



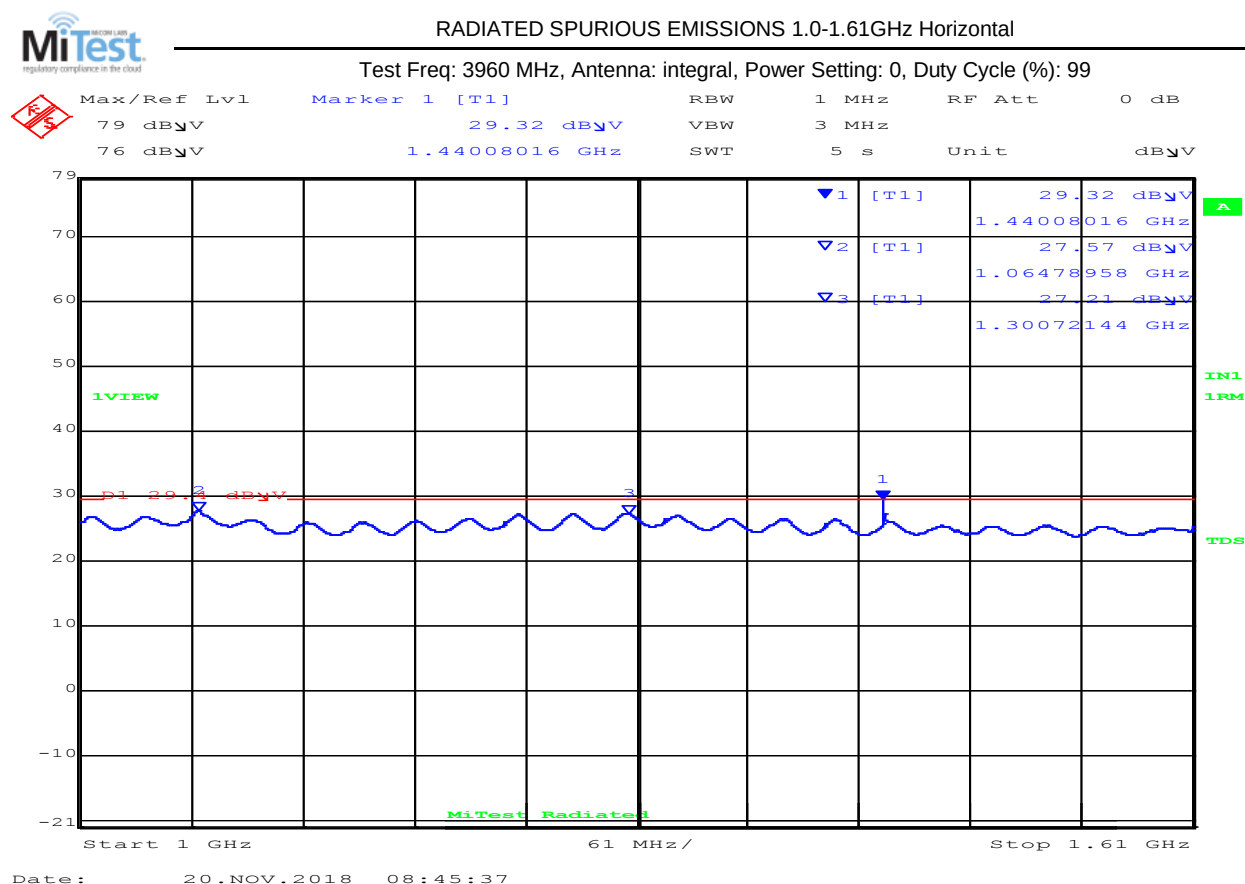
Title: Alereon AL5955, AL5930, AL5934  
To: FCC Part 15.519  
Serial #: ALER01-U2B Rev A  
Issue Date: 12th December 2018  
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3960 MHz

Equipment Configuration for Spurious Emissions 1-1.61 GHz Horizontal

|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

Test Measurement Results



1000.00– 1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 1440.1        | 28.2         | Average          | Horizontal | 150    | 0       | 29.4         | -1.2      | Pass       |
| 2   | 1064.8        | 25.8         | Average          | Horizontal | 150    | 0       | 29.4         | -3.6      | Pass       |
| 2   | 1300.7        | 24.5         | Average          | Horizontal | 150    | 0       | 29.4         | -4.9      | Pass       |

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 1-1.61 GHz Vertical

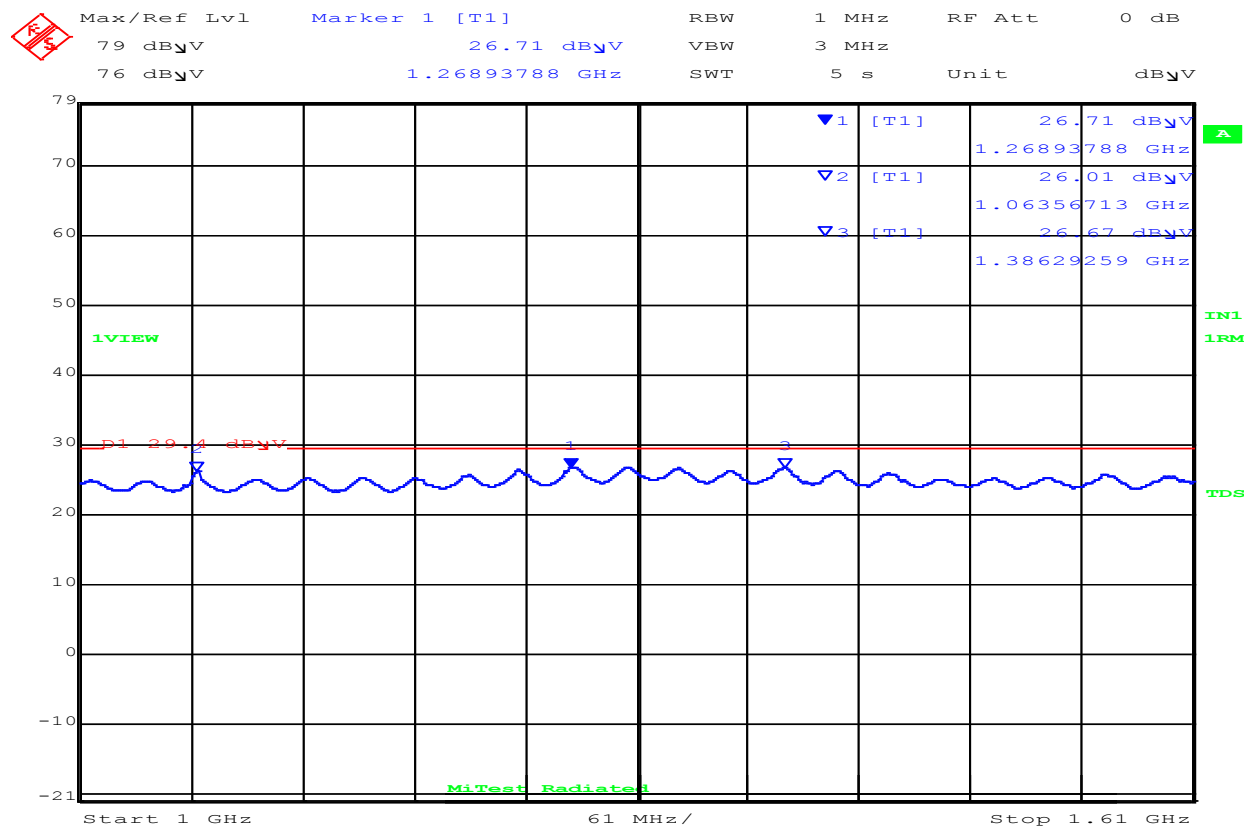
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.0-1.61GHz Vertical

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 08:52:30

| 1000.00- 1610.00 MHz |               |              |                  |          |        |         |              |           |            |
|----------------------|---------------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| Num                  | Frequency MHz | Level dBμV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| 1                    | 1268.9        | 24.6         | Average          | Vertical | 150    | 0       | 29.4         | -4.80     | Pass       |
| 2                    | 1063.6        | 23.8         | Average          | Vertical | 150    | 0       | 29.4         | -5.60     | Pass       |
| 2                    | 1386.3        | 24.1         | Average          | Vertical | 150    | 0       | 29.4         | -5.30     | Pass       |

**Test Notes:**  
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 1.61 - 1.99 GHz Horizontal

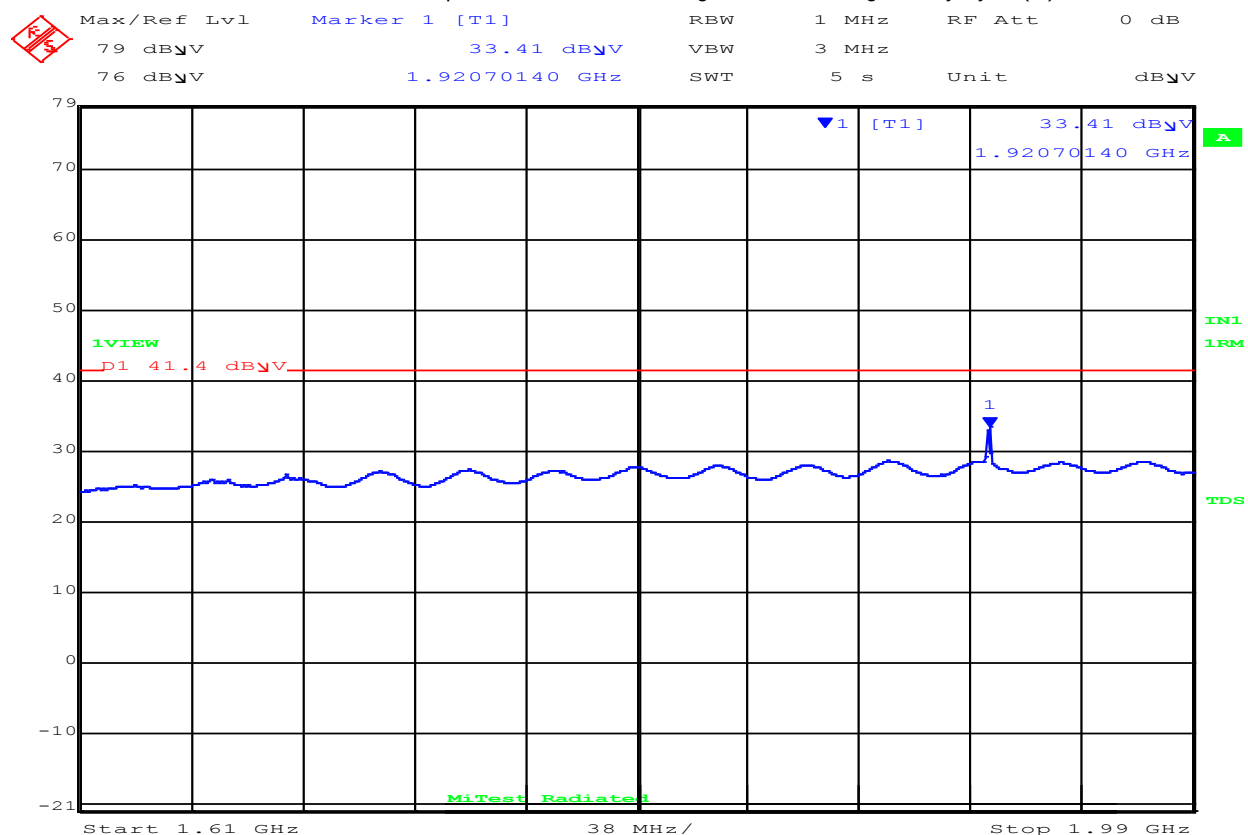
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.61-1.99GHz Horizontal

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99

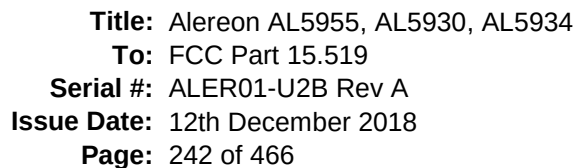


Date: 20.NOV.2018 09:00:24

#### 1610.00 – 1990.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |



Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99

Date: 20.NOV.2018 08:58:03

| 1610.00 – 1990.00 MHz                                                                                                                       |                  |                 |                     |     |           |            |                 |              |               |
|---------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|---------------------|-----|-----------|------------|-----------------|--------------|---------------|
| Num                                                                                                                                         | Frequency<br>MHz | Level<br>dBμV/m | Measurement<br>Type | Pol | Hgt<br>cm | Azt<br>Deg | Limit<br>dBμV/m | Margin<br>dB | Pass<br>/Fail |
| No Signals found within 6 dB of limit                                                                                                       |                  |                 |                     |     |           |            |                 |              |               |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |                  |                 |                     |     |           |            |                 |              |               |

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#### Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Horizontal

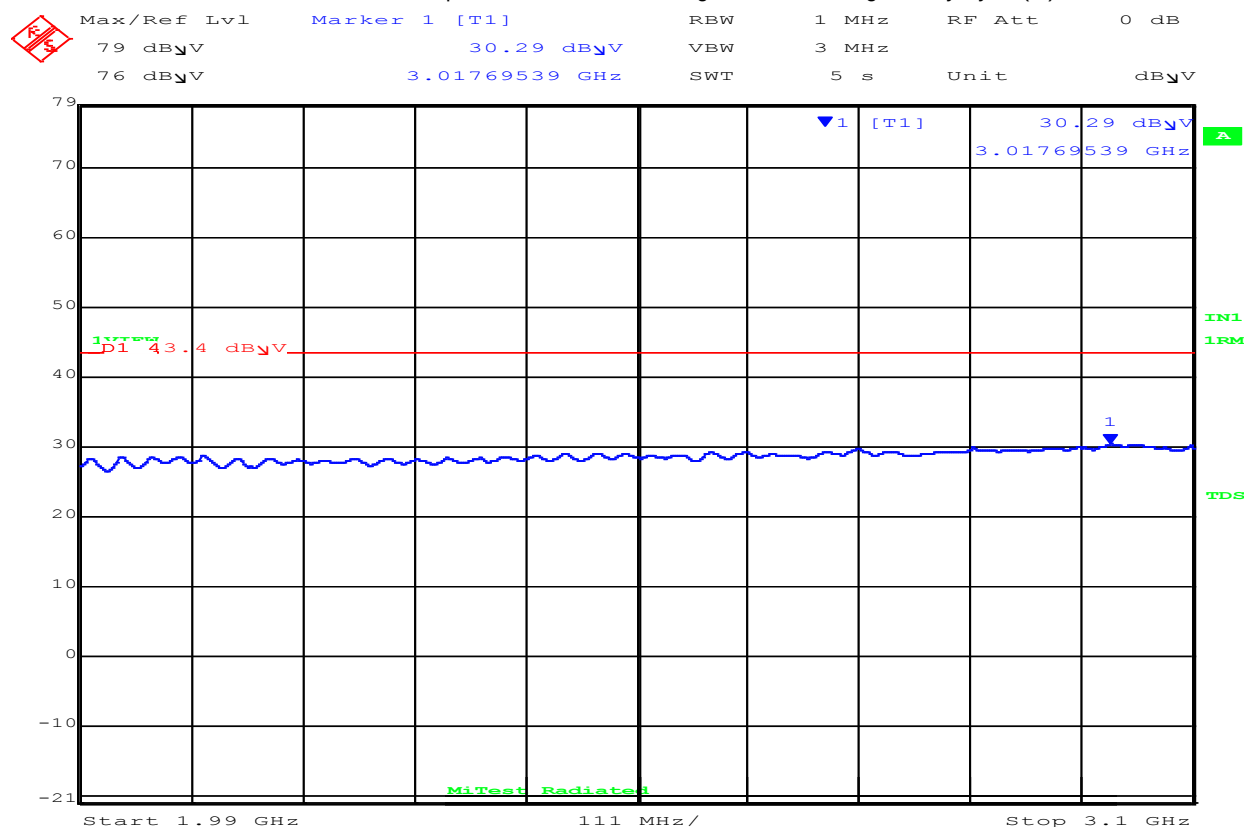
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.99-3.1GHz Horizontal

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 09:01:40

#### 1990.00 – 3100.00 GHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Vertical

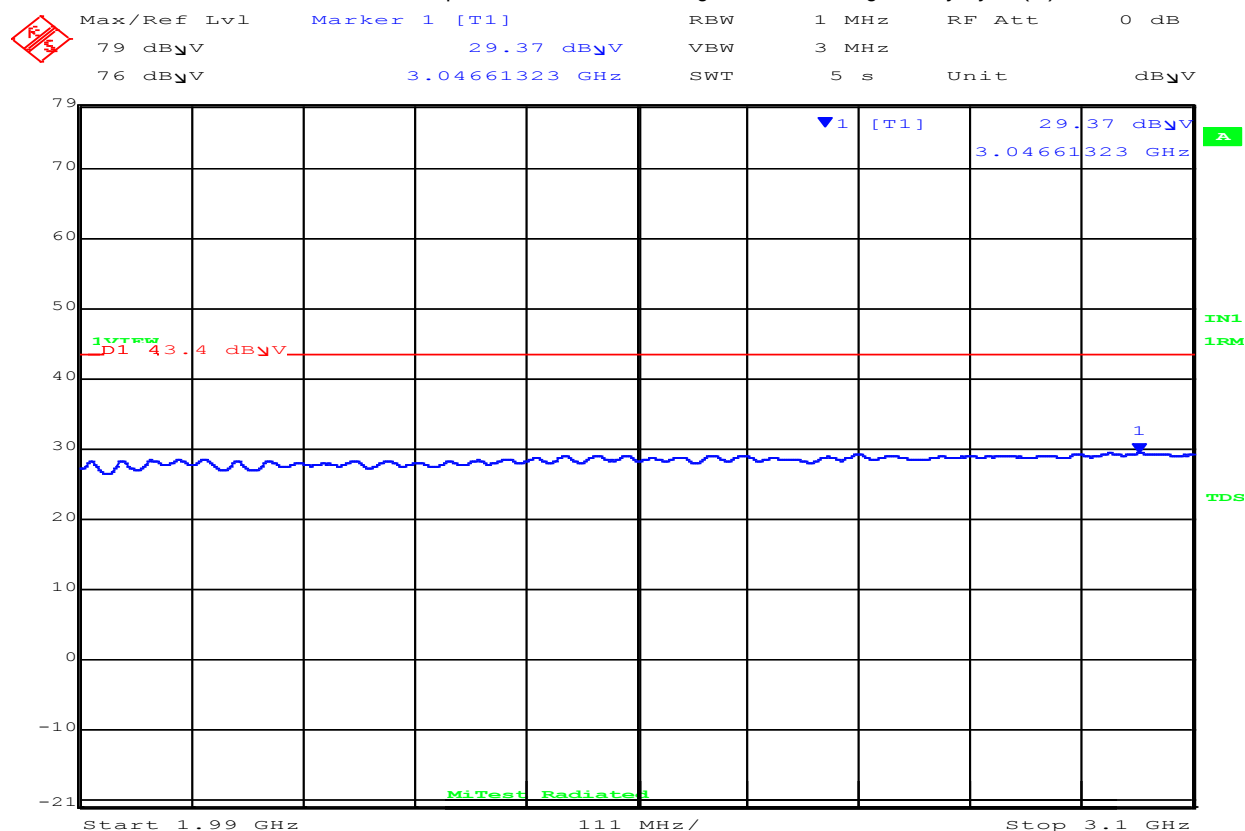
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.99-3.1GHz Vertical

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 09:02:26

#### 1990.00 – 3100.00 GHz

| Num                                                                                                                                         | Frequency MHz | Level dB $\mu$ V/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|------------------|-----|--------|---------|--------------------|-----------|------------|
| No Signals found within 6 dB of limit                                                                                                       |               |                    |                  |     |        |         |                    |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |                    |                  |     |        |         |                    |           |            |

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#### Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Horizontal

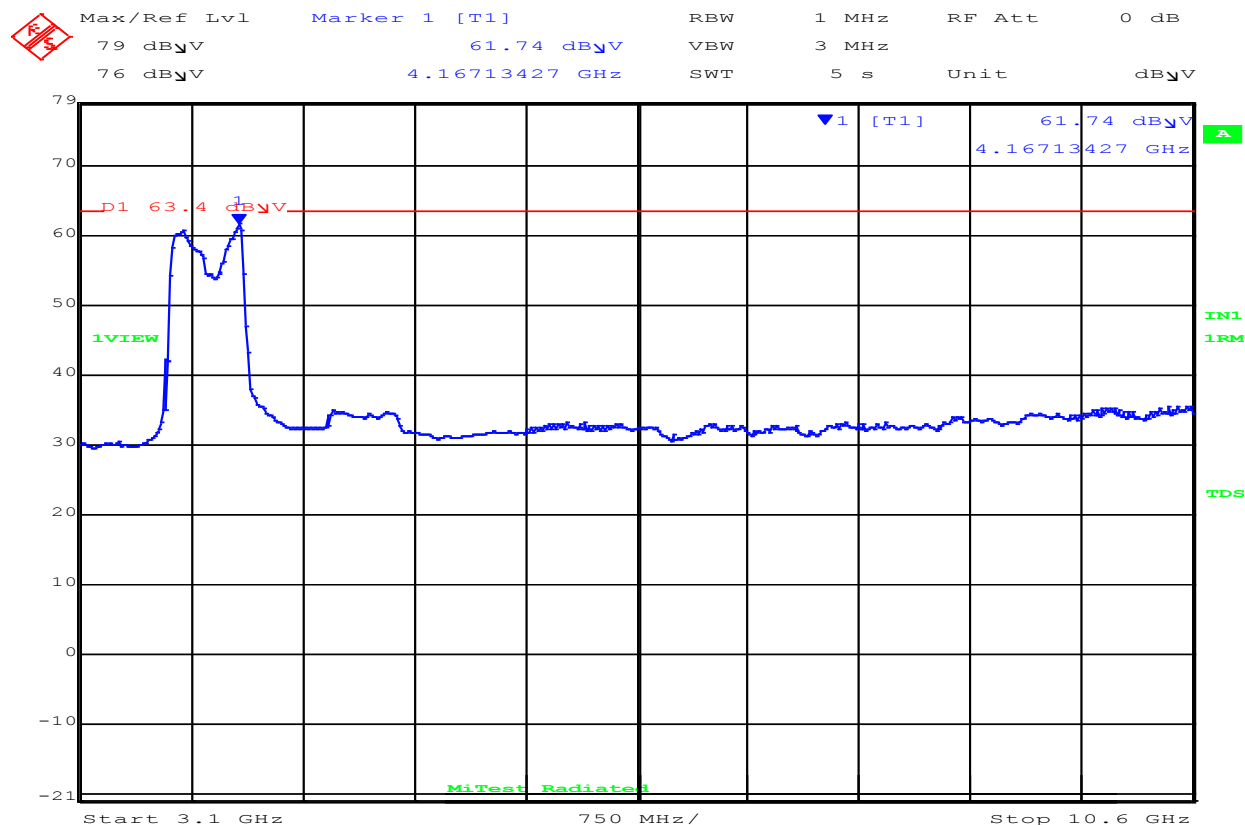
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 3.1-10.6GHz Horizontal

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 09:10:38

#### 3100.00 - 10600.00 MHz

| Num | Frequency MHz | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|-----|---------------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|
| 1   | 4167.1        | 61.5               | Average          | Horizontal | 150    | 0       | 63.4               | -1.90     | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Vertical

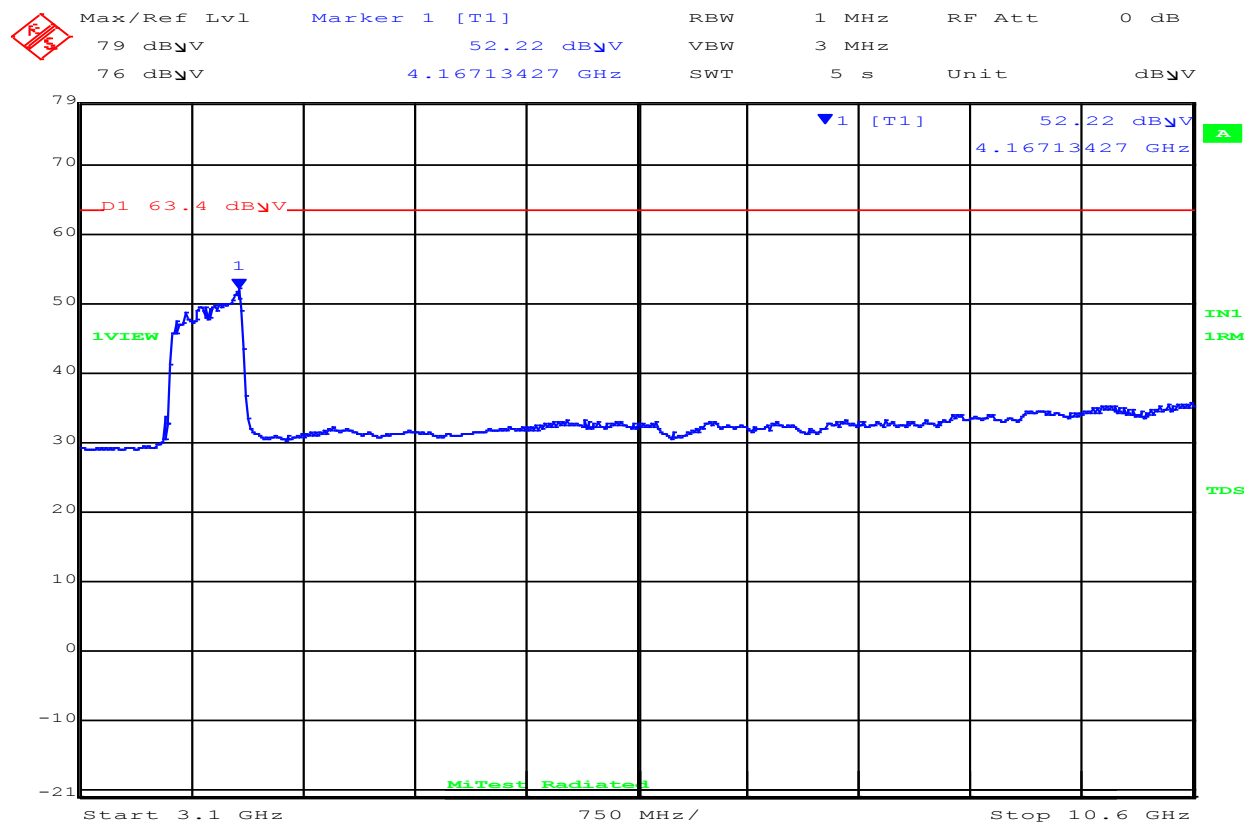
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 3.1-10.6GHz Vertical

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99

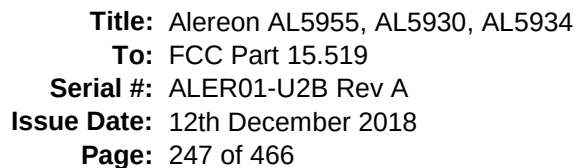


Date: 20.NOV.2018 09:05:26

#### 3100.00 - 10600.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

## Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



**Test Notes:**

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Vertical

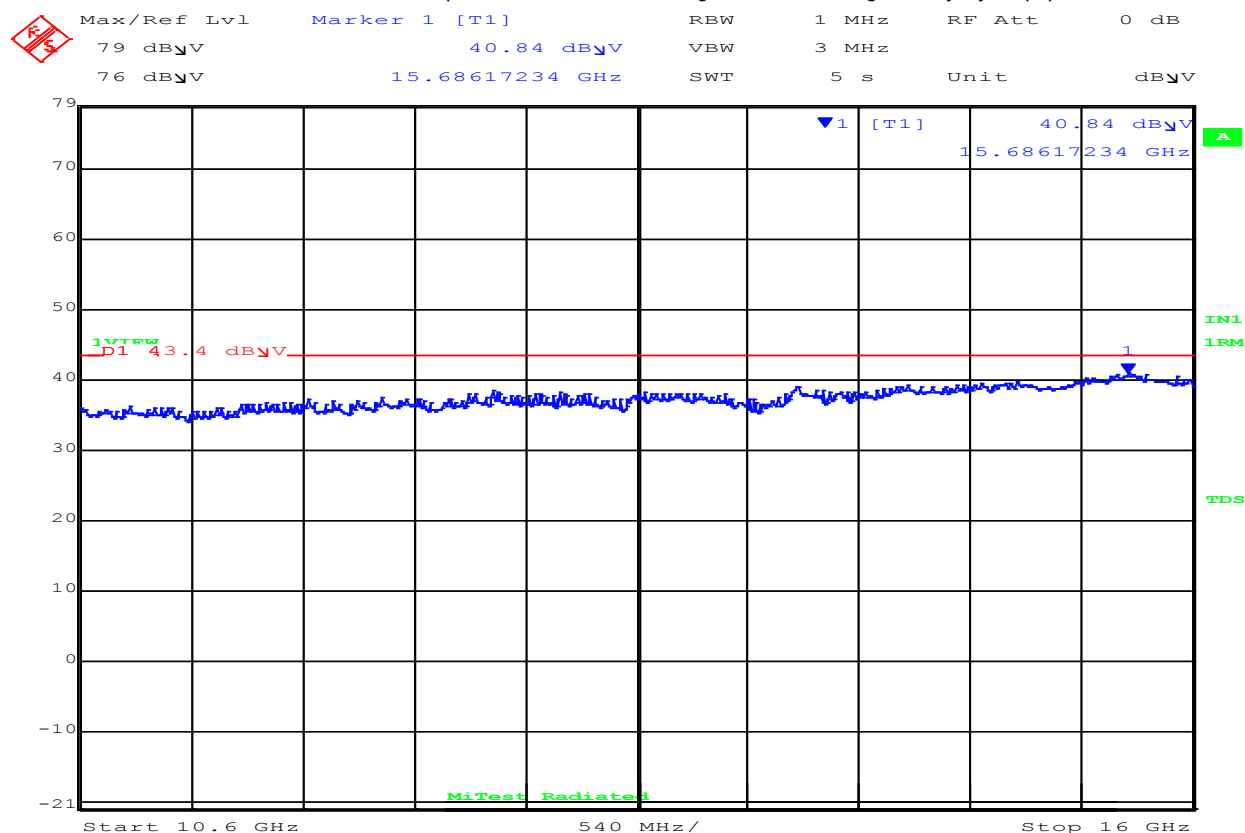
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 10.6-16GHz Vertical

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 09:15:55

#### 10600.00 – 16000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| 1   | 15686.2       | 39.8         | Average          | Vertical | 150    | 0       | 43.4         | -3.60     | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Horizontal

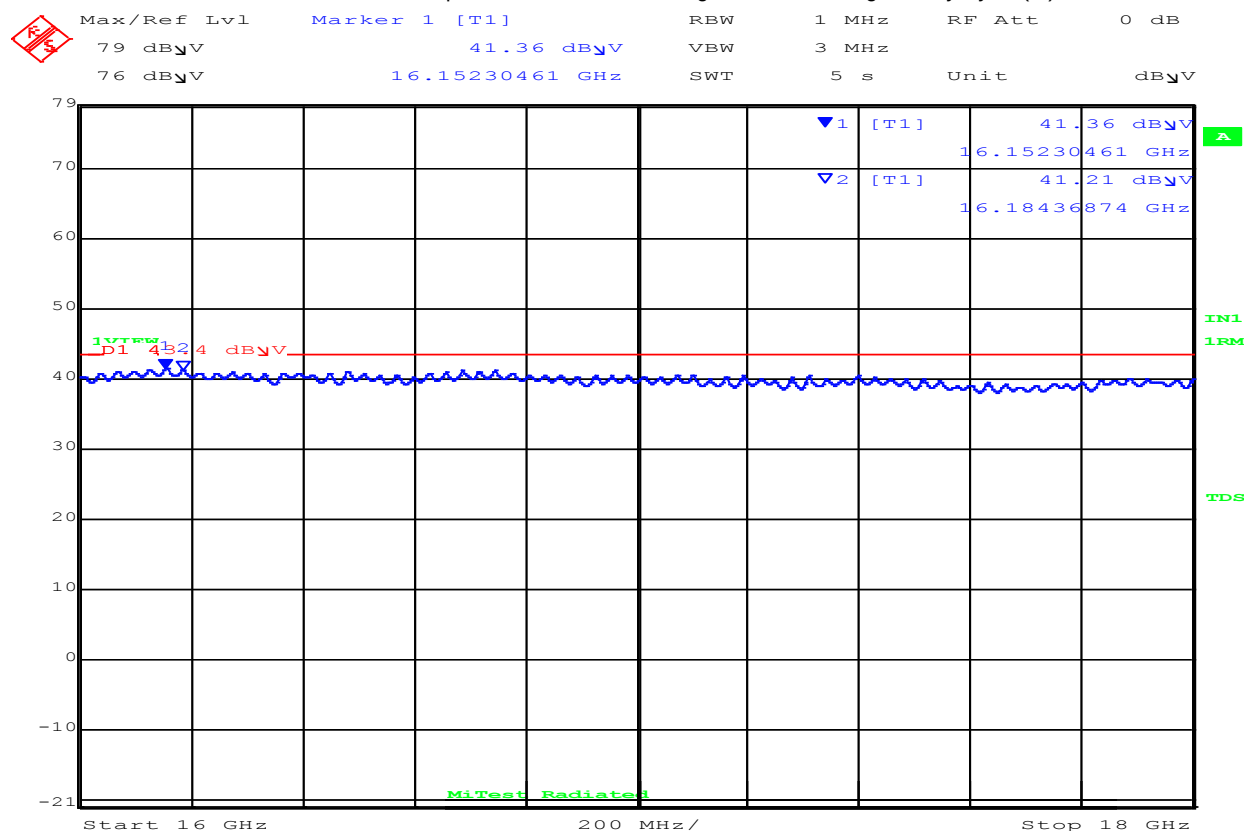
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 16-18GHz Horizontal

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 09:20:37

#### 16000.00 – 18000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 16152.3       | 40.3         | Average          | Horizontal | 150    | 0       | 43.4         | -3.1      | Pass       |
|     | 16184.4       | 40.2         | Average          | Horizontal | 150    | 0       | 43.4         | -3.2      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Vertical

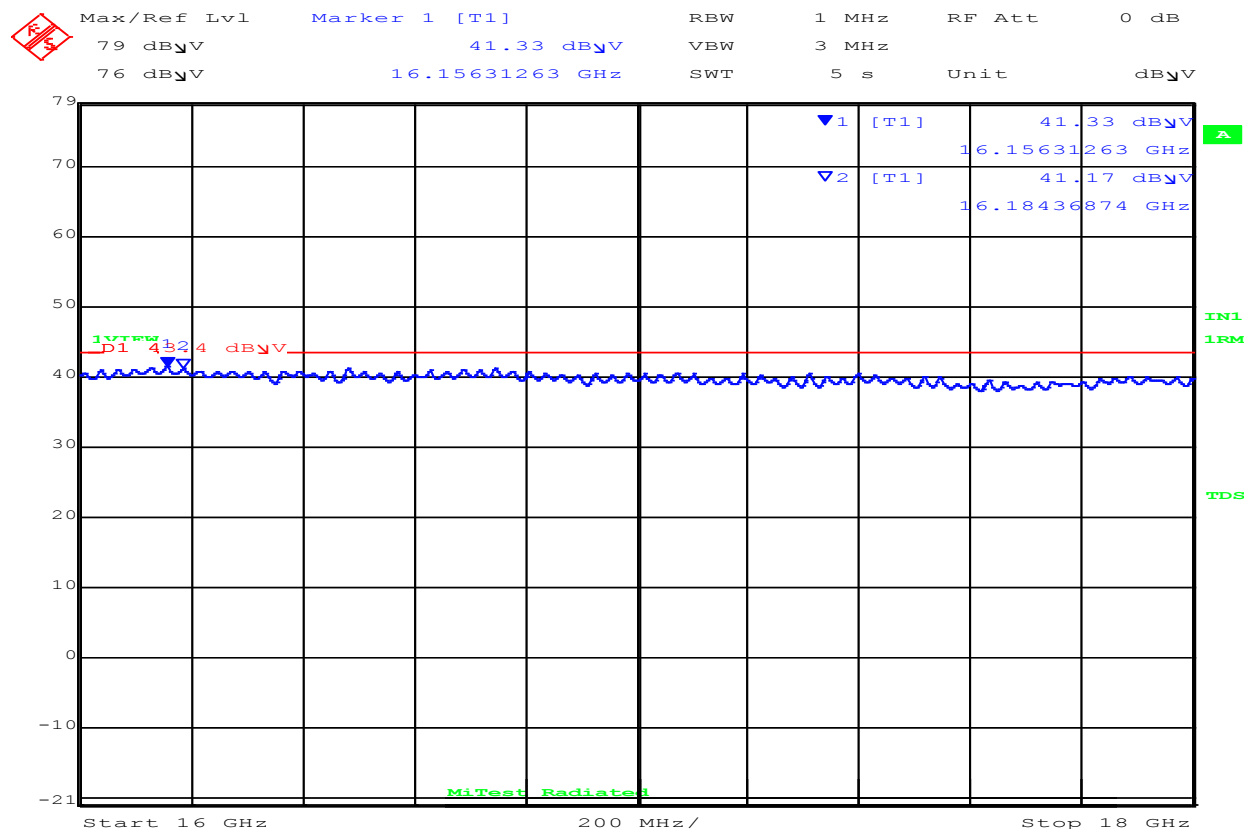
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 16-18GHz Vertical

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 09:18:05

#### 16000.00 – 18000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| 1   | 16156.3       | 40.4         | Average          | Vertical | 150    | 0       | 43.4         | -3.00     | Pass       |
| 2   | 16184.4       | 40.3         | Average          | Vertical | 150    | 0       | 43.4         | -3.10     | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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4488 MHz

Equipment Configuration for Spurious Emissions 1-1.61 GHz Horizontal

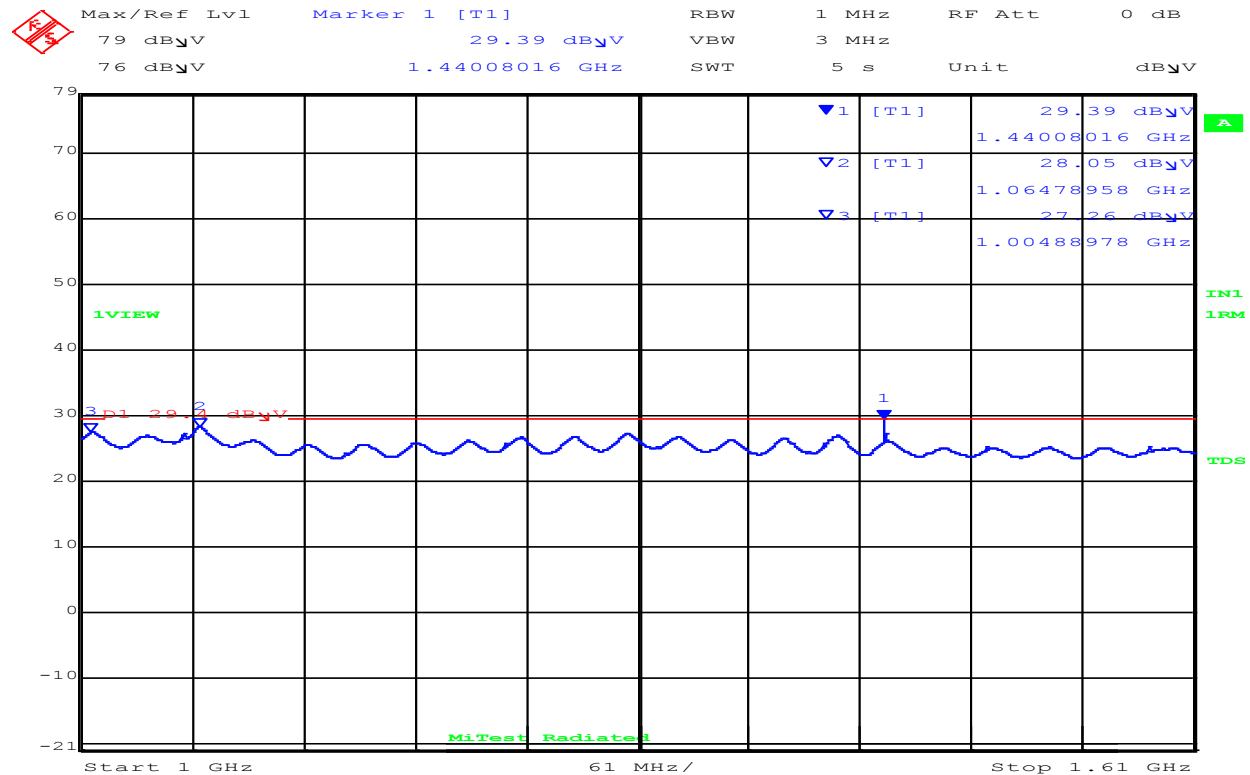
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS 1.0-1.61GHz Horizontal

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 10:04:33

1000.00- 1610.00MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 1440.1        | 28.9         | Average          | Horizontal | 150    | 0       | 29.4         | -0.5      | Pass       |
| 2   | 1064.8        | 26.1         | Average          | Horizontal | 150    | 0       | 29.4         | -3.3      | Pass       |
| 3   | 1004.9        | 25.2         | Average          | Horizontal | 150    | 0       | 29.4         | -4.2      | Pass       |

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 1-1.61 GHz Vertical

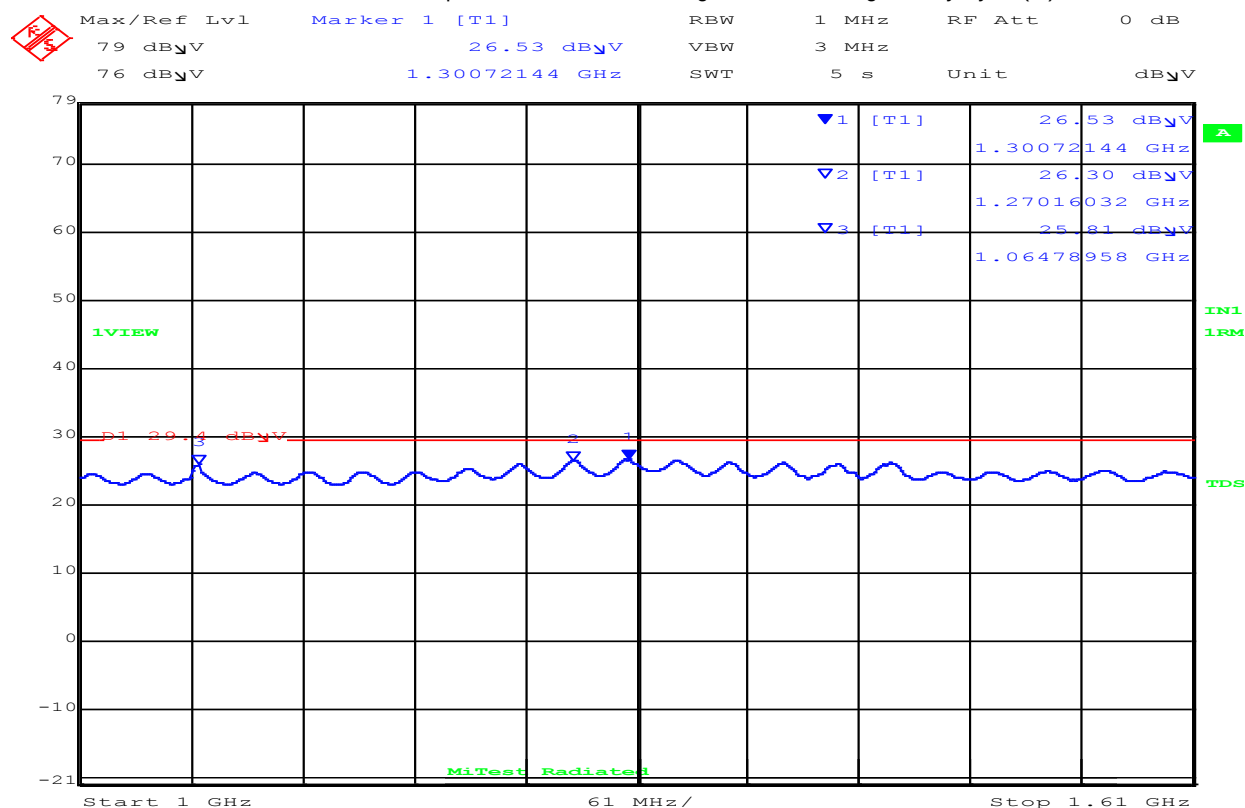
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.0-1.61GHz Vertical

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 10:11:35

#### 1000.00– 1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| 1   | 1300.7        | 24.1         | Average          | Vertical | 150    | 0       | 29.4         | -5.3      | Pass       |
| 2   | 1270.2        | 24.1         | Average          | Vertical | 150    | 0       | 29.4         | -5.3      | Pass       |
| 3   | 1064.8        | 23.8         | Average          | Vertical | 150    | 0       | 29.4         | -5.6      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 1.61 - 1.99 GHz Horizontal

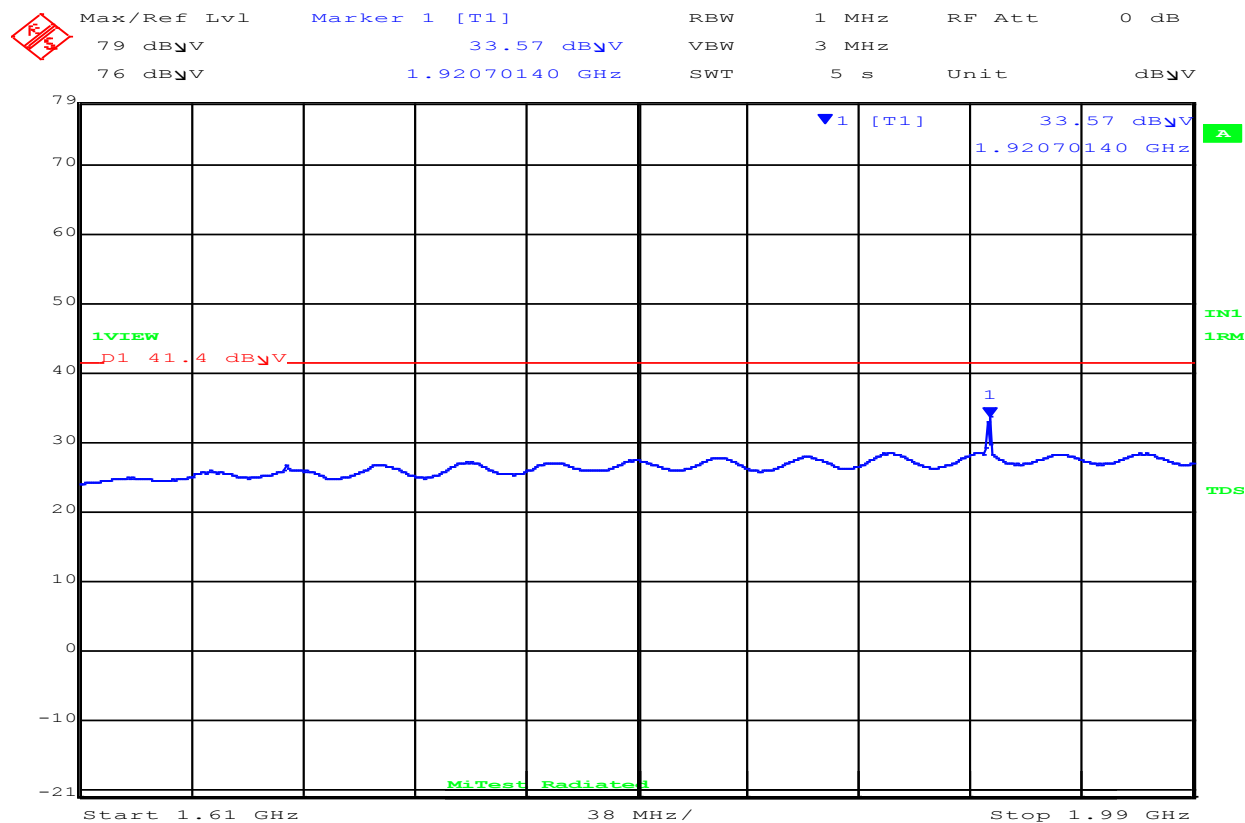
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.61-1.99GHz Horizontal

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 10:01:25

#### 1610.00 – 1990.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.61 – 1.99 GHz Vertical

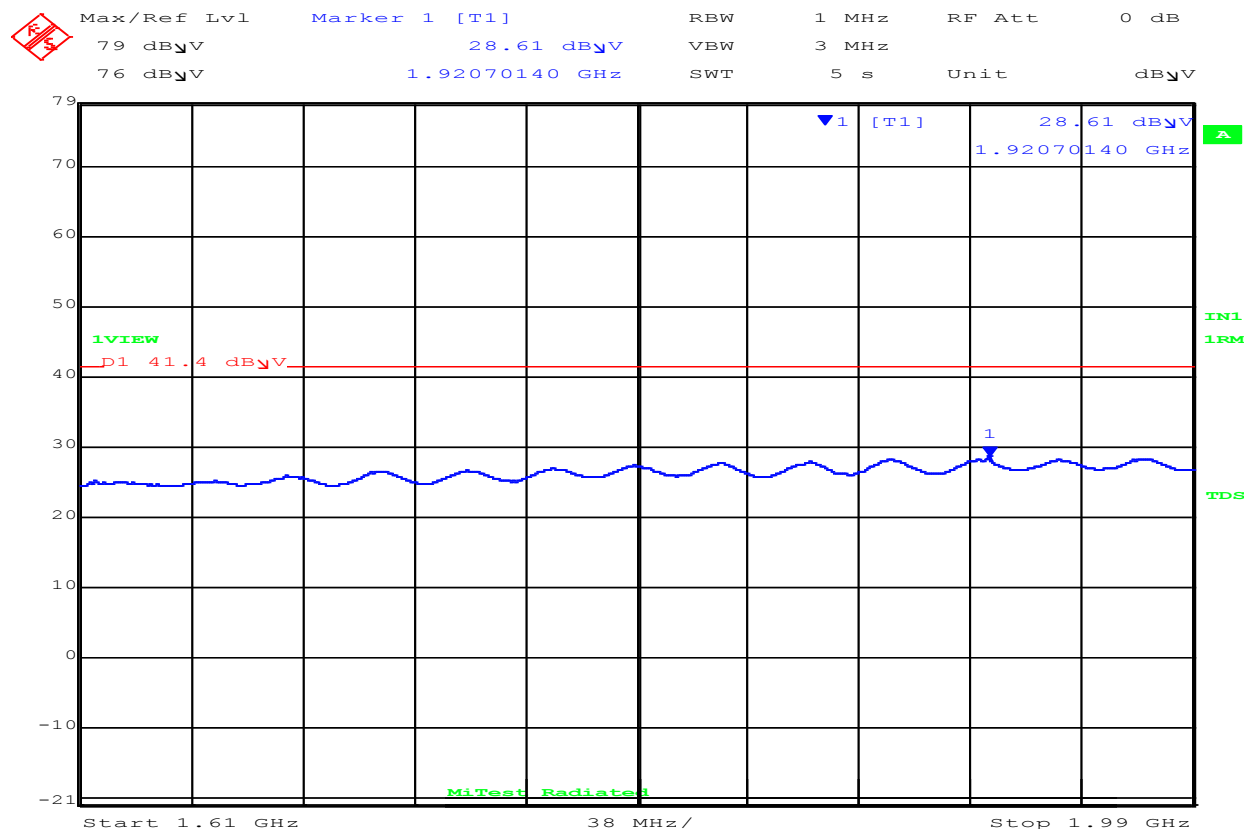
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.61-1.99GHz Vertical

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 10:00:28

#### 1610.00 – 1990.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dB $\mu$ V/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|------------------|-----|--------|---------|--------------------|-----------|------------|
| No Signals found within 6 dB of limit                                                                                                       |               |                    |                  |     |        |         |                    |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |                    |                  |     |        |         |                    |           |            |

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#### Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Horizontal

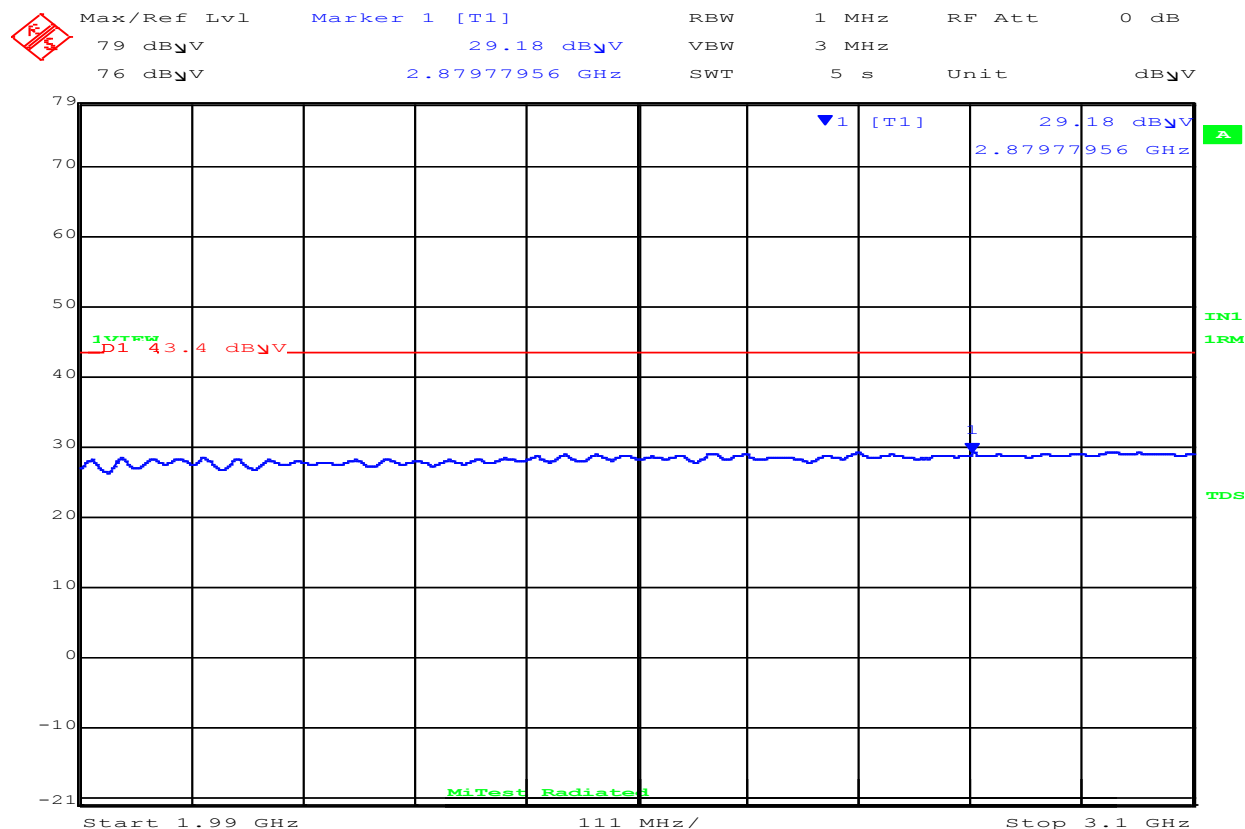
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.99-3.1GHz Horizontal

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 09:58:14

#### 1990.00 – 3100.00 GHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Vertical

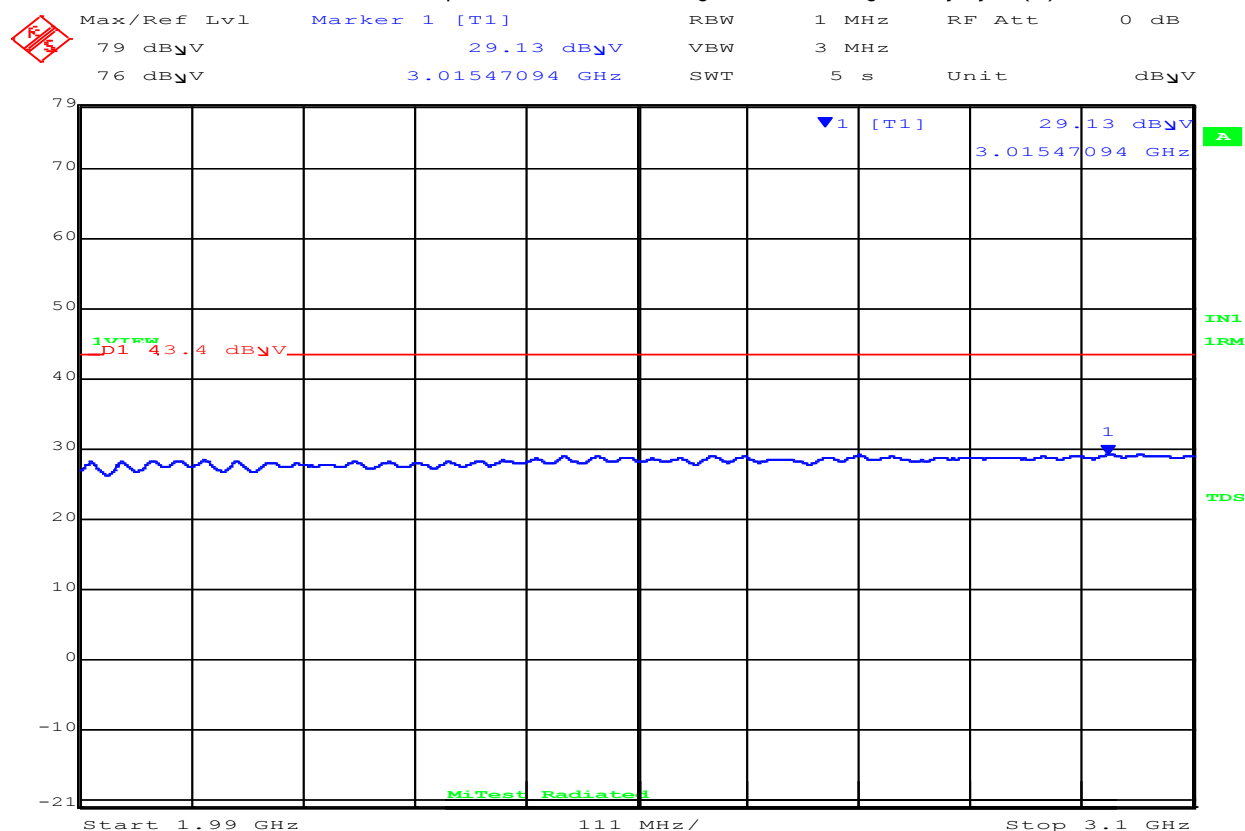
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.99-3.1GHz Vertical

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 09:58:53

#### 1990.00 – 3100.00 GHz

| Num                                                                                                                                         | Frequency MHz | Level dB $\mu$ V/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|------------------|-----|--------|---------|--------------------|-----------|------------|
| No Signals found within 6 dB of limit                                                                                                       |               |                    |                  |     |        |         |                    |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |                    |                  |     |        |         |                    |           |            |

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#### Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Horizontal

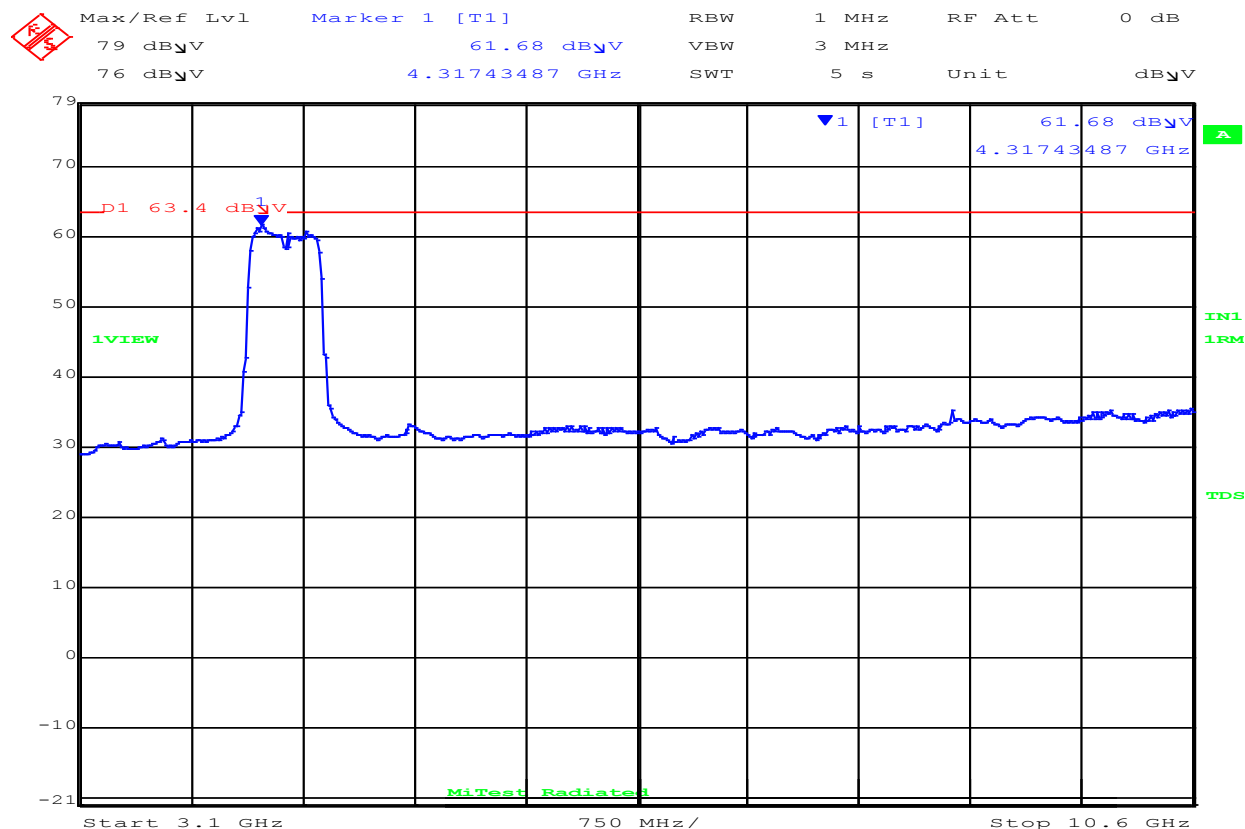
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 3.1-10.6GHz Horizontal

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 09:55:09

#### 3100.00 - 10600.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 4317.4        | 59.4         | Average          | Horizontal | 150    | 0       | 63.4         | -4.0      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Vertical

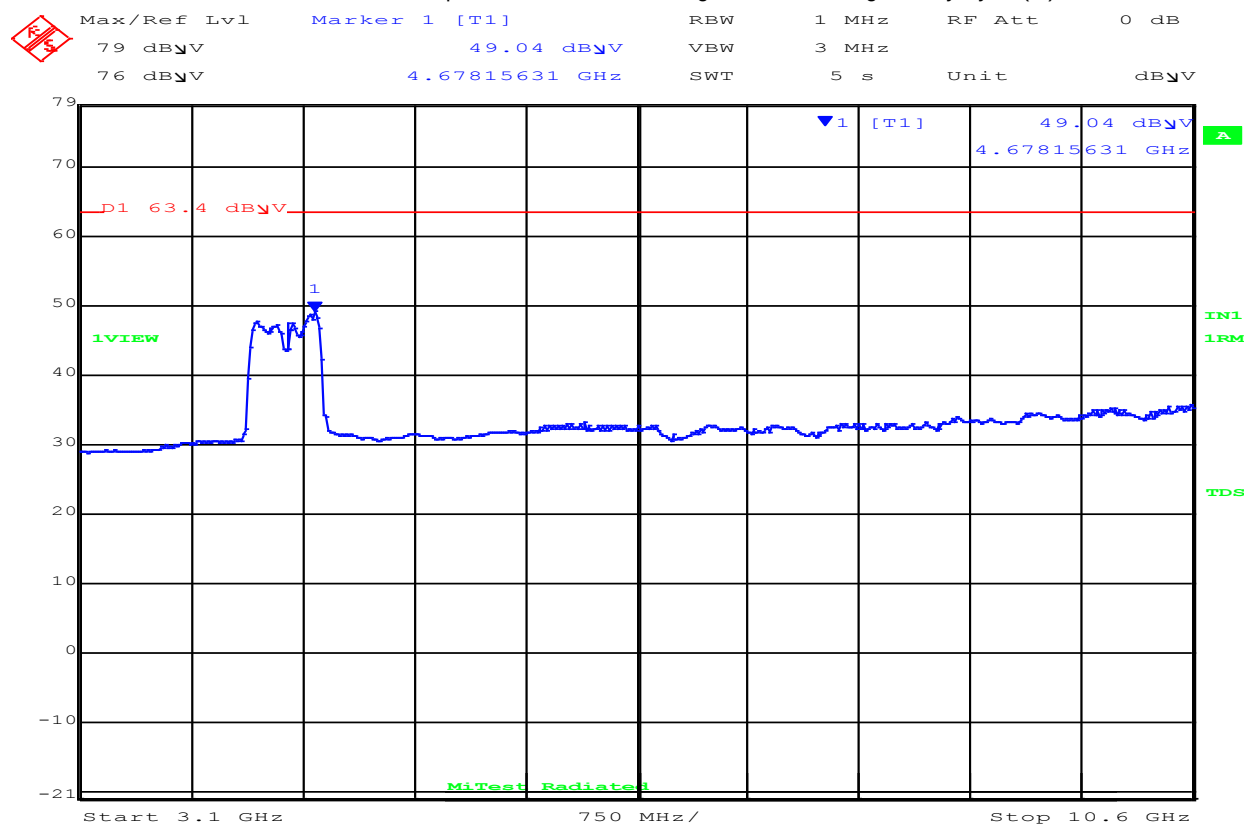
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 3.1-10.6GHz Vertical

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 09:52:55

#### 3100.00 - 10600.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Horizontal

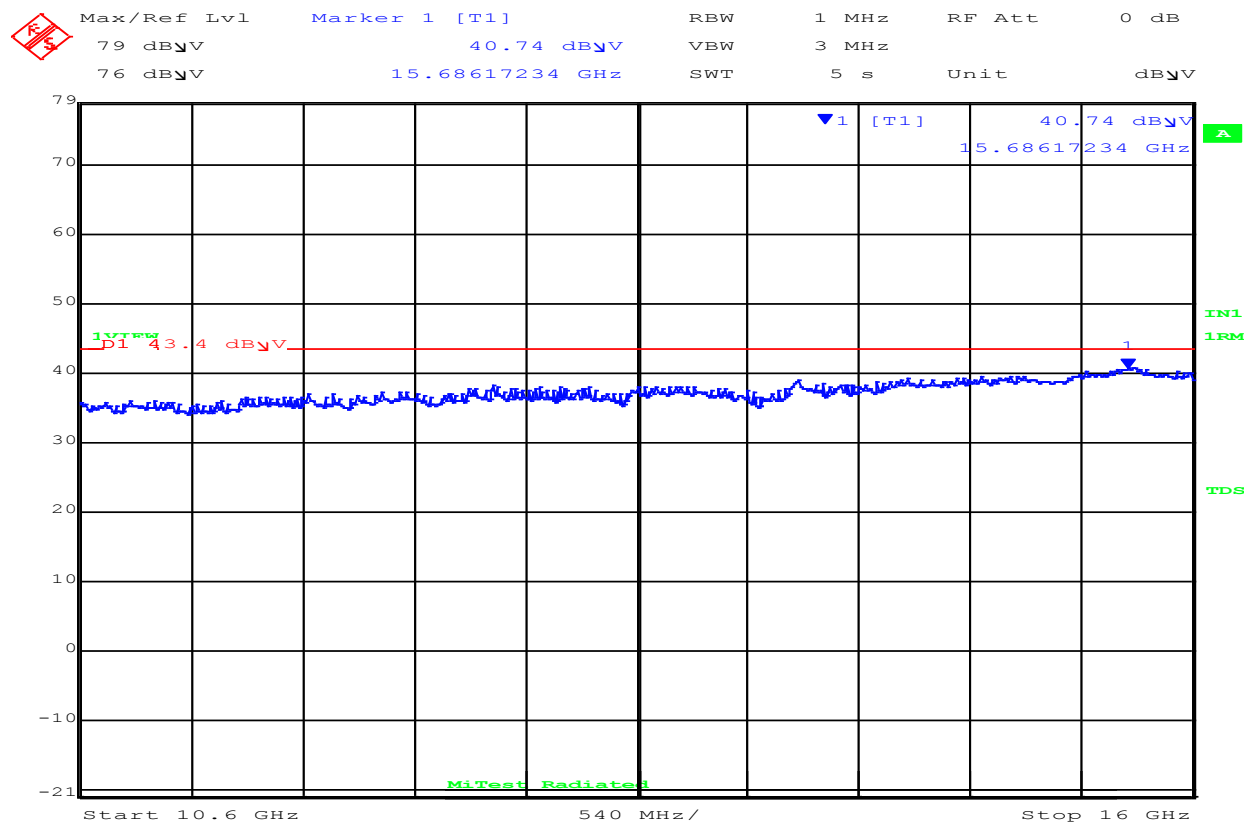
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 10.6-16GHz Horizontal

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 09:56:31

#### 10600.00 – 16000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 15686.2       | 39.6         | Average          | Horizontal | 150    | 0       | 43.4         | -3.8      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Vertical

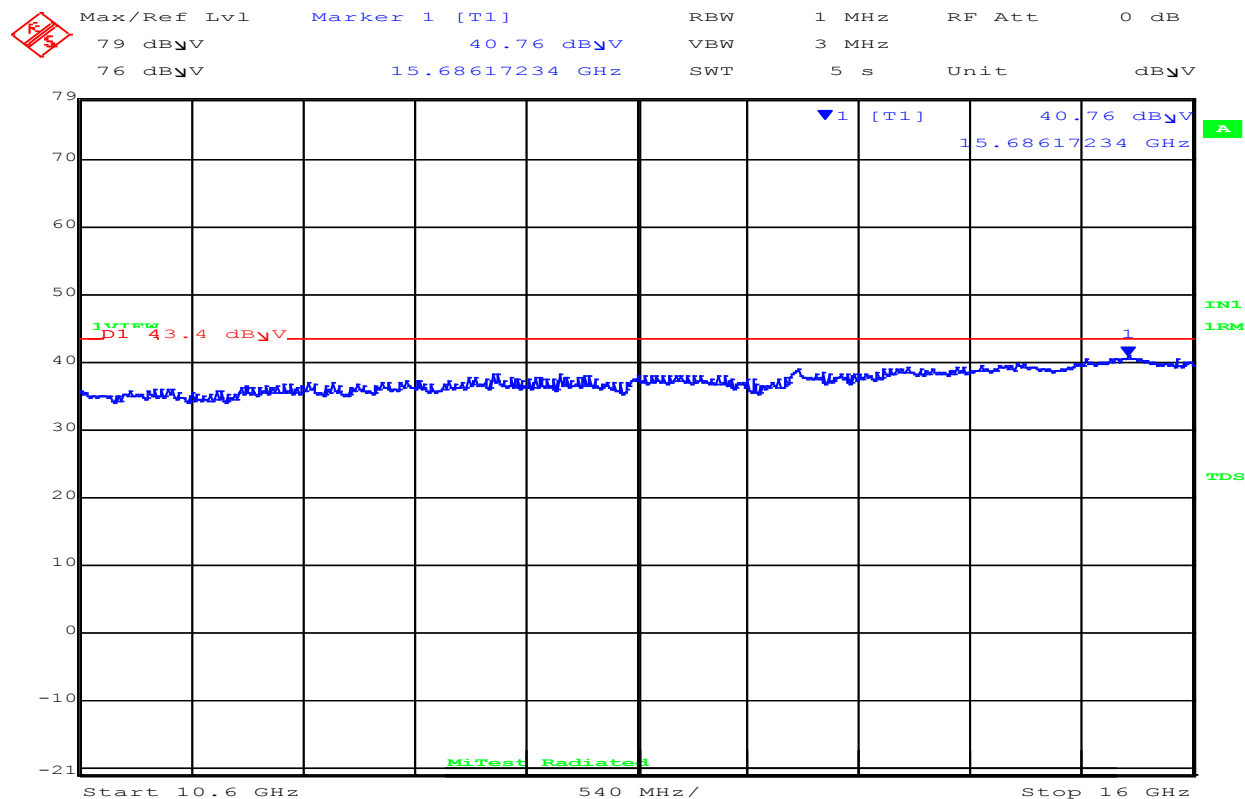
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 10.6-16GHz Vertical

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 09:32:15

#### 10600.00 – 16000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| 1   | 15686.2       | 39.5         | Average          | Vertical | 150    | 0       | 43.4         | -3.5      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Horizontal

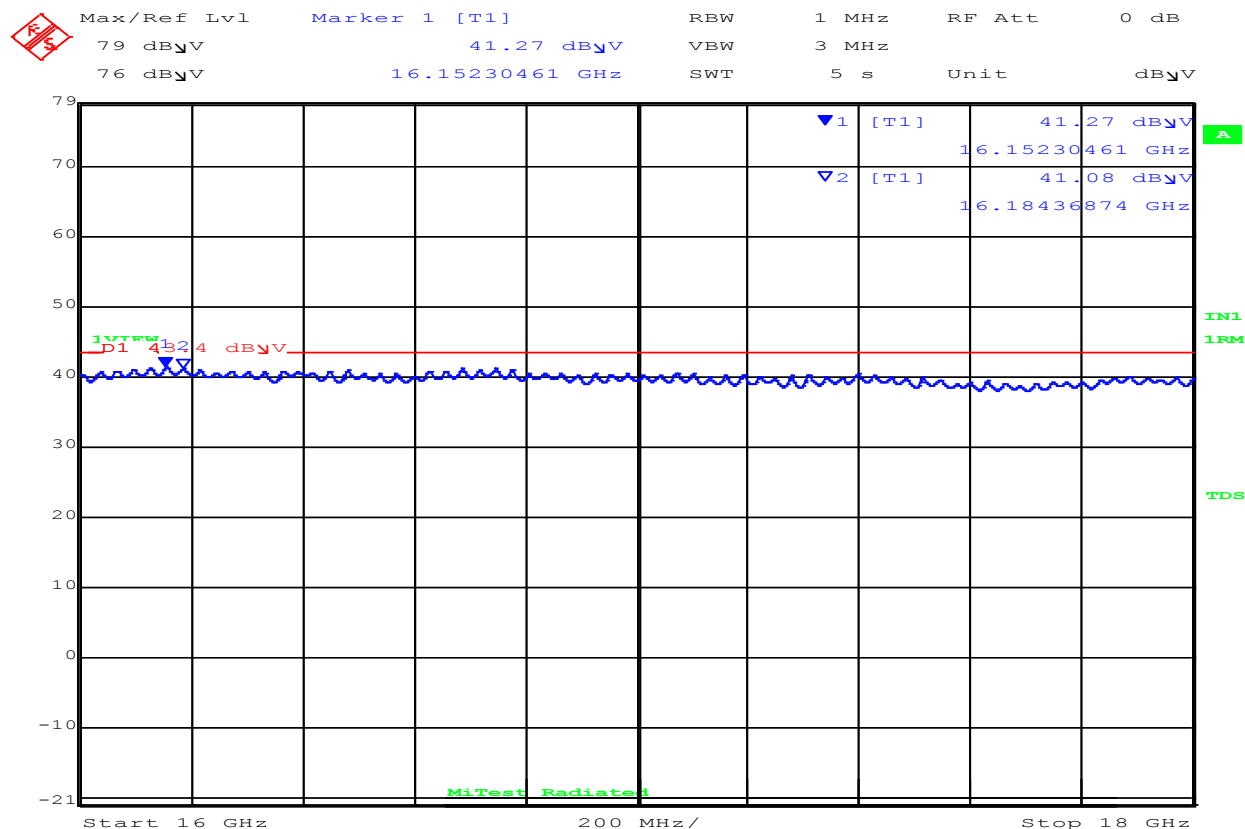
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 16-18GHz Horizontal

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 09:26:15

#### 16000.00 – 18000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 16152.3       | 40.2         | Average          | Horizontal | 150    | 0       | 43.4         | -3.2      | Pass       |
| 2   | 16184.4       | 40.2         | Average          | Horizontal | 150    | 0       | 43.4         | -3.2      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Vertical

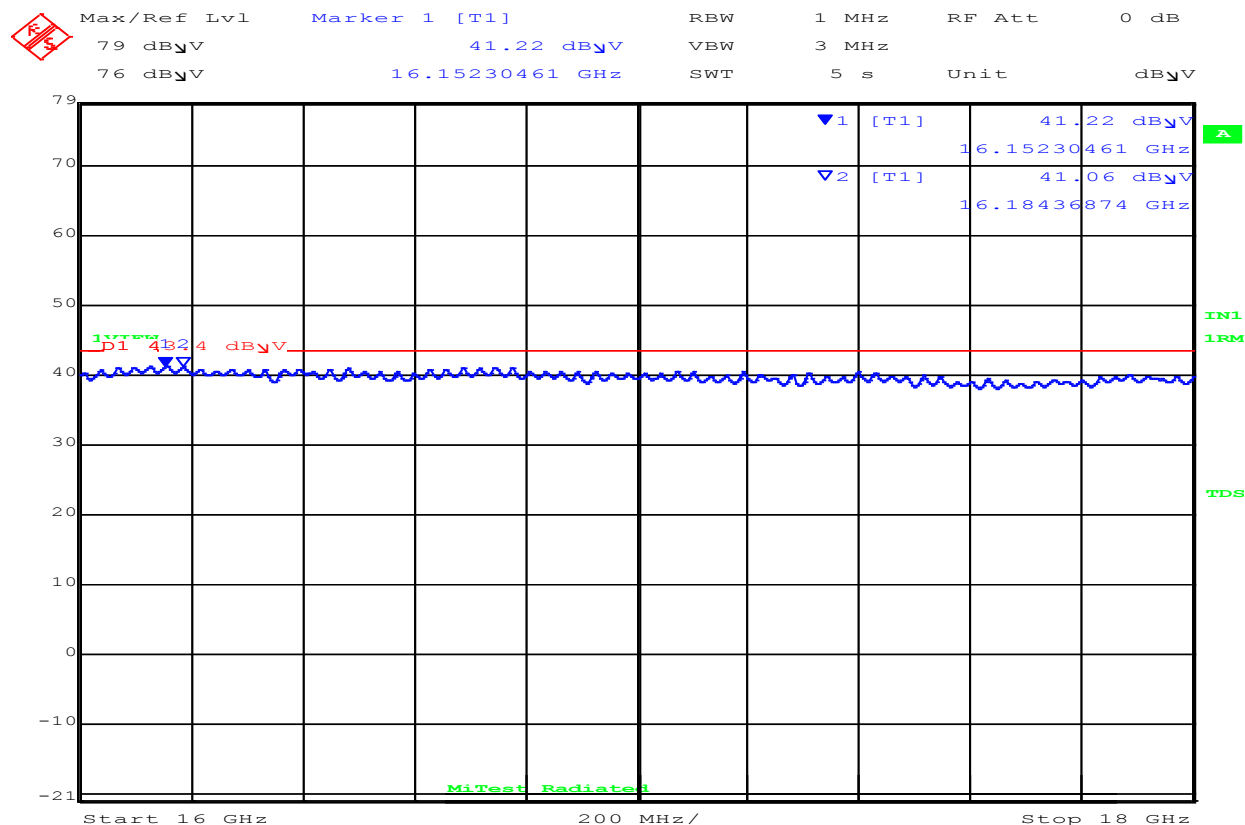
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 16-18GHz Vertical

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 09:30:01

#### 16000.00 – 18000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| 1   | 16152.3       | 40.2         | Average          | Vertical | 150    | 0       | 43.4         | -3.2      | Pass       |
| 2   | 16184.4       | 40.1         | Average          | Vertical | 150    | 0       | 43.4         | -3.3      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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6600 MHz

#### Equipment Configuration for Spurious Emissions 1-1.61 GHz Horizontal

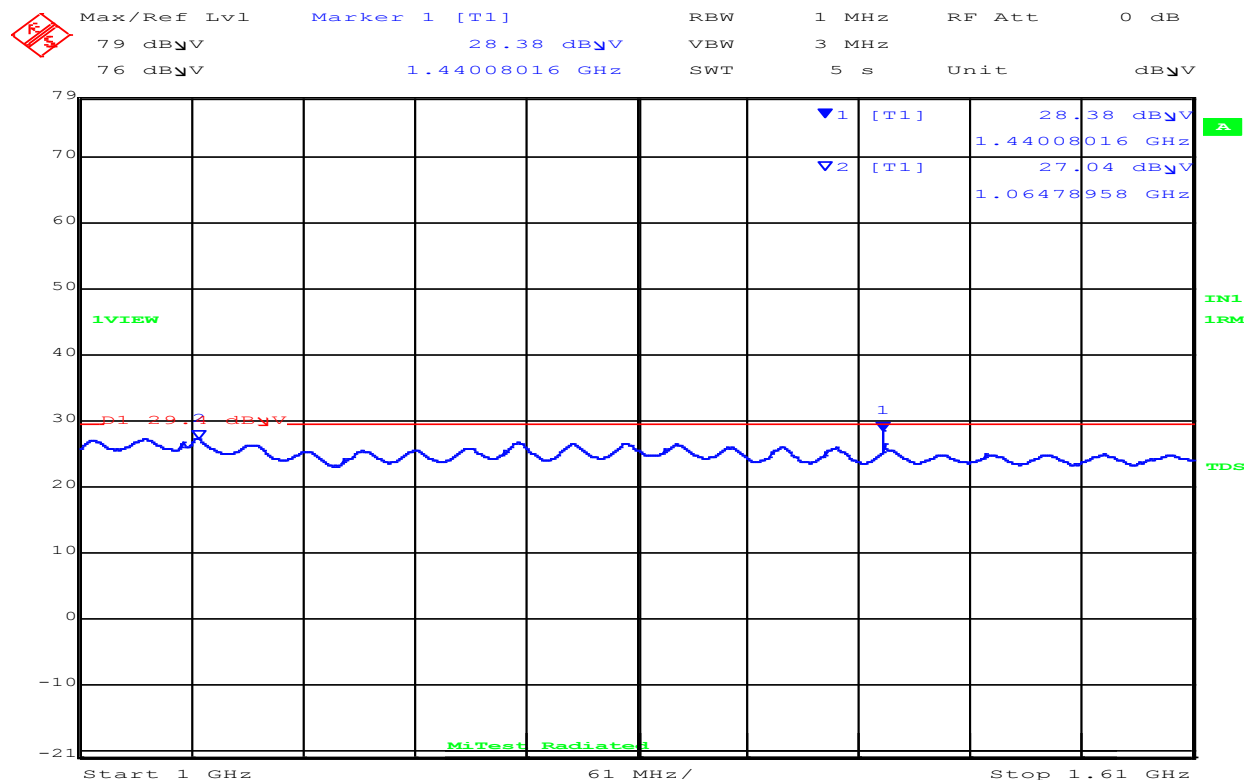
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.0-1.61GHz Horizontal

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 11:46:45

#### 1000.00- 1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 1440.1        | 28.9         | Average          | Horizontal | 150    | 0       | 29.4         | -0.5      | Pass       |
| 2   | 1064.8        | 25.9         | Average          | Horizontal | 150    | 0       | 29.4         | -3.5      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 1-1.61 GHz Vertical

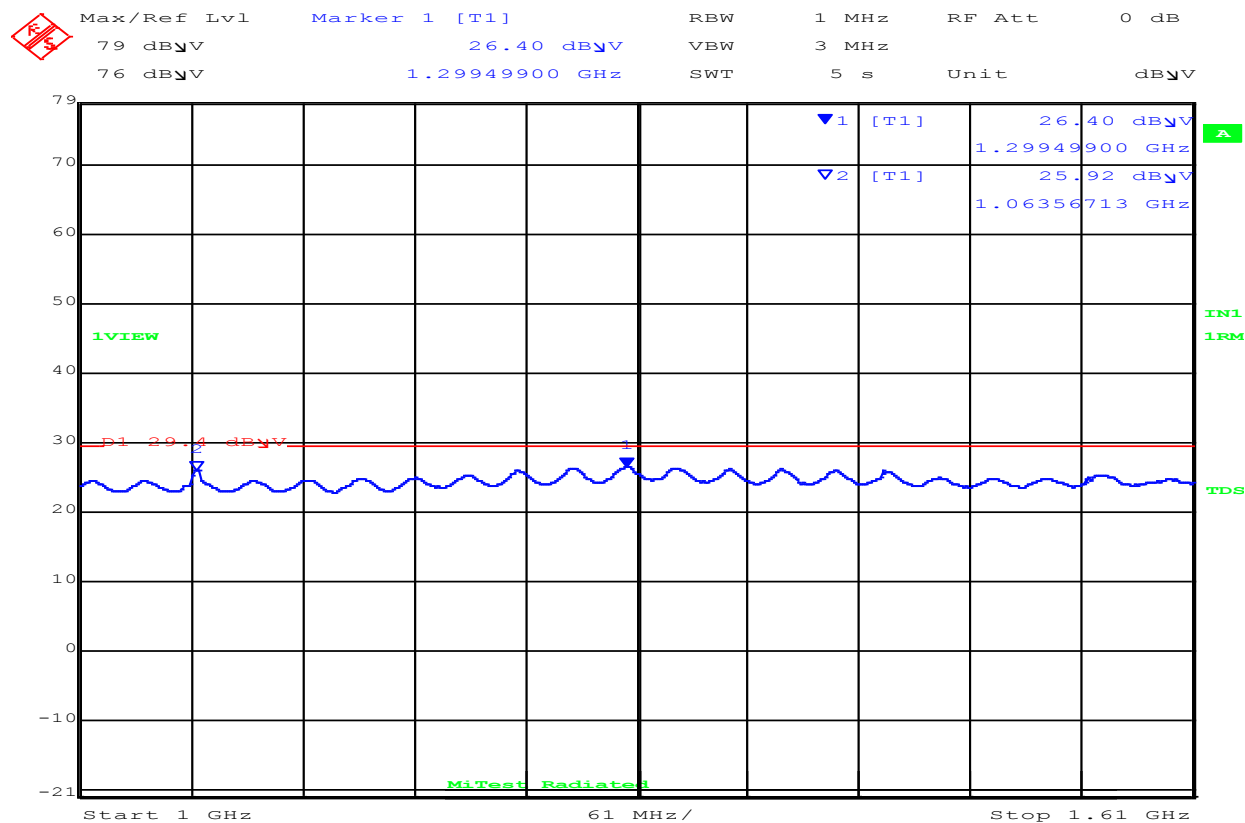
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.0-1.61GHz Vertical

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 11:42:06

#### 1000.00– 1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| 1   | 1299.9        | 24.1         | Average          | Vertical | 150    | 0       | 29.4         | -5.30     | Pass       |
| 2   | 1063.6        | 23.9         | Average          | Vertical | 150    | 0       | 29.4         | -5.50     | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 1.61 - 1.99 GHz Horizontal

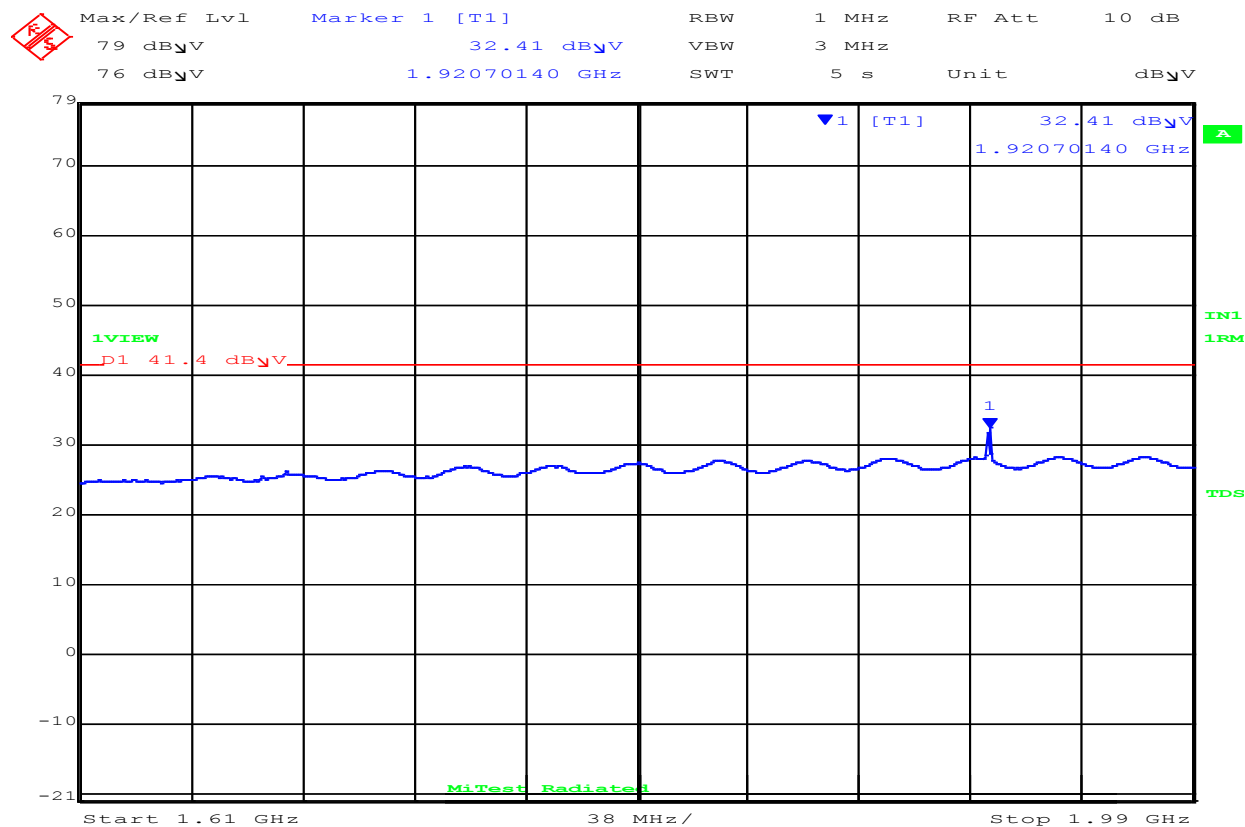
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.61-1.99GHz Horizontal

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 11:29:38

#### 1610.00 – 1990.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of limit.                                                                                                      |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.61 – 1.99 GHz Vertical

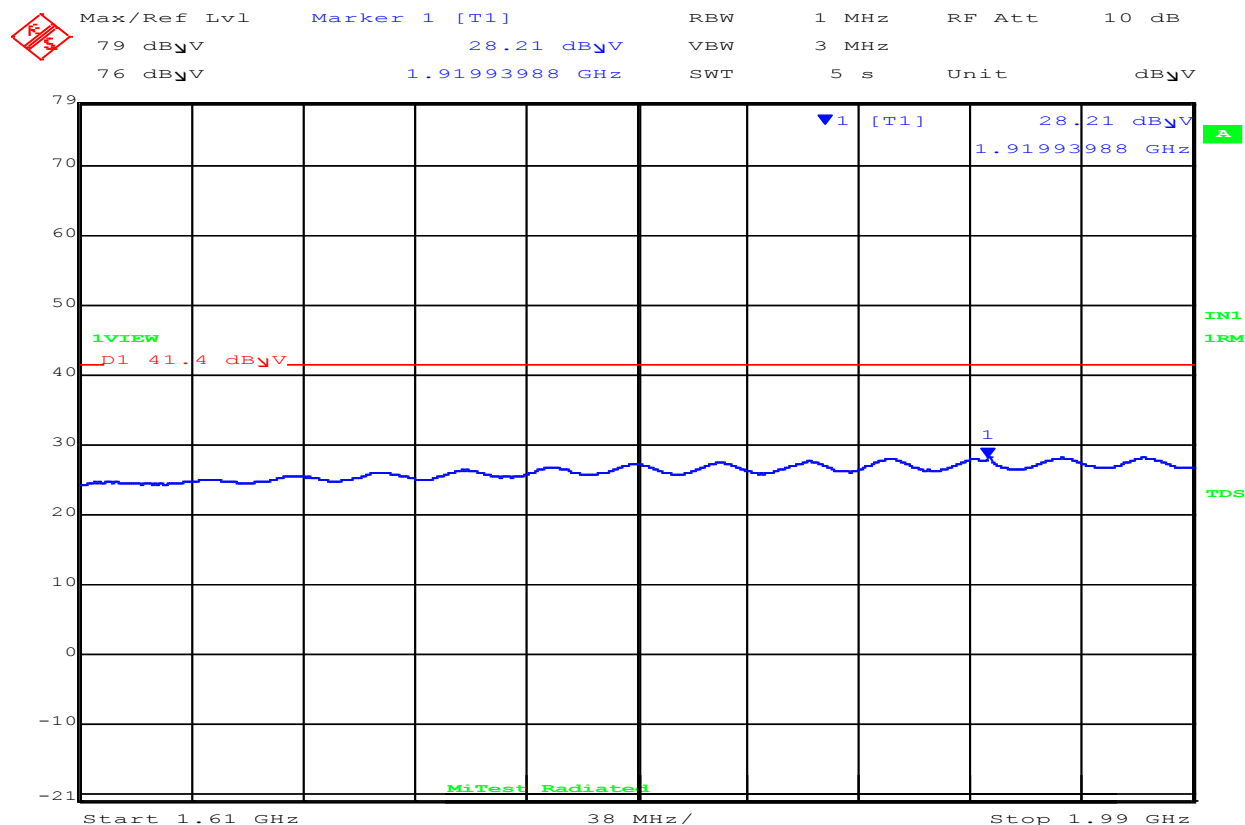
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.61-1.99GHz Vertical

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 11:30:25

#### 1610.00 – 1990.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of limit.                                                                                                      |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Horizontal

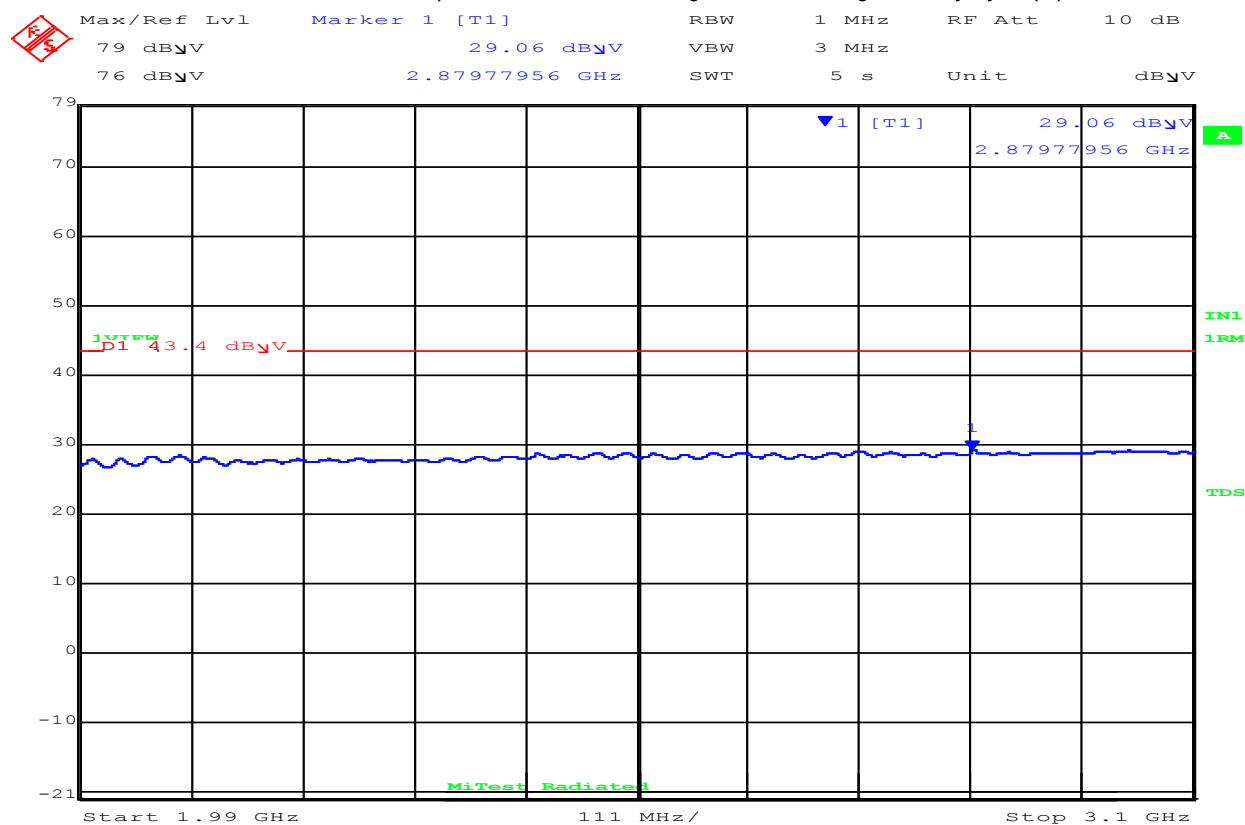
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.99-3.1GHz Horizontal

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 11:26:50

#### 1990.00 – 3100.00 GHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of limit.                                                                                                      |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Vertical

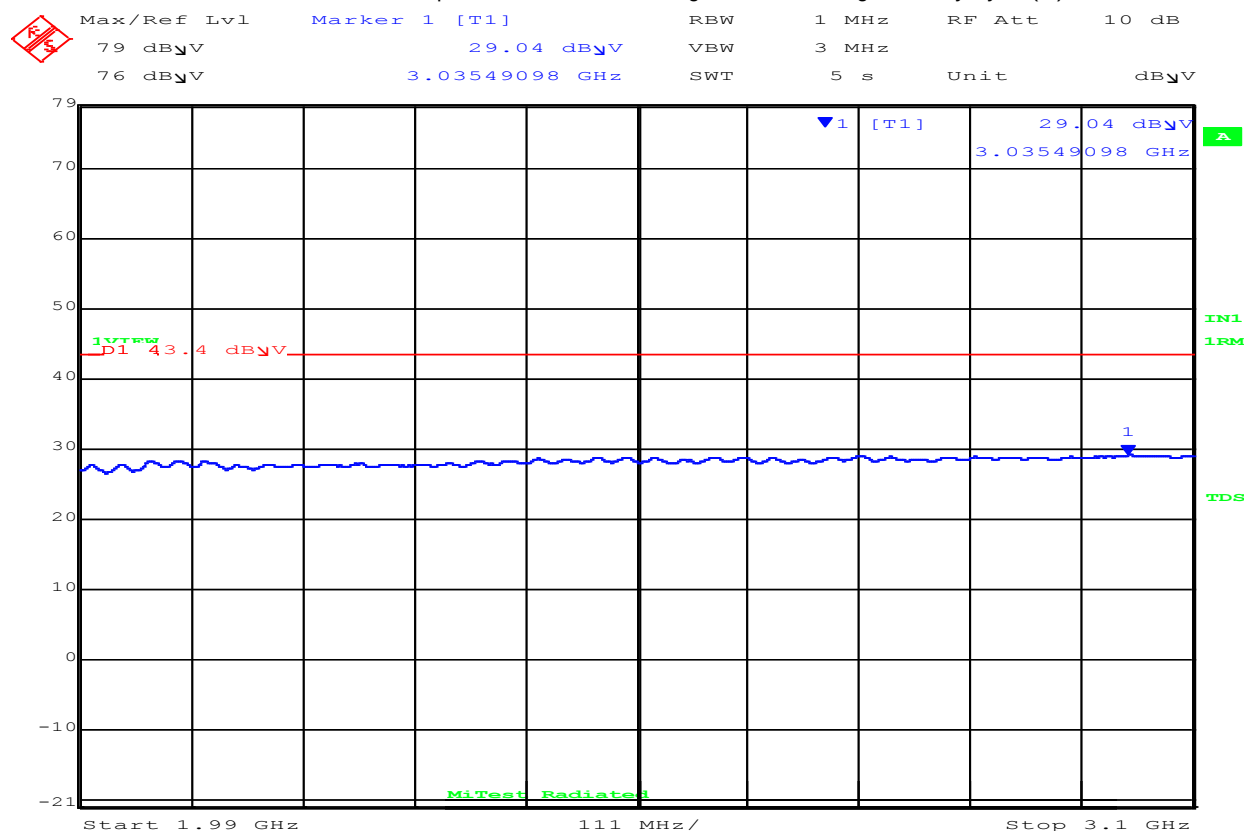
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.99-3.1GHz Vertical

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 11:25:58

#### 1990.00 – 3100.00 GHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of limit.                                                                                                      |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Horizontal

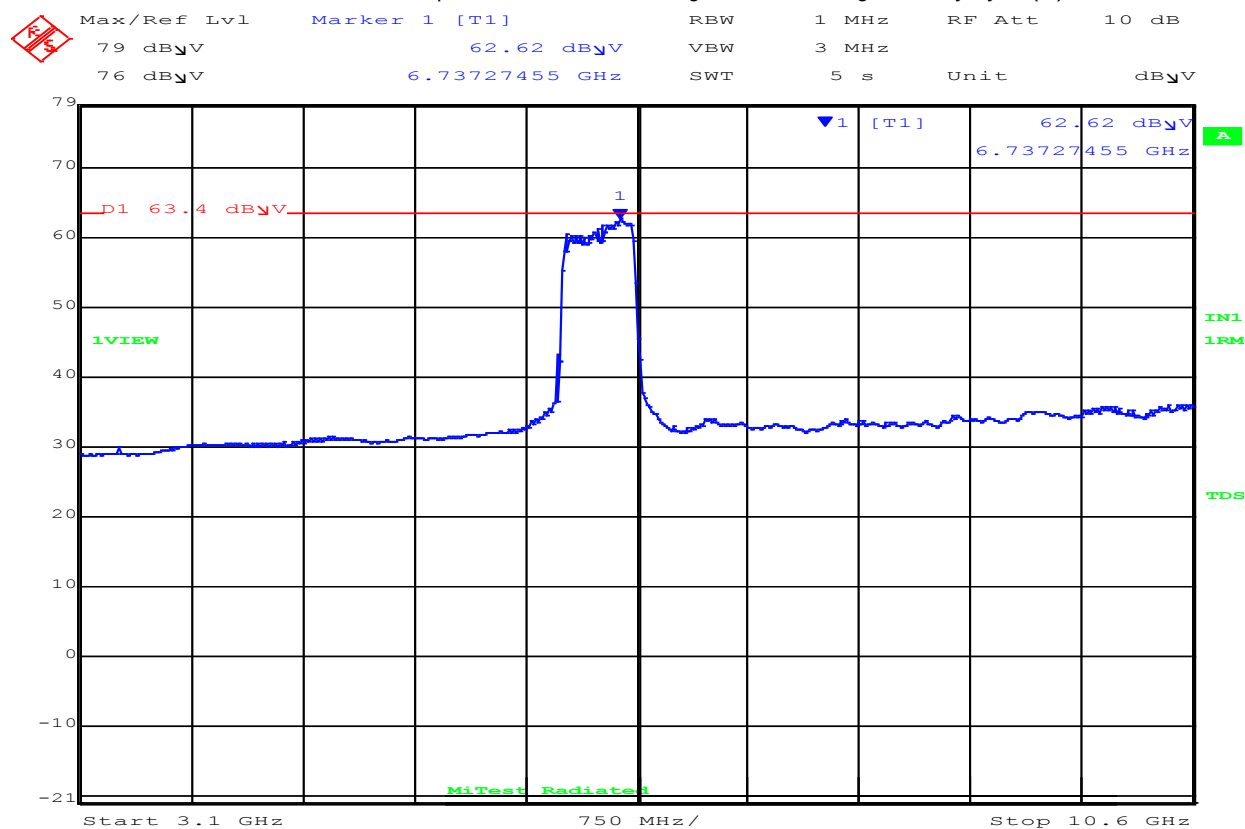
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 3.1-10.6GHz Horizontal

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 11:08:58

#### 3100.00 - 10600.00 MHz

| Num | Frequency MHz | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|-----|---------------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|
| 1   | 6737.3        | 60.5               | Average          | Horizontal | 150    | 0       | 63.4               | -2.9      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Vertical

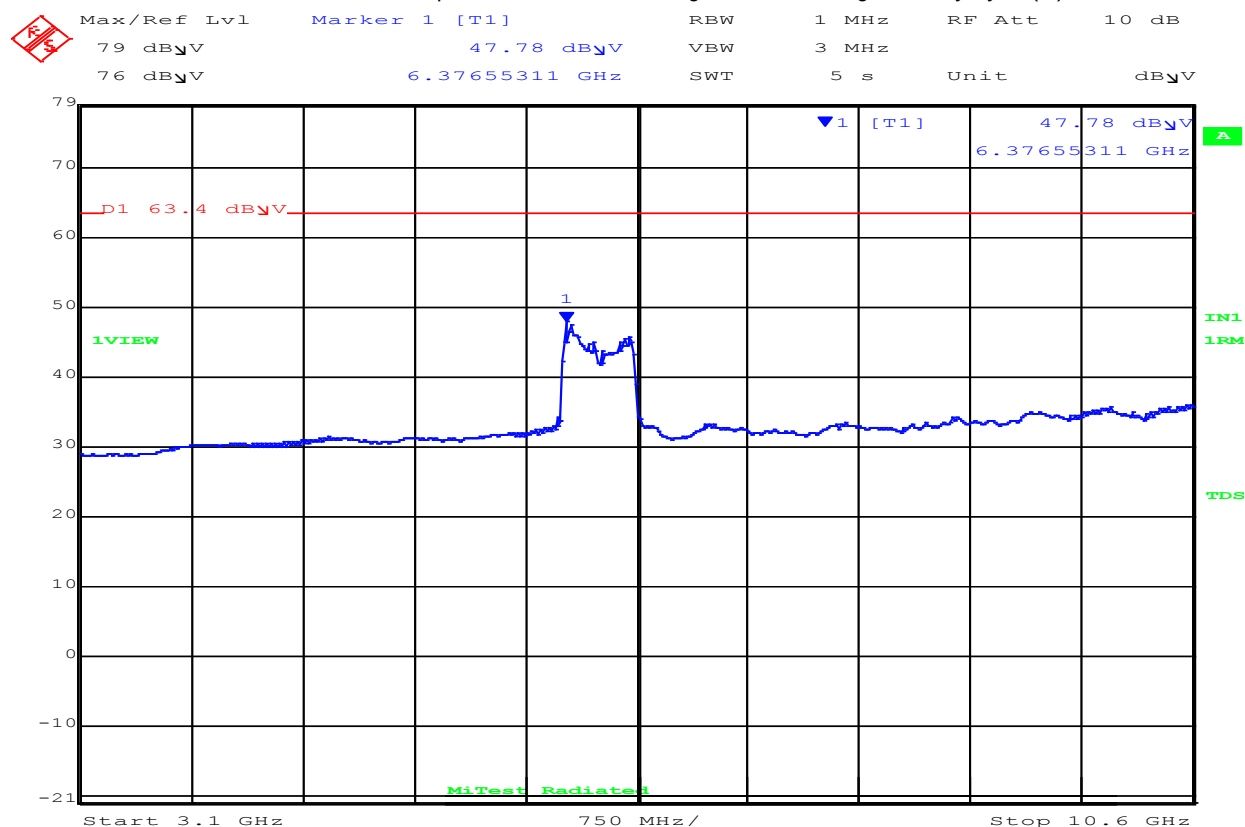
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 3.1-10.6GHz Vertical

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 11:14:32

#### 3100.00 - 10600.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of limit.                                                                                                      |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Horizontal

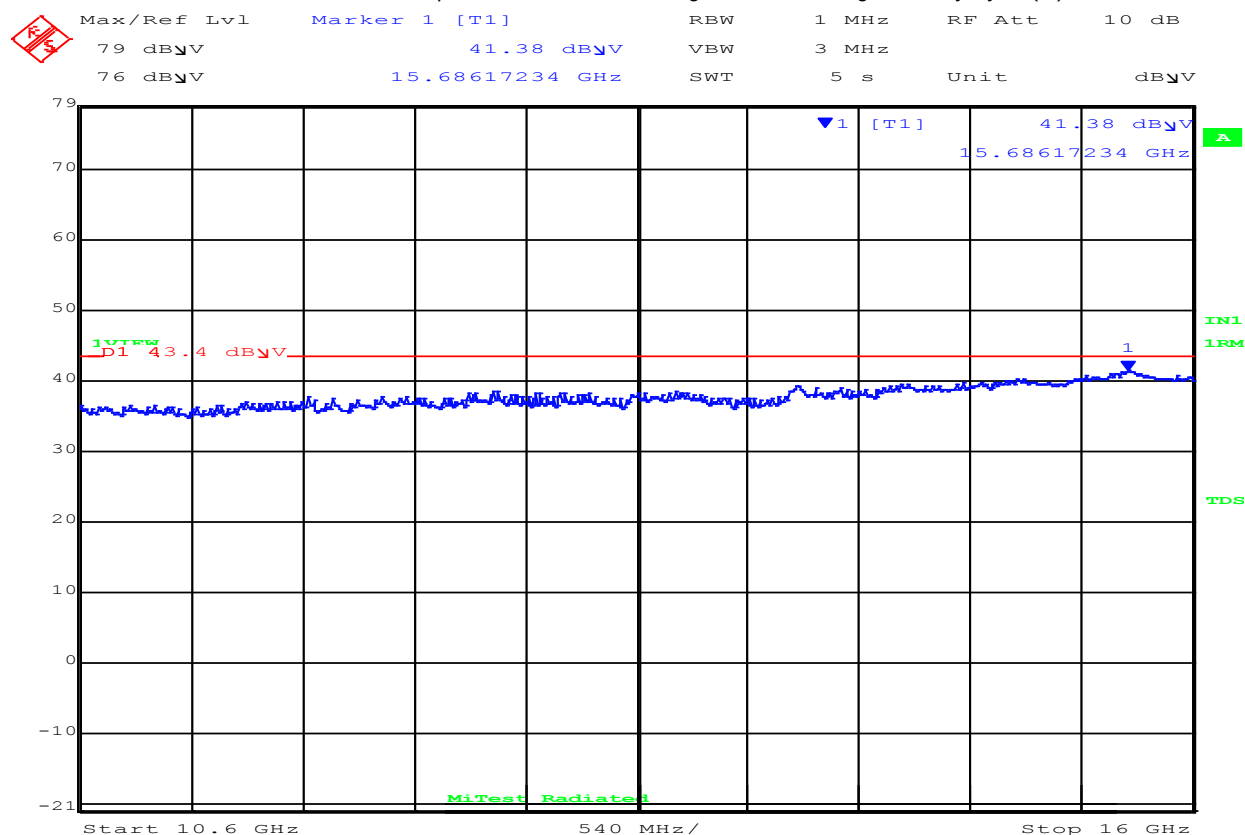
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 10.6-16GHz Horizontal

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 11:18:13

#### 10600.00 – 16000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 15686.2       | 40.1         | Average          | Horizontal | 150    | 0       | 43.4         | -3.3      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Vertical

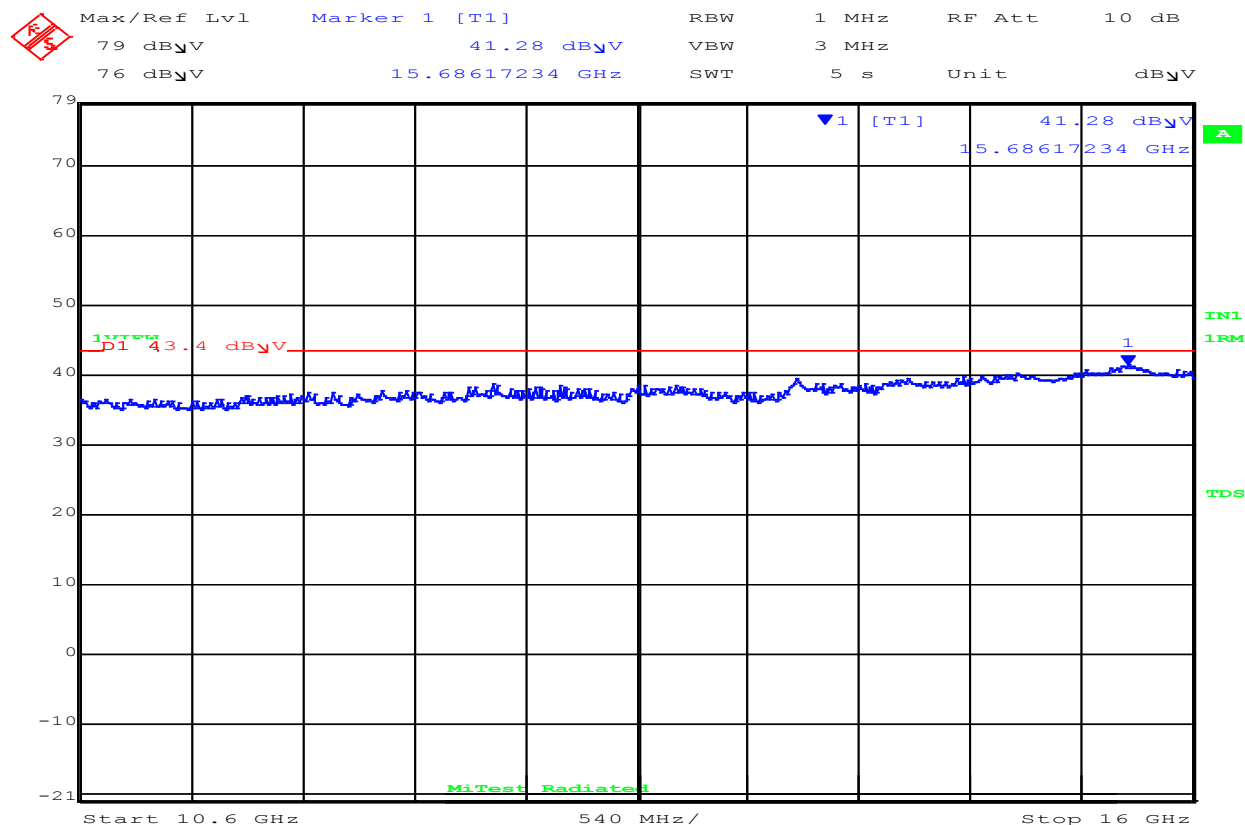
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 10.6-16GHz Vertical

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 11:16:18

#### 10600.00 – 16000.00 GHz

| Num | Frequency MHz | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|-----|---------------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|
| 1   | 15686.2       | 40.2               | Average          | Vertical | 150    | 0       | 43.4               | -3.2      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Horizontal

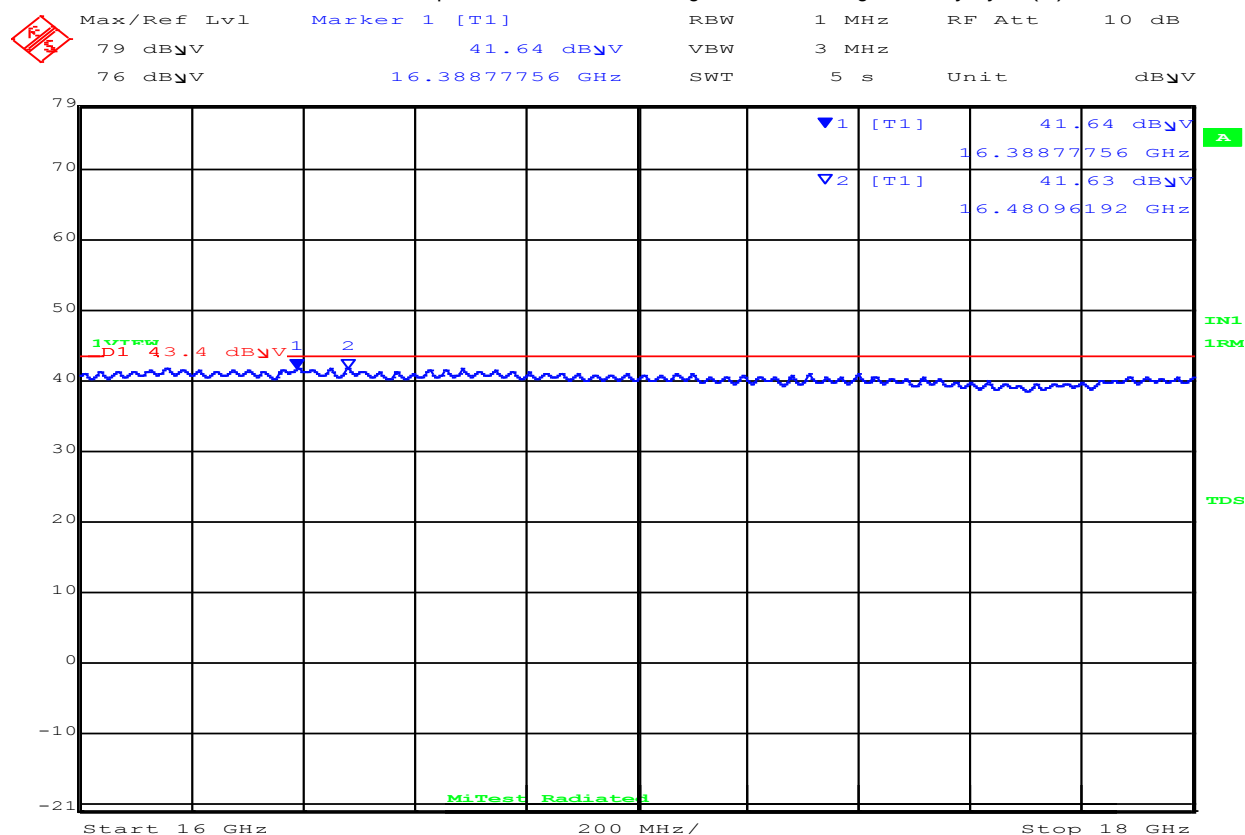
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 16-18GHz Horizontal

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 11:20:39

#### 16000.00 – 18000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 16388.8       | 40.6         | Average          | Horizontal | 150    | 0       | 43.4         | -2.80     | Pass       |
| 2   | 16481.0       | 40.5         | Average          | Horizontal | 150    | 0       | 43.4         | -2.90     | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Vertical

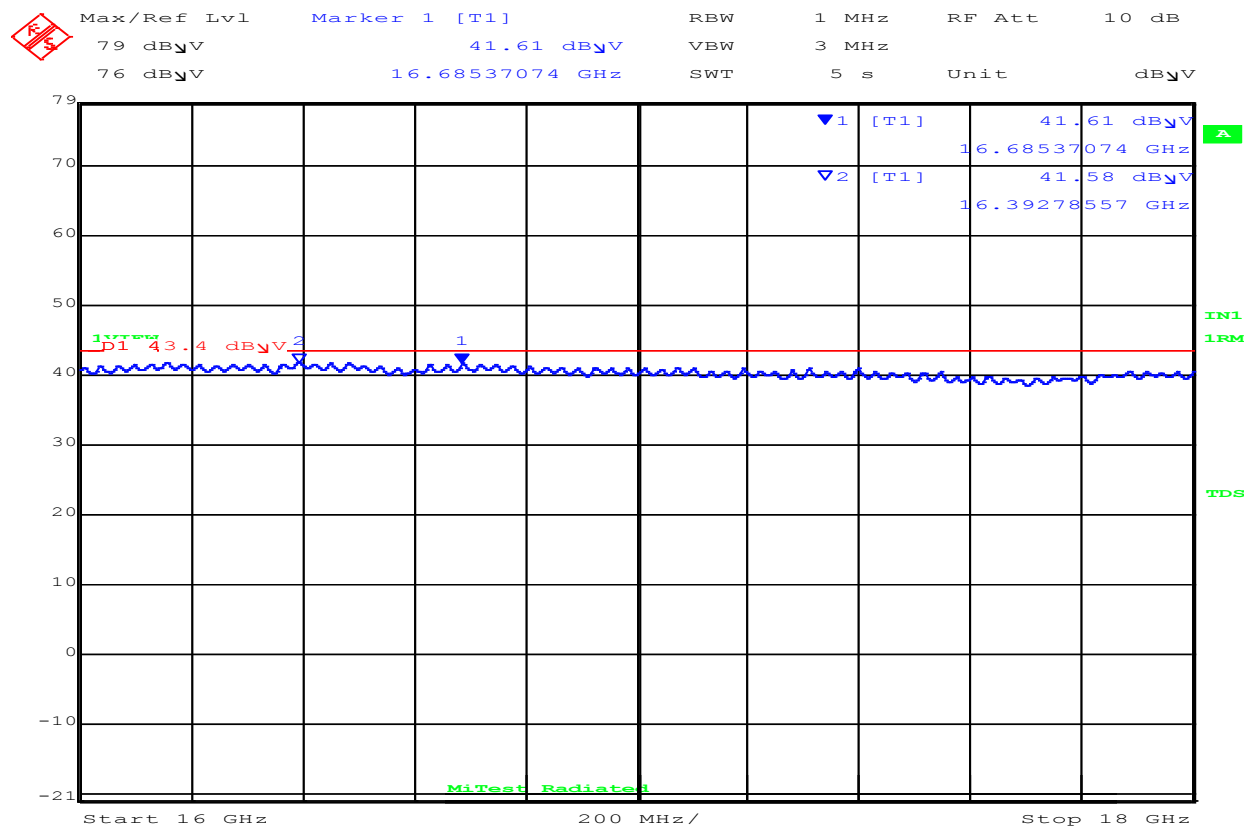
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 16-18GHz Vertical

Test Freq: 6600 MHz, Antenna: integral, Power Setting:2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 11:23:26

#### 16000.00 – 18000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| 1   | 16685.4       | 40.1         | Average          | Vertical | 150    | 0       | 43.4         | -3.3      | Pass       |
| 2   | 16392.8       | 40.6         | Average          | Vertical | 150    | 0       | 43.4         | -2.8      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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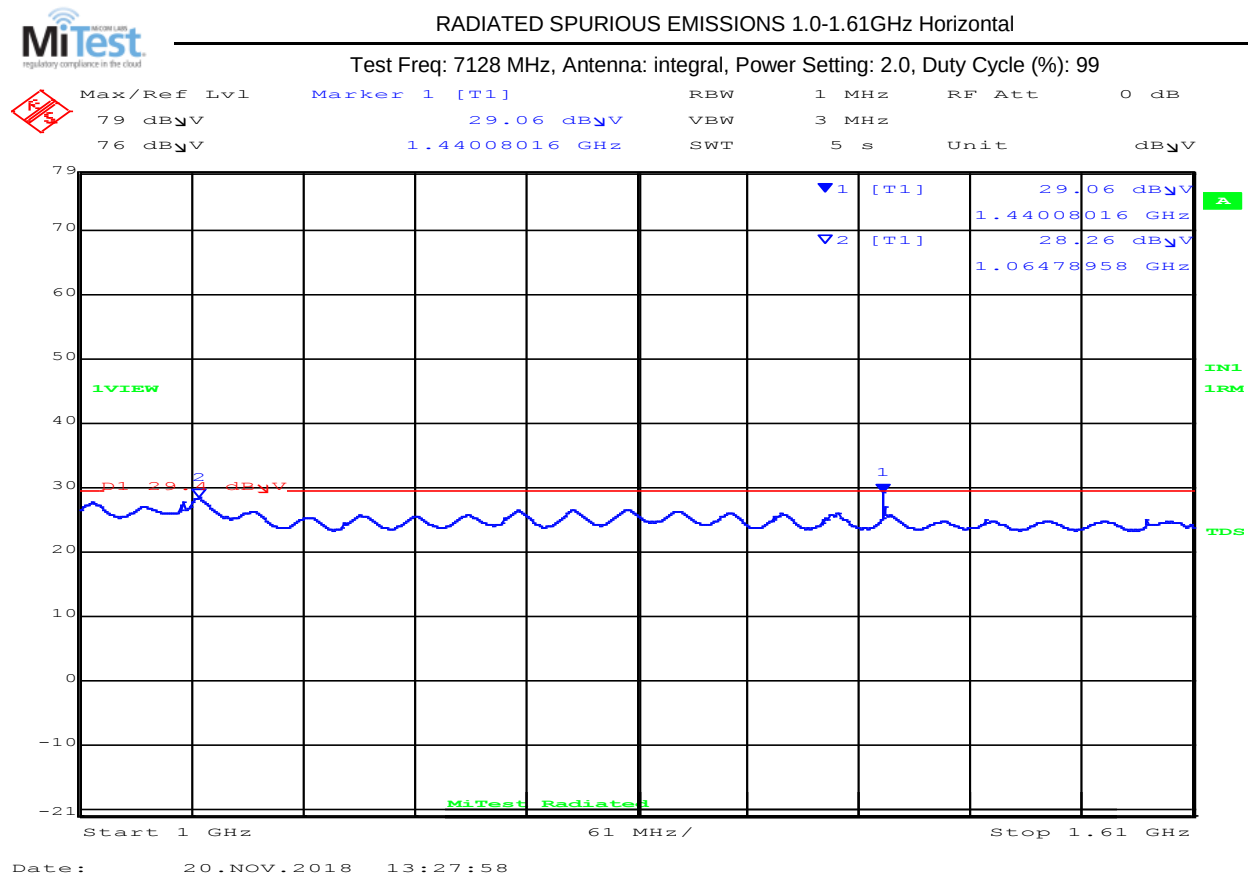
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7128 MHz

Equipment Configuration for Spurious Emissions 1-1.61 GHz Horizontal

|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

Test Measurement Results



1000.00– 1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 1440.1        | 28.8         | Average          | Horizontal | 150    | 0       | 29.4         | -0.6      | Pass       |
| 2   | 1064.8        | 25.9         | Average          | Horizontal | 150    | 0       | 29.4         | -3.5      | Pass       |

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 1-1.61 GHz Vertical

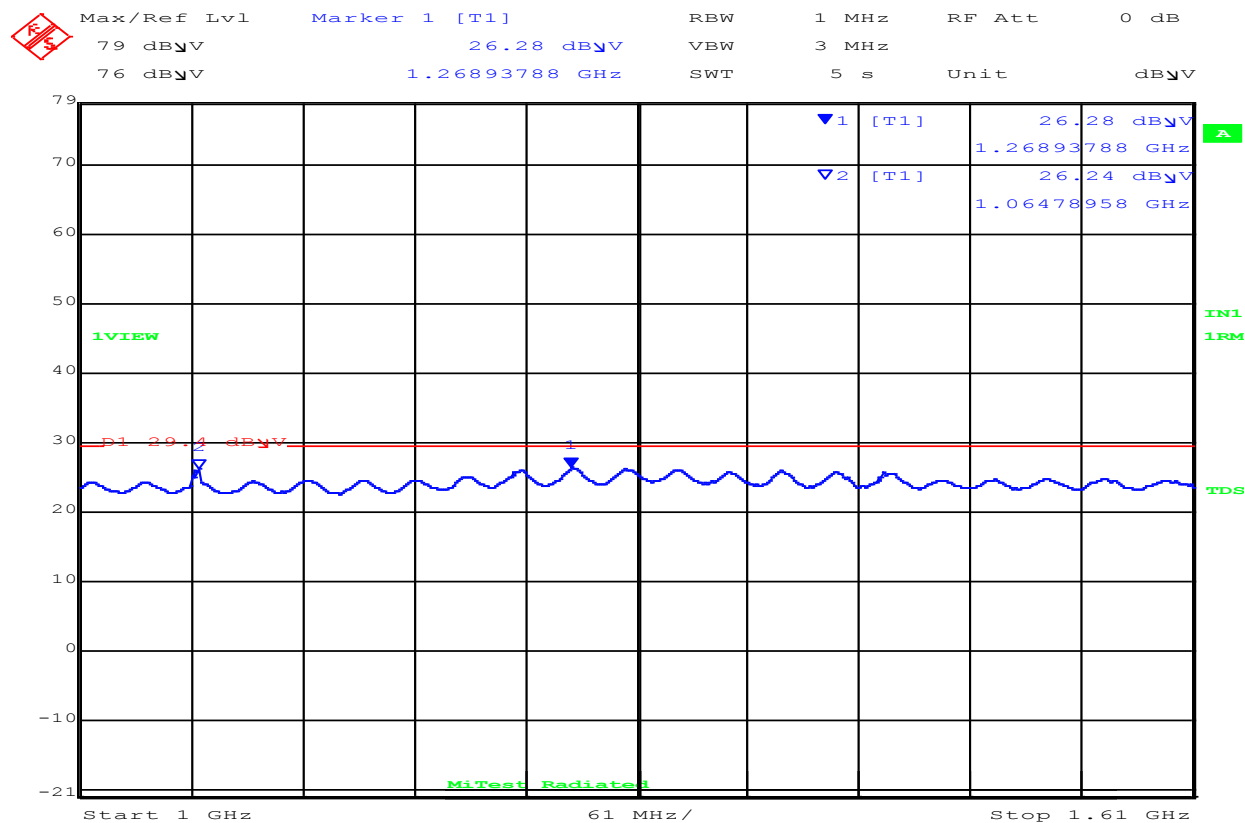
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.0-1.61GHz Vertical

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 13:33:19

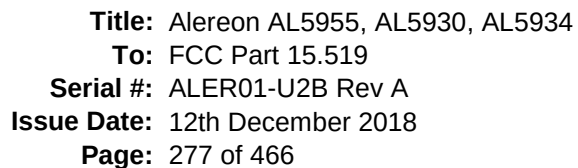
#### 1000.00– 1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| 1   | 1268.9        | 23.9         | Average          | Vertical | 150    | 0       | 29.4         | -5.5      | Pass       |
| 2   | 1064.8        | 23.9         | Average          | Vertical | 150    | 0       | 29.4         | -5.5      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |



Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



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#### Equipment Configuration for Spurious Emissions 1.61 – 1.99 GHz Vertical

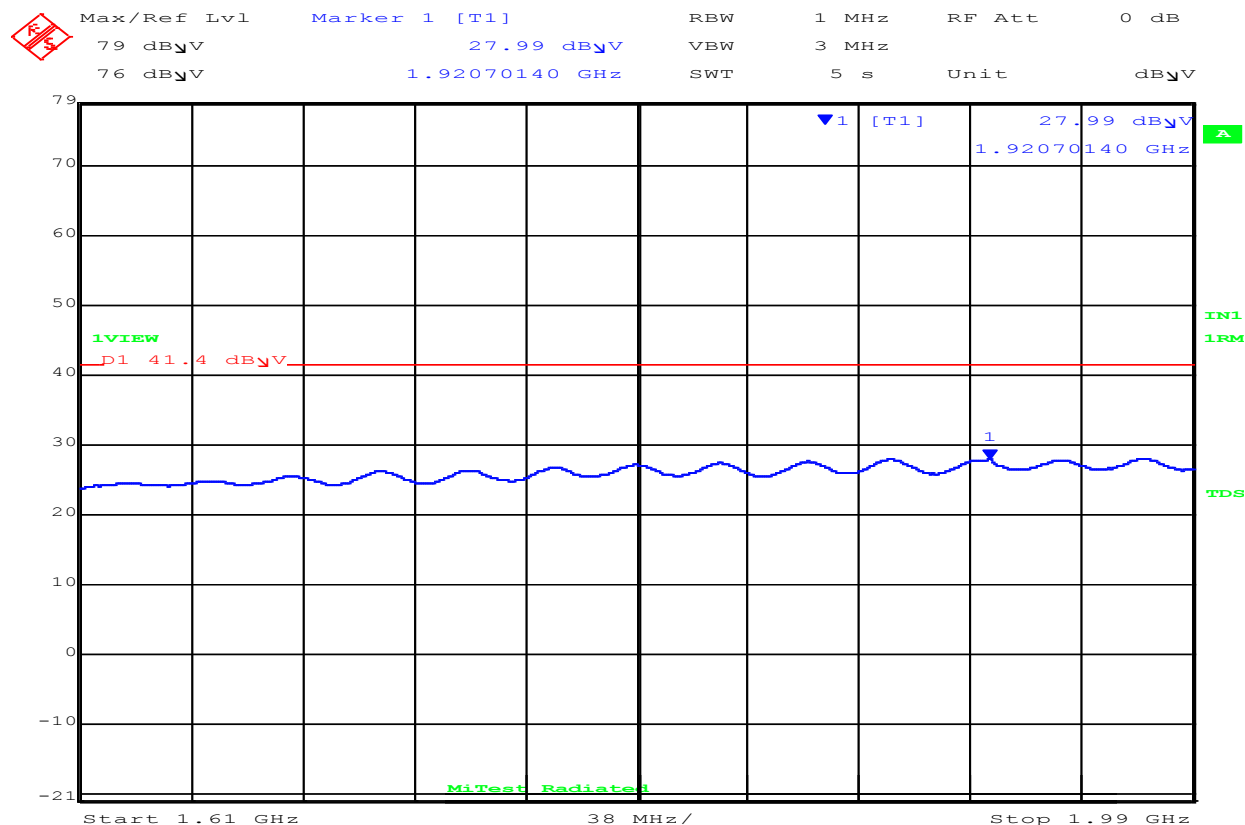
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.61-1.99GHz Vertical

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 14:07:02

#### 1610.00 – 1990.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Horizontal

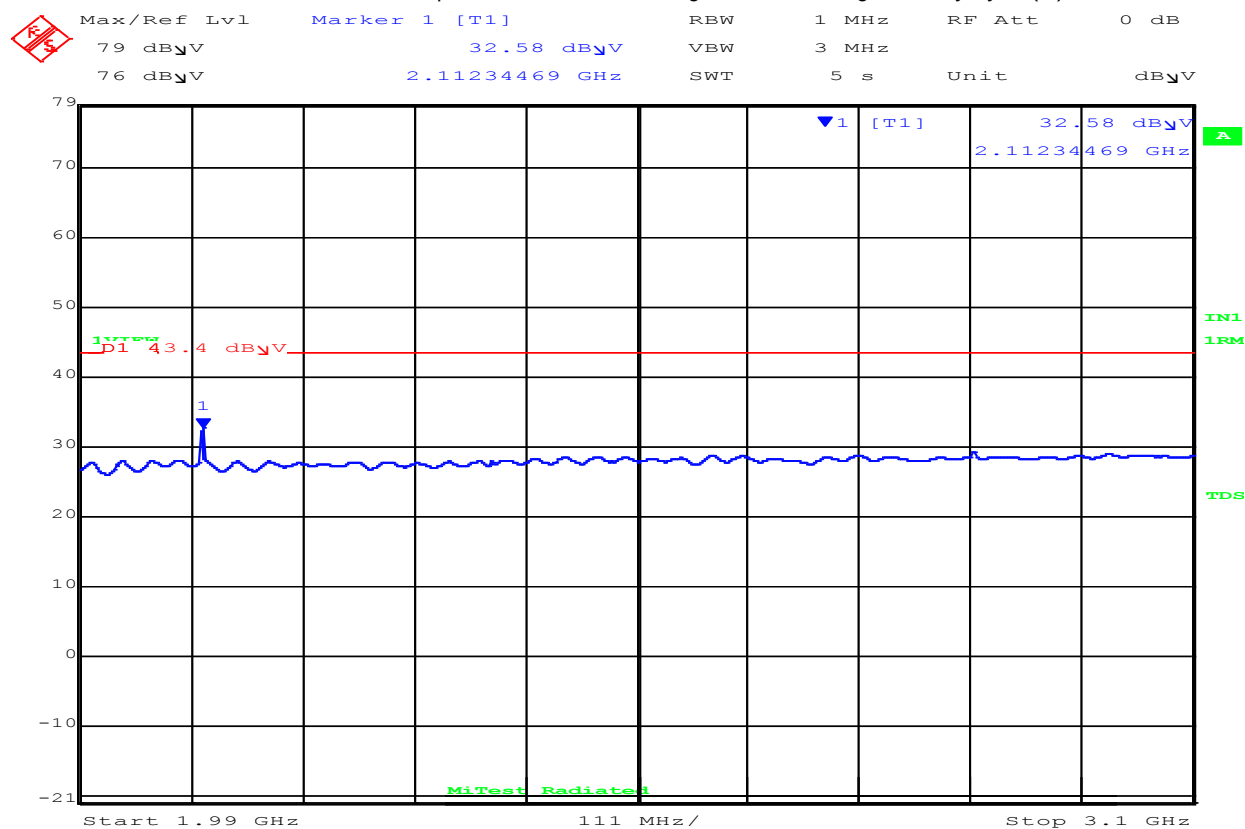
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.99-1.31GHz Horizontal

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 14:17:51

#### 1990.00 – 3100.00 GHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Vertical

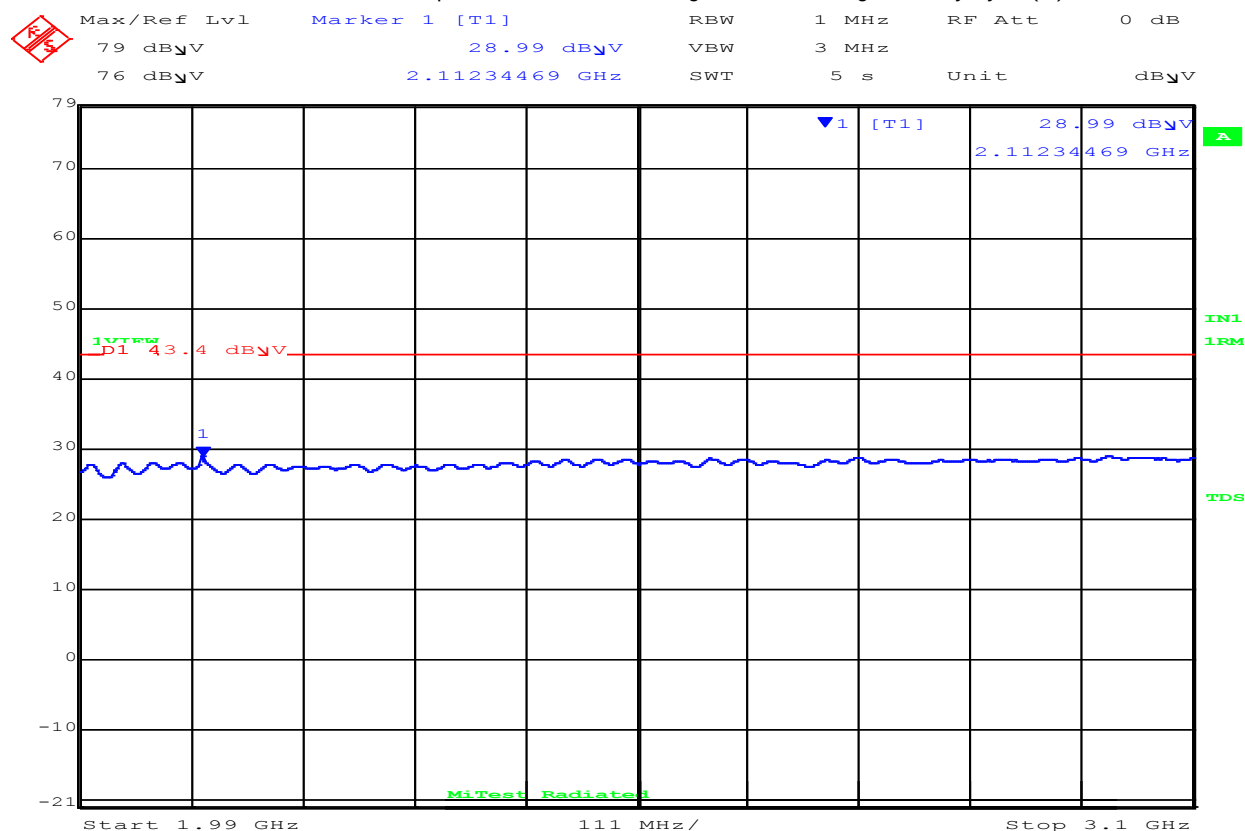
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.99-3.1GHz Vertical

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 14:19:27

#### 1990.00 – 3100.00 GHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Horizontal

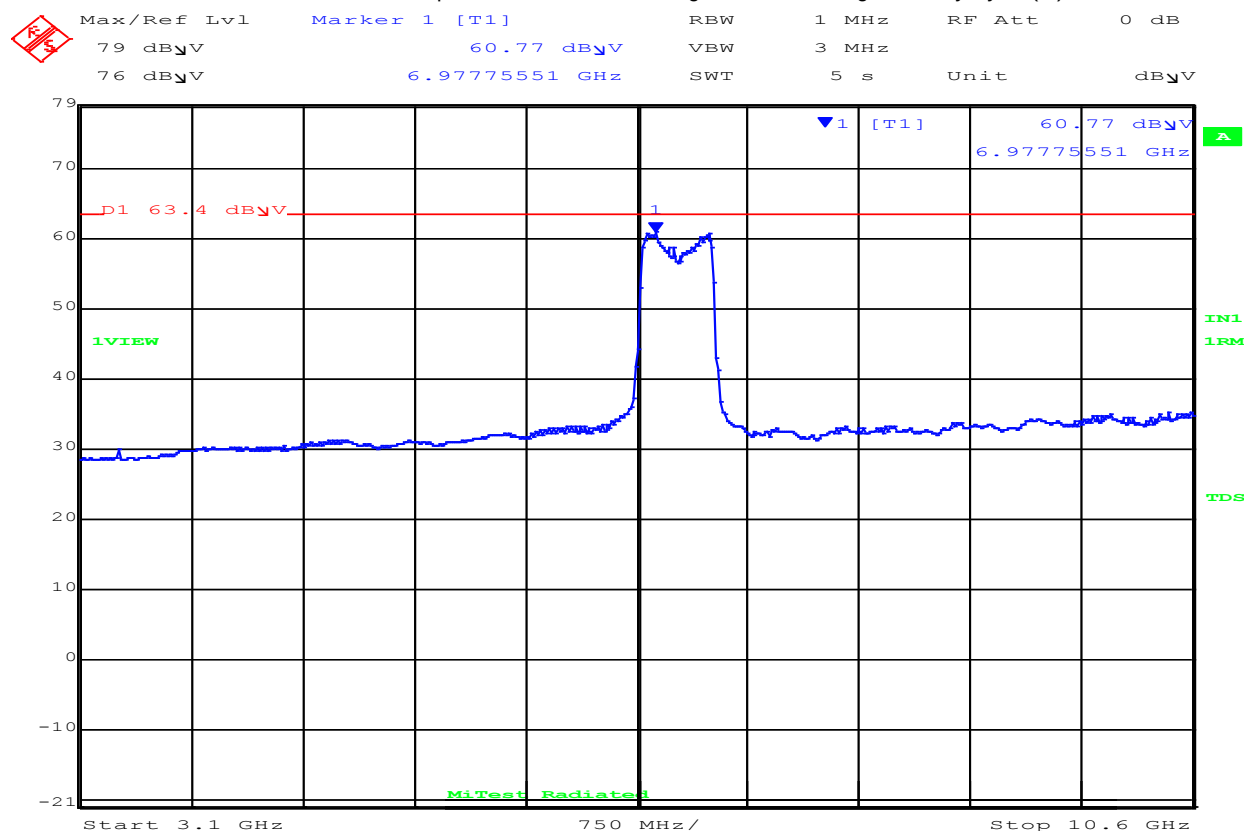
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 3.1-10.6GHz Horizontal

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 14:23:25

#### 3100.00 - 10600.00 MHz

| Num | Frequency MHz | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|-----|---------------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|
| 1   | 6977.8        | 58.9               | Average          | Horizontal | 150    | 0       | 63.4               | -4.5      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Vertical

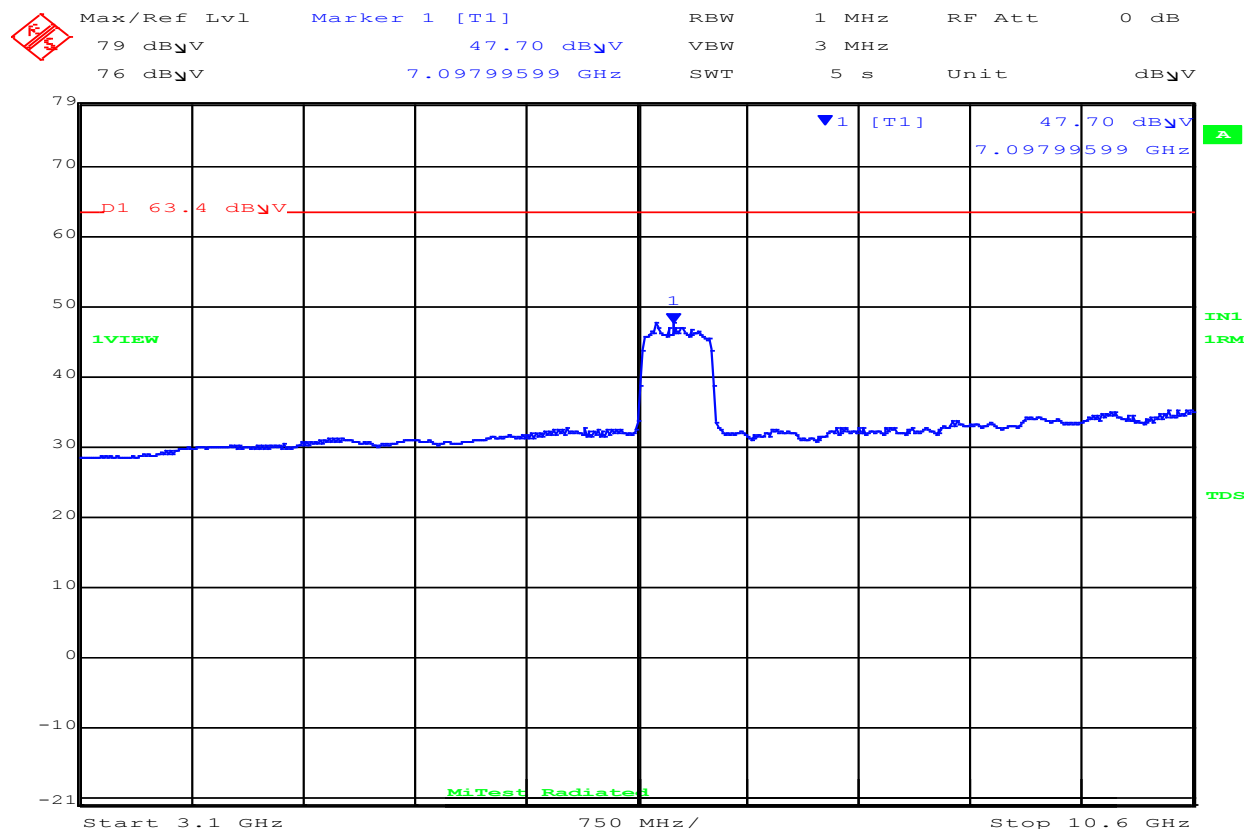
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 3.1-10.6GHz Vertical

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 14:21:37

#### 3100.00 - 10600.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Horizontal

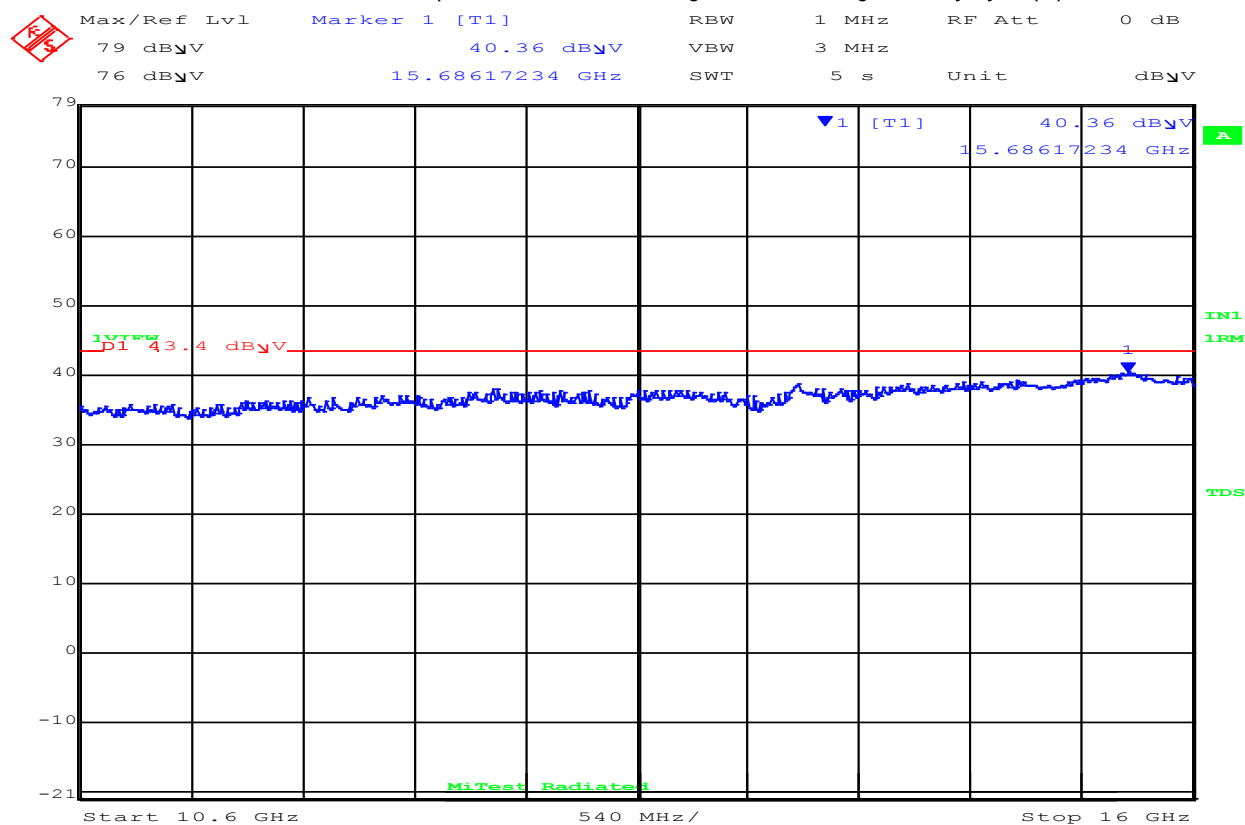
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 10.6-16GHz Horizontal

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 14:26:53

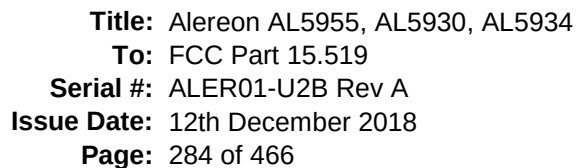
#### 10600.00 – 16000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 15686.2       | 39.4         | Average          | Horizontal | 150    | 0       | 43.4         | -4.0      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



|                           |
|---------------------------|
| <p><b>Test Notes:</b></p> |
|---------------------------|

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Horizontal

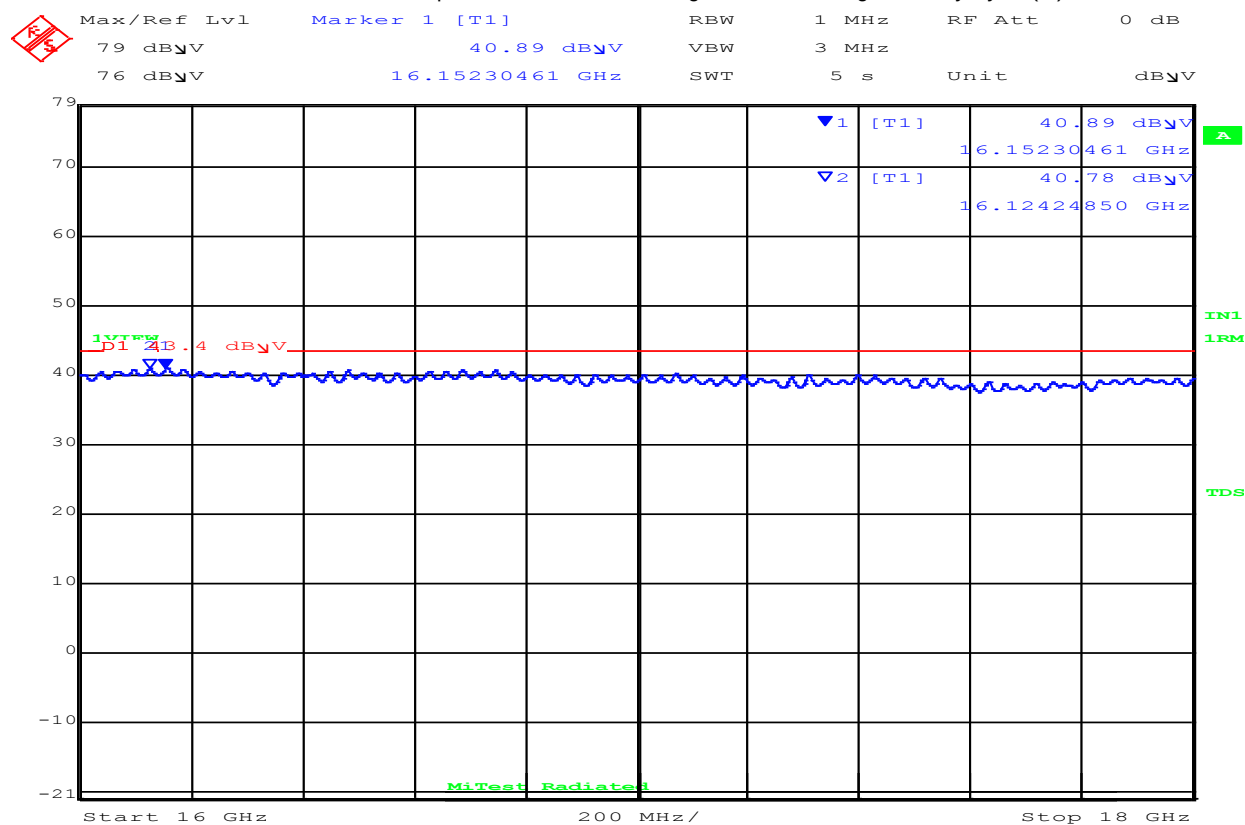
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 16-18GHz Horizontal

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 14:30:06

#### 16000.00 – 18000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 16152.3       | 39.9         | Average          | Horizontal | 150    | 0       | 43.4         | -3.5      | Pass       |
| 2   | 16124.2       | 39.8         | Average          | Horizontal | 150    | 0       | 43.4         | -3.6      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Vertical

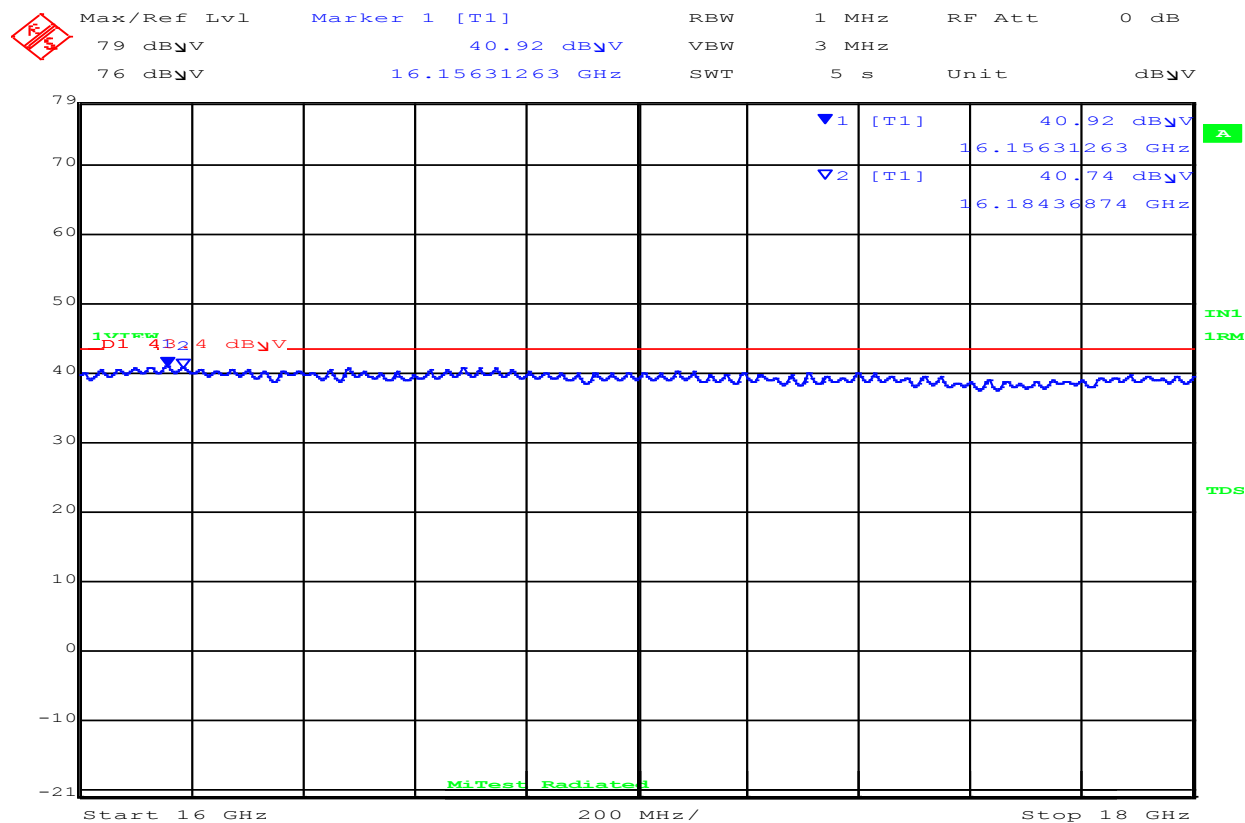
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 16-18GHz Vertical

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 14:33:16

#### 16000.00 – 18000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| 1   | 16156.3       | 39.9         | Average          | Vertical | 150    | 0       | 43.4         | -3.5      | Pass       |
| 2   | 16184.4       | 39.8         | Average          | Vertical | 150    | 0       | 43.4         | -3.6      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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7656 MHz (Covers Band Group 3 TFC 7 and Band Group 6 TFC 5)

Equipment Configuration for Spurious Emissions 1-1.61 GHz Horizontal

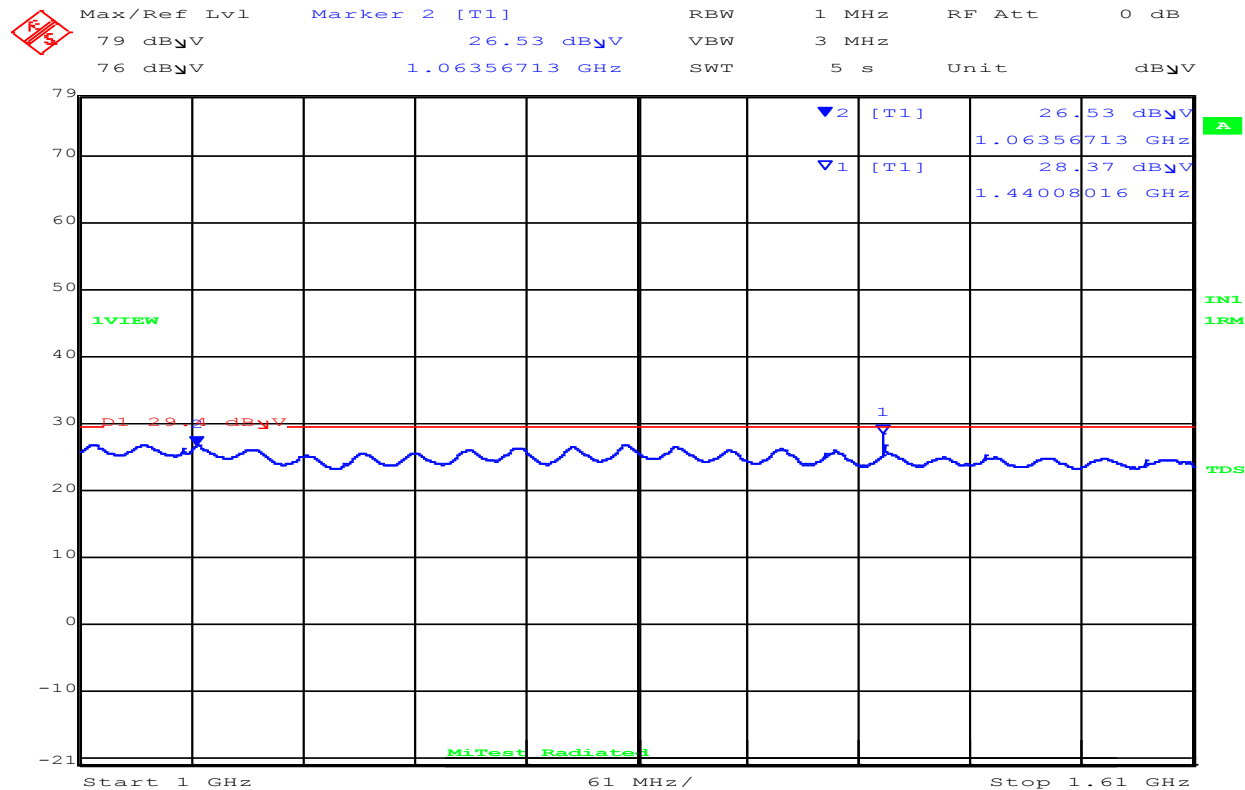
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS 1.0-1.61GHz Horizontal

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 21.NOV.2018 09:32:51

1000.00– 1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 1440.1        | 28.2         | Average          | Horizontal | 150    | 0       | 29.4         | -1.2      | Pass       |
| 2   | 1063.6        | 24.5         | Average          | Horizontal | 150    | 0       | 29.4         | -4.5      | Pass       |

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 1-1.61 GHz Vertical

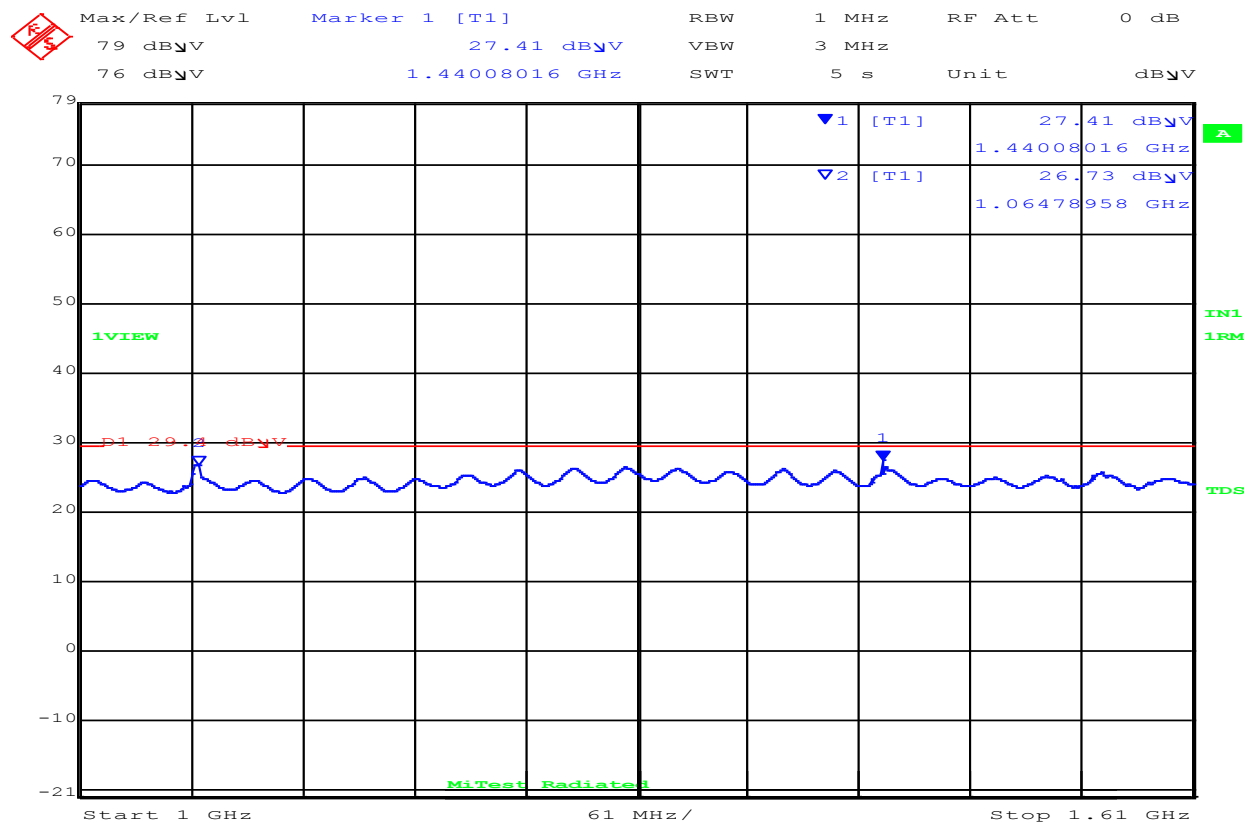
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.0-1.61GHz Vertical

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 21.NOV.2018 09:27:21

#### 1000.00– 1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| 1   | 1440.1        | 26.4         | Average          | Vertical | 150    | 0       | 29.4         | -3.0      | Pass       |
| 2   | 1064.8        | 24.5         | Average          | Vertical | 150    | 0       | 29.4         | -4.9      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 1.61 - 1.99 GHz Horizontal

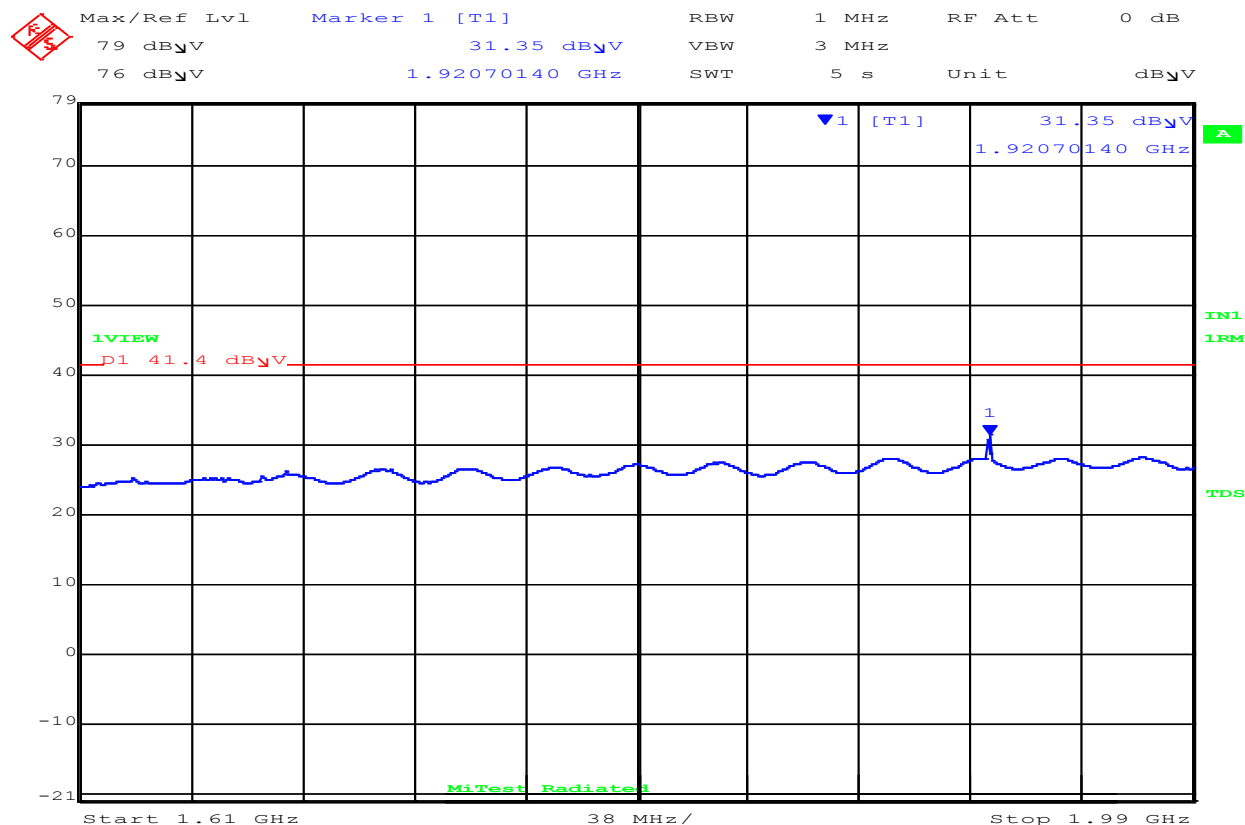
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.61-1.99GHz Horizontal

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 21.NOV.2018 09:36:57

#### 1610.00 – 1990.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.61 – 1.99 GHz Vertical

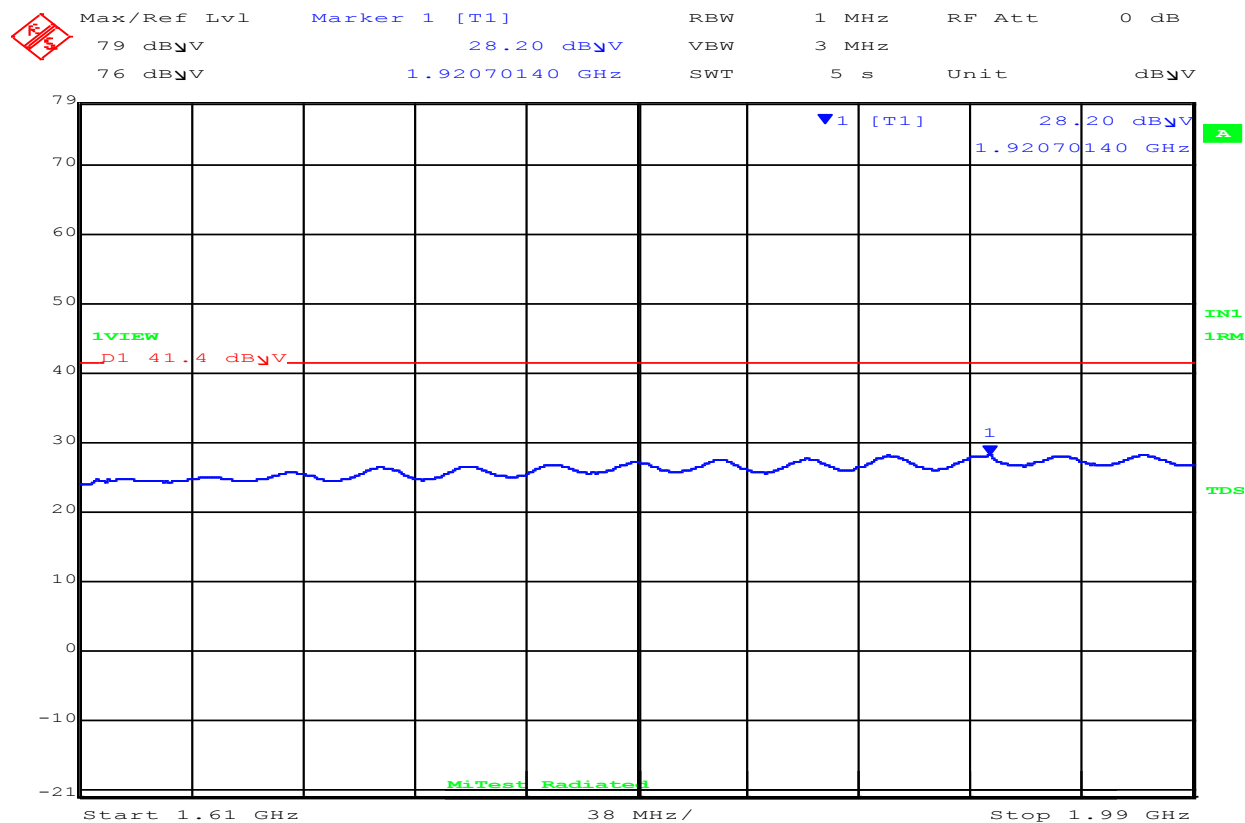
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.61-1.99GHz Vertical

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 21.NOV.2018 09:22:20

#### 1610.00 – 1990.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Horizontal

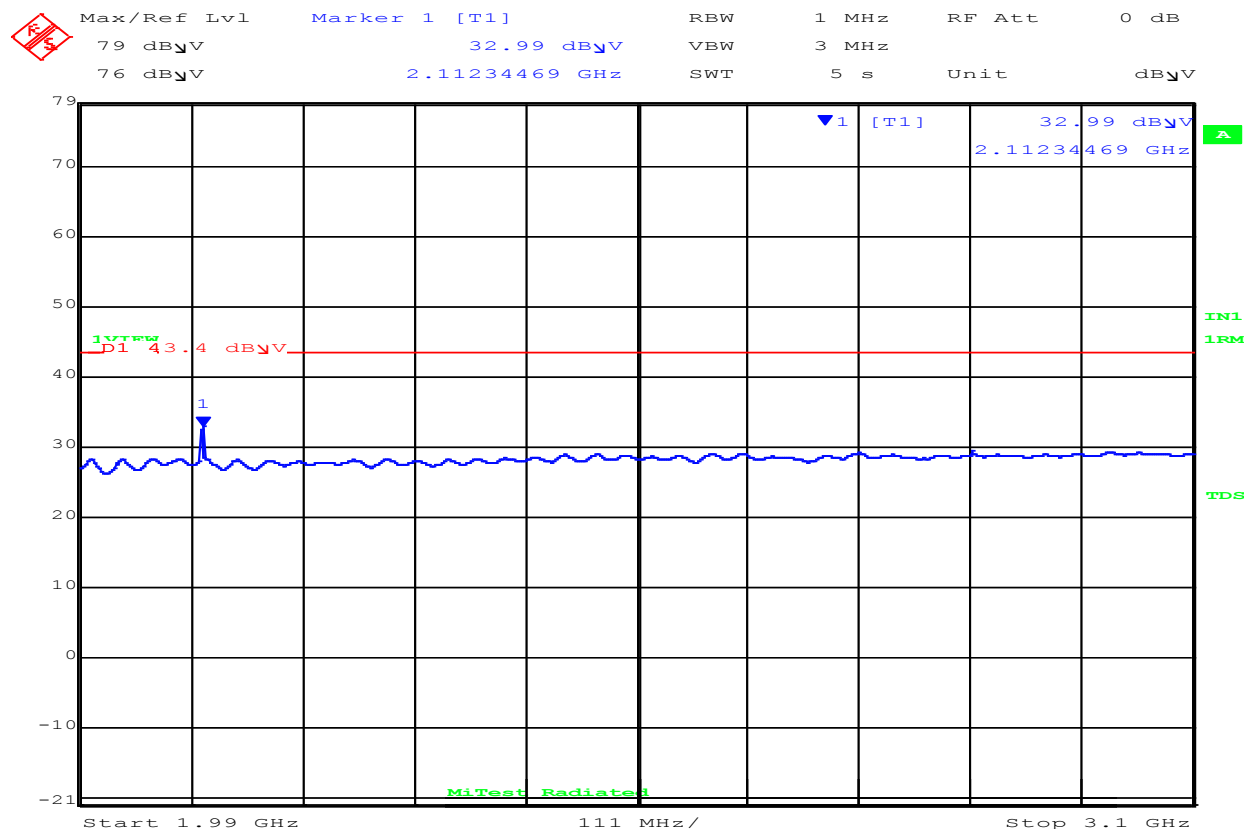
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.99-3.1GHz Horizontal

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 21.NOV.2018 09:13:54

#### 1990.00 – 3100.00 GHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Vertical

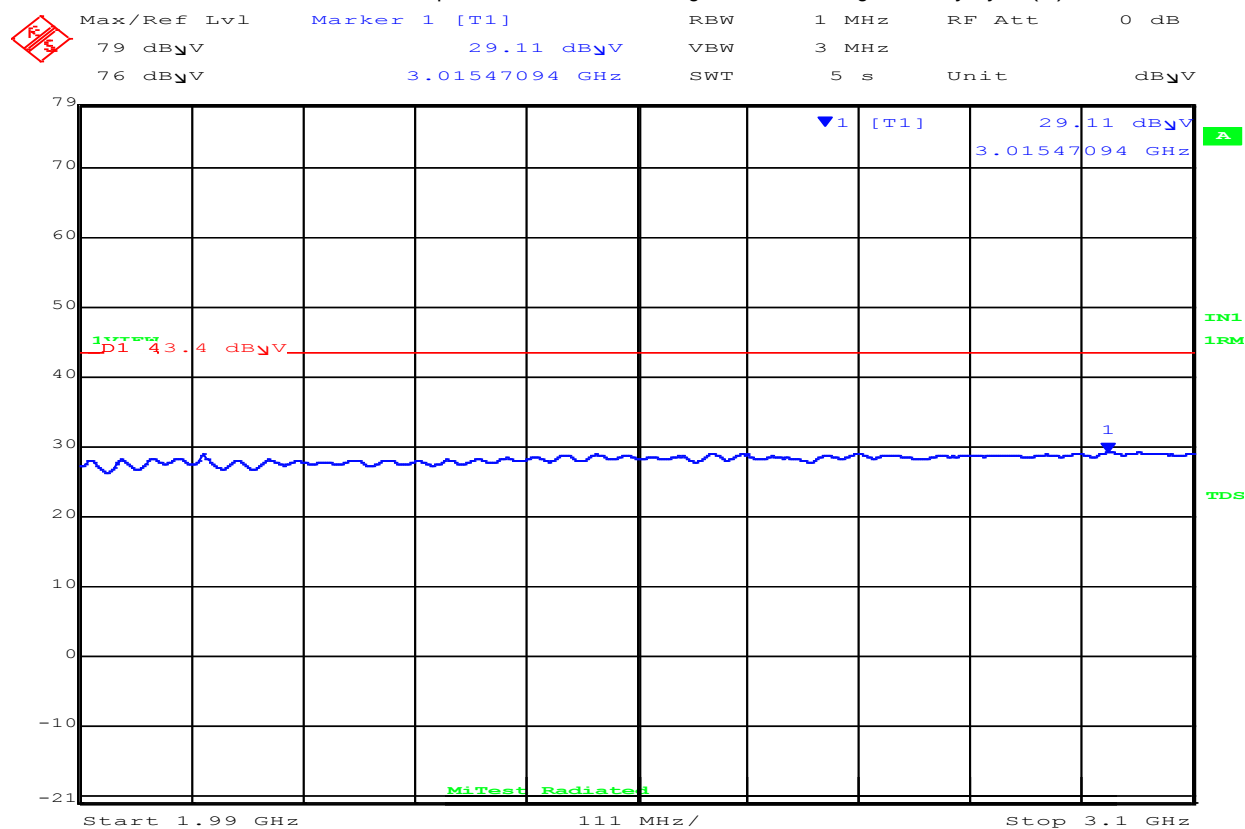
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.99-3.1GHz Vertical

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 21.NOV.2018 09:12:31

#### 1990.00 – 3100.00 GHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Horizontal

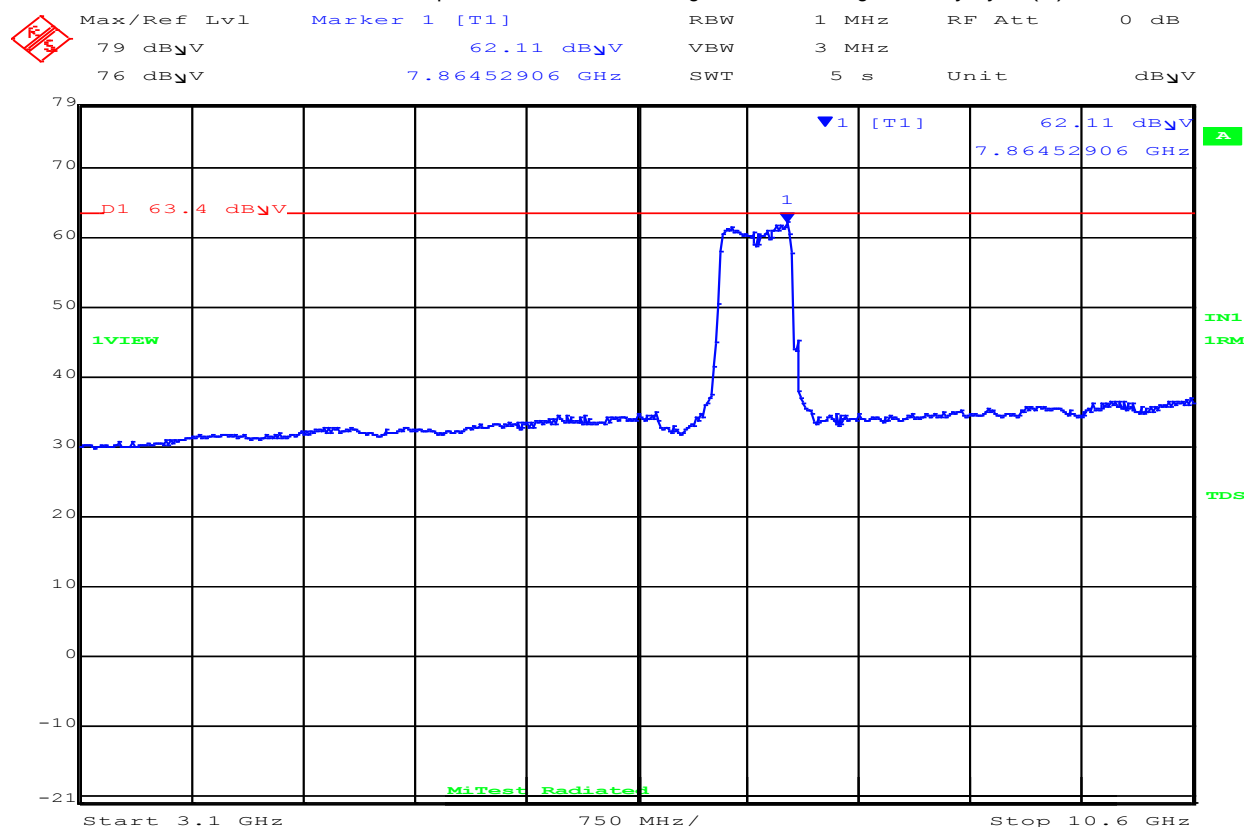
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 3.1-10.6GHz Horizontal

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 21.NOV.2018 08:45:41

#### 3100.00 - 10600.00 MHz

| Num | Frequency MHz | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|-----|---------------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|
| 1   | 7864.5        | 60.5               | Average          | Horizontal | 150    | 0       | 63.4               | -2.9      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Vertical

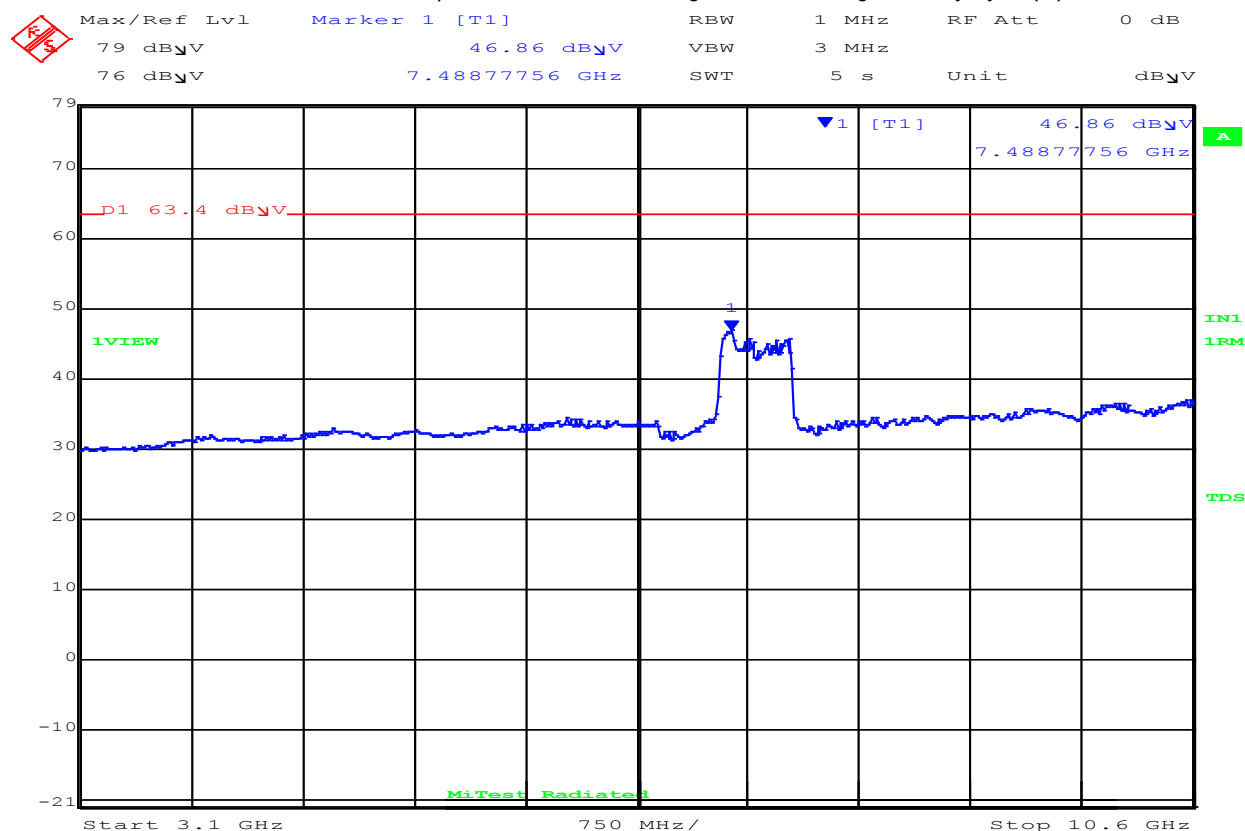
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 3.1-10.6GHz Vertical

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 21.NOV.2018 08:49:15

#### 3100.00 - 10600.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Horizontal

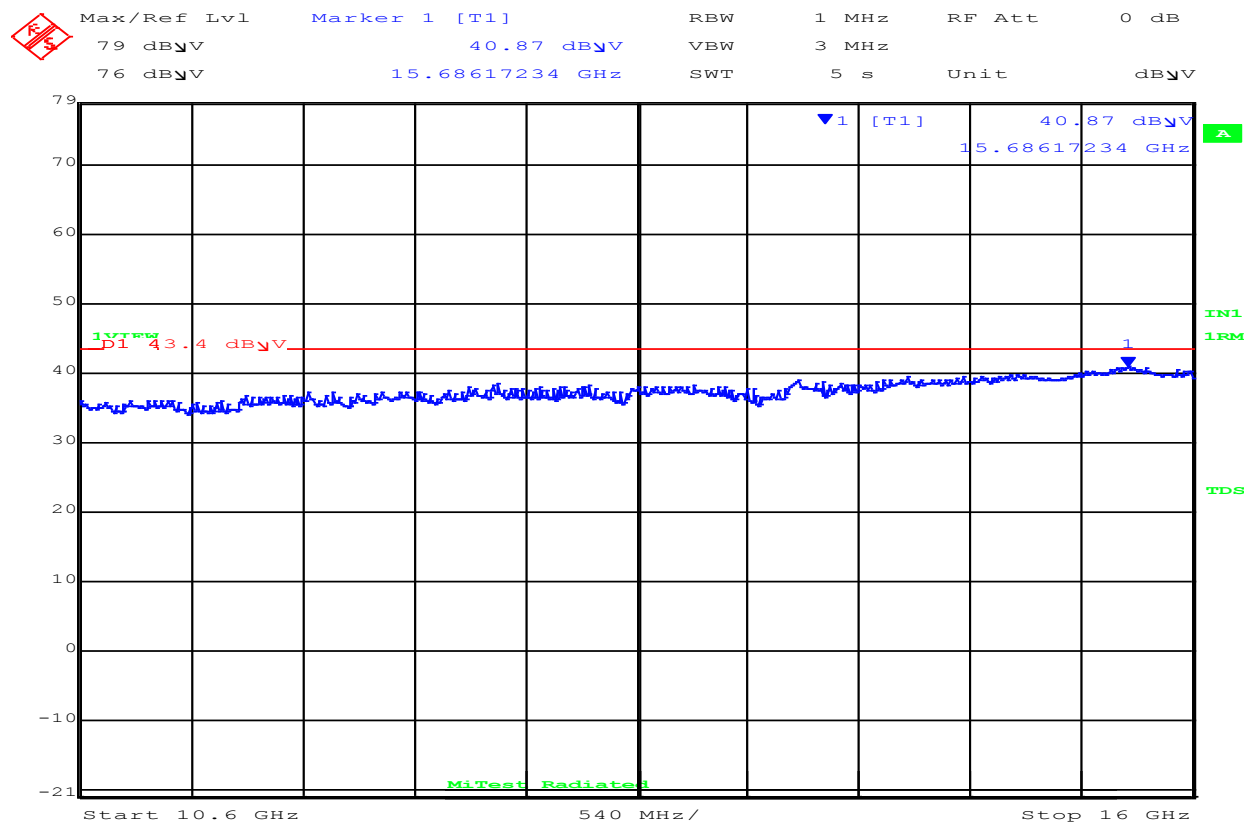
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 10.6-16GHz Horizontal

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 21.NOV.2018 09:02:36

#### 10600.00 – 16000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 15686.2       | 39.7         | Average          | Horizontal | 150    | 0       | 43.4         | -3.70     | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Vertical

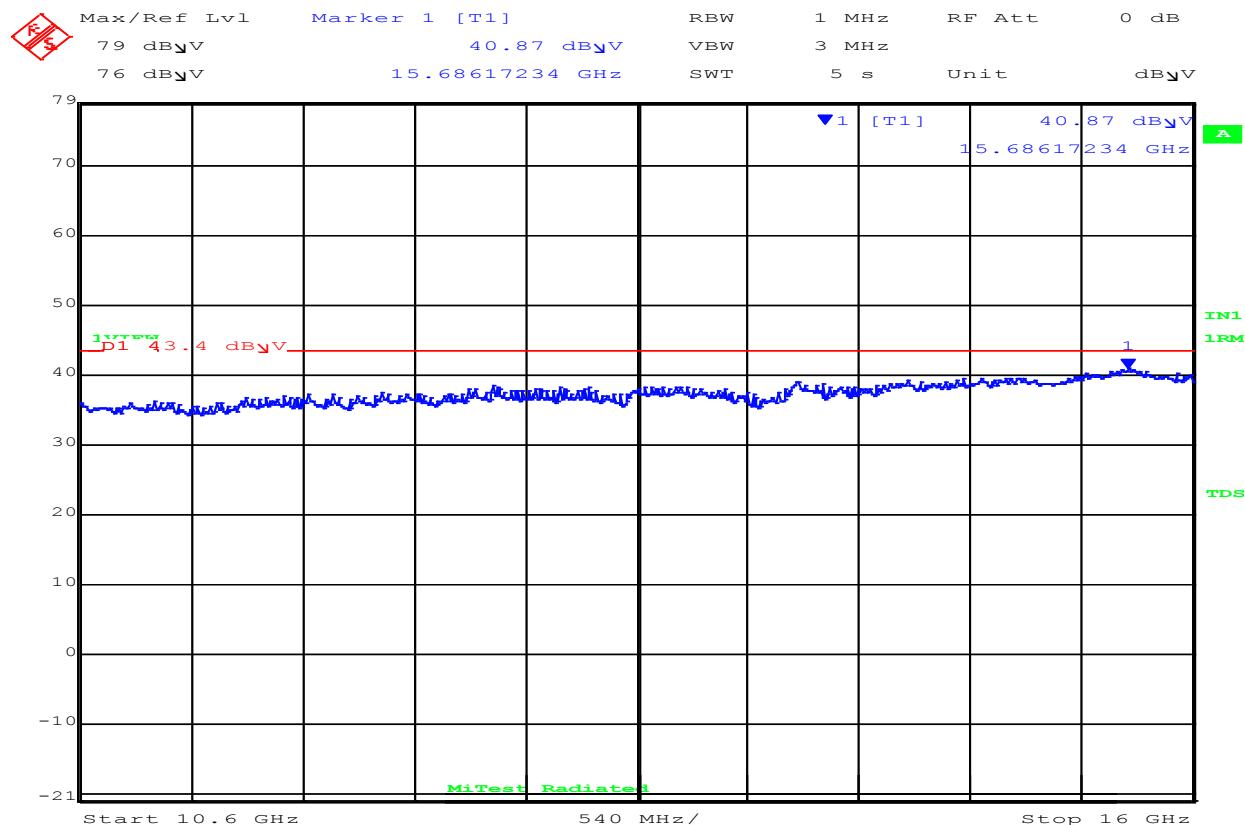
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 10.6-16GHz Vertical

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 21.NOV.2018 08:59:03

#### 10600.00 – 16000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| 1   | 15686.2       | 39.6         | Average          | Vertical | 150    | 0       | 43.4         | -3.8      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Horizontal

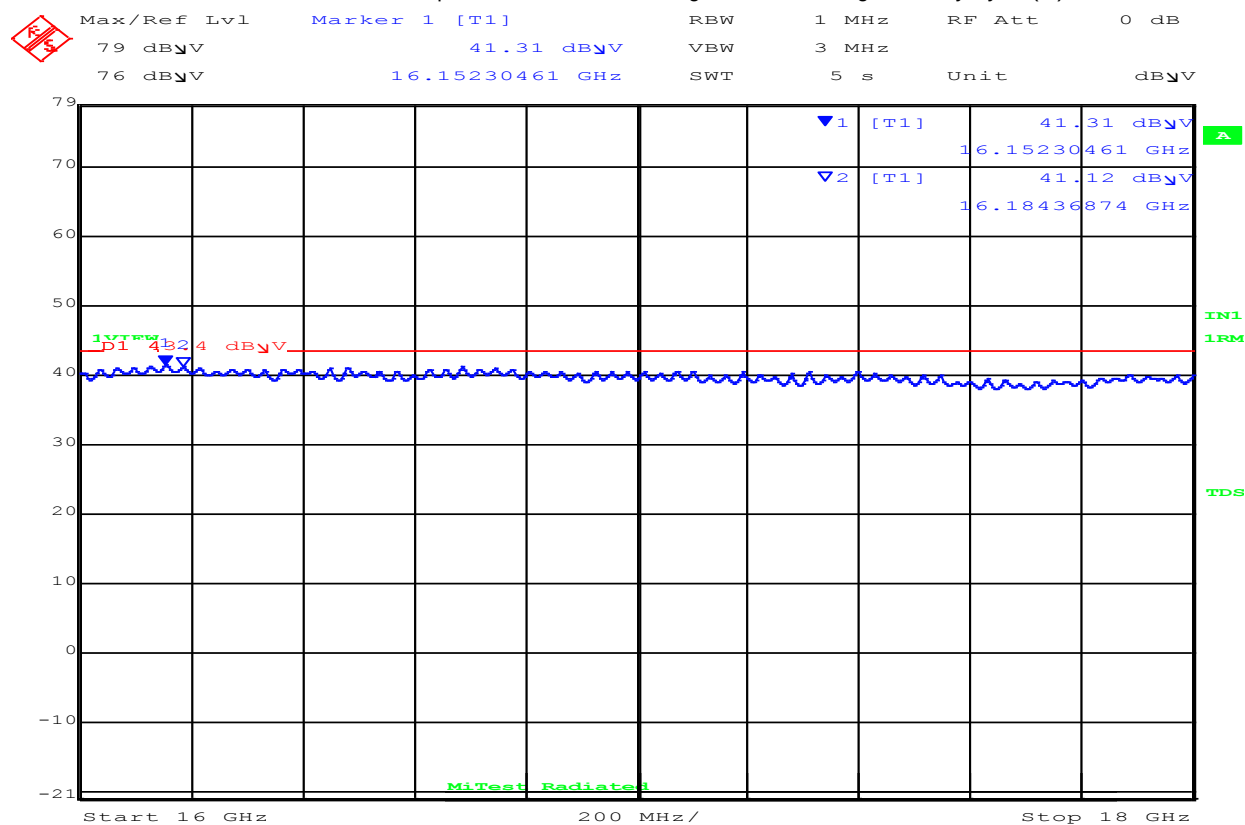
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 16-18GHz Horizontal

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 21.NOV.2018 09:05:10

#### 16000.00 – 18000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 16152.3       | 40.3         | Average          | Horizontal | 150    | 0       | 43.4         | -3.1      | Pass       |
| 2   | 16184.4       | 40.2         | Average          | Horizontal | 150    | 0       | 43.4         | -3.2      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Vertical

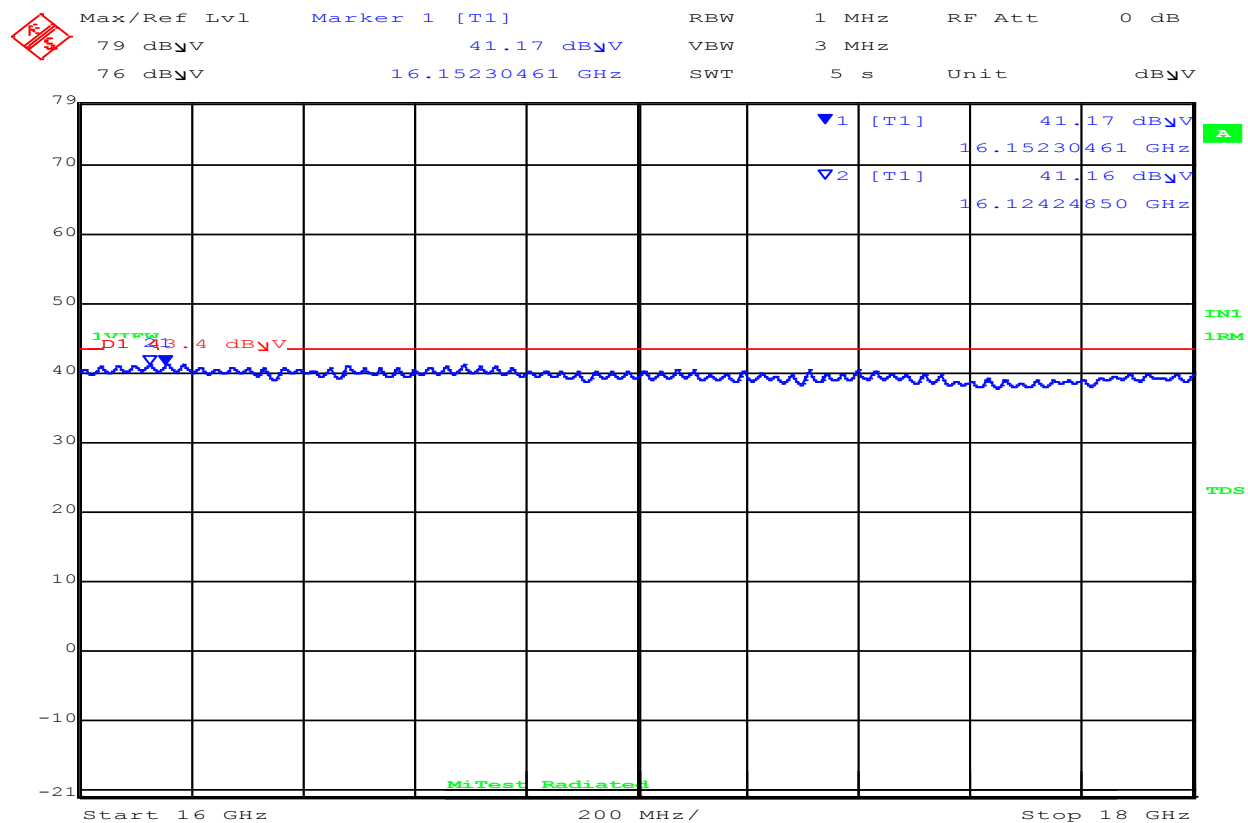
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 16-18GHz Vertical

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 21.NOV.2018 09:15:51

#### 16000.00 – 18000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| 1   | 16152.3       | 40.2         | Average          | Vertical | 150    | 0       | 43.4         | -3.2      | Pass       |
| 2   | 16124.2       | 40.1         | Average          | Vertical | 150    | 0       | 43.4         | -3.3      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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8184 MHz

Equipment Configuration for Spurious Emissions 1-1.61 GHz Horizontal

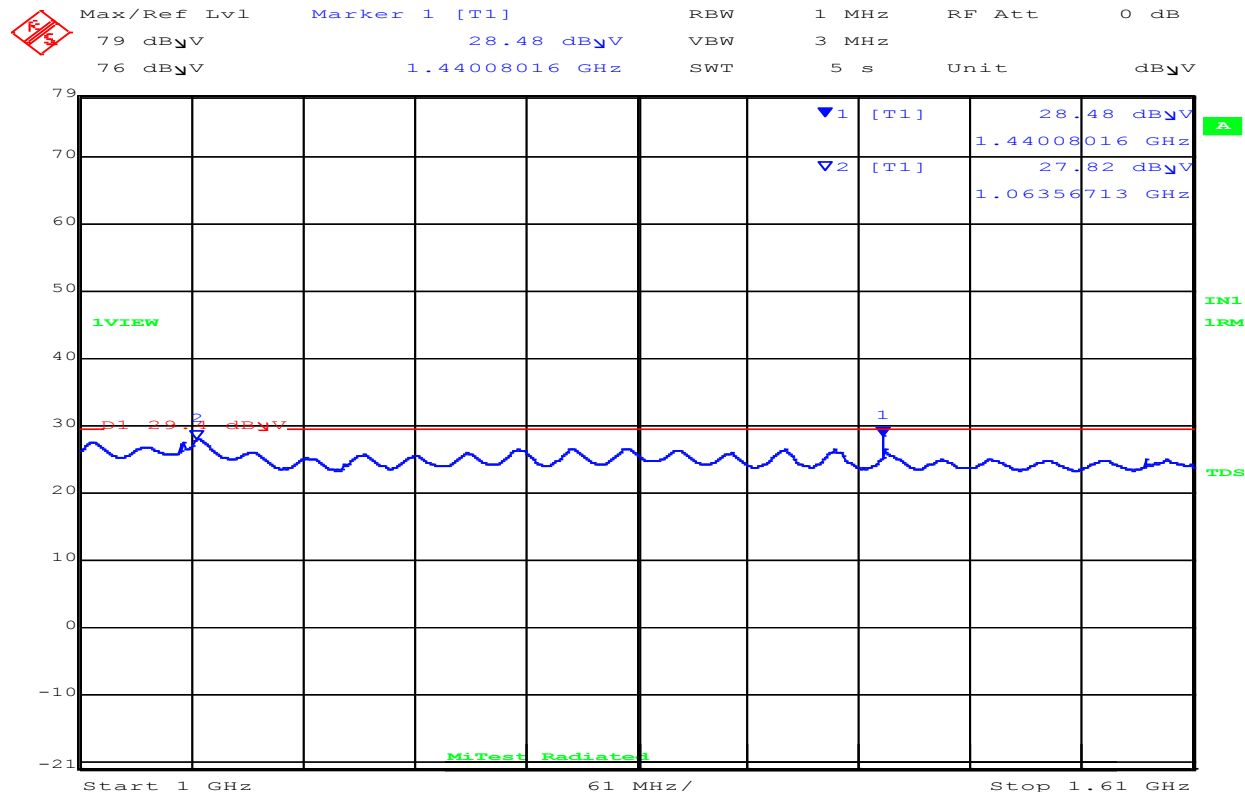
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS 1.0-1.61GHz Horizontal

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 10:10:29

1000.00- 1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 1440.1        | 24.2         | Average          | Horizontal | 150    | 0       | 29.4         | -5.2      | Pass       |
| 2   | 1063.6        | 25.4         | Average          | Horizontal | 150    | 0       | 29.4         | -4.0      | Pass       |

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 1-1.61 GHz Vertical

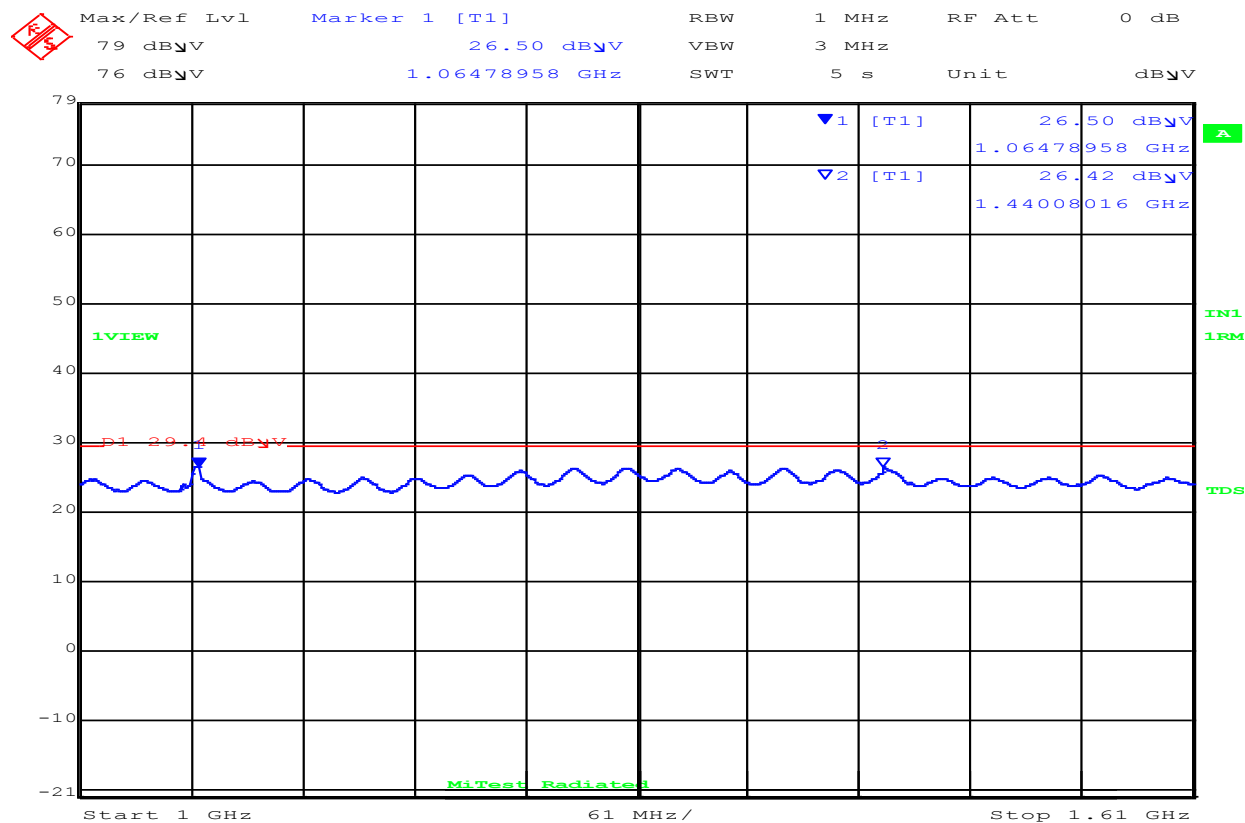
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.0-1.61GHz Vertical

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 10:15:41

#### 1000.00– 1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| 1   | 1064.8        | 24.3         | Average          | Vertical | 150    | 0       | 29.4         | -5.1      | Pass       |
| 2   | 1440.1        | 25.3         | Average          | Vertical | 150    | 0       | 29.4         | -4.1      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 1.61 - 1.99 GHz Horizontal

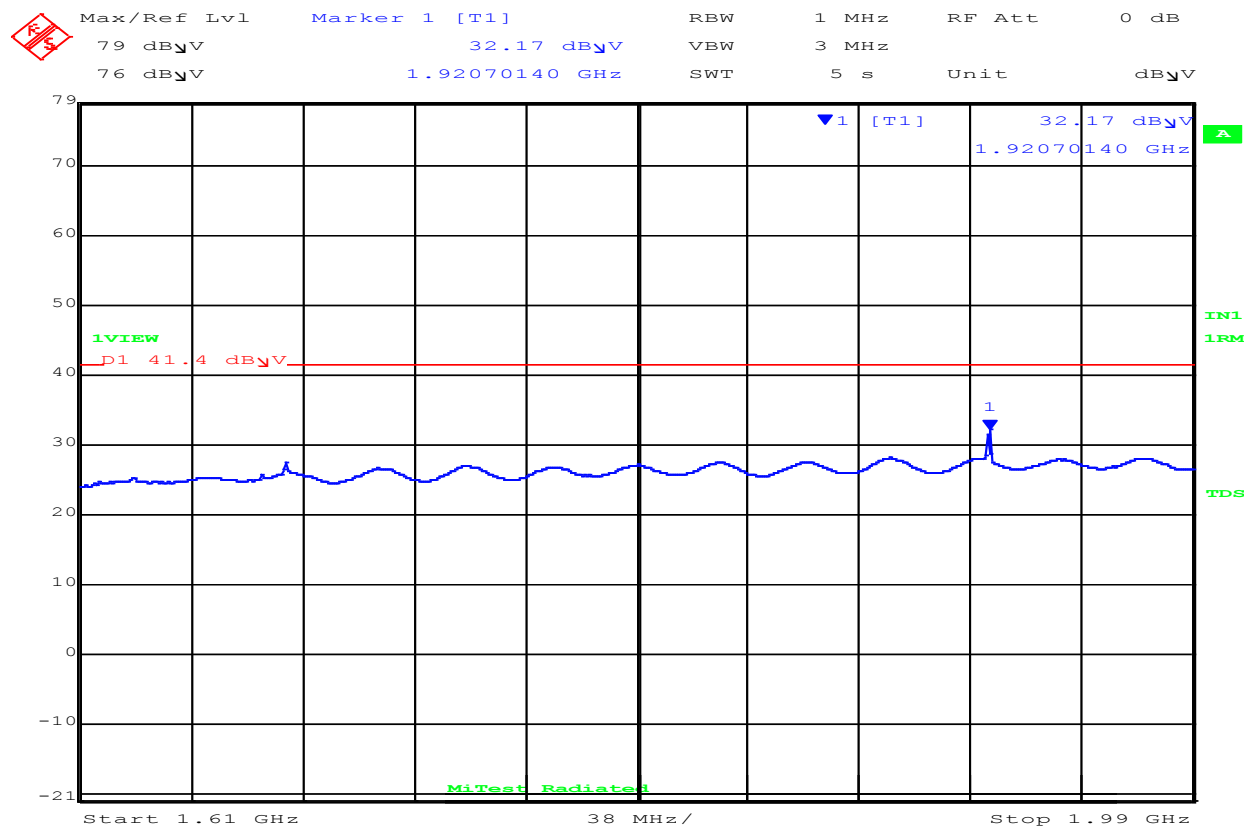
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.61-1.99GHz Horizontal

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 11:39:45

#### 1610.00 – 1990.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dB $\mu$ V/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------|------------------|-----|--------|---------|--------------------|-----------|------------|
| No Signals found within 6 dB of Limit                                                                                                       |               |                    |                  |     |        |         |                    |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |                    |                  |     |        |         |                    |           |            |

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#### Equipment Configuration for Spurious Emissions 1.61 – 1.99 GHz Vertical

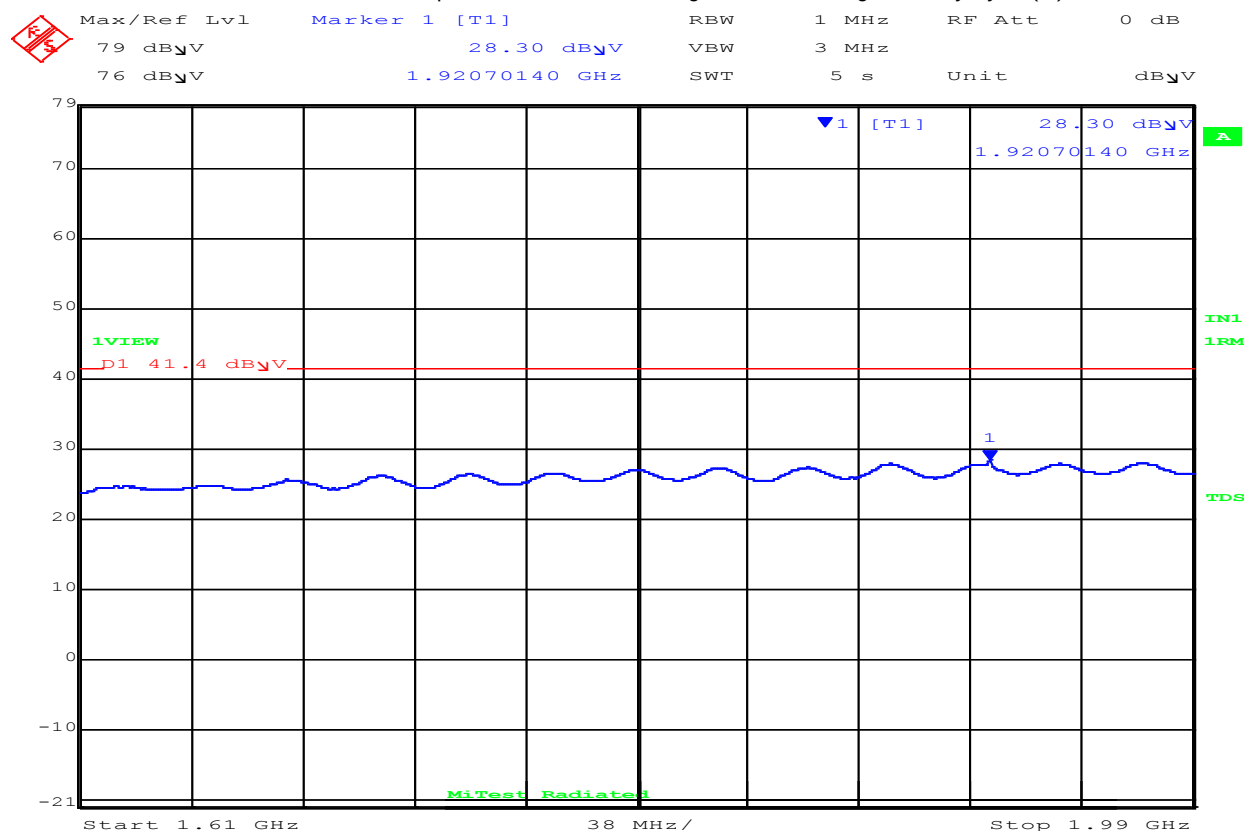
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.61-1.99GHz Vertical

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 11:38:41

#### 1610.00 – 1990.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Horizontal

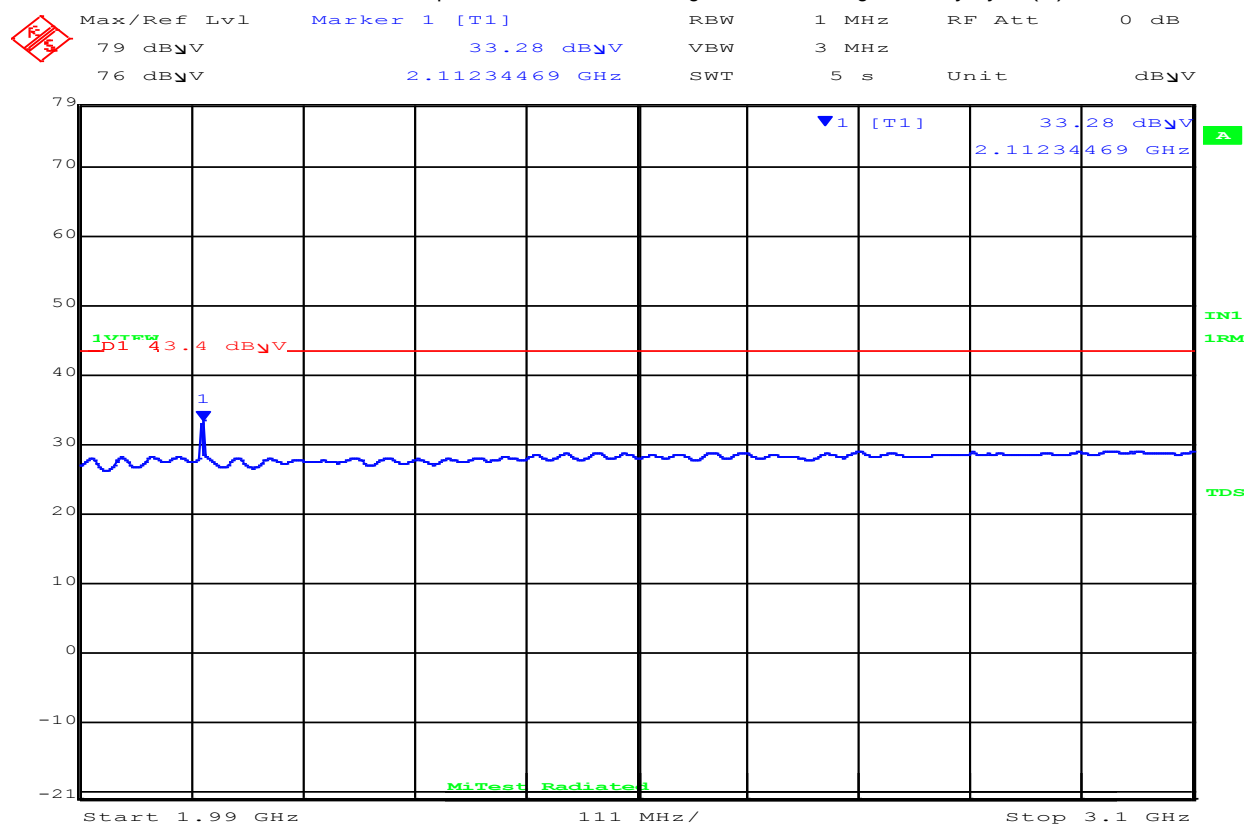
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.99-3.1GHz Horizontal

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 10:31:03

#### 1990.00 – 3100.00 GHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Vertical

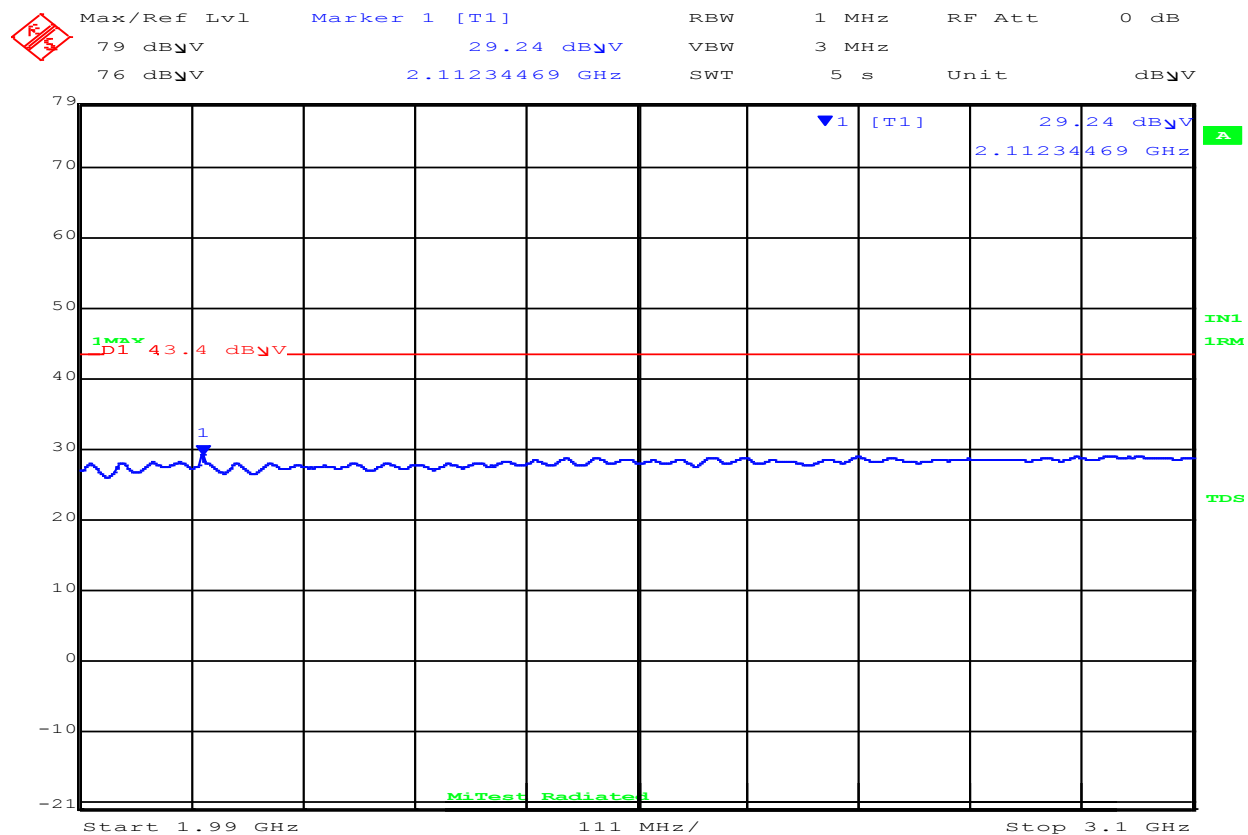
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.99-3.1GHz Vertical

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 10:26:43

#### 1990.00 – 3100.00 GHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Horizontal

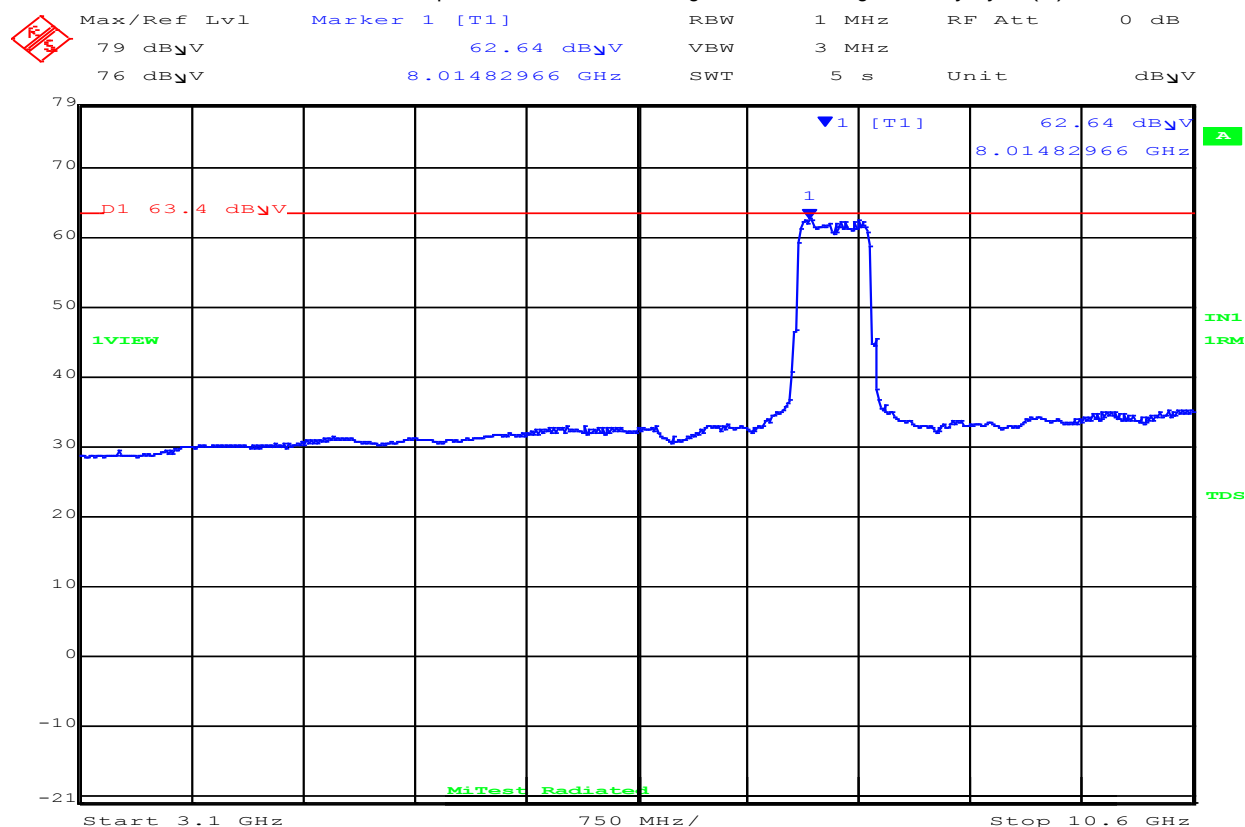
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 3.1-10.6GHz Horizontal

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 10:20:31

#### 3100.00 - 10600.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 8014.8        | 62.2         | Average          | Horizontal | 150    | 0       | 63.4         | -1.2      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Vertical

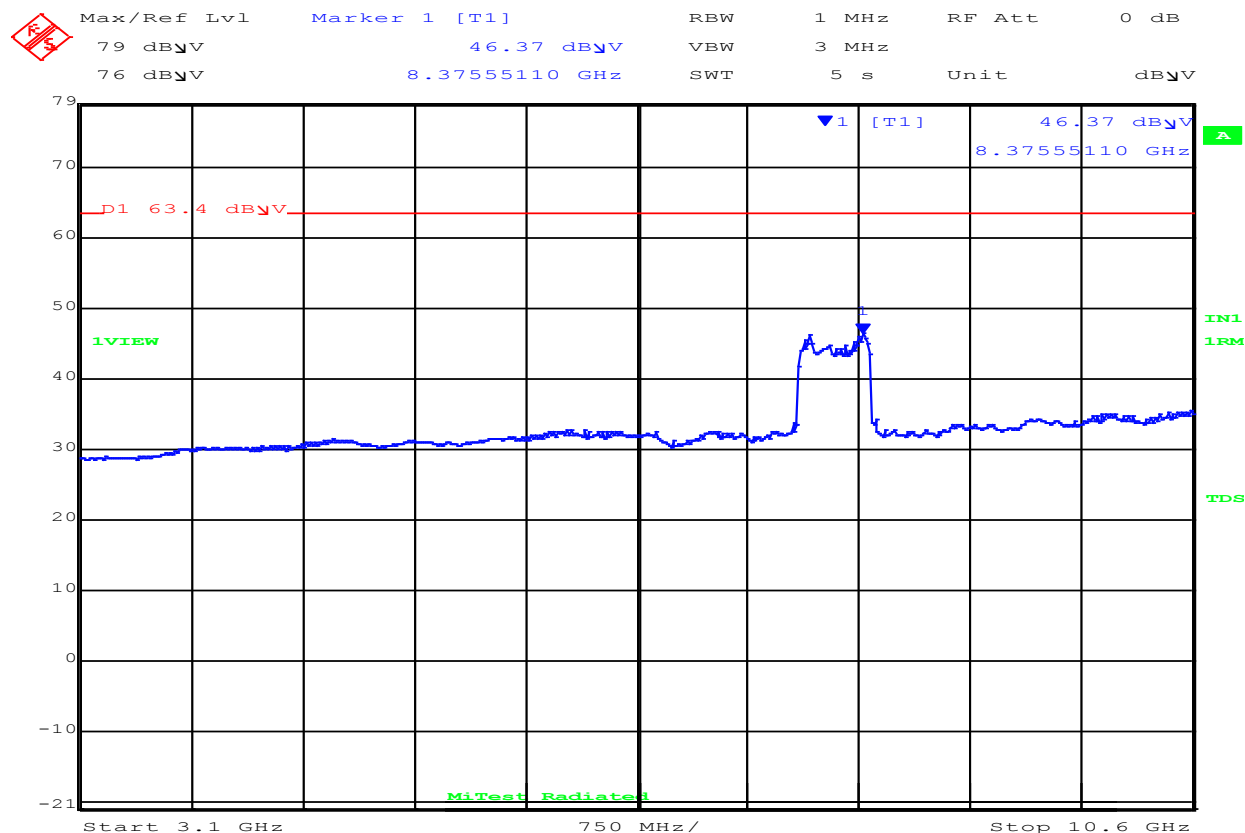
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 3.1-10.6GHz Vertical

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99

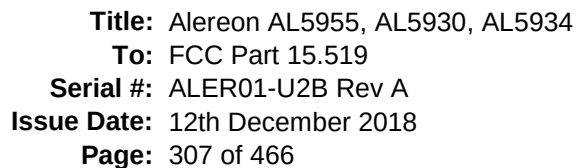


Date: 21.NOV.2018 10:23:16

#### 3100.00 - 10600.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

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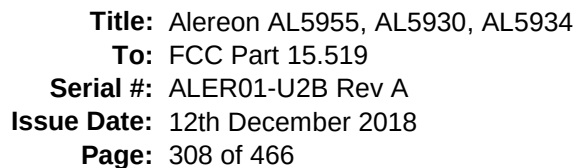
Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99

Date: 21.NOV.2018 10:32:45

| 10600.00 – 16000.00 GHz |                  |                 |                     |            |           |            |                 |              |               |
|-------------------------|------------------|-----------------|---------------------|------------|-----------|------------|-----------------|--------------|---------------|
| Num                     | Frequency<br>MHz | Level<br>dBµV/m | Measurement<br>Type | Pol        | Hgt<br>cm | Azt<br>Deg | Limit<br>dBµV/m | Margin<br>dB | Pass<br>/Fail |
| 1                       | 15686.2          | 39.5            | Average             | Horizontal | 150       | 0          | 43.4            | -3.9         | Pass          |

**Test Notes:**  
Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99

Date: 21.NOV.2018 10:35:47

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#### Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Horizontal

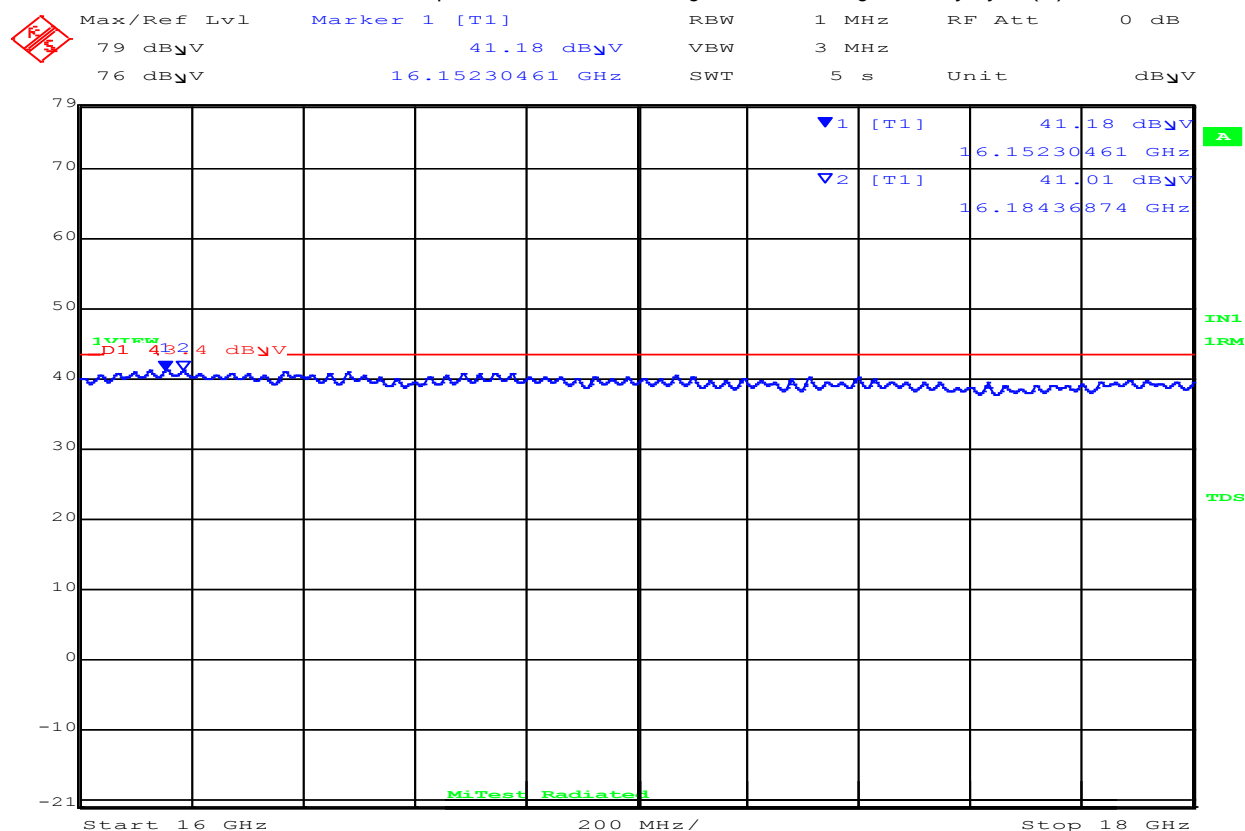
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 16-18GHz Horizontal

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 10:41:39

#### 16000.00 – 18000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 16152.3       | 40.3         | Average          | Horizontal | 150    | 0       | 43.4         | -3.1      | Pass       |
| 2   | 16184.4       | 40.1         | Average          | Horizontal | 150    | 0       | 43.4         | -3.3      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Vertical

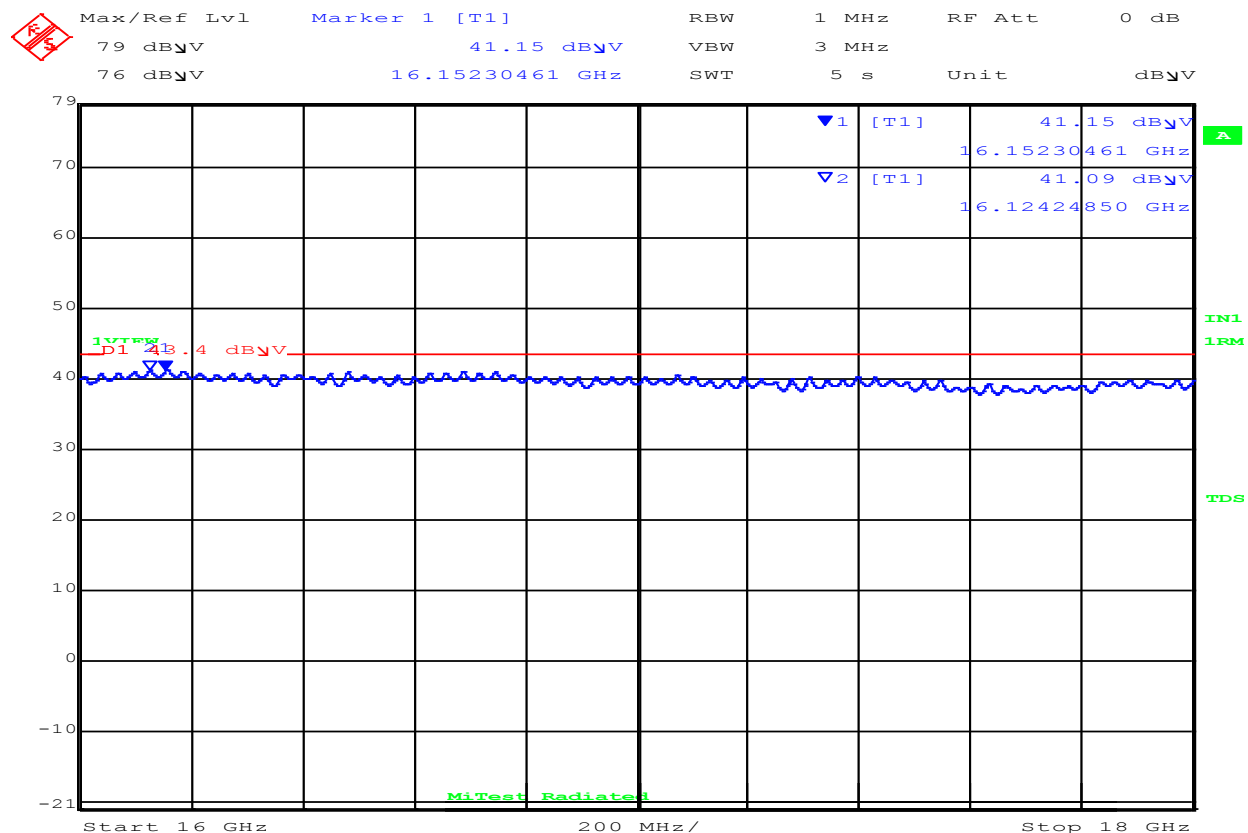
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 16-18GHz Vertical

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 10:36:53

#### 16000.00 – 18000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| 1   | 16152.3       | 40.1         | Average          | Vertical | 150    | 0       | 43.4         | -3.3      | Pass       |
| 2   | 16124.2       | 40.1         | Average          | Vertical | 150    | 0       | 43.4         | -3.3      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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8712 MHz

Equipment Configuration for Spurious Emissions 1-1.61 GHz Horizontal

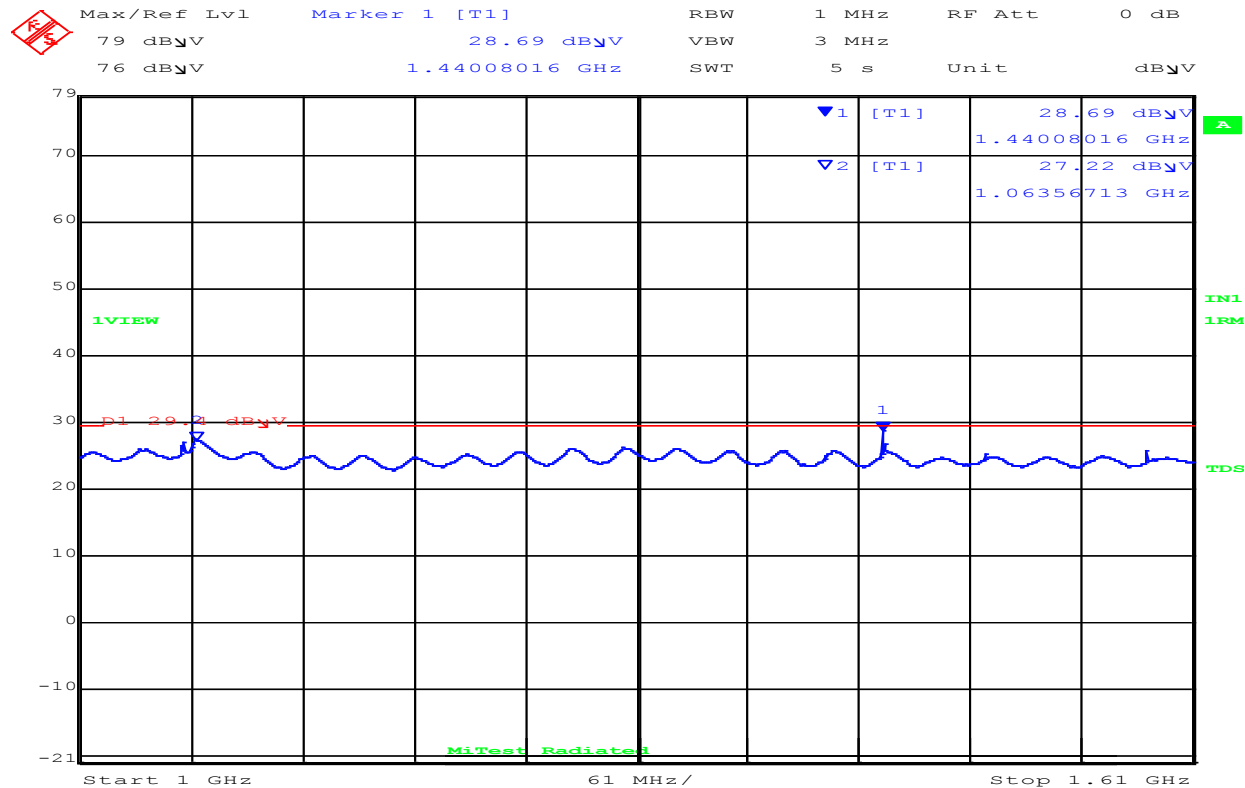
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS 1.0-1.61GHz Horizontal

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 11:42:07

1000.00– 1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 1440.1        | 28.8         | Average          | Horizontal | 150    | 0       | 29.4         | -0.6      | Pass       |
| 2   | 1063.6        | 25.6         | Average          | Horizontal | 150    | 0       | 29.4         | -3.8      | Pass       |

Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 1-1.61 GHz Vertical

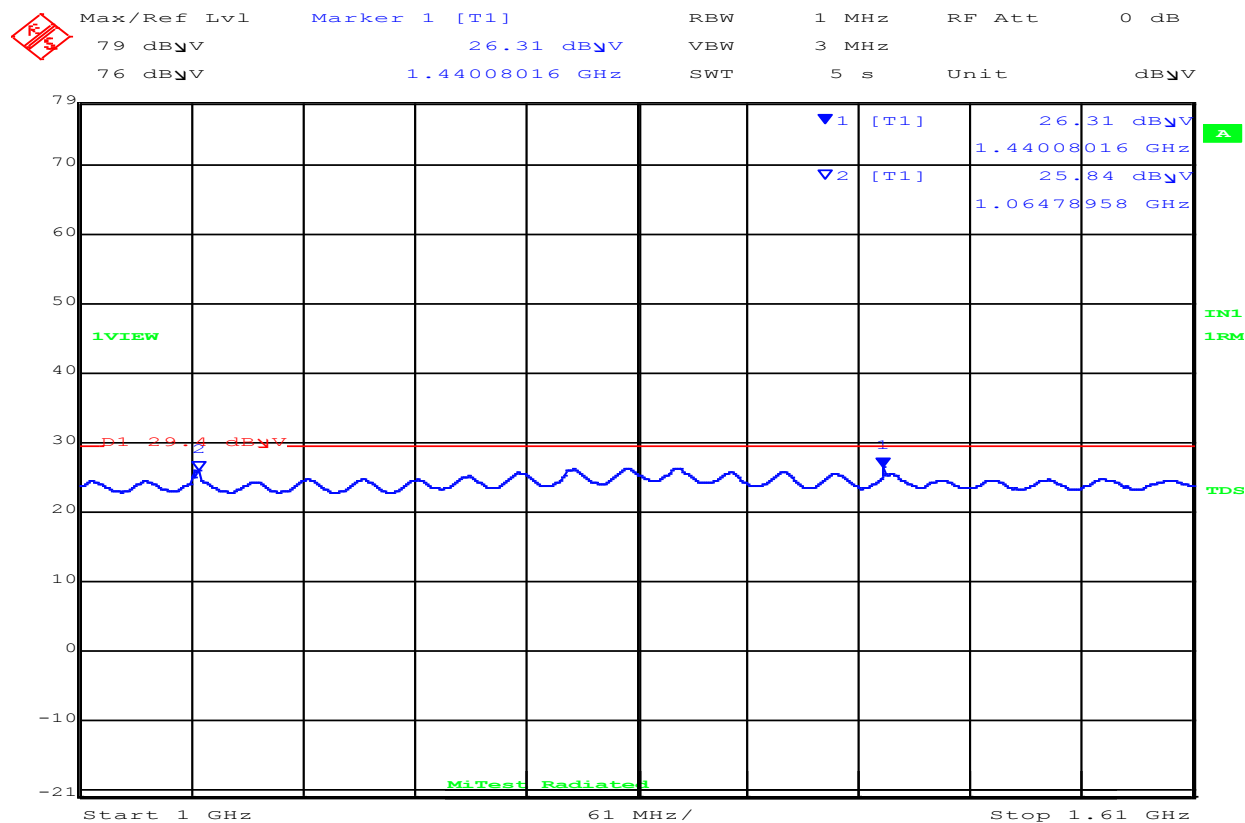
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.0-1.61GHz Vertical

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 11:46:45

#### 1000.00– 1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|----------|--------|---------|--------------|-----------|------------|
| 1   | 1440.1        | 25.2         | Average          | Vertical | 150    | 0       | 29.4         | -4.2      | Pass       |
| 2   | 1064.8        | 23.9         | Average          | Vertical | 150    | 0       | 29.4         | -5.5      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 1.61 - 1.99 GHz Horizontal

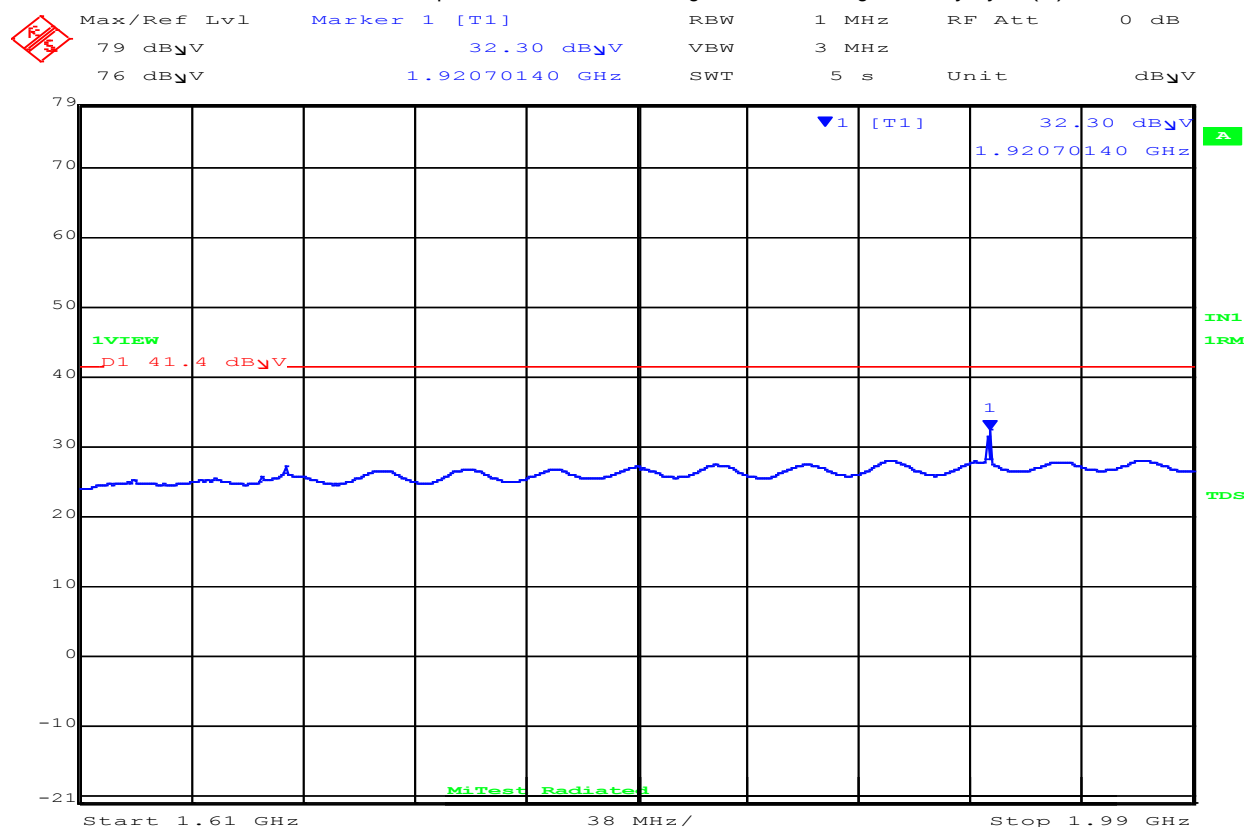
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.61-1.99GHz Horizontal

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 11:31:02

#### 1610.00 – 1990.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.61 – 1.99 GHz Vertical

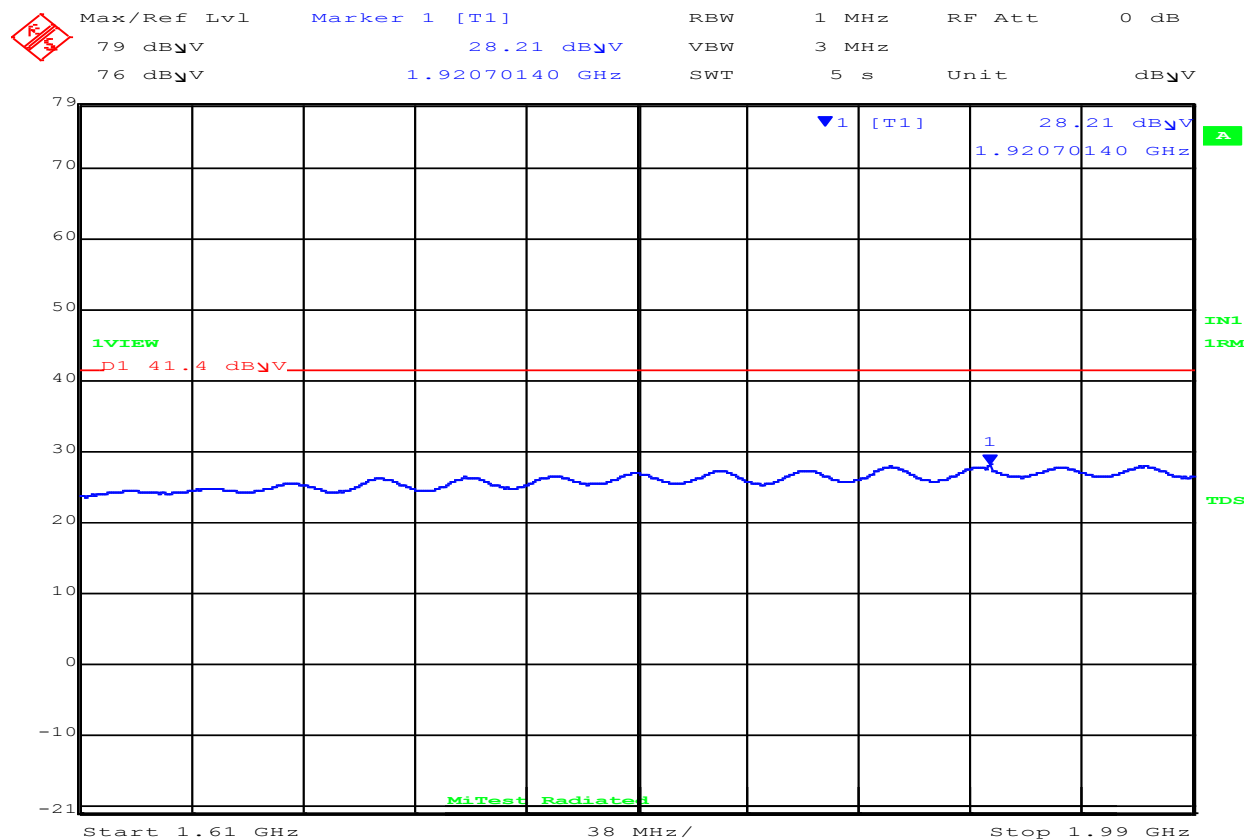
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.61-1.99GHz Vertical

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99

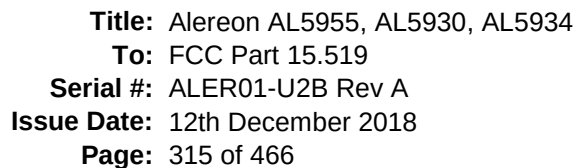


Date: 21.NOV.2018 11:36:07

#### 1610.00 – 1990.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

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Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



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#### Equipment Configuration for Spurious Emissions 1.99 – 3.1 GHz Vertical

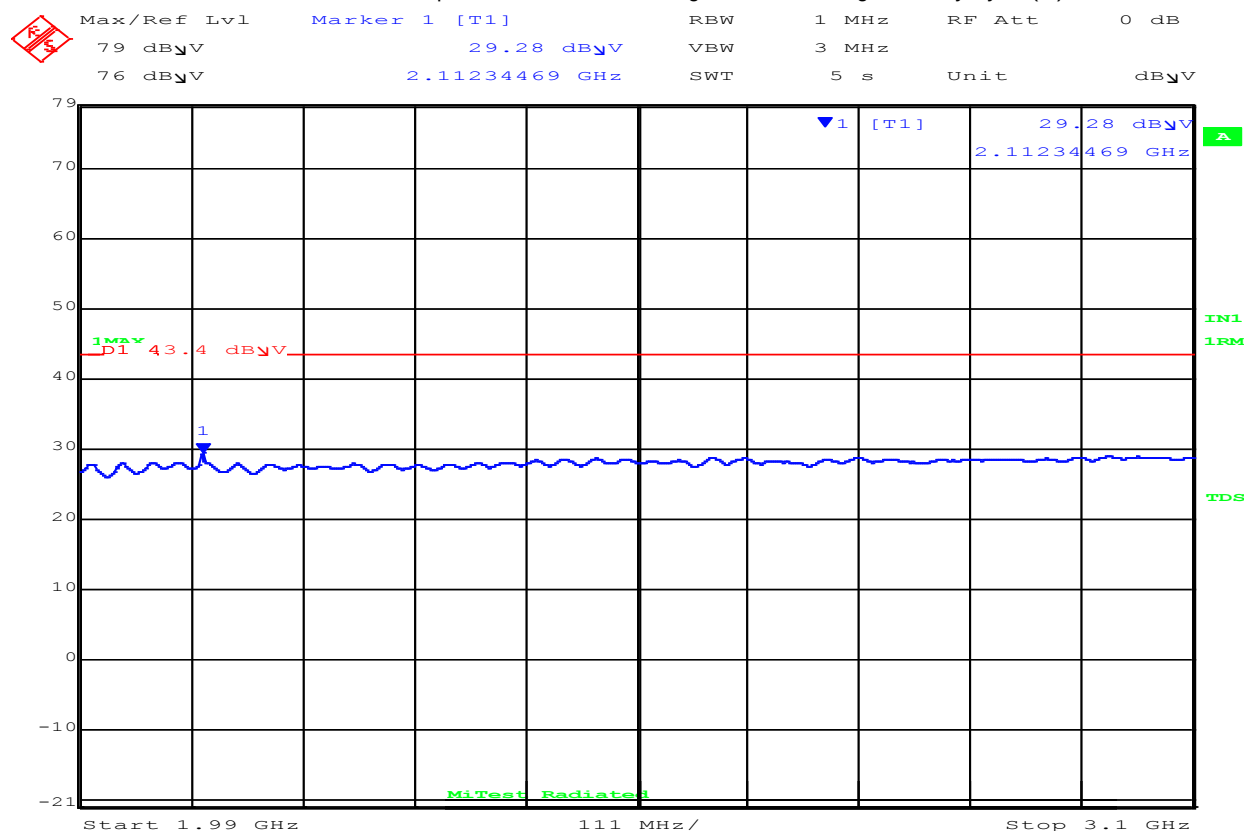
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 1.99-3.1GHz Vertical

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 11:27:22

#### 1990.00 – 3100.00 GHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Horizontal

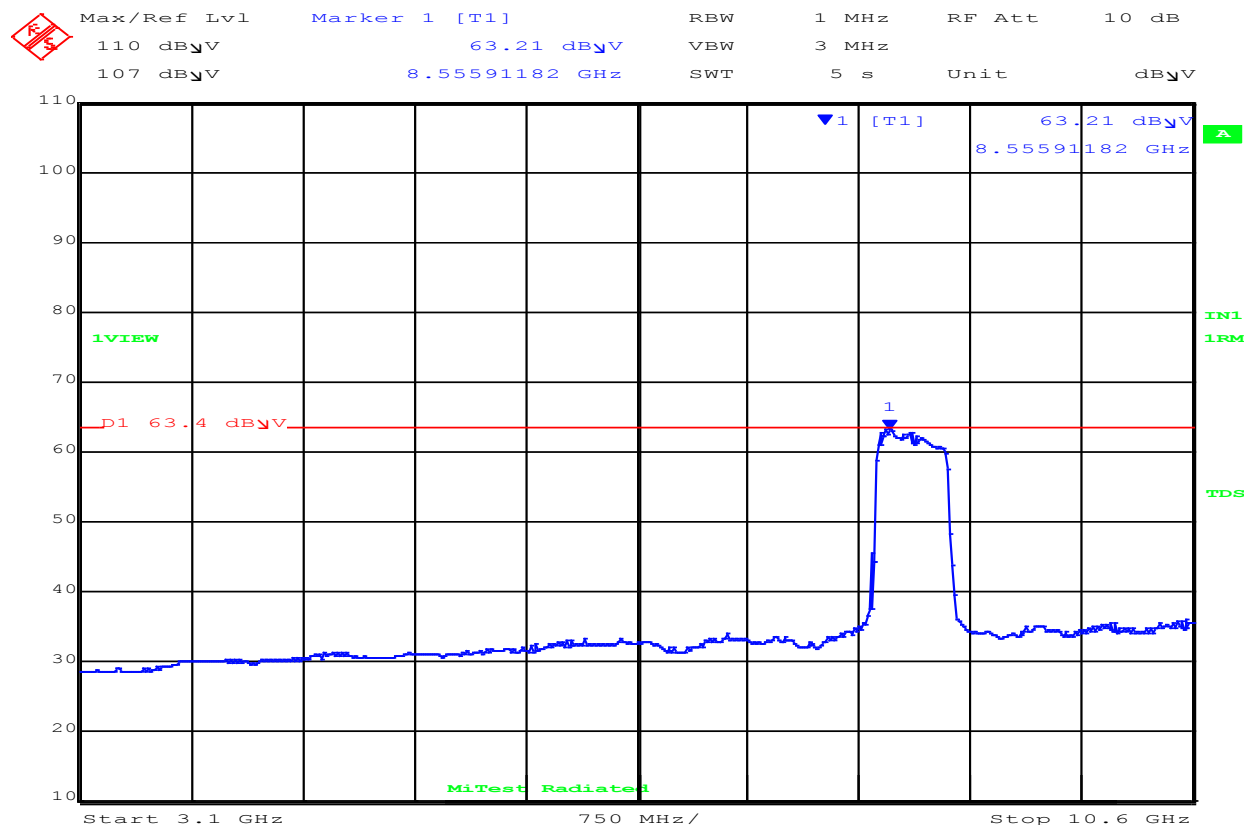
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 3.1-10.6GHz Horizontal

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 11:06:11

#### 3100.00 - 10600.00 MHz

| Num | Frequency MHz | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|-----|---------------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|
| 1   | 8555.9        | 62.9               | Average          | Horizontal | 150    | 0       | 63.4               | -0.5      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 3.1 – 10.6 GHz Vertical

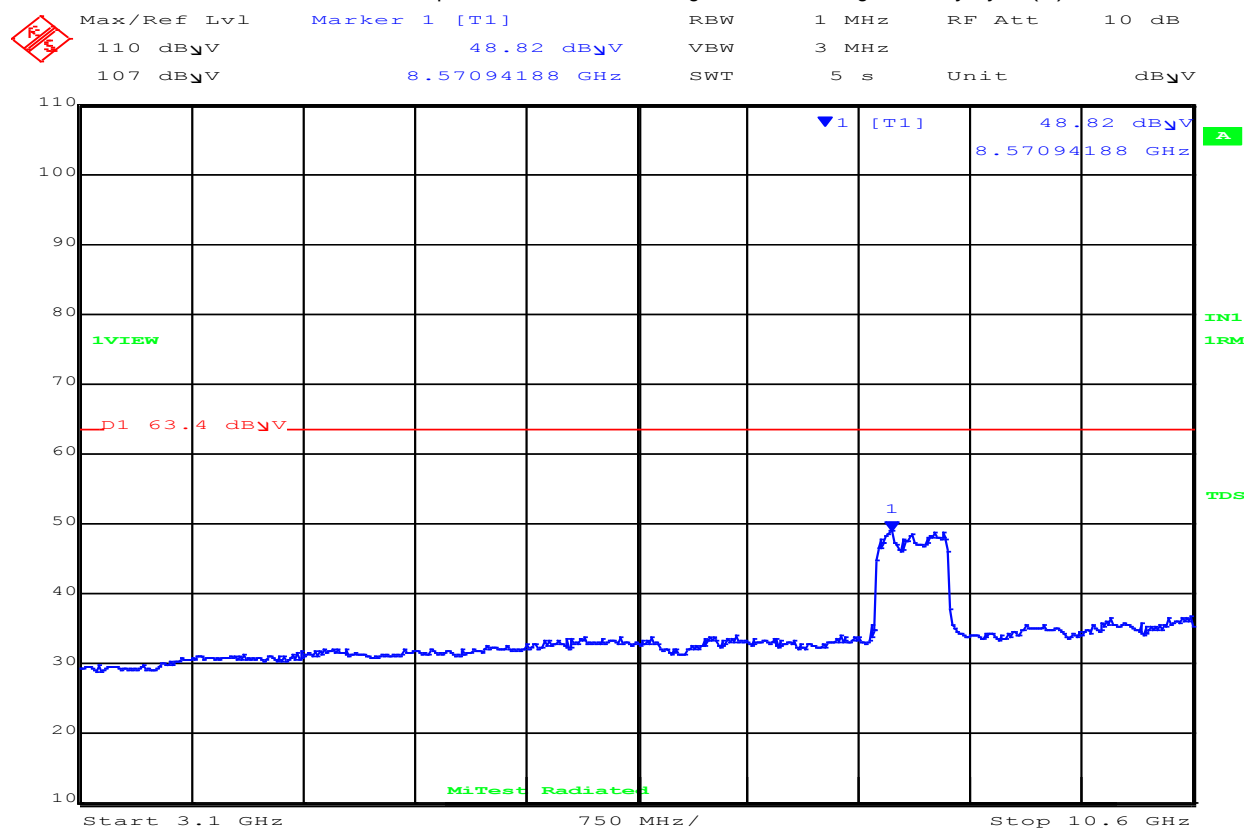
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 3.1-10.6GHz Vertical

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 11:08:12

#### 3100.00 - 10600.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Horizontal

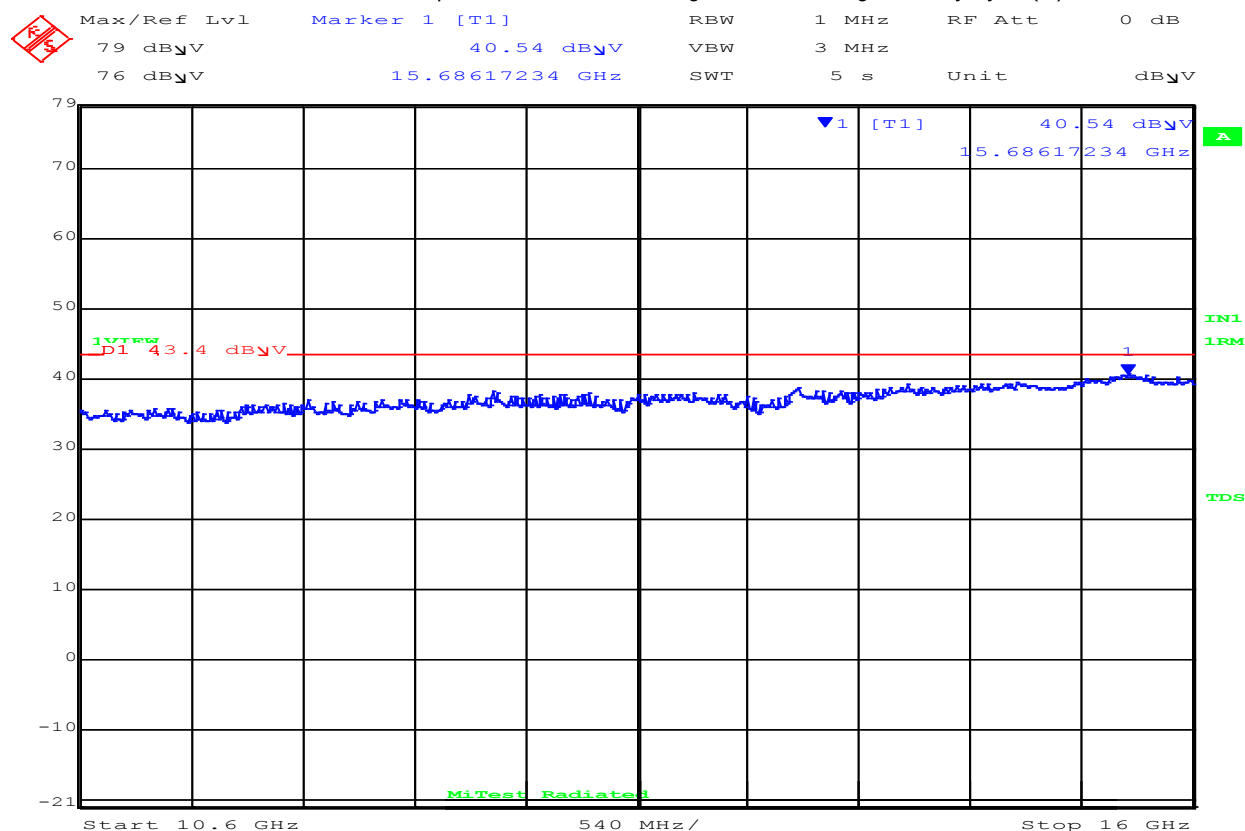
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 10.6-16GHz Horizontal

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 11:12:35

#### 10600.00 – 16000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 15686.2       | 39.6         | Average          | Horizontal | 150    | 0       | 43.4         | -3.80     | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 10.6 – 16.0 GHz Vertical

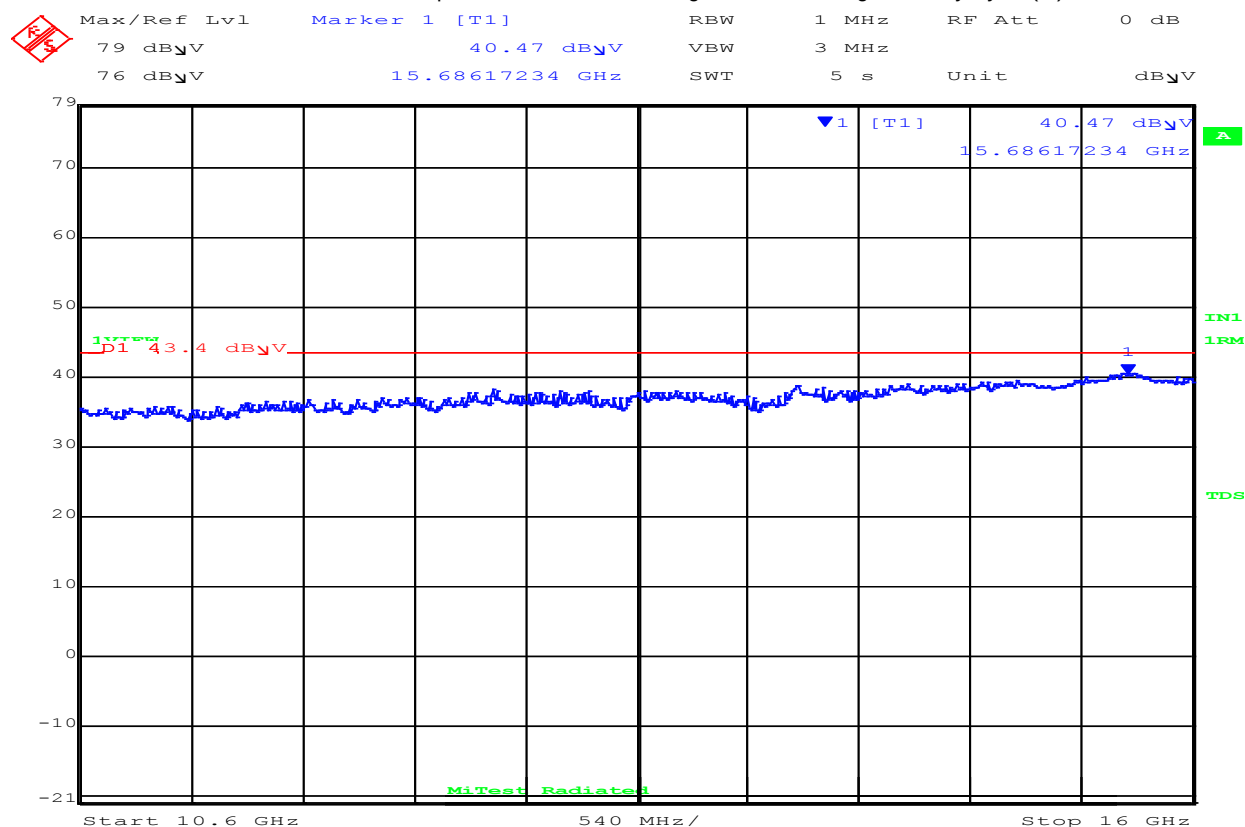
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 10.6-16GHz Vertical

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 11:10:04

#### 10600.00 – 16000.00 GHz

| Num | Frequency MHz | Level dB $\mu$ V/m | Measurement Type | Pol      | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|-----|---------------|--------------------|------------------|----------|--------|---------|--------------------|-----------|------------|
| 1   | 15686.2       | 39.6               | Average          | Vertical | 150    | 0       | 43.4               | -3.8      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Horizontal

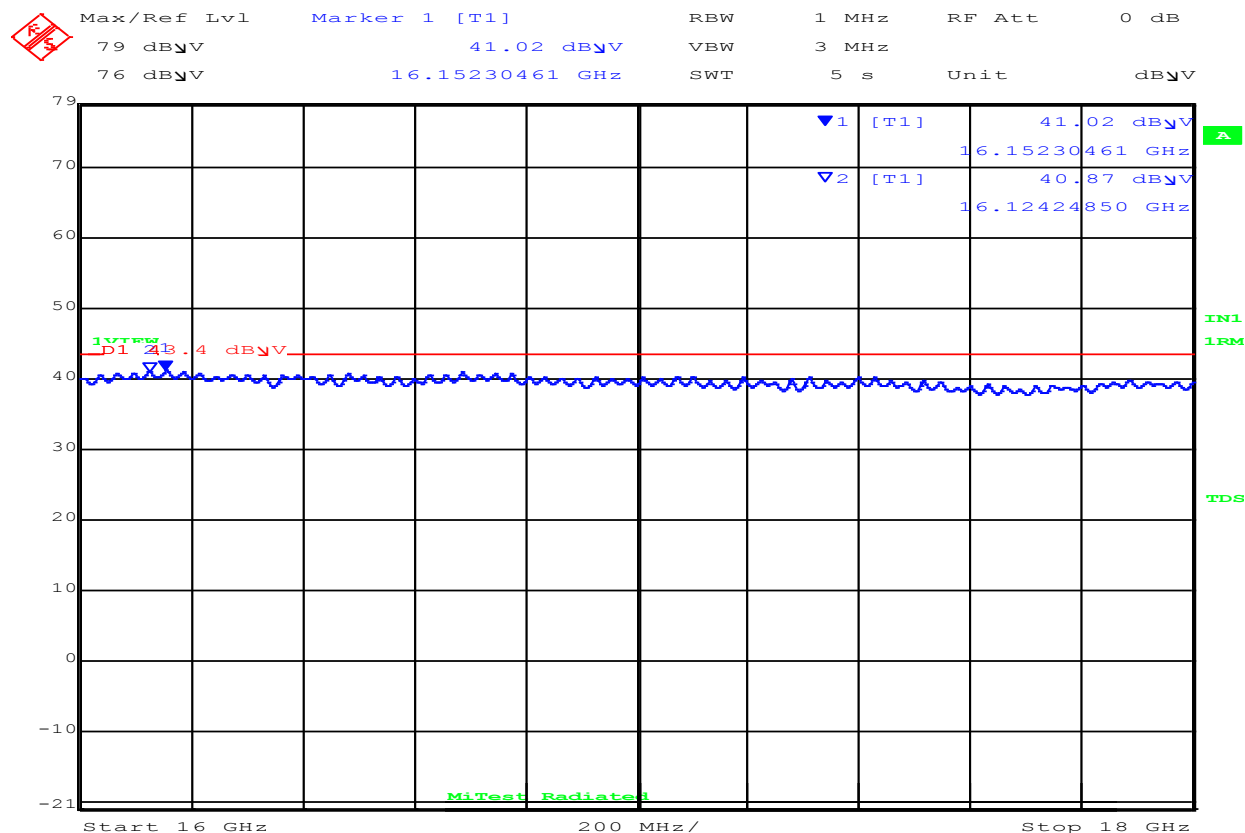
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 16-18GHz Horizontal

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 11:14:09

#### 16000.00 – 18000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 16152.3       | 40.1         | Average          | Horizontal | 150    | 0       | 43.4         | -3.3      | Pass       |
| 2   | 16124.2       | 39.9         | Average          | Horizontal | 150    | 0       | 43.4         | -3.5      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 16.0 – 18.0 GHz Vertical

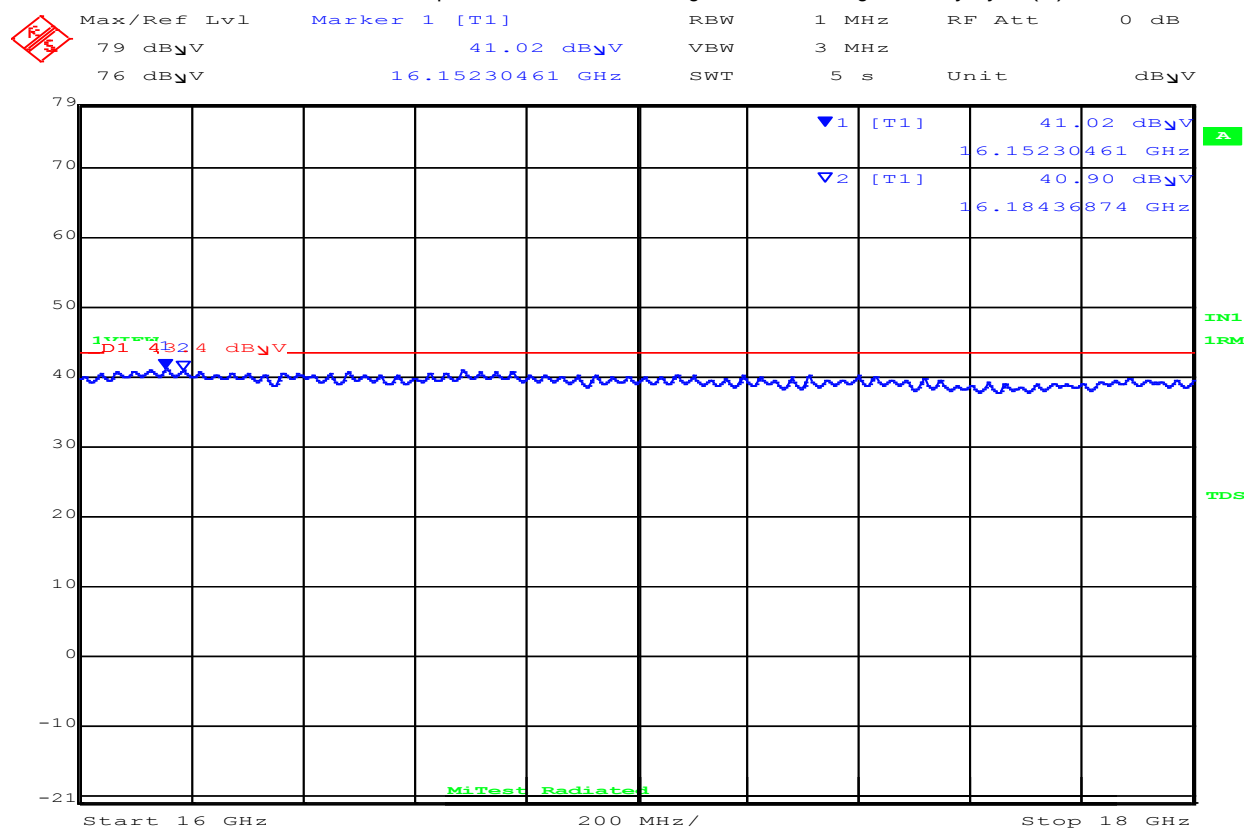
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS 16-18GHz Vertical

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 11:16:58

#### 16000.00 – 18000.00 GHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 1   | 16152.3       | 40.1         | Average          | Horizontal | 150    | 0       | 43.4         | -3.3      | Pass       |
| 2   | 16184.4       | 39.9         | Average          | Horizontal | 150    | 0       | 43.4         | -3.5      | Pass       |

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### 9.4.2. GPS Band Emissions

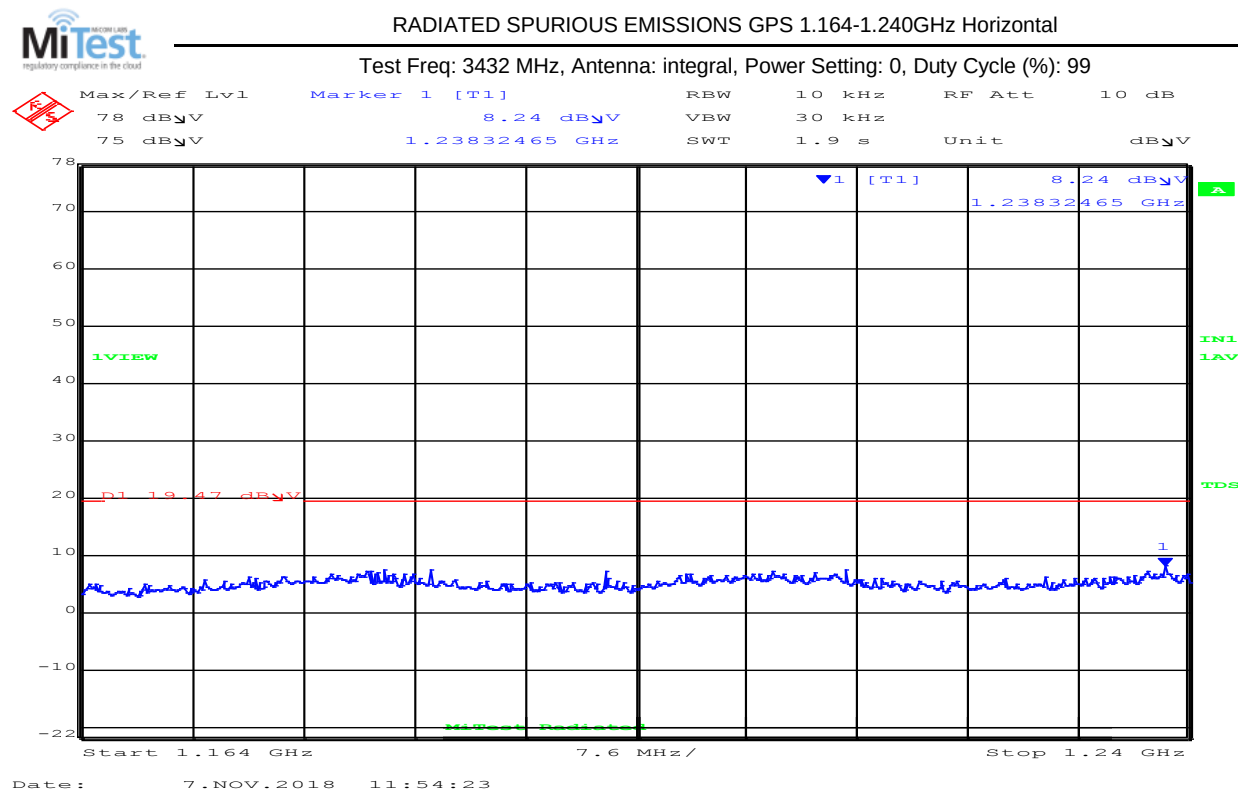
##### 9.4.2.1. Commander AL5930

3432 MHz

#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 1.0            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3432.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### 1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

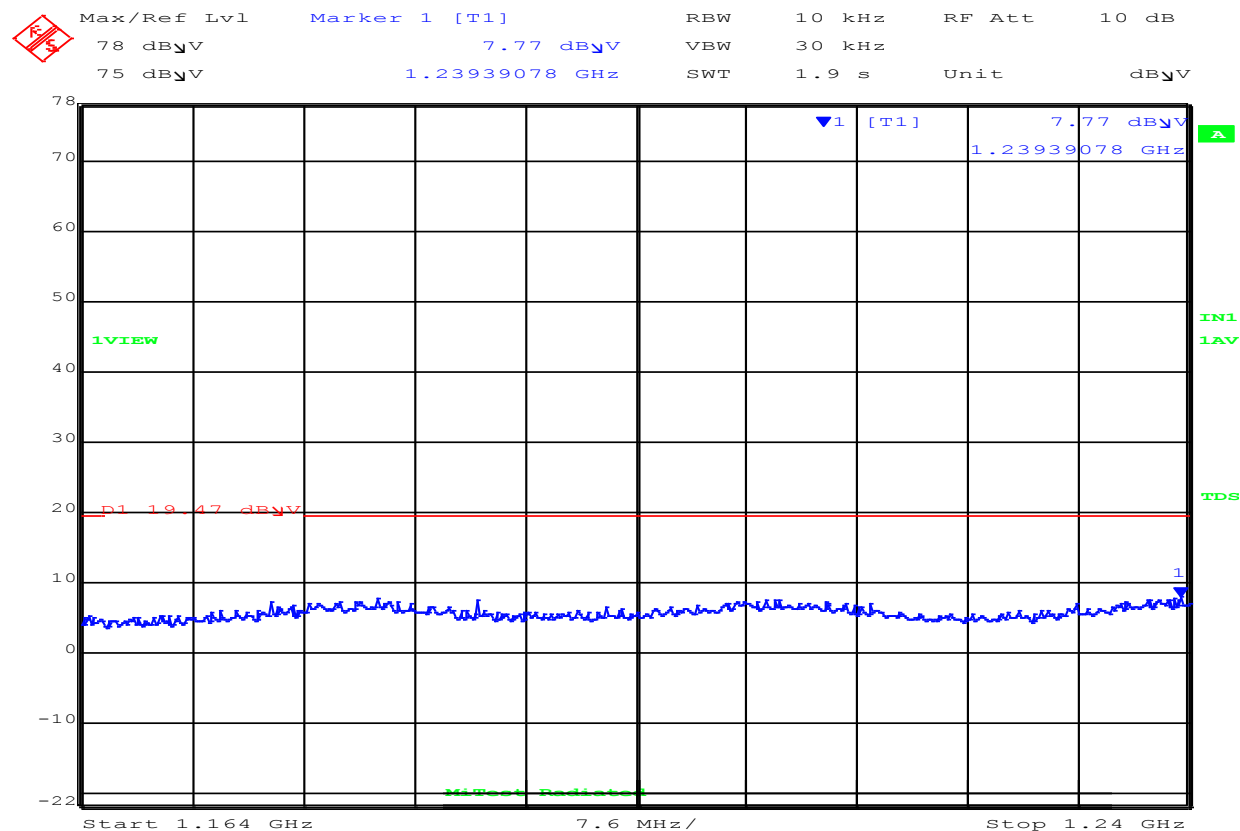
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 1.0            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3432.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 3432 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 7.NOV.2018 11:53:15

#### 1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

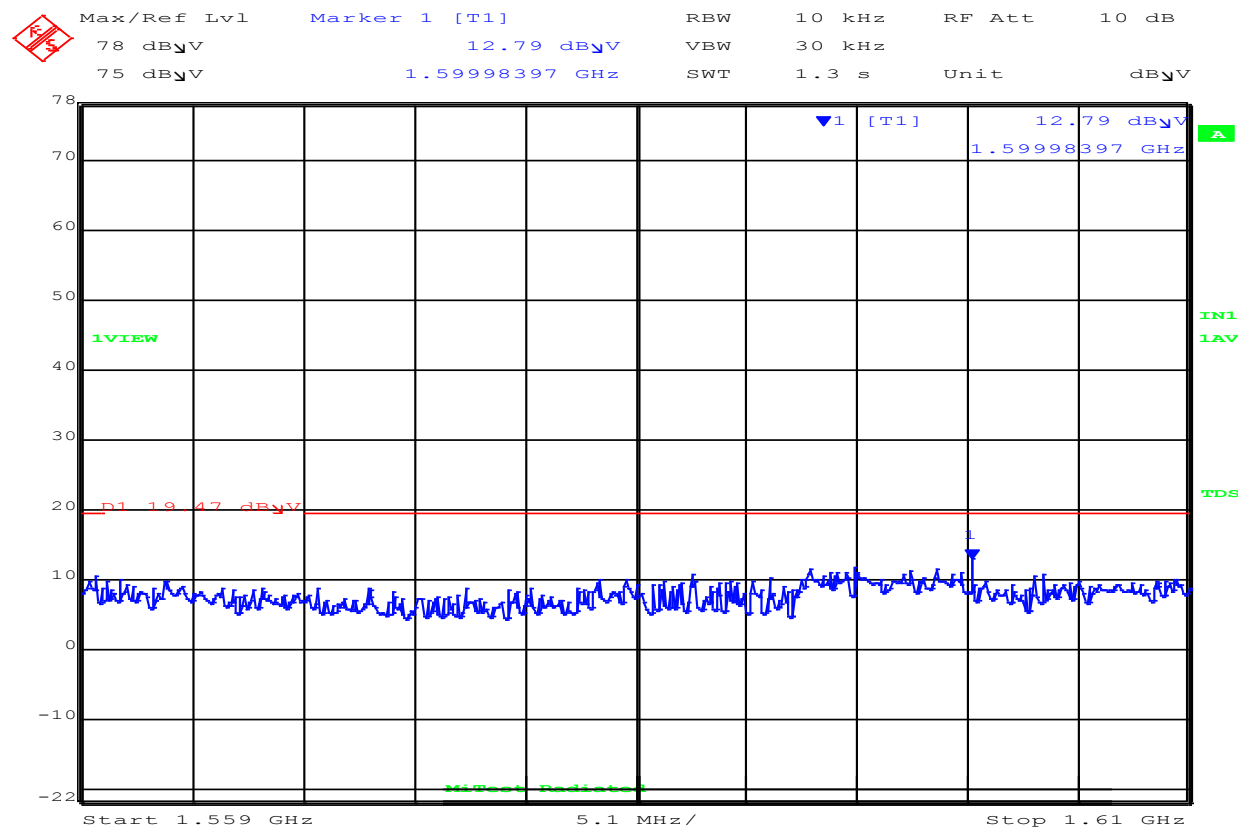
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 1.0            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3432.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 3432 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 7.NOV.2018 11:55:49

#### 1559.00-1610.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

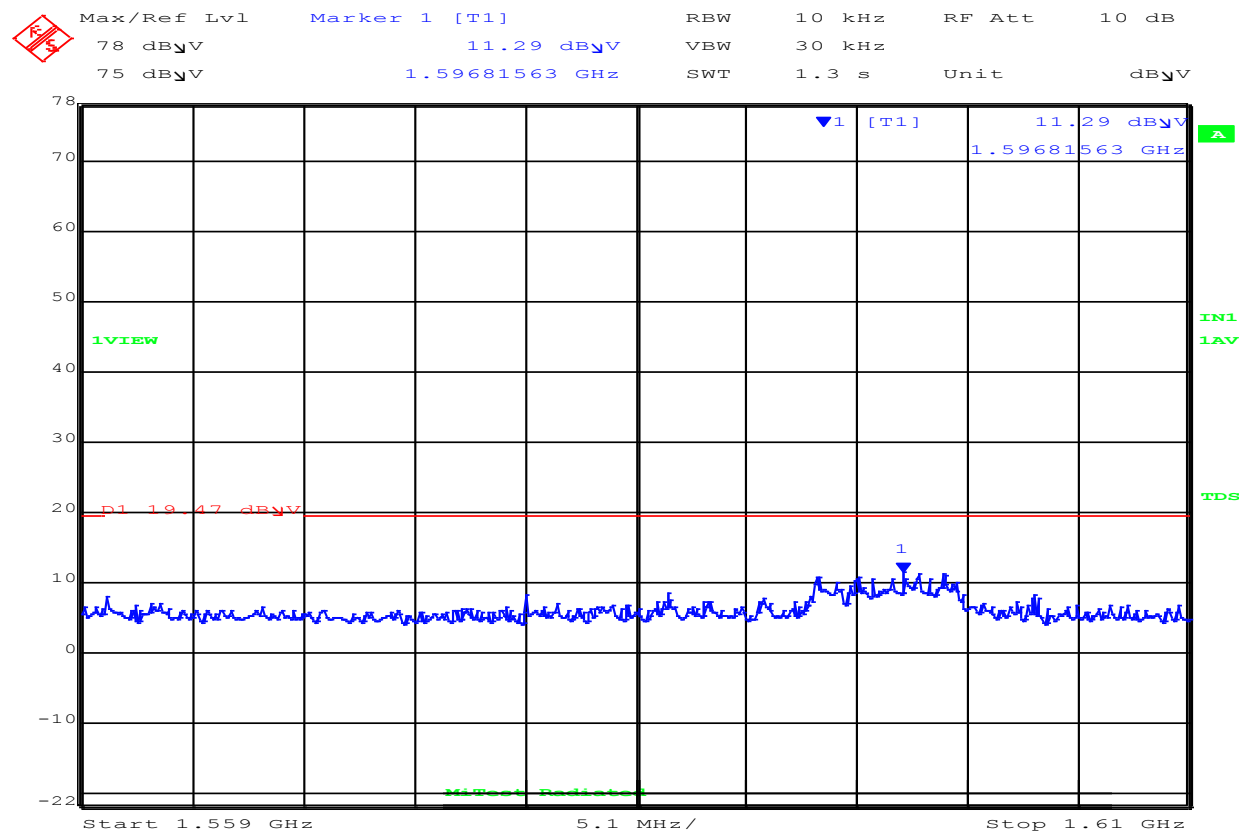
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 1.0            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3432.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 3432 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 7.NOV.2018 11:56:51

#### 1559.00-1610.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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3960 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

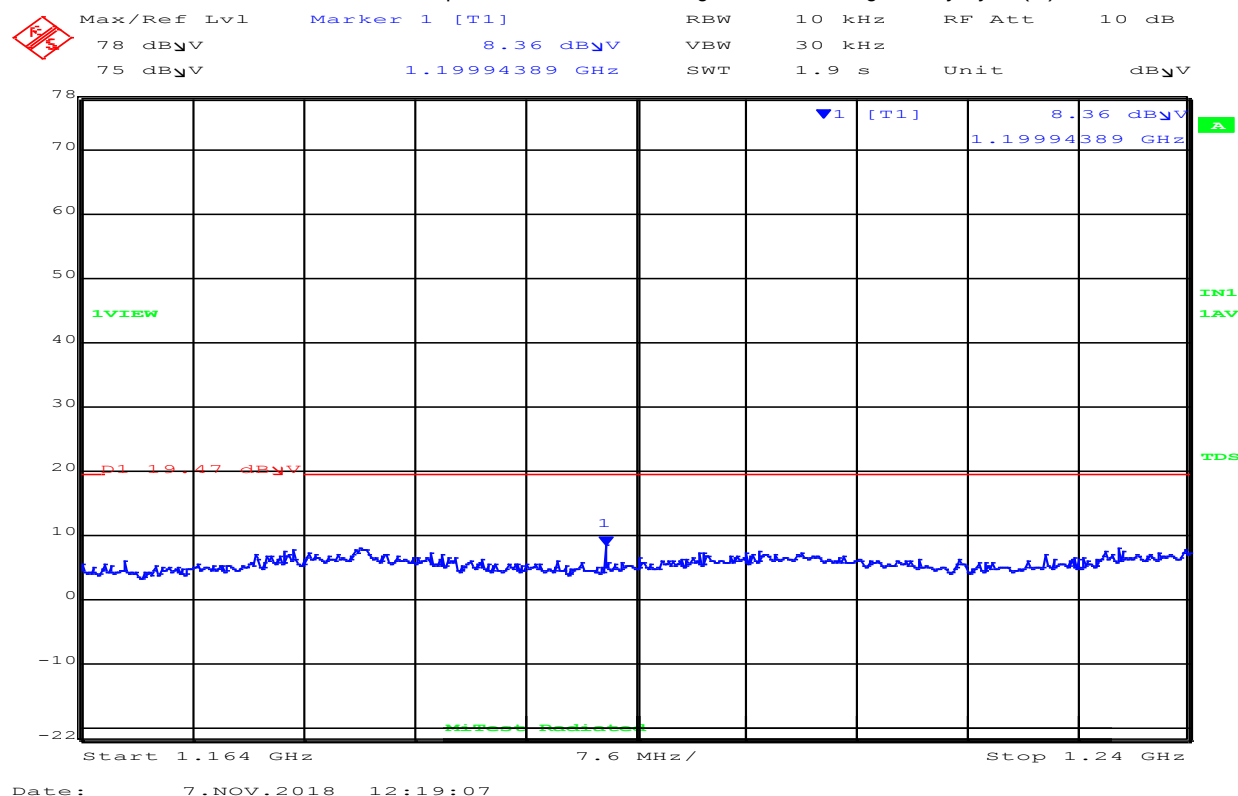
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dB $\mu$ V/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------------|------------------|-----|--------|---------|--------------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |                    |                  |     |        |         |                    |           |            |
| Test Notes:<br>Laptop Removed         |               |                    |                  |     |        |         |                    |           |            |

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#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

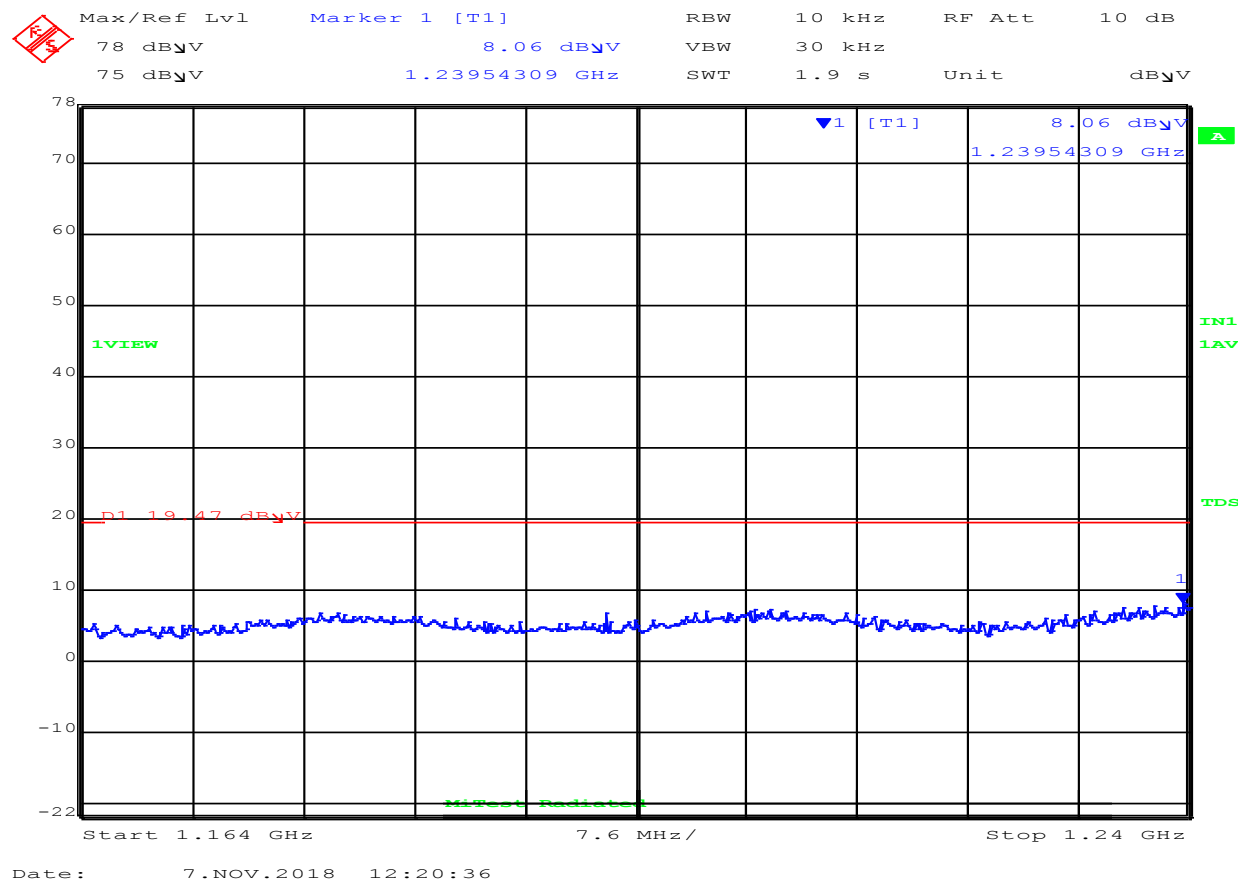
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



#### 1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

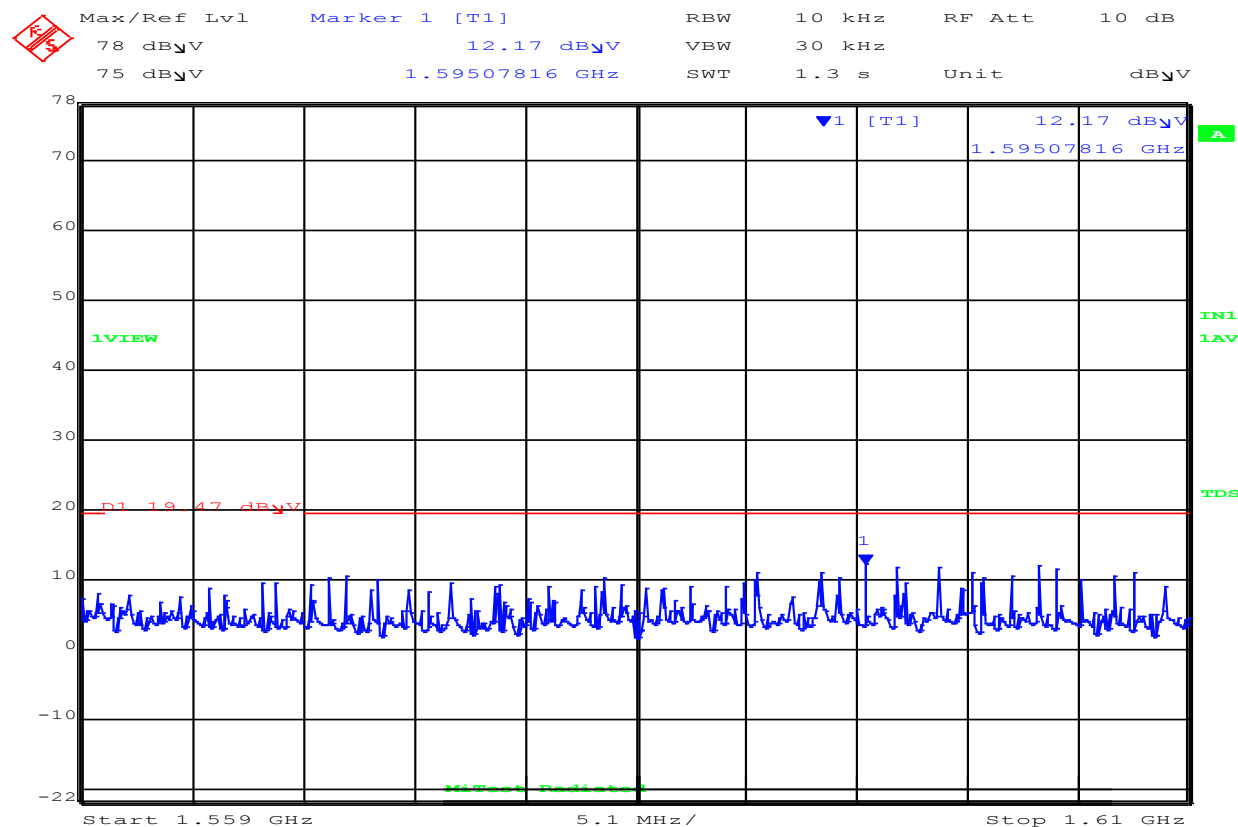
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 7.NOV.2018 12:17:47

#### 1559.00-1610.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

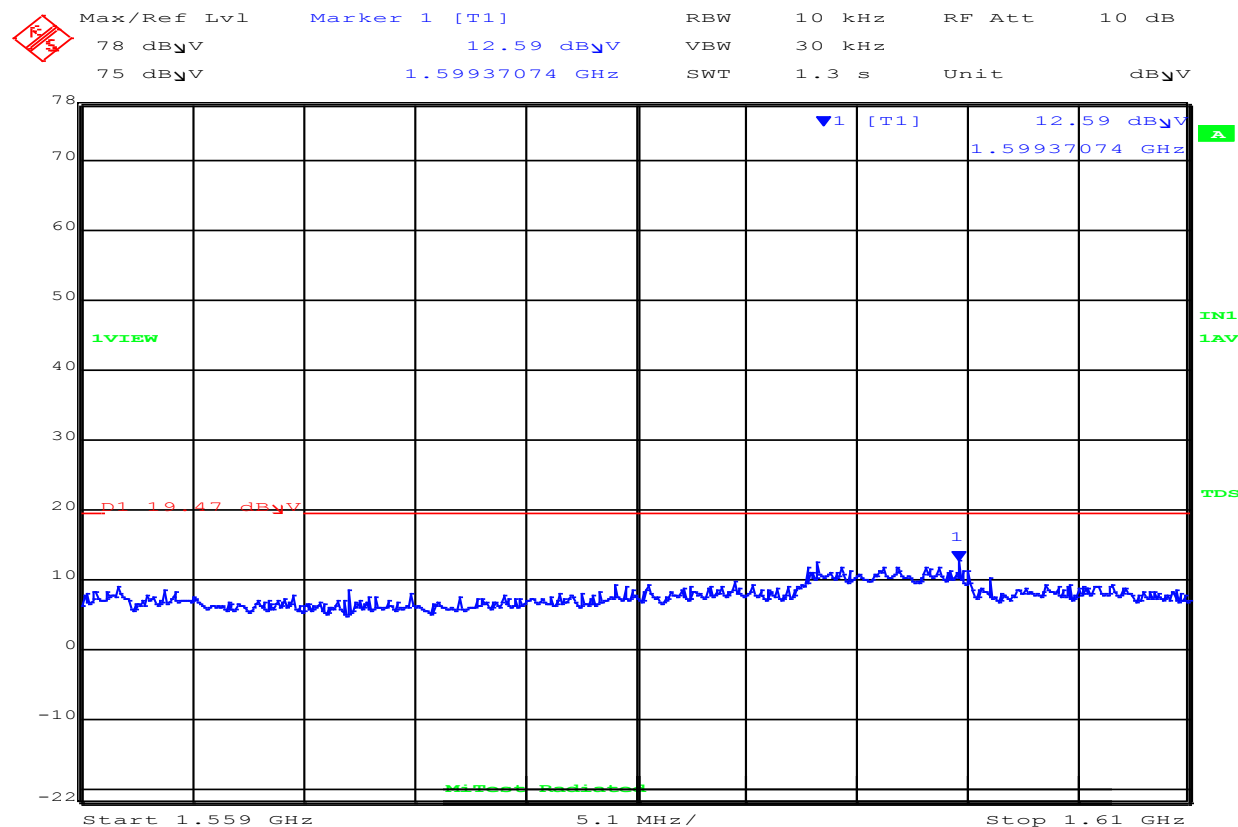
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 7.NOV.2018 12:14:28

#### 1559.00-1610.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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4488 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

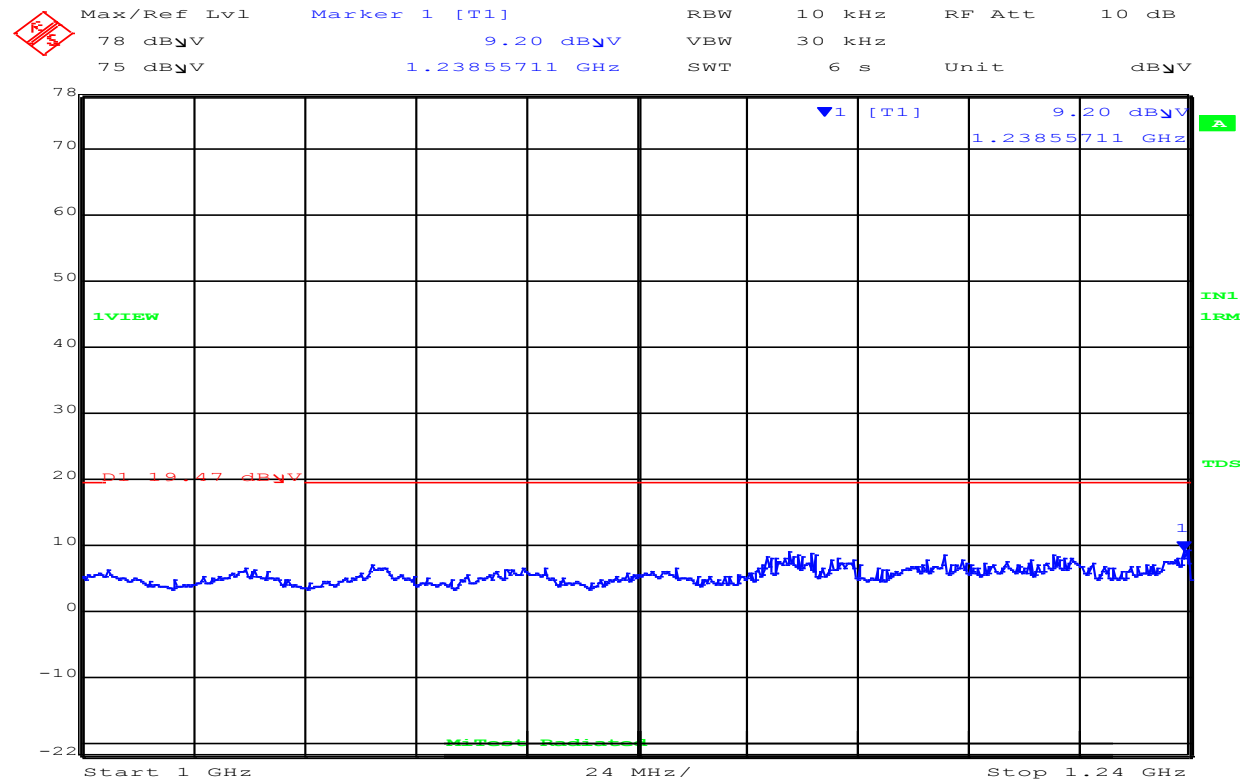
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 7.NOV.2018 13:37:46

| 1164.00-1240.00 MHz                   |               |              |                  |     |        |         |              |           |            |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

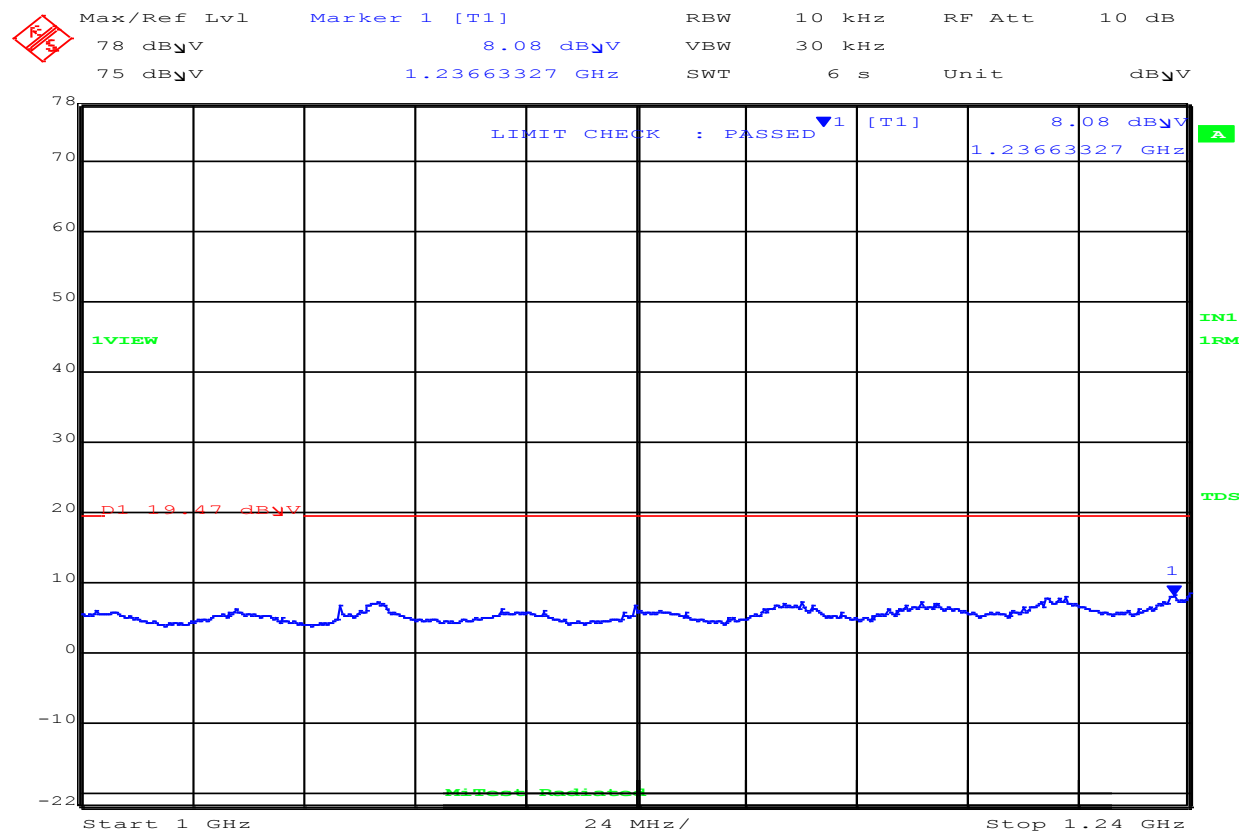
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 4448 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 7.NOV.2018 13:35:29

#### 1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

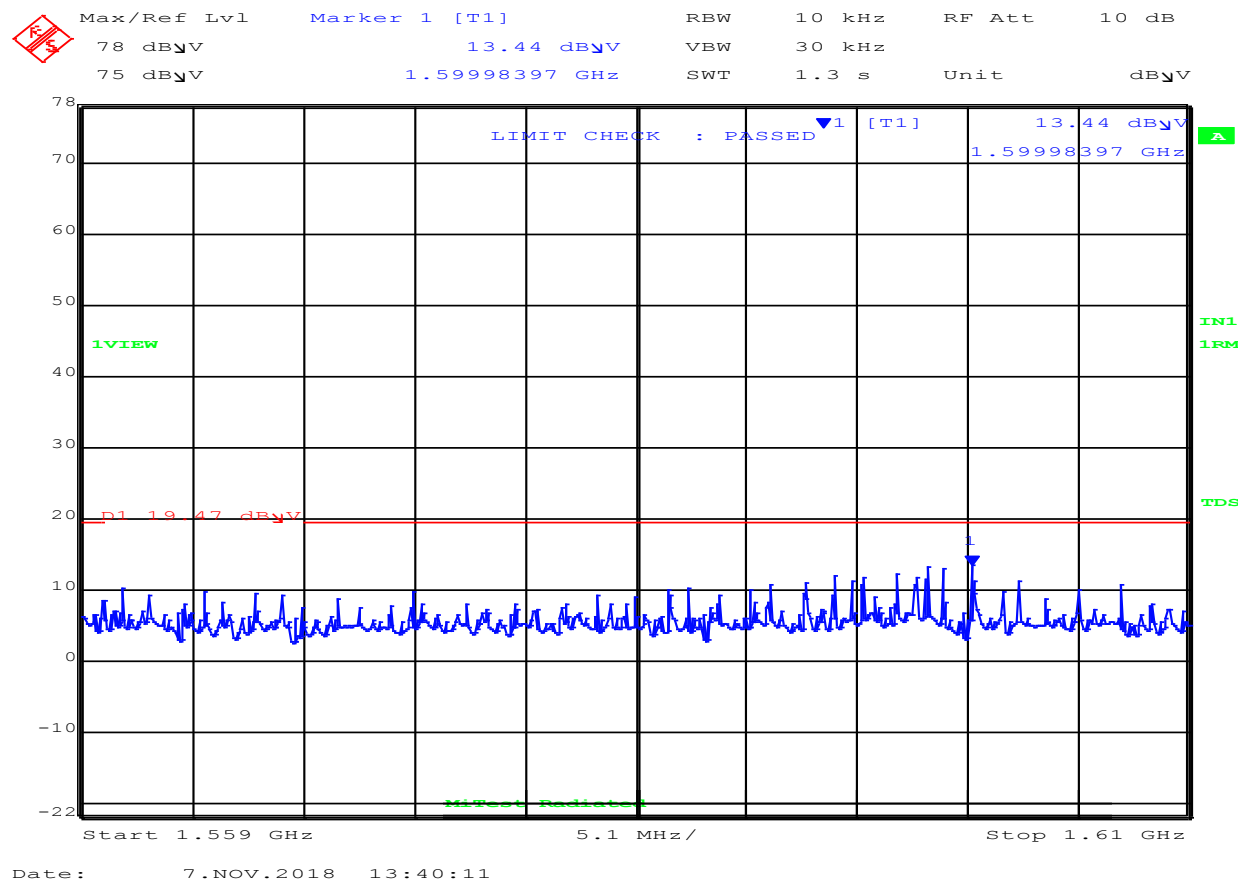
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 4448 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



#### 1559.00-1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 2   | 1599.98       | 1.9*         | Average          | Horizontal | 150    | 0       | 19.47        | -17.6     | Pass       |

#### Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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#### Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

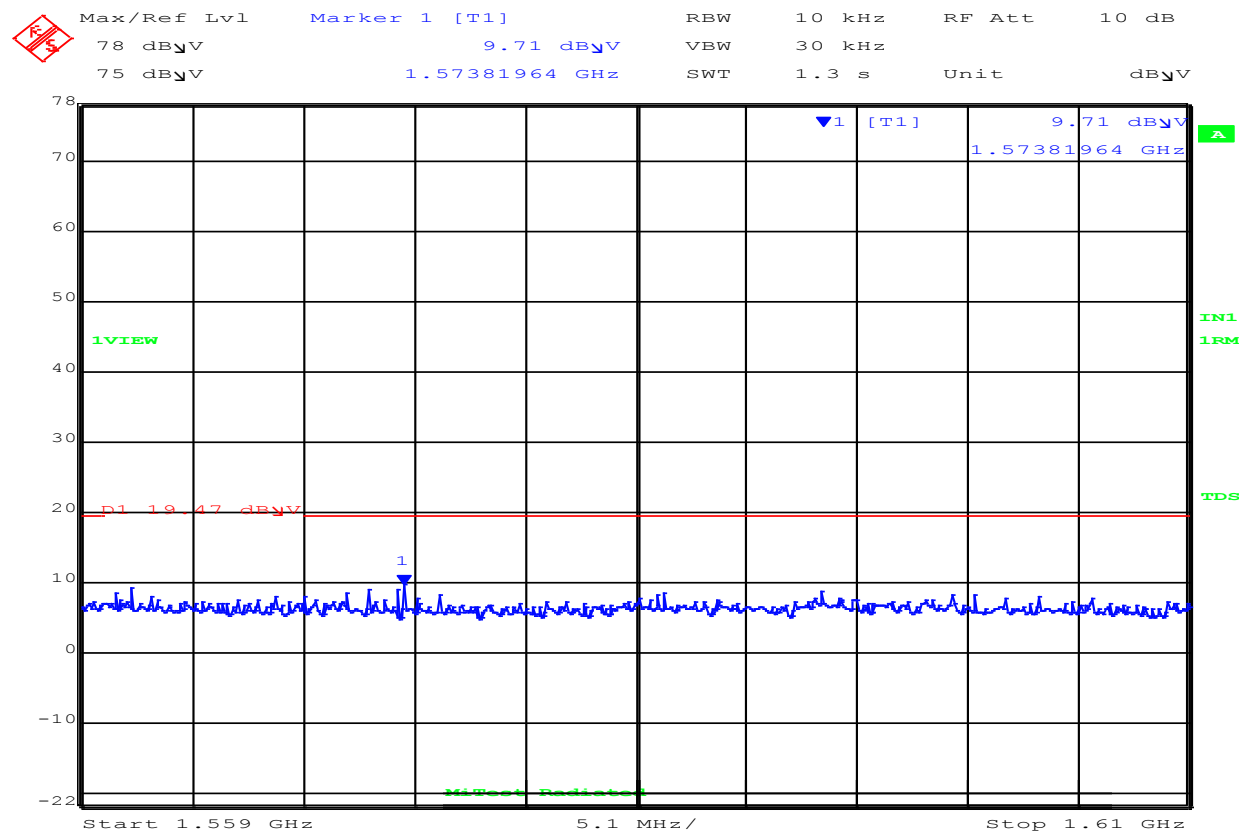
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 4448 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 7.NOV.2018 13:42:06

#### 1559.00-1610.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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6600 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

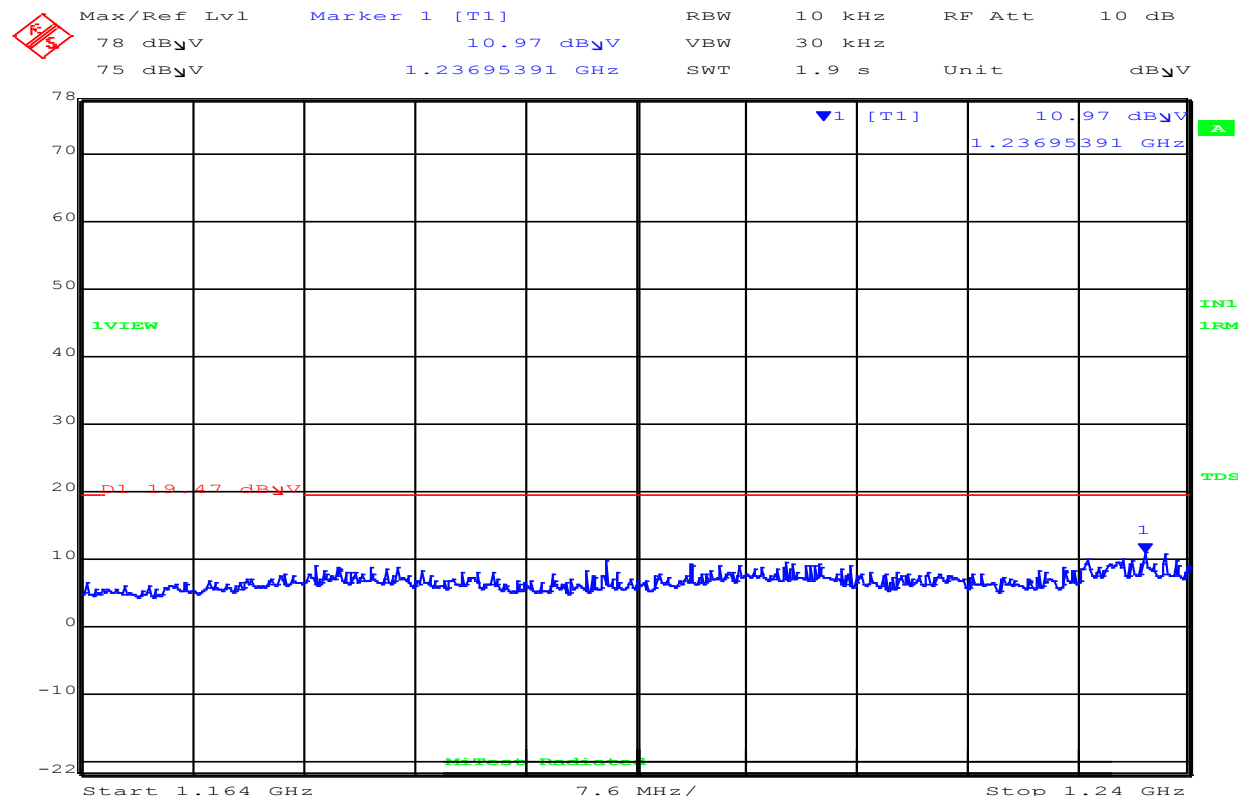
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 7.NOV.2018 13:53:35

| 1164.00-1240.00 MHz                   |               |              |                  |     |        |         |              |           |            |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

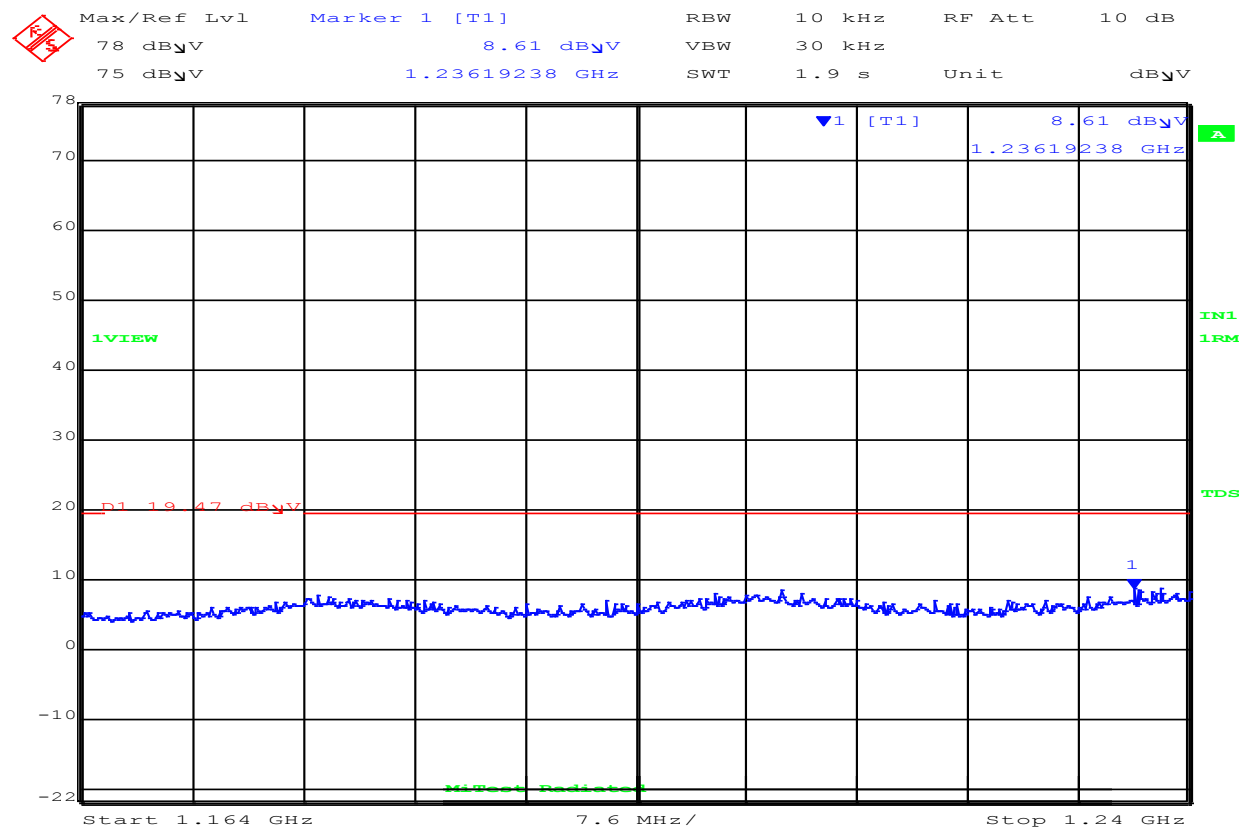
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 7.NOV.2018 13:55:05

#### 1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

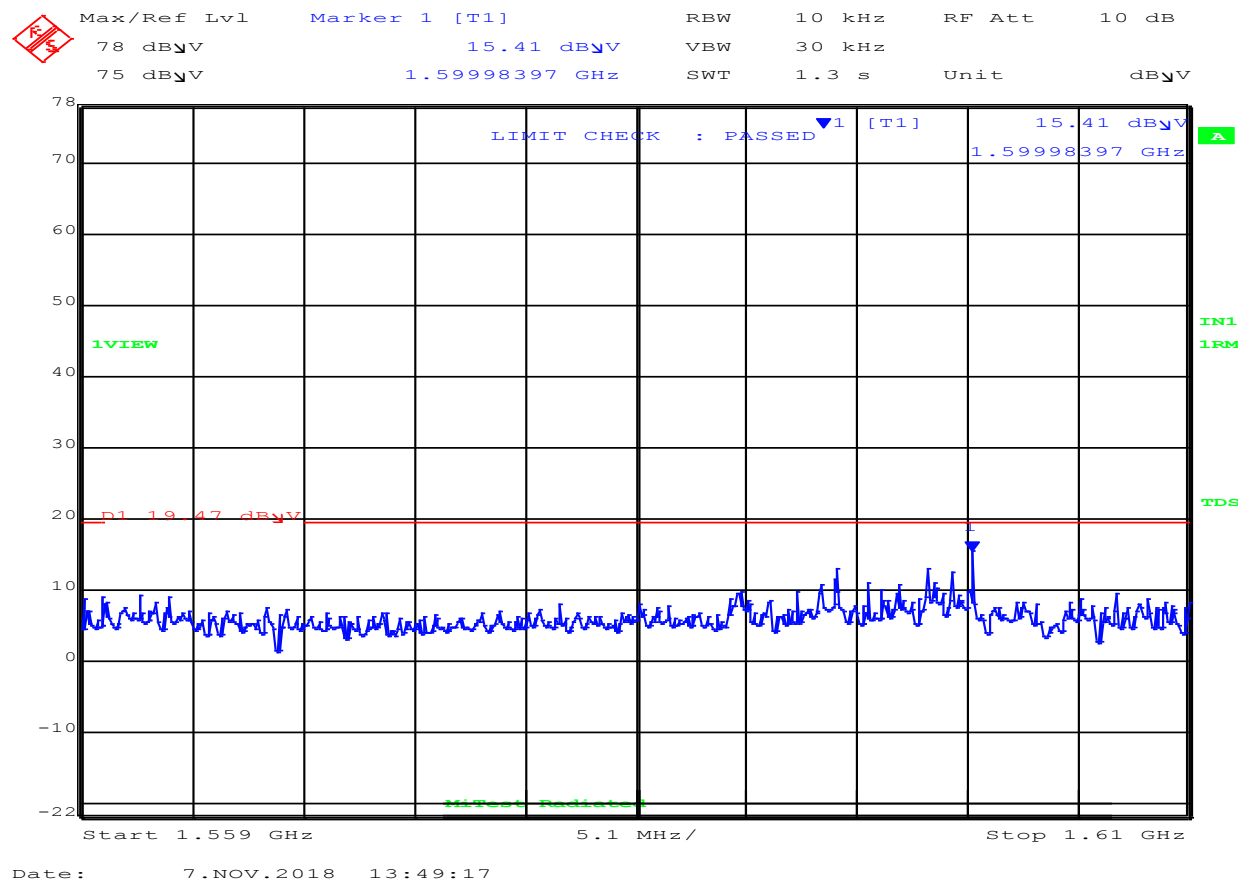
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



#### 1559.00-1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 2   | 1599.98       | 2.0*         | Average          | Horizontal | 150    | 0       | 19.47        | -17.5     | Pass       |

#### Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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#### Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

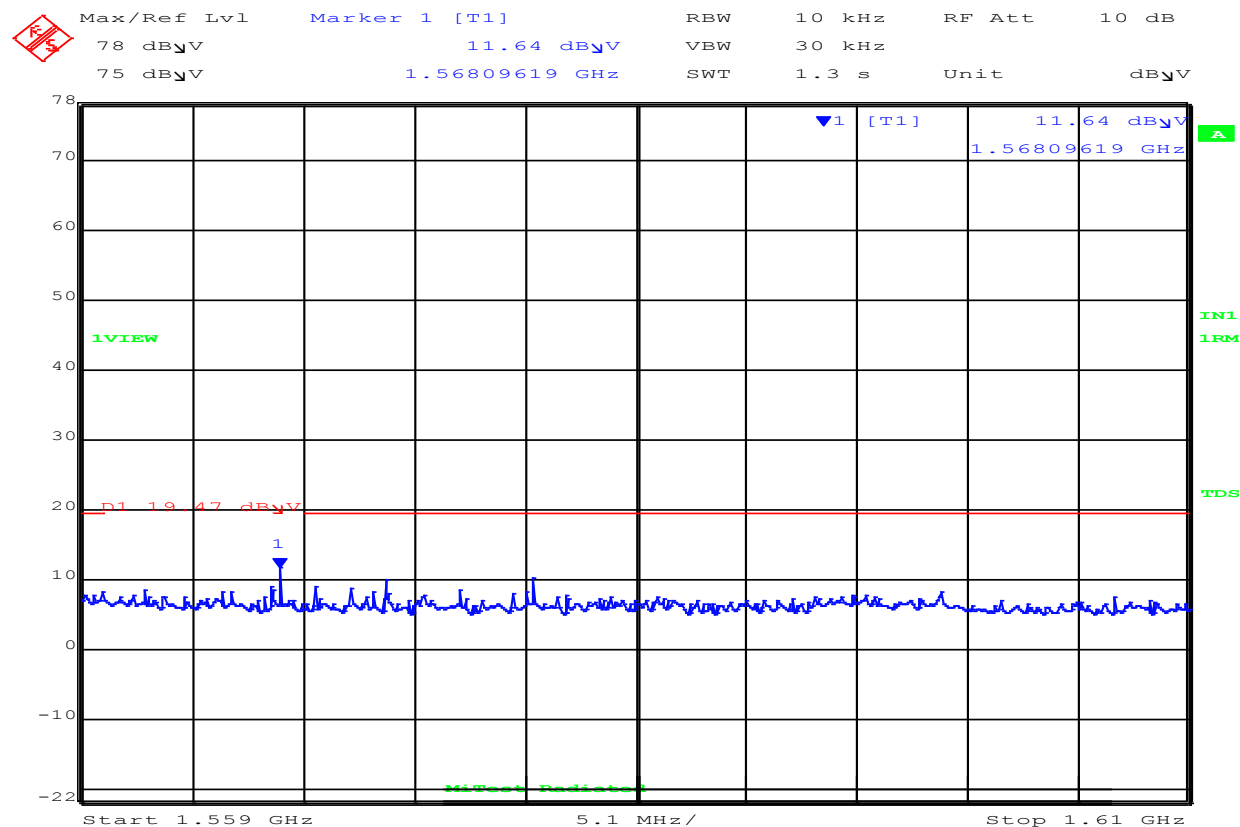
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 7.NOV.2018 13:46:34

#### 1559.00-1610.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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7128 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

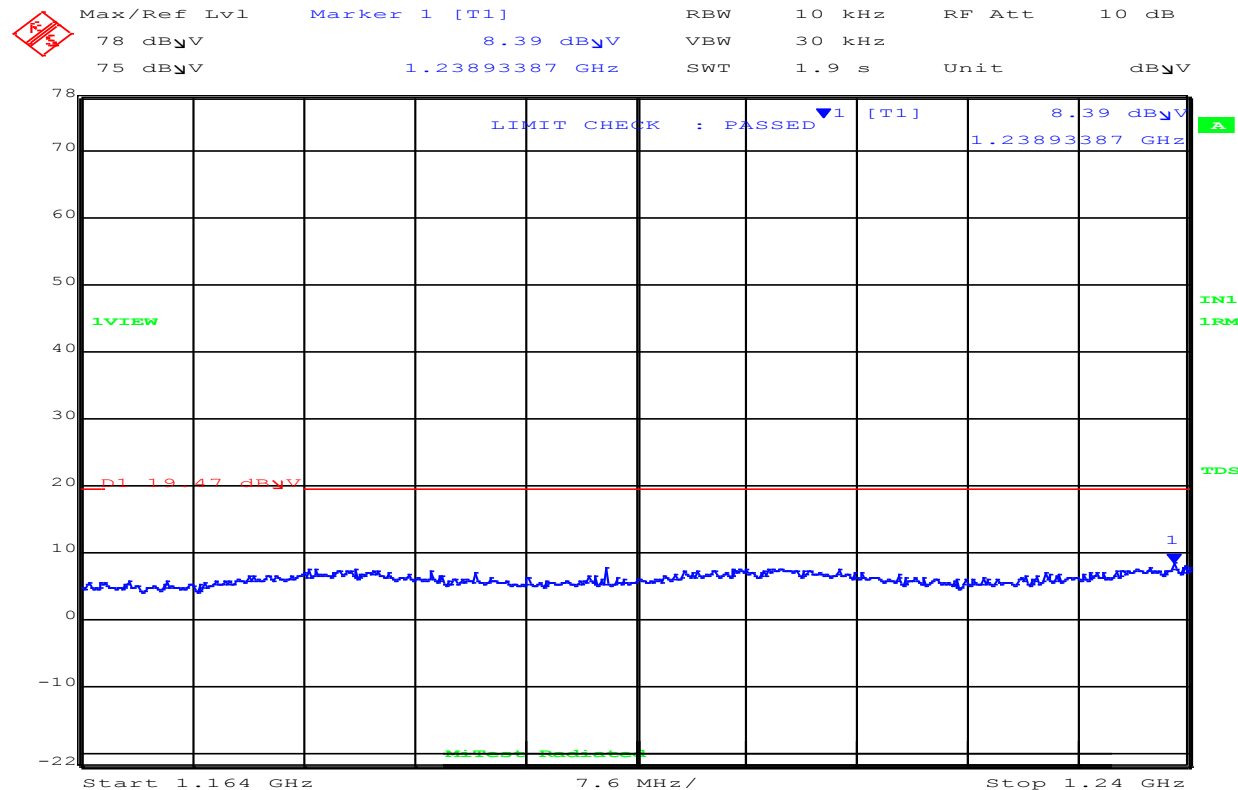
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 7.NOV.2018 14:25:01

1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

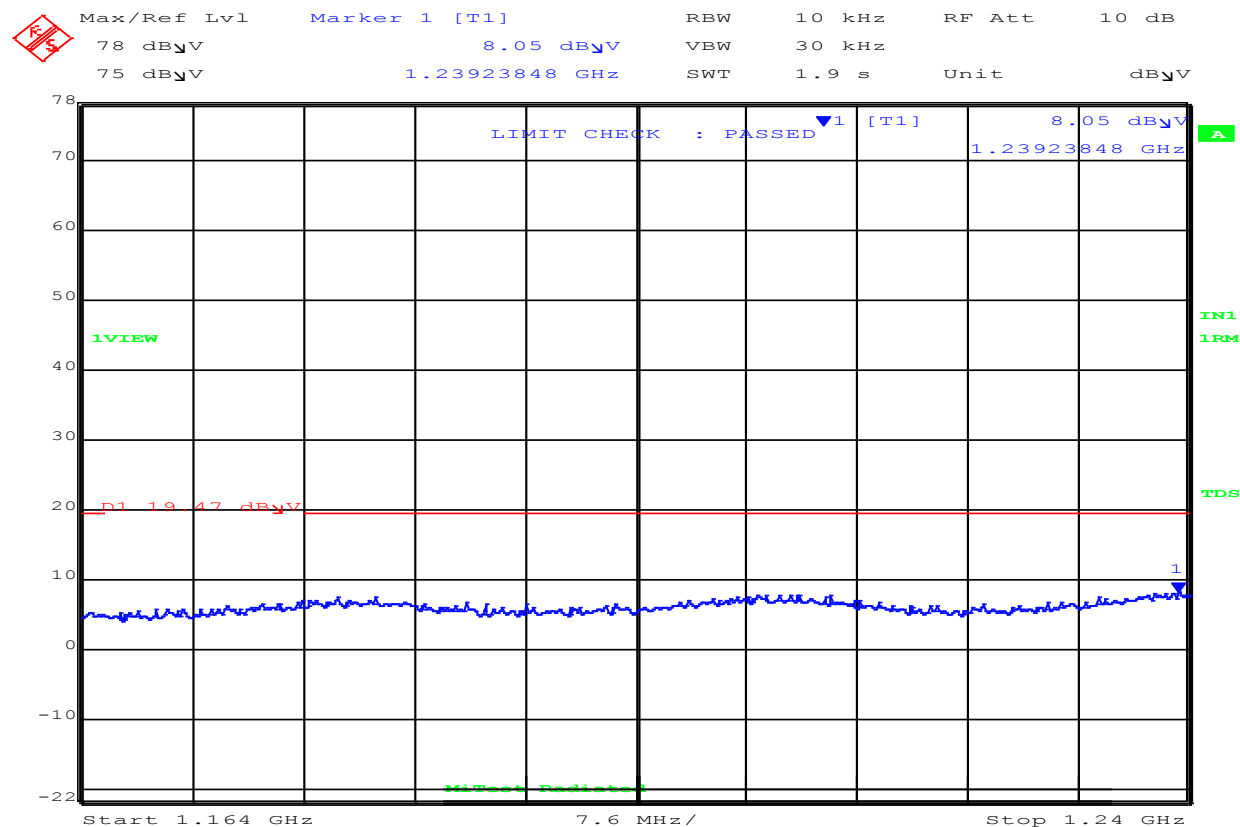
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 7.NOV.2018 14:23:13

#### 1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

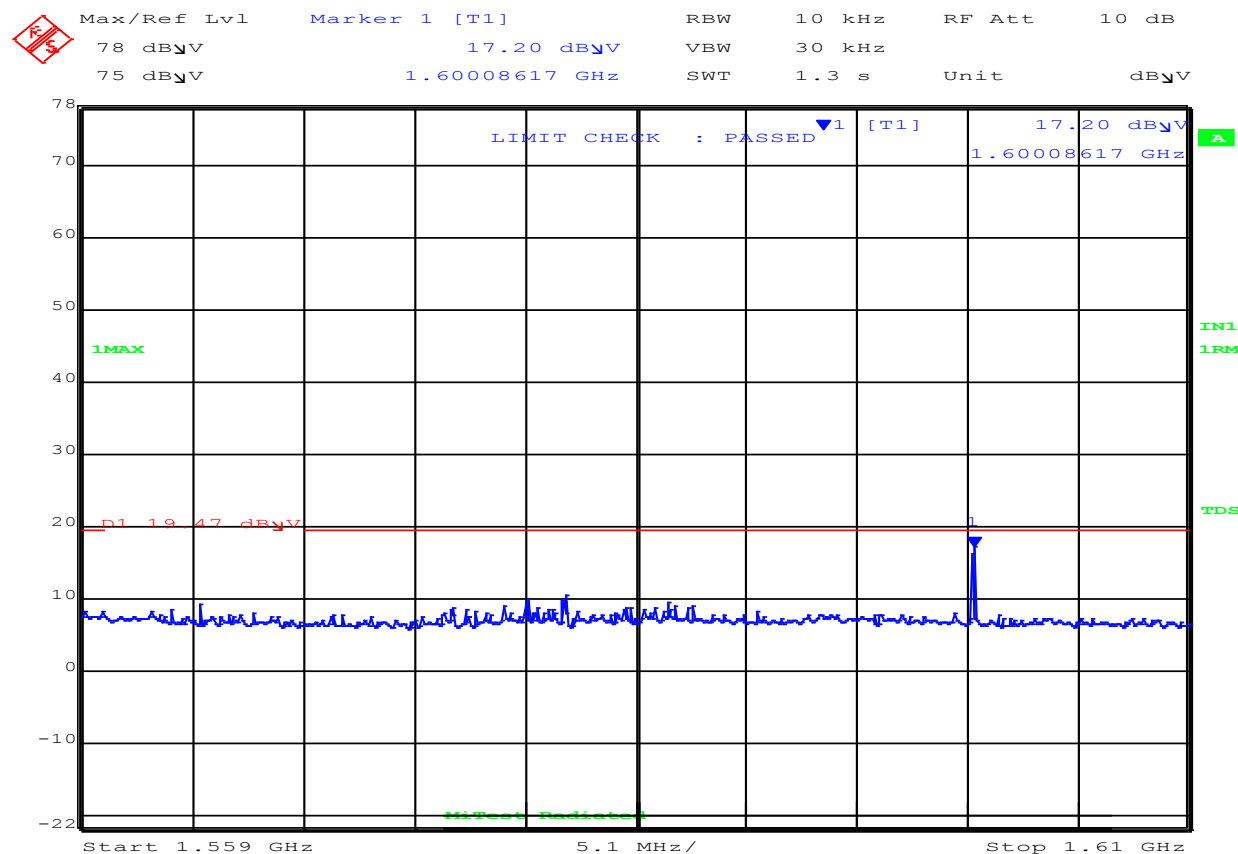
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 7.NOV.2018 14:27:39

#### 1559.00-1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 2   | 1600.08       | 16.5         | Average          | Horizontal | 150    | 0       | 19.47        | -3.0      | Pass       |

#### Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Vertical

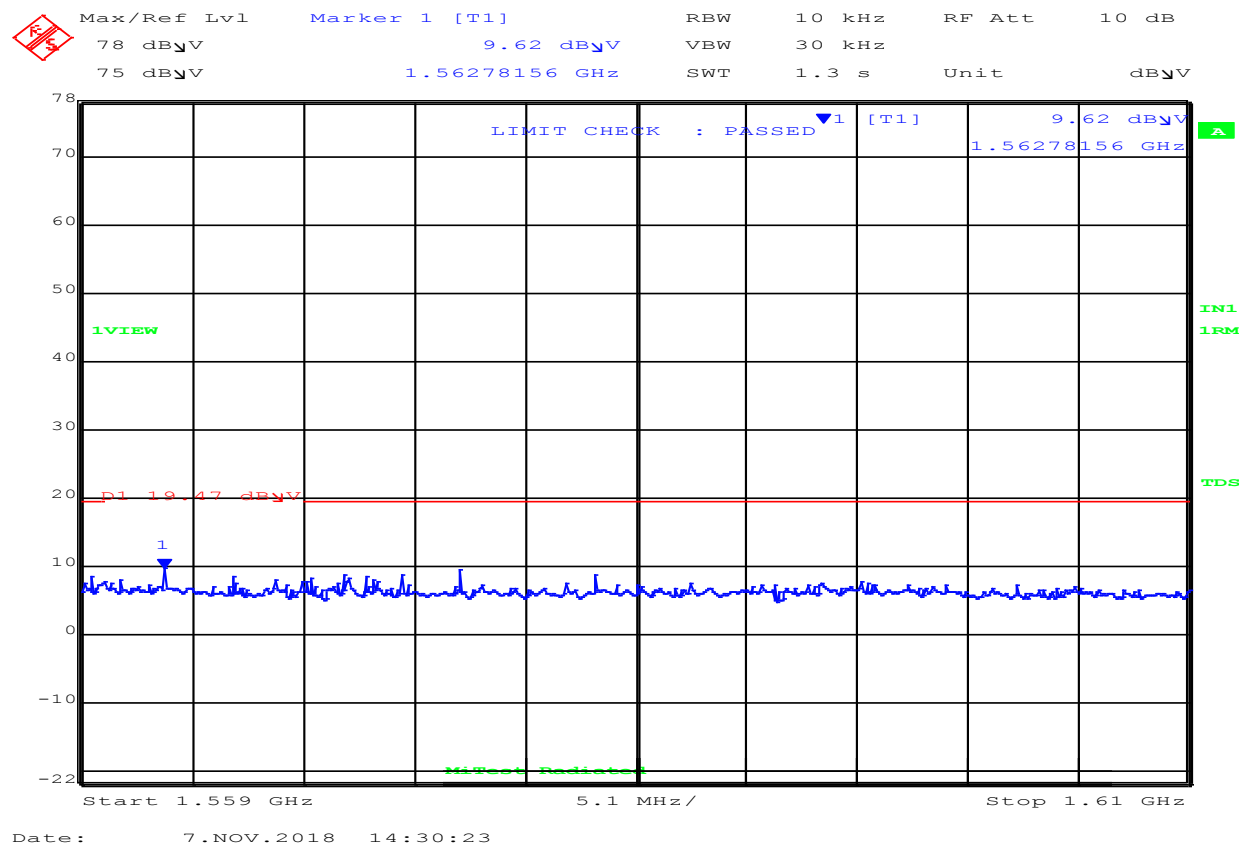
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610 GHz Vertical

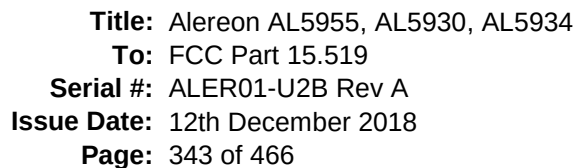
Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



#### 1559.00-1610.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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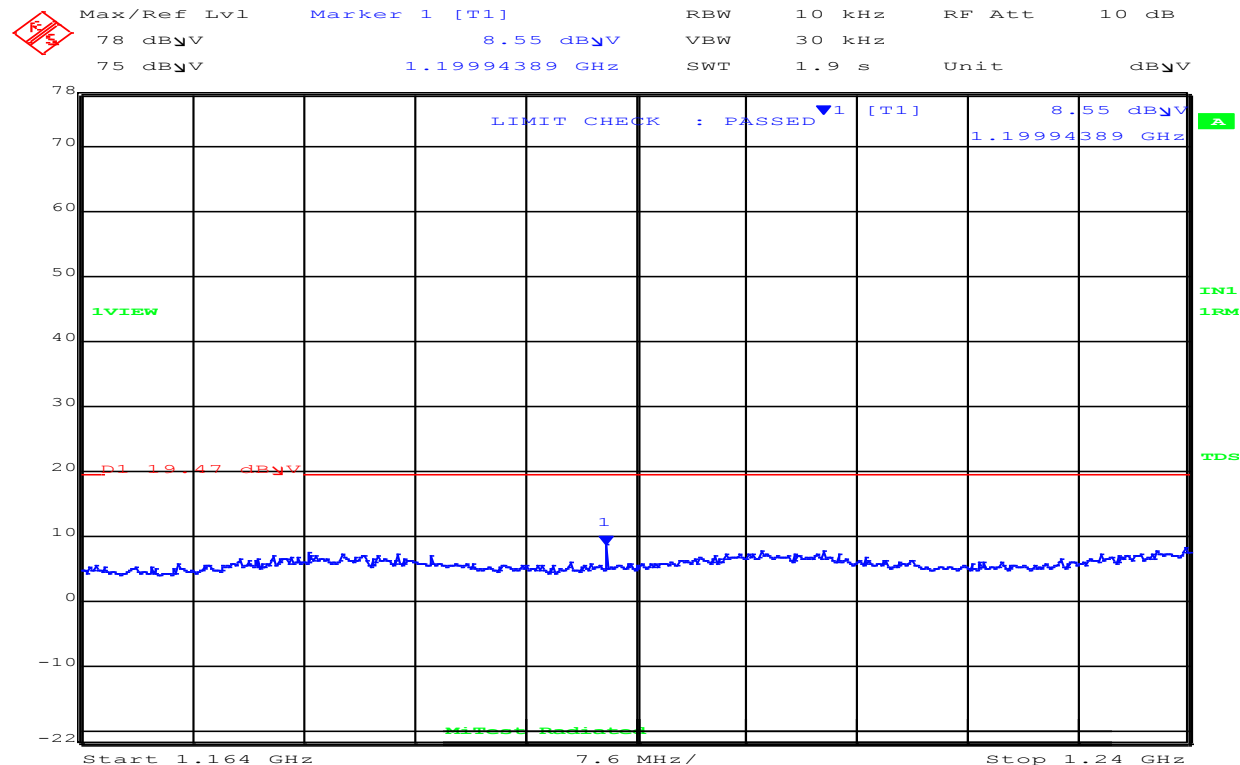
### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

### Test Measurement Results



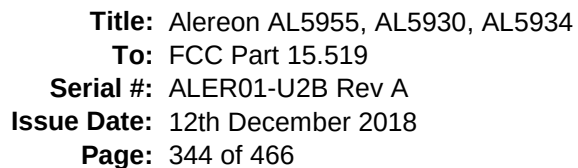
Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 7.NOV.2018 14:47:39

| 1164.00-1240.00 MHz                   |                  |                 |                     |     |           |            |                 |              |               |
|---------------------------------------|------------------|-----------------|---------------------|-----|-----------|------------|-----------------|--------------|---------------|
| Num                                   | Frequency<br>MHz | Level<br>dBμV/m | Measurement<br>Type | Pol | Hgt<br>cm | Azt<br>Deg | Limit<br>dBμV/m | Margin<br>dB | Pass<br>/Fail |
| No Signals Found within 6 dB of Limit |                  |                 |                     |     |           |            |                 |              |               |
| <b>Test Notes:</b><br>Laptop Removed  |                  |                 |                     |     |           |            |                 |              |               |

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|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99

Date: 7.NOV.2018 14:49:00

| 1164.00-1240.00 MHz                   |                  |                 |                     |     |           |            |                 |              |               |
|---------------------------------------|------------------|-----------------|---------------------|-----|-----------|------------|-----------------|--------------|---------------|
| Num                                   | Frequency<br>MHz | Level<br>dBμV/m | Measurement<br>Type | Pol | Hgt<br>cm | Azt<br>Deg | Limit<br>dBμV/m | Margin<br>dB | Pass<br>/Fail |
| No Signals Found within 6 dB of Limit |                  |                 |                     |     |           |            |                 |              |               |
| <b>Test Notes:</b><br>Laptop Removed  |                  |                 |                     |     |           |            |                 |              |               |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

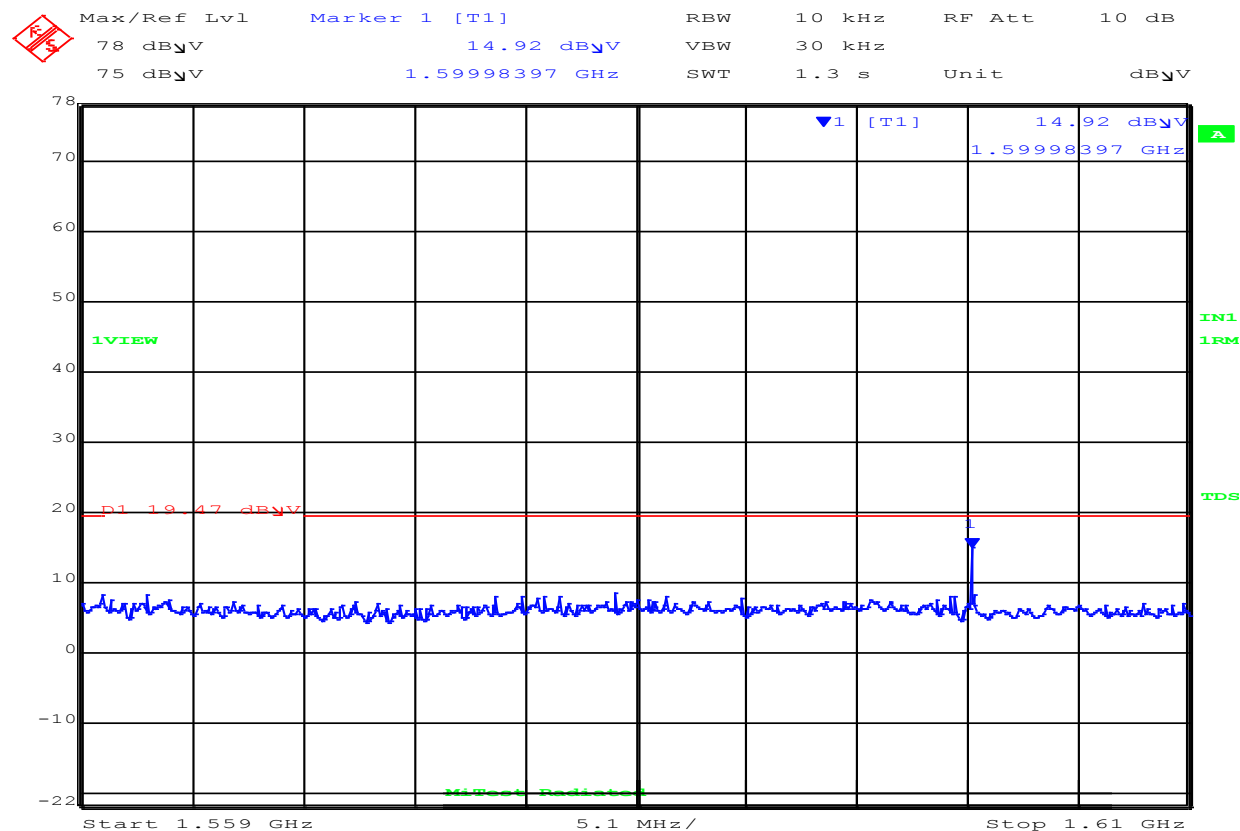
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 7.NOV.2018 14:44:44

#### 1559.00-1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 2   | 1599.98       | 4.8          | Average          | Horizontal | 150    | 0       | 19.47        | -14.7     | Pass       |

#### Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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#### Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

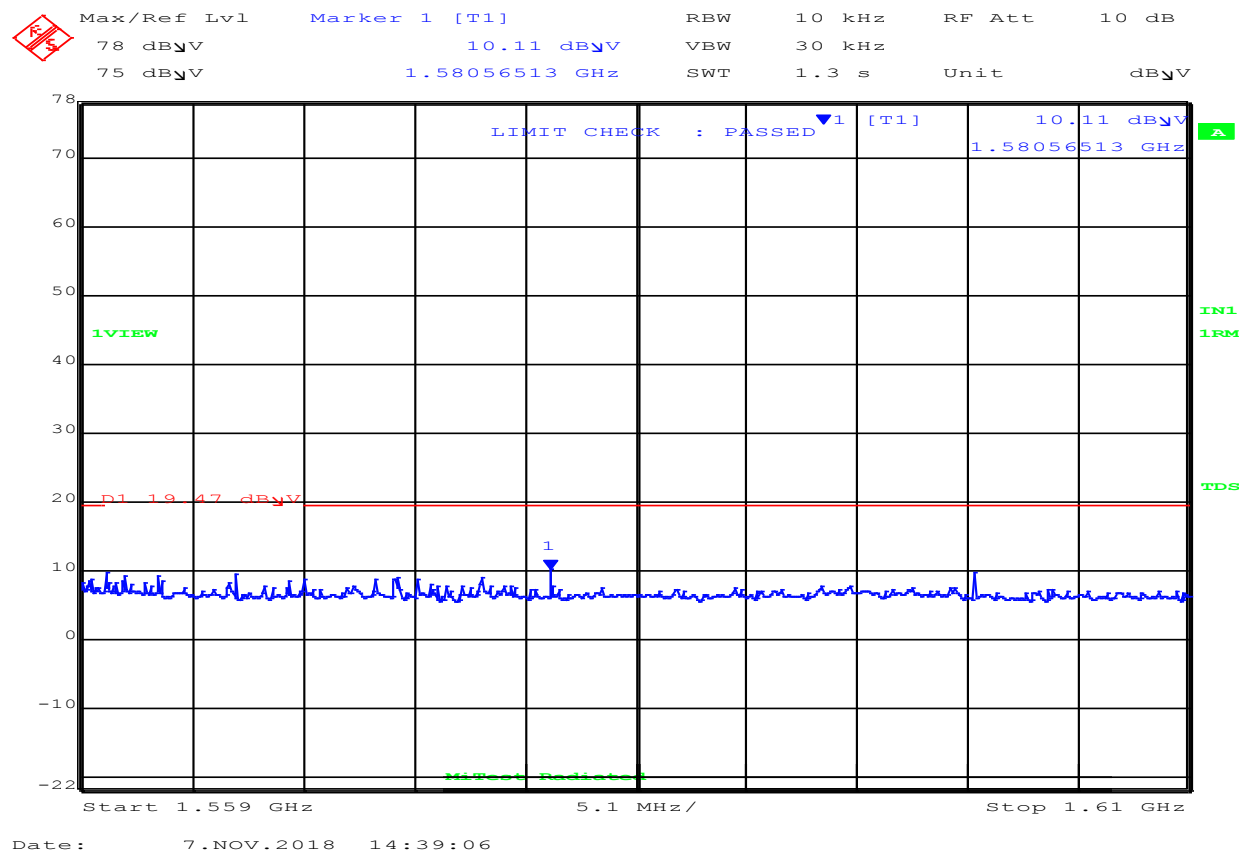
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



#### 1559.00-1610.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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8184 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

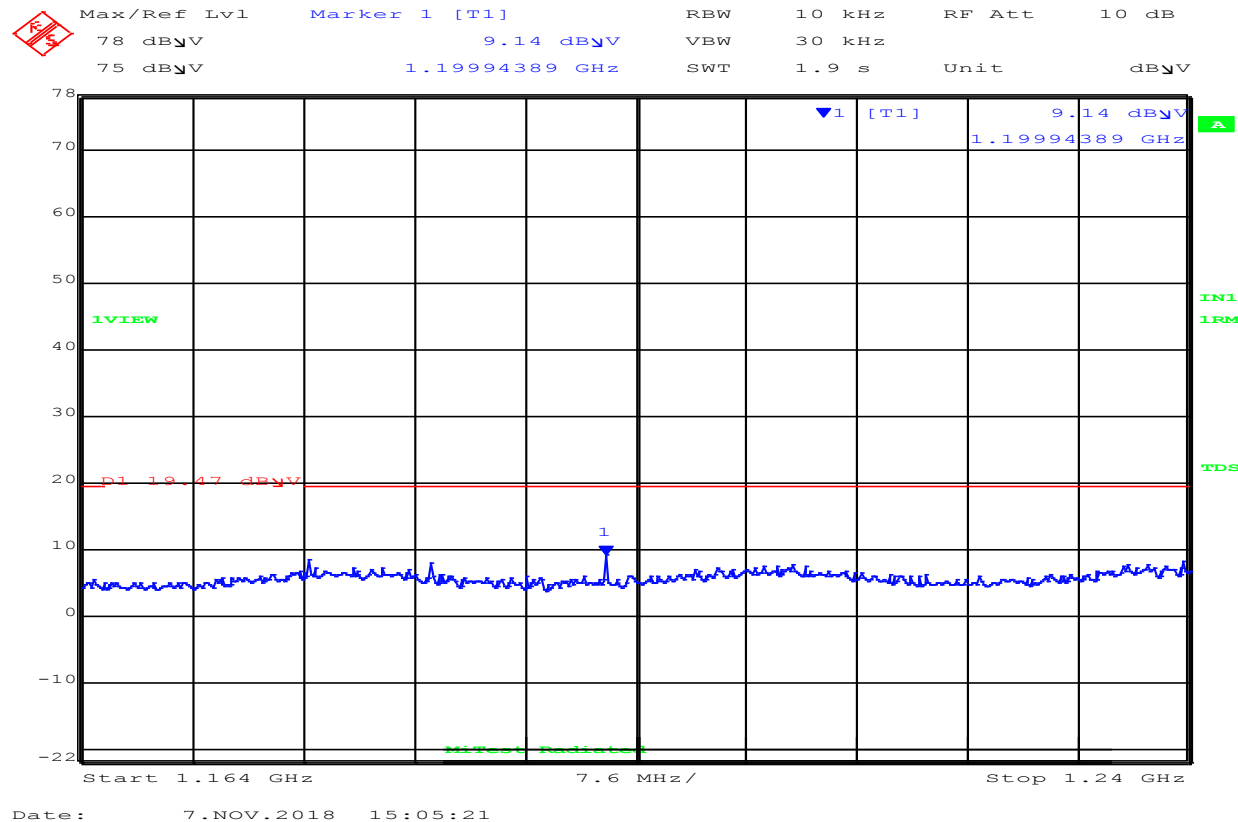
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

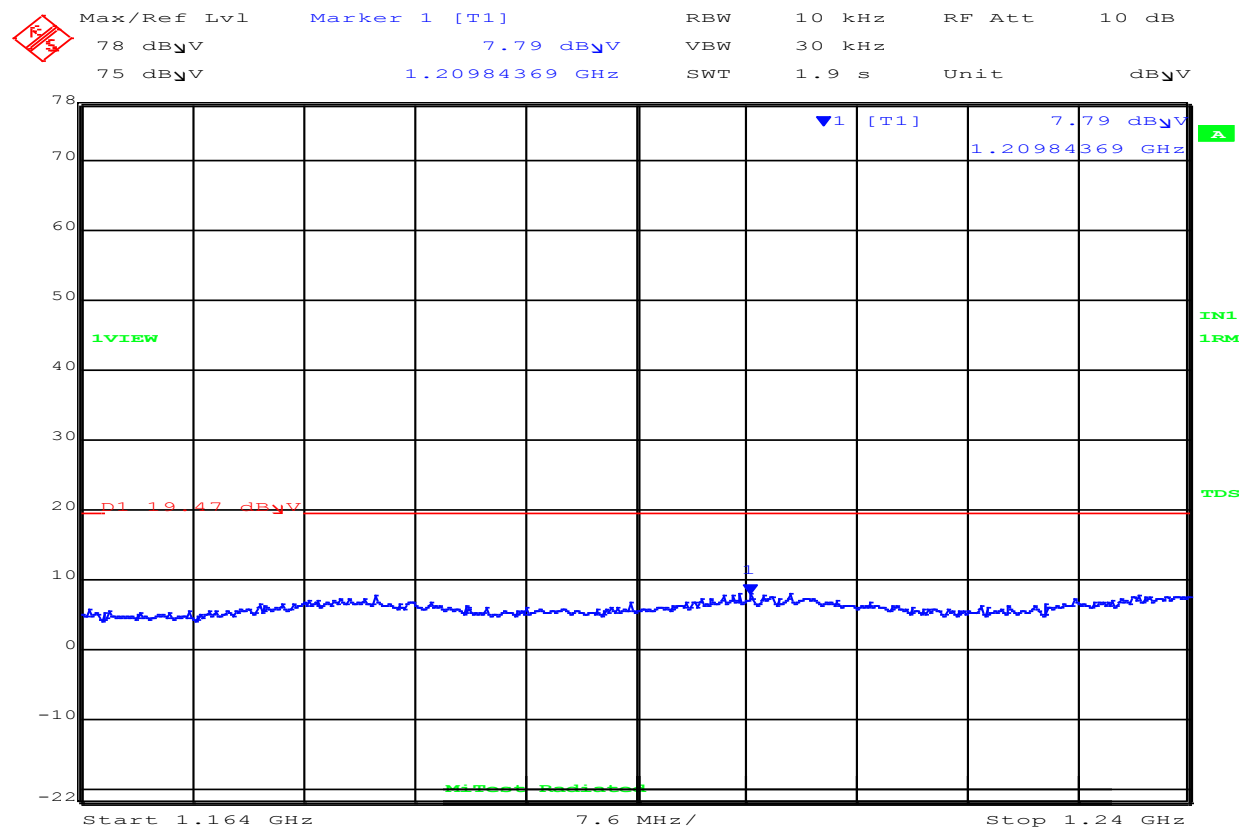
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99

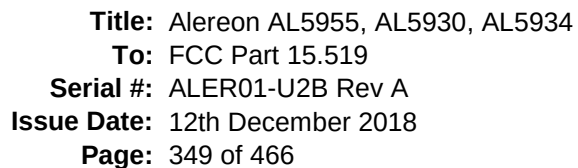


Date: 7.NOV.2018 15:03:14

#### 1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



|             |  |
|-------------|--|
| Test Notes: |  |
|-------------|--|

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Vertical

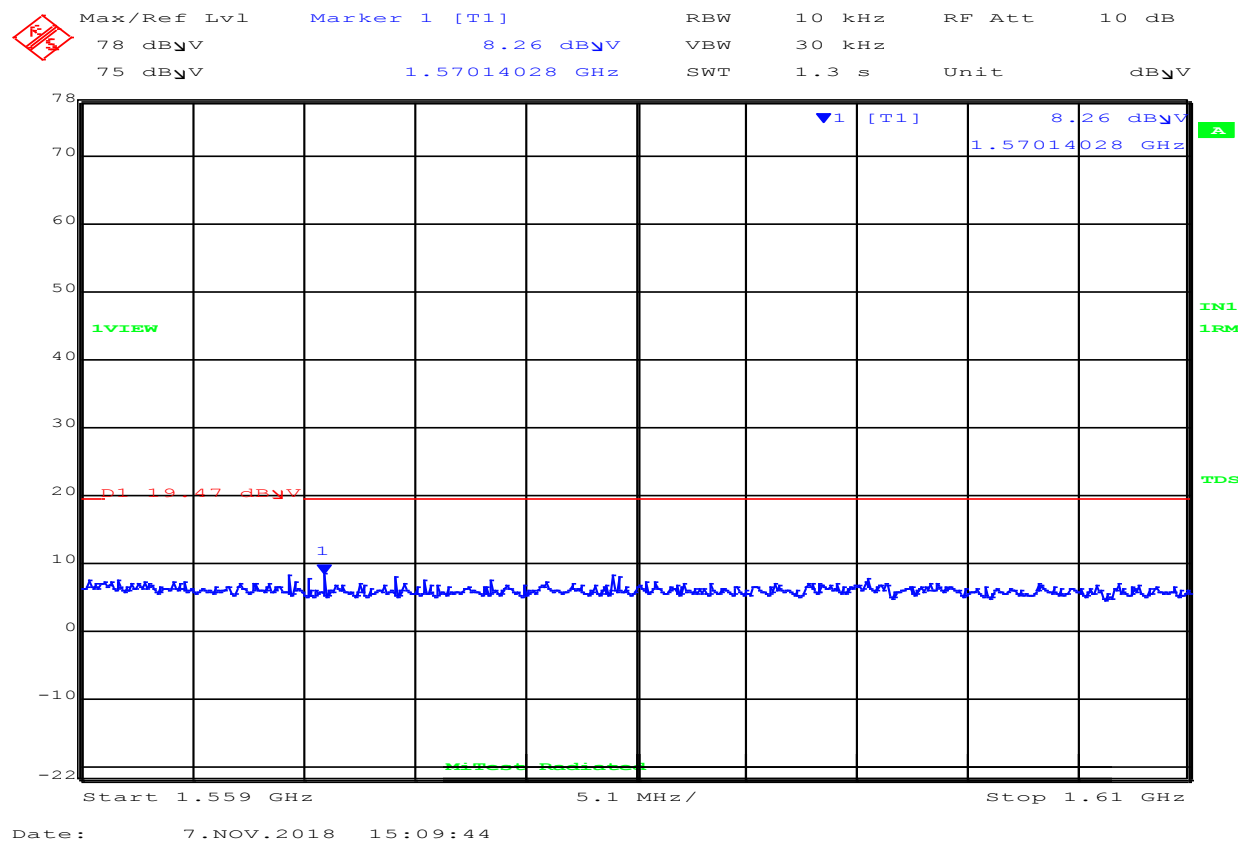
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610 GHz Vertical

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



#### 1559.00-1610.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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Serial #: ALER01-U2B Rev A  
Issue Date: 12th December 2018  
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8712 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

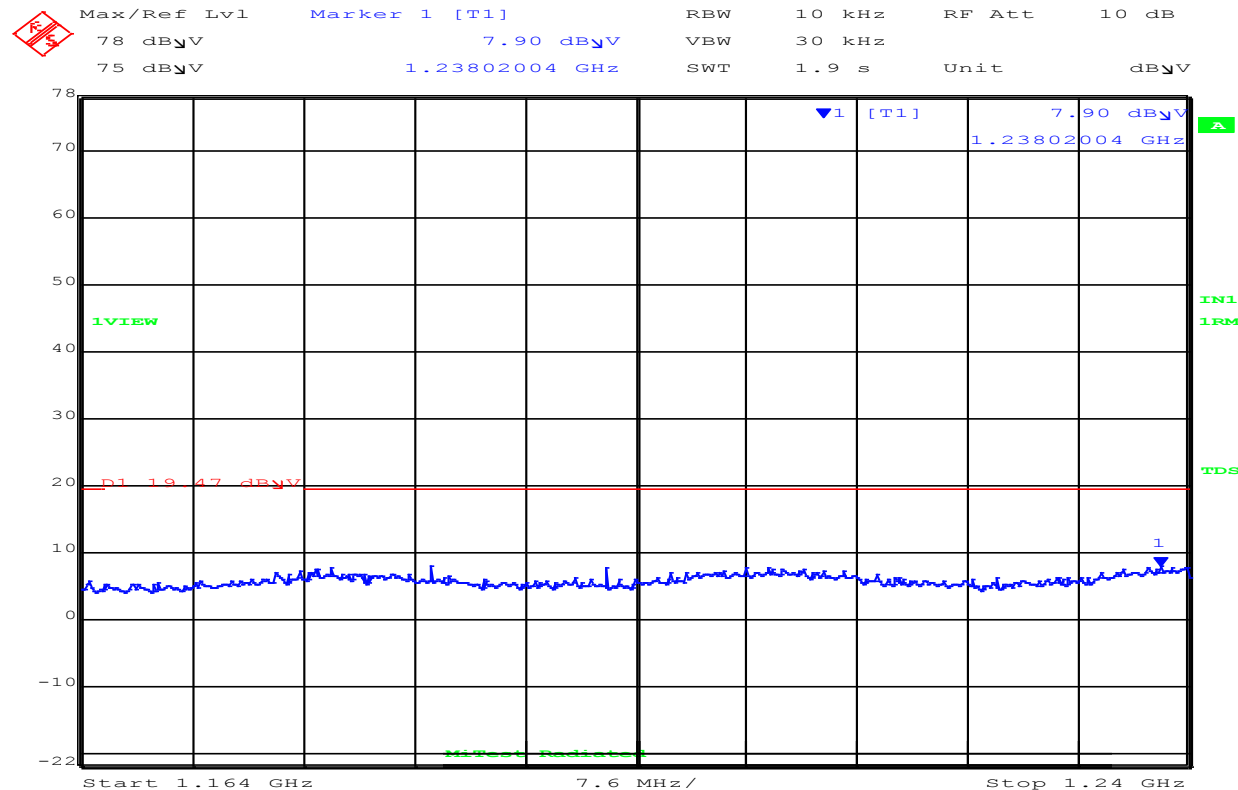
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 7.NOV.2018 15:18:47

1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

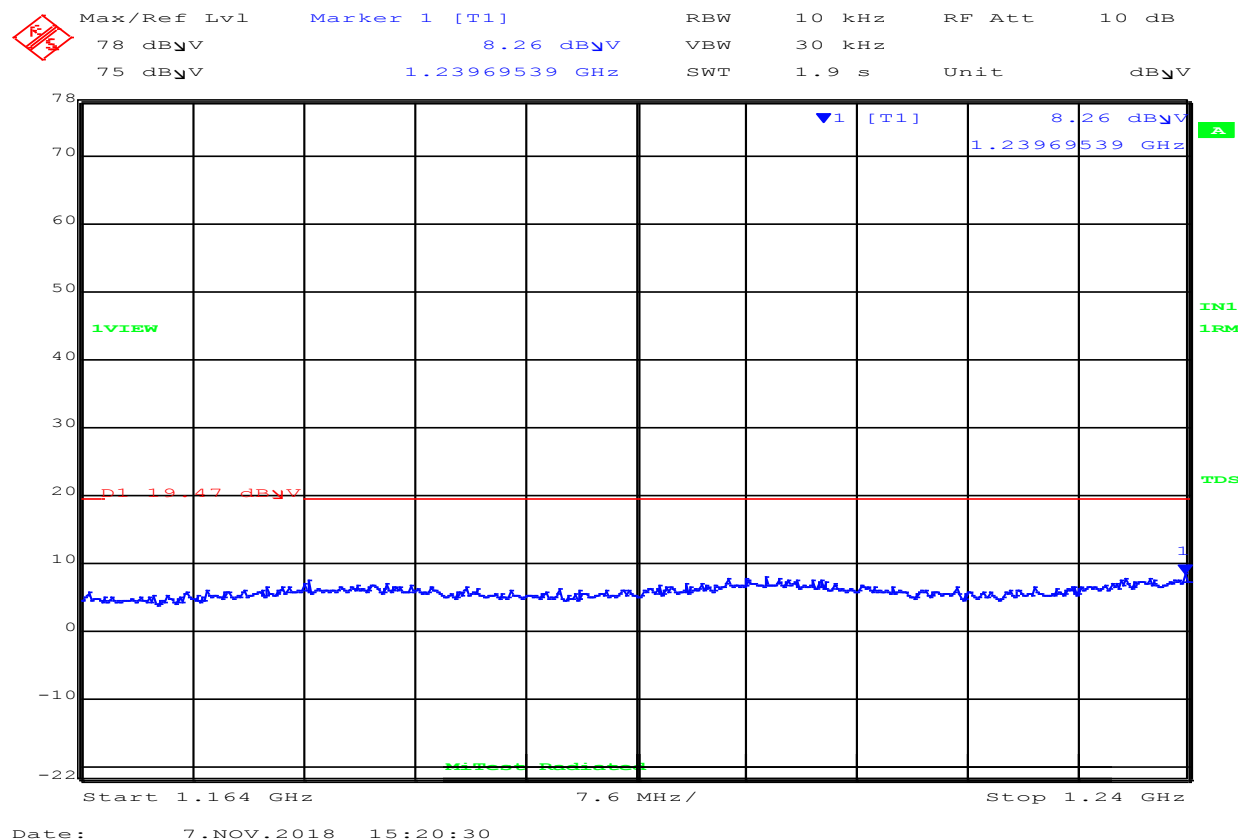
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



#### 1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

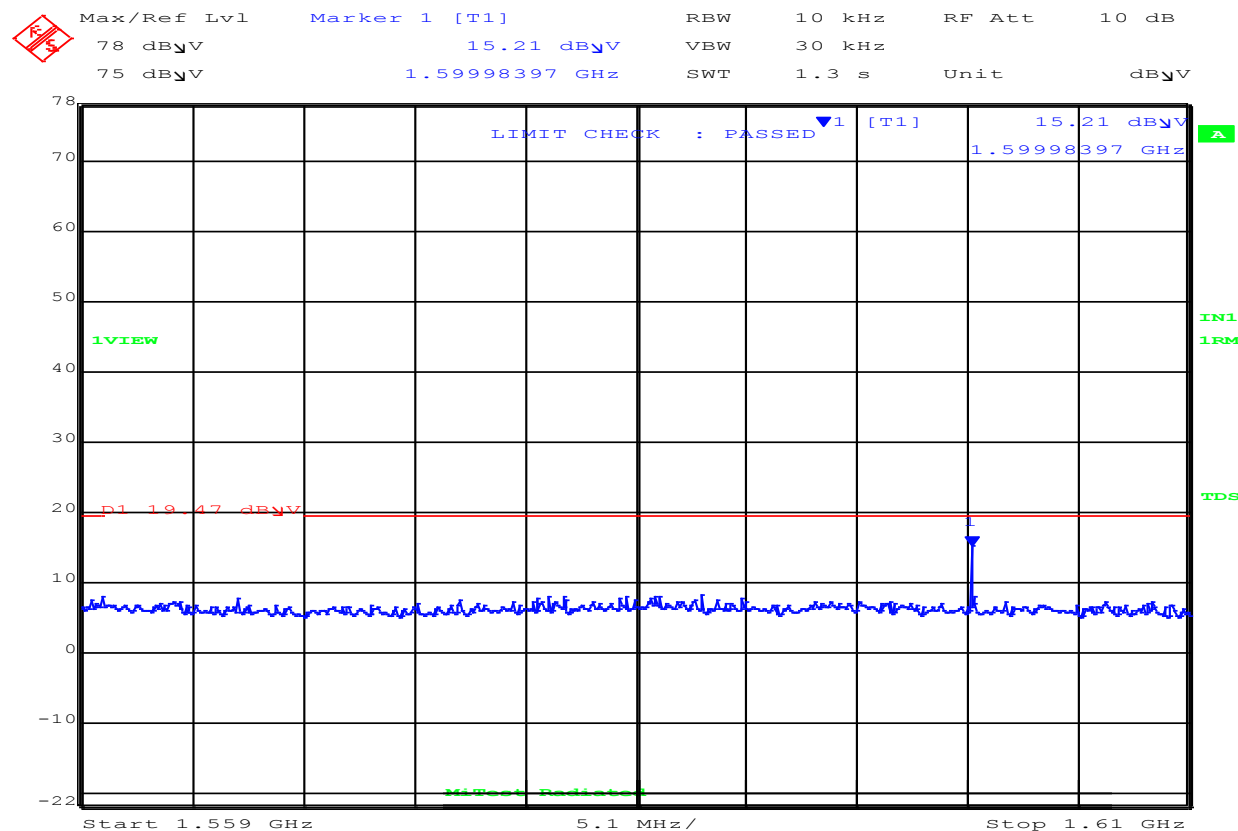
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 7.NOV.2018 15:14:23

#### 1559.00-1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 2   | 1599.98       | 12.2*        | Average          | Horizontal | 150    | 0       | 19.47        | -7.3      | Pass       |

#### Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Vertical

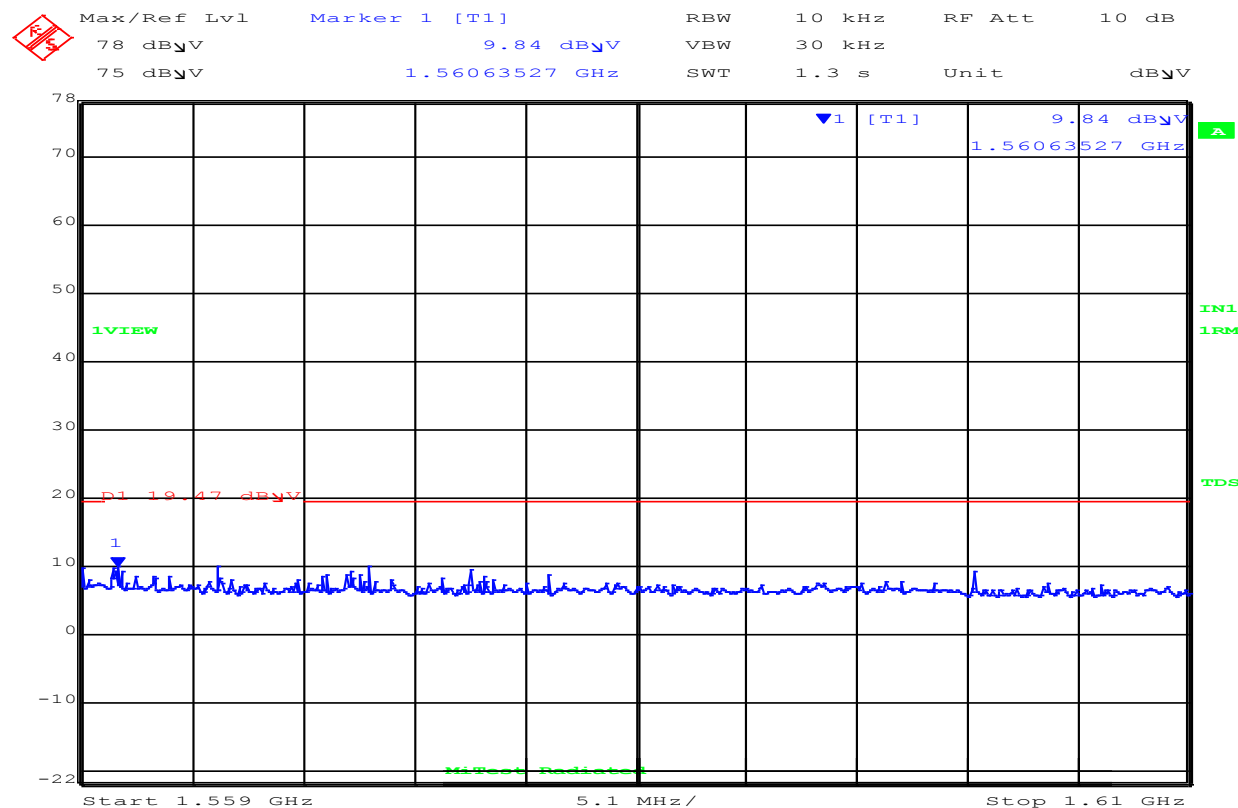
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610 GHz Vertical

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 7.NOV.2018 15:13:09

| 1559.00-1610.00 MHz                   |               |              |                  |     |        |         |              |           |            |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### 9.4.2.2. Camouflage AL5955

3432 MHz

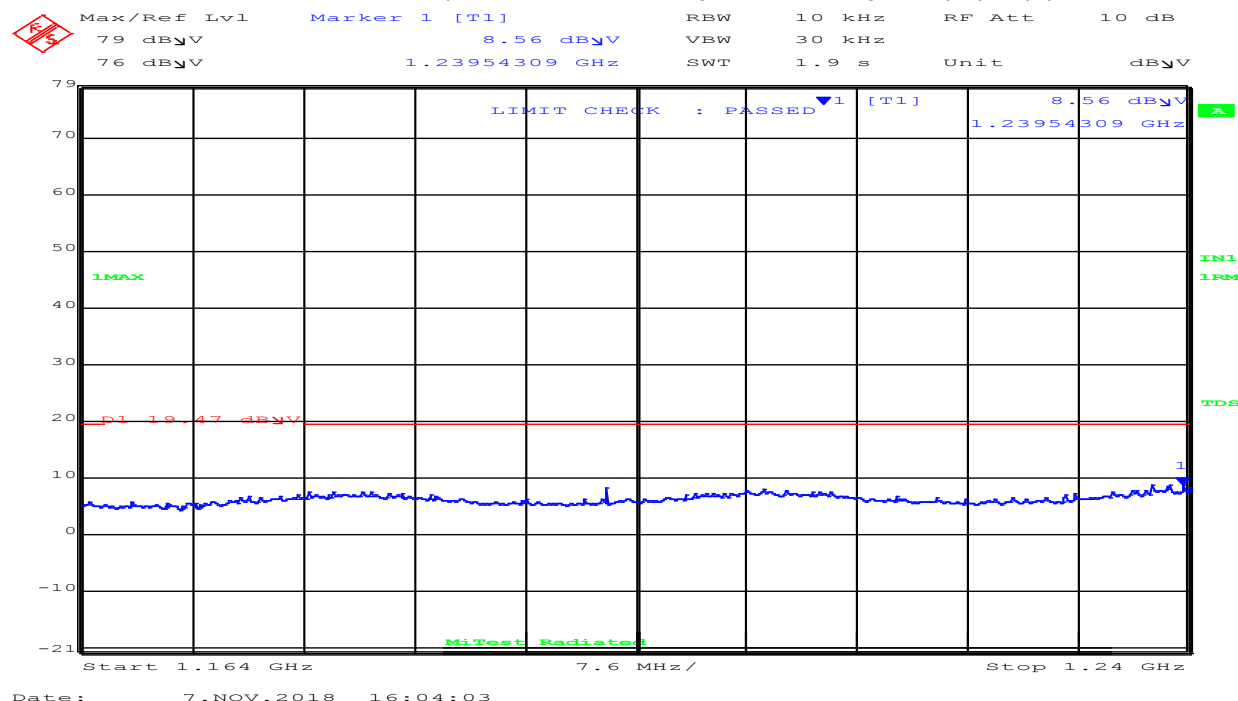
##### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 1.0            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3432.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |



##### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 3432 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



##### Test Measurement Results

1164.00-1240.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
|-----|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|

No Signals Found within 6 dB of Limit

##### Test Notes:

Laptop Removed

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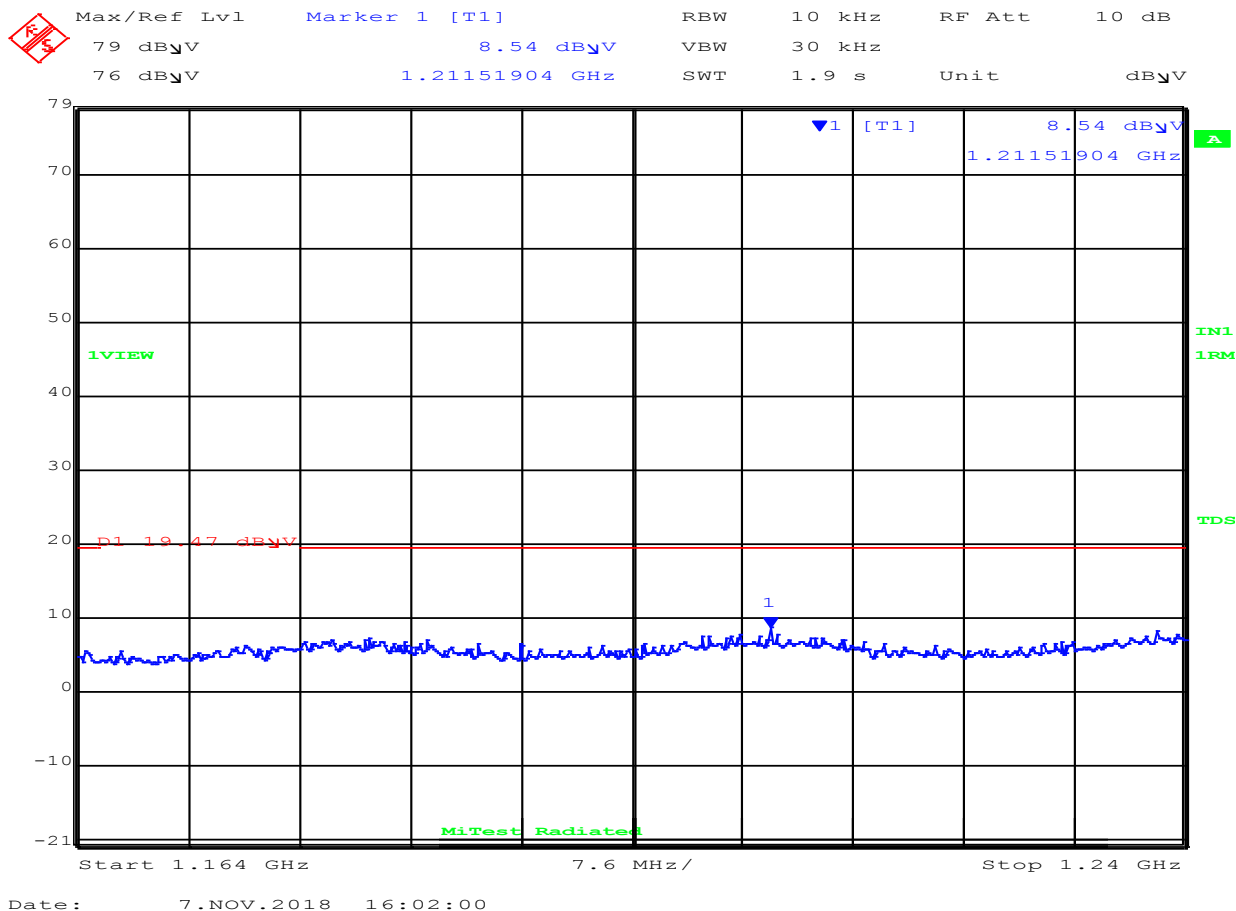
#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 1.0            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3432.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 3432 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



#### Test Measurement Results

| 1164.00-1240.00 MHz                   |               |              |                  |     |        |         |              |           |            |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610GHz Horizontal

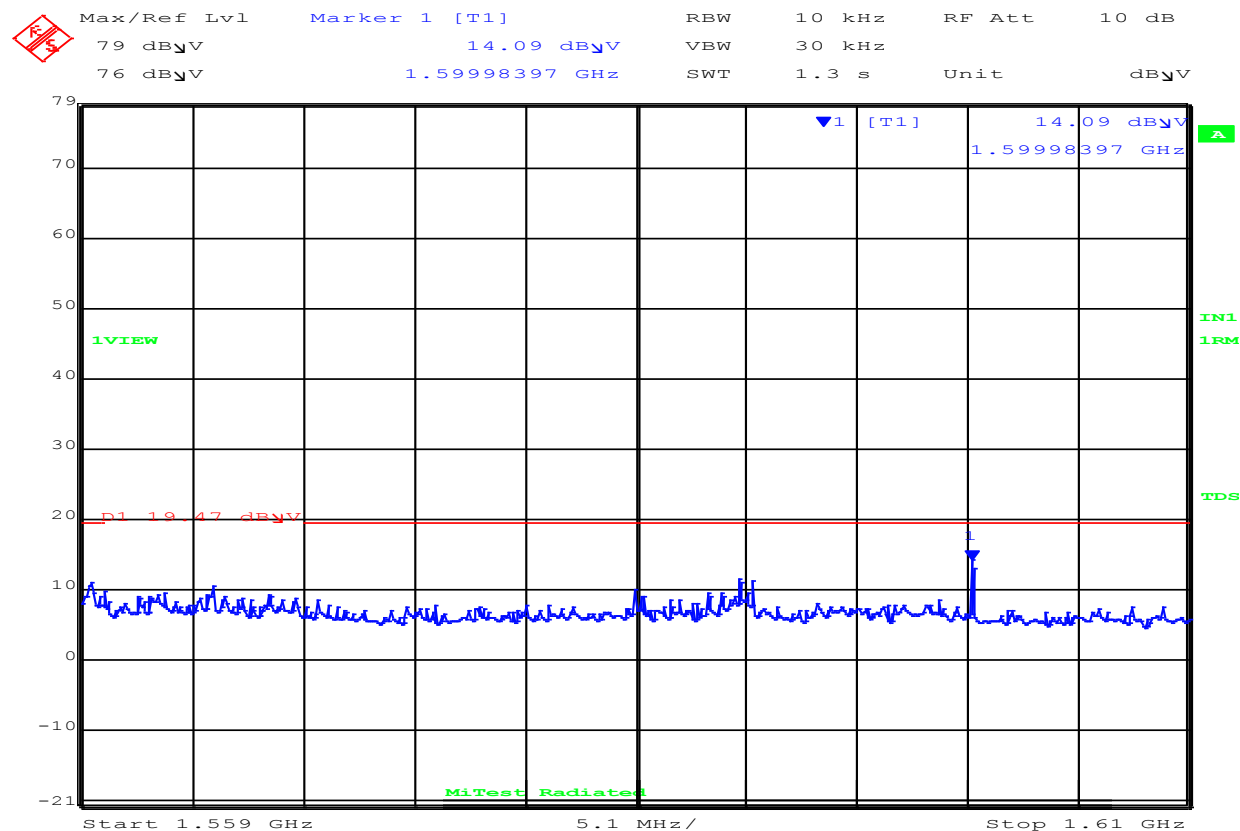
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 1.0            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3432.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 3432 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 7.NOV.2018 16:06:26

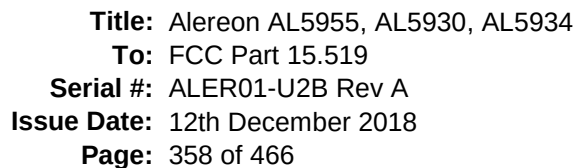
#### 1559.00-1610.00 MHz

| Num | Frequency MHz | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|-----|---------------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|
| 1   | 1599.98       | 3.2*               | Average          | Horizontal | 150    | 0       | 19.47              | -16.27    | Pass       |

#### Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard.

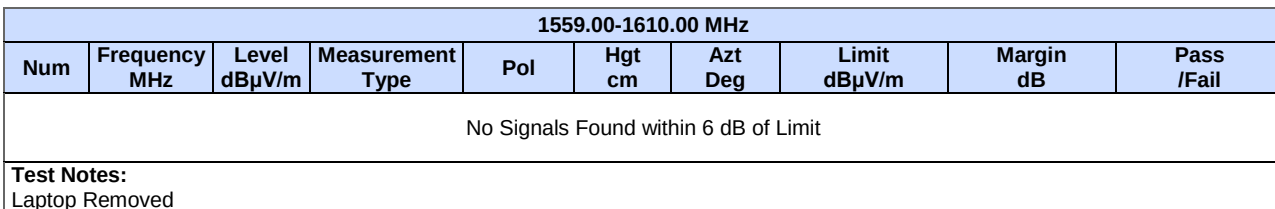
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|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 1.0            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3432.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |



|                                                                                   |             |                |     |        |        |       |
|-----------------------------------------------------------------------------------|-------------|----------------|-----|--------|--------|-------|
|  | Max/Ref Lvl | Marker 1 [T1]  | RBW | 10 kHz | RF Att | 10 dB |
|                                                                                   | 79 dBμV     | 12.21 dBμV     | VBW | 30 kHz |        |       |
|                                                                                   | 76 dBμV     | 1.56288377 GHz | SWT | 1.3 s  | Unit   | dBμV  |



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3960 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

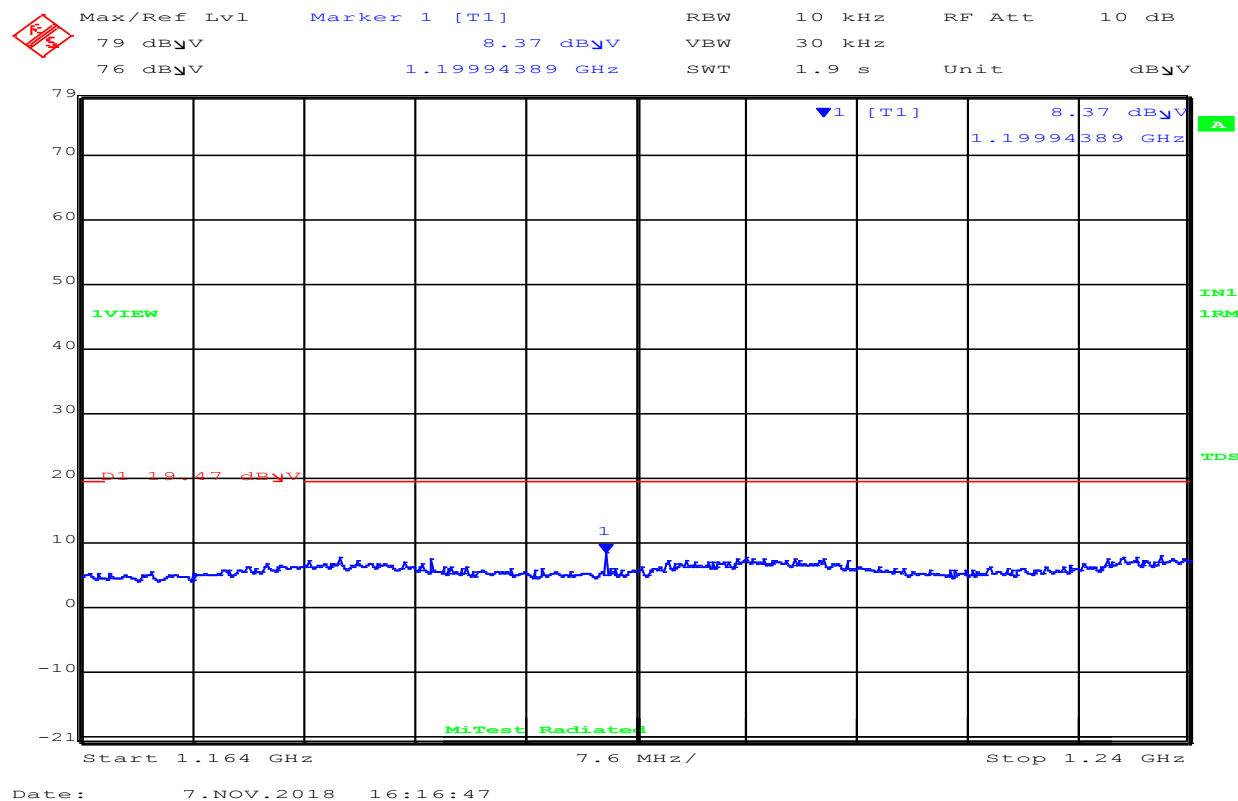
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

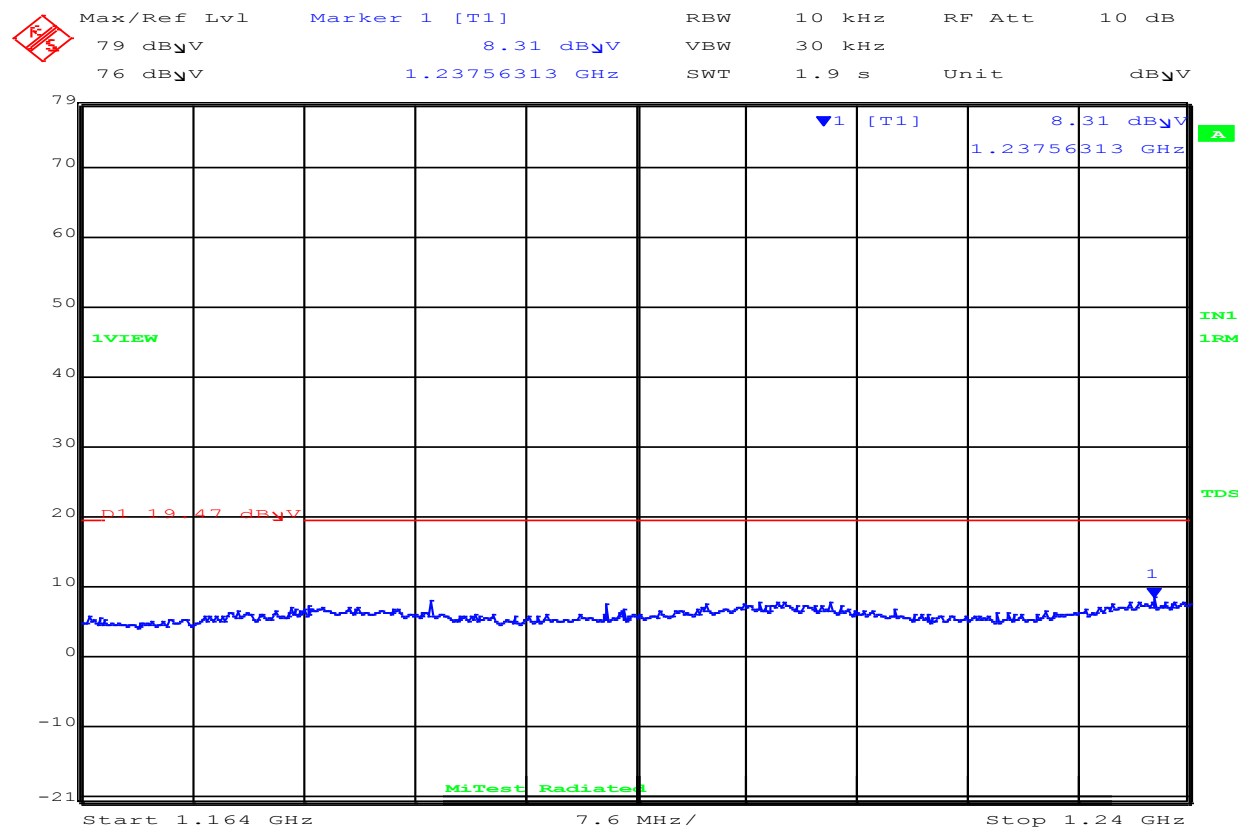
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 7.NOV.2018 16:17:53

#### 1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

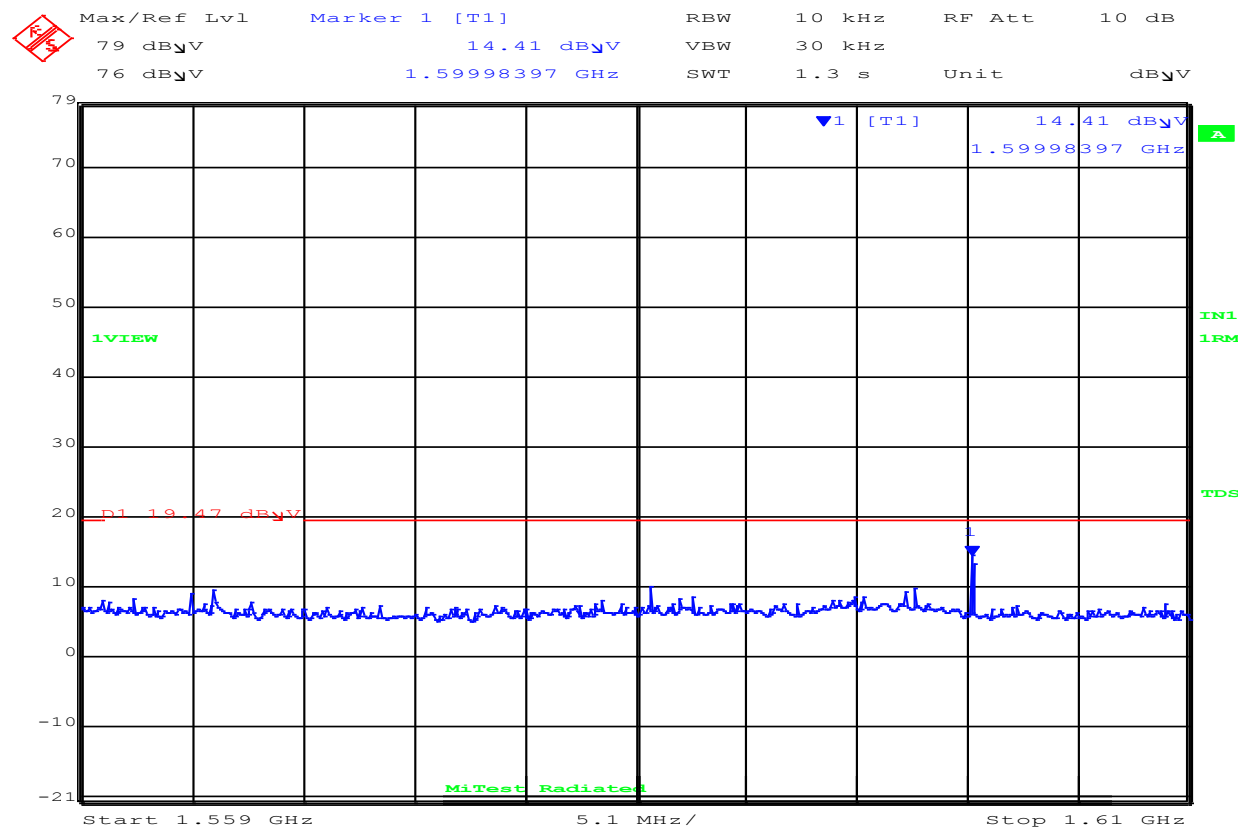
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 7.NOV.2018 16:13:44

#### 1559.00-1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 2   | 1599.99       | 2.8*         | Average          | Horizontal | 150    | 0       | 19.47        | -16.67    | Pass       |

#### Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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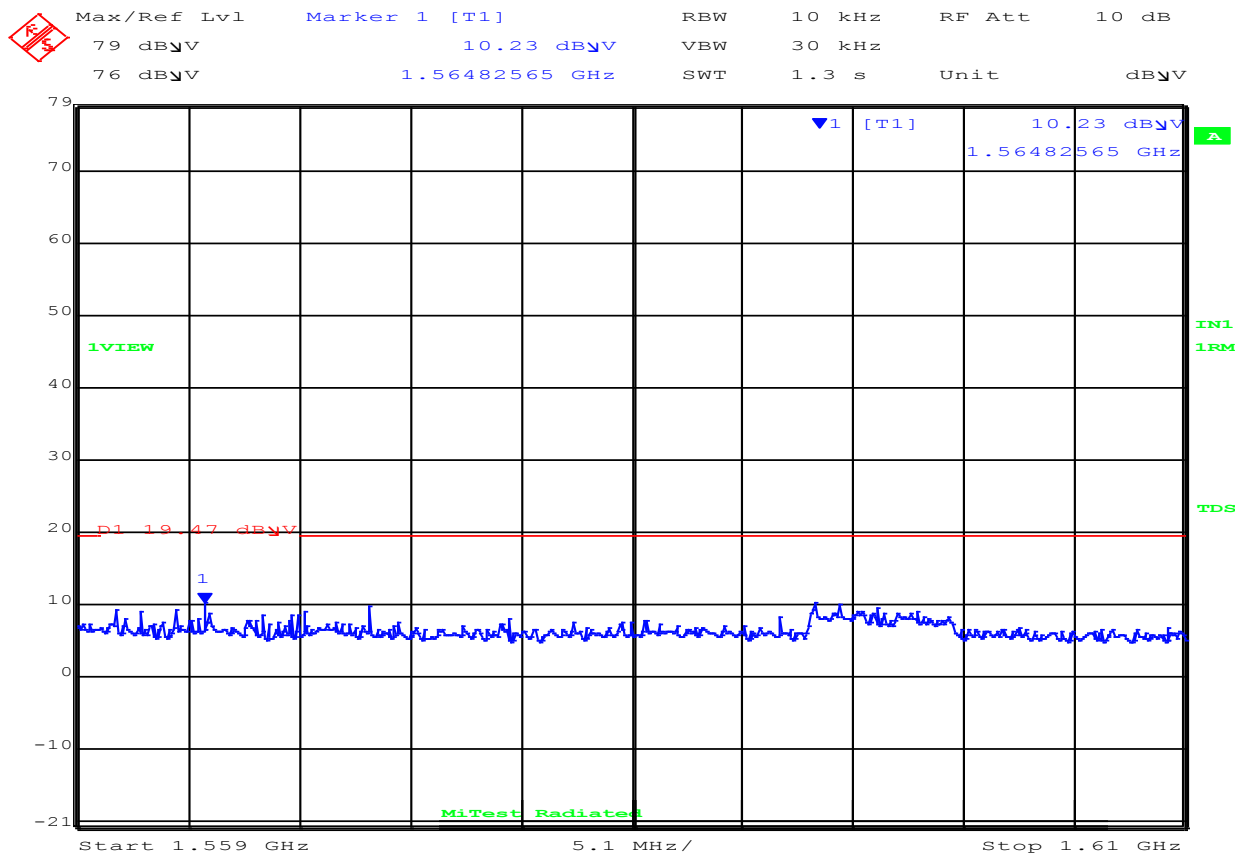
#### Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 7.NOV.2018 16:12:47

#### Test Measurement Results

1559.00-1610.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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4488 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

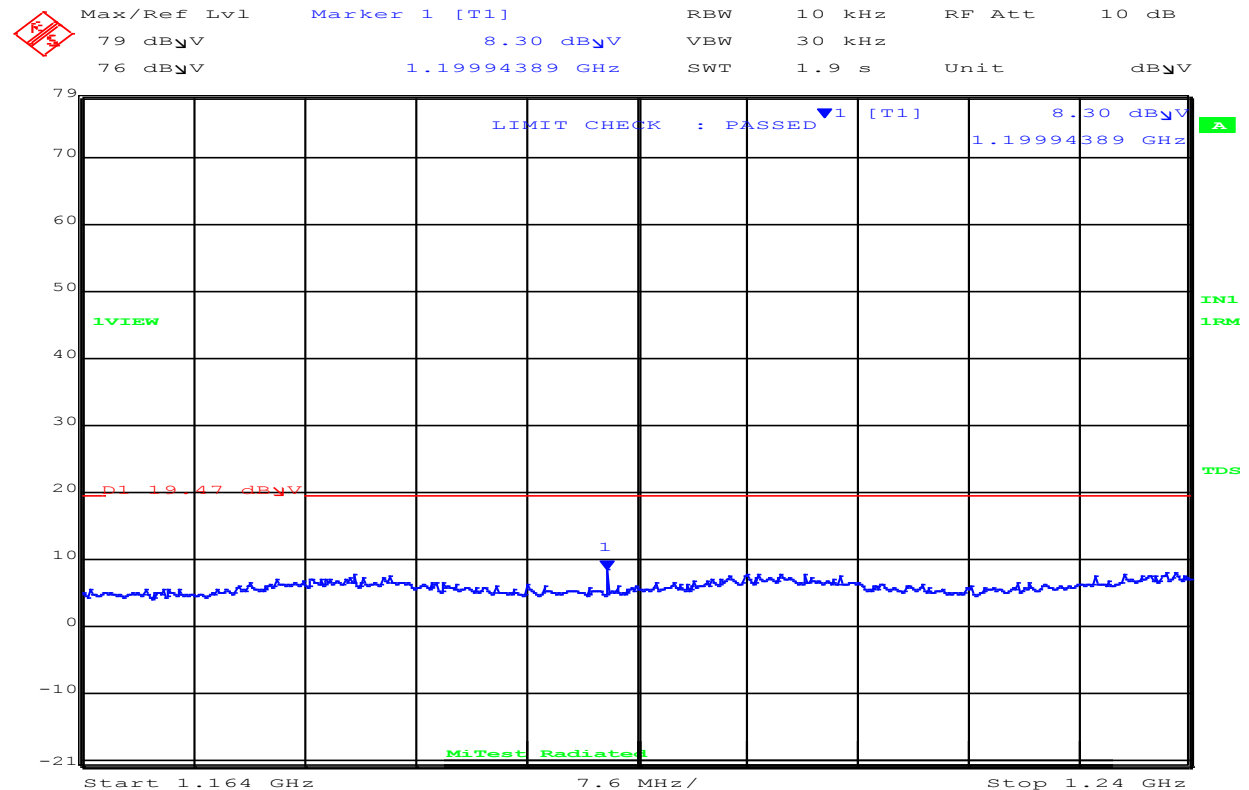
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99

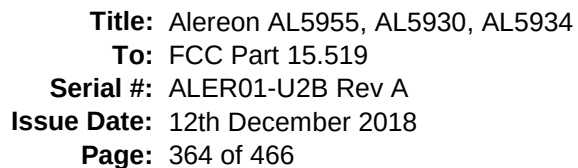


Date: 7.NOV.2018 16:38:15

1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99

Date: 7.NOV.2018 16:36:37

| 1164.00-1240.00 MHz                   |                  |                 |                     |     |           |            |                 |              |               |
|---------------------------------------|------------------|-----------------|---------------------|-----|-----------|------------|-----------------|--------------|---------------|
| Num                                   | Frequency<br>MHz | Level<br>dBμV/m | Measurement<br>Type | Pol | Hgt<br>cm | Azt<br>Deg | Limit<br>dBμV/m | Margin<br>dB | Pass<br>/Fail |
| No Signals Found within 6 dB of Limit |                  |                 |                     |     |           |            |                 |              |               |
| <b>Test Notes:</b><br>Laptop Removed  |                  |                 |                     |     |           |            |                 |              |               |

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Serial #: ALER01-U2B Rev A  
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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

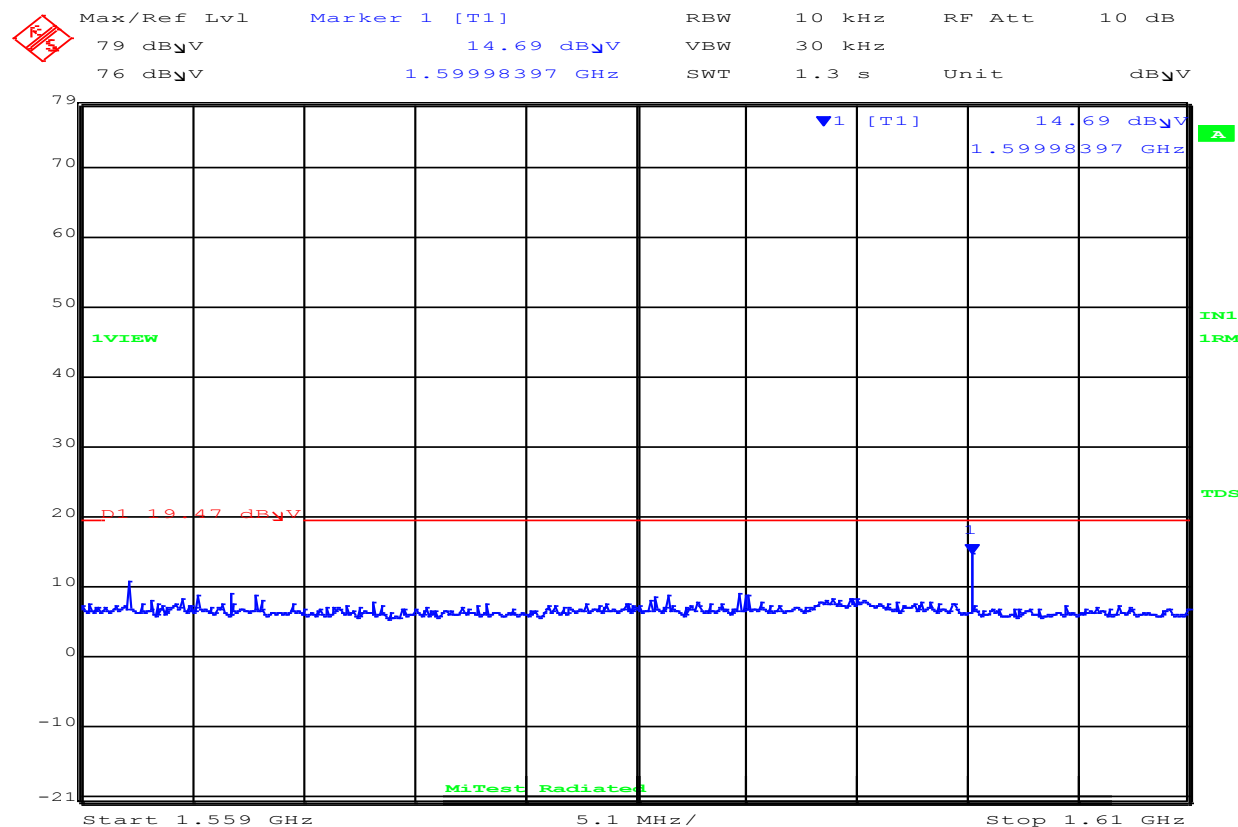
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 7.NOV.2018 16:39:40

#### 1559.00-1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 2   | 1599.98       | 2.1*         | Average          | Horizontal | 150    | 0       | 19.47        | -17.4     | Pass       |

#### Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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#### Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

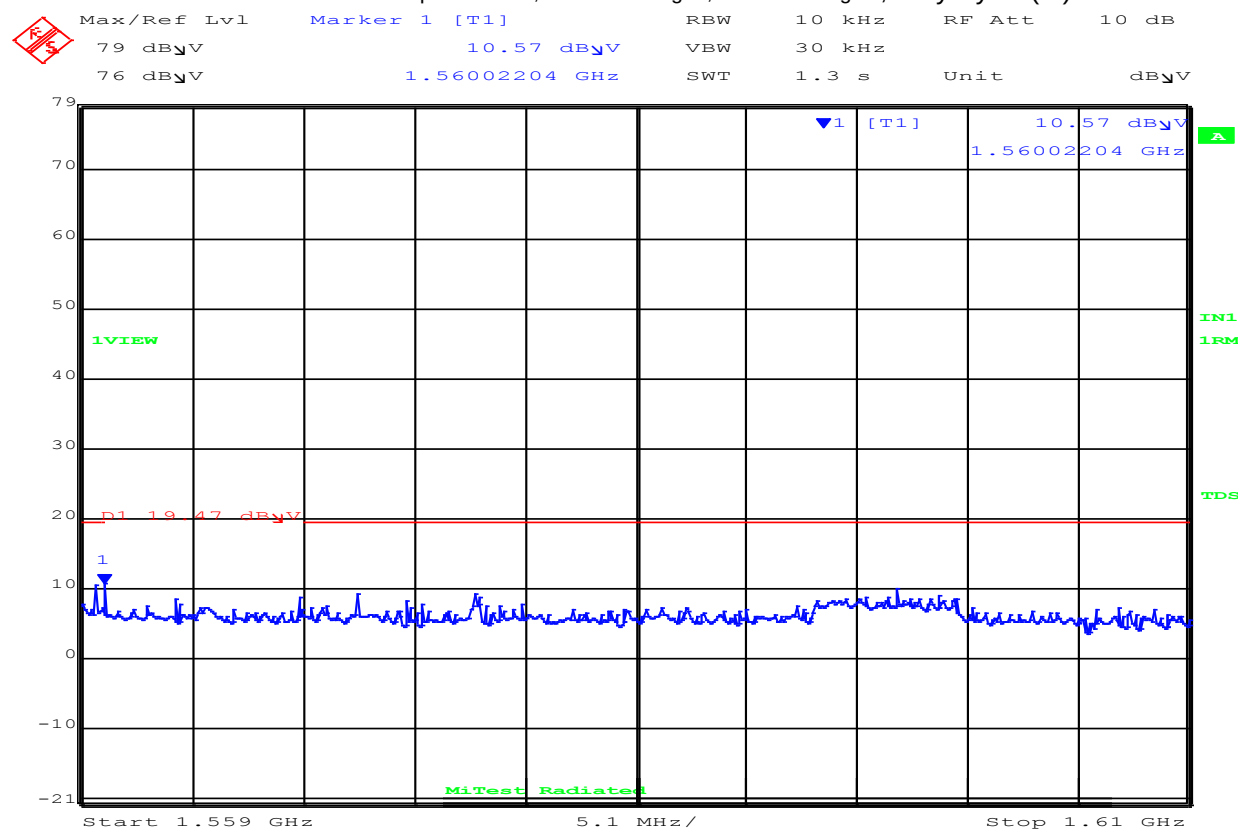
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 7.NOV.2018 16:43:24

#### 1559.00-1610.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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6600 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

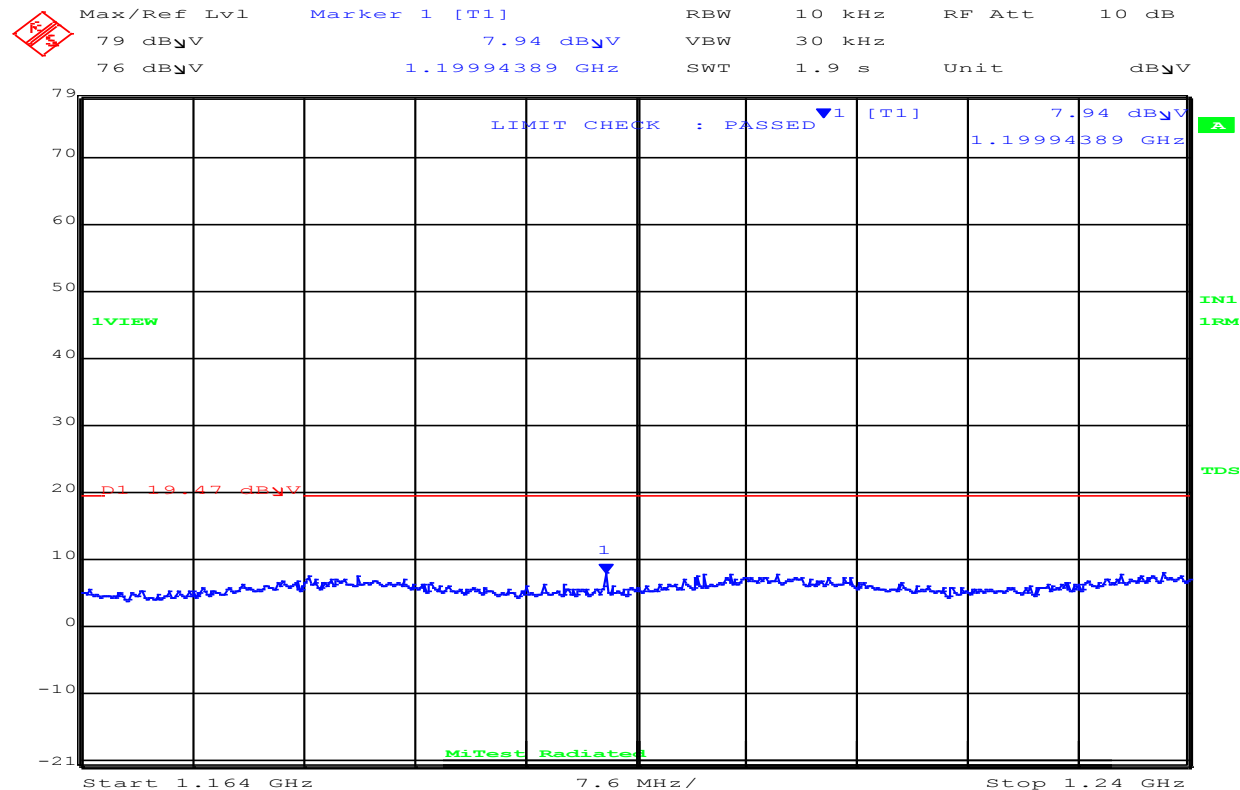
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 7.NOV.2018 16:52:57

| 1164.00-1240.00 MHz                   |               |              |                  |     |        |         |              |           |            |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

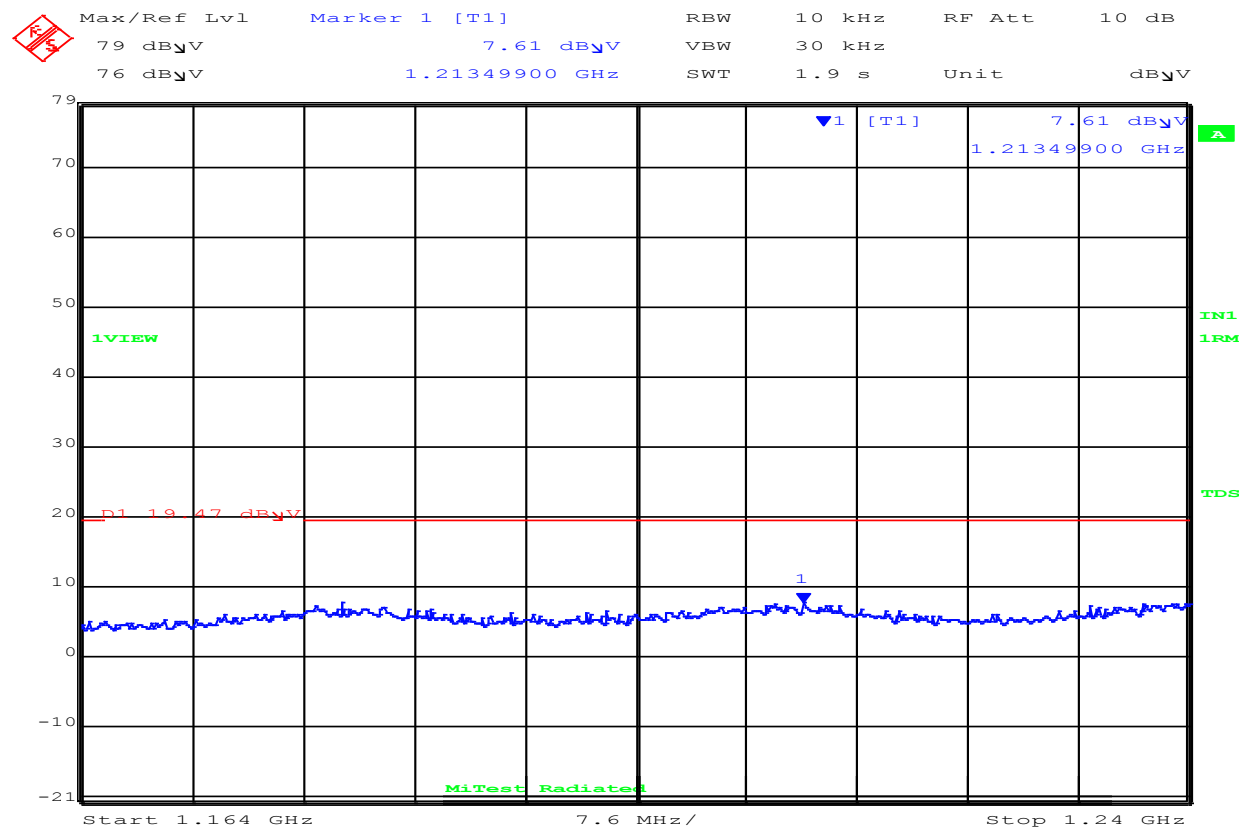
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 7.NOV.2018 16:54:33

#### 1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

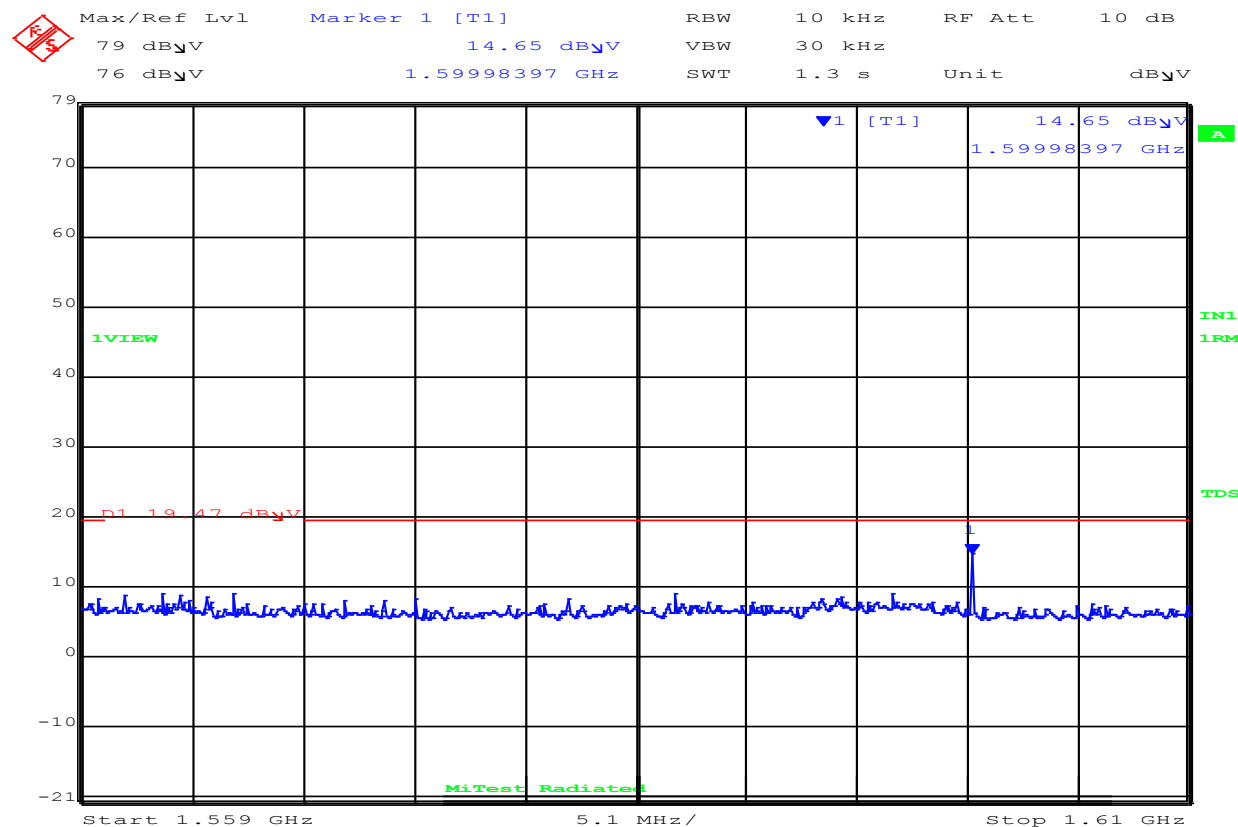
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 7.NOV.2018 16:49:03

#### 1559.00-1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 2   | 1599.98       | 1.9*         | Average          | Horizontal | 150    | 0       | 29.4         | -3.8      | Pass       |

#### Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Vertical

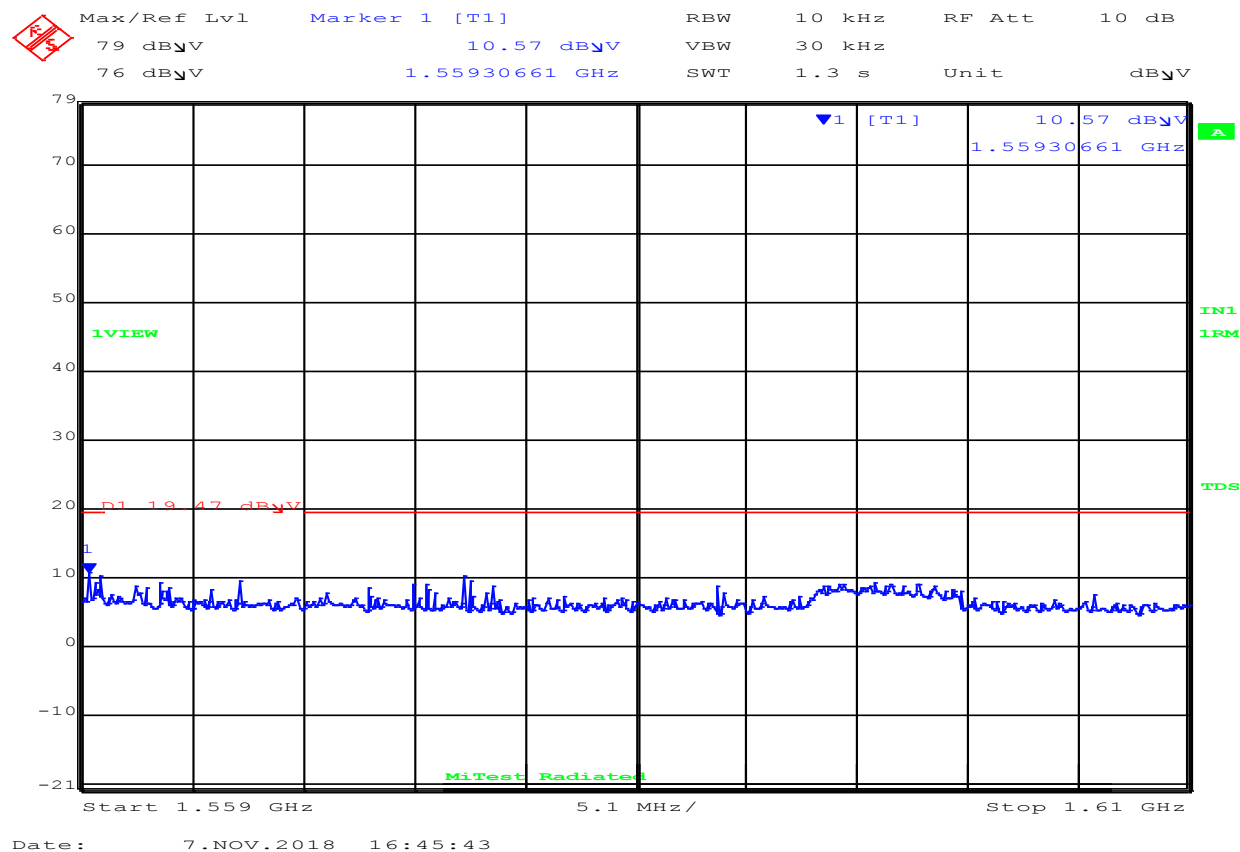
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610 GHz Vertical

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



#### 1559.00-1610.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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7128 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

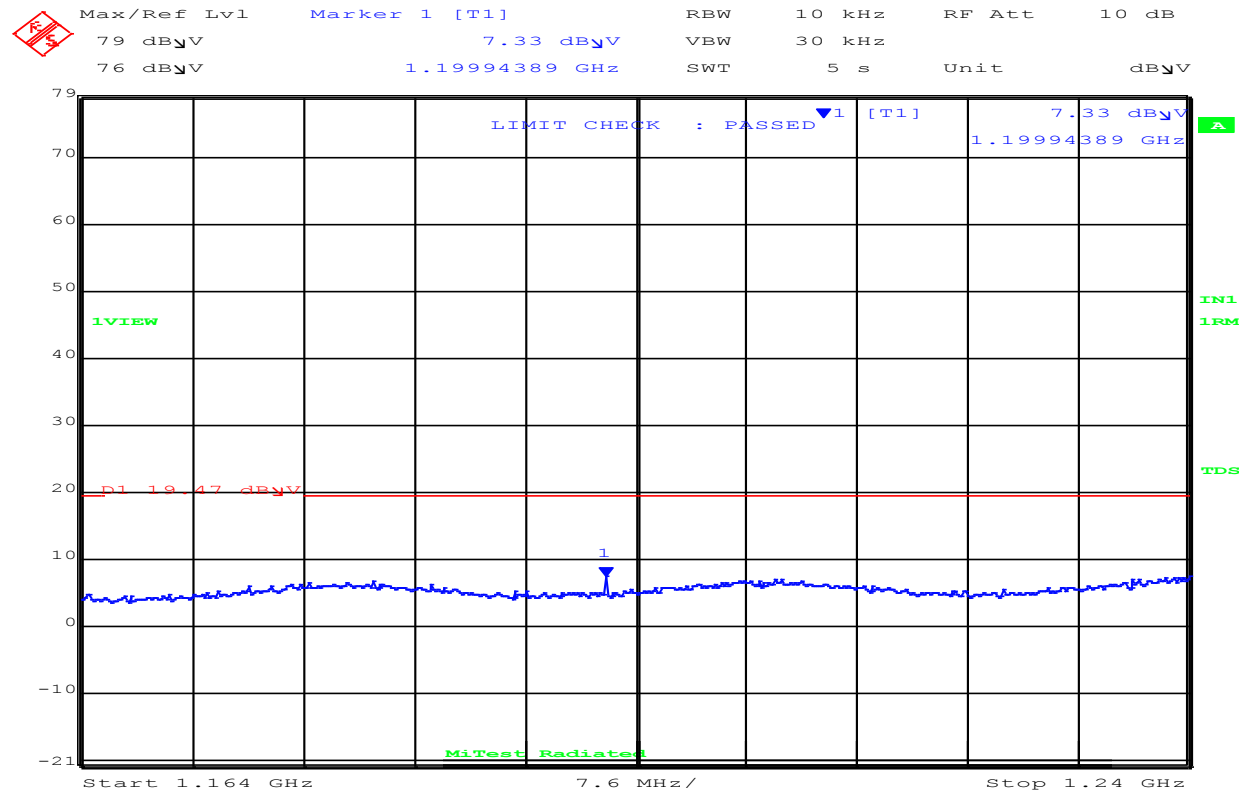
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 7.NOV.2018 17:20:28

1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

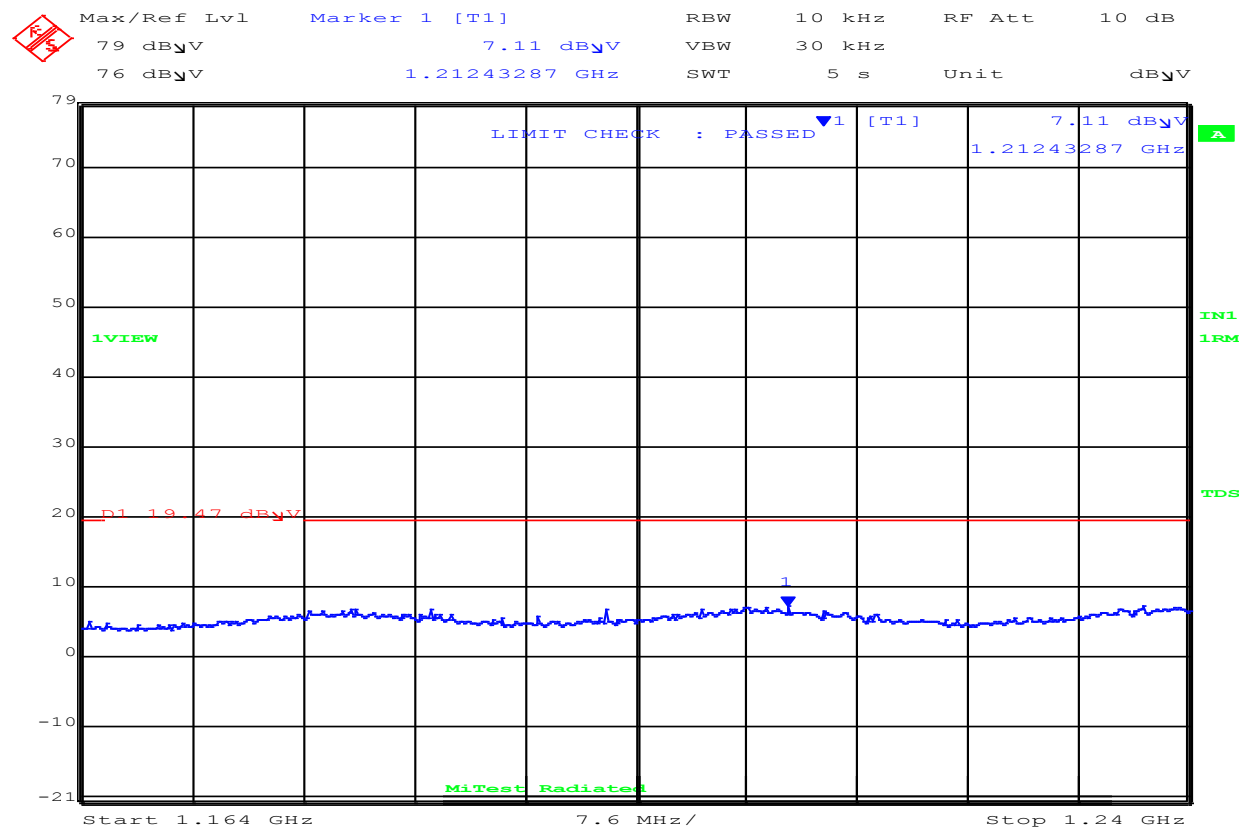
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 7.NOV.2018 17:18:56

#### 1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

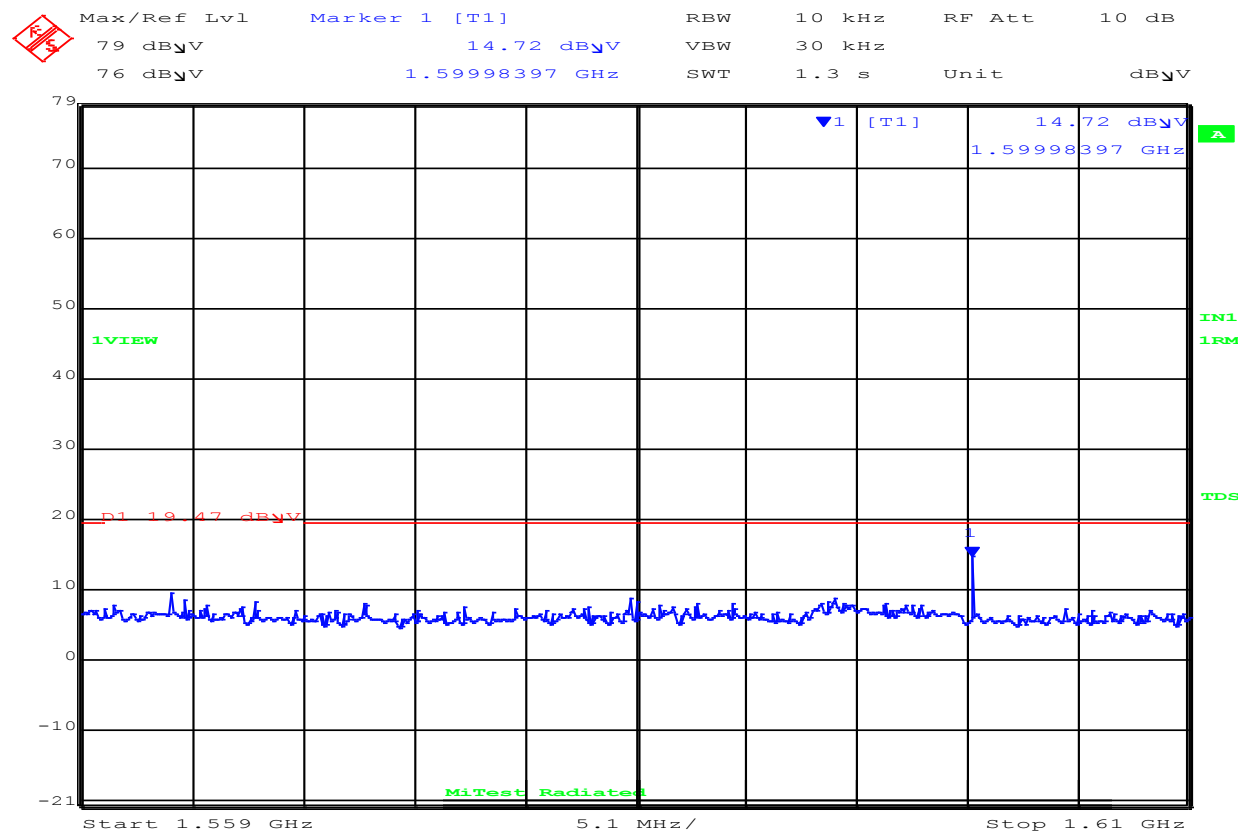
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 7.NOV.2018 17:21:47

#### 1559.00-1610.00 MHz

| Num | Frequency MHz | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|-----|---------------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|
| 2   | 1599.98       | 1.8*               | Average          | Horizontal | 150    | 0       | 19.47              | -3.8      | Pass       |

#### Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Vertical

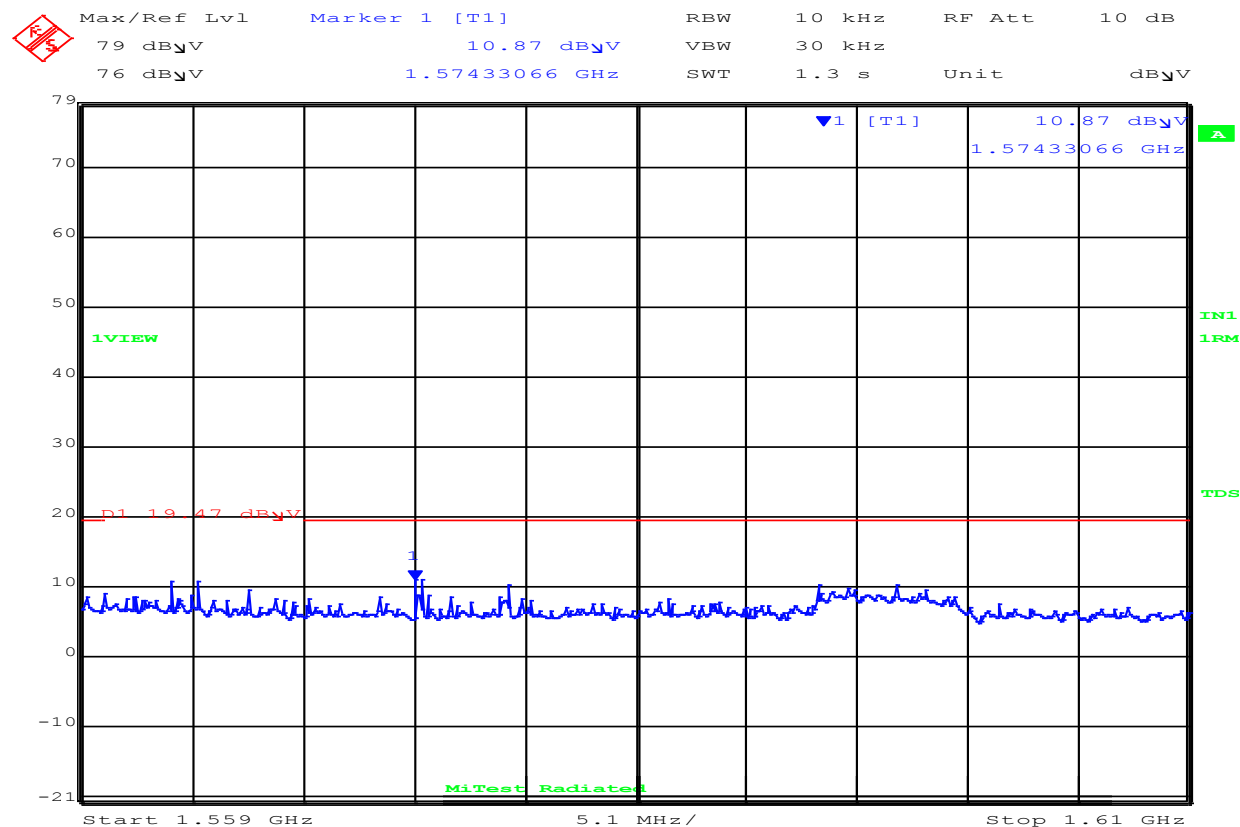
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610 GHz Vertical

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 7.NOV.2018 17:25:18

#### 1559.00-1610.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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7656 MHz (Covers Band Group 3 TFC 7 and Band Group 6 TFC 5)

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

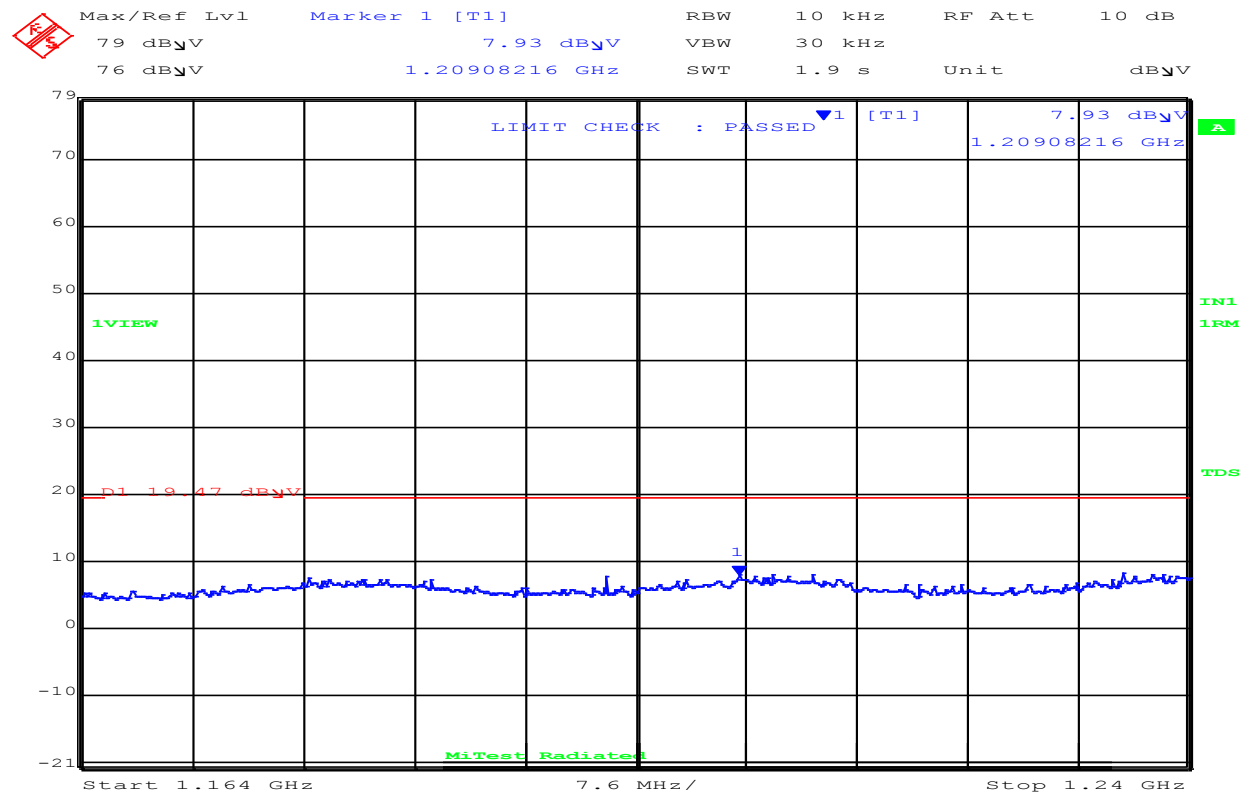
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 7.NOV.2018 17:32:44

1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

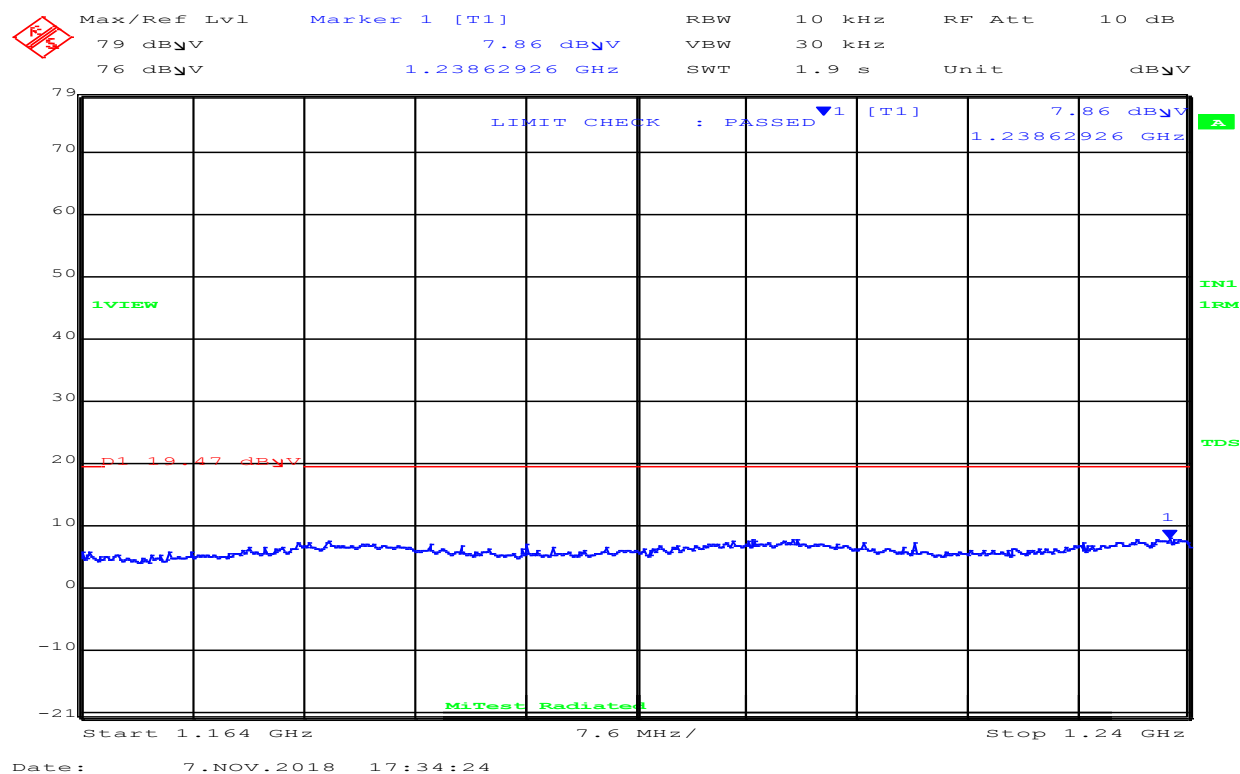
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



#### 1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

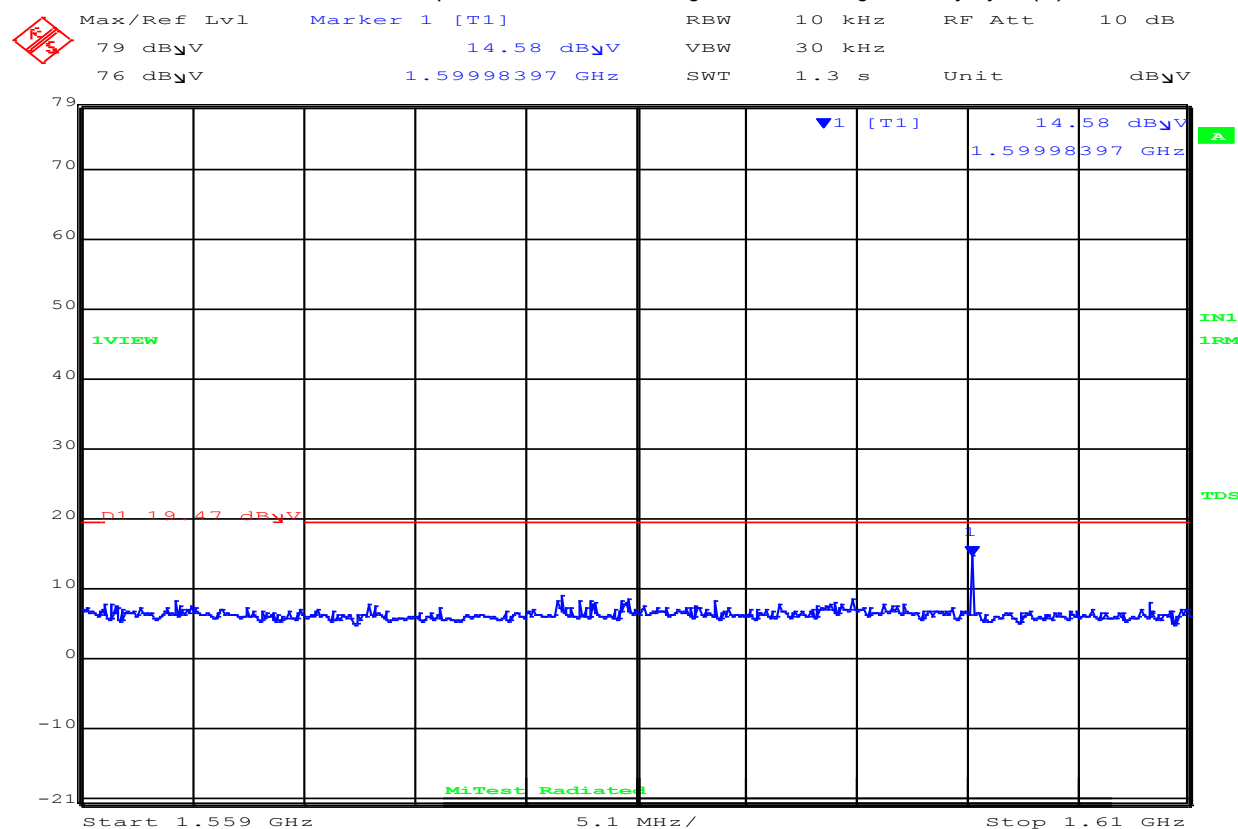
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 7.NOV.2018 17:30:23

#### 1559.00-1610.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|------------|--------|---------|--------------|-----------|------------|
| 2   | 1599.98       | 1.7*         | Average          | Horizontal | 150    | 0       | 29.4         | -3.8      | Pass       |

#### Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Vertical

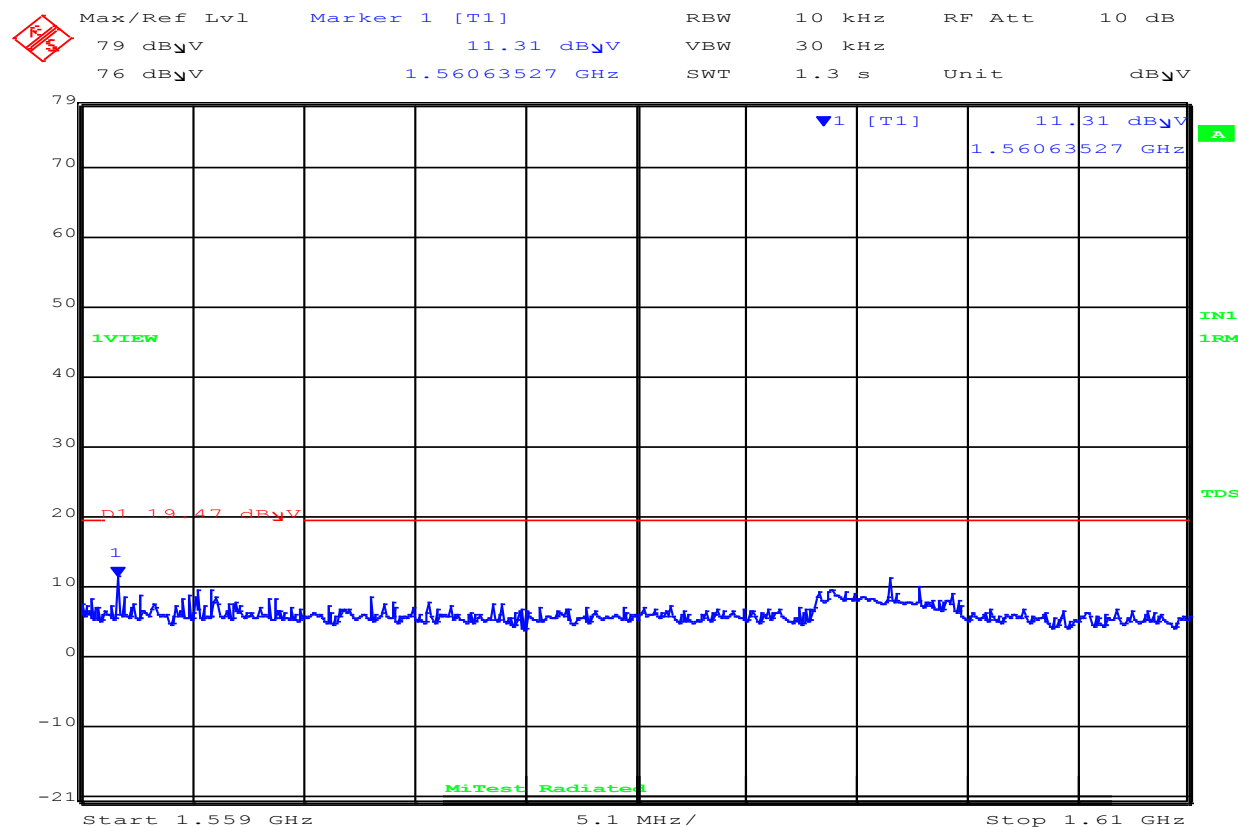
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610 GHz Vertical

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 7.NOV.2018 17:28:31

#### 1559.00-1610.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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8184 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

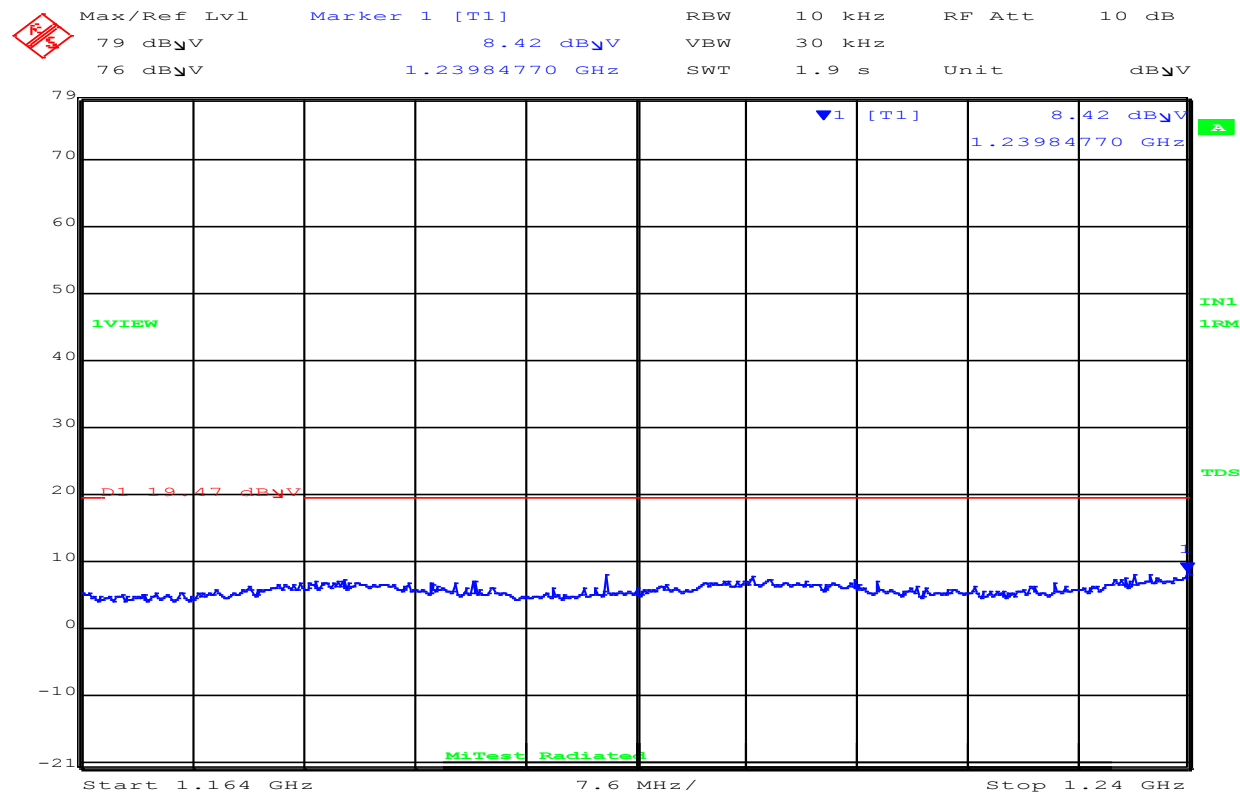
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 7.NOV.2018 17:52:37

1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

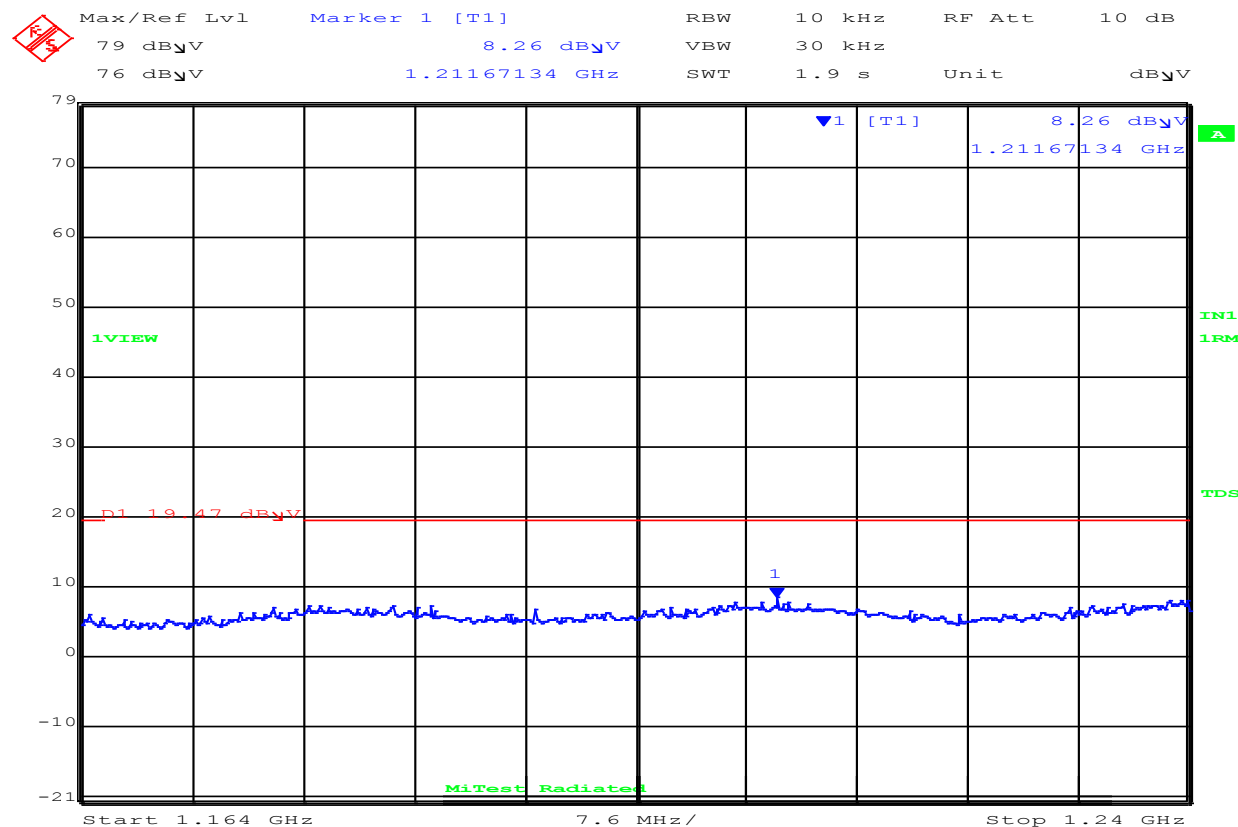
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 7.NOV.2018 17:51:11

#### 1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

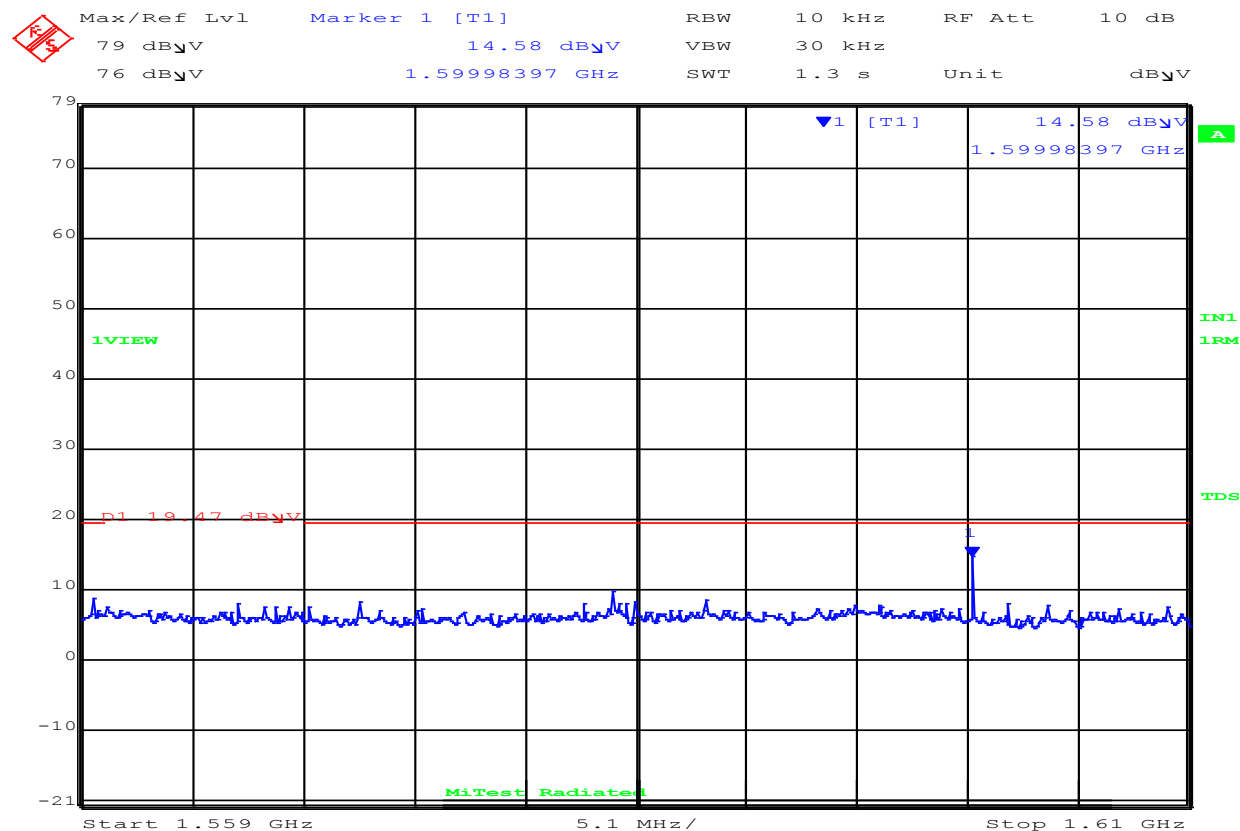
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 7.NOV.2018 17:53:54

#### 1559.00-1610.00 MHz

| Num | Frequency MHz | Level dB $\mu$ V/m | Measurement Type | Pol        | Hgt cm | Azt Deg | Limit dB $\mu$ V/m | Margin dB | Pass /Fail |
|-----|---------------|--------------------|------------------|------------|--------|---------|--------------------|-----------|------------|
| 2   | 1599.98       | 2.0*               | Average          | Horizontal | 150    | 0       | 19.47              | -17.5     | Pass       |

#### Test Notes:

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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#### Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

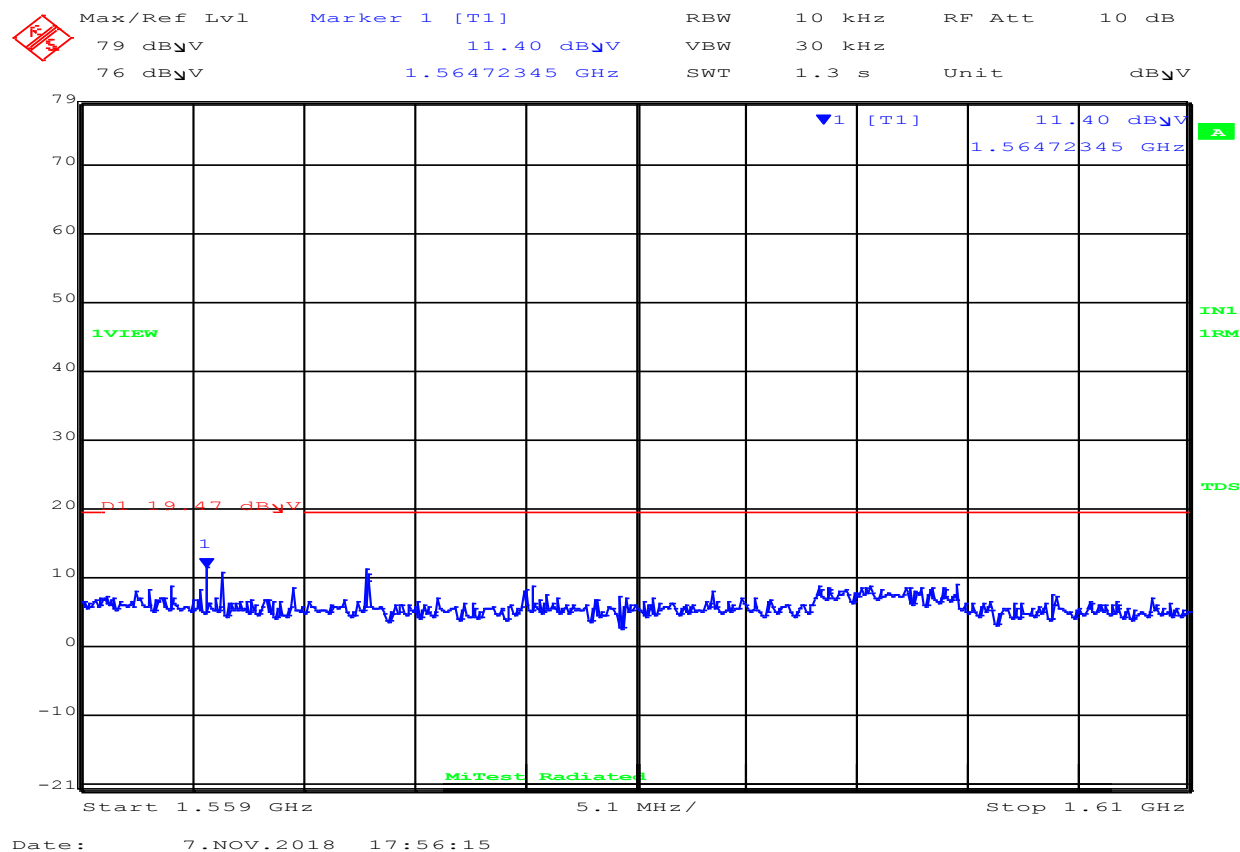
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



#### 1559.00-1610.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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8712 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

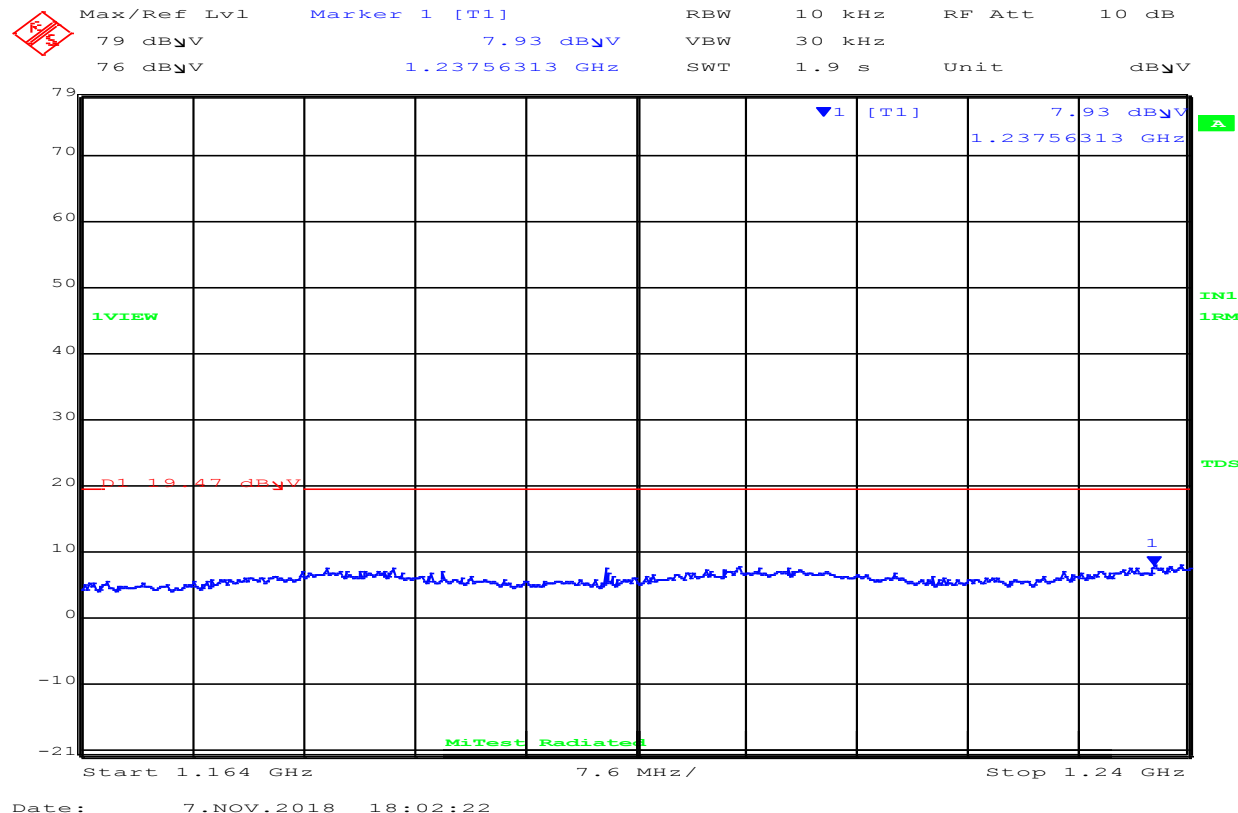
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

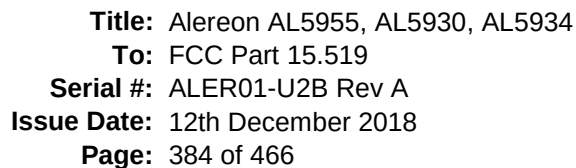
Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



1164.00-1240.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

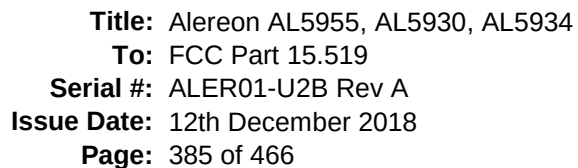
**MiTest**  
regulatory compliance in the cloud

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99

Date: 7.NOV.2018 18:03:23

| 1164.00-1240.00 MHz                   |                  |                 |                     |     |           |            |                 |              |               |
|---------------------------------------|------------------|-----------------|---------------------|-----|-----------|------------|-----------------|--------------|---------------|
| Num                                   | Frequency<br>MHz | Level<br>dBμV/m | Measurement<br>Type | Pol | Hgt<br>cm | Azt<br>Deg | Limit<br>dBμV/m | Margin<br>dB | Pass<br>/Fail |
| No Signals Found within 6 dB of Limit |                  |                 |                     |     |           |            |                 |              |               |
| <b>Test Notes:</b><br>Laptop Removed  |                  |                 |                     |     |           |            |                 |              |               |

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|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99

Date: 7.NOV.2018 17:59:48

**Test Notes:**

Final Average measurements done with 1 KHz Receiver Bandwidth per standard

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Vertical

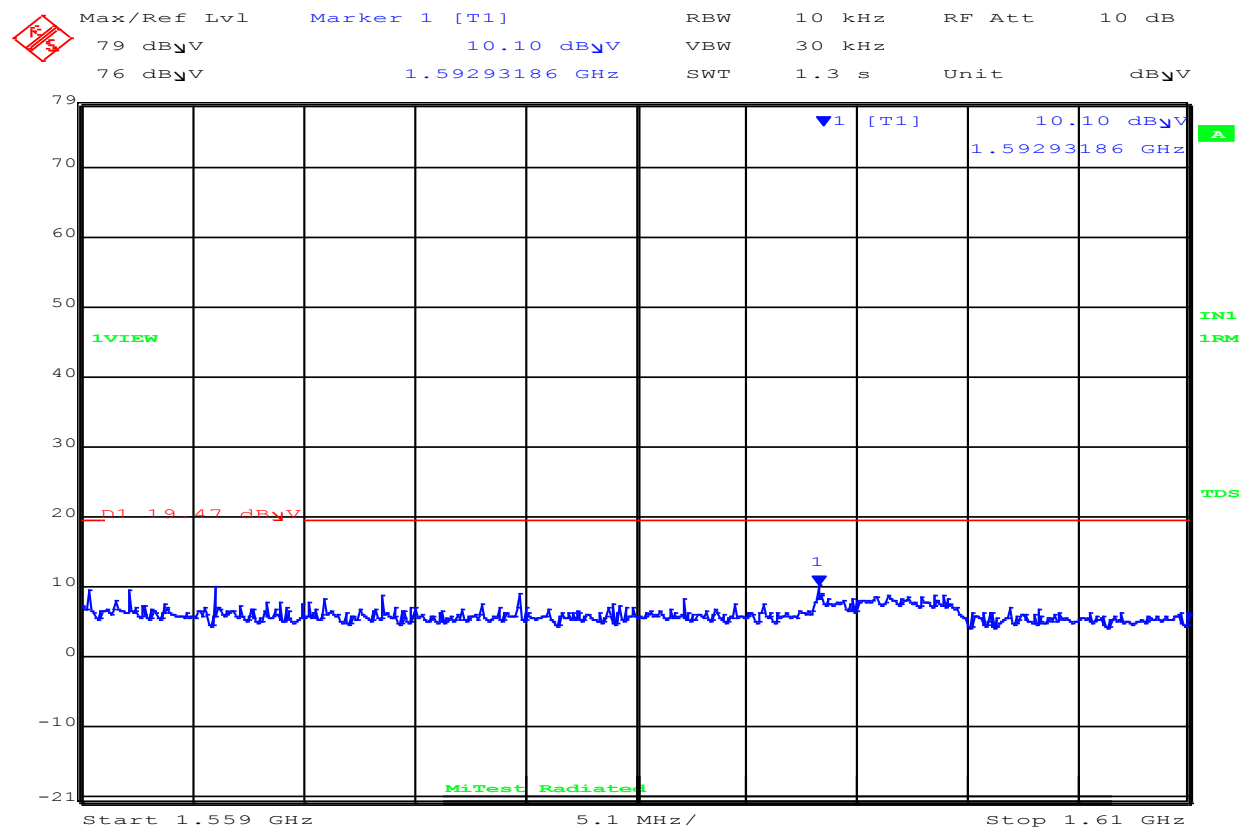
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610 GHz Vertical

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 7.NOV.2018 17:58:57

#### 1559.00-1610.00 MHz

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop Removed         |               |              |                  |     |        |         |              |           |            |

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### 9.4.2.3. Combat AL5934

3432 MHz

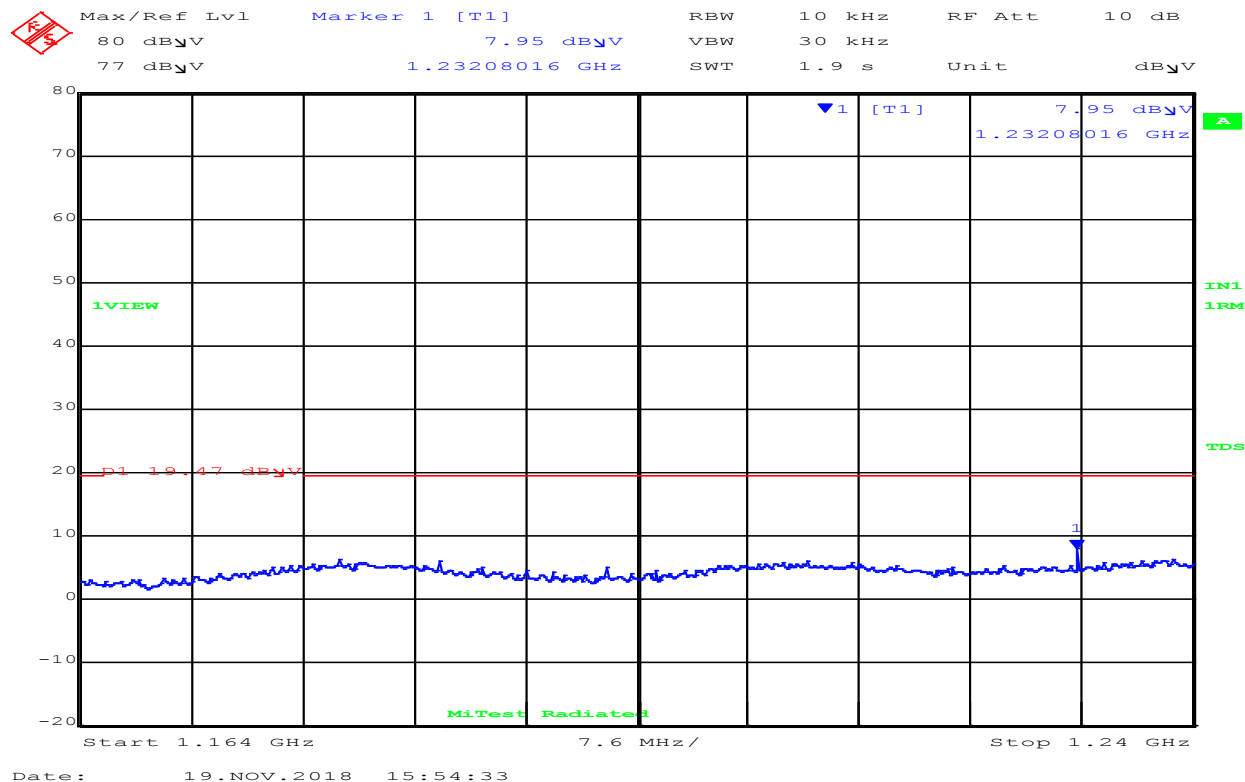
#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 1.0            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3432.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 3432 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



#### Test Measurement Results

1164.00-1240.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
|-----|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|

No Signals Found within 6 dB of Limit

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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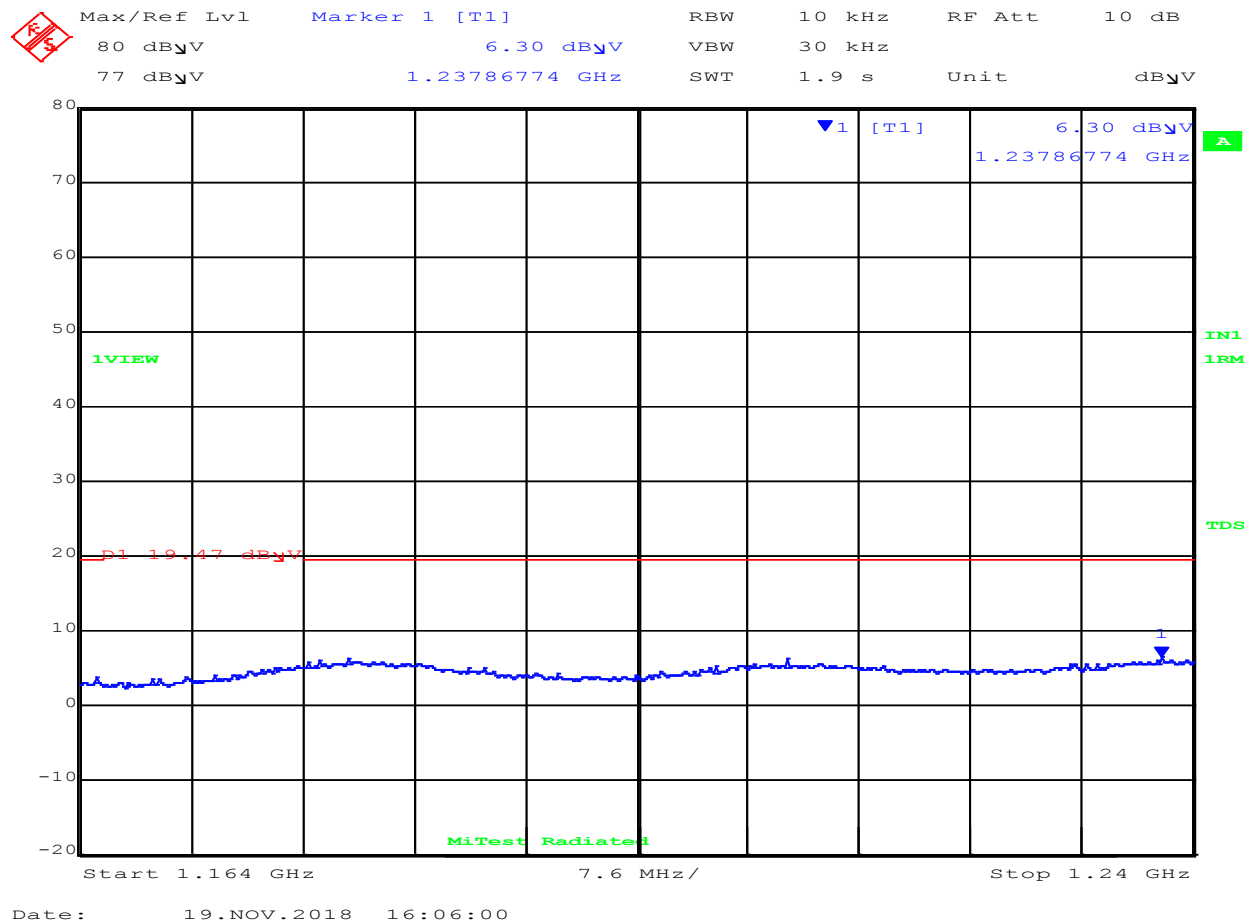
#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 1.0            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3432.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 3432 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



#### Test Measurement Results

1164.00-1240.00 MHz

| Num | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|-----|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
|-----|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|

No Signals Found within 6 dB of Limit

#### Test Notes:

Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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#### Equipment Configuration for Spurious Emissions 1.559-1.610GHz Horizontal

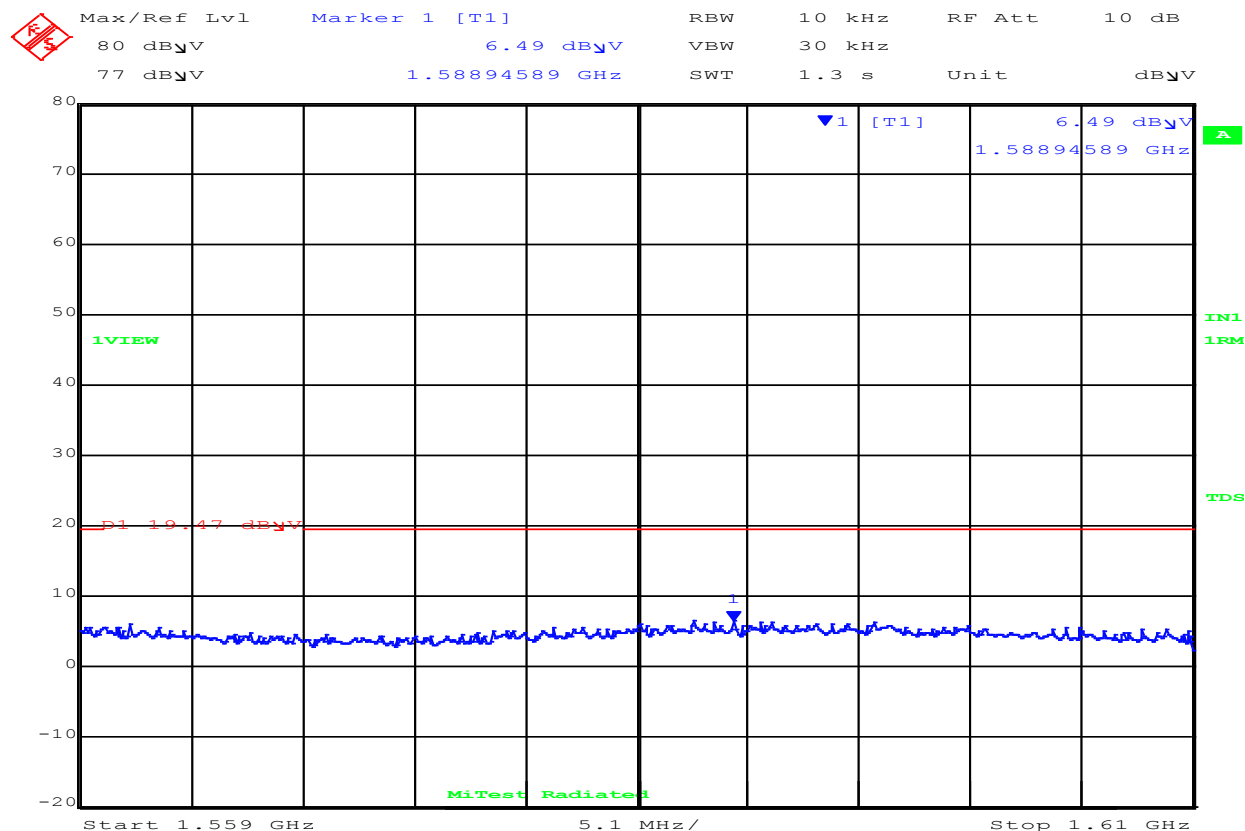
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 1.0            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3432.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 3432 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 19.NOV.2018 16:09:28

#### 1559.00-1610.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

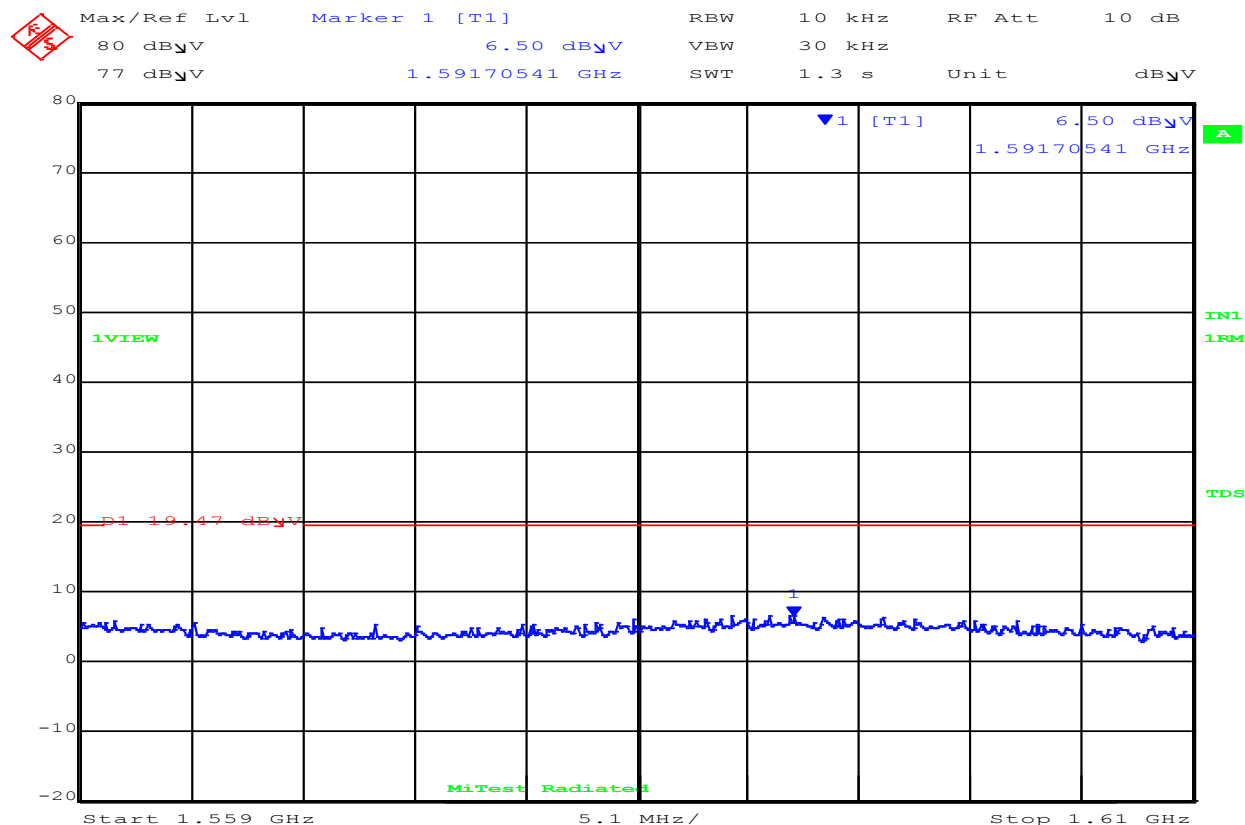
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 1.0            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3432.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 3432 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 19.NOV.2018 16:08:22

#### 1559.00-1610.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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3960 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

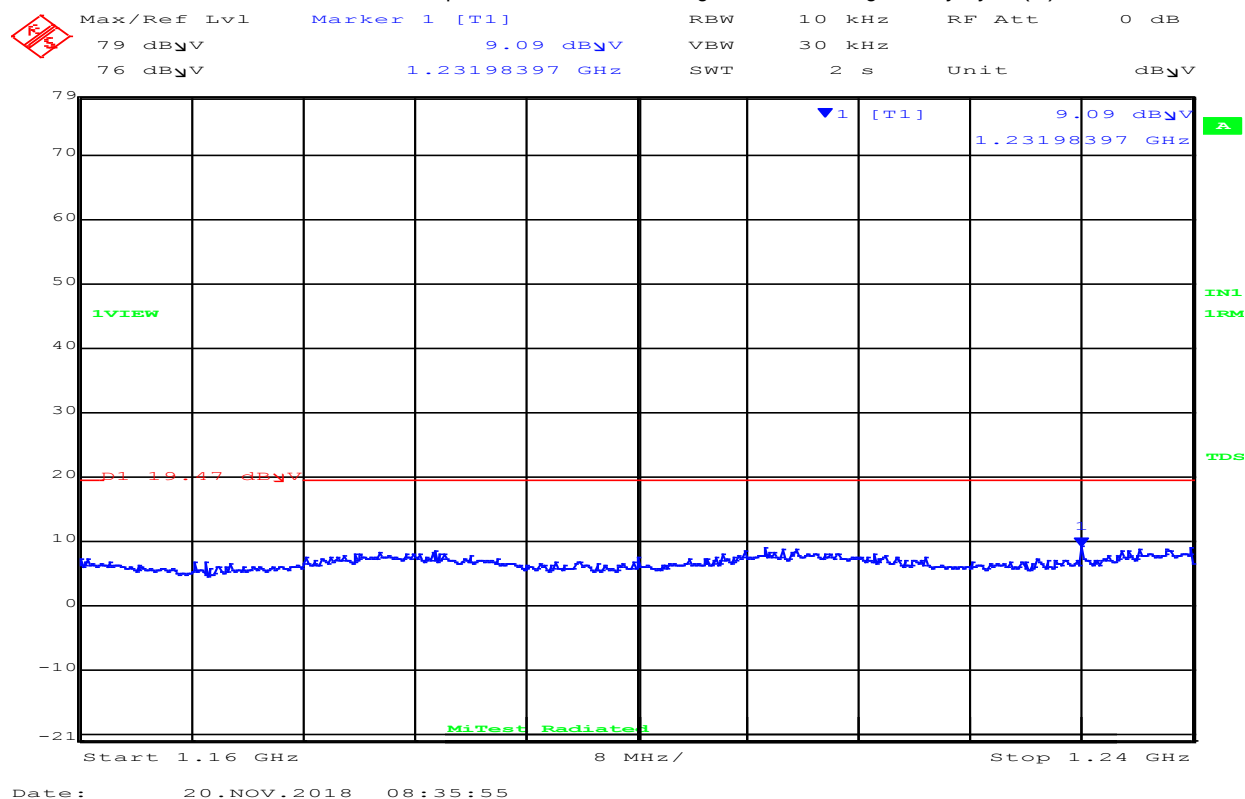
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



1164.00-1240.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

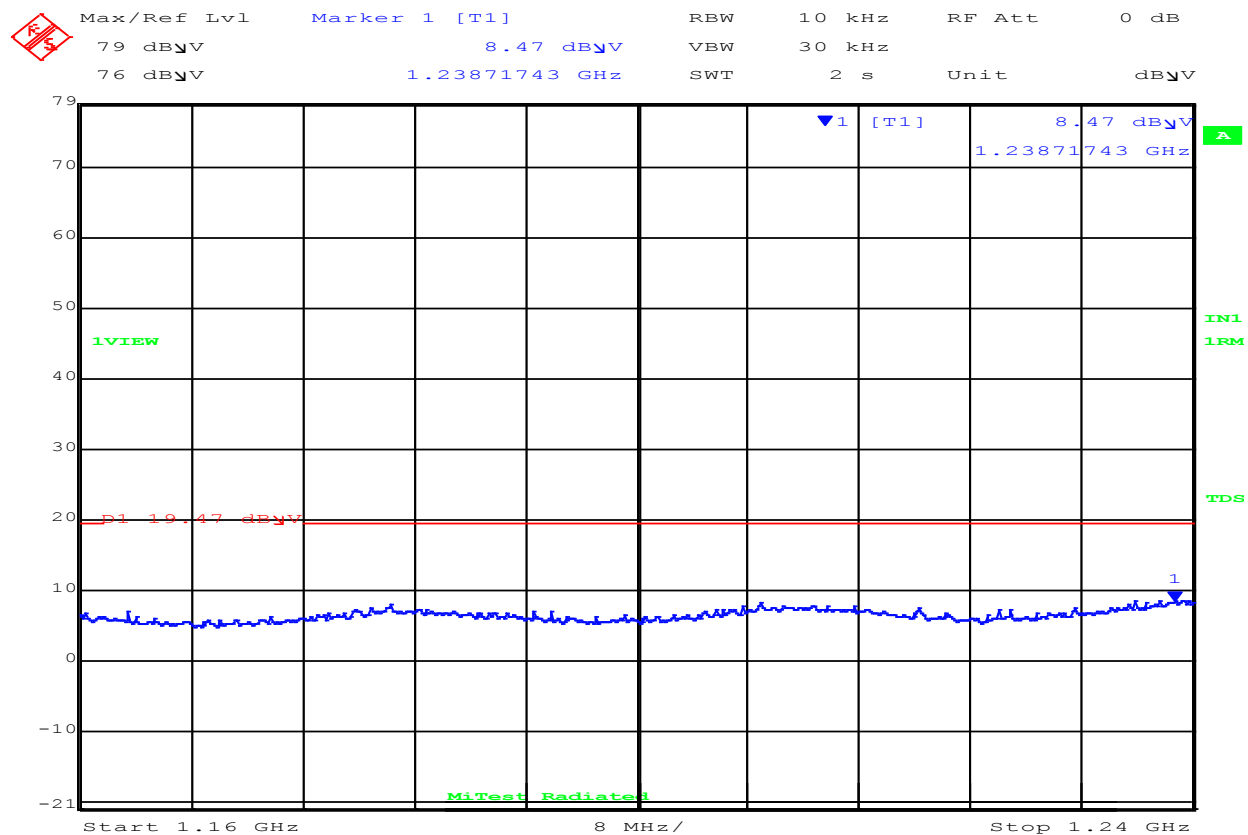
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 08:39:30

#### 1164.00-1240.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

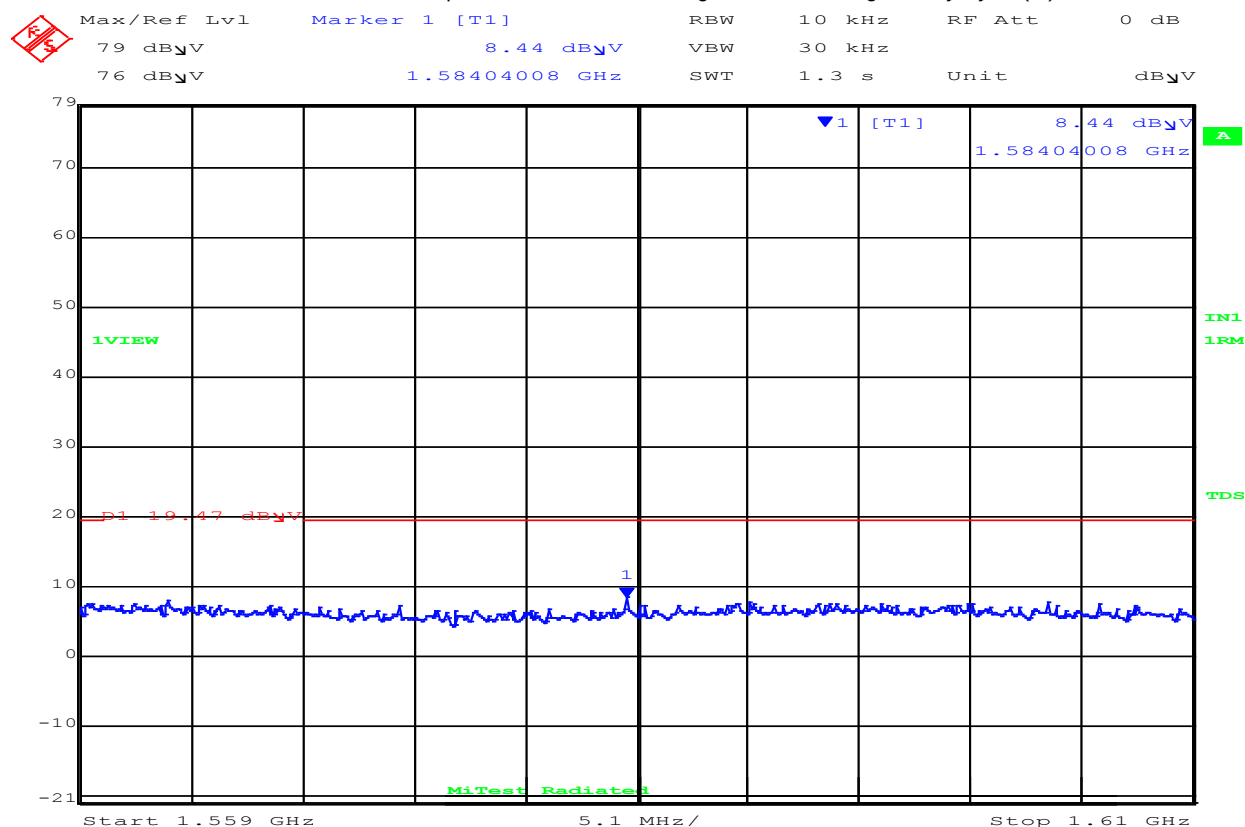
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99

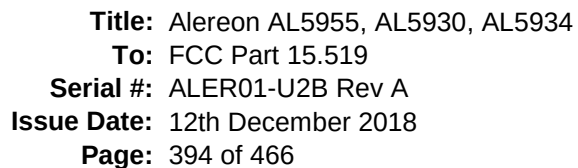


Date: 20.NOV.2018 08:42:12

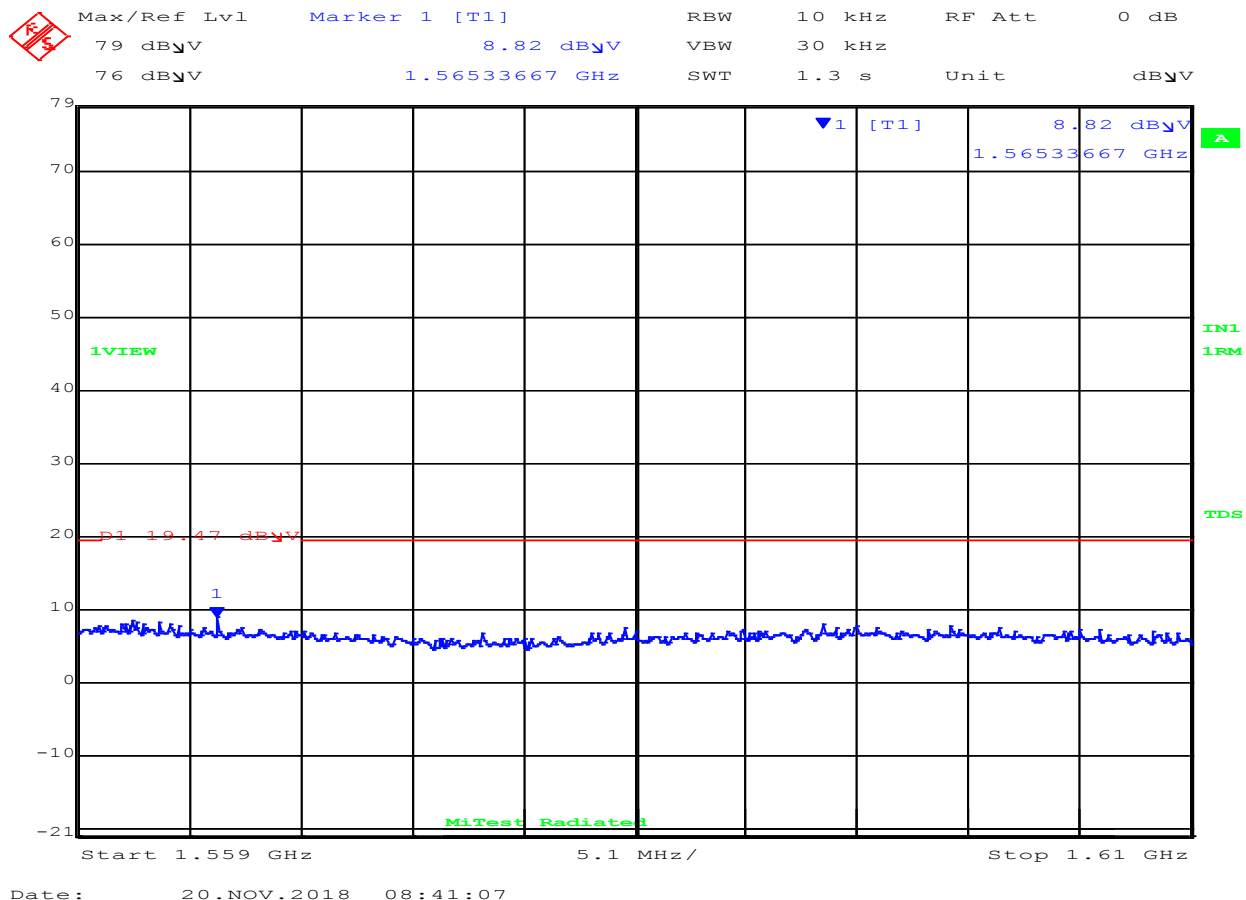
#### 1559.00-1610.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

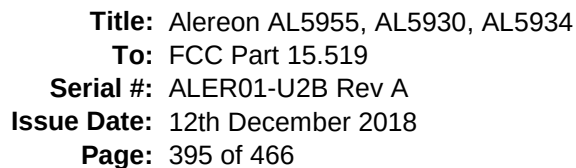


Date: 20.NOV.2018 08:41:07

| Test Measurement Results              |                  |                 |                     |     |           |            |                 |              |               |
|---------------------------------------|------------------|-----------------|---------------------|-----|-----------|------------|-----------------|--------------|---------------|
| 1559.00-1610.00 MHz                   |                  |                 |                     |     |           |            |                 |              |               |
| Num                                   | Frequency<br>MHz | Level<br>dBµV/m | Measurement<br>Type | Pol | Hgt<br>cm | Azt<br>Deg | Limit<br>dBµV/m | Margin<br>dB | Pass<br>/Fail |
| No Signals Found within 6 dB of Limit |                  |                 |                     |     |           |            |                 |              |               |

**Test Notes:**  
 Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end)

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| Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal |  |
|---------------------------------------------------------------------------|--|
|---------------------------------------------------------------------------|--|

| Test Measurement Results |  |
|--------------------------|--|
|--------------------------|--|



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To: FCC Part 15.519  
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#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

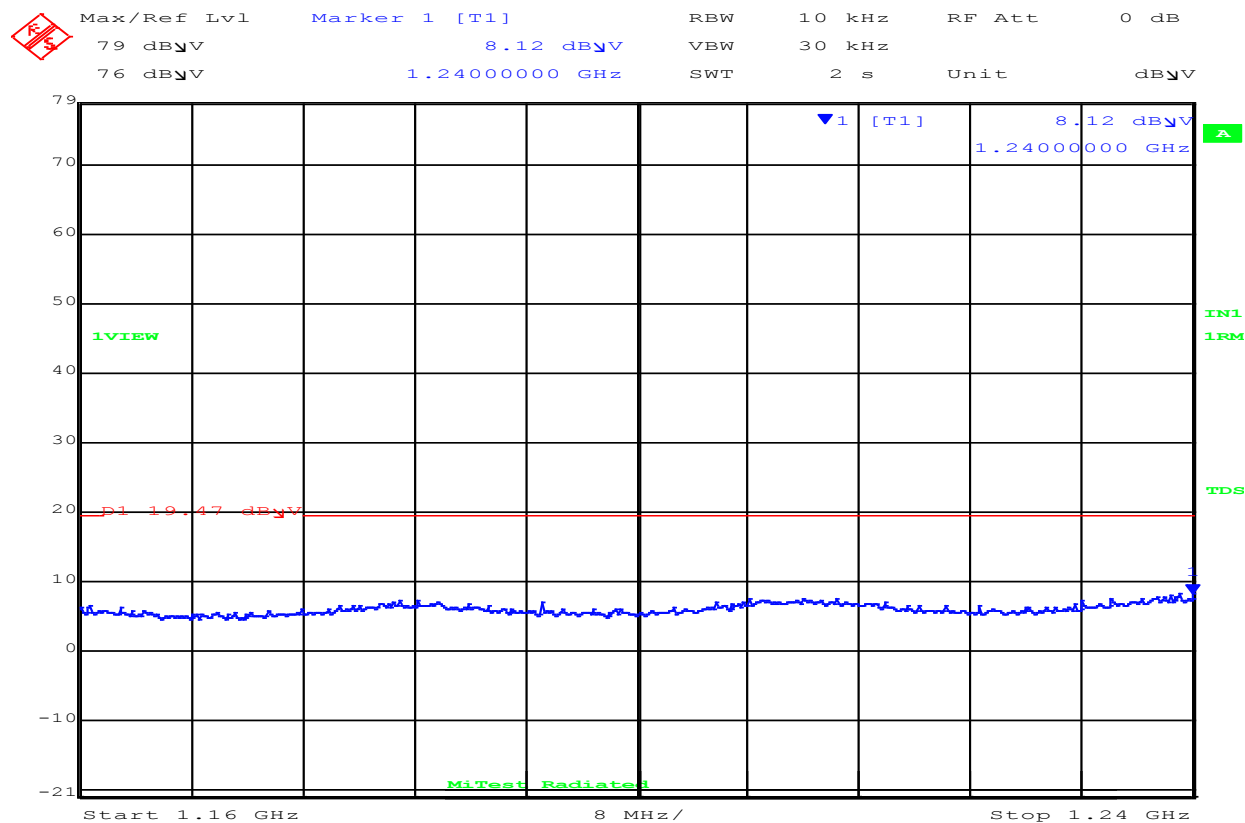
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 10:20:36

#### 1164.00-1240.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

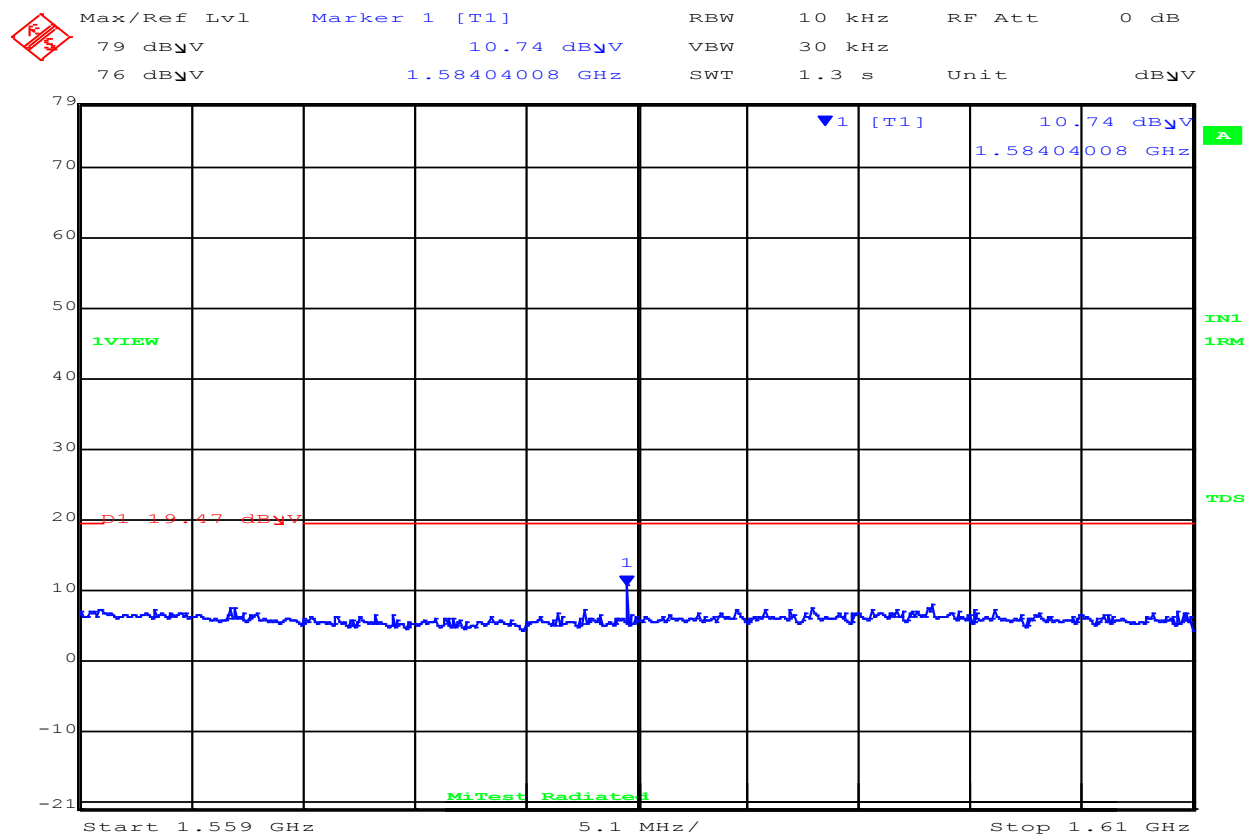
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 10:25:41

#### 1559.00-1610.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

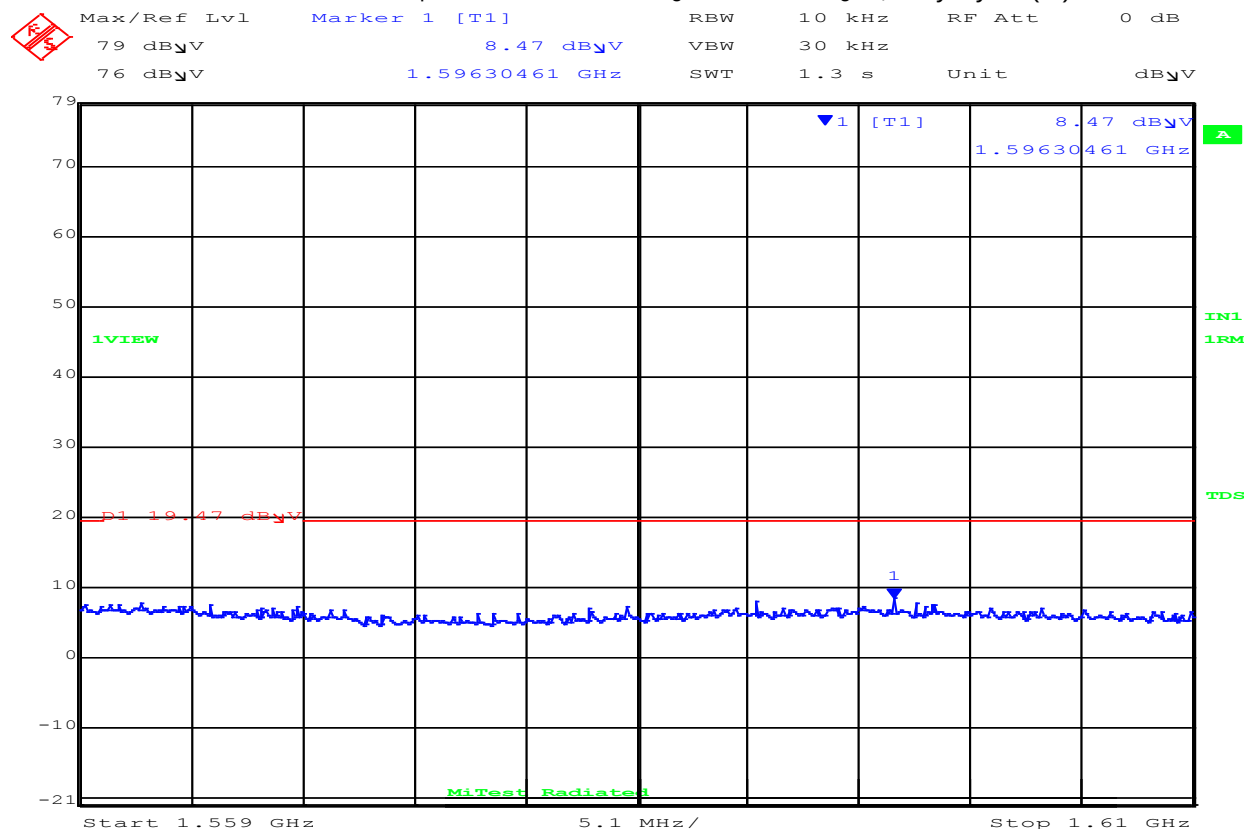
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 10:26:54

#### 1559.00-1610.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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6600 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

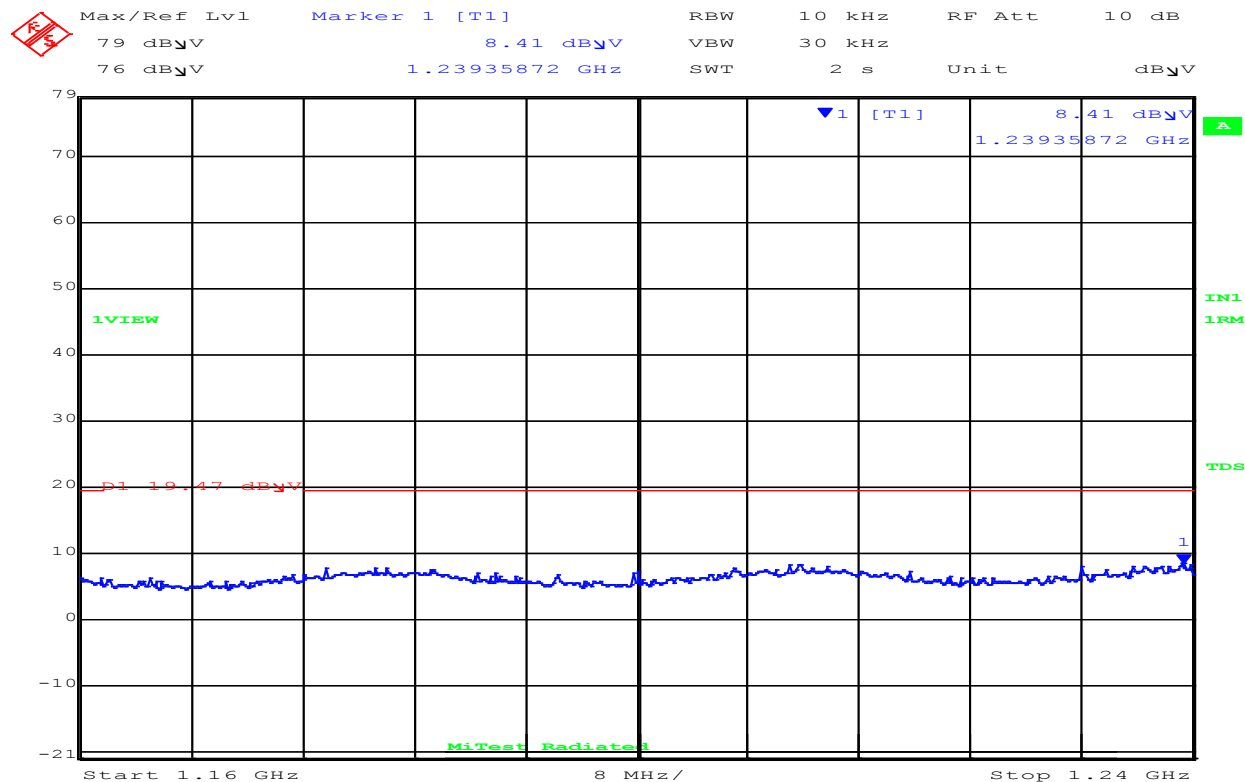
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 11:37:20

1164.00-1240.00 MHz

| Num                                                                                                                                  | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|--------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                |               |              |                  |     |        |         |              |           |            |
| Test Notes:<br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

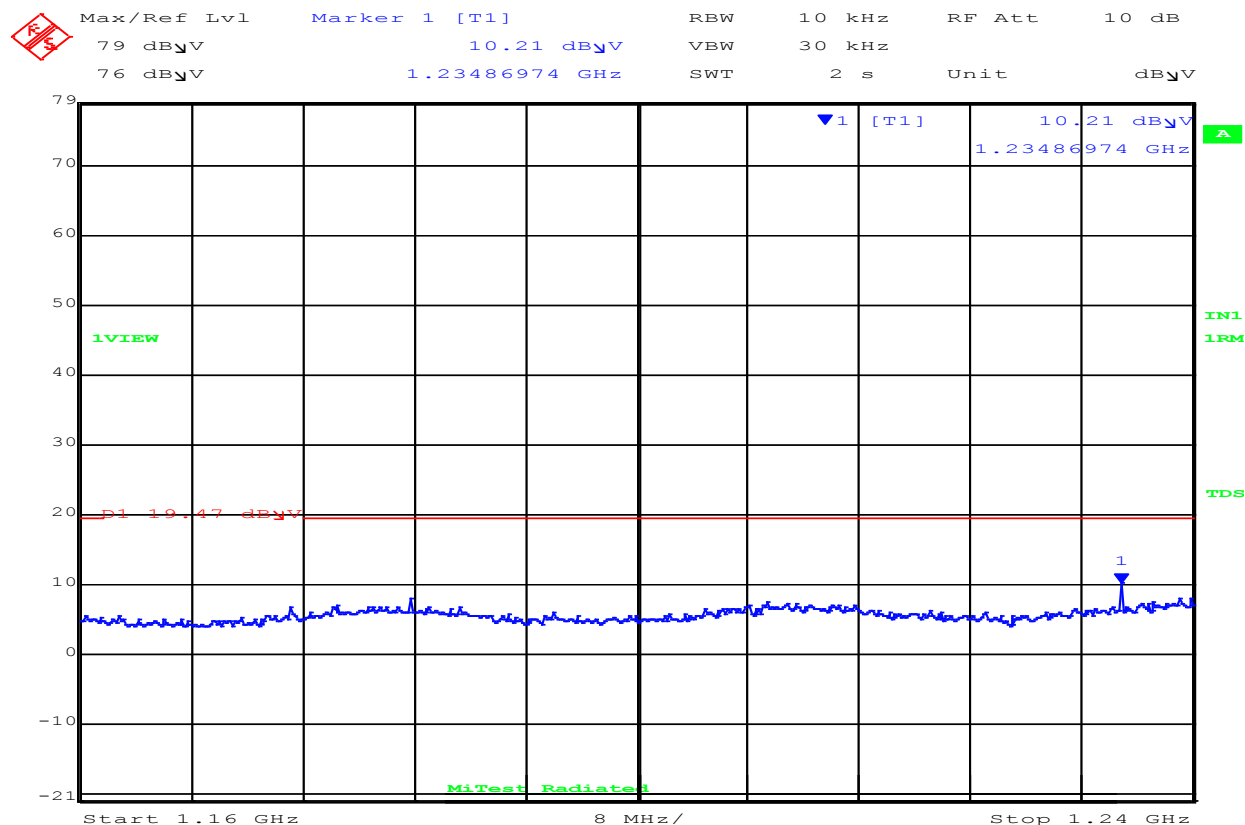
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 11:38:52

#### 1164.00-1240.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

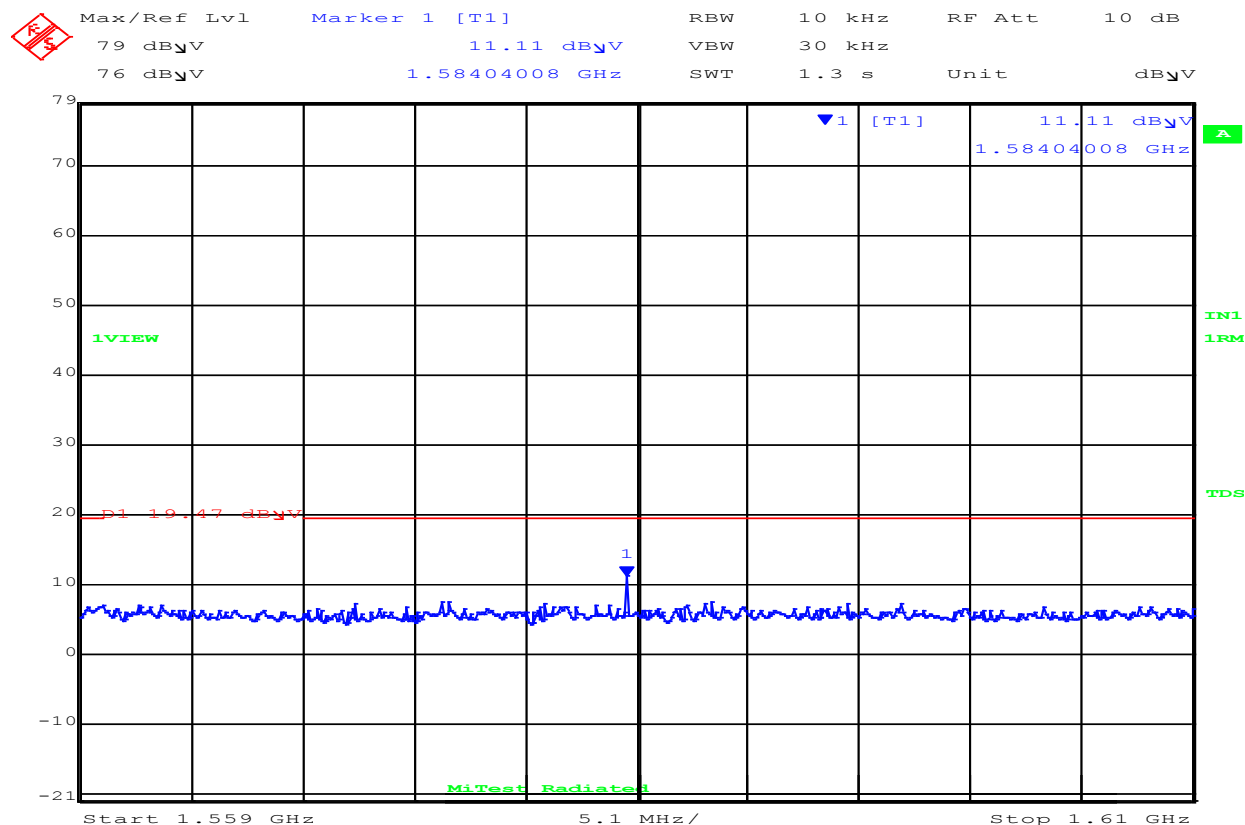
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 11:36:02

#### 1559.00-1610.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Vertical

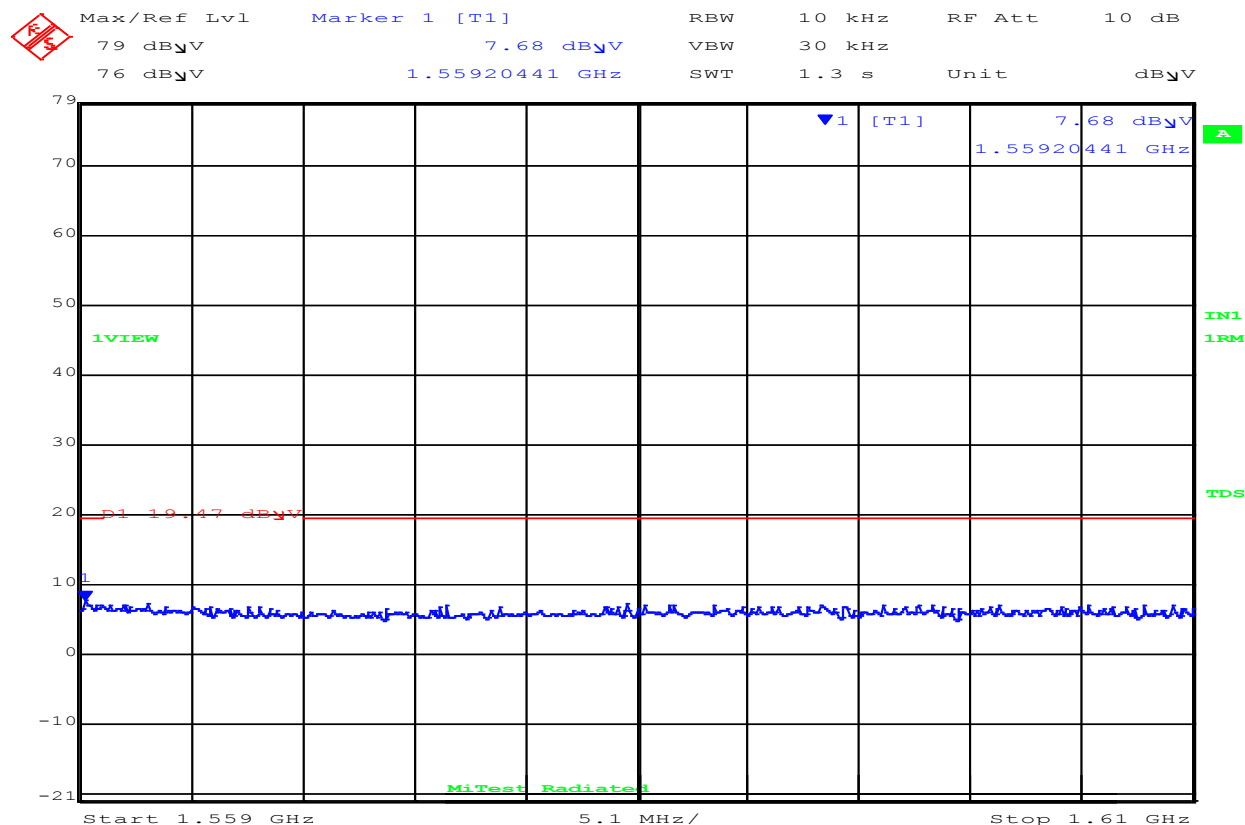
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610 GHz Vertical

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 11:33:52

#### 1559.00-1610.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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7128 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

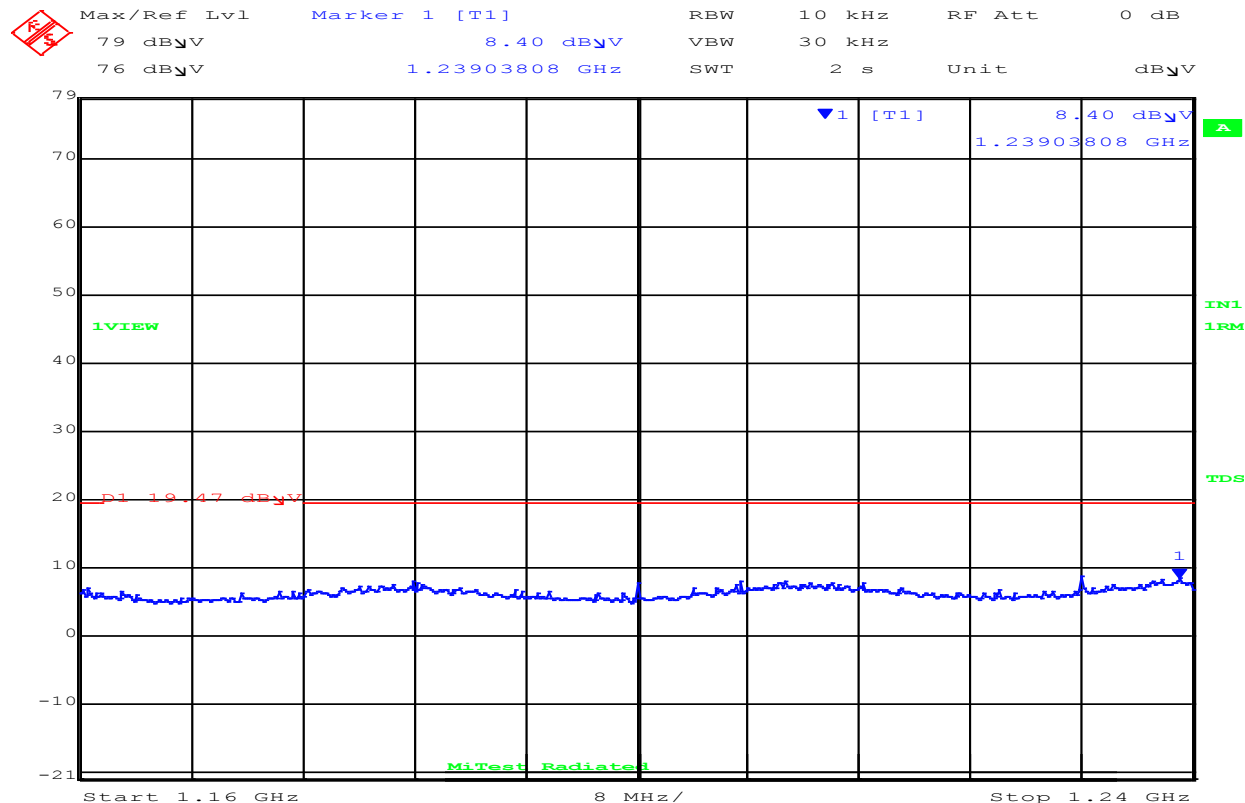
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 13:41:34

| 1164.00-1240.00 MHz                                                                                                                         |               |              |                  |     |        |         |              |           |            |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

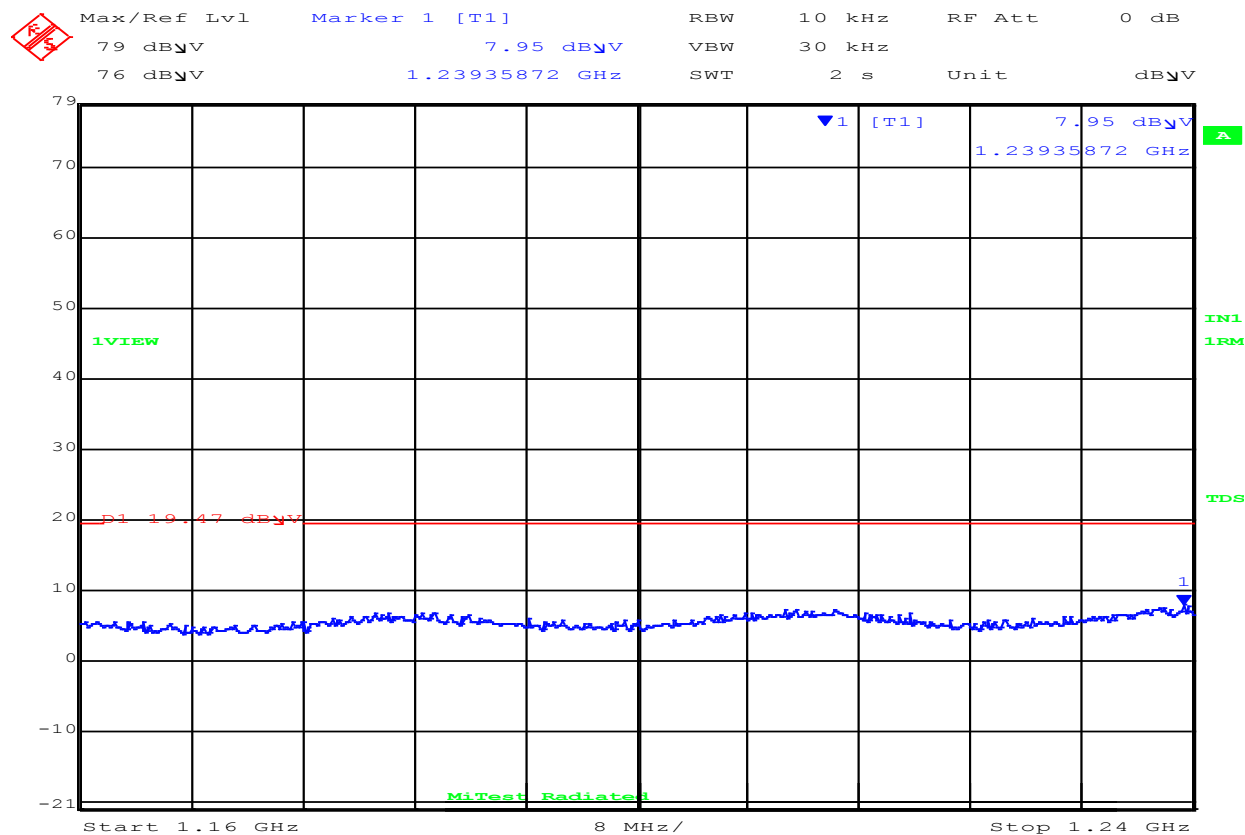
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 13:39:48

#### 1164.00-1240.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

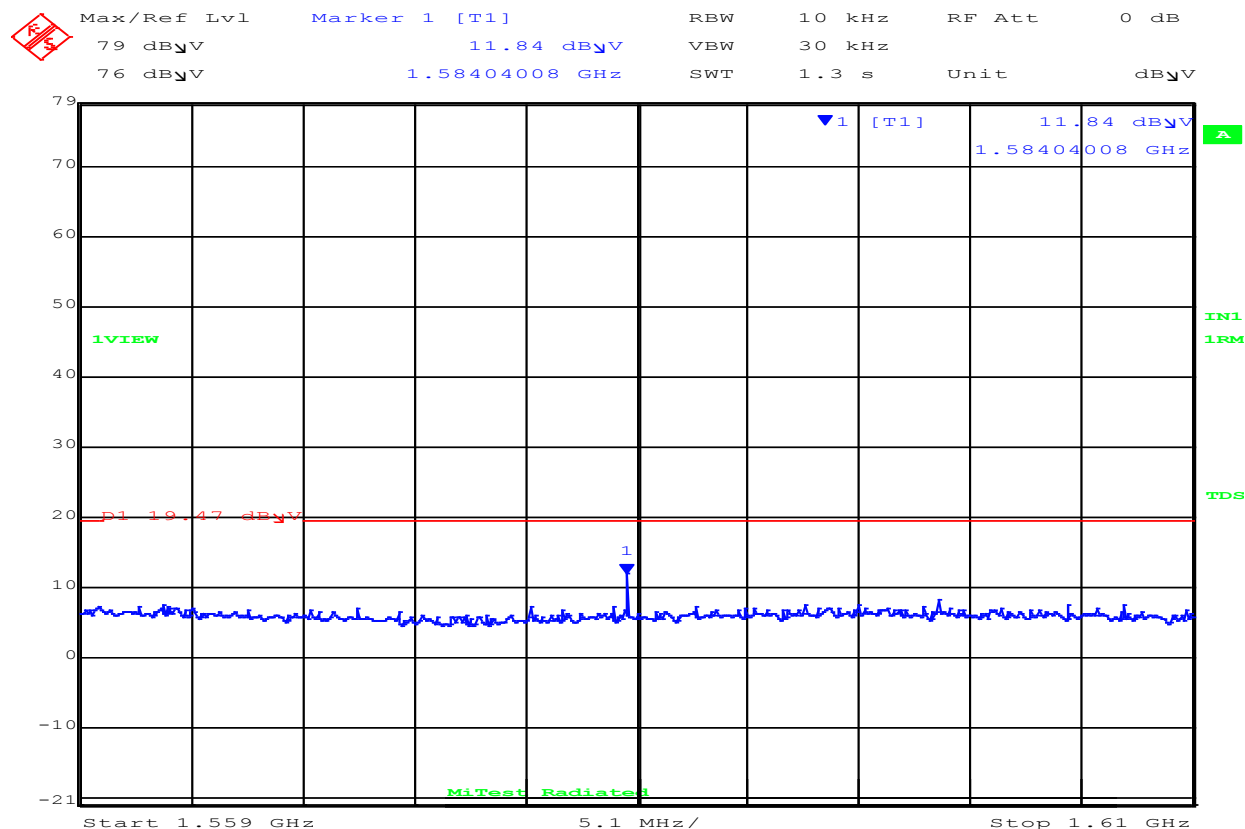
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 13:43:06

#### 1559.00-1610.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

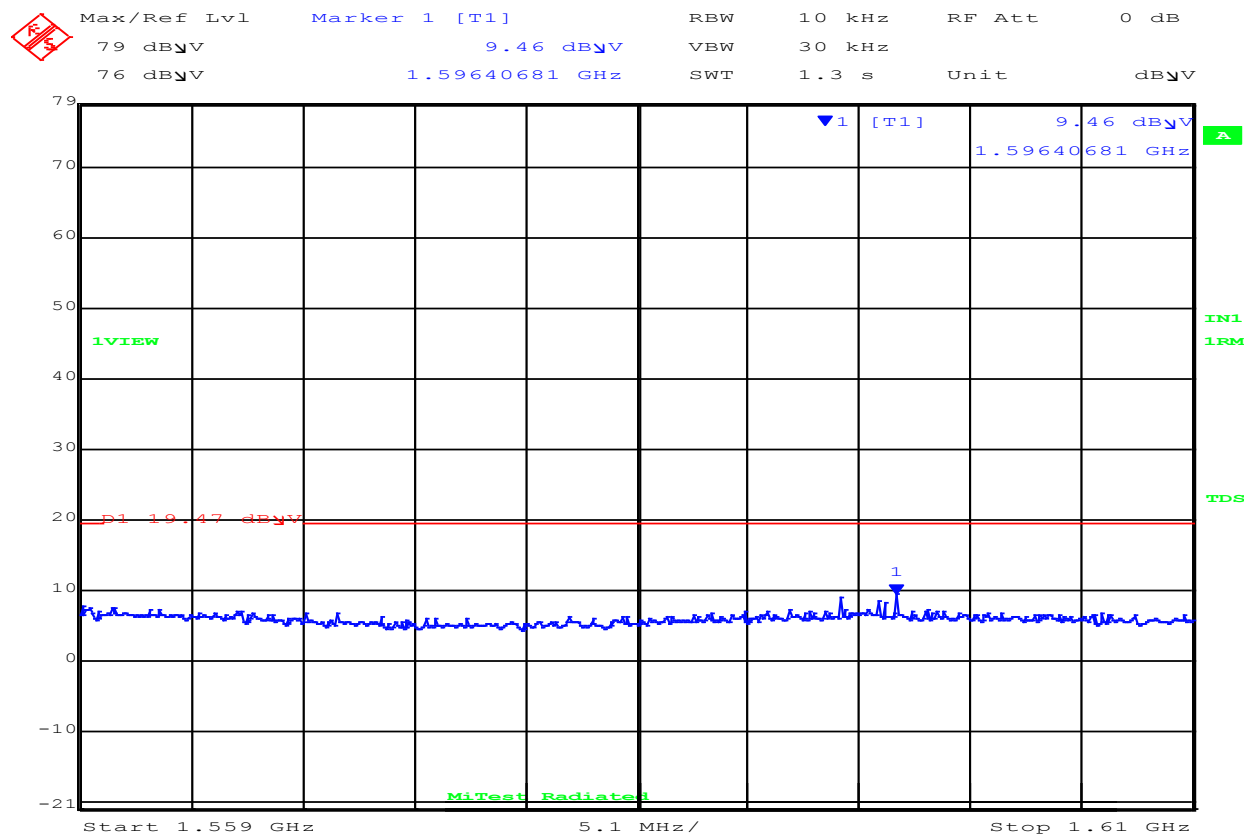
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 13:46:37

#### 1559.00-1610.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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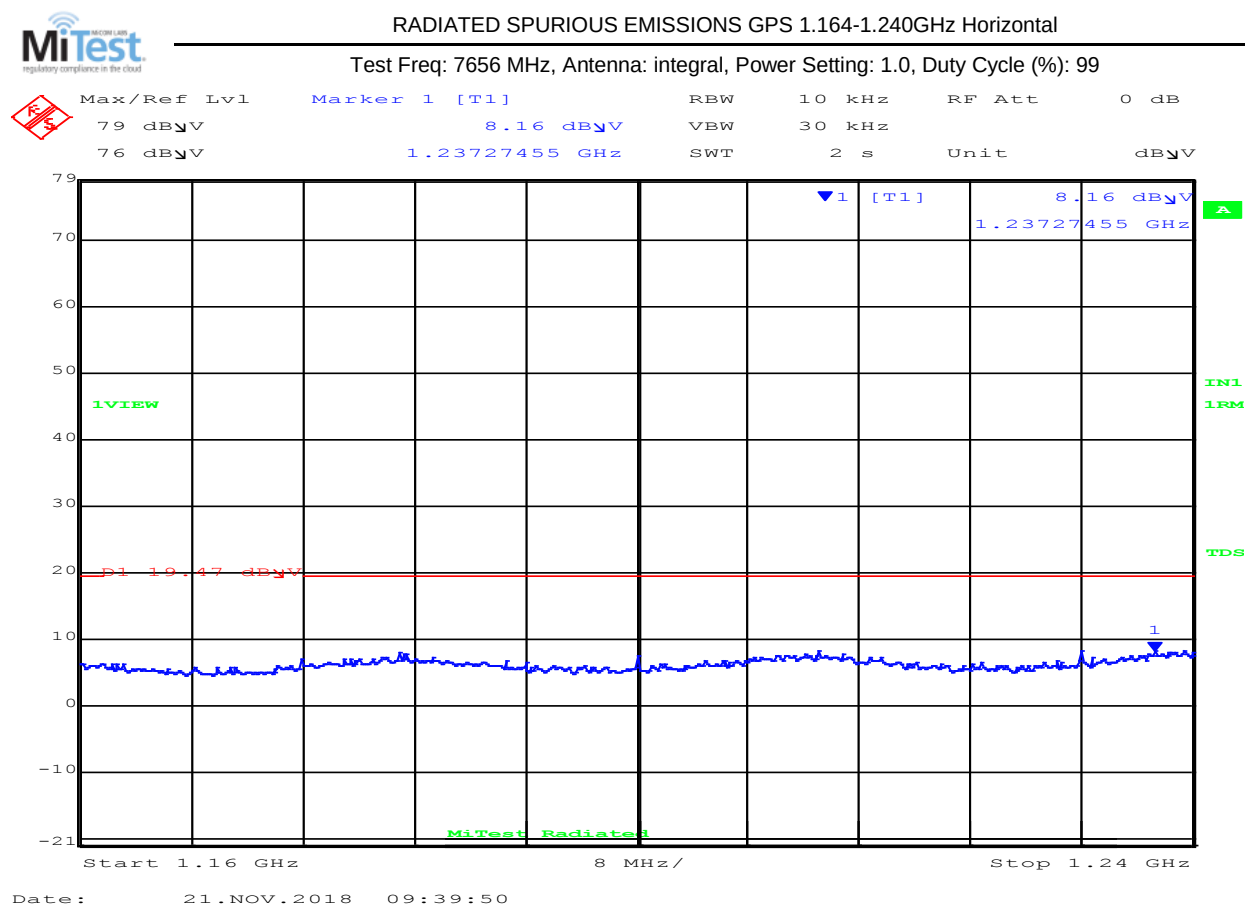
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7656 MHz (Covers Band Group 3 TFC 7 and Band Group 6 TFC 5)

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

Test Measurement Results



1164.00-1240.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

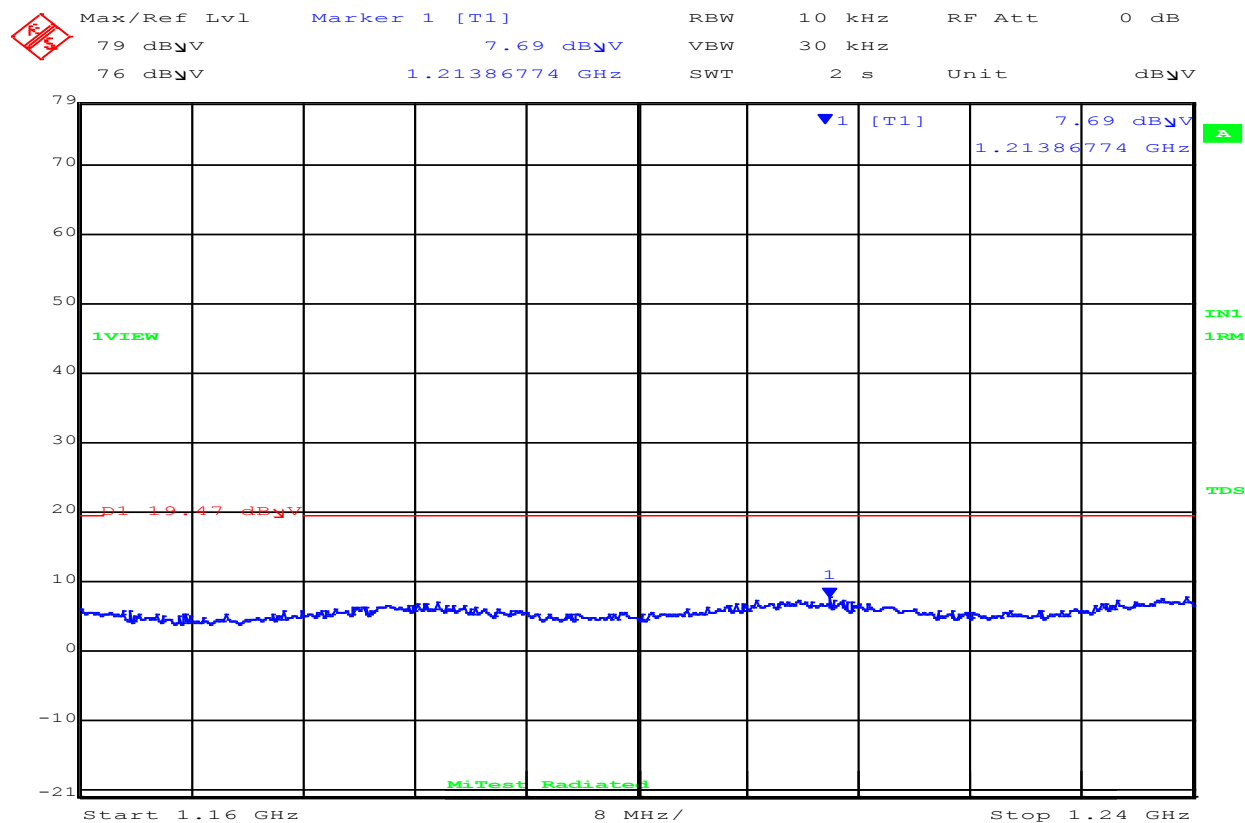
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 21.NOV.2018 09:41:03

#### 1164.00-1240.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

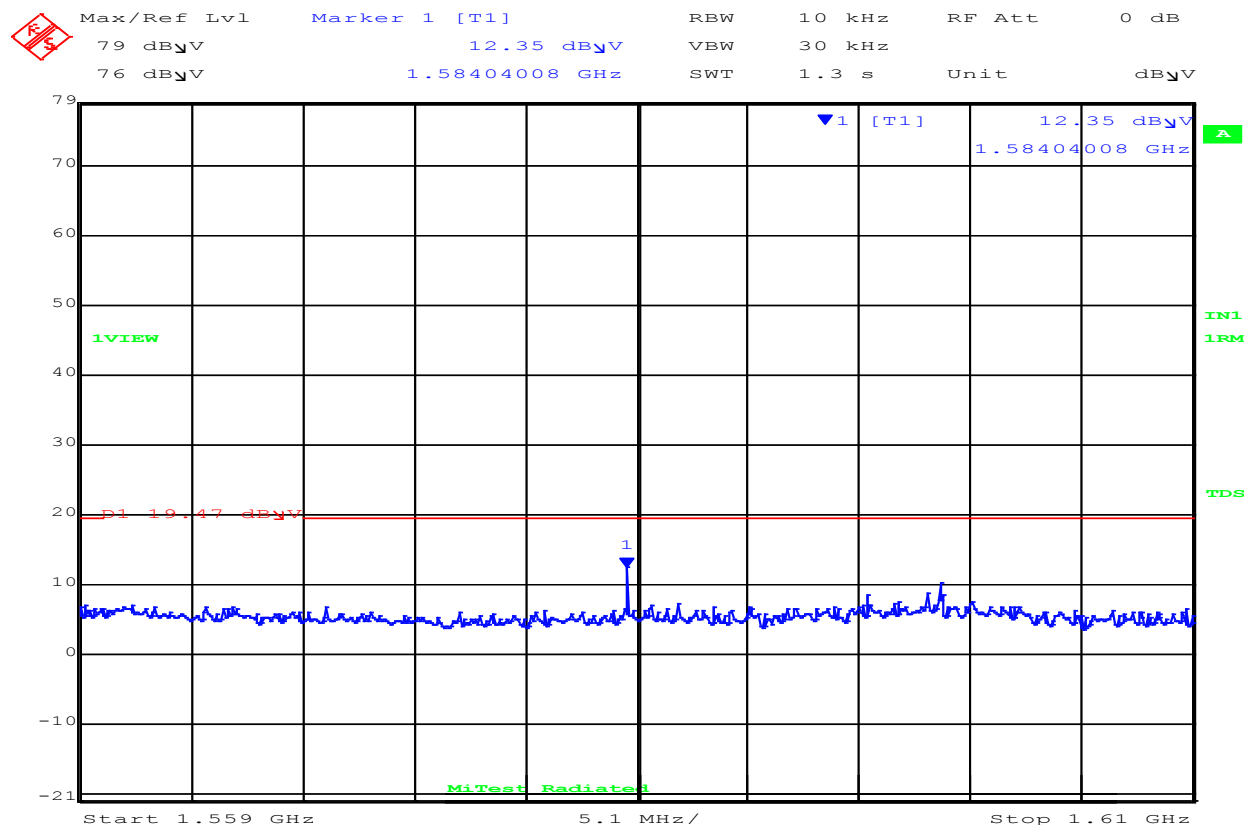
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 21.NOV.2018 09:44:21

#### 1559.00-1610.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

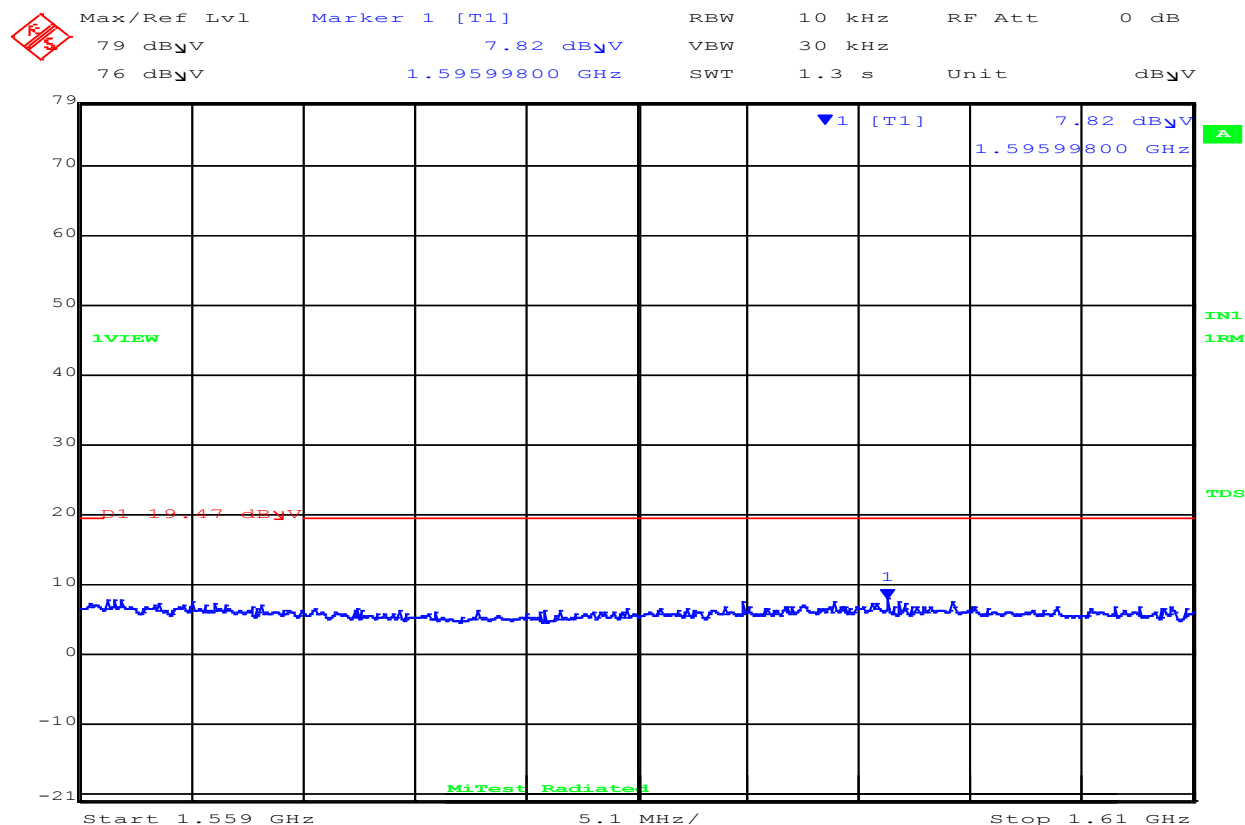
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 21.NOV.2018 09:42:47

#### 1559.00-1610.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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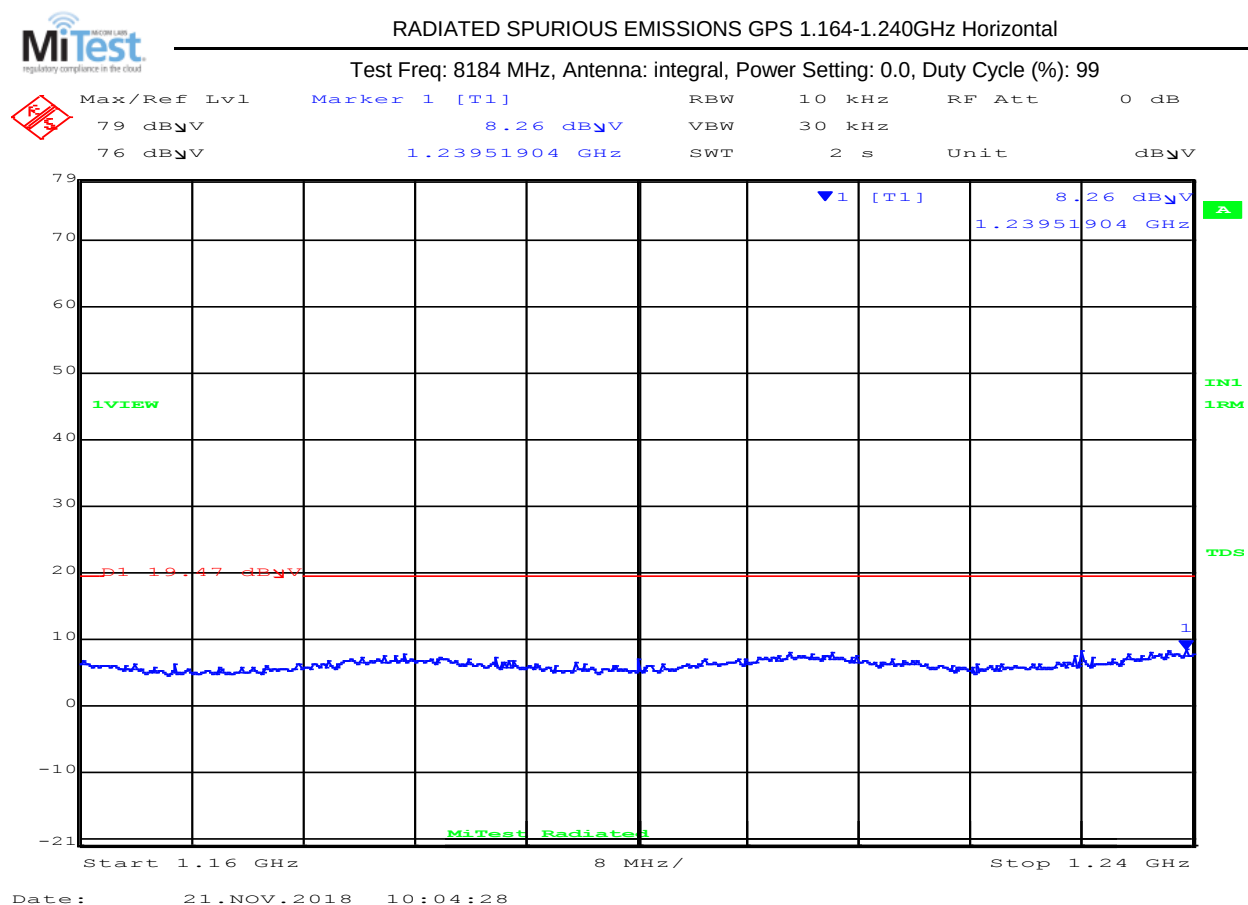
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8184 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

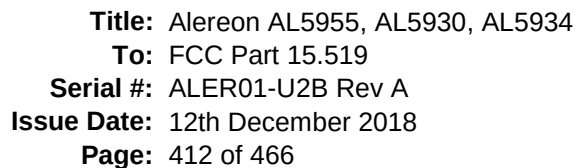
Test Measurement Results



1164.00-1240.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



| 1164.00-1240.00 MHz                                                                                                                         |                  |                 |                     |     |           |            |                 |              |               |
|---------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|---------------------|-----|-----------|------------|-----------------|--------------|---------------|
| Num                                                                                                                                         | Frequency<br>MHz | Level<br>dBμV/m | Measurement<br>Type | Pol | Hgt<br>cm | Azt<br>Deg | Limit<br>dBμV/m | Margin<br>dB | Pass<br>/Fail |
| No Signals Found within 6 dB of Limit                                                                                                       |                  |                 |                     |     |           |            |                 |              |               |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |                  |                 |                     |     |           |            |                 |              |               |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

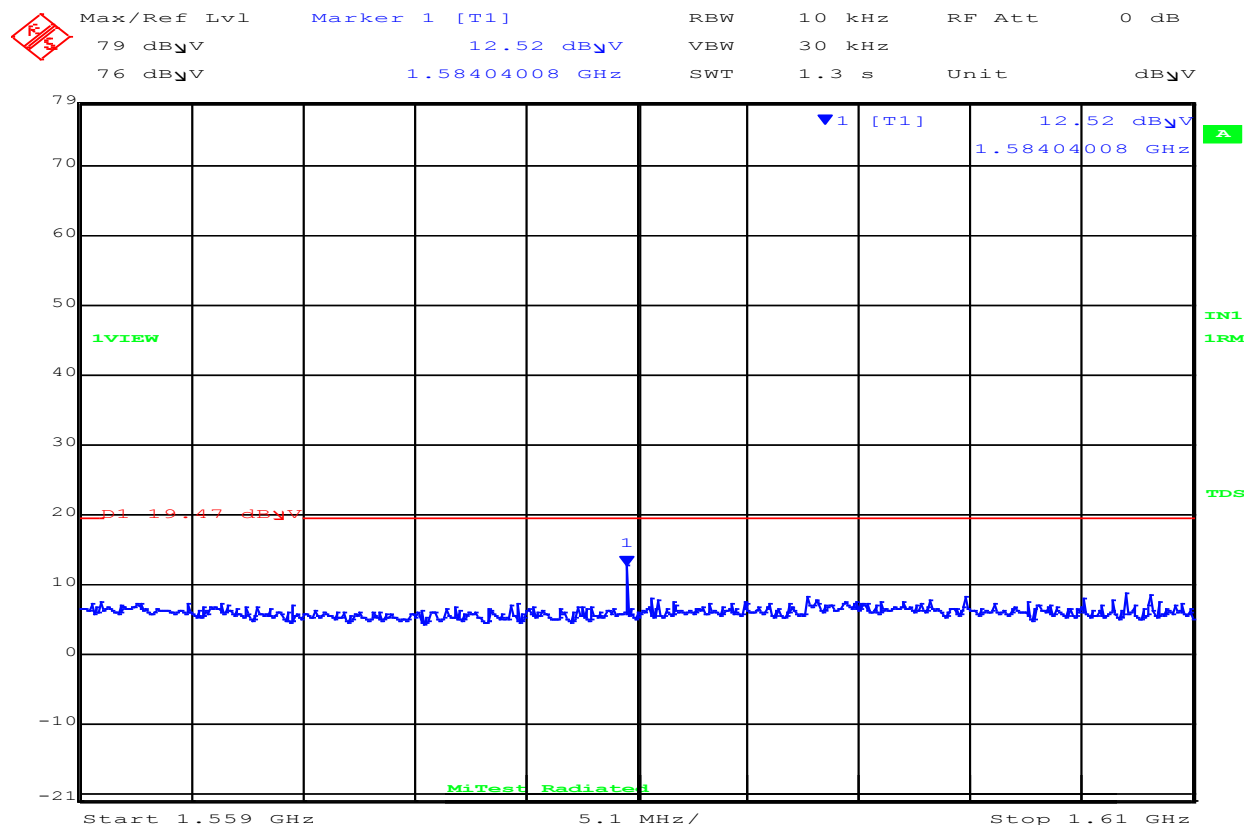
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 09:58:09

#### 1559.00-1610.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610GHz Vertical

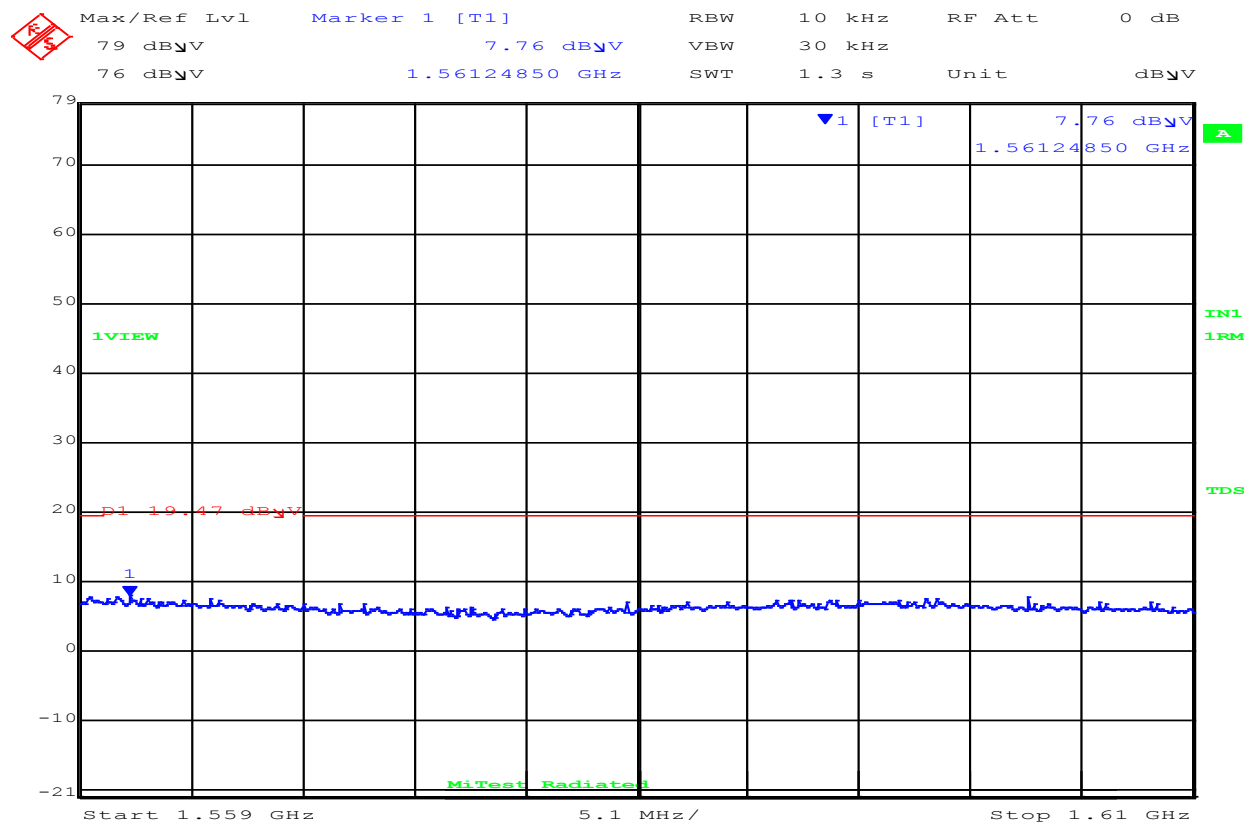
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Vertical

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 10:01:09

#### 1559.00-1610.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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8712 MHz

Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Horizontal

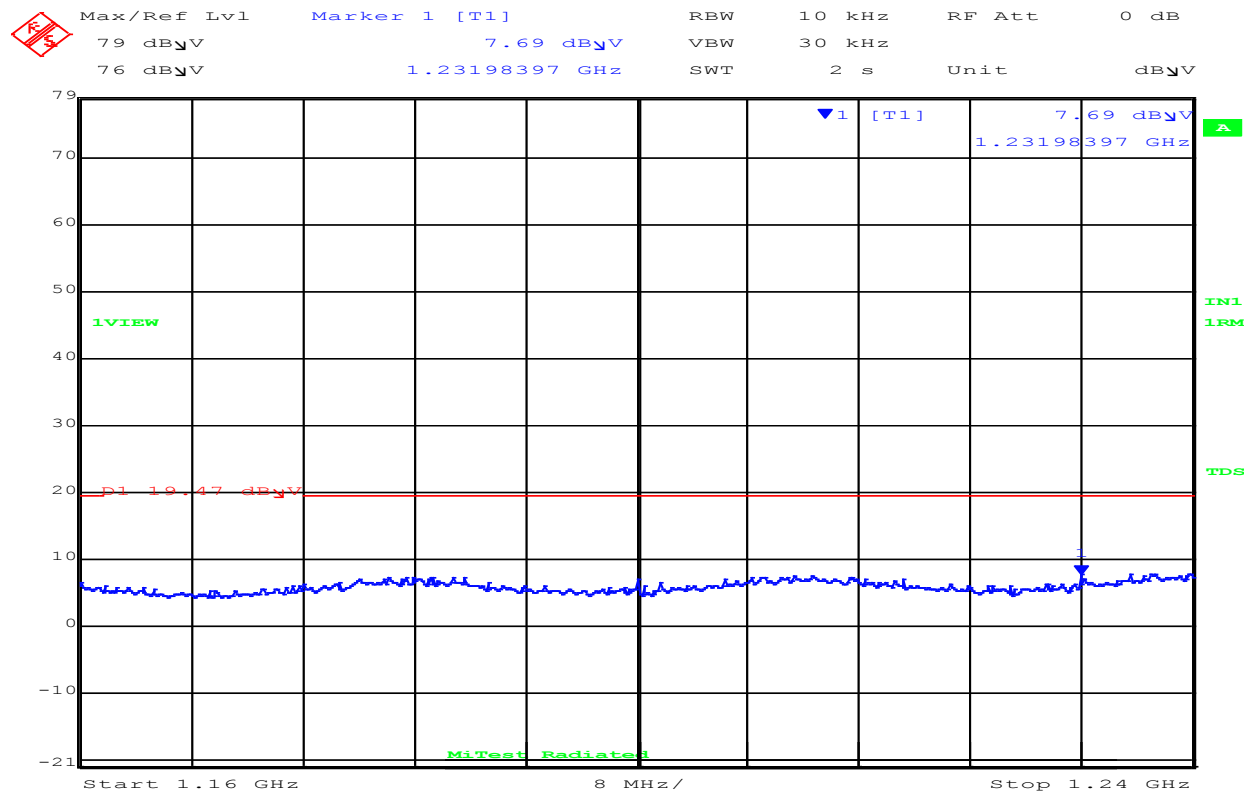
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

Test Measurement Results



RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Horizontal

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 11:55:48

1164.00-1240.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.164-1.240 GHz Vertical

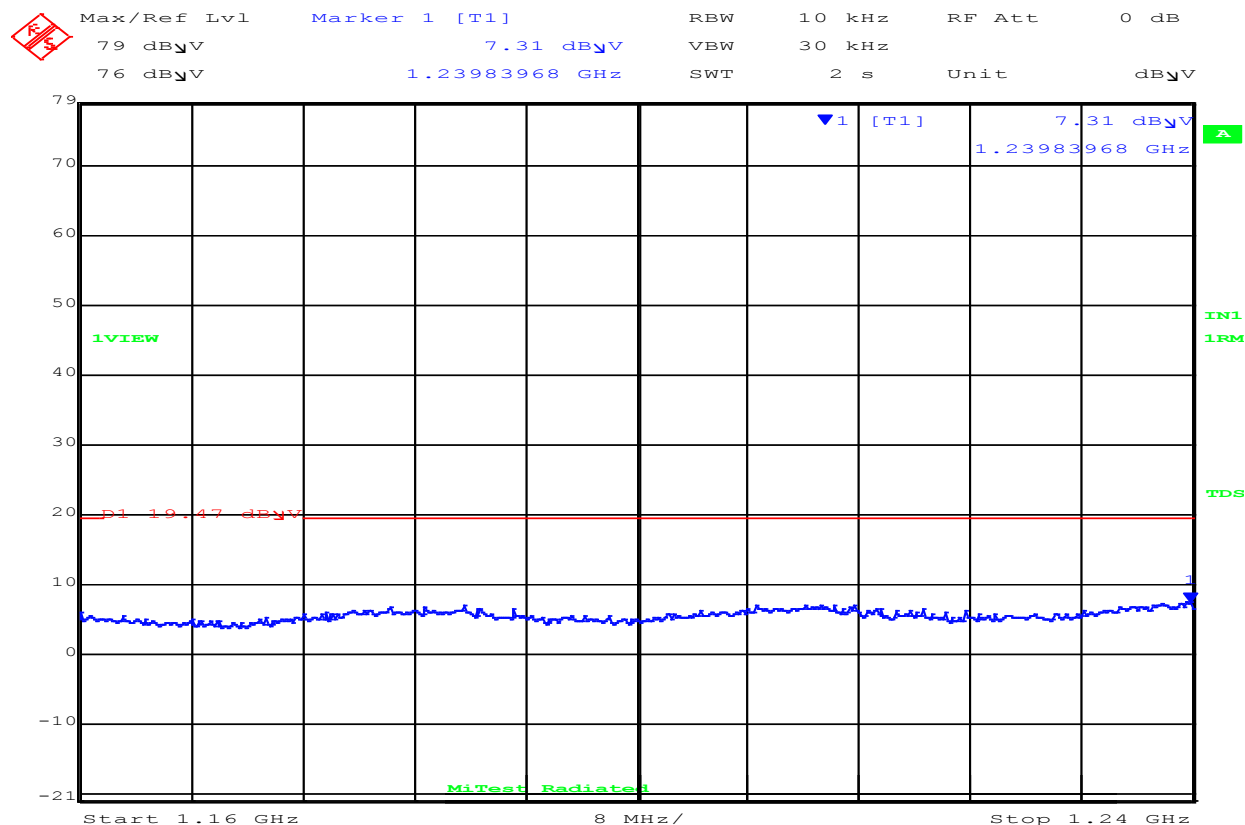
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.164-1.240GHz Vertical

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 21.NOV.2018 11:57:05

#### 1164.00-1240.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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#### Equipment Configuration for Spurious Emissions 1.559-1.610 GHz Horizontal

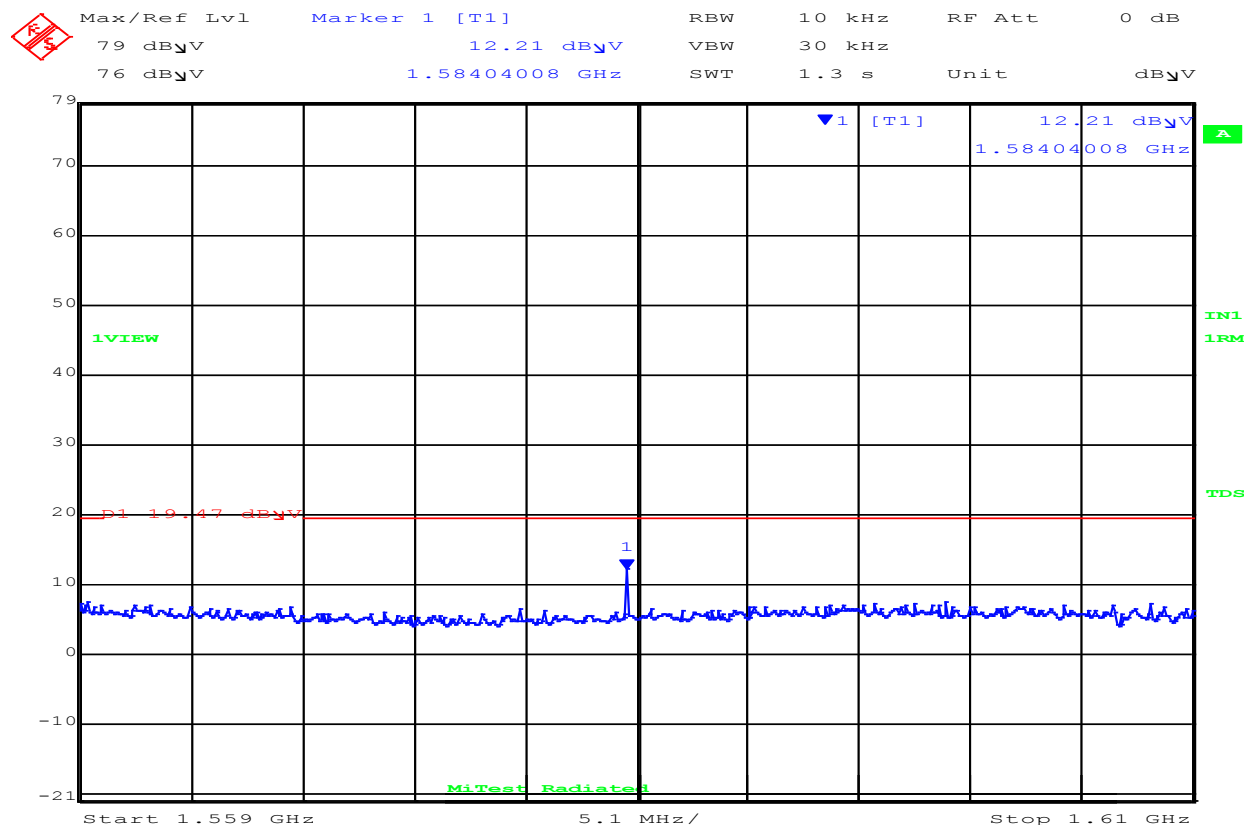
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### RADIATED SPURIOUS EMISSIONS GPS 1.559-1.610GHz Horizontal

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99

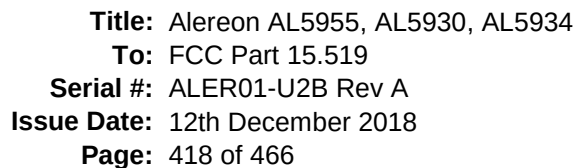


Date: 21.NOV.2018 11:54:14

#### 1559.00-1610.00 MHz

| Num                                                                                                                                         | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit                                                                                                       |               |              |                  |     |        |         |              |           |            |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |               |              |                  |     |        |         |              |           |            |

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|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |



Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99

Date: 21.NOV.2018 11:52:32

| 1559.00-1610.00 MHz                                                                                                                         |                  |                 |                     |     |           |            |                 |              |               |
|---------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------|---------------------|-----|-----------|------------|-----------------|--------------|---------------|
| Num                                                                                                                                         | Frequency<br>MHz | Level<br>dBμV/m | Measurement<br>Type | Pol | Hgt<br>cm | Azt<br>Deg | Limit<br>dBμV/m | Margin<br>dB | Pass<br>/Fail |
| No Signals Found within 6 dB of Limit                                                                                                       |                  |                 |                     |     |           |            |                 |              |               |
| <b>Test Notes:</b><br>Laptop connected via 10ft USB cable with Ferrites (TDK ZCAT-330-1236 and Fair-Rite Type 61 with one turn at each end) |                  |                 |                     |     |           |            |                 |              |               |

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### 9.4.3. 50 MHz Bandwidth Peak Emissions

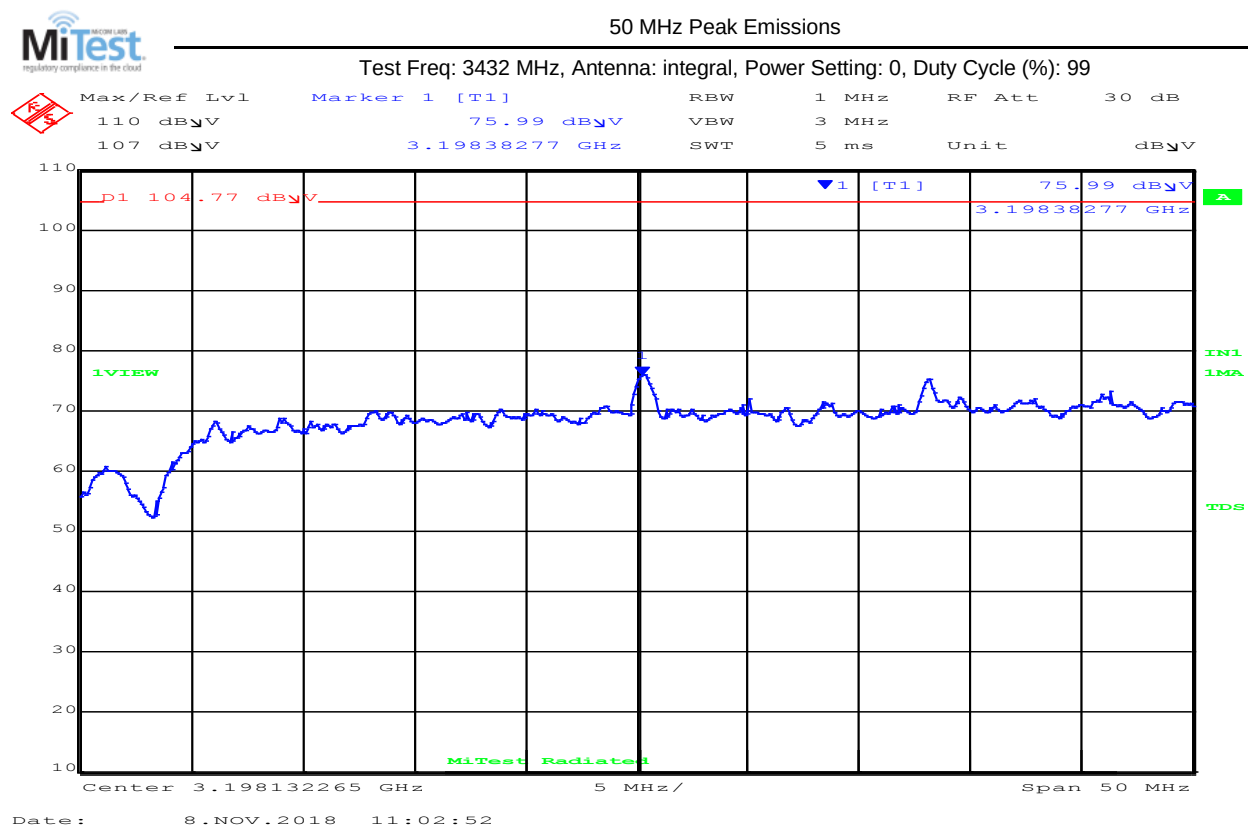
#### 9.4.3.1. Commander AL5930

3432 MHz

#### Equipment Configuration for 50 MHz Peak Emissions

|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 1.0            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3432.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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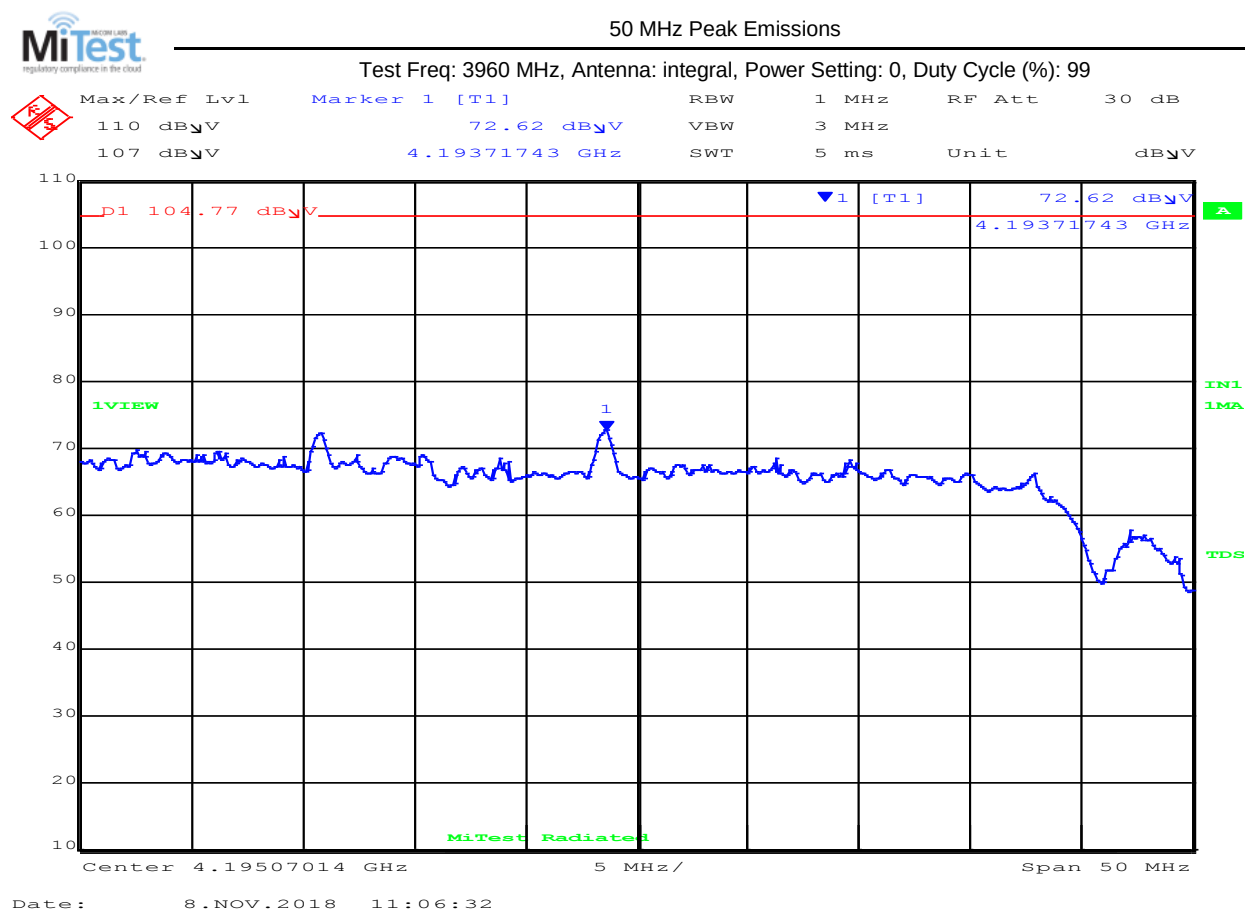
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3960 MHz

#### Equipment Configuration for 50 MHz Peak Emissions

|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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4488 MHz

#### Equipment Configuration for 50 MHz Peak Emissions

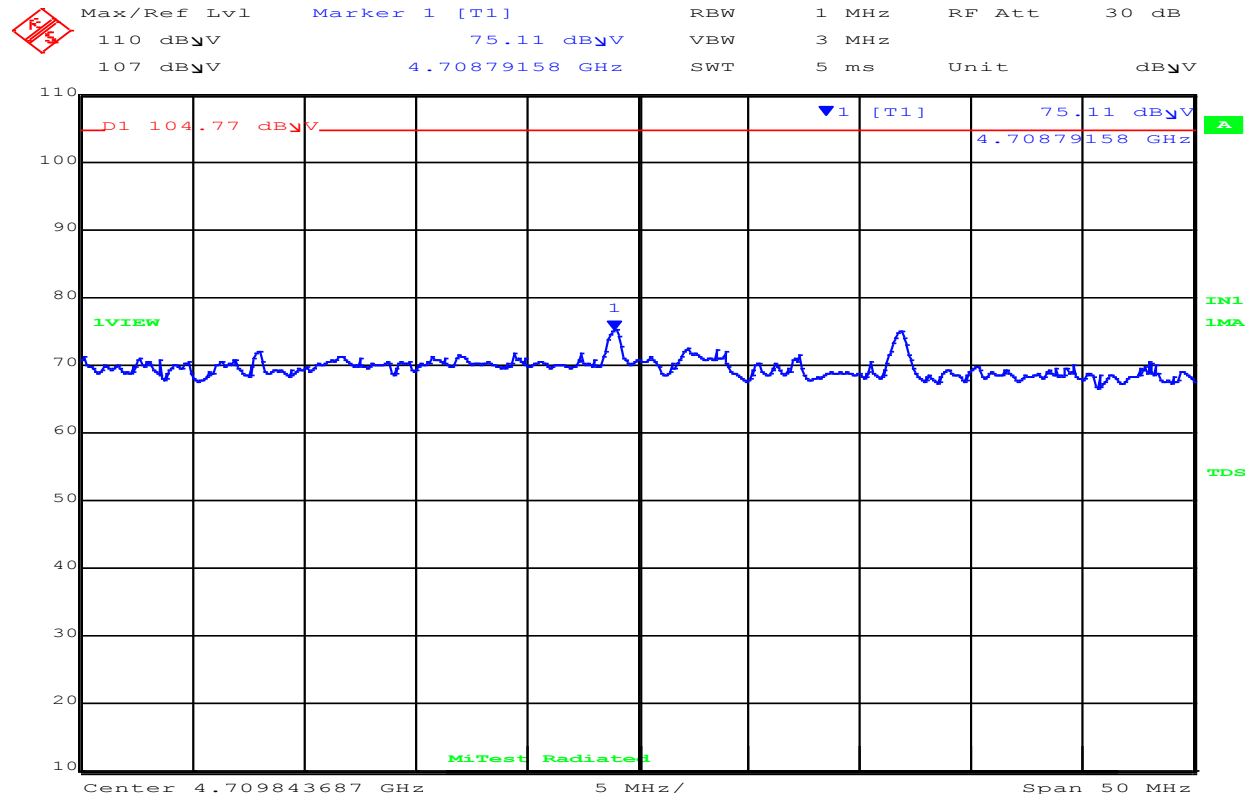
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 8.NOV.2018 11:09:19

#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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6600 MHz

#### Equipment Configuration for 50 MHz Peak Emissions

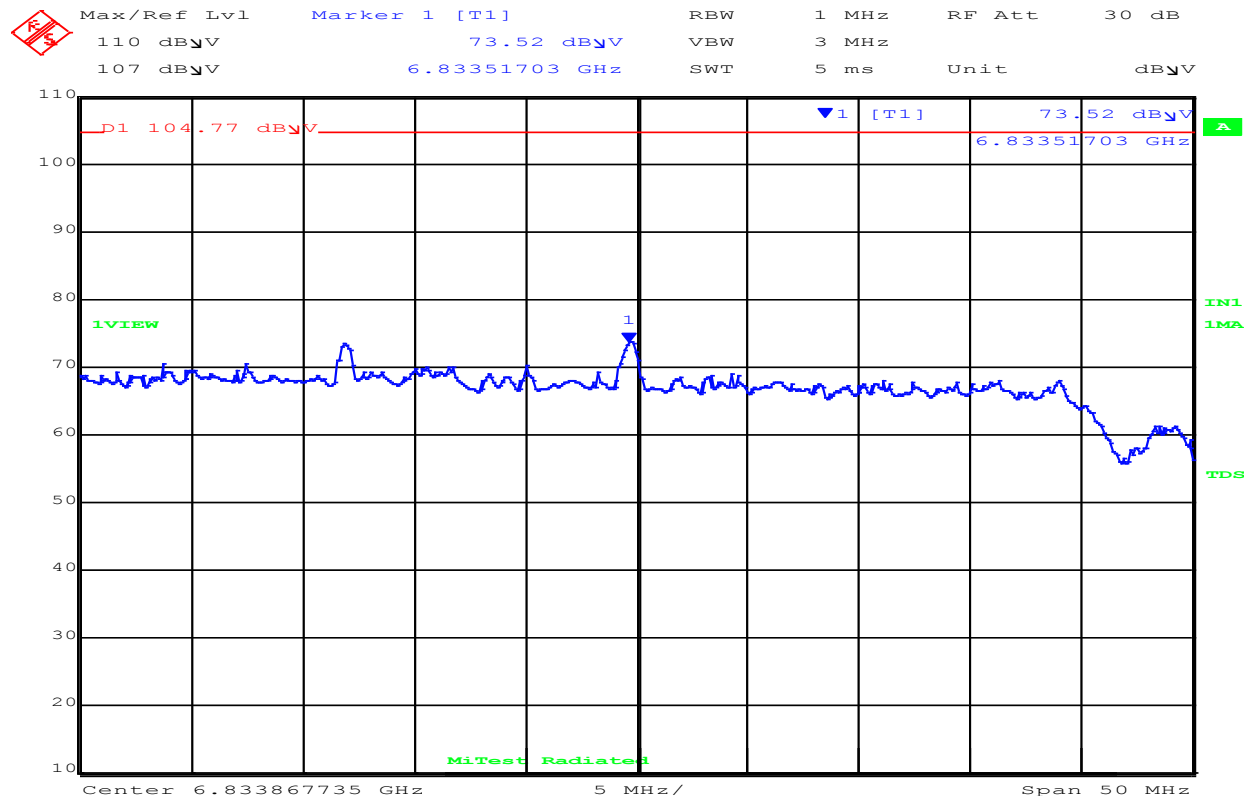
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 8.NOV.2018 11:12:23

#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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7128 MHz

#### Equipment Configuration for 50 MHz Peak Emissions

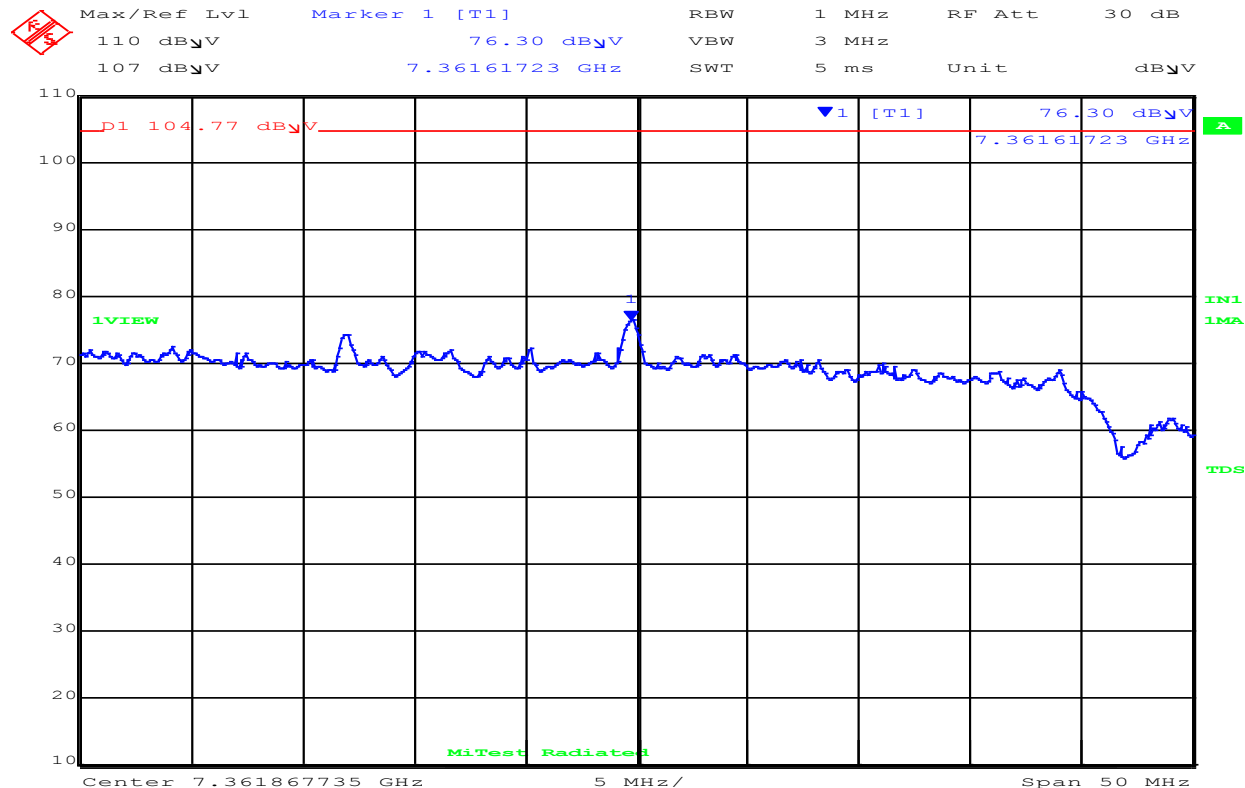
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 8.NOV.2018 11:15:55

#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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7656 MHz (Covers Band Group 3 TFC 7 and Band Group 6 TFC 5)

Equipment Configuration for 50 MHz Peak Emissions

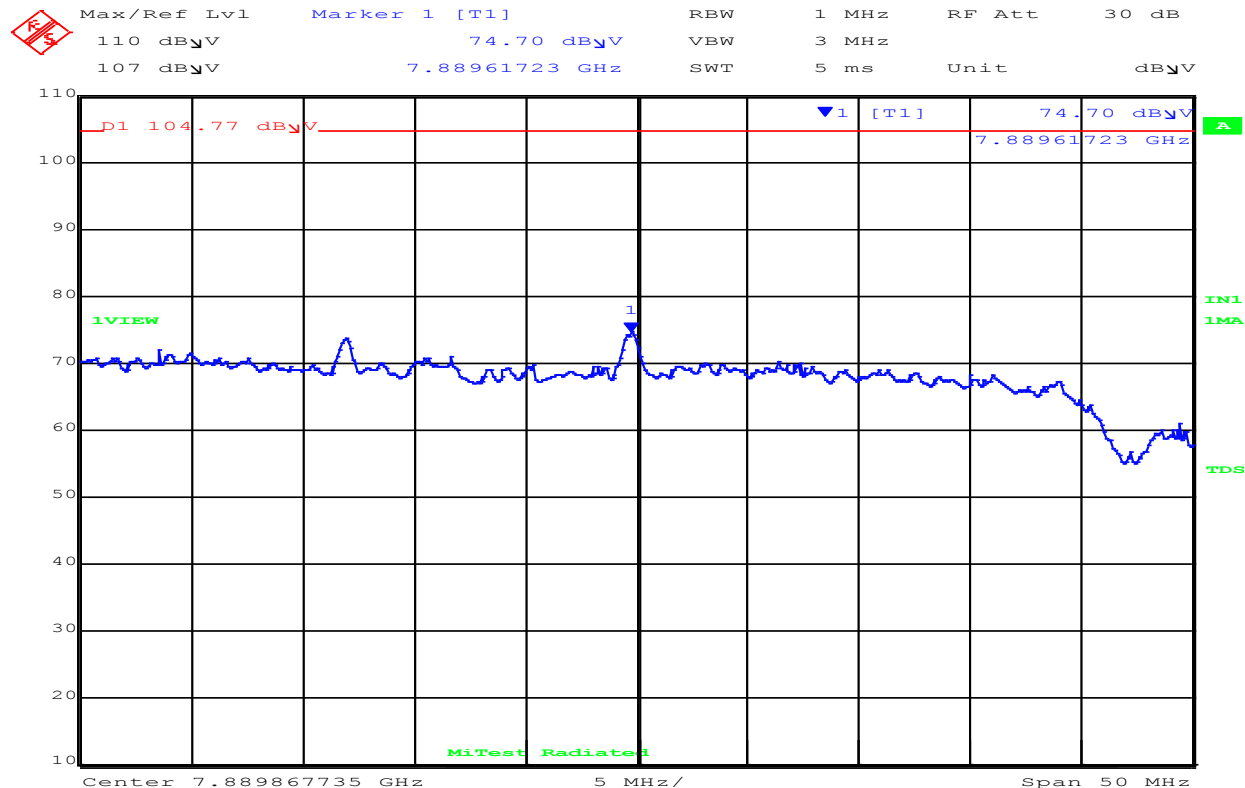
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

Test Measurement Results



50 MHz Peak Emissions

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 8.NOV.2018 11:18:58

50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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8184 MHz

#### Equipment Configuration for 50 MHz Peak Emissions

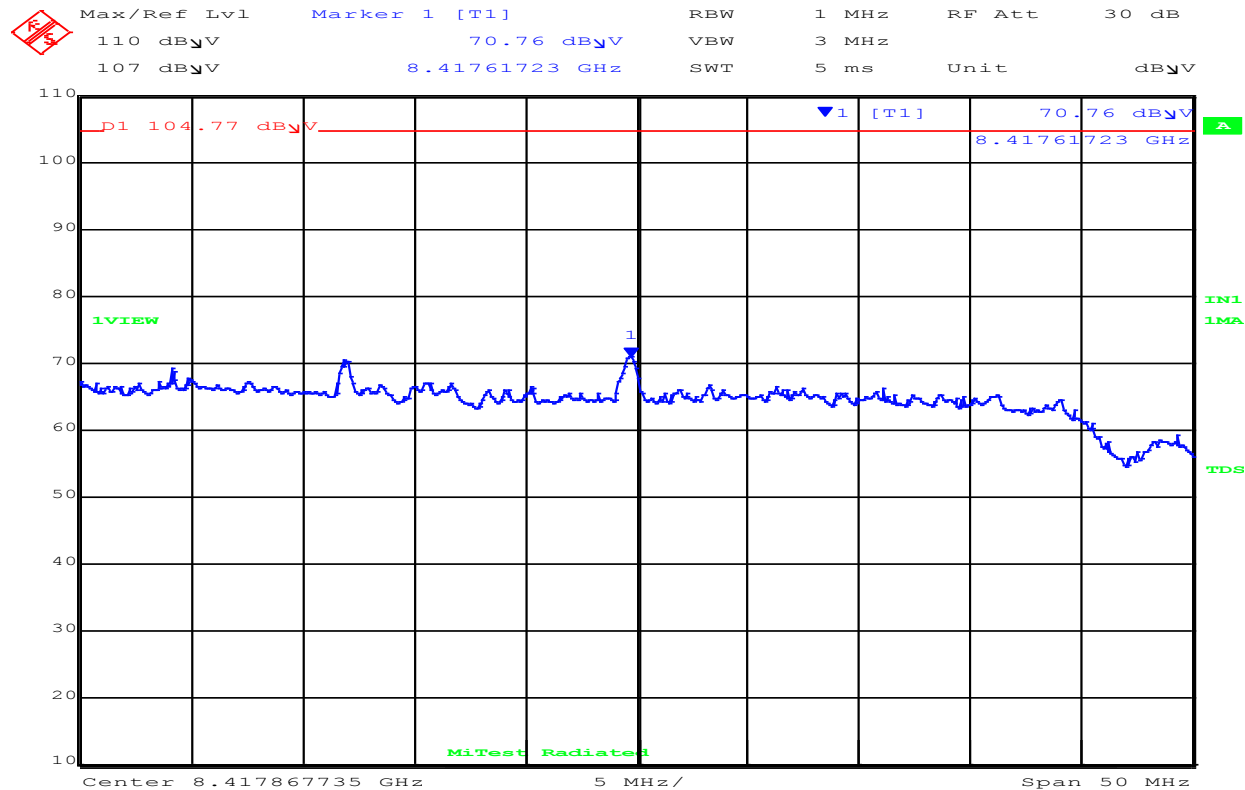
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 8.NOV.2018 11:22:41

#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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8712 MHz

#### Equipment Configuration for 50 MHz Peak Emissions

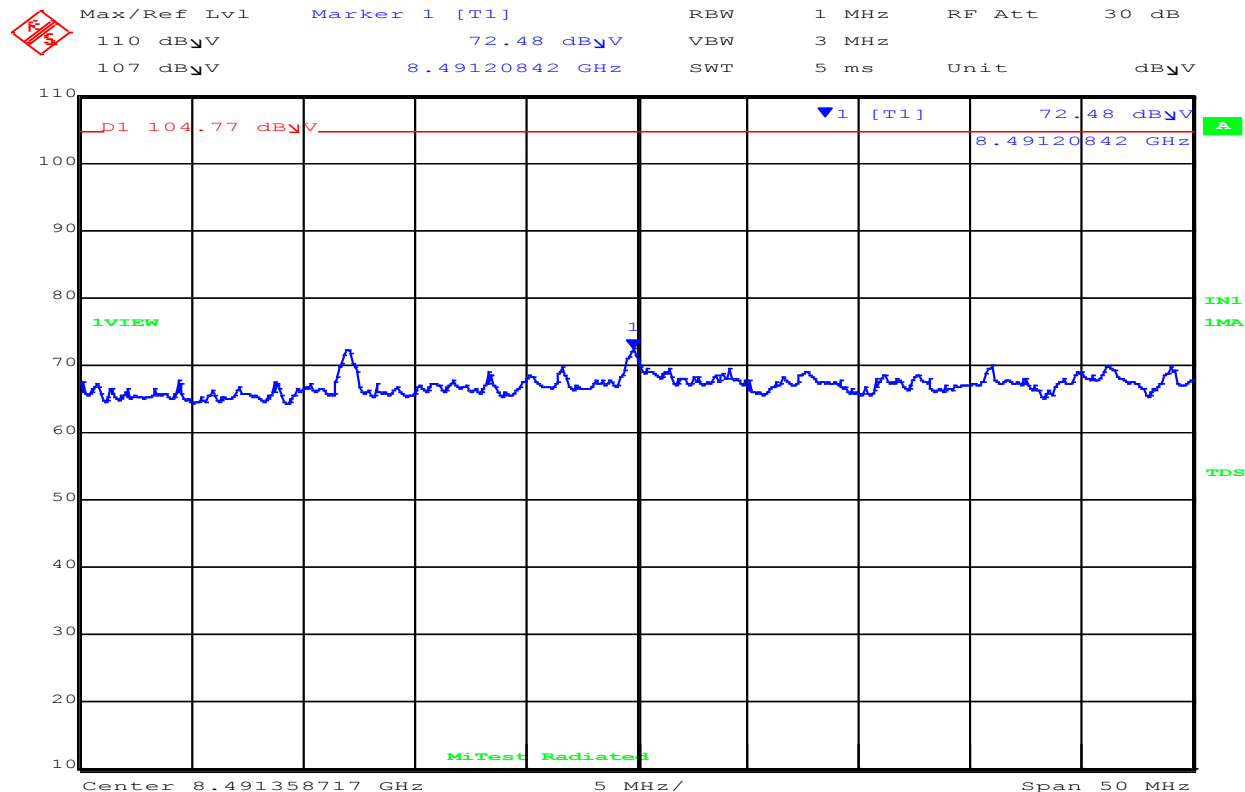
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 8.NOV.2018 11:24:49

#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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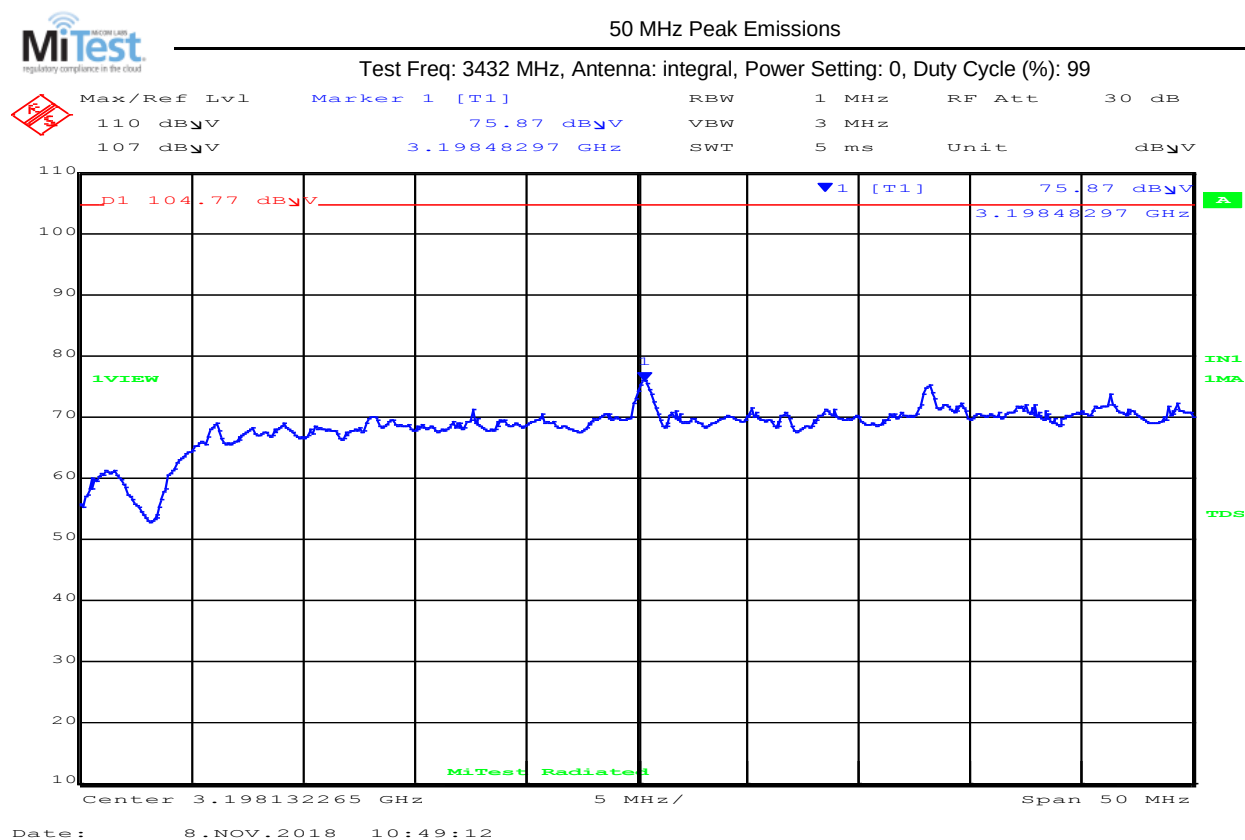
#### 9.4.3.2. Camouflage AL5955

3432 MHz

##### Equipment Configuration for 50 MHz Peak Emissions

|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 1.0            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3432.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

##### Test Measurement Results



##### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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3960 MHz

#### Equipment Configuration for 50 MHz Peak Emissions

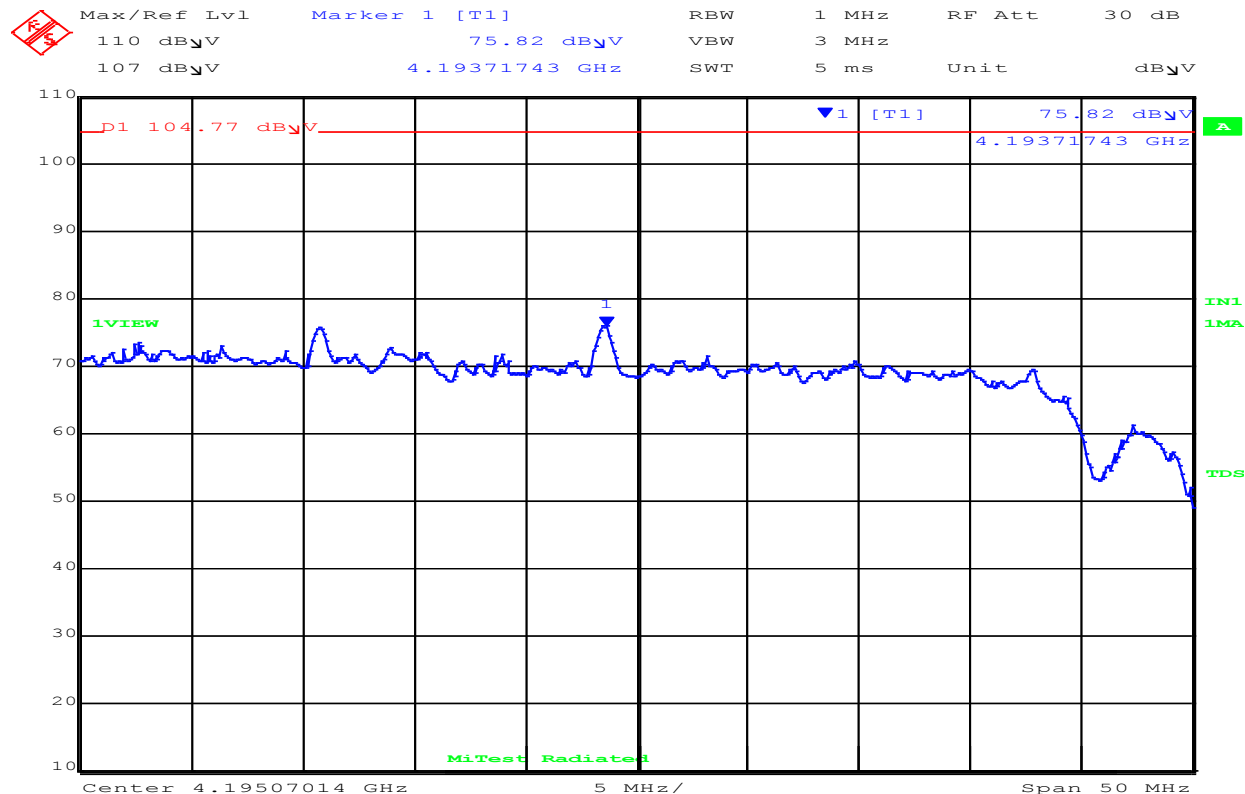
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 8.NOV.2018 10:45:45

#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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4488 MHz

#### Equipment Configuration for 50 MHz Peak Emissions

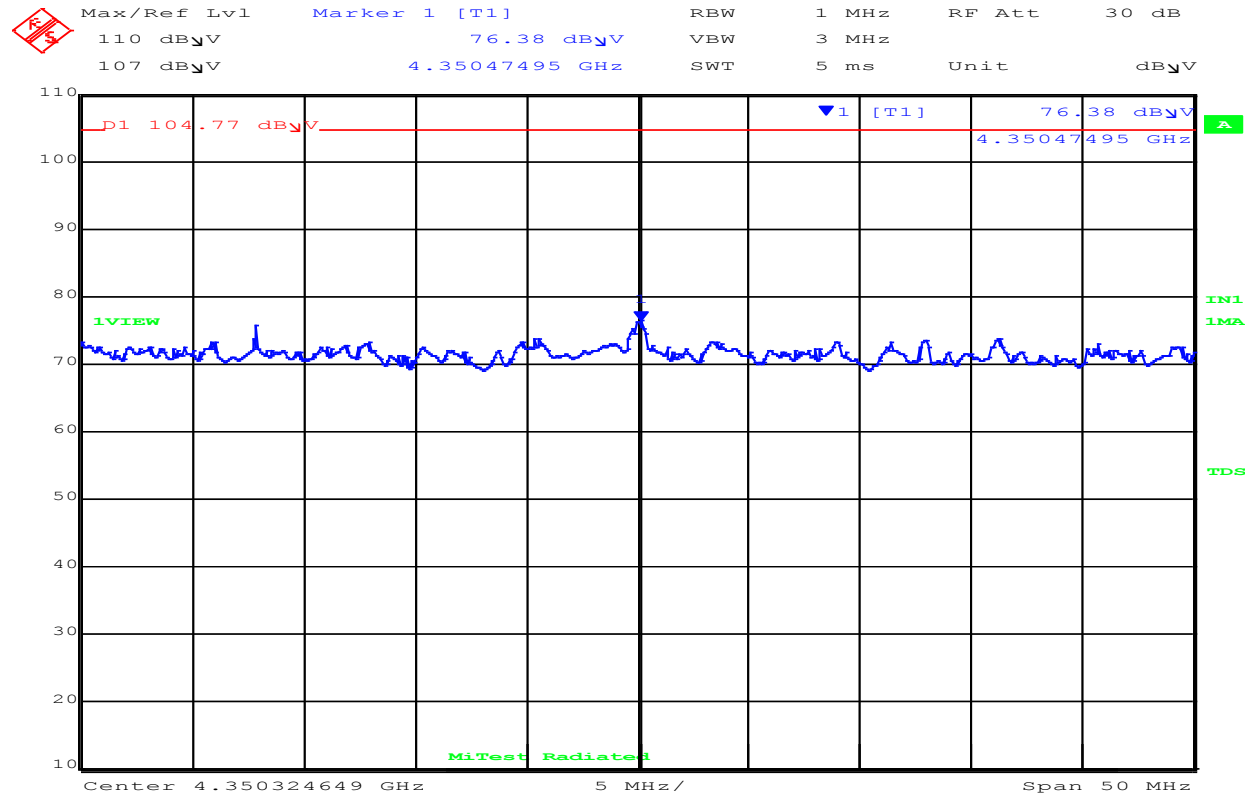
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 8.NOV.2018 10:40:47

#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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6600 MHz

#### Equipment Configuration for 50 MHz Peak Emissions

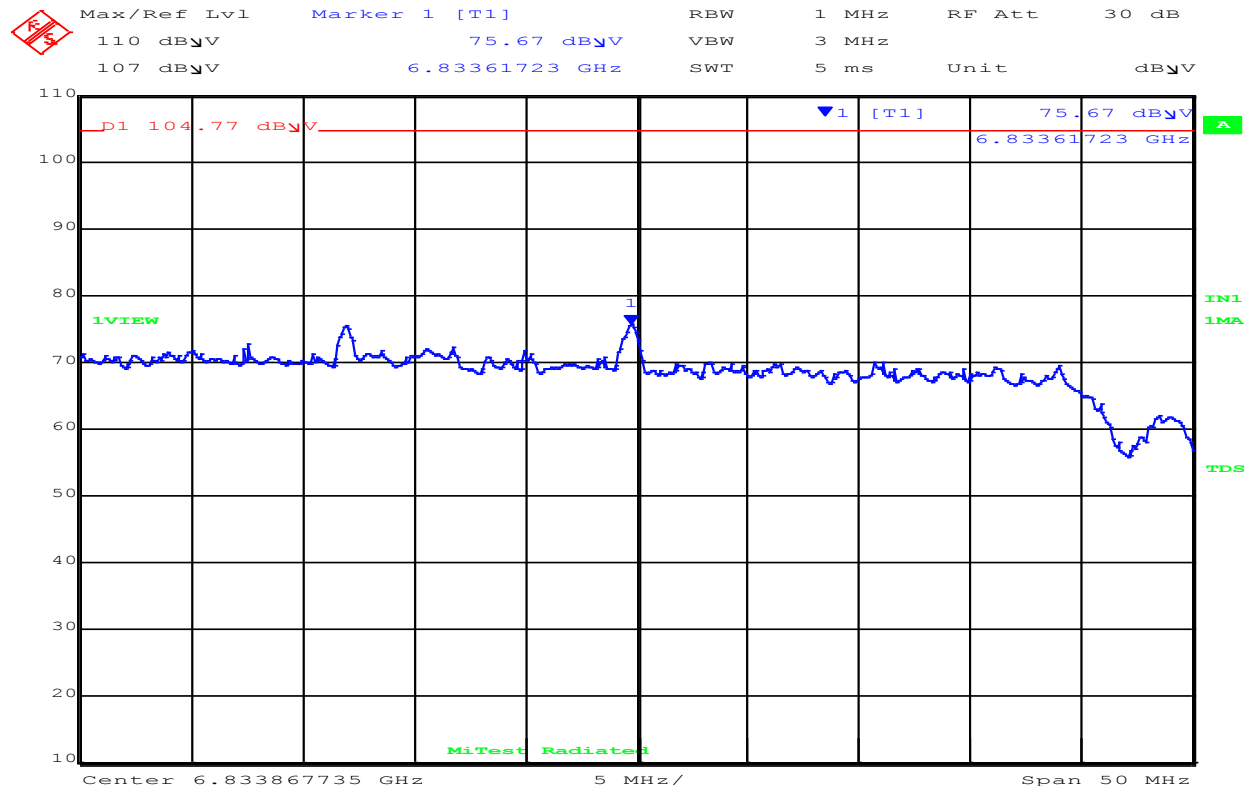
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 8.NOV.2018 10:37:39

#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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7128 MHz

Equipment Configuration for 50 MHz Peak Emissions

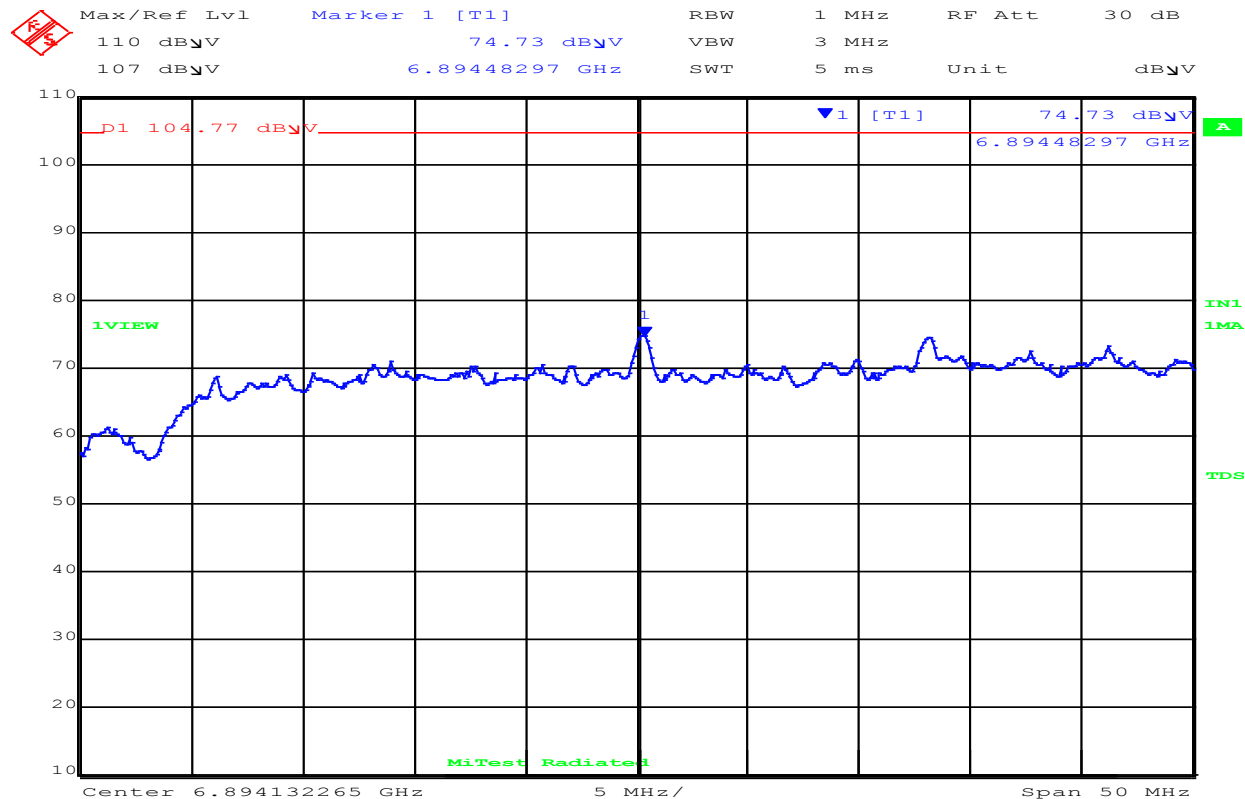
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

Test Measurement Results



50 MHz Peak Emissions

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 8.NOV.2018 10:33:58

50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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7656 MHz (Covers Band Group 3 TFC 7 and Band Group 6 TFC 5)

#### Equipment Configuration for 50 MHz Peak Emissions

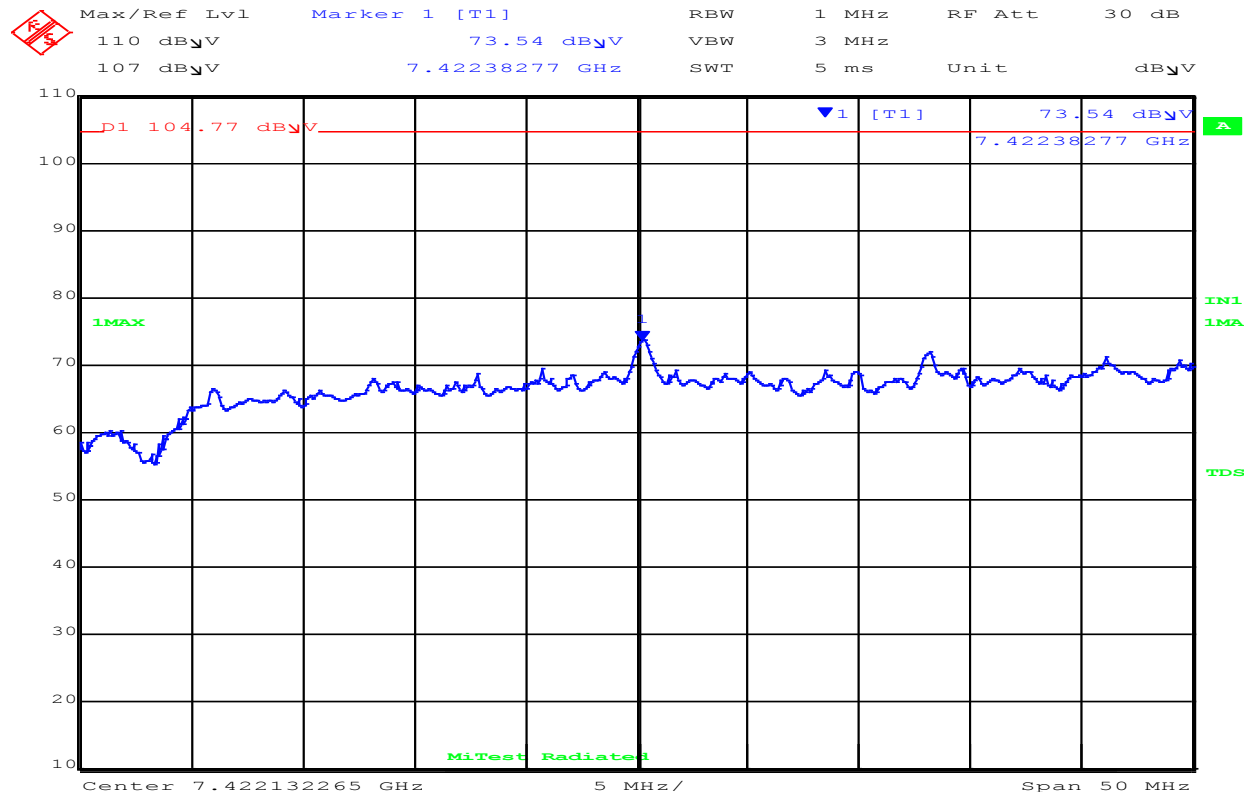
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 8.NOV.2018 10:28:14

#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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8184 MHz

#### Equipment Configuration for 50 MHz Peak Emissions

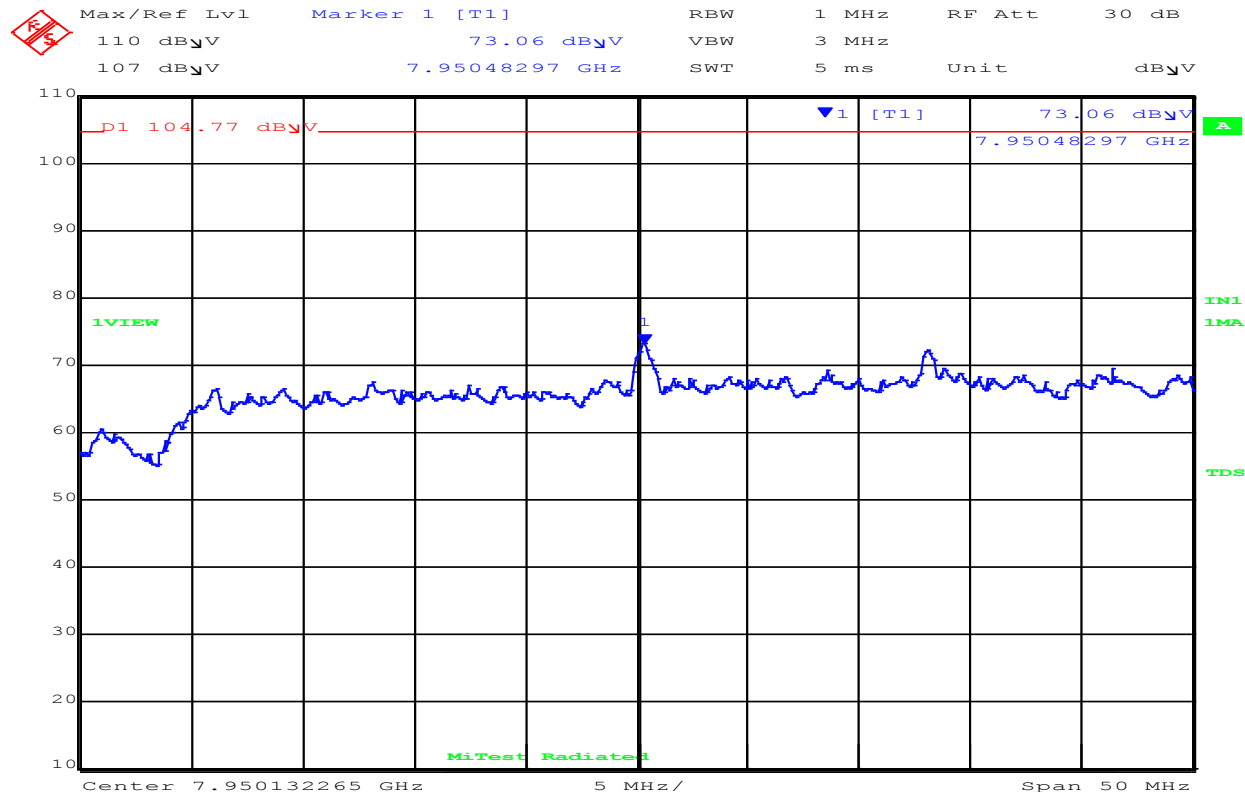
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

Test Freq: 8184 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



Date: 8.NOV.2018 10:52:53

#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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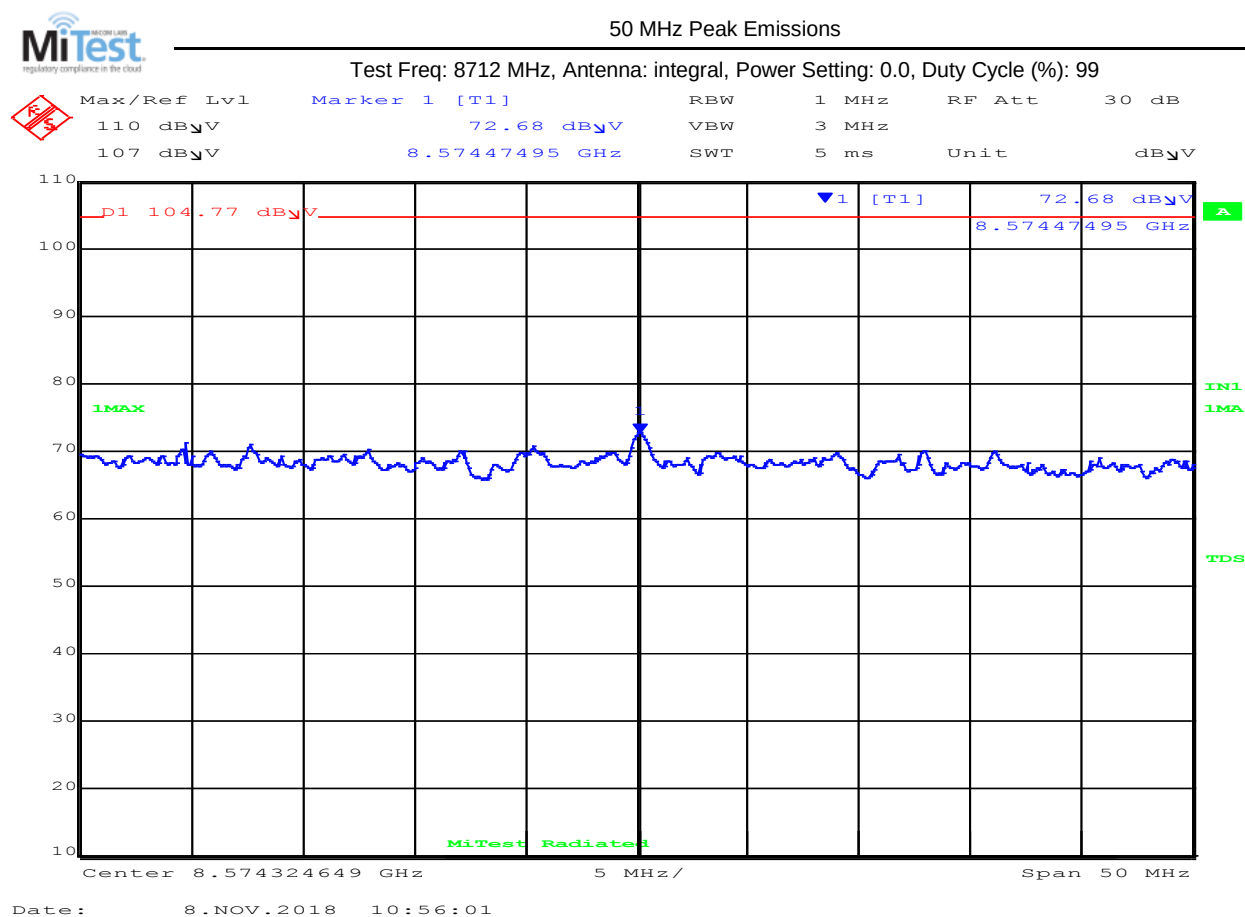
Title: Alereon AL5955, AL5930, AL5934  
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8712 MHz

Equipment Configuration for 50 MHz Peak Emissions

|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

Test Measurement Results



50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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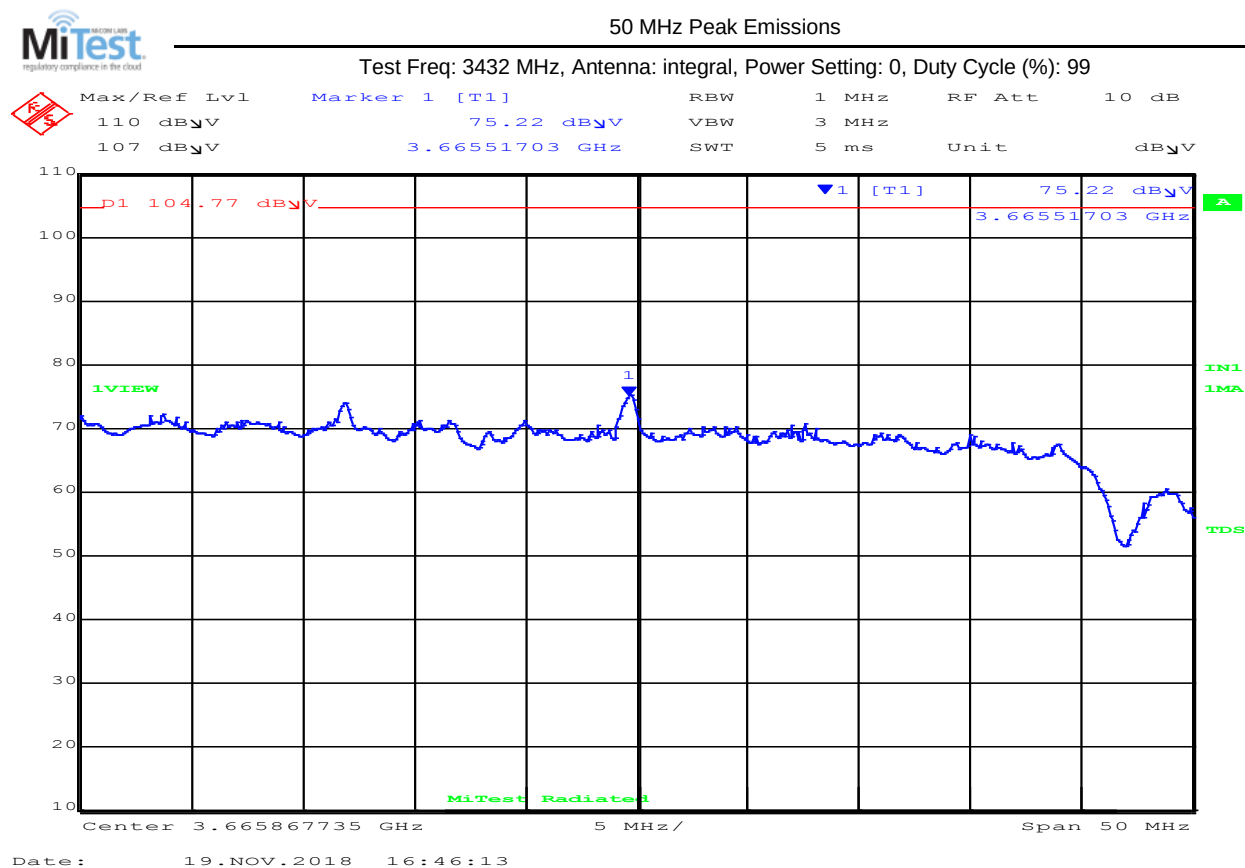
### 9.4.3.3. Combat AL5934

3432 MHz

#### Equipment Configuration for 50 MHz Peak Emissions

|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 1.0            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3432.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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3960 MHz

#### Equipment Configuration for 50 MHz Peak Emissions

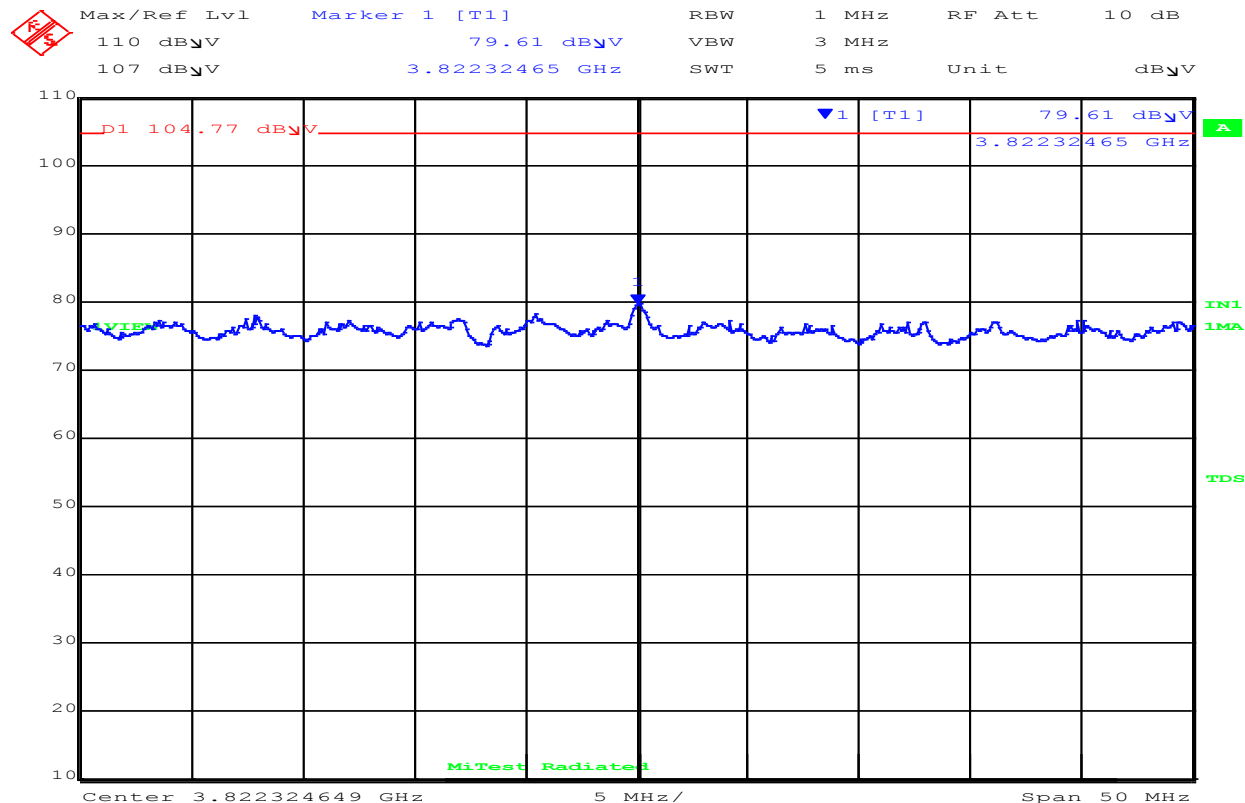
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 3960.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

Test Freq: 3960 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 08:31:44

#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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4488 MHz

#### Equipment Configuration for 50 MHz Peak Emissions

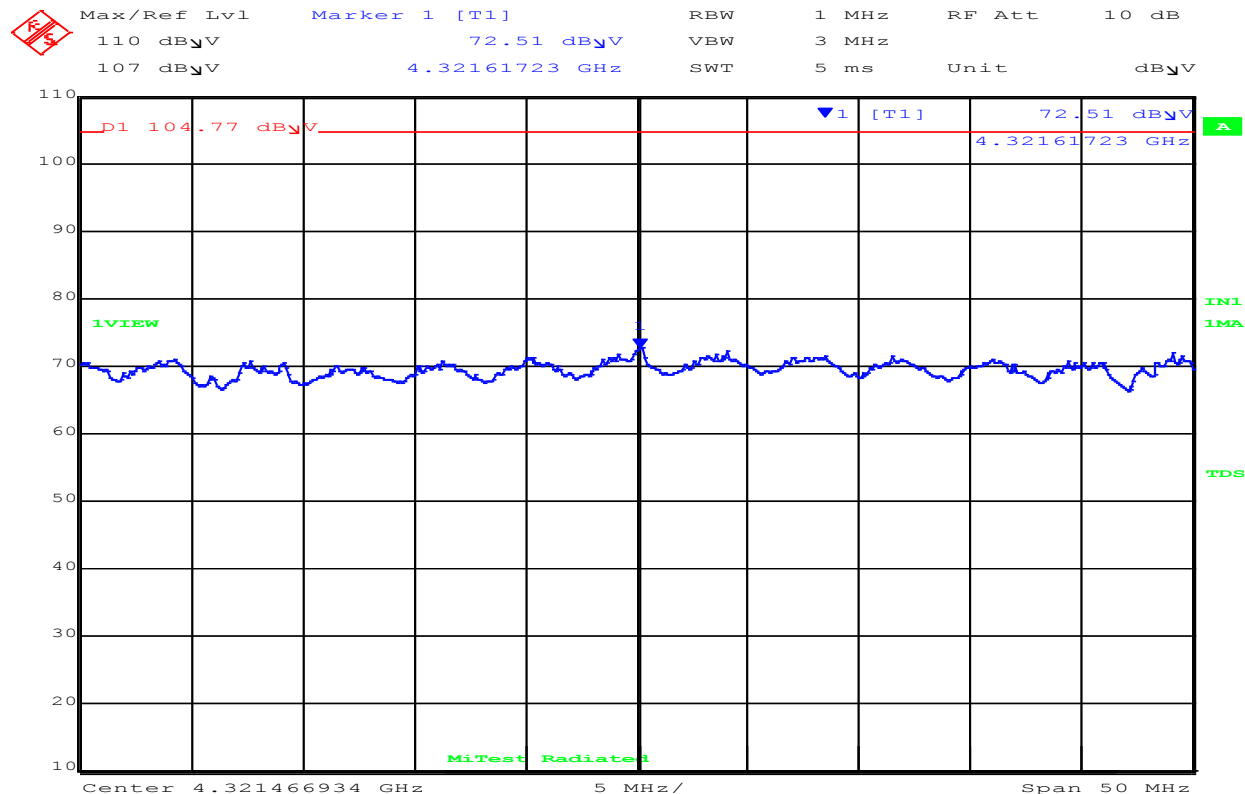
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 4488.00        | Data Rate:      |                   |
| Power Setting:           | Max            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

Test Freq: 4488 MHz, Antenna: integral, Power Setting: 0, Duty Cycle (%): 99



Date: 20.NOV.2018 10:33:15

#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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6600 MHz

#### Equipment Configuration for 50 MHz Peak Emissions

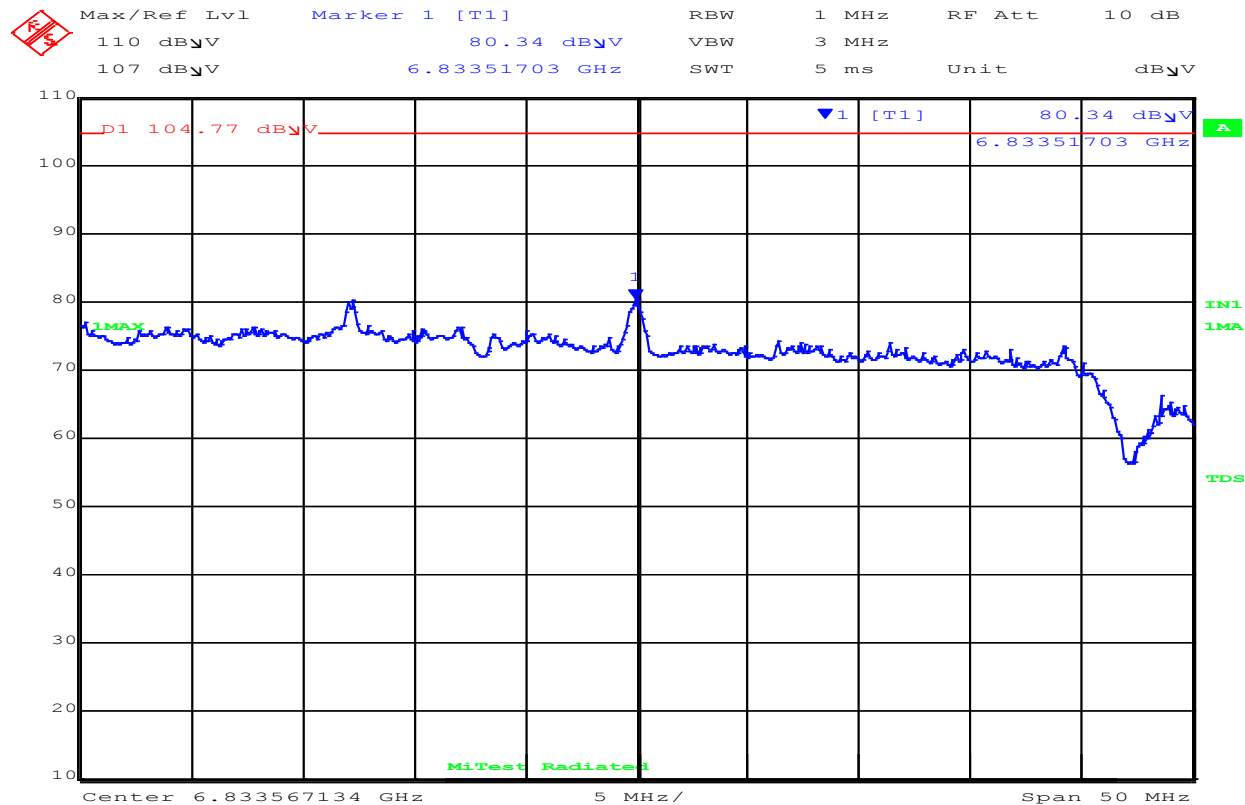
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.2            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 6600.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

Test Freq: 6600 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 20.NOV.2018 11:00:39

#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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7128 MHz

#### Equipment Configuration for 50 MHz Peak Emissions

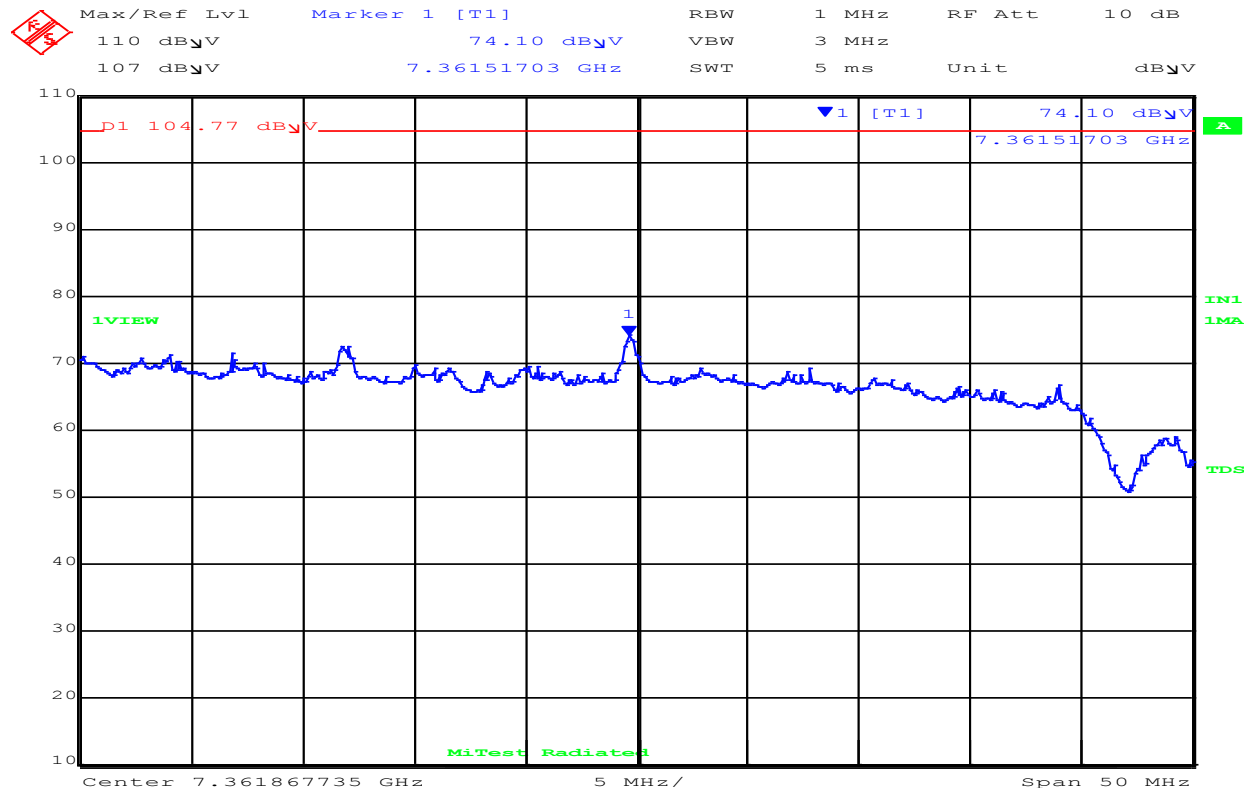
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -0.2           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7128.00        | Data Rate:      |                   |
| Power Setting:           | 2.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

Test Freq: 7128 MHz, Antenna: integral, Power Setting: 2.0, Duty Cycle (%): 99



Date: 21.NOV.2018 08:39:16

#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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7656 MHz (Covers Band Group 3 TFC 7 and Band Group 6 TFC 5)

#### Equipment Configuration for 50 MHz Peak Emissions

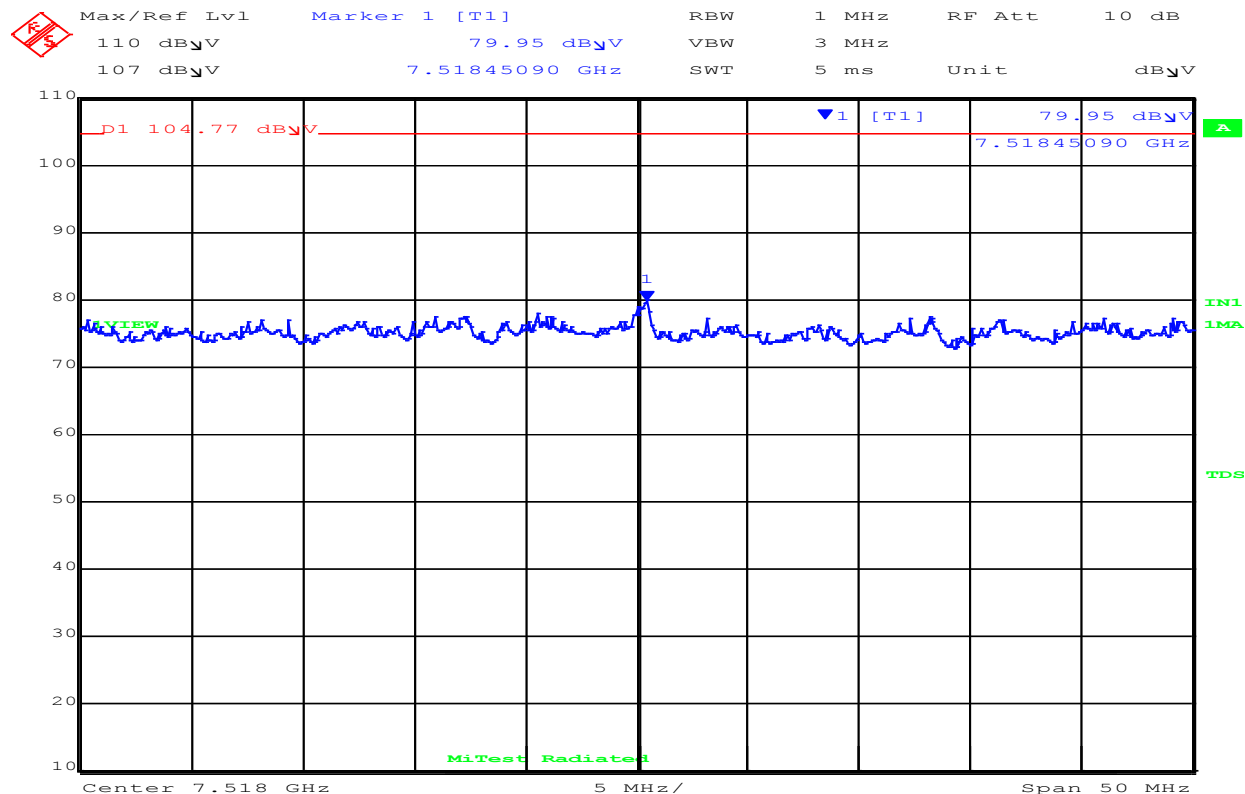
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | 0.1            | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 7656.00        | Data Rate:      |                   |
| Power Setting:           | 1.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

Test Freq: 7656 MHz, Antenna: integral, Power Setting: 1.0, Duty Cycle (%): 99



Date: 21.NOV.2018 08:30:57

#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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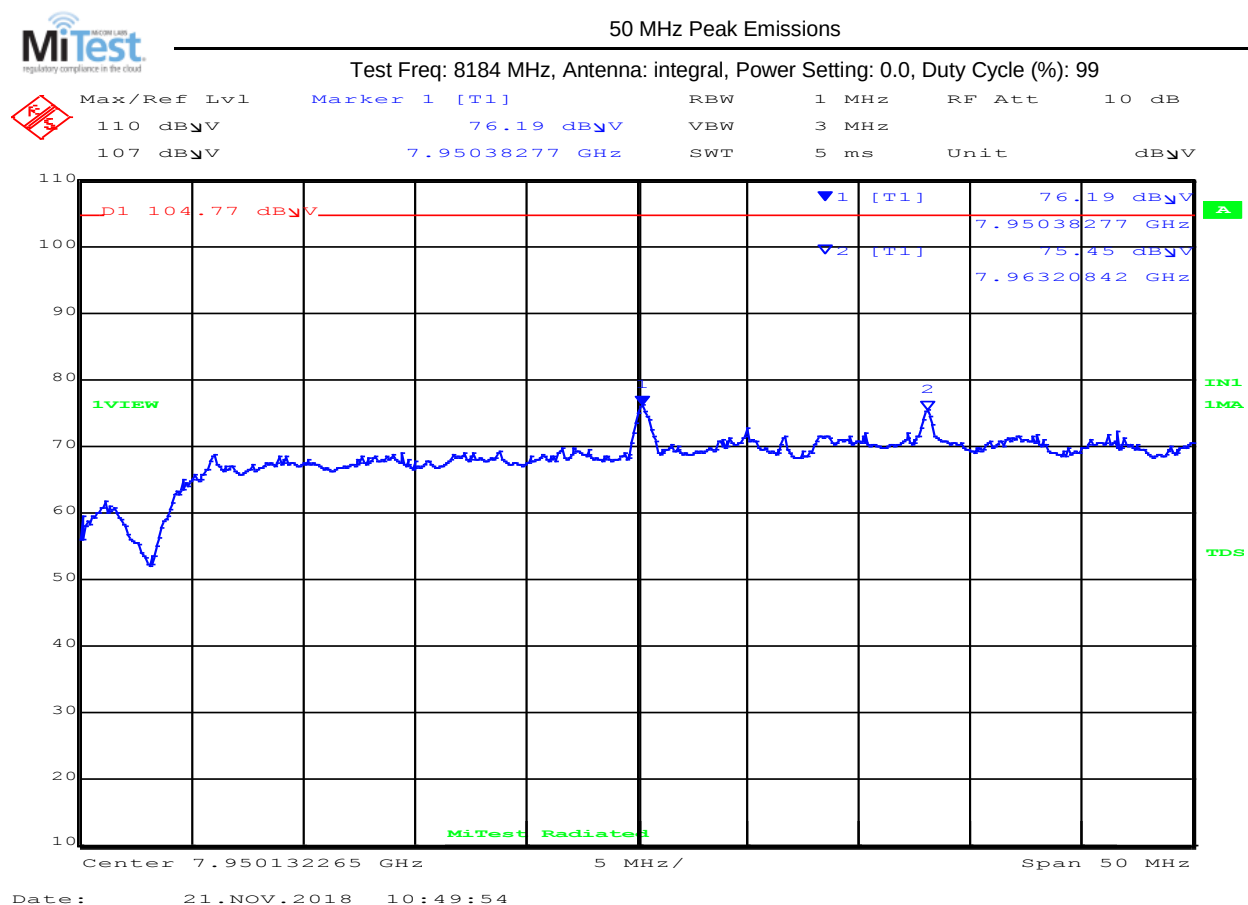
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8184 MHz

#### Equipment Configuration for 50 MHz Peak Emissions

|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8184.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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8712 MHz

#### Equipment Configuration for 50 MHz Peak Emissions

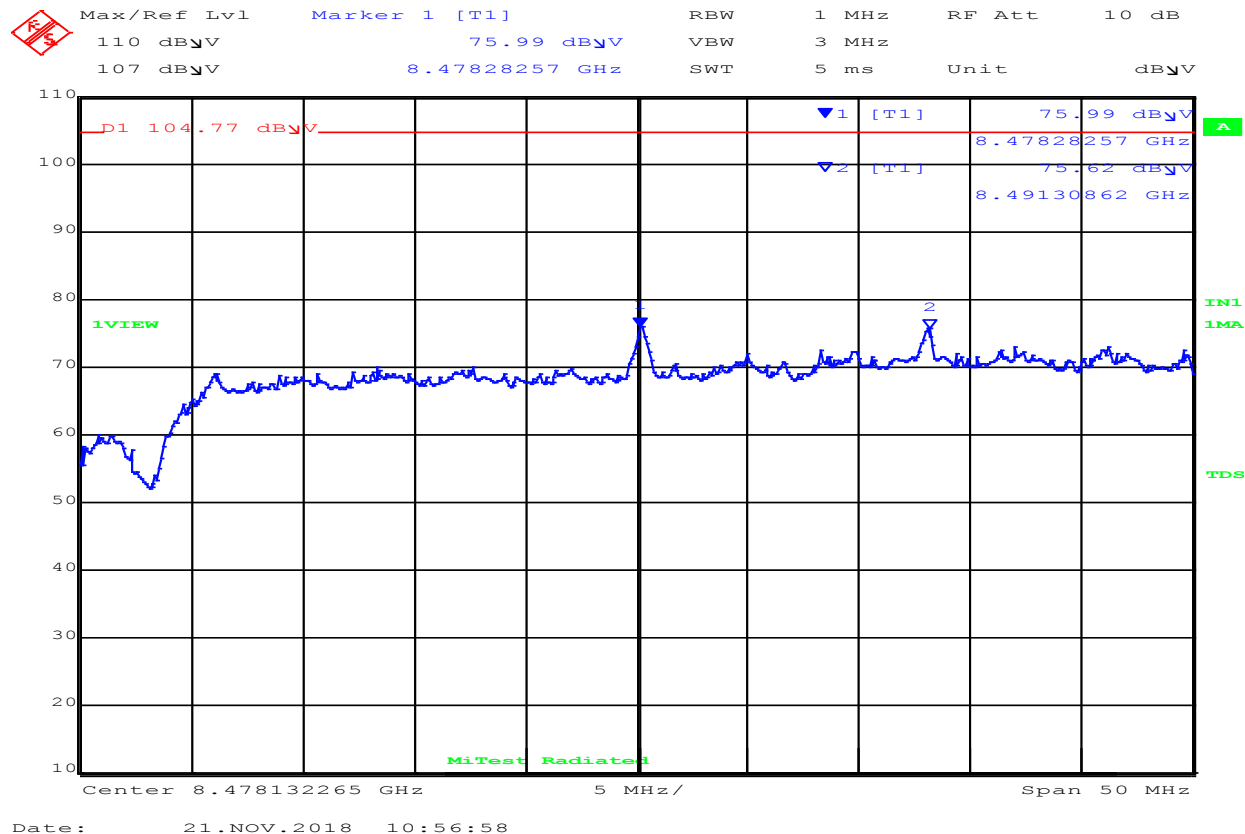
|                          |                |                 |                   |
|--------------------------|----------------|-----------------|-------------------|
| Antenna:                 | Chip           | Variant:        | 500 MHz Bandwidth |
| Antenna Gain (dBi):      | -1.8           | Modulation:     | BPM/BPSK          |
| Beam Forming Gain (Y):   | Not Applicable | Duty Cycle (%): | 99%               |
| Channel Frequency (MHz): | 8712.00        | Data Rate:      |                   |
| Power Setting:           | 0.0            | Tested By:      | JMH               |

#### Test Measurement Results



#### 50 MHz Peak Emissions

Test Freq: 8712 MHz, Antenna: integral, Power Setting: 0.0, Duty Cycle (%): 99



#### 50 MHz Peak Emissions

| Num                                   | Frequency MHz | Level dBμV/m | Measurement Type | Pol | Hgt cm | Azt Deg | Limit dBμV/m | Margin dB | Pass /Fail |
|---------------------------------------|---------------|--------------|------------------|-----|--------|---------|--------------|-----------|------------|
| No Signals Found within 6 dB of Limit |               |              |                  |     |        |         |              |           |            |
| Test Notes:                           |               |              |                  |     |        |         |              |           |            |

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## 9.5. Shutoff Timing Requirements

| Radiated Test Conditions for Shutoff Timing Requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             |                     |             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------|-------------|
| Standard:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | FCC CFR 47:15.519 (a)(1)    | Ambient Temp. (°C): | 24.0 - 27.5 |
| Test Heading:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Shutoff Timing Requirements | Rel. Humidity (%):  | 32 - 45     |
| Standard Section(s):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ANSI C63.10 Section 10.3.6  | Pressure (mBars):   | 999 - 1001  |
| Reference Document(s):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | None                        |                     |             |
| <b>Test Procedure for UWB Transmission</b><br><br>Testing was performed under ambient conditions at nominal voltage.<br><br>Test configuration and setup used for the measurement was per the Radiated Test Set-up section specified in this document.<br><br><b>Operating Frequency Band:</b><br>3100-10600 MHz<br><br><b>Limits</b><br>The UWB intentional radiator shall cease transmission within 10 seconds unless it receives an acknowledgement from the associated receiver that its transmission is being received. |                             |                     |             |

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#### Equipment Configuration for Shutdown Timing Requirements

|                                |                                                                                                                              |                                   |                      |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|----------------------|
| <b>Variant:</b>                | Band Group 6                                                                                                                 | <b>Duty Cycle (%):</b>            | 99                   |
| <b>Data Rate:</b>              | -                                                                                                                            | <b>Antenna Gain (dBi):</b>        | Client Info Required |
| <b>Modulation:</b>             | BPM/BPSK                                                                                                                     | <b>Beam Forming Gain (Y)(dB):</b> | Not Applicable       |
| <b>TPC:</b>                    | Not Applicable                                                                                                               | <b>Tested By:</b>                 | SB                   |
| <b>Engineering Test Notes:</b> | 1. Timing behavior is identical in all 3 models. Testing performed on the USB variant and is representative of all 3 models. |                                   |                      |

#### Test Measurement Results

| Frequency (MHz) | Shutdown Time | Limit | Margin | EUT Power Setting |
|-----------------|---------------|-------|--------|-------------------|
|                 | (s)           | (s)   | (s)    | Numeric           |
| 8712.00         | <u>2.120</u>  | 10    | -7.88  | 1                 |

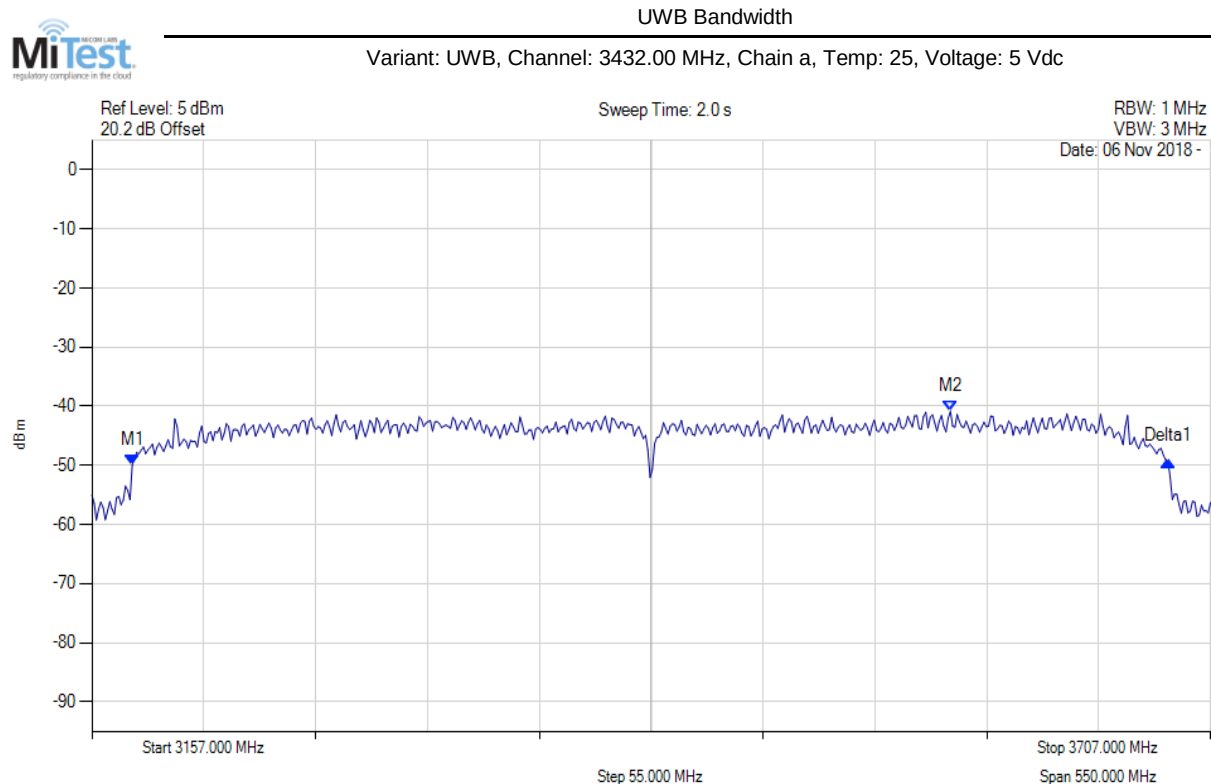
#### Traceability to Industry Recognized Test Methodologies

|                          |                                 |
|--------------------------|---------------------------------|
| <b>Work Instruction:</b> | WI-01 MEASURING RF OUTPUT POWER |
| <b>Uncertainty:</b>      | ±1.33 dB                        |

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## **A. APPENDIX - GRAPHICAL IMAGES**

## A.1. UWB Bandwidth



| Analyzer Setup                                                                        | Marker:Frequency:Amplitude                                                                            | Test Results                   |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 3176.884 MHz : -49.962 dBm<br>M2 : 3579.144 MHz : -40.865 dBm<br>Delta1 : 509.174 MHz : 0.787 dB | Channel Frequency: 3432.00 MHz |

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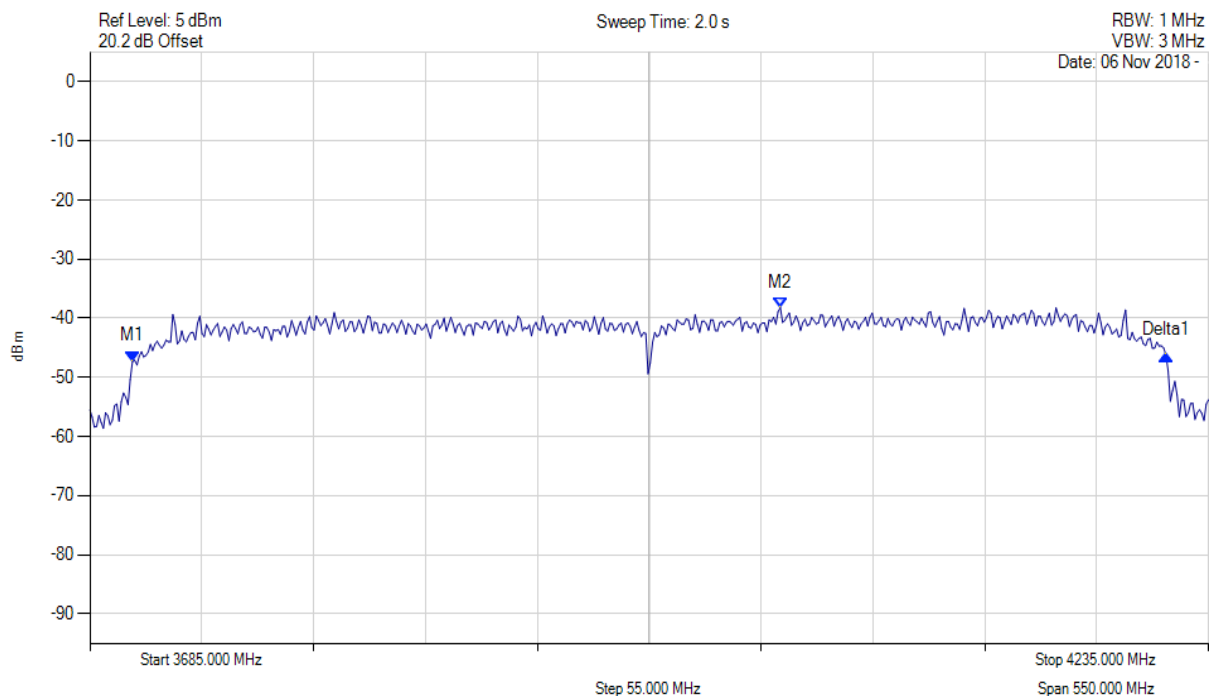


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#### UWB Bandwidth

Variant: UWB, Channel: 3960.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



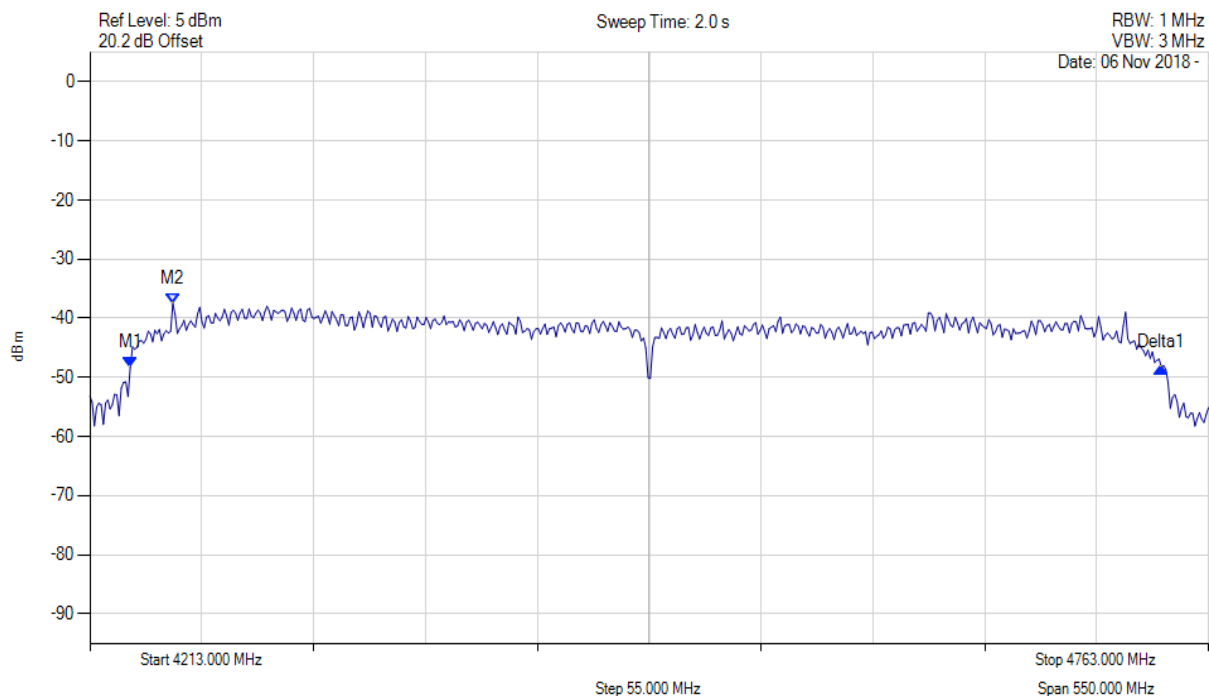
| Analyzer Setup                                                                        | Marker:Frequency:Amplitude                                                                            | Test Results                   |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 3705.942 MHz : -47.255 dBm<br>M2 : 4024.479 MHz : -38.193 dBm<br>Delta1 : 508.116 MHz : 1.092 dB | Channel Frequency: 3960.00 MHz |

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# UWB Bandwidth

Variant: UWB, Channel: 4488.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



| Analyzer Setup                                                                        | Marker:Frequency:Amplitude                                                                            | Test Results                   |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 4232.840 MHz : -48.343 dBm<br>M2 : 4253.782 MHz : -37.497 dBm<br>Delta1 : 507.014 MHz : 0.014 dB | Channel Frequency: 4488.00 MHz |

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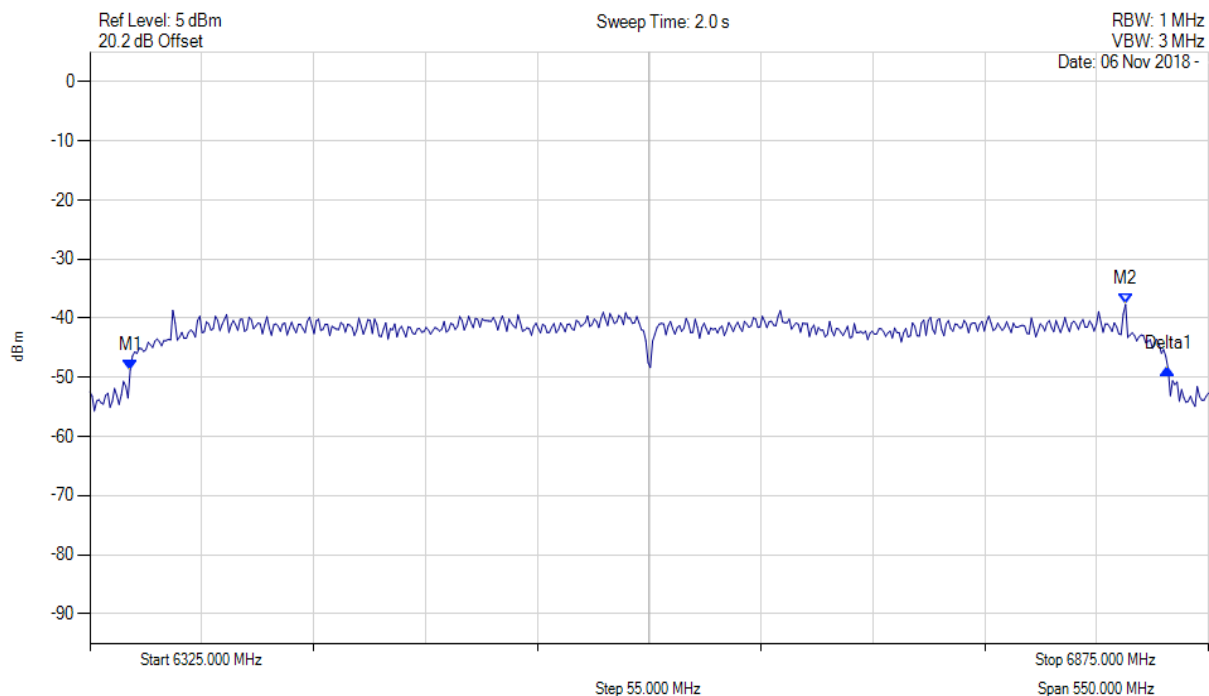


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#### UWB Bandwidth

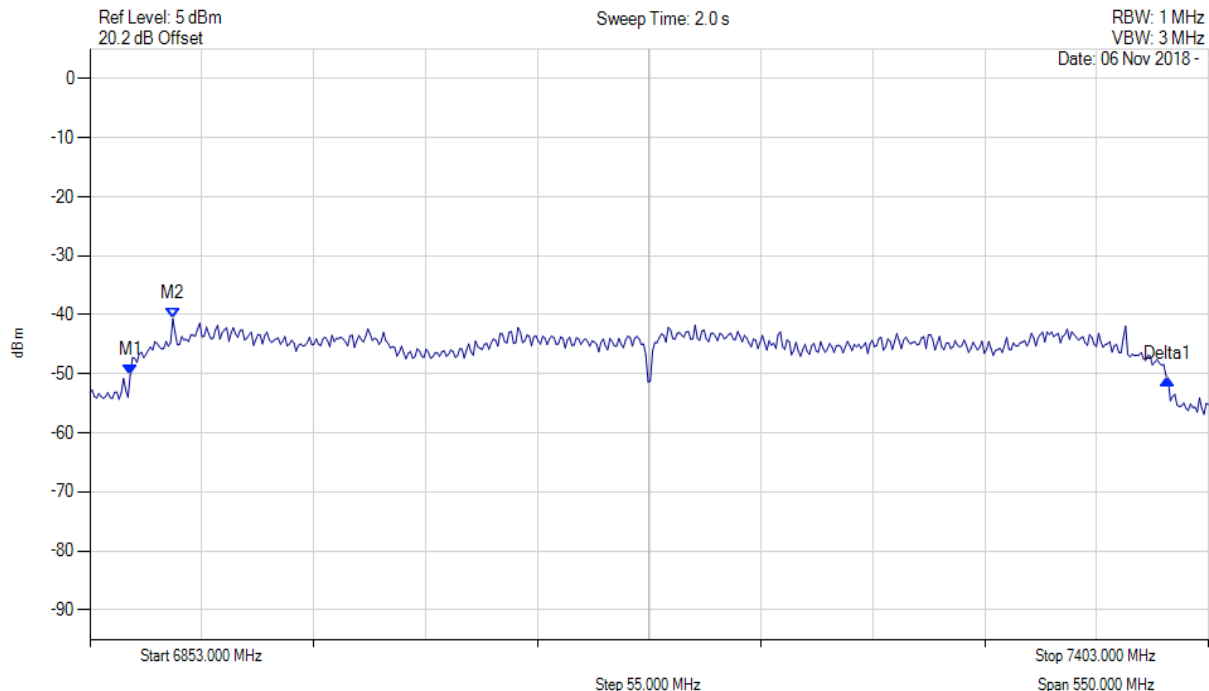
Variant: UWB, Channel: 6600.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



| Analyzer Setup                                                                        | Marker:Frequency:Amplitude                                                                            | Test Results                   |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 6344.840 MHz : -48.727 dBm<br>M2 : 6834.218 MHz : -37.625 dBm<br>Delta1 : 510.321 MHz : 0.205 dB | Channel Frequency: 6600.00 MHz |

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| Analyzer Setup                                                                        | Marker:Frequency:Amplitude                                                                             | Test Results                   |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 6872.840 MHz : -50.171 dBm<br>M2 : 6893.782 MHz : -40.658 dBm<br>Delta1 : 509.920 MHz : -0.687 dB | Channel Frequency: 7128.00 MHz |

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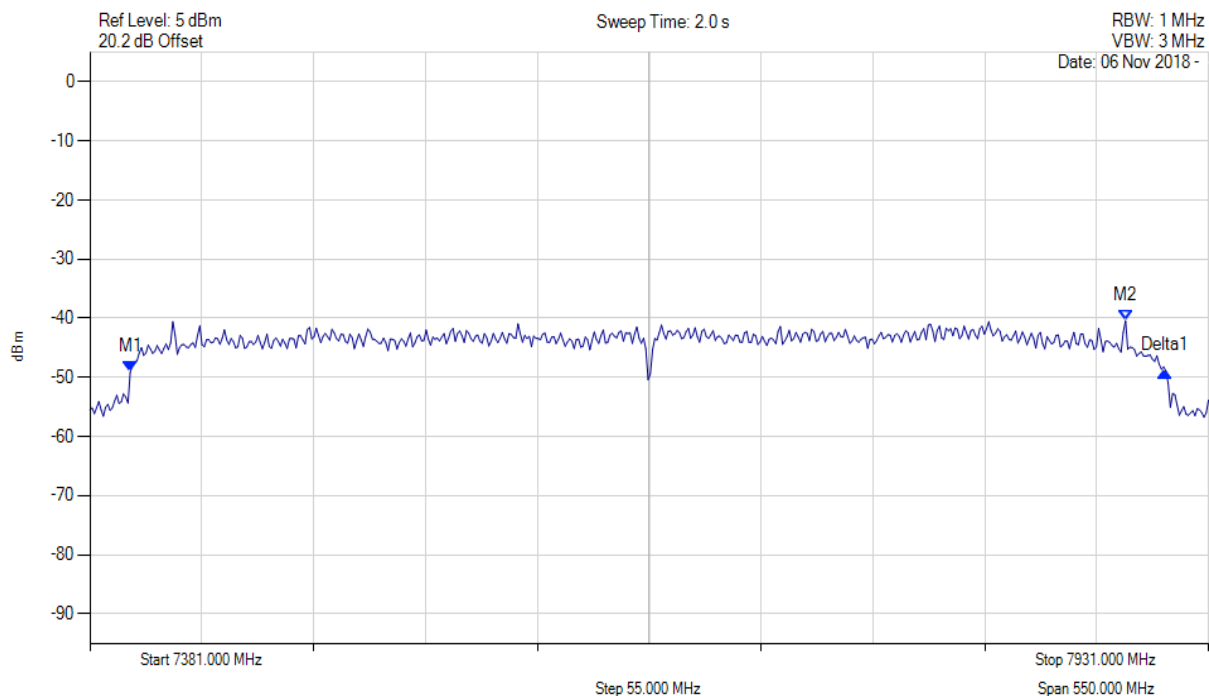


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#### UWB Bandwidth

Variant: UWB, Channel: 7656.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



| Analyzer Setup                                                                        | Marker:Frequency:Amplitude                                                                            | Test Results                   |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 7400.840 MHz : -49.106 dBm<br>M2 : 7890.218 MHz : -40.409 dBm<br>Delta1 : 508.818 MHz : 0.214 dB | Channel Frequency: 7656.00 MHz |

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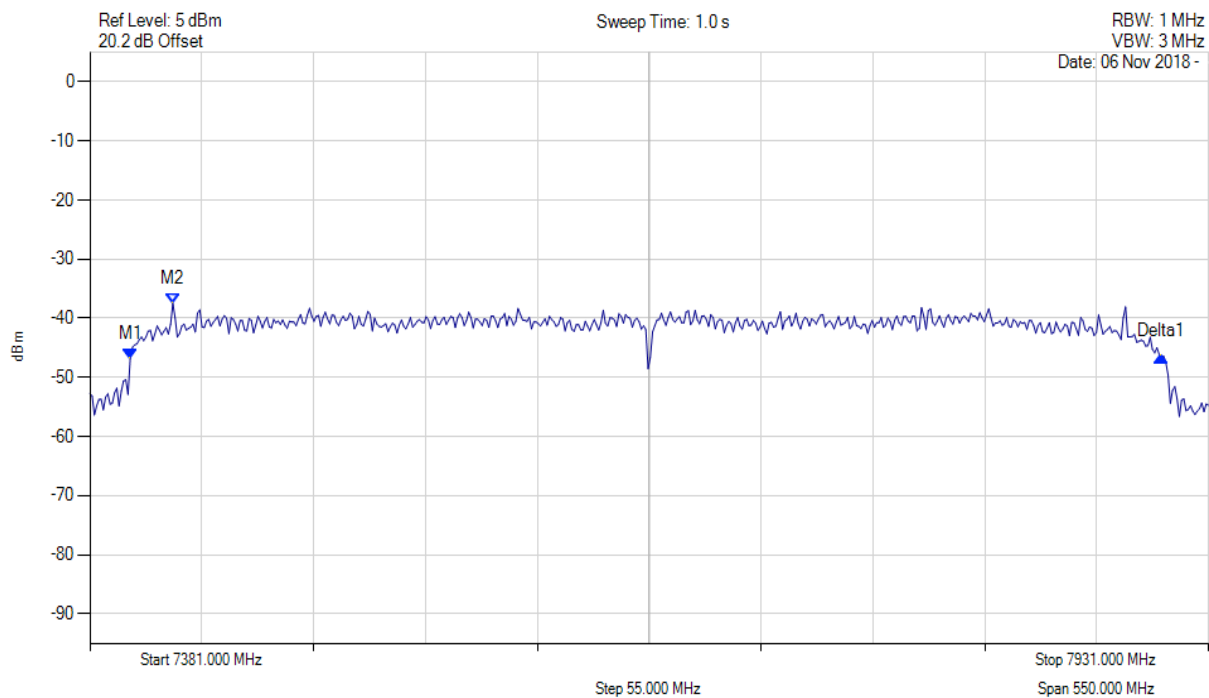


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#### UWB Bandwidth

Variant: UWB, Channel: 7656.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



| Analyzer Setup                                                                        | Marker:Frequency:Amplitude                                                                            | Test Results            |
|---------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|-------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 7400.840 MHz : -46.810 dBm<br>M2 : 7421.782 MHz : -37.489 dBm<br>Delta1 : 506.613 MHz : 0.307 dB | Channel Frequency: 0 Hz |

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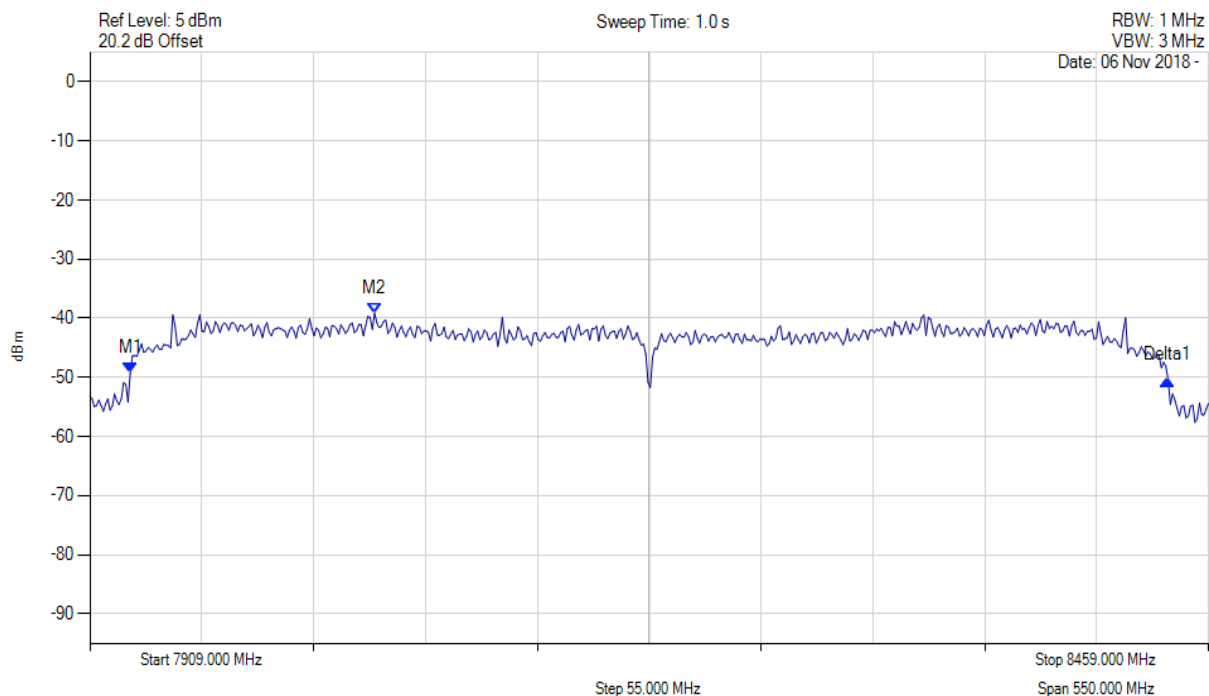


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#### UWB Bandwidth

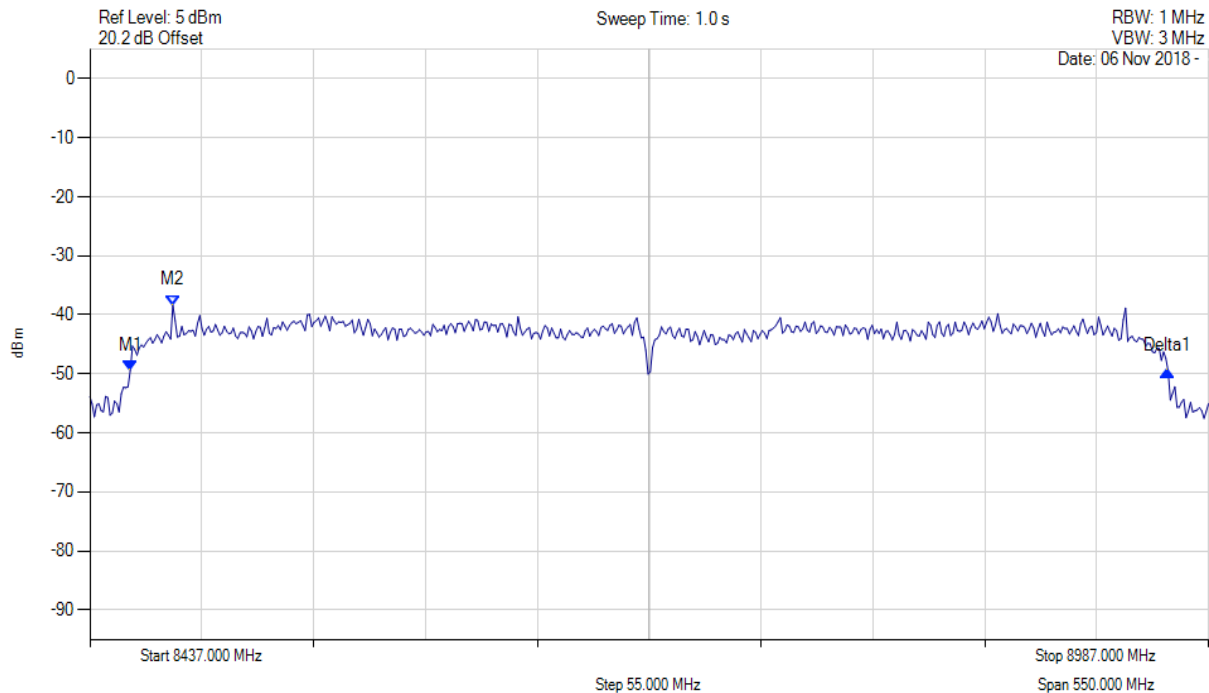
Variant: UWB, Channel: 8184.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



| Analyzer Setup                                                                        | Marker:Frequency:Amplitude                                                                             | Test Results                   |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 7928.840 MHz : -49.315 dBm<br>M2 : 8048.980 MHz : -39.169 dBm<br>Delta1 : 509.920 MHz : -1.074 dB | Channel Frequency: 8184.00 MHz |

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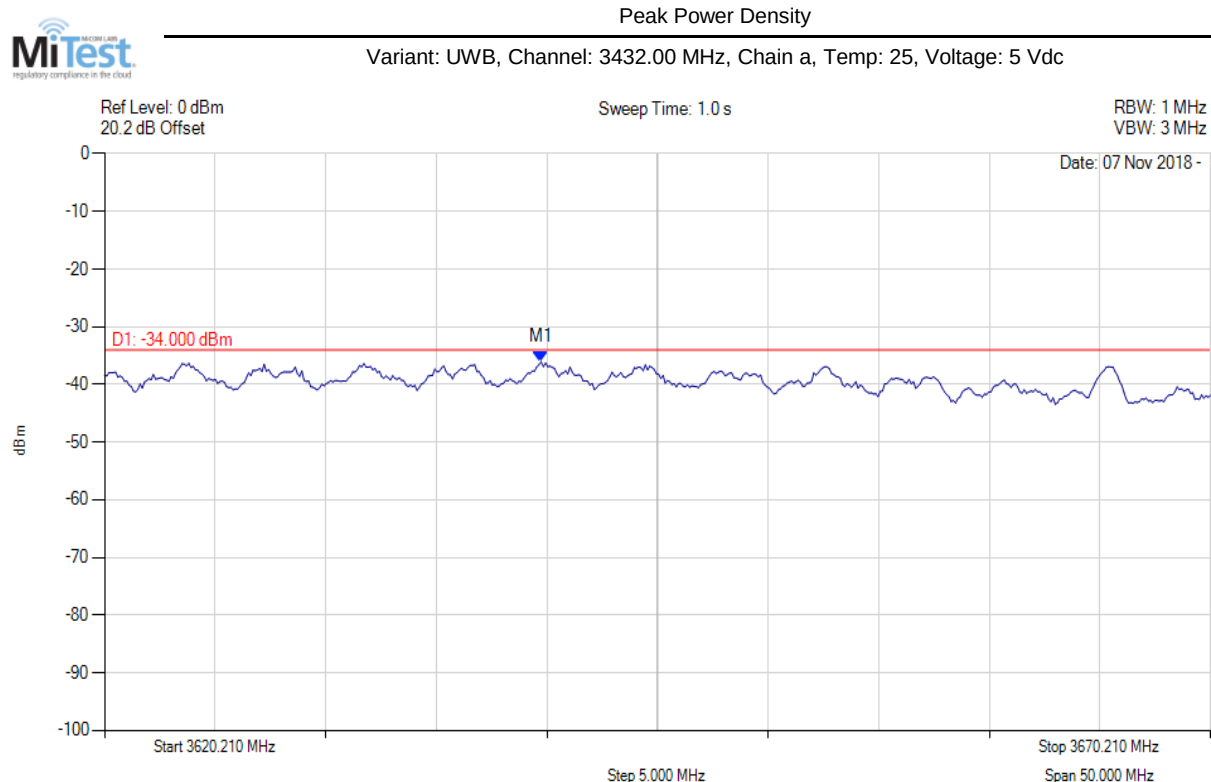
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| Analyzer Setup                                                                        | Marker:Frequency:Amplitude                                                                             | Test Results                   |
|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|--------------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 8456.840 MHz : -49.468 dBm<br>M2 : 8477.782 MHz : -38.388 dBm<br>Delta1 : 509.920 MHz : -0.057 dB | Channel Frequency: 8712.00 MHz |

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## A.2. Peak Power Density



| Analyzer Setup                                                                        | Marker:Frequency:Amplitude      | Test Results                   |
|---------------------------------------------------------------------------------------|---------------------------------|--------------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 3639.950 MHz : -36.101 dBm | Channel Frequency: 3432.00 MHz |

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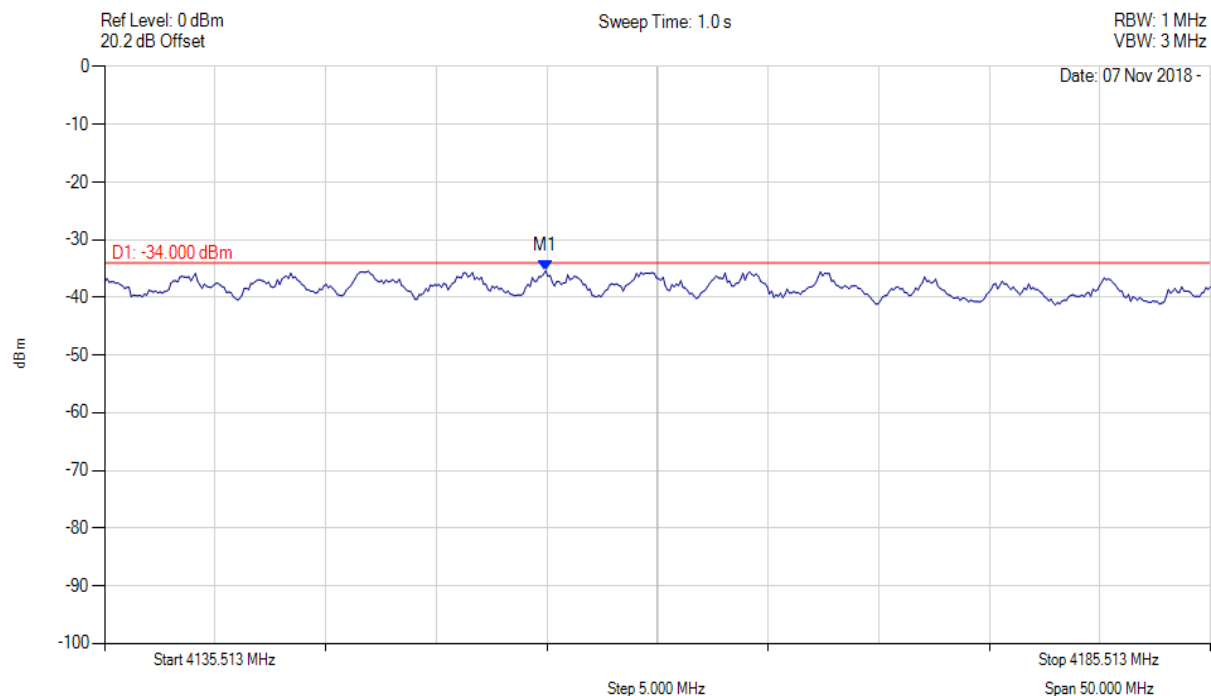


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#### Peak Power Density

Variant: UWB, Channel: 3690.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



| Analyzer Setup                                                                        | Marker:Frequency:Amplitude      | Test Results                   |
|---------------------------------------------------------------------------------------|---------------------------------|--------------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 4155.453 MHz : -35.379 dBm | Channel Frequency: 3690.00 MHz |

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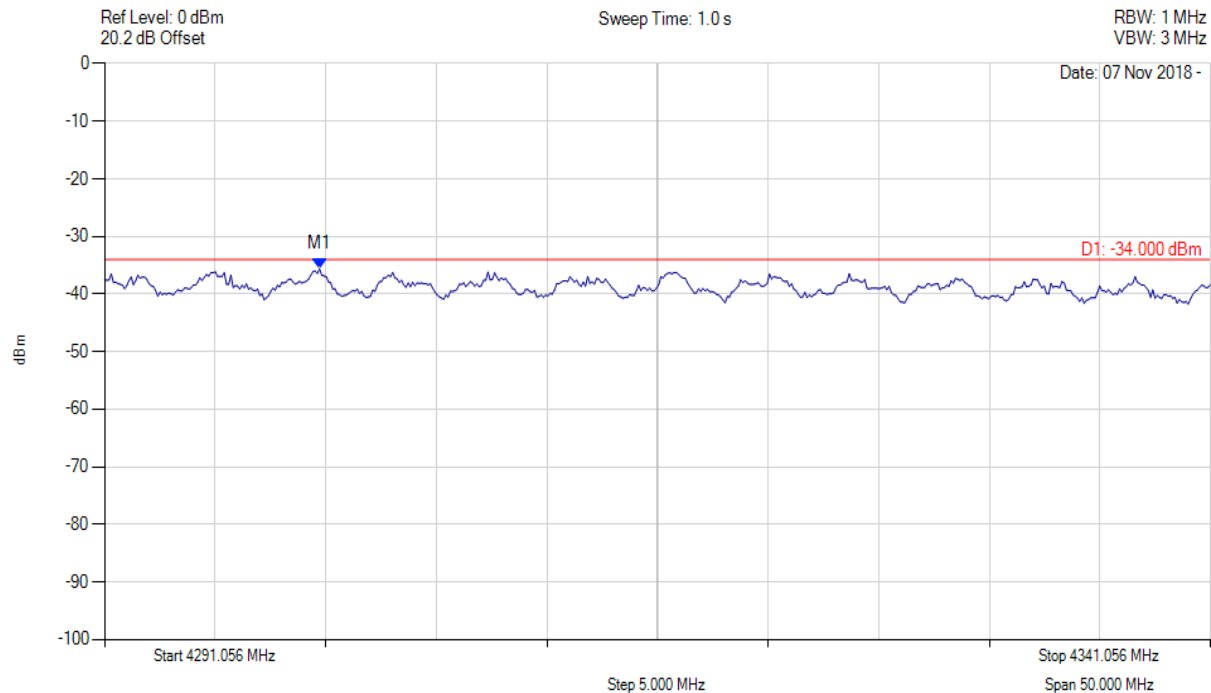


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Peak Power Density

Variant: UWB, Channel: 4488.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



| Analyzer Setup                                                                        | Marker:Frequency:Amplitude      | Test Results                   |
|---------------------------------------------------------------------------------------|---------------------------------|--------------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 4300.776 MHz : -35.635 dBm | Channel Frequency: 4488.00 MHz |

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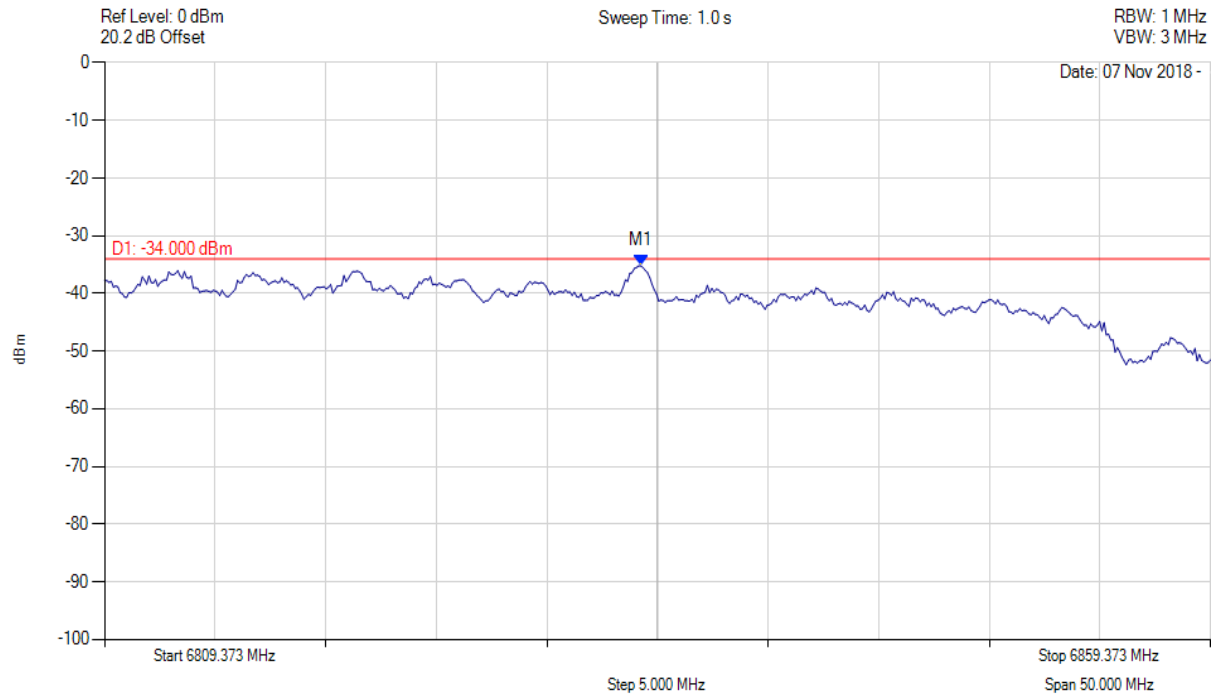


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#### Peak Power Density

Variant: UWB, Channel: 6600.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



| Analyzer Setup                                                                        | Marker:Frequency:Amplitude      | Test Results                   |
|---------------------------------------------------------------------------------------|---------------------------------|--------------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 6833.621 MHz : -35.220 dBm | Channel Frequency: 6600.00 MHz |

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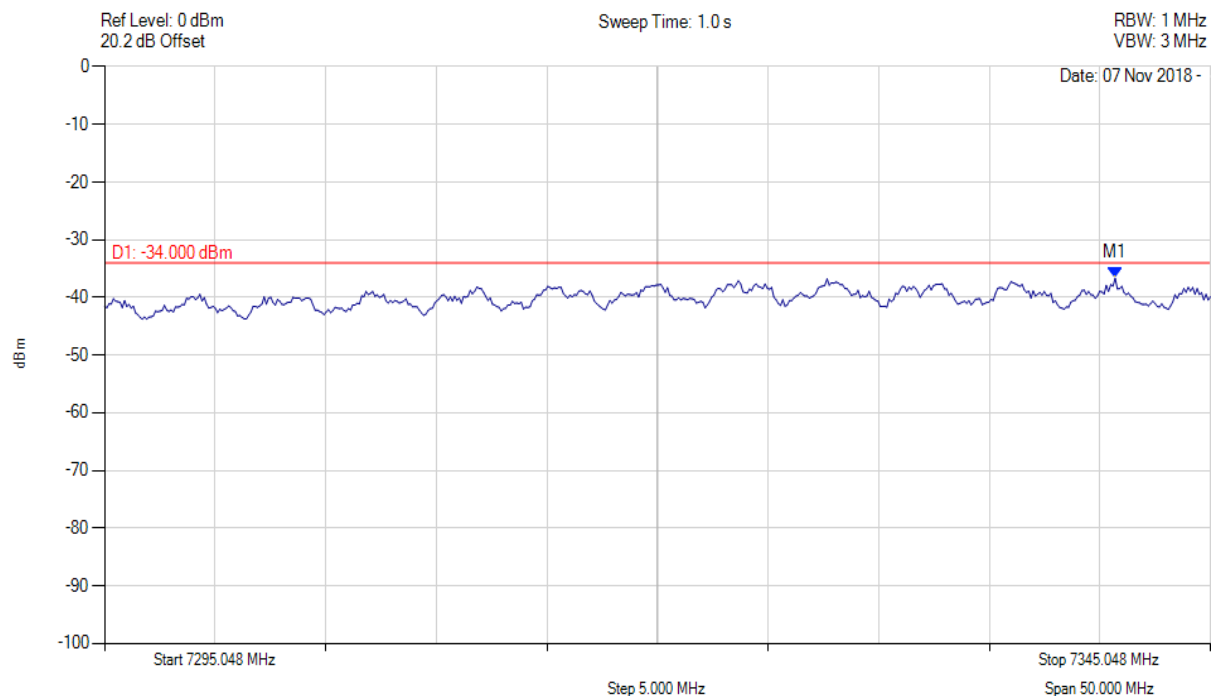


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#### Peak Power Density

Variant: UWB, Channel: 7128.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



| Analyzer Setup                                                                        | Marker:Frequency:Amplitude      | Test Results                   |
|---------------------------------------------------------------------------------------|---------------------------------|--------------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 7340.739 MHz : -36.648 dBm | Channel Frequency: 7128.00 MHz |

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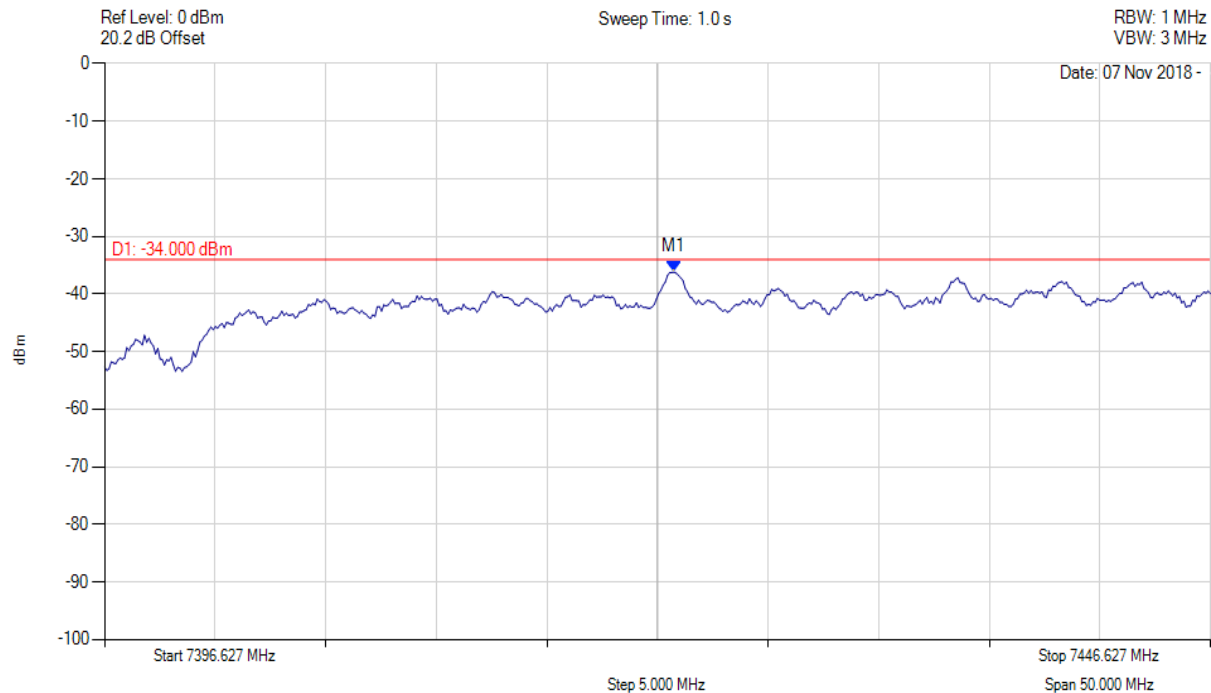


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Peak Power Density

Variant: UWB, Channel: 7656.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



| Analyzer Setup                                                                        | Marker:Frequency:Amplitude      | Test Results                   |
|---------------------------------------------------------------------------------------|---------------------------------|--------------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 7422.379 MHz : -36.188 dBm | Channel Frequency: 7656.00 MHz |

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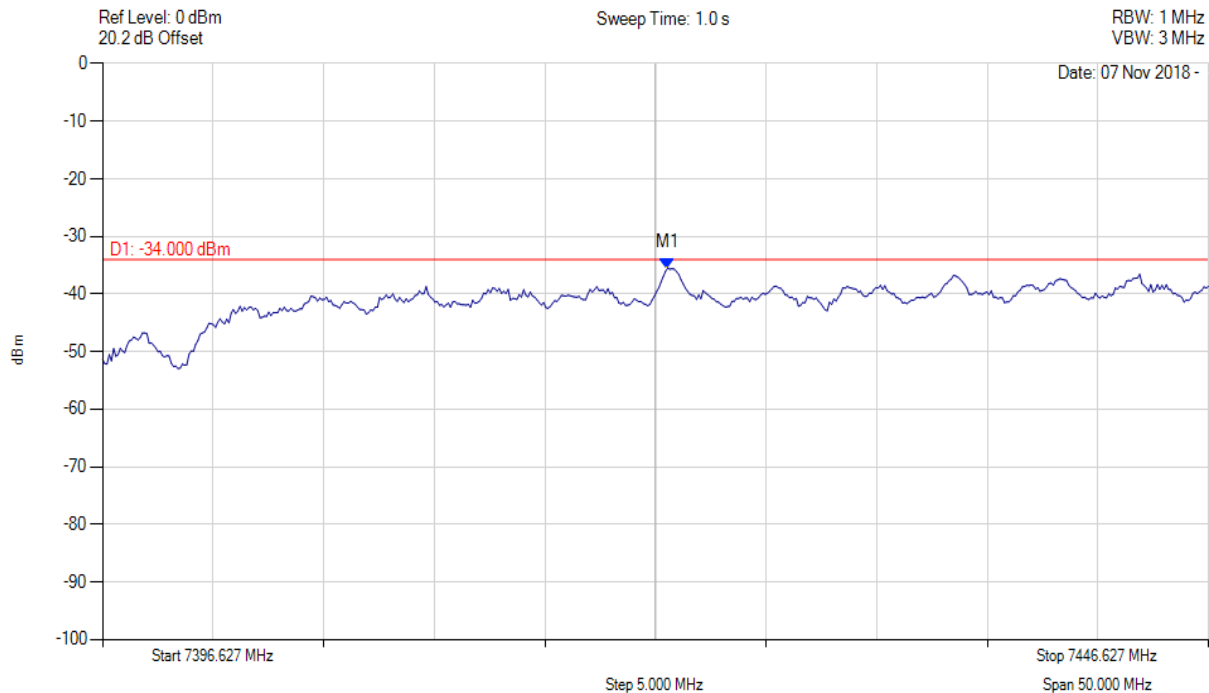


**Title:** Alereon AL5955, AL5930, AL5934  
**To:** FCC Part 15.519  
**Serial #:** ALER01-U2B Rev A  
**Issue Date:** 12th December 2018  
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Peak Power Density

Variant: UWB, Channel: 7656 Hz, Chain a, Temp: 25, Voltage: 5 Vdc



| Analyzer Setup                                                                        | Marker:Frequency:Amplitude      | Test Results            |
|---------------------------------------------------------------------------------------|---------------------------------|-------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 7422.178 MHz : -35.495 dBm | Channel Frequency: 0 Hz |

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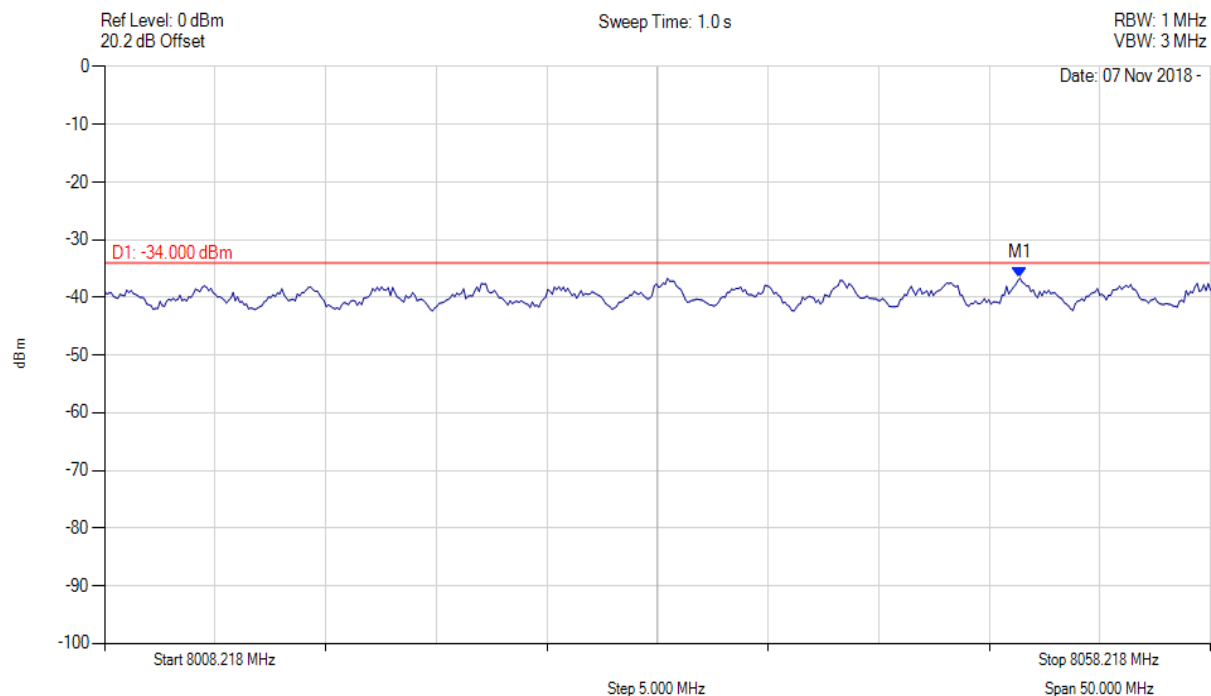


**Title:** Alereon AL5955, AL5930, AL5934  
**To:** FCC Part 15.519  
**Serial #:** ALER01-U2B Rev A  
**Issue Date:** 12th December 2018  
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#### Peak Power Density

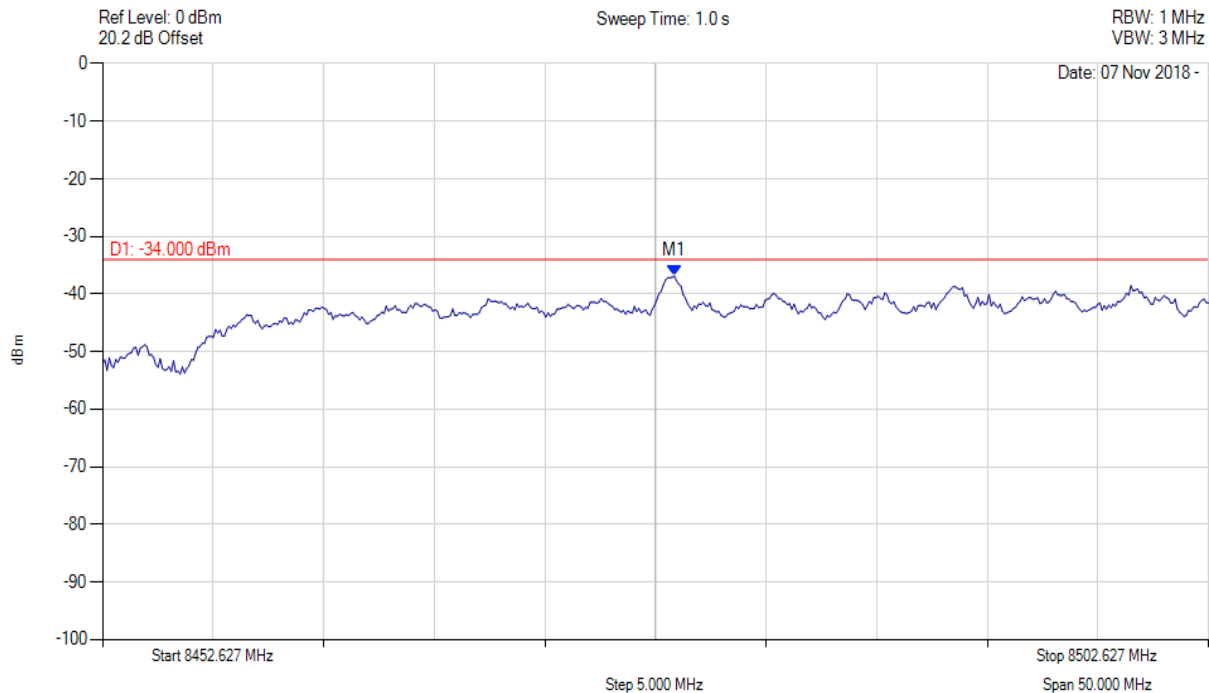
Variant: UWB, Channel: 8184.00 MHz, Chain a, Temp: 25, Voltage: 5 Vdc



| Analyzer Setup                                                                        | Marker:Frequency:Amplitude      | Test Results                   |
|---------------------------------------------------------------------------------------|---------------------------------|--------------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 8049.601 MHz : -36.648 dBm | Channel Frequency: 8184.00 MHz |

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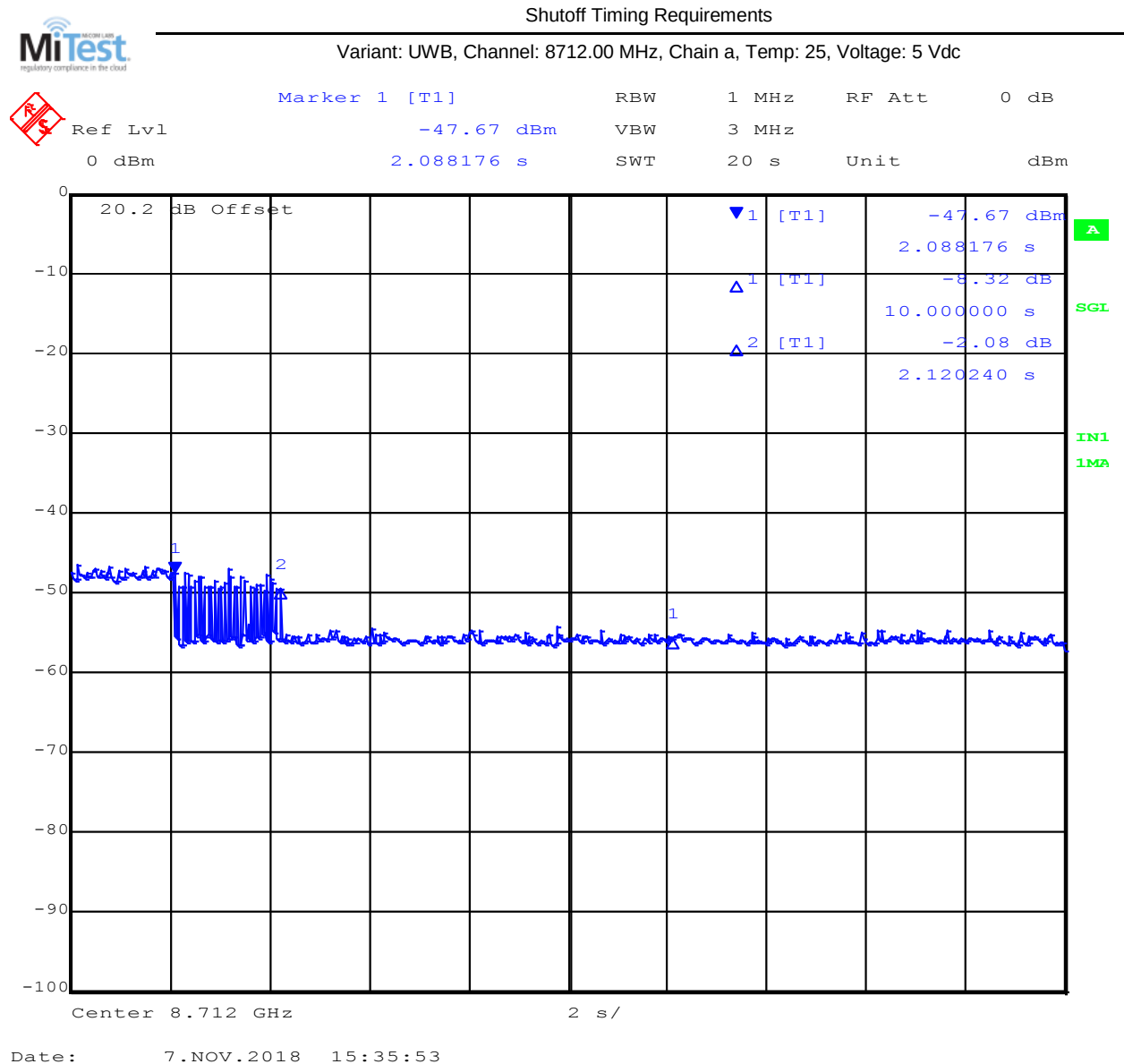
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| Analyzer Setup                                                                        | Marker:Frequency:Amplitude      | Test Results                   |
|---------------------------------------------------------------------------------------|---------------------------------|--------------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 8478.479 MHz : -36.858 dBm | Channel Frequency: 8712.00 MHz |

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### A.3. Shutoff Timing Requirements



| Analyzer Setup                                                                        | Marker:Frequency:Amplitude                                                                     | Test Results                   |
|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|--------------------------------|
| Detector = MAX PEAK<br>Sweep Count = 0<br>RF Atten (dB) = 0<br>Trace Mode = CLR/WRITE | M1 : 8712.00 MHz : 2.088 s<br>Delta 1 : 8712.00 MHz : -10 s<br>Delta 2 : 8712.00 MHz : 2.120 s | Channel Frequency: 8712.00 MHz |

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## **B. APPENDIX – Manufacturer Declaration on Similarity of Models**

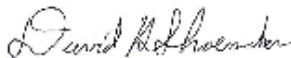


www.alereon.com | 10500 Preston Park Blvd | Suite 100 | Austin, TX 78730 | 512.345.4200 | 512.345.4201

To whom it may concern,

The AL5934 Combat, AL5930 Commander and the AL5955 Camouflage all use the exact same Alereon radio chipset (AL5100 and AL5350). The only difference between the boards is the interface connector, so for the conducted tests, testing just the AL5934 Combat should be adequate.

Thanks,



David Shoemaker  
CEO  
Alereon, Inc.

12/6/2018

12/6/2018

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575 Boulder Court  
Pleasanton, California 94566, USA  
Tel: +1 (925) 462 0304  
Fax: +1 (925) 462 0306  
[www.micomlabs.com](http://www.micomlabs.com)