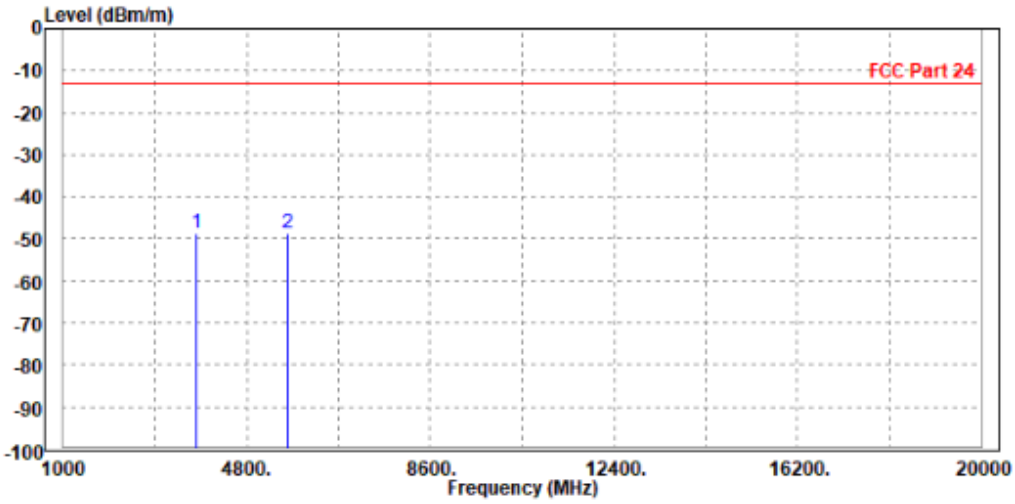
## CHANNEL BANDWIDTH: 5MHz / QPSK

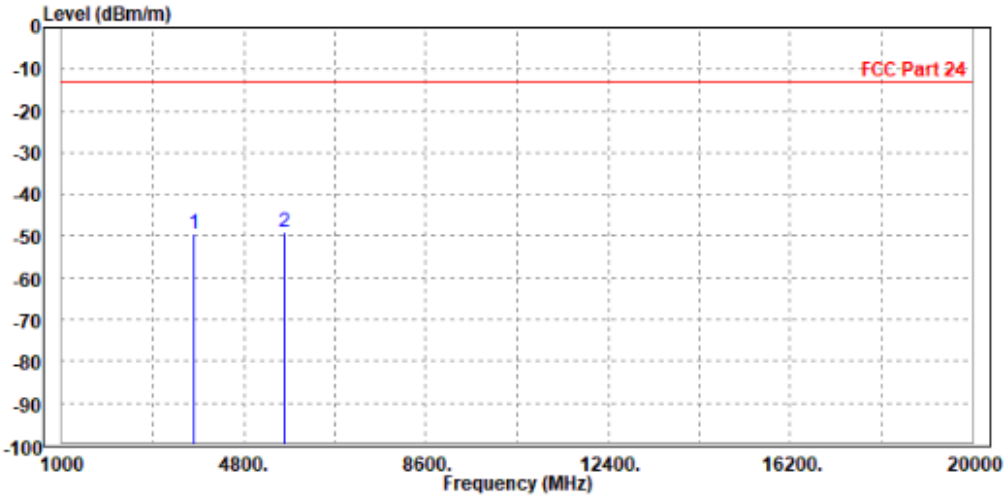
| MODE | TX channel 26365 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | |

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | | |
| 1 | 3774.000 | -48.65 | -57.52 | -13.00 | -35.65 | 8.87 | Peak | Horizontal |
| 2 PP | 5647.500 | -48.61 | -59.12 | -13.00 | -35.61 | 10.51 | Peak | Horizontal |



| MODE | TX channel 26365 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

| | | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm/m | dBm | dBm/m | dB | dB/m | | |
| 1 | | 3774.000 | -49.59 | -58.86 | -13.00 | -36.59 | 9.27 | Peak | Vertical |
| 2 | PP | 5647.500 | -49.01 | -59.29 | -13.00 | -36.01 | 10.28 | Peak | Vertical |

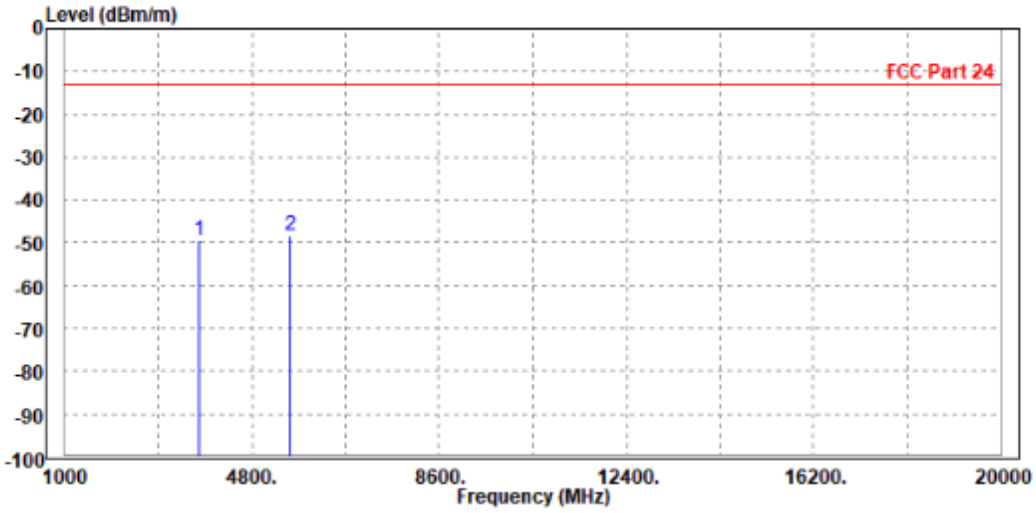


## CHANNEL BANDWIDTH: 10MHz / QPSK

### CH 26090

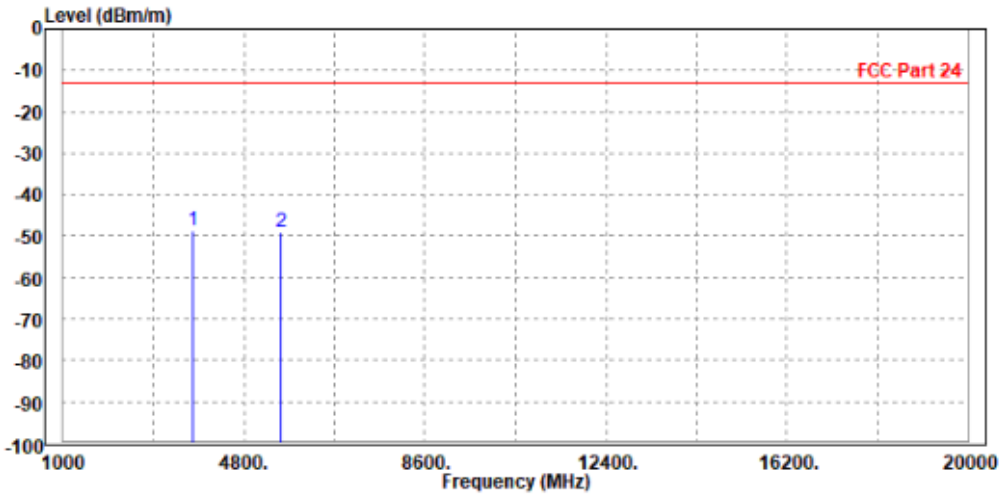
| MODE | TX channel 26090 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | |

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | | |
| 1 | 3717.000 | -49.44 | -58.25 | -13.00 | -36.44 | 8.81 | Peak | Horizontal |
| 2 PP | 5565.000 | -48.35 | -58.59 | -13.00 | -35.35 | 10.24 | Peak | Horizontal |



| MODE | TX channel 26090 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

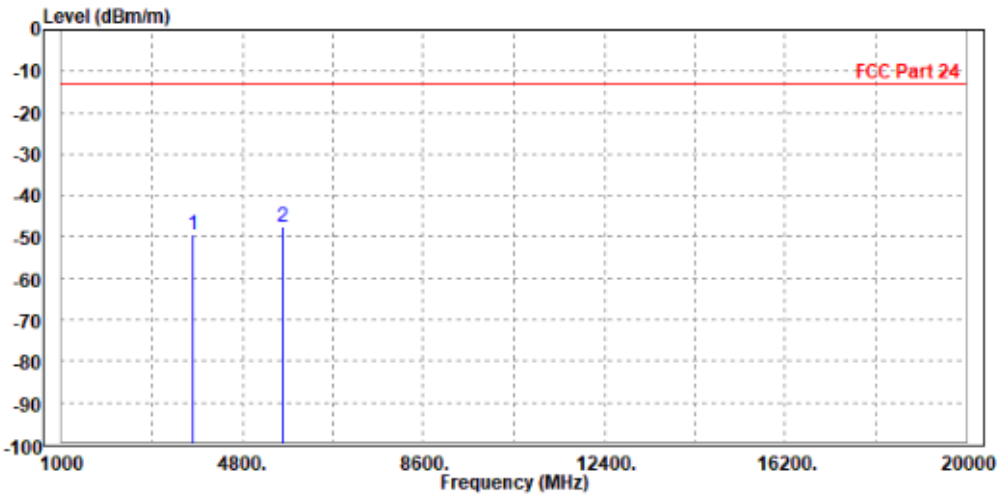
| | | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm/m | dBm | dBm/m | dB | dB/m | | |
| 1 | PP | 3717.000 | -48.82 | -58.08 | -13.00 | -35.82 | 9.26 | Peak | Vertical |
| 2 | | 5565.000 | -49.06 | -59.02 | -13.00 | -36.06 | 9.96 | Peak | Vertical |



## CH 26365

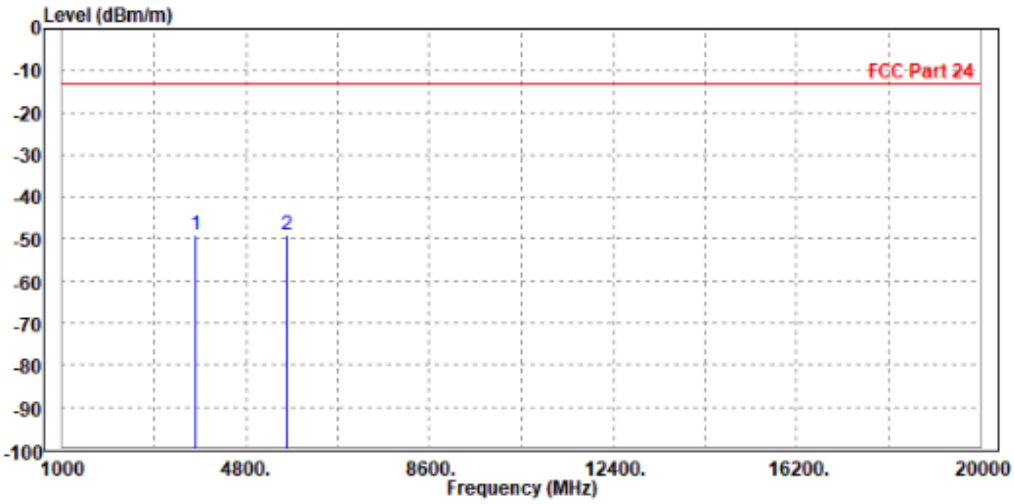
| MODE | TX channel 26365 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | |

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | | |
| 1 | 3765.000 | -49.52 | -58.38 | -13.00 | -36.52 | 8.86 | Peak | Horizontal |
| 2 PP | 5647.500 | -47.72 | -58.23 | -13.00 | -34.72 | 10.51 | Peak | Horizontal |



| MODE | TX channel 26365 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

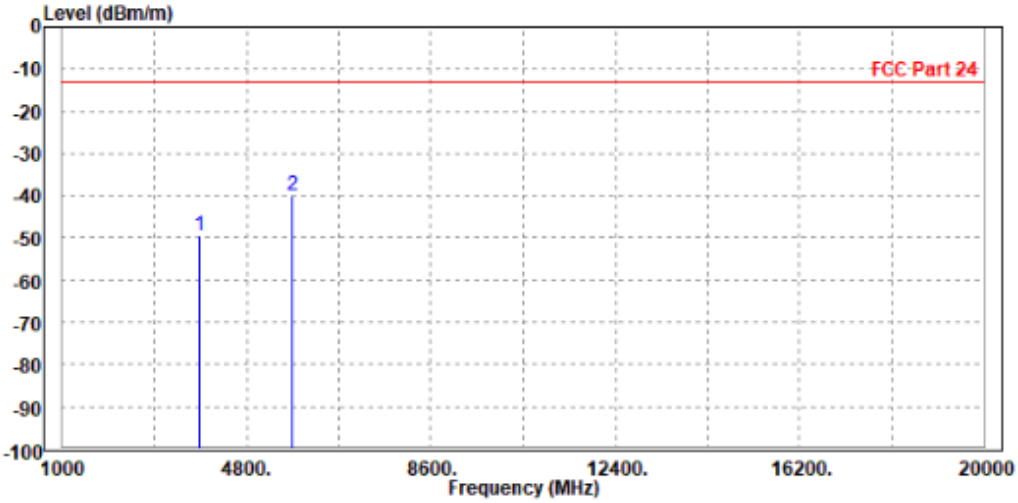
| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | | |
| 1 | 3774.000 | -49.00 | -58.27 | -13.00 | -36.00 | 9.27 | Peak | Vertical |
| 2 PP | 5647.500 | -48.88 | -59.16 | -13.00 | -35.88 | 10.28 | Peak | Vertical |



## CH 26640

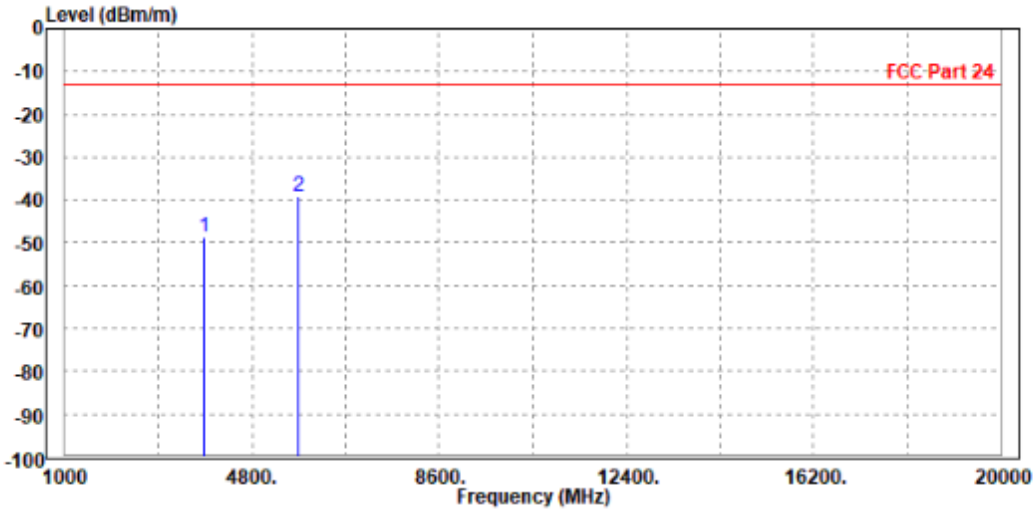
| MODE | TX channel 26640 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | |

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | | |
| 1 | 3812.000 | -49.45 | -58.36 | -13.00 | -36.45 | 8.91 | Peak | Horizontal |
| 2 PP | 5730.000 | -39.96 | -50.74 | -13.00 | -26.96 | 10.78 | Peak | Horizontal |



| MODE | TX channel 26640 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

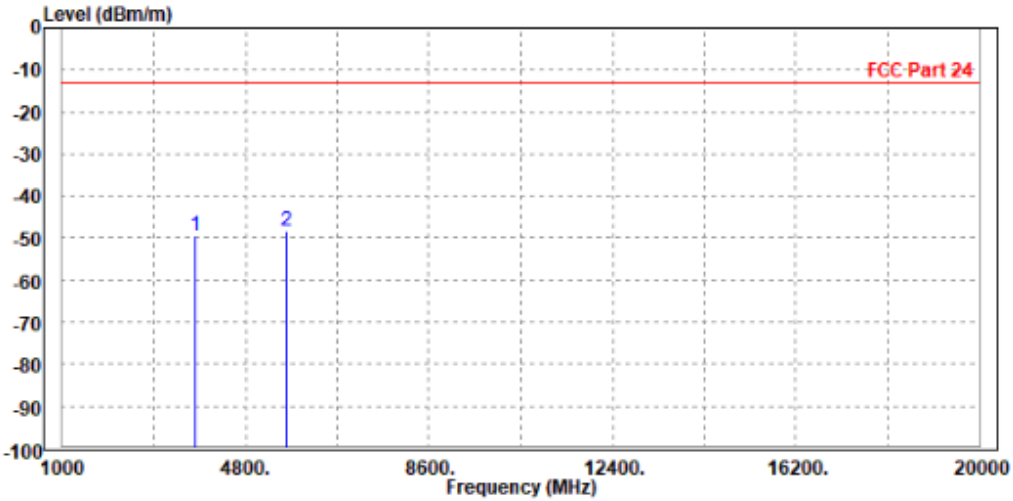
| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | | |
| 1 | 3812.000 | -48.54 | -57.83 | -13.00 | -35.54 | 9.29 | Peak | Vertical |
| 2 PP | 5730.000 | -39.28 | -49.88 | -13.00 | -26.28 | 10.60 | Peak | Vertical |



## CHANNEL BANDWIDTH: 15MHz / QPSK

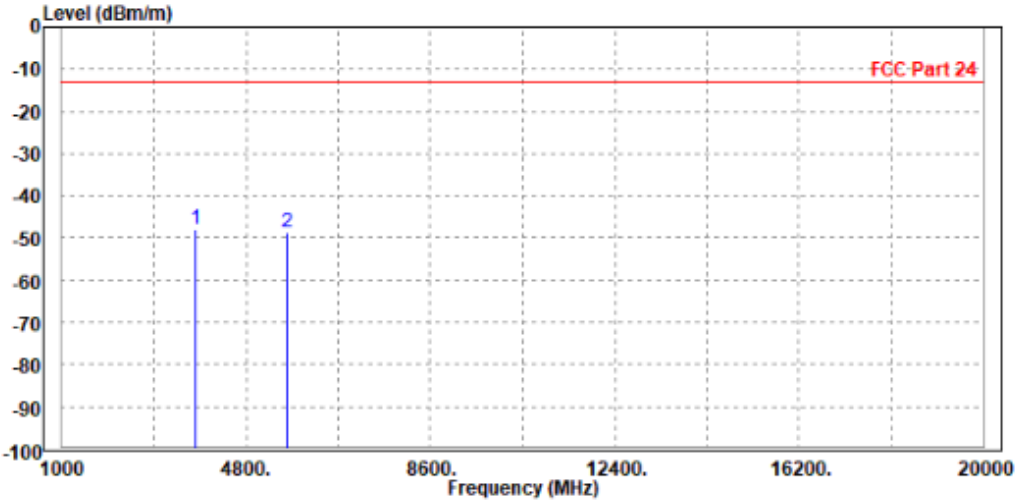
| MODE | TX channel 26365 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | |

| | | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm/m | dBm | dBm/m | dB | dB/m | | |
| 1 | | 3774.000 | -49.56 | -58.43 | -13.00 | -36.56 | 8.87 | Peak | Horizontal |
| 2 | PP | 5647.500 | -48.36 | -58.87 | -13.00 | -35.36 | 10.51 | Peak | Horizontal |



| MODE | TX channel 26365 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

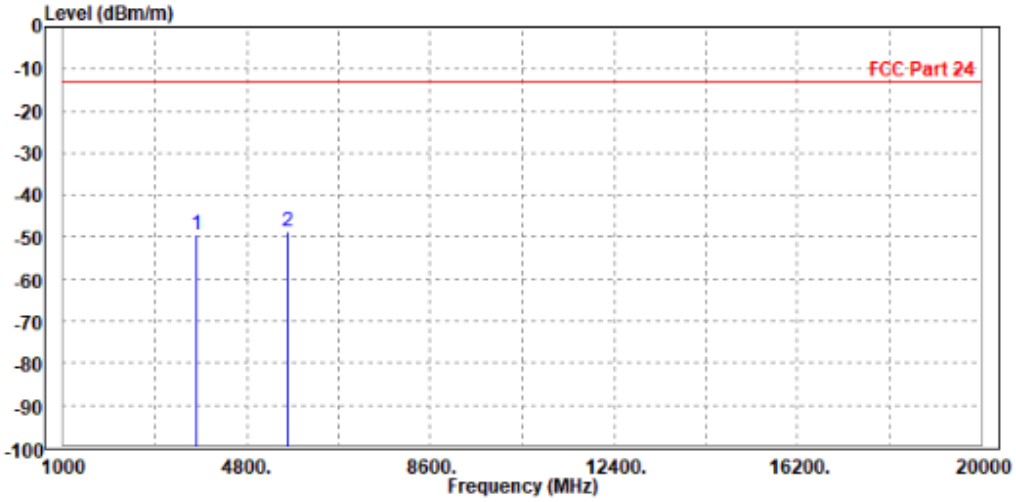
| | | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|---|
| | | MHz | dBm/m | dBm | dBm/m | dB | dB/m | | |
| 1 | PP | 3774.000 | -47.98 | -57.25 | -13.00 | -34.98 | 9.27 | Peak | Vertical |
| 2 | | 5647.500 | -48.72 | -59.00 | -13.00 | -35.72 | 10.28 | Peak | Vertical |



## CHANNEL BANDWIDTH: 20MHz / QPSK

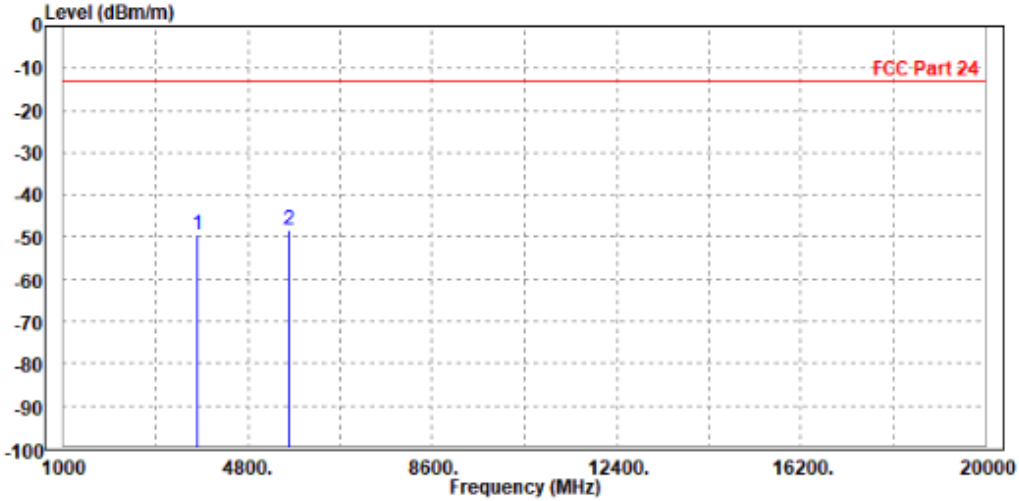
| MODE | TX channel 26365 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M | | | |

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | | |
| 1 | 3774.000 | -49.57 | -58.44 | -13.00 | -36.57 | 8.87 | Peak | Horizontal |
| 2 PP | 5647.500 | -48.51 | -59.02 | -13.00 | -35.51 | 10.51 | Peak | Horizontal |



| MODE | TX channel 26365 | FREQUENCY RANGE | Above 1000MHz |
|---|---|---|---|
| ENVIRONMENTAL CONDITIONS | 23deg. C, 70%RH | INPUT POWER | AC 120V/60Hz |
| TESTED BY | Jace Hu | | |
| ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M | | | |

| | Freq | Level | Read Level | Limit Line | Over Limit | Factor | Remark | Pol/Phase |
|---|---|---|---|---|---|---|---|---|
| | MHz | dBm/m | dBm | dBm/m | dB | dB/m | | |
| 1 | 3774.000 | -49.54 | -58.81 | -13.00 | -36.54 | 9.27 | Peak | Vertical |
| 2 PP | 5647.500 | -48.28 | -58.56 | -13.00 | -35.28 | 10.28 | Peak | Vertical |

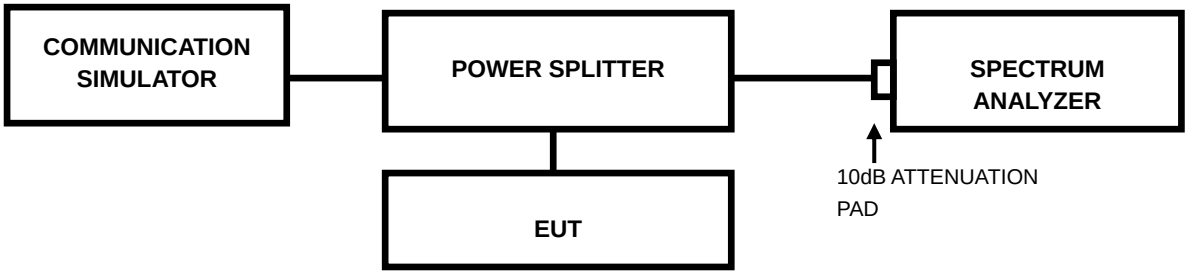


## 3.7 PEAK TO AVERAGE RATIO

### 3.7.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

### 3.7.2 TEST SETUP




### 3.7.3 TEST PROCEDURES

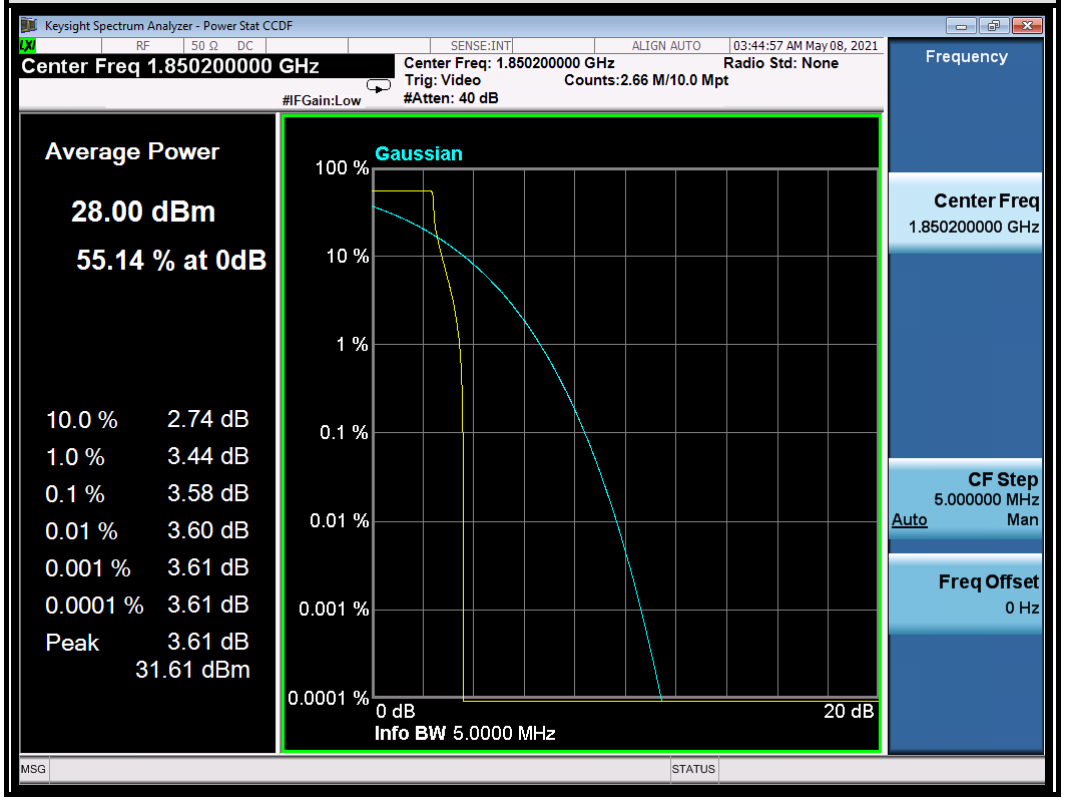
1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

## 3.7.4 TEST RESULTS

### GSM

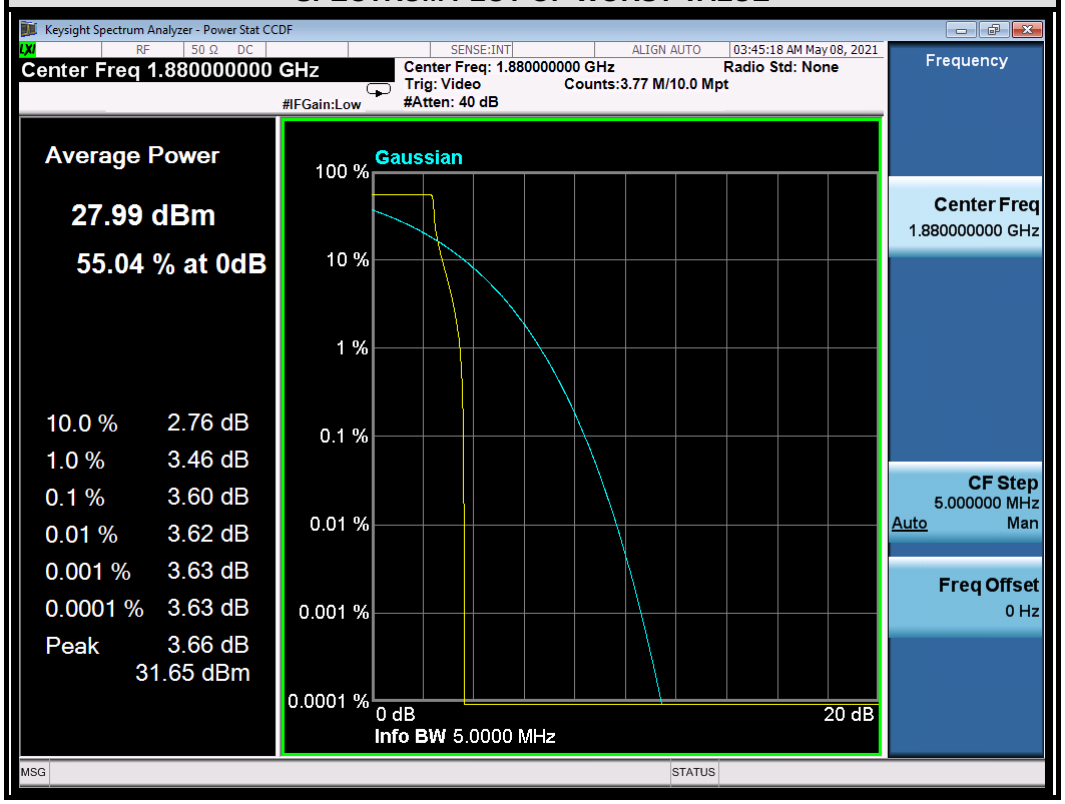
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) |
|---|---|---|
| 512 | 1850.2 | 3.58 |

SPECTRUM PLOT OF WORST VALUE



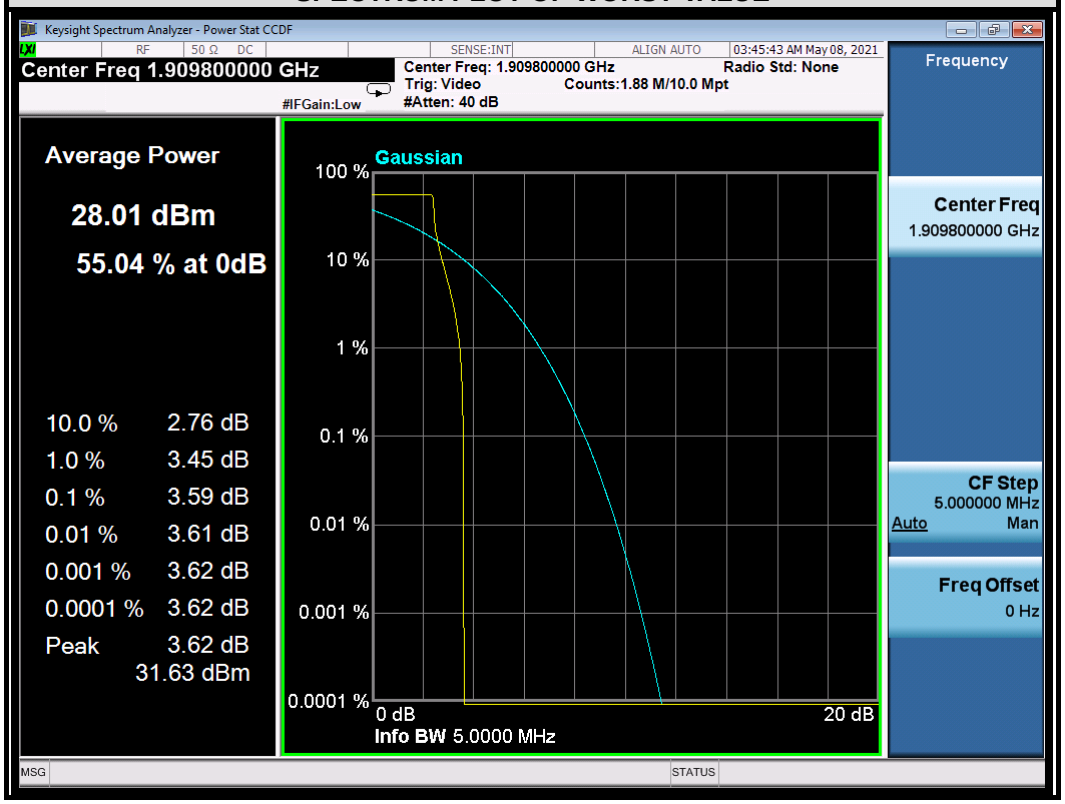
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) |
|---|---|---|
| 661 | 1880 | 3.60 |

SPECTRUM PLOT OF WORST VALUE



| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) |
|---|---|---|
| 810 | 1909.8 | 3.59 |

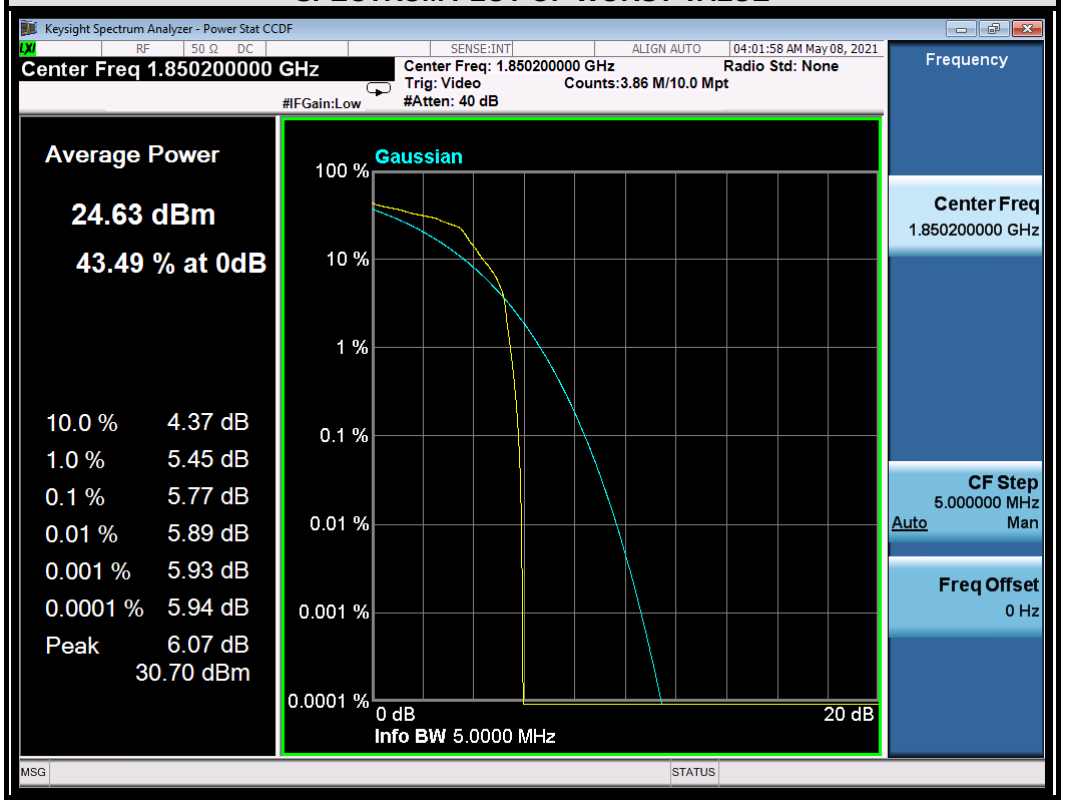
SPECTRUM PLOT OF WORST VALUE



## EDGE

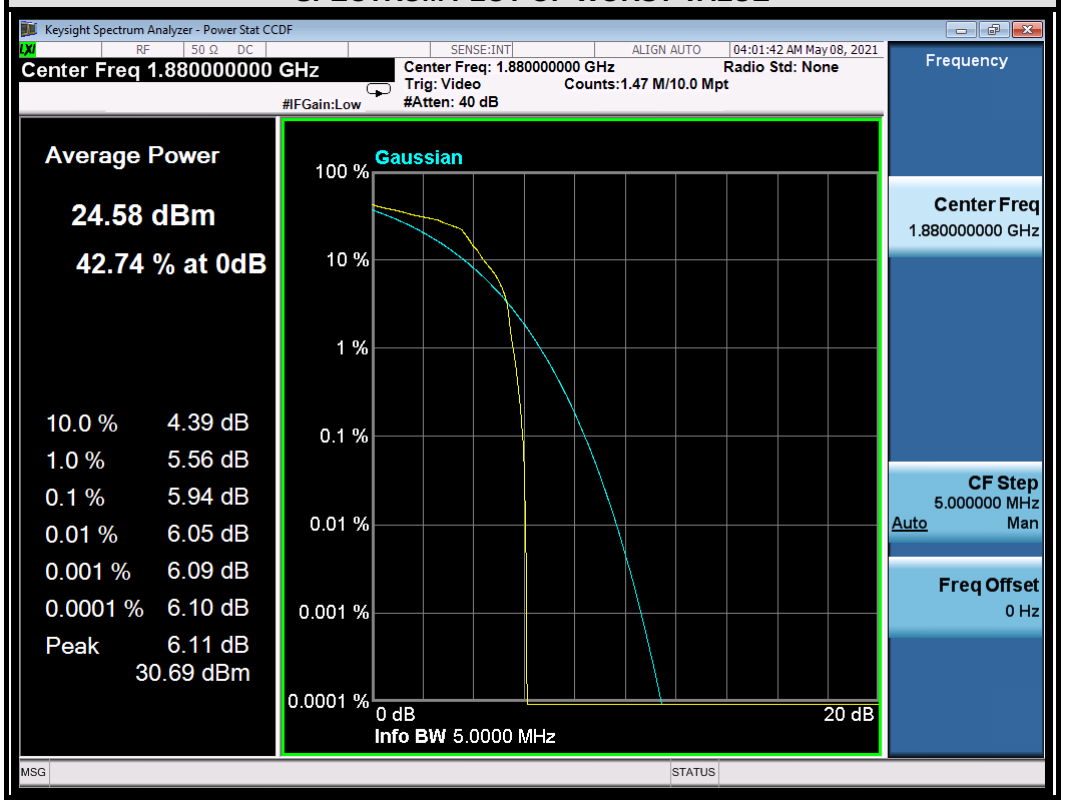
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) |
|---|---|---|
| 512 | 1850.2 | 5.77 |

SPECTRUM PLOT OF WORST VALUE



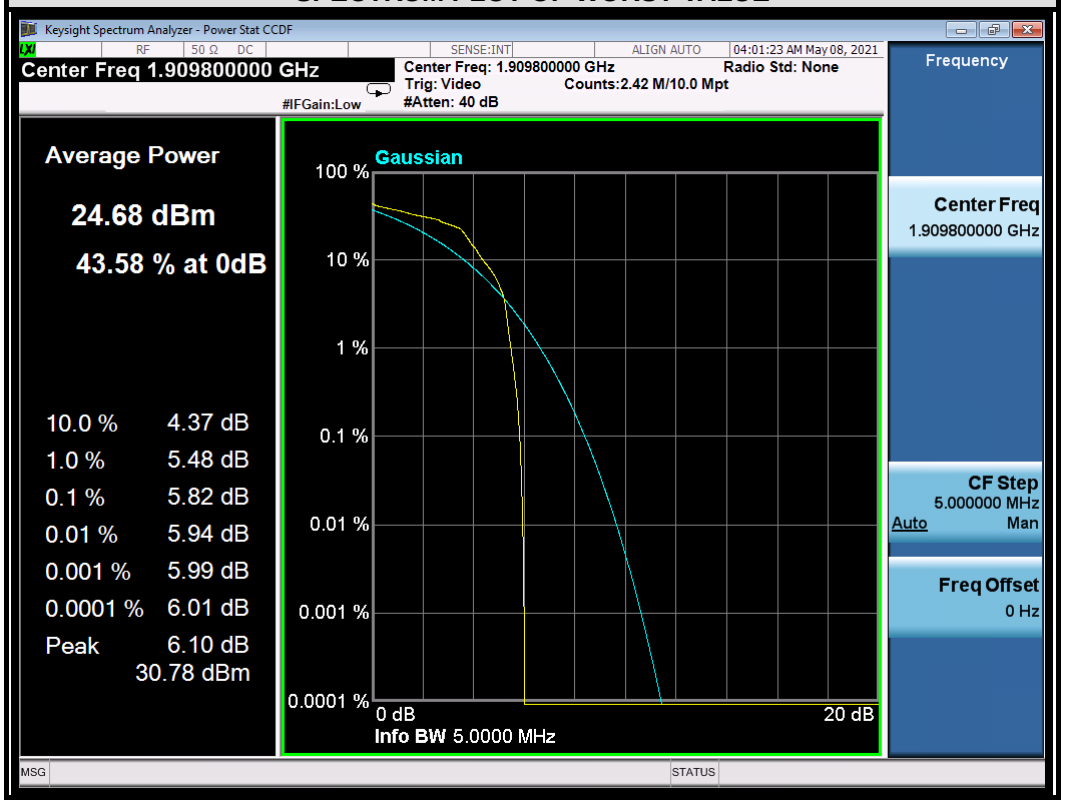
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) |
|---|---|---|
| 661 | 1880 | 5.94 |

SPECTRUM PLOT OF WORST VALUE



| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) |
|---|---|---|
| 810 | 1909.8 | 5.82 |

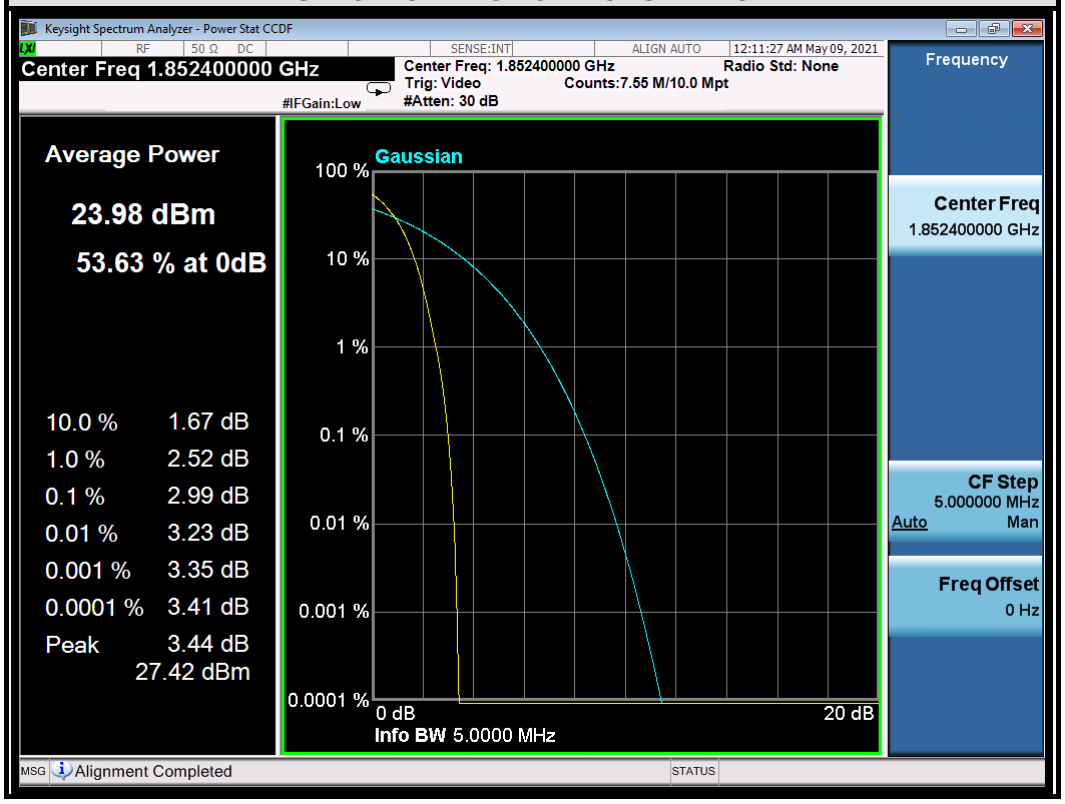
SPECTRUM PLOT OF WORST VALUE



**WCDMA**

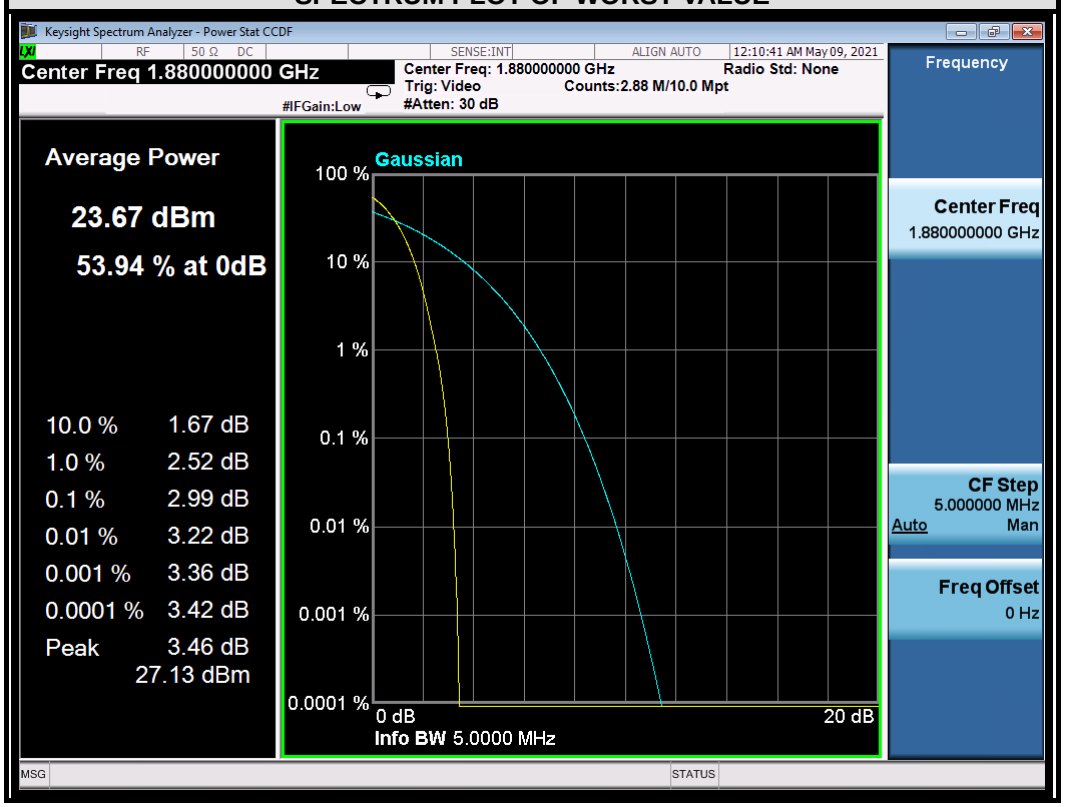
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) |
|---|---|---|
| 9262 | 1852.4 | 2.99 |

**SPECTRUM PLOT OF WORST VALUE**



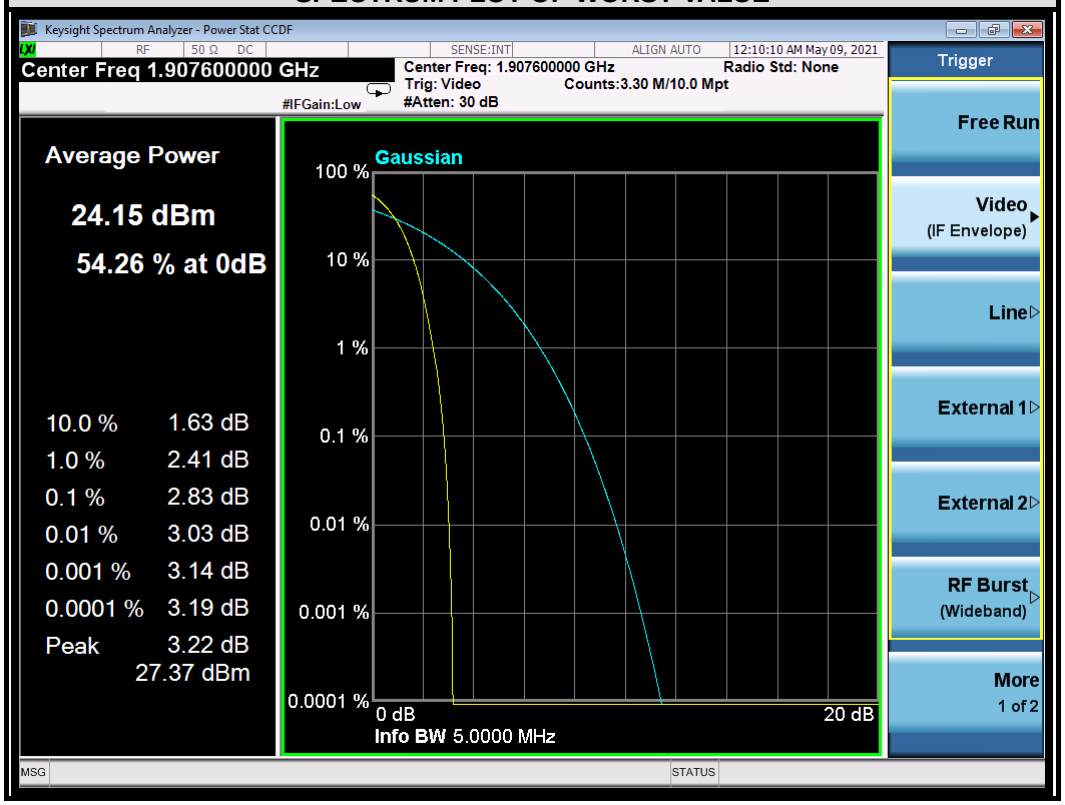
| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) |
|---|---|---|
| 9400 | 1880.0 | 2.99 |

SPECTRUM PLOT OF WORST VALUE



| CHANNEL | FREQUENCY (MHz) | PEAK TO AVERAGE RATIO (dB) |
|---|---|---|
| 9538 | 1907.6 | 2.83 |

SPECTRUM PLOT OF WORST VALUE

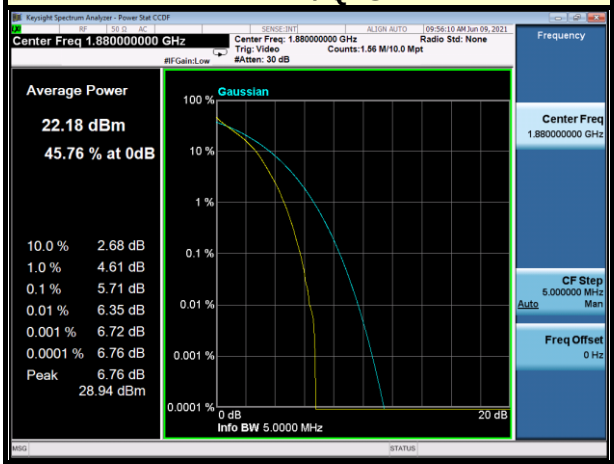


## LTE BAND 2

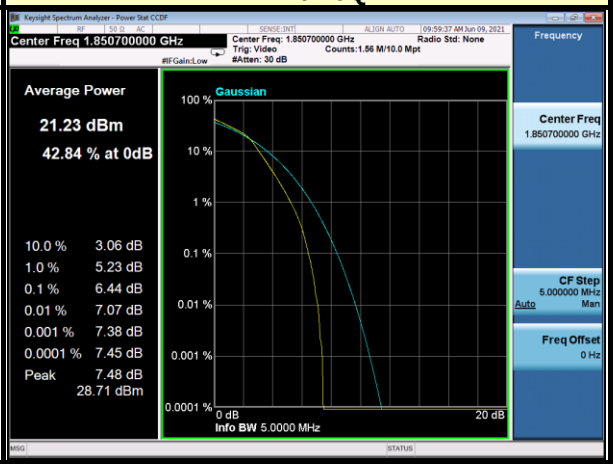
| CHANNEL BANDWIDTH: 1.4MHz | | | | |
|---|---|---|---|---|
| CHANNEL | Frequency (MHz) | PEAK TO AVERAGE RATIO (dB) | | |
| | | QPSK | 16QAM | 64QAM |
| 18607 | 1850.7 | 5.63 | 6.44 | 6.47 |
| 18900 | 1880 | 5.71 | 6.41 | 6.40 |
| 19193 | 1909.3 | 5.03 | 5.84 | 5.83 |

### SPECTRUM PLOT OF WORST VALUE

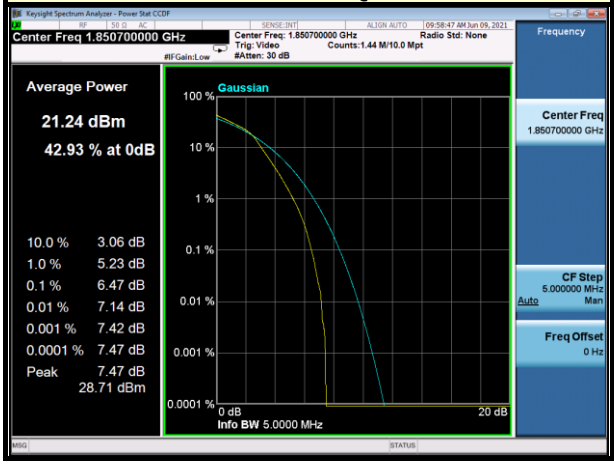
**1.4MHz / QPSK**




**1.4MHz / 16QAM**



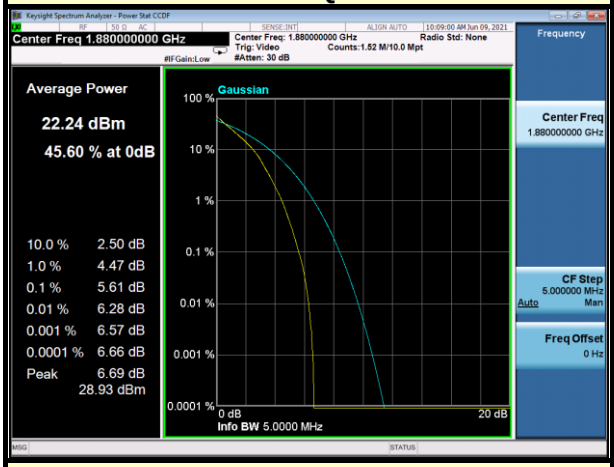

**1.4MHz / 64QAM**



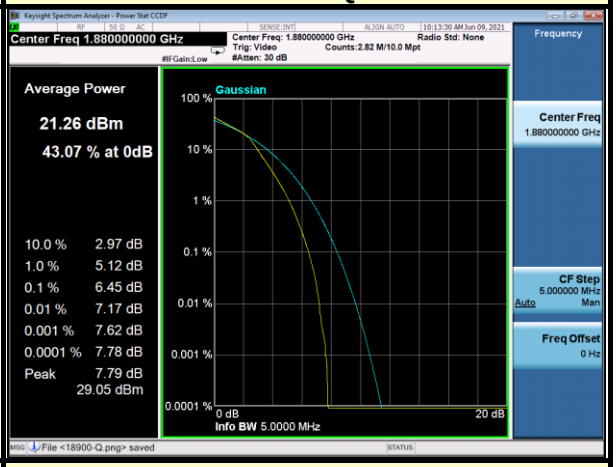
| CHANNEL BANDWIDTH: 3MHz | | | | |
|---|---|---|---|---|
| CHANNEL | Frequency (MHz) | PEAK TO AVERAGE RATIO (dB) | | |
| | | QPSK | 16QAM | 64QAM |
| 18615 | 1851.5 | 5.58 | 6.42 | 6.44 |
| 18900 | 1880 | 5.61 | 6.45 | 6.43 |
| 19185 | 1908.5 | 5.15 | 6.04 | 6.05 |

SPECTRUM PLOT OF WORST VALUE

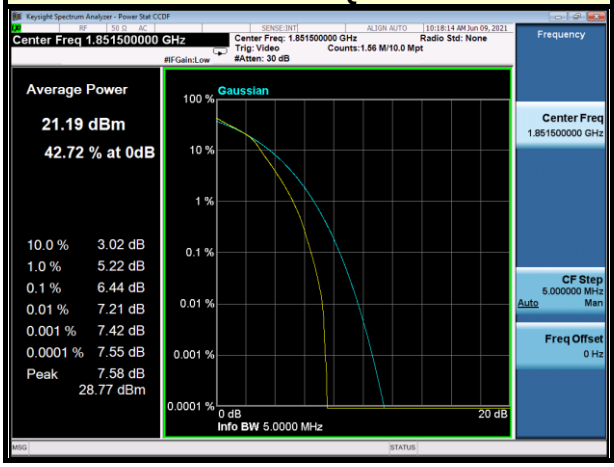
3MHz / QPSK




3MHz / 16QAM



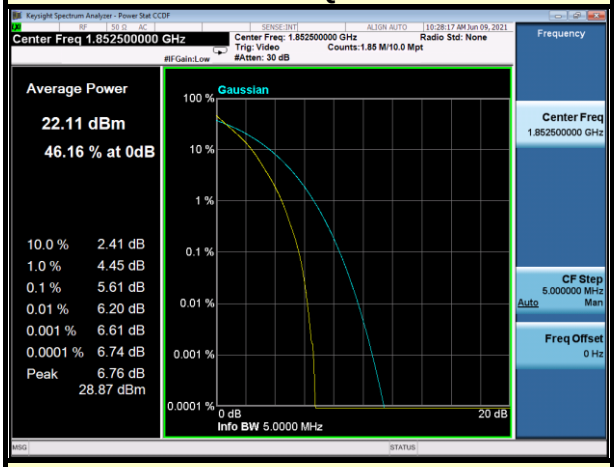

3MHz / 64QAM



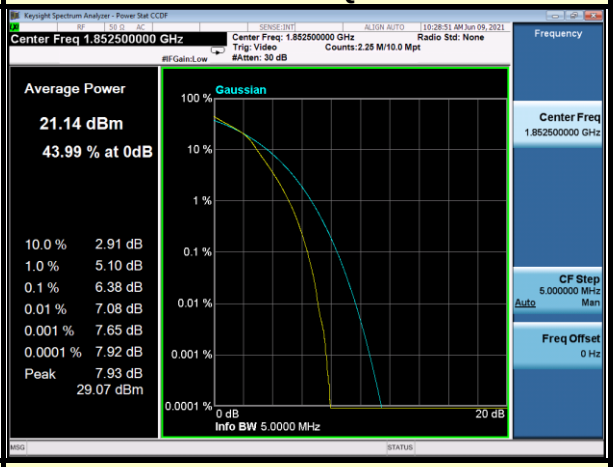
| CHANNEL BANDWIDTH: 5MHz | | | | |
|---|---|---|---|---|
| CHANNEL | Frequency (MHz) | PEAK TO AVERAGE RATIO (dB) | | |
| | | QPSK | 16QAM | 64QAM |
| 18625 | 1852.5 | 5.61 | 6.38 | 6.39 |
| 18900 | 1880 | 5.56 | 6.29 | 6.31 |
| 19175 | 1907.5 | 5.36 | 6.13 | 6.14 |

SPECTRUM PLOT OF WORST VALUE

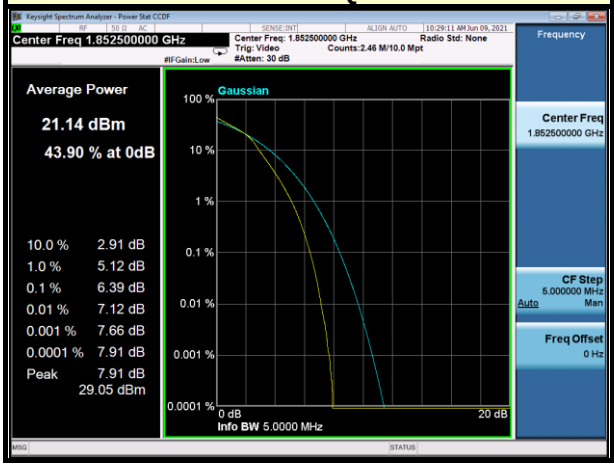
5MHz / QPSK




5MHz / 16QAM



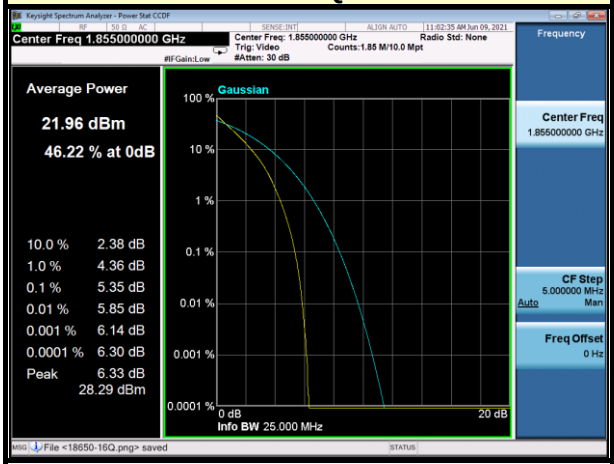

5MHz / 64QAM



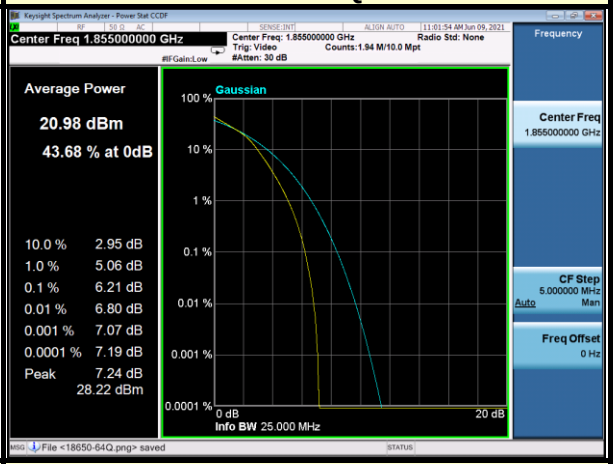
| CHANNEL BANDWIDTH: 10MHz | | | | |
|---|---|---|---|---|
| CHANNEL | Frequency (MHz) | PEAK TO AVERAGE RATIO (dB) | | |
| | | QPSK | 16QAM | 64QAM |
| 18650 | 1855 | 5.35 | 6.21 | 6.21 |
| 18900 | 1880 | 5.28 | 6.09 | 6.08 |
| 19150 | 1905 | 5.13 | 5.98 | 5.99 |

SPECTRUM PLOT OF WORST VALUE

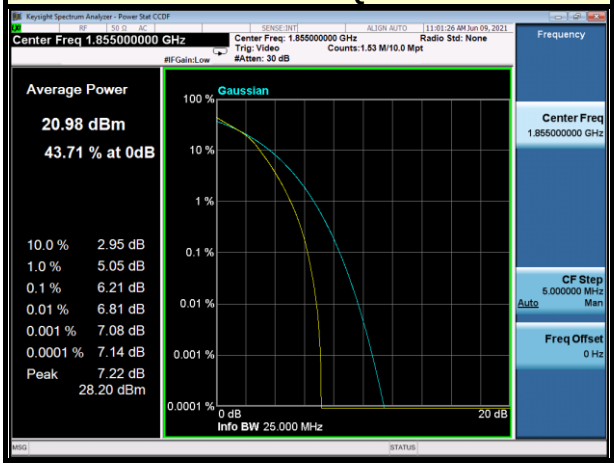
10MHz / QPSK




10MHz / 16QAM



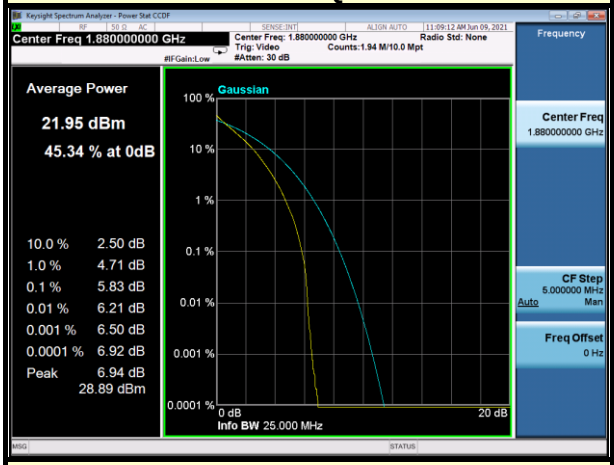

10MHz / 64QAM



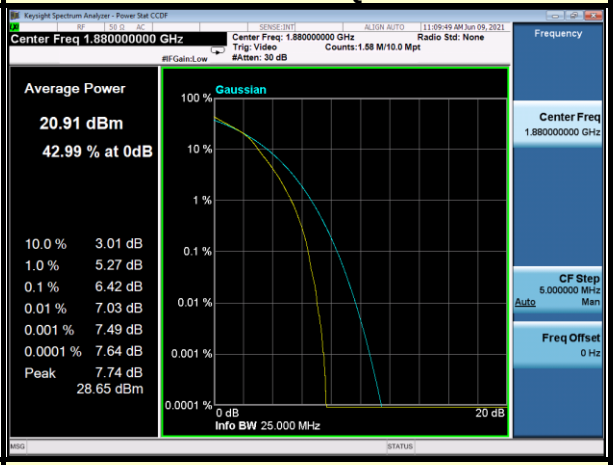
| CHANNEL BANDWIDTH: 15MHz | | | | |
|---|---|---|---|---|
| CHANNEL | Frequency (MHz) | PEAK TO AVERAGE RATIO (dB) | | |
| | | QPSK | 16QAM | 64QAM |
| 18675 | 1857.5 | 5.55 | 6.22 | 6.21 |
| 18900 | 1880 | 5.83 | 6.42 | 6.41 |
| 19125 | 1902.5 | 5.45 | 6.10 | 6.10 |

## SPECTRUM PLOT OF WORST VALUE

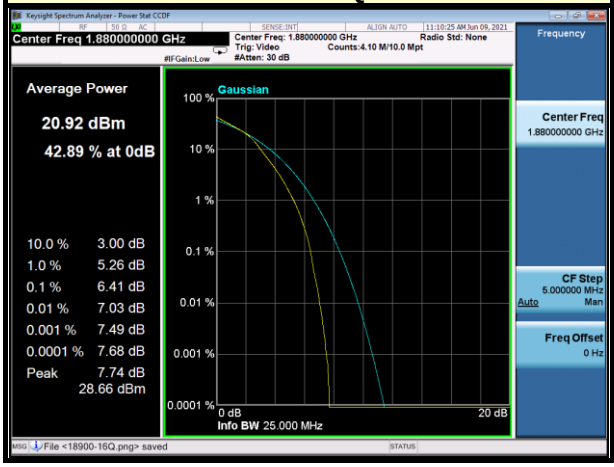
### 15MHz / QPSK




### 15MHz / 16QAM



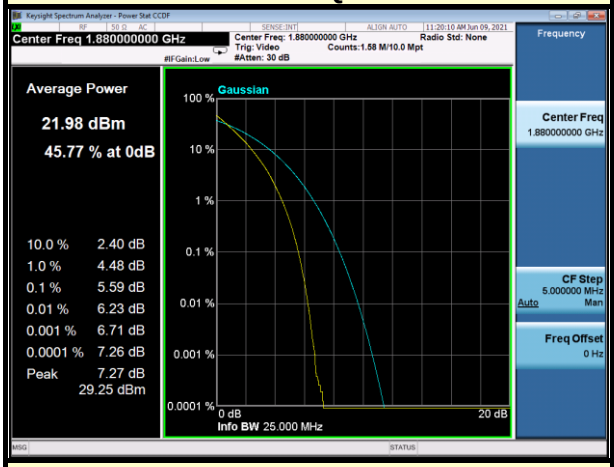

### 15MHz / 64QAM



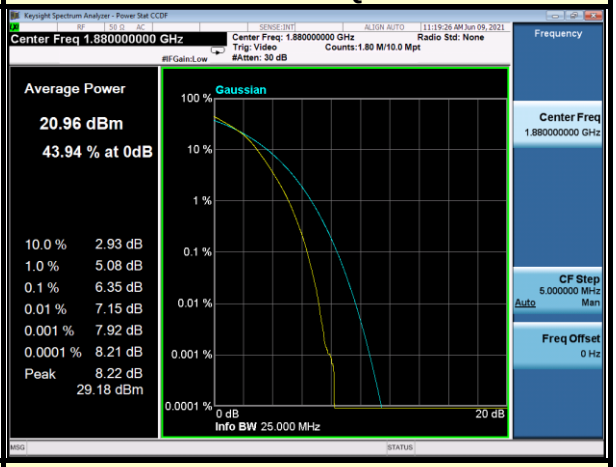
| CHANNEL BANDWIDTH: 20MHz | | | | |
|---|---|---|---|---|
| CHANNEL | Frequency (MHz) | PEAK TO AVERAGE RATIO (dB) | | |
| | | QPSK | 16QAM | 64QAM |
| 18700 | 1860 | 5.18 | 6.07 | 6.08 |
| 18900 | 1880 | 5.59 | 6.35 | 6.35 |
| 19100 | 1900 | 5.32 | 6.04 | 6.03 |

## SPECTRUM PLOT OF WORST VALUE

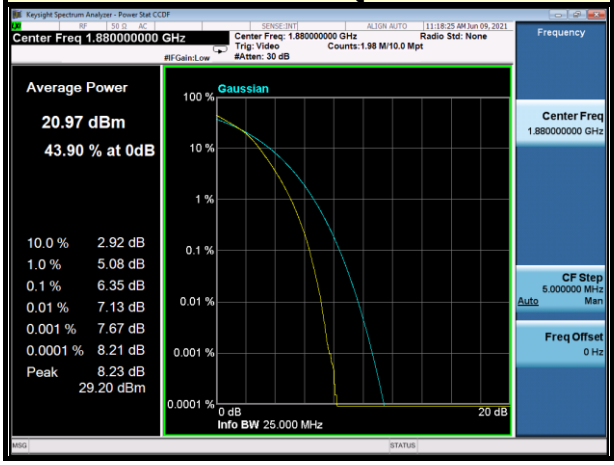
### 20MHz / QPSK




### 20MHz / 16QAM




### 20MHz / 64QAM

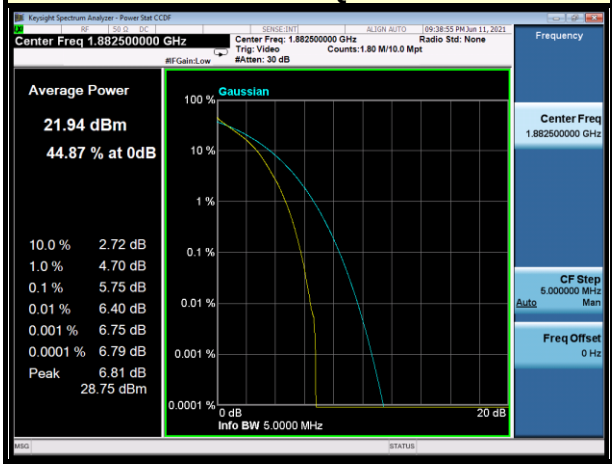


## LTE BAND 25

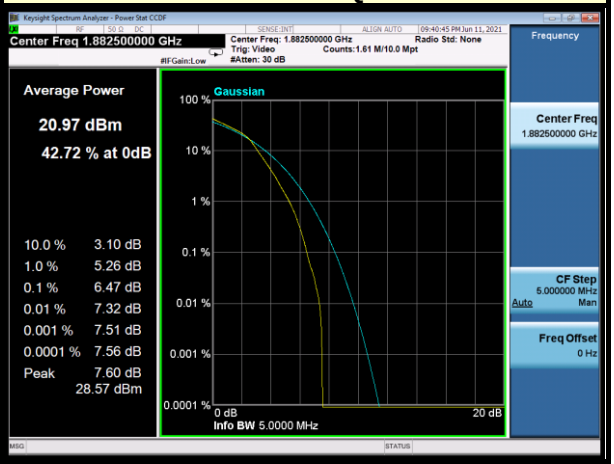
| CHANNEL BANDWIDTH: 1.4MHz | | | | |
|---|---|---|---|---|
| CHANNEL | Frequency (MHz) | PEAK TO AVERAGE RATIO (dB) | | |
| | | QPSK | 16QAM | 64QAM |
| 26047 | 1850.7 | 5.44 | 6.32 | 6.35 |
| 26365 | 1882.5 | 5.75 | 6.47 | 6.51 |
| 26683 | 1914.3 | 4.03 | 4.92 | 4.91 |

### SPECTRUM PLOT OF WORST VALUE

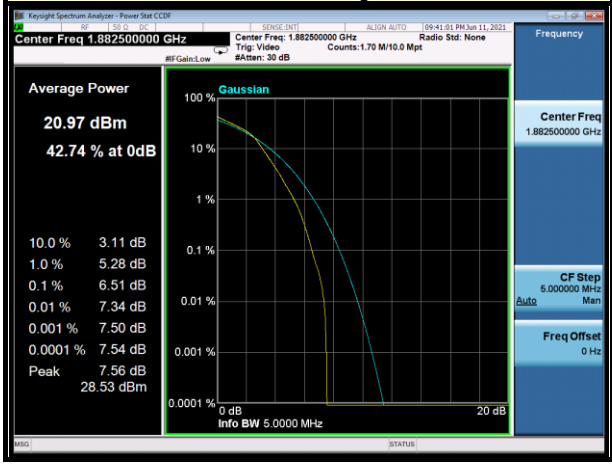
**1.4MHz / QPSK**




**1.4MHz / 16QAM**



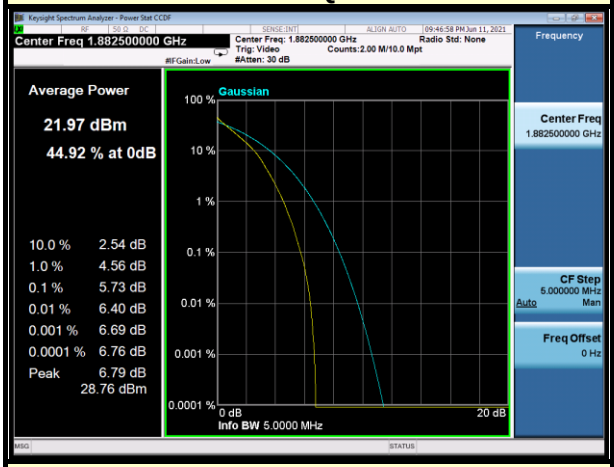

**1.4MHz / 64QAM**



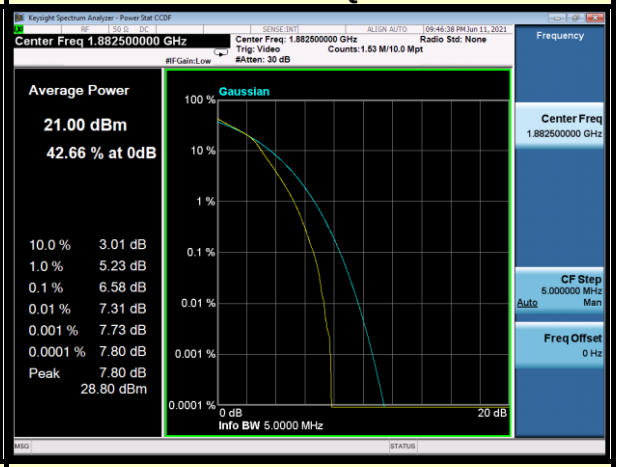
| CHANNEL BANDWIDTH: 3MHz | | | | |
|---|---|---|---|---|
| CHANNEL | Frequency (MHz) | PEAK TO AVERAGE RATIO (dB) | | |
| | | QPSK | 16QAM | 64QAM |
| 26055 | 1851.5 | 5.42 | 6.31 | 6.31 |
| 26365 | 1882.5 | 5.73 | 6.58 | 6.58 |
| 26675 | 1913.5 | 3.78 | 4.60 | 4.63 |

SPECTRUM PLOT OF WORST VALUE

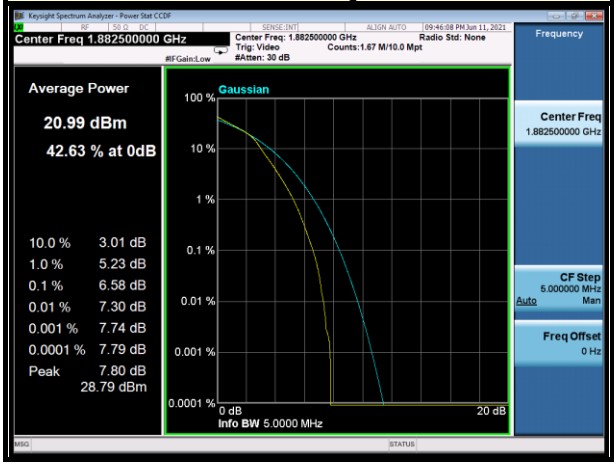
3MHz / QPSK




3MHz / 16QAM



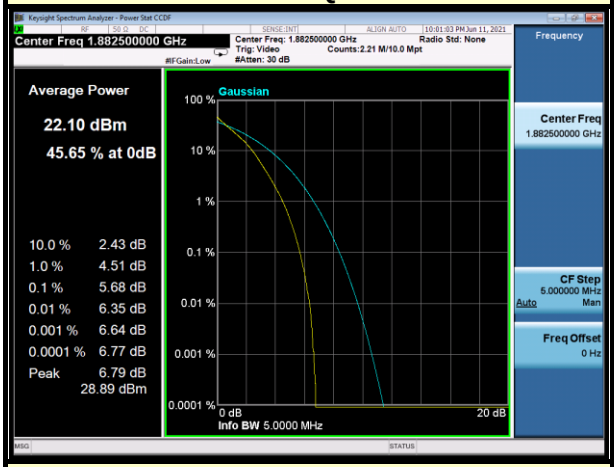

3MHz / 64QAM



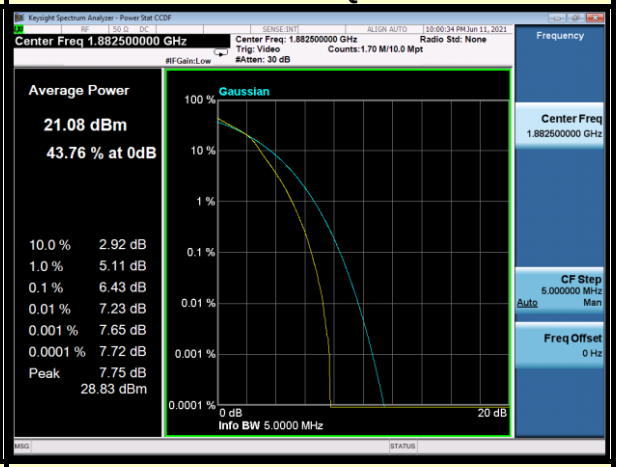
| CHANNEL BANDWIDTH: 5MHz | | | | |
|---|---|---|---|---|
| CHANNEL | Frequency (MHz) | PEAK TO AVERAGE RATIO (dB) | | |
| | | QPSK | 16QAM | 64QAM |
| 26065 | 1852.5 | 5.48 | 6.23 | 6.25 |
| 26365 | 1882.5 | 5.68 | 6.43 | 6.41 |
| 26665 | 1912.5 | 4.16 | 4.77 | 4.80 |

SPECTRUM PLOT OF WORST VALUE

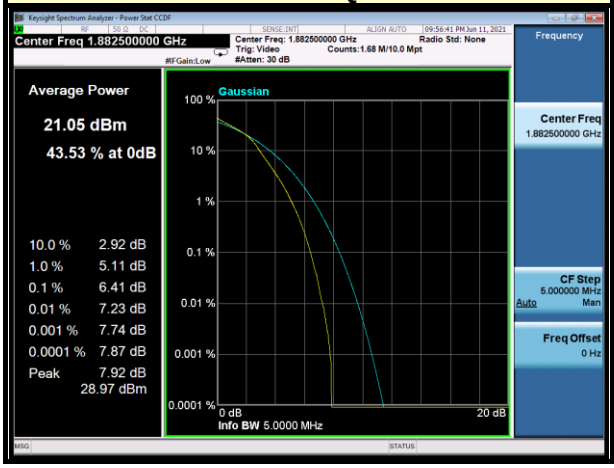
5MHz / QPSK




5MHz / 16QAM



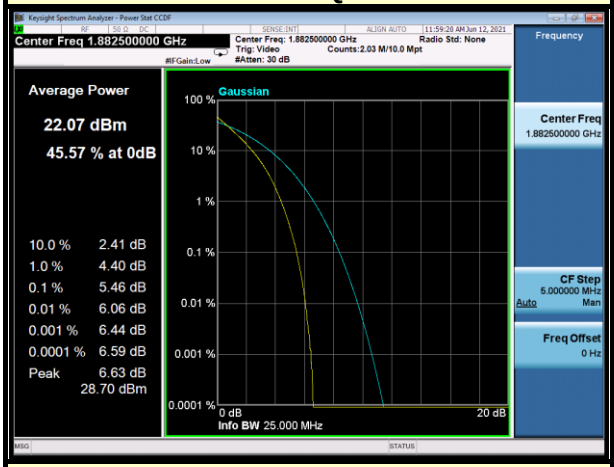

5MHz / 64QAM



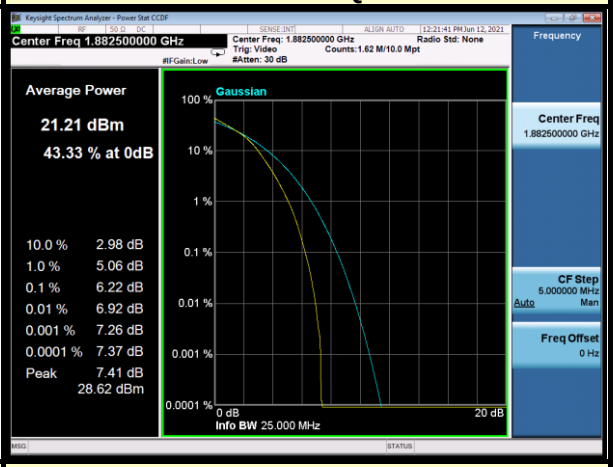
| CHANNEL BANDWIDTH: 10MHz | | | | |
|---|---|---|---|---|
| CHANNEL | Frequency (MHz) | PEAK TO AVERAGE RATIO (dB) | | |
| | | QPSK | 16QAM | 64QAM |
| 26090 | 1855 | 5.15 | 6.03 | 6.03 |
| 26365 | 1882.5 | 5.46 | 6.22 | 6.26 |
| 26640 | 1910 | 4.65 | 5.50 | 5.55 |

**SPECTRUM PLOT OF WORST VALUE**

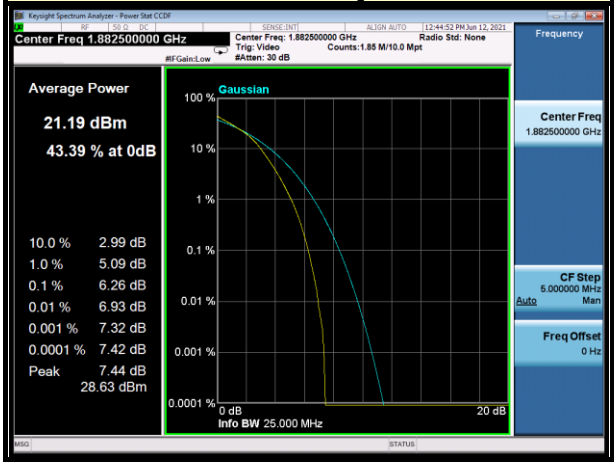
**10MHz / QPSK**




**10MHz / 16QAM**



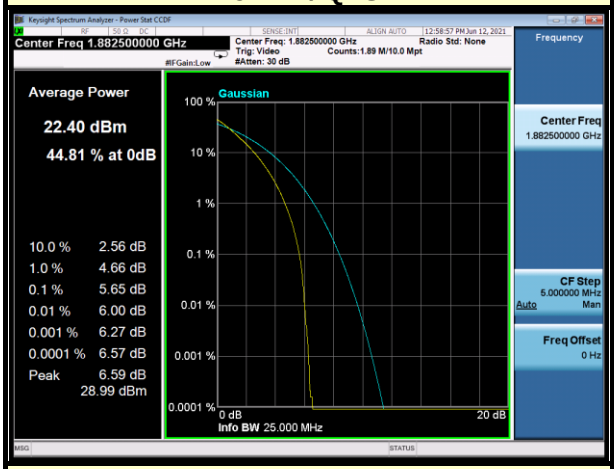

**10MHz / 64QAM**



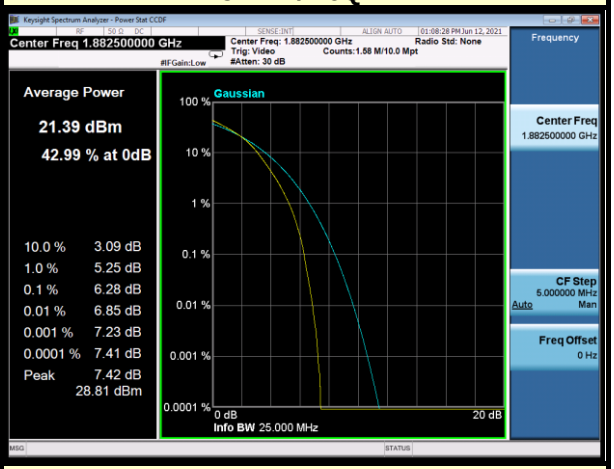
| CHANNEL BANDWIDTH: 15MHz | | | | |
|---|---|---|---|---|
| CHANNEL | Frequency (MHz) | PEAK TO AVERAGE RATIO (dB) | | |
| | | QPSK | 16QAM | 64QAM |
| 26115 | 1857.5 | 5.28 | 6.01 | 6.02 |
| 26365 | 1882.5 | 5.65 | 6.28 | 6.28 |
| 26615 | 1907.5 | 5.27 | 5.91 | 5.91 |

## SPECTRUM PLOT OF WORST VALUE

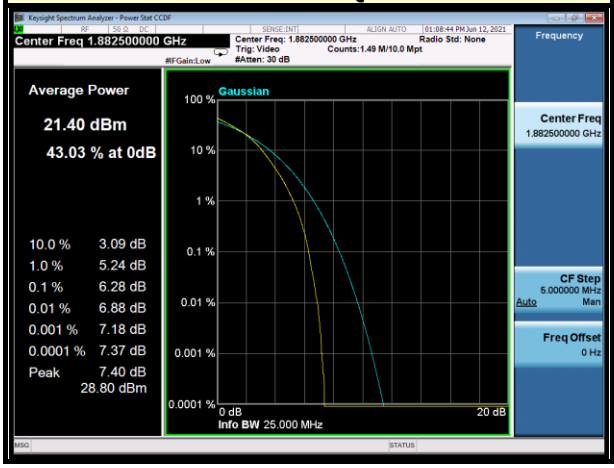
### 15MHz / QPSK




### 15MHz / 16QAM



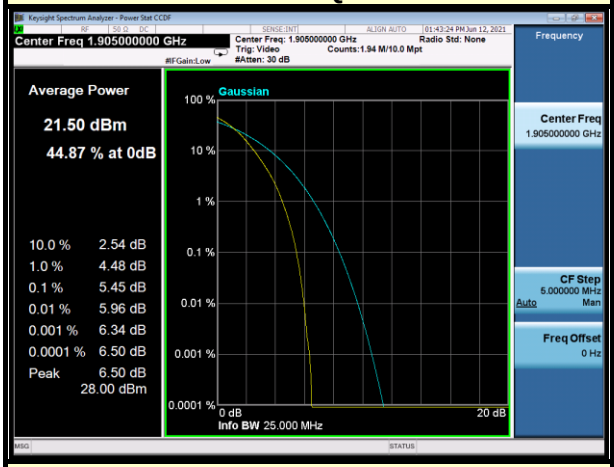

### 15MHz / 64QAM



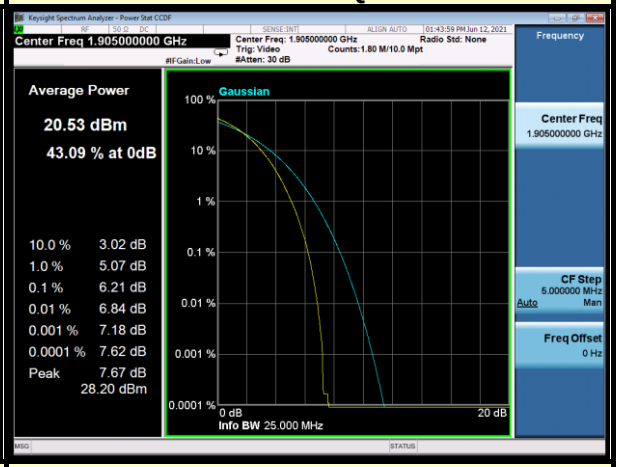
| CHANNEL BANDWIDTH: 20MHz | | | | |
|---|---|---|---|---|
| CHANNEL | Frequency (MHz) | PEAK TO AVERAGE RATIO (dB) | | |
| | | QPSK | 16QAM | 64QAM |
| 26140 | 1860 | 4.98 | 5.88 | 5.86 |
| 26365 | 1882.5 | 5.39 | 6.19 | 6.21 |
| 26590 | 1905 | 5.45 | 6.21 | 6.19 |

## SPECTRUM PLOT OF WORST VALUE

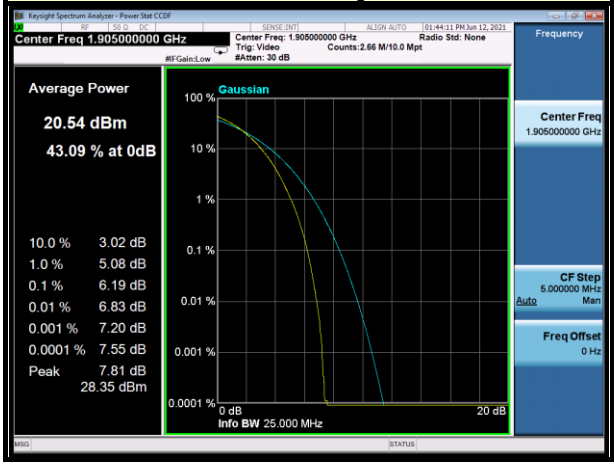
### 20MHz / QPSK




### 20MHz / 16QAM




### 20MHz / 64QAM



# 4 INFORMATION ON THE TESTING LABORATORIES

We, BV 7LAYERS COMMUNICATIONS TECHNOLOGY (SHENZHEN) CO. LTD., were founded in 2015 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

**Shenzhen EMC/RF Lab**:
Tel: +86-755-88696566
Fax: +86-755-88696577

**Email:** customerservice.sw@cn.bureauveritas.com
**Web Site**: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

# 5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

**---END---**