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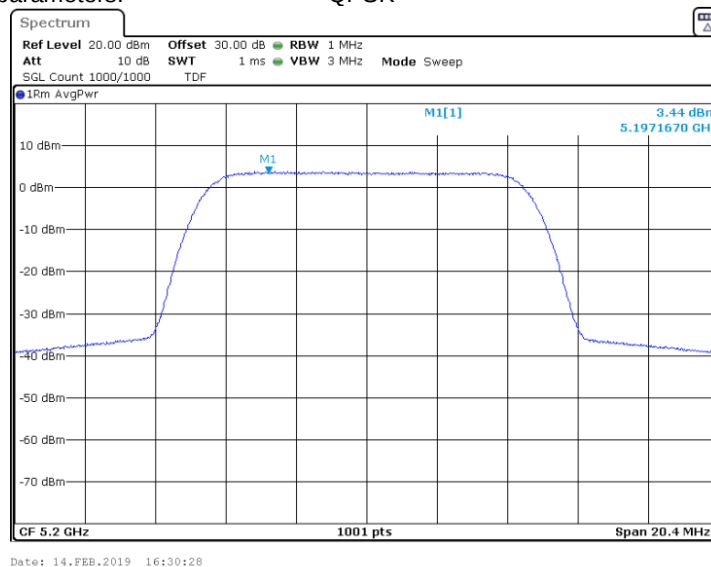
Report ID: TELRAD_FCC.31830

Date of Issue: 28-May-19

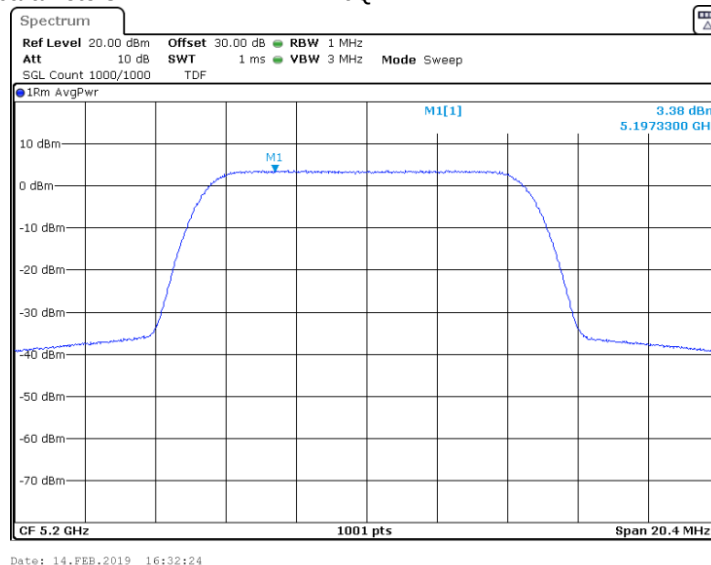
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
12-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.7.21 Peak power spectral density test results

Frequency: 5.200 GHz
Channel BW: 10 MHz
EUT configuration: 2 carrier 1 sector (4 ports to 2 dual slant antenna)
Modulation parameters: QPSK



Modulation parameters: 16QAM





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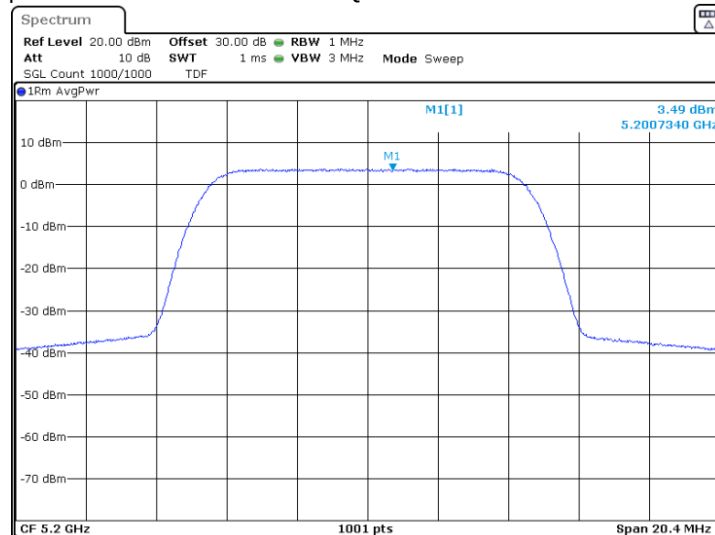
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
12-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM



Date: 14.FEB.2019 16:32:59



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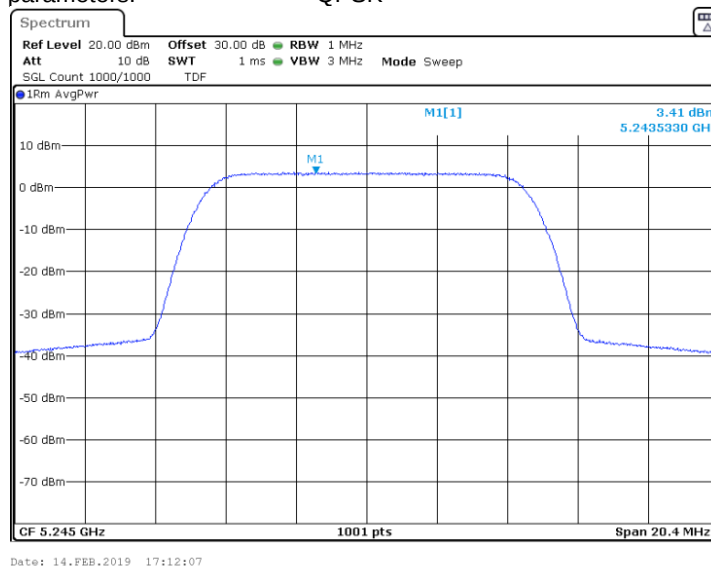
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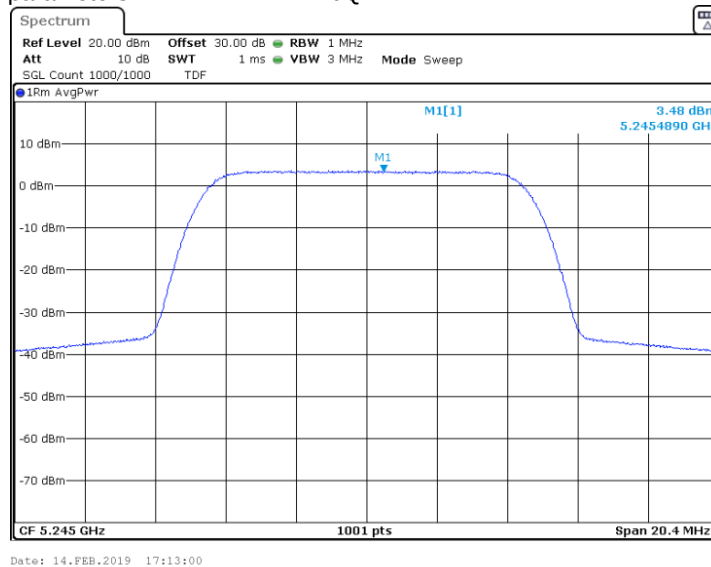
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
12-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.7.22 Peak power spectral density test results

Frequency: 5.245 GHz
Channel BW: 10 MHz
EUT configuration: 2 carrier 1 sector (4 ports to 2 dual slant antenna)
Modulation parameters: QPSK



Modulation parameters: 16QAM





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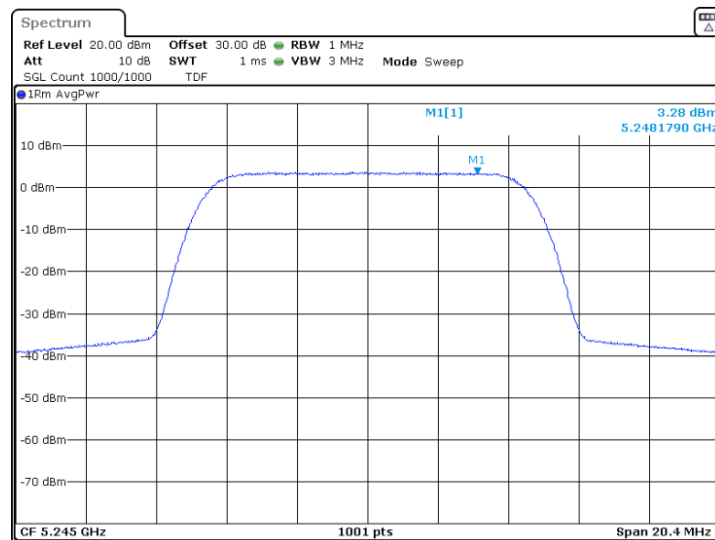
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Date of Issue: 28-May-19

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Test mode:		Verdict: PASS	
Date(s):			
12-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM



Date: 14.FEB.2019 17:13:34



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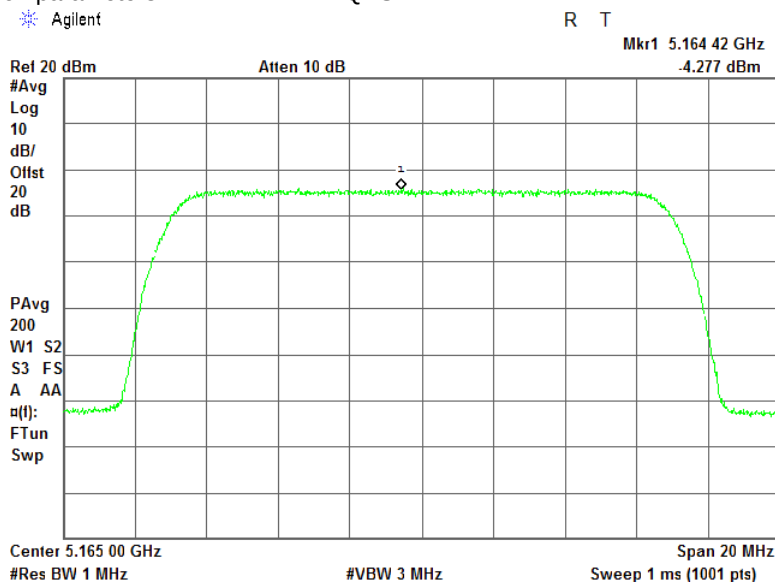
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Date of Issue: 28-May-19

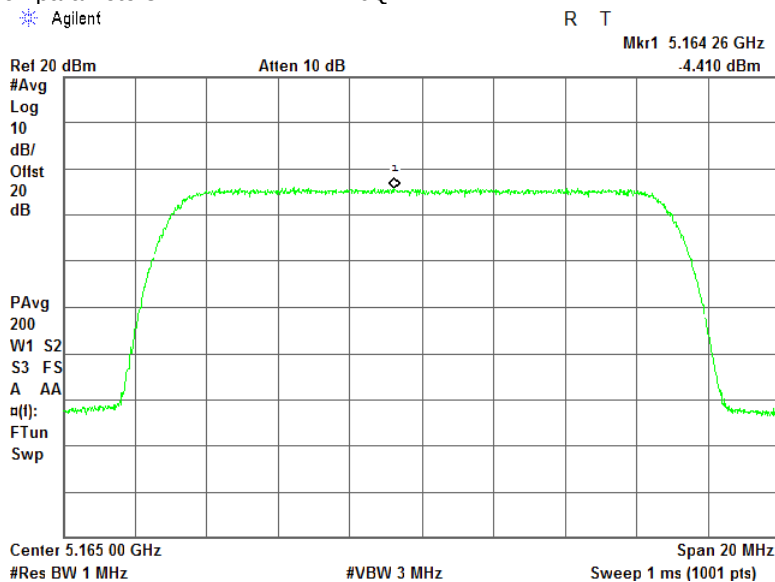
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
12-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.7.23 Peak power spectral density test results

Frequency: 5.165 GHz
Channel BW: 15 MHz
EUT configuration: 2 carrier 1
sector (4 ports to 2 dual slant antenna)
Modulation parameters: QPSK



Modulation parameters: 16QAM





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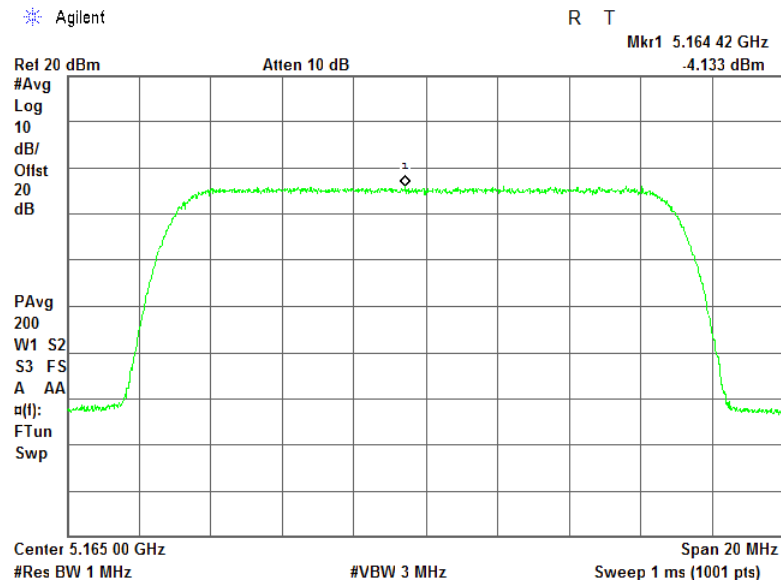
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Date of Issue: 28-May-19

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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
12-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM





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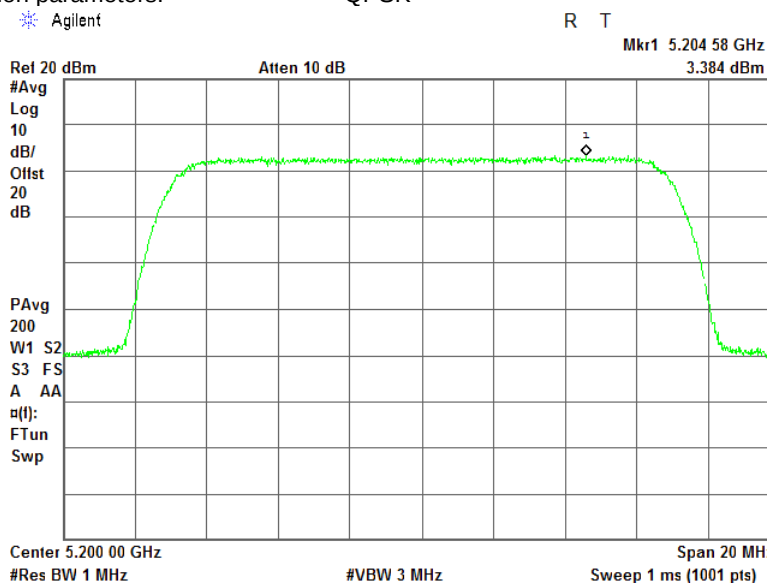
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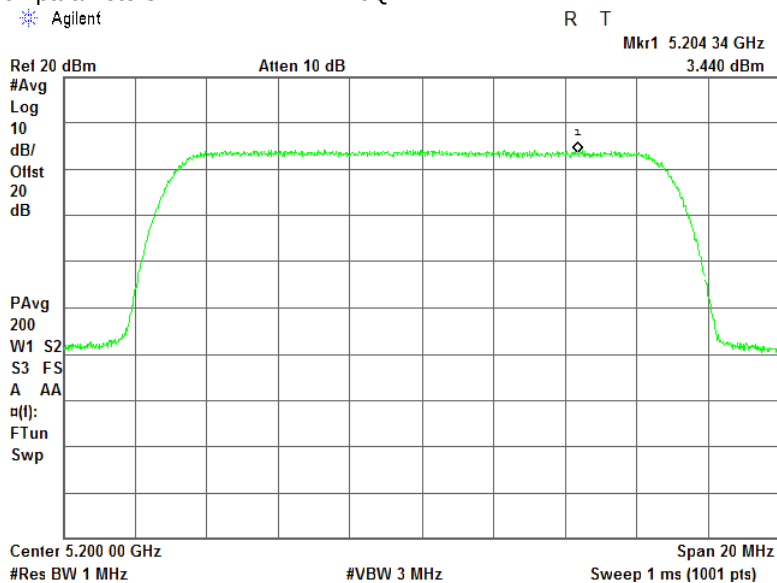
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
12-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.7.24 Peak power spectral density test results

Frequency: 5.200 GHz
Channel BW: 15 MHz
EUT configuration: 2 carrier 1 sector (4 ports to 2 dual slant antenna)
Modulation parameters: QPSK



Modulation parameters: 16QAM





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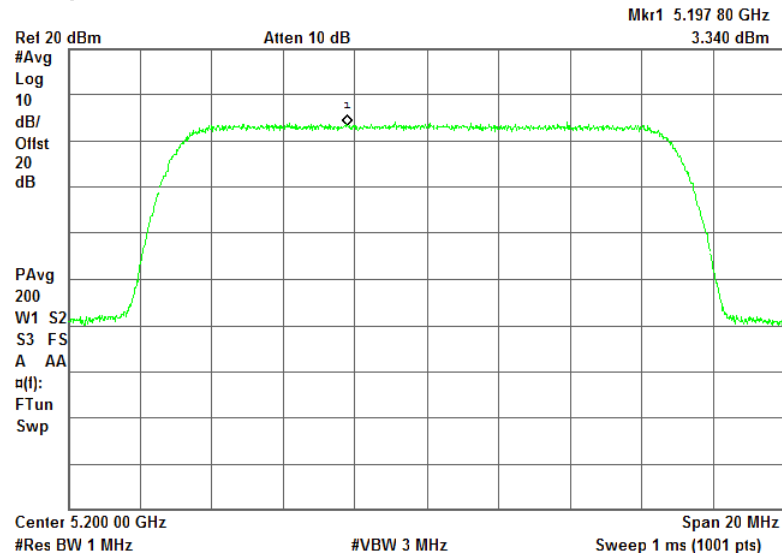
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Test mode:		Compliance	Verdict: PASS
Date(s):		12-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM

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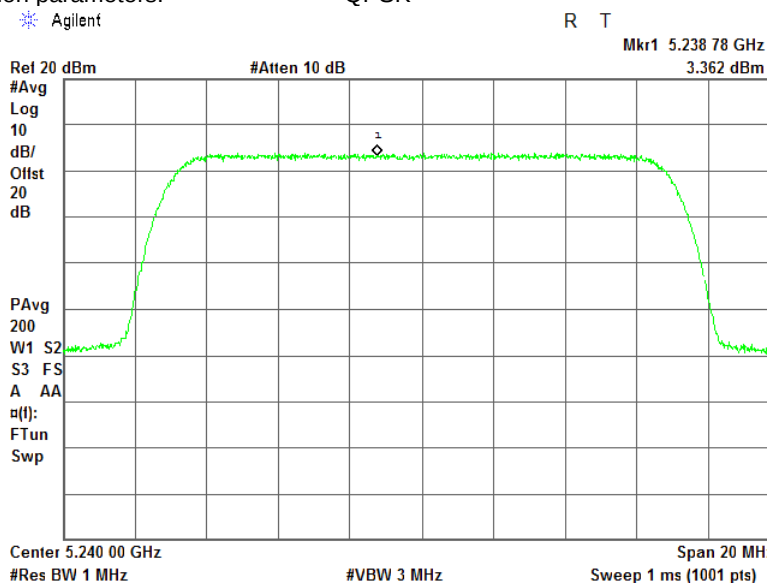
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Date of Issue: 28-May-19

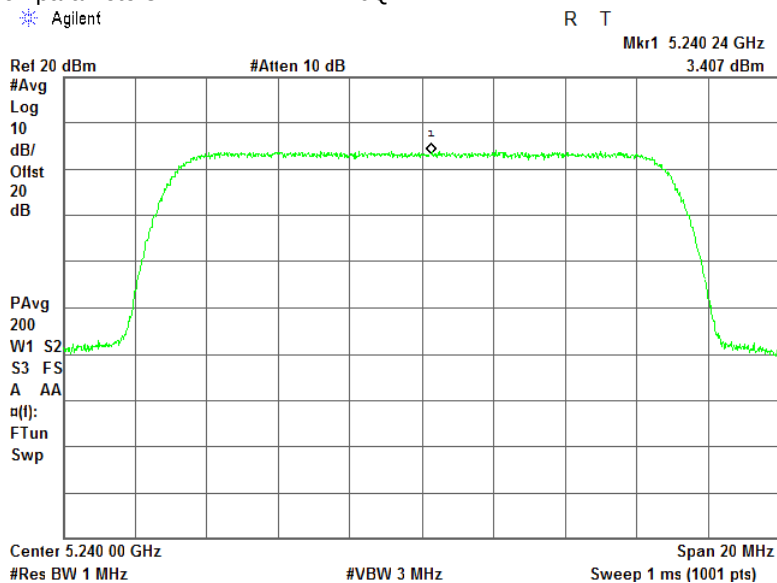
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Compliance	Verdict: PASS
Date(s):		12-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.7.25 Peak power spectral density test results

Frequency: 5.240 GHz
Channel BW: 15 MHz
EUT configuration: 2 carrier 1 sector (4 ports to 2 dual slant antenna)
Modulation parameters: QPSK



Modulation parameters: 16QAM





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Report ID: TELRAD_FCC.31830
Date of Issue: 28-May-19

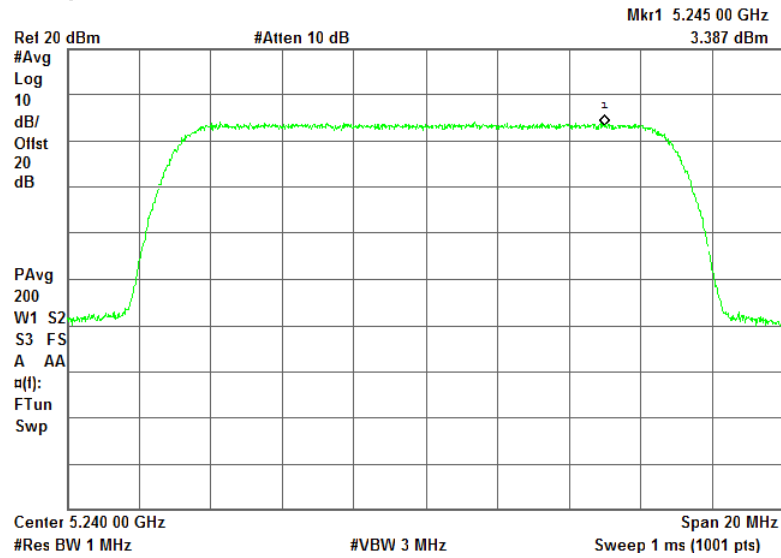
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Compliance	Verdict: PASS
Date(s):		12-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM

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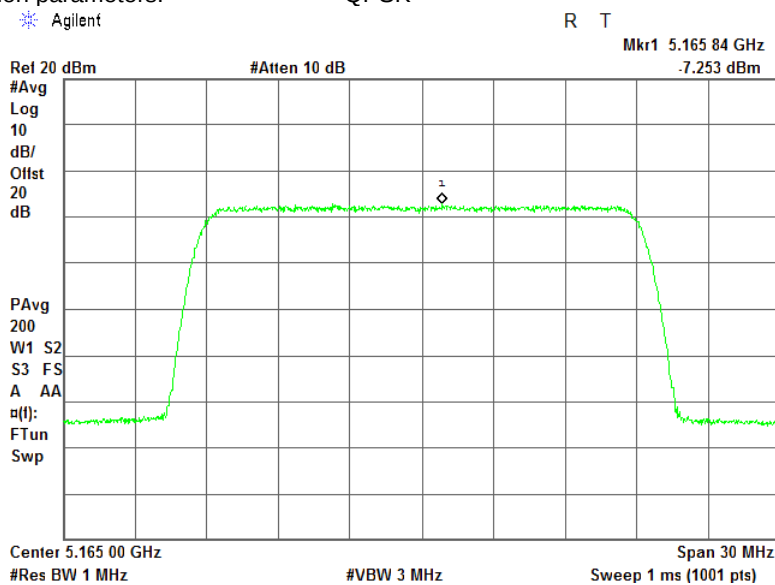
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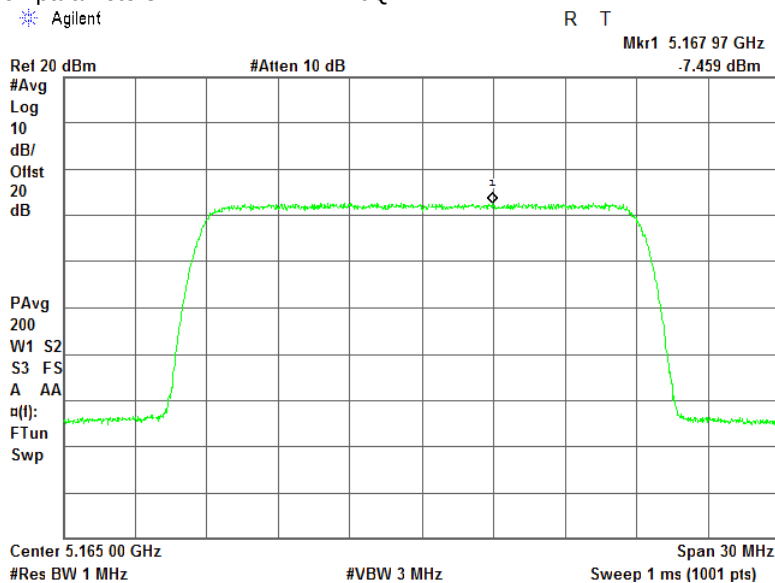
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
12-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.7.26 Peak power spectral density test results

Frequency: 5.165 GHz
Channel BW: 20 MHz
EUT configuration: 2 carrier 1 sector (4 ports to 2 dual slant antenna)
Modulation parameters: QPSK



Modulation parameters: 16QAM



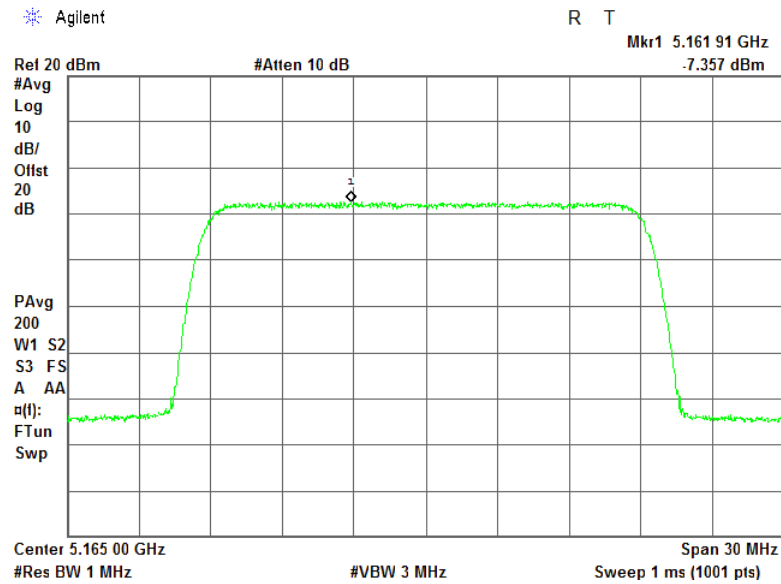


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Report ID: TELRAD_FCC.31830
Date of Issue: 28-May-19

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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
12-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters: 64QAM





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Date of Issue: 28-May-19

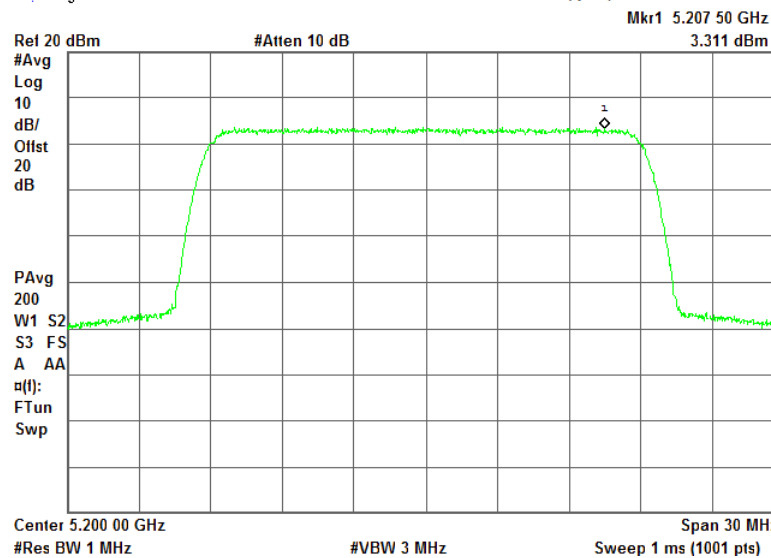
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
12-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.7.27 Peak power spectral density test results

Frequency: 5.200 GHz
Channel BW: 20 MHz
EUT configuration: 2 carrier 1 sector (4 ports to 2 dual slant antenna)
Modulation parameters: QPSK

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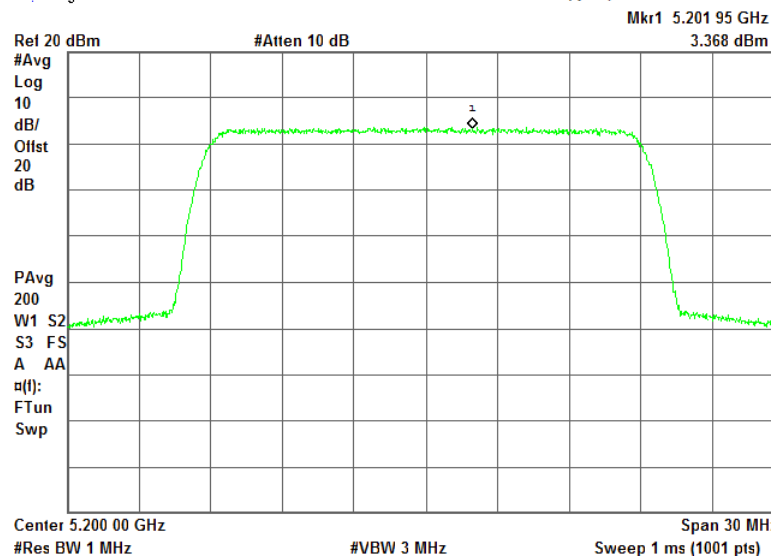


Modulation parameters:

16QAM

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Report ID: TELRAD_FCC.31830

Date of Issue: 28-May-19

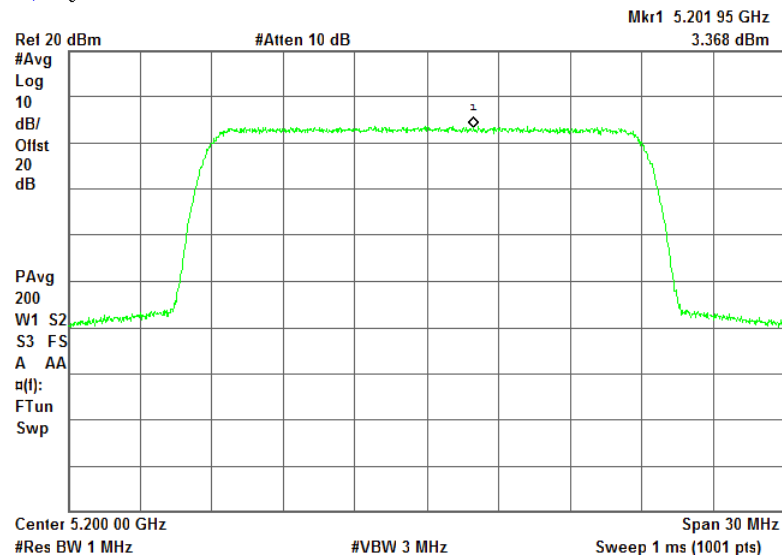
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Compliance	Verdict: PASS
Date(s):		12-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM

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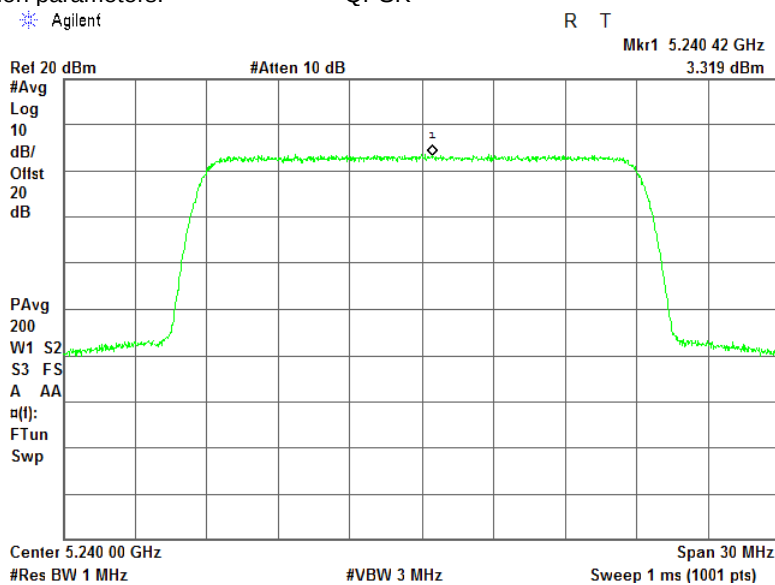
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Date of Issue: 28-May-19

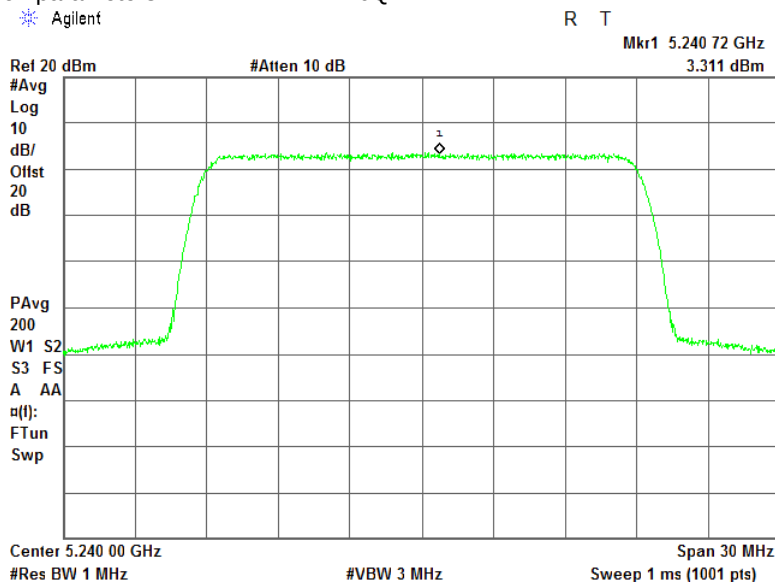
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
12-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.7.28 Peak power spectral density test results

Frequency: 5.240 GHz
Channel BW: 20 MHz
EUT configuration: 2 carrier 1 sector (4 ports to 2 dual slant antenna)
Modulation parameters: QPSK



Modulation parameters: 16QAM





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Report ID: TELRAD_FCC.31830
Date of Issue: 28-May-19

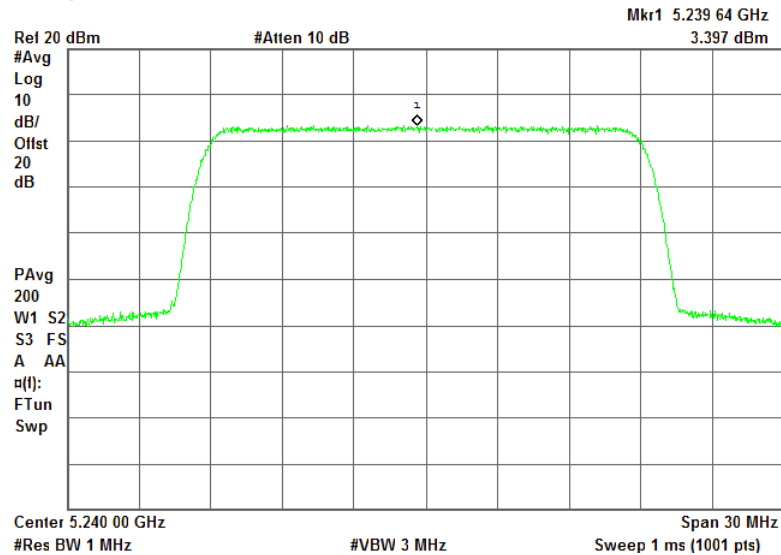
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Test mode:		Verdict: PASS	
Date(s):			
12-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM

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Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

7.8 Peak spectral power density at 5725 – 5850 MHz range

7.8.1 General

This test was performed to measure the peak spectral power density at the transmitter RF antenna connector. Specification test limits are given in Table 7.8.1.

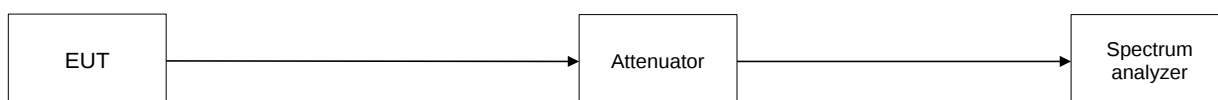
Table 7.8.1 Peak spectral power density limits

Assigned frequency range, MHz	Peak power spectral density, dBm/500kHz	EIRP spectral density, dBm/500kHz
5725 - 5850	30	36

7.8.2 Test procedure

- 7.8.2.1** The EUT was set up as shown in The peak power spectral density was measured using a average detector and power averaging mode to find the highest level across the emission in any 1-MHz band more than 100 sweeps of averaging. The worst cased antennas output are provided in the associated tables and plots.
- 7.8.2.2** Figure 7.8.1, energized and its proper operation was checked.
- 7.8.2.3** The EUT was adjusted to produce maximum available to end user RF output power.
- 7.8.2.4** The peak power spectral density was measured using a average detector and power averaging mode to find the highest level across the emission in any 1-MHz band more than 100 sweeps of averaging. The worst cased antennas output are provided in the associated tables and plots.

Figure 7.8.1 Peak spectral power density test setup





Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Table 7.8.2 Power spectral density test results

ASSIGNED FREQUENCY RANGE:

5.725 -5.850 GHz

DETECTOR USED:

RMS

METHOD OF POWER MEASUREMENTS:

SA-2 (789033 D02)

MIMO CONFIGURATION:

1 carrier, 1 sector (4 ports to 2 dual slant antennas), coherent signal

Channel bandwidth, MHz	Modulation	Frequency, MHz	SA reading, dBm	Antenna gain array*, dB	Total power spectral density**, dBm	Limit, dBm	Margin***, dB	Verdict
10	QPSK	5730	0.47	6.00	8.96	30.00	-21.04	Pass
		5788	0.72	6.00	9.21	30.00	-20.79	Pass
		5845	0.78	6.00	9.27	30.00	-20.73	Pass
	16QAM	5730	0.47	6.00	8.96	30.00	-21.04	Pass
		5788	1.10	6.00	9.59	30.00	-20.41	Pass
		5845	0.71	6.00	9.20	30.00	-20.80	Pass
	64QAM	5730	0.78	6.00	9.27	30.00	-20.73	Pass
		5788	0.78	6.00	9.27	30.00	-20.73	Pass
		5845	0.50	6.00	8.99	30.00	-21.01	Pass
15	QPSK	5733	-0.07	6.00	8.42	30.00	-21.58	Pass
		5788	-0.61	6.00	7.88	30.00	-22.12	Pass
		5843	-0.99	6.00	7.50	30.00	-22.50	Pass
	16QAM	5733	-0.08	6.00	8.41	30.00	-21.59	Pass
		5788	-0.41	6.00	8.08	30.00	-21.92	Pass
		5843	-0.97	6.00	7.52	30.00	-22.48	Pass
	64QAM	5733	-0.34	6.00	8.15	30.00	-21.85	Pass
		5788	-0.77	6.00	7.72	30.00	-22.28	Pass
		5843	-0.71	6.00	7.78	30.00	-22.22	Pass
20	QPSK	5735	-1.51	6.00	6.98	30.00	-23.02	Pass
		5788	-1.85	6.00	6.64	30.00	-23.36	Pass
		5840	-2.08	6.00	6.41	30.00	-23.59	Pass
	16QAM	5735	-1.56	6.00	6.93	30.00	-23.07	Pass
		5788	-1.85	6.00	6.64	30.00	-23.36	Pass
		5840	-2.42	6.00	6.07	30.00	-23.93	Pass
	64QAM	5735	-1.31	6.00	7.18	30.00	-22.82	Pass
		5788	-2.02	6.00	6.47	30.00	-23.53	Pass
		5840	-2.06	6.00	6.43	30.00	-23.57	Pass

* Antenna gain array = $10 \cdot \log(N_{\text{ant}})$, where $N_{\text{ant}} = 4$

** Total power spectral density = SA reading + Antenna gain array + Duty cycle factor (2.49 dB) + RBW correction factor, where RBW correction factor = $10 \cdot \log(500 \text{ kHz} / \text{RBW})$ $10 \cdot \log(500/300) = 2.22 \text{ dB}$

*** Margin = Total power spectral density – specification limit



Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:	Compliance	Verdict: PASS	
Date(s):	04-Marc-19		
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Table 7.8.3 Power spectral density test results

ASSIGNED FREQUENCY RANGE: 5.725 -5.850 GHz
 DETECTOR USED: RMS
 METHOD OF POWER MEASUREMENTS: SA-2 (789033 D02)
 MIMO CONFIGURATION: 1 carrier, 1 sector (4 ports to 2 dual slant antennas), non-coherent signal

Channel bandwidth, MHz	Modulation	Frequency, MHz	SA reading, dBm	Antenna gain array*, dB	Total power spectral density**, dBm	Limit, dBm	Margin***, dB	Verdict
10	QPSK	5730	3.68	6.00	12.17	30.00	-17.83	Pass
		5788	3.33	6.00	11.82	30.00	-18.18	Pass
		5845	3.56	6.00	12.05	30.00	-17.95	Pass
	16QAM	5730	3.64	6.00	12.13	30.00	-17.87	Pass
		5788	3.37	6.00	11.86	30.00	-18.14	Pass
		5845	3.43	6.00	11.92	30.00	-18.08	Pass
	64QAM	5730	3.62	6.00	12.11	30.00	-17.89	Pass
		5788	3.92	6.00	12.41	30.00	-17.59	Pass
		5845	3.60	6.00	12.09	30.00	-17.91	Pass
15	QPSK	5733	2.64	6.00	11.13	30.00	-18.87	Pass
		5788	2.64	6.00	11.13	30.00	-18.87	Pass
		5843	2.17	6.00	10.66	30.00	-19.34	Pass
	16QAM	5733	2.90	6.00	11.39	30.00	-18.61	Pass
		5788	2.81	6.00	11.30	30.00	-18.70	Pass
		5843	2.05	6.00	10.54	30.00	-19.46	Pass
	64QAM	5733	3.00	6.00	11.49	30.00	-18.51	Pass
		5788	2.32	6.00	10.81	30.00	-19.19	Pass
		5843	2.46	6.00	10.95	30.00	-19.05	Pass
20	QPSK	5735	1.52	6.00	10.01	30.00	-19.99	Pass
		5788	1.11	6.00	9.60	30.00	-20.40	Pass
		5840	0.46	6.00	8.95	30.00	-21.05	Pass
	16QAM	5735	1.55	6.00	10.04	30.00	-19.96	Pass
		5788	1.04	6.00	9.53	30.00	-20.47	Pass
		5840	1.07	6.00	9.56	30.00	-20.44	Pass
	64QAM	5735	1.30	6.00	9.79	30.00	-20.21	Pass
		5788	1.10	6.00	9.59	30.00	-20.41	Pass
		5840	1.02	6.00	9.51	30.00	-20.49	Pass

* Antenna gain array = $10 \cdot \log(N_{\text{ant}})$, where $N_{\text{ant}} = 4$

** Total power spectral density = SA reading + Antenna gain array + Duty cycle factor (2.49 dB) + RBW correction factor, where RBW correction factor = $10 \cdot \log(500 \text{ kHz} / \text{RBW})$ $10 \cdot \log(500/300) = 2.22 \text{ dB}$

*** Margin = Total power spectral density – specification limit



Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Table 7.8.4 Power spectral density test results

ASSIGNED FREQUENCY RANGE: 5.725 -5.850 GHz
 DETECTOR USED: RMS
 METHOD OF POWER MEASUREMENTS: SA-2 (789033 D02)
 MIMO CONFIGURATION: 2 carrier, 1 sector (4 ports to 2 dual slant antennas), non-coherent signal

Channel bandwidth, MHz	Modulation	Frequency, MHz	SA reading, dBm	Antenna gain array*, dB	Total power spectral density**, dBm	Limit, dBm	Margin***, dB	Verdict
10	QPSK	5730	5.95	6.00	14.44	30.00	-15.56	Pass
		5788	6.67	6.00	15.16	30.00	-14.84	Pass
		5845	6.73	6.00	15.22	30.00	-14.78	Pass
	16QAM	5730	6.23	6.00	14.72	30.00	-15.28	Pass
		5788	6.83	6.00	15.32	30.00	-14.68	Pass
		5845	6.19	6.00	14.68	30.00	-15.32	Pass
	64QAM	5730	6.34	6.00	14.83	30.00	-15.17	Pass
		5788	7.04	6.00	15.53	30.00	-14.47	Pass
		5845	6.66	6.00	15.15	30.00	-14.85	Pass
15	QPSK	5733	5.58	6.00	14.07	30.00	-15.93	Pass
		5788	5.41	6.00	13.90	30.00	-16.10	Pass
		5843	5.30	6.00	13.79	30.00	-16.21	Pass
	16QAM	5733	5.59	6.00	14.08	30.00	-15.92	Pass
		5788	5.39	6.00	13.88	30.00	-16.12	Pass
		5843	5.08	6.00	13.57	30.00	-16.43	Pass
	64QAM	5733	5.78	6.00	14.27	30.00	-15.73	Pass
		5788	5.72	6.00	14.21	30.00	-15.79	Pass
		5843	5.04	6.00	13.53	30.00	-16.47	Pass
20	QPSK	5735	4.43	6.00	12.92	30.00	-17.08	Pass
		5788	4.15	6.00	12.64	30.00	-17.36	Pass
		5840	4.07	6.00	12.56	30.00	-17.44	Pass
	16QAM	5735	4.97	6.00	13.46	30.00	-16.54	Pass
		5788	4.36	6.00	12.85	30.00	-17.15	Pass
		5840	3.72	6.00	12.21	30.00	-17.79	Pass
	64QAM	5735	4.56	6.00	13.05	30.00	-16.95	Pass
		5788	3.96	6.00	12.45	30.00	-17.55	Pass
		5840	4.04	6.00	12.53	30.00	-17.47	Pass

* Antenna gain array = $10 \cdot \log(N_{\text{ant}})$, where $N_{\text{ant}} = 4$

** Total power spectral density = SA reading + Antenna gain array + Duty cycle factor (2.49 dB) + RBW correction factor, where RBW correction factor = $10 \cdot \log(500 \text{ kHz} / \text{RBW})$ $10 \cdot \log(500/300) = 2.22 \text{ dB}$

*** Margin = Total power spectral density – specification limit



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Report ID: TELRAD_FCC.31830

Date of Issue: 28-May-19

Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:	Compliance	Verdict: PASS	
Date(s):	04-Marc-19		
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Table 7.8.5 EIRP spectral density test results

ASSIGNED FREQUENCY RANGE: 5.725 -5.850 GHz
DETECTOR USED: RMS
METHOD OF POWER MEASUREMENTS: SA-2 (789033 D02)
MIMO CONFIGURATION: 1 carrier, 1 sector (4 ports to 2 dual slant antennas), coherent signal

Channel bandwidth, MHz	Modulation	Frequency, MHz	SA reading, dBm	Antenna gain array*, dB	Single antenna gain, dBi	EIRP spectral density**, dBm	Limit, dBm	Margin***, dB	Verdict
10	QPSK	5730	0.47	6.00	17.00	25.96	36.00	-10.04	Pass
		5788	0.72	6.00	17.00	26.21	36.00	-9.79	Pass
		5845	0.78	6.00	17.00	26.27	36.00	-9.73	Pass
	16QAM	5730	0.47	6.00	17.00	25.96	36.00	-10.04	Pass
		5788	1.10	6.00	17.00	26.59	36.00	-9.41	Pass
		5845	0.71	6.00	17.00	26.20	36.00	-9.80	Pass
	64QAM	5730	0.78	6.00	17.00	26.27	36.00	-9.73	Pass
		5788	0.78	6.00	17.00	26.27	36.00	-9.73	Pass
		5845	0.50	6.00	17.00	25.99	36.00	-10.01	Pass
15	QPSK	5732.5	-0.07	6.00	17.00	25.42	36.00	-10.58	Pass
		5788	-0.61	6.00	17.00	24.88	36.00	-11.12	Pass
		5842.5	-0.99	6.00	17.00	24.50	36.00	-11.50	Pass
	16QAM	5732.5	-0.08	6.00	17.00	25.41	36.00	-10.59	Pass
		5788	-0.41	6.00	17.00	25.08	36.00	-10.92	Pass
		5842.5	-0.97	6.00	17.00	24.52	36.00	-11.48	Pass
	64QAM	5732.5	-0.34	6.00	17.00	25.15	36.00	-10.85	Pass
		5788	-0.77	6.00	17.00	24.72	36.00	-11.28	Pass
		5842.5	-0.71	6.00	17.00	24.78	36.00	-11.22	Pass
20	QPSK	5735	-1.51	6.00	17.00	23.98	36.00	-12.02	Pass
		5788	-1.85	6.00	17.00	23.64	36.00	-12.36	Pass
		5840	-2.08	6.00	17.00	23.41	36.00	-12.59	Pass
	16QAM	5735	-1.56	6.00	17.00	23.93	36.00	-12.07	Pass
		5788	-1.85	6.00	17.00	23.64	36.00	-12.36	Pass
		5840	-2.42	6.00	17.00	23.07	36.00	-12.93	Pass
	64QAM	5735	-1.31	6.00	17.00	24.18	36.00	-11.82	Pass
		5788	-2.02	6.00	17.00	23.47	36.00	-12.53	Pass
		5840	-2.06	6.00	17.00	23.43	36.00	-12.57	Pass

* Antenna gain array = $10\log(N_{ant})$, where $N_{ant} = 4$ (two cross-polarized antennas with coherent signals)

** EIRP spectral density = SA reading + Antenna gain array + Single antenna gain + Duty cycle factor (2.49 dB) + RBW correction factor, where RBW correction factor = $10\log(500 \text{ kHz} / \text{RBW})$ $10\log(500/300)=2.22 \text{ dB}$

*** Margin = EIRP spectral density – specification limit



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Report ID: TELRAD_FCC.31830

Date of Issue: 28-May-19

Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Table 7.8.6 EIRP spectral density test results

ASSIGNED FREQUENCY RANGE: 5.725 -5.850 GHz
DETECTOR USED: RMS
METHOD OF POWER MEASUREMENTS: SA-2 (789033 D02)
MIMO CONFIGURATION: 1 carrier, 1 sector (4 ports to 2 dual slant antennas), non-coherent signal

Channel bandwidth, MHz	Modulation	Frequency, MHz	SA reading, dBm	Antenna gain array*, dB	Single antenna gain, dBi	EIRP spectral density**, dBm	Limit, dBm	Margin***, dB	Verdict
10	QPSK	5730	3.68	3	17.00	26.17	36.00	-9.83	Pass
		5788	3.33	3	17.00	25.82	36.00	-10.18	Pass
		5845	3.56	3	17.00	26.05	36.00	-9.95	Pass
	16QAM	5730	3.64	3	17.00	26.13	36.00	-9.87	Pass
		5788	3.37	3	17.00	25.86	36.00	-10.14	Pass
		5845	3.43	3	17.00	25.92	36.00	-10.08	Pass
	64QAM	5730	3.62	3	17.00	26.11	36.00	-9.89	Pass
		5788	3.92	3	17.00	26.41	36.00	-9.59	Pass
		5845	3.60	3	17.00	26.09	36.00	-9.91	Pass
15	QPSK	5732.5	2.64	3	17.00	25.13	36.00	-10.87	Pass
		5788	2.64	3	17.00	25.13	36.00	-10.87	Pass
		5842.5	2.17	3	17.00	24.66	36.00	-11.34	Pass
	16QAM	5732.5	2.90	3	17.00	25.39	36.00	-10.61	Pass
		5788	2.81	3	17.00	25.30	36.00	-10.70	Pass
		5842.5	2.05	3	17.00	24.54	36.00	-11.46	Pass
	64QAM	5732.5	3.00	3	17.00	25.49	36.00	-10.51	Pass
		5788	2.32	3	17.00	24.81	36.00	-11.19	Pass
		5842.5	2.46	3	17.00	24.95	36.00	-11.05	Pass
20	QPSK	5735	1.52	3	17.00	24.01	36.00	-11.99	Pass
		5788	1.11	3	17.00	23.60	36.00	-12.40	Pass
		5840	0.46	3	17.00	22.95	36.00	-13.05	Pass
	16QAM	5735	1.55	3	17.00	24.04	36.00	-11.96	Pass
		5788	1.04	3	17.00	23.53	36.00	-12.47	Pass
		5840	1.07	3	17.00	23.56	36.00	-12.44	Pass
	64QAM	5735	1.30	3	17.00	23.79	36.00	-12.21	Pass
		5788	1.10	3	17.00	23.59	36.00	-12.41	Pass
		5840	1.02	3	17.00	23.51	36.00	-12.49	Pass

* Antenna gain array = $10\log(N_{ant})$, where $N_{ant} = 2$ (two cross-polarized antennas with non-coherent signals)

** EIRP spectral density = SA reading + Antenna gain array + Single antenna gain + Duty cycle factor (2.49 dB) + RBW correction factor, where RBW correction factor = $10\log(500 \text{ kHz} / \text{RBW})$ $10\log(500/300)=2.22 \text{ dB}$

*** Margin = EIRP spectral density – specification limit



Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:	Compliance	Verdict: PASS	
Date(s):	04-Marc-19		
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Table 7.8.7 EIRP spectral density test results

ASSIGNED FREQUENCY RANGE: 5.725 -5.850 GHz
DETECTOR USED: RMS
METHOD OF POWER MEASUREMENTS: SA-2 (789033 D02)
MIMO CONFIGURATION: 2 carrier, 1 sector (4 ports to 2 dual slant antennas), non-coherent signal

Channel bandwidth, MHz	Modulation	Frequency, MHz	SA reading, dBm	Antenna gain array*, dB	Single antenna gain, dBi	EIRP spectral density**, dBm	Limit, dBm	Margin***, dB	Verdict
10	5730	5.95	0	17.00	25.44	36.00	-10.56	Pass	5730
		5788	0	17.00	26.16	36.00	-9.84	Pass	5788
		5845	0	17.00	26.22	36.00	-9.78	Pass	5845
	5730	6.23	0	17.00	25.72	36.00	-10.28	Pass	5730
		5788	0	17.00	26.32	36.00	-9.68	Pass	5788
		5845	0	17.00	25.68	36.00	-10.32	Pass	5845
	5730	6.34	0	17.00	25.83	36.00	-10.17	Pass	5730
		5788	0	17.00	26.53	36.00	-9.47	Pass	5788
		5845	0	17.00	26.15	36.00	-9.85	Pass	5845
	15	5732.5	0	17.00	25.07	36.00	-10.93	Pass	5732.5
		5788	0	17.00	24.90	36.00	-11.10	Pass	5788
		5842.5	0	17.00	24.79	36.00	-11.21	Pass	5842.5
		5732.5	0	17.00	25.08	36.00	-10.92	Pass	5732.5
		5788	0	17.00	24.88	36.00	-11.12	Pass	5788
		5842.5	0	17.00	24.57	36.00	-11.43	Pass	5842.5
20	5735	5.78	0	17.00	25.27	36.00	-10.73	Pass	5732.5
		5788	0	17.00	25.21	36.00	-10.79	Pass	5788
		5842.5	0	17.00	24.53	36.00	-11.47	Pass	5842.5
		5735	0	17.00	23.92	36.00	-12.08	Pass	5735
		5788	0	17.00	23.64	36.00	-12.36	Pass	5788
		5840	0	17.00	23.56	36.00	-12.44	Pass	5840
	5735	4.43	0	17.00	23.92	36.00	-12.08	Pass	5735
		4.15	0	17.00	23.64	36.00	-12.36	Pass	5788
		4.07	0	17.00	23.56	36.00	-12.44	Pass	5840
		4.97	0	17.00	24.46	36.00	-11.54	Pass	5735
		4.36	0	17.00	23.85	36.00	-12.15	Pass	5788
		3.72	0	17.00	23.21	36.00	-12.79	Pass	5840
	5735	4.56	0	17.00	24.05	36.00	-11.95	Pass	5735
		5788	0	17.00	23.45	36.00	-12.55	Pass	5788
		5840	0	17.00	23.53	36.00	-12.47	Pass	5840

* EIRP spectral density = SA reading + Antenna gain array + Single antenna gain + Duty cycle factor (2.49 dB) + RBW correction factor, where RBW correction factor = $10 \cdot \log(500 \text{ kHz} / \text{RBW})$ $10 \cdot \log(500/300) = 2.22 \text{ dB}$

** Margin = EIRP spectral density – specification limit

Table 7.8.8 Duty cycle factor calculation

Burst duration, ms	Burst period, ms	Duty cycle*	Duty cycle factor**, dB
2.82	5.00	0.564	2.49

*- Duty cycle = Burst duration / Burst period

** - Duty cycle factor = $10 \log(1/\text{Duty cycle})$

Reference numbers of test equipment used

HL 2909	HL 3901					
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Full description is given in Appendix A.



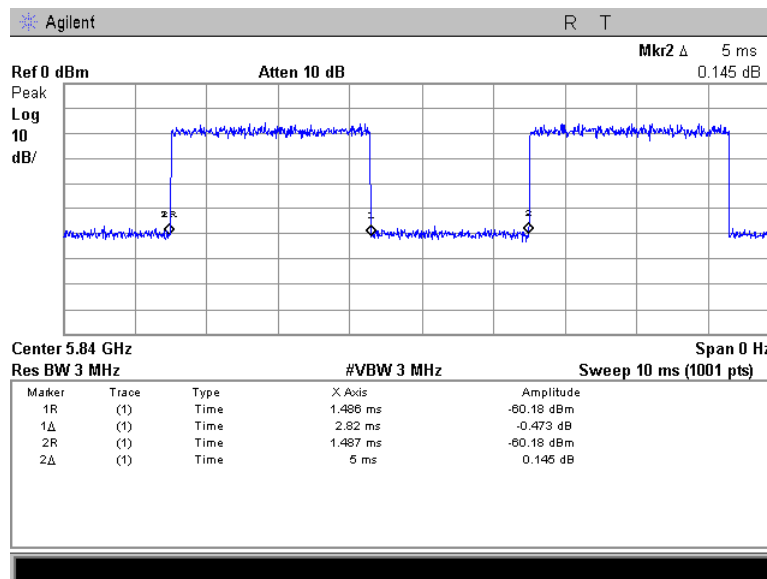
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Report ID: TELRAD_FCC.31830

Date of Issue: 28-May-19

Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.1 Duty cycle





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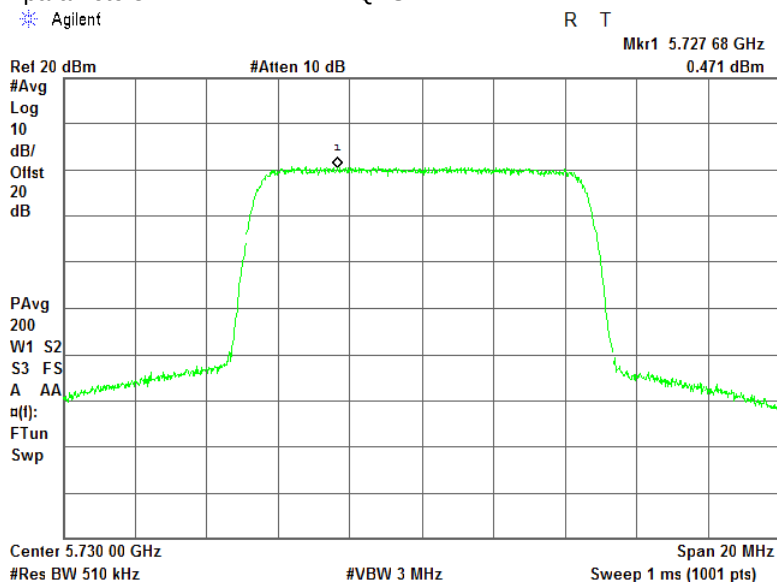
Report ID: TELRAD_FCC.31830

Date of Issue: 28-May-19

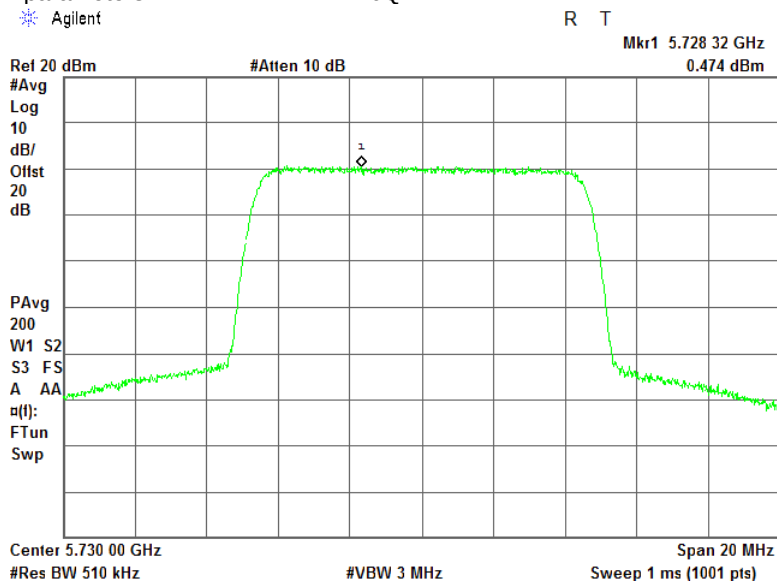
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.2 Peak power spectral density test results

Frequency: 5.730 GHz
Channel BW: 10 MHz
EUT configuration: 1 carrier 1 sector (4 ports to 2 dual slant antennas) coherent signal
Modulation parameters: QPSK



Modulation parameters: 16QAM





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Report ID: TELRAD_FCC.31830
Date of Issue: 28-May-19

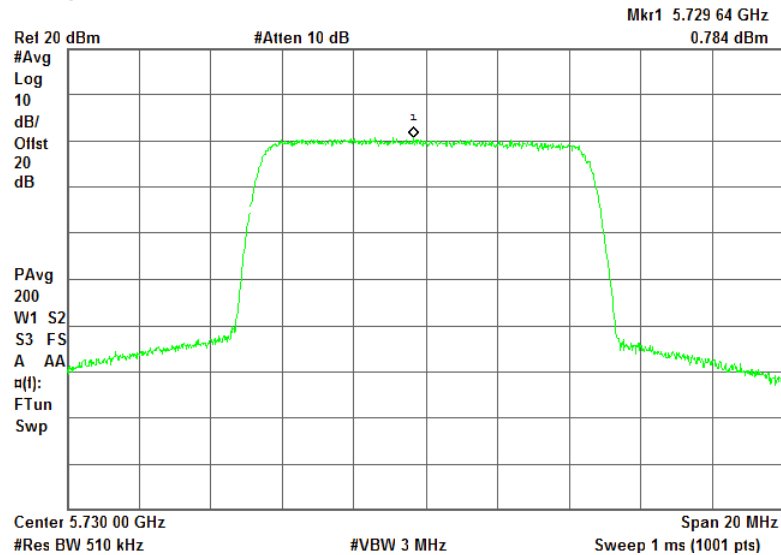
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM

Agilent

R T





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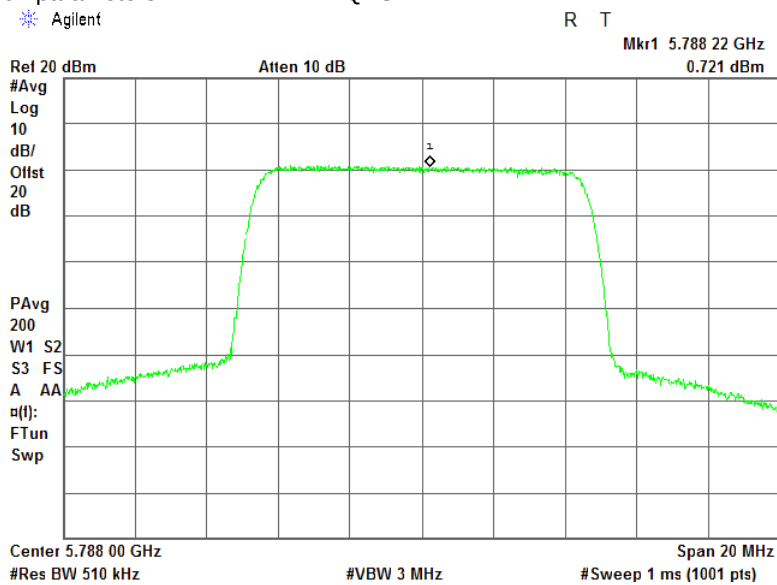
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Date of Issue: 28-May-19

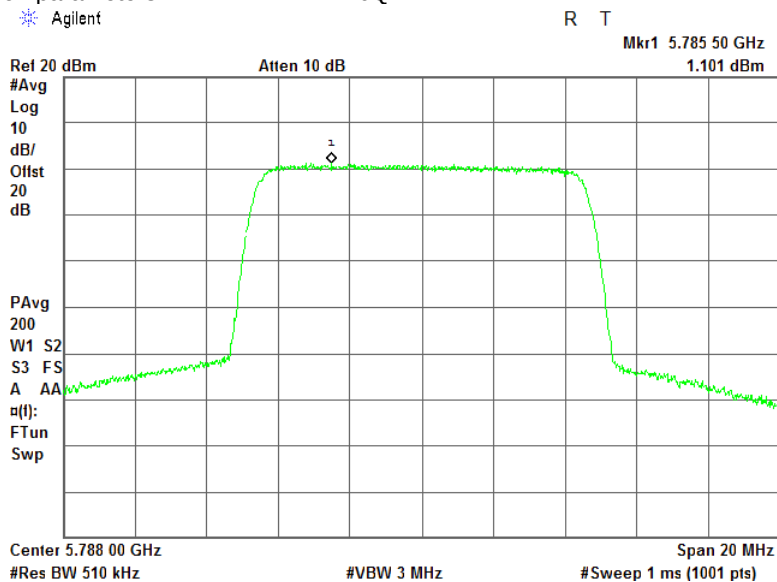
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.3 Peak power spectral density test results

Frequency: 5.788 GHz
Channel BW: 10 MHz
EUT configuration: 1 carrier 1 sector (4 ports to 2 dual slant antennas) coherent signal
Modulation parameters: QPSK



Modulation parameters: 16QAM





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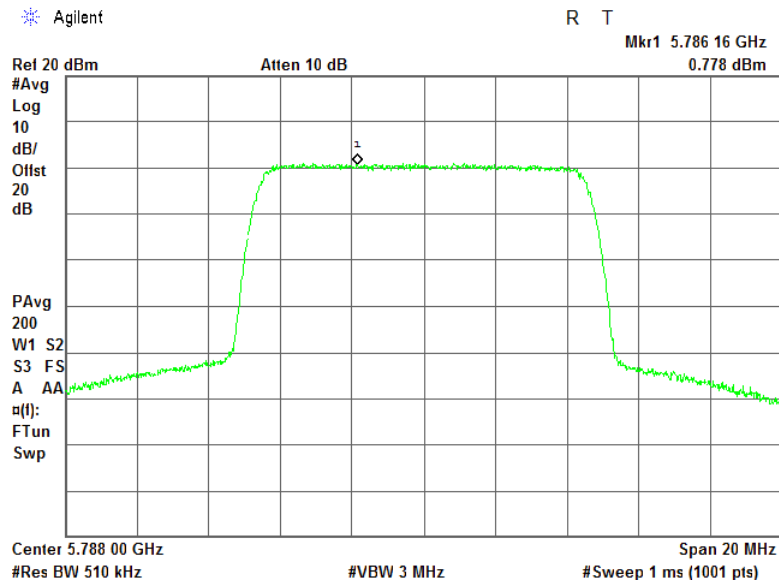
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Date of Issue: 28-May-19

Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM





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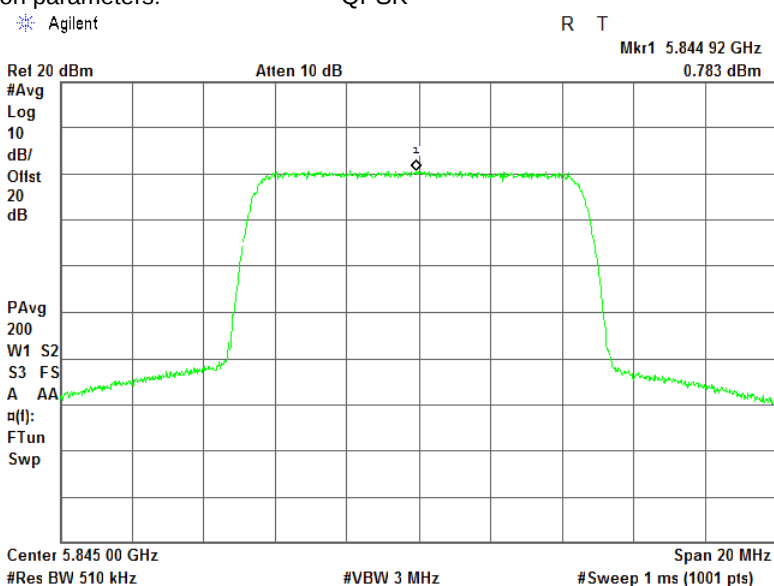
Report ID: TELRAD_FCC.31830

Date of Issue: 28-May-19

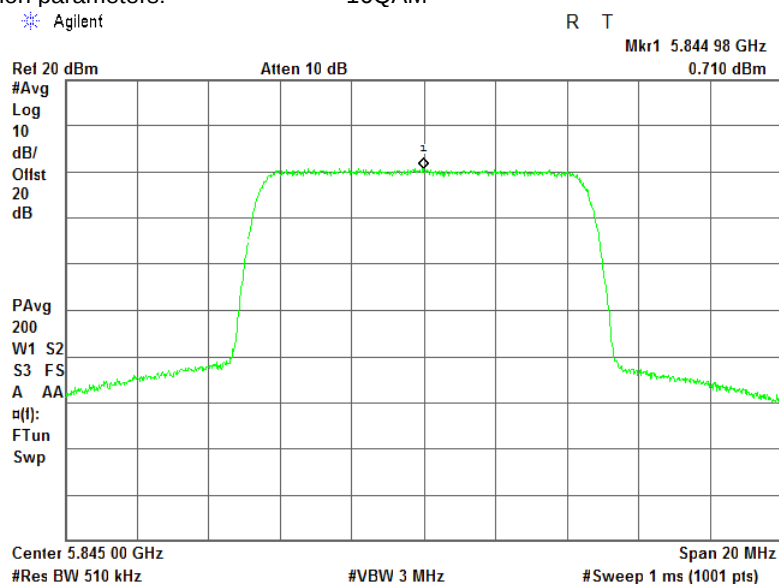
Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Compliance	Verdict: PASS
Date(s):		04-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.4 Peak power spectral density test results

Frequency: 5.845 GHz
Channel BW: 10 MHz
EUT configuration: 1 carrier 1 sector (4 ports to 2 dual slant antennas) coherent signal
Modulation parameters: QPSK



Modulation parameters: 16QAM





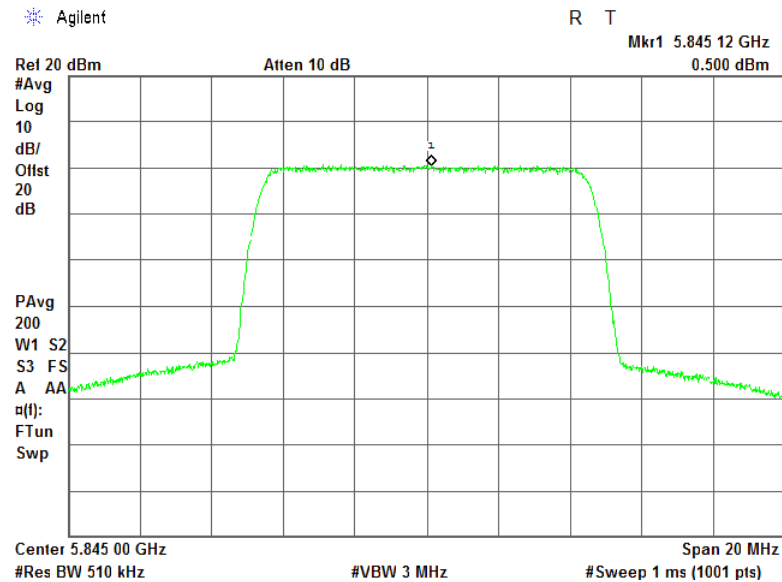
HERMON LABORATORIES

Report ID: TELRAD_FCC.31830

Date of Issue: 28-May-19

Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters: 64QAM





HERMON LABORATORIES

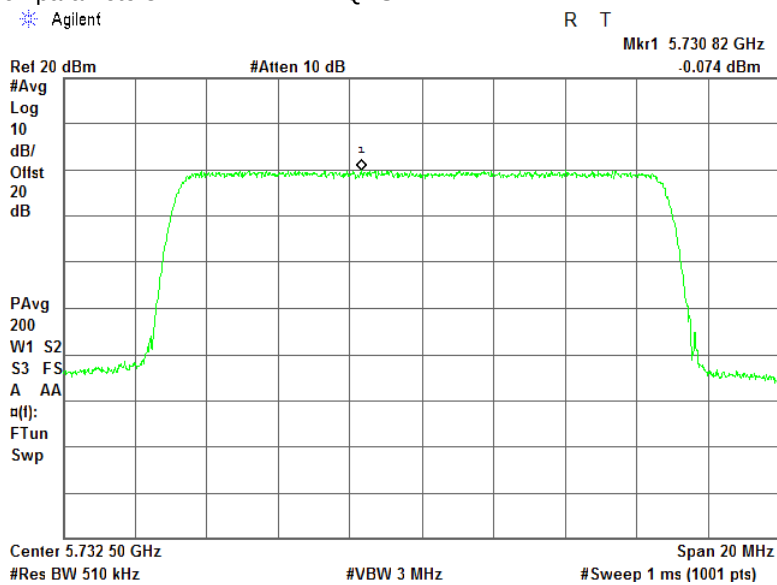
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Date of Issue: 28-May-19

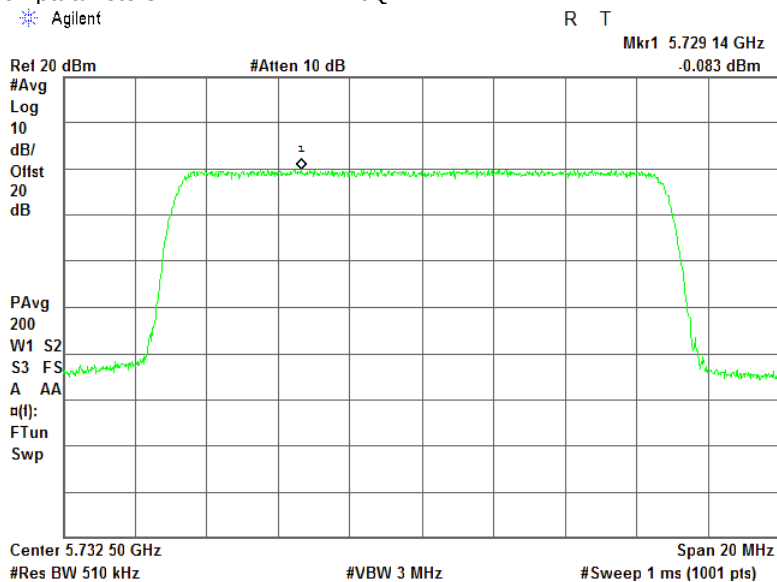
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.5 Peak power spectral density test results

Frequency: 5.7325 GHz
Channel BW: 15 MHz
EUT configuration: 1 carrier 1 sector (4 ports to 2 dual slant antennas) coherent signal
Modulation parameters: QPSK



Modulation parameters: 16QAM



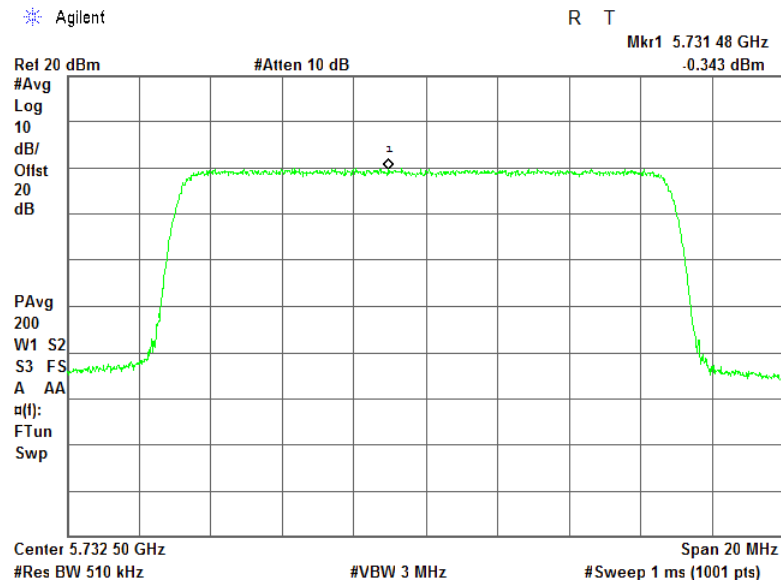


HERMON LABORATORIES

Report ID: TELRAD_FCC.31830
Date of Issue: 28-May-19

Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters: 64QAM





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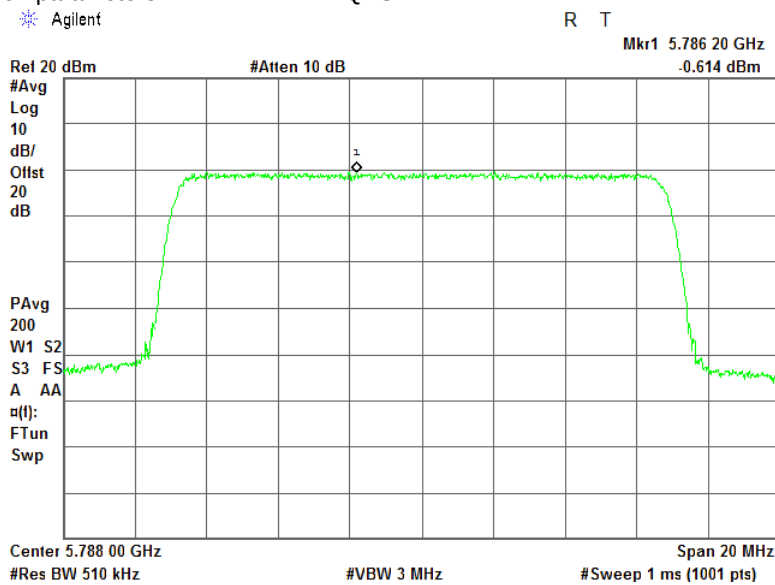
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Date of Issue: 28-May-19

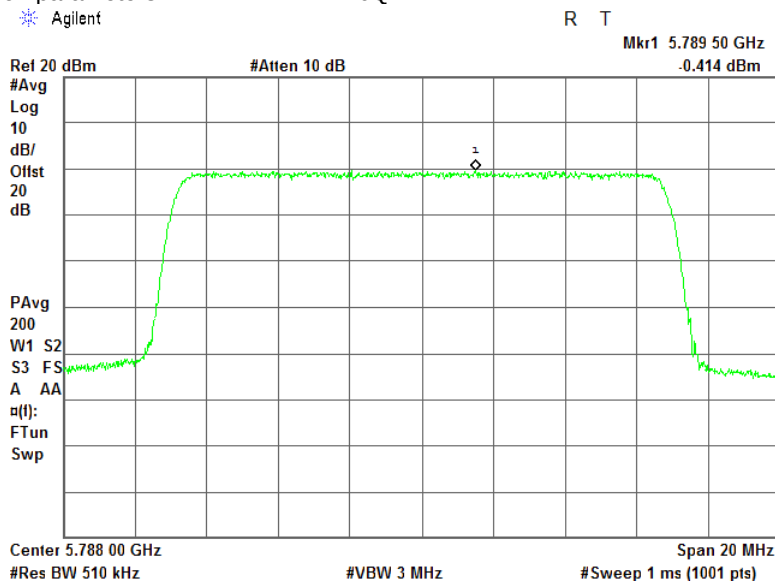
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Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.6 Peak power spectral density test results

Frequency: 5.788 GHz
Channel BW: 15 MHz
EUT configuration: 1 carrier 1 sector (4 ports to 2 dual slant antennas) coherent signal
Modulation parameters: QPSK



Modulation parameters: 16QAM





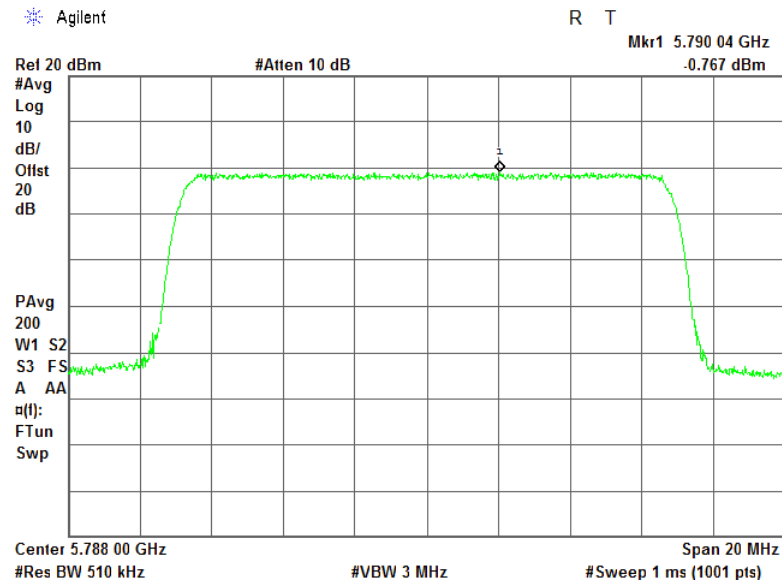
HERMON LABORATORIES

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Date of Issue: 28-May-19

Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
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Remarks:			

Modulation parameters: 64QAM





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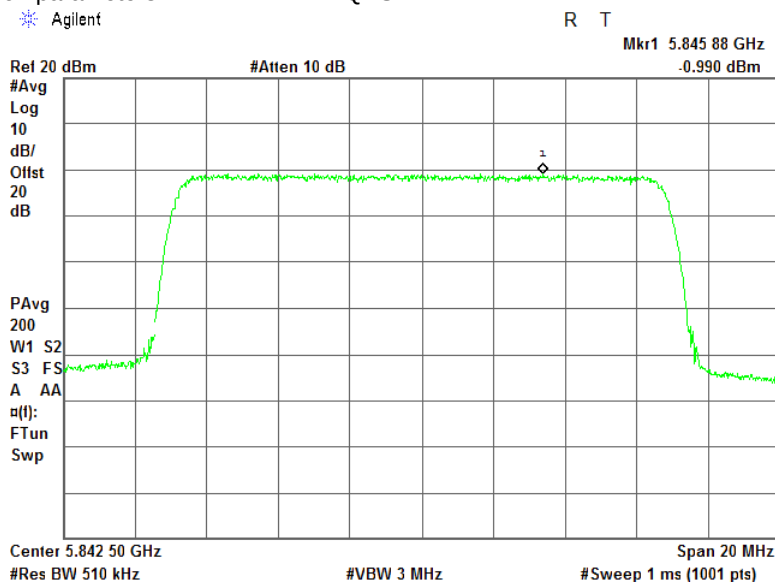
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Date of Issue: 28-May-19

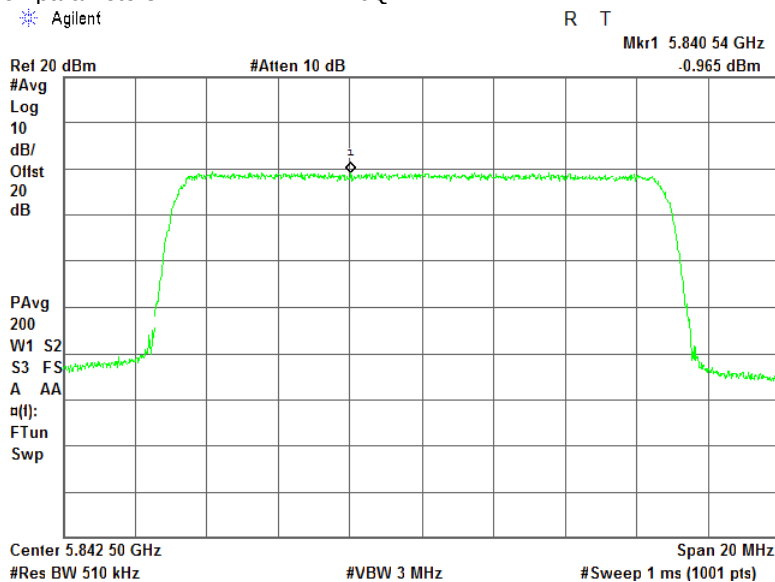
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Compliance	Verdict: PASS
Date(s):		04-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.7 Peak power spectral density test results

Frequency: 5.8425 GHz
Channel BW: 15 MHz
EUT configuration: 1 carrier 1 sector (4 ports to 2 dual slant antennas) coherent signal
Modulation parameters: QPSK



Modulation parameters: 16QAM





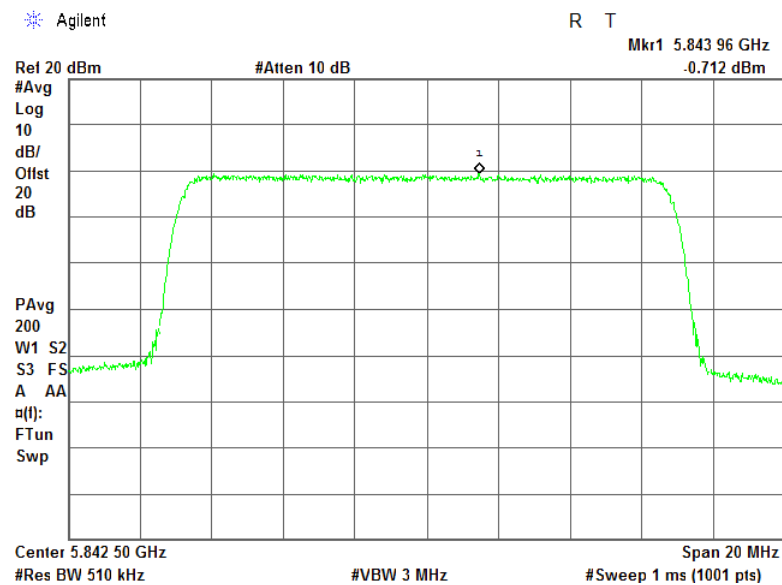
HERMON LABORATORIES

Report ID: TELRAD_FCC.31830

Date of Issue: 28-May-19

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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters: 64QAM





HERMON LABORATORIES

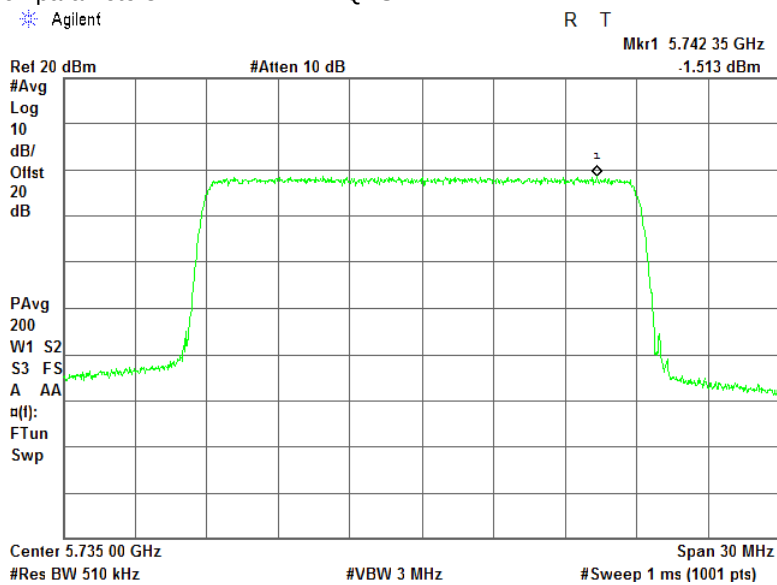
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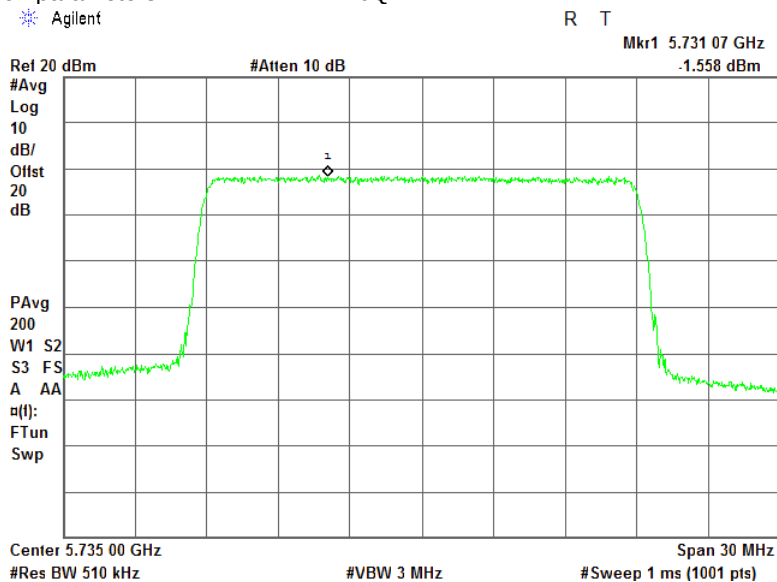
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Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.8 Peak power spectral density test results

Frequency: 5.735 GHz
Channel BW: 20 MHz
EUT configuration: 1 carrier 1 sector (4 ports to 2 dual slant antennas) coherent signal
Modulation parameters: QPSK



Modulation parameters: 16QAM





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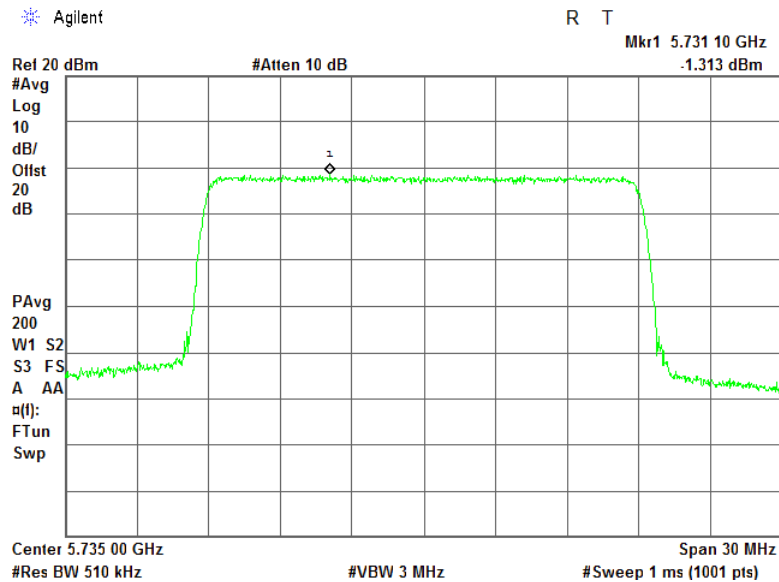
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Date of Issue: 28-May-19

Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM





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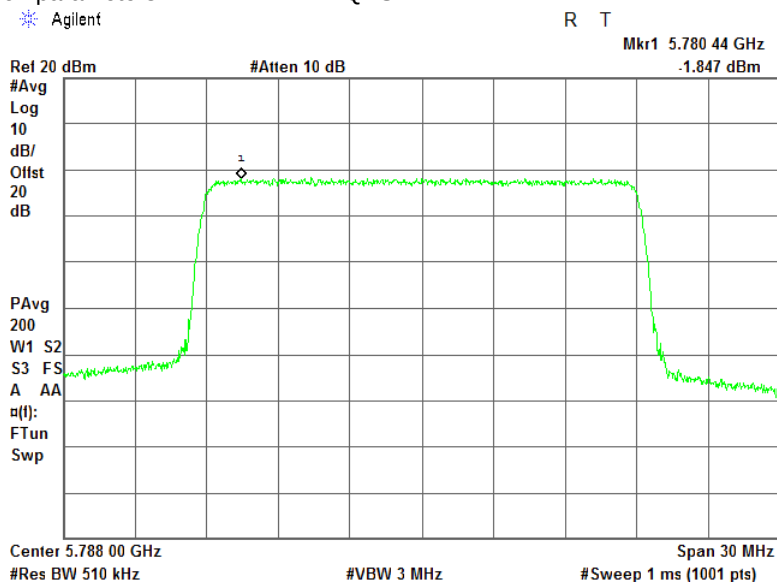
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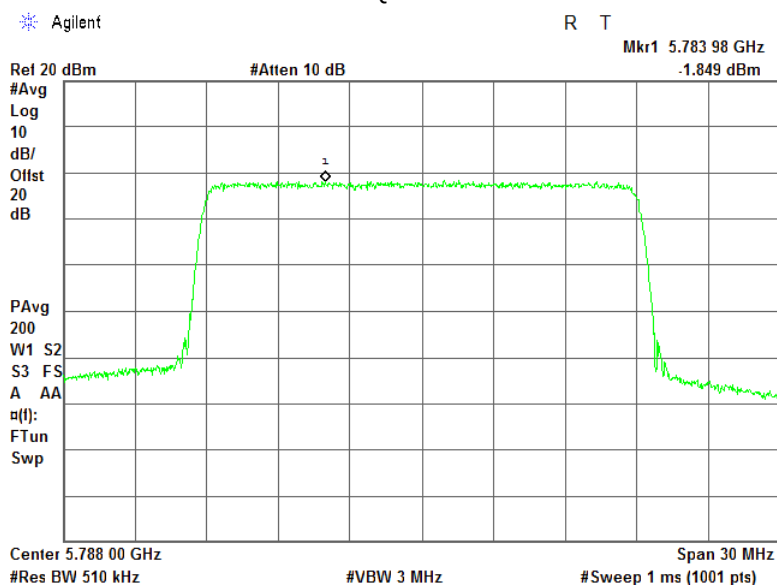
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Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.9 Peak power spectral density test results

Frequency: 5.788 GHz
Channel BW: 20 MHz
EUT configuration: 1 carrier 1 sector (4 ports to 2 dual slant antennas) coherent signal
Modulation parameters: QPSK



Modulation parameters: 16QAM





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Report ID: TELRAD_FCC.31830
Date of Issue: 28-May-19

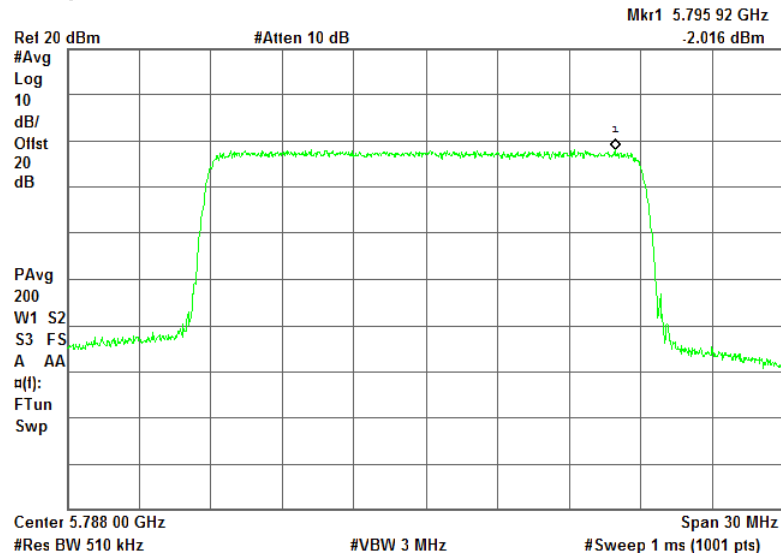
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM

Agilent

R T





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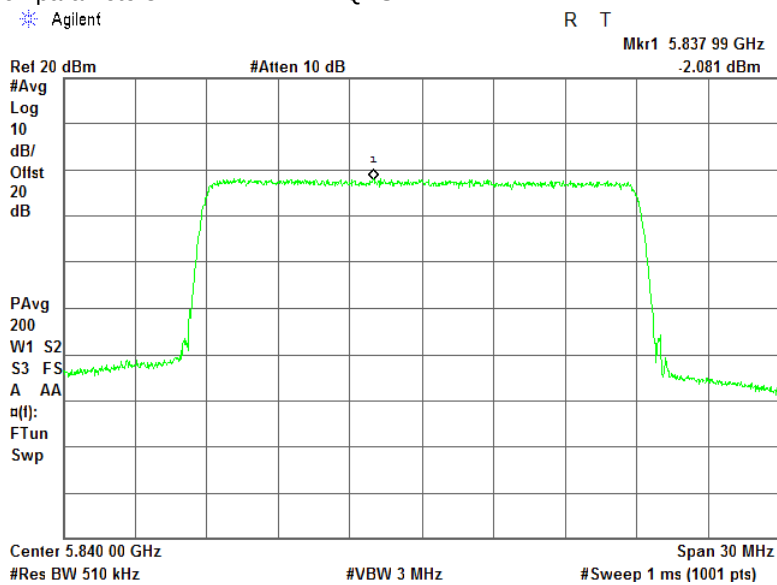
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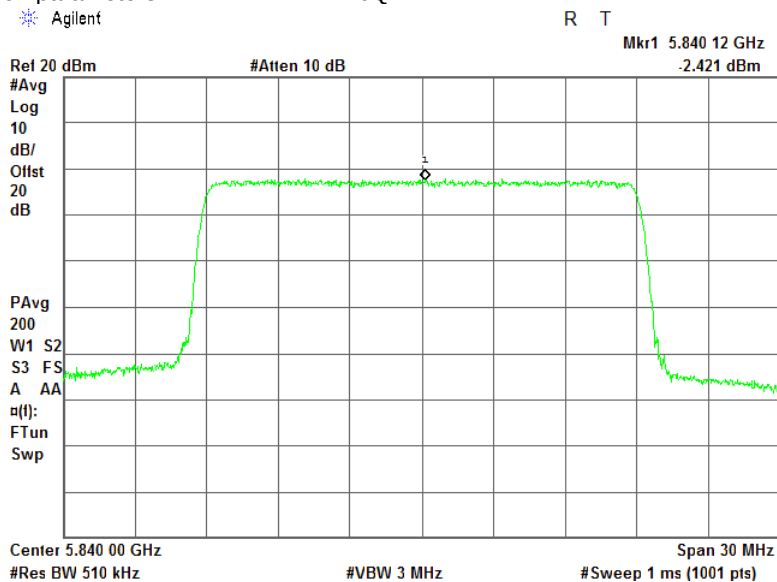
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Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.10 Peak power spectral density test results

Frequency: 5.840 GHz
Channel BW: 20 MHz
EUT configuration: 1 carrier 1 sector (4 ports to 2 dual slant antennas) coherent signal
Modulation parameters: QPSK



Modulation parameters: 16QAM





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Report ID: TELRAD_FCC.31830

Date of Issue: 28-May-19

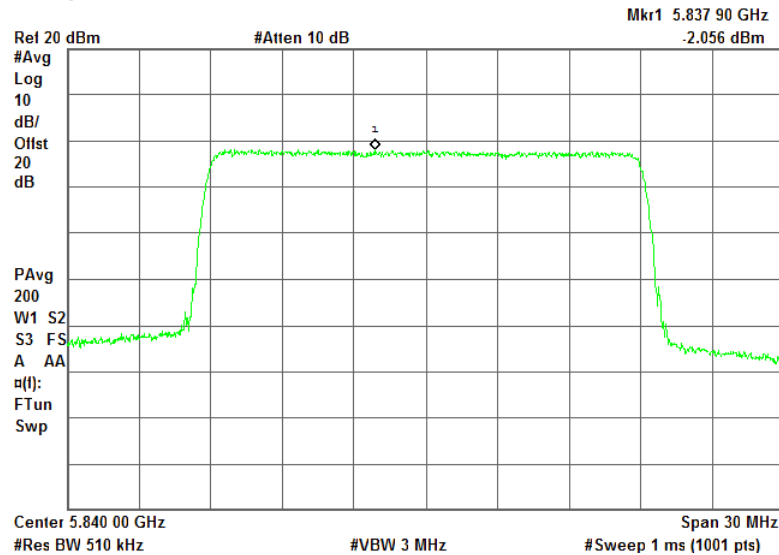
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Compliance	Verdict: PASS
Date(s):		04-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM

Agilent

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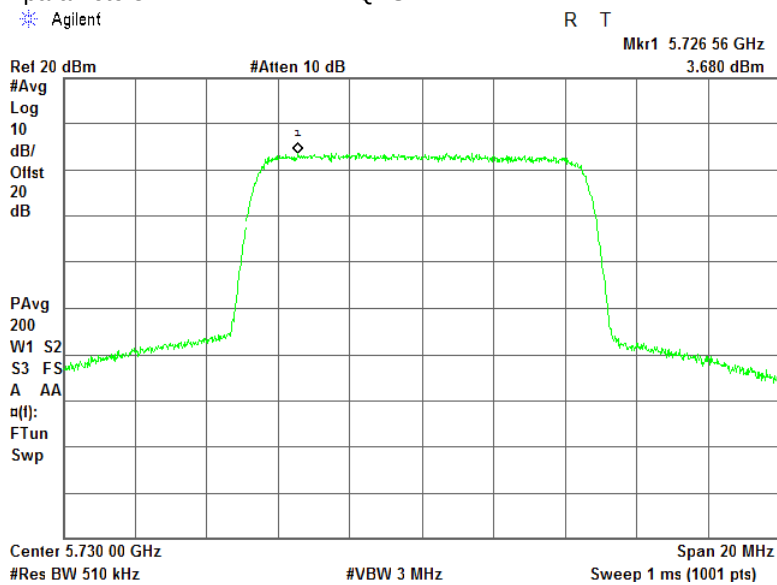




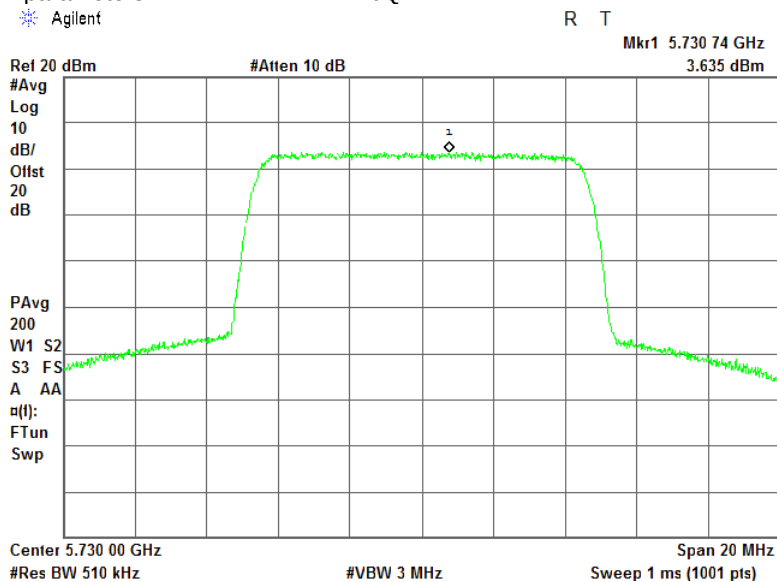
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Compliance	Verdict: PASS
Date(s):		04-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.11 Peak power spectral density test results

Frequency: 5.730 GHz
Channel BW: 10 MHz
EUT configuration: 1 carrier 1 sector (4 ports to 2 dual slant antennas) non-coherent signal
Modulation parameters: QPSK



Modulation parameters: 16QAM





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Report ID: TELRAD_FCC.31830

Date of Issue: 28-May-19

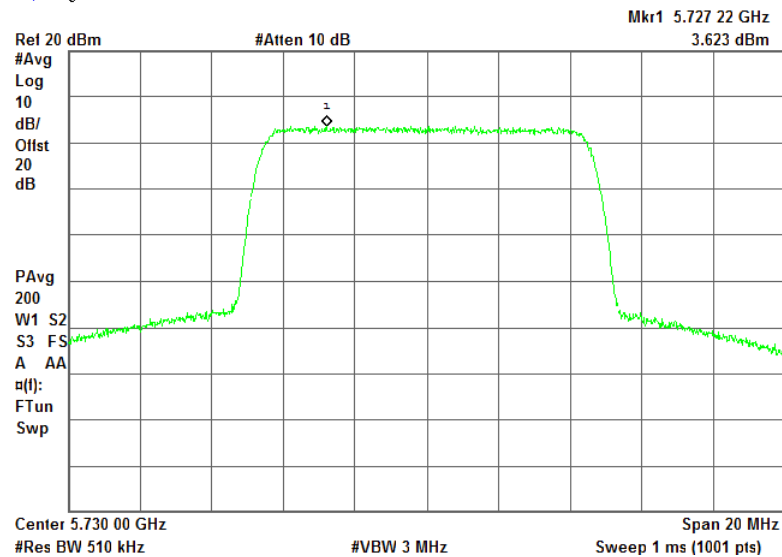
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM

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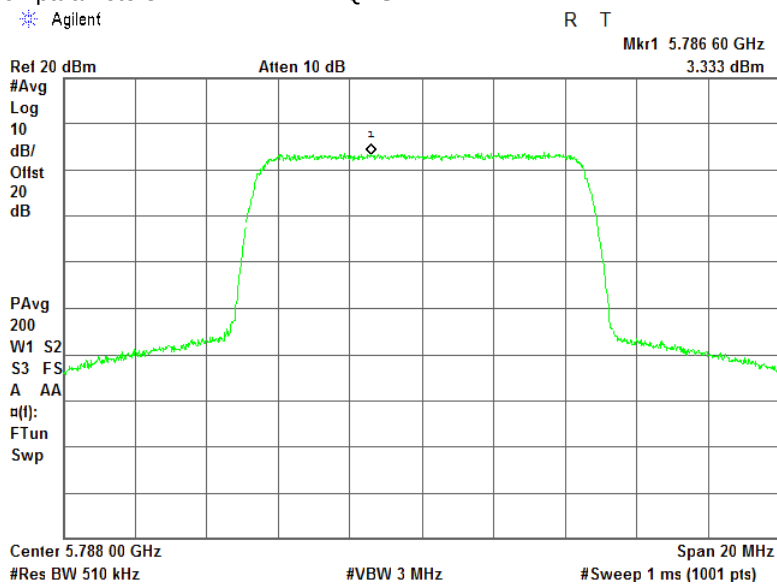
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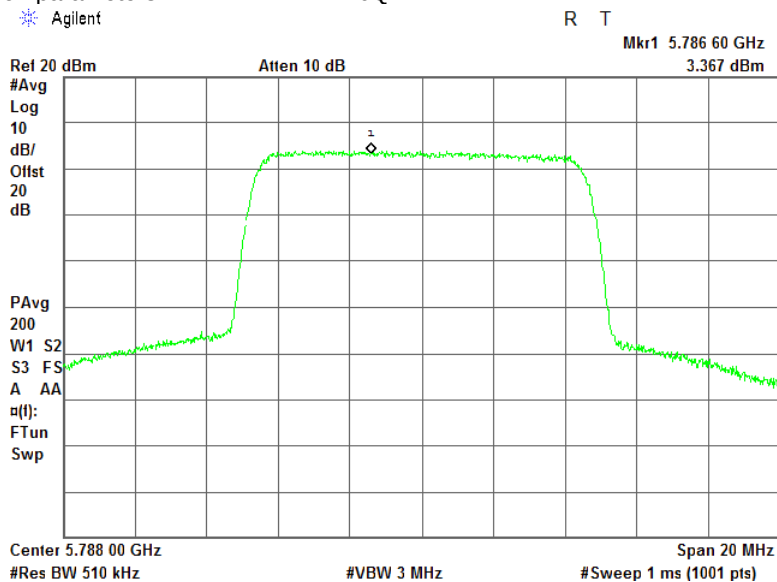
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Test mode:		Compliance	Verdict: PASS
Date(s):		04-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.12 Peak power spectral density test results

Frequency: 5.788 GHz
Channel BW: 10 MHz
EUT configuration: 1 carrier 1 sector (4 ports to 2 dual slant antennas) non-coherent signal
Modulation parameters: QPSK



Modulation parameters: 16QAM





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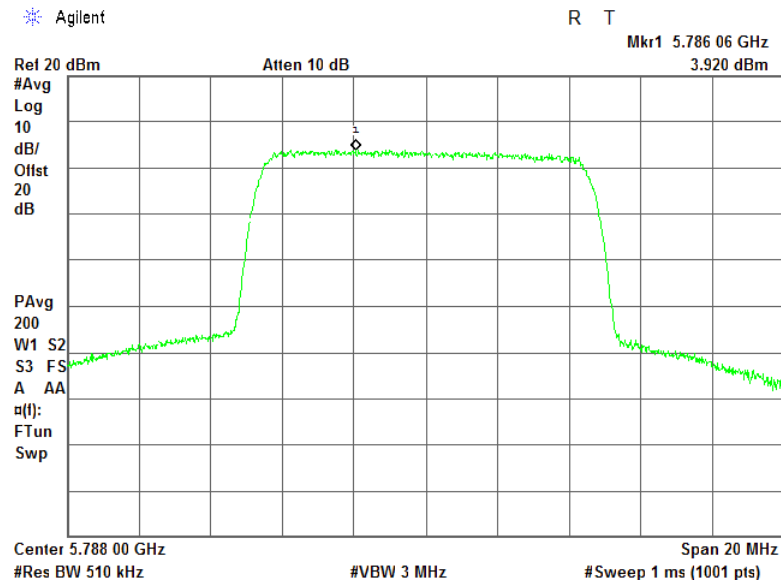
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Test mode:		Verdict: PASS	
Date(s):			
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Remarks:			

Modulation parameters:

64QAM





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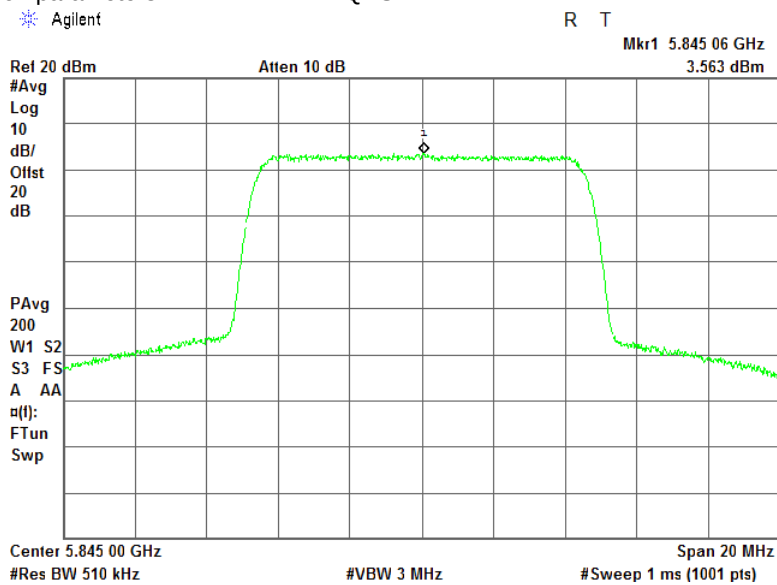
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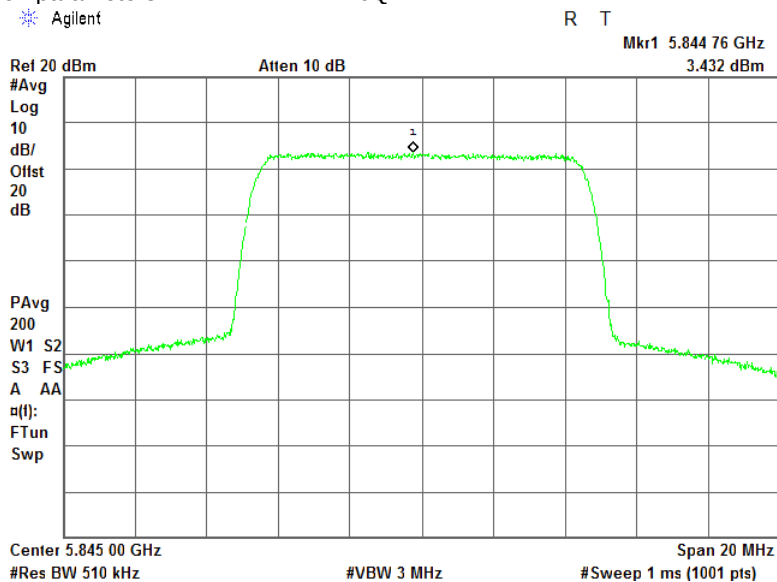
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Test mode:		Compliance	Verdict: PASS
Date(s):		04-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.13 Peak power spectral density test results

Frequency: 5.845 GHz
Channel BW: 10 MHz
EUT configuration: 1 carrier 1 sector (4 ports to 2 dual slant antennas) non-coherent signal
Modulation parameters: QPSK



Modulation parameters: 16QAM



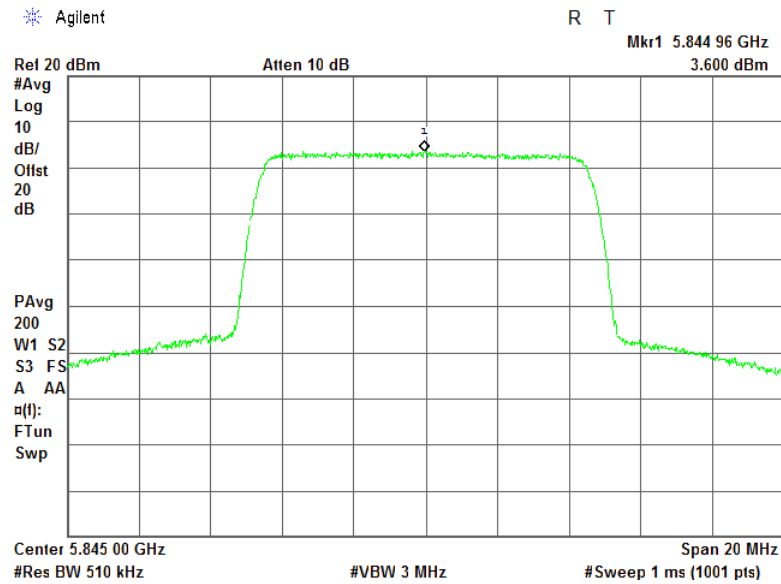


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Report ID: TELRAD_FCC.31830
Date of Issue: 28-May-19

Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
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Test mode:		Verdict: PASS	
Date(s):			
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Remarks:			

Modulation parameters: 64QAM





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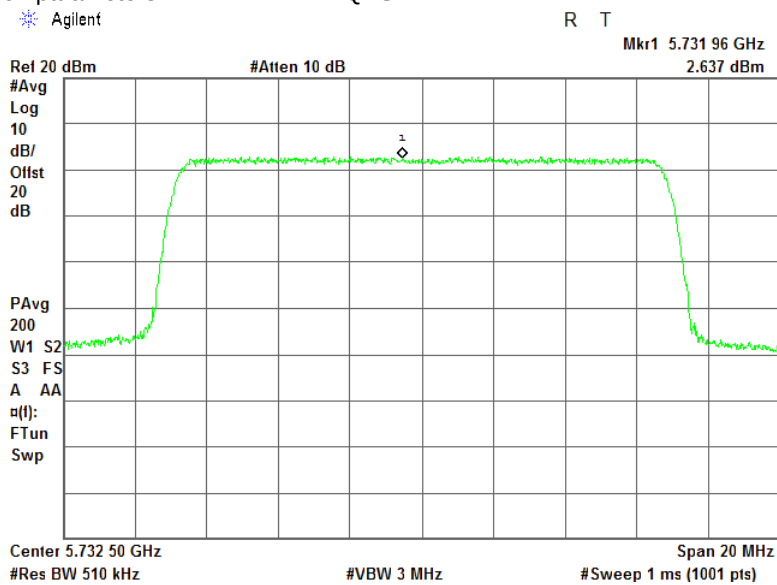
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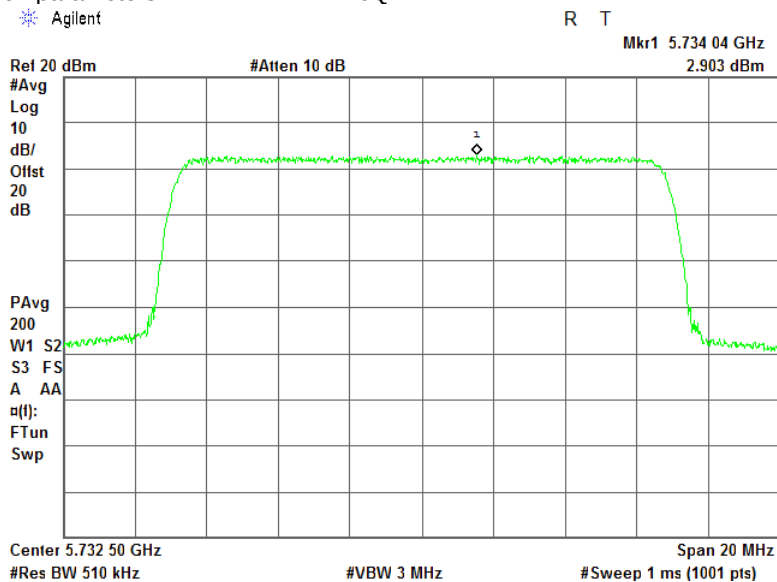
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Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.14 Peak power spectral density test results

Frequency: 5.7325 GHz
Channel BW: 15 MHz
EUT configuration: 1 carrier 1 sector (4 ports to 2 dual slant antennas) non-coherent signal
Modulation parameters: QPSK



Modulation parameters: 16QAM



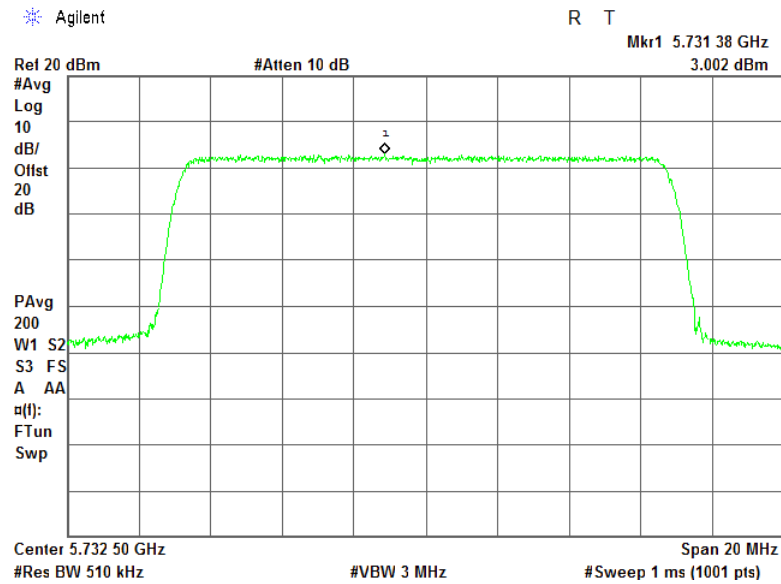


HERMON LABORATORIES

Report ID: TELRAD_FCC.31830
Date of Issue: 28-May-19

Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
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Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters: 64QAM





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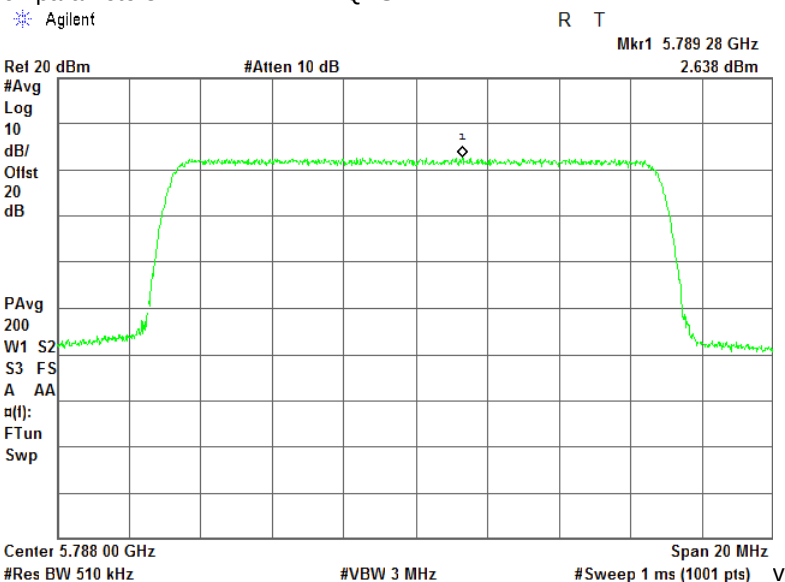
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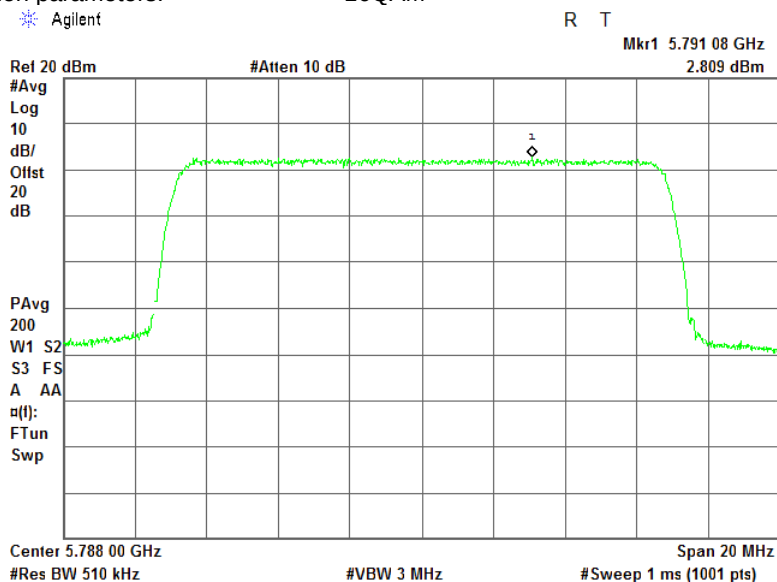
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Test mode:		Compliance	Verdict: PASS
Date(s):		04-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.15 Peak power spectral density test results

Frequency: 5.788 GHz
Channel BW: 15 MHz
EUT configuration: 1 carrier 1 sector (4 ports to 2 dual slant antennas) non-coherent signal
Modulation parameters: QPSK



Modulation parameters: 16QAM





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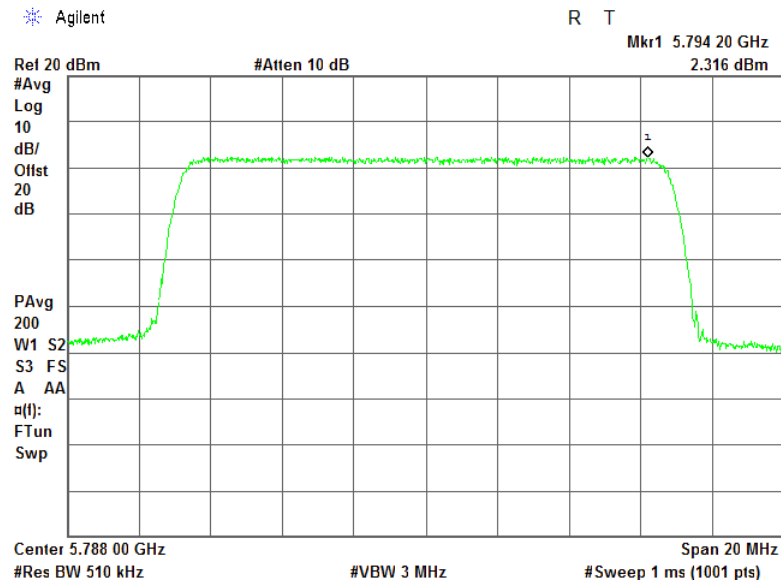
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Test mode:		Verdict: PASS	
Date(s):			
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Remarks:			

Modulation parameters:

64QAM





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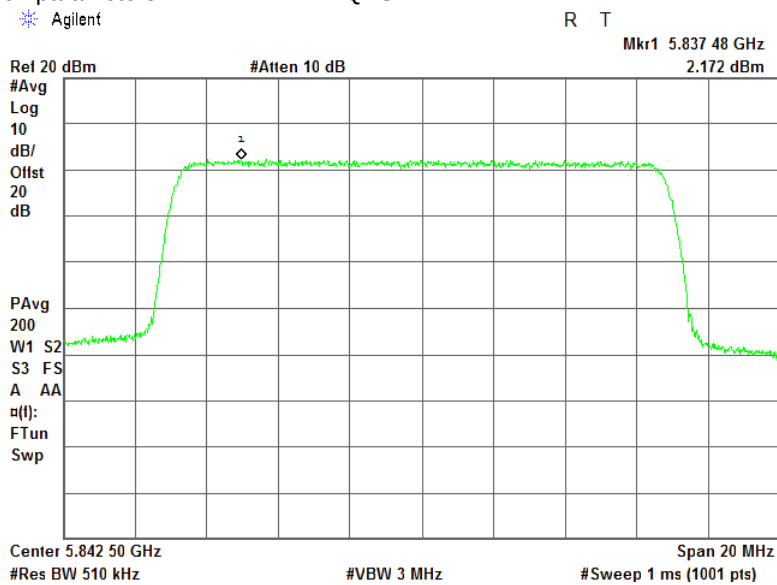
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Date of Issue: 28-May-19

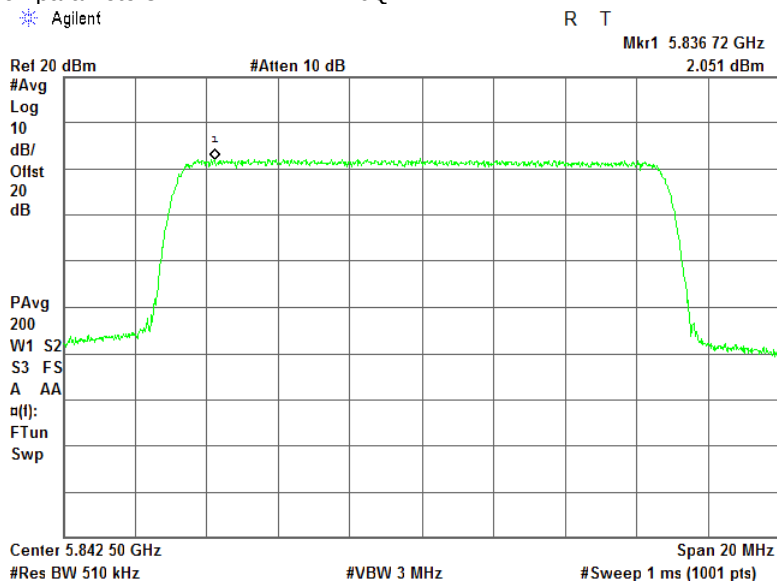
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Compliance	Verdict: PASS
Date(s):		04-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.16 Peak power spectral density test results

Frequency: 5.8425 GHz
Channel BW: 15 MHz
EUT configuration: 1 carrier 1 sector (4 ports to 2 dual slant antennas) non-coherent signal
Modulation parameters: QPSK



Modulation parameters: 16QAM



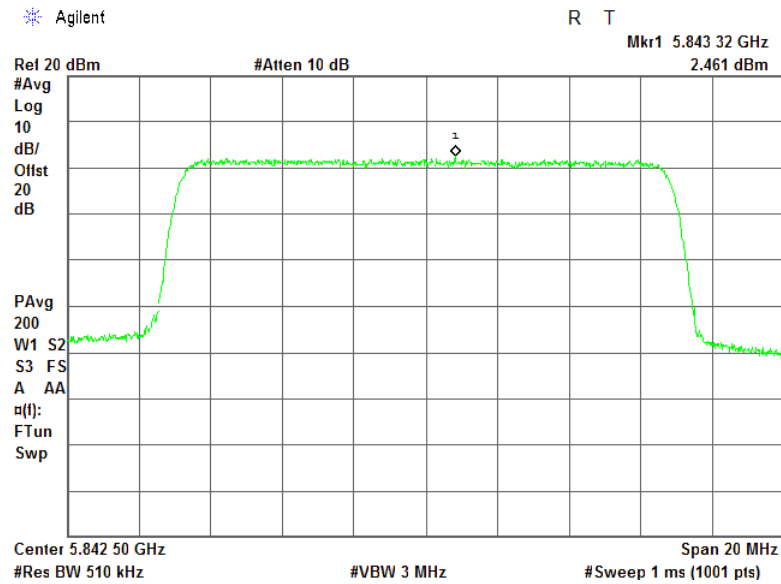


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Report ID: TELRAD_FCC.31830
Date of Issue: 28-May-19

Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters: 64QAM





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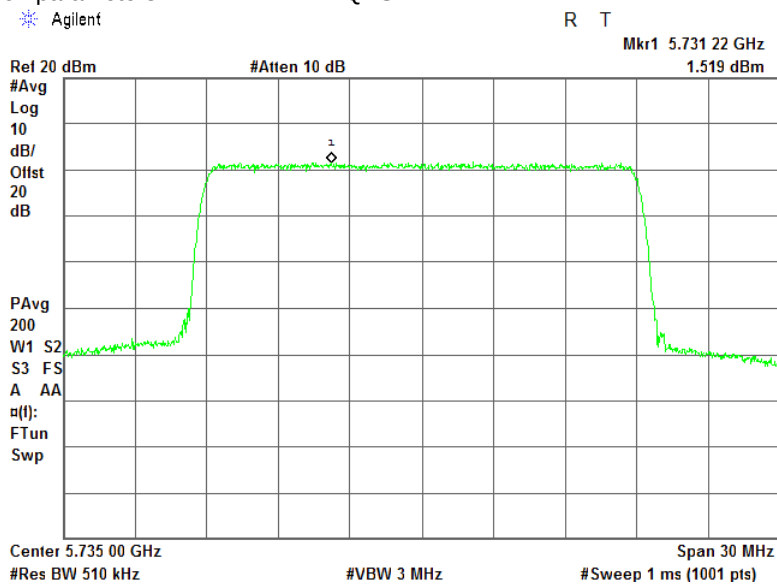
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Date of Issue: 28-May-19

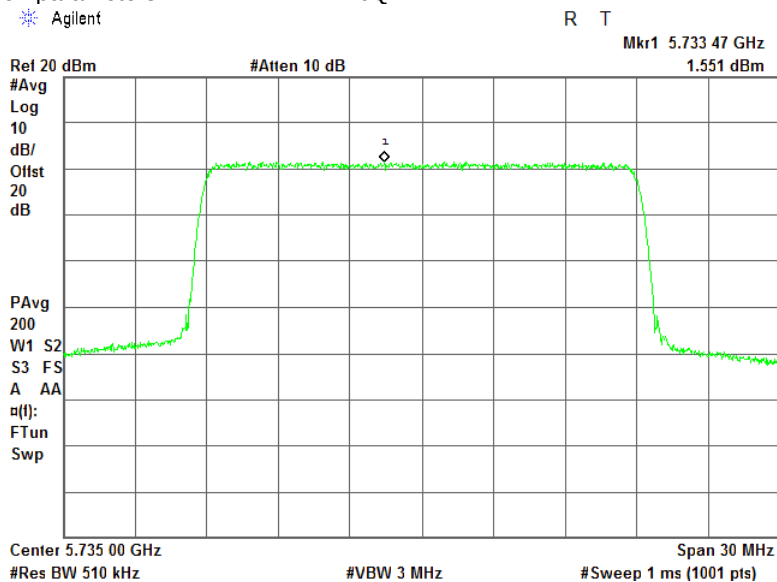
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Compliance	Verdict: PASS
Date(s):		04-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.17 Peak power spectral density test results

Frequency: 5.735 GHz
Channel BW: 20 MHz
EUT configuration: 1 carrier 1 sector (4 ports to 2 dual slant antennas) non-coherent signal
Modulation parameters: QPSK



Modulation parameters: 16QAM





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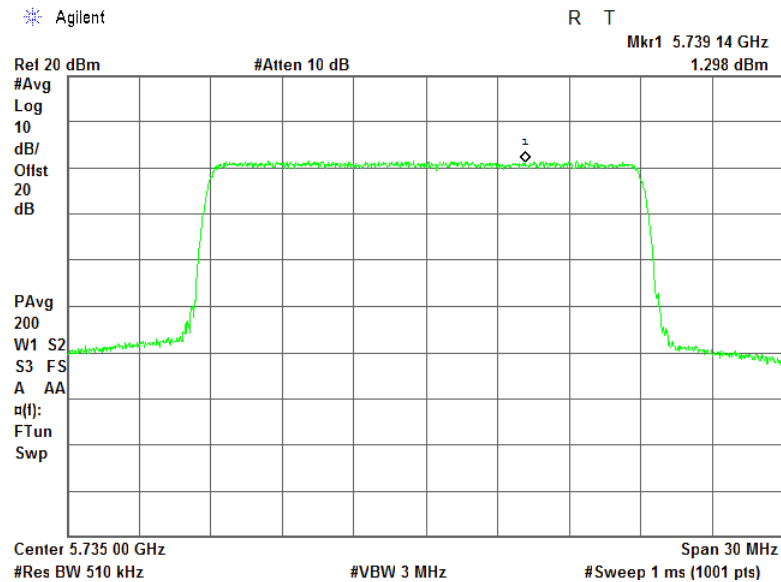
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Date of Issue: 28-May-19

Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM





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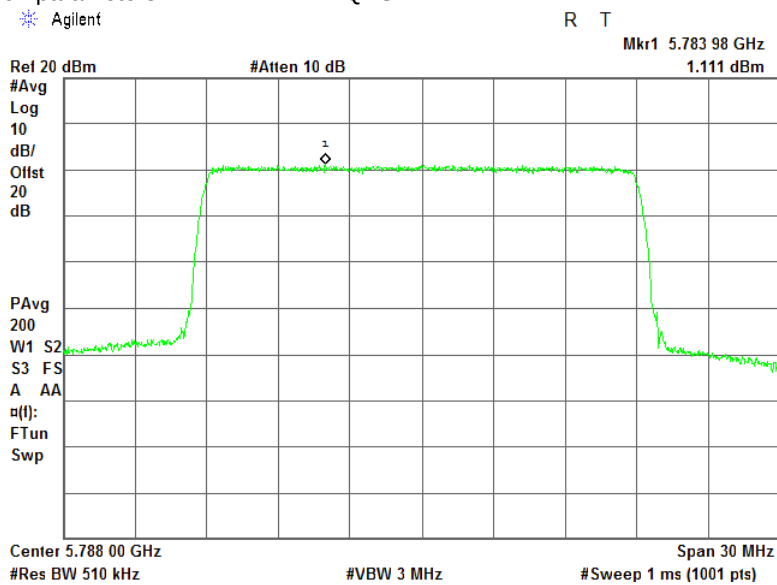
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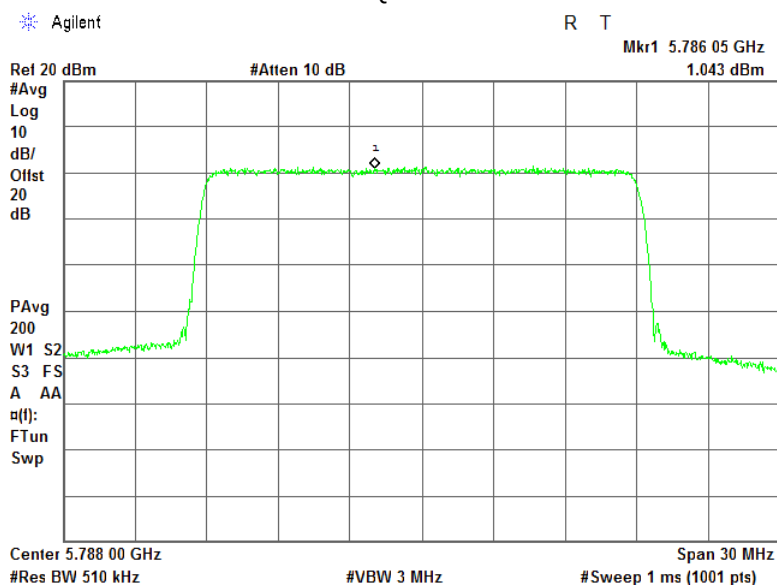
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Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.18 Peak power spectral density test results

Frequency: 5.788 GHz
Channel BW: 20 MHz
EUT configuration: 1 carrier 1 sector (4 ports to 2 dual slant antennas) non-coherent signal
Modulation parameters: QPSK



Modulation parameters: 16QAM





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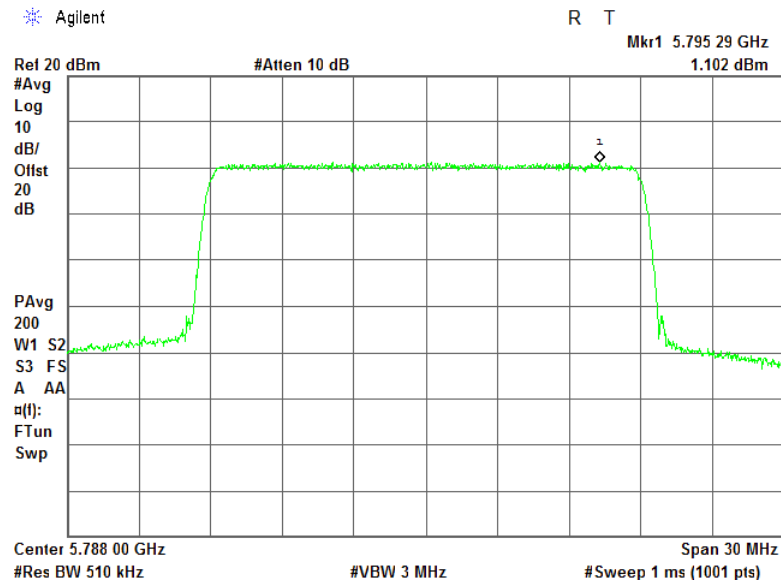
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM





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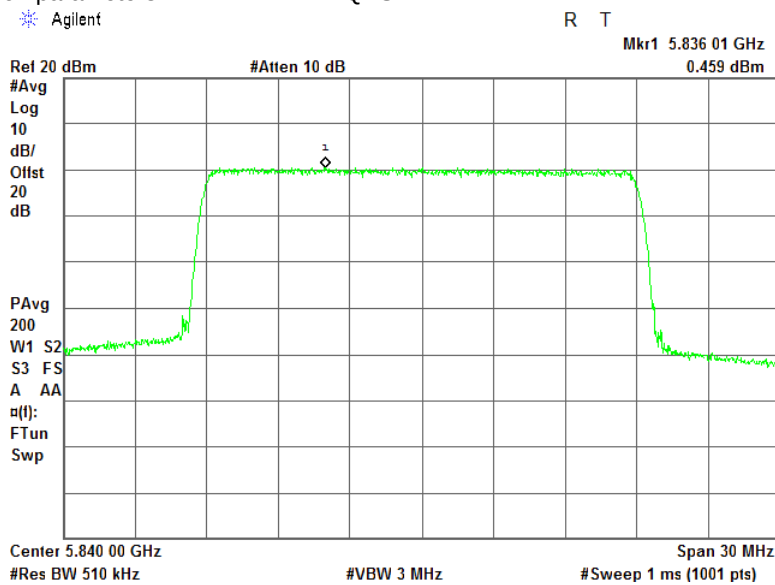
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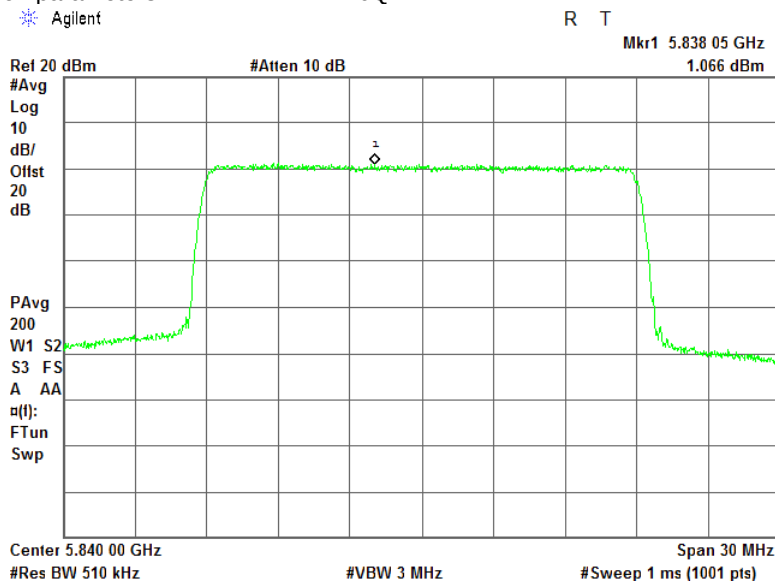
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Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.19 Peak power spectral density test results

Frequency: 5.840 GHz
Channel BW: 20 MHz
EUT configuration: 1 carrier 1 sector (4 ports to 2 dual slant antennas) non-coherent signal
Modulation parameters: QPSK



Modulation parameters: 16QAM





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Report ID: TELRAD_FCC.31830

Date of Issue: 28-May-19

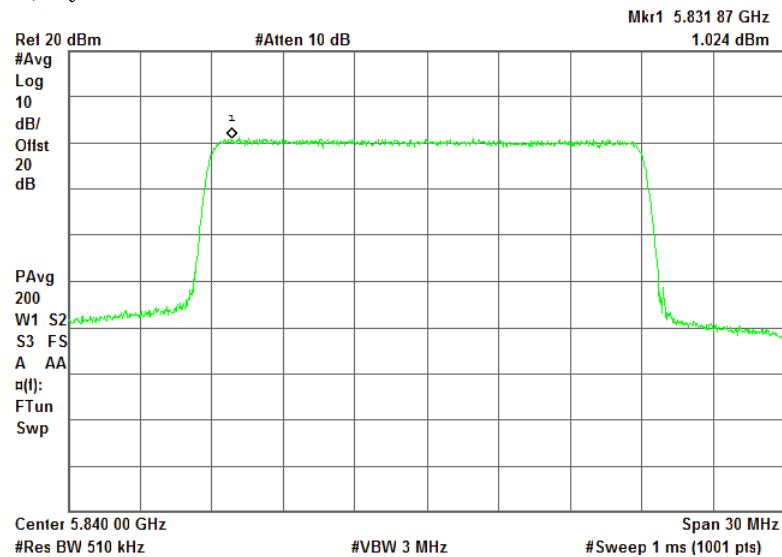
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Compliance	Verdict: PASS
Date(s):		04-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM

Agilent

R T





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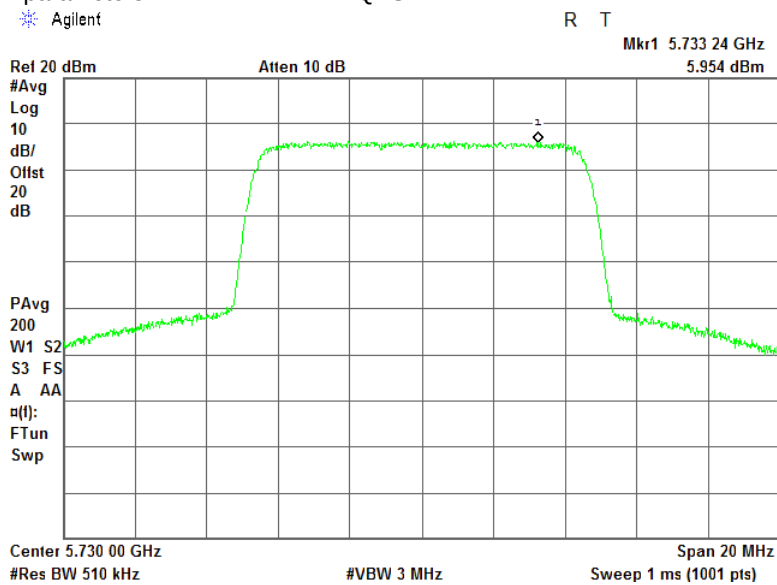
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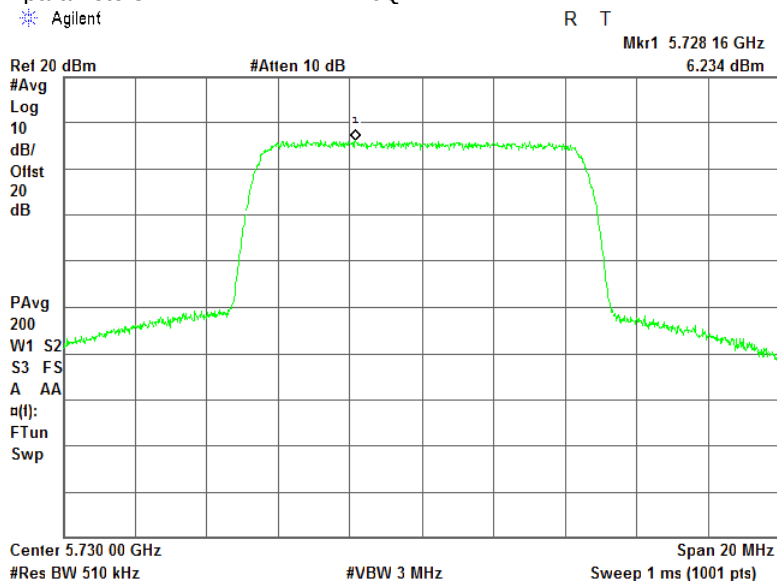
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Compliance	Verdict: PASS
Date(s):		04-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.20 Peak power spectral density test results

Frequency: 5.730 GHz
Channel BW: 10 MHz
EUT configuration: 2 carrier 1 sector (4 ports to 2 dual slant antennas)
Modulation parameters: QPSK



Modulation parameters: 16QAM





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Report ID: TELRAD_FCC.31830

Date of Issue: 28-May-19

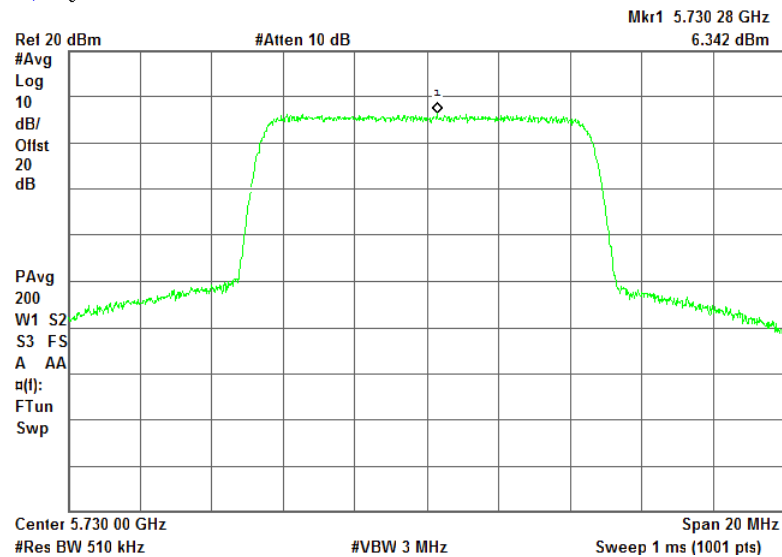
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Compliance	Verdict: PASS
Date(s):		04-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM

Agilent

R T





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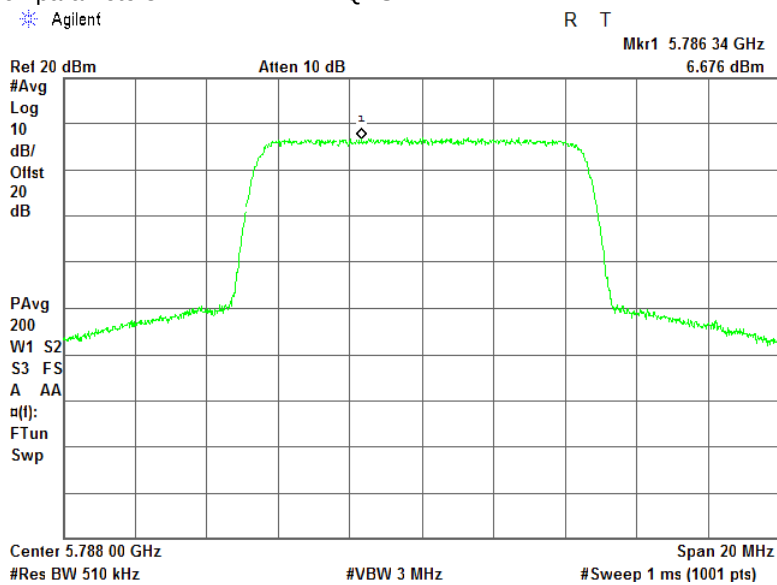
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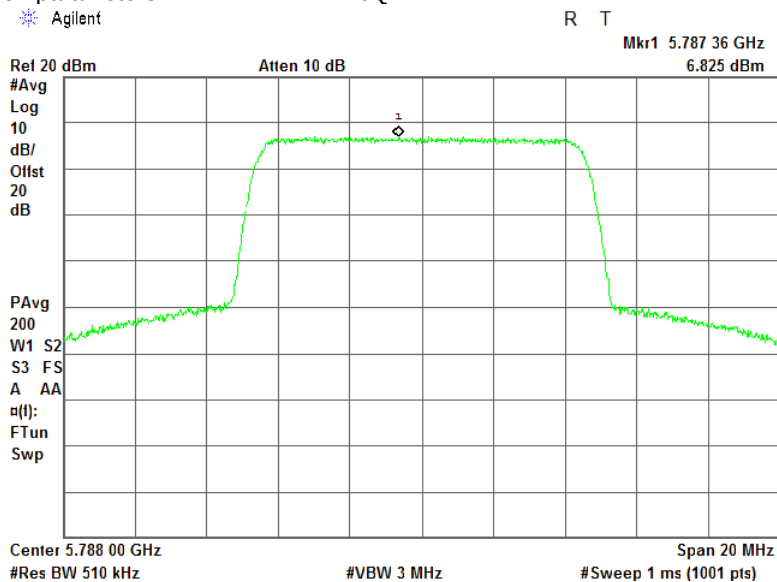
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Compliance	Verdict: PASS
Date(s):		04-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.21 Peak power spectral density test results

Frequency: 5.788 GHz
Channel BW: 10 MHz
EUT configuration: 2 carrier 1 sector (4 ports to 2 dual slant antennas)
Modulation parameters: QPSK



Modulation parameters: 16QAM





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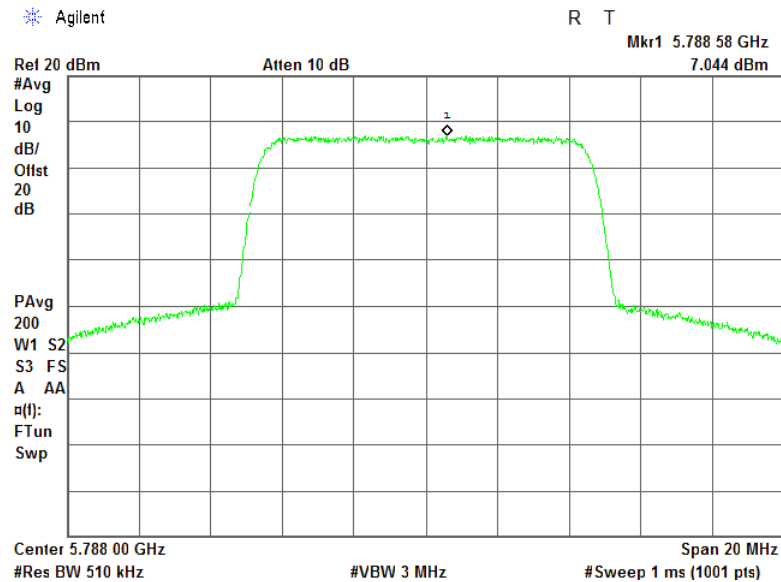
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Date of Issue: 28-May-19

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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM





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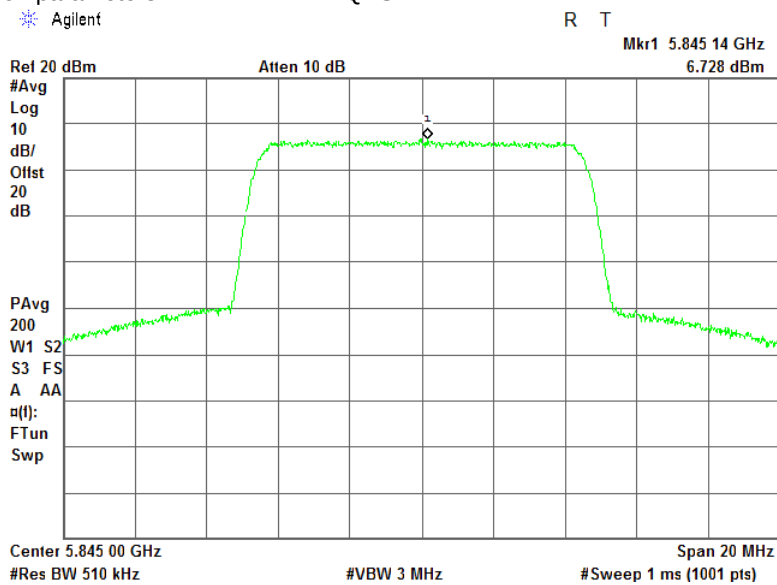
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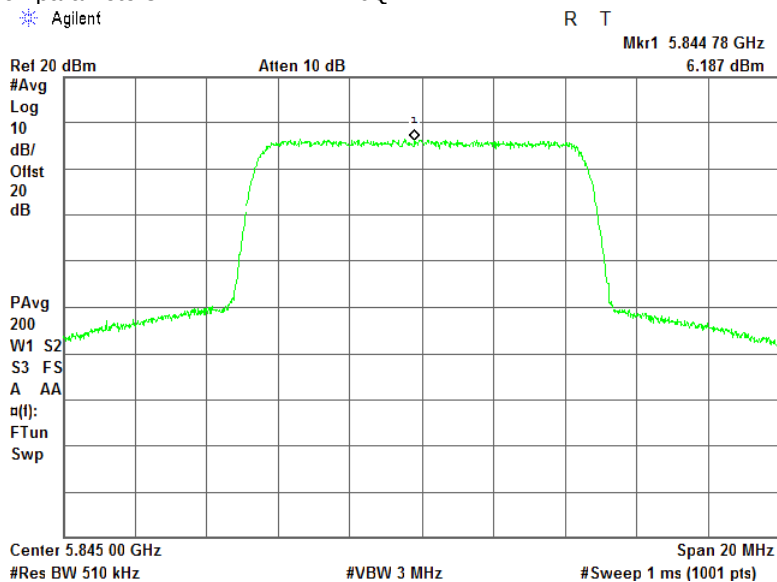
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.22 Peak power spectral density test results

Frequency: 5.845 GHz
Channel BW: 10 MHz
EUT configuration: 2 carrier 1 sector (4 ports to 2 dual slant antennas)
Modulation parameters: QPSK



Modulation parameters: 16QAM





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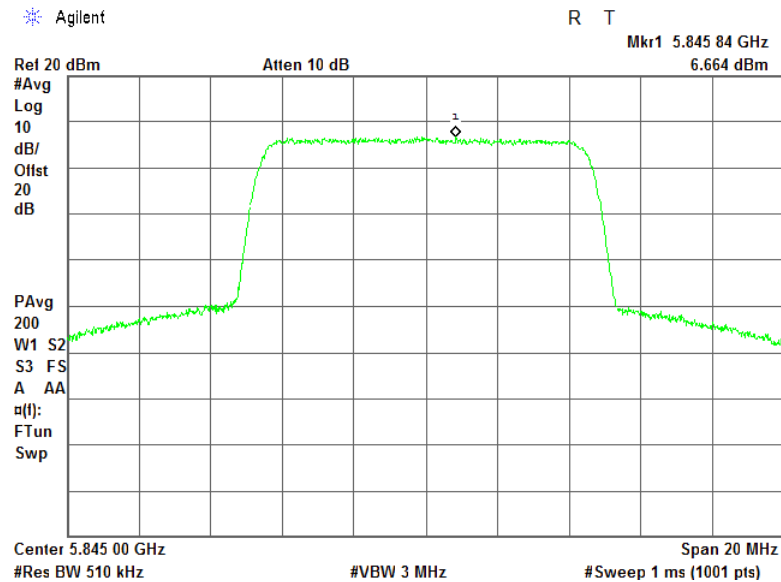
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Date of Issue: 28-May-19

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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM





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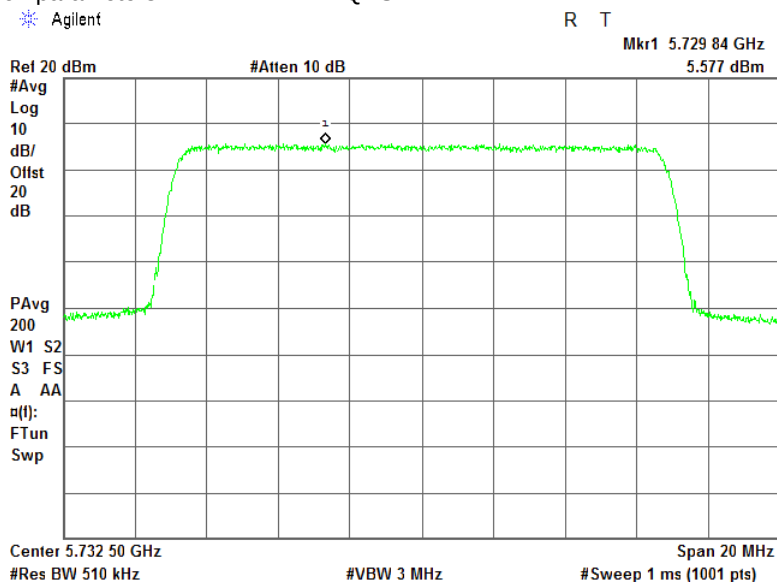
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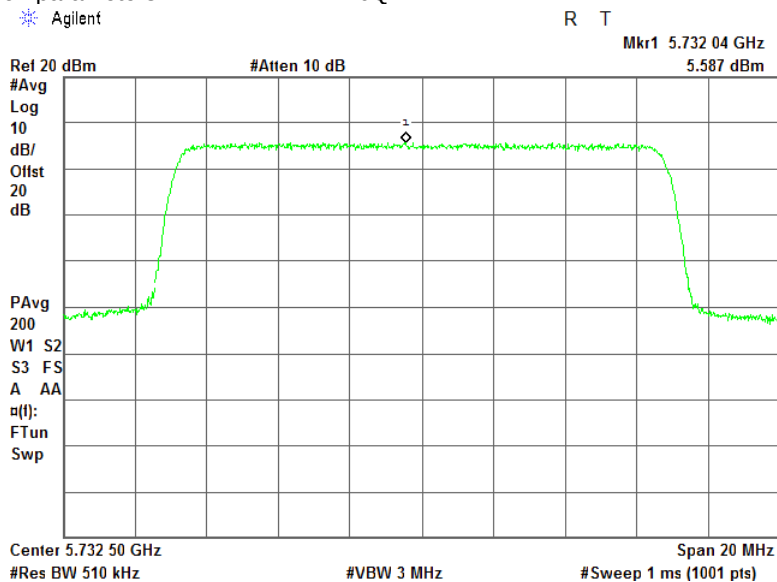
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.23 Peak power spectral density test results

Frequency: 5.7325 GHz
Channel BW: 15 MHz
EUT configuration: 2 carrier 1 sector (4 ports to 2 dual slant antennas)
Modulation parameters: QPSK



Modulation parameters: 16QAM





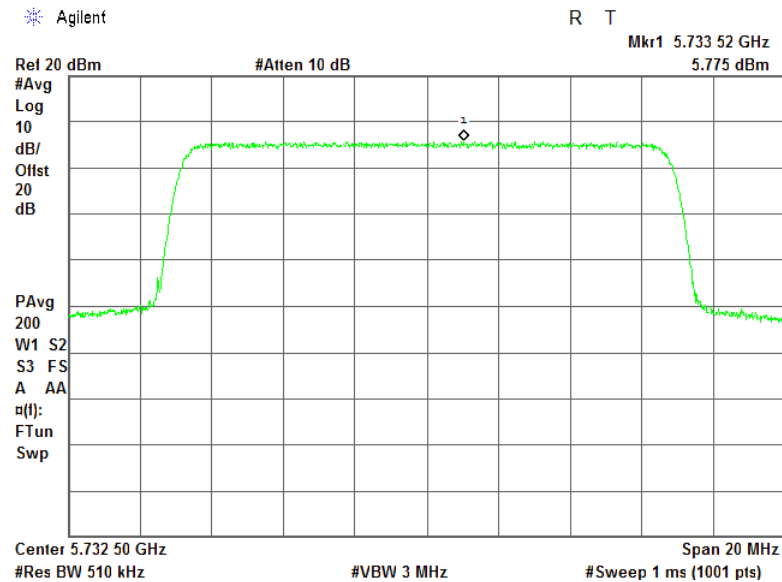
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Report ID: TELRAD_FCC.31830

Date of Issue: 28-May-19

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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters: 64QAM





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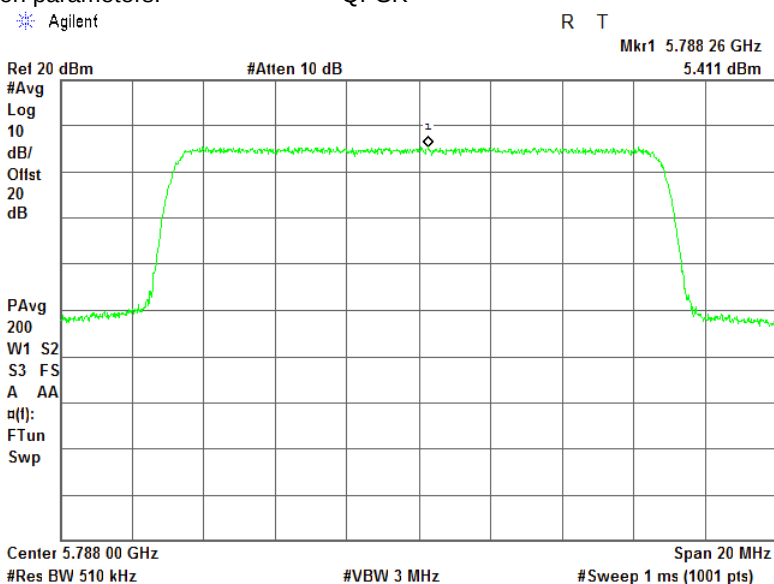
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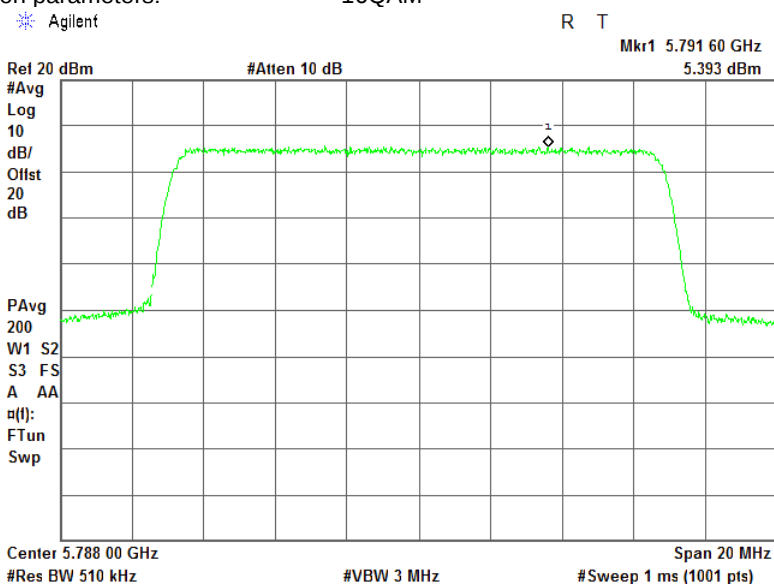
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Test procedure: FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5			
Test mode: Compliance		Verdict: PASS	
Date(s): 04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.24 Peak power spectral density test results

Frequency: 5.788 GHz
Channel BW: 15 MHz
EUT configuration: 2 carrier 1 sector (4 ports to 2 dual slant antennas)
Modulation parameters: QPSK



Modulation parameters: 16QAM





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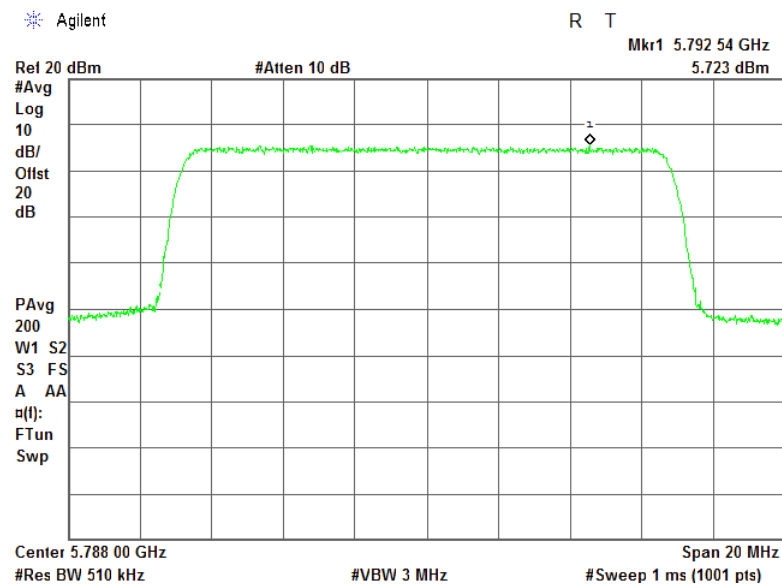
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Test mode:		Verdict: PASS	
Date(s):			
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Remarks:			

Modulation parameters:

64QAM





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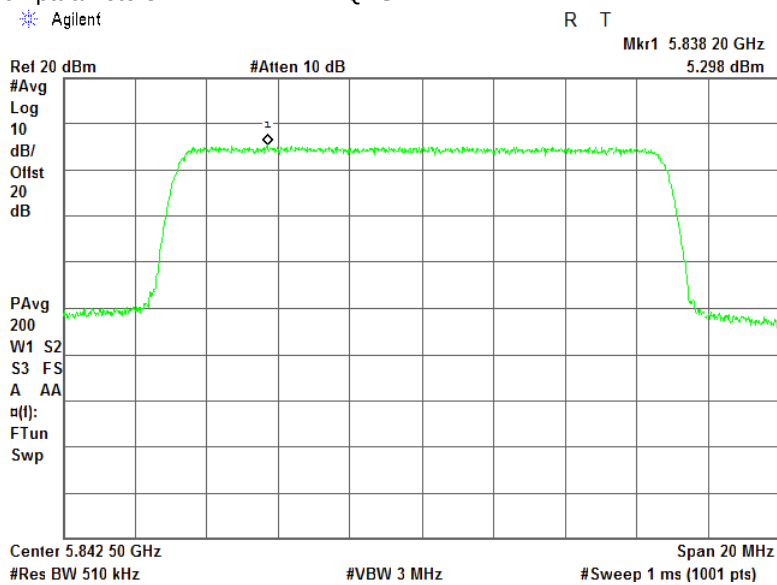
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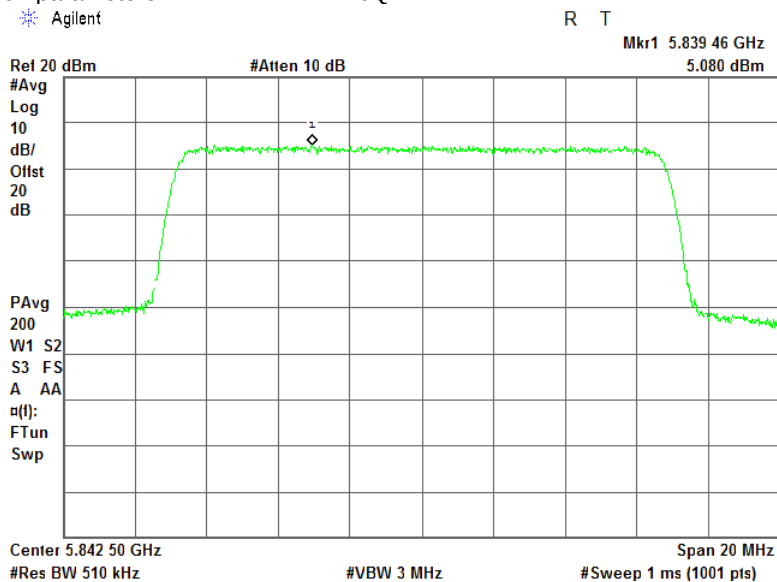
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Test procedure:	FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5		
Test mode:	Compliance	Verdict:	PASS
Date(s):	04-Marc-19		
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.25 Peak power spectral density test results

Frequency: 5.8425 GHz
Channel BW: 15 MHz
EUT configuration: 2 carrier 1 sector (4 ports to 2 dual slant antennas)
Modulation parameters: QPSK



Modulation parameters: 16QAM



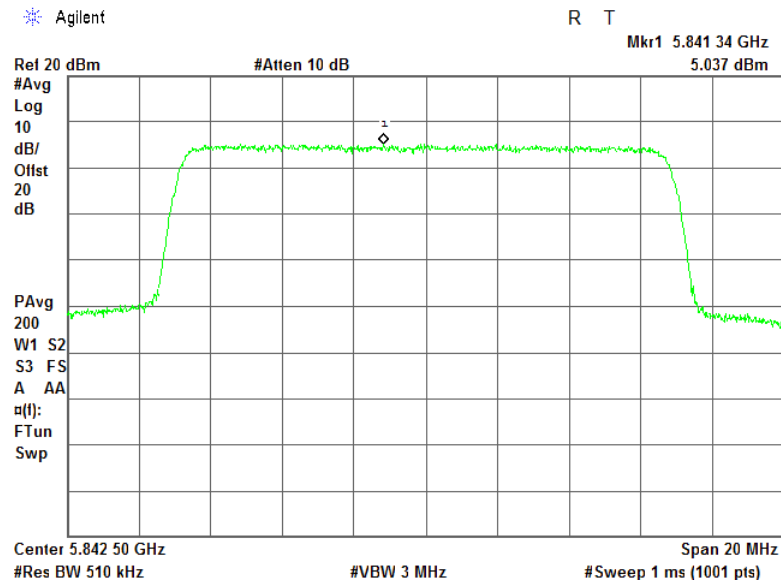


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Report ID: TELRAD_FCC.31830
Date of Issue: 28-May-19

Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters: 64QAM





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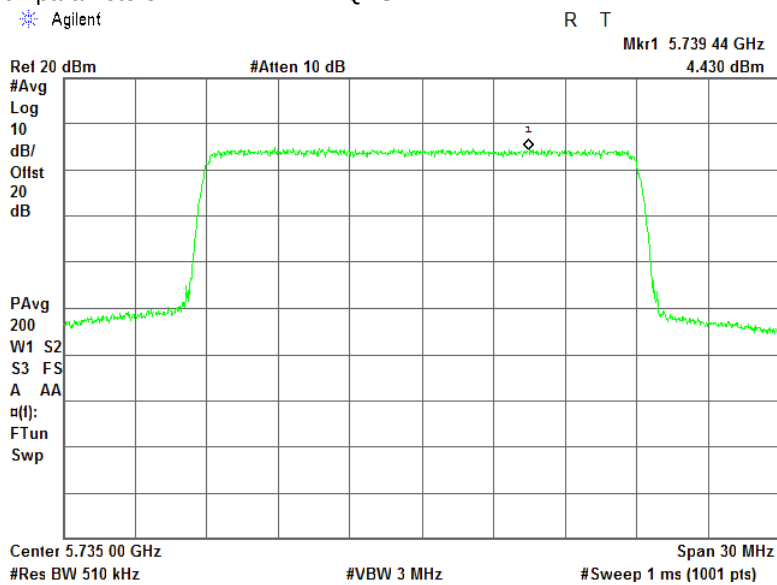
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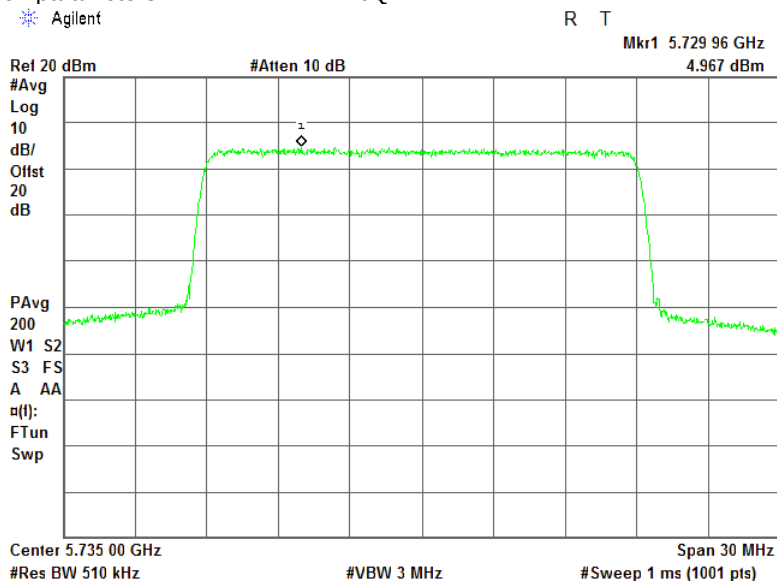
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Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.26 Peak power spectral density test results

Frequency: 5.735 GHz
Channel BW: 20 MHz
EUT configuration: 2 carrier 1 sector (4 ports to 2 dual slant antennas)
Modulation parameters: QPSK



Modulation parameters: 16QAM





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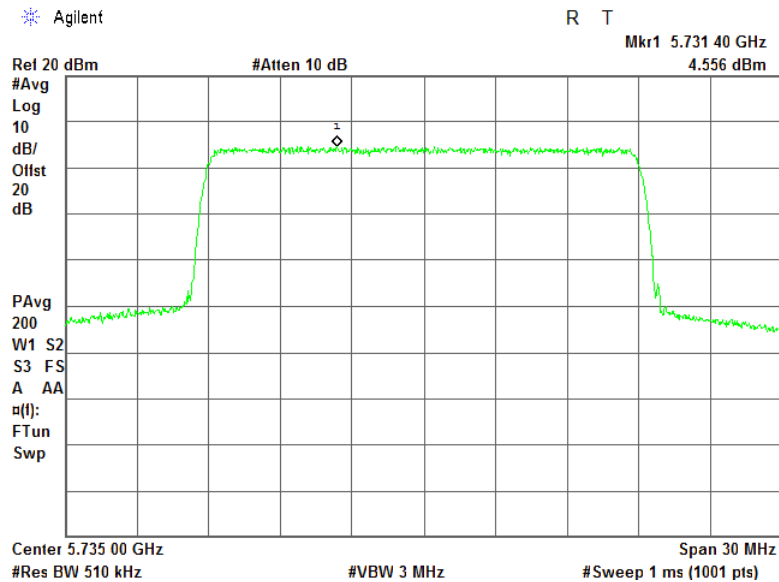
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Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
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Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM





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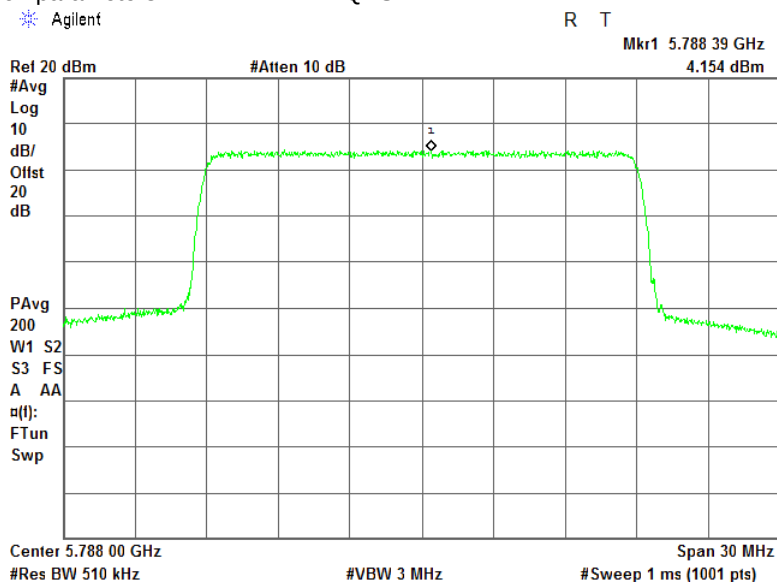
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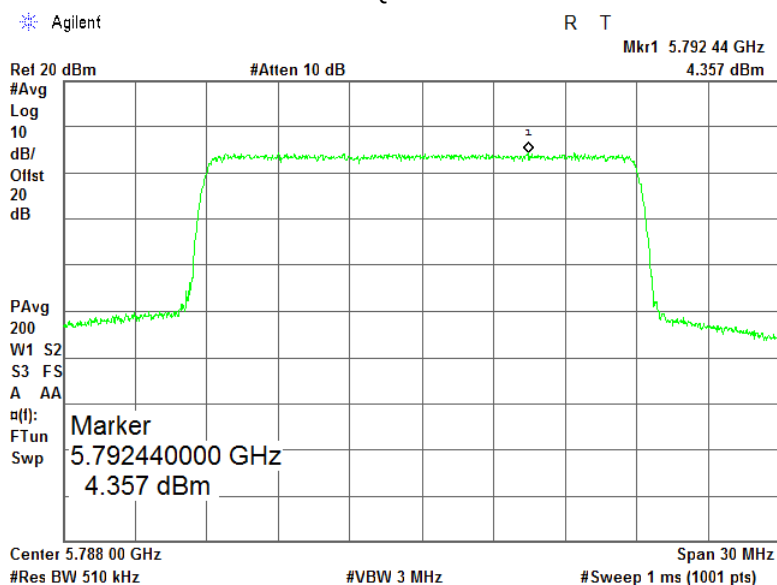
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Test mode:		Compliance	Verdict: PASS
Date(s):		04-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.27 Peak power spectral density test results

Frequency: 5.788 GHz
Channel BW: 20 MHz
EUT configuration: 2 carrier 1 sector (4 ports to 2 dual slant antennas)
Modulation parameters: QPSK



Modulation parameters: 16QAM





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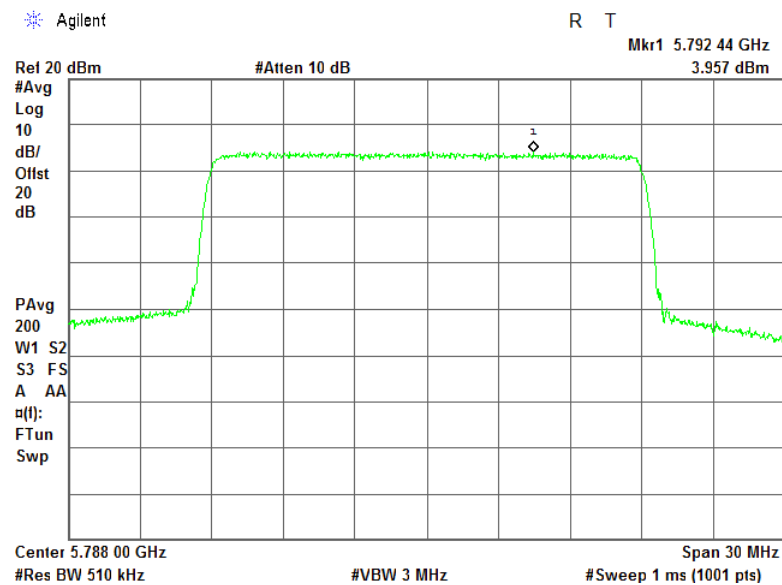
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Date of Issue: 28-May-19

Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM





HERMON LABORATORIES

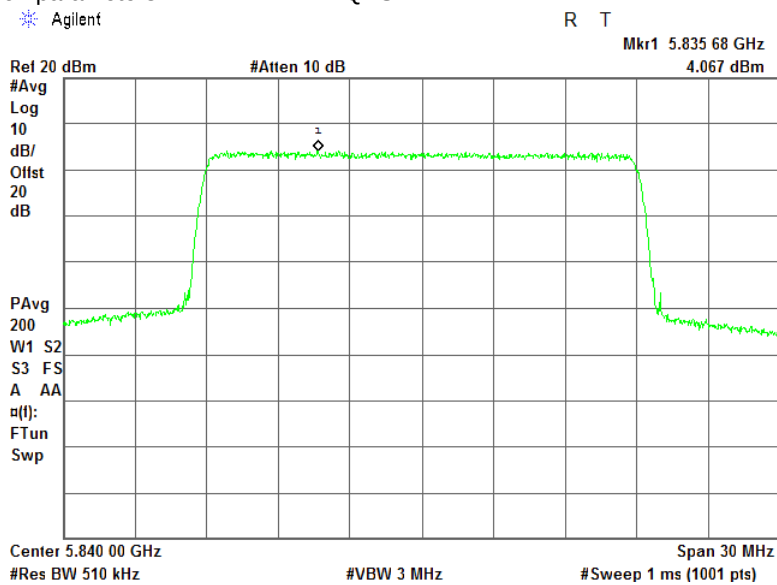
Report ID: TELRAD_FCC.31830

Date of Issue: 28-May-19

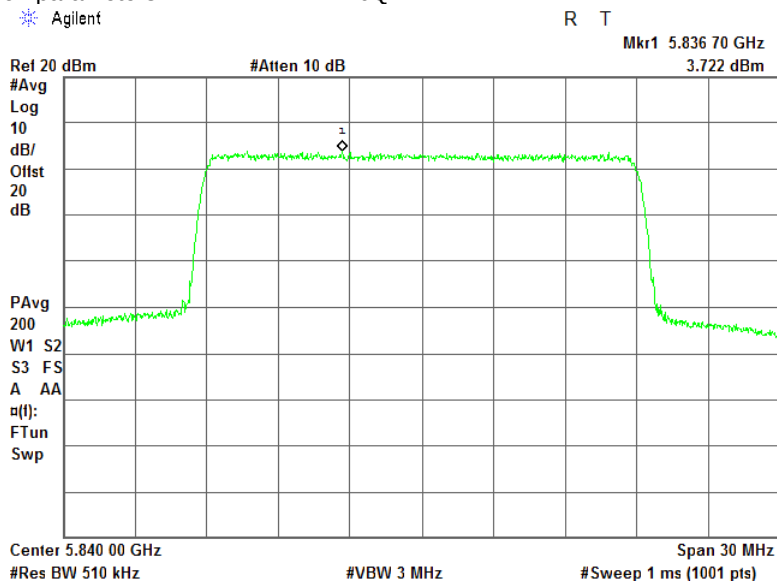
Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Verdict: PASS	
Date(s):			
04-Marc-19			
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.8.28 Peak power spectral density test results

Frequency: 5.840 GHz
Channel BW: 20 MHz
EUT configuration: 2 carrier 1 sector (4 ports to 2 dual slant antennas)
Modulation parameters: QPSK



Modulation parameters: 16QAM





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Report ID: TELRAD_FCC.31830
Date of Issue: 28-May-19

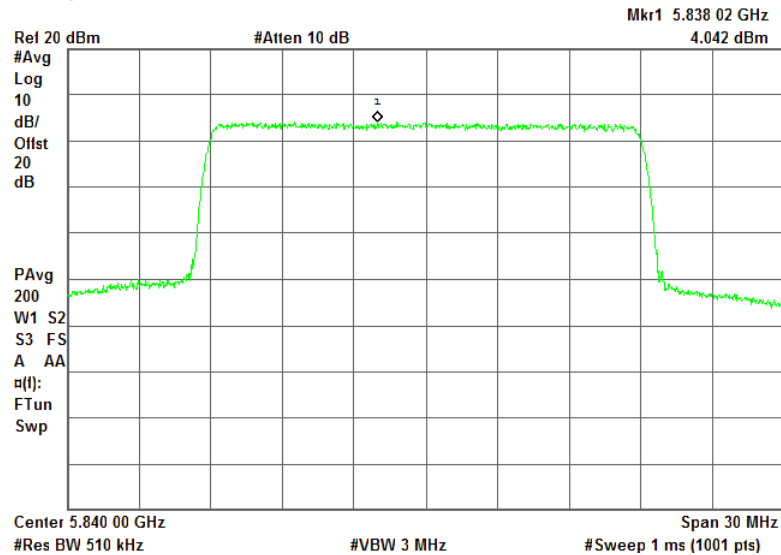
Test specification:		FCC section 15.407(a)(1-3), RSS-247 section 6.2.4.2, Peak spectral power density	
Test procedure:		FCC section 15.407(a)(5); KDB 662911, KDB 789033, ANSI C63.10, section 12.5	
Test mode:		Compliance	Verdict: PASS
Date(s):		04-Marc-19	
Temperature: 24 °C	Relative Humidity: 46 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Modulation parameters:

64QAM

Agilent

R T





Test specification:		FCC section 15.407(b), RSS-247 section 6.2.4.2, Conducted out of band emissions	
Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Verdict: PASS	
Date(s):			
11-Feb-19			
Temperature: 26 °C	Relative Humidity: 45 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

7.9 Conducted out of band emissions at 5725 – 5850 MHz range

7.9.1 General

This test was performed to measure spurious emissions from the EUT near the band edges and within the pass band of the antenna. Specification test limits are given in Table 7.9.1 & EIRP of undesirable emission limits are given in Table 7.9.2

Table 7.9.1 Unwanted emissions limit within restricted bands above 1 GHz

Frequency, MHz	Field strength at 3 m, dB(μV/m)*		Equivalent EIRP*, dBm	
	Peak	Average	Peak	Average
1000 – 40000	74.0	54.0	-21.2	-41.2

* Equivalent EIRP was calculated as follow: Field strength – 95.2

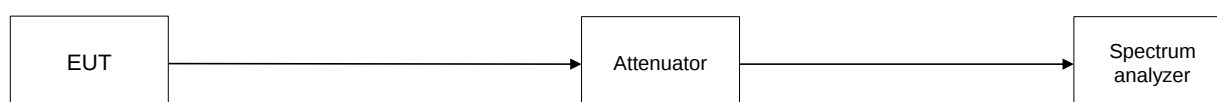
Table 7.9.2 EIRP of undesirable emission limits outside restricted bands above 1 GHz

Frequency, MHz	EIRP of spurious, dBm/MHz
Outside 5725-5850 band	-27 (below 5.650 GHz and above 5.925 GHz) -27 increasing linearly to 10 (in 5.650 - 5.700 GHz and 5.925 - 5.875 GHz) 10 increasing linearly to 15.6 (in 5.700 - 5.720 GHz and 5.875 - 5.855 GHz) 15.6 increasing linearly to 27 (in 5.720 - 5.725 GHz and 5.855 - 5.850 GHz)

7.9.2 Test procedure

- 7.9.2.1 The EUT was set up as shown in Figure 7.9.1, energized and the performance check was conducted.
- 7.9.2.2 The EUT was adjusted to produce maximum available to end user RF output power at the lowest carrier frequency.
- 7.9.2.3 The spectrum analyzer span was set to capture the carrier frequency and associated modulation products. The resolution bandwidth was set to 1 MHz.
- 7.9.2.4 The spectrum analyzer was set in max hold mode and allowed trace to stabilize. The highest emission level within the authorized band was measured.
- 7.9.2.5 The maximum band edge emission and modulation product outside of the band were measured as provided in the associated tables and plots.
- 7.9.2.6 The above procedure was repeated with the EUT adjusted to produce maximum RF output power at the mid and highest carrier frequencies.
- 7.9.2.7 Test results are shown in the Table 7.9.3, Table 7.9.4, Table 7.9.5 and the associated plots.

Figure 7.9.1 Setup for conducted spurious emissions





Test specification: FCC section 15.407(b), RSS-247 section 6.2.4.2, Conducted out of band emissions			
Test procedure: KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Feb-19			
Temperature: 26 °C	Relative Humidity: 45 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Table 7.9.3 Conducted spurious emission within restricted band test results

ASSIGNED FREQUENCY RANGE: 5.725 – 5.850 GHz
 INVESTIGATED FREQUENCY RANGE: 4500 - 6400 MHz
 MODULATION: QPSK
 DETECTOR USED: Peak
 RESOLUTION BANDWIDTH: 1000 kHz
 EUT CONFIGURATION: 1 carrier, 1 sector (4 ports to 2 dual slant antennas), non-coherent signal
 CHANNEL BANDWIDTH: 10 MHz

CHANNEL BANDWIDTH:			10 MHz								
Frequency, MHz	Antenna gain, dBi	Antenna gain array*, dB	Peak				Average				Verdict
			SA reading, dBm	EIRP**, dBm/MHz	Limit, dBm	Margin***, dB	SA reading, dBm	EIRP**, dBm/MHz	Limit, dBm	Margin***, dB	
Low carrier frequency											
4993.910	17.0	3.0	-60.09	-40.09	-21.2	-18.89	-71.25	-48.76	-41.2	-7.56	Pass
Mid carrier frequency											
5365.730	17.0	3.0	-56.42	-36.42	-21.2	-15.22	-71.05	-48.56	-41.2	-7.36	Pass
High carrier frequency											
5060.600	17.0	3.0	-57.10	-37.10	-21.2	-15.90	-70.96	-48.47	-41.2	-7.27	Pass

CHANNEL BANDWIDTH: 15 MHz

CHANNEL BANDWIDTH:			15 MHz								
Frequency, MHz	Antenna gain, dBi	Antenna gain array*, dB	Peak				Average				Verdict
			SA reading, dBm	EIRP**, dBm/MHz	Limit, dBm	Margin***, dB	SA reading, dBm	EIRP**, dBm/MHz	Limit, dBm	Margin***, dB	
Low carrier frequency											
5320.150	17.0	3.0	-58.79	-38.79	-21.2	-17.59	-70.44	-47.95	-41.2	-6.75	Pass
Mid carrier frequency											
5257.300	17.0	3.0	-58.76	-38.76	-21.2	-17.56	-70.83	-48.34	-41.2	-7.14	Pass
High carrier frequency											
5041.890	17.0	3.0	-58.56	-38.56	-21.2	-17.36	-72.75	-50.26	-41.2	-9.06	Pass

CHANNEL BANDWIDTH: 20 MHz

CHANNEL BANDWIDTH:			20 MHz								
Frequency, MHz	Antenna gain, dBi	Antenna gain array*, dB	Peak				Average				Verdict
			SA reading, dBm	Peak EIRP**, dBm/MHz	Limit, dBm	Margin***, dB	SA reading, dBm	Average EIRP****, dBm/MHz	Limit, dBm	Margin***, dB	
Low carrier frequency											
5284.170	17.0	3.0	-59.50	-39.50	-21.2	-18.30	-70.39	-47.90	-41.2	-6.70	Pass
Mid carrier frequency											
5249.630	17.0	3.0	-59.66	-39.66	-21.2	-18.46	-70.73	-48.24	-41.2	-7.04	Pass
High carrier frequency											
5011.180	17.0	3.0	-60.08	-40.08	-21.2	-18.88	-73.07	-50.58	-41.2	-9.38	Pass

* - Antenna gain array = $10\log(N_{ant})$, where $N_{ant} = 4$ (two cross-polarized antennas with coherent signals)

** - Peak EIRP = SA reading + Antenna gain + Antenna gain array

*** - Margin = EIRP – specified limit.

**** - Average EIRP = SA reading + Antenna gain + Antenna gain array + Duty cycle factor

Table 7.9.4 Duty cycle factor calculation

Burst duration, ms	Burst period, ms	Duty cycle*	Duty cycle factor**, dB
2.82	5.00	0.564	2.49

* - Duty cycle = Burst duration / Burst period

** - Duty cycle factor = $10\log(1/\text{Duty cycle})$



Test specification:		FCC section 15.407(b), RSS-247 section 6.2.4.2, Conducted out of band emissions	
Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Verdict: PASS	
Date(s):			
11-Feb-19			
Temperature: 26 °C	Relative Humidity: 45 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Table 7.9.5 Conducted spurious emission outside restricted band test results

ASSIGNED FREQUENCY RANGE: 5.725 – 5.850 GHz
 INVESTIGATED FREQUENCY RANGE: 4500 - 6400 MHz
 MODULATION: QPSK
 DETECTOR USED: Peak
 RESOLUTION BANDWIDTH: 1000 kHz
 EUT CONFIGURATION: 1 carrier, 1 sector (4 ports to 2 dual slant antennas), non-coherent signal
 CHANNEL BANDWIDTH: 10 MHz

Frequency, MHz	SA reading, dBm	Antenna gain, dBi	Antenna gain array*, dB	EIRP**, dBm/MHz	Limit, dBm/MHz	Margin***, dB	Verdict
Low carrier frequency							
5298.080	-58.84	17.0	3.0	-38.84	-27.0	-11.84	Pass
5719.810	-19.71	17.0	3.0	0.29	15.5	-15.26	Pass
5724.500	-11.91	17.0	3.0	8.09	25.9	-17.77	Pass
Mid carrier frequency							
5226.600	-56.12	17.0	3.0	-36.12	-27.0	-9.12	Pass
High carrier frequency							
5337.420	-56.20	17.0	3.0	-36.20	-27.0	-9.20	Pass
5850.500	-18.01	17.0	3.0	1.99	25.9	-23.87	Pass
5856.500	-19.57	17.0	3.0	0.43	15.2	-14.75	Pass

CHANNEL BANDWIDTH: 15 MHz

Frequency, MHz	SA reading, dBm	Antenna gain, dBi	Antenna gain array*, dB	EIRP**, dBm/MHz	Limit, dBm/MHz	Margin***, dB	Verdict
Low carrier frequency							
5220.360	-59.79	17.0	3.0	-39.79	-27.0	-12.79	Pass
5719.550	-16.96	17.0	3.0	3.04	15.5	-12.43	Pass
5724.996	-1.99	17.0	3.0	18.01	27.0	-8.98	Pass
Mid carrier frequency							
5384.940	-58.75	17.0	3.0	-38.75	-27.0	-11.75	Pass
High carrier frequency							
5850.049	-2.89	17.0	3.0	17.11	26.9	-9.78	Pass
5855.680	-21.09	17.0	3.0	-1.09	15.4	-16.50	Pass



Test specification:		FCC section 15.407(b), RSS-247 section 6.2.4.2, Conducted out of band emissions	
Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Verdict: PASS	
Date(s):			
11-Feb-19			
Temperature: 26 °C	Relative Humidity: 45 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Table 7.9.5 Conducted spurious emission outside restricted band test results

ASSIGNED FREQUENCY RANGE: 5.725 – 5.850 GHz
 INVESTIGATED FREQUENCY RANGE: 4500 - 6400 MHz
 MODULATION: QPSK
 DETECTOR USED: Peak
 RESOLUTION BANDWIDTH: 1000 kHz
 EUT CONFIGURATION: 1 carrier, 1 sector (4 ports to 2 dual slant antennas), non-coherent signal
 CHANNEL BANDWIDTH: 20 MHz

Frequency, MHz	SA reading, dBm	Antenna gain, dBi	Antenna gain array*, dB	EIRP**, dBm/MHz	Limit, dBm/MHz	Margin***, dB	Verdict
Low carrier frequency							
5276.010	-59.50	17.0	3.0	-39.50	-27.0	-12.50	Pass
5718.640	-16.56	17.0	3.0	3.44	15.2	-11.78	Pass
5724.986	-4.89	17.0	3.0	15.11	27.0	-11.86	Pass
Mid carrier frequency							
5248.670	-59.66	17.0	3.0	-39.66	-27.0	-12.66	Pass
High carrier frequency							
5850.031	-8.03	17.0	3.0	11.97	26.9	-14.96	Pass
5855.140	-20.19	17.0	3.0	-0.19	15.6	-15.75	Pass

* - Antenna gain array = $10\log(N_{ant})$, where $N_{ant} = 2$ (two cross-polarized antennas)

** - EIRP = SA reading + Antenna gain + Antenna gain array

*** - Margin = EIRP – specified limit.

Reference numbers of test equipment used

HL 3901	HL 4355						
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Full description is given in Appendix A.



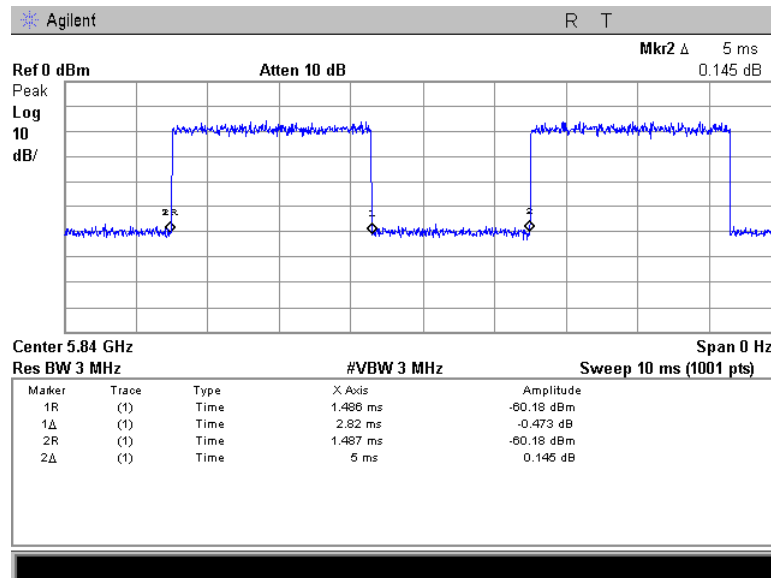
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Report ID: TELRAD_FCC.31830

Date of Issue: 28-May-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.4.2, Conducted out of band emissions	
Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Verdict: PASS	
Date(s):			
11-Feb-19			
Temperature: 26 °C	Relative Humidity: 45 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Plot 7.9.1 Duty cycle





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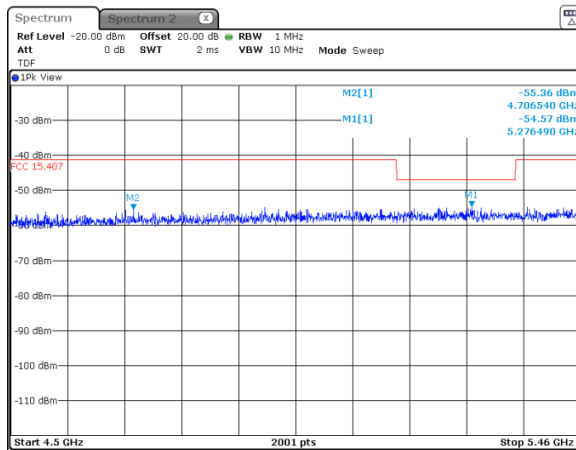
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Date of Issue: 28-May-19

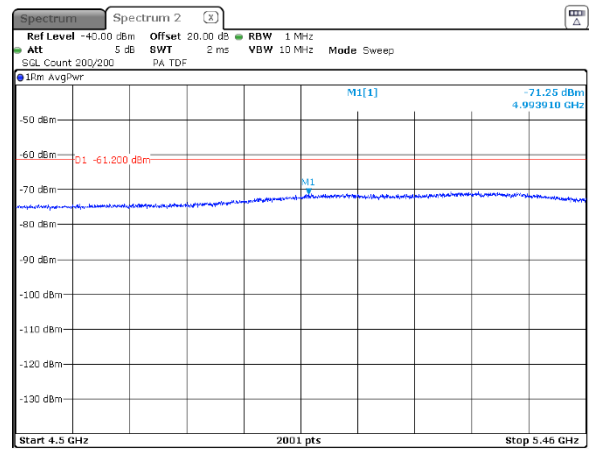
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Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Compliance	Verdict: PASS
Date(s):		11-Feb-19	
Temperature: 26 °C	Relative Humidity: 45 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Plot 7.9.2 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

CARRIER FREQUENCY 5730 MHz
CHANNEL BANDWIDTH 10 MHz



Date: 12.FEB.2019 16:42:29

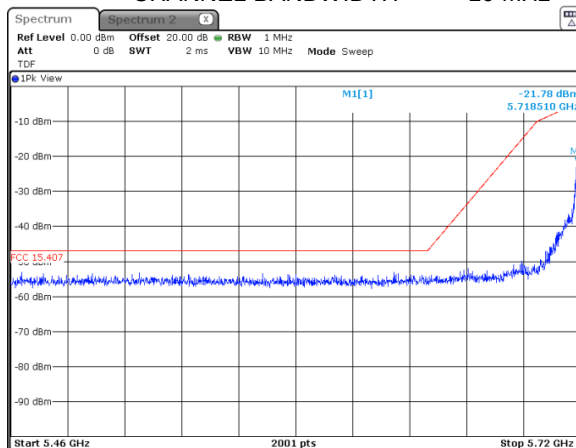


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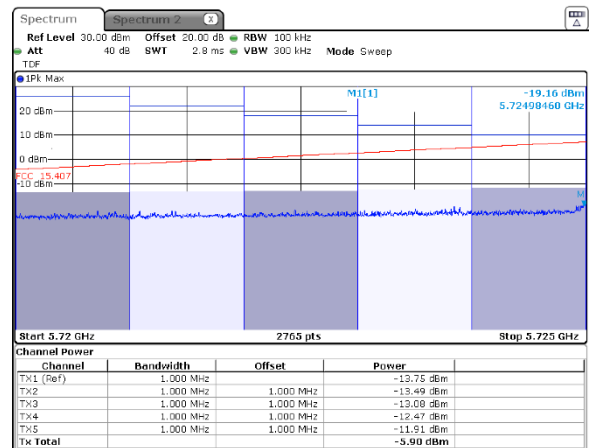
*Applied Limit = Specification limit – Antenna Gain – Antenna Array gain

Plot 7.9.3 Conducted spurious emission measurements in the range 5.46 – 5.725 GHz

CARRIER FREQUENCY 5730 MHz
CHANNEL BANDWIDTH 10 MHz



Date: 12.FEB.2019 16:43:37



Date: 12.FEB.2019 16:45:07



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Report ID: TELRAD_FCC.31830

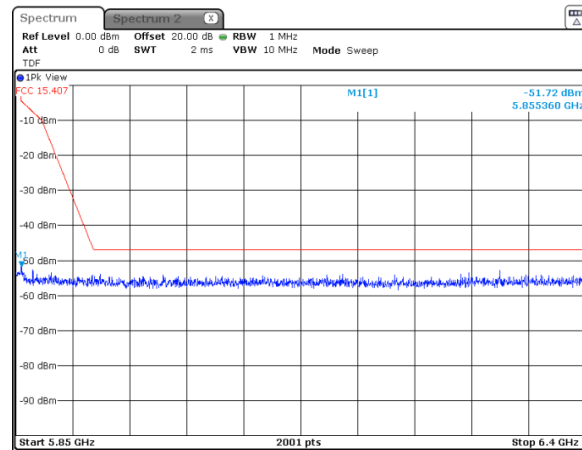
Date of Issue: 28-May-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.4.2, Conducted out of band emissions	
Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Verdict: PASS	
Date(s):			
11-Feb-19			
Temperature: 26 °C	Relative Humidity: 45 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Plot 7.9.4 Conducted spurious emission measurements in the range 5.85 – 6.4 GHz

CARRIER FREQUENCY 5730 MHz

CHANNEL BANDWIDTH 10 MHz





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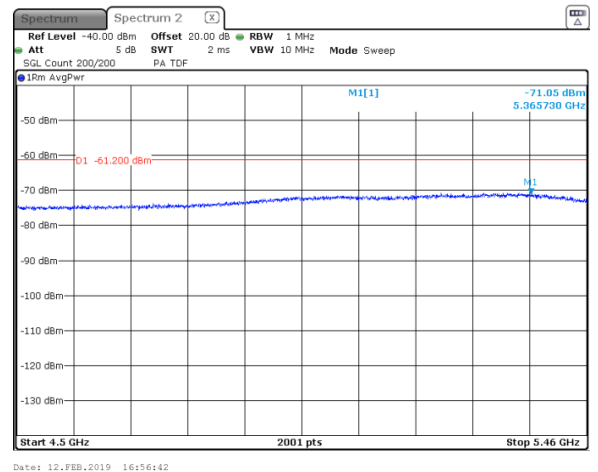
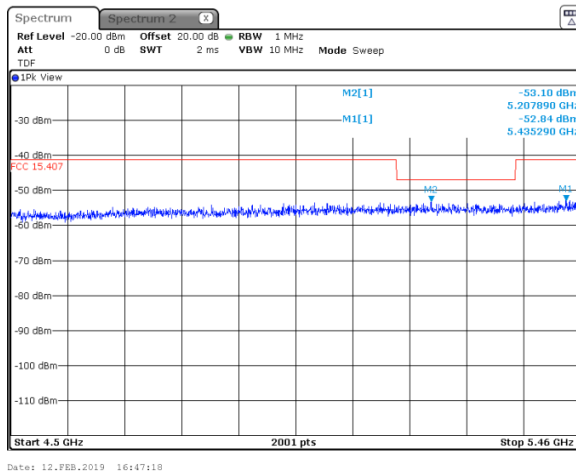
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Date of Issue: 28-May-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.4.2, Conducted out of band emissions	
Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Compliance	Verdict: PASS
Date(s):		11-Feb-19	
Temperature: 26 °C	Relative Humidity: 45 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

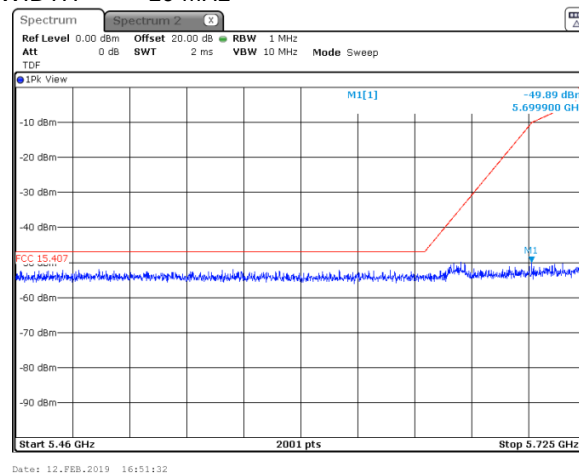
Plot 7.9.5 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

CARRIER FREQUENCY 5788 MHz
CHANNEL BANDWIDTH 10 MHz



Plot 7.9.6 Conducted spurious emission measurements in the range 5.46 – 5.725 GHz

CARRIER FREQUENCY 5788 MHz
CHANNEL BANDWIDTH 10 MHz





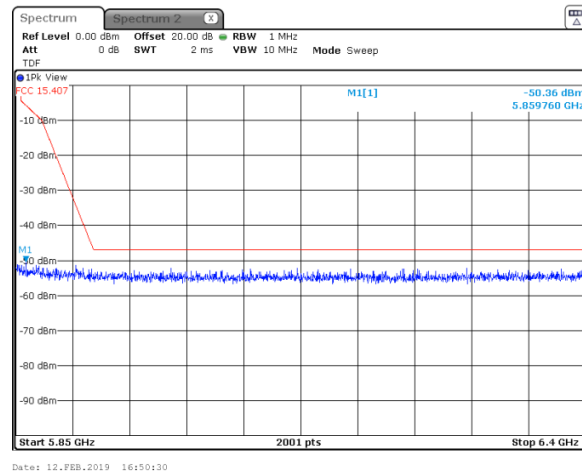
HERMON LABORATORIES

Report ID: TELRAD_FCC.31830
Date of Issue: 28-May-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.4.2, Conducted out of band emissions	
Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Verdict: PASS	
Date(s):			
11-Feb-19			
Temperature: 26 °C	Relative Humidity: 45 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Plot 7.9.7 Conducted spurious emission measurements in the range 5.85 – 6.4 GHz

CARRIER FREQUENCY 5788 MHz
CHANNEL BANDWIDTH 10 MHz





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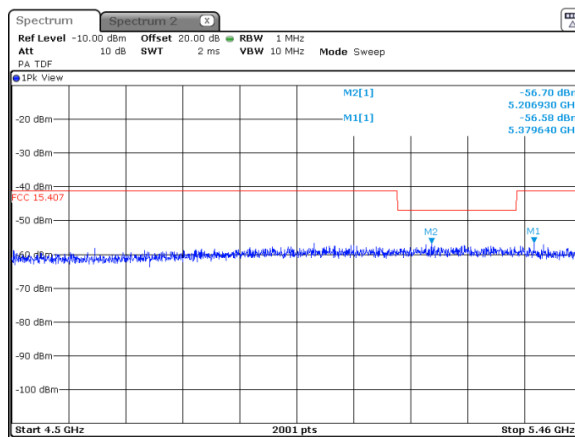
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Date of Issue: 28-May-19

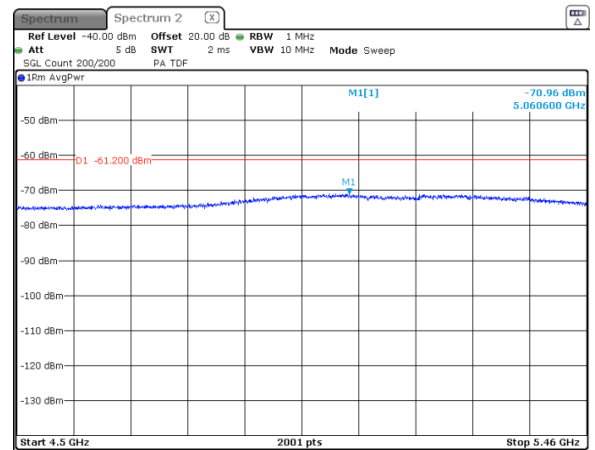
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Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Verdict: PASS	
Date(s):			
11-Feb-19			
Temperature: 26 °C	Relative Humidity: 45 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Plot 7.9.8 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

CARRIER FREQUENCY 5845 MHz
CHANNEL BANDWIDTH 10 MHz



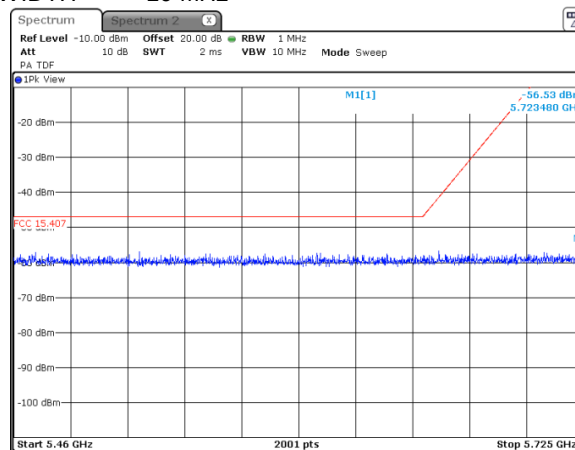
Date: 12.FEB.2019 17:09:04



Date: 12.FEB.2019 17:00:20

Plot 7.9.9 Conducted spurious emission measurements in the range 5.46 – 5.725 GHz

CARRIER FREQUENCY 5845 MHz
CHANNEL BANDWIDTH 10 MHz



Date: 12.FEB.2019 17:08:11



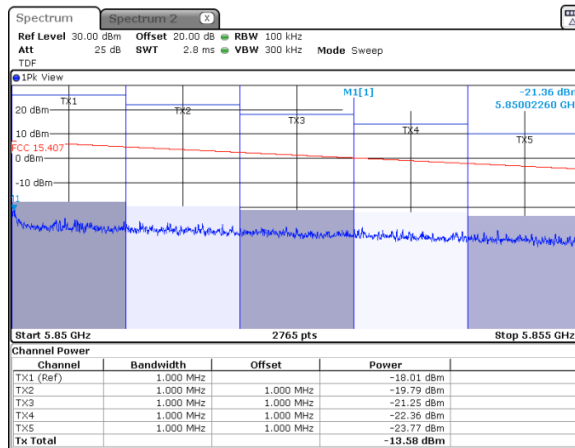
HERMON LABORATORIES

Report ID: TELRAD_FCC.31830
Date of Issue: 28-May-19

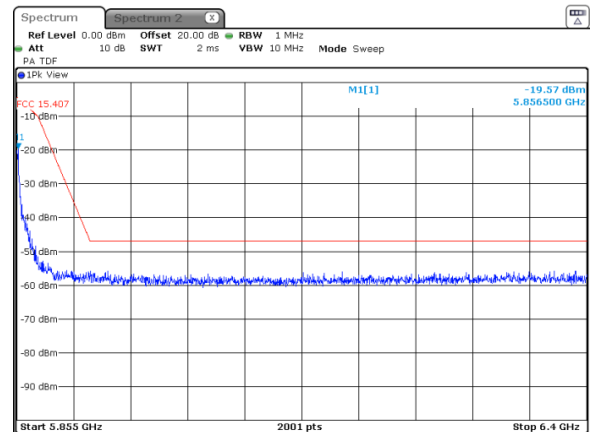
Test specification:		FCC section 15.407(b), RSS-247 section 6.2.4.2, Conducted out of band emissions	
Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Verdict: PASS	
Date(s):			
11-Feb-19			
Temperature: 26 °C	Relative Humidity: 45 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Plot 7.9.10 Conducted spurious emission measurements in the range 5.85 – 6.4 GHz

CARRIER FREQUENCY 5845 MHz
CHANNEL BANDWIDTH 10 MHz



Date: 12.FEB.2019 17:57:40



Date: 12.FEB.2019 17:53:59



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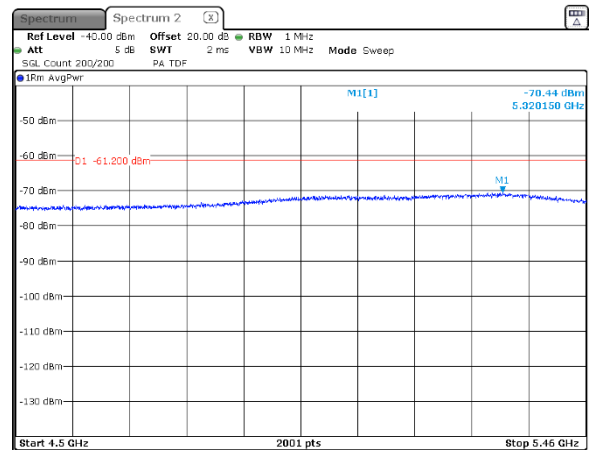
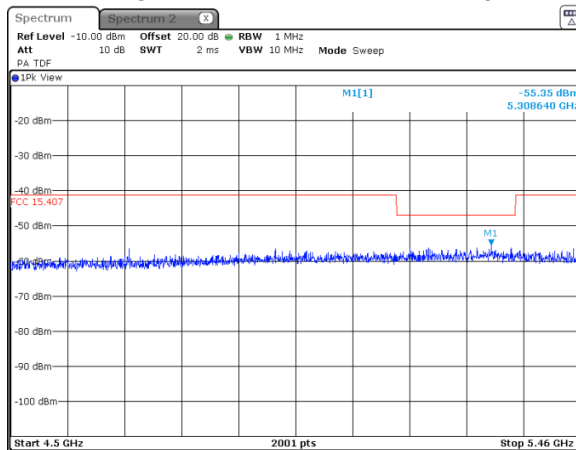
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Date of Issue: 28-May-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.4.2, Conducted out of band emissions	
Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Compliance	Verdict: PASS
Date(s):		11-Feb-19	
Temperature: 26 °C	Relative Humidity: 45 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Plot 7.9.11 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

CARRIER FREQUENCY 5732.5 MHz
CHANNEL BANDWIDTH 15 MHz



Plot 7.9.12 Conducted spurious emission measurements in the range 5.46 – 5.725 GHz

CARRIER FREQUENCY 5732.5 MHz
CHANNEL BANDWIDTH 15 MHz

