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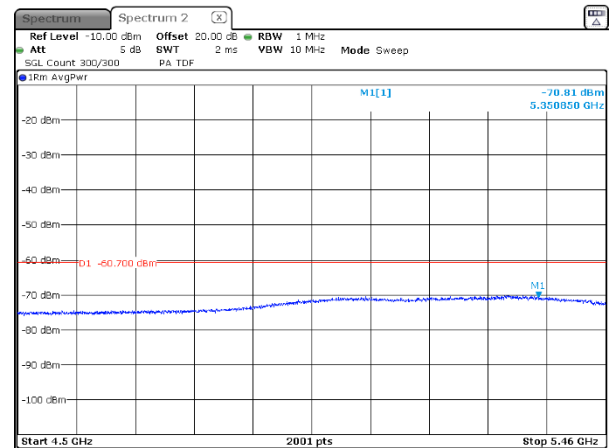
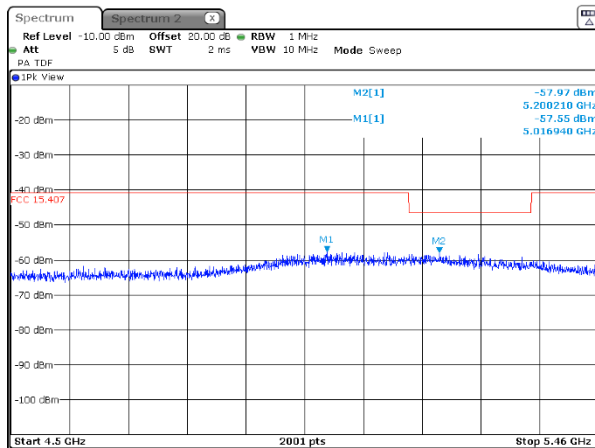
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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:			

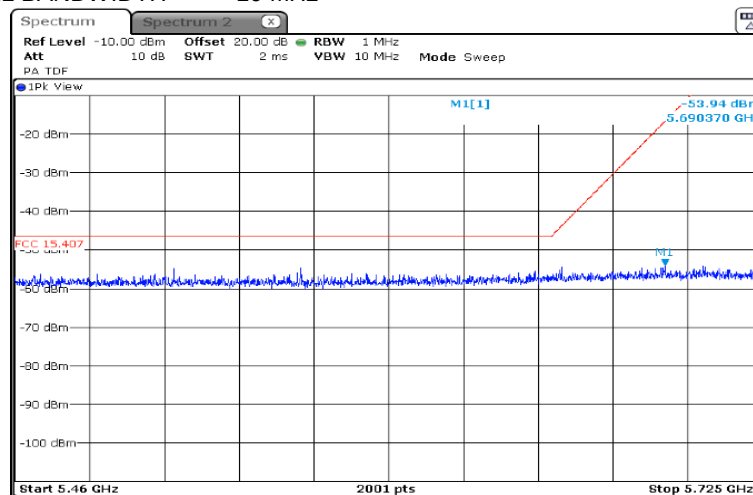
Plot 7.9.8 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

CARRIER FREQUENCY 5845 MHz
CHANNEL BANDWIDTH 10 MHz



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

CARRIER FREQUENCY 5845 MHz
CHANNEL BANDWIDTH 10 MHz





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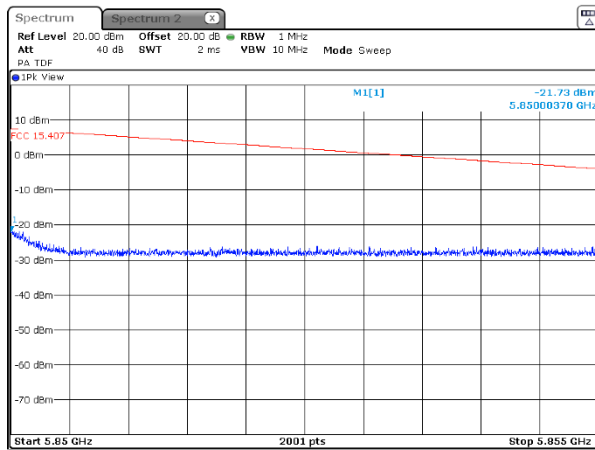
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Date of Issue: 25-Jun-19

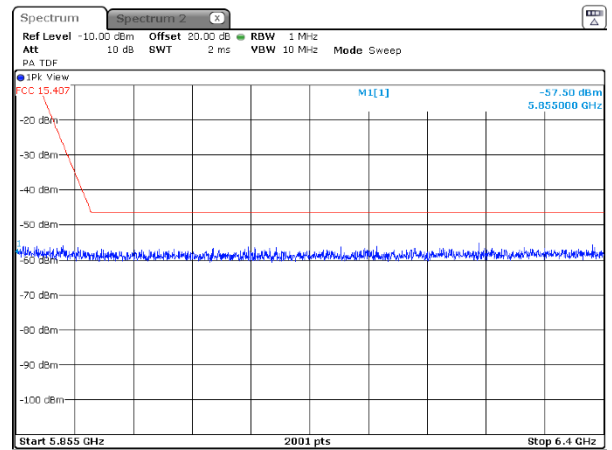
Test specification:		FCC section 15.407(b), RSS-247 section 6.2.4.2, Conducted out of band emissions	
Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Verdict: PASS	
Date(s):			
11-Feb-19			
Temperature: 26 °C	Relative Humidity: 45 %	Air Pressure: 1020 hPa	Power: 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: 11-Feb-2019 16:33:52



Date: 11-Feb-2019 16:34:59



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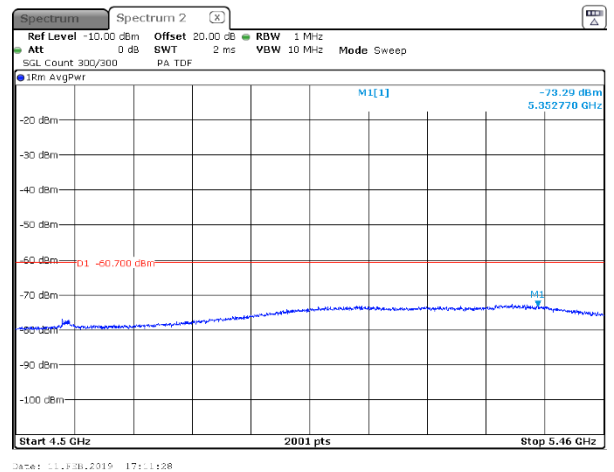
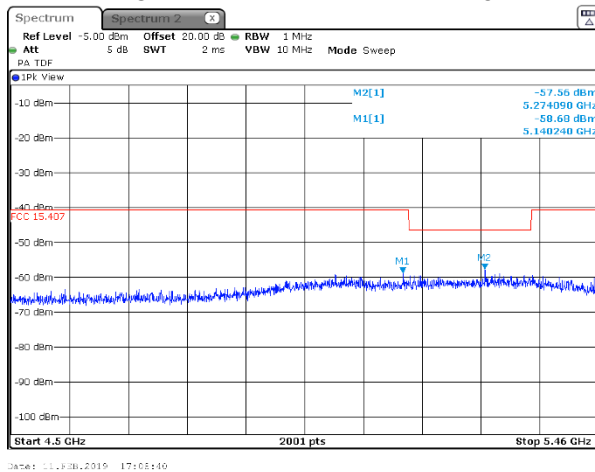
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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):			
Temperature: 26 °C		Relative Humidity: 45 %	Air Pressure: 1020 hPa
		Power: 48 VDC	
Remarks:			

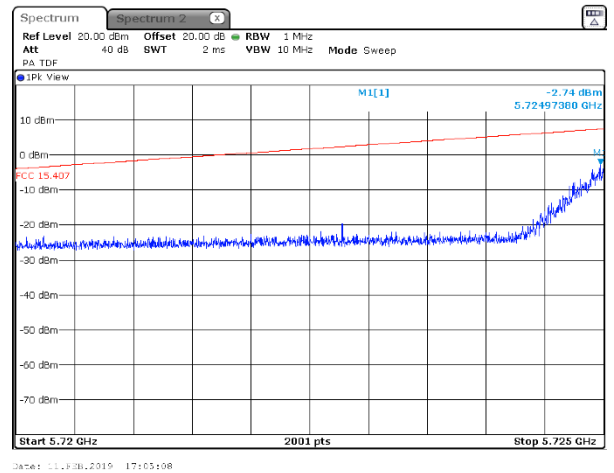
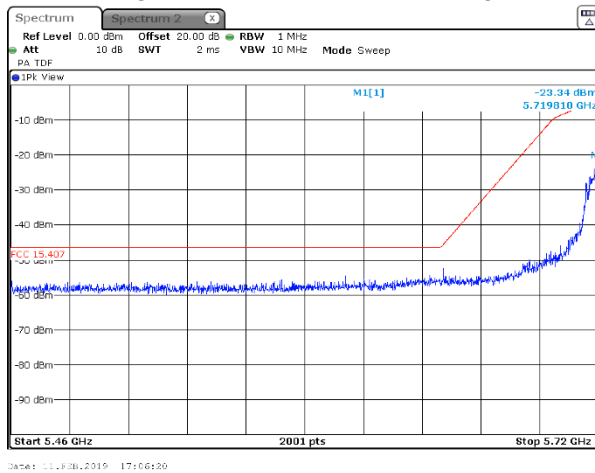
Plot 7.9.11 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

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





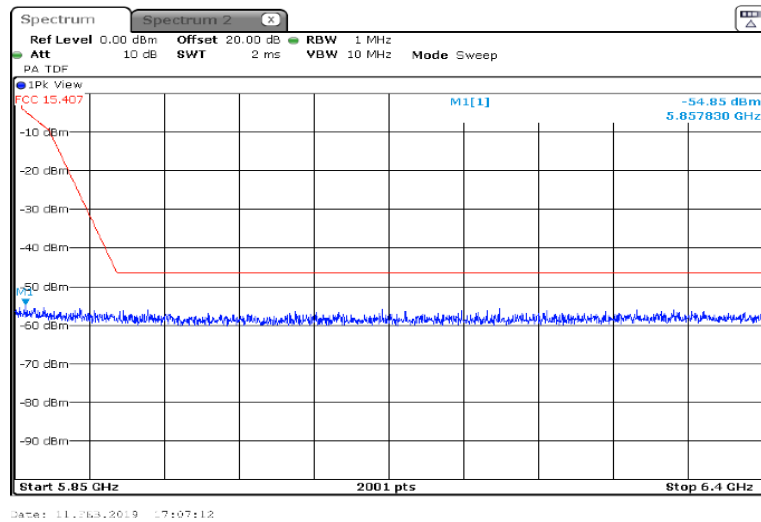
HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2
Date of Issue: 25-Jun-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 7.9.13 Conducted spurious emission measurements in the range 5.85 – 6.4 GHz

CARRIER FREQUENCY 5732.5 MHz
CHANNEL BANDWIDTH 15 MHz





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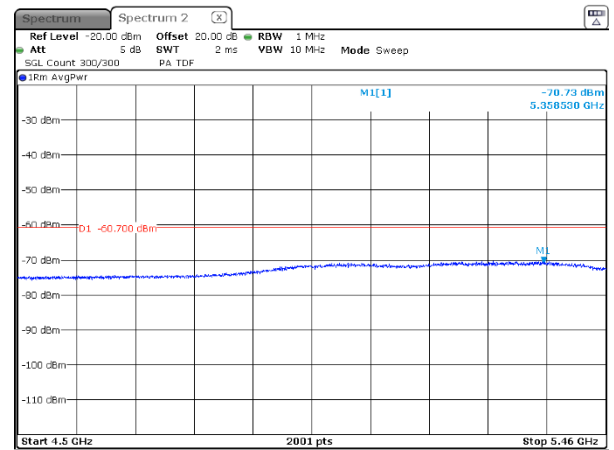
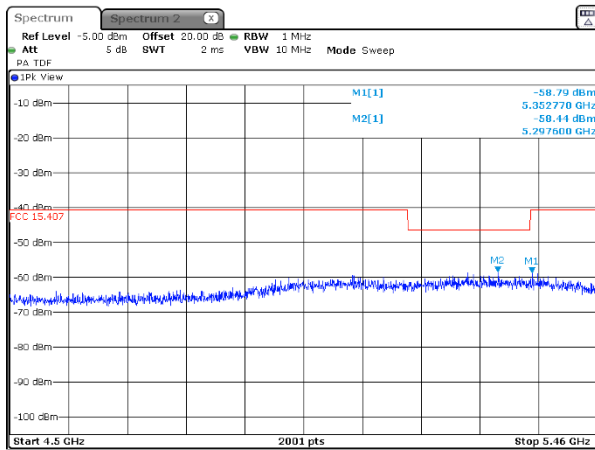
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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:			

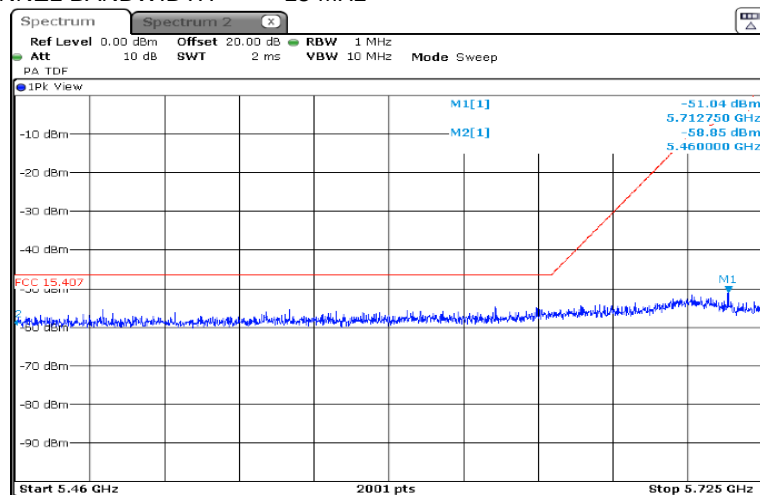
Plot 7.9.14 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

CARRIER FREQUENCY 5788 MHz
CHANNEL BANDWIDTH 15 MHz



Plot 7.9.15 Conducted spurious emission measurements in the range 5.46 – 5.725 GHz

CARRIER FREQUENCY 5788 MHz
CHANNEL BANDWIDTH 15 MHz





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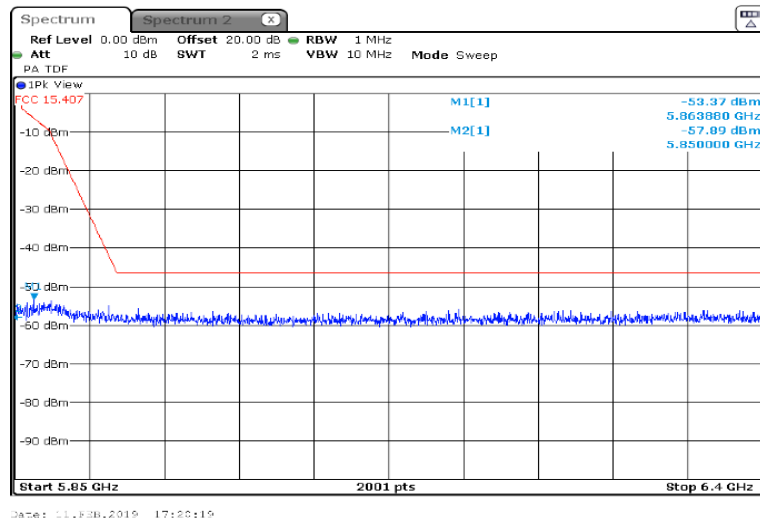
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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 7.9.16 Conducted spurious emission measurements in the range 5.85 – 6.4 GHz

CARRIER FREQUENCY 5788 MHz
CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

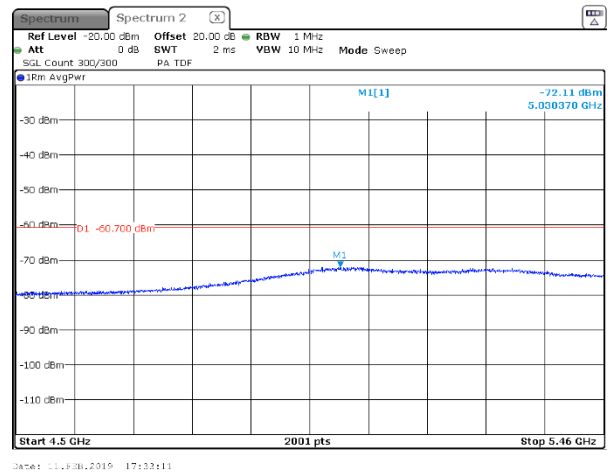
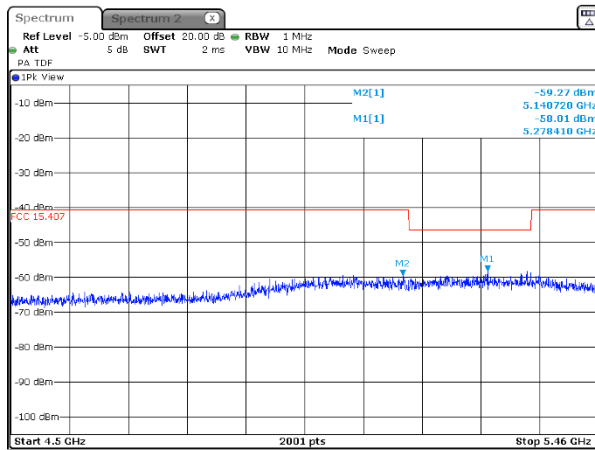
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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:			

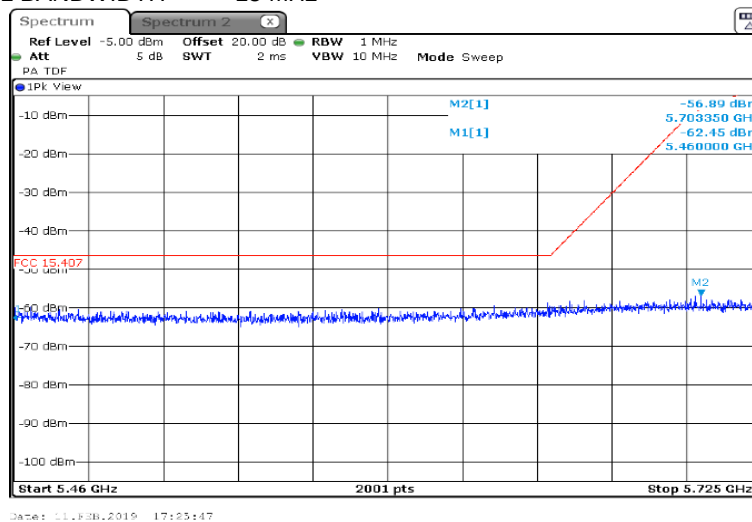
Plot 7.9.17 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

CARRIER FREQUENCY 5842.5 MHz
CHANNEL BANDWIDTH 15 MHz



Plot 7.9.18 Conducted spurious emission measurements in the range 5.46 – 5.725 GHz

CARRIER FREQUENCY 5842.5 MHz
CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

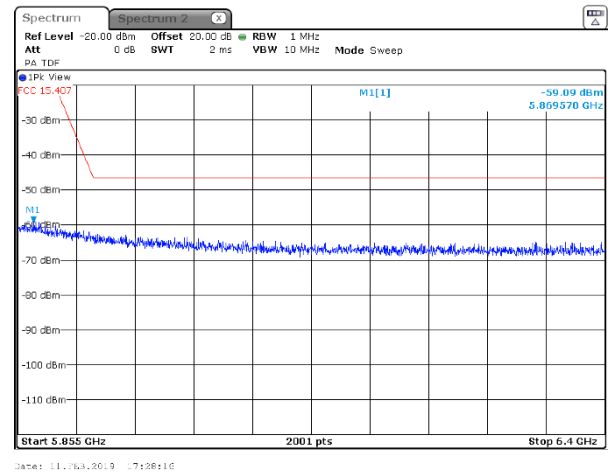
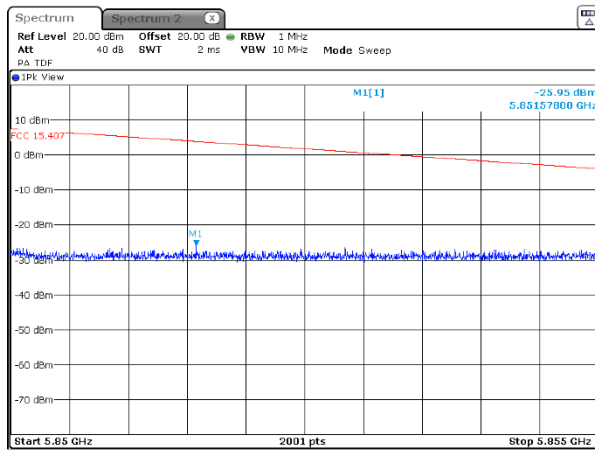
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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 7.9.19 Conducted spurious emission measurements in the range 5.85 – 6.4 GHz

CARRIER FREQUENCY 5842.5 MHz
CHANNEL BANDWIDTH 15 MHz





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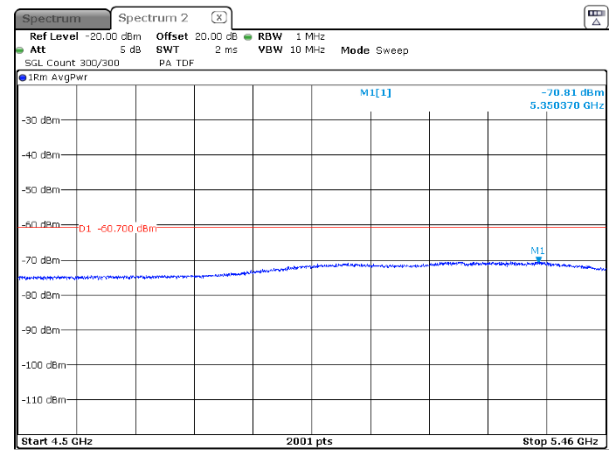
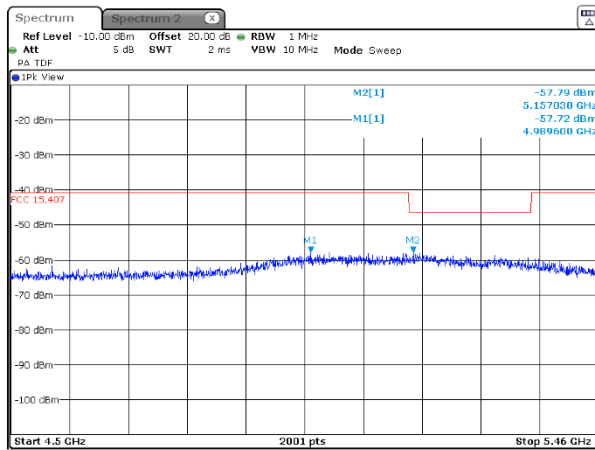
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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:			

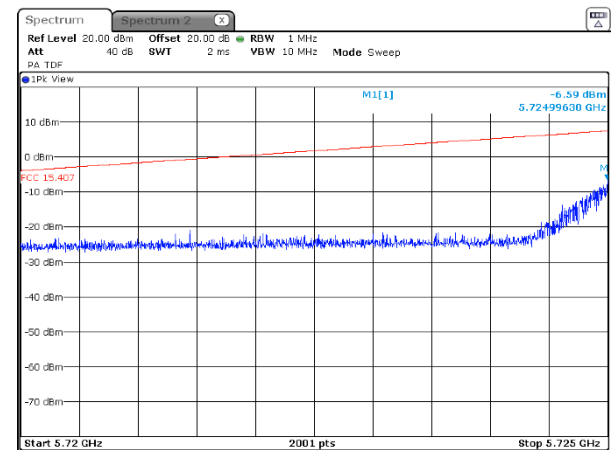
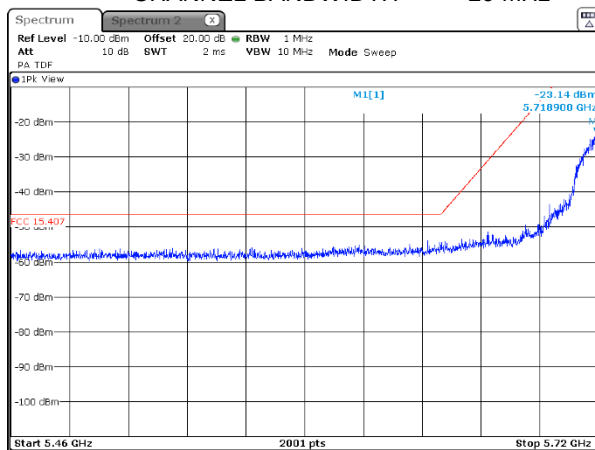
Plot 7.9.20 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

CARRIER FREQUENCY 5735 MHz
CHANNEL BANDWIDTH 20 MHz



Plot 7.9.21 Conducted spurious emission measurements in the range 5.46 – 5.725 GHz

CARRIER FREQUENCY 5735 MHz
CHANNEL BANDWIDTH 20 MHz





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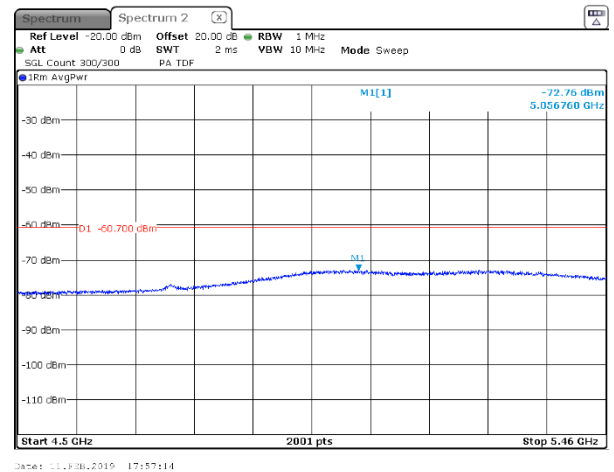
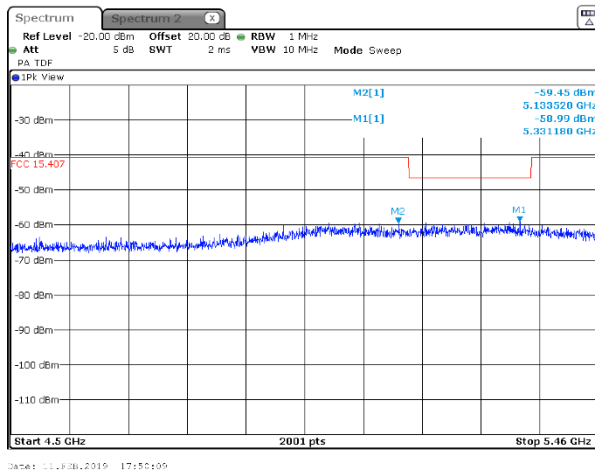
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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:			

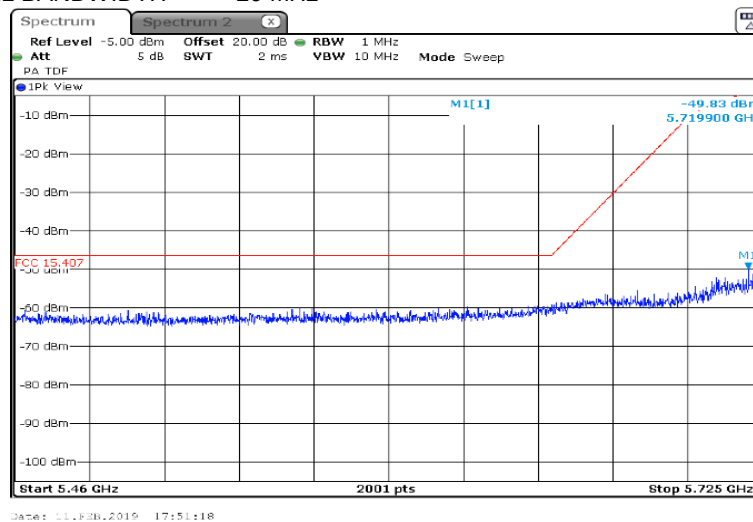
Plot 7.9.23 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

CARRIER FREQUENCY 5788 MHz
CHANNEL BANDWIDTH 20 MHz



Plot 7.9.24 Conducted spurious emission measurements in the range 5.46 – 5.725 GHz

CARRIER FREQUENCY 5788 MHz
CHANNEL BANDWIDTH 20 MHz





HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2

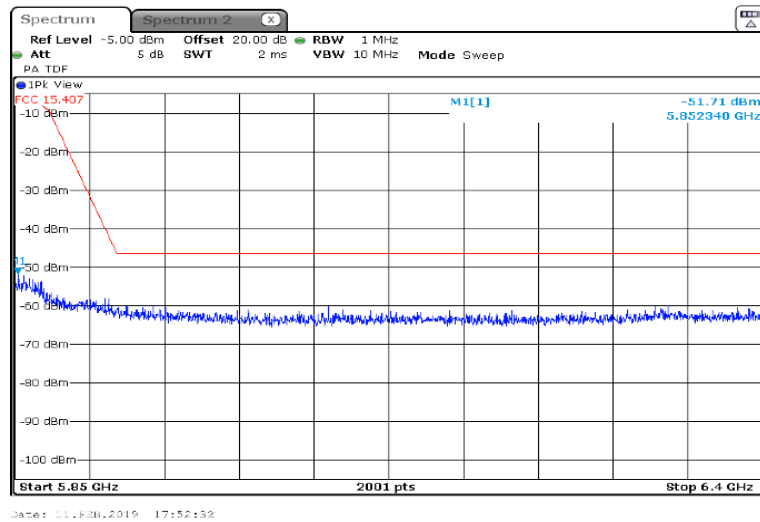
Date of Issue: 25-Jun-19

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 7.9.25 Conducted spurious emission measurements in the range 5.85 – 6.4 GHz

CARRIER FREQUENCY 5788 MHz

CHANNEL BANDWIDTH 20 MHz





HERMON LABORATORIES

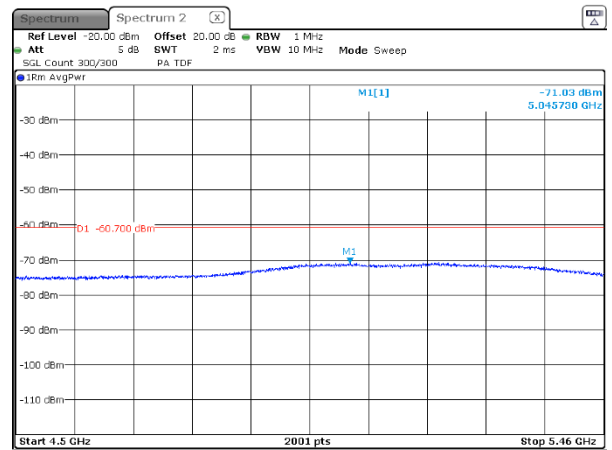
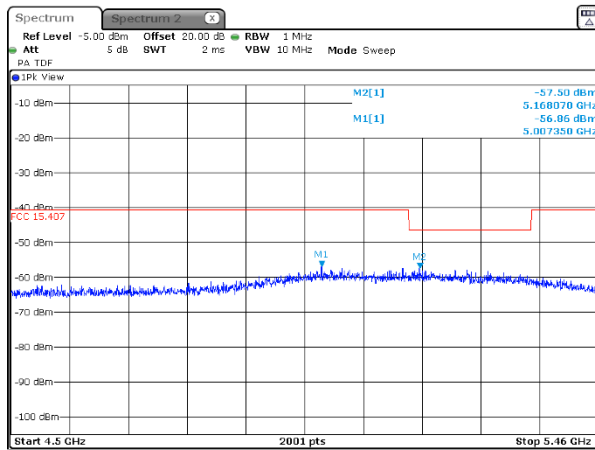
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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:			

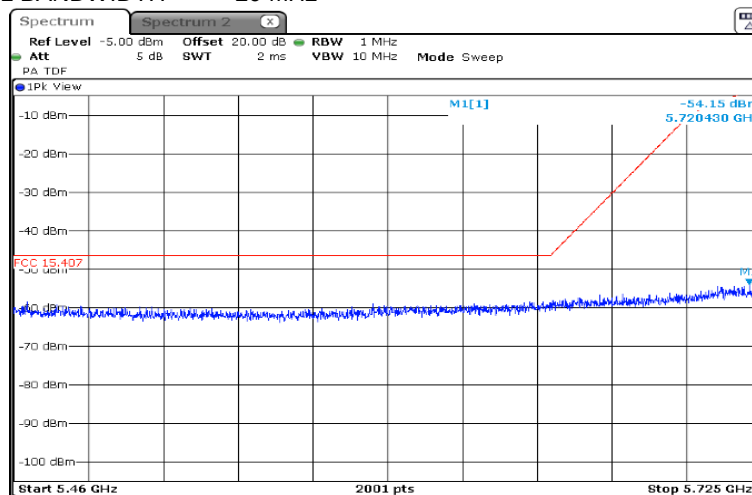
Plot 7.9.26 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

CARRIER FREQUENCY 5840 MHz
CHANNEL BANDWIDTH 20 MHz



Plot 7.9.27 Conducted spurious emission measurements in the range 5.46 – 5.725 GHz

CARRIER FREQUENCY 5840 MHz
CHANNEL BANDWIDTH 20 MHz





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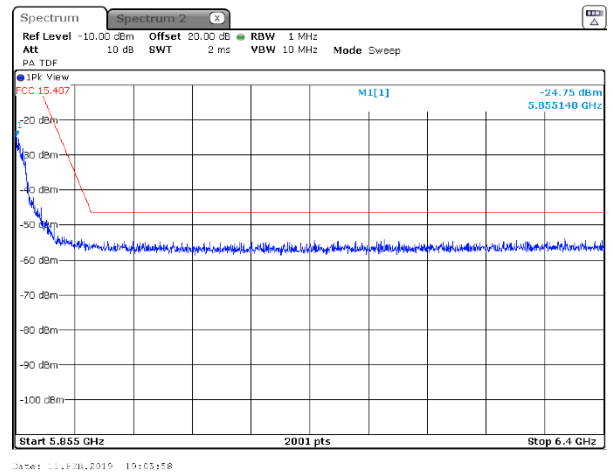
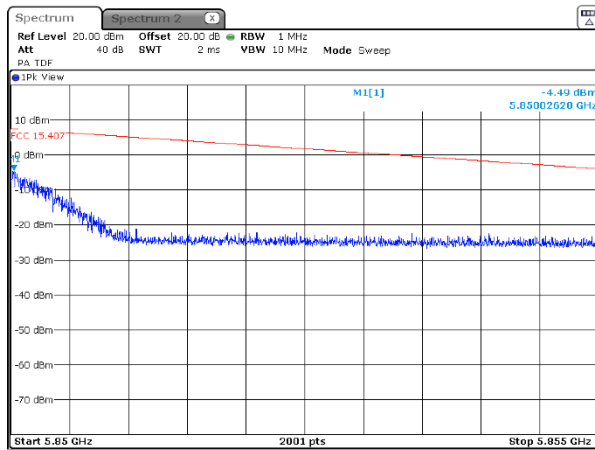
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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 7.9.28 Conducted spurious emission measurements in the range 5.85 – 6.4 GHz

CARRIER FREQUENCY 5840 MHz
CHANNEL BANDWIDTH 20 MHz





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:			

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

7.10.1 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 7.10.1 & EIRP of undesirable emission limits are given in Table 7.10.2

Table 7.10.1 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

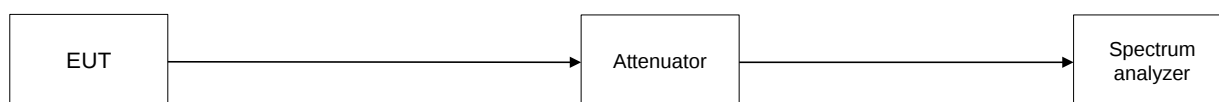
Table 7.10.2 EIRP of undesirable emission limits outside restricted bands above 1 GHz

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)

7.10.2 Test procedure

- 7.10.2.1** The EUT was set up as shown in Figure 7.10.1, energized and the performance check was conducted.
- 7.10.2.2** The EUT was adjusted to produce maximum available to end user RF output power at the lowest carrier frequency.
- 7.10.2.3** The spectrum analyzer span was set to capture the carrier frequency and associated modulation products. The resolution bandwidth was set to 1 MHz.
- 7.10.2.4** The spectrum analyzer was set in max hold mode and allowed trace to stabilize. The highest emission level within the authorized band was measured.
- 7.10.2.5** The maximum band edge emission and modulation product outside of the band were measured as provided in the associated tables and plots.
- 7.10.2.6** The above procedure was repeated with the EUT adjusted to produce maximum RF output power at the mid and highest carrier frequencies.
- 7.10.2.7** Test results are shown in the Table 7.10.3, Table 7.10.4, Table 7.10.5 and the associated plots.

Figure 7.10.1 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 7.10.3 Conducted spurious emission within restricted band test results

ASSIGNED FREQUENCY: 5.725 – 5.850 GHz
 INVESTIGATED FREQUENCY RANGE: 4500 - 6400 MHz
 MODULATION: QPSK
 DETECTOR USED: Peak/Average
 RESOLUTION BANDWIDTH: 1000 kHz
 EUT CONFIGURATION: 1 carrier, 1 sector (4 ports to 2 dual slant antennas), coherent signal
 CHANNEL BANWIDTH: 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											
5063.000	16.5	6.0	-59.15	-36.65	-21.2	-15.45	-71.66	-46.67	-41.2	-5.47	Pass
Mid carrier frequency											
5048.130	16.5	6.0	-58.67	-36.17	-21.2	-14.97	-70.71	-45.72	-41.2	-4.52	Pass
High carrier frequency											
5350.850	16.5	6.0	-58.62	-36.12	-21.2	-14.92	-70.81	-45.82	-41.2	-4.62	Pass

CHANNEL BANWIDTH: 15 MHz

			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											
5352.770	16.5	6.0	-58.73	-36.23	-21.2	-15.03	-73.29	-48.30	-41.2	-7.10	Pass
Mid carrier frequency											
5358.530	16.5	6.0	-58.79	-36.29	-21.2	-15.09	-70.73	-45.74	-41.2	-4.54	Pass
High carrier frequency											
5030.370	16.5	6.0	-58.56	-36.06	-21.2	-14.86	-72.11	-47.12	-41.2	-5.92	Pass

CHANNEL BANWIDTH: 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											
5350.370	16.5	6.0	-58.45	-35.95	-21.2	-14.75	-70.81	-45.82	-41.2	-4.62	Pass
Mid carrier frequency											
5056.760	16.5	6.0	-59.16	-36.66	-21.2	-15.46	-72.76	-47.77	-41.2	-6.57	Pass
High carrier frequency											
5045.730	16.5	6.0	-56.84	-34.34	-21.2	-13.14	-71.03	-46.04	-41.2	-4.84	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 7.10.4 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 7.10.5 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), 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							
5244.350	-57.87	16.5	6.0	-35.37	-27.0	-8.37	Pass
5719.680	-23.06	16.5	6.0	-0.56	15.5	-16.07	Pass
5724.996	2.44	16.5	6.0	24.94	27.0	-2.05	Pass
Mid carrier frequency							
5295.680	-59.27	16.5	6.0	-36.77	-27.0	-9.77	Pass
High carrier frequency							
5157.030	-57.47	16.5	6.0	-34.97	-27.0	-7.97	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							
5274.090	-57.56	16.5	6.0	-35.06	-27.0	-8.06	Pass
5718.510	-22.36	16.5	6.0	0.14	15.2	-15.04	Pass
5724.974	-2.74	16.5	6.0	19.76	26.9	-7.18	Pass
Mid carrier frequency							
5297.600	-58.44	16.5	6.0	-35.94	-27.0	-8.94	Pass
High carrier frequency							
5278.410	-58.01	16.5	6.0	-35.51	-27.0	-8.51	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 7.10.5 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), 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							
5262.100	-58.33	16.5	6.0	-35.83	-27.0	-8.83	Pass
5719.550	-23.04	16.5	6.0	-0.54	15.5	-16.01	Pass
5724.981	-6.48	16.5	6.0	16.02	27.0	-10.94	Pass
Mid carrier frequency							
5310.550	-58.55	16.5	6.0	-36.05	-27.0	-9.05	Pass
High carrier frequency							
5168.070	-57.50	16.5	6.0	-35.00	-27.0	-8.00	Pass
5850.049	-3.85	16.5	6.0	18.65	26.9	-8.24	Pass
5855.140	-24.75	16.5	6.0	-2.25	15.6	-17.81	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.



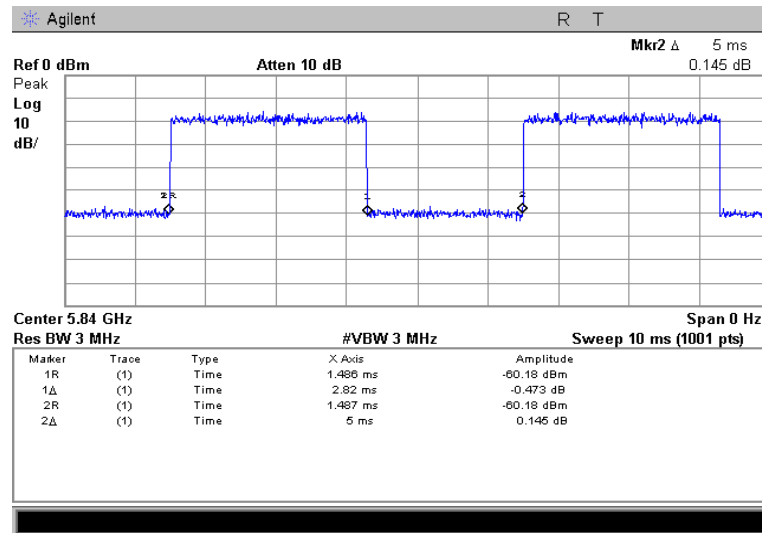
HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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 7.10.1 Duty cycle





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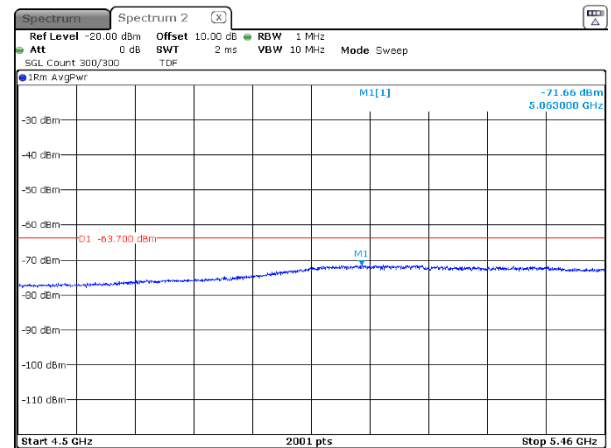
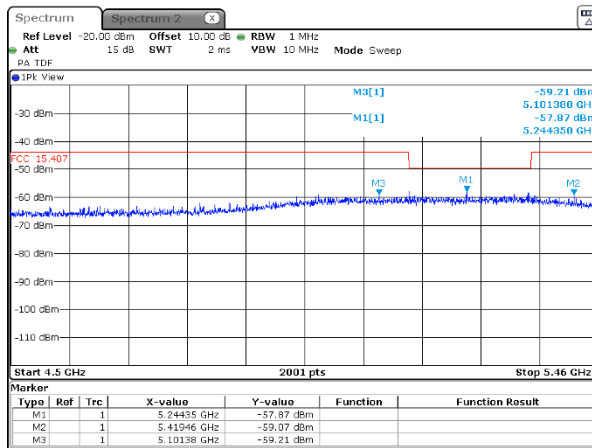
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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 7.10.2 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

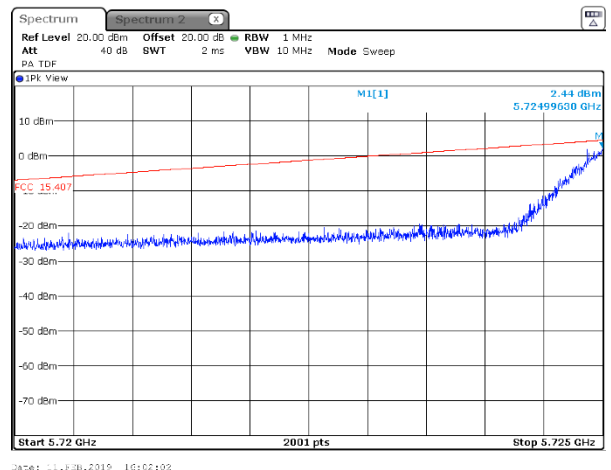
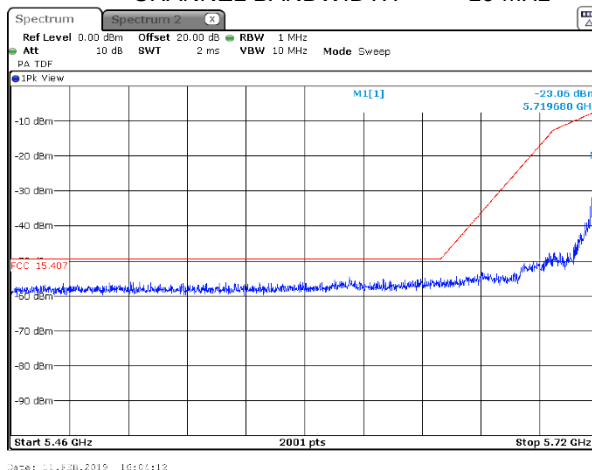
CARRIER FREQUENCY 5730 MHz
CHANNEL BANDWIDTH 10 MHz



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

Plot 7.10.3 Conducted spurious emission measurements in the range 5.46 – 5.725 GHz

CARRIER FREQUENCY 5730 MHz
CHANNEL BANDWIDTH 10 MHz





HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2

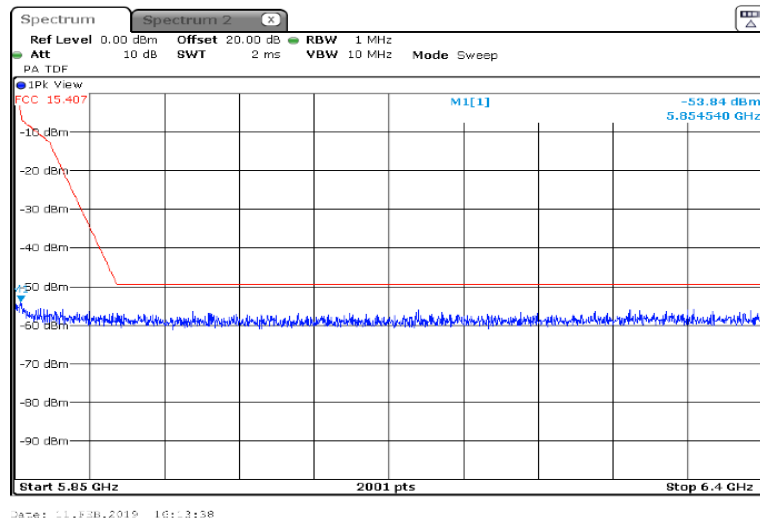
Date of Issue: 25-Jun-19

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 7.10.4 Conducted spurious emission measurements in the range 5.85 – 6.4 GHz

CARRIER FREQUENCY 5730 MHz

CHANNEL BANDWIDTH 10 MHz





HERMON LABORATORIES

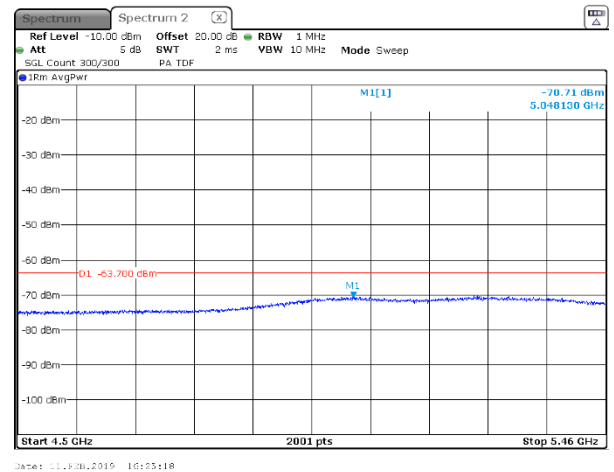
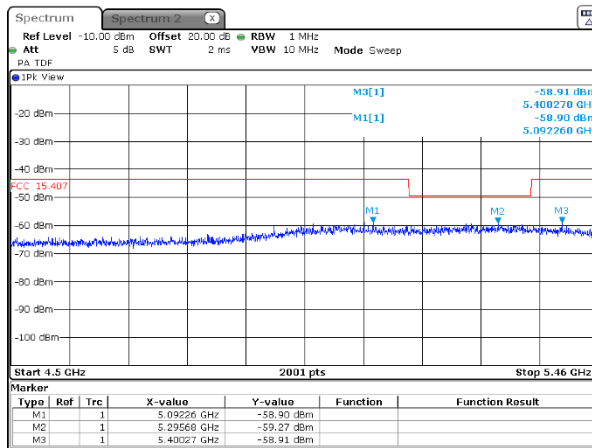
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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:			

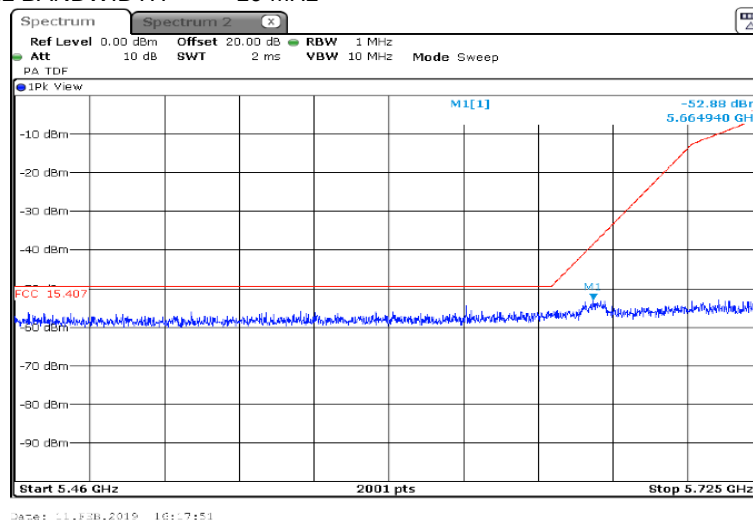
Plot 7.10.5 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

CARRIER FREQUENCY 5788 MHz
CHANNEL BANDWIDTH 10 MHz



Plot 7.10.6 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_31832_rev2

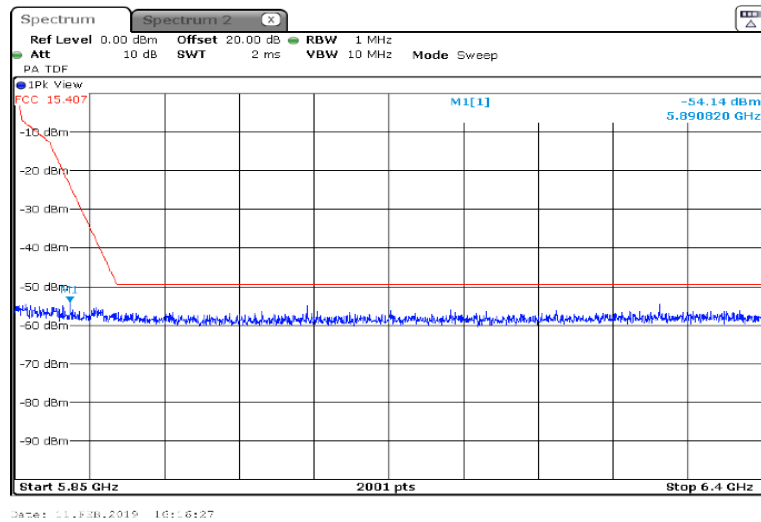
Date of Issue: 25-Jun-19

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 7.10.7 Conducted spurious emission measurements in the range 5.85 – 6.4 GHz

CARRIER FREQUENCY 5788 MHz

CHANNEL BANDWIDTH 10 MHz





HERMON LABORATORIES

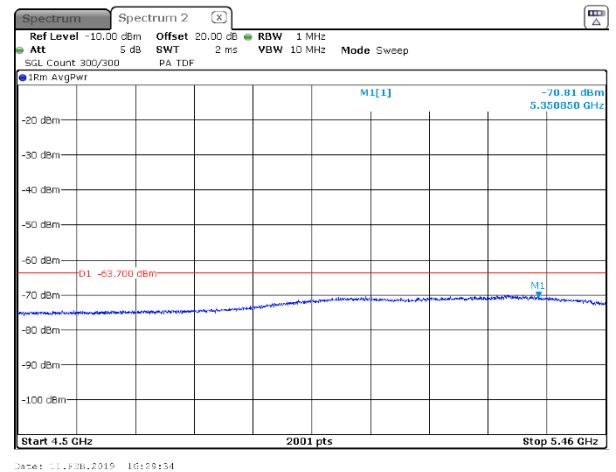
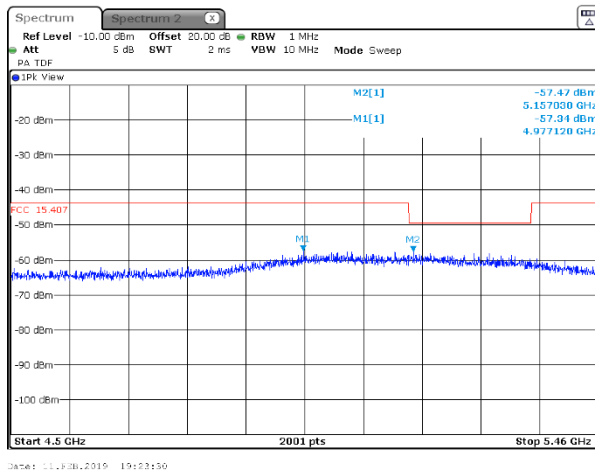
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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:			

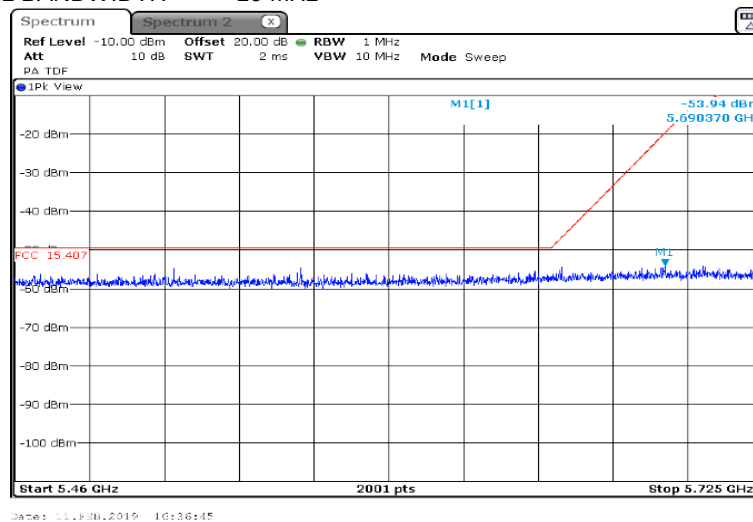
Plot 7.10.8 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

CARRIER FREQUENCY 5845 MHz
CHANNEL BANDWIDTH 10 MHz



Plot 7.10.9 Conducted spurious emission measurements in the range 5.46 – 5.725 GHz

CARRIER FREQUENCY 5845 MHz
CHANNEL BANDWIDTH 10 MHz





HERMON LABORATORIES

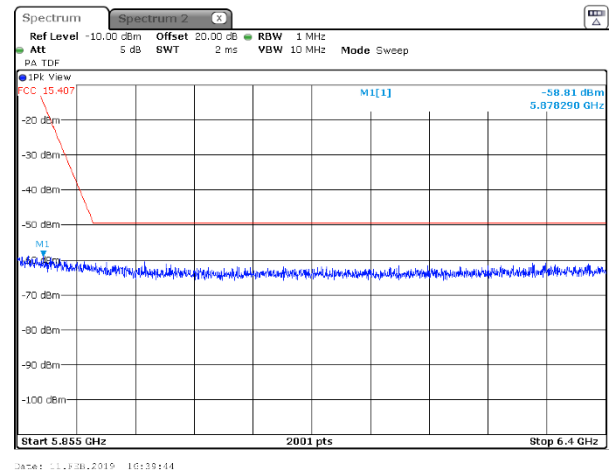
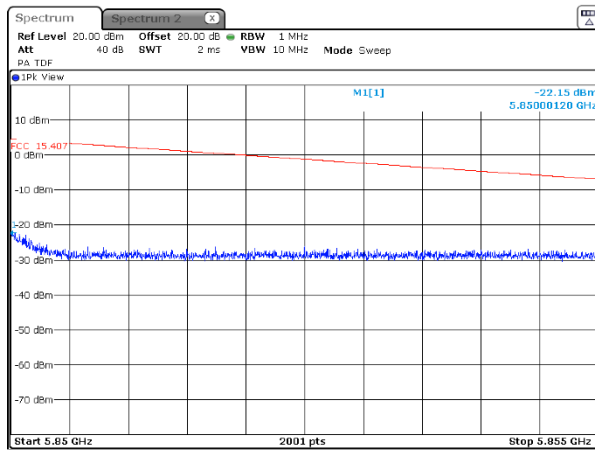
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Date of Issue: 25-Jun-19

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 7.10.10 Conducted spurious emission measurements in the range 5.85 – 6.4 GHz

CARRIER FREQUENCY 5845 MHz
CHANNEL BANDWIDTH 10 MHz





HERMON LABORATORIES

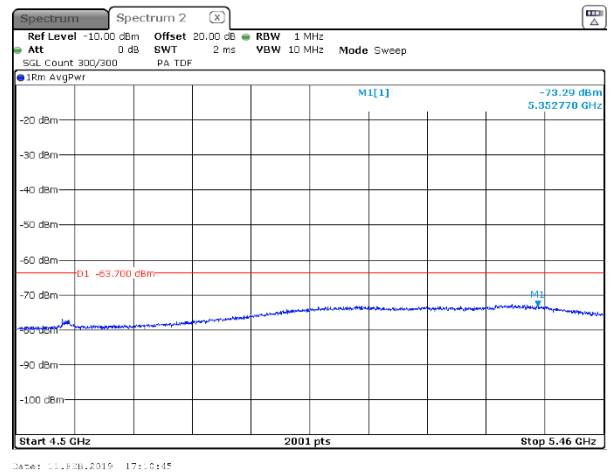
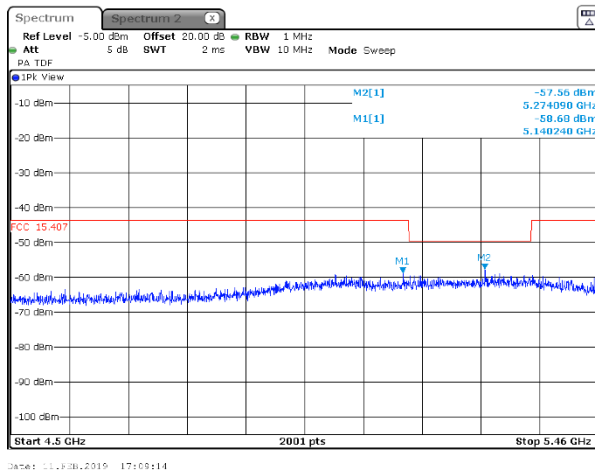
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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:			

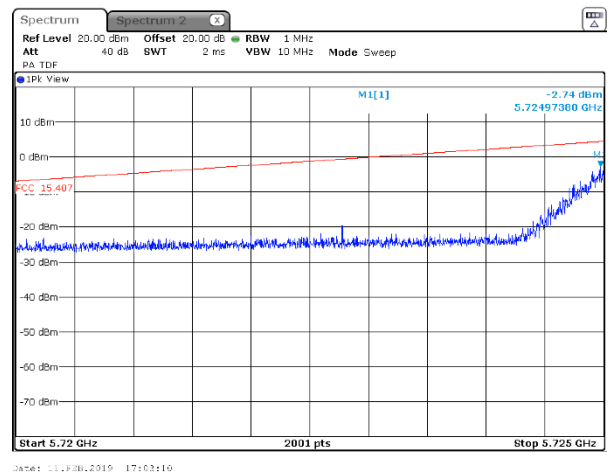
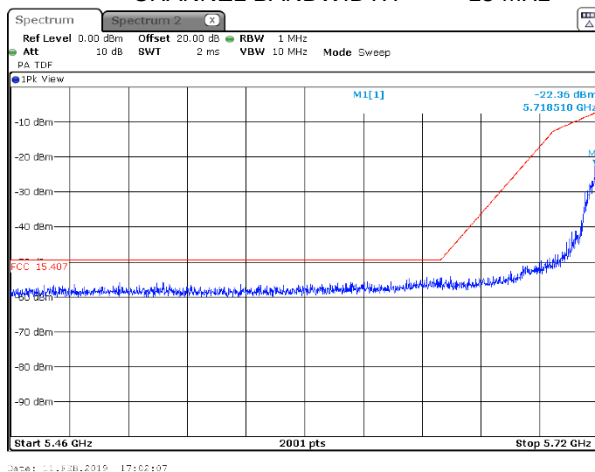
Plot 7.10.11 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

CARRIER FREQUENCY 5732.5 MHz
CHANNEL BANDWIDTH 15 MHz



Plot 7.10.12 Conducted spurious emission measurements in the range 5.46 – 5.725 GHz

CARRIER FREQUENCY 5732.5 MHz
CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2

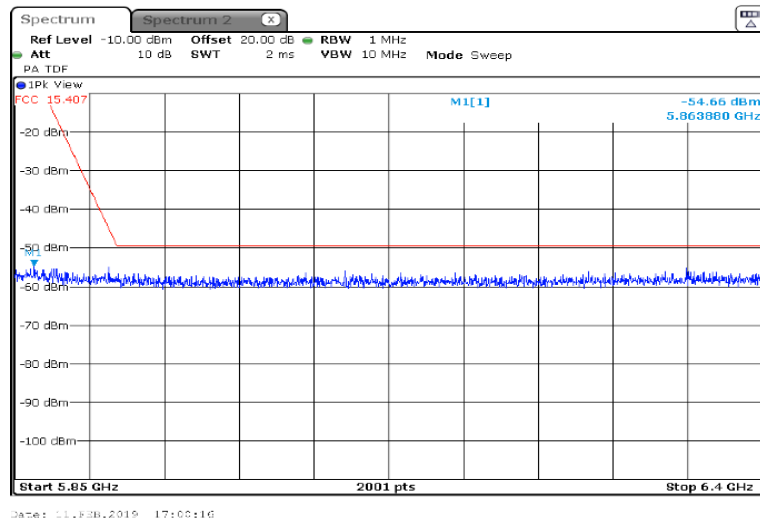
Date of Issue: 25-Jun-19

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 7.10.13 Conducted spurious emission measurements in the range 5.85 – 6.4 GHz

CARRIER FREQUENCY 5732.5 MHz

CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

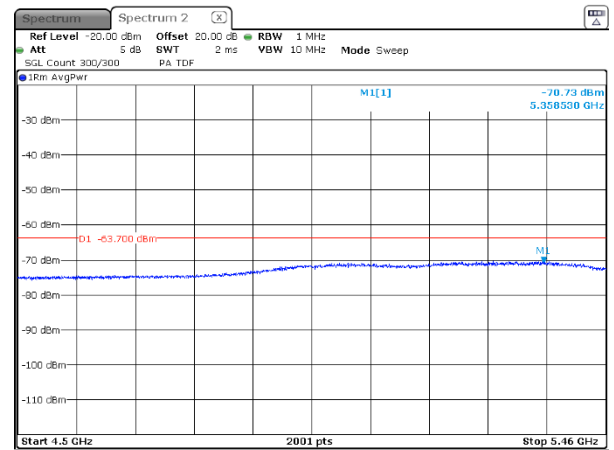
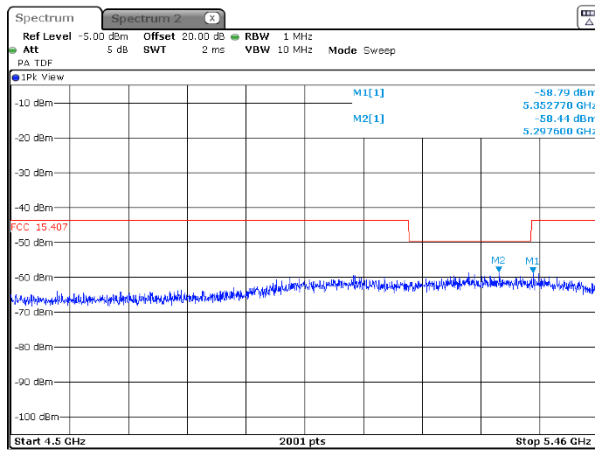
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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:			

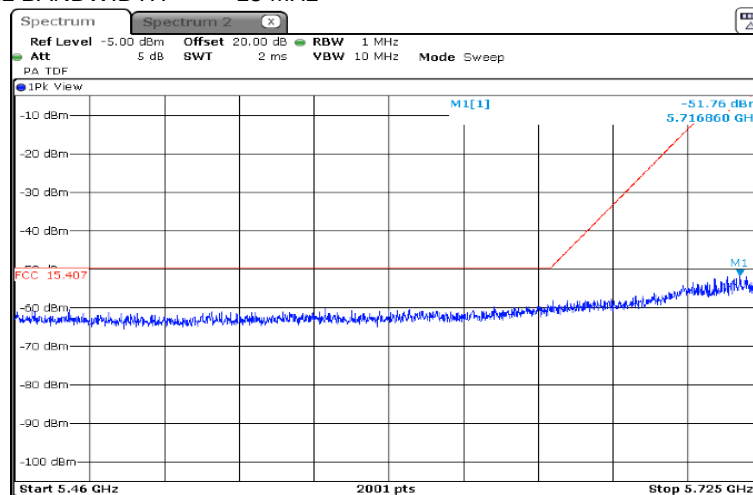
Plot 7.10.14 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

CARRIER FREQUENCY 5788 MHz
CHANNEL BANDWIDTH 15 MHz



Plot 7.10.15 Conducted spurious emission measurements in the range 5.46 – 5.725 GHz

CARRIER FREQUENCY 5788 MHz
CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

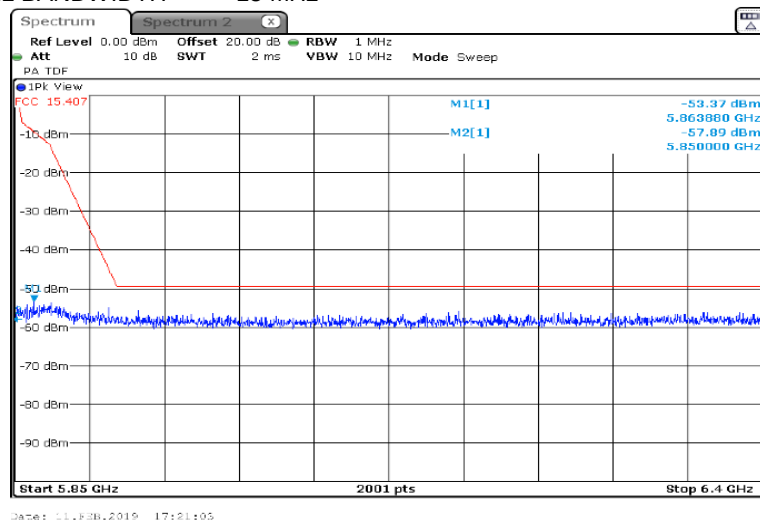
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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:			

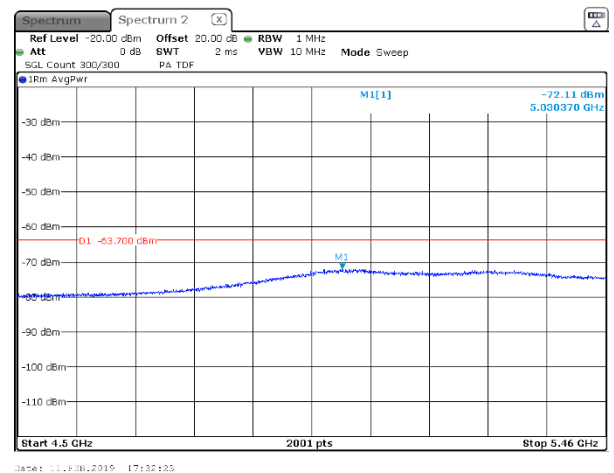
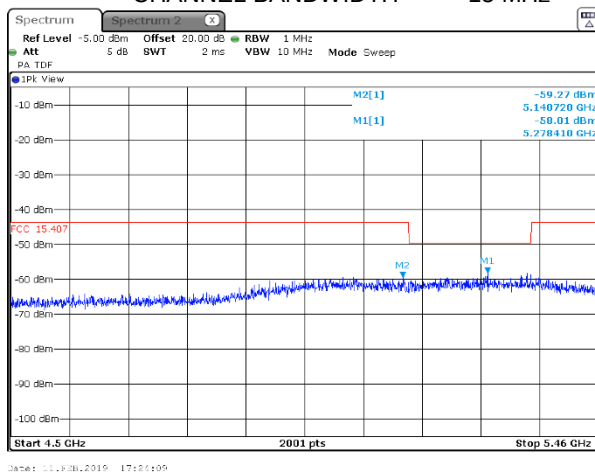
Plot 7.10.16 Conducted spurious emission measurements in the range 5.85 – 6.4 GHz

CARRIER FREQUENCY 5788 MHz
CHANNEL BANDWIDTH 15 MHz



Plot 7.10.17 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

CARRIER FREQUENCY 5842.5 MHz
CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

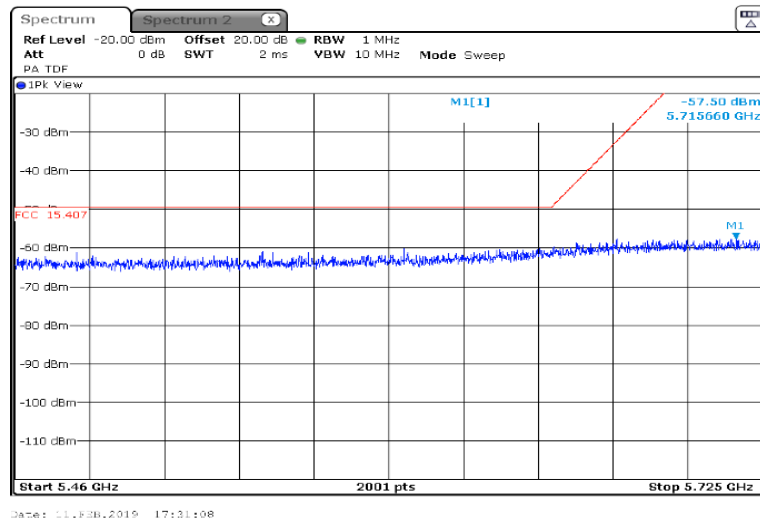
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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:			

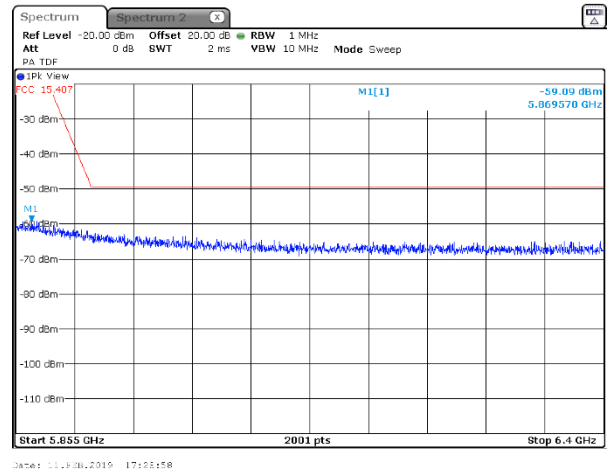
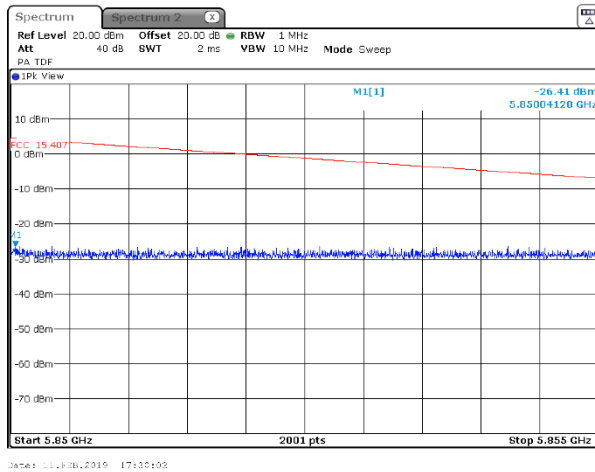
Plot 7.10.18 Conducted spurious emission measurements in the range 5.46 – 5.725 GHz

CARRIER FREQUENCY 5842.5 MHz
CHANNEL BANDWIDTH 15 MHz



Plot 7.10.19 Conducted spurious emission measurements in the range 5.85 – 6.4 GHz

CARRIER FREQUENCY 5842.5 MHz
CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

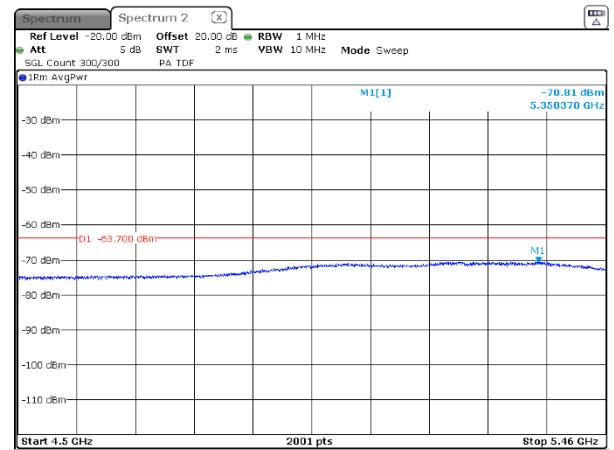
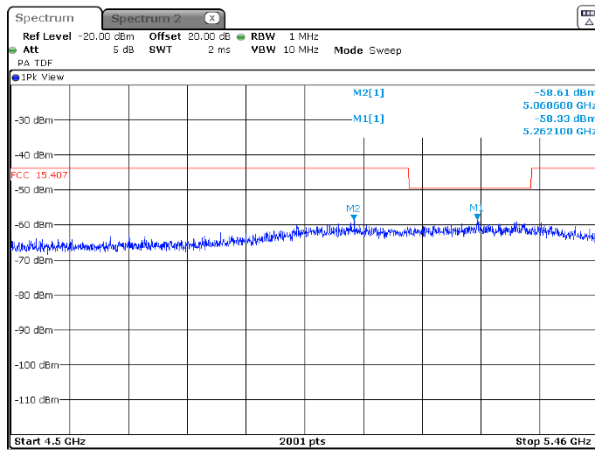
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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:			

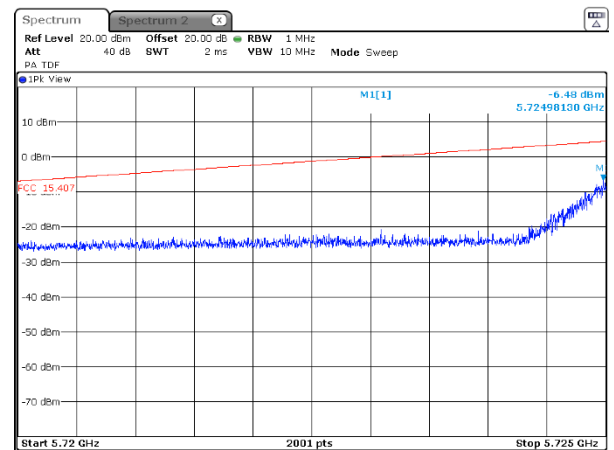
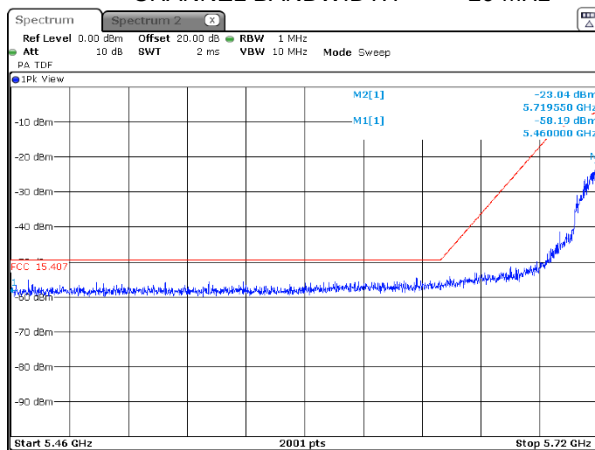
Plot 7.10.20 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

CARRIER FREQUENCY 5735 MHz
CHANNEL BANDWIDTH 20 MHz



Plot 7.10.21 Conducted spurious emission measurements in the range 5.46 – 5.725 GHz

CARRIER FREQUENCY 5735 MHz
CHANNEL BANDWIDTH 20 MHz





HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2

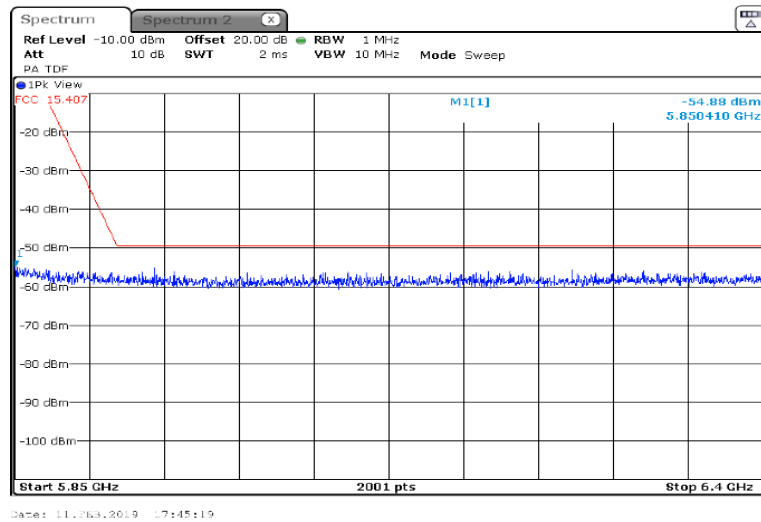
Date of Issue: 25-Jun-19

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 7.10.22 Conducted spurious emission measurements in the range 5.85 – 6.4 GHz

CARRIER FREQUENCY 5735 MHz

CHANNEL BANDWIDTH 20 MHz





HERMON LABORATORIES

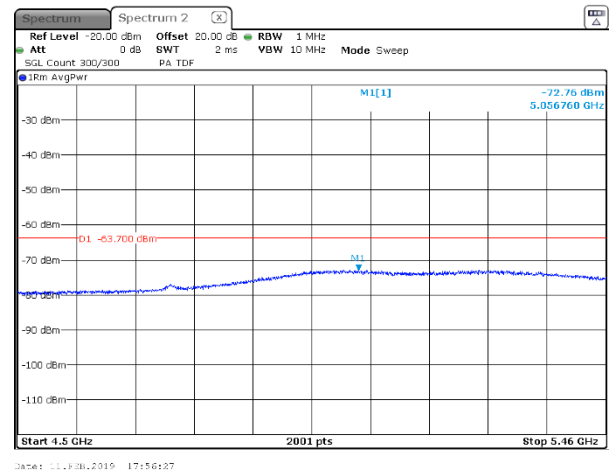
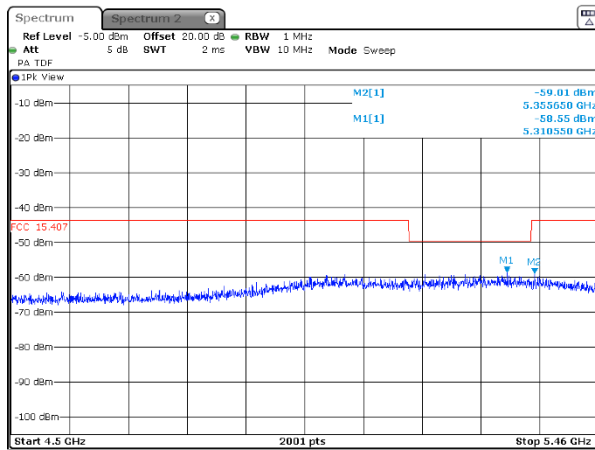
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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:			

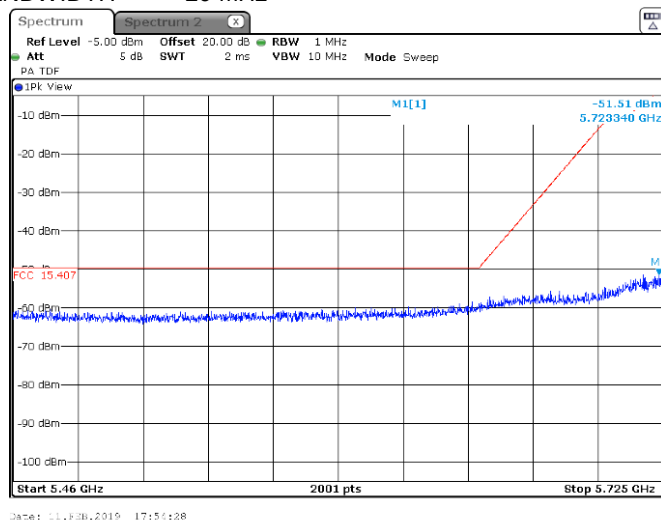
Plot 7.10.23 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

CARRIER FREQUENCY 5788 MHz
CHANNEL BANDWIDTH 20 MHz



Plot 7.10.24 Conducted spurious emission measurements in the range 5.46 – 5.725 GHz

CARRIER FREQUENCY 5788 MHz
CHANNEL BANDWIDTH 20 MHz





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Report ID: TelRad_FCC_31832_rev2

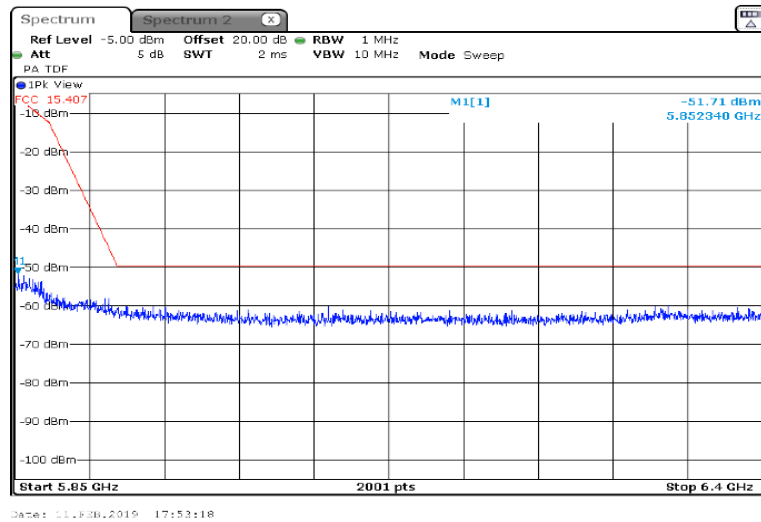
Date of Issue: 25-Jun-19

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 7.10.25 Conducted spurious emission measurements in the range 5.85 – 6.4 GHz

CARRIER FREQUENCY 5788 MHz

CHANNEL BANDWIDTH 20 MHz





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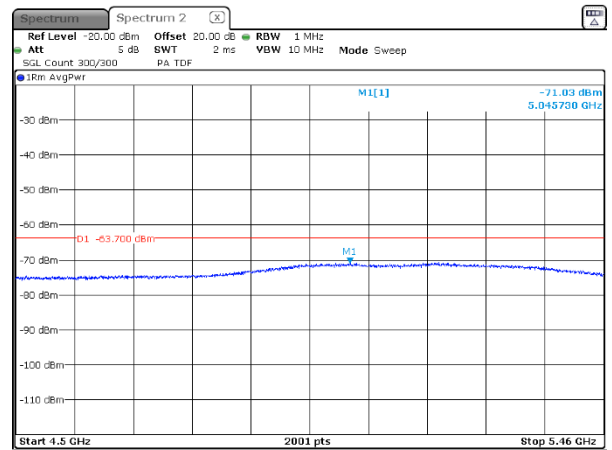
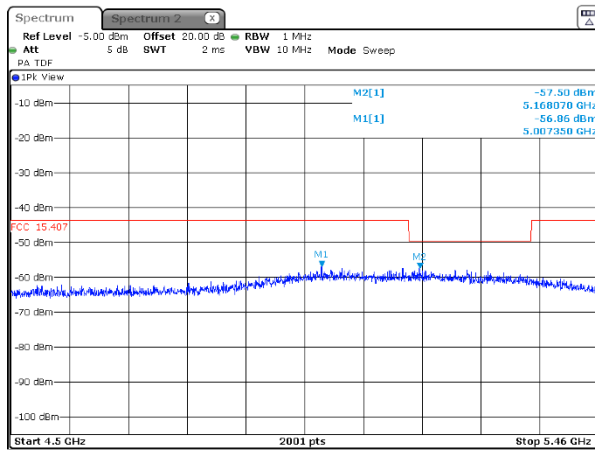
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-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:			

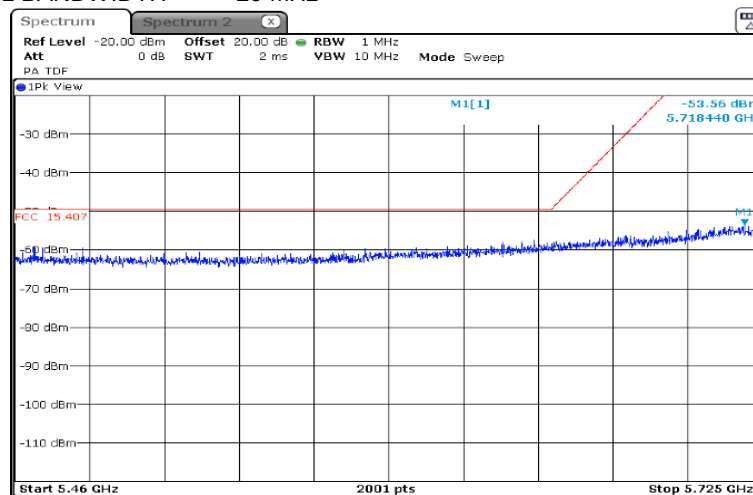
Plot 7.10.26 Conducted spurious emission measurements in the range 4.5 – 5.46 GHz

CARRIER FREQUENCY 5840 MHz
CHANNEL BANDWIDTH 20 MHz



Plot 7.10.27 Conducted spurious emission measurements in the range 5.46 – 5.725 GHz

CARRIER FREQUENCY 5840 MHz
CHANNEL BANDWIDTH 20 MHz





HERMON LABORATORIES

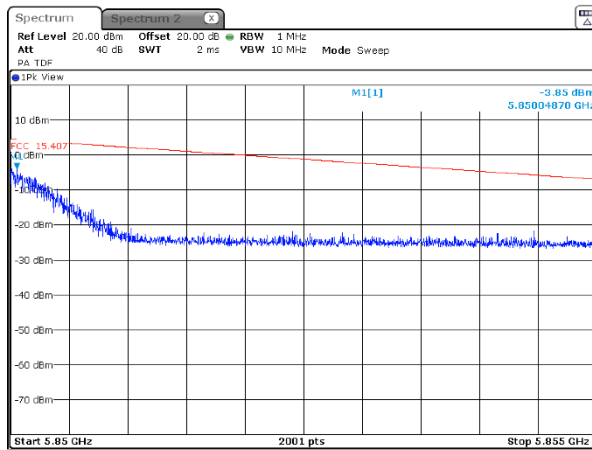
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

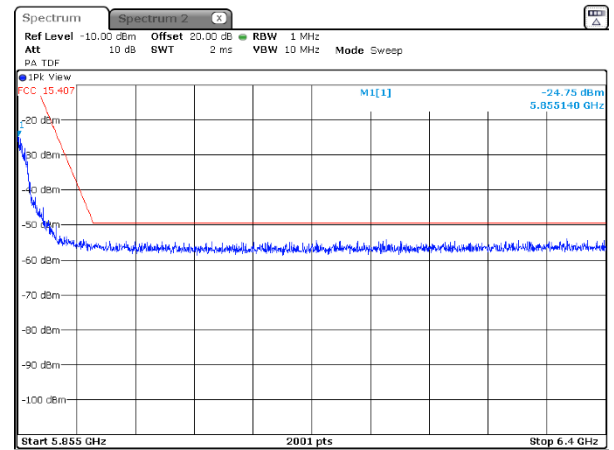
Test specification:		FCC section 15.407(b), RSS-247 section 6.2.4.2, Conducted out of band emissions	
Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Verdict: PASS	
Date(s):			
11-Feb-19			
Temperature: 26 °C	Relative Humidity: 45 %	Air Pressure: 1020 hPa	Power: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

Plot 7.10.28 Conducted spurious emission measurements in the range 5.85 – 6.4 GHz

CARRIER FREQUENCY 5840 MHz
CHANNEL BANDWIDTH 20 MHz



Date: 11-Jun-2019 9:07:31



Date: 11-Jun-2019 19:06:54



Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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):			
10-Feb-19			
Temperature: 25 °C	Relative Humidity: 48 %	Air Pressure: 1019 hPa	Power: 48 VDC
Remarks:			

7.11 Conducted out of band emissions at 5150 – 5250 MHz range

7.11.1 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 7.11.1 & EIRP of undesirable emission limits are given in Table 7.11.2

Table 7.11.1 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 7.11.2 EIRP of undesirable emission limits outside restricted bands above 1 GHz

Frequency, MHz	EIRP of spurious, dBm/MHz
Outside 5150-5350 band	-27

7.11.2 Test procedure

7.11.2.1 The EUT was set up as shown in Figure 7.11.1, energized and the performance check was conducted.

7.11.2.2 The EUT was adjusted to produce maximum available to end user RF output power at the lowest carrier frequency.

7.11.2.3 The spectrum analyzer span was set to capture the carrier frequency and associated modulation products. The resolution bandwidth was set to 1 MHz.

7.11.2.4 The spectrum analyzer was set in max hold mode and allowed trace to stabilize. The highest emission level within the authorized band was measured.

7.11.2.5 The maximum band edge emission and modulation product outside of the band were measured as provided in the associated tables and plots.

7.11.2.6 The above procedure was repeated with the EUT adjusted to produce maximum RF output power at the mid and highest carrier frequencies.

7.11.2.7 Test results are shown in the Table 7.11.3, Table 7.11.4, Table 7.11.5 and the associated plots.

Figure 7.11.1 Setup for conducted spurious emissions





Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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):			
10-Feb-19			
Temperature: 25 °C	Relative Humidity: 48 %	Air Pressure: 1019 hPa	Power: 48 VDC
Remarks:			

Table 7.11.3 Conducted spurious emission within restricted band test results

ASSIGNED FREQUENCY: 5.15 – 5.25 GHz
 INVESTIGATED FREQUENCY RANGE: 4500 - 6400 MHz
 MODULATION: QPSK
 DETECTOR USED: Peak/Average
 RESOLUTION BANDWIDTH: 1000 kHz
 EUT CONFIGURATION: 1 carrier, 1 sector (4 ports to 2 dual slant antennas), non-coherent signal
 CHANNEL BANWIDTH: 10 MHz

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											
5149.840	16.5	3.0	-49.09	-29.59	-21.2	-8.39	-64.15	-42.18	-41.2	-0.98	Pass
5406.750	16.5	3.0	-59.89	-40.39	-21.2	-19.19	-70.69	-48.72	-41.2	-7.52	Pass
Mid carrier frequency											
4915.300	16.5	3.0	-54.25	-34.75	-21.2	-13.55	-64.56	-42.59	-41.2	-1.39	Pass
5406.750	16.5	3.0	-54.32	-34.82	-21.2	-13.62	-70.59	-48.62	-41.2	-7.42	Pass
High carrier frequency											
4915.300	16.5	3.0	-54.89	-35.39	-21.2	-24.19	-63.90	-41.93	-41.2	-0.73	Pass
5366.210	16.5	3.0	-55.06	-35.56	-21.2	-14.36	-68.66	-46.69	-41.2	-5.49	Pass

CHANNEL BANWIDTH: 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											
5149.840	16.5	3.0	-56.98	-37.48	-21.2	-16.28	-64.05	-42.08	-41.2	-0.88	Pass
5437.420	16.5	3.0	-60.02	-40.52	-21.2	-19.32	-72.53	-50.56	-41.2	-9.36	Pass
Mid carrier frequency											
5068.950	16.5	3.0	-56.54	-37.04	-21.2	-15.84	-65.15	-43.18	-41.2	-1.98	Pass
5437.530	16.5	3.0	-57.46	-37.96	-21.2	-16.76	-72.11	-50.14	-41.2	-8.94	Pass
High carrier frequency											
5147.560	16.5	3.0	-57.25	-37.75	-21.2	-16.55	-66.72	-44.75	-41.2	-3.55	Pass
5437.530	16.5	3.0	-56.45	-36.95	-21.2	-15.75	-72.42	-50.45	-41.2	-9.25	Pass



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Report ID: TelRad_FCC_31832_rev2
Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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):			
10-Feb-19			
Temperature: 25 °C	Relative Humidity: 48 %	Air Pressure: 1019 hPa	Power: 48 VDC
Remarks:			

Table 7.11.3 Conducted spurious emission within restricted band test results

ASSIGNED FREQUENCY: 5.15 – 5.25 GHz
 INVESTIGATED FREQUENCY RANGE: 4500 - 6400 MHz
 MODULATION: QPSK
 DETECTOR USED: Peak/Average
 RESOLUTION BANDWIDTH: 1000 kHz
 EUT CONFIGURATION: 1 carrier, 1 sector (4 ports to 2 dual slant antennas), non-coherent signal
 CHANNEL BANDWIDTH: 20 MHz

			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											
5149.840	16.5	3.0	-49.63	-30.13	-21.2	-8.93	-64.27	-42.30	-41.2	-1.10	Pass
Mid carrier frequency											
4915.300	16.5	3.0	-52.43	-32.93	-21.2	-11.73	-63.46	-41.49	-41.2	-0.29	Pass
5439.853	16.5	3.0	-51.78	-32.28	-21.2	-11.08	-69.53	-47.56	-41.2	-6.36	Pass
High carrier frequency											
4915.300	16.5	3.0	-54.38	-34.88	-21.2	-13.68	-63.31	-41.34	-41.2	-0.14	Pass
5360.032	16.5	3.0	-54.65	-35.15	-21.2	-13.95	-68.59	-46.62	-41.2	-5.42	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 7.11.4 Duty cycle factor calculation

Burst duration, ms	Burst period, ms	Duty cycle*	Duty cycle factor**, dB
2.83	5.00	0.566	2.47

* - Duty cycle = Burst duration / Burst period

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



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Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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):			
10-Feb-19			
Temperature: 25 °C	Relative Humidity: 48 %	Air Pressure: 1019 hPa	Power: 48 VDC
Remarks:			

Table 7.11.5 Conducted spurious emission outside restricted band test results

ASSIGNED FREQUENCY RANGE: 5.15 – 5.25 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 BANWIDTH: 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							
5655.790	-60.02	16.5	6.0	-37.52	-27.0	-10.52	Pass
Mid carrier frequency							
5688.420	-51.35	16.5	6.0	-28.85	-27.0	-1.85	Pass
High carrier frequency							
5736.550	-51.35	16.5	6.0	-28.85	-27.0	-1.85	Pass

CHANNEL BANWIDTH: 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							
5736.550	-52.38	16.5	6.0	-29.88	-27.0	-2.88	Pass
Mid carrier frequency							
5722.470	-60.55	16.5	6.0	-38.05	-27.0	-11.05	Pass
High carrier frequency							
5750.640	-53.62	16.5	6.0	-31.12	-27.0	-4.12	Pass

CHANNEL BANWIDTH: 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							
5792.900	-53.95	16.5	6.0	-31.45	-27.0	-4.45	Pass
Mid carrier frequency							
5541.230	-59.04	16.5	6.0	-36.54	-27.0	-9.54	Pass
High carrier frequency							
5692.420	-48.92	16.5	6.0	-26.42	-27.0	0.58	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.



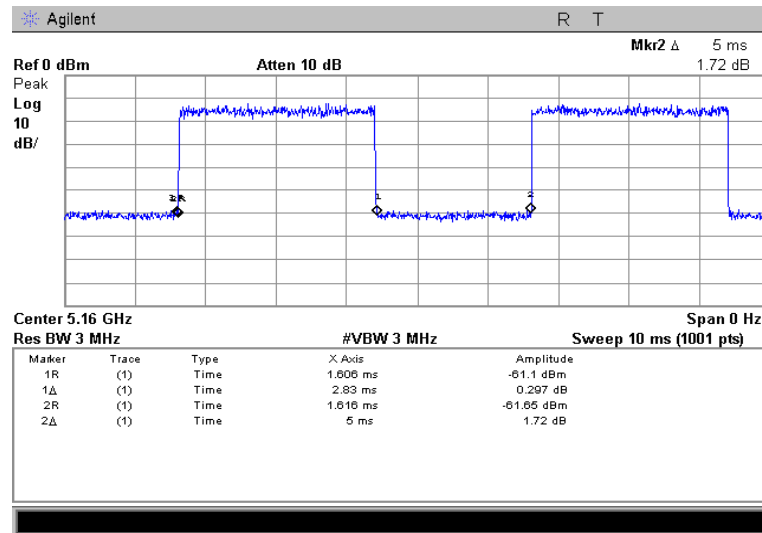
HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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):			
10-Feb-19			
Temperature: 25 °C	Relative Humidity: 48 %	Air Pressure: 1019 hPa	Power: 48 VDC
Remarks:			

Plot 7.11.1 Duty cycle





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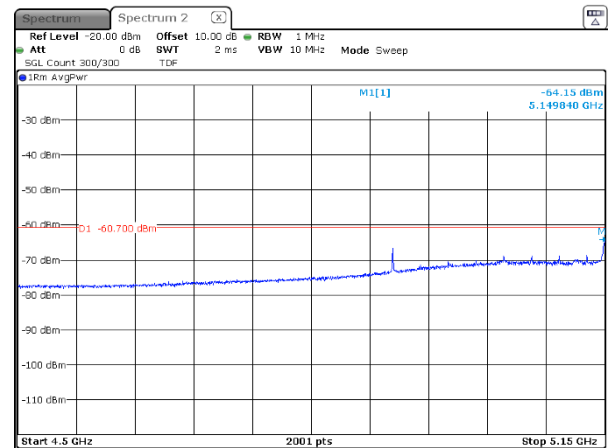
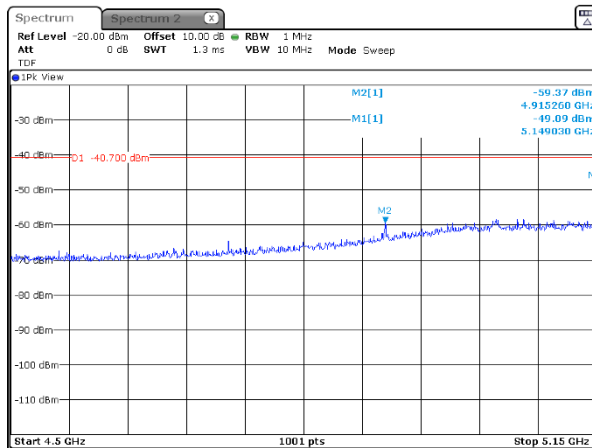
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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):		10-Feb-19	
Temperature: 25 °C	Relative Humidity: 48 %	Air Pressure: 1019 hPa	Power: 48 VDC
Remarks:			

Plot 7.11.2 Conducted spurious emission measurements in the range 4.5 – 5.15 GHz

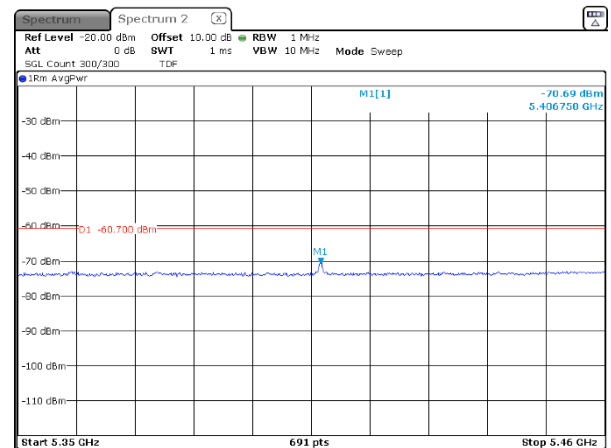
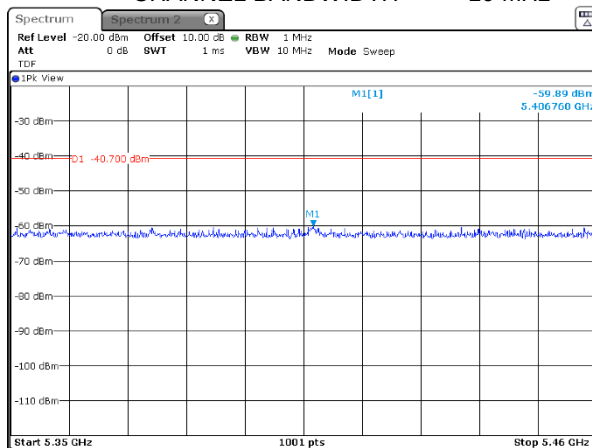
CARRIER FREQUENCY 5160 MHz
CHANNEL BANDWIDTH 10 MHz



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

Plot 7.11.3 Conducted spurious emission measurements in the range 5.35 – 5.46 GHz

CARRIER FREQUENCY 5160 MHz
CHANNEL BANDWIDTH 10 MHz





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Report ID: TelRad_FCC_31832_rev2

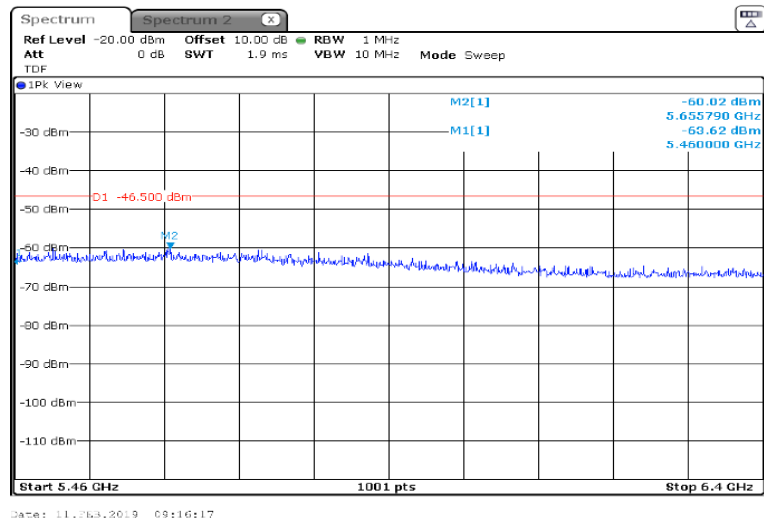
Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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):			
10-Feb-19			
Temperature: 25 °C	Relative Humidity: 48 %	Air Pressure: 1019 hPa	Power: 48 VDC
Remarks:			

Plot 7.11.4 Conducted spurious emission measurements in the range 5.46 – 6.4 GHz

CARRIER FREQUENCY 5160 MHz

CHANNEL BANDWIDTH 10 MHz





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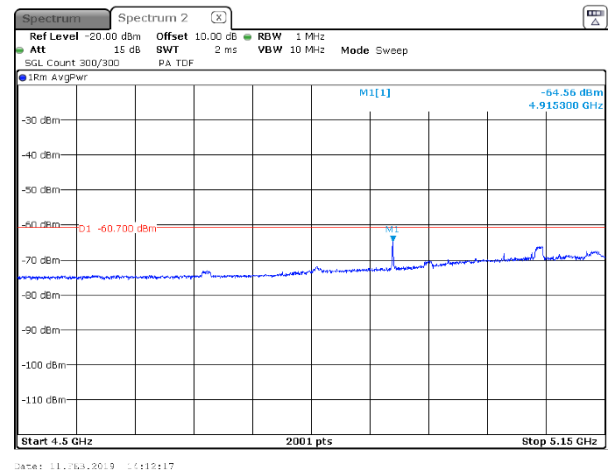
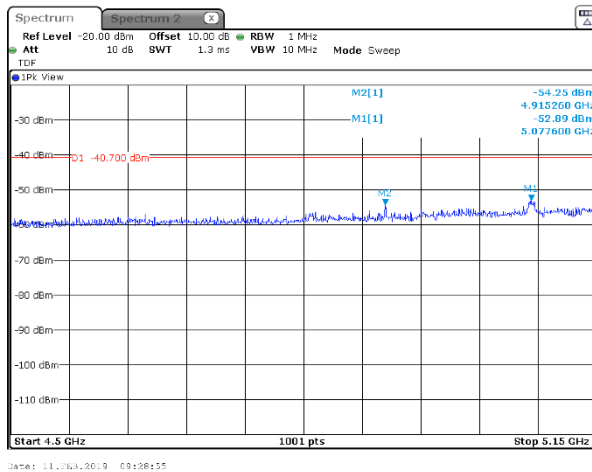
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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):		10-Feb-19	
Temperature: 25 °C	Relative Humidity: 48 %	Air Pressure: 1019 hPa	Power: 48 VDC
Remarks:			

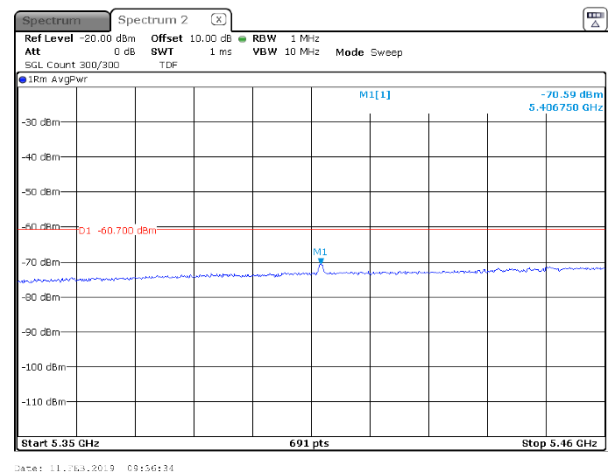
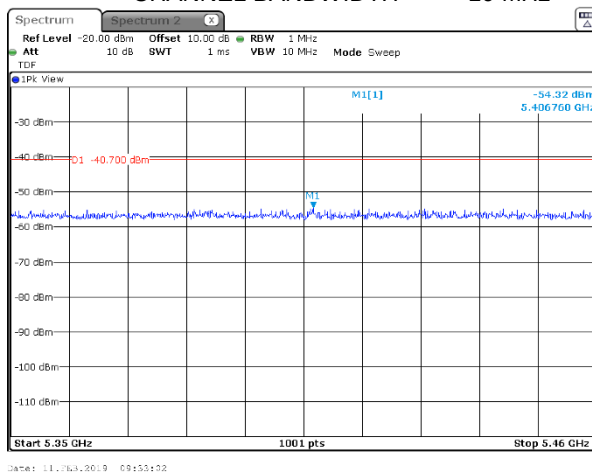
Plot 7.11.5 Conducted spurious emission measurements in the range 4.5 – 5.15 GHz

CARRIER FREQUENCY 5200 MHz
CHANNEL BANDWIDTH 10 MHz



Plot 7.11.6 Conducted spurious emission measurements in the range 5.35 – 5.46 GHz

CARRIER FREQUENCY 5200 MHz
CHANNEL BANDWIDTH 10 MHz





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Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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):			
10-Feb-19			
Temperature: 25 °C	Relative Humidity: 48 %	Air Pressure: 1019 hPa	Power: 48 VDC
Remarks:			

Plot 7.11.7 Conducted spurious emission measurements in the range 5.46 – 6.4 GHz

CARRIER FREQUENCY 5200 MHz

CHANNEL BANDWIDTH 10 MHz

