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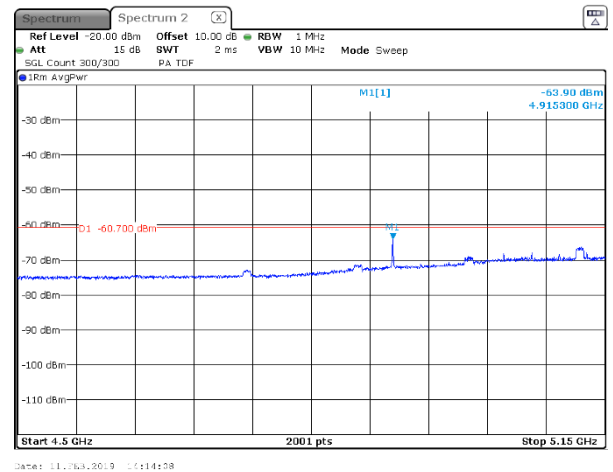
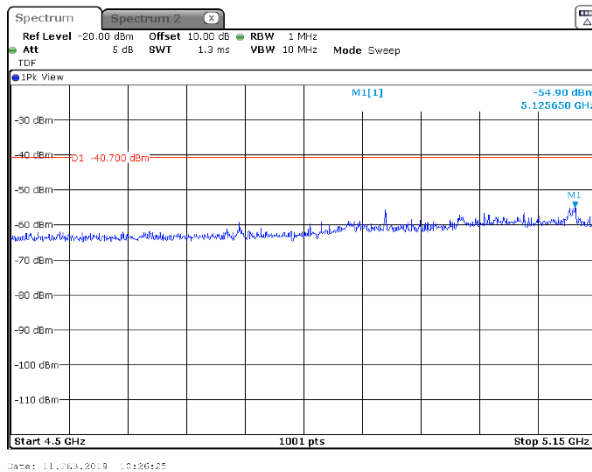
Report ID: TelRad_FCC_31832_rev2

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:			

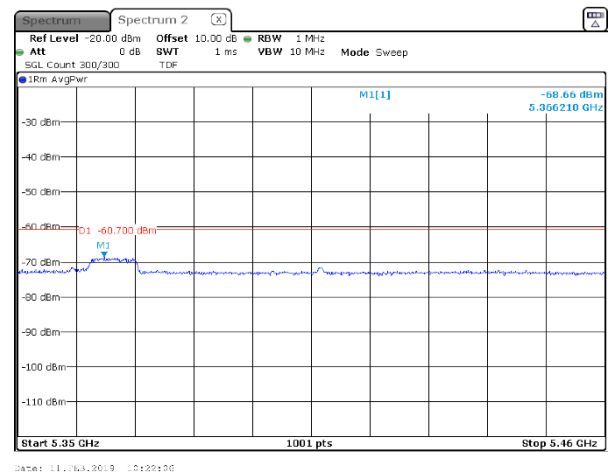
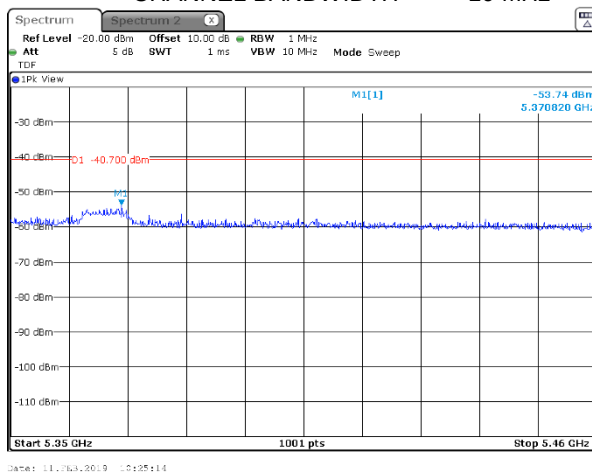
Plot 7.11.8 Conducted spurious emission measurements in the range 4.5 – 5.15 GHz

CARRIER FREQUENCY 5245 MHz
CHANNEL BANDWIDTH 10 MHz



Plot 7.11.9 Conducted spurious emission measurements in the range 5.35 – 5.46 GHz

CARRIER FREQUENCY 5245 MHz
CHANNEL BANDWIDTH 10 MHz





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Report ID: TelRad_FCC_31832_rev2

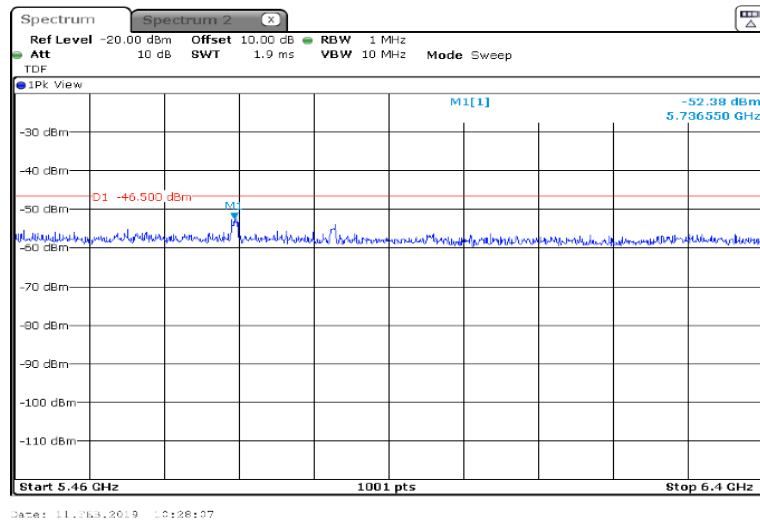
Date of Issue: 25-Jun-19

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 7.11.10 Conducted spurious emission measurements in the range 5.46 – 6.4 GHz

CARRIER FREQUENCY 5245 MHz

CHANNEL BANDWIDTH 10 MHz





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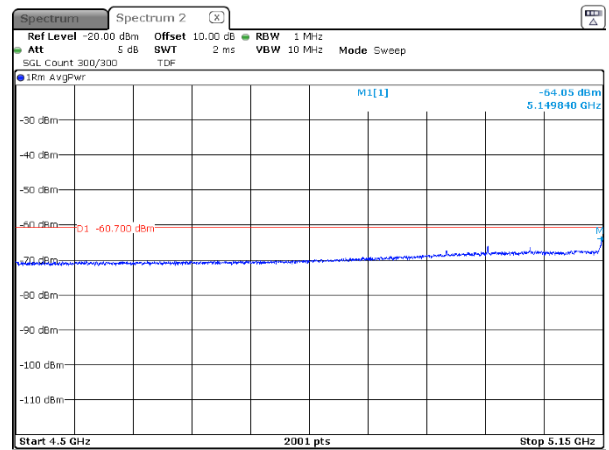
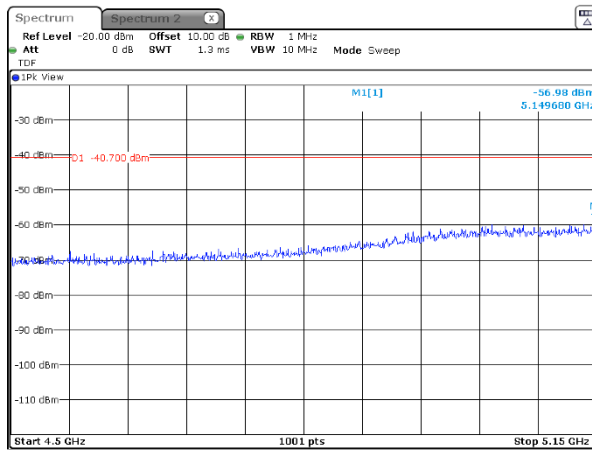
Report ID: TelRad_FCC_31832_rev2

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:			

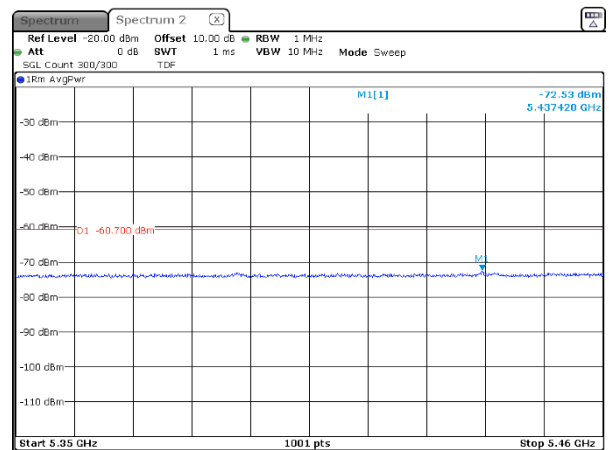
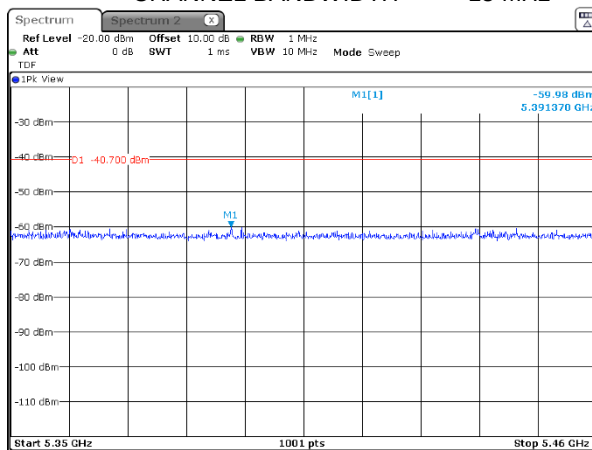
Plot 7.11.11 Conducted spurious emission measurements in the range 4.5 – 5.15 GHz

CARRIER FREQUENCY 5165 MHz
CHANNEL BANDWIDTH 15 MHz



Plot 7.11.12 Conducted spurious emission measurements in the range 5.35 – 5.46 GHz

CARRIER FREQUENCY 5165 MHz
CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2

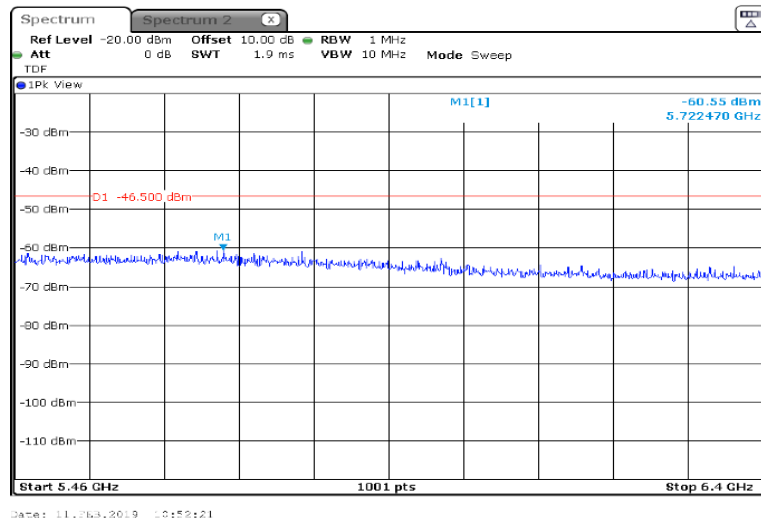
Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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 7.11.13 Conducted spurious emission measurements in the range 5.46 – 6.4 GHz

CARRIER FREQUENCY 5165 MHz

CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

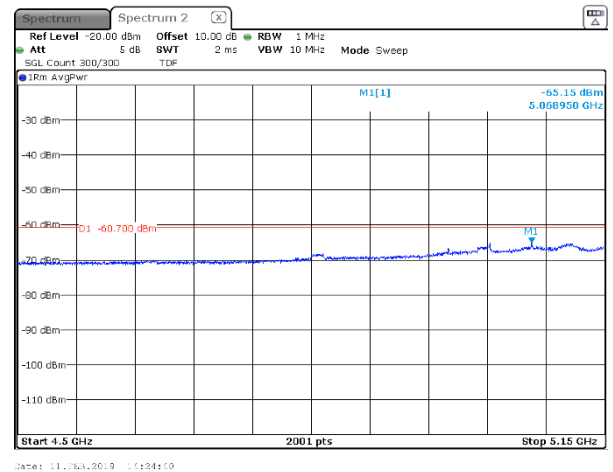
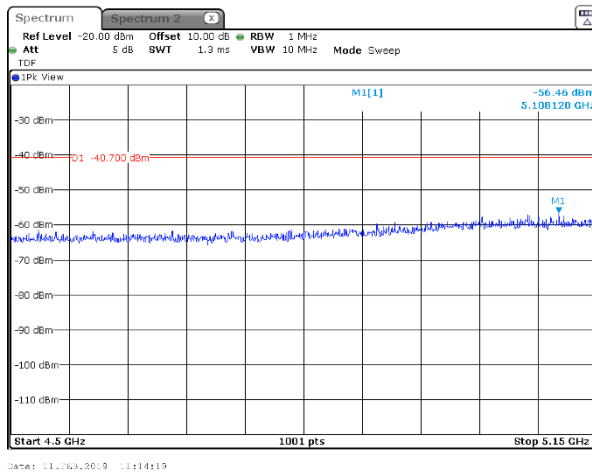
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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:			

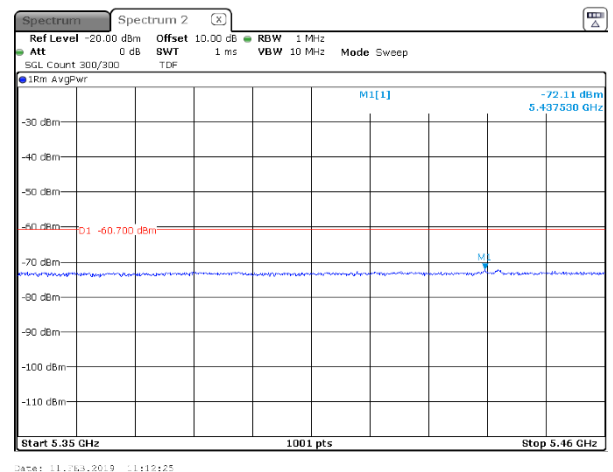
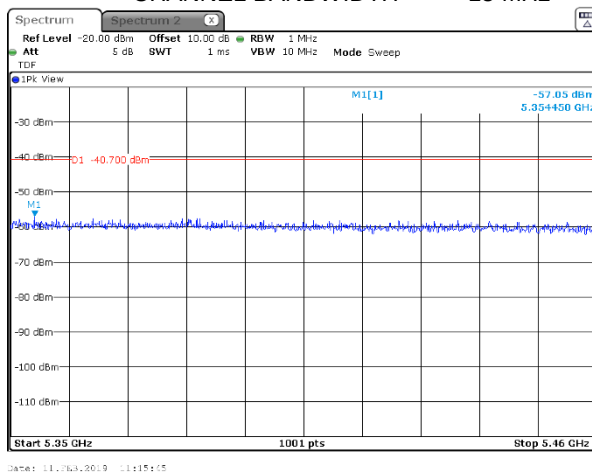
Plot 7.11.14 Conducted spurious emission measurements in the range 4.5 – 5.15 GHz

CARRIER FREQUENCY 5200 MHz
CHANNEL BANDWIDTH 15 MHz



Plot 7.11.15 Conducted spurious emission measurements in the range 5.35 – 5.46 GHz

CARRIER FREQUENCY 5200 MHz
CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2

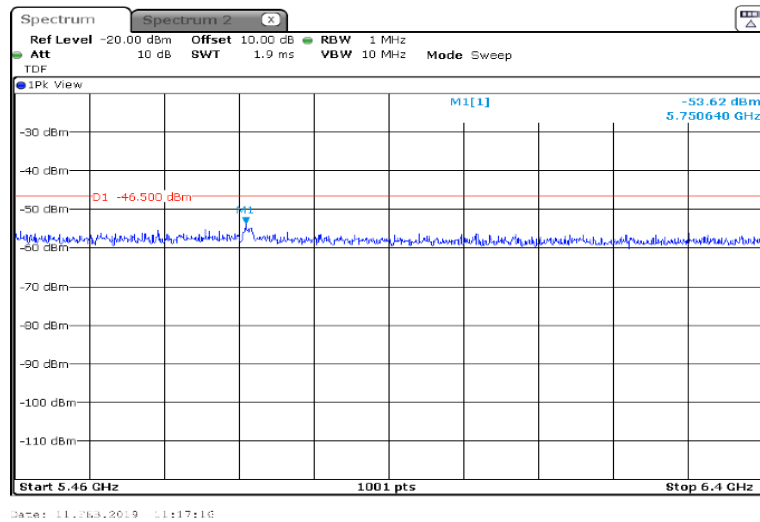
Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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 7.11.16 Conducted spurious emission measurements in the range 5.46 – 6.4 GHz

CARRIER FREQUENCY 5200 MHz

CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

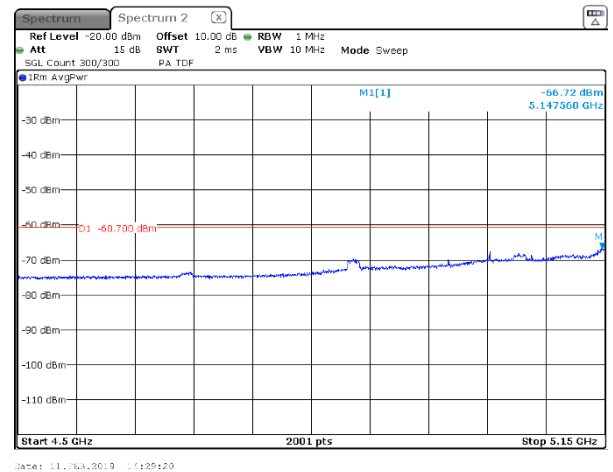
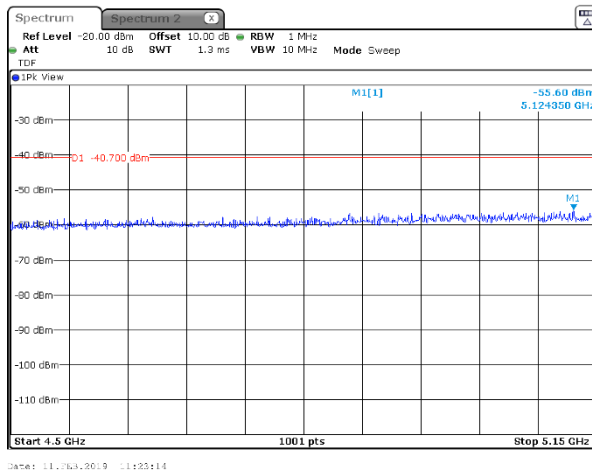
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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:			

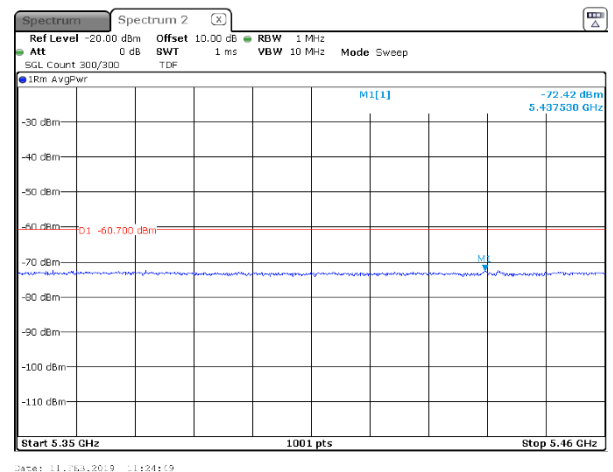
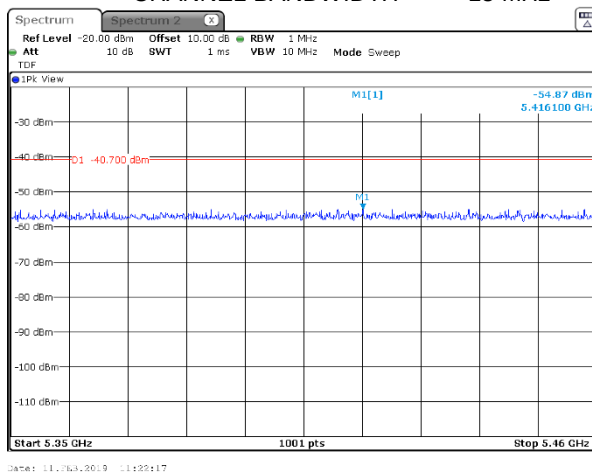
Plot 7.11.17 Conducted spurious emission measurements in the range 4.5 – 5.15 GHz

CARRIER FREQUENCY 5240 MHz
CHANNEL BANDWIDTH 15 MHz



Plot 7.11.18 Conducted spurious emission measurements in the range 5.35 – 5.46 GHz

CARRIER FREQUENCY 5240 MHz
CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2

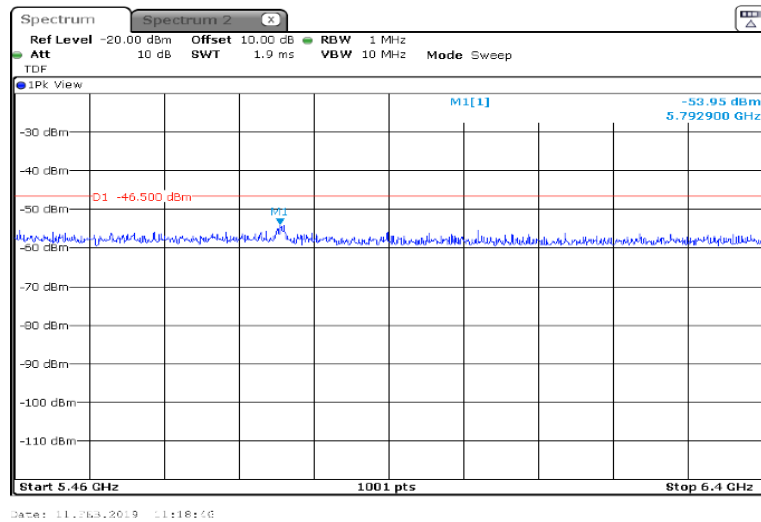
Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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 7.11.19 Conducted spurious emission measurements in the range 5.46 – 6.4 GHz

CARRIER FREQUENCY 5240 MHz

CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

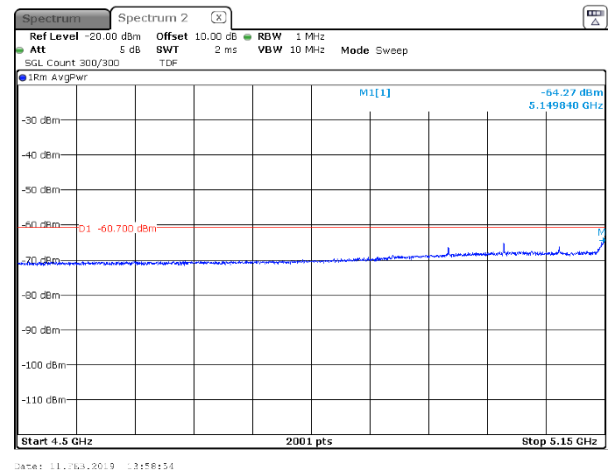
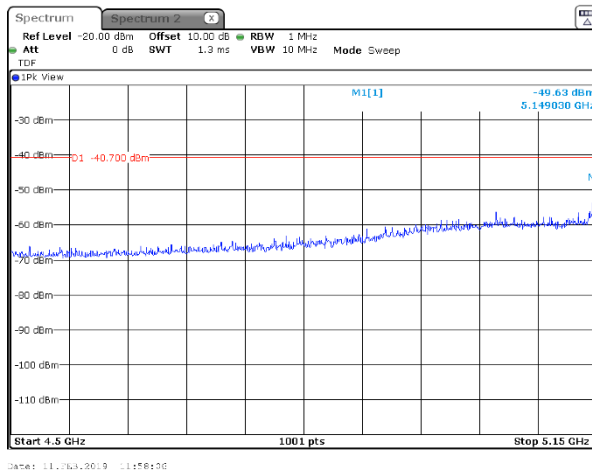
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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:			

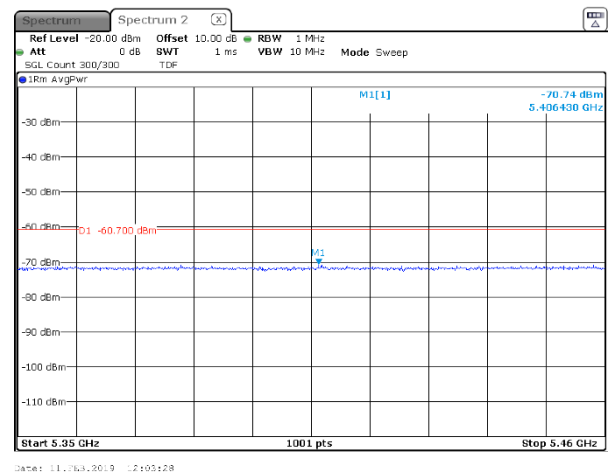
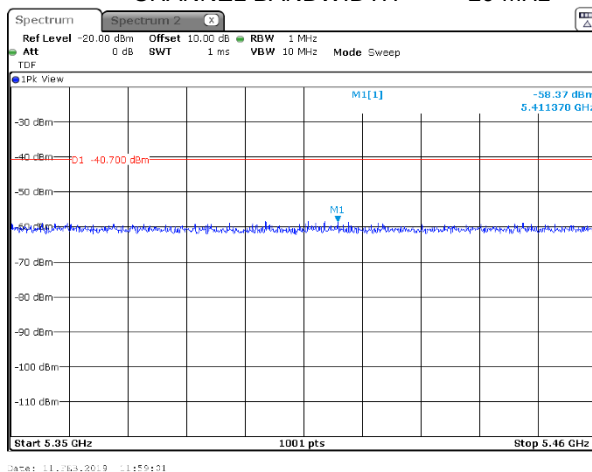
Plot 7.11.20 Conducted spurious emission measurements in the range 4.5 – 5.15 GHz

CARRIER FREQUENCY 5165 MHz
CHANNEL BANDWIDTH 20 MHz



Plot 7.11.21 Conducted spurious emission measurements in the range 5.35 – 5.46 GHz

CARRIER FREQUENCY 5165 MHz
CHANNEL BANDWIDTH 20 MHz





HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2

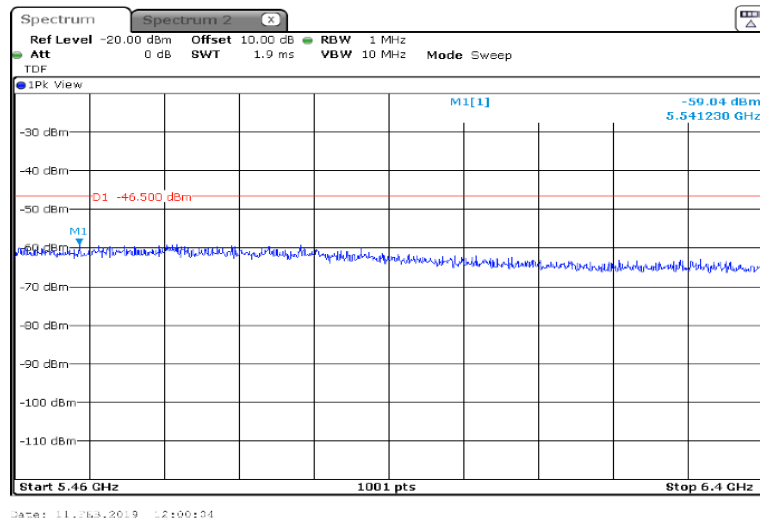
Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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 7.11.22 Conducted spurious emission measurements in the range 5.46 – 6.4 GHz

CARRIER FREQUENCY 5165 MHz

CHANNEL BANDWIDTH 20 MHz





HERMON LABORATORIES

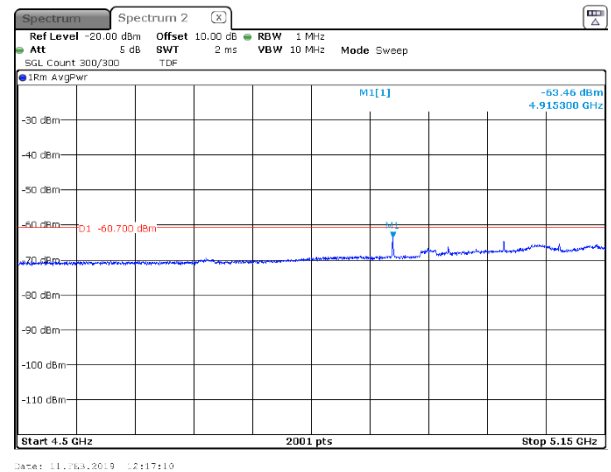
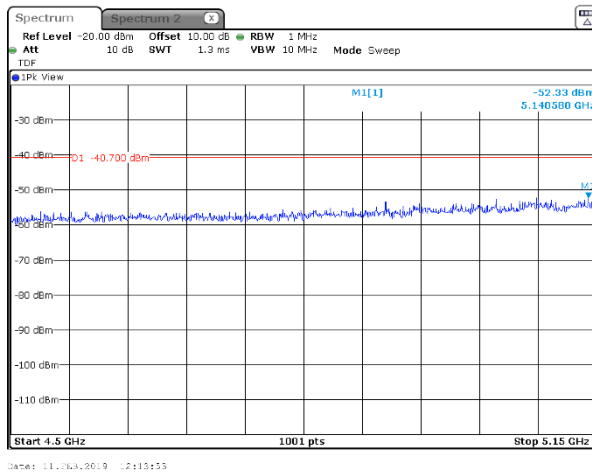
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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:			

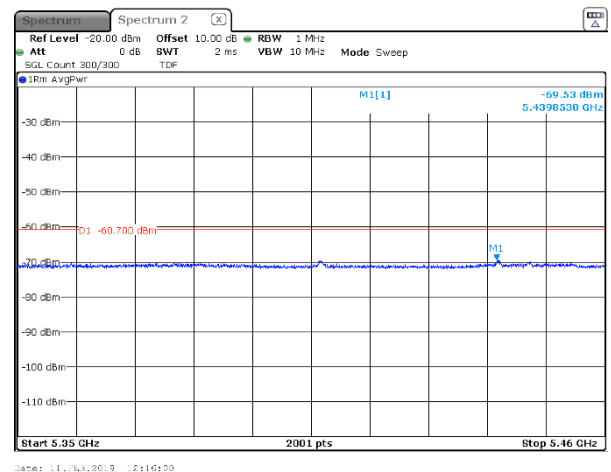
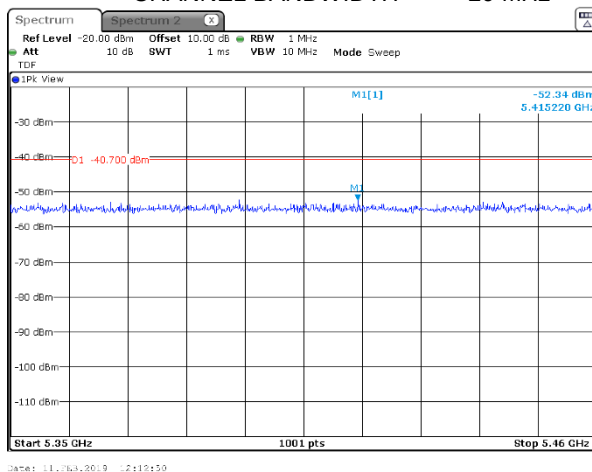
Plot 7.11.23 Conducted spurious emission measurements in the range 4.5 – 5.15 GHz

CARRIER FREQUENCY 5200 MHz
CHANNEL BANDWIDTH 20 MHz



Plot 7.11.24 Conducted spurious emission measurements in the range 5.35 – 5.46 GHz

CARRIER FREQUENCY 5200 MHz
CHANNEL BANDWIDTH 20 MHz





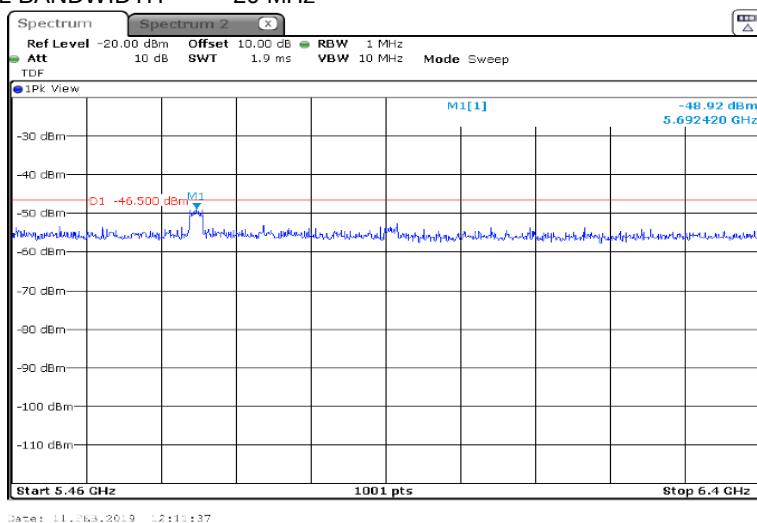
HERMON LABORATORIES

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

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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 7.11.25 Conducted spurious emission measurements in the range 5.46 – 6.4 GHz

CARRIER FREQUENCY 5200 MHz
CHANNEL BANDWIDTH 20 MHz





HERMON LABORATORIES

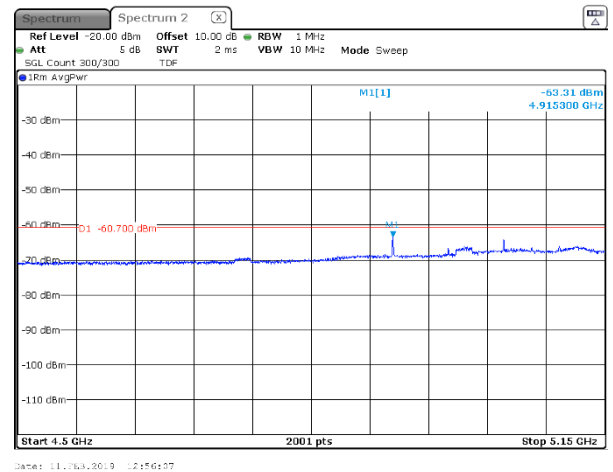
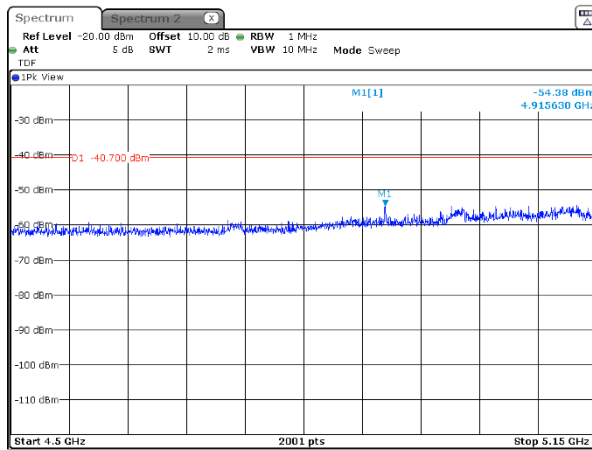
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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:			

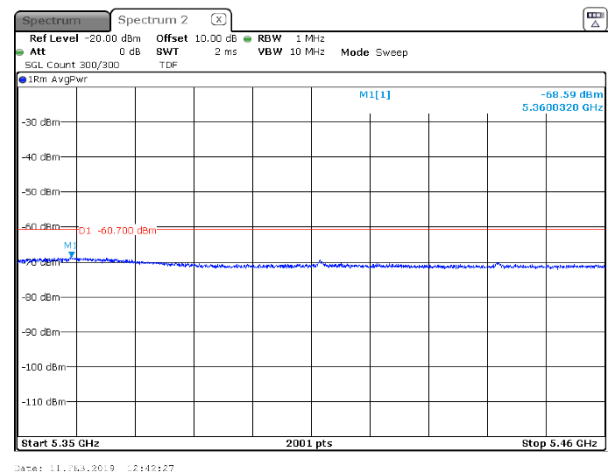
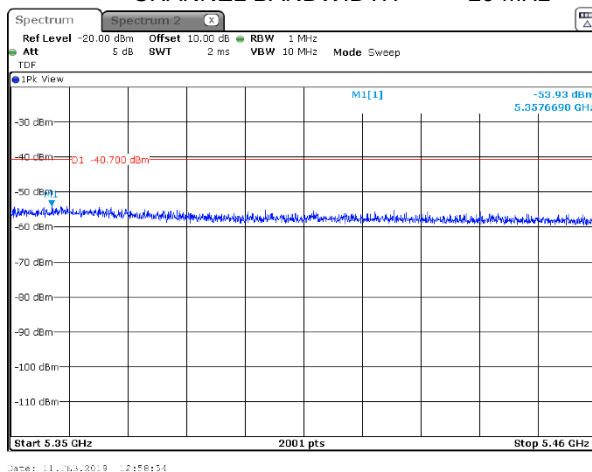
Plot 7.11.26 Conducted spurious emission measurements in the range 4.5 – 5.15 GHz

CARRIER FREQUENCY 5240 MHz
CHANNEL BANDWIDTH 20 MHz



Plot 7.11.27 Conducted spurious emission measurements in the range 5.35 – 5.46 GHz

CARRIER FREQUENCY 5240 MHz
CHANNEL BANDWIDTH 20 MHz





HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2

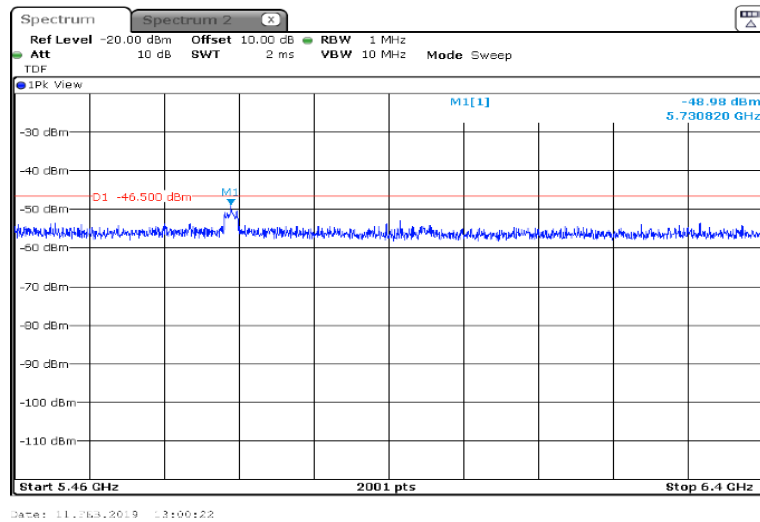
Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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 7.11.28 Conducted spurious emission measurements in the range 5.46 – 6.4 GHz

CARRIER FREQUENCY 5240 MHz

CHANNEL BANDWIDTH 20 MHz





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:			

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

7.12.1 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 7.12.1 & EIRP of undesirable emission limits are given in Table 7.12.2

Table 7.12.1 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 7.12.2 EIRP of undesirable emission limits outside restricted bands above 1 GHz

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

Test procedure

7.12.1.1 The EUT was set up as shown in Figure 7.12.1, energized and the performance check was conducted.

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

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

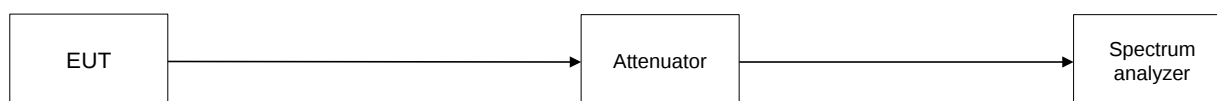
7.12.1.4 The spectrum analyzer was set in max hold mode and allowed trace to stabilize. The highest emission level within the authorized band was measured.

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

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

7.12.1.7 Test results are shown in the Table 7.12.3, Table 7.12.4, Table 7.12.5 and the associated plots.

Figure 7.12.1 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 7.12.3 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), 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											
5149.510	16.5	6.0	-54.00	-31.50	-21.2	-10.30	-67.07	-42.10	-41.2	-0.90	Pass
5406.540	16.5	6.0	-58.46	-35.96	-21.2	-14.76	-69.98	-45.01	-41.2	-3.81	Pass
Mid carrier frequency											
4915.300	16.5	6.0	-57.12	-34.62	-21.2	-13.42	-66.27	-41.30	-41.2	-0.10	Pass
5406.650	16.5	6.0	-55.78	-33.28	-21.2	-12.08	-71.23	-46.26	-41.2	-5.06	Pass
High carrier frequency											
4915.300	16.5	6.0	-59.01	-36.51	-21.2	-15.31	-66.79	-41.82	-41.2	-0.62	Pass
5406.980	16.5	6.0	-59.31	-36.81	-21.2	-15.61	-71.87	-46.90	-41.2	-5.70	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											
5149.510	16.5	6.0	-58.56	-36.06	-21.2	-14.86	-67.67	-42.70	-41.2	-1.50	Pass
5437.310	16.5	6.0	-60.23	-37.73	-21.2	-16.53	-72.29	-47.32	-41.2	-6.12	Pass
Mid carrier frequency											
5022.830	16.5	6.0	-59.56	-37.06	-21.2	-15.86	-67.24	-42.27	-41.2	-1.07	Pass
5437.420	16.5	6.0	-60.02	-37.52	-21.2	-16.32	-72.10	-47.13	-41.2	-5.93	Pass
High carrier frequency											
5148.540	16.5	6.0	-55.36	-32.86	-21.2	-11.66	-66.64	-41.67	-41.2	-0.47	Pass
5439.950	16.5	6.0	-54.76	-32.26	-21.2	-11.06	-72.32	-47.35	-41.2	-6.15	Pass



HERMON LABORATORIES

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 7.12.3 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), coherent signal
 CHANNEL BANDWIDTH: 20 MHz

CHANNEL BANDWIDTH:			20 MHz				Average				Verdict
Frequency, MHz	Antenna gain, dBi	Antenna gain array*, dB	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											
5038.090	16.5	6.0	-56.89	-34.39	-21.2	-13.19	-66.28	-41.31	-41.2	-0.11	Pass
Mid carrier frequency											
5038.090	16.5	6.0	-56.70	-34.20	-21.2	-13.00	-67.19	-42.22	-41.2	-1.02	Pass
5440.182	16.5	6.0	-58.10	-35.60	-21.2	-14.40	-70.61	-45.64	-41.2	-4.44	Pass
High carrier frequency											
5038.090	16.5	6.0	-56.47	-33.97	-21.2	-12.77	-66.78	-41.81	-41.2	-0.61	Pass
5360.197	16.5	6.0	-58.15	-35.65	-21.2	-14.45	-70.17	-45.20	-41.2	-4.00	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 7.12.4 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 = $10\log(1/\text{Duty cycle})$



HERMON LABORATORIES

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 7.12.5 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), 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							
5618.230	-58.80	16.5	6.0	-36.30	-27.0	-9.30	Pass
Mid carrier frequency							
5593.820	-55.42	16.5	6.0	-32.92	-27.0	-5.92	Pass
High carrier frequency							
5736.550	-60.49	16.5	6.0	-37.99	-27.0	-10.99	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							
5472.680	-61.07	16.5	6.0	-38.57	-27.0	-11.57	Pass
Mid carrier frequency							
5748.760	-58.69	16.5	6.0	-36.19	-27.0	-9.19	Pass
High carrier frequency							
5643.590	-59.05	16.5	6.0	-36.55	-27.0	-9.55	Pass

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							
5652.980	-58.75	16.5	6.0	-36.25	-27.0	-9.25	Pass
Mid carrier frequency							
5685.250	-54.98	16.5	6.0	-32.48	-27.0	-5.48	Pass
High carrier frequency							
5731.760	-55.25	16.5	6.0	-32.75	-27.0	-5.75	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.



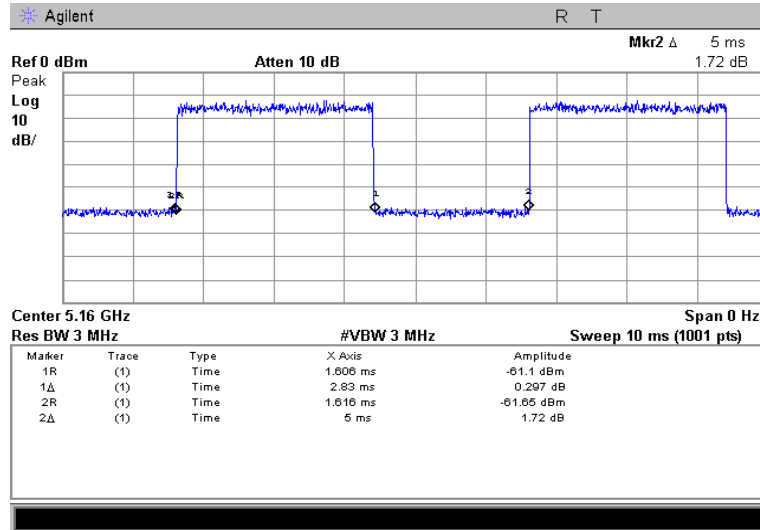
HERMON LABORATORIES

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 7.12.1 Duty cycle





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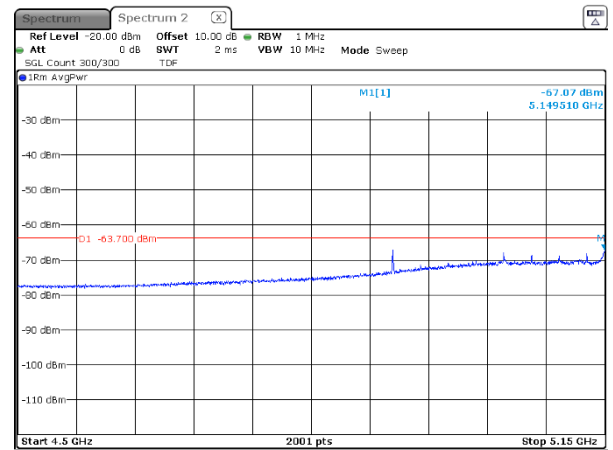
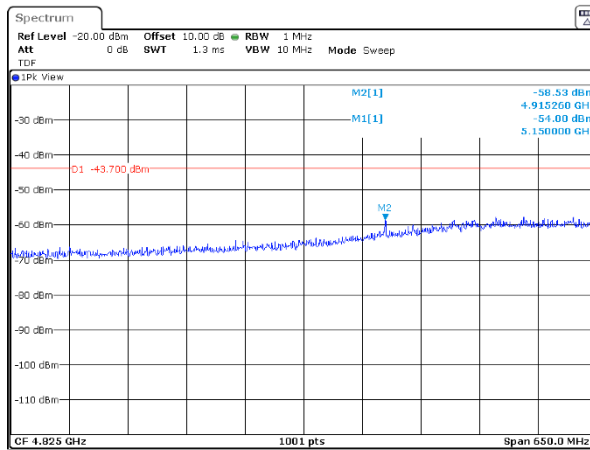
Report ID: TelRad_FCC_31832_rev2

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 7.12.2 Conducted spurious emission measurements in the range 4.5 – 5.15 GHz

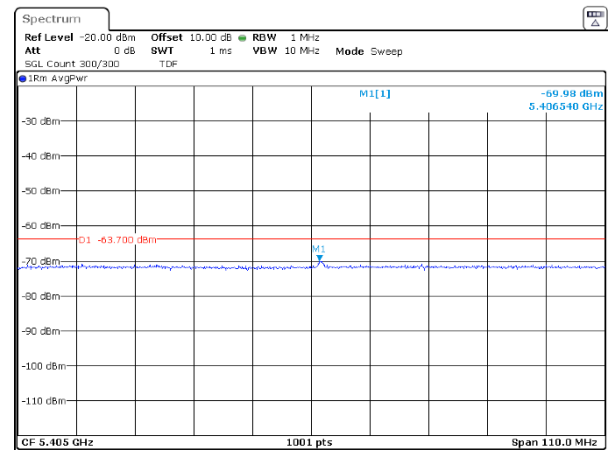
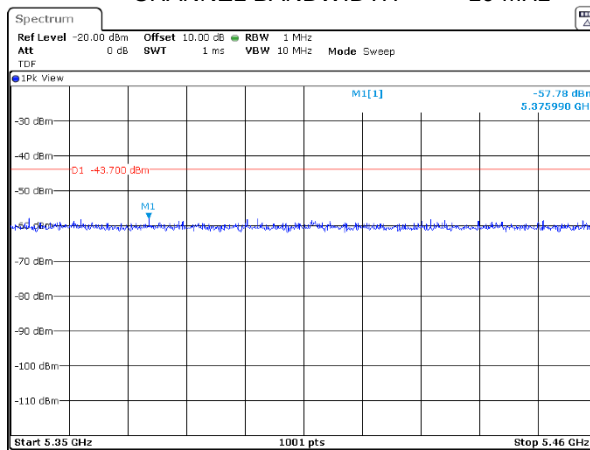
CARRIER FREQUENCY 5160 MHz
CHANNEL BANDWIDTH 10 MHz



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

Plot 7.12.3 Conducted spurious emission measurements in the range 5.35 – 5.46 GHz

CARRIER FREQUENCY 5160 MHz
CHANNEL BANDWIDTH 10 MHz





HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2

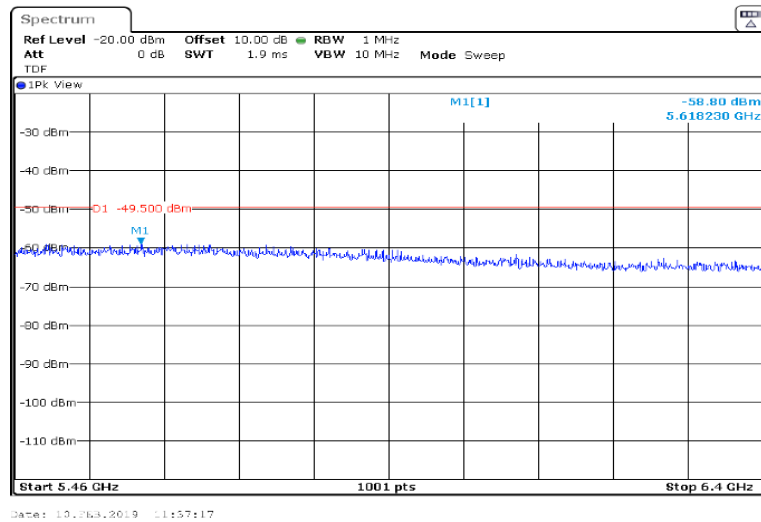
Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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 7.12.4 Conducted spurious emission measurements in the range 5.46 – 6.4 GHz

CARRIER FREQUENCY 5160 MHz

CHANNEL BANDWIDTH 10 MHz





HERMON LABORATORIES

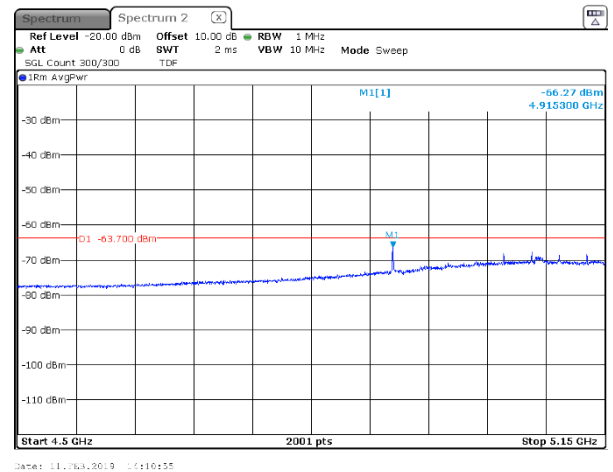
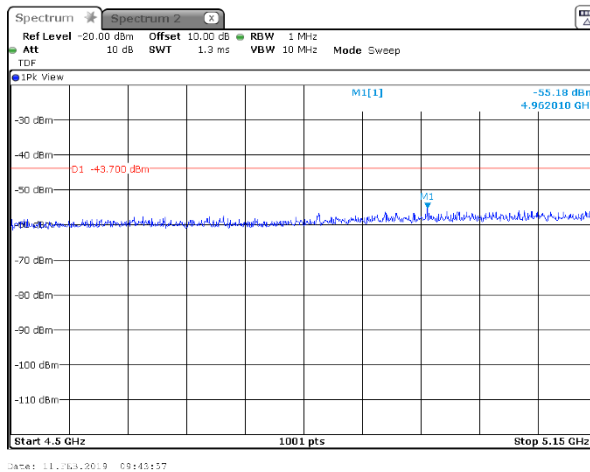
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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:			

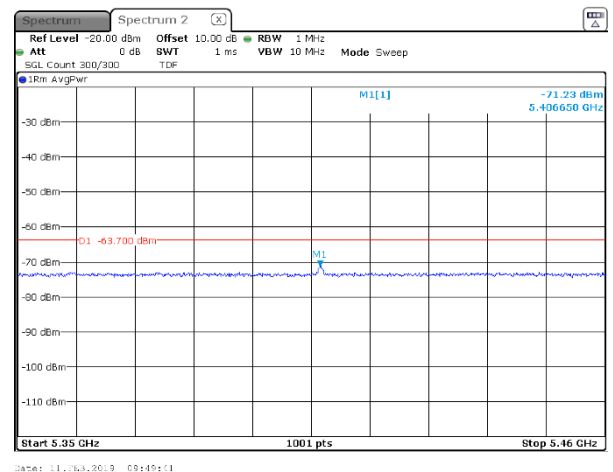
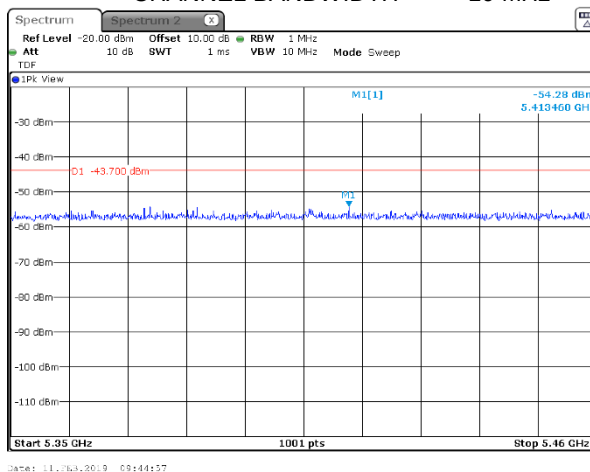
Plot 7.12.5 Conducted spurious emission measurements in the range 4.5 – 5.15 GHz

CARRIER FREQUENCY 5200 MHz
CHANNEL BANDWIDTH 10 MHz



Plot 7.12.6 Conducted spurious emission measurements in the range 5.35 – 5.46 GHz

CARRIER FREQUENCY 5200 MHz
CHANNEL BANDWIDTH 10 MHz



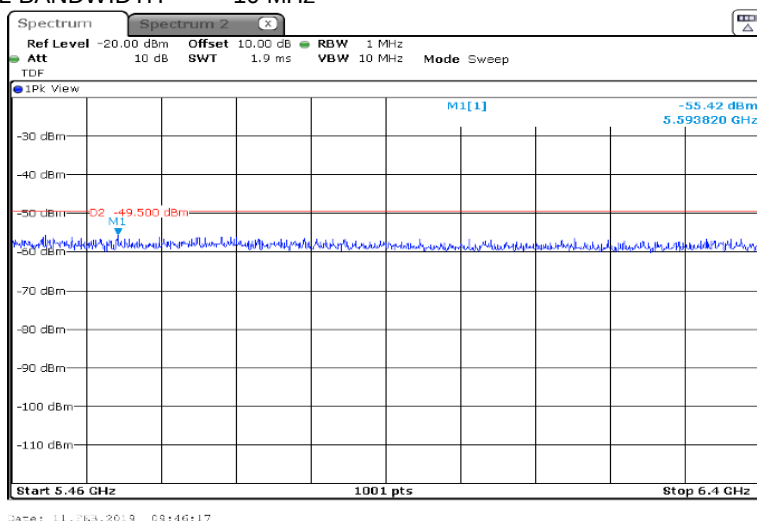


HERMON LABORATORIES

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

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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 7.12.7 Conducted spurious emission measurements in the range 5.46 – 6.4 GHz
CARRIER FREQUENCY 5200 MHz
CHANNEL BANDWIDTH 10 MHz





HERMON LABORATORIES

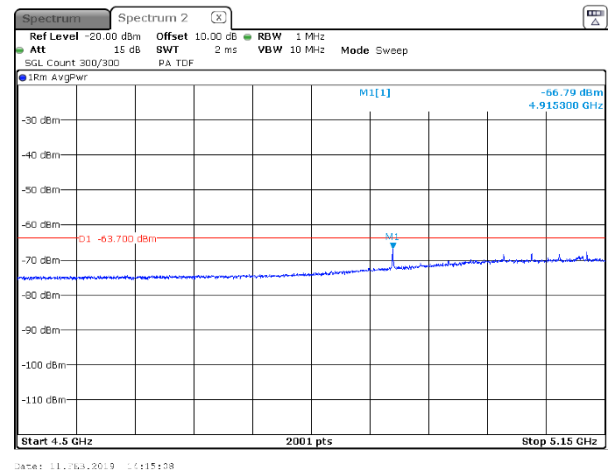
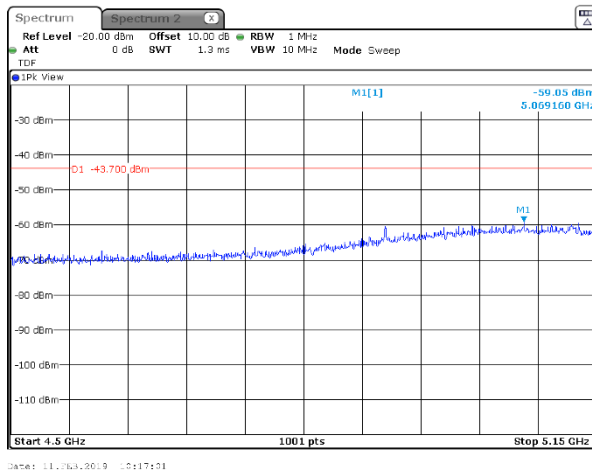
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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:			

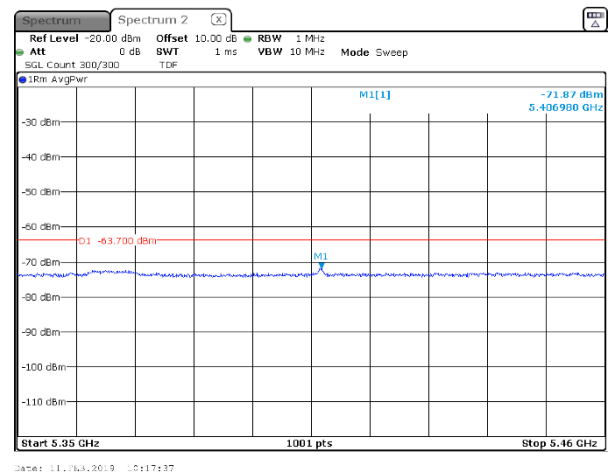
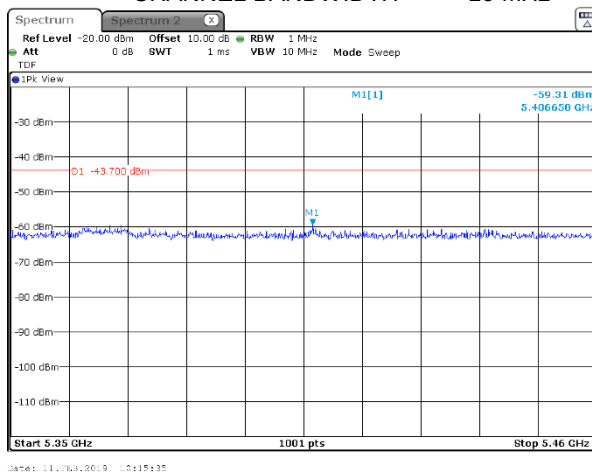
Plot 7.12.8 Conducted spurious emission measurements in the range 4.5 – 5.15 GHz

CARRIER FREQUENCY 5245 MHz
CHANNEL BANDWIDTH 10 MHz



Plot 7.12.9 Conducted spurious emission measurements in the range 5.35 – 5.46 GHz

CARRIER FREQUENCY 5245 MHz
CHANNEL BANDWIDTH 10 MHz





HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2

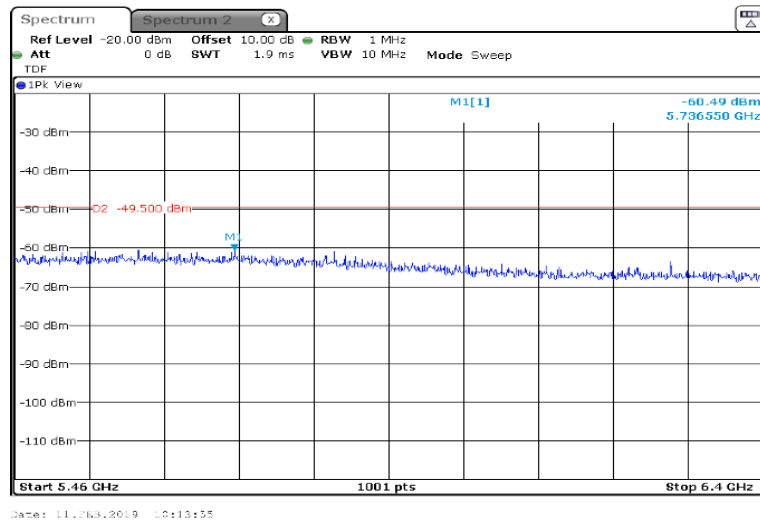
Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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 7.12.10 Conducted spurious emission measurements in the range 5.46 – 6.4 GHz

CARRIER FREQUENCY 5245 MHz

CHANNEL BANDWIDTH 10 MHz





HERMON LABORATORIES

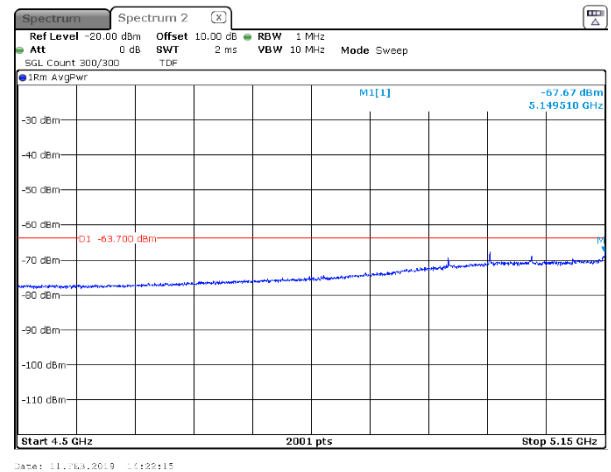
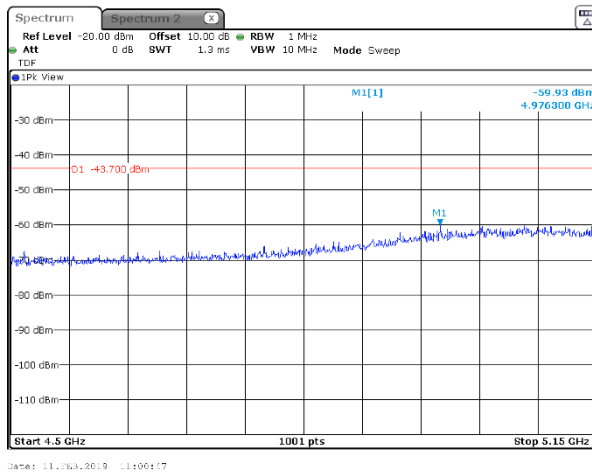
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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:			

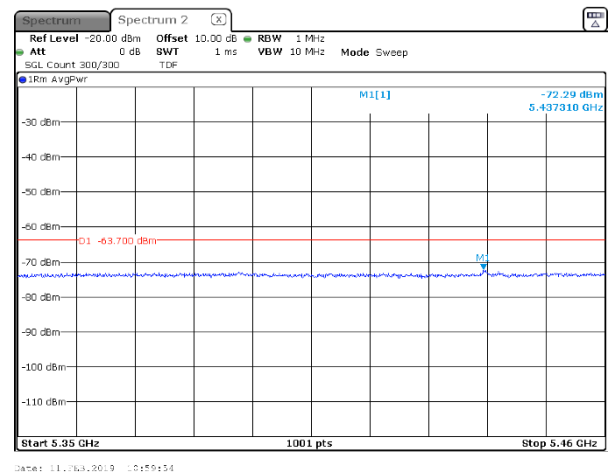
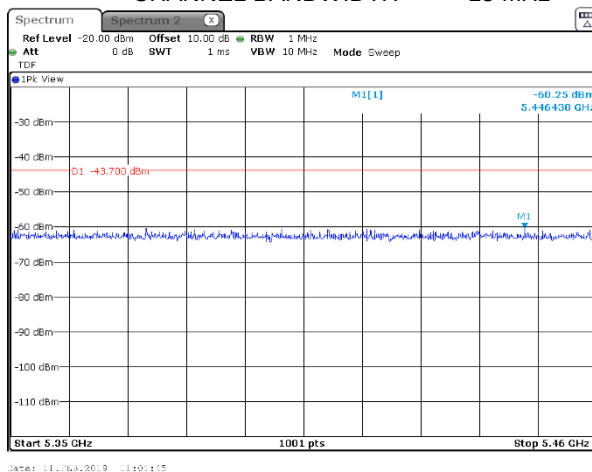
Plot 7.12.11 Conducted spurious emission measurements in the range 4.5 – 5.15 GHz

CARRIER FREQUENCY 5165 MHz
CHANNEL BANDWIDTH 15 MHz



Plot 7.12.12 Conducted spurious emission measurements in the range 5.35 – 5.46 GHz

CARRIER FREQUENCY 5165 MHz
CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2

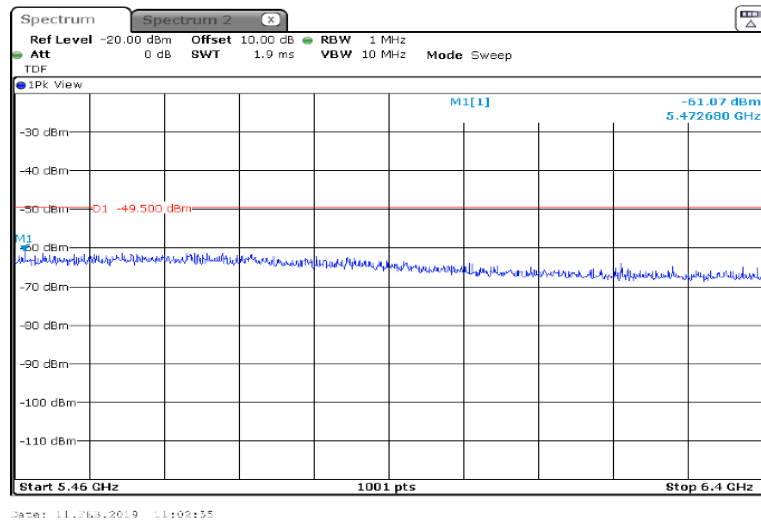
Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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 7.12.13 Conducted spurious emission measurements in the range 5.46 – 6.4 GHz

CARRIER FREQUENCY 5165 MHz

CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

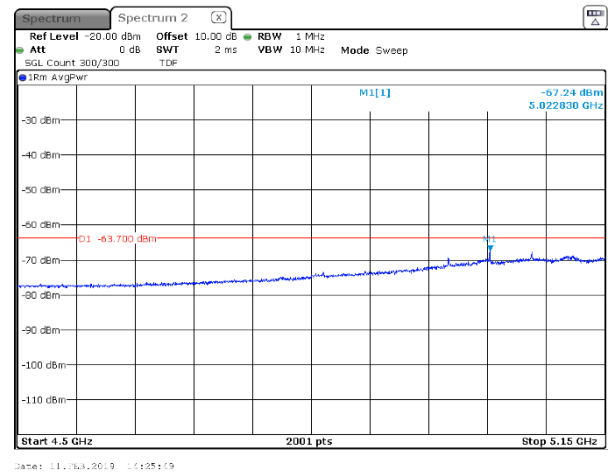
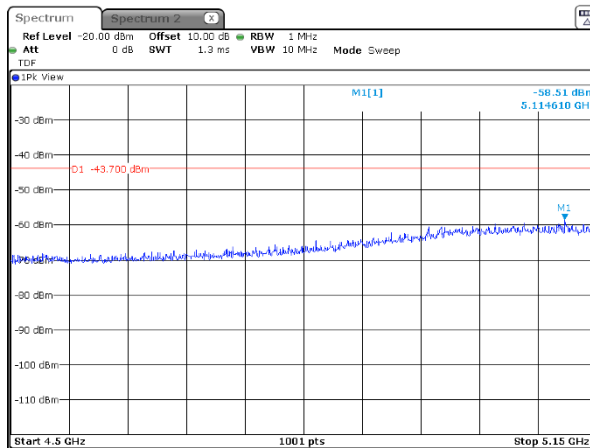
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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:			

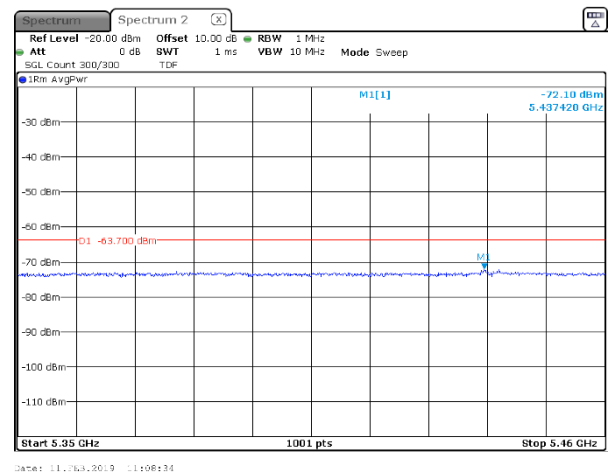
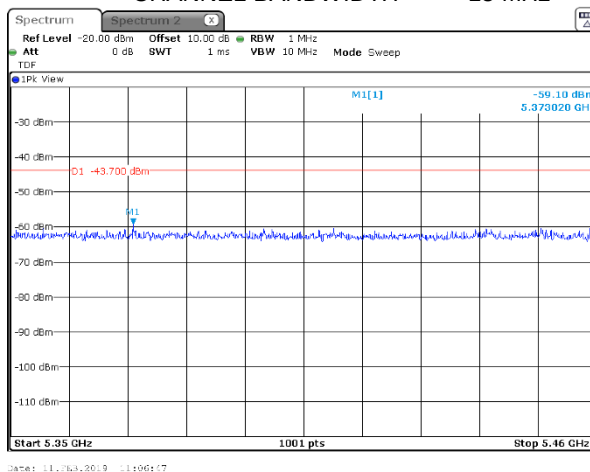
Plot 7.12.14 Conducted spurious emission measurements in the range 4.5 – 5.15 GHz

CARRIER FREQUENCY 5200 MHz
CHANNEL BANDWIDTH 15 MHz



Plot 7.12.15 Conducted spurious emission measurements in the range 5.35 – 5.46 GHz

CARRIER FREQUENCY 5200 MHz
CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2

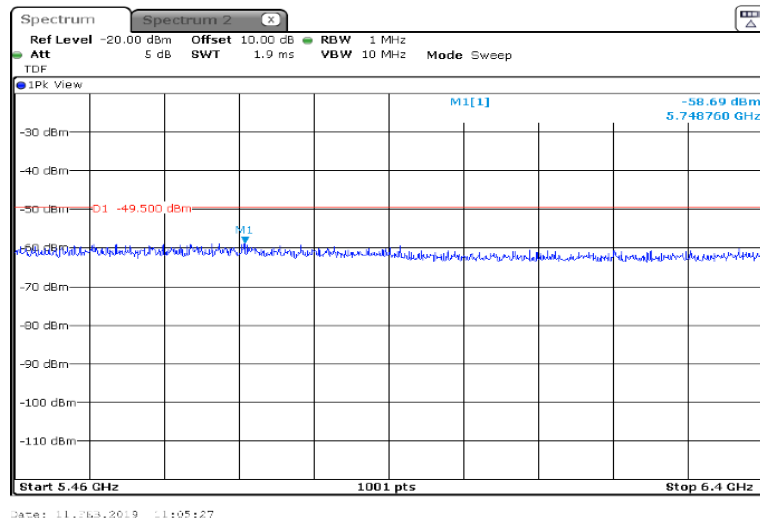
Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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 7.12.16 Conducted spurious emission measurements in the range 5.46 – 6.4 GHz

CARRIER FREQUENCY 5200 MHz

CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

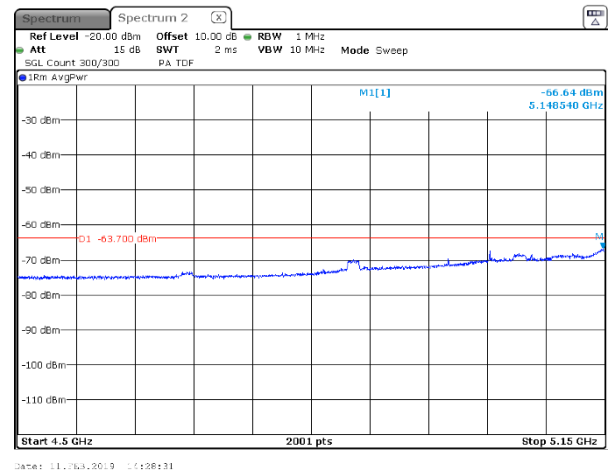
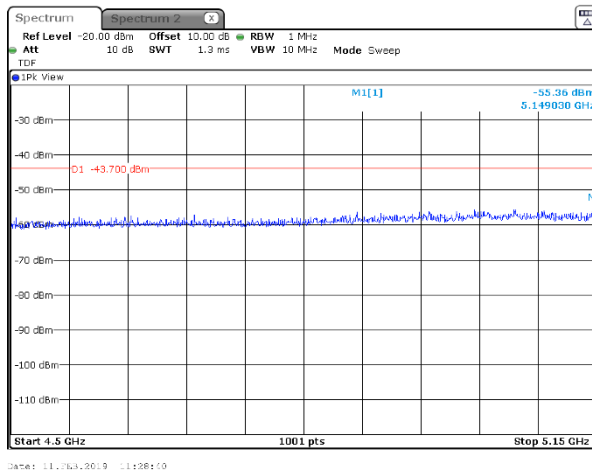
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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:			

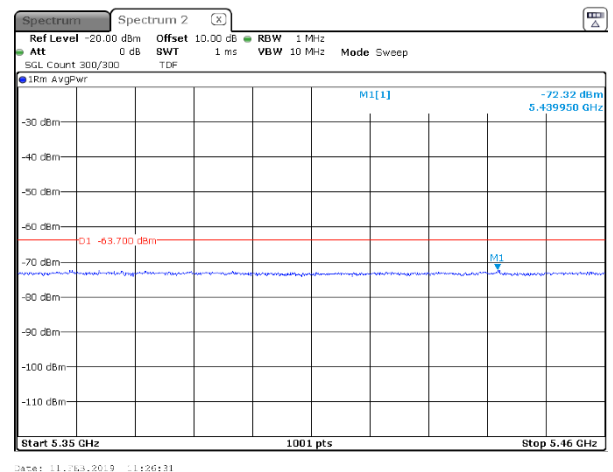
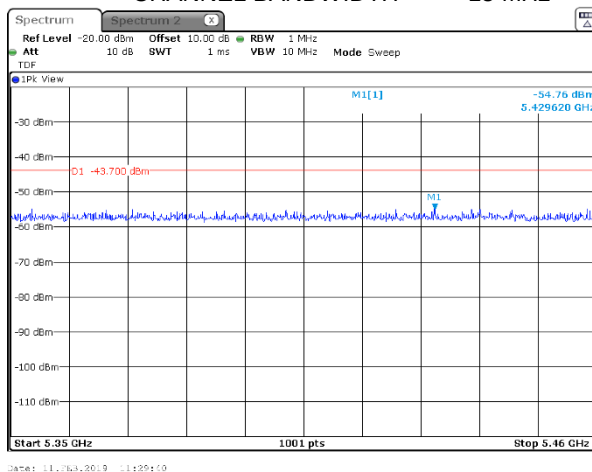
Plot 7.12.17 Conducted spurious emission measurements in the range 4.5 – 5.15 GHz

CARRIER FREQUENCY 5240 MHz
CHANNEL BANDWIDTH 15 MHz



Plot 7.12.18 Conducted spurious emission measurements in the range 5.35 – 5.46 GHz

CARRIER FREQUENCY 5240 MHz
CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2

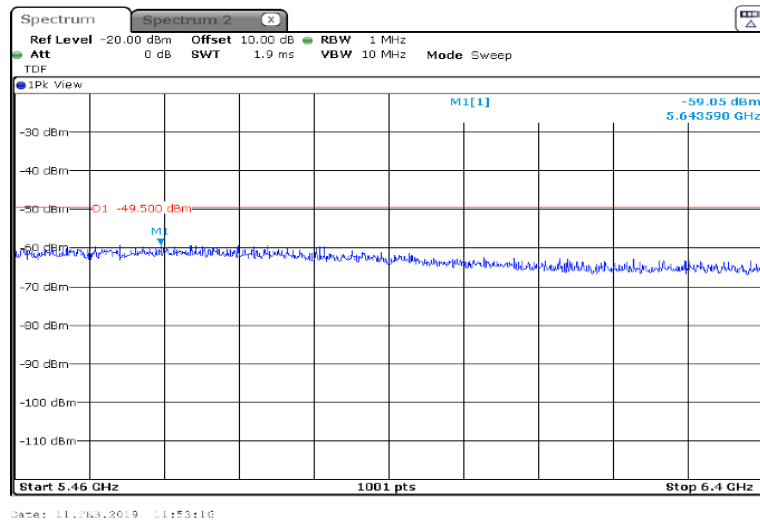
Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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 7.12.19 Conducted spurious emission measurements in the range 5.46 – 6.4 GHz

CARRIER FREQUENCY 5240 MHz

CHANNEL BANDWIDTH 15 MHz





HERMON LABORATORIES

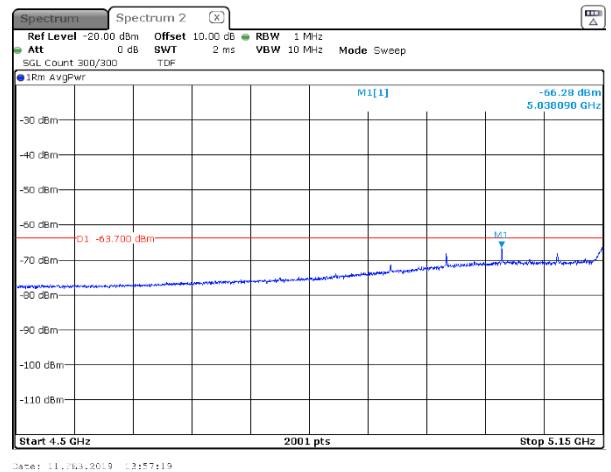
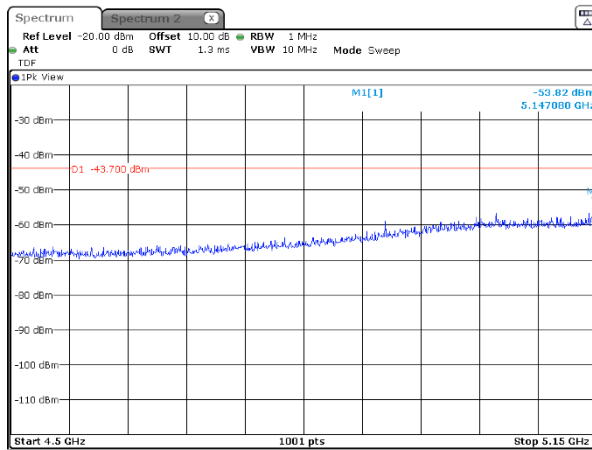
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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:			

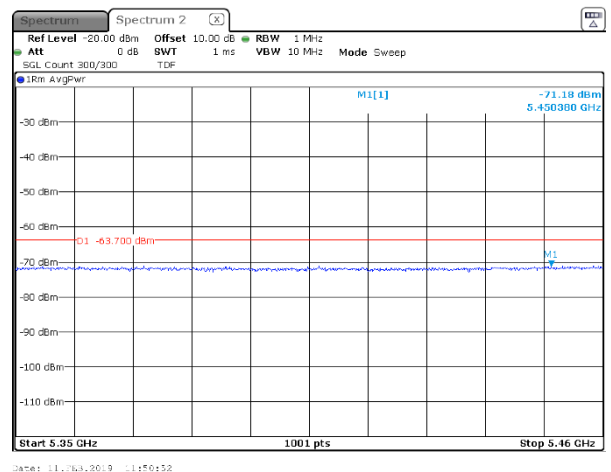
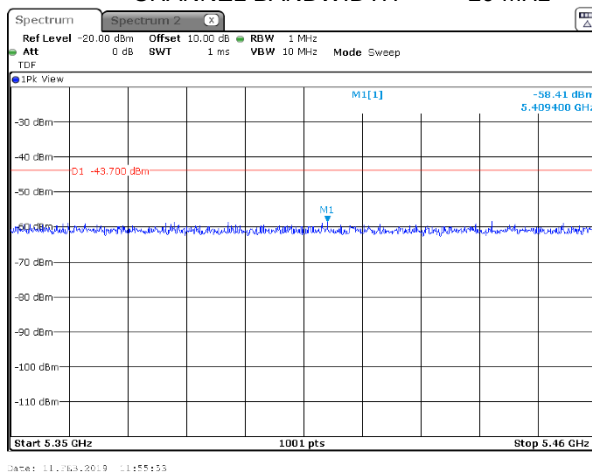
Plot 7.12.20 Conducted spurious emission measurements in the range 4.5 – 5.15 GHz

CARRIER FREQUENCY 5165 MHz
CHANNEL BANDWIDTH 20 MHz



Plot 7.12.21 Conducted spurious emission measurements in the range 5.35 – 5.46 GHz

CARRIER FREQUENCY 5165 MHz
CHANNEL BANDWIDTH 20 MHz





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Report ID: TelRad_FCC_31832_rev2

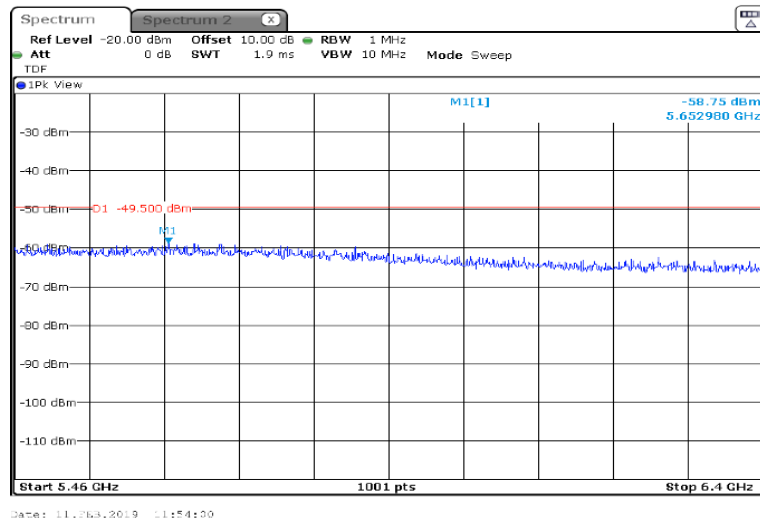
Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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 7.12.22 Conducted spurious emission measurements in the range 5.46 – 6.4 GHz

CARRIER FREQUENCY 5165 MHz

CHANNEL BANDWIDTH 20 MHz





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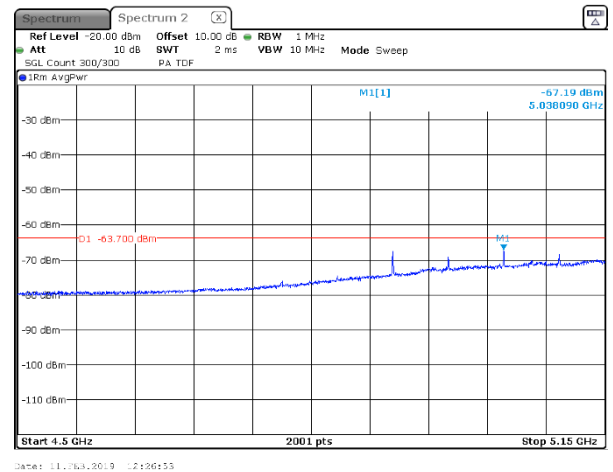
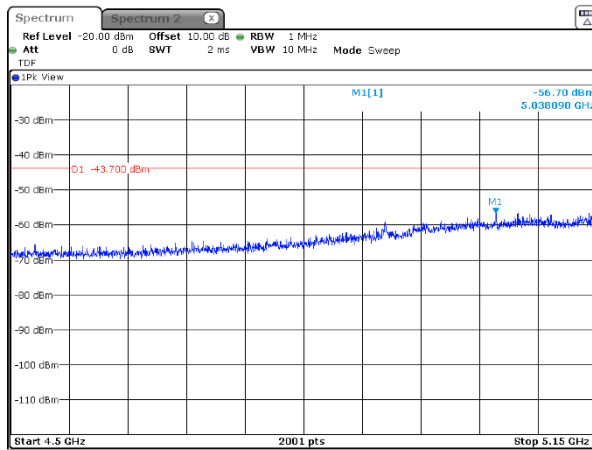
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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:			

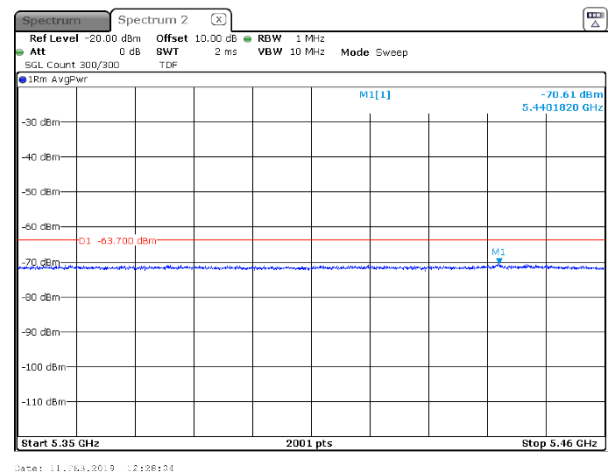
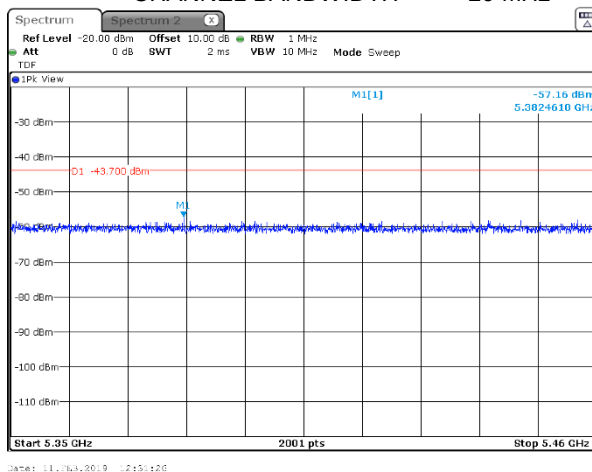
Plot 7.12.23 Conducted spurious emission measurements in the range 4.5 – 5.15 GHz

CARRIER FREQUENCY 5200 MHz
CHANNEL BANDWIDTH 20 MHz



Plot 7.12.24 Conducted spurious emission measurements in the range 5.35 – 5.46 GHz

CARRIER FREQUENCY 5200 MHz
CHANNEL BANDWIDTH 20 MHz





HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2

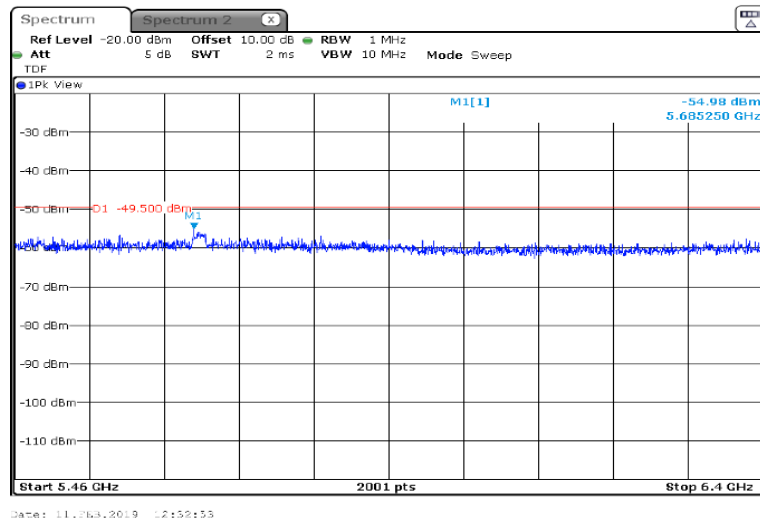
Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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 7.12.25 Conducted spurious emission measurements in the range 5.46 – 6.4 GHz

CARRIER FREQUENCY 5200 MHz

CHANNEL BANDWIDTH 20 MHz





HERMON LABORATORIES

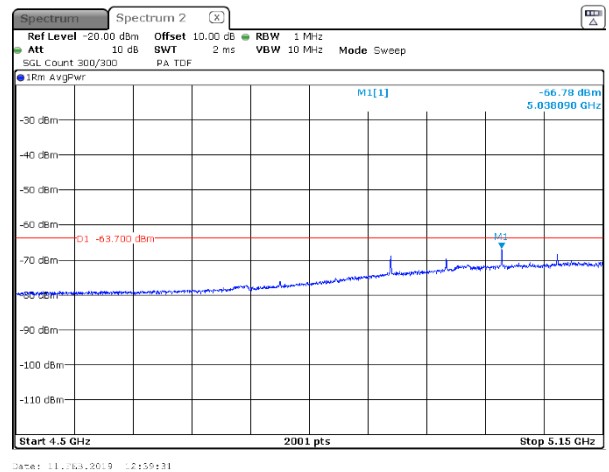
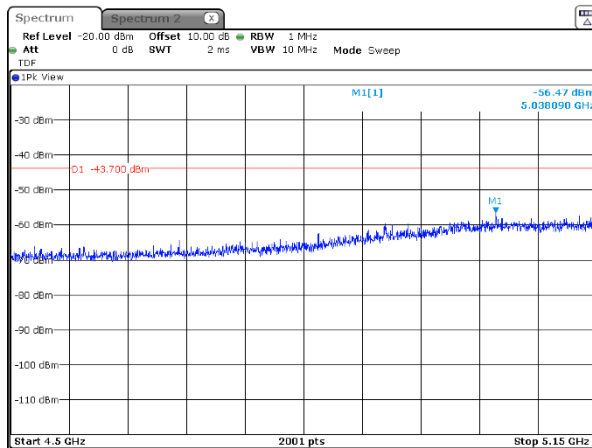
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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:			

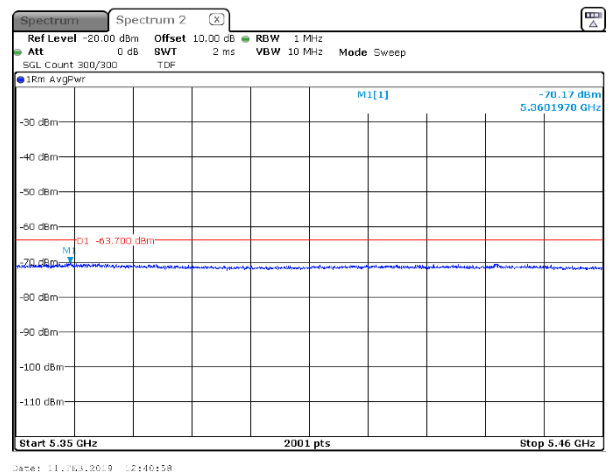
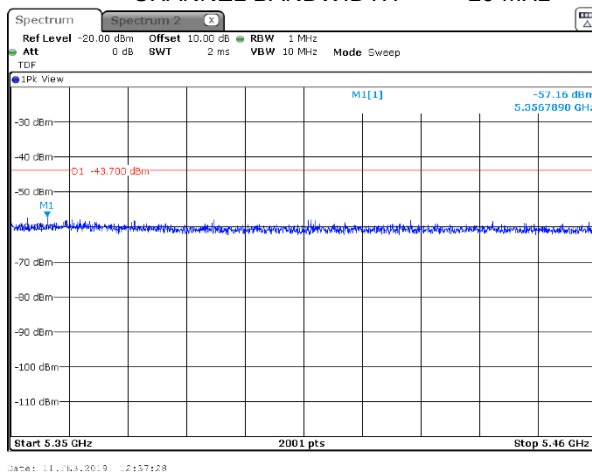
Plot 7.12.26 Conducted spurious emission measurements in the range 4.5 – 5.15 GHz

CARRIER FREQUENCY 5240 MHz
CHANNEL BANDWIDTH 20 MHz



Plot 7.12.27 Conducted spurious emission measurements in the range 5.35 – 5.46 GHz

CARRIER FREQUENCY 5240 MHz
CHANNEL BANDWIDTH 20 MHz





HERMON LABORATORIES

Report ID: TelRad_FCC_31832_rev2

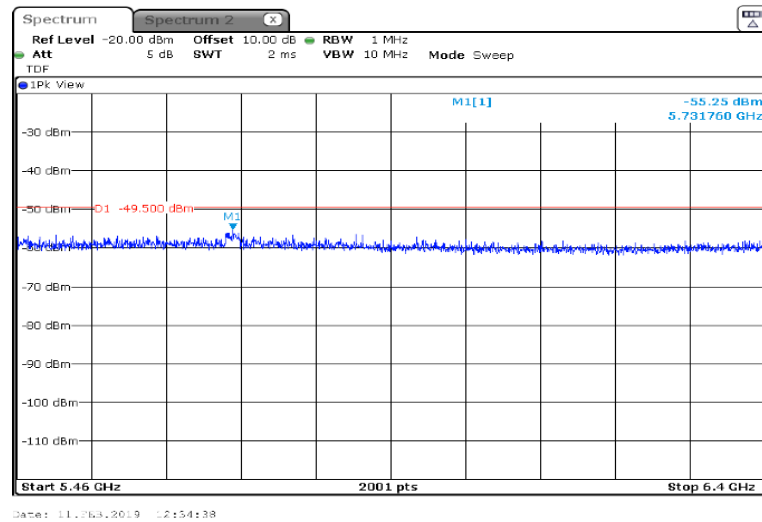
Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b), RSS-247 section 6.2.1.2 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 7.12.28 Conducted spurious emission measurements in the range 5.46 – 6.4 GHz

CARRIER FREQUENCY 5240 MHz

CHANNEL BANDWIDTH 20 MHz





Test specification:		FCC section 15.407(b)1, RSS-247 section 6.2.4 Field strength of undesirable emissions	
Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Verdict: PASS	
Date(s):			
07-Feb-19			
Temperature: 25 °C	Relative Humidity: 46 %	Air Pressure: 1012 hPa	Power: 48 VDC
Remarks:			

7.13 Field strength of undesirable emissions at 5150 – 5250 MHz range

7.13.1 General

This test was performed to measure field strength of spurious emissions from the EUT. Specification test limits are given Table 7.13.1, Table 7.13.2

Table 7.13.1 Unwanted emissions limits below 1 GHz and within restricted bands above 1 GHz

Frequency, MHz	Field strength at 3 m, dB(μV/m)*		
	Peak	Quasi Peak	Average
0.009 – 0.090	148.5 – 128.5	NA	128.5 – 108.5**
0.090 – 0.110	NA	108.5 – 106.8**	NA
0.110 – 0.490	126.8 – 113.8	NA	106.8 – 93.8**
0.490 – 1.705	NA	73.8 – 63.0**	NA
1.705 – 30.0*		69.5	
30 – 88		40.0	
88 – 216		43.5	
216 – 960		46.0	
960 – 1000		54.0	
1000 – 40000	74.0	NA	54.0

*- The limit for 3 m test distance was calculated using the inverse square distance extrapolation factor as follows:

$$\text{Lims}_2 = \text{Lims}_1 + 40 \log (S_1/S_2),$$

where S_1 and S_2 – standard defined and test distance respectively in meters.

** - The limit decreases linearly with the logarithm of frequency.

Table 7.13.2 EIRP of undesirable emission limits outside restricted bands (above 1 GHz)

Operating frequency band, GHz	EIRP of spurious, dBm/MHz	Field strength at 3 m, dB(μV/m)
5.150 – 5.250	-27	68.23
5.250 – 5.350	-27	68.23
5.470 – 5.725	-27	68.23
5.725 – 5.850	-27 (below 5.650 GHz and above 5.925 GHz)	68.23
	-27 increasing linearly to 10 (in 5.650 - 5.700 GHz and 5.875 - 5.925 GHz)	68.23 - 105.23*
	10 increasing linearly to 15.6 (in 5.700 - 5.720 GHz and 5.855 - 5.875 GHz)	105.23 - 110.83*
	15.6 increasing linearly to 27 (in 5.720 - 5.725 GHz and 5.850 - 5.855 GHz)	110.83 - 122.23*



Test specification:		FCC section 15.407(b)1, RSS-247 section 6.2.4 Field strength of undesirable emissions	
Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Verdict: PASS	
Date(s):			
07-Feb-19			
Temperature: 25 °C	Relative Humidity: 46 %	Air Pressure: 1012 hPa	Power: 48 VDC
Remarks:			

Test procedure for spurious emission field strength measurements in 9 kHz to 30 MHz band

7.13.1.1 The EUT was set up as shown in Figure 7.13.1 energized and the performance check was conducted.

7.13.1.2 The specified frequency range was investigated with antenna connected to spectrum analyzer/ EMI receiver. To find maximum radiation the turntable was rotated 360° and the measuring antenna was rotated around its vertical axis.

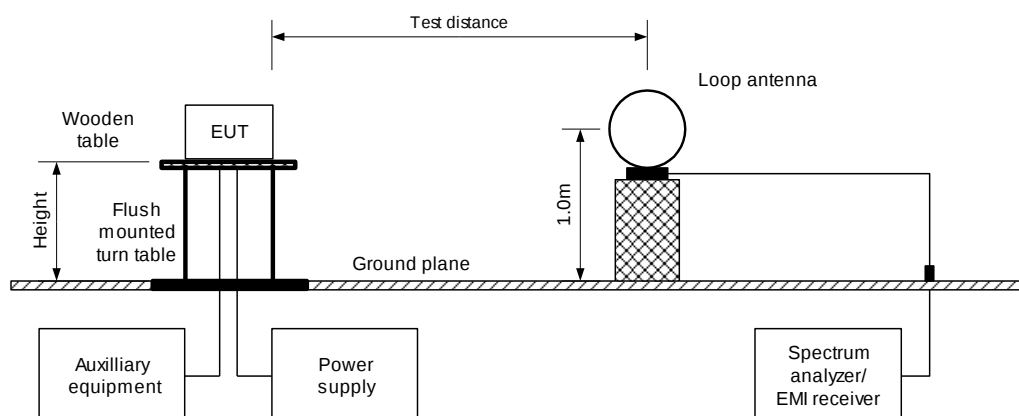
7.13.1.3 The worst test results (the lowest margins) were recorded and shown in the associated plots.

Test procedure for spurious emission field strength measurements above 30 MHz

7.13.1.4 The EUT was set up as shown in Figure 7.13.2, Figure 7.13.3, energized and the performance check was conducted.

7.13.1.5 The specified frequency range was investigated with antenna connected to spectrum analyzer/ EMI receiver. To find maximum radiation the turntable was rotated 360°, the measuring antenna height was changed from 1 to 4 m, its polarization was switched from vertical to horizontal.

7.13.1.6 The worst test results (the lowest margins) were recorded and shown in the associated plots.

Figure 7.13.1 Setup for spurious emission field strength measurements below 30 MHz

Test specification:		FCC section 15.407(b)1, RSS-247 section 6.2.4 Field strength of undesirable emissions	
Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Verdict: PASS	
Date(s):			
07-Feb-19			
Temperature: 25 °C	Relative Humidity: 46 %	Air Pressure: 1012 hPa	Power: 48 VDC
Remarks:			

Figure 7.13.2 Setup for spurious emission field strength measurements from 30 to 1000 MHz

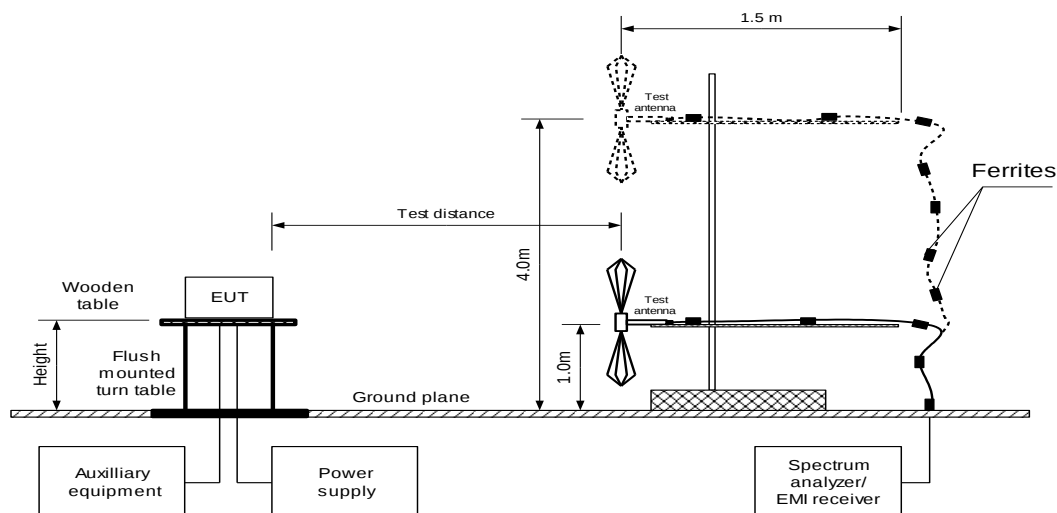
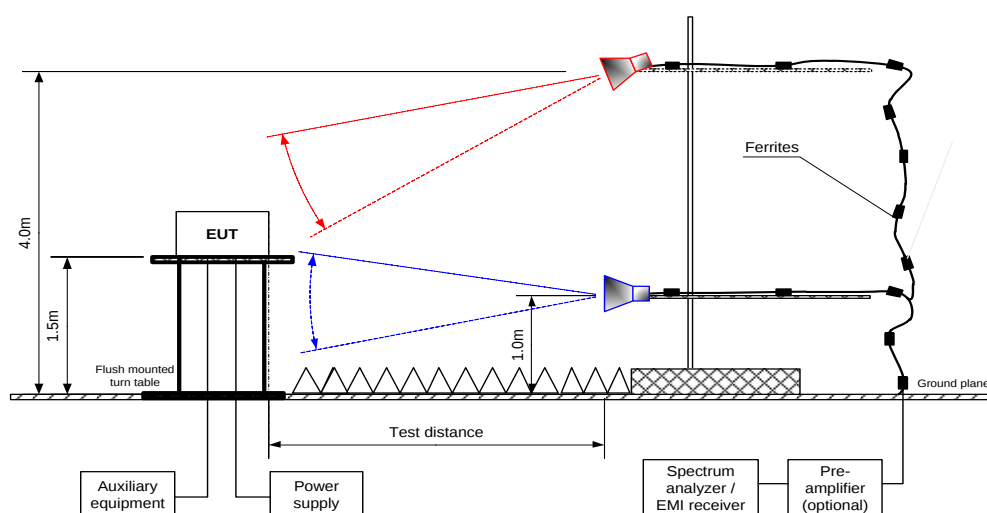


Figure 7.13.3 Setup for spurious emission field strength measurements above 1000 MHz





Test specification:		FCC section 15.407(b)1, RSS-247 section 6.2.4 Field strength of undesirable emissions	
Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Verdict: PASS	
Date(s):			
07-Feb-19			
Temperature: 25 °C	Relative Humidity: 46 %	Air Pressure: 1012 hPa	Power: 48 VDC
Remarks:			

Table 7.13.3 Field strength of spurious emissions below 1 GHz

ASSIGNED FREQUENCY BAND: 5.15 – 5.25 GHz
 INVESTIGATED FREQUENCY RANGE: 0.009 – 1000 MHz
 TEST DISTANCE: 3 m
 CHANNEL SPACING: 10MHz
 MODULATION: QPSK
 TRANSMITTER OUTPUT POWER: Maximum
 RESOLUTION BANDWIDTH: 1 kHz (9 kHz – 150 kHz)
 9.0 kHz (150 kHz – 30 MHz)
 120 kHz (30 MHz – 1000 MHz)
 VIDEO BANDWIDTH: > Resolution bandwidth
 TEST ANTENNA TYPE: Active loop (9 kHz – 30 MHz)
 Biconilog (30 MHz – 1000 MHz)

Biconilog (50 MHz – 1000 MHz)								
Frequency, MHz	Peak emission, dB(µV/m)	Quasi-peak			Antenna polarization	Antenna height, m	Turn-table position**, degrees	Verdict
		Measured emission, dB(µV/m)	Limit, dB(µV/m)	Margin, dB*				
Low, mid, high carrier frequency								
136.634	40.00	34.37	43.5	-9.13	Vertical	100	180	Pass
245.765	38.73	35.32	46.0	-10.68	Vertical	102	115	
301.715	44.37	37.98	46.0	-8.02	Horizontal	102	-173	
332.495	39.33	30.79	46.0	-15.21	Horizontal	104	-160	
375.010	41.20	38.37	46.0	-7.63	Horizontal	102	-180	
750.029	41.29	37.47	46.0	-8.53	Horizontal	132	180	
874.996	42.83	39.42	46.0	-6.58	Vertical	132	-133	

*- Margin = Measured emission - specification limit.

** - EUT front panel refer to 0 degrees position of turntable.

Table 7.13.4 Field strength of emissions above 1 GHz outside restricted bands

ASSIGNED FREQUENCY BAND: 5.15 – 5.25 GHz
 INVESTIGATED FREQUENCY RANGE: 1000 – 40000 MHz
 TEST DISTANCE: 3 m
 MODULATION: QPSK
 TRANSMITTER OUTPUT POWER: Maximum
 DETECTOR: USED: Peak
 RESOLUTION BANDWIDTH: 1000 kHz
 TEST ANTENNA TYPE: Biconilog (30 MHz – 1000 MHz)
 Double ridged guide (above 1000 MHz)

Frequency, MHz	Antenna polarization	Antenna height, m	Azimuth, degrees*	Field strength of spurious, dB(μV/m)	Limit, dBμV/m	Margin, dB**	Verdict
Low, mid, high carrier frequency							
All emissions are more than 20 dB below the limit							Pass

*- EUT front panel refers to 0 degrees position of turntable.

** - Margin = Measured emission - specification limit.



Test specification:		FCC section 15.407(b)1, RSS-247 section 6.2.4 Field strength of undesirable emissions	
Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Verdict: PASS	
Date(s):			
07-Feb-19			
Temperature: 25 °C	Relative Humidity: 46 %	Air Pressure: 1012 hPa	Power: 48 VDC
Remarks:			

Table 7.13.5 Field strength of spurious emissions above 1 GHz within restricted bands

ASSIGNED FREQUENCY: 5.15 – 5.25 GHz
 INVESTIGATED FREQUENCY RANGE: 1000 - 40000 MHz
 TEST DISTANCE: 3 m
 CHANNEL SPACING: 10MHz
 MODULATION: QPSK
 DUTY CYCLE: 100 %
 TRANSMITTER OUTPUT POWER: Maximum
 DETECTOR USED: Peak
 RESOLUTION BANDWIDTH: 1000 kHz
 TEST ANTENNA TYPE: Double ridged guide

TEST ANTENNA TYPE:				Double ridge guide							
Frequency, MHz	Antenna		Azimuth, degrees*	Peak field strength(VBW=3 MHz)			Average field strength(VBW=1 kHz)				Verdict
	Polarization	Height, m		Measured, dB(μV/m)	Limit, dB(μV/m)	Margin, dB**	Measured, dB(μV/m)	Calculated, dB(μV/m)	Limit, dB(μV/m)	Margin, dB***	
Low, mid, high carrier frequency											
All emissions are more than 20 dB below the limit											Pass

*- EUT front panel refers to 0 degrees position of turntable.

** - Margin, dB = Measured, dB(μV/m) – Limit, dB(μV/m)

*** - Margin, dB = Calculated, dB(μV/m) – Limit, dB(μV/m)

Reference numbers of test equipment used

HL 0446	HL 0604	HL 3903	HL 4355	HL 4360	HL 4933	HL 4956	HL 5405
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Full description is given in Appendix A.

Table 7.13.6 Restricted bands according to FCC section 15.205

MHz	MHz	MHz	MHz	MHz	GHz
0.09 - 0.11	8.37625 - 8.38675	73 - 74.6	399.9 - 410	2690 - 2900	10.6 - 12.7
0.495 - 0.505	8.41425 - 8.41475	74.8 - 75.2	608 - 614	3260 - 3267	13.25 - 13.4
2.1735 - 2.1905	12.29 - 12.293	108 - 121.94	960 - 1240	3332 - 3339	14.47 - 14.5
4.125 - 4.128	12.51975 - 12.52025	123 - 138	1300 - 1427	3345.8 - 3358	15.35 - 16.2
4.17725 - 4.17775	12.57675 - 12.57725	149.9 - 150.05	1435 - 1626.5	3600 - 4400	17.7 - 21.4
4.20725 - 4.20775	13.36 - 13.41	156.52475 - 156.52525	1645.5 - 1646.5	4500 - 5150	22.01 - 23.12
6.215 - 6.218	16.42 - 16.423	156.7 - 156.9	1660 - 1710	5350 - 5460	23.6 - 24
6.26775 - 6.26825	16.69475 - 16.69525	162.0125 - 167.17	1718.8 - 1722.2	7250 - 7750	31.2 - 31.8
6.31175 - 6.31225	16.80425 - 16.80475	167.72 - 173.2	2200 - 2300	8025 - 8500	36.43 - 36.5
8.291 - 8.294	25.5 - 25.67	240 - 285	2310 - 2390	9000 - 9200	Above 38.6
8.362 - 8.366	37.5 - 38.25	322 - 335.4	2483.5 - 2500	9300 - 9500	

Table 7.13.7 Restricted bands according to RSS-Gen

MHz	MHz	MHz	MHz	MHz	GHz
0.09 - 0.11	8.291 - 8.294	16.80425 - 16.80475	399.9 - 410	3260 - 3267	10.6 - 12.7
2.1735 - 2.1905	8.362 - 8.366	25.5 - 25.67	608 - 614	3332 - 3339	13.25 - 13.4
3.020 - 3.026	8.37625 - 8.38675	37.5 - 38.25	960 - 1427	3345.8 - 3358	14.47 - 14.5
4.125 - 4.128	8.41425 - 8.41475	73 - 74.6	1435 - 1626.5	3500 - 4400	15.35 - 16.2
4.17725 - 4.17775	12.29 - 12.293	74.8 - 75.2	1645.5 - 1646.5	4500 - 5150	17.7 - 21.4
4.20725 - 4.20775	12.51975 - 12.52025	108 - 138	1660 - 1710	5350 - 5460	22.01 - 23.12
5.677 - 5.683	12.57675 - 12.57725	156.52475 - 156.52525	1718.8 - 1722.2	7250 - 7750	23.6 - 24
6.215 - 6.218	13.36 - 13.41	156.7 - 156.9	2200 - 2300	8025 - 8500	31.2 - 31.8
6.26775 - 6.26825	16.42 - 16.423	240 - 285	2310 - 2390	9000 - 9200	36.43 - 36.5
6.31175 - 6.31225	16.69475 - 16.69525	322 - 335.4	2655 - 2900	9300 - 9500	Above 38.6



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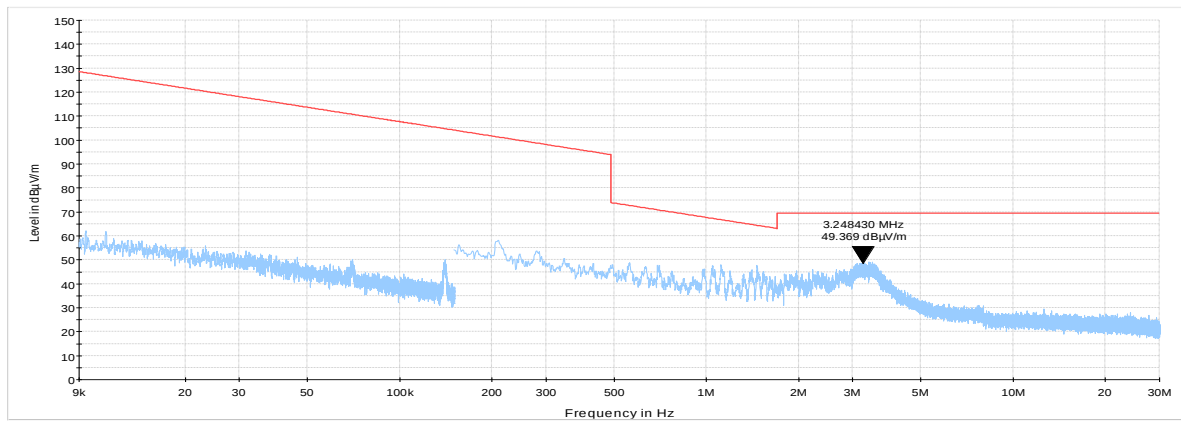
Report ID: TelRad_FCC_31832_rev2

Date of Issue: 25-Jun-19

Test specification:		FCC section 15.407(b)1, RSS-247 section 6.2.4 Field strength of undesirable emissions			
Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7			
Test mode:		Compliance		Verdict: PASS	
Date(s):		07-Feb-19			
Temperature: 25 °C	Relative Humidity: 46 %		Air Pressure: 1012 hPa		Power: 48 VDC
Remarks:					

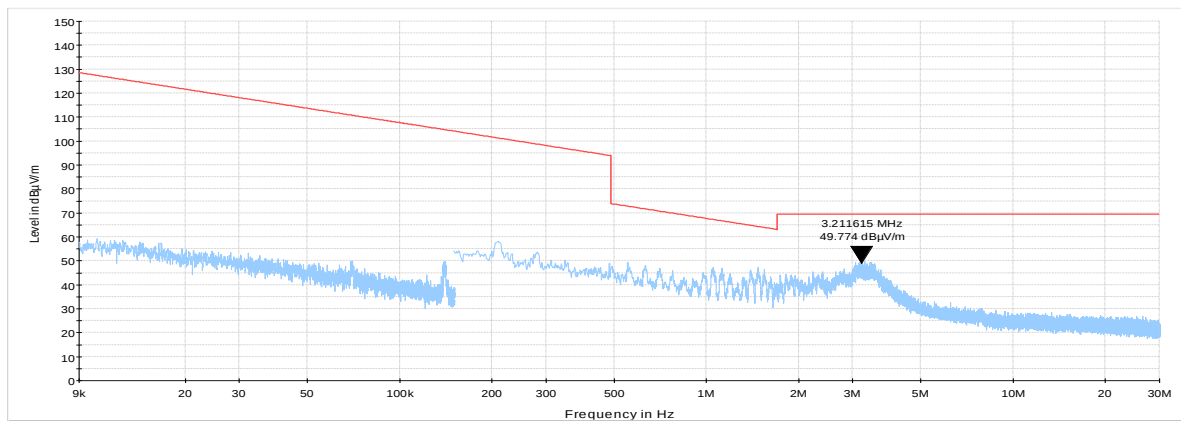
Plot 7.13.1 Radiated emission measurements from 9 kHz to 30 MHz at the low carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal



Plot 7.13.2 Radiated emission measurements from 9 kHz to 30 MHz at the mid carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal





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

Test specification:		FCC section 15.407(b)1, RSS-247 section 6.2.4 Field strength of undesirable emissions	
Test procedure:		KDB 662911; KDB 789033, ANSI C63.10, section 12.7.6 & 12.7.7	
Test mode:		Verdict: PASS	
Date(s):			
07-Feb-19			
Temperature: 25 °C	Relative Humidity: 46 %	Air Pressure: 1012 hPa	Power: 48 VDC
Remarks:			

Plot 7.13.3 Radiated emission measurements from 9 kHz to 30 MHz at the high carrier frequency

TEST SITE: Semi anechoic chamber
TEST DISTANCE: 3 m
ANTENNA POLARIZATION: Vertical and Horizontal

