



Test specification: Section 15.247(d) / RSS-247 section 5.5, Band edge emissions			
Test procedure: ANSI C63.10 section 11.12.1			
Test mode: Compliance		Verdict: PASS	
Date(s): 28-Jul-19			
Temperature: 24 °C	Relative Humidity: 44 %	Air Pressure: 1004 hPa	Power: 48 VDC
Remarks:			

Table 7.6.3 Low band edge emission within restricted band test results

ASSIGNED FREQUENCY RANGE: 2400 - 2483.5 MHz
 DETECTOR USED: Peak / Average
 MODULATING SIGNAL: PRBS
 TRANSMITTER OUTPUT POWER SETTINGS: Maximum
 RESOLUTION BANDWIDTH: 1 MHz
 VIDEO BANDWIDTH: ≥ RBW
 CONFIGURATION: 1 beam
 CHANNEL SPACING: 5 MHz

Modulation	Band edge	SA Reading, dBm								Sum , dBm
		Chain #1	Chain #2	Chain #3	Chain #4	Chain #5	Chain #6	Chain #7	Chain #8	
Detector Peak										
QPSK	2390.0	-64.38	-64.06	-62.60	-63.12	-62.78	-60.89	-60.32	-60.25	-53.03
64QAM	2390.0	-62.97	-62.91	-63.98	-63.66	-63.62	-60.87	-59.88	-60.56	-53.03
Detector Average										
QPSK	2390.0	-75.38	-75.48	-75.46	-75.55	-75.52	-72.03	-72.23	-72.16	-64.91
64QAM	2390.0	-75.25	-75.33	-75.33	-75.17	-75.08	-71.91	-71.67	-72.00	-64.65

CHANNEL SPACING: 10 MHz

Detector Peak										
QPSK	2390.0	-58.38	-60.29	-60.50	-63.23	-62.76	-61.75	-60.46	-62.81	-51.99
64QAM	2390.0	-62.58	-62.48	-62.83	-63.75	-63.16	-62.00	-63.35	-63.81	-53.95
Detector Average										
QPSK	2390.0	-73.13	-73.23	-73.35	-74.27	-74.19	-74.06	-75.29	-74.88	-64.99
64QAM	2390.0	-75.29	-75.08	-74.40	-75.38	-75.27	-75.21	-75.03	-75.10	-66.08

CHANNEL SPACING: 5 MHz

Frequency, MHz	Detector peak, dBm			Limit, dBm	Margin, dB*	Detector average, dBm,		Limit, dBm	Margin, dB*	Verdict
	Emission	Cable loss, dB	Band edge result			Emission	Band edge result			
Modulation QPSK										
2390.0	-53.03	1.23	-54.26	-39.58	-14.68	-64.91	-66.14	-59.58	-6.56	Pass
Modulation 64QAM										
2390.0	-53.03	1.23	-54.26	-39.58	-14.68	-64.65	-65.88	-59.58	-6.30	Pass

CHANNEL SPACING: 10 MHz

Modulation QPSK										
2390.0	-51.99	1.23	-53.22	-39.58	-13.64	-64.99	-66.22	-59.58	-6.64	Pass
Modulation 64QAM										
2390.0	-53.95	1.23	-55.18	-39.58	-15.60	-66.08	-67.31	-59.58	-7.73	Pass



Test specification: Section 15.247(d) / RSS-247 section 5.5, Band edge emissions			
Test procedure: ANSI C63.10 section 11.12.1			
Test mode: Compliance		Verdict: PASS	
Date(s): 28-Jul-19			
Temperature: 24 °C	Relative Humidity: 44 %	Air Pressure: 1004 hPa	Power: 48 VDC
Remarks:			

Table 7.6.4 High band edge emission within restricted band test results

ASSIGNED FREQUENCY RANGE: 2400 - 2483.5 MHz
 DETECTOR USED: Peak / Average
 MODULATING SIGNAL: PRBS
 TRANSMITTER OUTPUT POWER SETTINGS: Maximum
 RESOLUTION BANDWIDTH: 1 MHz
 VIDEO BANDWIDTH: ≥ RBW
 CONFIGURATION: 1 beam
 CHANNEL SPACING: 5 MHz

Modulation	Band edge	SA Reading, dBm								Sum , dBm
		Chain #1	Chain #2	Chain #3	Chain #4	Chain #5	Chain #6	Chain #7	Chain #8	
Detector Peak										
QPSK	2483.5	-64.79	-64.58	-64.85	-64.58	-64.52	-64.24	-64.47	-64.98	-55.62
64QAM	2483.5	-64.85	-64.43	-65.08	-64.33	-64.24	-64.80	-64.29	-63.98	-55.49
Detector Average										
QPSK	2483.5	-77.23	-77.00	-77.48	-77.54	-77.67	-77.48	-77.57	-77.56	-68.44
64QAM	2483.5	-77.55	-77.38	-77.42	-77.62	-77.73	-77.53	-77.73	-77.68	-68.58

CHANNEL SPACING: 10 MHz

Detector Peak										
QPSK	2483.5	-64.68	-64.83	-64.88	-64.38	-63.99	-64.79	-64.89	-64.40	-55.59
64QAM	2483.5	-64.36	-64.41	-64.51	-64.46	-64.70	-64.45	-64.92	-64.03	-55.47
Detector Average										
QPSK	2483.5	-77.45	-77.59	-77.56	-77.29	-77.52	-77.53	-77.57	-77.34	-68.48
64QAM	2483.5	-77.46	-77.61	-77.57	-77.52	-77.51	-77.64	-77.40	-77.60	-68.54

CHANNEL SPACING: 5 MHz

Frequency, MHz	Detector peak, dBm			Limit, dBm**	Margin, dB*	Detector average, dBm,		Limit, dBm	Margin, dB*	Verdict
	Emission	Cable loss, dB	Band edge result			Emission	Band edge result			
High band edge										
Modulation QPSK										
2483.5	-55.62	1.23	-56.85	-39.58	-17.27	-68.44	-69.67	-59.58	-10.09	Pass
Modulation 64QAM										
2483.5	-55.49	1.23	-56.72	-39.58	-17.14	-68.58	-69.81	-59.58	-10.23	Pass

CHANNEL SPACING: 10 MHz

Modulation QPSK										
2483.5	-55.59	1.23	-56.82	-39.58	-17.24	-68.48	-69.71	-59.58	-10.13	Pass
Modulation 64QAM										
2483.5	-55.47	1.23	-56.70	-39.58	-17.12	-68.54	-69.77	-59.58	-10.19	Pass

Reference numbers of test equipment used

HL 3901	HL 4070	HL 4366	HL 5376	HL	HL	HL	HL
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Full description is given in Appendix A.



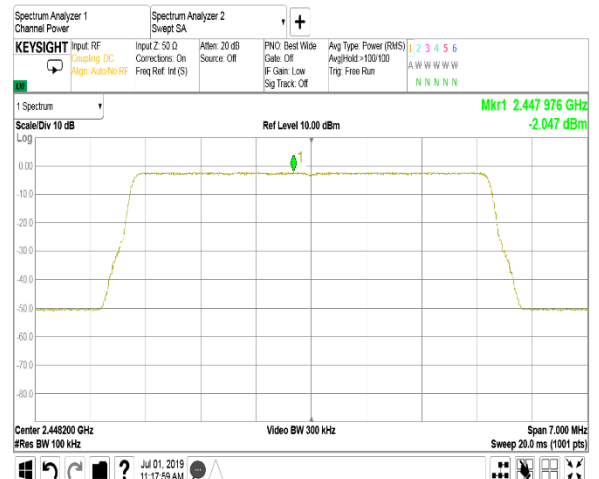
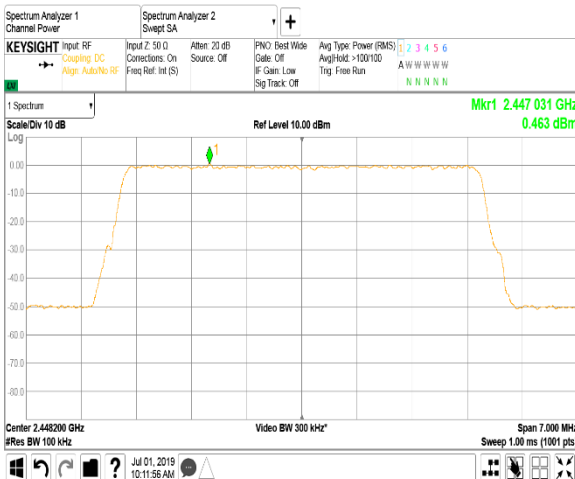
HERMON LABORATORIES

Test specification: Section 15.247(d) / RSS-247 section 5.5, Band edge emissions			
Test procedure: ANSI C63.10 section 11.12.1			
Test mode: Compliance		Verdict: PASS	
Date(s): 28-Jul-19			
Temperature: 24 °C	Relative Humidity: 44 %	Air Pressure: 1004 hPa	Power: 48 VDC
Remarks:			

Plot 7.6.1 Spurious emission measurements at reference level, low carrier frequency

CHANNEL BANDWIDTH:
CONFIGURATION:
MODULATION:
ANTENNA CHAIN # 1: Maximum level

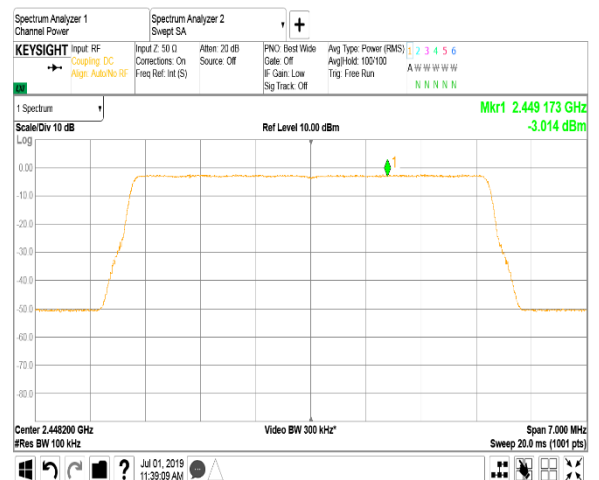
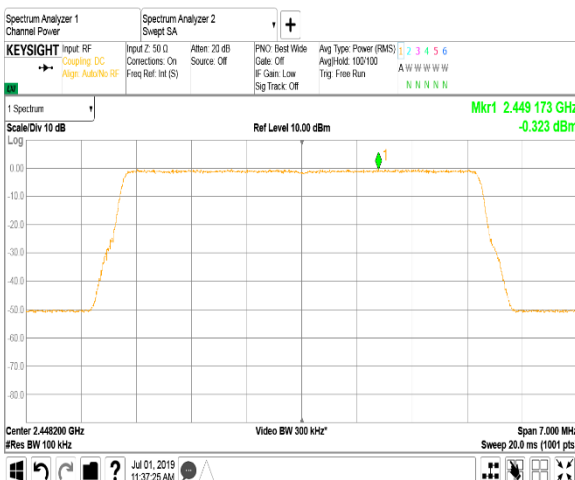
5 MHz
1beam
QPSK
ANTENNA CHAIN # 5: Minimum level



Plot 7.6.2 Spurious emission measurements at reference level, low carrier frequency

CHANNEL BANDWIDTH:
CONFIGURATION:
MODULATION:
ANTENNA CHAIN # 1: Maximum level

5 MHz
1beam
64QAM
ANTENNA CHAIN # 5: Minimum level





HERMON LABORATORIES

Test specification: Section 15.247(d) / RSS-247 section 5.5, Band edge emissions			
Test procedure: ANSI C63.10 section 11.12.1			
Test mode: Compliance		Verdict: PASS	
Date(s): 28-Jul-19			
Temperature: 24 °C	Relative Humidity: 44 %	Air Pressure: 1004 hPa	Power: 48 VDC
Remarks:			

Plot 7.6.3 Spurious emission measurements at reference level, low carrier frequency

CHANNEL BANDWIDTH:

10 MHz

CONFIGURATION:

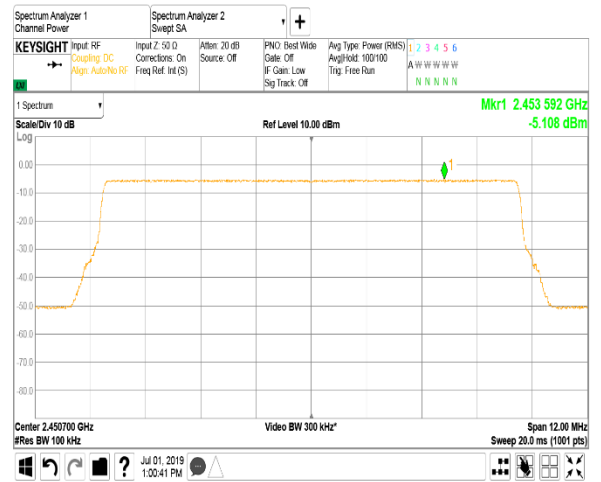
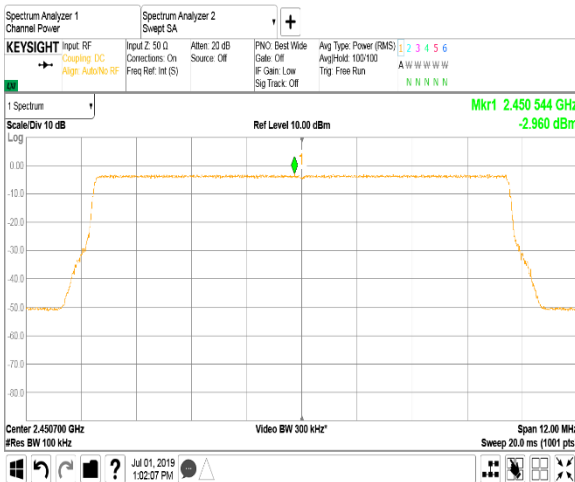
1beam

MODULATION:

QPSK

ANTENNA CHAIN # 1: Maximum level

ANTENNA CHAIN # 5: Minimum level



Plot 7.6.4 Spurious emission measurements at reference level, low carrier frequency

CHANNEL BANDWIDTH:

10 MHz

CONFIGURATION:

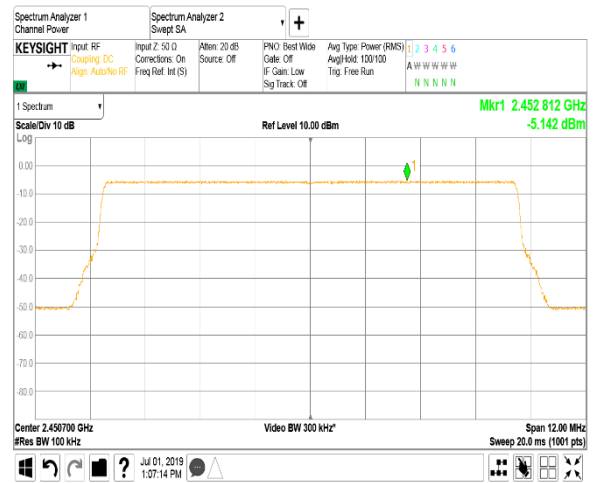
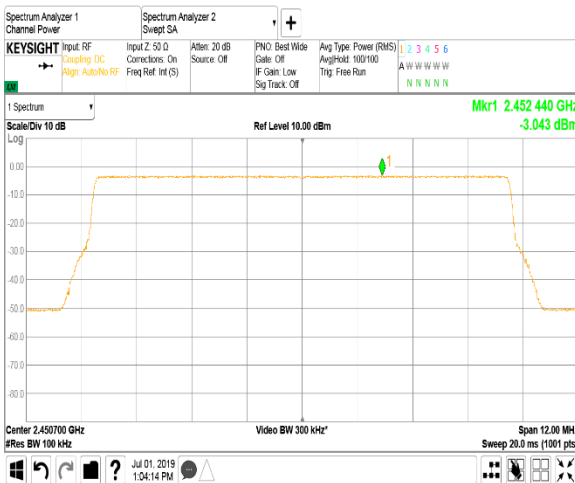
1beam

MODULATION:

64QAM

ANTENNA CHAIN # 1: Maximum level

ANTENNA CHAIN # 5: Minimum level





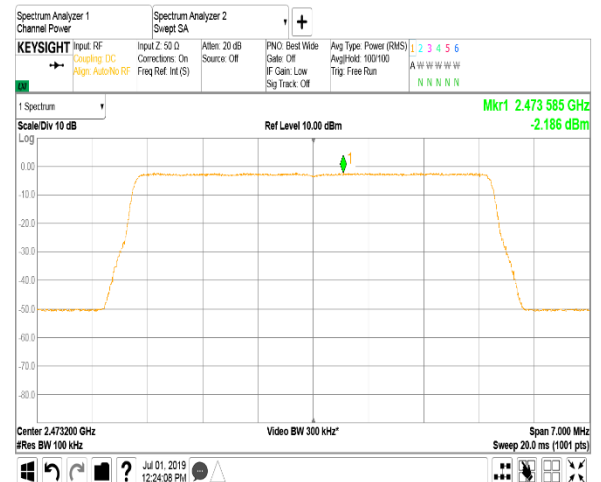
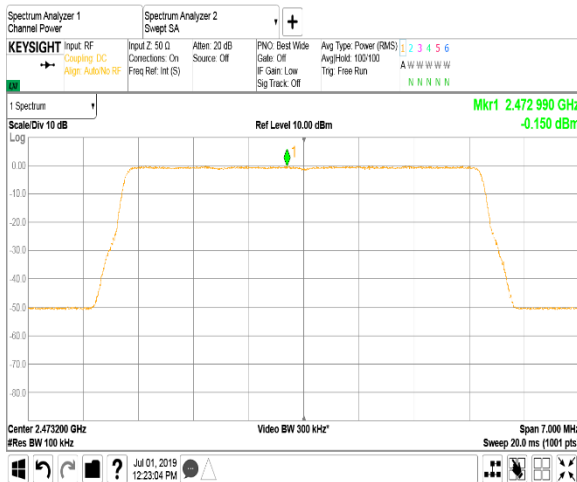
HERMON LABORATORIES

Test specification: Section 15.247(d) / RSS-247 section 5.5, Band edge emissions			
Test procedure: ANSI C63.10 section 11.12.1			
Test mode: Compliance		Verdict: PASS	
Date(s): 28-Jul-19			
Temperature: 24 °C	Relative Humidity: 44 %	Air Pressure: 1004 hPa	Power: 48 VDC
Remarks:			

Plot 7.6.5 Spurious emission measurements at reference level, high carrier frequency

CHANNEL BANDWIDTH:
 CONFIGURATION:
 MODULATION:
 ANTENNA CHAIN # 1: Maximum level

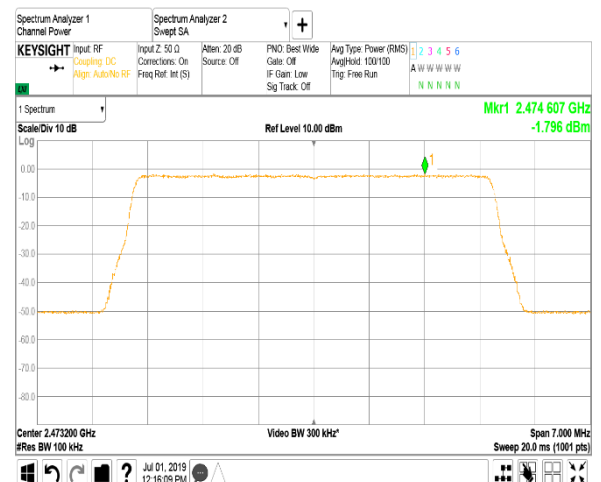
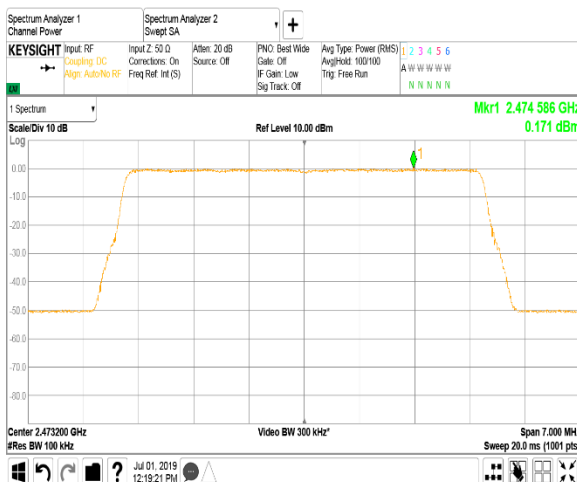
5 MHz
 1beam
 QPSK
 ANTENNA CHAIN # 6: Minimum level



Plot 7.6.6 Spurious emission measurements at reference level, high carrier frequency

CHANNEL BANDWIDTH:
 CONFIGURATION:
 MODULATION:
 ANTENNA CHAIN # 1: Maximum level

5 MHz
 1beam
 64QAM
 ANTENNA CHAIN # 6: Minimum level





HERMON LABORATORIES

Test specification: Section 15.247(d) / RSS-247 section 5.5, Band edge emissions			
Test procedure: ANSI C63.10 section 11.12.1			
Test mode: Compliance		Verdict: PASS	
Date(s): 28-Jul-19			
Temperature: 24 °C	Relative Humidity: 44 %	Air Pressure: 1004 hPa	Power: 48 VDC
Remarks:			

Plot 7.6.7 Spurious emission measurements at reference level, high carrier frequency

CHANNEL BANDWIDTH:

10 MHz

CONFIGURATION:

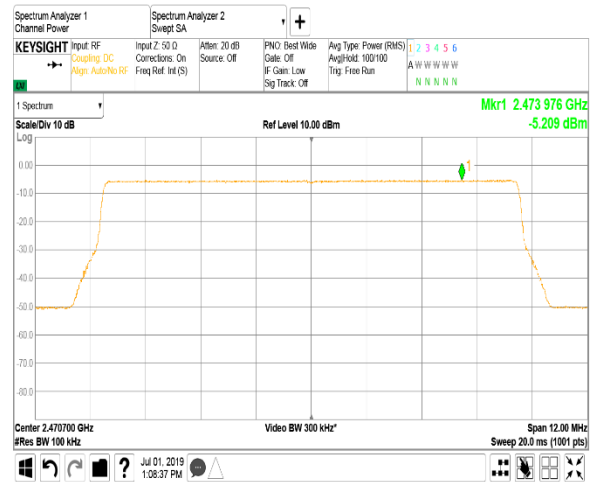
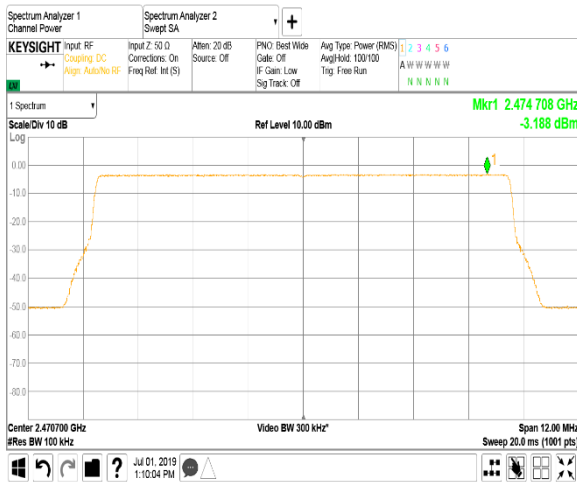
1beam

MODULATION:

QPSK

ANTENNA CHAIN # 1: Maximum level

ANTENNA CHAIN # 6: Minimum level



Plot 7.6.8 Spurious emission measurements at reference level, high carrier frequency

CHANNEL BANDWIDTH:

10 MHz

CONFIGURATION:

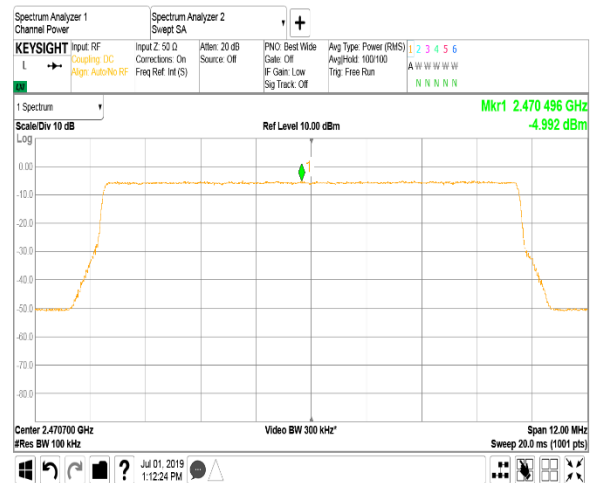
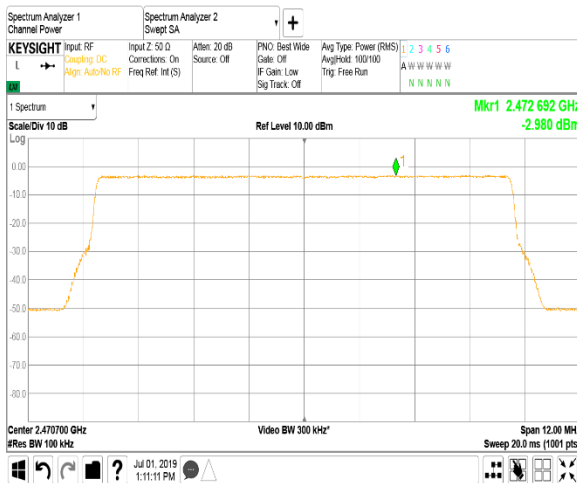
1beam

MODULATION:

64QAM

ANTENNA CHAIN # 1: Maximum level

ANTENNA CHAIN # 6: Minimum level





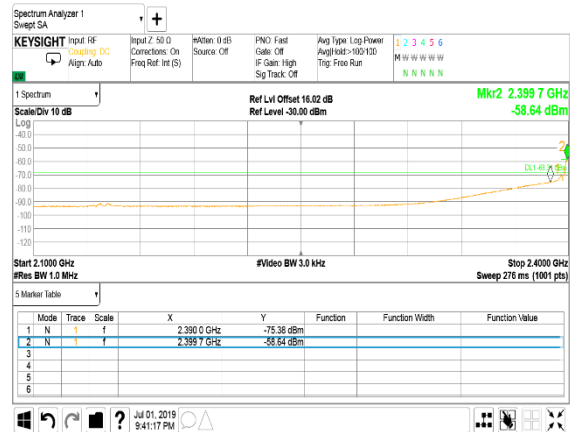
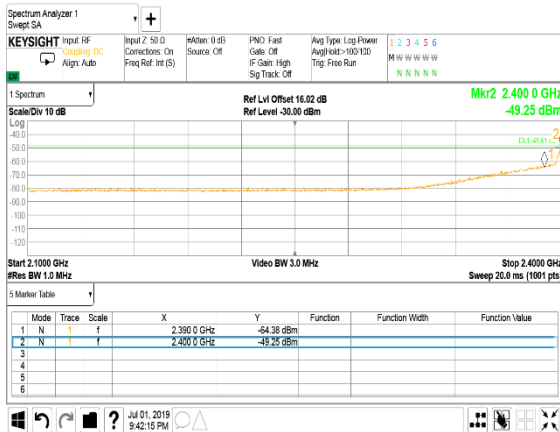
HERMON LABORATORIES

Test specification: Section 15.247(d) / RSS-247 section 5.5, Band edge emissions			
Test procedure: ANSI C63.10 section 11.12.1			
Test mode: Compliance		Verdict: PASS	
Date(s): 28-Jul-19			
Temperature: 24 °C	Relative Humidity: 44 %	Air Pressure: 1004 hPa	Power: 48 VDC
Remarks:			

Plot 7.6.9 Spurious emission measurements in 2100 - 2400 MHz range at antenna chain # 1, low carrier frequency

CHANNEL BANDWIDTH:
CONFIGURATION:
MODULATION:

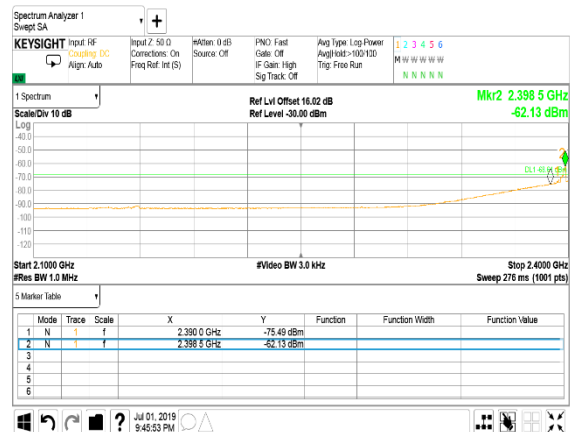
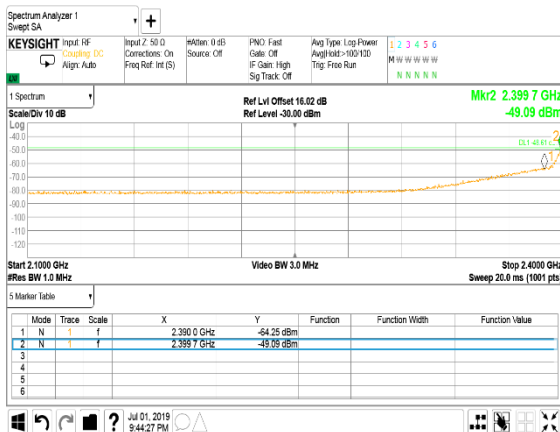
5 MHz
1beam
QPSK



Plot 7.6.10 Spurious emission measurements in 2100 - 2400 MHz range at antenna chain # 1, low carrier frequency

CHANNEL BANDWIDTH:
CONFIGURATION:
MODULATION:

5 MHz
1beam
64 QAM





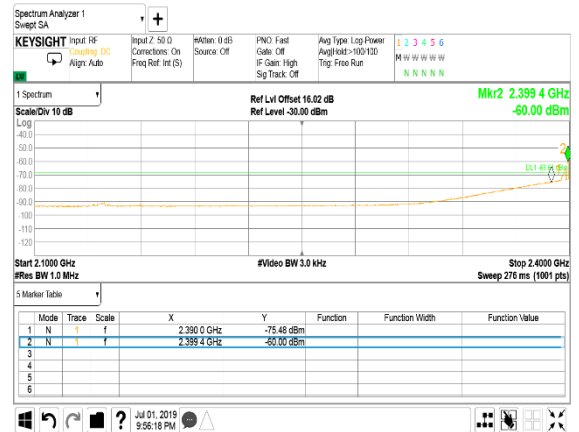
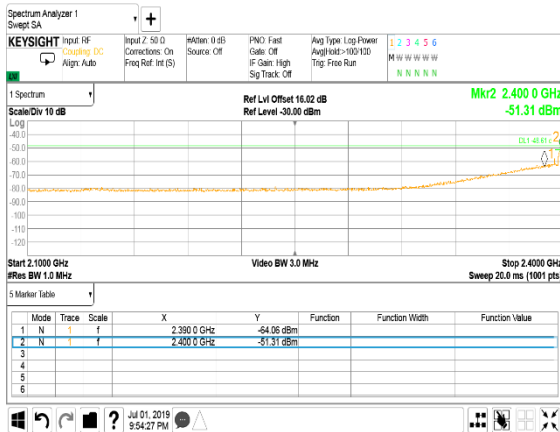
HERMON LABORATORIES

Test specification: Section 15.247(d) / RSS-247 section 5.5, Band edge emissions			
Test procedure: ANSI C63.10 section 11.12.1			
Test mode: Compliance		Verdict: PASS	
Date(s): 28-Jul-19			
Temperature: 24 °C	Relative Humidity: 44 %	Air Pressure: 1004 hPa	Power: 48 VDC
Remarks:			

Plot 7.6.11 Spurious emission measurements in 2100 - 2400 MHz range at antenna chain # 2, low carrier frequency

CHANNEL BANDWIDTH:
CONFIGURATION:
MODULATION:

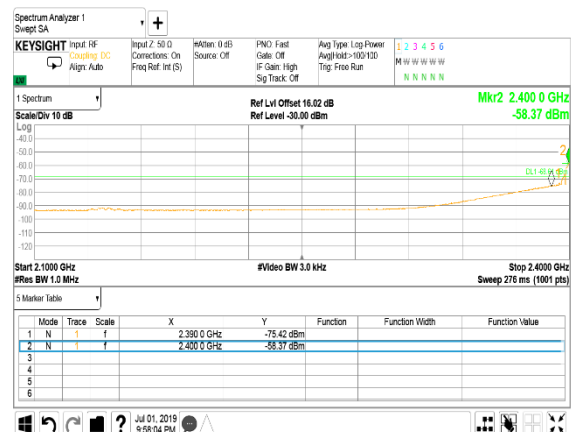
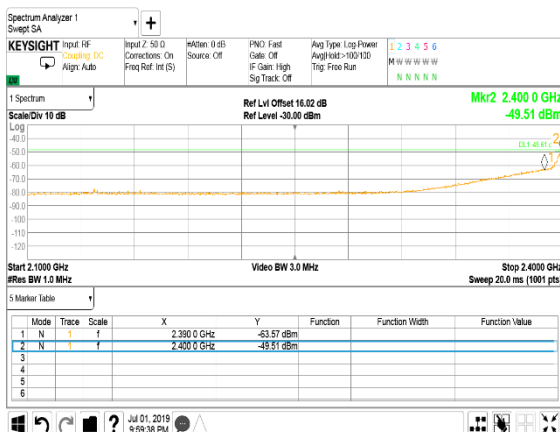
5 MHz
1beam
QPSK



Plot 7.6.12 Spurious emission measurements in 2100 - 2400 MHz range at antenna chain # 2, low carrier frequency

CHANNEL BANDWIDTH:
CONFIGURATION:
MODULATION:

5 MHz
1beam
64 QAM





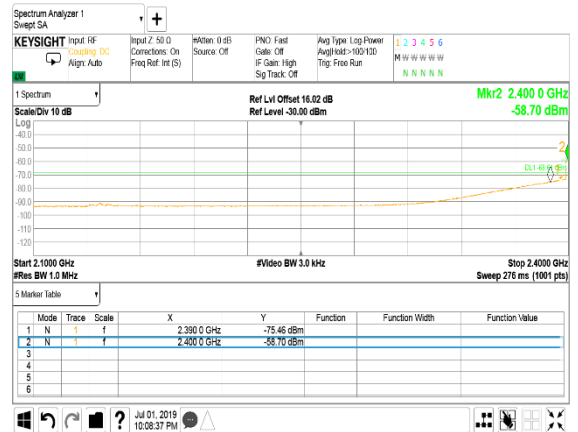
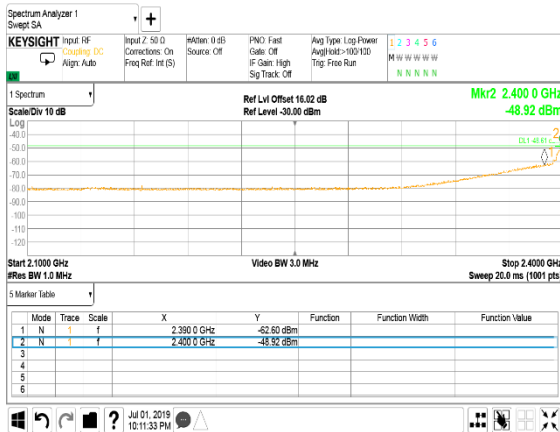
HERMON LABORATORIES

Test specification: Section 15.247(d) / RSS-247 section 5.5, Band edge emissions			
Test procedure: ANSI C63.10 section 11.12.1			
Test mode: Compliance		Verdict: PASS	
Date(s): 28-Jul-19			
Temperature: 24 °C	Relative Humidity: 44 %	Air Pressure: 1004 hPa	Power: 48 VDC
Remarks:			

Plot 7.6.13 Spurious emission measurements in 2100 - 2400 MHz range at antenna chain # 3, low carrier frequency

CHANNEL BANDWIDTH:
CONFIGURATION:
MODULATION:

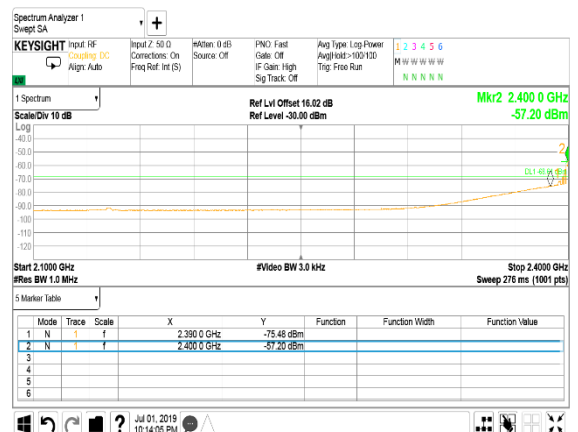
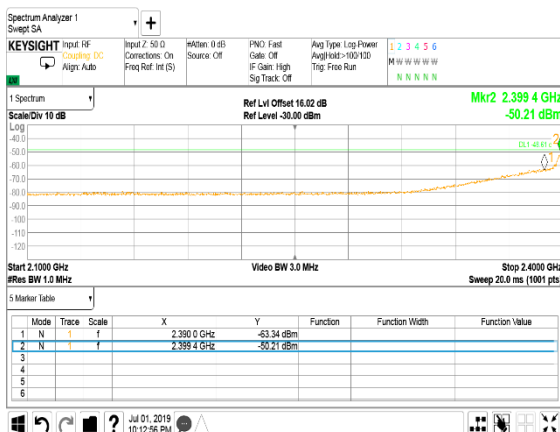
5 MHz
1beam
QPSK



Plot 7.6.14 Spurious emission measurements in 2100 - 2400 MHz range at antenna chain # 3, low carrier frequency

CHANNEL BANDWIDTH:
CONFIGURATION:
MODULATION:

5 MHz
1beam
64 QAM





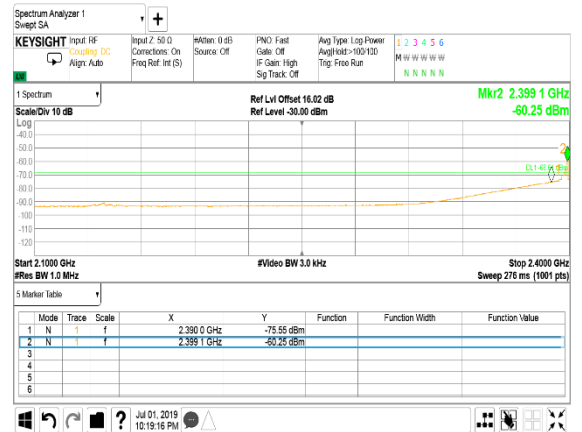
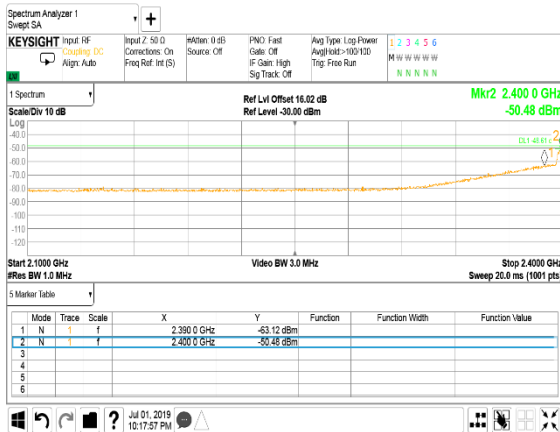
HERMON LABORATORIES

Test specification: Section 15.247(d) / RSS-247 section 5.5, Band edge emissions			
Test procedure: ANSI C63.10 section 11.12.1			
Test mode: Compliance		Verdict: PASS	
Date(s): 28-Jul-19			
Temperature: 24 °C	Relative Humidity: 44 %	Air Pressure: 1004 hPa	Power: 48 VDC
Remarks:			

Plot 7.6.15 Spurious emission measurements in 2100 - 2400 MHz range at antenna chain # 4, low carrier frequency

CHANNEL BANDWIDTH:
CONFIGURATION:
MODULATION:

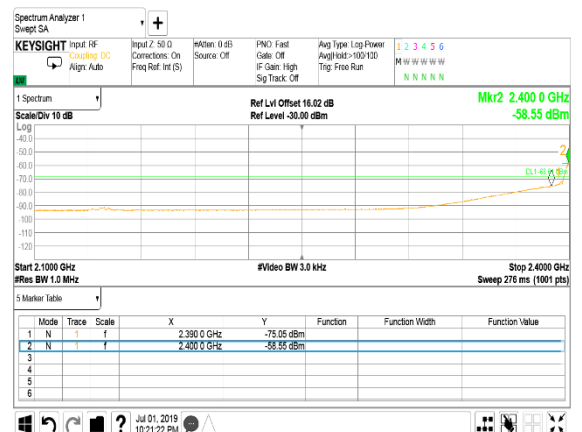
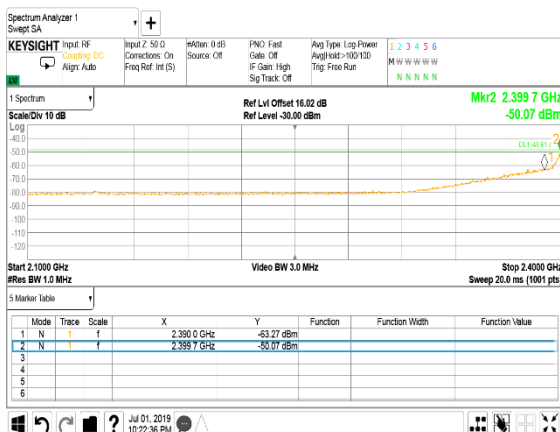
5 MHz
1beam
QPSK



Plot 7.6.16 Spurious emission measurements in 2100 - 2400 MHz range at antenna chain # 4, low carrier frequency

CHANNEL BANDWIDTH:
CONFIGURATION:
MODULATION:

5 MHz
1beam
64 QAM





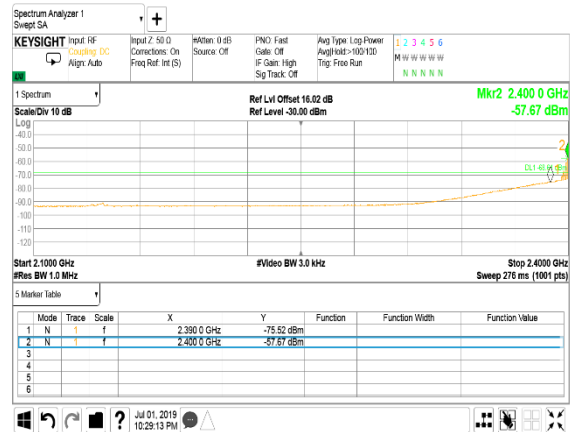
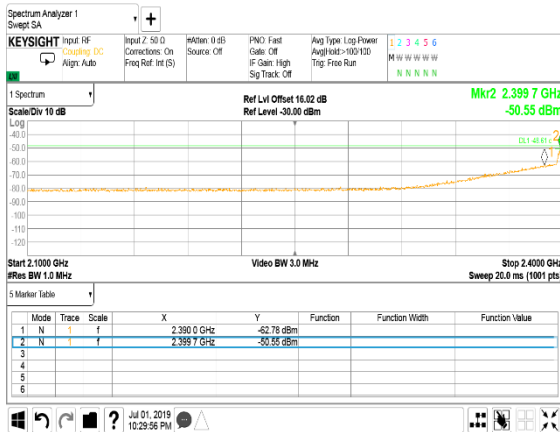
HERMON LABORATORIES

Test specification: Section 15.247(d) / RSS-247 section 5.5, Band edge emissions			
Test procedure: ANSI C63.10 section 11.12.1			
Test mode: Compliance		Verdict: PASS	
Date(s): 28-Jul-19			
Temperature: 24 °C	Relative Humidity: 44 %	Air Pressure: 1004 hPa	Power: 48 VDC
Remarks:			

Plot 7.6.17 Spurious emission measurements in 2100 - 2400 MHz range at antenna chain # 5, low carrier frequency

CHANNEL BANDWIDTH:
CONFIGURATION:
MODULATION:

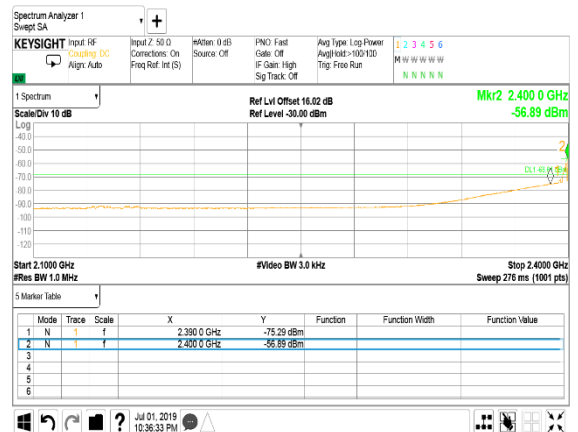
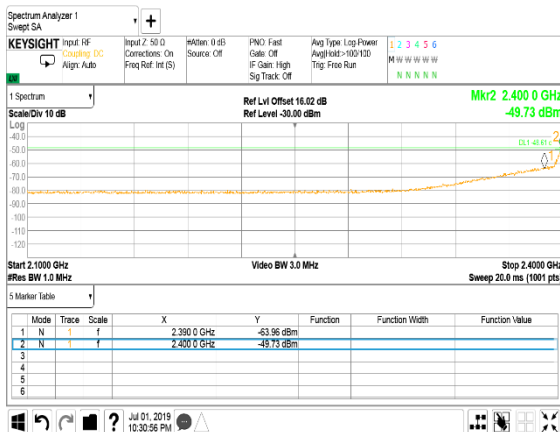
5 MHz
1beam
QPSK



Plot 7.6.18 Spurious emission measurements in 2100 - 2400 MHz range at antenna chain # 5, low carrier frequency

CHANNEL BANDWIDTH:
CONFIGURATION:
MODULATION:

5 MHz
1beam
64 QAM





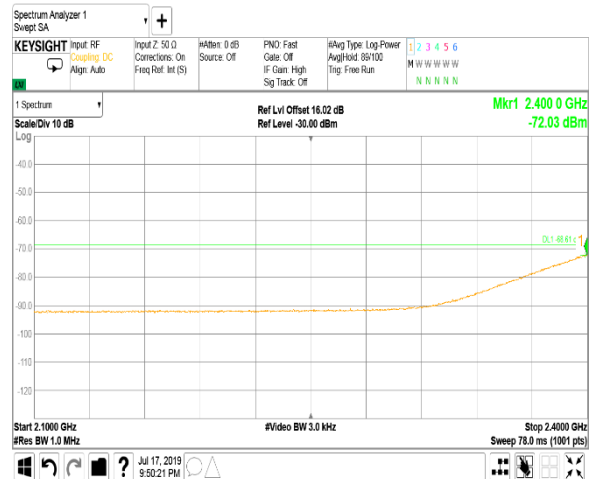
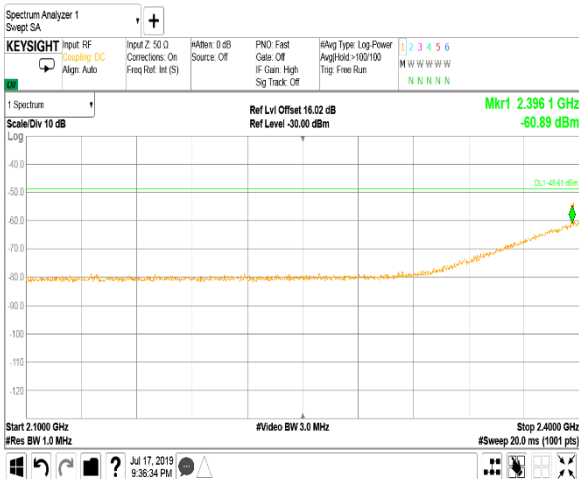
HERMON LABORATORIES

Test specification: Section 15.247(d) / RSS-247 section 5.5, Band edge emissions			
Test procedure: ANSI C63.10 section 11.12.1			
Test mode: Compliance		Verdict: PASS	
Date(s): 28-Jul-19			
Temperature: 24 °C	Relative Humidity: 44 %	Air Pressure: 1004 hPa	Power: 48 VDC
Remarks:			

Plot 7.6.19 Spurious emission measurements in 2100 - 2400 MHz range at antenna chain # 6, low carrier frequency

CHANNEL BANDWIDTH:
CONFIGURATION:
MODULATION:

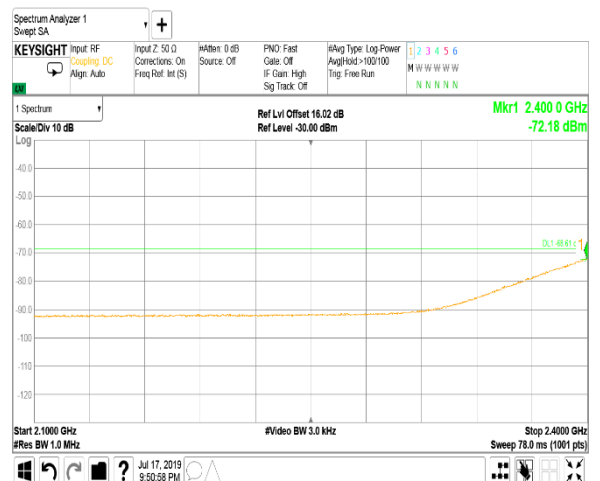
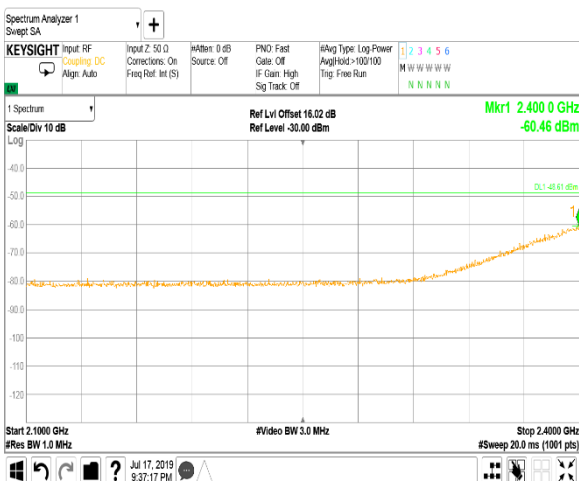
5 MHz
1beam
QPSK



Plot 7.6.20 Spurious emission measurements in 2100 - 2400 MHz range at antenna chain # 6, low carrier frequency

CHANNEL BANDWIDTH:
CONFIGURATION:
MODULATION:

5 MHz
1beam
64 QAM





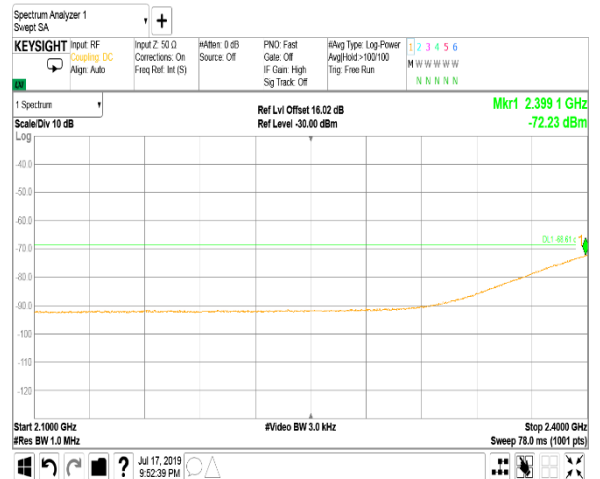
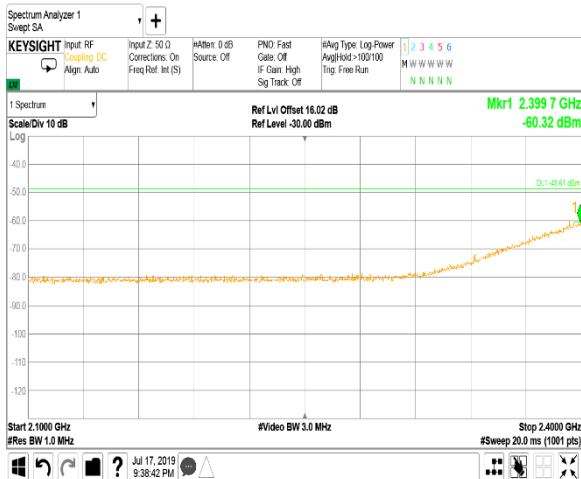
HERMON LABORATORIES

Test specification: Section 15.247(d) / RSS-247 section 5.5, Band edge emissions			
Test procedure: ANSI C63.10 section 11.12.1			
Test mode: Compliance		Verdict: PASS	
Date(s): 28-Jul-19			
Temperature: 24 °C	Relative Humidity: 44 %	Air Pressure: 1004 hPa	Power: 48 VDC
Remarks:			

Plot 7.6.21 Spurious emission measurements in 2100 - 2400 MHz range at antenna chain # 7, low carrier frequency

CHANNEL BANDWIDTH:
CONFIGURATION:
MODULATION:

5 MHz
1beam
QPSK



Plot 7.6.22 Spurious emission measurements in 2100 - 2400 MHz range at antenna chain # 7, low carrier frequency

CHANNEL BANDWIDTH:
CONFIGURATION:
MODULATION:

5 MHz
1beam
64 QAM

