



<b>Test specification: Section 15.215(c), Occupied bandwidth</b>			
<b>Test procedure:</b> ANSI C63.10 section 6.9.2			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 08-Aug-17 - 22-Aug-17			
<b>Temperature:</b> 24.3 °C	<b>Relative Humidity:</b> 39 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b>			

### 7.3 Occupied bandwidth test

#### 7.3.1 General

This test was performed to verify that the 20 dB bandwidth of the emissions was contained within the standard specified frequency band according to FCC §15.215 requirements. Specification test limits are given in Table 7.3.1.

Table 7.3.1 Occupied bandwidth limits

Assigned frequency, MHz	Modulation envelope reference points*, dBc
902 - 928	20.0
2400 – 2483.5	
5725 – 5875	
<b>24000 – 24250</b>	

\*- Modulation envelope reference points provided in terms of attenuation below modulated carrier.

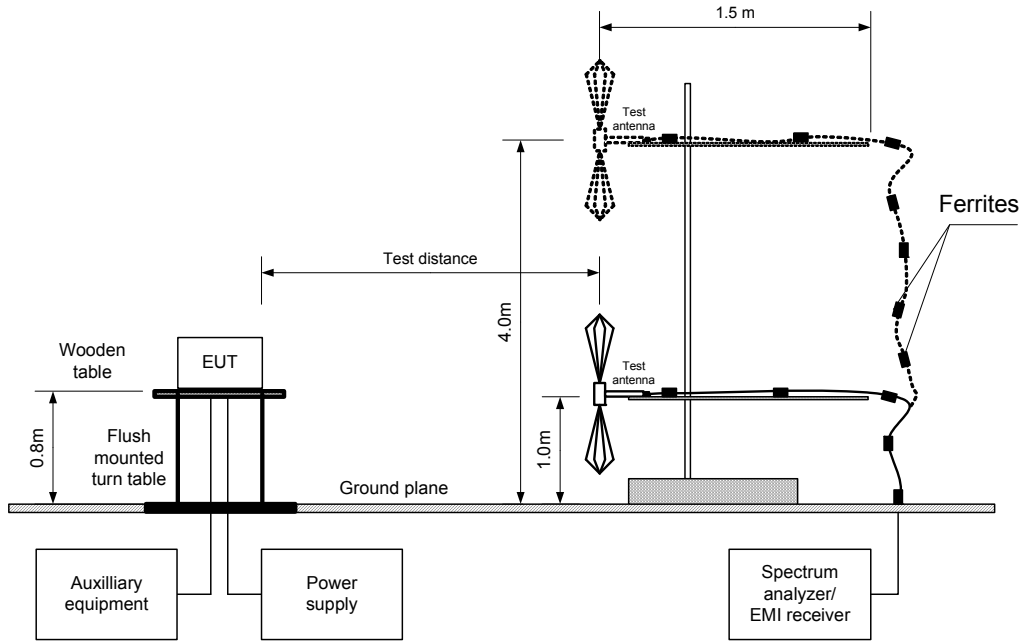
#### 7.3.2 Test procedure

- 7.3.2.1 The EUT was set up as shown in Figure 7.3.1, energized and its proper operation was checked
- 7.3.2.2 The spectrum analyzer sweep time and bandwidth were set to capture all major modulation sidebands of emission and sweep time was set sufficiently slow to ensure peak measurements. Spectrum analyzer was set in peak hold mode and time sufficient for trace stabilization was allowed.
- 7.3.2.3 The peak of emission was measured. The transmitter occupied bandwidth was measured with spectrum analyzer as frequency delta between reference points on modulation envelope and provided in Table 7.3.2 and associated plots.



<b>Test specification:</b> Section 15.215(c), Occupied bandwidth			
<b>Test procedure:</b> ANSI C63.10 section 6.9.2			
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS		
<b>Date(s):</b> 08-Aug-17 - 22-Aug-17			
<b>Temperature:</b> 24.3 °C	<b>Relative Humidity:</b> 39 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b>			

Figure 7.3.1 Occupied bandwidth test setup





<b>Test specification: Section 15.215(c), Occupied bandwidth</b>			
<b>Test procedure:</b> ANSI C63.10 section 6.9.2			
<b>Test mode:</b> Compliance		<b>Verdict: PASS</b>	
<b>Date(s):</b> 08-Aug-17 - 22-Aug-17			
<b>Temperature:</b> 24.3 °C	<b>Relative Humidity:</b> 39 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b>			

Table 7.3.2 Occupied bandwidth test results

ASSIGNED FREQUENCY BAND 24000.0 – 24250.0 MHz  
 DETECTOR USED: Peak hold  
 MODULATION ENVELOPE REFERENCE POINTS: 20 dBc  
 VIDEO BANDWIDTH: 8 x RBW

Modulation	Frequency, MHz	RBW, kHz	Occupied bandwidth, MHz	Limit, MHz	Verdict
<b>Channel bandwidth 20 MHz</b>					
QPSK	24010.0	300	19.737	NA	Pass
	24070.0	300	19.652	NA	Pass
	24240.0	300	19.656	NA	Pass
2048 QAM	24010.0	300	19.940	NA	Pass
	24070.0	300	19.784	NA	Pass
	24240.0	300	19.943	NA	Pass
<b>Channel bandwidth 30 MHz</b>					
QPSK	24015.0	390	29.971	NA	Pass
	24065.0	390	29.916	NA	Pass
	24235.0	390	29.930	NA	Pass
2048 QAM	24015.0	390	29.976	NA	Pass
	24065.0	390	29.989	NA	Pass
	24235.0	390	29.943	NA	Pass
<b>Channel bandwidth 40 MHz</b>					
QPSK	24020.0	1000	39.993	NA	Pass
	24060.0	1000	39.938	NA	Pass
	24230.0	430	39.975	NA	Pass
2048 QAM	24020.0	1000	39.966	NA	Pass
	24060.0	1000	39.978	NA	Pass
	24230.0	430	39.943	NA	Pass
<b>Channel bandwidth 50 MHz</b>					
QPSK	24025.0	1000	49.916	NA	Pass
	24055.0	1000	49.885	NA	Pass
	24225.0	510	49.970	NA	Pass
2048 QAM	24025.0	1000	49.906	NA	Pass
	24055.0	1000	49.995	NA	Pass
	24225.0	510	49.960	NA	Pass
<b>Channel bandwidth 60 MHz</b>					
QPSK	24030.0	1000	59.678	NA	Pass
	24050.0	1000	59.683	NA	Pass
	24220.0	1000	59.487	NA	Pass
2048 QAM	24030.0	1000	59.607	NA	Pass
	24050.0	1000	59.344	NA	Pass
	24220.0	1000	59.404	NA	Pass

Reference numbers of test equipment used

HL 2909	HL 3818	HL 5112	HL 5174	HL 5175				
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Full description is given in Appendix A.



HERMON LABORATORIES

<b>Test specification: Section 15.215(c), Occupied bandwidth</b>			
<b>Test procedure:</b> ANSI C63.10 section 6.9.2			
<b>Test mode:</b> Compliance		<b>Verdict: PASS</b>	
<b>Date(s):</b> 08-Aug-17 - 22-Aug-17			
<b>Temperature:</b> 24.3 °C	<b>Relative Humidity:</b> 39 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b>			

**Plot 7.3.1 Occupied bandwidth test result**

TEST SITE:  
TEST DISTANCE:  
ANTENNA POLARIZATION:  
EUT POSITION:  
EMISSION BANDWIDTH:  
CARRIER FREQUENCY: Low

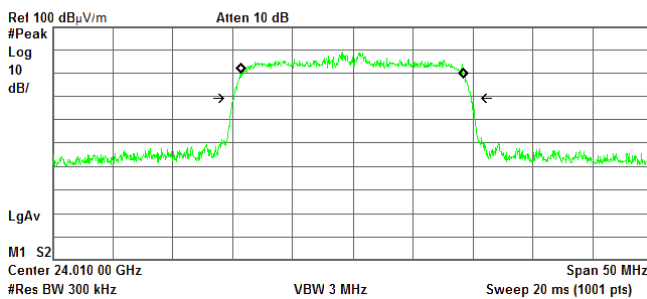
OATS  
3 m  
Vertical  
Typical (Vertical)  
20 MHz  
CARRIER FREQUENCY: Mid

\* Agilent

R T

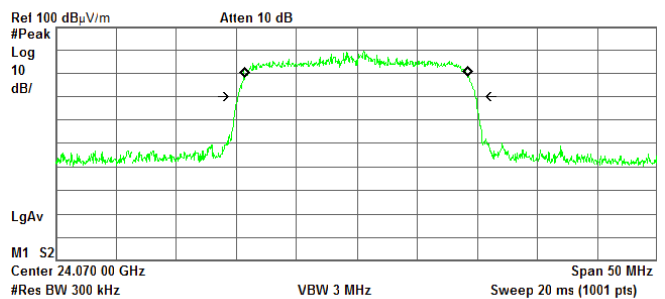
\* Agilent

R T



Occupied Bandwidth 18.4887 MHz  
Occ BW % Pwr 99.00 %  
x dB -20.00 dB

Transmit Freq Error -40.956 kHz  
x dB Bandwidth 19.737 MHz



Occupied Bandwidth 18.4592 MHz  
Occ BW % Pwr 99.00 %  
x dB -20.00 dB

Transmit Freq Error -9.314 kHz  
x dB Bandwidth 19.652 MHz

CARRIER FREQUENCY: Mid

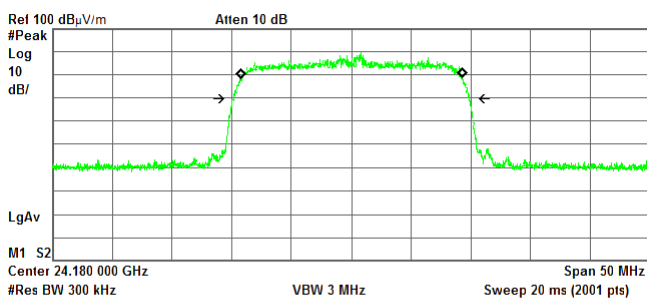
CARRIER FREQUENCY: High

\* Agilent

R T

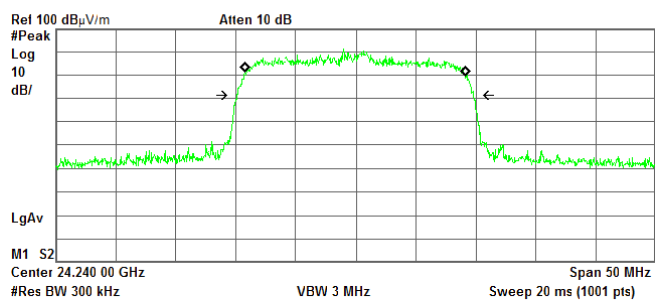
\* Agilent

R T



Occupied Bandwidth 18.4075 MHz  
Occ BW % Pwr 99.00 %  
x dB -20.00 dB

Transmit Freq Error 37.475 kHz  
x dB Bandwidth 19.666 MHz



Occupied Bandwidth 18.3311 MHz  
Occ BW % Pwr 99.00 %  
x dB -20.00 dB

Transmit Freq Error -33.809 kHz  
x dB Bandwidth 19.656 MHz



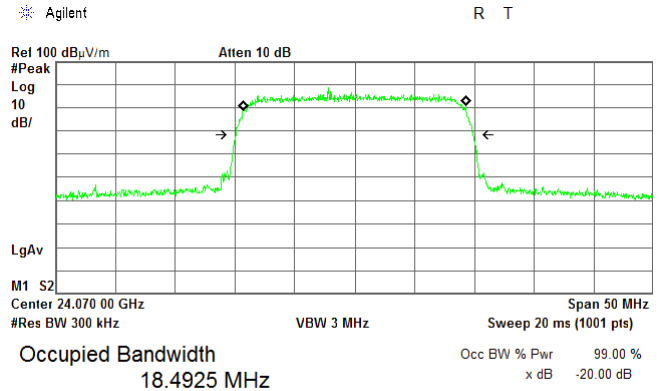
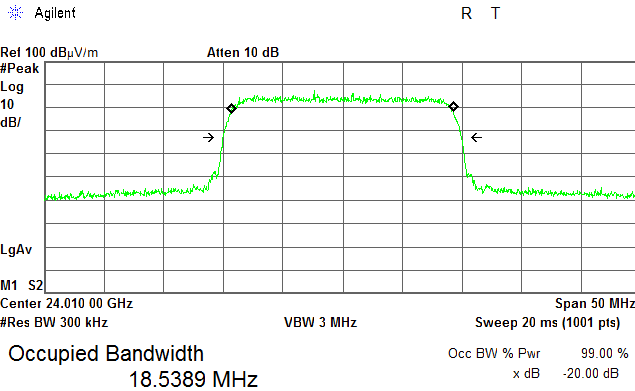
HERMON LABORATORIES

<b>Test specification:</b> Section 15.215(c), Occupied bandwidth			
<b>Test procedure:</b> ANSI C63.10 section 6.9.2			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 08-Aug-17 - 22-Aug-17			
<b>Temperature:</b> 24.3 °C	<b>Relative Humidity:</b> 39 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b>			

**Plot 7.3.2 Occupied bandwidth test result**

TEST SITE:  
TEST DISTANCE:  
ANTENNA POLARIZATION:  
EUT POSITION:  
EMISSION BANDWIDTH:  
CARRIER FREQUENCY: Low

OATS  
3 m  
Vertical  
Typical (Vertical)  
20 MHz 2048QAM  
CARRIER FREQUENCY: Mid

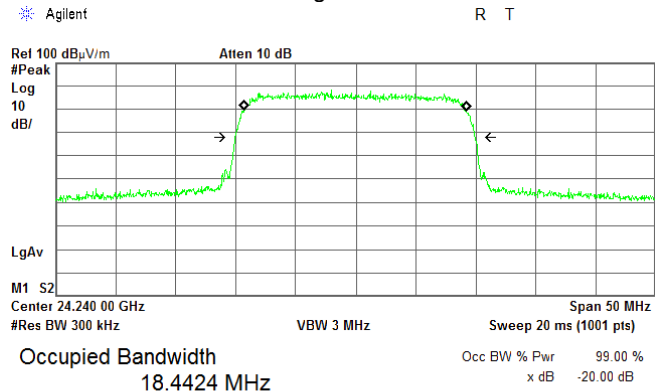
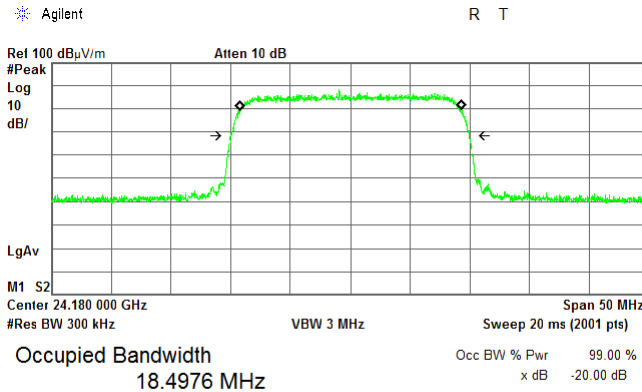


Transmit Freq Error -31.751 kHz  
x dB Bandwidth 19.940 MHz

Transmit Freq Error 6.127 kHz  
x dB Bandwidth 19.784 MHz

CARRIER FREQUENCY: Mid

CARRIER FREQUENCY: High



Transmit Freq Error 23.246 kHz  
x dB Bandwidth 19.960 MHz

Transmit Freq Error -44.421 kHz  
x dB Bandwidth 19.943 MHz



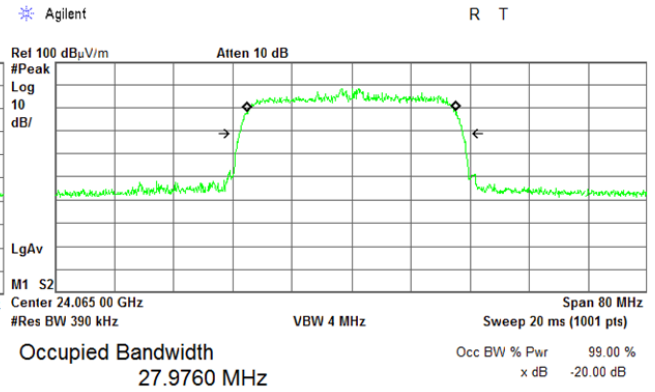
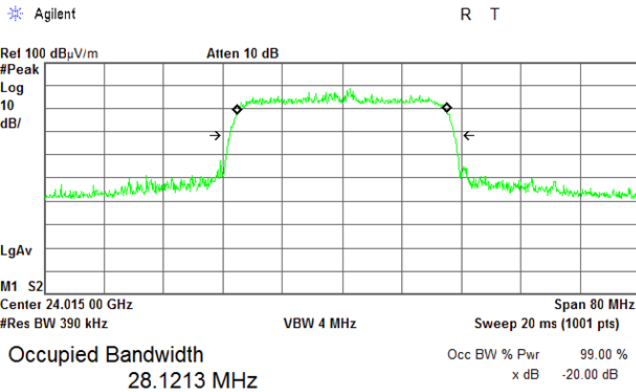
HERMON LABORATORIES

<b>Test specification: Section 15.215(c), Occupied bandwidth</b>			
<b>Test procedure:</b> ANSI C63.10 section 6.9.2			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 08-Aug-17 - 22-Aug-17			
<b>Temperature:</b> 24.3 °C	<b>Relative Humidity:</b> 39 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b>			

**Plot 7.3.3 Occupied bandwidth test result**

TEST SITE:  
TEST DISTANCE:  
ANTENNA POLARIZATION:  
EUT POSITION:  
EMISSION BANDWIDTH:  
CARRIER FREQUENCY: Low

OATS  
3 m  
Vertical  
Typical (Vertical)  
30 MHz QPSK  
CARRIER FREQUENCY: Mid

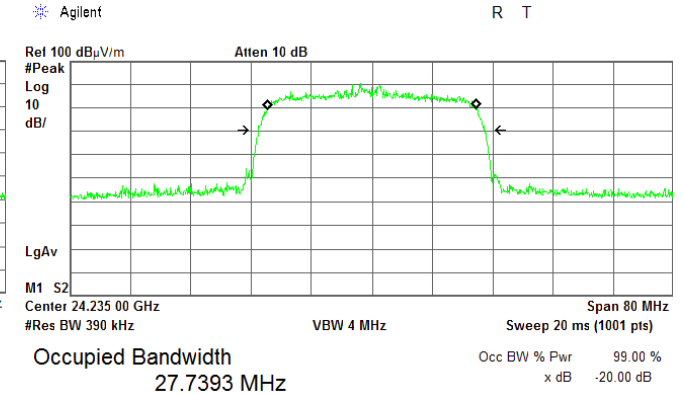
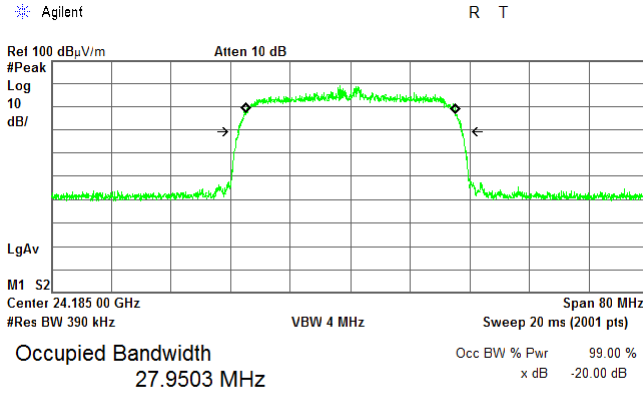


Transmit Freq Error 54.664 kHz  
x dB Bandwidth 29.971 MHz

Transmit Freq Error -23.455 kHz  
x dB Bandwidth 29.916 MHz

CARRIER FREQUENCY: Mid

CARRIER FREQUENCY: High



Transmit Freq Error 20.744 kHz  
x dB Bandwidth 29.946 MHz

Transmit Freq Error 301.939 Hz  
x dB Bandwidth 29.930 MHz



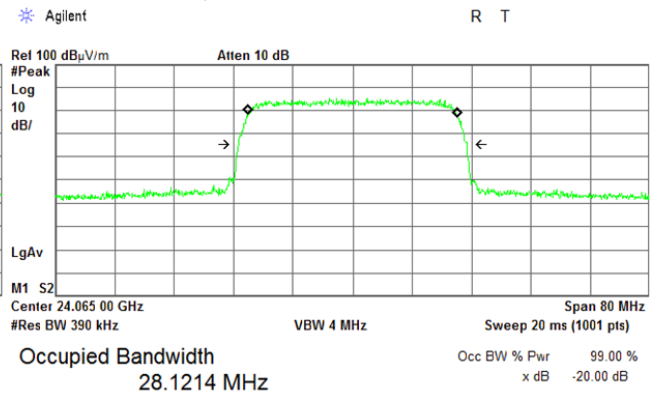
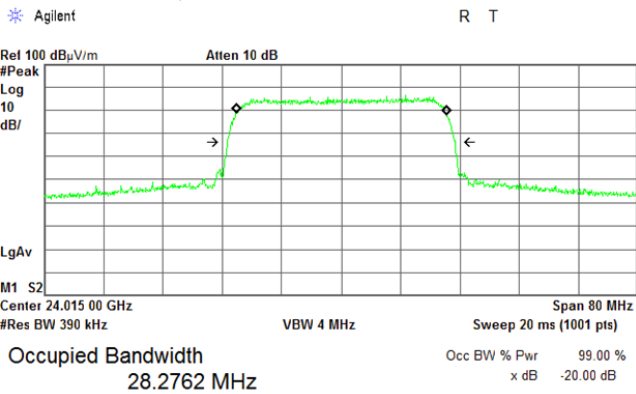
HERMON LABORATORIES

<b>Test specification: Section 15.215(c), Occupied bandwidth</b>			
<b>Test procedure:</b> ANSI C63.10 section 6.9.2			
<b>Test mode:</b> Compliance		<b>Verdict: PASS</b>	
<b>Date(s):</b> 08-Aug-17 - 22-Aug-17			
<b>Temperature:</b> 24.3 °C	<b>Relative Humidity:</b> 39 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b>			

**Plot 7.3.4 Occupied bandwidth test result**

TEST SITE:  
TEST DISTANCE:  
ANTENNA POLARIZATION:  
EUT POSITION:  
EMISSION BANDWIDTH:  
CARRIER FREQUENCY: Low

OATS  
3 m  
Vertical  
Typical (Vertical)  
30 MHz 2048 QAM  
CARRIER FREQUENCY: Mid

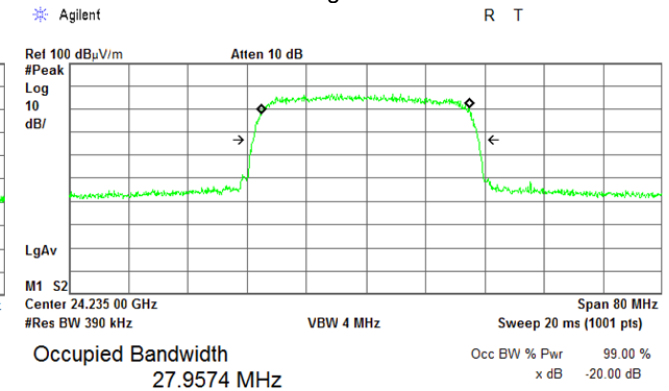
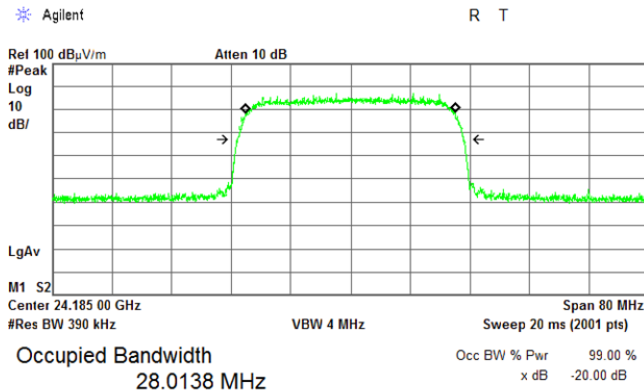


Transmit Freq Error 27.966 kHz  
x dB Bandwidth 29.976 MHz

Transmit Freq Error -17.988 kHz  
x dB Bandwidth 29.989 MHz

CARRIER FREQUENCY: Mid

CARRIER FREQUENCY: High



Transmit Freq Error 5.470 kHz  
x dB Bandwidth 29.915 MHz

Transmit Freq Error -48.773 kHz  
x dB Bandwidth 29.943 MHz



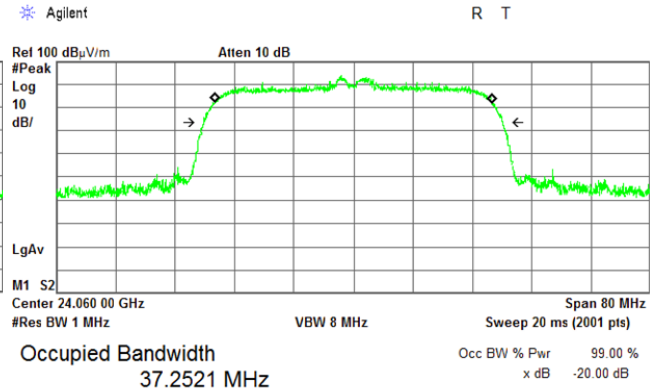
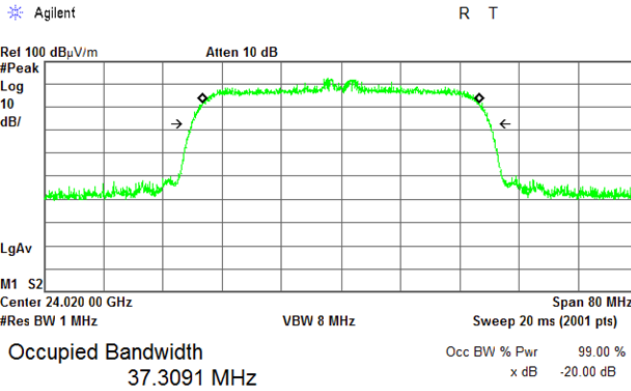
HERMON LABORATORIES

<b>Test specification:</b> Section 15.215(c), Occupied bandwidth			
<b>Test procedure:</b> ANSI C63.10 section 6.9.2			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 08-Aug-17 - 22-Aug-17			
<b>Temperature:</b> 24.3 °C	<b>Relative Humidity:</b> 39 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b>			

**Plot 7.3.5 Occupied bandwidth test result**

TEST SITE:  
TEST DISTANCE:  
ANTENNA POLARIZATION:  
EUT POSITION:  
EMISSION BANDWIDTH:  
CARRIER FREQUENCY: Low

OATS  
3 m  
Vertical  
Typical (Vertical)  
40 MHz QPSK  
CARRIER FREQUENCY: Mid

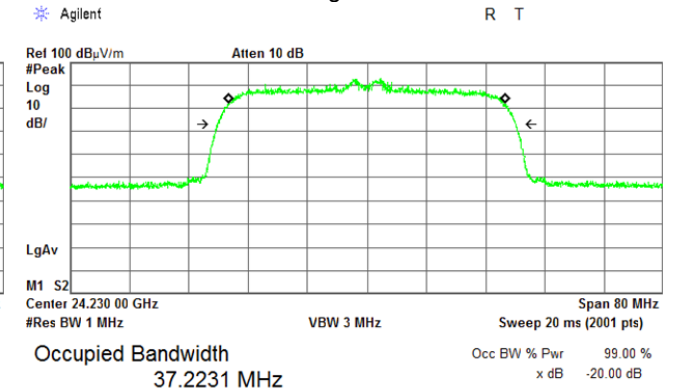
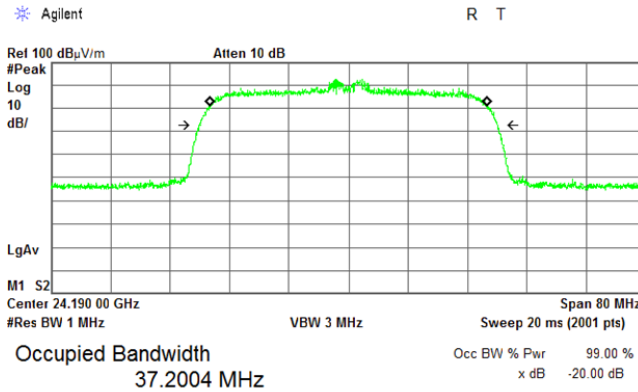


Transmit Freq Error -13.092 kHz  
x dB Bandwidth 39.993 MHz

Transmit Freq Error -25.357 kHz  
x dB Bandwidth 39.938 MHz

CARRIER FREQUENCY: Mid

CARRIER FREQUENCY: High



Transmit Freq Error 31.057 kHz  
x dB Bandwidth 39.980 MHz

Transmit Freq Error -30.584 kHz  
x dB Bandwidth 39.914 MHz





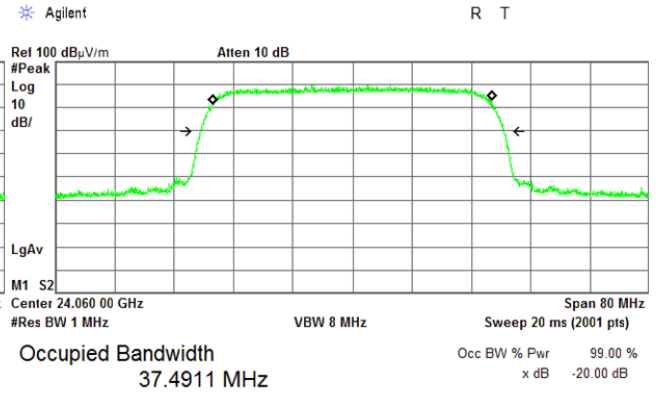
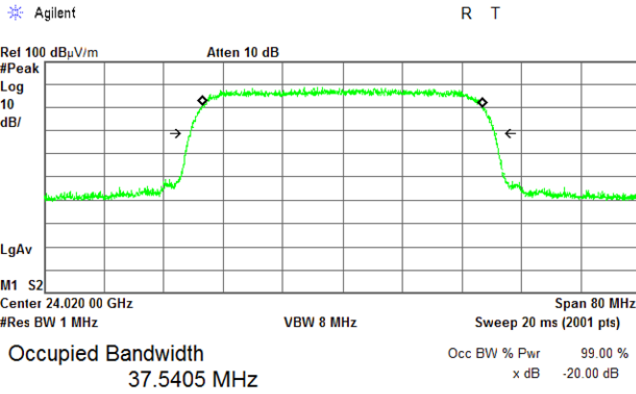
HERMON LABORATORIES

<b>Test specification:</b> Section 15.215(c), Occupied bandwidth			
<b>Test procedure:</b> ANSI C63.10 section 6.9.2			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 08-Aug-17 - 22-Aug-17			
<b>Temperature:</b> 24.3 °C	<b>Relative Humidity:</b> 39 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b>			

Plot 7.3.6 Occupied bandwidth test result

TEST SITE:  
TEST DISTANCE:  
ANTENNA POLARIZATION:  
EUT POSITION:  
EMISSION BANDWIDTH:  
CARRIER FREQUENCY: Low

OATS  
3 m  
Vertical  
Typical (Vertical)  
40 MHz 2048 QAM  
CARRIER FREQUENCY: Mid

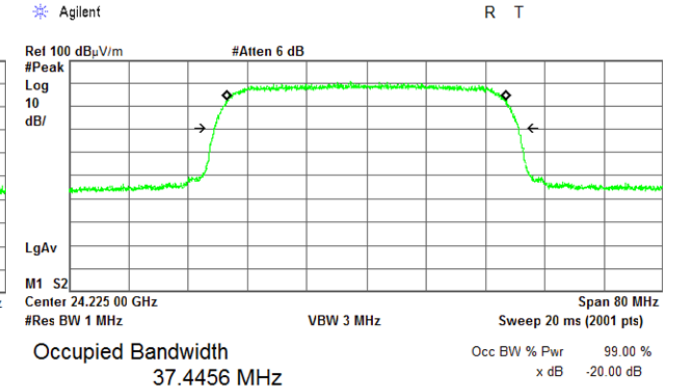
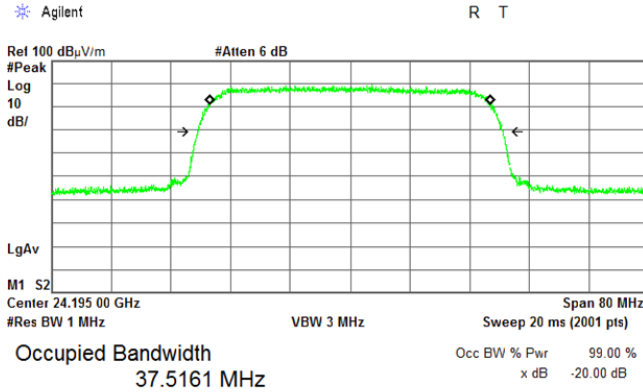


Transmit Freq Error -37.613 kHz  
x dB Bandwidth 39.966 MHz

Transmit Freq Error -25.121 kHz  
x dB Bandwidth 39.978 MHz

CARRIER FREQUENCY: Mid

CARRIER FREQUENCY: High



Transmit Freq Error -10.409 kHz  
x dB Bandwidth 39.904 MHz

Transmit Freq Error -15.636 kHz  
x dB Bandwidth 39.825 MHz



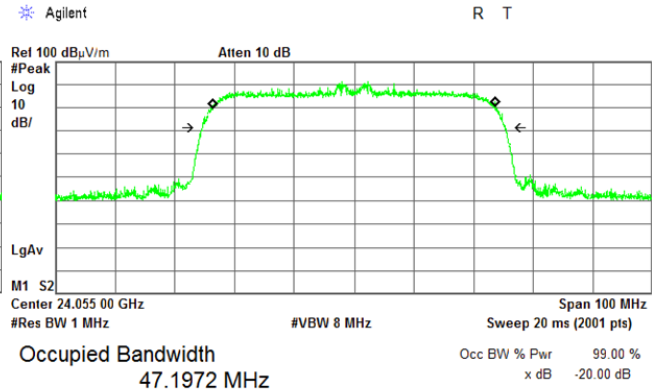
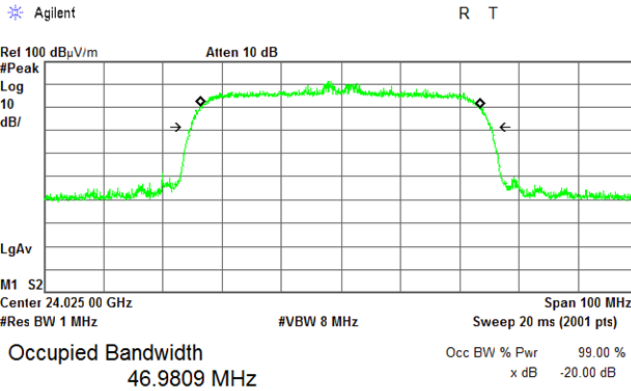
HERMON LABORATORIES

<b>Test specification:</b> Section 15.215(c), Occupied bandwidth			
<b>Test procedure:</b> ANSI C63.10 section 6.9.2			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 08-Aug-17 - 22-Aug-17			
<b>Temperature:</b> 24.3 °C	<b>Relative Humidity:</b> 39 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b>			

**Plot 7.3.7 Occupied bandwidth test result**

TEST SITE:  
TEST DISTANCE:  
ANTENNA POLARIZATION:  
EUT POSITION:  
EMISSION BANDWIDTH:  
CARRIER FREQUENCY: Low

OATS  
3 m  
Vertical  
Typical (Vertical)  
50 MHz QPSK  
CARRIER FREQUENCY: Mid

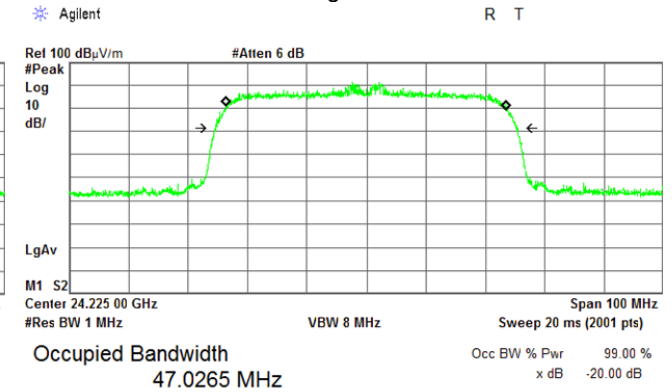
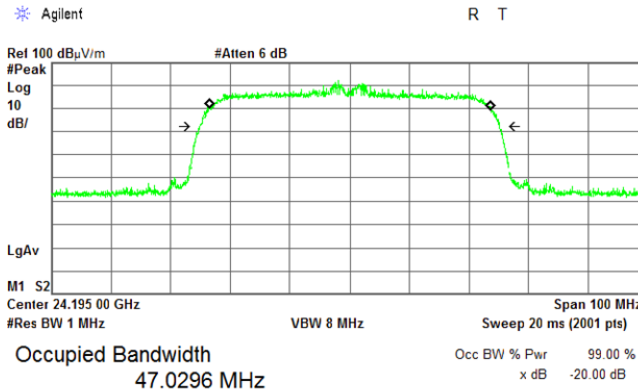


Transmit Freq Error -64.547 kHz  
x dB Bandwidth 49.916 MHz

Transmit Freq Error -42.815 kHz  
x dB Bandwidth 49.885 MHz

CARRIER FREQUENCY: Mid

CARRIER FREQUENCY: High



Transmit Freq Error 44.328 kHz  
x dB Bandwidth 49.933 MHz

Transmit Freq Error -44.505 kHz  
x dB Bandwidth 49.973 MHz



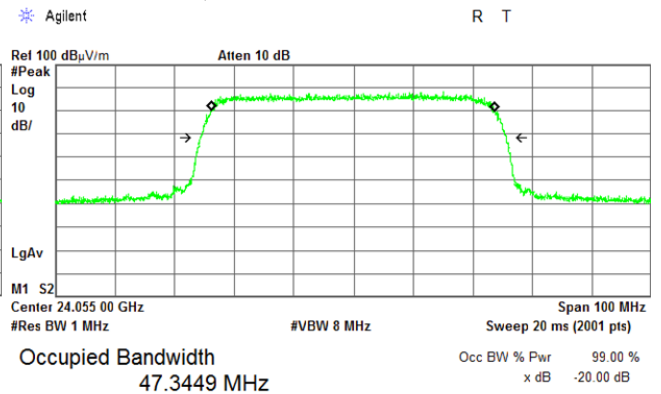
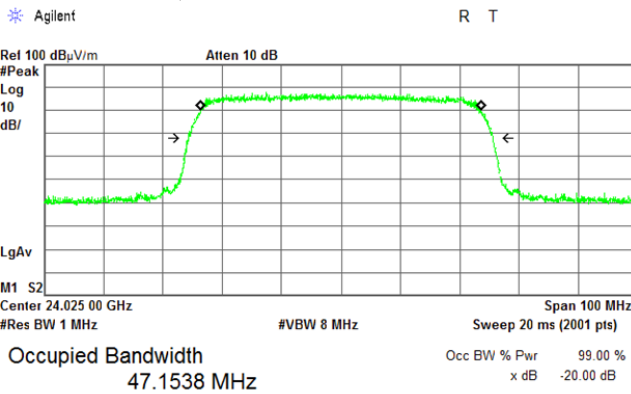
HERMON LABORATORIES

<b>Test specification:</b> Section 15.215(c), Occupied bandwidth			
<b>Test procedure:</b> ANSI C63.10 section 6.9.2			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 08-Aug-17 - 22-Aug-17			
<b>Temperature:</b> 24.3 °C	<b>Relative Humidity:</b> 39 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b>			

### Plot 7.3.8 Occupied bandwidth test result

TEST SITE:  
 TEST DISTANCE:  
 ANTENNA POLARIZATION:  
 EUT POSITION:  
 EMISSION BANDWIDTH:  
 CARRIER FREQUENCY: Low

OATS  
 3 m  
 Vertical  
 Typical (Vertical)  
 50 MHz 2048 QAM  
 CARRIER FREQUENCY: Mid

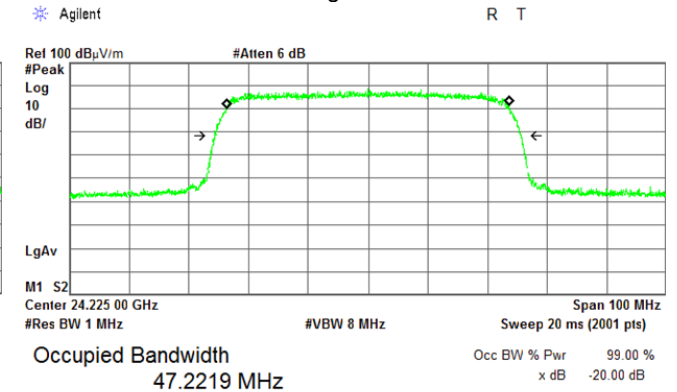
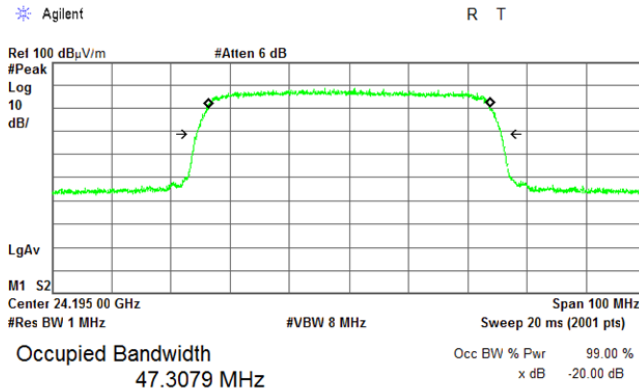


Transmit Freq Error -6.750 kHz  
 x dB Bandwidth 49.906 MHz

Transmit Freq Error -58.578 kHz  
 x dB Bandwidth 49.995 MHz

CARRIER FREQUENCY: Mid

CARRIER FREQUENCY: High



Transmit Freq Error 28.841 kHz  
 x dB Bandwidth 49.902 MHz

Transmit Freq Error -15.283 kHz  
 x dB Bandwidth 49.997 MHz



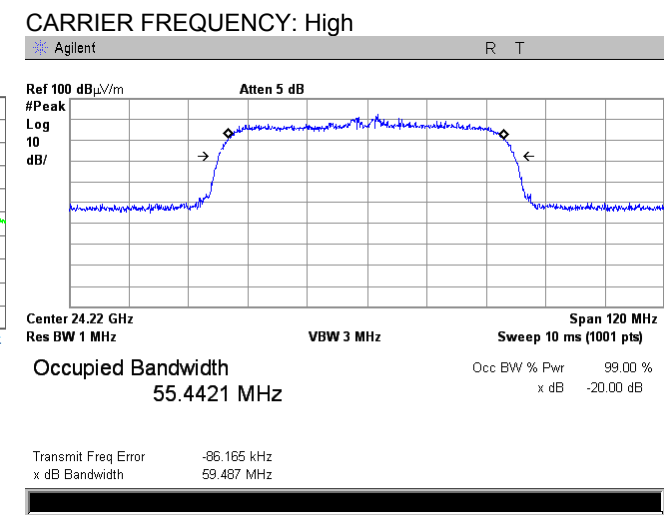
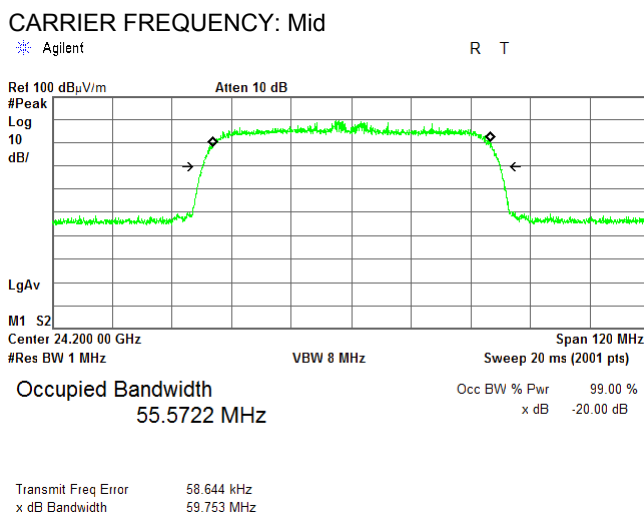
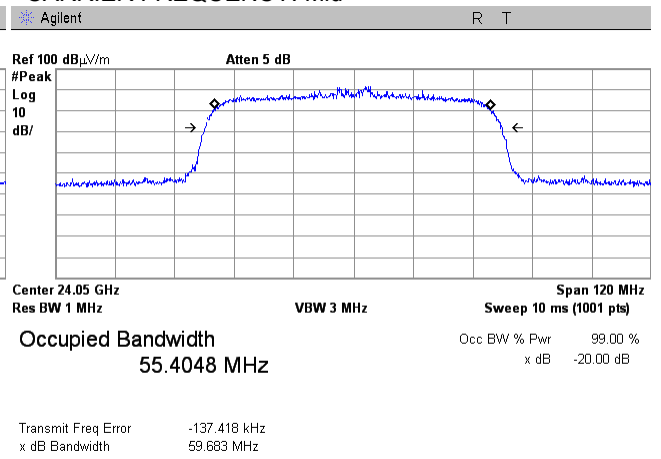
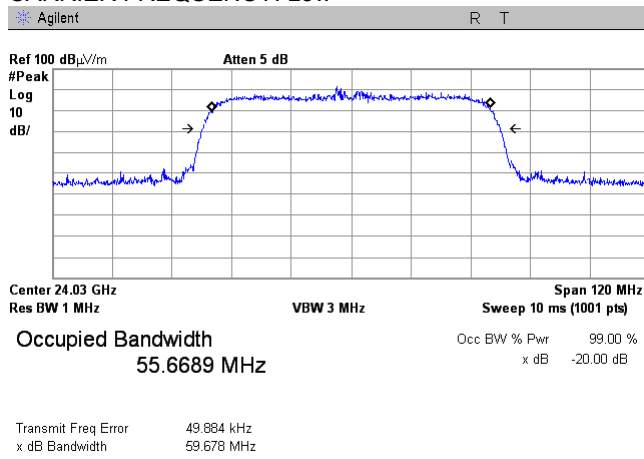
HERMON LABORATORIES

<b>Test specification:</b> Section 15.215(c), Occupied bandwidth			
<b>Test procedure:</b> ANSI C63.10 section 6.9.2			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 08-Aug-17 - 22-Aug-17			
<b>Temperature:</b> 24.3 °C	<b>Relative Humidity:</b> 39 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b>			

### Plot 7.3.9 Occupied bandwidth test result

TEST SITE:  
 TEST DISTANCE:  
 ANTENNA POLARIZATION:  
 EUT POSITION:  
 EMISSION BANDWIDTH:  
 CARRIER FREQUENCY: Low

OATS  
 3 m  
 Vertical  
 Typical (Vertical)  
 60 MHz QPSK  
 CARRIER FREQUENCY: Mid





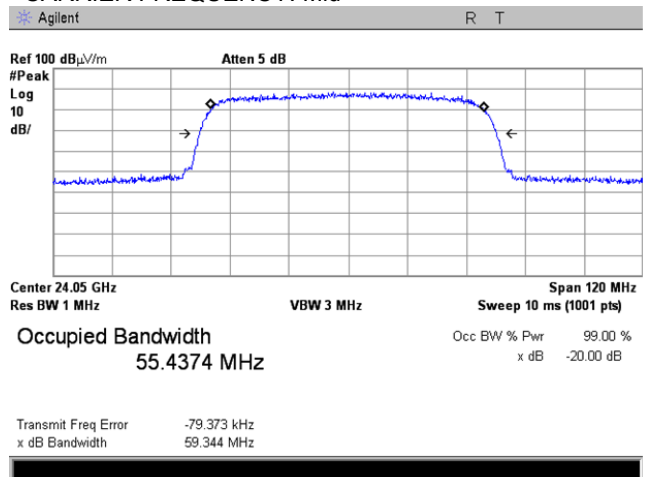
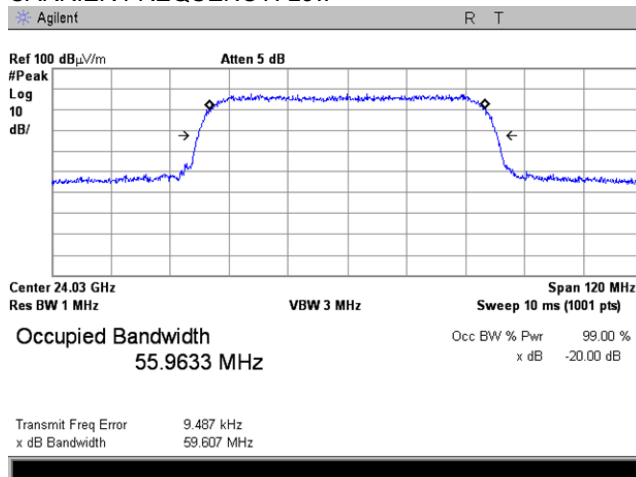
HERMON LABORATORIES

<b>Test specification:</b> Section 15.215(c), Occupied bandwidth			
<b>Test procedure:</b> ANSI C63.10 section 6.9.2			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 08-Aug-17 - 22-Aug-17			
<b>Temperature:</b> 24.3 °C	<b>Relative Humidity:</b> 39 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b>			

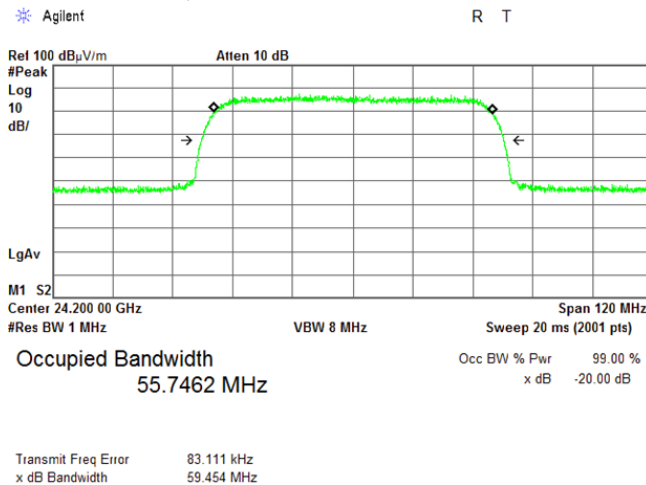
Plot 7.3.10 Occupied bandwidth test result

TEST SITE:  
TEST DISTANCE:  
ANTENNA POLARIZATION:  
EUT POSITION:  
EMISSION BANDWIDTH:  
CARRIER FREQUENCY: Low

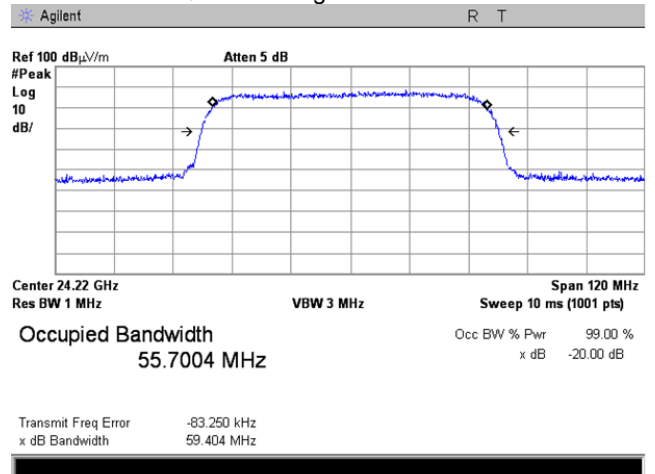
OATS  
3 m  
Vertical  
Typical (Vertical)  
60 MHz 2048 QAM  
CARRIER FREQUENCY: Mid



CARRIER FREQUENCY: Mid



CARRIER FREQUENCY: High





<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

## 7.4 Band edge emission with 42.4 dBi antenna gain

### 7.4.1 General

This test was performed to verify the EUT band edge emission including all associated side bands was attenuated at least 50 dB below the unmodulated carrier level or below the general spurious emission limit. Specification test limits are given in Table 7.4.1.

Table 7.4.1 Band edge emission limits

Frequency band, MHz	Field strength limit, dBµV/m		Attenuation below carrier, dBc
	Peak	Average	
24000 - 24250	at 3 m distance		50
	74.0	54.0	
	at 0.75 m distance		
	86.0	66.0	

\*- The limit for 0.75 m test distance was calculated using the inverse square distance extrapolation factor as follows:

$$\text{Lim}_{S_2} = \text{Lim}_{S_1} + 20 \log (S_1/S_2),$$

where S<sub>1</sub> and S<sub>2</sub> – standard defined and test distance respectively in meters.

### 7.4.2 Test procedure

7.4.2.1 The EUT was set up as shown in Figure 7.4.1, energized and the performance check was conducted.

7.4.2.2 The spectrum analyzer frequency span was set to capture all major modulation sidebands of emission and sweep time was set sufficiently slow to ensure peak measurements. Spectrum analyzer was set in peak hold mode and time sufficient for trace stabilization was allowed.

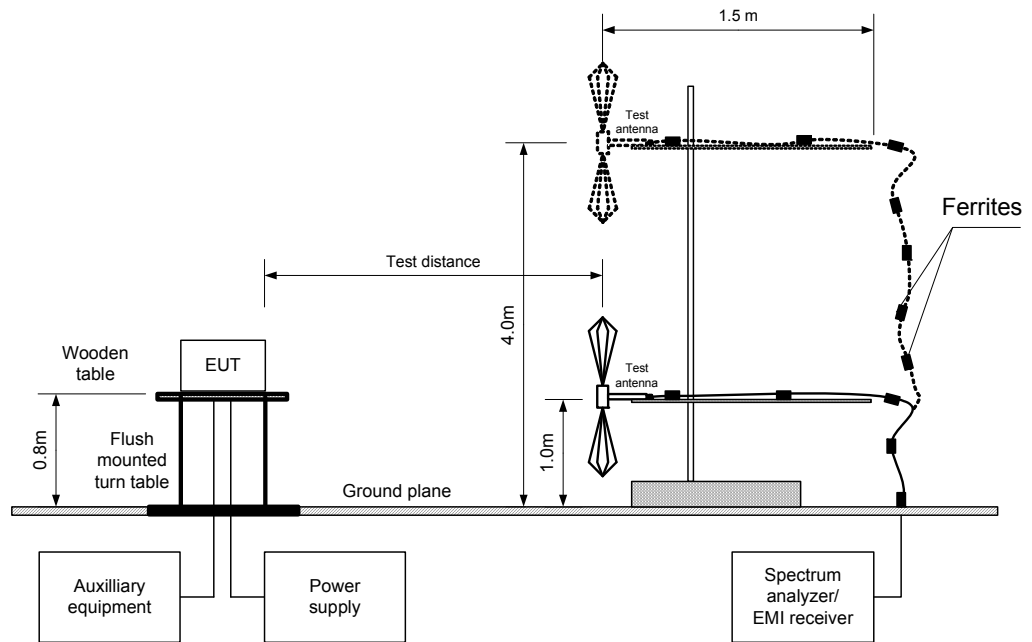
7.4.2.3 The frequency of modulation envelope points beyond which power level drops below the band edge emission limit was measured.

7.4.2.4 The test results were recorded in Table 7.4.2, Table 7.4.3 and shown in the associated plots.



<b>Test specification: Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions</b>			
<b>Test procedure: ANSI C63.10 section 6.10</b>			
<b>Test mode: Compliance</b>		<b>Verdict: PASS</b>	
<b>Date(s): 30-Jan-18 - 21-Feb-18</b>			
<b>Temperature: 24.1 °C</b>	<b>Relative Humidity: 46 %</b>	<b>Air Pressure: 1009 hPa</b>	<b>Power: -48 VDC</b>
<b>Remarks: EUT with 42.4 dBi antenna gain</b>			

Figure 7.4.1 Band edge emission measurement set up





<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

Table 7.4.2 Band edge emission test results

OPERATING FREQUENCY RANGE: 24000 – 24080 MHz  
 DETECTOR USED: Peak / Average  
 RESOLUTION BANDWIDTH: 1000 kHz  
 VIDEO BANDWIDTH: 3000 kHz  
 TEST DISTANCE: 0.75 m  
 MODULATING SIGNAL: PRBS  
 TRANSMITTER OUTPUT POWER: Maximum  
 SETTINGS:

Frequency, MHz	Antenna polarization	Band edge emission, dBµV/m, peak	Limit, dBµV/m	Margin, dB**	Band edge emission, dBµV/m, average	Limit, dBµV/m	Margin, dB**	Verdict
Channel Bandwidth 20 MHz; Modulation: QPSK								
24000	Vert	78.30	86.0	-7.70	65.69	66.0	-0.31	Pass
24000	Hor	78.16	86.0	-7.84	65.91	66.0	-0.09	
Channel Bandwidth 20 MHz; Modulation: 2048 QAM								
24000	Vert	78.1	86.0	-7.90	65.77	66.0	-0.23	Pass
24000	Hor	77.15	86.0	-8.85	65.82	66.0	-0.18	
Channel Bandwidth 30 MHz; Modulation: QPSK								
24000	Vert	78.46	86.0	-7.54	65.82	66.0	-0.18	Pass
24000	Hor	77.86	86.0	-8.14	65.40	66.0	-0.60	
Channel Bandwidth 30 MHz; Modulation: 2048 QAM								
24000	Vert	78.72	86.0	-7.28	65.29	66.0	-0.71	Pass
24000	Hor	77.41	86.0	-8.59	65.54	66.0	-0.46	
Channel Bandwidth 40 MHz; Modulation: QPSK								
24000	Vert	78.33	86.0	-7.67	65.57	66.0	-0.43	Pass
24000	Hor	78	86.0	-8.00	65.92	66.0	-0.08	
Channel Bandwidth 40 MHz; Modulation: 2048 QAM								
24000	Vert	77.66	86.0	-8.34	65.58	66.0	-0.42	Pass
24000	Hor	78.15	86.0	-7.85	65.59	66.0	-0.41	
Channel Bandwidth 50 MHz; Modulation: QPSK								
24000	Vert	78.18	86.0	-7.82	65.32	66.0	-0.68	Pass
24000	Hor	78.61	86.0	-7.39	65.40	66.0	-0.60	
Channel Bandwidth 50 MHz; Modulation: 2048 QAM								
24000	Vert	78.12	86.0	-7.88	65.53	66.0	-0.47	Pass
24000	Hor	78.21	86.0	-7.79	65.55	66.0	-0.45	
Channel Bandwidth 60 MHz; Modulation: QPSK								
24000	Vert	78.98	86.0	-7.02	65.44	66.0	-0.56	Pass
24000	Hor	77.81	86.0	-8.19	65.67	66.0	-0.33	
Channel Bandwidth 60 MHz; Modulation: 2048 QAM								
24000	Vert	78.33	86.0	-7.67	65.32	66.0	-0.68	Pass
24000	Hor	78.61	86.0	-7.39	64.40	66.0	-1.60	

\* - Measured frequency beyond which the emission dropped 50 dB below the carrier emission or below the field strength limit whichever was a less stringent

\*\* - Margin = Band edge limit – Band edge frequency





<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

**Table 7.4.3 High Band edge emission test results**

OPERATING FREQUENCY RANGE: 24170 – 24250 MHz  
 DETECTOR USED: Peak / Average  
 RESOLUTION BANDWIDTH: 1000 kHz  
 VIDEO BANDWIDTH: 3000 kHz  
 TEST DISTANCE: 3 m  
 MODULATING SIGNAL: PRBS  
 TRANSMITTER OUTPUT POWER SETTINGS: Maximum

Frequency, MHz	Antenna polarization	Band edge emission, dBµV/m, peak	Limit, dBµV/m	Margin, dB**	Band edge emission, dBµV/m, average	Limit, dBµV/m	Margin, dB**	Verdict
Channel Bandwidth 20 MHz; Modulation: QPSK								
24000	Vert	81.66	89.9	-8.24	69.82	69.9	-0.08	Pass
24000	Hor	81.21	88.9	-7.69	68.62	68.9	-0.28	
Channel Bandwidth 20 MHz; Modulation: 2048 QAM								
24000	Vert	81.57	89.5	-7.93	69.36	69.5	-0.14	Pass
24000	Hor	80.59	89.0	-8.41	68.58	69.0	-0.42	
Channel Bandwidth 30 MHz; Modulation: QPSK								
24250	Vert	81.27	88.6	-7.33	68.43	68.6	-0.17	Pass
24250	Hor	80.92	87.7	-6.78	67.52	67.7	-0.18	
Channel Bandwidth 30 MHz; Modulation: 2048 QAM								
24250	Vert	81.85	88.6	-6.75	68.5	68.6	-0.10	Pass
24250	Hor	79.88	87.2	-7.32	67.1	67.2	-0.10	
Channel Bandwidth 40 MHz; Modulation: QPSK								
24250	Vert	80.77	86.5	-5.73	66.34	66.5	-0.16	Pass
24250	Hor	80.37	86.0	-5.63	65.71	66.0	-0.29	
Channel Bandwidth 40 MHz; Modulation: 2048 QAM								
24250	Vert	86.8	-5.55	66.72	66.8	-0.08	86.8	Pass
24250	Hor	86.7	-6.96	66.53	66.7	-0.17	86.7	
Channel Bandwidth 50 MHz; Modulation: QPSK								
24250	Vert	80.55	86.0	-5.45	65.91	66.0	-0.09	Pass
24250	Hor	79.62	86.0	-6.38	65.82	66.0	-0.18	
Channel Bandwidth 50 MHz; Modulation: 2048 QAM								
24250	Vert	79.74	86.0	-6.26	65.88	66.0	-0.12	Pass
24250	Hor	80.44	86.0	-5.56	65.72	66.0	-0.28	
Channel Bandwidth 60 MHz; Modulation: QPSK								
24250	Vert	80.25	86.0	-5.75	65.92	66.0	-0.08	Pass
24250	Hor	79.69	86.0	-6.31	65.92	66.0	-0.08	
Channel Bandwidth 60 MHz; Modulation: 2048 QAM								
24250	Vert	79.97	86.0	-6.03	65.89	66.0	-0.11	Pass
24250	Hor	80.18	86.0	-5.82	65.72	66.0	-0.28	

\* - Measured frequency beyond which the emission dropped 50 dB below the carrier emission or below the field strength limit whichever was a less stringent

\*\* - Margin = Band edge limit – Band edge frequency

**Reference numbers of test equipment used**

HL 0768	HL 3818	HL 3903				
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Full description is given in Appendix A.

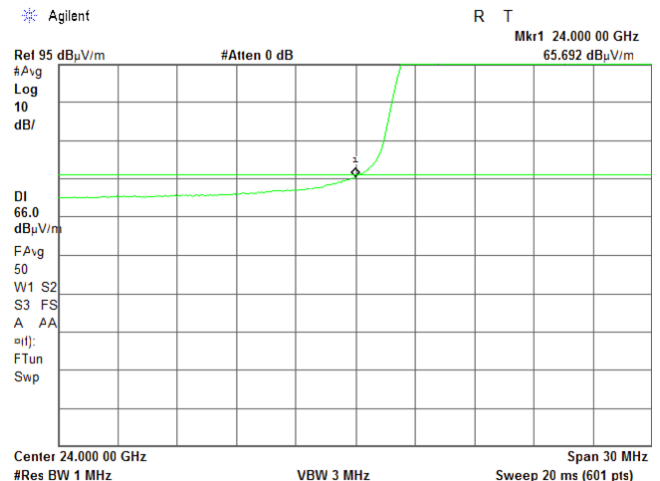
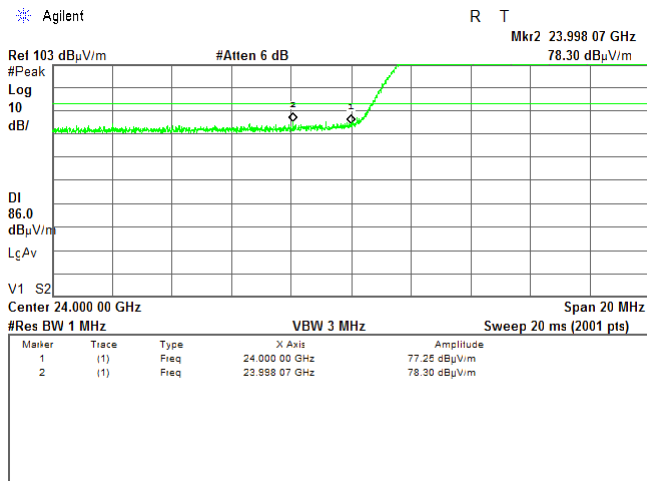


HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

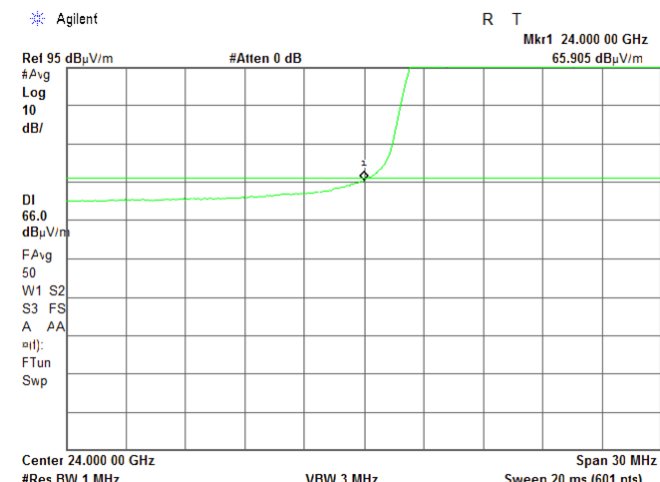
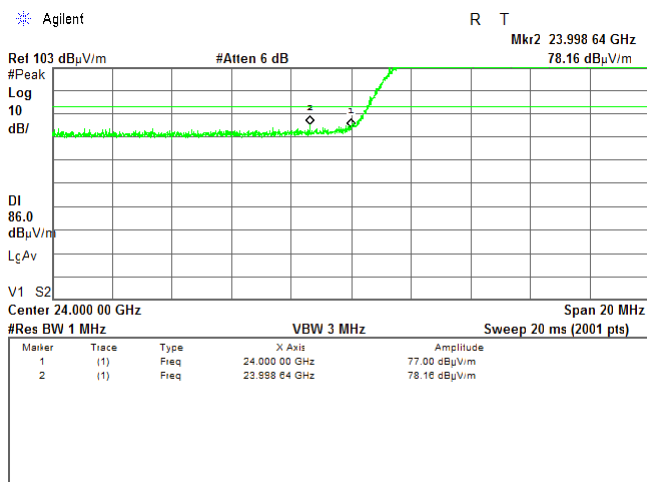
Plot 7.4.1 Low band edge emission test result

TEST SITE: OATS  
TEST DISTANCE: 0.75 m  
ANTENNA POLARIZATION: Vertical  
EUT POSITION: Typical (Vertical)  
EMISSION BANDWIDTH: 20 MHz  
MODULATION: QPSK



Plot 7.4.2 Low band edge emission test result

TEST SITE: OATS  
TEST DISTANCE: 0.75 m  
ANTENNA POLARIZATION: Horizontal  
EUT POSITION: Typical (Vertical)  
EMISSION BANDWIDTH: 20 MHz  
MODULATION: QPSK



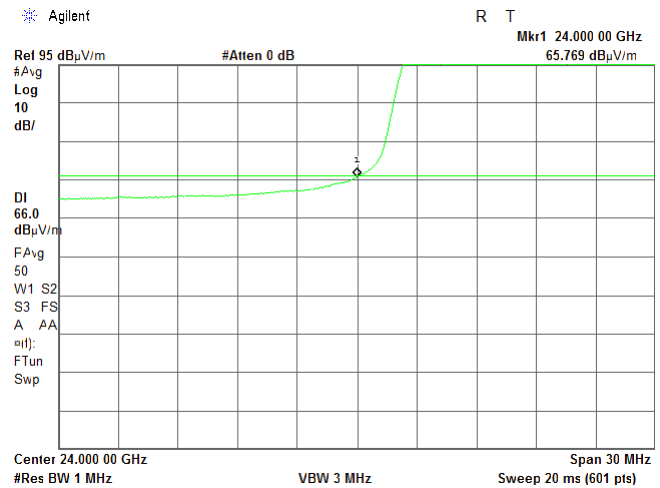
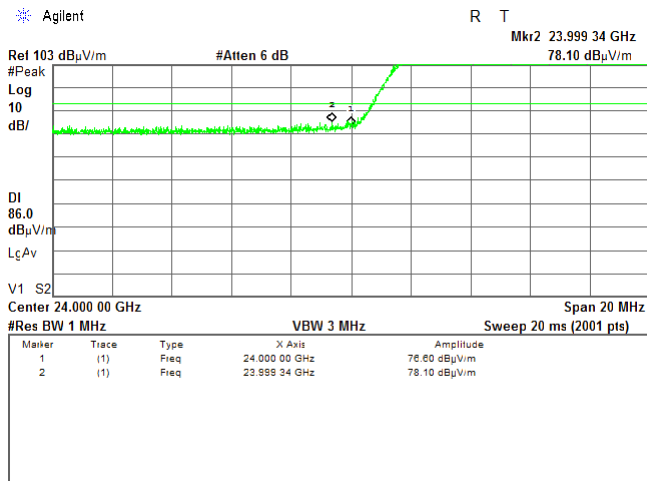


HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

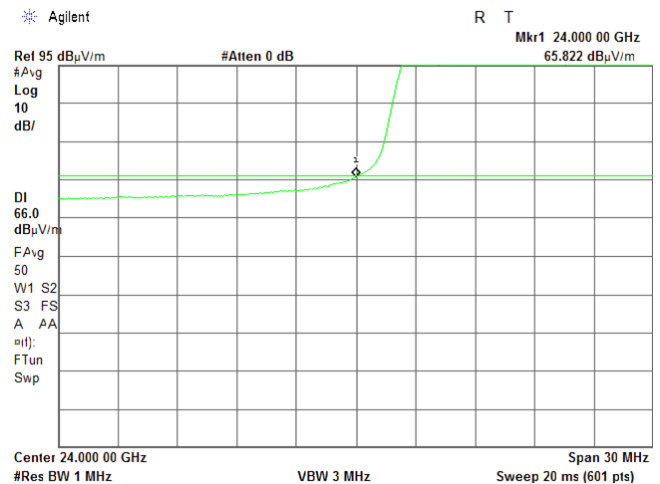
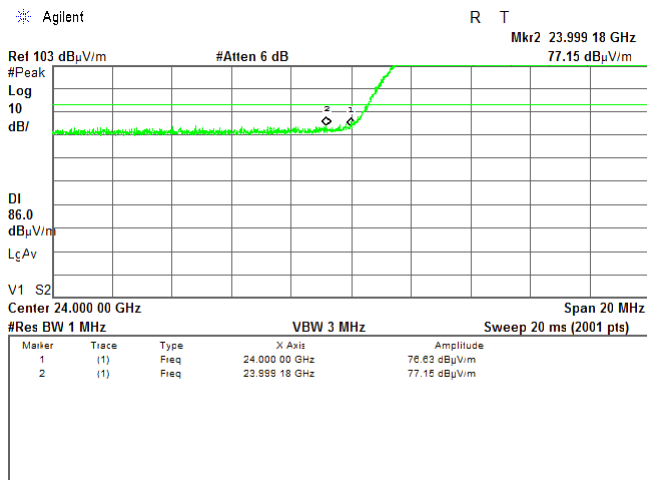
### Plot 7.4.3 Low band edge emission test result

TEST SITE: OATS  
 TEST DISTANCE: 0.75 m  
 ANTENNA POLARIZATION: Vertical  
 EUT POSITION: Typical (Vertical)  
 EMISSION BANDWIDTH: 20 MHz  
 MODULATION: 2048QAM



### Plot 7.4.4 Low band edge emission test result

TEST SITE: OATS  
 TEST DISTANCE: 0.75 m  
 ANTENNA POLARIZATION: Horizontal  
 EUT POSITION: Typical (Vertical)  
 EMISSION BANDWIDTH: 20 MHz  
 MODULATION: 2048QAM





HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

### Plot 7.4.5 High band edge emission test result

TEST SITE:

TEST DISTANCE:

ANTENNA POLARIZATION:

EUT POSITION:

EMISSION BANDWIDTH:

MODULATION:

\* Agilent

OATS

0.75 m

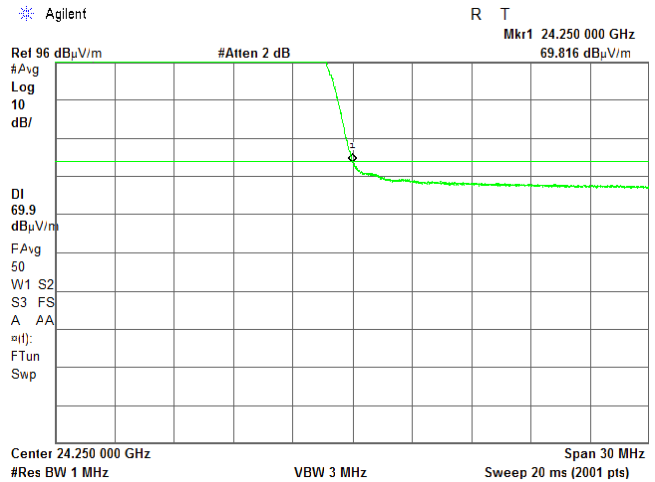
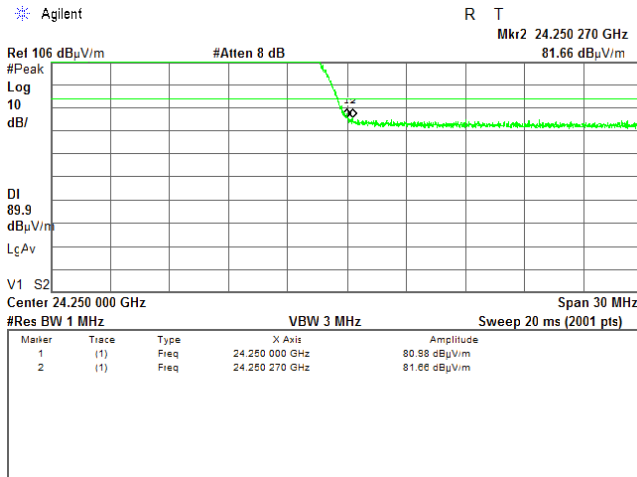
Vertical

Typical (Vertical)

20 MHz

QPSK

\* Agilent



### Plot 7.4.6 High band edge emission test result

TEST SITE:

TEST DISTANCE:

ANTENNA POLARIZATION:

EUT POSITION:

EMISSION BANDWIDTH:

MODULATION:

\* Agilent

OATS

0.75 m

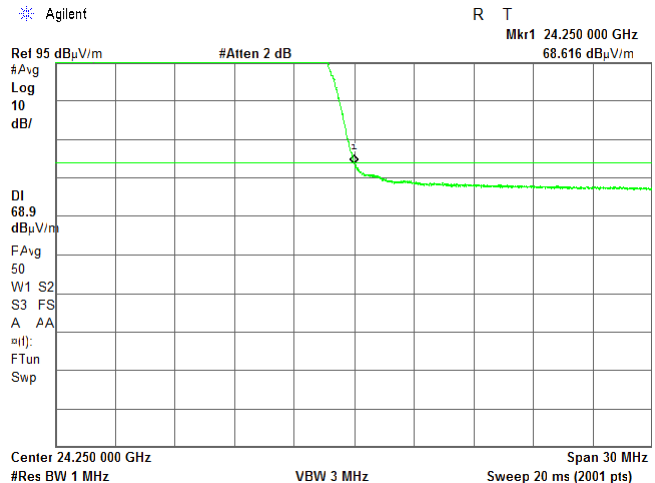
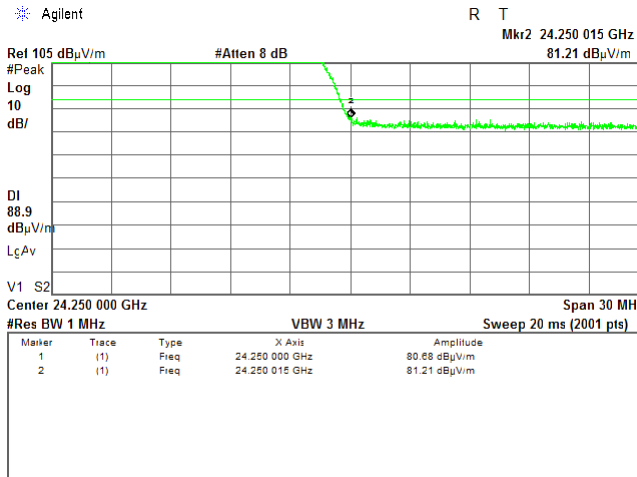
Horizontal

Typical (Vertical)

20 MHz

QPSK

\* Agilent





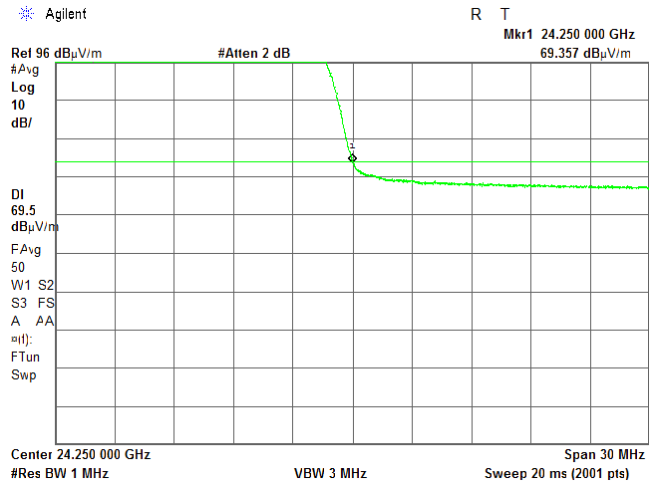
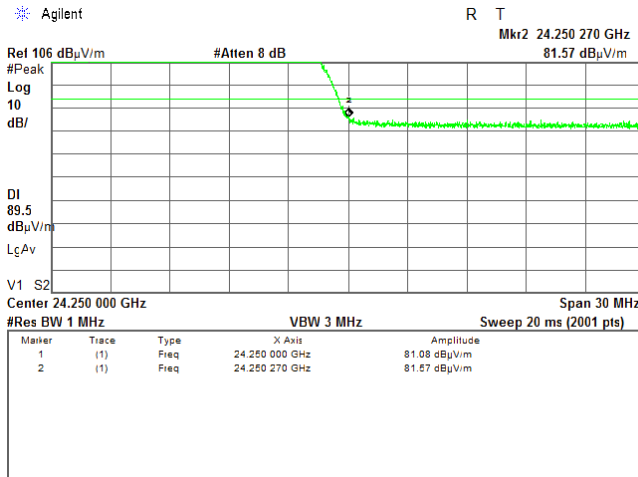
HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

Plot 7.4.7 High band edge emission test result

TEST SITE:  
 TEST DISTANCE:  
 ANTENNA POLARIZATION:  
 EUT POSITION:  
 EMISSION BANDWIDTH:  
 MODULATION:

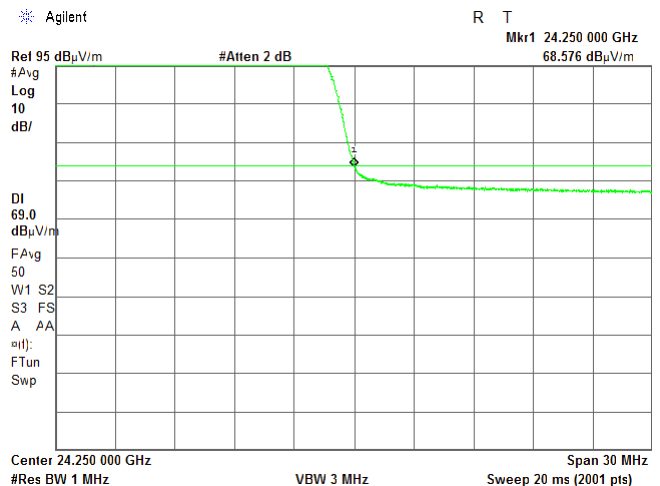
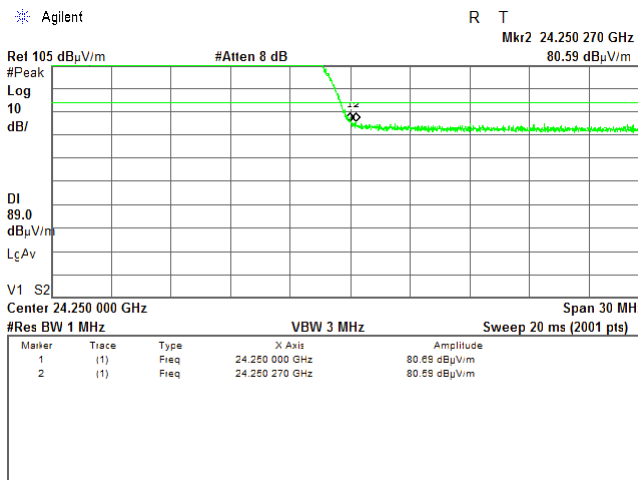
OATS  
 0.75 m  
 Vertical  
 Typical (Vertical)  
 20 MHz  
 2048QAM



Plot 7.4.8 High band edge emission test result

TEST SITE:  
 TEST DISTANCE:  
 ANTENNA POLARIZATION:  
 EUT POSITION:  
 EMISSION BANDWIDTH:  
 MODULATION:

OATS  
 0.75 m  
 Horizontal  
 Typical (Vertical)  
 20 MHz  
 2048QAM





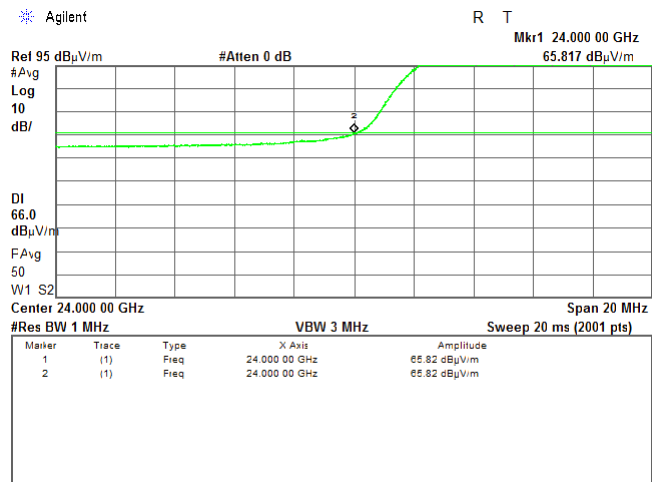
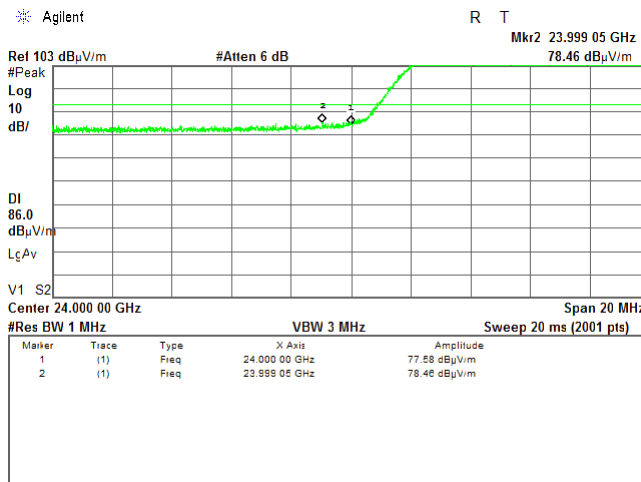
HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

### Plot 7.4.9 Low band edge emission test result

TEST SITE:  
 TEST DISTANCE:  
 ANTENNA POLARIZATION:  
 EUT POSITION:  
 EMISSION BANDWIDTH:  
 MODULATION:

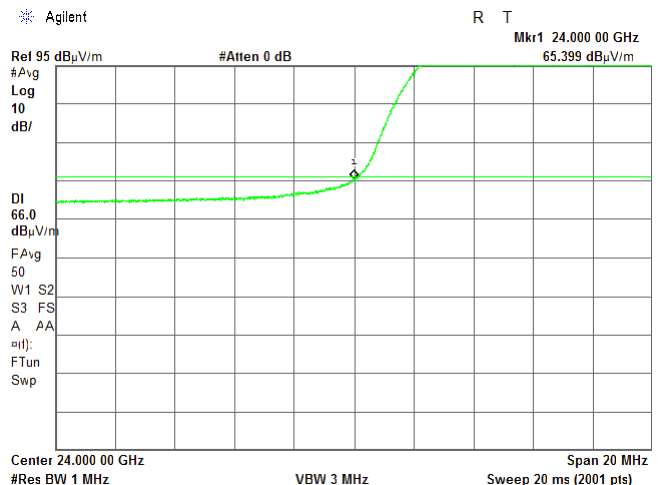
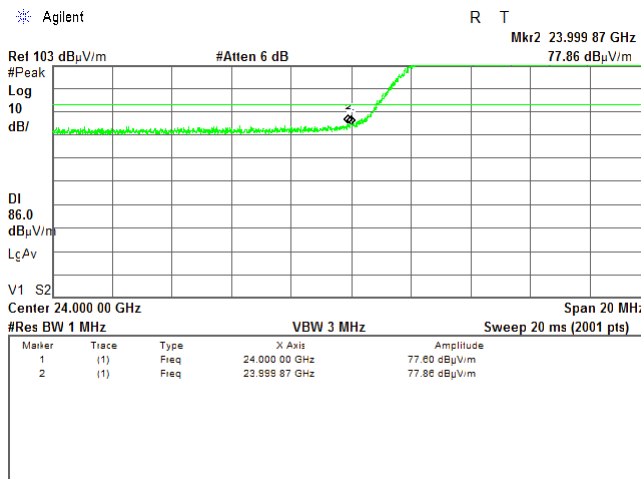
OATS  
 0.75 m  
 Vertical  
 Typical (Vertical)  
 30 MHz  
 QPSK



### Plot 7.4.10 Low band edge emission test result

TEST SITE:  
 TEST DISTANCE:  
 ANTENNA POLARIZATION:  
 EUT POSITION:  
 EMISSION BANDWIDTH:  
 MODULATION:

OATS  
 0.75 m  
 Horizontal  
 Typical (Vertical)  
 30 MHz  
 QPSK



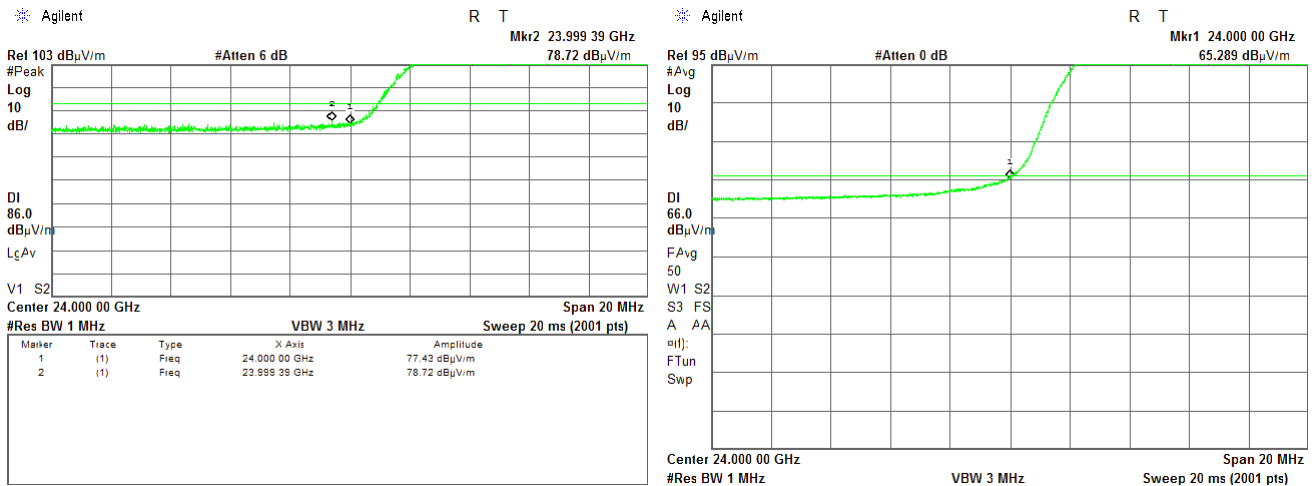


HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

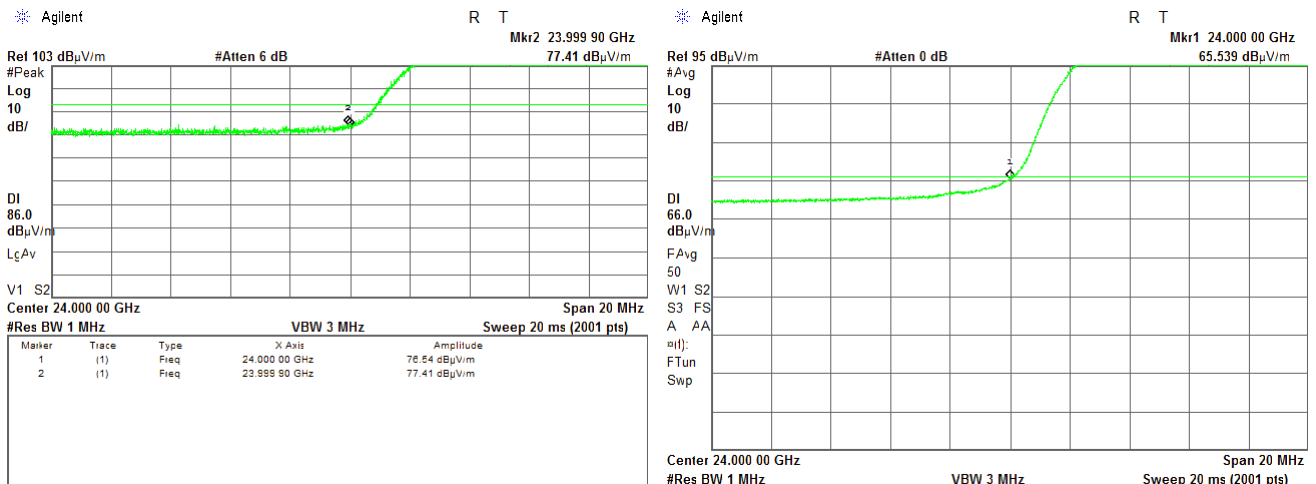
Plot 7.4.11 Low band edge emission test result

TEST SITE: OATS  
TEST DISTANCE: 0.75 m  
ANTENNA POLARIZATION: Vertical  
EUT POSITION: Typical (Vertical)  
EMISSION BANDWIDTH: 30 MHz  
MODULATION: 2048QAM



Plot 7.4.12 Low band edge emission test result

TEST SITE: OATS  
TEST DISTANCE: 0.75 m  
ANTENNA POLARIZATION: Horizontal  
EUT POSITION: Typical (Vertical)  
EMISSION BANDWIDTH: 30 MHz  
MODULATION: 2048QAM



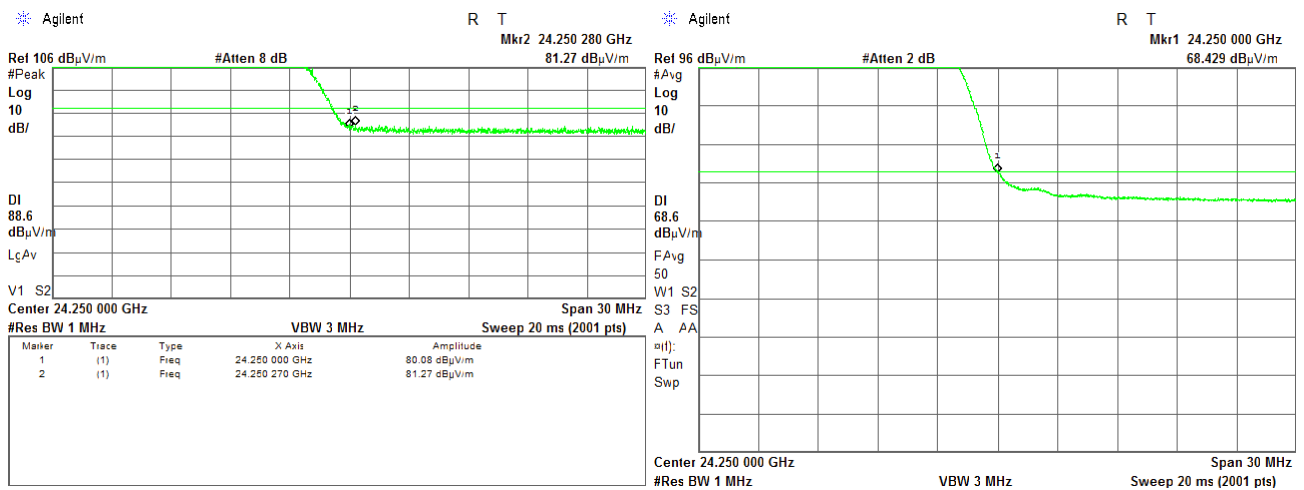


HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

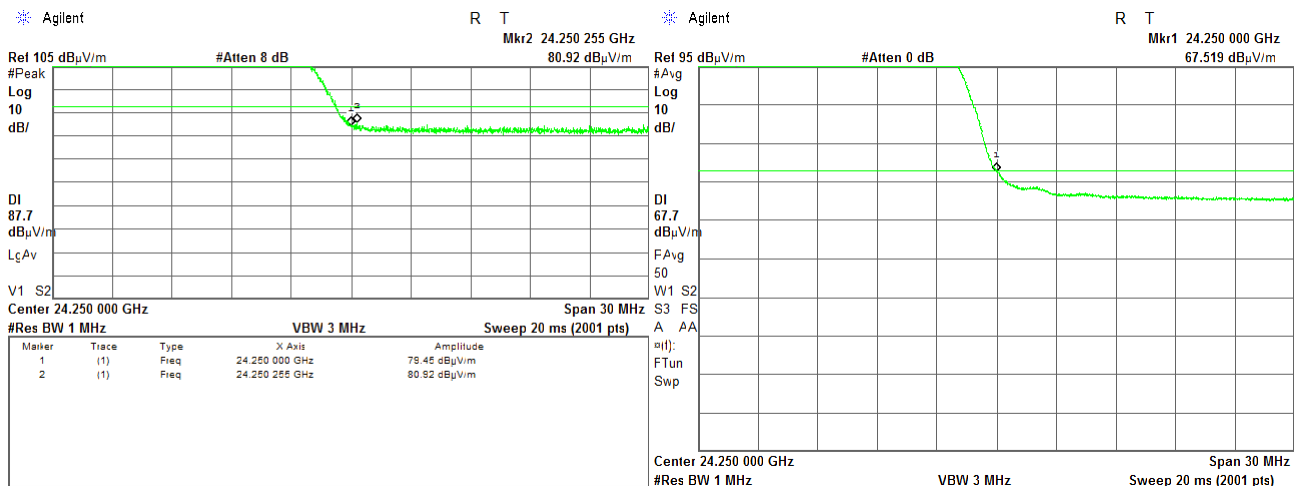
### Plot 7.4.13 High band edge emission test result

TEST SITE: OATS  
 TEST DISTANCE: 0.75 m  
 ANTENNA POLARIZATION: Vertical and Horizontal  
 EUT POSITION: Typical (Vertical)  
 EMISSION BANDWIDTH: 30 MHz  
 MODULATION: QPSK



### Plot 7.4.14 High band edge emission test result

TEST SITE: OATS  
 TEST DISTANCE: 0.75 m  
 ANTENNA POLARIZATION: Horizontal  
 EUT POSITION: Typical (Vertical)  
 EMISSION BANDWIDTH: 30 MHz  
 MODULATION: QPSK







HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

Plot 7.4.15 High band edge emission test result

TEST SITE:

TEST DISTANCE:

ANTENNA POLARIZATION:

EUT POSITION:

EMISSION BANDWIDTH:

MODULATION:

OATS

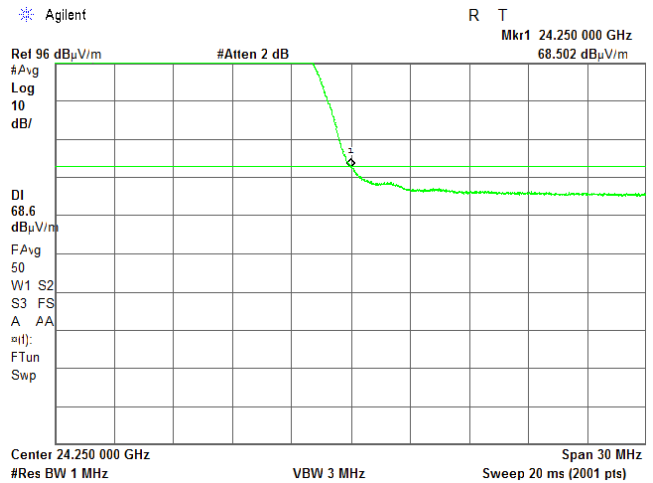
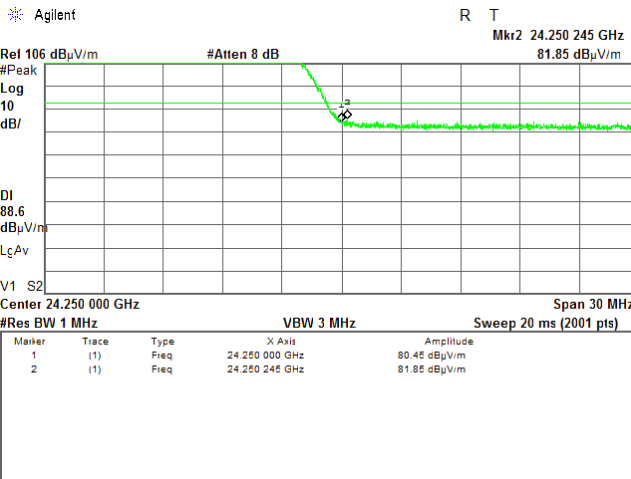
0.75 m

Vertical and Horizontal

Typical (Vertical)

30 MHz

2048QAM



Plot 7.4.16 High band edge emission test result

TEST SITE:

TEST DISTANCE:

ANTENNA POLARIZATION:

EUT POSITION:

EMISSION BANDWIDTH:

MODULATION:

OATS

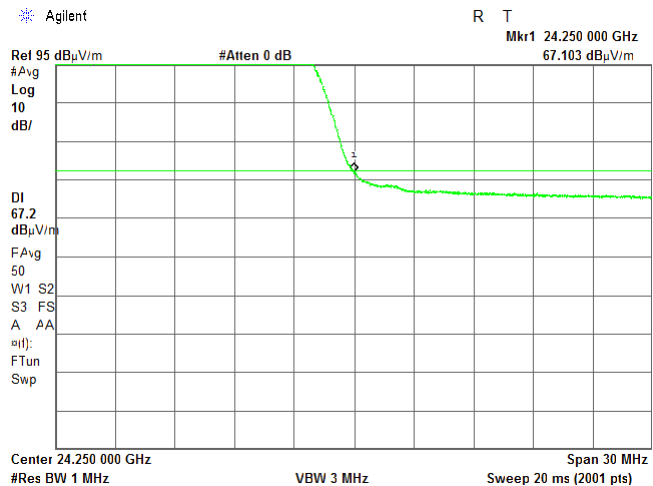
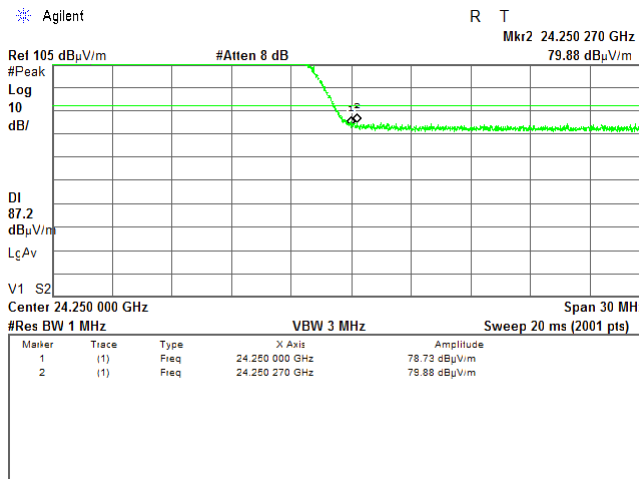
0.75 m

Horizontal

Typical (Vertical)

30 MHz

2048QAM



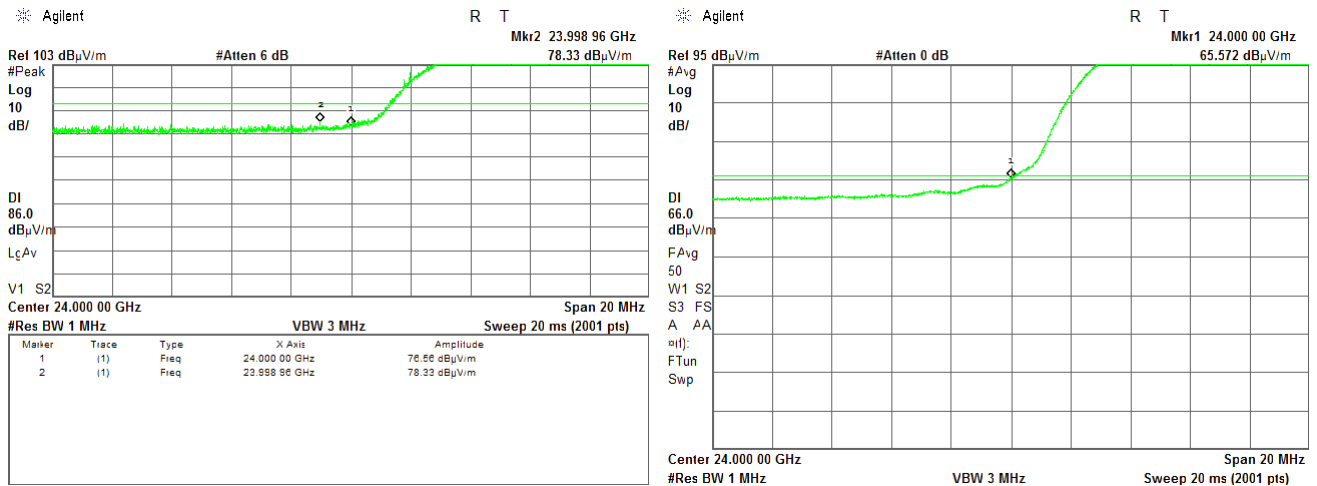


HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

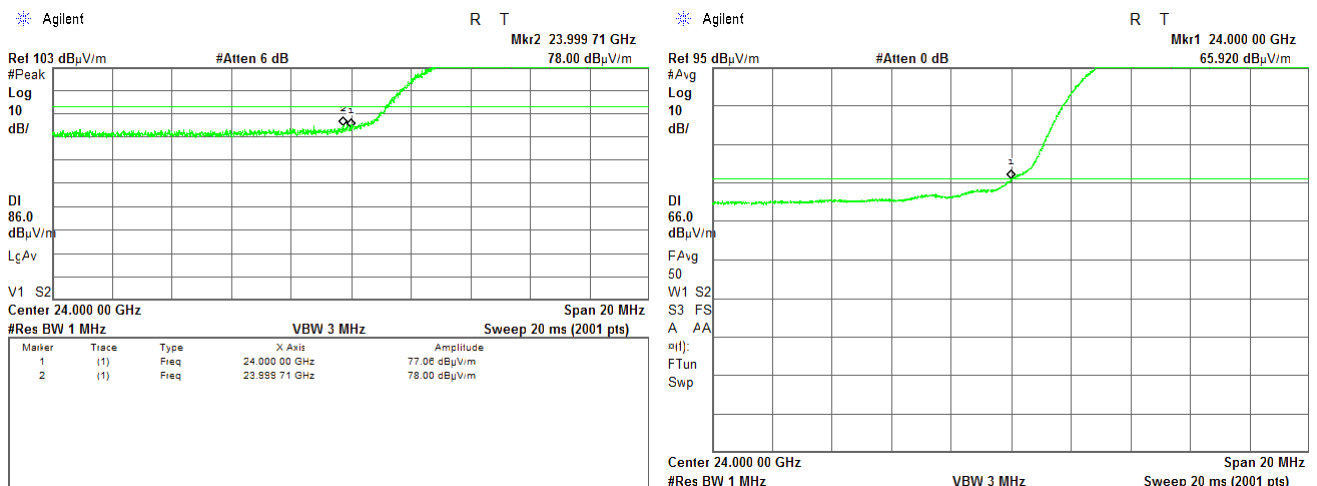
Plot 7.4.17 Low band edge emission test result

TEST SITE: OATS  
TEST DISTANCE: 0.75 m  
ANTENNA POLARIZATION: Vertical  
EUT POSITION: Typical (Vertical)  
EMISSION BANDWIDTH: 40 MHz  
MODULATION: QPSK



Plot 7.4.18 Low band edge emission test result

TEST SITE: OATS  
TEST DISTANCE: 0.75 m  
ANTENNA POLARIZATION: Horizontal  
EUT POSITION: Typical (Vertical)  
EMISSION BANDWIDTH: 40 MHz  
MODULATION: QPSK



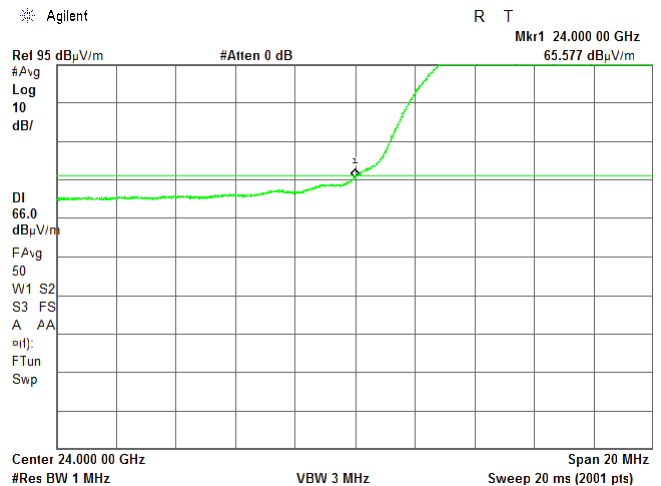
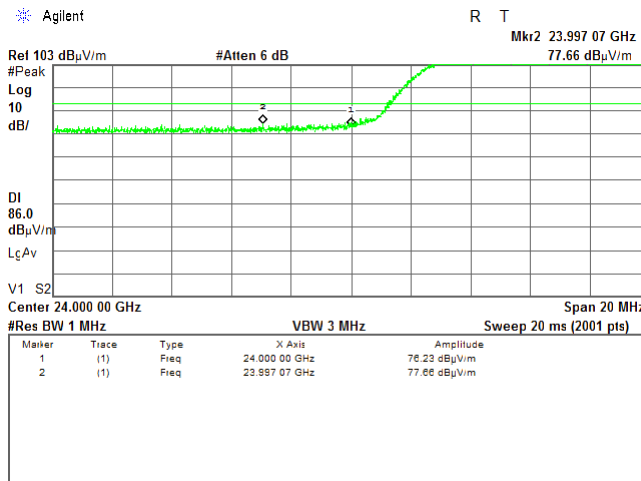


HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

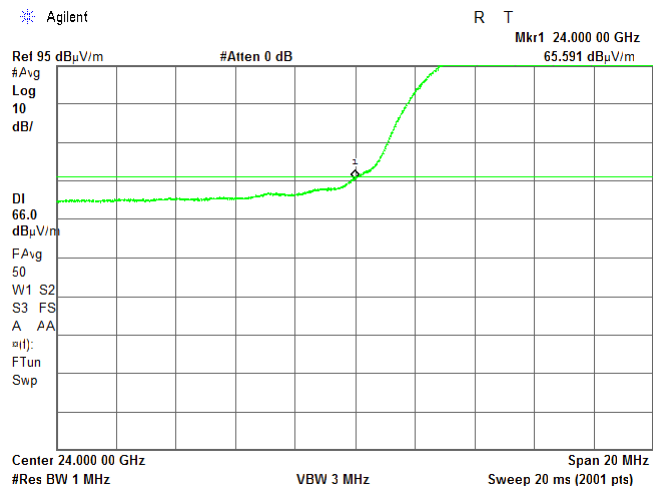
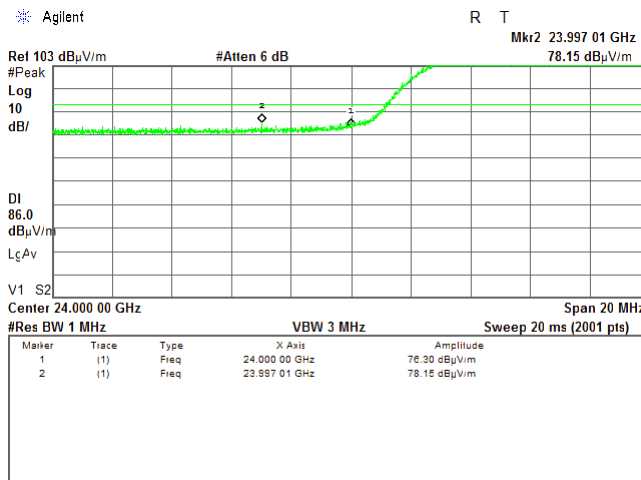
Plot 7.4.19 Low band edge emission test result

TEST SITE: OATS  
 TEST DISTANCE: 0.75 m  
 ANTENNA POLARIZATION: Vertical  
 EUT POSITION: Typical (Vertical)  
 EMISSION BANDWIDTH: 40 MHz  
 MODULATION: 2048QAM



Plot 7.4.20 Low band edge emission test result

TEST SITE: OATS  
 TEST DISTANCE: 0.75 m  
 ANTENNA POLARIZATION: Horizontal  
 EUT POSITION: Typical (Vertical)  
 EMISSION BANDWIDTH: 40 MHz  
 MODULATION: 2048QAM





HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

### Plot 7.4.21 High band edge emission test result

TEST SITE:

TEST DISTANCE:

ANTENNA POLARIZATION:

EUT POSITION:

EMISSION BANDWIDTH:

MODULATION:

Agilent

R T

OATS

0.75 m

Vertical

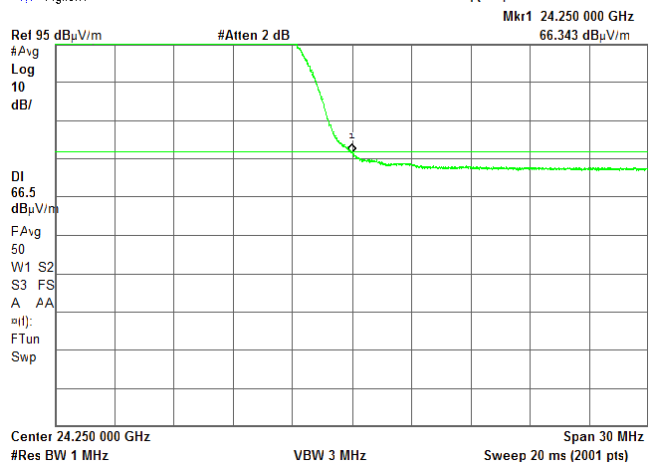
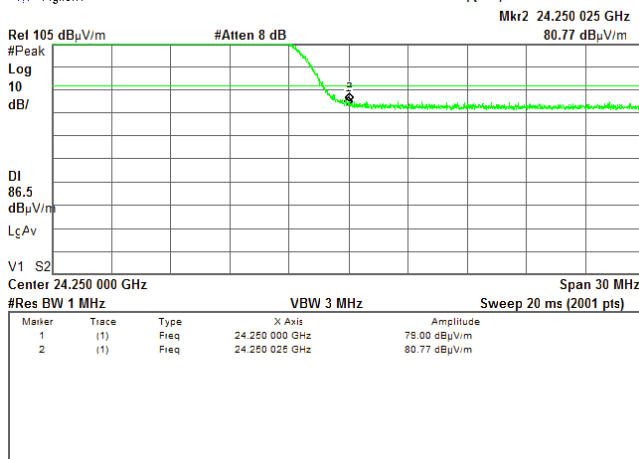
Typical (Vertical)

40 MHz

QPSK

Agilent

R T



### Plot 7.4.22 High band edge emission test result

TEST SITE:

TEST DISTANCE:

ANTENNA POLARIZATION:

EUT POSITION:

EMISSION BANDWIDTH:

MODULATION:

Agilent

R T

OATS

0.75 m

Horizontal

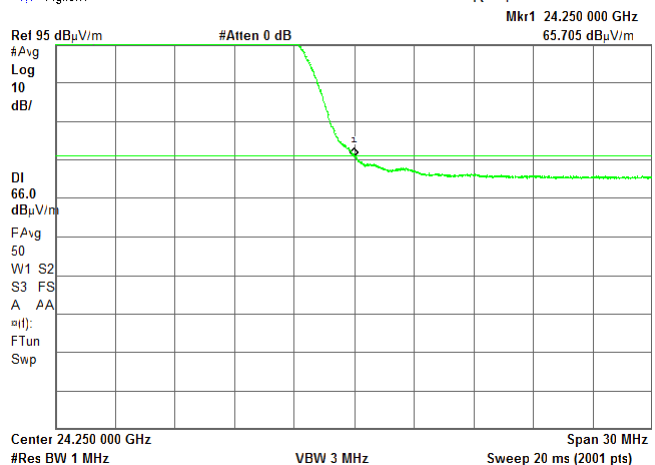
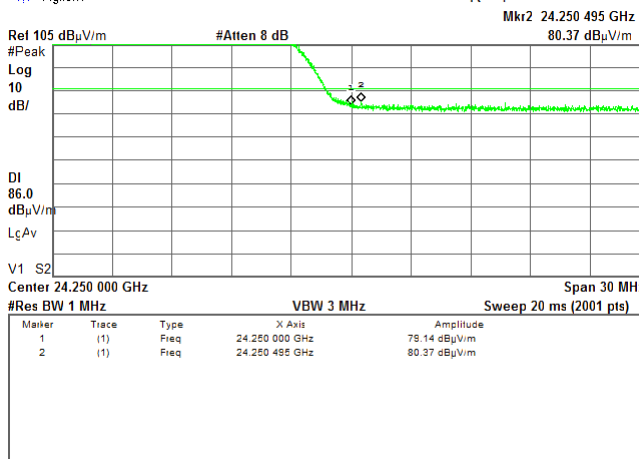
Typical (Vertical)

40 MHz

QPSK

Agilent

R T



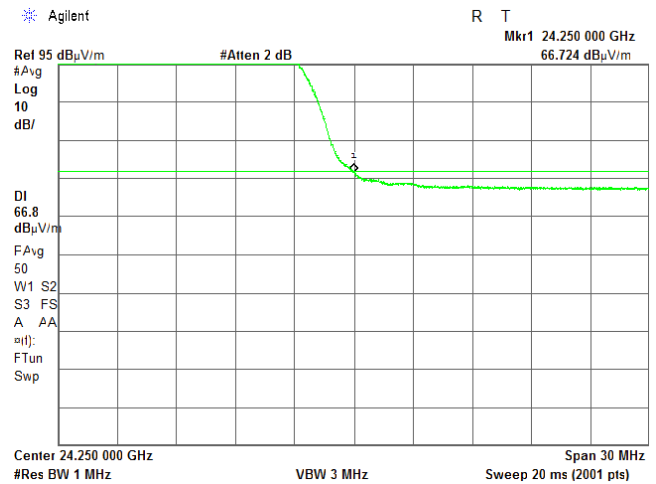
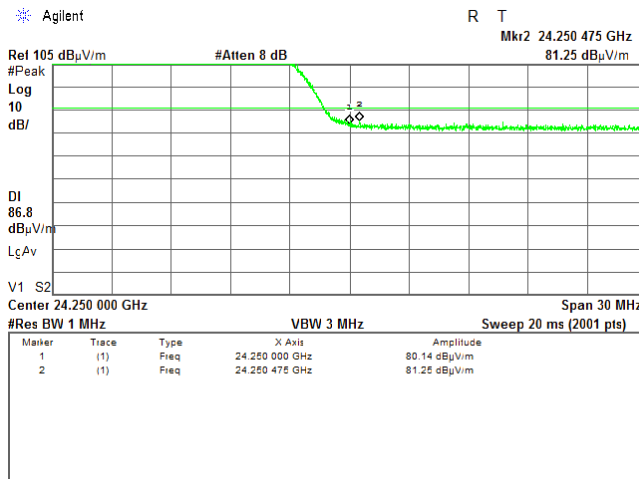


HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

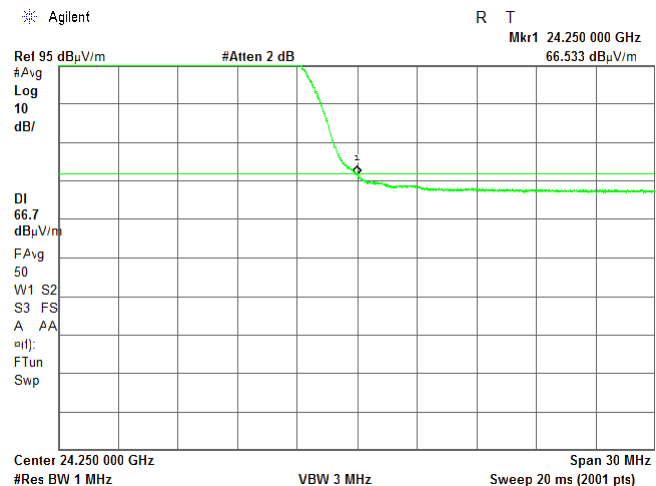
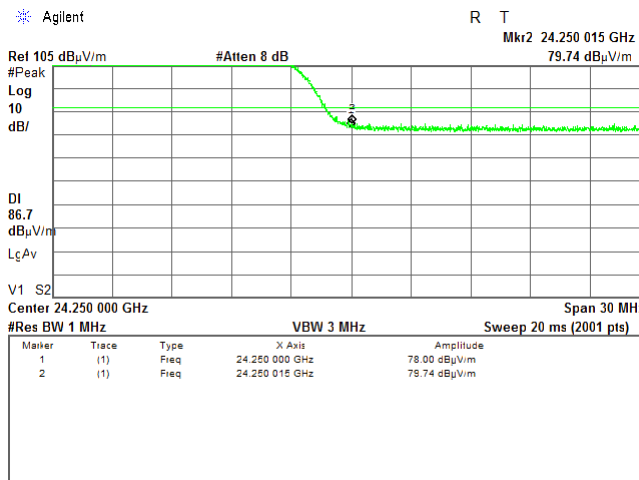
### Plot 7.4.23 High band edge emission test result

TEST SITE: OATS  
 TEST DISTANCE: 0.75 m  
 ANTENNA POLARIZATION: Vertical  
 EUT POSITION: Typical (Vertical)  
 EMISSION BANDWIDTH: 40 MHz  
 MODULATION: 2048QAM



### Plot 7.4.24 High band edge emission test result

TEST SITE: OATS  
 TEST DISTANCE: 0.75 m  
 ANTENNA POLARIZATION: Horizontal  
 EUT POSITION: Typical (Vertical)  
 EMISSION BANDWIDTH: 40 MHz  
 MODULATION: 2048QAM



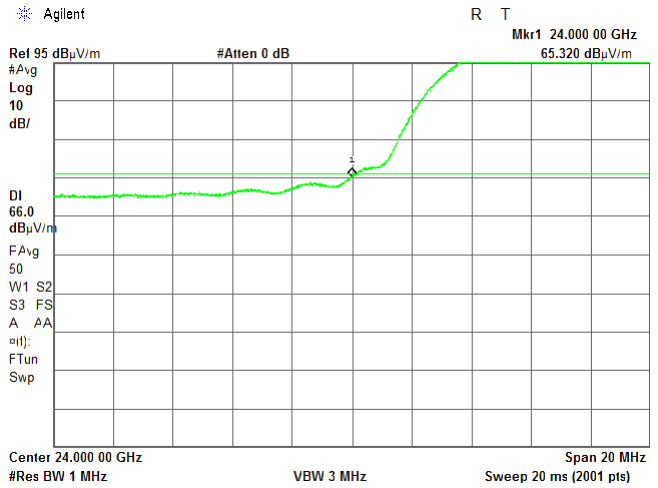
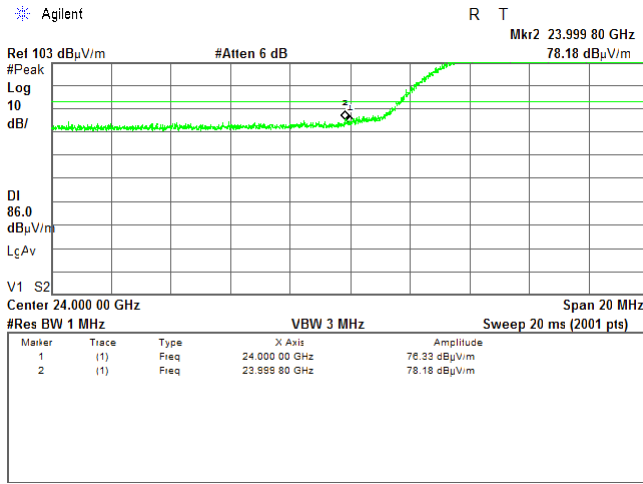


HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

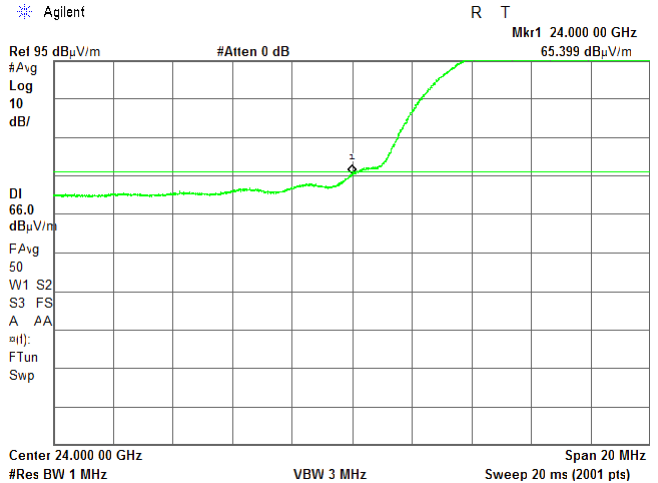
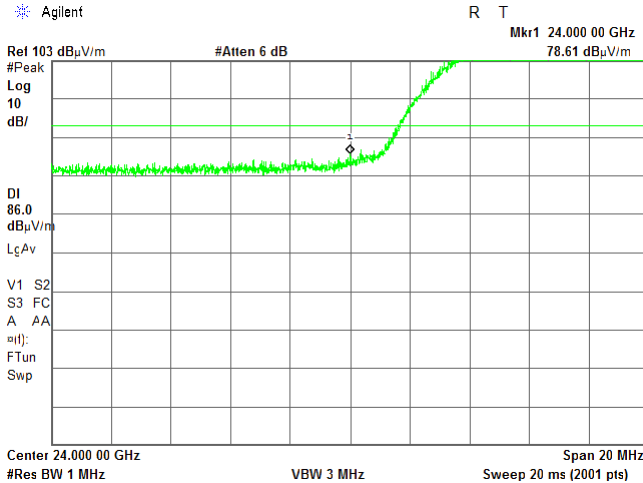
ot 7.4.25 Low band edge emission test result

TEST SITE: OATS  
TEST DISTANCE: 0.75 m  
ANTENNA POLARIZATION: Vertical  
EUT POSITION: Typical (Vertical)  
EMISSION BANDWIDTH: 50 MHz  
MODULATION: QPSK



Plot 7.4.26 Low band edge emission test result

TEST SITE: OATS  
TEST DISTANCE: 0.75 m  
ANTENNA POLARIZATION: Horizontal  
EUT POSITION: Typical (Vertical)  
EMISSION BANDWIDTH: 50 MHz  
MODULATION: QPSK



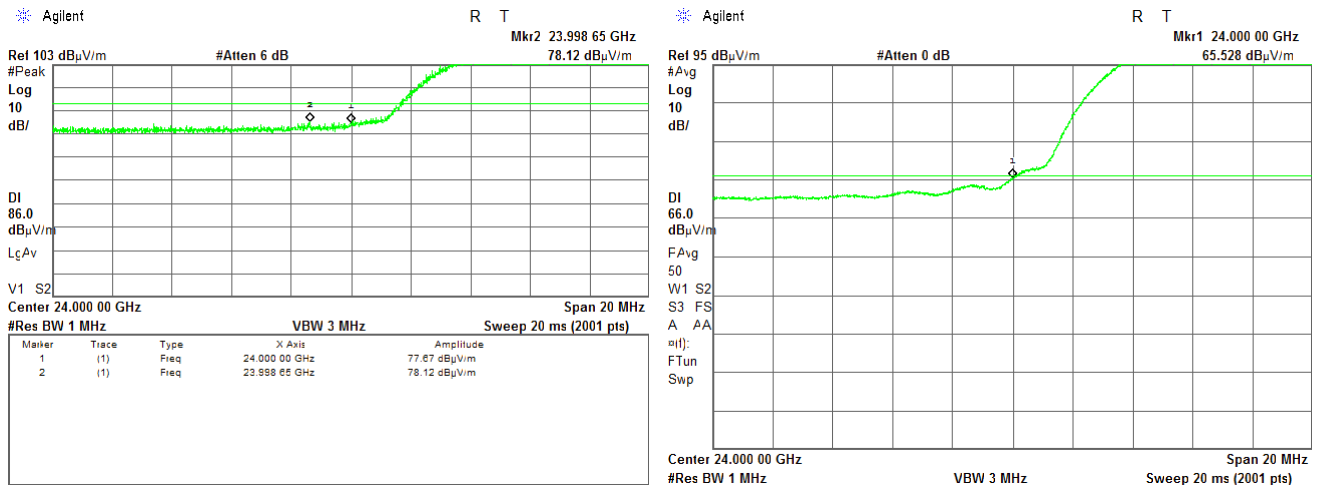


HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

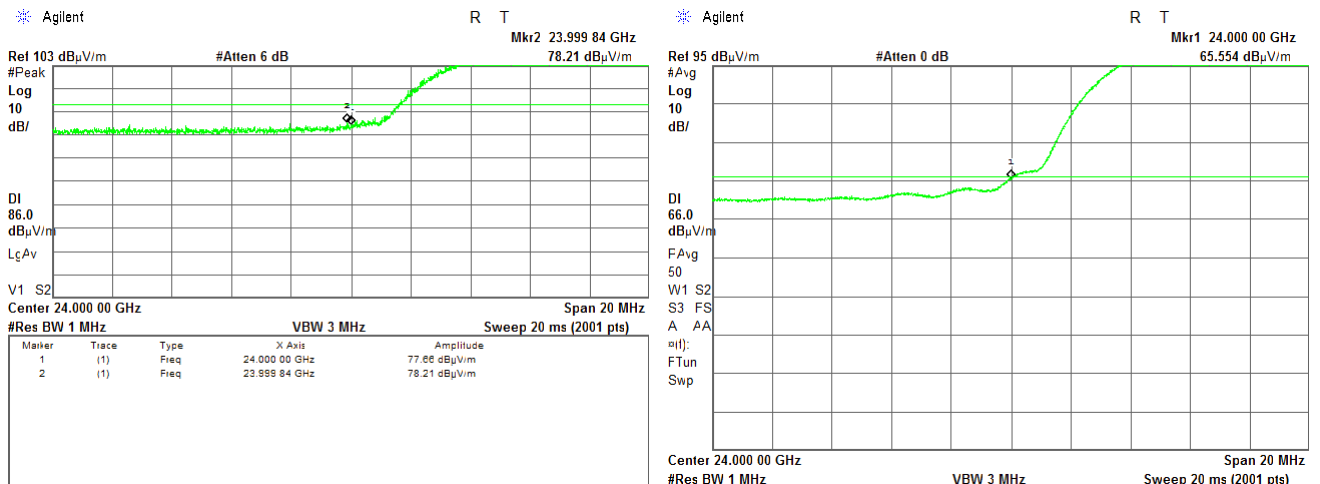
Plot 7.4.27 Low band edge emission test result

TEST SITE: OATS  
 TEST DISTANCE: 0.75 m  
 ANTENNA POLARIZATION: Vertical  
 EUT POSITION: Typical (Vertical)  
 EMISSION BANDWIDTH: 50 MHz  
 MODULATION: 2048QAM



Plot 7.4.28 Low band edge emission test result

TEST SITE: OATS  
 TEST DISTANCE: 0.75 m  
 ANTENNA POLARIZATION: Horizontal  
 EUT POSITION: Typical (Vertical)  
 EMISSION BANDWIDTH: 50 MHz  
 MODULATION: 2048QAM





HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

### Plot 7.4.29 High band edge emission test result

TEST SITE:

TEST DISTANCE:

ANTENNA POLARIZATION:

EUT POSITION:

EMISSION BANDWIDTH:

MODULATION:

\* Agilent

R T

OATS

0.75 m

Vertical and Horizontal

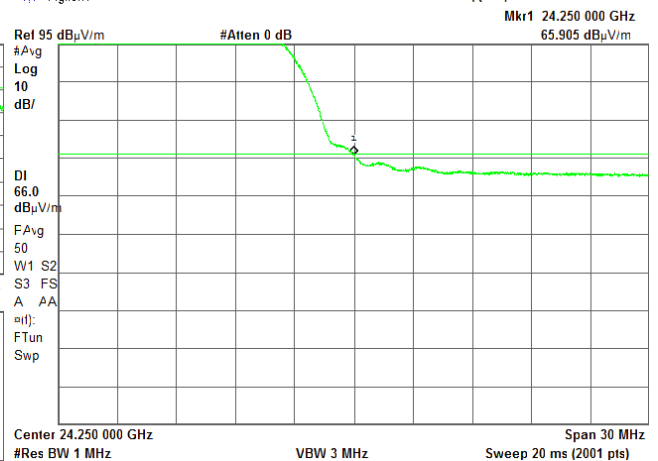
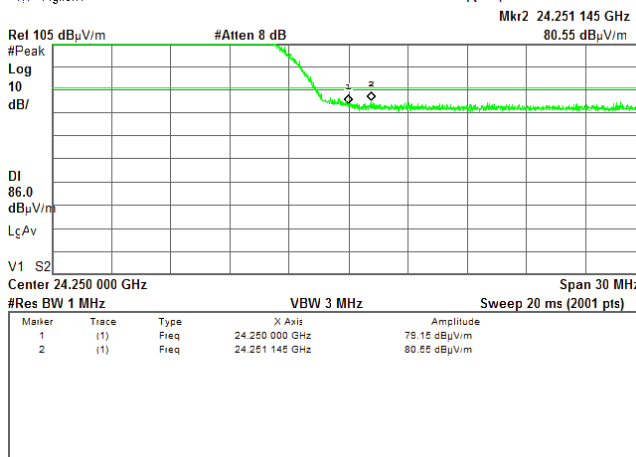
Typical (Vertical)

50 MHz

QPSK

\* Agilent

R T



### Plot 7.4.30 High band edge emission test result

TEST SITE:

TEST DISTANCE:

ANTENNA POLARIZATION:

EUT POSITION:

EMISSION BANDWIDTH:

MODULATION:

\* Agilent

R T

OATS

0.75 m

Horizontal

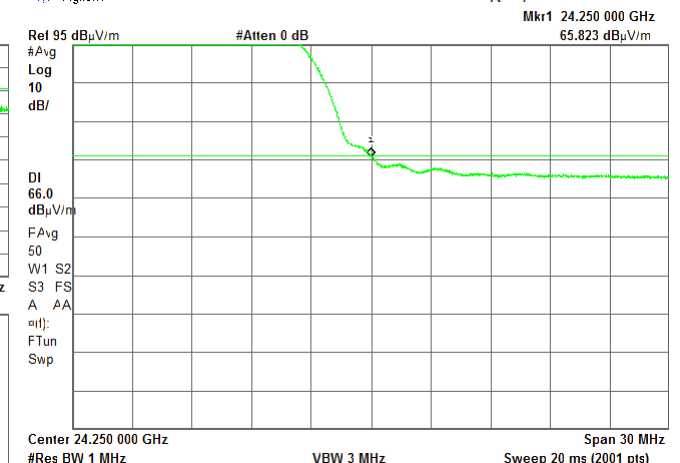
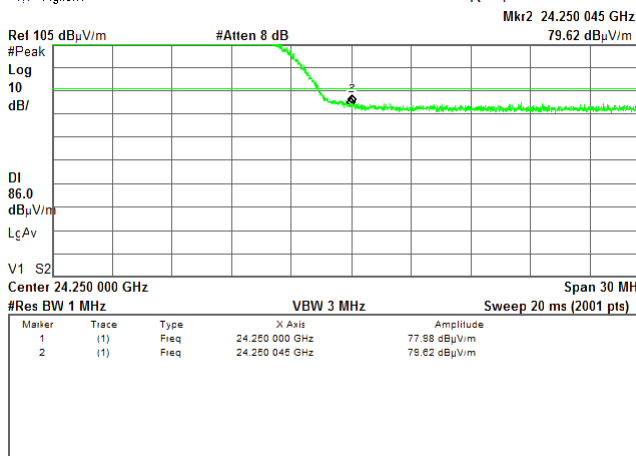
Typical (Vertical)

50 MHz

QPSK

\* Agilent

R T







HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

**Plot 7.4.31 High band edge emission test result**

TEST SITE:

OATS

TEST DISTANCE:

0.75 m

ANTENNA POLARIZATION:

Vertical and Horizontal

EUT POSITION:

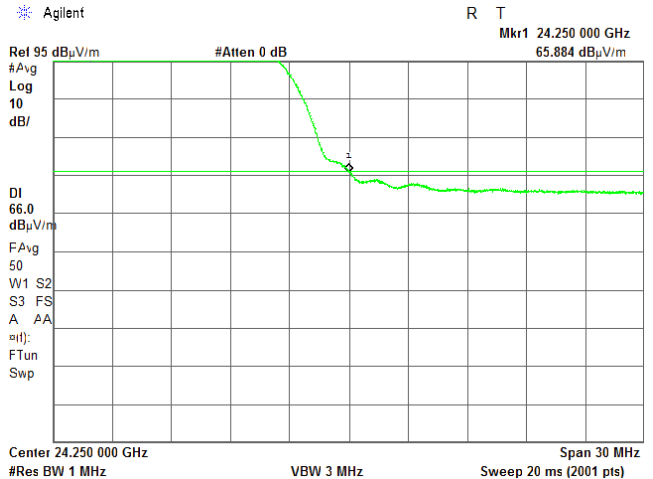
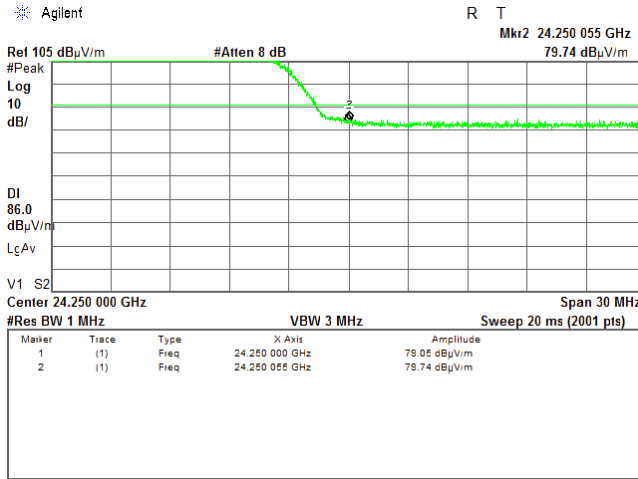
Typical (Vertical)

EMISSION BANDWIDTH:

50 MHz

MODULATION:

2048QAM



**Plot 7.4.32 High band edge emission test result**

TEST SITE:

OATS

TEST DISTANCE:

0.75 m

ANTENNA POLARIZATION:

Horizontal

EUT POSITION:

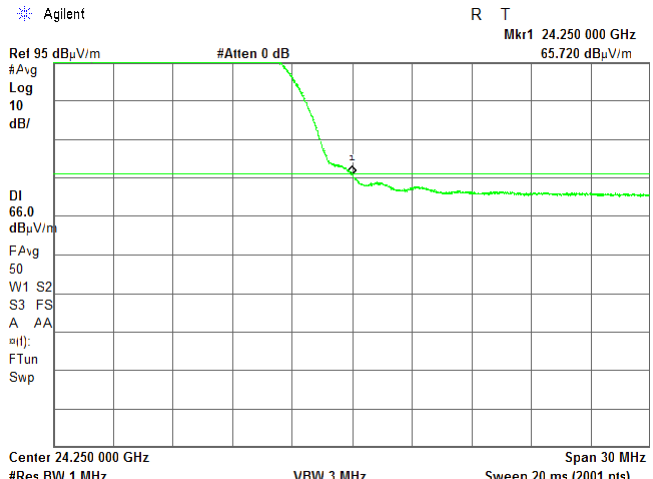
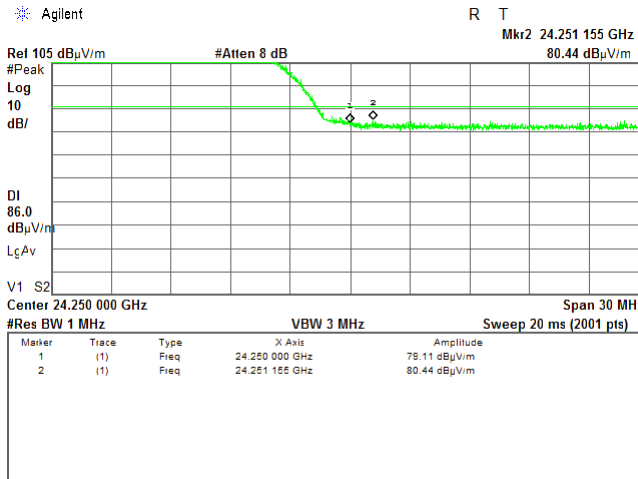
Typical (Vertical)

EMISSION BANDWIDTH:

50 MHz

MODULATION:

2048QAM



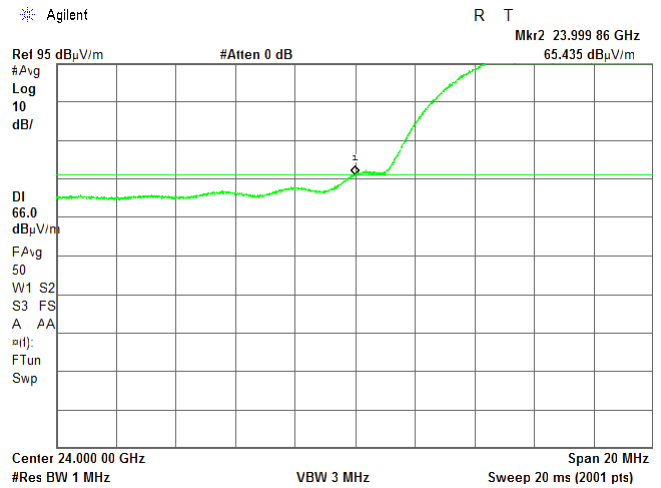
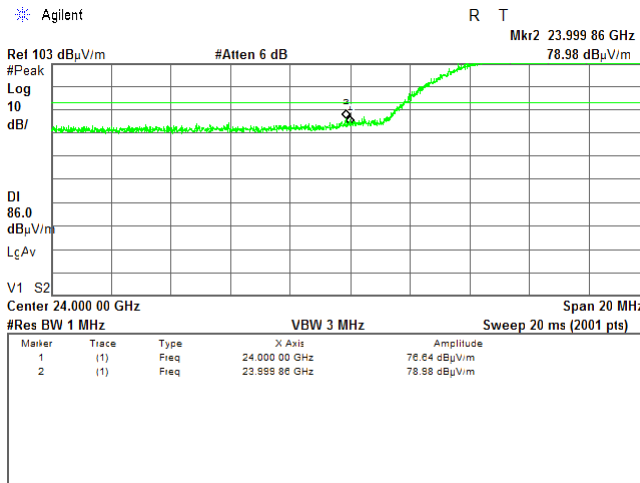


HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

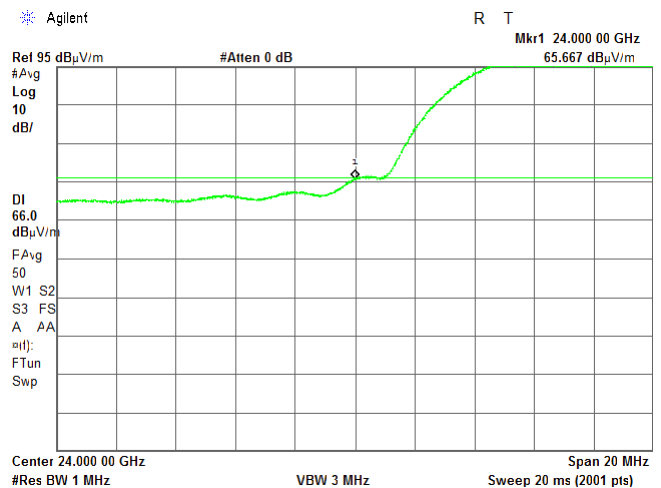
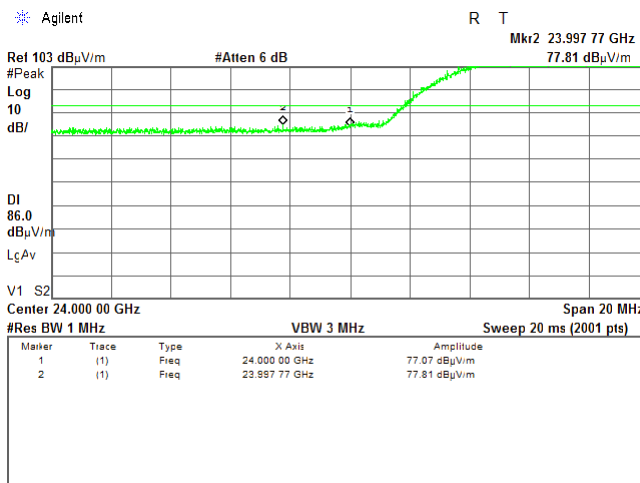
Plot 7.4.33 Low band edge emission test result

TEST SITE: OATS  
TEST DISTANCE: 0.75 m  
ANTENNA POLARIZATION: Vertical  
EUT POSITION: Typical (Vertical)  
EMISSION BANDWIDTH: 60 MHz  
MODULATION: QPSK



Plot 7.4.34 Low band edge emission test result

TEST SITE: OATS  
TEST DISTANCE: 0.75 m  
ANTENNA POLARIZATION: Horizontal  
EUT POSITION: Typical (Vertical)  
EMISSION BANDWIDTH: 60 MHz  
MODULATION: QPSK



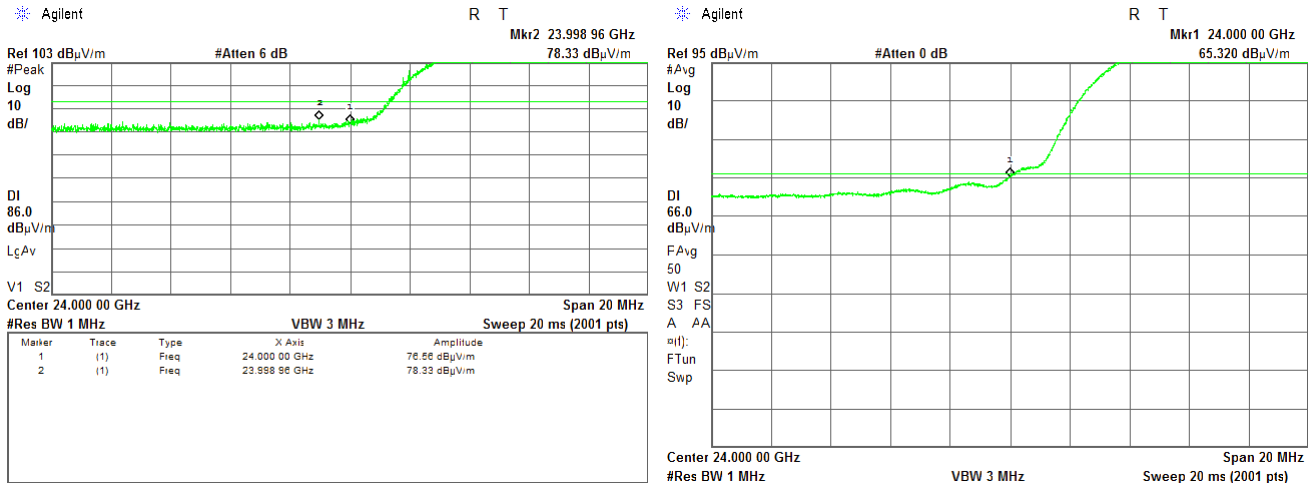


HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

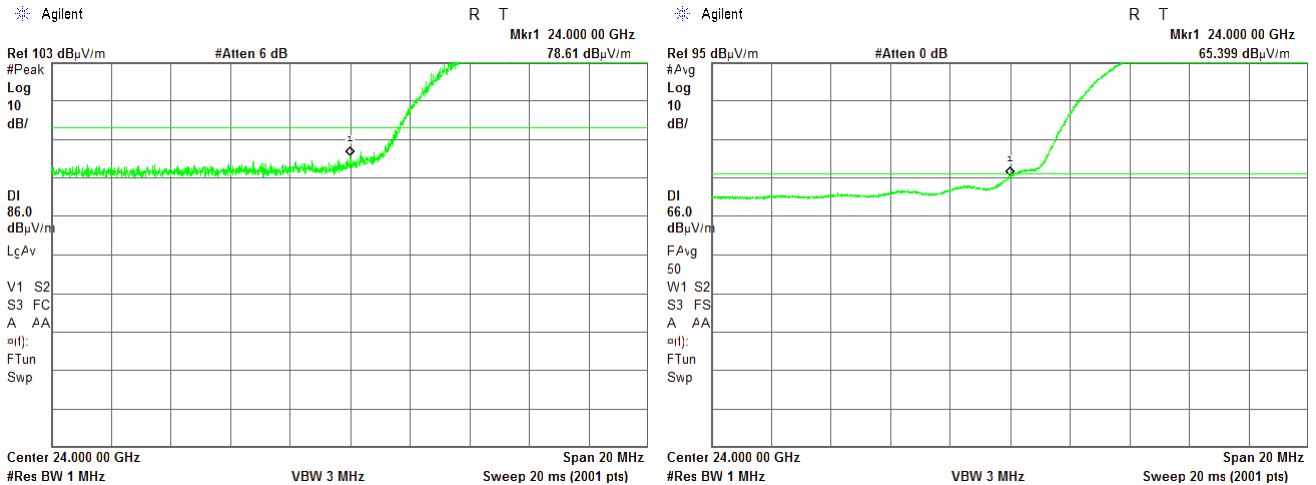
Plot 7.4.35 Low band edge emission test result

TEST SITE: OATS  
TEST DISTANCE: 0.75 m  
ANTENNA POLARIZATION: Vertical  
EUT POSITION: Typical (Vertical)  
EMISSION BANDWIDTH: 60 MHz  
MODULATION: 2048 QAM



Plot 7.4.36 Low band edge emission test result

TEST SITE: OATS  
TEST DISTANCE: 0.75 m  
ANTENNA POLARIZATION: Horizontal  
EUT POSITION: Typical (Vertical)  
EMISSION BANDWIDTH: 60 MHz  
MODULATION: 2048 QAM



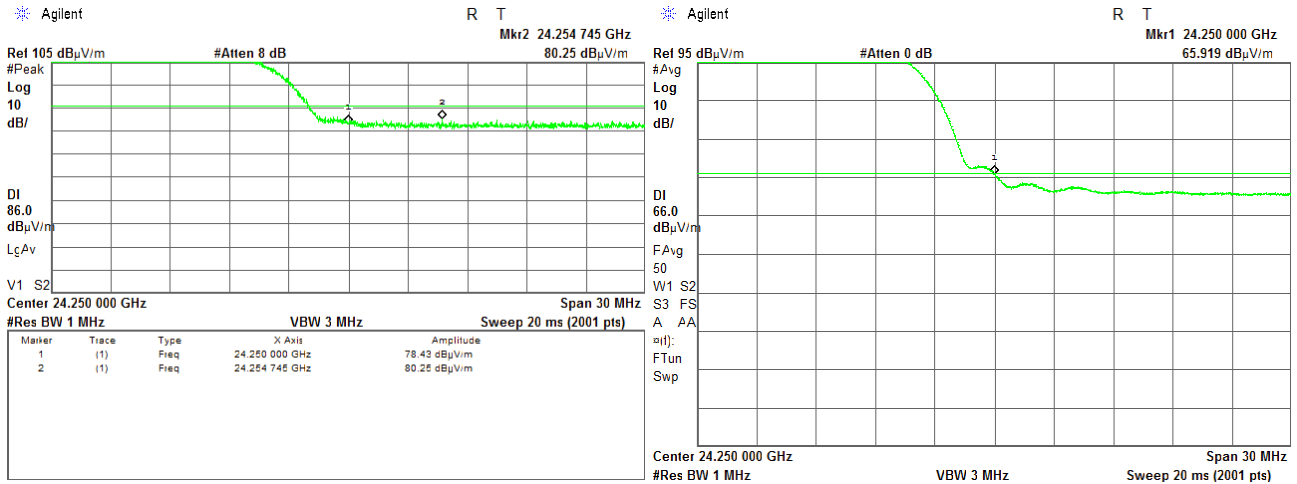


HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

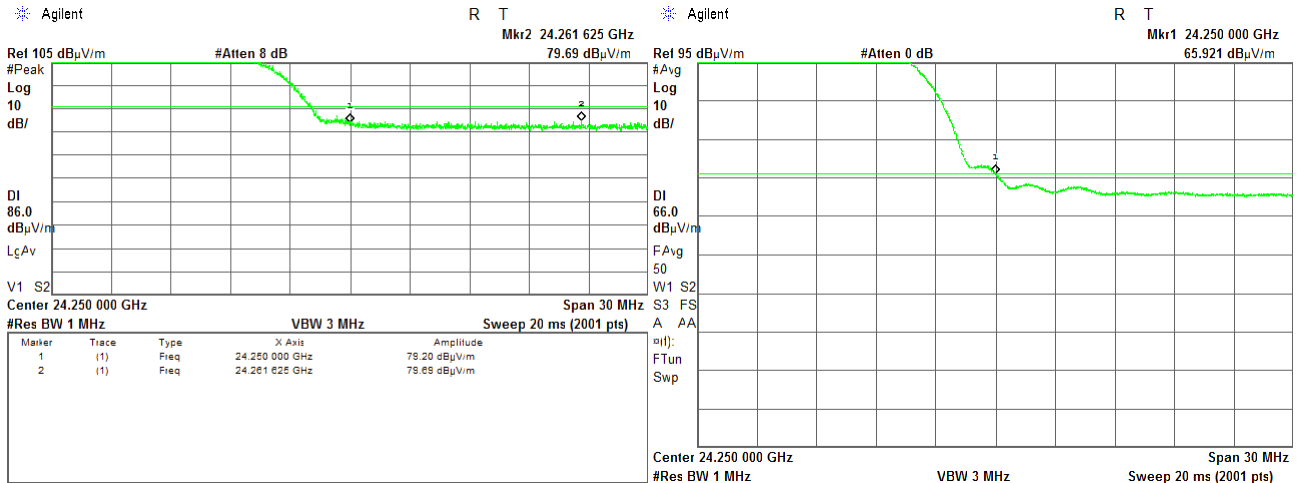
Plot 7.4.37 High band edge emission test result

TEST SITE: OATS  
 TEST DISTANCE: 0.75 m  
 ANTENNA POLARIZATION: Vertical  
 EUT POSITION: Typical (Vertical)  
 EMISSION BANDWIDTH: 60 MHz  
 MODULATION: QPSK



Plot 7.4.38 High band edge emission test result

TEST SITE: OATS  
 TEST DISTANCE: 0.75 m  
 ANTENNA POLARIZATION: Horizontal  
 EUT POSITION: Typical (Vertical)  
 EMISSION BANDWIDTH: 60 MHz  
 MODULATION: QPSK



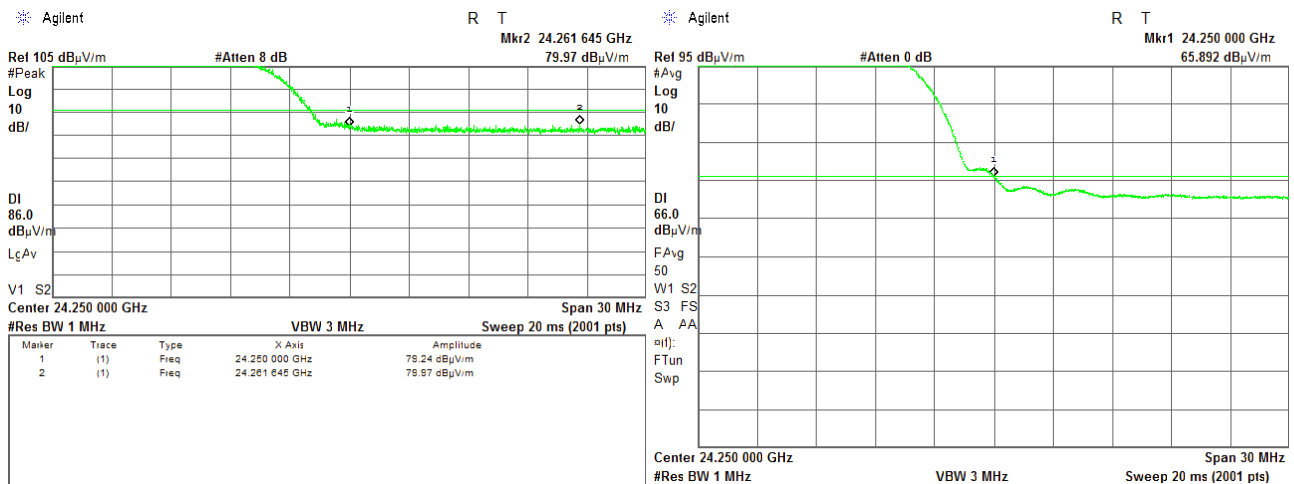


HERMON LABORATORIES

<b>Test specification:</b> Section 15.249(d)/ RSS-310, section 3.10, Band edge emissions			
<b>Test procedure:</b> ANSI C63.10 section 6.10			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 30-Jan-18 - 21-Feb-18			
<b>Temperature:</b> 24.1 °C	<b>Relative Humidity:</b> 46 %	<b>Air Pressure:</b> 1009 hPa	<b>Power:</b> -48 VDC
<b>Remarks:</b> EUT with 42.4 dBi antenna gain			

Plot 7.4.39 High band edge emission test result

TEST SITE: OATS  
 TEST DISTANCE: 0.75 m  
 ANTENNA POLARIZATION: Vertical  
 EUT POSITION: Typical (Vertical)  
 EMISSION BANDWIDTH: 60 MHz  
 MODULATION: 2048QAM



Plot 7.4.40 High band edge emission test result

TEST SITE: OATS  
 TEST DISTANCE: 0.75 m  
 ANTENNA POLARIZATION: Horizontal  
 EUT POSITION: Typical (Vertical)  
 EMISSION BANDWIDTH: 60 MHz  
 MODULATION: 2048QAM

