



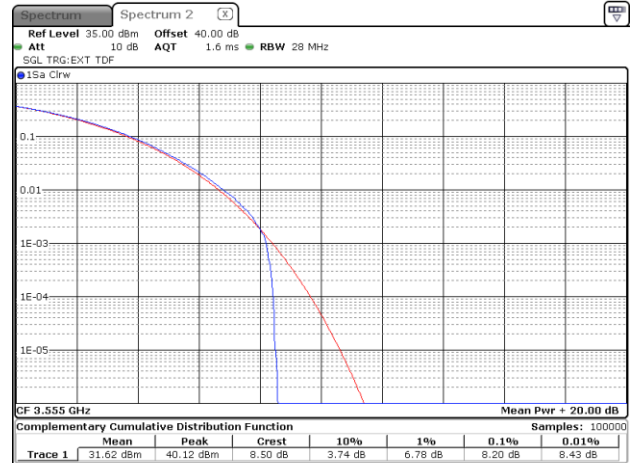
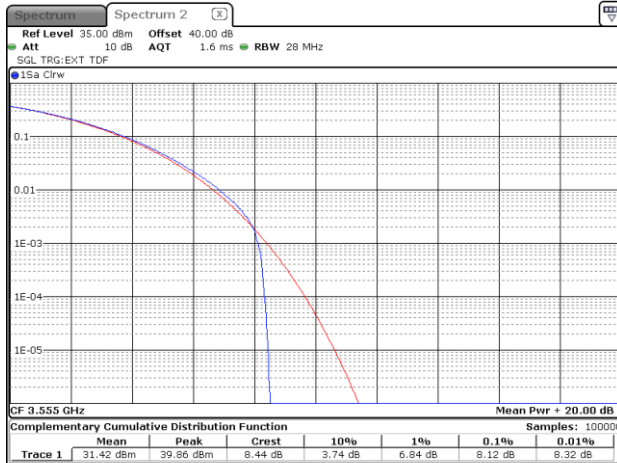
HERMON LABORATORIES

<b>Test specification:</b> Section 96.41(g), Peak-to- average power ratio	
<b>Test procedure:</b> Section 96.41(g)	
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS
<b>Date(s):</b> 21-Jul-20	
<b>Temperature:</b> 24.3. °C	<b>Relative Humidity:</b> 48 %
<b>Remarks:</b>	

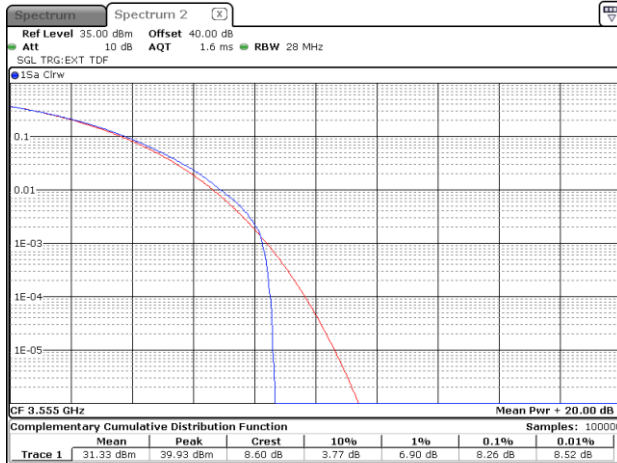
Plot 7.2.1 Peak-to-average power ratio test results at low frequency

CHANNEL SPACING:  
ANTENNA PORT:  
Modulation: QPSK

10 MHz  
1  
Modulation: 16QAM



Modulation: 64QAM





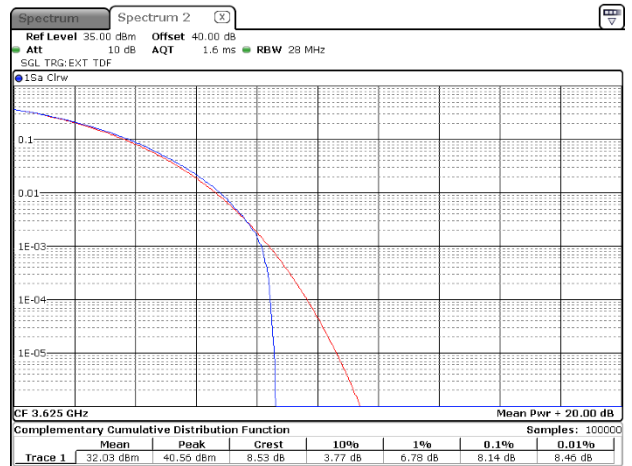
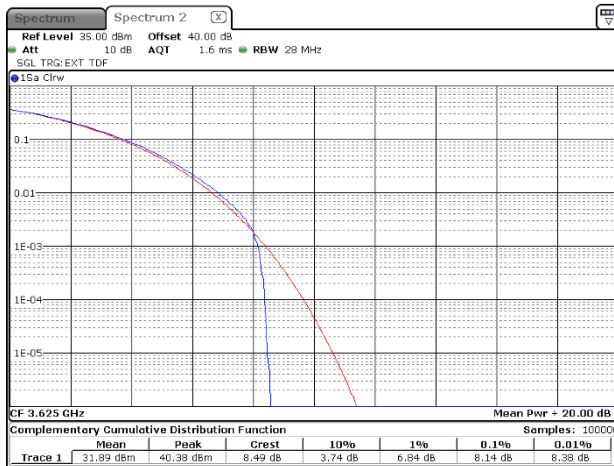
HERMON LABORATORIES

<b>Test specification:</b> Section 96.41(g), Peak-to-average power ratio	
<b>Test procedure:</b> Section 96.41(g)	
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS
<b>Date(s):</b> 21-Jul-20	
<b>Temperature:</b> 24.3. °C	<b>Relative Humidity:</b> 48 %
<b>Remarks:</b>	

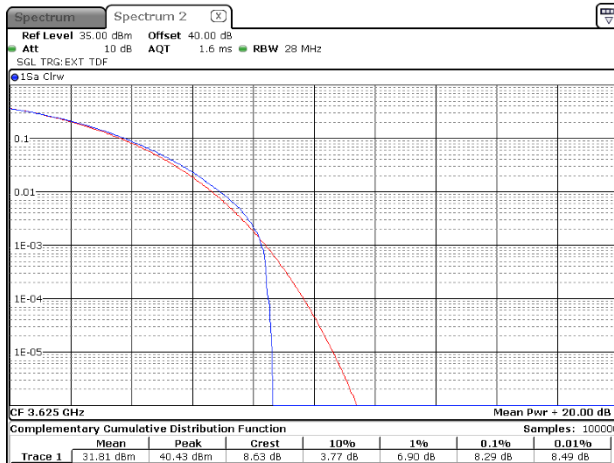
Plot 7.2.2 Peak-to-average power ratio test results at mid frequency

CHANNEL SPACING:  
ANTENNA PORT:  
Modulation: QPSK

10 MHz  
1  
Modulation: 16QAM



Modulation: 64QAM





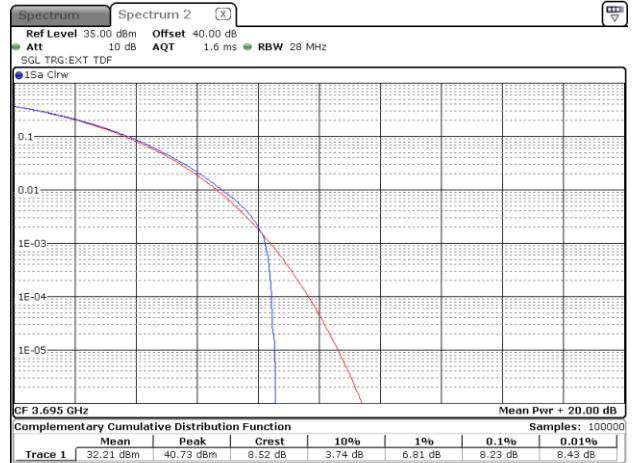
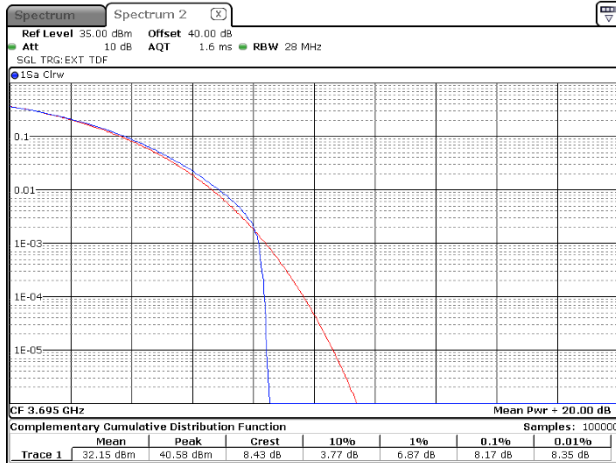
HERMON LABORATORIES

<b>Test specification:</b> Section 96.41(g), Peak-to- average power ratio	
<b>Test procedure:</b> Section 96.41(g)	
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS
<b>Date(s):</b> 21-Jul-20	
<b>Temperature:</b> 24.3. °C	<b>Relative Humidity:</b> 48 %
<b>Remarks:</b>	

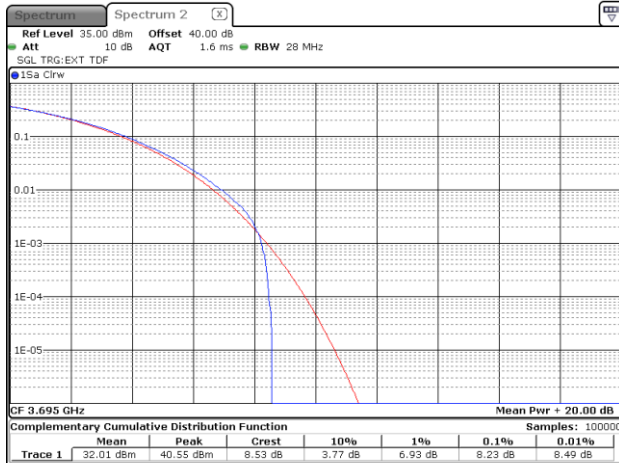
Plot 7.2.3 Peak-to-average power ratio test results at high frequency

CHANNEL SPACING:  
ANTENNA PORT:  
Modulation: QPSK

10 MHz  
1  
Modulation: 16QAM



Modulation: 64QAM





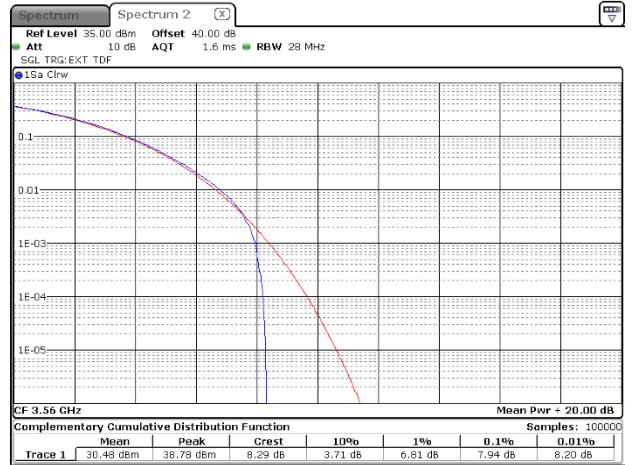
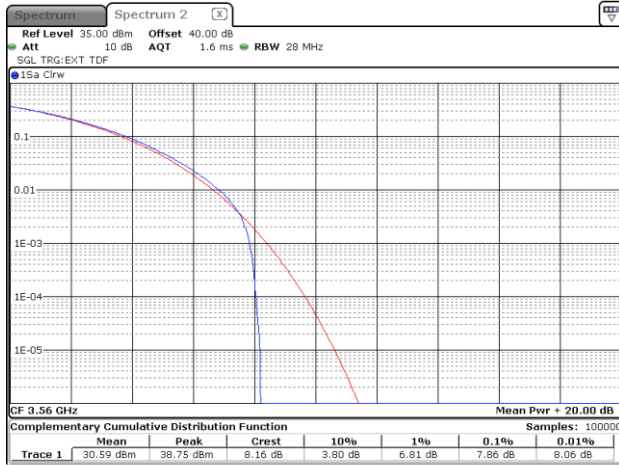
HERMON LABORATORIES

<b>Test specification:</b> Section 96.41(g), Peak-to- average power ratio	
<b>Test procedure:</b> Section 96.41(g)	
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS
<b>Date(s):</b> 21-Jul-20	
<b>Temperature:</b> 24.3. °C	<b>Relative Humidity:</b> 48 %
<b>Remarks:</b>	

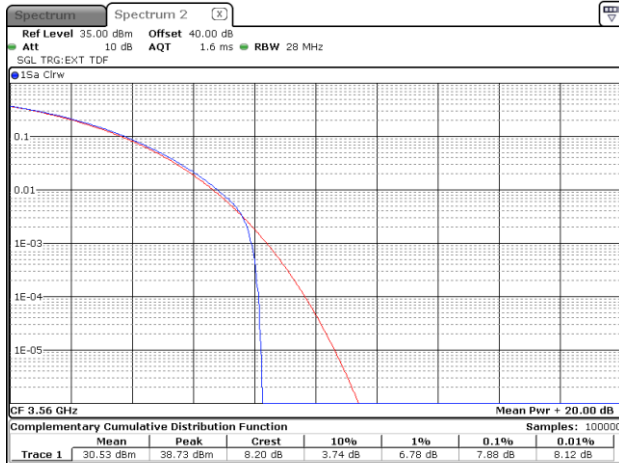
Plot 7.2.4 Peak-to-average power ratio test results at low frequency

CHANNEL SPACING:  
ANTENNA PORT:  
Modulation: QPSK

20 MHz  
1  
Modulation: 16QAM



Modulation: 64QAM





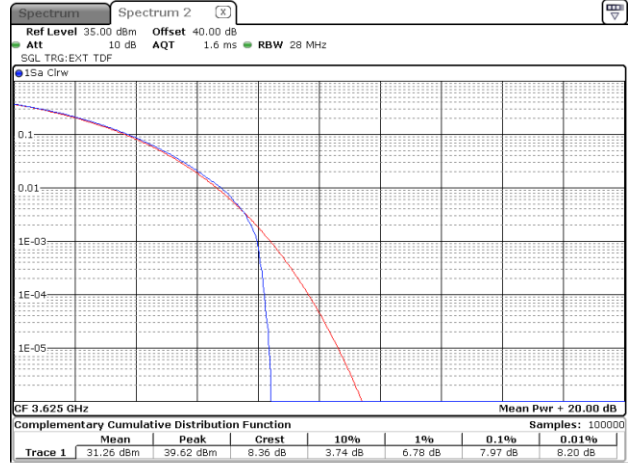
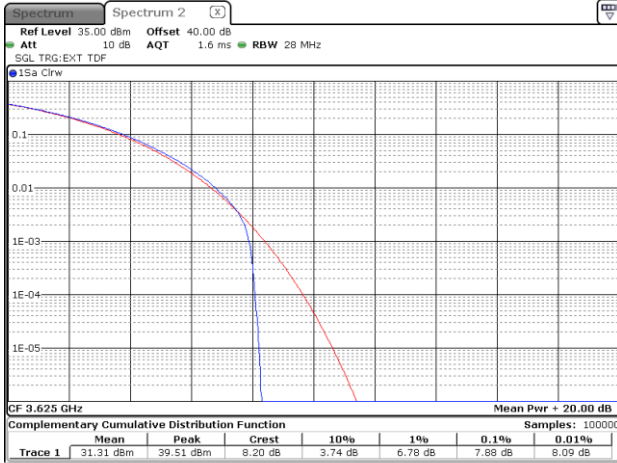
HERMON LABORATORIES

<b>Test specification:</b> Section 96.41(g), Peak-to- average power ratio	
<b>Test procedure:</b> Section 96.41(g)	
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS
<b>Date(s):</b> 21-Jul-20	
<b>Temperature:</b> 24.3. °C	<b>Relative Humidity:</b> 48 %
<b>Remarks:</b>	

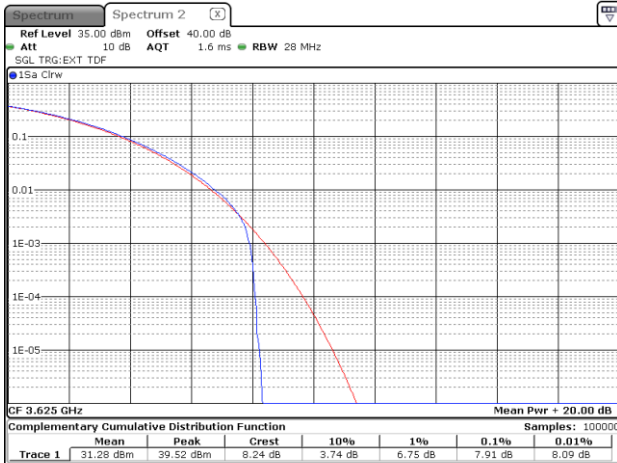
Plot 7.2.5 Peak-to-average power ratio test results at mid frequency

CHANNEL SPACING:  
ANTENNA PORT:  
Modulation: QPSK

20 MHz  
1  
Modulation: 16QAM



Modulation: 64QAM





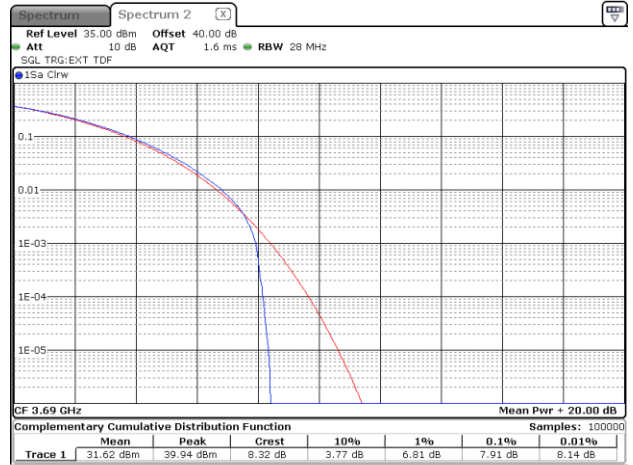
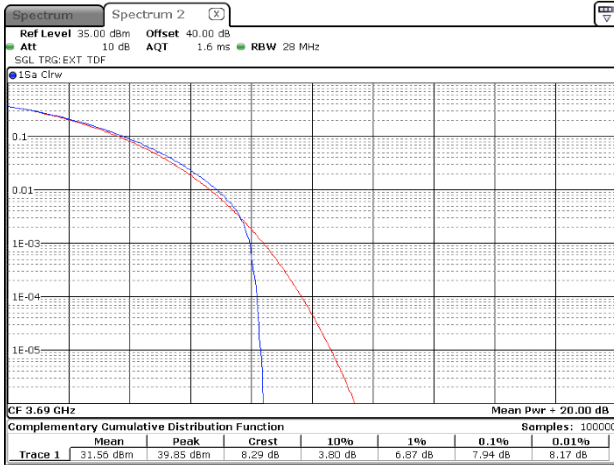
HERMON LABORATORIES

<b>Test specification:</b> Section 96.41(g), Peak-to-average power ratio	
<b>Test procedure:</b> Section 96.41(g)	
<b>Test mode:</b> Compliance	<b>Verdict:</b> PASS
<b>Date(s):</b> 21-Jul-20	
<b>Temperature:</b> 24.3. °C	<b>Relative Humidity:</b> 48 %
<b>Remarks:</b>	

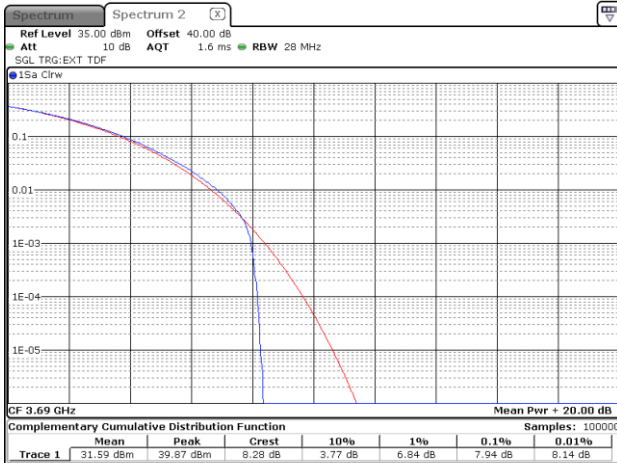
Plot 7.2.6 Peak-to-average power ratio test results at high frequency

CHANNEL SPACING:  
ANTENNA PORT:  
Modulation: QPSK

20 MHz  
1  
Modulation: 16QAM



Modulation: 64QAM





<b>Test specification: Section 2.1049, Occupied bandwidth</b>			
<b>Test procedure:</b> 47 CFR, Section 2.1049			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Apr-20			
<b>Temperature:</b> 24 °C	<b>Relative Humidity:</b> 52 %	<b>Air Pressure:</b> 1012 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

### 7.3 Occupied bandwidth test

#### 7.3.1 General

This test was performed to measure transmitter occupied bandwidth. Specification test limits are given in Table 7.3.1.

Table 7.3.1 Occupied bandwidth limits

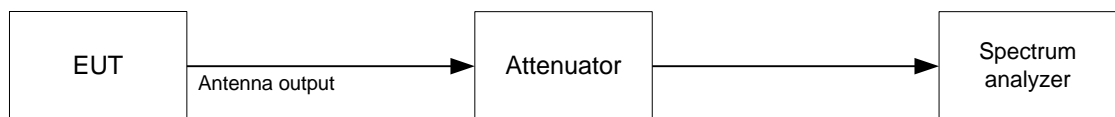
Assigned frequency, MHz	Modulation envelope reference points*, %	Maximum allowed bandwidth, MHz
3550 - 3700	99	10 / 20 MHz

\* - Modulation envelope reference points are provided in terms of attenuation below the unmodulated 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 EUT was set to transmit the unmodulated carrier and the reference peak power level was measured.
- 7.3.2.3 The EUT was set to transmit the normally modulated carrier.
- 7.3.2.4 The transmitter occupied bandwidth was measured with spectrum analyzer as a frequency delta between the reference points on modulation envelope and provided in Table 7.3.2 and the associated plots.

Figure 7.3.1 Occupied bandwidth test setup





<b>Test specification: Section2.1049, Occupied bandwidth</b>			
<b>Test procedure:</b> 47 CFR, Section 2.1049			
<b>Test mode:</b> Compliance		<b>Verdict: PASS</b>	
<b>Date(s):</b> 19-Apr-20			
<b>Temperature:</b> 24 °C	<b>Relative Humidity:</b> 52 %	<b>Air Pressure:</b> 1012 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

Table 7.3.2 Occupied bandwidth test results

DETECTOR USED: Peak hold  
 RESOLUTION BANDWIDTH: 1 – 5% of the OBW  
 VIDEO BANDWIDTH: > RBW  
 MODULATION ENVELOPE REFERENCE POINTS: 99%

Carrier frequency, MHz	Occupied bandwidth, MHz	Limit, MHz	Margin, MHz	Verdict
<b>Channel spacing 10 MHz</b>				
<b>Modulation QPSK</b>				
3555.0	9.0113	10.0	-0.9887	Pass
3625.0	9.0188	10.0	-0.9812	Pass
3695.0	9.0138	10.0	-0.9862	Pass
<b>Modulation 16QAM</b>				
3555.0	9.0113	10.0	-0.9887	Pass
3625.0	9.0088	10.0	-0.9912	Pass
3695.0	9.0038	10.0	-0.9962	Pass
<b>Modulation 64QAM</b>				
3555.0	8.9988	10.0	-1.0012	Pass
3625.0	9.0013	10.0	-0.9987	Pass
3695.0	8.9988	10.0	-1.0012	Pass
<b>Channel spacing 20 MHz</b>				
<b>Modulation QPSK</b>				
3560.0	17.8227	20.0	-2.1773	Pass
3625.0	17.8127	20.0	-2.1873	Pass
3690.0	17.8077	20.0	-2.1923	Pass
<b>Modulation 16QAM</b>				
3560.0	17.8427	20.0	-2.1573	Pass
3625.0	17.8327	20.0	-2.1673	Pass
3690.0	17.8127	20.0	-2.1873	Pass
<b>Modulation 64QAM</b>				
3560.0	17.7727	20.0	-2.2273	Pass
3625.0	17.8027	20.0	-2.1973	Pass
3690.0	17.7927	20.0	-2.2073	Pass

Reference numbers of test equipment used

HL 4355	HL 3901	HL 5608				
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Full description is given in Appendix A.

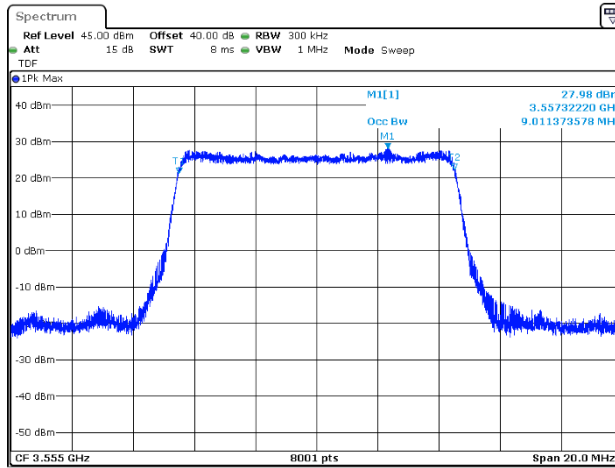




<b>Test specification: Section2.1049, Occupied bandwidth</b>			
<b>Test procedure:</b> 47 CFR, Section 2.1049			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Apr-20			
<b>Temperature:</b> 24 °C	<b>Relative Humidity:</b> 52 %	<b>Air Pressure:</b> 1012 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

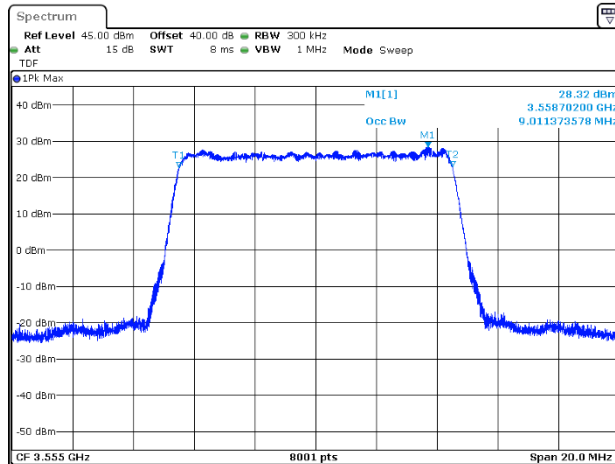
Plot 7.3.1 Occupied bandwidth test result at low frequency

MODULATION: QPSK  
CHANNEL SPACING: 10 MHz  
ANTENNA CHAIN: 1



Plot 7.3.2 Occupied bandwidth test result at low frequency

MODULATION: 16QAM  
CHANNEL SPACING: 10 MHz  
ANTENNA CHAIN: 1



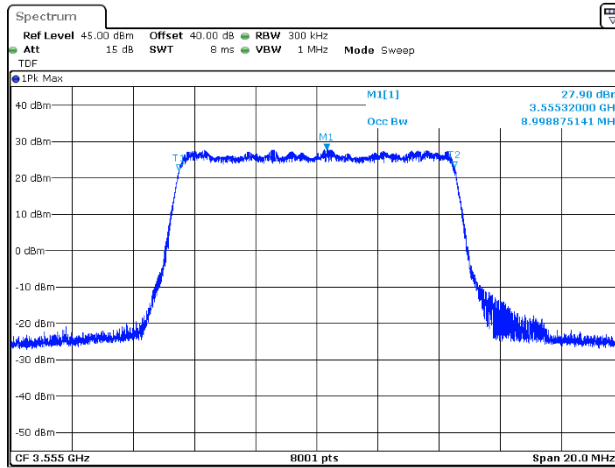


HERMON LABORATORIES

<b>Test specification:</b> Section2.1049, Occupied bandwidth			
<b>Test procedure:</b> 47 CFR, Section 2.1049			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Apr-20			
<b>Temperature:</b> 24 °C	<b>Relative Humidity:</b> 52 %	<b>Air Pressure:</b> 1012 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

Plot 7.3.3 Occupied bandwidth test result at low frequency

MODULATION: 64QAM  
CHANNEL SPACING: 10 MHz  
ANTENNA CHAIN: 1



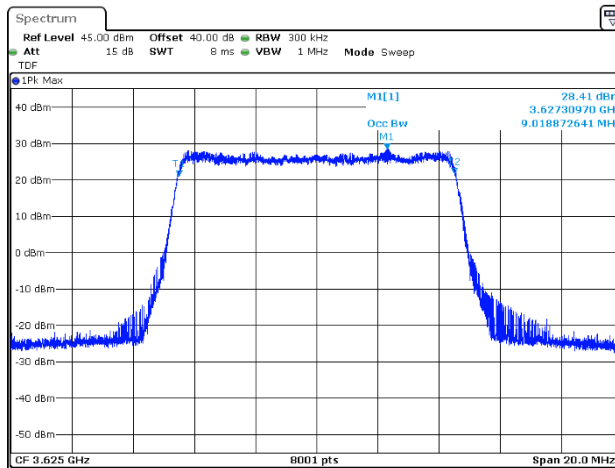


HERMON LABORATORIES

<b>Test specification: Section2.1049, Occupied bandwidth</b>			
<b>Test procedure:</b> 47 CFR, Section 2.1049			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Apr-20			
<b>Temperature:</b> 24 °C	<b>Relative Humidity:</b> 52 %	<b>Air Pressure:</b> 1012 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

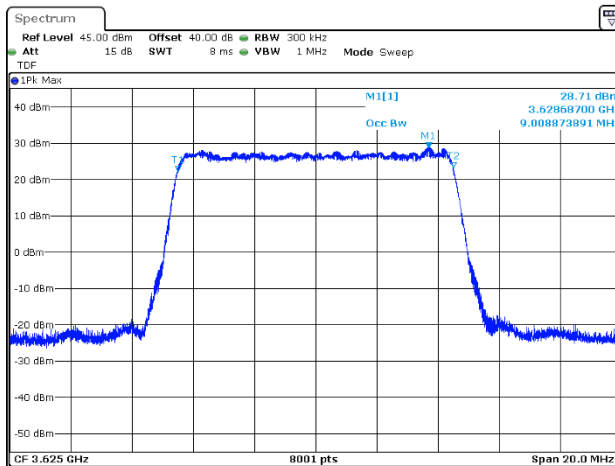
Plot 7.3.4 Occupied bandwidth test result at mid frequency

MODULATION: QPSK  
CHANNEL SPACING: 10 MHz  
ANTENNA CHAIN: 1



Plot 7.3.5 Occupied bandwidth test result at mid frequency

MODULATION: 16QAM  
CHANNEL SPACING: 10 MHz  
ANTENNA CHAIN: 1



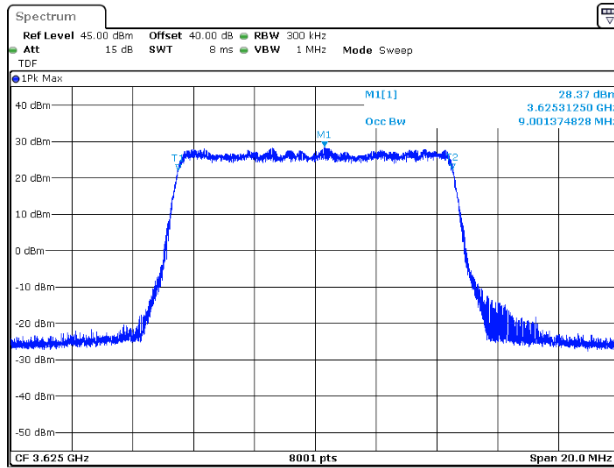


HERMON LABORATORIES

<b>Test specification:</b> Section2.1049, Occupied bandwidth			
<b>Test procedure:</b> 47 CFR, Section 2.1049			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Apr-20			
<b>Temperature:</b> 24 °C	<b>Relative Humidity:</b> 52 %	<b>Air Pressure:</b> 1012 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

Plot 7.3.6 Occupied bandwidth test result at mid frequency

MODULATION: 64QAM  
CHANNEL SPACING: 10 MHz  
ANTENNA CHAIN: 1

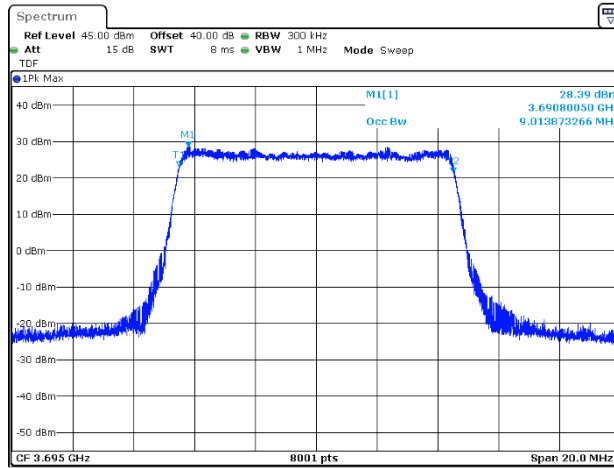




<b>Test specification: Section2.1049, Occupied bandwidth</b>			
<b>Test procedure:</b> 47 CFR, Section 2.1049			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Apr-20			
<b>Temperature:</b> 24 °C	<b>Relative Humidity:</b> 52 %	<b>Air Pressure:</b> 1012 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

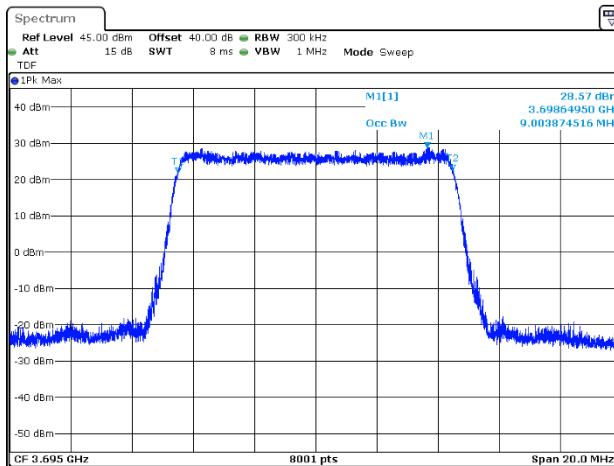
Plot 7.3.7 Occupied bandwidth test result at high frequency

MODULATION: QPSK  
CHANNEL SPACING: 10 MHz  
ANTENNA CHAIN: 1



Plot 7.3.8 Occupied bandwidth test result at high frequency

MODULATION: 16QAM  
CHANNEL SPACING: 10 MHz  
ANTENNA CHAIN: 1



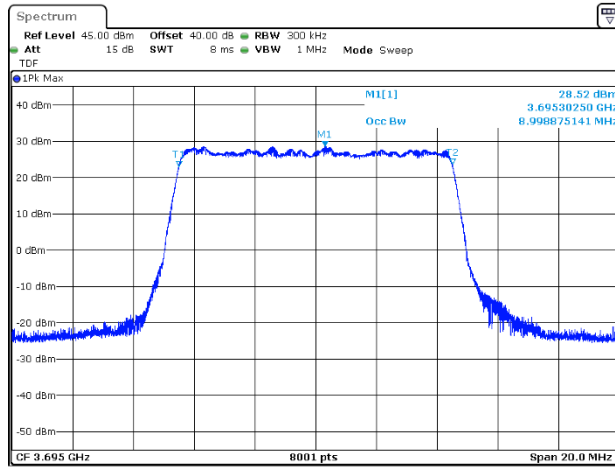


HERMON LABORATORIES

<b>Test specification:</b> Section2.1049, Occupied bandwidth			
<b>Test procedure:</b> 47 CFR, Section 2.1049			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Apr-20			
<b>Temperature:</b> 24 °C	<b>Relative Humidity:</b> 52 %	<b>Air Pressure:</b> 1012 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

Plot 7.3.9 Occupied bandwidth test result at high frequency

MODULATION: 64QAM  
CHANNEL SPACING: 10 MHz  
ANTENNA CHAIN: 1

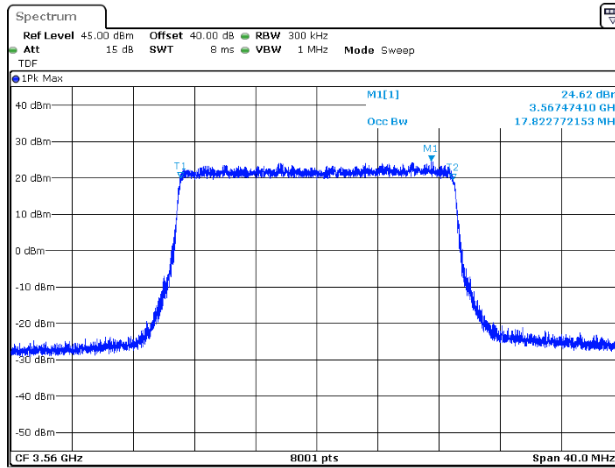




<b>Test specification: Section2.1049, Occupied bandwidth</b>			
<b>Test procedure:</b> 47 CFR, Section 2.1049			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Apr-20			
<b>Temperature:</b> 24 °C	<b>Relative Humidity:</b> 52 %	<b>Air Pressure:</b> 1012 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

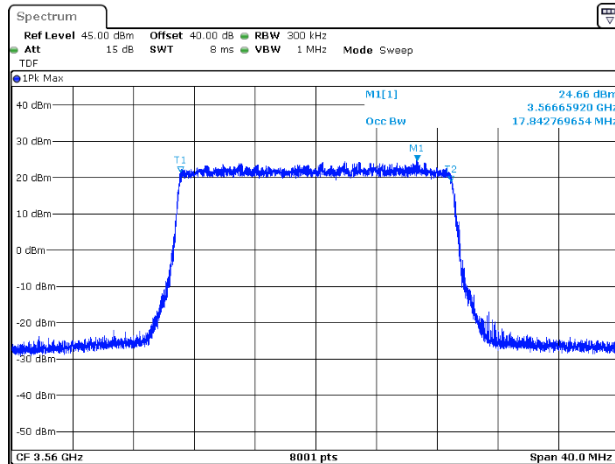
Plot 7.3.10 Occupied bandwidth test result at low frequency

MODULATION: QPSK  
CHANNEL SPACING: 20 MHz  
ANTENNA CHAIN: 1



Plot 7.3.11 Occupied bandwidth test result at low frequency

MODULATION: 16QAM  
CHANNEL SPACING: 20 MHz  
ANTENNA CHAIN: 1



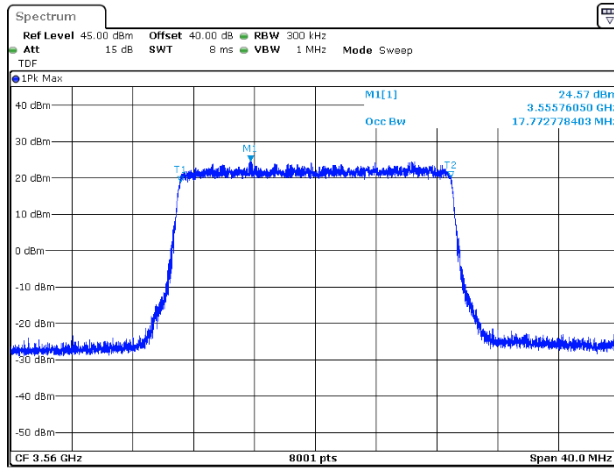


HERMON LABORATORIES

<b>Test specification: Section 2.1049, Occupied bandwidth</b>			
<b>Test procedure:</b> 47 CFR, Section 2.1049			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Apr-20			
<b>Temperature:</b> 24 °C	<b>Relative Humidity:</b> 52 %	<b>Air Pressure:</b> 1012 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

Plot 7.3.12 Occupied bandwidth test result at low frequency

MODULATION: 64QAM  
CHANNEL SPACING: 20 MHz  
ANTENNA CHAIN: 1



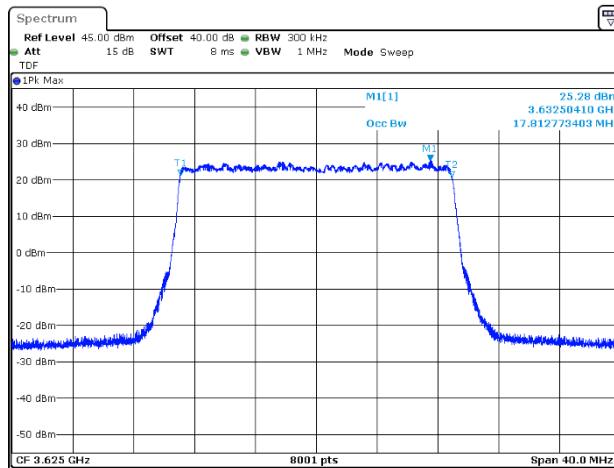




<b>Test specification: Section2.1049, Occupied bandwidth</b>			
<b>Test procedure:</b> 47 CFR, Section 2.1049			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Apr-20			
<b>Temperature:</b> 24 °C	<b>Relative Humidity:</b> 52 %	<b>Air Pressure:</b> 1012 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

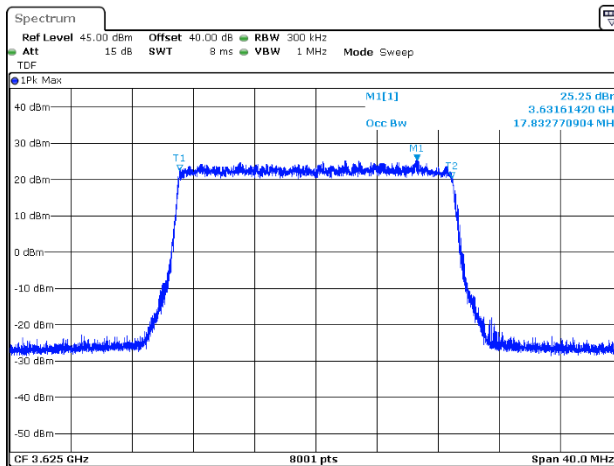
Plot 7.3.13 Occupied bandwidth test result at mid frequency

MODULATION: QPSK  
CHANNEL SPACING: 20 MHz  
ANTENNA CHAIN: 1



Plot 7.3.14 Occupied bandwidth test result at mid frequency

MODULATION: 16QAM  
CHANNEL SPACING: 20 MHz  
ANTENNA CHAIN: 1



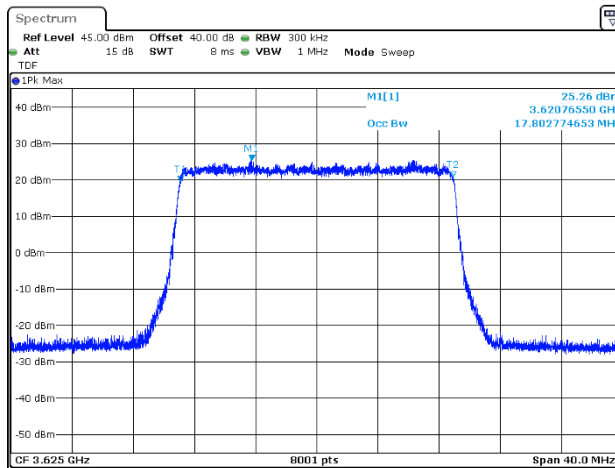


HERMON LABORATORIES

<b>Test specification:</b> Section2.1049, Occupied bandwidth			
<b>Test procedure:</b> 47 CFR, Section 2.1049			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Apr-20			
<b>Temperature:</b> 24 °C	<b>Relative Humidity:</b> 52 %	<b>Air Pressure:</b> 1012 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

Plot 7.3.15 Occupied bandwidth test result at mid frequency

MODULATION: 64QAM  
CHANNEL SPACING: 20 MHz  
ANTENNA CHAIN: 1



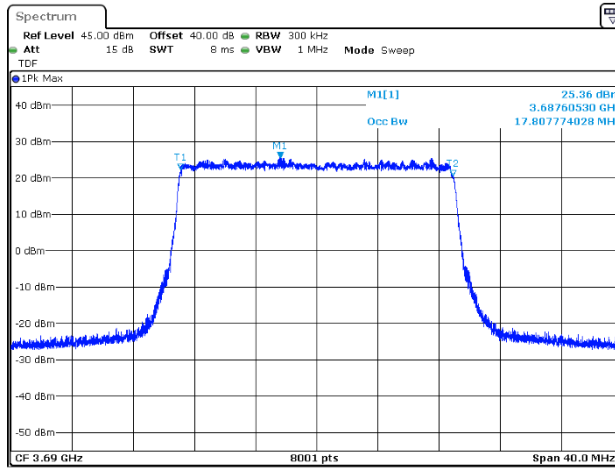


HERMON LABORATORIES

<b>Test specification: Section2.1049, Occupied bandwidth</b>			
<b>Test procedure:</b> 47 CFR, Section 2.1049			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Apr-20			
<b>Temperature:</b> 24 °C	<b>Relative Humidity:</b> 52 %	<b>Air Pressure:</b> 1012 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

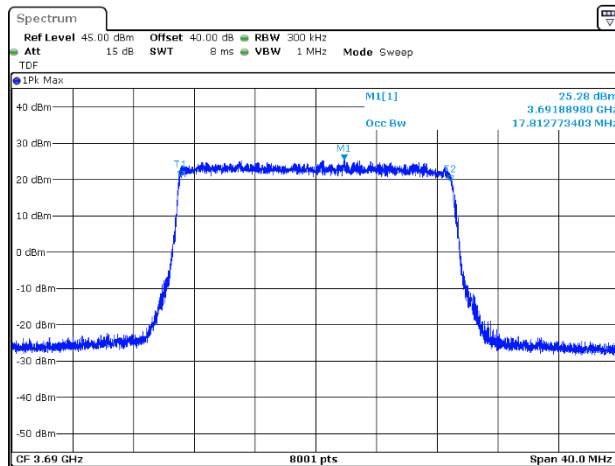
Plot 7.3.16 Occupied bandwidth test result at high frequency

MODULATION: QPSK  
CHANNEL SPACING: 20 MHz  
ANTENNA CHAIN: 1



Plot 7.3.17 Occupied bandwidth test result at high frequency

MODULATION: 16QAM  
CHANNEL SPACING: 20 MHz  
ANTENNA CHAIN: 1



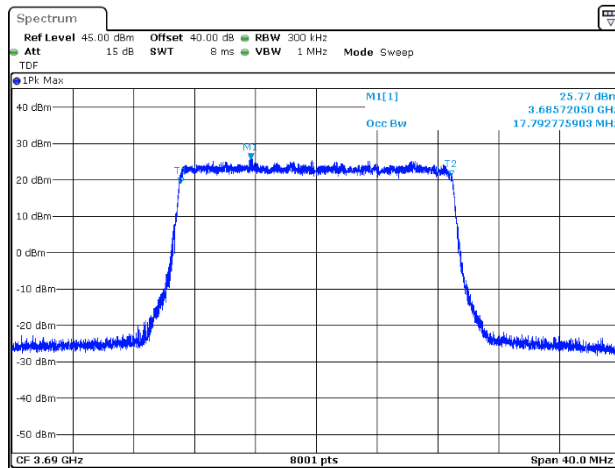


HERMON LABORATORIES

<b>Test specification:</b> Section2.1049, Occupied bandwidth			
<b>Test procedure:</b> 47 CFR, Section 2.1049			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Apr-20			
<b>Temperature:</b> 24 °C	<b>Relative Humidity:</b> 52 %	<b>Air Pressure:</b> 1012 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

Plot 7.3.18 Occupied bandwidth test result at high frequency

MODULATION: 64QAM  
CHANNEL SPACING: 20 MHz  
ANTENNA CHAIN: 1





<b>Test specification: Section 96.41(e), Emission mask</b>			
<b>Test procedure:</b> Section 96.41(e)(3)			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Jul-20			
<b>Temperature:</b> 24.2 °C	<b>Relative Humidity:</b> 49 %	<b>Air Pressure:</b> 1010 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

## 7.4 Emission outside the fundamental test

### 7.4.1 General

This test was performed to measure Emission outside the fundamental at RF antenna connector. Specification test limits are given in Table 7.4.1.

Table 7.4.1 Emission outside the fundamental limits

Frequency displacement from frequency block	Limit*, dBm/MHz	RBW, kHz
<b>Channel Spacing 10 MHz</b>		
0 – 1 MHz	- 13	100
0 – 10 MHz	- 13	1000
10 – 20 MHz	- 25	1000
Above 3530 MHz and below 3720 MHz	- 25	1000
Below 3530 MHz and above 3720 MHz	- 40	1000
<b>Channel Spacing 20 MHz</b>		
0 – 1 MHz	- 13	100
0 – 10 MHz	- 13	1000
10 – 20 MHz	- 25	1000
Above 3530 MHz and below 3720 MHz	- 25	1000
Below 3530 MHz and above 3720 MHz	- 40	1000

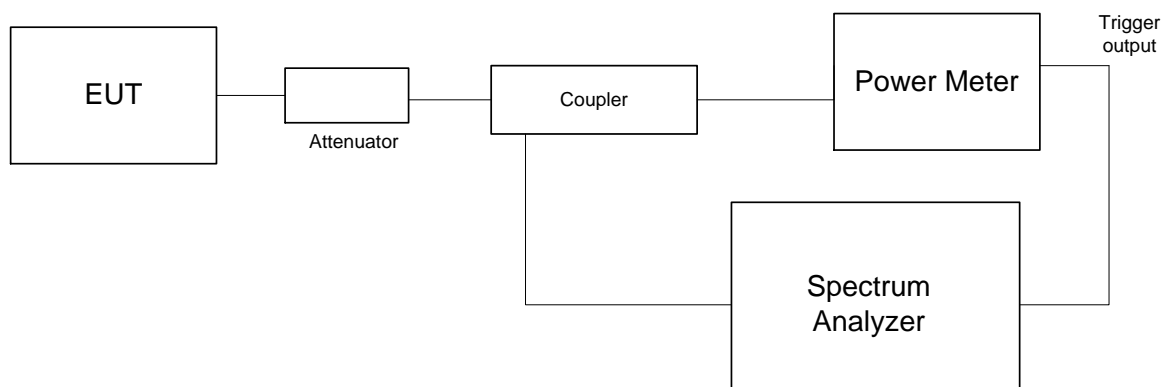
\* - Limit at each antenna connector (amount of antennas N = 2)

### 7.4.2 Test procedure

7.4.2.1 The EUT was set up as shown in Figure 7.4.1, energized and its proper operation was checked.

7.4.2.2 The Emission outside the fundamental was measured with spectrum analyzer as provided in Table 7.4.2, Table 7.4.3 and the the associated plots.

Figure 7.4.1 Emission outside the fundamental test setup





<b>Test specification: Section 96.41(e), Emission mask</b>			
<b>Test procedure:</b> Section 96.41(e)(3)			
<b>Test mode:</b> Compliance		<b>Verdict: PASS</b>	
<b>Date(s):</b> 19-Jul-20			
<b>Temperature:</b> 24.2 °C	<b>Relative Humidity:</b> 49 %	<b>Air Pressure:</b> 1010 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

**Table 7.4.2 Emission outside the fundamental test results**

ASSIGNED FREQUENCY RANGE: 3550.0 –3700.0 MHz  
 DETECTOR USED: Average (gated)  
 VIDEO BANDWIDTH: ≥ Resolution bandwidth  
 EBW: 10 MHz  
 NUMBER OF CHAINS: 2  
 ANTENNA PORT: Worst case

Frequency MHz	Band edge	SA reading over 1 chain, dBm	Total band edge*, dBm	RBW, kHz	Integration BW, kHz	Limit, dBm	Verdict
<b>QPSK</b>							
<b>Low frequency 3555.0 MHz</b>							
3549.50	Low	-55.99	-52.99	100	1000	-13.0	Pass
3539.50	Low	-67.33	-64.33	100	1000	-25.0	
3560.50	High	-55.51	-52.51	100	1000	-13.0	
3570.50	High	-66.04	-63.04	100	1000	-25.0	
<b>Mid frequency 3625.0 MHz</b>							
3619.50	Low	-55.37	-52.37	100	1000	-13.0	Pass
3609.50	Low	-67.11	-64.11	100	1000	-25.0	
3630.50	High	-55.71	-52.71	100	1000	-13.0	
3640.50	High	-67.27	-64.27	100	1000	-25.0	
<b>High frequency 3695.0 MHz</b>							
3689.50	Low	-55.90	-52.90	100	1000	-13.0	Pass
3679.50	Low	-64.18	-61.18	100	1000	-25.0	
3700.50	High	-55.16	-52.16	100	1000	-13.0	
3710.50	High	-66.57	-63.57	100	1000	-25.0	
<b>64 QAM</b>							
<b>Low frequency 3555.0 MHz</b>							
3549.50	Low	-56.24	-53.24	100	1000	-13.0	Pass
3539.50	Low	-67.13	-64.13	100	1000	-25.0	
3560.50	High	-55.45	-52.45	100	1000	-13.0	
3570.50	High	-66.01	-63.01	100	1000	-25.0	
<b>Mid frequency 3625.0 MHz</b>							
3619.50	Low	-56.07	-53.07	100	1000	-13.0	Pass
3609.50	Low	-66.23	-63.23	100	1000	-25.0	
3630.50	High	-54.72	-51.72	100	1000	-13.0	
3640.50	High	-66.91	-63.91	100	1000	-25.0	
<b>High frequency 2680.0 MHz</b>							
3689.50	Low	-56.06	-53.06	100	1000	-13.0	Pass
3679.50	Low	-65.07	-62.07	100	1000	-25.0	
3700.50	High	-55.15	-52.15	100	1000	-13.0	
3710.50	High	-66.53	-63.53	100	1000	-25.0	

\* - SA Reading over 1 chain = Max SA reading (Chains #1&2 and #3&4)  
 \*\* - Total band edge = SA Reading over 1 chain + 10\*log(N) = SA reading +3 dB  
 \*\*\* - Margin = Total band edge – Specification limit



<b>Test specification: Section 96.41(e), Emission mask</b>			
<b>Test procedure:</b> Section 96.41(e)(3)			
<b>Test mode:</b> Compliance		<b>Verdict: PASS</b>	
<b>Date(s):</b> 19-Jul-20			
<b>Temperature:</b> 24.2 °C	<b>Relative Humidity:</b> 49 %	<b>Air Pressure:</b> 1010 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

**Table 7.4.3 Emission outside the fundamental test results**

ASSIGNED FREQUENCY RANGE: 3550.0 –3700.0 MHz  
 DETECTOR USED: Average (gated)  
 VIDEO BANDWIDTH: ≥ Resolution bandwidth  
 EBW: 20 MHz  
 NUMBER OF CHAINS: 2  
 ANTENNA PORT: Worst case

Frequency MHz	Band edge	SA reading over 1 chain, dBm	Total band edge*, dBm	RBW, kHz	Integration BW, kHz	Limit, dBm	Verdict
<b>QPSK</b>							
<b>Low frequency 3560.0 MHz</b>							
3549.50	Low	-53.73	-50.73	100	1000	-13.0	Pass
3539.50	Low	-64.11	-61.43	100	1000	-25.0	
3570.50	High	-53.59	-50.59	100	1000	-13.0	
3580.50	High	-62.31	-59.31	100	1000	-25.0	
<b>Mid frequency 3625.0 MHz</b>							
3615.50	Low	-54.47	-51.47	100	1000	-13.0	Pass
3604.50	Low	-65.54	-62.54	100	1000	-25.0	
3635.50	High	-54.85	-51.85	100	1000	-13.0	
3645.50	High	-64.22	-61.22	100	1000	-25.0	
<b>High frequency 3690.0 MHz</b>							
3679.50	Low	-54.82	-51.82	100	1000	-13.0	Pass
3669.50	Low	-63.32	-60.32	100	1000	-25.0	
3700.50	High	-55.12	-52.12	100	1000	-13.0	
3710.50	High	-63.98	-60.98	100	1000	-25.0	
<b>64 QAM</b>							
<b>Low frequency 3560.0 MHz</b>							
3549.50	Low	-53.80	-50.80	100	1000	-13.0	Pass
3539.50	Low	-63.67	-60.67	100	1000	-25.0	
3570.50	High	-53.93	-50.93	100	1000	-13.0	
3580.50	High	-63.03	-60.03	100	1000	-25.0	
<b>Mid frequency 3625.0 MHz</b>							
3615.50	Low	-54.89	-51.89	100	1000	-13.0	Pass
3604.50	Low	-65.30	-62.30	100	1000	-25.0	
3635.50	High	-54.63	-51.63	100	1000	-13.0	
3645.50	High	-65.02	-62.02	100	1000	-25.0	
<b>High frequency 3690.0 MHz</b>							
3679.50	Low	-54.29	-51.29	100	1000	-13.0	Pass
3669.50	Low	-62.74	-59.74	100	1000	-25.0	
3700.50	High	-56.15	-53.15	100	1000	-13.0	
3710.50	High	-65.22	-62.22	100	1000	-25.0	

\* - SA Reading over 1 chain = Max SA reading (Chains #1&2 and #3&4)  
 \*\* - Total band edge = SA Reading over 1 chain + 10\*log(N) = SA reading +3 dB  
 \*\*\* - Margin = Total band edge – Specification limit

**Reference numbers of test equipment used**

HL 3301	HL 3302	HL 4355	HL 3901	HL 4366			
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Full description is given in Appendix A.



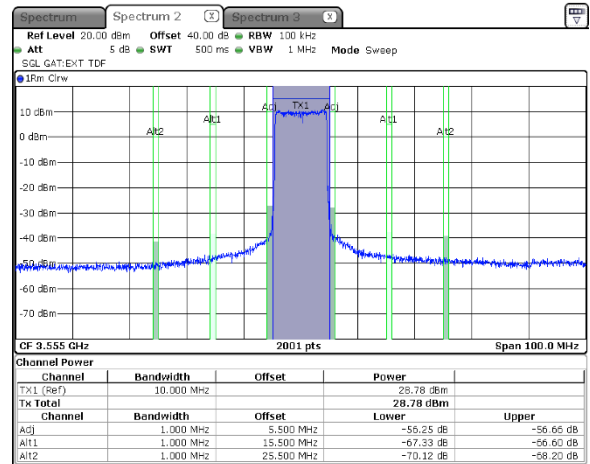
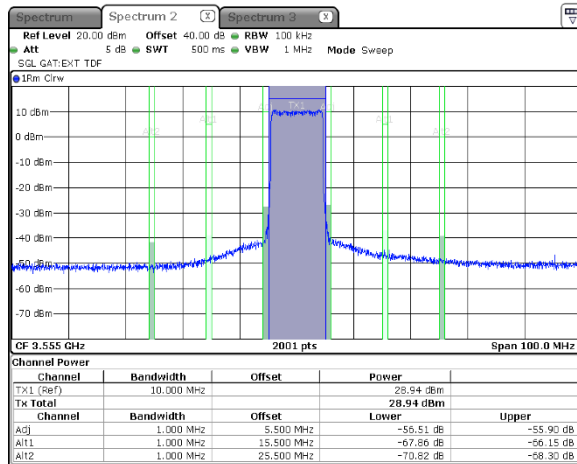
HERMON LABORATORIES

<b>Test specification:</b> Section 96.41(e), Emission mask			
<b>Test procedure:</b> Section 96.41(e)(3)			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Jul-20			
<b>Temperature:</b> 24.2 °C	<b>Relative Humidity:</b> 49 %	<b>Air Pressure:</b> 1010 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

Plot 7.4.1 Emission outside the fundamental test results in 3505 - 3605 GHz range at low carrier frequency

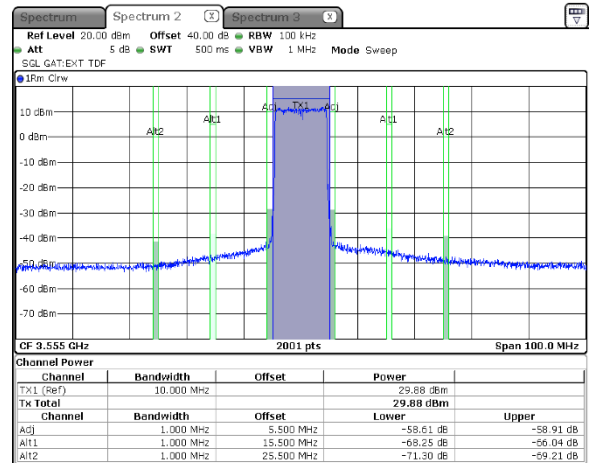
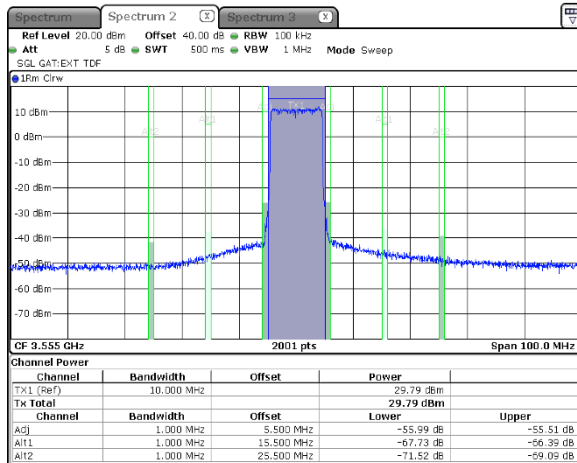
MODULATION:  
CHANNEL SPACING:  
ANTENNA CHAIN: #1

QPSK  
10 MHz  
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





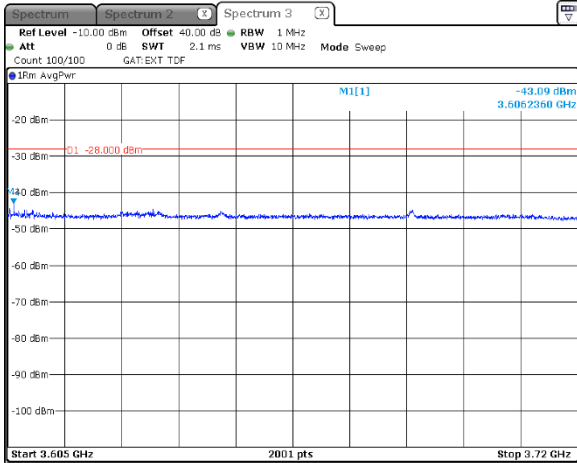


HERMON LABORATORIES

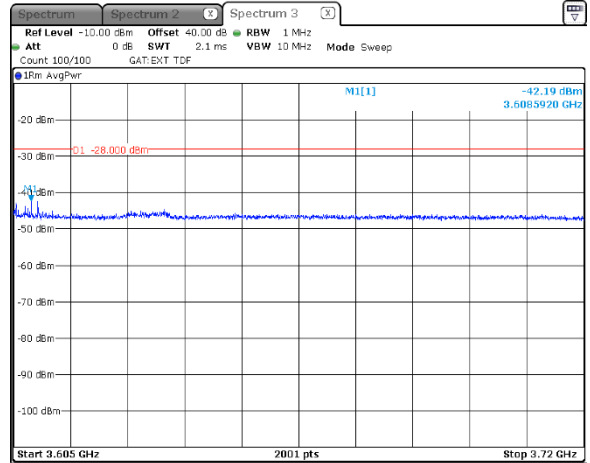
<b>Test specification: Section 96.41(e), Emission mask</b>			
<b>Test procedure:</b> Section 96.41(e)(3)			
<b>Test mode:</b> Compliance		<b>Verdict: PASS</b>	
<b>Date(s):</b> 19-Jul-20			
<b>Temperature:</b> 24.2 °C	<b>Relative Humidity:</b> 49 %	<b>Air Pressure:</b> 1010 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

**Plot 7.4.2 Emission outside the fundamental test results in 3605 - 3720 GHz range at low carrier frequency**

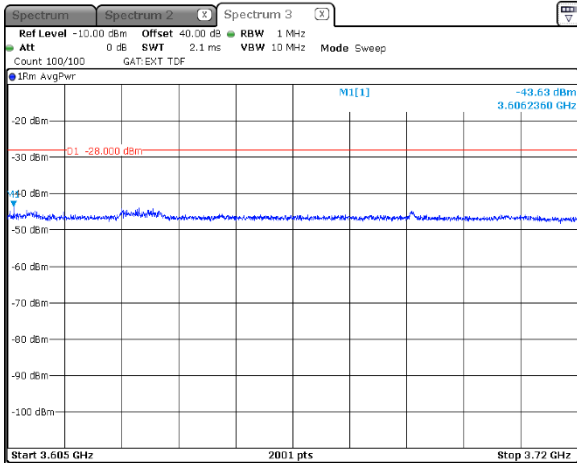
MODULATION:  
CHANNEL SPACING:  
ANTENNA CHAIN: #1



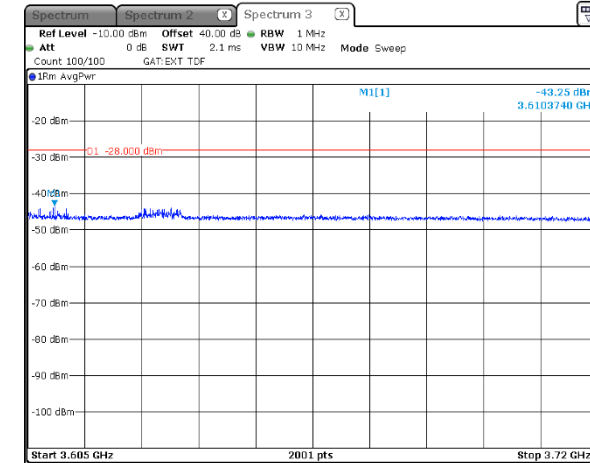
QPSK  
10 MHz  
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3



ANTENNA CHAIN: #4



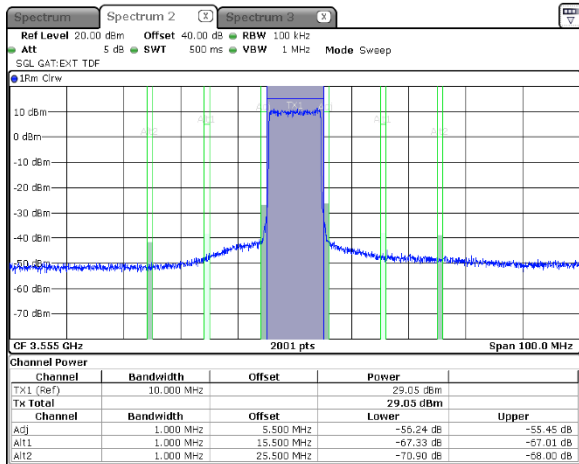


HERMON LABORATORIES

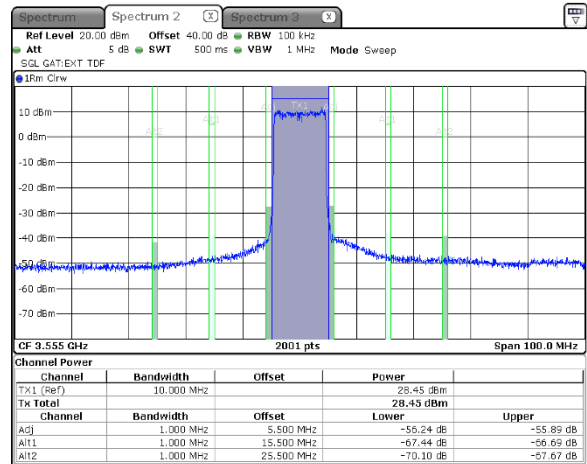
<b>Test specification: Section 96.41(e), Emission mask</b>			
<b>Test procedure:</b> Section 96.41(e)(3)			
<b>Test mode:</b> Compliance		<b>Verdict: PASS</b>	
<b>Date(s):</b> 19-Jul-20			
<b>Temperature:</b> 24.2 °C	<b>Relative Humidity:</b> 49 %	<b>Air Pressure:</b> 1010 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

Plot 7.4.3 Emission outside the fundamental test results in 3505 - 3605 GHz range at low carrier frequency

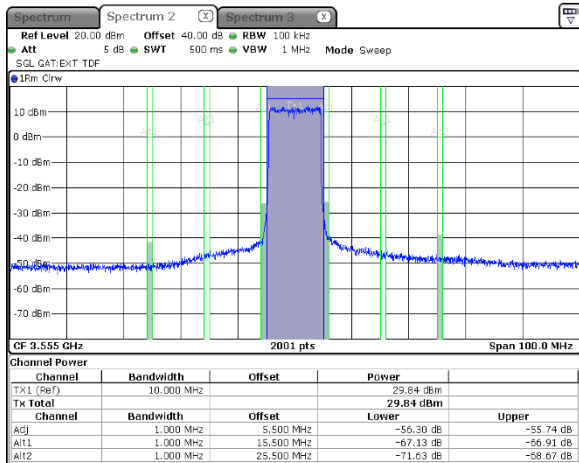
MODULATION:  
CHANNEL SPACING:  
ANTENNA CHAIN: #1



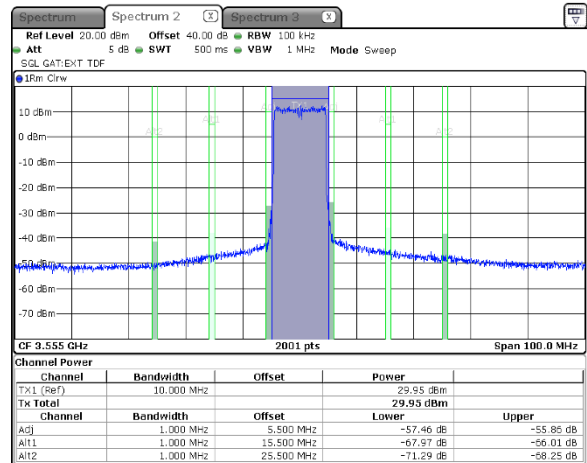
64QAM  
10 MHz  
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3



ANTENNA CHAIN: #4





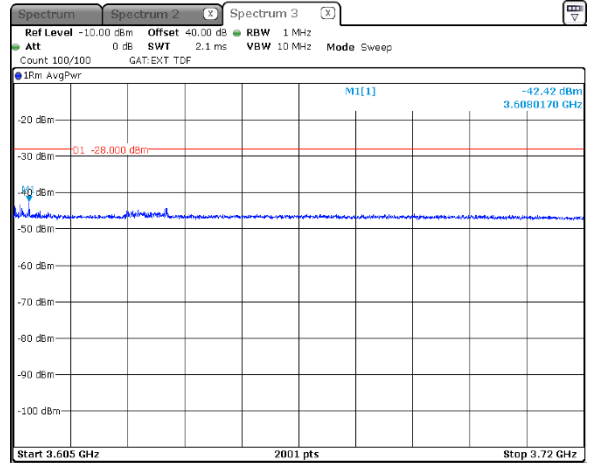
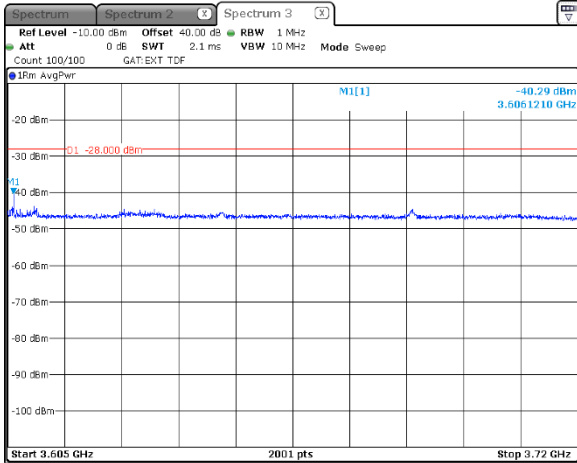
HERMON LABORATORIES

<b>Test specification:</b> Section 96.41(e), Emission mask			
<b>Test procedure:</b> Section 96.41(e)(3)			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Jul-20			
<b>Temperature:</b> 24.2 °C	<b>Relative Humidity:</b> 49 %	<b>Air Pressure:</b> 1010 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

**Plot 7.4.4 Emission outside the fundamental test results in 3605 - 3720 GHz range at low carrier frequency**

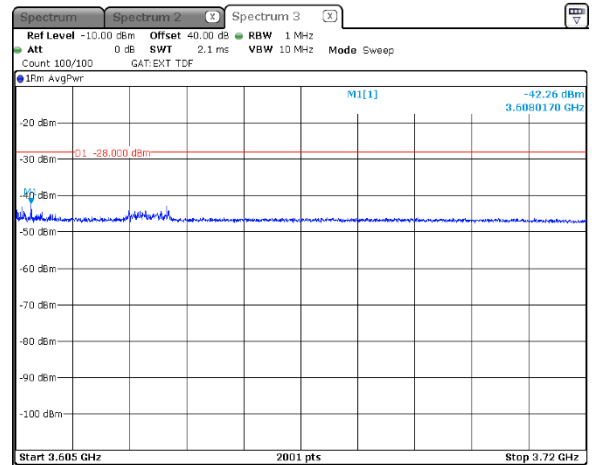
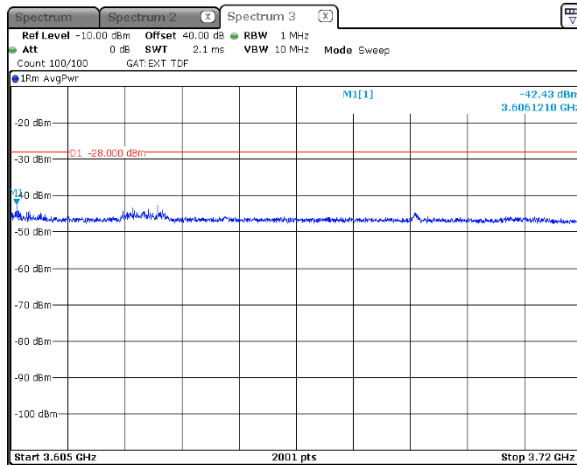
MODULATION:  
CHANNEL SPACING:  
ANTENNA CHAIN: #1

64QAM  
10 MHz  
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





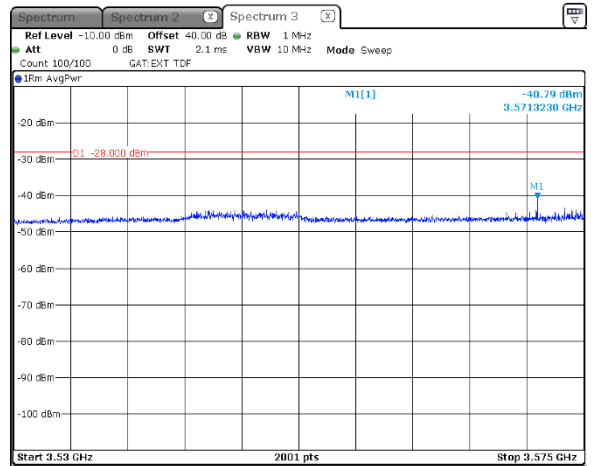
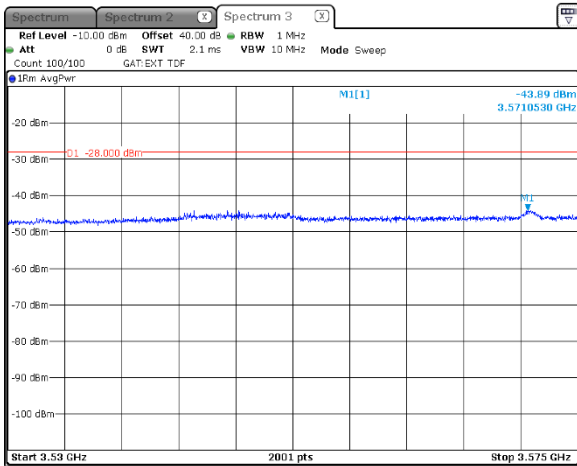
HERMON LABORATORIES

<b>Test specification: Section 96.41(e), Emission mask</b>			
<b>Test procedure: Section 96.41(e)(3)</b>			
<b>Test mode: Compliance</b>		<b>Verdict: PASS</b>	
<b>Date(s): 19-Jul-20</b>			
<b>Temperature: 24.2 °C</b>	<b>Relative Humidity: 49 %</b>	<b>Air Pressure: 1010 hPa</b>	<b>Power: 48 VDC</b>
<b>Remarks:</b>			

**Plot 7.4.5 Emission outside the fundamental test results in 3530 - 3575 GHz range at mid carrier frequency**

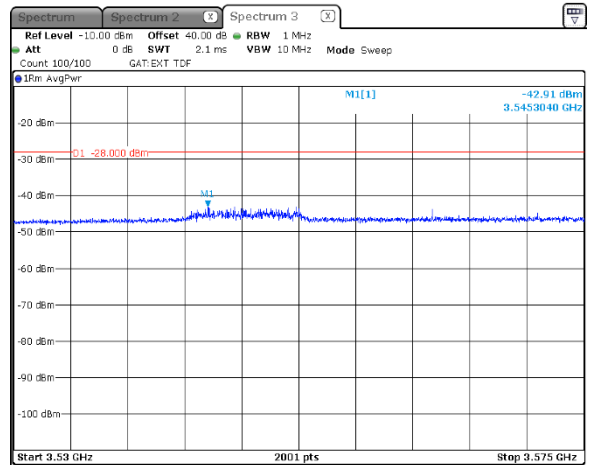
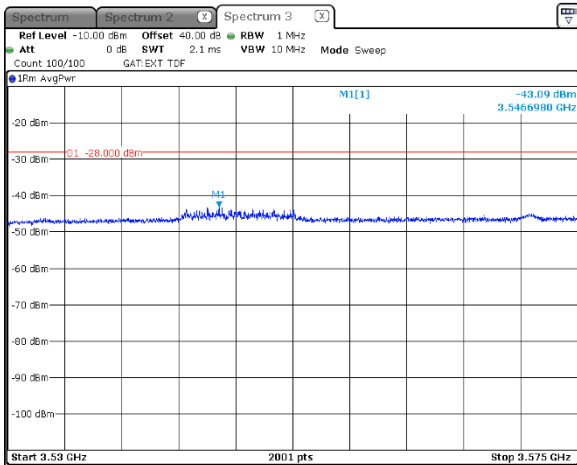
MODULATION:  
CHANNEL SPACING:  
ANTENNA CHAIN: #2

QPSK  
10 MHz  
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





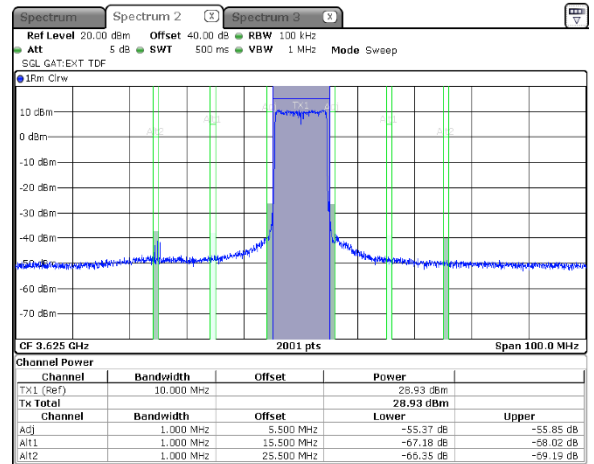
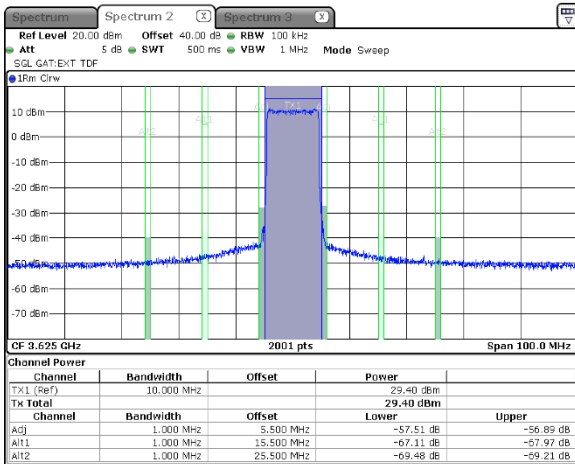
HERMON LABORATORIES

<b>Test specification:</b> Section 96.41(e), Emission mask			
<b>Test procedure:</b> Section 96.41(e)(3)			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Jul-20			
<b>Temperature:</b> 24.2 °C	<b>Relative Humidity:</b> 49 %	<b>Air Pressure:</b> 1010 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

Plot 7.4.6 Emission outside the fundamental test results in 3575 - 3675 GHz range at mid carrier frequency

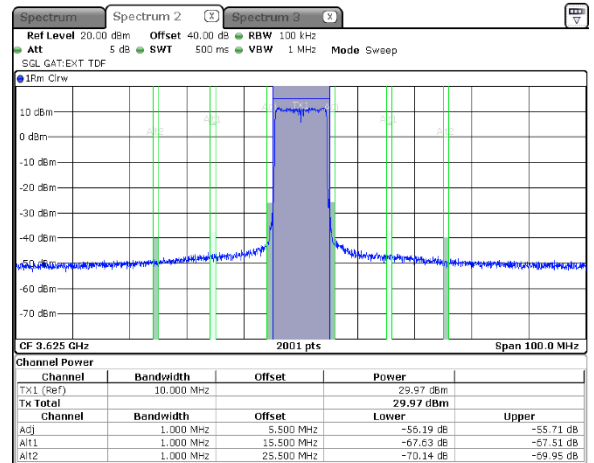
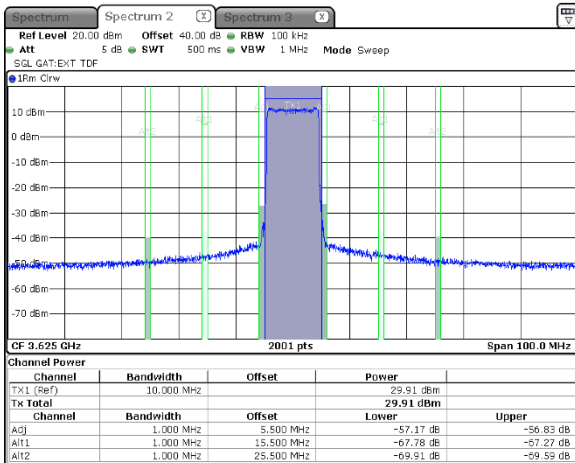
MODULATION:  
CHANNEL SPACING:  
ANTENNA CHAIN: #1

QPSK  
10 MHz  
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





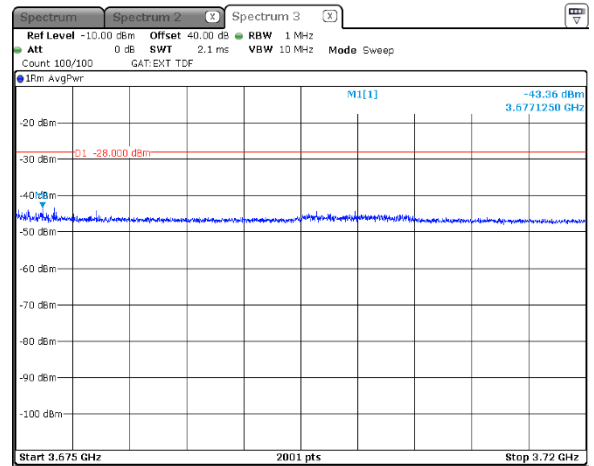
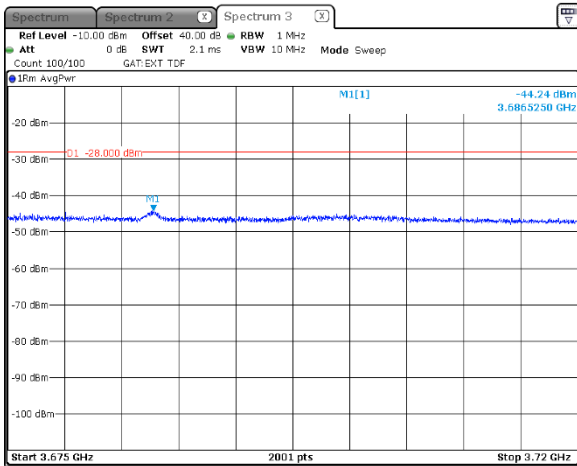
HERMON LABORATORIES

<b>Test specification:</b> Section 96.41(e), Emission mask			
<b>Test procedure:</b> Section 96.41(e)(3)			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Jul-20			
<b>Temperature:</b> 24.2 °C	<b>Relative Humidity:</b> 49 %	<b>Air Pressure:</b> 1010 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

Plot 7.4.7 Emission outside the fundamental test results in 3675 - 3720 GHz range at mid carrier frequency

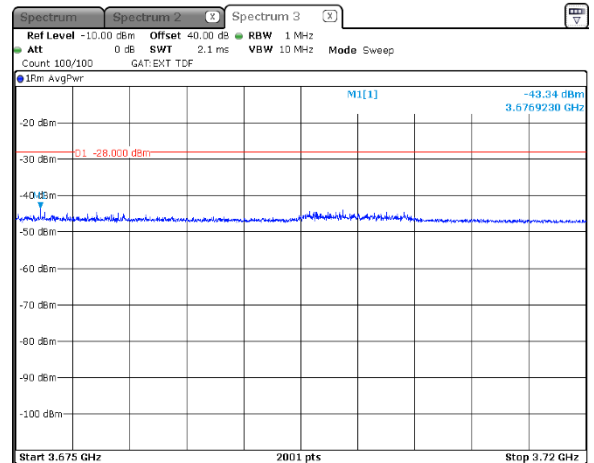
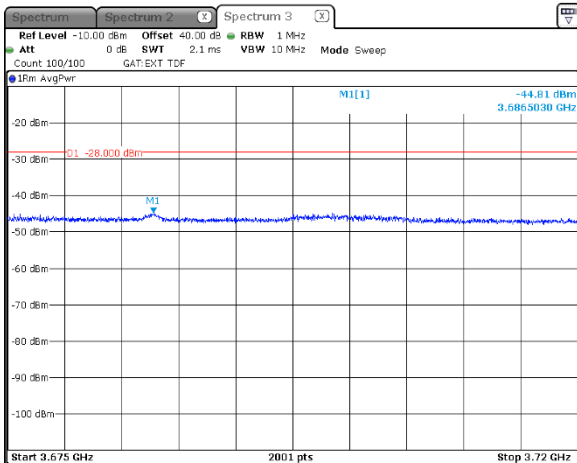
MODULATION:  
CHANNEL SPACING:  
ANTENNA CHAIN: #1

QPSK  
10 MHz  
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4





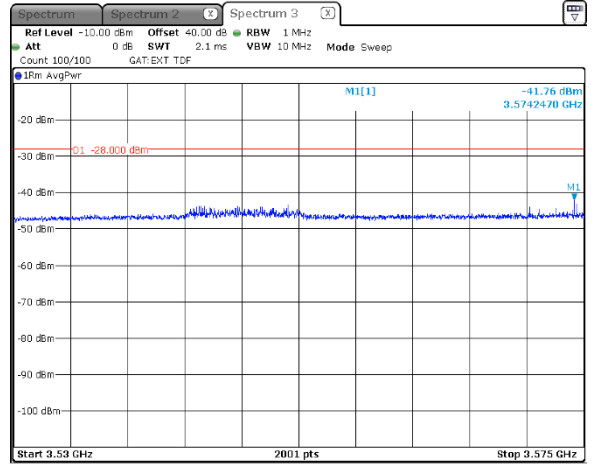
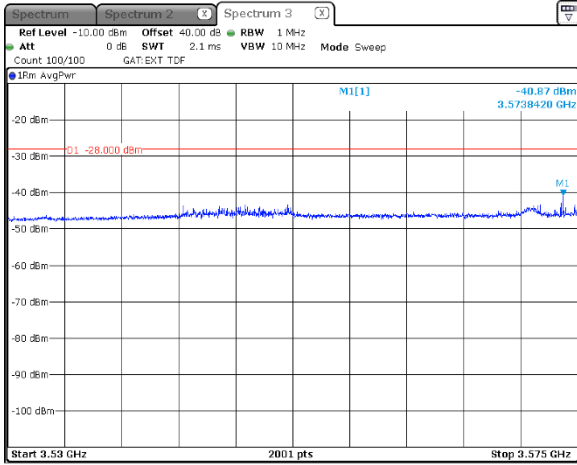
HERMON LABORATORIES

<b>Test specification:</b> Section 96.41(e), Emission mask			
<b>Test procedure:</b> Section 96.41(e)(3)			
<b>Test mode:</b> Compliance		<b>Verdict:</b> PASS	
<b>Date(s):</b> 19-Jul-20			
<b>Temperature:</b> 24.2 °C	<b>Relative Humidity:</b> 49 %	<b>Air Pressure:</b> 1010 hPa	<b>Power:</b> 48 VDC
<b>Remarks:</b>			

Plot 7.4.8 Emission outside the fundamental test results in 3530 - 3575 GHz range at mid carrier frequency

MODULATION:  
CHANNEL SPACING:  
ANTENNA CHAIN: #2

64QAM  
10 MHz  
ANTENNA CHAIN: #2



ANTENNA CHAIN: #3

ANTENNA CHAIN: #4

