



Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

7.4 Out of band radiated emissions above 40 GHz up to 200 GHz

7.4.1 General

This test was performed to measure radiated spurious emissions from the EUT. Specification test limits are given in Table 7.4.1.

Table 7.4.1 Spurious emission field strength limits

Frequency, GHz	Power density at 3 m distance $\mu\text{W}/\text{cm}^2$	Distance, m	Field strength $\text{dB}(\mu\text{V}/\text{m})^*$, peak	Field strength $\text{dB}(\mu\text{V}/\text{m})^*$, average
40 – 200	90.0	3.0	105.30	85.30
90 - 140	90.0	0.05	140.9**	120.9**
140 - 200	90.0	0.01	154.8**	134.8**

*- The limit is provided in average values.

** - The limit for 1 m and other test distance was calculated using the inverse distance extrapolation factor as follows:

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

where S_1 – standard defined distance in meters;

S_2 – measurement distance in meters (according to ANSI C63.10)

7.4.2 Test procedure for spurious emission field strength measurements

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

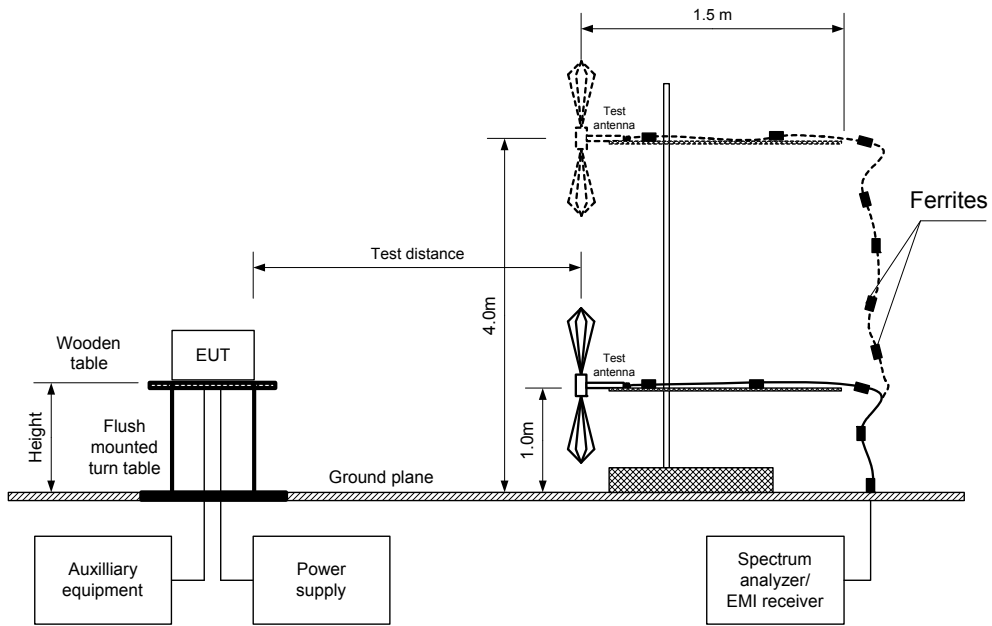
7.4.2.2 The specified frequency range was investigated with antenna connected to spectrum analyzer/ EMI receiver. To find maximum radiation the turntable was rotated 360° , the measuring antenna height was changed from 1 to 4 m, its polarization was switched from vertical to horizontal.

7.4.2.3 The test results were recorded in Table 7.4.2 and are shown in the associated plots.



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Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance	Verdict: PASS		
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Figure 7.4.1 Spurious emission field strength above 40 GHz test set up





Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Table 7.4.2 Spurious emission field strength test results

TEST DISTANCE: 0.01 - 3 m
 EUT POSITION: Typical (Vertical)
 TRANSMITTER OUTPUT POWER: Maximum
 INVESTIGATED FREQUENCY RANGE: 40 – 200 GHz
 RESOLUTION BANDWIDTH: 1000 kHz
 VIDEO BANDWIDTH: ≥ Resolution bandwidth
 TEST ANTENNA TYPE: Standard Gain Horn 24 dB (40-60 GHz)
 Standard Gain Horn 24 dB (60-90 GHz)
 Standard Gain Horn 24dB (90-140 GHz)
 Standard Gain Horn 24 dB (140-220 GHz)

MODULATION: 16QAM

Frequency, MHz	Antenna		Azimuth, degrees*	Peak field strength(VBW=3 MHz)			Average field strength(VBW=1 kHz)			Verdict
	Polariz.	Height, m		Measured, dB(µV/m)	Limit, dB(µV/m)	Margin, dB**	Measured, dB(µV/m)	Limit, dB(µV/m)	Margin, dB**	
Low carrier frequency 58320 MHz										
56999.361	Vertical	1.0	0	85.45	105.3	-19.85	77.23	85.3	-8.07	Pass
Mid carrier frequency 60480 MHz										
No emissions were found										Pass
High carrier frequency 64800 MHz										
55806.801	Vertical	1.0	0	92.15	105.3	-13.15	84.75	85.3	-0.55	Pass

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

**- Margin = Measured emission – specification limit.

MODULATION: BPSK

Frequency, MHz	Antenna		Azimuth, degrees*	Peak field strength(VBW=3 MHz)			Average field strength(VBW=1 kHz)			Verdict
	Polariz.	Height, m		Measured, dB(µV/m)	Limit, dB(µV/m)	Margin, dB**	Measured, dB(µV/m)	Limit, dB(µV/m)	Margin, dB**	
Low carrier frequency 58320 MHz										
56999.421	Vertical	1.0	0	86.03	105.3	-19.27	77.85	85.3	-7.45	Pass
Mid carrier frequency 60480 MHz										
No emissions were found										Pass
High carrier frequency 64800 MHz										
55796.122	Vertical	1.0	0	94.42	105.3	-10.88	85.06	85.3	-0.24	Pass

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

**- Margin = Measured emission – specification limit.

Reference numbers of test equipment used

HL 0747	HL 0770	HL 0771	HL 1300	HL 1303	HL 1312	HL 2909	HL 3235
HL 3290	HL 3329	HL 3433	HL 3434	HL 3536	HL 4023	HL 5376	HL 5380

Full description is given in Appendix A.



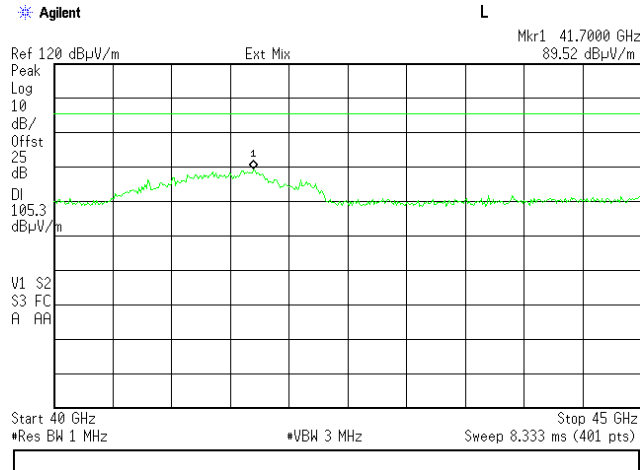
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.1 Spurious emission measurements in 40 – 45 GHz range

TEST SITE: OATS
TEST DISTANCE: 3 m
MODULATION: BPSK
ANTENNA POLARIZATION: Vertical and Horizontal
Low carrier frequency: 58320 MHz

DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz





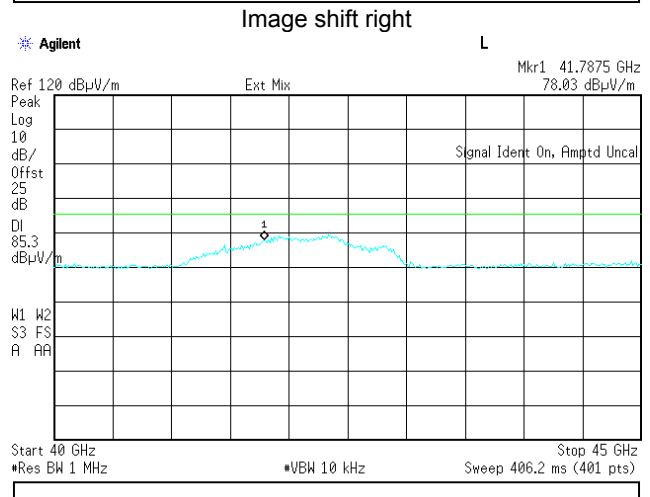
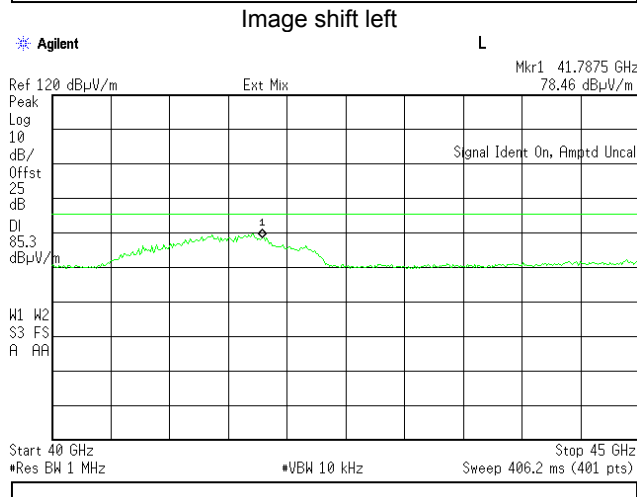
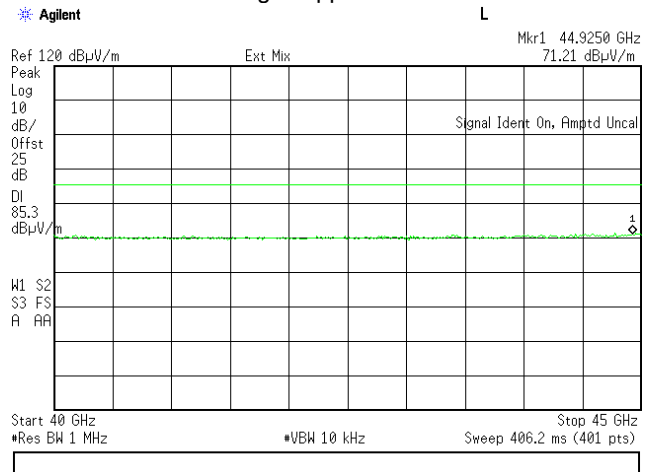
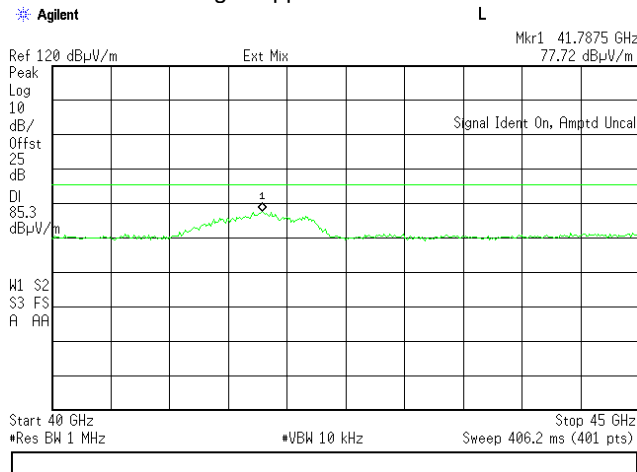
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz	
Test procedure: ANSI C63.10, Sections 9.9, 9.12	
Test mode: Compliance	Verdict: PASS
Date(s): 11-Mar-20	
Temperature: 25 °C	Relative Humidity: 43 %
	Air Pressure: 1015 hPa
	Power: 55 VDC
Remarks:	

Plot 7.4.2 Spurious emission measurements in 40 – 45 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
Low carrier frequency:
DETECTOR: Peak

OATS
3 m
BPSK
Vertical and Horizontal
58320 MHz
RBW = 1 MHz; VBW = 10 kHz
Image suppress Modulated
Image suppress CW





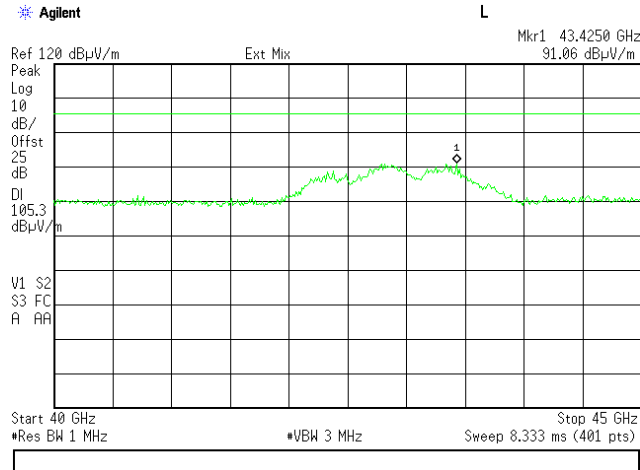
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.3 Spurious emission measurements in 40 – 45 GHz range

TEST SITE: OATS
TEST DISTANCE: 3 m
MODULATION: BPSK
ANTENNA POLARIZATION: Vertical and Horizontal
Mid carrier frequency: 60480 MHz

DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz





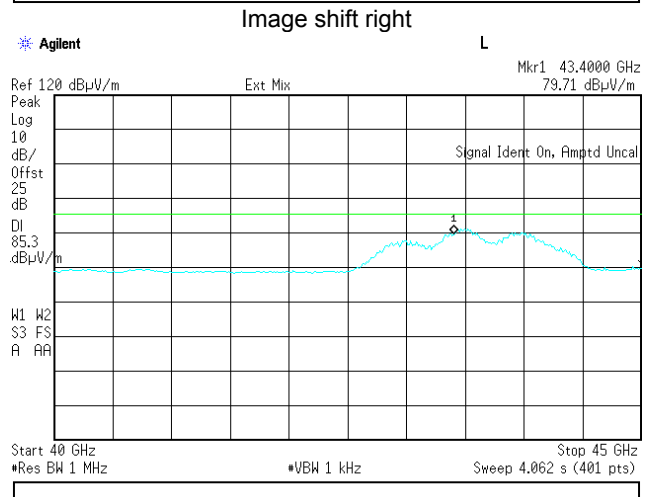
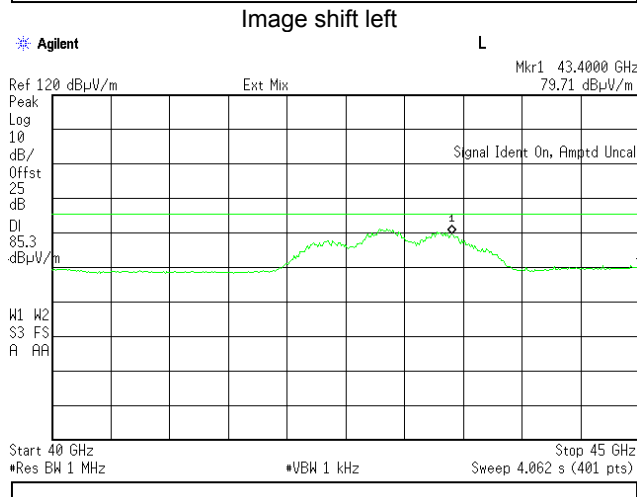
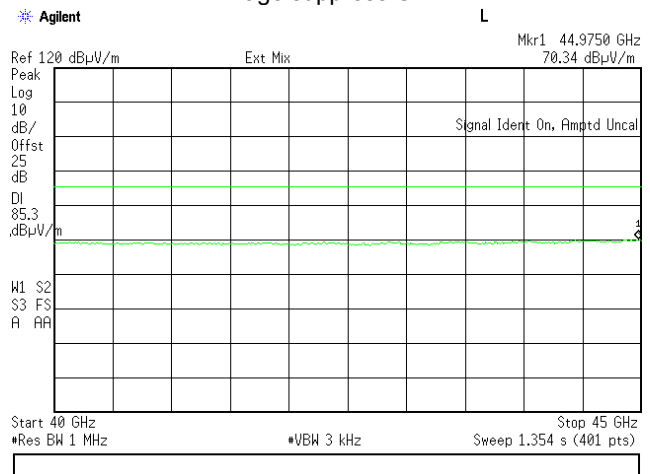
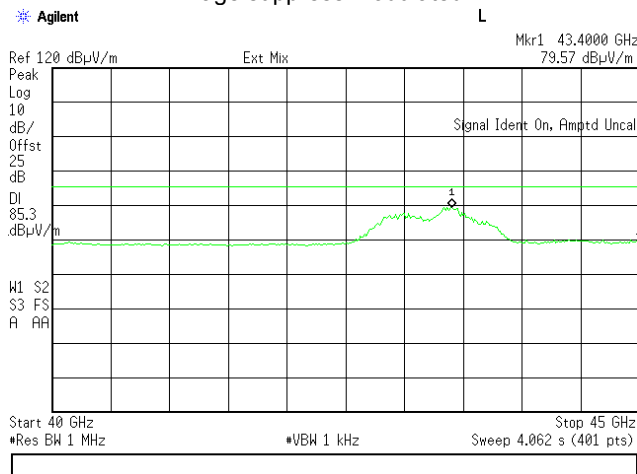
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.4 Spurious emission measurements in 40 – 45 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
Mid carrier frequency:
DETECTOR: Peak

OATS
3 m
BPSK
Vertical and Horizontal
60480 MHz
RBW = 1 MHz; VBW = 10 kHz
Image suppress Modulated
Image suppress CW





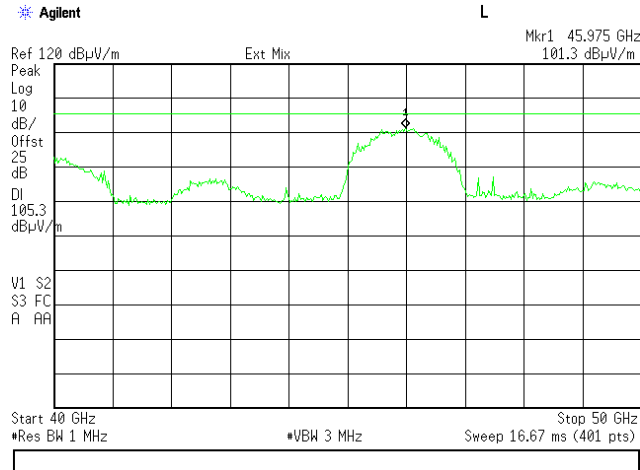
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.5 Spurious emission measurements in 40 – 50 GHz range

TEST SITE: OATS
TEST DISTANCE: 3 m
MODULATION: BPSK
ANTENNA POLARIZATION: Vertical and Horizontal
High carrier frequency: 64800 MHz

DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz	
Test procedure: ANSI C63.10, Sections 9.9, 9.12	
Test mode: Compliance	Verdict: PASS
Date(s): 11-Mar-20	
Temperature: 25 °C	Relative Humidity: 43 %
Remarks:	

Plot 7.4.6 Spurious emission measurements in 40 – 50 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
High carrier frequency:
DETECTOR: Peak

OATS
3 m
BPSK
Vertical and Horizontal
64800 MHz
RBW = 1 MHz; VBW = 10 kHz
Image suppress Modulated
Image suppress CW

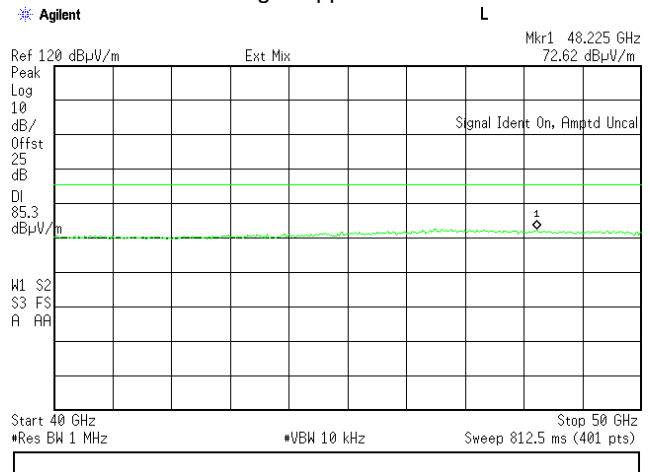
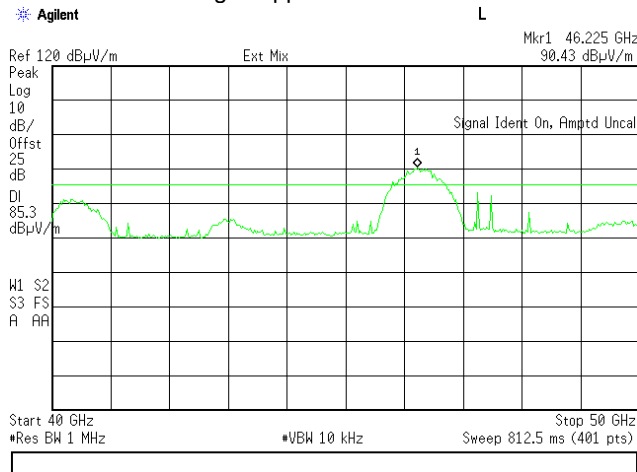
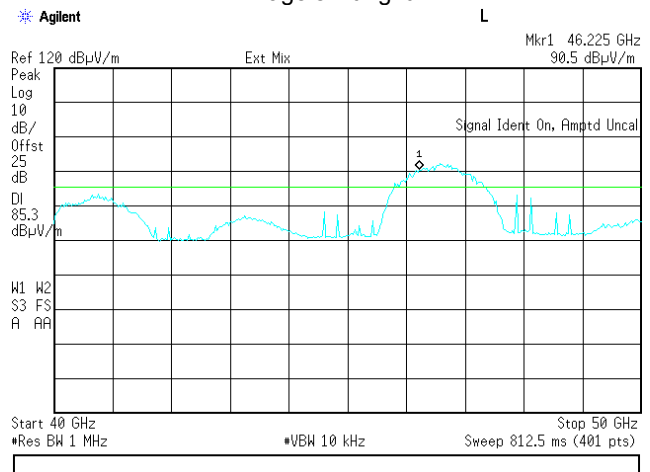
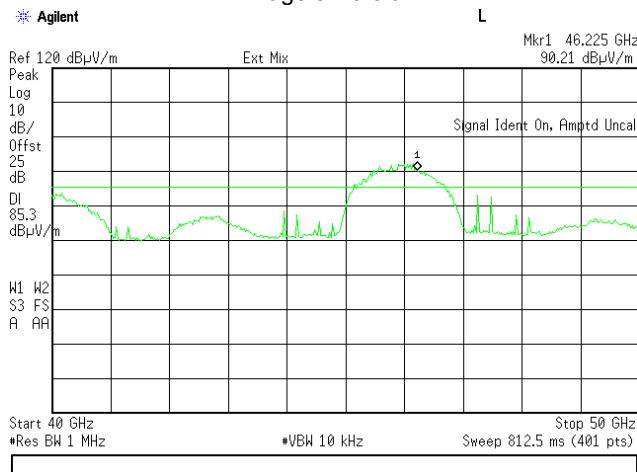


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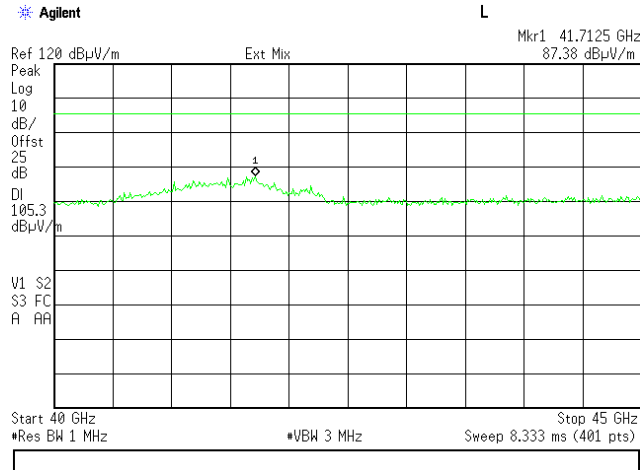
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.7 Spurious emission measurements in 40 – 45 GHz range

TEST SITE: OATS
TEST DISTANCE: 3 m
MODULATION: 16QAM
ANTENNA POLARIZATION: Vertical and Horizontal

Low carrier frequency: 58320 MHz
DETECTOR: Peak
RBW = 1 MHz; VBW = 3 MHz





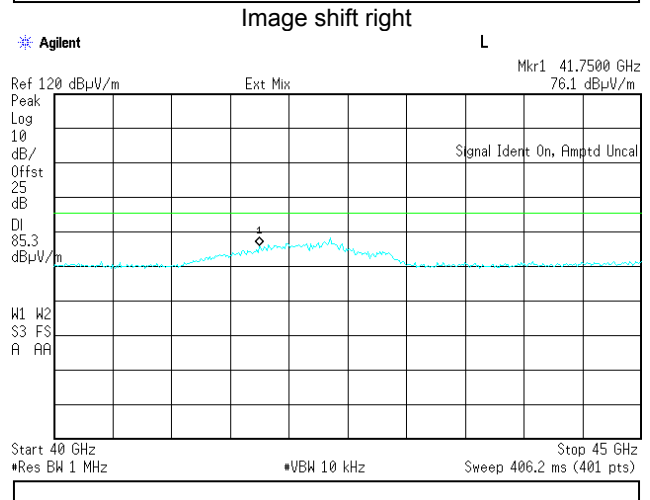
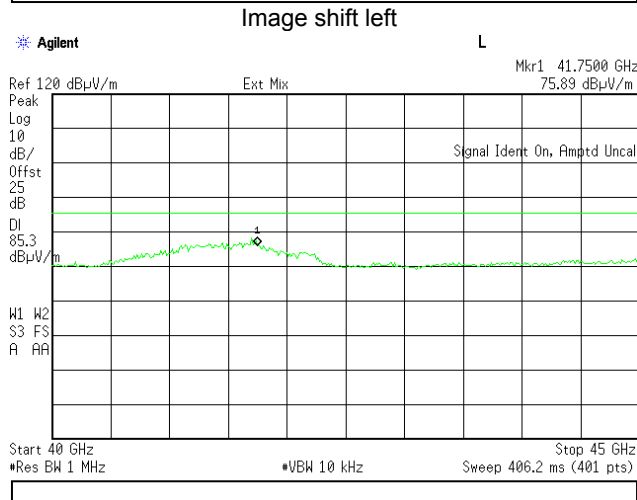
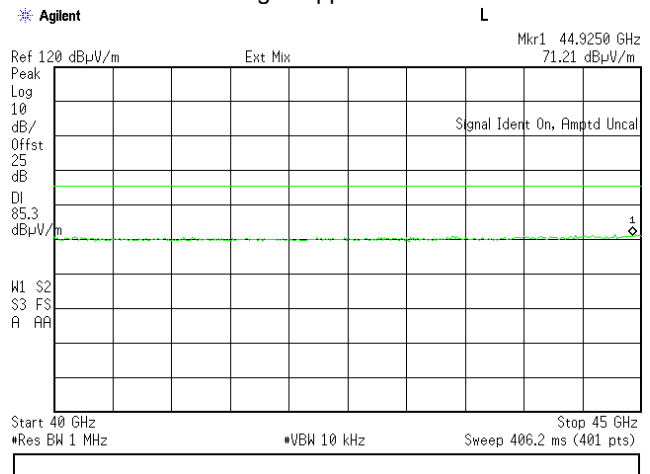
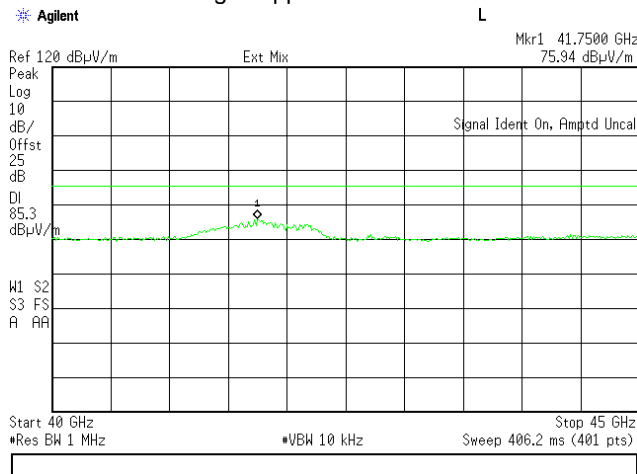
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.8 Spurious emission measurements in 40 – 45 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak

OATS
3 m
16QAM
Vertical and Horizontal
RBW = 1 MHz; VBW = 10 kHz
Image suppress Modulated
Image suppress CW





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

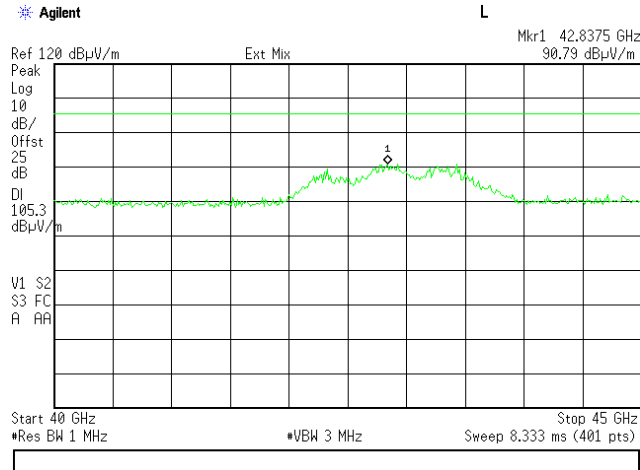
Plot 7.4.9 Spurious emission measurements in 40 – 45 GHz range

TEST SITE: OATS
 TEST DISTANCE: 3 m
 MODULATION: 16QAM
 ANTENNA POLARIZATION: Vertical and Horizontal
 Mid carrier frequency: 60480 MHz

DETECTOR: Peak

RBW = 1 MHz; VBW = 3 MHz

DETEC





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.10 Spurious emission measurements in 40 – 45 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
Mid carrier frequency:
DETECTOR: Peak

OATS
3 m
16QAM
Vertical and Horizontal
60480 MHz
RBW = 1 MHz; VBW = 3 kHz
Image suppress CW
Image suppress Modulated

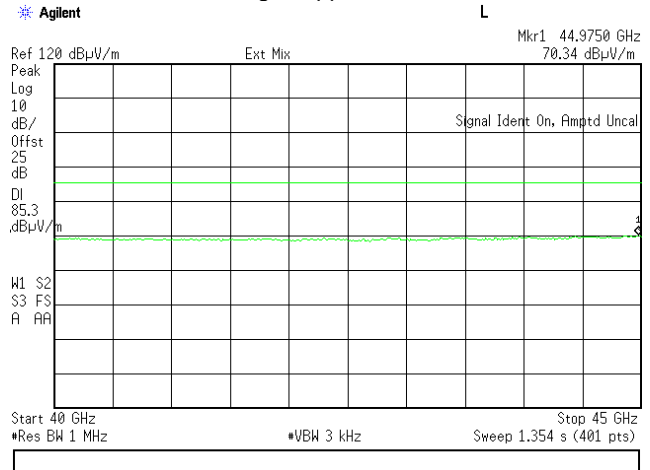
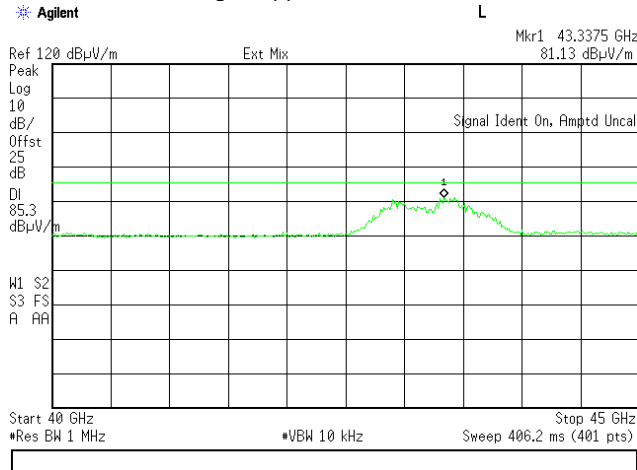
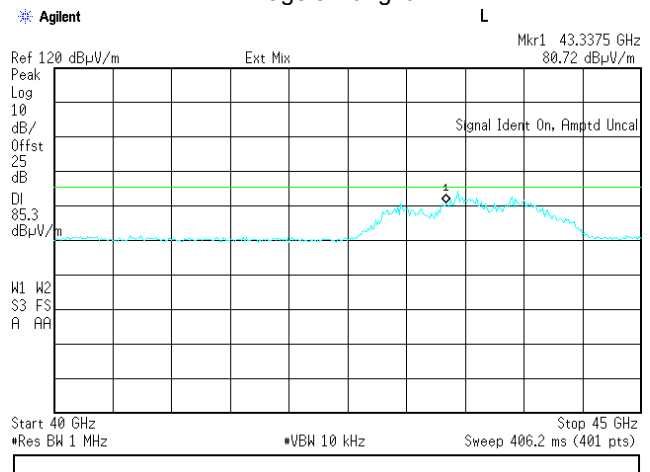
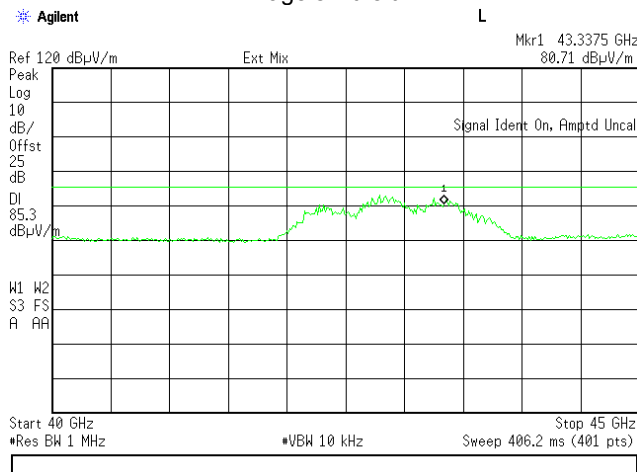


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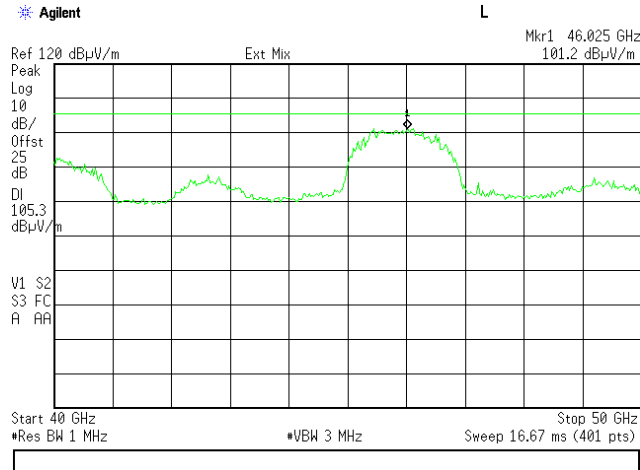
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz	
Test procedure: ANSI C63.10, Sections 9.9, 9.12	
Test mode: Compliance	Verdict: PASS
Date(s): 11-Mar-20	
Temperature: 25 °C	Relative Humidity: 43 %
Remarks:	

Plot 7.4.11 Spurious emission measurements in 40 – 50 GHz range

TEST SITE: OATS
TEST DISTANCE: 3 m
MODULATION: 16QAM
ANTENNA POLARIZATION: Vertical and Horizontal
High carrier frequency: 64800 MHz

DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz





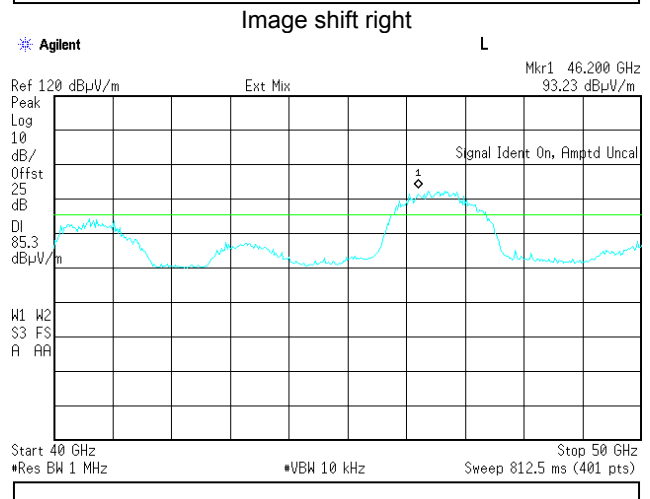
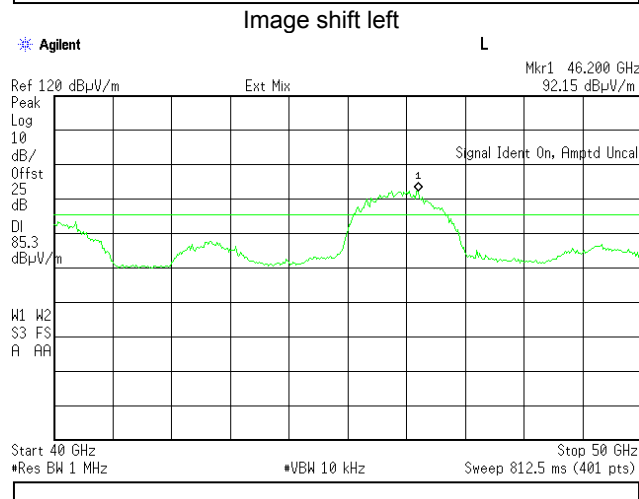
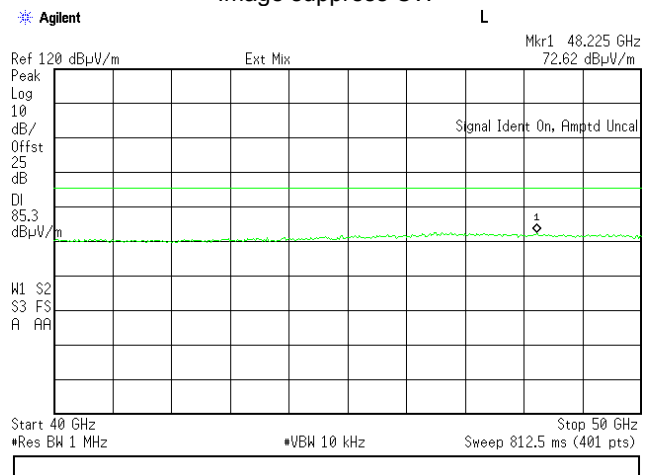
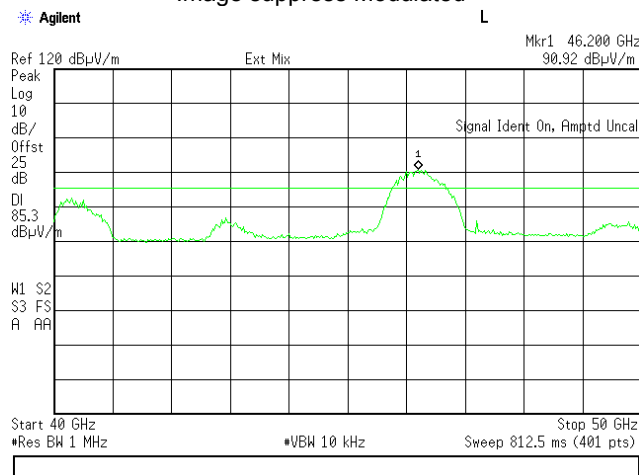
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.12 Spurious emission measurements in 40 – 50 GHz range

TEST SITE: OATS
TEST DISTANCE: 3 m
MODULATION: 16QAM
ANTENNA POLARIZATION: Vertical and Horizontal
High carrier frequency: 64800 MHz

DETECTOR: Peak Image suppress Modulated RBW = 1 MHz; VBW = 10 kHz
Image suppress CW





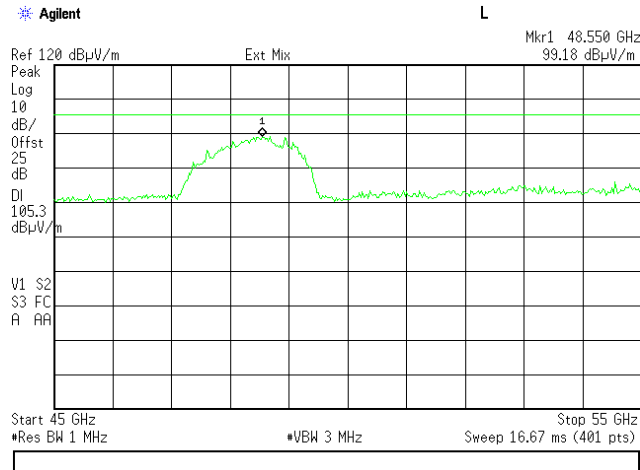
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.13 Spurious emission measurements in 45 – 55 GHz range

TEST SITE: OATS
 TEST DISTANCE: 3 m
 MODULATION: BPSK
 ANTENNA POLARIZATION: Vertical and Horizontal
 Low carrier frequency: 58320 MHz

DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

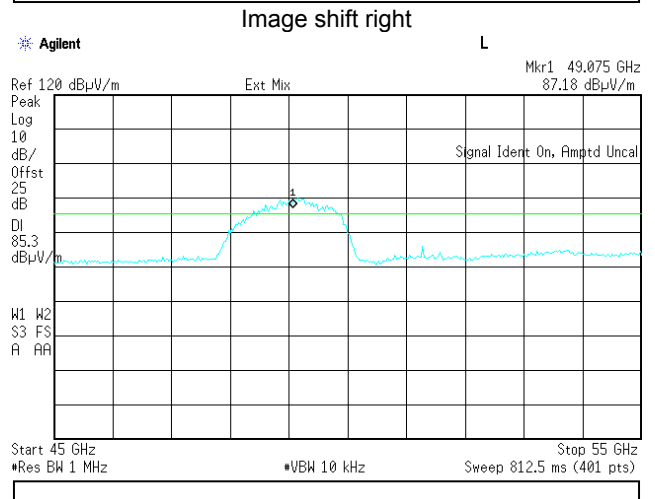
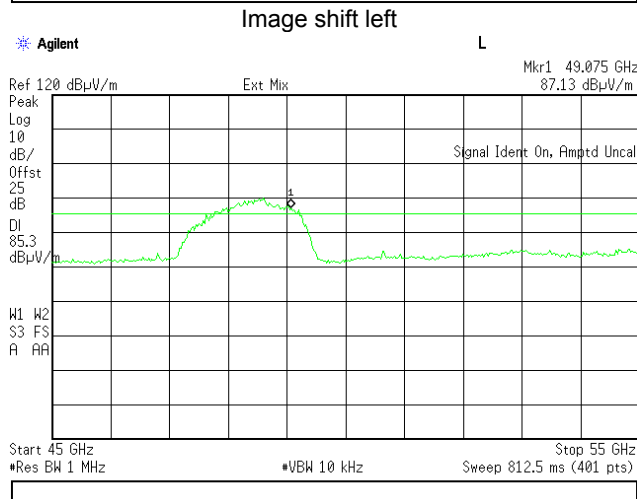
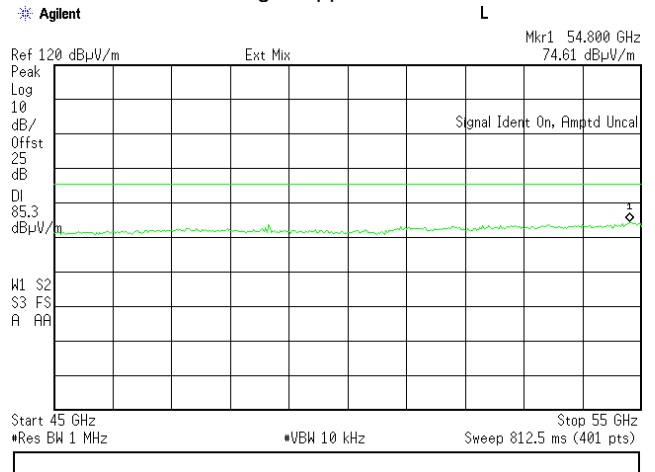
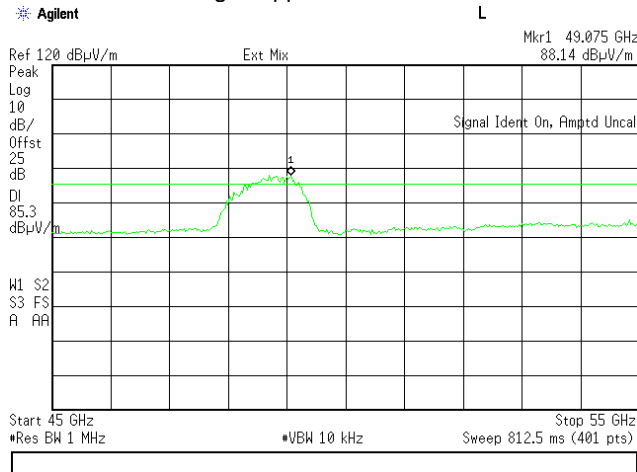
Plot 7.4.14 Spurious emission measurements in 45 – 55 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
Low carrier frequency:

OATS
3 m
BPSK
Vertical and Horizontal
58320 MHz

DETECTOR: Peak
Image suppress Modulated

RBW = 1 MHz; VBW = 10 kHz
Image suppress CW





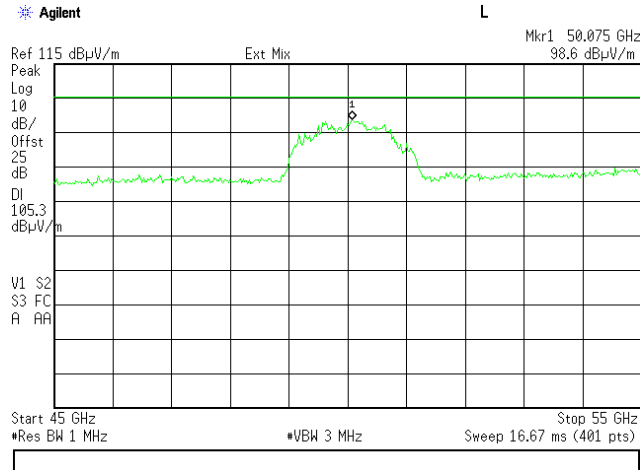
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.15 Spurious emission measurements in 45 – 55 GHz range

TEST SITE: OATS
TEST DISTANCE: 3 m
MODULATION: BPSK
ANTENNA POLARIZATION: Vertical and Horizontal
Mid carrier frequency: 60480 MHz

DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.16 Spurious emission measurements in 45 – 55 GHz range

TEST SITE: OATS
 TEST DISTANCE: 3 m
 MODULATION: BPSK
 ANTENNA POLARIZATION: Vertical and Horizontal
 Mid carrier frequency: 60480 MHz

DETECTOR: Peak
 Image suppress Modulated
 RBW = 1 MHz; VBW = 10 kHz
 Image suppress CW

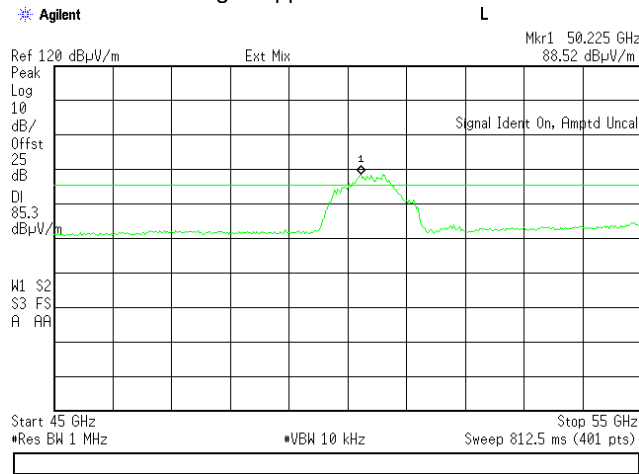


Image shift left

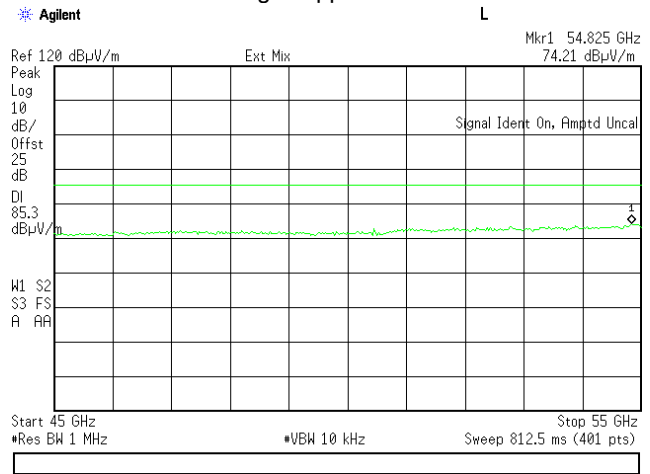
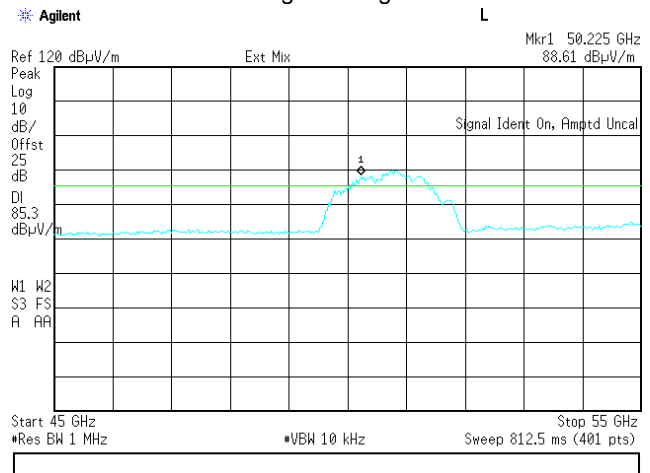
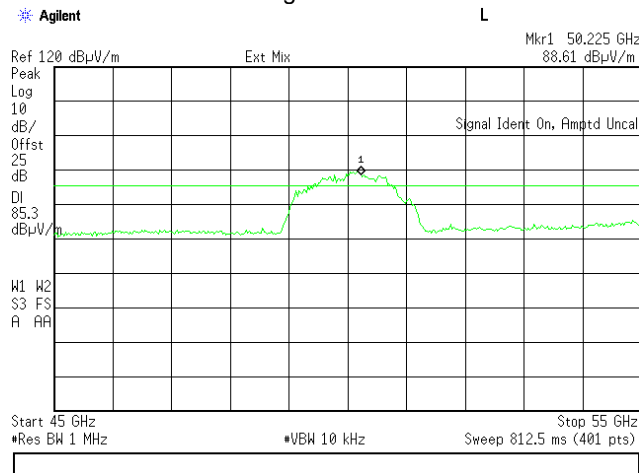


Image shift right





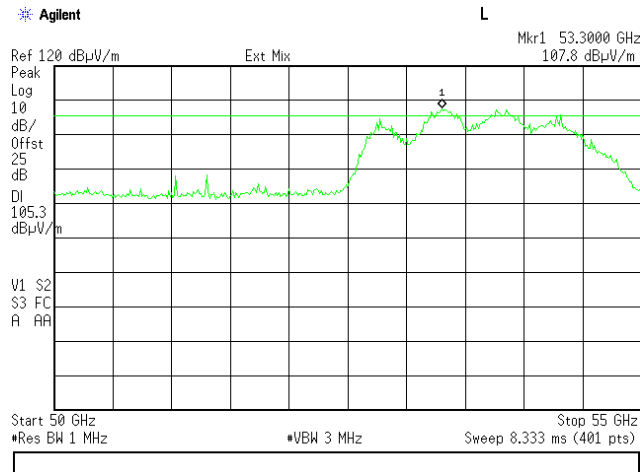
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.17 Spurious emission measurements in 50 – 55 GHz range

TEST SITE: OATS
 TEST DISTANCE: 3 m
 MODULATION: BPSK
 ANTENNA POLARIZATION: Vertical and Horizontal
 High carrier frequency: 64800 MHz

DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz





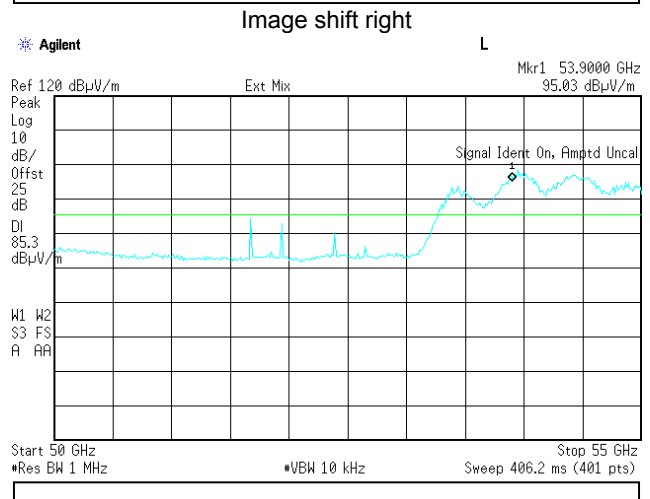
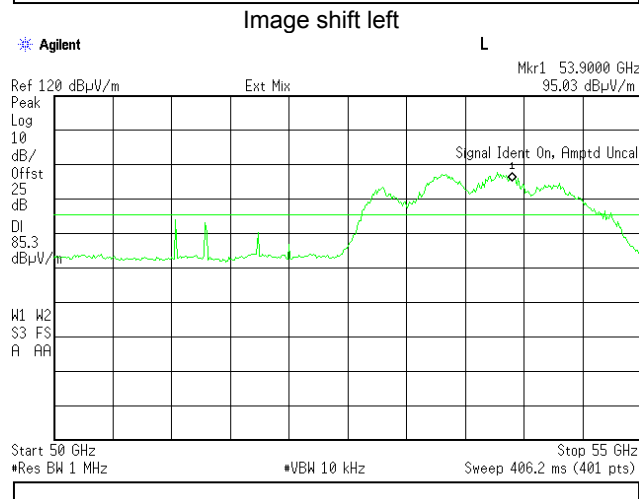
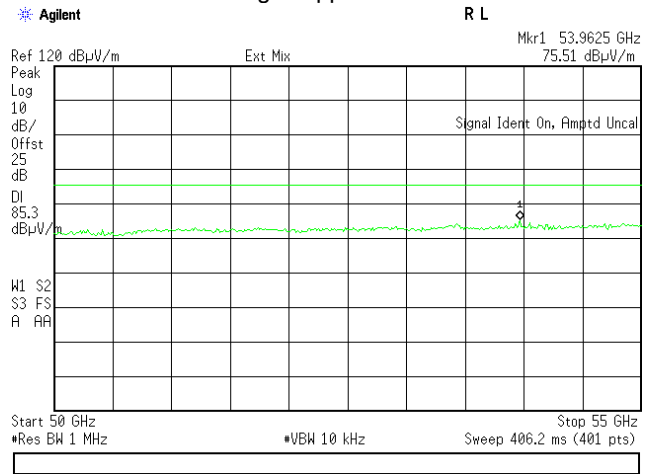
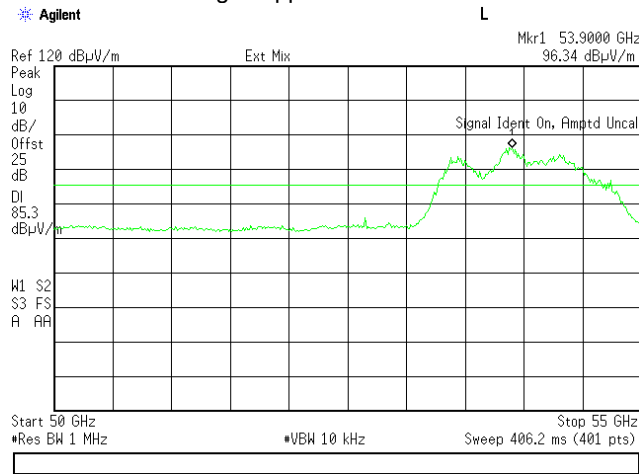
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.18 Spurious emission measurements in 50 – 55 GHz range

TEST SITE: OATS
TEST DISTANCE: 3 m
MODULATION: BPSK
ANTENNA POLARIZATION: Vertical and Horizontal
High carrier frequency: 64800 MHz

DETECTOR: Peak
Image suppress Modulated
RBW = 1 MHz; VBW = 10 kHz
Image suppress CW



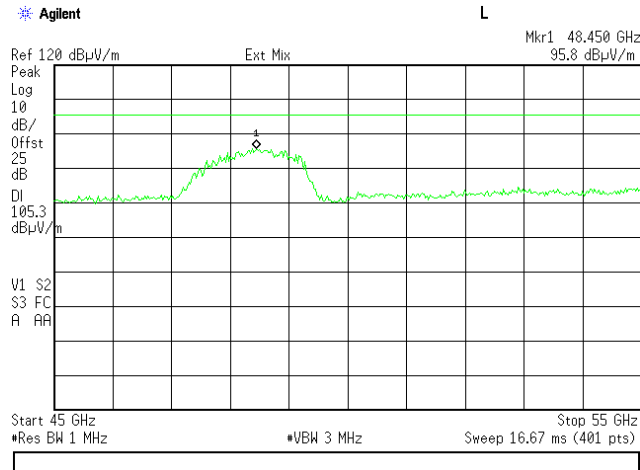


HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.19 Spurious emission measurements in 45 – 55 GHz range

TEST SITE:	OATS
TEST DISTANCE:	3 m
MODULATION:	16QAM
ANTENNA POLARIZATION:	Vertical and Horizontal
Low carrier frequency:	58320 MHz
DETECTOR:	Peak
	RBW = 1 MHz; VBW = 3 MHz





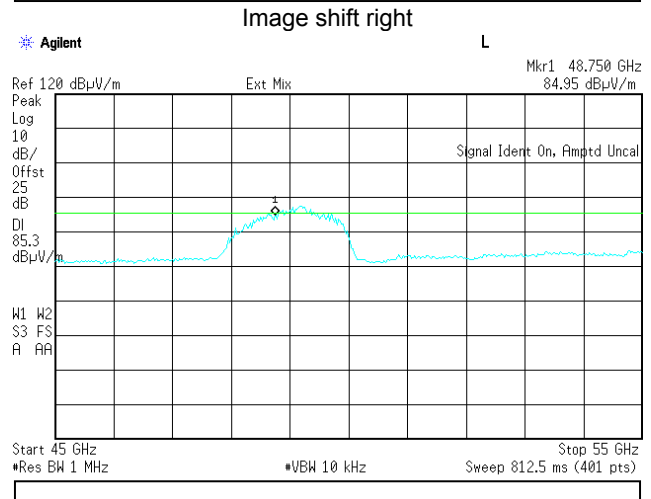
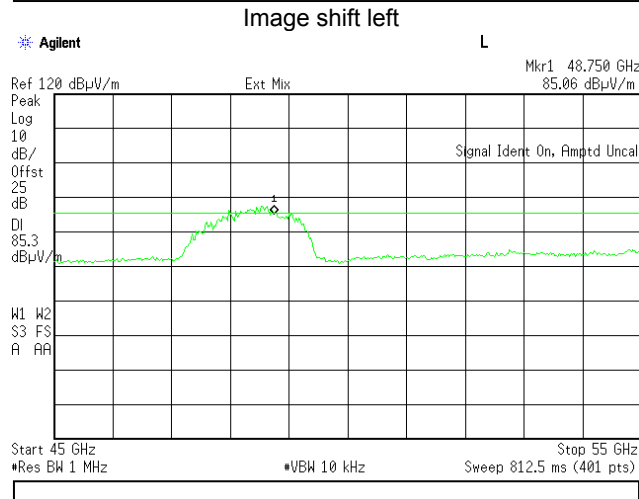
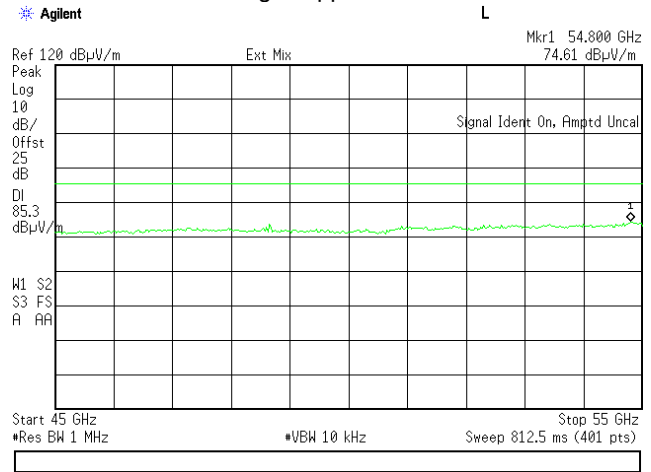
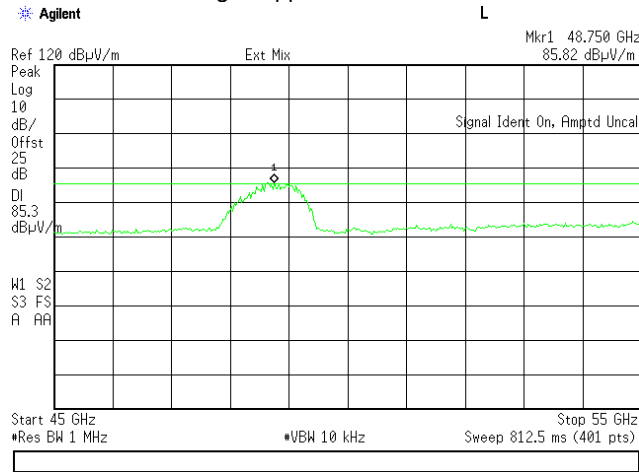
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.20 Spurious emission measurements in 45 – 55 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
Low carrier frequency:
DETECTOR: Peak

OATS
3 m
16QAM
Vertical and Horizontal
58320 MHz
RBW = 1 MHz; VBW = 10 kHz
Image suppress Modulated
Image suppress CW





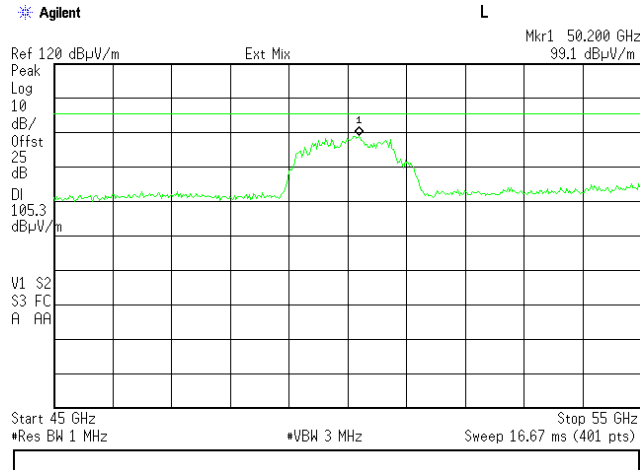
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.21 Spurious emission measurements in 45 – 55 GHz range

TEST SITE: OATS
TEST DISTANCE: 3 m
MODULATION: 16QAM
ANTENNA POLARIZATION: Vertical and Horizontal
Mid carrier frequency: 60480 MHz

DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.22 Spurious emission measurements in 45 – 55 GHz range

TEST SITE: OATS
 TEST DISTANCE: 3 m
 MODULATION: 16QAM
 ANTENNA POLARIZATION: Vertical and Horizontal
 Mid carrier frequency: 60480 MHz

DETECTOR: Peak Image suppress Modulated RBW = 1 MHz; VBW = 10 kHz
 Image suppress CW

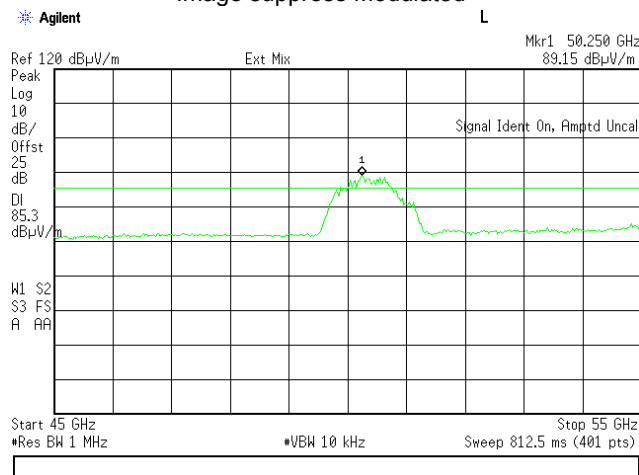


Image shift left

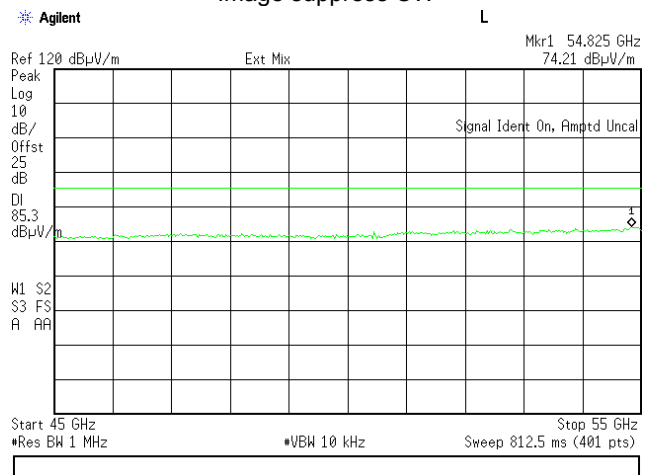
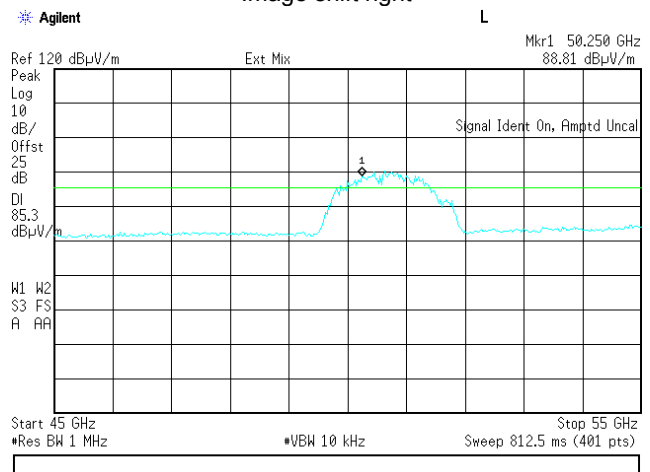
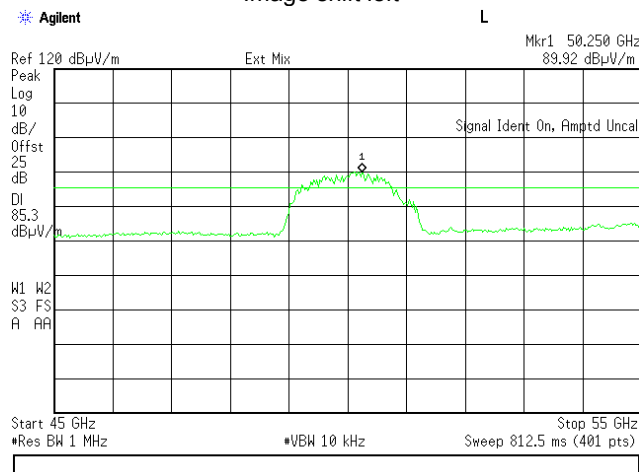


Image shift right





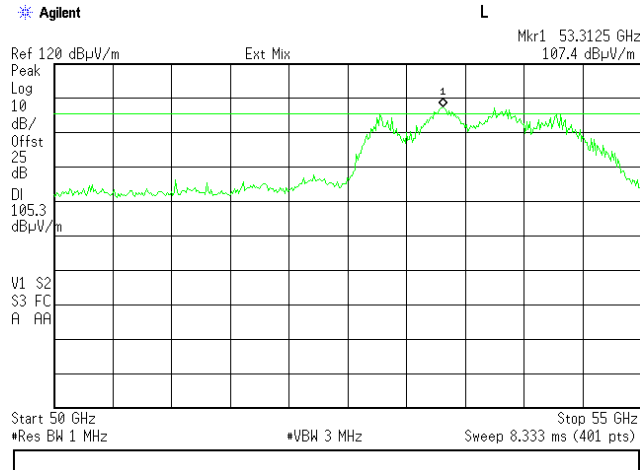
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.23 Spurious emission measurements in 50 – 55 GHz range

TEST SITE: OATS
TEST DISTANCE: 3 m
MODULATION: 16QAM
ANTENNA POLARIZATION: Vertical and Horizontal
High carrier frequency: 64800 MHz

DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz





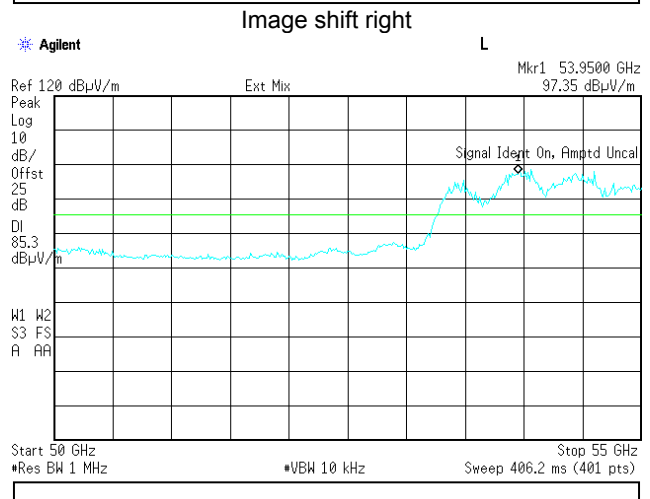
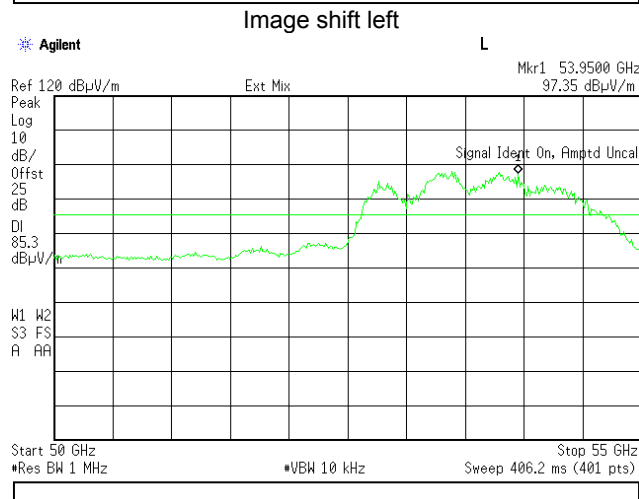
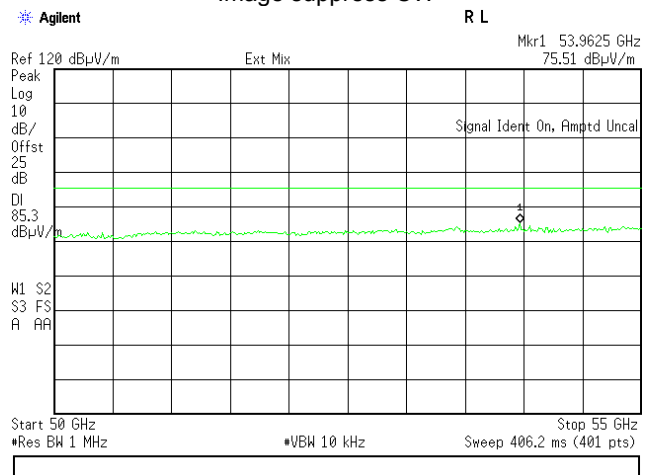
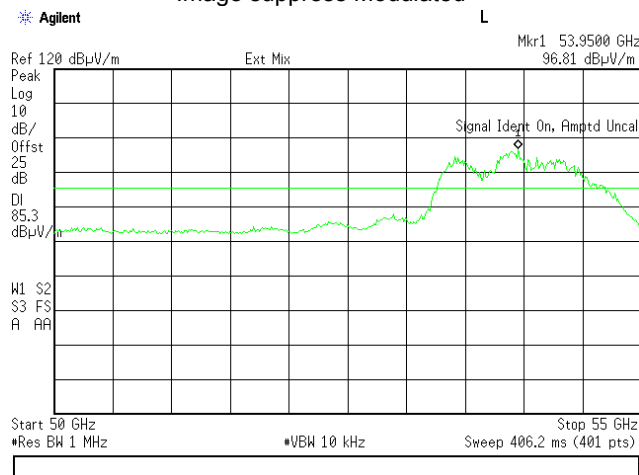
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.24 Spurious emission measurements in 50 – 55 GHz range

TEST SITE: OATS
 TEST DISTANCE: 3 m
 MODULATION: 16QAM
 ANTENNA POLARIZATION: Vertical and Horizontal
 High carrier frequency: 64800 MHz

DETECTOR: Peak
 Image suppress Modulated
 RBW = 1 MHz; VBW = 10 kHz
 Image suppress CW





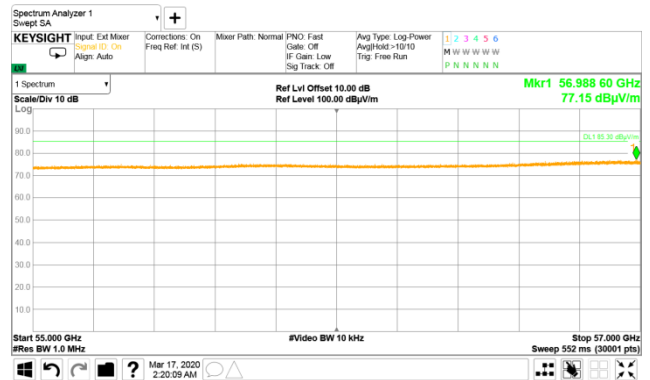
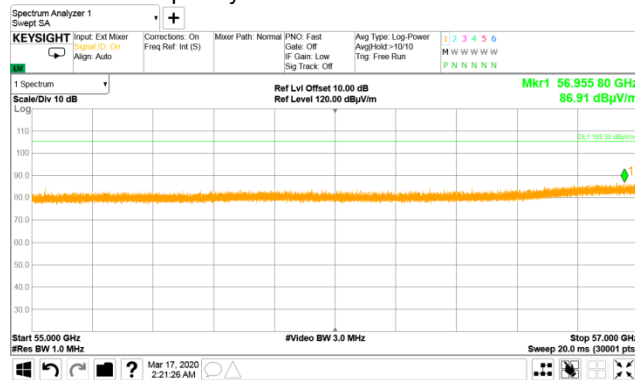
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz	
Test procedure: ANSI C63.10, Sections 9.9, 9.12	
Test mode: Compliance	Verdict: PASS
Date(s): 11-Mar-20	
Temperature: 25 °C	Relative Humidity: 43 %
Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:	

Plot 7.4.25 Spurious emission measurements in 55 – 57 GHz range

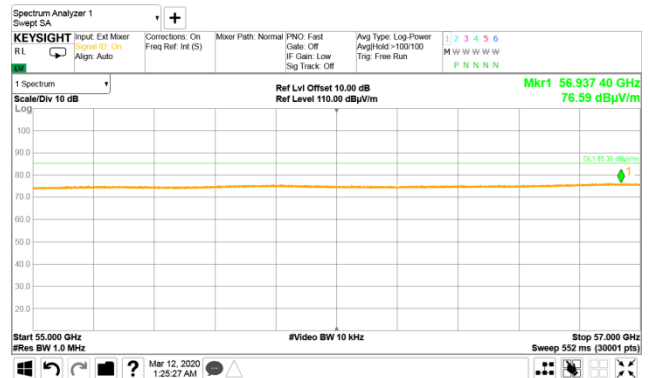
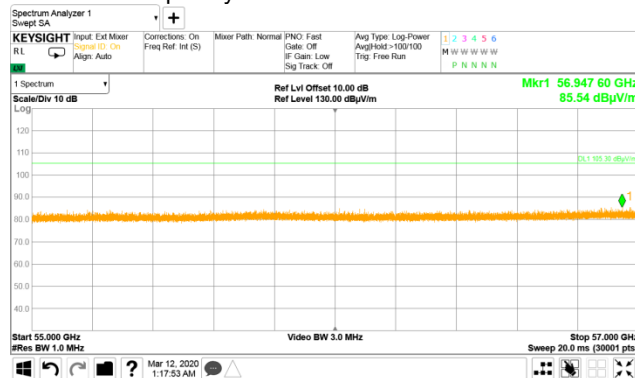
TEST SITE:
 TEST DISTANCE:
 MODULATION:
 ANTENNA POLARIZATION:
 DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
 Low carrier frequency:

OATS
 3 m
 BPSK
 Vertical and Horizontal
 DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
 58320 MHz



Mid carrier frequency:

60480 MHz





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

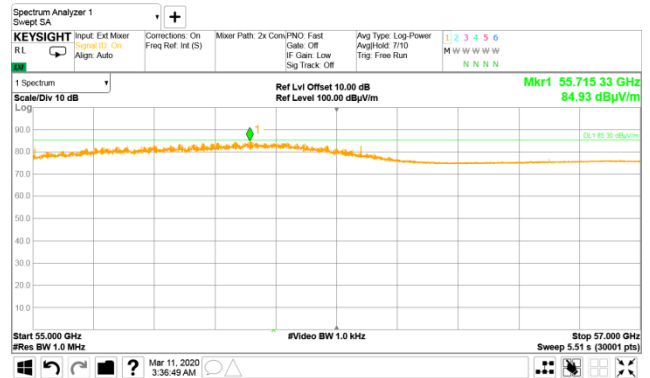
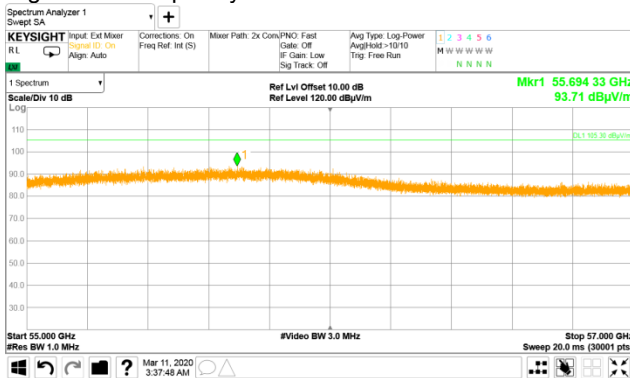
Plot 7.4.26 Spurious emission measurements in 55 – 57 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
3 m
BPSK
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

64800 MHz





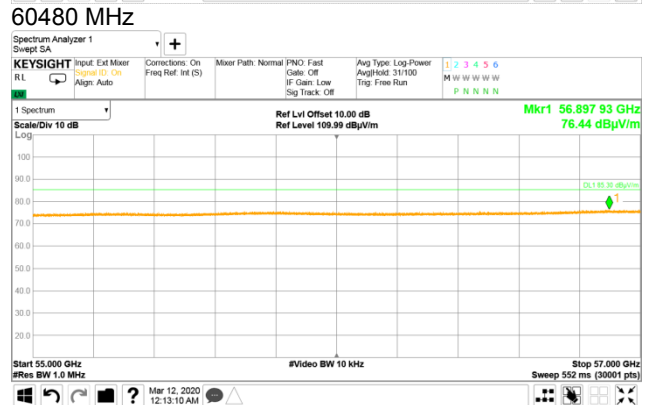
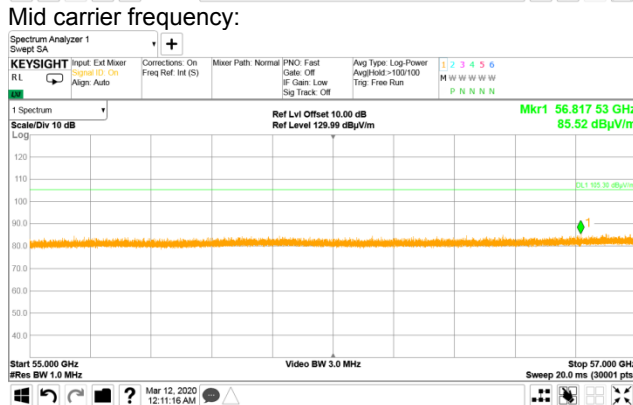
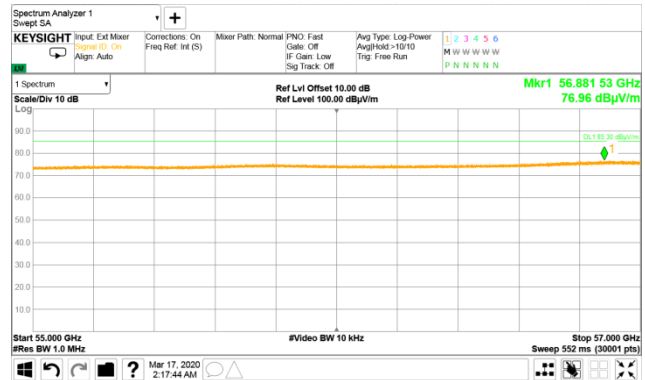
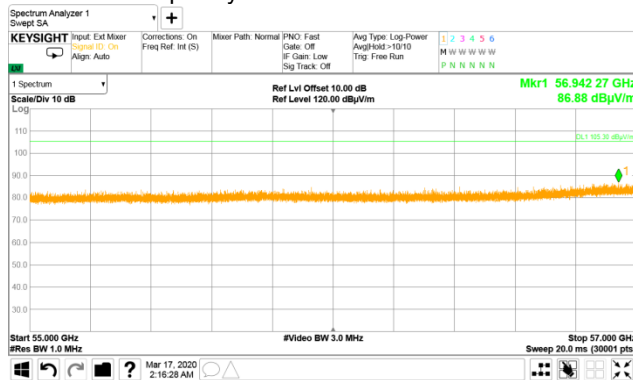
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz	
Test procedure: ANSI C63.10, Sections 9.9, 9.12	
Test mode: Compliance	Verdict: PASS
Date(s): 11-Mar-20	
Temperature: 25 °C	Relative Humidity: 43 %
	Air Pressure: 1015 hPa
	Power: 55 VDC
Remarks:	

Plot 7.4.27 Spurious emission measurements in 55 – 57 GHz range

TEST SITE:
 TEST DISTANCE:
 MODULATION:
 ANTENNA POLARIZATION:
 DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
 Low carrier frequency:

OATS
 3 m
 16QAM
 Vertical and Horizontal
 DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
 58320 MHz





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

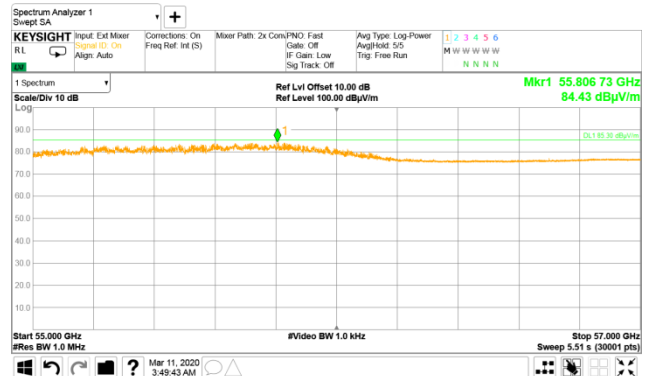
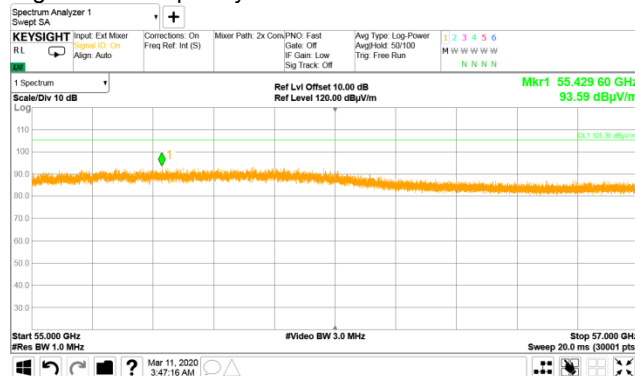
Plot 7.4.28 Spurious emission measurements in 55 – 57 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
3 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

64800 MHz





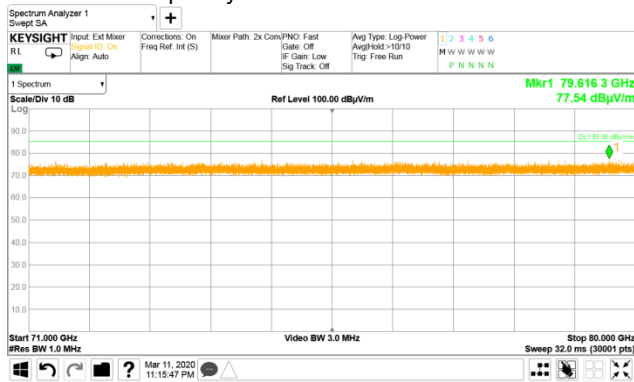
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.29 Spurious emission measurements in 71 – 80 GHz range

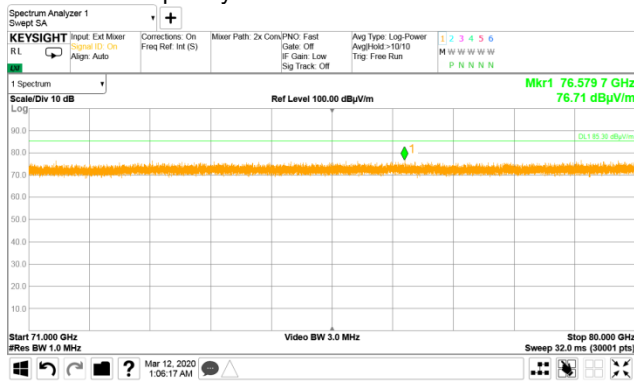
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak
Low carrier frequency:

OATS
3 m
BPSK
Vertical and Horizontal
RBW = 1 MHz; VBW = 3 MHz
58320 MHz



Mid carrier frequency:

60480 MHz





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

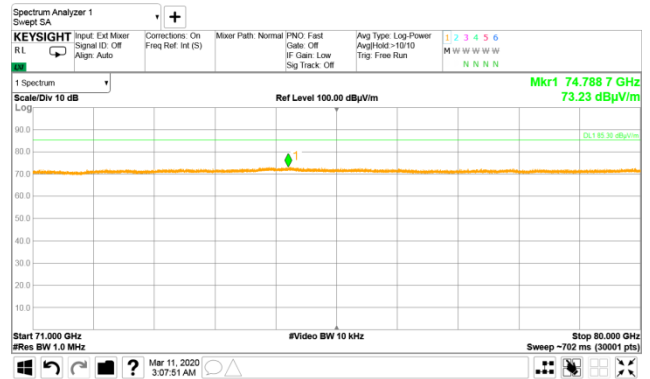
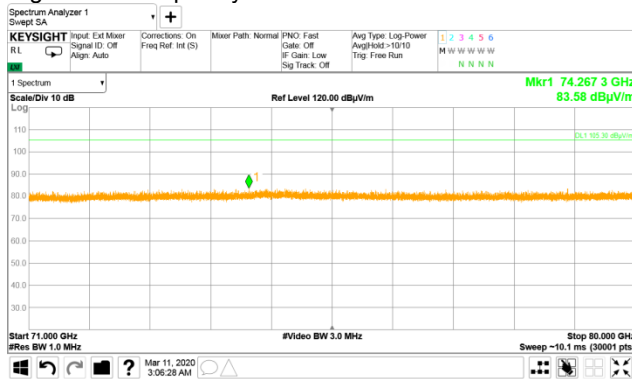
Plot 7.4.30 Spurious emission measurements in 71 – 80 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:

OATS
3 m
BPSK
Vertical and Horizontal

DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
High carrier frequency:

DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
64800 MHz





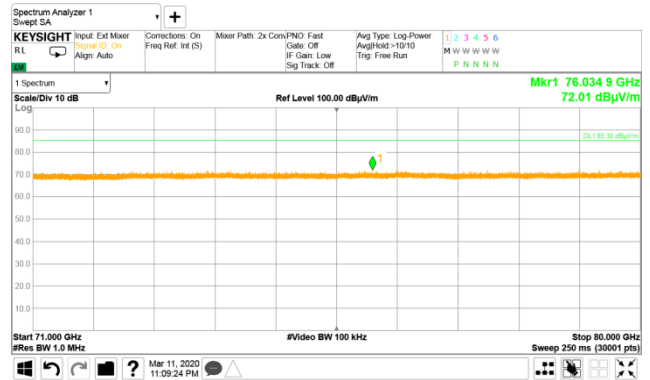
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.31 Spurious emission measurements in 71 – 80 GHz range

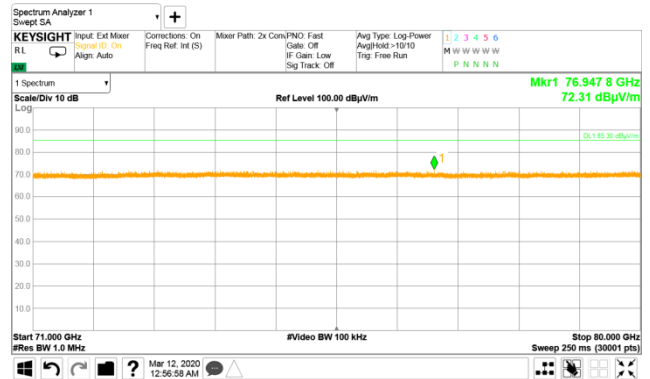
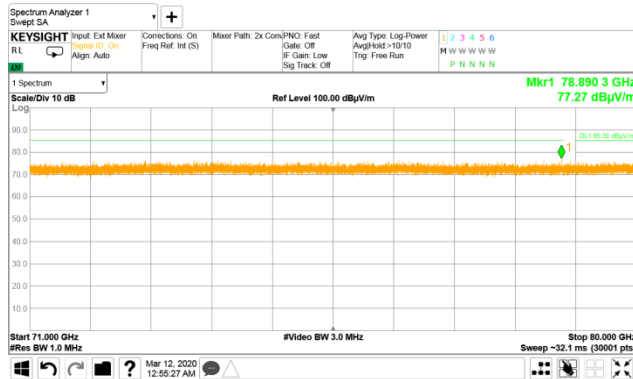
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

OATS
3 m
16QAM
Vertical
DETECTOR: Peak RBW = 1 MHz; VBW = 100 kHz
58320 MHz



Mid carrier frequency:

60480 MHz





HERMON LABORATORIES

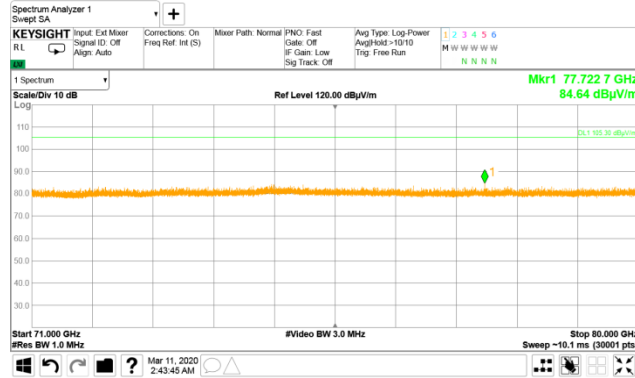
Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.32 Spurious emission measurements in 71 – 80 GHz range

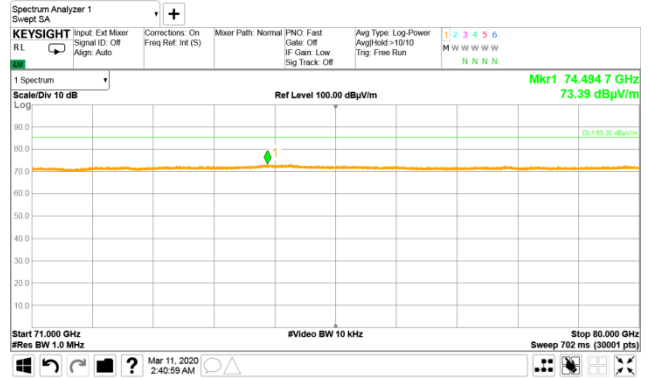
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
3 m
16QAM
Vertical
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:



64800 MHz





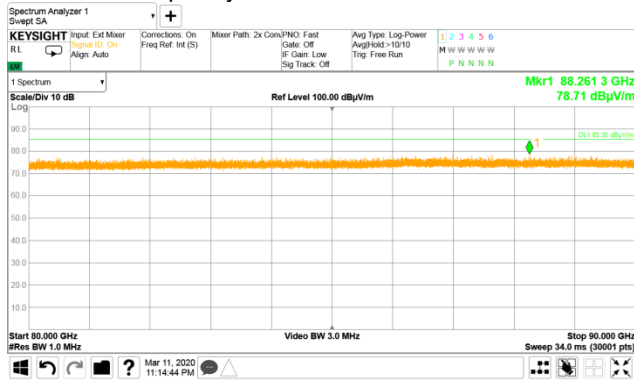
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.33 Spurious emission measurements in 80 – 90 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak
Low carrier frequency:

OATS
3 m
BPSK
Vertical and Horizontal
RBW = 1 MHz; VBW = 3 MHz
58320 MHz



Mid carrier frequency:

60480 MHz





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

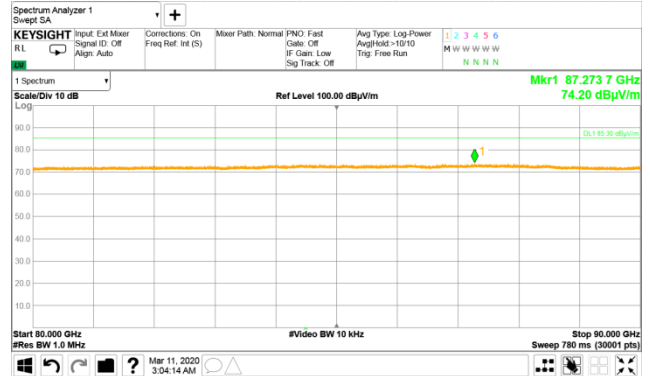
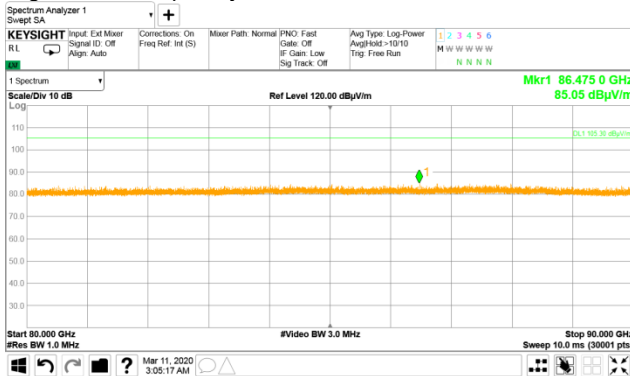
Plot 7.4.34 Spurious emission measurements in 80 – 90 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:

OATS
3 m
BPSK
Vertical and Horizontal

DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
High carrier frequency:

DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
64800 MHz





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.35 Spurious emission measurements in 80 – 90 GHz range

TEST SITE:	OATS
TEST DISTANCE:	3 m
MODULATION:	16QAM
ANTENNA POLARIZATION:	Vertical and Horizontal
DETECTOR: Peak	RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:	58320 MHz



Mid carrier frequency:	60480 MHz
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HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz	
Test procedure: ANSI C63.10, Sections 9.9, 9.12	
Test mode: Compliance	Verdict: PASS
Date(s): 11-Mar-20	
Temperature: 25 °C	Relative Humidity: 43 %
Remarks:	

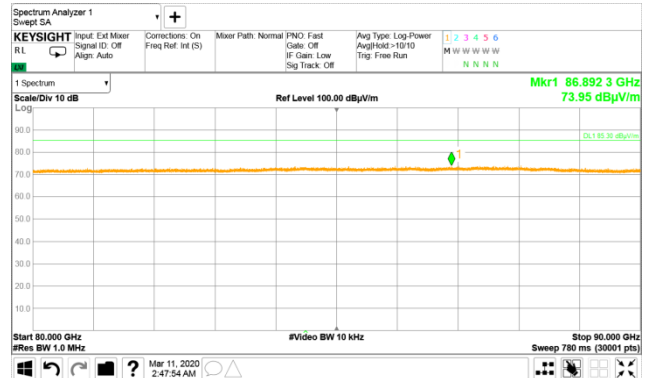
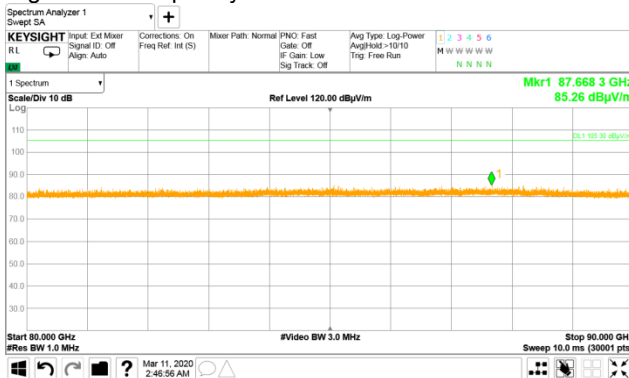
Plot 7.4.36 Spurious emission measurements in 80 – 90 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak

OATS
3 m
16QAM
Vertical and Horizontal
RBW = 1 MHz; VBW = 3 MHz

DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
High carrier frequency:

DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
64800 MHz





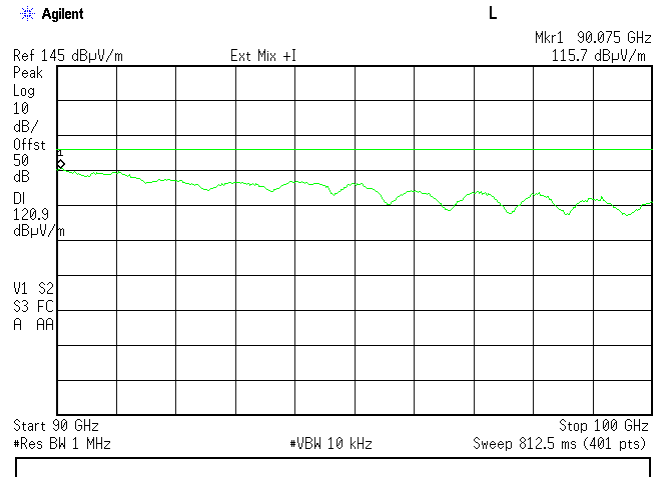
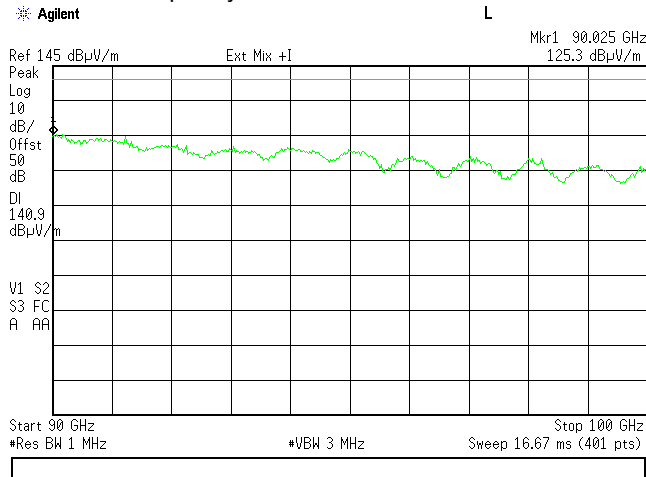
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

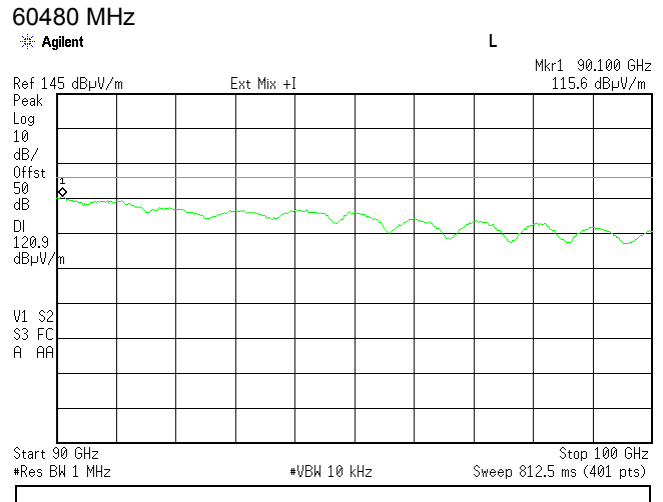
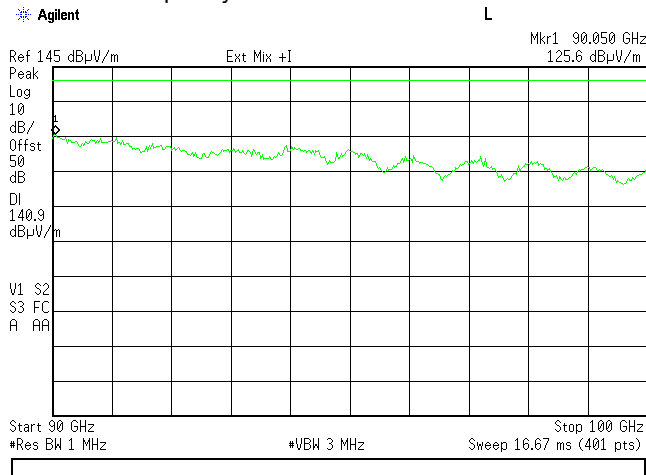
Plot 7.4.37 Spurious emission measurements in 90 – 100 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

OATS
0.05 m
BPSK
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



Mid carrier frequency:





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

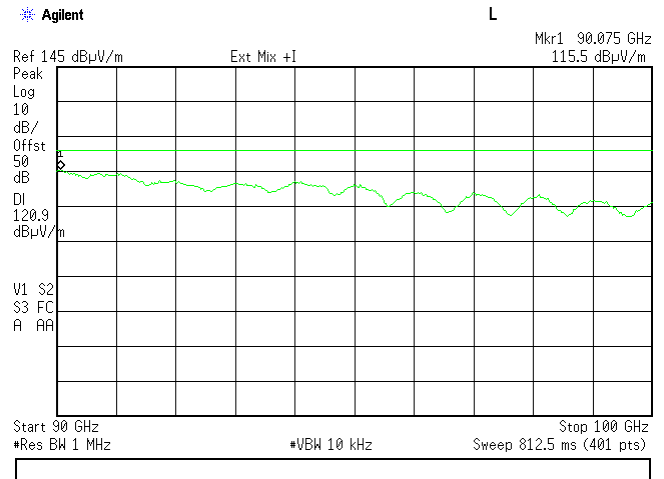
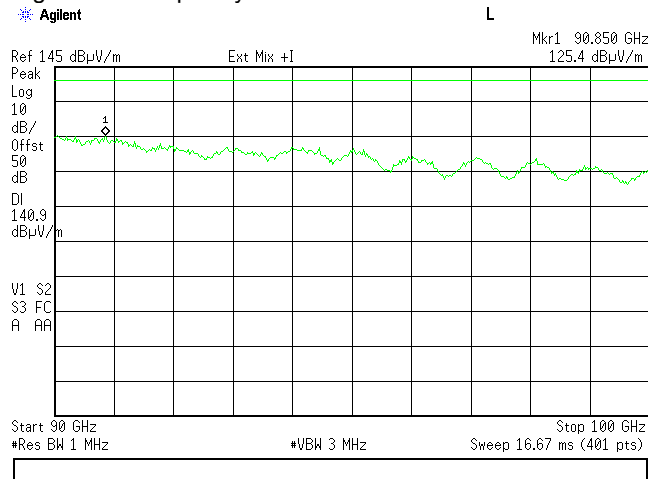
Plot 7.4.38 Spurious emission measurements in 90 – 100 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
0.05 m
BPSK
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

64800 MHz





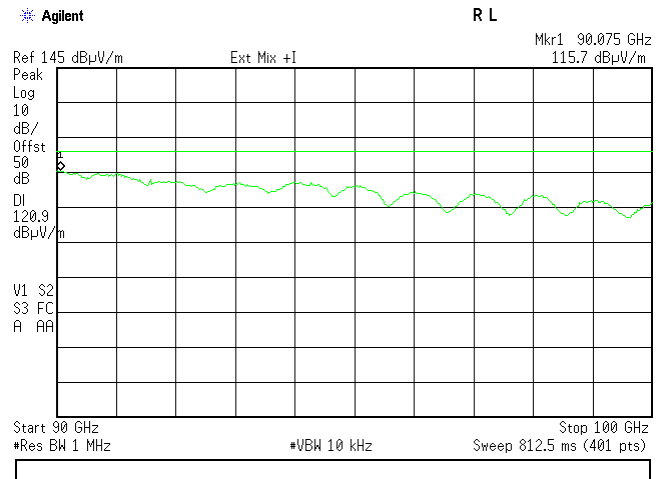
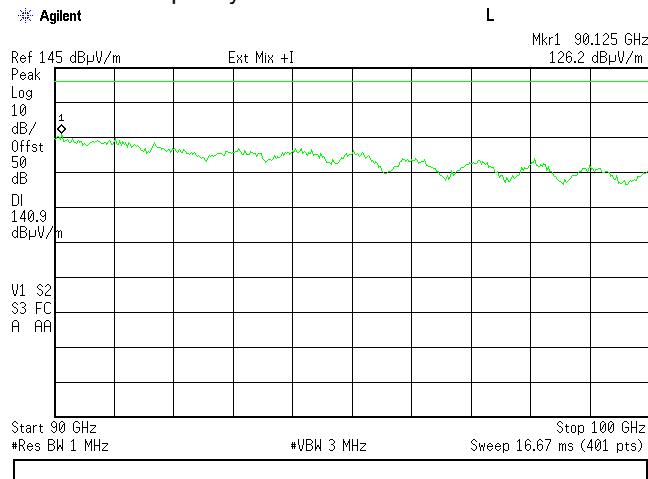
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

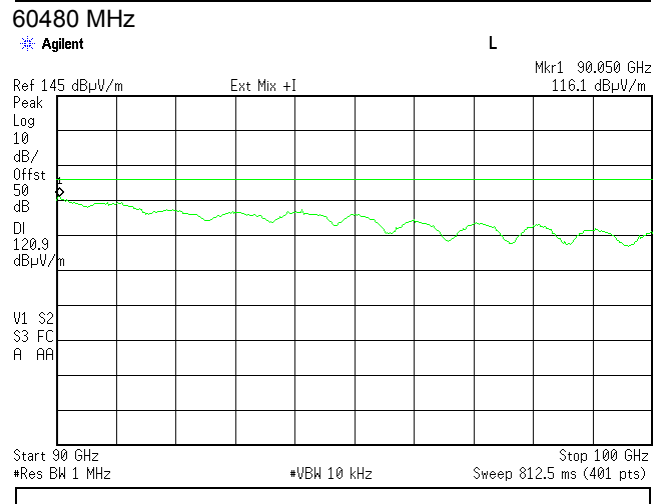
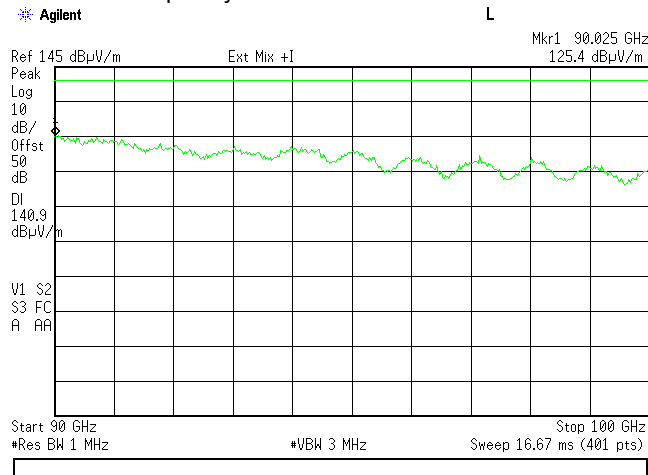
Plot 7.4.39 Spurious emission measurements in 90 – 100 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

OATS
0.05 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



Mid carrier frequency:





Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

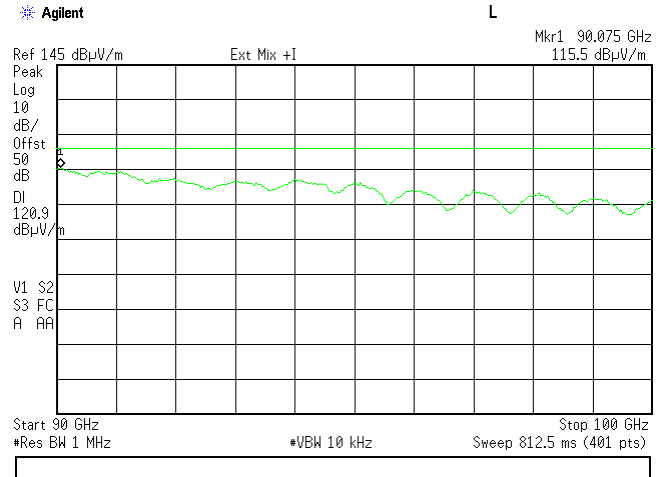
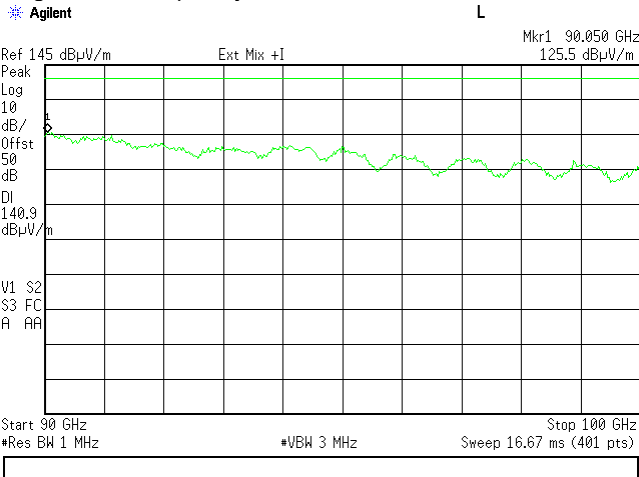
Plot 7.4.40 Spurious emission measurements in 90 – 100 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
0.05 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

64800 MHz





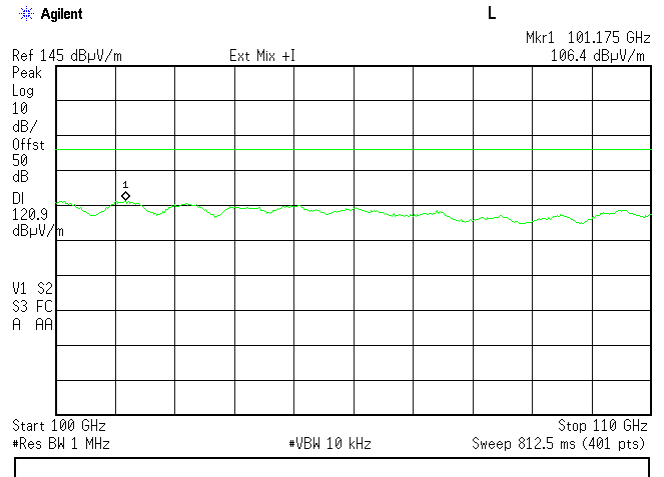
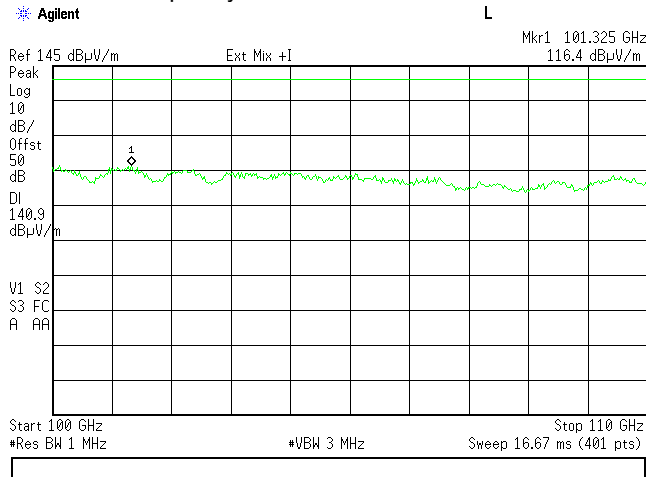
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

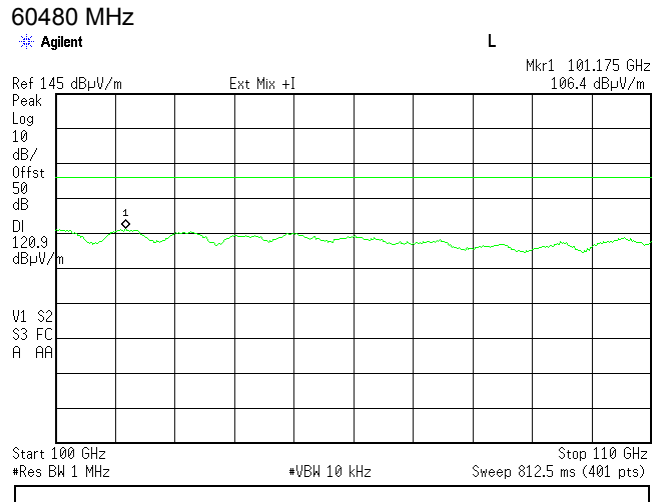
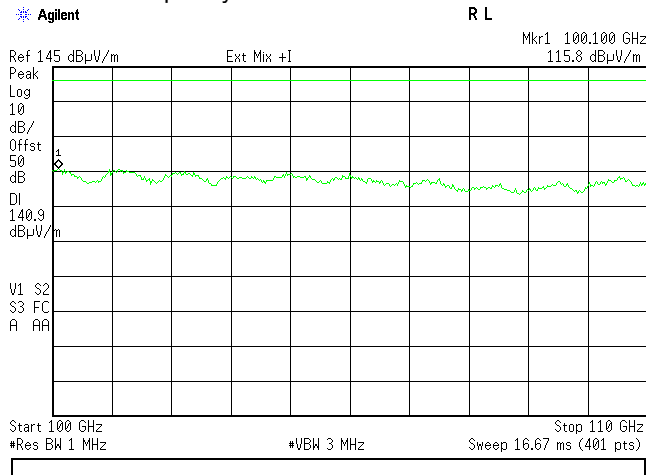
Plot 7.4.41 Spurious emission measurements in 100 – 110 GHz range

TEST SITE:
 TEST DISTANCE:
 MODULATION:
 ANTENNA POLARIZATION:
 DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
 Low carrier frequency:

OATS
 0.05 m
 BPSK
 Vertical and Horizontal
 DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
 58320 MHz



Mid carrier frequency:





HERMON LABORATORIES

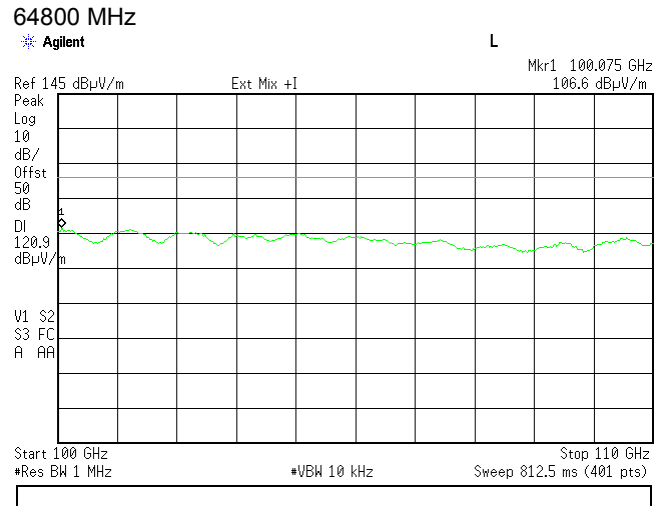
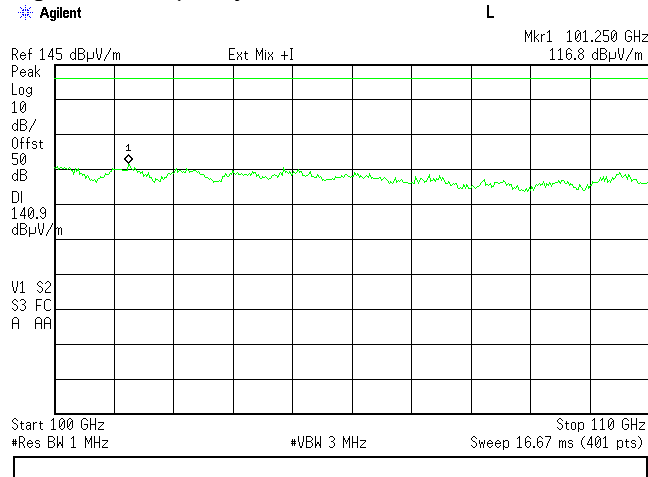
Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.42 Spurious emission measurements in 100 – 110 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
0.05 m
BPSK
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.43 Spurious emission measurements in 100 – 110 GHz range

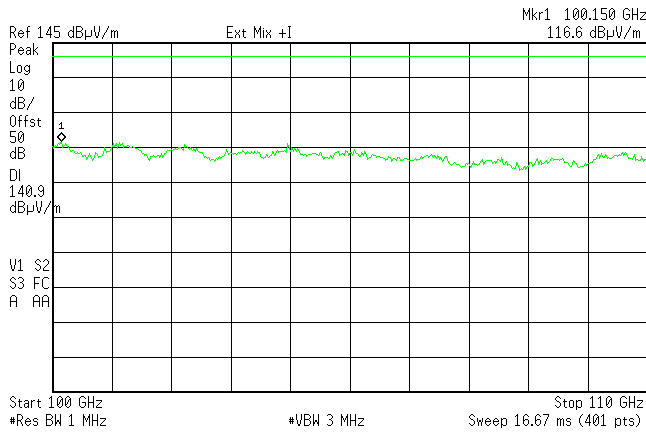
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
0.05 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

Low carrier frequency:

Agilent

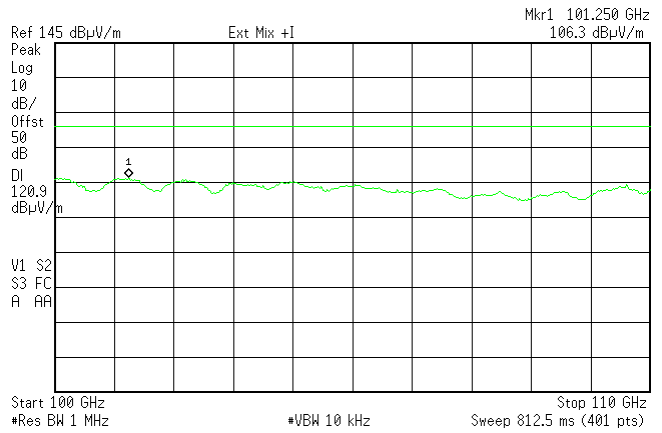
L



58320 MHz

Agilent

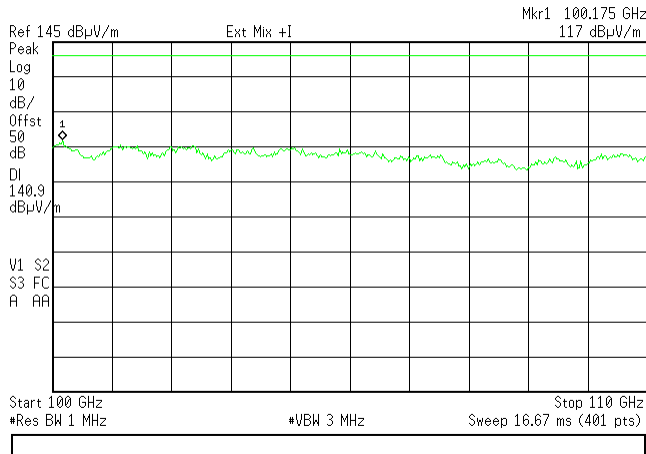
L



Mid carrier frequency:

Agilent

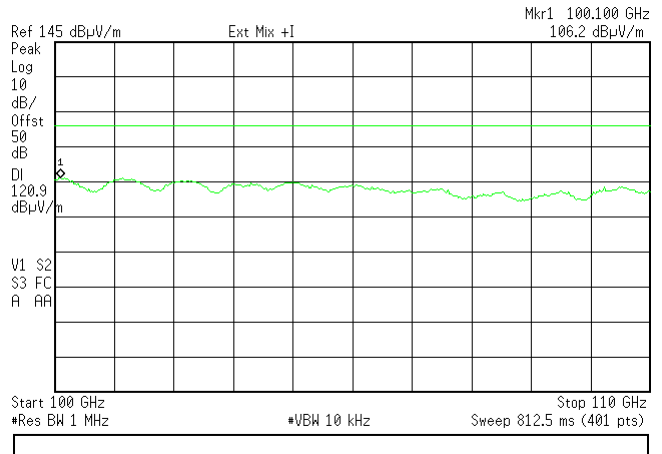
R L



60480 MHz

Agilent

L





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

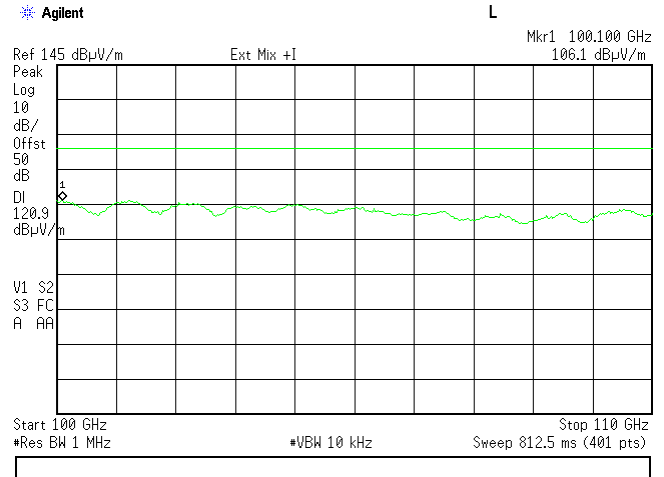
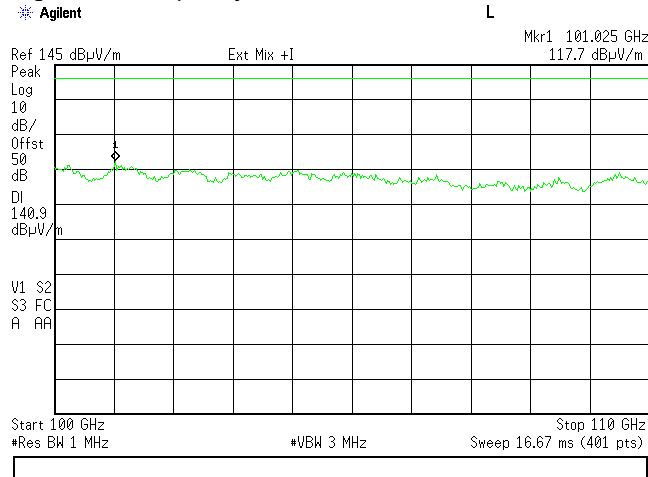
Plot 7.4.44 Spurious emission measurements in 100 – 110 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
0.05 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

64800 MHz





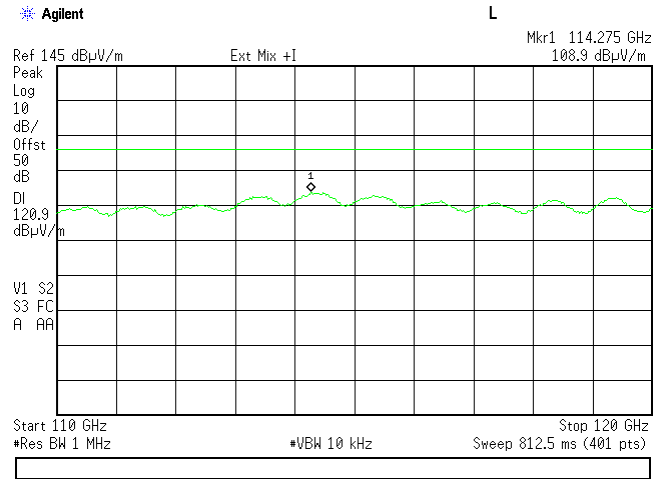
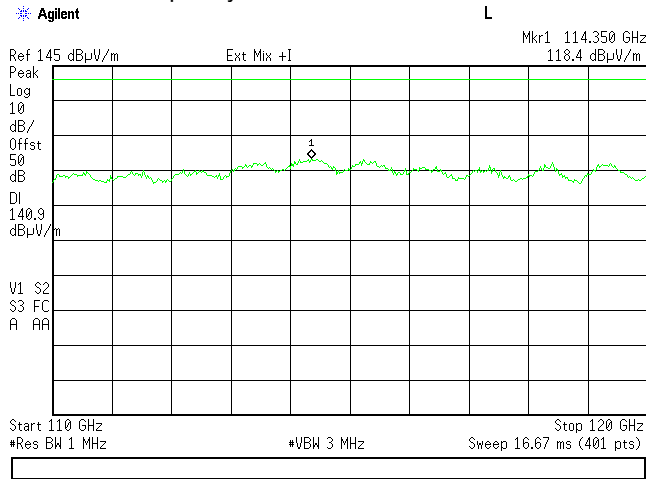
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

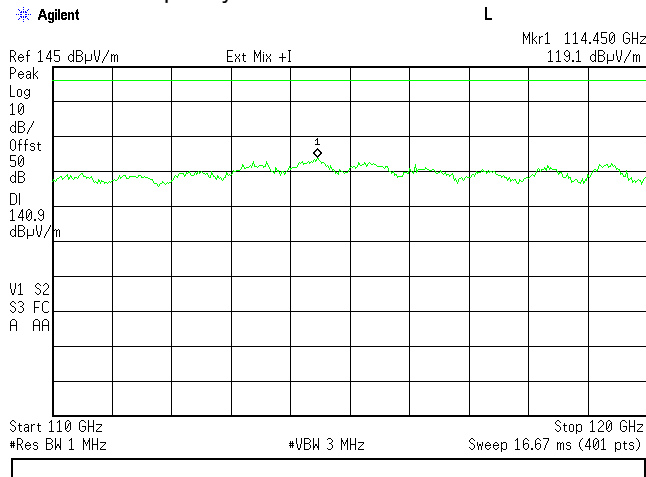
Plot 7.4.45 Spurious emission measurements in 110 – 120 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

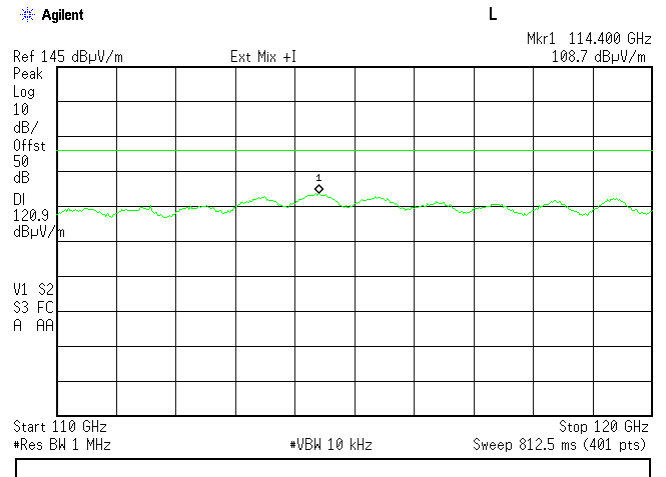
OATS
0.05 m
BPSK
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



Mid carrier frequency:



60480 MHz





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

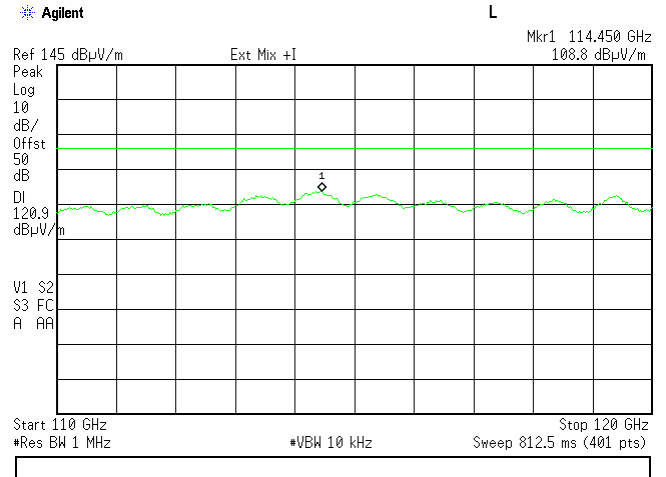
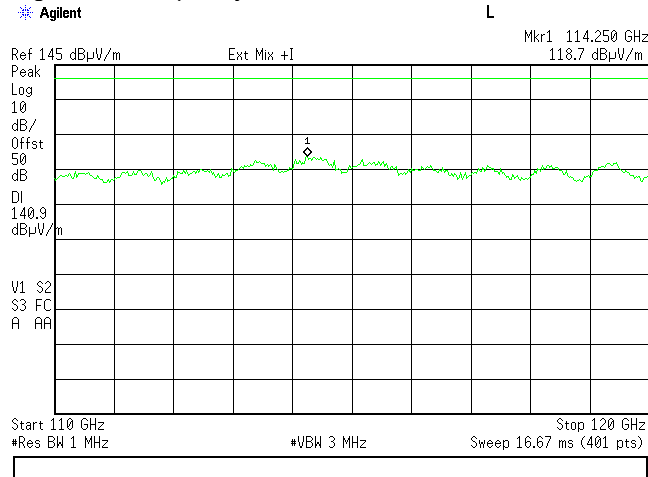
Plot 7.4.46 Spurious emission measurements in 110 – 120 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
0.05 m
BPSK
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

64800 MHz





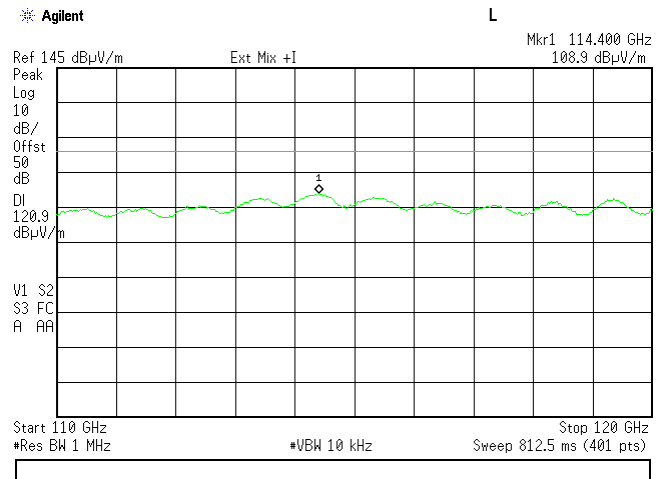
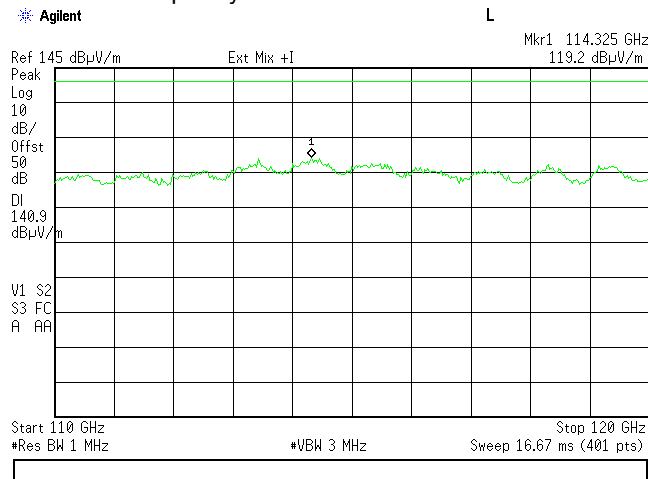
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

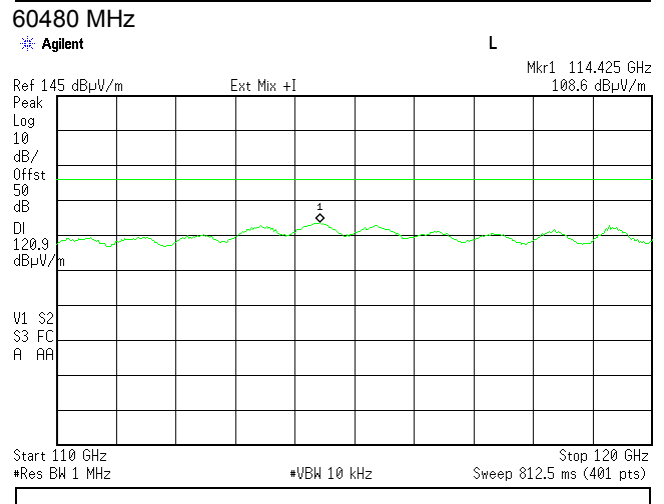
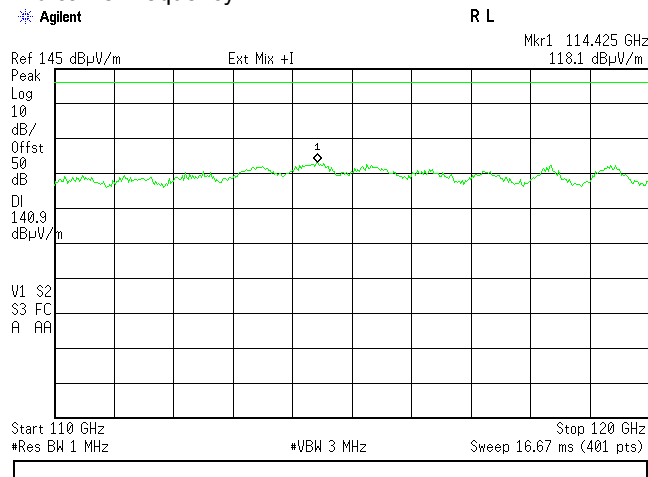
Plot 7.4.47 Spurious emission measurements in 110 – 120 GHz range

TEST SITE:
 TEST DISTANCE:
 MODULATION:
 ANTENNA POLARIZATION:
 DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
 Low carrier frequency:

OATS
 0.05 m
 16QAM
 Vertical and Horizontal
 DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
 58320 MHz



Mid carrier frequency:





HERMON LABORATORIES

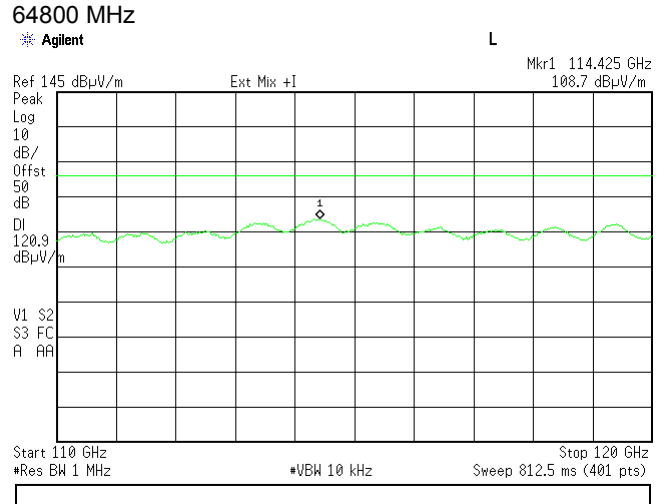
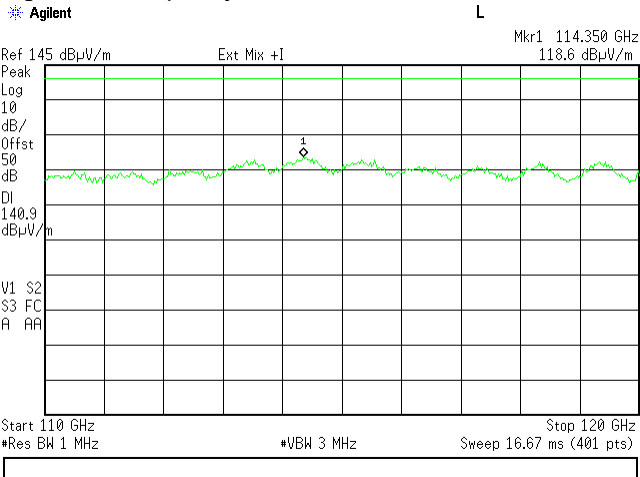
Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.48 Spurious emission measurements in 110 – 120 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

OATS
0.05 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz

High carrier frequency:





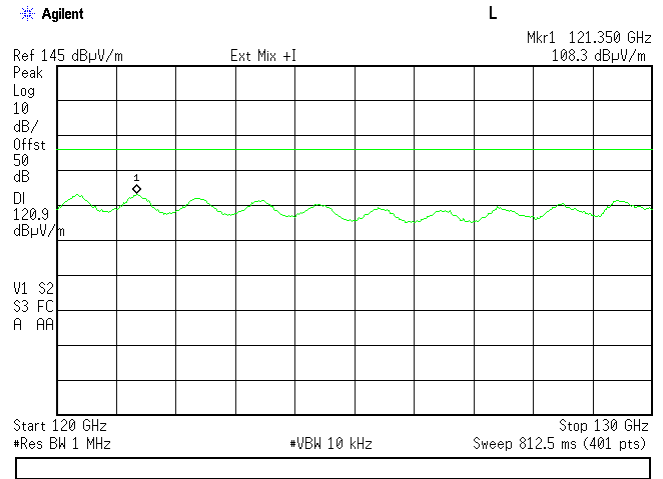
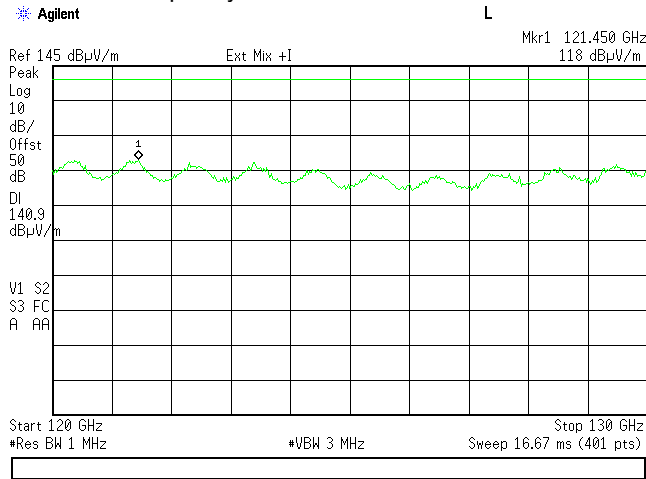
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

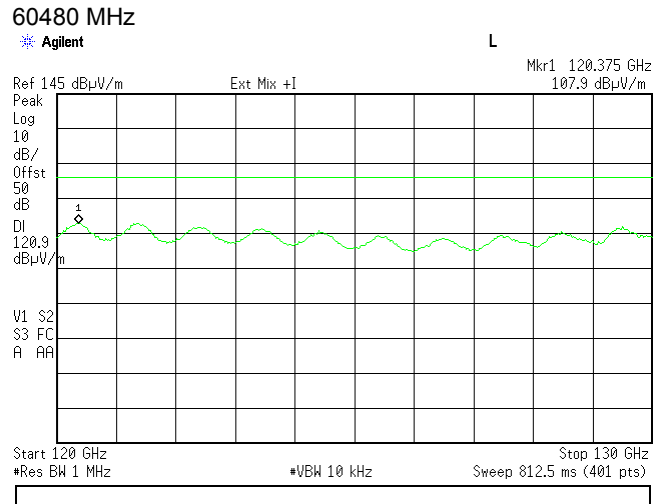
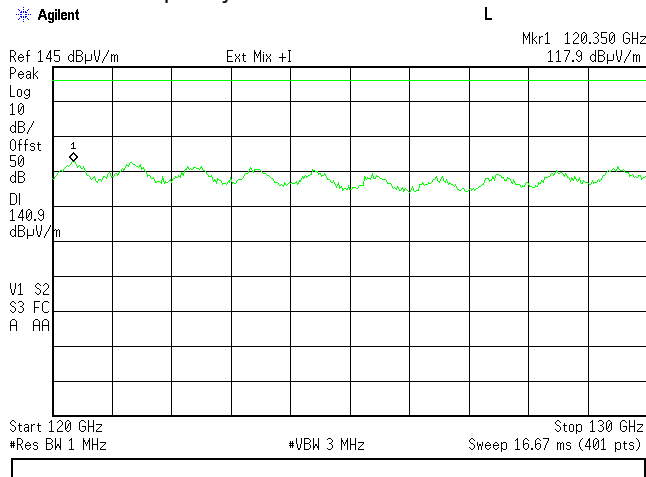
Plot 7.4.49 Spurious emission measurements in 120 – 130 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

OATS
0.05 m
BPSK
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



Mid carrier frequency:





HERMON LABORATORIES

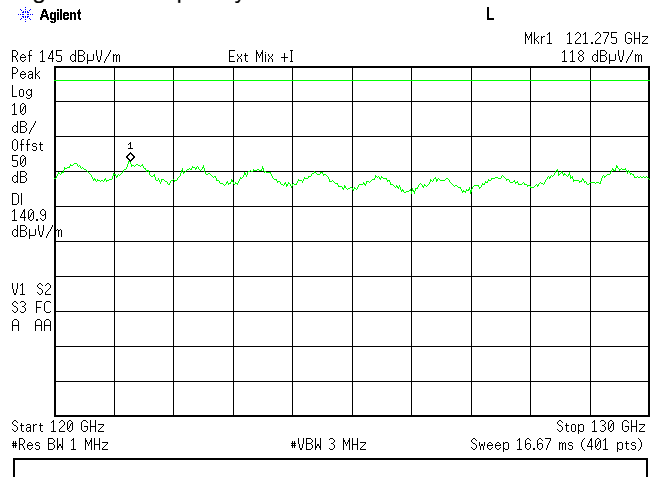
Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.50 Spurious emission measurements in 120 – 130 GHz range

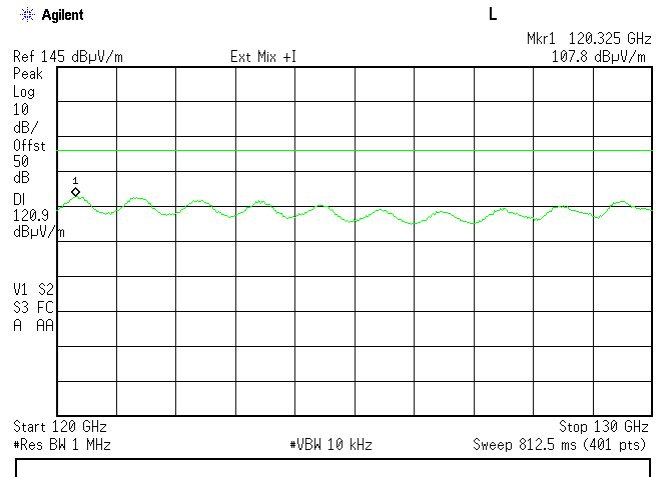
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
0.05 m
BPSK
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:



64800 MHz





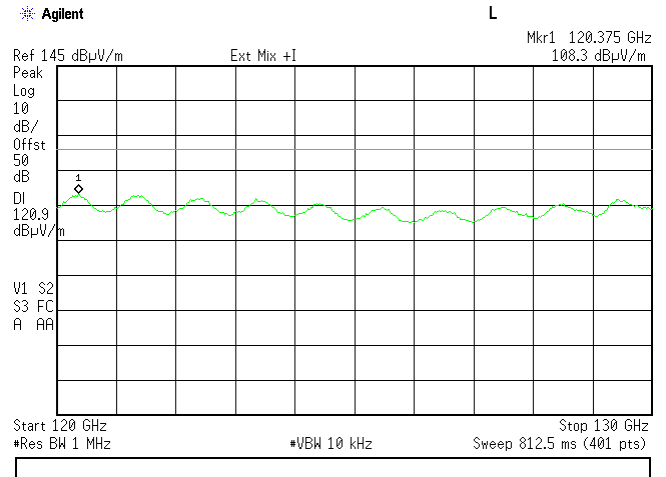
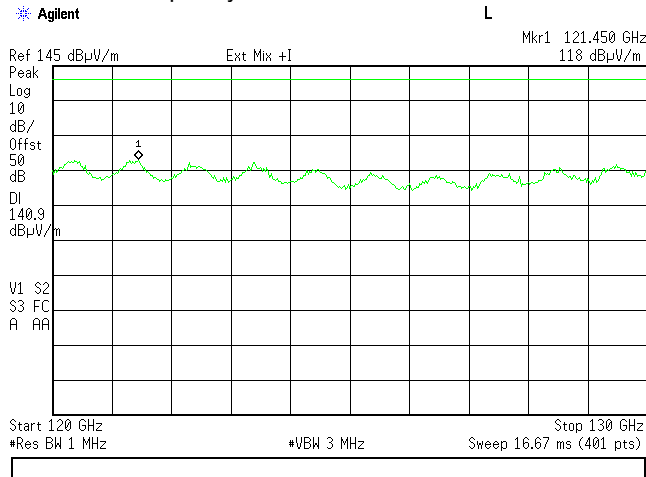
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.51 Spurious emission measurements in 120 – 130 GHz range

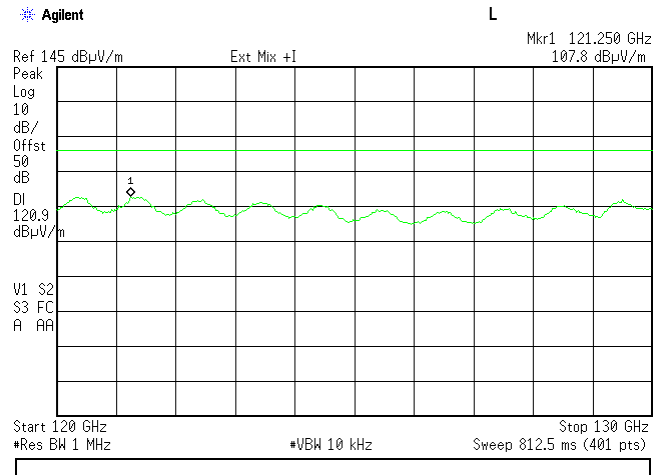
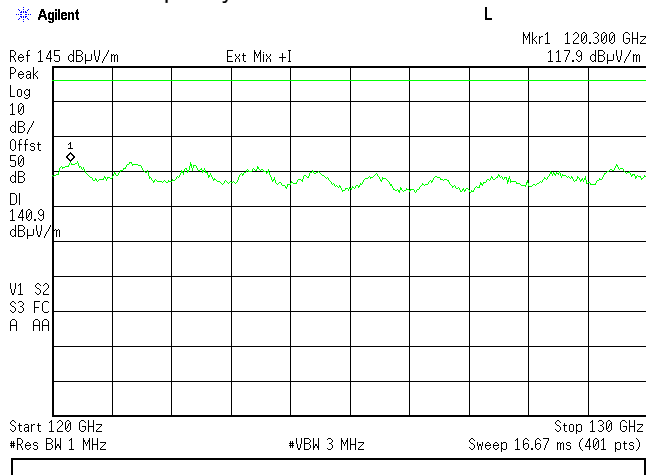
TEST SITE:
 TEST DISTANCE:
 MODULATION:
 ANTENNA POLARIZATION:
 DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
 Low carrier frequency:

OATS
 0.05 m
 16QAM
 Vertical and Horizontal
 DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
 58320 MHz



Mid carrier frequency:

60480 MHz





HERMON LABORATORIES

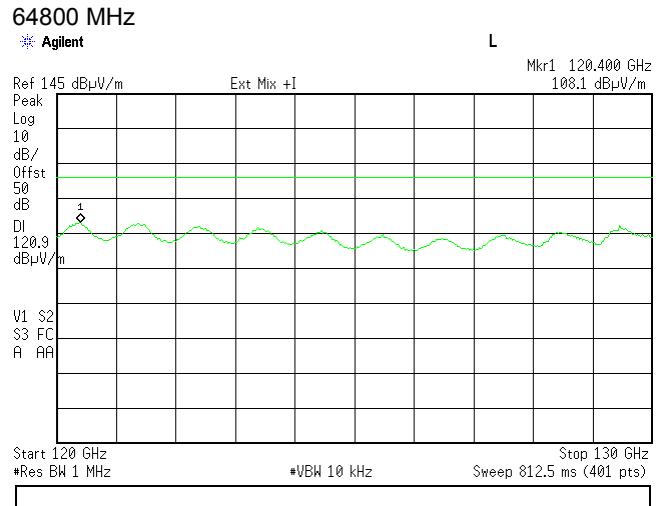
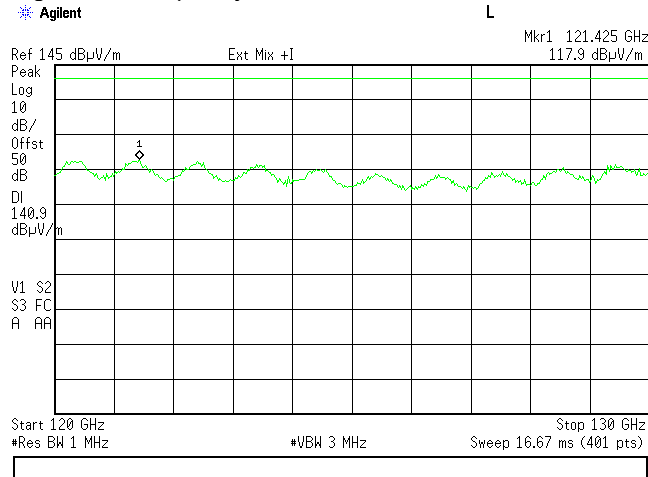
Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.52 Spurious emission measurements in 120 – 130 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
0.05 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:





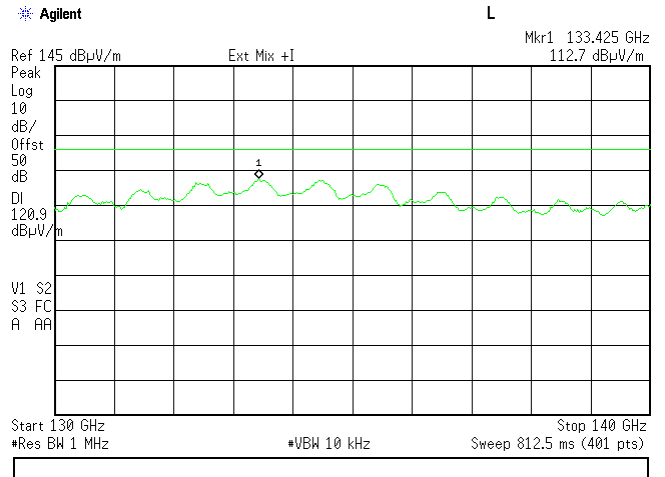
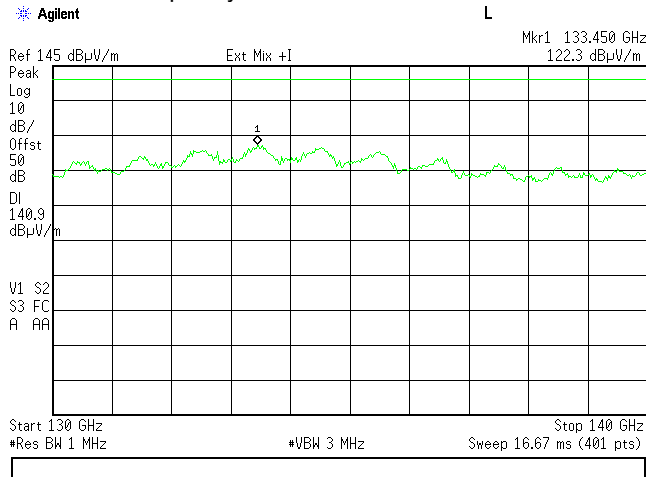
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.53 Spurious emission measurements in 130 – 140 GHz range

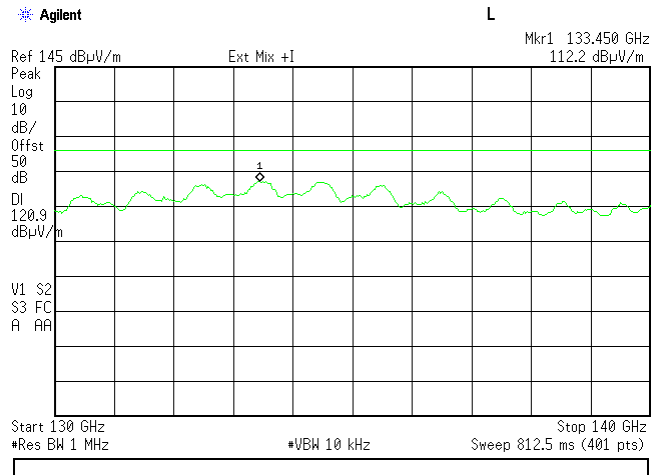
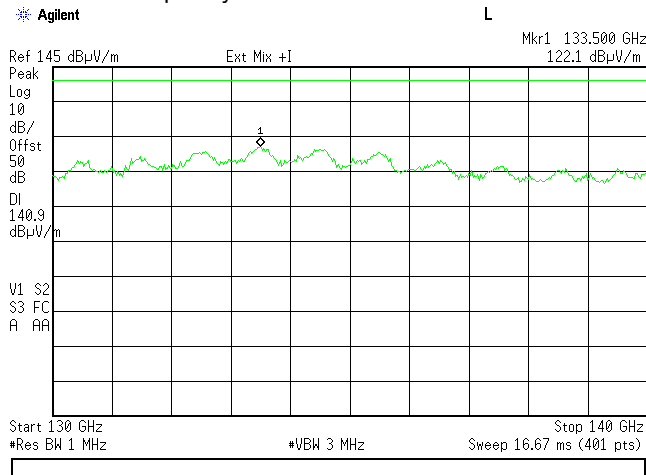
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

OATS
0.05 m
BPSK
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



Mid carrier frequency:

60480 MHz





HERMON LABORATORIES

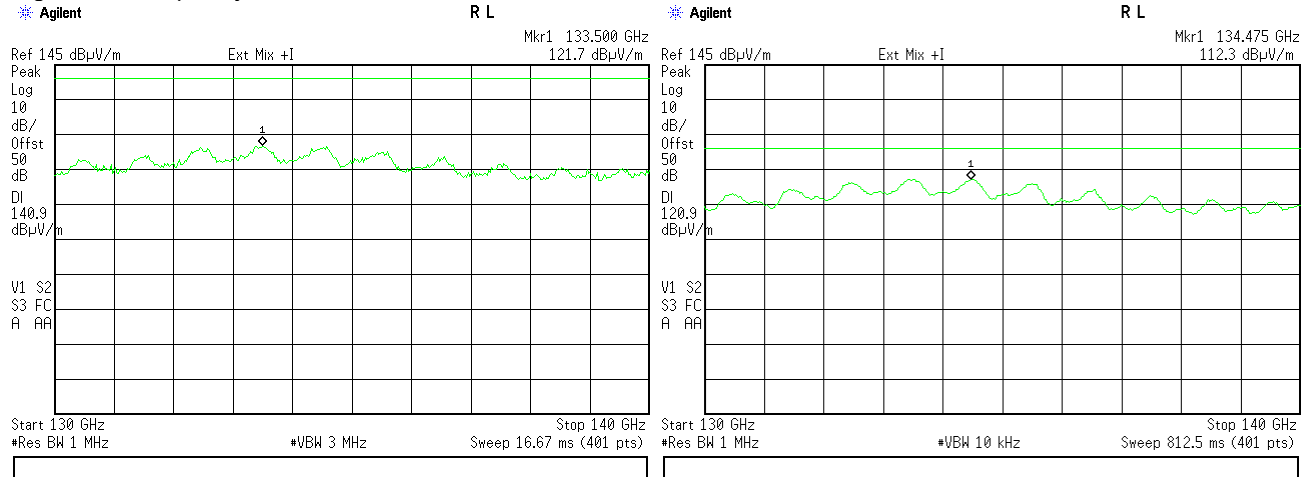
Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.54 Spurious emission measurements in 130 – 140 GHz range

TEST SITE:	OATS
TEST DISTANCE:	0.05 m
MODULATION:	BPSK
ANTENNA POLARIZATION:	Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz	DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

64800 MHz





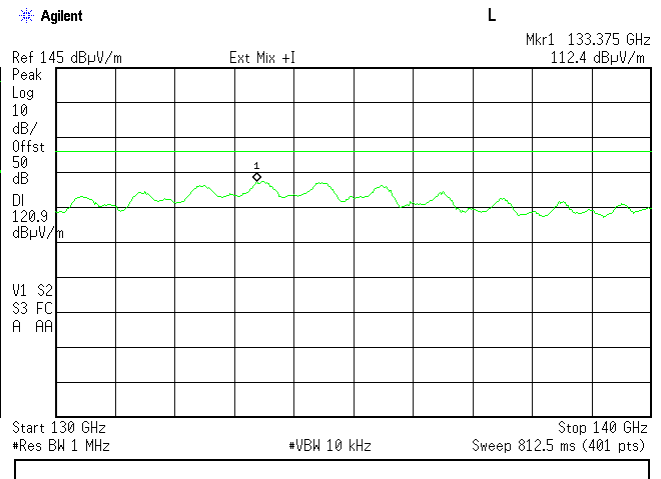
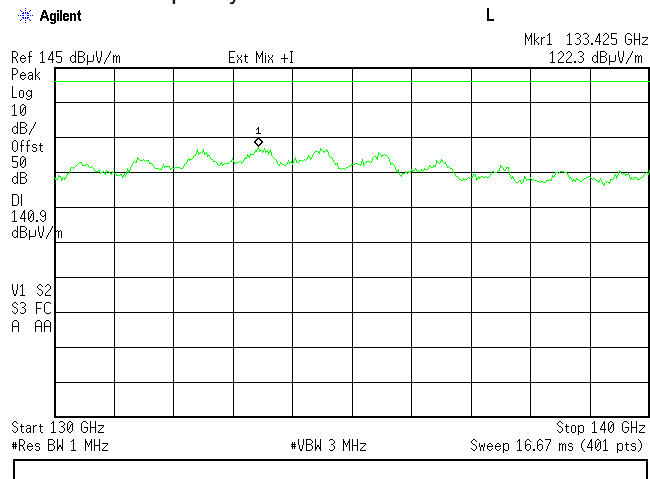
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.55 Spurious emission measurements in 130 – 140 GHz range

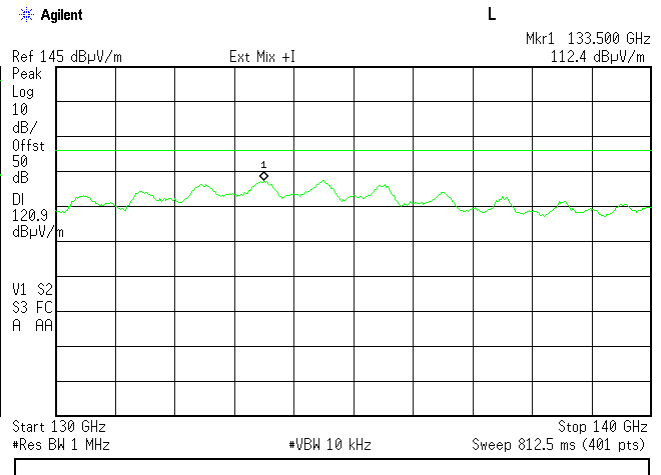
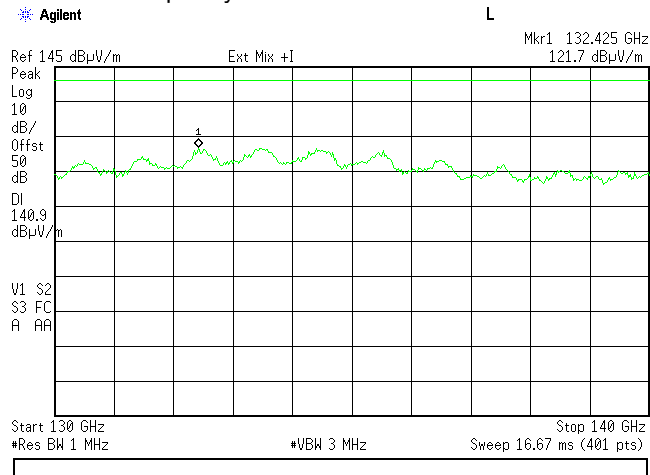
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

OATS
0.05 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



Mid carrier frequency:

60480 MHz





HERMON LABORATORIES

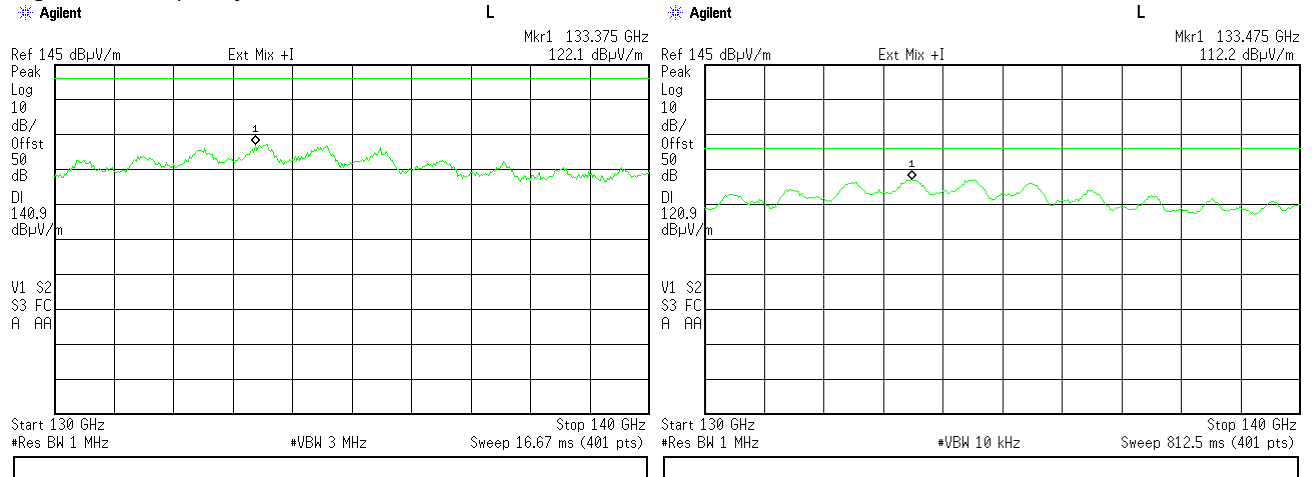
Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.56 Spurious emission measurements in 130 – 140 GHz range

TEST SITE:	OATS
TEST DISTANCE:	0.05 m
MODULATION:	16QAM
ANTENNA POLARIZATION:	Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz	DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

64800 MHz





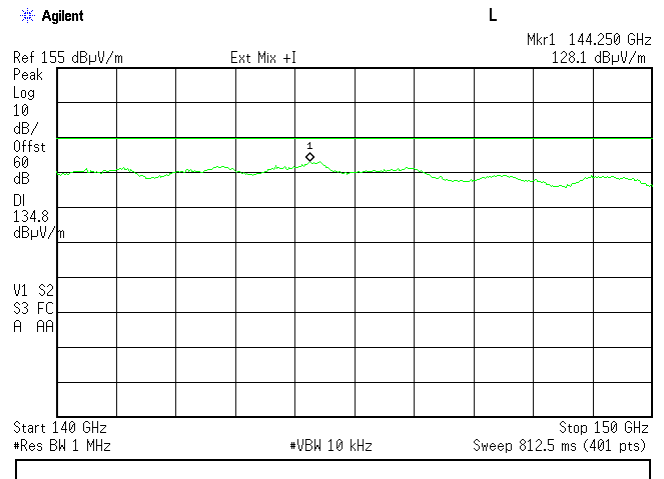
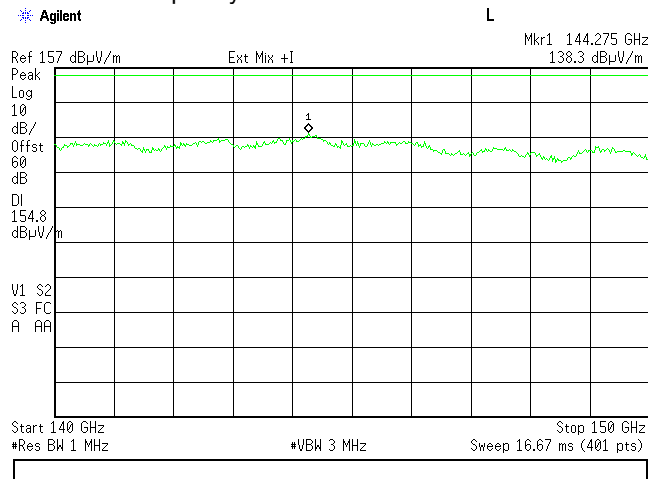
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

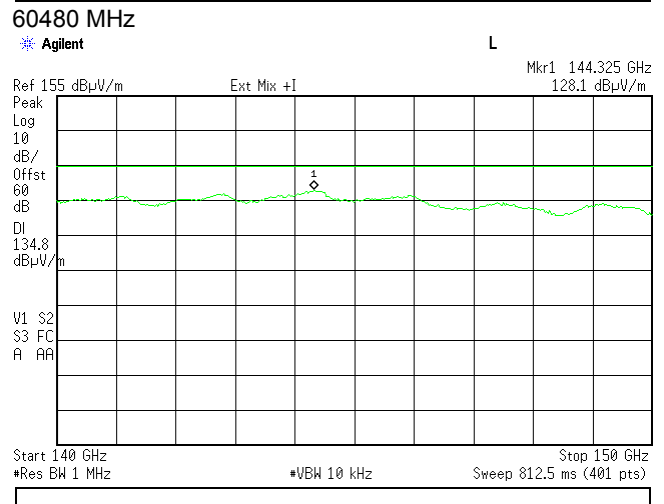
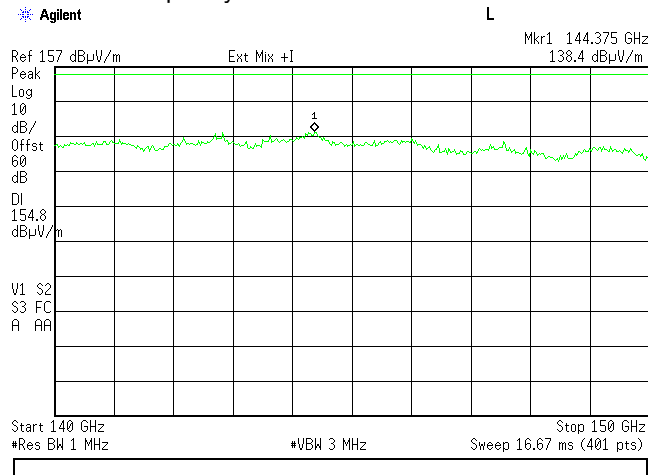
Plot 7.4.57 Spurious emission measurements in 140 – 150 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

OATS
0.01 m
BPSK
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



Mid carrier frequency:





HERMON LABORATORIES

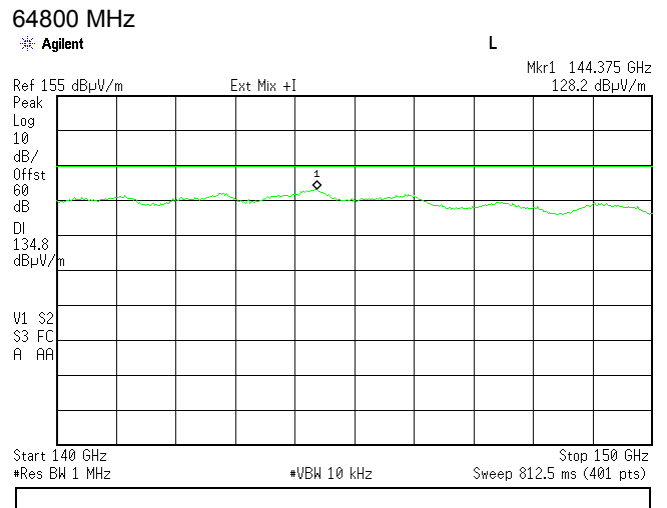
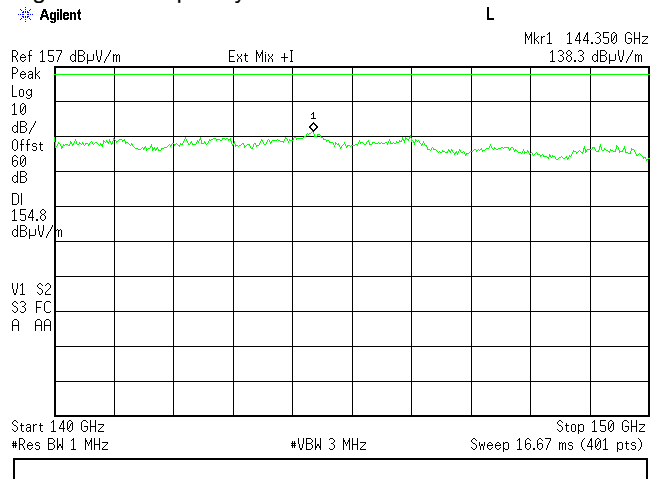
Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.58 Spurious emission measurements in 140 – 150 GHz range

TEST SITE:
 TEST DISTANCE:
 MODULATION:
 ANTENNA POLARIZATION:
 DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
 0.01 m
 BPSK
 Vertical and Horizontal
 DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:





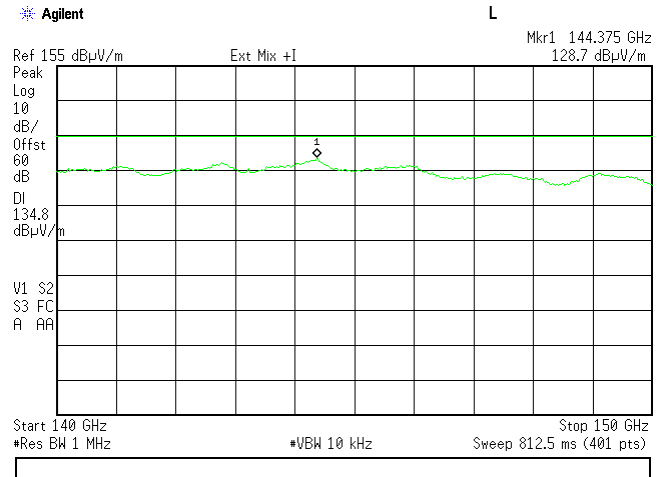
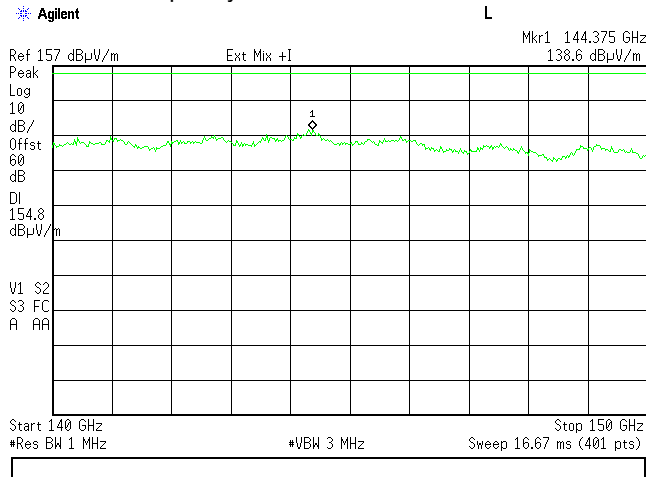
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.59 Spurious emission measurements in 140 – 150 GHz range

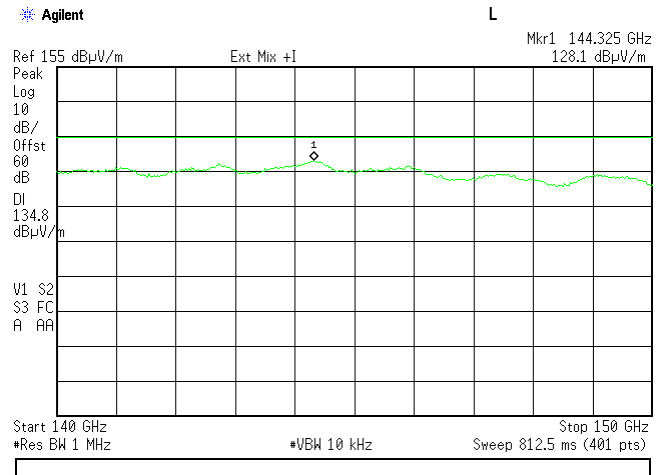
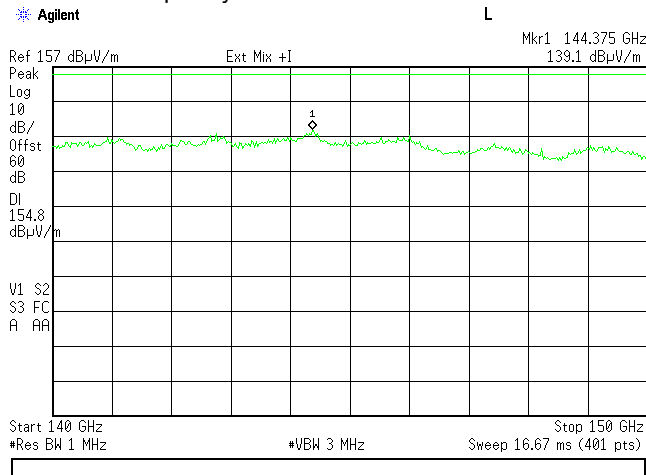
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

OATS
0.01 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



Mid carrier frequency:

60480 MHz





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

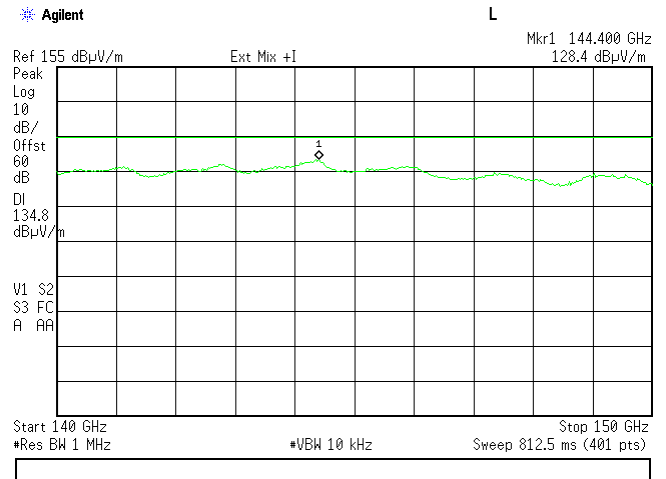
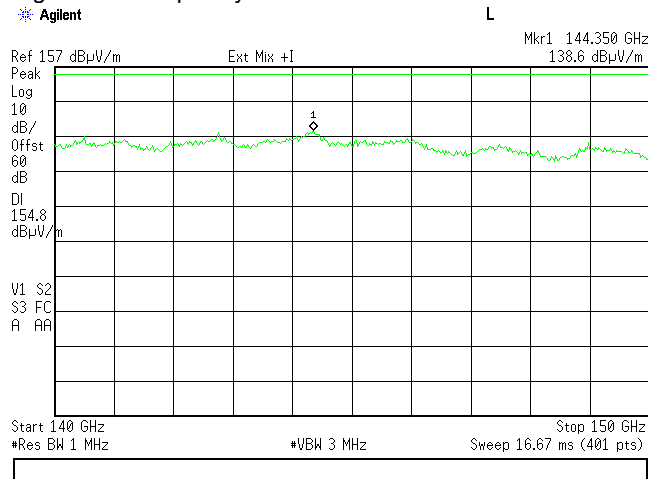
Plot 7.4.60 Spurious emission measurements in 140 – 150 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
0.01 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

64800 MHz





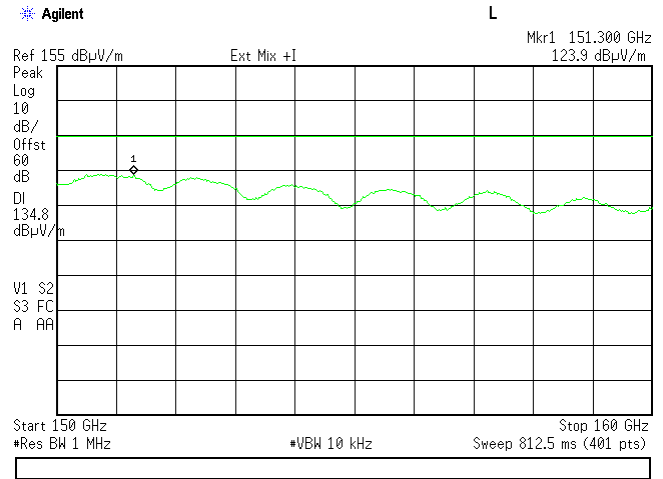
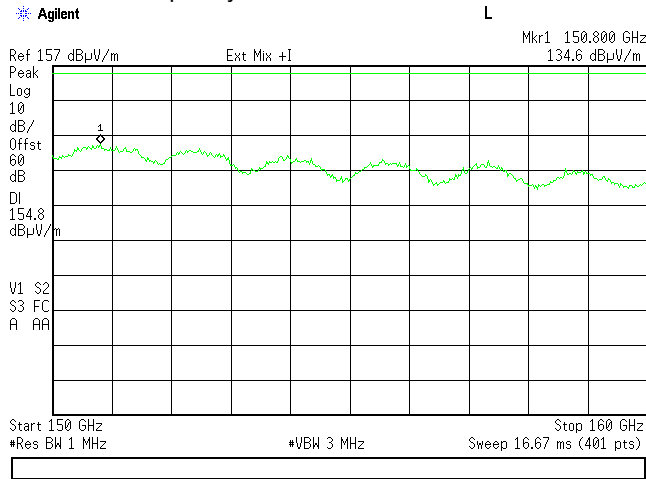
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

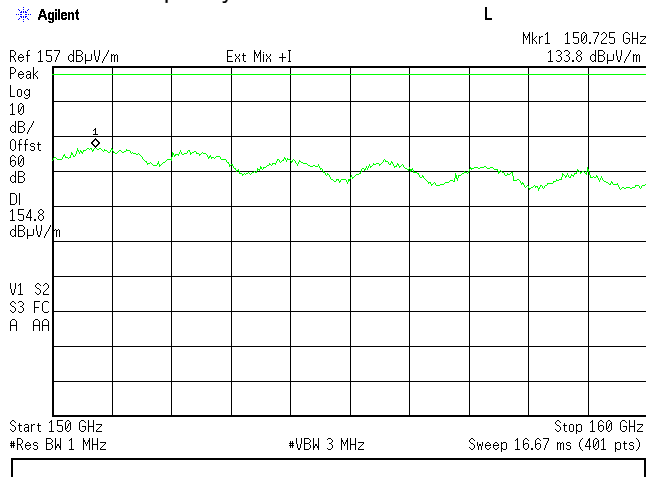
Plot 7.4.61 Spurious emission measurements in 150 – 160 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

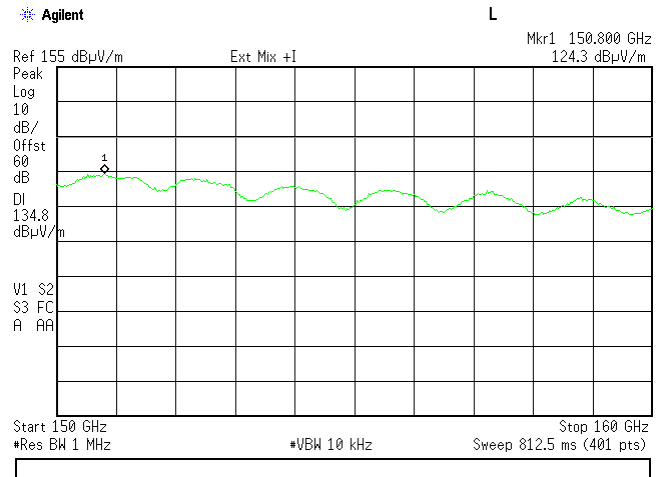
OATS
0.01 m
BPSK
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



Mid carrier frequency:



60480 MHz





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

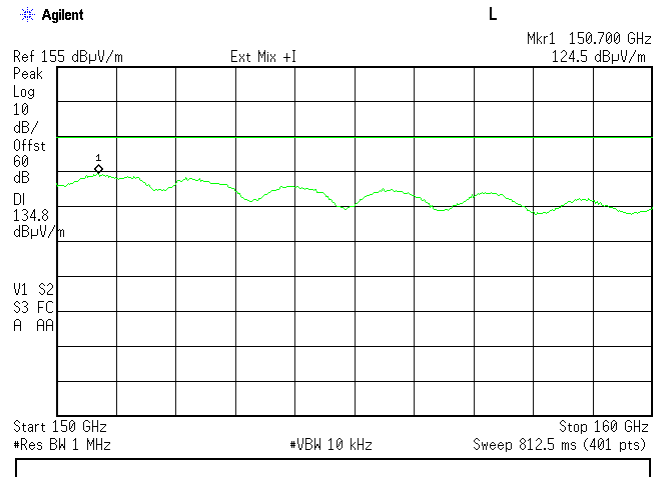
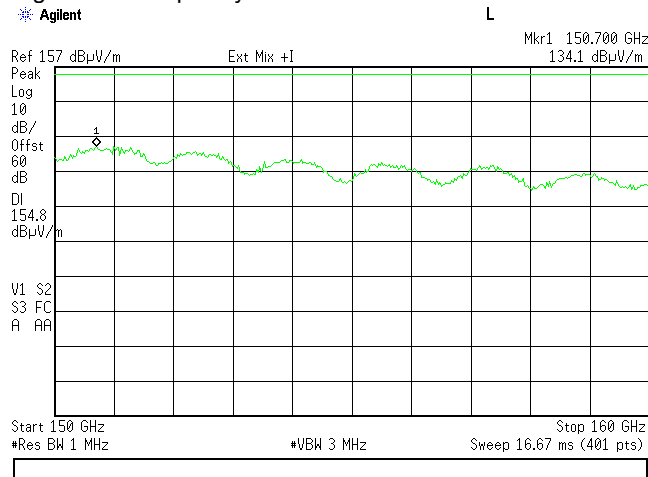
Plot 7.4.62 Spurious emission measurements in 150 – 160 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
0.01 m
BPSK
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

64800 MHz





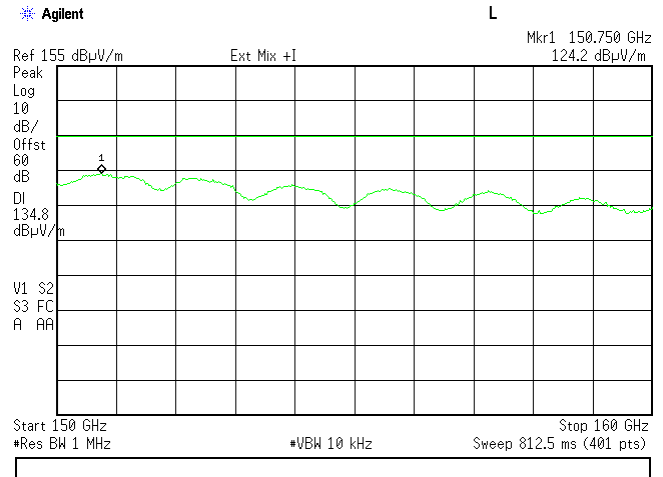
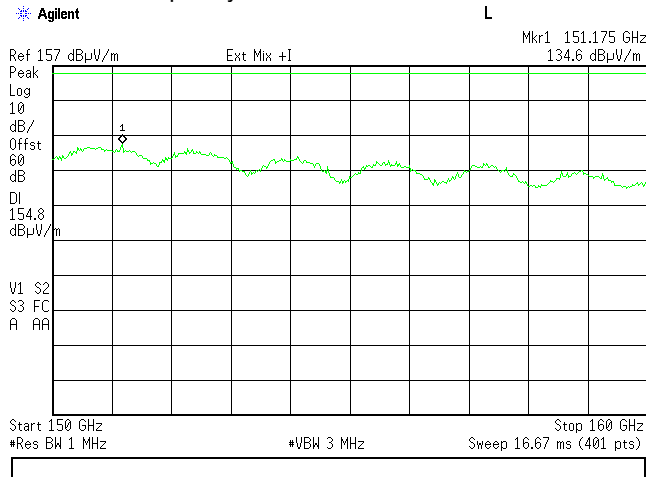
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.63 Spurious emission measurements in 150 – 160 GHz range

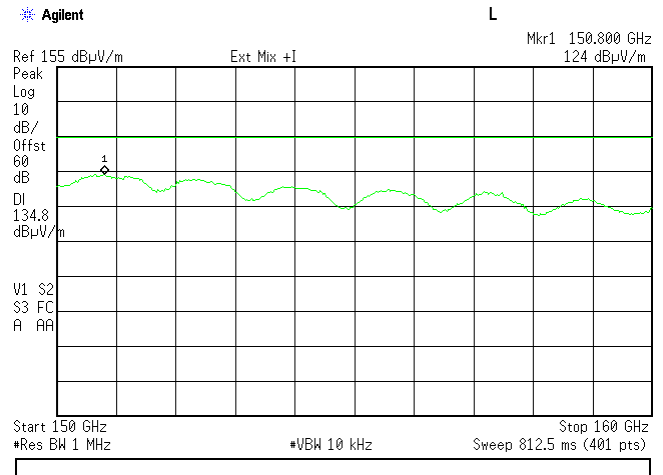
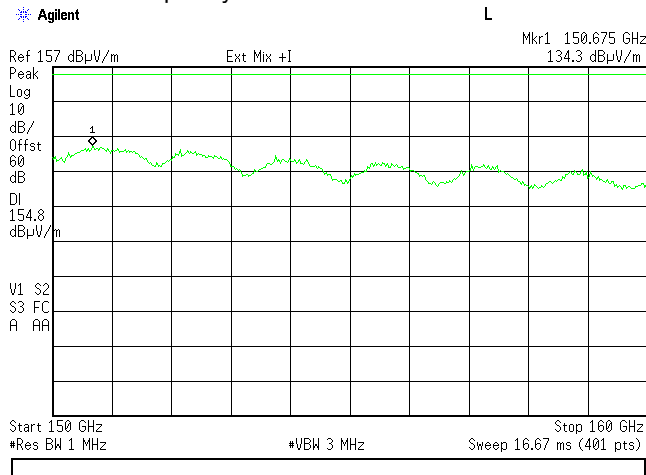
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

OATS
0.01 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



Mid carrier frequency:

60480 MHz





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

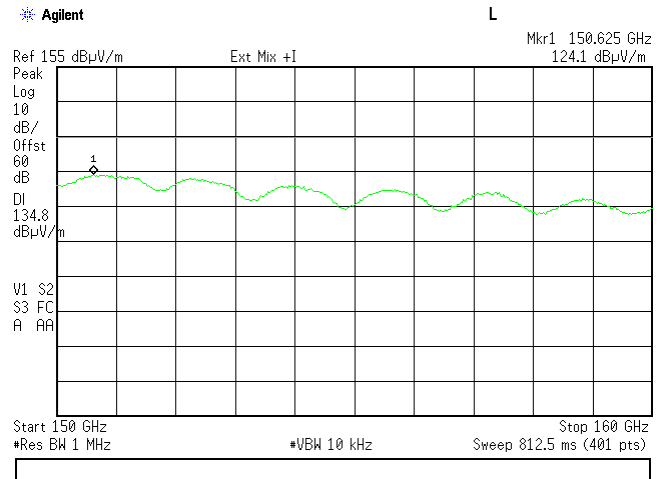
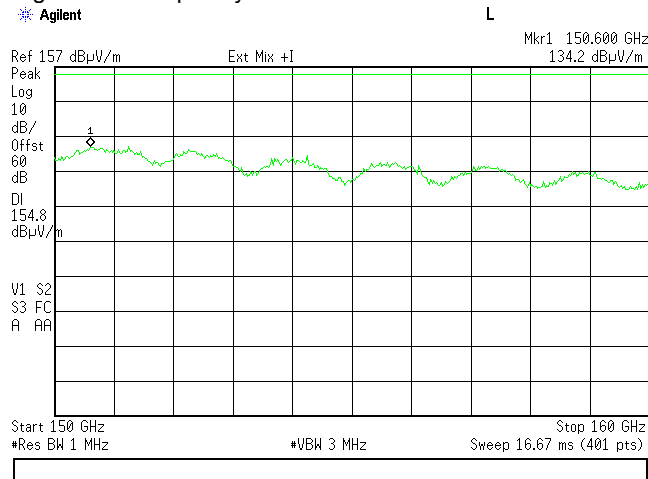
Plot 7.4.64 Spurious emission measurements in 150 – 160 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
0.01 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

64800 MHz





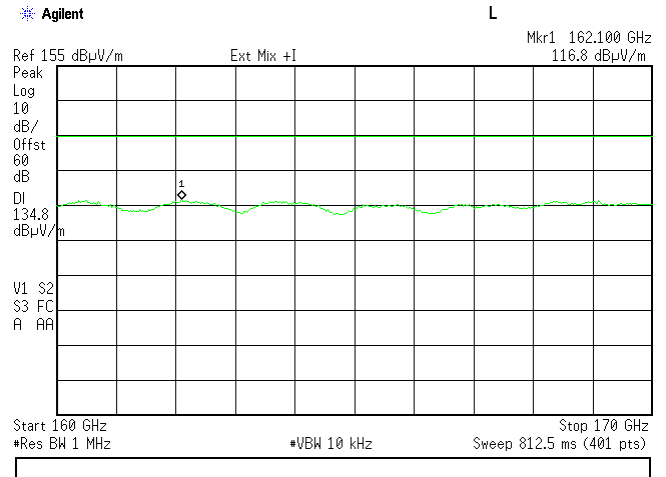
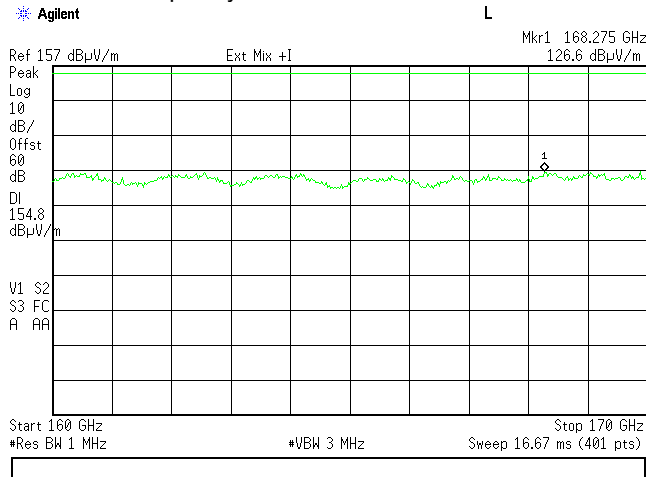
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

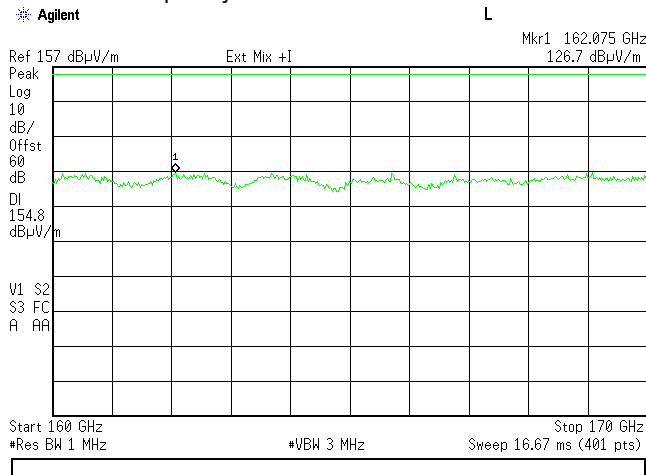
Plot 7.4.65 Spurious emission measurements in 160 – 170 GHz range

TEST SITE:
 TEST DISTANCE:
 MODULATION:
 ANTENNA POLARIZATION:
 DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
 Low carrier frequency:

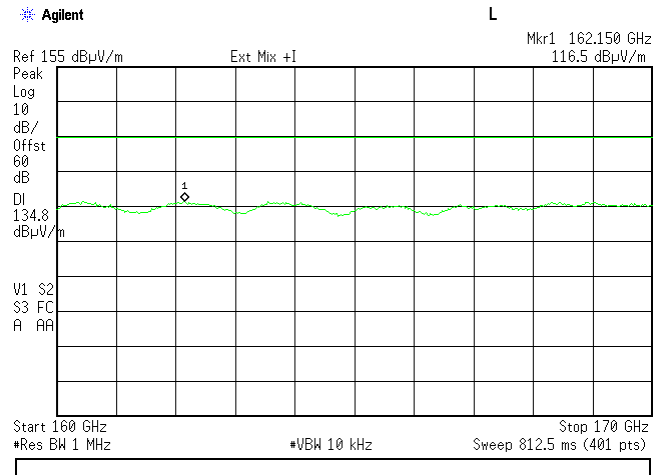
OATS
 0.01 m
 BPSK
 Vertical and Horizontal
 DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
 58320 MHz



Mid carrier frequency:



60480 MHz





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

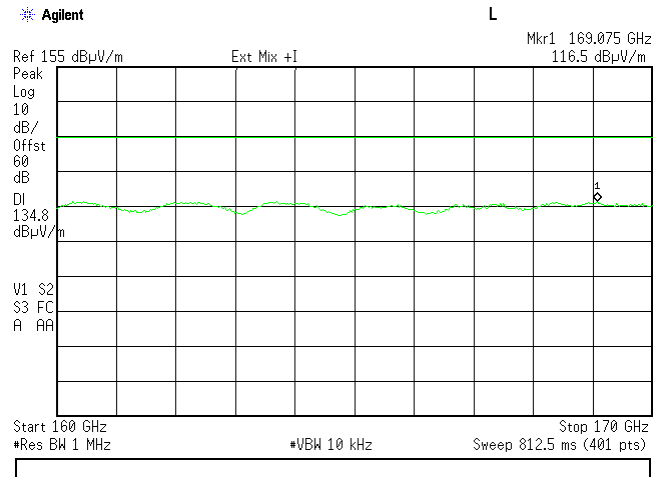
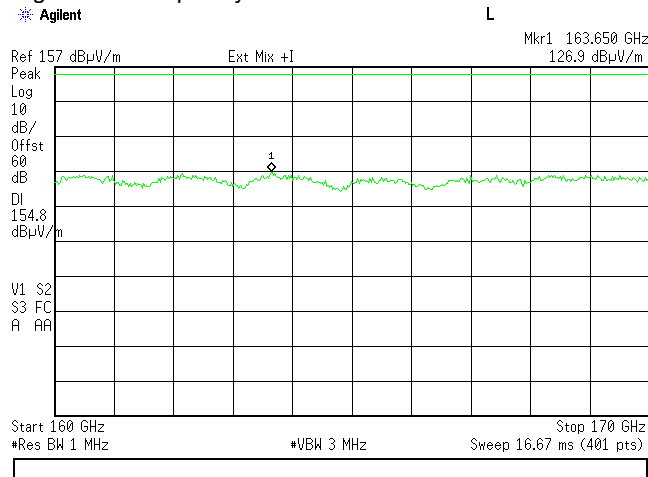
Plot 7.4.66 Spurious emission measurements in 160 – 170 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
0.01 m
BPSK
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

64800 MHz





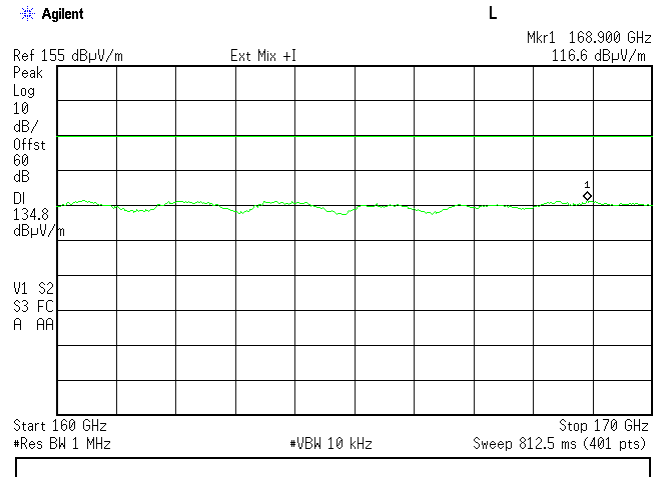
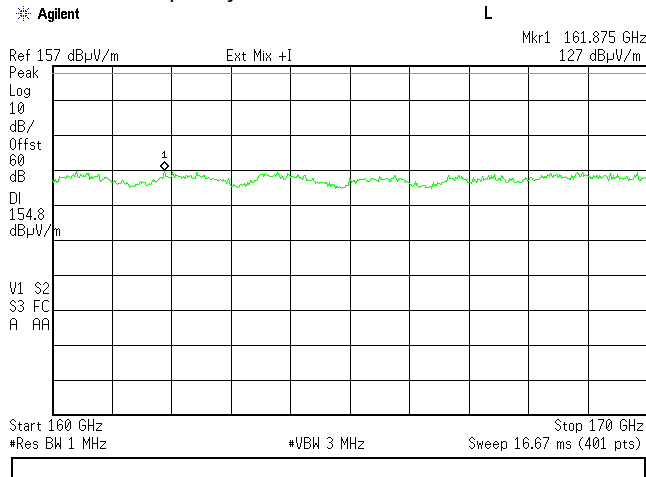
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

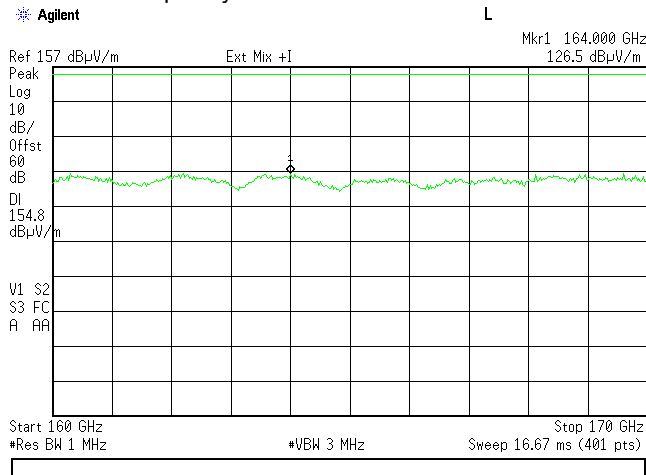
Plot 7.4.67 Spurious emission measurements in 160 – 170 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

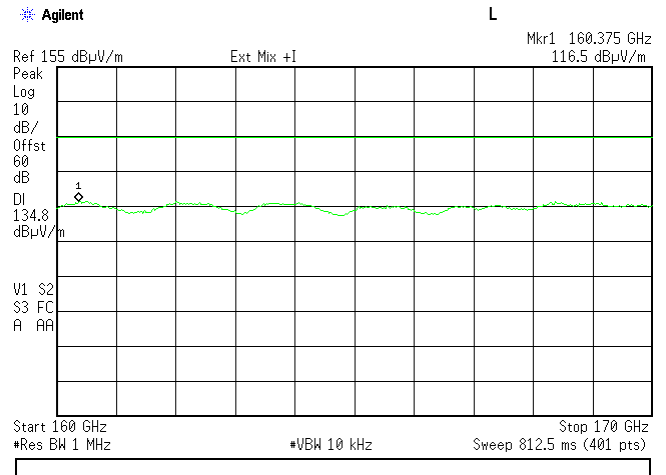
OATS
0.01 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



Mid carrier frequency:



60480 MHz





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

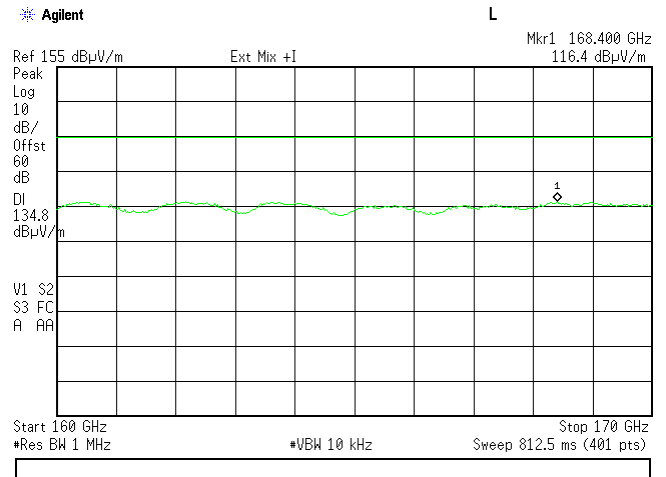
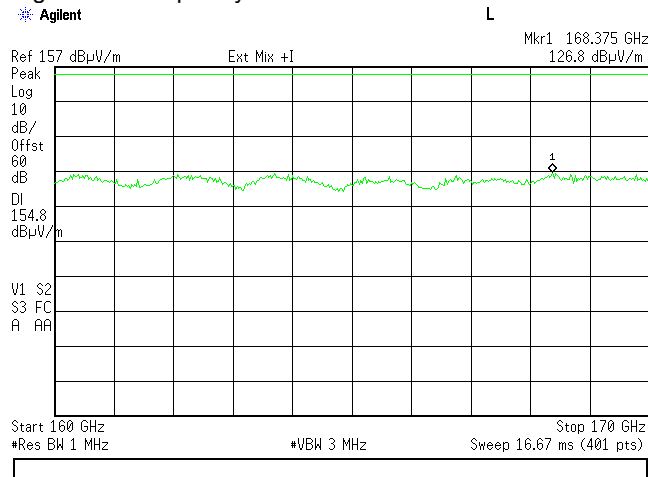
Plot 7.4.68 Spurious emission measurements in 160 – 170 GHz range

TEST SITE:
 TEST DISTANCE:
 MODULATION:
 ANTENNA POLARIZATION:
 DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
 0.01 m
 16QAM
 Vertical and Horizontal
 DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

64800 MHz





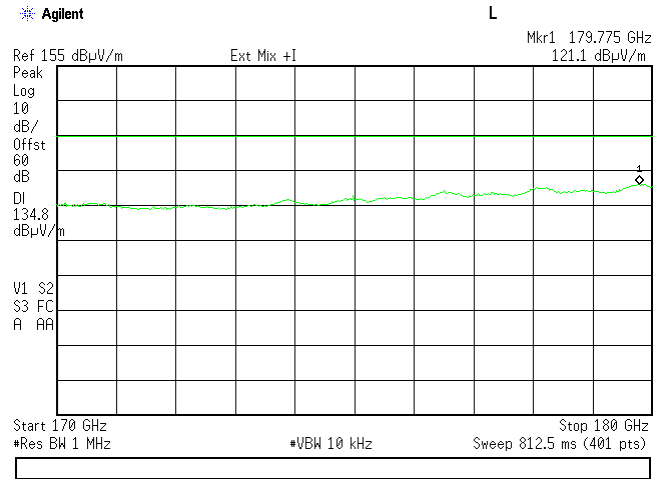
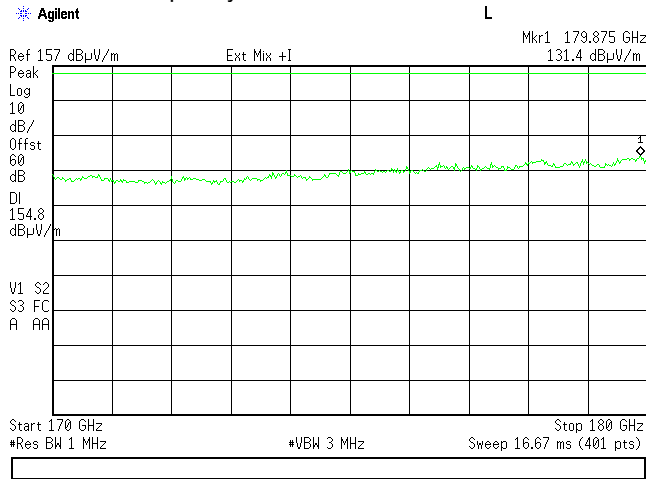
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.69 Spurious emission measurements in 170 – 180 GHz range

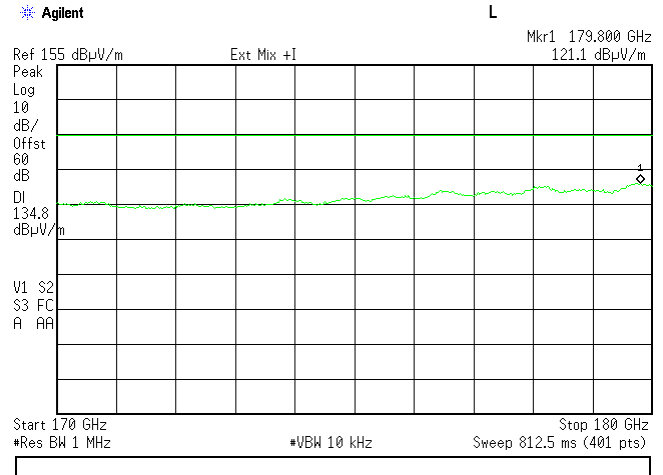
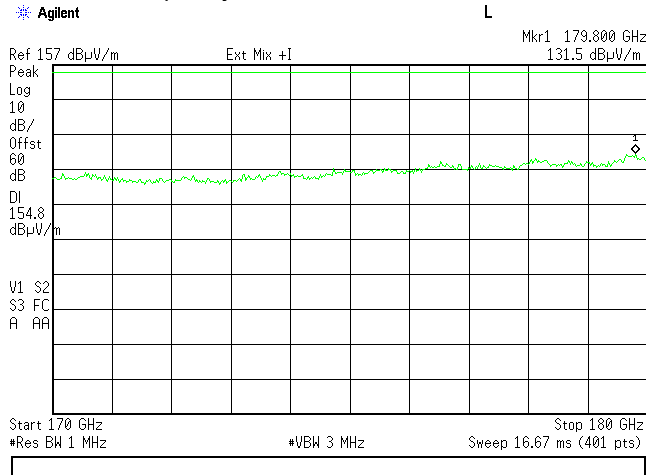
TEST SITE:
 TEST DISTANCE:
 MODULATION:
 ANTENNA POLARIZATION:
 DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
 Low carrier frequency:

OATS
 0.01 m
 BPSK
 Vertical and Horizontal
 DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
 58320 MHz



Mid carrier frequency:

60480 MHz





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

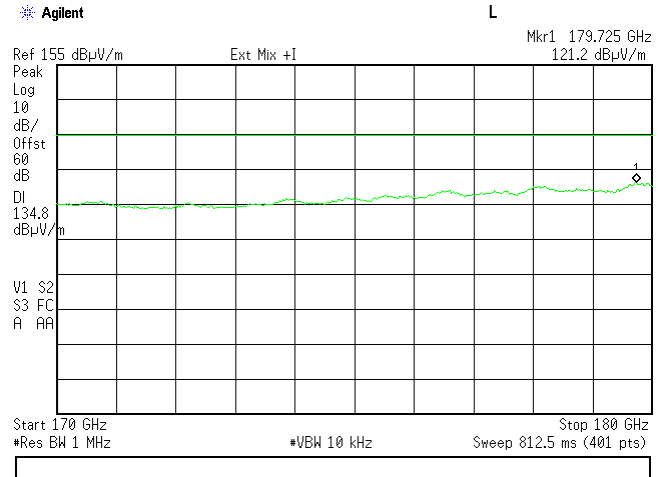
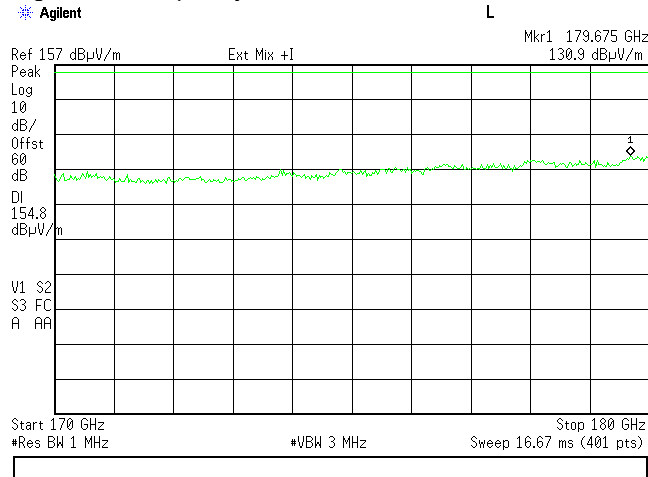
Plot 7.4.70 Spurious emission measurements in 170 – 180 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
0.01 m
BPSK
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

64800 MHz





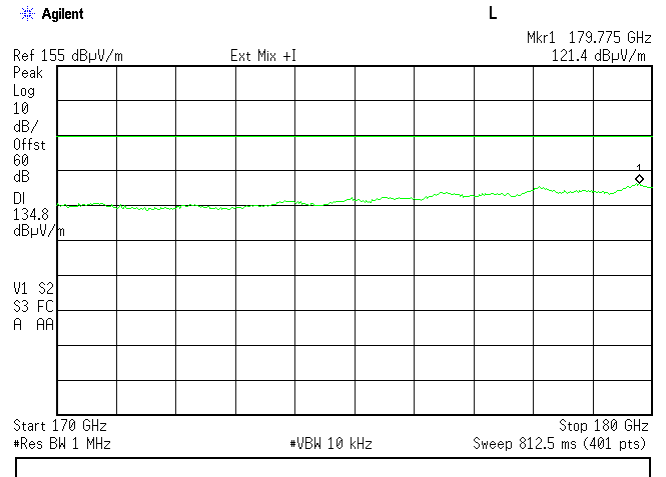
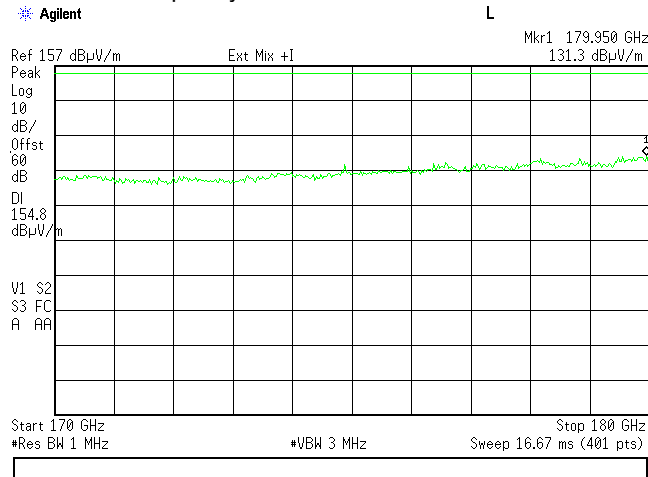
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

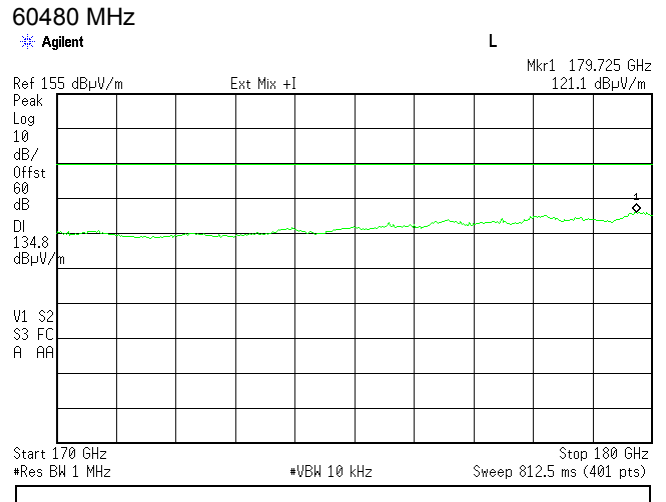
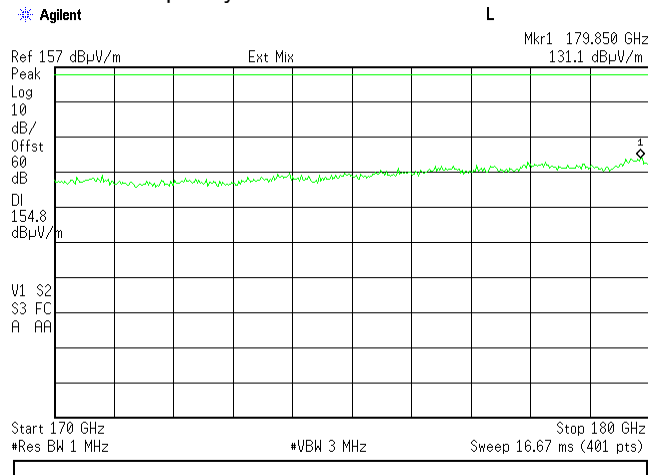
Plot 7.4.71 Spurious emission measurements in 170 – 180 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

OATS
0.01 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



Mid carrier frequency:





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

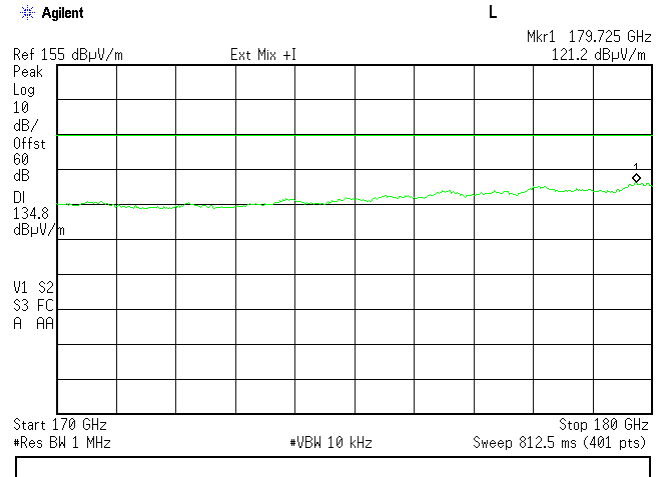
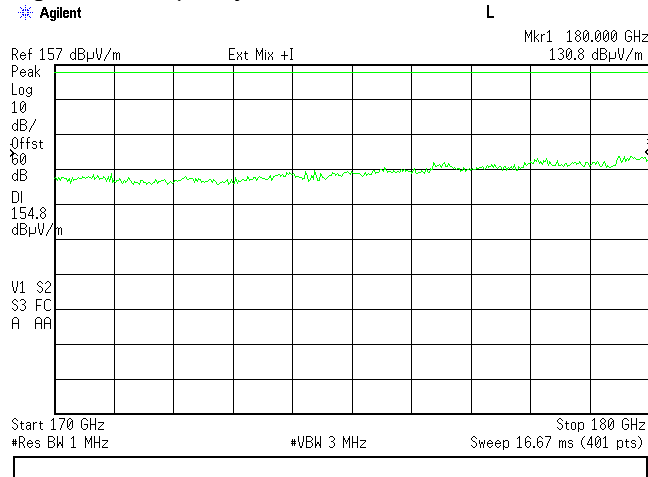
Plot 7.4.72 Spurious emission measurements in 170 – 180 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
0.01 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

64800 MHz





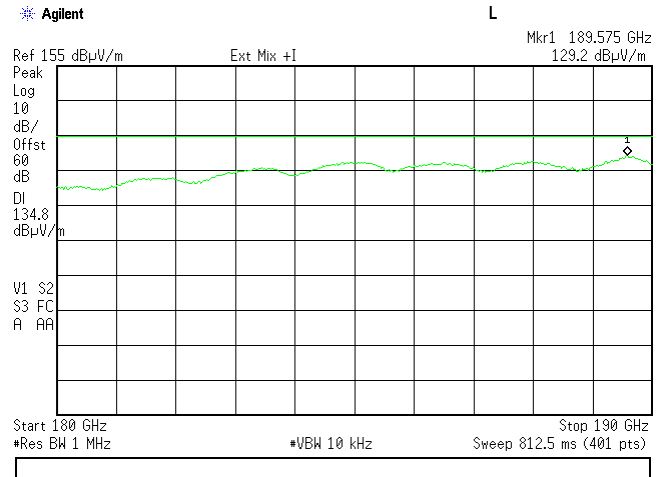
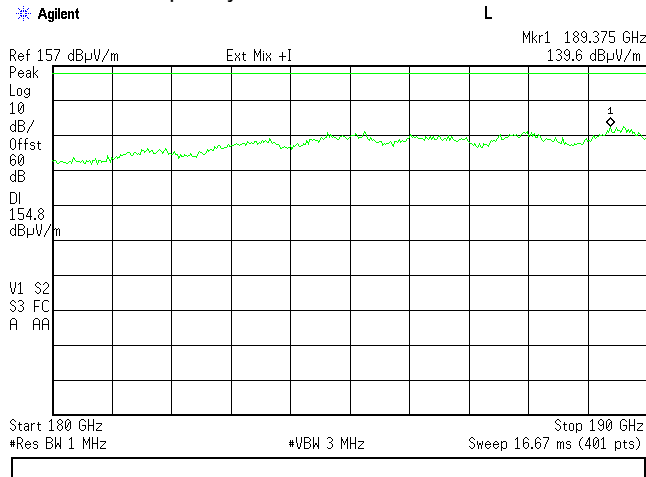
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

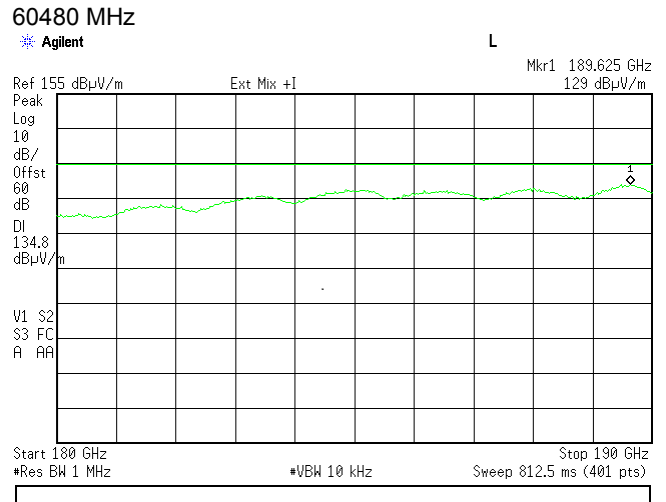
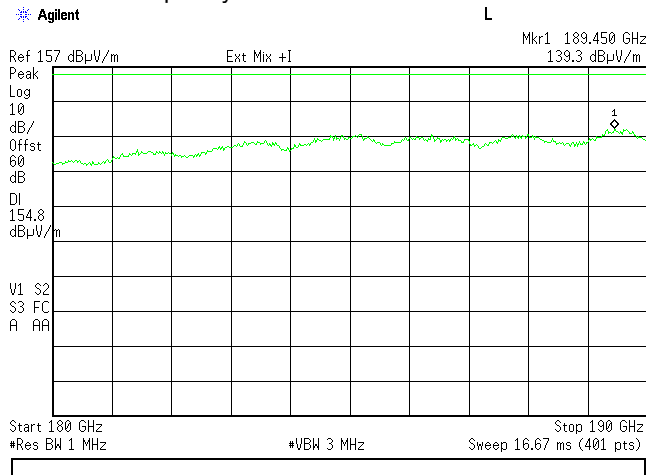
Plot 7.4.73 Spurious emission measurements in 180 – 190 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

OATS
0.01 m
BPSK
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



Mid carrier frequency:





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

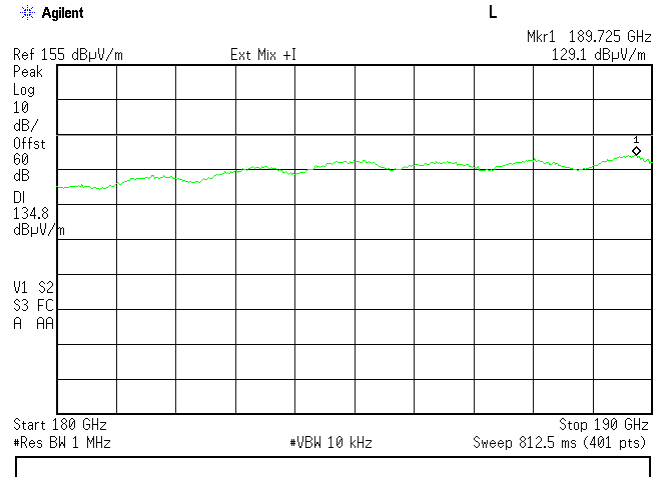
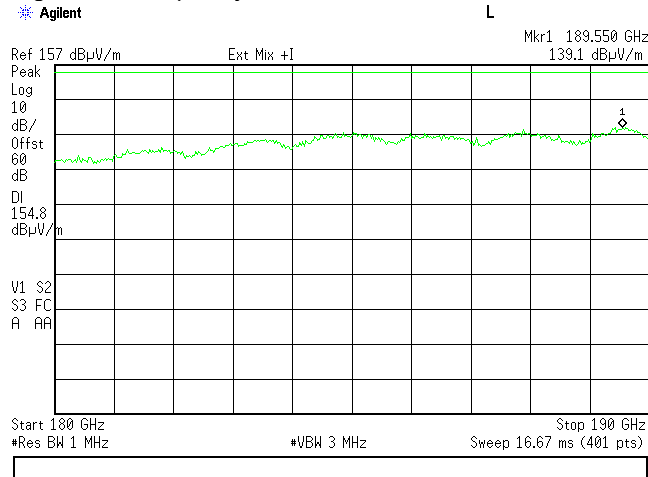
Plot 7.4.74 Spurious emission measurements in 180 – 190 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
0.01 m
BPSK
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

64800 MHz





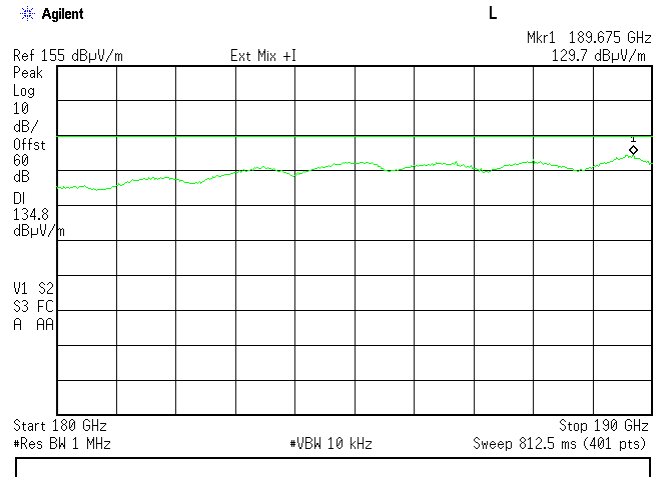
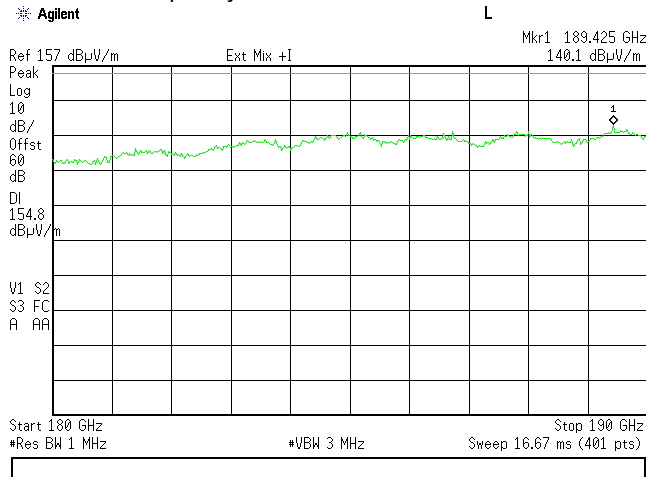
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.75 Spurious emission measurements in 180 – 190 GHz range

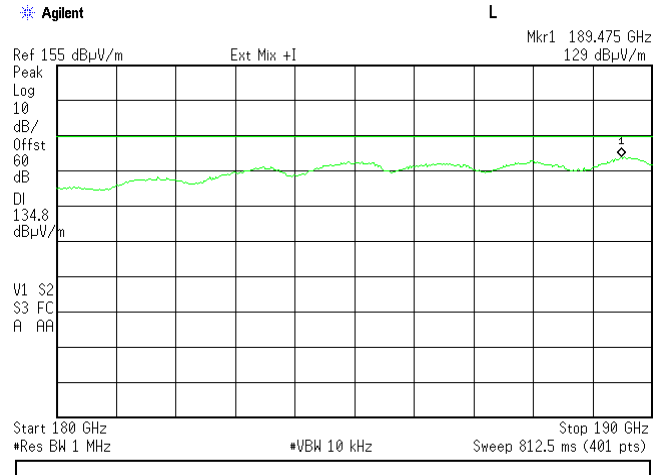
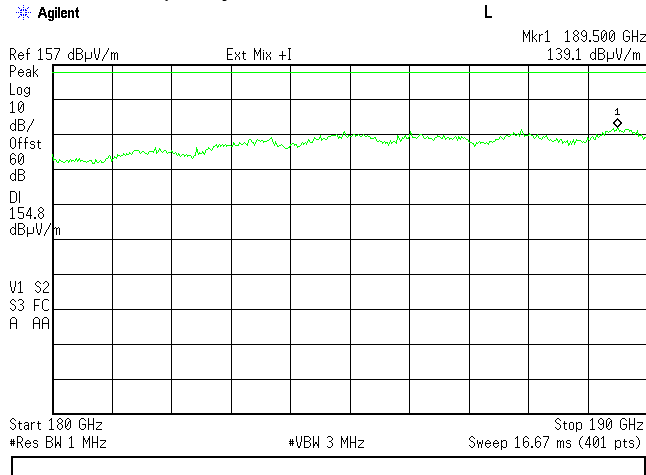
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

OATS
0.01 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



Mid carrier frequency:

60480 MHz





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

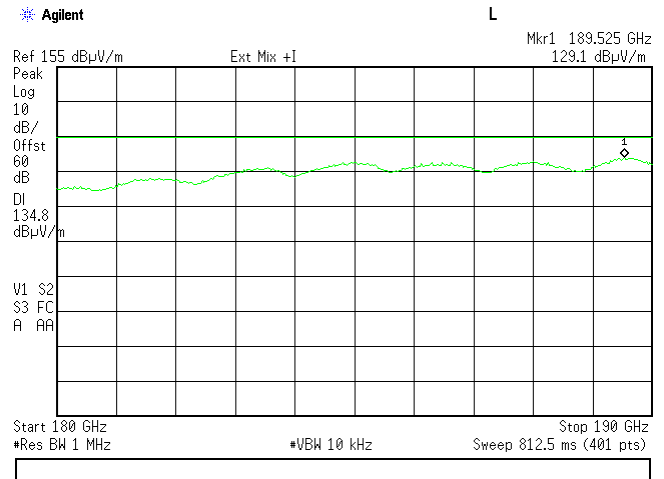
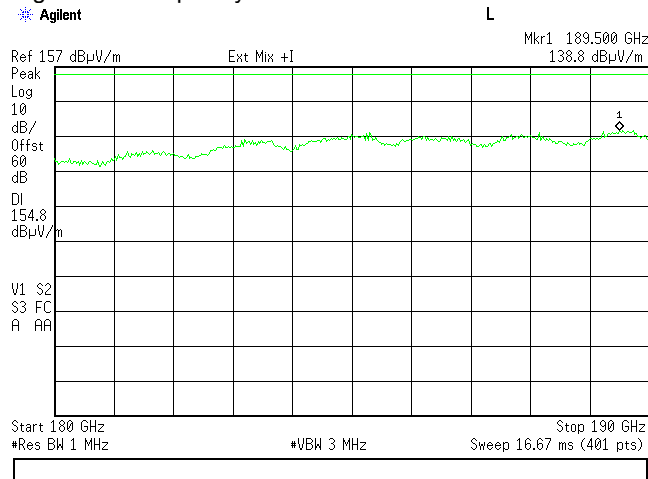
Plot 7.4.76 Spurious emission measurements in 180 – 190 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
0.01 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

64800 MHz





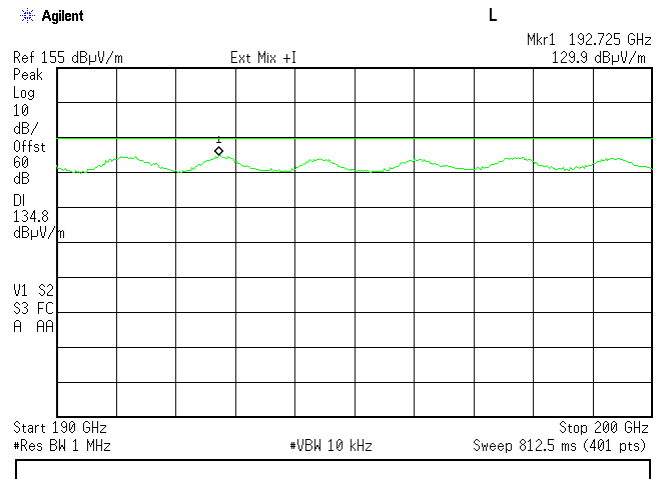
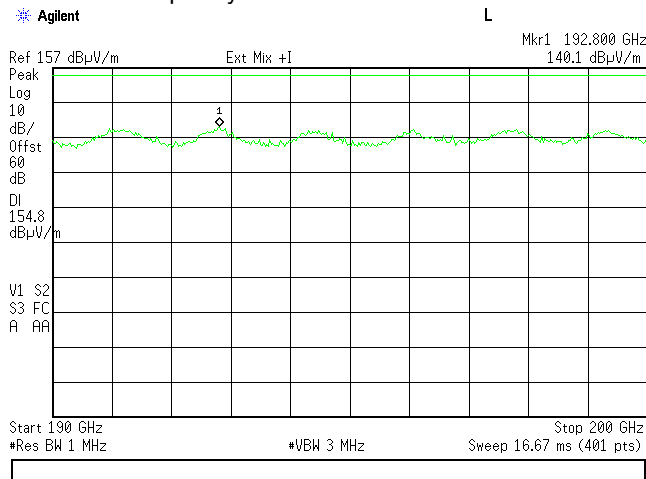
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

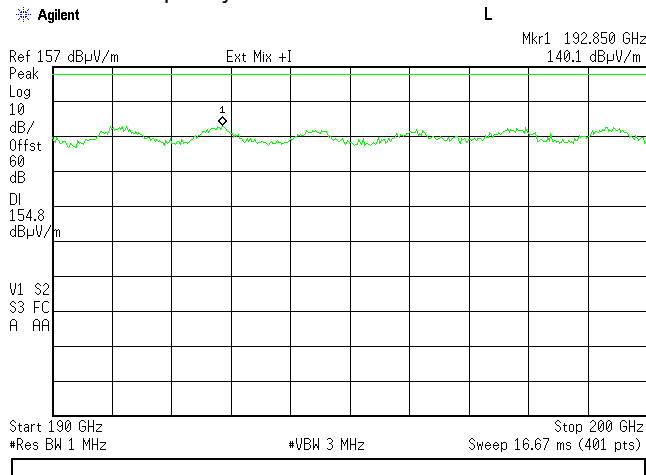
Plot 7.4.77 Spurious emission measurements in 190 – 200 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

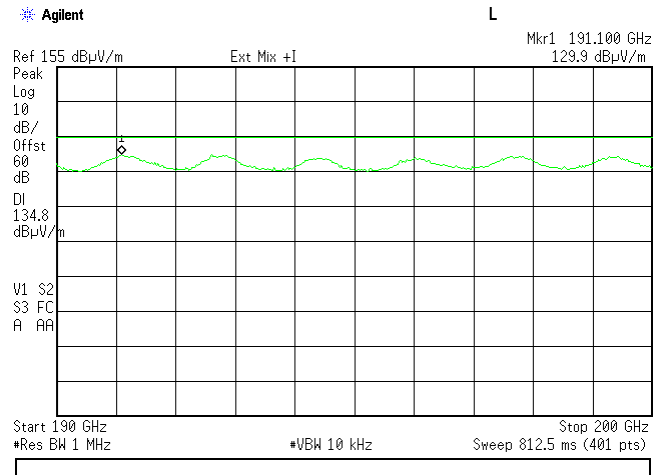
OATS
0.01 m
BPSK
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



Mid carrier frequency:



60480 MHz





HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

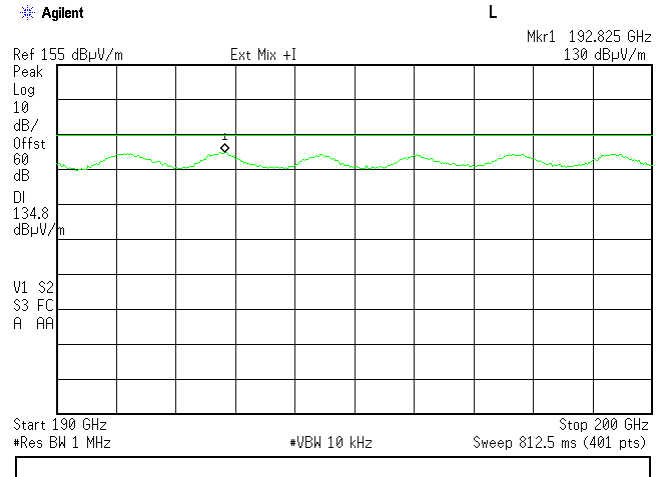
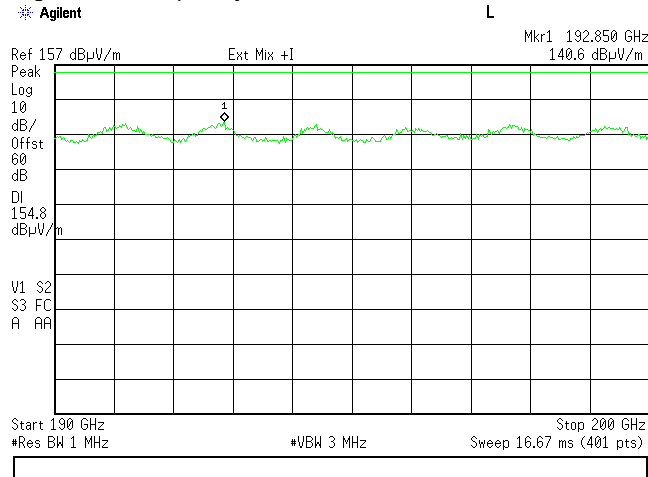
Plot 7.4.78 Spurious emission measurements in 190 – 200 GHz range

TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
0.01 m
BPSK
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:

64800 MHz





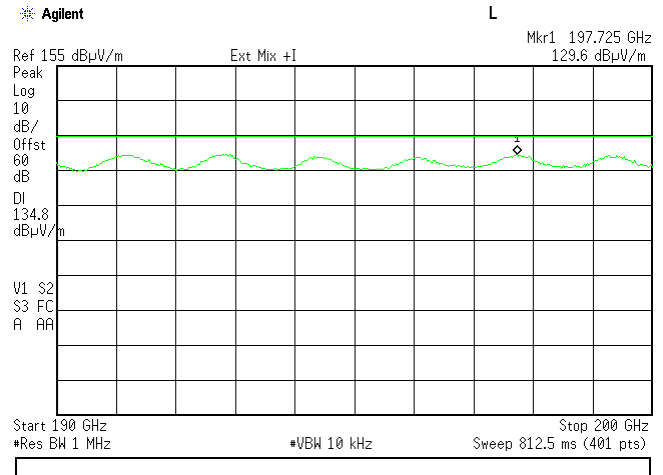
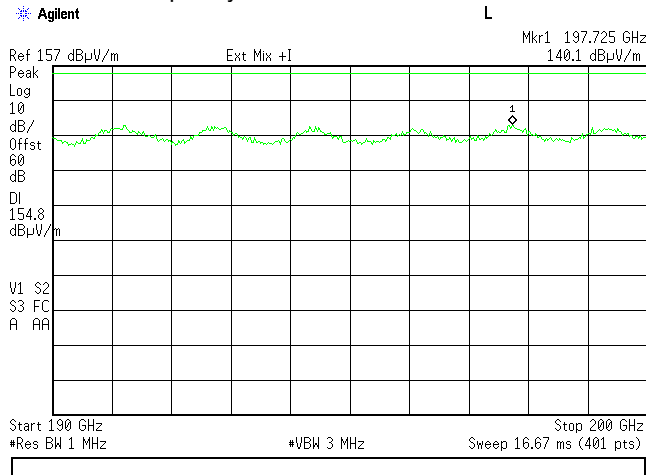
HERMON LABORATORIES

Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.79 Spurious emission measurements in 190 – 200 GHz range

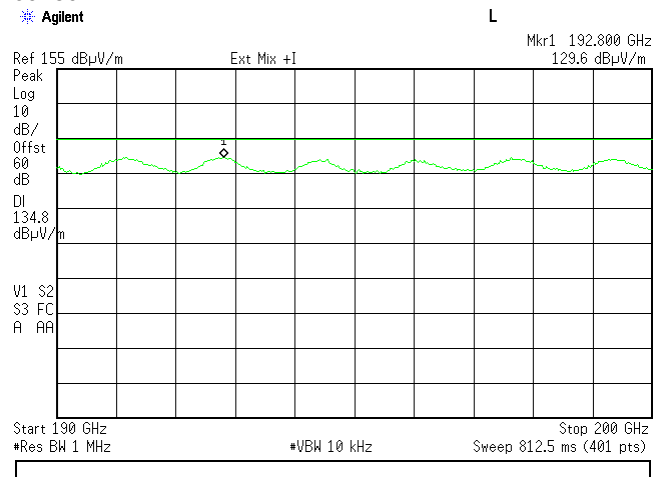
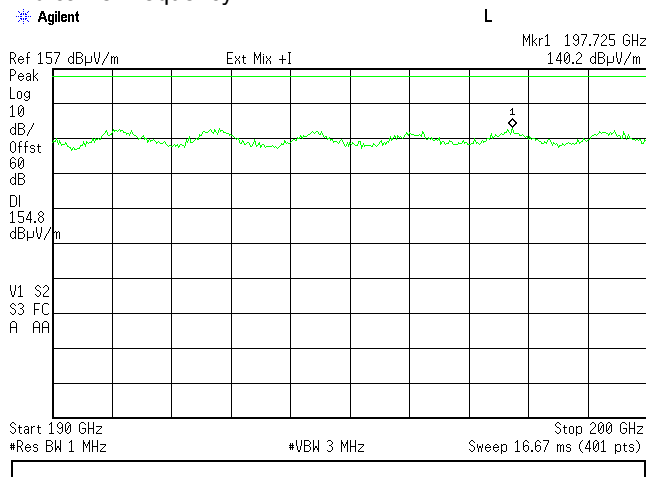
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

OATS
0.01 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



Mid carrier frequency:

60480 MHz





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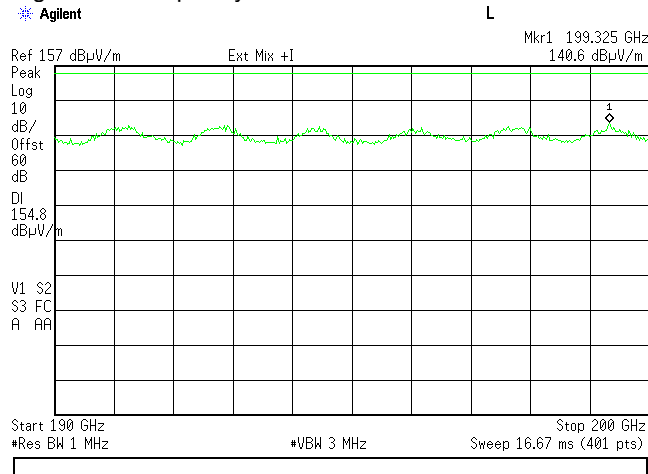
Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance	Verdict: PASS		
Date(s): 11-Mar-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 55 VDC
Remarks:			

Plot 7.4.80 Spurious emission measurements in 190 – 200 GHz range

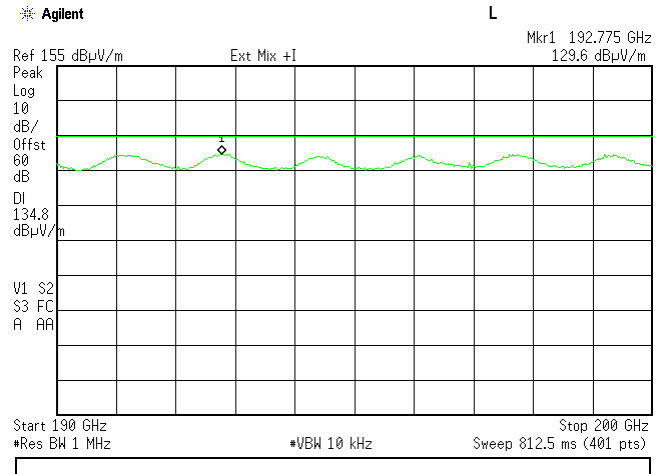
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz

OATS
0.01 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz

High carrier frequency:



64800 MHz





Test specification: FCC Section 15.255(f), RSS-210 section J.6, Frequency stability			
Test procedure: ANSI C63.10, Section 9.14			
Test mode: Compliance		Verdict: PASS	
Date(s): 09-Mar-20			
Temperature: 24 °C	Relative Humidity: 47 %	Air Pressure: 1014 hPa	Power: 55 VDC
Remarks:			

7.5 Frequency stability test

7.5.1 General

This test was performed to measure frequency stability of transmitter RF carrier. Specification test limits are given in Table 7.5.1.

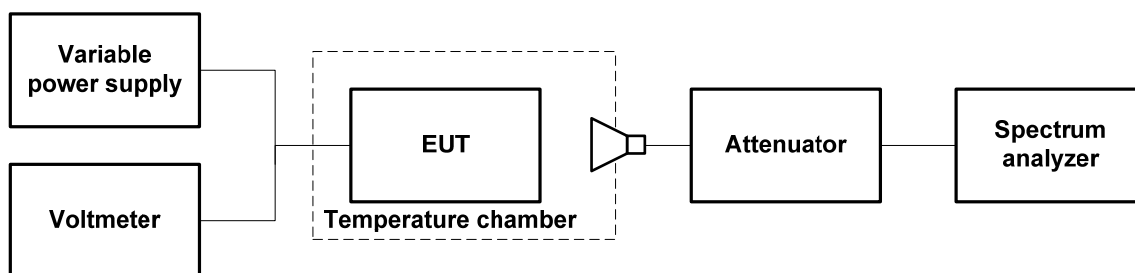
Table 7.5.1 Frequency stability limits

Assigned frequency, MHz	Maximum allowed frequency displacement
58320	NA
60480	
64800	

7.5.2 Test procedure

- 7.5.2.1 The EUT was set up as shown in Figure 7.5.1, energized and its proper operation was checked.
- 7.5.2.2 The EUT power was turned off. Temperature within test chamber was set to +30°C and a period of time sufficient to stabilize all of the oscillator circuit components was allowed.
- 7.5.2.3 The EUT was powered on and carrier frequency was measured at start up moment and then every minute until frequency had been stabilized or 10 minutes elapsed whichever reached the last. The EUT was powered off.
- 7.5.2.4 The above procedure was repeated at 0°C and at the lowest test temperature.
- 7.5.2.5 The EUT was powered on and carrier frequency was measured at start up moment and at the end of stabilization period at the rest of test temperatures and voltages. The EUT was powered off.
- 7.5.2.6 Frequency displacement was calculated and compared with the limit as provided in Table 7.5.2.

Figure 7.5.1 Frequency stability test setup





HERMON LABORATORIES

Test specification: FCC Section 15.255(f), RSS-210 section J.6, Frequency stability			
Test procedure: ANSI C63.10, Section 9.14			
Test mode: Compliance		Verdict: PASS	
Date(s): 09-Mar-20			
Temperature: 24 °C	Relative Humidity: 47 %	Air Pressure: 1014 hPa	Power: 55 VDC
Remarks:			

Table 7.5.2 Frequency stability test results

ASSIGNED FREQUENCY RANGE: 57000 – 66000 MHz
 NOMINAL POWER VOLTAGE: 48 V
 TEMPERATURE STABILIZATION PERIOD: 20 min
 POWER DURING TEMPERATURE TRANSITION: Off
 SPECTRUM ANALYZER MODE: Counter
 RESOLUTION BANDWIDTH: 3 kHz
 VIDEO BANDWIDTH: 10 kHz
 MODULATION: Unmodulated

T, °C	Voltage, V	Frequency, MHz							Max frequency drift, kHz	
		Start up	1 st min	2 nd min	3 rd min	4 th min	5 th min	10 th min	Posit	Negative
Low frequency 58.32 GHz										
-30	nominal	58320.010	NA	NA	NA	NA	NA	58320.011	11.0	NA
-20	nominal	58320.009	58320.008	58320.008	58320.008	58320.008	58320.008	58320.008	9.0	NA
-10	nominal	58320.003	NA	NA	NA	NA	NA	58320.009	9.0	NA
0	nominal	58320.007	58320.007	58320.008	58320.008	58320.008	58320.008	58320.009	9.0	NA
10	nominal	58320.008	NA	NA	NA	NA	NA	58320.012	12.0	NA
20	+15%	58320.016	NA	NA	NA	NA	NA	58320.017	17.0	NA
20	nominal	58320.016	NA	NA	NA	NA	NA	58320.017	17.0	NA
20	-15%	58320.016	NA	NA	NA	NA	NA	58320.017	17.0	NA
30	nominal	58320.017	58320.016	58320.018	58320.018	58320.019	58320.019	58320.019	19.0	NA
40	nominal	58320.019	NA	NA	NA	NA	NA	58320.019	19.0	NA
50	nominal	58320.023	NA	NA	NA	NA	NA	58320.026	26.0	NA
60	nominal	58320.027	NA	NA	NA	NA	NA	58320.022	27.0	NA
Mid frequency 60.48GHz										
-30	nominal	60480.011	NA	NA	NA	NA	NA	60480.011	11.0	NA
-20	nominal	60480.007	60480.009	60480.009	60480.009	60480.009	60480.009	60480.010	10.0	NA
-10	nominal	60480.006	NA	NA	NA	NA	NA	60480.010	10.0	NA
0	nominal	60480.009	60480.010	60480.010	60480.011	60480.011	60480.011	60480.011	11.0	NA
10	nominal	60480.013	NA	NA	NA	NA	NA	60480.014	14.0	NA
20	+15%	60480.012	NA	NA	NA	NA	NA	60480.013	13.0	NA
20	nominal	60480.012	NA	NA	NA	NA	NA	60480.013	13.0	NA
20	-15%	60480.012	NA	NA	NA	NA	NA	60480.013	13.0	NA
30	nominal	60480.016	60480.017	60480.017	60480.017	60480.017	60480.017	60480.018	18.0	NA
40	nominal	60480.019	NA	NA	NA	NA	NA	60480.023	23.0	NA
50	nominal	60480.023	NA	NA	NA	NA	NA	60480.026	26.0	NA
60	nominal	60480.024	NA	NA	NA	NA	NA	60480.020	24.0	NA
High frequency 64.80 GHz										
-30	nominal	64800.012	NA	NA	NA	NA	NA	64800.012	12.0	NA
-20	nominal	64800.007	64800.008	64800.009	64800.009	64800.009	64800.009	64800.010	10.0	NA
-10	nominal	64800.004	NA	NA	NA	NA	NA	64800.010	10.0	NA
0	nominal	64800.009	64800.009	64800.009	64800.009	64800.009	64800.010	64800.011	11.0	NA
10	nominal	64800.010	NA	NA	NA	NA	NA	64800.015	15.0	NA
20	+15%	64800.018	NA	NA	NA	NA	NA	64800.020	20.0	NA
20	nominal	64800.017	NA	NA	NA	NA	NA	64800.020	20.0	NA
20	-15%	64800.017	NA	NA	NA	NA	NA	64800.020	20.0	NA
30	nominal	64800.019	64800.020	64800.021	64800.021	64800.021	64800.021	64800.021	21.0	NA
40	nominal	64800.019	NA	NA	NA	NA	NA	64800.025	25.0	NA
50	nominal	64800.028	NA	NA	NA	NA	NA	64800.027	28.0	NA
60	nominal	64800.026	NA	NA	NA	NA	NA	64800.022	26.0	NA

* - Reference frequency

Reference numbers of test equipment used

HL 0493	HL 0771	HL 2171	HL 5376	HL 5380		
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Full description is given in Appendix A.



Test specification: FCC Section 15.207(a)/RSS-Gen 8.8, Conducted emission			
Test procedure: ANSI C63.4, Section 13.1.3			
Test mode: Compliance		Verdict: PASS	
Date(s): 21-Feb-20			
Temperature: 23 °C	Relative Humidity: 55 %	Air Pressure: 1009 hPa	Power: 120 VAC, 60 Hz
Remarks:			

7.6 Conducted emissions

7.6.1 General

This test was performed to measure common mode conducted emissions at the power port. Specification test limits are given in Table 7.6.1.

Table 7.6.1 Limits for conducted emissions

Frequency, MHz	Class B limit, dB(μV)	
	QP	AVRG
0.15 - 0.5	66 - 56*	56 - 46*
0.5 - 5.0	56	46
5.0 - 30	60	50

* The limit decreases linearly with the logarithm of frequency.

7.6.2 Test procedure

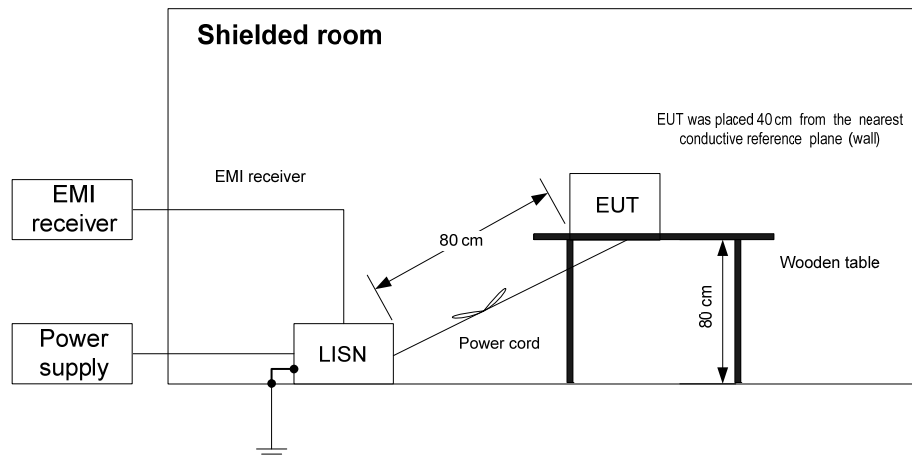
7.6.2.1 The EUT was set up as shown in Figure 7.6.1 and associated photographs, energized and the performance check was conducted.

7.6.2.2 The measurements were performed at power terminals with the LISN, connected to a spectrum analyzer in the frequency range referred to in Table 7.6.2. Unused coaxial connector of the LISN was terminated with 50 Ohm. Quasi-peak and average detectors were used throughout the testing.

7.6.2.3 The position of the device cables was varied to determine maximum emission level.

7.6.2.4 The worst test results (the lowest margins) were recorded in Table 7.6.2 and shown in the associated plots.

Figure 7.6.1 Setup for conducted emission measurements, table-top equipment





Test specification: FCC Section 15.207(a)/RSS-Gen 8.8, Conducted emission			
Test procedure: ANSI C63.4, Section 13.1.3			
Test mode: Compliance		Verdict: PASS	
Date(s): 21-Feb-20			
Temperature: 23 °C	Relative Humidity: 55 %	Air Pressure: 1009 hPa	Power: 120 VAC, 60 Hz
Remarks:			

Table 7.6.2 Conducted emission test results

LINE: AC mains
 EUT OPERATING MODE: Transmit
 EUT SET UP: TABLE-TOP
 TEST SITE: SHIELDED ROOM
 DETECTORS USED: PEAK / QUASI-PEAK / AVERAGE
 FREQUENCY RANGE: 150 kHz - 30 MHz
 RESOLUTION BANDWIDTH: 9 kHz

Frequency, MHz	Peak emission, dB(µV)	Quasi-peak			Average			Line ID	Verdict
		Measured emission, dB(µV)	Limit, dB(µV)	Margin, dB*	Measured emission, dB(µV)	Limit, dB(µV)	Margin, dB*		
0.152	55.7	51.8	65.9	-14.1	37.3	55.9	-18.6	L1	Pass
0.400	48.6	46.9	57.9	-11.0	35.7	47.9	-12.2		
0.580	49.5	46.6	56.0	-9.4	33.6	46.0	-12.4		
1.317	46.7	43.6	56.0	-12.4	29.9	46.0	-16.1		
7.480	55.5	50.0	60.0	-10.0	42.0	50.0	-8.0		
9.730	52.3	47.5	60.0	-12.5	40.6	50.0	-9.4		
0.153	55.7	52.6	65.9	-13.3	37.4	55.9	-18.5	L2	Pass
0.420	47.9	45.8	57.5	-11.7	33.3	47.5	-14.2		
0.580	48.1	45.3	56.0	-10.7	32.3	46.0	-13.7		
7.480	54.2	48.8	60.0	-11.2	41.0	50.0	-9.0		
10.74	52.1	48.1	60.0	-11.9	42.1	50.0	-7.9		
26.42	45.7	44.9	60.0	-15.1	40.0	50.0	-10.0		

*- Margin = Measured emission - specification limit.

Reference numbers of test equipment used

HL 447	HL 787	HL 4778	HL 5476				
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Full description is given in Appendix A.



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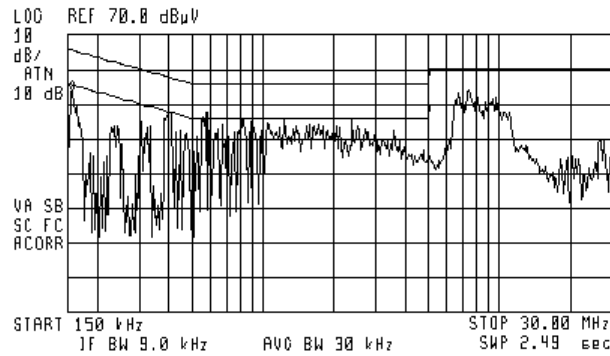
Test specification: FCC Section 15.207(a)/RSS-Gen 8.8, Conducted emission			
Test procedure: ANSI C63.4, Section 13.1.3			
Test mode: Compliance		Verdict: PASS	
Date(s): 21-Feb-20			
Temperature: 23 °C	Relative Humidity: 55 %	Air Pressure: 1009 hPa	Power: 120 VAC, 60 Hz
Remarks:			

Plot 7.6.1 Conducted emission measurements

LINE: L1
EUT OPERATING MODE: Transmit
LIMIT: QUASI-PEAK, AVERAGE
DETECTOR: PEAK



ACTV DET: PEAK
MERS DET: PEAK QP AVG
NKR 160 kHz
54.23 dBµV

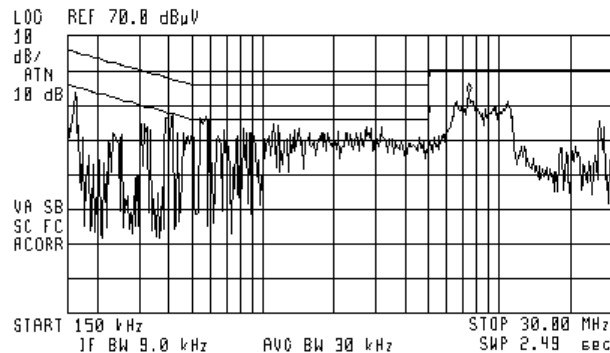


Plot 7.6.2 Conducted emission measurements

LINE: L2
EUT OPERATING MODE: Transmit
LIMIT: QUASI-PEAK, AVERAGE
DETECTOR: PEAK



ACTV DET: PEAK
MERS DET: PEAK QP AVG
NKR 7.40 MHz
53.46 dBµV





Test specification: Section 15.203, Antenna requirement			
Test procedure: Visual inspection / supplier declaration			
Test mode: Compliance		Verdict: PASS	
Date(s): 17-Mar-20			
Temperature: 24 °C	Relative Humidity: 49 %	Air Pressure: 1013 hPa	Power: 55 VDC
Remarks:			

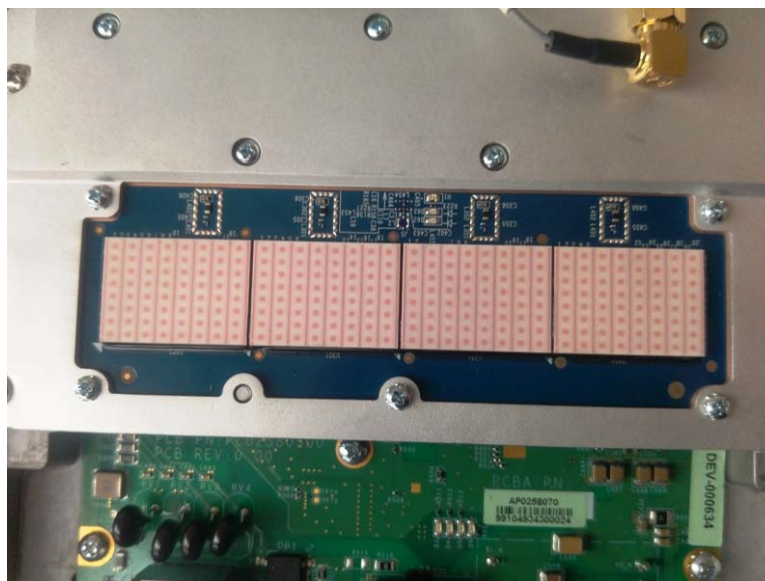
7.7 Antenna requirements

The EUT was verified for compliance with antenna requirements. A transmitter shall be designed to ensure that no antenna other than that furnished by the responsible party will be used with the device. It may be either permanently attached or employs a unique antenna connector for every antenna proposed for use with the EUT. This requirement does not apply to professionally installed transmitters. The rationale for compliance with the above requirements was either visual inspection results or supplier declaration. The summary of results is provided in Table 7.7.1.

Table 7.7.1 Antenna requirements

Requirement	Rationale	Verdict
The transmitter antenna is permanently attached	Visual inspection	Comply
The transmitter employs a unique antenna connector	NA	
The transmitter requires professional installation	NA	

Photograph 7.7.1 Antenna assembly





8 APPENDIX A Test equipment and ancillaries used for tests

HL No	Description	Manufacturer	Model	Ser. No.	Last Cal./ Check	Due Cal./ Check
0446	Antenna, Loop, Active, 10 (9) kHz - 30 MHz	EMCO	6502	2857	24-Feb-20	24-Feb-21
0447	LISN, 16/2, 300V RMS, 50 Ohm/50 uH + 5 Ohm, STD CISPR 16-1	Hermon Laboratories	LISN 16 - 1	066	03-Nov-19	03-Nov-20
0493	Temperature Chamber -45...175 deg C	Thermotron	S-1.2 Mini-Max	14016	19-Jun-19	19-Jun-20
0747	Mixer, Millimeter Wave Harmonic 90 - 140 GHZ	Oleson Microwave Labs	M08HW	F80429-1	03-Mar-20	03-Mar-21
0770	Antenna Standard Gain Horn, 40-60 GHz WR-19, U-band, 24 dB mid-band gain	Quinstar Technology	QWH-1900-AA	118	05-Aug-19	05-Aug-20
0771	Antenna Standard Gain Horn, 60-90 GHz, WR-12, 24 dB mid-band gain	Quinstar Technology	QWH-1200-AA	111	05-Aug-19	05-Aug-20
0787	Transient Limiter 9 kHz-200 MHz	Hewlett Packard	11947A	3107A018 77	08-Oct-19	08-Oct-20
1300	Transition waveguide ET28S -19R	Custom Microwave	ET28S - 19R	1300	18-Nov-18	18-Nov-20
1303	Transition waveguide ET28S -12R	Custom Microwave	ET28S - 12R	S0951	18-Nov-18	18-Nov-20
1312	Mixer Millimeter Wave Harmonic 140-220 GHz	Oleson Microwave Labs	M05HWD	G91112-1	03-Mar-20	03-Mar-21
2171	Multimeter	Fluke	177	79960418	21-Jul-19	21-Jul-20
2909	Spectrum analyzer, ESA-E, 100 Hz to 26.5 GHz	Agilent Technologies	E4407B	MY414447 62	05-Apr-20	05-Apr-21
3235	Harmonic mixer 40 to 60 GHz	Agilent Technologies	11970U	MY300301 82	30-Jan-20	30-Jan-23
3290	Attenuator, direct reading, 40 to 60 GHz, 0.4 W	Quinstar Technology	QAD-U00000	10381008	24-Sep-19	24-Sep-21
3329	Antenna Standard Gain Horn, 140-220 GHz, WR-5, 24 dB mid-band gain	Quinstar Technology	NA	3329	19-Aug-19	19-Aug-20
3433	Test Cable , DC-18 GHz, 1.5 m, SMA - SMA	Mini-Circuits	CBL-5FT-SMSM+	25679	13-Apr-20	13-Apr-21
3434	Test Cable , DC-18 GHz, 1.5 m, SMA - SMA	Mini-Circuits	CBL-5FT-SMSM+	25683	13-Apr-20	13-Apr-21
3536	Antenna Standard Gain Horn, 90-140 GHz, WR-8, 24 dB mid-band gain	Quinstar Technology	QWH-FPRR00	111590040 01	26-Jun-19	26-Jun-20
3903	Microwave Cable Assembly, 40.0 GHz, 1.5 m, SMA/SMA	Huber-Suhner	SUCOFLE X 102A	1226/2A	06-Apr-20	06-Apr-21
4023	Diplexer for use OML mixers with Agilent spectrum analyzer	Oleson Microwave Labs	DPL.26	NA	01-Apr-20	01-Apr-21
4360	EMI Test Receiver, 20 Hz to 40 GHz.	Rohde & Schwarz	ESU40	100322	20-Jan-20	20-Jan-21



HL No	Description	Manufacturer	Model	Ser. No.	Last Cal./ Check	Due Cal./ Check
4778	EMI Receiver, 9 kHz - 2.9 GHz, System: HL1431, HL4777	Hewlett Packard	8542E	30807A00 262, 3427A001 23	04-Nov-19	04-Nov-20
4933	Active Horn Antenna, 1 GHz to 18 GHz	COM-POWER CORPORATION	AHA-118	701046	06-Jan-20	06-Jan-21
4956	Active horn antenna, 18 to 40 GHz	COM-POWER CORPORATION	AHA-840	105004	29-Jan-20	29-Jan-21
5288	Trilog Antenna, 25 MHz - 8 GHz, 100W	Frankonia	ALX-8000E	00809	08-Feb-19	08-Feb-22
5376	EXA Signal Analyzer, 10 Hz - 32 GHz	Keysight Technologies	N9010B	MY574704 04	18-Mar-20	18-Mar-21
5380	Waveguide Harmonic Mixer 55-90G Hz	Keysight Technologies	M1971E	MY561302 39	01-Jun-18	01-Jun-20
5404	RF cable, 18 GHz, N-N, 6 m	Huber-Suhner	SF118/11 N(x2)	500024/18	11-Aug-19	11-Aug-20
5476	Cable, BNC/BNC, 10.5 m	Western wire	MIL-C-17G	NA	30-Jan-20	30-Jan-21

**9 APPENDIX B Measurement uncertainties****Expanded uncertainty at 95% confidence in Hermon Labs EMC measurements**

Test description	Expanded uncertainty
Conducted emissions with LISN	9 kHz to 150 kHz: ± 3.9 dB 150 kHz to 30 MHz: ± 3.8 dB
Radiated emissions at 10 m measuring distance Horizontal polarization Vertical polarization	Biconilog antenna: ± 5.0 dB Biconical antenna: ± 5.0 dB Log periodic antenna: ± 5.1 dB Double ridged horn antenna: ± 5.3 dB Biconilog antenna: ± 5.5 dB Biconical antenna: ± 5.5 dB Log periodic antenna: ± 5.6 dB Double ridged horn antenna: ± 5.8 dB
Radiated emissions at 3 m measuring distance Horizontal polarization Vertical polarization	Biconilog antenna: ± 5.3 dB Biconical antenna: ± 5.0 dB Log periodic antenna: ± 5.3 dB Double ridged horn antenna: ± 5.3 dB Biconilog antenna: ± 6.0 dB Biconical antenna: ± 5.7 dB Log periodic antenna: ± 6.0 dB Double ridged horn antenna: ± 6.0 dB
Conducted emissions at RF antenna connector	9 kHz to 2.9 GHz: ± 2.6 dB 2.9 GHz to 6.46 GHz: ± 3.5 dB 6.46 GHz to 13.2 GHz: ± 4.3 dB 13.2 GHz to 22.0 GHz: ± 5.0 dB 22.0 GHz to 26.8 GHz: ± 5.5 dB 26.8 GHz to 40.0 GHz: ± 4.8 dB

Hermon Laboratories is accredited by A2LA for calibration according to present requirements of ISO/IEC 17025 and NCSL Z540-1. The accreditation is granted to perform calibration of parameters that are listed in the Scope of Hermon Laboratories Accreditation.

Hermon Laboratories calibrates its reference and transfer standards by calibration laboratories accredited to ISO/IEC 17025 by a mutually recognized Accreditation Body or by a recognized national metrology institute. All reference and transfer standards used in the calibration system are traceable to national or international standards.

In-house calibration of all test and measurement equipment is performed on a regular basis according to Hermon Laboratories calibration procedures, manufacturer calibration/verification procedures or procedures defined in the relevant standards. The Hermon Laboratories test and measurement equipment is calibrated within the tolerances specified by the manufacturers and/or by the relevant standards.



10 APPENDIX C Test facility description

Tests were performed at Hermon Laboratories Ltd., which is a fully independent, private, EMC, Radio, Safety, Environmental and Telecommunication testing facility.

Hermon Laboratories is recognized and accredited by the Federal Communications Commission (USA) for relevant parts of Code of Federal Regulations 47 (CFR 47), Test Firm Registration Number is 927748, Designation Number is IL1001; Recognized by Innovation, Science and Economic Development Canada for wireless and terminal testing (ISED), ISED #2186A, CAB identifier is IL1001; Certified by VCCI, Japan (the registration numbers are R-10808 for OATS, R-11082 for anechoic chamber, G-10869 for RE measurements above 1 GHz, C-10845 for conducted emissions site and T-11606 for conducted emissions at telecommunication ports).

The laboratory is accredited by American Association for Laboratory Accreditation (USA) according to ISO/IEC 17025 for electromagnetic compatibility, product safety, telecommunications testing, environmental simulation and calibration (for exact scope please refer to Certificate No. 839.01, 839.03 and 839.04).

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Person for contact: Mr. Michael Nikishin, EMC&Radio group manager

11 APPENDIX D Specification references

47CFR part 15: 2019	Radio Frequency Devices.
ANSI C63.2: 1996	American National Standard for Instrumentation-Electromagnetic Noise and Field Strength, 10 kHz to 40 GHz-Specifications.
ANSI C63.10: 2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
RSS-210 Issue 10: 2019	Licence-Exempt Radio Apparatus:Category I Equipment
RSS-Gen Issue 5 with Am.1: 2019	General Requirements for Compliance of Radio Apparatus



12 Test equipment correction factors

Antenna factor
Active loop antenna
Model 6502, S/N 2857, HL 0446

Frequency, MHz	Magnetic antenna factor, dB	Electric antenna factor, dB
0.009	-32.8	18.7
0.010	-33.8	17.7
0.020	-38.3	13.2
0.050	-41.1	10.4
0.075	-41.3	10.2
0.100	-41.6	9.9
0.150	-41.7	9.8
0.250	-41.6	9.9
0.500	-41.8	9.8
0.750	-41.9	9.7
1.000	-41.4	10.1
2.000	-41.5	10.0
3.000	-41.4	10.2
4.000	-41.4	10.1
5.000	-41.5	10.1
10.000	-41.9	9.6
15.000	-41.9	9.6
20.000	-42.2	9.3
25.000	-42.8	8.7
30.000	-44.0	7.5

Antenna factor in dB(1/m) is to be added to receiver meter reading in dB(μ V) to convert it into field strength in dB(μ V/m).

Antenna factor
Standard gain horn antenna
Quinstar Technology
Model QWH
Ser.No.112, HL 0768, 0769, 0770, 0771, 0772

Frequency min, GHz	Frequency max, GHz	Antenna factor, dB(1/m)
18.000	26.500	32.01
26.500	40.000	35.48
40.000	60.000	39.03
60.000	90.000	42.55
90.000	140.000	46.23
140.000	220.000	50.11

Antenna factor in dB(1/m) is to be added to receiver meter reading in dB(μ V) to convert it into field intensity in dB(μ V/m).



Antenna factor
Trilog antenna
Model ALX-8000E, Frankonia, S/N 00809, HL 5288, 30-1000 MHz

Frequency, MHz	Antenna factor, dB/m		
	Vert Up	Vert Down	Delta
30	-51.19	-51.28	0.09
35	-44.03	-44.12	0.09
40	-43.07	-43.12	0.05
45	-39.61	-39.79	0.18
50	-37.84	-38.14	0.3
60	-34.93	-34.9	0.03
70	-29.76	-29.66	0.1
80	-27.69	-27.82	0.13
90	-29.05	-29.07	0.02
100	-31.19	-31.19	0
120	-31.61	-31.6	0.01
140	-28.13	-28.06	0.07
160	-27.71	-27.75	0.04
180	-26.19	-26.15	0.04
200	-28.2	-28.15	0.05
250	-27.45	-27.47	0.02
300	-29.61	-29.63	0.02
400	-31.77	-31.78	0.01
500	-32.81	-32.81	0
600	-33.64	-33.61	0.03
700	-34.21	-34.21	0
800	-35.66	-35.66	0
900	-36.99	-36.91	0.08
1000	-38	-37.91	0.09

Antenna factor in dB(1/m) is to be added to receiver meter reading in dB(μ V) to convert it into field intensity in dB(μ V/m).



Antenna factor
Active Horn Antenna,
Com-Power Corporation, model: AHA-118, s/n 701046, HL 4933

Frequency, MHz	Measured antenna factor (with preamplifier), dB/m
1000	-16.1
1500	-15.1
2000	-10.9
2500	-11.9
3000	-11.1
3500	-10.6
4000	-8.6
4500	-8.3
5000	-5.9
5500	-5.7
6000	-3.3
6500	-4.0
7000	-2.2
7500	-1.7
8000	1.1
8500	-0.8
9000	-1.5
9500	-0.2

Frequency, MHz	Measured antenna factor (with preamplifier), dB/m
10000	1.8
10500	1.0
11000	0.3
11500	-0.5
12000	3.1
12500	1.4
13000	-0.3
13500	-0.4
14000	2.5
14500	2.2
15000	1.9
15500	0.5
16000	2.1
16500	1.2
17000	0.6
17500	3.1
18000	4.2

The antenna factor shall be added to receiver reading in dB μ V to obtain field strength in dB μ V/m.



Antenna factor
Active Horn Antenna,
Com-Power Corporation, model: AHA-840, s/n 105004, HL 4956

Frequency, MHz	Measured antenna factor (with preamplifier), dB/m
18000	2.5
18500	0.5
19000	-1.0
19500	-2.4
20000	-2.5
20500	-2.2
21000	-2.0
21500	-2.7
22000	-3.7
22500	-3.8
23000	-3.7
23500	-5.0
24000	-4.5
24500	-5.0
25000	-4.7
25500	-4.4
26000	-4.3
26500	-5.6
27000	-4.3
27500	-4.9
28000	-5.2
28500	-4.4

Frequency, MHz	Measured antenna factor (with preamplifier), dB/m
29000	-2.7
29500	-2.6
30000	-1.4
30500	-1.5
31000	-1.0
31500	-2.6
32000	-3.3
32500	-3.3
33000	-5.1
33500	-5.2
34000	-1.5
34500	-5.4
35000	-3.3
35500	-4.2
36000	-2.8
36500	-2.6
37000	-1.0
38000	1.8
38500	2.8
39000	1.3
39500	1.3
40000	0.3

The antenna factor shall be added to receiver reading in dB μ V to obtain field strength in dB μ V/m.



Cable loss
Test Cable, Mini-Circuits, CBL-5FT-SMSM+, SMA-SMA, 18 GHz, 1.5 m, S/N 25679
Mini-Circuits, HL 3433

Frequency, MHz	Cable loss, dB	Frequency, MHz	Cable loss, dB
10.0	0.06	9000	2.01
100	0.17	9500	2.06
500	0.41	10000	2.05
1000	0.58	10500	2.18
1500	0.72	11000	2.26
2000	0.86	11500	2.28
2500	0.96	12000	2.43
3000	1.04	12500	2.53
3500	1.13	13000	2.52
4000	1.23	13500	2.56
4500	1.31	14000	2.60
5000	1.41	14500	2.59
5500	1.49	15000	2.67
6000	1.55	15500	2.76
6500	1.63	16000	2.86
7000	1.71	16500	2.91
7500	1.78	17000	2.95
8000	1.86	17500	3.02
8500	1.92	18000	3.07



Cable loss
Test Cable, Mini-Circuits, CBL-5FT-SMSM+, SMA-SMA, 18 GHz, 1.5 m, S/N 25683
Mini-Circuits, HL 3434

Frequency, MHz	Cable loss, dB	Frequency, MHz	Cable loss, dB
10.0	0.06	9000	1.96
100	0.16	9500	2.01
500	0.40	10000	2.01
1000	0.57	10500	2.14
1500	0.72	11000	2.21
2000	0.85	11500	2.24
2500	0.95	12000	2.36
3000	1.03	12500	2.47
3500	1.11	13000	2.46
4000	1.21	13500	2.50
4500	1.29	14000	2.53
5000	1.39	14500	2.53
5500	1.46	15000	2.62
6000	1.52	15500	2.70
6500	1.60	16000	2.80
7000	1.68	16500	2.86
7500	1.75	17000	2.88
8000	1.83	17500	2.94
8500	1.88	18000	3.00



Cable loss
Microwave Cable Assembly, Huber-Suhner, 40 GHz, 1.5 m, SMA-SMA, S/N 1226/2A
HL 3903

Frequency, MHz	Cable loss, dB	Frequency, MHz	Cable loss, dB	Frequency, MHz	Cable loss, dB
10	-0.02	9500	1.84	21000	2.98
100	0.15	10000	1.86	22000	3.07
500	0.38	10500	1.93	23000	3.13
1000	0.56	11000	1.99	24000	3.21
1500	0.69	11500	2.04	25000	3.26
2000	0.82	12000	2.10	26000	3.48
2500	0.90	12500	2.15	27000	3.44
3000	0.98	13000	2.21	28000	3.53
3500	1.06	13500	2.25	29000	3.59
4000	1.11	14000	2.29	30000	3.66
4500	1.17	14500	2.34	31000	3.70
5000	1.24	15000	2.36	32000	3.79
5500	1.32	15500	2.40	33000	3.88
6000	1.40	16000	2.45	34000	3.94
6500	1.50	16500	2.48	35000	3.91
7000	1.56	17000	2.56	36000	4.05
7500	1.62	17500	2.58	37000	4.22
8000	1.68	18000	2.60	38000	4.25
8500	1.74	19000	2.84	39000	4.27
9000	1.78	20000	2.88	40000	4.33



Cable loss
RF Cable, Huber-Suhner, 18 GHz, 6 m,
SF118/11N(x2), S/N 500024/18
HL 5404

Frequency, MHz	Cable loss, dB	Frequency, MHz	Cable loss, dB
0.1	0.02	5500	3.62
50	0.23	6000	3.73
100	0.32	6500	3.83
200	0.46	7000	3.92
300	0.56	7500	4.04
400	0.64	8000	4.11
500	0.72	8500	4.19
600	0.79	9000	4.28
700	0.86	9500	4.37
800	0.92	10000	4.46
900	0.97	10500	3.62
1000	1.03	11000	3.73
1100	1.08	11500	3.83
1200	1.14	12000	3.92
1300	1.17	12500	4.04
1400	1.22	13000	4.11
1500	1.27	13500	4.19
1600	1.31	14000	4.28
1700	1.35	14500	4.37
1800	1.39	15000	4.46
1900	1.43	15500	4.54
2000	1.48	16000	4.60
2500	1.66	16500	4.70
3000	1.82	17000	4.80
3500	1.98	17500	4.87
4000	2.12	18000	4.93
4500	2.26		
5000	2.40		



Cable loss
Cable, BNC/BNC, 10.5 m MIL-C-17G
Western wire, HL 5476

Frequency, MHz	Cable loss, dB	Frequency, MHz	Cable loss, dB
0.01	0.12	270	3.07
10	0.56	280	3.13
20	0.79	290	3.19
30	0.97	300	3.26
40	1.11	310	3.32
50	1.25	320	3.40
60	1.37	330	3.46
70	1.48	340	3.52
80	1.58	350	3.58
90	1.68	360	3.62
100	1.79	370	3.70
110	1.88	380	3.75
120	1.96	390	3.82
130	2.05	400	3.87
140	2.12	410	3.93
150	2.20	420	3.98
160	2.29	430	4.06
170	2.37	440	4.11
180	2.44	450	4.18
190	2.51	460	4.22
200	2.58	470	4.27
210	2.66	480	4.35
220	2.74	490	4.39
230	2.80	500	4.45
240	2.87		
250	2.93		
260	3.01		



13 APPENDIX E Abbreviations and acronyms

A	ampere
AC	alternating current
A/m	ampere per meter
AM	amplitude modulation
AVRG	average (detector)
BB	broad band
cm	centimeter
dB	decibel
dBm	decibel referred to one milliwatt
dB(μ V)	decibel referred to one microvolt
dB(μ V/m)	decibel referred to one microvolt per meter
dB(μ A)	decibel referred to one microampere
dB Ω	decibel referred to one Ohm
DC	direct current
EIRP	equivalent isotropically radiated power
ERP	effective radiated power
EUT	equipment under test
F	frequency
GHz	gigahertz
GND	ground
H	height
HL	Hermon laboratories
Hz	hertz
ITE	information technology equipment
k	kilo
kHz	kilohertz
LISN	line impedance stabilization network
LO	local oscillator
m	meter
MHz	megahertz
min	minute
mm	millimeter
ms	millisecond
μ s	microsecond
NA	not applicable
NB	narrow band
NT	not tested
OATS	open area test site
Ω	Ohm
QP	quasi-peak
PM	pulse modulation
PS	power supply
RE	radiated emission
RF	radio frequency
rms	root mean square
Rx	receive
s	second
T	temperature
Tx	transmit
V	volt
VA	volt-ampere

END OF TEST REPORT

14 APPENDIX F Manufacturer's declaration

Note: The following data in this clause is provided by the customer and represents his sole responsibility.

RADWIN

DECLARATION OF IDENTITY

RADWIN 6000 TerraWIN™ 625G

The model RADWIN 6000 TerraWIN™ 601G is a variant of the model RADWIN 6000 TerraWIN™ 625G and is electronically / electrically / mechanically identical.

The RADWIN 6000 TerraWIN™ 625G and RADWIN 6000 TerraWIN™ 601G are model names for an outdoor radio transceiver operating in 60 GHz frequency band that come in two different software configurations depending on installation purpose.

The RADWIN 6000 TerraWIN™ 625G (named as DN – Distribution Node) :

Is a Point to Point or/and MultiPoint radio distribution unit operating in a wireless mesh network architecture.

Is installed in point of presents sites (POP) or in mesh sites as inter connecting wireless nodes to extent coverage and service availability.

Provides aggregate capacity up to 3.9 Gbps while guarantying minimum level of capacity in case of traffic overload over the air.

The RADWIN 6000 TerraWIN™ 601G (named as CN – Customer Node)

Is a Point to Point and/or MultiPoint customer premises distribution unit, installed either in enterprises or residential customer's sites.

Both radio models can provide aggregate capacity up to 3.9 Gbps while guarantying minimum level of capacity in case of traffic overload over the air, operating in 57-66 GHz frequency band and @2.16 GHz channel bandwidth, using a beamforming single polarized antenna.



Shlomo Weiss
Standardization Officer,
RADWIN Ltd.

END OF DOCUMENT