



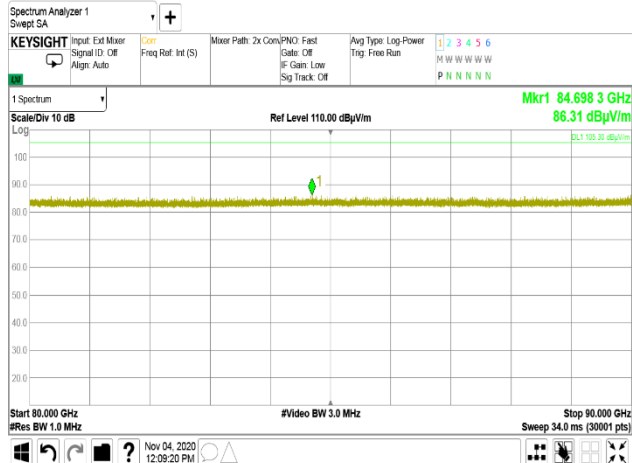
HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

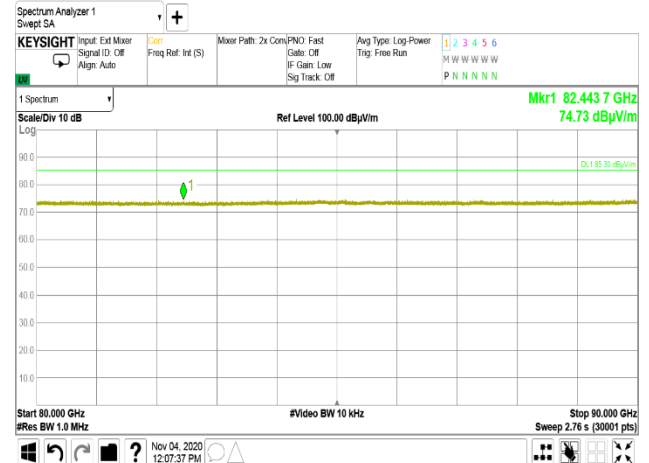
Date of Issue: 8-Feb-21

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):		22-Oct-20	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

High carrier frequency:



64.80 GHz





HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

Date of Issue: 8-Feb-21

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):		22-Oct-20	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.6 Spurious emission measurements in 90 - 100 GHz range

TEST SITE:

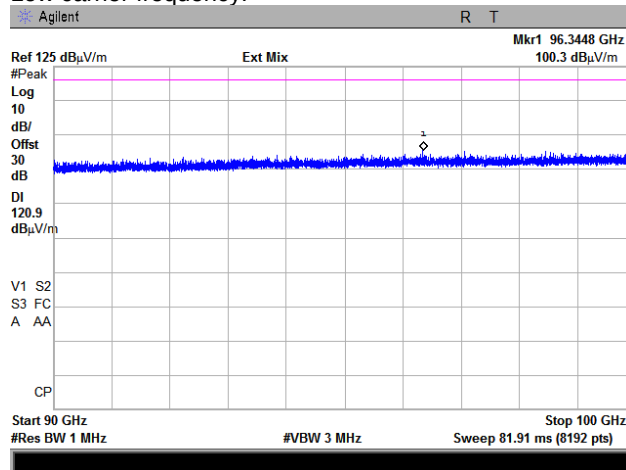
TEST DISTANCE:

MODULATION:

ANTENNA POLARIZATION:

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

Low carrier frequency:



OATS

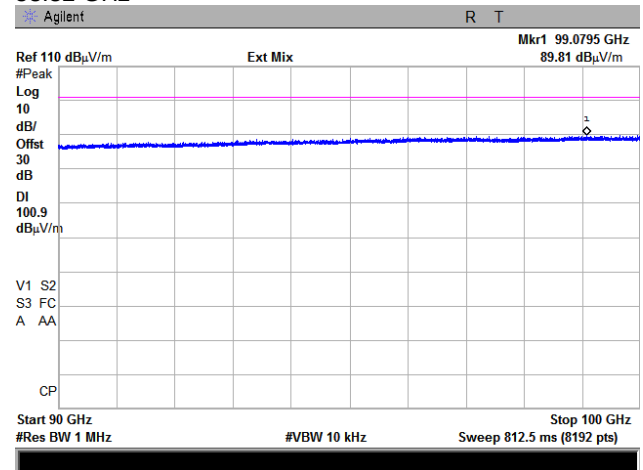
0.5 m

16QAM

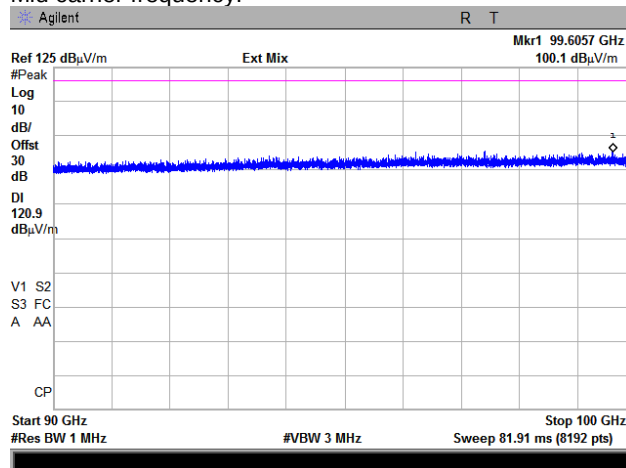
Vertical and Horizontal

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

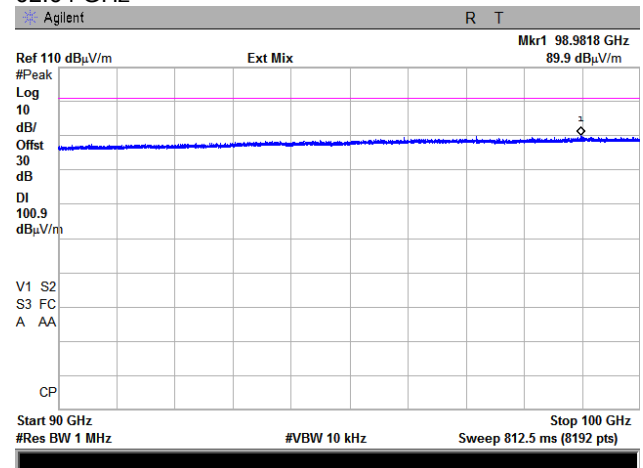
58.32 GHz



Mid carrier frequency:



62.64 GHz





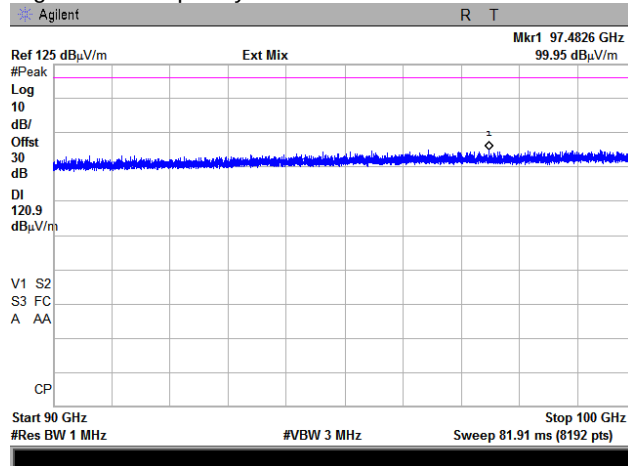
HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

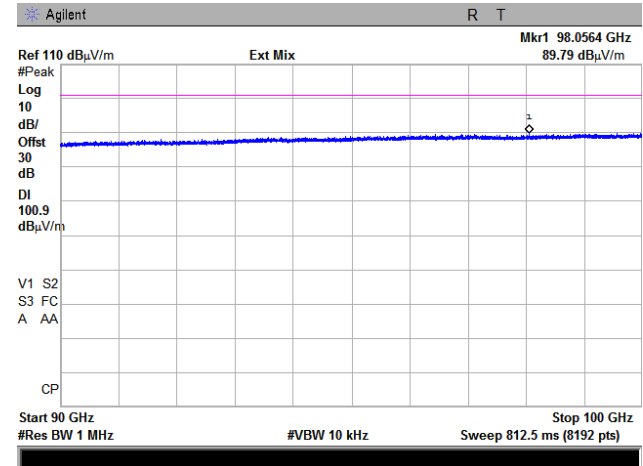
Date of Issue: 8-Feb-21

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):		22-Oct-20	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

High carrier frequency:



64.80 GHz





HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

Date of Issue: 8-Feb-21

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):		22-Oct-20	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.7 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

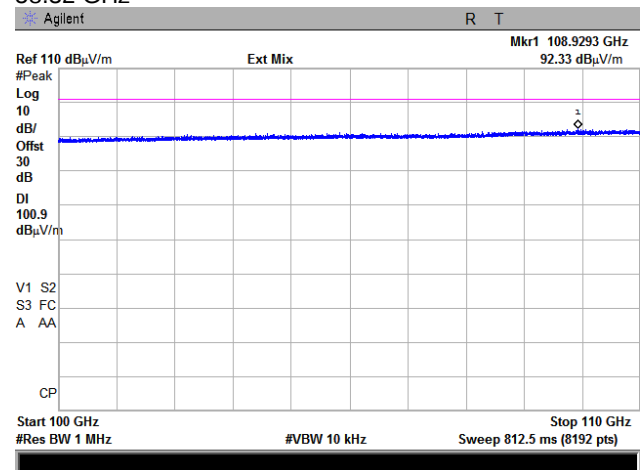
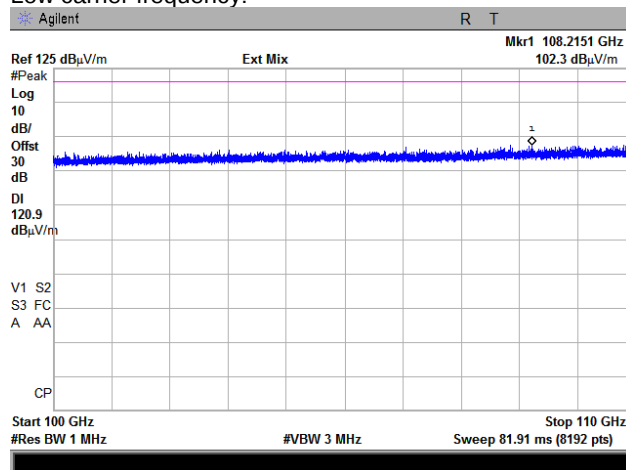
0.5 m

16QAM

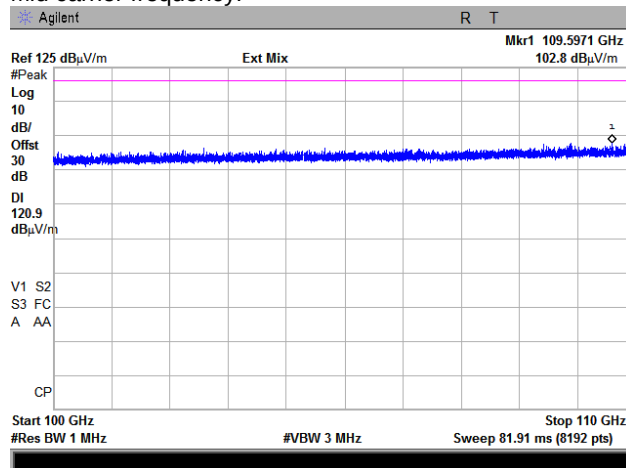
Vertical and Horizontal

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

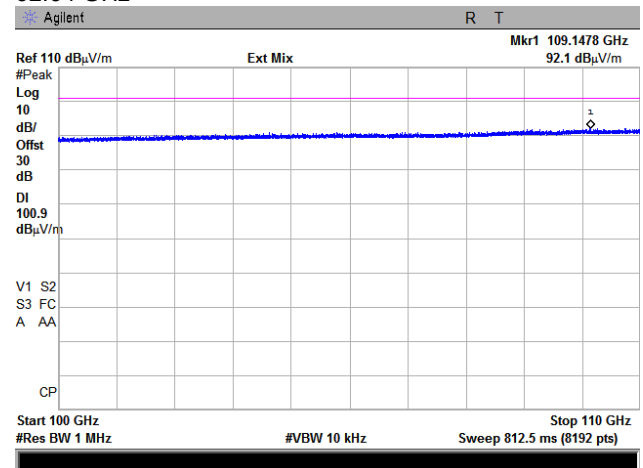
58.32 GHz



Mid carrier frequency:



62.64 GHz





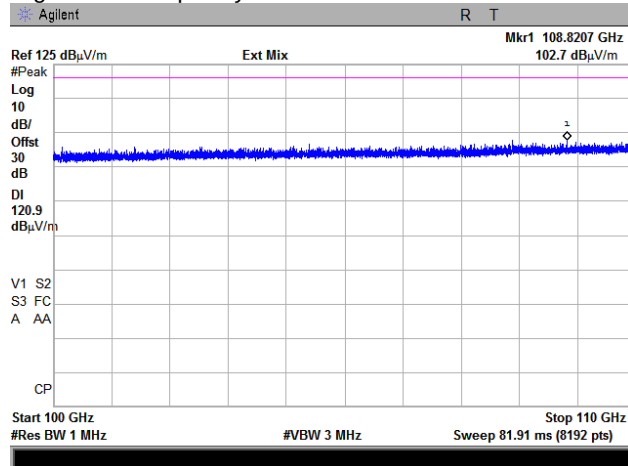
HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

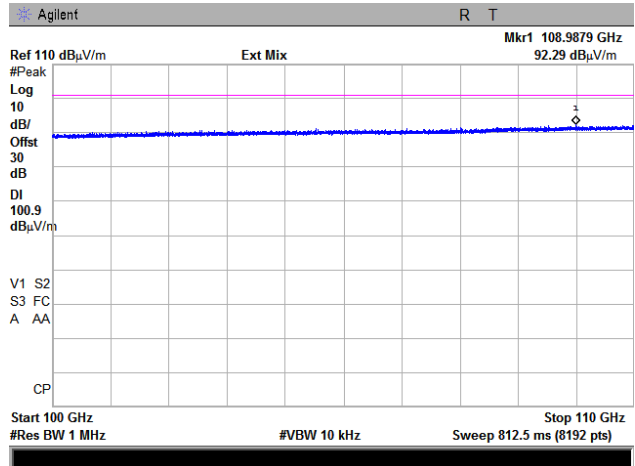
Date of Issue: 8-Feb-21

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):		22-Oct-20	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

High carrier frequency:



64.80 GHz





HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

Date of Issue: 8-Feb-21

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):		22-Oct-20	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.8 Spurious emission measurements in 110 - 120 GHz range

TEST SITE:

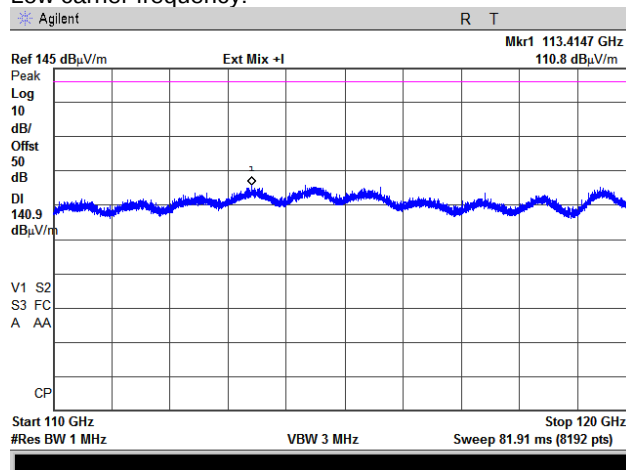
TEST DISTANCE:

MODULATION:

ANTENNA POLARIZATION:

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

Low carrier frequency:



OATS

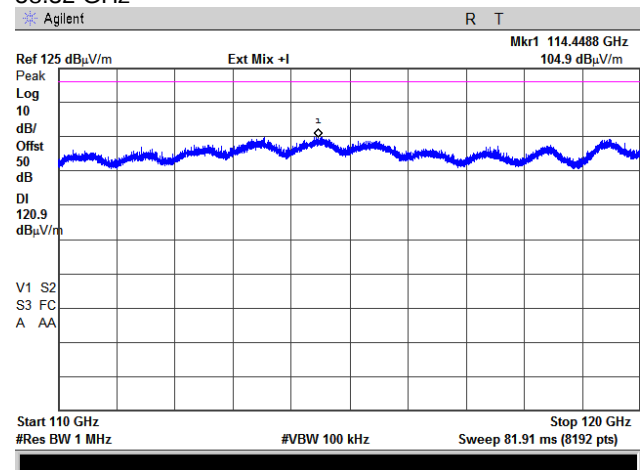
0.05 m

16QAM

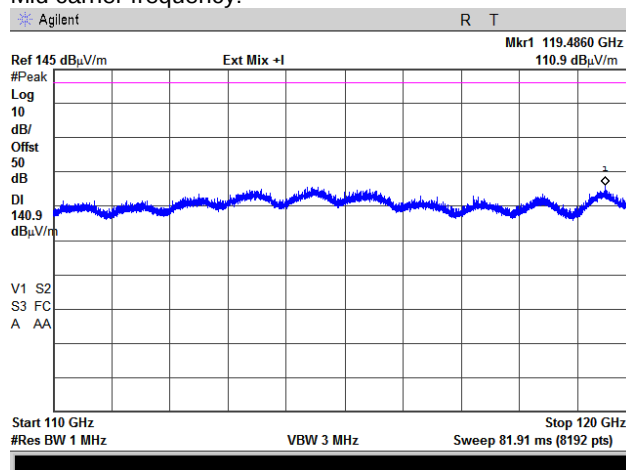
Vertical and Horizontal

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

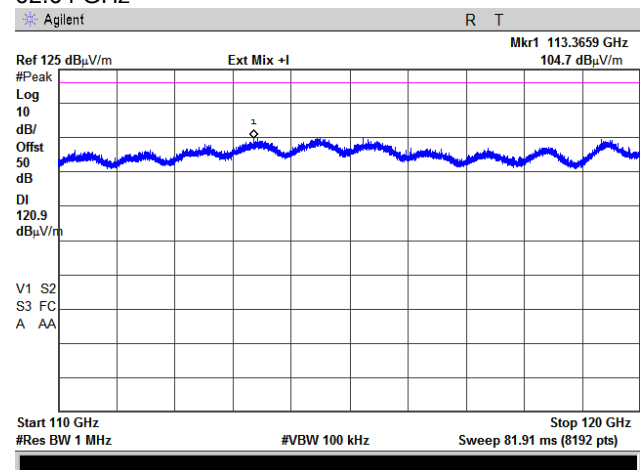
58.32 GHz



Mid carrier frequency:



62.64 GHz





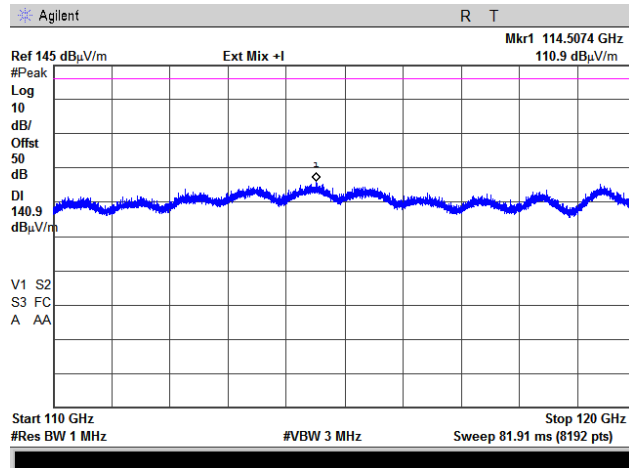
HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

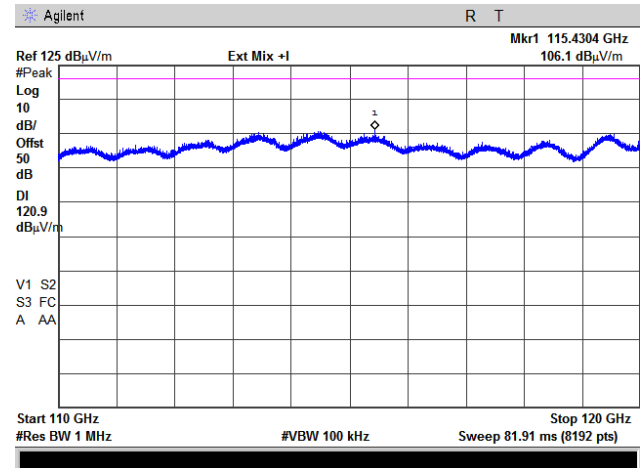
Date of Issue: 8-Feb-21

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):		22-Oct-20	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

High carrier frequency:



64.80 GHz





HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

Date of Issue: 8-Feb-21

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):		22-Oct-20	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.9 Spurious emission measurements in 120 - 130 GHz range

TEST SITE:

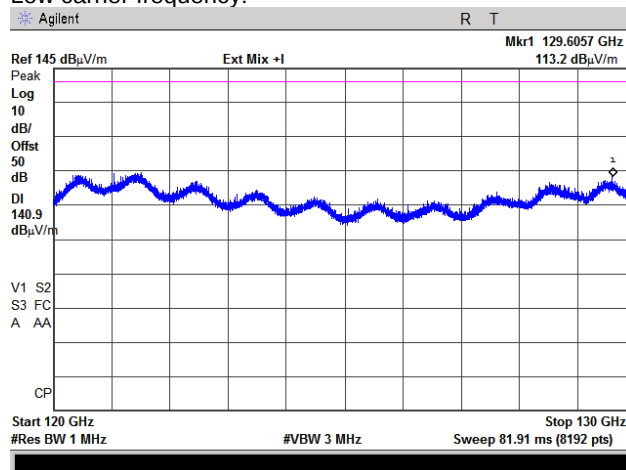
TEST DISTANCE:

MODULATION:

ANTENNA POLARIZATION:

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

Low carrier frequency:



OATS

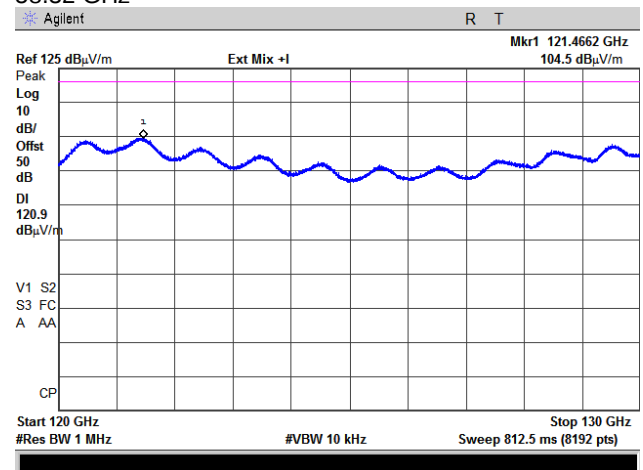
0.05 m

16QAM

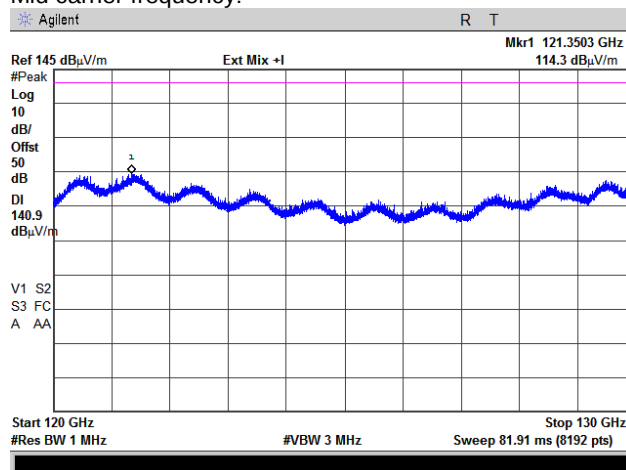
Vertical and Horizontal

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

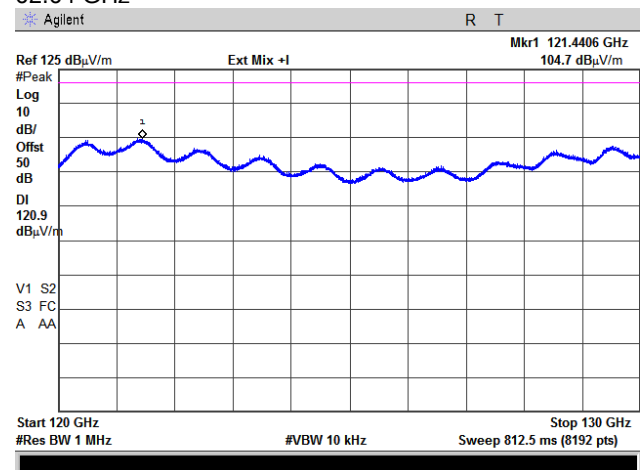
58.32 GHz



Mid carrier frequency:



62.64 GHz





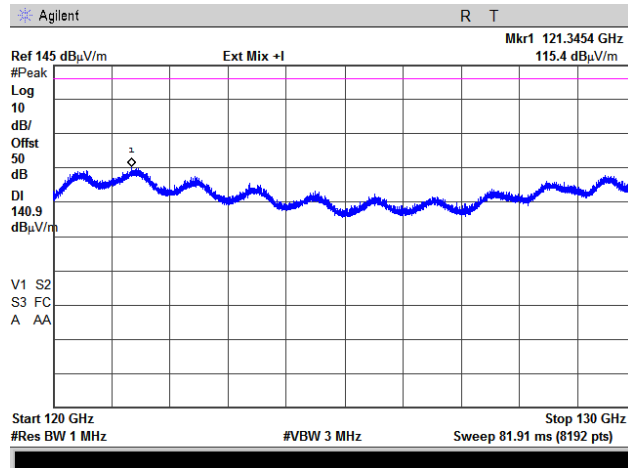
HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

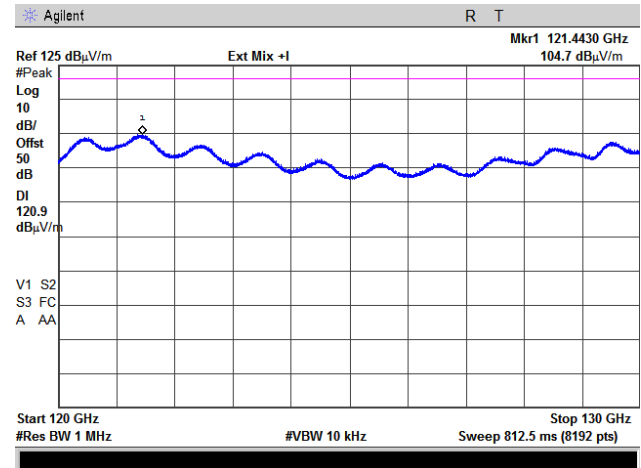
Date of Issue: 8-Feb-21

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):		22-Oct-20	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

High carrier frequency:



64.80 GHz





HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

Date of Issue: 8-Feb-21

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):		22-Oct-20	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.10 Spurious emission measurements in 130 - 140 GHz range

TEST SITE:

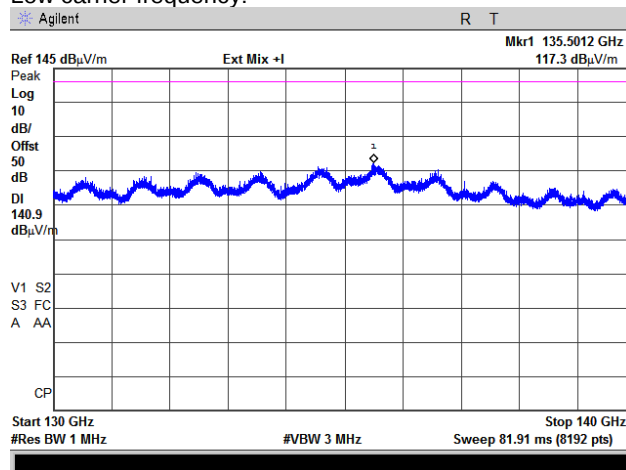
TEST DISTANCE:

MODULATION:

ANTENNA POLARIZATION:

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

Low carrier frequency:



OATS

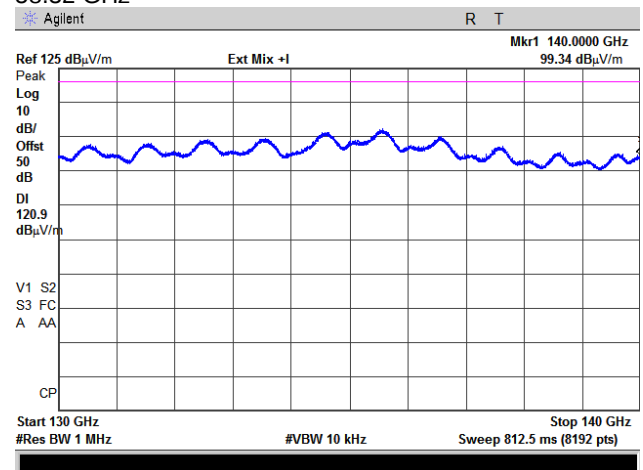
0.05 m

16QAM

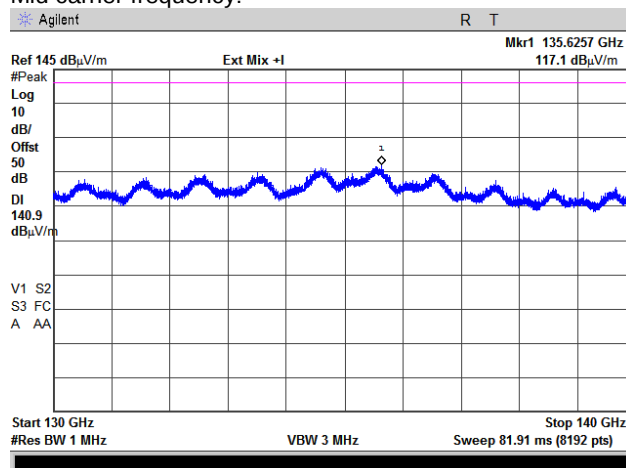
Vertical and Horizontal

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

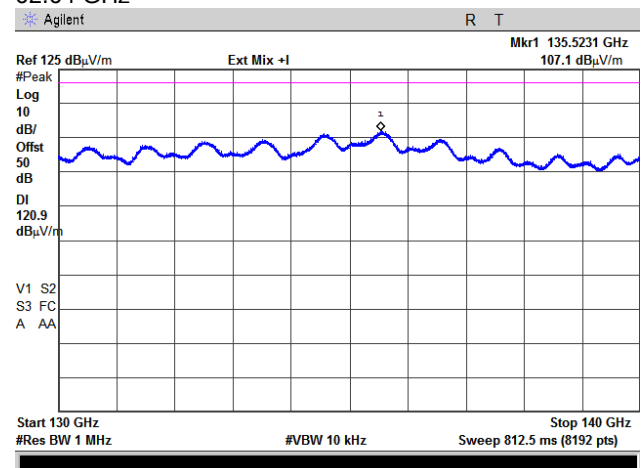
58.32 GHz



Mid carrier frequency:



62.64 GHz





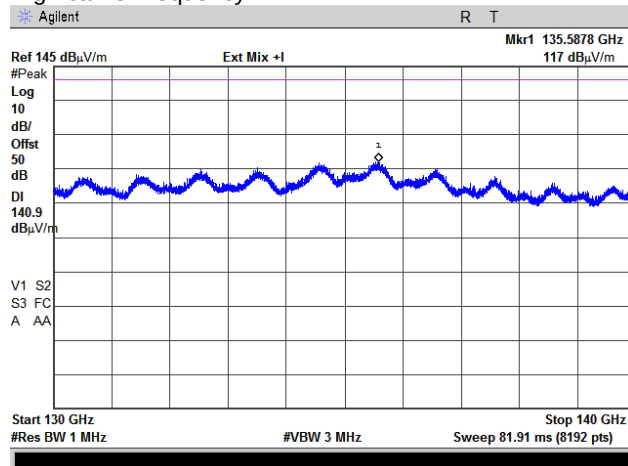
HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

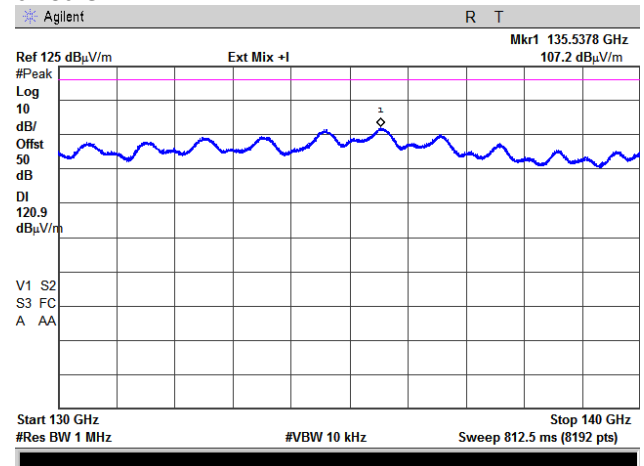
Date of Issue: 8-Feb-21

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):		22-Oct-20	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

High carrier frequency:



64.80 GHz





HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

Date of Issue: 8-Feb-21

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:		Verdict: PASS	
Date(s):			
22-Oct-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.11 Spurious emission measurements in 140 - 150 GHz range

TEST SITE:

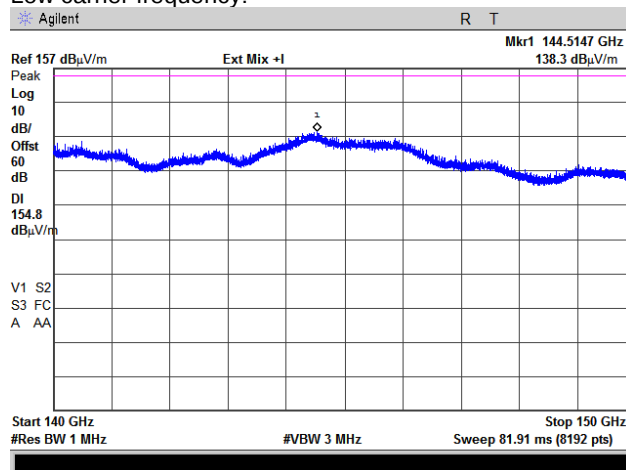
TEST DISTANCE:

MODULATION:

ANTENNA POLARIZATION:

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

Low carrier frequency:



OATS

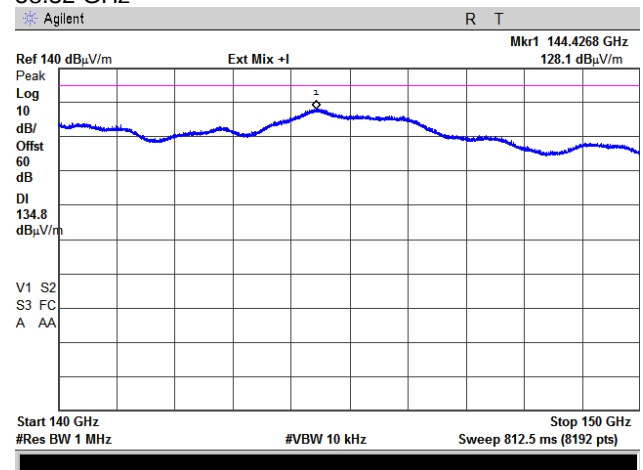
0.01 m

16QAM

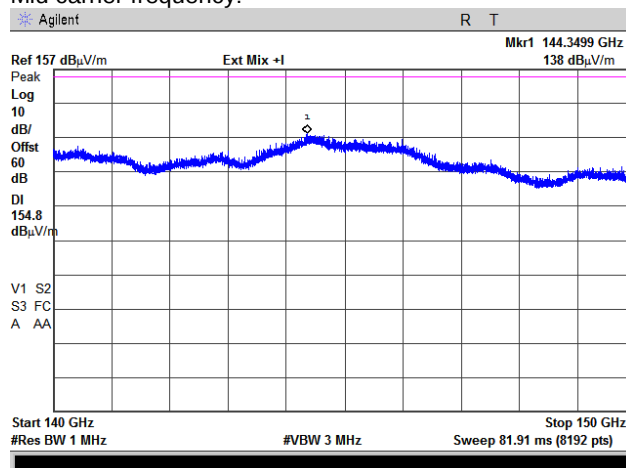
Vertical and Horizontal

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

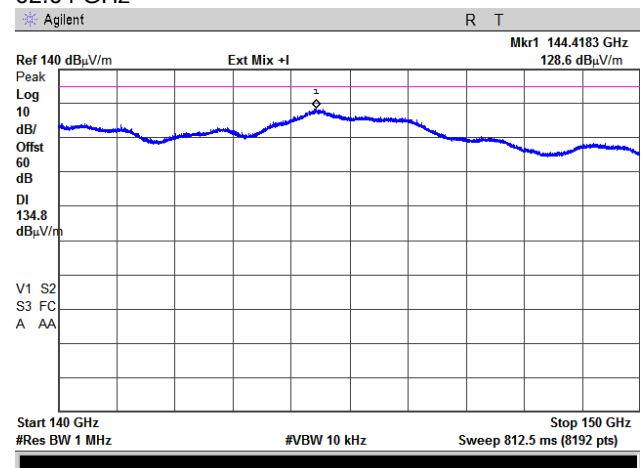
58.32 GHz



Mid carrier frequency:



62.64 GHz





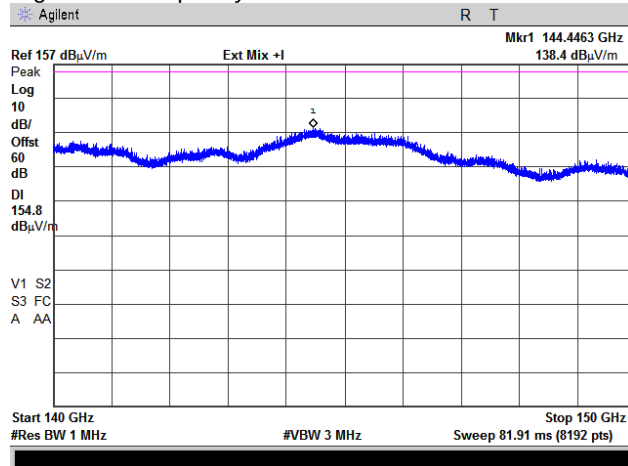
HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

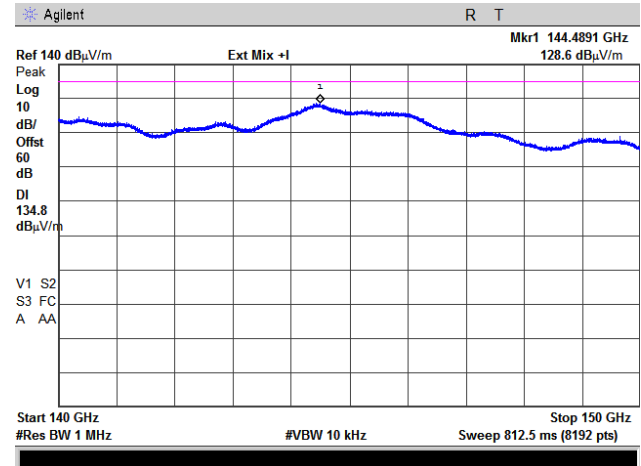
Date of Issue: 8-Feb-21

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:		Verdict: PASS	
Date(s):			
22-Oct-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

High carrier frequency:



64.80 GHz





HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

Date of Issue: 8-Feb-21

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):		22-Oct-20	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.12 Spurious emission measurements in 150 - 160 GHz range

TEST SITE:

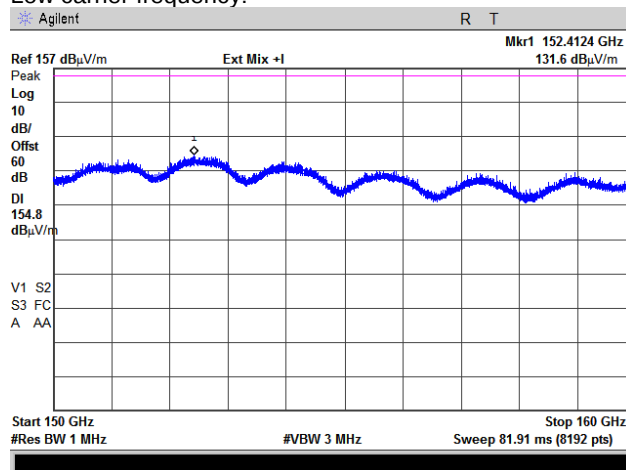
TEST DISTANCE:

MODULATION:

ANTENNA POLARIZATION:

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

Low carrier frequency:



OATS

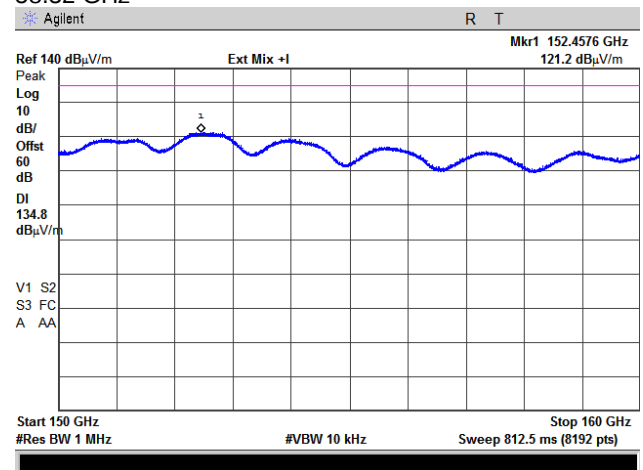
0.01 m

16QAM

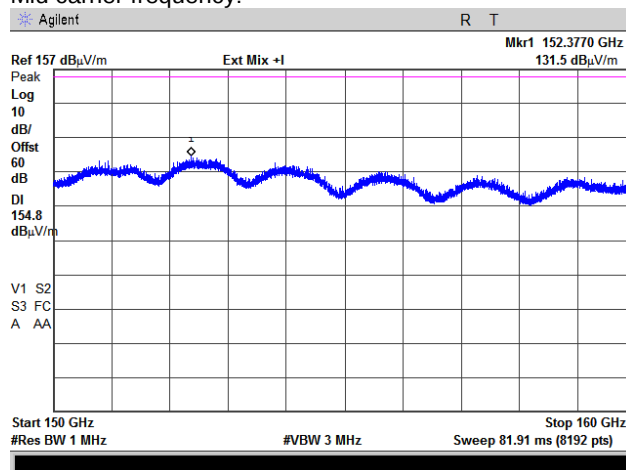
Vertical and Horizontal

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

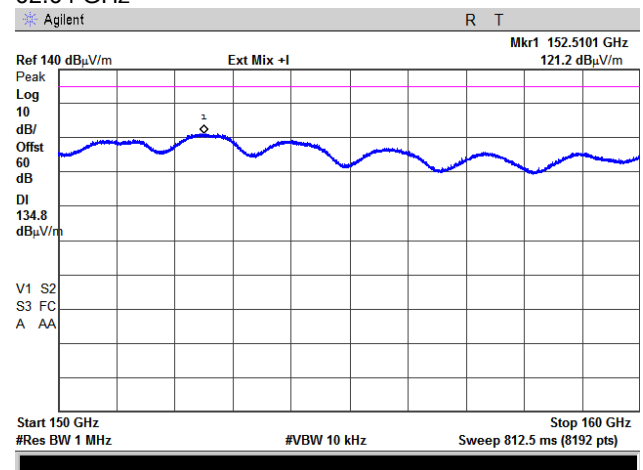
58.32 GHz



Mid carrier frequency:



62.64 GHz





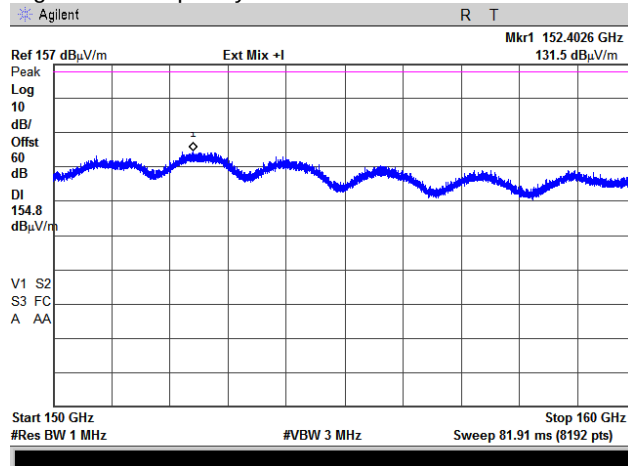
HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

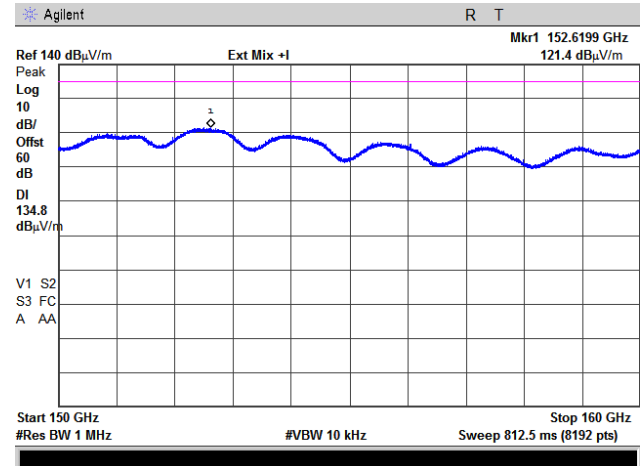
Date of Issue: 8-Feb-21

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):		22-Oct-20	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

High carrier frequency:



64.80 GHz





HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

Date of Issue: 8-Feb-21

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):		22-Oct-20	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.13 Spurious emission measurements in 160 - 170 GHz range

TEST SITE:

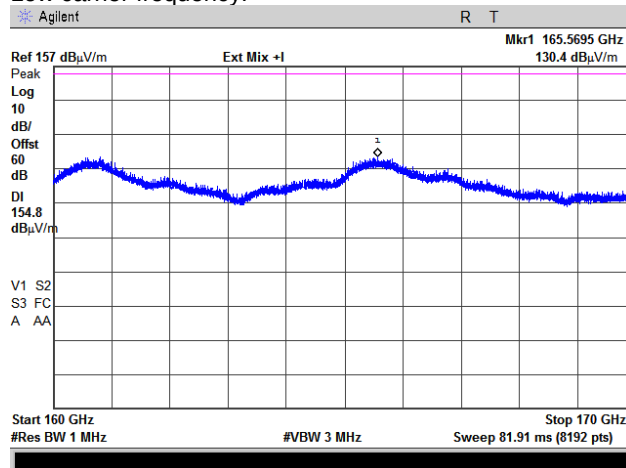
TEST DISTANCE:

MODULATION:

ANTENNA POLARIZATION:

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

Low carrier frequency:



OATS

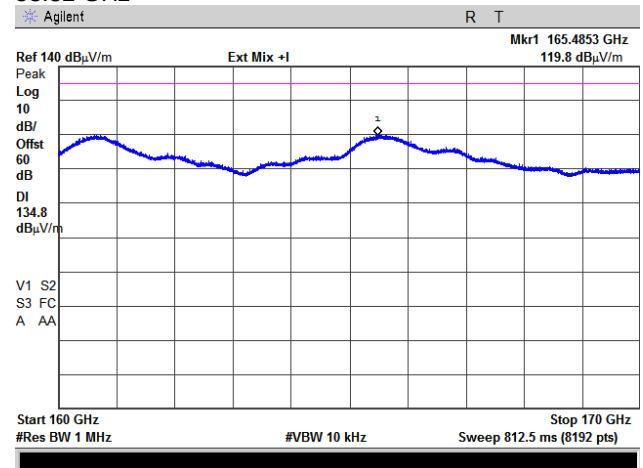
0.01 m

16QAM

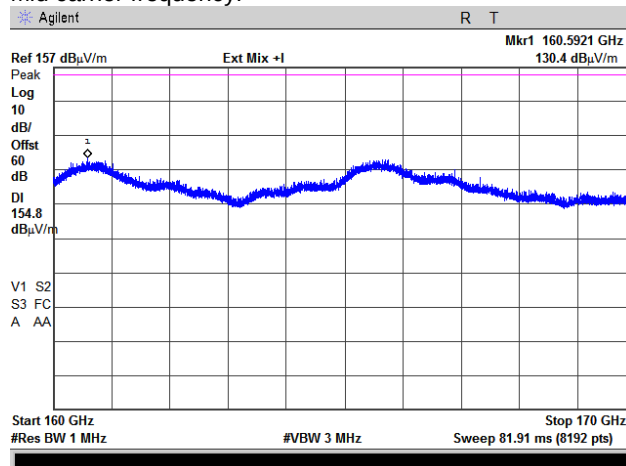
Vertical and Horizontal

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

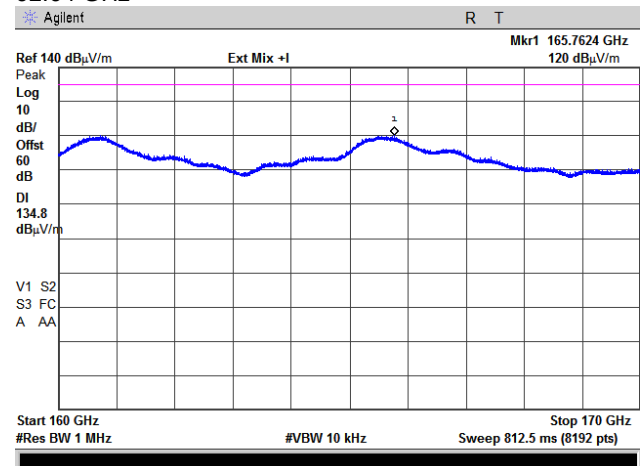
58.32 GHz



Mid carrier frequency:



62.64 GHz





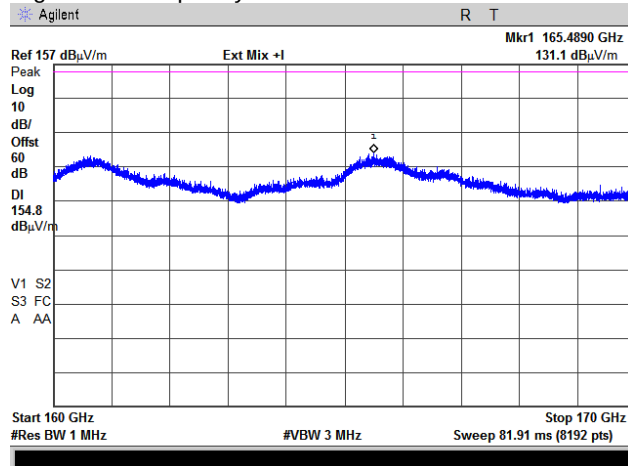
HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

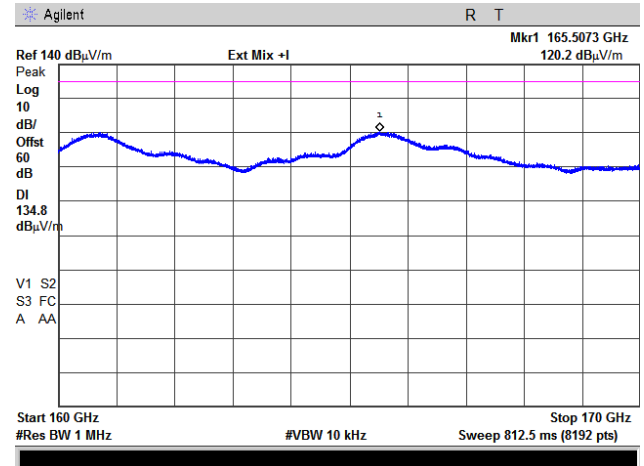
Date of Issue: 8-Feb-21

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):		22-Oct-20	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

High carrier frequency:



64.80 GHz





HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

Date of Issue: 8-Feb-21

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):		22-Oct-20	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.14 Spurious emission measurements in 170 - 180 GHz range

TEST SITE:

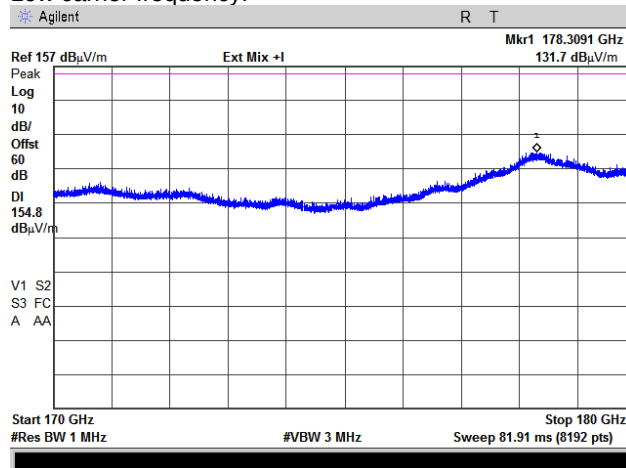
TEST DISTANCE:

MODULATION:

ANTENNA POLARIZATION:

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

Low carrier frequency:



OATS

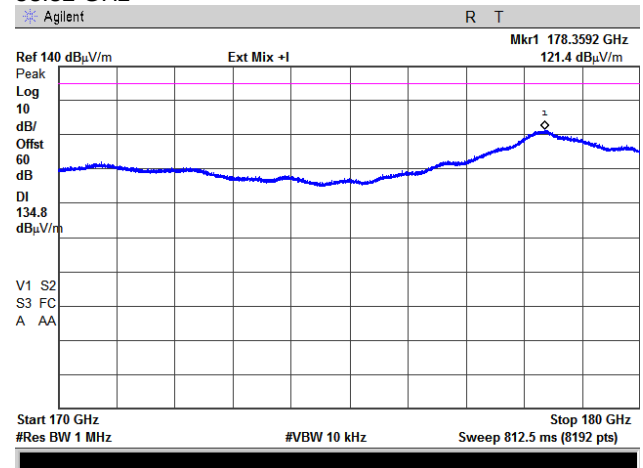
0.01 m

16QAM

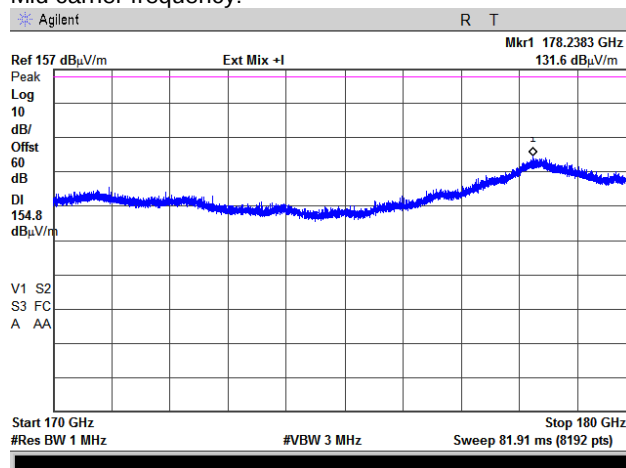
Vertical and Horizontal

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

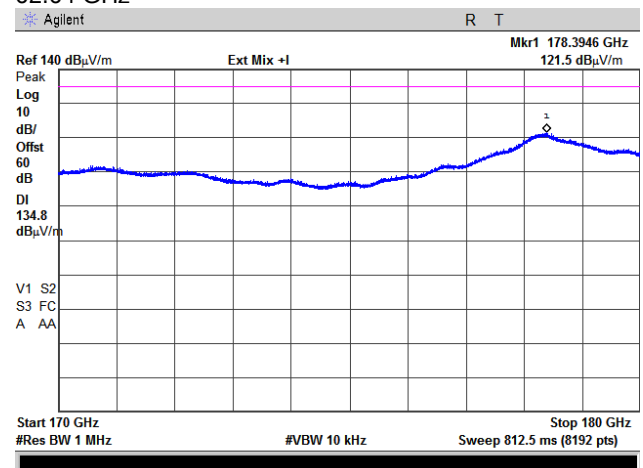
58.32 GHz



Mid carrier frequency:



62.64 GHz





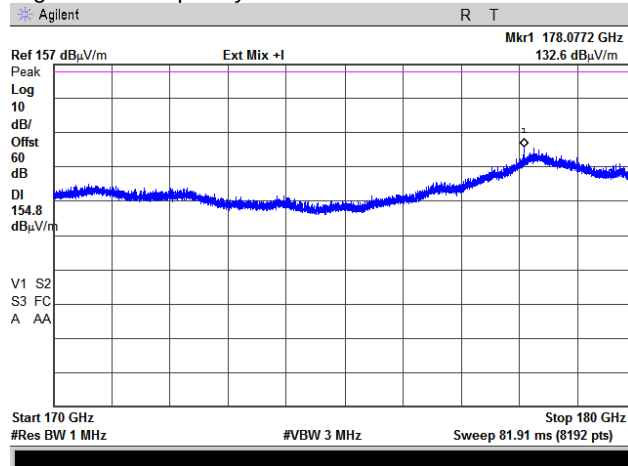
HERMON LABORATORIES

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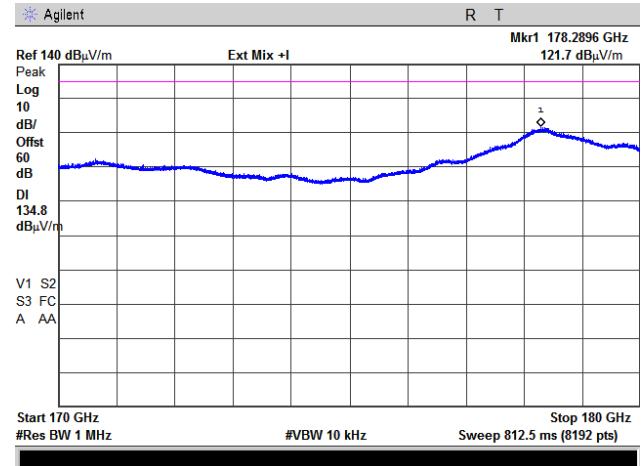
Date of Issue: 8-Feb-21

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:		Verdict: PASS	
Date(s):			
22-Oct-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

High carrier frequency:



64.80 GHz





HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

Date of Issue: 8-Feb-21

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):		22-Oct-20	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.15 Spurious emission measurements in 180 - 190 GHz range

TEST SITE:

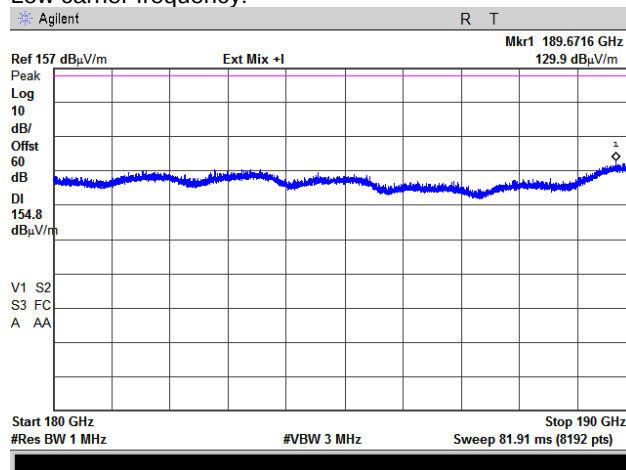
TEST DISTANCE:

MODULATION:

ANTENNA POLARIZATION:

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

Low carrier frequency:



OATS

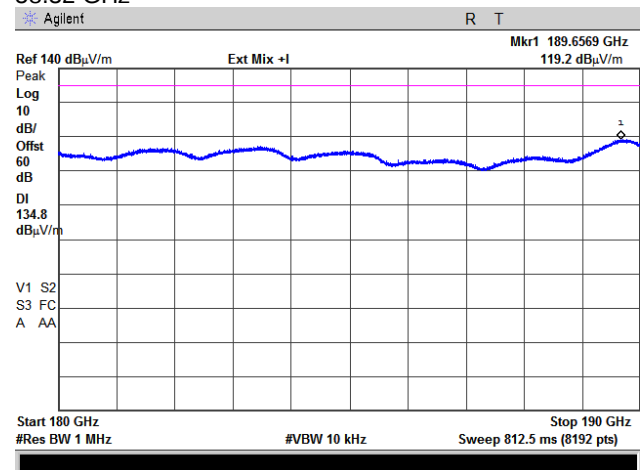
0.01 m

16QAM

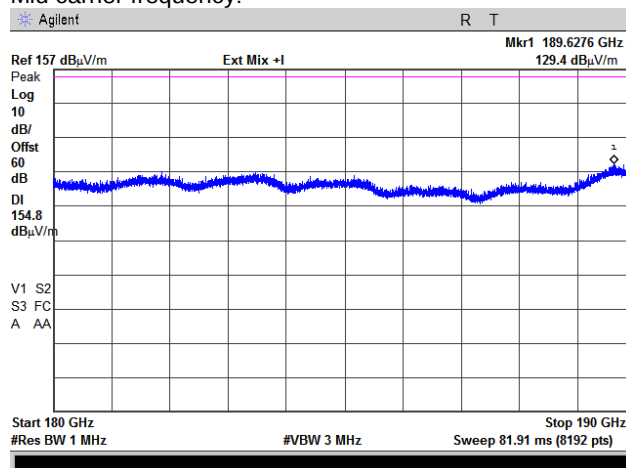
Vertical and Horizontal

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

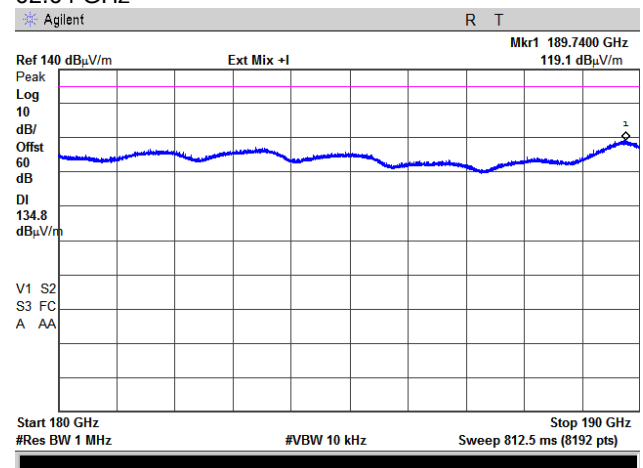
58.32 GHz



Mid carrier frequency:



62.64 GHz





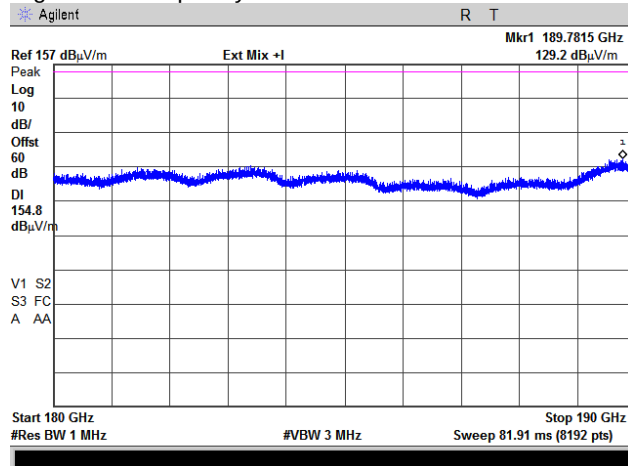
HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

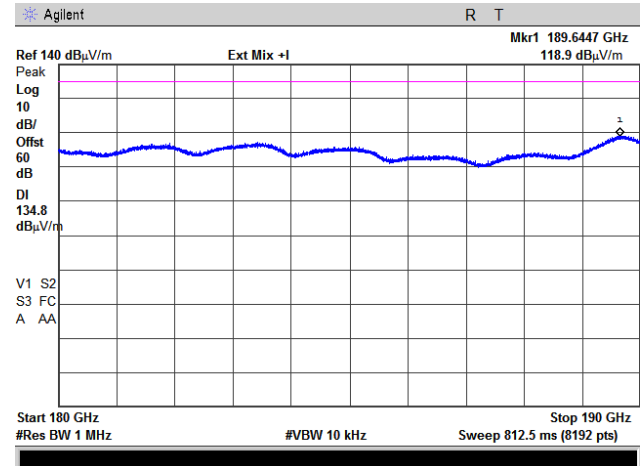
Date of Issue: 8-Feb-21

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:		Verdict: PASS	
Date(s):			
22-Oct-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

High carrier frequency:



64.80 GHz





HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

Date of Issue: 8-Feb-21

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:		Verdict: PASS	
Date(s):			
22-Oct-20			
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.16 Spurious emission measurements in 190 - 200 GHz range

TEST SITE:

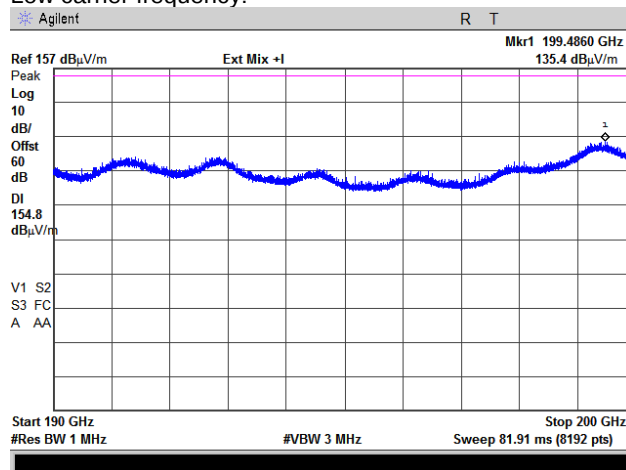
TEST DISTANCE:

MODULATION:

ANTENNA POLARIZATION:

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

Low carrier frequency:



OATS

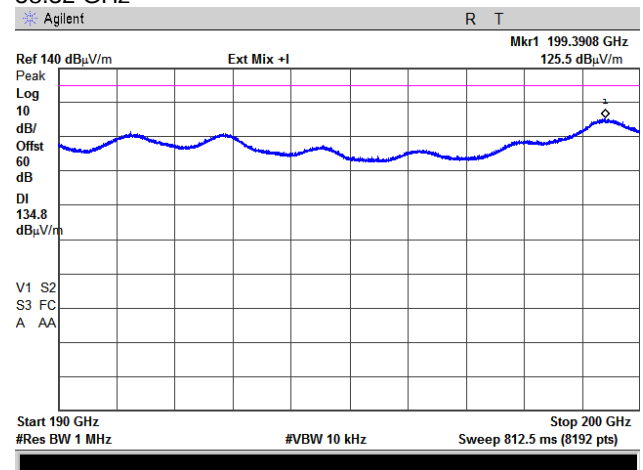
0.01 m

16QAM

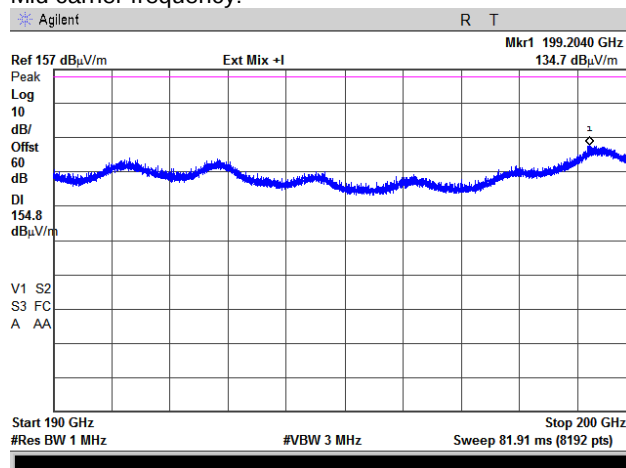
Vertical and Horizontal

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

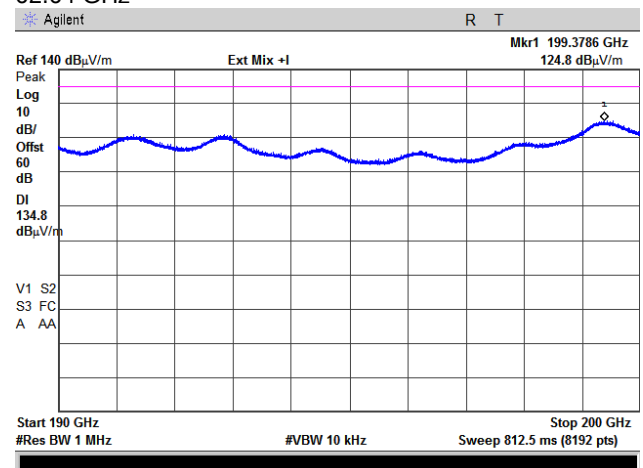
58.32 GHz



Mid carrier frequency:



62.64 GHz





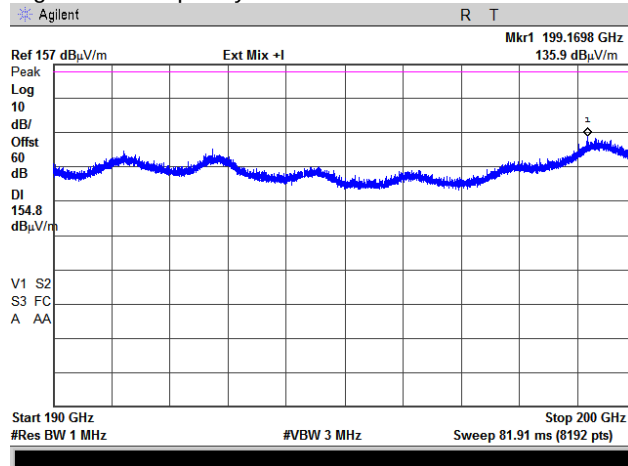
HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

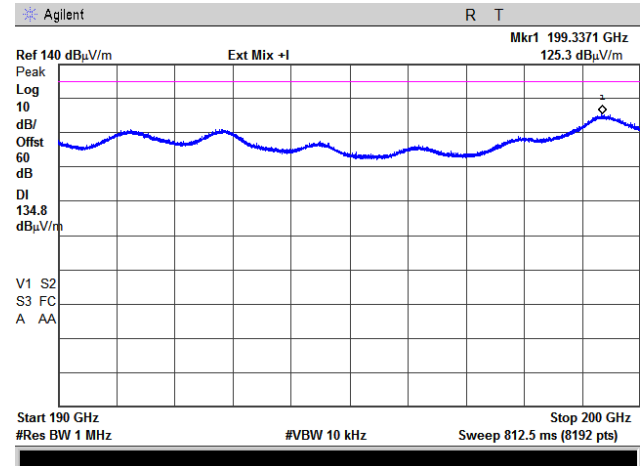
Date of Issue: 8-Feb-21

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):		22-Oct-20	
Temperature: 25 °C	Relative Humidity: 43 %	Air Pressure: 1015 hPa	Power: 48 VDC
Remarks:			

High carrier frequency:



64.80 GHz





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): 05-Nov-20			
Temperature: 24 °C	Relative Humidity: 47 %	Air Pressure: 1014 hPa	Power: 48 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.

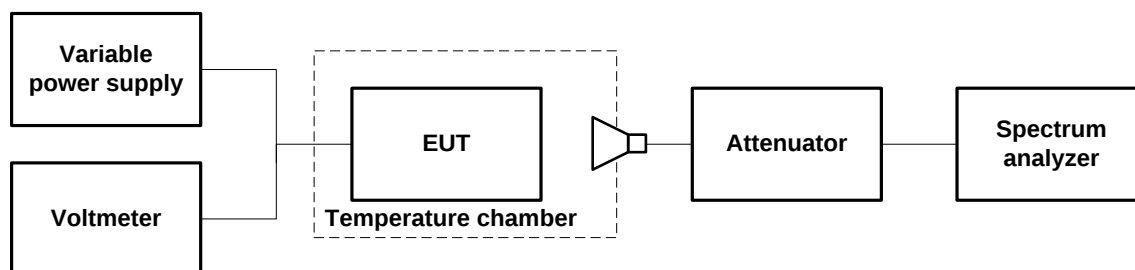
7.5.2.3 The EUT was powered on and carrier frequency was measured at start up moment and then every minute until frequency had been stabilized or 10 minutes elapsed whichever reached the last. The EUT was powered off.

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





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): 05-Nov-20			
Temperature: 24 °C	Relative Humidity: 47 %	Air Pressure: 1014 hPa	Power: 48 VDC
Remarks:			

Table 7.5.2 Frequency stability test results

OPERATING FREQUENCY: 57000 – 71000 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	Positive	Negative
Low frequency 58.32 GHz											
-45	nominal	58319.8851	NA	NA	NA	NA	NA	58319.8879	4.2	NA	
-40	nominal	58319.8834	NA	NA	NA	NA	NA	58319.8853	1.6	0.3	
-30	nominal	58319.8788	NA	NA	NA	NA	NA	58319.8806	NA	4.9	
-20	nominal	58319.8858	58319.8873	58319.8875	58319.8873	58319.8878	58319.8870	58319.8878	4.1	NA	
-10	nominal	58319.8868	NA	NA	NA	NA	NA	58319.8870	3.3	NA	
0	nominal	58319.8784	58319.8799	58319.8793	58319.8789	58319.8794	58319.8795	58319.8789	NA	5.3	
10	nominal	58319.8859	NA	NA	NA	NA	NA	58319.8803	2.2	3.4	
20	+15%	58319.8813	NA	NA	NA	NA	NA	58319.8814	NA	2.4	
20	nominal	58319.8838	NA	NA	NA	NA	NA	58319.8837*	0.1	NA	
20	-15%)	58319.8805	NA	NA	NA	NA	NA	58319.8809	NA	3.2	
30	nominal	58319.8813	58319.8818	58319.8819	58319.8818	58319.8816	58319.8818	58319.8815	NA	2.4	
40	nominal	58319.9085	NA	NA	NA	NA	NA	58319.9126	28.9	NA	
50	nominal	58319.8870	NA	NA	NA	NA	NA	58319.8425	3.3	41.2	
55	nominal	58319.8951	NA	NA	NA	NA	NA	58319.8654	11.4	18.3	
Mid frequency 62.64 GHz											
-45	nominal	62639.8834	NA	NA	NA	NA	NA	62639.8865	6.4	NA	
-40	nominal	62639.8818	NA	NA	NA	NA	NA	62639.8834	3.3	NA	
-30	nominal	62639.8785	NA	NA	NA	NA	NA	62639.8793	NA	1.6	
-20	nominal	62639.8850	62639.8848	62639.8865	62639.8860	62639.8860	62639.8860	62639.8863	6.4	NA	
-10	nominal	62639.8865	NA	NA	NA	NA	NA	62639.8868	6.7	NA	
0	nominal	62639.8773	62639.8779	62639.8768	62639.8776	62639.8775	62639.8774	62639.8780	NA	3.3	
10	nominal	62639.8769	NA	NA	NA	NA	NA	62639.8780	NA	3.2	
20	+15%	62639.8813	NA	NA	NA	NA	NA	62639.8811	1.2	NA	
20	nominal	62639.8800	NA	NA	NA	NA	NA	62639.8801*	NA	0.1	
20	-15%)	62639.8800	NA	NA	NA	NA	NA	62639.8800	NA	0.1	
30	nominal	62639.8813	62639.8826	62639.8836	62639.8838	62639.8839	62639.8840	62639.8864	6.3	NA	
40	nominal	62639.9090	NA	NA	NA	NA	NA	62639.9146	34.5	NA	
50	nominal	62639.8649	NA	NA	NA	NA	NA	62639.8109	NA	69.2	
55	nominal	62639.8786	NA	NA	NA	NA	NA	62639.8007	NA	79.4	



HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

Date of Issue: 8-Feb-21

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): 05-Nov-20			
Temperature: 24 °C	Relative Humidity: 47 %	Air Pressure: 1014 hPa	Power: 48 VDC
Remarks:			

Table 7.5.3 Frequency stability test results

OPERATING FREQUENCY: 57000 – 71000 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

High frequency 64.80 GHz										
-45	nominal	64799.8350	NA	NA	NA	NA	NA	64799.8851	6.2	43.9
-40	nominal	64799.8814	NA	NA	NA	NA	NA	64799.8835	4.6	NA
-30	nominal	64799.8762	NA	NA	NA	NA	NA	64799.8787	NA	2.7
-20	nominal	64799.8840	64799.8845	64799.8849	64799.8852	64799.8855	64799.8870	64799.8858	8.1	NA
-10	nominal	64799.8863	NA	NA	NA	NA	NA	64799.8855	7.4	NA
0	nominal	64799.9749	64799.8773	64799.8758	64799.8763	64799.8758	64799.8769	64799.8763	NA	-96
10	nominal	64799.8760	NA	NA	NA	NA	NA	64799.9779	99	2.9
20	+15%	64799.8788	NA	NA	NA	NA	NA	64799.8789	NA	0.1
20	nominal	64799.8788	NA	NA	NA	NA	NA	64799.8789*	NA	0.1
20	-15%	64799.8800	NA	NA	NA	NA	NA	64799.8702	1.1	8.7
30	nominal	64799.8823	64799.8848	64799.8850	64799.8849	64799.8855	64799.8855	64799.8856	6.7	NA
40	nominal	64799.9095	NA	NA	NA	NA	NA	64799.9158	36.9	NA
50	nominal	64799.8489	NA	NA	NA	NA	NA	64799.7939	NA	85
55	nominal	64799.8383	NA	NA	NA	NA	NA	64799.7716	NA	107.3

Reference numbers of test equipment used

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



Test specification: Section 15.207(a)/RSS-Gen 8.8, Conducted emission			
Test procedure: ANSI C63.10, Section 6.2			
Test mode: Compliance		Verdict: PASS	
Date(s): 24-Nov-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(μ V)	
	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

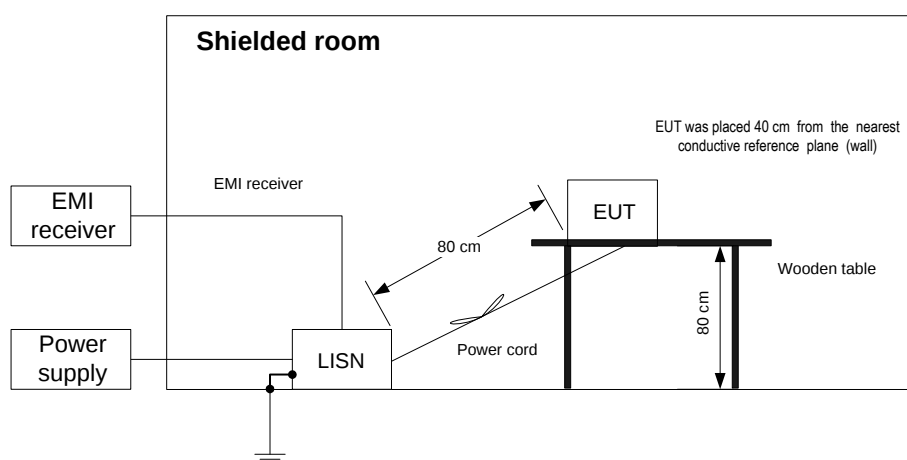
7.6.2.1 The EUT was set up as shown in Figure 7.6.1 and associated photographs, energized and the performance check was conducted.

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





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Report ID: SIKRAD_FCC.40852

Date of Issue: 8-Feb-21

Test specification: Section 15.207(a)/RSS-Gen 8.8, Conducted emission			
Test procedure: ANSI C63.10, Section 6.2			
Test mode: Compliance		Verdict: PASS	
Date(s): 24-Nov-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*		
0.158	NA	54.19	65.56	-11.37	38.82	55.56	-16.74	L1	Pass
0.201	NA	48.74	63.56	-14.82	35.70	53.56	-17.86		
0.555	NA	47.73	56.00	-8.27	39.64	46.00	-6.36		
0.635	NA	39.58	56.00	-16.42	33.80	46.00	-12.20		
0.796	NA	34.49	56.00	-21.51	27.31	46.00	-18.69		
26.725	NA	37.49	60.00	-22.51	32.38	50.00	-17.62		
0.160	NA	53.38	65.45	-12.07	38.76	55.45	-16.69	L2	Pass
0.201	NA	47.74	63.56	-15.82	35.99	53.56	-17.57		
0.555	NA	48.54	56.00	-7.46	40.97	46.00	-5.03		
0.798	NA	35.42	56.00	-20.58	27.54	46.00	-18.46		
1.853	NA	32.52	56.00	-23.48	28.61	46.00	-17.39		
26.929	NA	36.21	60.00	-23.79	30.85	50.00	-19.15		

*- Margin = Measured emission - specification limit.

Reference numbers of test equipment used

HL 0787	HL 3016	HL 5476	HL 5707				
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Full description is given in Appendix A.



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Report ID: SIKRAD_FCC.40852

Date of Issue: 8-Feb-21

Test specification:		Section 15.207(a)/RSS-Gen 8.8, Conducted emission	
Test procedure:		ANSI C63.10, Section 6.2	
Test mode:		Verdict: PASS	
Date(s):			
24-Nov-20			
Temperature: 23 °C	Relative Humidity: 55 %	Air Pressure: 1009 hPa	Power: 120 VAC, 60 Hz
Remarks:			

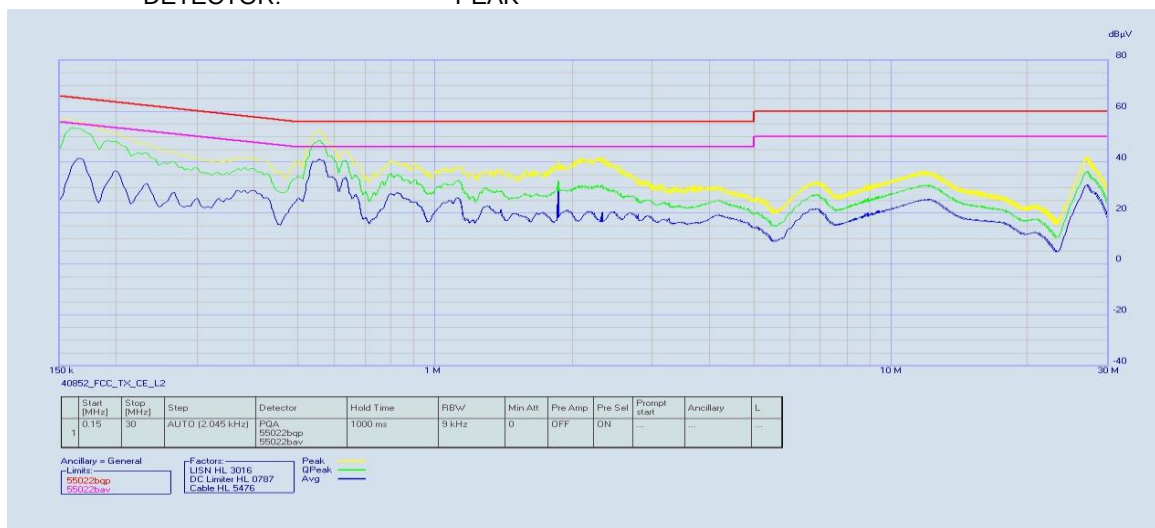
Plot 7.6.1 Conducted emission measurements

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



Plot 7.6.2 Conducted emission measurements

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



Test specification: Section 15.203, Antenna requirement			
Test procedure: Visual inspection / supplier declaration			
Test mode: Compliance		Verdict: PASS	
Date(s): 23-Nov-20			
Temperature: 24 °C	Relative Humidity: 49 %	Air Pressure: 1013 hPa	Power: 48 VDC
Remarks:			

7.7 Antenna requirements

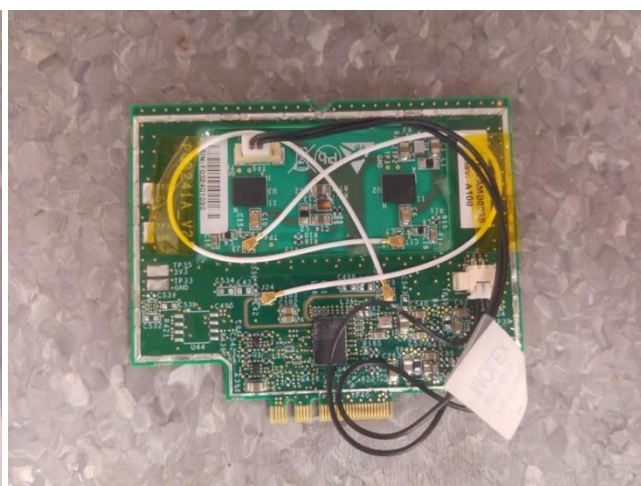
The EUT was verified for compliance with antenna requirements. A transmitter shall be designed to ensure that no antenna other than that furnished by the responsible party will be used with the device. It may be either permanently attached or employs a unique antenna connector for every antenna proposed 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





Test specification: Section 15.107, Conducted emission at AC power port			
Test procedure: ANSI C63.4, Sections 7			
Test mode: Compliance		Verdict: PASS	
Date(s): 24-Nov-20			
Temperature: 24 °C	Relative Humidity: 49 %	Air Pressure: 1013 hPa	Power: 120 VAC, 60 Hz
Remarks:			

8 Emission tests according to 47CFR part 15 subpart B requirements

8.1 Conducted emissions

8.1.1 General

This test was performed to measure common mode conducted emissions at the mains power port. Specification test limits are given in Table 8.1.1. The worst test results (the lowest margins) were recorded in Table 8.1.2 and shown in the associated plots.

Table 8.1.1 Limits for conducted emissions

Frequency, MHz	Class B limit, dB(μ V)	
	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.

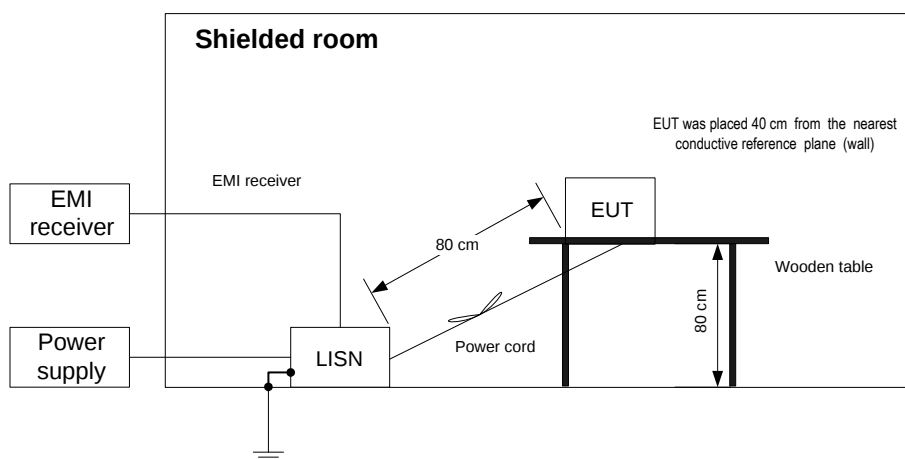
8.1.2 Test procedure

8.1.2.1 The EUT was set up as shown in Figure 8.1.1 and associated photographs, energized and the performance check was conducted.

8.1.2.2 The measurements were performed at power terminals with the LISN, connected to a spectrum analyzer in the frequency range referred to in Table 8.1.2. Unused coaxial connector of the LISN was terminated with 50 Ohm. Quasi-peak and average detectors were used throughout the testing.

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

Figure 8.1.1 Setup for conducted emission measurements, table-top equipment





HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

Date of Issue: 8-Feb-21

Test specification: Section 15.107, Conducted emission at AC power port			
Test procedure: ANSI C63.4, Sections 7			
Test mode: Compliance		Verdict: PASS	
Date(s): 24-Nov-20			
Temperature: 24 °C	Relative Humidity: 49 %	Air Pressure: 1013 hPa	Power: 120 VAC, 60 Hz
Remarks:			

Table 8.1.2 Conducted emission test results

LINE: AC mains
 LIMIT: Class B
 EUT OPERATING MODE: Receive
 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*		
0.150	NA	53.15	66.00	-12.85	38.69	56.00	-17.31	L1	Pass
0.154	NA	50.57	65.78	-15.21	31.41	55.78	-24.37		
0.175	NA	49.34	64.74	-15.40	37.36	54.74	-17.38		
0.381	NA	38.55	58.26	-19.71	29.42	48.26	-18.84		
0.551	NA	49.02	56.00	-6.98	40.90	46.00	-5.10		
0.804	NA	36.77	56.00	-19.23	29.22	46.00	-16.78		
1.851	NA	33.02	56.00	-22.98	28.13	46.00	-17.87	L2	Pass
0.150	NA	53.47	66.00	-12.53	38.24	56.00	-17.76		
0.154	NA	49.89	65.78	-15.89	31.35	55.78	-24.43		
0.175	NA	48.93	64.74	-15.81	36.15	54.74	-18.59		
0.555	NA	48.96	56.00	-7.04	42.33	46.00	-3.67		
0.806	NA	36.15	56.00	-19.85	28.71	46.00	-17.29		
27.027	NA	37.85	60.00	-22.15	32.35	50.00	-17.65		

*- Margin = Measured emission - specification limit.

Reference numbers of test equipment used

HL 0787	HL 3016	HL 5476	HL 5707				
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Full description is given in Appendix A.



HERMON LABORATORIES

Report ID: SIKRAD_FCC.40852

Date of Issue: 8-Feb-21

Test specification:		Section 15.107, Conducted emission at AC power port	
Test procedure:		ANSI C63.4, Sections 7	
Test mode:		Verdict: PASS	
Date(s):			
24-Nov-20			
Temperature: 24 °C	Relative Humidity: 49 %	Air Pressure: 1013 hPa	Power: 120 VAC, 60 Hz
Remarks:			

Plot 8.1.1 Conducted emission measurements

LINE: L1
LIMIT: Class B
EUT OPERATING MODE: Receive
LIMIT: QUASI-PEAK, AVERAGE
DETECTOR: PEAK



Plot 8.1.2 Conducted emission measurements

LINE: L2
LIMIT: Class B
EUT OPERATING MODE: Receive
LIMIT: QUASI-PEAK, AVERAGE
DETECTOR: PEAK



9 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
0747	Mixer, Millimeter Wave Harmonic 90 - 140 GHz	Oleson Microwave Labs	M08HW	F80429-1	19-May-20	19-May-23
0770	Antenna Standard Gain Horn, 40-60 GHz WR-19, U-band, 24 dB mid-band gain	Quinstar Technology	QWH-1900-AA	118	22-Nov-20	22-Nov-21
0771	Antenna Standard Gain Horn, 60-90 GHz, WR-12, 24 dB mid-band gain	Quinstar Technology	QWH-1200-AA	111	05-Aug-20	05-Aug-21
0772	Antenna Standard Gain Horn, 75-110 GHz, WR-10, 24 dB mid-band gain	Quinstar Technology	QWH-0800-AA	110	22-Nov-20	22-Nov-21
0787	Transient Limiter 9 kHz-200 MHz	Hewlett Packard	11947A	3107A01877	06-Oct-20	06-Oct-21
2171	Multimeter	Fluke	177	79960418	15-Jul-20	15-Jul-21
2909	Spectrum analyzer, ESA-E, 100 Hz to 26.5 GHz	Agilent Technologies	E4407B	MY41444762	05-Apr-20	05-Apr-21
3016	LISN, Two-line V-network, 9 kHz to 30 MHz, (50 uH+5 Ohm), CISPR16-1, MIL-461E	Rohde & Schwarz	ESH 3-Z5	892239/002	09-Feb-20	09-Feb-21
3235	Harmonic mixer 40 to 60 GHz	Agilent Technologies	11970U	MY30030182	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
3291	Attenuator, direct reading, 60 to 90 GHz, 0.2 W	Quinstar Technology	QAD-E00000	10381009	24-Sep-19	24-Sep-21
3293	Frequency multiplier, input 20-30 GHz, output 60-90 GHz	Quinstar Technology	QPM-75003E	10381003	17-Nov-20	17-Nov-21
3301	Power Meter, P-series, 50 MHz to 40 GHz	Agilent Technologies	N1911A	MY45101057	16-Apr-20	16-Apr-21
3302	Power sensor, P-Series, 50 MHz to 40 GHz, -35/30 to 20 dBm	Agilent Technologies	N1922A	MY45240586	16-Apr-20	16-Apr-21
3305	Harmonic mixer 50 to 75 GHz	Agilent Technologies	11970V	MY30030149	29-Jan-20	29-Jan-23
3306	Harmonic mixer 75 to 110 GHz	Agilent Technologies	11970W	MY25210273	30-Jan-20	30-Jan-23
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	11159004001	22-Nov-20	22-Nov-21
3903	Microwave Cable Assembly, 40.0 GHz, 1.5 m, SMA/SMA	Huber-Suhner	SUCOFL EX 102A	1226/2A	06-Apr-20	06-Apr-21
4343	Signal Generator, 100 kHz to 40 GHz	Rohde & Schwarz	SMB 100A	175291	29-Mar-20	29-Mar-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
4856	Amplifier, solid state, 18 GHz to 40 GHz, 20 dBm output power	Quinstar Technology	QGW-18402023-JO	16779001001	27-May-20	27-May-21
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
5112	RF cable, 40 GHz, 5.5 m, K-type	Huber-Suhner	SF102EA/11SK/11SK/5500MM	502494/2EA	19-Apr-20	19-Apr-21
5288	Trilog Antenna, 25 MHz - 8 GHz, 100W	Frankonia	ALX-8000E	00809	08-Feb-19	08-Feb-22
5360	Broadband detector, 55 to 90 GHz	Pacific Millimeter Products, Inc	ED	200	17-May-18	17-Nov-20
5409	RF cable, 40 GHz, SMA-SMA, 2 m	Huber-Suhner	SF102EA/11SK/11SK/2000MM	503973/2EA	03-Aug-20	03-Aug-21
5476	Cable, BNC/BNC, 10.5 m	Western wire	MIL-C-17G	NA	14-May-20	14-May-21
5669	Cable SF126EA/11N(x2)/3.0M, 18 GHz	Huber-Suhner	SF126EA	506775/126EA	25-Oct-20	25-Oct-21
5670	Cable SF126EA/11N(x2)/3M, 18 GHz	Huber-Suhner	SF126EA	506774/126EA	25-Oct-20	25-Oct-21
5707	EMI receiver	PMM / Narda	PMM 9010F	060WW91101	22-Nov-19	22-Nov-21
5710	Oscilloscope, 500 MHz, digital 4 channel	Rohde & Schwarz	RTM3004	103436	04-Dec-19	04-Dec-20

10 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.

11 APPENDIX C Test laboratory 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 for OATS are R-10808 for RE measurements below 1 GHz, G-20112 for RE measurements above 1 GHz, R-11082 for anechoic chamber for RE measurements below 1 GHz, 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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12 APPENDIX D Specification references

47CFR part 15: 2019	Radio Frequency Devices.
ANSI C63.4: 2014	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
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

13 APPENDIX E Test equipment correction factors

**Antenna factor
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
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
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		

14 APPENDIX F 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