



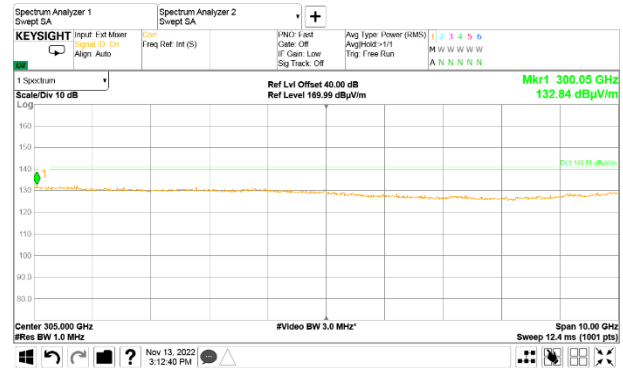
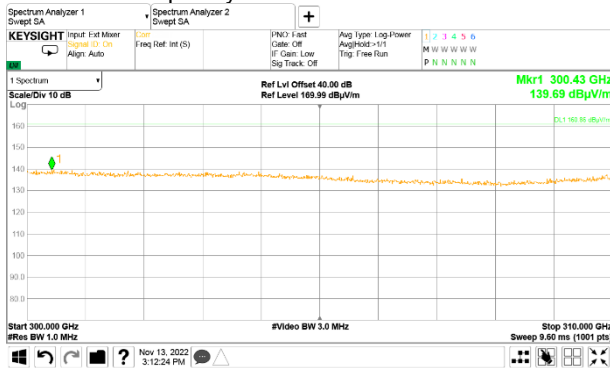
HERMON LABORATORIES

Test specification: Section 15.258(c)(3), Out of band radiated emissions above 40 GHz up to 370 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 31-Oct-22 - 21-Nov-22			
Temperature: 27 °C	Relative Humidity: 50 %	Air Pressure: 1010 hPa	Power: 5 VDC
Remarks:			

Plot 7.4.38 Spurious emission measurements in 300 - 310 GHz range

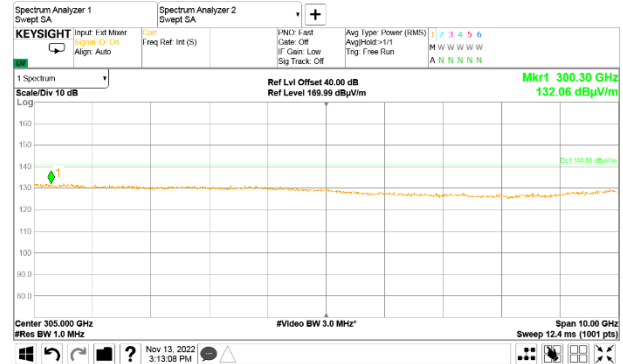
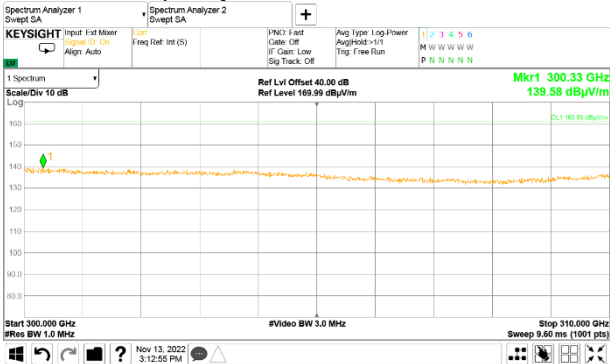
TEST SITE:
 TEST DISTANCE:
 MODULATION:
 ANTENNA POLARIZATION:
 DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
 Low carrier frequency:

OATS
 0.005 m
 CW
 Vertical and Horizontal
 DETECTOR: Average (RMS) RBW = 1 MHz; VBW = 3MHz
 119000 MHz



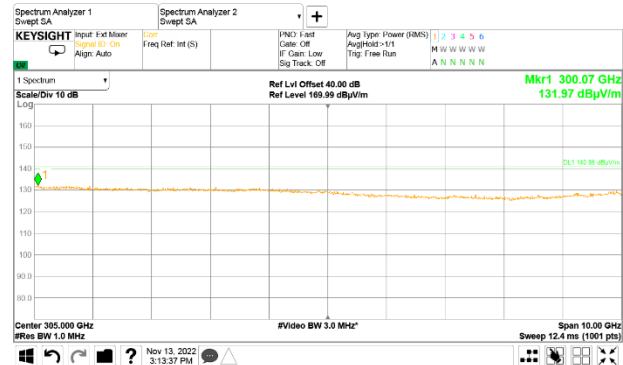
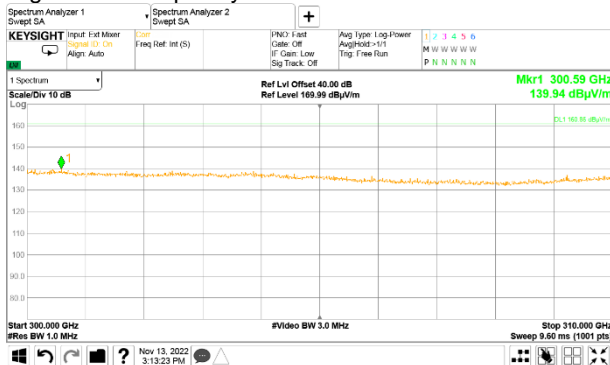
Mid carrier frequency:

121000 MHz



High carrier frequency:

122980 MHz





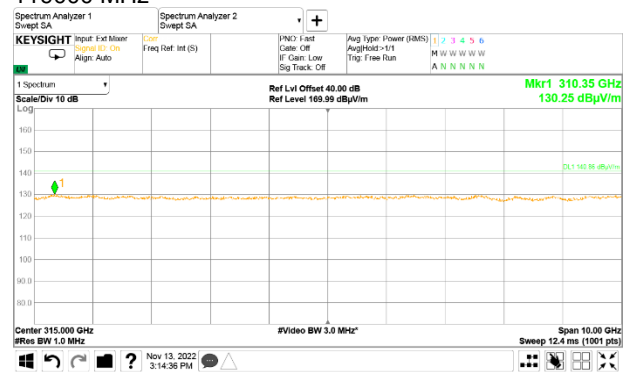
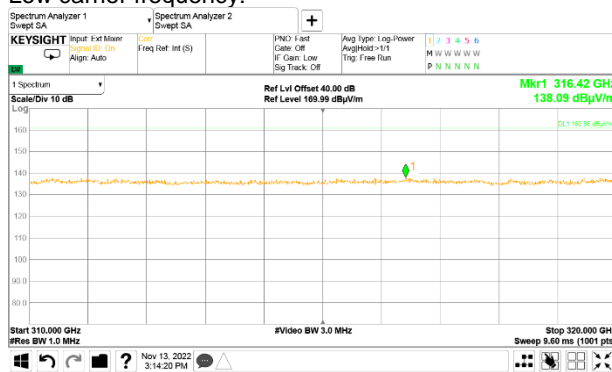
HERMON LABORATORIES

Test specification: Section 15.258(c)(3), Out of band radiated emissions above 40 GHz up to 370 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 31-Oct-22 - 21-Nov-22			
Temperature: 27 °C	Relative Humidity: 50 %	Air Pressure: 1010 hPa	Power: 5 VDC
Remarks:			

Plot 7.4.39 Spurious emission measurements in 310 - 320 GHz range

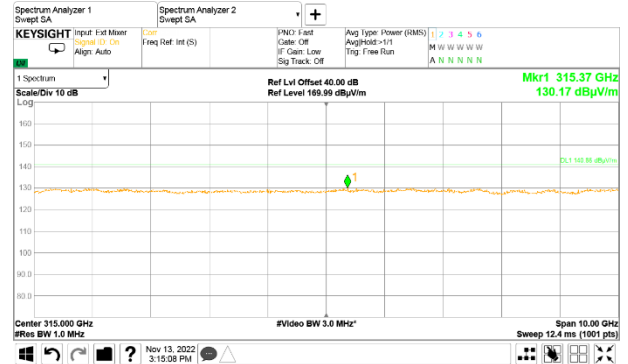
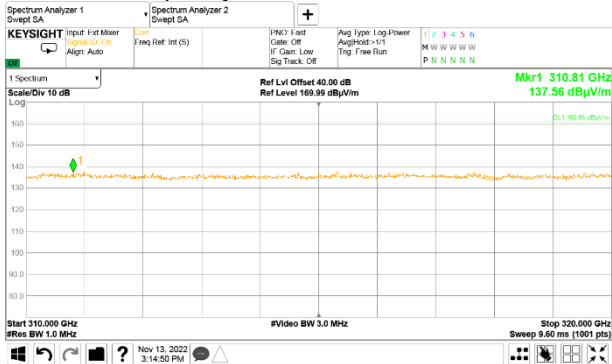
TEST SITE:
 TEST DISTANCE:
 MODULATION:
 ANTENNA POLARIZATION:
 DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
 Low carrier frequency:

OATS
 0.005 m
 CW
 Vertical and Horizontal
 DETECTOR: Average (RMS) RBW = 1 MHz; VBW = 3MHz
 119000 MHz



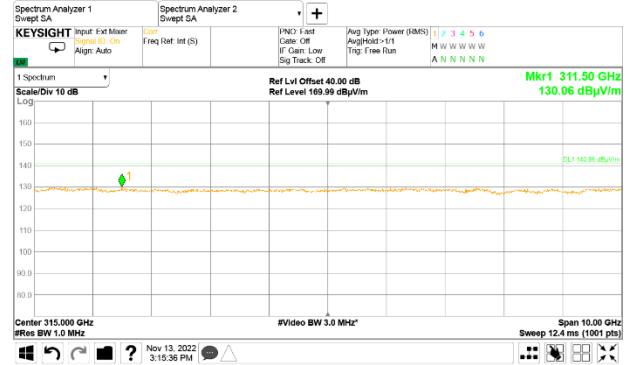
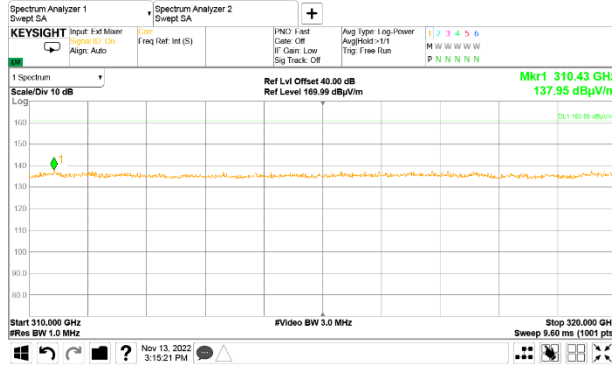
Mid carrier frequency:

121000 MHz



High carrier frequency:

122980 MHz





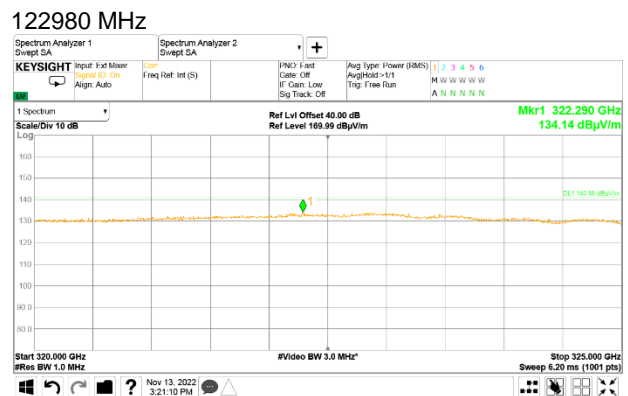
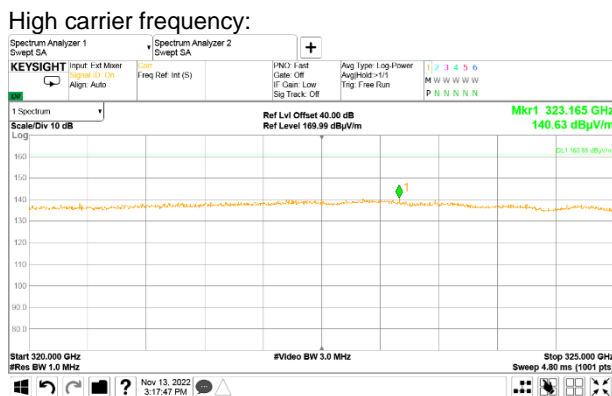
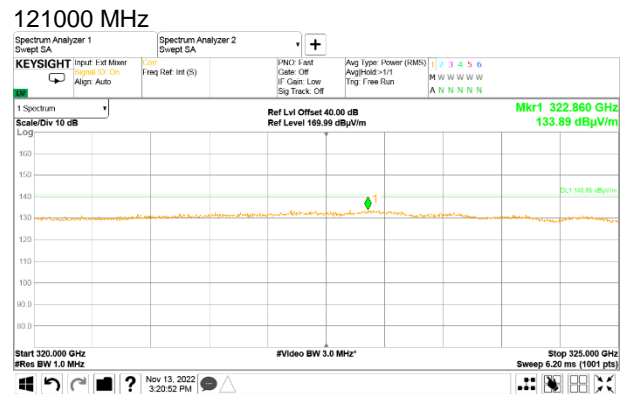
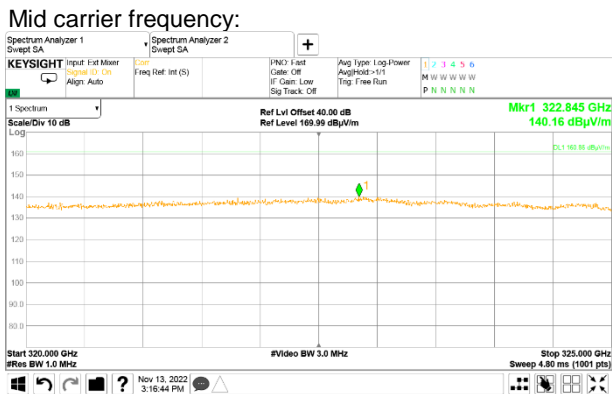
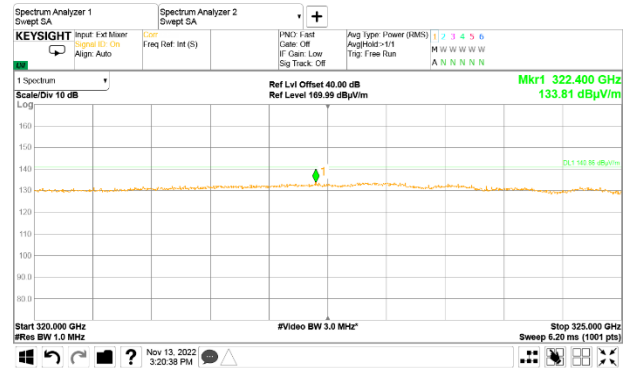
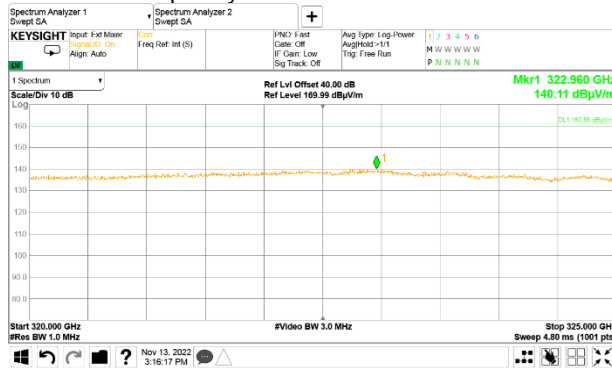
HERMON LABORATORIES

Test specification: Section 15.258(c)(3), Out of band radiated emissions above 40 GHz up to 370 GHz	
Test procedure: ANSI C63.10, Sections 9.9, 9.12	
Test mode: Compliance	Verdict: PASS
Date(s): 31-Oct-22 - 21-Nov-22	
Temperature: 27 °C	Relative Humidity: 50 %
Air Pressure: 1010 hPa	Power: 5 VDC
Remarks:	

Plot 7.4.40 Spurious emission measurements in 320 - 325 GHz range

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

OATS
 0.005 m
 CW
 Vertical and Horizontal
 DETECTOR: Average (RMS) RBW = 1 MHz; VBW = 3MHz
 119000 MHz





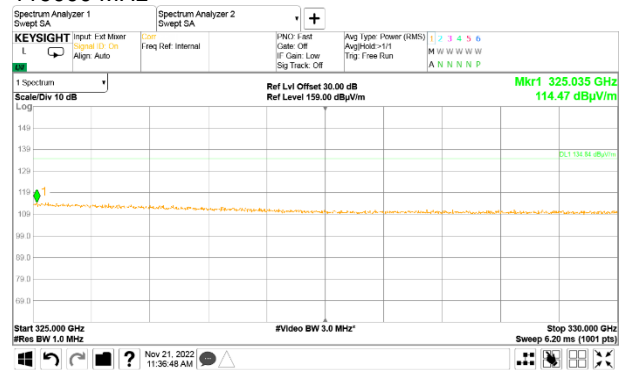
HERMON LABORATORIES

Test specification: Section 15.258(c)(3), Out of band radiated emissions above 40 GHz up to 370 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict:	PASS
Date(s): 31-Oct-22 - 21-Nov-22			
Temperature: 27 °C	Relative Humidity: 50 %	Air Pressure: 1010 hPa	Power: 5 VDC
Remarks:			

Plot 7.4.41 Spurious emission measurements in 325 - 330 GHz range

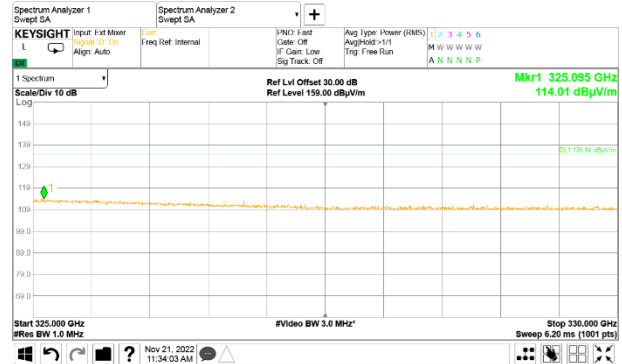
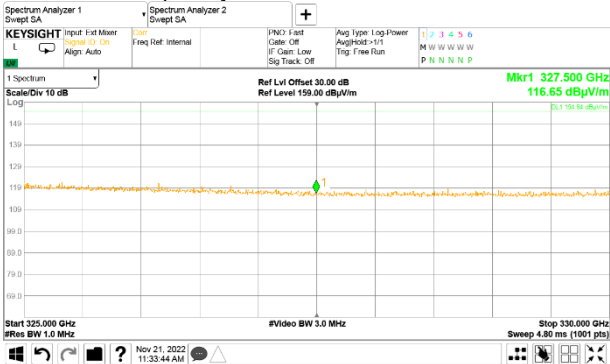
TEST SITE:
 TEST DISTANCE:
 MODULATION:
 ANTENNA POLARIZATION:
 DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
 Low carrier frequency:

OATS
 0.01 m
 CW
 Vertical and Horizontal
 DETECTOR: Average (RMS) RBW = 1 MHz; VBW = 3MHz
 119000 MHz



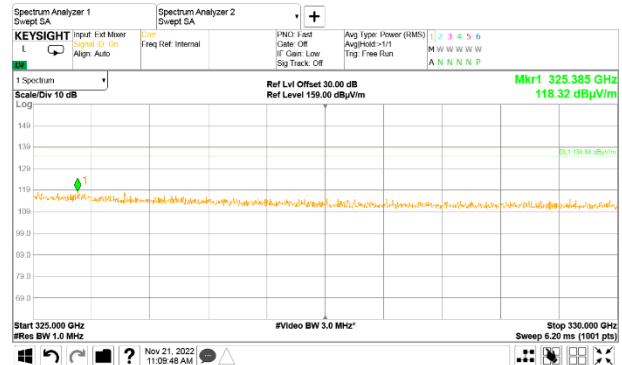
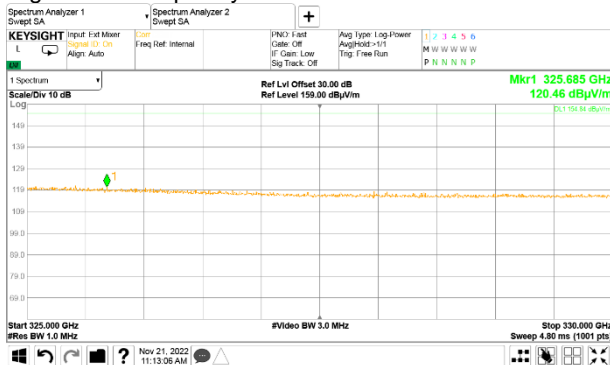
Mid carrier frequency:

121000 MHz



High carrier frequency:

122980 MHz





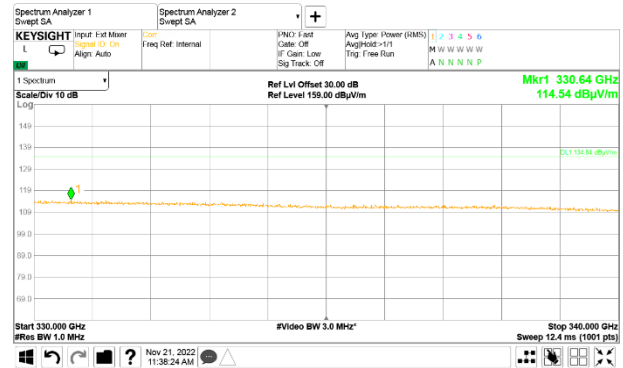
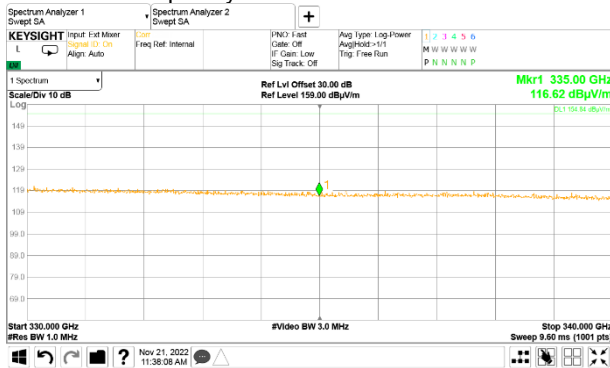
HERMON LABORATORIES

Test specification: Section 15.258(c)(3), Out of band radiated emissions above 40 GHz up to 370 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict:	PASS
Date(s): 31-Oct-22 - 21-Nov-22			
Temperature: 27 °C	Relative Humidity: 50 %	Air Pressure: 1010 hPa	Power: 5 VDC
Remarks:			

Plot 7.4.42 Spurious emission measurements in 330 - 340 GHz range

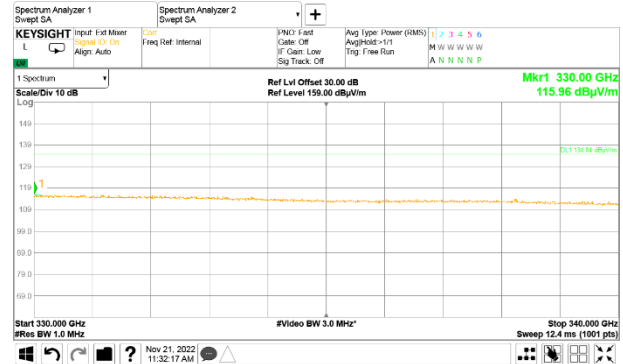
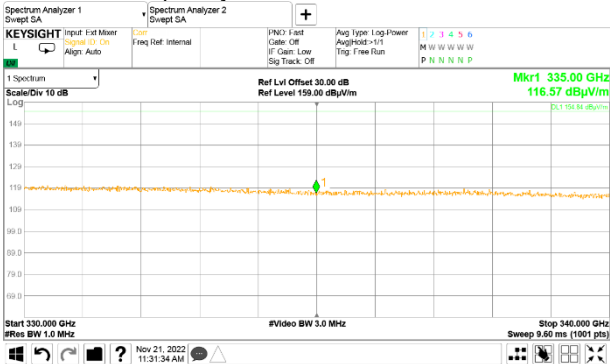
TEST SITE:
 TEST DISTANCE:
 MODULATION:
 ANTENNA POLARIZATION:
 DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
 Low carrier frequency:

OATS
 0.01 m
 CW
 Vertical and Horizontal
 DETECTOR: Average (RMS) RBW = 1 MHz; VBW = 3MHz
 119000 MHz



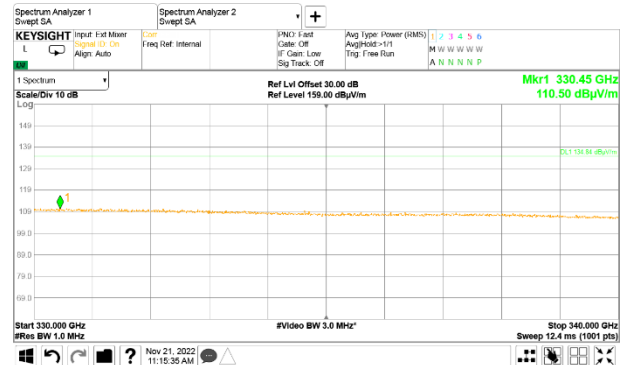
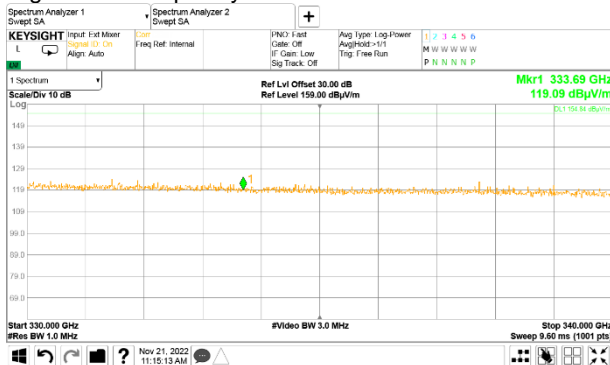
Mid carrier frequency:

121000 MHz



High carrier frequency:

122980 MHz





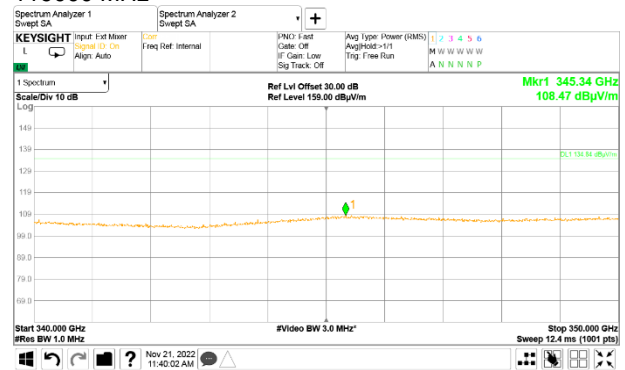
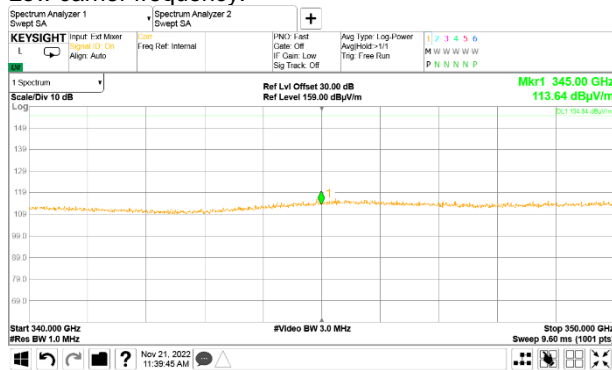
HERMON LABORATORIES

Test specification: Section 15.258(c)(3), Out of band radiated emissions above 40 GHz up to 370 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict:	PASS
Date(s): 31-Oct-22 - 21-Nov-22			
Temperature: 27 °C	Relative Humidity: 50 %	Air Pressure: 1010 hPa	Power: 5 VDC
Remarks:			

Plot 7.4.43 Spurious emission measurements in 340 - 350 GHz range

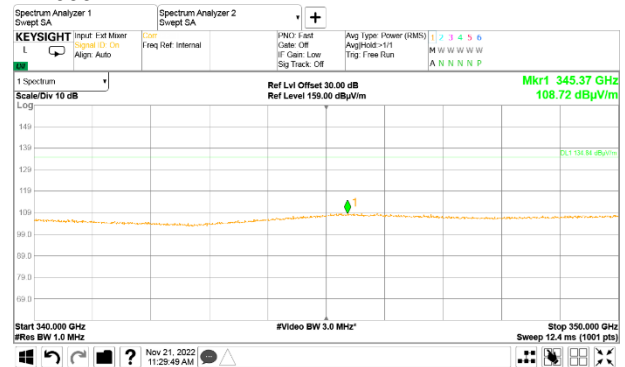
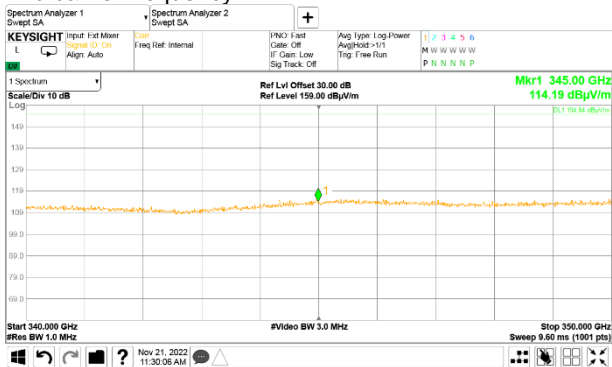
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

OATS
0.01 m
CW
Vertical and Horizontal
DETECTOR: Average (RMS) RBW = 1 MHz; VBW = 3MHz
119000 MHz



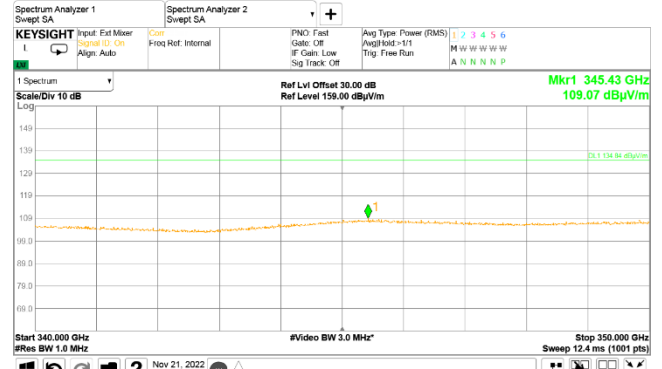
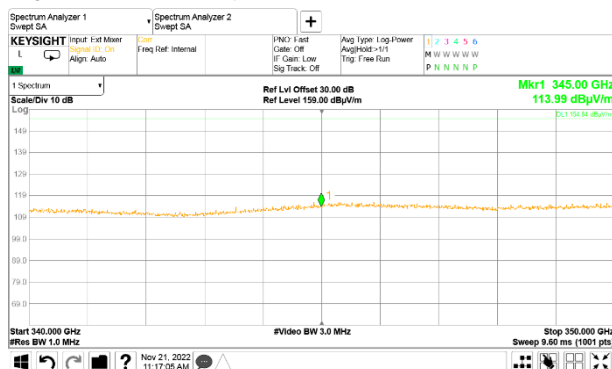
Mid carrier frequency:

121000 MHz



High carrier frequency:

122980 MHz





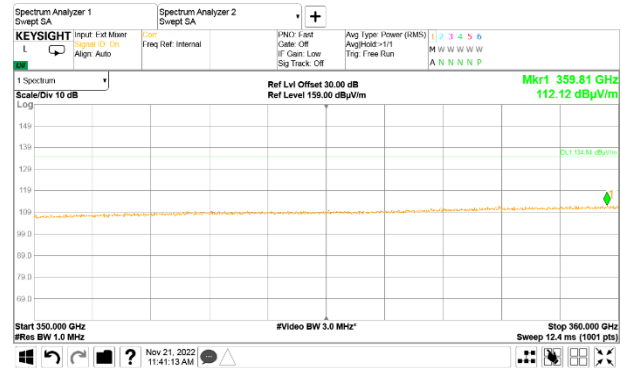
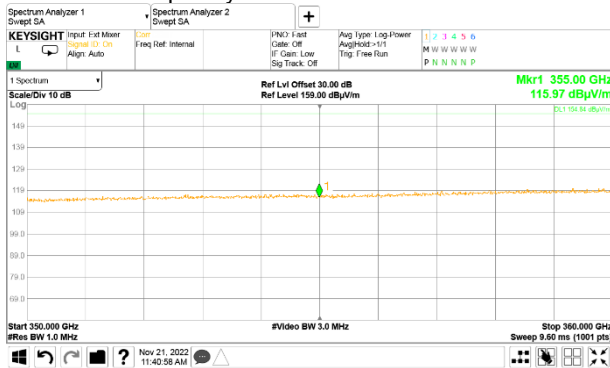
HERMON LABORATORIES

Test specification: Section 15.258(c)(3), Out of band radiated emissions above 40 GHz up to 370 GHz	
Test procedure: ANSI C63.10, Sections 9.9, 9.12	
Test mode: Compliance	Verdict: PASS
Date(s): 31-Oct-22 - 21-Nov-22	
Temperature: 27 °C	Relative Humidity: 50 %
Air Pressure: 1010 hPa	Power: 5 VDC
Remarks:	

Plot 7.4.44 Spurious emission measurements in 350 - 360 GHz range

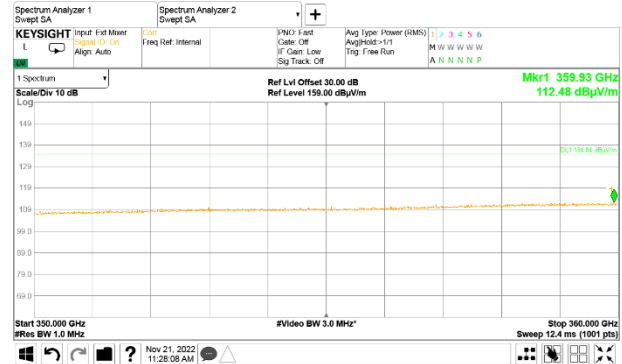
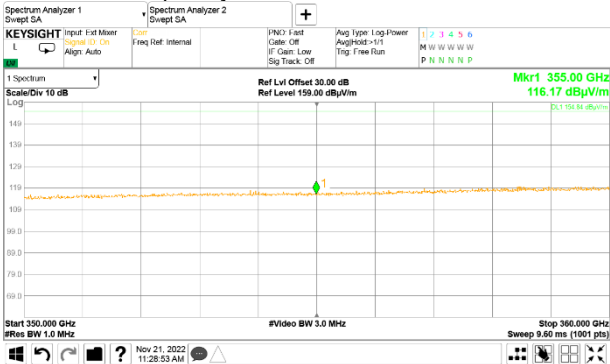
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:

OATS
0.01 m
CW
Vertical and Horizontal
DETECTOR: Average (RMS) RBW = 1 MHz; VBW = 3MHz
119000 MHz



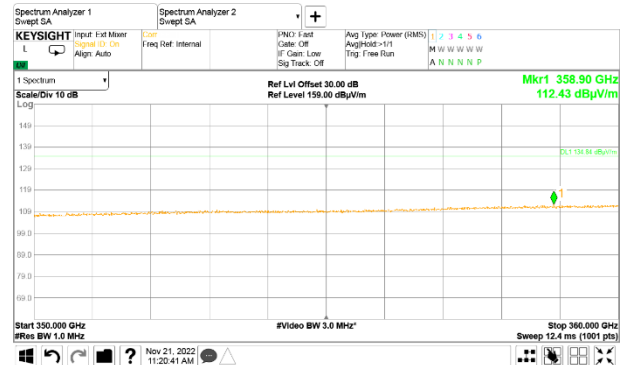
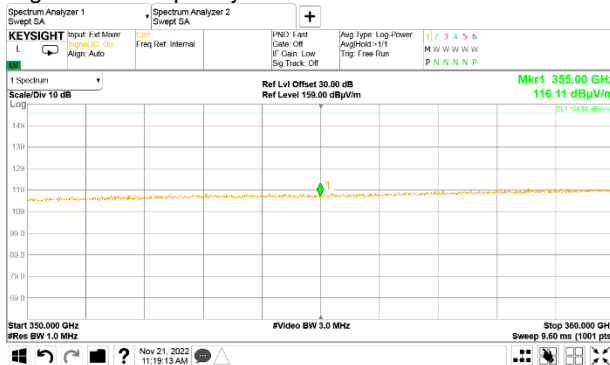
Mid carrier frequency:

121000 MHz



High carrier frequency:

122980 MHz





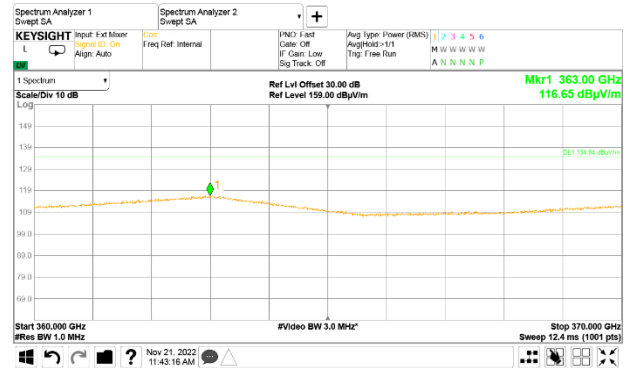
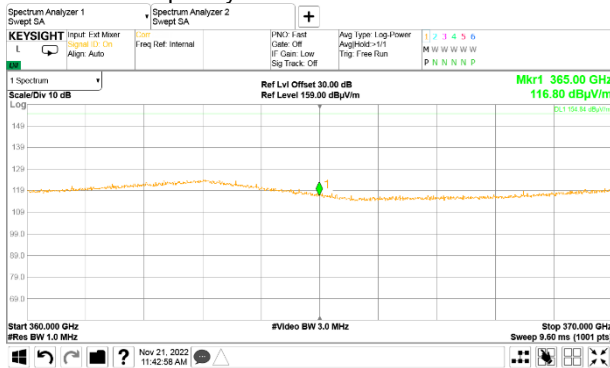
HERMON LABORATORIES

Test specification: Section 15.258(c)(3), Out of band radiated emissions above 40 GHz up to 370 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 31-Oct-22 - 21-Nov-22			
Temperature: 27 °C	Relative Humidity: 50 %	Air Pressure: 1010 hPa	Power: 5 VDC
Remarks:			

Plot 7.4.45 Spurious emission measurements in 360 - 370 GHz range

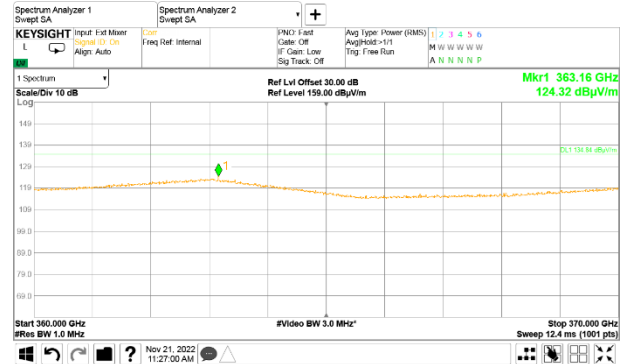
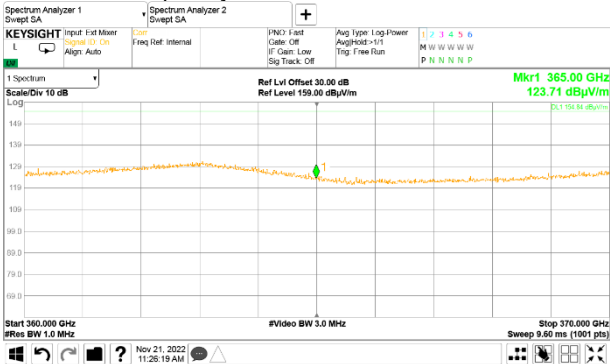
TEST SITE:
 TEST DISTANCE:
 MODULATION:
 ANTENNA POLARIZATION:
 DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
 Low carrier frequency:

OATS
 0.01 m
 CW
 Vertical and Horizontal
 DETECTOR: Average (RMS) RBW = 1 MHz; VBW = 3MHz
 119000 MHz



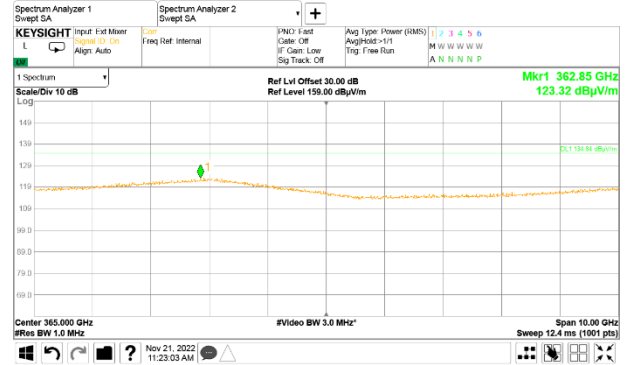
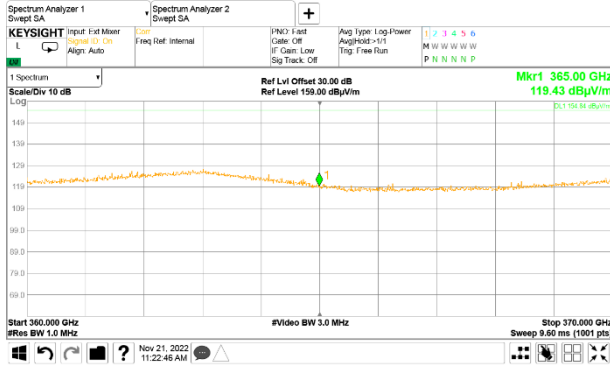
Mid carrier frequency:

121000 MHz



High carrier frequency:

122980 MHz





Test specification: Section 15.258(d), Frequency stability			
Test procedure: ANSI C63.4, Section 13.1.4			
Test mode: Compliance		Verdict: PASS	
Date(s): 17-Nov-22 - 27-Nov-22			
Temperature: 25 °C	Relative Humidity: 51 %	Air Pressure: 1010 hPa	Power: 5 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.

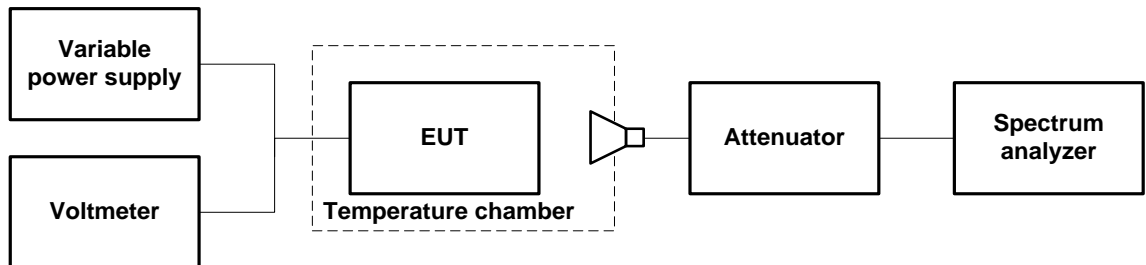
Table 7.5.1 Frequency stability limits

Assigned frequency, MHz	Maximum allowed frequency displacement
119000	NA
121000	
122980	

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: Section 15.258(d), Frequency stability			
Test procedure: ANSI C63.4, Section 13.1.4			
Test mode: Compliance		Verdict: PASS	
Date(s): 17-Nov-22 - 27-Nov-22			
Temperature: 25 °C	Relative Humidity: 51 %	Air Pressure: 1010 hPa	Power: 5 VDC
Remarks:			

Table 7.5.2 Frequency stability test results

OPERATING FREQUENCY: 116000 – 123000 MHz
 NOMINAL POWER VOLTAGE: 5 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 119.000 GHz										
-20	nominal	118998.895	118998.898	11998.901	118998.903	118.998.905	118998.907	118998.913	0.748	0.000
-10	nominal	118998.732	NA	NA	NA	NA	NA	118998.762	0.597	0.000
0	nominal	118998.472	118998.480	118998.484	118998.486	118998.488	118.998.491	118998.499	0.334	0.000
10	nominal	118998.266	NA	NA	NA	NA	NA	118998.303	0.138	0.000
20	+15%	118998.156	NA	NA	NA	NA	NA	118998.165	0.000	-0.009
20	nominal	118998.156	NA	NA	NA	NA	NA	118998.165	0.000	-0.009
20	-15%	118998.157	NA	NA	NA	NA	NA	118998.164	0.000	-0.008
30	nominal	118998.184	118998.184	118998.184	118998.184	118998.184	118998.184	118998.185	0.020	0.000
40	nominal	119998.287	NA	NA	NA	NA	NA	119998.339	0.174	0.000
50	nominal	118998.654	NA	NA	NA	NA	NA	118998.777	0.612	0.000
Mid frequency 121.000 GHz										
-20	nominal	121000.004	121000.002	121000.001	121000.000	121000.000	121000.000	121000.005	0.337	0.000
-10	nominal	120999.757	NA	NA	NA	NA	NA	121000.000	0.332	0.000
0	nominal	120999.713	120999.719	120999.729	120999.690	120999.736	120999.723	120999.660	0.068	-0.008
10	nominal	120999.699	NA	NA	NA	NA	NA	120999.755	0.087	0.000
20	+15%	120999.673	NA	NA	NA	NA	NA	120999.668	0.005	0.000
20	nominal	120999.674	NA	NA	NA	NA	NA	120999.668	0.006	0.000
20	-15%	120999.673	NA	NA	NA	NA	NA	120999.669	0.005	0.000
30	nominal	120999.609	120999.609	120999.609	120999.609	120999.608	120999.608	120999.608	0.000	-0.060
40	nominal	120999.624	NA	NA	NA	NA	NA	120999.691	0.023	-0.044
50	nominal	120999.870	NA	NA	NA	NA	NA	121000.022	0.354	0.000
High frequency 122.980 GHz										
-20	nominal	122979.518	122979.514	122979.510	122979.508	122979.506	122979.505	122979.508	0.412	0.000
-10	nominal	122979.442	NA	NA	NA	NA	NA	122979.515	0.409	0.000
0	nominal	122979.262	122979.284	122979.303	122979.320	122979.332	122979.344	122979.382	0.276	0.000
10	nominal	122979.145	NA	NA	NA	NA	NA	122979.214	0.108	0.000
20	+15%	122979.106	NA	NA	NA	NA	NA	122979.104	0.000	-0.002
20	nominal	122979.108	NA	NA	NA	NA	NA	122979.106	0.002	0.000
20	-15%	122979.104	NA	NA	NA	NA	NA	122979.104	0.000	-0.002
30	nominal	122979.297	122979.222	122979.174	122979.134	122979.110	122979.098	122979.058	0.191	-0.048
40	nominal	122979.060	NA	NA	NA	NA	NA	122979.116	0.010	-0.046
50	nominal	122979.135	NA	NA	NA	NA	NA	122979.344	0.238	0.000

Reference numbers of test equipment used

HL 0495	HL 5373	HL 3286	HL 3536	HL 5376		
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Full description is given in Appendix A.



Test specification: Section 15.203, Antenna requirement			
Test procedure: Visual inspection / supplier declaration			
Test mode: Compliance		Verdict: PASS	
Date(s): 24-Nov-22			
Temperature: 25 °C	Relative Humidity: 50 %	Air Pressure: 1008 hPa	Power: 5 VDC
Remarks:			

7.6 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 7.6.1.

Table 7.6.1 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	



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	28-Feb-22	28-Feb-23
0495	Autotransformer 0-255V, 10A	Variac	EMPL01	495	10-May-22	10-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	11-Nov-21	11-Nov-22
0771	Antenna Standard Gain Horn, 60-90 GHz, WR-12, 24 dB mid-band gain	Quinstar Technology	QWH-1200-AA	111	15-Aug-22	15-Aug-23
1312	Mixer Millimeter Wave Harmonic 140-220 GHz	Oleson Microwave Labs	M05HWD	G91112-1	19-May-20	19-May-23
3235	Harmonic mixer 40 to 60 GHz	Agilent Technologies	11970U	MY30030182	30-Jan-20	30-Jan-23
3286	Temperature Chamber, (-50 to +170) °C	Thermotron	EL-8-CH-1-1-CO2	21-9048	12-Dec-21	12-Dec-22
3329	Antenna Standard Gain Horn, 140-220 GHz, WR-5, 24 dB mid-band gain	Quinstar Technology			11-Nov-21	11-Nov-22
3536	Antenna Standard Gain Horn, 90-140 GHz, WR-8, 24 dB mid-band gain	Quinstar Technology	QWH-FPRR00	11159004001	11-Nov-21	11-Nov-22
3903	Microwave Cable Assembly, 40.0 GHz, 1.5 m, SMA/SMA	Huber-Suhner	SUCOFL EX 102A	1226/2A	07-Apr-22	07-Apr-23
4023	Diplexer for use OML mixers with Agilent spectrum analyzer	Oleson Microwave Labs	DPL.26	NA	28-Apr-22	28-Apr-23
4933	Active Horn Antenna, 1 GHz to 18 GHz	COM-POWER CORPORATION	AHA-118	701046	13-Jan-22	13-Jan-23
4956	Active horn antenna, 18 to 40 GHz	COM-POWER CORPORATION	AHA-840	105004	07-Mar-22	07-Mar-23
5112	RF cable, 40 GHz, 5.5 m, K-type	Huber-Suhner	SF102EA/11SK/11SK/5500MM	502494/2EA	25-Apr-22	25-Apr-23
5286	Band Pass Filter, 50 Ohm, 4.4 to 18 GHz, SMA/M-SMA/F	A-INFOMW	WBLB-T-HP-4.4-18-S	J10800000305	15-Jun-21	15-Jun-23
5288	Trilog Antenna, 25 MHz - 8 GHz, 100W	Frankonia	ALX-8000E	00809	24-Mar-22	24-Apr-25
5369	Digital storage oscilloscope, 350 MHz	Keysight Technologies	DSOX3034T	MY58032630	12-Oct-22	12-Oct-23
5371	EXG Analog Signal Generator, 9 kHz - 40 GHz	Keysight Technologies	N5173B	MY57280540	28-Oct-21	28-Dec-22
5372	MXE EMI receiver, 3 Hz to 44 GHz	Keysight Technologies	N9038A	MY57290155	16-Mar-22	16-Mar-23



HL No	Description	Manufacturer	Model	Ser. No.	Last Cal./ Check	Due Cal./ Check
5373	Millimeter-wave Signal Generator E8257DV08 WR8.0SGX ATO64975 90-140GHz	Keysight Technologies	E8257D V08	US53250 008	01-Jan-22	01-Jan-23
5376	EXA Signal Analyzer, 10 Hz - 32 GHz	Keysight Technologies	N9010B	MY574704 04	01-Nov-21	01-Jan-23
5377	USB Thermocouple Power Sensor, DC-120 GHz	Keysight Technologies	U8489A	US56430 158	19-Oct-22	19-Oct-23
5378	Adapter, E-Band Waveguide to Coax Panel Mount , WR-12 End Launch	SaGE Millimeter, Incdan - Insurance agency	SWC- 121F-E1- KS	14427-09	30-May-22	30-May-23
5979	Harmonic Mixer 220-325 GHz	OML Inc.	M03HWD	210216-1	16-Feb-21	16-Feb-24
5980	Standard Horn Antenna 220-325 GHz, WR-03, 24.5 dB mid-band gain	Radar Systems Technology	HO3R WR-03	01	07-Mar-21	07-Mar-23
5981	RF detector 90 – 140 GHz.	Pacific Millimeter Products, Inc	FD	155	25-Jan-21	25-Jan-23
6038	Harmonic mixer 325 - 500 GHz, WR- 2.2	Farran Technology Ltd	WHMB- 2.2-0001	FTL13699	11-May-21	11-May-23
6039	Standard Gain Horn antenna, 325-500 GHz, WR-2.2, 25 dB mid-band gain	Farran Technology Ltd	SGH-2.2- 25	FTL5631B	11-Nov-21	11-Nov-22
7585	EMI Test Receiver, 1 Hz to 44 GHz	Rohde & Schwarz	ESW44	103130	19-May-22	19-May-23



9 APPENDIX B Test equipment correction factors

HL 0446: Active Loop Antenna
EMCO, model: 6502, s/n 2857

Frequency,	Measured antenna factor, dBS/m	Measurement uncertainty, dB
10	-33.4	±1.0
20	-37.8	±1.0
50	-40.5	±1.0
75	-41.0	±1.0
100	-41.2	±1.0
150	-41.2	±1.0
250	-41.1	±1.0
500	-41.2	±1.0
750	-41.3	±1.0
1000	-41.3	±1.0

Frequency,	Measured antenna factor, dBS/m	Measurement uncertainty, dB
2000	-41.4	±1.0
3000	-41.4	±1.0
4000	-41.5	±1.0
5000	-41.5	±1.0
10000	-41.7	±1.0
15000	-42.1	±1.0
20000	-42.7	±1.0
25000	-44.2	±1.0
30000	-45.8	±1.0

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



HL 4933: Active Horn Antenna
COM-POWER CORPORATION, model: AHA-118, s/n 701046

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.



HL 4956: Active horn antenna
COM-POWER Corp., model: AHA-840, s/n 105004

Frequency, MHz	Measured antenna factor, dB/m
18000	5.1
18500	3.6
19000	2.2
19500	0.7
20000	0.7
20500	0.8
21000	0.5
21500	-1.3
22000	-2.1
22500	-2.0
23000	-1.6
23500	-2.9
24000	-2.3
24500	-2.6
25000	-1.8
25500	-1.2
26000	-0.5
26500	-1.2
27000	-0.1
27500	-1.0
28000	-0.7
28500	0.5

Frequency, MHz	Measured antenna factor, dB/m
29500	1.4
30000	2.9
30500	2.9
31000	2.9
31500	1.2
32000	0.7
32500	0.2
33000	-1.7
33500	-2.2
34000	2.3
34500	-1.1
35000	0.7
35500	-1.1
36000	0.1
36500	1.4
37000	3.7
37500	5.8
38000	6.6
38500	7.3
39000	6.5
39500	7.3
40000	7.1

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



HL 5288: Trilog Antenna
Frankonia, model: ALX-8000E, s/n: 00809
30-1000 MHz

Frequency, MHz	Antenna factor, dB/m
30	14.96
35	15.33
40	16.37
45	17.56
50	17.95
60	16.87
70	13.22
80	10.56
90	13.61
100	15.46
120	14.03
140	12.23

Frequency, MHz	Antenna factor, dB/m
160	12.67
180	13.34
200	15.40
250	16.42
300	17.28
400	19.98
500	21.11
600	22.90
700	24.13
800	25.25
900	26.35
1000	27.18

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

above 1000 MHz

Frequency, MHz	Antenna factor, dB/m
1000	26.9
1100	28.1
1200	28.4
1300	29.6
1400	29.1
1500	30.4
1600	30.7
1700	31.5
1800	32.3
1900	32.6
2000	32.5
2100	32.9
2200	33.5
2300	33.2
2400	33.7
2500	34.6
2600	34.7
2700	34.6
2800	35.0
2900	35.5
3000	36.2
3100	36.8
3200	36.8
3300	37.0
3400	37.5
3500	38.2

Frequency, MHz	Antenna factor, dB/m
3600	38.9
3700	39.4
3800	39.4
3900	39.6
4000	39.7
4100	39.8
4200	40.5
4300	40.9
4400	41.1
4500	41.4
4600	41.3
4700	41.6
4800	41.9
4900	42.3
5000	42.7
5100	43.0
5200	42.9
5300	43.5
5400	43.6
5500	44.3
5600	44.7
5700	45.0
5800	45.0
5900	45.3
6000	45.9

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



10 APPENDIX C 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 D 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 E Specification references

FCC 47CFR part 15: 2020

Radio Frequency Devices

ANSI C63.10: 2013

American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices



13 APPENDIX F Abbreviations and acronyms

A	ampere
AC	alternating current
A/m	ampere per meter
AM	amplitude modulation
AVRG	average (detector)
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
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
k	kilo
kHz	kilohertz
LO	local oscillator
m	meter
MHz	megahertz
min	minute
mm	millimeter
ms	millisecond
μ s	microsecond
NA	not applicable
NB	narrow band
OATS	open area test site
Ω	Ohm
PM	pulse modulation
PS	power supply
ppm	part per million (10^{-6})
QP	quasi-peak
RE	radiated emission
RF	radio frequency
rms	root mean square
Rx	receive
s	second
T	temperature
Tx	transmit
V	volt
WB	wideband



14 APPENDIX F Manufacturer's declaration



Declaration of identity between models: Neteera 130H-Plus/Neteera 131H-Plus

The Neteera devices, models 130H-Plus and 131H-Plus, are identical in components, assembly, technical specifications and performance operation principles, except the following distinctions:

1. Neteera 130H-Plus – uses a USB cable connected to a power supply and communicates with the data display monitor via Wi-Fi
2. Neteera 131H-Plus - uses a USB cable connects to display monitor and communicates with the data display monitor via wire connection

All the models can be powered by an AC/DC class II adapter (mode 1) or by connecting via USB connector (mode 2) to display monitor by receiving 5 VDC.

Reviewed and Confirmed By			
Name	Position	Date	Signature
Shahar Yaron	VP Product	20-Dec-2022	
Rakefet Shohat	VP QQ/RA	20-Dec-2022	
Shimon Steinberger	CTO	20-Dec-2022	

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