

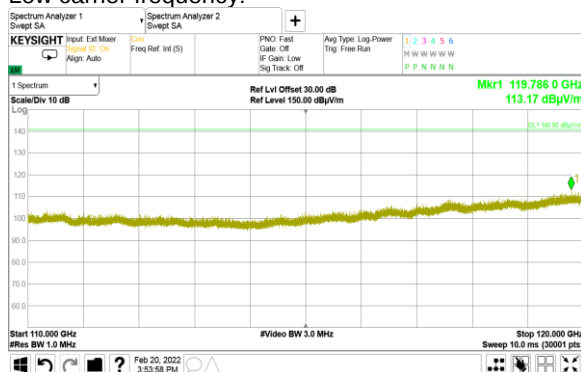


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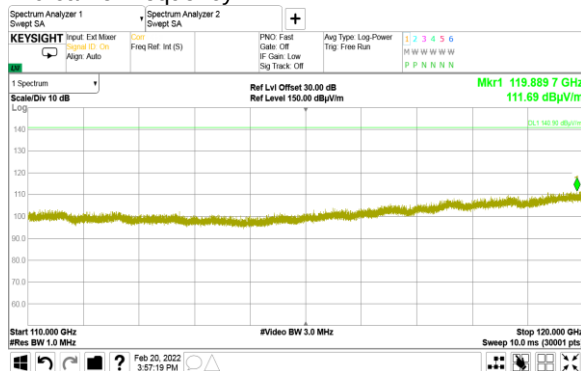
Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 21-Feb-22			
Temperature: 10 °C	Relative Humidity: 48 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.8 Spurious emission measurements in 110 - 120 GHz range

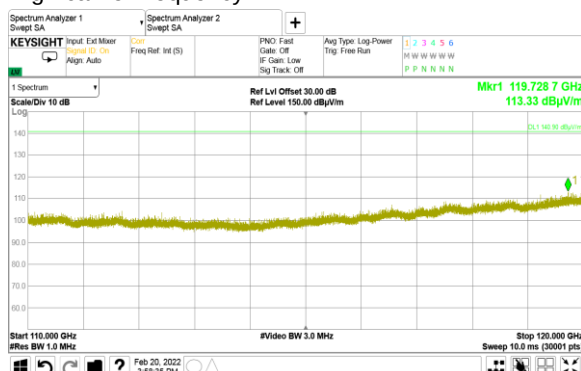
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:



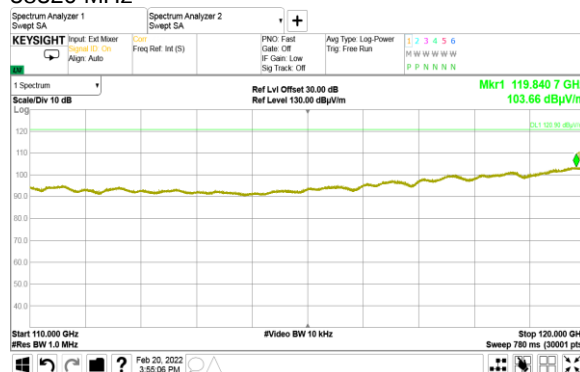
Mid carrier frequency:



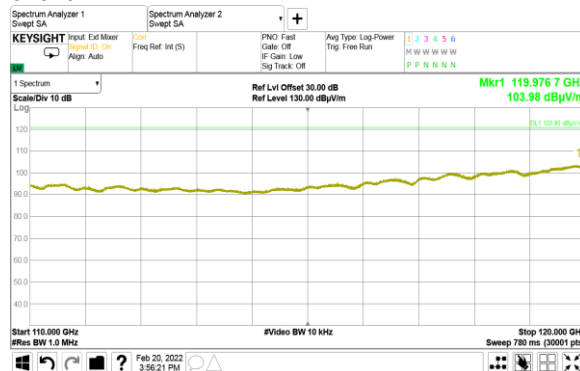
High carrier frequency:



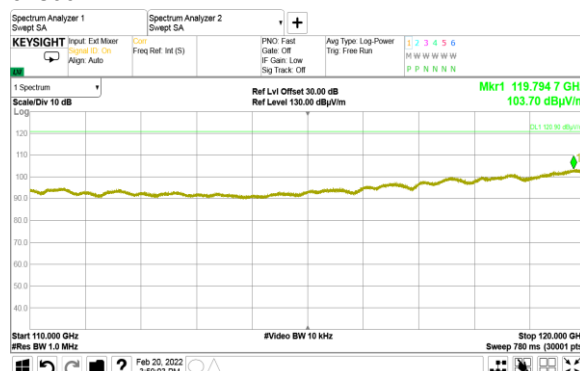
OATS
0.05 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



62640 MHz



64800 MHz



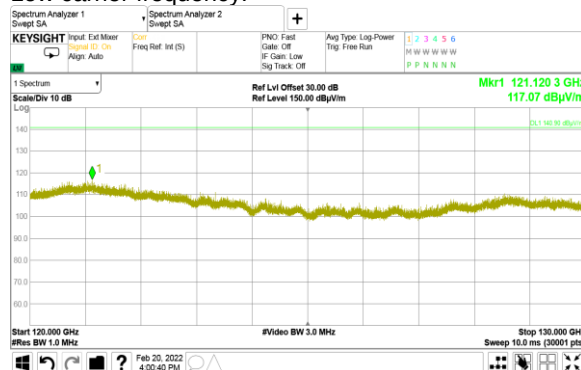


HERMON LABORATORIES

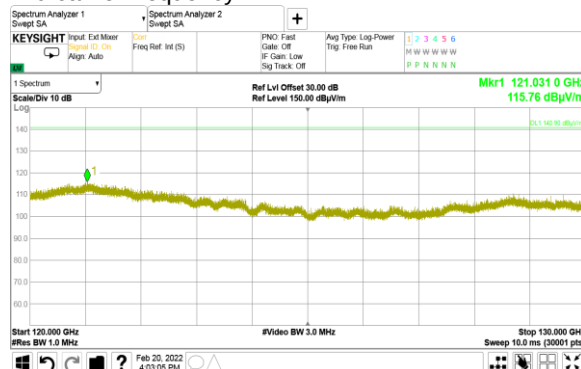
Test specification:		FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz	
Test procedure:		ANSI C63.10, Sections 9.9, 9.12	
Test mode:		Compliance	Verdict: PASS
Date(s):		21-Feb-22	
Temperature: 10 °C	Relative Humidity: 48 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.9 Spurious emission measurements in 120 - 130 GHz range

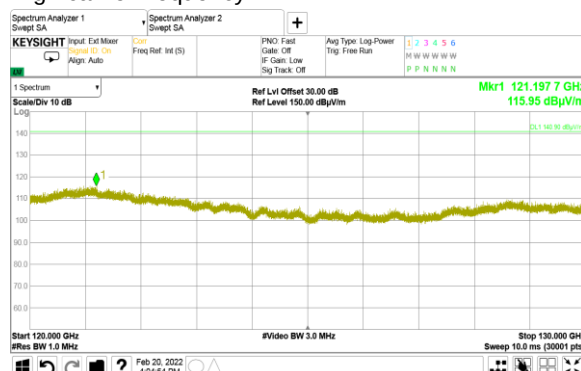
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:



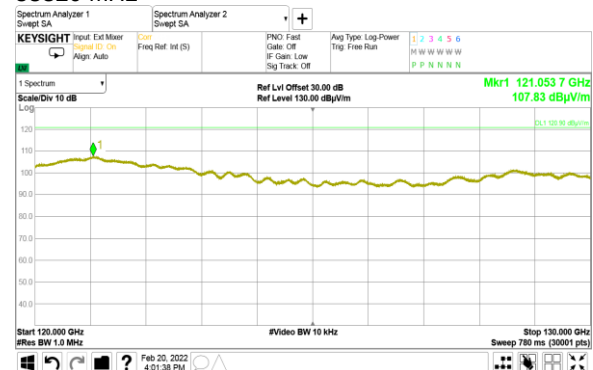
Mid carrier frequency:



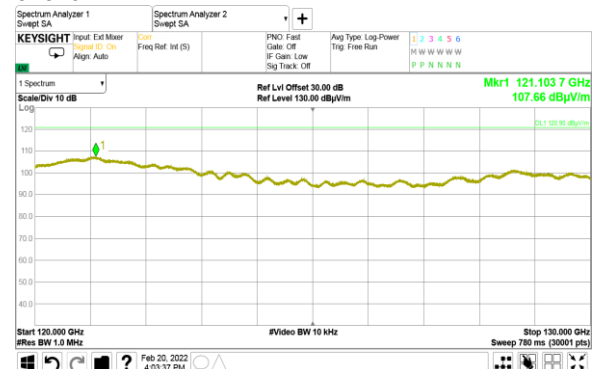
High carrier frequency:



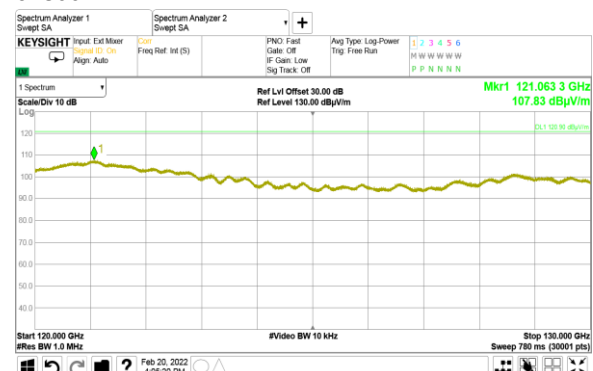
OATS
0.05 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



62640 MHz



64800 MHz



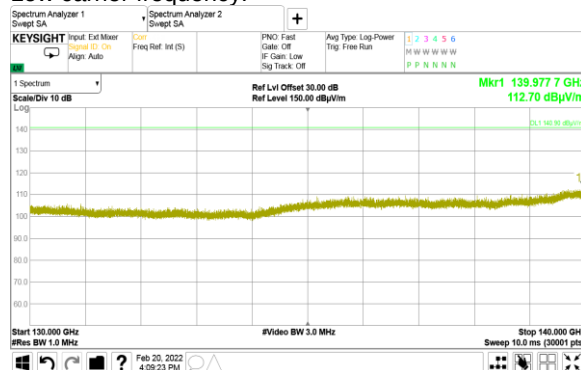


HERMON LABORATORIES

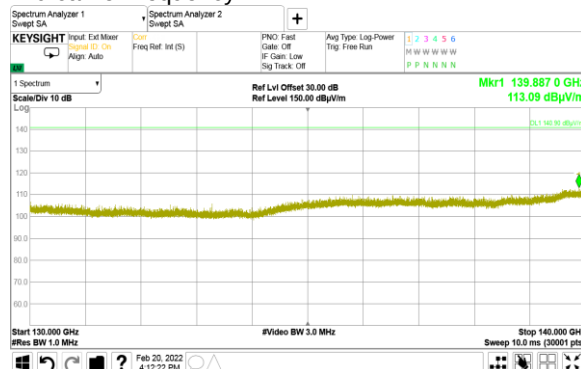
Test specification:		FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz	
Test procedure:		ANSI C63.10, Sections 9.9, 9.12	
Test mode:		Compliance	Verdict: PASS
Date(s):		21-Feb-22	
Temperature: 10 °C	Relative Humidity: 48 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.10 Spurious emission measurements in 130 - 140 GHz range

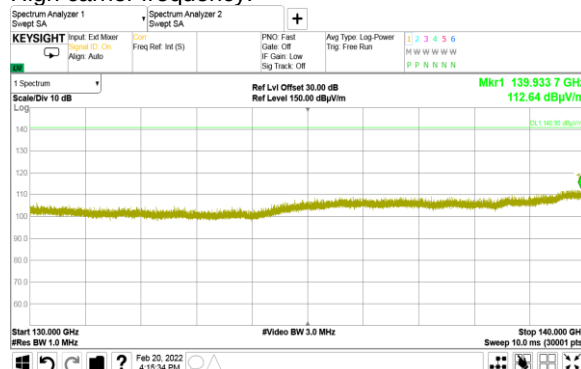
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:



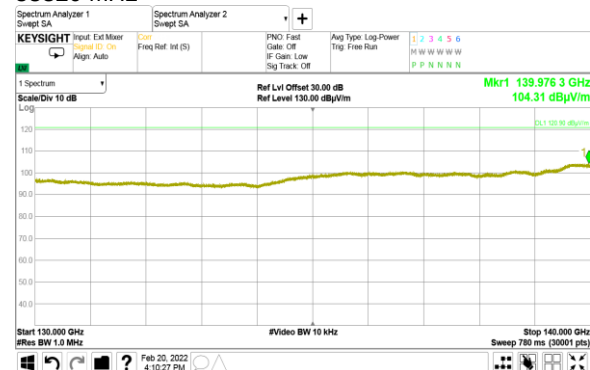
Mid carrier frequency:



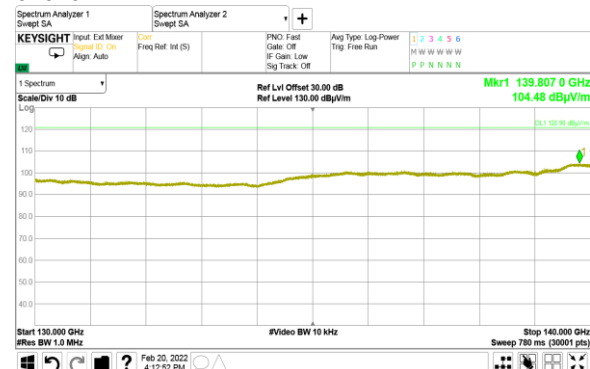
High carrier frequency:



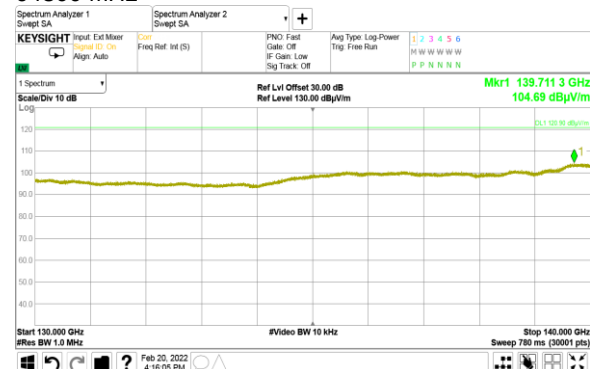
OATS
0.05 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



62640 MHz



64800 MHz



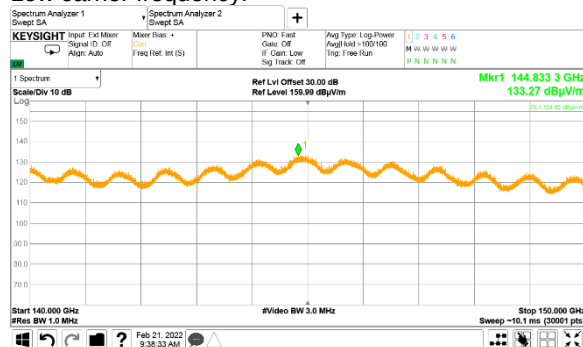


HERMON LABORATORIES

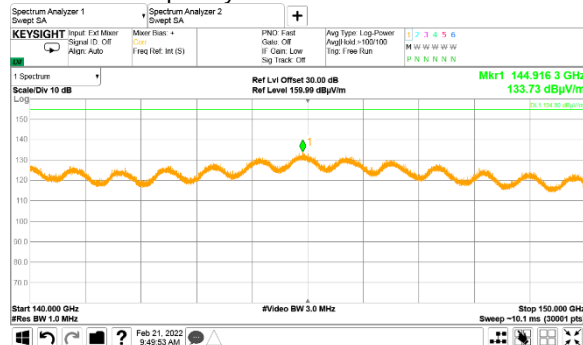
Test specification:		FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz	
Test procedure:		ANSI C63.10, Sections 9.9, 9.12	
Test mode:		Verdict: PASS	
Date(s):			
21-Feb-22			
Temperature: 10 °C	Relative Humidity: 48 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.11 Spurious emission measurements in 140 - 150 GHz range

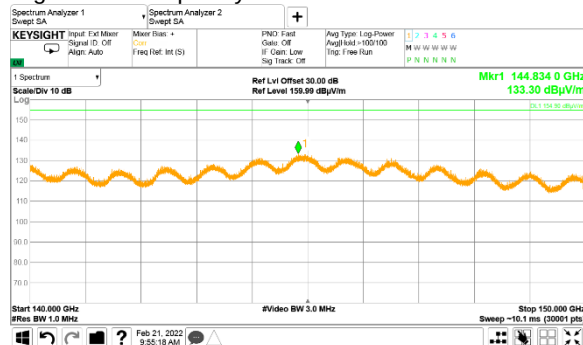
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:



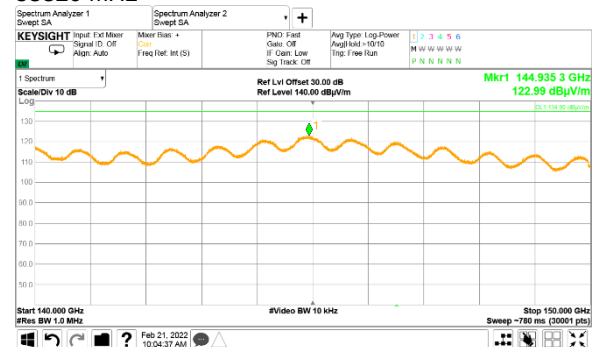
Mid carrier frequency:



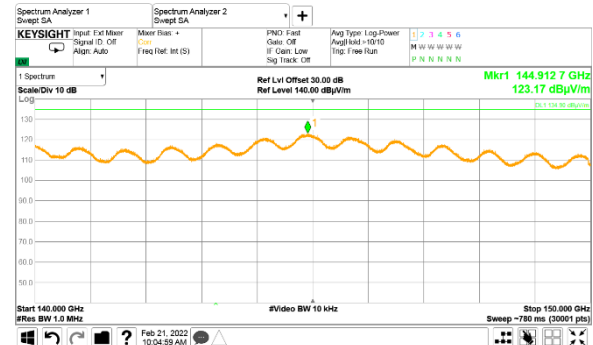
High carrier frequency:



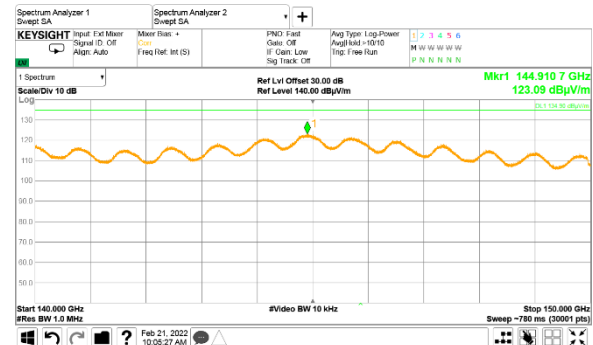
OATS
0.01 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



62640 MHz



64800 MHz



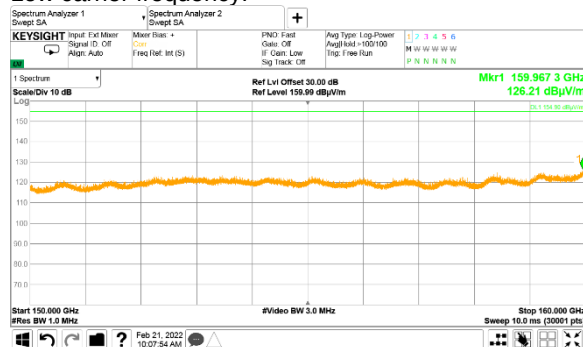


HERMON LABORATORIES

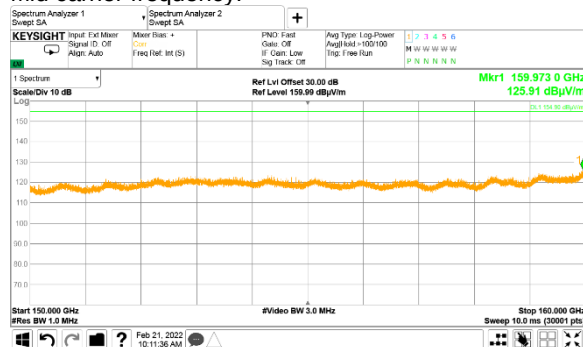
Test specification:		FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz	
Test procedure:		ANSI C63.10, Sections 9.9, 9.12	
Test mode:		Verdict: PASS	
Date(s):			
21-Feb-22			
Temperature: 10 °C	Relative Humidity: 48 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.12 Spurious emission measurements in 150 - 160 GHz range

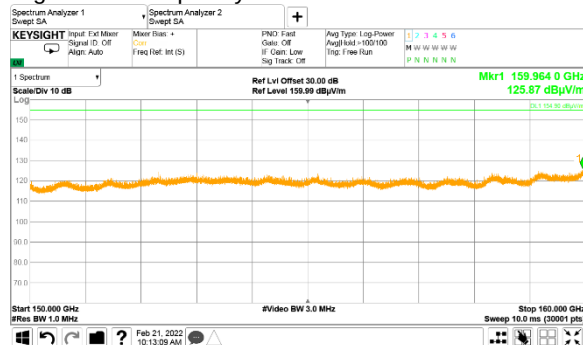
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:



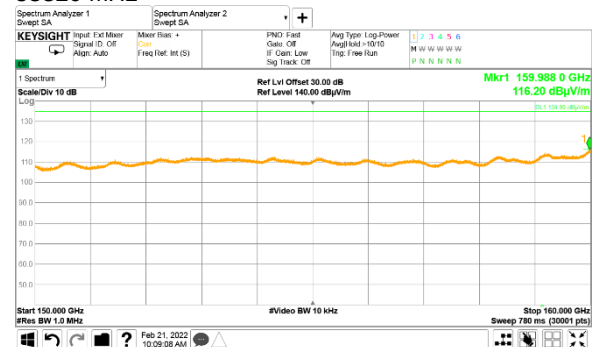
Mid carrier frequency:



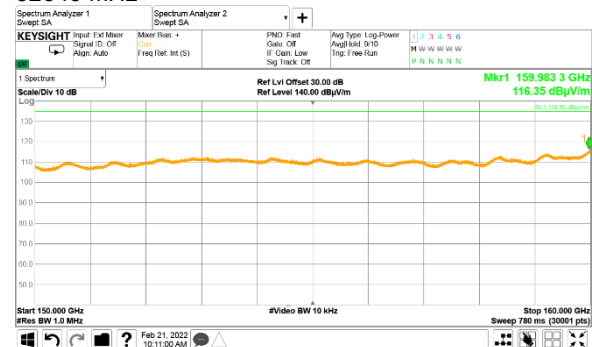
High carrier frequency:



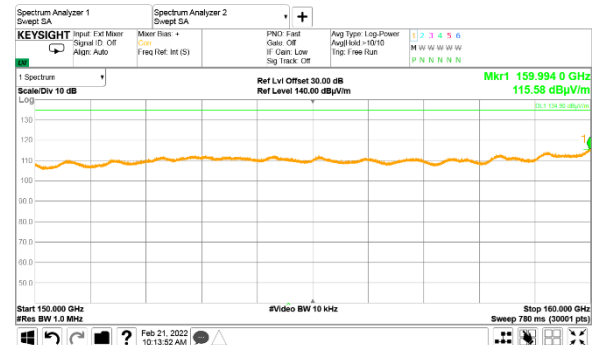
OATS
0.01 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



62640 MHz



64800 MHz



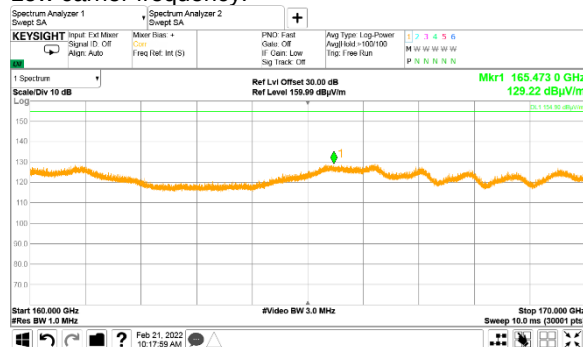


HERMON LABORATORIES

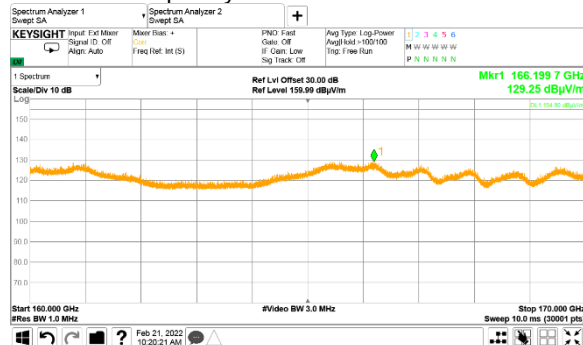
Test specification:		FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz	
Test procedure:		ANSI C63.10, Sections 9.9, 9.12	
Test mode:		Verdict: PASS	
Date(s):			
21-Feb-22			
Temperature: 10 °C	Relative Humidity: 48 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.13 Spurious emission measurements in 160 - 170 GHz range

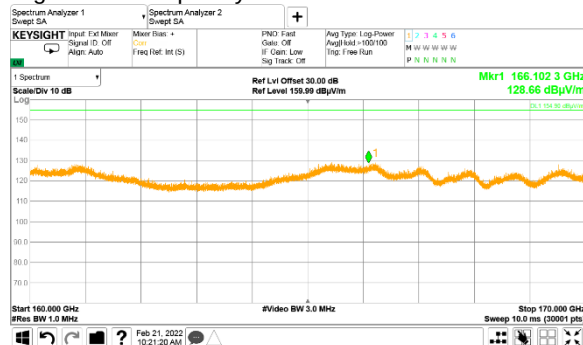
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:



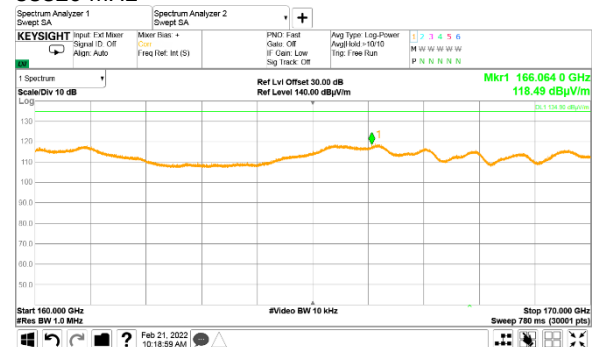
Mid carrier frequency:



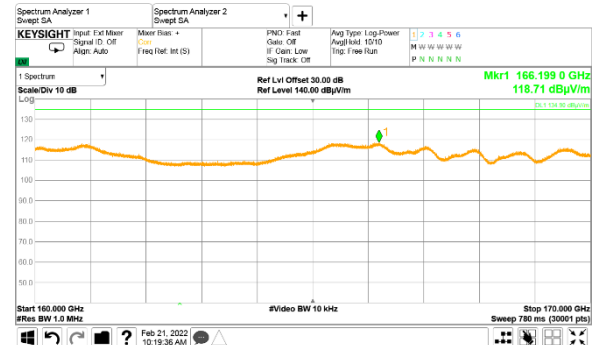
High carrier frequency:



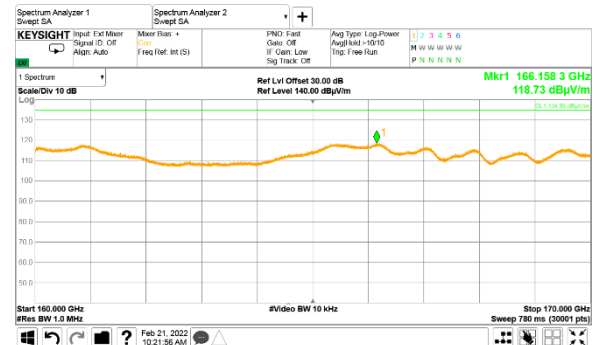
OATS
0.01 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



62640 MHz



64800 MHz



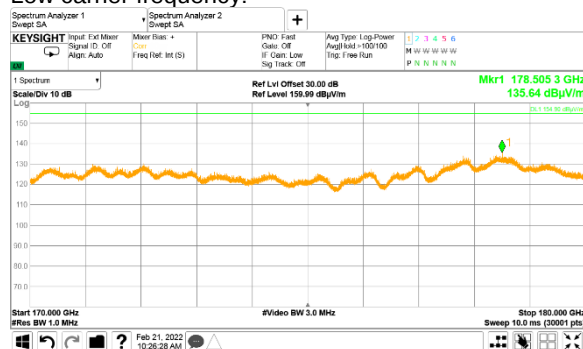


HERMON LABORATORIES

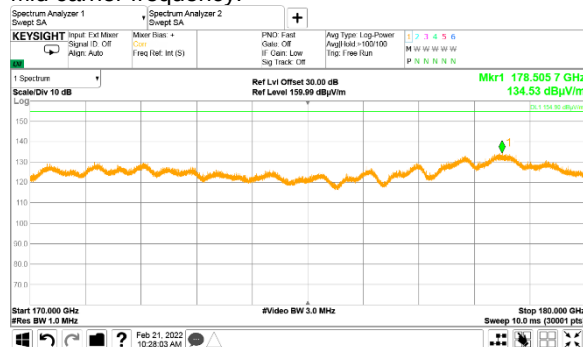
Test specification:		FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz	
Test procedure:		ANSI C63.10, Sections 9.9, 9.12	
Test mode:		Verdict: PASS	
Date(s):			
21-Feb-22			
Temperature: 10 °C	Relative Humidity: 48 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.14 Spurious emission measurements in 170 - 180 GHz range

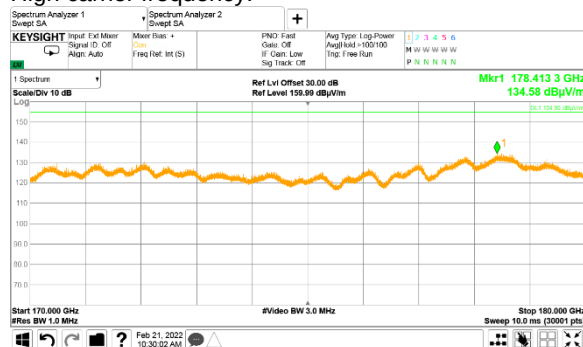
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:



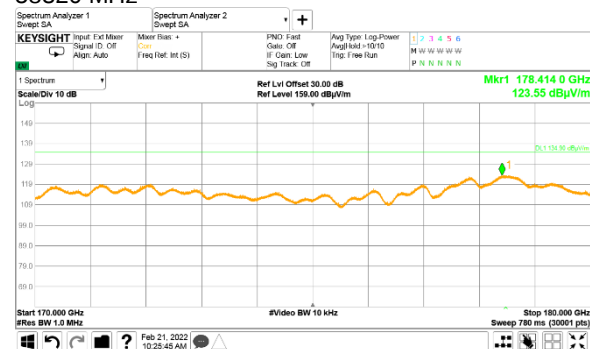
Mid carrier frequency:



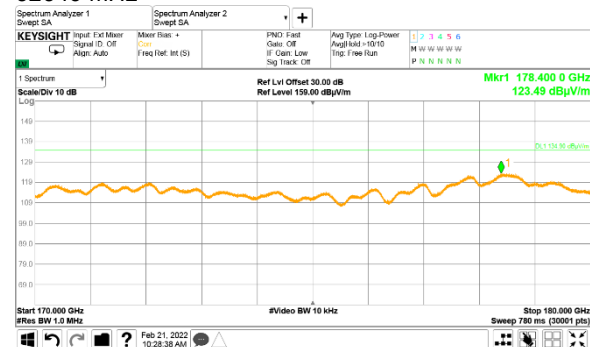
High carrier frequency:



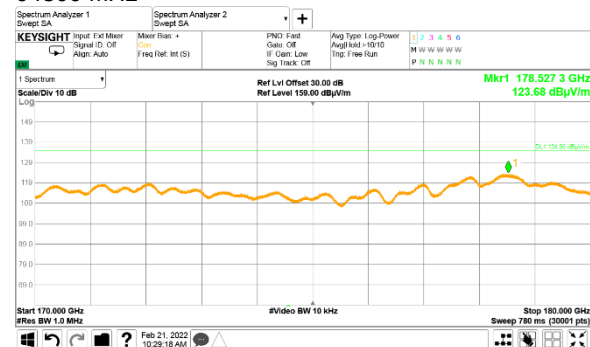
OATS
0.01 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



62640 MHz



64800 MHz



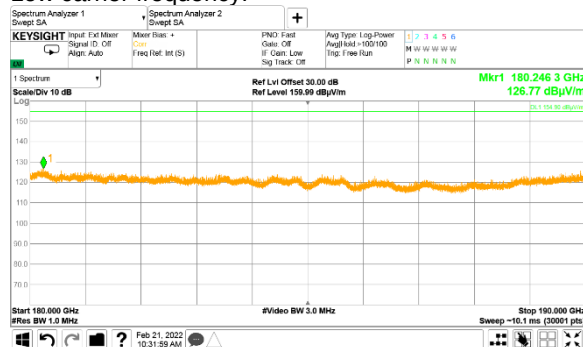


HERMON LABORATORIES

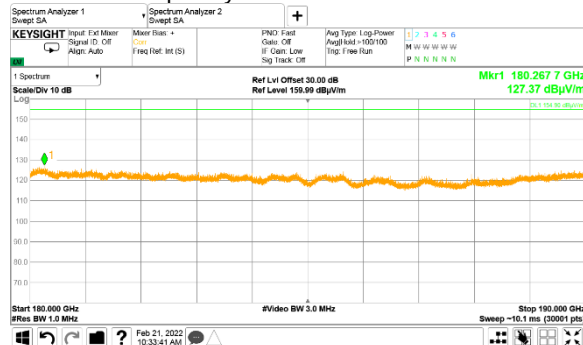
Test specification:		FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz	
Test procedure:		ANSI C63.10, Sections 9.9, 9.12	
Test mode:		Verdict: PASS	
Date(s):			
21-Feb-22			
Temperature: 10 °C	Relative Humidity: 48 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.15 Spurious emission measurements in 180 - 190 GHz range

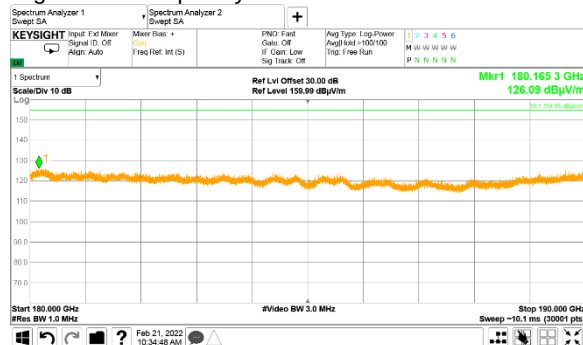
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:



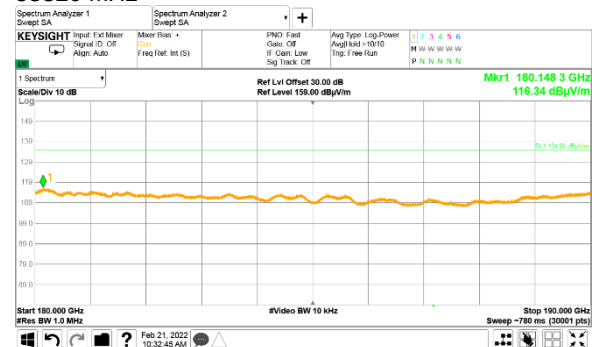
Mid carrier frequency:



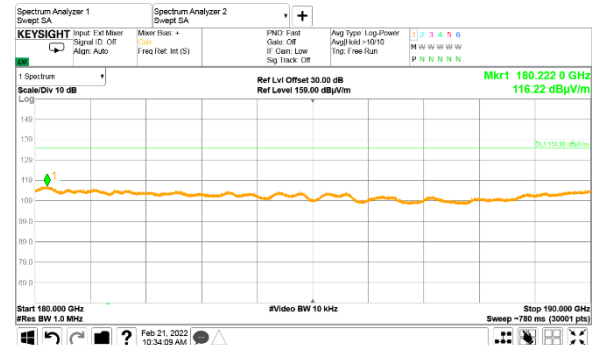
High carrier frequency:



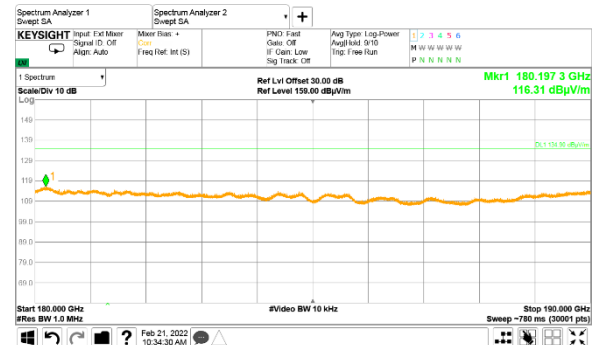
OATS
0.01 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



62640 MHz



64800 MHz



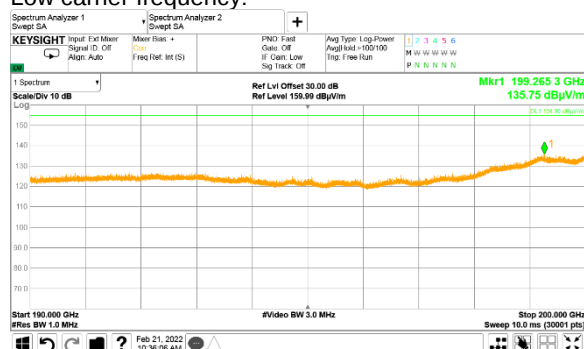


HERMON LABORATORIES

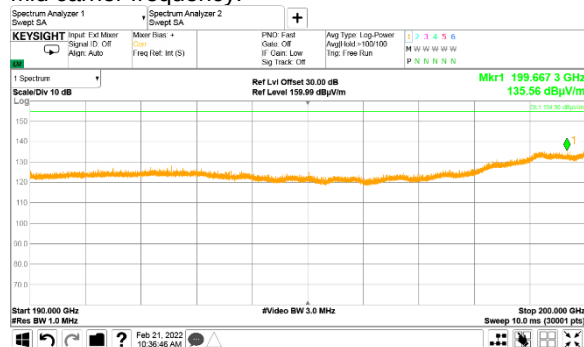
Test specification: FCC Section 15.255(d)(3), RSS-210 section J.3, Out of band radiated emissions above 40 GHz			
Test procedure: ANSI C63.10, Sections 9.9, 9.12			
Test mode: Compliance		Verdict: PASS	
Date(s): 21-Feb-22			
Temperature: 10 °C	Relative Humidity: 48 %	Air Pressure: 1020 hPa	Power: 48 VDC
Remarks:			

Plot 7.4.16 Spurious emission measurements in 190 - 200 GHz range

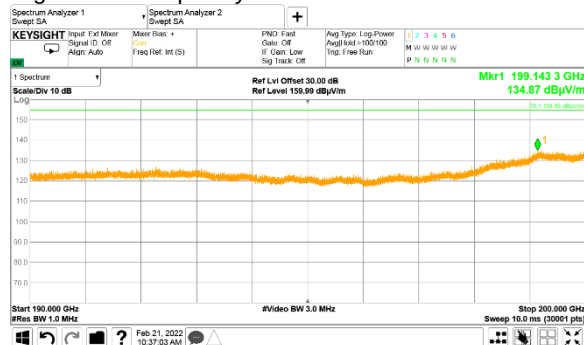
TEST SITE:
TEST DISTANCE:
MODULATION:
ANTENNA POLARIZATION:
DETECTOR: Peak RBW = 1 MHz; VBW = 3 MHz
Low carrier frequency:



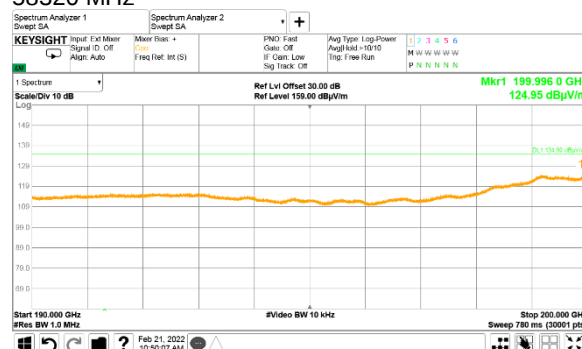
Mid carrier frequency:



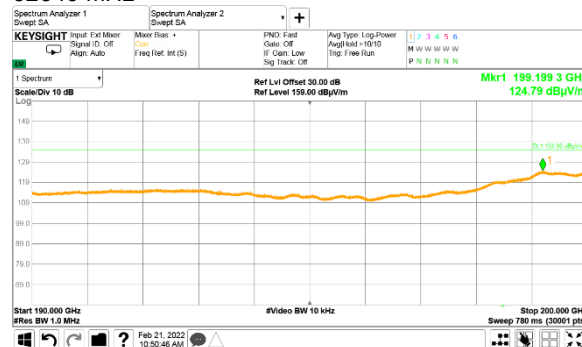
High carrier frequency:



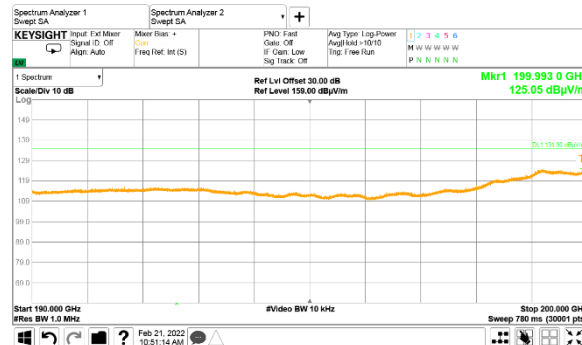
OATS
0.01 m
16QAM
Vertical and Horizontal
DETECTOR: Peak RBW = 1 MHz; VBW = 10 kHz
58320 MHz



62640 MHz



64800 MHz





Test specification: FCC section 15.255(f)/RSS-210 section J.6, Frequency stability			
Test procedure: ANSI C63.10, Section 6.8.1			
Test mode: Compliance		Verdict: PASS	
Date(s): 10-Mar-22			
Temperature: 25 °C	Relative Humidity: 48 %	Air Pressure: 1018 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
62640	NA
64800	NA

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.

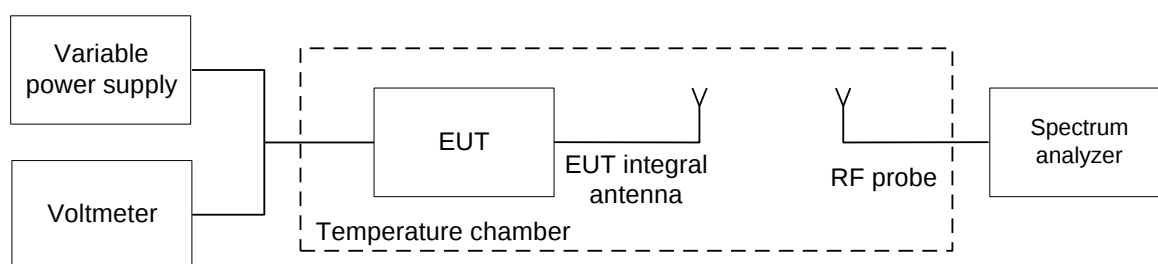
7.5.2.2 The EUT power was turned off. Temperature within test chamber was set to +30°C and a period of time sufficient to stabilize all of the oscillator circuit components was allowed.

7.5.2.3 The EUT was powered on and carrier frequency was measured at start up moment +30°C 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 the rest of the test temperatures and voltages as provided in Table 7.5.2. The EUT was powered off.

7.5.2.5 Frequency displacement was calculated and compared with the limit as provided in Table 7.5.2.

Figure 7.5.1 Frequency stability test setup





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Test specification: FCC section 15.255(f)/RSS-210 section J.6, Frequency stability			
Test procedure: ANSI C63.10, Section 6.8.1			
Test mode: Compliance		Verdict: PASS	
Date(s): 10-Mar-22			
Temperature: 25 °C	Relative Humidity: 48 %	Air Pressure: 1018 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 58320 MHz											
-45	nominal	58419.862475	NA	NA	NA	NA	NA	NA	58419.862489	66	0
-40	nominal	58419.862430	NA	NA	NA	NA	NA	NA	58419.862416	7	-7
-30	nominal	58419.862467	NA	NA	NA	NA	NA	NA	58419.862437	44	0
-20	nominal	58419.862478	58419.862476	58419.862471	58419.862478	58419.862472	58419.862479	58419.862476	56	0	
-10	nominal	58419.862460	NA	NA	NA	NA	NA	NA	58419.862478	55	0
0	nominal	58419.862445	58419.862456	58419.862476	58419.862436	58419.862478	58419.862442	58419.862399	55	-24	
10	nominal	58419.862456	NA	NA	NA	NA	NA	NA	58419.862472	49	0
20	15%	58419.862421	NA	NA	NA	NA	NA	NA	58419.862432	9	-2
20	nominal	58419.862419	NA	NA	NA	NA	NA	NA	58419.862423	0	-4
20	-15%	58419.862432	NA	NA	NA	NA	NA	NA	58419.862437	14	0
30	nominal	58419.862449	58419.862465	58419.862433	58419.862426	58419.862434	58419.862433	58419.862470	47	0	
40	nominal	58419.862431	NA	NA	NA	NA	NA	NA	58419.862447	24	0
50	nominal	58419.862457	NA	NA	NA	NA	NA	NA	58419.862480	57	0
55	nominal	58419.862427	NA	NA	NA	NA	NA	NA	58419.862438	15	0
Mid frequency 62640 MHz											
-45	nominal	62739.859070	NA	NA	NA	NA	NA	NA	62739.859086	49	0
-40	nominal	62739.859079	NA	NA	NA	NA	NA	NA	62739.859074	42	0
-30	nominal	62739.859048	NA	NA	NA	NA	NA	NA	62739.859072	35	0
-20	nominal	62739.859045	62739.859090	62739.859093	62739.859015	62739.859065	62739.859098	62739.859027	61	-22	
-10	nominal	62739.859061	NA	NA	NA	NA	NA	NA	62739.859047	24	0
0	nominal	62739.859021	62739.859043	62739.858999	62739.859034	62739.859074	62739.859060	62739.859054	37	-38	
10	nominal	62739.859065	NA	NA	NA	NA	NA	NA	62739.859075	38	0
20	15%	62739.859052	NA	NA	NA	NA	NA	NA	62739.859059	22	0
20	nominal	62739.859046	NA	NA	NA	NA	NA	NA	62739.859037	9	0
20	-15%	62739.859051	NA	NA	NA	NA	NA	NA	62739.859048	14	0
30	nominal	62739.859045	62739.859045	62739.859087	62739.859043	62739.859012	62739.859023	62739.859056	50	-25	
40	nominal	62739.859056	NA	NA	NA	NA	NA	NA	62739.859059	22	0
50	nominal	62739.859053	NA	NA	NA	NA	NA	NA	62739.859046	16	0
55	nominal	62739.859058	NA	NA	NA	NA	NA	NA	62739.859058	21	0
High frequency 64800 MHz											
-45	nominal	64899.858493	NA	NA	NA	NA	NA	NA	64899.858490	46	0
-40	nominal	64899.858498	NA	NA	NA	NA	NA	NA	64899.858480	42	0
-30	nominal	64899.85848	NA	NA	NA	NA	NA	NA	64899.85849	43	0
-20	nominal	64899.858412	64899.858478	64899.858445	64899.858456	64899.858485	64899.858467	64899.858467	41	-32	
-10	nominal	64899.858448	NA	NA	NA	NA	NA	NA	64899.858487	43	0
0	nominal	64899.858437	64899.858412	64899.858497	64899.858434	64899.858434	64899.858478	64899.858421	53	-32	
10	nominal	64899.85845	NA	NA	NA	NA	NA	NA	64899.85846	15	0
20	15%	64899.858446	NA	NA	NA	NA	NA	NA	64899.858451	7	0
20	nominal	64899.858444	NA	NA	NA	NA	NA	NA	64899.858450	6	0
20	-15%	64899.858442	NA	NA	NA	NA	NA	NA	64899.858444	0	-2
30	nominal	64899.858480	64899.858427	64899.858365	64899.858456	64899.858446	64899.858458	64899.858480	38	-79	
40	nominal	64899.858499	NA	NA	NA	NA	NA	NA	64899.858439	55	-5
50	nominal	64899.858429	NA	NA	NA	NA	NA	NA	64899.858446	2	-15
55	nominal	64899.858473	NA	NA	NA	NA	NA	NA	64899.858454	29	0

* - Reference frequency

Reference numbers of test equipment used

HL 0771	HL 3286	HL 3291	HL 5376	HL 5380	HL 5391		
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Full description is given in Appendix A.



Test specification: FCC section 15.203/ RSS-Gen, Section 6.8, Antenna requirement			
Test procedure: Visual inspection / supplier declaration			
Test mode: Compliance		Verdict: PASS	
Date(s): 01-Mar-22			
Temperature: 24 °C	Relative Humidity: 40 %	Air Pressure: 1018 hPa	Power: 48 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	NA	Comply
The transmitter employs a unique antenna connector	Visual inspection	
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-21	28-Feb-22
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	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	10-Aug-21	10-Aug-22
0772	Antenna Standard Gain Horn, 75-110 GHz, WR-10, 24 dB mid-band gain	Quinstar Technology	QWH-0800-AA	110	11-Nov-21	11-Nov-22
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
3290	Attenuator, direct reading, 40 to 60 GHz, 0.4 W	Quinstar Technology	QAD-U00000	10381008	04-Nov-21	04-Nov-22
3291	Attenuator, direct reading, 60 to 90 GHz, 0.2 W	Quinstar Technology	QAD-E00000	10381009	04-Nov-21	04-Nov-22
3293	Frequency multiplier, input 20-30 GHz, output 60-90 GHz	Quinstar Technology	QPM-75003E	10381003	11-Nov-21	11-Nov-22
3294	Tapered transition, WR-28, UG-599 to WR-15, UG-385 (26.5-40 GHz to 50-75 GHz)	Quinstar Technology	QWP-AV0000	10381004	11-Nov-21	11-Nov-22
3306	Harmonic mixer 75 to 110 GHz	Agilent Technologies	11970W	MY25210273	30-Jan-20	30-Jan-23
3434	Test Cable , DC-18 GHz, 1.5 m, SMA - SMA	Mini-Circuits	CBL-5FT-SMSM+	25683	19-Apr-21	19-Apr-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
3901	Microwave Cable Assembly, 40.0 GHz, 3.5 m, SMA/SMA	Huber-Suhner	SUCOFL EX 102A	1225/2A	06-Apr-21	06-Apr-22
3903	Microwave Cable Assembly, 40.0 GHz, 1.5 m, SMA/SMA	Huber-Suhner	SUCOFL EX 102A	1226/2A	06-Apr-21	06-Apr-22
4023	Diplexer for use OML mixers with Agilent spectrum analyzer	Oleson Microwave Labs	DPL.26	NA	31-Mar-21	31-Mar-22
4360	EMI Test Receiver, 20 Hz to 40 GHz.	Rohde & Schwarz	ESU40	100322	13-Jan-22	13-Jan-23
4483	WR28 to WR22 Waveguide Transition, Freq. Range: 33-50GHz, Flange: FBP320/FUGP400	A-info (HK) Limited	2822WA-50	J5031121024002	11-Nov-21	11-Nov-22



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	30-May-21	30-May-22
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	26-Jan-21	07-Mar-22
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	19-Apr-21	19-Apr-22
5288	Trilog Antenna, 25 MHz - 8 GHz, 100W	Frankonia	ALX-8000E	00809	08-Feb-19	08-Mar-22
5371	EXG Analog Signal Generator, 9 kHz - 40 GHz	Keysight Technologies	N5173B	MY57280540	28-Oct-21	28-Oct-22
5376	EXA Signal Analyzer, 10 Hz - 32 GHz	Keysight Technologies	N9010B	MY57470404	01-Nov-21	01-Nov-22
5377	USB Thermocouple Power Sensor, DC-120 GHz	Keysight Technologies	U8489A	US56430158	19-Oct-21	19-Oct-22
5380	Waveguide Harmonic Mixer 55-90GHz	Keysight Technologies	M1971E	MY56130239	13-Nov-20	13-Nov-22
5391	Temperature/Humidity Cycle Chamber, -77 - +177 deg., Humidity Range 20% RH to 95% RH	Thermotron	SM-8C	27737	11-Nov-21	11-Nov-22
5902	RF cable, 18 GHz, 6.0m, N-type	Huber-Suhner	SF126EA/11N/11N/6000	NA	16-Jan-22	16-Jan-23

9 APPENDIX B 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