TEST REPORT

Application No.:	KSCR2208001370AT
FCC ID:	2A8CZ000077GB000001
IC:	29000-077GB000001
Applicant:	Nova Electronics (Shanghai) Co., LTD
Address of Applicant:	Zone A, 6th Floor, 1st Building, No. 601, Jinyuan fifth road, Jiading District, Shanghai,P.R.China
Manufacturer:	Nova Electronics (Shanghai) Co., LTD
Address of Manufacturer:	Zone A, 6th Floor, 1st Building, No. 601, Jinyuan fifth road, Jiading District, Shanghai,P.R.China
Factory:	Nova Electronics (Shanghai) Co., LTD
Address of Factory:	Zone A, 6th Floor, 1st Building, No. 601, Jinyuan fifth road, Jiading District, Shanghai,P.R.China
Equipment Under Test (EUT):	
EUT Name:	77GHz millimeter-wave radar
Model No.:	NOVA77GB-A
Standard(s) :	47 CFR Part 95, Subpart M RSS-251 Issue 2(July 2018) RSS-Gen Issue5 Amendment 2(February 2021)
Date of Receipt:	2022-08-05
Date of Test:	2022-08-15 to 2022-08-31
Date of Issue:	2022-09-01
Test Result:	

* In the configuration tested, the EUT complied with the standards specified above.

Eric Lin
Laboratory Manager

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Revision Record			
Version	**Description**	***Date***	***Remark***
00	Original	*2022-09-01*	/

Authorized for issue by:				
		Pawn. Liu **Pawn Liu / Project Engineer**		
		Eric Lin **Eric Lin / Reviewer**		

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2 Test Summary

Radio Spectrum Technical Requirement					
Item	**FCC Requirement**	**IC Requirement**	**Method**	**Test Limit**	**Result**
Antenna Requirement	47 CFR Part 95, Subpart M	RSS-Gen Clause 6.8	N/A	N/A	Pass

Radio Spectrum Matter Part For FCC				
Item	**FCC Requirement**	**Method**	**Test Limit**	**Result**
EIRP	47 CFR Part 95, Subpart M	ANSI C63.26 (2015) Section 5.2	Peak EIRP<55dBm/MHz Average EIRP<50dBm/MHz	Pass
Occupied Bandwidth	47 CFR Part 95, Subpart M	ANSI C63.26 (2015) Section 5.4	⩾76GHz,⩽81GHz	Pass
Modulation characteristics	47 CFR Part 95, Subpart M	ANSI C63.26 (2015) Section 5.3	N/A	Pass
Unwanted Emissions	47 CFR Part 95, Subpart M	ANSI C63.26 (2015) Section 5.5	Refer to 47 CFR Part 95, Subpart M §95.3379	Pass
Frequency Stability	47 CFR Part 95, Subpart M	ANSI C63.26 (2015) Section 5.6	76-81GHz	Pass

Radio Spectrum Matter Part For IC				
Item	**IC Requirement**	**Method**	**Test Limit**	**Result**
EIRP	RSS-251,Issue 2 Section 8.2	RSS-Gen Clause 6.12	Average EIRP<50dBm	Pass
Peak e.i.r.p.spectral density	RSS-251,Issue 2 Section 9.2	RSS-Gen Clause 6.12	Peak e.i.r.p. spectral density<55 dBm/MHz	Pass
Occupied Bandwidth	RSS-251,Issue 2 Section 7.2	RSS-Gen Clause 6.7	⩾76GHz,⩽81GHz	Pass
Modulation characteristics	RSS-251,Issue 2 Section 6(b)	ANSI C63.26 (2015) Section 5.3	N/A	Pass
Unwanted Emissions	RSS-251,Issue 2 Section 10.2	RSS-Gen Clause 6.13	Refer to RSS-251,Issue 2 Section 10.2 Table 1	Pass
Frequency Stability	RSS-251,Issue 2 Section 11.2	RSS-Gen Clause 6.11	76-81GHz	Pass

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4 General Information

4.1 Details of E.U.T.

Power supply:	DC 12-24V
Test voltage:	DC 12V
Frequency band:	76.0 GHz – 77.0 GHz
Type of modulation:	FMCW
Center Frequency:	76.48GHz
Channel Number:	1
Antenna Type:	PCB antenna
Antenna Gain:	16dBi (Provided by the manufacturer)
Serial Number:	072722A0060
Software version:	V0.83

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
/	/	/	/

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	8.4×10^{-8}
2	Occupied Bandwidth	3%
3	RF Power Density	2.9dB
4	RF Radiated Power	5.2dB (Below 1GHz)
		5.9dB (Above 1GHz)
5	Radiated Spurious Emission Test	4.2dB (Below 30MHz)
		4.5dB (30MHz-1GHz)
		5.1dB (1GHz-18GHz)
		5.4dB (Above 18GHz)
6	Temperature Test	1°C
7	Humidity Test	3%
8	Supply Voltages	1.5%
9	Time	3%

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

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4.4 Test Location

All tests were performed at:

Compliance Certification Services (Kunshan) Inc.

No.10 Weiye Rd, Innovation park, Eco&Tec, Development Zone, Kunshan City, Jiangsu, China.

Tel: +86 512 5735 5888 Fax: +86 512 5737 0818

No tests were sub-contracted.

Note:

1.SGS is not responsible for wrong test results due to incorrect information (e.g. max. clock frequency, highest internal frequency, antenna gain, cable loss, etc) is provided by the applicant. (if applicable).

2.SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (if applicable).

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS**

Compliance Certification Services (Kunshan) Inc. is accredited by the China National Accreditation Service for Conformity Assessment (CNAS). Registration No. CNAS L4354

- **A2LA**

Compliance Certification Services (Kunshan) Inc. is accredited by the American Association for Laboratory Accreditation (A2LA). Certificate No. 2541.01.

- **FCC**

Compliance Certification Services (Kunshan) Inc. has been recognized as an accredited testing laboratory. Designation Number: CN1172.

- **ISED**

Compliance Certification Services (Kunshan) Inc. has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory. Company Number: 2324E

- **VCCI**

The 3m and 10m Semi-anechoic chamber and Shielded Room of Compliance Certification Services (Kunshan) Inc. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-20134, R-11600, C-11707, T-11499, G-10216 respectively.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

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5 Equipment List

Item	Equipment	Manufacturer	Model	Serial Number	Cal Date	Cal. Due Date
RF Radiated Test						
1	Spectrum Analyzer	R&S	FSV40	101493	10/11/2021	10/10/2022
2	Signal Generator	Agilent	E8257C	MY43321570	10/18/2021	10/17/2022
3	Loop Antenna	Schwarzbeck	HXYZ9170	9170-108	02/21/2022	02/20/2023
4	Bilog Antenna	TESEQ	CBL 6112D	35403	06/21/2021	06/20/2023
5	Bilog Antenna	SCHWARZBECK	VULB9160	9160-3342	04/13/2021	04/12/2023
6	Horn-antenna(1-18GHz)	Schwarzbeck	BBHA9120D	267	10/26/2020	10/25/2022
7	Horn-antenna(1-18GHz)	ETS-LINDGREN	3117	00143290	02/22/2021	02/21/2023
8	Horn Antenna(18-40GHz)	Schwarzbeck	BBHA9170	BBHA9170171	02/21/2022	02/20/2023
9	Horn-antenna(40-60GHz)	REBES	SAZ-2410-19-S1	06299-01	N/A	N/A
10	Horn-antenna(50-75GHz)	REBES	SAZ-2410-15-S1	01731-01	N/A	N/A
11	Horn-antenna(75-110GHz)	REBES	SAZ-2410-10-S1	01773-09	N/A	N/A
12	Horn-antenna(110-170GHz)	REBES	SAZ-2410-06-S1	01776-05	N/A	N/A
13	Horn-antenna(140-220GHz)	REBES	SAZ-2410-05-S1	01759-04	N/A	N/A
14	Horn-antenna(220-325GHz)	REBES	SAR-2309-03-S2	06300-01	N/A	N/A
15	Extended waveguide(40-60GHz)	REBES	SWG-19025-FB	06303-01	N/A	N/A
16	Extended waveguide(50-75GHz)	REBES	SWG-15025-FB	01525-09	N/A	N/A
17	Extended waveguide(75-110GHz)	REBES	SWG-10025-FB	01509-01	N/A	N/A
18	Extended waveguide(110-170GHz)	REBES	SWG-06025-FB	06302-01	N/A	N/A
19	Extended waveguide(140-220GHz)	REBES	SWG-05025-FB	06304-01	N/A	N/A
20	Extended waveguide(220-325GHz)	REBES	SWG-03025-FB	06301-01	N/A	N/A
21	Harmonic mixer(110-170GHz)	REBES	STH-06SF-S1	06110-01	N/A	N/A
22	Harmonic mixer(40-60GHz)	REBES	STH-19SF-S1	06937-01	N/A	N/A
23	Harmonic mixer(140-220GHz)	REBES	STH-06SF-S1	0220-210-002-3D	N/A	N/A
24	Harmonic mixer(220-325GHz)	REBES	STH-19SF-S1	0325-210-002-2F	N/A	N/A
25	Waveguide Harmonic Mixer(50-75GHz)	KEYSIGHT	M1970V	MY51390966	N/A	N/A
26	Waveguide Harmonic Mixer(50-75GHz) cable	Silverline	SLU18-SMSM-01.00M	99612	N/A	N/A
27	Waveguide Harmonic Mixer(75-110GHz)	KEYSIGHT	M1970W	MY51430883	N/A	N/A
28	Waveguide Harmonic Mixer(75-110GHz) cable	Silverline	SLU18-SMSM-01.00M	94202	N/A	N/A
29	Waveguide Harmonic Mixer(40-60GHz) cable	Silverline	SLU18-SMSM-01.00M	94011	N/A	N/A
30	Waveguide Harmonic Mixer(110-170GHz) cable	Silverline	SLU18-SMSM-01.00M	96416	N/A	N/A
31	Waveguide Harmonic Mixer(140-220GHz) cable	Silverline	SLU18-SMSM-01.00M	99632	N/A	N/A
32	Waveguide Harmonic Mixer(220-325GHz) cable	Silverline	SLU18-SMSM-01.00M	94215	N/A	N/A
33	Pre-Amplifier(30MHz~18GHz)	LNA	/	/	04/14/2022	04/13/2023
34	Amplifier(18~40GHz)	COM-POWER	PAM-840A	461332	10/18/2021	10/17/2022
35	Low Pass Filter	MICRO-TRONICS	VLFX-950	RV142900829	N.C.R	N.C.R
36	High Pass Filter	Mini-Circuits	VHF-1200	15542	N.C.R	N.C.R
37	RE test cable	/	RE01-RE04	/	04/14/2022	04/13/2023
38	PXA Spectrum Analyzer	KEYSIGHT	N9030B	KSEM021-1	01/30/2022	01/29/2023

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39	Vector Signal Generator	R&S	SMW200A	110074	10/12/2021	10/12/2022
40	Software	Farad	EZ-EMC	CCS-03A1	N/A	N/A

Note: N.C.R means Not Calibration Requirements.

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6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

FCC 47 CFR Part 95M; RSS-Gen Clause 6.8

6.1.2 Conclusion

Standard Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is PCB Antenna and no consideration of replacement.

Antenna location: Refer to EUT Photos.

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7 Radio Spectrum Matter Test Results

7.1 Modulation characteristics

7.1.1 Test Requirement:

47 CFR Part 95, Subpart M; RSS-251 Section 6(b)

7.1.2 Conclusion

According to § 2.1047, A curve or equivalent data which shows that the equipment will meet the modulation requirements of the rules under which the equipment is to be licensed

Comments from manufacturer on modulation characteristics according to KDB:

Parameter	
Duty Cycle %:	19.5%
Time RF on(ms):	9.8 ms
Time RF off (ms):	40.5 ms
Power:	Constant during RF on
Steepness of Ramps(GHz/s):	5.88 MHz/us
Calibration:	N/A
Antenna Beam Steering(TX):	±40°
Characteristics	
Sweep Bandwidth:	350MHz
Sweep Rate(KHz):	12.98KHz
Sweep Time(us):	76.2us

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7.2 EIRP

Test Requirement: 47 CFR Part 95, Subpart M; RSS-251 Section 8.2

Test Method: ANSI C63.26 (2015) Section 5.2;RSS-Gen Clause 6.12

Limit:

Peak EIRP <55dBm/MHz

Average EIRP <50dBm

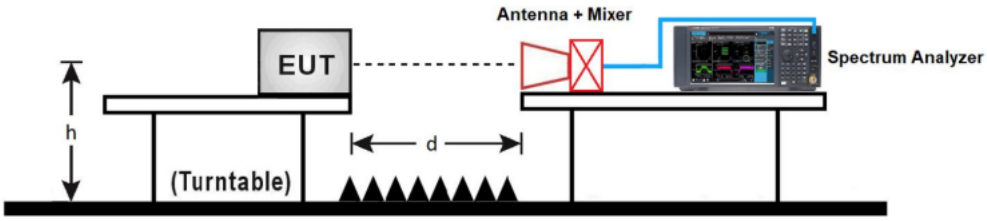
7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 24 °C Humidity: 48 % RH Atmospheric Pressure: 1010 mbar

Test mode a:TX mode_Make EUT continuously emit radar signals

7.2.2 Test Setup Diagram



h=1.25m, d=0.15m

7.2.3 Measurement Data

Frequency (GHz)	Distance (cm)	Polarity	dBuV/m @ 0.15m	E.I.R.P. Power (dBm)	E.I.R.P Limit (dBm)	Result	Remark
76.48	15	Horizontal	122.47	1.22	55.0	Pass	peak
	15	Horizontal	121.97	0.72	50.0	Pass	AVG
	15	Vertical	135.26	14.01	55.0	Pass	peak
	15	Vertical	134.31	13.06	50.0	Pass	AVG

Remark:

E[dBμV/m] = EIRP[dBm] - 20 log(d[meters]) + 104.77, where E = field strength and d = distance at which field strength limit is specified in the rules

EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77

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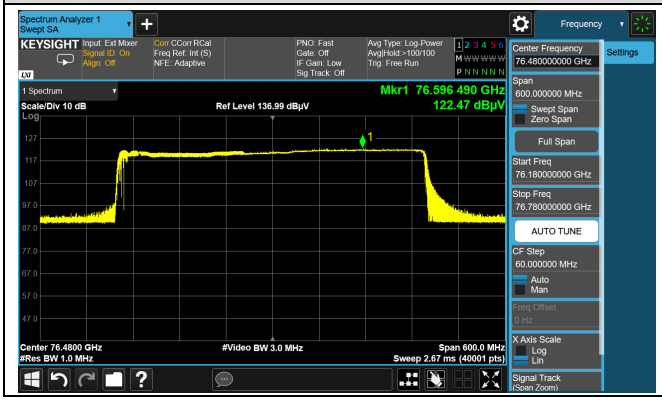
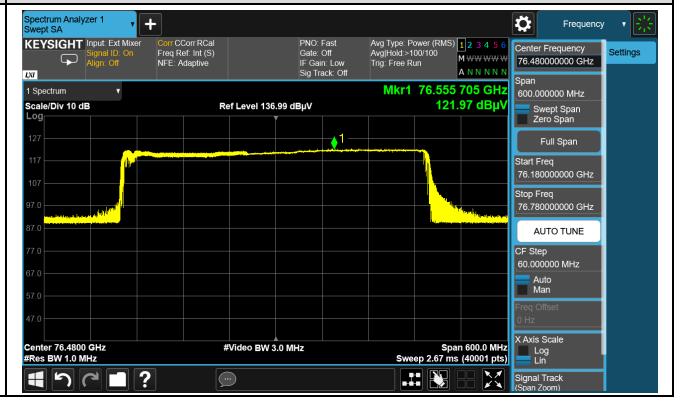
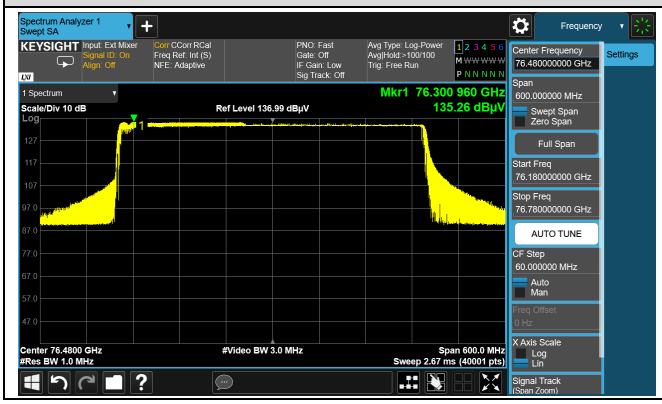
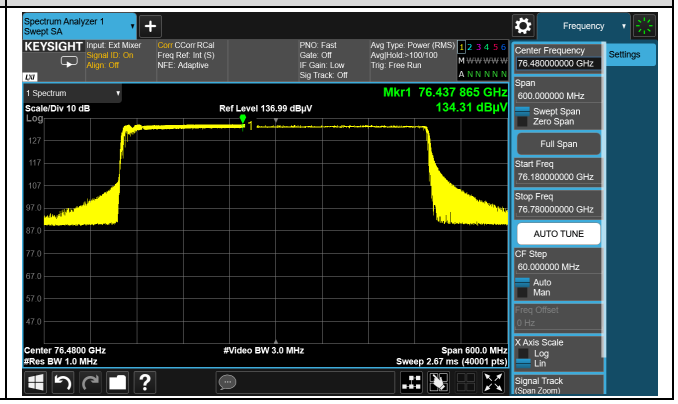
Horizontal	
Peak EIRP	AV EIRP
	

Vertical	
Peak EIRP	AV EIRP
	

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7.3 Peak Eirp Spectral Density

Test Requirement: RSS-251 Section 9.2

Test Method: RSS-Gen Clause 6.12

Limit:

Peak Eirp Spectral Density <55dBm/MHz

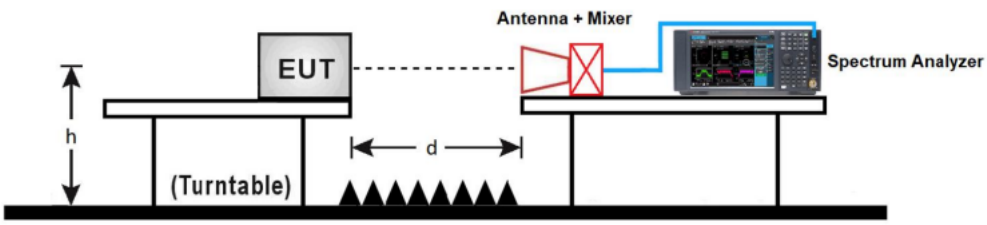
7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 24 °C 48 % RH Atmospheric Pressure: 1010 mbar

Test mode a:TX mode_Make EUT continuously emit radar signals

7.3.2 Test Setup Diagram



h=1.25m, d=0.15m

7.3.3 Measurement Data

Frequency (GHz)	Distance (cm)	Polarity	dBuV/m @ 0.15m	E.I.R.P. Spectral Density(dBm)	E.I.R.P. Spectral Density Limit (dBm)	Result	Remark
76.48	15	Horizontal	122.47	1.22	55.0	Pass	peak
	15	Vertical	135.26	14.01	55.0	Pass	peak

Remark:

E[dBμV/m] = EIRP[dBm] - 20 log(d[meters]) + 104.77, where E = field strength and d = distance at which field strength limit is specified in the rules

EIRP[dBm] = E[dBμV/m] + 20 log(d[meters]) - 104.77

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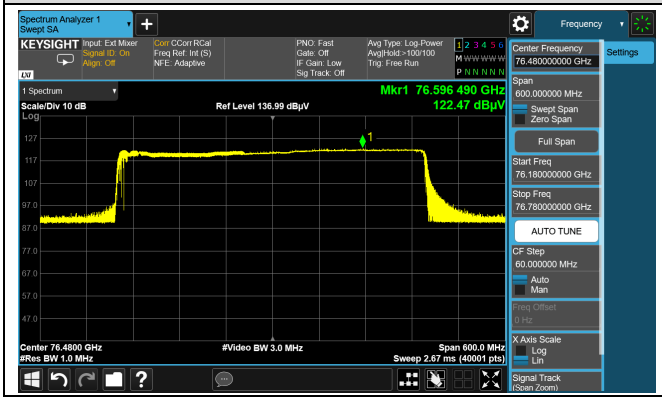
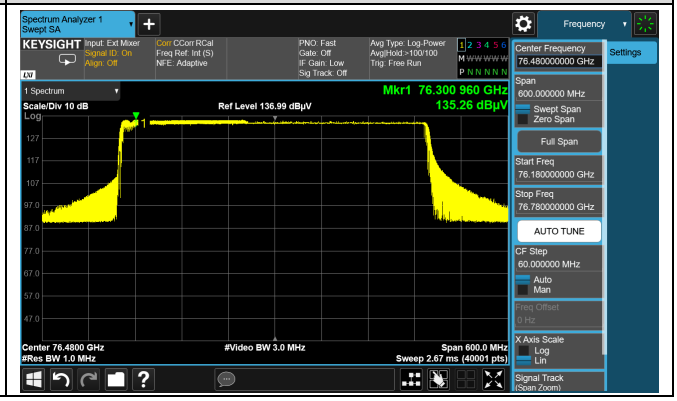
Horizontal	Vertical
	

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7.4 Occupied Bandwidth

Test Requirement: 47 CFR Part 95, Subpart M; RSS-251 Section 7.2

Test Method: ANSI C63.26 (2015)Section 5.4; RSS-Gen Clause 6.7

Limit: ⩾76GHz,⩽81GHz

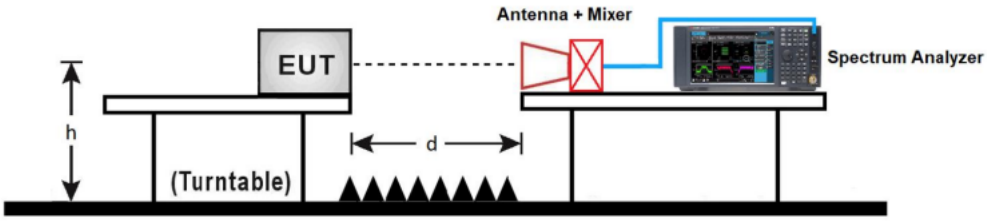
7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 24 °C Humidity: 48 % RH Atmospheric Pressure: 1010 mbar

Test mode a:TX mode_Make EUT continuously emit radar signals

7.4.2 Test Setup Diagram



h=1.25m, d=0.15m

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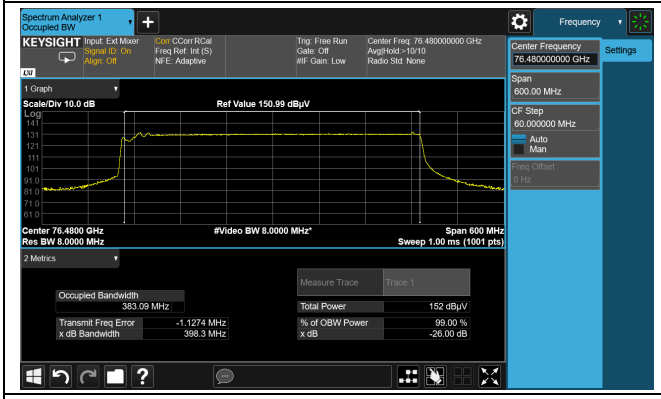
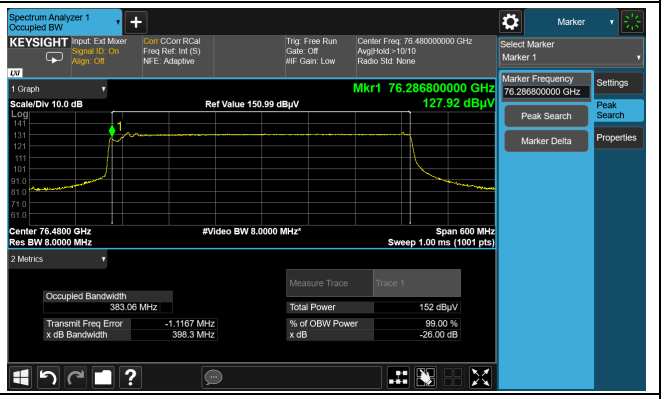
7.4.3 Measurement Data

99% Bandwidth (GHz)	Lowest Frequency (GHz)	Highest Frequency (GHz)	Limit	Result
0.383	76.2868	76.6708	76-81GHz	Pass

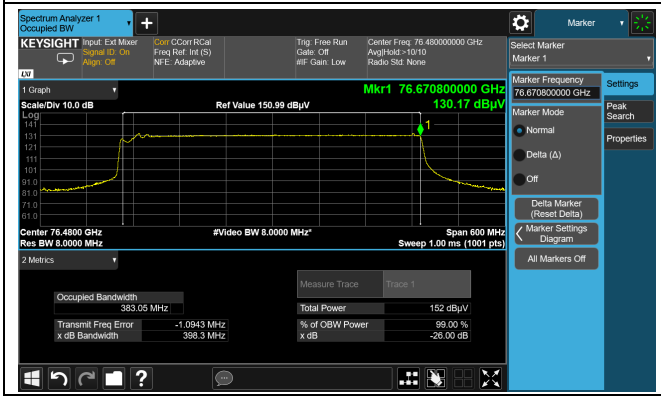
99%OB



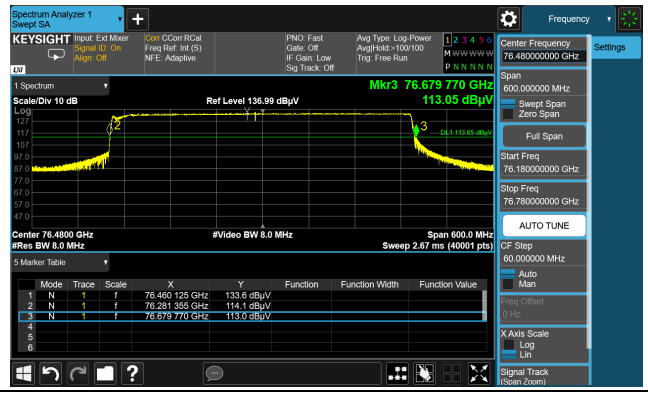
99%OB-Left



99%OB-Right



20dB OB



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7.5 Unwanted Emissions

Test Requirement: 47 CFR Part 95, Subpart M; RSS-251 Section10.2

Test Method: ANSI C63.26 (2015) Section 5.5; RSS-Gen Clause 6.13

Limit:

The power density of any emissions outside the 76-81 GHz band shall consist solely of spurious emissions and shall not exceed the following:

FCC Limit:

(1) Radiated emissions below 40 GHz shall not exceed the field strength as shown in the following emissions table.

Frequency (MHz)	Field Strength (uV/m)	Measurement Distance (m)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

(i) The tighter limit applies at the band edges.

(ii)The limits in the table are based on the frequency of the unwanted emissions and not the fundamental frequency. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.

(iii)The emissions limits shown in the table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9.0-90.0 kHz, 110.0-490.0 kHz, and above 1000 MHz. Radiated emissions limits in these three bands are based on measurements employing an average detector with a 1 MHz RBW.

(2) The power density of radiated emissions outside the 76-81 GHz band above 40.0 GHz shall not exceed the following, based on measurements employing an average detector with a 1 MHz

(i) For radiated emissions between 40 GHz and 200 GHz: 600 pW/cm2 at a distance of 3 meters from the exterior surface of the radiating structure.

(ii) For radiated emissions above 200 GHz: 1000 pW/cm2 at a distance of 3 meters from the exterior surface of the radiating structure.

(3) For field disturbance sensors and radar systems operating in the 76-81 GHz band, the spectrum shall be investigated up to 231.0 GHz

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Frequency (GHz)	Power density at 3 m distance (pW/cm^2)	Distance (m)	Field strength (dBuV/m)*, peak	Field strength (dBuV/m)*, average
40 - 200	600	3.0	113.54	93.54
40 - 200	600	0.15	139.56**	119.56**
200-231	1000	3.0	115.76	95.76
200-231	1000	0.15	141.78**	121.78**

* - Field strength was calculated per equation (26) of ANSI C63.10-2013 section 9 as follows: E=sqrt(PD×377), where PD is the power density at the distance specified by the limit in W/m^2, E- field strength in V/m.

**- The limit for other test distance was calculated using the inverse distance extrapolation factor as follows: LimS2 = LimS1 + 20 log (S1/S2), where S1 and S2 - standard defined and test distance respectively in meters.

IC Limit:

Table 1: Unwanted emissions limits outside the 76-81 GHz frequency band

Emission frequency range	Limit	Applicable detector
Below 40 GHz	RSS-Gen general field strength limits for licence-exempt radio apparatus	RSS-Gen requirements
40-162 GHz *	-30 dBm/MHz (e.i.r.p.)	RMS detector

Note:
* For radar devices that operate solely in the 76-77 GHz band (i.e. the occupied bandwidth is entirely contained in the 76-77 GHz band), an unwanted emissions limit of 0 dBm/MHz shall apply for the unwanted emission that fall in the 73.5-76 GHz band. Outside of the 73.5-76 GHz band, the unwanted emission limits prescribed in table 1 shall apply.

Frequency (GHz)	Eirp at 3 m distance (dBm/MHz)	Distance (m)	Field strength (dBuV/m)*, peak	Field strength (dBuV/m)*, average
40 - 162	-30	3.0	85.2	65.2
40 - 162	-30	0.15	111.22	91.22
73.5 - 76	0	3.0	115.2	95.2
73.5 - 76	0	0.15	141.22	121.22

Remark:

E[dBμV/m] = EIRP[dBm] - 20 log(d[meters]) + 104.77, where E = field strength and d = distance at which field strength limit is specified in the rules

7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 24 °C Humidity: 48 % RH Atmospheric Pressure: 1010 mbar

Test mode a:TX mode_Make EUT continuously emit radar signals

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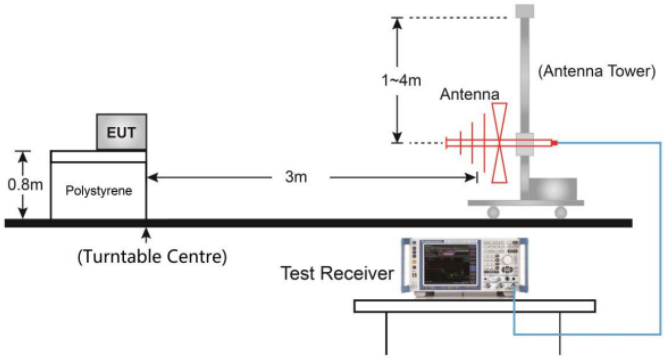
7.5.2 Test Setup Diagram

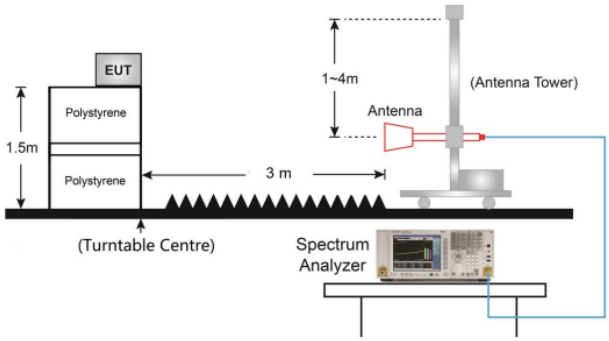
Below 1GHz

Below 1GHz Test Setup:



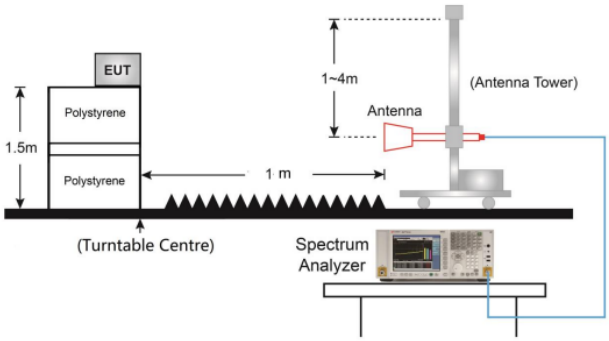
1GHz-18GHz

1GHz ~ 40GHz Test Setup:



18GHz-40GHz

1GHz ~ 40GHz Test Setup:



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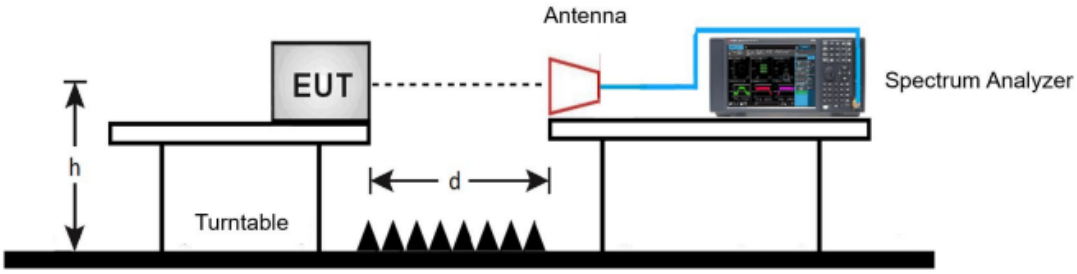
Above 40GHz

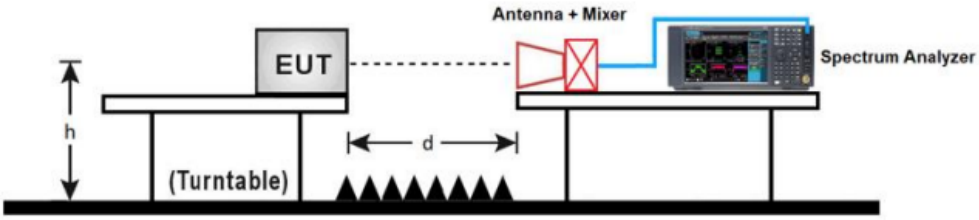
Above 40GHz Test Setup:



h = 1.25m, d = 0.15m

Above 50GHz

Above 50GHz Test Setup:



h=1.25m, d=0.15m

7.5.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities.

1.Result (dBuV/m) = Reading(dBuV/m) + Correction Factor (dB/m)

2.Correction Factor (dB/m)=Antenna Factor (dB/m)+Cable Loss (dB)- Amplifier (dB)

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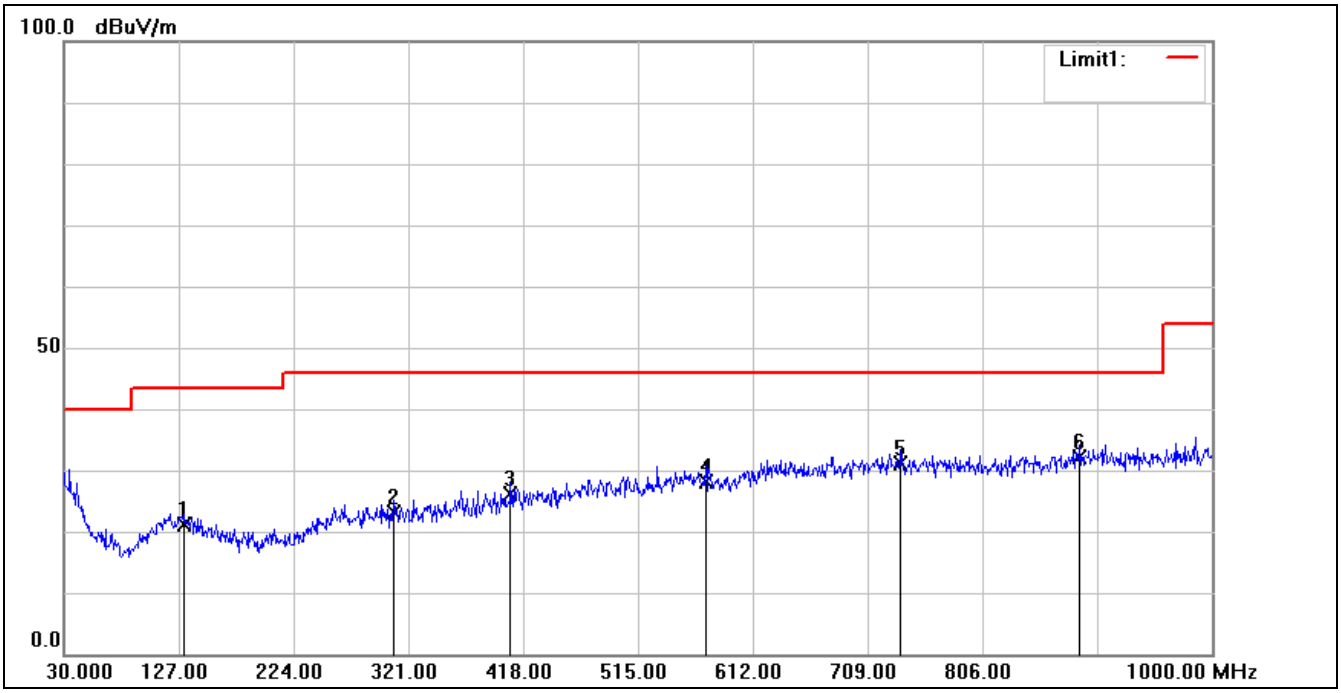
Below 1GHz- Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	131.8500	1.73	19.30	21.03	43.50	-22.47	100	43	QP
2	308.3900	2.21	20.87	23.08	46.00	-22.92	100	256	QP
3	407.3300	2.51	23.64	26.15	46.00	-19.85	100	205	QP
4	572.2300	1.00	27.09	28.09	46.00	-17.91	100	301	QP
5	737.1300	28.86	2.39	31.25	46.00	-14.75	100	297	QP
6	888.4500	29.80	2.38	32.18	46.00	-13.82	100	186	QP

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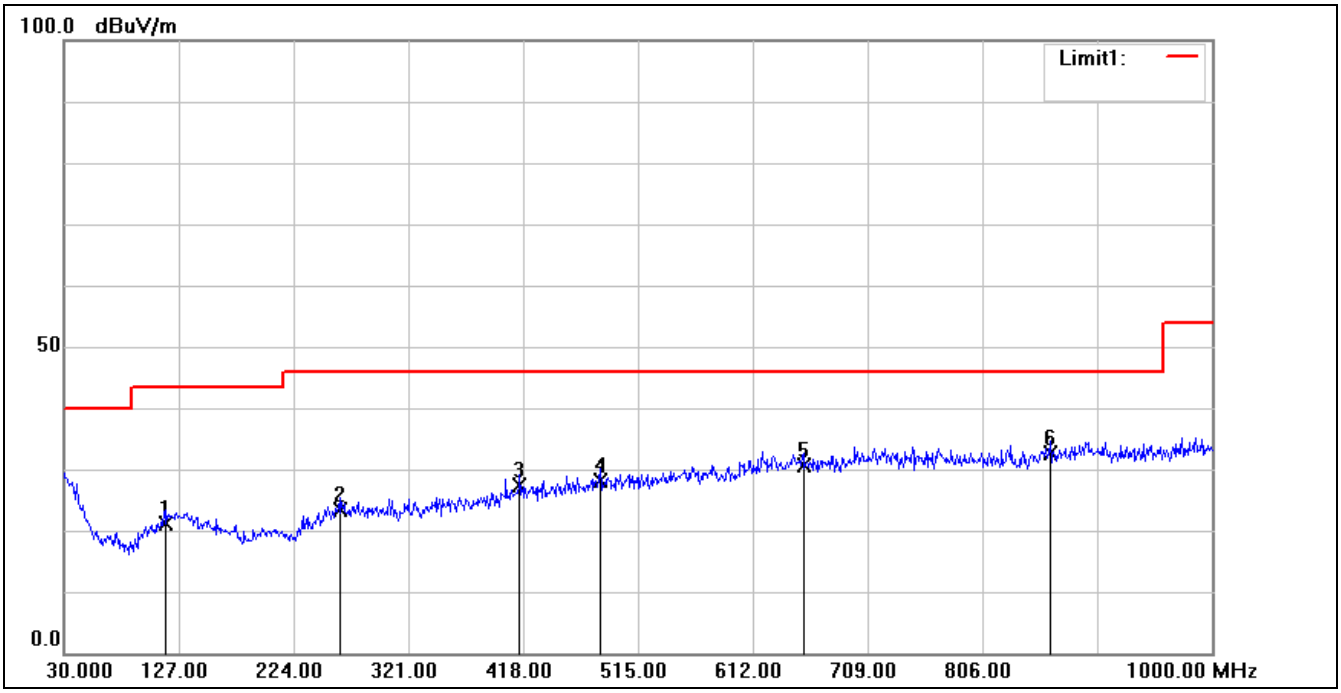
Below 1GHz- Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Height	Degree	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	(cm)	(deg.)	
1	115.3600	2.09	19.07	21.16	43.50	-22.34	100	116	QP
2	262.8000	2.25	21.03	23.28	46.00	-22.72	100	42	QP
3	415.0900	3.46	23.99	27.45	46.00	-18.55	100	337	QP
4	482.9900	2.80	25.27	28.07	46.00	-17.93	100	338	QP
5	654.6800	3.10	27.49	30.59	46.00	-15.41	100	254	QP
6	863.2300	30.46	2.21	32.67	46.00	-13.33	100	360	QP

Note: The amplitude of radiated emissions (frequency range from 9KHz to 30MHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value. Therefore, the data is not Presented in the report.

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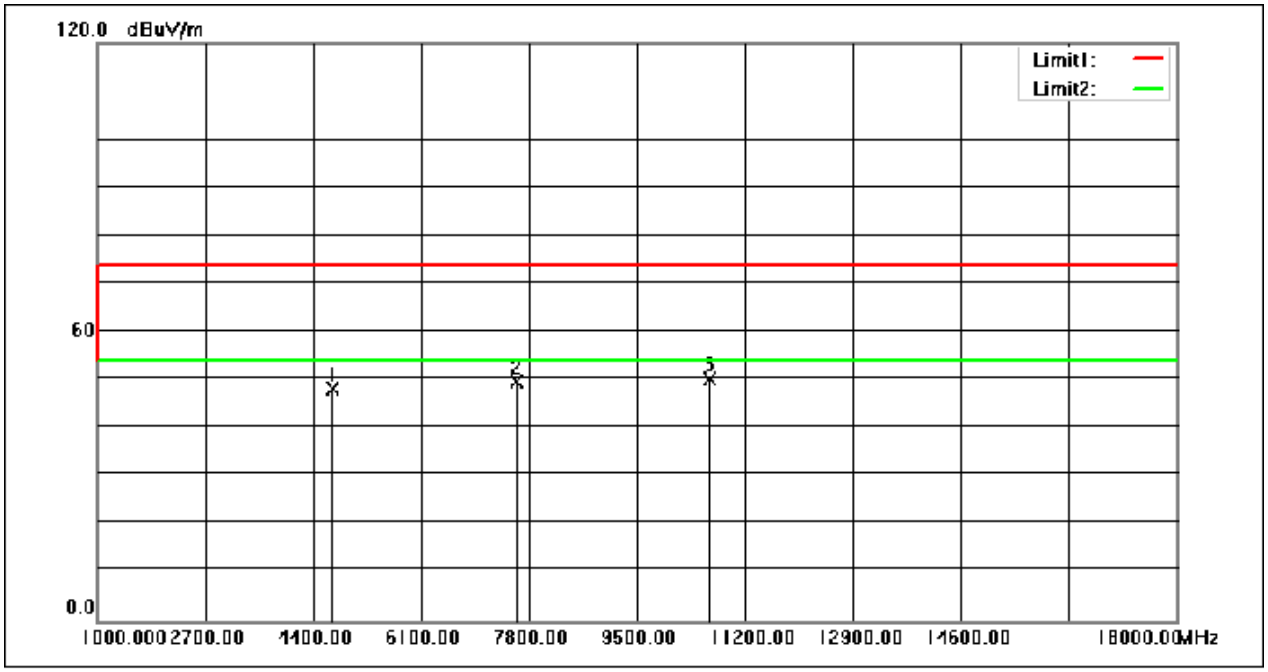
1GHz-18GHz- Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4696.000	56.92	-8.69	48.23	74.00	-25.77	peak
2	7616.000	54.99	-5.43	49.56	74.00	-24.44	peak
3	10654.000	49.72	0.47	50.19	74.00	-23.81	peak

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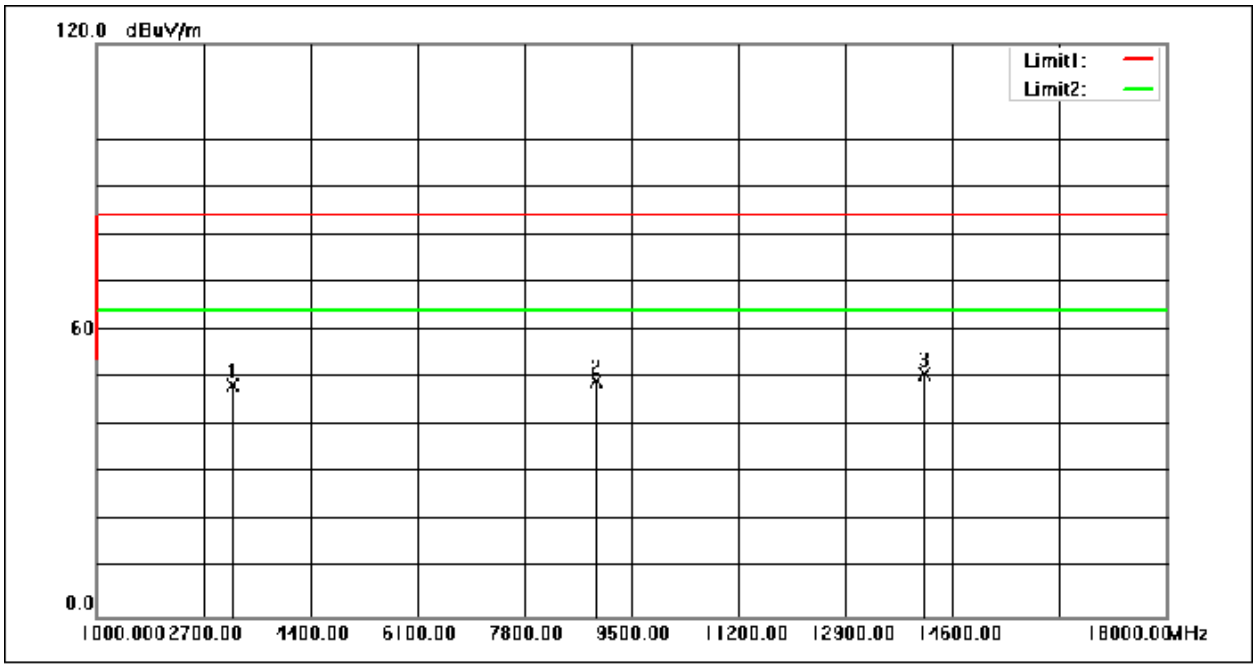
1GHz-18GHz-Vertical



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	3169.000	59.79	-11.42	48.37	84.00	-35.63	peak
2	8949.000	51.53	-2.12	49.41	84.00	-34.59	peak
3	14152.000	46.53	4.35	50.88	84.00	-33.12	peak

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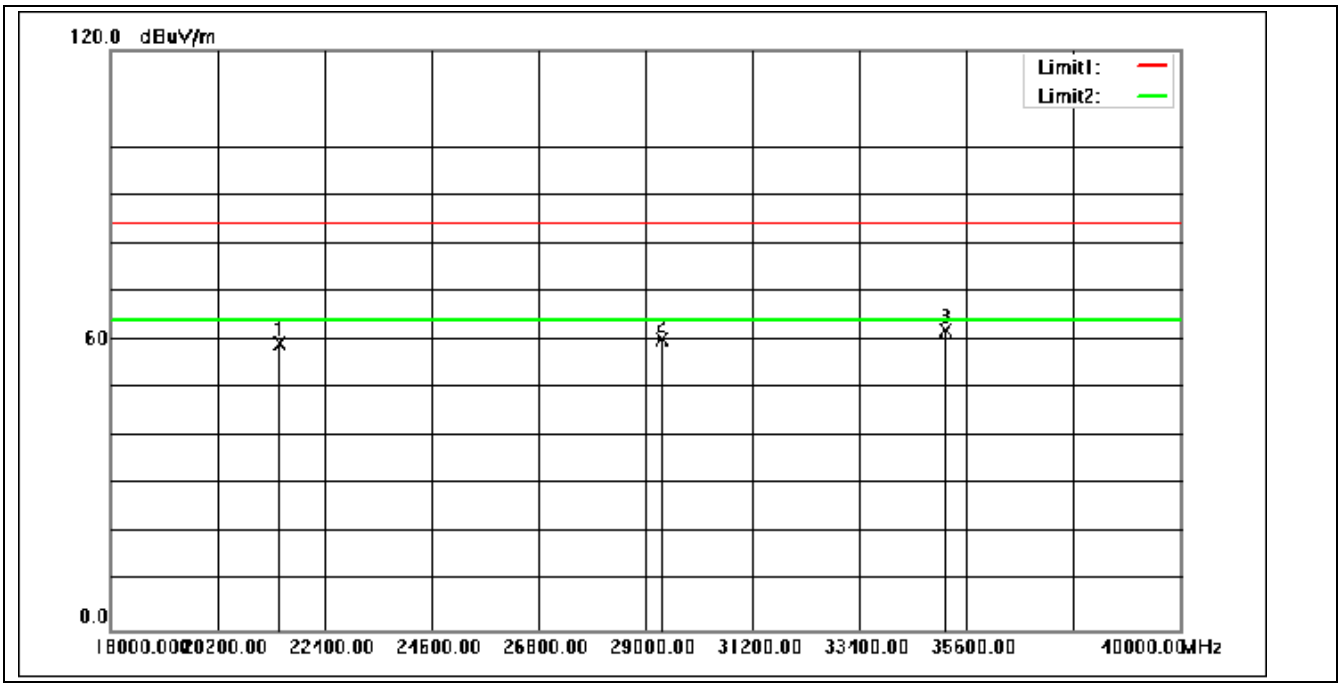
18GHz-40GHz- Horizontal



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	21489.000	47.45	11.91	59.36	83.50	-24.14	peak
2	29345.000	31.42	28.83	60.25	83.50	-23.25	peak
3	35165.000	31.79	30.12	61.91	83.50	-21.59	peak

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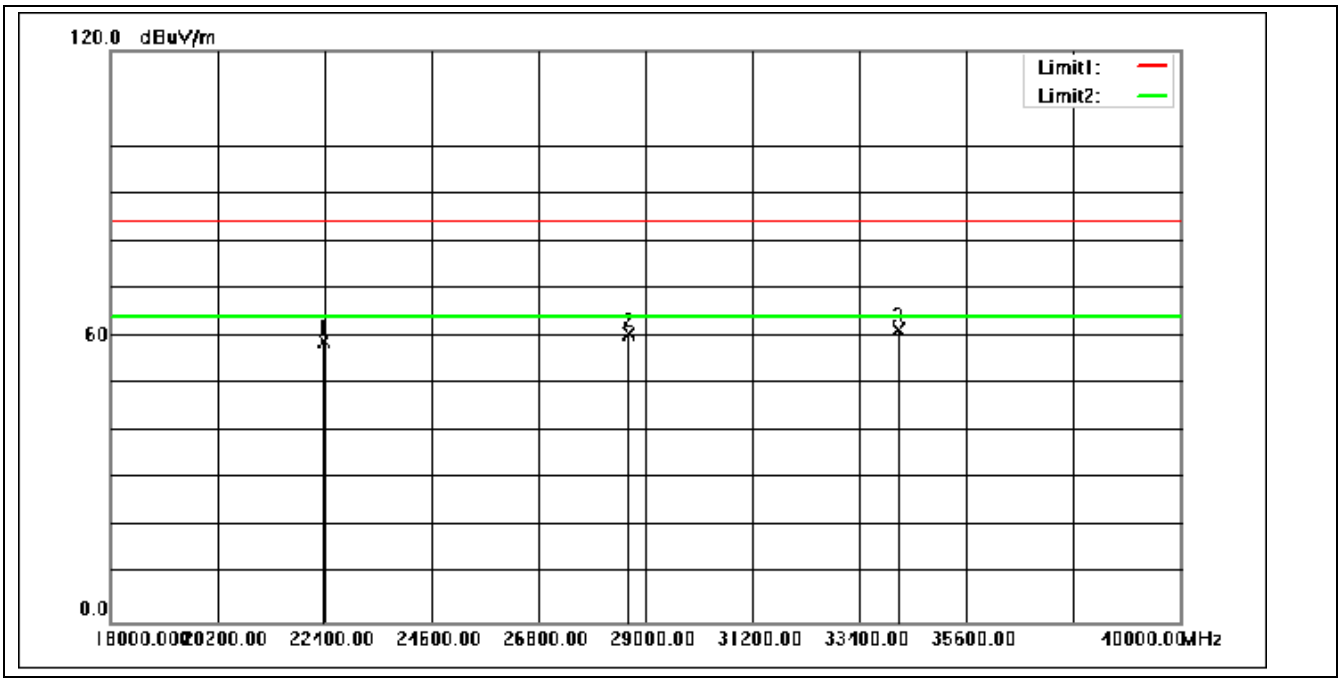
18GHz-40GHz- Vertical



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	22399.000	44.00	15.10	59.10	83.50	-20.40	peak
2	28655.000	40.76	19.62	60.38	83.50	-23.12	peak
3	34196.000	33.88	27.56	61.44	83.50	-22.06	peak

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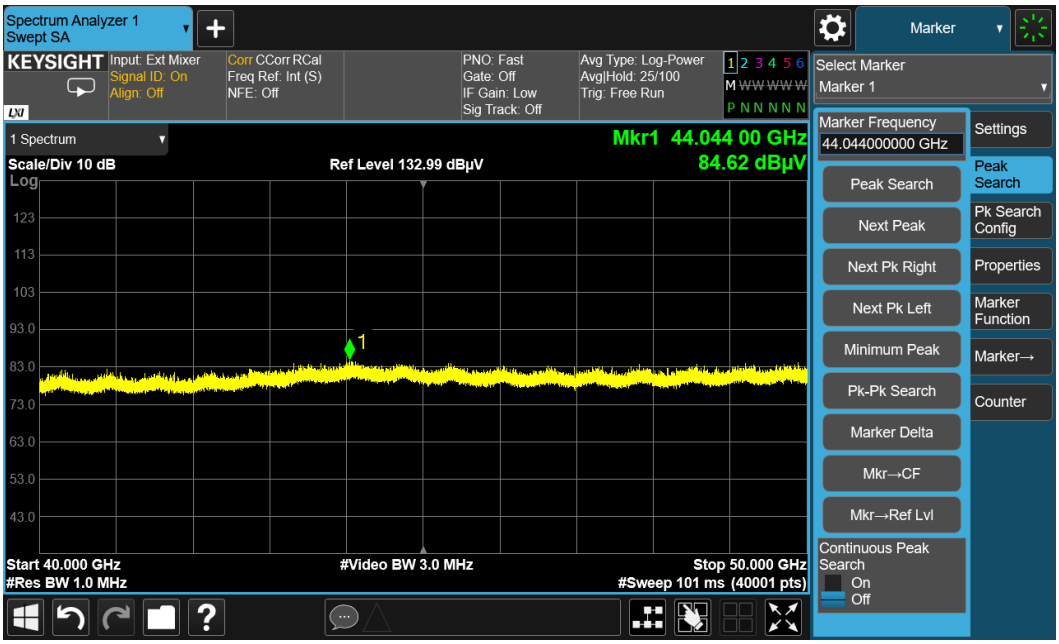
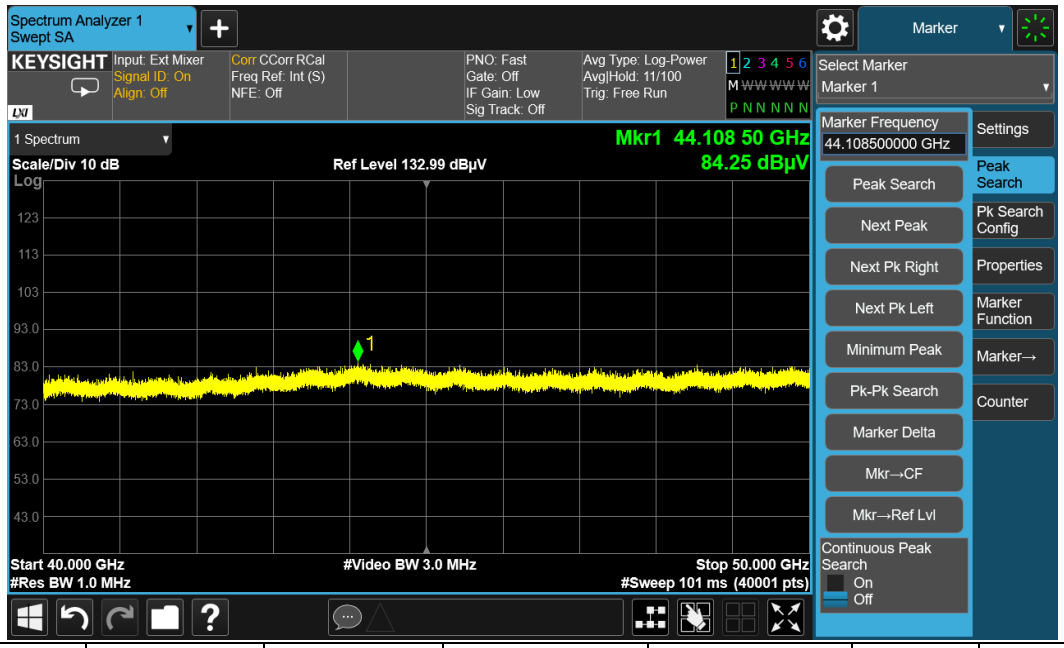
40GHz-50GHz Horizontal



40GHz-50GHz Vertical



Frequency (GHz)	Distance (M)	Peak Value (dBuv/m)	IC AV Limit (dBuv/m)	FCC AV Limit (dBuv/m)	Polarization	Result
44.04400	0.15	84.62	91.22	119.56	V	PASS
44.10850	0.15	84.25	91.22	119.56	H	PASS

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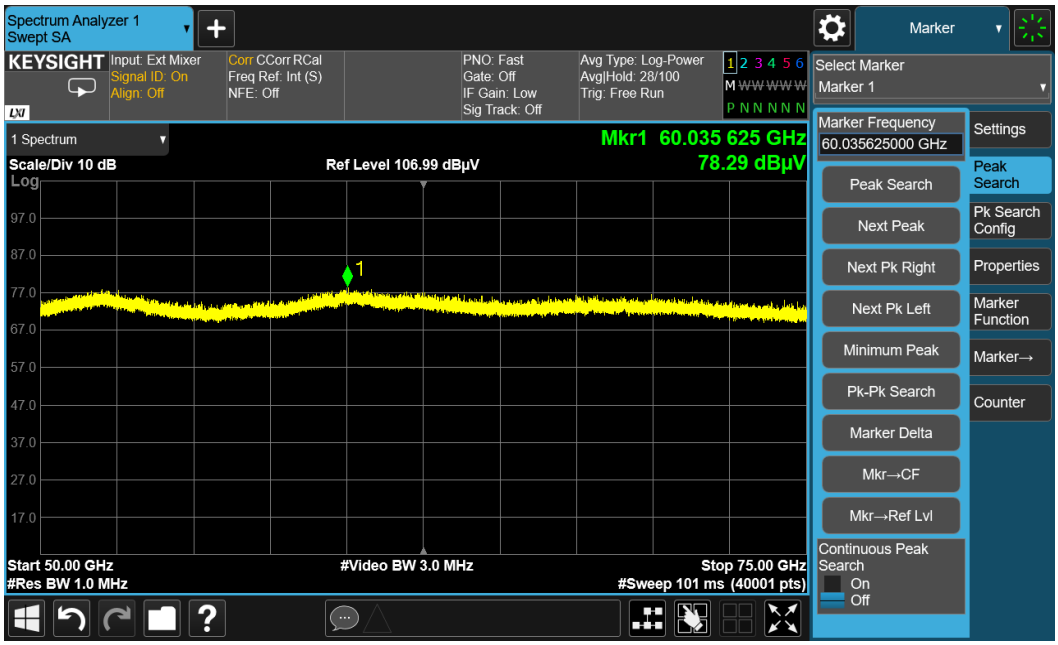
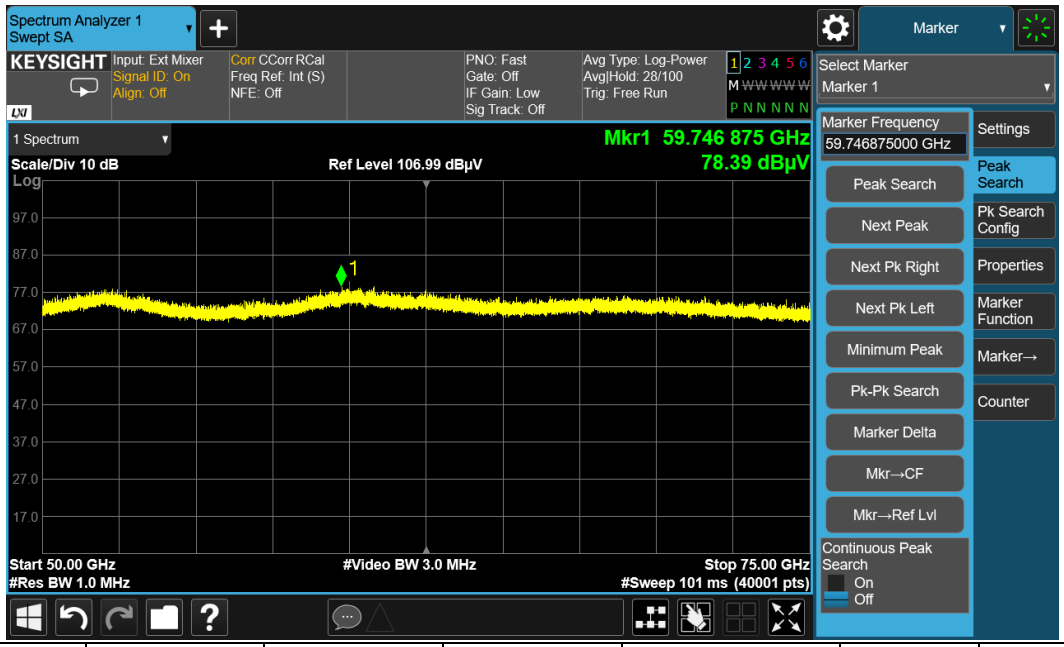
50GHz-75GHz Horizontal



50GHz-75GHz Vertical



Frequency (GHz)	Distance (M)	Peak Value (dBuv/m)	IC AV Limit (dBuv/m)	FCC AV Limit (dBuv/m)	Polarization	Result
60.035625	0.15	78.29	91.22	119.56	V	PASS
59.746875	0.15	78.39	91.22	119.56	H	PASS

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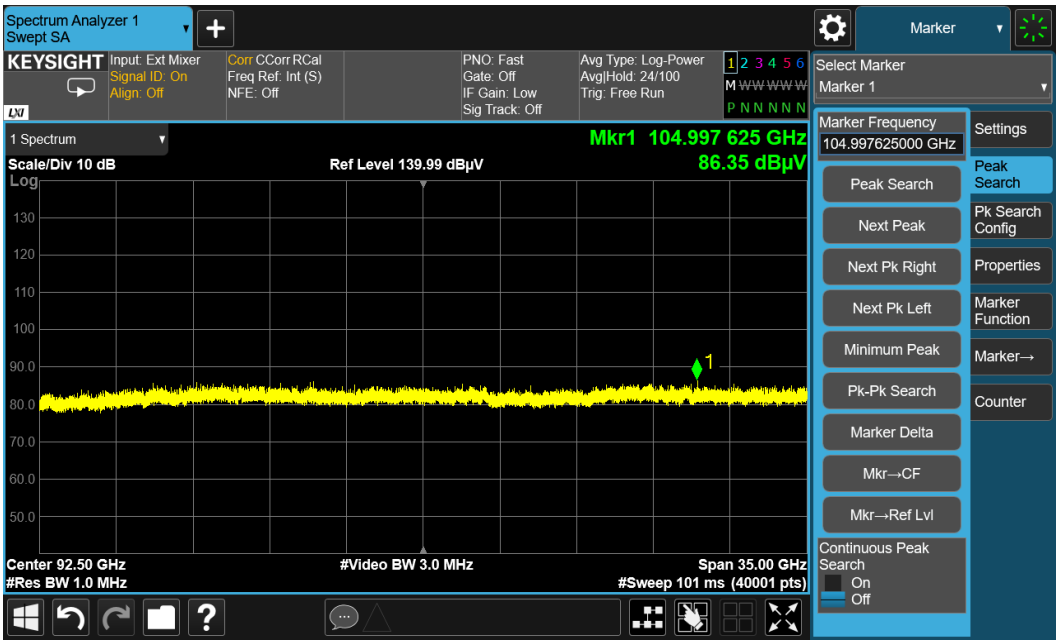
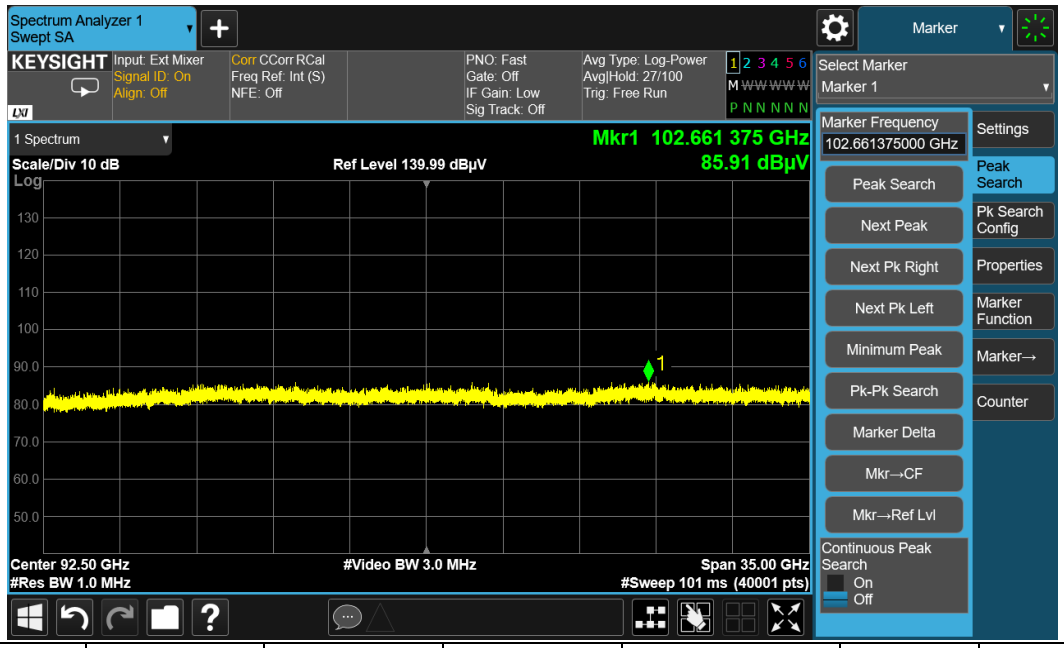
75GHz-110GHz Horizontal



75GHz-110GHz Vertical



Frequency (GHz)	Distance (M)	Peak Value (dBuv/m)	IC AV Limit (dBuv/m)	FCC AV Limit (dBuv/m)	Polarization	Result
104.997625	0.15	86.35	91.22	119.56	V	PASS
102.661375	0.15	85.91	91.22	119.56	H	PASS

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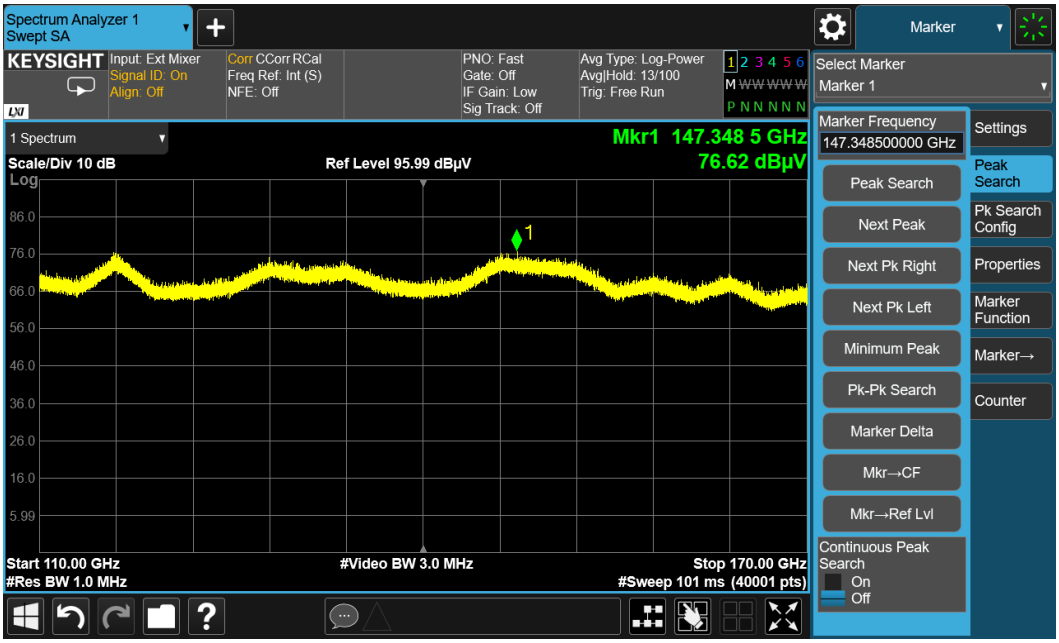
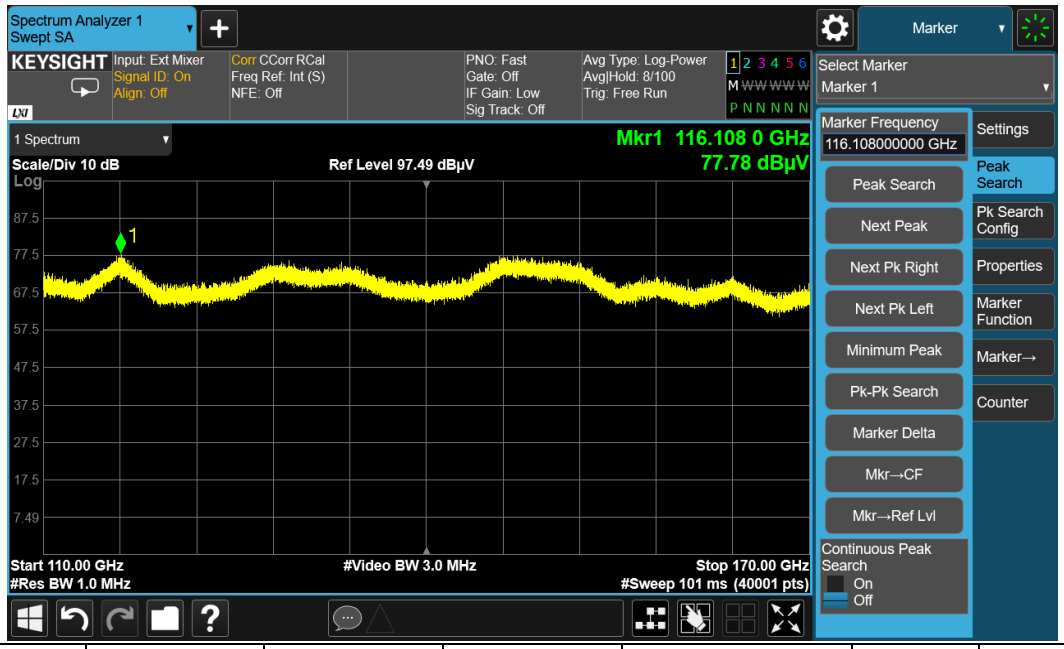
110GHz-170GHz Horizontal



110GHz-170GHz Vertical



Frequency (GHz)	Distance (M)	Peak Value (dBuv/m)	IC AV Limit (dBuv/m)	FCC AV Limit (dBuv/m)	Polarization	Result
147.3485	0.15	76.62	91.22	119.56	V	PASS
116.1080	0.15	77.78	91.22	119.56	H	PASS

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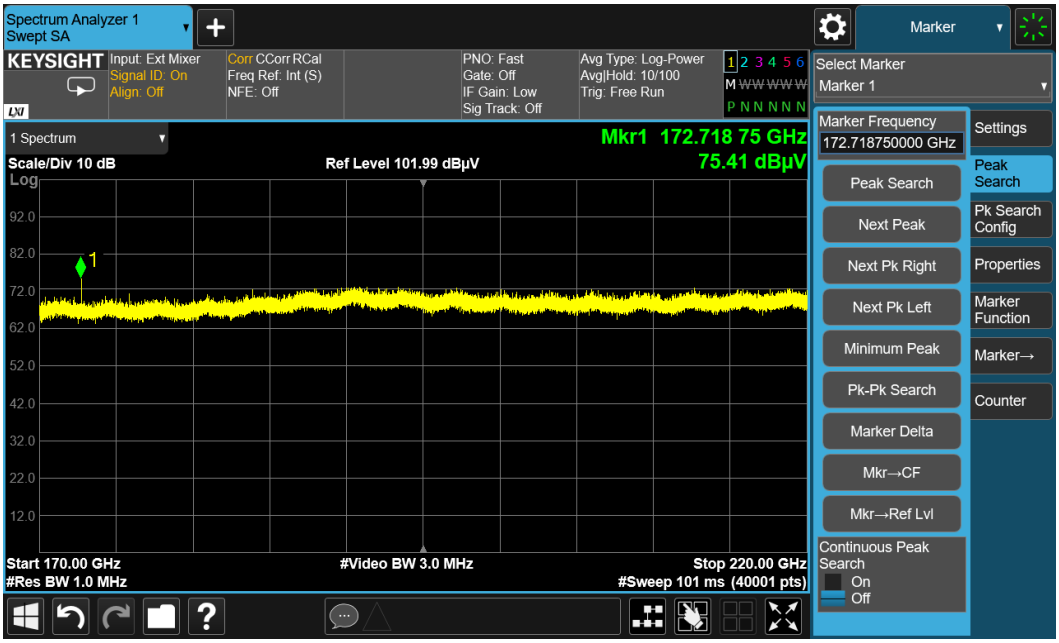
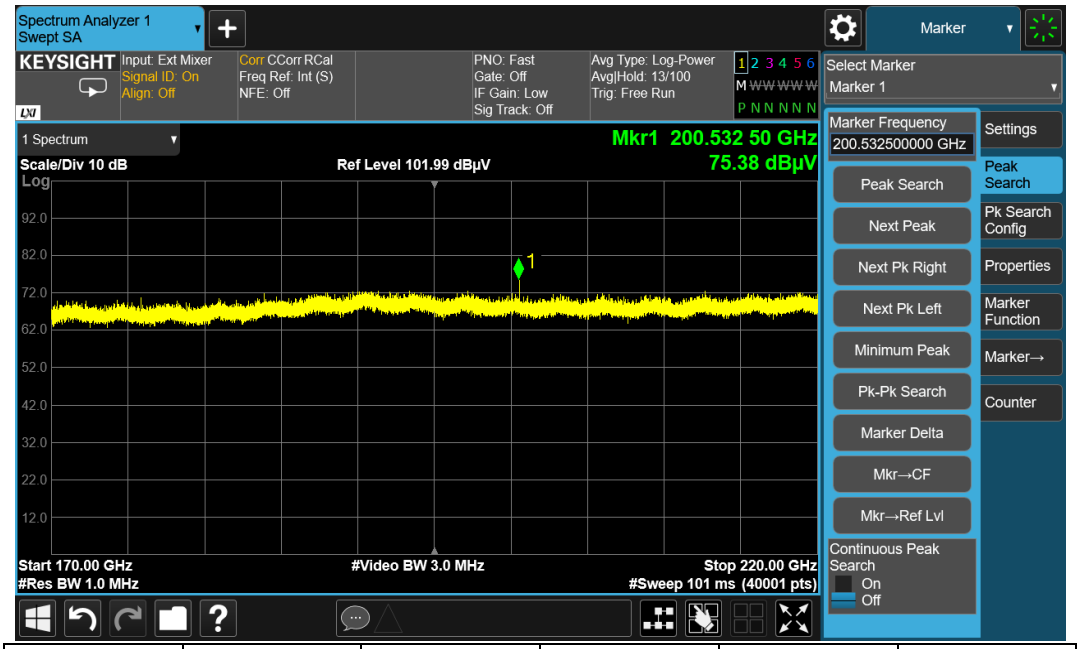
170GHz-220GHz Horizontal



170GHz-220GHz Vertical



Frequency (GHz)	Distance (M)	Peak Value (dBuv/m)	AV Limit (dBuv/m)	Polarization	Result
172.71875	0.15	75.41	119.56	V	PASS
200.53250	0.15	75.38	121.78	H	PASS

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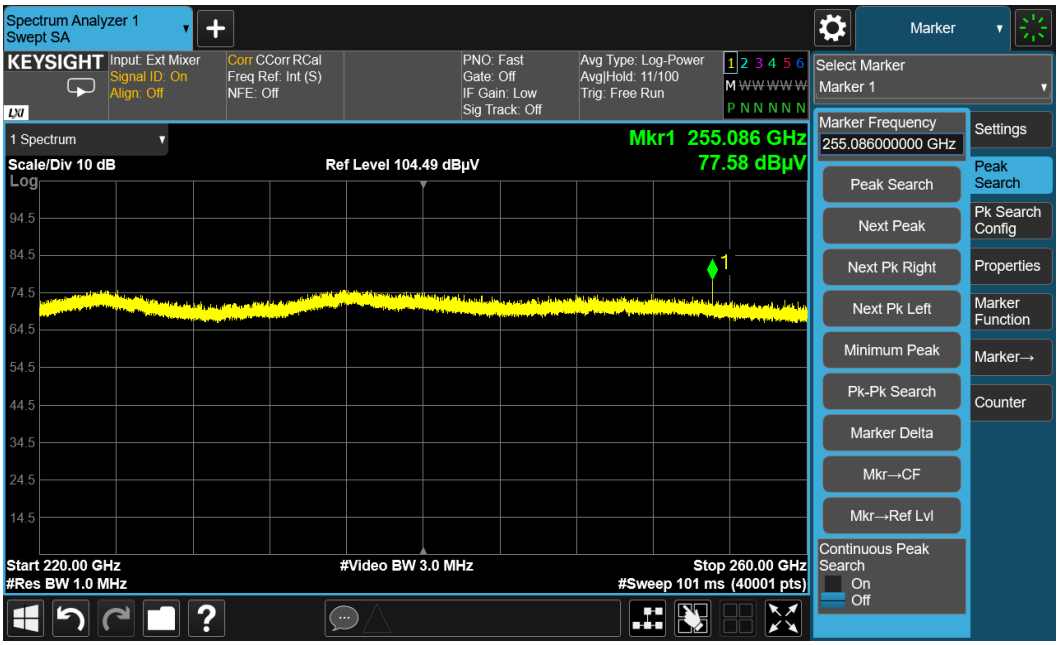
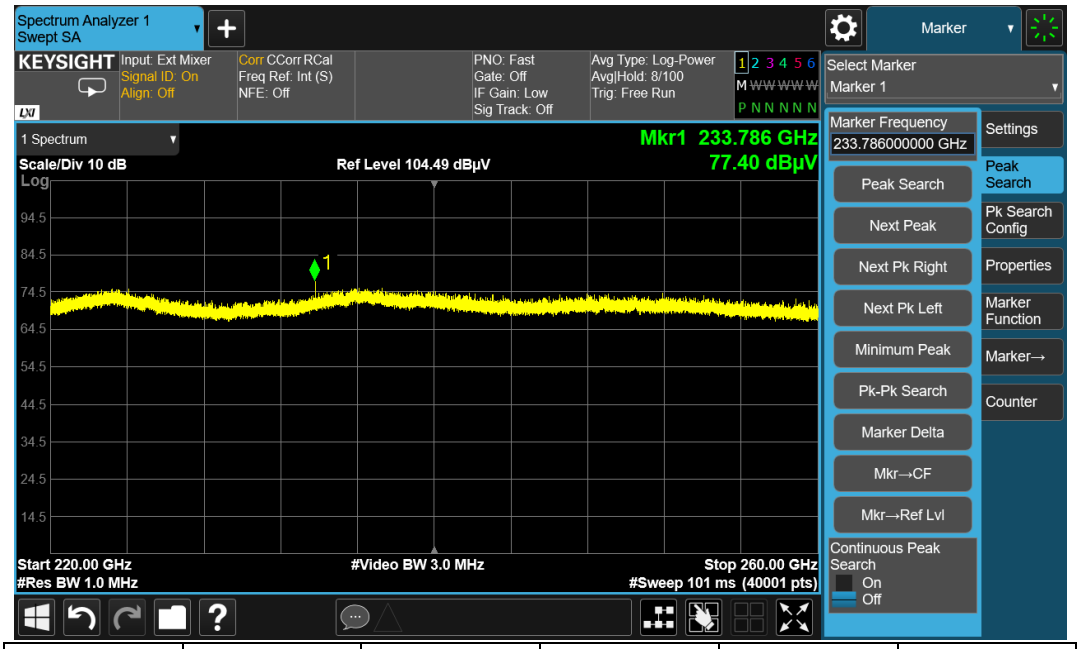
220GHz-260GHz Horizontal



220GHz-260GHz Vertical



Frequency (GHz)	Distance (M)	Peak Value (dBuv/m)	AV Limit (dBuv/m)	Polarization	Result
255.086	0.15	77.58	121.78	V	PASS
233.786	0.15	77.40	121.78	H	PASS

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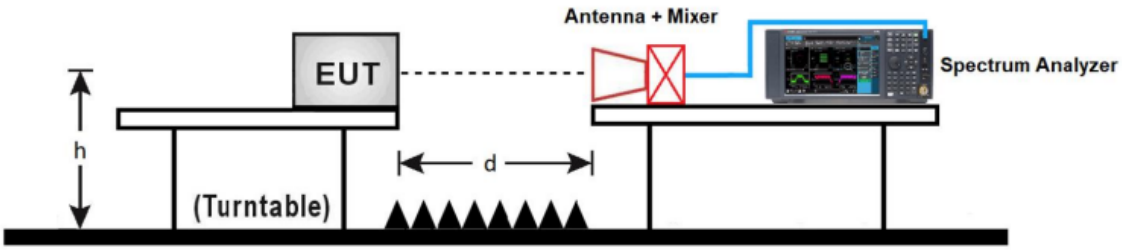
7.6 Frequency Stability

Test Requirement: 47 CFR Part 95, Subpart M; RSS-251 Section11.2
Test Method: ANSI C63.26 (2015) Section 5.6; RSS-Gen Clause 6.11
Limit: 76-81GHz

7.6.1 E.U.T. Operation

Operating Environment:
Temperature: 20 °C Humidity: 48 % RH Atmospheric Pressure: 1010 mbar
Test mode a:TX mode_Make EUT continuously emit radar signals

7.6.2 Test Setup Diagram



h=1.25m, d=0.15m

7.6.3 Measurement Data

Voltage (%)	Power (VDC)	Temp (°C)	FL (GHz)	FH (GHz)	Limit (GHz)	Result
100%	12V	-30	76.498	76.670	76-81GHz	Pass
		-20	76.478	76.602	76-81GHz	Pass
		-10	76.440	76.641	76-81GHz	Pass
		0	76.418	76.658	76-81GHz	Pass
		+10	76.450	76.655	76-81GHz	Pass
		+20	76.429	76.620	76-81GHz	Pass
		+30	76.486	76.660	76-81GHz	Pass
		+40	76.421	76.603	76-81GHz	Pass
		+50	76.408	76.668	76-81GHz	Pass
		+60	76.405	76.608	76-81GHz	Pass
		+70	76.408	76.642	76-81GHz	Pass
115%	13.8V	+20	76.457	76.613	76-81GHz	Pass
85%	10.2V	+20	76.417	76.642	76-81GHz	Pass

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8 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2208001370AT

9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for KSCR2208001370AT

- End of the Report -

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