TEST REPORT

Product Name	:	Gravio Multi Sensor Gen 1.0
Brand Name	:	Gravio
Model/HVIN	:	GMS9218
Series Model	:	N/A
FCC ID	:	2AT7Z-GMS9218
Applicant	:	**Asteria Technology Pte. Ltd.**
Address	:	160 ROBINSON ROAD, #19-05 SBF CENTERSINGAPORE 068914
Manufacturer	:	**Asteria Technology Pte. Ltd.**
Address	:	160 ROBINSON ROAD, #19-05 SBF CENTERSINGAPORE 068914
Standard(s)	:	FCC CFR Title 47 Part 15 Subpart C Section 15.249
Date of Receipt	:	Mar. 04, 2025
Date of Test	:	Mar. 04, 2025~ Mar. 30, 2025
Issued Date	:	Mar. 31, 2025

Issued By: **Guangdong Asia Hongke Test Technology Limited**

B1/F, Building 11, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

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Reviewed by: Leon Yi
Leon.yi

Approved by: Sean She
Sean She

Note: This device has been tested and found to comply with the standard(s) listed, this test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory. This report shall not be reproduced except in full, without the written approval of Guangdong Asia Hongke Test Technology Limited. If there is a need to alter or revise this document, the right belongs to Guangdong Asia Hongke Test Technology Limited, and it should give a prior written notice of the revision document. This test report must not be used by the client to claim product endorsement.

Report Revise Record

Report Version	Issued Date	Notes
M1	Mar. 31, 2025	Initial Release

Contents

1 TEST SUMMARY

1.1 Test Standards

The tests were performed according to following standards:
FCC Rules Part 15.249: Operation within the bands 902-928 MHz, 2400-2483.5 MHz, 5725-5875 MHz, and 24.0-24.25 GHz.

ANSI C63.10: 2013: American National Standard for Testing Unlicensed Wireless Devices.

1.2 Test Summary

FCC PART 15.249		
FCC Part 15.249(a)	Field Strength of Fundamental	PASS
FCC Part 15.249(d),15.209	Radiated Spurious Emissions and Band Edge Spurious	PASS
FCC Part 15.215(c)	20dB bandwidth	PASS
FCC Part 15.207	Conducted Emission	PASS
FCC Part 15.203	Antenna Requirement	PASS

1.3 Test Facility

Test Laboratory:
Guangdong Asia Hongke Test Technology Limited
B1/F, Building 11, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

The test facility is recognized, certified or accredited by the following organizations:
FCC-Registration No.: 251906 Designation Number: CN1376
Guangdong Asia Hongke Test Technology Limited has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

IC —Registration No.: 31737 CAB identifier: CN0165
The 3m Semi-anechoic chamber of Guangdong Asia Hongke Test Technology Limited has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 31737

A2LA-Lab Cert. No.: 7133.01
Guangdong Asia Hongke Test Technology Limited has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

1.4 Measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report according to CISPR 16 - 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the Guangdong Asia Hongke Test Technology Limited’s quality system according to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.
Hereafter the best measurement capability for Asia Hongke laboratory is reported:

Test	Measurement Uncertainty	Notes
Power Line Conducted Emission	9KHz~30MHz ±1.20 dB	(1)
Radiated Emission	9KHz~30MHz ±3.10dB	(1)
Radiated Emission	30MHz~1GHz ±3.75dB	(1)
Radiated Emission	1GHz~18GHz ±3.88 dB	(1)
Radiated Emission	18GHz-40GHz ±3.88 dB	(1)
Radiated Emission	40GHz-60GHz ±4.92 dB	(1)
Radiated Emission	60GHz-90GHz ±5.16 dB	(1)
Radiated Emission	90GHz-100GHz ±5.64 dB	(1)
RF power, conducted	30MHz~6GHz ±0.16dB	(1)
RF power density, conducted	±0.24dB	(1)
Spurious emissions, conducted	±0.21dB	(1)
Temperature	±1℃	(1)
Humidity	±3%	(1)
DC and low frequency voltages	±1.5%	(1)
Time	±2%	(1)
Duty cycle	±2%	(1)
Bandwidth	±1.5 x10^{-6}	(1)

The report uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty Multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

2 GENGENERAL INFORMATION

2.1 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	25°C
Relative Humidity:	55 %
Air Pressure:	101 kPa

2.2 General Description of EUT

Product Name:	Gravio Multi Sensor Gen 1.0
Model/Type reference:	GMS9218
Serial Model:	N/A
Power Rating:	5V/1A
Hardware Version:	N/A
Software Version:	N/A
24G Radar	
Operation frequency band:	24000-24250MHz
Center frequency:	24125MHz
Modulation Type	FMCW
Antenna type:	PCB antenna
Antenna gain:	0.5dBi

2.3 Description of Test Modes and Test Frequency

The EUT has been tested under typical operating condition. The EUT stay in sweep model during the test.

Operation Frequency：

Sweep Start Frequency (MHz)	Sweep Stop Frequency (MHz)
24010	24245

2.4 Special Accessories

Follow auxiliary equipment(s) test with EUT that provided by the manufacturer or laboratory is listed as follow:

Description	Manufacturer	Model	Serial No.	Provided by	Other
Adapter	HNT	HNT-QC530	/	Test lab	/
/	/	/	/	/	/

2.5 Equipment List for the Test

No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	EMI Measuring Receiver	R&S	ESR	101160	2024.09.25	2025.09.24
2	Spectrum Analyzer	R&S	FSV40	101470	2024.09.23	2025.09.22
3	EMI Test Receiver	R&S	ESPI	100771	2024.09.25	2025.09.24
4	LISN	R&S	NNLK 8129	8130179	2024.09.24	2025.09.23
5	LISN	R&S	ESH3-Z5	892785/016	2024.09.23	2025.09.22
6	Pulse Limiter	R&S	ESH3-Z2	102789	2024.09.24	2025.09.23
7	Low Noise Pre Amplifier	SCHWARZBECK	BBV 9745	00282	2024.09.25	2025.09.24
8	Low Noise Pre Amplifier	CESHENG	CSKJLNA231016A	CSKJLNA231016A	2024.09.25	2025.09.24
9	Pre Amplifier	AT-Microwave	AT-LNA-4060	3803	2024.08.20	2025.08.19
10	Pre Amplifier	AT-Microwave	AT-LNA-5075	3825	2024.08.20	2025.08.19
11	Pre Amplifier	AT-Microwave	AT-LNA-75110	4204	2024.08.20	2025.08.19
12	Passive Loop	ETS	6512	00165355	2024.08.29	2027.08.28
13	TRILOG Super Broadband test Antenna	SCHWARZBECK	VULB9168	01434	2024.08.29	2027.08.28
14	Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	452	2024.08.29	2027.08.28
15	Horn Antenna 15-40GHz	SCHWARZBECK	BBHA9170	BBHA9170367	2024.08.28	2027.08.27
16	Horn Antenna 40-60GHz	A-INFO	LB-19-25-A2	2020036000052	2024.09.25	2027.09.24
17	Horn Antenna 60-90GHz	A-INFO	LB-12-25-A	2020026000062	2024.09.25	2027.09.24
18	Horn Antenna 90-140GHz	A-INFO	LB-8-25-A	2020016000185	2024.09.25	2027.09.24
19	6dB Attenuator	JFW	50FPE-006	4360846-949-1	2024.09.24	2025.09.23

20	Attenuator	EZLZ	AT-SAX8-4060	104	2024.08.20	2025.08.19
21	Attenuator	EZLZ	MFA-050075-A30A	111	2024.08.20	2025.08.19
22	Attenuator	EZLZ	MFA-075110-A30A	127	2024.08.20	2025.08.19
23	Harmonic Mixer	AT-Microwave	AT-SAX8-4060	101318	2024.08.20	2025.08.19
24	Harmonic Mixer	AT-Microwave	AT-SAX8-5075	101335	2024.08.20	2025.08.19
25	Harmonic Mixer	AT-Microwave	AT-SAX8-75110	101376	2024.08.20	2025.08.19
26	DC power supply	ZHAOXIN	RXN-305D-2	28070002559	2024.09.24	2025.09.23
27	RE Software	EZ	EZ-EMC_RE	Ver.AIT-03A	N/A	N/A
28	CE Software	EZ	EZ-EMC_CE	Ver.AIT-03A	N/A	N/A
29	RF Software	TST	TSTPASS	Version 2.0	N/A	N/A
30	RF Software	cesheng	WCS-WCN	Version 2024.6.20	N/A	N/A
31	temporary antenna connector(Note)	NTS	R001	N/A	N/A	N/A
Note: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.						

3 TEST CONDITIONS AND RESULTS

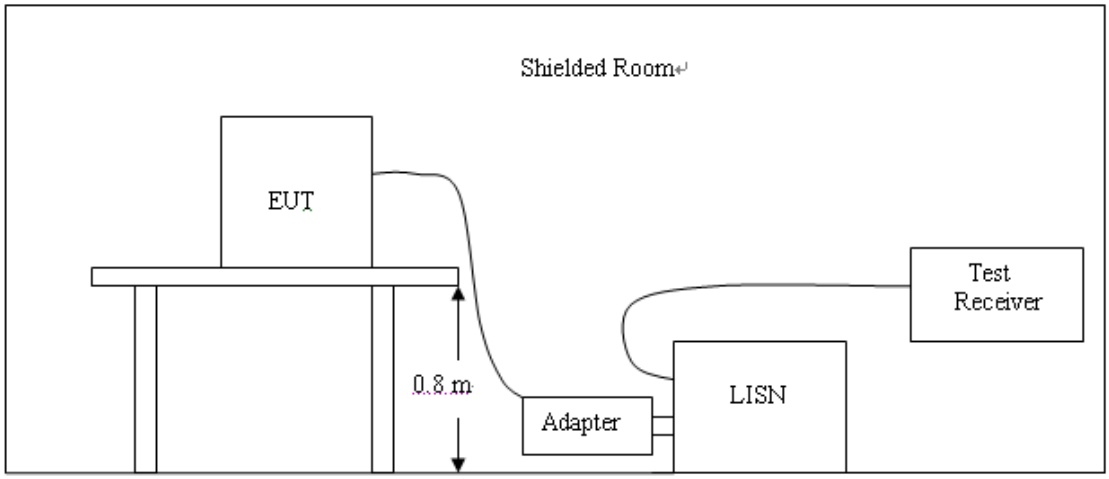
3.1 Conducted Emissions Test

LIMIT

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST CONFIGURATION



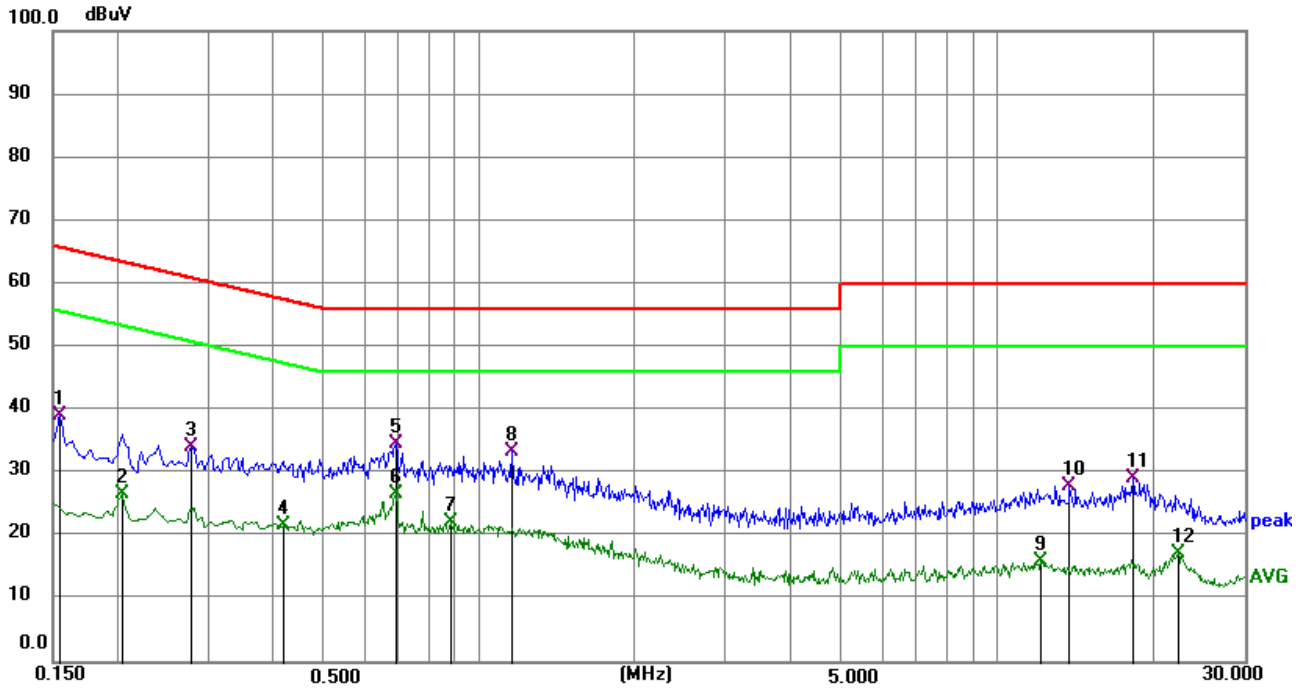
TEST PROCEDURE

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10:2013.
2. Support equipment, if needed, was placed as per ANSI C63.10:2013.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10:2013.
4. The adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5. All support equipments received AC power from a second LISN, if any.
6. The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.

TEST RESULTS

Remark: Both 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz power supply have been tested, only the worst result of 120 VAC, 60 Hz was reported as below:

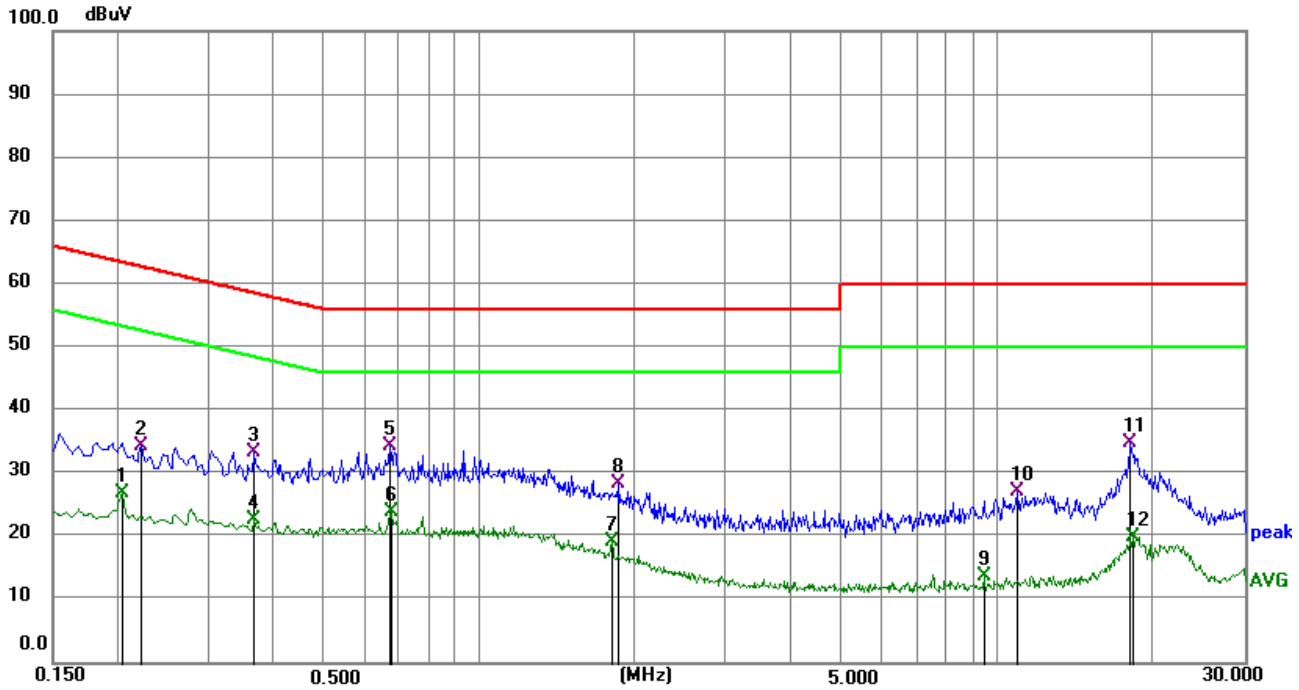
Test Mode	24G Radar	Line:	L



Remark: Correct Factor = Insertion loss of LISN + Cable loss + Insertion loss of Pulse Limiter;
Measurement Result = Reading Level +Correct Factor;
Margin = Measurement Result- Limit

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1544	27.86	11.33	39.19	65.76	-26.57	QP
2	0.2040	16.02	10.70	26.72	53.45	-26.73	AVG
3	0.2760	23.30	10.70	34.00	60.94	-26.94	QP
4	0.4192	11.08	10.69	21.77	47.46	-25.69	AVG
5	0.6900	24.02	10.68	34.70	56.00	-21.30	QP
6	0.6900	16.05	10.68	26.73	46.00	-19.27	AVG
7	0.8834	11.53	10.65	22.18	46.00	-23.82	AVG
8	1.1580	22.71	10.67	33.38	56.00	-22.62	QP
9	12.1244	4.74	11.28	16.02	50.00	-33.98	AVG
10	13.8030	16.51	11.42	27.93	60.00	-32.07	QP
11	18.2985	17.49	11.66	29.15	60.00	-30.85	QP
12	22.3034	5.43	11.75	17.18	50.00	-32.82	AVG

Test Mode	24G Radar	Line:	N



Remark: Correct Factor = Insertion loss of LISN + Cable loss + Insertion loss of Pulse Limiter;
Measurement Result = Reading Level +Correct Factor;

Margin = Measurement Result- Limit

No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.2040	16.31	10.69	27.00	53.45	-26.45	AVG
2	0.2220	23.72	10.69	34.41	62.74	-28.33	QP
3	0.3660	22.73	10.68	33.41	58.59	-25.18	QP
4	0.3660	12.09	10.68	22.77	48.59	-25.82	AVG
5	0.6720	23.66	10.67	34.33	56.00	-21.67	QP
6	0.6764	13.16	10.67	23.83	46.00	-22.17	AVG
7	1.8015	8.42	10.75	19.17	46.00	-26.83	AVG
8	1.8645	17.64	10.75	28.39	56.00	-27.61	QP
9	9.4290	2.69	10.96	13.65	50.00	-36.35	AVG
10	10.9275	15.94	11.14	27.08	60.00	-32.92	QP
11	18.0554	23.17	11.60	34.77	60.00	-25.23	QP
12	18.2850	8.30	11.61	19.91	50.00	-30.09	AVG

3.2 Radiated Emissions and Band Edge

Limit

According 15.249, the field strength of emissions from intentional radiators operated within 24000-24250 MHz shall not exceed 107.96dBμV/m (250mV/m) for Field strength of fundamental and 67.96 dBμV/m(2500uV/m) for Field strength of harmonics.

FCC PART 15.249(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a)

§15.205(a) restricted bands

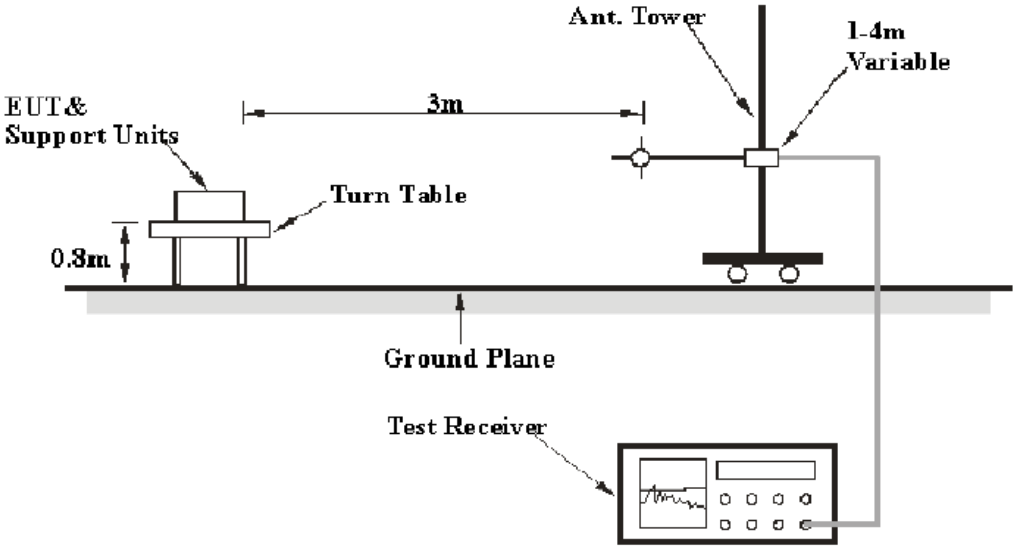
MHz	MHz	MHz	MHz	GHz	GHz
0.009 ~ 0.110	8.414 25 ~ 8.414 75	108 ~ 121.94	1 300 ~ 1 427	4.5 ~ 5.15	14.47 ~ 14.5
0.495 ~ 0.505	12.29 ~ 12.293	123 ~ 138	1 435 ~ 1 626.5	5.35 ~ 5.46	15.35 ~ 16.2
2.173 5 ~ 2.190 5	12.519 75 ~ 12.520 25	149.9 ~ 150.05	1 645.5 ~ 1 646.5	7.25 ~ 7.75	17.7 ~ 21.4
4.125 ~ 4.128	12.576 75 ~ 12.577 25	156.524 75 ~ 156.525 25	1 660 ~ 1 710	8.025 ~ 8.5	22.01 ~ 23.12
4.177 25 ~ 4.177 75	13.36 ~ 13.41	156.7 ~ 156.9	1 718.8 ~ 1 722.2	9.0 ~ 9.2	23.6 ~ 24.0
4.207 25 ~ 4.207 75	16.42 ~ 16.423	162.012 5 ~ 167.17	2 200 ~ 2 300	9.3 ~ 9.5	31.2 ~ 31.8
6.215 ~ 6.218	16.694 75 ~ 16.695 25	167.72 ~ 173.2	2 310 ~ 2 390	10.6 ~ 12.7	36.43 ~ 36.5
6.267 75 ~ 6.268 25	16.804 25 ~ 16.804 75	240 ~ 285	2 483.5 ~ 2 500	13.25 ~ 13.4	Above 38.6
6.311 75 ~ 6.312 25	25.5 ~ 25.67	322 ~ 335.4	2 655 ~ 2 900		
8.291 ~ 8.294	37.5 ~ 38.25	399.90 ~ 410	3 260 ~ 3 267		
8.362 ~ 8.366	73 ~ 74.6	608 ~ 614	3 332 ~ 3 339		
8.376 25 ~ 8.386 75	74.8 ~ 75.2	960 ~ 1240	3 345.8 ~ 3 358		
			3 600 ~ 4 400		

§15.209(a) Radiated emission limits

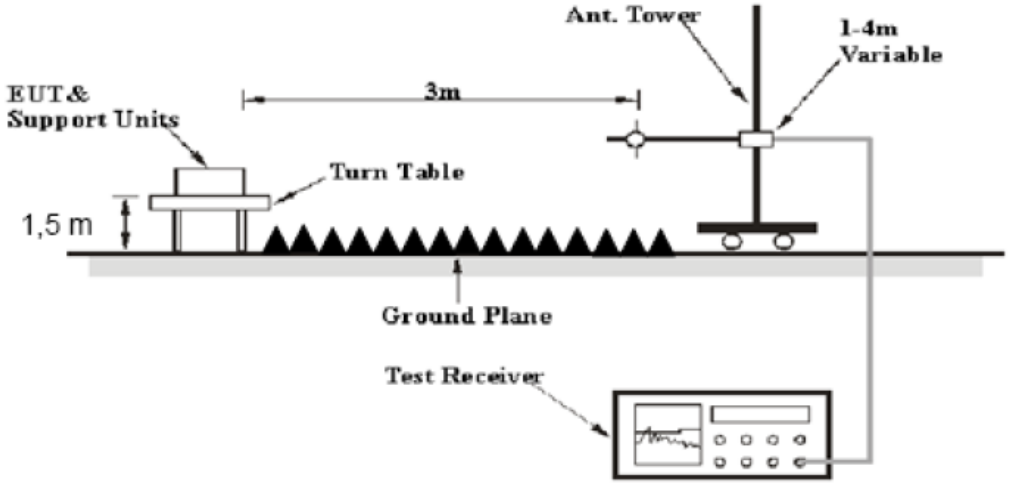
Frequency (MHz)	Distance (Meters)	Radiated (dBμV/m)	Radiated (μV/m)
0.009-0.49	3	20log(2400/F(KHz))+40log(300/3)	2400/F(KHz)
0.49-1.705	3	20log(24000/F(KHz))+ 40log(30/3)	24000/F(KHz)
1.705-30	3	20log(30)+ 40log(30/3)	30
30-88	3	40.0	100
88-216	3	43.5	150
216-960	3	46.0	200
Above 960	3	54.0	500

TEST CONFIGURATION

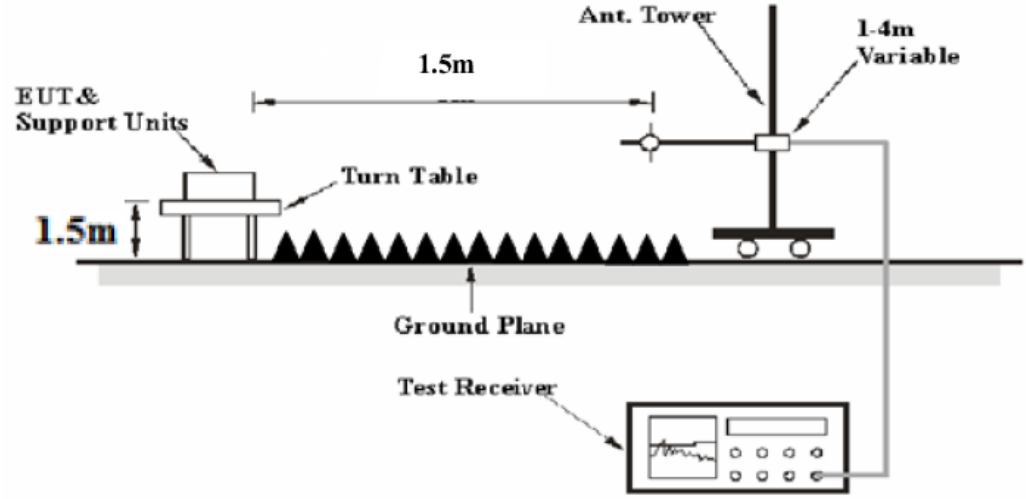
Below 1GHz



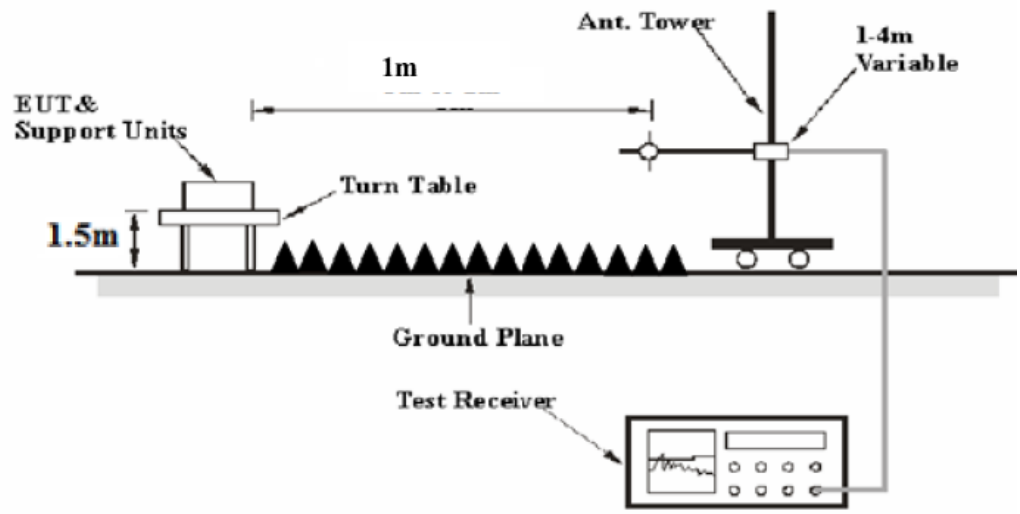
1GHz-26.5G



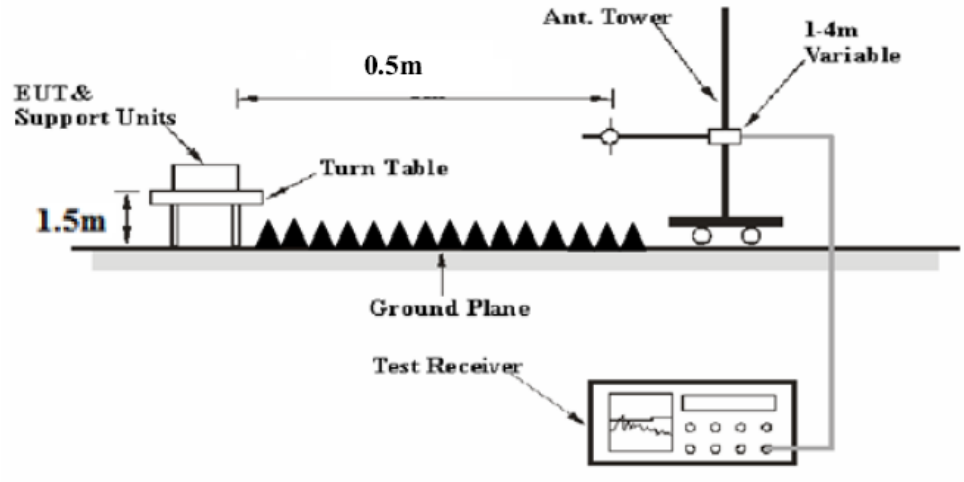
26.5GHz-40G



40GHz-90G



90GHz-100G



Test Procedure

1. Below 1GHz measurement the EUT is placed on a turntable which is 0.8m above ground plane, and above 1GHz measurement EUT was placed on a low permittivity and low loss tangent turn table which is 1.5m above ground plane.
2. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0℃ to 360℃ to acquire the highest emissions from EUT
3. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4. Repeat above procedures until all frequency measurements have been completed.
5. Radiated emission test frequency band from 9KHz to 100GHz.
6. The distance between test antenna and EUT as following table states:

Test Frequency range	Test Antenna Type	Test Distance(m)
9KHz-30MHz	Active Loop Antenna	3
30MHz-1GHz	Bilog Antenna	3
1GHz-26.5GHz	Horn Antenna	3
26.5GHz-40GHz	Horn Antenna	1.5
40GHz-90G	Horn Antenna	1
90GHz-100G	Horn Antenna	0.5

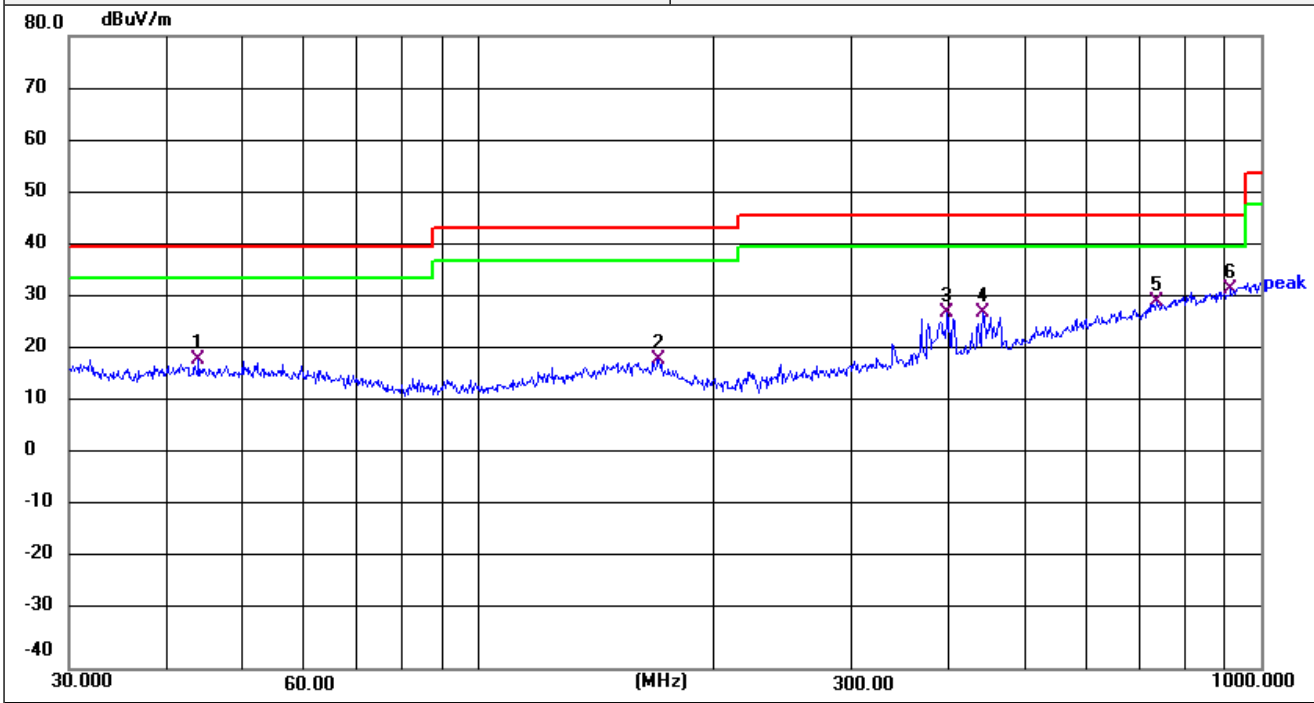
7. Setting test receiver/spectrum as following table states:

Test Frequency range	Test Receiver/Spectrum Setting	Detector
9KHz-150KHz	RBW=200Hz/VBW=3KHz,Sweep time=Auto	QP
150KHz-30MHz	RBW=9KHz/VBW=100KHz,Sweep time=Auto	QP
30MHz-1GHz	RBW=120KHz/VBW=1000KHz,Sweep time=Auto	QP
Above 1GHz	Peak Value: RBW=1MHz/VBW=3MHz, Sweep time=Auto Average Value: RBW=1MHz/VBW=10Hz, Sweep time=Auto	Peak

TEST RESULTS

For 30MHz-1GHz

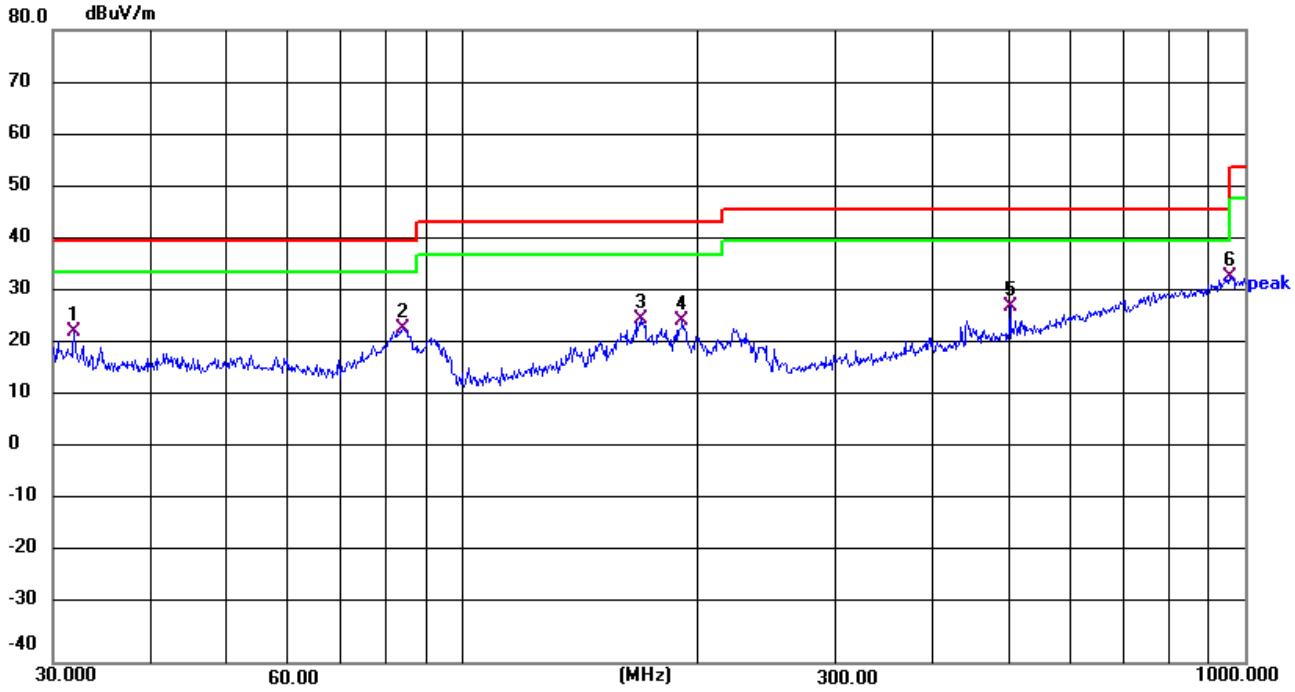
Polarization:	Horizontal



Remark:
Emission Level = Reading + Factor;
Factor = Antenna Factor + Cable Loss – Pre-amplifier;
Margin= Emission Level - Limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	43.9658	35.19	-16.66	18.53	40.00	-21.47	peak
2	170.1948	35.62	-16.86	18.76	43.50	-24.74	peak
3	397.6334	42.32	-14.62	27.70	46.00	-18.30	peak
4	441.7426	40.98	-13.44	27.54	46.00	-18.46	peak
5	737.0714	36.78	-7.23	29.55	46.00	-16.45	peak
6	916.0687	36.38	-4.40	31.98	46.00	-14.02	peak

Polarization:	Vertical



Remark:
Emission Level = Reading + Factor;
Factor = Antenna Factor + Cable Loss – Pre-amplifier;
Margin= Emission Level - Limit.

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	31.9546	40.22	-17.43	22.79	40.00	-17.21	peak
2	84.1100	44.24	-20.96	23.28	40.00	-16.72	peak
3	169.5990	42.15	-16.83	25.32	43.50	-18.18	peak
4	191.0738	44.46	-19.51	24.95	43.50	-18.55	peak
5	501.1790	40.19	-12.50	27.69	46.00	-18.31	peak
6	955.4381	36.73	-3.49	33.24	46.00	-12.76	peak

For 1GHz to 40GHz

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Distance Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
	Reading (dBμV)	Detector						
24125.000	95.85	PK	H	5.63	0.00	101.48	127.96	-26.48
24125.000	86.75	AV	H	5.63	0.00	92.38	107.96	-15.58
24125.000	101.54	PK	V	5.63	0.00	107.17	127.96	-20.79
24125.000	92.42	AV	V	5.63	0.00	98.05	107.96	-9.91
4634.55	36.65	PK	H	10.45	0.00	47.10	74.00	-26.90
4634.75	23.88	AV	H	10.45	0.00	34.33	54.00	-19.67
4510.75	38.45	PK	V	10.04	0.00	48.49	74.00	-25.51
4510.75	29.85	AV	V	10.04	0.00	39.89	54.00	-14.11
8042.25	45.74	PK	H	16.24	0.00	61.98	74.00	-12.02
8042.25	35.69	AV	H	16.24	0.00	51.93	54.00	-2.07
8042.25	47.25	PK	V	16.24	0.00	63.49	74.00	-10.51
8042.25	36.25	AV	V	16.24	0.00	52.49	54.00	-1.51
23544.50	51.44	PK	H	5.94	0.00	57.38	74.00	-16.62
23544.50	40.24	AV	H	5.94	0.00	46.18	54.00	-7.82
23544.50	51.74	PK	V	5.94	0.00	57.68	74.00	-16.32
23544.50	39.39	AV	V	5.94	0.00	45.33	54.00	-8.67
24000.00	49.25	PK	H	6.79	0.00	56.04	74.00	-17.96
24000.00	37.54	AV	H	6.79	0.00	44.33	54.00	-9.67
24000.00	50.03	PK	V	6.79	0.00	56.82	74.00	-17.18
24000.00	38.45	AV	V	6.79	0.00	45.24	54.00	-8.76
24250.00	51.42	PK	H	8.05	0.00	59.47	74.00	-14.53
24250.00	38.09	AV	H	8.05	0.00	46.14	54.00	-7.86
24250.00	52.24	PK	V	8.05	0.00	60.29	74.00	-13.71
24250.00	40.64	AV	V	8.05	0.00	48.69	54.00	-5.31
39335.75	52.22	PK	H	16.32	6.02	62.52	74.00	-11.48
39335.75	38.80	AV	H	16.32	6.02	49.10	54.00	-4.90
39335.75	52.55	PK	V	16.32	6.02	62.85	74.00	-11.15
39335.75	39.47	AV	V	16.32	6.02	49.77	54.00	-4.23

REMARKS:

1. Result (dBuV/m) = Reading (dBuV)+ Factor (dB/m) -Distance extrapolation Factor
   For 1-26.5GHz:
   Distance extrapolation Factor =20 log (specific distance [3m]/test distance [3m]) dB= 0 dB
   For 26.5-40GHz:
   Distance extrapolation Factor =20 log (specific distance [3m]/test distance [1.5m]) dB= 6.02 dB
2. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
3. Margin value = Result - Limit value.
4. -- Mean the PK detector measured value is below average limit.
5. Other emission levels are attenuated 20dB below the limit and not recorded in report.
6. RBW1MHz VBW3MHz Peak detector is for PK value; RBW 1MHz VBW10Hz Peak detector is for AV value.

For 40GHz to 100GHz

Frequency (GHz)	Receiver		Polar (H/V)	Factor (dB/m)	Distance Factor (dB)	Result (dBμV)	Limit (dBμV)	Margin (dB)
	Reading (dBμV)	Detector						
48.250	26.55	PK	H	40.07	9.54	57.08	87.96	-30.88
48.250	11.74	AV	H	40.07	9.54	42.27	67.96	-25.69
48.250	24.21	PK	V	40.07	9.54	54.74	87.96	-33.22
48.250	11.92	AV	V	40.07	9.54	42.45	67.96	-25.51
72.375	40.25	PK	H	43.83	9.54	74.54	87.96	-13.42
72.375	26.25	AV	H	43.83	9.54	60.54	67.96	-7.42
72.375	39.42	PK	V	43.83	9.54	73.71	87.96	-14.25
72.375	24.77	AV	V	43.83	9.54	59.06	67.96	-8.9
96.500	34.75	PK	H	45.90	15.56	65.09	87.96	-22.87
96.500	17.95	AV	H	45.90	15.56	48.29	67.96	-19.67
96.500	30.77	PK	V	45.90	15.56	61.11	87.96	-26.85
96.500	19.25	AV	V	45.90	15.56	49.59	67.96	-18.37

REMARKS:

1. Emission level (dBuV/m) = Reading (dBuV)+ Factor (dB/m) -Distance extrapolation Factor
   For 40-90GHz:
   Distance extrapolation Factor =20 log (specific distance [3m]/test distance [1m]) dB= 9.54 dB
   For 90-100GHz:
   Distance extrapolation Factor =20 log (specific distance [3m]/test distance [0.5m]) dB= 15.56 dB
2. Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
3. Margin value = Emission level- Limit value.
4. -- Mean the PK detector measured value is below average limit.
5. Other emission levels are attenuated 20dB below the limit and not recorded in report.
6. RBW1MHz VBW3MHz Peak detector is for PK value; RBW 1MHz VBW10Hz Peak detector is for AV value.

3.3 20dB Bandwidth & Occupied Bandwidth

Limit

N/A

Test Procedure

1. The EUT was placed on a low permittivity and low loss tangent turn table which is 1.5m above ground plane.
2. Set the SPECTRUM ANALYZER as follow:

   RBW=1% to 5% of the OBW

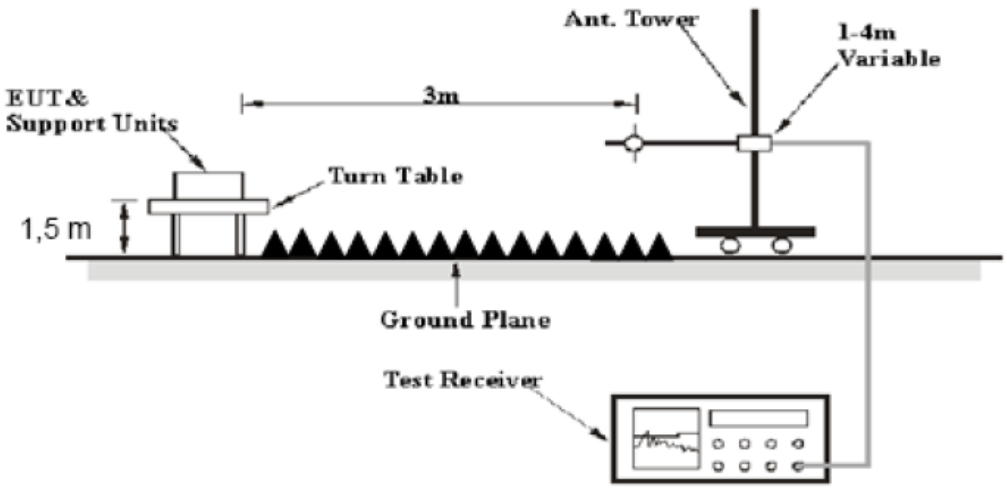
   VBW=approximately 3 X RBW

   Detector=Peak

   Trace Mode: Max Hold
3. Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0℃ to 360℃ to acquire the highest emissions from EUT.
4. Use the 99% power bandwidth and ndb down function of the instrument to measure the bandwidth and recoded.

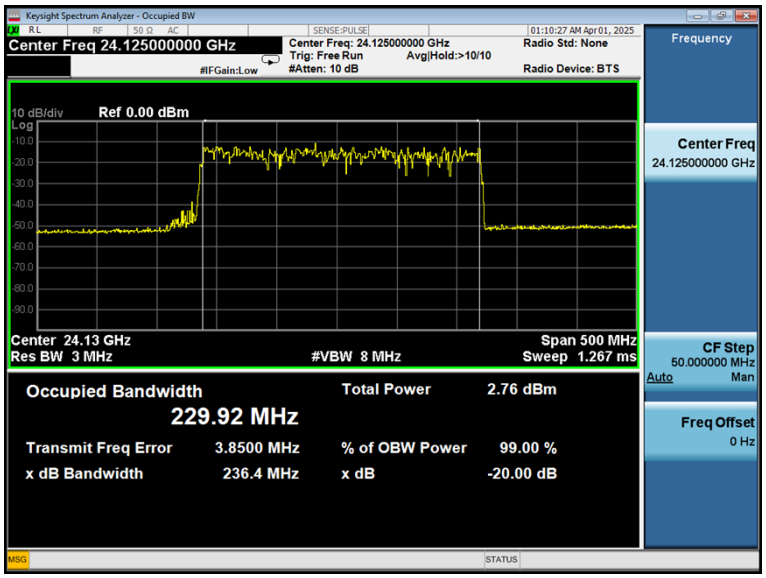
Note: The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.
The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission

Test Configuration



Test Results

Frequency (GHz)	20dB Bandwidth (MHz)	99% OBW (MHz)	Conclusion
24.125	236.4	229.92	PASS



3.4 Antenna Requirement

Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203:
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 a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited

Test Result

The antenna attached on PCB and here is no consideration of replacement the antenna The maximum gain of antenna was 0.5dBi with impedance 50Ω.

********** End of Report **********