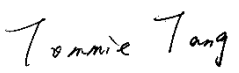
TEST REPORT

Application No.:	KSCR2504000758AT
FCC ID:	2BPE4CLAIRWAV-T24
Applicant:	TraffiClair Technology Co.,Ltd.
Address of Applicant:	The 4th floor,Building No.4,Xiangshan South Road 105#, Shijingshan,Beijing
Manufacturer:	TraffiClair Technology Co.,Ltd.
Address of Manufacturer:	The 4th floor,Building No.4,Xiangshan South Road 105#, Shijingshan,Beijing
Factory:	TraffiClair Technology Co.,Ltd.
Address of Factory:	The 4th floor,Building No.4,Xiangshan South Road 105#, Shijingshan,Beijing
Equipment Under Test (EUT):	
EUT Name:	Microwave Radar Traffic Detector
Model No.:	ClairWav-T24L;ClairWav-T24S;ClairWav-T24LC;ClairWav-T24SC ♣
♣	Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Trade Mark:	TraffiClair
Standard(s) :	47 CFR Part 15, Subpart C 15.249
Date of Receipt:	2025-04-18
Date of Test:	2025-04-19 to 2025-05-27
Date of Issue:	2025-05-27
Test Result:	**Pass***

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

Revision Record			
Version	**Description**	***Date***	***Remark***
00	Original	2025-05-27	/

Authorized for issue by:				
Tested By				
		Tommie_Tang/Project Engineer		
Approved By				
		Terry Hou /Reviewer		

2 Test Summary

Radio Spectrum Technical Requirement			
Item	**Requirement**	**Method**	**Result**
Antenna Requirement	47 CFR Part 15, Subpart C 15.203	N/A	Pass

N/A: Not applicable

Radio Spectrum Matter Part			
Item	**Requirement**	**Method**	**Result**
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.207	47 CFR Part 15, Subpart C 15.207	Pass
20dB Emission bandwidth	47 CFR Part 15, Subpart C 15.215	ANSI C63.10 (2013) Section 6.9	Pass
Filed strength of fundamental	47 CFR Part 15, Subpart C 15.249	ANSI C63.10 (2013) Section 6.6	Pass
Radiation Spurious Emission	47 CFR Part 15, Subpart C 15.249	ANSI C63.10 (2013) Section 6.6	Pass
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.249	ANSI C63.10 (2013) Section 6.10	Pass

Declaration of EUT Family Grouping:

Note: There are series models mentioned in this report, and they are identical in electrical and electronic characters. Only the model ClairWav-T24SC was tested since their differences were the model number, camera and software which do not affect RF parameters. The details are as follows.

Model number	ClairWav-T24SC	ClairWav-T24LC	ClairWav-T24S	ClairWav-T24L
Detection distance	250m	400m	250m	400m
Camera	✓	✓	×	×

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4 General Information

4.1 Details of E.U.T.

Power supply:	DC 24V
Test Voltage:	DC 24V
Operation Frequency Range:	24GHz-24.25GHz
Modulation:	FMCW
Antenna type:	Integrated Patch Antenna
Antenna Gain:	14dBi (Provided by the manufacturer)

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
The EUT has been tested as an independent unit.			

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	8.4×10^{-8}
2	Timeout	2s
3	Duty Cycle	0.37%
4	Occupied Bandwidth	3%
5	RF Radiated Power	5.2dB (Below 1GHz)
		5.9dB (Above 1GHz)
6	Radiated Spurious Emission Test	4.2dB (Below 30MHz)
		4.5dB (30MHz-1GHz)
		5.1dB (1GHz-18GHz)
		5.4dB (Above 18GHz)
7	Temperature Test	1°C
8	Humidity Test	3%
9	Supply Voltages	1.5%
10	Time	3%
Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.		

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. internal working 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).

3. Sample source: sent by customer.

4.5 Test Facility

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

• 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

5 Equipment List

Item	Equipment	Manufacturer	Model	Inventory No	Cal Date	Cal. Due Date
Conducted Emissions at AC Mains Power Port (150kHz-30MHz)						
1	EMI TEST RECEIVER	R&S	ESCI	KS301195	03/27/2025	03/26/2026
2	TWO-LINE V-NETWORK	R&S	ENV216	KS301197	04/02/2025	04/01/2026
3	V (V-LISN)	SCHWARZBECK	NNLK 8129	KS301091	01/15/2025	01/14/2026
4	Pulse LIMITER	R&S	ESH3-Z2	KUS1902E001	12/05/2024	12/04/2025
5	Software	Faratronic	E3 v 3A1	N/A	N/A	N/A
RF Radiated Test						
1	Spectrum Analyzer	R&S	FSV40	KUS1806E003	08/06/2024	08/05/2025
2	PXA Spectrum Analyzer	KEYSIGHT	N9030B	KSEM021-1	01/15/2025	01/14/2026
3	Signal Generator	Agilent	E8257C	KS301066	08/06/2024	08/05/2025
4	Loop Antenna	COM-POWER	AL-130R	KUS1806E001	03/01/2025	02/28/2027
5	Bilog Antenna	TESEQ	CBL 6112D	KUS1806E005	06/29/2023	06/28/2025
6	Amplifier(30MHz~18GHz)	PANSHAN TECHNOLOGY	LNA:1~18G	KSEM010-1	01/15/2025	01/14/2026
8	Horn-antenna(1-18GHz)	Schwarzbeck	BBHA9120D	KS301079	03/23/2024	03/22/2026
9	Amplifier(18~40GHz)	PANSHAN TECHNOLOGY	LNA180400G40	KSEM038	08/12/2024	08/11/2025
10	Horn Antenna(18-40GHz)	Schwarzbeck	BBHA9170	CZ301058	01/07/2024	01/06/2026
11	Horn-antenna(40-60GHz)	ERAVANT	SAZ-2410-19-S1	KSEM003-1	02/02/2021*	02/01/2031**
12	Horn-antenna(50-75GHz)	ERAVANT	SAZ-2410-15-S1	KSEM003-2	02/02/2021*	02/01/2031**
13	Horn-antenna(50-75GHz)	ERAVANT	SAZ-2410-15-S1	KSEM003-7	12/14/2022*	12/13/2032**
14	Horn-antenna(60-90GHz)	ERAVANT	SAZ-2410-12-S1	KSEM003-8	12/14/2022*	12/13/2032**
15	Horn-antenna(75-110GHz)	ERAVANT	SAZ-2410-10-S1	KSEM003-3	02/02/2021*	02/01/2031**
16	Horn-antenna(90-140GHz)	ERAVANT	SAZ-2410-08-S1	KSEM003-9	12/14/2022*	12/13/2032**
17	Horn-antenna(110-170GHz)	ERAVANT	SAZ-2410-06-S1	KSEM003-4	02/02/2021*	02/01/2031**
18	Horn-antenna(140-220GHz)	ERAVANT	SAZ-2410-05-S1	KSEM003-5	02/02/2021*	02/01/2031**
19	Horn-antenna(140-220GHz)	ERAVANT	SAZ-2410-05-S1	KSEM003-10	12/14/2022*	12/13/2032**
20	Horn-antenna(220-325GHz)	ERAVANT	SAR-2309-03-S2	KSEM003-6	02/02/2021*	02/01/2031**
21	Extended waveguide(40-60GHz)	ERAVANT	SWG-19025-FB	KSEM004-1	02/02/2021*	02/01/2031**
22	Extended waveguide(50-75GHz)	ERAVANT	SWG-15025-FB	KSEM004-2	02/02/2021*	02/01/2031**
23	Extended waveguide(50-75GHz)	ERAVANT	SWG-15025-FB	KSEM004-7	12/14/2022*	12/13/2032**
24	Extended waveguide(60-90GHz)	ERAVANT	SWG-12025-FB	KSEM004-8	12/14/2022*	12/13/2032**
25	Extended waveguide(75-110GHz)	ERAVANT	SWG-10025-FB	KSEM004-3	02/02/2021*	02/01/2031**
26	Extended waveguide(90-140GHz)	ERAVANT	SWG-08025-FB	KSEM004-9	12/14/2022*	12/13/2032**
27	Extended waveguide(110-170GHz)	ERAVANT	SWG-06025-FB	KSEM004-4	02/02/2021*	02/01/2031**
28	Extended waveguide(140-220GHz)	ERAVANT	SWG-05025-FB	KSEM004-5	02/02/2021*	02/01/2031**

29	Extended waveguide(140-220GHz)	ERAVANT	SWG-05025-FB	KSEM004-10	12/14/2022*	12/13/2032**
30	Extended waveguide(220-325GHz)	ERAVANT	SWG-03025-FB	KSEM004-6	02/02/2021*	02/01/2031**
31	Harmonic mixer(40-60GHz)	ERAVANT	STH-19SF-S1	KSEM005-2	10/01/2020*	09/30/2030**
32	Harmonic Mixer(50-75GHz)	VDI	SAX WR15	KSEM007-1	08/23/2023*	08/23/2033**
33	Harmonic Mixer(60-90GHz)	VDI	SAX WR12	KSEM007-2	08/23/2023*	08/23/2033**
34	Harmonic mixer(90-140GHz)	VDI	SAX WR8.0	KSEM007-3	08/23/2023*	08/23/2033**
35	Harmonic mixer(140-220GHz)	VDI	SAX WR5.1	KSEM007-4	08/23/2023*	08/23/2033**
36	Harmonic mixer(220-325GHz)	ERAVANT	HM 220-325	KSEM005-4	04/20/2021*	04/19/2031**
37	Upconverter	Talent	TMAM-060090-0612-12-AC	KSEM043	01/18/2022*	01/17/2032**
38	RE Test Cable	ERAVANT MICROWAVE	/	CZ301097	11/10/2024	11/09/2025
39	Temperature & Humidity Recorder	Renke Control	RS-WS-N01-6J	KSEM024-4	03/18/2025	03/17/2026
40	Software	Faratronic	EZ_EMC-v 3A1	/	NCR	NCR
41	Software	ESE	E3_V 6.111221a	/	NCR	NCR

*Calibration date provided by the equipment manufacturer.
**Calibration every ten years. During this period, there will be daily check files for the equipment and the requirements for operators will be clearly defined through SOP.

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

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 Integrated Patch Antenna and no consideration of replacement.

Antenna location: Refer to EUT Photos.

7 Radio Spectrum Matter Test Results

7.1 Conducted Emissions at AC Mains Power Port (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207

Test Method: ANSI C63.10 (2013) Section 6.2

Limit:

Frequency of Emission (MHz)	Conducted Limit (dBµV)	
	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.		

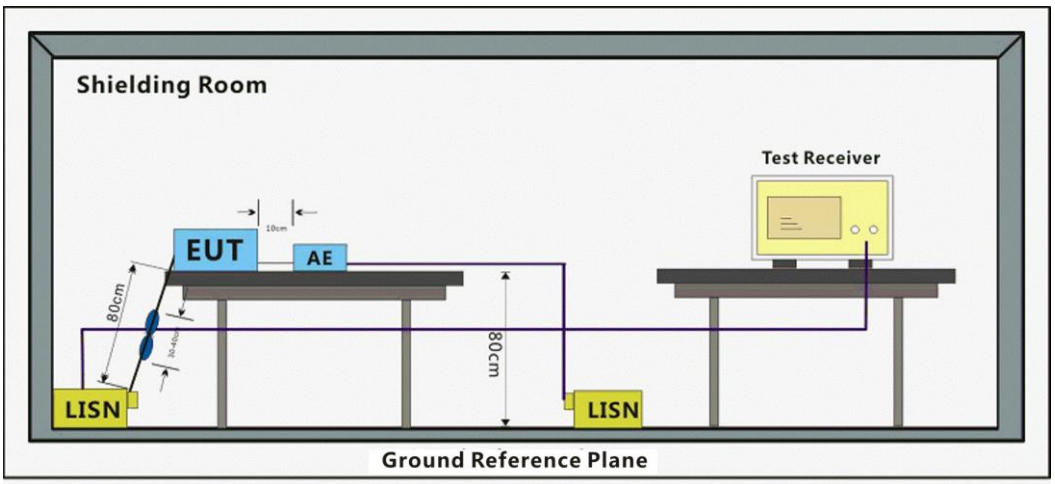
7.1.1 E.U.T. Operation

Operating Environment:

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

Test Mode: a: TX mode _ Keep the EUT in continuously transmitting mode.

7.1.2 Test Setup Diagram



7.1.3 Measurement Procedure and Data

Frequency range: 150KHz-30MHz

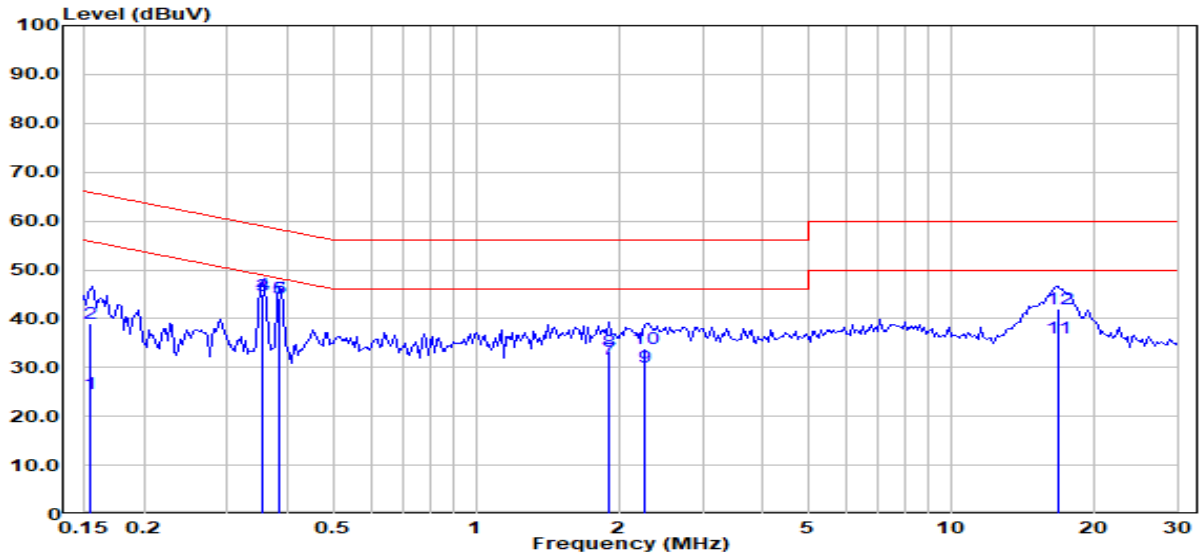
An initial pre-scan was performed with peak detector.Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

The red line show in graphic is the limit in standard used in this section.

Measured Level = Read level + Cable Loss + LISN Factor

Test Mode: 00; Line: Live line

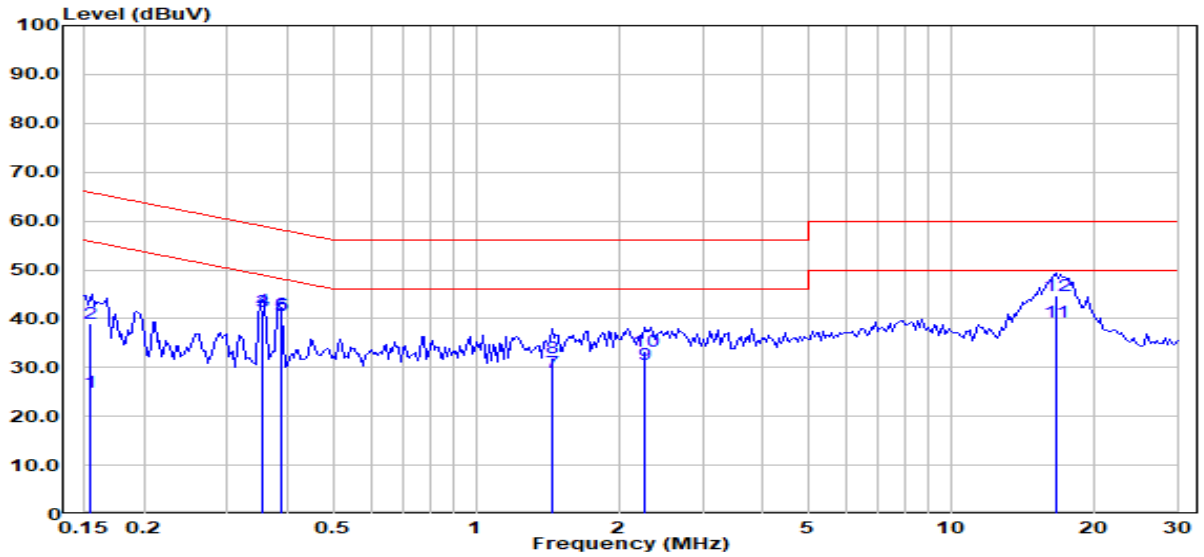
Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1539	4.84	19.79	24.63	55.79	-31.16	Average
2	0.1539	19.27	19.79	39.06	65.79	-26.73	QP
3	0.3568	24.92	19.67	44.59	48.80	-4.21	Average
4	0.3568	25.32	19.67	44.99	58.80	-13.81	QP
5	0.3863	24.39	19.65	44.04	48.14	-4.10	Average
6	0.3863	24.64	19.65	44.29	58.14	-13.85	QP
7	1.9050	11.89	19.86	31.75	46.00	-14.25	Average
8	1.9050	13.50	19.86	33.36	56.00	-22.64	QP
9	2.2630	10.39	19.80	30.19	46.00	-15.81	Average
10	2.2630	14.05	19.80	33.85	56.00	-22.15	QP
11	16.8270	16.20	19.83	36.03	50.00	-13.97	Average
12	16.8270	22.16	19.83	41.99	60.00	-18.01	QP

Test Mode: 00; Line: Neutral Line

Test Data :



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1536	5.30	19.74	25.04	55.80	-30.76	Average
2	0.1536	19.28	19.74	39.02	65.80	-26.78	QP
3	0.3557	21.80	19.59	41.39	48.83	-7.44	Average
4	0.3557	22.20	19.59	41.79	58.83	-17.04	QP
5	0.3879	20.96	19.57	40.53	48.11	-7.58	Average
6	0.3879	21.31	19.57	40.88	58.11	-17.23	QP
7	1.4480	9.36	19.51	28.87	46.00	-17.13	Average
8	1.4480	12.42	19.51	31.93	56.00	-24.07	QP
9	2.2580	11.19	19.53	30.72	46.00	-15.28	Average
10	2.2580	13.67	19.53	33.20	56.00	-22.80	QP
11	16.6370	19.36	19.91	39.27	50.00	-10.73	Average
12	16.6370	24.85	19.91	44.76	60.00	-15.24	QP

7.2 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.215

Test Method: ANSI C63.10 (2013) Section 6.9

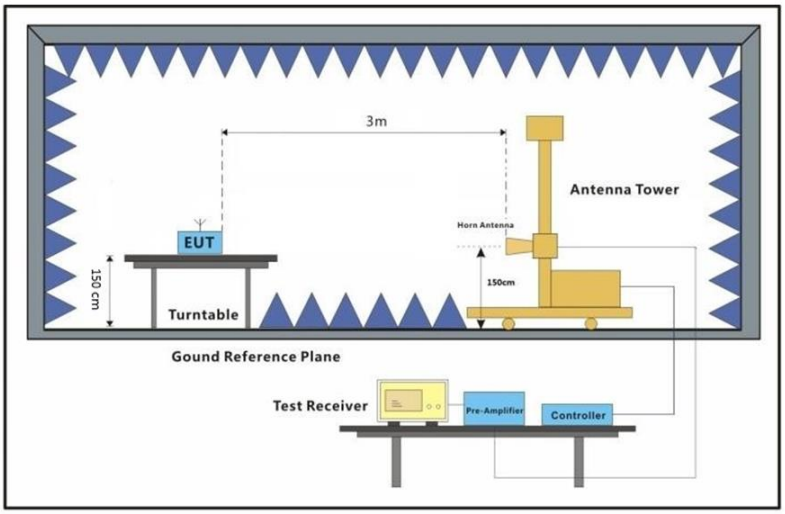
7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25.1 °C Humidity: 48.3 % RH Atmospheric Pressure: 1010 mbar

Test Mode: a: TX mode _ Keep the EUT in continuously transmitting mode.

7.2.2 Test Setup Diagram



7.2.3 Measurement Procedure and Data

1) Place the EUT on the table and set it in the transmitting mode
2) SA set RBW=1%~5% OBW, VBW=3RBW and Detector=Peak
3) Measure and record the result of 20dB bandwidth

Please Refer to Appendix for Details

7.3 Filed Strength of Fundamental and Radiation Spurious Emission

Test Requirement 47 CFR Part 15, Subpart C 15.249(a)

Test Method: ANSI C63.10 (2013) Section 6.6

Limit:

(1) The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency (MHz)	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
2400-2483.5	50	500
5725-5875	50	500
24000-24250	250	2500

* Field strength limits are specified at a distance of 3 meters.

Harmonic Limit Conversion			
Average (uV/m) at 3M	Average (dBuV/m) at 3M	Average (dBuV/m) at 1M	Peak (dBuV/m) at 1M
2500	67.9588	77.50	97.50

*(Limit = 67.96 + 20LOG(3/1)=77.5 dBuV/m)

(2) 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 (follow the table), whichever is the lesser attenuation.

Below 30MHz

Frequency	Field Strength (μA/m)	Magnetic field strength (H-Field) (μA/m)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/F (F in kHz)	30
1.705-30 MHz	30	N/A	30

Above 30MHz

Frequency (MHz)	Field Strength microvolts/m at 3 metres (watts, e.i.r.p.)	
	Transmitters	Receivers
30-88	100 (3 nW)	100 (3 nW)
88-216	150 (6.8 nW)	150 (6.8 nW)
216-960	200 (12 nW)	200 (12 nW)
Above 960	500 (75 nW)	500 (75 nW)

Frequency	Field Strength microvolts/m at specific distance	
	Peak	AVG
Above 40GHz	83.52dBuV/m @1m	63.52dBuV/m @1m

*(Limit = 53.98 + 20LOG(3/1)=63.52 dBuV/m)

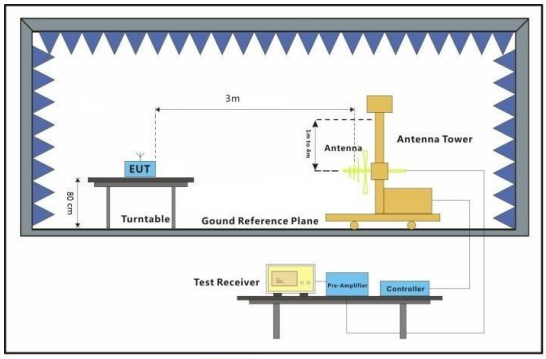
7.3.1 E.U.T. Operation

Operating Environment:

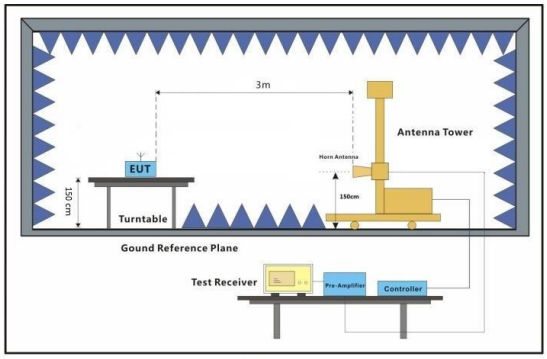
Temperature: 25.1 °C Humidity: 48.3 % RH Atmospheric Pressure: 1010 mbar

Test Mode: a: TX mode _ Keep the EUT in continuously transmitting mode.

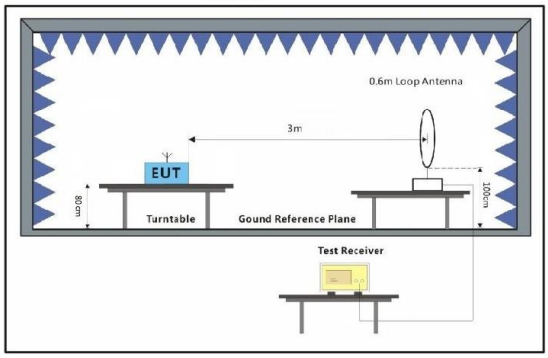
7.3.2 Test Setup Diagram



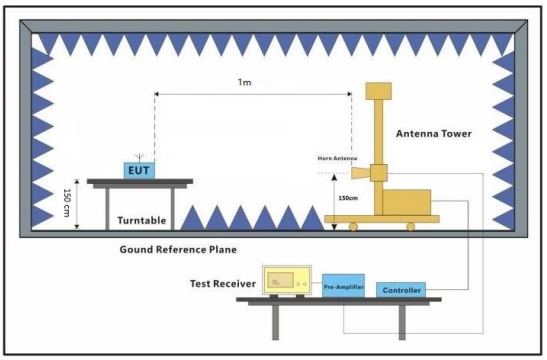
30MHz-1GHz



1GHz-40GHz



Below 30MHz



Above 40GHz

7.3.3 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For 1-18GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

c. For 18-40GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

d. For above 40GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 1 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation

e. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

f. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

g. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

h. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

j. Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

Please Refer to Appendix for Details

7.4 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.10.5

Limit:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
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
Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.		

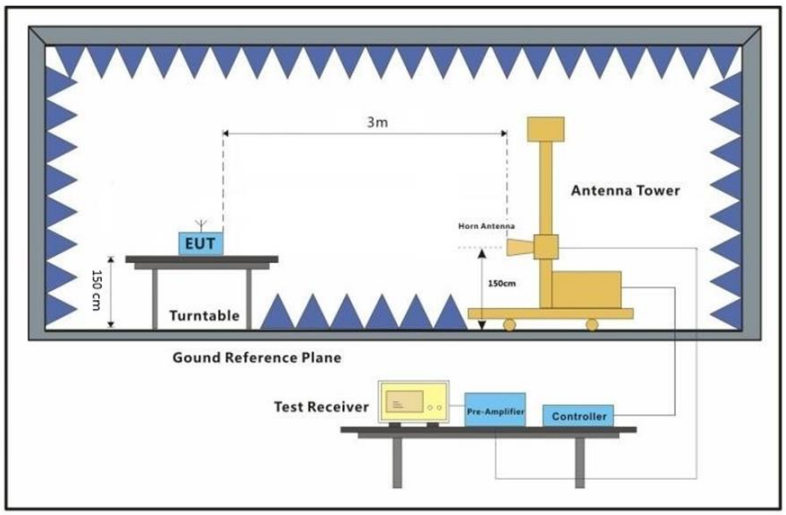
7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 25.1 °C Humidity: 48.3 % RH Atmospheric Pressure: 1010 mbar

Test Mode: a: TX mode _ Keep the EUT in continuously transmitting mode.

7.4.2 Test Setup Diagram



7.4.3 Measurement Procedure and Data

1) The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
2) The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3) For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
4) The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
5) If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
6) The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
7) Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

Please Refer to Appendix for Details

8 Test Setup Photo

Refer to Appendix - Test Setup Photo for KSCR2504000758AT

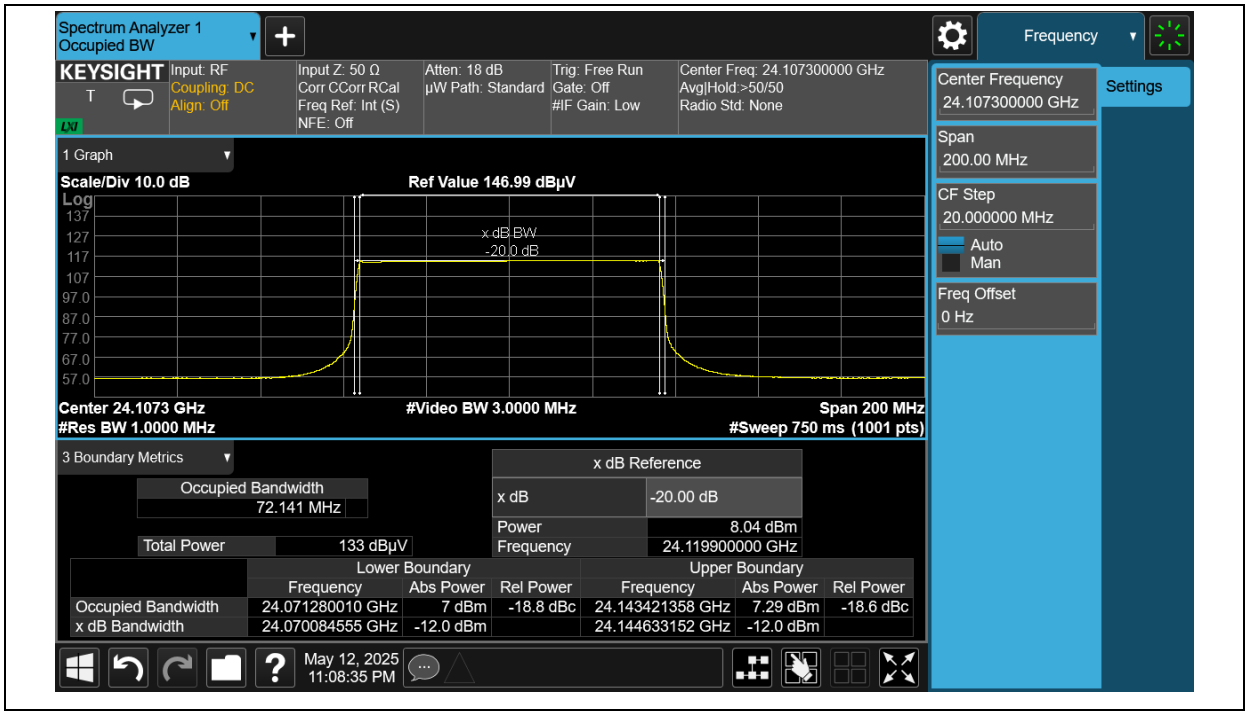
9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for KSCR2504000758AT

10 Appendix

10.1 20dB Bandwidth

Low Frequency (GHz)	Limit (GHz)	High Frequency (GHz)	Limit (GHz)	20dB Bandwidth (MHz)	Result
24.0700	24.00	24.1446	24.25	74.6	Pass



10.2 Filed Strength of Fundamental

Filed Strength of Fundamental

Frequency (GHz)	Distance (m)	Desensitization factor (dB)	Peak Power @3m dBuV/m	Peak Power Limit @3m dBuV/m	Average Power @3m dBuV/m	Average Power Limit @3m dBuV/m	Result	Polarity
24.1	3	0.23	108.58	127.96	95.35	107.96	Pass	Horizontal
24.1	3	0.23	85.33	127.96	72.10	107.96	Pass	Vertical

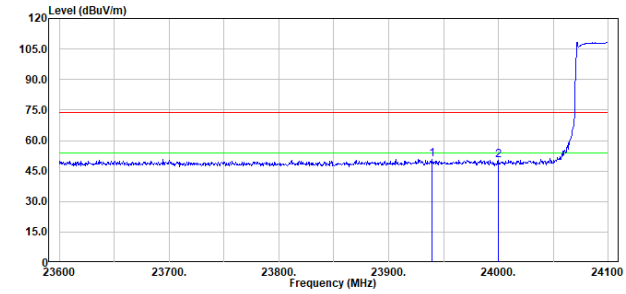
Note 1: The FMCW modulation desensitization correct factor 0.23 was calculated with equation below, where the BW_{Chirp}=75MHz, T_{chirp}=100uS, B=1MHz.

$$\alpha = \frac{1}{\sqrt{1+\left(\frac{2\ln(2)}{\pi}\right)^2\left(\frac{BW_{Chirp}}{T_{Chirp}B^2}\right)^2}}$$

where

α	is the reduction in amplitude
BW_{Chirp}	is the FMCW Chirp Bandwidth
T_{Chirp}	is the FMCW Chirp Time
B	is the 3 dB IF Bandwidth = RBW

Bandedge

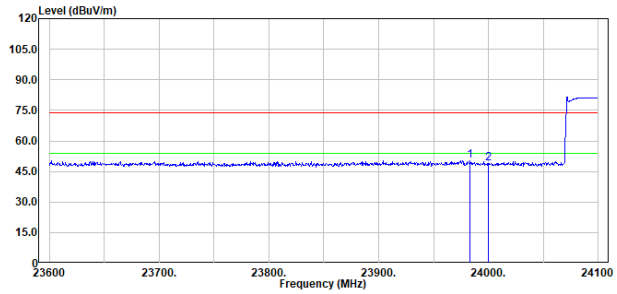


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
1	23939.50	56.62	39.21	10.47	55.61	50.69	74.00	-23.31	Peak
2	24000.00	55.92	39.23	10.58	55.60	50.13	74.00	-23.87	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

23600MHz-24100MHz-Horizontal

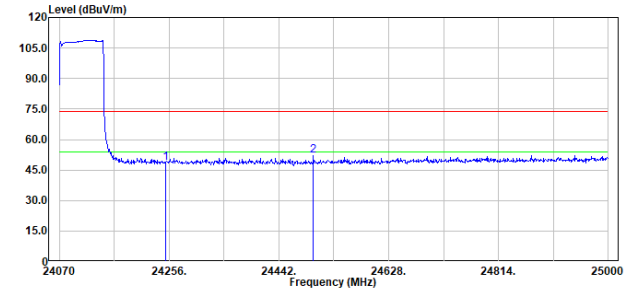


Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
1	23983.50	56.05	39.22	10.55	55.60	50.22	74.00	-23.78	Peak
2	24000.00	54.47	39.23	10.58	55.60	48.68	74.00	-25.32	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

23600MHz-24100MHz-Vertical

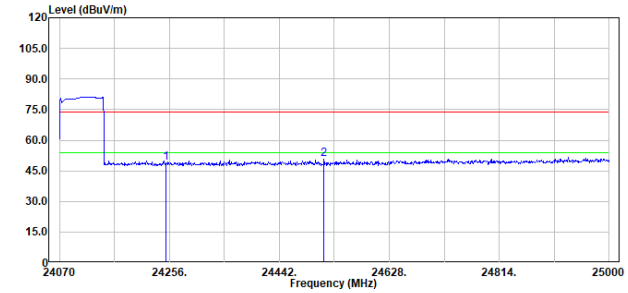


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
1	24250.42	54.16	39.33	10.46	55.60	48.35	74.00	-25.65	Peak
2	24500.59	57.47	39.43	10.70	55.60	52.00	74.00	-22.00	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

24000MHz-25000MHz-Horizontal



Antenna Polarity :Vertical

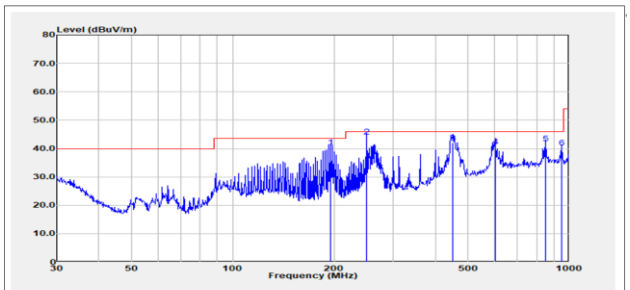
No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
1	24250.42	54.74	39.33	10.46	55.60	48.93	74.00	-25.07	Peak
2	24517.33	56.28	39.43	10.68	55.55	50.84	74.00	-23.16	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

24000MHz-25000MHz-Vertical

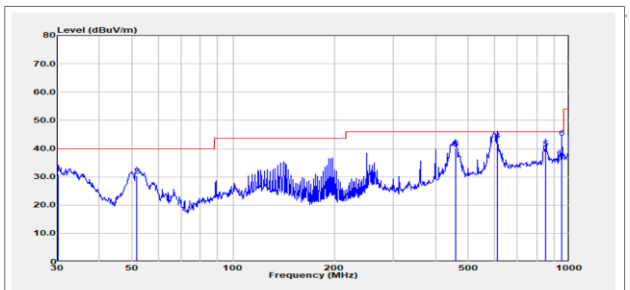
10.3 Radiation Spurious Emissions below 40 GHz

30MHz-1GHz



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	195.8220	23.34	17.21	40.55	43.50	-2.95	100	339	QP
2	250.3012	24.01	20.24	44.25	46.00	-1.75	100	90	QP
3	451.1350	17.04	25.01	42.05	46.00	-3.95	189	360	QP
4	601.4265	12.26	28.57	40.83	46.00	-5.17	100	167	QP
5	848.0563	11.14	30.66	41.80	46.00	-4.20	100	138	QP
6	952.0937	9.35	31.07	40.42	46.00	-5.58	200	86	QP

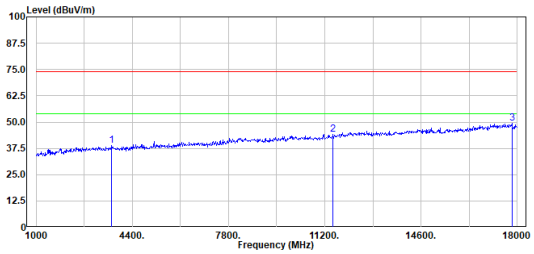
Horizontal



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Degree (deg.)	Remark
1	30.1050	6.05	25.04	31.09	40.00	-8.91	100	198	QP
2	51.8430	17.85	12.44	30.29	40.00	-9.71	100	198	QP
3	459.1140	14.69	25.36	40.05	46.00	-5.95	101	360	QP
4	609.9220	14.12	28.84	42.96	46.00	-3.04	100	360	QP
5	851.0350	9.41	30.81	40.22	46.00	-5.78	100	44	QP
6	952.0940	12.78	31.07	43.85	46.00	-2.15	109	360	QP

Vertical

1GHz-18GHz

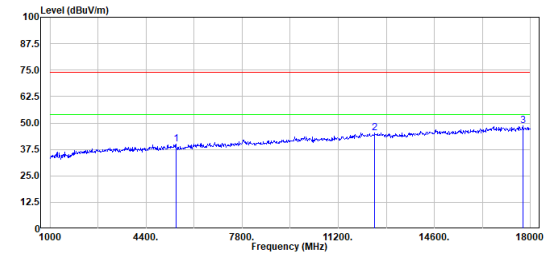


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
1	3652.00	56.14	32.81	4.70	54.91	38.74	74.00	-35.26	Peak
2	11489.00	50.79	38.41	8.42	53.30	44.32	74.00	-29.68	Peak
3	17813.00	49.06	40.84	10.68	51.32	49.26	74.00	-24.74	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Horizontal



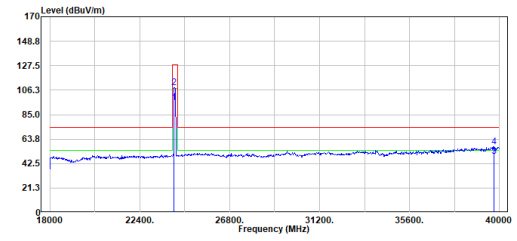
Antenna Polarity :Vertical

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
1	5454.00	54.01	34.26	5.75	53.89	40.13	74.00	-33.87	Peak
2	12492.00	50.59	39.28	8.84	53.29	45.42	74.00	-28.58	Peak
3	17728.00	48.60	40.85	10.65	51.31	48.79	74.00	-25.21	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Vertical

18GHz-40GHz

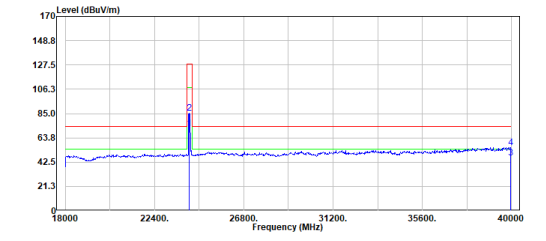


Antenna Polarity :Horizontal

No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
1	24072.00	101.14	39.26	10.55	55.60	95.35	108.00	-12.65	Average
2	24072.00	114.14	39.26	10.55	55.60	108.35	128.00	-19.65	Peak
3	39736.00	45.83	43.71	15.19	56.08	48.65	54.00	-5.35	Average
4	39736.00	54.16	43.71	15.19	56.08	56.98	74.00	-17.02	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Horizontal



Antenna Polarity :Vertical

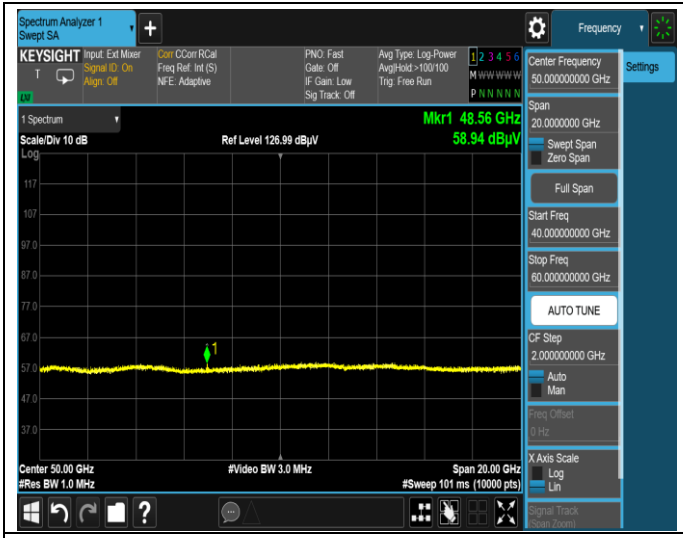
No.	Freq	Read level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
1	24116.00	77.90	39.28	10.52	55.60	72.10	108.00	-35.90	Average
2	24116.00	90.90	39.28	10.52	55.60	85.10	128.00	-42.90	Peak
3	39956.00	42.89	43.80	15.09	55.68	46.10	54.00	-7.90	Average
4	39956.00	51.99	43.80	15.09	55.68	55.20	74.00	-18.80	Peak

Notes: Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

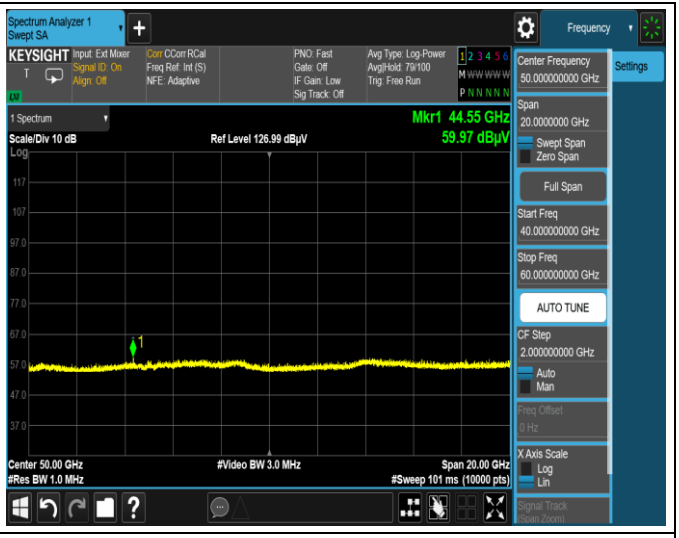
Vertical

10.4 Radiated emissions above 40 GHz

Frequency (GHz)	Distance (M)	Peak Value (dBuv/m)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Polarization	Result
48.56	1	58.94	83.52	63.52	Horizontal	Pass
44.55	1	59.97	83.52	63.52	Vertical	Pass

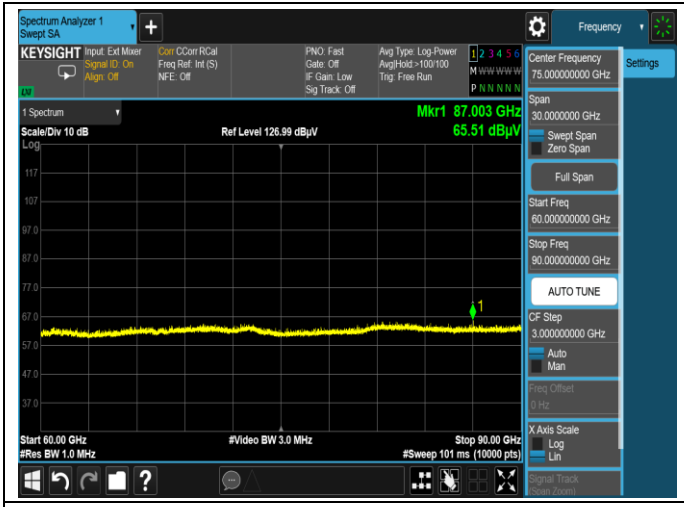


40GHz-60GHz-Horizontal

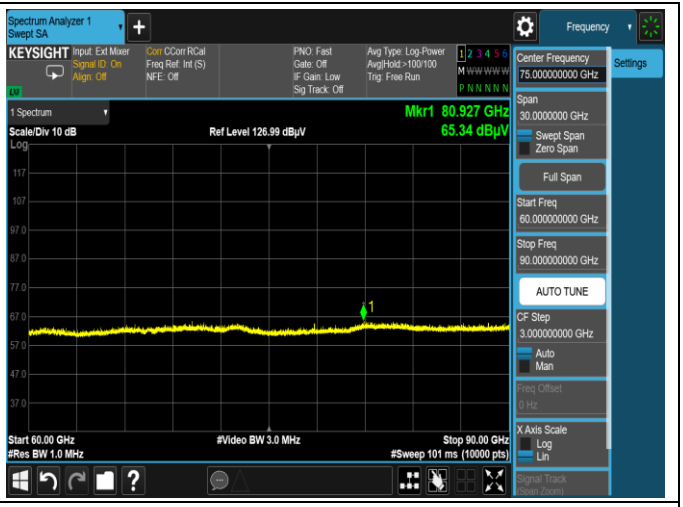


40GHz-60GHz-Vertical

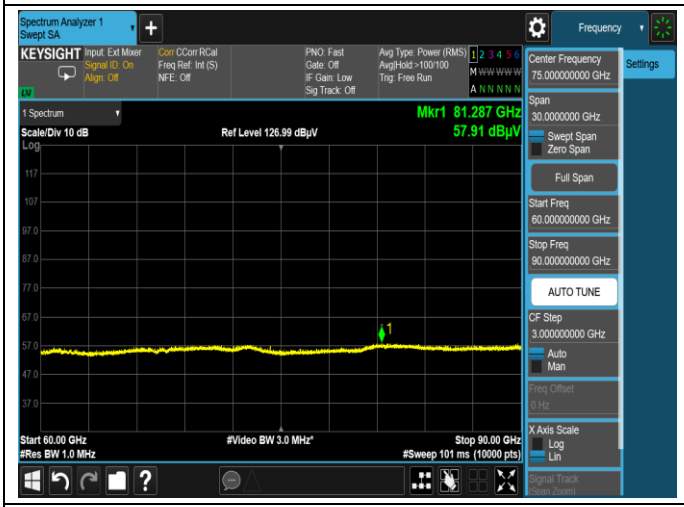
Frequency (GHz)	Distance (M)	Peak Value (dBuv/m)	Average Value (dBuv/m)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Polarization	Result
87.003	1	65.51	/	83.52	/	Horizontal	Pass
80.927	1	65.34	/	83.52	/	Vertical	Pass
81.287	1	/	57.91	/	63.52	Horizontal	Pass
82.436	1	/	57.92	/	63.52	Vertical	Pass



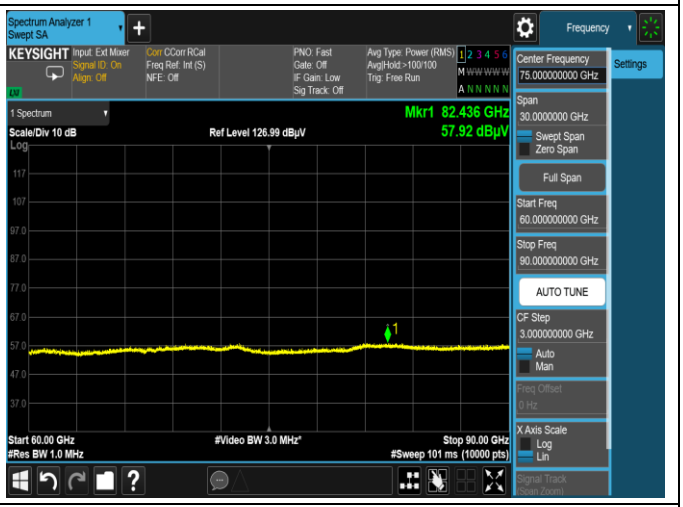
60GHz-90GHz-PK- Horizontal



60GHz-90GHz-PK-Vertical

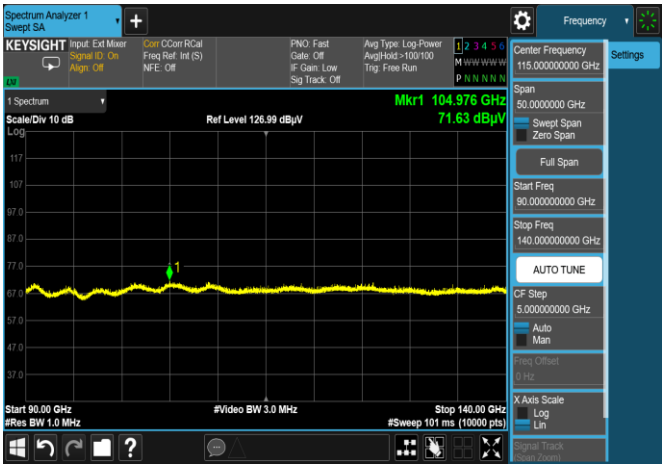


60GHz-90GHz-AV- Horizontal

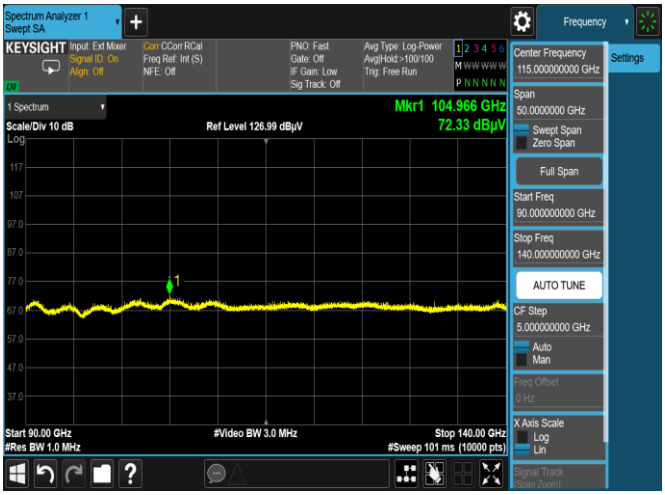


60GHz-90GHz-AV-Vertical

Frequency (GHz)	Distance (M)	Peak Value (dBuv/m)	Average Value (dBuv/m)	PK Limit (dBuV/m)	AV Limit (dBuV/m)	Polarization	Result
104.976	1	71.63	/	83.52	/	Horizontal	Pass
104.966	1	72.33	/	83.52	/	Vertical	Pass
106.217	1	/	62.30	/	63.52	Horizontal	Pass
105.192	1	/	62.66	/	63.52	Vertical	Pass

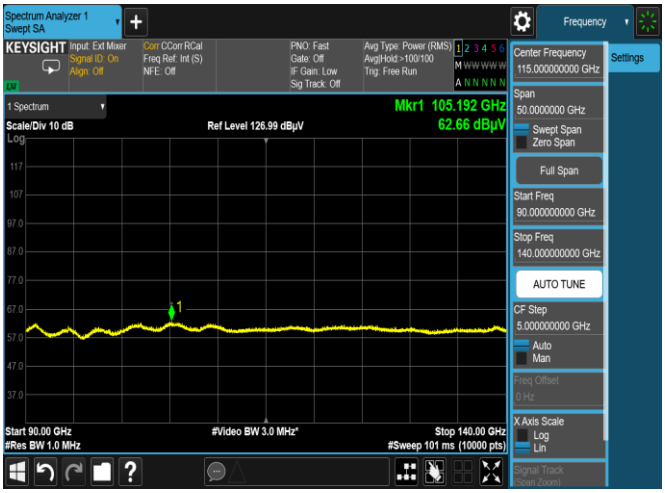


90GHz-140GHz-PK- Horizontal



90GHz-140GHz-PK-Vertical

90GHz-140GHz-AV- Horizontal



90GHz-140GHz-AV-Vertical

- End of the Report -