



# FCC RADIO TEST REPORT

**FCC ID** : 2AEUPBHASP001  
**Equipment** : Spotlight Cam Pro  
**Brand Name** : Ring  
**Model Name** : 5E62E9  
**Applicant** : Ring LLC  
12515 Cerise Ave, Hawthorne, CA 90250 USA  
**Manufacturer** : Goertek Inc.  
No.268 Dongfang Road High-Tech Industrial  
Development District, Weifang Shandong, China  
**Standard** : FCC Part 15 Subpart C §15.249

The product was received on May 27, 2022 and testing was performed from Jun. 06, 2022 to Jul. 12, 2022. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.

Approved by: Louis Wu

**Sporton International Inc. Wensan Laboratory**

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)



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### History of this test report

Report No.	Version	Description	Issued Date
FR1D1004	01	Initial issue of report	Jul. 15, 2022



### Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	2.1049	99% Occupied Bandwidth	Reporting only	-
3.2	15.249(a) 15.249(d)	Field Strength of Fundamental and Radiated Spurious Emission	Pass	1.60 dB under the limit at 24250.000 MHz
3.3	15.207	AC Conducted Emission	Pass	13.57 dB under the limit at 12.518 MHz
-	15.249(b)	Frequency Stability	Not Required	Note
3.4	15.203	Antenna Requirements	Pass	

**Note:** Only applicable to fixed point to point systems.

Declaration of Conformity:
1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
2. The measurement uncertainty please refer to report "Uncertainty of Evaluation".
Comments and Explanations:
The product specifications of the EUT presented in the report are declared by the manufacturer who shall take full responsibility for the authenticity.

**Reviewed by: Keven Cheng**  
**Report Producer: Lucy Wu**



# 1 General Description

## 1.1 Product Feature of Equipment Under Test

Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n, Wi-Fi 5GHz 802.11a/n, LoRa, and 24G Radar.

Product Feature	
Antenna Type	WLAN: Stamping Antenna Bluetooth: PIFA Antenna LoRa: PIFA Antenna 24GHz Radar: Patch Antenna

Antenna information		
24.05 GHz ~ 24.25 GHz	Peak Gain (dBi)	2

Remark: The EUT's information above is declared by manufacturer. Please refer to Comments and Explanations in report summary.

## 1.2 Modification of EUT

No modifications are made to the EUT during all test items.

## 1.3 Testing Location

Test Site	Sporton International Inc. Wensan Laboratory		
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855		
Test Site No.	Sporton Site No.		
	TH05-HY	CO07-HY	03CH19-HY
Test Engineer	Eric Jeng	Louis Chung	Eric Jeng
Temperature (°C)	23~25	23.4~25.1	22.3~24.9
Relative Humidity (%)	51~55	51.2~58.8	55.6~62.1

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC designation No.: TW3786



## **1.4 Applicable Standards**

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ FCC Part 15 Subpart C §15.249
- ♦ ANSI C63.10-2013
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.

**Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. The TAF code is not including all the FCC KDB listed without accreditation.



## 2 Test Configuration of Equipment Under Test

- a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction emission (150 kHz to 30 MHz), radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.10 exploratory test procedures and find Z plane as worst plane.
  
- b. AC power line Conducted Emission was tested under maximum output power.

### 2.1 Carrier Frequency and Test Mode

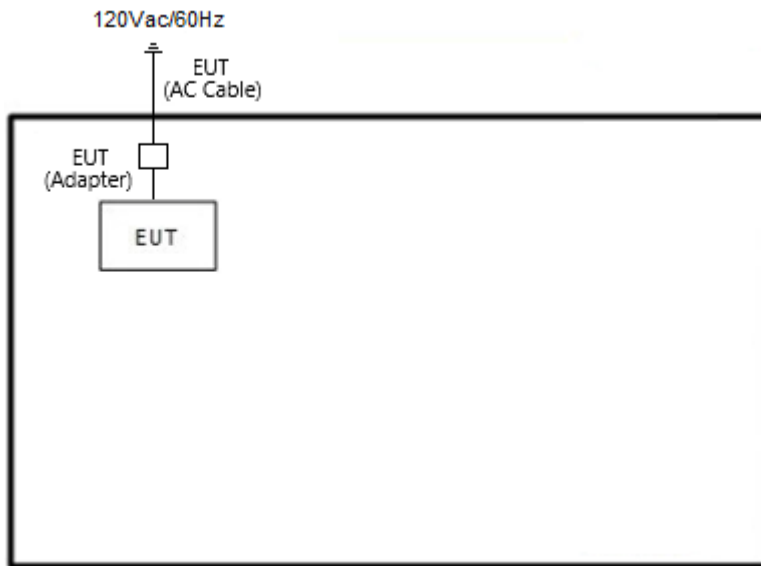
Frequency Band	Frequency (MHz)	Modulation
24.05-24.25 GHz	24060	CW
24.05-24.25 GHz	24150	CW
24.05-24.25 GHz	24240	CW

Note: The 99%OBW is tested by using FMCW, and the rest of test cases use CW mode in accordance with FCC Part 15.31(c).

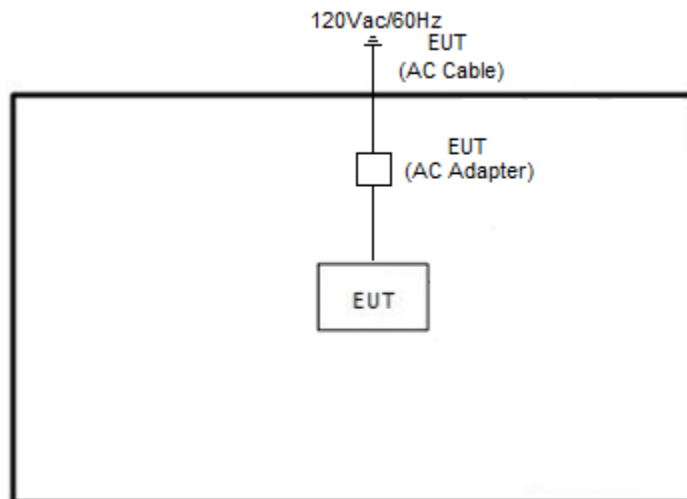
Test Cases	
<b>AC Conducted Emission</b>	Mode 1 :24G Radar TX + AC Adapter 1
<b>Remark:</b> For Radiated Test Cases, the tests were performed with Adapter 1, AC Cable 2 and Battery 1.	

## 2.2 Connection Diagram of Test System

### <AC Conducted Emission Mode>



### <WLAN Tx Mode>



## 2.3 EUT Operation Test Setup

The RF test items, utility "J-Link V6.88c" was installed in Notebook and connected to the EUT which was programmed in order to make the EUT get into the engineering modes for continuous transmitting signals.





### 3 Test Result

#### 3.1 99% Bandwidth Measurement

##### 3.1.1 Limit of 99% Bandwidth

For reference only.

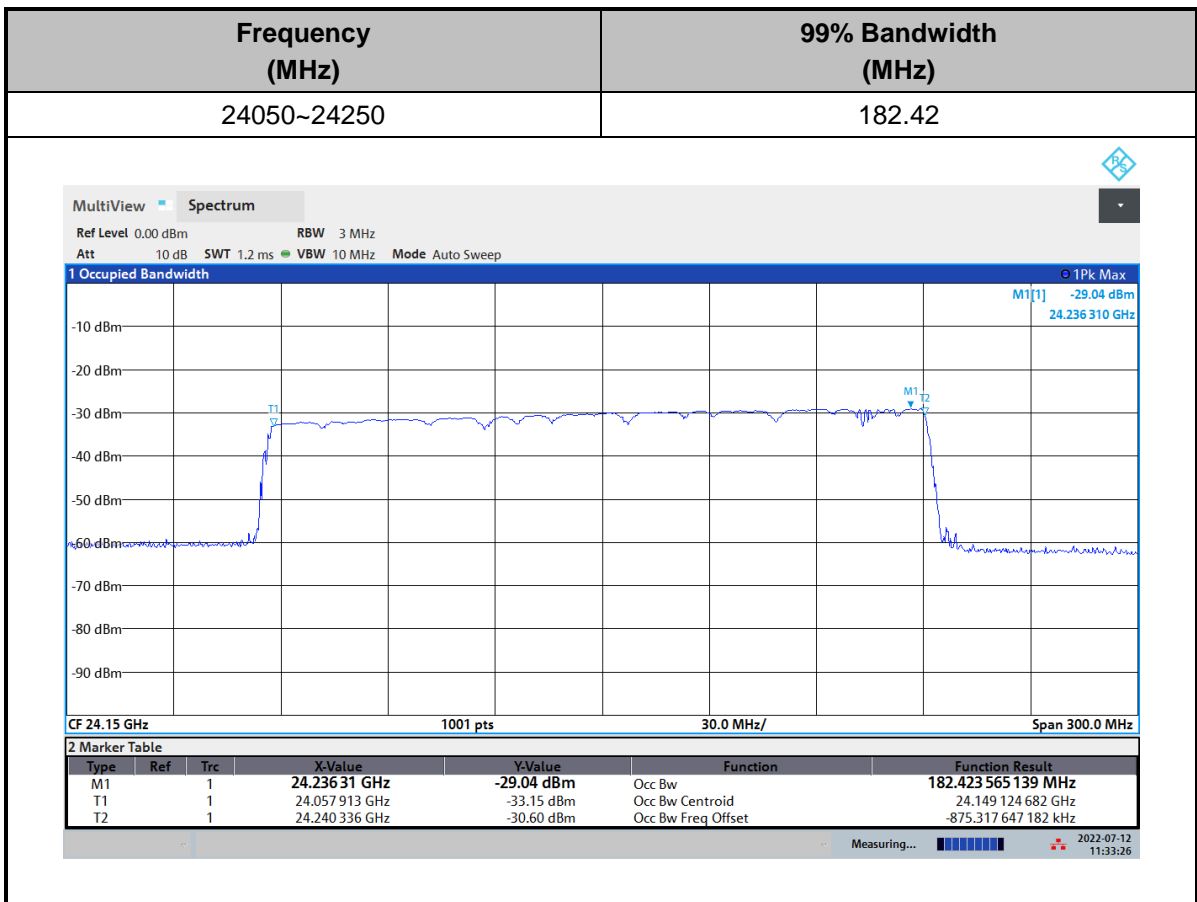
##### 3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

##### 3.1.3 Test Procedures

1. The testing follows the ANSI C63.10 Section 6.9.3.
2. Enable the EUT transmit continuously under FMCW mode.
3. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1-5% of the emission bandwidth and set the Video bandwidth (VBW)  $\geq 3 * RBW$ .
4. Measure and record the results in the test report.

##### 3.1.4 Test Result of 99% Occupied Bandwidth





### 3.2 Field Strength of Fundamental/Harmonics and Radiated Spurious Emission Measurement

#### 3.2.1 Limit

The field strength measured at 3 meters shall not exceed the limits in the following table:

Rules and specifications		FCC CFR 47 Part 15 section 15.249	
Description		Field strength of fundamental	
24.0~24.25 (GHz)	Field strength of fundamental (millivolts/meter) at 3m	Field strength of fundamental (dBµV/m) at 3m	
Average limits	250	107.95	
Peak limits	-	127.95	
Description		Field strength of harmonics	
24.0~24.25 (GHz)	Field strength of harmonics (microvolts/meter) at 3m	Field strength of harmonics (dBµV/m) at 3m	
Average limits	2500	67.95	
Peak limits	-	87.95	
Note: Above 18GHz, the distance correction factor is used, 18GHz to 90GHz : 20log (1m/3m)= -9.54dB ; 90GHz – 100GHz: 20log (0.5m/3m)= -15.56dB.			

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

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

#### 3.2.2 Measuring Instruments

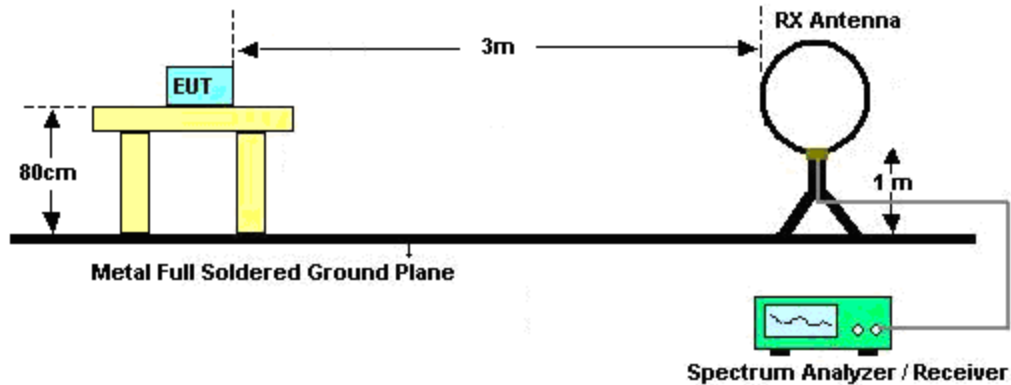
See list of measuring equipment of this test report.

### 3.2.3 Test Procedures

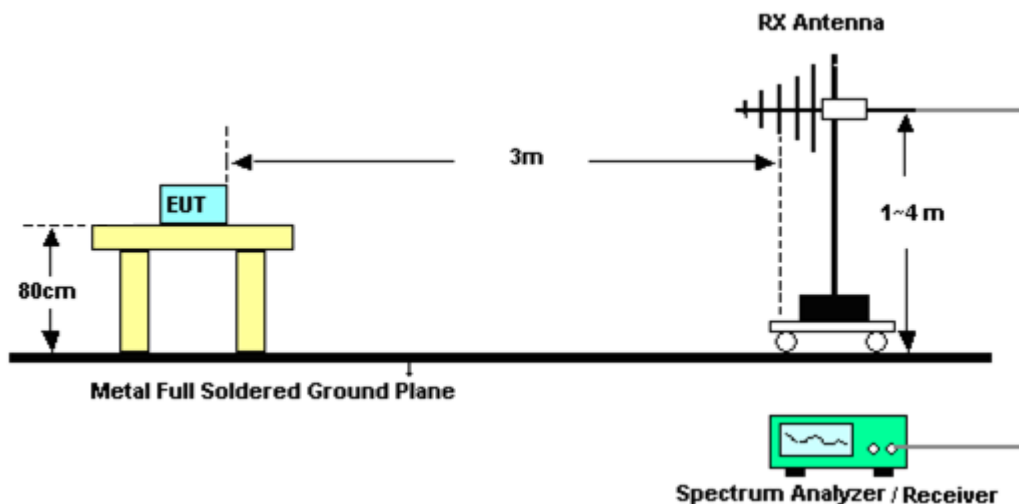
For emissions 9KHz to 40GHz, ANSI C63.10 Section 6.3 Radiated emissions testing follows, and for emissions 40GHz to 100GHz, ANSI C63.10 Section 9.8 and 9.9 radiated measurements follows. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and with 1.5 meter height for frequency above 1GHz, and was arranged test distance as shown in Section 3.4 Test Setup, respectively. For emissions, test results are attenuated more than 20 dB below the permissible value need not be reported in accordance with FCC Part 15.31(O).

### 3.2.4 Test Setup

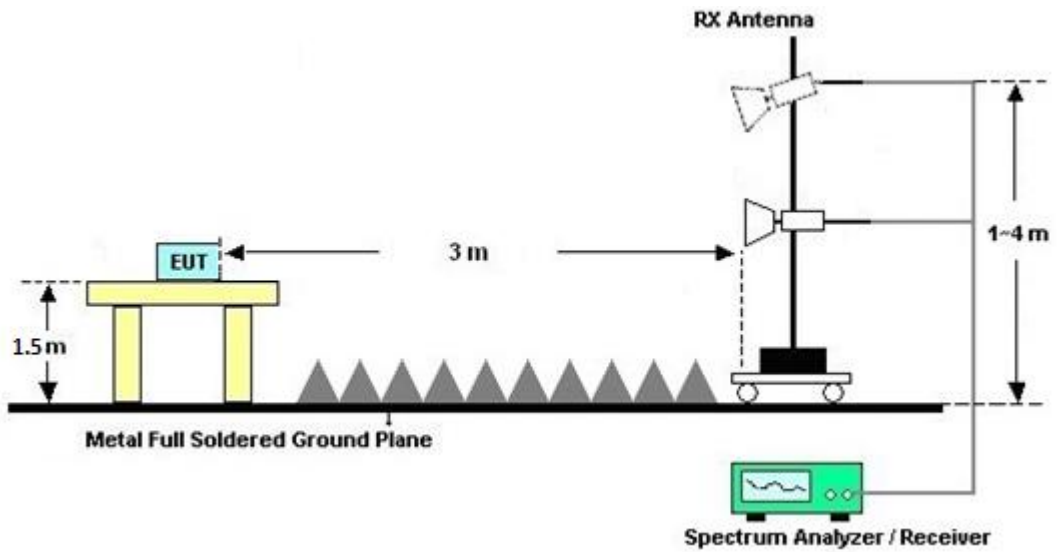
<For radiated emissions below 30MHz>



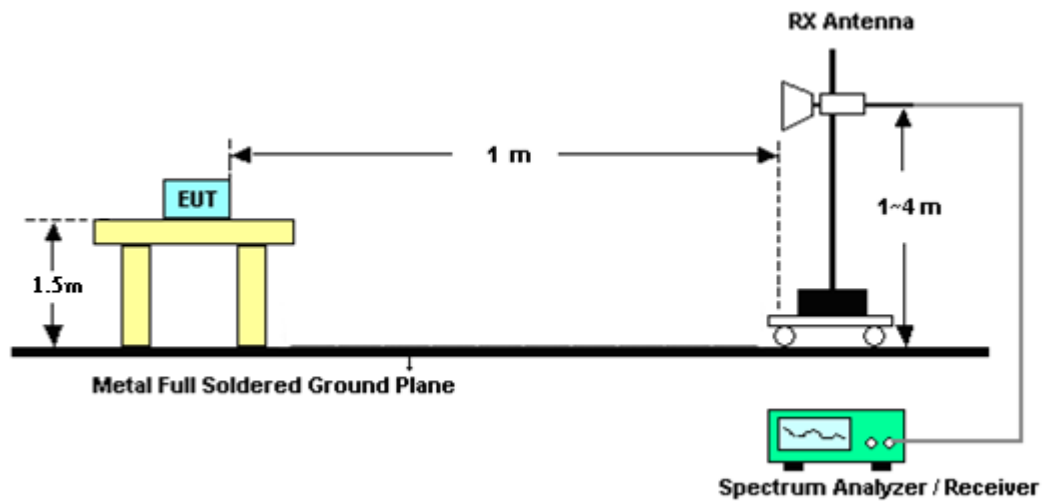
<For radiated emissions from 30MHz ~ 1GHz>



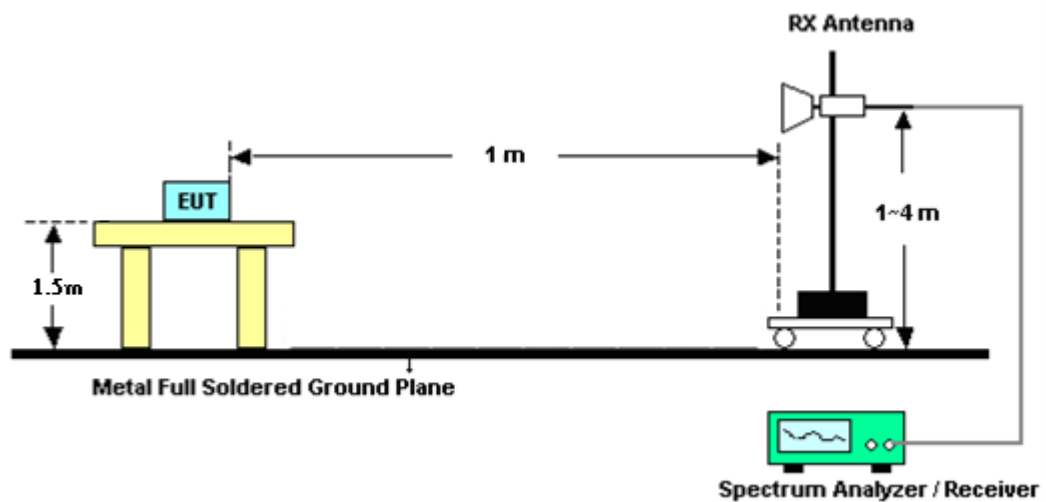
<For radiated emissions from 1 ~ 18GHz>



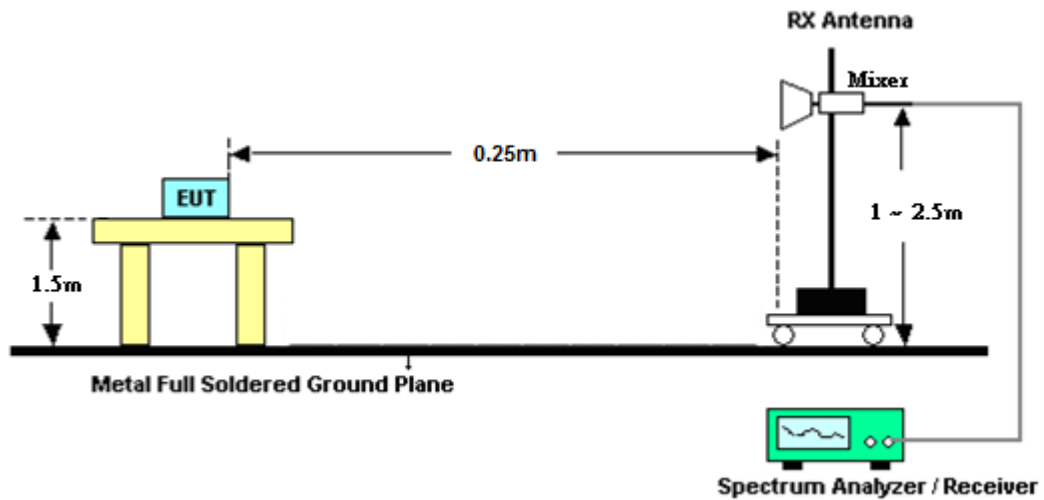
<For radiated emissions from 18 ~ 40GHz>



<For radiated emissions above 40 ~ 90GHz>



<For radiated emissions above 90 ~ 100GHz>



### 3.2.5 Test Results of Radiated Spurious Emissions (9 kHz ~ 30 MHz)

The low frequency, which starts from 9 kHz to 30 MHz, is pre-scanned and the result which is 20 dB lower than the limit line is not reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result comes out very similar.

### 3.2.6 Test Result of Field Strength of Fundamental and Radiated Spurious Emission

Please refer to Appendix B and C.



### 3.3 AC Conducted Emission Measurement

#### 3.3.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

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.

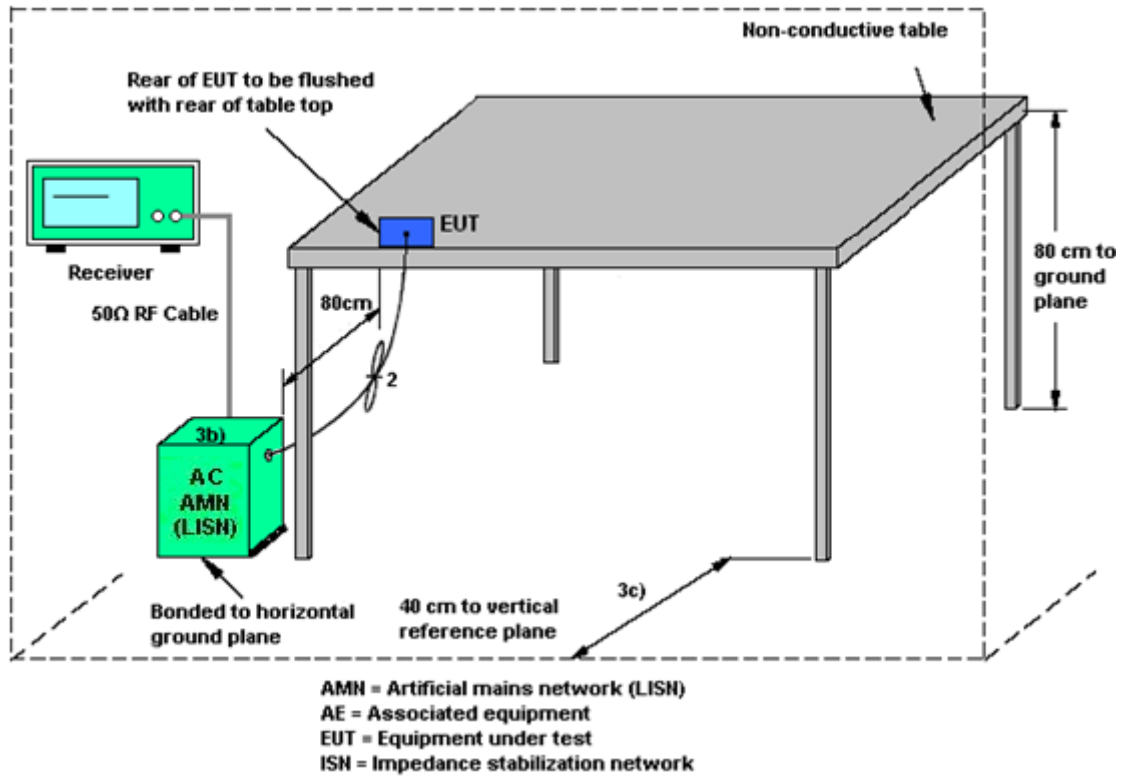
#### 3.3.2 Measuring Instruments

See list of measuring equipment of this test report.

#### 3.3.3 Test Procedures

1. Connect EUT to the power mains through a line impedance stabilization network (LISN).
2. All the support units are connecting to the other LISN.
3. The LISN provides 50 ohm coupling impedance for the measuring instrument.
4. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
5. Both sides of AC line were checked for maximum conducted interference.
6. The frequency range from 150 kHz to 30 MHz was searched.
7. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF bandwidth = 9kHz) with Maximum Hold Mode.

### 3.3.4 Test Setup



### 3.3.5 Test Result of AC Conducted Emission

Please refer to Appendix A.



## **3.4 Antenna Requirements**

### **3.4.1 Limit**

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. 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 shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited.

### **3.4.2 Antenna Connector Construction**

Embedded in Antenna.





## 4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Rohde & Schwarz	FSV3044	101009	9kHz to 44GHz	Nov. 11, 2021	Jun. 06, 2022~ Jun. 22, 2022	Nov. 10, 2022	Radiation (03CH19-HY)
Bilog Antenna	TESEQ	CBL 6111D&00802 N1D01N-06	55608 & 09	30MHz~1GHz	Oct. 17, 2021	Jun. 06, 2022~ Jun. 11, 2022	Oct. 16, 2022	Radiation (03CH19-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-02294	1GHz~18GHz	Jun. 23, 2021	Jun. 06, 2022~ Jun. 11, 2022	Jun. 22, 2022	Radiation (03CH19-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA9170	BBHA917098 0	18GHz-40GHz	Jan. 25, 2022	Jun. 06, 2022~ Jun. 11, 2022	Jan. 24, 2023	Radiation (03CH19-HY)
Preamplifier	COM-POWER	PAM-103	18020199	1MHz-1GHz	Jan. 03, 2022	Jun. 06, 2022~ Jun. 11, 2022	Jan. 02, 2023	Radiation (03CH19-HY)
Preamplifier	EMEC	EM1G18G	060387	1GHz~18GHz	Sep. 02, 2021	Jun. 06, 2022~ Jun. 11, 2022	Sep. 01, 2022	Radiation (03CH19-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 24, 2021	Jun. 06, 2022~ Jun. 11, 2022	Dec. 23, 2022	Radiation (03CH19-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	519226/2,804 014/2,804026 /2	30MHz~40GHz	Jan. 19, 2022	Jun. 06, 2022~ Jun. 11, 2022	Jan. 18, 2023	Radiation (03CH19-HY)
Harmonic Mixer	Rohde & Schwarz	RPG FS-Z60	100986	40GHz to 60GHz	Apr. 09, 2021	Jun. 16, 2022~ Jun. 22, 2022	Apr. 08, 2024	Radiation (03CH19-HY)
Harmonic Mixer	Rohde & Schwarz	RPG FS-Z75	101557	50 GHz to 75 GHz	Apr. 06, 2021	Jun. 16, 2022~ Jun. 22, 2022	Apr. 05, 2024	Radiation (03CH19-HY)
Harmonic Mixer	Rohde & Schwarz	FSZ-90	101811	60GHz to 90GHz	Nov. 16, 2021	Jun. 16, 2022~ Jun. 22, 2022	Nov. 15, 2024	Radiation (03CH19-HY)
Harmonic Mixer	Rohde & Schwarz	RPG FS-Z140	101128	90GHz to 140GHz	Oct. 26, 2020	Jun. 16, 2022~ Jun. 22, 2022	Oct. 25, 2023	Radiation (03CH19-HY)
Antenna	Quinstar	QWH-UPRR00	QWH-UPRR0 0-01	40-60 GHz	Jul. 06, 2021	Jun. 16, 2022~ Jun. 22, 2022	Jul. 05, 2024	Radiation (03CH19-HY)
Antenna	Quinstar	QWH-VPRR00	1371800009	50-75 GHz	Jul. 06, 2021	Jun. 16, 2022~ Jun. 22, 2022	Jul. 05, 2024	Radiation (03CH19-HY)
Antenna	Quinstar	QWH-EPRR00	1372000000	60-90 GHz	Jul. 06, 2021	Jun. 16, 2022~ Jun. 22, 2022	Jul. 05, 2024	Radiation (03CH19-HY)
Antenna	Quinstar	QWH-FPRR00	1011500008	90-140 GHz	Jul. 06, 2021	Jun. 16, 2022~ Jun. 22, 2022	Jul. 05, 2024	Radiation (03CH19-HY)
Solid State Amplifier	Quinstar	QLW-4060503 0-00	953500005	40 ~ 60 GHz	Jul. 06, 2021	Jun. 16, 2022~ Jun. 22, 2022	Jul. 05, 2024	Radiation (03CH19-HY)
Solid State Amplifier	Quinstar	QLW-5075453 0-12	953600006	50 ~ 75 GHz	Jul. 06, 2021	Jun. 16, 2022~ Jun. 22, 2022	Jul. 05, 2024	Radiation (03CH19-HY)
Solid State Amplifier	Quinstar	QLW-7090503 0-12	953700007	70 ~ 90 GHz	Jul. 06, 2021	Jun. 16, 2022~ Jun. 22, 2022	Jul. 05, 2024	Radiation (03CH19-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	801589/2	N/A	Nov. 30, 2021	Jun. 16, 2022~ Jun. 22, 2022	Nov. 29, 2022	Radiation (03CH19-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ACPOWER	AFC-11003G	F317040033	N/A	N/A	Jun. 27, 2022	N/A	Conduction (CO07-HY)
Software	Rohde & Schwarz	EMC32 V10.30	N/A	N/A	N/A	Jun. 27, 2022	N/A	Conduction (CO07-HY)
Pulse Limiter	SCHWARZBECK	VTSD 9561-F N	9561-F N00373	9kHz-200MHz	Oct. 29, 2021	Jun. 27, 2022	Oct. 28, 2022	Conduction (CO07-HY)
RF Cable	HUBER + SUHNER	RG 214/U	1358175	9kHz~30MHz	Mar. 16, 2022	Jun. 27, 2022	Mar. 15, 2023	Conduction (CO07-HY)
Two-Line V-Network	TESEQ	NNB 51	45051	N/A	Feb. 16, 2022	Jun. 27, 2022	Feb. 15, 2023	Conduction (CO07-HY)
EMI Test Receiver	Rohde & Schwarz	ESC17	100724	9kHz~7GHz	Feb. 24, 2022	Jun. 27, 2022	Feb. 23, 2023	Conduction (CO07-HY)
Hygrometer	TECPEL	DTM-303A	TP201996	N/A	Nov. 16, 2021	Jul. 12, 2022	Nov. 15, 2022	Conducted (TH05-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	519226/2,804014/2,804026 /2	30MHz~40GHz	Jan. 19, 2022	Jul. 12, 2022	Jan. 18, 2023	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV3044	101009	9kHz to 44GHz	Nov. 11, 2021	Jul. 12, 2022	Nov. 10, 2022	Conducted (TH05-HY)



## 5 Uncertainty of Evaluation

### Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	2.30 dB
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### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.90 dB
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### Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.10 dB
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### Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.70 dB
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### Uncertainty of Radiated Emission Measurement (40 GHz ~ 140 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	5.74 dB
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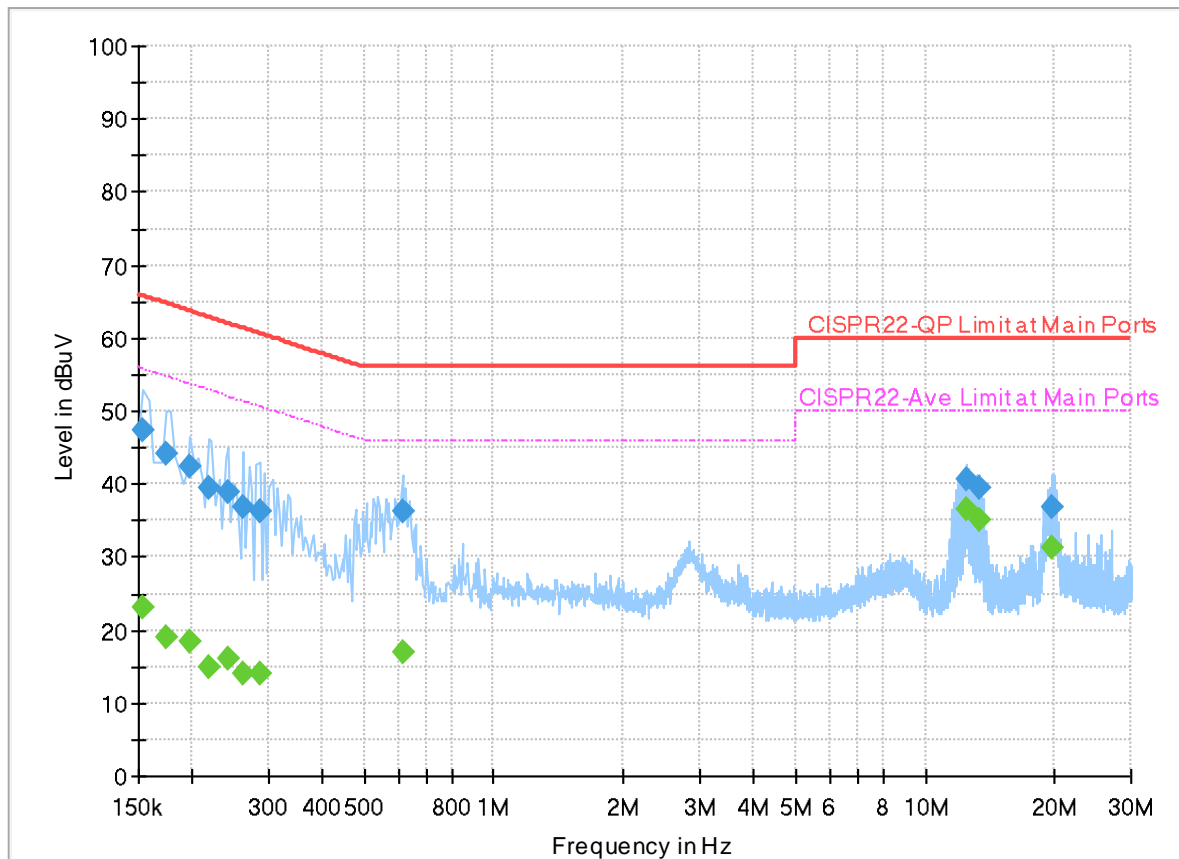


## **Appendix A. AC Conducted Emission Test Results**

## EUT Information

Report NO : 1D1004  
 Test Mode : Mode 1  
 Test Voltage : 120Vac/60Hz  
 Phase : Line

Full Spectrum



## Final\_Result

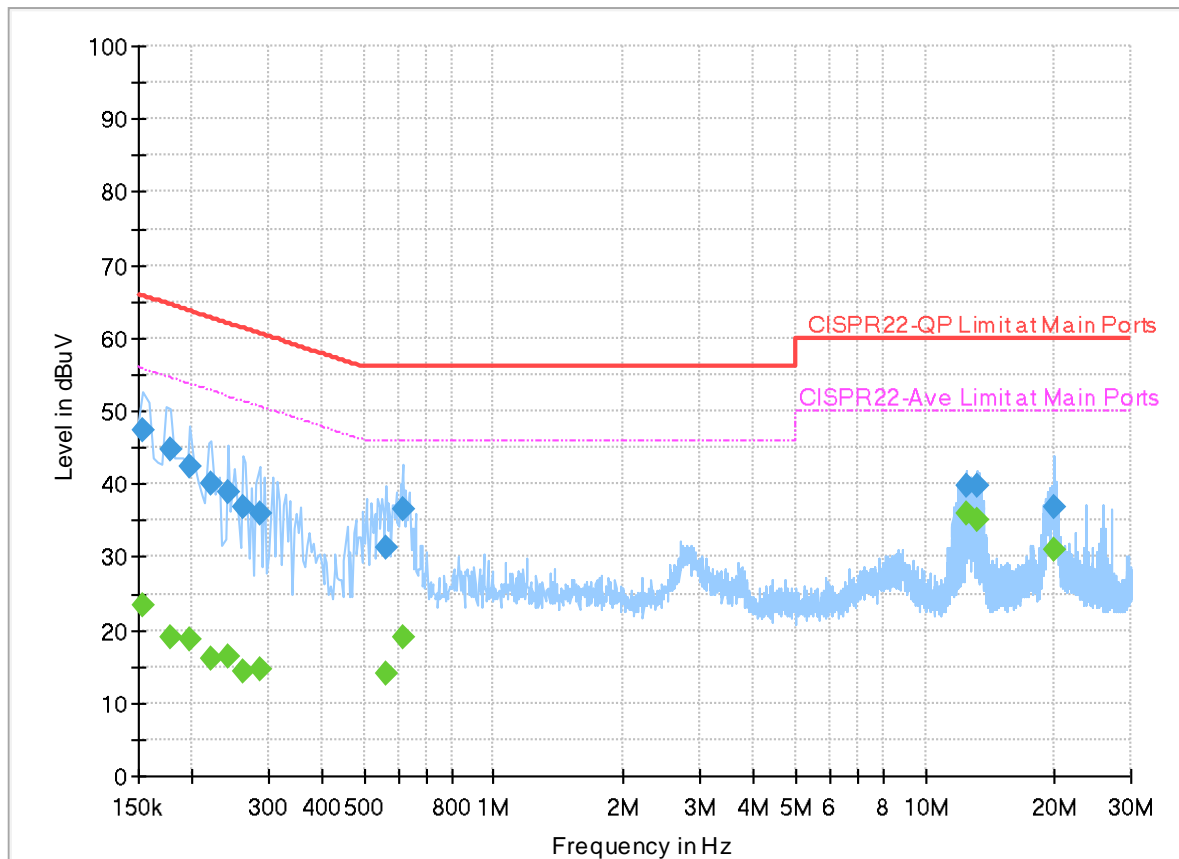
Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.154000	---	23.07	55.78	32.71	L1	OFF	20.0
0.154000	47.33	---	65.78	18.45	L1	OFF	20.0
0.174000	---	18.99	54.77	35.78	L1	OFF	20.0
0.174000	44.10	---	64.77	20.67	L1	OFF	20.0
0.198000	---	18.42	53.69	35.27	L1	OFF	20.0
0.198000	42.49	---	63.69	21.20	L1	OFF	20.0
0.218000	---	14.92	52.90	37.98	L1	OFF	20.0
0.218000	39.58	---	62.90	23.32	L1	OFF	20.0
0.242000	---	16.10	52.03	35.93	L1	OFF	20.0
0.242000	39.02	---	62.03	23.01	L1	OFF	20.0
0.262000	---	13.91	51.37	37.46	L1	OFF	20.0
0.262000	36.93	---	61.37	24.44	L1	OFF	20.0
0.286000	---	13.96	50.64	36.68	L1	OFF	20.0
0.286000	36.23	---	60.64	24.41	L1	OFF	20.0
0.614000	---	16.82	46.00	29.18	L1	OFF	20.0
0.614000	36.40	---	56.00	19.60	L1	OFF	20.0
12.518000	---	36.43	50.00	13.57	L1	OFF	20.2
12.518000	40.56	---	60.00	19.44	L1	OFF	20.2
13.362000	---	35.05	50.00	14.95	L1	OFF	20.2

13.362000	39.55	---	60.00	20.45	L1	OFF	20.2
19.622000	---	31.29	50.00	18.71	L1	OFF	20.2
19.622000	36.87	---	60.00	23.13	L1	OFF	20.2

## EUT Information

Report NO : 1D1004  
 Test Mode : Mode 1  
 Test Voltage : 120Vac/60Hz  
 Phase : Neutral

Full Spectrum



## Final\_Result

Frequency (MHz)	QuasiPeak (dBuV)	CAverage (dBuV)	Limit (dBuV)	Margin (dB)	Line	Filter	Corr. (dB)
0.154000	---	23.40	55.78	32.38	N	OFF	20.0
0.154000	47.43	---	65.78	18.35	N	OFF	20.0
0.178000	---	19.02	54.58	35.56	N	OFF	20.0
0.178000	44.67	---	64.58	19.91	N	OFF	20.0
0.198000	---	18.75	53.69	34.94	N	OFF	20.0
0.198000	42.53	---	63.69	21.16	N	OFF	20.0
0.222000	---	16.03	52.74	36.71	N	OFF	20.0
0.222000	40.04	---	62.74	22.70	N	OFF	20.0
0.242000	---	16.47	52.03	35.56	N	OFF	20.0
0.242000	38.78	---	62.03	23.25	N	OFF	20.0
0.262000	---	14.28	51.37	37.09	N	OFF	20.0
0.262000	36.72	---	61.37	24.65	N	OFF	20.0
0.286000	---	14.60	50.64	36.04	N	OFF	20.0
0.286000	36.00	---	60.64	24.64	N	OFF	20.0
0.562000	---	13.95	46.00	32.05	N	OFF	20.0
0.562000	31.37	---	56.00	24.63	N	OFF	20.0
0.614000	---	18.98	46.00	27.02	N	OFF	20.0
0.614000	36.47	---	56.00	19.53	N	OFF	20.0
12.518000	---	35.91	50.00	14.09	N	OFF	20.2

12.518000	39.68	---	60.00	20.32	N	OFF	20.2
13.266000	---	35.05	50.00	14.95	N	OFF	20.2
13.266000	39.70	---	60.00	20.30	N	OFF	20.2
19.998000	---	31.10	50.00	18.90	N	OFF	20.3
19.998000	36.79	---	60.00	23.21	N	OFF	20.3





## Appendix B. Radiated Spurious Emission

Test Engineer :	Eric Jeng	Temperature :	22.3~24.9°C
		Relative Humidity :	55.6~62.1%

### 24GHz 24000~24250MHz (Field strength of fundamental @ 3m)

24GHz	Note	Frequency ( MHz )	Level ( dBµV/m )	Over Limit ( dB )	Limit Line ( dBµV/m )	Read Level ( dBµV )	Antenna Factor ( dB/m )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. ( P/A )	Pol. ( H/V )
24.06GHz		23544	42.67	-31.33	74	38.63	39.21	27.67	53.3	172	48	P	H
		23500	27.98	-26.02	54	23.89	39.3	27.63	53.3	172	48	A	H
	*	24058	89.67	-38.28	127.95	85.31	39.13	28.09	53.32	172	48	P	H
	*	24058	87.22	-20.78	108	82.86	39.13	28.09	53.32	172	48	A	H
		24826	41.6	-32.4	74	37	39.06	28.58	53.5	172	48	P	H
		24788	27.94	-26.06	54	23.4	39.03	28.55	53.5	172	48	A	H
		23584	41.96	-32.04	74	37.97	39.13	27.7	53.3	166	355	P	V
		23500	26.4	-27.6	54	22.31	39.3	27.63	53.3	166	355	A	V
	*	24058	96.69	-31.26	127.95	92.33	39.13	28.09	53.32	166	355	P	V
	*	24058	95.47	-12.53	108	91.11	39.13	28.09	53.32	166	355	A	V
		24878	41.66	-32.34	74	36.99	39.1	28.61	53.5	166	355	P	V
		24750	26.33	-27.67	54	21.84	39	28.53	53.5	166	355	A	V
24.15GHz		23996	47.71	-26.29	74	43.31	39.19	28.05	53.3	166	33	P	H
		23940	37.99	-16.01	54	33.73	39.1	28	53.3	166	33	A	H
	*	24148	92.37	-35.58	127.95	88.11	39.02	28.14	53.36	166	33	P	H
	*	24148	91.08	-16.92	108	86.82	39.02	28.14	53.36	166	33	A	H
		25060	49.21	-24.79	74	44.32	39.2	28.72	53.49	166	33	P	H
		25460	39.06	-14.94	54	34.33	38.78	28.9	53.41	166	33	A	H
		23900	48.18	-25.82	74	44.01	39.04	27.97	53.3	166	355	P	V
		23914	37.83	-16.17	54	33.63	39.06	27.98	53.3	166	355	A	V
	*	24148	98.4	-29.55	127.95	94.14	39.02	28.14	53.36	166	355	P	V
	*	24148	97.93	-10.07	108	93.67	39.02	28.14	53.36	166	355	A	V
		25288	48.82	-25.18	74	43.86	39.12	28.82	53.44	166	355	P	V
		25498	38.79	-15.21	54	34.12	38.7	28.91	53.4	166	355	A	V



24GHz	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB/m )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. ( P/A )	Pol. ( H/V )
24.24GHz		23508	42.04	-31.96	74	37.96	39.28	27.64	53.3	166	355	P	H
		23504	27.75	-26.25	54	23.67	39.29	27.63	53.3	166	355	A	H
	*	24238	89.54	-38.41	127.95	85.37	38.91	28.2	53.4	166	355	P	H
	*	24238	88.99	-19.01	108	84.82	38.91	28.2	53.4	166	355	A	H
		24250	55.38	-18.62	74	51.21	38.9	28.21	53.4	166	355	P	H
		24250	45.18	-8.82	54	41.01	38.9	28.21	53.4	166	355	A	H
		23500	42.31	-31.69	74	38.22	39.3	27.63	53.3	162	0	P	V
		23502	26.44	-27.56	54	22.35	39.3	27.63	53.3	162	0	A	V
	*	24238	97.08	-30.87	127.95	92.91	38.91	28.2	53.4	162	0	P	V
	*	24238	96.59	-11.41	108	92.42	38.91	28.2	53.4	162	0	A	V
		24250	65.16	-8.84	74	60.99	38.9	28.21	53.4	162	0	P	V
		24250	52.4	-1.6	54	48.23	38.9	28.21	53.4	162	0	A	V
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are Pass against Peak and Average limit line.</li> <li>The general radiated emission limits in §15.209 is lesser attenuation as limit.</li> <li>The maximized peak level complies with the average limit, unnecessary to perform an average measurement</li> </ol>												



**24GHz 24000~24250MHz  
(Radiated Spurious Emission @ 3m)**

24GHz	Note	Frequency ( MHz )	Level ( dBµV/m )	Over Limit ( dB )	Limit Line ( dBµV/m )	Read Level ( dBµV )	Antenna Factor ( dB/m )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. ( P/A )	Pol. ( H/V )
24.06GHz		17916	56.97	-17.03	74	37.86	41.21	24.14	46.24	-	-	P	H
		39926	51.32	-22.68	74	35.88	43.27	36.13	54.42	-	-	P	H
		40000	37.9	-16.1	54	22.29	43.3	36.15	54.3	-	-	A	H
													H
		17960	56.02	-17.98	74	36.61	41.52	24.18	46.29	-	-	P	V
		40000	51.5	-22.5	74	35.89	43.3	36.15	54.3	-	-	P	V
		40000	37.92	-16.08	54	22.31	43.3	36.15	54.3	-	-	A	V
													V
24.15GHz		17988	55.98	-18.02	74	36.39	41.72	24.2	46.33	-	-	P	H
		39852	51.82	-22.18	74	36.55	43.24	36.11	54.54	-	-	A	H
		39498	40.1	-13.9	54	25.33	43.4	36.01	55.1	-	-	P	H
												A	H
		17986	56.24	-17.76	74	36.66	41.7	24.2	46.32	-	-	P	V
		39988	51.48	-22.52	74	35.89	43.3	36.15	54.32	-	-	A	V
		40000	37.82	-16.18	54	22.21	43.3	36.15	54.3	-	-	P	V
												A	V
24.24GHz		17984	56.38	-17.62	74	36.81	41.69	24.2	46.32	-	-	P	H
		39958	51.92	-22.08	74	36.41	43.28	36.14	54.37	-	-	A	H
		40000	38.37	-15.63	54	22.76	43.3	36.15	54.3	-	-	P	H
												A	H
		17996	56.53	-17.47	74	36.89	41.77	24.21	46.34	-	-	P	V
		39850	50.39	-23.61	74	35.12	43.24	36.11	54.54	-	-	A	V
		40000	37.92	-16.08	54	22.31	43.3	36.15	54.3	-	-	P	V
												A	V
<b>Remark</b>	<ol style="list-style-type: none"> <li>No other spurious found.</li> <li>All results are Pass against Peak and Average limit line.</li> <li>The general radiated emission limits in §15.209 is lesser attenuation as limit.</li> <li>The maximized peak level complies with the average limit, unnecessary to perform an average measurement</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only</li> </ol>												



**24GHz 24000~24250MHz**  
**(Radiated Spurious Emission & Harmonic @ 3m)**

24GHz	Note	Frequency ( GHz )	Level ( dB $\mu$ V/m )	Over Limit ( dB )	Limit Line ( dB $\mu$ V/m )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. (P/A)	Pol. (H/V)
24.06GHz		48.12	50.26	-37.69	87.95	-	-	P	H
		48.12	41.30	-26.65	67.95	-	-	A	H
		42.83	55.48	-18.52	74	-	-	P	H
		42.17	44.05	-9.95	54	-	-	A	H
		72.18	57.84	-30.11	87.95	-	-	P	H
		72.18	47.24	-20.71	67.95	-	-	A	H
		74.87	63.22	-10.78	74	-	-	P	H
		75.00	49.90	-4.10	54	-	-	A	H
		83.10	54.72	-19.28	74	-	-	P	H
		82.07	43.81	-10.19	54	-	-	A	H
		96.24	55.92	-32.03	87.95	-	-	P	H
		96.24	47.38	-20.57	67.95	-	-	A	H
		91.97	62.45	-11.55	74	-	-	P	H
		92.22	50.66	-3.34	54	-	-	A	H



24GHz	Note	Frequency ( GHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. (P/A)	Pol. (H/V)
<b>24.06GHz</b>		48.12	51.19	-36.76	87.95	-	-	P	V
		48.12	41.64	-26.31	67.95	-	-	A	V
		42.88	55.33	-18.67	74	-	-	P	V
		42.29	44.05	-9.95	54	-	-	A	V
		72.18	59.79	-28.16	87.95	-	-	P	V
		72.18	47.08	-20.87	67.95	-	-	A	V
		74.99	63.24	-10.76	74	-	-	P	V
		75.00	50.07	-3.93	54	-	-	A	V
		83.07	54.62	-19.38	74	-	-	P	V
		81.99	43.60	-10.40	54	-	-	A	V
		96.24	54.85	-33.10	87.95	-	-	P	V
		96.24	47.12	-20.83	67.95	-	-	A	V
		91.97	61.53	-12.47	74	-	-	P	V
		92.22	50.67	-3.33	54	-	-	A	V
<b>Remark</b>	<ol style="list-style-type: none"> <li>Except above, no other spurious found.</li> <li>All results are Pass against Peak and Average limit line.</li> <li>Test plots shown in the Annex B use closer distance and above final results are extrapolated to the distance specified by the limit, 3m, by offset with distance correction factor.</li> <li>The maximized peak level complies with the average limit, unnecessary to perform an average measurement</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only</li> </ol>								



24GHz	Note	Frequency ( GHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. (P/A)	Pol. (H/V)
24.15GHz		48.30	49.06	-38.89	87.95	-	-	P	H
		48.30	41.11	-26.84	67.95	-	-	A	H
		42.80	54.87	-19.13	74	-	-	P	H
		42.14	44.02	-9.98	54	-	-	A	H
		72.45	58.80	-29.15	87.95	-	-	P	H
		72.45	47.74	-20.21	67.95	-	-	A	H
		73.97	63.87	-10.13	74	-	-	P	H
		75.00	50.34	-3.66	54	-	-	A	H
		76.40	54.18	-19.82	74	-	-	P	H
		77.73	43.72	-10.28	54	-	-	A	H
		96.60	55.26	-32.69	87.95	-	-	P	H
		96.60	46.57	-21.38	67.95	-	-	A	H
		91.74	62.67	-11.33	74	-	-	P	H
		91.93	50.71	-3.29	54	-	-	A	H



24GHz	Note	Frequency ( GHz )	Level ( dBµV/m )	Over Limit ( dB )	Limit Line ( dBµV/m )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. ( P/A )	Pol. ( H/V )
24.15GHz		48.30	49.14	-38.81	87.95	-	-	P	V
		48.30	41.34	-26.61	67.95	-	-	A	V
		56.43	54.85	-19.15	74	-	-	P	V
		42.03	44.07	-9.93	54	-	-	A	V
		72.45	57.38	-30.57	87.95	-	-	P	V
		72.45	47.17	-20.78	67.95	-	-	A	V
		74.75	62.95	-11.05	74	-	-	P	V
		75.00	49.93	-4.07	54	-	-	A	V
		77.71	54.45	-19.55	74	-	-	P	V
		77.72	43.74	-10.26	54	-	-	A	V
		96.60	54.97	-32.98	87.95	-	-	P	V
		96.60	46.81	-21.14	67.95	-	-	A	V
		92.00	61.64	-12.36	74	-	-	P	V
		92.17	50.61	-3.39	54	-	-	A	V
Remark	<ol style="list-style-type: none"> <li>Except above, no other spurious found.</li> <li>All results are Pass against Peak and Average limit line.</li> <li>Test plots shown in the Annex B use closer distance and above final results are extrapolated to the distance specified by the limit, 3m, by offset with distance correction factor.</li> <li>The maximized peak level complies with the average limit, unnecessary to perform an average measurement</li> <li>The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only</li> </ol>								



24GHz	Note	Frequency ( GHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. (P/A)	Pol. (H/V)
24.24GHz		48.48	48.14	-39.81	87.95	-	-	P	H
		48.48	41.16	-26.79	67.95	-	-	A	H
		42.22	55.28	-18.72	74	-	-	P	H
		42.36	44.07	-9.93	54	-	-	A	H
		72.72	56.98	-30.97	87.95	-	-	P	H
		72.72	46.54	-21.41	67.95	-	-	A	H
		74.21	63.14	-10.86	74	-	-	P	H
		75.00	49.99	-4.01	54	-	-	A	H
		82.08	53.89	-20.11	74	-	-	P	H
		77.64	43.59	-10.41	54	-	-	A	H
		96.96	56.31	-31.64	87.95	-	-	P	H
		96.96	46.40	-21.55	67.95	-	-	A	H
		92.23	62.51	-11.49	74	-	-	P	H
		91.99	50.68	-3.32	54	-	-	A	H





24GHz	Note	Frequency ( GHz )	Level ( dBµV/m )	Over Limit ( dB )	Limit Line ( dBµV/m )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. ( P/A )	Pol. ( H/V )
24.24GHz		48.48	47.85	-40.10	87.95	-	-	P	V
		48.48	41.30	-26.65	67.95	-	-	A	V
		40.64	54.59	-19.41	74	-	-	P	V
		42.22	44.00	-10.00	54	-	-	A	V
		72.72	58.08	-29.87	87.95	-	-	P	V
		72.72	46.92	-21.03	67.95	-	-	A	V
		74.98	63.42	-10.58	74	-	-	P	V
		75.00	49.77	-4.23	54	-	-	A	V
		83.00	54.34	-19.66	74	-	-	P	V
		77.63	43.60	-10.40	54	-	-	A	V
		96.96	54.91	-33.04	87.95	-	-	P	V
		96.96	46.15	-21.80	67.95	-	-	A	V
		91.53	62.00	-12.00	74	-	-	P	V
	92.00	50.74	-3.26	54	-	-	A	V	
Remark	<ol style="list-style-type: none"> <li>1. Except above, no other spurious found.</li> <li>2. All results are Pass against Peak and Average limit line.</li> <li>3. Test plots shown in the Annex B use closer distance and above final results are extrapolated to the distance specified by the limit, 3m, by offset with distance correction factor.</li> <li>4. The maximized peak level complies with the average limit, unnecessary to perform an average measurement</li> <li>5. The emission position marked as "-" means no suspected emission found with sufficient margin against limit line or noise floor only</li> </ol>								



Emission below 1GHz  
24GHz (LF)

24GHz	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB/m )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. ( P/A )	Pol. ( H/V )
24.06GHz LF		32.91	23.71	-16.29	40	35.13	23.32	0.99	35.73	-	-	P	H
		179.38	24.69	-18.81	43.5	42.53	15.37	2.33	35.54	-	-	P	H
		263.77	29.19	-16.81	46	41.23	20.51	2.81	35.36	-	-	P	H
		359.8	38.31	-7.69	46	49.08	21.03	3.29	35.09	-	-	P	H
		954.41	34.84	-11.16	46	31.43	31.23	5.33	33.15	-	-	P	H
		967.02	35.68	-18.32	54	32	31.41	5.37	33.1	-	-	P	H
		81.41	25.7	-14.3	40	45.86	13.96	1.57	35.69	-	-	P	V
		129.91	31.31	-12.19	43.5	47.21	17.76	1.97	35.63	-	-	P	V
		359.8	30.56	-15.44	46	41.33	21.03	3.29	35.09	-	-	P	V
		857.41	34.11	-11.89	46	33.16	29.42	5.07	33.54	-	-	P	V
		923.37	34.92	-11.08	46	33.13	29.81	5.26	33.28	-	-	P	V
		977.69	35.1	-18.9	54	31.61	31.14	5.4	33.05	-	-	P	V
24.15GHz LF		31.94	25.59	-14.41	40	36.53	23.82	0.97	35.73	-	-	P	H
		179.38	25.56	-17.94	43.5	43.4	15.37	2.33	35.54	-	-	P	H
		359.8	36.49	-9.51	46	47.26	21.03	3.29	35.09	-	-	P	H
		561.56	32.23	-13.77	46	36.22	26.47	4.11	34.57	-	-	P	H
		843.83	35.65	-10.35	46	35.18	29.03	5.03	33.59	-	-	P	H
		907.85	35.24	-10.76	46	33.91	29.45	5.23	33.35	-	-	P	H
		81.41	25.35	-14.65	40	45.51	13.96	1.57	35.69	-	-	P	V
		151.25	29.55	-13.95	43.5	45.58	17.43	2.13	35.59	-	-	P	V
		359.8	31.21	-14.79	46	41.98	21.03	3.29	35.09	-	-	P	V
		680.87	30.09	-15.91	46	32.91	26.84	4.52	34.18	-	-	P	V
		853.53	32.69	-13.31	46	31.86	29.33	5.06	33.56	-	-	P	V
		957.32	34.75	-11.25	46	31.24	31.31	5.34	33.14	-	-	P	V



24GHz	Note	Frequency ( MHz )	Level ( dBμV/m )	Over Limit ( dB )	Limit Line ( dBμV/m )	Read Level ( dBμV )	Antenna Factor ( dB/m )	Cable Loss ( dB )	Preamp Factor ( dB )	Ant Pos ( cm )	Table Pos ( deg )	Peak Avg. ( P/A )	Pol. ( H/V )
<b>24.24GHz</b> <b>LF</b>		31.94	22.77	-17.23	40	33.71	23.82	0.97	35.73	-	-	P	H
		178.41	24.37	-19.13	43.5	42.18	15.41	2.32	35.54	-	-	P	H
		359.8	38.09	-7.91	46	48.86	21.03	3.29	35.09	-	-	P	H
		561.56	31.46	-14.54	46	35.45	26.47	4.11	34.57	-	-	P	H
		877.78	34.15	-11.85	46	33.08	29.39	5.14	33.46	-	-	P	H
		928.22	35	-11	46	33.02	29.97	5.27	33.26	-	-	P	H
		44.55	25.7	-14.3	40	43.02	17.25	1.15	35.72	-	-	P	V
		132.82	29.69	-13.81	43.5	45.41	17.9	2	35.62	-	-	P	V
		359.8	31.66	-14.34	46	42.43	21.03	3.29	35.09	-	-	P	V
		741.01	32.75	-13.25	46	33.81	28.21	4.7	33.97	-	-	P	V
		885.54	34.38	-11.62	46	33.27	29.38	5.16	33.43	-	-	P	V
		958.29	35.24	-10.76	46	31.71	31.33	5.34	33.14	-	-	P	V
<b>Remark</b>	<ol style="list-style-type: none"> <li>1. No other spurious found.</li> <li>2. All results are PASS against limit line.</li> <li>3. The general radiated emission limits in §15.209 is lesser attenuation as limit.</li> <li>4. The emission position marked as "-" means no suspected emission found and emission level has at least 6dB margin against limit or emission is noise floor only.</li> </ol>												



**Note symbol**

*	<b>Fundamental Frequency</b> which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is <b>over limit</b> line.
P/A	<b>Peak</b> or <b>Average</b>
H/V	<b>Horizontal</b> or <b>Vertical</b>



A calculation example for radiated spurious emission is shown as below:

Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
( MHz )	( dBμV/m )	( dB )	( dBμV/m )	( dBμV )	( dB/m )	( dB )	( dB )	( cm )	( deg )	( P/A )	( H/V )
24250	55.38	-18.62	74	51.21	38.9	28.21	53.4	166	355	P	H
24250	45.18	-8.82	54	31.47	38.9	28.21	53.4	166	355	A	H

- Level(dBμV/m) =  
Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
- Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

**For Peak Limit @ 24250MHz:**

- Level(dBμV/m)  
= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)  
= 38.9(dB/m) + 28.21(dB) + 51.21(dBμV) – 53.4 (dB)  
= 55.38 (dBμV/m)
- Over Limit(dB)  
= Level(dBμV/m) – Limit Line(dBμV/m)  
= 55.38(dBμV/m) – 74(dBμV/m)  
= -18.62(dB)

**For Average Limit @ 24250MHz:**

- Level(dBμV/m)  
= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)  
= 38.9(dB/m) + 28.21(dB) + 31.47(dBμV) – 53.4 (dB)  
= 45.18 (dBμV/m)
- Over Limit(dB)  
= Level(dBμV/m) – Limit Line(dBμV/m)  
= 45.18(dBμV/m) – 54(dBμV/m)  
= -8.82(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.



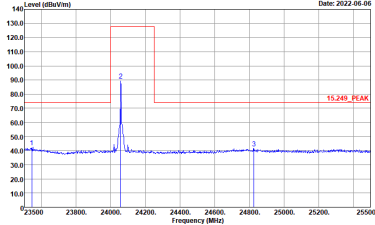
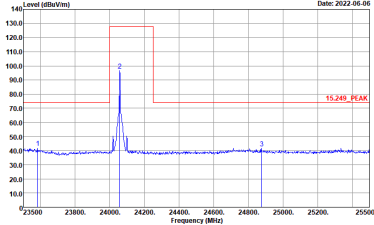
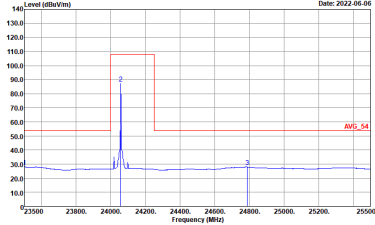
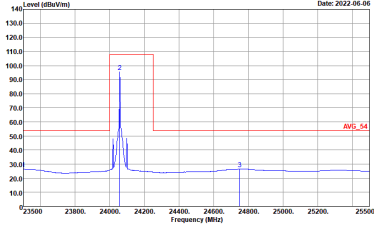
## Appendix C. Radiated Spurious Emission Plots

Test Engineer :	Eric Jeng	Temperature :	22.3~24.9°C
		Relative Humidity :	55.6~62.1%

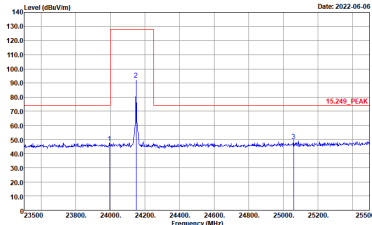
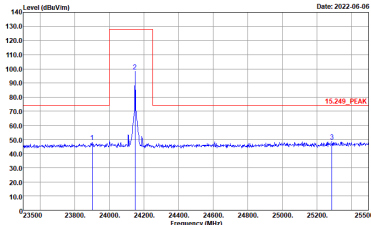
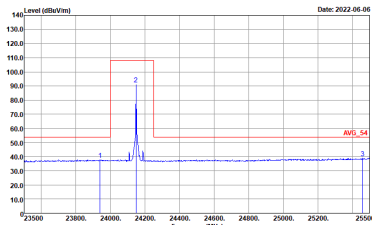
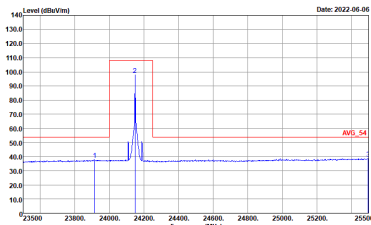


24GHz 24000~24250MHz

Field strength of fundamental@ 3m

24GHz	Field strength of fundamental	
Test frequency:24.06GHz		
	Horizontal	Vertical
Peak	 <p>Date: 2022-06-06</p> <p>Level (dBW/m)</p> <p>Frequency (MHz)</p> <p>15.249_Peak</p> <p>Site : 03CH19-HY Condition : 15.249_Peak 1m SHF HORN BBH49170980 HORIZONTAL</p>	 <p>Date: 2022-06-06</p> <p>Level (dBW/m)</p> <p>Frequency (MHz)</p> <p>15.249_Peak</p> <p>Site : 03CH19-HY Condition : 15.249_Peak 1m SHF HORN BBH49170980 VERTICAL</p>
Avg.	 <p>Date: 2022-06-06</p> <p>Level (dBW/m)</p> <p>Frequency (MHz)</p> <p>AVG_54</p> <p>Site : 03CH19-HY Condition : AVG_54 1m SHF HORN BBH49170980 HORIZONTAL</p>	 <p>Date: 2022-06-06</p> <p>Level (dBW/m)</p> <p>Frequency (MHz)</p> <p>AVG_54</p> <p>Site : 03CH19-HY Condition : AVG_54 1m SHF HORN BBH49170980 VERTICAL</p>



24GHz	Field strength of fundamental	
	Test frequency :24.15GHz	
	Horizontal	Vertical
Peak	 <p>Level (dBW/m) vs Frequency (MHz) plot for Horizontal orientation. The y-axis ranges from 0 to 140 dBW/m, and the x-axis ranges from 23500 to 25500 MHz. A sharp peak is visible at 24.15 GHz, reaching approximately 110 dBW/m. A red box highlights the peak area. A red label '15.249_Peak' is present. The date is 2022-06-06.</p> <p>Site : 03CH19-HY Condition : 15.249_Peak 1m SHF HORN 88HA9170980 HORIZONTAL</p>	 <p>Level (dBW/m) vs Frequency (MHz) plot for Vertical orientation. The y-axis ranges from 0 to 140 dBW/m, and the x-axis ranges from 23500 to 25500 MHz. A sharp peak is visible at 24.15 GHz, reaching approximately 110 dBW/m. A red box highlights the peak area. A red label '15.249_Peak' is present. The date is 2022-06-06.</p> <p>Site : 03CH19-HY Condition : 15.249_Peak 1m SHF HORN 88HA9170980 VERTICAL</p>
Avg.	 <p>Level (dBW/m) vs Frequency (MHz) plot for Horizontal orientation showing the average. The y-axis ranges from 0 to 140 dBW/m, and the x-axis ranges from 23500 to 25500 MHz. A sharp peak is visible at 24.15 GHz, reaching approximately 110 dBW/m. A red box highlights the peak area. A red label 'AVG_54' is present. The date is 2022-06-06.</p> <p>Site : 03CH19-HY Condition : AVG_54 1m SHF HORN 88HA9170980 HORIZONTAL</p>	 <p>Level (dBW/m) vs Frequency (MHz) plot for Vertical orientation showing the average. The y-axis ranges from 0 to 140 dBW/m, and the x-axis ranges from 23500 to 25500 MHz. A sharp peak is visible at 24.15 GHz, reaching approximately 110 dBW/m. A red box highlights the peak area. A red label 'AVG_54' is present. The date is 2022-06-06.</p> <p>Site : 03CH19-HY Condition : AVG_54 1m SHF HORN 88HA9170980 VERTICAL</p>





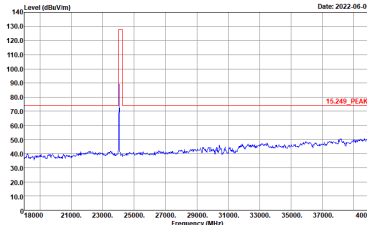
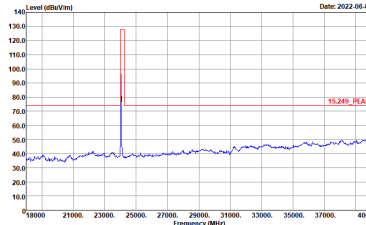
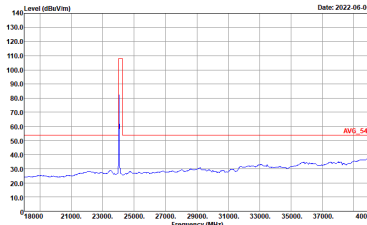
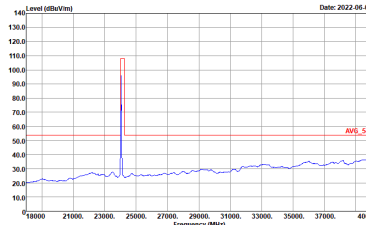
24GHz	Field strength of fundamental	
	Test frequency :24.24GHz	
	Horizontal	Vertical
<b>Peak</b>	<p>Site : 03CH19-HY Condition : 15.249_PEAK 1m SHF HORN 88HA9170980 HORIZONTAL</p>	<p>Site : 03CH19-HY Condition : 15.249_PEAK 1m SHF HORN 88HA9170980 VERTICAL</p>
<b>Avg.</b>	<p>Site : 03CH19-HY Condition : AVG_54 1m SHF HORN 88HA9170980 HORIZONTAL</p>	<p>Site : 03CH19-HY Condition : AVG_54 1m SHF HORN 88HA9170980 VERTICAL</p>



24GHz 24000~24250MHz  
(Radiated Spurious Emission& Harmonic @ 3m)

24GHz	Test frequency :24.06GHz	
	1-18GHz	
	Horizontal	Vertical
Peak	<p>Horizontal plot showing Level (dBW/m) vs Frequency (MHz). The y-axis ranges from 0 to 140 dBW/m, and the x-axis ranges from 0 to 18000 MHz. A blue line represents the emission level, which is relatively flat around 40-50 dBW/m. A red horizontal line is drawn at approximately 74 dBW/m, labeled 'PEAK_74'. The plot date is 2022-06-10.</p> <p>Site : 03CH19-HY Condition : PEAK_74 3m 91200-02294_1100727 HORIZONTAL</p>	<p>Vertical plot showing Level (dBW/m) vs Frequency (MHz). The y-axis ranges from 0 to 140 dBW/m, and the x-axis ranges from 0 to 18000 MHz. A blue line represents the emission level, which is relatively flat around 40-50 dBW/m. A red horizontal line is drawn at approximately 74 dBW/m, labeled 'PEAK_74'. The plot date is 2022-06-10.</p> <p>Site : 03CH19-HY Condition : PEAK_74 3m 91200-02294_1100727 VERTICAL</p>



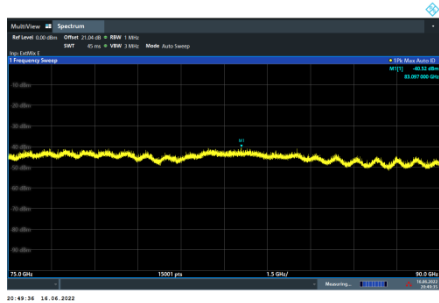
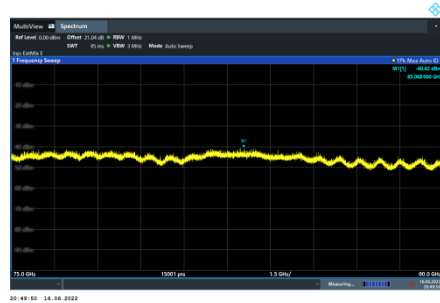
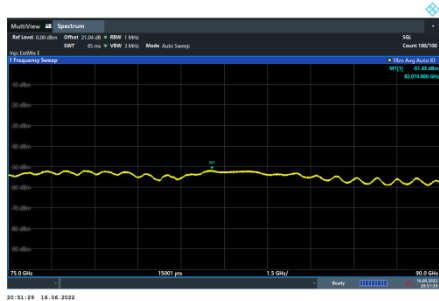
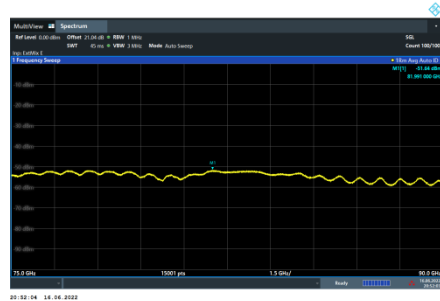
24GHz	Test frequency :24.06GHz	
18-40GHz		
Horizontal		Vertical
<b>Peak</b>	 <p>Level (dBW/m) vs Frequency (MHz) plot for Horizontal orientation. The y-axis ranges from 0 to 140 dBW/m, and the x-axis ranges from 18000 to 40000 MHz. A sharp peak is visible at approximately 24060 MHz, reaching a level of about 130 dBW/m. A red horizontal line is drawn at approximately 75 dBW/m, labeled '15.249_PEAK'. The plot date is 2022-06-06.</p> <p>Site : 03CH19-HY Condition : 15.249_PEAK 1m SHF HORN 88HA9170980 HORIZONTAL</p>	 <p>Level (dBW/m) vs Frequency (MHz) plot for Vertical orientation. The y-axis ranges from 0 to 140 dBW/m, and the x-axis ranges from 18000 to 40000 MHz. A sharp peak is visible at approximately 24060 MHz, reaching a level of about 130 dBW/m. A red horizontal line is drawn at approximately 75 dBW/m, labeled '15.249_PEAK'. The plot date is 2022-06-06.</p> <p>Site : 03CH19-HY Condition : 15.249_PEAK 1m SHF HORN 88HA9170980 VERTICAL</p>
<b>Avg.</b>	 <p>Level (dBW/m) vs Frequency (MHz) plot for Horizontal orientation showing the average level. The y-axis ranges from 0 to 140 dBW/m, and the x-axis ranges from 18000 to 40000 MHz. A sharp peak is visible at approximately 24060 MHz, reaching a level of about 110 dBW/m. A red horizontal line is drawn at approximately 50 dBW/m, labeled 'AVG_54'. The plot date is 2022-06-06.</p> <p>Site : 03CH19-HY Condition : AVG_54 1m SHF HORN 88HA9170980 HORIZONTAL</p>	 <p>Level (dBW/m) vs Frequency (MHz) plot for Vertical orientation showing the average level. The y-axis ranges from 0 to 140 dBW/m, and the x-axis ranges from 18000 to 40000 MHz. A sharp peak is visible at approximately 24060 MHz, reaching a level of about 110 dBW/m. A red horizontal line is drawn at approximately 50 dBW/m, labeled 'AVG_54'. The plot date is 2022-06-06.</p> <p>Site : 03CH19-HY Condition : AVG_54 1m SHF HORN 88HA9170980 VERTICAL</p>



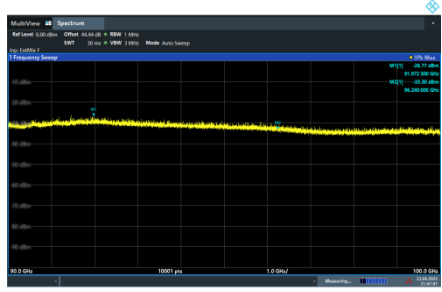
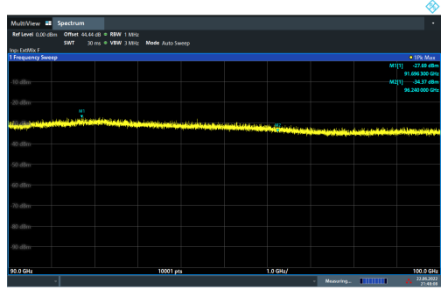
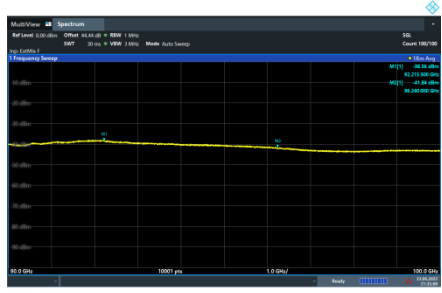
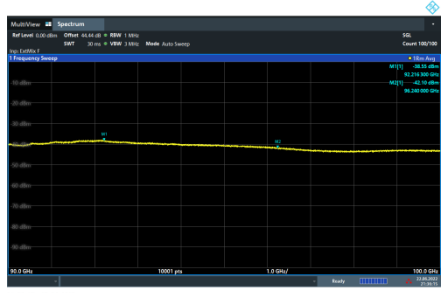


24GHz	Test frequency :24.06GHz	
	60-75GHz	
	Horizontal	Vertical
Peak		
Avg.		



24GHz	Test frequency :24.06GHz	
	75-90GHz	
	Horizontal	Vertical
Peak		
Avg.		



24GHz	Test frequency :24.06GHz	
90-100GHz		
	Horizontal	Vertical
Peak	 <p>21:47:42 22-06-2022</p>	 <p>21:48:09 22-06-2022</p>
Avg.	 <p>21:38:00 22-06-2022</p>	 <p>21:38:13 22-06-2022</p>



24GHz	Test frequency :24.15GHz	
	1-18GHz	
	Horizontal	Vertical
Peak	<p>Site : 03CH19-HY Condition : PEAK_74 3m 91200-02294_1100727 HORIZONTAL</p>	<p>Site : 03CH19-HY Condition : PEAK_74 3m 91200-02294_1100727 VERTICAL</p>



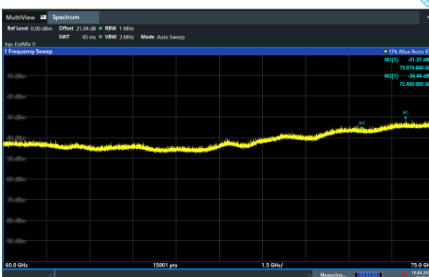
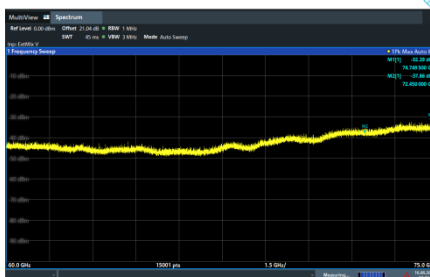
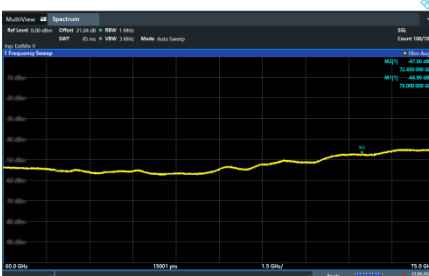
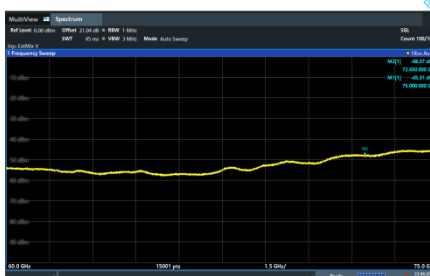


24GHz	Test frequency :24.15GHz	
	18-40GHz	
	Horizontal	Vertical
Peak	<p>Level (dBW/m) vs Frequency (MHz) plot for Horizontal orientation. The y-axis ranges from 10.0 to 140.0 dBW/m, and the x-axis ranges from 18000 to 40000 MHz. A sharp peak is visible at 24.15 GHz, reaching approximately 130 dBW/m. A red horizontal line labeled '15.249_Peak' is drawn at approximately 75 dBW/m. The plot date is 2022-06-06. Site: 03CH19-HY, Condition: 15.249_Peak 1m SHF HORN BBH49170980 HORIZONTAL.</p>	<p>Level (dBW/m) vs Frequency (MHz) plot for Vertical orientation. The y-axis ranges from 10.0 to 140.0 dBW/m, and the x-axis ranges from 18000 to 40000 MHz. A sharp peak is visible at 24.15 GHz, reaching approximately 130 dBW/m. A red horizontal line labeled '15.249_Peak' is drawn at approximately 75 dBW/m. The plot date is 2022-06-06. Site: 03CH19-HY, Condition: 15.249_Peak 1m SHF HORN BBH49170980 VERTICAL.</p>
Avg.	<p>Level (dBW/m) vs Frequency (MHz) plot for Horizontal orientation. The y-axis ranges from 10.0 to 140.0 dBW/m, and the x-axis ranges from 18000 to 40000 MHz. A sharp peak is visible at 24.15 GHz, reaching approximately 110 dBW/m. A red horizontal line labeled 'AVG_54' is drawn at approximately 50 dBW/m. The plot date is 2022-06-06. Site: 03CH19-HY, Condition: AVG_54 1m SHF HORN BBH49170980 HORIZONTAL.</p>	<p>Level (dBW/m) vs Frequency (MHz) plot for Vertical orientation. The y-axis ranges from 10.0 to 140.0 dBW/m, and the x-axis ranges from 18000 to 40000 MHz. A sharp peak is visible at 24.15 GHz, reaching approximately 110 dBW/m. A red horizontal line labeled 'AVG_54' is drawn at approximately 50 dBW/m. The plot date is 2022-06-06. Site: 03CH19-HY, Condition: AVG_54 1m SHF HORN BBH49170980 VERTICAL.</p>

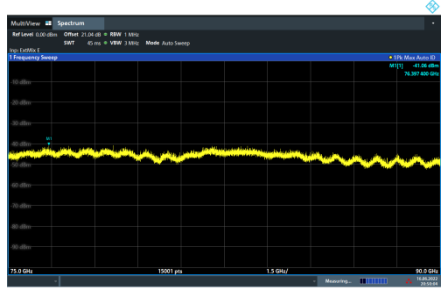
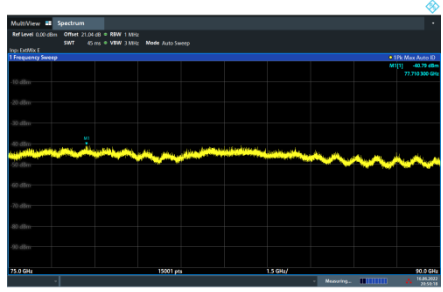
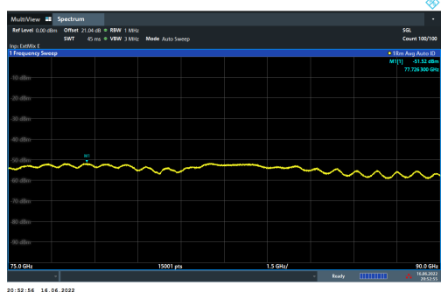
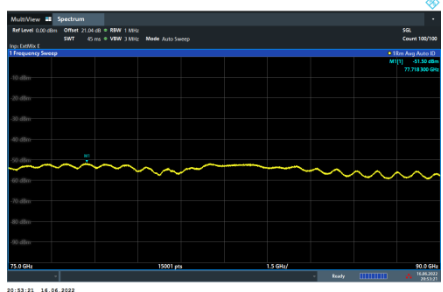


24GHz	Test frequency :24.15GHz	
	40-60GHz	
	Horizontal	Vertical
Peak		
Avg.		

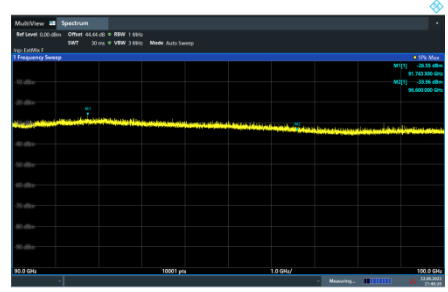
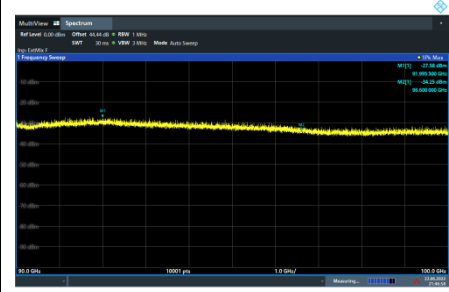
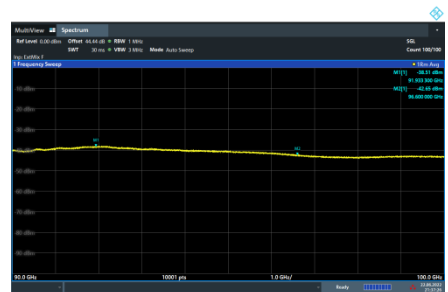
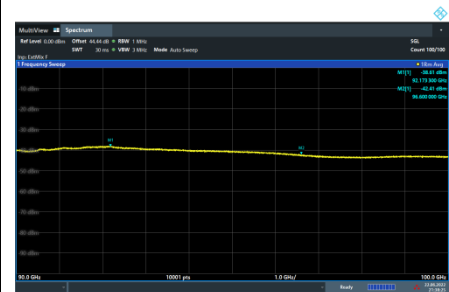


24GHz	Test frequency :24.15GHz	
	60-75GHz	
	Horizontal	Vertical
Peak	 <p>20:13:54 14-06-2022</p>	 <p>20:14:54 14-06-2022</p>
Avg.	 <p>20:17:28 22-04-2022</p>	 <p>20:16:43 22-04-2022</p>



24GHz	Test frequency :24.15GHz	
	75-90GHz	
	Horizontal	Vertical
Peak		
Avg.		

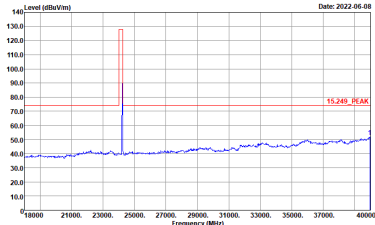
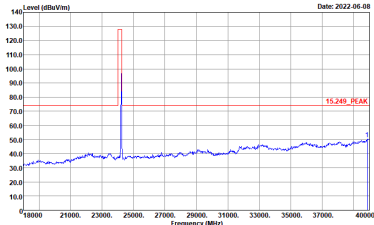
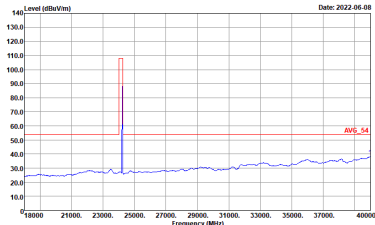
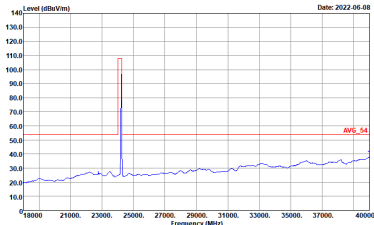


24GHz	Test frequency :24.15GHz	
	90-100GHz	
	Horizontal	Vertical
Peak	 <p>21:41:27 22:16:2022</p>	 <p>21:41:59 22:16:2022</p>
Avg.	 <p>21:37:27 22:16:2022</p>	 <p>21:38:24 22:16:2022</p>

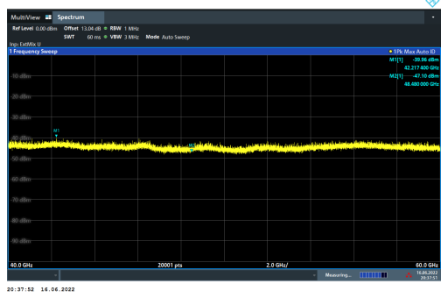
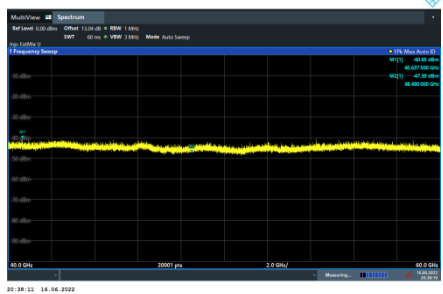
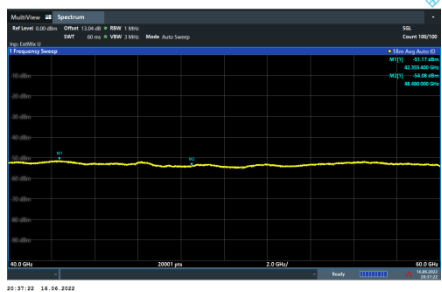
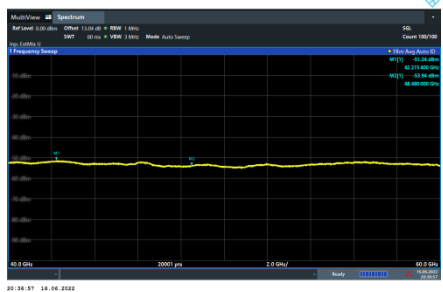


24GHz	Test frequency :24.24GHz	
	1-18GHz	
	Horizontal	Vertical
Peak	<p>Site : 03CH19-HY Condition : PEAK_74 3m 91200-02294_1100727 HORIZONTAL</p>	<p>Site : 03CH19-HY Condition : PEAK_74 3m 91200-02294_1100727 VERTICAL</p>



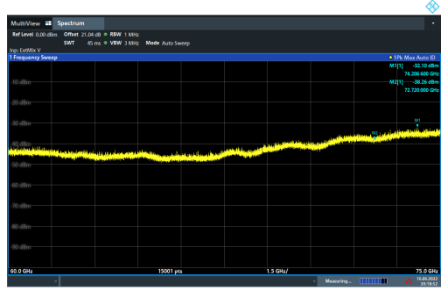
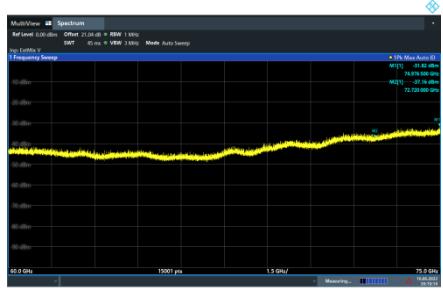
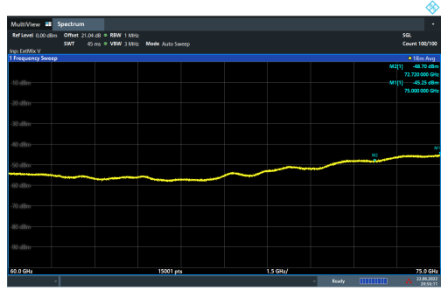
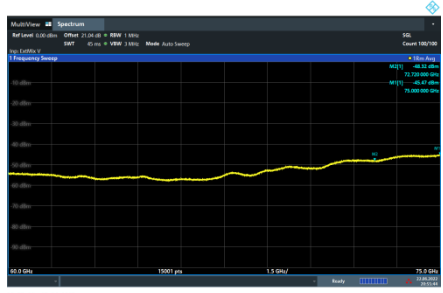
24GHz	Test frequency :24.24GHz	
	18-40GHz	
	Horizontal	Vertical
Peak	 <p>Level (dBW/m) vs Frequency (MHz) plot for Horizontal orientation. The y-axis ranges from 10.0 to 140.0 dBW/m, and the x-axis ranges from 18000 to 40000 MHz. A sharp peak is visible at 24.24 GHz, reaching approximately 130 dBW/m. A red horizontal line indicates the peak level at 15.249 dBW/m. The plot is dated 2022-06-08.</p> <p>Site : 03CH19-HY Condition : 15.249_PEAK 1m SHF HORN BBH49170980 HORIZONTAL</p>	 <p>Level (dBW/m) vs Frequency (MHz) plot for Vertical orientation. The y-axis ranges from 10.0 to 140.0 dBW/m, and the x-axis ranges from 18000 to 40000 MHz. A sharp peak is visible at 24.24 GHz, reaching approximately 130 dBW/m. A red horizontal line indicates the peak level at 15.249 dBW/m. The plot is dated 2022-06-08.</p> <p>Site : 03CH19-HY Condition : 15.249_PEAK 1m SHF HORN BBH49170980 VERTICAL</p>
Avg.	 <p>Level (dBW/m) vs Frequency (MHz) plot for Horizontal orientation. The y-axis ranges from 10.0 to 140.0 dBW/m, and the x-axis ranges from 18000 to 40000 MHz. A sharp peak is visible at 24.24 GHz, reaching approximately 110 dBW/m. A red horizontal line indicates the average level at 49.5 dBW/m. The plot is dated 2022-06-08.</p> <p>Site : 03CH19-HY Condition : AVG_54 1m SHF HORN BBH49170980 HORIZONTAL</p>	 <p>Level (dBW/m) vs Frequency (MHz) plot for Vertical orientation. The y-axis ranges from 10.0 to 140.0 dBW/m, and the x-axis ranges from 18000 to 40000 MHz. A sharp peak is visible at 24.24 GHz, reaching approximately 110 dBW/m. A red horizontal line indicates the average level at 49.5 dBW/m. The plot is dated 2022-06-08.</p> <p>Site : 03CH19-HY Condition : AVG_54 1m SHF HORN BBH49170980 VERTICAL</p>



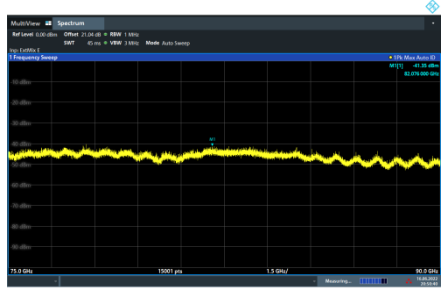
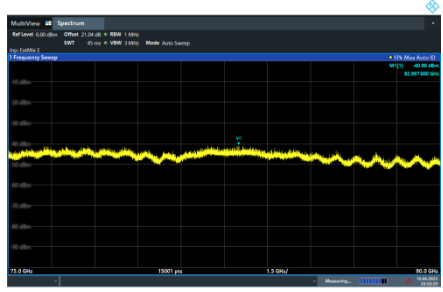
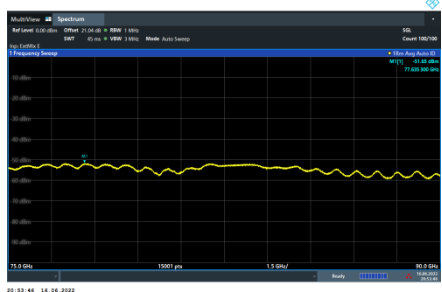
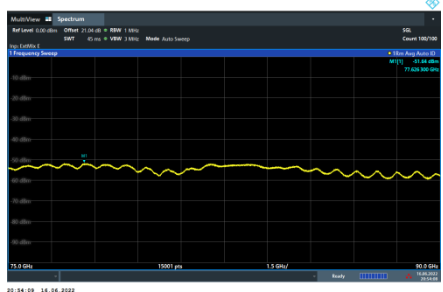
24GHz	Test frequency :24.24GHz	
	40-60GHz	
	Horizontal	Vertical
Peak.		
Avg.		





24GHz	Test frequency :24.24GHz	
60-75GHz		
Horizontal		Vertical
Peak	 <p>20:18:53 14-06-2022</p>	 <p>20:19:15 14-06-2022</p>
Avg.	 <p>20:14:12 22-04-2022</p>	 <p>20:15:44 22-04-2022</p>



24GHz	Test frequency :24.24GHz	
	75-90GHz	
	Horizontal	Vertical
Peak		
Avg.		



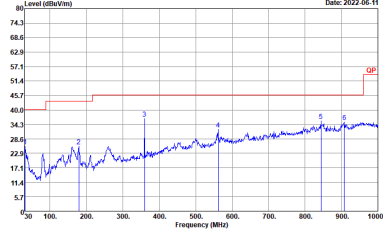
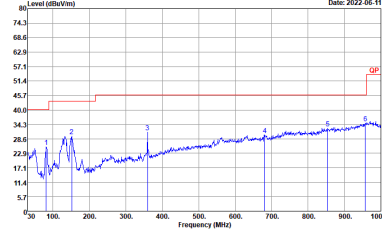
24GHz	Test frequency :24.24GHz	
	90-100GHz	
	Horizontal	Vertical
Peak		
Avg.		



Emission below 1GHz  
24GHz

24GHz	24GHz	
	Test frequency :24.06GHz_LF	
	Horizontal	Vertical
<b>QP / Peak</b>	<p>Site : 03CH19-HY Condition : QP 3m LF_55608 809_1091022 HORIZONTAL</p>	<p>Site : 03CH19-HY Condition : QP 3m LF_55608 809_1091022 VERTICAL</p>



24GHz	24GHz	
Test frequency :24.15GHz_LF		
	Horizontal	Vertical
QP / Peak	 <p>Site : 03CH19-IHV Condition : QP 3m LF_55608 409_1091022 HORIZONTAL</p>	 <p>Site : 03CH19-IHV Condition : QP 3m LF_55608 409_1091022 VERTICAL</p>



24GHz	24GHz	
	Test frequency :24.24GHz_LF	
	Horizontal	Vertical
QP / Peak	<p>Site : 03CH19-HY Condition : QP 3m LF_55608 409_1091022 HORIZONTAL</p>	<p>Site : 03CH19-HY Condition : QP 3m LF_55608 409_1091022 VERTICAL</p>