

FCC Test Report

FCC ID: 2BUHL-FX4CR

Product: Transceiver

Trade Mark: N/A

Model Number: FX-4CR

Prepared for

Hu bei Lu Xin Technology Co., Ltd.
Room 616, Building 2, Sanfeng Optoelectronic Industrial Park, No.177, High-tech
Zo Changchun China

Prepared by

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TEST RESULT CERTIFICATION

Applicant's Name..... : Hu bei Lu Xin Technology Co., Ltd.
Address..... : Room 616, Building 2, Sanfeng Optoelectronic Industrial Park,
No.177, High-tech Zo Changchun China
Manufacturer's Name..... : Hu bei Lu Xin Technology Co., Ltd.
Address..... : Room 616, Building 2, Sanfeng Optoelectronic Industrial Park,
No.177, High-tech Zo Changchun China

Product description

Product name..... : Transceiver
Model Number..... : FX-4CR
Standards..... : E-CFR Title 47 Part 15 Subpart B
Test procedure..... : ANSI C63.4: 2014

This device described above has been tested by Shenzhen HongBiao Certification& Testing Co., Ltd and the test results show that the equipment under test (EUT) is in compliance with the EMC requirements. And it is applicable only to the tested sample identified in the report.

Date of Test..... :

Date (s) of performance of tests..... : Dec 29, 2025~ Jan 06, 2026

Test Result..... : **Pass**

Testing Engineer :



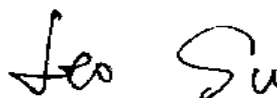
(Z o e S u)

Technical Manager :



(G a r y L u)

Authorized Signatory :



(L e o S u)

[illegible]

1 General Description

1.1 Description of EUT

Product name:	Transceiver	
Model name:	FX-4CR	
Series Model:	N/A	
Different of series model:	N/A	
Battery:	N/A	
Power supply:	DC 12V	
Adapter information:	N/A	
Product Description:	The EUT is a FX-4CR.	
	Connecting I/O port:	DC in, Antenna interface, External speaker interface, DC power interface, KEY interface, ATU interface, MIC interface, IF signal output
	Operation Frequency:	receive: 0.465MHz-50MHz
	Modulation Type:	SSB, AM, FM, CW
Receive frequency	0.465MHz-50MHz	

1.2 Test Mode

Pretest Test Mode	Description of Mode
1	Normal Operation
2	/
3	/

Test Item	Final Test Mode
Conducted Emissions	/
Radiated Emissions 30 to 1000 MHz	1
Radiated Emissions 1 GHz to 6 GHz	1

1.3 Test Setup

See photographs of the test setup in the report for the actual setup and connections between EUT and support equipment.

1.4 Ancillary Equipment

Equipment	Model	S/N	Manufacturer
/	/	/	/

2 Summary of Test Result

Test procedures according to the technical standards:

E-CFR Title 47 Part 15 Subpart B					
No.	Standard Section	Test Item	Limit	Result	Remark
1	15.107	Conducted Emissions	Class B	N/A	
2	15.109	Radiated Emissions	Class B	Pass	
Note: “N/A” means the test item not applicable.					

3 Test Facilities and Accreditations

3.1 Test Laboratory

Test Site	Shenzhen HongBiao Certification& Testing Co., Ltd
Test Site Location	Room 102, 201, Building 2, Yuanwanggu RFID Industrial Park, Tongguan Road, Tianliao Community, Yutang Street, Guangming District, Shenzhen, China
Telephone:	(86-755) 2998 9321
Fax:	(86-755) 2998 5110
A2LA Certificate No.:	6765.01

3.2 Environmental Conditions

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

Temperature:	15°C~35°C
Relative Humidity:	20%~75%
Air Pressure:	98kPa~101kPa

3.3 Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %. The data and results quoted in this document are true and accurate values, and uncertainties are not involved in the calculations.

In addition, components and mass production processes that are similar to testing equipment may introduce additional deviations, and the manufacturer is solely responsible for the continued compliance of the equipment.

A. Conducted Measurement:

Measurement Frequency Range	U, (dB)	Note
150 kHz to 30 MHz	2.5	AC Power Port

B. Radiated Measurement:

Measurement Frequency Range	U, (dB)	Note
30 MHz to 1000 MHz	4.2	/
1 GHz to 6 GHz	4.7	/

3.4 Test Software

Software name	Manufacturer	Model	Version
Conducted Emission test Software	Farad	EZ-EMC	EMC-CON 3A1.1+
Radiated Emission test Software	Farad	EZ-EMC	FA-03A2

4 List of Test Equipment

Radiation emission							
Item	Equipment No.	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	HB-E001	Horn Antenna	Schwarzbeck	BBHA 9120D	02592	2024-05-18	2026-05-17
2	HB-E002	Biconical log-periodic composite antenna	Schwarzbeck	VULB 9168	01340	2024-05-18	2026-05-17
3	HB-E003	SHF-EHF Horn	Schwarzbeck	BBHA 9170	01193	2024-05-18	2026-05-17
4	HB-E005	Preamplifier	Noyetec	LAN-0118	NYCM1420102	2025-05-07	2026-05-06
5	HB-E006	Preamplifier	Noyetec	LAN-1840	NYCM1420103	2025-05-07	2026-05-06
6	HB-E007	EMI TEST RECEIVER	R&S	ESR7	102520	2025-05-07	2026-05-06
7	HB-E009	POSITINAL COTROLLE R	Noyetec	N/A	N/A	/	/
8	HB-E013	RF switch	Noyetec	NY-RF4	NY0CM1420204	/	/
9	HB-E066	Illuminance Tester	TASI	TA8121	N/A	2025-05-13	2026-05-12
10	HB-E075	Active loop antenna	Schwarzbeck	FMZB 1519B	1519B-245	2024-05-18	2026-05-17
11	HB-E076	Preamplifier	Hewlett Packard	8447D	1937A02278	2025-05-07	2026-05-06
Conduction emission							
Item	Equipment No.	Equipment name	Manufacturer	Model	Serial No.	Calibration date	Due date
1	HB-E014	4 Path V-LISN	Schwarzbeck	NNLK 8121	00770	2025-05-07	2026-05-06
2	HB-E015	Pulse Limiter	Schwarzbeck	VTSD 9561-F	00949	2025-05-07	2026-05-06
3	HB-E016	Absorb clamp	ZHINAN	ZN23201	N/A	2025-05-10	2026-05-09
4	HB-E059	Attenuator	Xianghua	TS2-6-1	220215166	2025-05-10	2026-05-09
5	HB-E069	EMI TEST RECEIVER	R&S	ESCI	N/A	2025-05-07	2026-05-06

Note: the calibration interval of the above test instruments is 12&24 months and the calibrations are traceable to international system unit (SI).

5 EMC Emission Test

5.1 Conducted Emission

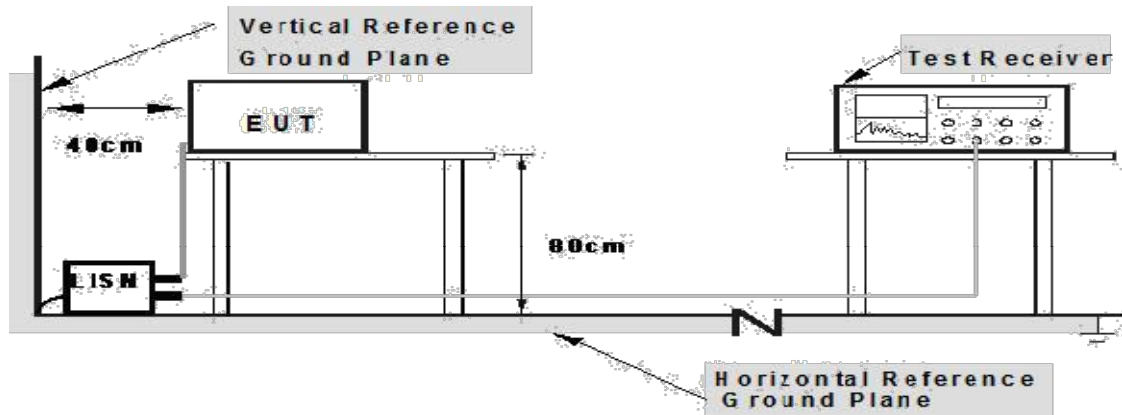
5.1.1 Limits

Limits – Class A		
Frequency (MHz)	Limit (dBμV)	
	Quasi-Peak	Average
0.15 to 0.5	79	66
0.5 to 30	73	60
Limits – Class B		
Frequency (MHz)	Limit (dBμV)	
	Quasi-Peak	Average
0.15 to 0.5	66 to 56*	56 to 46*
0.5 to 5	56	46
5 to 30	60	50
Note: 1. the tighter limit applies at the band edges. 2. the limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.		

5.1.2 Test Procedures

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN is at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item – photographs of the test setup.

5.1.3 Test setup



5.1.4 Test Result

EUT:	Transceiver	Model Name:	FX-4CR
Test Mode:	N/A	Phase:	N/A
Test Voltage:	N/A		
DC-Powered; test not applicable			

5.2 Radiated Emission

5.2.1 Limits

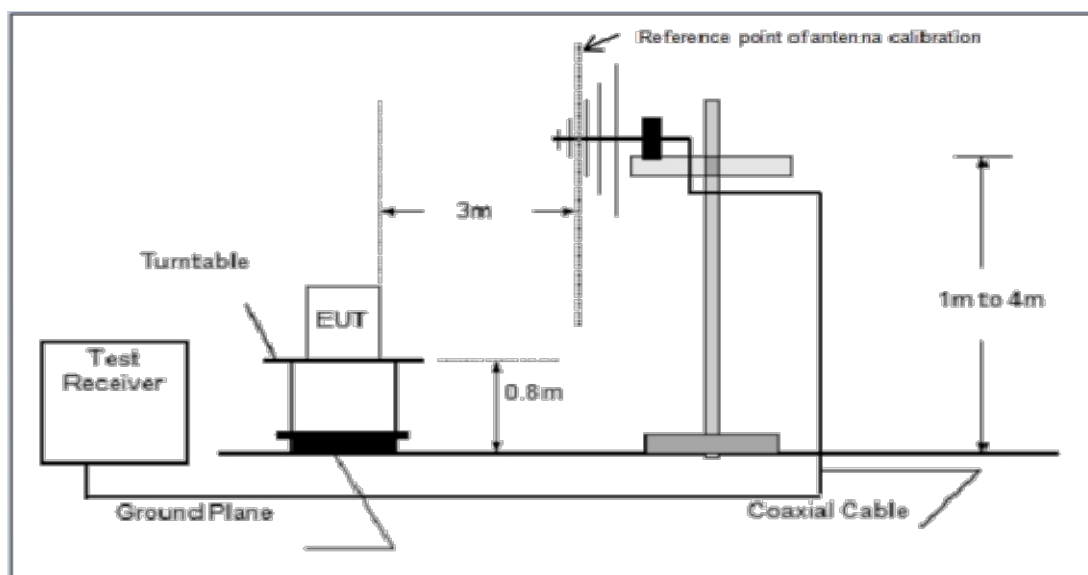
Limits – Class A at 3 m		
Frequency (MHz)	Quasi-Peak(dBμV/m)	Average(dBμV/m)
30 to 88	49	/
88 to 216	53.5	/
216 to 960	56.4	/
960 to 1000	59.5	/
Above 1000	84	64
Limits – Class B at 3 m		
Frequency (MHz)	Quasi-Peak(dBμV/m)	Average(dBμV/m)
30 to 88	40	/
88 to 216	43.5	/
216 to 960	46	/
960 to 1000	54	/
Above 1000	74	54

5.2.2 Test Procedures

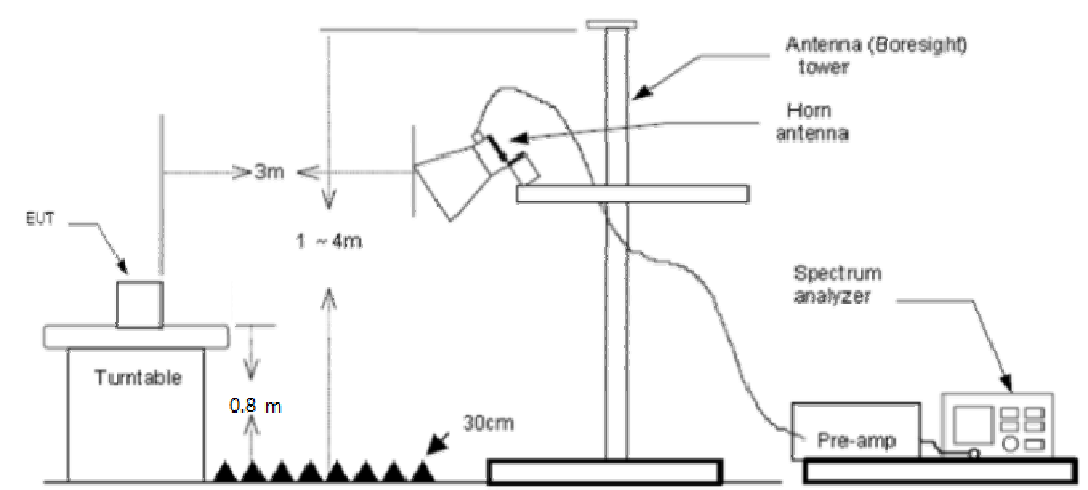
- The radiated emission tests were performed in the 3 meters.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the test antenna shall vary between 1m to 4m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- If the peak mode measured value compliance with and lower than quasi peak mode limit, the EUT shall be deemed to meet QP limits and then no additional QP mode measurement performed.
- If the peak mode measured value compliance with and lower than average mode limit, the EUT shall be deemed to meet average limits and then no additional average mode measurement performed.
- For the actual test configuration, please refer to the related item – EUT test photos.

5.2.3 Test Setup

Radiated emission test-up frequency for 30MHz - 1GHz:



Radiated emission test-up frequency for above 1GHz:



5.2.4 Test Result

Note: the highest working frequency of EUT is below 108MHz.

Formula:

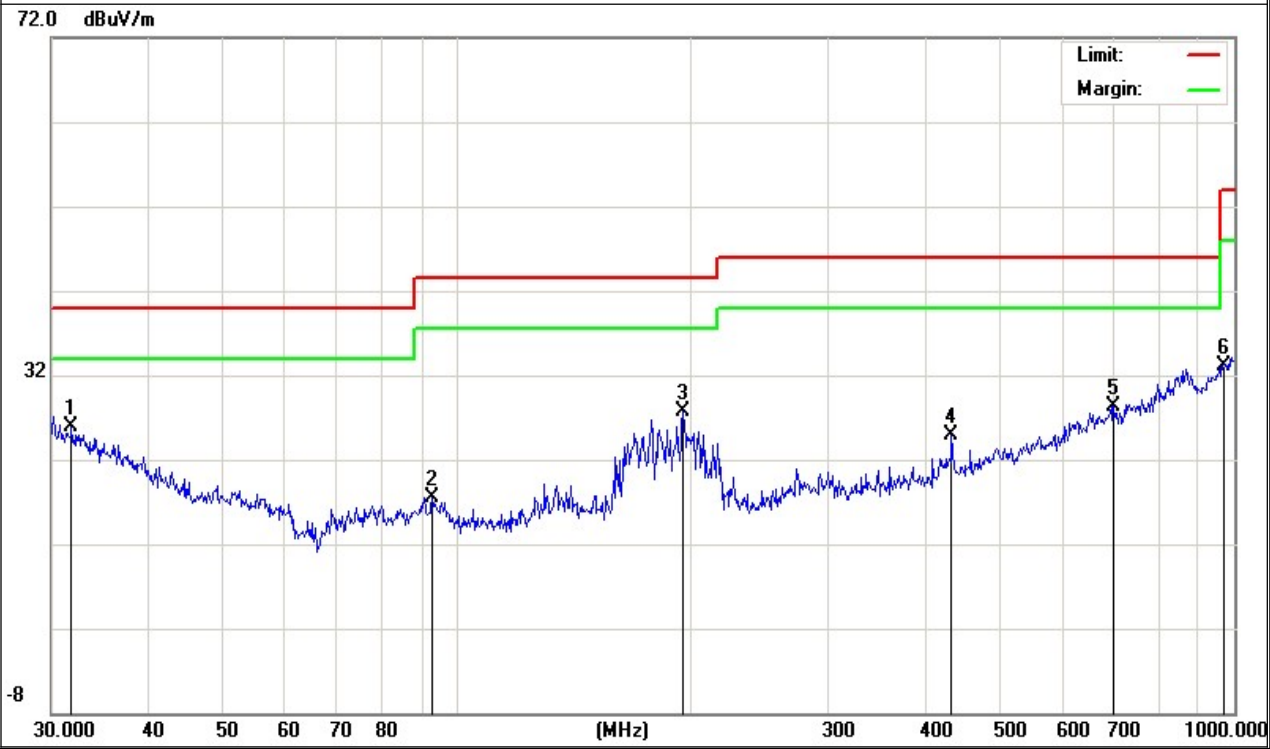
Measurement Level (dBuV/m) = Reading Level (dBuV/m) + Correct Factor (dBuV/m)

Margin Level (dBuV/m) = Measurement Level (dBuV/m) – Limit Level (dBuV/m)

EUT:	Transceiver	Model Name:	FX-4CR
Test Mode:	Mode 1	Phase:	Horizontal
Test Voltage:	DC 12V		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remar k
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
H	31.8427	5.42	20.41	25.83	40.00	-14.17	QP
H	92.7871	5.62	11.97	17.59	43.50	-25.91	QP
H	195.1365	13.90	13.74	27.64	43.50	-15.86	QP
H	432.5457	8.46	16.47	24.93	46.00	-21.07	QP
H	699.3046	6.94	21.36	28.30	46.00	-17.70	QP
H	968.9338	6.03	27.17	33.20	54.00	-20.80	QP

Remark:
Factor = Antenna Factor + Cable Loss - Amplifier.

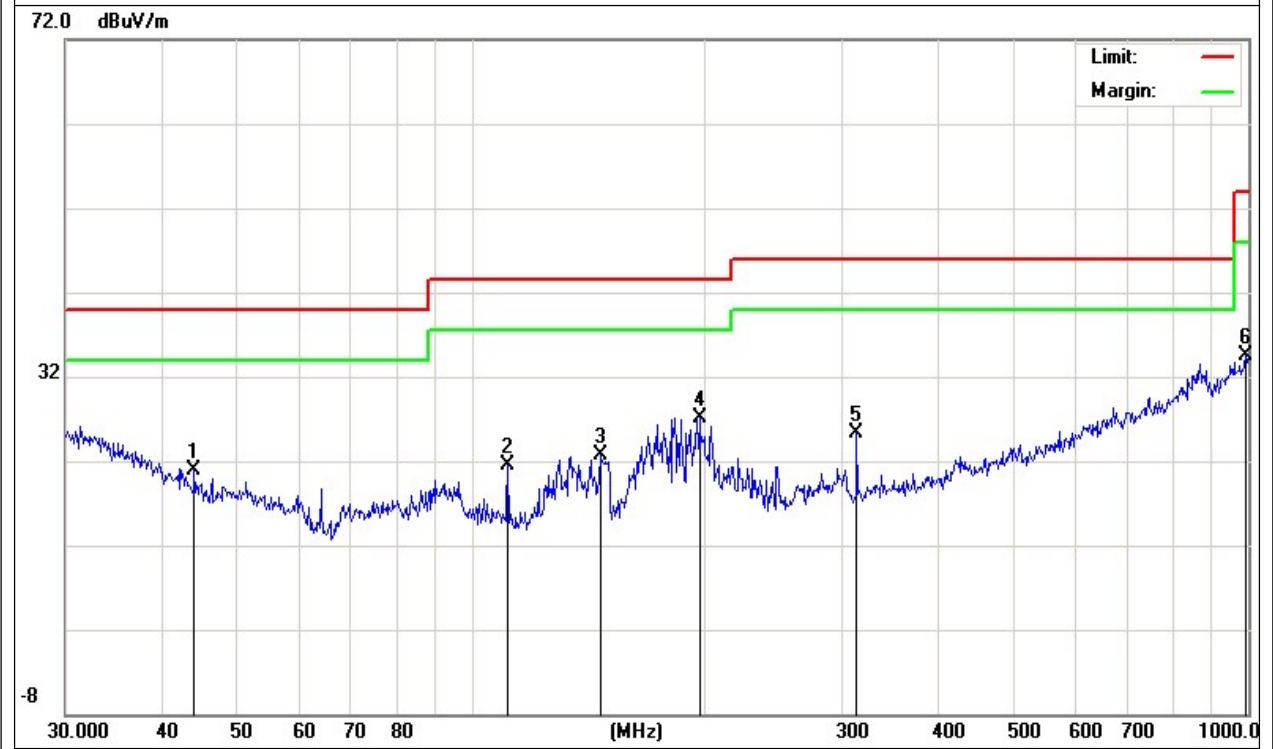


EUT:	Transceiver	Model Name:	FX-4CR
Test Mode:	Mode 1	Phase:	Vertical
Test Voltage:	DC 12V		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remarks
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	43.9658	6.42	14.40	20.82	40.00	-19.18	QP
V	111.3468	11.27	10.17	21.44	43.50	-22.06	QP
V	146.3735	11.36	11.33	22.69	43.50	-20.81	QP
V	196.5098	13.28	13.75	27.03	43.50	-16.47	QP
V	313.2760	11.96	13.31	25.27	46.00	-20.73	QP
V	993.0113	6.70	27.90	34.60	54.00	-19.40	QP

Remark:

Factor = Antenna Factor + Cable Loss - Amplifier.



TEST RESULTS(1000~6000MHz)

EUT:	Transceiver	Model Name:	FX-4CR
Test Mode:	Mode 1	Phase:	H/V
Test Voltage:	DC 12V		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
	(MHz)	(dBm)	(dB)	(dBm)	(dBm)	(dB)	
V	1894.621	85.96	-17.15	68.81	74.00	-5.19	peak
V	1894.621	60.82	-17.15	43.67	54.00	-10.33	AVG
V	2657.389	82.37	-15.76	66.61	74.00	-7.39	peak
V	2657.389	59.34	-15.76	43.58	54.00	-10.42	AVG
V	4013.629	76.71	-11.22	65.49	74.00	-8.51	peak
V	4013.629	53.98	-11.22	42.76	54.00	-11.24	AVG
H	1896.351	81.81	-17.14	64.67	74.00	-9.33	peak
H	1896.351	58.40	-17.14	41.26	54.00	-12.74	AVG
H	3116.378	82.03	-15.54	66.49	74.00	-7.51	peak
H	3116.378	58.51	-15.54	42.97	54.00	-11.03	AVG
H	4361.254	75.44	-10.13	65.31	74.00	-8.69	peak
H	4361.254	51.49	-10.13	41.36	54.00	-12.64	AVG

Remark:
Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit

6. Antenna power conduction for receivers

6.1 Test Procedure

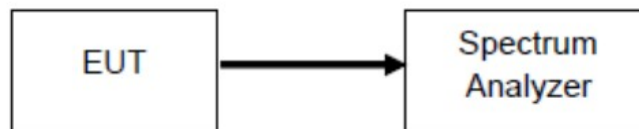
Per FCC section 15.109(f), For a receiver which employs terminals for the connection of an external receiving antenna, the receiver shall be tested to demonstrate compliance with the provisions of this section with an antenna connected to the antenna terminals unless the antenna conducted power is measured as specified in § 15.111(a).

FCC section 15.111(a) states: In addition to the radiated emission limits, receivers that operate (tune) in the frequency range 30 to 960 MHz and CB receivers that provide terminals for the connection of an external receiving antenna may be tested to demonstrate compliance with the provisions of § 15.109 with the antenna terminals shielded and terminated with a resistive termination equal to the impedance specified for the antenna, provided these receivers also comply with the following: With the receiver antenna terminal connected to a resistive termination equal to the impedance specified or employed for the antenna, the power at the antenna terminal at any frequency within the range of measurements specified in § 15.33 shall not exceed 2.0 nanowatts.

All signals measured at the receiver antenna port were below 2 nanowatts (-57 dBm). Refer to Annex A for supporting test data.

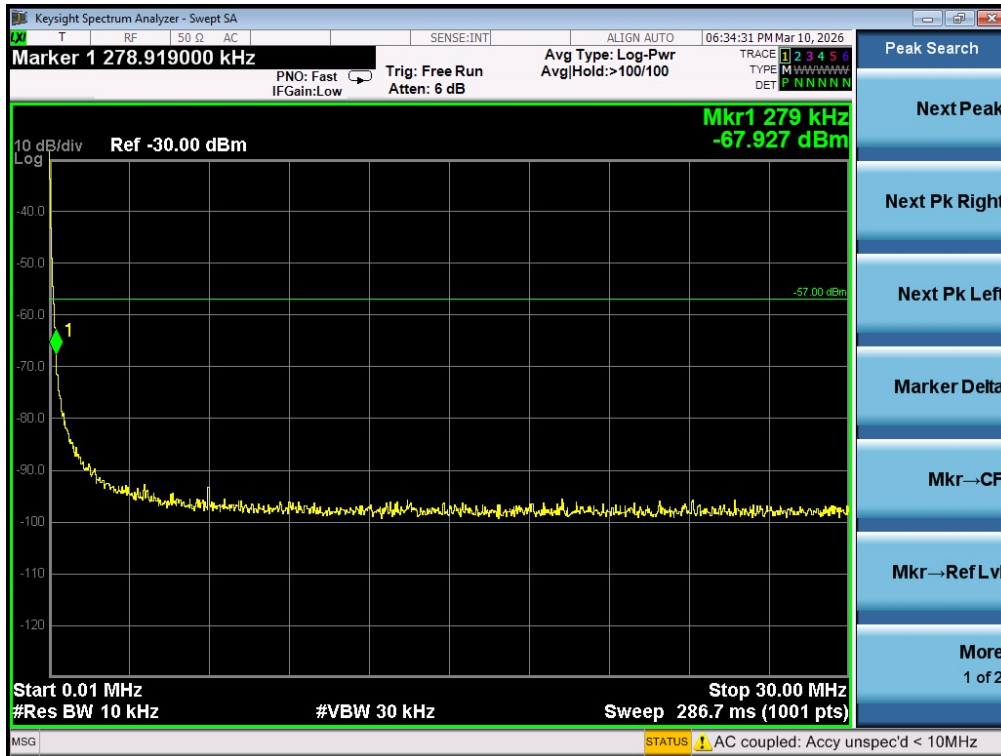
The EUT was connected directly to the spectrum analyzer and conducted spurious emissions were recorded for each type of modulation in both scanning and non-scanning mode. Scanning mode was performed across the allowed frequency range of 30 – 3000 MHz.

Test Setup

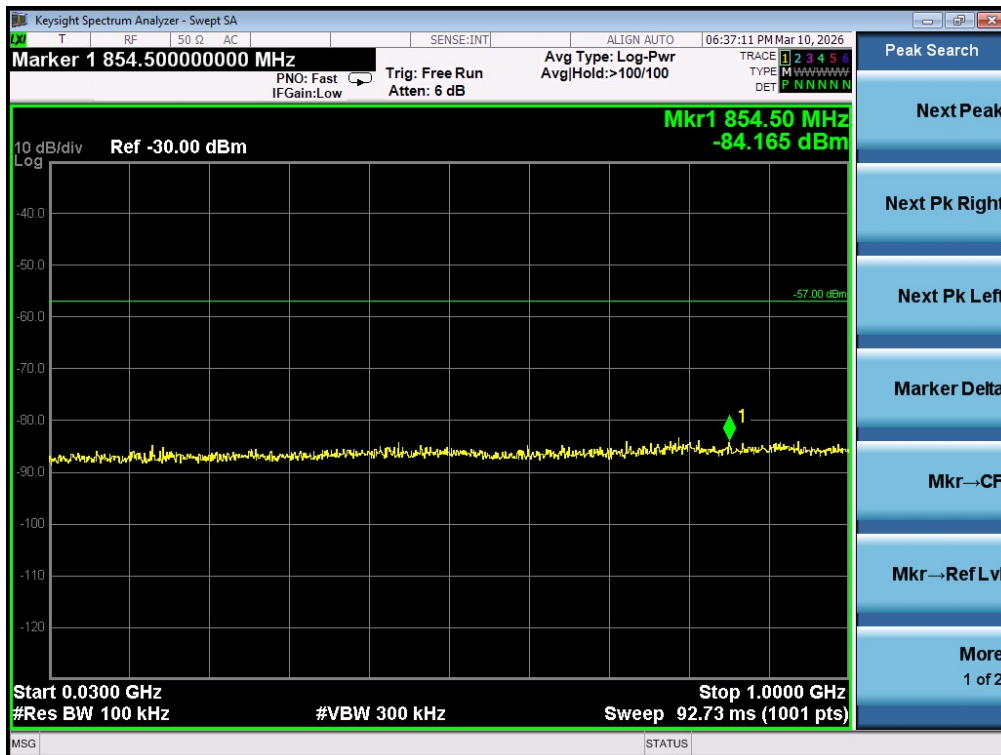


TEST RESULTS

9KHz-30MHz



30MHz-1GHz





Only the worst-case results are recorded in the report.

***** END OF REPORT *****