

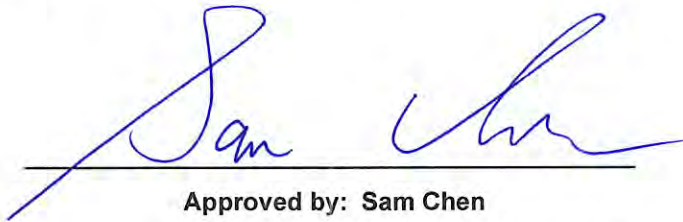


RADIO TEST REPORT

FCC ID : 2ABLK-GPR2022XX
Equipment : GigaPro p6dx, GigaPro p6dlx
Brand Name : Calix
Model Name : p6dx GPR2022H, p6dlx GPR2022LH
Applicant : Calix Inc.
1035 N. McDowell Blvd. Petaluma, CA94954 U.S.A.
Standard : 47 CFR FCC Part 15.407

The product was received on Dec. 11, 2024, and testing was started from Dec. 27, 2024 and completed on Dec. 27, 2024. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

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



Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory

No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)



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History of this test report

TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB-A12_1 Ver1.4

Page Number : 3 of 20
Issued Date : Jan. 23, 2025
Report Version : 01



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.3	15.203	Antenna Requirement	PASS	-
3.1	15.407(a)	Unwanted Emissions	PASS	-

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacture who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the chapter "Measurement Uncertainty".

Disclaimer:

The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Sam Chen

Report Producer: Sandy Chuang



1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5150-5250	a, n (HT20), ac (VHT20), ax (HEW20)	5180-5240	36-48 [4]
5250-5350		5260-5320	52-64 [4]
5470-5725		5500-5720	100-144 [12]
5725-5850		5745-5825	149-165 [5]
5150-5250	n (HT40), ac (VHT40), ax (HEW40)	5190-5230	38-46 [2]
5250-5350		5270-5310	54-62 [2]
5470-5725		5510-5710	102-142 [6]
5725-5850		5755-5795	151-159 [2]
5150-5250	ac (VHT80), ax (HEW80)	5210	42 [1]
5250-5350		5290	58 [1]
5470-5725		5530-5690	106-138 [3]
5725-5850		5775	155 [1]

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	4TX
5.15-5.25GHz	802.11n HT20	20	4TX
5.15-5.25GHz	802.11n HT20-BF	20	4TX
5.15-5.25GHz	802.11ac VHT20	20	4TX
5.15-5.25GHz	802.11ac VHT20-BF	20	4TX
5.15-5.25GHz	802.11ax HEW20	20	4TX
5.15-5.25GHz	802.11ax HEW20-BF	20	4TX
5.15-5.25GHz	802.11n HT40	40	4TX
5.15-5.25GHz	802.11n HT40-BF	40	4TX
5.15-5.25GHz	802.11ac VHT40	40	4TX
5.15-5.25GHz	802.11ac VHT40-BF	40	4TX
5.15-5.25GHz	802.11ax HEW40	40	4TX
5.15-5.25GHz	802.11ax HEW40-BF	40	4TX
5.15-5.25GHz	802.11ac VHT80	80	4TX
5.15-5.25GHz	802.11ac VHT80-BF	80	4TX
5.15-5.25GHz	802.11ax HEW80	80	4TX
5.15-5.25GHz	802.11ax HEW80-BF	80	4TX
5.25-5.35GHz	802.11a	20	4TX



Band	Mode	BWch (MHz)	Nant
5.25-5.35GHz	802.11n HT20	20	4TX
5.25-5.35GHz	802.11n HT20-BF	20	4TX
5.25-5.35GHz	802.11ac VHT20	20	4TX
5.25-5.35GHz	802.11ac VHT20-BF	20	4TX
5.25-5.35GHz	802.11ax HEW20	20	4TX
5.25-5.35GHz	802.11ax HEW20-BF	20	4TX
5.25-5.35GHz	802.11n HT40	40	4TX
5.25-5.35GHz	802.11n HT40-BF	40	4TX
5.25-5.35GHz	802.11ac VHT40	40	4TX
5.25-5.35GHz	802.11ac VHT40-BF	40	4TX
5.25-5.35GHz	802.11ax HEW40	40	4TX
5.25-5.35GHz	802.11ax HEW40-BF	40	4TX
5.25-5.35GHz	802.11ac VHT80	80	4TX
5.25-5.35GHz	802.11ac VHT80-BF	80	4TX
5.25-5.35GHz	802.11ax HEW80	80	4TX
5.25-5.35GHz	802.11ax HEW80-BF	80	4TX
5.47-5.725GHz	802.11a	20	4TX
5.47-5.725GHz	802.11n HT20	20	4TX
5.47-5.725GHz	802.11n HT20-BF	20	4TX
5.47-5.725GHz	802.11ac VHT20	20	4TX
5.47-5.725GHz	802.11ac VHT20-BF	20	4TX
5.47-5.725GHz	802.11ax HEW20	20	4TX
5.47-5.725GHz	802.11ax HEW20-BF	20	4TX
5.47-5.725GHz	802.11n HT40	40	4TX
5.47-5.725GHz	802.11n HT40-BF	40	4TX
5.47-5.725GHz	802.11ac VHT40	40	4TX
5.47-5.725GHz	802.11ac VHT40-BF	40	4TX
5.47-5.725GHz	802.11ax HEW40	40	4TX
5.47-5.725GHz	802.11ax HEW40-BF	40	4TX
5.47-5.725GHz	802.11ac VHT80	80	4TX
5.47-5.725GHz	802.11ac VHT80-BF	80	4TX
5.47-5.725GHz	802.11ax HEW80	80	4TX
5.47-5.725GHz	802.11ax HEW80-BF	80	4TX
5.725-5.85GHz	802.11a	20	4TX
5.725-5.85GHz	802.11n HT20	20	4TX
5.725-5.85GHz	802.11n HT20-BF	20	4TX
5.725-5.85GHz	802.11ac VHT20	20	4TX
5.725-5.85GHz	802.11ac VHT20-BF	20	4TX
5.725-5.85GHz	802.11ax HEW20	20	4TX
5.725-5.85GHz	802.11ax HEW20-BF	20	4TX



Band	Mode	BWch (MHz)	Nant
5.725-5.85GHz	802.11n HT40	40	4TX
5.725-5.85GHz	802.11n HT40-BF	40	4TX
5.725-5.85GHz	802.11ac VHT40	40	4TX
5.725-5.85GHz	802.11ac VHT40-BF	40	4TX
5.725-5.85GHz	802.11ax HEW40	40	4TX
5.725-5.85GHz	802.11ax HEW40-BF	40	4TX
5.725-5.85GHz	802.11ac VHT80	80	4TX
5.725-5.85GHz	802.11ac VHT80-BF	80	4TX
5.725-5.85GHz	802.11ax HEW80	80	4TX
5.725-5.85GHz	802.11ax HEW80-BF	80	4TX

Note:

- ♦ 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ VHT20, VHT40, VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- ♦ HEW20, HEW40, HEW80 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ♦ BWch is the nominal channel bandwidth.

**1.1.2 Table for 80+80 MHz Mode**

Type	Channel No.	Frequency
1	42+58	5210+5290 MHz
2	106+122	5530+5610 MHz

1.1.3 Antenna Information

For EUT 1:

Ant.	Port	Brand Name	Model Name	Antenna Type	Connector	Gain (dBi)	
						2.4GHz	5GHz
1	1	HLt	6NS1293	Sector	I-PEX	-	9.10
2	2	HLt	6NS1293	Sector	I-PEX	-	9.20
3	3	HLt	6NS1293	Sector	I-PEX	-	9.20
4	4	HLt	6NS1293	Sector	I-PEX	-	9.20
5	1	HLt	6NS1293	Sector	I-PEX	8.60	-
6	2	HLt	6NS1293	Sector	I-PEX	8.60	-

For EUT 2:

Ant.	Port	Brand Name	Model Name	Antenna Type	Connector	Gain (dBi)
						LoRa
7	1	HL Tronics	P-0809-02PN	Dipole	N Type	2

Note 1: The above information was declared by manufacturer.

Note 2: Directional gain information

Type	Maximum Output Power	Power Spectral Density
Non-BF	Directional gain = Max.gain + array gain. For power measurements on IEEE 802.11 devices Array Gain = 0 dB (i.e., no array gain) for N ANT ≤ 4	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left(\sum_{k=1}^N g_{j,k} \right)^2}{N_{ANT}} \right]$
BF	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right]$	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right]$

Ex.

Directional Gain (NSS1) formula :

$$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right]$$

$$NSS1(g1,1) = 10^{G1/20} ; NSS1(g1,2) = 10^{G2/20} ; NSS1(g1,3) = 10^{G3/20} ; NSS1(g1,4) = 10^{G4/20}$$

$$g_{j,k} = (NSS1(g1,1) + NSS1(g1,2) + NSS1(g1,3) + NSS1(g1,4))^2$$

$$DG = 10 \log[(NSS1(g1,1) + NSS1(g1,2) + NSS1(g1,3) + NSS1(g1,4))^2 / N_{ANT}] \Rightarrow 10$$

$$\log[(10^{G1/20} + 10^{G2/20} + 10^{G3/20} + 10^{G4/20})^2 / N_{ANT}]$$

Where ;

$$2.4G \ G1 = 8.60 \text{ dBi} ; G2 = 8.60 \text{ dBi}$$

$$5G \text{ UNII-1} \ G1 = 9.10 \text{ dBi} ; G2 = 9.20 \text{ dBi} ; G3 = 9.20 \text{ dBi} ; G4 = 9.20 \text{ dBi}$$

$$5G \text{ UNII-2A} \ G1 = 9.10 \text{ dBi} ; G2 = 9.20 \text{ dBi} ; G3 = 9.20 \text{ dBi} ; G4 = 9.20 \text{ dBi}$$

$$5G \text{ UNII-2C} \ G1 = 9.10 \text{ dBi} ; G2 = 9.20 \text{ dBi} ; G3 = 9.20 \text{ dBi} ; G4 = 9.20 \text{ dBi}$$

$$5G \text{ UNII-3} \ G1 = 9.10 \text{ dBi} ; G2 = 9.20 \text{ dBi} ; G3 = 9.20 \text{ dBi} ; G4 = 9.20 \text{ dBi}$$

Cross-Polarized Antenna

$$2.4G \ DG = 8.60 \text{ dBi}$$

$$5G \text{ UNII-1} \ DG = 12.21 \text{ dBi}$$

$$5G \text{ UNII-2A} \ DG = 12.21 \text{ dBi}$$

$$5G \text{ UNII-2C} \ DG = 12.21 \text{ dBi}$$

$$5G \text{ UNII-3} \ DG = 12.21 \text{ dBi}$$

80+80M

$$5G \text{ UNII-1} \ DG = 9.20 \text{ dBi}$$

$$5G \text{ UNII-2A} \ DG = 9.20 \text{ dBi}$$

$$5G \text{ UNII-2C} \ DG = 12.21 \text{ dBi}$$

Note 3: For 2.4GHz function:

For IEEE 802.11 b/g/n/VHT/ax (2TX/2RX):

Port 1 and Port 2 can be used as transmitting/receiving antenna.

Port 1 and Port 2 could transmit/receive simultaneously.

For 5GHz function:

For IEEE 802.11 a/n/ac/ax (4TX/4RX):

Port 1~4 can be used as transmitting/receiving antenna.

Port 1~4 could transmit/receive simultaneously.

For LoRa function (1TX/1RX):

Only Port 1 can be use as transmitting antenna.

**1.1.4 EUT Operational Condition**

EUT Power Type	From Power Adapter or PoE or DC to DC		
Beamforming Function	<input checked="" type="checkbox"/>	With beamforming	<input type="checkbox"/> Without beamforming
	The product has beamforming function for n/VHT/ax in 2.4GHz and n/ac/ax in 5GHz.		
Weather Band	<input checked="" type="checkbox"/>	With 5600~5650MHz	<input type="checkbox"/> Without 5600~5650MHz
Function	<input checked="" type="checkbox"/>	Outdoor P2M	<input type="checkbox"/> Indoor P2M
	<input type="checkbox"/>	Fixed P2P	<input type="checkbox"/> Client
	<input checked="" type="checkbox"/>	Point-to-multipoint	<input type="checkbox"/> Point-to-point
TPC Function	<input checked="" type="checkbox"/>	With TPC	<input type="checkbox"/> Without TPC
Channel Puncturing Function	<input type="checkbox"/>	Supported Static Puncturing	
	<input type="checkbox"/>	Supported Dynamic Puncturing	
	<input checked="" type="checkbox"/>	Unsupported	
Support RU	<input checked="" type="checkbox"/>	Full RU	<input type="checkbox"/> Partial RU

Note: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

EUT	Equipment Name	Model Name	Description
1	GigaPro p6dx	p6dx GPR2022H	Without certified LoRa module
2	GigaPro p6dlx	p6dlx GPR2022LH	With certified LoRa module

Note 1: From the above, EUT 1 has selected to execute the in Unwanted Emissions Below 1GHz.

Note 2: The above information was declared by manufacturer.

1.1.6 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FR430430-01AB

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. Changing the equipment name to "GigaPro p6dlx" from "GigaPro p6lx" for the EUT with lora module. 2. Changing the model name to "p6dlx GPR2022LH" from "p6lx GPR2022LH" for the EUT with lora module.	After evaluating, it does not affect the test.
3. Adding the power source type (Powered type: DC to DC).	Unwanted Emissions Below 1GHz.

**1.1.7 Table for EUT Supports Functions**

Function
AP Router
Bridge
Extender

Note: The above information was declared by manufacturer.



1.2 Applicable Standards

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

- ♦ 47 CFR FCC Part 15
- ♦ ANSI C63.10-2013
- ♦ FCC KDB 789033 D02 v02r01

The following reference test guidance is not within the scope of accreditation of TAF.

- ♦ FCC KDB 412172 D01 v01r01
- ♦ FCC KDB 414788 D01 v01r01

1.3 Testing Location Information

Testing Location Information	
Test Lab. : Sporton International Inc. Hsinchu Laboratory	
Hsinchu (TAF: 3787)	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.) TEL: 886-3-656-9065 FAX: 886-3-656-9085 Test site Designation No. TW3787 with FCC. Conformity Assessment Body Identifier (CABID) TW3787 with ISED.

Test Condition	Test Site No.	Test Engineer	Test Environment (°C / %)	Test Date
Radiated Below 1G	03CH04-CB	Viola Huang	22.7-23.8 / 58-60	Dec. 27, 2024

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2))

Test Items	Uncertainty	Remark
Radiated Emission (9kHz ~ 30MHz)	4.1 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.2 dB	Confidence levels of 95%

2 Test Configuration of EUT

The Worst Case Mode for Following Conformance Tests	
Tests Item	Unwanted Emissions
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	CTX
	According to the original test report, "EUT 1 in Y axis_WLAN 2.4GHz" has been evaluated to be the worst case, so the measurement will follow this same test configuration
1	EUT 1 in Y axis_WLAN 2.4GHz + DC to DC converter with Adapter

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	EUT 1_WLAN 2.4GHz + WLAN 5GHz
2	EUT 2_WLAN 2.4GHz + WLAN 5GHz + LoRa
Refer to Sporton Test Report No.: FA430430-02 for Co-location RF Exposure Evaluation.	

Note: The DC to DC converter with Adapter are for measurement only, would not be marketed.

The DC to DC converter with Adapter information as below:

Support Unit	Brand	Model	Remark
DC to DC converter	MEAN WELL	DDR-60G-12	-
Adapter	LG	MS-V2530R190-048L0-US	Used for DC to DC converter only

2.1 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.



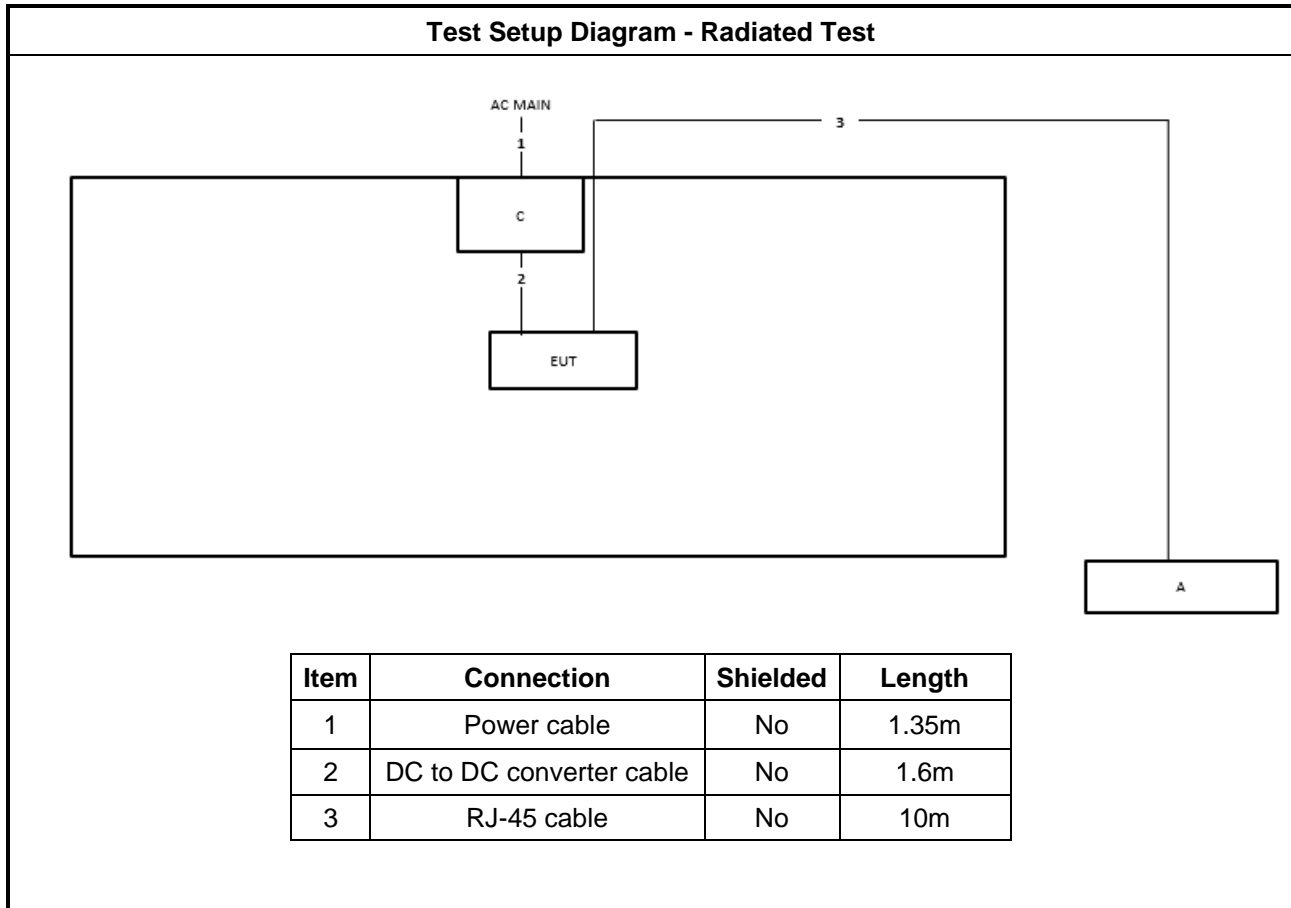
2.2 Accessories

Accessories
Wall-mounted rack*1
Sealing Collar 1*1
Sealing Collar 2*1

2.3 Support Equipment

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	Adapter	LG	MS-V2530R190-048L0-US	N/A
C	DC to DC converter	MEAN WELL	DDR-60G-12	N/A

2.4 Test Setup Diagram





3 Transmitter Test Result

3.1 Unwanted Emissions

3.1.1 Transmitter Unwanted Emissions Limit

Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit			
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

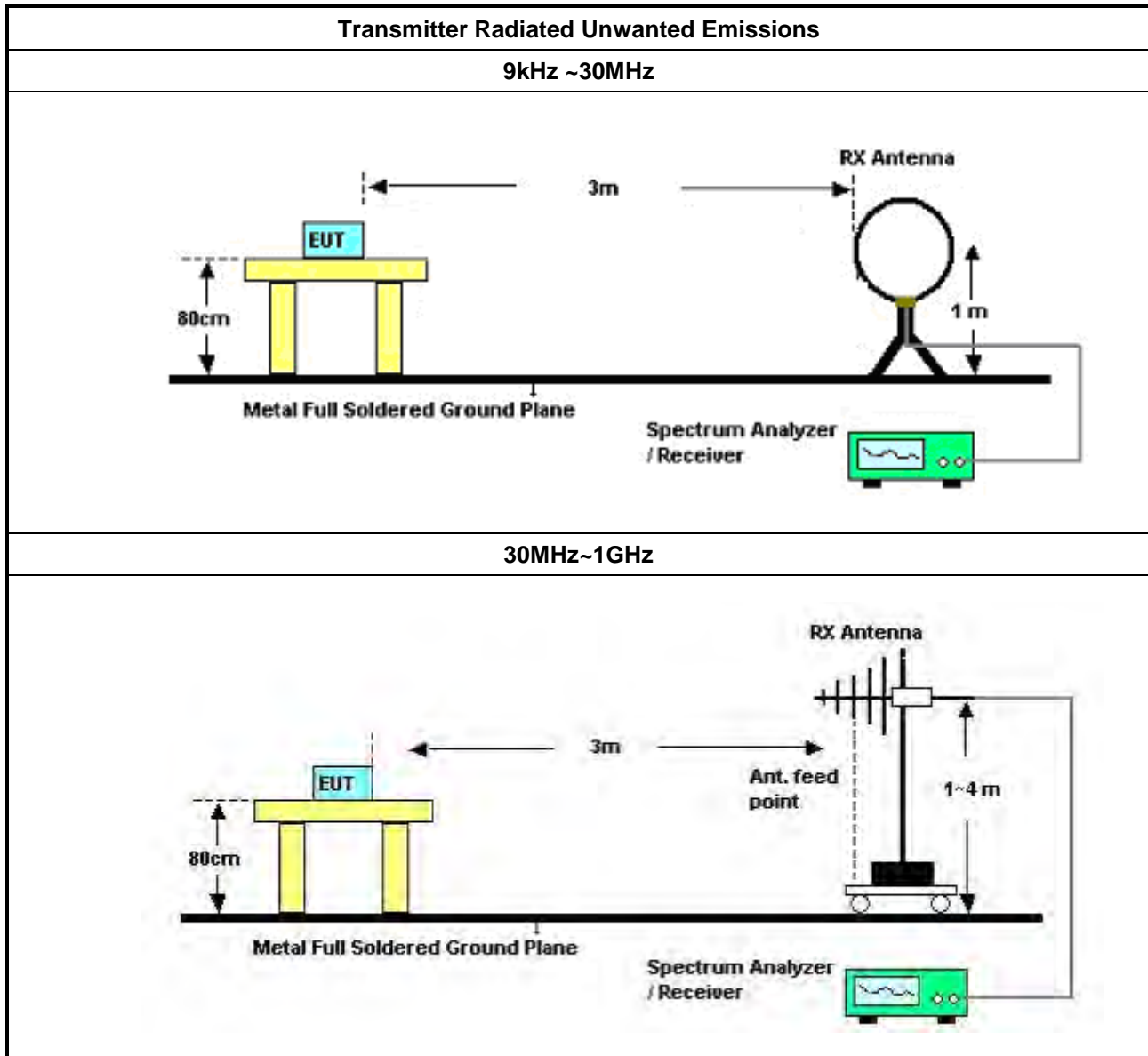
3.1.3 Test Procedures

Test Method
<ul style="list-style-type: none">Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).



Test Method	
▪ The average emission levels shall be measured in [duty cycle \geq 98 or duty factor].	
▪ For the transmitter unwanted emissions shall be measured using following options below:	
	▪ Refer as FCC KDB 789033 D02, clause G)2) for unwanted emissions into non-restricted bands.
	▪ Refer as FCC KDB 789033 D02, clause G)1) for unwanted emissions into restricted bands.
	<input type="checkbox"/> Refer as FCC KDB 789033 D02, G)6) Method AD (Trace Averaging).
	<input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02, G)6) Method VB (Reduced VBW).
	<input type="checkbox"/> Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW \geq 1/T, where T is pulse time.
	<input type="checkbox"/> Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
	<input checked="" type="checkbox"/> Refer as FCC KDB 789033 D02, clause G)5) measurement procedure peak limit.
<input type="checkbox"/> Refer as ANSI C63.10, clause 4.1.4.2.2 measurement procedure peak limit.	
▪ For radiated measurement.	
	▪ Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.
	▪ Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.
	▪ Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.
▪ The any unwanted emissions level shall not exceed the fundamental emission level.	
▪ All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.	

3.1.4 Test Setup





3.1.5 Measurement Results Calculation

The measured Level is calculated using:

Corrected Reading: Antenna factor (AF) + Cable loss (CL) + Read level (Raw) - Preamp factor (PA)(if applicable) = Level.

3.1.6 Transmitter Unwanted Emissions (Below 30MHz)

There is a comparison data of both open-field test site and alternative test site - semi-Anechoic chamber according to KDB414788 Radiated Test Site, and the result came out very similar.

All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

The radiated emissions were investigated from 9 kHz or the lowest frequency generated within the device, up to the 10th harmonic or 40 GHz, whichever is appropriate.

3.1.7 Test Result of Transmitter Unwanted Emissions

Refer as Appendix A



4 Test Equipment and Calibration Data

Instrument	Brand	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Loop Antenna	Teseq	HLA 6121	65417	9kHz - 30 MHz	Oct. 16, 2024	Oct. 15, 2025	Radiation (03CH04-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH04-CB	30 MHz ~ 1 GHz	Jul. 31, 2024	Jul. 30, 2025	Radiation (03CH04-CB)
3m Semi Anechoic Chamber VSWR	TDK	SAC-3M	03CH04-CB	1GHz ~18GHz 3m	Feb. 22, 2024	Feb. 21, 2025	Radiation (03CH04-CB)
BILOG ANTENNA with 6 dB attenuator	Schaffner & EMCI	CBL6112B & N-6-06	22021&AT-N0 607	30MHz ~ 1GHz	Oct. 05, 2024	Oct. 04, 2025	Radiation (03CH04-CB)
Pre-Amplifier	EMCI	EMC330N	980391	20MHz ~ 3GHz	May 22, 2024	May 21, 2025	Radiation (03CH04-CB)
Spectrum Analyzer	R&S	FSP40	100142	9kHz~40GHz	Mar. 19, 2024	Mar. 18, 2025	Radiation (03CH04-CB)
EMI Test Receiver	R&S	ESR7	102172	9kHz ~ 7GHz	Oct. 21, 2024	Oct. 20, 2025	Radiation (03CH04-CB)
RF Cable-low	Woken	RG402	Low Cable-03+67	30MHz ~ 1GHz	Oct. 01, 2024	Sep. 30, 2025	Radiation (03CH04-CB)
Test Software	SPORTON	SENSE-EMI	V5.11	30MHz-40GHz	N.C.R.	N.C.R.	Radiation (03CH04-CB)

Note: Calibration Interval of instruments listed above is one year.

NCR means Non-Calibration required.



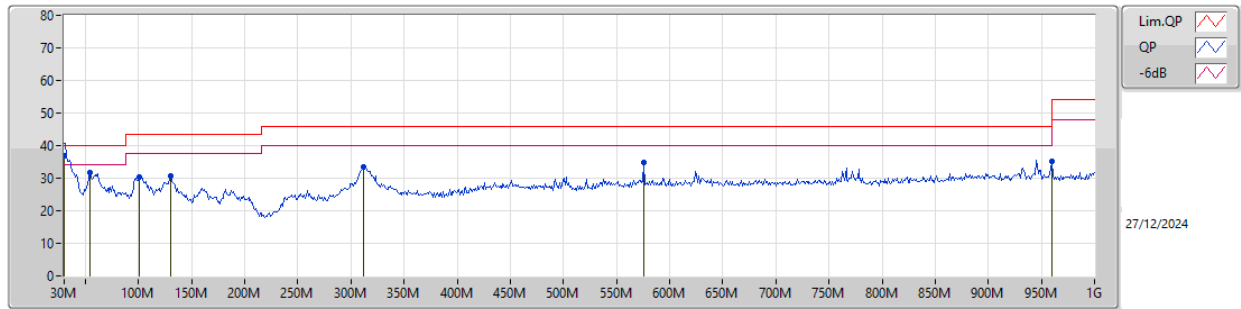
Radiated Emissions below 1GHz

Appendix A

Summary

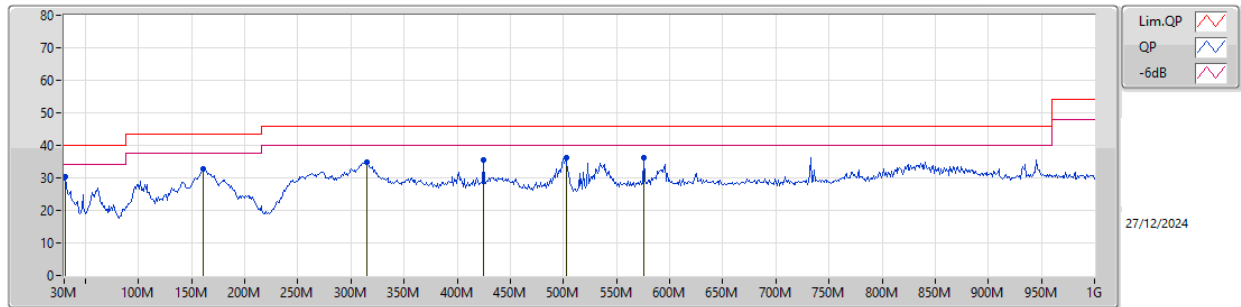
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	QP	30M	36.76	40.00	-3.24	Vertical

Mode 1



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB/m)	CL (dB)	PA (dB)		
QP	30M	36.76	40.00	-3.24	-6.74	3	Vertical	90	1.00	"Worst"	43.50	23.85	0.46	31.05		
PK	54.25M	31.65	40.00	-8.35	-17.62	3	Vertical	216	1.00	-	49.27	12.86	0.67	31.15		
PK	100.81M	30.19	43.50	-13.31	-12.72	3	Vertical	175	1.00	-	42.91	16.99	0.98	30.69		
PK	129.91M	30.73	43.50	-12.77	-12.04	3	Vertical	151	1.00	-	42.77	18.02	1.14	31.20		
PK	311.3M	33.28	46.00	-12.72	-10.07	3	Vertical	164	1.50	-	43.35	19.38	1.86	31.31		
PK	576.11M	34.83	46.00	-11.17	-4.58	3	Vertical	165	1.00	-	39.41	24.55	2.59	31.72		
PK	960M	35.33	54.00	-18.67	-2.13	3	Vertical	0	1.50	-	37.46	26.81	3.33	32.27		

Mode 1



Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB/m)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comment	Raw (dBuV)	AF (dB/m)	CL (dB)	PA (dB)		
PK	30.97M	30.22	40.00	-9.78	-6.89	3	Horizontal	360	1.25	"Worst"	37.11	23.62	0.47	30.98		
PK	160.95M	32.83	43.50	-10.67	-13.99	3	Horizontal	127	2.00	-	46.82	16.02	1.27	31.28		
PK	315.18M	34.71	46.00	-11.29	-10.04	3	Horizontal	115	1.00	-	44.75	19.40	1.87	31.31		
PK	424.79M	35.52	46.00	-10.48	-6.92	3	Horizontal	344	1.50	-	42.44	22.34	2.18	31.44		
PK	502.39M	36.06	46.00	-9.94	-5.80	3	Horizontal	360	1.50	-	41.86	23.54	2.39	31.73		
PK	576.11M	36.19	46.00	-9.81	-4.58	3	Horizontal	33	1.50	-	40.77	24.55	2.59	31.72		