

RADIO TEST REPORT

FCC ID : MSQ-RTBE8T00
Equipment : TUF Gaming BE9400 Tri Band WiFi 7 Router,
BE9400 Tri Band WiFi 7 Router
Brand Name : ASUS
Model Name : TUF-BE9400, RT-BE90U, RT-BE9400
Applicant : ASUSTeK COMPUTER INC.
1F., No. 15, Lide Rd., Beitou, Taipei City 112, Taiwan
Standard : 47 CFR FCC Part 15.407

The product was received on Sep. 12, 2025, and testing was started from Oct. 16, 2025 and completed on Oct. 16, 2025. 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 C63.10-2020 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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TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB-A12_1 Ver1.4



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
3.1	15.407(b)	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: Wendy Pan



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), be (EHT20)	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), be (EHT40)	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), be (EHT80)	5210	42 [1]
5250-5350		5290	58 [1]
5470-5725		5530-5690	106-138 [3]
5725-5850		5775	155 [1]
5150-5350	ac (VHT160), ax (HEW160), be (EHT160)	5250	50 [1]
5470-5725		5570	114 [1]
5470-5725	EHT240	5610	122 [1]

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11a	20	2TX
5.15-5.25GHz	802.11n HT20	20	2TX
5.15-5.25GHz	802.11n HT20-BF	20	2TX
5.15-5.25GHz	802.11ac VHT20	20	2TX
5.15-5.25GHz	802.11ac VHT20-BF	20	2TX
5.15-5.25GHz	802.11ax HEW20	20	2TX
5.15-5.25GHz	802.11ax HEW20-BF	20	2TX
5.15-5.25GHz	802.11be EHT20	20	2TX
5.15-5.25GHz	802.11be EHT20-BF	20	2TX
5.15-5.25GHz	802.11n HT40	40	2TX
5.15-5.25GHz	802.11n HT40-BF	40	2TX
5.15-5.25GHz	802.11ac VHT40	40	2TX
5.15-5.25GHz	802.11ac VHT40-BF	40	2TX
5.15-5.25GHz	802.11ax HEW40	40	2TX
5.15-5.25GHz	802.11ax HEW40-BF	40	2TX



Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11be EHT40	40	2TX
5.15-5.25GHz	802.11be EHT40-BF	40	2TX
5.15-5.25GHz	802.11ac VHT80	80	2TX
5.15-5.25GHz	802.11ac VHT80-BF	80	2TX
5.15-5.25GHz	802.11ax HEW80	80	2TX
5.15-5.25GHz	802.11ax HEW80-BF	80	2TX
5.15-5.25GHz	802.11be EHT80	80	2TX
5.15-5.25GHz	802.11be EHT80-BF	80	2TX
5.15-5.35GHz	802.11ac VHT160	160	2TX
5.15-5.35GHz	802.11ac VHT160-BF	160	2TX
5.15-5.35GHz	802.11ax HEW160	160	2TX
5.15-5.35GHz	802.11ax HEW160-BF	160	2TX
5.15-5.35GHz	802.11be EHT160	160	2TX
5.15-5.35GHz	802.11be EHT160-BF	160	2TX
5.25-5.35GHz	802.11a	20	2TX
5.25-5.35GHz	802.11n HT20	20	2TX
5.25-5.35GHz	802.11n HT20-BF	20	2TX
5.25-5.35GHz	802.11ac VHT20	20	2TX
5.25-5.35GHz	802.11ac VHT20-BF	20	2TX
5.25-5.35GHz	802.11ax HEW20	20	2TX
5.25-5.35GHz	802.11ax HEW20-BF	20	2TX
5.25-5.35GHz	802.11be EHT20	20	2TX
5.25-5.35GHz	802.11be EHT20-BF	20	2TX
5.25-5.35GHz	802.11n HT40	40	2TX
5.25-5.35GHz	802.11n HT40-BF	40	2TX
5.25-5.35GHz	802.11ac VHT40	40	2TX
5.25-5.35GHz	802.11ac VHT40-BF	40	2TX
5.25-5.35GHz	802.11ax HEW40	40	2TX
5.25-5.35GHz	802.11ax HEW40-BF	40	2TX
5.25-5.35GHz	802.11be EHT40	40	2TX
5.25-5.35GHz	802.11be EHT40-BF	40	2TX
5.25-5.35GHz	802.11ac VHT80	80	2TX
5.25-5.35GHz	802.11ac VHT80-BF	80	2TX
5.25-5.35GHz	802.11ax HEW80	80	2TX
5.25-5.35GHz	802.11ax HEW80-BF	80	2TX
5.25-5.35GHz	802.11be EHT80	80	2TX
5.25-5.35GHz	802.11be EHT80-BF	80	2TX
5.47-5.725GHz	802.11a	20	2TX
5.47-5.725GHz	802.11n HT20	20	2TX
5.47-5.725GHz	802.11n HT20-BF	20	2TX



Band	Mode	BWch (MHz)	Nant
5.47-5.725GHz	802.11ac VHT20	20	2TX
5.47-5.725GHz	802.11ac VHT20-BF	20	2TX
5.47-5.725GHz	802.11ax HEW20	20	2TX
5.47-5.725GHz	802.11ax HEW20-BF	20	2TX
5.47-5.725GHz	802.11be EHT20	20	2TX
5.47-5.725GHz	802.11be EHT20-BF	20	2TX
5.47-5.725GHz	802.11n HT40	40	2TX
5.47-5.725GHz	802.11n HT40-BF	40	2TX
5.47-5.725GHz	802.11ac VHT40	40	2TX
5.47-5.725GHz	802.11ac VHT40-BF	40	2TX
5.47-5.725GHz	802.11ax HEW40	40	2TX
5.47-5.725GHz	802.11ax HEW40-BF	40	2TX
5.47-5.725GHz	802.11be EHT40	40	2TX
5.47-5.725GHz	802.11be EHT40-BF	40	2TX
5.47-5.725GHz	802.11ac VHT80	80	2TX
5.47-5.725GHz	802.11ac VHT80-BF	80	2TX
5.47-5.725GHz	802.11ax HEW80	80	2TX
5.47-5.725GHz	802.11ax HEW80-BF	80	2TX
5.47-5.725GHz	802.11be EHT80	80	2TX
5.47-5.725GHz	802.11be EHT80-BF	80	2TX
5.47-5.725GHz	802.11ac VHT160	160	2TX
5.47-5.725GHz	802.11ac VHT160-BF	160	2TX
5.47-5.725GHz	802.11ax HEW160	160	2TX
5.47-5.725GHz	802.11ax HEW160-BF	160	2TX
5.47-5.725GHz	802.11be EHT160	160	2TX
5.47-5.725GHz	802.11be EHT160-BF	160	2TX
5.47-5.725GHz	EHT240	240	2TX
5.47-5.725GHz	EHT240-BF	240	2TX
5.725-5.85GHz	802.11a	20	2TX
5.725-5.85GHz	802.11n HT20	20	2TX
5.725-5.85GHz	802.11n HT20-BF	20	2TX
5.725-5.85GHz	802.11ac VHT20	20	2TX
5.725-5.85GHz	802.11ac VHT20-BF	20	2TX
5.725-5.85GHz	802.11ax HEW20	20	2TX
5.725-5.85GHz	802.11ax HEW20-BF	20	2TX
5.725-5.85GHz	802.11be EHT20	20	2TX
5.725-5.85GHz	802.11be EHT20-BF	20	2TX
5.725-5.85GHz	802.11n HT40	40	2TX
5.725-5.85GHz	802.11n HT40-BF	40	2TX
5.725-5.85GHz	802.11ac VHT40	40	2TX



Band	Mode	BWch (MHz)	Nant
5.725-5.85GHz	802.11ac VHT40-BF	40	2TX
5.725-5.85GHz	802.11ax HEW40	40	2TX
5.725-5.85GHz	802.11ax HEW40-BF	40	2TX
5.725-5.85GHz	802.11be EHT40	40	2TX
5.725-5.85GHz	802.11be EHT40-BF	40	2TX
5.725-5.85GHz	802.11ac VHT80	80	2TX
5.725-5.85GHz	802.11ac VHT80-BF	80	2TX
5.725-5.85GHz	802.11ax HEW80	80	2TX
5.725-5.85GHz	802.11ax HEW80-BF	80	2TX
5.725-5.85GHz	802.11be EHT80	80	2TX
5.725-5.85GHz	802.11be EHT80-BF	80	2TX

Note:

- ♦ 11a, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- ♦ VHT20, VHT40, VHT80 and VHT160 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ♦ HEW20, HEW40, HEW80 and HEW160 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- ♦ EHT20, EHT40, EHT80, EHT160 and EHT240 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM, 4096QAM modulation.
- ♦ BWch is the nominal channel bandwidth.

**1.1.2 Antenna Information**

Ant.	Port			Brand	Model Name	Antenna Type	Connector	Gain (dBi)
	WLAN 2.4GHz	WLAN 5GHz	WLAN 6GHz					
1	1	-	-	RFlink	3020202219	Dipole Antenna	I-PEX	Note 1
2	2	-	-	RFlink	3020202220	Dipole Antenna	I-PEX	
3	-	1	-	RFlink	3020202222	Dipole Antenna	I-PEX	
4	-	2	-	RFlink	3020202221	Dipole Antenna	I-PEX	
5	-	-	1	RFlink	3020202223	Dipole Antenna	I-PEX	
6	-	-	2	RFlink	3020202224	Dipole Antenna	I-PEX	

Note 1

Ant.	Antenna Gain (dBi)								
	WLAN 2.4GHz	WLAN 5GHz				WLAN 6GHz			
		UNII 1	UNII 2A	UNII 2C	UNII 3	UNII 5	UNII 6	UNII 7	UNII 8
1	2.55	-	-	-	-	-	-	-	-
2	2.25	-	-	-	-	-	-	-	-
3	-	2.89	2.28	2.67	2.74	-	-	-	-
4	-	2.37	2.68	2.85	2.48	-	-	-	-
5	-	-	-	-	-	2.05	1.97	2.39	2.37
6	-	-	-	-	-	1.97	1.97	2.17	2.56

Note 2: The above information was declared by manufacturer.

Note3: 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	$DirectionalGain = 10 \cdot \log \left[\frac{\sum_{j=1}^{N_{ANT}} \left(\sum_{k=1}^{N_{ANT}} g_{j,k} \right)^2}{N_{ANT}} \right]$
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 ;

$$2.4G \ G1 = 2.55 \text{ dBi} ; G2 = 2.25 \text{ dBi} ; DG = 5.41 \text{ dBi}$$

$$5G \text{ UNII-1} \ G1 = 2.89 \text{ dBi} ; G2 = 2.37 \text{ dBi} ; DG = 5.64 \text{ dBi}$$

$$5G \text{ UNII-2A} \ G1 = 2.28 \text{ dBi} ; G2 = 2.68 \text{ dBi} ; DG = 5.49 \text{ dBi}$$

$$5G \text{ UNII-2C} \ G1 = 2.67 \text{ dBi} ; G2 = 2.85 \text{ dBi} ; DG = 5.77 \text{ dBi}$$

$$5G \text{ UNII-3} \ G1 = 2.74 \text{ dBi} ; G2 = 2.48 \text{ dBi} ; DG = 5.62 \text{ dBi}$$

$$6G \text{ UNII-5} \ G1 = 2.05 \text{ dBi} ; G2 = 1.97 \text{ dBi} ; DG = 5.02 \text{ dBi}$$

$$6G \text{ UNII-6} \ G1 = 1.97 \text{ dBi} ; G2 = 1.97 \text{ dBi} ; DG = 4.98 \text{ dBi}$$

$$6G \text{ UNII-7} \ G1 = 2.39 \text{ dBi} ; G2 = 2.17 \text{ dBi} ; DG = 5.29 \text{ dBi}$$

$$6G \text{ UNII-8} \ G1 = 2.37 \text{ dBi} ; G2 = 2.56 \text{ dBi} ; DG = 5.48 \text{ dBi}$$

For 2.4GHz function:

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

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

Port 1 and Port 2 could transmit/receive simultaneously.

For 6GHz function:

For IEEE 802.11 a/ax/be (2TX/2RX):

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

Port 1 and Port 2 could transmit/receive simultaneously.

**1.1.3 EUT Operational Condition**

EUT Power Type	From Power Adapter		
Beamforming Function	☒	With beamforming	☐ Without beamforming
	The product has beamforming function for n/VHT/ax/be in 2.4GHz, n/ac/ax/be in 5GHz and ax/be in 6GHz.		
Weather Band	☒	With 5600~5650MHz	☐ Without 5600~5650MHz
Function	☐	Outdoor P2M	☒ Indoor P2M
	☐	Fixed P2P	☐ Client
	☒	Point-to-multipoint	☐ Point-to-point
TPC Function	☒	With TPC	☐ Without TPC
Channel Puncturing Function	☐	Supported Static Puncturing	
	☐	Supported Dynamic Puncturing (Reduce BW)	
	☒	Unsupported	
Support RU	☒	Full RU	☐ Partial RU
Test Software Version	QSPR V2.0.003315		

Note: The above information was declared by manufacturer.

**1.1.4 Table for EUT supports function**

Function	Supports type
AP Router	Master
Bridge	Slave without radar detection
Repeater	Master
Mesh	Master

Note 1: The USB port on this device supports both storage and WWAN functionality.

Note 2: The above information was declared by manufacturer.

1.1.5 Table for Multiple Listing

EUT	Equipment Name	Model Name	DDR4 (Location: TP7)	Heatsink with Thermal Pad	Housing and Heatsink Design	Description
1	TUF Gaming BE9400 Tri Band WiFi 7 Router	TUF-BE9400	Brand Name: Samsung Model Name: K4A8G165WG-BCWE	Without	-	For Retail Channel
2	BE9400 Tri Band WiFi 7 Router	RT-BE90U	Brand Name: Nanya Model Name: NT5AD512M16C4-JR	With	Different from TUF-BE9400	For Wholesales
		RT-BE9400			Same with RT-BE90U	For Retail Channel

Note 1: Following this change, model: RT-BE90U (EUT 2) was selected as representative model for the test and its data was recorded in this report.

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: FR531325AB

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

Modifications	Performance Checking
1. Adding the EUT 2 (Please refer to section 1.1.5 for detailed information.)	Unwanted Emissions Below 1GHz.
2. Updating test standard to "ANSI C63.10-2020" from "ANSI C63.10-2013".	After evaluating, it doesn't affect the test results.



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 C63.10-2020
- ♦ FCC KDB 789033 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	03CH05-CB	George Fan	21.5~22.9 / 57~60	Oct. 16, 2025

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)	3.8 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.7 dB	Confidence levels of 95%

2 Test Configuration of EUT

2.1 The Worst Case Measurement Configuration

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
1. After evaluating, and the worst case was found at X axis for WLAN 2.4GHz, at Z axis for WLAN 5GHz, Y axis for WLAN 6GHz from Radiated Emissions above 1GHz test, so it was selected to perform test and its test result was written in the report. 2. The EUT performed testing at WLAN 2.4GHz, WLAN 5GHz and WLAN 6GHz, and the worst case was found at WLAN 5GHz in the original report. Thus, the measurement will follow this same test configuration. 3. The EUT performed testing with Adapter 1~2, and "Adapter 2" was found as worst case in the original report. Thus, the measurement will follow this same test configuration.	
1	EUT 2 in Z axis + WLAN 5GHz + Adapter 2

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 + WLAN 6GHz
2	EUT 1+ WLAN 2.4GHz + WLAN 5GHz + WLAN 6GHz + WWAN dongle
Refer to Sporton Test Report No.: FA531325-04 for Co-location RF Exposure Evaluation.	



2.2 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

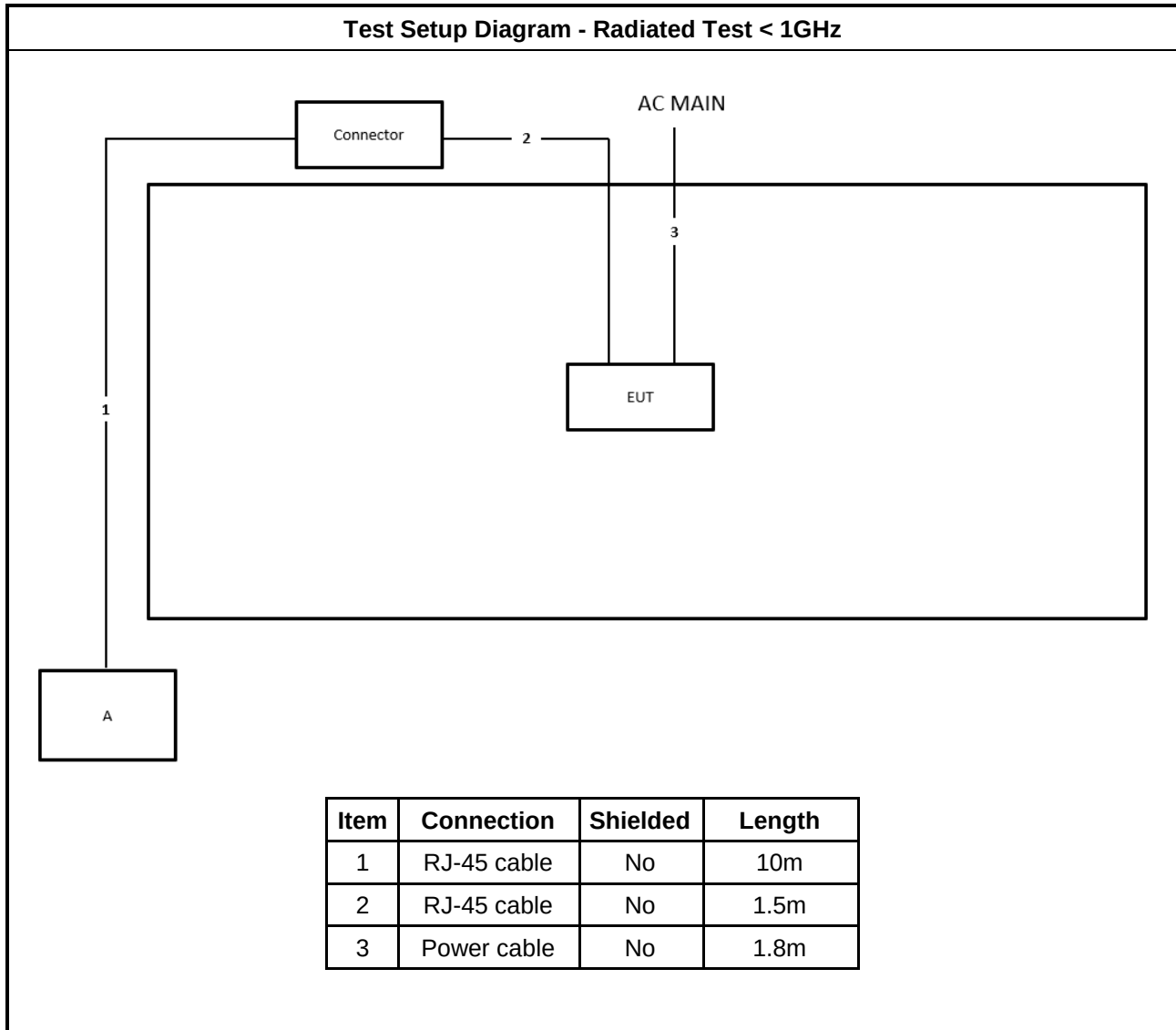
2.3 Accessories

Accessories			
Equipment Name	Brand Name	Model Name	Rating
Adapter 1	Frecom	F30L10-120250SPAU	Input: 100-240V~50/60Hz, 1.25A Output: 12.0V, 2.5A, 30.0W
Adapter 2	SOY	SOY-1200250US-540	Input: 100-240V~50/60Hz, 0.9A Max. Output: 12.0V, 2.5A
Other			
RJ-45 cable*1, Non-Shielded, 1.5m			

2.4 Support Equipment

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	NB	DELL	E4300	N/A

2.5 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

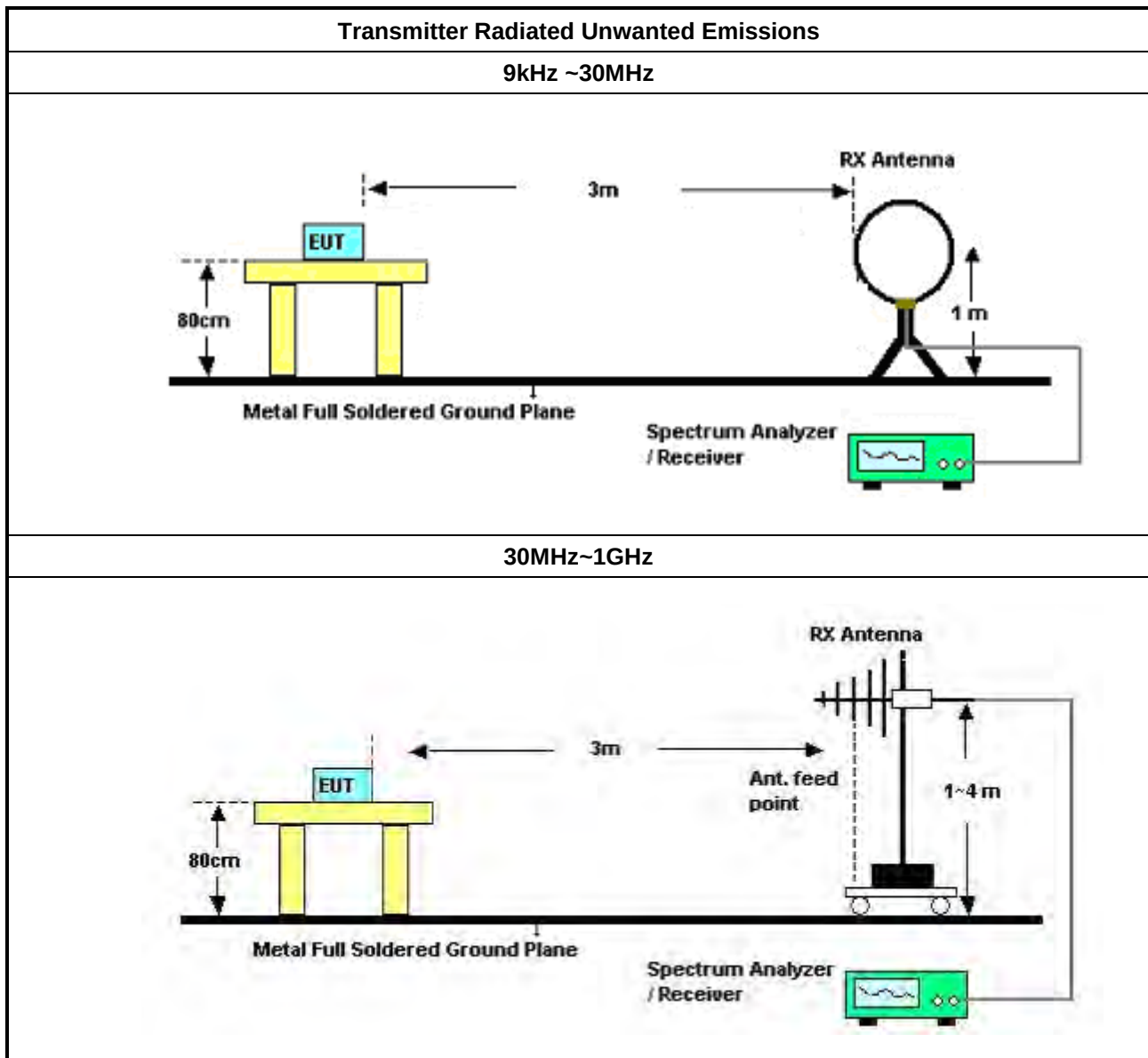
Refer a test equipment and calibration data table in this test report.



3.1.3 Test Procedures

Test Method	
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).	
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, clause G)2) for unwanted emissions into non-restricted bands.
	Refer as FCC KDB 789033, clause G)1) for unwanted emissions into restricted bands.
	☐ Refer as FCC KDB 789033, G)6) Method AD (Trace Averaging).
	☒ Refer as FCC KDB 789033, G)6) Method VB (Reduced VBW).
	☐ Refer as ANSI C63.10, clause 11.12.2.5.3 (Reduced VBW). VBW $\geq$ 1/T, where T is pulse time.
	☐ Refer as ANSI C63.10, clause 7.5 average value of pulsed emissions.
	☒ Refer as FCC KDB 789033, clause G)5) measurement procedure peak limit.
	☐ 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 - 30MHz	Oct. 17, 2024	Oct. 16, 2025	Radiation (03CH05-CB)
3m Semi Anechoic Chamber NSA	TDK	SAC-3M	03CH05-CB	30 MHz ~ 1 GHz	Jul. 31, 2025	Jul. 30, 2026	Radiation (03CH05-CB)
Bilog Antenna with 6dB Attenuator	TESEQ & EMCi	CBL 6112D & N-6-06	35236 & AT-N0610	30MHz ~ 2GHz	Mar. 22, 2025	Mar. 21, 2026	Radiation (03CH05-CB)
Amplifier	EMCI	EMC330N	980331	20MHz ~ 3GHz	May 01, 2025	Apr. 30, 2026	Radiation (03CH05-CB)
Spectrum Analyzer	R&S	FSP40	100304	9kHz ~ 40GHz	Apr. 21, 2025	Apr. 20, 2026	Radiation (03CH05-CB)
EMI Test Receiver	R&S	ESR7	102172	9kHz ~ 7GHz	Oct. 21, 2024	Oct. 20, 2025	Radiation (03CH05-CB)
RF Cable-low	Woken	RG402	Low Cable-04+23	30MHz~1GHz	Sep. 25, 2025	Sep. 24, 2026	Radiation (03CH05-CB)
Test Software	SPORTON	SENSE-EMI	V5.11.8	30MHz-40GHz	N.C.R.	N.C.R.	Radiation (03CH05-CB)

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

N.C.R. means Non-Calibration required.



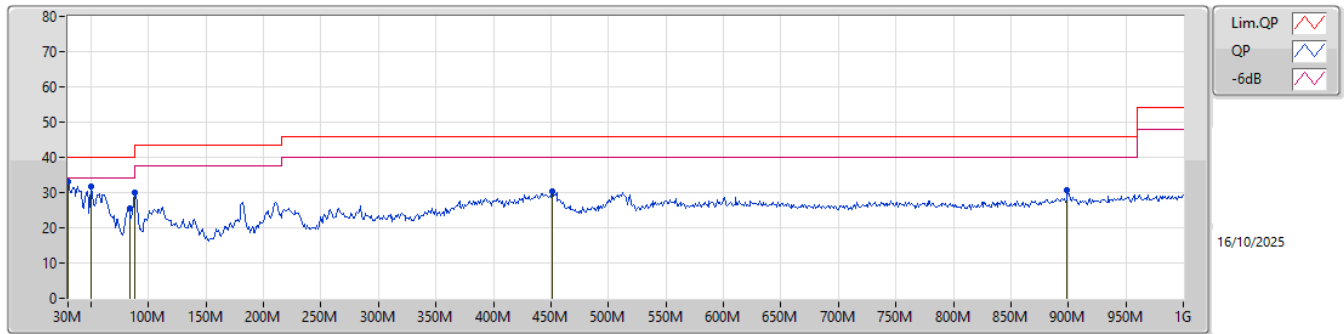
Radiated Emissions below 1GHz

Appendix A

Summary

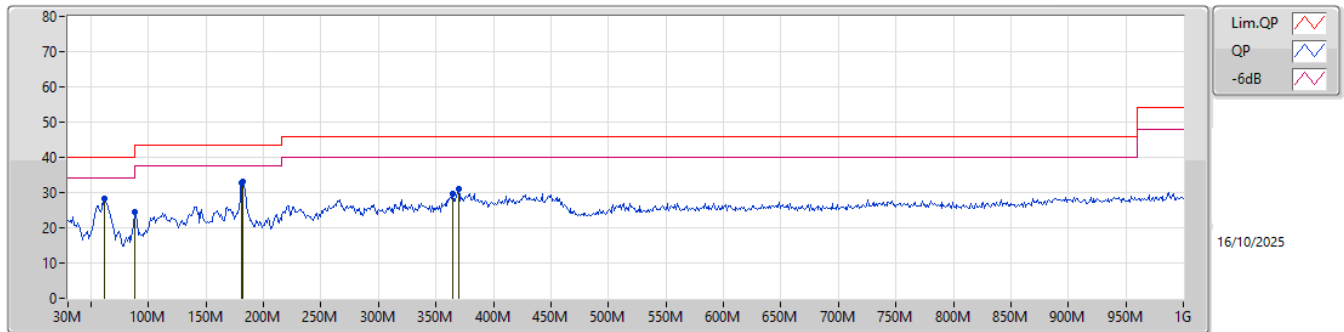
Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Condition
Mode 1	Pass	PK	30M	33.07	40.00	-6.93	Vertical

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)		
PK	30M	33.07	40.00	-6.93	-8.41	3	Vertical	249	1.00	"Worst"	41.48	23.43	0.52	32.36		
PK	50.37M	31.68	40.00	-8.32	-17.22	3	Vertical	356	1.00	-	48.90	14.04	0.67	31.93		
PK	83.35M	25.49	40.00	-14.51	-17.73	3	Vertical	166	2.00	-	43.22	13.43	0.87	32.03		
PK	88M	29.91	43.50	-13.59	-16.68	3	Vertical	68	1.50	-	46.59	14.44	0.89	32.01		
PK	450.98M	30.29	46.00	-15.71	-7.77	3	Vertical	247	1.25	-	38.06	22.39	2.12	32.28		
PK	899.12M	30.58	46.00	-15.42	-2.86	3	Vertical	0	1.50	-	33.44	26.52	3.16	32.54		

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	62.01M	28.12	40.00	-11.88	-18.84	3	Horizontal	158	1.25	-	46.96	12.40	0.75	31.99		
PK	88M	24.50	43.50	-19.00	-16.68	3	Horizontal	66	2.00	-	41.18	14.44	0.89	32.01		
PK	181.32M	32.78	43.50	-10.72	-15.55	3	Horizontal	323	2.00	-	48.33	15.16	1.31	32.02		
PK	182.29M	33.16	43.50	-10.34	-15.58	3	Horizontal	311	2.00	"Worst"	48.74	15.13	1.31	32.02		
PK	364.65M	29.68	46.00	-16.32	-9.43	3	Horizontal	303	1.00	-	39.11	20.81	1.90	32.14		
PK	369.5M	31.18	46.00	-14.82	-9.39	3	Horizontal	303	1.00	-	40.57	20.84	1.91	32.14		