



# FCC RADIO TEST REPORT

**FCC ID** : LHJ-FE5NAR110  
**Equipment** : FE5NAR110, FE5NAR111  
**Brand Name** : Continental  
**Model Name** : FE5NAR110, FE5NAR111  
**Applicant** : Continental Automotive Systems, Inc.  
21440 W Lake Cook Rd., Deer Park, IL 60010, USA  
**Manufacturer** : Continental Automotive Systems, Inc.  
21440 W Lake Cook Rd., Deer Park, IL 60010, USA  
**Standard** : FCC 47 CFR Part 2, 22(H), 24(E)

The product was received on Aug. 06, 2024 and testing was performed from Aug. 16, 2024 to Aug. 27, 2024. We, Sporton International Inc. EMC & Wireless Communications 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 partial report apply exclusively to the tested model / sample. Without written approval from Sporton International Inc. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

**Sporton International Inc. EMC & Wireless Communications Laboratory**

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)



## Table of Contents

<b>History of this test report.....</b>	<b>3</b>
<b>Summary of Test Result.....</b>	<b>4</b>
<b>1 General Description .....</b>	<b>5</b>
1.1 Product Feature of Equipment Under Test .....	5
1.2 Product Specification of Equipment Under Test .....	6
1.3 Modification of EUT .....	7
1.4 Testing Location .....	7
1.5 Applicable Standards .....	8
<b>2 Test Configuration of Equipment Under Test .....</b>	<b>9</b>
2.1 Test Mode.....	9
2.2 Connection Diagram of Test System .....	9
2.3 Support Unit used in test configuration .....	10
2.4 Frequency List of Low/Middle/High Channels .....	10
<b>3 Conducted Test Result .....</b>	<b>11</b>
3.1 Measuring Instruments.....	11
3.2 Conducted Output Power and ERP/EIRP .....	12
<b>4 Radiated Test Items .....</b>	<b>13</b>
4.1 Measuring Instruments.....	13
4.2 Test Setup .....	13
4.3 Test Result of Radiated Test.....	14
4.4 Field Strength of Spurious Radiation Measurement .....	15
<b>5 List of Measuring Equipment.....</b>	<b>16</b>
<b>6 Measurement Uncertainty .....</b>	<b>18</b>
<b>Appendix A. Test Results of Conducted Test</b>	
<b>Appendix B. Test Results of Radiated Test</b>	
<b>Appendix C. Test Setup Photographs</b>	



## History of this test report

Report No.	Version	Description	Issue Date
FG480602A	01	Initial issue of report	Sep. 18, 2024
FG480602A	02	Revise Product Specification of Equipment Under Test and appendix B This report is an updated version, replacing the report issued on Sep. 18, 2024.	Oct. 11, 2024

## Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power	Pass	-
	§22.913 (a)(5)	Effective Radiated Power (WCDMA Band V)		
	§24.232 (c)	Equivalent Isotropic Radiated Power (WCDMA Band II)		
-	§24.232 (d)	Peak-to-Average Ratio	Pass	See Note
-	§2.1049 §22.917 (b) §24.238 (b)	Occupied Bandwidth (WCDMA Band V) (WCDMA Band II)	Pass	See Note
-	§2.1051 §22.917 (a) §24.238 (a)	Band Edge Measurement (WCDMA Band V) (WCDMA Band II)	Pass	See Note
-	§2.1051 §22.917 (a) §24.238 (a)	Conducted Emission (WCDMA Band V) (WCDMA Band II)	Pass	See Note
-	§2.1055 §22.355 §24.235	Frequency Stability Temperature & Voltage	Pass	See Note
4.4	§2.1053 §22.917 (a) §24.238 (a)	Field Strength of Spurious Radiation (WCDMA Band V) (WCDMA Band II)	Pass	36.18 dB under the limit at 7409.00 MHz

**Note:**

- For host device, Radiated Spurious Emission, Equivalent Isotropic Radiated Power and Effective Radiated Power are verified and complies with the limit in this test report.
- For host device, the Conducted Output Power is no difference after compared to module (Model: FE5NAR110, FE5NAR111).

**Conformity Assessment Condition:**

- 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.
- The measurement uncertainty please refer to each test result in the section "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: Yun Huang**
**Report Producer: Lucy Wu**

# 1 General Description

## 1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	FE5NAR110, FE5NAR111
Brand Name	Continental
Model Name	FE5NAR110, FE5NAR111
FCC ID	LHJ-FE5NAR110
Installed into the Host	Equipment name: G12N51RG1, G12N50RG1 Brand name: Continental Model name: G12N51RG1, G12N50RG1
EUT supports Radios application	WCDMA/HSPA/LTE/5G NR/GNSS
EUT Stage	Identical Prototype

Sample Information			
Sample	TA-code	L2/L5 GNSS	Band Difference
1	FE5NAR110	Support	/
2	FE5NAR111	Not Support	BOM change: depopulated passive components from the GNSS RF front-end

**Remark:** The above EUT's information was declared by manufacturer.

Support band and evaluated information	
Supported band	WCDMA Band II / WCDMA Band V
Evaluated and Tested band	WCDMA Band II / WCDMA Band V

FDD band Power Class		
	PC3	PC2
WCDMA Band II	V	
WCDMA Band V	V	

## 1.2 Product Specification of Equipment Under Test

Product Specification is subject to this standard	
<b>Tx Frequency</b>	<b>WCDMA:</b> Band V: 826.4 MHz ~ 846.6 MHz Band II: 1852.4 MHz ~ 1907.6 MHz
<b>Rx Frequency</b>	<b>WCDMA:</b> Band V: 871.4 MHz ~ 891.6 MHz Band II: 1932.4 MHz ~ 1987.6 MHz
<b>Maximum Output Power to Antenna</b>	<b>WCDMA:</b> Band V: 23.13 dBm Band II: 23.26 dBm
<b>Antenna Type / Gain</b>	<b>&lt;Internal Antenna&gt;: TCP Antenna</b> <b>Primary cell antenna:</b> Cellular Band: 4.69 dBi PCS Band: 5.15 dBi <b>&lt;External Glass Antenna (Composed by component PN: 85038208, 85038209, 85038210, 85732934)&gt;:</b> <b>Primary cell antenna:</b> Cellular Band: 2.72 dBi PCS Band: 4.34 dBi <b>&lt;External Front Fender Antenna (Composed by component PN: 86784729, 86784728)&gt;:</b> <b>Primary cell antenna:</b> Cellular Band: 4.81 dBi PCS Band: 4.89 dBi <b>&lt;External sharkfin antenna, North America 5G L1 Only + XM (Composed by component PN: 26464255)&gt;:</b> <b>Primary cell antenna:</b> Cellular Band: 0.6 dBi PCS Band: 5.3 dBi <b>&lt;External sharkfin antenna, North America 5G L1/L5 + XM (Composed by component PN: 26464260)&gt;:</b> <b>Primary cell antenna:</b> Cellular Band: 5.5 dBi PCS Band: 5.7 dBi <b>&lt;External Sharkfin Antenna + XM + Dual GNSS +5G (Composed by component PN: 86783279)&gt;:</b> <b>Primary cell antenna:</b> Cellular Band: 4.0 dBi PCS Band: 3.5 dBi
<b>Type of Modulation</b>	WCDMA: QPSK (Uplink) HSDPA: 64QAM (Downlink) HSUPA: QPSK (Uplink)

**Remark:** The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.



### 1.3 Modification of EUT

No modifications made to the EUT during the testing.

### 1.4 Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	<b>Sporton Site No.</b> TH03-HY
Test Engineer	Eric Wu
Temperature (°C)	22.5~24.5
Relative Humidity (%)	35.7~37.7

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.	<b>Sporton Site No.</b> 03CH11-HY (TAF Code: 3786)
Test Engineer	Daniel Lee, Fu Chen and Troye Hsieh
Temperature (°C)	20.1~21.9
Relative Humidity (%)	51.2~65.7
Remark	The Radiated Spurious Emission test item subcontracted to Sporton International Inc. Wensan Laboratory.

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

FCC Designation No.: TW1190 and TW3786



## 1.5 Applicable Standards

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

- ♦ ANSI C63.26-2015
- ♦ FCC 47 CFR Part 2, 22(H), 24(E)
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- ♦ FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01

**Remark:**

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.
3. The TAF code is not including all the FCC KDB listed without accreditation.



## 2 Test Configuration of Equipment Under Test

### 2.1 Test Mode

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

Radiated emissions were investigated as following frequency range:

1. 30 MHz to 9000 MHz for WCDMA Band V
2. 30 MHz to 19100 MHz for WCDMA Band II

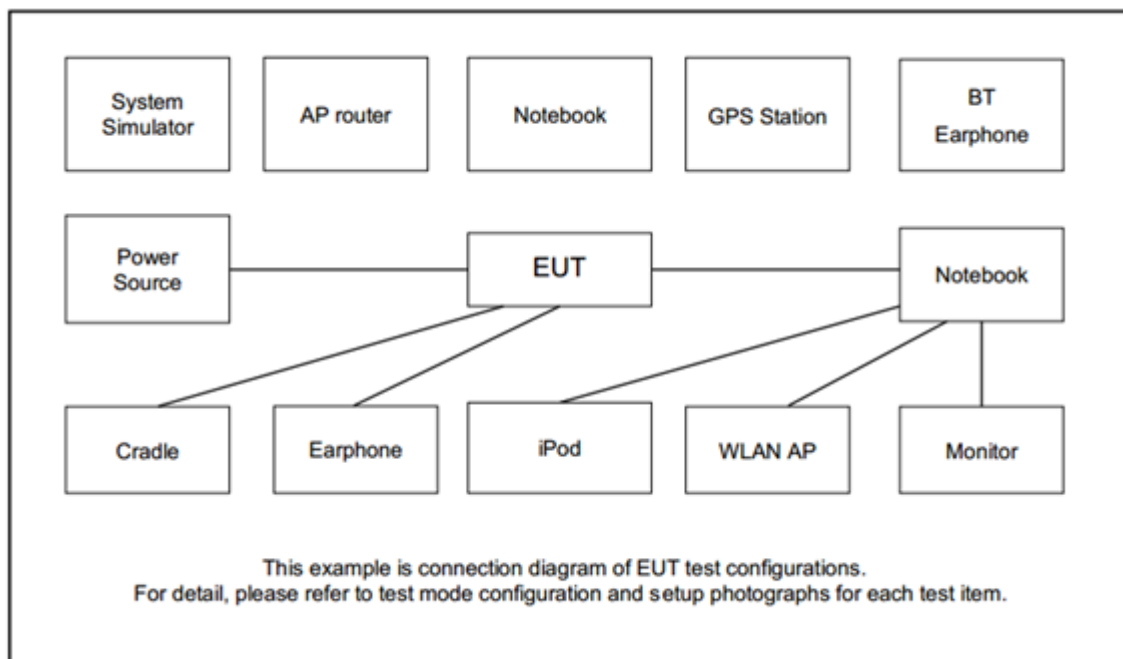
All modes, data rates and positions were investigated.

Test modes are chosen to be reported as the worst case configuration below:

Test Modes		
Band	Radiated TCs	Conducted TCs
WCDMA Band V	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link
WCDMA Band II	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link

**Remark:** All the radiated test cases were performed with Sample 1.

### 2.2 Connection Diagram of Test System



## 2.3 Support Unit used in test configuration

Item	Equipment	Brand Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	DC Power Supply	GW Instek	GPE-2323	N/A	N/A	N/A
3.	Power Adapter	TePoo	PT-WC-03	N/A	N/A	N/A
4.	Metal Plate	N/A	N/A	N/A	N/A	N/A
5.	Teddy Jr Load Box	Continental	N/A	N/A	N/A	N/A

## 2.4 Frequency List of Low/Middle/High Channels

Frequency List				
Band	Channel/Frequency(MHz)	Lowest	Middle	Highest
WCDMA Band V	Channel	4132	4182	4233
	Frequency	826.4	836.4	846.6
WCDMA Band II	Channel	9262	9400	9538
	Frequency	1852.4	1880.0	1907.6

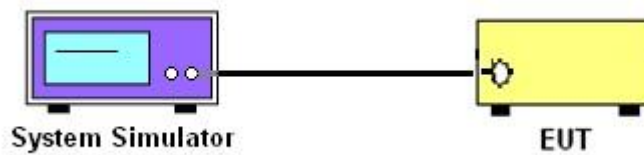
### 3 Conducted Test Result

#### 3.1 Measuring Instruments

Please refer to the measuring equipment list in this test report.

##### 3.1.1 Test Setup

##### 3.1.2 Conducted Output Power



##### 3.1.3 Test Result of Conducted Test

Please refer to Appendix A.

## 3.2 Conducted Output Power and ERP/EIRP

### 3.2.1 Description of the Conducted Output Power and ERP/EIRP

A system simulator was used to establish communication with the EUT. Its parameters were set to enforce EUT transmitting at the maximum power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The ERP of mobile transmitters must not exceed 7 Watts for WCDMA Band V

The EIRP of mobile transmitters must not exceed 2 Watts for WCDMA Band II

According to KDB 412172 D01 Power Approach,

$EIRP = P_T + G_T - L_C$ ,  $ERP = EIRP - 2.15$ , where

$P_T$  = transmitter output power in dBm

$G_T$  = gain of the transmitting antenna in dBi

$L_C$  = signal attenuation in the connecting cable between the transmitter and antenna in dB

### 3.2.2 Test Procedures

1. The transmitter output port is connected to the system simulator.
2. Set EUT at maximum power through system simulator.
3. Select the lowest, middle, and the highest channels for each band and different modulation.
4. Measure the maximum burst average power for GSM and maximum average power for other modulation signal.

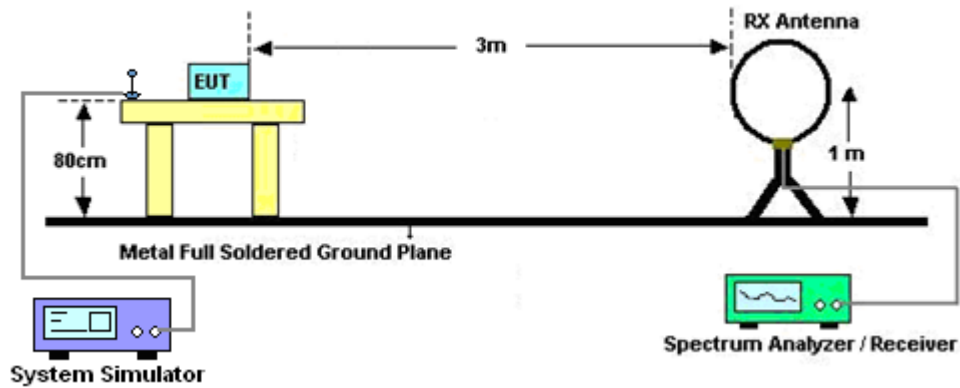
## 4 Radiated Test Items

### 4.1 Measuring Instruments

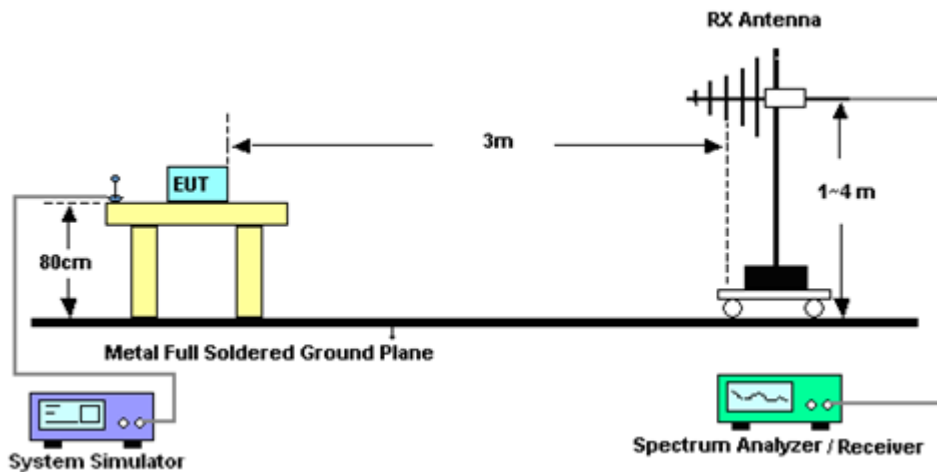
Please refer to the measuring equipment list in this test report.

### 4.2 Test Setup

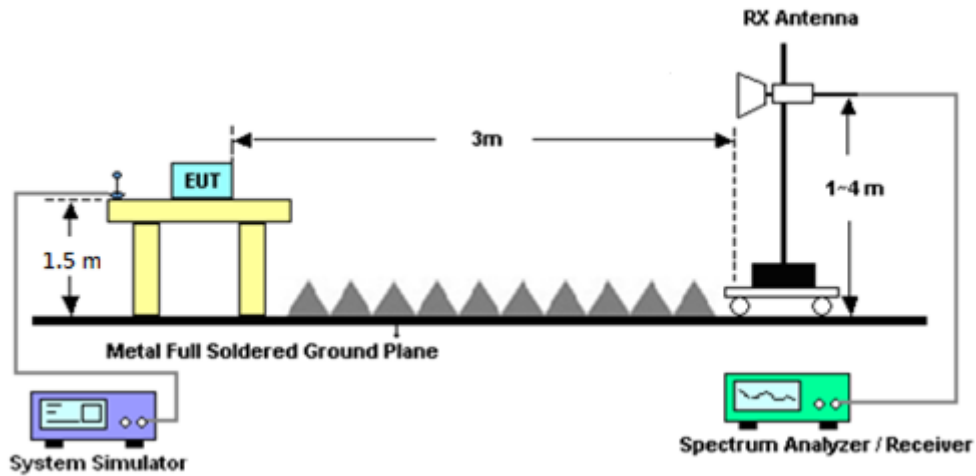
For radiated test below 30MHz



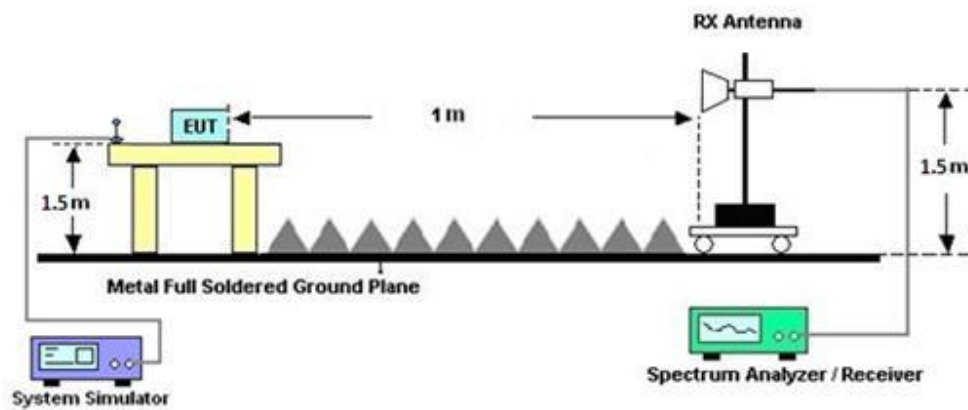
For radiated test from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



### 4.3 Test Result of Radiated Test

Please refer to Appendix B.

#### Note:

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 came out very similar.

## 4.4 Field Strength of Spurious Radiation Measurement

### 4.4.1 Description of Field Strength of Spurious Radiated Measurement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least  $43 + 10 \log (P)$  dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

### 4.4.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 7 and ANSI C63.26-2015 section 5.5.4 Radiated measurement using the field strength method.

1. The EUT is placed on a rotatable wooden table 0.8 meters for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz above the ground.
2. The EUT is set 3 meters away from the receiving antenna, which is mounted on the antenna tower.
3. The table is rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search for the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1 MHz, VBW = 3 MHz, taking record of maximum spurious emission.
6. To convert spectrum reading E(dBuV/m) to EIRP(dBm)  
$$\text{EIRP(dBm)} = \text{Level (dBuV/m)} + 20\log(d) - 104.77,$$
where d is the distance at which field strength limit is specified in the rules
7. Field Strength Level (dBm) = Spectrum Reading (dBm) + Antenna Factor + Cable Loss + Read Level - Preamp Factor.
8. ERP (dBm) = EIRP (dBm) - 2.15
9. The RF fundamental frequency shall be excluded against the limit line in the operating frequency band.
10. The limit line is derived from  $43 + 10\log(P)$  dB below the transmitter power P(Watts)



## 5 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Bilog Antenna	TESEQ	CBL 6111D & N-6-06	35414 & AT-N0602	30MHz~1GHz	Oct. 07, 2023	Aug. 16, 2024~ Aug. 27, 2024	Oct. 06, 2024	Radiation (03CH11-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Sep. 12, 2023	Aug. 16, 2024~ Aug. 27, 2024	Sep. 11, 2024	Radiation (03CH11-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-02038	1GHz~18GHz	Jul. 29, 2024	Aug. 16, 2024~ Aug. 27, 2024	Jul. 28, 2025	Radiation (03CH11-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	1224	18GHz~40GHz	Jun. 24, 2024	Aug. 16, 2024~ Aug. 27, 2024	Jun. 23, 2025	Radiation (03CH11-HY)
Amplifier	SONOMA	310N	187312	9kHz~1GHz	Dec. 08, 2023	Aug. 16, 2024~ Aug. 27, 2024	Dec. 07, 2024	Radiation (03CH11-HY)
Preamplifier	Keysight	83017A	MY53270080	1GHz~26.5GHz	Mar. 25, 2024	Aug. 16, 2024~ Aug. 27, 2024	Mar. 24, 2025	Radiation (03CH11-HY)
Preamplifier	Jet-Power	JPA0118-55-303	1710001800055007	1GHz~18GHz	Jun. 13, 2024	Aug. 16, 2024~ Aug. 27, 2024	Jun. 12, 2025	Radiation (03CH11-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	May 27, 2024	Aug. 16, 2024~ Aug. 27, 2024	May 26, 2025	Radiation (03CH11-HY)
Preamplifier	EMEC	EM18G40G	060872	18GHz~40GHz	Sep. 06, 2023	Aug. 16, 2024~ Aug. 27, 2024	Sep. 05, 2024	Radiation (03CH11-HY)
Preamplifier	EMEC	EM18G40G	06715	18GHz~40GHz	Dec. 07, 2023	Aug. 16, 2024~ Aug. 27, 2024	Dec. 06, 2024	Radiation (03CH11-HY)
Spectrum Analyzer	Keysight	N9010A	MY54200486	10Hz~44GHz	Oct. 05, 2023	Aug. 16, 2024~ Aug. 27, 2024	Oct. 04, 2024	Radiation (03CH11-HY)
Controller	EMEC	EM 1000	N/A	Control Turn table & Ant Mast	N/A	Aug. 16, 2024~ Aug. 27, 2024	N/A	Radiation (03CH11-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1~4m	N/A	Aug. 16, 2024~ Aug. 27, 2024	N/A	Radiation (03CH11-HY)
Turn Table	EMEC	TT 2000	N/A	0~360 Degree	N/A	Aug. 16, 2024~ Aug. 27, 2024	N/A	Radiation (03CH11-HY)
Software	Audix	E3 6.2009-8-24	RK-001053	N/A	N/A	Aug. 16, 2024~ Aug. 27, 2024	N/A	Radiation (03CH11-HY)
Hygrometer	TECEPEL	DTM-303B	TP140325	N/A	Dec. 08, 2023	Aug. 16, 2024~ Aug. 27, 2024	Dec. 07, 2024	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	801595/2	30M~40G	Mar. 06, 2024	Aug. 16, 2024~ Aug. 27, 2024	Mar. 05, 2025	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	804013/2	30M~40G	May 23, 2024	Aug. 16, 2024~ Aug. 27, 2024	May 22, 2025	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	MY2859/2	30MHz~40GHz	Mar. 06, 2024	Aug. 16, 2024~ Aug. 27, 2024	Mar. 05, 2025	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	9K~30M	Mar. 06, 2024	Aug. 16, 2024~ Aug. 27, 2024	Mar. 05, 2025	Radiation (03CH11-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	30M~40G	Mar. 06, 2024	Aug. 16, 2024~ Aug. 27, 2024	Mar. 05, 2025	Radiation (03CH11-HY)
Filter	Wainwright	WHKX12-900-1000-15000-60SS	SN12	1GHz High Pass Filter	Sep. 11, 2023	Aug. 16, 2024~ Aug. 27, 2024	Sep. 10, 2024	Radiation (03CH11-HY)
Filter	Wainwright	WHKX12-2700-3000-18000-60SS	SN3	3GHz High Pass Filter	Sep. 11, 2023	Aug. 16, 2024~ Aug. 27, 2024	Sep. 10, 2024	Radiation (03CH11-HY)
Filter	Wainwright	WHKX8-5872.5-6750-18000-40SS	SN3	6.75GHz High Pass Filter	Sep. 11, 2023	Aug. 16, 2024~ Aug. 27, 2024	Sep. 10, 2024	Radiation (03CH11-HY)





Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Rohde & Schwarz	FSP30	101329	9kHz~30GHz	Sep. 20, 2023	Aug. 27, 2024	Sep. 19, 2024	Conducted (TH03-HY)
DC Power Supply	GW Instek	GPE-2323	GET910896	0V~64V ; 0A~6A	Nov. 16, 2023	Aug. 27, 2024	Nov. 15, 2024	Conducted (TH03-HY)
Base Station (Measure)	Rohde & Schwarz	CMU200	117995	GSM / GPRS / WCDMA / CDMA	Aug. 08, 2024	Aug. 27, 2024	Aug. 07, 2025	Conducted (TH03-HY)
Temperature & Humidity Cabinet Chamber	ESPEC	LHU-113	1012005860	-20°C~85°C	Dec. 13, 2023	Aug. 27, 2024	Dec. 12, 2024	Conducted (TH03-HY)
Hygrometer	TECPEL	DTM-303B	TP200886	N/A	Mar. 14, 2024	Aug. 27, 2024	Mar. 13, 2025	Conducted (TH03-HY)

## 6 Measurement Uncertainty

### Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	3.290 dB
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### Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	2.076 dB
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### Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	2.082 dB
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## Appendix A. Test Results of Conducted Test

### Conducted Output Power(Average power & ERP / EIRP)

WCDMA Band V Maximum Average Power [dBm] (GT - LC = 5.5 dB)					
Channel	4132	4182	4233	ERP (dBm)	ERP (W)
Frequency	826.4	836.4	846.6		
RMC 12.2K	22.95	23.13	23.06	26.48	0.4446
HSDPA Subtest-1	22.97	23.03	23.11		
HSDPA Subtest-2	22.93	23.10	23.11		
HSDPA Subtest-3	22.92	23.06	23.10		
HSDPA Subtest-4	22.92	23.03	22.91		
HSUPA Subtest-1	23.05	22.99	22.90		
HSUPA Subtest-2	21.07	20.95	20.95		
HSUPA Subtest-3	22.07	21.94	21.91		
HSUPA Subtest-4	21.01	20.95	20.94		
HSUPA Subtest-5	23.04	23.00	22.94		
Limit	ERP < 7W			Result	Pass

WCDMA Band II Maximum Average Power [dBm] (GT - LC = 5.7 dB)					
Channel	9262	9400	9538	EIRP (dBm)	EIRP (W)
Frequency	1852.4	1880	1907.6		
RMC 12.2K	23.13	23.26	23.25	28.96	0.7870
HSDPA Subtest-1	23.16	23.03	23.15		
HSDPA Subtest-2	23.12	23.15	23.22		
HSDPA Subtest-3	23.07	23.21	23.14		
HSDPA Subtest-4	23.11	23.24	23.14		
HSUPA Subtest-1	22.70	22.57	22.62		
HSUPA Subtest-2	20.65	20.54	20.54		
HSUPA Subtest-3	21.59	21.49	21.56		
HSUPA Subtest-4	20.60	20.56	20.52		
HSUPA Subtest-5	22.63	22.53	22.55		
Limit	EIRP < 2W			Result	Pass



## Appendix B. Test Results of Radiated Test

### B1. Summary of each worse mode

Mode	Part	Band	Ch	Freq (MHz)	Level (dBm)	Det	Ant Factor (dB)	Amp\Cbl (dB)	Filter (dB)	EIRPCF (dB)	Reading (dBuV)	Limit (dBm)	Margin (dB)	Pol	Ant
1	Part 22H	WCDMA B5	M	3344	-57.99	RMS	29.59	-25.03	0.24	-95.23	32.44	-13.00	-44.99	V	External sharkfin antenna,  North America 5G L1/L5 + XM
1	Part 24E	WCDMA B2	L	7409	-49.18	RMS	36.30	-20.91	0.65	-95.23	30.01	-13.00	-36.18	V	External sharkfin antenna,  North America 5G L1/L5 + XM

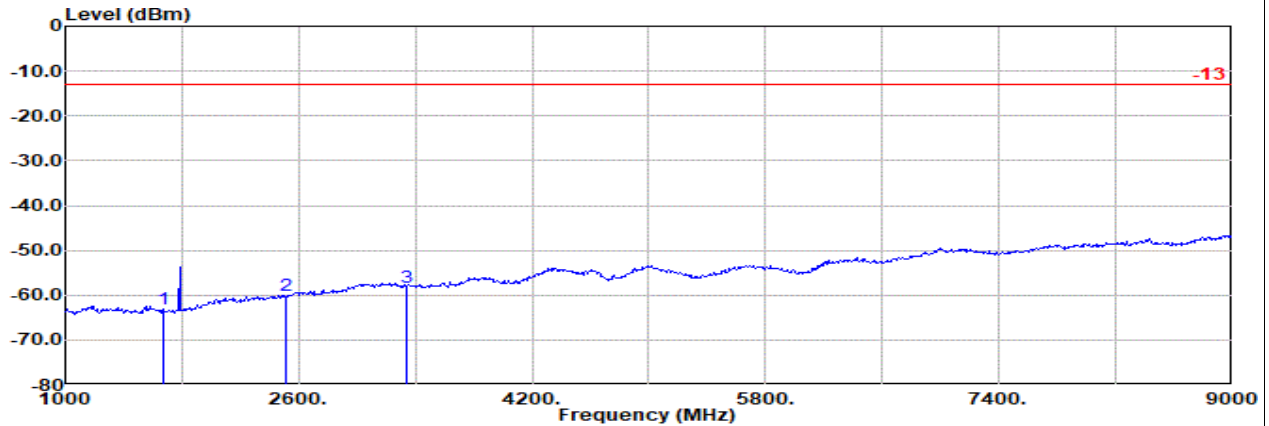


External sharkfin antenna, North America 5G L1/L5 + XM

Part 22H Mode 1

WCDMA B5 Ch4182

M

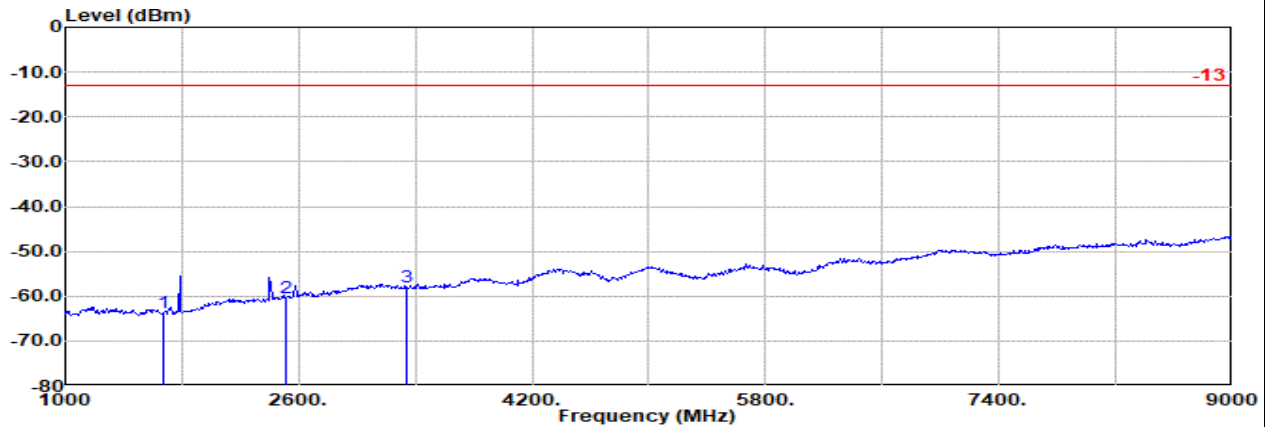


Site : 03CH11-HY

Condition: -13 3m 9120D\_02038\_240729 Horizontal

: WCDMA 850 CH4182

	Freq	Level	Detector	Ant Factor	Amp\Cb	Filter	EIRPCF	Readin	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	1672.00	-63.23	RMS	25.28	-28.35	0.33	-95.23	34.74	-13.00	-50.23	Horizontal
2	2508.00	-60.01	RMS	27.80	-26.32	0.21	-95.23	33.53	-13.00	-47.01	Horizontal
3	3344.00	-58.16	RMS	29.59	-25.03	0.24	-95.23	32.27	-13.00	-45.16	Horizontal



Site : 03CH11-HY

Condition: -13 3m 9120D\_02038\_240729 Vertical

: WCDMA 850 CH4182

	Freq	Level	Detector	Ant Factor	Amp\Cb	Filter	EIRPCF	Readin	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	1672.00	-63.59	RMS	25.28	-28.35	0.33	-95.23	34.38	-13.00	-50.59	Vertical
2	2508.00	-60.46	RMS	27.80	-26.32	0.21	-95.23	33.08	-13.00	-47.46	Vertical
3	3344.00	-57.99	RMS	29.59	-25.03	0.24	-95.23	32.44	-13.00	-44.99	Vertical

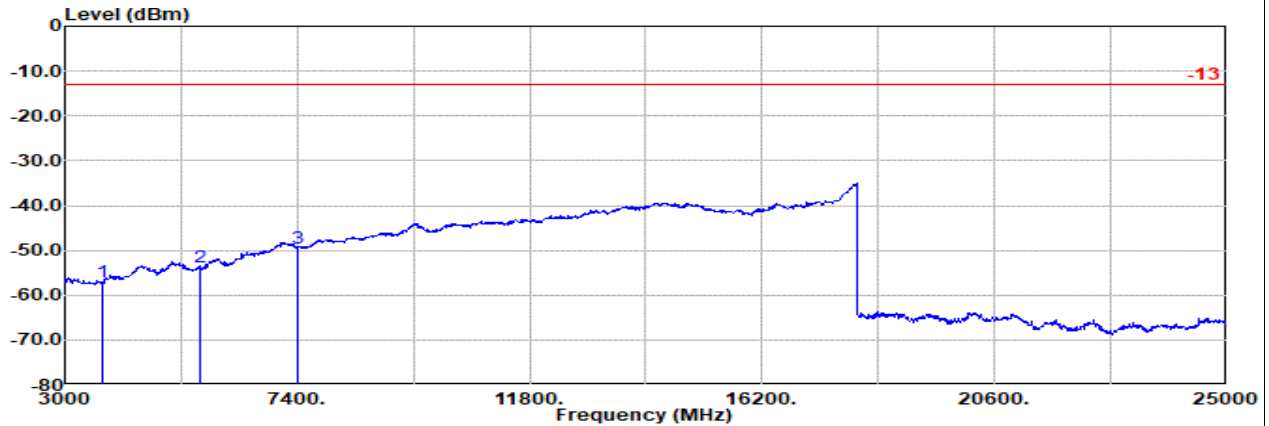


External sharkfin antenna, North America 5G L1/L5 + XM

Part 24E Mode 1

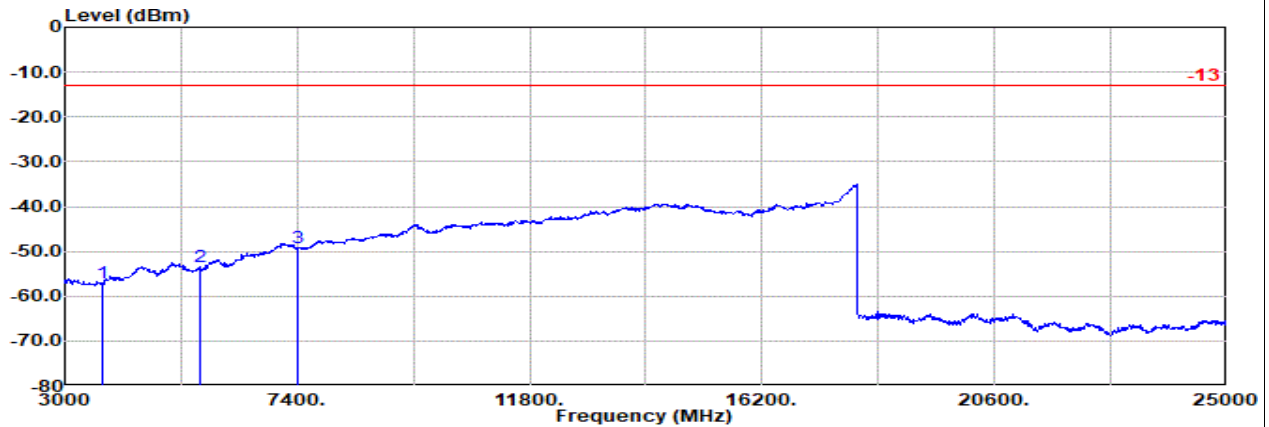
WCDMA B2 Ch9262

L



Site : 03CH11-HY  
Condition: -13 1m SHF\_1224\_240624 Horizontal  
: WCDMA 1900 Ch9262

	Freq	Level	Detector	Ant Factor	Amp\Cb	Filter	EIRPCF	Readin	Limit	Margin	Pol
	MHz	dBm						g			
1	3704.00	-57.03	RMS	29.72	-24.41	0.76	-95.23	32.13	-13.00	-44.03	Horizontal
2	5557.00	-53.65	RMS	32.87	-22.15	0.51	-95.23	30.35	-13.00	-40.65	Horizontal
3	7409.00	-49.50	RMS	36.30	-20.91	0.65	-95.23	29.69	-13.00	-36.50	Horizontal



Site : 03CH11-HY  
Condition: -13 1m SHF\_1224\_240624 Vertical  
: WCDMA 1900 Ch9262

	Freq	Level	Detector	Ant Factor	Amp\Cb	Filter	EIRPCF	Readin	Limit	Margin	Pol
	MHz	dBm						g			
1	3704.00	-57.17	RMS	29.72	-24.41	0.76	-95.23	31.99	-13.00	-44.17	Vertical
2	5557.00	-53.57	RMS	32.87	-22.15	0.51	-95.23	30.43	-13.00	-40.57	Vertical
3	7409.00	-49.18	RMS	36.30	-20.91	0.65	-95.23	30.01	-13.00	-36.18	Vertical

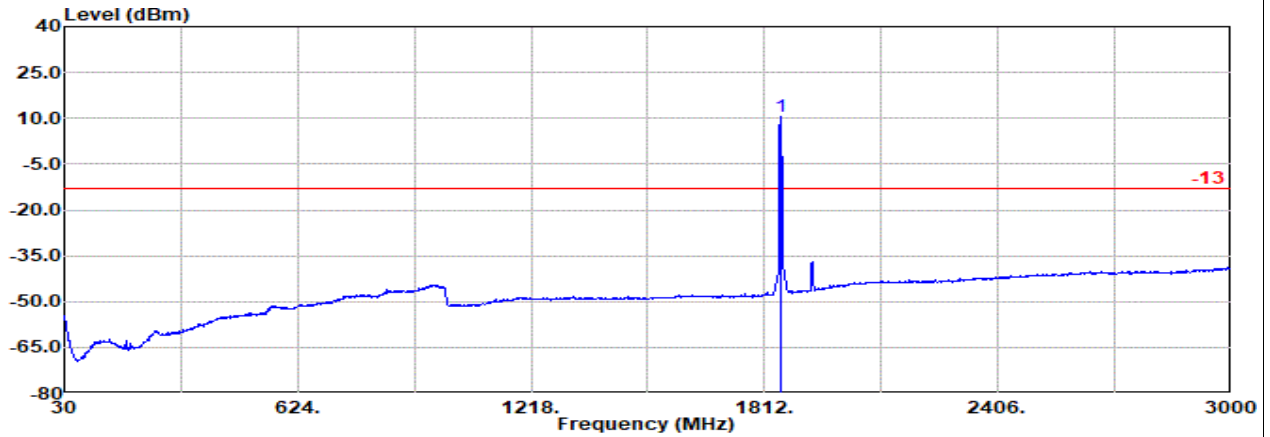


External sharkfin antenna, North America 5G L1/L5 + XM

Part 24E Mode 1

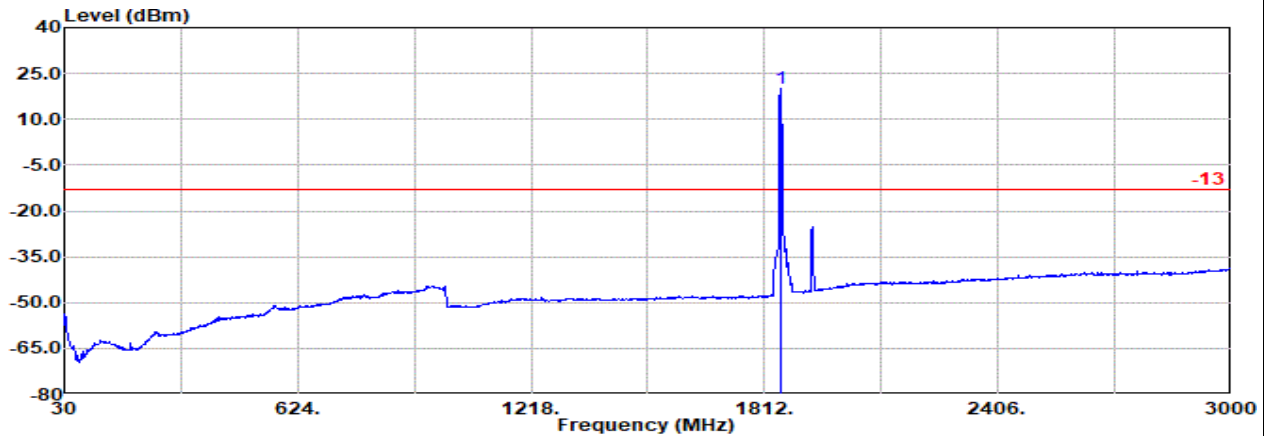
WCDMA B2 Ch9262

L



Site : 03CH11-HY  
Condition: -13 3m 9120D\_02038\_240729 Horizontal  
: WCDMA 1900 Ch9262  
: #1 is fundamental signal which can be ignored.

1	Freq	Level	Detector	Ant Factor	Amp\Cb	Filter	EIRPCF	Readin	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB		dBuV	dBm		
1	1852.00	10.37	RMS	25.34	6.05	0.00	-95.23	74.21	-13.00	23.37	Horizontal



Site : 03CH11-HY  
Condition: -13 3m 9120D\_02038\_240729 Vertical  
: WCDMA 1900 Ch9262  
: #1 is fundamental signal which can be ignored.

1	Freq	Level	Detector	Ant Factor	Amp\Cb	Filter	EIRPCF	Readin	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB		dBuV	dBm		
1	1852.00	20.16	RMS	25.34	6.05	0.00	-95.23	84.00	-13.00	33.16	Vertical

Remark: #1 is fundamental signal which can be ignored.