



MEASUREMENT REPORT

FCC ID: 2BAHBINTSHMDV20EC25

Applicant: Intangles Lab Private Limited

Product: System Health Monitoring Device

Model No.: INT-SHMD-V2.0I-EC25AF; INT-SHMD-V2.0E-EC25AF

Brand Name: INTANGLES

FCC Rule Part(s): Part 2, 22 (H), 24 (E), 27, 90 Subpart R

Result: Complies

Received Date: 2023-04-18

Test Date: 2023-04-21~ 2023-05-06

Reviewed By:

Sunny Sun

Approved By:

Robin Wu



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.26-2015. Test results reported herein relate only to the item(s) tested.

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Revision History

Report No.	Version	Description	Issue Date	Note
2304RSU037-U1	Rev. 01	Initial Report	2023-05-22	Valid

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1. General Information

1.1. Applicant

Intangles Lab Private Limited

Orville Business Port,9th Floor, Terminal 2 Airport Road,Viman Nagar, Pune,Maharashtra – 411014

1.2. Manufacturer

Intangles Lab Private Limited

Orville Business Port,9th Floor, Terminal 2 Airport Road,Viman Nagar, Pune,Maharashtra – 411014

1.3. Testing Facility

☒	Test Site – MRT Suzhou Laboratory Laboratory Location (Suzhou - Wuzhong) D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China Laboratory Location (Suzhou - SIP) 4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China Laboratory Accreditations A2LA: 3628.01 CNAS: L10551 FCC: CN1166 ISED: CN0001 VCCI: ☐ R-20025 ☐ G-20034 ☐ C-20020 ☐ T-20020 ☐ R-20141 ☐ G-20134 ☐ C-20103 ☐ T-20104
☐	Test Site – MRT Shenzhen Laboratory Laboratory Location (Shenzhen) 1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China Laboratory Accreditations A2LA: 3628.02 CNAS: L10551 FCC: CN1284 ISED: CN0105
☐	Test Site – MRT Taiwan Laboratory Laboratory Location (Taiwan) No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) Laboratory Accreditations TAF: L3261-190725 FCC: 291082, TW3261 ISED: TW3261

1.4. Product Information

Product Name	System Health Monitoring Device
Model No.	INT-SHMD-V2.0I-EC25AF; INT-SHMD-V2.0E-EC25AF
Brand Name	INTANGLES
IMEI	867200060788229
WLAN Specification	802.11 b/g/n
Bluetooth Specification	V5.2
GNSS Specification	GPS/GLONASS/BDS/Galileo/SBAS
3GPP Specification	WCDMA Band II/IV/V LTE Band 2/4/5/12/13/14/66/71
Operating Temperature	-40 ~ 85°C
Supply Voltage	8 ~ 32Vdc
Integrated Modular Information	
Cellular Modular Information	Model Number: EC25-AF FCC ID: XMR201808EC25AF
Wi-Fi & BT Modular Information	Model Number: FC41D FCC ID: XMR20211108FC41D
GNSS Modular Information	Model Number: LC86G Brand Name: QUECTEL
Remark: 1. The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer. 2. This device is based on the certification modular to assess the radiated spurious emission. 3. The model "INT-SHMD-V2.0I-EC25AF" is the internal cellular antenna unit, the model "INT-SHMD-V2.0E-EC25AF" is the external cellular antenna unit, all the other circuits are the same.	

1.5. Radio Specification Under Testing

WCDMA Specification	
TX Frequency Range:	Band II: 1850 ~ 1910 MHz, Band IV: 1710 ~ 1755 MHz Band V: 824 ~ 849 MHz
RX Frequency Range:	Band II: 1930 ~ 1990 MHz, Band IV: 2110 ~ 2155 MHz Band V: 869 ~ 894 MHz
Modulation	QPSK
Category	HSDPA: 24; HSUPA: 6
E-UTRA Specification	
TX Frequency Range:	Band 2: 1850 ~ 1910 MHz, Band 4: 1710 ~ 1755 MHz Band 5: 824 ~ 849 MHz, Band 12: 699 ~ 716 MHz Band 13: 777 ~ 787 MHz, Band 14: 788 ~ 798 MHz Band 66: 1710 ~ 1780 MHz, Band 71: 663 ~ 698 MHz
RX Frequency Range:	Band 2: 1930 ~ 1990 MHz, Band 4: 2110 ~ 2155 MHz Band 5: 869 ~ 894 MHz, Band 12: 729 ~ 746 MHz Band 13: 746 ~ 756 MHz, Band 14: 758 ~ 768 MHz Band 66: 2110 ~ 2200 MHz, Band 71: 617 ~ 652 MHz
Modulation	QPSK, 16QAM
Category	4

1.6. Description of Available Antennas

Technology	Frequency Range (MHz)	INT-SHMD-V2.0I-EC25AU		INT-SHMD-V2.0E-EC25AU	
		Antenna Type	Max Peak Gain (dBi)	Antenna Type	Max Peak Gain (dBi)
WCDMA Band II LTE Band 2	1850 ~ 1910	FPC	4.98	Glue Stick	2.62
WCDMA Band IV LTE Band 4	1710 ~ 1755		2.97		2.62
WCDMA Band V LTE Band 5	824 ~ 849		-4.12		2.78
LTE Band 12	699 ~ 716		-4.12		2.78
LTE Band 13	777 ~ 787		-4.12		2.78
LTE Band 14	788 ~ 798		-4.12		2.78
LTE Band 66	1710 ~ 1780		2.97		2.62
LTE Band 71	663 ~ 698		-4.12		2.78

Note: All antenna information (Antenna type and Peak Gain) is provided by the manufacturer.

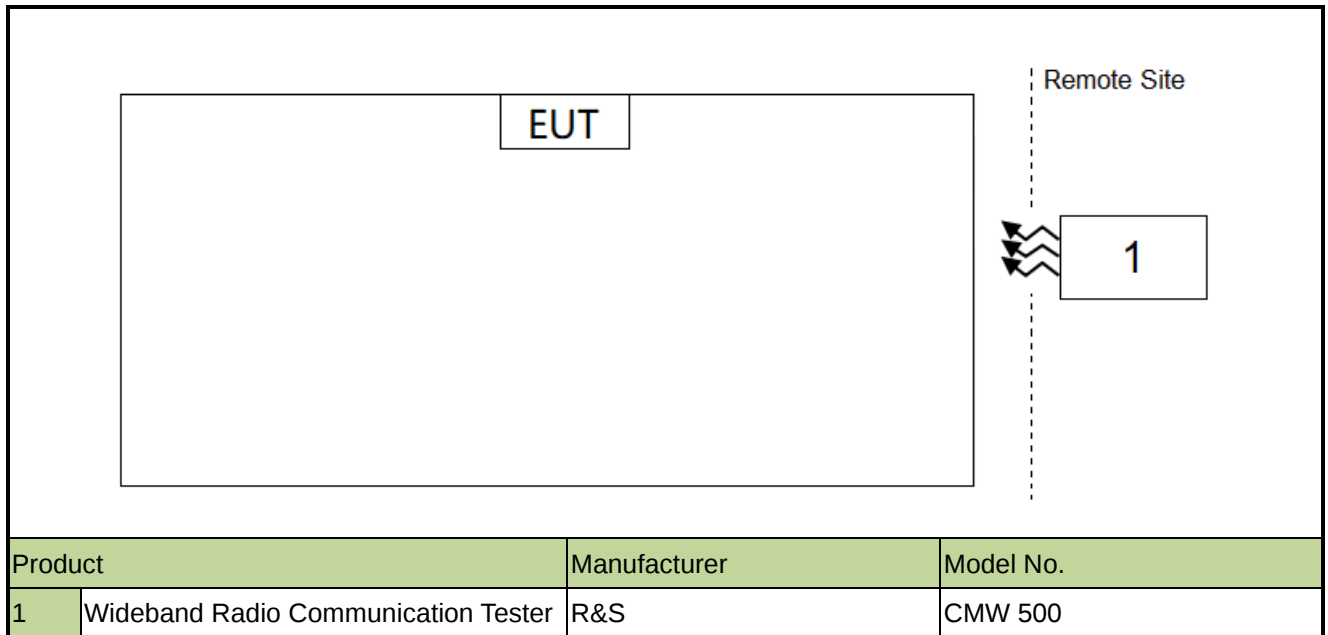
1.7. Test Methodology

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

- ANSI C63.26:2015
- FCC CFR 47 Part 2, Part 22, Part 24, Part 27
- FCC KDB 971168 D01 v03r01: Power Meas License Digital Systems

2. Test Configuration

2.1. Test System Connection Diagram



2.2. Test Environment Condition

Ambient Temperature	15 ~ 35°C
Relative Humidity	20% ~ 75%RH

3. Measuring Instrument

Instrument	Manufacturer	Model No.	Asset No.	Cali. Interval	Cali. Due Date	Test Site
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2023-12-28	WZ-AC1
Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06023	1 year	2023-08-22	WZ-AC1
Preamplifier	Agilent	83017A	MRTSUE06076	1 year	2024-05-06	WZ-AC1
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2023-06-21	WZ-AC1
Anechoic Chamber	TDK	WZ-AC1	MRTSUE06212	1 year	2024-04-20	WZ-AC1
Horn Antenna	ETS	3117	MRTSUE06257	1 year	2023-09-18	WZ-AC1
Thermohygrometer	testo	608-H1	MRTSUE06403	1 year	2023-06-06	WZ-AC1
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06597	1 year	2023-11-05	WZ-AC1
Signal Analyzer	Keysight	N9010B	MRTSUE06607	1 year	2023-12-28	WZ-AC1
Preamplifier	EMCI	EMC184045SE	MRTSUE06640	1 year	2024-01-12	WZ-AC1
Preamplifier	EMCI	EMC051845SE	MRTSUE06987	1 year	2023-09-08	WZ-AC1
Thermohygrometer	testo	608-H1	MRTSUE11039	1 year	2023-11-01	WZ-AC1

Software	Version	Function
EMI V3	V 3.0.0	EMI Test Software
Controller_MF 7802	2.03C	RE Antenna & Turntable

4. Decision Rules and Measurement Uncertainty

4.1. Decision Rules

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2.

(Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

4.2. Measurement Uncertainty

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Radiated Spurious Emissions

Measurement Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$):

Horizontal: 9kHz ~ 300MHz: 5.04dB

300MHz ~ 1GHz: 4.95dB

1GHz ~ 40GHz: 6.40dB

Vertical: 9kHz ~ 300MHz: 5.24dB

300MHz ~ 1GHz: 6.03dB

1GHz ~ 40GHz: 6.40dB

5. Test Result

5.1. Summary

FCC Part Section(s)	Test Description	Test Condition	Test Result
2.1053, 22.917(a), 24.238(a), 27.53(c) (f) (g) (h), 90.543(e)(3) 90.543(f)	Spurious Emissions	Radiated	Pass

Notes:

- 1) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
- 2) Radiated Spurious Emission were presented the worst-case in the test report.
- 3) For radiated emission tests, every axis (X, Y, Z) was also verified. The test results shown in the following sections represent the worst-case emissions.
- 4) LTE Band 66 (1710 ~ 1780 MHz) overlaps the entire frequency range of LTE Band 4 (1710 ~ 1755 MHz). Therefore, test data provided in this report covers Band 4 as well as Band 66.

5.2. Radiated Spurious Emissions Measurement

5.2.1. Test Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm.

For LTE Band 13/14, For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz (-40dBm/MHz) equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW (-50dBm) EIRP for discrete emissions of less than 700 Hz bandwidth.

$E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20 \log D + 104.8$; where D is the measurement distance in meters. The emission limit equal to 82.3dB μ V/m or 55.3dB μ V/m.

5.2.2. Test Procedure

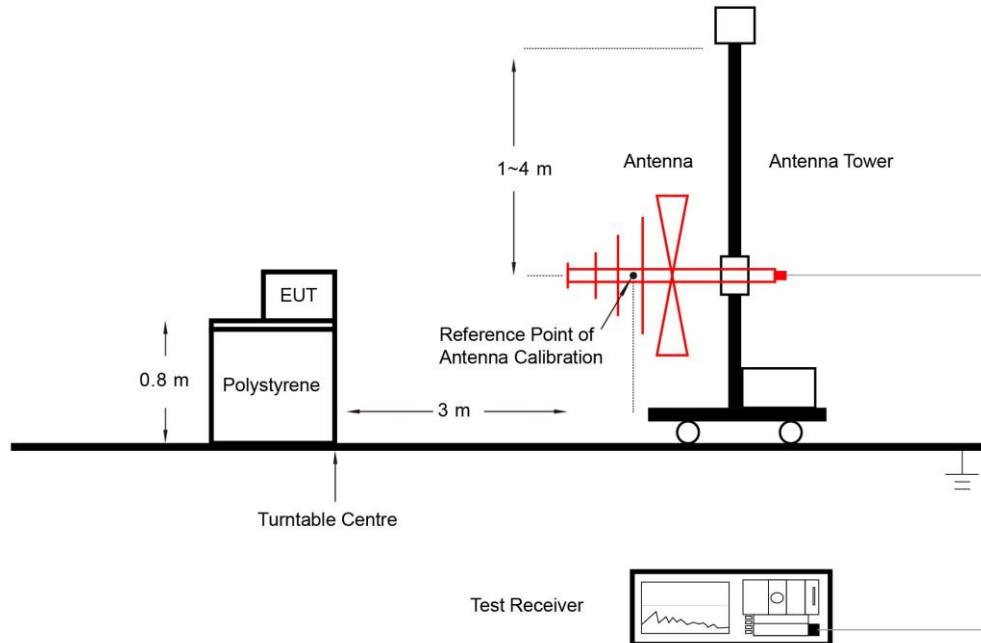
ANSI C63.26-2015 - Section 5.2.7 & 5.5

5.2.3. Test Setting

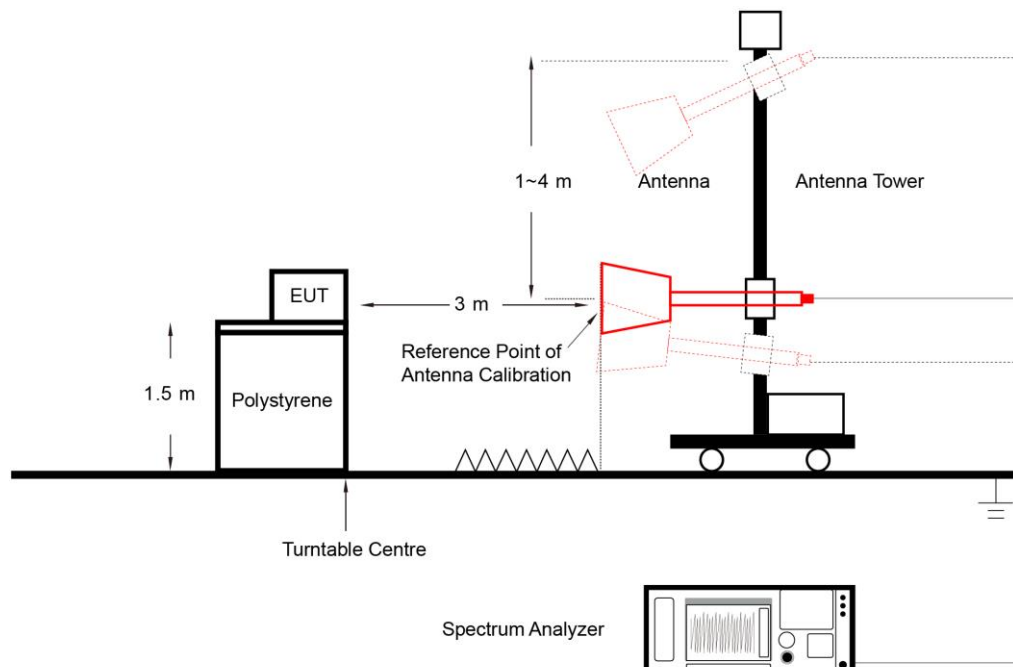
1. RBW = 1MHz
2. VBW $\geq 3 \times$ RBW
3. Sweep time $\geq 10 \times$ (number of points in sweep) $\times$ (transmission symbol period)
4. Detector = Peak
5. Trace mode = max hold
6. The trace was allowed to stabilize

5.2.4. Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



5.2.5. Test Result

Refer to Appendix A.1.

Appendix A - Test Result

A.1 Radiated Spurious Emissions Test Result

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-22 ~ 2023-04-28	Test Band	WCDMA Band II, QPSK
Model No.	INT-SHMD-V2.0I-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
289.5	19.8	18.2	38.0	82.3	-44.3	Peak	Horizontal
328.3	16.1	19.3	35.4	82.3	-46.9	Peak	Horizontal
215.8	19.3	14.7	34.0	82.3	-48.3	Peak	Vertical
290.0	15.2	18.2	33.4	82.3	-48.9	Peak	Vertical
5556.0	40.5	3.7	44.2	82.3	-38.1	Peak	Horizontal
10707.0	35.9	13.5	49.4	82.3	-32.9	Peak	Horizontal
5556.0	43.3	3.7	47.0	82.3	-35.3	Peak	Vertical
10579.5	35.9	13.6	49.5	82.3	-32.8	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)							
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-22 ~ 2023-04-28	Test Band	WCDMA Band IV, QPSK
Model No.	INT-SHMD-V2.0I-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
167.3	15.1	18.0	33.1	82.3	-49.2	Peak	Horizontal
323.4	17.2	19.2	36.4	82.3	-45.9	Peak	Horizontal
167.7	13.3	17.9	31.2	82.3	-51.1	Peak	Vertical
244.4	14.4	16.5	30.9	82.3	-51.4	Peak	Vertical
3422.5	46.2	-1.3	44.9	82.3	-37.4	Peak	Horizontal
11489.0	37.5	13.2	50.7	82.3	-31.6	Peak	Horizontal
3431.0	43.8	-1.3	42.5	82.3	-39.8	Peak	Vertical
11514.5	36.8	13.0	49.8	82.3	-32.5	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m) Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-22 ~ 2023-04-28	Test Band	WCDMA Band V, QPSK
Model No.	INT-SHMD-V2.0I-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
288.5	17.9	18.2	36.1	82.3	-46.2	Peak	Horizontal
328.3	15.3	19.3	34.6	82.3	-47.7	Peak	Horizontal
167.7	11.6	17.9	29.5	82.3	-52.8	Peak	Vertical
239.0	16.4	16.1	32.5	82.3	-49.8	Peak	Vertical
1654.5	49.0	-6.5	42.5	82.3	-39.8	Peak	Horizontal
10911.0	37.4	13.4	50.8	82.3	-31.5	Peak	Horizontal
1654.5	55.5	-6.5	49.0	82.3	-33.3	Peak	Vertical
9678.5	36.4	12.6	49.0	82.3	-33.3	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m) Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-22 ~ 2023-04-28	Test Band	LTE Band 2, 1RB QPSK
Model No.	INT-SHMD-V2.0I-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
162.9	19.6	18.1	37.7	82.3	-44.6	Peak	Horizontal
327.3	29.1	19.3	48.4	82.3	-33.9	Peak	Horizontal
162.9	22.2	18.1	40.3	82.3	-42.0	Peak	Vertical
271.0	21.1	17.5	38.6	82.3	-43.7	Peak	Vertical
3703.0	53.6	-0.1	53.5	82.3	-28.8	Peak	Horizontal
5547.5	48.5	3.7	52.2	82.3	-30.1	Peak	Horizontal
3703.0	53.9	-0.1	53.8	82.3	-28.5	Peak	Vertical
5547.5	50.3	3.7	54.0	82.3	-28.3	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m) Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-22 ~ 2023-04-28	Test Band	LTE Band 4/66, 1RB QPSK
Model No.	INT-SHMD-V2.0I-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
162.9	20.8	18.1	38.9	82.3	-43.4	Peak	Horizontal
327.8	29.0	19.3	48.3	82.3	-34.0	Peak	Horizontal
162.9	21.7	18.1	39.8	82.3	-42.5	Peak	Vertical
215.8	23.6	14.7	38.3	82.3	-44.0	Peak	Vertical
3422.5	51.6	-1.3	50.3	82.3	-32.0	Peak	Horizontal
11038.5	35.7	13.6	49.3	82.3	-33.0	Peak	Horizontal
3422.5	49.1	-1.3	47.8	82.3	-34.5	Peak	Vertical
6839.5	41.3	6.4	47.7	82.3	-34.6	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m) Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-22 ~ 2023-04-28	Test Band	LTE Band 5, 1RB QPSK
Model No.	INT-SHMD-V2.0I-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
843.3	26.6	28.7	55.3	82.3	-27.0	Peak	Horizontal
869.5	25.2	29.1	54.3	82.3	-28.0	Peak	Horizontal
843.3	24.0	28.7	52.7	82.3	-29.6	Peak	Vertical
869.5	22.0	29.1	51.1	82.3	-31.2	Peak	Vertical
1646.0	54.7	-6.4	48.3	82.3	-34.0	Peak	Horizontal
7392.0	37.4	8.3	45.7	82.3	-36.6	Peak	Horizontal
1646.0	60.8	-6.4	54.4	82.3	-27.9	Peak	Vertical
10588.0	35.6	13.6	49.2	82.3	-33.1	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m) Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-22 ~ 2023-04-28	Test Band	LTE Band 12, 1RB QPSK
Model No.	INT-SHMD-V2.0I-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
324.4	19.1	19.2	38.3	82.3	-44.0	Peak	Horizontal
729.4	26.9	27.2	54.1	82.3	-28.2	Peak	Horizontal
269.1	16.8	17.4	34.2	82.3	-48.1	Peak	Vertical
729.4	26.3	27.2	53.5	82.3	-28.8	Peak	Vertical
1603.5	40.3	-6.3	34.0	82.3	-48.3	Peak	Horizontal
3499.0	45.9	-0.9	45.0	82.3	-37.3	Peak	Horizontal
1603.5	40.3	-6.3	34.0	82.3	-48.3	Peak	Vertical
2096.5	64.0	-4.2	59.8	82.3	-22.5	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m) Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-22 ~ 2023-04-28	Test Band	LTE Band 13, 1RB QPSK
Model No.	INT-SHMD-V2.0I-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
324.9	20.6	19.2	39.8	82.3	-42.5	Peak	Horizontal
747.3	24.9	28.1	53.0	82.3	-29.3	Peak	Horizontal
211.9	19.1	14.7	33.8	82.3	-48.5	Peak	Vertical
747.8	26.4	28.1	54.5	82.3	-27.8	Peak	Vertical
1586.5	43.0	-6.3	36.7	55.3	-18.6	Peak	Horizontal
2334.5	48.7	-3.1	45.6	82.3	-36.7	Peak	Horizontal
1595.0	40.8	-6.3	34.5	55.3	-20.8	Peak	Vertical
2334.5	60.3	-3.1	57.2	82.3	-25.1	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m) Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-21 ~ 2023-04-28	Test Band	LTE Band 14, 1RB QPSK
Model No.	INT-SHMD-V2.0I-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
325.9	18.1	19.3	37.4	82.3	-44.9	Peak	Horizontal
759.0	25.2	28.3	53.5	82.3	-28.8	Peak	Horizontal
213.3	18.1	14.7	32.8	82.3	-49.5	Peak	Vertical
762.8	25.5	28.2	53.7	82.3	-28.6	Peak	Vertical
1578.0	48.5	-6.3	42.2	55.3	-13.1	Peak	Horizontal
2368.5	45.6	-3.3	42.3	82.3	-40.0	Peak	Horizontal
1578.0	48.0	-6.3	41.7	55.3	-13.6	Peak	Vertical
2368.5	54.7	-3.3	51.4	82.3	-30.9	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)							
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-22 ~ 2023-04-28	Test Band	LTE Band 71, 1RB QPSK
Model No.	INT-SHMD-V2.0I-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
327.3	18.3	19.3	37.6	82.3	-44.7	Peak	Horizontal
617.3	27.5	25.8	53.3	82.3	-29.0	Peak	Horizontal
270.1	16.4	17.5	33.9	82.3	-48.4	Peak	Vertical
621.7	29.1	25.8	54.9	82.3	-27.4	Peak	Vertical
1986.0	51.4	-5.4	46.0	82.3	-36.3	Peak	Horizontal
9738.0	35.0	12.6	47.6	82.3	-34.7	Peak	Horizontal
1986.0	63.2	-5.4	57.8	82.3	-24.5	Peak	Vertical
11055.5	35.4	13.5	48.9	82.3	-33.4	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m) Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-22 ~ 2023-04-28	Test Band	WCDMA Band II, QPSK
Model No.	INT-SHMD-V2.0E-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
206.5	15.7	14.6	30.3	82.3	-52.0	Peak	Horizontal
296.3	20.8	18.3	39.1	82.3	-43.2	Peak	Horizontal
206.5	19.1	14.6	33.7	82.3	-48.6	Peak	Vertical
297.7	15.2	18.4	33.6	82.3	-48.7	Peak	Vertical
3703.0	42.9	-0.1	42.8	82.3	-39.5	Peak	Horizontal
10851.5	37.1	13.5	50.6	82.3	-31.7	Peak	Horizontal
3703.0	40.1	-0.1	40.0	82.3	-42.3	Peak	Vertical
11047.0	35.8	13.7	49.5	82.3	-32.8	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m) Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-22 ~ 2023-04-28	Test Band	WCDMA Band IV, QPSK
Model No.	INT-SHMD-V2.0E-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
205.1	15.3	14.6	29.9	82.3	-52.4	Peak	Horizontal
297.7	20.9	18.4	39.3	82.3	-43.0	Peak	Horizontal
205.1	15.3	14.6	29.9	82.3	-52.4	Peak	Vertical
297.7	16.3	18.4	34.7	82.3	-47.6	Peak	Vertical
8046.5	37.1	8.9	46.0	82.3	-36.3	Peak	Horizontal
10486.0	35.8	13.5	49.3	82.3	-33.0	Peak	Horizontal
8871.0	36.3	10.2	46.5	82.3	-35.8	Peak	Vertical
11497.5	36.1	13.3	49.4	82.3	-32.9	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m) Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-22 ~ 2023-04-28	Test Band	WCDMA Band V, QPSK
Model No.	INT-SHMD-V2.0E-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
159.0	18.4	18.2	36.6	82.3	-45.7	Peak	Horizontal
292.9	29.0	18.2	47.2	82.3	-35.1	Peak	Horizontal
156.6	21.1	18.2	39.3	82.3	-43.0	Peak	Vertical
306.0	32.5	18.6	51.1	82.3	-31.2	Peak	Vertical
1654.5	49.4	-6.5	42.9	82.3	-39.4	Peak	Horizontal
10579.5	36.6	13.6	50.2	82.3	-32.1	Peak	Horizontal
1654.5	44.3	-6.5	37.8	82.3	-44.5	Peak	Vertical
9704.0	36.2	12.6	48.8	82.3	-33.5	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m) Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-22 ~ 2023-04-28	Test Band	LTE Band 2, 1RB QPSK
Model No.	INT-SHMD-V2.0E-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
156.6	12.7	18.2	30.9	82.3	-51.4	Peak	Horizontal
292.4	20.7	18.2	38.9	82.3	-43.4	Peak	Horizontal
157.1	19.7	18.2	37.9	82.3	-44.4	Peak	Vertical
295.3	21.8	18.3	40.1	82.3	-42.2	Peak	Vertical
5547.5	41.0	3.7	44.7	82.3	-37.6	Peak	Horizontal
7400.5	41.4	8.2	49.6	82.3	-32.7	Peak	Horizontal
5547.5	41.0	3.7	44.7	82.3	-37.6	Peak	Vertical
7400.5	41.4	8.2	49.6	82.3	-32.7	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m) Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-22 ~ 2023-04-28	Test Band	LTE Band 4/66, 1RB QPSK
Model No.	INT-SHMD-V2.0E-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
296.3	19.8	18.3	38.1	82.3	-44.2	Peak	Horizontal
622.7	13.0	25.9	38.9	82.3	-43.4	Peak	Horizontal
205.1	18.1	14.6	32.7	82.3	-49.6	Peak	Vertical
283.7	14.7	18.1	32.8	82.3	-49.5	Peak	Vertical
8726.5	38.2	10.0	48.2	82.3	-34.1	Peak	Horizontal
10681.5	37.1	13.5	50.6	82.3	-31.7	Peak	Horizontal
9355.5	36.1	11.9	48.0	82.3	-34.3	Peak	Vertical
10987.5	35.4	13.6	49.0	82.3	-33.3	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m) Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-22 ~ 2023-04-28	Test Band	LTE Band 5, 1RB QPSK
Model No.	INT-SHMD-V2.0E-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
293.8	21.9	18.3	40.2	82.3	-42.1	Peak	Horizontal
870.0	23.5	29.1	52.6	82.3	-29.7	Peak	Horizontal
293.8	22.0	18.3	40.3	82.3	-42.0	Peak	Vertical
870.0	20.9	29.1	50.0	82.3	-32.3	Peak	Vertical
7927.5	38.4	8.5	46.9	82.3	-35.4	Peak	Horizontal
10928.0	35.8	13.5	49.3	82.3	-33.0	Peak	Horizontal
8726.5	38.2	10.0	48.2	82.3	-34.1	Peak	Vertical
10885.5	35.8	13.4	49.2	82.3	-33.1	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m) Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-22 ~ 2023-04-28	Test Band	LTE Band 12, 1RB QPSK
Model No.	INT-SHMD-V2.0E-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
293.4	23.0	18.3	41.3	82.3	-41.0	Peak	Horizontal
729.4	21.4	27.2	48.6	82.3	-33.7	Peak	Horizontal
294.8	22.2	18.3	40.5	82.3	-41.8	Peak	Vertical
729.4	25.4	27.2	52.6	82.3	-29.7	Peak	Vertical
1399.5	47.6	-5.7	41.9	82.3	-40.4	Peak	Horizontal
3499.0	43.3	-0.9	42.4	82.3	-39.9	Peak	Horizontal
1399.5	49.3	-5.7	43.6	82.3	-38.7	Peak	Vertical
3499.0	43.3	-0.9	42.4	82.3	-39.9	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m) Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-22 ~ 2023-04-28	Test Band	LTE Band 13, 1RB QPSK
Model No.	INT-SHMD-V2.0E-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
293.8	21.8	18.3	40.1	82.3	-42.2	Peak	Horizontal
749.7	22.5	28.2	50.7	82.3	-31.6	Peak	Horizontal
157.1	21.4	18.2	39.6	82.3	-42.7	Peak	Vertical
747.3	26.4	28.1	54.5	82.3	-27.8	Peak	Vertical
1578.0	42.6	-6.3	36.3	55.3	-19.0	Peak	Horizontal
11055.5	36.6	13.5	50.1	82.3	-32.2	Peak	Horizontal
1603.5	42.5	-6.3	36.2	55.3	-19.1	Peak	Vertical
10273.5	35.5	13.1	48.6	82.3	-33.7	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m) Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-21 ~ 2023-04-28	Test Band	LTE Band 14, 1RB QPSK
Model No.	INT-SHMD-V2.0E-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
51.8	26.0	18.1	44.1	82.3	-38.2	Peak	Horizontal
924.3	27.9	29.9	57.8	82.3	-24.5	Peak	Horizontal
47.0	25.1	18.3	43.4	82.3	-38.9	Peak	Vertical
587.3	27.0	25.0	52.0	82.3	-30.3	Peak	Vertical
1578.0	42.0	-6.3	35.7	55.3	-19.6	Peak	Horizontal
10554.0	35.7	13.4	49.1	82.3	-33.2	Peak	Horizontal
1578.0	42.4	-6.3	36.1	55.3	-19.2	Peak	Vertical
11098.0	36.6	13.3	49.9	82.3	-32.4	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)							
Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-04-22 ~ 2023-04-28	Test Band	LTE Band 71, 1RB QPSK
Model No.	INT-SHMD-V2.0E-EC25AF		

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
136.7	27.2	17.2	44.4	82.3	-37.9	Peak	Horizontal
871.5	29.1	29.0	58.1	82.3	-24.2	Peak	Horizontal
162.9	26.6	18.1	44.7	82.3	-37.6	Peak	Vertical
913.2	28.1	29.7	57.8	82.3	-24.5	Peak	Vertical
1331.5	46.1	-5.8	40.3	82.3	-42.0	Peak	Horizontal
10741.0	35.3	13.6	48.9	82.3	-33.4	Peak	Horizontal
1331.5	43.4	-5.8	37.6	82.3	-44.7	Peak	Vertical
10996.0	35.8	13.6	49.4	82.3	-32.9	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m) Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).							

Appendix B - Test Setup Photograph

Refer to “2304RSU037-UT” file.

Appendix C - EUT Photograph

Refer to “2304RSU037-UE” file.