

RF MEASUREMENT REPORT

FCC ID: 2BAEZMR201910BG95M3

Applicant: Arctic Systems ApS

Product: RATMO® 2.5 NB IoT

Model No.: RATMO® 2.5 NB IoT / RATMO® 2.5 / RATMO® NB IoT

Brand Name: RATMO®

FCC Rule Part(s): Part 2, 22 (H), 24 (E), 27, 90(S)
(The test item shows in section 5.1)

Test Procedure(s): ANSI C63.26: 2015

Result: Complies

Received Date: 2023-01-18

Test Date: 2023-01-29 ~ 2023-03-27

Reviewed By:

Sunny Sun

Sunny Sun

Approved By:

Robin Wu

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
2301RSU045-U1	Rev. 01	Initial Report	2023-04-20	Valid

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1. General Information

1.1. Applicant

Arctic Systems ApS

Daemningen 67 st, 2610 Roedovre, DK-Denmark

1.2. Manufacturer

Arctic Systems ApS

Daemningen 67 st, 2610 Roedovre, DK-Denmark

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	RATMO® 2.5 NB IoT
Model No.	RATMO® 2.5 NB IoT / RATMO® 2.5 / RATMO® NB IoT
Brand Name	RATMO®
EUT Identification No.	RSD – 0472, RSD - 0474
GSM	850, 1900
LTE Cat M1	FDD Band: 2, 4, 5, 12, 13, 25, 26, 66, 85
LTE Cat NB2	FDD Band: 2, 4, 5, 12, 13, 25, 66, 71, 85
Operating Temperature	-22 ~ 50 °C
Integrated WWAN Modular Information	
FCC ID	XMR201910BG95M3
Model No.	BG95M3
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 module FCC ID “XMR201910BG95M3” to assess the radiated spurious emission. 3. The model difference is different marketing purposes.	

1.5. Radio Specification Under Test

GSM Specification	
T _x Frequency Range	GSM850: 824 ~ 849 MHz; PCS1900: 1850 ~ 1910 MHz
R _x Frequency Range	GSM850: 869 ~ 894 MHz; PCS1900: 1930 ~ 1990 MHz
LTE Cat NB2 Specification	
FDD T _x 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 25: 1850 ~ 1915 MHz Band 66: 1710 ~ 1780 MHz; Band 71: 663 ~ 698 MHz Band 85: 698 ~ 716 MHz
FDD R _x 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 25: 1930 ~ 1995 MHz Band 66: 2110 ~ 2180 MHz; Band 71: 617 ~ 652 MHz Band 85: 728 ~ 746 MHz
Modulation	UL & DL up to 64QAM
LTE Cat M1 Specification	
FDD T _x 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 25: 1850 ~ 1915 MHz Band 26: 814 ~ 849 MHz; Band 66: 1710 ~ 1780 MHz Band 85: 698 ~ 716 MHz
FDD R _x 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 25: 1930 ~ 1995 MHz Band 26: 859 ~ 894 MHz; Band 66: 2110 ~ 2180 MHz; Band 85: 728 ~ 746 MHz
Support Bandwidth	Band 2/4/25/66: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz Band 5/12: 1.4MHz, 3MHz, 5MHz, 10MHz Band 13/85: 5MHz, 10MHz Band 26: 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz Band 71: 5MHz, 10MHz, 15MHz, 20MHz
Modulation	UL & DL up to 64QAM
Power Class	5

1.6. Description of Available Antennas

Technology	Frequency Range (MHz)	Antenna Type	MaxPeak Gain (dBi)
GSM 850	824 ~ 849		-1.09
PCS 1900	1850 ~ 1910		3.59
Band 2	1850 ~ 1910		3.59
Band 4	1710 ~ 1755		2.79
Band 5	824 ~ 849		-1.09
Band 12	699 ~ 716		-2.70
Band 13	777 ~ 787		-2.70
Band 25	1850 ~ 1915		3.59
Band 26	814 ~ 849		-1.09
Band 66	1710 ~ 1780		2.79
Band 71	663 ~ 698		-2.70
Band 85	698 ~ 716		-2.70

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, Part 90
- FCC KDB 971168 D01 v03r01: Power Meas License Digital Systems

1.8. Device Capabilities

This device contains the following capabilities:

Working on LTE Band 2, 4, 5, 12, 13, 25, 26, 66, 71 RATMO Smart Trap.

LTE Band 25 (1850 ~ 1915 MHz) overlaps the entire frequency range of LTE Band 2 (1850 ~ 1910 MHz).

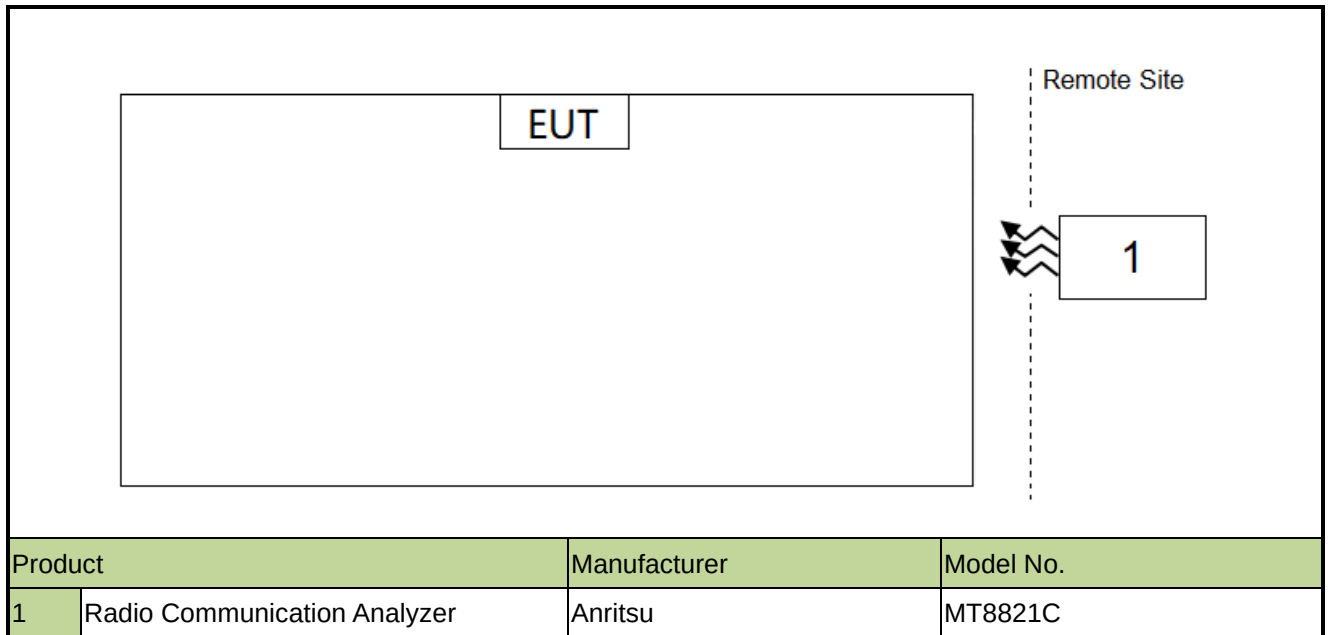
Therefore, test data provided in this report covers Band 2 as well as Band 25.

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.

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 Name	Manufacturer	Model No.	Asset No.	Cali. Interval	Cal. Due Date	Test Site
TRILOG Antenna	Schwarzbeck	VULB 9162	MRTSUE06022	1 year	2023-05-20	WZ-AC2
EMI Test Receiver	Agilent	N9038A	MRTSUE06125	1 year	2023-06-04	WZ-AC2
Thermohygrometer	Mingle	ETH529	MRTSUE06170	1 year	2023-11-27	WZ-AC2
Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06171	1 year	2023-10-13	WZ-AC2
Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06176	1 year	2023-05-08	WZ-AC2
Anechoic Chamber	RIKEN	WZ-AC2	MRTSUE06213	1 year	2023-04-21	WZ-AC2
Thermohygrometer	testo	608-H1	MRTSUE11038	1 year	2023-11-01	WZ-AC2
Radio Communication Analyzer	Anritsu	MT8821C	MRTSUE06960	1 year	2023-07-08	WZ-AC2
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	2023-05-08	WZ-AC1
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2023-06-21	WZ-AC1
Anechoic Chamber	TDK	WZ-AC1	MRTSUE06212	1 year	2023-04-21	WZ-AC1
Thermohygrometer	testo	608-H1	MRTSUE06403	1 year	2023-06-06	WZ-AC1
Signal Analyzer	Keysight	N9010B	MRTSUE06607	1 year	2023-12-28	WZ-AC1
Thermohygrometer	testo	608-H1	MRTSUE11039	1 year	2023-11-01	WZ-AC1

Software	Version	Function
EMI Software	V3	EMI Test Software
Controller_MF 7802	2.03C	RE Antenna & Turntable
Controller_MF 7802	1.02	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	Verdict
2.1053, 22.917(a) 24.238(a), 27.53(c) (f) (g) (h), 90.691(a)	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) All supported modulation types were evaluated. The worst-case emission of modulation was selected. Therefore, the Radiated Spurious Emission was 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.

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, 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 (dBμV/m) = EIRP (dBm) - $20 \log D$ + 104.8; where D is the measurement distance in meters. The emission limit equal to 82.3dBμV/m or 70.3dBμV/m.

5.2.2. Test Procedure

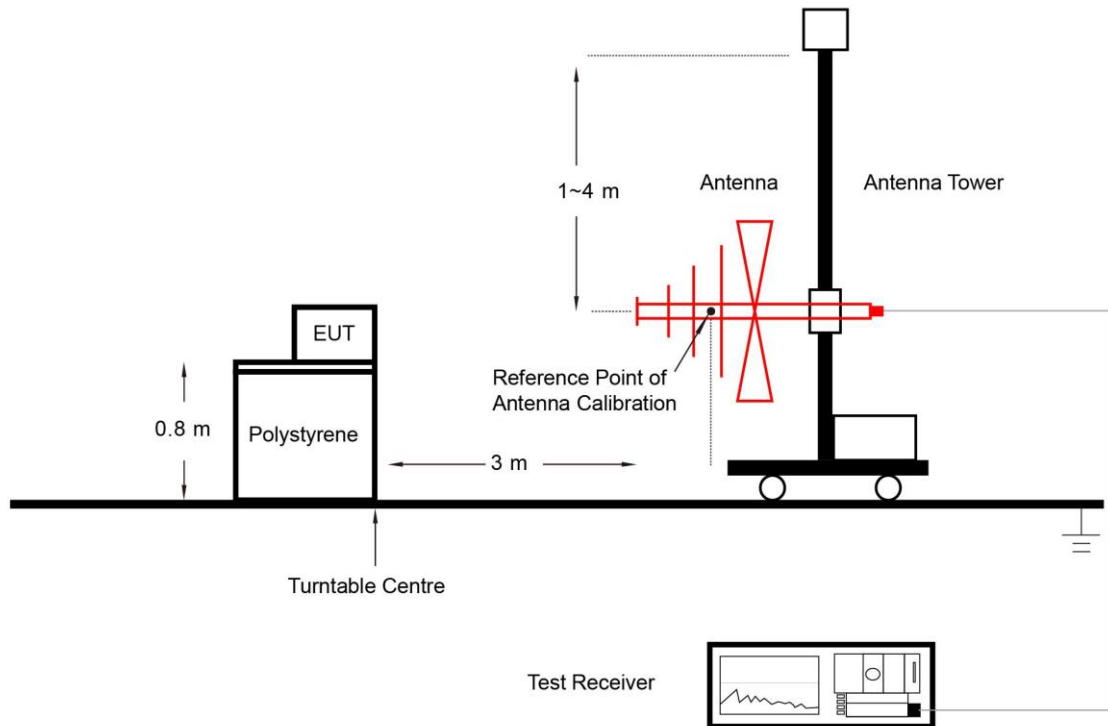
ANSI C63.26-2015 - Section 5.2.7 & 5.5

5.2.3. Test Setting

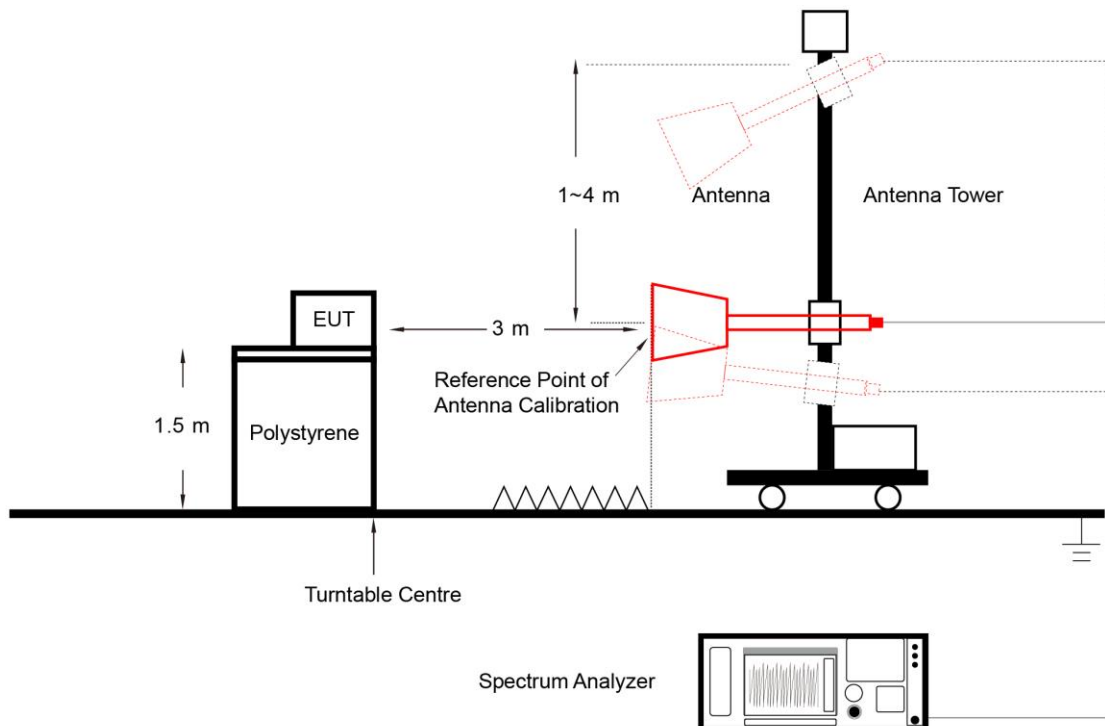
1. RBW = 1MHz
2. VBW $\geq 3 \times$ RBW
3. Sweep time $\geq 10 \times$ (number of points in sweep) $\times$ (transmission symbol period)
4. Detector = Peak
5. Trace mode = max hold
6. The trace was allowed to stabilize

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-AC2	Test Engineer	Edith Yu
Test Date	2023-01-30 ~ 2023-02-04	Test Band	LTE Cat NB2 Band 2/25, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
230.3	6.6	19.2	25.8	82.3	-56.5	Peak	Horizontal
704.2	12.8	28.5	41.3	82.3	-41.0	Peak	Horizontal
55.7	16.6	20.2	36.8	82.3	-45.5	Peak	Vertical
762.4	4.1	29.5	33.6	82.3	-48.7	Peak	Vertical
3703.0	38.5	-0.4	38.1	82.3	-44.2	Peak	Horizontal
14166.5	31.4	19.9	51.3	82.3	-31.0	Peak	Horizontal
5760.0	38.6	5.4	44.0	82.3	-38.3	Peak	Vertical
14302.5	31.7	19.5	51.2	82.3	-31.1	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).							

Test Site	WZ-AC2	Test Engineer	Edith Yu
Test Date	2023-01-30 ~ 2023-02-04	Test Band	LTE Cat NB2 Band 4/66, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
53.3	4.0	20.4	24.4	82.3	-57.9	Peak	Horizontal
230.3	7.4	19.2	26.6	82.3	-55.7	Peak	Horizontal
53.8	16.1	20.4	36.5	82.3	-45.8	Peak	Vertical
230.3	7.4	19.2	26.6	82.3	-55.7	Peak	Vertical
3422.5	49.3	-1.6	47.7	82.3	-34.6	Peak	Horizontal
14795.5	31.6	19.9	51.5	82.3	-30.8	Peak	Horizontal
5794.0	36.7	5.9	42.6	82.3	-39.7	Peak	Vertical
10826.0	32.1	17.6	49.7	82.3	-32.6	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).							

Test Site	WZ-AC2	Test Engineer	Edith Yu
Test Date	2023-01-30 ~ 2023-02-04	Test Band	LTE Cat NB2 Band 5, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
55.7	2.8	20.2	23.0	82.3	-59.3	Peak	Horizontal
230.3	7.0	19.2	26.2	82.3	-56.1	Peak	Horizontal
56.2	18.0	20.1	38.1	82.3	-44.2	Peak	Vertical
230.3	8.7	19.2	27.9	82.3	-54.4	Peak	Vertical
1646.0	49.7	-5.5	44.2	82.3	-38.1	Peak	Horizontal
11115.0	32.1	17.5	49.6	82.3	-32.7	Peak	Horizontal
5743.0	36.6	5.6	42.2	82.3	-40.1	Peak	Vertical
14200.5	32.2	19.8	52.0	82.3	-30.3	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).							

Test Site	WZ-AC2	Test Engineer	Edith Yu
Test Date	2023-01-30 ~ 2023-02-04	Test Band	LTE Cat NB2 Band 12, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
55.7	4.1	20.2	24.3	82.3	-58.0	Peak	Horizontal
904.9	3.5	31.2	34.7	82.3	-47.6	Peak	Horizontal
56.2	16.6	20.1	36.7	82.3	-45.6	Peak	Vertical
899.1	2.9	31.2	34.1	82.3	-48.2	Peak	Vertical
2096.5	50.8	-3.1	47.7	82.3	-34.6	Peak	Horizontal
14175.0	31.3	20.4	51.7	82.3	-30.6	Peak	Horizontal
2096.5	39.8	-3.1	36.7	82.3	-45.6	Peak	Vertical
5751.5	38.8	5.5	44.3	82.3	-38.0	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).							

Test Site	WZ-AC2	Test Engineer	Edith Yu
Test Date	2023-01-30 ~ 2023-02-04	Test Band	LTE Cat NB2 Band 13, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
52.8	3.4	20.4	23.8	82.3	-58.5	Peak	Horizontal
961.7	3.7	31.6	35.3	82.3	-47.0	Peak	Horizontal
56.7	14.0	20.1	34.1	82.3	-48.2	Peak	Vertical
925.8	4.0	31.1	35.1	82.3	-47.2	Peak	Vertical
1552.5	45.2	-5.4	39.8	82.3	-42.5	Peak	Horizontal
2334.5	43.1	-2.0	41.1	82.3	-41.2	Peak	Horizontal
4842.0	36.4	3.8	40.2	82.3	-42.1	Peak	Vertical
10919.5	31.3	17.3	48.6	82.3	-33.7	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).							

Test Site	WZ-AC2	Test Engineer	Edith Yu
Test Date	2023-01-30 ~ 2023-02-04	Test Band	LTE Cat NB2 Band 71, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
54.3	2.9	20.3	23.2	82.3	-59.1	Peak	Horizontal
950.0	4.1	31.5	35.6	82.3	-46.7	Peak	Horizontal
57.2	16.9	20.0	36.9	82.3	-45.4	Peak	Vertical
654.2	13.5	27.7	41.2	82.3	-41.1	Peak	Vertical
1986.0	42.6	-4.3	38.3	82.3	-44.0	Peak	Horizontal
14217.5	31.5	19.5	51.0	82.3	-31.3	Peak	Horizontal
1731.0	50.7	-5.5	45.2	82.3	-37.1	Peak	Vertical
14183.5	31.2	20.2	51.4	82.3	-30.9	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).							

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-03-27	Test Band	LTE Cat NB2 Band 85, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
739.6	25.3	27.7	53.0	82.3	-29.3	Peak	Horizontal
913.2	7.6	29.7	37.3	82.3	-45.0	Peak	Horizontal
752.7	16.9	28.2	45.1	82.3	-37.2	Peak	Vertical
909.3	2.6	29.6	32.2	82.3	-50.1	Peak	Vertical
1399.5	57.7	-5.7	52.0	82.3	-30.3	Peak	Horizontal
2096.5	60.5	-4.2	56.3	82.3	-26.0	Peak	Horizontal
1399.5	47.3	-5.7	41.6	82.3	-40.7	Peak	Vertical
2096.5	51.1	-4.2	46.9	82.3	-35.4	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Test Site	WZ-AC2	Test Engineer	Edith Yu
Test Date	2023-01-30 ~ 2023-02-04	Test Band	LTE Cat M1 Band 2/25, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
55.2	3.9	20.2	24.1	82.3	-58.2	Peak	Horizontal
853.0	4.1	30.5	34.6	82.3	-47.7	Peak	Horizontal
55.7	17.3	20.2	37.5	82.3	-44.8	Peak	Vertical
863.7	3.4	30.7	34.1	82.3	-48.2	Peak	Vertical
5751.5	39.6	5.5	45.1	82.3	-37.2	Peak	Horizontal
14396.0	32.1	19.6	51.7	82.3	-30.6	Peak	Horizontal
4833.5	34.6	3.8	38.4	82.3	-43.9	Peak	Vertical
14251.5	32.0	19.6	51.6	82.3	-30.7	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Test Site	WZ-AC2	Test Engineer	Edith Yu
Test Date	2023-01-30 ~ 2023-02-04	Test Band	LTE Cat M1 Band 4/66, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
55.7	2.9	20.2	23.1	82.3	-59.2	Peak	Horizontal
898.2	3.5	31.1	34.6	82.3	-47.7	Peak	Horizontal
56.2	15.6	20.1	35.7	82.3	-46.6	Peak	Vertical
916.1	4.0	31.2	35.2	82.3	-47.1	Peak	Vertical
3422.5	59.6	-1.6	58.0	82.3	-24.3	Peak	Horizontal
9678.5	34.7	14.0	48.7	82.3	-33.6	Peak	Horizontal
3422.5	47.7	-1.6	46.1	82.3	-36.2	Peak	Vertical
14370.5	32.4	19.1	51.5	82.3	-30.8	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Test Site	WZ-AC2	Test Engineer	Edith Yu
Test Date	2023-01-30 ~ 2023-02-04	Test Band	LTE Cat1 M1 Band 5, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
53.8	1.9	20.4	22.3	82.3	-60.0	Peak	Horizontal
555.3	9.9	26.2	36.1	82.3	-46.2	Peak	Horizontal
54.3	13.9	20.3	34.2	82.3	-48.1	Peak	Vertical
516.9	6.1	25.0	31.1	82.3	-51.2	Peak	Vertical
1646.0	61.2	-5.5	55.7	82.3	-26.6	Peak	Horizontal
2470.5	52.4	-2.7	49.7	82.3	-32.6	Peak	Horizontal
1646.0	47.7	-5.5	42.2	82.3	-40.1	Peak	Vertical
14285.5	32.0	19.6	51.6	82.3	-30.7	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).							

Test Site	WZ-AC2	Test Engineer	Edith Yu
Test Date	2023-01-30 ~ 2023-02-04	Test Band	LTE Cat M1 Band 12, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
55.7	2.7	20.2	22.9	82.3	-59.4	Peak	Horizontal
968.0	11.2	31.7	42.9	82.3	-39.4	Peak	Horizontal
57.2	17.5	20.0	37.5	82.3	-44.8	Peak	Vertical
230.3	8.1	19.2	27.3	82.3	-55.0	Peak	Vertical
2096.5	63.1	-3.1	60.0	82.3	-22.3	Peak	Horizontal
14192.0	31.4	20.0	51.4	82.3	-30.9	Peak	Horizontal
2096.5	49.2	-3.1	46.1	82.3	-36.2	Peak	Vertical
14175.0	30.7	20.4	51.1	82.3	-31.2	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).							

Test Site	WZ-AC2	Test Engineer	Edith Yu
Test Date	2023-01-30 ~ 2023-02-04	Test Band	LTE Cat M1 Band 13, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
54.3	2.7	20.3	23.0	82.3	-59.3	Peak	Horizontal
508.7	6.2	24.9	31.1	82.3	-51.2	Peak	Horizontal
56.7	15.7	20.1	35.8	82.3	-46.5	Peak	Vertical
230.3	6.5	19.2	25.7	82.3	-56.6	Peak	Vertical
1552.5	55.1	-5.4	49.7	82.3	-32.6	Peak	Horizontal
14642.5	32.4	19.0	51.4	82.3	-30.9	Peak	Horizontal
1552.5	45.6	-5.4	40.2	82.3	-42.1	Peak	Vertical
14073.0	32.2	19.8	52.0	82.3	-30.3	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).							

Test Site	WZ-AC2	Test Engineer	Edith Yu
Test Date	2023-01-30 ~ 2023-02-04	Test Band	LTE Cat M1 Band 26, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
55.7	2.6	20.2	22.8	82.3	-59.5	Peak	Horizontal
230.3	5.0	19.2	24.2	82.3	-58.1	Peak	Horizontal
54.7	14.3	20.3	34.6	82.3	-47.7	Peak	Vertical
546.0	4.5	26.1	30.6	82.3	-51.7	Peak	Vertical
1629.0	56.5	-5.4	51.1	82.3	-31.2	Peak	Horizontal
2445.0	50.6	-2.6	48.0	82.3	-34.3	Peak	Horizontal
1629.0	46.7	-5.4	41.3	82.3	-41.0	Peak	Vertical
14328.0	31.4	19.8	51.2	82.3	-31.1	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Test Site	WZ-AC1	Test Engineer	Carl Jiang
Test Date	2023-03-27	Test Band	LTE Cat M1 Band 85, 1RB, QPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
928.7	14.7	29.9	44.6	82.3	-37.7	Peak	Horizontal
967.0	14.2	29.9	44.1	82.3	-38.2	Peak	Horizontal
434.0	11.5	21.9	33.4	82.3	-48.9	Peak	Vertical
716.3	18.2	27.0	45.2	82.3	-37.1	Peak	Vertical
1399.5	60.4	-5.7	54.7	82.3	-27.6	Peak	Horizontal
2096.5	64.2	-4.2	60.0	82.3	-22.3	Peak	Horizontal
1399.5	48.5	-5.7	42.8	82.3	-39.5	Peak	Vertical
2096.5	50.5	-4.2	46.3	82.3	-36.0	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Test Site	WZ-AC2	Test Engineer	Edith Yu
Test Date	2023-01-30 ~ 2023-02-04	Test Band	GSM850, BPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
555.3	13.0	26.2	39.2	82.3	-43.1	Peak	Horizontal
807.5	18.0	29.7	47.7	82.3	-34.6	Peak	Horizontal
52.3	1.4	20.4	21.8	82.3	-60.5	Peak	Vertical
594.1	14.5	26.9	41.4	82.3	-40.9	Peak	Vertical
1646.0	68.7	-5.5	63.2	82.3	-19.1	Peak	Horizontal
2470.5	51.3	-2.7	48.6	82.3	-33.7	Peak	Horizontal
1646.0	59.8	-5.5	54.3	82.3	-28.0	Peak	Vertical
14192.0	32.9	20.0	52.9	82.3	-29.4	Peak	Vertical
Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).							

Test Site	WZ-AC2	Test Engineer	Edith Yu
Test Date	2023-01-30 ~ 2023-02-04	Test Band	PCS1900, BPSK

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
Low Channel							
230.3	5.3	19.2	24.5	82.3	-57.8	Peak	Horizontal
768.2	5.9	29.4	35.3	82.3	-47.0	Peak	Horizontal
52.3	3.6	20.4	24.0	82.3	-58.3	Peak	Vertical
847.7	3.3	30.4	33.7	82.3	-48.6	Peak	Vertical
3822.0	52.4	0.1	52.5	82.3	-29.8	Peak	Horizontal
5726.0	44.0	5.5	49.5	82.3	-32.8	Peak	Horizontal
3822.0	51.7	0.1	51.8	82.3	-30.5	Peak	Vertical
5726.0	44.5	5.5	50.0	82.3	-32.3	Peak	Vertical

Note: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Appendix B - Test Setup Photograph

Refer to “2301RSU045-UT” file.

Appendix C - EUT Photograph

Refer to “2301RSU045-UE” file.