

FCC RF Test Report

APPLICANT : Motorola Mobility LLC
EQUIPMENT : Mobile Cellular Phone
BRAND NAME : Motorola
MODEL NAME : XT2659-1, XT2659-2
FCC ID : IHDT56AP9
STANDARD : 47 CFR Part 96
CLASSIFICATION : Citizens Band End User Devices (CBE)
EQUIPMENT TYPE : End User Equipment
TEST DATE(S) : Dec. 02, 2025 ~ Dec. 04, 2025

We, Sporton International Inc. (Shenzhen), would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26 and shown compliance with the applicable technical standards.

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



Approved by: Fly Liang



Sporton International Inc. (ShenZhen)

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People's Republic of China



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History of this test report

Report No.	Version	Description	Issued Date
FG5N2011C	01	Initial issue of report	Dec. 23, 2025

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.3	§2.1055	Frequency Stability for Temperature & Voltage	Pass	-
4.4	§2.1051 §96.41	Radiated Spurious Emission	Pass	Under limit 9.85 dB at 14424.000 MHz

Note: This is a variant report, the change note could be referred to the XT2659-1, XT2659-2_Operational Description of Product Equality Declaration which is exhibit separately. According to the change, only the related test cases from original test report (Sporton Report Number FG420703O) were verified for the differences.

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/manufacturer 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 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.



1 General Description

1.1 Applicant

Motorola Mobility LLC

222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.2 Manufacturer

Motorola Mobility LLC

222 W,Merchandise Mart Plaza, Chicago IL 60654 USA

1.3 Feature of Equipment Under Test

Product Feature	
Equipment	Mobile Cellular Phone
Brand Name	Motorola
Model Name	XT2659-1, XT2659-2
FCC ID	IHDT56AP9
Tx Frequency	5G NR n48: 3550 MHz ~ 3700 MHz
Rx Frequency	5G NR n48: 3550 MHz ~ 3700 MHz
SCS	30kHz
Bandwidth	10MHz / 15MHz / 20MHz / 30MHz / 40MHz
Type of Modulation	DFT-s-OFDM (PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM) CP-OFDM (QPSK / 16QAM / 64QAM / 256QAM)
IMEI Code	Conducted: 354410210014414/354410210014422 Radiation: 354410210014851/354410210014869
HW Version	DVT1
SW Version	WWS36.24
EUT Stage	Identical Prototype

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. 5G NR 48 supports SA mode only.

1.4 Modification of EUT

No modifications are made to the EUT during all test items.

1.5 Specification of Accessory

Specification of Accessory				
Battery 1	Brand Name	Motorola(ATL)	Model Name	SA11
Battery 2	Brand Name	Motorola(ATL)	Model Name	SA34
USB Cable 1	Brand Name	Motorola(Saibao)	Model Name	SC18D86731
USB Cable 2	Brand Name	Motorola(Luxshare)	Model Name	SC18E08103

1.6 Testing Site

Sporton International Inc. (ShenZhen) is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.01.

Test Firm	Sporton International Inc. (ShenZhen)		
Test Site Location	101, 1st Floor, Block B, Building 1, No. 2, Tengfeng 4th Road, Fenghuang Community, Fuyong Street, Baoan District, Shenzhen City, Guangdong Province 518103 People's Republic of China TEL: +86-755-86066985		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	TH01-SZ 03CH04-SZ	CN1256	421272

1.7 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH04-SZ	AUDIX	E3	6.2009-8-24



1.8 Applied Standards

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

- ♦ ANSI C63.26-2015
- ♦ 47 CFR Part 96
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- ♦ FCC KDB 940660 D01 Part 96 CBRS v03r01
- ♦ FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

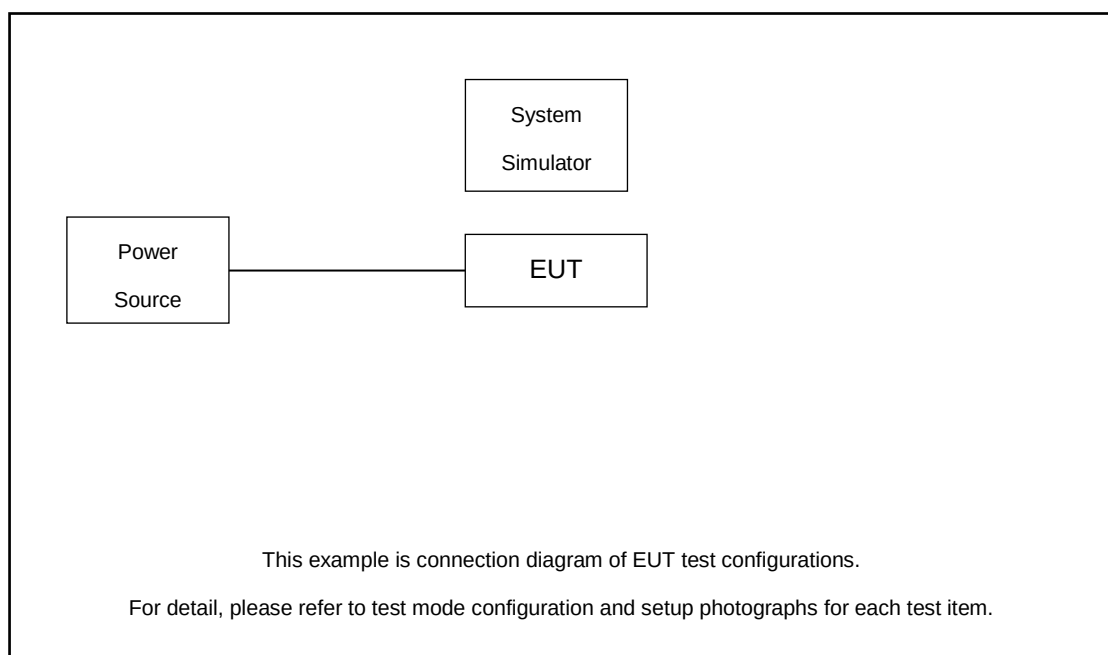
Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems with maximum output power.

The EUT is a folding phone, pretest the open status and closed status, only the worst status perform final test and record in the report. For the accessories, pretest standalone mode / Earphone mode / Adapter mode / Wireless charging mode, only the worst status perform final test and record in the report.

For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane) were recorded in this report.

Test Items	Band	Bandwidth (MHz)						Modulation					RB #			Test Channel			
		1.4	10	15	20	30	40	PI/2 BPSK	QPSK	16 QAM	64 QAM	256 QAM	1	Half	Full	L	M	H	
Frequency Stability	n48	-			v				v						v		v		
Radiated Spurious Emission	n48	Worst Case																v	
Remark	1.	The mark “v ” means that this configuration is chosen for testing																	
	2.	The mark “-” means that this bandwidth is not supported.																	
	3.	The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.																	
	4.	Frequency Stability : Normal Voltage = 3.88V ; Low Voltage =3.40V. ; High Voltage =4.53V																	

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	Power Supply	GWINSTEK	PSS-2002	N/A	N/A	Unshielded, 1.8 m
2.	NR Base Station	Anritsu	MT8000A	N/A	N/A	Unshielded, 1.8 m

2.4 Frequency List of Low/Middle/High Channels

5G NR n48 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
40	Channel	638000	641666	645332
	Frequency	3570	3624.99	3679.98
30	Channel	637668	641666	645666
	Frequency	3565.02	3624.99	3684.99
20	Channel	637334	641666	646000
	Frequency	3560.01	3624.99	3690
15	Channel	637168	641666	646166
	Frequency	3557.52	3624.99	3692.49
10	Channel	637000	641666	646332
	Frequency	3555	3624.99	3694.98

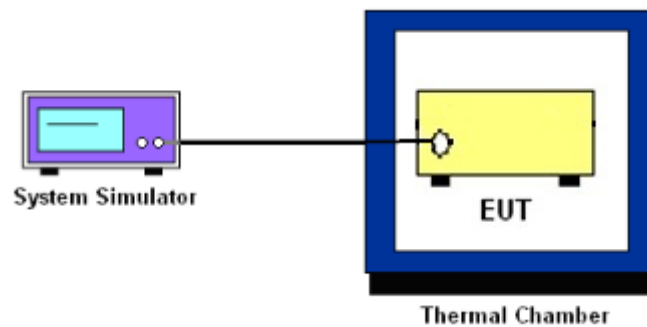
3 Conducted Test Items

3.1 Measuring Instruments

See list of measuring instruments of this test report.

3.2 Test Setup

3.2.1 Frequency Stability



3.2.2 Test Result of Conducted Test

Please refer to Appendix A.

3.3 Frequency Stability

3.3.1 Description of Frequency Stability Measurement

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block.

3.3.2 Test Procedures for Temperature Variation

The testing follows FCC KDB 971168 D01 Section 9.0.

1. The EUT was set up in the thermal chamber and connected with the system simulator.
2. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C step up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

3.3.3 Test Procedures for Voltage Variation

The testing follows FCC KDB 971168 D01 Section 9.0.

1. The EUT was placed in a temperature chamber at 25±5° C and connected with the system simulator.
2. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

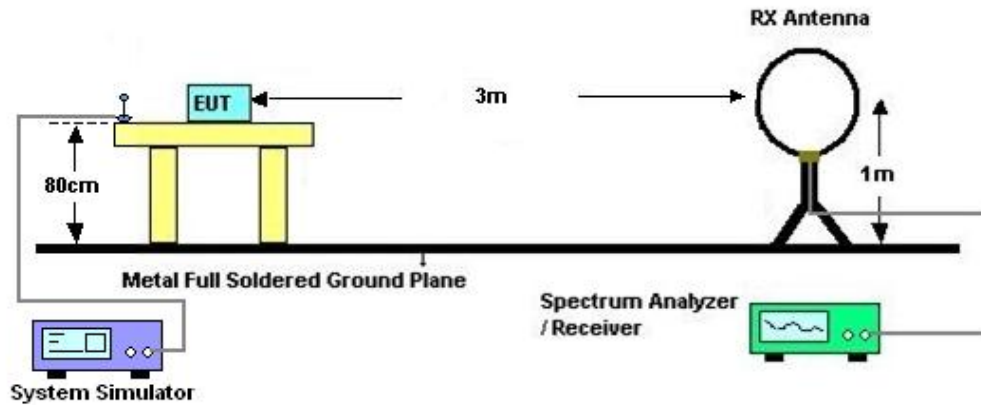
4 Radiated Test Items

4.1 Measuring Instruments

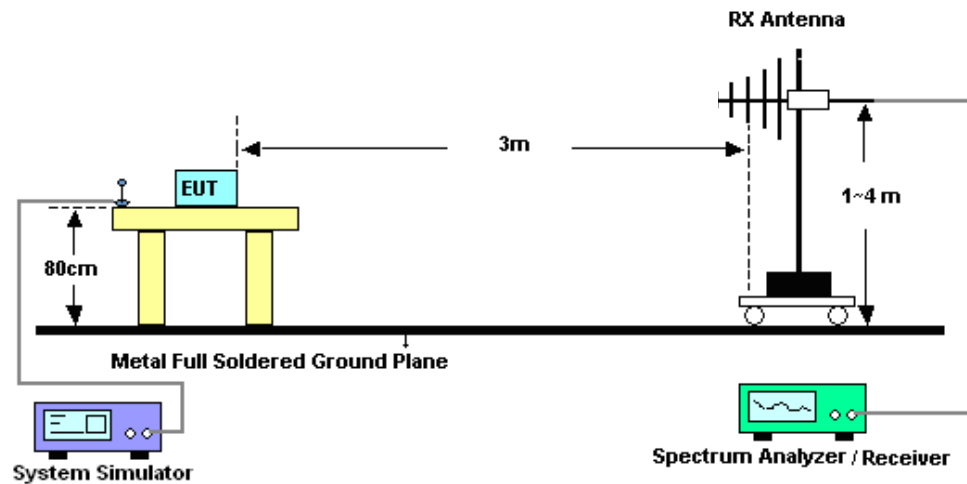
See list of measuring instruments of this test report.

4.2 Test Setup

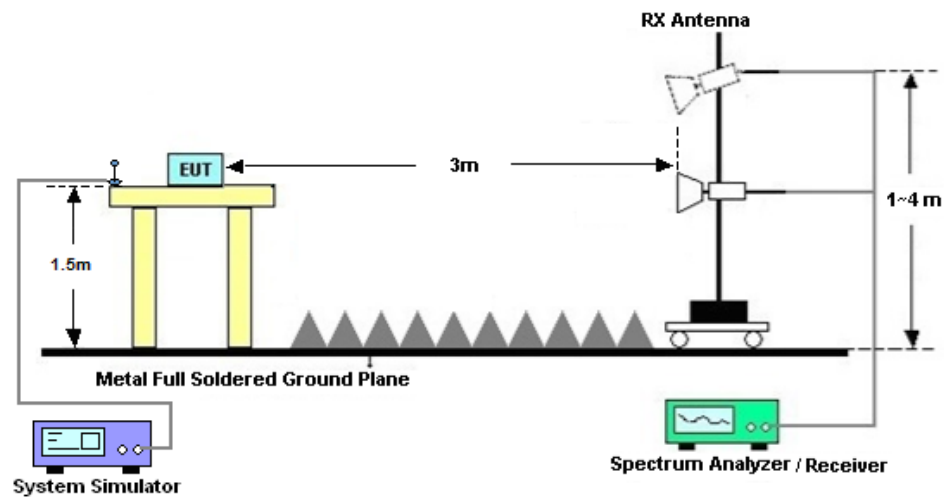
4.2.1 For radiated test below 30MHz



4.2.2 For radiated test from 30MHz to 1GHz



4.2.3 For radiated test above 1GHz



4.3 Test Result of Radiated Test

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported.

Please refer to Appendix B.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission Measurement

The radiated spurious emission was measured by substitution method according to ANSI C63.26-2015.

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 -40dBm / MHz.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.4.2 Test Procedures

1. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
5. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
$$\text{EIRP (dBm)} = \text{S.G. Power} - \text{Tx Cable Loss} + \text{Tx Antenna Gain}$$
$$\text{ERP (dBm)} = \text{EIRP} - 2.15$$
8. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

The limit line is -40dBm/MHz



5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSV40	101078	10Hz~40GHz	Apr. 02, 2025	Dec.02, 2025	Apr. 01, 2026	Conducted (TH01-SZ)
DC Power Supply	TTI	PL330P	290070	Max 32V, 3A	Oct. 13, 2025	Dec.02, 2025	Oct. 12, 2026	Conducted (TH01-SZ)
Power Divider	Titan	P02N005180	923402	0.4GHz~26.5GHz	Nov. 07, 2025	Dec.02, 2025	Nov. 06, 2026	Conducted (TH01-SZ)
Thermal Chamber	Ten Billion Hongzhangroup	LP-150U	H2014081803	-40~+150°C	Jul. 02, 2025	Dec.02, 2025	Jul. 01, 2026	Conducted (TH01-SZ)
EMI Test Receiver	R&S	ESR7	101404	9kHz~7GHz	Oct. 14, 2025	Dec.04, 2025	Oct. 13, 2026	Radiation (03CH04-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Jul. 03, 2025	Dec.04, 2025	Jul. 02, 2026	Radiation (03CH04-SZ)
Loop Antenna	R&S	HFH2-Z2E	101141	9kHz~30MHz	Dec. 28, 2024	Dec.04, 2025	Dec. 27, 2025	Radiation (03CH04-SZ)
Bilog Antenna	TeseQ	CBL6111D	41909	30MHz~1GHz	Apr. 21, 2025	Dec.04, 2025	Apr. 20, 2026	Radiation (03CH04-SZ)
Double Ridge Guide Antenna	ETS-Lindgren	Burgeon-3117	00240057	1GHz~18GHz	Jul. 03, 2025	Dec.04, 2025	Jul. 02, 2026	Radiation (03CH04-SZ)
Horn Antenna	SCHWARZBECK	BBHA9170	9170#679	15GHz~40GHz	Jul. 04, 2025	Dec.04, 2025	Jul. 03, 2026	Radiation (03CH04-SZ)
LF Amplifier	EM Electronics	EM330	060773	20MHz~3GHz	Apr. 02, 2025	Dec.04, 2025	Apr. 01, 2026	Radiation (03CH04-SZ)
HF Amplifier	MITEQ	AMF-7D-00101800-30-10P-R	1943528	1GHz~18GHz	Oct. 14, 2025	Dec.04, 2025	Oct. 13, 2026	Radiation (03CH04-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 03, 2025	Dec.04, 2025	Jul. 02, 2026	Radiation (03CH04-SZ)
Amplifier	Agilent Technologies	83017A	MY57280136	500MHz~26.5GHz	Jul. 03, 2025	Dec.04, 2025	Jul. 02, 2026	Radiation (03CH04-SZ)
AC Power Source	APC	AFV-S-600B	F119050019	N/A	Oct. 14, 2025	Dec.04, 2025	Oct. 13, 2026	Radiation (03CH04-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Dec.04, 2025	NCR	Radiation (03CH04-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Dec.04, 2025	NCR	Radiation (03CH04-SZ)

NCR: No Calibration Required

6 Measurement Uncertainty

Uncertainty of Conducted Measurement

Test Item	Uncertainty
Frequency Stability	± 1.3 Hz

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.8 dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.1 dB
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.9 dB
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----- THE END -----

Appendix A. Test Results of Conducted Test

Test Engineer :	Hank Lin	Temperature :	24~26°C
		Relative Humidity :	50~53%

Frequency Stability

NR Band	SCS (kHz)	Bandwidth (MHz)	Arfcn	Freq (MHz)	Modulation	RB	Deviation (Hz)	Verdict	Environment
48	30	20	641666	3624.99	DFT-s-OFDM QPSK	50@0	16.9	PASS	NV
48	30	20	641666	3624.99	DFT-s-OFDM QPSK	50@0	16.4	PASS	LV
48	30	20	641666	3624.99	DFT-s-OFDM QPSK	50@0	12.4	PASS	HV
48	30	20	641666	3624.99	DFT-s-OFDM QPSK	50@0	17.3	PASS	-30°C
48	30	20	641666	3624.99	DFT-s-OFDM QPSK	50@0	17.2	PASS	-20°C
48	30	20	641666	3624.99	DFT-s-OFDM QPSK	50@0	16.6	PASS	-10°C
48	30	20	641666	3624.99	DFT-s-OFDM QPSK	50@0	11.5	PASS	0°C
48	30	20	641666	3624.99	DFT-s-OFDM QPSK	50@0	16.6	PASS	10°C
48	30	20	641666	3624.99	DFT-s-OFDM QPSK	50@0	16.9	PASS	20°C
48	30	20	641666	3624.99	DFT-s-OFDM QPSK	50@0	18.1	PASS	30°C
48	30	20	641666	3624.99	DFT-s-OFDM QPSK	50@0	14	PASS	40°C
48	30	20	641666	3624.99	DFT-s-OFDM QPSK	50@0	10.5	PASS	50°C

$|\text{MAX}(\Delta f)| = 18.1 \text{ Hz}$

Frequency Stability	Frequency (MHz)	Limit Line	Result
$f_L - \text{MAX}(\Delta f) $	3550.875382	$\geq 3550 \text{ MHz}$	PASS
$f_H + \text{MAX}(\Delta f) $	3699.081618	$\leq 3700 \text{ MHz}$	

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

Test Engineer :	HuaCong Liang	Temperature :	22~25°C
		Relative Humidity :	48~52%

Note: Pre-scanned harmonic for the different antennas, we choose the worst antenna mode to perform final test and record in the report.

SA n48 / 20MHz / QPSK / Ant.4									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	7212.00	-60.35	-40	-20.35	-53.93	-63.65	8.30	11.60	H
	10818.00	-53.65	-40	-13.65	-53.83	-55.17	10.48	12.00	H
	14424.00	-49.85	-40	-9.85	-55.91	-51.55	11.80	13.50	H
	7212.00	-59.67	-40	-19.67	-53.62	-62.97	8.30	11.60	V
	10818.00	-54.78	-40	-14.78	-54.58	-56.30	10.48	12.00	V
	14424.00	-50.64	-40	-10.64	-56.13	-52.34	11.80	13.50	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.