



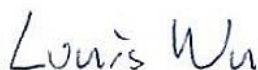
FCC RADIO TEST REPORT

FCC ID : 2AJN7-TP00144A
Equipment : Notebook
Brand Name : Lenovo
Model Name : TP00144A
Applicant : LC Future Center Limited Taiwan Branch
7F., No.780, Beian Rd., Zhongshan Dist., Taipei
104, Taiwan
Manufacturer : LCFC (HeFei) Electronics Technology Co., Ltd.
No. 3188-1, Yungu Road (Hefei Export
Processing Zone), Hefei Economics &
Technology Development Area, Anhui, CHINA
Standard : FCC 47 CFR Part 2, 96

Equipment: Fibocom FM350-GL tested inside of Lenovo Notebook.

The product was received on Jul. 14, 2022 and testing was performed from Jul. 22, 2022 to Sep. 07, 2022. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E 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. Wensan Laboratory, the test report shall not be reproduced except in full.



Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory



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History of this test report

Report No.	Version	Description	Issue Date
FG271304H	01	Initial issue of report	Sep. 15, 2022
FG271304H	02	Revise Applied Standards	Sep. 23, 2022

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046 RSS-192 8.6	Conducted Output Power	Reporting only	-
-	§96.41	Peak-to-Average Ratio	-	See Note
3.3	§96.41	Effective Isotropic Radiated Power	Pass	-
-	§2.1049 §96.41	Occupied Bandwidth	-	See Note
-	§2.1051 §96.41	Conducted Band Edge Measurement	-	See Note
-	§2.1051 §96.41	Conducted Spurious Emission	-	See Note
-	§2.1055	Frequency Stability for Temperature & Voltage	-	-
4.4	§2.1051 §96.41	Radiated Spurious Emission	Pass	6.19 dB under the limit at 7362.000 MHz

Note:

- The certified module (model: FM350-GL) which supports normal mode and TX switching mode being integrated into a notebook computer. Spot check on both modes were performed and no degradation occur. Thus the module test results were leveraged in this report and additionally reporting the spot check results in this report.
- In normal mode, Conducted power was verified to be consistent with the original modular approval, so the output power level in the original modular grant is referenced in this report for determining ERP of this host product, and verified the TX switching mode of Radiated Spurious Emission and Conducted power.

Declaration of Conformity:

- The test results (PASS/FAIL) with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
- The measurement uncertainty please refer to report "Uncertainty of Evaluation".

Comments and Explanations:

The product specifications of the EUT presented in the report are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Sheng Kuo
Report Producer: Clio Lo

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Notebook
Brand Name	Lenovo
Model Name	TP00144A
FCC ID	2AJN7-TP00144A
EUT supports Radios application	WCDMA/HSPA/LTE/5G NR/GNSS
EUT Stage	Production Unit

Remark:

1. The above EUT's information was declared by manufacturer.
2. Equipment: Fibocom FM350-GL tested inside of Lenovo Notebook.

Antenna Information				
Main Antenna	Manufacturer	Amphenol	Peak gain(dBi)	0.54
	Part number	TKE427-12-000-R	Type	PIFA Antenna
MIMO2 Antenna	Manufacturer	Amphenol	Peak gain(dBi)	-1.72
	Part number	TKE423-16-000-R	Type	PIFA Antenna

Remark: The above EUT's information was declared by manufacturer. Please refer to Comments and Explanations in report summary.

	Normal mode	TX switching mode
	TX/RX	TX/RX
Ant_0 (Main)	WCDMA : 2/4/5 LTE : 2/4/5/7/12/13/14/17/25/26/30/38/66/71 NR : 2/5/7/25/30/38/66/71	WCDMA : 5 LTE : 5/12/13/14/17/26/41/48/71 NR : 5/41/71/77/78
Ant_2 (MIMO2)	LTE : 41/48 NR : 41/77/78	WCDMA : 2/4 LTE : 2/4/7/25/30/38/66 NR : 2/7/25/30/38/66

1.2 Product Specification of Equipment Under Test

Product Specification is subject to this standard	
Tx Frequency	3552.5 MHz ~ 3697.5 MHz
Rx Frequency	3552.5 MHz ~ 3697.5 MHz
Bandwidth	5 MHz / 10 MHz / 15 MHz / 20 MHz
Maximum Output Power to Antenna	Main Antenna: LTE Band 48: 21.90 dBm LTE Band 48C: 20.58 dBm MIMO 2 Antenna: LTE Band 48: 21.32 dBm LTE Band 48C: 21.60 dBm
Type of Modulation	QPSK / 16QAM / 64QAM / 256QAM

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 TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	Sporton Site No. TH03-HY (TAF Code: 1190)
Test Engineer	Eric Chang
Temperature (°C)	22.5~23.3
Relative Humidity (%)	52~55
Remark	The Conducted test item subcontracted to Sporton International Inc. EMC & Wireless Communications Laboratory.

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010 TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	Sporton Site No. 03CH12-HY
Test Engineer	Jack Cheng, Tim Lee and Wilson Wu
Temperature (°C)	20~25
Relative Humidity (%)	50~60

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

FCC Designation No.: TW1190 and TW3786

1.5 Applied Standards

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

- ♦ ANSI C63.26-2015
- ♦ ANSI / TIA-603-E
- ♦ FCC 47 CFR Part 2, 96
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- ♦ FCC KDB 940660 D01 Part 96 CBRS Eqpt v03
- ♦ 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. The TAF code is not including all the FCC KDB listed without accreditation.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

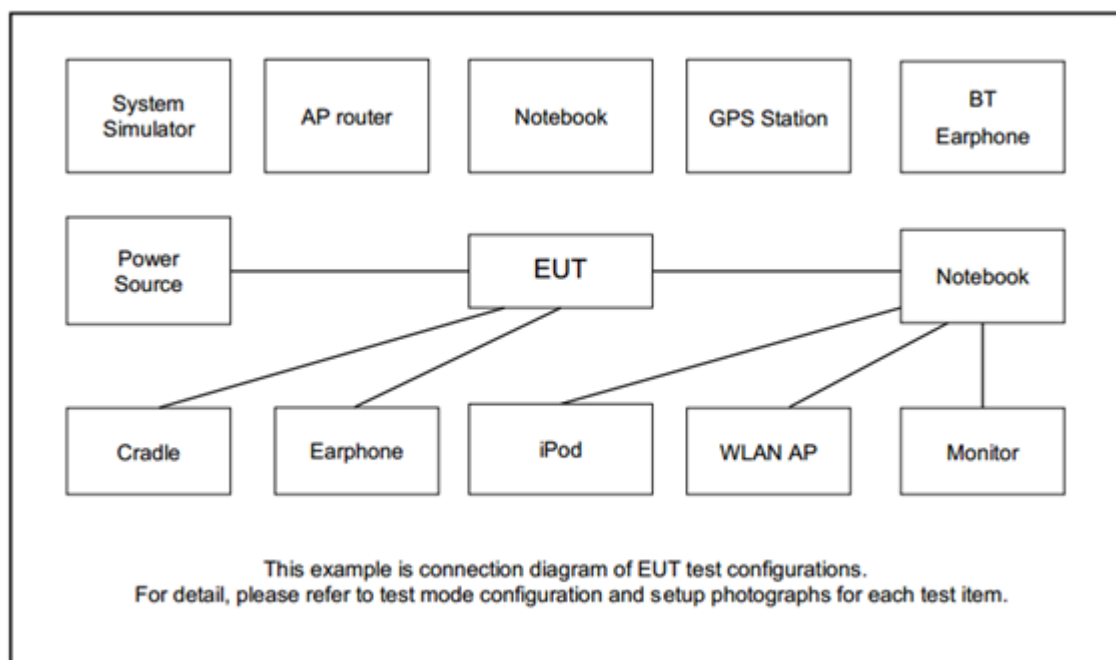
Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in Tablet Type (three orthogonal axis (X: flat, Y: portrait, Z: landscape)) and Notebook Type, and adjusting the measurement antenna orientation, following C63.26 exploratory test procedures and only the worst case emissions were reported in this report..

Test Items	Band	Bandwidth (MHz)						Modulation				RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	256QAM	1	Half	Full	L	M	H
Max. Output Power	48	-	-	v	v	v	v	v	v	v		v	v	v	v	v	v
E.I.R.P	48	-	-	v	v	v	v	v	v	v		Max. Power					
Radiated Spurious Emission	48	-	-				v	v				v			v	v	v
Remark	- The mark "v" means that this configuration is chosen for testing - The mark "-" means that this bandwidth is not supported. - 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. - For modulation of 256QAM, the maximum power of 256QAM is lower than other modulation (QPSK/16QAM/64QAM), therefore, for Normal Mode, according to engineering evaluation, we choose higher power (QPSK/16QAM/64QAM) to perform all tests and show in the report. - All the radiated test cases were performed with Battery 1.																

Test Items	Band	Bandwidth (MHz)										Modulation				RB #			Test Channel		
		20+20	20+15	15+20	20+10	10+20	20+5	5+20	15+15	15+10	10+15	QPSK	16QAM	64QAM	256QAM	1	Half	Full	L	M	H
Max. Output Power	48_CA	v	v	v	v	v	v	v	-	-	-	v	v	v	v	v	v	v	v	v	v
E.I.R.P	48_CA	v	v	v	v	v	v	v	-	-	-	v	v	v	v	v			v	v	v
Radiated Spurious Emission	48_CA	v							-	-	-	v				v			v	v	v
Remark	- The mark "v" means that this configuration is chosen for testing - The mark "-" means that this bandwidth is not supported. - 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. - All the radiated test cases were performed with Battery 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	MT8821C	N/A	N/A	Unshielded, 1.8 m
2.	System Simulator	Anritsu	MT8000A	N/A	N/A	Unshielded, 1.8 m
3.	Type C Earphone	Google	G019A	N/A	Unshielded, 1.5 m	N/A

2.4 Frequency List of Low/Middle/High Channels

LTE Band 48 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	55340	55990	56640
	Frequency	3560.0	3625.0	3690.0
15	Channel	55315	55990	56665
	Frequency	3557.5	3625.0	3692.5
10	Channel	55290	55990	56690
	Frequency	3555.0	3625.0	3695.0
5	Channel	55265	55990	56715
	Frequency	3552.5	3625.0	3697.5

LTE Band 48C Channel and Frequency List_CA					
BW [MHz]	Channel/Frequency(MHz)		Lowest	Middle	Highest
20 + 20	PCC	Channel	55340	55641	55942
		Frequency	3560	3590.1	3620.2
	SCC	Channel	55538	55839	56140
		Frequency	3579.8	3609.9	3640
20 + 15	PCC	Channel	55340	55667	55994
		Frequency	3560	3592.7	3625.4
	SCC	Channel	55511	55838	56165
		Frequency	3577.1	3609.8	3642.5
15 + 20	PCC	Channel	55315	55642	55969
		Frequency	3557.5	3590.2	3622.9
	SCC	Channel	55486	55813	56140
		Frequency	3574.6	3607.3	3640
20 + 10	PCC	Channel	55340	55693	56046
		Frequency	3560	3595.3	3630.6
	SCC	Channel	55484	55837	56190
		Frequency	3574.4	3609.7	3645
10 + 20	PCC	Channel	55290	55643	55996
		Frequency	3555	3590.3	3625.6
	SCC	Channel	55434	55787	56140
		Frequency	3569.4	3604.7	3640
20 + 5	PCC	Channel	55340	55719	56098
		Frequency	3560	3597.9	3635.8
	SCC	Channel	55457	55836	56215
		Frequency	3571.7	3609.6	3647.5
5 + 20	PCC	Channel	55265	55644	56023
		Frequency	3552.5	3590.4	3628.3
	SCC	Channel	55382	55761	56140
		Frequency	3564.2	3602.1	3640

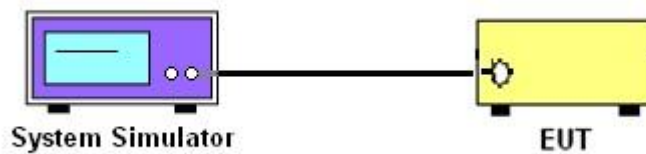
3 Conducted Test Items

3.1 Measuring Instruments

See list of measuring instruments of 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

3.2.1 Description of the Conducted Output Power Measurement

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

3.2.2 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through the system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.

3.3 EIRP

3.3.1 Description of the EIRP Measurement

The EIRP of mobile transmitters must not exceed 23 dBm /10 megahertz for LTE Band 48.

The testing follows ANSI C63.26-2015 Section 5.2.5.5

According to KDB 412172 D01 Power Approach,

$EIRP = P_T + G_T - LC$, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

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

Device	Maximum EIRP (dBm/10 MHz)	Maximum PSD (dBm/MHz)
End User Device	23	n/a

Remark: Total channel power is complied with EIRP limit 23dBm/10MHz.

3.3.2 Test Procedures

The testing follows procedure in Section 5.2 of ANSI C63.26-2015 and KDB 940660 D01 Part 96 CBRS Eqpt v03 Section 3.2(b)(2)

Determine the EIRP by adding the effective antenna gain to the measured average conducted power level.

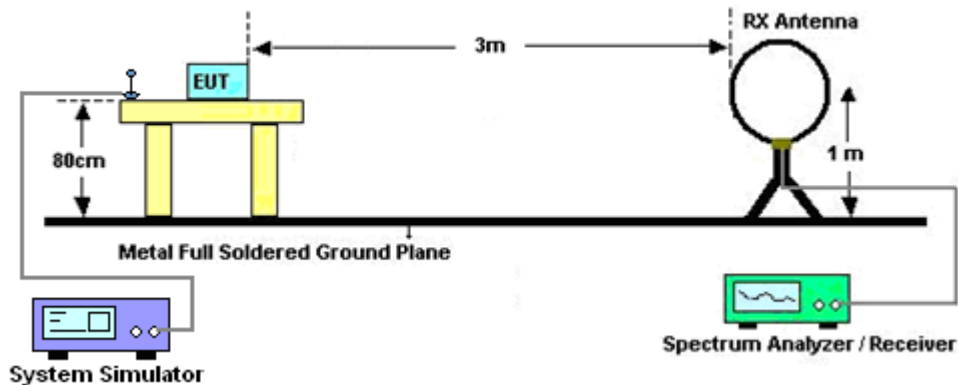
4 Radiated Test Items

4.1 Measuring Instruments

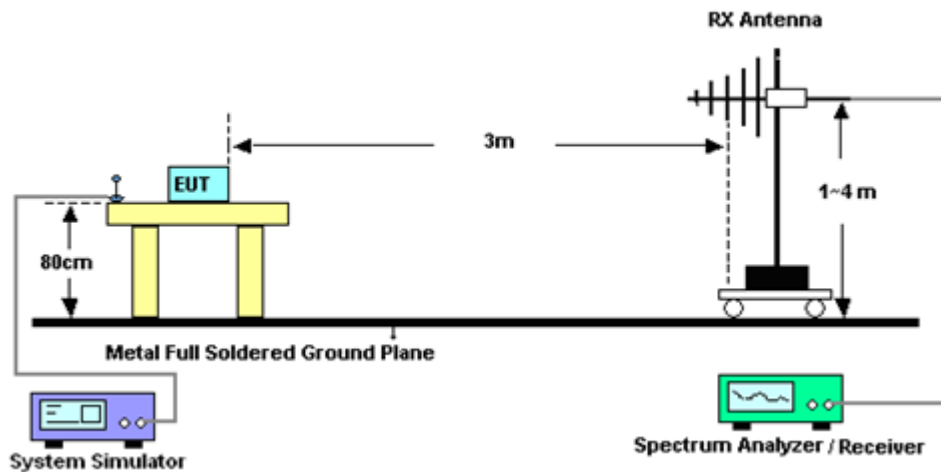
See list of measuring instruments of this test report.

4.2 Test Setup

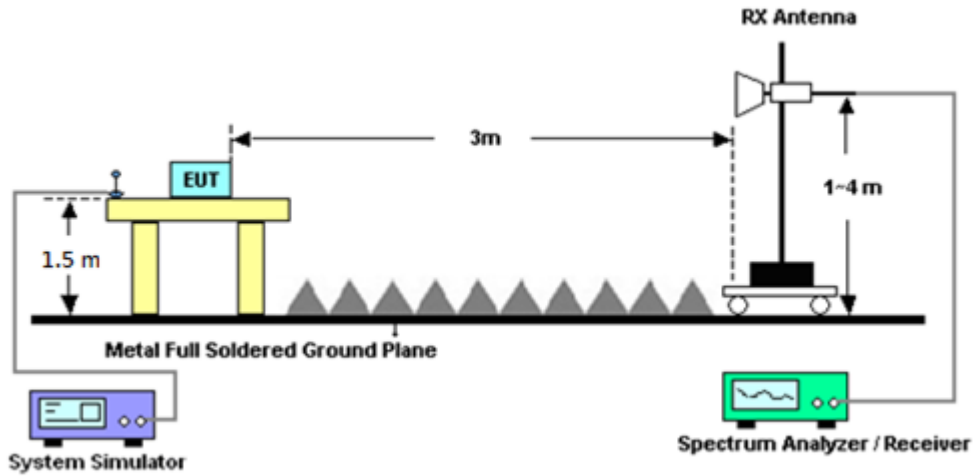
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.

Note:

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.

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 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E.

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

The testing follows FCC KDB 971168 D01 v03r01 Section 7 and ANSI / TIA-603-E Section 2.2.12.

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	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	May 13, 2022	Jul. 22, 2022~ Aug. 02, 2022	May 12, 2023	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01 N-06	37059 & 01	30MHz~1GHz	Oct. 09, 2021	Jul. 22, 2022~ Aug. 02, 2022	Oct. 08, 2022	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & N-6-06	35414 & AT-N0602	30MHz~1GHz	Oct. 09, 2021	Jul. 22, 2022~ Aug. 02, 2022	Oct. 08, 2022	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1328	1GHz~18GHz	Dec. 03, 2021	Jul. 22, 2022~ Aug. 02, 2022	Dec. 02, 2022	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1212	1GHz~18GHz	Mar. 10, 2022	Jul. 22, 2022~ Aug. 02, 2022	Mar. 09, 2023	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	18GHz~40GHz	Nov. 30, 2021	Jul. 22, 2022~ Aug. 02, 2022	Nov. 29, 2022	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170576	18GHz~40GHz	May 14, 2022	Jul. 22, 2022~ Aug. 02, 2022	May 13, 2023	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103	161075	10MHz~1GHz	Mar. 23, 2022	Jul. 22, 2022~ Aug. 02, 2022	Mar. 22, 2023	Radiation (03CH12-HY)
Preamplifier	Aglient	8449B	3008A02375	1GHz~26.5GHz	May 24, 2022	Jul. 22, 2022~ Aug. 02, 2022	May 23, 2023	Radiation (03CH12-HY)
Preamplifier	E-INSTRUMENT TECH LTD.	ERA-100M-18 G-56-01-A70	EC1900270	1GHz~18GHz	Dec. 27, 2021	Jul. 22, 2022~ Aug. 02, 2022	Dec. 26, 2022	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 24, 2021	Jul. 22, 2022~ Aug. 02, 2022	Dec. 23, 2022	Radiation (03CH12-HY)
Spectrum Analyzer	Keysight	N9010A	MY53470118	10Hz~44GHz	Jan. 12, 2022	Jul. 22, 2022~ Aug. 02, 2022	Jan. 11, 2023	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 104	MY9837/4PE	9kHz~30MHz	Mar. 10, 2022	Jul. 22, 2022~ Aug. 02, 2022	Mar. 09, 2023	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0058/126E	30MHz~18GHz	Dec. 10, 2021	Jul. 22, 2022~ Aug. 02, 2022	Dec. 09, 2022	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz~40GHz	Feb. 21, 2022	Jul. 22, 2022~ Aug. 02, 2022	Feb. 20, 2023	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803953/2	30MHz~40GHz	Mar. 08, 2022	Jul. 22, 2022~ Aug. 02, 2022	Mar. 07, 2023	Radiation (03CH12-HY)
Filter	Wainwright	WLKS1200-1 2SS	SN2	1.2GHz Low Pass Filter	Mar. 15, 2022	Jul. 22, 2022~ Aug. 02, 2022	Mar. 14, 2023	Radiation (03CH12-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Filter	Wainwright	WHKX12-2700 -3000-18000-6 OST	SN2	3GHz High Pass Filter	Jul. 11, 2022	Jul. 22, 2022~ Aug. 02, 2022	Jul. 10, 2023	Radiation (03CH12-HY)
Filter	Wainwright	WHKX8-5872. 5-6750-18000- 40ST	SN2	6.75GHz High Pass Filter	Mar. 15, 2022	Jul. 22, 2022~ Aug. 02, 2022	Mar. 14, 2023	Radiation (03CH12-HY)
Hygrometer	TECPEL	DTM-303B	TP140349	N/A	Sep. 30, 2021	Jul. 22, 2022~ Aug. 02, 2022	Sep. 29, 2022	Radiation (03CH12-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Jul. 22, 2022~ Aug. 02, 2022	N/A	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Jul. 22, 2022~ Aug. 02, 2022	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Jul. 22, 2022~ Aug. 02, 2022	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-000989	N/A	N/A	Jul. 22, 2022~ Aug. 02, 2022	N/A	Radiation (03CH12-HY)
Radio Communication Analyzer	Anritsu	MT8821C	6262025280	LTE FDD/TDD LTE-2CC DLCA/ULCA	Oct. 29, 2021	Sep. 01, 2022~ Sep. 07, 2022	Oct. 28, 2022	Conducted (TH03-HY)
Coupler	Warison	20dB 25W SMA Directional Coupler	#B	1-18GHz	Jan. 07, 2022	Sep. 01, 2022~ Sep. 07, 2022	Jan. 06, 2023	Conducted (TH03-HY)

6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.31 dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.25 dB
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.81 dB
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Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power & EIRP)

<Main Antenna>

LTE Band 48 Maximum Average Power [dBm] (GT - LC = 0.54 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
20	1	0	QPSK	21.90	21.55	21.70	22.44	0.1754
20	1	49		21.86	21.77	21.59		
20	1	99		21.87	21.86	21.56		
20	50	0		21.00	20.66	20.78		
20	50	24		20.94	20.72	20.77		
20	50	50		20.99	20.78	20.75		
20	100	0		20.98	20.72	20.73		
20	1	0	16-QAM	20.91	20.62	20.67	21.53	0.1422
20	1	49		20.99	20.76	20.67		
20	1	99		20.99	20.85	20.59		
20	50	0		19.98	19.74	19.77		
20	50	24		19.99	19.74	19.78		
20	50	50		20.00	19.82	19.73		
20	100	0		19.99	19.72	19.78		
20	1	0	64-QAM	19.43	19.15	19.24	20.10	0.1023
20	1	49		19.56	19.33	19.26		
20	1	99		19.51	19.42	19.20		
20	50	0		18.91	18.68	18.74		
20	50	24		19.00	18.74	18.76		
20	50	50		18.97	18.82	18.71		
20	100	0		18.94	18.72	18.71		
Limit	EIRP < 23dBm/10MHz			Result			Pass	



FCC RADIO TEST REPORT

Report No. : FG271304H

LTE Band 48 Maximum Average Power [dBm] (GT - LC = 0.54 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
15	1	0	QPSK	21.83	21.63	21.65	22.39	0.1734
15	1	37		21.84	21.83	21.63		
15	1	74		21.85	21.80	21.55		
15	36	0		20.79	20.68	20.70		
15	36	20		20.82	20.65	20.72		
15	36	39		20.72	20.65	20.66		
15	75	0		20.89	20.69	20.72		
15	1	0	16-QAM	20.79	20.58	20.58	21.45	0.1396
15	1	37		20.91	20.75	20.57		
15	1	74		20.91	20.83	20.54		
15	36	0		19.92	19.64	19.73		
15	36	20		19.88	19.73	19.64		
15	36	39		19.87	19.79	19.72		
15	75	0		19.84	19.65	19.60		
15	1	0	64-QAM	19.49	19.25	19.29	20.11	0.1026
15	1	37		19.57	19.45	19.38		
15	1	74		19.45	19.44	19.31		
15	36	0		18.84	18.67	18.68		
15	36	20		18.91	18.73	18.63		
15	36	39		18.83	18.71	18.63		
15	75	0		18.82	18.75	18.66		
Limit	EIRP < 23dBm/10MHz			Result			Pass	



LTE Band 48 Maximum Average Power [dBm] (GT - LC = 0.54 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
10	1	0	QPSK	21.76	21.53	21.61	22.39	0.1734
10	1	25		21.75	21.82	21.54		
10	1	49		21.85	21.70	21.51		
10	25	0		20.77	20.60	20.61		
10	25	12		20.82	20.61	20.71		
10	25	25		20.70	20.64	20.57		
10	50	0		20.86	20.67	20.66		
10	1	0	16-QAM	20.78	20.53	20.58	21.45	0.1396
10	1	25		20.83	20.68	20.49		
10	1	49		20.91	20.78	20.53		
10	25	0		19.83	19.54	19.64		
10	25	12		19.78	19.63	19.56		
10	25	25		19.84	19.76	19.69		
10	50	0		19.83	19.64	19.58		
10	1	0	64-QAM	19.45	19.18	19.22	20.06	0.1014
10	1	25		19.52	19.41	19.30		
10	1	49		19.43	19.37	19.21		
10	25	0		18.80	18.59	18.61		
10	25	12		18.84	18.72	18.56		
10	25	25		18.77	18.71	18.58		
10	50	0		18.82	18.69	18.65		
Limit	EIRP < 23dBm/10MHz			Result			Pass	



LTE Band 48 Maximum Average Power [dBm] (GT - LC = 0.54 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
5	1	0	QPSK	21.79	21.63	21.62	22.34	0.1714
5	1	12		21.80	21.74	21.55		
5	1	24		21.80	21.78	21.45		
5	12	0		20.74	20.65	20.61		
5	12	7		20.80	20.57	20.66		
5	12	13		20.67	20.61	20.66		
5	25	0		20.79	20.65	20.71		
5	1	0	16-QAM	20.76	20.51	20.54	21.39	0.1377
5	1	12		20.83	20.72	20.49		
5	1	24		20.85	20.74	20.45		
5	12	0		19.83	19.61	19.69		
5	12	7		19.79	19.69	19.57		
5	12	13		19.83	19.74	19.67		
5	25	0		19.76	19.65	19.57		
5	1	0	64-QAM	19.43	19.17	19.22	20.04	0.1009
5	1	12		19.50	19.39	19.28		
5	1	24		19.38	19.34	19.30		
5	12	0		18.79	18.66	18.64		
5	12	7		18.90	18.65	18.53		
5	12	13		18.83	18.65	18.58		
5	25	0		18.78	18.75	18.63		
Limit	EIRP < 23dBm/10MHz			Result			Pass	



LTE Band 48C_CA Maximum Average Power [dBm] (GT - LC = 0.54 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
	RB Size	RB Offset	RB Size	RB Offset						
20+20	100	0	100	0	QPSK	18.86	18.80	18.80	21.12	0.1294
20+20	1	0	1	99		11.75	11.66	11.57		
20+20	1	99	1	0		20.32	20.58	20.49		
20+20	100	0	100	0	16-QAM	17.92	17.86	17.83	20.44	0.1107
20+20	1	0	1	99		12.06	11.97	11.86		
20+20	1	99	1	0		19.90	19.87	19.86		
20+20	100	0	100	0	64-QAM	17.89	17.81	17.76	18.43	0.0697
20+20	1	0	1	99		11.90	11.83	11.70		
20+20	1	99	1	0		17.76	17.77	17.71		
20+20	100	0	100	0	256-QAM	15.96	15.85	15.76	16.50	0.0447
20+20	1	0	1	99		11.93	11.85	11.75		
20+20	1	99	1	0		15.83	15.80	15.74		
20+15	100	0	75	0	QPSK	18.84	18.67	18.56	20.99	0.1256
20+15	1	0	1	74		11.83	11.61	11.50		
20+15	1	74	1	0		20.45	20.35	20.21		
20+15	100	0	75	0	16-QAM	17.87	17.69	17.60	20.30	0.1072
20+15	1	0	1	74		12.12	11.88	11.78		
20+15	1	74	1	0		19.76	19.68	19.58		
20+15	100	0	75	0	64-QAM	17.83	17.65	17.59	18.37	0.0687
20+15	1	0	1	74		11.97	11.71	11.65		
20+15	1	74	1	0		17.63	17.53	17.48		
20+15	100	0	75	0	256-QAM	15.83	15.64	15.59	16.37	0.0434
20+15	1	0	1	74		12.00	11.74	11.68		
20+15	1	74	1	0		15.67	15.58	15.52		
15+20	75	0	100	0	QPSK	18.77	18.74	18.66	21.09	0.1285
15+20	1	0	1	99		11.92	11.81	11.68		
15+20	1	74	1	0		20.51	20.55	20.47		
15+20	75	0	100	0	16-QAM	17.80	17.75	17.64	20.46	0.1112
15+20	1	0	1	99		12.24	12.14	12.02		
15+20	1	74	1	0		19.85	19.92	19.83		
15+20	75	0	100	0	64-QAM	17.83	18.26	17.67	18.80	0.0759
15+20	1	0	1	99		12.09	11.97	11.85		
15+20	1	74	1	0		17.78	17.82	17.72		
15+20	75	0	100	0	256-QAM	15.88	15.78	15.62	16.42	0.0439
15+20	1	0	1	99		12.13	12.00	11.86		
15+20	1	74	1	0		15.84	15.86	15.72		
Limit	EIRP < 23dBm/10MHz					Result			Pass	



LTE Band 48C_CA Maximum Average Power [dBm] (GT - LC = 0.54 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
	RB Size	RB Offset	RB Size	RB Offset						
20+10	100	0	50	0	QPSK	18.82	18.80	18.73	20.91	0.1233
20+10	1	0	1	49		11.85	11.72	11.65		
20+10	1	99	1	0		20.34	20.37	20.28		
20+10	100	0	50	0	16-QAM	17.85	17.83	17.75	20.27	0.1064
20+10	1	0	1	49		12.19	12.04	11.96		
20+10	1	99	1	0		19.65	19.73	19.64		
20+10	100	0	50	0	64-QAM	17.81	17.79	17.69	18.35	0.0684
20+10	1	0	1	49		12.03	11.89	11.78		
20+10	1	99	1	0		17.54	17.60	17.46		
20+10	100	0	50	0	256-QAM	15.83	15.81	15.66	16.37	0.0434
20+10	1	0	1	49		12.03	11.93	11.80		
20+10	1	99	1	0		15.59	15.66	15.50		
10+20	50	0	100	0	QPSK	18.57	18.79	18.84	21.08	0.1282
10+20	1	0	1	99		11.61	11.84	11.93		
10+20	1	49	1	0		20.22	20.54	20.54		
10+20	50	0	100	0	16-QAM	17.56	17.89	17.96	20.50	0.1122
10+20	1	0	1	99		11.90	12.33	12.29		
10+20	1	49	1	0		19.50	19.96	19.93		
10+20	50	0	100	0	64-QAM	17.58	17.90	17.96	18.50	0.0708
10+20	1	0	1	99		11.75	12.02	12.14		
10+20	1	49	1	0		17.40	17.76	17.80		
10+20	50	0	100	0	256-QAM	15.61	15.95	15.98	16.52	0.0449
10+20	1	0	1	99		11.79	12.07	12.18		
10+20	1	49	1	0		15.47	15.84	15.85		
20+5	100	0	25	0	QPSK	18.96	18.92	18.94	20.95	0.1245
20+5	1	0	1	24		12.01	12.07	12.02		
20+5	1	99	1	0		20.41	20.27	20.40		
20+5	100	0	25	0	16-QAM	18.02	18.01	17.94	20.32	0.1076
20+5	1	0	1	24		12.34	12.40	12.36		
20+5	1	99	1	0		19.78	19.65	19.78		
20+5	100	0	25	0	64-QAM	18.02	17.78	17.93	18.56	0.0718
20+5	1	0	1	24		12.21	12.10	12.12		
20+5	1	99	1	0		17.65	17.52	17.59		
20+5	100	0	25	0	256-QAM	16.03	15.84	15.86	16.57	0.0454
20+5	1	0	1	24		12.22	12.17	12.15		
20+5	1	99	1	0		15.72	15.56	15.65		
Limit	EIRP < 23dBm/10MHz					Result			Pass	



LTE Band 48C_CA Maximum Average Power [dBm] (GT - LC = 0.54 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
	RB Size	RB Offset	RB Size	RB Offset						
5+20	25	0	100	0	QPSK	18.86	18.97	18.96	21.08	0.1282
5+20	1	0	1	99		11.96	12.04	12.04		
5+20	1	24	1	0		20.47	20.54	20.51		
5+20	25	0	100	0	16-QAM	17.83	17.95	17.93	20.45	0.1109
5+20	1	0	1	99		12.22	12.35	12.31		
5+20	1	24	1	0		19.83	19.91	19.89		
5+20	25	0	100	0	64-QAM	17.93	18.04	18.05	18.59	0.0723
5+20	1	0	1	99		12.12	12.25	12.22		
5+20	1	24	1	0		17.71	17.78	17.76		
5+20	25	0	100	0	256-QAM	15.92	15.99	15.97	16.53	0.0450
5+20	1	0	1	99		12.14	12.20	12.23		
5+20	1	24	1	0		15.77	15.81	15.80		
Limit	EIRP < 23dBm/10MHz					Result			Pass	



<MIMO 2 Antenna>

LTE Band 48 Maximum Average Power [dBm] (GT - LC = -1.72 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
20	1	0	QPSK	21.08	21.10	20.92	19.60	0.0912
20	1	49		21.21	21.32	21.24		
20	1	99		21.05	21.02	21.12		
20	50	0		21.20	21.18	21.07		
20	50	24		21.21	21.21	21.16		
20	50	50		21.20	21.19	21.14		
20	100	0		21.12	21.17	21.16		
20	1	0	16-QAM	21.11	21.14	20.99	19.51	0.0893
20	1	49		21.20	21.19	21.18		
20	1	99		21.11	21.07	21.19		
20	50	0		21.21	21.22	21.19		
20	50	24		21.18	21.23	21.16		
20	50	50		21.19	21.21	21.19		
20	100	0		21.16	21.13	21.20		
20	1	0	64-QAM	21.00	21.04	20.90	19.49	0.0889
20	1	49		21.10	21.09	21.07		
20	1	99		21.00	21.10	21.10		
20	50	0		21.20	21.18	21.15		
20	50	24		21.18	21.21	21.18		
20	50	50		21.20	21.20	21.20		
20	100	0		21.10	21.14	21.16		
Limit	EIRP < 23dBm/10MHz			Result			Pass	



FCC RADIO TEST REPORT

Report No. : FG271304H

LTE Band 48 Maximum Average Power [dBm] (GT - LC = -1.72 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
15	1	0	QPSK	21.03	20.99	21.02	19.46	0.0883
15	1	37		21.17	21.08	21.15		
15	1	74		21.09	21.09	21.10		
15	36	0		21.12	21.06	21.10		
15	36	20		21.14	21.10	21.15		
15	36	39		21.14	21.09	21.18		
15	75	0		21.14	21.11	21.16		
15	1	0	16-QAM	21.09	21.06	21.10	19.48	0.0887
15	1	37		21.20	21.13	21.17		
15	1	74		21.16	21.13	21.19		
15	36	0		21.11	21.03	21.05		
15	36	20		21.09	21.06	21.06		
15	36	39		21.09	21.04	21.11		
15	75	0		21.13	21.12	21.13		
15	1	0	64-QAM	21.02	21.04	21.02	19.48	0.0887
15	1	37		21.14	21.08	21.17		
15	1	74		21.11	21.10	21.10		
15	36	0		21.18	21.04	21.11		
15	36	20		21.10	21.09	21.17		
15	36	39		21.18	21.12	21.20		
15	75	0		21.18	21.12	21.13		
Limit	EIRP < 23dBm/10MHz			Result			Pass	



LTE Band 48 Maximum Average Power [dBm] (GT - LC = -1.72 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
10	1	0	QPSK	21.00	20.98	21.05	19.43	0.0877
10	1	25		21.11	21.02	21.10		
10	1	49		21.08	21.06	21.10		
10	25	0		21.10	21.03	21.14		
10	25	12		21.10	21.00	21.13		
10	25	25		21.12	21.03	21.12		
10	50	0		21.14	21.06	21.15		
10	1	0	16-QAM	21.06	20.98	21.14	19.46	0.0883
10	1	25		21.15	21.10	21.15		
10	1	49		21.16	21.11	21.17		
10	25	0		21.15	21.08	21.14		
10	25	12		21.16	21.09	21.18		
10	25	25		21.17	21.07	21.15		
10	50	0		21.15	21.07	21.16		
10	1	0	64-QAM	20.98	20.97	21.05	19.49	0.0889
10	1	25		21.09	21.00	21.07		
10	1	49		21.09	21.06	21.06		
10	25	0		21.17	21.08	21.17		
10	25	12		21.17	21.13	21.21		
10	25	25		21.19	21.12	21.20		
10	50	0		21.14	21.06	21.13		
Limit	EIRP < 23dBm/10MHz			Result			Pass	



LTE Band 48 Maximum Average Power [dBm] (GT - LC = -1.72 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
5	1	0	QPSK	21.11	21.12	21.17	19.49	0.0889
5	1	12		21.17	21.13	21.20		
5	1	24		21.15	21.09	21.21		
5	12	0		21.14	21.13	21.21		
5	12	7		21.15	21.09	21.19		
5	12	13		21.14	21.12	21.21		
5	25	0		21.14	21.13	21.18		
5	1	0	16-QAM	21.16	21.12	21.21	19.49	0.0889
5	1	12		21.20	21.16	21.18		
5	1	24		21.21	21.12	21.16		
5	12	0		21.09	21.04	21.15		
5	12	7		20.92	21.02	21.11		
5	12	13		21.04	21.02	21.10		
5	25	0		21.19	21.16	21.18		
5	1	0	64-QAM	21.08	21.09	21.14	19.49	0.0889
5	1	12		21.10	21.07	21.15		
5	1	24		21.12	21.06	21.13		
5	12	0		21.12	21.11	21.18		
5	12	7		21.10	21.06	21.12		
5	12	13		21.14	21.04	21.16		
5	25	0		21.18	21.15	21.21		
Limit	EIRP < 23dBm/10MHz			Result			Pass	



LTE Band 48C_CA Maximum Average Power [dBm] (GT - LC = -1.72 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
	RB Size	RB Offset	RB Size	RB Offset						
20+20	100	0	100	0	QPSK	21.50	21.35	21.37	19.78	0.0951
20+20	1	0	1	99		20.79	20.68	20.71		
20+20	1	99	1	0		21.48	21.27	21.30		
20+20	100	0	100	0	16-QAM	21.57	21.42	21.42	19.85	0.0966
20+20	1	0	1	99		20.80	20.69	20.76		
20+20	1	99	1	0		21.49	21.29	21.34		
20+20	100	0	100	0	64-QAM	21.52	21.37	21.39	19.80	0.0955
20+20	1	0	1	99		20.74	20.64	20.69		
20+20	1	99	1	0		21.45	21.25	21.29		
20+15	100	0	75	0	QPSK	21.52	21.37	21.42	19.83	0.0962
20+15	1	0	1	74		21.02	20.88	20.96		
20+15	1	74	1	0		21.55	21.31	21.38		
20+15	100	0	75	0	16-QAM	21.60	21.44	21.47	19.88	0.0973
20+15	1	0	1	74		21.01	20.90	20.97		
20+15	1	74	1	0		21.57	21.36	21.42		
20+15	100	0	75	0	64-QAM	21.56	21.42	21.46	19.84	0.0964
20+15	1	0	1	74		21.00	20.88	20.91		
20+15	1	74	1	0		21.54	21.31	21.37		
15+20	75	0	100	0	QPSK	21.50	21.21	21.22	19.85	0.0966
15+20	1	0	1	99		21.00	20.70	20.78		
15+20	1	74	1	0		21.57	21.25	21.29		
15+20	75	0	100	0	16-QAM	21.44	21.37	21.36	19.77	0.0948
15+20	1	0	1	99		20.84	20.76	20.89		
15+20	1	74	1	0		21.49	21.26	21.36		
15+20	75	0	100	0	64-QAM	21.54	21.26	21.35	19.82	0.0959
15+20	1	0	1	99		20.88	20.74	20.72		
15+20	1	74	1	0		21.40	21.27	21.25		
Limit	EIRP < 23dBm/10MHz					Result			Pass	



LTE Band 48C_CA Maximum Average Power [dBm] (GT - LC = -1.72 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
	RB Size	RB Offset	RB Size	RB Offset						
20+10	100	0	50	0	QPSK	21.51	21.29	21.41	19.79	0.0953
20+10	1	0	1	49		21.00	20.74	20.81		
20+10	1	99	1	0		21.43	21.25	21.35		
20+10	100	0	50	0	16-QAM	21.55	21.27	21.37	19.84	0.0964
20+10	1	0	1	49		20.82	20.89	20.97		
20+10	1	99	1	0		21.56	21.24	21.42		
20+10	100	0	50	0	64-QAM	21.37	21.28	21.34	19.82	0.0959
20+10	1	0	1	49		20.95	20.73	20.77		
20+10	1	99	1	0		21.54	21.31	21.17		
10+20	50	0	100	0	QPSK	21.48	21.22	21.36	19.76	0.0946
10+20	1	0	1	99		21.00	20.75	20.79		
10+20	1	49	1	0		21.39	21.22	21.22		
10+20	50	0	100	0	16-QAM	21.52	21.28	21.46	19.80	0.0955
10+20	1	0	1	99		20.86	20.90	20.89		
10+20	1	49	1	0		21.50	21.36	21.36		
10+20	50	0	100	0	64-QAM	21.45	21.30	21.44	19.74	0.0942
10+20	1	0	1	99		20.90	20.80	20.84		
10+20	1	49	1	0		21.46	21.22	21.36		
20+5	100	0	25	0	QPSK	21.53	21.33	21.34	19.81	0.0957
20+5	1	0	1	24		21.09	20.70	20.82		
20+5	1	99	1	0		21.38	21.14	21.31		
20+5	100	0	25	0	16-QAM	21.51	21.37	21.34	19.79	0.0953
20+5	1	0	1	24		20.93	20.75	20.78		
20+5	1	99	1	0		21.45	21.16	21.30		
20+5	100	0	25	0	64-QAM	21.51	21.38	21.39	19.81	0.0957
20+5	1	0	1	24		20.80	20.71	20.71		
20+5	1	99	1	0		21.53	21.25	21.24		
Limit	EIRP < 23dBm/10MHz					Result			Pass	



LTE Band 48C_CA Maximum Average Power [dBm] (GT - LC = -1.72 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
	RB Size	RB Offset	RB Size	RB Offset						
5+20	25	0	100	0	QPSK	21.50	21.27	21.23	19.78	0.0951
5+20	1	0	1	99		21.11	20.72	20.77		
5+20	1	24	1	0		21.32	21.31	21.36		
5+20	25	0	100	0	16-QAM	21.54	21.35	21.42	19.82	0.0959
5+20	1	0	1	99		20.95	20.83	20.95		
5+20	1	24	1	0		21.45	21.16	21.39		
5+20	25	0	100	0	64-QAM	21.55	21.24	21.32	19.83	0.0962
5+20	1	0	1	99		20.84	20.76	20.79		
5+20	1	24	1	0		21.46	21.16	21.18		
Limit	EIRP < 23dBm/10MHz					Result			Pass	



Appendix B. Test Results of Radiated Test

<MIMO2 Antenna>

LTE Band 48

LTE Band 48 / 20MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	7102	-52.25	-40	-12.25	-50.11	-61.96	1.84	11.55	H
	10653	-53.97	-40	-13.97	-56.41	-62.44	2.23	10.71	H
	14204	-49.24	-40	-9.24	-58.64	-58.87	2.65	12.28	H
	21306	-62.92	-40	-22.92	-77.29	-77.77	3.32	18.17	H
	24857	-59.37	-40	-19.37	-77.65	-74.14	3.71	18.49	H
	28408	-55.64	-40	-15.64	-76.15	-71.11	3.99	19.46	H
									H
	7102	-53.39	-40	-13.39	-51.49	-63.10	1.84	11.55	V
	10653	-54.15	-40	-14.15	-56.18	-62.62	2.23	10.71	V
	14204	-49.15	-40	-9.15	-58.42	-58.78	2.65	12.28	V
	21306	-62.12	-40	-22.12	-76.18	-76.97	3.32	18.17	V
	24857	-59.31	-40	-19.31	-77.27	-74.08	3.71	18.49	V
	28408	-56.34	-40	-16.34	-76.43	-71.81	3.99	19.46	V
									V



Middle	7232	-48.33	-40	-8.33	-46.65	-57.79	1.86	11.32	H
	10848	-52.86	-40	-12.86	-55.6	-61.24	2.22	10.59	H
	14464	-49.70	-40	-9.70	-58.87	-59.20	2.62	12.12	H
	18080	-60.38	-40	-20.38	-71.86	-74.75	3.23	17.60	H
	21696	-60.95	-40	-20.95	-76.11	-76.12	3.42	18.60	H
	25312	-58.72	-40	-18.72	-77.04	-73.72	3.77	18.77	H
									H
	7232	-52.73	-40	-12.73	-51.4	-62.19	1.86	11.32	V
	10848	-52.79	-40	-12.79	-55.3	-61.17	2.22	10.59	V
	14464	-49.30	-40	-9.30	-58.91	-58.80	2.62	12.12	V
	18080	-60.64	-40	-20.64	-71.82	-75.01	3.23	17.60	V
	21696	-61.18	-40	-21.18	-76.01	-76.35	3.42	18.60	V
	25312	-59.25	-40	-19.25	-77.28	-74.25	3.77	18.77	V
									V
Highest	7362	-47.84	-40	-7.84	-46.59	-57.30	1.92	11.38	H
	11043	-53.07	-40	-13.07	-56.19	-61.40	2.22	10.55	H
	14724	-49.75	-40	-9.75	-58.7	-59.75	2.59	12.59	H
	18405	-61.93	-40	-21.93	-73.72	-76.29	3.24	17.60	H
	22086	-61.19	-40	-21.19	-76.76	-76.56	3.52	18.88	H
	25767	-58.66	-40	-18.66	-77.32	-73.83	3.88	19.05	H
									H
	7362	-46.19	-40	-6.19	-45.09	-55.65	1.92	11.38	V
	11043	-50.80	-40	-10.80	-53.85	-59.13	2.22	10.55	V
	14724	-48.48	-40	-8.48	-58.39	-58.48	2.59	12.59	V
	18405	-62.78	-40	-22.78	-74.34	-77.14	3.24	17.60	V
	22086	-62.38	-40	-22.38	-77.57	-77.75	3.52	18.88	V
	25767	-59.01	-40	-19.01	-77.38	-74.18	3.88	19.05	V
									V

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

**LTE Band 48C**

LTE Band 48C / 20+20MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	7138	-54.32	-40	-14.32	-52.31	-63.94	1.84	11.46	H
	10707	-53.44	-40	-13.44	-55.96	-61.89	2.23	10.68	H
	14276	-49.01	-40	-9.01	-58.36	-58.60	2.64	12.23	H
	21413	-61.98	-40	-21.98	-76.68	-76.93	3.35	18.30	H
	24982	-58.69	-40	-18.69	-76.97	-73.40	3.70	18.41	H
	28551	-55.75	-40	-15.75	-76.36	-71.15	3.99	19.39	H
									H
	7138	-55.98	-40	-15.98	-54.27	-65.60	1.84	11.46	V
	10707	-53.40	-40	-13.40	-55.56	-61.85	2.23	10.68	V
	14276	-49.11	-40	-9.11	-58.48	-58.70	2.64	12.23	V
	21413	-62.07	-40	-22.07	-76.46	-77.02	3.35	18.30	V
	24982	-59.34	-40	-19.34	-77.3	-74.05	3.70	18.41	V
	28551	-56.43	-40	-16.43	-76.62	-71.83	3.99	19.39	V
									V
Middle	7248	-53.26	-40	-13.26	-51.64	-62.72	1.86	11.32	H
	10872	-52.75	-40	-12.75	-55.53	-61.11	2.21	10.58	H
	14496	-49.66	-40	-9.66	-58.8	-59.14	2.62	12.10	H
	18122	-60.75	-40	-20.75	-72.27	-75.12	3.23	17.60	H
	21751	-61.41	-40	-21.41	-76.61	-76.62	3.44	18.65	H
	25370	-58.61	-40	-18.61	-76.94	-73.67	3.79	18.84	H
									H
	7248	-53.35	-40	-13.35	-52.05	-62.81	1.86	11.32	V
	10872	-51.16	-40	-11.16	-53.73	-59.52	2.21	10.58	V
	14496	-49.21	-40	-9.21	-58.85	-58.69	2.62	12.10	V
	18122	-61.30	-40	-21.30	-72.53	-75.67	3.23	17.60	V
	21751	-62.09	-40	-22.09	76.95	-77.30	3.44	18.65	V
	25370	-59.09	-40	-19.09	-77.14	-74.15	3.79	18.84	V
									V



Highest	7358	-53.02	-40	-13.02	-51.76	-62.48	1.92	11.38	H
	11037	-53.21	-40	-13.21	-56.31	-61.54	2.21	10.54	H
	14716	-48.91	-40	-8.91	-57.87	-58.89	2.59	12.58	H
	18399	-61.48	-40	-21.48	-73.26	-75.84	3.24	17.60	H
	22073	-61.09	-40	-21.09	-76.64	-76.46	3.51	18.89	H
	25758	-58.25	-40	-18.25	-76.89	-73.42	3.88	19.05	H
									H
	7358	-50.94	-40	-10.94	-49.84	-60.40	1.92	11.38	V
	11037	-53.06	-40	-13.06	-56.08	-61.39	2.21	10.54	V
	14716	-48.39	-40	-8.39	-58.29	-58.37	2.59	12.58	V
	18399	-62.48	-40	-22.48	-74.02	-76.84	3.24	17.60	V
	22073	-62.11	-40	-22.11	-77.28	-77.48	3.51	18.89	V
	25758	-58.68	-40	-18.68	-77.03	-73.85	3.88	19.05	V
									V

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

**<Main Antenna>****LTE Band 48**

LTE Band 48 / 20MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	7102	-52.02	-40	-12.02	-50.15	-61.73	1.84	11.55	H
	10653	-49.30	-40	-9.30	-51.9	-57.77	2.23	10.71	H
	14204	-48.94	-40	-8.94	-57.67	-58.57	2.65	12.28	H
	21306	-61.66	-40	-21.66	-78.72	-76.51	3.32	18.17	H
	24857	-61.13	-40	-21.13	-79.09	-75.90	3.71	18.49	H
	28408	-58.30	-40	-18.30	-78.39	-73.77	3.99	19.46	H
									H
	7102	-52.92	-40	-12.92	-51.29	-62.63	1.84	11.55	V
	10653	-49.84	-40	-9.84	-52.03	-58.31	2.23	10.71	V
	14204	-49.25	-40	-9.25	-57.85	-58.88	2.65	12.28	V
	21306	-63.46	-40	-23.46	-77.83	-78.31	3.32	18.17	V
	24857	-60.36	-40	-20.36	-78.64	-75.13	3.71	18.49	V
	28408	-57.79	-40	-17.79	-78.3	-73.26	3.99	19.46	V
									V



Middle	7232	-52.52	-40	-12.52	-50.99	-61.98	1.86	11.32	H
	10848	-51.11	-40	-11.11	-54.1	-59.49	2.22	10.59	H
	14464	-49.09	-40	-9.09	-58.06	-58.59	2.62	12.12	H
	18080	-62.71	-40	-22.71	-74.19	-77.08	3.23	17.60	H
	21696	-63.48	-40	-23.48	-78.64	-78.65	3.42	18.60	H
	25312	-60.77	-40	-20.77	79.09	-75.77	3.77	18.77	H
									H
	7232	-52.68	-40	-12.68	-51.5	-62.14	1.86	11.32	V
	10848	-51.72	-40	-11.72	-54.48	-60.10	2.22	10.59	V
	14464	-48.90	-40	-8.90	-58.31	-58.40	2.62	12.12	V
	18080	-62.66	-40	-22.66	-73.84	-77.03	3.23	17.60	V
	21696	-63.49	-40	-23.49	-78.32	-78.66	3.42	18.60	V
	25312	-61.00	-40	-21.00	-79.03	-76.00	3.77	18.77	V
									V
Highest	7362	-49.01	-40	-9.01	-47.8	-58.47	1.92	11.38	H
	11043	-49.41	-40	-9.41	-52.83	-57.74	2.22	10.55	H
	14724	-49.14	-40	-9.14	-58.22	-59.14	2.59	12.59	H
	18405	-63.76	-40	-23.76	-75.55	-78.12	3.24	17.60	H
	22086	-63.70	-40	-23.70	-79.27	-79.07	3.52	18.88	H
	25767	-60.16	-40	-20.16	-78.82	-75.33	3.88	19.05	H
									H
	7362	-50.26	-40	-10.26	-49.2	-59.72	1.92	11.38	V
	11043	-48.58	-40	-8.58	-51.93	-56.91	2.22	10.55	V
	14724	-48.26	-40	-8.26	-58.3	-58.26	2.59	12.59	V
	18405	-64.46	-40	-24.46	-76.02	-78.82	3.24	17.60	V
	22086	-64.03	-40	-24.03	-79.22	-79.40	3.52	18.88	V
	25767	-60.81	-40	-20.81	-79.18	-75.98	3.88	19.05	V
									V

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

**LTE Band 48C**

LTE Band 48C / 20+20MHz / QPSK									
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Margin (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Lowest	7102	-57.64	-40	-17.64	-55.85	-67.34	1.84	11.55	H
	10653	-53.65	-40	-13.65	-56.36	-62.12	2.23	10.71	H
	14204	-48.87	-40	-8.87	-57.68	-58.50	2.65	12.28	H
	21306	-63.95	-40	-23.95	-78.65	-78.80	3.32	18.17	H
	24857	-60.64	-40	-20.64	-78.92	-75.41	3.71	18.49	H
	28408	-57.73	-40	-17.73	-78.34	-73.20	3.99	19.46	H
									H
	7102	-57.46	-40	-17.46	-55.97	-67.16	1.84	11.55	V
	10653	-54.08	-40	-14.08	-56.43	-62.55	2.23	10.71	V
	14204	-48.96	-40	-8.96	-57.79	-58.59	2.65	12.28	V
	21306	-63.96	-40	-23.96	-78.35	-78.81	3.32	18.17	V
	24857	-61.37	-40	-21.37	-79.33	-76.14	3.71	18.49	V
	28408	-58.14	-40	-18.14	-78.33	-73.61	3.99	19.46	V
									V
Middle	7232	-57.60	-40	-17.60	-56.11	-67.06	1.86	11.32	H
	10848	-51.74	-40	-11.74	-54.78	-60.12	2.22	10.59	H
	14464	-48.64	-40	-8.64	-57.65	-58.14	2.62	12.12	H
	18080	-62.71	-40	-22.71	-74.23	-77.08	3.23	17.60	H
	21696	-63.47	-40	-23.47	-78.67	-78.64	3.42	18.60	H
	25312	-60.50	-40	-20.50	-78.83	-75.50	3.77	18.77	H
									H
	7232	-57.38	-40	-17.38	-56.21	-66.84	1.86	11.32	V
	10848	-52.59	-40	-12.59	-55.42	-60.97	2.22	10.59	V
	14464	-48.66	-40	-8.66	-58.17	-58.16	2.62	12.12	V
	18080	-62.70	-40	-22.70	-73.93	-77.07	3.23	17.60	V
	21696	-63.62	-40	-23.62	-78.48	-78.79	3.42	18.60	V
	25312	-60.73	-40	-20.73	-78.78	-75.73	3.77	18.77	V
									V



Highest	7362	-56.00	-40	-16.00	-54.78	-65.46	1.92	11.38	H
	11043	-52.65	-40	-12.65	-56.05	-60.98	2.22	10.55	H
	14724	-48.89	-40	-8.89	-57.97	-58.89	2.59	12.59	H
	18405	-64.32	-40	-24.32	-76.1	-78.68	3.24	17.60	H
	22086	-63.44	-40	-23.44	-78.99	-78.81	3.52	18.88	H
	25767	-60.12	-40	-20.12	-78.76	-75.29	3.88	19.05	H
									H
	7362	-55.58	-40	-15.58	-54.52	-65.04	1.92	11.38	V
	11043	-52.75	-40	-12.75	-56.07	-61.08	2.22	10.55	V
	14724	-47.96	-40	-7.96	-57.98	-57.96	2.59	12.59	V
	18405	-63.92	-40	-23.92	-75.46	-78.28	3.24	17.60	V
	22086	-63.29	-40	-23.29	-78.46	-78.66	3.52	18.88	V
	25767	-60.22	-40	-20.22	-78.57	-75.39	3.88	19.05	V
									V

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