



FCC RF Test Report

APPLICANT : ASUSTeK COMPUTER INC.
EQUIPMENT : ASUS Phone (Mobile Phone)
BRAND NAME : ASUS
MODEL NAME : ASUS_AI2205_E, ASUS_AI2205_F
FCC ID : MSQAI2205
STANDARD : 47 CFR Part 2, 22(H), 24(E), 27(L), 27(M), 27(H), 27(D)
CLASSIFICATION : PCS Licensed Transmitter Held to Ear (PCE)
TEST DATE(S) : Feb. 09, 2023

We, Sporton International Inc. (ShenZhen), would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 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.

Jason Jia

Approved by: Jason Jia



Sporton International Inc. (ShenZhen)

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People's Republic of China



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SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
-	§2.1046	Conducted Output Power	-	Report Only	1
	§22.913(a)(5)	ERP (Band 5)	ERP < 7 Watt	PASS	1
	§27.50(c)(10)	ERP (Band 12)	ERP < 3 Watt		1
	§24.232(c) §27.50(h)(2)	EIRP (Band 2)(Band 7)	EIRP < 2Watt		1
	§27.50(d)(4) §27.50 (k)(3)	EIRP (Band 4) (Band 66)	EIRP < 1Watt		1
	§27.50 (a)(3)	EIRP (Band 30)	EIRP < 250mW/5MHz		1
-	§24.232(d)	Peak-to-Average Ratio	<13 dB		PASS
-	§2.1049	Occupied Bandwidth	-	Report Only	1
-	§2.1051 §22.917(a) §24.238(a) §27.53(g) §27.53(h) §27.53 (a)(4)	Conducted Band Edge Measurement (Band 2) (Band 4) (Band 5) (Band 12)(Band 66)(Band 30)	< 43+10log ₁₀ (P[Watts])	PASS	1
	§2.1051 §27.53(m)(4)	Conducted Band Edge Measurement (Band 7)	§27.53(m)(4)		
-	§2.1051 §22.917(a) §24.238(a) §27.53(g) §27.53(h)	Conducted Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12)(Band 66)	< 43+10log ₁₀ (P[Watts])	PASS	1
	§2.1051 §27.53(m)(4)	Conducted Spurious Emission (Band 7)	< 55+10log ₁₀ (P[Watts])		
	§2.1051 §27.53 (a)(4)	Conducted Spurious Emission (Band 30)	< 70+10log ₁₀ (P[Watts])		
-	§2.1055 §22.355	Frequency Stability Temperature & Voltage	< 2.5 ppm for Part 22	PASS	1
	§2.1055 §24.235		Within Authorized Band		
	§27.54		< ±1.25 ppm		
3.4	§2.1053 §22.917(a) §24.238(a) §27.53(g) §27.53(h)	Radiated Spurious Emission (Band 2) (Band 4) (Band 5) (Band 12) (Band 66)	< 43+10log ₁₀ (P[Watts])	PASS	Under limit 16.02 dB at 9222.00 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (Band 7)	< 55+10log ₁₀ (P[Watts])		
	§2.1053 §27.53 (a)(4)	Radiated Spurious Emission (Band 30)	< 70+10log ₁₀ (P[Watts])		

Remark 1 : The test items of inter band CA were cover by LTE single carrier due to the CA power is reduced according to 3GPP MPR.

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.



1 General Description

1.1 Applicant

ASUSTeK COMPUTER INC.

1F., No. 15, Lide Rd., Beitou Dist., Taipei City 112, Taiwan

1.2 Manufacturer

ASUSTeK COMPUTER INC.

1F., No. 15, Lide Rd., Beitou Dist., Taipei City 112, Taiwan

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	ASUS Phone (Mobile Phone)
Brand Name	ASUS
Model Name	ASUS_AI2205_E, ASUS_AI2205_F
FCC ID	MSQAI2205
IMEI Code	Radiation: 355156850101156/355156850101164
HW Version	R2.0
SW Version	Android 13
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. There are four SKUs of EUT for this project. The differences between them are summary below, According to the difference, we evaluate SKU1 (ASUS_AI2205_F) to perform RF test.

Sample list				
	SKU1	SKU2	SKU3	SKU4
Model name	ASUS_AI2205_F	ASUS_AI2205_E	ASUS_AI2205_F	ASUS_AI2205_E
Config.	US(Pro)	US(Entry)	US(Pro)	US(Entry)
RF module board	US(Pro)	US(Entry)	US(Pro)	US(Entry)
LCD+Touch front frame	AI2205 FRONT CASE ASSY WW	AI2205 FRONT CASE ASSY WW	AI2205 FRONT CASE ASSY WW	AI2205 FRONT CASE ASSY WW
DDR	16G(Micron) Micron / MT62F2G64D8CL-023 WT:B	16G(Micron) Micron / MT62F2G64D8CL-023 WT:B	16G(Micron) Micron / MT62F2G64D8CL-023 WT:B	16G(Micron) Micron / MT62F2G64D8CL-023 WT:B
UFS	512G(Kioxia)(UFS4.0) Kioxia / THGJFJT2T85BAT0	512G(Samsung)(UFS4.0) Samsung /KLUFG8RHHD-B0G1	512G(Kioxia)(UFS4.0) Kioxia / THGJFJT2T85BAT0	512G(Samsung)(UFS4.0) Samsung /KLUFG8RHHD-B0G1
MB	AI2205_MB	AI2205_MB	AI2205_MB	AI2205_MB
Back cover	WW-Dark-Ult	WW-Light-Entry	WW-Dark-Ult	WW-Light-Entry
Battery	SCUD / C21P2101	SWD / C21P2101	SWD / C21P2101	SCUD / C21P2101
Rear Camera 50+13M	SHINETECH/CDN60B	TRIPLEWIN/CASDA-002A 1	TRIPLEWIN/CASDA-002A 1	SHINETECH/CDN60B
Front Camera 32M	TSPRECISSION/TVHF2170	SHINETECH/ST-CMG07B	SHINETECH/ST-CMG07B	TSPRECISSION/TVHF2170
Rear Camera 5M	HUNAN KINGCOME/KBFE378	TSPRECISSION/TV8F2224	TSPRECISSION/TV8F2224	HUNAN KINGCOME/KBFE378



PCB	COMPEQ	COMPEQ	COMPEQ	COMPEQ
CPU	QUALCOMM MPSP1581 / SM-8550 MPSP1581 CS	QUALCOMM MPSP1581 / SM-8550 MPSP1581 CS	QUALCOMM MPSP1581 / SM-8550 MPSP1581 CS	QUALCOMM MPSP1581 / SM-8550 MPSP1581 CS

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification					
Tx Frequency	LTE Band 2 : 1850 MHz ~ 1910 MHz				
	LTE Band 4 : 1710 MHz ~ 1755 MHz				
	LTE Band 5 : 824 MHz ~ 849 MHz				
	LTE Band 7 : 2500 MHz ~ 2570 MHz				
	LTE Band 12 : 699 MHz ~ 716 MHz				
	LTE Band 30 : 2305 MHz ~ 2315 MHz				
	LTE Band 66 : 1710 MHz ~ 1780 MHz				
Rx Frequency	LTE Band 2 : 1930 MHz ~ 1990 MHz				
	LTE Band 4 : 2110 MHz ~ 2155 MHz				
	LTE Band 5 : 869 MHz ~ 894 MHz				
	LTE Band 7 : 2620 MHz ~ 2690 MHz				
	LTE Band 12 : 729 MHz ~ 746 MHz				
	LTE Band 30 : 2350 MHz ~ 2360 MHz				
	LTE Band 66 : 2110 MHz~ 2200 MHz				
Uplink CA Bands	2A-12A	4A-12A	5A-7A	12A-30A	30A-66A
	2A-4A	4A-5A	5A-30A	12A-66A	
	2A-5A	4A-30A	5A-66A		
	2A-7A	4A-7A			
	2A-30A				
	2A-66A				
	Type of Modulation				
QPSK / 16QAM / 64QAM / 256QAM					

1.5 Modification of EUT

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

1.6 Testing Location

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 China 518103 TEL: +86-755-33202398		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH01-SZ	CN1256	421272



1.7 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH01-SZ	AUDIX	E3	6.2009-8-24

1.8 Applicable Standards

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

- ♦ 47 CFR Part 2, 22(H), 24(E), 27(L), 27(M), 27(H), 27(D)
- ♦ ANSI C63.26-2015
- ♦ FCC KDB 971168 D01 Power Meas License Digital Systems 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

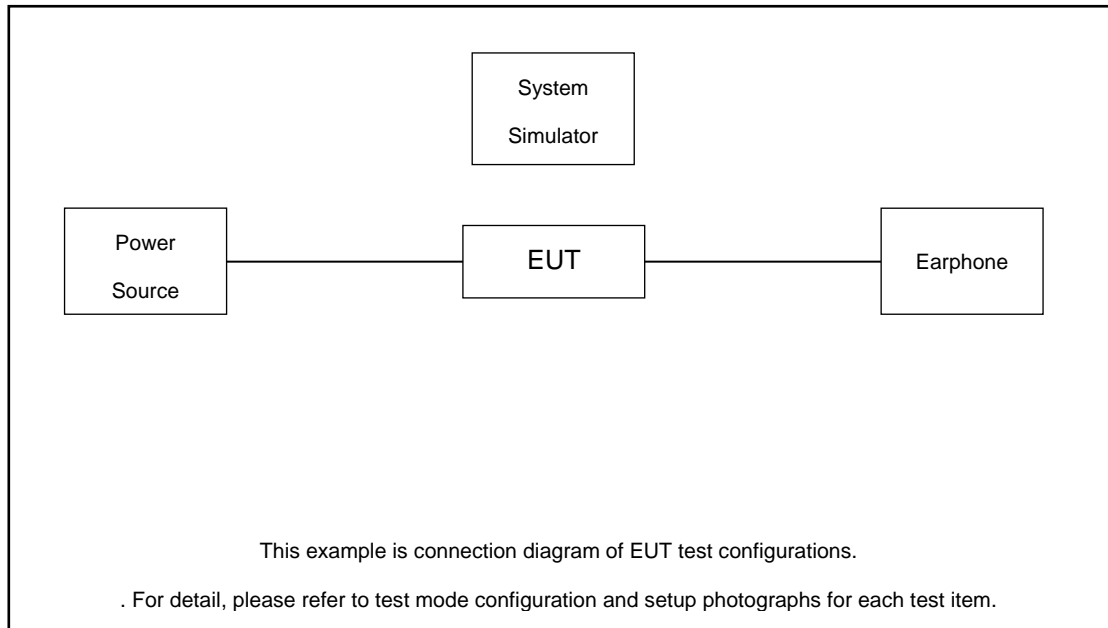
2.1 Test Mode

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

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes to find the maximum emission.

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		
Radiated Spurious Emission	2A-12A	Worst Case																v	
	2A-4A	Worst Case																v	
	2A-5A	Worst Case																v	
	2A-7A	Worst Case																v	
	2A-30A	Worst Case																v	
	2A-66A	Worst Case																v	
	4A-12A	Worst Case																v	
	4A-5A	Worst Case																v	
	4A-30A	Worst Case																v	
	4A-7A	Worst Case																v	
	5A-7A	Worst Case																v	
	5A-30A	Worst Case																v	
	5A-66A	Worst Case																v	
	12A-30A	Worst Case																v	
	12A-66A	Worst Case																v	
30A-66A	Worst Case																v		
Note	<ol style="list-style-type: none"> 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. 																		

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	LTE Base Station	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m



2.4 Frequency List of Low/Middle/High Channels

LTE Band 2 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	18700	18900	19100
	Frequency	1860	1880	1900
15	Channel	18675	18900	19125
	Frequency	1857.5	1880	1902.5
10	Channel	18650	18900	19150
	Frequency	1855	1880	1905
5	Channel	18625	18900	19175
	Frequency	1852.5	1880	1907.5
3	Channel	18615	18900	19185
	Frequency	1851.5	1880	1908.5
1.4	Channel	18607	18900	19193
	Frequency	1850.7	1880	1909.3

LTE Band 4 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	20050	20175	20300
	Frequency	1720	1732.5	1745
15	Channel	20025	20175	20325
	Frequency	1717.5	1732.5	1747.5
10	Channel	20000	20175	20350
	Frequency	1715	1732.5	1750
5	Channel	19975	20175	20375
	Frequency	1712.5	1732.5	1752.5
3	Channel	19965	20175	20385
	Frequency	1711.5	1732.5	1753.5
1.4	Channel	19957	20175	20393
	Frequency	1710.7	1732.5	1754.3



LTE Band 5 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	20450	20525	20600
	Frequency	829	836.5	844
5	Channel	20425	20525	20625
	Frequency	826.5	836.5	846.5
3	Channel	20415	20525	20635
	Frequency	825.5	836.5	847.5
1.4	Channel	20407	20525	20643
	Frequency	824.7	836.5	848.3

LTE Band 7 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	20850	21100	21350
	Frequency	2510	2535	2560
15	Channel	20825	21100	21375
	Frequency	2507.5	2535	2562.5
10	Channel	20800	21100	21400
	Frequency	2505	2535	2565
5	Channel	20775	21100	21425
	Frequency	2502.5	2535	2567.5

LTE Band 12 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	23060	23095	23130
	Frequency	704	707.5	711
5	Channel	23035	23095	23155
	Frequency	701.5	707.5	713.5
3	Channel	23025	23095	23165
	Frequency	700.5	707.5	714.5
1.4	Channel	23017	23095	23173
	Frequency	699.7	707.5	715.3



LTE Band 30 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	-	27710	-
	Frequency	-	2310	-
5	Channel	27685	27710	27735
	Frequency	2307.5	2310	2312.5

LTE Band 66 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	132072	132322	132572
	Frequency	1720	1745	1770
15	Channel	132047	132322	132597
	Frequency	1717.5	1745	1772.5
10	Channel	132022	132322	132622
	Frequency	1715	1745	1775
5	Channel	131997	132322	132647
	Frequency	1712.5	1745	1777.5
3	Channel	131987	132322	132657
	Frequency	1711.5	1745	1778.5
1.4	Channel	131979	132322	132665
	Frequency	1710.7	1745	1779.3

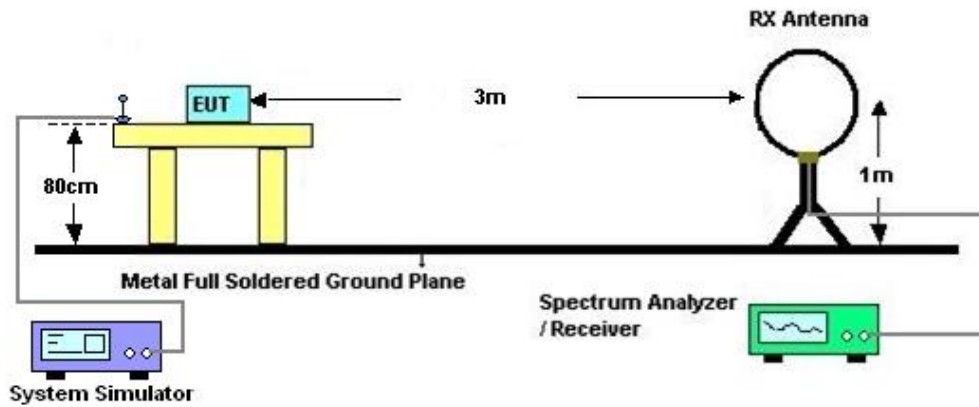
3 Radiated Test Items

3.1 Measuring Instruments

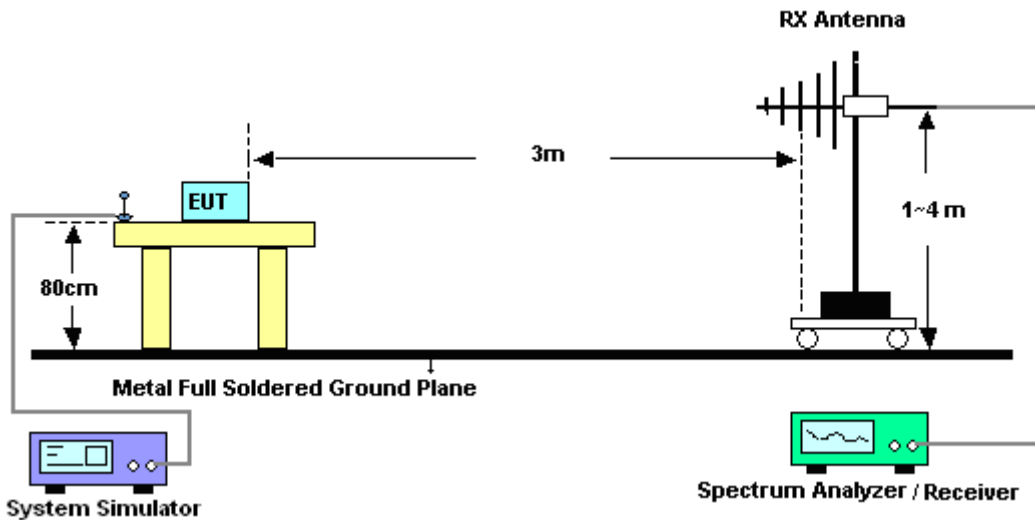
See list of measuring instruments of this test report.

3.2 Test Setup

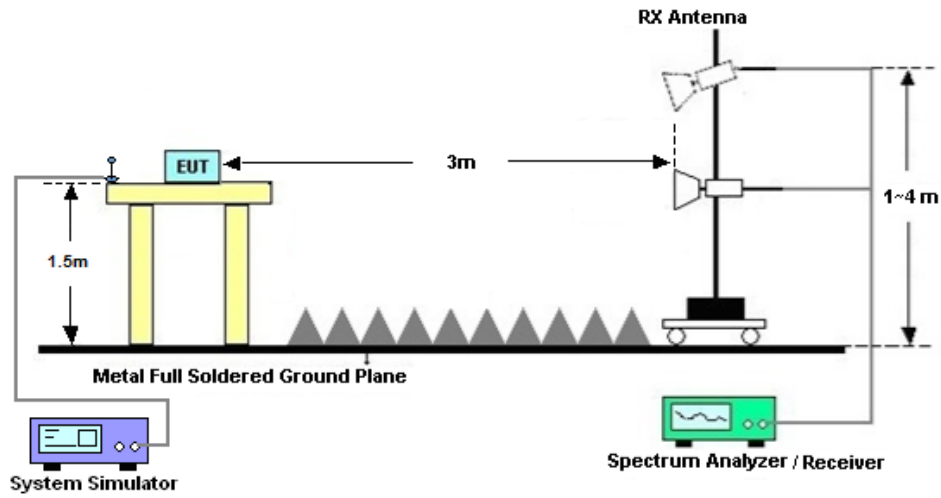
3.2.1 For radiated test below 30MHz



3.2.2 For radiated test from 30MHz to 1GHz



3.2.3 For radiated test above 1GHz



3.3 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 A.



3.4 Radiated Spurious Emission

3.4.1 Description of Radiated Spurious Emission

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

For LTE Band 2, 4, 5, 12, 66

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.

For Band 7

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 $55 + 10 \log (P)$ dB.

For LTE Band 30

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 $70 + 10 \log (P)$ dB.

3.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
2. 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.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
10. $EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$
11. $ERP \text{ (dBm)} = EIRP - 2.15$
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

For Band 2, 4, 5, 12, 66:

The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)

$= P(W) - [43 + 10\log(P)] \text{ (dB)}$

$= [30 + 10\log(P)] \text{ (dBm)} - [43 + 10\log(P)] \text{ (dB)}$



= -13dBm.

For Band 30:

The limit line is derived from $70 + 10\log(P)$ dB below the transmitter power P(Watts)

= P(W)- $[70 + 10\log(P)]$ (dB)

= $[30 + 10\log(P)]$ (dBm) - $[70 + 10\log(P)]$ (dB)

= -40dBm.

For Band 7:

The limit line is derived from $55 + 10\log(P)$ dB below the transmitter power P(Watts)



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EMI Test Receiver&SA	Agilent	N9038A	MY52260185	20Hz~26.5GHz	Dec. 26, 2022	Feb. 09, 2023	Dec. 25, 2023	Radiation (03CH01-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150213	10Hz~44GHz	Jul. 07, 2022	Feb. 09, 2023	Jul. 06, 2023	Radiation (03CH01-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jul. 28, 2022	Feb. 09, 2023	Jul. 27, 2024	Radiation (03CH01-SZ)
Bilog Antenna	TeseQ	CBL6112D	35407	30MHz~2GHz	Sep. 28, 2021	Feb. 09, 2023	Sep. 27, 2023	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS-Lindgren	3117	00119436	1GHz~18GHz	Jul. 07, 2022	Feb. 09, 2023	Jul. 06, 2023	Radiation (03CH01-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz~40GHz	Apr. 10, 2022	Feb. 09, 2023	Apr. 09, 2023	Radiation (03CH01-SZ)
LF Amplifier	Burgeon	BPA-530	102209	0.01~3000Mhz	Apr. 06, 2022	Feb. 09, 2023	Apr. 05, 2023	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	AMF-7D-00 101800-30-1 0P-R	1943528	1GHz~18GHz	Oct. 19, 2022	Feb. 09, 2023	Oct.18, 2023	Radiation (03CH01-SZ)
HF Amplifier	KEYSIGHT	83017A	MY53270105	0.5GHz~26.5Ghz	Oct. 19, 2022	Feb. 09, 2023	Oct. 18, 2023	Radiation (03CH01-SZ)
HF Amplifier	MITEQ	TTA1840-35 -HG	1871923	18GHz~40GHz	Jul. 06, 2022	Feb. 09, 2023	Jul. 05, 2023	Radiation (03CH01-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	Nov. 10, 2022	Feb. 09, 2023	Nov. 09, 2023	Radiation (03CH01-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Feb. 09, 2023	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Feb. 09, 2023	NCR	Radiation (03CH01-SZ)

NCR: No Calibration Required



5 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.2 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))	5.0 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))	4.3 dB
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Appendix A. Test Results of Radiated Test

Radiated Spurious Emission

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

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

ULCA_2A-12A (ANT1+0)									
Channel	Frequency (MHz)	EIRP/ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
LTE B2 BW 20MHz Middle 1RB0,QPSK	3742.18	-57.64	-13	-44.64	-80.68	-64.39	5.85	12.60	H
	5613.27	-57.31	-13	-44.31	-81.89	-63.11	7.30	13.10	H
	7484.36	-55.07	-13	-42.07	-82.15	-58.22	8.35	11.50	H
	3742.18	-55.02	-13	-42.02	-80.07	-61.77	5.85	12.60	V
	5613.27	-56.68	-13	-43.68	-82.11	-62.48	7.30	13.10	V
	7484.36	-54.93	-13	-41.93	-81.99	-58.08	8.35	11.50	V
LTE B12 BW 10MHz Middle 1RB0,QPSK	1406	-64.87	-13	-51.87	-76.13	-68.12	4.00	9.40	H
	2109	-59.80	-13	-46.80	-77.95	-63.37	4.88	10.60	H
	2812	-59.44	-13	-46.44	-78.88	-64.37	5.52	12.60	H
	1406	-63.96	-13	-50.96	-76.28	-67.21	4.00	9.40	V
	2109	-60.21	-13	-47.21	-78.15	-63.78	4.88	10.60	V
	2812	-58.64	-13	-45.64	-78.89	-63.57	5.52	12.60	V

ULCA_2A-4A (ANT1+7)									
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)
LTE B2 BW 20MHz Middle 1RB0,QPSK	3742.18	-57.16	-13	-44.16	-80.20	-63.91	5.85	12.60	H
	5613.27	-57.66	-13	-44.66	-82.24	-63.46	7.30	13.10	H
	7484.36	-54.86	-13	-41.86	-81.94	-58.01	8.35	11.50	H
	3742.18	-55.15	-13	-42.15	-80.2	-61.90	5.85	12.60	V
	5613.27	-57.16	-13	-44.16	-82.59	-62.96	7.30	13.10	V
	7484.36	-54.49	-13	-41.49	-81.55	-57.64	8.35	11.50	V
LTE B4 BW 20MHz Middle 1RB0,QPSK	3447.18	-57.90	-13	-44.90	-79.35	-64.75	5.65	12.50	H
	5170.77	-57.92	-13	-44.92	-82.56	-63.59	7.13	12.80	H
	6894.36	-55.32	-13	-42.32	-81.52	-58.72	8.40	11.80	H
	3447.18	-56.63	-13	-43.63	-79.02	-63.48	5.65	12.50	V
	5170.77	-57.79	-13	-44.79	-82.93	-63.46	7.13	12.80	V
	6894.36	-53.53	-13	-40.53	-81.01	-56.93	8.40	11.80	V



ULCA_2A-5A (ANT1+0)									
Channel	Frequency (MHz)	EIRP/ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
LTE B2 BW 20MHz Middle 1RB0,QPSK	3742.18	-56.69	-13	-43.69	-79.73	-63.44	5.85	12.60	H
	5613.27	-57.56	-13	-44.56	-82.14	-63.36	7.30	13.10	H
	7484.36	-54.31	-13	-41.31	-81.39	-57.46	8.35	11.50	H
	3742.18	-54.56	-13	-41.56	-79.61	-61.31	5.85	12.60	V
	5613.27	-56.88	-13	-43.88	-82.31	-62.68	7.30	13.10	V
	7484.36	-54.16	-13	-41.16	-81.22	-57.31	8.35	11.50	V
LTE B5 BW 10MHz Middle 1RB0,QPSK	1664.18	-62.37	-13	-49.37	-74.57	-65.62	4.00	9.40	H
	2496.27	-57.65	-13	-44.65	-77.02	-61.22	4.88	10.60	H
	3328.36	-57.37	-13	-44.37	-78.62	-62.30	5.52	12.60	H
	1664.18	-62.15	-13	-49.15	-75.02	-65.40	4.00	9.40	V
	2496.27	-57.45	-13	-44.45	-77.08	-61.02	4.88	10.60	V
	3328.36	-56.91	-13	-43.91	-78.66	-61.84	5.52	12.60	V

ULCA_2A-7A (ANT7+1)									
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)
LTE B2 BW 20MHz Middle 1RB0,QPSK	3742.18	-57.39	-13	-44.39	-80.43	-64.14	5.85	12.60	H
	5613.27	-57.57	-13	-44.57	-82.15	-63.37	7.30	13.10	H
	7484.36	-54.45	-13	-41.45	-81.53	-57.60	8.35	11.50	H
	3742.18	-53.28	-13	-40.28	-78.33	-60.03	5.85	12.60	V
	5613.27	-56.91	-13	-43.91	-82.34	-62.71	7.30	13.10	V
	7484.36	-54.85	-13	-41.85	-81.91	-58.00	8.35	11.50	V
LTE B7 BW 20MHz Middle 1RB0,QPSK	5052.18	-58.18	-25	-33.18	-82.13	-63.74	7.14	12.70	H
	7578.27	-55.35	-25	-30.35	-82.05	-58.65	8.30	11.60	H
	10104.36	-52.39	-25	-27.39	-83.33	-53.91	10.48	12.00	H
	5052.18	-57.03	-25	-32.03	-82.31	-62.59	7.14	12.70	V
	7578.27	-54.81	-25	-29.81	-81.51	-58.11	8.30	11.60	V
	10104.36	-51.27	-25	-26.27	-83.19	-52.79	10.48	12.00	V

ULCA_2A-30A (ANT7+1)									
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)
LTE B2 BW 20MHz Middle 1RB0,QPSK	3742.18	-59.17	-13	-46.17	-62.81	-65.92	5.85	12.60	H
	5613.27	-59.34	-13	-46.34	-64.60	-65.14	7.30	13.10	H
	7484.36	-57.60	-13	-44.60	-66.26	-60.75	8.35	11.50	H
	3742.18	-55.69	-13	-42.69	-61.34	-62.44	5.85	12.60	V
	5613.27	-58.50	-13	-45.50	-64.61	-64.30	7.30	13.10	V
	7484.36	-57.50	-13	-44.50	-66.14	-60.65	8.35	11.50	V
LTE B30 BW 10MHz Middle 1RB0,QPSK	4611.00	-60.23	-40	-20.23	-65.18	-66.48	6.45	12.70	H
	6916.50	-58.23	-40	-18.23	-65.73	-61.63	8.40	11.80	H
	9222.00	-58.60	-40	-18.60	-68.12	-60.95	9.65	12.00	H
	4611.00	-59.88	-40	-19.88	-64.96	-66.13	6.45	12.70	V
	6916.50	-57.29	-40	-17.29	-65.89	-60.69	8.40	11.80	V
	9222.00	-56.45	-40	-16.45	-68.2	-58.80	9.65	12.00	V



ULCA_2A-66A (ANT1+7)									
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)
LTE B2 BW 20MHz Middle 1RB0,QPSK	3742.18	-57.60	-13	-44.60	-80.64	-64.35	5.85	12.60	H
	5613.27	-57.79	-13	-44.79	-82.37	-63.59	7.30	13.10	H
	7484.36	-54.61	-13	-41.61	-81.69	-57.76	8.35	11.50	H
	3742.18	-55.07	-13	-42.07	-80.12	-61.82	5.85	12.60	V
	5613.27	-57.21	-13	-44.21	-82.64	-63.01	7.30	13.10	V
	7484.36	-54.63	-13	-41.63	-81.69	-57.78	8.35	11.50	V
LTE B66 BW 20MHz Middle 1RB0,QPSK	3472	-57.18	-13	-44.18	-79.43	-64.03	5.65	12.50	H
	5208	-57.66	-13	-44.66	-82.57	-63.33	7.13	12.80	H
	6944	-55.43	-13	-42.43	-81.76	-58.83	8.40	11.80	H
	3472	-56.39	-13	-43.39	-78.44	-63.24	5.65	12.50	V
	5208	-57.16	-13	-44.16	-82.24	-62.83	7.13	12.80	V
	6944	-54.75	-13	-41.75	-81.81	-58.15	8.40	11.80	V

ULCA_4A-12A (ANT1+0)									
Channel	Frequency (MHz)	EIRP/ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
LTE B4 BW 20MHz Middle 1RB0,QPSK	3447.18	-57.81	-13	-44.81	-79.26	-64.56	5.85	12.60	H
	5170.77	-58.26	-13	-45.26	-82.90	-64.06	7.30	13.10	H
	6894.36	-55.39	-13	-42.39	-81.59	-58.54	8.35	11.50	H
	3447.18	-56.76	-13	-43.76	-79.15	-63.51	5.85	12.60	V
	5170.77	-57.79	-13	-44.79	-82.93	-63.59	7.30	13.10	V
	6894.36	-53.61	-13	-40.61	-81.09	-56.76	8.35	11.50	V
LTE B12 BW 10MHz Middle 1RB0,QPSK	1406	-63.92	-13	-50.92	-75.18	-67.17	4.00	9.40	H
	2109	-59.14	-13	-46.14	-77.29	-62.71	4.88	10.60	H
	2812	-58.19	-13	-45.19	-77.63	-63.12	5.52	12.60	H
	1406	-63.10	-13	-50.10	-75.42	-66.35	4.00	9.40	V
	2109	-59.50	-13	-46.50	-77.44	-63.07	4.88	10.60	V
	2812	-57.71	-13	-44.71	-77.96	-62.64	5.52	12.60	V

ULCA_4A-5A (ANT1+0)									
Channel	Frequency (MHz)	EIRP/ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
LTE B4 BW 20MHz Middle 1RB0,QPSK	3447.18	-57.87	-13	-44.87	-80.02	-64.62	5.85	12.60	H
	5170.77	-57.86	-13	-44.86	-81.81	-63.66	7.30	13.10	H
	6894.36	-55.23	-13	-42.23	-81.75	-58.38	8.35	11.50	H
	3447.18	-56.95	-13	-43.95	-79.59	-63.70	5.85	12.60	V
	5170.77	-57.64	-13	-44.64	-81.62	-63.44	7.30	13.10	V
	6894.36	-54.05	-13	-41.05	-81.83	-57.20	8.35	11.50	V
LTE B5 BW 10MHz Middle 1RB0,QPSK	1664.18	-63.57	-13	-50.57	-79.32	-66.82	4.00	9.40	H
	2496.27	-58.03	-13	-45.03	-82.50	-61.60	4.88	10.60	H
	3328.36	-57.57	-13	-44.57	-81.43	-62.50	5.52	12.60	H
	1664.18	-62.57	-13	-49.57	-79.34	-65.82	4.00	9.40	V
	2496.27	-57.98	-13	-44.98	-82.78	-61.55	4.88	10.60	V
	3328.36	-57.21	-13	-44.21	-81.53	-62.14	5.52	12.60	V



ULCA_4A-30A (ANT7+1)									
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)
LTE B4 BW 20MHz Middle 1RB0,QPSK	3447.18	-59.06	-13	-46.06	-60.90	-65.81	5.85	12.60	H
	5170.77	-54.79	-13	-41.79	-59.72	-60.59	7.30	13.10	H
	6894.36	-56.18	-13	-43.18	-63.64	-59.33	8.35	11.50	H
	3447.18	-57.06	-13	-44.06	-59.84	-63.81	5.85	12.60	V
	5170.77	-55.64	-13	-42.64	-61.07	-61.44	7.30	13.10	V
	6894.36	-56.54	-13	-43.54	-65.28	-59.69	8.35	11.50	V
LTE B30 BW 10MHz Middle 1RB0,QPSK	4611.00	-60.25	-40	-20.25	-65.20	-66.50	6.45	12.70	H
	6916.50	-58.44	-40	-18.44	-65.94	-61.84	8.40	11.80	H
	9222.00	-58.68	-40	-18.68	-68.20	-61.03	9.65	12.00	H
	4611.00	-60.16	-40	-20.16	-65.24	-66.41	6.45	12.70	V
	6916.50	-57.09	-40	-17.09	-65.69	-60.49	8.40	11.80	V
	9222.00	-56.46	-40	-16.46	-68.21	-58.81	9.65	12.00	V

ULCA_4A-7A (ANT7+1)									
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)
LTE B4 BW 20MHz Middle 1RB0,QPSK	3447.18	-57.49	-13	-44.49	-78.94	-64.24	5.85	12.60	H
	5170.77	-57.71	-13	-44.71	-82.35	-63.51	7.30	13.10	H
	6894.36	-54.78	-13	-41.78	-80.98	-57.93	8.35	11.50	H
	3447.18	-57.08	-13	-44.08	-79.47	-63.83	5.85	12.60	V
	5170.77	-57.24	-13	-44.24	-82.38	-63.04	7.30	13.10	V
	6894.36	-53.99	-13	-40.99	-81.47	-57.14	8.35	11.50	V
LTE B7 BW 20MHz Middle 1RB0,QPSK	5052.18	-58.38	-25	-33.38	-82.33	-63.94	7.14	12.70	H
	7578.27	-55.14	-25	-30.14	-81.84	-58.44	8.30	11.60	H
	10104.36	-51.91	-25	-26.91	-82.85	-53.43	10.48	12.00	H
	5052.18	-56.90	-25	-31.90	-82.18	-62.46	7.14	12.70	V
	7578.27	-54.86	-25	-29.86	-81.56	-58.16	8.30	11.60	V
	10104.36	-51.42	-25	-26.42	-83.34	-52.94	10.48	12.00	V

ULCA_5A-7A (ANT0+1)									
Channel	Frequency (MHz)	EIRP/ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
LTE B5 BW 10MHz Middle 1RB0,QPSK	1664.18	-64.61	-13	-51.61	-76.81	-67.86	4.00	9.40	H
	2496.27	-55.38	-13	-42.38	-74.75	-58.95	4.88	10.60	H
	3328.36	-58.29	-13	-45.29	-79.54	-63.22	5.52	12.60	H
	1664.18	-63.94	-13	-50.94	-76.81	-67.19	4.00	9.40	V
	2496.27	-56.16	-13	-43.16	-75.79	-59.73	4.88	10.60	V
	3328.36	-58.04	-13	-45.04	-79.79	-62.97	5.52	12.60	V
LTE B7 BW 20MHz Middle 1RB0,QPSK	5052.18	-58.16	-25	-33.16	-82.11	-63.72	7.14	12.70	H
	7578.27	-54.61	-25	-29.61	-81.31	-57.91	8.30	11.60	H
	10104.36	-52.07	-25	-27.07	-83.01	-53.59	10.48	12.00	H
	5052.18	-56.97	-25	-31.97	-82.25	-62.53	7.14	12.70	V
	7578.27	-54.80	-25	-29.80	-81.5	-58.10	8.30	11.60	V
	10104.36	-51.13	-25	-26.13	-83.05	-52.65	10.48	12.00	V



ULCA_5A-30A (ANT0+1)									
Channel	Frequency (MHz)	EIRP/ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
LTE B5 BW 10MHz Middle 1RB0,QPSK	1664.18	-62.09	-13	-49.09	-74.29	-65.34	4.00	9.40	H
	2496.27	-51.73	-13	-38.73	-71.10	-55.30	4.88	10.60	H
	3328.36	-58.33	-13	-45.33	-79.58	-63.26	5.52	12.60	H
	1664.18	-56.17	-13	-43.17	-69.04	-59.42	4.00	9.40	V
	2496.27	-46.70	-13	-33.70	-66.33	-50.27	4.88	10.60	V
	3328.36	-58.05	-13	-45.05	-79.80	-62.98	5.52	12.60	V
LTE B30 BW 10MHz Middle 1RB0,QPSK	4611.00	-60.15	-40	-20.15	-65.10	-66.40	6.45	12.70	H
	6916.50	-57.40	-40	-17.40	-64.90	-60.80	8.40	11.80	H
	9222.00	-58.35	-40	-18.35	-67.87	-60.70	9.65	12.00	H
	4611.00	-60.04	-40	-20.04	-65.12	-66.29	6.45	12.70	V
	6916.50	-56.60	-40	-16.60	-65.2	-60.00	8.40	11.80	V
	9222.00	-56.08	-40	-16.08	-67.83	-58.43	9.65	12.00	V

ULCA_5A-66A (ANT0+1)									
Channel	Frequency (MHz)	EIRP/ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
LTE B5 BW 10MHz Middle 1RB0,QPSK	1664.18	-64.79	-13	-51.79	-76.99	-68.04	4.00	9.40	H
	2496.27	-58.86	-13	-45.86	-78.23	-62.43	4.88	10.60	H
	3328.36	-58.51	-13	-45.51	-79.76	-63.44	5.52	12.60	H
	1664.18	-63.89	-13	-50.89	-76.76	-67.14	4.00	9.40	V
	2496.27	-56.02	-13	-43.02	-75.65	-59.59	4.88	10.60	V
	3328.36	-58.14	-13	-45.14	-79.89	-63.07	5.52	12.60	V
LTE B66 BW 20MHz Middle 1RB0,QPSK	3472	-57.99	-13	-44.99	-80.24	-64.84	5.65	12.50	H
	5208	-57.24	-13	-44.24	-82.15	-62.91	7.13	12.80	H
	6944	-55.28	-13	-42.28	-81.61	-58.68	8.40	11.80	H
	3472	-57.82	-13	-44.82	-79.87	-64.67	5.65	12.50	V
	5208	-56.68	-13	-43.68	-81.76	-62.35	7.13	12.80	V
	6944	-54.14	-13	-41.14	-81.2	-57.54	8.40	11.80	V

ULCA_12A-30A (ANT0+1)									
Channel	Frequency (MHz)	EIRP/ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
LTE B12 BW 10MHz Middle 1RB0,QPSK	1406	-65.43	-13	-52.43	-76.69	-68.68	4.00	9.40	H
	2109	-59.84	-13	-46.84	-77.99	-63.41	4.88	10.60	H
	2812	-60.23	-13	-47.23	-79.67	-65.16	5.52	12.60	H
	1406	-64.10	-13	-51.10	-76.42	-67.35	4.00	9.40	V
	2109	-60.42	-13	-47.42	-78.36	-63.99	4.88	10.60	V
	2812	-59.35	-13	-46.35	-79.60	-64.28	5.52	12.60	V
LTE B30 BW 10MHz Middle 1RB0,QPSK	4611.00	-59.80	-40	-19.80	-64.75	-66.05	6.45	12.70	H
	6916.50	-58.11	-40	-18.11	-65.61	-61.51	8.40	11.80	H
	9222.00	-58.42	-40	-18.42	-67.94	-60.77	9.65	12.00	H
	4611.00	-59.96	-40	-19.96	-65.04	-66.21	6.45	12.70	V
	6916.50	-56.59	-40	-16.59	-65.19	-59.99	8.40	11.80	V
	9222.00	-56.02	-40	-16.02	-67.77	-58.37	9.65	12.00	V



ULCA_12A-66A (ANT0+1)									
Channel	Frequency (MHz)	EIRP/ERP (dBm)	Limit (dBm)	Over Limit (dB)	SPA Reading (dBm)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
LTE B12 BW 10MHz Middle 1RB0,QPSK	1406	-64.52	-13	-51.52	-75.78	-67.77	4.00	9.40	H
	2109	-58.83	-13	-45.83	-76.98	-62.40	4.88	10.60	H
	2812	-59.44	-13	-46.44	-78.88	-64.37	5.52	12.60	H
	1406	-63.99	-13	-50.99	-76.31	-67.24	4.00	9.40	V
	2109	-60.53	-13	-47.53	-78.47	-64.10	4.88	10.60	V
	2812	-58.70	-13	-45.70	-78.95	-63.63	5.52	12.60	V
LTE 66 BW 20MHz Middle 1RB0,QPSK	3472	-57.98	-13	-44.98	-80.23	-64.83	5.65	12.50	H
	5208	-57.23	-13	-44.23	-82.14	-62.90	7.13	12.80	H
	6944	-54.89	-13	-41.89	-81.22	-58.29	8.40	11.80	H
	3472	-57.46	-13	-44.46	-79.51	-64.31	5.65	12.50	V
	5208	-57.25	-13	-44.25	-82.33	-62.92	7.13	12.80	V
	6944	-54.10	-13	-41.10	-81.16	-57.50	8.40	11.80	V

ULCA_30A-66A (ANT1+7)									
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)
LTE B30 BW 10MHz Middle 1RB0,QPSK	4611.00	-60.19	-40	-20.19	-65.14	-66.44	6.45	12.70	H
	6916.50	-58.66	-40	-18.66	-66.16	-62.06	8.40	11.80	H
	9222.00	-58.56	-40	-18.56	-68.08	-60.91	9.65	12.00	H
	4611.00	-60.18	-40	-20.18	-65.26	-66.43	6.45	12.70	V
	6916.50	-57.30	-40	-17.30	-65.9	-60.70	8.40	11.80	V
	9222.00	-56.32	-40	-16.32	-68.07	-58.67	9.65	12.00	V
LTE B66 BW 20MHz Middle 1RB0,QPSK	3472	-58.57	-13	-45.57	-61.21	-65.42	5.65	12.50	H
	5208	-60.85	-13	-47.85	-66.07	-66.52	7.13	12.80	H
	6944	-58.06	-13	-45.06	-65.67	-61.46	8.40	11.80	H
	3472	-56.97	-13	-43.97	-59.41	-63.82	5.65	12.50	V
	5208	-60.27	-13	-47.27	-65.66	-65.94	7.13	12.80	V
	6944	-57.60	-13	-44.60	-65.94	-61.00	8.40	11.80	V

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