



FCC RF Test Report

APPLICANT : Rolling Wireless S.a r.l.
EQUIPMENT : 5G module
BRAND NAME : Rolling Wireless
MODEL NAME : RW350R-GL
FCC ID : 2AX2URW350RGL
STANDARD : 47 CFR Part 2, 22, 24, 27
CLASSIFICATION : PCS Licensed Transmitter (PCB)
TEST DATE(S) : Apr. 14, 2024

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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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG430728U	Rev. 01	Initial issue of report	Jun. 13, 2024

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.4	§2.1053 §22.917(a) §24.238(a) §27.53(h) §27.53(g) §27.53(l)(2) §90.543 (e)(3) §90.543 (f)	Radiated Spurious Emission (5G NR n5, n26) (5G NR n2) (5G NR n66) (5G NR n12, n71) (5G NR n77,78) (5G NR n14)	$< 43+10\log_{10}(P[\text{Watts}])$	PASS	Under limit 13.31 dB at 1577.00 MHz
	§2.1053 §27.53(m)(4)	Radiated Spurious Emission (5G NR n7, n41)	$< 55+10\log_{10}(P[\text{Watts}])$		
	§2.1053 §27.53 (a)(4)	(5G NR n30)	$< 70+10\log_{10}(P[\text{Watts}])$		

Remark : The other test items of inter band CA were cover by 5G NR single carrier due to the CA power is reduced according to 3GPP MPR.

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/manufacture 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

Rolling Wireless S.a r.l.

8-10, rue Mathias Hardt 1717, Luxembourg

1.2 Manufacturer

Rolling Wireless S.a r.l.

8-10, rue Mathias Hardt 1717, Luxembourg

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	5G module
Brand Name	Rolling Wireless
Model Name	RW350R-GL
FCC ID	2AX2URW350RGL
IMEI Code	Radiation: 356413950000872
HW Version	V1.1
SW Version	81601.0000.00.29.24.13
EUT Stage	Identical Prototype

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	5G NR n2 : 1850 MHz ~ 1910 MHz 5G NR n5 : 824 MHz ~ 849 MHz 5G NR n7 : 2500 MHz ~ 2570 MHz 5G NR n12 : 699 MHz ~ 716 MHz 5G NR n14: 788 MHz ~ 798 MHz 5G NR n26 : 824 MHz ~ 849 MHz 5G NR n30 : 2305 MHz ~ 2315 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n66 : 1710 MHz ~ 1780 MHz 5G NR n71: 663 MHz ~ 698 MHz 5G NR n77: 3450 MHz ~ 3550 MHz; 3700 MHz ~ 3980 MHz 5G NR n78: 3450 MHz ~ 3550 MHz; 3700 MHz ~ 3800 MHz
Rx Frequency	5G NR n2 : 1930 MHz ~ 1990 MHz 5G NR n5 : 869 MHz ~ 894 MHz 5G NR n7 : 2620 MHz ~ 2690 MHz 5G NR n12: 729 MHz ~ 746 MHz 5G NR n14: 758 MHz ~ 768 MHz 5G NR n26 : 869 MHz ~ 894 MHz 5G NR n30 : 2350 MHz ~ 2360 MHz 5G NR n41 : 2496 MHz ~ 2690 MHz 5G NR n66 : 2110 MHz~ 2200 MHz 5G NR n71: 617 MHz ~ 652 MHz 5G NR n77: 3450 MHz ~ 3550 MHz; 3700 MHz ~ 3980 MHz 5G NR n78: 3450 MHz ~ 3550 MHz; 3700 MHz ~ 3800 MHz

SCS	15kHz, 30kHz	
Uplink CA Bands	n7A-n78A n5A-n78A n26A-n78A n5A-n7A n7A-n26A n12A-n66A n14A-n66A n2A-n12A n2A-n14A	n12A-n30A n14A-n30A n12A-n77A n14A-n77A n41A-n71A n41A-n66A n41A-n77A n2A-n5A n5A-n66A
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM	

Note: For 5G NR n77/n78 inter CA combination , we choice worse band of single carrier bands among Part 27O/Part 27Q to test.

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 518103 People's Republic of China TEL: +86-755-86066985		
Test Site No.	Sporton Site No.	FCC Designation No.	FCC Test Firm Registration No.
	03CH03-SZ	CN1256	421272

1.7 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH03-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, 47 CFR Part 2, 22, 24, 27
- ♦ 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

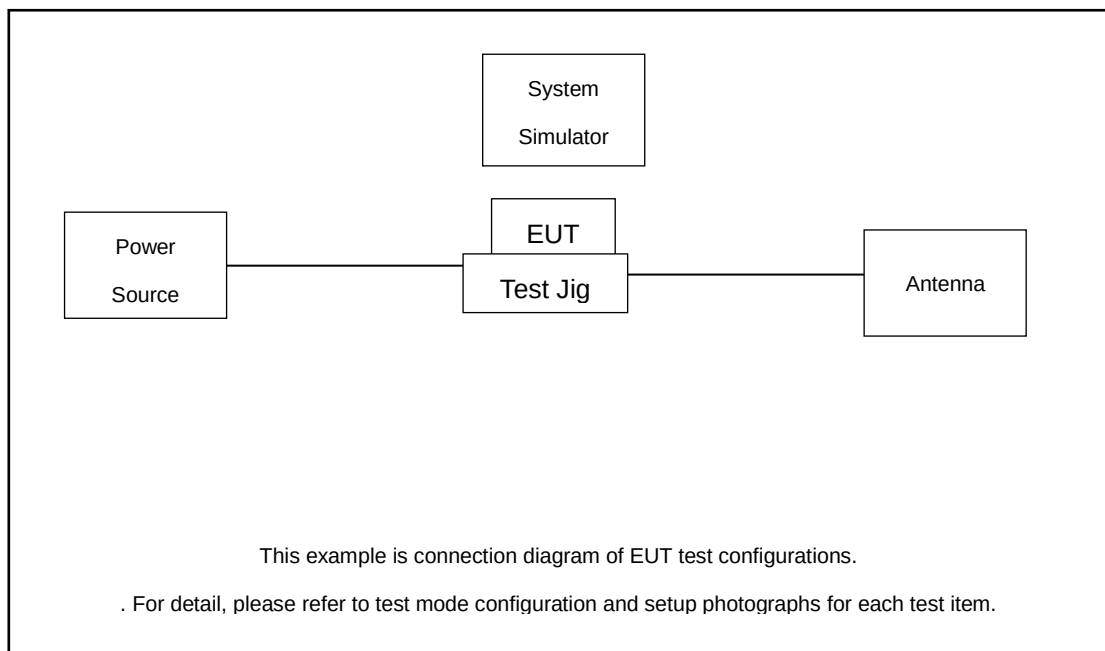
2.1 Test Mode

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. (Z-Plane)

Test Items	5G NR	Bandwidth (MHz)													Modulation					RB #		Test Channel		
		5	10	15	20	30	40	50	60	70	80	90	100	PI/2 BPSK	QPSK	16 QAM	64 QAM	256 QAM	1	Full	L	M	H	
Radiated Spurious Emission	n7A-n78A	Worst Case																		v	v	v		
	n5A-n78A	Worst Case																		v	v	v		
	n26A-n78A	Worst Case																		v	v	v		
	n5A-n7A	Worst Case																		v	v	v		
	n7A-n26A	Worst Case																		v	v	v		
	n12A-n66A	Worst Case																		v	v	v		
	n14A-n66A	Worst Case																		v	v	v		
	n2A-n12A	Worst Case																		v	v	v		
	n2A-n14A	Worst Case																		v	v	v		
	n12A-n30A	Worst Case																		v	v	v		
	n14A-n30A	Worst Case																		v	v	v		
	n12A-n77A	Worst Case																		v	v	v		
	n14A-n77A	Worst Case																		v	v	v		
	n41A-n71A	Worst Case																		v	v	v		
	n41A-n66A	Worst Case																		v	v	v		
	n41A-n77A	Worst Case																		v	v	v		
	n2A-n5A	Worst Case																		v	v	v		
	n5A-n66A	Worst Case																		v	v	v		
Note	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 = 3.30V ; Low Voltage =3.14V; High Voltage =4.40V																							

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.	NR Base Station	Anritsu	MT8000A	N/A	N/A	Unshielded, 1.8 m
2.	Antenna	N/A	N/A	N/A	N/A	N/A
3.	Adapter	N/A	N/A	N/A	N/A	N/A
4.	Test Jig	N/A	N/A	N/A	N/A	N/A



2.4 Frequency List of Low/Middle/High Channels

5G NR n2 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
30	Channel	373000	376000	379000
	Frequency	1865	1880	1895
25	Channel	372500	376000	379500
	Frequency	1862.5	1880	1897.5
20	Channel	372000	376000	380000
	Frequency	1860	1880	1900
15	Channel	371500	376000	380500
	Frequency	1857.5	1880	1902.5
10	Channel	371000	376000	381000
	Frequency	1855	1880	1905
5	Channel	370500	376000	381500
	Frequency	1852.5	1880	1907.5

Note: SCS 30kHz does not support 5MHz Bandwidths.

5G NR n5 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
25	Channel	-	167300	-
	Frequency	-	836.5	-
20	Channel	166800	167300	167800
	Frequency	834	836.5	839
15	Channel	166300	167300	168300
	Frequency	831.5	836.5	841.5
10	Channel	165800	167300	168800
	Frequency	829	836.5	844
5	Channel	165300	167300	169300
	Frequency	826.5	836.5	846.5

Note: SCS 30kHz does not support 5MHz Bandwidths.



5G NR n7 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
50	Channel	505000	507000	509000
	Frequency	2525	2535	2545
40	Channel	504000	507000	510000
	Frequency	2520	2535	2550
30	Channel	503000	507000	511000
	Frequency	2515	2535	2555
25	Channel	502500	507000	511500
	Frequency	2512.5	2535	2557.5
20	Channel	502000	507000	512000
	Frequency	2510	2535	2560
15	Channel	501500	507000	512500
	Frequency	2507.5	2535	2562.5
10	Channel	501000	507000	513000
	Frequency	2505	2535	2565
5	Channel	500500	507000	513500
	Frequency	2502.5	2535	2567.5

Note: SCS 30kHz does not support 5MHz Bandwidths.

5G NR n12 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
15	Channel	141300	141500	141700
	Frequency	706.5	707.5	708.5
10	Channel	140800	141500	142200
	Frequency	704	707.5	711
5	Channel	140300	141500	142700
	Frequency	701.5	707.5	713.5

Note: SCS 30kHz does not support 5MHz Bandwidths.



5G NR n14 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	158600		
	Frequency	793		
5	Channel	158100	158600	159100
	Frequency	790.5	793	795.5

Note: SCS 30kHz does not support 5MHz Bandwidths.

5G NR n26 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	166800	167300	167800
	Frequency	834	836.5	839
15	Channel	166300	167300	168300
	Frequency	831.5	836.5	841.5
10	Channel	165800	167300	168800
	Frequency	829	836.5	844
5	Channel	165300	167300	169300
	Frequency	826.5	836.5	846.5

Note: SCS 30kHz does not support 5MHz Bandwidths.

5G NR n30 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	-	471000	-
	Frequency	-	2310	-
5	Channel	470500	471000	471500
	Frequency	2307.5	2310	2312.5

Note: SCS 30kHz does not support 5MHz Bandwidths.



5G NR n41 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
100	Channel	509202	518598	528000
	Frequency	2546.01	2592.99	2640
90	Channel	508200	518598	528996
	Frequency	2541	2592.99	2644.98
80	Channel	507204	518598	529998
	Frequency	2536.02	2592.99	2649.99
70	Channel	506202	518598	531000
	Frequency	2531.01	2592.99	2655
60	Channel	505200	518598	531996
	Frequency	2526	2592.99	2659.98
50	Channel	504204	518598	532998
	Frequency	2521.02	2592.99	2664.99
40	Channel	503202	518598	534000
	Frequency	2516.01	2592.99	2670
30	Channel	502200	518598	534996
	Frequency	2511	2592.99	2674.98
20	Channel	501204	518598	535998
	Frequency	2506.02	2592.99	2679.99
15	Channel	500700	518598	536496
	Frequency	2503.5	2592.99	2682.48
10	Channel	500202	518598	537000
	Frequency	2501.01	2592.99	2685

Note: SCS 15kHz does not support 60M~100MHz Bandwidths.



5G NR n66 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
45	Channel	346500	349000	351500
	Frequency	1732.5	1745	1757.5
40	Channel	346000	349000	352000
	Frequency	1730	1745	1760
35	Channel	345500	349000	352500
	Frequency	1727.5	1745	1762.5
30	Channel	345000	349000	353000
	Frequency	1725	1745	1765
25	Channel	344500	349000	353500
	Frequency	1722.5	1745	1767.5
20	Channel	344000	349000	354000
	Frequency	1720	1745	1770
15	Channel	343500	349000	354500
	Frequency	1717.5	1745	1772.5
10	Channel	343000	349000	355000
	Frequency	1715	1745	1775
5	Channel	342500	349000	355500
	Frequency	1712.5	1745	1777.5

Note: SCS 30kHz does not support 5MHz Bandwidths.

5G NR n71 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	134600	136100	137600
	Frequency	673	680.5	688
15	Channel	134100	136100	138100
	Frequency	670.5	680.5	690.5
10	Channel	133600	136100	138600
	Frequency	668	680.5	693
5	Channel	133100	136100	139100
	Frequency	665.5	680.5	695.5

Note: SCS 30kHz does not support 5MHz Bandwidths.



5G n77 Channel and Frequency List for Part 270				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
100	Channel	650000	656000	662000
	Frequency	3750	3840	3930
90	Channel	649668	656000	662332
	Frequency	3745.02	3840	3934.98
80	Channel	649334	656000	662666
	Frequency	3740.01	3840	3939.99
70	Channel	649000	656000	663000
	Frequency	3735	3840	3945
60	Channel	648668	656000	663332
	Frequency	3730.02	3840	3949.98
50	Channel	648334	656000	663666
	Frequency	3725.01	3840	3954.99
40	Channel	648000	656000	664000
	Frequency	3720	3840	3960
30	Channel	647668	656000	664332
	Frequency	3715.02	3840	3964.98
20	Channel	647334	656000	664666
	Frequency	3710.01	3840	3969.99
15	Channel	647168	656000	664832
	Frequency	3707.52	3840	3972.48
10	Channel	647000	656000	665000
	Frequency	3705	3840	3975

Note: SCS 15kHz does not support 60M~100MHz Bandwidths.



5G n78 Channel and Frequency List for Part 270				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
100	Channel	650000		
	Frequency	3750		
90	Channel	649668	650000	650332
	Frequency	3745.02	3750	3754.98
80	Channel	649334	650000	650666
	Frequency	3740.01	3750	3759.99
70	Channel	649000	650000	651000
	Frequency	3735	3750	3765
60	Channel	648668	650000	651332
	Frequency	3730.02	3750	3769.98
50	Channel	648334	650000	651666
	Frequency	3725.01	3750	3774.99
40	Channel	648000	650000	652000
	Frequency	3720	3750	3780
30	Channel	647668	650000	652332
	Frequency	3715.02	3750	3784.98
20	Channel	647334	650000	652666
	Frequency	3710.01	3750	3789.99
15	Channel	647168	650000	652832
	Frequency	3707.52	3750	3792.48
10	Channel	647000	650000	653000
	Frequency	3705	3750	3795

Note: SCS 15kHz does not support 60M~100MHz Bandwidths.



5G n77/n78 Channel and Frequency Listfor 27Q				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
100	Channel	-	633334	-
	Frequency	-	3500.01	-
90	Channel	633000	633334	633666
	Frequency	3495	3500.01	3504.99
80	Channel	632668	633334	634000
	Frequency	3490.02	3500.01	3510
70	Channel	632334	633334	634332
	Frequency	3485.01	3500.01	3514.98
60	Channel	632000	633334	634666
	Frequency	3480	3500.01	3519.99
50	Channel	631668	633334	635000
	Frequency	3475.02	3500.01	3525
40	Channel	631334	633334	635332
	Frequency	3470.01	3500.01	3529.98
30	Channel	631000	633334	635666
	Frequency	3465	3500.01	3534.99
20	Channel	630668	633334	636000
	Frequency	3460.02	3500.01	3540
15	Channel	630500	633334	636166
	Frequency	3457.5	3500.01	3542.49
10	Channel	630334	633334	636332
	Frequency	3455.01	3500.01	3544.98

Note: SCS 15kHz does not support 60M~100MHz Bandwidths.

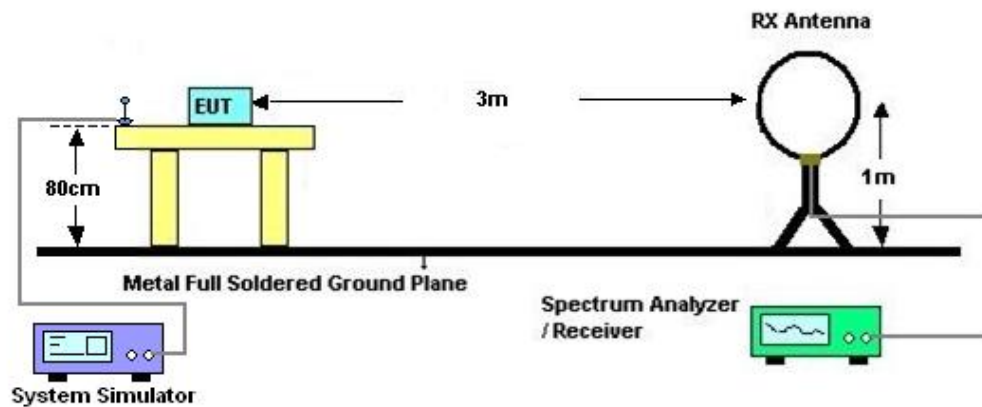
3 Radiated Test Items

3.1 Measuring Instruments

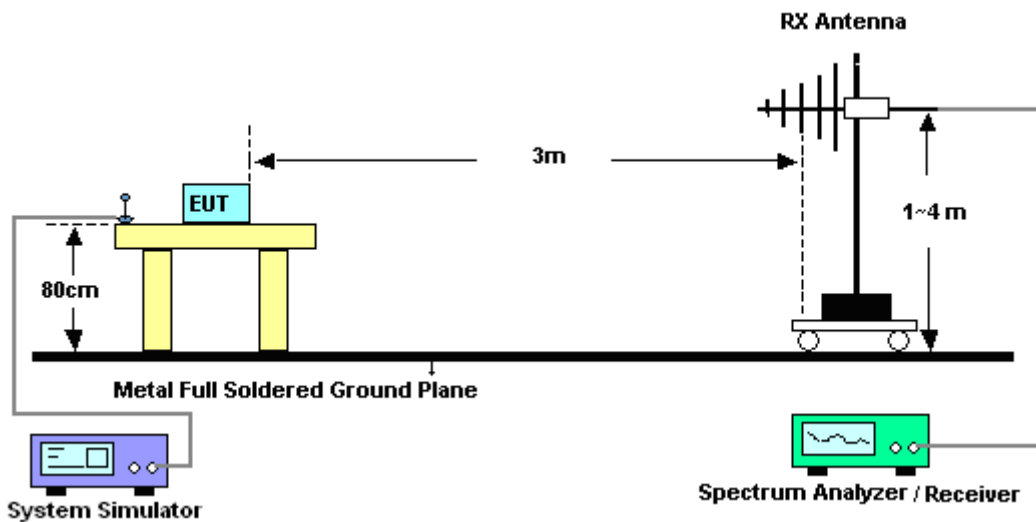
See list of measuring instruments of this test report.

3.2 Test Setup

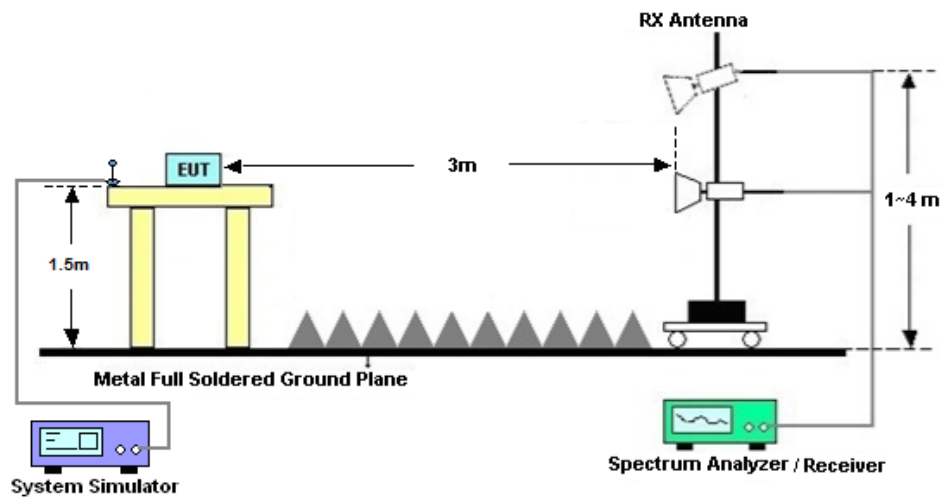
3.2.1 For radiated test below 30MHz



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. 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 5G NR n41

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.

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

For 5G NR n30

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.

For 5G NR n14

For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

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. $EIRP\ (dBm) = S.G.\ Power - Tx\ Cable\ Loss + Tx\ Antenna\ Gain$
11. $ERP\ (dBm) = EIRP - 2.15$
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
The limit line is derived from $43 + 10\log(P)dB$ below the transmitter power $P(Watts)$
 $= P(W) - [43 + 10\log(P)]\ (dB)$
 $= [30 + 10\log(P)]\ (dBm) - [43 + 10\log(P)]\ (dB)$
 $= -13dBm.$
13. For 5G NR n41:
The limit line is derived from $55 + 10\log(P)dB$ below the transmitter power $P(Watts)$ The limit line is derived from $55 + 10\log(P)dB$ below the transmitter power $P(Watts)$
14. For 5G NR n30:
The limit line is derived from $70 + 10\log(P)dB$ below the transmitter power $P(Watts)$ The limit line is derived from $70 + 10\log(P)dB$ 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	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	Apr. 09, 2024	Apr. 14, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz;	Apr. 09, 2024	Apr. 14, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	Jun. 28, 2022	Apr. 14, 2024	Jun. 27, 2024	Radiation (03CH03-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz~2GHz	Aug. 20, 2023	Apr. 14, 2024	Aug. 19, 2025	Radiation (03CH03-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1355	1GHz~18GHz	Apr. 09, 2024	Apr. 14, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18Ghz~40GHz	Apr. 09, 2024	Apr. 14, 2024	Apr. 08, 2025	Radiation (03CH03-SZ)
Amplifier	Burgeon	BPA-530	102211	0.01Hz ~3000MHz	Oct. 18, 2023	Apr. 14, 2024	Oct. 17, 2024	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 07, 2023	Apr. 14, 2024	Jul.06, 2024	Radiation (03CH03-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5GHz	Dec. 27, 2023	Apr. 14, 2024	Dec. 26, 2024	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	616010002729	N/A	Oct. 18, 2023	Apr. 14, 2024	Oct. 17, 2024	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	NCR	Apr. 14, 2024	NCR	Radiation (03CH03-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	NCR	Apr. 14, 2024	NCR	Radiation (03CH03-SZ)

NCR: No Calibration Required



5 Measurement Uncertainty

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 (9 KHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.0dB
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.6dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.8dB
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----- THE END -----



Appendix A. Test Results of Radiated Test

Radiated Spurious Emission

Note: n77/n78 apply multi rule parts, the limit of n77/n78 consider the worst from Part 270/Part 27Q/RSS-192/RSS-198.

ULCA_n7A-n78A (ANT2+0)									
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)
NR n7 Max BW Lowest 1RB0,QPSK	5050.00	-57.33	-25	-32.33	-81.28	-62.89	7.12	12.68	H
	7575.00	-58.18	-25	-33.18	-66.49	-61.51	8.26	11.59	H
	10100.00	-56.81	-25	-31.81	-68.52	-58.34	10.45	11.98	H
	5050.00	-55.70	-25	-30.70	-80.98	-61.26	7.12	12.68	V
	7575.00	-57.87	-25	-32.87	-66.18	-61.20	8.26	11.59	V
	10100.00	-56.14	-25	-31.14	-68.78	-57.67	10.45	11.98	V
NR n78 Max BW Lowest 1RB0,QPSK	6902.40	-56.29	-30	-26.29	-63.75	-59.62	8.25	11.58	H
	10353.60	-56.26	-30	-26.26	-68.28	-57.81	10.45	12.00	H
	13804.80	-53.79	-30	-23.79	-69.64	-55.50	11.74	13.45	H
	6902.40	-51.88	-30	-21.88	-60.62	-55.21	8.25	11.58	V
	10353.60	-54.38	-30	-24.38	-68.2	-55.93	10.45	12.00	V
	13804.80	-54.95	-30	-24.95	-69.61	-56.66	11.74	13.45	V
NR n7 Max BW Middle 1RB0,QPSK	5070.00	-56.97	-25	-31.97	-81.01	-62.53	7.14	12.70	H
	7605.00	-58.04	-25	-33.04	-66.25	-61.34	8.30	11.60	H
	10140.00	-56.26	-25	-31.26	-68.04	-57.78	10.48	12.00	H
	5070.00	-56.21	-25	-31.21	-81.46	-61.77	7.14	12.70	V
	7605.00	-57.81	-25	-32.81	-66.36	-61.11	8.30	11.60	V
	10140.00	-55.05	-25	-30.05	-67.93	-56.57	10.48	12.00	V
NR n78 Max BW Middle 1RB0,QPSK	7002.36	-54.00	-30	-24.00	-61.77	-57.30	8.30	11.60	H
	10503.54	-55.81	-30	-25.81	-68.01	-57.33	10.48	12.00	H
	14004.72	-54.19	-30	-24.19	-69.80	-55.89	11.80	13.50	H
	7002.36	-49.03	-30	-19.03	-56.98	-52.33	8.30	11.60	V
	10503.54	-53.55	-30	-23.55	-68.07	-55.07	10.48	12.00	V
	14004.72	-55.53	-30	-25.53	-70.36	-57.23	11.80	13.50	V
NR n7 Max BW Highest 1RB0,QPSK	5090.00	-56.71	-25	-31.71	-80.99	-62.27	7.16	12.72	H
	7635.00	-58.43	-25	-33.43	-66.60	-61.73	8.33	11.63	H
	10180.00	-57.00	-25	-32.00	-68.81	-58.60	10.50	12.10	H
	5090.00	-55.64	-25	-30.64	-80.9	-61.20	7.16	12.72	V
	7635.00	-56.83	-25	-31.83	-65.68	-60.13	8.33	11.63	V
	10180.00	-55.76	-25	-30.76	-68.79	-57.36	10.50	12.10	V
NR n78 Max BW Highest 1RB0,QPSK	7102.38	-53.66	-30	-23.66	-61.85	-56.96	8.32	11.62	H
	10653.57	-55.20	-30	-25.20	-68.08	-56.88	10.52	12.20	H
	14204.76	-54.32	-30	-24.32	-70.20	-56.02	11.85	13.55	H
	7102.38	-46.17	-30	-16.17	-55.52	-49.47	8.32	11.62	V
	10653.57	-52.59	-30	-22.59	-67.93	-54.27	10.52	12.20	V
	14204.76	-54.97	-30	-24.97	-70.24	-56.67	11.85	13.55	V



ULCA_ n5A-n78A (ANT0+2)									
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)
NR n5 Max BW Lowest 1RB0,QPSK	1650	-66.26	-13	-53.26	-78.35	-69.49	3.98	9.36	H
	2475	-60.99	-13	-47.99	-80.24	-64.54	4.85	10.55	H
	3300	-60.28	-13	-47.28	-81.33	-65.21	5.50	12.58	H
	1650	-65.71	-13	-52.71	-78.44	-68.94	3.98	9.36	V
	2475	-60.57	-13	-47.57	-80.14	-64.12	4.85	10.55	V
	3300	-59.40	-13	-46.40	-81.34	-64.33	5.50	12.58	V
NR n78 Max BW Lowest 1RB0,QPSK	6902.40	-57.90	-30	-27.90	-65.36	-61.23	8.25	11.58	H
	10353.60	-55.93	-30	-25.93	-67.95	-57.48	10.45	12.00	H
	13804.80	-53.47	-30	-23.47	-69.32	-55.18	11.74	13.45	H
	6902.40	-56.88	-30	-26.88	-65.62	-60.21	8.25	11.58	V
	10353.60	-54.27	-30	-24.27	-68.09	-55.82	10.45	12.00	V
	13804.80	-54.77	-30	-24.77	-69.43	-56.48	11.74	13.45	V
NR n5 Max BW Middle 1RB0,QPSK	1654.5	-66.67	-13	-53.67	-78.80	-69.92	4.00	9.40	H
	2481.75	-61.25	-13	-48.25	-80.50	-64.82	4.88	10.60	H
	3309	-60.60	-13	-47.60	-81.75	-65.53	5.52	12.60	H
	1654.5	-65.89	-13	-52.89	-78.66	-69.14	4.00	9.40	V
	2481.75	-60.96	-13	-47.96	-80.53	-64.53	4.88	10.60	V
	3309	-59.56	-13	-46.56	-81.41	-64.49	5.52	12.60	V
NR n78 Max BW Middle 1RB0,QPSK	7002.36	-57.62	-30	-27.62	-65.39	-60.92	8.30	11.60	H
	10503.54	-55.83	-30	-25.83	-68.03	-57.35	10.48	12.00	H
	14004.72	-54.26	-30	-24.26	-69.87	-55.96	11.80	13.50	H
	7002.36	-57.15	-30	-27.15	-65.1	-60.45	8.30	11.60	V
	10503.54	-53.54	-30	-23.54	-68.06	-55.06	10.48	12.00	V
	14004.72	-55.00	-30	-25.00	-69.83	-56.70	11.80	13.50	V
NR n5 Max BW Highest 1RB0,QPSK	1660	-66.27	-13	-53.27	-78.47	-69.44	4.10	9.42	H
	2490	-60.77	-13	-47.77	-80.15	-64.35	4.90	10.63	H
	3320	-60.08	-13	-47.08	-81.23	-65.00	5.55	12.62	H
	1660	-65.49	-13	-52.49	-78.36	-68.66	4.10	9.42	V
	2490	-60.69	-13	-47.69	-80.33	-64.27	4.90	10.63	V
	3320	-59.72	-13	-46.72	-81.57	-64.64	5.55	12.62	V
NR n78 Max BW Highest 1RB0,QPSK	7102.38	-57.61	-30	-27.61	-65.80	-60.91	8.32	11.62	H
	10653.57	-55.14	-30	-25.14	-68.02	-56.82	10.52	12.20	H
	14204.76	-53.81	-30	-23.81	-69.69	-55.51	11.85	13.55	H
	7102.38	-56.23	-30	-26.23	-65.58	-59.53	8.32	11.62	V
	10653.57	-52.33	-30	-22.33	-67.67	-54.01	10.52	12.20	V
	14204.76	-54.59	-30	-24.59	-69.86	-56.29	11.85	13.55	V



ULCA_n26A-n78A (ANT 0+2)									
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)
NR n26 Max BW Lowest 1RB0,QPSK	1650	-65.47	-13	-52.47	-77.56	-68.70	3.98	9.36	H
	2475	-59.82	-13	-46.82	-79.07	-63.37	4.85	10.55	H
	3300	-58.97	-13	-45.97	-80.02	-63.90	5.50	12.58	H
	1650	-64.57	-13	-51.57	-77.30	-67.80	3.98	9.36	V
	2475	-59.61	-13	-46.61	-79.18	-63.16	4.85	10.55	V
	3300	-58.44	-13	-45.44	-80.38	-63.37	5.50	12.58	V
NR n78 Max BW Lowest 1RB0,QPSK	6902.40	-58.02	-30	-28.02	-65.48	-61.35	8.25	11.58	H
	10353.60	-56.43	-30	-26.43	-68.45	-57.98	10.45	12.00	H
	13804.80	-53.80	-30	-23.80	-69.65	-55.51	11.74	13.45	H
	6902.40	-57.00	-30	-27.00	-65.74	-60.33	8.25	11.58	V
	10353.60	-54.53	-30	-24.53	-68.35	-56.08	10.45	12.00	V
	13804.80	-55.12	-30	-25.12	-69.78	-56.83	11.74	13.45	V
NR n26 Max BW Middle 1RB0,QPSK	1654	-65.55	-13	-52.55	-77.68	-68.80	4.00	9.40	H
	2481	-60.29	-13	-47.29	-79.54	-63.86	4.88	10.60	H
	3308	-59.62	-13	-46.62	-80.77	-64.55	5.52	12.60	H
	1654	-64.63	-13	-51.63	-77.40	-67.88	4.00	9.40	V
	2481	-59.42	-13	-46.42	-78.99	-62.99	4.88	10.60	V
	3308	-58.90	-13	-45.90	-80.75	-63.83	5.52	12.60	V
NR n78 Max BW Middle 1RB0,QPSK	7002.36	-57.79	-30	-27.79	-65.56	-61.09	8.30	11.60	H
	10503.54	-56.22	-30	-26.22	-68.42	-57.74	10.48	12.00	H
	14004.72	-54.57	-30	-24.57	-70.18	-56.27	11.80	13.50	H
	7002.36	-57.61	-30	-27.61	-65.56	-60.91	8.30	11.60	V
	10503.54	-53.98	-30	-23.98	-68.5	-55.50	10.48	12.00	V
	14004.72	-55.12	-30	-25.12	-69.95	-56.82	11.80	13.50	V
NR n26 Max BW Highest 1RB0,QPSK	1660	-65.43	-13	-52.43	-77.63	-68.60	4.10	9.42	H
	2490	-60.06	-13	-47.06	-79.44	-63.64	4.90	10.63	H
	3320	-59.38	-13	-46.38	-80.53	-64.30	5.55	12.62	H
	1660	-64.94	-13	-51.94	-77.81	-68.11	4.10	9.42	V
	2490	-59.44	-13	-46.44	-79.08	-63.02	4.90	10.63	V
	3320	-58.66	-13	-45.66	-80.51	-63.58	5.55	12.62	V
NR n78 Max BW Highest 1RB0,QPSK	7102.38	-57.37	-30	-27.37	-65.56	-60.67	8.32	11.62	H
	10653.57	-54.60	-30	-24.60	-67.48	-56.28	10.52	12.20	H
	14204.76	-53.78	-30	-23.78	-69.66	-55.48	11.85	13.55	H
	7102.38	-56.24	-30	-26.24	-65.59	-59.54	8.32	11.62	V
	10653.57	-52.55	-30	-22.55	-67.89	-54.23	10.52	12.20	V
	14204.76	-54.50	-30	-24.50	-69.77	-56.20	11.85	13.55	V



ULCA_n5A-n7A (ANT 2+0)									
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)
NR n5 Max BW Lowest 1RB0,QPSK	1650	-61.90	-13	-48.90	-73.99	-65.13	3.98	9.36	H
	2475	-59.39	-13	-46.39	-78.64	-62.94	4.85	10.55	H
	3300	-58.98	-13	-45.98	-80.03	-63.91	5.50	12.58	H
	1650	-61.62	-13	-48.62	-74.35	-64.85	3.98	9.36	V
	2475	-59.33	-13	-46.33	-78.90	-62.88	4.85	10.55	V
	3300	-58.07	-13	-45.07	-80.01	-63.00	5.50	12.58	V
NR n7 Max BW Lowest 1RB0,QPSK	5050.00	-57.59	-25	-32.59	-81.54	-63.15	7.12	12.68	H
	7575.00	-55.30	-25	-30.30	-82.00	-58.63	8.26	11.59	H
	10100.00	-52.72	-25	-27.72	-83.63	-54.25	10.45	11.98	H
	5050.00	-56.36	-25	-31.36	-81.64	-61.92	7.12	12.68	V
	7575.00	-55.16	-25	-30.16	-81.86	-58.49	8.26	11.59	V
	10100.00	-51.71	-25	-26.71	-83.55	-53.24	10.45	11.98	V
NR n5 Max BW Middle 1RB0,QPSK	1654.5	-61.50	-13	-48.50	-73.63	-64.75	4.00	9.40	H
	2481.75	-60.09	-13	-47.09	-79.34	-63.66	4.88	10.60	H
	3309	-58.94	-13	-45.94	-80.09	-63.87	5.52	12.60	H
	1654.5	-62.11	-13	-49.11	-74.88	-65.36	4.00	9.40	V
	2481.75	-59.72	-13	-46.72	-79.29	-63.29	4.88	10.60	V
	3309	-58.06	-13	-45.06	-79.91	-62.99	5.52	12.60	V
NR n7 Max BW Middle 1RB0,QPSK	5070.00	-57.95	-25	-32.95	-81.99	-63.51	7.14	12.70	H
	7605.00	-55.33	-25	-30.33	-81.92	-58.63	8.30	11.60	H
	10140.00	-52.22	-25	-27.22	-83.21	-53.74	10.48	12.00	H
	5070.00	-56.41	-25	-31.41	-81.66	-61.97	7.14	12.70	V
	7605.00	-55.05	-25	-30.05	-81.98	-58.35	8.30	11.60	V
	10140.00	-51.44	-25	-26.44	-83.53	-52.96	10.48	12.00	V
NR n5 Max BW Highest 1RB0,QPSK	1660	-60.99	-13	-47.99	-73.19	-64.16	4.10	9.42	H
	2490	-60.30	-13	-47.30	-79.68	-63.88	4.90	10.63	H
	3320	-58.13	-13	-45.13	-79.28	-63.05	5.55	12.62	H
	1660	-61.24	-13	-48.24	-74.11	-64.41	4.10	9.42	V
	2490	-58.91	-13	-45.91	-78.55	-62.49	4.90	10.63	V
	3320	-58.42	-13	-45.42	-80.27	-63.34	5.55	12.62	V
NR n7 Max BW Highest 1RB0,QPSK	5090.00	-57.38	-25	-32.38	-81.66	-62.94	7.16	12.72	H
	7635.00	-55.72	-25	-30.72	-82.26	-59.02	8.33	11.63	H
	10180.00	-52.37	-25	-27.37	-83.39	-53.97	10.50	12.10	H
	5090.00	-56.39	-25	-31.39	-81.65	-61.95	7.16	12.72	V
	7635.00	-54.64	-25	-29.64	-81.86	-57.94	8.33	11.63	V
	10180.00	-51.08	-25	-26.08	-83.32	-52.68	10.50	12.10	V



ULCA_ n7A-n26A (ANT 2+0)									
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)
NR n7 Max BW Lowest 1RB0,QPSK	5050.00	-57.75	-25	-32.75	-81.70	-63.31	7.12	12.68	H
	7575.00	-55.38	-25	-30.38	-82.08	-58.71	8.26	11.59	H
	10100.00	-52.87	-25	-27.87	-83.78	-54.40	10.45	11.98	H
	5050.00	-56.37	-25	-31.37	-81.65	-61.93	7.12	12.68	V
	7575.00	-55.51	-25	-30.51	-82.21	-58.84	8.26	11.59	V
	10100.00	-51.15	-25	-26.15	-82.99	-52.68	10.45	11.98	V
NR n26 Max BW Lowest 1RB0,QPSK	1650	-65.08	-13	-52.08	-77.17	-68.31	3.98	9.36	H
	2475	-60.17	-13	-47.17	-79.42	-63.72	4.85	10.55	H
	3300	-58.15	-13	-45.15	-79.20	-63.08	5.50	12.58	H
	1650	-64.57	-13	-51.57	-77.30	-67.80	3.98	9.36	V
	2475	-59.51	-13	-46.51	-79.08	-63.06	4.85	10.55	V
	3300	-57.60	-13	-44.60	-79.54	-62.53	5.50	12.58	V
NR n7 Max BW Middle 1RB0,QPSK	5070.00	-57.76	-25	-32.76	-81.80	-63.32	7.14	12.70	H
	7605.00	-55.39	-25	-30.39	-81.98	-58.69	8.30	11.60	H
	10140.00	-52.32	-25	-27.32	-83.31	-53.84	10.48	12.00	H
	5070.00	-56.42	-25	-31.42	-81.67	-61.98	7.14	12.70	V
	7605.00	-54.75	-25	-29.75	-81.68	-58.05	8.30	11.60	V
	10140.00	-50.77	-25	-25.77	-82.86	-52.29	10.48	12.00	V
NR n26 Max BW Middle 1RB0,QPSK	1654	-65.23	-13	-52.23	-77.36	-68.48	4.00	9.40	H
	2481	-56.46	-13	-43.46	-75.71	-60.03	4.88	10.60	H
	3308	-58.98	-13	-45.98	-80.13	-63.91	5.52	12.60	H
	1654	-64.46	-13	-51.46	-77.23	-67.71	4.00	9.40	V
	2481	-58.41	-13	-45.41	-77.98	-61.98	4.88	10.60	V
	3308	-58.21	-13	-45.21	-80.06	-63.14	5.52	12.60	V
NR n7 Max BW Higest 1RB0,QPSK	5090.00	-57.29	-25	-32.29	-81.57	-62.85	7.16	12.72	H
	7635.00	-55.47	-25	-30.47	-82.01	-58.77	8.33	11.63	H
	10180.00	-52.40	-25	-27.40	-83.42	-54.00	10.50	12.10	H
	5090.00	-56.46	-25	-31.46	-81.72	-62.02	7.16	12.72	V
	7635.00	-54.54	-25	-29.54	-81.76	-57.84	8.33	11.63	V
	10180.00	-50.86	-25	-25.86	-83.1	-52.46	10.50	12.10	V
NR n26 Max BW Higest 1RB0,QPSK	1660	-65.09	-13	-52.09	-77.29	-68.26	4.10	9.42	H
	2490	-59.45	-13	-46.45	-78.83	-63.03	4.90	10.63	H
	3320	-58.78	-13	-45.78	-79.93	-63.70	5.55	12.62	H
	1660	-64.23	-13	-51.23	-77.10	-67.40	4.10	9.42	V
	2490	-59.57	-13	-46.57	-79.21	-63.15	4.90	10.63	V
	3320	-58.49	-13	-45.49	-80.34	-63.41	5.55	12.62	V



ULCA_n12A-n66A (ANT0+2)									
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)
NR n12 Max BW Lowest 1RB0,QPSK	1397.3	-64.36	-13	-51.36	-75.63	-67.59	3.98	9.36	H
	2096	-60.65	-13	-47.65	-78.71	-64.20	4.85	10.55	H
	2794.6	-60.00	-13	-47.00	-79.38	-64.93	5.50	12.58	H
	1397.3	-63.70	-13	-50.70	-76.00	-66.93	3.98	9.36	V
	2096	-60.54	-13	-47.54	-78.41	-64.09	4.85	10.55	V
	2794.6	-58.96	-13	-45.96	-79.10	-63.89	5.50	12.58	V
NR n66 Max BW Lowest 1RB0,QPSK	3421.4	-59.48	-13	-46.48	-80.35	-66.36	5.60	12.48	H
	5132.1	-56.71	-13	-43.71	-81.17	-62.39	7.10	12.78	H
	6842.8	-55.18	-13	-42.18	-81.24	-58.57	8.38	11.77	H
	3421.4	-57.94	-13	-44.94	-80.01	-64.82	5.60	12.48	V
	5132.1	-56.30	-13	-43.30	-81.5	-61.98	7.10	12.78	V
	6842.8	-53.55	-13	-40.55	-81.44	-56.94	8.38	11.77	V
NR n12 Max BW Middle 1RB0,QPSK	1401.3	-64.50	-13	-51.50	-75.76	-67.75	4.00	9.40	H
	2102	-60.98	-13	-47.98	-79.13	-64.55	4.88	10.60	H
	2802.6	-59.95	-13	-46.95	-79.33	-64.88	5.52	12.60	H
	1401.3	-63.84	-13	-50.84	-76.16	-67.09	4.00	9.40	V
	2102	-61.58	-13	-48.58	-79.52	-65.15	4.88	10.60	V
	2802.6	-59.09	-13	-46.09	-79.23	-64.02	5.52	12.60	V
NR n66 Max BW Middle 1RB0,QPSK	3452.5	-58.79	-13	-45.79	-80.24	-65.64	5.65	12.50	H
	5178.74	-56.96	-13	-43.96	-81.72	-62.63	7.13	12.80	H
	6905	-55.24	-13	-42.24	-81.45	-58.64	8.40	11.80	H
	3452.5	-58.56	-13	-45.56	-80.95	-65.41	5.65	12.50	V
	5178.74	-56.37	-13	-43.37	-81.52	-62.04	7.13	12.80	V
	6905	-53.71	-13	-40.71	-81.2	-57.11	8.40	11.80	V
NR n12 Max BW Highest 1RB0,QPSK	1402.6	-63.90	-13	-50.90	-75.16	-67.07	4.10	9.42	H
	2104	-61.03	-13	-48.03	-79.18	-64.61	4.90	10.63	H
	2805.3	-59.68	-13	-46.68	-79.06	-64.60	5.55	12.62	H
	1402.6	-63.78	-13	-50.78	-76.10	-66.95	4.10	9.42	V
	2104	-61.27	-13	-48.27	-79.21	-64.85	4.90	10.63	V
	2805.3	-58.95	-13	-45.95	-79.09	-63.87	5.55	12.62	V
NR n66 Max BW Highest 1RB0,QPSK	3481.4	-58.42	-13	-45.42	-80.46	-65.26	5.68	12.52	H
	5222.1	-56.95	-13	-43.95	-81.83	-62.62	7.15	12.82	H
	6962.8	-55.43	-13	-42.43	-81.81	-58.86	8.42	11.85	H
	3481.4	-57.46	-13	-44.46	-80.17	-64.30	5.68	12.52	V
	5222.1	-56.85	-13	-43.85	-81.9	-62.52	7.15	12.82	V
	6962.8	-54.40	-13	-41.40	-81.33	-57.83	8.42	11.85	V



ULCA_n14A-n66A (ANT0+2)									
Channel	Frequency (MHz)	ERP/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)
NR n14 Max BW Lowest 1RB0,QPSK	1577	-56.26	-42.15	-14.11	-68.09	-59.49	3.98	9.36	H
	2365.5	-59.97	-13	-46.97	-78.57	-63.52	4.85	10.55	H
	3154	-59.37	-13	-46.37	-79.77	-64.30	5.50	12.58	H
	1577	-56.33	-42.15	-14.18	-68.73	-59.56	3.98	9.36	V
	2365.5	-59.69	-13	-46.69	-78.75	-63.24	4.85	10.55	V
	3154	-57.10	-13	-44.10	-79.43	-62.03	5.50	12.58	V
NR n66 Max BW Lowest 1RB0,QPSK	3421.4	-59.22	-13	-46.22	-80.09	-66.10	5.60	12.48	H
	5132.1	-57.19	-13	-44.19	-81.65	-62.87	7.10	12.78	H
	6842.8	-55.25	-13	-42.25	-81.31	-58.64	8.38	11.77	H
	3421.4	-57.73	-13	-44.73	-79.8	-64.61	5.60	12.48	V
	5132.1	-55.76	-13	-42.76	-80.96	-61.44	7.10	12.78	V
	6842.8	-53.49	-13	-40.49	-81.38	-56.88	8.38	11.77	V
NR n14 Max BW Middle 1RB0,QPSK	1577	-56.16	-42.15	-14.01	-67.99	-59.41	4.00	9.40	H
	2365.5	-60.22	-13	-47.22	-78.82	-63.79	4.88	10.60	H
	3154	-59.03	-13	-46.03	-79.43	-63.96	5.52	12.60	H
	1577	-57.06	-42.15	-14.91	-69.46	-60.31	4.00	9.40	V
	2365.5	-59.42	-13	-46.42	-78.48	-62.99	4.88	10.60	V
	3154	-57.19	-13	-44.19	-79.52	-62.12	5.52	12.60	V
NR n66 Max BW Middle 1RB0,QPSK	3452.5	-59.28	-13	-46.28	-80.73	-66.13	5.65	12.50	H
	5178.74	-57.47	-13	-44.47	-82.23	-63.14	7.13	12.80	H
	6905	-55.67	-13	-42.67	-81.88	-59.07	8.40	11.80	H
	3452.5	-58.85	-13	-45.85	-81.24	-65.70	5.65	12.50	V
	5178.74	-56.67	-13	-43.67	-81.82	-62.34	7.13	12.80	V
	6905	-53.76	-13	-40.76	-81.25	-57.16	8.40	11.80	V
NR n14 Max BW Highest 1RB0,QPSK	1577	-55.46	-42.15	-13.31	-67.29	-58.63	4.10	9.42	H
	2365.5	-60.26	-13	-47.26	-78.86	-63.84	4.90	10.63	H
	3154	-58.87	-13	-45.87	-79.27	-63.79	5.55	12.62	H
	1577	-57.50	-42.15	-15.35	-69.90	-60.67	4.10	9.42	V
	2365.5	-59.48	-13	-46.48	-78.54	-63.06	4.90	10.63	V
	3154	-57.25	-13	-44.25	-79.58	-62.17	5.55	12.62	V
NR n66 Max BW Highest 1RB0,QPSK	3481.4	-58.72	-13	-45.72	-80.76	-65.56	5.68	12.52	H
	5222.1	-57.12	-13	-44.12	-82.00	-62.79	7.15	12.82	H
	6962.8	-55.40	-13	-42.40	-81.78	-58.83	8.42	11.85	H
	3481.4	-57.34	-13	-44.34	-80.05	-64.18	5.68	12.52	V
	5222.1	-56.92	-13	-43.92	-81.97	-62.59	7.15	12.82	V
	6962.8	-55.09	-13	-42.09	-82.02	-58.52	8.42	11.85	V



ULCA_n2A-n12A (ANT 2+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)
NR n2 Max BW Lowest 1RB0,QPSK	3701.5	-56.69	-13	-43.69	-79.87	-63.45	5.82	12.58	H
	5552.25	-56.69	-13	-43.69	-81.44	-62.41	7.28	13.00	H
	7403	-53.97	-13	-40.97	-81.35	-57.13	8.32	11.48	H
	3701.5	-54.32	-13	-41.32	-79.19	-61.08	5.82	12.58	V
	5552.25	-50.34	-13	-37.34	-75.52	-56.06	7.28	13.00	V
	7403	-53.16	-13	-40.16	-80.51	-56.32	8.32	11.48	V
NR n12 Max BW Lowest 1RB0,QPSK	1397.3	-66.16	-13	-53.16	-77.43	-69.39	3.98	9.36	H
	2096	-61.67	-13	-48.67	-79.73	-65.22	4.85	10.55	H
	2794.6	-61.03	-13	-48.03	-80.41	-65.96	5.50	12.58	H
	1397.3	-65.04	-13	-52.04	-77.34	-68.27	3.98	9.36	V
	2096	-61.90	-13	-48.90	-79.77	-65.45	4.85	10.55	V
	2794.6	-60.11	-13	-47.11	-80.25	-65.04	5.50	12.58	V
NR n2 Max BW Middle 1RB0,QPSK	3741.5	-56.59	-13	-43.59	-79.63	-63.34	5.85	12.60	H
	5612.25	-56.36	-13	-43.36	-80.94	-62.16	7.30	13.10	H
	7483	-54.00	-13	-41.00	-81.08	-57.15	8.35	11.50	H
	3741.5	-54.13	-13	-41.13	-79.18	-60.88	5.85	12.60	V
	5612.25	-52.20	-13	-39.20	-77.63	-58.00	7.30	13.10	V
	7483	-53.36	-13	-40.36	-80.42	-56.51	8.35	11.50	V
NR n12 Max BW Middle 1RB0,QPSK	1401.3	-65.61	-13	-52.61	-76.87	-68.86	4.00	9.40	H
	2102	-60.75	-13	-47.75	-78.90	-64.32	4.88	10.60	H
	2802.6	-60.40	-13	-47.40	-79.78	-65.33	5.52	12.60	H
	1401.3	-64.59	-13	-51.59	-76.91	-67.84	4.00	9.40	V
	2102	-61.33	-13	-48.33	-79.27	-64.90	4.88	10.60	V
	2802.6	-59.63	-13	-46.63	-79.77	-64.56	5.52	12.60	V
NR n2 Max BW Highest 1RB0,QPSK	3781.5	-56.92	-13	-43.92	-80.28	-63.66	5.88	12.62	H
	5672.25	-52.65	-13	-39.65	-77.23	-58.46	7.32	13.13	H
	7563	-54.40	-13	-41.40	-81.16	-57.56	8.38	11.54	H
	3781.5	-52.07	-13	-39.07	-76.92	-58.81	5.88	12.62	V
	5672.25	-47.33	-13	-34.33	-72.2	-53.14	7.32	13.13	V
	7563	-54.06	-13	-41.06	-80.81	-57.22	8.38	11.54	V
NR n12 Max BW Highest 1RB0,QPSK	1402.6	-65.95	-13	-52.95	-77.21	-69.12	4.10	9.42	H
	2104	-61.64	-13	-48.64	-79.79	-65.22	4.90	10.63	H
	2805.3	-60.78	-13	-47.78	-80.16	-65.70	5.55	12.62	H
	1402.6	-65.02	-13	-52.02	-77.34	-68.19	4.10	9.42	V
	2104	-62.13	-13	-49.13	-80.07	-65.71	4.90	10.63	V
	2805.3	-59.94	-13	-46.94	-80.08	-64.86	5.55	12.62	V



ULCA_n2A-n14A (ANT2+0)									
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)
NR n2 Max BW Lowest 1RB0,QPSK	3701.5	-57.08	-13	-44.08	-80.26	-63.84	5.82	12.58	H
	5552.25	-56.82	-13	-43.82	-81.57	-62.54	7.28	13.00	H
	7403	-54.47	-13	-41.47	-81.85	-57.63	8.32	11.48	H
	3701.5	-54.75	-13	-41.75	-79.62	-61.51	5.82	12.58	V
	5552.25	-51.50	-13	-38.50	-76.68	-57.22	7.28	13.00	V
	7403	-52.95	-13	-39.95	-80.3	-56.11	8.32	11.48	V
NR n14 Max BW Lowest 1RB0,QPSK	1577	-65.51	-42.15	-23.36	-77.34	-68.76	4.00	9.40	H
	2365.5	-59.67	-13	-46.67	-78.27	-63.24	4.88	10.60	H
	3154	-59.21	-13	-46.21	-79.61	-64.14	5.52	12.60	H
	1577	-65.14	-42.15	-22.99	-77.54	-68.39	4.00	9.40	V
	2365.5	-59.40	-13	-46.40	-78.46	-62.97	4.88	10.60	V
	3154	-57.13	-13	-44.13	-79.46	-62.06	5.52	12.60	V
NR n2 Max BW Middle 1RB0,QPSK	3741.5	-57.40	-13	-44.40	-80.44	-64.15	5.85	12.60	H
	5612.25	-56.14	-13	-43.14	-80.72	-61.94	7.30	13.10	H
	7483	-54.65	-13	-41.65	-81.73	-57.80	8.35	11.50	H
	3741.5	-54.81	-13	-41.81	-79.86	-61.56	5.85	12.60	V
	5612.25	-48.74	-13	-35.74	-74.17	-54.54	7.30	13.10	V
	7483	-53.90	-13	-40.90	-80.96	-57.05	8.35	11.50	V
NR n14 Max BW Middle 1RB0,QPSK	1577	-65.58	-42.15	-23.43	-77.41	-68.83	4.00	9.40	H
	2365.5	-59.90	-13	-46.90	-78.50	-63.47	4.88	10.60	H
	3154	-59.14	-13	-46.14	-79.54	-64.07	5.52	12.60	H
	1577	-64.87	-42.15	-22.72	-77.27	-68.12	4.00	9.40	V
	2365.5	-59.66	-13	-46.66	-78.72	-63.23	4.88	10.60	V
	3154	-57.01	-13	-44.01	-79.34	-61.94	5.52	12.60	V
NR n2 Max BW Highest 1RB0,QPSK	3781.5	-56.99	-13	-43.99	-80.35	-63.73	5.88	12.62	H
	5672.25	-55.86	-13	-42.86	-80.44	-61.67	7.32	13.13	H
	7563	-54.99	-13	-41.99	-81.75	-58.15	8.38	11.54	H
	3781.5	-52.36	-13	-39.36	-77.21	-59.10	5.88	12.62	V
	5672.25	-47.89	-13	-34.89	-72.76	-53.70	7.32	13.13	V
	7563	-54.67	-13	-41.67	-81.42	-57.83	8.38	11.54	V
NR n14 Max BW Highest 1RB0,QPSK	1577	-65.76	-42.15	-23.61	-77.59	-69.01	4.00	9.40	H
	2365.5	-60.15	-13	-47.15	-78.75	-63.72	4.88	10.60	H
	3154	-59.07	-13	-46.07	-79.47	-64.00	5.52	12.60	H
	1577	-65.24	-42.15	-23.09	-77.64	-68.49	4.00	9.40	V
	2365.5	-59.62	-13	-46.62	-78.68	-63.19	4.88	10.60	V
	3154	-56.89	-13	-43.89	-79.22	-61.82	5.52	12.60	V



ULCA_n12A-n30A (ANT2+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)
NR n12 Max BW Lowest 1RB0,QPSK	1397.3	-65.21	-13	-52.21	-76.48	-68.44	3.98	9.36	H
	2096	-60.94	-13	-47.94	-79.00	-64.49	4.85	10.55	H
	2794.6	-59.72	-13	-46.72	-79.10	-64.65	5.50	12.58	H
	1397.3	-64.40	-13	-51.40	-76.70	-67.63	3.98	9.36	V
	2096	-61.20	-13	-48.20	-79.07	-64.75	4.85	10.55	V
	2794.6	-59.08	-13	-46.08	-79.22	-64.01	5.50	12.58	V
NR n30 Max BW Lowest 1RB0,QPSK	4611.00	-58.86	-40	-18.86	-63.81	-65.11	6.45	12.70	H
	6916.50	-58.24	-40	-18.24	-65.74	-61.64	8.40	11.80	H
	9222.00	-58.41	-40	-18.41	-67.93	-60.76	9.65	12.00	H
	4611.00	-58.64	-40	-18.64	-63.72	-64.89	6.45	12.70	V
	6916.50	-57.16	-40	-17.16	-65.76	-60.56	8.40	11.80	V
	9222.00	-55.78	-40	-15.78	-67.53	-58.13	9.65	12.00	V
NR n12 Max BW Middle 1RB0,QPSK	1401.3	-65.42	-13	-52.42	-76.68	-68.67	4.00	9.40	H
	2102	-60.76	-13	-47.76	-78.91	-64.33	4.88	10.60	H
	2802.6	-59.97	-13	-46.97	-79.35	-64.90	5.52	12.60	H
	1401.3	-63.91	-13	-50.91	-76.23	-67.16	4.00	9.40	V
	2102	-61.07	-13	-48.07	-79.01	-64.64	4.88	10.60	V
	2802.6	-58.95	-13	-45.95	-79.09	-63.88	5.52	12.60	V
NR n30 Max BW Middle 1RB0,QPSK	4611.00	-58.77	-40	-18.77	-63.72	-65.02	6.45	12.70	H
	6916.50	-57.85	-40	-17.85	-65.35	-61.25	8.40	11.80	H
	9222.00	-58.59	-40	-18.59	-68.11	-60.94	9.65	12.00	H
	4611.00	-58.78	-40	-18.78	-63.86	-65.03	6.45	12.70	V
	6916.50	-57.23	-40	-17.23	-65.83	-60.63	8.40	11.80	V
	9222.00	-56.34	-40	-16.34	-68.09	-58.69	9.65	12.00	V
NR n12 Max BW Highest 1RB0,QPSK	1402.6	-65.19	-13	-52.19	-76.45	-68.36	4.10	9.42	H
	2104	-61.05	-13	-48.05	-79.20	-64.63	4.90	10.63	H
	2805.3	-59.84	-13	-46.84	-79.22	-64.76	5.55	12.62	H
	1402.6	-63.24	-13	-50.24	-75.56	-66.41	4.10	9.42	V
	2104	-61.15	-13	-48.15	-79.09	-64.73	4.90	10.63	V
	2805.3	-58.75	-13	-45.75	-78.89	-63.67	5.55	12.62	V
NR n30 Max BW Highest 1RB0,QPSK	4611.00	-58.56	-40	-18.56	-63.51	-64.81	6.45	12.70	H
	6916.50	-58.42	-40	-18.42	-65.92	-61.82	8.40	11.80	H
	9222.00	-58.48	-40	-18.48	-68.00	-60.83	9.65	12.00	H
	4611.00	-58.61	-40	-18.61	-63.69	-64.86	6.45	12.70	V
	6916.50	-56.51	-40	-16.51	-65.11	-59.91	8.40	11.80	V
	9222.00	-55.91	-40	-15.91	-67.66	-58.26	9.65	12.00	V



ULCA_n14A-n30A (ANT 0+2)									
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)
NR n14 Max BW Lowest 1RB0,QPSK	1572.1	-65.66	-42.15	-23.51	-77.45	-68.89	3.98	9.36	H
	2358.15	-59.37	-13	-46.37	-77.97	-62.92	4.85	10.55	H
	3144.2	-58.89	-13	-45.89	-79.25	-63.82	5.50	12.58	H
	1572.1	-65.19	-42.15	-23.04	-77.55	-68.42	3.98	9.36	V
	2358.15	-59.50	-13	-46.50	-78.56	-63.05	4.85	10.55	V
	3144.2	-56.84	-13	-43.84	-79.06	-61.77	5.50	12.58	V
NR n30 Max BW Lowest 1RB0,QPSK	4611.00	-59.51	-40	-19.51	-64.46	-65.76	6.45	12.70	H
	6916.50	-59.10	-40	-19.10	-66.60	-62.50	8.40	11.80	H
	9222.00	-59.15	-40	-19.15	-68.67	-61.50	9.65	12.00	H
	4611.00	-58.23	-40	-18.23	-63.31	-64.48	6.45	12.70	V
	6916.50	-57.49	-40	-17.49	-66.09	-60.89	8.40	11.80	V
	9222.00	-56.44	-40	-16.44	-68.19	-58.79	9.65	12.00	V
NR n14 Max BW Middle 1RB0,QPSK	1577	-65.80	-42.15	-23.65	-77.63	-69.05	4.00	9.40	H
	2365.5	-59.98	-13	-46.98	-78.58	-63.55	4.88	10.60	H
	3154	-59.03	-13	-46.03	-79.43	-63.96	5.52	12.60	H
	1577	-65.22	-42.15	-23.07	-77.62	-68.47	4.00	9.40	V
	2365.5	-59.31	-13	-46.31	-78.37	-62.88	4.88	10.60	V
	3154	-56.96	-13	-43.96	-79.29	-61.89	5.52	12.60	V
NR n30 Max BW Middle 1RB0,QPSK	4611.00	-59.22	-40	-19.22	-64.17	-65.47	6.45	12.70	H
	6916.50	-58.76	-40	-18.76	-66.26	-62.16	8.40	11.80	H
	9222.00	-58.43	-40	-18.43	-67.95	-60.78	9.65	12.00	H
	4611.00	-58.79	-40	-18.79	-63.87	-65.04	6.45	12.70	V
	6916.50	-57.57	-40	-17.57	-66.17	-60.97	8.40	11.80	V
	9222.00	-56.37	-40	-16.37	-68.12	-58.72	9.65	12.00	V
NR n14 Max BW Highest 1RB0,QPSK	1582.1	-65.57	-42.15	-23.42	-77.40	-68.74	4.10	9.42	H
	2373.15	-59.36	-13	-46.36	-77.96	-62.94	4.90	10.63	H
	3164.2	-58.62	-13	-45.62	-79.01	-63.54	5.55	12.62	H
	1582.1	-65.03	-42.15	-22.88	-77.43	-68.20	4.10	9.42	V
	2373.15	-58.99	-13	-45.99	-78.13	-62.57	4.90	10.63	V
	3164.2	-57.19	-13	-44.19	-79.51	-62.11	5.55	12.62	V
NR n30 Max BW Highest 1RB0,QPSK	4611.00	-58.97	-40	-18.97	-63.92	-65.22	6.45	12.70	H
	6916.50	-58.64	-40	-18.64	-66.14	-62.04	8.40	11.80	H
	9222.00	-58.64	-40	-18.64	-68.16	-60.99	9.65	12.00	H
	4611.00	-59.00	-40	-19.00	-64.08	-65.25	6.45	12.70	V
	6916.50	-57.66	-40	-17.66	-66.26	-61.06	8.40	11.80	V
	9222.00	-56.59	-40	-16.59	-68.34	-58.94	9.65	12.00	V



ULCA_n12A-n77A (ANT 0+2)									
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)
NR n12 Max BW Lowest 1RB0,QPSK	1397.3	-66.16	-13	-53.16	-58.89	-69.39	3.98	9.36	H
	2096	-61.92	-13	-48.92	-60.28	-65.47	4.85	10.55	H
	2794.6	-60.51	-13	-47.51	-60.19	-65.44	5.50	12.58	H
	1397.3	-65.06	-13	-52.06	-58.82	-68.29	3.98	9.36	V
	2096	-62.04	-13	-49.04	-60.21	-65.59	4.85	10.55	V
	2794.6	-59.89	-13	-46.89	-60.33	-64.82	5.50	12.58	V
NR n77 Max BW Lowest 1RB0,QPSK	6902.42	-58.13	-30	-28.13	-65.59	-61.46	8.25	11.58	H
	10353.63	-56.23	-30	-26.23	-68.25	-57.78	10.45	12.00	H
	13804.84	-54.00	-30	-24.00	-69.85	-55.71	11.74	13.45	H
	6902.42	-57.77	-30	-27.77	-66.51	-61.10	8.25	11.58	V
	10353.63	-54.14	-30	-24.14	-67.96	-55.69	10.45	12.00	V
	13804.84	-55.19	-30	-25.19	-69.85	-56.90	11.74	13.45	V
NR n12 Max BW Middle 1RB0,QPSK	1401.3	-66.24	-13	-53.24	-58.96	-69.49	4.00	9.40	H
	2102	-61.79	-13	-48.79	-60.24	-65.36	4.88	10.60	H
	2802.6	-60.47	-13	-47.47	-60.15	-65.40	5.52	12.60	H
	1401.3	-65.03	-13	-52.03	-58.81	-68.28	4.00	9.40	V
	2102	-61.98	-13	-48.98	-60.22	-65.55	4.88	10.60	V
	2802.6	-59.97	-13	-46.97	-60.41	-64.90	5.52	12.60	V
NR n77 Max BW Middle 1RB0,QPSK	7002.38	-57.59	-30	-27.59	-65.36	-60.89	8.30	11.60	H
	10503.57	-55.70	-30	-25.70	-67.90	-57.22	10.48	12.00	H
	14004.76	-54.37	-30	-24.37	-69.98	-56.07	11.80	13.50	H
	7002.38	-57.12	-30	-27.12	-65.07	-60.42	8.30	11.60	V
	10503.57	-53.85	-30	-23.85	-68.37	-55.37	10.48	12.00	V
	14004.76	-54.81	-30	-24.81	-69.64	-56.51	11.80	13.50	V
NR n12 Max BW Highest 1RB0,QPSK	1402.6	-66.61	-13	-53.61	-59.33	-69.78	4.10	9.42	H
	2104	-62.02	-13	-49.02	-60.47	-65.60	4.90	10.63	H
	2805.3	-60.98	-13	-47.98	-60.66	-65.90	5.55	12.62	H
	1402.6	-65.40	-13	-52.40	-59.18	-68.57	4.10	9.42	V
	2104	-62.33	-13	-49.33	-60.57	-65.91	4.90	10.63	V
	2805.3	-60.02	-13	-47.02	-60.46	-64.94	5.55	12.62	V
NR n77 Max BW Highest 1RB0,QPSK	7102.40	-56.93	-30	-26.93	-65.12	-60.23	8.32	11.62	H
	10653.60	-54.91	-30	-24.91	-67.79	-56.59	10.52	12.20	H
	14204.80	-53.70	-30	-23.70	-69.58	-55.40	11.85	13.55	H
	7102.40	-55.69	-30	-25.69	-65.04	-58.99	8.32	11.62	V
	10653.60	-52.55	-30	-22.55	-67.89	-54.23	10.52	12.20	V
	14204.80	-54.44	-30	-24.44	-69.71	-56.14	11.85	13.55	V



ULCA_n14A-n77A (ANT 2+0)									
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)
NR n14 Max BW Lowest 1RB0,QPSK	1577	-66.12	-42.15	-23.97	-58.92	-69.37	4.00	9.40	H
	2365.5	-60.75	-13	-47.75	-59.65	-64.32	4.88	10.60	H
	3154	-59.59	-13	-46.59	-60.32	-64.52	5.52	12.60	H
	1577	-65.94	-42.15	-23.79	-59.31	-69.19	4.00	9.40	V
	2365.5	-60.40	-13	-47.40	-59.76	-63.97	4.88	10.60	V
	3154	-57.72	-13	-44.72	-60.38	-62.65	5.52	12.60	V
NR n77 Max BW Lowest 1RB0,QPSK	6902.42	-58.28	-30	-28.28	-65.74	-61.61	8.25	11.58	H
	10353.63	-56.26	-30	-26.26	-68.28	-57.81	10.45	12.00	H
	13804.84	-54.23	-30	-24.23	-70.08	-55.94	11.74	13.45	H
	6902.42	-57.31	-30	-27.31	-66.05	-60.64	8.25	11.58	V
	10353.63	-53.91	-30	-23.91	-67.73	-55.46	10.45	12.00	V
	13804.84	-55.47	-30	-25.47	-70.13	-57.18	11.74	13.45	V
NR n14 Max BW Middle 1RB0,QPSK	1577	-66.33	-42.15	-24.18	-59.13	-69.58	4.00	9.40	H
	2365.5	-60.91	-13	-47.91	-59.81	-64.48	4.88	10.60	H
	3154	-59.55	-13	-46.55	-60.28	-64.48	5.52	12.60	H
	1577	-65.91	-42.15	-23.76	-59.28	-69.16	4.00	9.40	V
	2365.5	-60.42	-13	-47.42	-59.78	-63.99	4.88	10.60	V
	3154	-57.75	-13	-44.75	-60.41	-62.68	5.52	12.60	V
NR n77 Max BW Middle 1RB0,QPSK	7002.38	-58.05	-30	-28.05	-65.82	-61.35	8.30	11.60	H
	10503.57	-56.44	-30	-26.44	-68.64	-57.96	10.48	12.00	H
	14004.76	-54.62	-30	-24.62	-70.23	-56.32	11.80	13.50	H
	7002.38	-57.46	-30	-27.46	-65.41	-60.76	8.30	11.60	V
	10503.57	-54.15	-30	-24.15	-68.67	-55.67	10.48	12.00	V
	14004.76	-55.26	-30	-25.26	-70.09	-56.96	11.80	13.50	V
NR n14 Max BW Highest 1RB0,QPSK	1577	-66.42	-42.15	-24.27	-59.22	-69.67	4.00	9.40	H
	2365.5	-60.86	-13	-47.86	-59.76	-64.43	4.88	10.60	H
	3154	-59.59	-13	-46.59	-60.32	-64.52	5.52	12.60	H
	1577	-65.89	-42.15	-23.74	-59.26	-69.14	4.00	9.40	V
	2365.5	-60.27	-13	-47.27	-59.63	-63.84	4.88	10.60	V
	3154	-57.73	-13	-44.73	-60.39	-62.66	5.52	12.60	V
NR n77 Max BW Highest 1RB0,QPSK	7102.40	-57.49	-30	-27.49	-65.68	-60.79	8.32	11.62	H
	10653.60	-55.23	-30	-25.23	-68.11	-56.91	10.52	12.20	H
	14204.80	-54.20	-30	-24.20	-70.08	-55.90	11.85	13.55	H
	7102.40	-55.91	-30	-25.91	-65.26	-59.21	8.32	11.62	V
	10653.60	-52.93	-30	-22.93	-68.27	-54.61	10.52	12.20	V
	14204.80	-54.83	-30	-24.83	-70.10	-56.53	11.85	13.55	V



ULCA_n41A-n71A (ANT2+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)
NR n41 Max BW Lowest 1RB0,QPSK	5002.40	-57.97	-25	-32.97	-81.62	-63.53	7.12	12.68	H
	7503.60	-54.83	-25	-29.83	-81.77	-58.16	8.26	11.59	H
	10004.80	-52.74	-25	-27.74	-83.56	-54.27	10.45	11.98	H
	5002.40	-56.68	-25	-31.68	-82.01	-62.24	7.12	12.68	V
	7503.60	-54.39	-25	-29.39	-81.32	-57.72	8.26	11.59	V
	10004.80	-52.18	-25	-27.18	-83.64	-53.71	10.45	11.98	V
NR n71 Max BW Lowest 1RB0,QPSK	1327	-65.72	-13	-52.72	-76.74	-68.95	3.98	9.36	H
	1990.5	-61.80	-13	-48.80	-79.18	-65.35	4.85	10.55	H
	2654	-60.62	-13	-47.62	-80.32	-65.55	5.50	12.58	H
	1327	-63.96	-13	-50.96	-75.91	-67.19	3.98	9.36	V
	1990.5	-60.62	-13	-47.62	-77.95	-64.17	4.85	10.55	V
	2654	-59.36	-13	-46.36	-79.44	-64.29	5.50	12.58	V
NR n41 Max BW Middle 1RB0,QPSK	5093.00	-57.38	-25	-32.38	-81.62	-62.94	7.14	12.70	H
	7639.50	-55.31	-25	-30.31	-81.81	-58.61	8.30	11.60	H
	10186.00	-51.74	-25	-26.74	-82.76	-53.26	10.48	12.00	H
	5093.00	-56.19	-25	-31.19	-81.41	-61.75	7.14	12.70	V
	7639.50	-54.19	-25	-29.19	-81.72	-57.49	8.30	11.60	V
	10186.00	-51.20	-25	-26.20	-83.44	-52.72	10.48	12.00	V
NR n71 Max BW Middle 1RB0,QPSK	1342	-66.26	-13	-53.26	-77.27	-69.51	4.00	9.40	H
	2013	-61.60	-13	-48.60	-79.31	-65.17	4.88	10.60	H
	2684	-59.35	-13	-46.35	-78.98	-64.28	5.52	12.60	H
	1342	-63.81	-13	-50.81	-75.77	-67.06	4.00	9.40	V
	2013	-59.25	-13	-46.25	-76.85	-62.82	4.88	10.60	V
	2684	-58.34	-13	-45.34	-78.43	-63.27	5.52	12.60	V
NR n41 Max BW Highest 1RB0,QPSK	5182.40	-57.02	-25	-32.02	-81.78	-62.58	7.16	12.72	H
	7773.60	-55.55	-25	-30.55	-81.74	-58.85	8.33	11.63	H
	10364.80	-52.11	-25	-27.11	-83.35	-53.71	10.50	12.10	H
	5182.40	-56.53	-25	-31.53	-81.68	-62.09	7.16	12.72	V
	7773.60	-51.67	-25	-26.67	-81.29	-54.97	8.33	11.63	V
	10364.80	-50.16	-25	-25.16	-83.26	-51.76	10.50	12.10	V
NR n71 Max BW Highest 1RB0,QPSK	1357	-66.30	-13	-53.30	-77.40	-69.47	4.10	9.42	H
	2035.5	-61.68	-13	-48.68	-79.48	-65.26	4.90	10.63	H
	2714	-60.53	-13	-47.53	-80.09	-65.45	5.55	12.62	H
	1357	-63.65	-13	-50.65	-75.73	-66.82	4.10	9.42	V
	2035.5	-60.11	-13	-47.11	-77.78	-63.69	4.90	10.63	V
	2714	-58.40	-13	-45.40	-78.51	-63.32	5.55	12.62	V



ULCA_n41A-n66A (ANT0+2)									
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)
NR n41 Max BW Middle 1RB0,QPSK	5002.40	-58.02	-25	-33.02	-81.67	-63.58	7.12	12.68	H
	7503.60	-54.90	-25	-29.90	-81.84	-58.23	8.26	11.59	H
	10004.80	-52.41	-25	-27.41	-83.23	-53.94	10.45	11.98	H
	5002.40	-53.14	-25	-28.14	-78.47	-58.70	7.12	12.68	V
	7503.60	-54.91	-25	-29.91	-81.84	-58.24	8.26	11.59	V
	10004.80	-50.93	-25	-25.93	-82.39	-52.46	10.45	11.98	V
NR n66 Max BW Middle 1RB0,QPSK	3423	-59.47	-13	-46.47	-81.13	-66.35	5.60	12.48	H
	5134.5	-56.74	-13	-43.74	-81.20	-62.42	7.10	12.78	H
	6846	-54.85	-13	-41.85	-80.91	-58.24	8.38	11.77	H
	3423	-56.69	-13	-43.69	-79.42	-63.57	5.60	12.48	V
	5134.5	-56.48	-13	-43.48	-81.68	-62.16	7.10	12.78	V
	6846	-51.85	-13	-38.85	-79.74	-55.24	8.38	11.77	V
NR n41 Max BW Middle 1RB0,QPSK	5093.00	-57.45	-25	-32.45	-81.69	-63.01	7.14	12.70	H
	7639.50	-55.46	-25	-30.46	-81.96	-58.76	8.30	11.60	H
	10186.00	-52.21	-25	-27.21	-83.23	-53.73	10.48	12.00	H
	5093.00	-55.31	-25	-30.31	-80.53	-60.87	7.14	12.70	V
	7639.50	-54.23	-25	-29.23	-81.76	-57.53	8.30	11.60	V
	10186.00	-50.77	-25	-25.77	-83.01	-52.29	10.48	12.00	V
NR n66 Max BW Middle 1RB0,QPSK	3448	-59.19	-13	-46.19	-80.64	-66.04	5.65	12.50	H
	5172	-56.78	-13	-43.78	-81.42	-62.45	7.13	12.80	H
	6896	-55.23	-13	-42.23	-81.43	-58.63	8.40	11.80	H
	3448	-58.39	-13	-45.39	-80.78	-65.24	5.65	12.50	V
	5172	-56.50	-13	-43.50	-81.64	-62.17	7.13	12.80	V
	6896	-53.34	-13	-40.34	-80.82	-56.74	8.40	11.80	V
NR n41 Max BW Middle 1RB0,QPSK	5182.40	-56.77	-25	-31.77	-81.53	-62.33	7.16	12.72	H
	7773.60	-55.50	-25	-30.50	-81.69	-58.80	8.33	11.63	H
	10364.80	-51.85	-25	-26.85	-83.09	-53.45	10.50	12.10	H
	5182.40	-55.64	-25	-30.64	-80.79	-61.20	7.16	12.72	V
	7773.60	-51.59	-25	-26.59	-81.21	-54.89	8.33	11.63	V
	10364.80	-50.21	-25	-25.21	-83.31	-51.81	10.50	12.10	V
NR n66 Max BW Middle 1RB0,QPSK	3473	-58.46	-13	-45.46	-80.71	-65.30	5.68	12.52	H
	5209.5	-56.63	-13	-43.63	-81.54	-62.30	7.15	12.82	H
	6946	-55.45	-13	-42.45	-81.78	-58.88	8.42	11.85	H
	3473	-57.87	-13	-44.87	-79.92	-64.71	5.68	12.52	V
	5209.5	-56.45	-13	-43.45	-81.53	-62.12	7.15	12.82	V
	6946	-54.42	-13	-41.42	-81.48	-57.85	8.42	11.85	V



ULCA_n41A-n77A (ANT2+0)									
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)
NR n41 Max BW Lowest 1RB0,QPSK	5002.40	-62.12	-25	-37.12	-65.87	-67.68	7.12	12.68	H
	7503.60	-58.20	-25	-33.20	-66.74	-61.53	8.26	11.59	H
	10004.80	-56.62	-25	-31.62	-68.24	-58.15	10.45	11.98	H
	5002.40	-60.38	-25	-35.38	-65.81	-65.94	7.12	12.68	V
	7503.60	-57.85	-25	-32.85	-66.38	-61.18	8.26	11.59	V
	10004.80	-56.55	-25	-31.55	-68.81	-58.08	10.45	11.98	V
NR n77 Max BW Lowest 1RB0,QPSK	6902.42	-52.67	-30	-22.67	-60.13	-56.00	8.25	11.58	H
	10353.63	-56.11	-30	-26.11	-68.13	-57.66	10.45	12.00	H
	13804.84	-53.92	-30	-23.92	-69.77	-55.63	11.74	13.45	H
	6902.42	-46.08	-30	-16.08	-54.82	-49.41	8.25	11.58	V
	10353.63	-54.26	-30	-24.26	-68.08	-55.81	10.45	12.00	V
	13804.84	-55.17	-30	-25.17	-69.83	-56.88	11.74	13.45	V
NR n41 Max BW Middle 1RB0,QPSK	5093.00	-61.01	-25	-36.01	-65.46	-66.57	7.14	12.70	H
	7639.50	-58.20	-25	-33.20	-66.33	-61.50	8.30	11.60	H
	10186.00	-56.50	-25	-31.50	-68.31	-58.02	10.48	12.00	H
	5093.00	-60.29	-25	-35.29	-65.72	-65.85	7.14	12.70	V
	7639.50	-57.12	-25	-32.12	-66.28	-60.42	8.30	11.60	V
	10186.00	-55.19	-25	-30.19	-68.22	-56.71	10.48	12.00	V
NR n77 Max BW Middle 1RB0,QPSK	7002.38	-52.20	-30	-22.20	-59.97	-55.50	8.30	11.60	H
	10503.57	-56.32	-30	-26.32	-68.52	-57.84	10.48	12.00	H
	14004.76	-54.59	-30	-24.59	-70.20	-56.29	11.80	13.50	H
	7002.38	-45.08	-30	-15.08	-53.03	-48.38	8.30	11.60	V
	10503.57	-53.85	-30	-23.85	-68.37	-55.37	10.48	12.00	V
	14004.76	-54.85	-30	-24.85	-69.68	-56.55	11.80	13.50	V
NR n41 Max BW Highest 1RB0,QPSK	5182.40	-60.66	-25	-35.66	-65.70	-66.22	7.16	12.72	H
	7773.60	-57.96	-25	-32.96	-65.80	-61.26	8.33	11.63	H
	10364.80	-56.22	-25	-31.22	-68.26	-57.82	10.50	12.10	H
	5182.40	-60.31	-25	-35.31	-65.74	-65.87	7.16	12.72	V
	7773.60	-54.07	-25	-29.07	-65.34	-57.37	8.33	11.63	V
	10364.80	-54.49	-25	-29.49	-68.39	-56.09	10.50	12.10	V
NR n77 Max BW Highest 1RB0,QPSK	7102.40	-52.88	-30	-22.88	-61.07	-56.18	8.32	11.62	H
	10653.60	-55.18	-30	-25.18	-68.06	-56.86	10.52	12.20	H
	14204.80	-53.78	-30	-23.78	-69.66	-55.48	11.85	13.55	H
	7102.40	-49.23	-30	-19.23	-58.58	-52.53	8.32	11.62	V
	10653.60	-52.35	-30	-22.35	-67.69	-54.03	10.52	12.20	V
	14204.80	-54.72	-30	-24.72	-69.99	-56.42	11.85	13.55	V



ULCA_n2A-n5A (ANT2+0)									
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)
NR n2 Max BW Lowest 1RB0,QPSK	3701.5	-56.98	-13	-43.98	-80.16	-63.74	5.82	12.58	H
	5552.25	-56.91	-13	-43.91	-81.66	-62.63	7.28	13.00	H
	7403	-53.85	-13	-40.85	-81.23	-57.01	8.32	11.48	H
	3701.5	-54.48	-13	-41.48	-79.35	-61.24	5.82	12.58	V
	5552.25	-50.46	-13	-37.46	-75.64	-56.18	7.28	13.00	V
	7403	-53.46	-13	-40.46	-80.81	-56.62	8.32	11.48	V
NR n5 Max BW Lowest 1RB0,QPSK	1650	-64.71	-13	-51.71	-76.80	-67.94	3.98	9.36	H
	2475	-59.32	-13	-46.32	-78.57	-62.87	4.85	10.55	H
	3300	-58.75	-13	-45.75	-79.80	-63.68	5.50	12.58	H
	1650	-63.82	-13	-50.82	-76.55	-67.05	3.98	9.36	V
	2475	-58.77	-13	-45.77	-78.34	-62.32	4.85	10.55	V
	3300	-57.54	-13	-44.54	-79.48	-62.47	5.50	12.58	V
NR n2 Max BW Middle 1RB0,QPSK	3741.5	-56.74	-13	-43.74	-79.78	-63.49	5.85	12.60	H
	5612.25	-54.97	-13	-41.97	-79.55	-60.77	7.30	13.10	H
	7483	-54.06	-13	-41.06	-81.14	-57.21	8.35	11.50	H
	3741.5	-53.76	-13	-40.76	-78.81	-60.51	5.85	12.60	V
	5612.25	-47.73	-13	-34.73	-73.16	-53.53	7.30	13.10	V
	7483	-53.28	-13	-40.28	-80.34	-56.43	8.35	11.50	V
NR n5 Max BW Middle 1RB0,QPSK	1654.5	-64.63	-13	-51.63	-76.76	-67.88	4.00	9.40	H
	2481.75	-59.29	-13	-46.29	-78.54	-62.86	4.88	10.60	H
	3309	-58.48	-13	-45.48	-79.63	-63.41	5.52	12.60	H
	1654.5	-63.90	-13	-50.90	-76.67	-67.15	4.00	9.40	V
	2481.75	-58.95	-13	-45.95	-78.52	-62.52	4.88	10.60	V
	3309	-57.84	-13	-44.84	-79.69	-62.77	5.52	12.60	V
NR n2 Max BW Highest 1RB0,QPSK	3781.5	-56.89	-13	-43.89	-80.25	-63.63	5.88	12.62	H
	5672.25	-55.05	-13	-42.05	-79.63	-60.86	7.32	13.13	H
	7563	-54.88	-13	-41.88	-81.64	-58.04	8.38	11.54	H
	3781.5	-51.22	-13	-38.22	-76.07	-57.96	5.88	12.62	V
	5672.25	-48.05	-13	-35.05	-72.92	-53.86	7.32	13.13	V
	7563	-53.82	-13	-40.82	-80.57	-56.98	8.38	11.54	V
NR n5 Max BW Highest 1RB0,QPSK	1660	-64.70	-13	-51.70	-76.90	-67.87	4.10	9.42	H
	2490	-59.22	-13	-46.22	-78.60	-62.80	4.90	10.63	H
	3320	-58.60	-13	-45.60	-79.75	-63.52	5.55	12.62	H
	1660	-63.64	-13	-50.64	-76.51	-66.81	4.10	9.42	V
	2490	-58.93	-13	-45.93	-78.57	-62.51	4.90	10.63	V
	3320	-58.23	-13	-45.23	-80.08	-63.15	5.55	12.62	V



ULCA_n5A-n66A (ANT0+2)									
Channel	Frequency (MHz)	ERP/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)
NR n5 Max BW Lowest 1RB0,QPSK	1650	-64.85	-13	-51.85	-76.94	-68.08	3.98	9.36	H
	2475	-59.50	-13	-46.50	-78.75	-63.05	4.85	10.55	H
	3300	-58.62	-13	-45.62	-79.67	-63.55	5.50	12.58	H
	1650	-64.34	-13	-51.34	-77.07	-67.57	3.98	9.36	V
	2475	-59.44	-13	-46.44	-79.01	-62.99	4.85	10.55	V
	3300	-57.88	-13	-44.88	-79.82	-62.81	5.50	12.58	V
NR n66 Max BW Lowest 1RB0,QPSK	3421.4	-59.23	-13	-46.23	-80.10	-66.11	5.60	12.48	H
	5132.1	-57.33	-13	-44.33	-81.79	-63.01	7.10	12.78	H
	6842.8	-55.39	-13	-42.39	-81.45	-58.78	8.38	11.77	H
	3421.4	-58.25	-13	-45.25	-80.32	-65.13	5.60	12.48	V
	5132.1	-56.62	-13	-43.62	-81.82	-62.30	7.10	12.78	V
	6842.8	-53.75	-13	-40.75	-81.64	-57.14	8.38	11.77	V
NR n5 Max BW Middle 1RB0,QPSK	1654.5	-65.13	-13	-52.13	-77.26	-68.38	4.00	9.40	H
	2481.75	-59.44	-13	-46.44	-78.69	-63.01	4.88	10.60	H
	3309	-58.67	-13	-45.67	-79.82	-63.60	5.52	12.60	H
	1654.5	-64.22	-13	-51.22	-76.99	-67.47	4.00	9.40	V
	2481.75	-59.27	-13	-46.27	-78.84	-62.84	4.88	10.60	V
	3309	-57.66	-13	-44.66	-79.51	-62.59	5.52	12.60	V
NR n66 Max BW Middle 1RB0,QPSK	3452.5	-59.22	-13	-46.22	-80.67	-66.07	5.65	12.50	H
	5178.74	-57.23	-13	-44.23	-81.99	-62.90	7.13	12.80	H
	6905	-55.68	-13	-42.68	-81.89	-59.08	8.40	11.80	H
	3452.5	-59.08	-13	-46.08	-81.47	-65.93	5.65	12.50	V
	5178.74	-56.65	-13	-43.65	-81.8	-62.32	7.13	12.80	V
	6905	-54.06	-13	-41.06	-81.55	-57.46	8.40	11.80	V
NR n5 Max BW Highest 1RB0,QPSK	1660	-64.83	-13	-51.83	-77.03	-68.00	4.10	9.42	H
	2490	-59.72	-13	-46.72	-79.10	-63.30	4.90	10.63	H
	3320	-59.03	-13	-46.03	-80.18	-63.95	5.55	12.62	H
	1660	-64.52	-13	-51.52	-77.39	-67.69	4.10	9.42	V
	2490	-59.49	-13	-46.49	-79.13	-63.07	4.90	10.63	V
	3320	-58.58	-13	-45.58	-80.43	-63.50	5.55	12.62	V
NR n66 Max BW Highest 1RB0,QPSK	3481.4	-58.83	-13	-45.83	-80.87	-65.67	5.68	12.52	H
	5222.1	-57.24	-13	-44.24	-82.12	-62.91	7.15	12.82	H
	6962.8	-55.31	-13	-42.31	-81.69	-58.74	8.42	11.85	H
	3481.4	-57.60	-13	-44.60	-80.31	-64.44	5.68	12.52	V
	5222.1	-57.29	-13	-44.29	-82.34	-62.96	7.15	12.82	V
	6962.8	-55.05	-13	-42.05	-81.98	-58.48	8.42	11.85	V