



# FCC RADIO TEST REPORT

**FCC ID** : 2AJN7-TP00128AUC  
**Equipment** : Notebook Computer  
**Brand Name** : Lenovo  
**Model Name** : TP00128A  
**Applicant** : LC Future Center Limited Taiwan Branch  
7F., No. 780, Bei'an Rd., Zhongshan Dist.,  
Taipei City 104, Taiwan  
**Manufacturer** : LCFC (HeFei) Electronics Technology Co., Ltd.  
No. 3188-1, Yungu Road (Hefei Export  
Processing Zone), Hefei Economics &  
Technology Development Area, Anhui, CHINA  
**Standard** : FCC 47 CFR Part 2, 22(H), 24(E), 27

Equipment: Foxconn T99W175 tested inside of Lenovo Notebook Computer.

The product was received on Jun. 03, 2021 and testing was started from Jun. 09, 2021 and completed on Jun. 26, 2021. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and has been in compliance with the applicable technical standards.

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

*Louis Wu*

Approved by: Louis Wu

**Sporton International Inc. Wensan Laboratory**

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan



## Table of Contents

History of this test report.....	3
Summary of Test Result.....	4
<b>1 General Description .....</b>	<b>6</b>
1.1 Product Feature of Equipment Under Test.....	6
1.2 Product Specification of Equipment Under Test.....	7
1.3 Modification of EUT .....	7
1.4 Testing Location .....	8
1.5 Applicable Standards.....	8
<b>2 Test Configuration of Equipment Under Test .....</b>	<b>9</b>
2.1 Test Mode.....	9
2.2 Connection Diagram of Test System.....	10
2.3 Support Unit used in test configuration and system .....	10
2.4 Frequency List of Low/Middle/High Channels .....	11
<b>3 Radiated Test Items .....</b>	<b>14</b>
3.1 Measuring Instruments .....	14
3.2 Radiated Spurious Emission Measurement .....	16
<b>4 List of Measuring Equipment.....</b>	<b>17</b>
<b>5 Uncertainty of Evaluation .....</b>	<b>18</b>
<b>Appendix A. Test Results of Radiated Test</b>	
<b>Appendix B. Test Setup Photographs</b>	



## History of this test report

Report No.	Version	Description	Issued Date
FG0N0620-02C	01	Initial issue of report	Jun. 30, 2021
FG0N0620-02C	02	1. Add remark for description in summary of test result 2. Revise product feature of equipment under test	Sep. 29, 2021
FG0N0620-02C	03	Revise Antenna Information	Oct. 04, 2021

## Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
-	§2.1046	Conducted Output Power	Not Required	-
	§22.913 (a)(2)	Effective Radiated Power (n5)	Not Required	
	§27.50 (c)(10)	Effective Radiated Power (n12) (n71)		
	§24.232 (c) §27.50 (h)(2)	Equivalent Isotropic Radiated Power (n2) (n7) (n41)		
	§27.50 (d)(4)	Equivalent Isotropic Radiated Power (n66)		
-	§24.232 (d) §27.50 (d)(5)	Peak-to-Average Ratio	Not Required	-
-	§2.1049	Occupied Bandwidth	Not Required	-
-	§2.1051 §22.917 (a) §24.238 (a) §27.53 (g) §27.53 (h)	Conducted Band Edge Measurement (n2) (n5) (n12) (n66) (n71)	Not Required	-
	§2.1051 §27.53 (m)(4)	Conducted Band Edge Measurement (n7) (n41)		
-	§2.1051 §22.917 (a) §24.238 (a) §27.53 (g) §27.53 (h)	Conducted Spurious Emission (n2) (n5) (n12) (n66) (n71)	Not Required	-
	§2.1051 §27.53 (m)(4)	Conducted Spurious Emission (n7) (n41)		
-	§2.1055 §22.355 §24.235 §27.54	Frequency Stability Temperature & Voltage	Not Required	-



Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1053 §22.917 (a) §24.238 (a) §27.53 (g) §27.53 (h)	Radiated Spurious Emission (n2) (n5) (n12) (n66) (n71)	Pass	Under limit 13.61 dB at 1352.000 MHz
	§2.1051 §27.53 (m)(4)	Radiated Spurious Emission (n7) (n41)		

**Note:**

1. Not required means after assessing, test items are not necessary to carry out.
2. This is a variant report by adding antenna. All the test cases were performed on original report which can be referred to Sporton Report Number FG0N0620C. Based on the original report, the test cases were verified.
3. The maximum ERP/EIRP power does not exceed the original grant.

<b>Declaration of Conformity:</b>
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
<b>Comments and Explanations:</b>
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.

**Reviewed by: Sheng Kuo**

**Report Producer: Ruby Zou**

# 1 General Description

## 1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Notebook Computer
Brand Name	Lenovo
Model Name	TP00128A
FCC ID	2AJN7-TP00128AUC
EUT supports Radios application	WCDMA/HSPA/LTE/5G NR/GNSS/NFC/UWB WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT80/VHT160 WLAN 11ax HE20/HE40/HE80/HE160 Bluetooth BR/EDR/LE
EUT Stage	Production Unit

**Remark:**

1. The above EUT's information was declared by manufacturer.
2. Equipment: Foxconn T99W175 tested inside of Lenovo Notebook Computer.

WWAN Antenna Information				
Main Antenna	Manufacturer	JYT/NVC	Peak gain (dBi)	5G NR n2: -1.83 5G NR n5: -2.02 5G NR n12: -3.81 5G NR n66: -1.21 5G NR n71: -4.43
	Part number	JYAAE0154HR	Type	PIFA
MIMO 2 Antenna	Manufacturer	JYT/NVC	Peak gain (dBi)	5G NR n2: -1.31 5G NR n7: -1.80 5G NR n41: -1.69 5G NR n66: -3.21
	Part number	JYAAE0155HR	Type	PIFA

**Remark:**

1. The above EUT's information was declared by manufacturer. Please refer to Comments and Explanations in report summary.
2. All test items were performed with Main Antenna for 5G NR n5, n12, n66, n71 and MIMO 2 Antenna for 5G NR n2, n7, n41.

## 1.2 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
<b>Tx Frequency</b>	5G NR n2: 1852.5 MHz ~ 1907.5 MHz 5G NR n5: 826.5 MHz ~ 846.5 MHz 5G NR n7: 2502.5 MHz ~ 2567.5 MHz 5G NR n12: 701.5 MHz ~ 713.5 MHz 5G NR n41: 2506.02 MHz ~ 2679.99 MHz 5G NR n66: 1712.5 MHz ~ 1777.5 MHz 5G NR n71: 668.0 MHz ~ 693.0 MHz
<b>Rx Frequency</b>	5G NR n2: 1932.5 MHz ~ 1987.5 MHz 5G NR n5: 871.5 MHz ~ 891.5 MHz 5G NR n7: 2502.5 MHz ~ 2567.5 MHz 5G NR n12: 731.5 MHz ~ 743.5 MHz 5G NR n41: 2506.02 MHz ~ 2679.99 MHz 5G NR n66: 2112.5 MHz ~ 2197.5 MHz 5G NR n71: 668.0 MHz ~ 693.0 MHz
<b>Bandwidth</b>	5G NR n2: 5MHz / 10MHz / 15MHz / 20MHz 5G NR n5: 5MHz / 10MHz / 15MHz / 20MHz 5G NR n7: 5MHz / 10MHz / 15MHz / 20MHz 5G NR n12: 5MHz / 10MHz / 15MHz 5G NR n41: 20MHz / 40MHz / 50MHz / 60MHz / 80MHz / 90MHz / 100MHz 5G NR n66: 5MHz / 10MHz / 15MHz / 20MHz 5G NR n71: 5MHz / 10MHz / 15MHz / 20MHz
<b>Type of Modulation</b>	PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM

## 1.3 Modification of EUT

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



### 1.4 Testing Location

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan
Test Site No.	<b>Sporton Site No.</b>
	03CH12-HY
Test Engineer	Jack Cheng, Lance Chiang and Chuan Chu
Temperature	22.3~26.4°C
Relative Humidity	58~66%

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

FCC Designation No.: TW3786

### 1.5 Applicable Standards

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

- ♦ ANSI C63.26-2015
- ♦ ANSI / TIA-603-E
- ♦ FCC 47 CFR Part 2, 22(H), 24(E), 27
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.

**Remark:**

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. The TAF code is not including all the FCC KDB listed without accreditation.





## 2 Test Configuration of Equipment Under Test

### 2.1 Test Mode

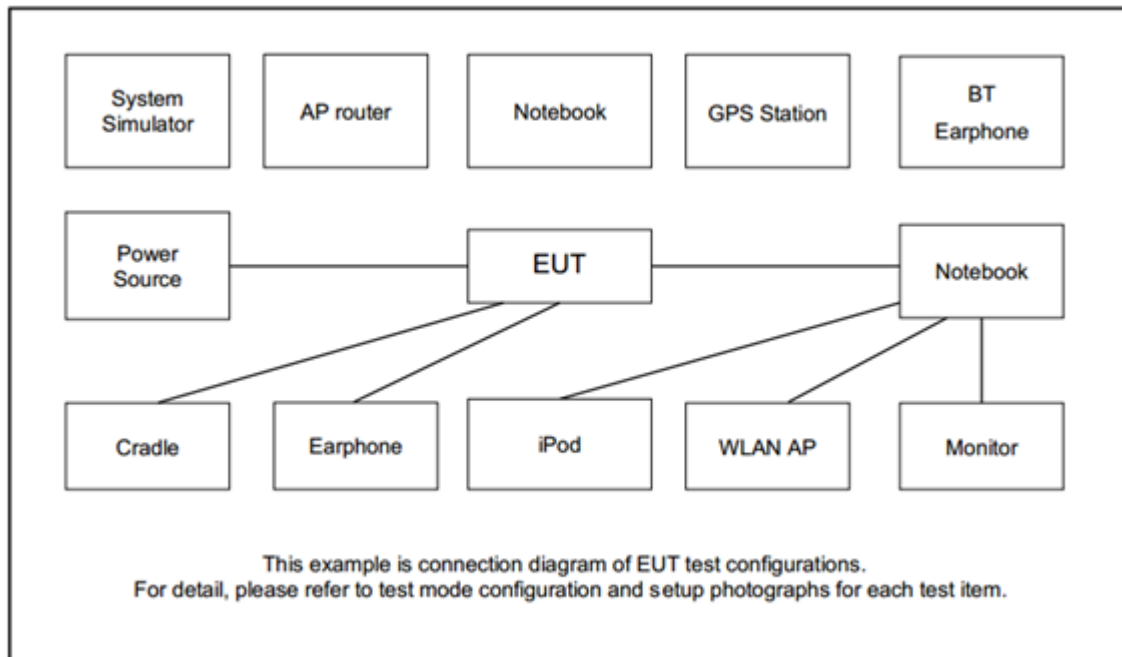
Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

For radiated measurement, pre-scanned in Tablet Type (three orthogonal panels, X, Y, Z) and Notebook Type. The worst cases (Notebook Type with Accessory) were recorded in this report.

Test Items	NR	Bandwidth (MHz)						Modulation					RB #			Test Channel		
		5	10	15	20	40	50	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	1	Half	Full	L	M	H
Radiated Spurious Emission	n2				v	-	-	v					v			v	v	v
	n5	v				-	-	v					v			v	v	v
	n7	v						v					v			v	v	v
	n12		v			-	-	v					v			v	v	v
	n66				v	-	-	v					v			v	v	v
	n71		v					v					v			v	v	v
Remark	<ol style="list-style-type: none"> <li>The mark "v" means that this configuration is chosen for testing</li> <li>The mark "-" means that this bandwidth is not supported.</li> <li>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.</li> <li>Test combination is EN-DC 66A-n5A, EN-DC 2A-n5A., EN-DC 7A-n5A, EN-DC 48A-n5A, EN-DC 5A-n2A, EN-DC 12A-n2A, EN-DC 13A-n2A, EN-DC 48A-n2A, EN-DC 2A-n12A, EN-DC 66A-n12A, EN-DC 12A-n66A, EN-DC 5A-n66A, EN-DC 13A-n66A, EN-DC 48A-n66A, EN-DC 71A-n66A, EN-DC 12A-n7A, EN-DC 7A-n71A, EN-DC 2A-n71A, EN-DC 66A-n71A.</li> <li>For radiated measurement, pre-scanned in two modes, DFT-s OFDM and CP OFDM. The worst cases (DFT-s OFDM) were recorded in this report.</li> <li>All the 5G NR Sub-carrier only support 15kHz.</li> </ol>																	

Test Items	NR	Bandwidth (MHz)								Modulation					RB #			Test Channel		
		10	20	40	50	60	80	90	100	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	1	Half	Full	L	M	H
Radiated Spurious Emission	n41		v							v					v			v	v	v
Remark	<ol style="list-style-type: none"> <li>The mark "v" means that this configuration is chosen for testing</li> <li>The mark "-" means that this bandwidth is not supported.</li> <li>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.</li> <li>Test combination is EN-DC 2A-n41A, EN-DC 25A-n41A, EN-DC 26A-n41A and EN-DC 66A-n41A.</li> <li>For radiated measurement, pre-scanned in two modes, DFT-s OFDM and CP OFDM. The worst cases (DFT-s OFDM) were recorded in this report.</li> <li>All the 5G NR Sub-carrier only support 30kHz.</li> </ol>																			

## 2.2 Connection Diagram of Test System



## 2.3 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model No.	FCC ID	Data Cable	Power Cord
1.	iPod Earphone	Apple	N/A	Verification	Unshielded, 1.0m	N/A
2.	System Simulator	Anritsu	MT8000A	N/A	N/A	Unshielded, 1.8 m
3.	System Simulator	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m

## 2.4 Frequency List of Low/Middle/High Channels

5G NR n2 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
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

5G NR n5 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

5G NR Band n7 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
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



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

5G NR Band 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
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
20	Channel	501204	518598	535998
	Frequency	2506.02	2592.99	2679.99

5G NR n66 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
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



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

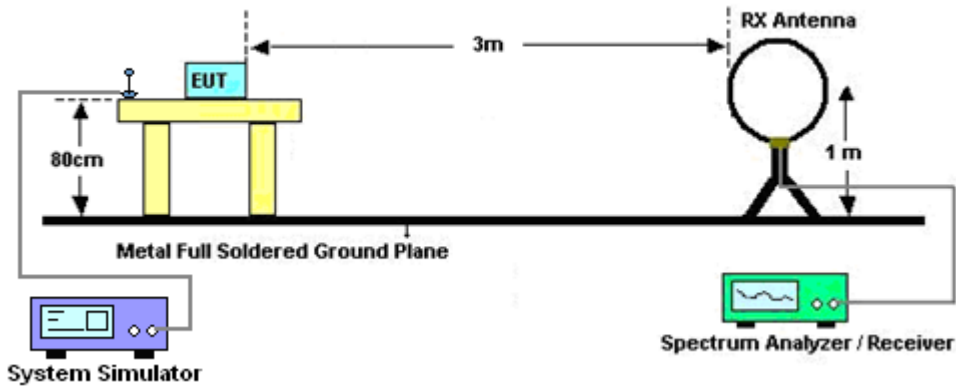
### 3 Radiated Test Items

#### 3.1 Measuring Instruments

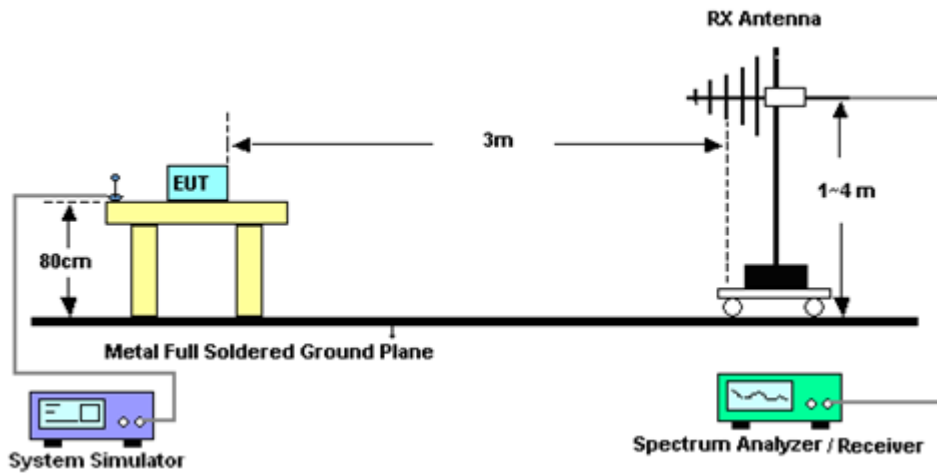
See list of measuring instruments of this test report.

##### 3.1.1 Test Setup

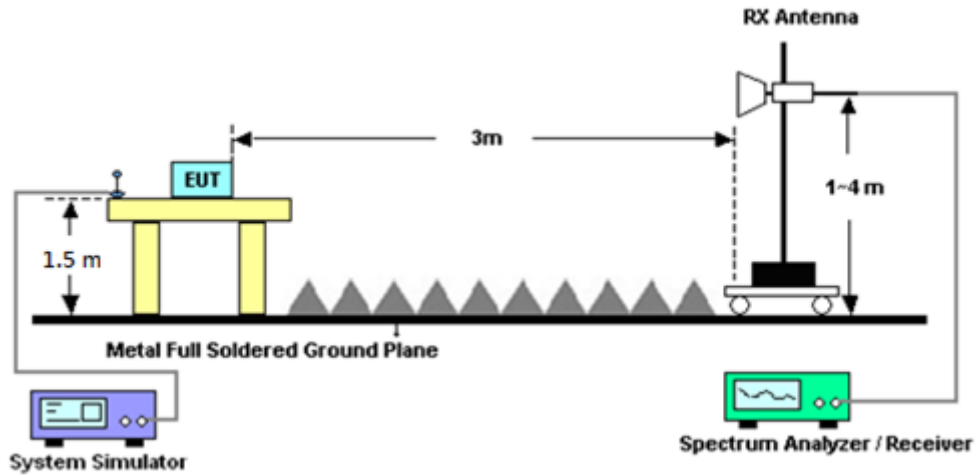
For radiated test below 30MHz



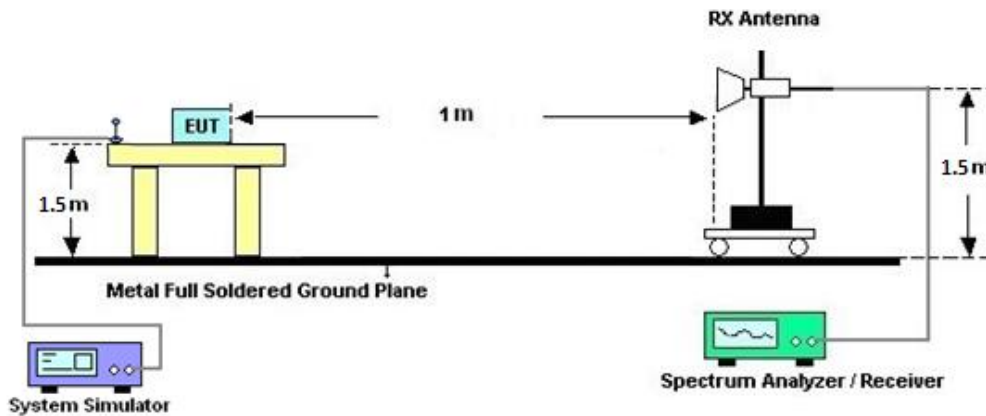
For radiated test from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



### 3.1.2 Test Result of Radiated Test

Please refer to Appendix A.

**Note:**

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

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.



## 3.2 Radiated Spurious Emission Measurement

### 3.2.1 Description of Radiated Spurious Emission Measurement

The radiated spurious emission was measured by substitution method according to ANSI / TIA-603-E. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least  $43 + 10 \log (P)$  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.

### 3.2.2 Test Procedures

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

1. The EUT was placed on a turntable 1.5 meter for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
6. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
7. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
8. Taking the record of output power at antenna port.
9. Repeat step 7 to step 8 for another polarization.
10. 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)

For 5G NR n41

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

EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain

ERP (dBm) = EIRP - 2.15





## 4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Jul. 14, 2020	Jun. 09, 2021~ Jun. 26, 2021	Jul. 13, 2021	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	37059 & 01	30MHz~1GHz	Oct. 11, 2020	Jun. 09, 2021~ Jun. 26, 2021	Oct. 10, 2021	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & N-6-06	35414 & AT-N0602	30MHz~1GHz	Oct. 11, 2020	Jun. 09, 2021~ Jun. 26, 2021	Oct. 10, 2021	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-1328	1GHz~18GHz	Nov. 23, 2020	Jun. 09, 2021~ Jun. 26, 2021	Nov. 22, 2021	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-1212	1GHz~18GHz	May 18, 2021	Jun. 09, 2021~ Jun. 26, 2021	May 17, 2022	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	00993	18GHz~40GHz	Nov. 19, 2020	Jun. 09, 2021~ Jun. 26, 2021	Nov. 18, 2021	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA9170980	18GHz~40GHz	Jan. 11, 2021	Jun. 09, 2021~ Jun. 26, 2021	Jan. 10, 2022	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103	161075	10MHz~1GHz	Mar. 24, 2021	Jun. 09, 2021~ Jun. 26, 2021	Mar. 23, 2022	Radiation (03CH12-HY)
Preamplifier	Keysight	83017A	MY57280120	1GHz~26.5GHz	Jul. 20, 2020	Jun. 09, 2021~ Jun. 26, 2021	Jul. 19, 2021	Radiation (03CH12-HY)
Preamplifier	E-INSTRUME NT TECH LTD.	ERA-100M-18 G-56-01-A70	EC1900249	1GHz~18GHz	Dec. 05, 2020	Jun. 09, 2021~ Jun. 26, 2021	Dec. 04, 2021	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 11, 2020	Jun. 09, 2021~ Jun. 26, 2021	Dec. 10, 2021	Radiation (03CH12-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Jan. 15, 2021	Jun. 09, 2021~ Jun. 26, 2021	Jan. 14, 2022	Radiation (03CH12-HY)
Signal Generator	Rohde & Schwarz	SMB100A	101107	100kHz~40GHz	Dec. 04, 2020	Jun. 09, 2021~ Jun. 26, 2021	Dec. 03, 2021	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0058/126E	30MHz~18GHz	Dec. 11, 2020	Jun. 09, 2021~ Jun. 26, 2021	Dec. 10, 2021	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz~40GHz	Feb. 22, 2021	Jun. 09, 2021~ Jun. 26, 2021	Feb. 21, 2022	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30MHz~40GHz	Feb. 22, 2021	Jun. 09, 2021~ Jun. 26, 2021	Feb. 21, 2022	Radiation (03CH12-HY)
Filter	Wainwright	WLKS1200-12 SS	SN2	1.2GHz Low Pass Filter	Mar. 17, 2021	Jun. 09, 2021~ Jun. 26, 2021	Mar. 16, 2022	Radiation (03CH12-HY)
Filter	Wainwright	WHKX12-1080 -1200-15000-6 OSS	SN1	1.2GHz High Pass Filter	Mar. 17, 2021	Jun. 09, 2021~ Jun. 26, 2021	Mar. 16, 2022	Radiation (03CH12-HY)
Filter	Wainwright	WHKX12-2700 -3000-18000-6 OST	SN2	3GHz High Pass Filter	Jul. 14, 2020	Jun. 09, 2021~ Jun. 26, 2021	Jul. 13, 2021	Radiation (03CH12-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Jun. 09, 2021~ Jun. 26, 2021	N/A	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Jun. 09, 2021~ Jun. 26, 2021	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Jun. 09, 2021~ Jun. 26, 2021	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-000989	N/A	N/A	Jun. 09, 2021~ Jun. 26, 2021	N/A	Radiation (03CH12-HY)



## 5 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	3.07
---	------

### Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	3.21
---	------

### Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ( $U = 2Uc(y)$ )	3.80
---	------



Appendix A. Test Results of Radiated Test

EN-DC 66A-n5A

EN-DC 66A-n5A / 5MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	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)
Lowest	1649	-41.03	-13	-28.03	-69.45	-46.63	0.92	8.67	H
	2473	-37.91	-13	-24.91	-71.42	-45.28	1.14	10.66	H
	3298	-35.91	-13	-22.91	-71.26	-44.45	1.32	12.02	H
									H
									H
									H
	1649	-42.45	-13	-29.45	-70.34	-48.05	0.92	8.67	V
	2473	-37.70	-13	-24.70	-71.36	-45.07	1.14	10.66	V
	3298	-35.04	-13	-22.04	-70.86	-43.58	1.32	12.02	V
									V
									V
									V
Middle	1669	-42.77	-13	-29.77	-71.27	-48.43	0.93	8.74	H
	2503	-37.67	-13	-24.67	-71.23	-45.07	1.15	10.70	H
	3338	-36.06	-13	-23.06	-71.33	-44.69	1.33	12.11	H
									H
									H
									H
	1669	-42.93	-13	-29.93	-70.82	-48.59	0.93	8.74	V
	2503	-37.38	-13	-24.38	-71.15	-44.78	1.15	10.70	V
	3338	-35.53	-13	-22.53	-71.25	-44.16	1.33	12.11	V
									V
									V
									V



Highest	1689	-42.15	-13	-29.15	-70.7	-47.88	0.93	8.82	H
	2533	-37.90	-13	-24.90	-71.46	-45.33	1.16	10.74	H
	3378	-36.51	-13	-23.51	-71.67	-45.23	1.34	12.21	H
									H
									H
									H
	1689	-43.29	-13	-30.29	-71.15	-49.02	0.93	8.82	V
	2533	-37.78	-13	-24.78	-71.47	-45.21	1.16	10.74	V
	3378	-35.90	-13	-22.90	-71.5	-44.62	1.34	12.21	V
									V
									V
									V

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



EN-DC 2A-n5A

EN-DC 2A-n5A / 5MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	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)
Middle	1669	-42.39	-13	-29.39	-70.89	-48.05	0.93	8.74	H
	2503	-37.92	-13	-24.92	-71.48	-45.32	1.15	10.70	H
	3338	-36.17	-13	-23.17	-71.44	-44.80	1.33	12.11	H
									H
									H
									H
	1669	-43.13	-13	-30.13	-71.02	-48.79	0.93	8.74	V
	2503	-37.50	-13	-24.50	-71.27	-44.90	1.15	10.70	V
	3338	-35.72	-13	-22.72	-71.44	-44.35	1.33	12.11	V
									V
									V
									V

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



**EN-DC 7A-n5A**

EN-DC 7A-n5A / 5MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	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)
Middle	1669	-42.38	-13	-29.38	-70.88	-48.04	0.93	8.74	H
	2503	-37.42	-13	-24.42	-70.98	-44.82	1.15	10.70	H
	3338	-36.19	-13	-23.19	-71.46	-44.82	1.33	12.11	H
									H
									H
									H
	1669	-43.16	-13	-30.16	-71.05	-48.82	0.93	8.74	V
	2503	-37.37	-13	-24.37	-71.14	-44.77	1.15	10.70	V
	3338	-35.42	-13	-22.42	-71.15	-44.05	1.33	12.11	V
									V
									V
									V

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



**EN-DC 48A-n5A**

EN-DC 48A-n5A / 5MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	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)
Middle	1669	-42.17	-13	-29.17	-70.67	-47.83	0.93	8.74	H
	2503	-37.58	-13	-24.58	-71.14	-44.98	1.15	10.70	H
	3338	-36.11	-13	-23.11	-71.38	-44.74	1.33	12.11	H
									H
									H
									H
	1669	-43.27	-13	-30.27	-71.16	-48.93	0.93	8.74	V
	2503	-37.41	-13	-24.41	-71.18	-44.81	1.15	10.70	V
	3338	-35.71	-13	-22.71	-71.43	-44.34	1.33	12.11	V
									V
									V
									V

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



**EN-DC 5A-n2A**

EN-DC 5A-n2A / 20MHz / PI/2 BPSK									
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)
Lowest	3702	-35.78	-13	-22.78	-73.16	-46.99	1.41	12.62	H
	5553	-30.90	-13	-17.90	-74.09	-42.46	1.74	13.30	H
	7405	-46.58	-13	-33.58	-73.88	-55.89	1.94	11.25	H
									H
									H
									H
	3702	-35.75	-13	-22.75	-73.28	-46.96	1.41	12.62	V
	5553	-31.37	-13	-18.37	-74.09	-42.93	1.74	13.30	V
	7405	-46.45	-13	-33.45	-73.6	-55.76	1.94	11.25	V
									V
									V
									V
Middle	3742	-35.36	-13	-22.36	-72.94	-46.58	1.42	12.65	H
	5613	-30.71	-13	-17.71	-73.85	-42.27	1.74	13.30	H
	7485	-46.63	-13	-33.63	-73.55	-55.77	1.98	11.12	H
									H
									H
									H
	3742	-35.18	-13	-22.18	-72.96	-46.40	1.42	12.65	V
	5613	-30.90	-13	-17.90	-73.7	-42.46	1.74	13.30	V
	7485	-46.97	-13	-33.97	-73.84	-56.11	1.98	11.12	V
									V
									V
									V





Highest	3782	-35.12	-13	-22.12	-72.91	-46.36	1.43	12.67	H
	5673	-30.91	-13	-17.91	-74.32	-42.48	1.73	13.30	H
	7565	-46.98	-13	-33.98	-73.49	-56.09	2.00	11.11	H
									H
									H
									H
	3782	-35.06	-13	-22.06	-73.1	-46.30	1.43	12.67	V
	5673	-31.18	-13	-18.18	-74.1	-42.75	1.73	13.30	V
	7565	-47.07	-13	-34.07	-73.54	-56.18	2.00	11.11	V
									V
									V
									V

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



**EN-DC 12A-n2A**

EN-DC 12A-n2A / 20MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	SPA Reading (dBm)	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3742	-35.16	-13	-22.16	-72.74	-46.38	1.42	12.65	H
	5613	-30.59	-13	-17.59	-73.73	-42.15	1.74	13.30	H
	7485	-46.53	-13	-33.53	-73.45	-55.67	1.98	11.12	H
									H
									H
									H
	3742	-35.28	-13	-22.28	-73.06	-46.50	1.42	12.65	V
	5613	-30.81	-13	-17.81	-73.61	-42.37	1.74	13.30	V
	7485	-46.67	-13	-33.67	-73.54	-55.81	1.98	11.12	V
									V
									V
									V

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



**EN-DC 13A-n2A**

EN-DC 13A-n2A / 20MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	SPA Reading (dBm)	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3742	-35.05	-13	-22.05	-72.63	-46.27	1.42	12.65	H
	5613	-30.84	-13	-17.84	-73.98	-42.40	1.74	13.30	H
	7485	-46.14	-13	-33.14	-73.06	-55.28	1.98	11.12	H
									H
									H
									H
	3742	-35.43	-13	-22.43	-73.21	-46.65	1.42	12.65	V
	5613	-31.25	-13	-18.25	-74.05	-42.81	1.74	13.30	V
	7485	-46.63	-13	-33.63	-73.5	-55.77	1.98	11.12	V
									V
									V
									V

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



**EN-DC 48A-n2A**

EN-DC 48A-n2A / 20MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	SPA Reading (dBm)	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3742	-54.51	-13	-41.51	-72.62	-65.73	1.42	12.65	H
	5613	-50.87	-13	-37.87	-73.95	-62.43	1.74	13.30	H
	7485	-46.90	-13	-33.90	-73.33	-56.04	1.98	11.12	H
									H
									H
									H
	3742	-54.65	-13	-41.65	-72.96	-65.87	1.42	12.65	V
	5613	-50.94	-13	-37.94	-73.68	-62.50	1.74	13.30	V
	7485	-47.22	-13	-34.22	-73.6	-56.36	1.98	11.12	V
									V
									V
									V

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



**EN-DC 2A-n12A**

EN-DC 2A-n12A / 10MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	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)
Lowest	1399	-40.95	-13	-27.95	-60.40	-45.59	0.84	7.64	H
	2099	-49.39	-13	-36.39	-72.00	-56.32	1.06	10.14	H
	2799	-47.47	-13	-34.47	-71.77	-55.16	1.22	11.06	H
									H
									H
									H
	1399	-39.36	-13	-26.36	-57.59	-44.00	0.84	7.64	V
	2099	-50.20	-13	-37.20	-71.71	-57.13	1.06	10.14	V
	2799	-46.61	-13	-33.61	-70.85	-54.30	1.22	11.06	V
									V
									V
									V
Middle	1406	-45.72	-13	-32.72	-65.14	-50.39	0.85	7.67	H
	2109	-49.26	-13	-36.26	-72.04	-56.20	1.06	10.15	H
	2813	-47.64	-13	-34.64	-71.99	-55.34	1.23	11.08	H
									H
									H
									H
	1406	-40.66	-13	-27.66	-58.86	-45.33	0.85	7.67	V
	2109	-50.43	-13	-37.43	-72.10	-57.37	1.06	10.15	V
	2813	-46.15	-13	-33.15	-70.45	-53.85	1.23	11.08	V
									V
									V
									V



Highest	1413	-41.91	-13	-28.91	-61.32	-46.61	0.85	7.70	H
	2120	-48.74	-13	-35.74	-71.71	-55.69	1.07	10.17	H
	2827	-47.24	-13	-34.24	-71.65	-54.95	1.23	11.09	H
									H
									H
									H
	1413	-41.53	-13	-28.53	-59.72	-46.23	0.85	7.70	V
	2120	-49.88	-13	-36.88	-71.72	-56.83	1.07	10.17	V
	2827	-46.46	-13	-33.46	-70.83	-54.17	1.23	11.09	V
									V
									V
									V

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



EN-DC 66A-n12A

EN-DC 66A-n12A / 10MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	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)
Middle	1406	-42.13	-13	-29.13	-61.55	-46.80	0.85	7.67	H
	2109	-49.26	-13	-36.26	-72.04	-56.20	1.06	10.15	H
	2813	-47.83	-13	-34.83	-72.18	-55.53	1.23	11.08	H
									H
									H
									H
	1406	-40.61	-13	-27.61	-58.81	-45.28	0.85	7.67	V
	2109	-50.16	-13	-37.16	-71.83	-57.10	1.06	10.15	V
	2813	-47.81	-13	-34.81	-72.11	-55.51	1.23	11.08	V
									V
									V
									V

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



**EN-DC 12A-n66A**

EN-DC 12A-n66A / 20MHz / PI/2 BPSK									
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)
Lowest	3442	-56.74	-13	-43.74	-72.88	-67.75	1.35	12.36	H
	5163	-51.83	-13	-38.83	-73.79	-63.01	1.65	12.83	H
	6884	-48.30	-13	-35.30	-73.89	-58.63	1.74	12.06	H
									H
									H
									H
	3442	-56.53	-13	-43.53	-73.07	-67.54	1.35	12.36	V
	5163	-52.38	-13	-39.38	-74.12	-63.56	1.65	12.83	V
	6884	-48.78	-13	-35.78	-73.94	-59.11	1.74	12.06	V
									V
									V
									V
Middle	3472	-56.36	-13	-43.36	-72.78	-67.44	1.35	12.43	H
	5208	-52.69	-13	-39.69	-74.65	-63.92	1.66	12.89	H
	6944	-48.01	-13	-35.01	-73.89	-58.26	1.73	11.98	H
									H
									H
									H
	3472	-56.19	-13	-43.19	-72.99	-67.27	1.35	12.43	V
	5208	-52.88	-13	-39.88	-74.67	-64.11	1.66	12.89	V
	6944	-48.51	-13	-35.51	-73.93	-58.76	1.73	11.98	V
									V
									V
									V





Highest	3502	-55.89	-13	-42.89	-72.6	-67.03	1.36	12.50	H
	5253	-52.54	-13	-39.54	-74.67	-63.82	1.68	12.95	H
	7004	-47.65	-13	-34.65	-73.83	-57.82	1.72	11.89	H
									H
									H
									H
	3502	-55.48	-13	-42.48	-72.54	-66.62	1.36	12.50	V
	5253	-53.02	-13	-40.02	-74.92	-64.30	1.68	12.95	V
	7004	-48.09	-13	-35.09	-73.78	-58.26	1.72	11.89	V
									V
									V
									V

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



**EN-DC 5A-n66A**

EN-DC 5A-n66A / 20MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	SPA Reading (dBm)	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3469	-56.21	-13	-43.21	-72.61	-67.28	1.35	12.43	H
	5205	-52.73	-13	-39.73	-74.68	-63.95	1.66	12.89	H
	6948	-47.67	-13	-34.67	-73.57	-57.92	1.73	11.97	H
									H
									H
									H
	3469	-56.02	-13	-43.02	-72.8	-67.09	1.35	12.43	V
	5205	-52.57	-13	-39.57	-74.35	-63.79	1.66	12.89	V
	6948	-47.81	-13	-34.81	-73.25	-58.06	1.73	11.97	V
									V
									V
									V

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



**EN-DC 13A-n66A**

EN-DC 13A-n66A / 20MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	SPA Reading (dBm)	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3469	-56.15	-13	-43.15	-72.55	-67.22	1.35	12.43	H
	5205	-52.32	-13	-39.32	-74.27	-63.54	1.66	12.89	H
	6948	-47.47	-13	-34.47	-73.37	-57.72	1.73	11.97	H
									H
									H
									H
	3469	-56.14	-13	-43.14	-72.92	-67.21	1.35	12.43	V
	5205	-52.69	-13	-39.69	-74.47	-63.91	1.66	12.89	V
	6948	-48.36	-13	-35.36	-73.8	-58.61	1.73	11.97	V
									V
									V
									V

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



**EN-DC 48A-n66A**

EN-DC 48A-n66A / 20MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	SPA Reading (dBm)	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3469	-56.51	-13	-43.51	-72.91	-67.58	1.35	12.43	H
	5205	-52.47	-13	-39.47	-74.42	-63.69	1.66	12.89	H
	6948	-47.97	-13	-34.97	-73.87	-58.22	1.73	11.97	H
									H
									H
									H
	3469	-56.23	-13	-43.23	-73.01	-67.30	1.35	12.43	V
	5205	-51.17	-13	-38.17	-72.95	-62.39	1.66	12.89	V
	6948	-48.24	-13	-35.24	-73.68	-58.49	1.73	11.97	V
									V
									V
									V

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



EN-DC 71A-n66A

EN-DC 71A-n66A / 20MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	SPA Reading (dBm)	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3469	-56.53	-13	-43.53	-72.93	-67.60	1.35	12.43	H
	5205	-52.04	-13	-39.04	-73.99	-63.26	1.66	12.89	H
	6948	-47.54	-13	-34.54	-73.44	-57.79	1.73	11.97	H
									H
									H
									H
	3469	-55.77	-13	-42.77	-72.55	-66.84	1.35	12.43	V
	5205	-52.11	-13	-39.11	-73.89	-63.33	1.66	12.89	V
	6948	-48.31	-13	-35.31	-73.75	-58.56	1.73	11.97	V
									V
									V
									V

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



**EN-DC 12A-n7A**

EN-DC 12A-n7A / 5MHz / PI/2 BPSK									
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)
Lowest	5004	-51.99	-25	-26.99	-74.01	-62.98	1.61	12.61	H
	7500	-47.09	-25	-22.09	-73.46	-56.20	1.99	11.10	H
	9999	-44.52	-25	-19.52	-74.07	-53.42	2.40	11.30	H
									H
									H
									H
	5004	-52.50	-25	-27.50	-74.08	-63.49	1.61	12.61	V
	7500	-46.88	-25	-21.88	-73.22	-55.99	1.99	11.10	V
	9999	-43.49	-25	-18.49	-73.84	-52.39	2.40	11.30	V
									V
									V
									V
Middle	5064	-52.06	-25	-27.06	-74.06	-63.12	1.63	12.69	H
	7596	-47.96	-25	-22.96	-73.82	-57.08	2.00	11.12	H
	10134	-44.08	-25	-19.08	-73.97	-52.88	2.40	11.19	H
									H
									H
									H
	5064	-52.51	-25	-27.51	-74.15	-63.57	1.63	12.69	V
	7596	-47.42	-25	-22.42	-73.23	-56.54	2.00	11.12	V
	10134	-43.36	-25	-18.36	-73.76	-52.16	2.40	11.19	V
									V
									V
									V



Highest	5130	-52.59	-25	-27.59	-74.55	-63.73	1.64	12.78	H
	7698	-47.86	-25	-22.86	-73.75	-56.98	2.02	11.14	H
	10260	-43.55	-25	-18.55	-73.76	-52.25	2.39	11.09	H
									H
									H
									H
	5130	-52.58	-25	-27.58	-74.28	-63.72	1.64	12.78	V
	7698	-47.77	-25	-22.77	-73.49	-56.89	2.02	11.14	V
	10260	-43.08	-25	-18.08	-73.52	-51.78	2.39	11.09	V
									V
									V
									V

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



**EN-DC 2A-n41A (HPUE)**

EN-DC 2A-n41A / 20MHz / PI/2 BPSK									
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)
Lowest	4992	-51.61	-25	-26.61	-73.61	-62.60	1.61	12.60	H
	7491	-47.33	-25	-22.33	-73.73	-56.46	1.99	11.11	H
	9990	-44.15	-25	-19.15	-73.73	-53.06	2.40	11.30	H
									H
									H
									H
	4992	-52.29	-25	-27.29	-73.83	-63.28	1.61	12.60	V
	7494	-47.17	-25	-22.17	-73.53	-56.29	1.99	11.11	V
	9990	-43.67	-25	-18.67	-74.02	-52.58	2.40	11.30	V
									V
									V
									V
Middle	5172	-51.98	-25	-26.98	-73.93	-63.17	1.65	12.84	H
	7752	-47.85	-25	-22.85	-73.76	-56.98	2.03	11.15	H
	10341	-43.69	-25	-18.69	-74.11	-52.32	2.39	11.03	H
									H
									H
									H
	5172	-52.81	-25	-27.81	-74.56	-64.00	1.65	12.84	V
	7752	-47.86	-25	-22.86	-73.53	-56.99	2.03	11.15	V
	10341	-43.65	-25	-18.65	-74.12	-52.28	2.39	11.03	V
									V
									V
									V





Highest	5340	-51.93	-25	-26.93	-74.35	-63.31	1.70	13.08	H
	8013	-46.32	-25	-21.32	-73.48	-55.49	2.06	11.23	H
	10683	-42.37	-25	-17.37	-73.23	-50.78	2.49	10.90	H
									H
									H
									H
	5340	-52.66	-25	-27.66	-74.74	-64.04	1.70	13.08	V
	8013	-46.36	-25	-21.36	-73.41	-55.53	2.06	11.23	V
	10683	-43.20	-25	-18.20	-73.82	-51.61	2.49	10.90	V
									V
									V
									V

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



EN-DC 25A-n41A (HPUE)

EN-DC 25A-n41A / 20MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	SPA Reading (dBm)	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5166	-51.78	-25	-26.78	-73.73	-62.96	1.65	12.83	H
	7752	-47.80	-25	-22.80	-73.71	-56.93	2.03	11.15	H
	10341	-43.47	-25	-18.47	-73.89	-52.10	2.39	11.03	H
									H
									H
									H
	5166	-52.57	-25	-27.57	-74.31	-63.75	1.65	12.83	V
	7752	-47.80	-25	-22.80	-73.47	-56.93	2.03	11.15	V
	10341	-43.35	-25	-18.35	-73.82	-51.98	2.39	11.03	V
									V
									V
									V

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



EN-DC 26A-n41A (HPUE)

EN-DC 26A-n41A / 20MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	SPA Reading (dBm)	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5166	-52.28	-25	-27.28	-74.23	-63.46	1.65	12.83	H
	7752	-47.79	-25	-22.79	-73.7	-56.92	2.03	11.15	H
	10341	-43.57	-25	-18.57	-73.99	-52.20	2.39	11.03	H
									H
									H
									H
	5166	-52.66	-25	-27.66	-74.4	-63.84	1.65	12.83	V
	7752	-47.77	-25	-22.77	-73.44	-56.90	2.03	11.15	V
	10341	-43.38	-25	-18.38	-73.85	-52.01	2.39	11.03	V
									V
									V
									V

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



**EN-DC 66A-n41A (HPUE)**

EN-DC 66A-n41A / 20MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	EIRP ( dBm )	Limit ( dBm )	Over Limit ( dB )	SPA Reading (dBm)	S.G. Power ( dBm )	TX Cable loss ( dB )	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	5166	-52.26	-25	-27.26	-74.21	-63.44	1.65	12.83	H
	7752	-47.91	-25	-22.91	-73.82	-57.04	2.03	11.15	H
	10341	-43.67	-25	-18.67	-74.09	-52.30	2.39	11.03	H
									H
									H
									H
	5166	-52.64	-25	-27.64	-74.38	-63.82	1.65	12.83	V
	7752	-48.27	-25	-23.27	-73.94	-57.40	2.03	11.15	V
	10341	-43.54	-25	-18.54	-74.01	-52.17	2.39	11.03	V
									V
									V
									V

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



**EN-DC 7A-n71A**

EN-DC 7A-n71A / 10MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	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)
Lowest	1327	-36.58	-13	-23.58	-65.58	-43.06	0.83	7.30	H
	1991	-40.98	-13	-27.98	-71.77	-49.91	1.04	9.97	H
	2655	-37.90	-13	-24.90	-71.66	-47.60	1.19	10.89	H
									H
									H
									H
	1327	-36.64	-13	-23.64	-64.81	-43.12	0.83	7.30	V
	1991	-41.62	-13	-28.62	-71.44	-50.55	1.04	9.97	V
	2655	-38.27	-13	-25.27	-71.99	-47.97	1.19	10.89	V
									V
									V
									V
Middle	1352	-34.62	-13	-21.62	-63.78	-41.21	0.83	7.42	H
	2028	-40.28	-13	-27.28	-71.66	-49.27	1.05	10.04	H
	2705	-38.80	-13	-25.80	-72.76	-48.55	1.20	10.95	H
									H
									H
									H
	1352	-35.17	-13	-22.17	-63.37	-41.76	0.83	7.42	V
	2028	-41.77	-13	-28.77	-72.14	-50.76	1.05	10.04	V
	2705	-38.72	-13	-25.72	-72.63	-48.47	1.20	10.95	V
									V
									V
									V



Highest	1377	-35.29	-13	-22.29	-64.6	-41.99	0.84	7.53	H
	2066	-40.49	-13	-27.49	-72.54	-49.53	1.05	10.09	H
	2752	-38.04	-13	-25.04	-72.17	-47.83	1.21	11.00	H
									H
									H
									H
	1377	-33.89	-13	-20.89	-62.1	-40.59	0.84	7.53	V
	2066	-41.42	-13	-28.42	-72.41	-50.46	1.05	10.09	V
	2752	-38.49	-13	-25.49	-72.58	-48.28	1.21	11.00	V
									V
									V
									V

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



**EN-DC 2A-n71A**

EN-DC 2A-n71A / 10MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	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)
Middle	1352	-34.33	-13	-21.33	-63.49	-40.92	0.83	7.42	H
	2028	-40.40	-13	-27.40	-71.78	-49.39	1.05	10.04	H
	2705	-38.29	-13	-25.29	-72.25	-48.04	1.20	10.95	H
									H
									H
									H
	1352	-34.98	-13	-21.98	-63.18	-41.57	0.83	7.42	V
	2028	-41.82	-13	-28.82	-72.19	-50.81	1.05	10.04	V
	2705	-39.08	-13	-26.08	-72.99	-48.83	1.20	10.95	V
									V
									V
									V

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



**EN-DC 66A-n71A**

EN-DC 66A-n71A / 10MHz / PI/2 BPSK									
Channel	Frequency ( MHz )	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)
Middle	1352	-27.58	-13	-14.58	-56.74	-34.17	0.83	7.42	H
	2028	-40.44	-13	-27.44	-71.82	-49.43	1.05	10.04	H
	2705	-38.70	-13	-25.70	-72.66	-48.45	1.20	10.95	H
									H
									H
									H
	1352	-26.61	-13	-13.61	-54.81	-33.20	0.83	7.42	V
	2028	-41.73	-13	-28.73	-72.1	-50.72	1.05	10.04	V
	2705	-38.73	-13	-25.73	-72.64	-48.48	1.20	10.95	V
									V
									V
									V

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