



FCC RADIO TEST REPORT

FCC ID : 2AJN7-TP00130CU
Equipment : Notebook Computer
Brand Name : Lenovo
Model Name : TP00130C; TP00130D
Applicant : LC Future Center Limited Taiwan Branch
7F., No.780, Beian Rd., Zhongshan Dist., Taipei 104, Taiwan
Manufacturer : LCFC (HeFei) Electronics Technology Co., Ltd.
No. 3188-1, Yungu Road (Hefei Export Processing Zone), Hefei
Economics & Technology Development Area, Anhui, CHINA
Standard : FCC 47 CFR Part 2, 27

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

The product was received on Oct. 22, 2021 and testing was started from Dec. 14, 2021 to Feb. 15, 2022. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and has been in compliance with the applicable technical standards.

The test results in this partial report apply exclusively to the tested model / sample. Without written approval 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



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History of this test report

Report No.	Version	Description	Issued Date
FG1O2302J	01	Initial issue of report	Feb. 19, 2022



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power	Reporting only	-
	§27.50 (k)(3)	Equivalent Isotropic Radiated Power (n77) (n78)	Pass	
-	§27.50 (k)(4)	Peak-to-Average Ratio	-	See Note
-	§2.1049	Occupied Bandwidth	-	See Note
-	§2.1051 §27.53 (n)(2)	Conducted Band Edge Measurement (n77) (n78)	-	See Note
-	§2.1051 §27.53 (n)(2)	Conducted Spurious Emission (n77) (n78)	-	See Note
-	§2.1055 §27.54	Frequency Stability Temperature & Voltage	-	See Note
4.2	§2.1053 §27.53 (n)(2)	Radiated Spurious Emission (n77) (n78)	Pass	Under limit 21.44 dB at 13911.000 MHz

Note:

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

Declaration of Conformity:

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

Comments and Explanations:

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

Reviewed by: Sheng Kuo

Report Producer: Lucy Wu



1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	Notebook Computer
Brand Name	Lenovo
Model Name	TP00130C; TP00130D
FCC ID	2AJN7-TP00130CU
Sample 1	EUT with Amphenol Antenna
Sample 2	EUT with Speed Antenna
EUT supports Radios application	WCDMA/HSPA/LTE/5G NR/GNSS/NFC/UWB WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/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: Fibocom FM350-GL tested inside of Lenovo Notebook Computer.

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

WWAN Antenna Information				
Main Antenna	Manufacturer	Amphenol	Peak gain (dBi)	5G NR n77 : 0.9 5G NR n78 : 0.9
	Part number	DC33001VG40	Type	PIFA
	Manufacturer	Speed	Peak gain (dBi)	5G NR n77 : 0.9 5G NR n78 : 0.9
	Part number	DC33001VH40	Type	PIFA
MIMO 2 Antenna	Manufacturer	Amphenol	Peak gain (dBi)	5G NR n77 : 0.9 5G NR n78 : 0.9
	Part number	DC33001VG30	Type	PIFA
	Manufacturer	Speed	Peak gain (dBi)	5G NR n77 : 0.9 5G NR n78 : 0.9
	Part number	DC33001VH30	Type	PIFA

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



1.2 Product Specification of Equipment Under Test

Product Specification is subject to this standard	
Tx/Rx Frequency	3455 MHz ~ 3545 MHz
Bandwidth	SCS 15kHz: 10MHz/15MHz/20MHz SCS 30kHz: 10MHz/15MHz/20MHz/40MHz/50MHz/60MHz/80MHz/100MHz
Maximum Output Power to Antenna	Main Antenna: 5G NR n77: 25.02 dBm 5G NR n78: 26.32 dBm MIMO 2 Antenna: 5G NR n77: 25.89 dBm 5G NR n78: 26.84 dBm
Type of Modulation	CP-OFDM: QPSK/16QAM/64QAM/256QAM DFT-s-OFDM: 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. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333
Test Site No.	Sporton Site No.
	TH03-HY (TAF Code: 1190)
Test Engineer	HaoEn Zhang
Temperature	22.1~23.4
Relative Humidity	51.8~55.6
Remark	The Conducted test item subcontracted to Sporton International Inc. EMC & Wireless Communications Laboratory.

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010
Test Site No.	Sporton Site No.
	03CH12-HY
Test Engineer	Jack Cheng, Lance Chiang, and Chuan Chu
Temperature	21.2~24.2°C
Relative Humidity	58.2~68.8%

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

FCC Designation No.: TW1190 and 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, 27
- ♦ FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- ♦ FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- ♦ 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.



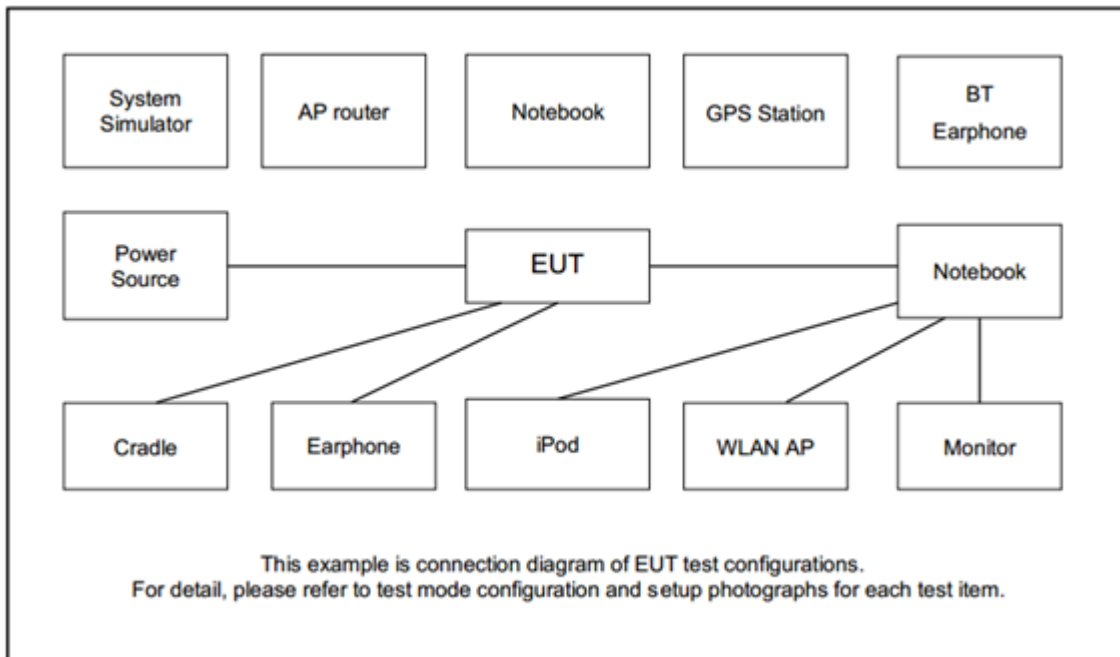
2 Test Configuration of Equipment Under Test

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.

Test Items	NR Band	Bandwidth (MHz)												Modulation					RB #			Test Channel			
		5	10	15	20	25	30	40	50	60	80	90	100	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	1	Half	Full	L	M	H	
Max. Output Power	n77	-	v	v	v	-	-	v	v	v	v	-	v	v	v	v	v	v	v	v	v	v	v	v	v
	n78	-	v	v	v	-	-	v	v	v	v	-	v	v	v	v	v	v	v	v	v	v	v	v	v
E.I.R.P	n77	-	v	v	v	-	-	v	v	v	v	-	v	v	v	v	v	v	Max. Power						
	n78	-	v	v	v	-	-	v	v	v	v	-	v	v	v	v	v								
Radiated Spurious Emission	n77	-				-	-					-	v	v					v					v	
	n78	-				-	-					-	v	v					v					v	
Remark	<ol style="list-style-type: none"> The mark "v" means that this configuration is chosen for testing The mark "-" means that this bandwidth is not supported. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported. Test combination are EN-DC 2A_n77A and EN-DC 2A_n78A. 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, and the worst modes of FR1 and LTE for simultaneous transmission were verified and compliant. All the radiated test cases were performed with Battery1 and Sample 1. 																								

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.	System Simulator	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m
2.	System Simulator	Anritsu	MT8000A	N/A	N/A	Unshielded, 1.8 m
3.	iPod Earphone	Apple	N/A	Verification	Unshielded, 1.0 m	N/A



2.4 Frequency List of Low/Middle/High Channels

5G NR n77/n78 Channel and Frequency List for SCS 15kHz				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	630667	633334	636000
	Frequency	3460.005	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

5G NR n77/n78 Channel and Frequency List for SCS 30kHz				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
100	Channel	-	633334	-
	Frequency	-	3500.01	-
80	Channel	632668	633334	634000
	Frequency	3490.02	3500.01	3510
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
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

3 Conducted Test Items

3.1 Measuring Instruments

See list of measuring instruments of this test report.

3.1.1 Test Setup

3.1.2 Conducted Output Power



3.1.3 Test Result of Conducted Test

Please refer to Appendix A.



3.2 Conducted Output Power and EIRP

3.2.1 Description of the Conducted Output Power Measurement and EIRP Measurement

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

The EIRP of mobile transmitters must not exceed 1 Watts for 5G NR n77 and n78

According to KDB 412172 D01 Power Approach,

$EIRP = P_T + G_T - L_C$, $ERP = EIRP - 2.15$, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

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

3.2.2 Test Procedures

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

4 Radiated Test Items

4.1 Measuring Instruments

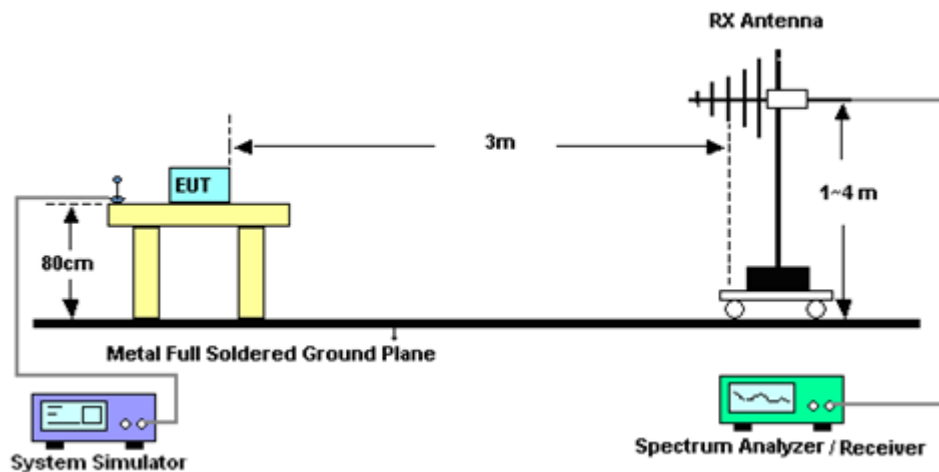
See list of measuring instruments of this test report.

4.1.1 Test Setup

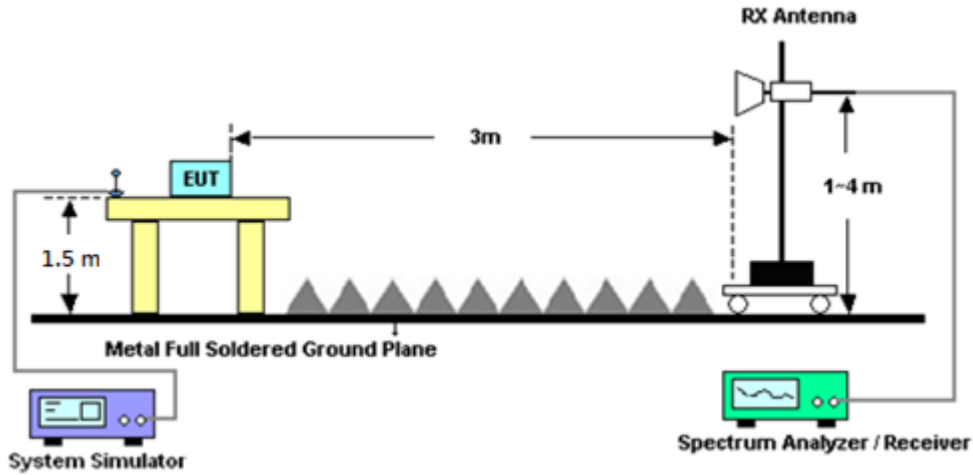
For radiated test below 30MHz



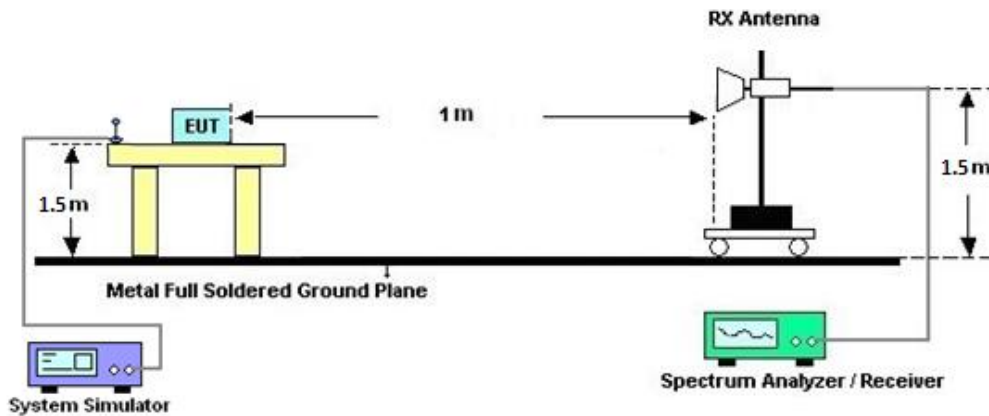
For radiated test from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz



4.1.2 Test Result of Radiated Test

Please refer to Appendix B.

Note:

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

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



4.2 Radiated Spurious Emission Measurement

4.2.1 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.

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

4.2.2 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 with 0.8 meter for frequency below 1GHz and 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)

$EIRP \text{ (dBm)} = S.G. \text{ Power} - Tx \text{ Cable Loss} + Tx \text{ Antenna Gain}$

$ERP \text{ (dBm)} = EIRP - 2.15$



5 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Jan. 04, 2021	Dec. 14, 2021~ Dec. 16, 2021	Jan. 03, 2022	Radiation (03CH12-HY)
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100315	9 kHz~30 MHz	Jan. 07, 2022	Jan. 22, 2022~ Jan. 24, 2022	Jan. 06, 2023	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N -06	37059 & 01	30MHz~1GHz	Oct. 09, 2021	Dec. 14, 2021~ Jan. 24, 2022	Oct. 08, 2022	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & N-6-06	35414 & AT-N0602	30MHz~1GHz	Oct. 09, 2021	Dec. 14, 2021~ Jan. 24, 2022	Oct. 08, 2022	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-1326	1GHz~18GHz	Oct. 25, 2021	Dec. 14, 2021~ Jan. 24, 2022	Oct. 24, 2022	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBE CK	BBHA 9120 D	9120D-1212	1GHz~18GHz	May 18, 2021	Dec. 14, 2021~ Jan. 24, 2022	May 17, 2022	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA917025 1	18GHz~40GHz	Nov. 30, 2021	Dec. 14, 2021~ Jan. 24, 2022	Nov. 29, 2022	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	BBHA917057 6	18GHz~40GHz	May 21, 2021	Dec. 14, 2021~ Jan. 24, 2022	May 20, 2022	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103	161075	10MHz~1GHz	Mar. 24, 2021	Dec. 14, 2021~ Jan. 24, 2022	Mar. 23, 2022	Radiation (03CH12-HY)
Preamplifier	Aglient	8449B	3008A02375	1GHz~26.5GHz	May 25, 2021	Dec. 14, 2021~ Jan. 24, 2022	May 24, 2022	Radiation (03CH12-HY)
Preamplifier	Jet-Power	JPA0118-55-30 3K	17100018000 54002	1GHz~18GHz	Jun. 16, 2021	Dec. 14, 2021~ Jan. 24, 2022	Jun. 15, 2022	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 22, 2021	Dec. 14, 2021~ Jan. 24, 2022	Jun. 21, 2022	Radiation (03CH12-HY)
Spectrum Analyzer	Keysight	N9010A	MY53470118	10Hz~44GHz	Mar. 05, 2021	Dec. 14, 2021~ Jan. 24, 2022	Mar. 04, 2022	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz~40GHz	Feb. 22, 2021	Dec. 14, 2021~ Jan. 24, 2022	Feb. 21, 2022	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	800740/2	30MHz~40GHz	Feb. 22, 2021	Dec. 14, 2021~ Jan. 24, 2022	Feb. 21, 2022	Radiation (03CH12-HY)
Filter	Wainwright	WLKS1200-12 SS	SN2	1.2GHz Low Pass Filter	Mar. 17, 2021	Dec. 14, 2021~ Jan. 24, 2022	Mar. 16, 2022	Radiation (03CH12-HY)
Filter	Wainwright	WHKX12-1080 -1200-15000-6 0SS	SN1	1.2GHz High Pass Filter	Mar. 17, 2021	Dec. 14, 2021~ Jan. 24, 2022	Mar. 16, 2022	Radiation (03CH12-HY)
Filter	Wainwright	WHKX12-2700 -3000-18000-6 0ST	SN2	3GHz High Pass Filter	Jul. 12, 2021	Dec. 14, 2021~ Jan. 24, 2022	Jul. 11, 2022	Radiation (03CH12-HY)
Hygrometer	TECPEL	DTM-303B	TP140349	N/A	Sep. 30, 2021	Dec. 14, 2021~ Jan. 24, 2022	Sep. 29, 2022	Radiation (03CH12-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Dec. 14, 2021~ Jan. 24, 2022	N/A	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Dec. 14, 2021~ Jan. 24, 2022	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Dec. 14, 2021~ Jan. 24, 2022	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-000989	N/A	N/A	Dec. 14, 2021~ Jan. 24, 2022	N/A	Radiation (03CH12-HY)



Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Radio Communication Analyzer	Anritsu	MT8821C	6201664755	2/3/4G/LTE FDD/TDD with44)/LTE-3CC DLCA/2CC ULCA, CatM1/NB1/NB2	Jul. 21, 2021	Feb. 09, 2022~ Feb. 15, 2022	Jul. 20, 2022	Conducted (TH03-HY)



6 Uncertainty of Evaluation

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

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.10 dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.39 dB
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.34 dB
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Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power) and EIRP

<Main Antenna>

<SCS 15K>

NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
10	1	1	PI/2 BPSK	24.75	24.95	25.06	26.18	0.415
10	1	50		24.89	24.96	25.17		
10	25	12		24.94	25.08	25.28		
10	1	1	QPSK	24.74	24.95	25.06		
10	1	50		24.75	24.98	25.21		
10	25	12		24.96	25.01	25.05		
10	1	1	16-QAM	23.82	23.95	24.11	25.01	0.317
10	1	1	64-QAM	22.17	22.32	22.65		
10	1	1	256-QAM	20.45	20.54	20.68		
Limit	EIRP < 1W			Result			Pass	

NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
15	1	1	PI/2 BPSK	24.79	24.92	25.02	26.16	0.413
15	1	77		24.95	24.97	25.24		
15	36	18		24.91	25.01	25.22		
15	1	1	QPSK	24.80	24.94	25.11		
15	1	77		24.98	25.09	25.26		
15	36	18		24.95	25.02	25.20		
15	1	1	16-QAM	23.87	23.98	24.02	24.92	0.3105
15	1	1	64-QAM	22.45	22.35	22.47		
15	1	1	256-QAM	20.42	20.58	20.65		
Limit	EIRP < 1W			Result			Pass	

NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
20	1	1	PI/2 BPSK	24.77	24.89	24.98	26.16	0.413
20	1	104		24.88	24.94	25.16		
20	50	25		24.95	25.08	25.26		
20	1	1	QPSK	24.78	24.95	24.97		
20	1	104		24.86	24.92	25.16		
20	50	25		24.94	25.06	25.23		
20	1	1	16-QAM	23.85	24.02	24.03	24.93	0.3112
20	1	1	64-QAM	22.18	22.48	22.58		
20	1	1	256-QAM	20.43	20.54	20.58		
Limit	EIRP < 1W			Result			Pass	



NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
10	1	1	PI/2 BPSK	25.76	25.95	26.28	27.47	0.5585
10	1	50		25.81	25.94	26.57		
10	25	12		25.95	26.04	26.51		
10	1	1	QPSK	25.87	26.01	26.35		
10	1	50		25.93	26.02	26.52		
10	25	12		25.88	26.04	26.45		
10	1	1	16-QAM	24.86	25.06	25.65	26.55	0.4519
10	1	1	64-QAM	23.26	23.41	23.82		
10	1	1	256-QAM	21.62	21.74	22.08		
Limit	EIRP < 1W			Result			Pass	

NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
15	1	1	PI/2 BPSK	25.95	26.05	26.25	27.55	0.5689
15	1	77		26.02	26.01	26.54		
15	36	18		26.11	26.21	26.52		
15	1	1	QPSK	26.05	26.15	26.35		
15	1	77		26.15	26.19	26.65		
15	36	18		26.02	26.18	26.48		
15	1	1	16-QAM	25.08	25.21	25.44	26.34	0.4305
15	1	1	64-QAM	23.48	23.54	23.88		
15	1	1	256-QAM	21.75	21.85	22.08		
Limit	EIRP < 1W			Result			Pass	

NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
20	1	1	PI/2 BPSK	25.95	26.03	26.38	27.45	0.5559
20	1	104		26.02	26.01	26.44		
20	50	25		26.18	26.24	26.55		
20	1	1	QPSK	26.04	26.12	26.21		
20	1	104		26.13	26.09	26.53		
20	50	25		26.13	26.22	26.51		
20	1	1	16-QAM	25.12	25.08	25.25	26.15	0.4121
20	1	1	64-QAM	23.44	23.75	23.85		
20	1	1	256-QAM	21.75	21.76	21.98		
Limit	EIRP < 1W			Result			Pass	



<SCS 30K>

NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
10	1	1	PI/2 BPSK	24.45	24.60	24.77	25.91	0.3899
10	1	22		24.44	24.59	24.80		
10	12	6		24.60	24.78	24.93		
10	1	1	QPSK	24.52	24.58	24.84		
10	1	22		24.56	24.63	24.86		
10	12	6		24.65	24.79	25.01		
10	1	1	16-QAM	23.48	23.52	23.71	24.61	0.2891
10	1	1	64-QAM	21.95	22.06	22.31		
10	1	1	256-QAM	23.40	20.41	20.54		
Limit	EIRP < 1W			Result			Pass	

NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
15	1	1	PI/2 BPSK	24.62	24.63	24.95	25.92	0.3908
15	1	36		24.60	24.58	24.99		
15	18	9		24.60	24.72	25.02		
15	1	1	QPSK	24.68	24.68	24.95		
15	1	36		24.65	24.63	24.98		
15	18	9		24.63	24.71	25.01		
15	1	1	16-QAM	23.58	23.52	23.77	24.67	0.2931
15	1	1	64-QAM	21.98	22.08	22.58		
15	1	1	256-QAM	20.21	20.36	20.54		
Limit	EIRP < 1W			Result			Pass	

NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
20	1	1	PI/2 BPSK	24.43	24.42	24.57	25.76	0.3767
20	1	49		24.50	24.48	24.63		
20	25	12		24.66	24.59	24.86		
20	1	1	QPSK	24.45	24.39	24.58		
20	1	49		24.51	24.41	24.73		
20	25	12		24.65	24.64	24.85		
20	1	1	16-QAM	23.40	23.45	23.58	24.48	0.2805
20	1	1	64-QAM	21.92	21.89	22.11		
20	1	1	256-QAM	20.17	20.26	20.42		
Limit	EIRP < 1W			Result			Pass	



NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
40	1	1	PI/2 BPSK	24.06	24.25	24.21	25.76	0.3767
40	1	104		24.39	24.45	24.50		
40	50	25		24.68	24.75	24.81		
40	1	1	QPSK	24.15	24.22	24.21		
40	1	104		24.42	24.35	24.54		
40	50	25		24.68	24.75	24.86		
40	1	1	16-QAM	23.11	23.10	23.15	24.05	0.2541
40	1	1	64-QAM	21.72	21.59	21.95		
40	1	1	256-QAM	19.93	20.01	19.98		
Limit	EIRP < 1W			Result			Pass	

NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
50	1	1	PI/2 BPSK	24.40	24.45	24.38	25.72	0.3733
50	1	131		24.65	24.61	24.71		
50	64	32		24.82	24.76	24.73		
50	1	1	QPSK	24.35	24.50	24.46		
50	1	131		24.46	24.66	24.74		
50	64	32		24.76	24.80	24.75		
50	1	1	16-QAM	23.26	23.52	23.42	24.42	0.2767
50	1	1	64-QAM	21.77	21.75	21.76		
50	1	1	256-QAM	20.17	20.21	20.16		
Limit	EIRP < 1W			Result			Pass	

NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
60	1	1	PI/2 BPSK	24.40	24.41	24.50	25.77	0.3776
60	1	160		24.62	24.71	24.82		
60	81	40		24.68	24.76	24.75		
60	1	1	QPSK	24.35	24.48	24.47		
60	1	160		24.81	24.76	24.87		
60	81	40		24.74	24.77	24.78		
60	1	1	16-QAM	23.26	23.45	23.41	24.35	0.2723
60	1	1	64-QAM	21.96	21.98	21.92		
60	1	1	256-QAM	19.89	20.21	20.31		
Limit	EIRP < 1W			Result			Pass	



NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
80	1	1	PI/2 BPSK	23.98	23.63	23.99	25.64	0.3664
80	1	215		24.28	24.43	24.39		
80	108	54		24.67	24.68	24.68		
80	1	1	QPSK	24.01	24.04	24.09		
80	1	215		24.42	24.57	24.52		
80	108	54		24.66	24.71	24.74		
80	1	1	16-QAM	22.96	22.87	22.70	23.86	0.2432
80	1	1	64-QAM	21.52	21.39	21.48		
80	1	1	256-QAM	19.68	19.95	19.75		
Limit	EIRP < 1W			Result			Pass	

NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
100	1	1	PI/2 BPSK	-	23.62	-	25.55	0.3589
100	1	271		-	24.19	-		
100	135	67		-	24.64	-		
100	1	1	QPSK	-	23.72	-		
100	1	271		-	24.25	-		
100	135	67		-	24.65	-		
100	1	1	16-QAM	-	22.65	-	23.55	0.2265
100	1	1	64-QAM	-	21.07	-		
100	1	1	256-QAM	-	19.54	-		
Limit	EIRP < 1W			Result			Pass	



NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
10	1	1	PI/2 BPSK	25.73	25.88	25.95	27.01	0.5023
10	1	22		25.77	25.80	26.05		
10	12	6		25.88	26.02	26.08		
10	1	1	QPSK	25.72	25.86	26.05		
10	1	22		25.69	25.85	26.02		
10	12	6		25.91	25.92	26.11		
10	1	1	16-QAM	24.79	24.82	24.86	25.76	0.3767
10	1	1	64-QAM	23.52	23.36	23.42		
10	1	1	256-QAM	21.39	21.65	21.77		
Limit	EIRP < 1W			Result			Pass	

NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
15	1	1	PI/2 BPSK	25.78	25.82	26.02	27.22	0.5272
15	1	36		25.79	25.72	26.24		
15	18	9		26.01	25.92	26.28		
15	1	1	QPSK	25.72	25.79	26.08		
15	1	36		25.79	25.81	26.31		
15	18	9		25.90	25.95	26.32		
15	1	1	16-QAM	24.74	24.87	25.02	25.92	0.3908
15	1	1	64-QAM	23.31	23.54	23.36		
15	1	1	256-QAM	21.42	21.65	21.92		
Limit	EIRP < 1W			Result			Pass	

NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
20	1	1	PI/2 BPSK	25.68	25.75	25.88	27.15	0.5188
20	1	49		25.81	25.77	26.01		
20	25	12		25.94	25.92	25.25		
20	1	1	QPSK	25.65	25.78	25.95		
20	1	49		25.77	25.81	26.18		
20	25	12		25.95	25.94	26.25		
20	1	1	16-QAM	24.77	24.74	24.95	25.85	0.3846
20	1	1	64-QAM	23.35	23.32	23.49		
20	1	1	256-QAM	21.65	21.53	21.74		
Limit	EIRP < 1W			Result			Pass	



NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
40	1	1	PI/2 BPSK	25.37	25.46	25.33	26.84	0.4831
40	1	104		25.63	25.52	25.84		
40	50	25		25.51	25.91	25.52		
40	1	1	QPSK	25.39	25.48	25.35		
40	1	104		25.65	25.54	25.94		
40	50	25		25.91	25.92	25.12		
40	1	1	16-QAM	24.35	24.48	24.50	25.4	0.3467
40	1	1	64-QAM	22.98	23.09	22.98		
40	1	1	256-QAM	21.15	21.15	21.05		
Limit	EIRP < 1W			Result			Pass	

NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
50	1	1	PI/2 BPSK	25.55	25.72	25.58	27.01	0.5023
50	1	131		25.73	25.83	26.02		
50	64	32		25.89	25.96	25.95		
50	1	1	QPSK	25.63	25.76	25.71		
50	1	131		25.75	25.92	26.11		
50	64	32		25.88	25.96	25.98		
50	1	1	16-QAM	24.54	24.62	24.62	25.52	0.3565
50	1	1	64-QAM	23.21	23.35	23.24		
50	1	1	256-QAM	21.32	21.44	21.35		
Limit	EIRP < 1W			Result			Pass	

NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
60	1	1	PI/2 BPSK	25.55	25.75	25.83	27.21	0.526
60	1	160		25.76	26.02	26.31		
60	81	40		25.95	25.95	26.01		
60	1	1	QPSK	25.62	25.68	25.78		
60	1	160		25.81	25.98	26.28		
60	81	40		25.97	25.96	26.05		
60	1	1	16-QAM	24.52	24.82	24.71	25.72	0.3733
60	1	1	64-QAM	23.22	23.24	23.26		
60	1	1	256-QAM	21.36	21.42	21.44		
Limit	EIRP < 1W			Result			Pass	



NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
80	1	1	PI/2 BPSK	25.33	25.27	25.31	27.05	0.507
80	1	215		25.67	25.74	25.92		
80	108	54		26.15	25.93	25.88		
80	1	1	QPSK	25.32	23.35	25.35	25.26	0.3357
80	1	215		25.68	25.85	25.88		
80	108	54		26.02	25.98	26.01		
80	1	1	64-QAM	22.88	22.72	22.89	25.26	0.3357
80	1	1	256-QAM	20.98	20.87	21.17		
Limit	EIRP < 1W			Result			Pass	

NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
100	1	1	PI/2 BPSK	-	24.95	-	26.79	0.4775
100	1	271		-	25.59	-		
100	135	67		-	25.89	-		
100	1	1	QPSK	-	24.95	-	24.85	0.3055
100	1	271		-	25.69	-		
100	135	67		-	25.85	-		
100	1	1	16-QAM	-	23.95	-	24.85	0.3055
100	1	1	64-QAM	-	22.42	-		
100	1	1	256-QAM	-	20.58	-	24.85	0.3055
Limit	EIRP < 1W			Result				



<MIMO2 Antenna>

NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
10	1	1	PI/2 BPSK	25.50	25.57	25.78	26.78	0.4764
10	1	22		25.49	25.60	25.77		
10	12	6		25.63	25.71	25.87		
10	1	1	QPSK	25.61	25.64	25.86		
10	1	22		25.60	25.65	25.86		
10	12	6		24.65	25.73	25.88		
10	1	1	16-QAM	24.42	24.55	24.76	25.66	0.3681
10	1	1	64-QAM	23.03	23.16	23.31		
10	1	1	256-QAM	21.01	21.03	21.29		
Limit	EIRP < 1W			Result			Pass	

NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
15	1	1	PI/2 BPSK	25.54	25.51	25.76	26.78	0.4764
15	1	36		25.52	25.54	25.75		
15	18	9		25.62	25.69	25.86		
15	1	1	QPSK	25.62	25.59	25.87		
15	1	36		25.61	25.67	25.84		
15	18	9		25.64	25.72	25.88		
15	1	1	16-QAM	25.62	24.46	24.70	26.52	0.4487
15	1	1	64-QAM	24.43	23.09	23.31		
15	1	1	256-QAM	23.04	21.05	21.28		
Limit	EIRP < 1W			Result			Pass	

NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
20	1	1	PI/2 BPSK	25.47	25.49	25.69	26.79	0.4775
20	1	49		25.47	25.51	25.68		
20	25	12		25.66	25.70	25.85		
20	1	1	QPSK	25.50	25.55	25.74		
20	1	49		25.49	25.58	25.73		
20	25	12		25.68	25.72	25.89		
20	1	1	16-QAM	24.55	24.48	24.69	25.59	0.3622
20	1	1	64-QAM	23.12	22.99	23.23		
20	1	1	256-QAM	20.88	20.98	21.18		
Limit	EIRP < 1W			Result			Pass	



NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
40	1	1	PI/2 BPSK	25.07	25.11	25.24	26.68	0.4656
40	1	104		25.08	25.23	25.33		
40	50	25		25.51	25.63	25.76		
40	1	1	QPSK	25.12	25.16	25.28		
40	1	104		25.13	25.31	25.38		
40	50	25		25.55	25.63	25.78		
40	1	1	16-QAM	23.94	23.97	24.24	25.14	0.3266
40	1	1	64-QAM	22.60	22.62	22.78		
40	1	1	256-QAM	20.55	20.59	20.73		
Limit	EIRP < 1W			Result			Pass	

NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
50	1	1	PI/2 BPSK	25.34	25.37	25.51	26.71	0.4688
50	1	131		25.57	25.50	25.56		
50	64	32		25.55	25.66	25.81		
50	1	1	QPSK	25.44	25.40	25.58		
50	1	131		25.43	25.60	25.61		
50	64	32		25.57	25.65	25.80		
50	1	1	16-QAM	24.27	24.29	24.49	25.39	0.3459
50	1	1	64-QAM	22.94	22.92	23.05		
50	1	1	256-QAM	20.77	20.93	21.03		
Limit	EIRP < 1W			Result			Pass	

NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
60	1	1	PI/2 BPSK	25.36	25.41	25.45	26.68	0.4656
60	1	160		25.48	25.57	25.60		
60	81	40		25.60	25.66	25.78		
60	1	1	QPSK	25.47	25.53	25.55		
60	1	160		25.55	25.65	25.68		
60	81	40		25.61	25.67	25.77		
60	1	1	16-QAM	24.31	24.36	24.39	25.29	0.3381
60	1	1	64-QAM	22.97	22.88	23.08		
60	1	1	256-QAM	20.91	20.85	20.83		
Limit	EIRP < 1W			Result			Pass	



NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
80	1	1	PI/2 BPSK	24.91	24.95	25.00	26.52	0.4487
80	1	215		25.00	25.07	25.06		
80	108	54		25.50	25.54	25.58		
80	1	1	QPSK	25.05	25.08	25.12		
80	1	215		25.21	25.21	25.22		
80	108	54		25.50	25.55	25.62		
80	1	1	16-QAM	23.95	23.89	24.03	24.93	0.3112
80	1	1	64-QAM	22.36	22.36	22.45		
80	1	1	256-QAM	20.66	20.70	20.74		
Limit	EIRP < 1W			Result			Pass	

NR n77 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
100	1	1	PI/2 BPSK	-	24.67	-	26.4	0.4365
100	1	271		-	24.79	-		
100	135	67		-	25.50	-		
100	1	1	QPSK	-	24.79	-		
100	1	271		-	24.92	-		
100	135	67		-	25.50	-		
100	1	1	16-QAM	-	23.76	-	24.66	0.2924
100	1	1	64-QAM	-	22.32	-		
100	1	1	256-QAM	-	20.46	-		
Limit	EIRP < 1W			Result			Pass	



NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
10	1	1	PI/2 BPSK	26.70	26.60	26.47	27.74	0.5943
10	1	22		26.62	26.51	26.44		
10	12	6		26.79	26.70	26.50		
10	1	1	QPSK	26.72	26.64	26.51		
10	1	22		26.68	26.53	26.43		
10	12	6		26.84	26.69	26.51		
10	1	1	16-QAM	25.69	25.71	25.54	26.61	0.4581
10	1	1	64-QAM	24.47	24.30	24.23		
10	1	1	256-QAM	22.14	22.29	22.05		
Limit	EIRP < 1W			Result			Pass	

NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
15	1	1	PI/2 BPSK	26.75	26.53	26.48	27.73	0.5929
15	1	36		26.65	26.51	26.37		
15	18	9		26.83	26.61	26.54		
15	1	1	QPSK	26.73	26.55	26.44		
15	1	36		26.72	26.54	26.34		
15	18	9		26.70	26.66	25.56		
15	1	1	16-QAM	25.62	25.67	25.50	26.57	0.4539
15	1	1	64-QAM	24.45	23.98	24.22		
15	1	1	256-QAM	22.01	22.19	21.79		
Limit	EIRP < 1W			Result			Pass	

NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
20	1	1	PI/2 BPSK	26.66	26.44	26.50	27.73	0.5929
20	1	49		26.63	26.47	26.28		
20	25	12		26.81	26.63	26.58		
20	1	1	QPSK	26.71	26.53	26.50		
20	1	49		26.66	26.41	26.31		
20	25	12		26.83	26.69	26.62		
20	1	1	16-QAM	25.58	25.41	25.55	26.48	0.4446
20	1	1	64-QAM	24.15	24.21	23.94		
20	1	1	256-QAM	21.97	21.99	21.69		
Limit	EIRP < 1W			Result			Pass	



NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
40	1	1	PI/2 BPSK	26.41	26.23	26.25	27.68	0.5861
40	1	104		26.22	26.22	26.02		
40	50	25		26.78	26.72	26.57		
40	1	1	QPSK	26.34	26.27	26.18		
40	1	104		26.15	26.20	25.98		
40	50	25		26.77	26.70	26.62		
40	1	1	16-QAM	25.37	25.16	25.36	26.27	0.4236
40	1	1	64-QAM	23.94	23.92	23.55		
40	1	1	256-QAM	21.62	21.89	21.72		
Limit	EIRP < 1W			Result			Pass	

NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
50	1	1	PI/2 BPSK	26.64	26.52	26.50	27.74	0.5943
50	1	131		26.47	26.42	26.29		
50	64	32		26.84	26.73	26.64		
50	1	1	QPSK	26.64	26.54	26.52		
50	1	131		26.51	26.48	26.20		
50	64	32		26.82	26.74	26.79		
50	1	1	16-QAM	25.66	25.38	25.38	26.56	0.4529
50	1	1	64-QAM	24.38	23.79	24.08		
50	1	1	256-QAM	22.26	22.25	21.94		
Limit	EIRP < 1W			Result			Pass	

NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
60	1	1	PI/2 BPSK	26.63	26.51	26.55	27.68	0.5861
60	1	160		26.52	26.44	26.28		
60	81	40		26.78	26.77	26.76		
60	1	1	QPSK	26.70	26.61	26.56		
60	1	160		26.55	26.47	26.34		
60	81	40		26.76	26.76	26.73		
60	1	1	16-QAM	25.38	25.52	25.57	26.47	0.4436
60	1	1	64-QAM	23.84	23.68	23.62		
60	1	1	256-QAM	22.10	21.91	21.95		
Limit	EIRP < 1W			Result			Pass	



NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
80	1	1	PI/2 BPSK	26.14	26.11	26.14	27.47	0.5585
80	1	215		25.85	25.77	25.74		
80	108	54		26.55	26.57	26.53		
80	1	1	QPSK	26.21	26.30	26.20		
80	1	215		25.89	25.87	25.80		
80	108	54		26.54	26.57	26.53		
80	1	1	16-QAM	24.78	25.37	25.46	26.36	0.4325
80	1	1	64-QAM	23.38	23.42	23.66		
80	1	1	256-QAM	21.45	21.64	21.31		
Limit	EIRP < 1W			Result			Pass	

NR n78 (HPUE) Maximum Average Power [dBm] (GT - LC = 0.9 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
100	1	1	PI/2 BPSK	-	25.98	-	27.45	0.5559
100	1	271		-	25.36	-		
100	135	67		-	26.55	-		
100	1	1	QPSK	-	26.06	-		
100	1	271		-	25.42	-		
100	135	67		-	26.54	-		
100	1	1	16-QAM	-	25.26	-	26.16	0.413
100	1	1	64-QAM	-	23.33	-		
100	1	1	256-QAM	-	21.09	-		
Limit	EIRP < 1W			Result			Pass	



Appendix B. Test Results of Radiated Test

EN-DC 2A-n77A (Ant. Main + Ant. MIMO 2)

EN-DC 2A-n77A / 20MHz + 100MHz / QPSK + 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	6902	-45.52	-13	-32.52	-72.02	-53.67	1.73	12.04	H
	10351	-41.83	-13	-28.83	-71.9	-48.31	2.39	11.02	H
	13806	-34.47	-13	-21.47	-72.51	-41.86	2.85	12.39	H
	21008	-53.43	-13	-40.43	-74.7	-67.90	2.08	18.70	H
	24504	-51.63	-13	-38.63	-76.39	-64.96	2.03	17.51	H
	28012	-50.19	-13	-37.19	-76	-65.05	2.40	19.40	H
									H
	6902	-46.37	-13	-33.37	-72.43	-54.52	1.73	12.04	V
	10353	-41.56	-13	-28.56	-71.67	-48.03	2.39	11.02	V
	13804	-34.48	-13	-21.48	-72.89	-41.87	2.85	12.40	V
	21008	-53.26	-13	-40.26	-74.2	-67.73	2.08	18.70	V
	24504	-50.31	-13	-37.31	-76.46	-63.64	2.03	17.51	V
	28012	-49.00	-13	-36.00	-76.22	-63.86	2.40	19.40	V
									V

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



5G NR n78 (HPUE) (Ant. MIMO 2)

5G NR n78 (HPUE) / 100MHz / 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	6902	-45.78	-13	-32.78	-72.28	-53.93	1.73	12.04	H
	10351	-41.56	-13	-28.56	-71.63	-48.04	2.39	11.02	H
	13806	-34.96	-13	-21.96	-73	-42.35	2.85	12.39	H
	21008	-53.98	-13	-40.98	-75.25	-68.45	2.08	18.70	H
	24504	-52.15	-13	-39.15	-76.91	-65.48	2.03	17.51	H
	28012	-50.47	-13	-37.47	-76.28	-65.33	2.40	19.40	H
									H
	6902	-46.29	-13	-33.29	-72.35	-54.44	1.73	12.04	V
	10351	-41.33	-13	-28.33	-71.45	-47.81	2.39	11.02	V
	13806	-34.62	-13	-21.62	-73.02	-42.01	2.85	12.39	V
	21008	-54.16	-13	-41.16	-75.1	-68.63	2.08	18.70	V
	24504	-50.94	-13	-37.94	-77.09	-64.27	2.03	17.51	V
	28012	-49.06	-13	-36.06	-76.27	-63.92	2.40	19.40	V
									V

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



5G NR n78 MIMO (HPUE) (Ant. MIMO 2 + Ant. Main)

5G NR n78 MIMO (HPUE) / 100MHz / 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	6903	-45.63	-13	-32.63	-72.13	-53.78	1.73	12.04	H
	10354	-41.51	-13	-28.51	-71.6	-47.98	2.39	11.02	H
	13805	-34.86	-13	-21.86	-72.9	-42.25	2.85	12.40	H
	21008	-53.68	-13	-40.68	-74.95	-68.15	2.08	18.70	H
	24504	-52.36	-13	-39.36	-77.12	-65.69	2.03	17.51	H
	28012	-50.49	-13	-37.49	-76.3	-65.35	2.40	19.40	H
									H
	6903	-45.57	-13	-32.57	-71.63	-53.72	1.73	12.04	V
	10354	-41.63	-13	-28.63	-71.75	-48.10	2.39	11.02	V
	13805	-34.46	-13	-21.46	-72.86	-41.85	2.85	12.40	V
	21008	-53.49	-13	-40.49	-74.43	-67.96	2.08	18.70	V
	24504	-50.95	-13	-37.95	-77.1	-64.28	2.03	17.51	V
	28012	-49.27	-13	-36.27	-76.49	-64.13	2.40	19.40	V
									V

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



EN-DC 2A-n78A (Ant. Main + Ant. MIMO 2)

EN-DC 2A-n78A / 20MHz + 50MHz / QPSK + 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	6955	-45.08	-13	-32.08	-71.82	-53.17	1.73	11.96	H
	10433	-40.67	-13	-27.67	-71	-47.08	2.39	10.95	H
	13911	-35.35	-13	-22.35	-73.09	-42.62	2.87	12.29	H
	20866	-53.25	-13	-40.25	-74.46	-67.70	2.07	18.67	H
	24344	-52.09	-13	-39.09	-76.85	-65.58	2.01	17.66	H
	27822	-50.57	-13	-37.57	-76.58	-65.42	2.33	19.33	H
									H
	6955	-45.71	-13	-32.71	-71.98	-53.80	1.73	11.96	V
	10433	-41.43	-13	-28.43	-71.62	-47.84	2.39	10.95	V
	13911	-34.44	-13	-21.44	-72.43	-41.71	2.87	12.29	V
	20866	-53.76	-13	-40.76	-74.56	-68.21	2.07	18.67	V
	24344	-50.67	-13	-37.67	-76.55	-64.16	2.01	17.66	V
	27822	-49.36	-13	-36.36	-76.73	-64.21	2.33	19.33	V
									V

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



5G NR n77 (HPUE) (Ant. Main)

5G NR n77 (HPUE) / 100MHz / 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	6903	-45.79	-13	-32.79	-72.29	-53.94	1.73	12.04	H
	10354	-41.73	-13	-28.73	-71.82	-48.20	2.39	11.02	H
	13805	-34.97	-13	-21.97	-73.01	-42.36	2.85	12.40	H
	21008	-53.58	-13	-40.58	-76.35	-68.05	2.08	18.70	H
	24504	-52.82	-13	-39.82	-77.78	-66.15	2.03	17.51	H
	28012	-51.10	-13	-38.10	-77.01	-65.96	2.40	19.40	H
									H
	6903	-46.43	-13	-33.43	-72.49	-54.58	1.73	12.04	V
	10354	-41.79	-13	-28.79	-71.91	-48.26	2.39	11.02	V
	13805	-34.72	-13	-21.72	-73.12	-42.11	2.85	12.40	V
	21008	-53.74	-13	-40.74	-76.18	-68.21	2.08	18.70	V
	24504	-51.00	-13	-38.00	-77.35	-64.33	2.03	17.51	V
	28012	-50.02	-13	-37.02	-77.34	-64.88	2.40	19.40	V
									V

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



5G NR n78 (HPUE) (Ant. Main)

5G NR n78 (HPUE) / 100MHz / 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	6902	-44.48	-13	-31.48	-70.98	-52.63	1.73	12.04	H
	10351	-41.62	-13	-28.62	-71.71	-48.10	2.39	11.02	H
	13806	-34.94	-13	-21.94	-72.98	-42.33	2.85	12.39	H
	21008	-53.68	-13	-40.68	-76.12	-68.15	2.08	18.70	H
	24504	-51.60	-13	-38.60	-77.95	-64.93	2.03	17.51	H
	28012	-50.03	-13	-37.03	-77.35	-64.89	2.40	19.40	H
									H
	6902	-43.37	-13	-30.37	-69.43	-51.52	1.73	12.04	V
	10351	-41.15	-13	-28.15	-71.27	-47.63	2.39	11.02	V
	13806	-34.74	-13	-21.74	-73.14	-42.13	2.85	12.39	V
	21008	-53.44	-13	-40.44	-76.21	-67.91	2.08	18.70	V
	24504	-53.20	-13	-40.20	-78.16	-66.53	2.03	17.51	V
	28012	-51.47	-13	-38.47	-77.38	-66.33	2.40	19.40	V
									V

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



5G NR n77 (HPUE) (Ant. MIMO 1 SRS)

5G NR n77 (HPUE) / 100MHz / 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	6903	-45.93	-13	-32.93	-72.43	-54.08	1.73	12.04	H
	10354	-42.04	-13	-29.04	-72.13	-48.51	2.39	11.02	H
	13805	-34.99	-13	-21.99	-73.03	-42.38	2.85	12.40	H
	21008	-53.60	-13	-40.60	-76.37	-68.07	2.08	18.70	H
	24504	-52.98	-13	-39.98	-77.94	-66.31	2.03	17.51	H
	28010	-51.68	-13	-38.68	-77.59	-66.54	2.40	19.40	H
									H
	6903	-46.71	-13	-33.71	-72.77	-54.86	1.73	12.04	V
	10354	-41.75	-13	-28.75	-71.87	-48.22	2.39	11.02	V
	13805	-34.62	-13	-21.62	-73.02	-42.01	2.85	12.40	V
	21008	-53.83	-13	-40.83	-76.27	-68.30	2.08	18.70	V
	24504	-50.98	-13	-37.98	-77.33	-64.31	2.03	17.51	V
	28012	-50.20	-13	-37.20	-77.52	-65.06	2.40	19.40	V
									V

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



5G NR n78 (HPUE) (Ant. MIMO 1 SRS)

5G NR n78 (HPUE) / 100MHz / 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	6902	-45.90	-13	-32.90	-72.4	-54.05	1.73	12.04	H
	10351	-41.66	-13	-28.66	-71.75	-48.14	2.39	11.02	H
	13806	-35.27	-13	-22.27	-73.31	-42.66	2.85	12.39	H
	21008	-53.18	-13	-40.18	-75.62	-67.65	2.08	18.70	H
	24504	-51.32	-13	-38.32	-77.67	-64.65	2.03	17.51	H
	28012	-49.85	-13	-36.85	-77.16	-64.71	2.40	19.40	H
									H
	6902	-46.34	-13	-33.34	-72.4	-54.49	1.73	12.04	V
	10351	-41.95	-13	-28.95	-72.07	-48.43	2.39	11.02	V
	13806	-34.91	-13	-21.91	-73.31	-42.30	2.85	12.39	V
	21008	-53.57	-13	-40.57	-76.34	-68.04	2.08	18.70	V
	24504	-52.85	-13	-39.85	-77.81	-66.18	2.03	17.51	V
	28012	-51.32	-13	-38.32	-77.23	-66.18	2.40	19.40	V
									V

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



5G NR n77 (HPUE) (Ant. Aux. SRS)

5G NR n77 (HPUE) / 100MHz / 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	6903	-45.91	-13	-32.91	-72.41	-54.06	1.73	12.04	H
	10354	-41.33	-13	-28.33	-71.42	-47.80	2.39	11.02	H
	13805	-35.21	-13	-22.21	-73.25	-42.60	2.85	12.40	H
	21008	-53.55	-13	-40.55	-76.32	-68.02	2.08	18.70	H
	24504	-52.93	-13	-39.93	-77.89	-66.26	2.03	17.51	H
	28012	-50.84	-13	-37.84	-76.75	-65.70	2.40	19.40	H
									H
	6903	-46.27	-13	-33.27	-72.33	-54.42	1.73	12.04	V
	10354	-42.03	-13	-29.03	-72.15	-48.50	2.39	11.02	V
	13805	-34.47	-13	-21.47	-72.87	-41.86	2.85	12.40	V
	21008	-53.78	-13	-40.78	-76.22	-68.25	2.08	18.70	V
	24504	-51.36	-13	-38.36	-77.71	-64.69	2.03	17.51	V
	28012	-49.81	-13	-36.81	-77.13	-64.67	2.40	19.40	V
									V

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



5G NR n78 (HPUE) (Ant. Aux. SRS)

5G NR n78 (HPUE) / 100MHz / 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	6902	-45.85	-13	-32.85	-72.35	-54.00	1.73	12.04	H
	10351	-40.80	-13	-27.80	-70.87	-47.28	2.39	11.02	H
	13806	-35.26	-13	-22.26	-73.3	-42.65	2.85	12.39	H
	21008	-53.72	-13	-40.72	-76.49	-68.19	2.08	18.70	H
	24504	-52.98	-13	-39.98	-77.94	-66.31	2.03	17.51	H
	28012	-51.43	-13	-38.43	-77.34	-66.29	2.40	19.40	H
									H
	6902	-45.96	-13	-32.96	-72.02	-54.11	1.73	12.04	V
	10351	-41.38	-13	-28.38	-71.49	-47.86	2.39	11.02	V
	13806	-34.89	-13	-21.89	-73.29	-42.28	2.85	12.39	V
	21008	-53.69	-13	-40.69	-76.13	-68.16	2.08	18.70	V
	24504	-51.54	-13	-38.54	-77.89	-64.87	2.03	17.51	V
	28012	-50.18	-13	-37.18	-77.5	-65.04	2.40	19.40	V
									V

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