

FCC Radio Test Report

FCC ID: XMR2023RM520NGLM

Report No. : BTL-FCCP-19-2311T076
Equipment : 5G Sub-6 GHz M.2 Module
Model Name : RM520N-GL
Brand Name : Quectel
Applicant : Quectel Wireless Solutions Co., Ltd.
Address : Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233

Radio Function : NR Band n48

FCC Rule Part(s) : FCC CFR Title 47, Part 96

Date of Receipt : 2023/11/16
Date of Test : 2023/11/27 ~ 2024/1/12
Issued Date : 2024/3/19

The above equipment has been tested and found in compliance with the requirement of the above standards by BTL Inc.

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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

This report is the confidential property of the client. As a mutual protection to the clients, the public and ourselves, the test report shall not be reproduced, except in full, without our written approval.

BTL's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

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REVISION HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-19-2311T076	R00	Original Report.	2024/1/31	Invalid
BTL-FCCP-19-2311T076	R01	Revised Typo.	2024/3/19	Valid

1 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards.

Standard(s) Section	Description	Test Result	Judgement	Remark
2.1046 96.41	Effective Isotropic Radiated Power	APPENDIX A	Pass	-----
2.1053 96.41	Radiated Spurious Emissions	APPENDIX B	Pass	-----

NOTE:

- (1) "N/A" denotes test is not applicable in this Test Report.
- (2) The report format version is TP.1.1.1.
- (3) This test report is issued for the RF module (FCCID: XMR2023RM520NGLM) to be incorporated to the host device (Model number: TP00160A), Product name: Notebook Computer).
Since the RF module has been certificated, after evaluation, above test items were criticized and reconfirmed in this report.
- (4) After spot check, this revision does not change original radio parameters.

1.1 REFERENCE TEST GUIDANCE

ANSI C63.26-2015
 ANSI/TIA-603-E-2016
 FCC KDB 971168 D01 Power Meas License Digital Systems v03r01

1.2 TEST FACILITY

The test locations stated below are under the TAF Accreditation Number 0659.

The test location(s) used to collect the test data in this report are:
 No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan
 (FCC DN: TW0659)

C05 SR10 SR11

No. 72, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan
 (FCC DN: TW0659)

C06 CB21 CB22

1.3 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k = 2$, providing a level of confidence of approximately **95 %**.

The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{cispr} requirement.

A. Radiated emissions test :

Test Site	Measurement Frequency Range	U,(dB)
CB21	0.03 GHz ~ 0.2 GHz	4.17
	0.2 GHz ~ 1 GHz	4.72
	1 GHz ~ 6 GHz	5.21
	6 GHz ~ 18 GHz	5.51
	18 GHz ~ 26 GHz	3.69
	26 GHz ~ 40 GHz	4.23

NOTE:

Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.4 TEST ENVIRONMENT CONDITIONS

Test Item	Environment Condition	Test Voltage	Tested by
Effective Isotropic Radiated Power	22.5 °C, 51 %	AC 120V	Cora Lin
Radiated Spurious Emissions	Refer to data	AC 120V	Kevin Zhen

2 GENERAL INFORMATION

2.1 DESCRIPTION OF EUT

Equipment	5G Sub-6 GHz M.2 Module			
Model Name	RM520N-GL			
Brand Name	Quectel			
Model Difference	N/A			
Power Source	Supplied from host system.			
Power Rating	3.3 Vdc			
Host device information				
Equipment	Notebook Computer			
Model Name	TP00160A			
Brand Name	Lenovo			
Model Difference	N/A			
Power Source	DC voltage supplied from External Power Supply. (Lenovo/ ADLX65YSDC2A)			
Power Rating	I/P: 100-240V~ 1.8A 50-60Hz O/P: 20.0VDC 3.25A 65.0W / 15.0VDC 3.0A / 9.0VDC 3.0A / 5.0VDC 3.0A 15.0W			
WIFI+BT Module	Intel® Wi-Fi 6E AX211 / AX211D2W Intel® BE200D2W / BE200D2W			
WWAN Module	Quectel / RM520N-GL Quectel / EM061K-GL			
NFC Module	FOXCONN / T77H747			
Operation Frequency	Band	UL Frequency (MHz)	DL Frequency (MHz)	
	NR n48	3550 ~ 3700	-	
Maximum EIRP	Band	BW (MHz)	Mode	Power (W)
	NR n48 Main Antenna	10	PI/2 BPSK	0.158
			QPSK	0.156
			16QAM	0.126
			64QAM	0.087
			256QAM	0.054
		20	PI/2 BPSK	0.160
			QPSK	0.158
			16QAM	0.127
			64QAM	0.088
			256QAM	0.055
		30	PI/2 BPSK	0.163
			QPSK	0.160
	16QAM		0.129	
	64QAM		0.090	
	256QAM		0.057	
	40	PI/2 BPSK	0.164	
		QPSK	0.162	
		16QAM	0.131	
		64QAM	0.090	
256QAM		0.057		
NR n48 MIMO2 Antenna	10	PI/2 BPSK	0.132	
		QPSK	0.130	
		16QAM	0.105	
		64QAM	0.073	
		256QAM	0.045	

Maximum EIRP	NR n48 MIMO2 Antenna	20	PI/2 BPSK	0.134
			QPSK	0.132
			16QAM	0.106
			64QAM	0.073
			256QAM	0.046
		30	PI/2 BPSK	0.129
			QPSK	0.127
			16QAM	0.102
			64QAM	0.072
			256QAM	0.045
		40	PI/2 BPSK	0.137
			QPSK	0.135
	16QAM		0.110	
	64QAM		0.076	
	256QAM		0.047	
	NR n48 UL MIMO	10	QPSK	0.102
			16QAM	0.089
			64QAM	0.062
			256QAM	0.042
		20	QPSK	0.103
16QAM			0.090	
64QAM			0.063	
256QAM			0.042	
30		QPSK	0.104	
		16QAM	0.091	
		64QAM	0.064	
		256QAM	0.043	
40	QPSK	0.106		
	16QAM	0.092		
	64QAM	0.065		
	256QAM	0.043		

Test Model	RM520N-GL
Sample Status	Engineering Sample
EUT Modification(s)	N/A

NOTE:

(1) The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

(2) Table for Filed Antenna:

Antenna	Manufacture	Parts Number	Type	Connector	Gain (dBi)	Note
Main	Luxshare-ICT	DC330022C00	PIFA	I-PEX	0.83	NR Band n48
MIMO1	Luxshare-ICT	DC330022C00	PIFA	I-PEX	-	RX only
MIMO2	Luxshare-ICT	DC330022D00	PIFA	I-PEX	0.22	NR Band n48

Antenna	Manufacture	Parts Number	Type	Connector	Gain (dBi)	Note
Main	SPEEDWIRE	DC330022J10	PIFA	I-PEX	0.83	NR Band n48
MIMO1	SPEEDWIRE	DC330022J10	PIFA	I-PEX	-	RX only
MIMO2	SPEEDWIRE	DC330022J20	PIFA	I-PEX	0.22	NR Band n48

(3) The above Antenna information are derived from the antenna data sheet provided by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

2.2 TEST MODES

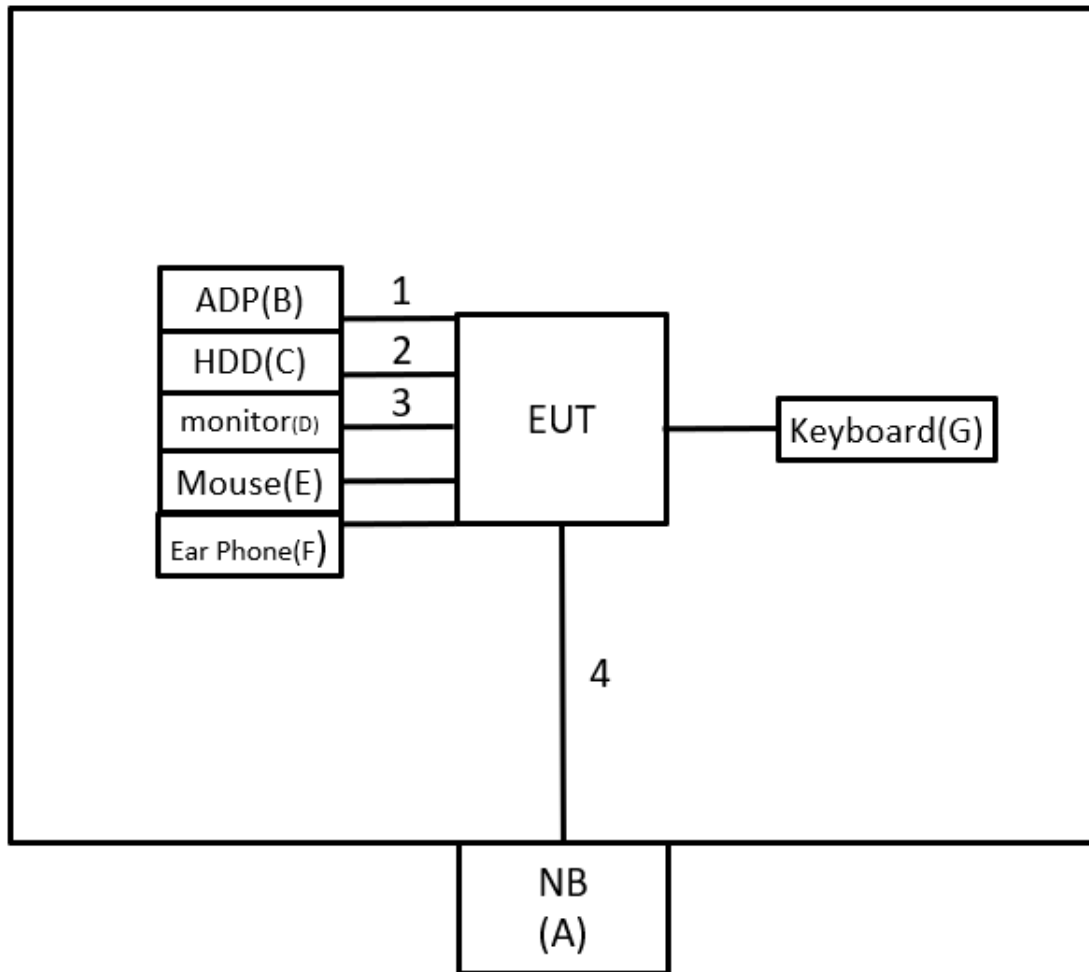
Test Items	Band	Test Mode	Note
Effective Isotropic Radiated Power	NR n48	Refer to APPENDIX A	-
Radiated Spurious Emissions (Below 1G)	NR n48	TX Mode (CH 638000)	-
Radiated Spurious Emissions (Above 1G)	NR n48	TX Mode (CH 638000/641666/645332)	-
Radiated Spurious Emissions (Above 18G)	NR n48	TX Mode (CH 638000)	-

NOTE:

- (1) All X, Y and Z axes are evaluated, but only the worst case (X axis) is recorded.
- (2) For Radiated Spurious Emissions both PI/2 BPSK, QPSK, 16QAM, 64QAM and 256QAM are evaluated, but only the worst case (QPSK) is recorded.
- (3) Support UL MIMO.

2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Equipment letters and Cable numbers refer to item numbers described in the tables of clause 2.4.



2.4 SUPPORT UNITS

Item	Equipment	Brand	Model No.	Series No.	Remarks
A	NB	HP	TPN-1119	N/A	Furnished by test lab.
B	ADP	Lenovo	ADLX65YSDC2 A	N/A	Supplied by test requester.
C	USB 2.5" HDD	TOSIBA	XS700	483B60M9KQSS	Furnished by test lab.
D	27" 4K Monitor	DELL	U2720Q	CN-083VF-WSL0 0-0B7-332L	Furnished by test lab.
E	Mouse	Lenovo	SM-8823	N/A	Furnished by test lab.
F	Ear Phone	HTC	N/A	N/A	Furnished by test lab.
G	Keyboard	Bloody	KB-8	N/A	Furnished by test lab.

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	N/A	N/A	0.9m	Power Cord	Supplied by test requester.
2	N/A	N/A	1m	Type C to USB Cable	Furnished by test lab.
3	N/A	N/A	1.8m	HDMI	Furnished by test lab.
4	N/A	N/A	10m	RJ45 Cable	Furnished by test lab.

3 EFFECTIVE ISOTROPIC RADIATED POWER MEASUREMENT

3.1 LIMIT

EIRP for CBRS equipment as below table:

Device	Maximum EIRP (dBm/10 MHz)
End User Device	23
Category A CBSD	30
Category B CBSD	47

3.2 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 5.8.

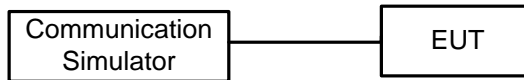
- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value “ of step a. Record the power level of S.G
- c. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn.}$
- d. ERP can be calculated form EIRP by subtracting the gain of dipole, $ERP = EIPR - 2.15\text{dBi.}$
- e. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

3.3 DEVIATION FROM TEST STANDARD

No deviation.

3.4 TEST SETUP

Conducted Measurement:



3.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

3.6 TEST RESULT

Please refer to the APPENDIX A.

4 RADIATED SPURIOUS EMISSIONS MEASUREMENT

4.1 LIMIT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm.

NOTE:

- (1) The measurements of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.
- (2) The test result calculated as following:

Measurement Value = Reading Level + Correct Factor
 Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
 Margin Level = Measurement Value - Limit Value

Calculation example:

Reading Level (dBm)		Correct Factor (dB/m)		Measurement Value (dBm)
-50.43	+	-2.11	=	-52.54

Measurement Value (dBm)		Limit Value (dBm)		Margin Level (dB)
-52.54	-	-13	=	-39.54

4.2 TEST PROCEDURE

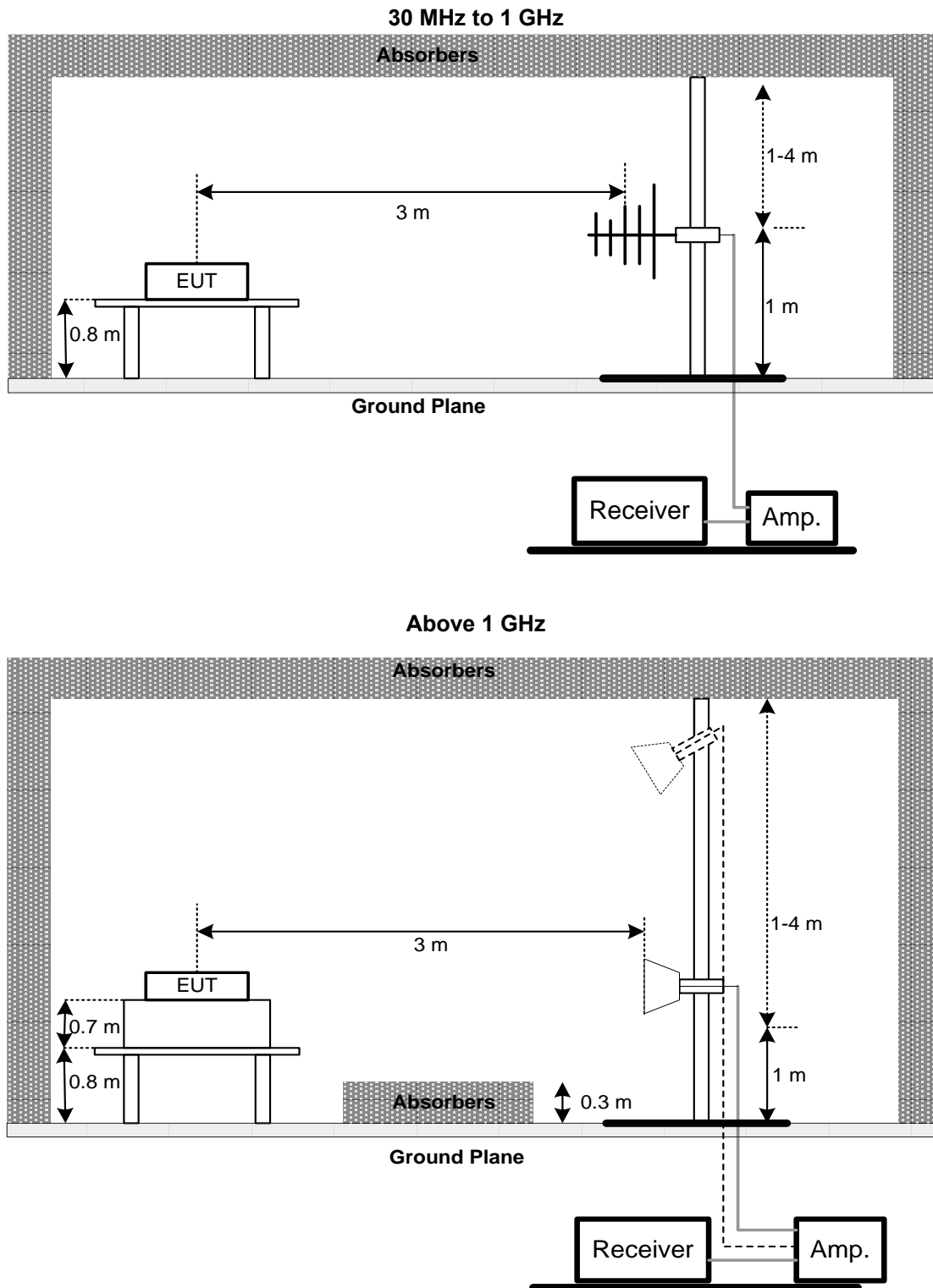
The testing follows FCC KDB 971168 v03r01 Section 6.2.

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step a. Record the power level of S.G
- c. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$.
- d. ERP can be calculated form EIRP by subtracting the gain of dipole, $ERP = EIPR - 2.15\text{dBi}$.
- e. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.3 DEVIATION FROM TEST STANDARD

No deviation.

4.4 TEST SETUP



4.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

4.6 TEST RESULT

Please refer to the APPENDIX B.

5 LIST OF MEASURING EQUIPMENTS

Effective Isotropic Radiated Power						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	WIRELESS COMMUNICATION TEST SET	Agilent	E5515C	GB47390193	2023/7/4	2024/7/3
2	Radio Communication Test Station	ANRITSU	MT8821C	6262044728	2023/11/22	2024/11/21
3	Radio Communication Analyzer	ANRITSU	MT8000A	6262036844	2023/11/22	2024/11/21
4	Radio Communication Analyzer	Keysight	E7515B	MY59020217	2023/7/6	2024/7/5

Radiated Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Preamplifier	EMCI	EMC330N	980850	2023/9/6	2024/9/5
2	Preamplifier	EMCI	EMC118A45SE	980819	2023/3/7	2024/3/6
3	Pre-Amplifier	EMCI	EMC184045SE	980907	2023/9/21	2024/9/20
4	Test Cable	EMCI	EMC104-SM-1000	180809	2023/7/10	2024/7/9
5	Test Cable	EMCI	EMC104-SM-SM-3000	220322	2023/3/14	2024/3/13
6	Test Cable	EMCI	EMC104-SM-SM-7000	220324	2023/3/14	2024/3/13
7	EXA Signal Analyzer	keysight	N9020B	MY57120120	2023/2/24	2024/2/23
8	Horn Antenna	RFSPIN	DRH18-E	211202A18EN	2023/5/12	2024/5/11
9	Horn Ant	Schwarzbeck	BBHA 9170D	1136	2023/5/12	2024/5/11
10	Log-bicon Antenna	Schwarzbeck	VULB9168	1369	2023/5/9	2024/5/8
11	6dB Attenuator	EMCI	EMCI-N-6-06	AT-06001	2023/5/9	2024/5/8
12	Test Cable	EMCI	EMC101G-KM-KM-3000	220329	2023/3/14	2024/3/13
13	Test Cable	EMCI	EMC102-KM-KM-1000	220327	2023/3/14	2024/3/13
14	WIRELESS COMMUNICATION TEST SET	Agilent	E5515C	GB47390193	2023/7/4	2024/7/3
15	Radio Communication Analyzer	ANRITSU	MT8820C	6201381608	2022/12/22	2023/12/21
16	Radio Communication Analyzer	Keysight	E7515B	MY59020217	2023/7/6	2024/7/5
17	Measurement Software	EZ	EZ_EMCI (Version NB-03A1-01)	N/A	N/A	N/A

Remark: "N/A" denotes no model name, no serial no. or no calibration specified.
All calibration period of equipment list is one year.

6 EUT TEST PHOTO

Please refer to document Appendix No.: TP-2311T076-FCCP-1 (APPENDIX-TEST PHOTOS).

7 EUT PHOTOS

Please refer to document Appendix No.: EP-2311T076-1 (APPENDIX-EUT PHOTOS).

APPENDIX A EQUIVALENT ISOTROPIC RADIATED POWER

NR Band n48 Main Antenna Power:

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	EIRP power (dBm)	EIRP power (W)
n48_SA	10	637000	3555	PI/2 BPSK	1	1	0	20.99	21.82	0.152
					1	22	0	20.96	21.79	0.151
					24	0	0.5	20.37	21.20	0.132
				QPSK	1	1	0	20.92	21.75	0.150
					1	22	0	20.91	21.74	0.149
					24	0	1	19.96	20.79	0.120
				16QAM	1	1	1	19.88	20.71	0.118
					1	22	1	20.04	20.87	0.122
					24	0	2	19.00	19.83	0.096
				64QAM	1	1	2.5	18.50	19.33	0.086
					1	22	2.5	18.51	19.34	0.086
					24	0	2.5	18.35	19.18	0.083
		256QAM	1	1	4.5	16.47	17.30	0.054		
			1	22	4.5	16.45	17.28	0.053		
			24	0	4.5	16.50	17.33	0.054		
		641666	3624.99	PI/2 BPSK	1	1	0	21.10	21.93	0.156
					1	22	0	21.16	21.99	0.158
					24	0	0.5	20.43	21.26	0.134
				QPSK	1	1	0	21.10	21.93	0.156
					1	22	0	20.94	21.77	0.150
					24	0	1	19.94	20.77	0.119
				16QAM	1	1	1	20.16	20.99	0.126
					1	22	1	20.05	20.88	0.122
					24	0	2	18.98	19.81	0.096
				64QAM	1	1	2.5	18.53	19.36	0.086
					1	22	2.5	18.52	19.35	0.086
					24	0	2.5	18.49	19.32	0.086
		256QAM	1	1	4.5	16.53	17.36	0.054		
			1	22	4.5	16.50	17.33	0.054		
			24	0	4.5	16.44	17.27	0.053		
		646332	3694.98	PI/2 BPSK	1	1	0	20.82	21.65	0.146
					1	22	0	20.76	21.59	0.144
					24	0	0.5	20.51	21.34	0.136
				QPSK	1	1	0	20.85	21.68	0.147
					1	22	0	20.77	21.60	0.145
					24	0	1	19.94	20.77	0.119
16QAM	1			1	1	20.04	20.87	0.122		
	1			22	1	20.02	20.85	0.122		
	24			0	2	19.02	19.85	0.097		
64QAM	1			1	2.5	18.55	19.38	0.087		
	1			22	2.5	18.47	19.30	0.085		
	24			0	2.5	18.57	19.40	0.087		
256QAM	1	1	4.5	16.38	17.21	0.053				
	1	22	4.5	16.49	17.32	0.054				
	24	0	4.5	16.51	17.34	0.054				

NOTE:

(1) EIRP = Average power + Antenna gain.

(2) ERP = EIRP - 2.15.

 (3) $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	EIRP power (dBm)	EIRP power (W)
n48_SA	20	637334	3560.01	PI/2 BPSK	1	1	0	21.04	21.87	0.154
					1	49	0	21.03	21.86	0.153
					50	0	0.5	20.42	21.25	0.133
				QPSK	1	1	0	20.99	21.82	0.152
					1	49	0	20.96	21.79	0.151
					50	0	1	20.02	20.85	0.122
				16QAM	1	1	1	19.95	20.78	0.120
					1	49	1	20.11	20.94	0.124
					50	0	2	19.07	19.90	0.098
				64QAM	1	1	2.5	18.54	19.37	0.086
					1	49	2.5	18.57	19.40	0.087
					50	0	2.5	18.42	19.25	0.084
				256QAM	1	1	4.5	16.53	17.36	0.054
					1	49	4.5	16.51	17.34	0.054
					50	0	4.5	16.55	17.38	0.055
		641666	3624.99	PI/2 BPSK	1	1	0	21.18	22.01	0.159
					1	49	0	21.21	22.04	0.160
					50	0	0.5	20.48	21.31	0.135
				QPSK	1	1	0	21.16	21.99	0.158
					1	49	0	21.02	21.85	0.153
					50	0	1	19.99	20.82	0.121
				16QAM	1	1	1	20.20	21.03	0.127
					1	49	1	20.11	20.94	0.124
					50	0	2	19.03	19.86	0.097
				64QAM	1	1	2.5	18.59	19.42	0.087
					1	49	2.5	18.60	19.43	0.088
					50	0	2.5	18.55	19.38	0.087
				256QAM	1	1	4.5	16.60	17.43	0.055
					1	49	4.5	16.57	17.40	0.055
					50	0	4.5	16.52	17.35	0.054
		646000	3690	PI/2 BPSK	1	1	0	20.87	21.70	0.148
					1	49	0	20.83	21.66	0.147
					50	0	0.5	20.54	21.37	0.137
				QPSK	1	1	0	20.93	21.76	0.150
					1	49	0	20.95	21.78	0.151
					50	0	1	20.12	20.95	0.124
				16QAM	1	1	1	20.15	20.98	0.125
					1	49	1	20.10	20.93	0.124
					50	0	2	18.87	19.70	0.093
				64QAM	1	1	2.5	18.87	19.70	0.093
					1	49	2.5	18.55	19.38	0.087
					50	0	2.5	18.53	19.36	0.086
				256QAM	1	1	4.5	16.54	17.37	0.055
					1	49	4.5	16.58	17.41	0.055
					50	0	4.5	16.37	17.20	0.052

NOTE:

(1) EIRP = Average power + Antenna gain.

(2) ERP = EIRP - 2.15.

 (3) $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	EIRP power (dBm)	EIRP power (W)				
n48_SA	30	637668	3565.02	PI/2 BPSK	1	1	0	21.09	21.92	0.156				
					1	76	0	21.07	21.90	0.155				
					75	0	0.5	20.49	21.32	0.136				
				QPSK	1	1	0	21.04	21.87	0.154				
					1	76	0	21.02	21.85	0.153				
					75	0	1	20.10	20.93	0.124				
				16QAM	1	1	1	20.01	20.84	0.121				
					1	76	1	20.18	21.01	0.126				
					75	0	2	19.15	19.98	0.100				
				64QAM	1	1	2.5	18.60	19.43	0.088				
					1	76	2.5	18.64	19.47	0.089				
					75	0	2.5	18.49	19.32	0.086				
				256QAM	1	1	4.5	16.60	17.43	0.055				
					1	76	4.5	16.57	17.40	0.055				
					75	0	4.5	16.62	17.45	0.056				
				641666	3624.99	PI/2 BPSK	3624.99	PI/2 BPSK	1	1	0	21.22	22.05	0.160
									1	76	0	21.28	22.11	0.163
									75	0	0.5	20.55	21.38	0.137
		QPSK	3624.99			QPSK	3624.99	QPSK	1	1	0	21.20	22.03	0.160
									1	76	0	21.07	21.90	0.155
									75	0	1	20.07	20.90	0.123
		16QAM	3624.99			16QAM	3624.99	16QAM	1	1	1	20.27	21.10	0.129
									1	76	1	20.15	20.98	0.125
									75	0	2	19.07	19.90	0.098
		64QAM	3624.99			64QAM	3624.99	64QAM	1	1	2.5	18.66	19.49	0.089
									1	76	2.5	18.64	19.47	0.089
									75	0	2.5	18.59	19.42	0.087
		256QAM	3624.99			256QAM	3624.99	256QAM	1	1	4.5	16.67	17.50	0.056
									1	76	4.5	16.60	17.43	0.055
									75	0	4.5	16.58	17.41	0.055
		645666	3684.99			PI/2 BPSK	3684.99	PI/2 BPSK	1	1	0	20.97	21.80	0.151
									1	76	0	20.88	21.71	0.148
									75	0	0.5	20.62	21.45	0.140
				QPSK	3684.99	QPSK	3684.99	QPSK	1	1	0	21.00	21.83	0.152
									1	76	0	20.92	21.75	0.150
									75	0	1	20.12	20.95	0.124
				16QAM	3684.99	16QAM	3684.99	16QAM	1	1	1	20.08	20.91	0.123
									1	76	1	19.97	20.80	0.120
									75	0	2	18.95	19.78	0.095
				64QAM	3684.99	64QAM	3684.99	64QAM	1	1	2.5	18.60	19.43	0.088
									1	76	2.5	18.58	19.41	0.087
									75	0	2.5	18.72	19.55	0.090
256QAM	3684.99			256QAM	3684.99	256QAM	1	1	4.5	16.60	17.43	0.055		
							1	76	4.5	16.70	17.53	0.057		
							75	0	4.5	16.58	17.41	0.055		

NOTE:

(1) EIRP = Average power + Antenna gain.

(2) ERP = EIRP - 2.15.

 (3) $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	EIRP power (dBm)	EIRP power (W)
n48_SA	40	638000	3570	PI/2 BPSK	1	1	0	21.16	21.99	0.158
					1	104	0	21.12	21.95	0.157
					100	0	0.5	20.55	21.38	0.137
				QPSK	1	1	0	21.10	21.93	0.156
					1	104	0	21.09	21.92	0.156
					100	0	1	20.17	21.00	0.126
				16QAM	1	1	1	20.05	20.88	0.122
					1	104	1	20.24	21.07	0.128
					100	0	2	19.19	20.02	0.100
				64QAM	1	1	2.5	18.67	19.50	0.089
					1	104	2.5	18.69	19.52	0.090
					100	0	2.5	18.55	19.38	0.087
		256QAM	1	1	4.5	16.68	17.51	0.056		
			1	104	4.5	16.61	17.44	0.055		
			100	0	4.5	16.67	17.50	0.056		
		641666	3624.99	PI/2 BPSK	1	1	0	21.28	22.11	0.163
					1	104	0	21.32	22.15	0.164
					100	0	0.5	20.63	21.46	0.140
				QPSK	1	1	0	21.26	22.09	0.162
					1	104	0	21.14	21.97	0.157
					100	0	1	20.12	20.95	0.124
				16QAM	1	1	1	20.35	21.18	0.131
					1	104	1	20.19	21.02	0.126
					100	0	2	19.15	19.98	0.100
				64QAM	1	1	2.5	18.73	19.56	0.090
					1	104	2.5	18.72	19.55	0.090
					100	0	2.5	18.64	19.47	0.089
		256QAM	1	1	4.5	16.71	17.54	0.057		
			1	104	4.5	16.59	17.42	0.055		
			100	0	4.5	16.64	17.47	0.056		
		645332	3679.98	PI/2 BPSK	1	1	0	21.19	22.02	0.159
					1	104	0	21.02	21.85	0.153
					100	0	0.5	20.77	21.60	0.145
				QPSK	1	1	0	21.08	21.91	0.155
					1	104	0	20.98	21.81	0.152
					100	0	1	20.22	21.05	0.127
16QAM	1			1	1	20.23	21.06	0.128		
	1			104	1	20.30	21.13	0.130		
	100			0	2	19.18	20.01	0.100		
64QAM	1			1	2.5	18.72	19.55	0.090		
	1			104	2.5	18.57	19.40	0.087		
	100			0	2.5	18.68	19.51	0.089		
256QAM	1	1	4.5	16.67	17.50	0.056				
	1	104	4.5	16.67	17.50	0.056				
	100	0	4.5	16.27	17.10	0.051				

NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3) $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$

NR Band n48 MIMO2 Antenna Power:

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	EIRP power (dBm)	EIRP power (W)
n48_SA	10	637000	3555	PI/2 BPSK	1	1	0	20.82	21.04	0.127
					1	22	0	20.79	21.01	0.126
					24	0	0.5	20.20	20.42	0.110
				QPSK	1	1	0	20.75	20.97	0.125
					1	22	0	20.74	20.96	0.125
					24	0	1	19.79	20.01	0.100
				16QAM	1	1	1	19.71	19.93	0.098
					1	22	1	19.87	20.09	0.102
					24	0	2	18.83	19.05	0.080
				64QAM	1	1	2.5	18.33	18.55	0.072
					1	22	2.5	18.34	18.56	0.072
					24	0	2.5	18.18	18.40	0.069
		256QAM	1	1	4.5	16.30	16.52	0.045		
			1	22	4.5	16.28	16.50	0.045		
			24	0	4.5	16.33	16.55	0.045		
		641666	3624.99	PI/2 BPSK	1	1	0	20.93	21.15	0.130
					1	22	0	20.99	21.21	0.132
					24	0	0.5	20.26	20.48	0.112
				QPSK	1	1	0	20.93	21.15	0.130
					1	22	0	20.77	20.99	0.126
					24	0	1	19.77	19.99	0.100
				16QAM	1	1	1	19.99	20.21	0.105
					1	22	1	19.88	20.10	0.102
					24	0	2	18.81	19.03	0.080
				64QAM	1	1	2.5	18.36	18.58	0.072
					1	22	2.5	18.35	18.57	0.072
					24	0	2.5	18.32	18.54	0.071
		256QAM	1	1	4.5	16.36	16.58	0.045		
			1	22	4.5	16.33	16.55	0.045		
			24	0	4.5	16.27	16.49	0.045		
		646332	3694.98	PI/2 BPSK	1	1	0	20.65	20.87	0.122
					1	22	0	20.59	20.81	0.121
					24	0	0.5	20.34	20.56	0.114
				QPSK	1	1	0	20.68	20.90	0.123
					1	22	0	20.60	20.82	0.121
					24	0	1	19.77	19.99	0.100
				16QAM	1	1	1	19.87	20.09	0.102
					1	22	1	19.85	20.07	0.102
					24	0	2	18.85	19.07	0.081
				64QAM	1	1	2.5	18.38	18.60	0.072
					1	22	2.5	18.30	18.52	0.071
					24	0	2.5	18.40	18.62	0.073
		256QAM	1	1	4.5	16.21	16.43	0.044		
			1	22	4.5	16.32	16.54	0.045		
			24	0	4.5	16.34	16.56	0.045		

NOTE:

(1) EIRP = Average power + Antenna gain.

(2) ERP = EIRP - 2.15.

 (3) $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	EIRP power (dBm)	EIRP power (W)
n48_SA	20	637334	3560.01	PI/2 BPSK	1	1	0	20.87	21.09	0.129
					1	49	0	20.86	21.08	0.128
					50	0	0.5	20.25	20.47	0.111
				QPSK	1	1	0	20.82	21.04	0.127
					1	49	0	20.79	21.01	0.126
					50	0	1	19.85	20.07	0.102
				16QAM	1	1	1	19.78	20.00	0.100
					1	49	1	19.94	20.16	0.104
					50	0	2	18.90	19.12	0.082
				64QAM	1	1	2.5	18.37	18.59	0.072
					1	49	2.5	18.40	18.62	0.073
					50	0	2.5	18.25	18.47	0.070
				256QAM	1	1	4.5	16.36	16.58	0.045
					1	49	4.5	16.34	16.56	0.045
					50	0	4.5	16.38	16.60	0.046
		641666	3624.99	PI/2 BPSK	1	1	0	21.01	21.23	0.133
					1	49	0	21.04	21.26	0.134
					50	0	0.5	20.31	20.53	0.113
				QPSK	1	1	0	20.99	21.21	0.132
					1	49	0	20.85	21.07	0.128
					50	0	1	19.82	20.04	0.101
				16QAM	1	1	1	20.03	20.25	0.106
					1	49	1	19.94	20.16	0.104
					50	0	2	18.86	19.08	0.081
				64QAM	1	1	2.5	18.42	18.64	0.073
					1	49	2.5	18.43	18.65	0.073
					50	0	2.5	18.38	18.60	0.072
				256QAM	1	1	4.5	16.43	16.65	0.046
					1	49	4.5	16.40	16.62	0.046
					50	0	4.5	16.35	16.57	0.045
		646000	3690	PI/2 BPSK	1	1	0	20.70	20.92	0.124
					1	49	0	20.66	20.88	0.122
					50	0	0.5	20.37	20.59	0.115
				QPSK	1	1	0	20.76	20.98	0.125
					1	49	0	20.78	21.00	0.126
					50	0	1	19.95	20.17	0.104
				16QAM	1	1	1	19.98	20.20	0.105
					1	49	1	19.93	20.15	0.104
					50	0	2	18.70	18.92	0.078
				64QAM	1	1	2.5	18.38	18.60	0.072
					1	49	2.5	18.40	18.62	0.073
					50	0	2.5	18.36	18.58	0.072
				256QAM	1	1	4.5	16.37	16.59	0.046
					1	49	4.5	16.41	16.63	0.046
					50	0	4.5	16.20	16.42	0.044

NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3) P(W) = $1 \text{ W} \cdot 10^{(P(\text{dBm}) / 10) / 1000}$

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	EIRP power (dBm)	EIRP power (W)	
n48_SA	30	637668	3565.02	PI/2 BPSK	1	1	0	21.09	20.92	0.124	
					1	76	0	21.07	20.90	0.123	
					75	0	0.5	20.49	20.32	0.108	
				QPSK	1	1	0	21.04	20.87	0.122	
					1	76	0	21.02	20.85	0.122	
					75	0	1	20.10	19.93	0.098	
				16QAM	1	1	1	20.01	19.84	0.096	
					1	76	1	20.18	20.01	0.100	
					75	0	2	19.15	18.98	0.079	
				64QAM	1	1	2.5	18.60	18.43	0.070	
					1	76	2.5	18.64	18.47	0.070	
					75	0	2.5	18.49	18.32	0.068	
		256QAM	1	1	4.5	16.60	16.43	0.044			
			1	76	4.5	16.57	16.40	0.044			
			75	0	4.5	16.62	16.45	0.044			
		641666	3624.99	PI/2 BPSK	3624.99	1	1	0	21.22	21.05	0.127
						1	76	0	21.28	21.11	0.129
						75	0	0.5	20.55	20.38	0.109
				QPSK	1	1	0	21.20	21.03	0.127	
					1	76	0	21.07	20.90	0.123	
					75	0	1	20.07	19.90	0.098	
				16QAM	1	1	1	20.27	20.10	0.102	
					1	76	1	20.15	19.98	0.100	
					75	0	2	19.07	18.90	0.078	
				64QAM	1	1	2.5	18.66	18.49	0.071	
					1	76	2.5	18.64	18.47	0.070	
					75	0	2.5	18.59	18.42	0.070	
		256QAM	1	1	4.5	16.67	16.50	0.045			
			1	76	4.5	16.60	16.43	0.044			
			75	0	4.5	16.58	16.41	0.044			
		645666	3684.99	PI/2 BPSK	3684.99	1	1	0	20.97	20.80	0.120
						1	76	0	20.88	20.71	0.118
						75	0	0.5	20.62	20.45	0.111
				QPSK	1	1	0	21.00	20.83	0.121	
					1	76	0	20.92	20.75	0.119	
					75	0	1	20.12	19.95	0.099	
				16QAM	1	1	1	20.08	19.91	0.098	
					1	76	1	19.97	19.80	0.095	
					75	0	2	18.95	18.78	0.076	
				64QAM	1	1	2.5	18.60	18.43	0.070	
					1	76	2.5	18.58	18.41	0.069	
					75	0	2.5	18.72	18.55	0.072	
256QAM	1	1	4.5	16.60	16.43	0.044					
	1	76	4.5	16.70	16.53	0.045					
	75	0	4.5	16.58	16.41	0.044					

NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3) P(W) = $1 \text{ W} \cdot 10^{(P(\text{dBm}) / 10) / 1000}$

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	EIRP power (dBm)	EIRP power (W)
n48_SA	40	638000	3570	PI/2 BPSK	1	1	0	20.99	21.21	0.132
					1	104	0	20.95	21.17	0.131
					100	0	0.5	20.38	20.60	0.115
				QPSK	1	1	0	20.93	21.15	0.130
					1	104	0	20.92	21.14	0.130
					100	0	1	20.00	20.22	0.105
				16QAM	1	1	1	19.88	20.10	0.102
					1	104	1	20.07	20.29	0.107
					100	0	2	19.02	19.24	0.084
				64QAM	1	1	2.5	18.50	18.72	0.074
					1	104	2.5	18.52	18.74	0.075
					100	0	2.5	18.38	18.60	0.072
		256QAM	1	1	4.5	16.51	16.73	0.047		
			1	104	4.5	16.44	16.66	0.046		
			100	0	4.5	16.50	16.72	0.047		
		641666	3624.99	PI/2 BPSK	1	1	0	21.11	21.33	0.136
					1	104	0	21.15	21.37	0.137
					100	0	0.5	20.46	20.68	0.117
				QPSK	1	1	0	21.09	21.31	0.135
					1	104	0	20.97	21.19	0.132
					100	0	1	19.95	20.17	0.104
				16QAM	1	1	1	20.18	20.40	0.110
					1	104	1	20.02	20.24	0.106
					100	0	2	18.98	19.20	0.083
				64QAM	1	1	2.5	18.56	18.78	0.076
					1	104	2.5	18.55	18.77	0.075
					100	0	2.5	18.47	18.69	0.074
		256QAM	1	1	4.5	16.54	16.76	0.047		
			1	104	4.5	16.42	16.64	0.046		
			100	0	4.5	16.47	16.69	0.047		
		645332	3679.98	PI/2 BPSK	1	1	0	21.02	21.24	0.133
					1	104	0	20.85	21.07	0.128
					100	0	0.5	20.60	20.82	0.121
				QPSK	1	1	0	20.91	21.13	0.130
					1	104	0	20.81	21.03	0.127
					100	0	1	20.05	20.27	0.106
16QAM	1			1	1	20.06	20.28	0.107		
	1			104	1	20.13	20.35	0.108		
	100			0	2	19.01	19.23	0.084		
64QAM	1			1	2.5	18.55	18.77	0.075		
	1			104	2.5	18.40	18.62	0.073		
	100			0	2.5	18.51	18.73	0.075		
256QAM	1	1	4.5	16.50	16.72	0.047				
	1	104	4.5	16.50	16.72	0.047				
	100	0	4.5	16.10	16.32	0.043				

NOTE:

(1) EIRP = Average power + Antenna gain.

(2) ERP = EIRP - 2.15.

 (3) $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$

NR Band n48 UL MIMO Power:

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Ant1 Average power (dBm)	Ant2 Average power (dBm)	Total Average power (dBm)	EIRP power (dBm)	EIRP power (W)
n48_MIMO	10	637000	3555	QPSK	1	1	0	16.59	14.95	18.86	19.69	0.093
					1	22	0	16.82	15.56	19.25	20.08	0.102
					24	0	1	13.57	12.18	15.94	16.77	0.048
				16QAM	1	1	1	16.00	14.44	18.30	19.13	0.082
					1	22	1	16.22	14.96	18.65	19.48	0.089
					24	0	2	13.58	12.40	16.04	16.87	0.049
				64QAM	1	1	2.5	14.70	12.91	16.91	17.74	0.059
					1	22	2.5	14.80	13.23	17.10	17.93	0.062
					24	0	2.5	12.45	11.25	14.90	15.73	0.037
				256QAM	1	1	4.5	12.56	11.24	14.96	15.79	0.038
					1	22	4.5	12.90	11.73	15.36	16.19	0.042
					24	0	4.5	12.75	11.51	15.18	16.01	0.040
		641666	3624.99	QPSK	1	1	0	16.84	15.00	19.03	19.86	0.097
					1	22	0	16.69	15.09	18.97	19.80	0.096
					24	0	1	13.65	12.09	15.95	16.78	0.048
				16QAM	1	1	1	16.19	14.40	18.40	19.23	0.084
					1	22	1	15.96	14.47	18.29	19.12	0.082
					24	0	2	13.49	12.05	15.84	16.67	0.046
				64QAM	1	1	2.5	14.76	12.86	16.92	17.75	0.060
					1	22	2.5	14.59	13.16	16.94	17.77	0.060
					24	0	2.5	12.62	11.32	15.03	15.86	0.039
				256QAM	1	1	4.5	12.96	11.17	15.17	16.00	0.040
					1	22	4.5	12.73	11.24	15.06	15.89	0.039
					24	0	4.5	12.66	11.07	14.95	15.78	0.038
		646332	3694.98	QPSK	1	1	0	16.40	15.35	18.92	19.75	0.094
					1	22	0	16.76	15.51	19.19	20.02	0.100
					24	0	1	13.38	12.29	15.88	16.71	0.047
				16QAM	1	1	1	16.03	14.81	18.47	19.30	0.085
					1	22	1	16.27	14.61	18.53	19.36	0.086
					24	0	2	13.50	12.34	15.97	16.80	0.048
				64QAM	1	1	2.5	14.60	13.15	16.95	17.78	0.060
					1	22	2.5	14.58	13.40	17.04	17.87	0.061
					24	0	2.5	12.22	11.16	14.73	15.56	0.036
				256QAM	1	1	4.5	12.76	11.26	15.08	15.91	0.039
					1	22	4.5	12.93	11.32	15.21	16.04	0.040
					24	0	4.5	12.41	11.58	15.03	15.86	0.039

NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3) P(W) = $1 \text{ W} \cdot 10^{(P(\text{dBm}) / 10) / 1000}$

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Ant1 Average	Ant2 Average	Total Average power	EIRP power (dBm)	EIRP power (W)
n48_MIMO	20	637334	3560.01	QPSK	1	1	0	16.65	15.01	18.92	19.75	0.094
					1	49	0	16.86	15.60	19.29	20.12	0.103
					50	0	1	13.64	12.25	16.01	16.84	0.048
				16QAM	1	1	1	16.08	14.52	18.38	19.21	0.083
					1	49	1	16.27	15.01	18.70	19.53	0.090
					50	0	2	13.65	12.47	16.11	16.94	0.049
				64QAM	1	1	2.5	14.76	12.97	16.97	17.80	0.060
					1	49	2.5	14.88	13.31	17.18	18.01	0.063
					50	0	2.5	12.51	11.31	14.96	15.79	0.038
				256QAM	1	1	4.5	12.61	11.29	15.01	15.84	0.038
					1	49	4.5	12.95	11.78	15.41	16.24	0.042
					50	0	4.5	12.80	11.56	15.23	16.06	0.040
		641666	3624.99	QPSK	1	1	0	16.90	15.06	19.09	19.92	0.098
					1	49	0	16.73	15.13	19.01	19.84	0.096
					50	0	1	13.71	12.15	16.01	16.84	0.048
				16QAM	1	1	1	16.23	14.44	18.44	19.27	0.084
					1	49	1	16.03	14.54	18.36	19.19	0.083
					50	0	2	13.57	12.13	15.92	16.75	0.047
				64QAM	1	1	2.5	14.81	12.91	16.97	17.80	0.060
					1	49	2.5	14.64	13.21	16.99	17.82	0.061
					50	0	2.5	12.67	11.37	15.08	15.91	0.039
				256QAM	1	1	4.5	13.04	11.25	15.25	16.08	0.041
					1	49	4.5	12.78	11.29	15.11	15.94	0.039
					50	0	4.5	12.72	11.13	15.01	15.84	0.038
		646000	3690	QPSK	1	1	0	16.45	15.40	18.97	19.80	0.095
					1	49	0	16.81	15.57	19.24	20.07	0.102
					50	0	1	13.45	12.35	15.95	16.78	0.048
				16QAM	1	1	1	16.09	14.88	18.54	19.37	0.086
					1	49	1	16.34	14.66	18.59	19.42	0.088
					50	0	2	13.55	12.39	16.02	16.85	0.048
64QAM	1			1	2.5	14.67	13.20	17.01	17.84	0.061		
	1			49	2.5	14.63	13.45	17.09	17.92	0.062		
	50			0	2.5	12.29	11.23	14.80	15.63	0.037		
256QAM	1			1	4.5	12.81	11.32	15.14	15.97	0.040		
	1			49	4.5	12.98	11.39	15.27	16.10	0.041		
	50			0	4.5	12.48	11.63	15.09	15.92	0.039		

NOTE:

(1) EIRP = Average power + Antenna gain.

(2) ERP = EIRP - 2.15.

 (3) $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Ant1 Average	Ant2 Average	Total Average power	EIRP power (dBm)	EIRP power (W)	
n48_MIMO	30	637668	3565.02	QPSK	1	1	0	16.73	15.08	18.99	19.82	0.096	
					1	76	0	16.92	15.68	19.35	20.18	0.104	
					75	0	1	13.72	12.33	16.09	16.92	0.049	
				16QAM	1	1	1	16.14	14.60	18.45	19.28	0.085	
					1	76	1	16.34	15.07	18.76	19.59	0.091	
					75	0	2	13.72	12.53	16.18	17.01	0.050	
				64QAM	1	1	2.5	14.84	13.02	17.03	17.86	0.061	
					1	76	2.5	14.94	13.38	17.24	18.07	0.064	
					75	0	2.5	12.59	11.37	15.03	15.86	0.039	
				256QAM	1	1	4.5	12.66	11.33	15.06	15.89	0.039	
					1	76	4.5	13.02	11.83	15.48	16.31	0.043	
					75	0	4.5	12.87	11.63	15.30	16.13	0.041	
		641666	3624.99	QPSK	3624.99	1	1	0	16.98	15.12	19.16	19.99	0.100
						1	76	0	16.80	15.19	19.08	19.91	0.098
						75	0	1	13.78	12.22	16.08	16.91	0.049
				16QAM	1	1	1	16.30	14.51	18.51	19.34	0.086	
					1	76	1	16.07	14.62	18.42	19.25	0.084	
					75	0	2	13.64	12.21	15.99	16.82	0.048	
				64QAM	1	1	2.5	14.85	12.99	17.03	17.86	0.061	
					1	76	2.5	14.71	13.28	17.06	17.89	0.062	
					75	0	2.5	12.71	11.45	15.14	15.97	0.039	
				256QAM	1	1	4.5	13.10	11.33	15.31	16.14	0.041	
					1	76	4.5	12.85	11.35	15.17	16.00	0.040	
					75	0	4.5	12.77	11.20	15.07	15.90	0.039	
		645666	3684.99	QPSK	3684.99	1	1	0	16.51	15.45	19.02	19.85	0.097
						1	76	0	16.88	15.63	19.31	20.14	0.103
						75	0	1	13.51	12.40	16.00	16.83	0.048
				16QAM	1	1	1	16.14	14.93	18.59	19.42	0.087	
					1	76	1	16.41	14.71	18.65	19.48	0.089	
					75	0	2	13.62	12.45	16.08	16.91	0.049	
64QAM	1			1	2.5	14.71	13.27	17.06	17.89	0.062			
	1			76	2.5	14.70	13.49	17.15	17.98	0.063			
	75			0	2.5	12.34	11.29	14.86	15.69	0.037			
256QAM	1			1	4.5	12.89	11.36	15.20	16.03	0.040			
	1			76	4.5	13.02	11.45	15.32	16.15	0.041			
	75			0	4.5	12.54	11.68	15.14	15.97	0.040			

NOTE:

- (1) EIRP = Average power + Antenna gain.
- (2) ERP = EIRP - 2.15.
- (3) P(W) = $1 \text{ W} \cdot 10^{(P(\text{dBm}) / 10) / 1000}$

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Ant1 Average	Ant2 Average	Total Average power	EIRP power (dBm)	EIRP power (W)
n48_MIMO	40	638000	3570	QPSK	1	1	0	16.78	15.15	19.05	19.88	0.097
					1	104	0	16.99	15.74	19.42	20.25	0.106
					100	0	1	13.78	12.39	16.15	16.98	0.050
				16QAM	1	1	1	16.20	14.64	18.50	19.33	0.086
					1	104	1	16.38	15.13	18.81	19.64	0.092
					100	0	2	13.79	12.60	16.25	17.08	0.051
				64QAM	1	1	2.5	14.89	13.07	17.08	17.91	0.062
					1	104	2.5	15.00	13.45	17.30	18.13	0.065
					100	0	2.5	12.66	11.43	15.10	15.93	0.039
				256QAM	1	1	4.5	12.72	11.39	15.12	15.95	0.039
					1	104	4.5	13.07	11.90	15.53	16.36	0.043
					100	0	4.5	12.93	11.70	15.37	16.20	0.042
		641666	3624.99	QPSK	1	1	0	17.04	15.18	19.22	20.05	0.101
					1	104	0	16.87	15.24	19.14	19.97	0.099
					100	0	1	13.82	12.26	16.12	16.95	0.050
				16QAM	1	1	1	16.38	14.57	18.58	19.41	0.087
					1	104	1	16.13	14.67	18.47	19.30	0.085
					100	0	2	13.72	12.29	16.07	16.90	0.049
				64QAM	1	1	2.5	14.91	13.05	17.09	17.92	0.062
					1	104	2.5	14.78	13.34	17.13	17.96	0.063
					100	0	2.5	12.75	11.50	15.18	16.01	0.040
				256QAM	1	1	4.5	13.15	11.37	15.36	16.19	0.042
					1	104	4.5	12.90	11.42	15.23	16.06	0.040
					100	0	4.5	12.83	11.27	15.13	15.96	0.039
		645332	3679.98	QPSK	1	1	0	16.57	15.49	19.07	19.90	0.098
					1	104	0	16.94	15.68	19.37	20.20	0.105
					100	0	1	13.56	12.46	16.06	16.89	0.049
				16QAM	1	1	1	16.18	14.99	18.64	19.47	0.088
					1	104	1	16.45	14.77	18.70	19.53	0.090
					100	0	2	13.69	12.52	16.15	16.98	0.050
				64QAM	1	1	2.5	14.75	13.32	17.10	17.93	0.062
					1	104	2.5	14.76	13.56	17.21	18.04	0.064
					100	0	2.5	12.40	11.35	14.92	15.75	0.038
				256QAM	1	1	4.5	12.94	11.43	15.26	16.09	0.041
					1	104	4.5	13.09	11.50	15.38	16.21	0.042
					100	0	4.5	12.59	11.75	15.20	16.03	0.040

NOTE:

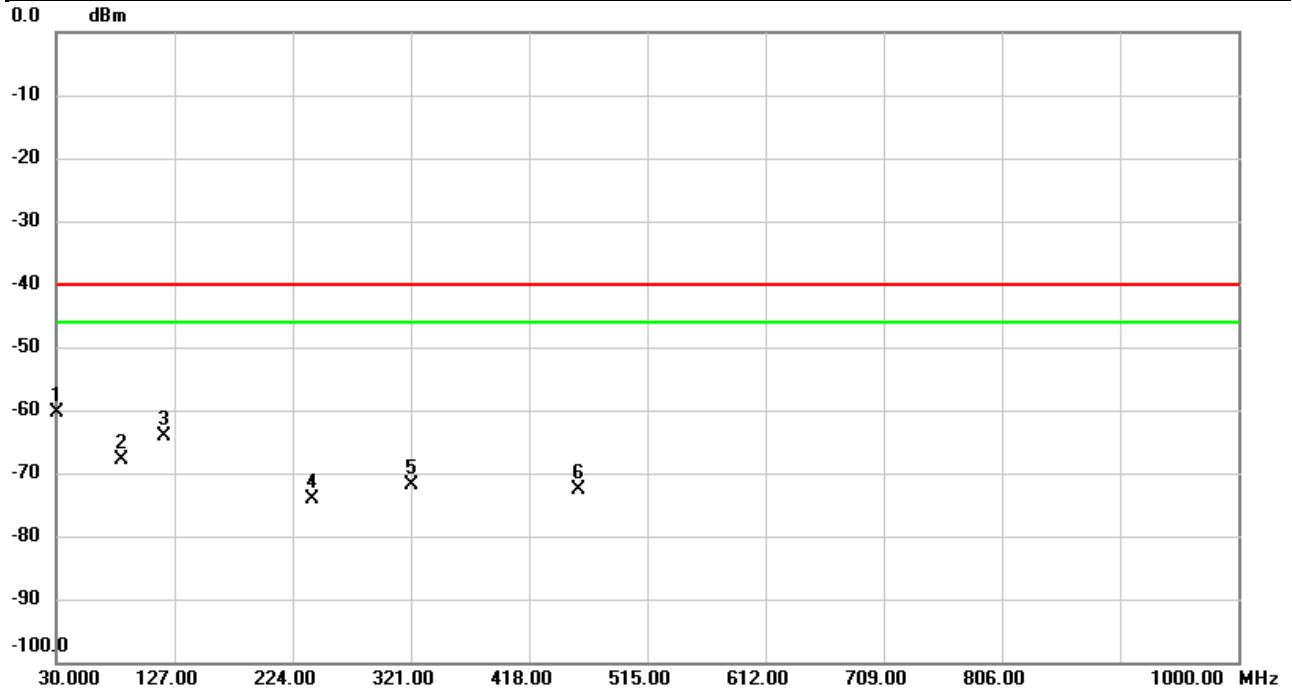
(1) EIRP = Average power + Antenna gain.

(2) ERP = EIRP - 2.15.

 (3) $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$

APPENDIX B RADIATED SPURIOUS EMISSIONS

Test Mode	NR n48	Test Date	2023/12/4
Test Channel	CH638000	Polarization	Vertical
Temp	22°C	Hum.	58%

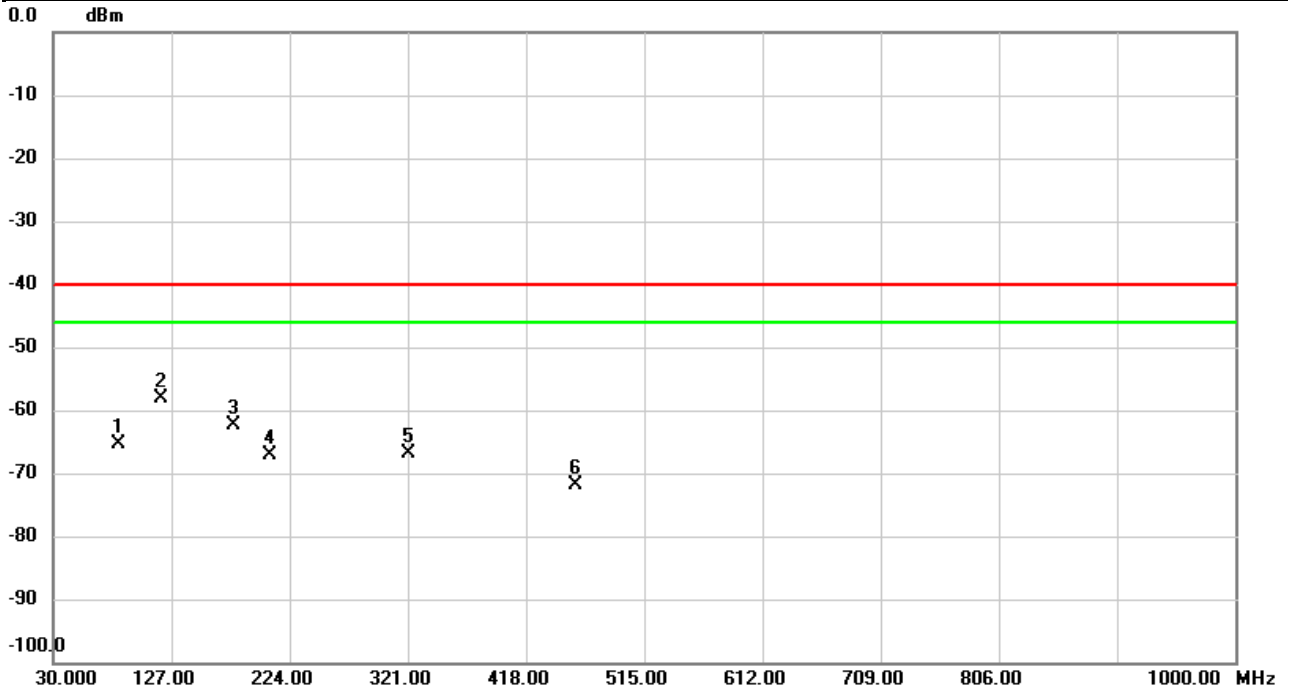


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	30.0000	-58.17	-2.15	-60.32	-40.00	-20.32	peak	
2		83.9320	-65.60	-2.15	-67.75	-40.00	-27.75	peak	
3		118.5287	-62.03	-2.15	-64.18	-40.00	-24.18	peak	
4		240.6517	-71.91	-2.15	-74.06	-40.00	-34.06	peak	
5		321.0323	-69.82	-2.15	-71.97	-40.00	-31.97	peak	
6		458.1257	-70.55	-2.15	-72.70	-40.00	-32.70	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	NR n48	Test Date	2023/12/4
Test Channel	CH638000	Polarization	Horizontal
Temp	22°C	Hum.	58%

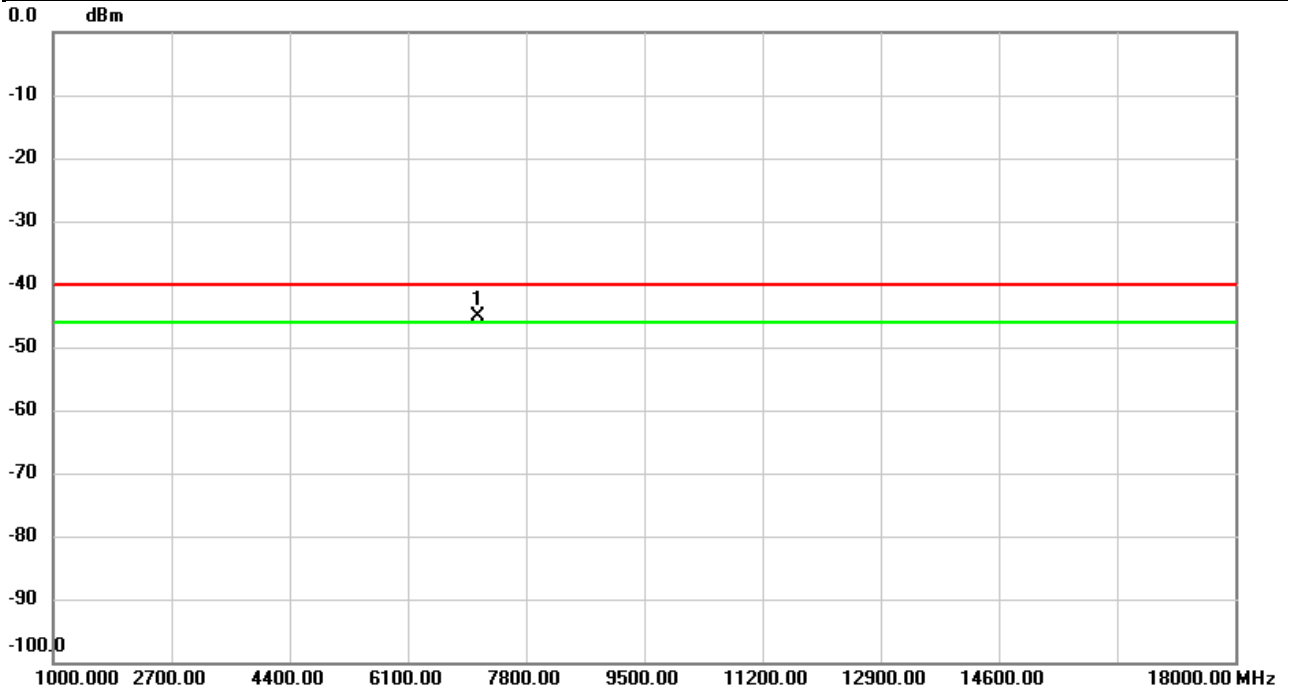


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1		83.6410	-63.21	-2.15	-65.36	-40.00	-25.36	peak	
2	*	118.3023	-55.93	-2.15	-58.08	-40.00	-18.08	peak	
3		178.1190	-60.10	-2.15	-62.25	-40.00	-22.25	peak	
4		207.3807	-65.03	-2.15	-67.18	-40.00	-27.18	peak	
5		321.0323	-64.78	-2.15	-66.93	-40.00	-26.93	peak	
6		458.1257	-69.80	-2.15	-71.95	-40.00	-31.95	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	NR n48	Test Date	2023/12/1
Test Channel	CH638000	Polarization	Vertical
Temp	21°C	Hum.	57%

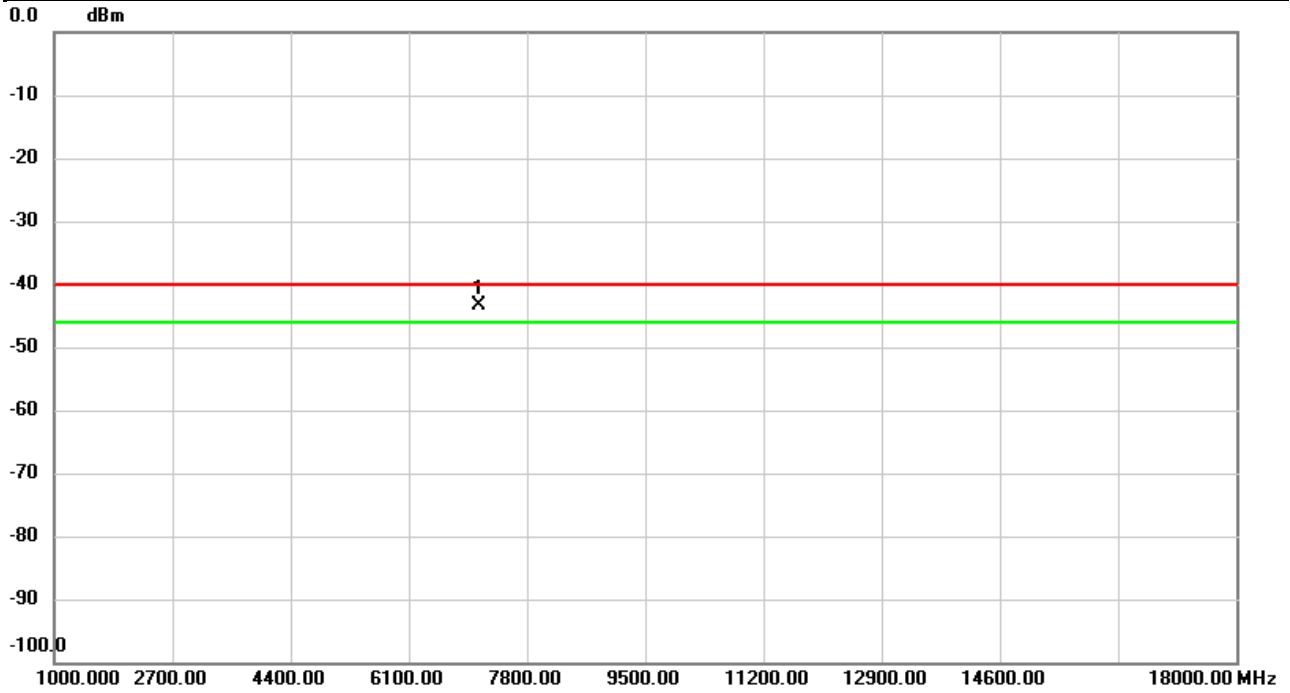


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	7100.000	-63.56	18.54	-45.02	-40.00	-5.02	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	NR n48	Test Date	2023/12/1
Test Channel	CH638000	Polarization	Horizontal
Temp	21°C	Hum.	57%

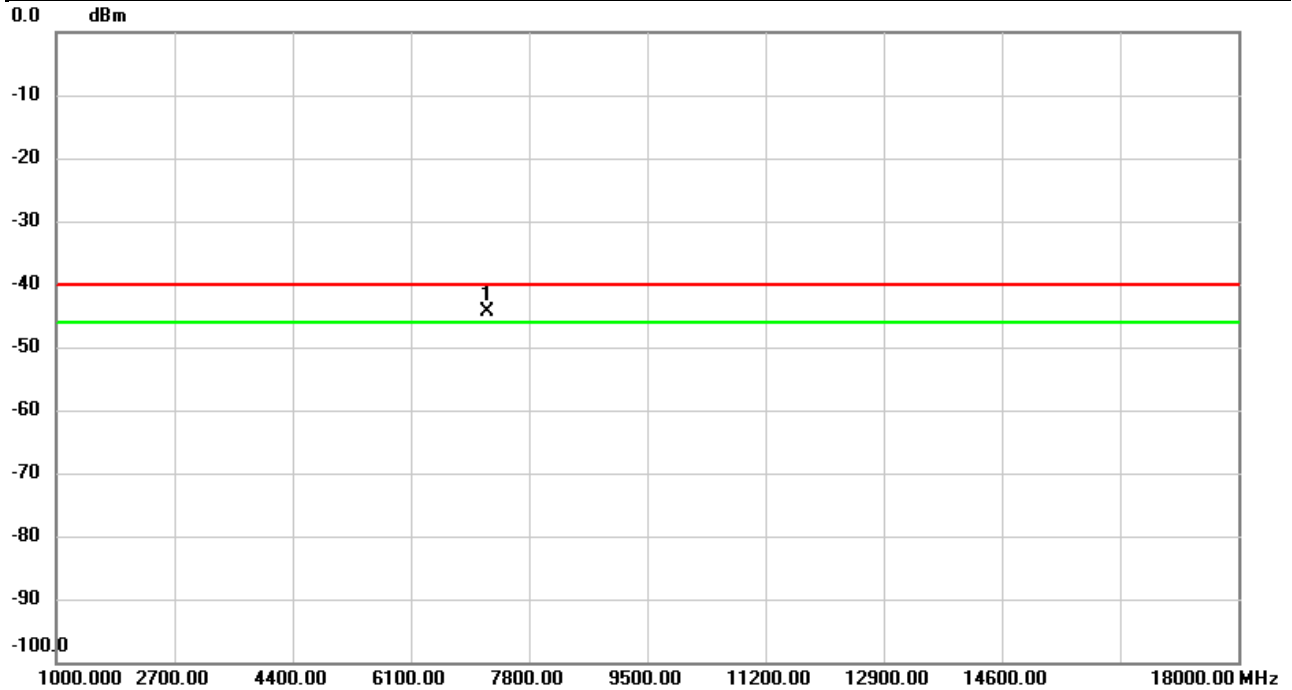


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	7100.000	-61.76	18.40	-43.36	-40.00	-3.36	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	NR n48	Test Date	2023/12/1
Test Channel	CH641666	Polarization	Vertical
Temp	21°C	Hum.	57%

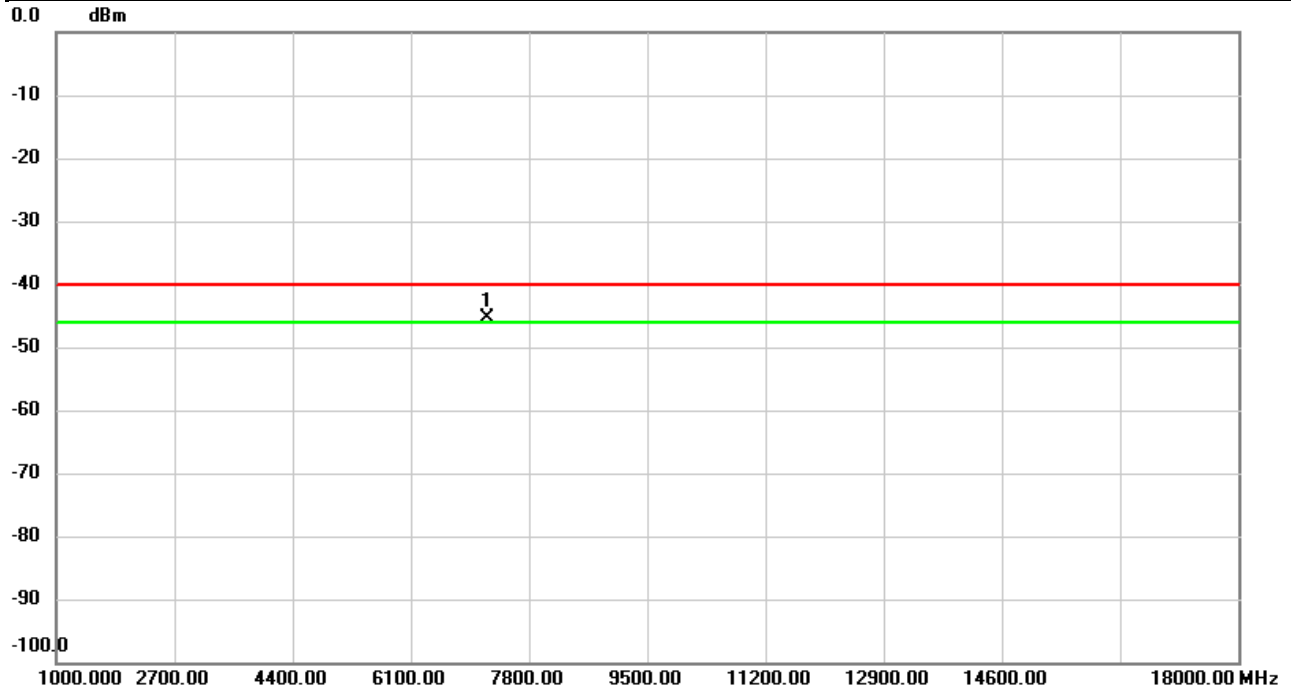


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	7209.980	-62.46	18.02	-44.44	-40.00	-4.44	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

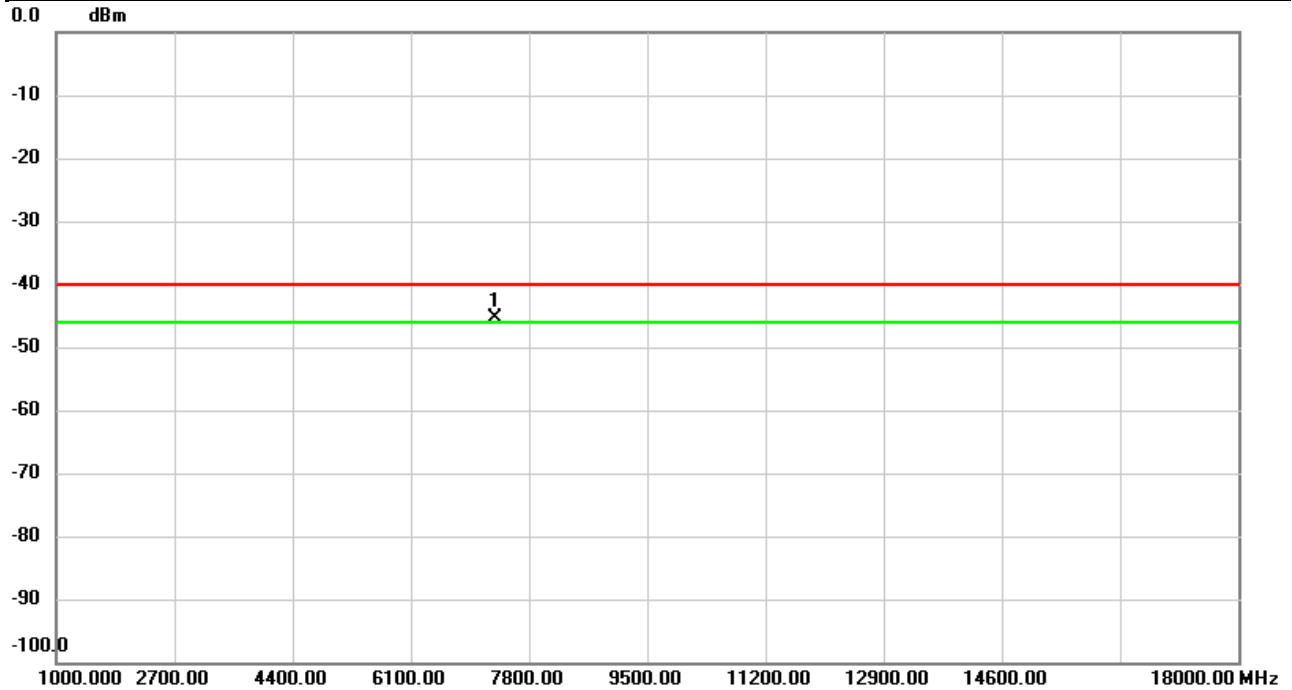
Test Mode	NR n48	Test Date	2023/12/1
Test Channel	CH641666	Polarization	Horizontal
Temp	21°C	Hum.	57%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	7209.980	-63.11	17.71	-45.40	-40.00	-5.40	peak	

REMARKS:
 (1) Measurement Value = Reading Level + Correct Factor.
 (2) Margin Level = Measurement Value - Limit Value.

Test Mode	NR n48	Test Date	2023/12/1
Test Channel	CH645332	Polarization	Vertical
Temp	21°C	Hum.	57%

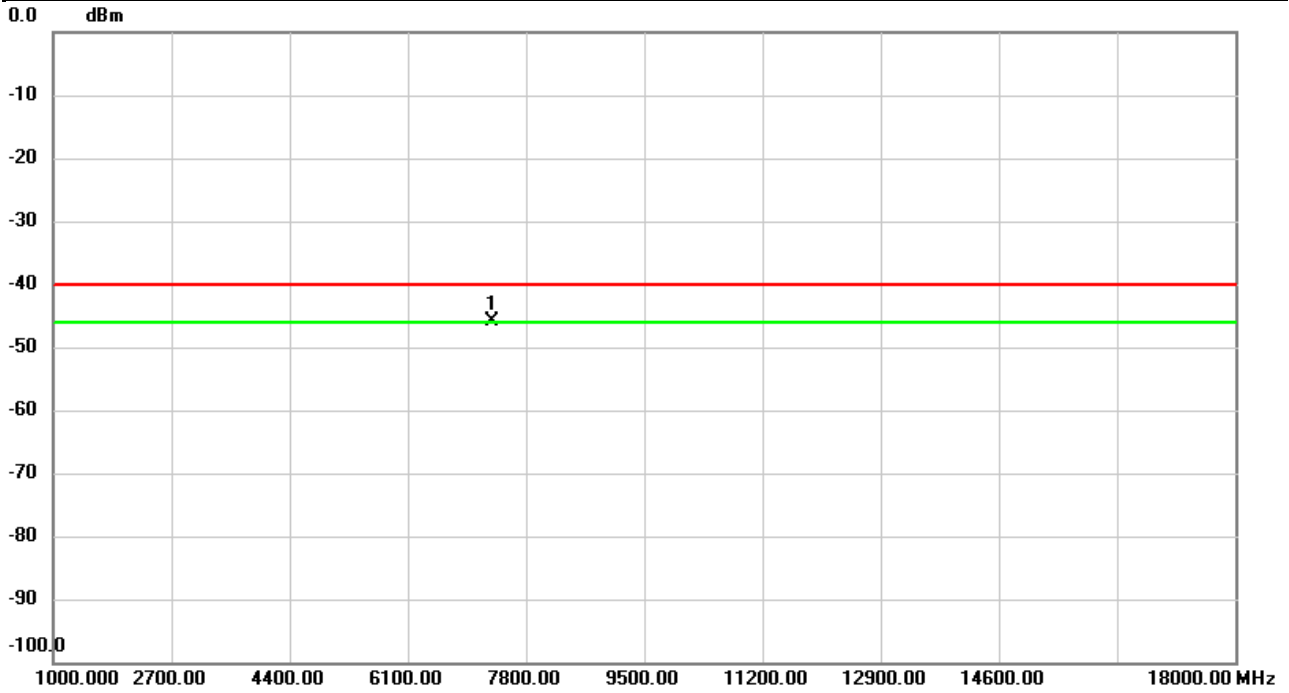


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	7319.960	-63.18	17.84	-45.34	-40.00	-5.34	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	NR n48	Test Date	2023/12/1
Test Channel	CH645332	Polarization	Horizontal
Temp	21°C	Hum.	57%

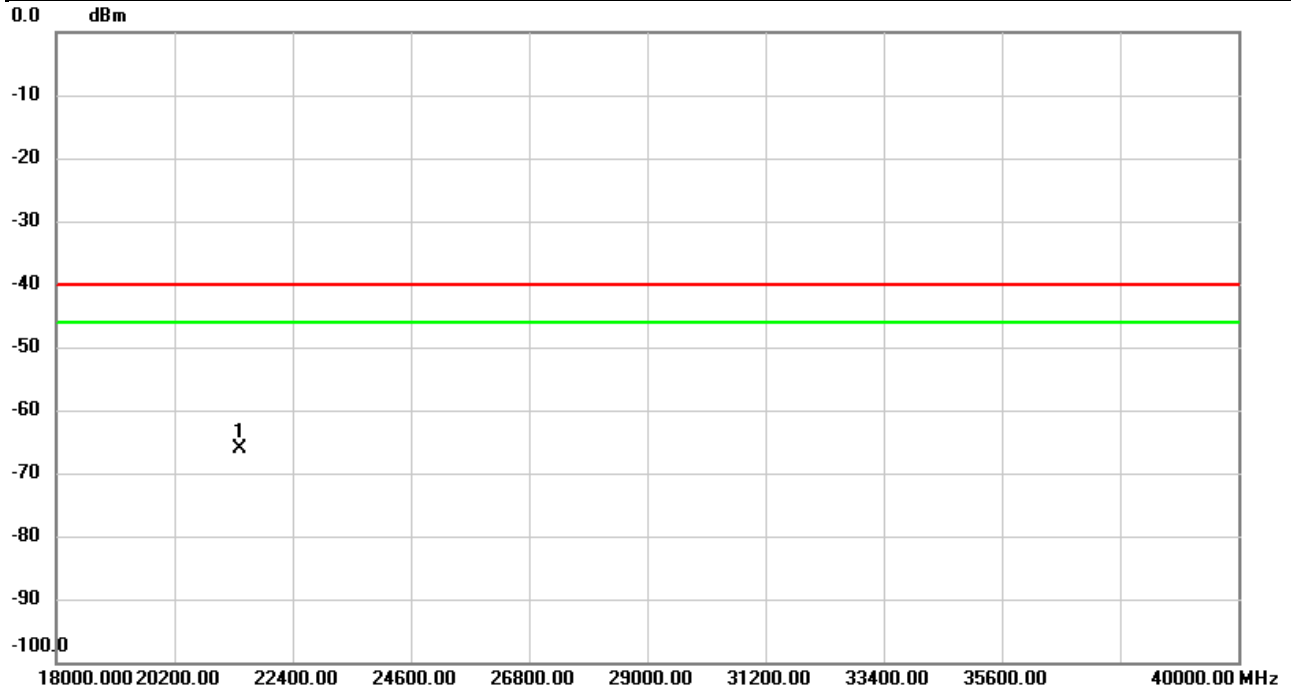


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	7319.960	-63.62	17.70	-45.92	-40.00	-5.92	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	NR n48	Test Date	2023/11/30
Test Channel	CH638000	Polarization	Vertical
Temp	22°C	Hum.	59%

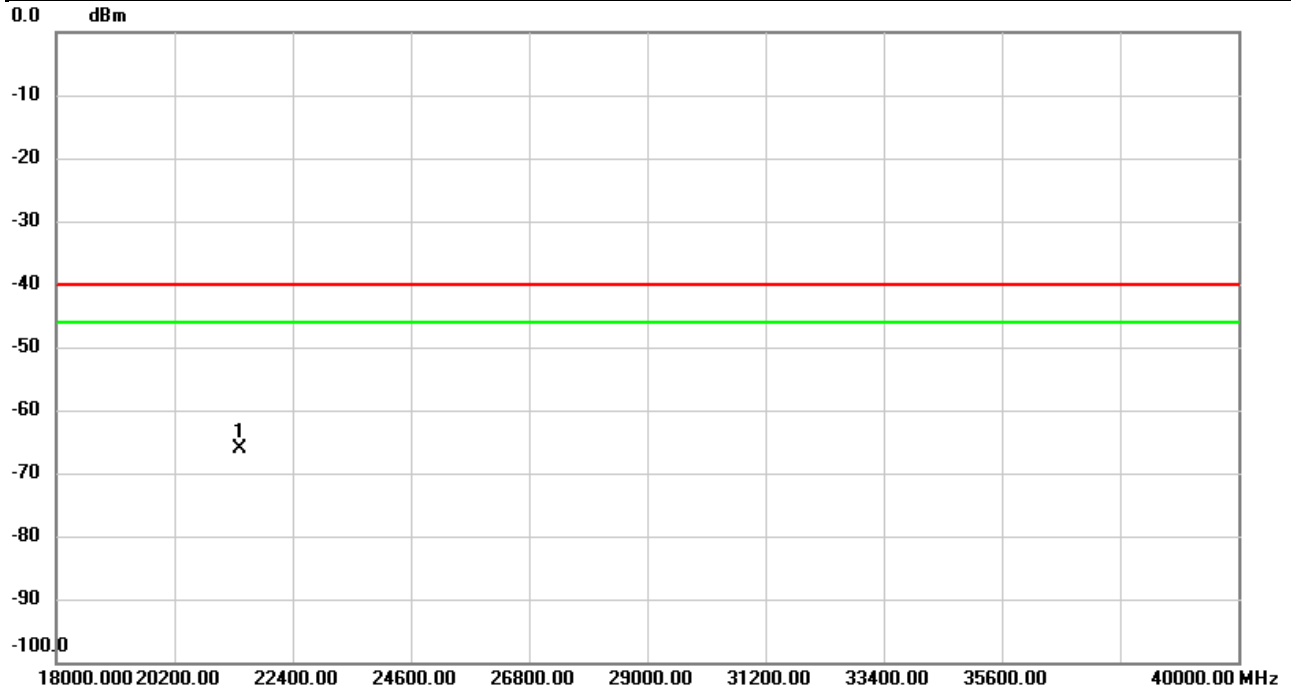


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	*	21420.00	-59.97	-6.07	-66.04	-40.00	-26.04	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	NR n48	Test Date	2023/11/30
Test Channel	CH638000	Polarization	Horizontal
Temp	22°C	Hum.	59%



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Comment
1	*	21420.00	-60.16	-6.07	-66.23	-40.00	-26.23	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

End of Test Report