

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

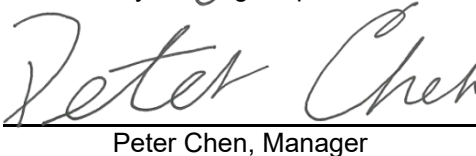
Issued Date : 2024/3/19

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

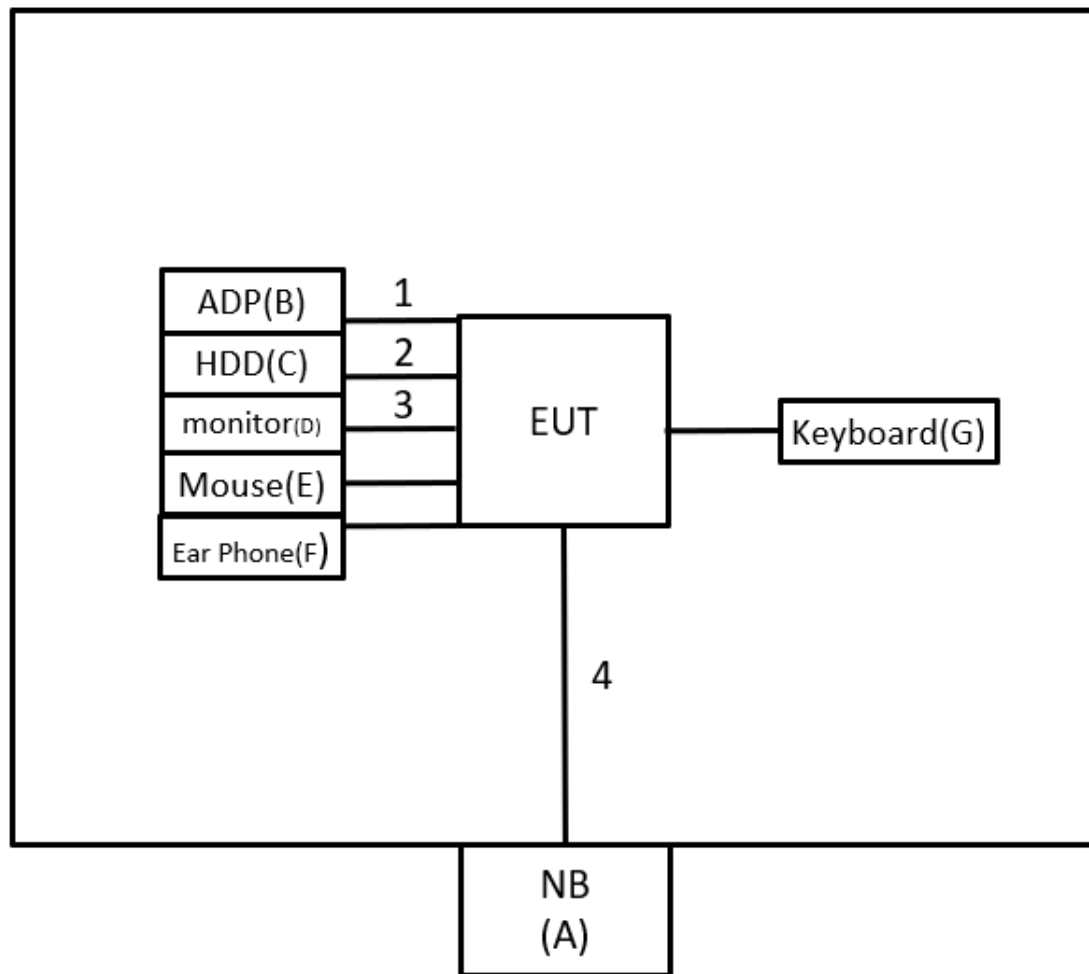
Test Items	Band	Test Mode	Note
Effective Isotropic Radiated Power	NR n48	Refer to APPENDIX A	-
Radiated Spurious Emissions (Below 1G)	NR n48	TX Mode (CH 638000)	-
Radiated Spurious Emissions (Above 1G)	NR n48	TX Mode (CH 638000/641666/645332)	-
Radiated Spurious Emissions (Above 18G)	NR n48	TX Mode (CH 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-I119	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.

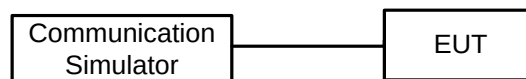
- Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- 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
- $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}.$
- ERP can be calculated form EIRP by subtracting the gain of dipole, $ERP = EIPR - 2.15\text{dBi}.$
- 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

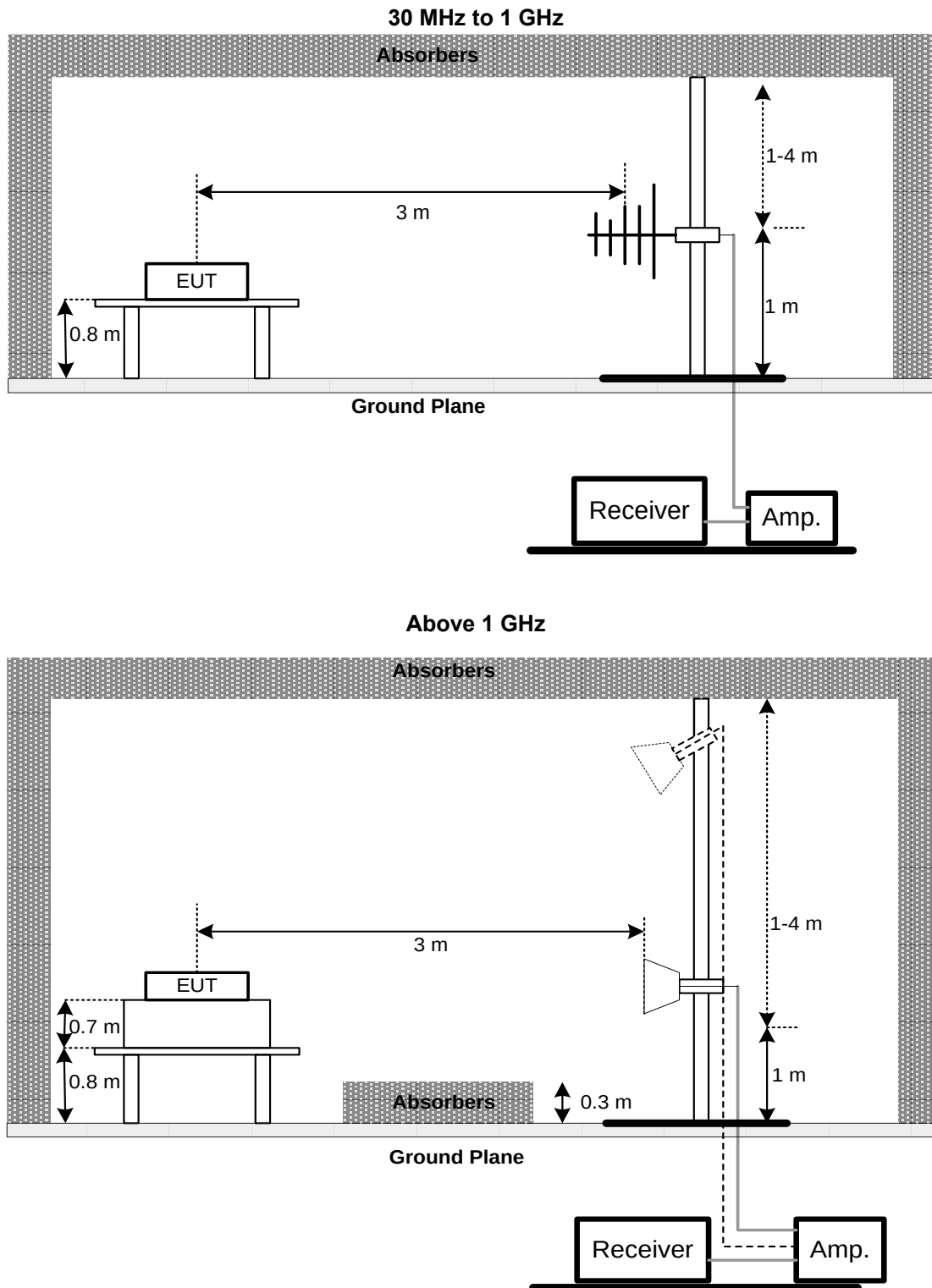
The testing follows FCC KDB 971168 v03r01 Section 6.2.

- 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.
- 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
- $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn.}$
- ERP can be calculated form EIRP by subtracting the gain of dipole, $ERP = EIPR - 2.15\text{dBi.}$
- 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 EMC (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	18.55	19.38	0.087
					1	49	2.5	18.57	19.40	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	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	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	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	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	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	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	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	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	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	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
		641666	3624.99	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
				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
		645332	3679.98	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
				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
		645332	3679.98	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
		641666	3624.99	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
				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
		646332	3694.98	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
				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
		641666	3624.99	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
				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
		646000	3690	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
				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) $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$

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	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
		641666	3624.99	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
				PI/2 BPSK	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
		645666	3684.99	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
				PI/2 BPSK	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) $P(W) = 1 W \cdot 10^{(P(dBm) / 10) / 1000}$

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	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
		641666	3624.99	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
				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
		645332	3679.98	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
				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) $P(W) = 1 \text{ W} \cdot 10^{(P(\text{dBm}) / 10) / 1000}$

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	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	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	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:

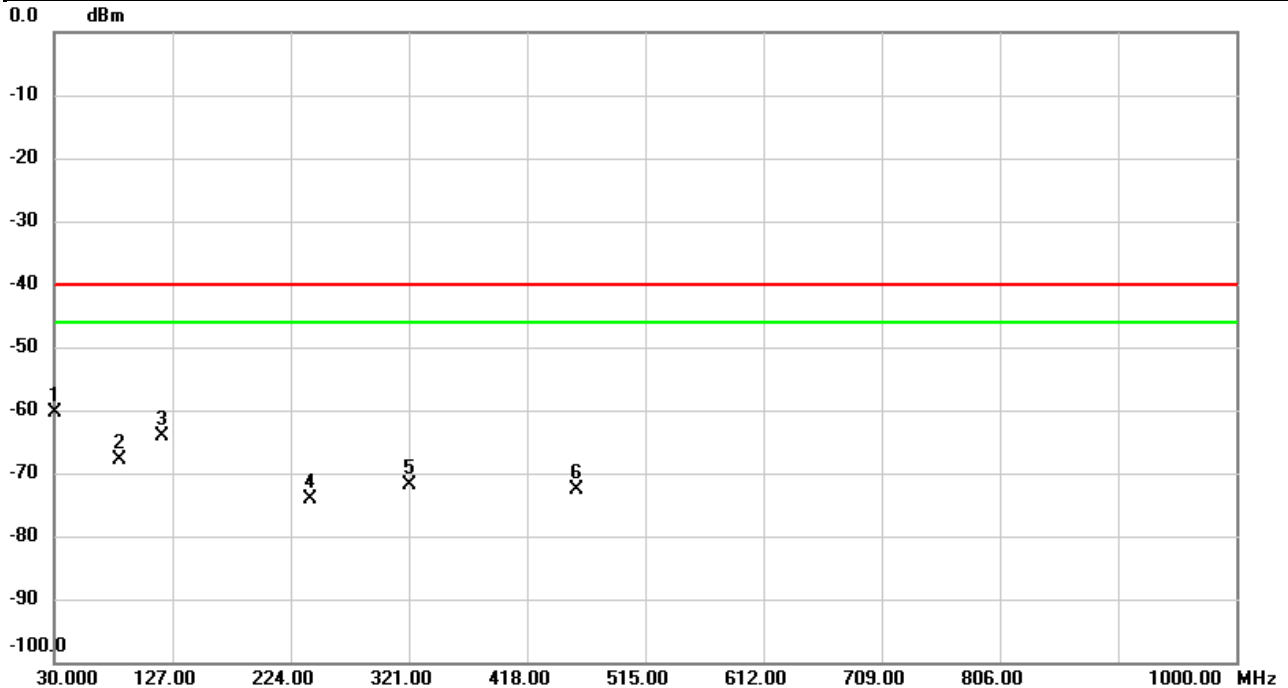
(1) EIRP = Average power + Antenna gain.

(2) ERP = EIRP - 2.15.

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

APPENDIX B RADIATED SPURIOUS EMISSIONS

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

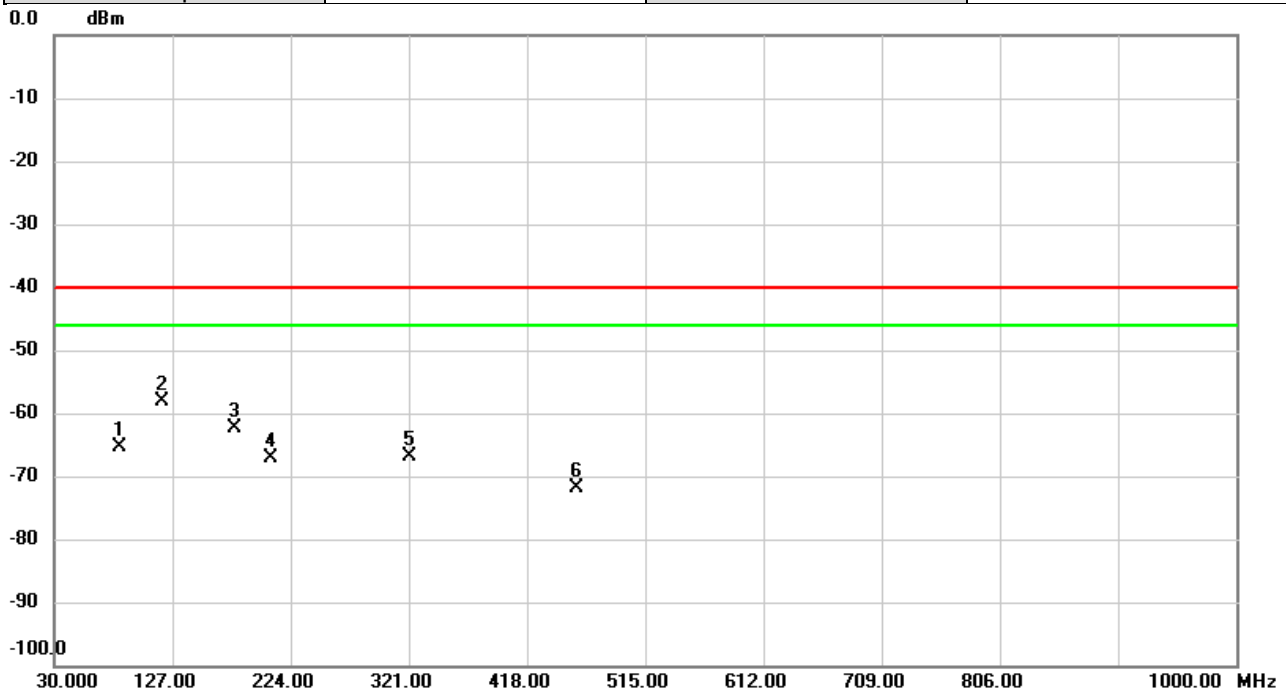


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	30.0000	-58.17	-2.15	-60.32	-40.00	-20.32	peak	
2		83.9320	-65.60	-2.15	-67.75	-40.00	-27.75	peak	
3		118.5287	-62.03	-2.15	-64.18	-40.00	-24.18	peak	
4		240.6517	-71.91	-2.15	-74.06	-40.00	-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%

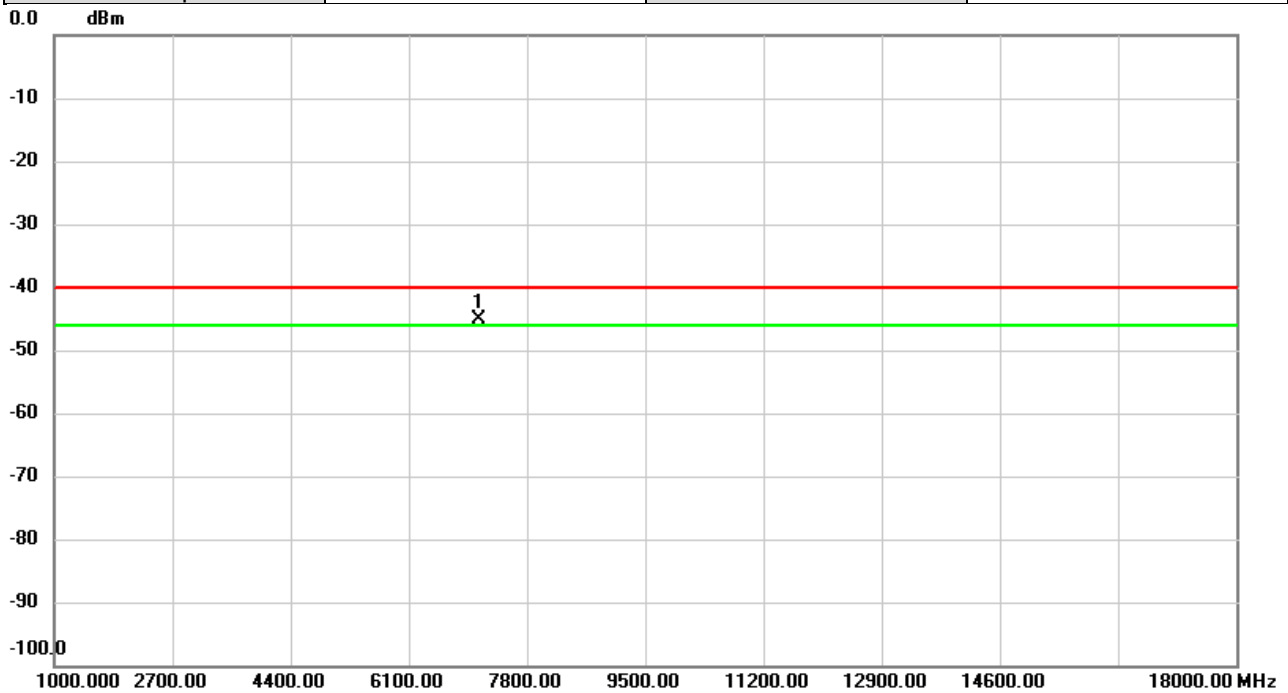


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		83.6410	-63.21	-2.15	-65.36	-40.00	-25.36	peak	
2	*	118.3023	-55.93	-2.15	-58.08	-40.00	-18.08	peak	
3		178.1190	-60.10	-2.15	-62.25	-40.00	-22.25	peak	
4		207.3807	-65.03	-2.15	-67.18	-40.00	-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%

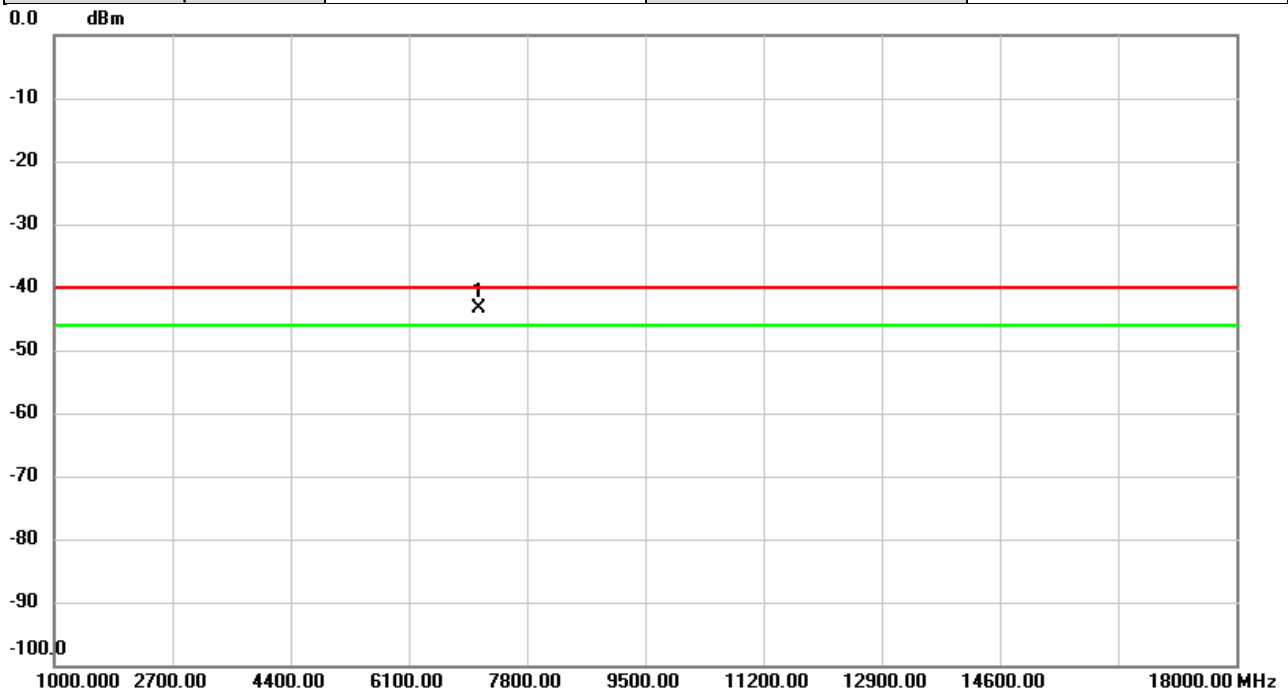


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	7100.000	-63.56	18.54	-45.02	-40.00	-5.02	peak	

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%

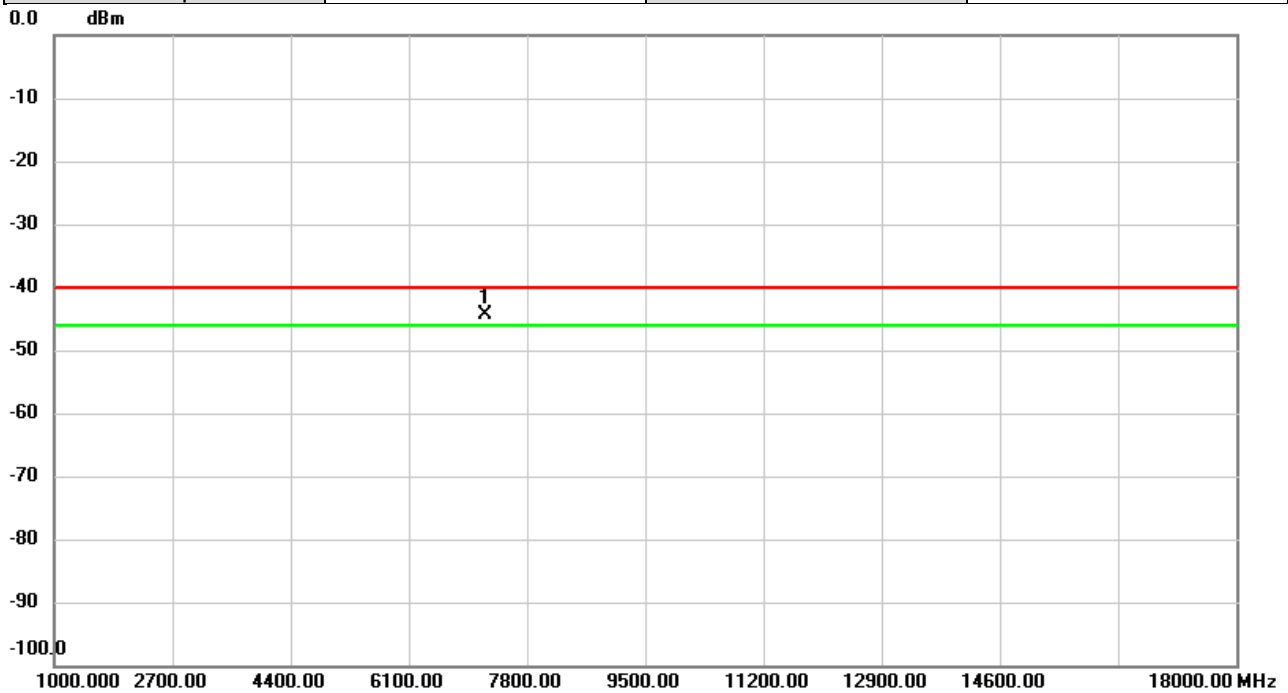


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	7100.000	-61.76	18.40	-43.36	-40.00	-3.36	peak	

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%

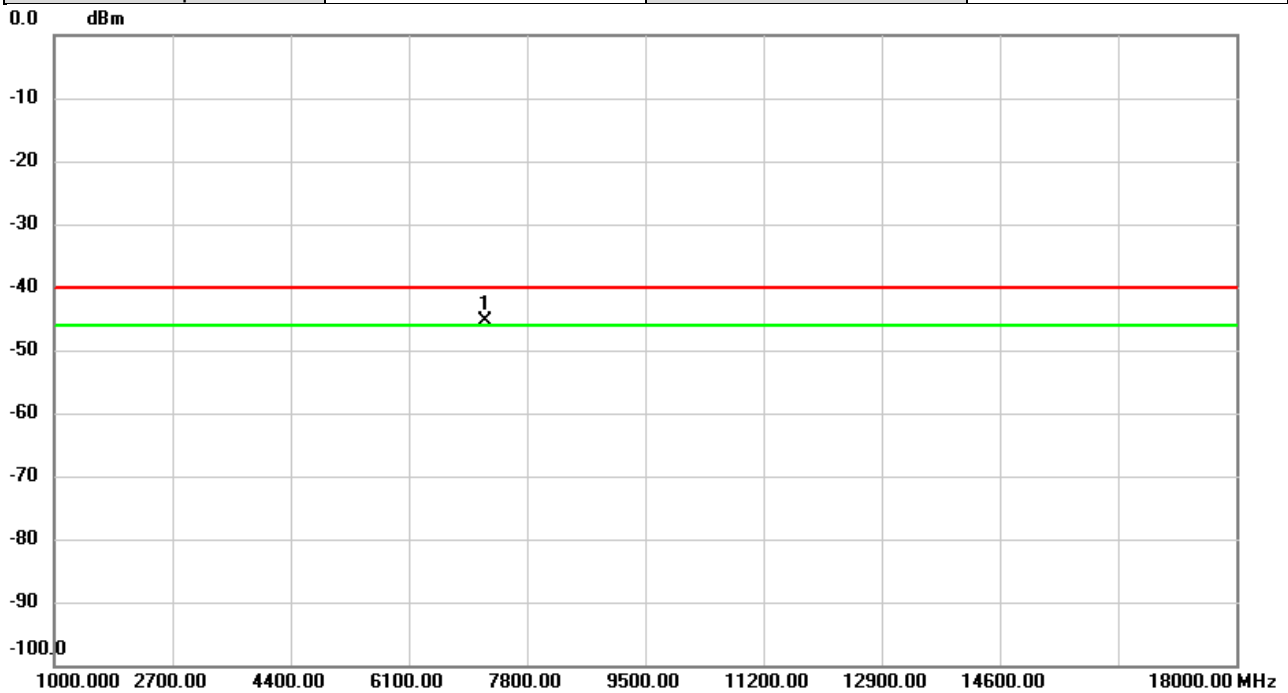


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	7209.980	-62.46	18.02	-44.44	-40.00	-4.44	peak	

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%

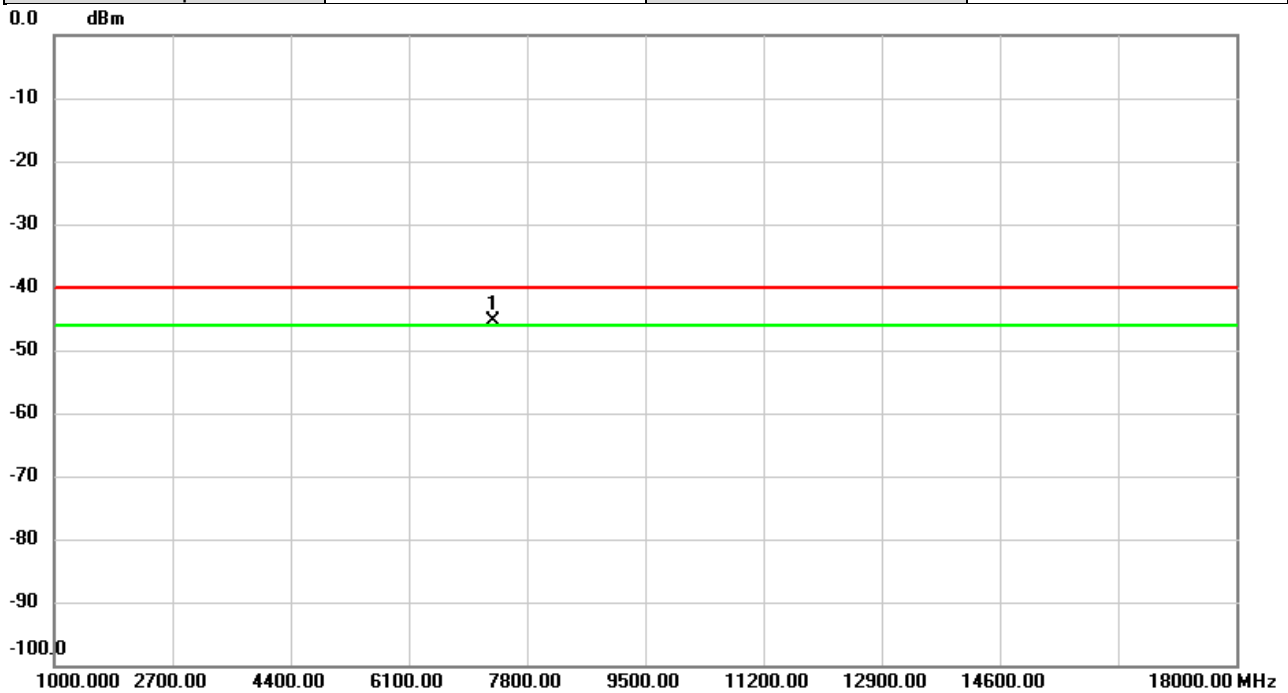


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	7209.980	-63.11	17.71	-45.40	-40.00	-5.40	peak	

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%

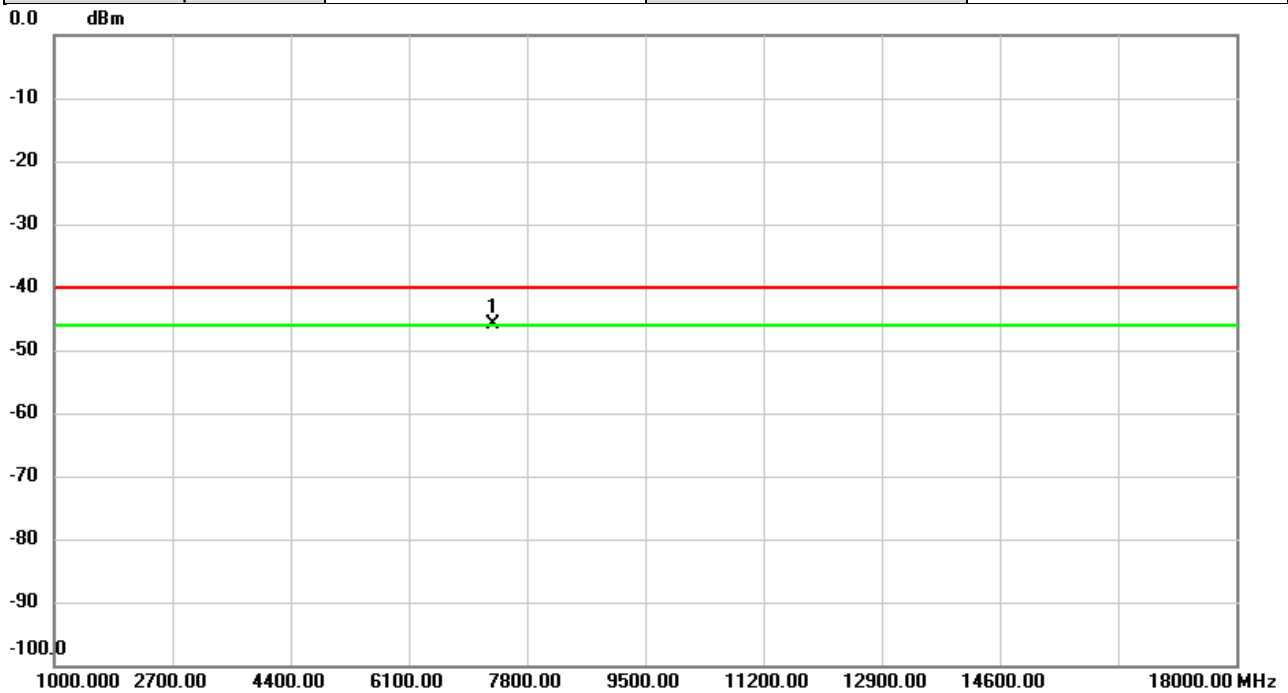


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	7319.960	-63.18	17.84	-45.34	-40.00	-5.34	peak	

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%

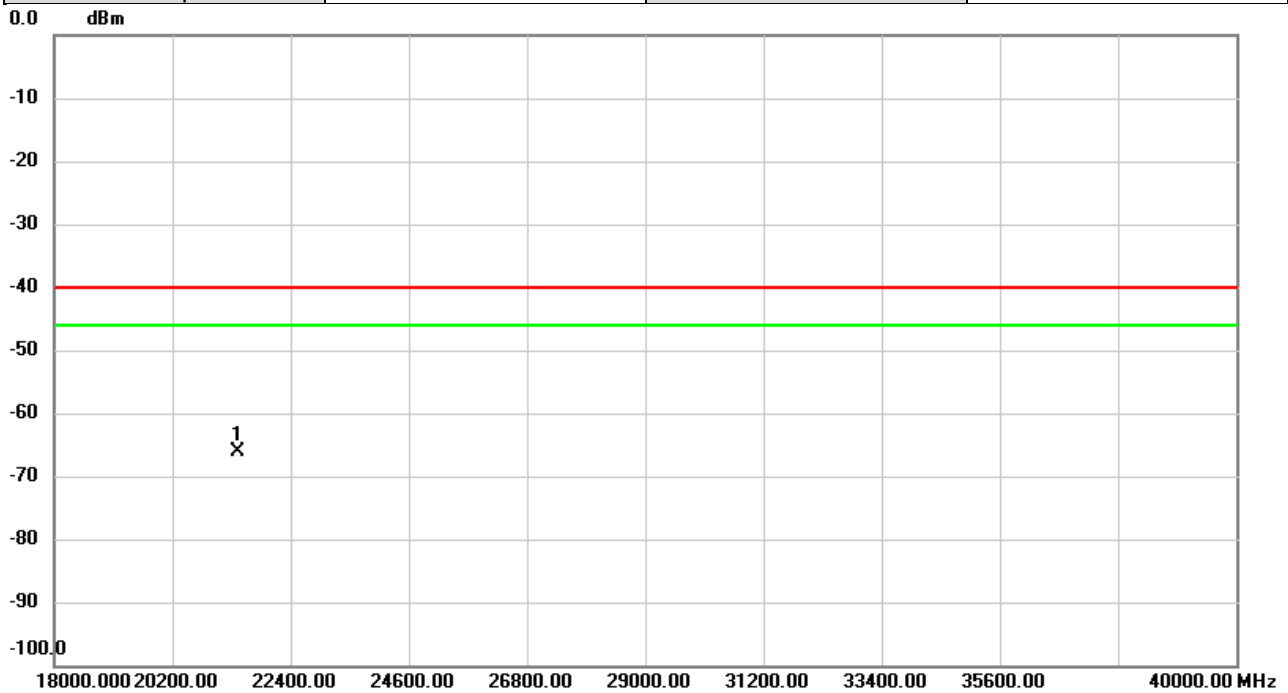


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	7319.960	-63.62	17.70	-45.92	-40.00	-5.92	peak	

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%

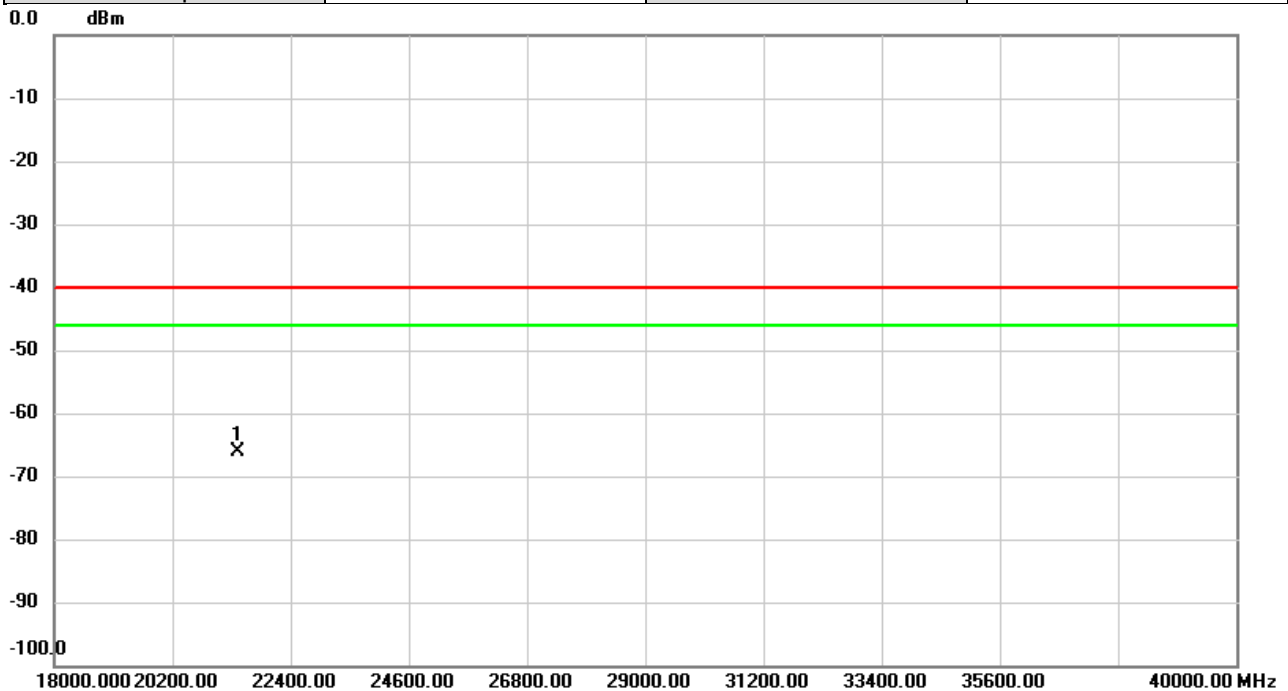


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	21420.00	-59.97	-6.07	-66.04	-40.00	-26.04	peak	

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.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBm	dB	dBm	dBm	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