

FCC Radio Test Report

FCC ID: 2AX2URW350RGLL

Report No. : BTL-FCCP-5-2504T032
Equipment : 5G module
Model Name : RW350R-GL
Brand Name : Rolling Wireless
Applicant : Rolling Wireless S.a r.l.
Address : 8-10, rue Mathias Hardt 1717, Ville-Haute Luxembourg

Radio Function : LTE Band 26

FCC Rule Part(s) : FCC CFR Title 47, Part 90, Subpart S

Date of Receipt : 2025/4/8
Date of Test : 2025/4/28 ~ 2025/6/2
Issued Date : 2025/6/18

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

Prepared by : Brett Shen
Brett Shen, Engineer

Approved by : Jerry Chuang
Jerry Chuang, Supervisor

**BTL Inc.**

No.18, Ln. 171, Sec. 2, Jiuzong Rd., Neihu Dist., Taipei City 114, Taiwan

Tel: +886-2-2657-3299 Fax: +886-2-2657-3331 Web: www.newbtl.com Service mail: btl_qa@newbtl.com

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** assumes no responsibility for the data provided by the Customer, any statements, inferences or generalizations drawn by the customer or others from the reports issued by **BTL**.

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-5-2504T032	R00	Original Report.	2025/6/18	Valid

1 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards.

Standard(s) Section	Description	Test Result	Judgement	Remark
2.1046 90.635 (b)	Effective Radiated Power	APPENDIX A	Pass	-----
2.1053 90.691	Radiated Spurious Emissions	APPENDIX B	Pass	-----

Statement of Conformity

The statement of conformity is based on the binary decision rule according to IEC Guide 115 and ILAC G8 "simple acceptance" principle. Without considering measurement uncertainty, its specific risk is less than 50% PFA. (PFA: Probability of False Accept)

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 (FCC ID: 2AX2URW350RGLL) to be incorporated to the host device (Model number: TP00167A), 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_{cisp} requirement.

A. Radiated emissions test :

Test Site	Measurement Frequency Range	U_{cisp} (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 Radiated Power	23 °C, 58 %	AC 120V	Easton Tsai
Radiated Spurious Emissions	Refer to data	AC 120V	Mark Wang

2 GENERAL INFORMATION

2.1 DESCRIPTION OF EUT

Equipment	5G module			
Model Name	RW350R-GL			
Brand Name	Rolling Wireless			
Model Difference	N/A			
Power Source	Supplied from host system.			
Power Rating	3.3 Vdc			
Host device information				
Equipment	Notebook Computer			
Model Name	TP00167A			
Brand Name	Lenovo			
Model Difference	N/A			
Power Source	DC voltage supplied from External Power Supply. (Lenovo / ADL180YGSAC3A, ADL180YGSAC3A, ADL180YGSAC3A)			
Power Rating	Model: ADL180YGSAC3A Input: 100-240V~ 3.0A 50-60Hz Output: 36.0VDC 5.0A 180W / 28.0VDC 5.0A / 20.0VDC 5.0A / 15.0VDC 3.0A / 9.0VDC 3.0A / 5.0VDC 3.0A 15.0W Model: ADL180YGSAC3A Input: 100-240V~ 2.5A 50-60Hz Output: 36.0VDC 5.0A 180W / 28.0VDC 5.0A / 20.0VDC 5.0A / 15.0VDC 3.0A / 9.0VDC 3.0A / 5.0VDC 3.0A 15.0W Model: ADL180YGSAC3A Input: 100-240V~ 2.5A 50-60Hz Output: 36.0VDC 5.0A 180W / 5.0VDC 3.0A 15.0W / 9.0VDC 3.0A 27.0W / 15.0VDC 3.0A 45.0W / 20.0VDC 5.0A 100.0W / 28.0VDC 5.0A 140.0W			
WIFI+BT Module	Intel® BE200NGW / BE200NGW			
WWAN Module	Rolling Wireless / RW350R-GL			
NFC Module	FOXCONN / T77H747			
Operation Frequency	Band	UL Frequency (MHz)	DL Frequency (MHz)	
	LTE 26	814 ~ 824	859 ~ 869	
Maximum ERP	Band	BW (MHz)	Mode	Power (W)
	LTE 26	1.4	QPSK	0.176
			16QAM	0.113
		3	QPSK	0.183
			16QAM	0.114
	5	5	QPSK	0.188
			16QAM	0.120
		10	QPSK	0.188
			16QAM	0.117
		64QAM	64QAM	0.091
			256QAM	0.075
Test Model	RW350R-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	Speedwire	DC330027Q10	PIFA	I-PEX	1.52	LTE Band 26
Aux	Speedwire	DC330027Q10	PIFA	I-PEX	-	RX only
MIMO1	Speedwire	DC330027Q10	PIFA	I-PEX	-	RX only
MIMO2	Speedwire	DC330027Q10	PIFA	I-PEX	-	-

(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

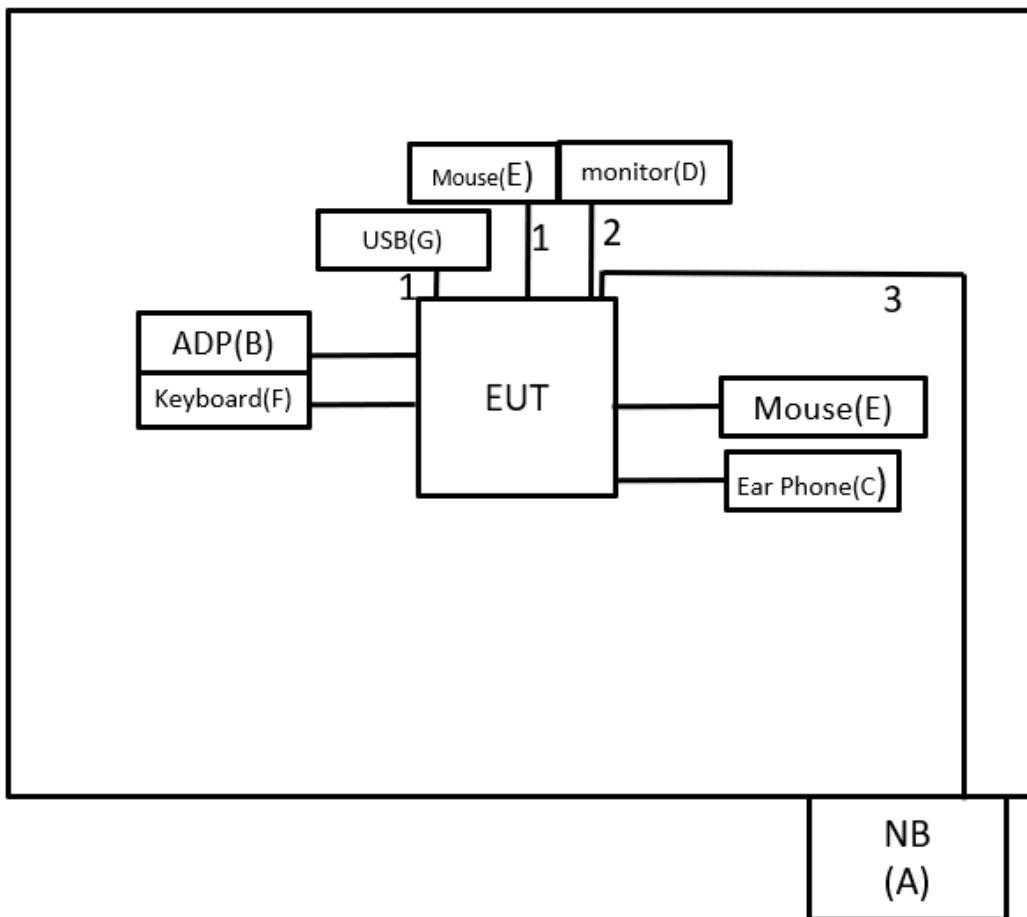
Test Items	Band	Test Mode	Note
Effective Radiated Power	LTE Band 26	Refer to APPENDIX A	-
Radiated Spurious Emissions (Below 1G)	LTE Band 26	Refer to APPENDIX B	-
Radiated Spurious Emissions (Above 1G)	LTE Band 26	Refer to APPENDIX B	-

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 QPSK, 16QAM, 64QAM and 256QAM are evaluated, but only the worst case (QPSK) is recorded.

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	ADL180YGSCHC 3A	N/A	Supplied by test requester.
C	Ear Phone	HTC	S260	N/A	Furnished by test lab.
D	27" 4K Monitor	DELL	P2415Q	N/A	Furnished by test lab.
E	Mouse	Lenovo	SM-8823	N/A	Furnished by test lab.
F	Keyboard	Bloody	KB-8	N/A	Furnished by test lab.
G	USB	ADATA	UV150	N/A	Furnished by test lab.

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	N/A	N/A	0.1m	USB-C to USB 3.0 CABLE	Furnished by test lab.
2	N/A	N/A	1.8m	HDMI	Furnished by test lab.
3	N/A	N/A	10m	RJ45 Cable	Furnished by test lab.

3 EFFECTIVE RADIATED POWER MEASUREMENT

3.1 LIMIT

Mobile / Portable station are limited to 100 watts e.r.p.

3.2 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 5.8.

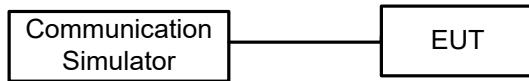
- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from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

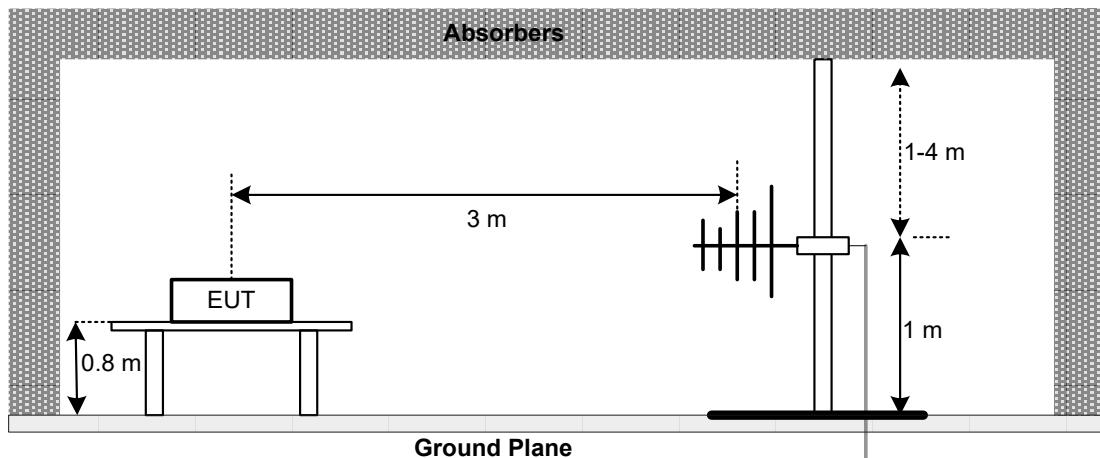
- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 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 = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.
- d. ERP can be calculated from EIRP by subtracting the gain of dipole, $ERP = EIRP - 2.15\text{dBi}$..
- e. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.3 DEVIATION FROM TEST STANDARD

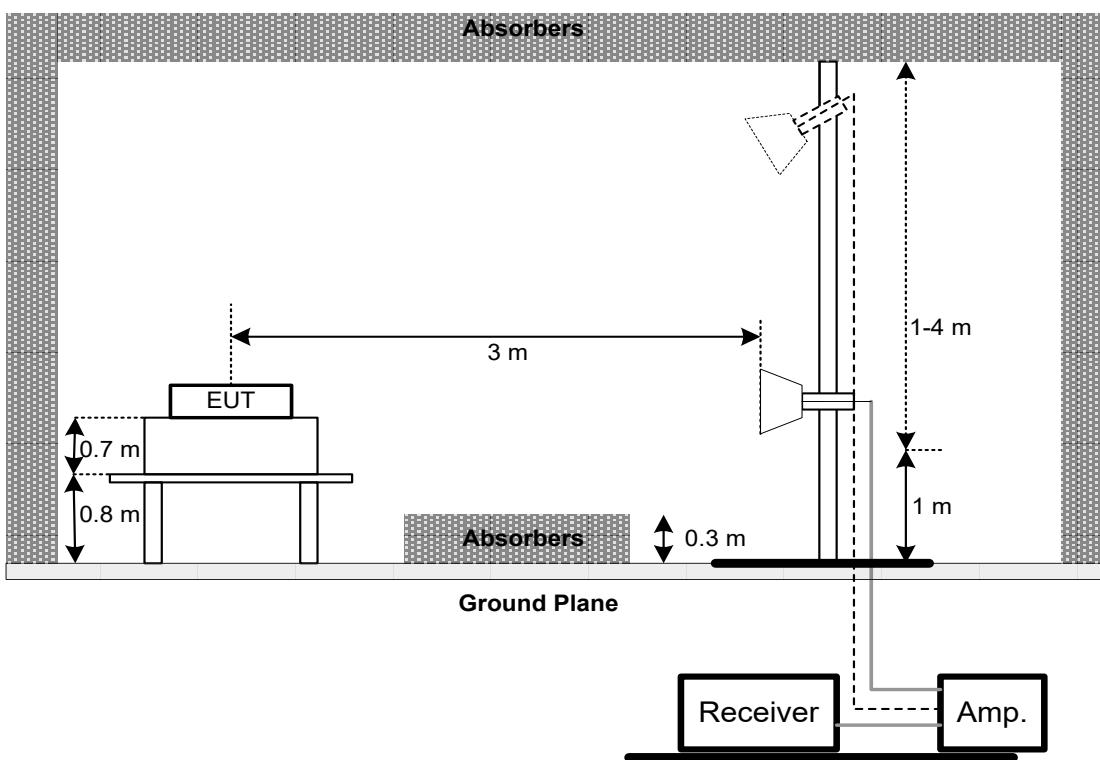
No deviation.

4.4 TEST SETUP

30 MHz to 1 GHz



Above 1 GHz



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 Radiated Power						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	WIRELESS COMMUNICATION TEST SET	Agilent	E5515C	GB47390193	2024/7/7	2025/7/6
2	Radio Communication Test Station	ANRITSU	MT8821C	6262044728	2024/11/19	2025/11/18
3	Radio Communication Analyzer	ANRITSU	MT8000A	6262036844	2024/11/20	2025/11/19

Radiated Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Preamplifier	EMCI	EMC330N	980850	2024/9/5	2025/9/4
2	Preamplifier	EMCI	EMC118A45SE	980819	2025/3/5	2026/3/4
3	Pre-Amplifier	EMCI	EMC184045SE	980907	2024/9/4	2025/9/3
4	Preamplifier	EMCI	EMC001340	980579	2024/9/4	2025/9/3
5	Test Cable	EMCI	EMC104-SM-1000	180809	2025/3/5	2026/3/4
6	Test Cable	EMCI	EMC104-SM-SM-3000	220322	2025/3/5	2026/3/4
7	Test Cable	EMCI	EMC104-SM-SM-7000	220324	2025/3/5	2026/3/4
8	EXA Signal Analyzer	keysight	N9020B	MY57120120	2025/2/19	2026/2/18
9	Loop Ant	Electro-Metrics	EMCI-LPA600	291	2024/9/9	2025/9/8
10	Horn Antenna	RFSPIN	DRH18-E	211202A18EN	2024/5/9 2025/5/9	2025/5/8 2026/5/8
11	Horn Ant	Schwarzbeck	BBHA 9170D	1136	2024/5/17 2025/5/15	2025/5/16 2026/5/14
12	Log-bicon Antenna	Schwarzbeck	VULB9168	1369	2024/6/14	2025/6/13
13	6dB Attenuator	EMCI	EMCI-N-6-06	AT-06001	2024/6/14	2025/6/13
14	Test Cable	EMCI	EMC101G-KM-KM-3000	220329	2025/3/12	2026/3/11
15	Test Cable	EMCI	EMC102-KM-KM-1000	220327	2025/3/12	2026/3/11
16	Measurement Software	EZ	EZ_EMC (Version NB-03A1-01)	N/A	N/A	N/A
17	Radio Communication Test Station	ANRITSU	MT8821C	6262044728	2024/11/19	2025/11/18

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-2504T032-FCCP-1 (APPENDIX-TEST PHOTOS).

7 EUT PHOTOS

Please refer to document Appendix No.: EP-2504T032-1 (APPENDIX-EUT PHOTOS).

APPENDIX A EFFECTIVE RADIATED POWER

LTE Band 26 Power:

Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	ERP power (dBm)	ERP power (W)	
26	1.4	26697	814.7	QPSK	1	0	0	22.83	22.202	0.166	
				16QAM	1	0	2	21.15	20.52	0.113	
		26740	819	QPSK	1	0	0	23.07	22.44	0.175	
				16QAM	1	0	2	21.17	20.54	0.113	
		26783	823.3	QPSK	1	0	0	23.08	22.45	0.176	
				16QAM	1	0	2	21.15	20.52	0.113	
Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	ERP power (dBm)	ERP power (W)	
26	3	26705	815.5	QPSK	1	0	0	23.25	22.62	0.183	
				16QAM	1	0	2	21.05	20.42	0.110	
		26740	819	QPSK	1	0	0	23.18	22.55	0.180	
				16QAM	1	0	2	21.22	20.59	0.114	
		26775	822.5	QPSK	1	0	0	23.08	22.45	0.176	
				16QAM	1	0	2	20.87	20.24	0.106	
Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	ERP power (dBm)	ERP power (W)	
26	5	26715	816.5	QPSK	1	0	0	23.23	22.60	0.182	
				16QAM	1	0	2	20.98	20.35	0.108	
		26740	819	QPSK	1	0	0	23.37	22.74	0.188	
				16QAM	1	0	2	21.43	20.80	0.120	
		26765	821.5	QPSK	1	0	0	23.07	22.44	0.175	
				16QAM	1	0	2	21.28	20.65	0.116	
Band	BW (MHz)	Channel	Frequency (MHz)	Mode	UL RB Allocation	UL RB Offset	MPR	Average power (dBm)	ERP power (dBm)	ERP power (W)	
26	10	26790	819	QPSK	1	0	0	23.37	22.74	0.188	
					1	37	0	23.10	22.47	0.177	
					1	74	0	22.94	22.31	0.170	
					36	0	1	22.21	21.58	0.144	
					36	20	1	22.20	21.57	0.144	
					36	39	1	22.18	21.55	0.143	
					75	0	1	22.05	21.42	0.139	
					16QAM	1	0	21.31	20.68	0.117	
					64QAM	1	0	3	20.22	19.59	0.091
					256QAM	1	0	4	19.41	18.78	0.075

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	LTE Band 26	Test Date	2025/5/2
Test Channel	CH26790	Polarization	Vertical
Temp	27°C	Hum.	61%

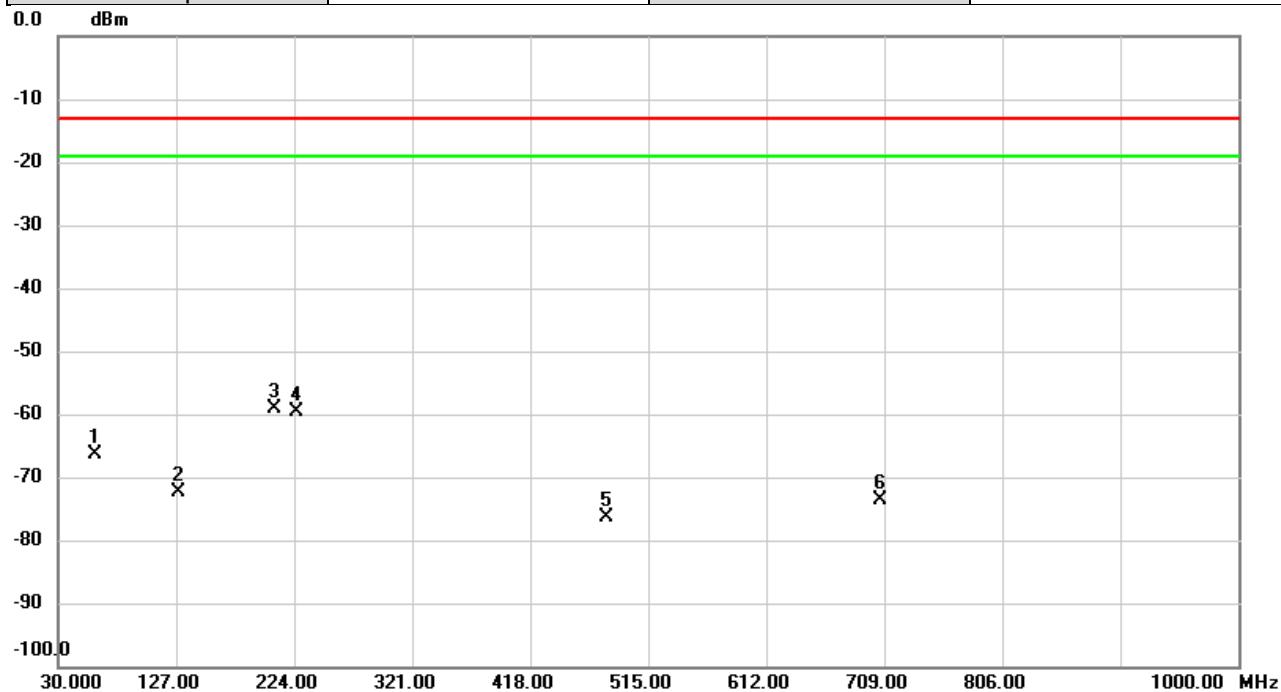


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBm	dB	dBm	dBm	dB	Detector Comment
1		59.8437	-60.33	-7.75	-68.08	-13.00	-55.08	peak
2		200.1057	-52.20	-3.38	-55.58	-13.00	-42.58	peak
3	*	218.4387	-49.41	-3.80	-53.21	-13.00	-40.21	peak
4		325.3327	-68.54	-3.13	-71.67	-13.00	-58.67	peak
5		549.0793	-73.55	2.78	-70.77	-13.00	-57.77	peak
6		759.5370	-76.35	3.82	-72.53	-13.00	-59.53	peak

REMARKS:

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

Test Mode	LTE Band 26	Test Date	2025/5/2
Test Channel	CH26790	Polarization	Horizontal
Temp	27°C	Hum.	61%

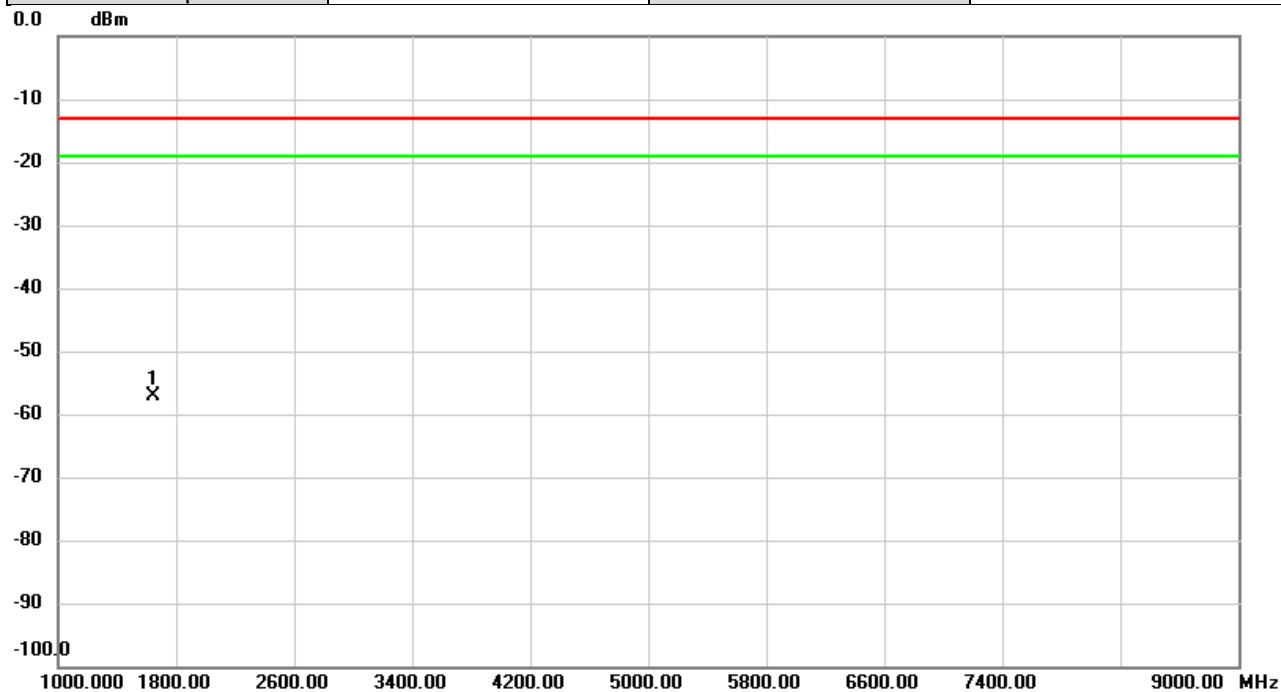


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBm	dB	dBm	dBm	dB	Detector Comment
1		60.0053	-62.34	-4.10	-66.44	-13.00	-53.44	peak
2		129.3603	-65.86	-6.63	-72.49	-13.00	-59.49	peak
3	*	207.5100	-49.60	-9.53	-59.13	-13.00	-46.13	peak
4		225.4227	-51.02	-8.50	-59.52	-13.00	-46.52	peak
5		480.9530	-74.81	-1.64	-76.45	-13.00	-63.45	peak
6		705.7020	-76.30	2.69	-73.61	-13.00	-60.61	peak

REMARKS:

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

Test Mode	LTE Band 26	Test Date	2025/4/30
Test Channel	CH26790	Polarization	Vertical
Temp	26°C	Hum.	54%

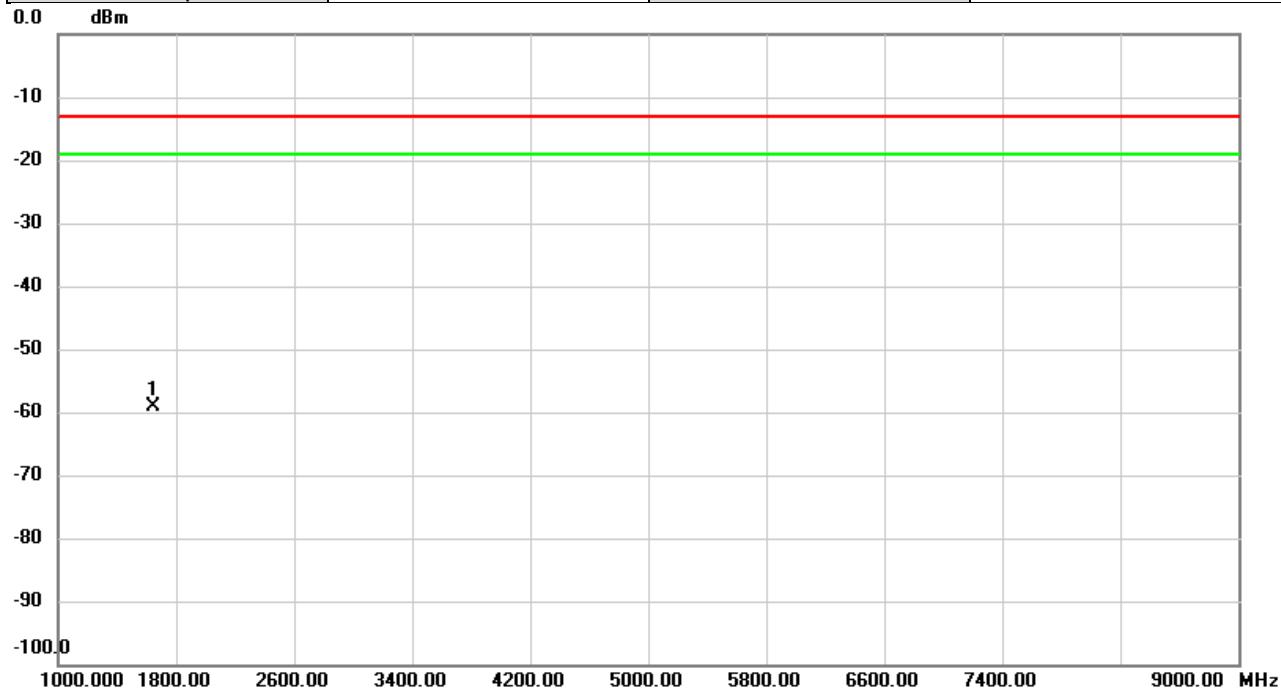


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over
		MHz	dBm	dB	dBm	dBm	Detector
1	*	1648.000	-62.90	5.71	-57.19	-13.00	-44.19 peak

REMARKS:

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

Test Mode	LTE Band 26	Test Date	2025/4/30
Test Channel	CH26790	Polarization	Horizontal
Temp	26°C	Hum.	54%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over
		MHz	dBm	dB	dBm	dBm	Detector
1	*	1648.000	-64.57	5.41	-59.16	-13.00	-46.16 peak

REMARKS:

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

End of Test Report