FCC RADIO TEST REPORT

FCC ID	:	2ARF9CSM64
Equipment	:	Cloud Services Modem
Brand Name	:	Versa Networks
Model Name	:	CSM64
Marketing Name	:	Cloud Services Modem
Applicant	:	Versa Networks 2550 GREAT AMERICA WAY SUITE 350 SANTA CLARA, CA 95054
Manufacturer	:	Versa Networks 2550 GREAT AMERICA WAY SUITE 350 SANTA CLARA, CA 95054
Standard	:	FCC 47 CFR Part 2, 96

The product was received on Jun. 17, 2024 and testing was performed from Sep. 27, 2024 to Feb. 25, 2025. We, Sporton International Inc. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this partial report apply exclusively to the tested model / sample. Without written approval from Sporton International Inc. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

Sporton International Inc. EMC & Wireless Communications Laboratory
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History of this test report

Report No.	Version	Description	Issue Date
FG461443-01D	01	Initial issue of report	Mar. 12, 2025

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power	Pass	-
-	§96.41	Peak-to-Average Ratio	Pass	See Note
3.3	§96.41	Effective Isotropic Radiated Power	Pass	-
-	§2.1049 §96.41	Occupied Bandwidth	Pass	See Note
-	§2.1051 §96.41	Conducted Band Edge Measurement	Pass	See Note
-	§2.1051 §96.41	Conducted Spurious Emission	Pass	See Note
-	§2.1055	Frequency Stability for Temperature & Voltage	Pass	See Note
4.4	§2.1053 §96.41	Radiated Spurious Emission	Pass	-

Note:

1. For host device, Radiated Spurious Emission and Effective Isotropic Radiated Power are verified and complies with the limit in this test report.
2. For host device, the Conducted Output Power is no difference after compared to module (Model: FN990A28).
3. This report is by changing EUT appearance, FCC ID, equipment name, brand name, model name, marketing name, applicant and manufacturer information. After assessing, since the test result is not affected by the changes, the FG461443-01D report reuses test data from the FG461443D report.

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section “Measurement Uncertainty”.

Disclaimer:

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

Reviewed by: Keven Cheng
Report Producer: Michelle Chen

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature
General Specs WCDMA/LTE/5G NR, and GNSS **Antenna Type** WWAN: **<Taoglas Antenna>:** Fixed External Antenna **<Airgain Antenna>:** Fixed External Antenna

Support band and evaluated information	
Supported band	B42, B42C, B43, B43C, B48, B48C
Evaluated and Tested band	B48, B48C
Band covered information	Wider operating frequency band range covers narrower one when the power is worse as follows: ■ LTE B48 cover B42 ■ LTE B48 cover B43

TDD band Power Class				
	PC3	**PC2**		
B42/ B42C	V			
B43/ B43C	V			
B48/ B48C	V			

Taoglas Antenna information(dBi)							
Band	**Ant3**		**Main Ant. #**				
B42	**0.44**		3				
B43	**0.42**		3				
B48	**0.44**		3				

Airgain Antenna information(dBi)							
Band	**Ant3**		**Main Ant. #**				
B42	**-0.15**		3				
B43	**0.02**		3				
B48	**0.02**		3				

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

1.2 Modification of EUT

No modifications made to the EUT during the testing.

1.3 Testing Site

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	**Sporton Site No.**
	TH03-HY
Test Engineer	Diego Huang
Temperature (℃)	22.2~23.6
Relative Humidity (%)	50.2~55.5

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855
Test Site No.	**Sporton Site No.**
	03CH12-HY (TAF Code: 3786)
Test Engineer	Jack Cheng, Tim Lee and Wilson Wu
Temperature (℃)	20~25
Relative Humidity (%)	50~60
Remark	The Radiated Spurious Emission test item subcontracted to Sporton International Inc. Wensan Laboratory.

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

FCC Designation No.: TW1190 and TW3786

1.4 Applied Standards

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

- ANSI C63.26-2015
- FCC 47 CFR Part 2, 96
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB 940660 D01 Part 96 CBRS Eqpt v03
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- FCC KDB 414788 D01 Radiated Test Site v01r01

Remark:

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.
3. The TAF code is not including all the FCC KDB listed without accreditation.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

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

For radiated measurement, the measured emission level of the EUT was maximized by rotating the EUT on a turntable, adjusting the orientation of the EUT and EUT antenna in two config (Ant. Horizontal and Ant. Vertical), and adjusting the measurement antenna orientation, following C63.26 exploratory test procedures and only the worst case emissions were reported in this report..

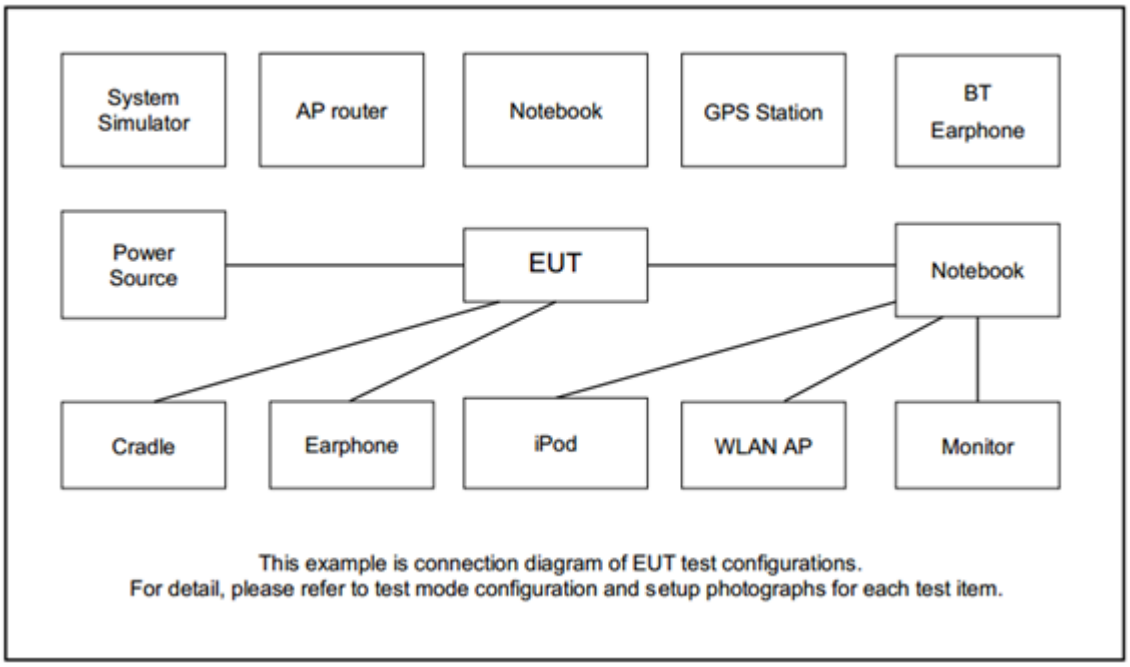
Modulation Type	Modulation
A	QPSK
B	16QAM
C	64QAM
D	256QAM

Test Item	Modulation Type	Bandwidth	RB Size	Channel
Conducted Power	A, B	All	1RB	L, M, H
EIRP	A, B	All	1RB	L, M, H
RSE	A	20 MHz	1RB	L, M, H

Remark:

1. Evaluated all the transmitter signal and reporting worst-case configuration among all modulation types.
2. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst-case emissions are reported.
3. For modulation of QPSK & 16QAM, the maximum power of QPSK & 16QAM is higher than other modulation (64QAM/256QAM), therefore, according to engineering evaluation , we choose higher power (QPSK & 16QAM) to perform tests and show in the report.

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Brand Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m

2.4 Frequency List of Low/Middle/High Channels

LTE Band 42 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	43190	43340	43490
	Frequency	3560.0	3575.0	3590.0
15	Channel	43165	43340	43515
	Frequency	3557.5	3575.0	3592.5
10	Channel	43140	43340	43540
	Frequency	3555.0	3575.0	3595.0
5	Channel	43115	43340	43565
	Frequency	3552.5	3575.0	3597.5

LTE Band 43 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	43690	44090	44490
	Frequency	3610.0	3650.0	3690.0
15	Channel	43665	44090	44515
	Frequency	3607.5	3650.0	3692.5
10	Channel	43640	44090	44540
	Frequency	3605.0	3650.0	3695.0
5	Channel	43615	44090	44565
	Frequency	3602.5	3650.0	3697.5

LTE Band 48 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	55340	55990	56640
	Frequency	3560.0	3625.0	3690.0
15	Channel	55315	55990	56665
	Frequency	3557.5	3625.0	3692.5
10	Channel	55290	55990	56690
	Frequency	3555.0	3625.0	3695.0
5	Channel	55265	55990	56715
	Frequency	3552.5	3625.0	3697.5

LTE Band 42C Channel and Frequency List_CA					
BW [MHz]	Channel/Frequency(MHz)		Lowest	Middle	Highest
20 + 20	PCC	Channel	43190	43241	43292
		Frequency	3560.0	3565.1	3570.2
	SCC	Channel	43388	43439	43490
		Frequency	3579.8	3584.9	3590.0
20 + 15	PCC	Channel	43190	43266	43344
		Frequency	3560.0	3567.6	3575.4
	SCC	Channel	43361	43437	43515
		Frequency	3577.1	3584.7	3592.5
15 + 20	PCC	Channel	43165	43243	43319
		Frequency	3557.5	3565.3	3572.9
	SCC	Channel	43336	43414	43490
		Frequency	3574.6	3582.4	3590.0
20 + 10	PCC	Channel	43190	43291	43396
		Frequency	3560.0	3570.1	3580.6
	SCC	Channel	43334	43435	43540
		Frequency	3574.4	3584.5	3595.0
10 + 20	PCC	Channel	43140	43246	43346
		Frequency	3555.0	3565.6	3575.6
	SCC	Channel	43284	43390	43490
		Frequency	3569.4	3580.0	3590.0
20 + 5	PCC	Channel	43190	43315	43448
		Frequency	3560.0	3572.5	3585.8
	SCC	Channel	43307	43432	43565
		Frequency	3571.7	3584.2	3597.5
5 + 20	PCC	Channel	43115	43248	43373
		Frequency	3552.5	3565.8	3578.3
	SCC	Channel	43232	43365	43490
		Frequency	3564.2	3577.5	3590.0

LTE Band 43C Channel and Frequency List_CA					
BW [MHz]	Channel/Frequency(MHz)		Lowest	Middle	Highest
20 + 20	PCC	Channel	43690	43991	44292
		Frequency	3610.0	3640.1	3670.2
	SCC	Channel	43888	44189	44490
		Frequency	3629.8	3659.9	3690.0
15 + 20	PCC	Channel	43665	43993	44319
		Frequency	3607.5	3640.3	3672.9
	SCC	Channel	43836	44164	44490
		Frequency	3624.6	3657.4	3690.0
10 + 20	PCC	Channel	43640	43996	44346
		Frequency	3605.0	3640.6	3675.6
	SCC	Channel	43784	44140	44490
		Frequency	3619.4	3655.0	3690.0
5 + 20	PCC	Channel	43615	43998	44373
		Frequency	3602.5	3640.8	3678.3
	SCC	Channel	43732	44115	44490
		Frequency	3614.2	3652.5	3690.0

LTE Band 48C Channel and Frequency List_CA					
BW [MHz]	Channel/Frequency(MHz)		Lowest	Middle	Highest
5 + 20	PCC	Channel	55273	55898	56523
		Frequency	3553.3	3615.8	3678.3
	SCC	Channel	55390	56015	56640
		Frequency	3565	3627.5	3690
20 + 5	PCC	Channel	55340	55965	56590
		Frequency	3560	3622.5	3685
	SCC	Channel	55457	56082	56707
		Frequency	3571.7	3634.2	3696.7
10 + 20	PCC	Channel	55295	55896	56496
		Frequency	3555.5	3615.6	3675.6
	SCC	Channel	55439	56040	56640
		Frequency	3569.9	3630	3690
20 + 10	PCC	Channel	55340	55941	56541
		Frequency	3560	3620.1	3680.1
	SCC	Channel	55484	56085	56685
		Frequency	3574.4	3634.5	3694.5
15 + 20	PCC	Channel	55318	55893	56469
		Frequency	3557.8	3615.3	3672.9
	SCC	Channel	55489	56064	56640
		Frequency	3574.9	3632.4	3690
20 + 15	PCC	Channel	55340	55916	56491
		Frequency	3560	3617.6	3675.1
	SCC	Channel	55511	56087	56662
		Frequency	3577.1	3634.7	3692.2
20 + 20	PCC	Channel	55340	55891	56442
		Frequency	3560	3615.1	3670.2
	SCC	Channel	55538	56089	56640
		Frequency	3579.8	3634.9	3690

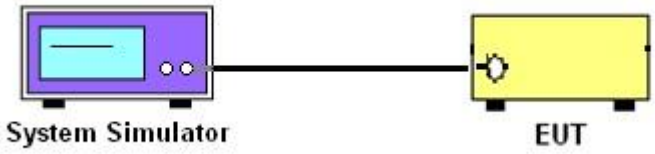
3 Conducted Test Items

3.1 Measuring Instruments

See list of measuring instruments of this test report.

3.1.1 Test Setup

3.1.2 Conducted Output Power



3.1.3 Test Result of Conducted Test

Please refer to Appendix A.

3.2 Conducted Output Power Measurement

3.2.1 Description of the Conducted Output Power Measurement

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

3.2.2 Test Procedures

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

3.3 EIRP

3.3.1 Description of the EIRP Measurement

The EIRP of mobile transmitters must not exceed 23 dBm /10 megahertz for LTE Band 48.

The testing follows ANSI C63.26-2015 Section 5.2.5.5.

According to KDB 412172 D01 Power Approach,

EIRP = PT + GT – LC, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

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

Device	Maximum EIRP (dBm/10 MHz)	Maximum PSD (dBm/MHz)
End User Device	23	n/a

Remark: Total channel power is complied with EIRP limit 23dBm/10MHz.

3.3.2 Test Procedures

The testing follows procedure in Section 5.2 of ANSI C63.26-2015 and KDB 940660 D01 Part 96 CBRS Eqpt v03 Section 3.2(b)(2)

Determine the EIRP by adding the effective antenna gain to the measured average conducted power level.

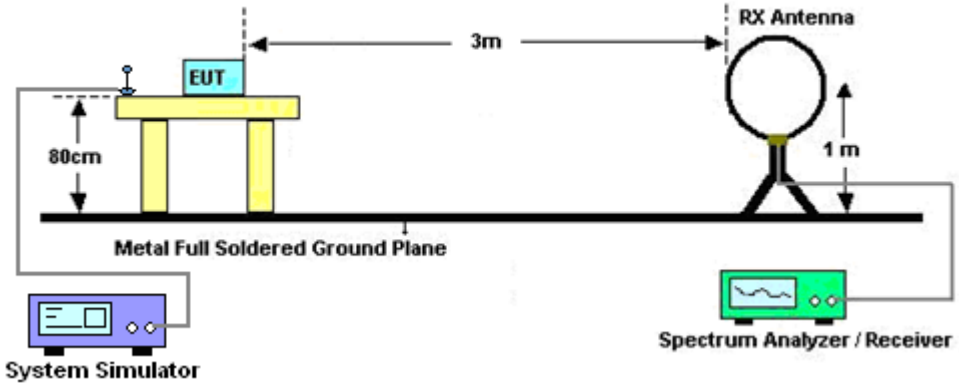
4 Radiated Test Items

4.1 Measuring Instruments

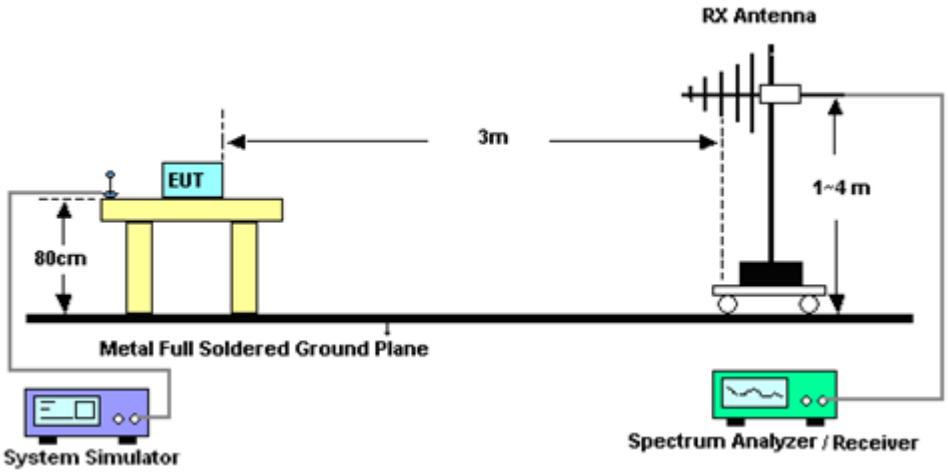
See list of measuring instruments of this test report.

4.2 Test Setup

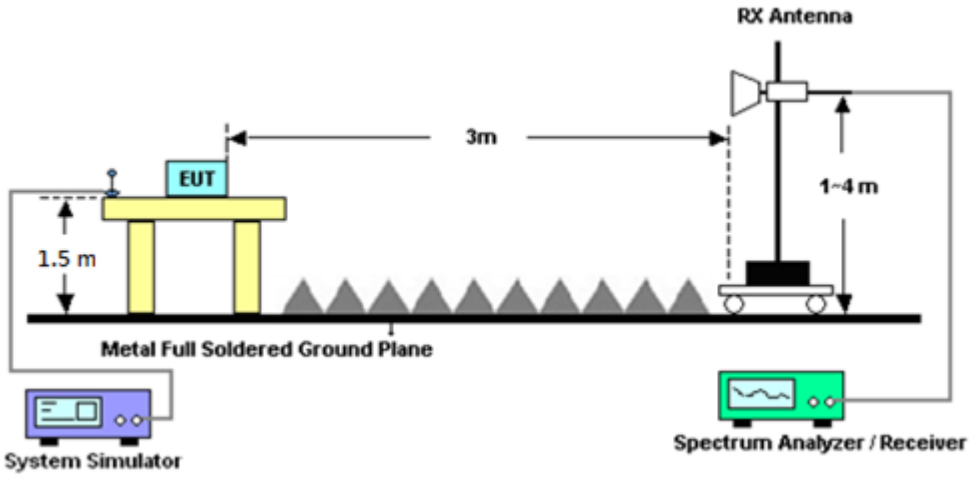
For radiated test below 30MHz



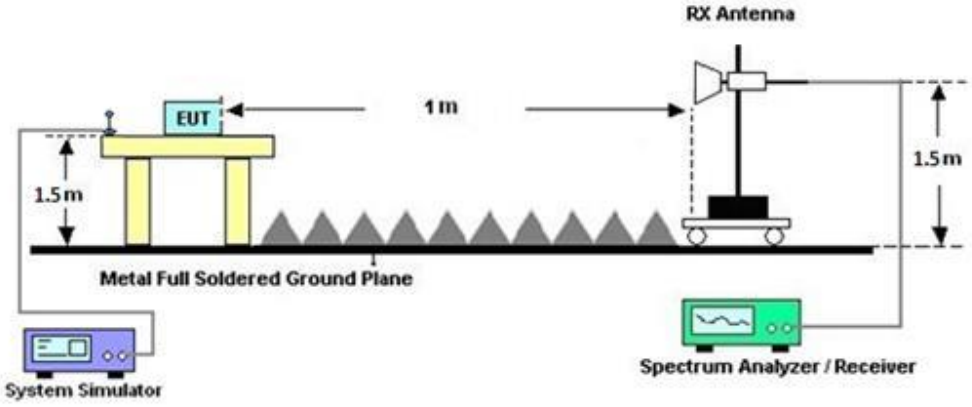
For radiated test from 30MHz to 1GHz



For radiated emissions from 1GHz to 18GHz



For radiated emissions above 18GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.

Note:

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

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

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI C63.26-2015.
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least -40dBm / MHz
The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

4.4.2 Test Procedures

The testing follows FCC KDB 971168 D01 v03r01 Section 7 and ANSI C63.26-2015 section 5.5.4 Radiated measurement using the field strength method.

1. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
2. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
5. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
6. To convert spectrum reading E(dBuV/m) to EIRP(dBm)
   EIRP(dBm) = Level (dBuV/m) + 20log(d) -104.77,
   where d is the distance at which filed strength limit is specified in the rules
7. Field Strength Level (dBm) = Spectrum Reading (dBm) + Antenna Factor + Cable Loss + Read Level - Preamp Factor.
8. ERP (dBm) = EIRP (dBm) - 2.15
9. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

5 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Loop Antenna	Rohde & Schwarz	HFH2-Z2	100488	9 kHz~30 MHz	Aug. 29, 2024	Feb. 18, 2025~ Feb. 25, 2025	Aug. 28, 2025	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N-06	37059 & 01	30MHz~1GHz	Nov. 27, 2024	Feb. 18, 2025~ Feb. 25, 2025	Nov. 26, 2025	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-02114	1GHz~18GHz	Jul. 11, 2024	Feb. 18, 2025~ Feb. 25, 2025	Jul. 10, 2025	Radiation (03CH12-HY)
Preamplifier	E-INSTRUMENT TECH LTD.	ERA-100M-18G-56-01-A70	EC1900269	1GHz-18GHz	Dec. 19, 2024	Feb. 18, 2025~ Feb. 25, 2025	Dec. 18, 2025	Radiation (03CH12-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Aug. 09, 2024	Feb. 18, 2025~ Feb. 25, 2025	Aug. 08, 2025	Radiation (03CH12-HY)
EMI Test Receiver	Agilent	N9038A(MXE)	MY53290053	20Hz~26.5GHz	Sep. 09, 2024	Feb. 18, 2025~ Feb. 25, 2025	Sep. 08, 2025	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	1224	18GHz-40GHz	Jun. 24, 2024	Feb. 18, 2025~ Feb. 25, 2025	Jun. 23, 2025	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060715	18GHz~40GHz	Dec. 02, 2024	Feb. 18, 2025~ Feb. 25, 2025	Dec. 01, 2025	Radiation (03CH12-HY)
Notch Filter	Wainwright	WHKX12-900-1000-15000-60SS	SN11	1GHz High Pass Filter	Mar. 13, 2024	Feb. 18, 2025~ Feb. 25, 2025	Mar. 12, 2025	Radiation (03CH12-HY)
Notch Filter	Wainwright	WLKS1200-12SS	SN2	1.2GHz Low Pass Filter	Mar. 13, 2024	Feb. 18, 2025~ Feb. 25, 2025	Mar. 12, 2025	Radiation (03CH12-HY)
Notch Filter	Wainwright	WHKX12-2700-3000-18000-60ST	SN2	3GHz High Pass Filter	Mar. 13, 2024	Feb. 18, 2025~ Feb. 25, 2025	Mar. 12, 2025	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	9kHz~30MHz	Mar. 06, 2024	Feb. 18, 2025~ Feb. 25, 2025	Mar. 05, 2025	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz~40GHz	Dec. 19, 2024	Feb. 18, 2025~ Feb. 25, 2025	Dec. 18, 2025	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803955/2	30MHz~40GHz	Nov. 01, 2024	Feb. 18, 2025~ Feb. 25, 2025	Oct. 31, 2025	Radiation (03CH12-HY)
RF Cable	EMCI	EMC101Y-KM-KM-100	240907	30MHz~40GHz	Nov. 14, 2024	Feb. 18, 2025~ Feb. 25, 2025	Dec. 13, 2025	Radiation (03CH12-HY)
Hygrometer	TECPEL	DTM-303B	TP210090	N/A	Aug. 29, 2024	Feb. 18, 2025~ Feb. 25, 2025	Aug. 28, 2025	Radiation (03CH12-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Feb. 18, 2025~ Feb. 25, 2025	N/A	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Feb. 18, 2025~ Feb. 25, 2025	N/A	Radiation (03CH12-HY)
Radio Communication Analyze	Anritsu	MT8821C	6262116730	LTE	Jun. 28, 2024	Feb. 18, 2025~ Feb. 25, 2025	Jun. 27, 2025	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Feb. 18, 2025~ Feb. 25, 2025	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-000989	N/A	N/A	Feb. 18, 2025~ Feb. 25, 2025	N/A	Radiation (03CH12-HY)
Radio Communication Analyzer	Anritsu	MT8821C	6262025353	LTE FDD/TDD LTE-2CC DLCA/ULCA	Oct. 03, 2023	Sep. 27, 2024~ Oct. 01, 2024	Oct. 02, 2024	Conducted (TH03-HY)
Radio Communication Analyzer	Anritsu	MT8821C	6262025353	LTE FDD/TDD LTE-2CC DLCA/ULCA	Oct. 01, 2024	Oct. 02, 2024~ Nov. 01, 2024	Sep. 01, 2025	Conducted (TH03-HY)
Coupler+10dB+ RFcable	Warison + WoKen + E-Instument	20dB 25W SMA Directional Coupler+ 10dB 18GHz_5W+SFL405_1.5M	#A+#1+#1+#7	1-18GHz	Jan. 02, 2024	Sep. 27, 2024~ Nov. 01, 2024	Jan. 01, 2025	Conducted (TH03-HY)
Power divider	Anritsu	K241C	2143398	9KHz~40GHz	Jun. 13, 2024	Sep. 27, 2024~ Nov. 01, 2024	Jun. 12, 2025	Conducted (TH03-HY)
Software	Sporton	LTE Conducted Test Tools	N/A	Conducted Test Item	N/A	Sep. 27, 2024~ Nov. 01, 2024	N/A	Conducted (TH03-HY)
Hygrometer	TECPEL	DTM-303B	TP210073	-10 ~ 50°C / 20 ~ 95%RH	Jun. 05, 2024	Sep. 27, 2024~ Nov. 01, 2024	Jun. 04, 2025	Conducted (TH03-HY)

6 Measurement Uncertainty

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**6.3 dB**

Uncertainty of Radiated Emission Measurement (1 GHz ~ 6 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.7 dB**

Uncertainty of Radiated Emission Measurement (6 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.0 dB**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**5.1 dB**

Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power & EIRP)

LTE Band 48 Maximum Average Power [dBm] (GT - LC = 0.44 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
20	1	0	QPSK	20.90	21.28	20.98	21.85	0.1531
20	1	0	16-QAM	19.70	20.27	20.37	21.01	0.1262
Limit	EIRP < 23dBm/10MHz			Result			Pass	

LTE Band 48 Maximum Average Power [dBm] (GT - LC = 0.44 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
15	1	0	QPSK	20.83	21.25	20.90	21.79	0.1510
15	1	0	16-QAM	19.65	20.21	20.30	20.91	0.1233
Limit	EIRP < 23dBm/10MHz			Result			Pass	

LTE Band 48 Maximum Average Power [dBm] (GT - LC = 0.44 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
10	1	0	QPSK	20.89	21.27	20.89	21.80	0.1514
10	1	0	16-QAM	19.67	20.26	20.31	20.99	0.1256
Limit	EIRP < 23dBm/10MHz			Result			Pass	

LTE Band 48 Maximum Average Power [dBm] (GT - LC = 0.44 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
5	1	0	QPSK	20.80	21.24	20.96	21.77	0.1503
5	1	0	16-QAM	19.67	20.18	20.29	20.93	0.1239
Limit	EIRP < 23dBm/10MHz			Result			Pass	

Total EIRP power is less than partial EIRP limit 23 dBm/10MHz.

LTE Band 48C_CA Maximum Average Power [dBm] (GT - LC = 0.44 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
	RB Size	RB Offset	RB Size	RB Offset						
20+20	100	0	100	0	QPSK	10.89	10.95	10.50	11.39	0.0138
20+20	100	0	100	0	16-QAM	10.93	10.98	10.56	11.42	0.0139
20+15	100	0	75	0	QPSK	10.93	10.94	10.46	11.38	0.0137
20+15	100	0	75	0	16-QAM	10.91	10.97	10.47	11.41	0.0138
15+20	75	0	100	0	QPSK	10.90	10.96	10.54	11.40	0.0138
15+20	75	0	100	0	16-QAM	10.89	10.97	10.51	11.41	0.0138
Limit	EIRP < 23dBm/10MHz					Result			Pass	

LTE Band 48C_CA Maximum Average Power [dBm] (GT - LC = 0.44 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
	RB Size	RB Offset	RB Size	RB Offset						
20+10	100	0	50	0	QPSK	10.94	10.93	10.44	11.38	0.0137
20+10	100	0	50	0	16-QAM	10.96	10.94	10.48	11.40	0.0138
10+20	50	0	100	0	QPSK	10.88	11.01	10.47	11.45	0.0140
10+20	50	0	100	0	16-QAM	10.93	11.02	10.51	11.46	0.0140
20+5	100	0	25	0	QPSK	10.89	10.91	10.37	11.35	0.0136
20+5	100	0	25	0	16-QAM	10.94	10.92	10.37	11.38	0.0137
Limit	EIRP < 23dBm/10MHz					Result			Pass	

LTE Band 48C_CA Maximum Average Power [dBm] (GT - LC = 0.44 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
	RB Size	RB Offset	RB Size	RB Offset						
5+20	25	0	100	0	QPSK	10.85	10.96	10.43	11.40	0.0138
5+20	25	0	100	0	16-QAM	10.87	10.98	10.48	11.42	0.0139
Limit	EIRP < 23dBm/10MHz					Result			Pass	

Total EIRP power is less than partial EIRP limit 23 dBm/10MHz.

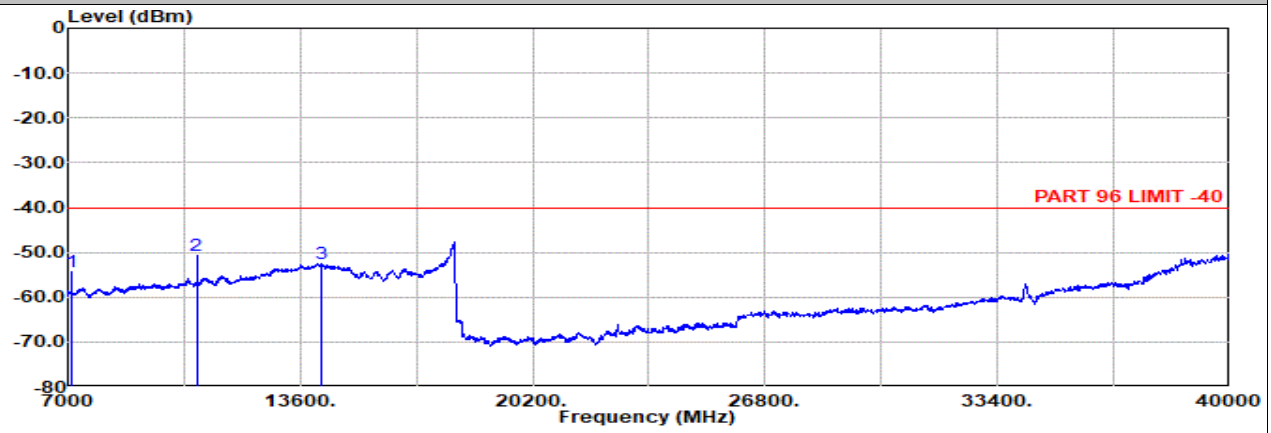
Appendix B. Test Results of Radiated Test

B1. Summary of each worse mode

Mode	Part	Band	Ch	Freq (MHz)	Level (dBm)	Det	Ant Factor (dB)	Amp\Cbl (dB)	Filter (dB)	EIRPCF (dB)	Reading (dBuV)	Limit (dBm)	Margin (dB)	Pol	Ant
16	Part 96	LTE B48	L	10653	-47.54	RMS	39.20	-51.99	0.26	-95.23	60.22	-40.00	-7.54	V	Taoglas Antenna 3
19	Part 96	LTE CA 48C	L	14276	-52.79	RMS	40.90	-47.89	0.45	-95.23	48.98	-40.00	-12.79	V	Taoglas Antenna 3

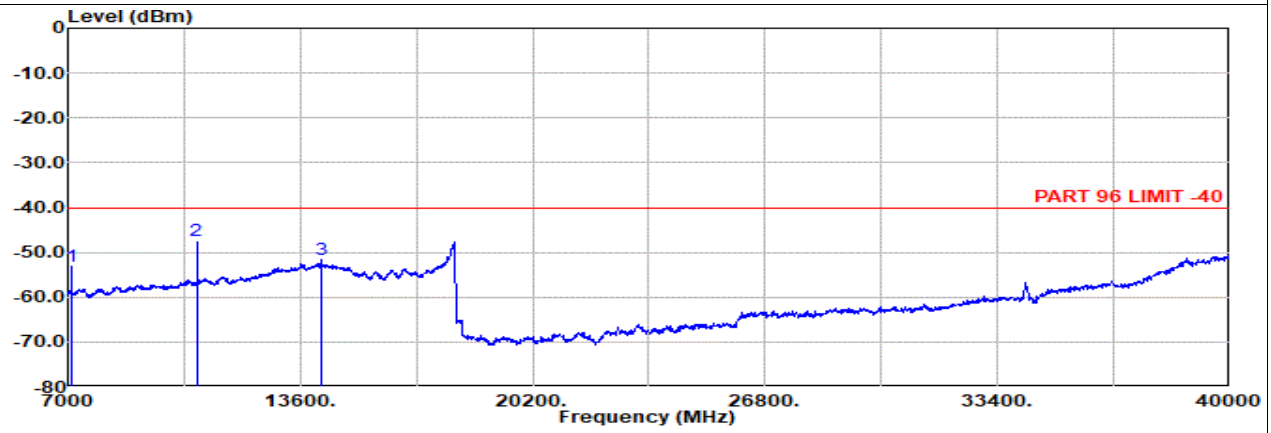
Taoglas Antenna 3

Part 96 Mode 16
LTE B48 20M Ch55340 1RB0 QPSK
L



Site : 03CH12-HY
Condition: PART 96 LIMIT -40 3m 9120D-02114-240711 Horizontal
: LTE Band 48 20M Ch55340 1RB0 QPSK

	Freq	Level	Detector	Ant Factor	Amp\Cbl	Filter	EIRPCF	Reading	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	7102.00	-54.44	RMS	36.61	-53.58	0.90	-95.23	56.86	-40.00	-14.44	Horizontal
2	10653.00	-50.76	RMS	39.20	-51.99	0.26	-95.23	57.00	-40.00	-10.76	Horizontal
3	14204.00	-52.63	RMS	40.99	-48.02	0.45	-95.23	49.18	-40.00	-12.63	Horizontal



Site : 03CH12-HY
Condition: PART 96 LIMIT -40 3m 9120D-02114-240711 Vertical
: LTE Band 48 20M Ch55340 1RB0 QPSK

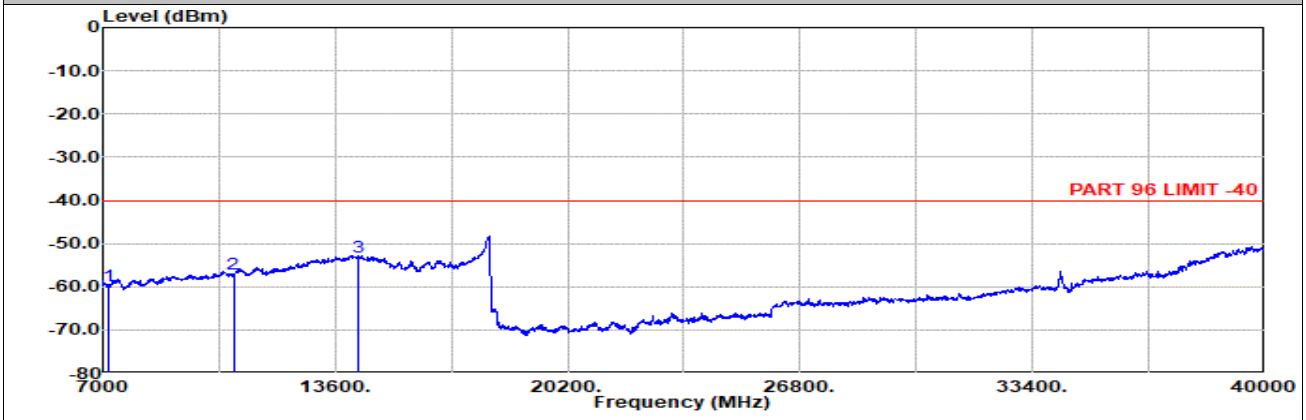
	Freq	Level	Detector	Ant Factor	Amp\Cbl	Filter	EIRPCF	Reading	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	7102.00	-53.07	RMS	36.61	-53.58	0.90	-95.23	58.23	-40.00	-13.07	Vertical
2	10653.00	-47.54	RMS	39.20	-51.99	0.26	-95.23	60.22	-40.00	-7.54	Vertical
3	14204.00	-51.55	RMS	40.99	-48.02	0.45	-95.23	50.26	-40.00	-11.55	Vertical

Taoglas Antenna 3

Part 96 Mode 19

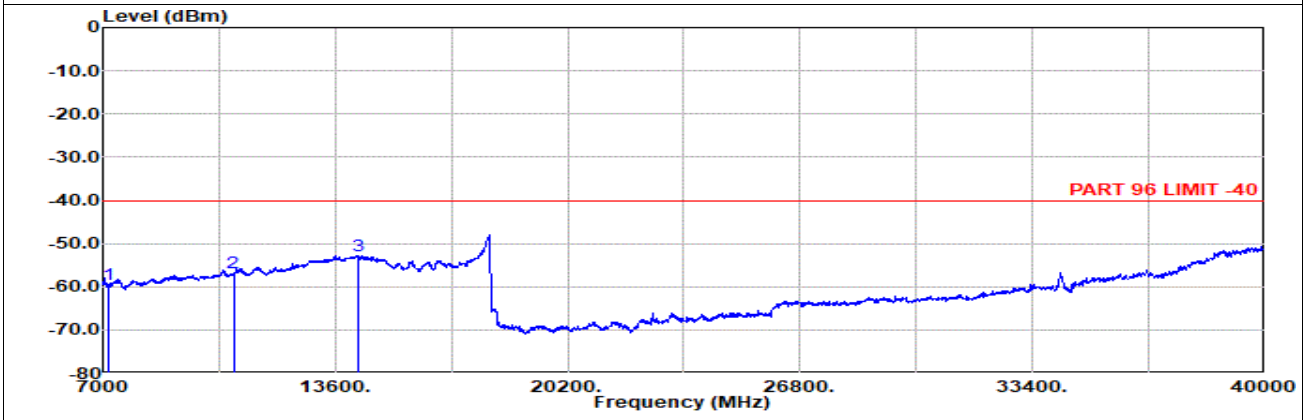
LTE CA 48C 20M + 20M Ch55340 1RB99 QPSK + Ch55538 1RB0 QPSK

L



Site : 03CH12-HY
Condition: PART 96 LIMIT -40 3m 9120D-02114-240711 Horizontal
: LTE Band 48 20M Ch55340 1RB99 QPSK
: LTE Band 48 20M Ch55538 1RB0 QPSK

	Freq	Level	Detector	Ant Factor	Amp\Cbl	Filter	EIRPCF	Reading	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	7138.00	-59.78	RMS	36.75	-53.55	0.90	-95.23	51.35	-40.00	-19.78	Horizontal
2	10707.00	-57.08	RMS	39.19	-51.93	0.26	-95.23	50.63	-40.00	-17.08	Horizontal
3	14276.00	-53.11	RMS	40.90	-47.89	0.45	-95.23	48.66	-40.00	-13.11	Horizontal

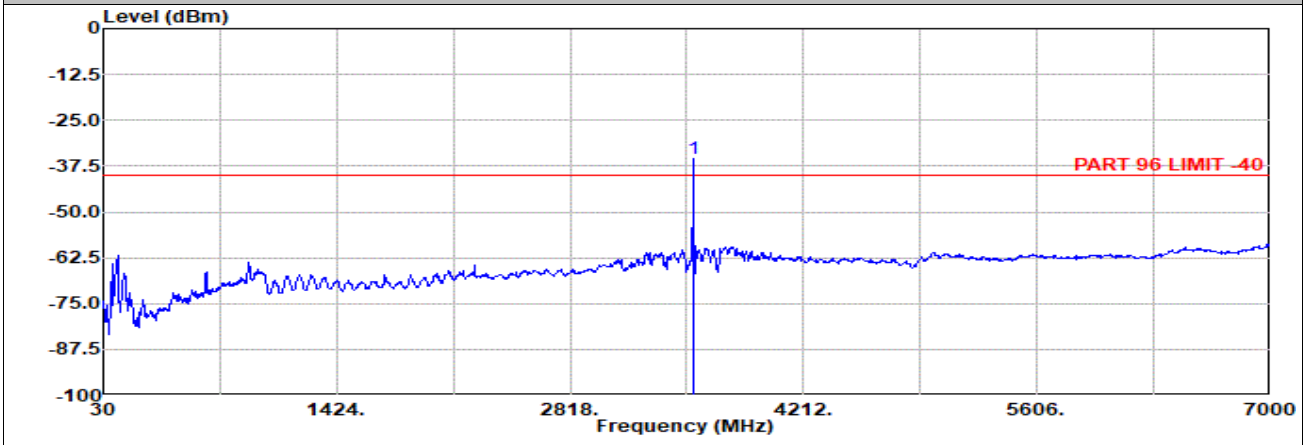


Site : 03CH12-HY
Condition: PART 96 LIMIT -40 3m 9120D-02114-240711 Vertical
: LTE Band 48 20M Ch55340 1RB99 QPSK
: LTE Band 48 20M Ch55538 1RB0 QPSK

	Freq	Level	Detector	Ant Factor	Amp\Cbl	Filter	EIRPCF	Reading	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	7138.00	-59.61	RMS	36.75	-53.55	0.90	-95.23	51.52	-40.00	-19.61	Vertical
2	10707.00	-56.70	RMS	39.19	-51.93	0.26	-95.23	51.01	-40.00	-16.70	Vertical
3	14276.00	-52.79	RMS	40.90	-47.89	0.45	-95.23	48.98	-40.00	-12.79	Vertical

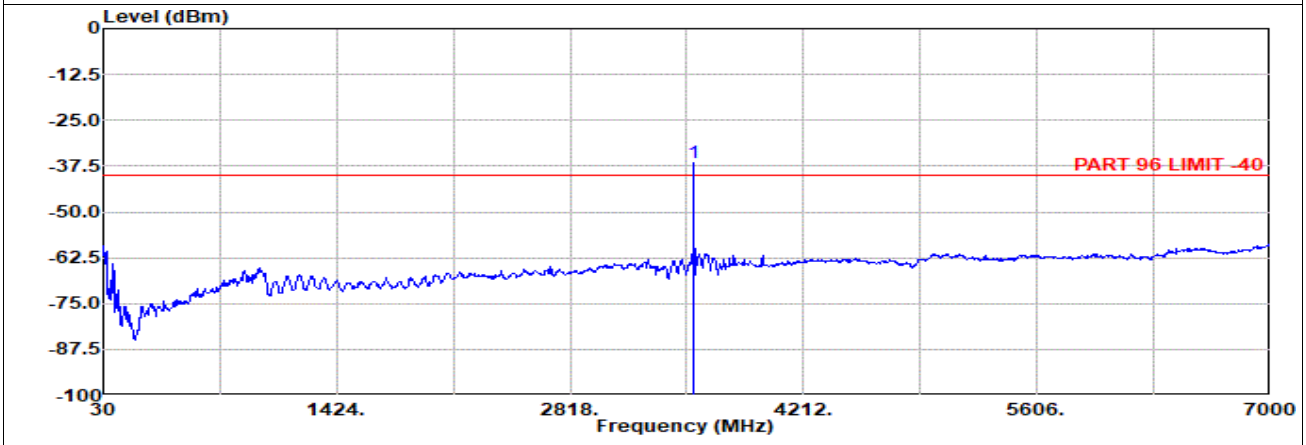
Taoglas Antenna 3

Part 96 Mode 16
LTE B48 20M Ch55340 1RB0 QPSK
L




```
Site      : 03CH12-HY
Condition: PART 96 LIMIT -40 3m 9120D-02114-240711 Horizontal
         : LTE Band 48 20M Ch55340 1RB0 QPSK
         : #1 is fundamental signal which can be ignored.
```

	Freq	Level	Detector	Ant Factor	Amp\Cbl	Filter	EIRPCF	Reading	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	3551.09	-35.47	RMS	29.60	-57.90	0.54	-95.23	87.52	-40.00	4.53	Horizontal

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Site      : 03CH12-HY
Condition: PART 96 LIMIT -40 3m 9120D-02114-240711 Vertical
         : LTE Band 48 20M Ch55340 1RB0 QPSK
         : #1 is fundamental signal which can be ignored.
```

	Freq	Level	Detector	Ant Factor	Amp\Cbl	Filter	EIRPCF	Reading	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	3551.09	-36.64	RMS	29.60	-57.90	0.54	-95.23	86.35	-40.00	3.36	Vertical

Remark: #1 is fundamental signal which can be ignored.