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 Jun. 16, 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
FG461443-01E	01	Initial issue of report	Jun. 25, 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	§2.1051 §96.41	Radiated Spurious Emission	Pass	-

Remark:

1. For host device, Field Strength of Spurious Radiation, Effective Radiated Power and Equivalent Isotropic Radiated Power are verified and comply 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 FG461443-01E report reuses test data from the FG461443E 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: Lucy Wu

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	n48,
Evaluated and Tested band	n48

TDD band Power Class				
	PC3	**PC2**		
n48	V			

Taoglas Antenna information(dBi)							
Band	**Ant3**	**Ant1**	**Main Ant. #**	**MIMO Ant. #**			
n48	**0.44**	**0.38**	**3**	**3&1**			

Airgain Antenna information(dBi)							
Band	**Ant3**	**Ant1**	**Main Ant. #**	**MIMO Ant. #**			
n48	**0.02**	**-0.04**	**3**	**3&1**			

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

1.2 Modification of EUT

No modifications are made to the EUT during all test items.

1.3 Testing Location

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	Kelvin Lu
Temperature (℃)	22.1~24
Relative Humidity (%)	53~58

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 of 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
- FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
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 degree (Degree 0 and Degree 90), 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	Modulation Type	Modulation
A	DFT-s-OFDM pi/2 BPSK	N/A	N/A
B	DFT-s-OFDM QPSK	F	CP-OFDM QPSK
C	DFT-s-OFDM 16QAM	G	CP-OFDM 16QAM
D	DFT-s-OFDM 64QAM	H	CP-OFDM 64QAM
E	DFT-s-OFDM 256QAM	I	CP-OFDM 256QAM

<SISO Mode>

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	20MHz	Inner_1RB	H

Remark:

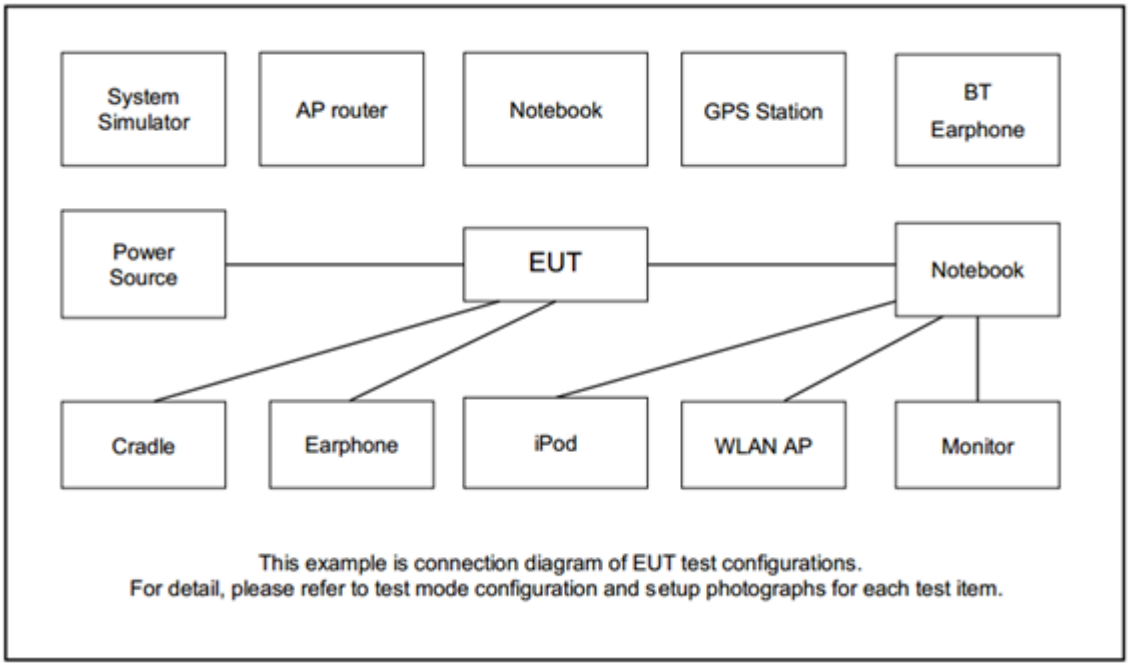
1. Evaluated all the transmitter signal and reporting worst-case configuration among all modulation types.
2. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only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

<MIMO Mode>

Test Item	Modulation Type	Bandwidth	RB Size	Channel
Conducted Power	F, G	All	1RB	L, M, H
EIRP	F, G	All	1RB	L, M, H
RSE	F	20MHz	Inner_1RB	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

Item	Equipment	Brand Name	Model No.	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m
2.	System Simulator	Anritsu	MT8000A	N/A	N/A	Unshielded, 1.8 m

2.4 Frequency List of Low/Middle/High Channels

NR Band n48 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
40	Channel	638000	641666	645332
	Frequency	3570.0	3624.99	3679.98
30	Channel	637668	641666	645666
	Frequency	3565.02	3624.99	3684.99
20	Channel	637334	641666	646000
	Frequency	3560.01	3624.99	3690.0
15	Channel	637168	641666	646166
	Frequency	3557.52	3624.99	3692.49
10	Channel	637000	641666	646332
	Frequency	3555.0	3624.99	3694.98

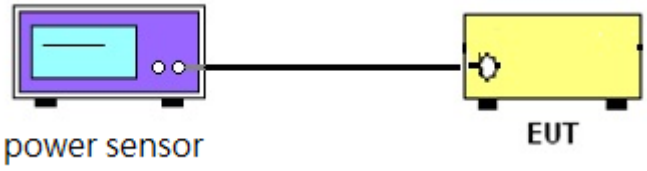
3 Conducted Test Items

3.1 Measuring Instruments

See list of measuring instruments of this test report.

3.1.1 Test Setup

3.1.2 Conducted Output Power



3.1.3 Test Result of Conducted Test

Please refer to Appendix A.

3.2 Conducted Output Power

3.2.1 Description of the Conducted Output Power Measurement

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

3.2.2 Test Procedures

1. The transmitter output port was connected to the power sensor.
2. Set EUT at maximum power.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the power sensor
5. The measure-and-sum technique is used for measuring in-band transmit power of a device. Total power is the sum of the conducted power levels measured at the various output ports.

3.3 EIRP

3.3.1 Description of the EIRP Measurement

The EIRP of category A CBSD must not exceed 30 dBm / 10 megahertz.

The EIRP PSD of category A CBSD must not exceed 20 dBm / 1 megahertz.

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

3.3.2 Test Procedures

1. 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) and 3.2(b)(3)
2. Determine the EIRP by adding the effective antenna gain to the measured average conducted power level.
3. The MIMO mode is completely uncorrelated, so the directional gain is selected the maximum gain among all antennas.

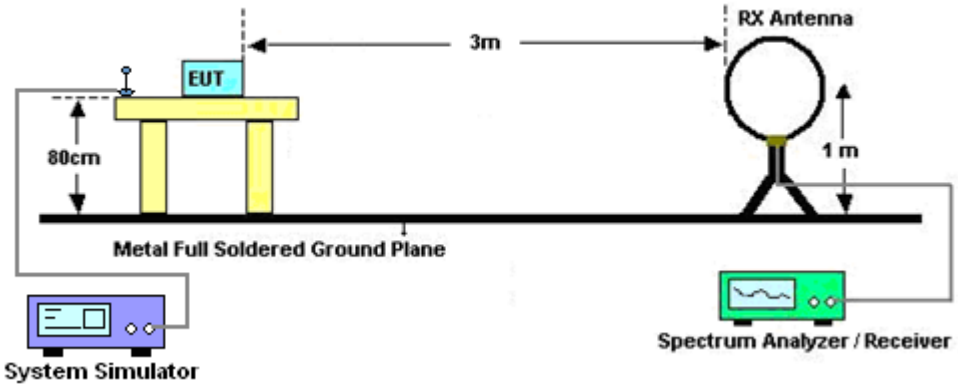
4 Radiated Test Items

4.1 Measuring Instruments

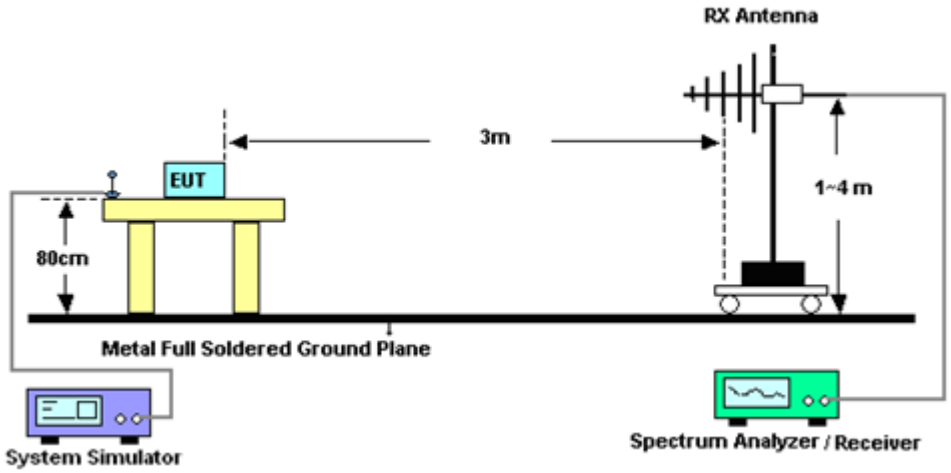
See list of measuring instruments of this test report.

4.2 Test Setup

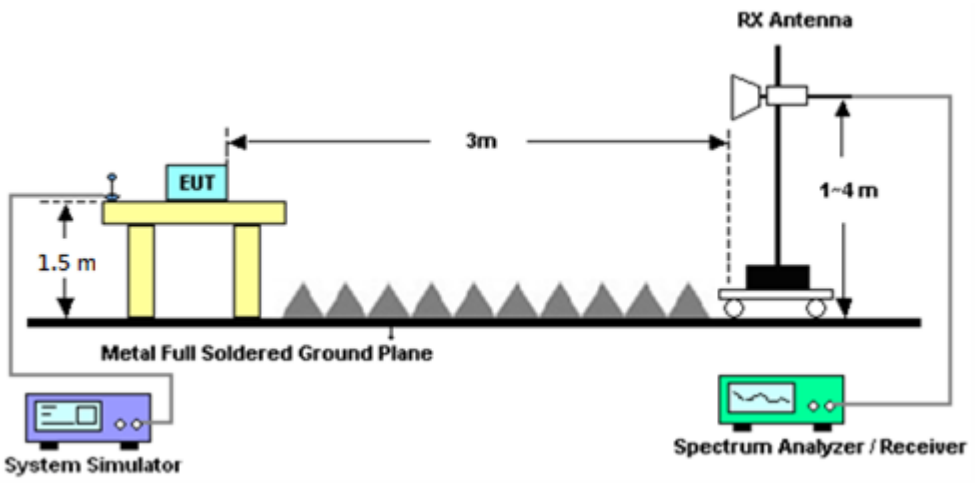
For radiated emissions below 30MHz



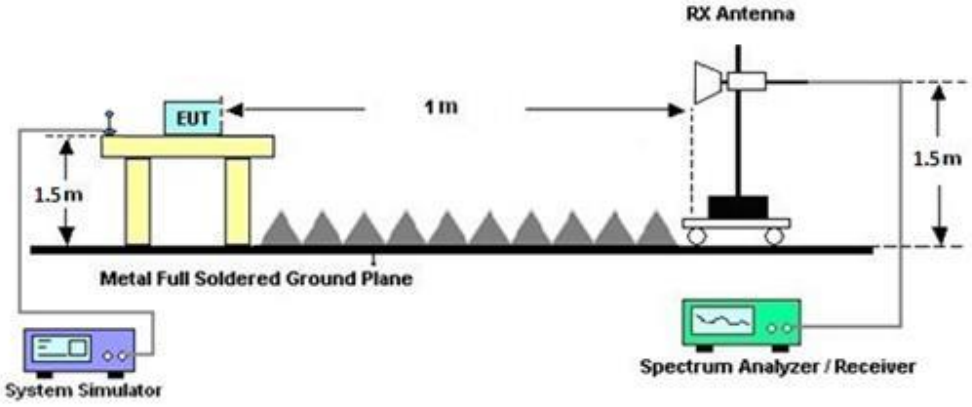
For radiated emissions from 30MHz to 1GHz



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 Measurement

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 height for frequency below 1GHz and 1.5 meter height 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	Nov. 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)

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Signal Analyzer	Rohde & Schwarz	FSV3044	101048	10Hz~44GHz	Apr. 23, 2024	Sep. 27, 2024~ Mar. 11, 2025	Apr. 22, 2025	Conducted (TH03-HY)
Temperature Chamber	ESPEC	LHU-113	1012005860	-20℃ ~85℃	Dec. 13, 2023	Sep. 27, 2024~ Nov. 11, 2024	Dec. 12, 2024	Conducted (TH03-HY)
Temperature Chamber	ESPEC	LHU-113	1012005860	-20℃ ~85℃	Dec. 10, 2024	Nov. 12, 2024~ Mar. 11, 2025	Dec. 09, 2025	Conducted (TH03-HY)
Hygrometer	TECPEL	DTM-303B	TP200886	NA	Mar. 14, 2024	Sep. 27, 2024~ Mar. 11, 2025	Mar. 13, 2025	Conducted (TH03-HY)
Hygrometer	TECPEL	DTM-303A	TP201996	NA	Nov. 01, 2024	Jun. 13, 2025~ Jun. 16, 2025	Oct. 31, 2025	Conducted (TH03-HY)
Base Station (Measure)	Anritsu	MT8821C	6262044657	LTE	May 22, 2024	Sep. 27, 2024~ Mar. 11, 2025	May 21, 2025	Conducted (TH03-HY)
Base Station (Measure)	Anritsu	MT8000A	6262134937	FR1	Jul. 31, 2024	Sep. 27, 2024~ Jun. 16, 2025	Jul. 30, 2025	Conducted (TH03-HY)
Coupler	MVE	MVE-4816-10	A400024	N/A	Jun. 27, 2024	Sep. 27, 2024~ Jun. 16, 2025	Jun. 26, 2025	Conducted (TH03-HY)
RF Cable	MVE	MCBL-LL403P.50	E80002C	9KHz~40GHz	Aug. 23, 2024	Sep. 27, 2024~ Jun. 16, 2025	Aug. 22, 2025	Conducted (TH03-HY)
Software 1	Sporton	FCC 5GNR_FSV3044_ 20231106	N/A	Conducted Test Item	N/A	Sep. 27, 2024~ Jun. 16, 2025	N/A	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 powerand EIRP)

<SISO Mode>

NR n48 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	1	PI/2 BPSK	21.15	21.33	20.99	21.77	0.1503
10	1	1	QPSK	21.12	21.25	20.94		
10	1	1	16-QAM	20.25	20.55	20.15	20.99	0.1256
Limit	EIRP < 23dBm/10MHz			Result			Pass	

NR n48 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	1	PI/2 BPSK	21.15	21.45	21.29	21.89	0.1545
15	1	1	QPSK	21.19	21.45	21.21		
15	1	1	16-QAM	20.35	20.54	20.32	20.98	0.1253
Limit	EIRP < 23dBm/10MHz			Result			Pass	

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

NR n48 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	1	PI/2 BPSK	21.26	21.49	21.19	21.96	0.1570
20	1	1	QPSK	21.18	21.52	21.15		
20	1	1	16-QAM	20.27	20.65	20.31	21.09	0.1285
Limit	EIRP < 23dBm/10MHz			Result			Pass	

NR n48 Maximum Average Power [dBm] (GT - LC = 0.44 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
30	1	1	PI/2 BPSK	21.38	21.50	21.30	21.94	0.1563
30	1	1	QPSK	21.35	21.49	21.29		
30	1	1	16-QAM	20.42	20.54	20.24	20.98	0.1253
Limit	EIRP < 23dBm/10MHz			Result			Pass	

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

NR n48 Maximum Average Power [dBm] (GT - LC = 0.44 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)
40	1	1	PI/2 BPSK	21.35	21.55	21.48	21.99	0.1581
40	1	1	QPSK	21.33	21.54	21.43		
40	1	1	16-QAM	20.52	20.21	20.21	20.96	0.1247
Limit	EIRP < 23dBm/10MHz			Result			Pass	

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

<MIMO Mode>

Part96 NR n48 Maximum Average Power [dBm], DG = 0.44 dBi														
BW	RB	RB	Mod	Antenna 3			Antenna 1			Combine			EIRP	EIRP
(MHz)	Size	Offset		Lowest	Middle	Highest	Lowest	Middle	Highest	Lowest	Middle	Highest	(dBm)	(W)
10	1	1	QPSK	16.85	17.32	16.91	16.76	17.10	16.85	19.82	20.22	19.89	20.72	0.1180
10	1	1	16-QAM	16.33	16.84	16.13	16.33	16.61	16.28	19.34	19.74	19.22	20.18	0.1042
Limit	EIRP < 23dBm/10MHz			Result									Pass	

Part96 NR n48 Maximum Average Power [dBm], DG = 0.44 dBi														
BW	RB	RB	Mod	Antenna 3			Antenna 1			Combine			EIRP	EIRP
(MHz)	Size	Offset		Lowest	Middle	Highest	Lowest	Middle	Highest	Lowest	Middle	Highest	(dBm)	(W)
15	1	1	QPSK	16.80	17.32	17.05	16.74	17.19	17.10	19.78	20.27	20.09	20.71	0.1178
15	1	1	16-QAM	16.66	16.82	16.35	16.45	16.80	16.66	19.57	19.82	19.52	20.26	0.1062
Limit	EIRP < 23dBm/10MHz			Result									Pass	

Part96 NR n48 Maximum Average Power [dBm], DG = 0.44 dBi														
BW	RB	RB	Mod	Antenna 3			Antenna 1			Combine			EIRP	EIRP
(MHz)	Size	Offset		Lowest	Middle	Highest	Lowest	Middle	Highest	Lowest	Middle	Highest	(dBm)	(W)
20	1	1	QPSK	17.22	17.35	16.96	16.96	17.02	16.88	20.10	20.20	19.93	20.64	0.1159
20	1	1	16-QAM	16.57	16.75	16.65	16.53	16.80	16.71	19.56	19.79	19.69	20.23	0.1054
Limit	EIRP < 23dBm/10MHz			Result									Pass	

Part96 NR n48 Maximum Average Power [dBm], DG = 0.44 dBi														
BW	RB	RB	Mod	Antenna 3			Antenna 1			Combine			EIRP	EIRP
(MHz)	Size	Offset		Lowest	Middle	Highest	Lowest	Middle	Highest	Lowest	Middle	Highest	(dBm)	(W)
30	1	1	QPSK	16.83	17.57	17.16	16.84	17.25	17.32	19.85	20.42	20.25	20.86	0.1219
30	1	1	16-QAM	16.82	16.67	16.54	16.65	16.68	16.45	19.75	19.69	19.51	20.19	0.1045
Limit	EIRP < 23dBm/10MHz			Result									Pass	

Part96 NR n48 Maximum Average Power [dBm], DG = 0.44 dBi														
BW	RB	RB	Mod	Antenna 3			Antenna 1			Combine			EIRP	EIRP
(MHz)	Size	Offset		Lowest	Middle	Highest	Lowest	Middle	Highest	Lowest	Middle	Highest	(dBm)	(W)
40	1	1	QPSK	15.52	17.52	15.44	15.53	17.18	15.76	18.54	20.36	18.61	20.80	0.1202
40	1	1	16-QAM	15.71	16.93	15.67	15.60	16.92	15.67	18.67	19.94	18.68	20.38	0.1091
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

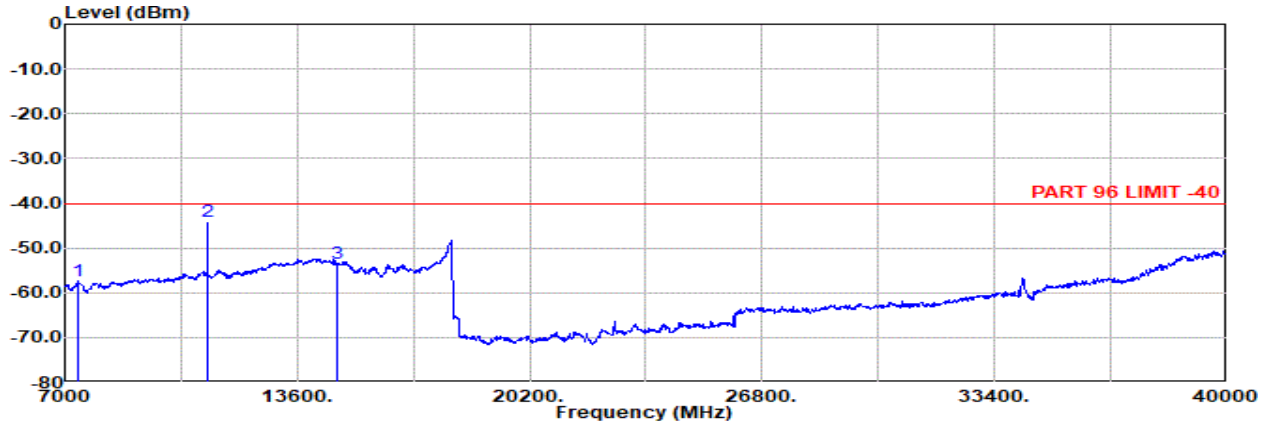
Mode	Part	Band	Ch	Freq (MHz)	Level (dBm)	Det	Ant Factor (dB)	Amp\Cbl (dB)	Filter (dB)	EIRPCF (dB)	Reading (dBuV)	Limit (dBm)	Margin (dB)	Pol	Ant
17	Part 96	NR SA n48	H	11043	-41.54	RMS	38.90	-51.54	0.28	-95.23	66.05	-40.00	-1.54	V	Taoglas Antenna 3
18	Part 96	NR SA n48 MIMO	H	11048	-43.44	RMS	38.90	-51.53	0.28	-95.23	64.14	-40.00	-3.44	V	Taoglas Antenna 3+1

Taoglas Antenna 3

Part 96 Mode 17

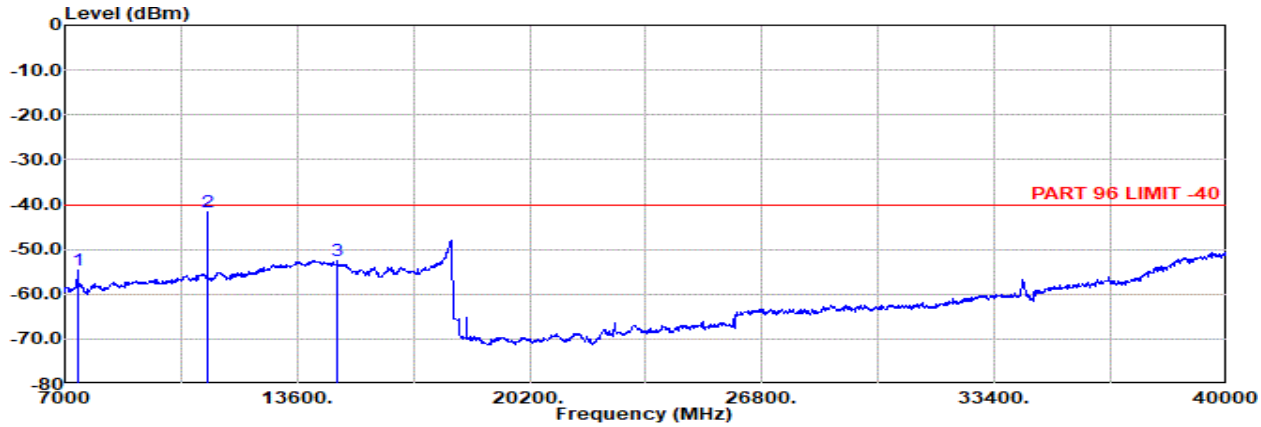
NR SA n48 20M Ch646000 1RB1 BPSK

H



Site : 03CH12-HY
Condition: PART 96 LIMIT -40 1m BBHA9170_1225_240624 Horizontal
: SA n48 20M Ch646000 1RB1 BPSK

	Freq	Level	Detector	Ant Factor	Amp\Cbl	Filter	EIRPCF	Reading	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	7362.00	-57.26	RMS	36.83	-53.44	0.83	-95.23	53.75	-40.00	-17.26	Horizontal
2	11043.00	-43.94	RMS	38.90	-51.54	0.28	-95.23	63.65	-40.00	-3.94	Horizontal
3	14725.00	-53.39	RMS	40.65	-47.96	0.42	-95.23	48.73	-40.00	-13.39	Horizontal



Site : 03CH12-HY
Condition: PART 96 LIMIT -40 1m BBHA9170_1225_240624 Vertical
: SA n48 20M Ch646000 1RB1 BPSK

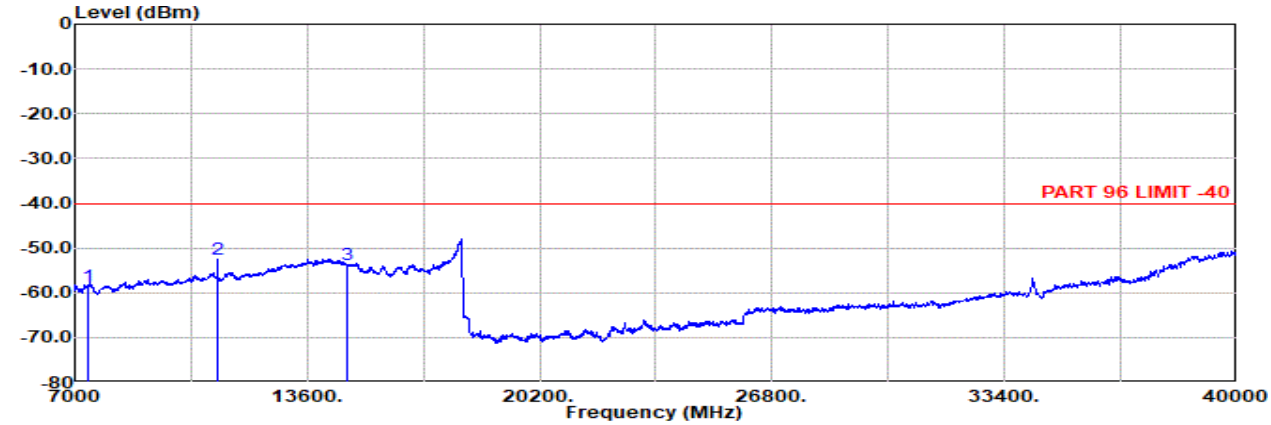
	Freq	Level	Detector	Ant Factor	Amp\Cbl	Filter	EIRPCF	Reading	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	7362.00	-54.56	RMS	36.83	-53.44	0.83	-95.23	56.45	-40.00	-14.56	Vertical
2	11043.00	-41.54	RMS	38.90	-51.54	0.28	-95.23	66.05	-40.00	-1.54	Vertical
3	14725.00	-52.42	RMS	40.65	-47.96	0.42	-95.23	49.70	-40.00	-12.42	Vertical

Taoglas Antenna 3+1

Part 96 Mode 18

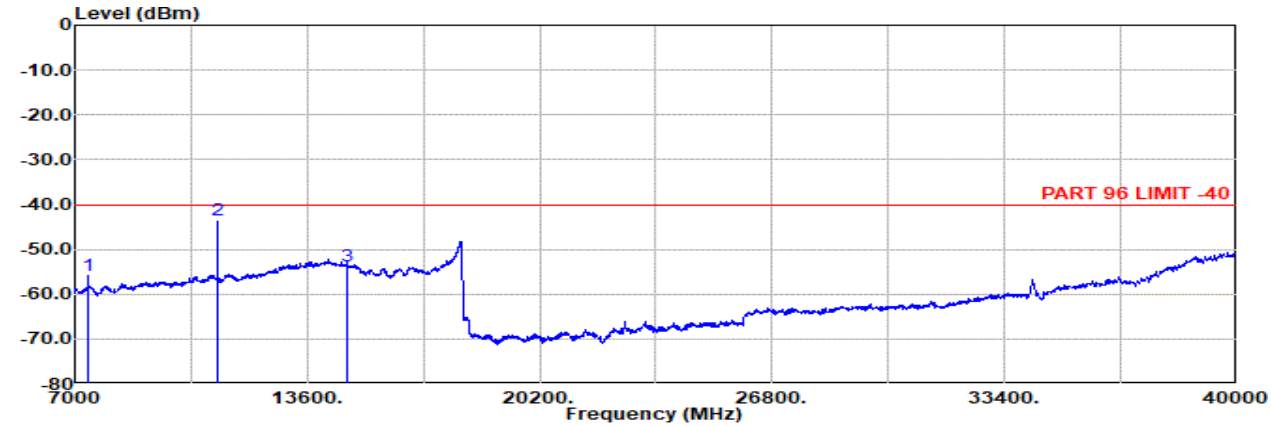
NR SA n48 MIMO 20M Ch646000 1RB1 QPSK

H



Site : 03CH12-HY
Condition: PART 96 LIMIT -40 3m 9120D-02114-240711 Horizontal
: SA n48 20M Ch646000 1RB1 BPSK

	Freq	Level	Detector	Ant Factor	Amp\Cbl	Filter	EIRPCF	Reading	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	7363.00	-58.47	RMS	36.82	-53.44	0.83	-95.23	52.55	-40.00	-18.47	Horizontal
2	11048.00	-52.41	RMS	38.90	-51.53	0.28	-95.23	55.17	-40.00	-12.41	Horizontal
3	14722.00	-53.61	RMS	40.66	-47.96	0.42	-95.23	48.50	-40.00	-13.61	Horizontal



Site : 03CH12-HY
Condition: PART 96 LIMIT -40 3m 9120D-02114-240711 Vertical
: SA n48 20M Ch646000 1RB1 BPSK

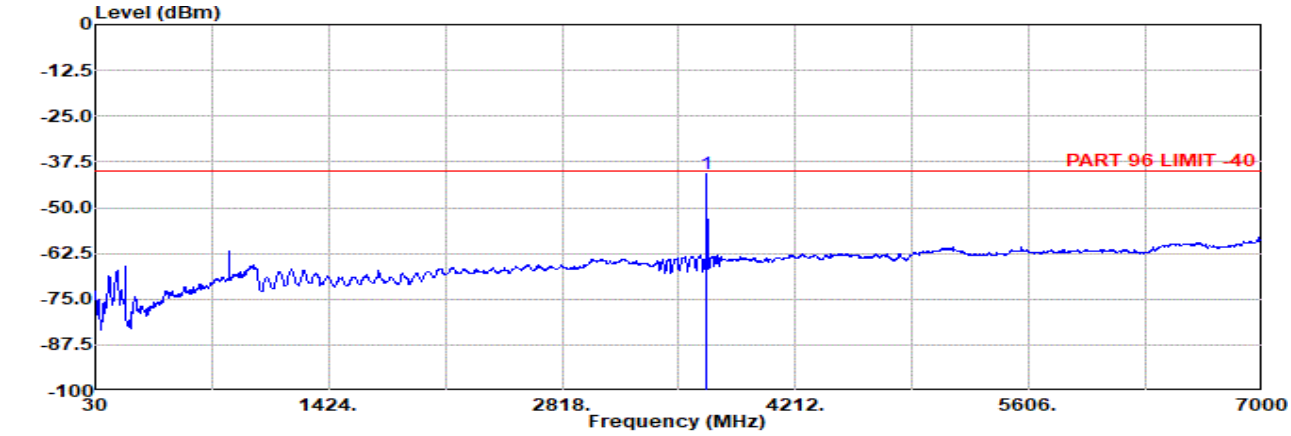
	Freq	Level	Detector	Ant Factor	Amp\Cbl	Filter	EIRPCF	Reading	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	7363.00	-55.96	RMS	36.82	-53.44	0.83	-95.23	55.06	-40.00	-15.96	Vertical
2	11048.00	-43.44	RMS	38.90	-51.53	0.28	-95.23	64.14	-40.00	-3.44	Vertical
3	14722.00	-53.71	RMS	40.66	-47.96	0.42	-95.23	48.40	-40.00	-13.71	Vertical

Taoglas Antenna 3

Part 96 Mode 17

NR SA n48 20M Ch646000 1RB1 BPSK

H

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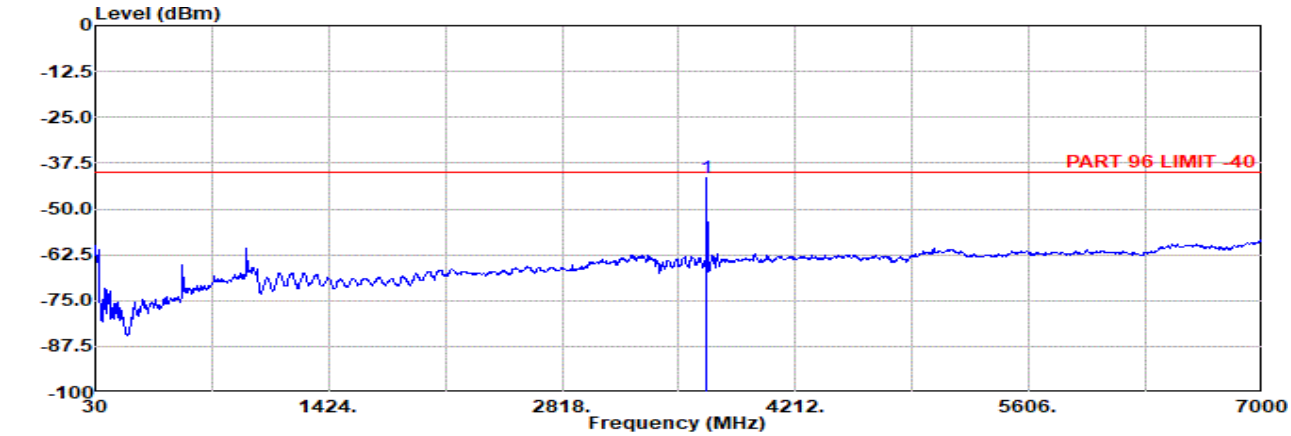
Site      : 03CH12-HY
Condition: PART 96 LIMIT -40 3m 9120D-02114-240711 Horizontal
         : SA n48 20M Ch646000 1RB1 BPSK
         : #1 is fundamental signal which can be ignored.
```

	Freq	Level	Detector	Ant Factor	Amp\Cbl	Filter	EIRPCF	Reading	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	3681.27	-40.72	RMS	29.86	-57.85	0.60	-95.23	81.90	-40.00	-0.72	Horizontal




```
Site      : 03CH12-HY
Condition: PART 96 LIMIT -40 3m 9120D-02114-240711 Vertical
         : SA n48 20M Ch646000 1RB1 BPSK
         : #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	3681.27	-41.67	RMS	29.86	-57.85	0.60	-95.23	80.95	-40.00	-1.67	Vertical

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