

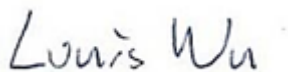


FCC RADIO TEST REPORT

FCC ID : UZ7ET65WW
Equipment : Tablet
Brand Name : Zebra
Model Name : ET65WW
Applicant : Zebra Technologies Corporation
3 Overlook Point, Lincolnshire, IL 60069 USA
Manufacturer : Zebra Technologies Corporation
3 Overlook Point, Lincolnshire, IL 60069 USA
Standard : FCC 47 CFR Part 2, 96

The product was received on Jul. 15, 2024 and testing was performed from Jul. 31, 2024 to Aug. 27, 2024. 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.



Approved by: Louis Wu

Sporton International Inc. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)



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History of this test report

Report No.	Version	Description	Issue Date
FG471511E	01	Initial issue of report	Sep. 30, 2024

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power	Pass	-
3.3	§96.41	Effective Isotropic Radiated Power	Pass	-
4.4	§2.1053 §96.41	Radiated Spurious Emission	Pass	8.44 dB under the limit at 14429.00 MHz

Remark:

- 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.
- For host device, the Conducted Output Power is no difference after compared to module (Model: RM520N-GL)

Conformity Assessment Condition:

- 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.
- 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	
Equipment	Tablet
Brand Name	Zebra
Model Name	ET65WW
FCC ID	UZ7ET65WW
EUT supports Radios application	WCDMA/HSPA/LTE/5G NR/NFC WLAN 11a/b/g/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80/VHT160 WLAN 11ax HE20/HE40/HE80/HE160 WLAN 11be EHT20/ EHT40/ EHT80/EHT160/EHT320 Bluetooth BR/EDR/LE
HW Version	EV
SW Version	Windows 11 PRO
MFD	10JUL24
EUT Stage	Identical Prototype

Remark: The EUT's information above is declared by manufacturer.

Specification of Accessories				
Adaptor with CLA cable	Brand Name	FSP	Model Number	FSP045-A2BR3
Power Cord	Brand Name	Zebra	Part Number	1411-01X5000
Battery 1	Brand Name	ZEBRA	Model Number	BT-000484
Battery 2	Brand Name	ZEBRA	Model Number	BT-000484A
Expansion pack	Brand Name	Zebra	Model Number	ET60WW-0S6DPS00A1-00

SKU List					
	SKU1	SKU2	SKU3	SKU5	SKU6
OS	Pro	Pro	Pro	Pro	Pro
CPU	i7 Vpro	i7 Non Vpro	i5 Vpro	i5 Non Vpro	i5 Non Vpro
Memory	32G RAM	32G RAM	16G RAM	16G RAM	8G RAM
DDR Vendor	Hynix	Hynix	Samsung	Hynix	Hynix
STORAGE	512GB	512GB	256GB	256GB	128GB
TPM (Touch Sensor)	Sigmasense	Sigmasense	Sigmasense	Sigmasense	Sigmasense
WWAN	YES	YES	YES	YES	YES
WLAN + BT	YES	YES	YES	YES	YES
BCR	YES	YES	No	No	No
FPR	YES	No	No	No	Yes
Panel	Standard	Standard	Standard	Standard	Standard
Sensors	Standard	Standard	Standard	Standard	Standard
Battery	Standard	Standard	Standard	Standard	Standard
NFC	Yes	Yes	Yes	Yes	Yes
RS232/RJ45 (PWB)	Yes	Yes	Yes	Yes	Yes

1.2 Product Specification of Equipment Under Test

Product Specification is subject to this standard	
Tx Frequency	3552.5 MHz ~ 3697.5 MHz
Rx Frequency	3552.5 MHz ~ 3697.5 MHz
Bandwidth	5G NR n48: 10 MHz / 20 MHz / 30 MHz / 40 MHz
Maximum Output Power to Antenna	<Ant. 2> 5G NR n48: 20.61 dBm MIMO <Ant. 2+0> 5G NR n48: 19.35 dBm
Antenna Type	<Ant. 0> : Fixed Internal Antenna <Ant. 2> : Fixed Internal Antenna
Antenna Gain	<Ant. 0> : 5G NR n48: 0.08 dBi <Ant. 2> : 5G NR n48: -0.51 dBi
Type of Modulation	PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM

Support band and evaluated information	
Supported band	n48
Evaluated and Tested band	n48

TDD band Power Class				
	SISO PC3	MIMO PC3		
N48	V	V		

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

1.3 Modification of EUT

No modifications made to the EUT during the testing.



1.4 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	Hank Chen
Temperature (°C)	20.1~22.2
Relative Humidity (%)	50.3~57.8

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. 03CH22-HY (TAF Code: 3786)
Test Engineer	Fred Zeng and Karl Hou
Temperature (°C)	20.5~21.4
Relative Humidity (%)	54.5~63.1
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

1.5 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
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.

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 three orthogonal axis (X: flat, Y: portrait, Z: landscape), and adjusting the measurement antenna orientation, following C63.26 exploratory test procedures and only the worst case emissions were reported in this report.

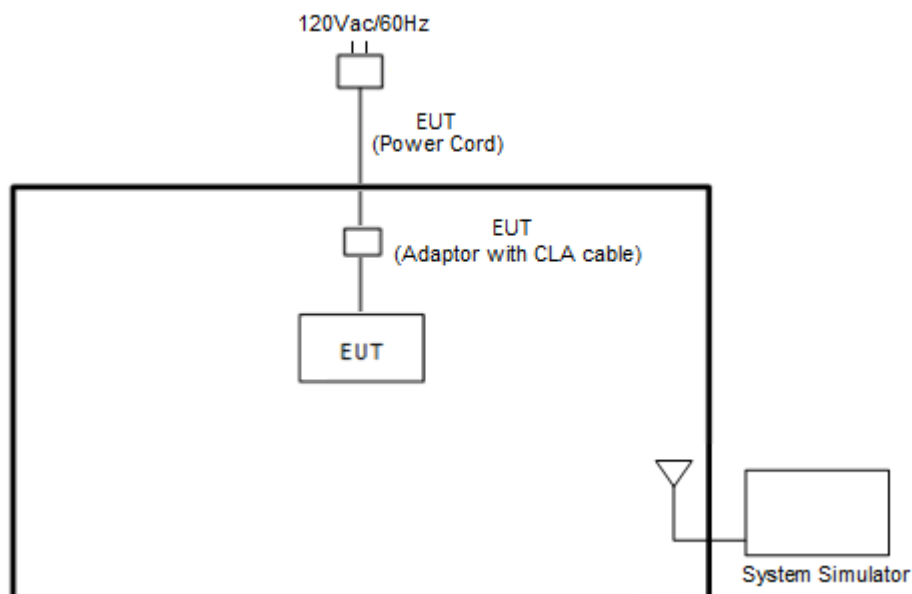
Modulation Type	Modulation	Modulation Type	Modulation
A	DFT-s-OFDM pi/2 BPSK	N/A	N/A
B	DFT-s-OFDM QPSK	F	CP-OFDM QPSK
C	DFT-s-OFDM 16QAM	G	CP-OFDM 16QAM
D	DFT-s-OFDM 64QAM	H	CP-OFDM 64QAM
E	DFT-s-OFDM 256QAM	I	CP-OFDM 256QAM

Test Item	Modulation Type	Bandwidth	RB Size	Channel
Conducted Power	A, B, C, D, E	All	1, Half, Full	L, M, H
EIRP	A, B, C, D, E	All	1, Half, Full	L, M, H
RSE	A	20MHz	Inner_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. Output Conducted Power was spot checks Original models worse case Modulation
4. All the radiated test cases were performed with Battery 1 and SKU 1.

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.	5G Wireless Test Platform	Anritsu	MT8000A	N/A	N/A	Unshielded, 1.8 m



2.4 Frequency List of Low/Middle/High Channels

5G NR n48 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
40	Channel	638000	641666	645332
	Frequency	3570	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
10	Channel	637000	641666	646332
	Frequency	3555	3624.99	3694.98

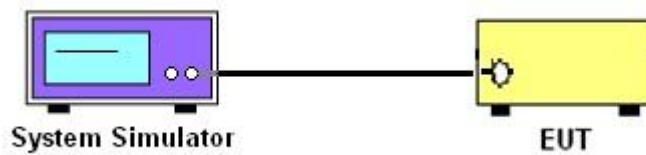
3 Conducted Test Items

3.1 Measuring Instruments

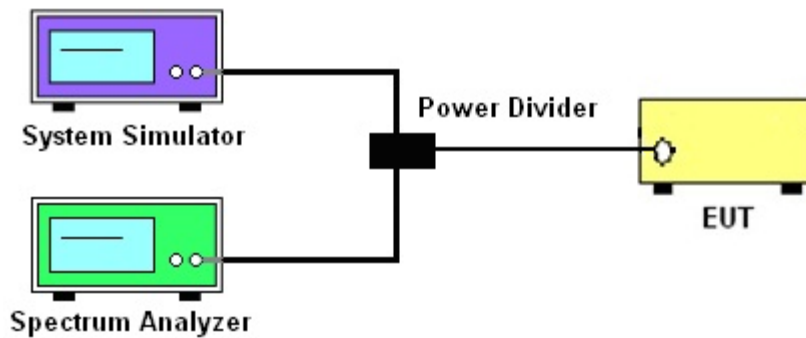
See list of measuring instruments of this test report.

3.1.1 Test Setup

3.1.2 Conducted Output Power



3.1.3 EIRP



3.1.4 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 5G NR n48.

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

According to KDB 412172 D01 Power Approach,

$EIRP = PT + GT - LC$, where

PT = transmitter output power in dBm

GT = gain of the transmitting antenna in dBi

LC = 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:

1. Total channel power is complied with EIRP limit 23dBm/10MHz.
2. The MIMO mode is completely uncorrelated, so the directional gain is selected the maximum gain among all antennas.

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.

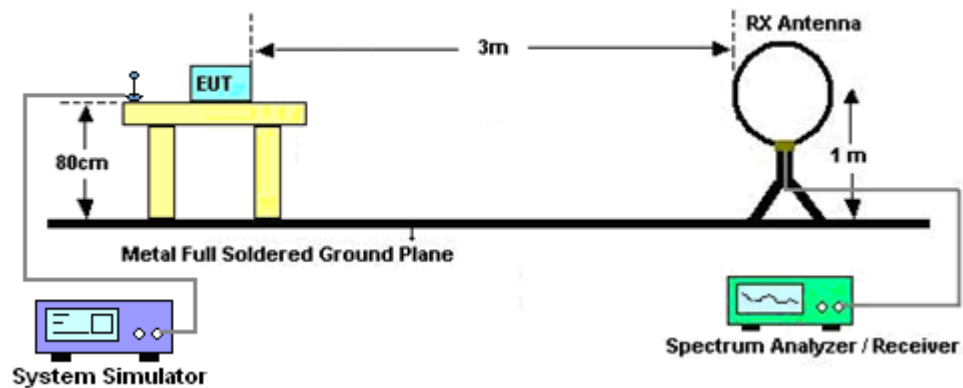
4 Radiated Test Items

4.1 Measuring Instruments

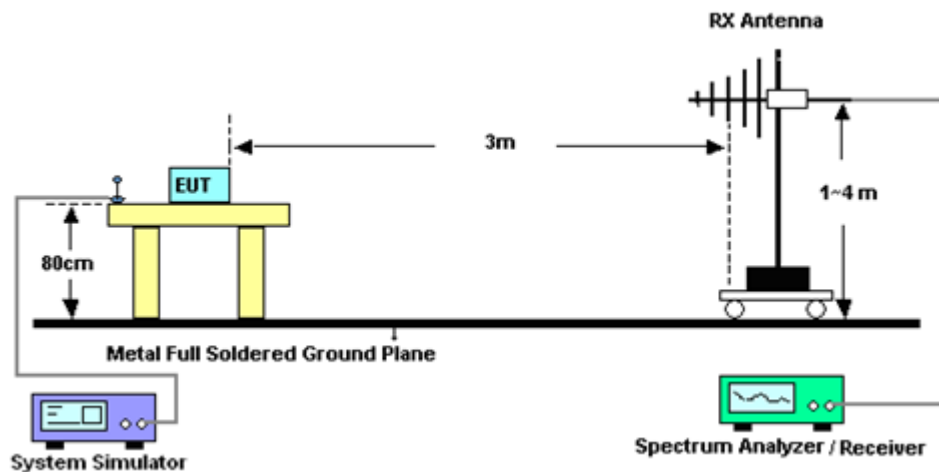
See list of measuring instruments of this test report.

4.2 Test Setup

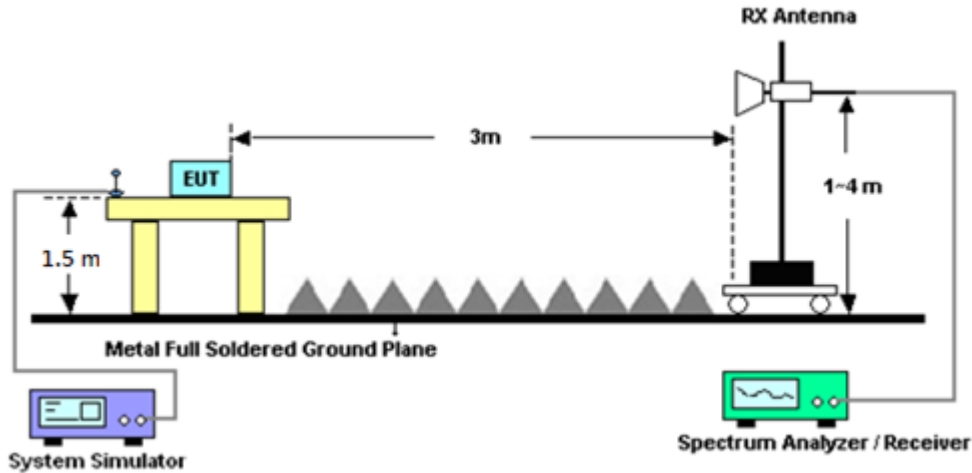
For radiated test below 30MHz



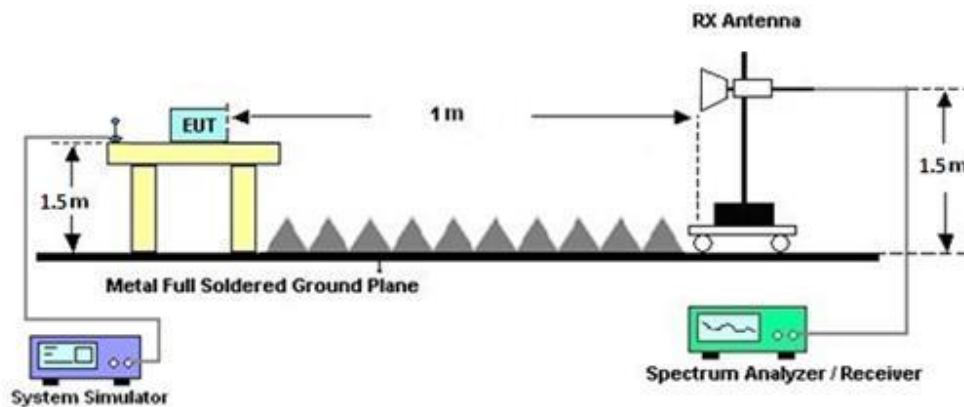
For radiated test from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test 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. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
7. To convert spectrum reading E(dBuV/m) to EIRP(dBm)
$$\text{EIRP(dBm)} = \text{Level (dBuV/m)} + 20\log(d) - 104.77,$$
where d is the distance at which field strength limit is specified in the rules
8. Field Strength Level (dBm) = Spectrum Reading (dBm) + Antenna Factor + Cable Loss + Read Level - Preamp Factor.
9. ERP (dBm) = EIRP (dBm) - 2.15
10. 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	9kHz~30MHz	Sep. 12, 2023	Aug. 07, 2024~ Aug. 27, 2024	Sep. 11, 2024	Radiation (03CH22-HY)
Bilog Antenna with 6dB	TESEQ & WOKEN	CBL 6111D & 00802N1D-06	63304 & 002	30MHz~1GHz	Oct. 15, 2023	Aug. 07, 2024~ Aug. 27, 2024	Oct. 14, 2024	Radiation (03CH22-HY)
Amplifier	SONOMA	310N	421581	N/A	Jul. 14, 2024	Aug. 07, 2024~ Aug. 27, 2024	Jul. 13, 2025	Radiation (03CH22-HY)
Double Ridged Guide Horn Antenna	RFSPIN	DRH18-E	LE2C04A18EN	1GHz~18GHz	Jul. 11, 2024	Aug. 07, 2024~ Aug. 27, 2024	Jul. 10, 2025	Radiation (03CH22-HY)
SHF-EHF Horn Antenna	SCHWARZBE CK	BBHA 9170	1224	18GHz~40GHz	Jun. 24, 2024	Aug. 07, 2024~ Aug. 27, 2024	Jun. 23, 2025	Radiation (03CH22-HY)
Amplifier	EMEC	EM01G18GA	060877	N/A	Sep. 28, 2023	Aug. 07, 2024~ Aug. 27, 2024	Sep. 27, 2024	Radiation (03CH22-HY)
Preamplifier	EMEC	EM18G40G	060872	18-40GHz	Sep. 06, 2023	Aug. 07, 2024~ Aug. 27, 2024	Sep. 05, 2024	Radiation (03CH22-HY)
Signal Analyzer	Keysight	N9010B	MY62170278	10Hz~44GHz	Aug. 31, 2023	Aug. 07, 2024~ Aug. 27, 2024	Aug. 30, 2024	Radiation (03CH22-HY)
Hygrometer	TECPEL	DTM-303A	TP211469	N/A	Jan. 03, 2024	Aug. 07, 2024~ Aug. 27, 2024	Jan. 02, 2025	Radiation (03CH22-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Aug. 07, 2024~ Aug. 27, 2024	N/A	Radiation (03CH22-HY)
Antenna Mast	ChainTek	MBS-520-1	N/A	1m~4m	N/A	Aug. 07, 2024~ Aug. 27, 2024	N/A	Radiation (03CH22-HY)
Turn Table	ChainTek	T-200-S-1	N/A	0~360 Degree	N/A	Aug. 07, 2024~ Aug. 27, 2024	N/A	Radiation (03CH22-HY)
Software	Audix	E3 6.09824_2019 122	RK-002347	N/A	N/A	Aug. 07, 2024~ Aug. 27, 2024	N/A	Radiation (03CH22-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	9kHz~30MHz	Mar. 06, 2024	Aug. 07, 2024~ Aug. 27, 2024	Mar. 05, 2025	Radiation (03CH22-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	804390/2,8046 11/2,804615/2	N/A	Oct. 24, 2023	Aug. 07, 2024~ Aug. 27, 2024	Oct. 23, 2024	Radiation (03CH22-HY)
Hygrometer	TECPEL	DTM-303B	TP200886	NA	Mar. 14, 2024	Jul. 31, 2024~ Aug. 12, 2024	Mar. 13, 2025	Conducted (TH03-HY)
Base Station (Measure)	Anritsu	MT8000A	6262148275	FR1	Oct. 24, 2023	Jul. 31, 2024~ Aug. 12, 2024	Oct. 23, 2024	Conducted (TH03-HY)
Software 1	Sporton	FCC 5GNR_FSV30 44_20231106	N/A	Conducted Test Item	N/A	Jul. 31, 2024~ Aug. 12, 2024	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% ($U = 2Uc(y)$)	3.03 dB
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.42 dB
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Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	3.91 dB
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Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power) and ERP/EIRP

<SISO Mode>

NR n48 Maximum Average Power [dBm] (GT - LC = -0.51 dB)										
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)		
10	1	1	PI/2 BPSK	20.30	20.15	20.12	19.88	0.0973		
10	1	22		20.22	20.06	20.05				
10	12	6		20.39	20.18	20.19				
10	1	0		19.79	19.61	19.62				
10	1	23		19.69	19.41	19.56				
10	24	0		19.85	19.65	19.63				
10	1	1	QPSK	20.24	20.17	20.04				
10	1	22		20.31	20.14	20.10				
10	12	6		20.38	20.27	20.12				
10	1	0		19.40	19.19	19.16				
10	1	23		19.29	19.10	19.10				
10	24	0		19.51	19.23	19.08				
10	1	1	16-QAM	19.19	19.40	19.27	18.89	0.0774		
10	1	1	64-QAM	17.71	17.70	17.60				
10	1	1	256-QAM	15.79	15.45	15.49				
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 = -0.51 dB)										
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)		
20	1	1	PI/2 BPSK	20.59	20.32	20.19	20.09	0.1021		
20	1	49		20.44	20.17	20.19				
20	25	12		20.39	20.32	20.29				
20	1	0		20.16	19.88	19.74				
20	1	50		19.92	19.68	19.66				
20	50	0		20.15	19.84	19.75				
20	1	1	QPSK	20.60	20.39	20.22				
20	1	49		20.44	20.19	20.21				
20	25	12		20.48	20.37	20.26				
20	1	0		19.61	19.40	19.22				
20	1	50		19.48	19.21	19.18				
20	50	0		19.50	19.32	19.30				
20	1	1	16-QAM	19.55	19.56	19.40	19.05	0.0804		
20	1	1	64-QAM	18.18	17.95	17.74				
20	1	1	256-QAM	15.87	15.67	15.52				
Limit	EIRP < 23dBm/10MHz			Result			Pass			

NR n48 Maximum Average Power [dBm] (GT - LC = -0.51 dB)										
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)		
30	1	1	PI/2 BPSK	20.55	20.43	20.31	20.09	0.1021		
30	1	76		20.29	20.19	20.18				
30	36	18		20.56	20.44	20.37				
30	1	0		20.18	20.08	19.86				
30	1	77		19.75	19.64	19.67				
30	75	0		20.03	19.97	19.86				
30	1	1	QPSK	20.60	20.46	20.29				
30	1	76		20.28	20.22	20.17				
30	36	18		20.41	20.37	20.36				
30	1	0		19.72	19.63	19.48				
30	1	77		19.32	19.27	19.22				
30	75	0		19.56	19.45	19.36				
30	1	1	16-QAM	19.81	19.70	19.52	19.30	0.0851		
30	1	1	64-QAM	18.22	18.07	17.93				
30	1	1	256-QAM	15.95	15.79	15.62				
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 = -0.51 dB)										
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP(W)		
40	1	1	PI/2 BPSK	20.61	20.49	20.21	20.10	0.1023		
40	1	104		20.40	20.35	20.25				
40	50	25		20.53	20.39	20.27				
40	1	0		20.21	20.10	19.81				
40	1	105		19.86	19.86	19.74				
40	100	0		20.07	19.95	19.78				
40	1	1	QPSK	20.59	20.52	20.19				
40	1	104		20.39	20.37	20.31				
40	50	25		20.54	20.32	20.32				
40	1	0		19.73	19.62	19.32				
40	1	105		19.43	19.34	19.33				
40	100	0		19.56	19.35	19.31				
40	1	1	16-QAM	19.76	19.71	19.33	19.25	0.0841		
40	1	1	64-QAM	18.18	18.12	17.76				
40	1	1	256-QAM	15.94	15.79	15.50				
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 = 0.08 dBi														
BW	RB	RB	Mod	Antenna 2			Antenna 0			Combine			EIRP	EIRP
(MHz)	Size	Offset		Lowest	Middle	Highest	Lowest	Middle	Highest	Lowest	Middle	Highest	(dBm)	(W)
10	1	1	QPSK	16.39	16.16	16.00	15.90	15.72	15.67	19.16	18.96	18.85	19.25	0.0841
10	1	22		16.31	16.14	15.85	15.98	15.94	15.85	19.16	19.05	18.86		
10	12	6		16.38	16.07	15.90	15.93	15.71	15.69	19.17	18.90	18.81		
10	1	0		15.05	14.82	14.76	14.37	14.21	14.15	17.73	17.54	17.48		
10	1	23		14.95	14.74	14.61	14.22	14.05	13.99	17.61	17.42	17.32		
10	24	0		13.41	13.20	12.97	12.97	12.64	12.69	16.21	15.94	15.84		
10	1	1	16-QAM	15.91	15.64	15.45	15.40	15.20	15.24	18.67	18.44	18.36	18.75	0.0750
10	1	1	64-QAM	14.67	14.30	14.15	13.87	13.61	13.61	17.30	16.98	16.90		
10	1	1	256-QAM	12.58	12.35	12.20	11.78	11.57	11.54	15.21	14.99	14.89		
Limit	EIRP < 23dBm/10MHz			Result									Pass	

Part96 NR n48 Maximum Average Power [dBm], DG = 0.08 dBi														
BW	RB	RB	Mod	Antenna 2			Antenna 0			Combine			EIRP	EIRP
(MHz)	Size	Offset		Lowest	Middle	Highest	Lowest	Middle	Highest	Lowest	Middle	Highest	(dBm)	(W)
20	1	1	QPSK	16.45	16.33	16.16	16.12	15.93	15.86	19.30	19.14	19.02	19.38	0.0867
20	1	49		16.40	16.15	16.13	15.91	15.71	15.65	19.17	18.95	18.91		
20	25	12		16.42	16.17	15.96	15.98	15.83	15.87	19.22	19.01	18.93		
20	1	0		15.38	15.02	14.79	14.63	14.41	14.35	18.03	17.74	17.59		
20	1	50		15.22	14.68	14.71	14.30	14.24	14.22	17.79	17.48	17.48		
20	51	0		13.50	13.29	13.14	12.99	12.79	12.82	16.26	16.06	15.99		
20	1	1	16-QAM	16.14	15.82	15.56	15.58	15.28	15.21	18.88	18.57	18.40	18.96	0.0787
20	1	1	64-QAM	14.73	14.53	14.32	14.13	13.78	13.68	17.45	17.18	17.02		
20	1	1	256-QAM	12.86	12.64	12.28	12.09	11.79	11.74	15.50	15.25	15.03		
Limit	EIRP < 23dBm/10MHz			Result									Pass	



Part96 NR n48 Maximum Average Power [dBm], DG = 0.08 dBi														
BW	RB	RB	Mod	Antenna 2			Antenna 0			Combine			EIRP	EIRP
(MHz)	Size	Offset		Lowest	Middle	Highest	Lowest	Middle	Highest	Lowest	Middle	Highest	(dBm)	(W)
30	1	1	QPSK	16.45	16.39	16.24	16.11	15.94	15.80	19.29	19.18	19.04	19.37	0.0865
30	1	76		16.29	16.09	16.12	15.75	15.87	15.97	19.04	18.99	19.06		
30	39	19		16.37	16.12	16.07	15.91	15.78	15.78	19.16	18.96	18.94		
30	1	0		15.36	15.28	14.96	14.64	14.64	14.37	18.03	17.98	17.69		
30	1	77		14.89	14.74	14.76	14.37	14.27	14.26	17.65	17.52	17.53		
30	78	0		13.45	13.32	13.19	12.83	12.86	12.81	16.16	16.11	16.01		
30	1	1	16-QAM	16.25	16.13	15.82	15.62	15.35	15.26	18.96	18.77	18.56	19.04	0.0802
30	1	1	64-QAM	14.82	14.67	14.49	14.15	13.90	13.76	17.51	17.31	17.15		
30	1	1	256-QAM	12.81	12.62	12.43	12.08	11.74	11.71	15.47	15.21	15.10		
Limit	EIRP < 23dBm/10MHz			Result									Pass	

Part96 NR n48 Maximum Average Power [dBm], DG = 0.08 dBi														
BW	RB	RB	Mod	Antenna 2			Antenna 0			Combine			EIRP	EIRP
(MHz)	Size	Offset		Lowest	Middle	Highest	Lowest	Middle	Highest	Lowest	Middle	Highest	(dBm)	(W)
40	1	1	QPSK	16.50	16.47	16.18	16.17	15.99	15.69	19.35	19.25	18.95	19.43	0.0877
40	1	104		16.29	16.29	16.11	15.99	15.74	15.69	19.15	19.03	18.92		
40	53	26		16.26	16.10	16.04	15.87	15.76	15.76	19.08	18.94	18.91		
40	1	0		15.35	15.23	14.95	14.67	14.56	14.28	18.03	17.92	17.64		
40	1	105		14.98	14.91	14.81	14.29	14.23	14.18	17.66	17.59	17.52		
40	106	0		13.41	13.35	13.18	12.87	12.85	12.73	16.16	16.12	15.97		
40	1	1	16-QAM	16.17	15.88	15.56	15.64	15.28	15.20	18.92	18.60	18.39	19.00	0.0794
40	1	1	64-QAM	14.81	14.70	14.45	14.15	13.93	13.65	17.50	17.34	17.08		
40	1	1	256-QAM	12.80	12.65	12.35	12.17	11.85	11.66	15.51	15.28	15.03		
Limit	EIRP < 23dBm/10MHz			Result									Pass	



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)	AmplCbl (dB)	Filter (dB)	EIRPCF (dB)	Reading (dBuV)	Limit (dBm)	Margin (dB)	Pol	Ant
3	Part 96 NR	NR SA n48	M	14429	-48.44	RMS	42.10	-20.88	0.48	-95.23	25.09	-40.00	-8.44	V	2
4	Part 96 NR	NR SA n48	M	14429	-48.49	RMS	42.10	-20.88	0.48	-95.23	25.04	-40.00	-8.49	V	2+0

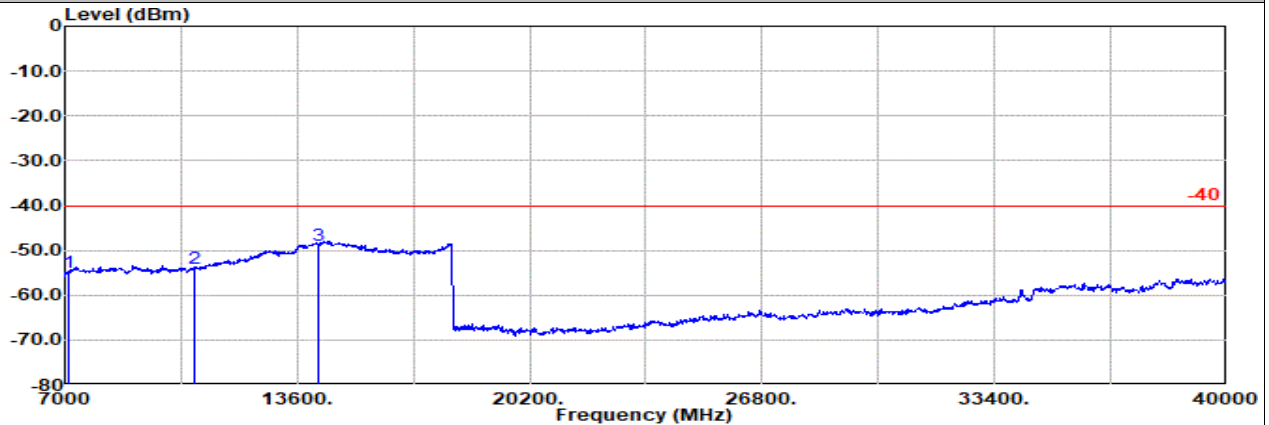


Ant. 2

Part 96 NR Mode 3

NR SA n48 40M Ch638000 1RB1 BPSK

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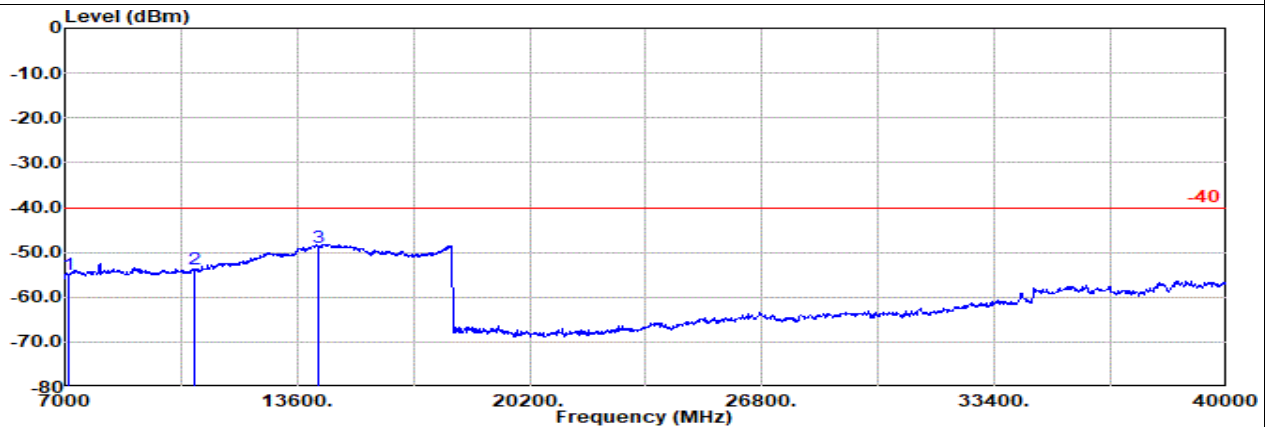


Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Horizontal

: SA n48 40M Ch638000 1RB1 QPSK

	Freq Level		Detector	Ant Factor	Amp\Cb Filter 1		EIRPCF	Reading	Limit		Margin	Pol
	MHz	dBm			dB/m	dB	dB	dB	dBuV	dBm	dB	
1	7104.00	-54.92	RMS	36.71	-20.57	1.10	-95.23	23.07	-40.00	-14.92	Horizontal	
2	10656.00	-53.97	RMS	37.50	-20.63	0.51	-95.23	23.88	-40.00	-13.97	Horizontal	
3	14209.00	-49.02	RMS	42.00	-20.69	0.46	-95.23	24.44	-40.00	-9.02	Horizontal	



Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Vertical

: SA n48 40M Ch638000 1RB1 QPSK

	Freq Level		Detector	Ant Factor	Amp\Cb Filter 1		EIRPCF	Reading	Limit		Margin	Pol
	MHz	dBm			dB/m	dB	dB	dB	dBuV	dBm	dB	
1	7104.00	-54.88	RMS	36.71	-20.57	1.10	-95.23	23.11	-40.00	-14.88	Vertical	
2	10656.00	-53.66	RMS	37.50	-20.63	0.51	-95.23	24.19	-40.00	-13.66	Vertical	
3	14209.00	-48.84	RMS	42.00	-20.69	0.46	-95.23	24.62	-40.00	-8.84	Vertical	

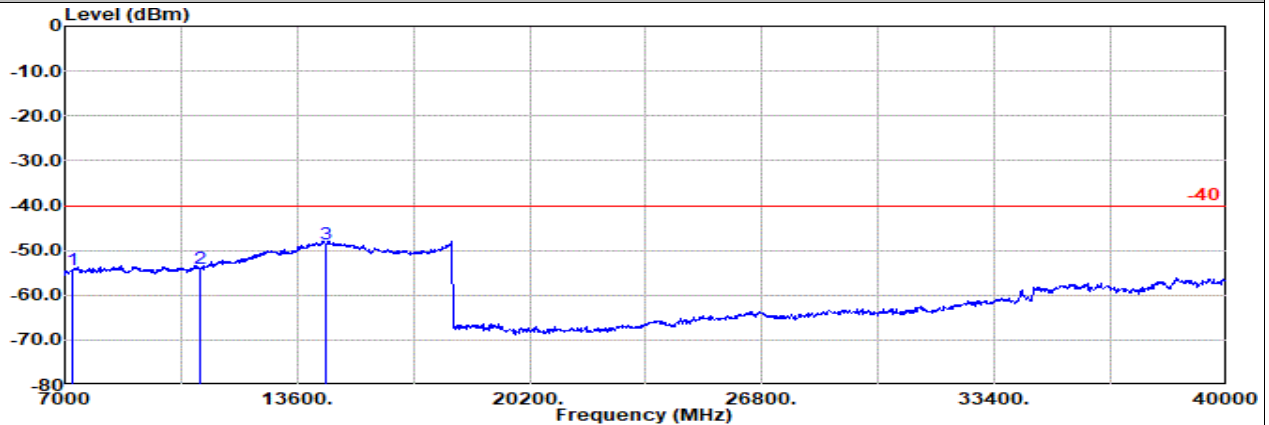


Ant. 2

Part 96 NR Mode 3

NR SA n48 40M Ch641666 1RB1 BPSK

M

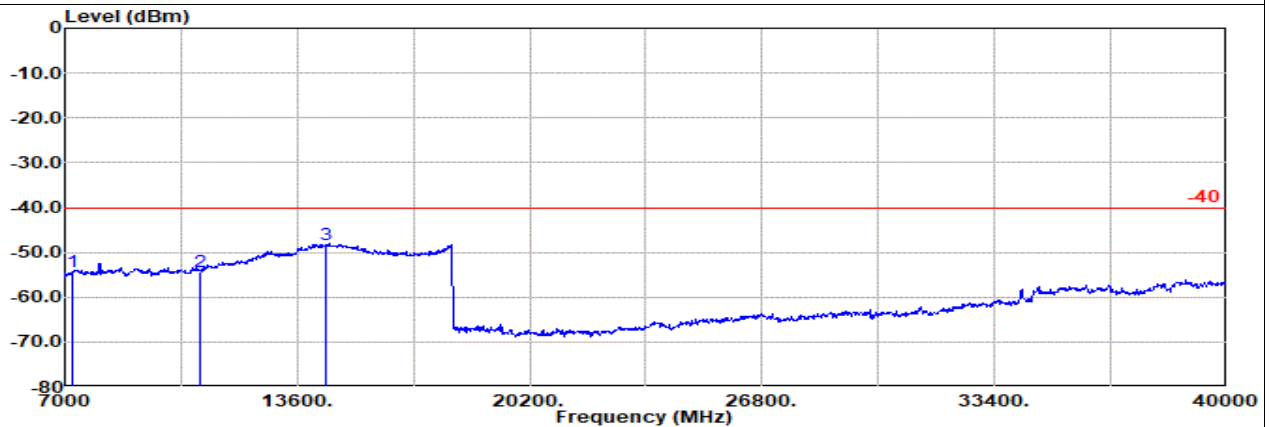


Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Horizontal

: SA n48 40M Ch641666 1RB1 QPSK

	Freq Level		Detector	Ant Amp\Cb Filter		Factor	Filter		EIRPCF	Readin g	Limit		Margin	Pol
	MHz	dBm		dB/m	dB		dB	dB			dBuV	dBm	dB	
1	7214.00	-54.41	RMS	36.86	-20.53	0.98	-95.23	23.51	-40.00	-14.41	Horizontal			
2	10821.00	-53.98	RMS	37.60	-20.57	0.52	-95.23	23.70	-40.00	-13.98	Horizontal			
3	14429.00	-48.73	RMS	42.10	-20.88	0.48	-95.23	24.80	-40.00	-8.73	Horizontal			



Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Vertical

: SA n48 40M Ch641666 1RB1 QPSK

	Freq Level		Detector	Ant Amp\Cb Filter		Factor	Filter		EIRPCF	Readin g	Limit		Margin	Pol
	MHz	dBm		dB/m	dB		dB	dB			dBuV	dBm	dB	
1	7214.00	-54.26	RMS	36.86	-20.53	0.98	-95.23	23.66	-40.00	-14.26	Vertical			
2	10821.00	-54.25	RMS	37.60	-20.57	0.52	-95.23	23.43	-40.00	-14.25	Vertical			
3	14429.00	-48.44	RMS	42.10	-20.88	0.48	-95.23	25.09	-40.00	-8.44	Vertical			

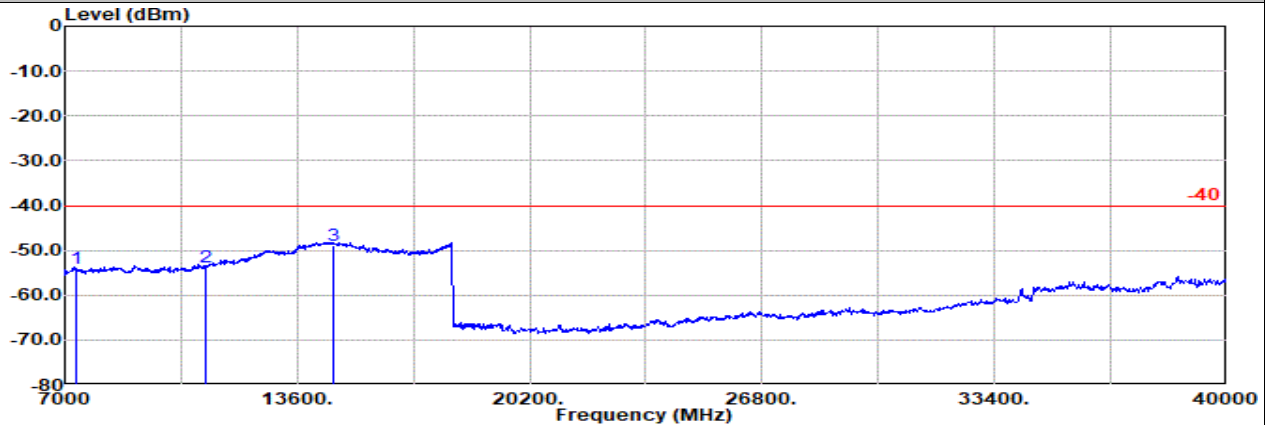


Ant. 2

Part 96 NR Mode 3

NR SA n48 40M Ch645332 1RB1 BPSK

H

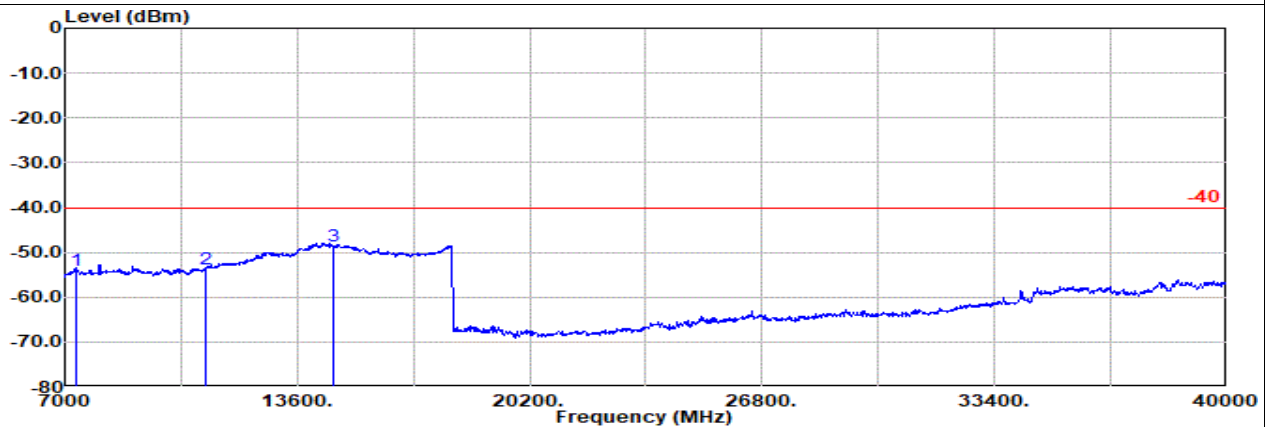


Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Horizontal

: SA n48 40M Ch645332 1RB1 QPSK

	Freq Level		Detector	Ant Amp\Cb Filter		Factor	Filter		EIRPCF	Readin g	Limit		Margin	Pol
	MHz	dBm		dB/m	dB		dB	dB			dBuV	dBm	dB	
1	7324.00	-54.06	RMS	37.20	-20.47	0.94	-95.23	23.50	-40.00	-14.06	Horizontal			
2	10986.00	-53.72	RMS	37.80	-20.51	0.52	-95.23	23.70	-40.00	-13.72	Horizontal			
3	14649.00	-48.79	RMS	42.30	-21.04	0.49	-95.23	24.69	-40.00	-8.79	Horizontal			



Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Vertical

: SA n48 40M Ch645332 1RB1 QPSK

	Freq Level		Detector	Ant Amp\Cb Filter		Factor	Filter		EIRPCF	Readin g	Limit		Margin	Pol
	MHz	dBm		dB/m	dB		dB	dB			dBuV	dBm	dB	
1	7324.00	-54.18	RMS	37.20	-20.47	0.94	-95.23	23.38	-40.00	-14.18	Vertical			
2	10986.00	-53.84	RMS	37.80	-20.51	0.52	-95.23	23.58	-40.00	-13.84	Vertical			
3	14649.00	-48.58	RMS	42.30	-21.04	0.49	-95.23	24.90	-40.00	-8.58	Vertical			

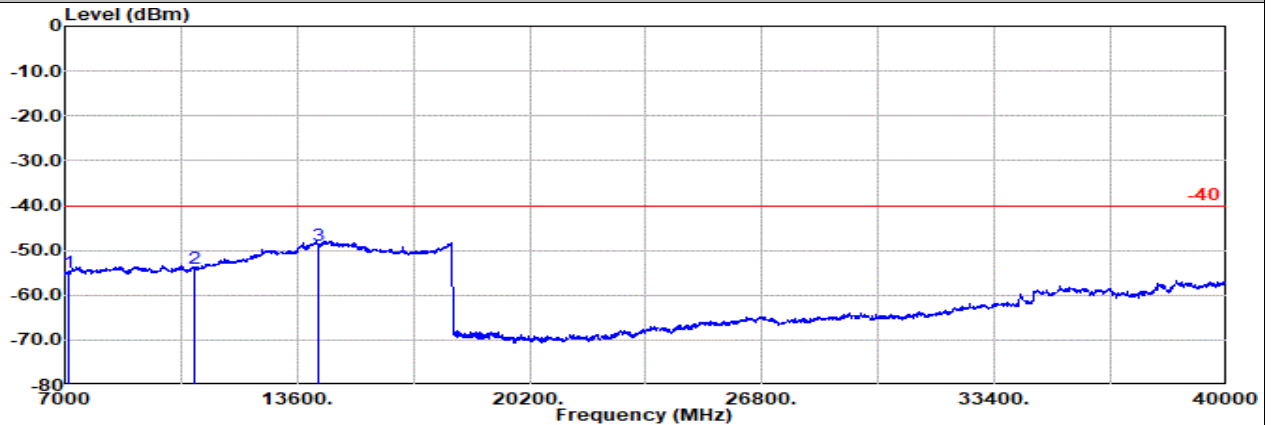


Ant. 2+0

Part 96 NR Mode 4

NR SA n48 40M Ch638000 1RB1 BPSK

L

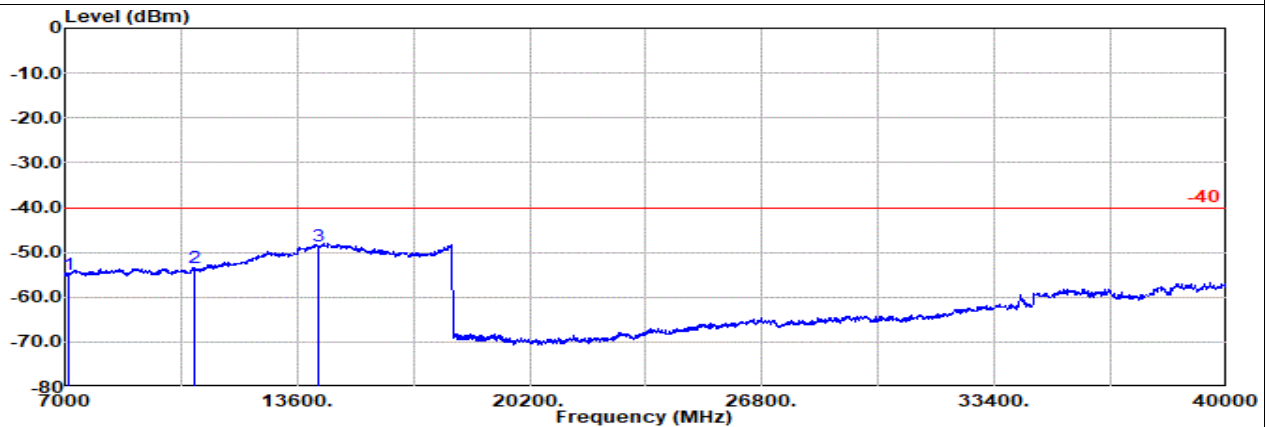


Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Horizontal

: SA n48 40M Ch638000 1RB1 QPSK

	Freq Level		Detector	Ant Factor	Amp\Cb Filter 1		EIRPCF	Reading	Limit		Margin	Pol
	MHz	dBm			dB/m	dB			dBuV	dBm	dB	
1	7104.00	-55.01	RMS	36.71	-20.57	1.10	-95.23	22.98	-40.00	-15.01	Horizontal	
2	10656.00	-53.94	RMS	37.50	-20.63	0.51	-95.23	23.91	-40.00	-13.94	Horizontal	
3	14209.00	-48.78	RMS	42.00	-20.69	0.46	-95.23	24.68	-40.00	-8.78	Horizontal	



Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Vertical

: SA n48 40M Ch638000 1RB1 QPSK

	Freq Level		Detector	Ant Factor	Amp\Cb Filter 1		EIRPCF	Reading	Limit		Margin	Pol
	MHz	dBm			dB/m	dB			dBuV	dBm	dB	
1	7104.00	-55.07	RMS	36.71	-20.57	1.10	-95.23	22.92	-40.00	-15.07	Vertical	
2	10656.00	-53.45	RMS	37.50	-20.63	0.51	-95.23	24.40	-40.00	-13.45	Vertical	
3	14209.00	-48.52	RMS	42.00	-20.69	0.46	-95.23	24.94	-40.00	-8.52	Vertical	

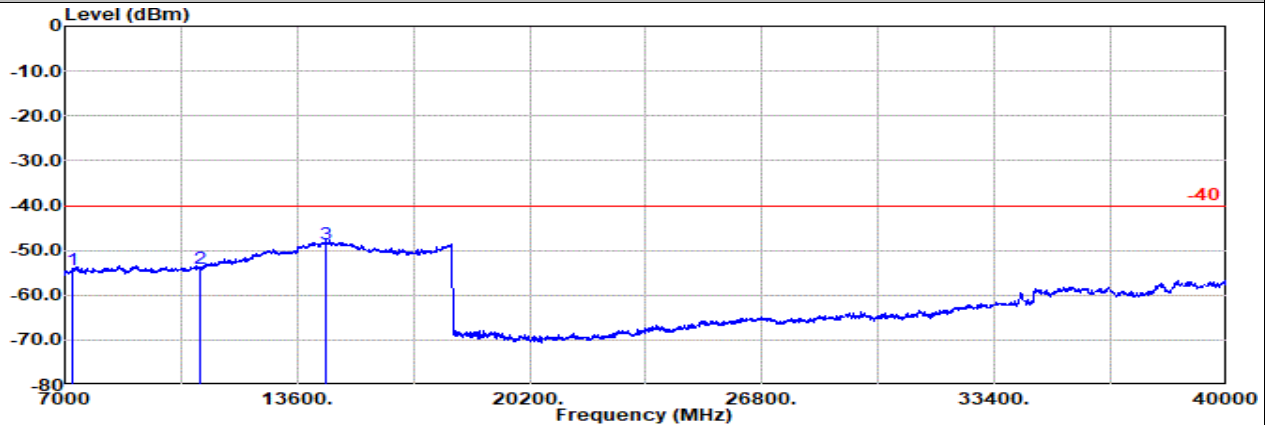


Ant. 2+0

Part 96 NR Mode 4

NR SA n48 40M Ch641666 1RB1 BPSK

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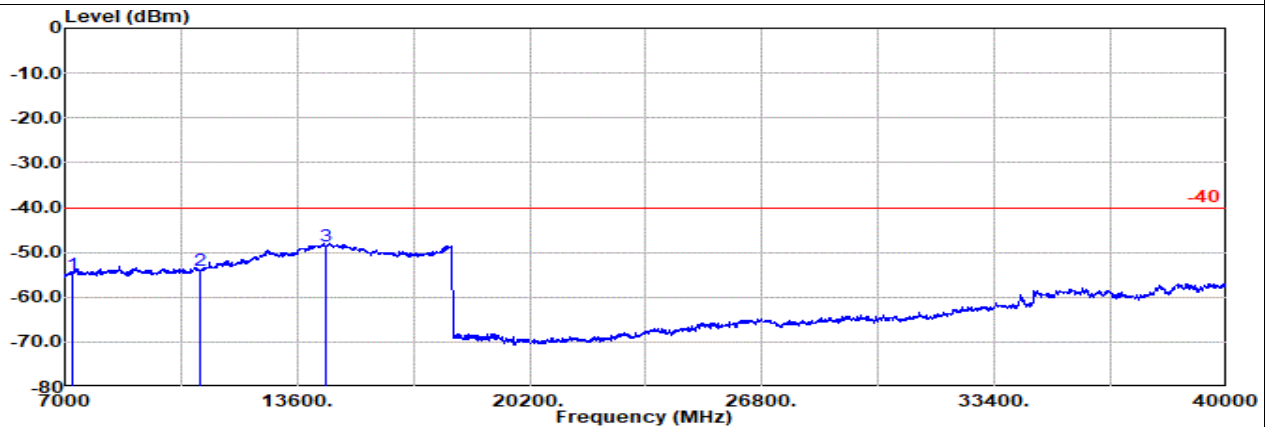


Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Horizontal

: SA n48 40M Ch641666 1RB1 QPSK

	Freq Level		Detector	Ant Amp\Cb Filter		Factor	Filter 1		EIRPCF	Readin g	Limit		Margin	Pol
	MHz	dBm		dB/m	dB		dB	dB			dBuV	dBm	dB	
1	7214.00	-54.42	RMS	36.86	-20.53	0.98	-95.23	23.50	-40.00	-14.42	Horizontal			
2	10821.00	-54.12	RMS	37.60	-20.57	0.52	-95.23	23.56	-40.00	-14.12	Horizontal			
3	14429.00	-48.57	RMS	42.10	-20.88	0.48	-95.23	24.96	-40.00	-8.57	Horizontal			



Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Vertical

: SA n48 40M Ch641666 1RB1 QPSK

	Freq Level		Detector	Ant Amp\Cb Filter		Factor	Filter 1		EIRPCF	Readin g	Limit		Margin	Pol
	MHz	dBm		dB/m	dB		dB	dB			dBuV	dBm	dB	
1	7214.00	-54.85	RMS	36.86	-20.53	0.98	-95.23	23.07	-40.00	-14.85	Vertical			
2	10821.00	-53.97	RMS	37.60	-20.57	0.52	-95.23	23.71	-40.00	-13.97	Vertical			
3	14429.00	-48.49	RMS	42.10	-20.88	0.48	-95.23	25.04	-40.00	-8.49	Vertical			

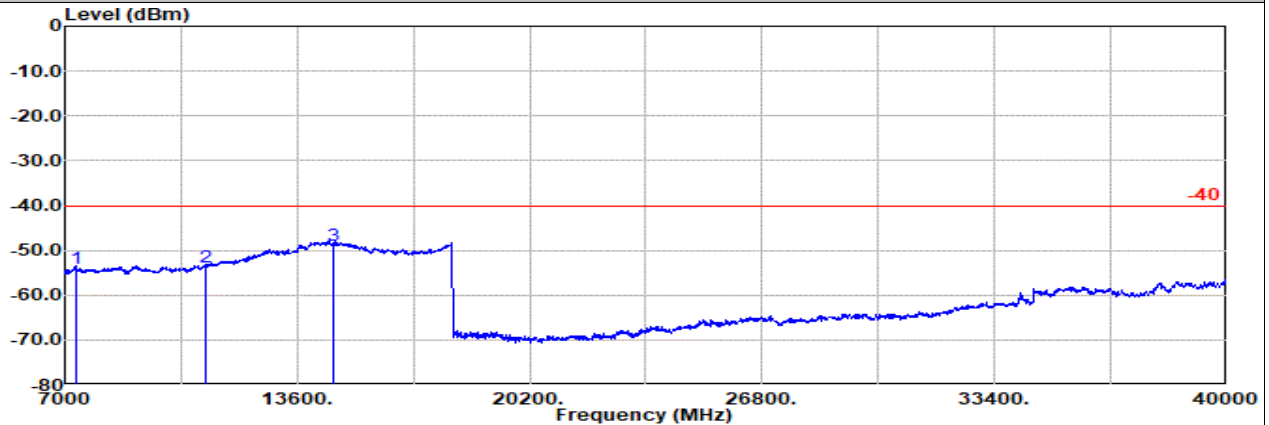


Ant. 2+0

Part 96 NR Mode 4

NR SA n48 40M Ch645332 1RB1 BPSK

H

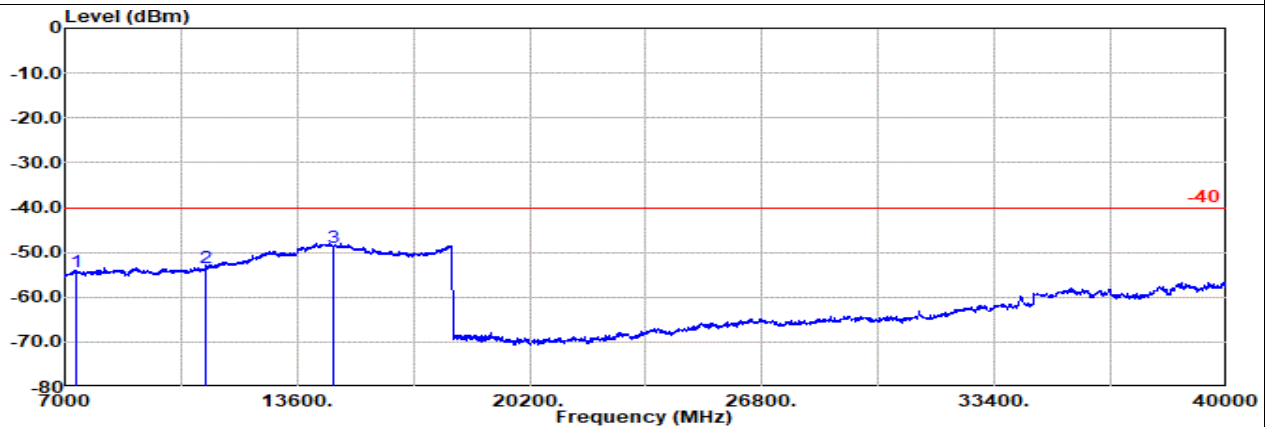


Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Horizontal

: SA n48 40M Ch645332 1RB1 QPSK

	Freq Level		Detector	Ant Amp\Cb Filter		Factor	Filter		EIRPCF	Readin g	Limit		Margin	Pol
	MHz	dBm		dB/m	dB		dB	dB			dBuV	dBm	dB	
1	7324.00	-54.11	RMS	37.20	-20.47	0.94	-95.23	23.45	-40.00	-14.11	Horizontal			
2	10986.00	-53.84	RMS	37.80	-20.51	0.52	-95.23	23.58	-40.00	-13.84	Horizontal			
3	14649.00	-48.86	RMS	42.30	-21.04	0.49	-95.23	24.62	-40.00	-8.86	Horizontal			



Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Vertical

: SA n48 40M Ch645332 1RB1 QPSK

	Freq Level		Detector	Ant Amp\Cb Filter		Factor	Filter		EIRPCF	Readin g	Limit		Margin	Pol
	MHz	dBm		dB/m	dB		dB	dB			dBuV	dBm	dB	
1	7324.00	-54.31	RMS	37.20	-20.47	0.94	-95.23	23.25	-40.00	-14.31	Vertical			
2	10986.00	-53.49	RMS	37.80	-20.51	0.52	-95.23	23.93	-40.00	-13.49	Vertical			
3	14649.00	-48.78	RMS	42.30	-21.04	0.49	-95.23	24.70	-40.00	-8.78	Vertical			

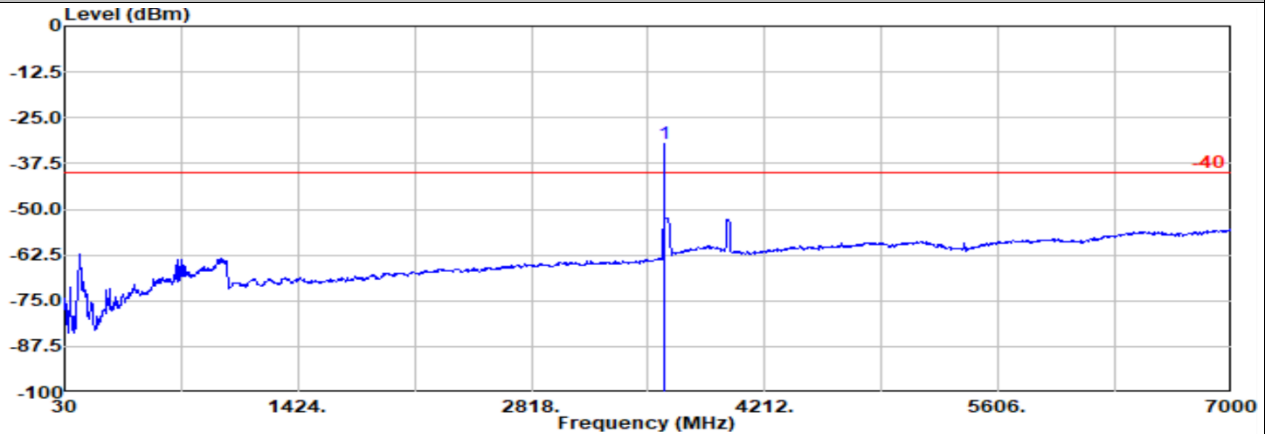


Ant. 2

Part 96 NR Mode 3

NR SA n48 40M Ch641666 1RB1 BPSK

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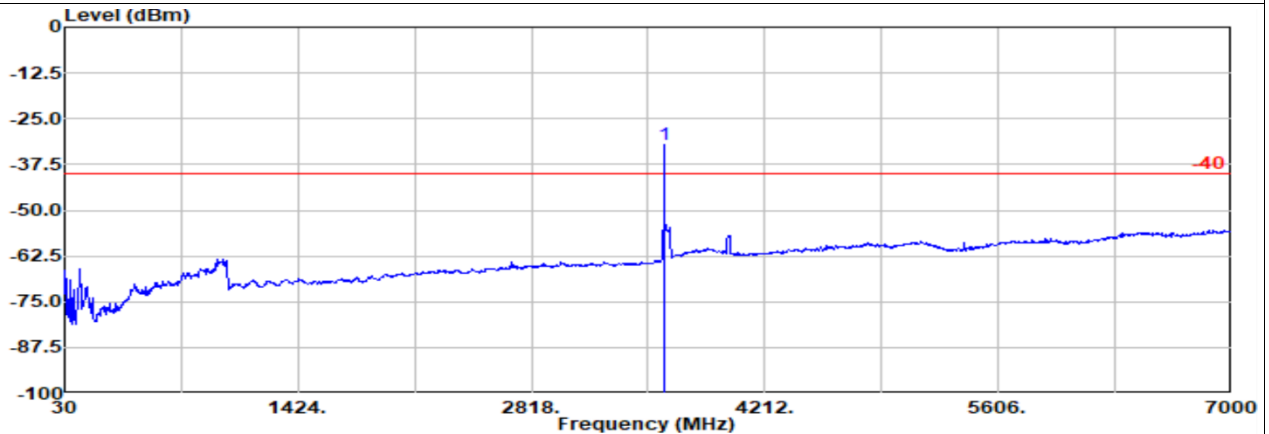
Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Horizontal

: SA n48 40M Ch641666 1RB1 BPSK

: #1 is fundamental signal which can be ignored.

1	Freq	Level	Detector	Ant Amp\Cb Filter		EIRPCF	Readin Limit		Margin	Pol
	MHz	dBm		Factor	1		g	dBm		
1	3607.00	-32.20	RMS	29.14	-22.58	0.00	-95.23	56.47	-40.00	7.80 Horizontal



Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Vertical

: SA n48 40M Ch641666 1RB1 BPSK

: #1 is fundamental signal which can be ignored.

1	Freq	Level	Detector	Ant Amp\Cb Filter		EIRPCF	Readin Limit		Margin	Pol
	MHz	dBm		Factor	1		g	dBm		
1	3607.00	-32.04	RMS	29.14	-22.58	0.00	-95.23	56.63	-40.00	7.96 Vertical

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