



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 Aug. 07, 2024 to Sep. 05, 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.

Louis Wu

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
FG471511D	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	8.31 dB under the limit at 14464.00 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/manufacture 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: Lucy Wu



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/GNSS 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	5 MHz / 10 MHz / 15 MHz / 20 MHz
Maximum Output Power to Antenna	<Ant. 2> LTE Band 48: 21.02 dBm LTE Band 48C: 21.80 dBm
Antenna Type	<Ant. 2>: Fixed Internal Antenna
Antenna Gain	<Ant. 2>: -0.51 dBi
Type of Modulation	QPSK / 16QAM / 64QAM / 256QAM

Support band and evaluated information	
Supported band	B48,B48C
Evaluated and Tested band	B48,B48C

TDD band Power Class		
	PC3	PC2
B48/B48C	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	HaoEn Zhang
Temperature (°C)	21.3~23.5
Relative Humidity (%)	50.6~55.4

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 Tseng 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 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 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.

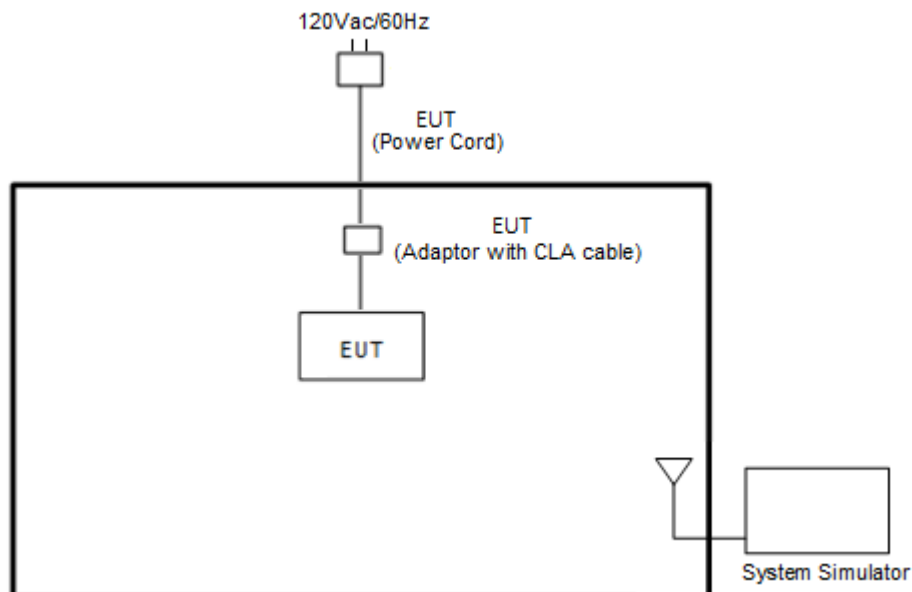
Modulation Type	Modulation
A	QPSK
B	16QAM
C	64QAM
D	256QAM

Test Item	Modulation Type	Bandwidth	RB Size	Channel
Conducted Power	A, B, C, D	All	1, Half, Full	L, M, H
EIRP	A, B, C, D	All	1, Half, Full	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. 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

2.4 Frequency List of Low/Middle/High Channels

LTE Band 48 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
20	Channel	55340	55990	56640
	Frequency	3560	3625	3690
15	Channel	55315	55990	56665
	Frequency	3557.5	3625	3692.5
10	Channel	55290	55990	56690
	Frequency	3555	3625	3695
5	Channel	55265	55990	56715
	Frequency	3552.5	3625	3697.5

LTE Band 48C Channel and Frequency List_CA					
BW [MHz]	Channel/Frequency(MHz)		Lowest	Middle	Highest
20 + 20	PCC	Channel	55340	55891	56442
		Frequency	3560	3615.1	3670.2
	SCC	Channel	55538	56089	56640
		Frequency	3579.8	3634.9	3690.0
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
15 + 20	PCC	Channel	55318	55893	56469
		Frequency	3557.8	3615.3	3672.9
	SCC	Channel	55489	56064	56640
		Frequency	3574.9	3632.4	3690.0
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
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 + 5	PCC	Channel	55340	55965	56590
		Frequency	3560	3622.5	3685
	SCC	Channel	55457	56082	56707
		Frequency	3571.7	3634.2	3696.7
5 + 20	PCC	Channel	55273	55896	56523
		Frequency	3553.3	3615.6	3678.3
	SCC	Channel	55390	56015	56640
		Frequency	3565	3627.5	3690.0

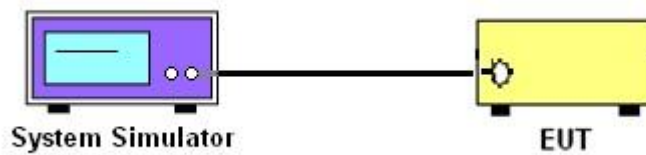
3 Conducted Test Items

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

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: 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.

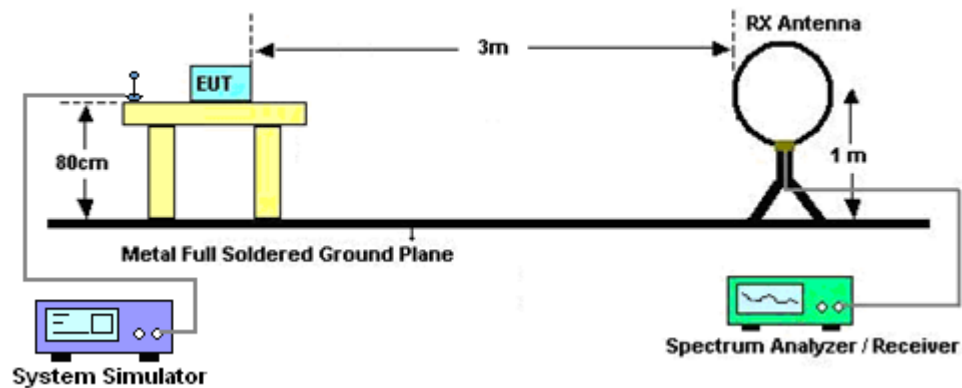
4 Radiated Test Items

4.1 Measuring Instruments

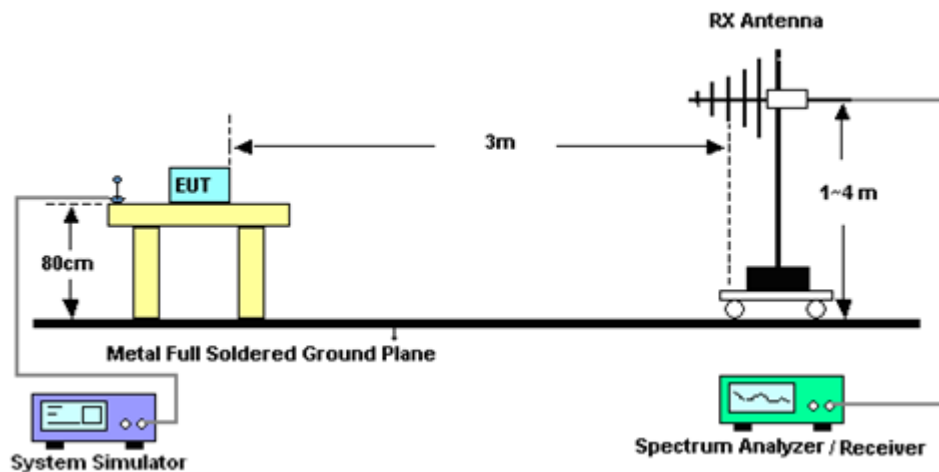
See list of measuring instruments of this test report.

4.2 Test Setup

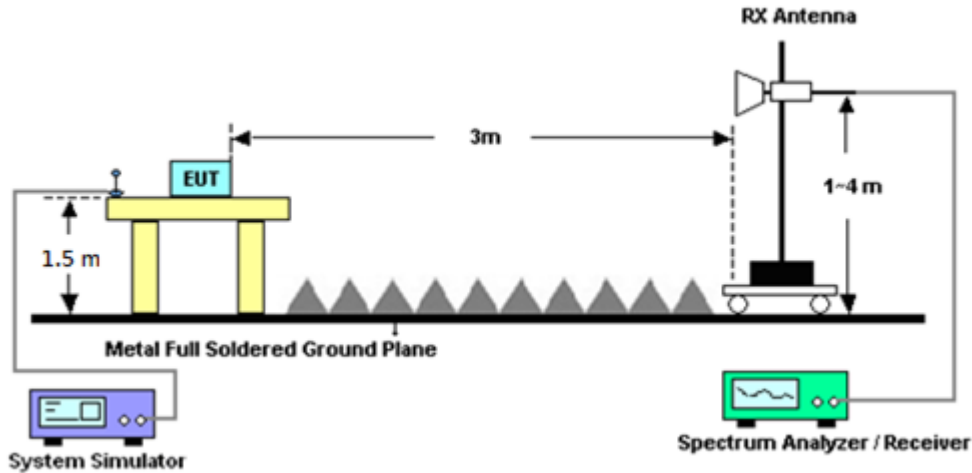
For radiated test below 30MHz



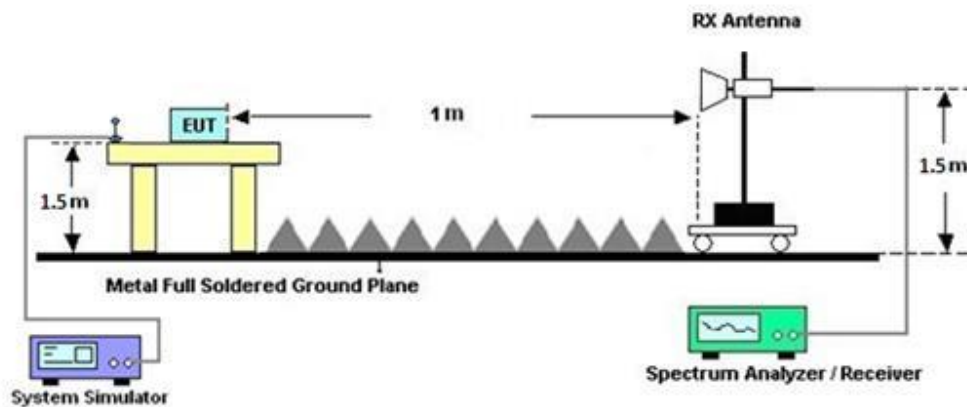
For radiated test from 30MHz to 1GHz



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. 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	LE2C04A1 8EN	1GHz~18GHz	Jul. 11, 2024	Aug. 07, 2024~ Aug. 27, 2024	Jul. 10, 2025	Radiation (03CH22-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	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	MY621702 78	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-00234 7	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	804390/2,8 04611/2,80 4615/2	N/A	Oct. 24, 2023	Aug. 07, 2024~ Aug. 27, 2024	Oct. 23, 2024	Radiation (03CH22-HY)
Radio Communication Analyzer	Anritsu	MT8821C	626202535 3	LTE FDD/TDD LTE-2CC DLCA/ULCA	Oct. 03, 2023	Sep. 04, 2024~ Sep. 05, 2024	Oct. 02, 2024	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. 04, 2024~ Sep. 05, 2024	Jan. 01, 2025	Conducted (TH03-HY)
Software	Anritsu	Auto Test System	N/A	Conducted Test Item	N/A	Sep. 04, 2024~ Sep. 05, 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 & EIRP)

LTE Band 48 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	0	QPSK	20.77	20.61	21.02	20.51	0.1125
20	1	49		20.86	20.59	20.97		
20	1	99		20.88	20.61	20.87		
20	50	0		19.81	19.68	19.97		
20	50	24		19.99	19.67	20.04		
20	50	50		19.96	19.79	20.03		
20	100	0		19.92	19.67	20.05		
20	1	0	16-QAM	19.76	19.68	20.00	19.49	0.0889
20	1	49		20.00	19.70	19.96		
20	1	99		19.80	19.66	19.89		
20	50	0		18.86	18.66	18.96		
20	50	24		18.98	18.70	19.04		
20	50	50		18.98	18.79	19.01		
20	100	0		18.95	18.67	19.03		
20	1	0	64-QAM	18.73	18.62	18.88	18.37	0.0687
20	1	49		18.83	18.67	18.87		
20	1	99		18.88	18.62	18.81		
20	50	0		17.82	17.65	17.95		
20	50	24		17.92	17.64	18.04		
20	50	50		17.96	17.75	18.01		
20	100	0		17.91	17.66	18.03		
20	1	0	256-QAM	15.76	15.65	16.01	15.50	0.0355
20	1	49		15.69	15.65	15.95		
20	1	99		15.65	15.60	15.92		
20	50	0		15.63	15.62	15.96		
20	50	24		15.67	15.55	15.95		
20	50	50		15.64	15.62	15.93		
20	100	0		15.64	15.54	15.98		
Limit	EIRP < 23dBm/10MHz			Result			Pass	

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



LTE Band 48 Maximum Average Power [dBm] (GT - LC = -0.51 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
15	1	0	QPSK	20.70	20.50	20.91	20.40	0.1096
15	1	37		20.76	20.53	20.86		
15	1	74		20.80	20.53	20.81		
15	36	0		19.72	19.60	19.87		
15	36	20		19.86	19.55	19.91		
15	36	39		19.85	19.67	19.96		
15	75	0		19.79	19.54	19.99		
15	1	0	16-QAM	19.63	19.59	19.89	19.41	0.0873
15	1	37		19.92	19.63	19.89		
15	1	74		19.70	19.53	19.77		
15	36	0		18.74	18.60	18.90		
15	36	20		18.86	18.61	18.91		
15	36	39		18.88	18.70	18.92		
15	75	0		18.82	18.61	18.93		
15	1	0	64-QAM	18.64	18.49	18.80	18.30	0.0676
15	1	37		18.72	18.57	18.77		
15	1	74		18.81	18.53	18.69		
15	36	0		17.69	17.56	17.89		
15	36	20		17.85	17.58	17.96		
15	36	39		17.89	17.64	17.94		
15	75	0		17.80	17.57	17.91		
15	1	0	256-QAM	15.64	15.62	15.91	15.40	0.0347
15	1	37		15.55	15.58	15.80		
15	1	74		15.48	15.60	15.78		
15	36	0		15.48	15.54	15.81		
15	36	20		15.49	15.58	15.82		
15	36	39		15.45	15.62	15.82		
15	75	0		15.50	15.50	15.82		
Limit	EIRP < 23dBm/10MHz			Result			Pass	

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



LTE Band 48 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	0	QPSK	20.67	20.49	20.89	20.38	0.1091
10	1	25		20.79	20.52	20.87		
10	1	49		20.75	20.53	20.81		
10	25	0		19.73	19.60	19.88		
10	25	12		19.90	19.58	19.92		
10	25	25		19.86	19.66	19.91		
10	50	0		19.84	19.61	19.94		
10	1	0	16-QAM	19.68	19.56	19.88	19.38	0.0867
10	1	25		19.87	19.58	19.89		
10	1	49		19.68	19.59	19.78		
10	25	0		18.76	18.58	18.90		
10	25	12		18.87	18.58	18.94		
10	25	25		18.91	18.71	18.94		
10	50	0		18.82	18.60	18.94		
10	1	0	64-QAM	18.62	18.55	18.76	18.27	0.0671
10	1	25		18.77	18.56	18.74		
10	1	49		18.78	18.51	18.73		
10	25	0		17.73	17.53	17.84		
10	25	12		17.81	17.57	17.94		
10	25	25		17.83	17.65	17.89		
10	50	0		17.78	17.57	17.91		
10	1	0	256-QAM	15.62	15.66	15.85	15.34	0.0342
10	1	25		15.58	15.61	15.80		
10	1	49		15.51	15.58	15.80		
10	25	0		15.43	15.53	15.83		
10	25	12		15.53	15.56	15.77		
10	25	25		15.50	15.56	15.75		
10	50	0		15.46	15.58	15.83		
Limit	EIRP < 23dBm/10MHz			Result			Pass	

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



LTE Band 48 Maximum Average Power [dBm] (GT - LC = -0.51 dB)								
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
5	1	0	QPSK	20.67	20.55	20.94	20.43	0.1104
5	1	12		20.76	20.47	20.87		
5	1	24		20.79	20.50	20.77		
5	12	0		19.71	19.62	19.91		
5	12	7		19.92	19.55	19.97		
5	12	13		19.87	19.69	19.97		
5	25	0		19.82	19.61	19.95		
5	1	0	16-QAM	19.69	19.57	19.94	19.43	0.0877
5	1	12		19.87	19.61	19.85		
5	1	24		19.73	19.57	19.83		
5	12	0		18.76	18.56	18.89		
5	12	7		18.85	18.60	18.93		
5	12	13		18.92	18.68	18.92		
5	25	0		18.87	18.56	18.94		
5	1	0	64-QAM	18.65	18.54	18.82	18.31	0.0678
5	1	12		18.73	18.60	18.80		
5	1	24		18.82	18.51	18.69		
5	12	0		17.71	17.52	17.88		
5	12	7		17.79	17.56	17.95		
5	12	13		17.89	17.64	17.89		
5	25	0		17.82	17.54	17.90		
5	1	0	256-QAM	15.65	15.71	15.81	15.32	0.0340
5	1	12		15.52	15.64	15.75		
5	1	24		15.49	15.56	15.73		
5	12	0		15.52	15.53	15.81		
5	12	7		15.52	15.54	15.83		
5	12	13		15.46	15.61	15.83		
5	25	0		15.44	15.51	15.80		
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 = -0.51 dB)										
BW [MHz]	PCC		SCC		Mod	Lowest	Middle	Highest	EIRP (dBm)	EIRP (W)
	RB Size	RB Offset	RB Size	RB Offset						
20+20	1	99	1	0	QPSK	21.80	21.52	21.50	21.29	0.1346
20+20	1	99	1	0	16-QAM	21.08	20.81	20.98	20.57	0.1140
20+15	1	74	1	0	QPSK	21.59	21.42	21.56	21.08	0.1282
20+15	1	74	1	0	16-QAM	21.29	20.92	21.20	20.78	0.1197
15+20	1	74	1	0	QPSK	21.62	21.53	21.45	21.11	0.1291
15+20	1	74	1	0	16-QAM	21.06	21.05	20.93	20.55	0.1135
20+10	1	99	1	0	QPSK	21.68	21.44	21.40	21.17	0.1309
20+10	1	99	1	0	16-QAM	21.32	21.08	21.22	20.81	0.1205
10+20	1	49	1	0	QPSK	21.70	21.77	21.56	21.26	0.1337
10+20	1	49	1	0	16-QAM	21.45	21.06	21.05	20.94	0.1242
20+5	1	99	1	0	QPSK	21.65	21.35	21.50	21.14	0.1300
20+5	1	99	1	0	16-QAM	20.90	20.97	21.03	20.52	0.1127
5+20	1	24	1	0	QPSK	21.65	21.55	21.62	21.14	0.1300
5+20	1	24	1	0	16-QAM	21.10	21.11	21.24	20.73	0.1183
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)	AmplCbl (dB)	Filter (dB)	EIRPCF (dB)	Reading (dBuV)	Limit (dBm)	Margin (dB)	Pol	Ant
1	Part 96	LTE B48	M	14464	-48.31	RMS	42.16	-20.91	0.48	-95.23	25.19	-40.00	-8.31	H	2
2	Part 96	LTE CA 48C	M	14495	-48.41	RMS	42.28	-20.94	0.48	-95.23	25.00	-40.00	-8.41	V	2

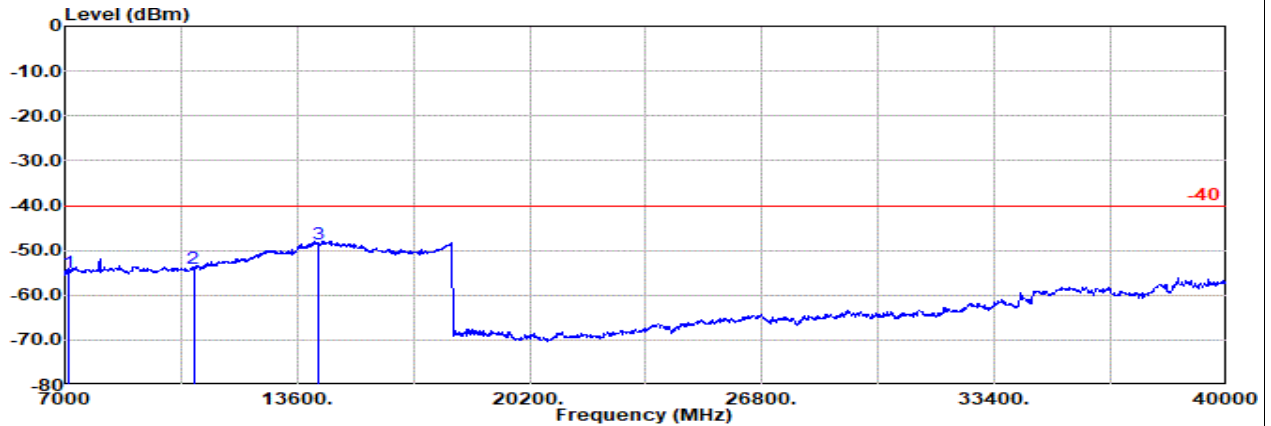


Ant. 2

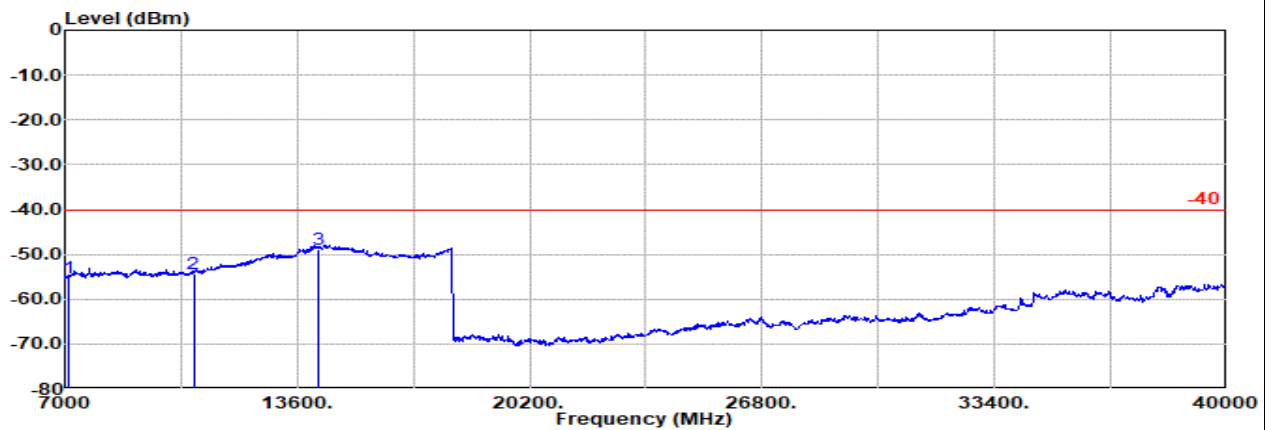
Part 96 LTE Mode 1

LTE B48 20M Ch55340 1RB0 QPSK

L



	Freq	Level	Detector	Ant Factor	Amp\Cb	Filter 1	EIRPCF	Readin g	Limit	Margin	Pol
	MHz	dBm									
1	7102.00	-55.09	RMS	36.70	-20.57	1.10	-95.23	22.91	-40.00	-15.09	Horizontal
2	10653.00	-53.89	RMS	37.50	-20.63	0.51	-95.23	23.96	-40.00	-13.89	Horizontal
3	14204.00	-48.48	RMS	42.00	-20.69	0.46	-95.23	24.98	-40.00	-8.48	Horizontal



	Freq	Level	Detector	Ant Factor	Amp\Cb	Filter 1	EIRPCF	Readin g	Limit	Margin	Pol
	MHz	dBm									
1	7102.00	-55.16	RMS	36.70	-20.57	1.10	-95.23	22.84	-40.00	-15.16	Vertical
2	10653.00	-54.20	RMS	37.50	-20.63	0.51	-95.23	23.65	-40.00	-14.20	Vertical
3	14204.00	-49.02	RMS	42.00	-20.69	0.46	-95.23	24.44	-40.00	-9.02	Vertical

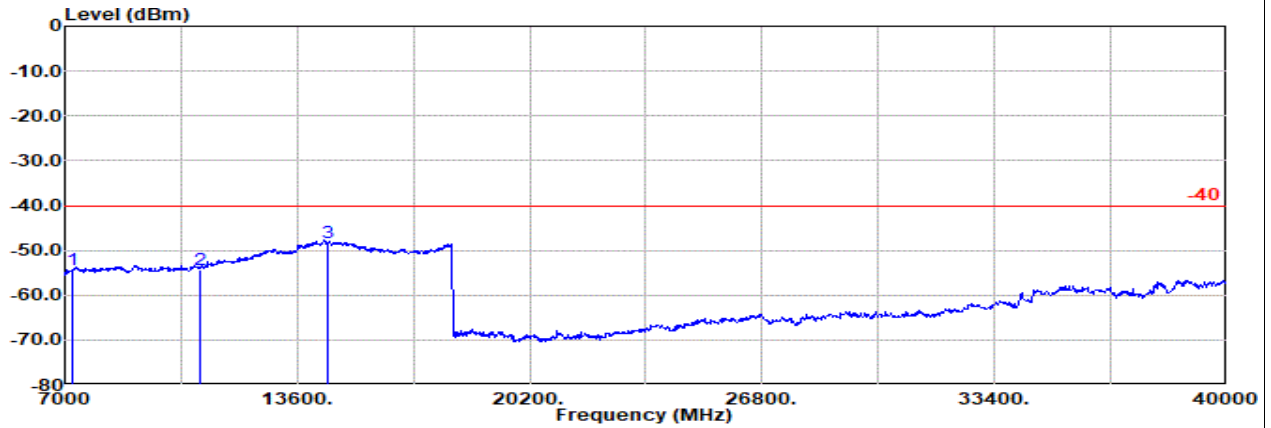


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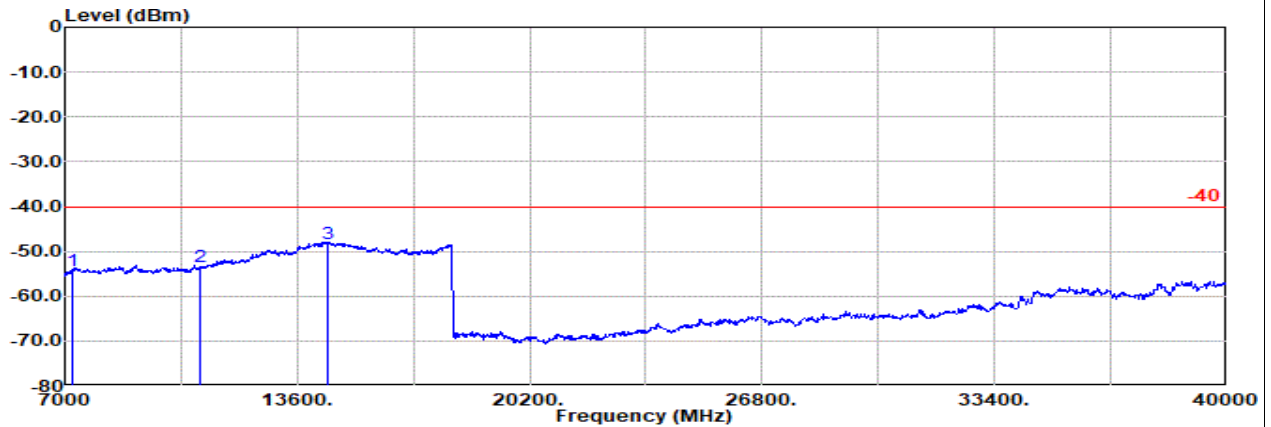
Part 96 LTE Mode 1

LTE B48 20M Ch55990 1RB0 QPSK

M



	Freq	Level	Detector	Ant	Amp\Cb	Filter	EIRPCF	Readin	Limit	Margin	Pol
				Factor	1			g	dBm		
	MHz	dBm		dB/m	dB	dB		dBuV	dBm	dB	
1	7232.00	-54.36	RMS	36.93	-20.52	0.98	-95.23	23.48	-40.00	-14.36	Horizontal
2	10848.00	-54.27	RMS	37.60	-20.56	0.52	-95.23	23.40	-40.00	-14.27	Horizontal
3	14464.00	-48.31	RMS	42.16	-20.91	0.48	-95.23	25.19	-40.00	-8.31	Horizontal



	Freq	Level	Detector	Ant Factor	Amp\Cb 1	Filter	EIRPCF	Readin g	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	7232.00	-54.44	RMS	36.93	-20.52	0.98	-95.23	23.40	-40.00	-14.44	Vertical
2	10848.00	-53.57	RMS	37.60	-20.56	0.52	-95.23	24.10	-40.00	-13.57	Vertical
3	14464.00	-48.41	RMS	42.16	-20.91	0.48	-95.23	25.09	-40.00	-8.41	Vertical

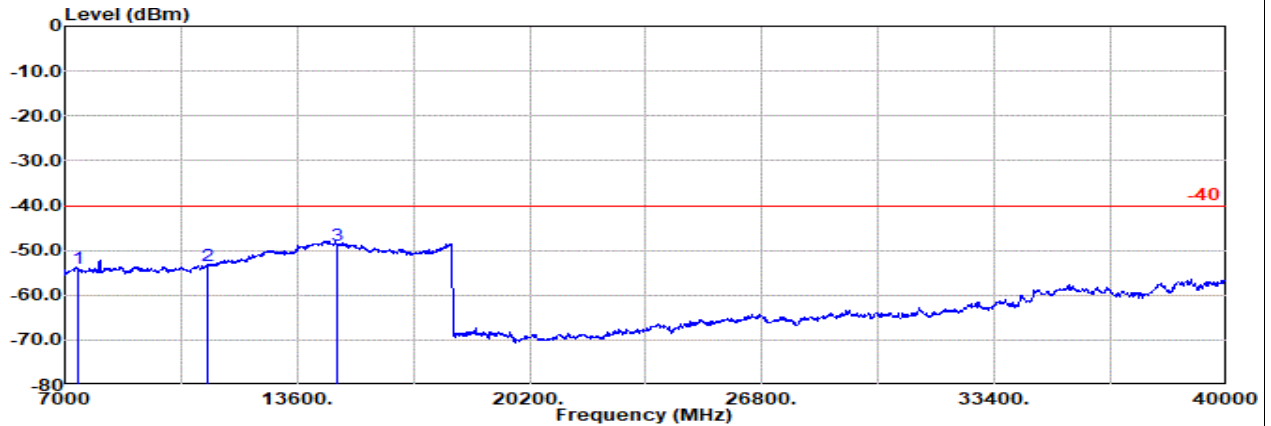


Ant. 2

Part 96 LTE Mode 1

LTE B48 20M Ch56640 1RB0 QPSK

H

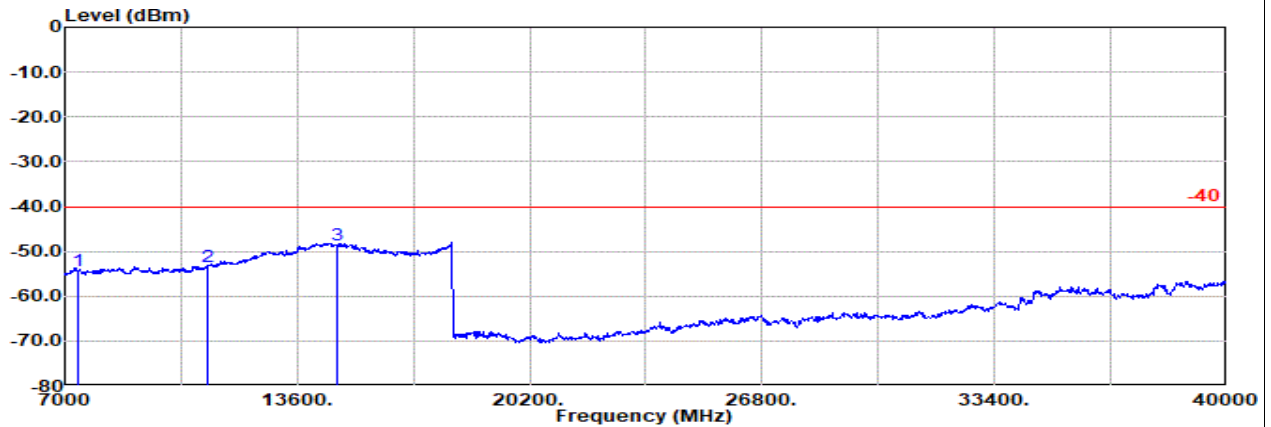


Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Horizontal

: LTE B48 20M Ch566401RB0 QPSK

	Freq Level		Detector	Ant Amp\Cb Filter		EIRPCF	Readin g	Limit		Margin	Pol
	MHz	dBm		Factor	dB			dBuV	dBm		
1	7362.00	-54.14	RMS	37.18	-20.45	0.93	-95.23	23.43	-40.00	-14.14	Horizontal
2	11043.00	-53.35	RMS	37.97	-20.49	0.53	-95.23	23.87	-40.00	-13.35	Horizontal
3	14724.00	-48.83	RMS	42.25	-21.09	0.50	-95.23	24.74	-40.00	-8.83	Horizontal



Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Vertical

: LTE B48 20M Ch566401RB0 QPSK

	Freq Level		Detector	Ant Amp\Cb Filter		EIRPCF	Readin g	Limit		Margin	Pol
	MHz	dBm		Factor	dB			dBuV	dBm		
1	7362.00	-54.43	RMS	37.18	-20.45	0.93	-95.23	23.14	-40.00	-14.43	Vertical
2	11043.00	-53.53	RMS	37.97	-20.49	0.53	-95.23	23.69	-40.00	-13.53	Vertical
3	14724.00	-48.69	RMS	42.25	-21.09	0.50	-95.23	24.88	-40.00	-8.69	Vertical

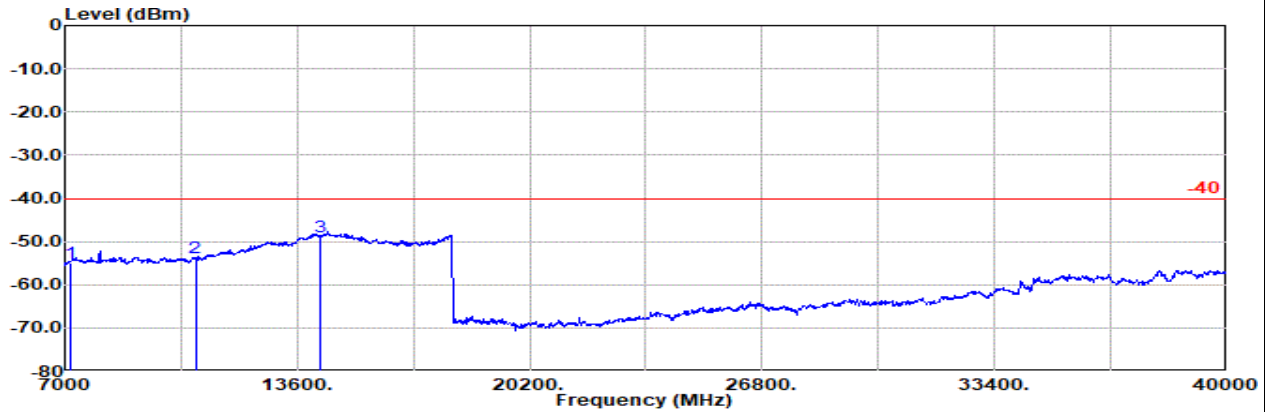


Ant. 2

Part 96 LTE Mode 2

LTE CA 48C Ch55340 + Ch55538

L



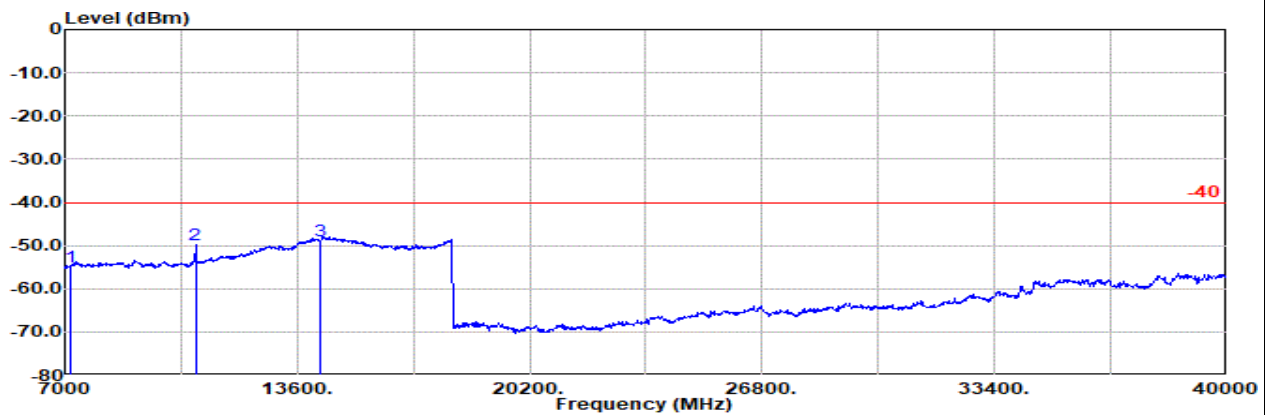
Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Horizontal

: LTE B48 20M Ch55340 1RB99 QPSK

: LTE B48 20M Ch55538 1RB0 QPSK

	Freq	Level	Detector	Ant Factor	Amp\Cb 1	Filter	EIRPCF	Readin g	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	7137.00	-54.95	RMS	36.77	-20.56	1.06	-95.23	23.01	-40.00	-14.95	Horizontal
2	10706.00	-53.79	RMS	37.50	-20.61	0.51	-95.23	24.04	-40.00	-13.79	Horizontal
3	14275.00	-48.94	RMS	42.10	-20.75	0.47	-95.23	24.47	-40.00	-8.94	Horizontal



Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Vertical

: LTE B48 20M Ch55340 1RB99 QPSK

: LTE B48 20M Ch55538 1RB0 QPSK

	Freq	Level	Detector	Ant Factor	Amp\Cb 1	Filter	EIRPCF	Readin g	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	7137.00	-55.08	RMS	36.77	-20.56	1.06	-95.23	22.88	-40.00	-15.08	Vertical
2	10706.00	-49.96	RMS	37.50	-20.61	0.51	-95.23	27.87	-40.00	-9.96	Vertical
3	14275.00	-48.89	RMS	42.10	-20.75	0.47	-95.23	24.52	-40.00	-8.89	Vertical

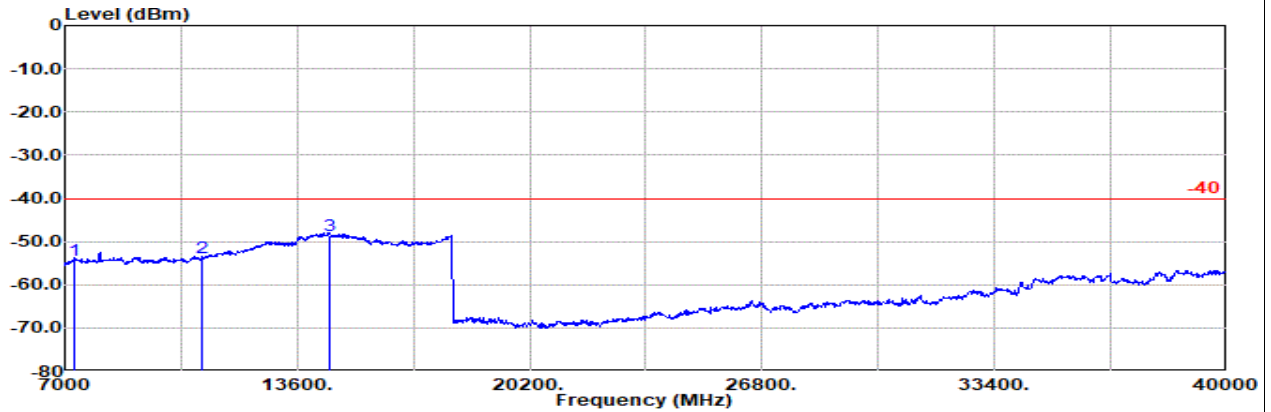


Ant. 2

Part 96 LTE Mode 2

LTE CA 48C Ch55891 + Ch56089

M



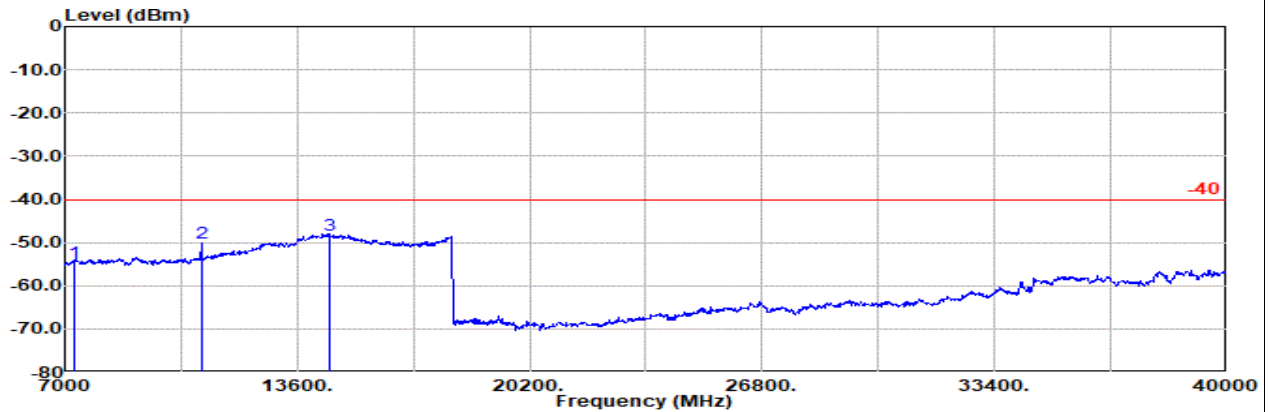
Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Horizontal

: LTE B48 20M Ch55891 1RB99 QPSK

: LTE B48 20M Ch56089 1RB0 QPSK

	Freq Level		Detector	Ant Factor	Amp\Cb		Filter	EIRPCF	Readin Limit		Margin	Pol
	MHz	dBm			dB/m	dB	dB	dB	dBuV	dBm	dB	
1	7247.00	-54.29	RMS	36.99	-20.51	0.97	-95.23	23.49	-40.00	-14.29	Horizontal	
2	10871.00	-53.67	RMS	37.64	-20.55	0.52	-95.23	23.95	-40.00	-13.67	Horizontal	
3	14495.00	-48.51	RMS	42.28	-20.94	0.48	-95.23	24.90	-40.00	-8.51	Horizontal	



Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Vertical

: LTE B48 20M Ch55891 1RB99 QPSK

: LTE B48 20M Ch56089 1RB0 QPSK

	Freq Level		Detector	Ant Factor	Amp\Cb		Filter	EIRPCF	Readin Limit		Margin	Pol
	MHz	dBm			dB/m	dB	dB	dB	dBuV	dBm	dB	
1	7247.00	-54.61	RMS	36.99	-20.51	0.97	-95.23	23.17	-40.00	-14.61	Vertical	
2	10871.00	-49.98	RMS	37.64	-20.55	0.52	-95.23	27.64	-40.00	-9.98	Vertical	
3	14495.00	-48.41	RMS	42.28	-20.94	0.48	-95.23	25.00	-40.00	-8.41	Vertical	

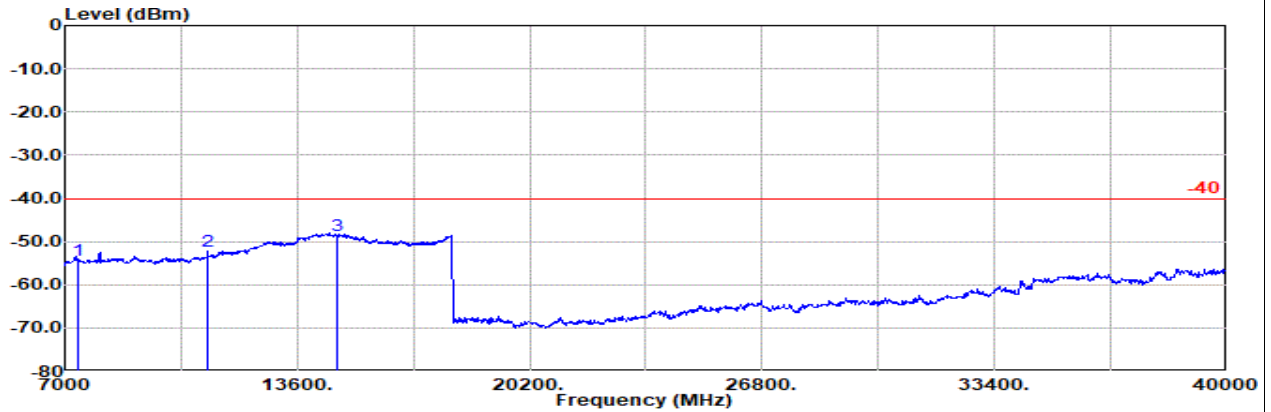


Ant. 2

Part 96 LTE Mode 2

LTE CA 48C Ch56442 + Ch56640

H



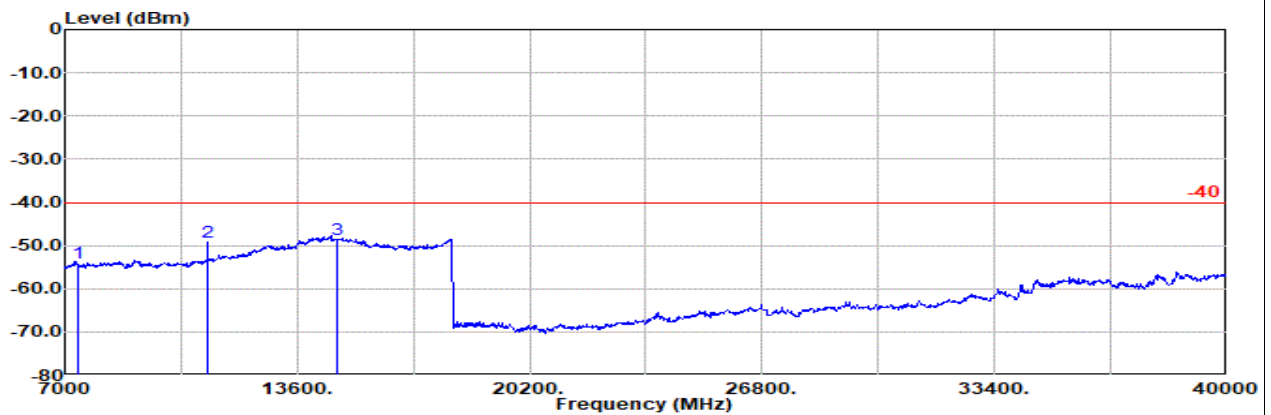
Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Horizontal

: LTE B48 20M Ch56442 1RB99 QPSK

: LTE B48 20M Ch56640 1RB0 QPSK

	Freq	Level	Detector	Ant Factor	Amp\Cb 1	Filter	EIRPCF	Readin g	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	7357.00	-54.40	RMS	37.19	-20.45	0.93	-95.23	23.16	-40.00	-14.40	Horizontal
2	11036.00	-52.22	RMS	37.94	-20.49	0.53	-95.23	25.03	-40.00	-12.22	Horizontal
3	14715.00	-48.46	RMS	42.27	-21.08	0.50	-95.23	25.08	-40.00	-8.46	Horizontal



Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Vertical

: LTE B48 20M Ch56442 1RB99 QPSK

: LTE B48 20M Ch56640 1RB0 QPSK

	Freq	Level	Detector	Ant Factor	Amp\Cb 1	Filter	EIRPCF	Readin g	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	7357.00	-54.18	RMS	37.19	-20.45	0.93	-95.23	23.38	-40.00	-14.18	Vertical
2	11036.00	-49.22	RMS	37.94	-20.49	0.53	-95.23	28.03	-40.00	-9.22	Vertical
3	14715.00	-48.64	RMS	42.27	-21.08	0.50	-95.23	24.90	-40.00	-8.64	Vertical

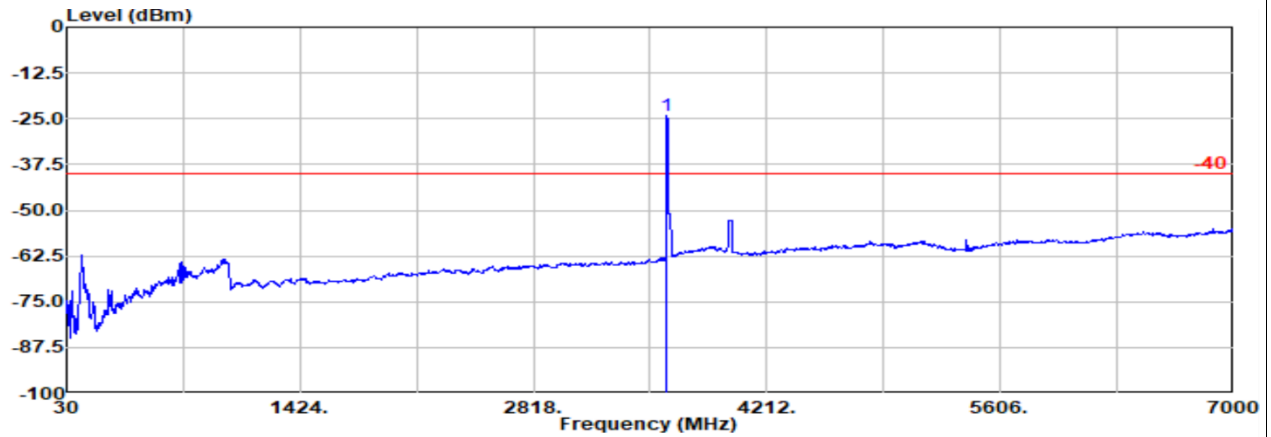


Ant. 2

Part 96 LTE Mode 1

LTE B48 20M Ch55990 1RB0 QPSK

M



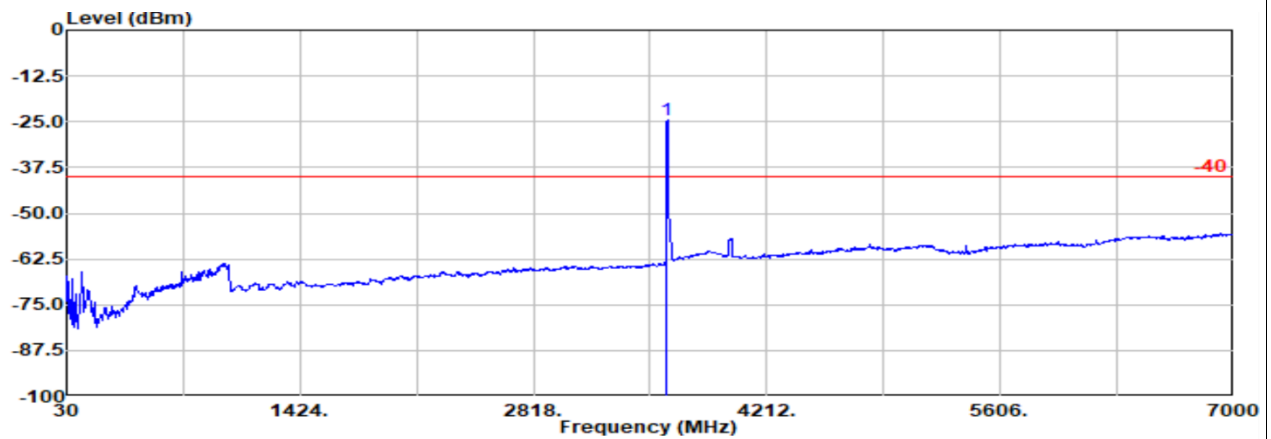
Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Horizontal

: LTE B48 20M Ch55990 1RB0 QPSK

: #1 is fundamental signal which can be ignored.

	Freq Level		Detector	Ant Amp\Cb Filter		EIRPCF	Readin Limit		Margin	Pol
	MHz	dBm		Factor	dB		dB	dBuV	dBm	dB
1	3616.00	-24.05	RMS	29.20	-22.57	0.00	-95.23	64.55	-40.00	15.95 Horizontal



Site : 03CH22-HY

Condition: -40 3m DRH18-E_LE2C04A18EN_240711 Vertical

: LTE B48 20M Ch55990 1RB0 QPSK

: #1 is fundamental signal which can be ignored.

	Freq Level		Detector	Ant Amp\Cb Filter		EIRPCF	Readin Limit		Margin	Pol
	MHz	dBm		Factor	dB		dB	dBuV	dBm	dB
1	3616.00	-24.34	RMS	29.20	-22.57	0.00	-95.23	64.26	-40.00	15.66 Vertical

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