FCC RADIO TEST REPORT

FCC ID	:	**XMR2020EM160RGL**
Equipment	:	**LTE-A Cat 16 M.2 Module**
Brand Name	:	**Quectel**
Model Name	:	**EM160R-GL**
Applicant	:	**Quectal Wireless Solutions Co., Ltd.** **Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China, 200233**
Manufacturer	:	**LCFC (HeFei) Electronics Technology Co., Ltd.** **No. 3188-1, Yungu Road (Hefei Export Processing Zone), Hefei Economics & Technology Development Area, Anhui, CHINA**
Standard	:	**FCC 47 CFR Part 2, 22(H), 24(E), 27(L)**

Equipment: Quectel EM160R-GL tested inside of Lenovo Notebook Computer.

The product was received on Nov. 21, 2023 and testing was performed from Dec. 02, 2023 to Dec. 18, 2023. 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 given in ANSI / TIA-603-E 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
FG3N2134A	01	Initial issue of report	Dec. 28, 2023
FG3N2134A	02	Revise Section 1.4 This report is an updated version, replacing the report issued on Dec. 28, 2023.	Feb. 01, 2024

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power	Pass	-
	§22.913 (a)(5)	Effective Radiated Power (WCDMA Band V)		
	§24.232 (c)	Equivalent Isotropic Radiated Power (WCDMA Band II)		
	§27.50 (d)(4)	Equivalent Isotropic Radiated Power (WCDMA Band IV)		
-	§24.232 (d)	Peak-to-Average Ratio	-	See Note
-	§2.1049 §22.917 (b) §24.238 (b) §27.53 (g)	Occupied Bandwidth (WCDMA Band V) (WCDMA Band II) (WCDMA Band IV)	-	See Note
-	§2.1051 §22.917 (a) §24.238 (a) §27.53 (g)	Band Edge Measurement (WCDMA Band V) (WCDMA Band II) (WCDMA Band IV)	-	See Note
-	§2.1051 §22.917 (a) §24.238 (a) §27.53 (g)	Conducted Emission (WCDMA Band V) (WCDMA Band II) (WCDMA Band IV)	-	See Note
-	§2.1055 §22.355 §24.235 §27.54	Frequency Stability Temperature & Voltage	-	See Note
4.4	§2.1053 §22.917 (a) §24.238 (a) §27.53 (h)	Field Strength of Spurious Radiation (WCDMA Band II) (WCDMA Band IV)	Pass	32.19 dB under the limit at 7520.00 MHz

Note:
1. For host device, Field Strength of Spurious Radiation, Effective Radiated Power and Equivalent Isotropic Radiated Power are verified and complies with the limit in this test report.
2. For host device, the Conducted Output Power is no difference after compared to module (Model: EM160R-GL)

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: Sheng Kuo
Report Producer: Michelle Chen

1 General Description

1.1 Product Feature of Equipment Under Test

Product Feature	
Equipment	LTE-A Cat 16 M.2 Module
Brand Name	Quectel
Model Name	EM160R-GL
FCC ID	XMR2020EM160RGL
EUT supports Radios application	WCDMA/HSPA/LTE/GNSS
EUT Stage	Production Unit

Remark:

1. The above EUT's information was declared by manufacturer.
2. Equipment: Quectel EM160R-GL tested inside of Lenovo Notebook Computer.

Support band and evaluated information	
Supported band	WCDMA Band II, Band IV, Band V
Evaluated and Tested band	WCDMA Band II, Band IV, Band V

The product was installed into Notebook Computer (Brand Name: Lenovo, Model Name: TP00147C) during test, and the host information was recorded in the following table.

WWAN Antenna Information for Host				
Main Antenna	**Manufacturer**	SPEEDWIRE	**Peak gain (dBi)**	WCDMA Band II: 1.48 WCDMA Band IV: 1.90 WCDMA Band V: -0.73
	Part number	DC330022M00	**Type**	PIFA

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

1.2 Product Specification of Equipment Under Test

Product Specification is subject to this standard	
Tx Frequency	**WCDMA:** Band V: 826.4 MHz ~ 846.6 MHz Band II: 1852.4 MHz ~ 1907.6 MHz Band IV: 1712.4 MHz ~ 1752.6 MHz
Rx Frequency	**WCDMA:** Band V: 871.4 MHz ~ 891.6 MHz Band II: 1932.4 MHz ~ 1987.6 MHz Band IV: 2112.4 MHz ~ 2152.6 MHz
Maximum Output Power to Antenna	**WCDMA:** Band V: 23.12 dBm Band II: 23.17 dBm Band IV: 23.13 dBm
Type of Modulation	WCDMA: BPSK (Uplink) HSDPA: 64QAM (Downlink) HSUPA: QPSK (Uplink)

1.3 Modification of EUT

No modifications made to the EUT during the testing.

1.4 Testing Location

Test Site	Sporton International Inc. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333
Test Site No.	**Sporton Site No.**
	TH03-HY
Test Engineer	Diego Huang
Temperature (℃)	21.9~23.7
Relative Humidity (%)	50.5~52.7

Test Site	Sporton International Inc. Wensan Laboratory
Test Site Location	No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010
Test Site No.	**Sporton Site No.**
	03CH12-HY (TAF Code: 3786)
Test Engineer	Bill Chang, Tim Lee and Wilson Wu
Temperature (℃)	20.0~25.0
Relative Humidity (%)	50.0~60.0
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 Applicable Standards

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

- ANSI C63.26-2015
- ANSI / TIA-603-E
- FCC 47 CFR Part 2, 22(H), 24(E), 27(L)
- FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01
- FCC KDB 414788 D01 Radiated Test Site v01r01

Remark:

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. 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 were performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

Radiated emissions were investigated as following frequency range:

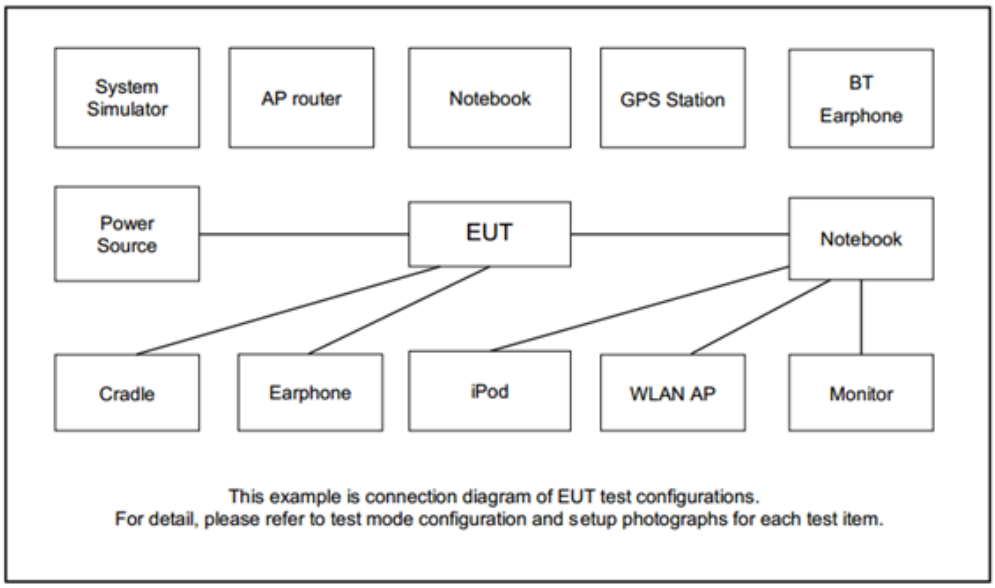
1. 30 MHz to 9000 MHz for WCDMA Band V
2. 30 MHz to 18000 MHz for WCDMA Band IV
3. 30 MHz to 19100 MHz for WCDMA Band II

All modes, data rates and positions were investigated.

Test modes are chosen to be reported as the worst case configuration below:

Test Modes		
Band	**Radiated TCs**	**Conducted TCs**
WCDMA Band V	-	■ RMC 12.2Kbps Link
WCDMA Band II	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link
WCDMA Band IV	■ RMC 12.2Kbps Link	■ RMC 12.2Kbps Link

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.	Earphone	Google	G019A	N/A	Shielded, 1.2 m	N/A
2.	System Simulator	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m

2.4 Frequency List of Low/Middle/High Channels

Frequency List				
Band	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
WCDMA Band V	Channel	4132	4182	4233
	Frequency	826.4	836.4	846.6
WCDMA Band II	Channel	9262	9400	9538
	Frequency	1852.4	1880.0	1907.6
WCDMA Band IV	Channel	1312	1413	1513
	Frequency	1712.4	1732.6	1752.6

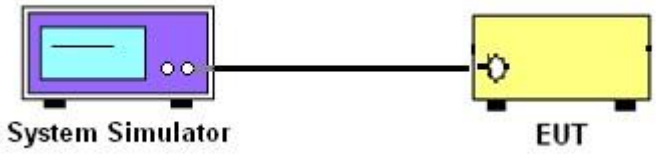
3 Conducted Test Result

3.1 Measuring Instruments

Please refer to the measuring equipment list in 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 and ERP/EIRP

3.2.1 Description of the Conducted Output Power and ERP/EIRP

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

The ERP of mobile transmitters must not exceed 7 Watts for WCDMA Band V

The EIRP of mobile transmitters must not exceed 2 Watts for WCDMA Band II

The EIRP of mobile transmitters must not exceed 1 Watts for WCDMA Band IV

According to KDB 412172 D01 Power Approach,

EIRP = $P_T + G_T – L_C$, ERP = EIRP -2.15, 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

3.2.2 Test Procedures

1. The transmitter output port is connected to the system simulator.
2. Set EUT at maximum power through system simulator.
3. Select the lowest, middle, and the highest channels for each band and different modulation.
4. Measure the maximum burst average power for GSM and maximum average power for other modulation signal.

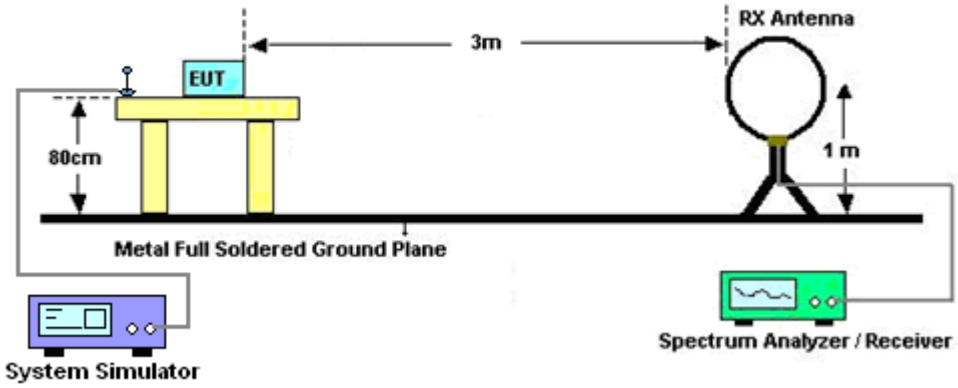
4 Radiated Test Items

4.1 Measuring Instruments

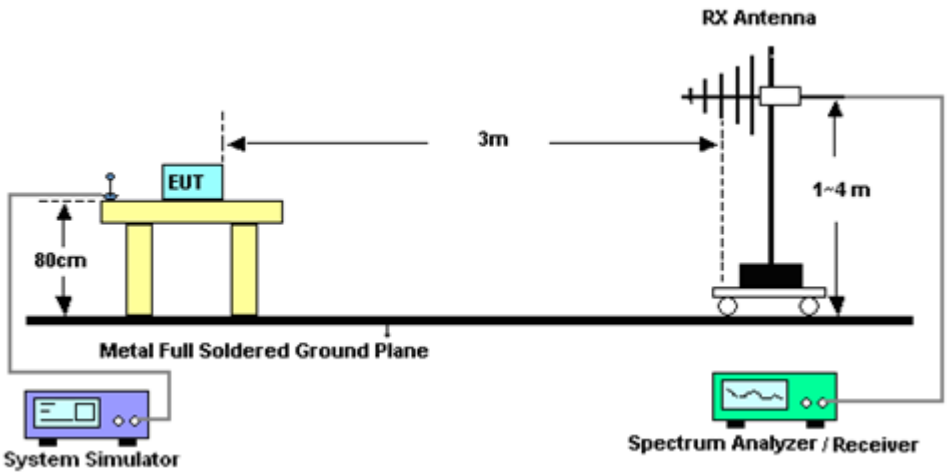
Please refer to the measuring equipment list in this test report.

4.2 Test Setup

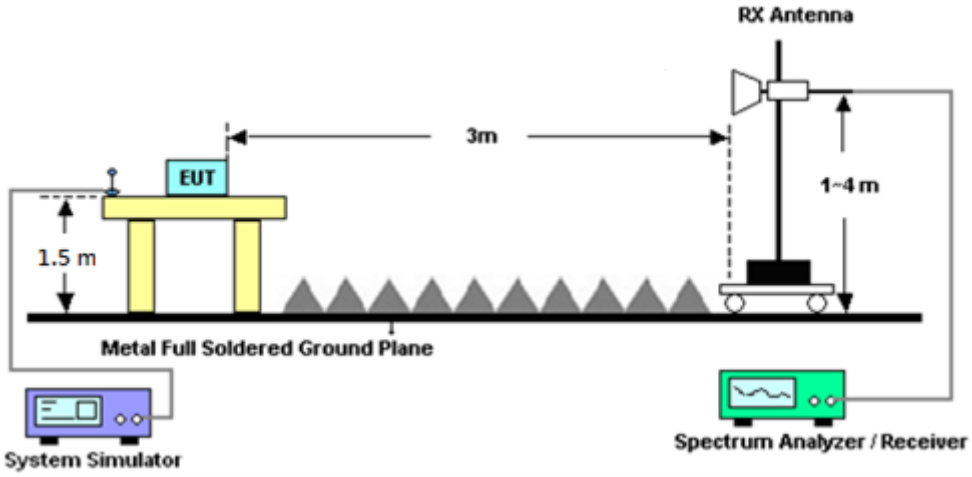
For radiated test below 30MHz



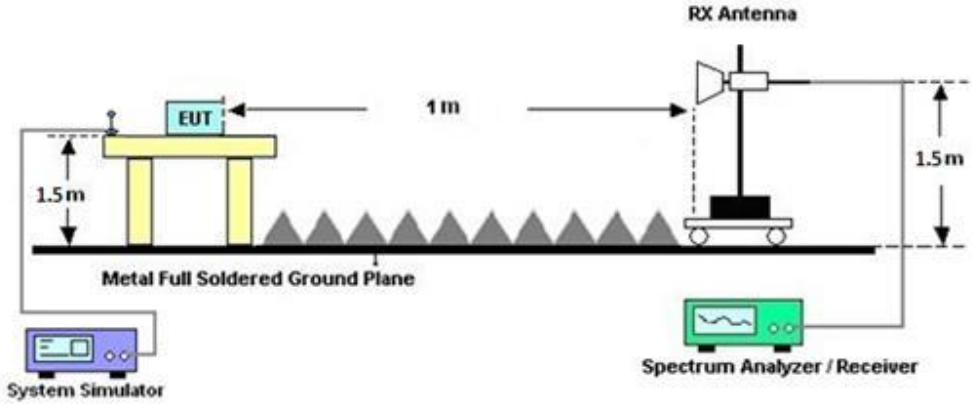
For radiated test from 30MHz to 1GHz



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 starts from 9 kHz to 30 MHz, is pre-scanned and the result which is 20 dB lower than the limit line is 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 Field Strength of Spurious Radiation Measurement

4.4.1 Description of Field Strength of Spurious Radiated Measurement

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 43 + 10 log (P) dB. 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 is placed on a rotatable wooden table 0.8 meters for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz above the ground.
2. The EUT is set 3 meters away from the receiving antenna, which is mounted on the antenna tower.
3. The table is rotated 360 degrees to determine the position of the highest spurious emission.
4. The height of the receiving antenna is varied between one meter and four meters to search for the maximum spurious emission for both horizontal and vertical polarizations.
5. Make the measurement with the spectrum analyzer's RBW = 1 MHz, VBW = 3 MHz, taking record of maximum spurious emission.
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 shall be excluded against the limit line in the operating frequency band.
10. The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

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	100315	9 kHz~30 MHz	Feb. 28, 2023	Dec. 02, 2023~ Dec. 12, 2023	Feb. 27, 2024	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N-06	37059 & 01	30MHz~1GHz	Nov. 03, 2023	Dec. 02, 2023~ Dec. 12, 2023	Nov. 02, 2024	Radiation (03CH12-HY)
Bilog Antenna	TESEQ	CBL 6111D & 00800N1D01N-06	40103 & 07	30MHz~1GHz	Apr. 23, 2023	Dec. 02, 2023~ Dec. 12, 2023	Apr. 22, 2024	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1328	1GHz~18GHz	Dec. 15, 2022	Dec. 02, 2023~ Dec. 12, 2023	Dec. 14, 2023	Radiation (03CH12-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-02114	1GHz~18GHz	Jul. 31, 2023	Dec. 02, 2023~ Dec. 12, 2023	Jul. 30, 2024	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA9170	1224	18GHz-40GHz	Jul. 10, 2023	Dec. 02, 2023~ Dec. 12, 2023	Jul. 09, 2024	Radiation (03CH12-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA9170	00991	18GHz-40GHz	Jun. 01, 2023	Dec. 02, 2023~ Dec. 12, 2023	May 31, 2024	Radiation (03CH12-HY)
Preamplifier	COM-POWER	PA-103A	161075	10MHz~1GHz	Mar. 21, 2023	Dec. 02, 2023~ Dec. 12, 2023	Mar. 20, 2024	Radiation (03CH12-HY)
Preamplifier	Agilent	8449B	3008A02375	1GHz~26.5GHz	May 23, 2023	Dec. 02, 2023~ Dec. 12, 2023	May 22, 2024	Radiation (03CH12-HY)
Preamplifier	E-INSTRUMENT TECH LTD.	ERA-100M-18G-56-01-A70	EC1900249	1GHz-18GHz	Dec. 21, 2022	Dec. 02, 2023~ Dec. 12, 2023	Dec. 20, 2023	Radiation (03CH12-HY)
Preamplifier	EMEC	EM18G40G	060801	18GHz~40GHz	Jun. 27, 2023	Dec. 02, 2023~ Dec. 12, 2023	Jun. 26, 2024	Radiation (03CH12-HY)
Spectrum Analyzer	Agilent	N9010A	MY53470118	10Hz~44GHz	Jan. 10, 2023	Dec. 02, 2023~ Dec. 12, 2023	Jan. 09, 2024	Radiation (03CH12-HY)
Filter	Wainwright	WHKX12-900-1000-15000-60SS	SN12	1GHz High Pass Filter	Sep. 11, 2023	Dec. 02, 2023~ Dec. 12, 2023	Sep. 10, 2024	Radiation (03CH12-HY)
Filter	Wainwright	WHKX12-2700-3000-18000-60ST	SN2	3GHz High Pass Filter	Mar. 14, 2023	Dec. 02, 2023~ Dec. 12, 2023	Mar. 13, 2024	Radiation (03CH12-HY)
Filter	Wainwright	WHKX8-5872.5-6750-18000-40ST	SN2	6.75GHz High Pass Filter	Mar. 14, 2023	Dec. 02, 2023~ Dec. 12, 2023	Mar. 13, 2024	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803951/2	9kHz~30MHz	Mar. 07, 2023	Dec. 02, 2023~ Dec. 12, 2023	Mar. 06, 2024	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 126E	0058/126E	30MHz~18GHz	Dec. 20, 2022	Dec. 02, 2023~ Dec. 12, 2023	Dec. 19, 2023	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	505134/2	30MHz~40GHz	Dec. 20, 2022	Dec. 02, 2023~ Dec. 12, 2023	Dec. 19, 2023	Radiation (03CH12-HY)
RF Cable	HUBER + SUHNER	SUCOFLEX 102	803953/2	30MHz~40GHz	Dec. 20, 2022	Dec. 02, 2023~ Dec. 12, 2023	Dec. 19, 2023	Radiation (03CH12-HY)
Hygrometer	TECPEL	DTM-303B	TP210117	N/A	Oct. 19, 2023	Dec. 02, 2023~ Dec. 12, 2023	Oct. 18, 2024	Radiation (03CH12-HY)
Controller	EMEC	EM1000	N/A	Control Turn table & Ant Mast	N/A	Dec. 02, 2023~ Dec. 12, 2023	N/A	Radiation (03CH12-HY)
Antenna Mast	EMEC	AM-BS-4500-B	N/A	1m~4m	N/A	Dec. 02, 2023~ Dec. 12, 2023	N/A	Radiation (03CH12-HY)
Turn Table	EMEC	TT2000	N/A	0~360 Degree	N/A	Dec. 02, 2023~ Dec. 12, 2023	N/A	Radiation (03CH12-HY)
Software	Audix	E3 6.2009-8-24	RK-000989	N/A	N/A	Dec. 02, 2023~ Dec. 12, 2023	N/A	Radiation (03CH12-HY)
Radio Communication Analyzer	Anritsu	MT8821C	6201664755	LTE FDD/TDD LTE-2CC DLCA/ULCA	Jul. 18, 2023	Dec. 15, 2023~ Dec. 18, 2023	Jul. 17, 2024	Conducted (TH03-HY)
Coupler	Warison	20dB 25W SMA Directional Coupler	#B	1-18GHz	Jan. 06, 2023	Dec. 15, 2023~ Dec. 18, 2023	Jan. 05, 2024	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))	3.07 dB

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	3.63 dB

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.14 dB

Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power) & ERP / EIRP

WCDMA Band V Maximum Average Power [dBm] (GT - LC = -0.73 dB)					
Channel	4132	4182	4233	ERP (dBm)	ERP (W)
Frequency	826.4	836.4	846.6		
RMC 12.2K	23.06	23.12	23.06	20.97	0.1250
HSDPA Subtest-1	22.04	22.11	22.10		
HSDPA Subtest-2	22.09	22.10	22.07		
HSDPA Subtest-3	21.50	21.62	21.56		
HSDPA Subtest-4	21.54	21.58	21.57		
HSUPA Subtest-1	22.10	22.18	22.14		
HSUPA Subtest-2	20.00	20.15	20.11		
HSUPA Subtest-3	21.04	21.15	21.11		
HSUPA Subtest-4	20.06	20.14	20.11		
HSUPA Subtest-5	22.00	22.10	22.20		
Limit	ERP < 7W			Result	Pass

WCDMA Band II Maximum Average Power [dBm] (GT - LC = 1.48 dB)					
Channel	9262	9400	9538	EIRP (dBm)	EIRP (W)
Frequency	1852.4	1880	1907.6		
RMC 12.2K	23.09	23.17	23.08	23.17	0.2075
HSDPA Subtest-1	22.13	22.19	22.08		
HSDPA Subtest-2	22.10	22.20	22.00		
HSDPA Subtest-3	21.60	21.61	21.51		
HSDPA Subtest-4	21.63	21.64	21.51		
HSUPA Subtest-1	22.11	22.22	22.05		
HSUPA Subtest-2	20.08	20.22	20.07		
HSUPA Subtest-3	21.13	21.18	21.12		
HSUPA Subtest-4	20.14	20.23	20.02		
HSUPA Subtest-5	22.10	22.20	22.10		
Limit	EIRP < 2W			Result	Pass

WCDMA Band IV Maximum Average Power [dBm] (GT - LC = 1.9 dB)					
Channel	1312	1413	1513	EIRP (dBm)	EIRP (W)
Frequency	1712.4	1732.6	1752.6		
RMC 12.2K	23.09	23.13	23.05	23.13	0.2056
HSDPA Subtest-1	22.03	22.14	22.07		
HSDPA Subtest-2	22.01	22.04	22.05		
HSDPA Subtest-3	21.54	21.54	21.52		
HSDPA Subtest-4	21.53	21.53	21.51		
HSUPA Subtest-1	22.08	22.11	22.10		
HSUPA Subtest-2	20.10	20.07	20.13		
HSUPA Subtest-3	21.04	21.06	21.10		
HSUPA Subtest-4	20.07	20.09	20.11		
HSUPA Subtest-5	22.10	22.10	22.10		
Limit	EIRP < 1W			Result	Pass

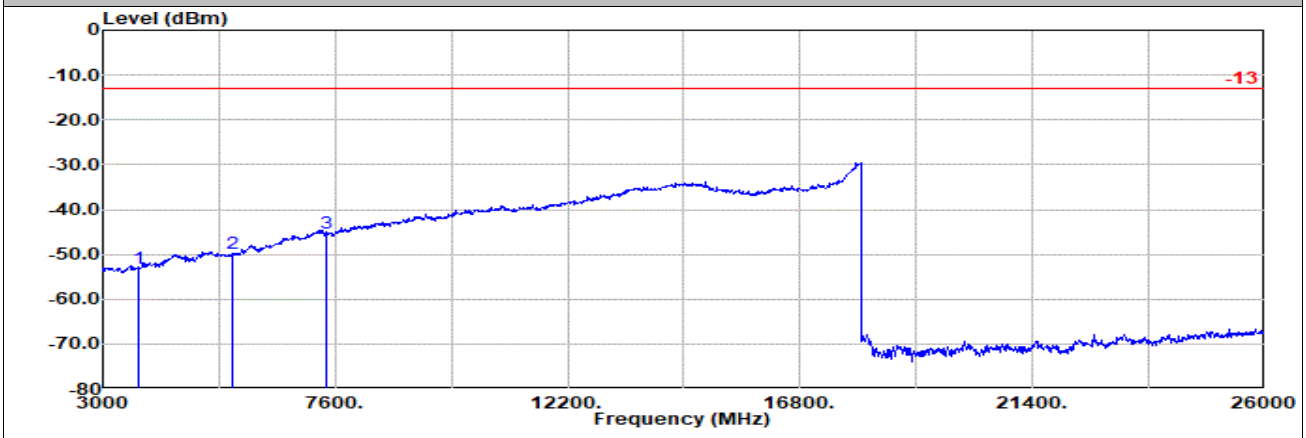
Appendix B. Test Results of Radiated Test

B1. Summary of each worse mode

Part	Mode	Ch	Freq (MHz)	Level (dBm)	Detector	Ant Factor (dB/m)	Amp\Cbl (dB)	Filter (dB)	EIRP CF (dB)	Reading (dBuV)	Limit (dBm)	Margin (dB)	Pol	Ant
Part 24E	1	M	7520.000	-45.19	RMS	36.46	-22.19	0.72	-95.23	35.05	-13.00	-32.19	V	Main
Part 27L	2	M	6930.000	-45.83	RMS	36.00	-22.52	0.71	-95.23	35.21	-13.00	-32.83	H	Main

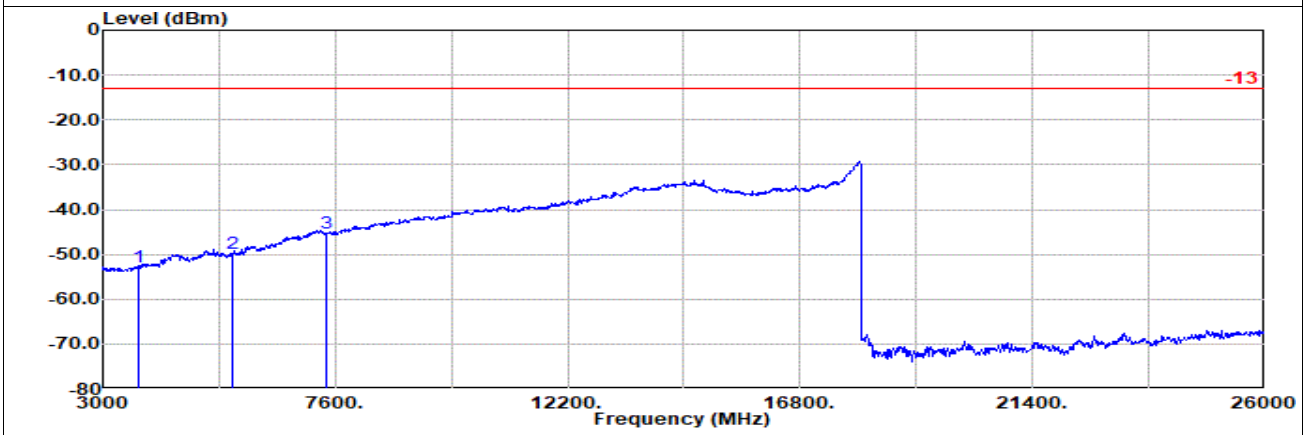
Main

Part 24E Mode 1
WCDMA B2 WCDMA B2 Ch9262
L



Site : 03CH12-HY
Condition: -13 3m 9120D-02114-230731 Horizontal
: WCDMA B2 Ch9262

	Freq	Level	Detector	Ant Factor	Amp\Cb l	Filter	EIRPCF	Readin g	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	3704.00	-53.16	RMS	29.72	-24.09	1.14	-95.23	35.30	-13.00	-40.16	Horizontal
2	5557.00	-49.86	RMS	33.11	-23.30	0.66	-95.23	34.90	-13.00	-36.86	Horizontal
3	7409.00	-45.23	RMS	36.70	-22.24	0.64	-95.23	34.90	-13.00	-32.23	Horizontal

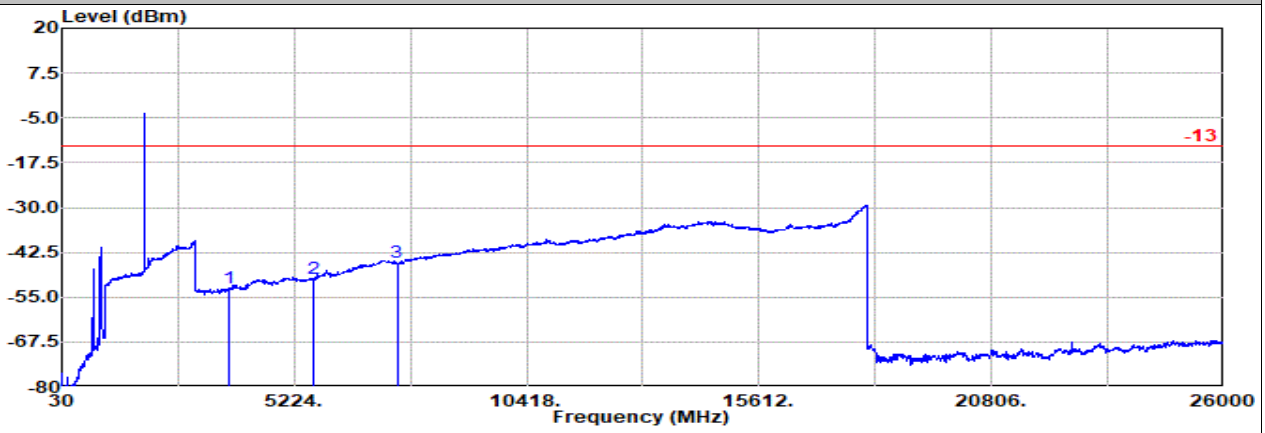


Site : 03CH12-HY
Condition: -13 3m 9120D-02114-230731 Vertical
: WCDMA B2 Ch9262

	Freq	Level	Detector	Ant Factor	Amp\Cb l	Filter	EIRPCF	Readin g	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	3704.00	-52.90	RMS	29.72	-24.09	1.14	-95.23	35.56	-13.00	-39.90	Vertical
2	5557.00	-49.96	RMS	33.11	-23.30	0.66	-95.23	34.80	-13.00	-36.96	Vertical
3	7409.00	-45.35	RMS	36.70	-22.24	0.64	-95.23	34.78	-13.00	-32.35	Vertical

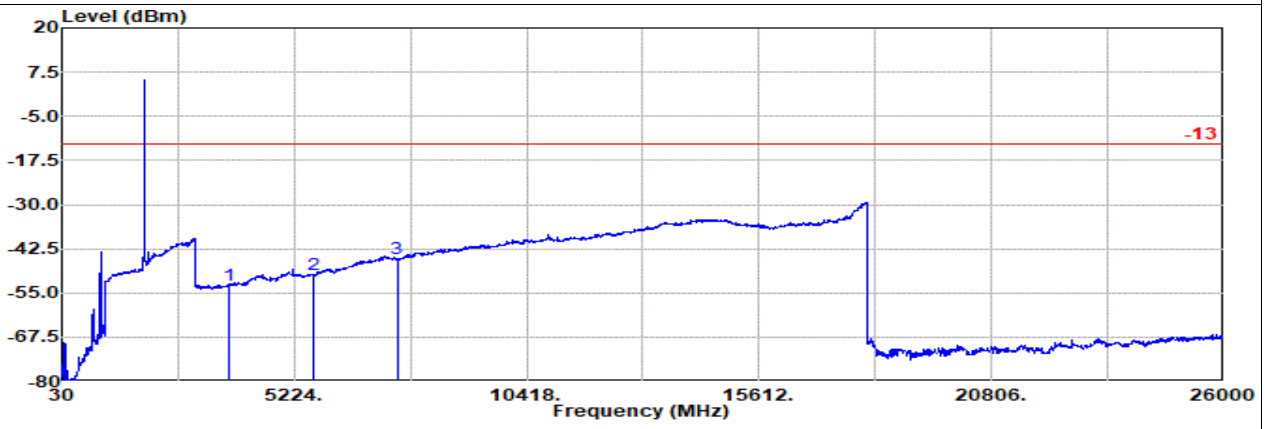
Main

Part 24E Mode 1
WCDMA B2 WCDMA B2 Ch9400
M



Site : 03CH12-HY
Condition: -13 3m 9120D-02114-230731 Horizontal
: WCDMA B2 Ch9400

	Freq	Level	Detector	Ant Factor	Amp\Cb l	Filter	EIRPCF	Reading	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	3760.00	-52.58	RMS	29.96	-23.98	1.08	-95.23	35.59	-13.00	-39.58	Horizontal
2	5640.00	-49.90	RMS	33.20	-23.31	0.62	-95.23	34.82	-13.00	-36.90	Horizontal
3	7520.00	-45.33	RMS	36.46	-22.19	0.72	-95.23	34.91	-13.00	-32.33	Horizontal



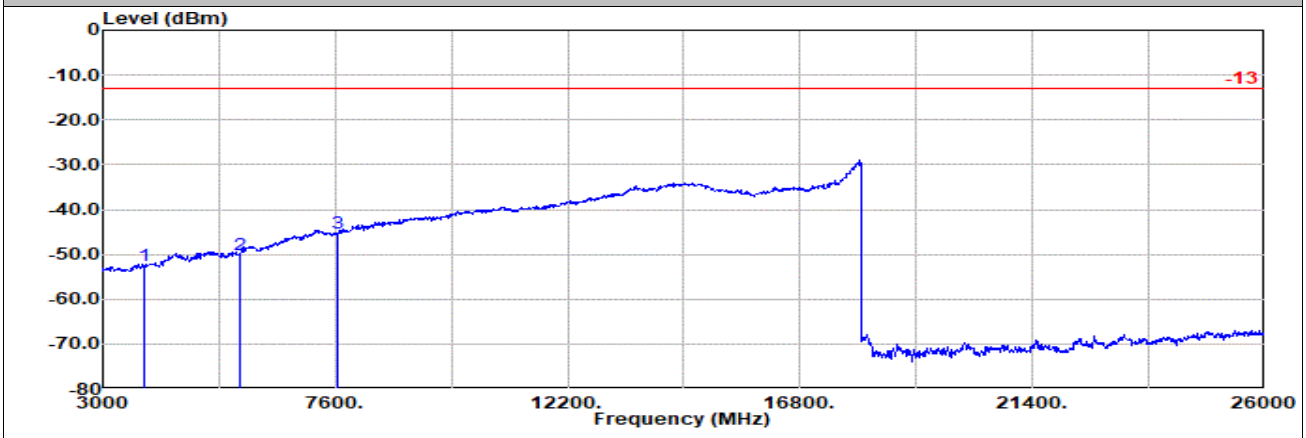
Site : 03CH12-HY
Condition: -13 3m 9120D-02114-230731 Vertical
: WCDMA B2 Ch9400

	Freq	Level	Detector	Ant Factor	Amp\Cb l	Filter	EIRPCF	Reading	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	3760.00	-52.76	RMS	29.96	-23.98	1.08	-95.23	35.41	-13.00	-39.76	Vertical
2	5640.00	-49.72	RMS	33.20	-23.31	0.62	-95.23	35.00	-13.00	-36.72	Vertical
3	7520.00	-45.19	RMS	36.46	-22.19	0.72	-95.23	35.05	-13.00	-32.19	Vertical

Remark: The over limit signal before #1 is fundamental signal which can be ignored.

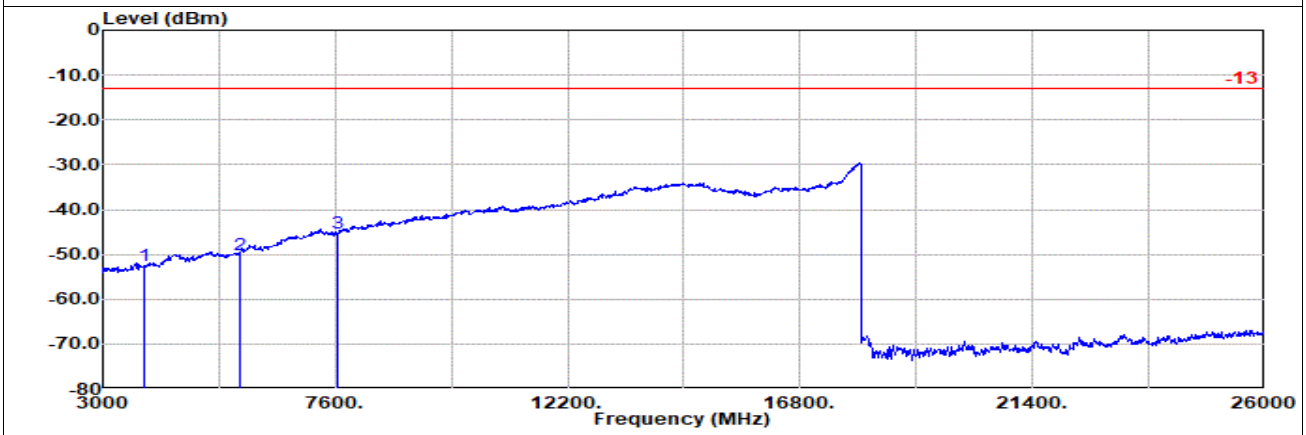
Main

Part 24E Mode 1
WCDMA B2 WCDMA B2 Ch9538
H



Site : 03CH12-HY
Condition: -13 3m 9120D-02114-230731 Horizontal
: WCDMA B2 Ch9538

	Freq	Level	Detector	Ant Factor	Amp\Cb l	Filter	EIRPCF	Readin g	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	3815.00	-52.59	RMS	30.29	-23.88	1.02	-95.23	35.21	-13.00	-39.59	Horizontal
2	5722.00	-50.19	RMS	33.28	-23.27	0.59	-95.23	34.44	-13.00	-37.19	Horizontal
3	7630.00	-45.25	RMS	36.46	-22.17	0.79	-95.23	34.90	-13.00	-32.25	Horizontal

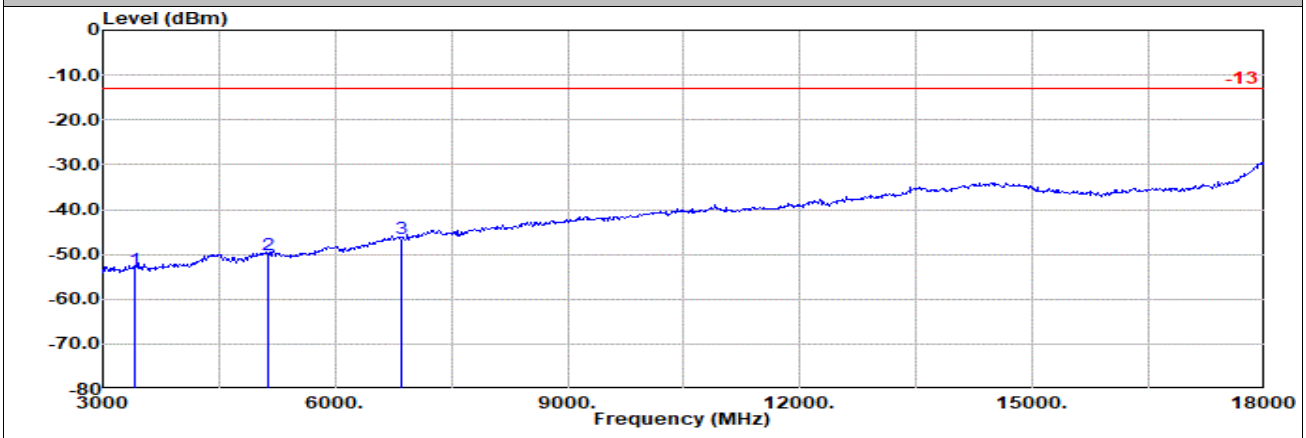


Site : 03CH12-HY
Condition: -13 3m 9120D-02114-230731 Vertical
: WCDMA B2 Ch9538

	Freq	Level	Detector	Ant Factor	Amp\Cb l	Filter	EIRPCF	Readin g	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	3815.00	-52.44	RMS	30.29	-23.88	1.02	-95.23	35.36	-13.00	-39.44	Vertical
2	5722.00	-49.98	RMS	33.28	-23.27	0.59	-95.23	34.65	-13.00	-36.98	Vertical
3	7630.00	-45.34	RMS	36.46	-22.17	0.79	-95.23	34.81	-13.00	-32.34	Vertical

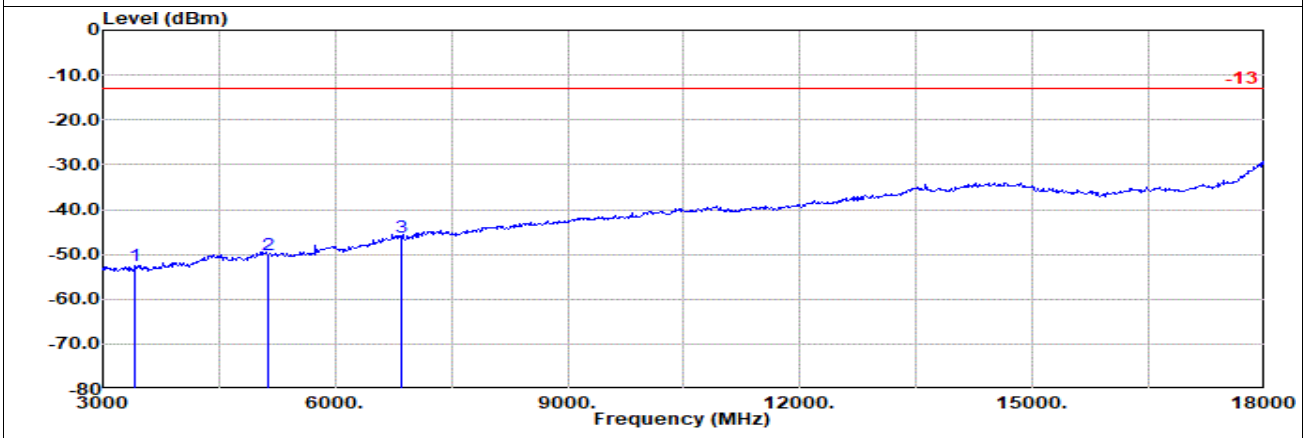
Main

Part 27L Mode 2
WCDMA B4 WCDMA B4 Ch1312
L



Site : 03CH12-HY
Condition: -13 3m 9120D-02114-230731 Horizontal
: WCDMA B4 Ch1312

	Freq	Level	Detector	Ant Factor	Amp\Cb l	Filter	EIRPCF	Reading	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	3424.00	-53.29	RMS	29.75	-24.56	1.20	-95.23	35.55	-13.00	-40.29	Horizontal
2	5137.00	-50.14	RMS	33.28	-23.67	0.68	-95.23	34.80	-13.00	-37.14	Horizontal
3	6849.00	-46.37	RMS	36.20	-22.53	0.73	-95.23	34.46	-13.00	-33.37	Horizontal

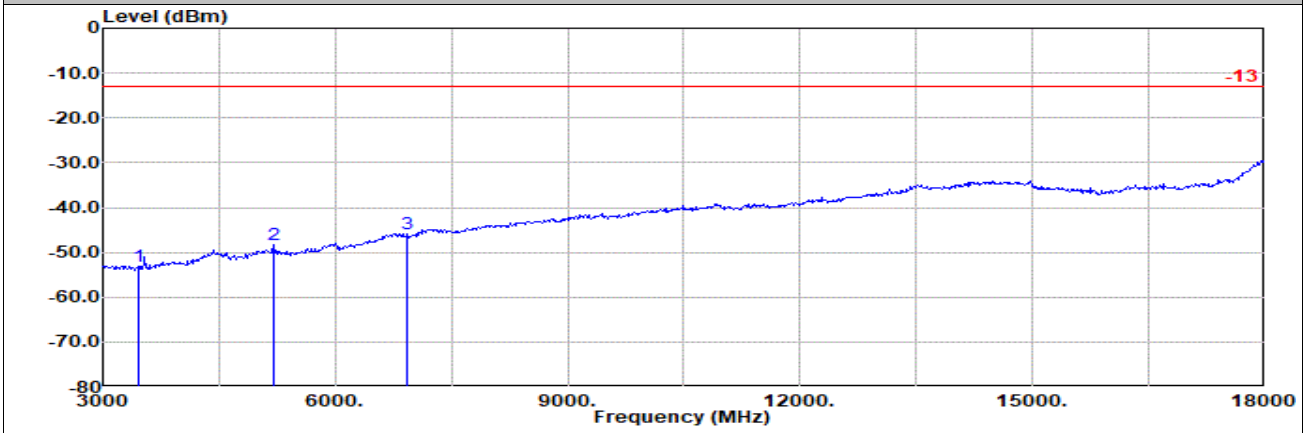


Site : 03CH12-HY
Condition: -13 3m 9120D-02114-230731 Vertical
: WCDMA B4 Ch1312

	Freq	Level	Detector	Ant Factor	Amp\Cb l	Filter	EIRPCF	Reading	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	3424.00	-52.58	RMS	29.75	-24.56	1.20	-95.23	36.26	-13.00	-39.58	Vertical
2	5137.00	-49.97	RMS	33.28	-23.67	0.68	-95.23	34.97	-13.00	-36.97	Vertical
3	6849.00	-46.33	RMS	36.20	-22.53	0.73	-95.23	34.50	-13.00	-33.33	Vertical

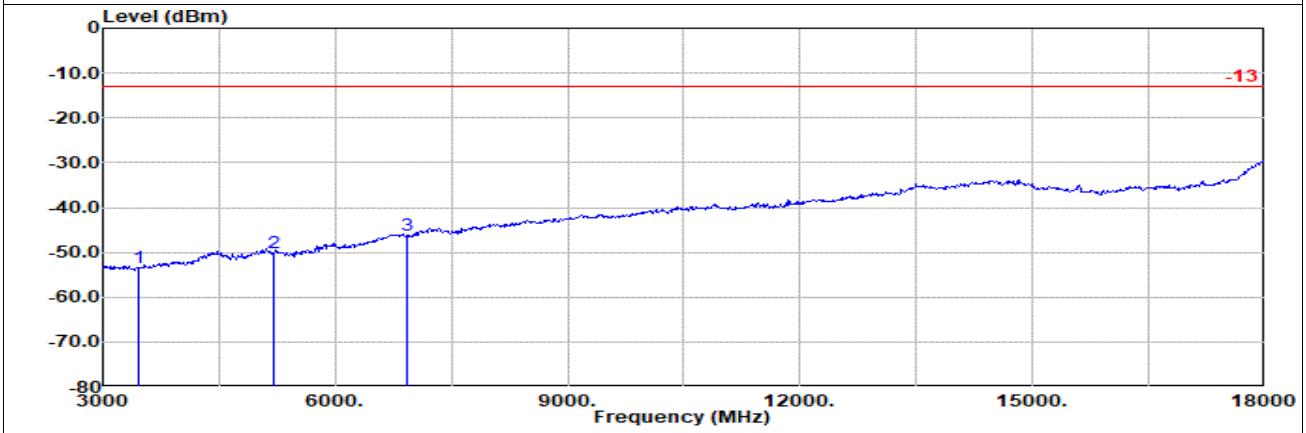
Main

Part 27L Mode 2
WCDMA B4 WCDMA B4 Ch1413
M



Site : 03CH12-HY
Condition: -13 3m 9120D-02114-230731 Horizontal
: WCDMA B2 Ch9400

	Freq	Level	Detector	Ant Factor	Amp\Cb l	Filter	EIRPCF	Readin g	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	3465.00	-53.08	RMS	29.74	-24.45	1.21	-95.23	35.65	-13.00	-40.08	Horizontal
2	5197.00	-48.25	RMS	33.11	-23.58	0.71	-95.23	36.74	-13.00	-35.25	Horizontal
3	6930.00	-45.83	RMS	36.00	-22.52	0.71	-95.23	35.21	-13.00	-32.83	Horizontal

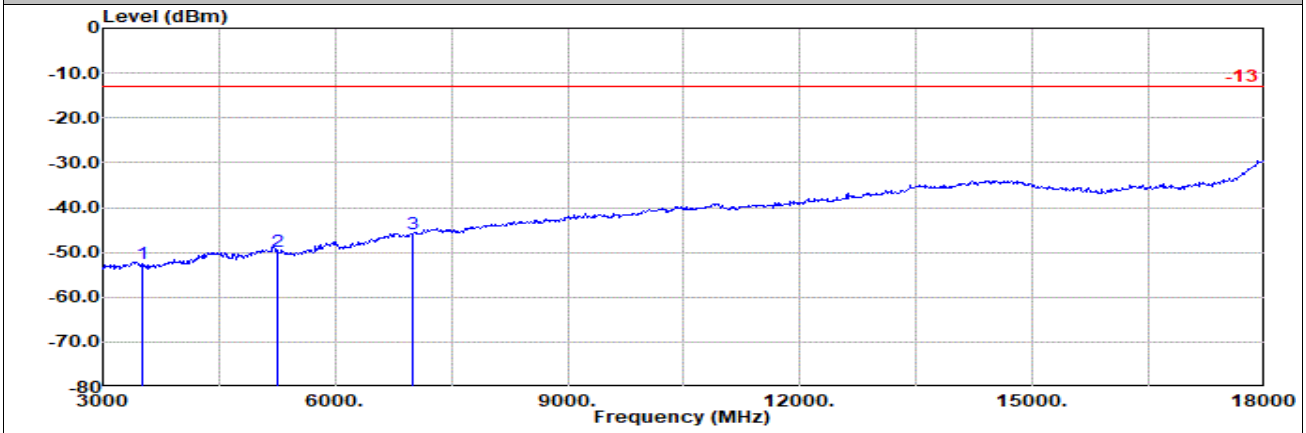


Site : 03CH12-HY
Condition: -13 3m 9120D-02114-230731 Vertical
: WCDMA B2 Ch9400

	Freq	Level	Detector	Ant Factor	Amp\Cb l	Filter	EIRPCF	Readin g	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	3465.00	-53.52	RMS	29.74	-24.45	1.21	-95.23	35.21	-13.00	-40.52	Vertical
2	5197.00	-50.00	RMS	33.11	-23.58	0.71	-95.23	34.99	-13.00	-37.00	Vertical
3	6930.00	-46.22	RMS	36.00	-22.52	0.71	-95.23	34.82	-13.00	-33.22	Vertical

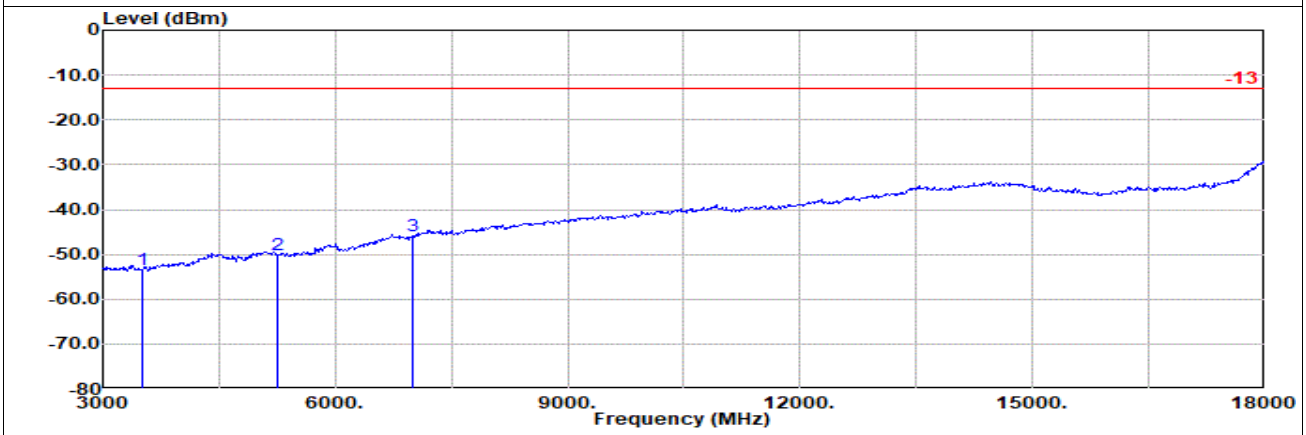
Main

Part 27L Mode 2
WCDMA B4 WCDMA B4 Ch1513
H



Site : 03CH12-HY
Condition: -13 3m 9120D-02114-230731 Horizontal
: WCDMA B4 Ch1513

	Freq	Level	Detector	Ant Factor	Amp\Cbl	Filter	EIRPCF	Reading	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	3505.00	-52.58	RMS	29.60	-24.36	1.22	-95.23	36.19	-13.00	-39.58	Horizontal
2	5257.00	-49.82	RMS	33.20	-23.50	0.73	-95.23	34.98	-13.00	-36.82	Horizontal
3	7010.00	-46.02	RMS	36.14	-22.50	0.70	-95.23	34.87	-13.00	-33.02	Horizontal



Site : 03CH12-HY
Condition: -13 3m 9120D-02114-230731 Vertical
: WCDMA B4 Ch1513

	Freq	Level	Detector	Ant Factor	Amp\Cbl	Filter	EIRPCF	Reading	Limit	Margin	Pol
	MHz	dBm		dB/m	dB	dB	dB	dBuV	dBm	dB	
1	3505.00	-53.43	RMS	29.60	-24.36	1.22	-95.23	35.34	-13.00	-40.43	Vertical
2	5257.00	-49.98	RMS	33.20	-23.50	0.73	-95.23	34.82	-13.00	-36.98	Vertical
3	7010.00	-45.89	RMS	36.14	-22.50	0.70	-95.23	35.00	-13.00	-32.89	Vertical