

FCC Test Report (Co-Located)

Report No.: RF190314C24

FCC ID: SLE-LE910CXNF

Test Model: UC-3121-T-US-LX

Series Model: UC-3nnn-v-w-x-y-zzzzzz and OnCell3nnn-v-w-x-y-zzzzzz
(Refer to item 3.1 for more details)

Received Date: Mar. 07, 2019

Test Date: Apr. 01 ~ May 18, 2019

Issued Date: May 23, 2019

Applicant: Moxa Inc.

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TAIWAN

Issued By: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch

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R.O.C.

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33383, TAIWAN (R.O.C.)

FCC Registration / 788550 / TW0003
Designation Number:



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Release Control Record

Issue No.	Description	Date Issued
RF190314C24	Original release.	May 23, 2019

1 Certificate of Conformity

Product: UC-3100 Series wireless computer, OnCell 3120-LTE Series cellular gateway

Brand: MOXA

Test Model: UC-3121-T-US-LX

Series Model: UC-3nnn-v-w-x-y-zzzzzz and OnCell3nnn-v-w-x-y-zzzzzz
(Refer to item 3.1 for more details)

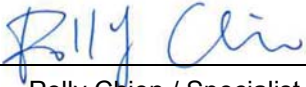
Sample Status: Engineering sample

Applicant: Moxa Inc.

Test Date: Apr. 01 ~ May 18, 2019

Standards: 47 CFR FCC Part 15, Subpart C (Section 15.247)
47 CFR FCC Part 15, Subpart E (Section 15.407)
FCC Part 22, Subpart H
FCC Part 24, Subpart E
FCC Part 27, Subpart C, L, H, F
FCC Part 90, Subpart R
ANSI C63.10:2013
ANSI C63.26:2015

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

Prepared by :  , **Date:** May 23, 2019
Polly Chien / Specialist

:  , **Date:** May 23, 2019
Bruce Chen / Project Engineer

2 Summary of Test Results

Applied Standard	47 CFR FCC Part 15, Subpart C (Section 15.247) 47 CFR FCC Part 15, Subpart E (Section 15.407) FCC Part 22, Subpart H FCC Part 24, Subpart E FCC Part 27, Subpart L, F FCC Part 90, Subpart R		
FCC Clause	Test Item	Result	Remarks
15.205 / 15.209 / 15.247(d) 15.407(b) (1/2/3/4(i/ii)/6)	Radiated Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -1.8dB at 30.00MHz.
2.1053 22.917	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -9.1dB at 2539.80MHz.
2.1053 24.238	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -28.5dB at 33.88MHz.
2.1053 27.53(h)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -31.1dB at 30.00MHz.
2.1053 27.53(c)(2) & (f)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -3.5dB at 1564.00MHz.
2.1053 90.543 (e)(3) & (f)	Radiated Spurious Emissions	Pass	Meet the requirement of limit. Minimum passing margin is -3.1dB at 1591.00MHz.

Note: Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement	Frequency	Expanded Uncertainty (k=2) ($\pm$)
Radiated Emissions up to 1 GHz	9kHz ~ 30MHz	3.04 dB
	30MHz ~ 200MHz	3.59 dB
	200MHz ~ 1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

2.2 Modification Record

There were no modifications required for compliance.

3 General Information

3.1 General Description of EUT

Product	UC-3100 Series wireless computer, OnCell 3120-LTE Series cellular gateway	
Brand	MOXA	
Test Model	UC-3121-T-US-LX	
Series Model	UC-3nnn-v-w-x-y-zzzzzz and OnCell3nnn-v-w-x-y-zzzzzz	
Model Difference	Refer to note as below	
Sample Status	Engineering sample	
Power Supply Rating	Input Voltage: 9 to 36Vdc Input Current: 800mA @ 12Vdc	
Modulation Type	WLAN	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
	EDGE	8PSK
	WCDMA	BPSK, QPSK
	HSDPA	BPSK
	HSUPA	QPSK
	LTE	QPSK, 16QAM
Operating Frequency	WLAN	2412~2462MHz, 5180~5240MHz, 5260~5320MHz, 5500~5720MHz, 5745~5825MHz
	WCDMA Band 5	826.4~846.6MHz
	LTE Band 5 (Channel Bandwidth 1.4MHz)	824.7~848.3MHz
	LTE Band 5 (Channel Bandwidth 3MHz)	825.5~847.5MHz
	LTE Band 5 (Channel Bandwidth 5MHz)	826.5~846.5MHz
	LTE Band 5 (Channel Bandwidth 10MHz)	829.0~844.0MHz
	WCDMA Band 2	1852.4~1907.6MHz
	LTE Band 2 (Channel Bandwidth 1.4MHz)	1850.7~1909.3MHz
	LTE Band 2 (Channel Bandwidth 3MHz)	1851.5~1908.5MHz
	LTE Band 2 (Channel Bandwidth 5MHz)	1852.5~1907.5MHz
	LTE Band 2 (Channel Bandwidth 10MHz)	1855.0~1905.0MHz
	LTE Band 2 (Channel Bandwidth 15MHz)	1857.5~1902.5MHz
	LTE Band 2 (Channel Bandwidth 20MHz)	1860.0~1900.0MHz
	WCDMA Band 4	1712.4~1752.6MHz
	LTE Band 4 (Channel Bandwidth 1.4MHz)	1710.7~1754.3MHz
	LTE Band 4 (Channel Bandwidth 3MHz)	1711.5~1753.5MHz
	LTE Band 4 (Channel Bandwidth 5MHz)	1712.5~1752.5MHz
	LTE Band 4 (Channel Bandwidth 10MHz)	1715~1750MHz
	LTE Band 4 (Channel Bandwidth 15MHz)	1717.5~1747.5MHz
	LTE Band 4 (Channel Bandwidth 20MHz)	1720~1745MHz
	LTE Band 12 (Channel Bandwidth 1.4MHz)	699.7~715.3MHz
	LTE Band 12 (Channel Bandwidth 3MHz)	700.5~714.5MHz
	LTE Band 12 (Channel Bandwidth 5MHz)	701.5~713.5MHz
	LTE Band 12 (Channel Bandwidth 10MHz)	704~711MHz
	LTE Band 13 (Channel Bandwidth 5MHz)	779.5~784.5MHz
	LTE Band 13 (Channel Bandwidth 10MHz)	782MHz

Operating Frequency	LTE Band 14 (Channel Bandwidth 5 MHz)	790.5~795.5 MHz
	LTE Band 14 (Channel Bandwidth 10 MHz)	793 MHz
	LTE Band 66 (Channel Bandwidth 1.4 MHz)	1710.7~1779.3 MHz
	LTE Band 66 (Channel Bandwidth 3 MHz)	1711.5~1778.5 MHz
	LTE Band 66 (Channel Bandwidth 5 MHz)	1712.5~1777.5 MHz
	LTE Band 66 (Channel Bandwidth 10 MHz)	1715~1775 MHz
	LTE Band 66 (Channel Bandwidth 15 MHz)	1717.5~1772.5 MHz
	LTE Band 66 (Channel Bandwidth 20 MHz)	1720~1770 MHz
	LTE Band 71 (Channel Bandwidth 5 MHz)	665.5~695.5 MHz
	LTE Band 71 (Channel Bandwidth 10 MHz)	668~693 MHz
	LTE Band 71 (Channel Bandwidth 15 MHz)	670.5~690.5 MHz
	LTE Band 71 (Channel Bandwidth 20 MHz)	673~688 MHz
Antenna Type	Refer to Note	
Antenna Connector	Refer to Note	
Accessory Device	NA	
Cable Supplied	0.13m shielded power cable w/o core	

Note:

1. This report is prepared for FCC class II permissive change. This report is issued as a supplementary report of the original Unilab Report No.: 1870209R-HPUSP17V00 and 1870209R-HPUSP17V00-A for module (Brand: Telit, Model: LE910C4-NF). The difference compared with the original report is adding host device. Therefore, radiated spurious emissions item is retested in this report. Refer to original report for the other test data.
2. The WLAN module (FCC ID: Z64-WL18DBMOD, Brand: Texas Instruments, Model: WL18MODGI) is collocated in the host device.
3. UC-3100 Series wireless computer and OnCell 3120 Series cellular gateway as shown below.
Model UC-3121-T-US-LX is the representative for final test.

Model	Definition
UC-3nnn-v-w-x-y-zzzzzz and OnCell3nnn-v-w-x-y-zzzzzz	n = 0-9 (standards for different model issue) v = CT or blank (standards for coating issue) w = T or blank (standard for temperature issue) x = US, EU, AU or blank (standards for regional issue) y = CE, LX or blank (standards for OS issue) z = 0-9, A-Z, or blank (standards for marketing issue)

Product Name	Model	Difference
UC-3100 Series wireless computer	UC-3101-T-US-LX	1 GHz CPU, 1GB RAM, 8 GB eMMC, 2 Ethernet ports, 1 serial port, 1 USB port, 1 GPS, onboard LTE-US cat.1 module and Debian 9 (kernel 4.4) pre-installed, -40 to 70°C operating temperature
	UC-3111-T-US-LX	1 GHz CPU, 1GB RAM, 8GB eMMC, 2 Ethernet ports, 2 serial port, 1 USB port, 1 GPS, 1 SD slot, onboard LTE-US cat.1 module and Debian 9 (kernel 4.4) pre-installed, -40 to 70°C operating temperature
	UC-3121-T-US-LX	1 GHz CPU, 1GB RAM, 8GB eMMC, 2 Ethernet ports, 1 serial port, 1 USB port, 1 GPS, 1 CAN port, 1 SD slot, onboard LTE-US cat.1 module and Debian 9 (kernel 4.4) pre-installed, -40 to 70°C operating temperature
OnCell 3120 Series cellular gateway	OnCell 3120-LTE-1-US-T	Industrial LTE Cat 1 cellular gateway, B2/B4/B5/B12/B13/B14/B66/B71, 1 x RS232/422/485 serial port, 2 x 10/100BaseT(X) RJ45 ports, 0 to 55°C
	OnCell 3120-LTE-1-US	Industrial LTE Cat 1 cellular gateway, B2/B4/B5/B12/B13/B14/B66/B71, 1 x RS232/422/485 serial port, 2 x 10/100BaseT(X) RJ45 ports, -30 to 70°C

* OnCell 3120 and UC-3101: The only difference is UI interface.

4. The EUT incorporates a MIMO function. Physically, the host device provides 2 completed transmitters and 2 receivers.

Band	Modulation Mode	TX Function
2.4GHz	802.11b	1TX
	802.11g	1TX
	802.11n (HT20)	2TX
	802.11n (HT40)	1TX
5GHz	802.11a	1TX
	802.11n (HT20)	1TX
	802.11n (HT40)	1TX

5. The EUT uses following antennas.

WLAN			
Type	Dipole	Connecter	SMA
Brand	Mgear	Serial No	ANT-WDB-ARM-02
Frequency	2.4~2.5GHz		4.9~5.825GHz
Gain (dBi)	1.8		1.8

WWAN								
Type	Dipole			Connecter			SMA(Male) Swivel Plug	
Brand	SANAV			Serial No			ANT-LTE-ASM-05 BK	
Band	B2	B4	B5	B12	B13	B14	B66	B71
Gain (dBi)	1.94	2.85	1.82	0.47	4.04	4.04	2.85	0.47

3.2 Description of Test Modes

WLAN 2412~2462MHz:

11 channels are provided for 802.11b, 802.11g and 802.11n (HT20):

Channel	Frequency	Channel	Frequency
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

7 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
3	2422MHz	7	2442MHz
4	2427MHz	8	2447MHz
5	2432MHz	9	2452MHz
6	2437MHz		

WLAN 5180~5240MHz

4 channels are provided for 802.11a, 802.11n (HT20):

Channel	Frequency	Channel	Frequency
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

WLAN 5260~5320MHz

4 channels are provided for 802.11a, 802.11n (HT20):

Channel	Frequency	Channel	Frequency
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

WLAN 5500~5700MHz

8 channels are provided for 802.11a, 802.11n (HT20):

Channel	Frequency	Channel	Frequency
100	5500 MHz	116	5580 MHz
104	5520 MHz	132	5660 MHz
108	5540 MHz	136	5680 MHz
112	5560 MHz	140	5700 MHz

3 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
102	5510 MHz	134	5670 MHz
110	5550 MHz		

WLAN 5745~5825MHz

5 channels are provided for 802.11a, 802.11n (HT20):

Channel	Frequency	Channel	Frequency
149	5745 MHz	161	5805 MHz
153	5765 MHz	165	5825 MHz
157	5785 MHz		

2 channels are provided for 802.11n (HT40):

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

3.2.1 Test Mode Applicability and Tested Channel Detail

EUT Configure Mode	Applicable to		Description
	RE $\geq$ 1G	RE<1G	
-	√	√	-

Where RE $\geq$ 1G: Radiated Emission above 1GHz & Bandedge Measurement RE<1G: Radiated Emission below 1GHz

Note:

1. The EUT had been pre-tested on the positioned of X-plane & Z-plane. The worst cases were found when positioned on X-plane.

Radiated Emission Test (Above 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Tested Channel	Remark
1	802.11n (HT20)	6	-
	WCDMA Band 2	9400 (1880.0MHz)	-
2	802.11n (HT20)	6	-
	WCDMA Band 4	1312 (1712.4MHz)	-
3	802.11n (HT20)	6	-
	WCDMA Band 5	4233 (846.6MHz)	-
4	802.11n (HT20)	6	-
	LTE Band 13	23230 (782MHz)	-
5	802.11n (HT20)	6	-
	LTE Band 14	23355 (795.5MHz)	-
6	802.11a	116	-
	WCDMA Band 2	9400 (1880.0MHz)	-
7	802.11a	116	-
	WCDMA Band 4	1312 (1712.4MHz)	-
8	802.11a	116	-
	WCDMA Band 5	4233 (846.6MHz)	-
9	802.11a	116	-
	LTE Band 13	23230 (782MHz)	-
10	802.11a	116	-
	LTE Band 14	23355 (795.5MHz)	-

*The above test mode was found to be the worst cases test mode and had been chosen for final test.

Radiated Emission Test (Below 1GHz):

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Mode	Tested Channel	Remark
1	802.11n (HT20)	6	-
	WCDMA Band 2	9400 (1880.0MHz)	-
2	802.11n (HT20)	6	-
	WCDMA Band 4	1312 (1712.4MHz)	-
3	802.11n (HT20)	6	-
	WCDMA Band 5	4233 (846.6MHz)	-
4	802.11n (HT20)	6	-
	LTE Band 13	23230 (782MHz)	-
5	802.11n (HT20)	6	-
	LTE Band 14	23355 (795.5MHz)	-
6	802.11a	116	-
	WCDMA Band 2	9400 (1880.0MHz)	-
7	802.11a	116	-
	WCDMA Band 4	1312 (1712.4MHz)	-
8	802.11a	116	-
	WCDMA Band 5	4233 (846.6MHz)	-
9	802.11a	116	-
	LTE Band 13	23230 (782MHz)	-
10	802.11a	116	-
	LTE Band 14	23355 (795.5MHz)	-

*The above test mode was found to be the worst cases test mode and had been chosen for final test.

Test Condition:

Applicable to	Environmental Conditions	Input Power (system)	Tested by
RE $\geq$ 1G	22 deg. C, 66% RH	120Vac, 60Hz	Han Wu
RE<1G	22 deg. C, 68% RH	120Vac, 60Hz	Greg Lin

3.3 Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

ID	Product	Brand	Model No.	Serial No.	FCC ID	Remarks
A.	DC Power supply	acpower	ADC-48-20A	802001	NA	-
B.	Antenna x4	Mgear	ANT-WDB-ARM-02	ANT-WDB-ARM-02	NA	Provided by client.
		SANAV	ANT-LTE-ASM-05 BK	ANT-LTE-ASM-05 BK	NA	Provided by client.

Note: All power cords of the above support units are non-shielded (1.8m).

ID	Descriptions	Qty.	Length (m)	Shielding (Yes/No)	Cores (Qty.)	Remarks
1.	Power	1	0.13	Y	0	Accessory
2.	DC	1	1	N	0	-

3.3.1 Configuration of System under Test



3.4 General Description of Applied Standards

The EUT is a RF Product. According to the specification of the EUT declared by the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C (15.247)

FCC Part 15, Subpart E (15.407)

FCC Part 22, Subpart H

FCC Part 24, Subpart E

FCC Part 27, Subpart L, H, F

FCC Part 90, Subpart R

ANSI C63.10:2013

ANSI C63.26:2015

All test items have been performed and recorded as per the above standards.

4 Test Types and Results

4.1 Radiated Emission and Bandedge Measurement

4.1.1 Limits of Radiated Emission and Bandedge Measurement

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

FCC PART 15.209:

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 ~ 0.490	2400/F(kHz)	300
0.490 ~ 1.705	24000/F(kHz)	30
1.705 ~ 30.0	30	30
30 ~ 88	100	3
88 ~ 216	150	3
216 ~ 960	200	3
Above 960	500	3

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. For frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

Limits of unwanted emission out of the restricted bands

Applicable To			Limit	
789033 D02 General UNII Test Procedure New Rules v02r01			Field Strength at 3m	
			PK: 74 (dBµV/m)	AV: 54 (dBµV/m)
Frequency Band	Applicable To		EIRP Limit	Equivalent Field Strength at 3m
5150~5250 MHz	15.407(b)(1)		PK: -27 (dBm/MHz)	PK: 68.2(dBµV/m)
5250~5350 MHz	15.407(b)(2)			
5470~5725 MHz	15.407(b)(3)			
5725~5850 MHz	☒	15.407(b)(4)(i)	PK: -27 (dBm/MHz) ^{*1} PK: 10 (dBm/MHz) ^{*2} PK: 15.6 (dBm/MHz) ^{*3} PK: 27 (dBm/MHz) ^{*4}	PK: 68.2 (dBµV/m) ^{*1} PK: 105.2 (dBµV/m) ^{*2} PK: 110.8 (dBµV/m) ^{*3} PK: 122.2 (dBµV/m) ^{*4}
	☐	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	
^{*1} beyond 75 MHz or more above of the band edge.			^{*2} below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.	
^{*3} below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.			^{*4} from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.	

Note: The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = \frac{1000000 \sqrt{30 P}}{3} \mu\text{V/m, where } P \text{ is the eirp (Watts).}$$

4.1.2 Test Instruments

Description & Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due
Test Receiver KEYSIGHT	N9038A	MY55420137	Apr. 11, 2018	Apr. 10, 2019
			Apr. 15, 2019	Apr. 14, 2020
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100269	May 29, 2018	May 28, 2019
MXG Vector signal generator Agilent	N5182B	MY53050430	Nov. 19, 2018	Nov. 18, 2019
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Nov. 21, 2018	Nov. 20, 2019
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-1169	Nov. 25, 2018	Nov. 24, 2019
BILOG Antenna SCHWARZBECK	VULB9168	9168-171	Nov. 22, 2018	Nov. 21, 2019
HORN Antenna SCHWARZBECK	9120D	9120D-408	Nov. 25, 2018	Nov. 24, 2019
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Nov. 25, 2018	Nov. 24, 2019
Loop Antenna TESEQ	HLA 6121	45745	Jun. 14, 2018	Jun. 13, 2019
Preamplifier Agilent (Below 1GHz)	8447D	2944A10638	Aug. 08, 2018	Aug. 07, 2019
Preamplifier Agilent (Above 1GHz)	8449B	3008A02367	Feb. 19, 2019	Feb. 18, 2020
RF signal cable HUBER+SUHNER&EMCI	SUCOFLEX 104 & EMC104-SM-SM8000	CABLE-CH9-02 (248780+171006)	Jan. 19, 2019	Jan. 18, 2020
RF signal cable HUBER+SUHNER	SUCOFLEX 104	CABLE-CH9-(250795/4)	Aug. 08, 2018	Aug. 07, 2019
RF signal cable Woken	8D-FB	Cable-CH9-01	Jul. 31, 2018	Jul. 30, 2019
Software BV ADT	ADT_Radiated_ V7.6.15.9.5	NA	NA	NA
Antenna Tower EMCO	2070/2080	512.835.4684	NA	NA
Turn Table EMCO	2087-2.03	NA	NA	NA
Antenna Tower & Turn BV ADT	AT100	AT93021705	NA	NA
Turn Table BV ADT	TT100	TT93021705	NA	NA
Turn Table Controller BV ADT	SC100	SC93021705	NA	NA
Boresight Antenna Fixture	FBA-01	FBA-SIP01	NA	NA
Pre-amplifier (18GHz-40GHz) EMC	EMC184045B	980175	Nov. 14, 2018	Nov. 13, 2019
USB Wideband Power Sensor KEYSIGHT	U2021XA	MY55050005/MY55190 004/MY55190007/MY55 210005	Jul. 17, 2018	Jul. 16, 2019
WIT Standard Temperature And Humidity Chamber	TH-4S-C	W981030	Jun. 04, 2018	Jun. 03, 2019

JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
True RMS Clamp Meter Fluke	325	31130711WS	May 22, 2018	May 21, 2019

Note: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 9.

4.1.3 Test Procedures

For Radiated emission below 30MHz

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Note:

- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 9kHz at frequency below 30MHz.

For Radiated emission above 30MHz

- The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

Note:

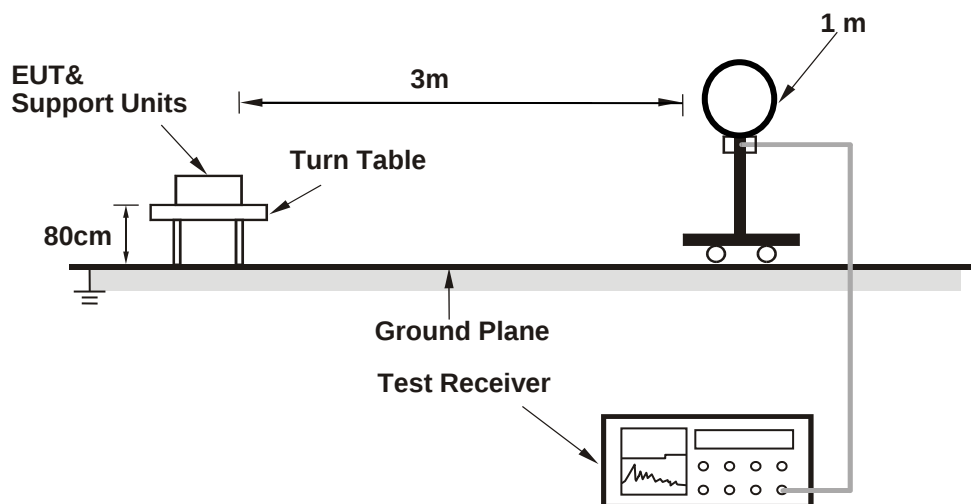
- The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) or Peak detection (PK) at frequency below 1GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.
- The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.
- All modes of operation were investigated and the worst-case emissions are reported.

4.1.4 Deviation from Test Standard

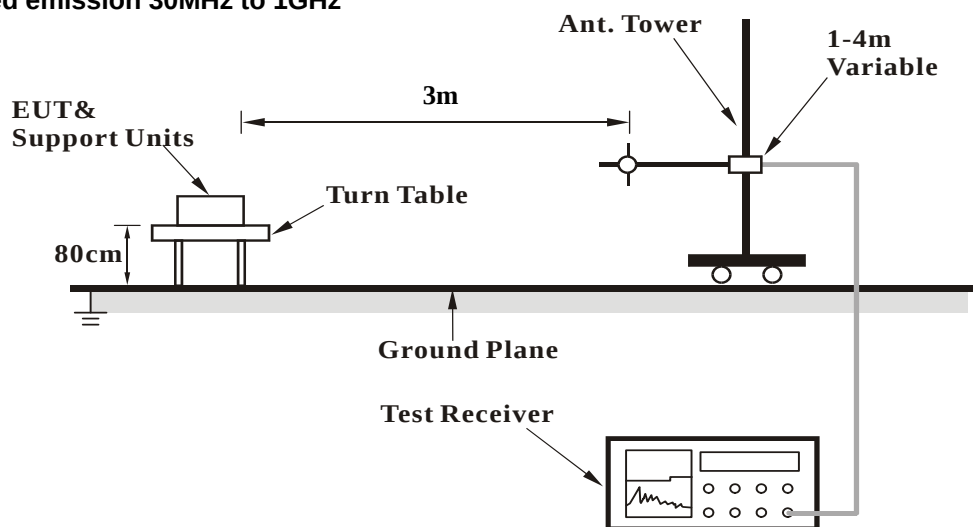
No deviation.

4.1.5 Test Setup

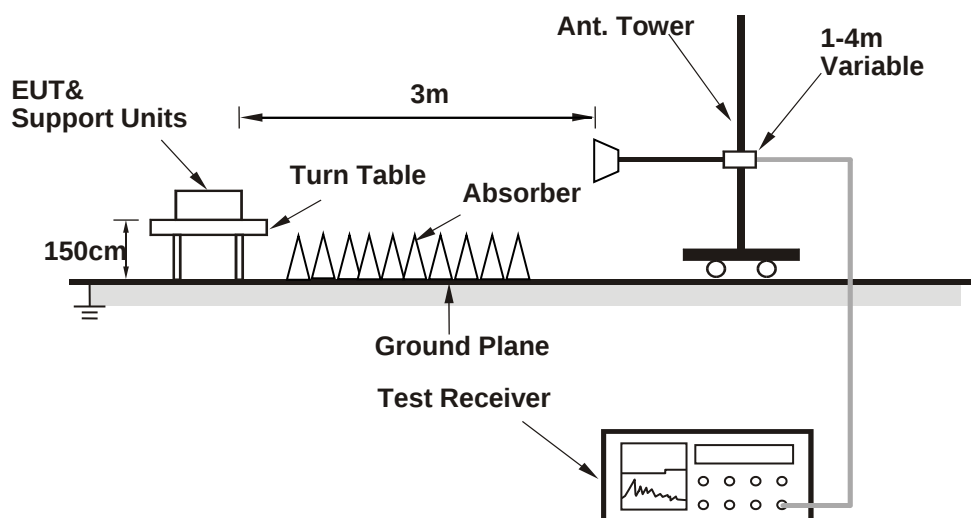
For Radiated emission below 30MHz



For Radiated emission 30MHz to 1GHz



For Radiated emission above 1GHz



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT Operating Conditions

- a. Set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 Test Results

Above 1GHz data:

Mode 1

802.11n (HT20), CH 6 +

WCDMA Band 2, CH 9400

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak (PK) Average (AV)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	96.5 PK			1.96 H	303	64.7	31.8
2	*2437.00	88.9 AV			1.96 H	303	57.1	31.8
3	4874.00	43.3 PK	74.0	-30.7	1.55 H	128	39.8	3.5
4	4874.00	31.8 AV	54.0	-22.2	1.55 H	128	28.3	3.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	111.4 PK			1.46 V	239	79.6	31.8
2	*2437.00	100.9 AV			1.46 V	239	69.1	31.8
3	4874.00	52.5 PK	74.0	-21.5	2.53 V	143	49.0	3.5
4	4874.00	48.3 AV	54.0	-5.7	2.53 V	143	44.8	3.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1880.00	-8.8	31.7	0.0	31.7	33.0	-1.3
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1880.00	-20.5	20.1	0.0	20.1	33.0	-12.9

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-59.3	-50.8	1.3	-49.5	-13.0	-36.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-60.7	-52.4	1.3	-51.1	-13.0	-38.1

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode 2

802.11n (HT20), CH 6 +

WCDMA Band 4, CH 1312

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak Average (AV)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	100.5 PK			1.99 H	303	68.7	31.8
2	*2437.00	88.9 AV			1.99 H	303	57.1	31.8
3	4874.00	43.3 PK	74.0	-30.7	1.54 H	128	39.8	3.5
4	4874.00	31.7 AV	54.0	-22.3	1.54 H	128	28.2	3.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	110.9 PK			1.54 V	238	79.1	31.8
2	*2437.00	100.1 AV			1.54 V	238	68.3	31.8
3	4874.00	52.3 PK	74.0	-21.7	2.50 V	132	48.8	3.5
4	4874.00	47.9 AV	54.0	-6.1	2.50 V	132	44.4	3.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1712.40	-10.8	27.2	0.7	27.9	30.0	-2.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1712.40	-22.0	15.8	0.7	16.5	30.0	-13.5

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3424.80	-61.3	-52.7	1.3	-51.4	-13.0	-38.4
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3424.80	-62.8	-54.7	1.3	-53.4	-13.0	-40.4

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode 3

802.11n (HT20), CH 6 +

WCDMA Band 5, CH 4233

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak Average (AV)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	100.6 PK			1.95 H	301	68.8	31.8
2	*2437.00	88.5 AV			1.95 H	301	56.7	31.8
3	4874.00	43.3 PK	74.0	-30.7	1.49 H	128	39.8	3.5
4	4874.00	32.1 AV	54.0	-21.9	1.49 H	128	28.6	3.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	110.9 PK			1.45 V	237	79.1	31.8
2	*2437.00	100.5 AV			1.45 V	237	68.7	31.8
3	4874.00	52.3 PK	74.0	-21.7	2.50 V	128	48.8	3.5
4	4874.00	48.1 AV	54.0	-5.9	2.50 V	128	44.6	3.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	846.60	-7.2	20.4	3.4	23.8	38.5	-14.7
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	846.60	-10.2	18.0	3.4	21.4	38.5	-17.1

Note: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1693.20	-47.4	-39.8	0.7	-39.1	-13.0	-26.1
2	2539.80	-28.5	-22.3	0.2	-22.1	-13.0	-9.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1693.20	-50.1	-42.8	0.7	-42.1	-13.0	-29.1
2	2539.80	-29.4	-25.3	0.2	-25.1	-13.0	-12.1

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode 4

802.11n (HT20), CH 6 +

LTE Band 13, CH 23230

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak Average (AV)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	101.1 PK			1.93 H	300	69.3	31.8
2	*2437.00	88.8 AV			1.93 H	300	57.0	31.8
3	4874.00	43.4 PK	74.0	-30.6	1.48 H	128	39.9	3.5
4	4874.00	31.9 AV	54.0	-22.1	1.48 H	128	28.4	3.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	111.1 PK			1.44 V	240	79.3	31.8
2	*2437.00	100.7 AV			1.44 V	240	68.9	31.8
3	4874.00	52.0 PK	74.0	-22.0	2.53 V	128	48.5	3.5
4	4874.00	47.8 AV	54.0	-6.2	2.53 V	128	44.3	3.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	782.00	-6.4	19.6	4.0	23.6	34.8	-11.2
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	782.00	-8.7	19.2	4.0	23.2	34.8	-11.6

Note: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1564.00	-52.5	-44.7	1.2	-43.5	-40.0	-3.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1564.00	-53.6	-46.7	1.2	-45.5	-40.0	-5.5

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode 5

802.11n (HT20), CH 6 +

LTE Band 14, CH 23355

Frequency Range	1GHz ~ 25GHz	Detector Function	Peak Average (AV)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	100.9 PK			2.00 H	303	69.1	31.8
2	*2437.00	89.1 AV			2.00 H	303	57.3	31.8
3	4874.00	43.2 PK	74.0	-30.8	1.54 H	131	39.7	3.5
4	4874.00	31.7 AV	54.0	-22.3	1.54 H	131	28.2	3.5
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*2437.00	111.3 PK			1.53 V	232	79.5	31.8
2	*2437.00	100.1 AV			1.53 V	232	68.3	31.8
3	4874.00	52.0 PK	74.0	-22.0	2.60 V	130	48.5	3.5
4	4874.00	48.1 AV	54.0	-5.9	2.60 V	130	44.6	3.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	795.50	-6.2	20.2	4.0	24.2	34.8	-10.6
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	795.50	-9.4	18.2	4.0	22.2	34.8	-12.6

Note: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1591.00	-52.1	-44.2	1.1	-43.1	-40.0	-3.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1591.00	-55.4	-48.2	1.1	-47.1	-40.0	-7.1

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode 6

802.11a, CH 116 +

WCDMA Band 2, CH 9400

Frequency Range	1GHz ~ 40GHz	Detector Function	Peak Average (AV)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	98.0 PK			1.38 H	24	59.8	38.2
2	*5580.00	86.2 AV			1.38 H	24	48.0	38.2
3	11160.00	56.4 PK	74.0	-17.6	3.49 H	148	40.4	16.0
4	11160.00	43.8 AV	54.0	-10.2	3.49 H	148	27.8	16.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	102.3 PK			1.31 V	337	64.1	38.2
2	*5580.00	91.1 AV			1.31 V	337	52.9	38.2
3	11160.00	55.7 PK	74.0	-18.3	2.07 V	269	39.7	16.0
4	11160.00	44.2 AV	54.0	-9.8	2.07 V	269	28.2	16.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1880.00	-9.0	31.5	0.0	31.5	33.0	-1.5
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1880.00	-20.8	19.8	0.0	19.8	33.0	-13.2

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-59.5	-51.0	1.3	-49.7	-13.0	-36.7
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3760.00	-61.1	-52.8	1.3	-51.5	-13.0	-38.5

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode 7

802.11a, CH 116 +

WCDMA Band 4, CH 1312

Frequency Range	1GHz ~ 40GHz	Detector Function	Peak Average (AV)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	97.7 PK			1.49 H	21	59.5	38.2
2	*5580.00	86.1 AV			1.49 H	21	47.9	38.2
3	11160.00	56.3 PK	74.0	-17.7	3.52 H	152	40.3	16.0
4	11160.00	44.2 AV	54.0	-9.8	3.52 H	152	28.2	16.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	102.2 PK			1.39 V	336	64.0	38.2
2	*5580.00	90.9 AV			1.39 V	336	52.7	38.2
3	11160.00	55.5 PK	74.0	-18.5	2.02 V	267	39.5	16.0
4	11160.00	43.7 AV	54.0	-10.3	2.02 V	267	27.7	16.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1712.40	-11.1	26.9	0.7	27.6	30.0	-2.4
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1712.40	-22.3	15.5	0.7	16.2	30.0	-13.8

Note: EIRP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3424.80	-61.7	-53.1	1.3	-51.8	-13.0	-38.8
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3424.80	-63.2	-55.1	1.3	-53.8	-13.0	-40.8

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode 8

802.11a, CH 116 +

WCDMA Band 5, CH 4233

Frequency Range	1GHz ~ 40GHz	Detector Function	Peak Average (AV)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	98.0 PK			1.39 H	25	59.8	38.2
2	*5580.00	85.9 AV			1.39 H	25	47.7	38.2
3	11160.00	55.9 PK	74.0	-18.1	3.50 H	151	39.9	16.0
4	11160.00	43.8 AV	54.0	-10.2	3.50 H	151	27.8	16.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	102.5 PK			1.29 V	344	64.3	38.2
2	*5580.00	90.8 AV			1.29 V	344	52.6	38.2
3	11160.00	56.1 PK	74.0	-17.9	2.06 V	267	40.1	16.0
4	11160.00	43.6 AV	54.0	-10.4	2.06 V	267	27.6	16.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	846.60	-7.3	20.3	3.4	23.7	38.5	-14.8
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	846.60	-10.4	17.8	3.4	21.2	38.5	-17.3

Note: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1693.20	-47.8	-40.2	0.7	-39.5	-13.0	-26.5
2	2539.80	-29.5	-23.3	0.2	-23.1	-13.0	-10.1
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1693.20	-50.5	-43.2	0.7	-42.5	-13.0	-29.5
2	2539.80	-29.9	-25.8	0.2	-25.6	-13.0	-12.6

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode 9

802.11a, CH 116 +

LTE Band 13, CH 23230

Frequency Range	1GHz ~ 40GHz	Detector Function	Peak Average (AV)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	97.8 PK			1.46 H	19	59.6	38.2
2	*5580.00	85.9 AV			1.46 H	19	47.7	38.2
3	11160.00	55.6 PK	74.0	-18.4	3.52 H	148	39.6	16.0
4	11160.00	43.8 AV	54.0	-10.2	3.52 H	148	27.8	16.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	102.7 PK			1.34 V	336	64.5	38.2
2	*5580.00	91.1 AV			1.34 V	336	52.9	38.2
3	11160.00	56.5 PK	74.0	-17.5	2.01 V	266	40.5	16.0
4	11160.00	43.6 AV	54.0	-10.4	2.01 V	266	27.6	16.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	782.00	-6.6	19.4	4.0	23.4	34.8	-11.4
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	782.00	-8.8	19.1	4.0	23.1	34.8	-11.7

Note: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1564.00	-52.8	-45.0	1.2	-43.8	-40.0	-3.8
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1564.00	-53.9	-47.0	1.2	-45.8	-40.0	-5.8

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Mode 10

802.11a, CH 116 +

LTE Band 14, CH 23355

Frequency Range	1GHz ~ 40GHz	Detector Function	Peak Average (AV)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	98.0 PK			1.40 H	16	59.8	38.2
2	*5580.00	86.0 AV			1.40 H	16	47.8	38.2
3	11160.00	55.8 PK	74.0	-18.2	3.52 H	152	39.8	16.0
4	11160.00	43.8 AV	54.0	-10.2	3.52 H	152	27.8	16.0
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	*5580.00	102.5 PK			1.33 V	343	64.3	38.2
2	*5580.00	90.9 AV			1.33 V	343	52.7	38.2
3	11160.00	56.4 PK	74.0	-17.6	2.04 V	268	40.4	16.0
4	11160.00	43.8 AV	54.0	-10.2	2.04 V	268	27.8	16.0

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission Level – Limit value
5. " * ": Fundamental frequency.
6. " # ": The radiated frequency is out of the restricted band.

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	795.50	-6.2	20.2	4.0	24.2	34.8	-10.6
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	795.50	-9.6	18.0	4.0	22.0	34.8	-12.8

Note: ERP (dBm) = S.G Power Value (dBm) + Correction Factor (dB).

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1591.00	-52.4	-44.5	1.1	-43.4	-40.0	-3.4
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1591.00	-55.6	-48.5	1.1	-47.4	-40.0	-7.4

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

Below 1GHz data:

Mode 1

802.11n (HT20), CH 6 +

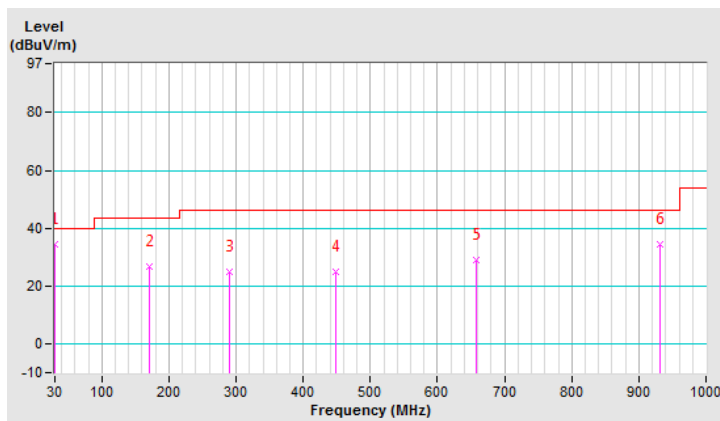
WCDMA Band 2, CH 9400

Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	34.6 QP	40.0	-5.4	1.25 H	37	45.8	-11.2
2	171.62	26.9 QP	43.5	-16.6	1.50 H	232	36.5	-9.6
3	290.93	24.7 QP	46.0	-21.3	1.50 H	17	32.8	-8.1
4	448.07	24.7 QP	46.0	-21.3	1.00 H	46	30.0	-5.3
5	658.56	29.1 QP	46.0	-16.9	2.00 H	16	30.3	-1.2
6	931.13	34.3 QP	46.0	-11.7	1.50 H	316	30.4	3.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

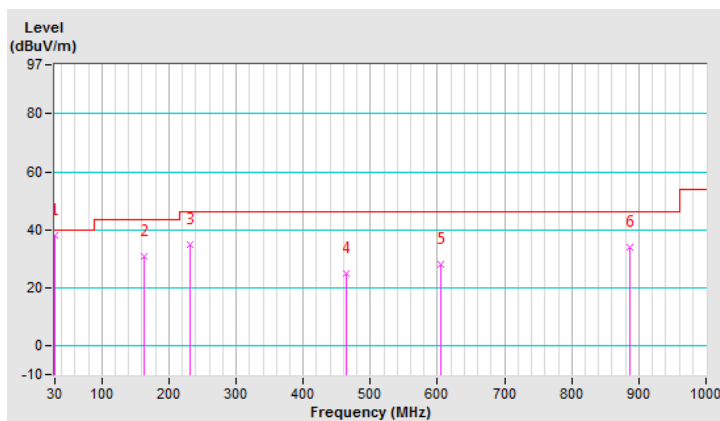


Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	38.2 QP	40.0	-1.8	1.25 V	192	49.4	-11.2
2	163.86	30.8 QP	43.5	-12.7	1.00 V	270	40.1	-9.3
3	231.76	35.1 QP	46.0	-10.9	1.25 V	142	45.8	-10.7
4	464.56	24.7 QP	46.0	-21.3	1.50 V	147	29.7	-5.0
5	605.21	28.2 QP	46.0	-17.8	1.00 V	151	30.3	-2.1
6	886.51	34.0 QP	46.0	-12.0	1.50 V	288	31.3	2.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

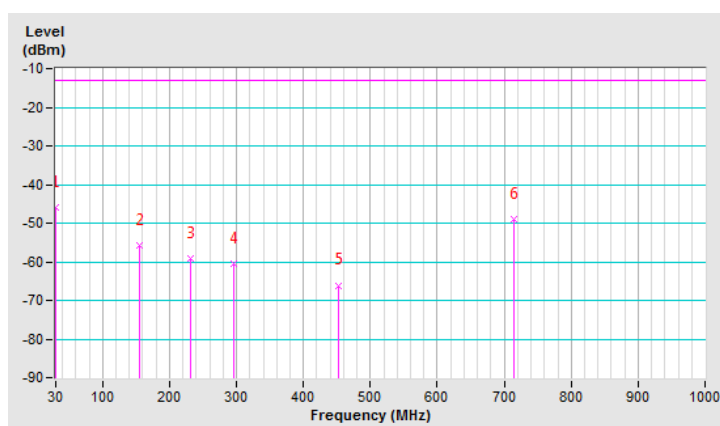


Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-50.0	-26.6	-19.4	-46.0	-13.0	-33.0
2	156.10	-51.2	-53.0	-2.9	-55.9	-13.0	-42.9
3	231.76	-51.7	-57.7	-1.6	-59.3	-13.0	-46.3
4	295.78	-57.5	-58.6	-1.8	-60.4	-13.0	-47.4
5	451.95	-66.1	-69.6	3.5	-66.1	-13.0	-53.1
6	714.82	-52.3	-52.5	3.5	-49.0	-13.0	-36.0

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

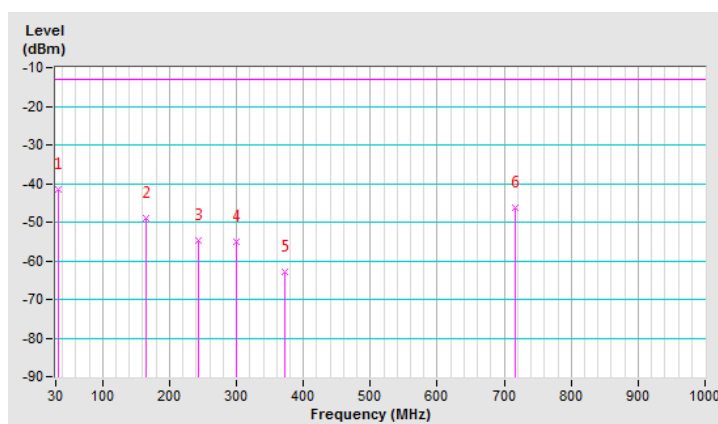


Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	33.88	-30.9	-24.4	-17.1	-41.5	-13.0	-28.5
2	164.83	-45.7	-46.0	-2.9	-48.9	-13.0	-35.9
3	243.40	-53.3	-53.3	-1.4	-54.7	-13.0	-41.7
4	299.66	-55.2	-57.6	2.5	-55.1	-13.0	-42.1
5	371.44	-62.5	-66.7	3.9	-62.8	-13.0	-49.8
6	715.79	-52.2	-49.8	3.5	-46.3	-13.0	-33.3

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode 2

802.11n (HT20), CH 6 +

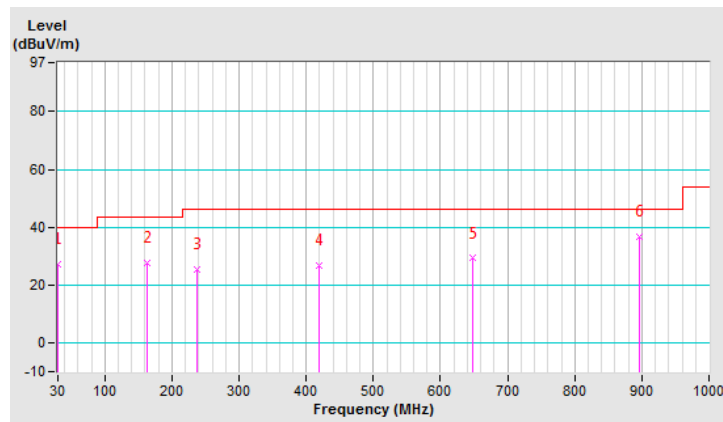
WCDMA Band 4, CH 1312

Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.97	27.0 QP	40.0	-13.0	1.50 H	355	38.4	-11.4
2	163.86	27.5 QP	43.5	-16.0	1.00 H	232	36.8	-9.3
3	236.61	25.4 QP	46.0	-20.6	1.25 H	206	35.7	-10.3
4	419.94	26.5 QP	46.0	-19.5	2.00 H	16	32.4	-5.9
5	647.89	29.2 QP	46.0	-16.8	1.00 H	16	30.5	-1.3
6	896.21	36.8 QP	46.0	-9.2	1.25 H	303	33.9	2.9

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

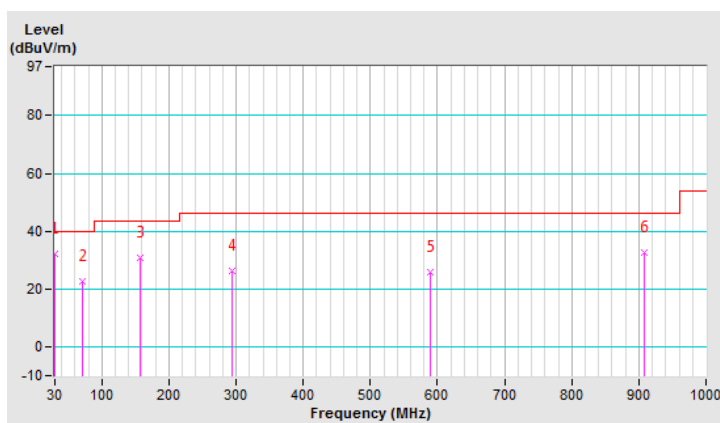


Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.97	32.3 QP	40.0	-7.7	1.00 V	194	43.7	-11.4
2	70.74	22.5 QP	40.0	-17.5	1.00 V	159	34.3	-11.8
3	157.07	30.7 QP	43.5	-12.8	1.00 V	256	40.0	-9.3
4	294.81	26.2 QP	46.0	-19.8	1.00 V	64	34.3	-8.1
5	588.72	26.0 QP	46.0	-20.0	1.00 V	258	28.7	-2.7
6	907.85	32.8 QP	46.0	-13.2	1.00 V	262	29.4	3.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

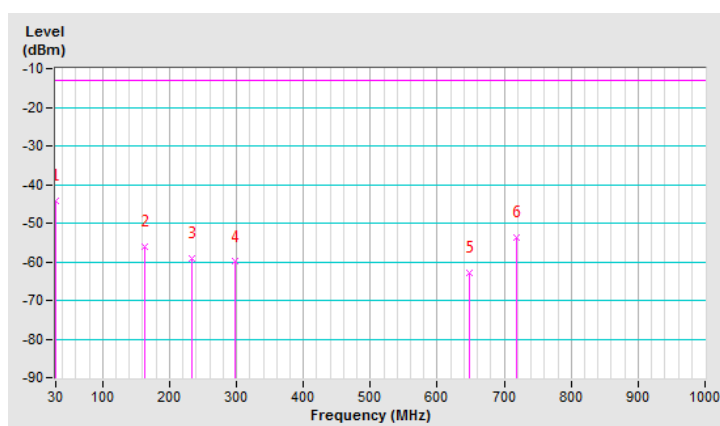


Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-48.1	-24.7	-19.4	-44.1	-13.0	-31.1
2	162.89	-50.2	-53.1	-2.9	-56.0	-13.0	-43.0
3	232.73	-51.5	-57.4	-1.6	-59.0	-13.0	-46.0
4	297.72	-57.3	-58.3	-1.7	-60.0	-13.0	-47.0
5	647.89	-65.1	-66.7	3.7	-63.0	-13.0	-50.0
6	717.73	-56.9	-57.2	3.5	-53.7	-13.0	-40.7

Remarks:

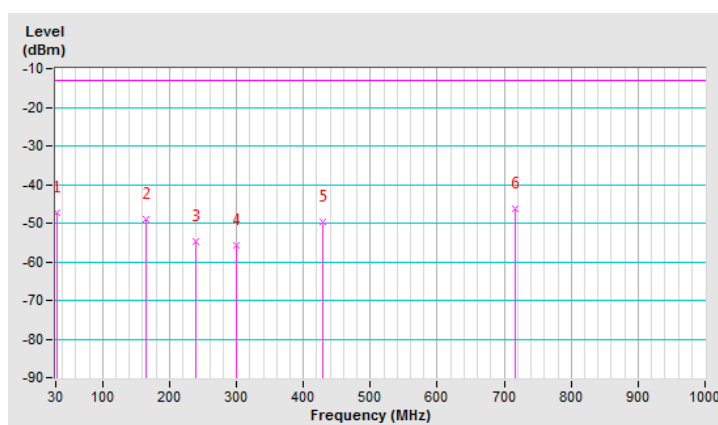
1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	31.94	-36.8	-29.0	-18.3	-47.3	-13.0	-34.3
2	164.83	-45.8	-46.1	-2.9	-49.0	-13.0	-36.0
3	238.55	-52.9	-53.3	-1.5	-54.8	-13.0	-41.8
4	300.63	-55.9	-59.1	3.4	-55.7	-13.0	-42.7
5	428.67	-49.3	-53.2	3.5	-49.7	-13.0	-36.7
6	715.79	-52.3	-49.9	3.5	-46.4	-13.0	-33.4

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode 3

802.11n (HT20), CH 6 +

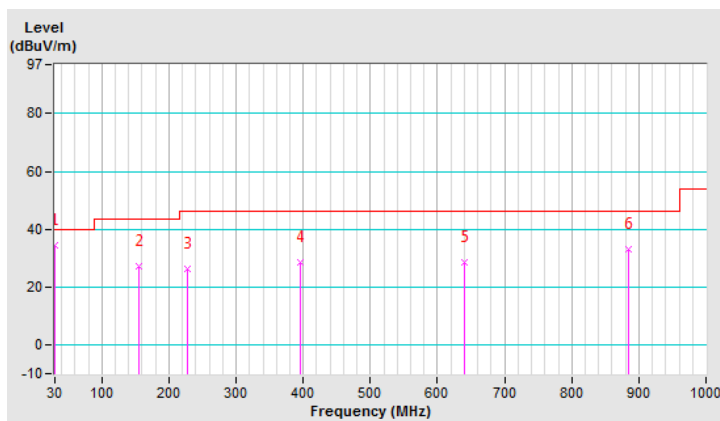
WCDMA Band 5, CH 4233

Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	34.3 QP	40.0	-5.7	1.25 H	37	45.5	-11.2
2	156.10	27.2 QP	43.5	-16.3	1.25 H	248	36.5	-9.3
3	226.91	26.4 QP	46.0	-19.6	1.00 H	227	37.4	-11.0
4	395.69	28.7 QP	46.0	-17.3	1.50 H	245	35.0	-6.3
5	640.13	28.4 QP	46.0	-17.6	1.00 H	327	29.6	-1.2
6	885.54	33.2 QP	46.0	-12.8	2.00 H	226	30.5	2.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

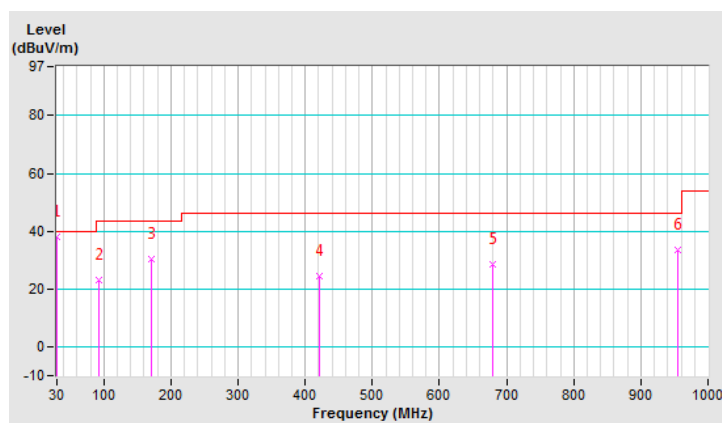


Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	38.0 QP	40.0	-2.0	1.50 V	192	49.2	-11.2
2	93.05	22.9 QP	43.5	-20.6	1.50 V	73	37.4	-14.5
3	171.62	30.3 QP	43.5	-13.2	1.00 V	248	39.9	-9.6
4	421.88	24.3 QP	46.0	-21.7	1.50 V	63	30.1	-5.8
5	679.90	28.4 QP	46.0	-17.6	1.00 V	19	29.4	-1.0
6	954.41	33.5 QP	46.0	-12.5	1.25 V	295	29.2	4.3

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

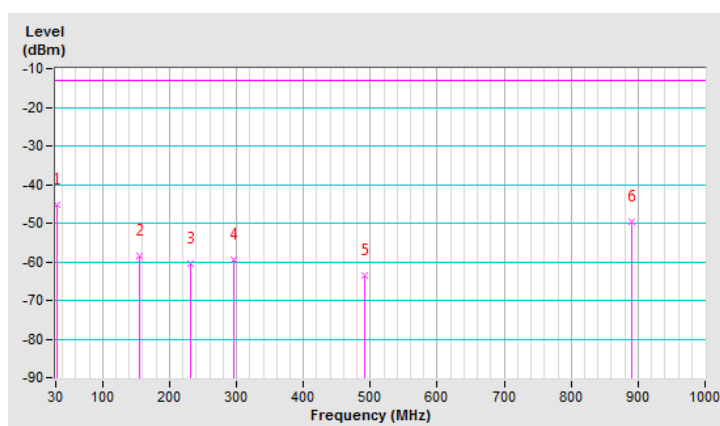


Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	31.94	-46.5	-26.9	-18.3	-45.2	-13.0	-32.2
2	156.10	-51.6	-55.6	-2.9	-58.5	-13.0	-45.5
3	231.76	-50.8	-58.9	-1.6	-60.5	-13.0	-47.5
4	296.75	-54.5	-57.6	-1.8	-59.4	-13.0	-46.4
5	491.72	-61.0	-67.1	3.7	-63.4	-13.0	-50.4
6	891.36	-54.8	-53.1	3.5	-49.6	-13.0	-36.6

Remarks:

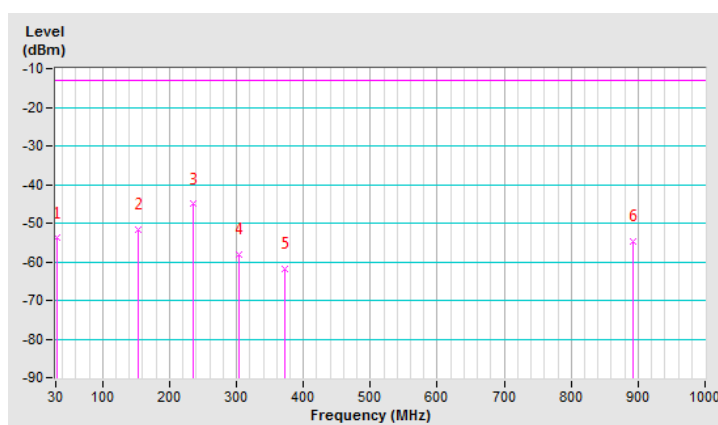
1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	31.94	-41.2	-35.6	-18.3	-53.9	-13.0	-40.9
2	154.16	-47.3	-48.9	-2.9	-51.8	-13.0	-38.8
3	235.64	-40.8	-43.6	-1.5	-45.1	-13.0	-32.1
4	303.54	-56.0	-61.7	3.7	-58.0	-13.0	-45.0
5	372.41	-59.2	-65.5	3.8	-61.7	-13.0	-48.7
6	893.30	-60.8	-58.1	3.5	-54.6	-13.0	-41.6

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode 4

802.11n (HT20), CH 6 +

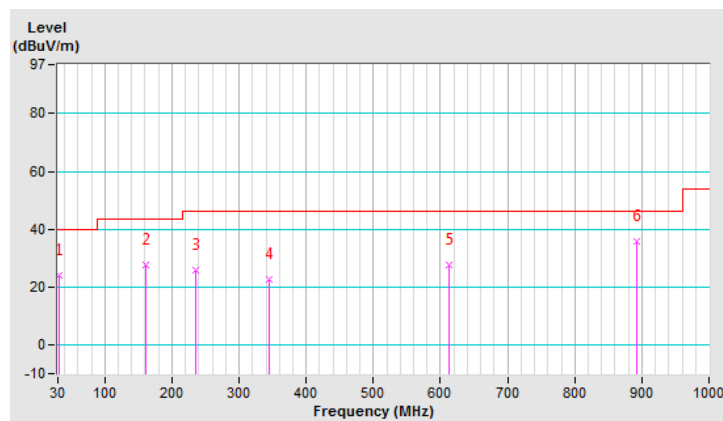
LTE Band 13, CH 23230

Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	32.91	24.0 QP	40.0	-16.0	1.00 H	27	35.1	-11.1
2	160.95	27.6 QP	43.5	-15.9	1.25 H	250	36.9	-9.3
3	235.64	25.6 QP	46.0	-20.4	1.50 H	219	36.0	-10.4
4	345.25	22.6 QP	46.0	-23.4	2.00 H	12	29.9	-7.3
5	612.00	27.5 QP	46.0	-18.5	1.00 H	176	29.5	-2.0
6	892.33	35.8 QP	46.0	-10.2	1.50 H	270	33.0	2.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

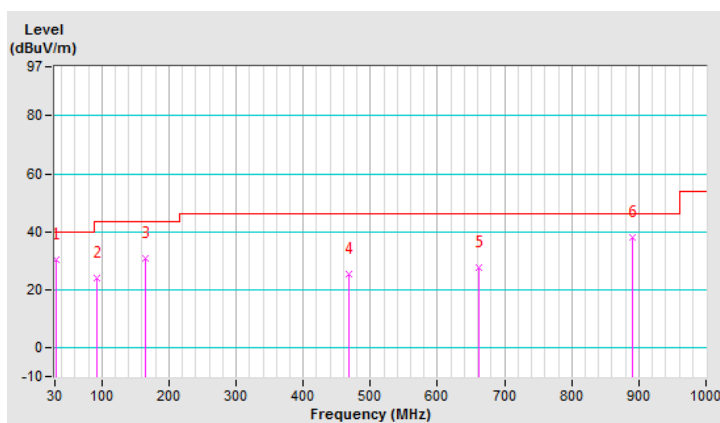


Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	32.91	30.3 QP	40.0	-9.7	1.00 V	15	41.4	-11.1
2	93.05	24.1 QP	43.5	-19.4	1.25 V	52	38.6	-14.5
3	164.83	30.8 QP	43.5	-12.7	1.25 V	290	40.2	-9.4
4	467.47	25.5 QP	46.0	-20.5	1.50 V	195	30.5	-5.0
5	661.47	27.8 QP	46.0	-18.2	1.00 V	173	29.0	-1.2
6	890.39	38.0 QP	46.0	-8.0	2.00 V	154	35.2	2.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

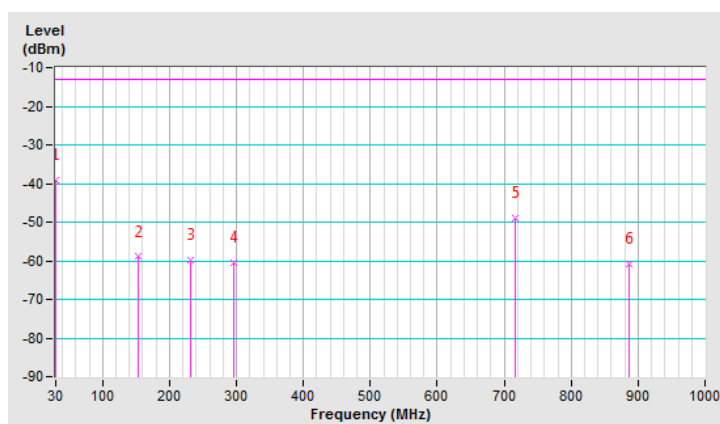


Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-41.1	-19.8	-19.4	-39.2	-13.0	-26.2
2	154.16	-52.5	-56.1	-2.9	-59.0	-13.0	-46.0
3	230.79	-49.8	-58.0	-1.7	-59.7	-13.0	-46.7
4	295.78	-55.5	-58.7	-1.8	-60.5	-13.0	-47.5
5	715.79	-50.0	-52.5	3.5	-49.0	-13.0	-36.0
6	886.51	-66.0	-64.3	3.4	-60.9	-13.0	-47.9

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

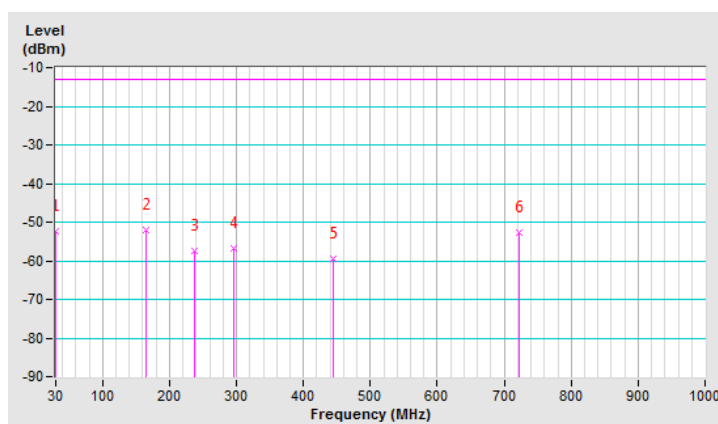


Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-40.2	-32.9	-19.4	-52.3	-13.0	-39.3
2	164.83	-46.5	-49.0	-2.9	-51.9	-13.0	-38.9
3	237.58	-53.4	-56.1	-1.4	-57.5	-13.0	-44.5
4	295.78	-54.8	-55.1	-1.8	-56.9	-13.0	-43.9
5	445.16	-57.0	-62.8	3.4	-59.4	-13.0	-46.4
6	721.61	-56.7	-56.2	3.6	-52.6	-13.0	-39.6

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).

2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode 5

802.11n (HT20), CH 6 +

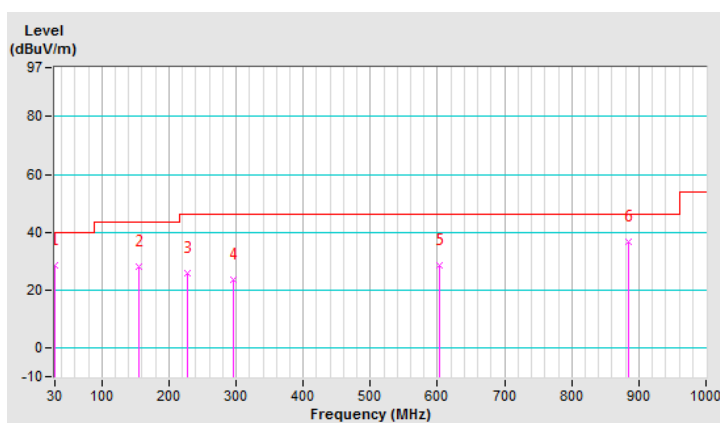
LTE Band 14, CH 23355

Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	28.4 QP	40.0	-11.6	1.00 H	107	39.6	-11.2
2	155.13	27.9 QP	43.5	-15.6	1.50 H	256	37.2	-9.3
3	227.88	25.9 QP	46.0	-20.1	1.00 H	40	36.9	-11.0
4	296.75	23.7 QP	46.0	-22.3	1.25 H	213	31.7	-8.0
5	603.27	28.6 QP	46.0	-17.4	1.00 H	243	30.8	-2.2
6	885.54	36.8 QP	46.0	-9.2	2.00 H	245	34.1	2.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

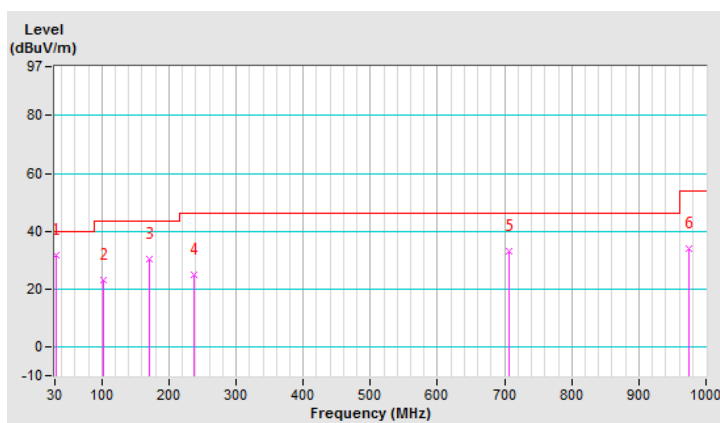


Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	31.94	31.8 QP	40.0	-8.2	1.50 V	15	42.9	-11.1
2	101.78	23.2 QP	43.5	-20.3	1.00 V	15	36.6	-13.4
3	171.62	30.4 QP	43.5	-13.1	1.25 V	267	40.0	-9.6
4	236.61	24.7 QP	46.0	-21.3	1.50 V	133	35.0	-10.3
5	707.06	32.9 QP	46.0	-13.1	1.00 V	109	33.4	-0.5
6	974.78	34.0 QP	54.0	-20.0	1.00 V	307	29.5	4.5

Remarks:

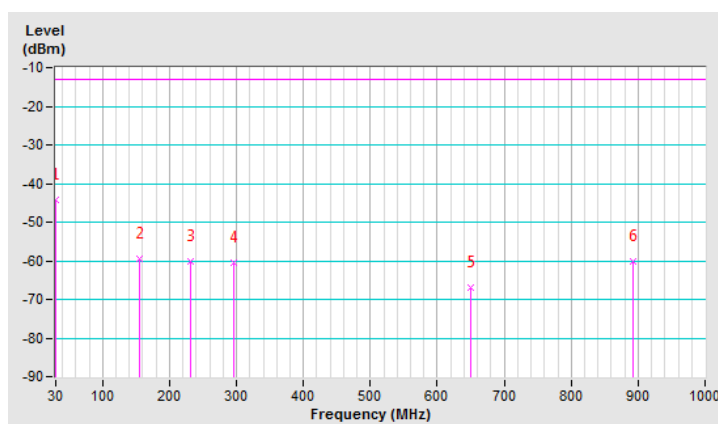
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.97	-45.6	-25.3	-18.8	-44.1	-13.0	-31.1
2	155.13	-52.9	-56.6	-2.9	-59.5	-13.0	-46.5
3	231.76	-50.4	-58.5	-1.6	-60.1	-13.0	-47.1
4	296.75	-55.5	-58.7	-1.8	-60.5	-13.0	-47.5
5	649.83	-66.9	-70.5	3.6	-66.9	-13.0	-53.9
6	892.33	-65.2	-63.6	3.5	-60.1	-13.0	-47.1

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

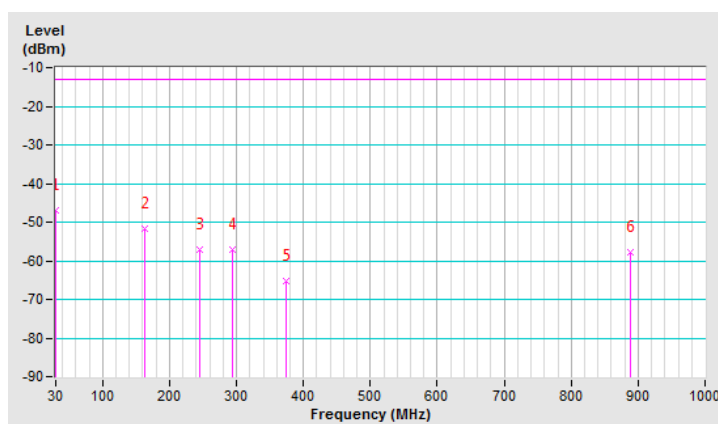


Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-35.0	-27.6	-19.4	-47.0	-13.0	-34.0
2	162.89	-46.6	-48.8	-2.9	-51.7	-13.0	-38.7
3	244.37	-53.6	-55.7	-1.4	-57.1	-13.0	-44.1
4	294.81	-55.1	-55.3	-1.8	-57.1	-13.0	-44.1
5	373.38	-62.8	-69.0	3.7	-65.3	-13.0	-52.3
6	888.45	-63.8	-61.3	3.5	-57.8	-13.0	-44.8

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).

2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode 6

802.11a, CH 116 +

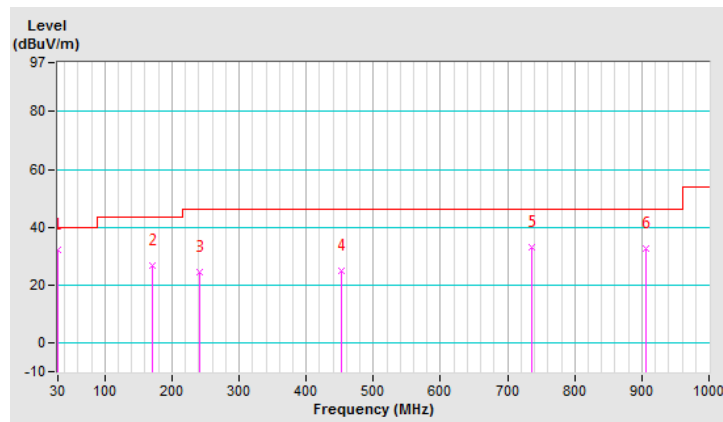
WCDMA Band 2, CH 9400

Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	32.1 QP	40.0	-7.9	1.00 H	14	43.3	-11.2
2	170.65	26.8 QP	43.5	-16.7	1.00 H	251	36.3	-9.5
3	240.49	24.6 QP	46.0	-21.4	1.50 H	211	34.6	-10.0
4	451.95	24.8 QP	46.0	-21.2	2.00 H	58	29.9	-5.1
5	736.16	33.2 QP	46.0	-12.8	1.00 H	134	33.0	0.2
6	905.91	32.8 QP	46.0	-13.2	1.50 H	17	29.4	3.4

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

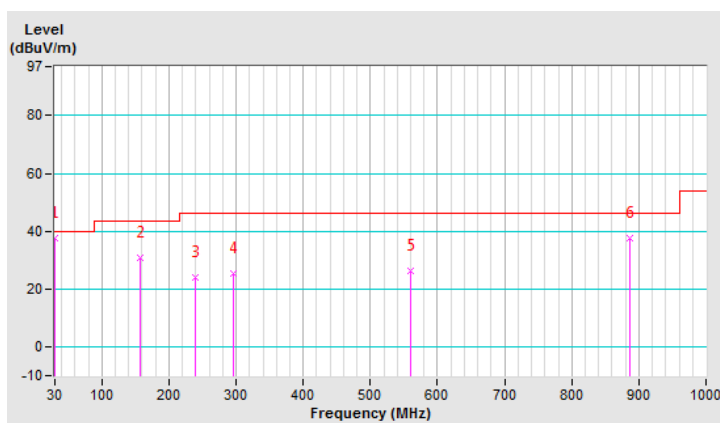


Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	37.5 QP	40.0	-2.5	1.25 V	167	48.7	-11.2
2	158.04	30.7 QP	43.5	-12.8	1.00 V	250	39.9	-9.2
3	238.55	24.2 QP	46.0	-21.8	1.50 V	128	34.3	-10.1
4	296.75	25.3 QP	46.0	-20.7	1.50 V	188	33.3	-8.0
5	559.62	26.2 QP	46.0	-19.8	2.00 V	6	29.8	-3.6
6	886.51	37.5 QP	46.0	-8.5	1.00 V	41	34.8	2.7

Remarks:

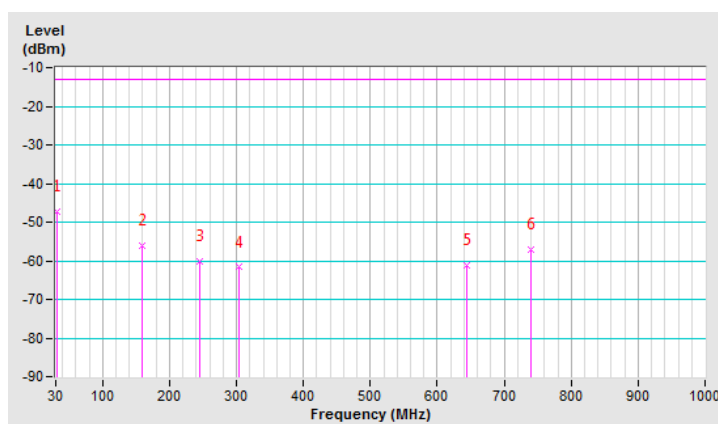
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	32.91	-50.3	-29.5	-17.7	-47.2	-13.0	-34.2
2	159.01	-51.1	-53.4	-2.8	-56.2	-13.0	-43.2
3	245.34	-53.2	-58.6	-1.6	-60.2	-13.0	-47.2
4	304.51	-57.2	-65.5	3.8	-61.7	-13.0	-48.7
5	644.98	-63.4	-65.0	3.7	-61.3	-13.0	-48.3
6	740.04	-61.3	-60.9	3.7	-57.2	-13.0	-44.2

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

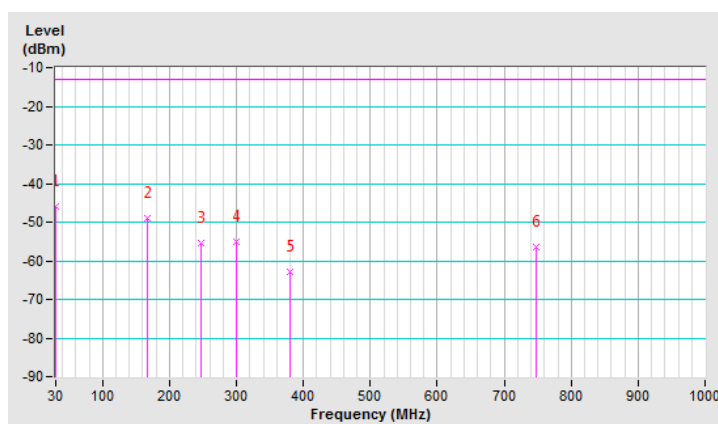


Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-36.0	-26.5	-19.4	-45.9	-13.0	-32.9
2	167.74	-45.9	-46.2	-2.9	-49.1	-13.0	-36.1
3	247.28	-54.6	-53.9	-1.5	-55.4	-13.0	-42.4
4	299.66	-55.2	-57.6	2.5	-55.1	-13.0	-42.1
5	379.20	-62.4	-66.5	3.6	-62.9	-13.0	-49.9
6	746.83	-63.6	-60.3	3.7	-56.6	-13.0	-43.6

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).

2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode 7

802.11a, CH 116 +

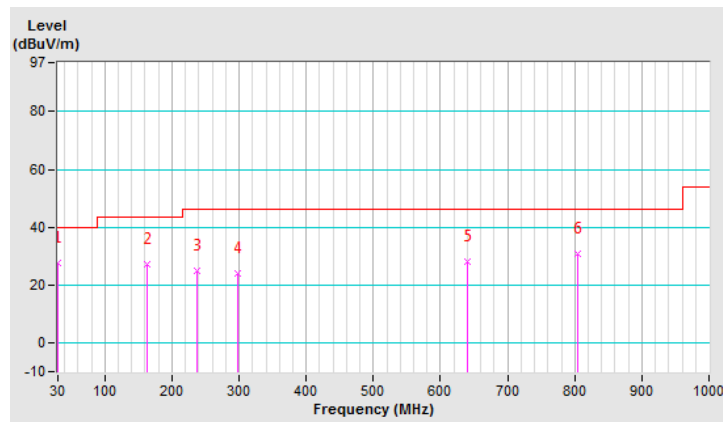
WCDMA Band 4, CH 1312

Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.97	27.5 QP	40.0	-12.5	1.25 H	270	38.9	-11.4
2	162.89	27.1 QP	43.5	-16.4	1.00 H	247	36.4	-9.3
3	236.61	25.0 QP	46.0	-21.0	1.50 H	197	35.3	-10.3
4	297.72	24.2 QP	46.0	-21.8	1.00 H	45	32.2	-8.0
5	640.13	28.0 QP	46.0	-18.0	1.50 H	178	29.2	-1.2
6	805.03	30.9 QP	46.0	-15.1	1.00 H	7	29.2	1.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

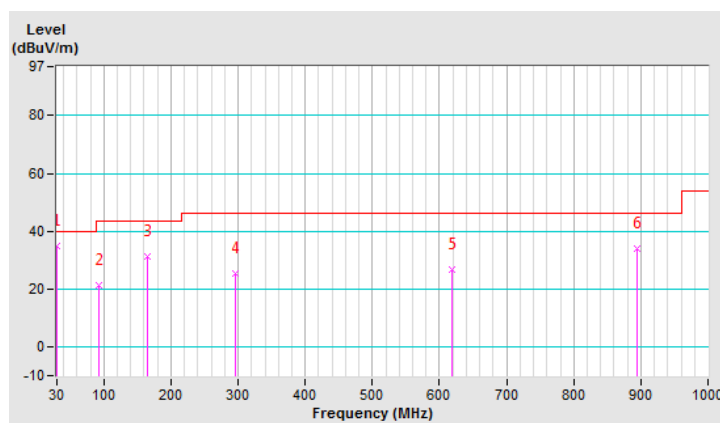


Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.97	35.1 QP	40.0	-4.9	1.50 V	174	46.5	-11.4
2	92.08	21.1 QP	43.5	-22.4	1.00 V	13	35.7	-14.6
3	164.83	31.1 QP	43.5	-12.4	1.00 V	260	40.5	-9.4
4	296.75	25.3 QP	46.0	-20.7	1.25 V	188	33.3	-8.0
5	617.82	26.7 QP	46.0	-19.3	1.00 V	202	28.6	-1.9
6	894.27	33.9 QP	46.0	-12.1	2.00 V	307	31.1	2.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

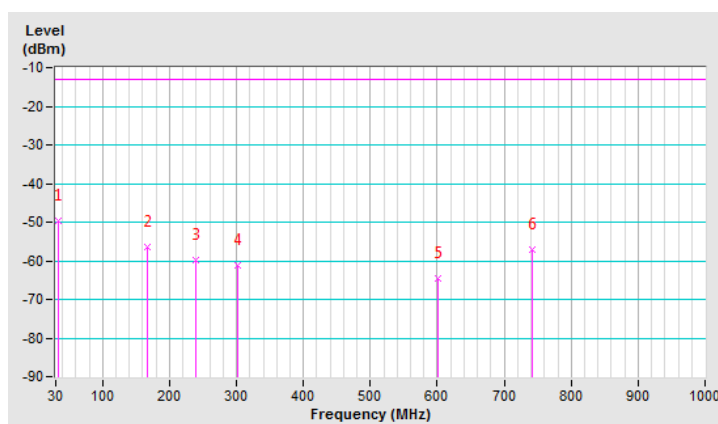


Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	33.88	-52.5	-32.5	-17.1	-49.6	-13.0	-36.6
2	166.77	-49.7	-53.5	-2.9	-56.4	-13.0	-43.4
3	239.52	-52.8	-58.2	-1.5	-59.7	-13.0	-46.7
4	301.60	-56.6	-64.8	3.7	-61.1	-13.0	-48.1
5	601.33	-66.1	-68.3	3.8	-64.5	-13.0	-51.5
6	741.01	-61.0	-60.7	3.7	-57.0	-13.0	-44.0

Remarks:

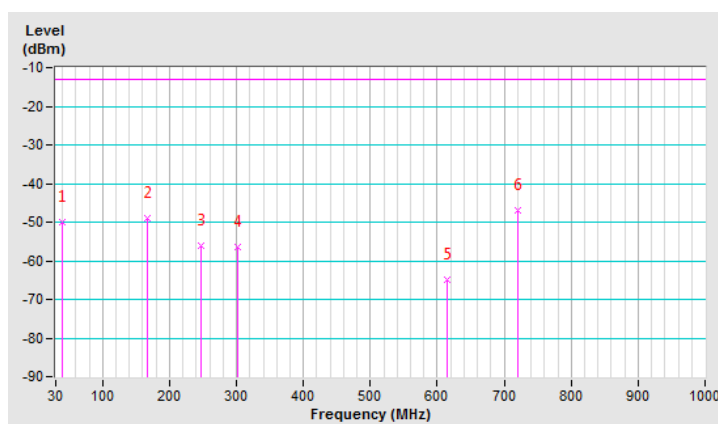
1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	40.67	-40.7	-37.0	-13.1	-50.1	-13.0	-37.1
2	166.77	-45.8	-46.2	-2.9	-49.1	-13.0	-36.1
3	247.28	-55.3	-54.6	-1.5	-56.1	-13.0	-43.1
4	301.60	-56.5	-60.0	3.7	-56.3	-13.0	-43.3
5	614.91	-69.6	-68.5	3.7	-64.8	-13.0	-51.8
6	720.64	-53.0	-50.4	3.6	-46.8	-13.0	-33.8

Remarks:

1. EIRP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode 8

802.11a, CH 116 +

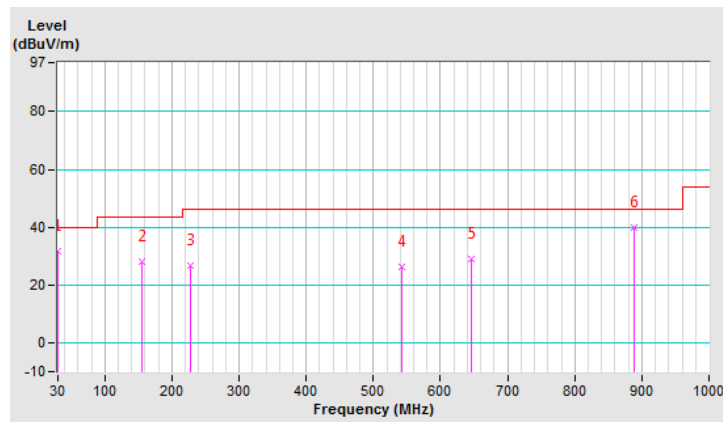
WCDMA Band 5, CH 4233

Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	31.6 QP	40.0	-8.4	1.00 H	14	42.8	-11.2
2	156.10	28.0 QP	43.5	-15.5	1.50 H	230	37.3	-9.3
3	226.91	26.5 QP	46.0	-19.5	1.00 H	211	37.5	-11.0
4	543.13	26.4 QP	46.0	-19.6	1.25 H	162	30.3	-3.9
5	646.92	28.8 QP	46.0	-17.2	1.50 H	36	30.1	-1.3
6	888.45	40.0 QP	46.0	-6.0	1.00 H	233	37.2	2.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

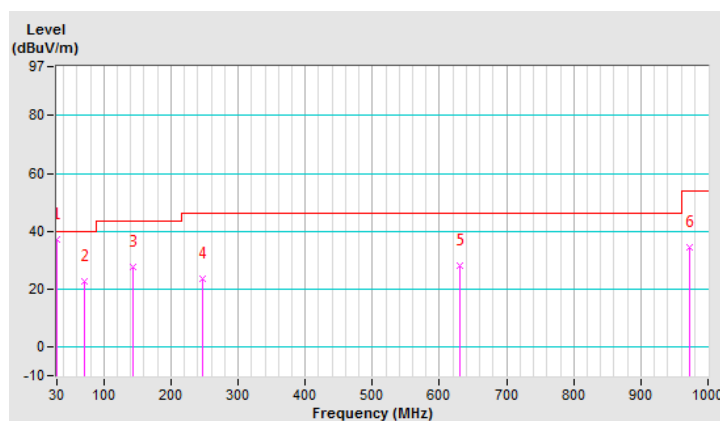


Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	37.3 QP	40.0	-2.7	1.50 V	167	48.5	-11.2
2	70.74	22.6 QP	40.0	-17.4	1.25 V	158	34.4	-11.8
3	143.49	27.5 QP	43.5	-16.0	1.00 V	237	37.2	-9.7
4	246.31	23.5 QP	46.0	-22.5	2.00 V	97	33.3	-9.8
5	630.43	27.9 QP	46.0	-18.1	1.50 V	267	29.5	-1.6
6	972.84	34.4 QP	54.0	-19.6	1.00 V	229	29.9	4.5

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



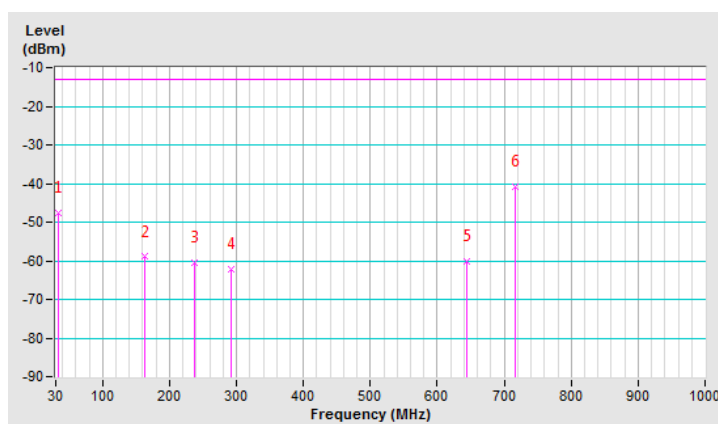
Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	33.88	-48.2	-30.4	-17.1	-47.5	-13.0	-34.5
2	162.89	-51.0	-56.1	-2.9	-59.0	-13.0	-46.0
3	237.58	-51.2	-59.0	-1.4	-60.4	-13.0	-47.4
4	291.90	-56.4	-60.1	-2.1	-62.2	-13.0	-49.2
5	644.98	-60.0	-63.7	3.7	-60.0	-13.0	-47.0
6	715.79	-41.8	-44.3	3.5	-40.8	-13.0	-27.8

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).

2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

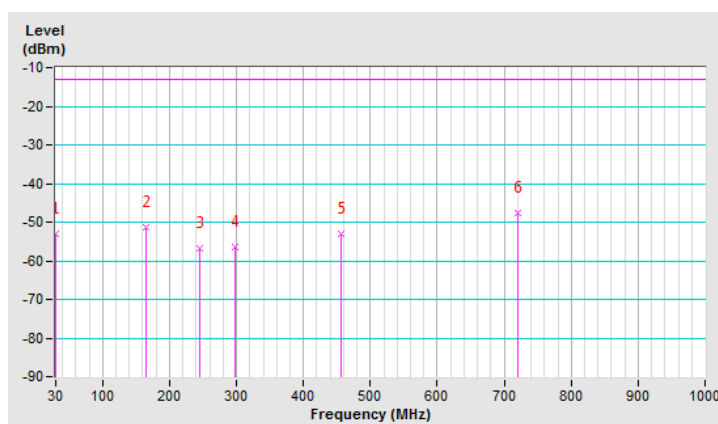


Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-41.2	-33.8	-19.4	-53.2	-13.0	-40.2
2	164.83	-46.0	-48.5	-2.9	-51.4	-13.0	-38.4
3	244.37	-53.2	-55.3	-1.4	-56.7	-13.0	-43.7
4	297.72	-53.8	-54.6	-1.7	-56.3	-13.0	-43.3
5	456.80	-50.6	-56.5	3.5	-53.0	-13.0	-40.0
6	720.64	-51.5	-51.1	3.6	-47.5	-13.0	-34.5

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).

2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode 9

802.11a, CH 116 +

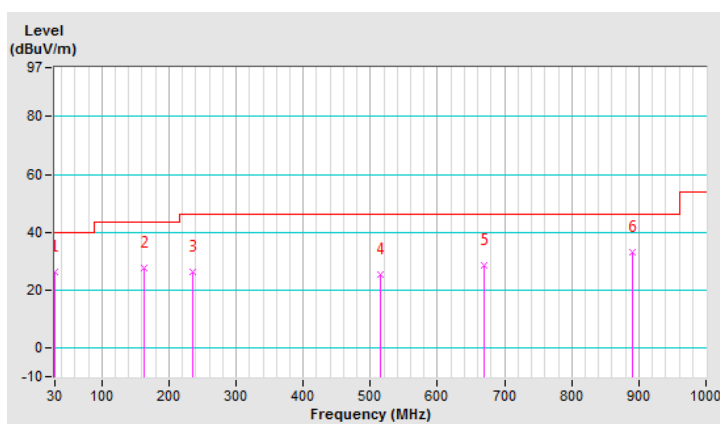
LTE Band 13, CH 23230

Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.97	26.3 QP	40.0	-13.7	1.00 H	203	37.7	-11.4
2	162.89	27.5 QP	43.5	-16.0	1.50 H	232	36.8	-9.3
3	234.67	26.4 QP	46.0	-19.6	1.00 H	218	36.8	-10.4
4	515.00	25.2 QP	46.0	-20.8	1.25 H	73	29.5	-4.3
5	669.23	28.6 QP	46.0	-17.4	1.00 H	18	29.6	-1.0
6	890.39	33.2 QP	46.0	-12.8	1.25 H	196	30.4	2.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

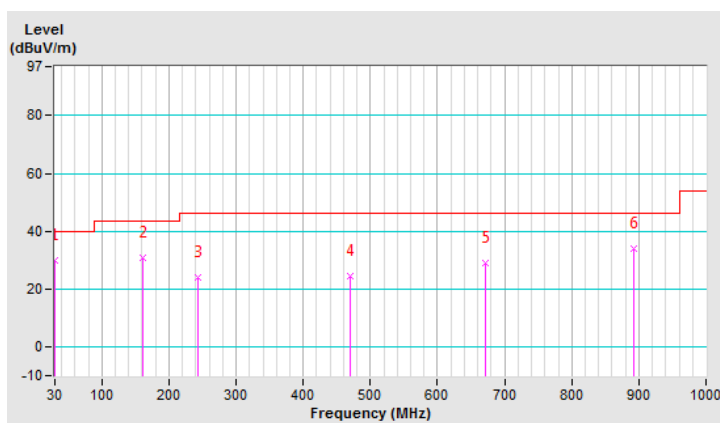


Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	30.0 QP	40.0	-10.0	1.00 V	304	41.2	-11.2
2	161.92	31.0 QP	43.5	-12.5	1.00 V	257	40.2	-9.2
3	243.40	24.0 QP	46.0	-22.0	1.25 V	145	33.9	-9.9
4	469.41	24.3 QP	46.0	-21.7	1.50 V	77	29.3	-5.0
5	672.14	28.8 QP	46.0	-17.2	1.50 V	124	29.9	-1.1
6	892.33	34.0 QP	46.0	-12.0	1.25 V	200	31.2	2.8

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

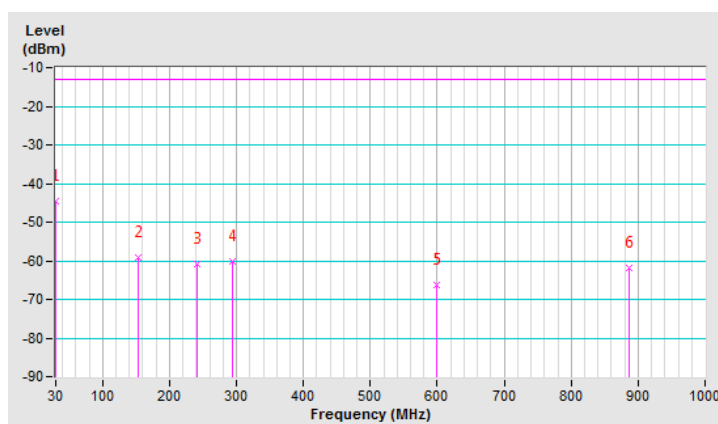


Antenna Polarity & Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.97	-46.0	-25.7	-18.8	-44.5	-13.0	-31.5
2	154.16	-52.8	-56.3	-2.9	-59.2	-13.0	-46.2
3	240.49	-51.7	-59.2	-1.5	-60.7	-13.0	-47.7
4	294.81	-54.9	-58.3	-1.8	-60.1	-13.0	-47.1
5	599.39	-65.8	-70.2	3.8	-66.4	-13.0	-53.4
6	886.51	-66.8	-65.2	3.4	-61.8	-13.0	-48.8

Remarks:

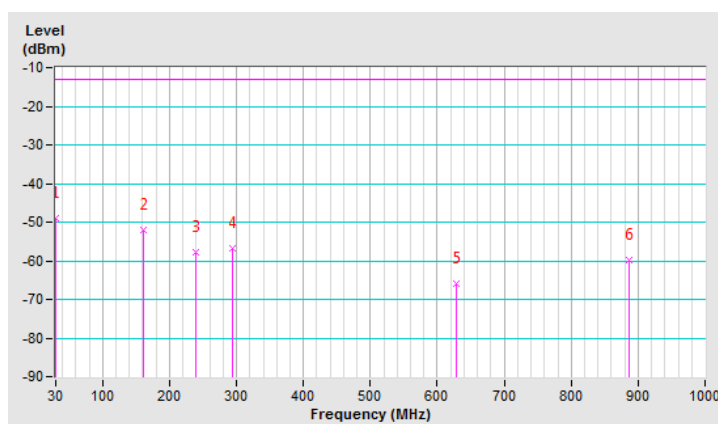
1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-36.8	-29.5	-19.4	-48.9	-13.0	-35.9
2	161.92	-46.9	-49.0	-2.9	-51.9	-13.0	-38.9
3	238.55	-53.9	-56.4	-1.5	-57.9	-13.0	-44.9
4	294.81	-54.9	-55.1	-1.8	-56.9	-13.0	-43.9
5	628.49	-68.6	-69.5	3.6	-65.9	-13.0	-52.9
6	886.51	-65.7	-63.3	3.4	-59.9	-13.0	-46.9

Remarks:

1. ERP (dBm) = S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



Mode 10

802.11a, CH 116 +

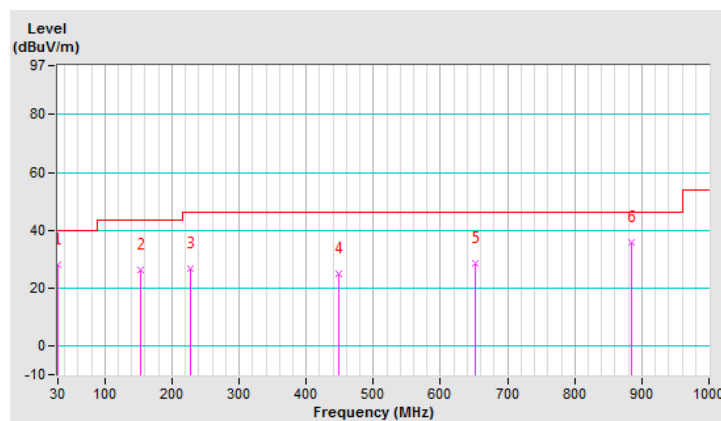
LTE Band 14, CH 23355

Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	28.1 QP	40.0	-11.9	1.50 H	2	39.3	-11.2
2	154.16	26.1 QP	43.5	-17.4	1.00 H	243	35.3	-9.2
3	226.91	26.7 QP	46.0	-19.3	1.50 H	218	37.7	-11.0
4	448.07	25.0 QP	46.0	-21.0	1.25 H	340	30.3	-5.3
5	652.74	28.6 QP	46.0	-17.4	1.25 H	13	29.8	-1.2
6	885.54	36.0 QP	46.0	-10.0	1.00 H	311	33.3	2.7

Remarks:

1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.

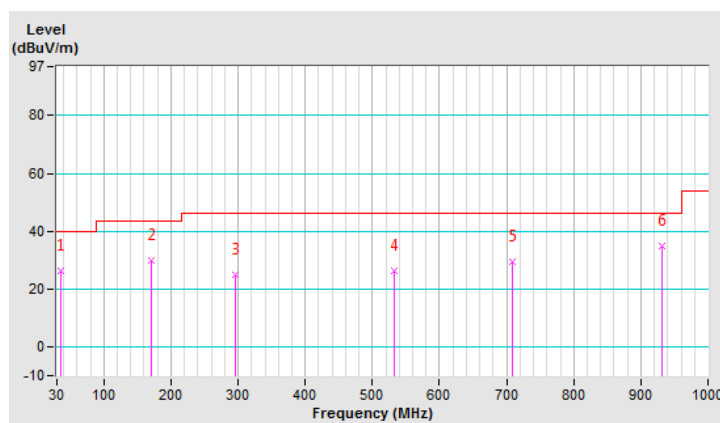


Frequency Range	9kHz ~ 1GHz	Detector Function	Quasi-Peak (QP)
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ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	35.82	26.2 QP	40.0	-13.8	1.00 V	220	36.9	-10.7
2	171.62	30.1 QP	43.5	-13.4	1.00 V	255	39.7	-9.6
3	295.78	25.0 QP	46.0	-21.0	1.50 V	84	33.0	-8.0
4	532.46	26.4 QP	46.0	-19.6	1.25 V	3	30.4	-4.0
5	708.03	29.4 QP	46.0	-16.6	1.00 V	164	29.9	-0.5
6	932.10	34.8 QP	46.0	-11.2	2.00 V	2	30.9	3.9

Remarks:

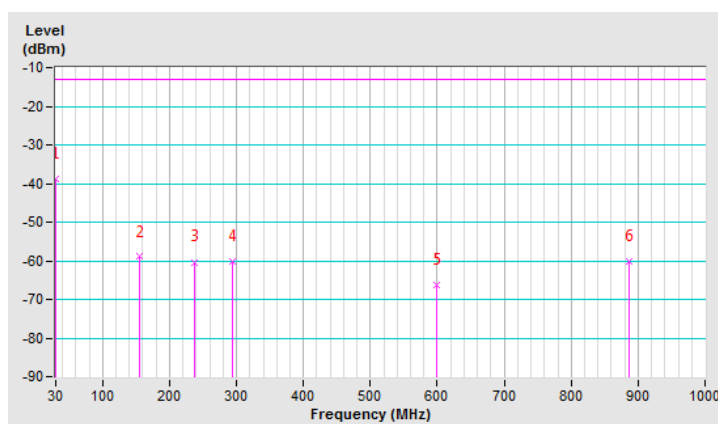
1. Emission Level(dBuV/m) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB)
3. Margin value = Emission Level – Limit value
4. The other emission levels were very low against the limit of frequency range 30MHz~1000MHz.
5. The emission levels were very low against the limit of frequency range 9kHz~30MHz: the amplitude of spurious emissions attenuated more than 20 dB below the permissible value to be report.



Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-40.8	-19.5	-19.4	-38.9	-13.0	-25.9
2	155.13	-52.4	-56.1	-2.9	-59.0	-13.0	-46.0
3	237.58	-51.1	-58.9	-1.4	-60.3	-13.0	-47.3
4	293.84	-54.8	-58.3	-1.8	-60.1	-13.0	-47.1
5	599.39	-65.5	-70.0	3.8	-66.2	-13.0	-53.2
6	886.51	-65.0	-63.4	3.4	-60.0	-13.0	-47.0

Remarks:

1. ERP (dBm)= S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).

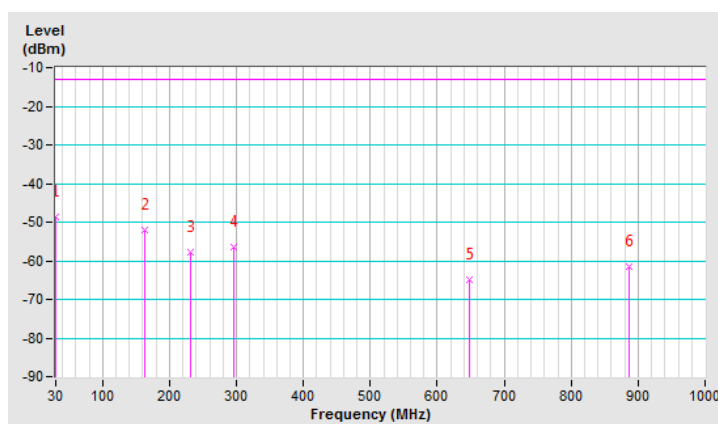


Antenna Polarity & Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	30.00	-36.5	-29.2	-19.4	-48.6	-13.0	-35.6
2	162.89	-47.1	-49.3	-2.9	-52.2	-13.0	-39.2
3	230.79	-52.5	-56.2	-1.7	-57.9	-13.0	-44.9
4	295.78	-54.4	-54.7	-1.8	-56.5	-13.0	-43.5
5	648.86	-68.5	-68.7	3.7	-65.0	-13.0	-52.0
6	886.51	-67.3	-65.0	3.4	-61.6	-13.0	-48.6

Remarks:

1. ERP (dBm)= S.G Value (dBm) + Correction Factor (dB).
2. Correction Factor (dB) = Substitution Antenna Gain (dB) + Cable Loss (dB).



5 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo).

Appendix – Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited and approved according to ISO/IEC 17025.

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The address and road map of all our labs can be found in our web site also.

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