FCC TEST REPORT

(PART 22)

REPORT NO.:	RF120710C03
MODEL NO.:	PM23300
FCC ID:	NM8PM23300
RECEIVED:	Jul. 10, 2012
TESTED:	Jul. 18 ~ Jul. 26, 2012
ISSUED:	Aug. 09, 2012

APPLICANT:	HTC Corporation
ADDRESS:	23, Xinghua Rd., Taoyuan 330, Taiwan, R.O.C.

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch
LAB ADDRESS:	No. 47, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan (R.O.C.)
TEST LOCATION:	No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.

This report should not be used by the client to claim product certification, approval, or endorsement by TAF or any government agencies.

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF120710C03	Original release	Aug. 09, 2012

1 CERTIFICATION

PRODUCT:	Smartphone
MODEL:	PM23300
BRAND:	HTC
APPLICANT:	HTC Corporation
TESTED:	Jul. 18 ~ Jul. 26, 2012
TEST SAMPLE:	Production Unit
STANDARDS:	**FCC PART 22, Subpart H**

The above equipment (model: PM23300) 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 EMC characteristics under the conditions specified in this report.

PREPARED BY : Ivonne Wu / Senior Specialist , **DATE :** Aug. 09, 2012

APPROVED BY : Gary Chang / Technical Manager , **DATE :** Aug. 09, 2012

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 22 & Part 2			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**REMARK**
2.1046 22.913 (a)	Effective radiated power	PASS	Meet the requirement of limit.
2.1055 22.355	Frequency Stability	PASS	Meet the requirement of limit.
2.1049	Occupied Bandwidth	PASS	Meet the requirement of limit.
22.917	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 22.917	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 22.917	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -24.96dB at 32.70MHz.

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	UNCERTAINTY
Conducted emissions	150kHz~30MHz	2.44 dB
Radiated emissions	30MHz ~ 200MHz	2.93 dB
	200MHz ~1000MHz	2.95 dB
	1GHz ~ 18GHz	2.26 dB
	18GHz ~ 40GHz	1.94 dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2.2 TEST SITE AND INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver Agilent	N9038A	MY51210203	Dec. 22, 2011	Dec. 21, 2012
Spectrum Analyzer ROHDE & SCHWARZ	FSU43	101261	Dec. 21, 2011	Dec. 20, 2012
BILOG Antenna SCHWARZBECK	VULB9168	9168-472	Dec. 20, 2011	Dec. 19, 2012
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-969	Dec. 20, 2011	Dec. 19, 2012
HORN Antenna SCHWARZBECK	BBHA 9170	9170-480	Dec. 20, 2011	Dec. 19, 2012
Preamplifier EMCI	EMC 012645	980115	Dec. 30, 2011	Dec. 29, 2012
Preamplifier EMCI	EMC 330H	980112	Dec. 30, 2011	Dec. 29, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309219/4	Oct. 21, 2011	Oct. 20, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250130/4	Jan. 02, 2012	Jan. 01, 2013
RF signal cable Worken	RG-213	NA	Jan. 02, 2012	Jan. 01, 2013
Software	E3 6.120103	NA	NA	NA
Antenna Tower MF	MFA-440H	NA	NA	NA
Turn Table MF	MFT-201SS	NA	NA	NA
Antenna Tower &Turn Table Controller MF	MF-7802	NA	NA	NA
Mini-Circuits Power Splitter	ZN2PD-9G	NA	Mar. 23, 2012	Mar. 22, 2013
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
Communications Tester-Wireless	E5515C	MY50266653	Sep. 28, 2011	Sep. 27, 2012
Radio Communication Analyzer	MT8820C	6201010284	Aug. 01, 2011	Jul. 31, 2012

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.

3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.

4. The FCC Site Registration No. is 460141.

5. The IC Site Registration No. is IC 7450F-4.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

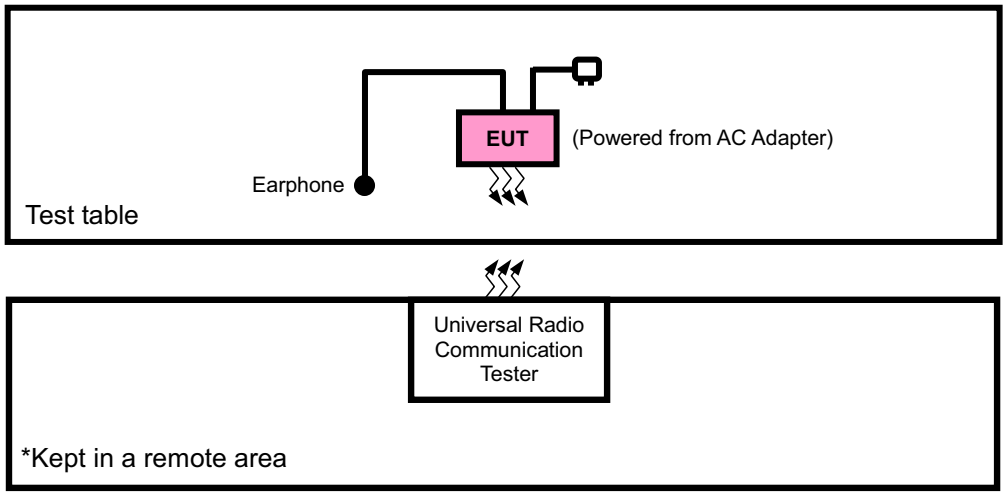
EUT	Smartphone	
MODEL NO.	PM23300	
POWER SUPPLY	5.0Vdc (adapter or host equipment) 3.75Vdc (battery)	
MODULATION TYPE	**GSM/GPRS**	GMSK
	EDGE	8PSK
	WCDMA	BPSK
	LTE	QPSK, 16QAM
FREQUENCY RANGE	**GSM/GPRS/EDGE**	824.2MHz ~ 848.8MHz
	WCDMA	826.4MHz ~ 846.6MHz
	LTE (Channel Bandwidth: 5MHz)	826.5MHz ~ 846.5MHz
	LTE (Channel Bandwidth: 10MHz)	829MHz ~ 844MHz
MAX. ERP POWER	**GSM**	423.64mW
	EDGE	99.31mW
	WCDMA	40.83mW
	LTE (Channel Bandwidth: 5MHz)	43.85mW
	LTE (Channel Bandwidth: 10MHz)	44.57mW
EMISSION DESIGNATOR	**GSM**	247KGXW
	EDGE	248KG7W
	WCDMA	4M18F9W
	LTE (Channel Bandwidth: 5MHz)	4M49G7D
	LTE (Channel Bandwidth: 10MHz)	8M95W7D
MULTI-SLOTS CLASS	10	
WCDMA RELEASE VERSION	6	
ANTENNA TYPE	Fixed Internal antenna with -4.8 dBi gain	
I/O PORTS	Refer to users' manual	
DATA CABLE	Refer to NOTE as below	
ACCESSORY DEVICES	Refer to NOTE as below	

NOTE:

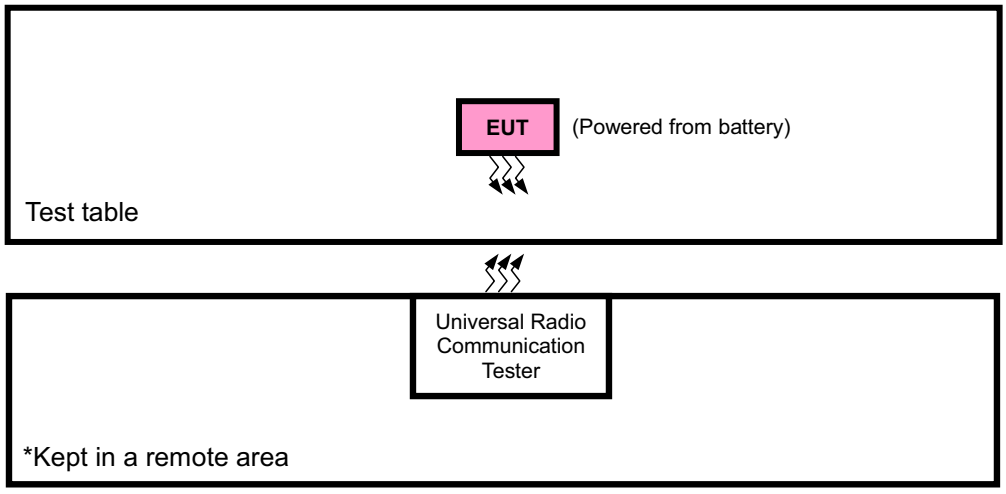
1. The EUT's accessories list refers to Ext Pho.pdf.
2. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST



FOR E.R.P. TEST



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.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	EARPHONE	Merry	HS250	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	1.1m audio cable

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

3.4 TEST ITEM AND TEST CONFIGURATION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports The worst case was found when positioned on Y-plane for ERP and Y-axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

GSM MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
ERP	128 to 251	128, 189, 251	GSM, EDGE
FREQUENCY STABILITY	128 to 251	189	GSM, EDGE
OCCUPIED BANDWIDTH	128 to 251	128, 189, 251	GSM, EDGE
BAND EDGE	128 to 251	128, 251	GSM, EDGE
CONDCUDETED EMISSION	128 to 251	189	GSM
RADIATED EMISSION	128 to 251	189	GSM, EDGE

WCDMA MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
ERP	4132 to 4233	4132, 4182, 4233	WCDMA
FREQUENCY STABILITY	4132 to 4233	4182	WCDMA
OCCUPIED BANDWIDTH	4132 to 4233	4132, 4182, 4233	WCDMA
BAND EDGE	4132 to 4233	4132, 4233	WCDMA
CONDCUDETED EMISSION	4132 to 4233	4182	WCDMA
RADIATED EMISSION	4132 to 4233	4182	WCDMA

LTE BAND 5 MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
ERP	20425 to 20625	20425, 20525, 20625	5MHz	QPSK	1 RB / 0 RB Offset
	20450 to 20600	20450, 20525, 20600	10MHz	QPSK	1 RB / 0 RB Offset
FREQUENCY STABILITY	20425 to 20625	20525	5MHz	QPSK	1 RB / 0 RB Offset
	20450 to 20600	20525	10MHz	QPSK	1 RB / 0 RB Offset
OCCUPIED BANDWIDTH	20425 to 20625	20525	5MHz	QPSK	25 RB / 0 RB Offset
	20450 to 20600	20525	10MHz	QPSK	50 RB / 0 RB Offset
BAND EDGE	20425 to 20626	20425, 20625	5MHz	QPSK	1 RB / 0 RB Offset
					1 RB / 24 RB Offset
					25 RB / 0 RB Offset
	20450 to 20600	20450, 20600	10MHz	QPSK	1 RB / 0 RB Offset
					1 RB / 49 RB Offset
					50 RB / 0 RB Offset
CONDCUDETED EMISSION	20425 to 20625	20525	5MHz	QPSK	1 RB / 0 RB Offset
	20450 to 20600	20525	10MHz	QPSK	1 RB / 0 RB Offset
RADIATED EMISSION	20425 to 20626	20525	5MHz	QPSK	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
				16QAM	1 RB / 24 RB Offset
					25 RB / 0 RB Offset
	20450 to 20600	20525	10MHz	QPSK	1 RB / 0 RB Offset
					50 RB / 0 RB Offset
				16QAM	1 RB / 0 RB Offset
					50 RB / 0 RB Offset

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP	26deg. C, 58%RH	3.8Vdc	Phoenix Chen
FREQUENCY STABILITY	26deg. C, 58%RH	3.8Vdc	Phoenix Chen
OCCUPIED BANDWIDTH	26deg. C, 58%RH	3.8Vdc	Phoenix Chen
BAND EDGE	26deg. C, 58%RH	3.8Vdc	Phoenix Chen
CONDCUDETED EMISSION	26deg. C, 58%RH	3.8Vdc	Phoenix Chen
RADIATED EMISSION	25deg. C, 65%RH	120Vac, 60Hz	Kay Wu

3.5 EUT OPERATING CONDITIONS

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency

3.6 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 22

ANSI/TIA/EIA-603-C 2004

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

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B. The test report has been issued separately.

4 TEST TYPES AND RESULTS

4.1 OUTPUT POWER MEASUREMENT

4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Mobile / Portable station are limited to 7 watts e.r.p.

4.1.2 TEST PROCEDURES

EIRP / ERP MEASUREMENT:

a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 1MHz for GSM, GPRS & EDGE, 5MHz for WCDMA, and 10MHz for LTE mode.

b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.

c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step b. Record the power level of S.G

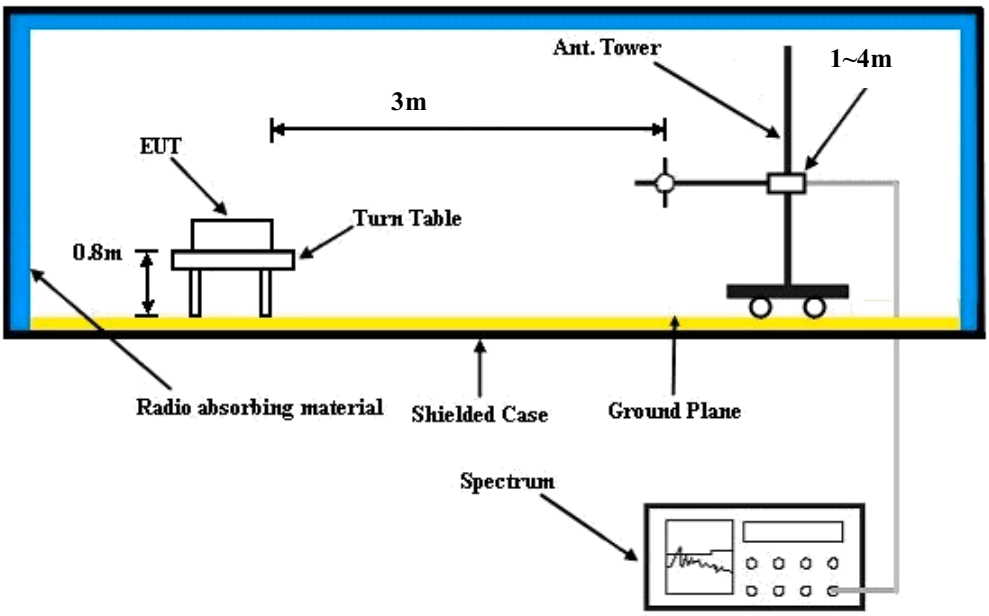
d. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15dBi.

CONDUCTED POWER MEASUREMENT:

The EUT was set up for the maximum power with GSM, GPRS, EDGE & WCDMA & LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

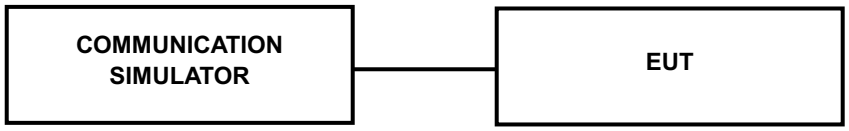
4.1.3 TEST SETUP

EIRP / ERP MEASUREMENT:



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

CONDUCTED POWER MEASUREMENT:



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

4.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Band	GPRS850		
Channel	128	189	251
Frequency (MHz)	824.2	836.4	848.8
GSM (1 Uplink)	33.01	**33.02**	32.98
GPRS 8 (GMSK, 1 slot)	32.96	33.00	32.92
GPRS 10 (GMSK, 2 slot)	30.55	30.60	30.43
EDGE 8 (GMSK, 1 slot)	32.87	32.86	32.81
EDGE 10 (GMSK, 2 slot)	30.50	30.56	30.40
EDGE 8 (8PSK, 1 slot)	27.52	27.31	27.22
EDGE 10 (8PSK, 2 slot)	27.53	27.36	27.20

Band	WCDMA V		
Channel	4132	4182	4233
Frequency (MHz)	826.4	836.4	846.6
RMC 12.2K	23.61	**23.68**	23.52
HSDPA Subtest-1	22.69	22.81	22.61
HSDPA Subtest-2	22.68	22.71	22.60
HSDPA Subtest-3	22.35	22.36	22.32
HSDPA Subtest-4	22.25	22.35	22.21
HSUPA Subtest-1	22.51	22.64	22.37
HSUPA Subtest-2	20.33	20.45	20.32
HSUPA Subtest-3	21.66	21.83	21.54
HSUPA Subtest-4	20.62	20.78	20.52
HSUPA Subtest-5	22.49	22.56	22.31

LTE Band 5								
BW	Modulation	CH	Frequency (MHz)	RB	RB Offset	MPR	Target Power	Measured Power
5 MHz	QPSK	20425	826.5	1	0	0	23.5	23.34
		20525	836.5	1	0	0	23.5	23.36
		20625	846.5	1	0	0	23.5	23.37
		20425	826.5	1	24	0	23.5	23.32
		20525	836.5	1	24	0	23.5	23.33
		20625	846.5	1	24	0	23.5	23.35
		20425	826.5	12	6	1	23.5	22.41
		20525	836.5	12	6	1	23.5	22.45
		20625	846.5	12	6	1	23.5	22.39
		20425	826.5	25	0	1	23.5	22.31
		20525	836.5	25	0	1	23.5	22.31
		20625	846.5	25	0	1	23.5	22.33
	16QAM	20425	826.5	1	0	1	23.5	22.32
		20525	836.5	1	0	1	23.5	22.31
		20625	846.5	1	0	1	23.5	22.43
		20425	826.5	1	24	1	23.5	22.31
		20525	836.5	1	24	1	23.5	22.34
		20625	846.5	1	24	1	23.5	22.36
		20425	826.5	12	6	2	23.5	21.34
		20525	836.5	12	6	2	23.5	21.40
		20625	846.5	12	6	2	23.5	21.43
		20425	826.5	25	0	2	23.5	21.32
		20525	836.5	25	0	2	23.5	21.34
		20625	846.5	25	0	2	23.5	21.37

LTE Band 5								
BW	Modulation	CH	Frequency (MHz)	RB	RB Offset	MPR	Target Power	Measured Power
10MHz	QPSK	20450	829	1	0	0	23.5	23.33
		20525	836.5	1	0	0	23.5	23.37
		20600	844	1	0	0	23.5	23.46
		20450	829	1	49	0	23.5	23.31
		20525	836.5	1	49	0	23.5	23.32
		20600	844	1	49	0	23.5	23.35
		20450	829	25	12	1	23.5	22.31
		20525	836.5	25	12	1	23.5	22.34
		20600	844	25	12	1	23.5	22.38
		20450	829	50	0	1	23.5	22.31
		20525	836.5	50	0	1	23.5	22.32
		20600	844	50	0	1	23.5	22.34
	16QAM	20450	829	1	0	1	23.5	22.32
		20525	836.5	1	0	1	23.5	22.34
		20600	844	1	0	1	23.5	22.39
		20450	829	1	49	1	23.5	22.32
		20525	836.5	1	49	1	23.5	22.36
		20600	844	1	49	1	23.5	22.35
		20450	829	25	12	2	23.5	21.31
		20525	836.5	25	12	2	23.5	21.32
		20600	844	25	12	2	23.5	21.35
		20450	829	50	0	2	23.5	21.35
		20525	836.5	50	0	2	23.5	21.36
		20600	844	50	0	2	23.5	21.39

ERP POWER (dBm)

GSM (1 Uplink)

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	128	824.2	-4.49	32.62	25.98	396.28	H
	189	836.4	-4.85	32.52	25.52	356.45	H
	251	848.8	-4.23	32.65	26.27	423.64	H
	128	824.2	-12.51	32.76	18.10	64.57	V
	189	836.4	-11.44	32.39	18.80	75.86	V
	251	848.8	-11.90	32.54	18.49	70.63	V

EDGE 8 (8PSK, 1 slot)

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	128	824.2	-11.00	32.62	19.47	88.51	H
	189	836.4	-10.40	32.52	19.97	99.31	H
	251	848.8	-11.12	32.65	19.38	86.70	H
	128	824.2	-17.78	32.76	12.83	19.19	V
	189	836.4	-18.20	32.39	12.04	16.00	V
	251	848.8	-18.05	32.54	12.34	17.14	V

WCDMA (RMC 12.2K)

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	4132	826.4	-14.89	32.62	15.58	36.14	H
	4182	836.4	-14.73	32.52	15.64	36.64	H
	4233	846.6	-14.39	32.65	16.11	40.83	H
	4132	826.4	-21.51	32.76	9.10	8.13	V
	4182	836.4	-21.23	32.39	9.01	7.96	V
	4233	846.6	-21.19	32.54	9.20	8.32	V

LTE BAND 5

CHANNEL BANDWIDTH: 5MHz QPSK (1RB / 0 RB Offset)

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	20425	826.5	-14.50	32.62	15.97	39.54	H
	20525	836.5	-14.11	32.52	16.26	42.27	H
	20625	846.5	-14.08	32.65	16.42	43.85	H
	20425	826.5	-20.88	32.76	9.73	9.40	V
	20525	836.5	-20.76	32.39	9.48	8.87	V
	20625	846.5	-20.64	32.54	9.75	9.44	V

LTE BAND 5

CHANNEL BANDWIDTH: 10MHz QPSK (1RB / 0 RB Offset)

Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	ERP(dBm)	ERP(mW)	Polarization (H/V)
Y	20450	829	-14.44	32.62	16.03	40.09	H
	20525	836.5	-13.90	32.52	16.47	44.36	H
	20600	844	-14.01	32.65	16.49	44.57	H
	20450	829	-21.06	32.76	9.55	9.02	V
	20525	836.5	-21.15	32.39	9.09	8.11	V
	20600	844	-21.00	32.54	9.39	8.69	V

4.2 FREQUENCY STABILITY MEASUREMENT

4.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

4.2.2 TEST PROCEDURE

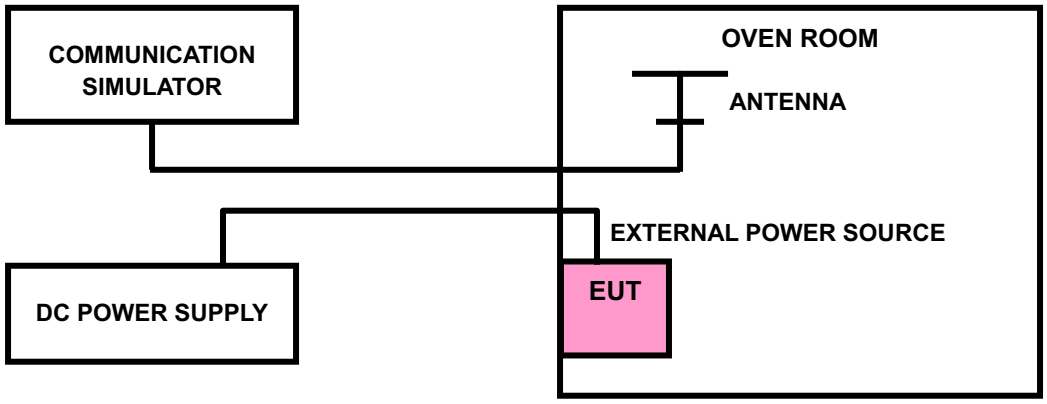
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.

c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

4.2.3 TEST SETUP



4.2.4 TEST RESULTS

FREQUENCY ERROR VS. VOLTAGE

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)					LIMIT (ppm)
	GPRS	EDGE	WCDMA	LTE Band 5		
				5MHz	10MHz	
3.75	-0.01	-0.04	-0.01	-0.004	0.004	2.5
3.6	0.01	-0.04	-0.01	-0.004	0.003	2.5
4.3	-0.01	-0.04	-0.01	-0.004	0.007	2.5

NOTE: The applicant defined the normal working voltage of the battery is from 3.6Vdc to 4.3Vdc.

FREQUENCY ERROR vs. TEMPERATURE.

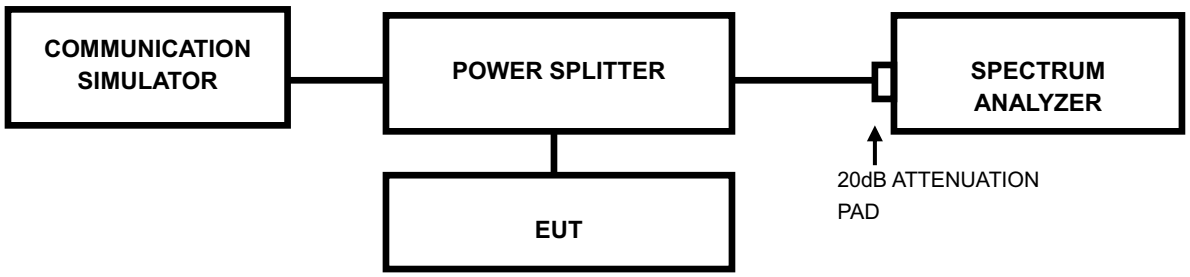
TEMP. (℃)	FREQUENCY ERROR (ppm)					LIMIT (ppm)
	GPRS	EDGE	WCDMA	LTE Band 5		
				5MHz	10MHz	
-20	0.01	-0.04	-0.01	0.004	0.006	2.5
-10	0.01	-0.04	-0.01	0.004	0.007	2.5
0	-0.01	-0.04	-0.01	0.003	0.004	2.5
10	-0.01	-0.04	-0.01	-0.004	0.003	2.5
20	0.01	-0.05	-0.01	-0.004	-0.003	2.5
30	-0.01	-0.04	-0.01	-0.004	0.006	2.5
40	-0.01	-0.04	-0.01	-0.005	0.003	2.5
50	-0.01	-0.04	-0.01	-0.002	0.005	2.5
60	0.01	-0.04	-0.01	-0.004	0.003	2.5

4.3 OCCUPIED BANDWIDTH MEASUREMENT

4.3.1 TEST PROCEDURES

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

4.3.2 TEST SETUP

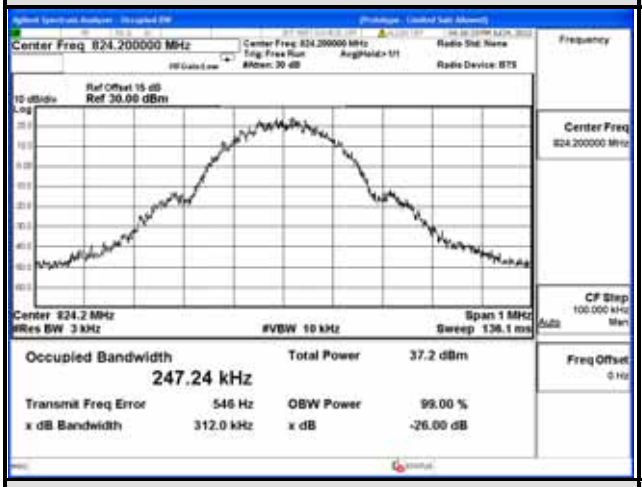


4.3.3 TEST RESULTS

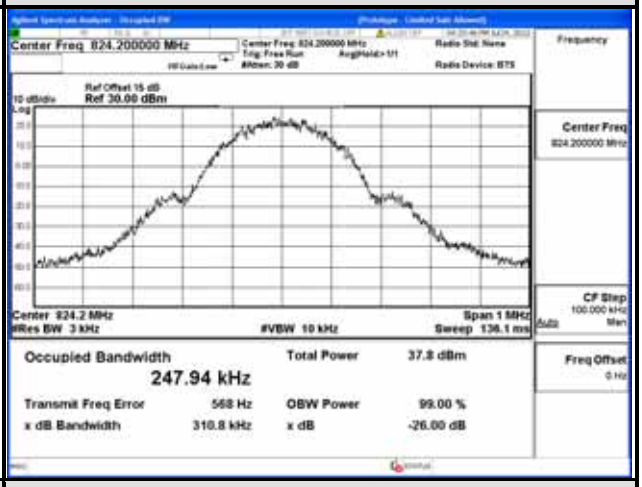
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (kHz)		CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)
		GSM	EDGE			WCDMA
128	824.2	247.24	247.94	4132	826.4	4.18
189	836.4	245.72	247.31	4182	836.4	4.18
251	848.8	244.66	244.74	4233	846.6	4.18

SPECTRUM PLOT OF WORST VALUE

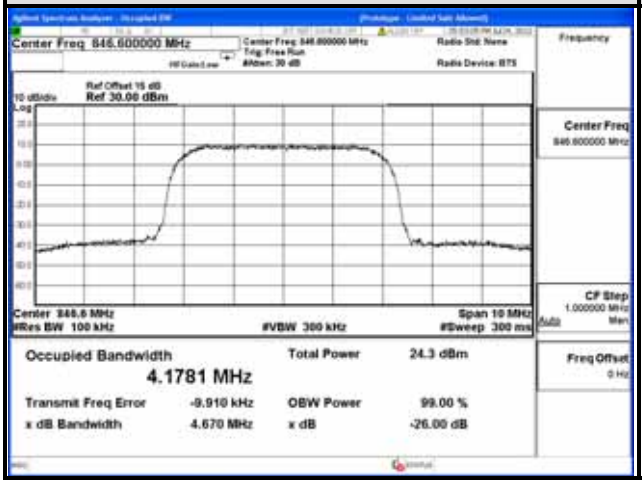
GSM



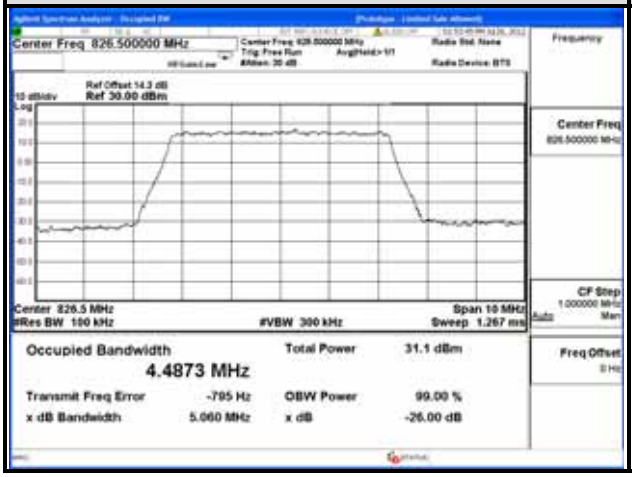
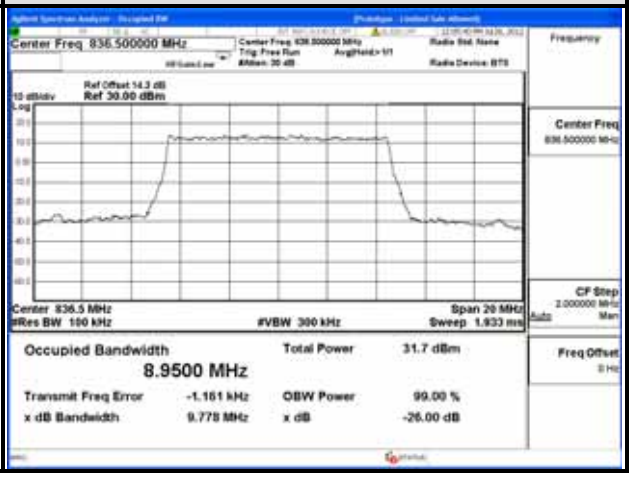
EDGE



WCDMA



LTE BAND 5					
CHANNEL BANDWIDTH: 5MHz			CHANNEL BANDWIDTH: 10MHz		
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)	CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)
20425	826.5	4.49	20450	829	8.94
20525	836.5	4.49	20525	836.5	8.95
20625	846.5	4.49	20600	844	8.94

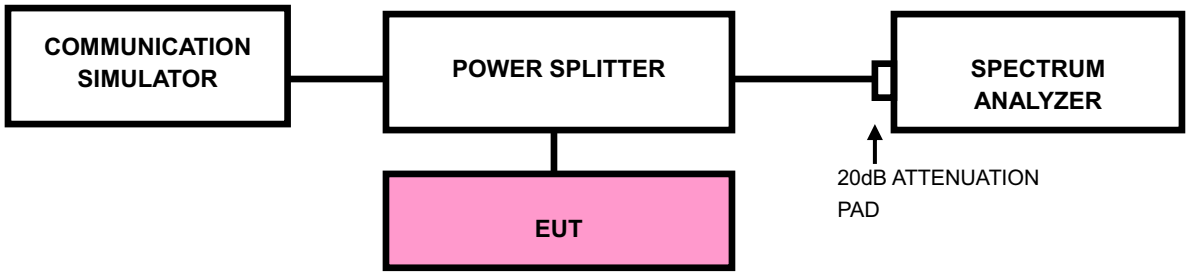
SPECTRUM PLOT OF WORST VALUE	
5MHz	10MHz
	

4.4 BAND EDGE MEASUREMENT

4.4.1 LIMITS OF BAND EDGE MEASUREMENT

Power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

4.4.2 TEST SETUP



4.4.3 TEST PROCEDURES

a. All measurements were done at low and high operational frequency range.

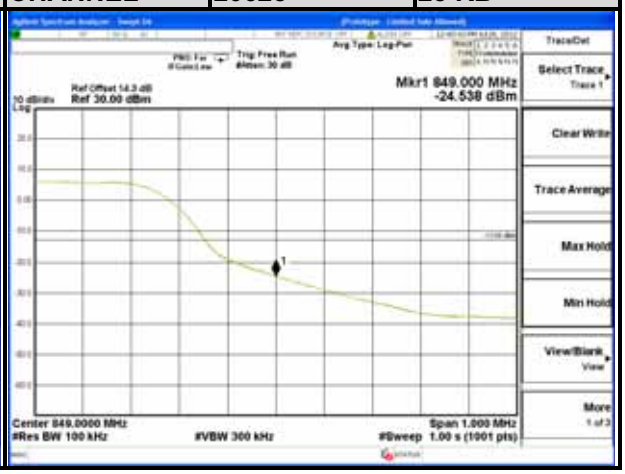
b. The center frequency of spectrum is the band edge frequency and span is 1.5 MHz. RB of the spectrum is 3kHz and VB of the spectrum is 10kHz (GSM/GPRS/ EDGE).

c. The center frequency of spectrum is the band edge frequency and span is 10MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (WCDMA/LTE).

d. Record the max trace plot into the test report.

4.4.4 TEST RESULTS

GSM			
CHANNEL	128	CHANNEL	251
			
EDGE			
CHANNEL	128	CHANNEL	251
			
WCDMA			
CHANNEL	4132	CHANNEL	4233
			

LTE Band 5					
Channel Bandwidth: 5MHz					
CHANNEL	20425	1 RB	CHANNEL	20625	1 RB
					
CHANNEL	20425	25 RB	CHANNEL	20625	25 RB
					

LTE Band 5					
Channel Bandwidth: 10MHz					
CHANNEL	20450	1 RB	CHANNEL	20600	1 RB
					
CHANNEL	23780	50 RB	CHANNEL	23800	50 RB
					

4.5 CONDUCTED SPURIOUS EMISSIONS

4.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

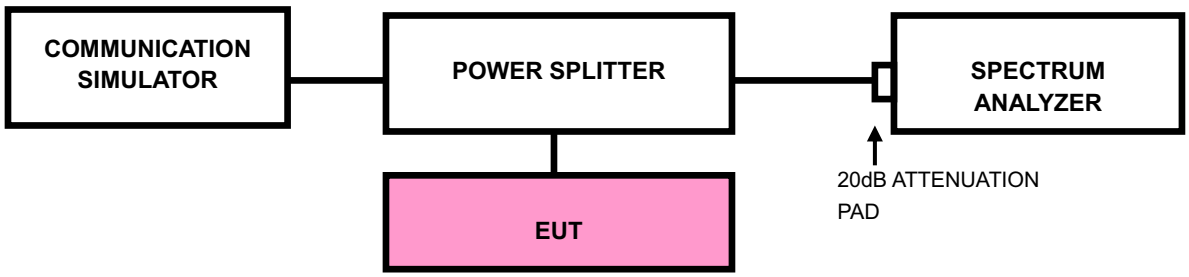
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

4.5.2 TEST PROCEDURE

a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.

b. Measuring frequency range is from 30 MHz to 9GHz. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

4.5.3 TEST SETUP



4.5.4 TEST RESULTS

GSM	WCDMA
CHANNEL 189	CHANNEL 4182
FREQUENCY RANGE : 30MHz~9GHz	FREQUENCY RANGE : 30MHz~9GHz
	
LTE Band 5 (Channel Bandwidth: 5MHz)	LTE Band 5 (Channel Bandwidth: 10MHz)
CHANNEL 20525	CHANNEL 20525
FREQUENCY RANGE : 30MHz~9GHz	FREQUENCY RANGE : 30MHz~9GHz
	

4.6 RADIATED EMISSION MEASUREMENT

4.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

4.6.2 TEST PROCEDURES

a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.

b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step a. Record the power level of S.G

c. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.

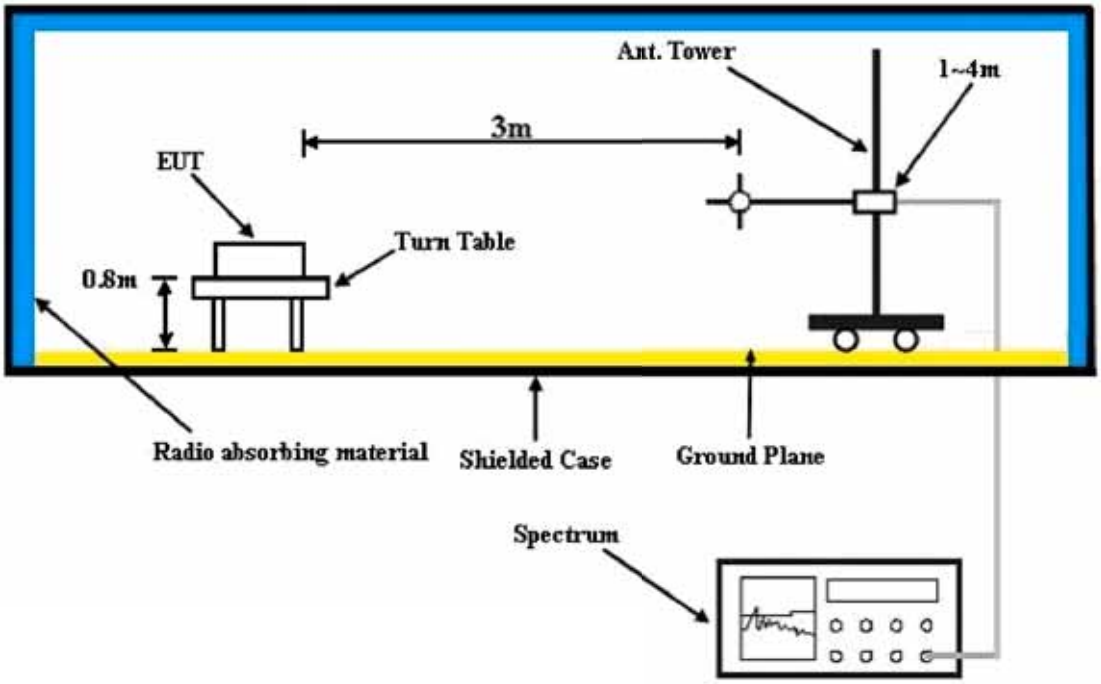
d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15dBi.

NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.6.3 DEVIATION FROM TEST STANDARD

No deviation

4.6.4 TEST SETUP



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

4.6.5 TEST RESULTS

GSM:

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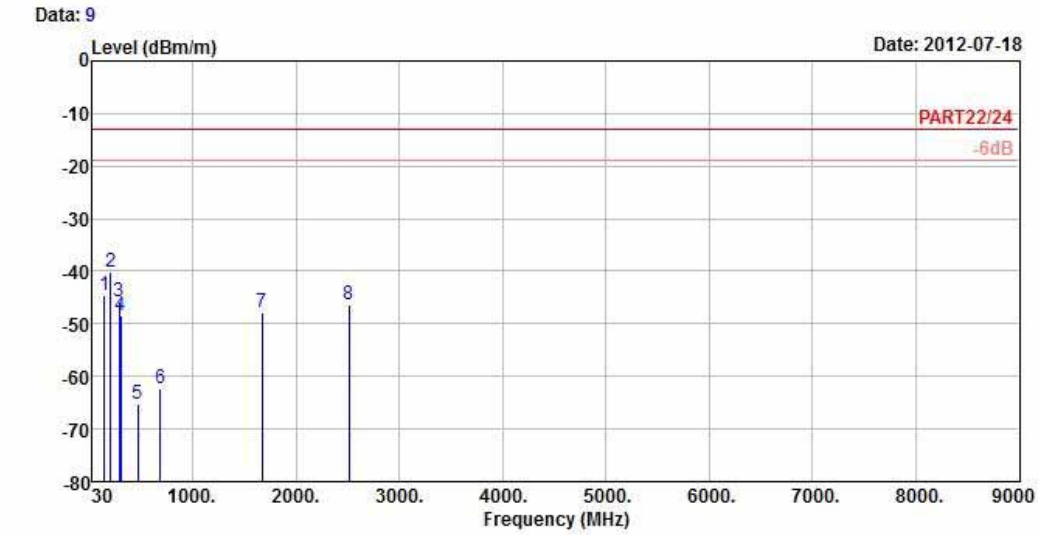
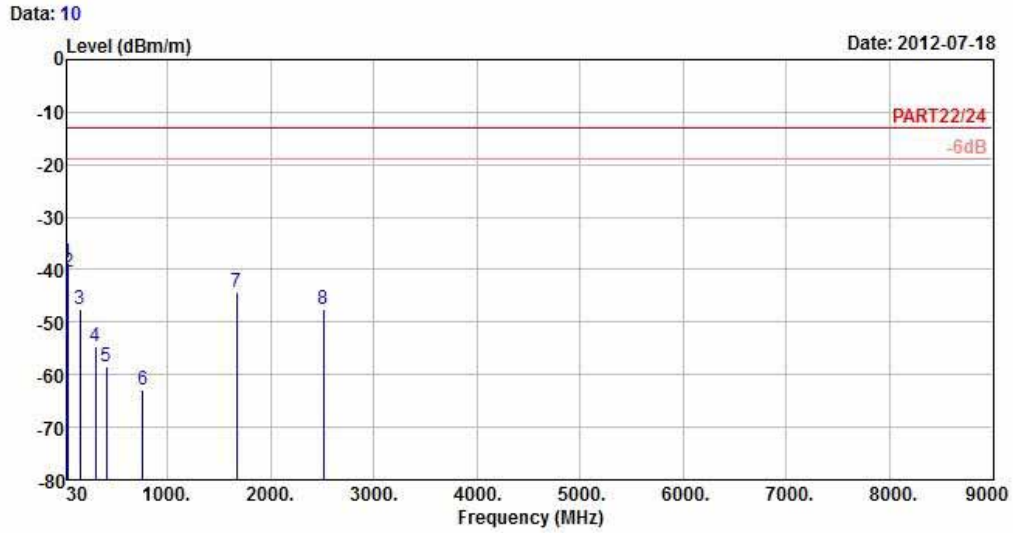


Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 HORIZONTAL
Brand/Model: PM23300
Remark : GSM850 Link
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	147.45	-44.62	-38.45	-13.00	-31.62	-6.17	Peak
2 pp	207.93	-40.21	-32.61	-13.00	-27.21	-7.60	Peak
3	289.47	-45.67	-39.44	-13.00	-32.67	-6.23	Peak
4	302.10	-48.39	-42.03	-13.00	-35.39	-6.36	Peak
5	464.50	-65.19	-61.19	-13.00	-52.19	-4.00	Peak
6	683.60	-62.37	-63.52	-13.00	-49.37	1.15	Peak
7	1672.80	-47.71	-34.89	-13.00	-34.71	-12.82	Peak
8	2509.20	-46.32	-37.15	-13.00	-33.32	-9.17	Peak



Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 VERTICAL
Brand/Model: PM23300
Remark : GSM850 Link
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	32.97	-38.72	-37.61	-13.00	-25.72	-1.11	Peak
2	42.96	-40.37	-39.04	-13.00	-27.37	-1.33	Peak
3	149.88	-47.40	-41.04	-13.00	-34.40	-6.36	Peak
4	302.10	-54.67	-48.31	-13.00	-41.67	-6.36	Peak
5	411.30	-58.52	-53.17	-13.00	-45.52	-5.35	Peak
6	764.10	-62.95	-64.84	-13.00	-49.95	1.89	Peak
7	1672.80	-44.37	-31.55	-13.00	-31.37	-12.82	Peak
8	2509.20	-47.65	-38.48	-13.00	-34.65	-9.17	Peak

EDGE:

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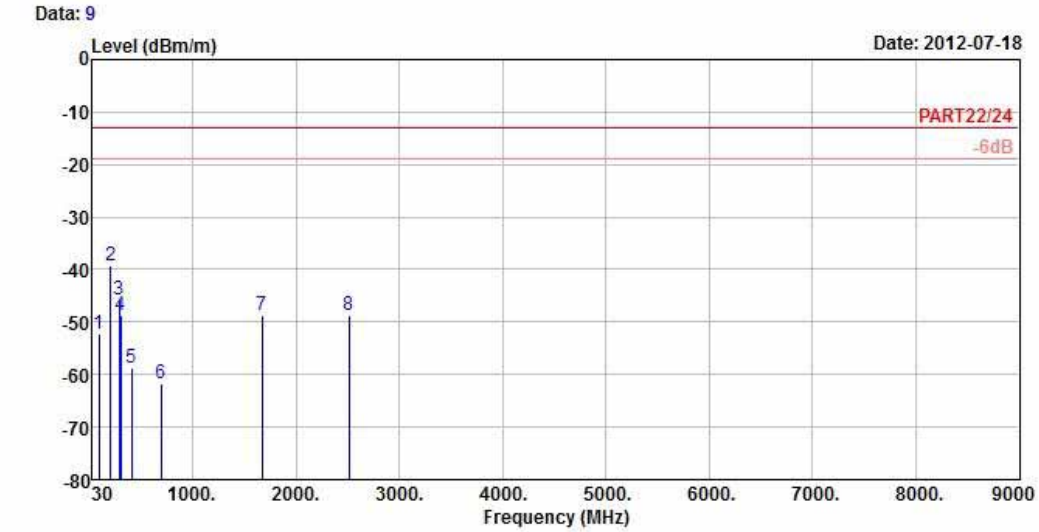
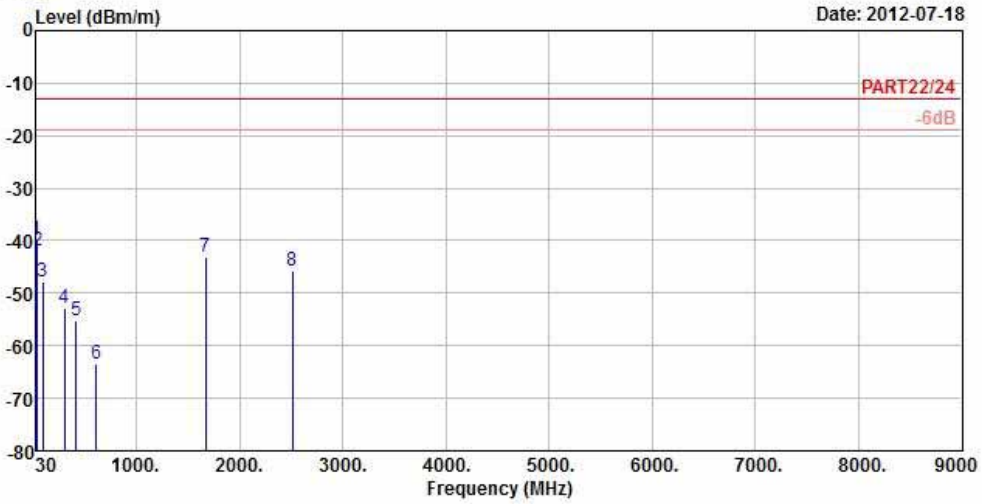


Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 HORIZONTAL
Brand/Model: PM23300
Remark : EDGE Link
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	95.07	-52.23	-41.74	-13.00	-39.23	-10.49	Peak
2 pp	208.20	-39.35	-31.79	-13.00	-26.35	-7.56	Peak
3	287.04	-45.64	-39.44	-13.00	-32.64	-6.20	Peak
4	302.80	-48.76	-42.40	-13.00	-35.76	-6.36	Peak
5	407.80	-58.72	-53.28	-13.00	-45.72	-5.44	Peak
6	696.90	-61.71	-63.11	-13.00	-48.71	1.40	Peak
7	1672.80	-48.84	-36.02	-13.00	-35.84	-12.82	Peak
8	2509.20	-48.60	-39.43	-13.00	-35.60	-9.17	Peak

Data: 10



Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 VERTICAL
Brand/Model: PM23300
Remark : EDGE Link
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	32.43	-39.72	-38.61	-13.00	-26.72	-1.11	Peak
2	41.07	-42.00	-40.54	-13.00	-29.00	-1.46	Peak
3	94.80	-47.87	-37.38	-13.00	-34.87	-10.49	Peak
4	301.40	-52.85	-46.48	-13.00	-39.85	-6.37	Peak
5	414.10	-55.25	-49.98	-13.00	-42.25	-5.27	Peak
6	607.30	-63.50	-63.27	-13.00	-50.50	-0.23	Peak
7	1672.80	-43.01	-30.19	-13.00	-30.01	-12.82	Peak
8	2509.20	-45.78	-36.61	-13.00	-32.78	-9.17	Peak

WCDMA:

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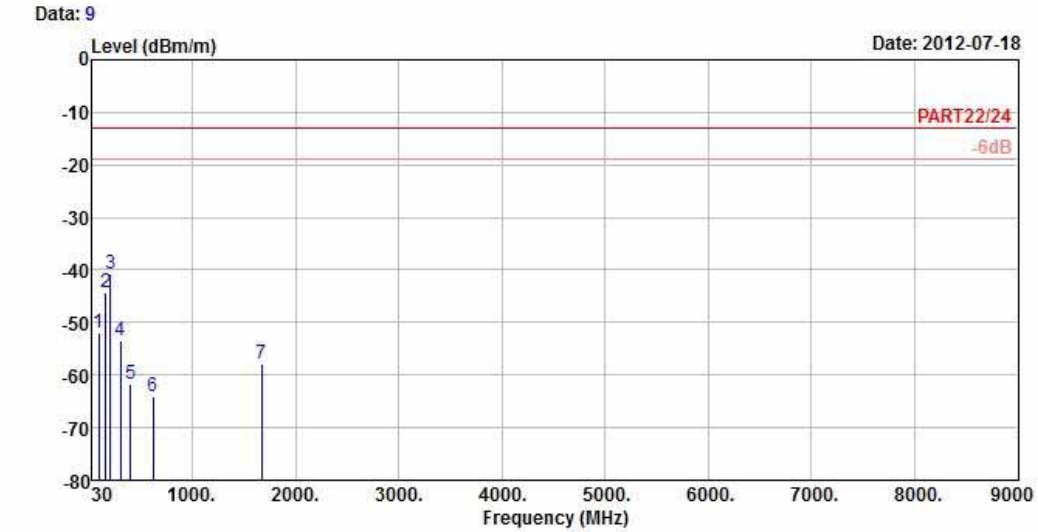
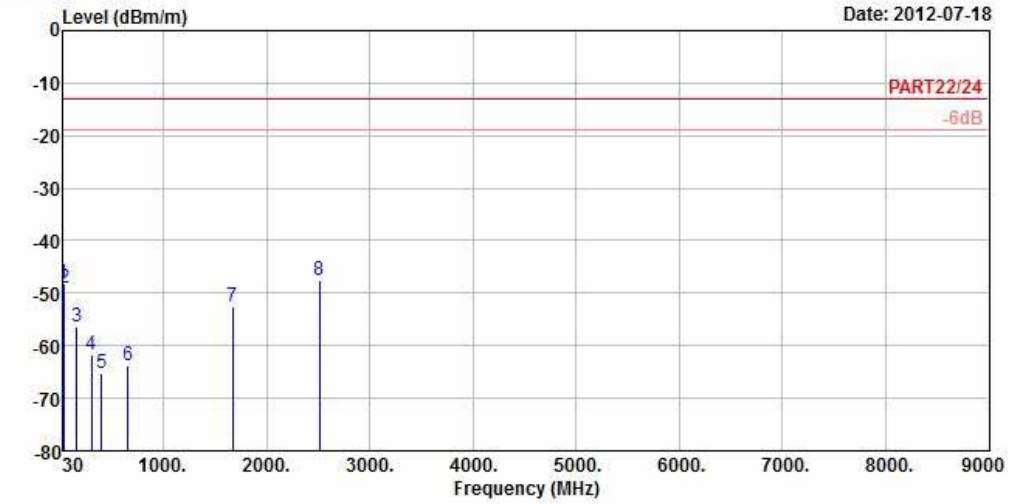


Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 HORIZONTAL
Brand/Model: PM23300
Remark : Band V Link
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	94.80	-52.04	-41.55	-13.00	-39.04	-10.49	Peak
2	163.11	-44.23	-37.66	-13.00	-31.23	-6.57	Peak
3 pp	204.42	-40.81	-33.08	-13.00	-27.81	-7.73	Peak
4	300.70	-53.49	-47.12	-13.00	-40.49	-6.37	Peak
5	402.90	-61.75	-56.18	-13.00	-48.75	-5.57	Peak
6	621.30	-64.01	-64.04	-13.00	-51.01	0.03	Peak
7	1672.80	-57.86	-45.04	-13.00	-44.86	-12.82	Peak

Data: 10



Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 VERTICAL
Brand/Model: PM23300
Remark : Band V Link
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	32.70	-48.02	-46.91	-13.00	-35.02	-1.11	Peak
2	42.15	-48.86	-47.53	-13.00	-35.86	-1.33	Peak
3	162.30	-56.28	-49.73	-13.00	-43.28	-6.55	Peak
4	300.00	-61.77	-55.39	-13.00	-48.77	-6.38	Peak
5	401.50	-65.20	-59.61	-13.00	-52.20	-5.59	Peak
6	657.70	-63.67	-64.35	-13.00	-50.67	0.68	Peak
7	1672.80	-52.47	-39.65	-13.00	-39.47	-12.82	Peak
8 pp	2509.20	-47.41	-38.24	-13.00	-34.41	-9.17	Peak

LTE BAND 5

CHANNEL BANDWIDTH: 5MHz / QPSK

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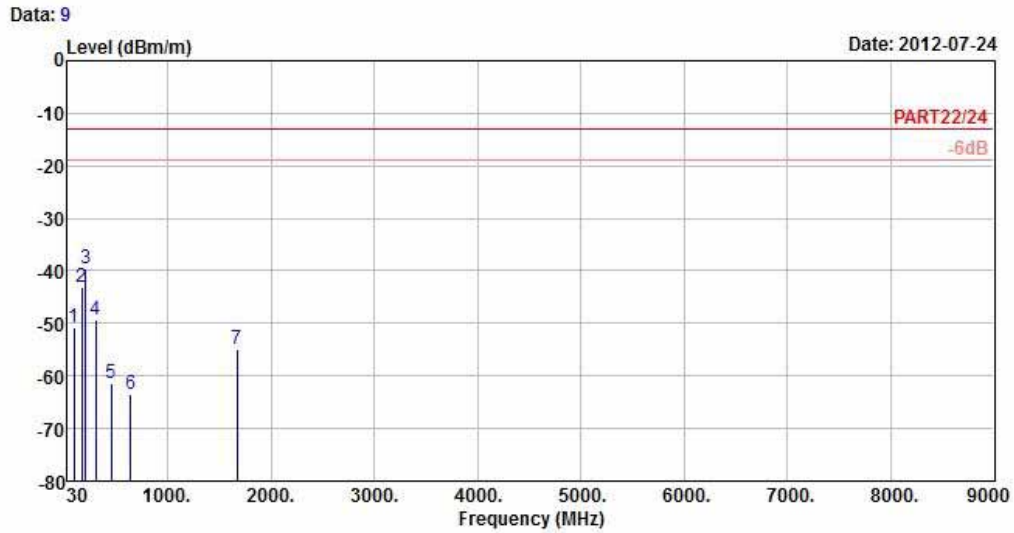
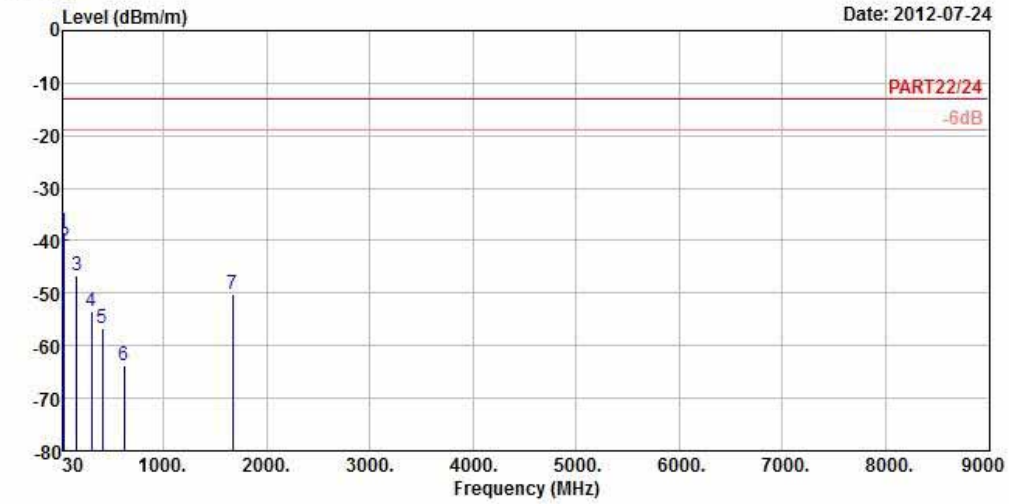


Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 HORIZONTAL
Brand/Model: PL23300
Remark : LTE Band 5_5M_(QPSK 1,0)
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	96.15	-50.82	-40.35	-13.00	-37.82	-10.47	Peak
2	166.62	-43.01	-36.37	-13.00	-30.01	-6.64	Peak
3 pp	204.15	-39.60	-31.87	-13.00	-26.60	-7.73	Peak
4	302.10	-49.36	-43.00	-13.00	-36.36	-6.36	Peak
5	455.40	-61.52	-57.30	-13.00	-48.52	-4.22	Peak
6	643.70	-63.56	-64.00	-13.00	-50.56	0.44	Peak
7	1668.60	-54.97	-42.15	-13.00	-41.97	-12.82	Peak

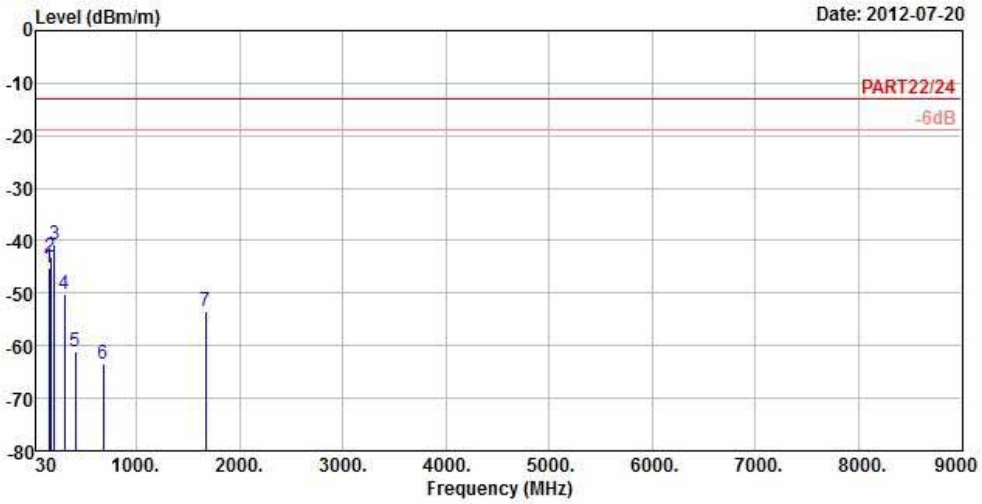
Data: 10



Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 VERTICAL
Brand/Model: PL23300
Remark : LTE Band 5_5M_(QPSK 1,0)
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

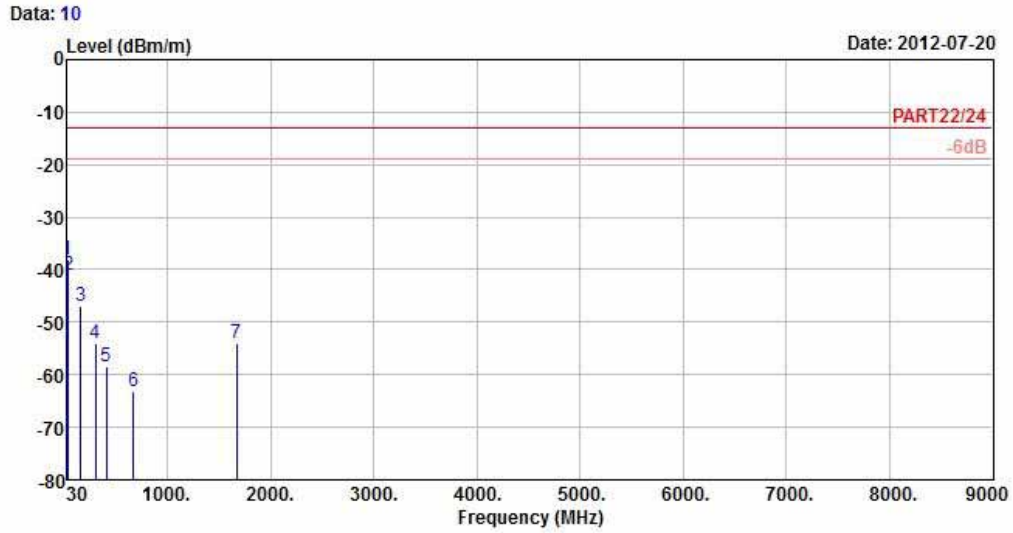
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	32.97	-38.40	-37.29	-13.00	-25.40	-1.11	Peak
2	41.07	-40.92	-39.46	-13.00	-27.92	-1.46	Peak
3	162.30	-46.56	-40.01	-13.00	-33.56	-6.55	Peak
4	300.00	-53.48	-47.10	-13.00	-40.48	-6.38	Peak
5	409.20	-56.61	-51.22	-13.00	-43.61	-5.39	Peak
6	620.60	-63.90	-63.92	-13.00	-50.90	0.02	Peak
7	1668.60	-50.14	-37.32	-13.00	-37.14	-12.82	Peak

Data: 9



Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 HORIZONTAL
Brand/Model: PL23300
Remark : LTE Band 5_5M_(QPSK 25,0)
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	150.42	-45.31	-38.95	-13.00	-32.31	-6.36	Peak
2	167.43	-43.09	-36.43	-13.00	-30.09	-6.66	Peak
3 pp	206.85	-40.67	-33.03	-13.00	-27.67	-7.64	Peak
4	300.00	-50.10	-43.72	-13.00	-37.10	-6.38	Peak
5	410.60	-60.99	-55.62	-13.00	-47.99	-5.37	Peak
6	675.20	-63.32	-64.32	-13.00	-50.32	1.00	Peak
7	1672.80	-53.42	-40.60	-13.00	-40.42	-12.82	Peak



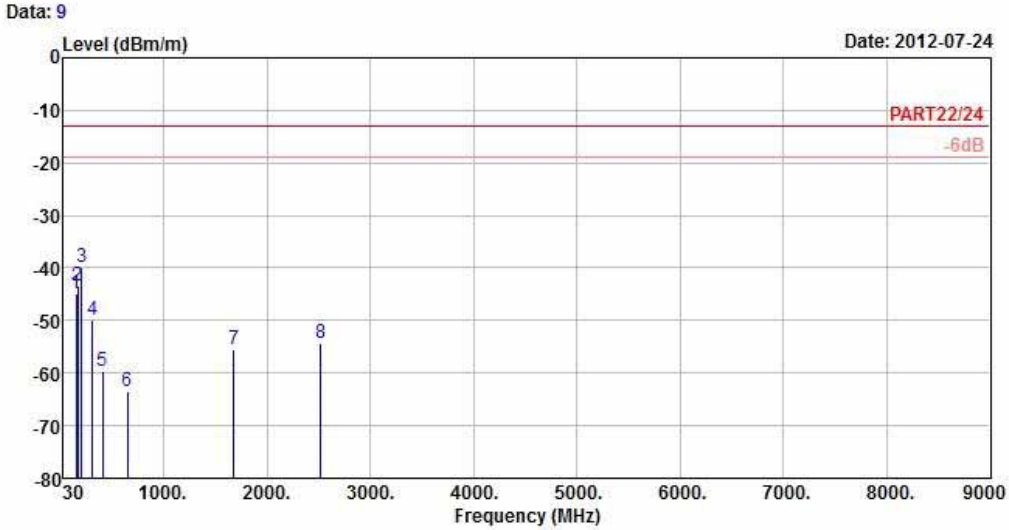
Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 VERTICAL
Brand/Model: PL23300
Remark : LTE Band 5_5M_(QPSK 25,0)
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	32.70	-37.96	-36.85	-13.00	-24.96	-1.11	Peak
2	40.80	-40.91	-39.45	-13.00	-27.91	-1.46	Peak
3	161.76	-46.83	-40.28	-13.00	-33.83	-6.55	Peak
4	300.70	-54.09	-47.72	-13.00	-41.09	-6.37	Peak
5	407.10	-58.39	-52.95	-13.00	-45.39	-5.44	Peak
6	668.90	-63.29	-64.18	-13.00	-50.29	0.89	Peak
7	1672.80	-54.16	-41.34	-13.00	-41.16	-12.82	Peak

LTE BAND 5

CHANNEL BANDWIDTH: 5MHz / 16QAM

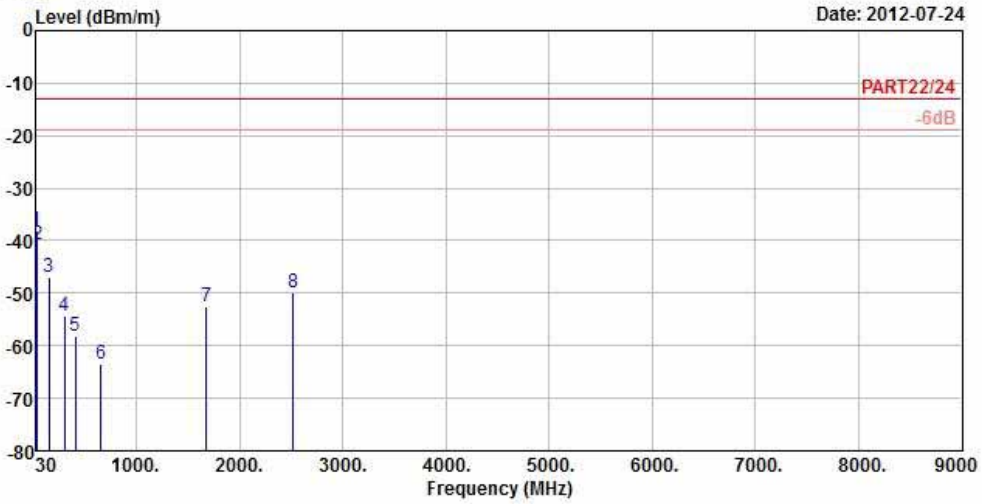
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 HORIZONTAL
Brand/Model: PL23300
Remark : LTE Band 5_5M_(16QAM 1,24)
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	149.07	-44.91	-38.61	-13.00	-31.91	-6.30	Peak
2	167.16	-43.26	-36.62	-13.00	-30.26	-6.64	Peak
3 pp	202.80	-39.99	-32.17	-13.00	-26.99	-7.82	Peak
4	314.00	-49.96	-43.69	-13.00	-36.96	-6.27	Peak
5	409.20	-59.53	-54.14	-13.00	-46.53	-5.39	Peak
6	646.50	-63.44	-63.93	-13.00	-50.44	0.49	Peak
7	1677.40	-55.43	-42.69	-13.00	-42.43	-12.74	Peak
8	2516.10	-54.25	-45.08	-13.00	-41.25	-9.17	Peak

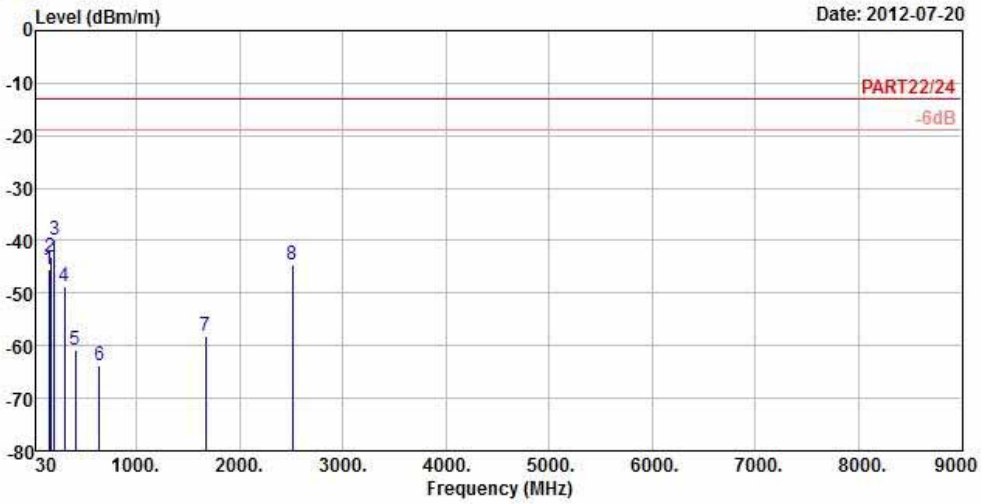
Data: 10



Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 VERTICAL
Brand/Model: PL23300
Remark : LTE Band 5_5M_(16QAM 1,24)
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	32.97	-38.18	-37.07	-13.00	-25.18	-1.11	Peak
2	41.61	-40.85	-39.46	-13.00	-27.85	-1.39	Peak
3	150.15	-46.82	-40.46	-13.00	-33.82	-6.36	Peak
4	300.70	-54.35	-47.98	-13.00	-41.35	-6.37	Peak
5	409.20	-58.24	-52.85	-13.00	-45.24	-5.39	Peak
6	658.40	-63.34	-64.04	-13.00	-50.34	0.70	Peak
7	1677.40	-52.44	-39.70	-13.00	-39.44	-12.74	Peak
8	2516.10	-49.92	-40.75	-13.00	-36.92	-9.17	Peak

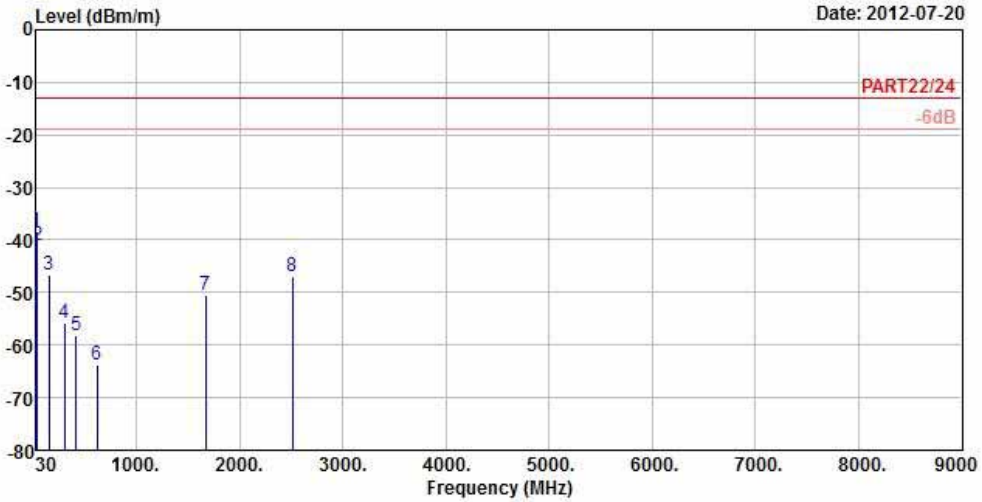
Data: 9



Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 HORIZONTAL
Brand/Model: PL23300
Remark : LTE Band 5_5M_(16QAM 25,0)
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	149.88	-45.39	-39.03	-13.00	-32.39	-6.36	Peak
2	167.70	-43.21	-36.55	-13.00	-30.21	-6.66	Peak
3 pp	205.50	-39.82	-32.13	-13.00	-26.82	-7.69	Peak
4	302.80	-48.74	-42.38	-13.00	-35.74	-6.36	Peak
5	407.10	-60.92	-55.48	-13.00	-47.92	-5.44	Peak
6	642.30	-63.79	-64.19	-13.00	-50.79	0.40	Peak
7	1672.80	-58.27	-45.45	-13.00	-45.27	-12.82	Peak
8	2509.20	-44.60	-35.43	-13.00	-31.60	-9.17	Peak

Data: 10



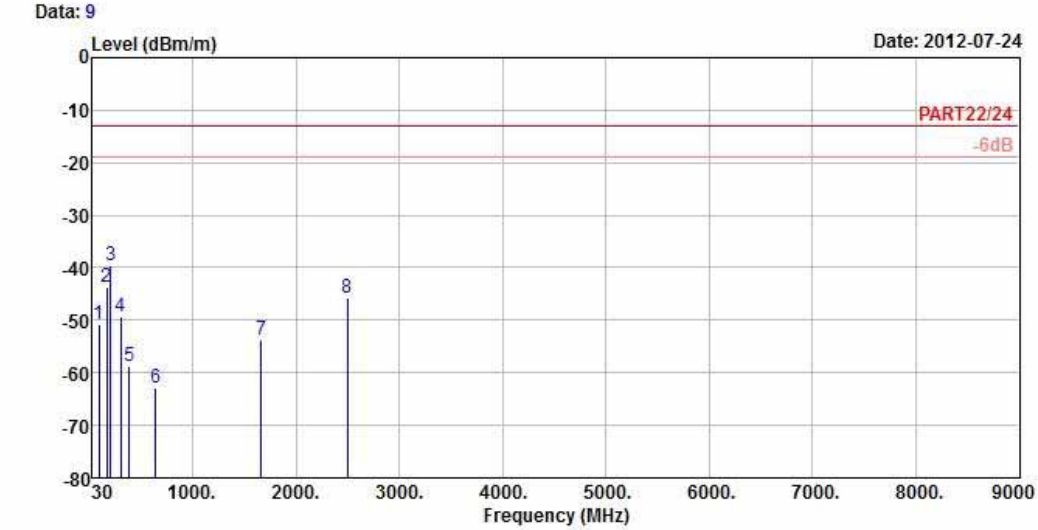
Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 VERTICAL
Brand/Model: PL23300
Remark : LTE Band 5_5M_(16QAM 25,0)
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	32.97	-38.46	-37.35	-13.00	-25.46	-1.11	Peak
2	41.61	-41.08	-39.69	-13.00	-28.08	-1.39	Peak
3	150.15	-46.63	-40.27	-13.00	-33.63	-6.36	Peak
4	301.40	-55.79	-49.42	-13.00	-42.79	-6.37	Peak
5	413.40	-58.16	-52.86	-13.00	-45.16	-5.30	Peak
6	617.10	-63.81	-63.76	-13.00	-50.81	-0.05	Peak
7	1672.80	-50.47	-37.65	-13.00	-37.47	-12.82	Peak
8	2509.20	-47.03	-37.86	-13.00	-34.03	-9.17	Peak

LTE BAND 5

CHANNEL BANDWIDTH: 10MHz / QPSK

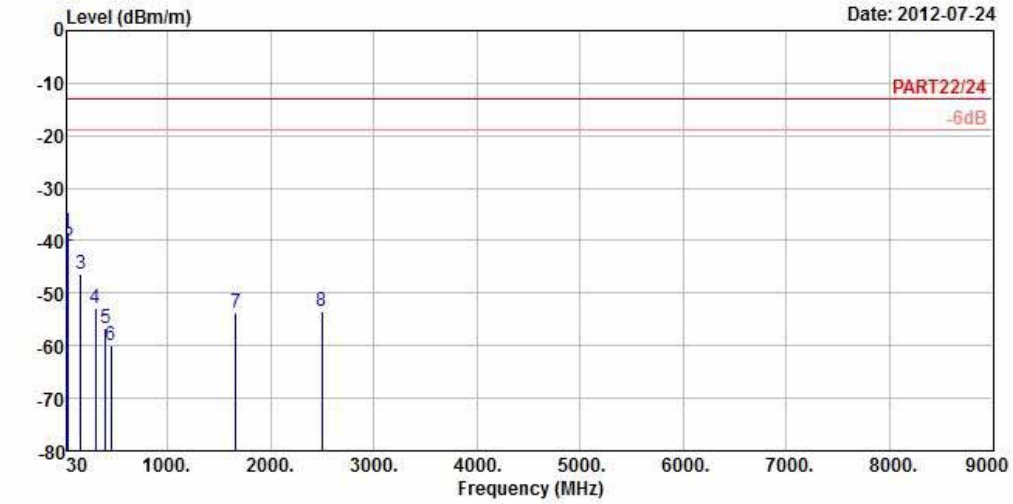
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 HORIZONTAL
Brand/Model: PL23300
Remark : LTE Band 5_10M_(QPSK 1,0)
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	96.15	-50.66	-40.19	-13.00	-37.66	-10.47	Peak
2	165.27	-43.57	-36.97	-13.00	-30.57	-6.60	Peak
3 pp	203.07	-39.52	-31.70	-13.00	-26.52	-7.82	Peak
4	301.40	-49.18	-42.81	-13.00	-36.18	-6.37	Peak
5	384.00	-58.80	-53.05	-13.00	-45.80	-5.75	Peak
6	641.60	-62.95	-63.35	-13.00	-49.95	0.40	Peak
7	1664.20	-53.76	-40.94	-13.00	-40.76	-12.82	Peak
8	2496.30	-45.87	-37.29	-13.00	-32.87	-8.58	Peak

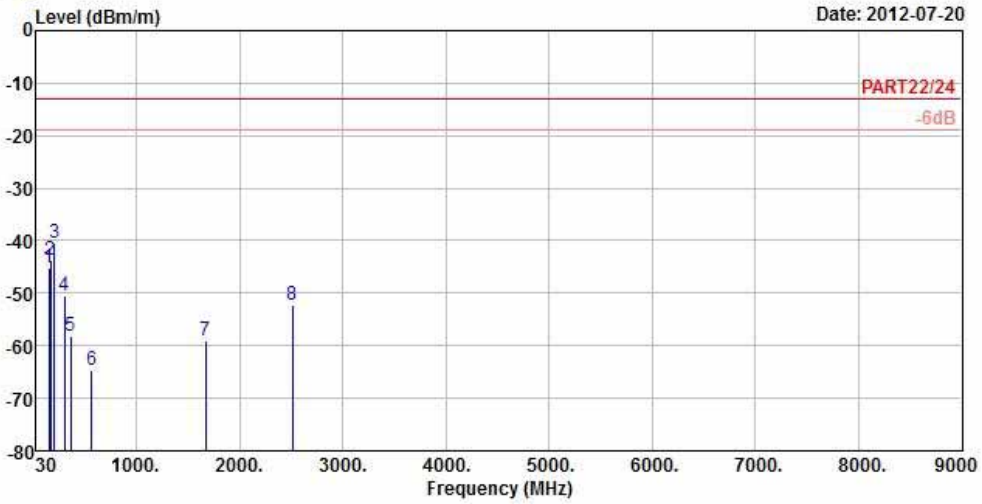
Data: 10



Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 VERTICAL
Brand/Model: PL23300
Remark : LTE Band 5_10M_(QPSK 1,0)
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	32.97	-38.45	-37.34	-13.00	-25.45	-1.11	Peak
2	40.80	-40.89	-39.43	-13.00	-27.89	-1.46	Peak
3	162.03	-46.46	-39.91	-13.00	-33.46	-6.55	Peak
4	300.00	-52.73	-46.35	-13.00	-39.73	-6.38	Peak
5	403.60	-56.59	-51.05	-13.00	-43.59	-5.54	Peak
6	451.90	-59.86	-55.54	-13.00	-46.86	-4.32	Peak
7	1664.20	-53.67	-40.85	-13.00	-40.67	-12.82	Peak
8	2496.30	-53.53	-44.95	-13.00	-40.53	-8.58	Peak

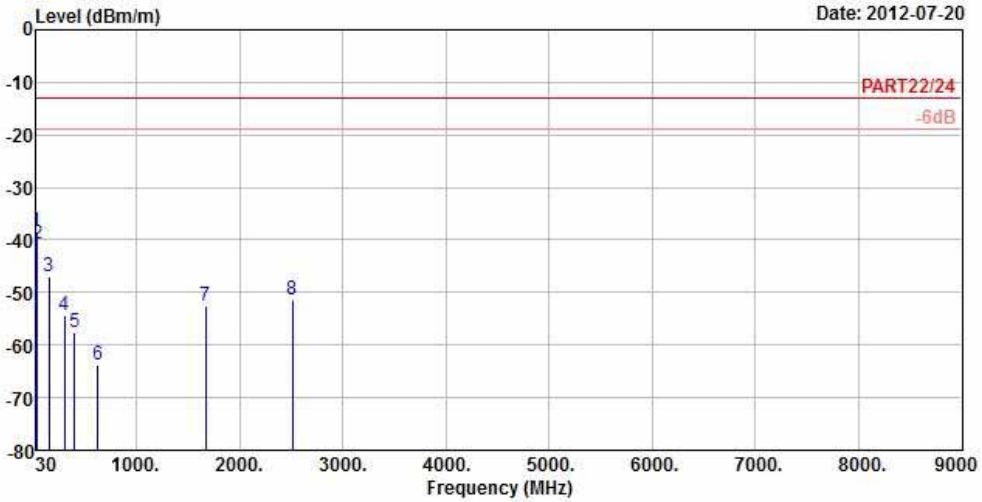
Data: 9



Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 HORIZONTAL
Brand/Model: PL23300
Remark : LTE Band 5_10M_(QPSK 50,0)
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	149.34	-45.06	-38.76	-13.00	-32.06	-6.30	Peak
2	166.89	-43.66	-37.02	-13.00	-30.66	-6.64	Peak
3 pp	204.42	-40.39	-32.66	-13.00	-27.39	-7.73	Peak
4	305.60	-50.39	-44.05	-13.00	-37.39	-6.34	Peak
5	361.60	-58.01	-52.09	-13.00	-45.01	-5.92	Peak
6	568.80	-64.56	-63.33	-13.00	-51.56	-1.23	Peak
7	1672.80	-59.03	-46.21	-13.00	-46.03	-12.82	Peak
8	2509.20	-52.37	-43.20	-13.00	-39.37	-9.17	Peak

Data: 10



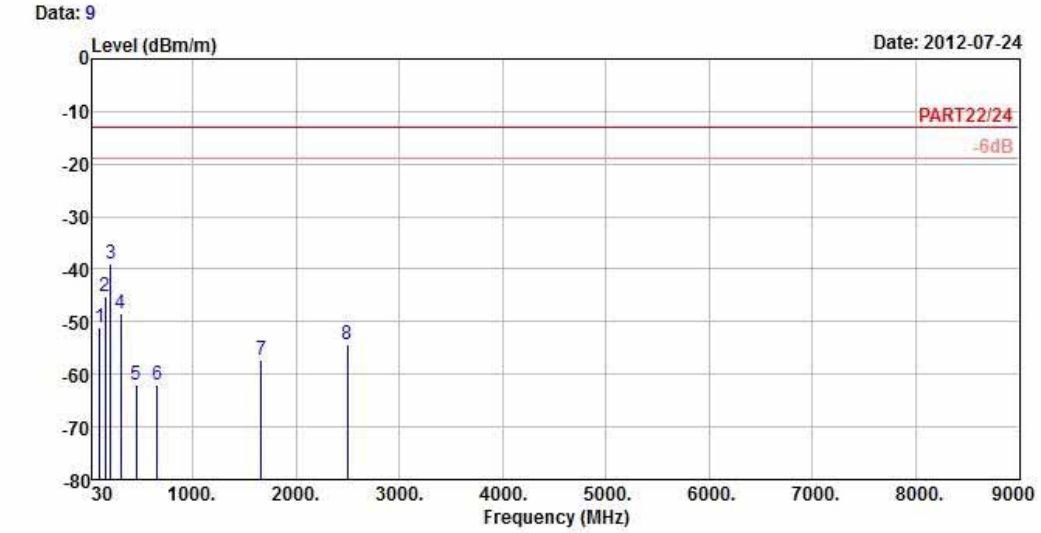
Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 VERTICAL
Brand/Model: PL23300
Remark : LTE Band 5_10M_(QPSK 50,0)
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	32.97	-38.25	-37.14	-13.00	-25.25	-1.11	Peak
2	41.07	-40.82	-39.36	-13.00	-27.82	-1.46	Peak
3	149.88	-47.07	-40.71	-13.00	-34.07	-6.36	Peak
4	302.10	-54.44	-48.08	-13.00	-41.44	-6.36	Peak
5	399.40	-57.71	-52.07	-13.00	-44.71	-5.64	Peak
6	629.00	-63.85	-64.02	-13.00	-50.85	0.17	Peak
7	1672.80	-52.64	-39.82	-13.00	-39.64	-12.82	Peak
8	2509.20	-51.25	-42.08	-13.00	-38.25	-9.17	Peak

LTE BAND 5

CHANNEL BANDWIDTH: 10MHz / 16QAM

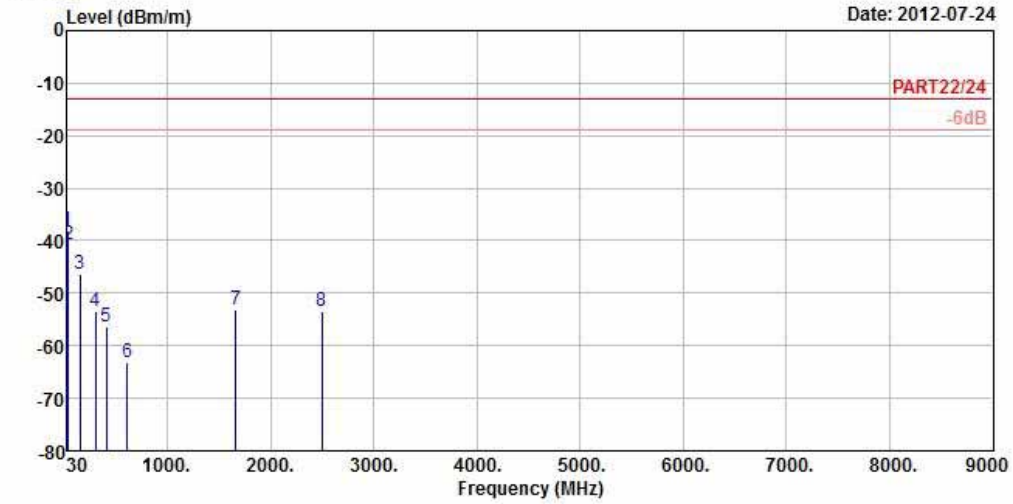
Bureau Veritas Consumer Products Services Ltd.,Taoyuan Branch



Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 HORIZONTAL
Brand/Model: PL23300
Remark : LTE Band 5_10M_(16QAM 1,0)
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	96.69	-50.97	-40.52	-13.00	-37.97	-10.45	Peak
2	149.34	-45.14	-38.84	-13.00	-32.14	-6.30	Peak
3 pp	205.77	-39.06	-31.37	-13.00	-26.06	-7.69	Peak
4	300.00	-48.38	-42.00	-13.00	-35.38	-6.38	Peak
5	455.40	-61.96	-57.74	-13.00	-48.96	-4.22	Peak
6	653.50	-61.96	-62.57	-13.00	-48.96	0.61	Peak
7	1664.20	-57.20	-44.38	-13.00	-44.20	-12.82	Peak
8	2496.30	-54.35	-45.77	-13.00	-41.35	-8.58	Peak

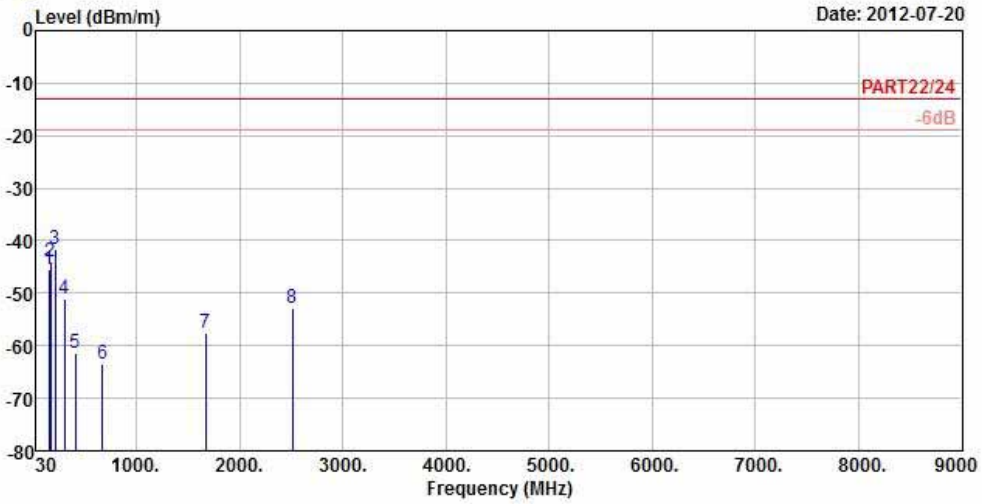
Data: 10



Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 VERTICAL
Brand/Model: PL23300
Remark : LTE Band 5_10M_(16QAM 1,0)
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

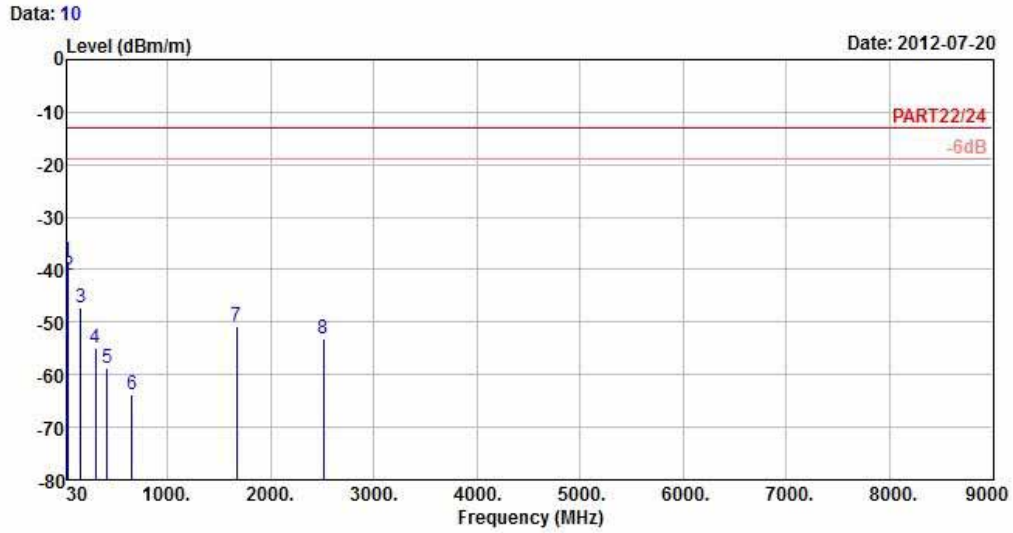
	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	32.97	-38.21	-37.10	-13.00	-25.21	-1.11	Peak
2	41.61	-40.87	-39.48	-13.00	-27.87	-1.39	Peak
3	149.88	-46.38	-40.02	-13.00	-33.38	-6.36	Peak
4	300.00	-53.37	-46.99	-13.00	-40.37	-6.38	Peak
5	405.70	-56.41	-50.92	-13.00	-43.41	-5.49	Peak
6	607.30	-63.10	-62.87	-13.00	-50.10	-0.23	Peak
7	1664.20	-53.01	-40.19	-13.00	-40.01	-12.82	Peak
8	2496.30	-53.57	-44.99	-13.00	-40.57	-8.58	Peak

Data: 9



Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 HORIZONTAL
Brand/Model: PL23300
Remark : LTE Band 5_10M_(16QAM 50,0)
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1	148.80	-45.52	-39.29	-13.00	-32.52	-6.23	Peak
2	167.70	-43.95	-37.29	-13.00	-30.95	-6.66	Peak
3 pp	209.82	-41.54	-34.03	-13.00	-28.54	-7.51	Peak
4	300.00	-51.05	-44.67	-13.00	-38.05	-6.38	Peak
5	411.30	-61.40	-56.05	-13.00	-48.40	-5.35	Peak
6	672.40	-63.59	-64.53	-13.00	-50.59	0.94	Peak
7	1672.80	-57.65	-44.83	-13.00	-44.65	-12.82	Peak
8	2509.20	-52.86	-43.69	-13.00	-39.86	-9.17	Peak



Site : 966 Chamber 5
Condition : PART22/24 3m EIRP_RSE_1G~19G_3 VERTICAL
Brand/Model: PL23300
Remark : LTE Band 5_10M_(16QAM 50,0)
Tested by : Kay Wu
Temprature : 25℃
Humidity : 65%
Plane : Y

	Freq	Level	Read Level	Limit Line	Over Limit	Factor	Remark
	MHz	dBm/m	dBm	dBm/m	dB	dB/m	
1 pp	32.70	-38.39	-37.28	-13.00	-25.39	-1.11	Peak
2	41.88	-41.10	-39.71	-13.00	-28.10	-1.39	Peak
3	162.30	-47.31	-40.76	-13.00	-34.31	-6.55	Peak
4	302.10	-54.90	-48.54	-13.00	-41.90	-6.36	Peak
5	414.10	-58.65	-53.38	-13.00	-45.65	-5.27	Peak
6	654.90	-63.67	-64.30	-13.00	-50.67	0.63	Peak
7	1672.80	-50.85	-38.03	-13.00	-37.85	-12.82	Peak
8	2509.20	-53.12	-43.95	-13.00	-40.12	-9.17	Peak

5 PHOTOGRAPHS OF THE TEST CONFIGURATION

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

6 INFORMATION ON 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 accredited and approved according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26051924

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety/Telecom Lab:
Tel: 886-3-3183232
Fax: 886-3-3270892
Email: service.adt@tw.bureauveritas.com
Web Site: www.adt.com.tw

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

7 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications were made to the EUT by the lab during the test.

---END---