FCC TEST REPORT

(PART 27)

REPORT NO.:	RF991230C03A-2
MODEL NO.:	C505A
FCC ID:	UZI-C505A
RECEIVED:	Dec. 30, 2010
TESTED:	Jan. 05 ~ Jan. 25, 2011 (for LTE band 4 & 17)
	Aug. 04 ~ Aug. 09, 2012 (for LTE band 12)
ISSUED:	Aug. 20, 2012

APPLICANT:	BandRich Inc.
ADDRESS:	6F., No. 71, Zhouzi St., Neihu Dist., Taipei City 11493, 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
RF991230C03A-2	Original release	Aug. 20, 2012

1 CERTIFICATION

PRODUCT:	LTE USB Modem
MODEL:	C505A
BRAND:	BandLuxe
APPLICANT:	BandRich Inc.
TESTED:	Jan. 05 ~ Jan. 25, 2011 (for LTE band 4 & 17)
	Aug. 04 ~ Aug. 09, 2012 (for LTE band 12)
TEST SAMPLE:	ENGINEERING SAMPLE
STANDARDS:	**FCC Part 27, Subpart C, L**
	FCC Part 2

The above equipment (model: C505A) 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 : _____ , **DATE :** Aug. 20, 2012
Andrea Hsia / Specialist

APPROVED BY : _____ , **DATE :** Aug. 20, 2012
Gary Chang / Technical Manager

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

LTE BAND 12

OPERATING BAND: 698MHz ~ 716MHz			
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**	**REMARK**
2.1046 27.50(C)(10)	Effective radiated power	PASS	Meet the requirement of limit.
2.1055 27.54	Frequency Stability	PASS	Meet the requirement of limit.
2.1049 27.53(g)	Occupied Bandwidth	PASS	Meet the requirement of limit.
27.50(d)(5)	Peak to average ratio	PASS	Meet the requirement of limit.
27.53(g)	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 27.53(g)	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 27.53(g)	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -22.16dB at 2125.20MHz.

LTE BAND 17

OPERATING BAND: 704~716 MHz			
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**	**REMARK**
2.1046 27.50(C)(10)	Maximum Peak Output Power	PASS	Meet the requirement of limit.
2.1055 27.54	Frequency Stability	PASS	Meet the requirement of limit.
2.1049 27.53(g)	Occupied Bandwidth	PASS	Meet the requirement of limit.
27.50(d)(5)	Peak to average ratio	PASS	Meet the requirement of limit.
27.53(g)	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 27.53(g)	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 27.53(g)	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -32.0dB at 1415.68MHz.

LTE BAND 4 & WCDMA AWS BAND

OPERATING BAND: 1710~1755 MHz			
STANDARD SECTION	**TEST TYPE AND LIMIT**	**RESULT**	**REMARK**
2.1046 27.50(d)(4)	Equivalent isotropically radiated power	PASS	Meet the requirement of limit.
2.1055 27.54	Frequency Stability	PASS	Meet the requirement of limit.
2.1049 27.53(h)	Occupied Bandwidth	PASS	Meet the requirement of limit.
27.50(d)(5)	Peak to average ratio	PASS	Meet the requirement of limit.
27.53(h)	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 27.53(h)	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 27.53(h)	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is –20.0dB at 3505.2MHz.

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	3.34 dB
	200MHz ~1000MHz	3.35 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

LTE BAND 17, WCDMA AWS BAND & LTE BAND 4 test date: Jan. 05 ~ Jan. 25, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Aug. 04, 2010	Aug. 03, 2011
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Jul. 09, 2010	Jul. 08, 2011
BILOG Antenna SCHWARZBECK	VULB9168	9168-156	Apr. 30, 2010	Apr. 29, 2011
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-209	Aug. 02, 2010	Aug. 01, 2011
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170243	Dec. 27, 2010	Dec. 26, 2011
Preamplifier Agilent	8449B	3008A01910	Sep. 09, 2010	Sep. 08, 2011
Preamplifier Agilent	8447D	2944A10638	Nov. 03, 2010	Nov. 02, 2011
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	218190/4 231241/4	May 14, 2010	May 13, 2011
RF signal cable Worken	8D-FB	Cable-HYCH9-01	Aug. 20, 2010	Aug. 19, 2011
Software	ADT_Radiated_ V7.6.15.9.2	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 Table Controller EMCO	2090	NA	NA	NA
Mini-Circuits Power Splitter	ZAPD-4	NA	Jun. 29, 2010	Jun. 28, 2011
JFW 20dB attenuation	50HF-020-SMA	NA	NA	NA
Wainwright Instruments Band Reject Filter	WRCG1850/1910-1830/ 1930-60/10SS	SN1	Mar. 25, 2010	Mar. 24, 2011
Wainwright Instruments High Pass Filter	WHK3.1/18G-10SS	SN3	Jun. 29, 2010	Jun. 28, 2011
WIT Standard Temperature & Humidity Chamber	TH-4S-C	W981030	Jun. 28, 2010	Jun. 27, 2011

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.

LTE BAND 12 test date: Aug. 04 ~ Aug. 09, 2012

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	DATE OF CALIBRATION	DUE DATE OF CALIBRATION
Test Receiver ROHDE & SCHWARZ	ESIB7	100187	Jan. 31, 2012	Jan. 30, 2013
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Feb. 03, 2012	Feb. 02, 2013
BILOG Antenna SCHWARZBECK	VULB9168	9168-160	Apr. 06, 2012	Apr. 05, 2013
HORN Antenna SCHWARZBECK	9120D	209	Aug. 25, 2011	Aug. 24, 2012
HORN Antenna SCHWARZBECK	BBHA 9170	148	Jul. 11, 2012	Jul. 10, 2013
Loop Antenna	HFH2-Z2	100070	Jan. 31, 2012	Jan. 30, 2014
Preamplifier Agilent	8447D	2944A10633	Oct. 29, 2011	Oct. 28, 2012
Preamplifier Agilent	8449B	3008A01964	Oct. 29, 2011	Oct. 28, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250723/4	Aug. 30, 2011	Aug. 29, 2012
RF signal cable HUBER+SUHNNER	SUCOFLEX 106	12738/6+309224/4	Aug. 30, 2011	Aug. 29, 2012
Software ADT.	ADT_Radiated_ V7.6.15.9.2	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	013303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	017303	NA	NA
Turn Table ADT.	TT100	TT93021703	NA	NA
Turn Table Controller ADT.	SC100	SC93021703	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	6201127458	May 25, 2012	May 24, 2013

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 3.
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 988962.
5. The IC Site Registration No. is IC 7450F-3.

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	LTE USB Modem	
MODEL NO.	C505A	
POWER SUPPLY	5.0Vdc from host equipment	
MODULATION TYPE	**LTE Band 12**	QPSK, 16QAM
	LTE Band 17	QPSK, 16QAM
	LTE Band 4	QPSK, 16QAM
	WCDMA AWS Band	BPSK
FREQUENCY RANGE	**LTE Band 12 Channel Bandwidth: 5MHz**	701.5MHz ~ 713.5MHz
	LTE Band 12 Channel Bandwidth: 10MHz	704.0MHz ~ 711.0MHz
	LTE Band 17 Channel Bandwidth: 5MHz	706.5MHz ~ 713.5MHz
	LTE Band 17 Channel Bandwidth: 10MHz	709MHz ~ 711MHz
	LTE Band 4 Channel Bandwidth: 5MHz	1712.5MHz ~1752.5MHz
	LTE Band 4 Channel Bandwidth: 10MHz	1715.0MHz ~1750.0MHz
	WCDMA AWS Band	1712.4MHz ~1752.6MHz
MAX. ERP POWER (W)	**LTE Band 12 Channel Bandwidth: 5MHz**	0.1148W
	LTE Band 12 Channel Bandwidth: 10MHz	0.1072W
	LTE Band 17 Channel Bandwidth: 5MHz	0.0646W
	LTE Band 17 Channel Bandwidth: 10MHz	0.0794W
MAX. EIRP POWER	**LTE Band 4 Channel Bandwidth: 5MHz**	0.0513W
	LTE Band 4 Channel Bandwidth: 10MHz	0.0372W
	WCDMA AWS Band	0.0525W
CATEGORY	LTE: 3	
WCDMA RELEASE VERSION	WCDMA: Release 5 / 6	
ANTENNA TYPE	Refer to Note	
DATA CABLE	0.5m non-shielded USB cable without core	
I/O PORTS	Refer to user's manual	
ACCESSORY DEVICES	NA	

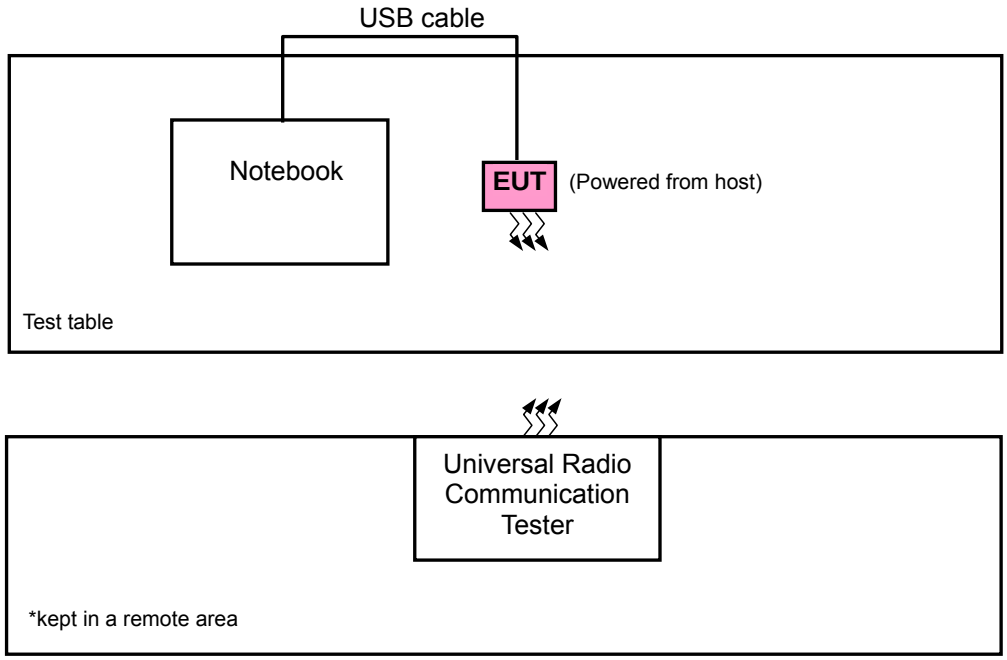
NOTE:

1. The antennas used in this EUT are listed as below table:

Frequency Band	Embedded Monopole Antenna	Chip Antenna	Printed Antenna
LTE band 12	TX/ RX (Gain: -3dB	Not support	RX only
LTE band 17	TX/ RX (Gain: -3dBi)		
GPRS/EGPRS/WCDMA 850	TX/ RX (Gain: -2dBi)		Not support
GPRS/EGPRS/WCDMA 1900	TX/ RX (Gain: -3dBi)		
LTE band 4 / WCDMA AWS Band	TX/ RX (Gain: -7dBi)	RX only	

2. The above EUT information is 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



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	Notebook	DELL	D600	N09-00319	QDS-BRCM1005-D
2	Universal Radio Communication Tester	R&S	CMU200	104484	NA
3	Universal Radio Communication Tester	Anritsu	MT8820C	NA	NA

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	1.8m USB cable
2	NA
3	NA

NOTE:

1. All power cords of the above support units are non shielded (1.8m).
2. Item 2, 3 acted as a communication partners to transfer data.

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 X-plane for LTE Band 12 & LTE Band 17, and Z-axis for LTE Band 4 & WCDMA AWS Band for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

LTE Band 12

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
					SIZE / OFFSET
ERP	23035 to 23155	23035, 23095, 23155	5MHz	QPSK	1 / 0
	23060 to 23130	23060, 23095, 23130	10MHz	QPSK	1 / 49
FREQUENCY STABILITY	23035 to 23155	23095	5MHz	QPSK	1 / 0
	23060 to 23130	23095	10MHz	QPSK	1 / 49
OCCUPIED BANDWIDTH	23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM	25 / 0
	23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM	50 / 0
PEAK TO AVERAGE RATIO	23035 to 23155	23035, 23095, 23155	5MHz	QPSK, 16QAM	1 / 0
	23060 to 23130	23060, 23095, 23130	10MHz	QPSK, 16QAM	1 / 49
BAND EDGE	23035 to 23155	23035, 23155	5MHz	QPSK, 16QAM	1 / 0
					1 / 24
					25 / 0
	23060 to 23130	23060, 23130	10MHz	QPSK, 16QAM	1 / 0
					1 / 49
					50 / 0
CONDCUDETED EMISSION	23035 to 23155	23035, 23095, 23155	5MHz	QPSK	1 / 0
	23060 to 23130	23060, 23095, 23130	10MHz	QPSK	1 / 49
RADIATED EMISSION BELOW 1GHz	23755 to 23825	23095	5MHz	QPSK	1 / 0
	23780 to 23800	23095	10MHz	QPSK	1 / 49
RADIATED EMISSION ABOVE 1GHz	23755 to 23825	23035, 23095, 23155	5MHz	QPSK	1 / 0
	23780 to 23800	23060, 23095, 23130	10MHz	QPSK	1 / 49

LTE Band 17

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
					SIZE / OFFSET
ERP	23755 to 23825	23755, 23790, 23825	5MHz	QPSK	1 / 0
	23780 to 23800	23780, 23790, 23800	10MHz	QPSK	1 / 0
FREQUENCY STABILITY	23755 to 23825	23790	5MHz	QPSK	1 / 0
	23780 to 23800	23790	10MHz	QPSK	1 / 0
OCCUPIED BANDWIDTH	23755 to 23825	23755, 23790, 23825	5MHz	QPSK, 16QAM	25 / 0
	23780 to 23800	23780, 23790, 23800	10MHz	QPSK, 16QAM	50 / 0
PEAK TO AVERAGE RATIO	23755 to 23825	23755, 23790, 23825	5MHz	QPSK, 16QAM	1 / 0
	23780 to 23800	23780, 23790, 23800	10MHz	QPSK, 16QAM	1 / 0
BAND EDGE	23755 to 23825	23755	5MHz	QPSK	1 / 0
					25 / 0
		23825			1 / 24
					25 / 0
	23780 to 23800	23780	10MHz	QPSK	1 / 0
					50, 0
		23800			1 / 49
					50 / 0
CONDCUDETED EMISSION	23755 to 23825	23755, 23790, 23825	5MHz	QPSK	1 / 0
	23780 to 23800	23780, 23790, 23800	10MHz	QPSK	1 / 0
RADIATED EMISSION BELOW 1GHz	23755 to 23825	23755	5MHz	QPSK	1 / 0
	23780 to 23800	23780	10MHz	QPSK	1 / 0
RADIATED EMISSION ABOVE 1GHz	23755 to 23825	23755, 23790, 23825	5MHz	QPSK	1 / 0
	23780 to 23800	23780, 23790, 23800	10MHz	QPSK	1 / 0

LTE Band 4

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
					SIZE / OFFSET
EIRP	19975 to 20375	19975, 20175, 20375	5MHz	QPSK	1 / 24
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK	1 / 49
FREQUENCY STABILITY	19975 to 20375	20175	5MHz	QPSK	1 / 24
	20000 to 20350	20175	10MHz	QPSK	1 / 49
OCCUPIED BANDWIDTH	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	25 / 0
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	50 / 0
PEAK TO AVERAGE RATIO	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1 / 24
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	1 / 49
BAND EDGE	19975 to 20375	19975	5MHz	QPSK	1 / 0
					25 / 0
		20375			1 / 24
					25 / 0
	20000 to 20350	20000	10MHz	QPSK	1 / 0
					50, 0
		20350			1 / 49
					50 / 0
CONDCUDETED EMISSION	19975 to 20375	19975, 20175, 20375	5MHz	QPSK	1 / 24
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK	1 / 49
RADIATED EMISSION BELOW 1GHz	19975 to 20375	19975	5MHz	QPSK	1 / 24
	20000 to 20350	20000	10MHz	QPSK	1 / 49
RADIATED EMISSION ABOVE 1GHz	19975 to 20375	19975, 20175, 20375	5MHz	QPSK	1 / 24
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK	1 / 49

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 Z-axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

WCDMA AWS Band

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION	MODE
EIRP	1312 to 1513	1312, 1412, 1513	BPSK	WCDMA
FREQUENCY STABILITY	1312 to 1513	1412	BPSK	WCDMA
OCCUPIED BANDWIDTH	1312 to 1513	1412	BPSK	WCDMA / HSDPA / HSUPA
PEAK TO AVERAGE RATIO	1312 to 1513	1312, 1412, 1513	BPSK	WCDMA / HSDPA / HSUPA
BAND EDGE	1312 to 1513	1312, 1513	BPSK	WCDMA / HSDPA / HSUPA
CONDCUDETED EMISSION	1312 to 1513	1312, 1412, 1513	BPSK	WCDMA
RADIATED EMISSION BELOW 1GHz	1312 to 1513	1312	BPSK	WCDMA
RADIATED EMISSION ABOVE 1GHz	1312 to 1513	1312, 1412, 1513	BPSK	WCDMA

3.4 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 27

ANSI C63.4-2003

ANSI/TIA/EIA-603-C 2004

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

4 TEST TYPES AND RESULTS

4.1 OUTPUT POWER MEASUREMENT

4.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP.
Portable stations (hand-held devices) operating in the 698–746 MHz band are limited to 3 watts ERP

4.1.2 TEST PROCEDURES

EIRP / ERP MEASUREMENT:

a. The EUT was set up for the maximum power with LTE link data modulation. The power was measured with R&S Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high operational frequency range). RBW and VBW is 10MHz for LTE.

b. E.I.R.P power 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 a. Record the power level of S.G

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

e. E.R.P = E.I.R.P- 2.15 dB

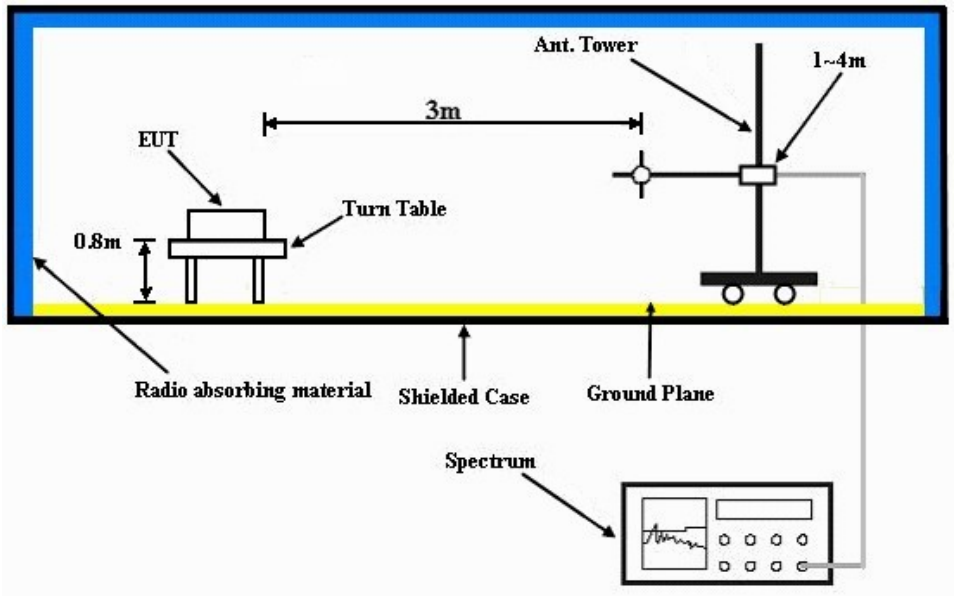
CONDUCTED POWER MEASUREMENT:

a. The EUT was set up for the maximum power with LTE/WCDMA link data modulation and link up with simulator.

b. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

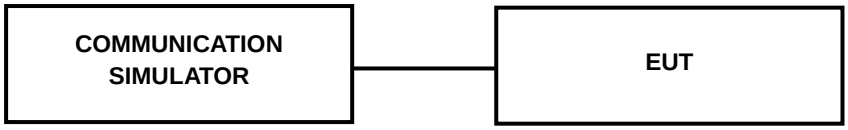
4.1.3 TEST SETUP

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)

LTE Band 12						
BW	Modulation	CH	Frequency (MHz)	RB	RB Offset	Measured Power
5 MHz	QPSK	23035	701.5	1	0	22.07
		23095	707.5	1	0	22.09
		23155	713.5	1	0	22.05
		23035	701.5	1	24	22.06
		23095	707.5	1	24	22.07
		23155	713.5	1	24	22.06
		23035	701.5	12	6	21.04
		23095	707.5	12	6	21.11
		23155	713.5	12	6	21.00
		23035	701.5	25	0	21.09
		23095	707.5	25	0	21.04
		23155	713.5	25	0	21.24
	16QAM	23035	701.5	1	0	21.36
		23095	707.5	1	0	21.36
		23155	713.5	1	0	21.16
		23035	701.5	1	24	21.32
		23095	707.5	1	24	21.36
		23155	713.5	1	24	21.31
		23035	701.5	12	6	20.00
		23095	707.5	12	6	20.18
		23155	713.5	12	6	20.01
		23035	701.5	25	0	20.28
		23095	707.5	25	0	20.26
		23155	713.5	25	0	20.27

LTE Band 12						
BW	Modulation	CH	Frequency (MHz)	RB	RB Offset	Measured Power
10 MHz	QPSK	23060	704	1	0	22.00
		23095	707.5	1	0	22.09
		23130	711	1	0	22.07
		23060	704	1	49	22.17
		23095	707.5	1	49	22.07
		23130	711	1	49	22.02
		23060	704	25	12	21.00
		23095	707.5	25	12	21.02
		23130	711	25	12	21.08
		23060	704	50	0	21.02
		23095	707.5	50	0	21.03
		23130	711	50	0	21.08
	16QAM	23060	704	1	0	21.01
		23095	707.5	1	0	21.06
		23130	711	1	0	21.06
		23060	704	1	49	21.05
		23095	707.5	1	49	21.20
		23130	711	1	49	21.30
		23060	704	25	12	20.39
		23095	707.5	25	12	20.38
		23130	711	25	12	20.24
		23060	704	50	0	20.29
		23095	707.5	50	0	20.08
		23130	711	50	0	20.05

LTE Band 17						
BW	Modulation	CH	Frequency (MHz)	RB	RB Offset	Measured Power
5 MHz	QPSK	23755	706.5	1	0	23.07
		23790	710	1	0	23.01
		23825	713.5	1	0	22.91
		23755	706.5	1	24	22.85
		23790	710	1	24	22.83
		23825	713.5	1	24	22.82
		23755	706.5	12	6	21.92
		23790	710	12	6	22.16
		23825	713.5	12	6	21.92
		23755	706.5	25	0	21.89
		23790	710	25	0	21.84
		23825	713.5	25	0	21.89
	16QAM	23755	706.5	1	0	22.20
		23790	710	1	0	22.13
		23825	713.5	1	0	22.14
		23755	706.5	1	24	22.10
		23790	710	1	24	22.02
		23825	713.5	1	24	21.93
		23755	706.5	12	6	21.17
		23790	710	12	6	21.12
		23825	713.5	12	6	21.18
		23755	706.5	25	0	21.14
		23790	710	25	0	21.16
		23825	713.5	25	0	21.12

LTE Band 17						
BW	Modulation	CH	Frequency (MHz)	RB	RB Offset	Measured Power
10 MHz	QPSK	23780	709	1	0	23.12
		23790	710	1	0	22.96
		23800	711	1	0	23.00
		23780	709	1	49	22.87
		23790	710	1	49	22.84
		23800	711	1	49	22.89
		23780	709	25	12	22.13
		23790	710	25	12	22.10
		23800	711	25	12	22.12
		23780	709	50	0	22.09
		23790	710	50	0	22.03
		23800	711	50	0	22.00
	16QAM	23780	709	1	0	22.16
		23790	710	1	0	22.18
		23800	711	1	0	22.01
		23780	709	1	49	21.90
		23790	710	1	49	21.85
		23800	711	1	49	21.88
		23780	709	25	12	21.13
		23790	710	25	12	21.16
		23800	711	25	12	21.15
		23780	709	50	0	21.13
		23790	710	50	0	21.17
		23800	711	50	0	21.13

LTE Band 4						
BW	Modulation	CH	Frequency (MHz)	RB	RB Offset	Measured Power
5 MHz	QPSK	19975	1712.5	1	0	22.65
		20175	1732.5	1	0	22.64
		20375	1752.5	1	0	22.63
		19975	1712.5	1	24	22.69
		20175	1732.5	1	24	22.67
		20375	1752.5	1	24	22.65
		19975	1712.5	12	6	21.88
		20175	1732.5	12	6	21.96
		20375	1752.5	12	6	21.81
		19975	1712.5	25	0	21.87
		20175	1732.5	25	0	21.86
		20375	1752.5	25	0	21.89
	16QAM	19975	1712.5	1	0	21.64
		20175	1732.5	1	0	21.69
		20375	1752.5	1	0	21.68
		19975	1712.5	1	24	21.61
		20175	1732.5	1	24	21.61
		20375	1752.5	1	24	21.67
		19975	1712.5	12	6	20.72
		20175	1732.5	12	6	20.73
		20375	1752.5	12	6	20.88
		19975	1712.5	25	0	20.90
		20175	1732.5	25	0	20.82
		20375	1752.5	25	0	20.95

LTE Band 4						
BW	Modulation	CH	Frequency (MHz)	RB	RB Offset	Measured Power
10 MHz	QPSK	20000	1715	1	0	22.63
		20175	1732.5	1	0	22.69
		20350	1750	1	0	22.68
		20000	1715	1	49	22.86
		20175	1732.5	1	49	22.80
		20350	1750	1	49	22.74
		20000	1715	25	12	21.66
		20175	1732.5	25	12	21.68
		20350	1750	25	12	21.69
		20000	1715	50	0	21.64
		20175	1732.5	50	0	21.64
		20350	1750	50	0	21.65
	16QAM	20000	1715	1	0	21.87
		20175	1732.5	1	0	21.70
		20350	1750	1	0	21.84
		20000	1715	1	49	21.88
		20175	1732.5	1	49	21.84
		20350	1750	1	49	21.86
		20000	1715	25	12	20.92
		20175	1732.5	25	12	20.92
		20350	1750	25	12	20.88
		20000	1715	50	0	20.90
		20175	1732.5	50	0	20.85
		20350	1750	50	0	20.91

Band	WCDMA AWS		
Channel	1312	1412	1513
Frequency (MHz)	1712.4	1732.4	1752.6
WCDMA-RMC	23.38	23.23	**23.43**

ERP POWER (dBm)

LTE Band 12

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

Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
701.50	-10.3	22.2	0.0	20.0	34.8	-14.8
707.50	-9.66	22.8	0.0	20.6	34.8	-14.3
713.50	-12.0	20.4	0.0	18.3	34.8	-16.5

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

CHANNEL BANDWIDTH: 10MHz / QPSK (1 RB / 49 RB Offset)

Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
704.00	-10.2	22.2	0.0	20.1	34.8	-14.7
707.50	-10.0	22.4	0	20.3	34.8	-14.5
711.00	-10.2	22.3	0.0	20.1	34.8	-14.7

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

LTE Band 17

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

Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
706.5	-13.2	19.25	0	17.1	34.8	-17.7
710	-12.2	20.25	0	18.1	34.8	-16.7
713.5	-12.3	20.15	0	18.0	34.8	-16.8

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

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

Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
709	-11.8	20.65	0	18.5	34.8	-16.3
710	-11.5	20.95	0	18.8	34.8	-16.0
711	-11.3	21.15	0	19.0	34.8	-15.8

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

EIRP POWER (dBm)

LTE Band 4

CHANNEL BANDWIDTH: 5MHz / QPSK (1 RB / 24 RB Offset)

Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1712.5	-20.4	15.2	1	16.2	30	-13.8
1732.5	-22.1	13.6	1	14.6	30	-15.4
1752.5	-19.7	16.1	1	17.1	30	-12.9

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

CHANNEL BANDWIDTH: 10MHz / QPSK (1 RB / 49 RB Offset)

Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1715	-20.9	14.7	1	15.7	30	-14.3
1732.5	-22	13.7	1	14.7	30	-15.3
1750	-21.3	14.5	1	15.5	30	-14.5

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

WCDMA AWS: FOR WCDMA-RMC MODE:

Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1712.4	-19.8	15.8	1	16.8	30	-13.2
1732.4	-19.5	16.2	1	17.2	30	-12.8
1752.6	-19.9	15.9	1	16.9	30	-13.1

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

4.2 FREQUENCY STABILITY MEASUREMENT

4.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

4.2.2 TEST PROCEDURE

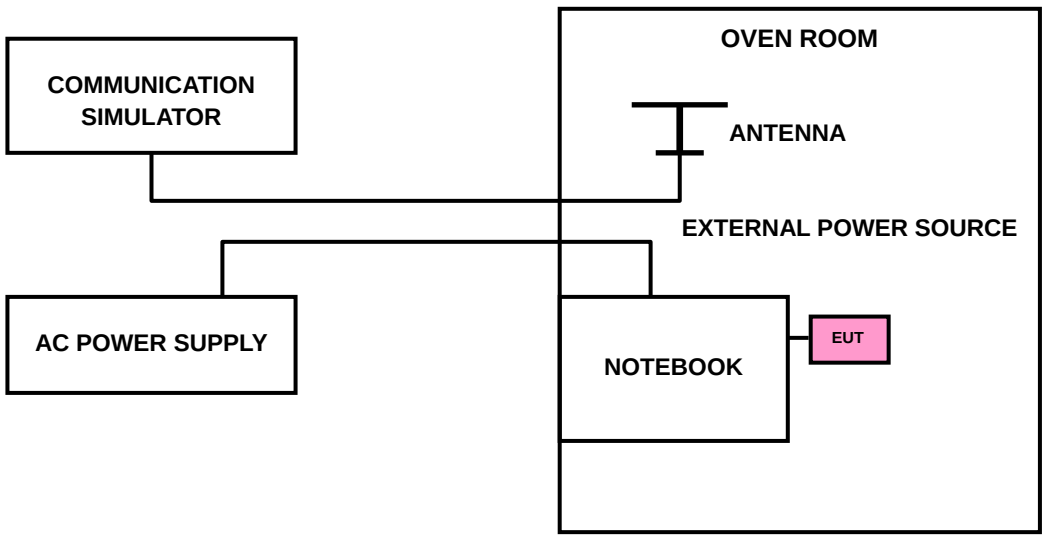
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

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

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)							LIMIT (ppm)
	LTE BAND 12		LTE BAND 17		LTE BAND 4		WCDMA AWS Band	
	5MHz	10MHz	5MHz	10MHz	5MHz	10MHz	5MHz	
126.5	-0.008	-0.011	-0.003	-0.003	-0.001	-0.001	-0.002	2.5
93.5	-0.001	-0.007	-0.004	-0.001	-0.001	-0.002	-0.002	2.5

NOTE: The applicant defined the normal working voltage of the host equipment is from 93.5Vac to 126.5Vac.

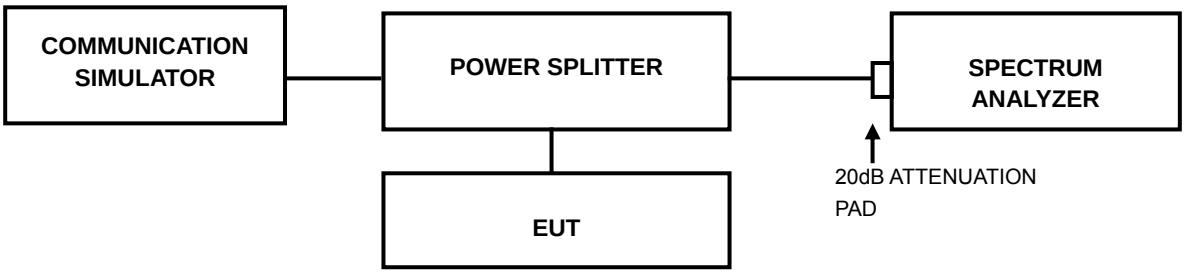
TEMP. (℃)	FREQUENCY ERROR (ppm)							LIMIT (ppm)
	LTE BAND 12		LTE BAND 17		LTE BAND 4		WCDMA AWS Band	
	5MHz	10MHz	5MHz	10MHz	5MHz	10MHz	5MHz	
50	-0.017	-0.016	-0.003	-0.001	-0.001	-0.001	0.007	2.5
40	-0.014	-0.011	-0.004	-0.003	-0.001	-0.002	0.005	2.5
30	-0.011	-0.009	-0.003	-0.003	-0.001	-0.001	-0.002	2.5
20	-0.007	-0.004	-0.004	-0.001	-0.001	-0.002	-0.002	2.5
10	-0.003	-0.006	-0.003	-0.003	-0.001	-0.001	-0.002	2.5
0	-0.006	-0.003	-0.001	-0.004	-0.001	-0.002	0.005	2.5
-10	-0.008	-0.007	-0.004	-0.003	-0.001	-0.001	-0.003	2.5
-20	-0.011	-0.010	-0.003	-0.001	-0.001	-0.002	-0.002	2.5
-30	-0.013	-0.013	-0.003	-0.003	-0.001	-0.002	0.005	2.5

4.3 OCCUPIED BANDWIDTH MEASUREMENT

4.3.1 TEST PROCEDURES

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

4.3.2 TEST SETUP



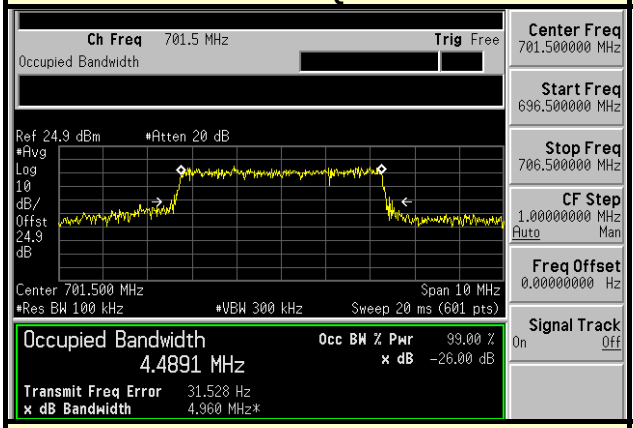
4.3.3 TEST RESULTS

LTE Band 12

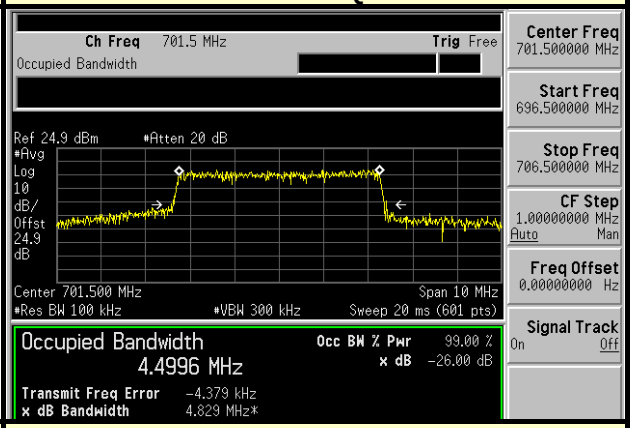
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQ. (MHz)	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQ. (MHz)	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
23035	701.5	4.4891	4.4996	23060	704.0	8.9005	8.8733
23095	707.5	4.4787	4.4638	23095	707.5	8.9044	8.8557
23155	713.5	4.4395	4.4786	23130	711.0	8.9742	8.9659

SPECTRUM PLOT OF WORST VALUE

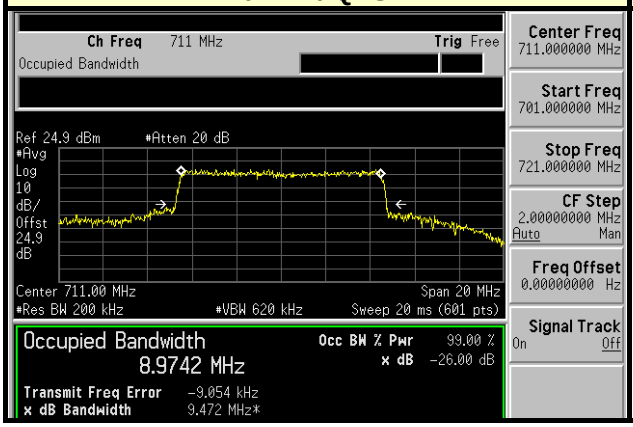
5MHz / QPSK



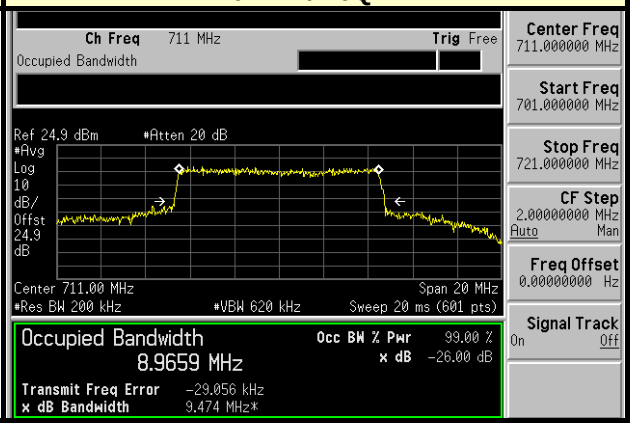
5MHz / 16QAM



10MHz / QPSK



10MHz / 16QAM

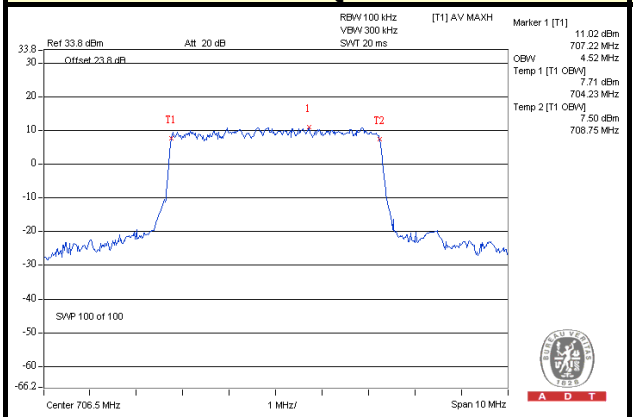


LTE Band 17

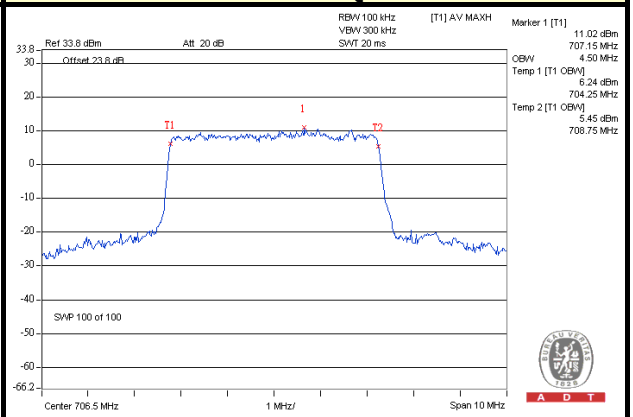
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQ. (MHz)	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQ. (MHz)	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
23755	706.5	4.52	4.50	23780	709.0	9.00	8.97
23790	710.0	4.52	4.48	23790	710.0	8.97	8.93
23825	713.5	4.52	4.48	23800	711.0	8.97	8.97

SPECTRUM PLOT OF WORST VALUE

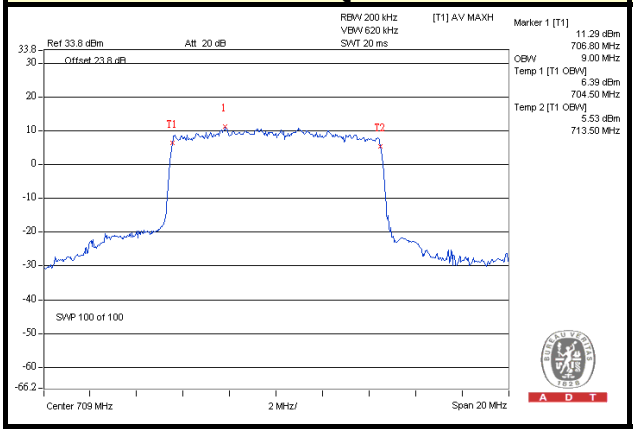
5MHz / QPSK



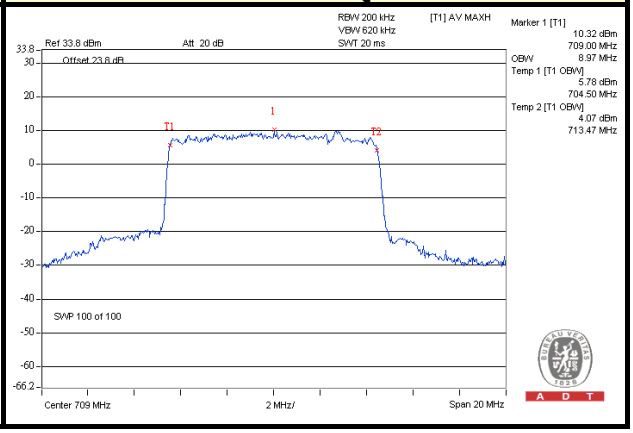
5MHz / 16QAM



10MHz / QPSK



10MHz / 16QAM

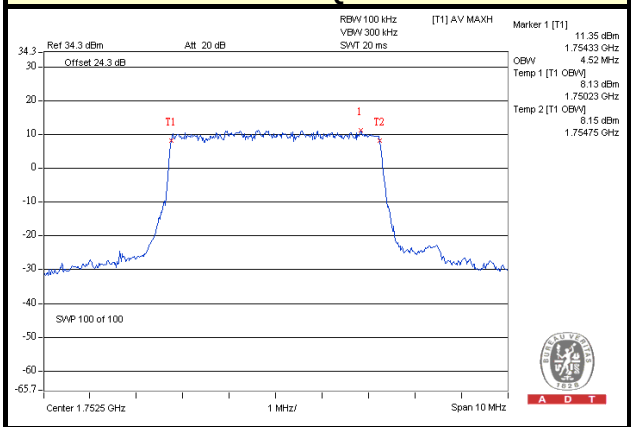


LTE Band 4

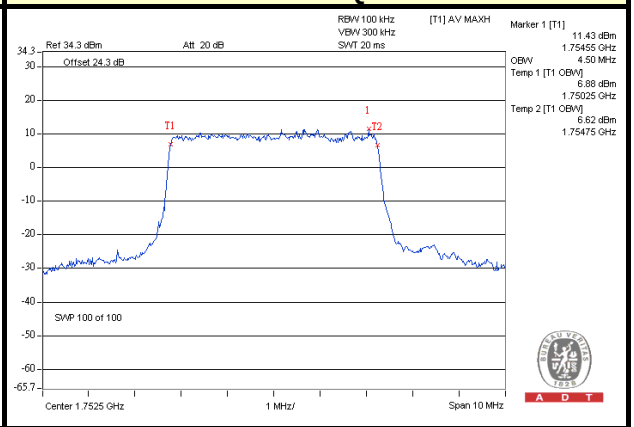
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQ. (MHz)	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQ. (MHz)	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
19975	1712.5	4.50	4.48	20000	1715.0	9.00	8.97
20175	1732.5	4.52	4.48	20175	1732.5	8.97	8.97
20375	1752.5	4.52	4.50	20350	1750.0	9.00	9.00

SPECTRUM PLOT OF WORST VALUE

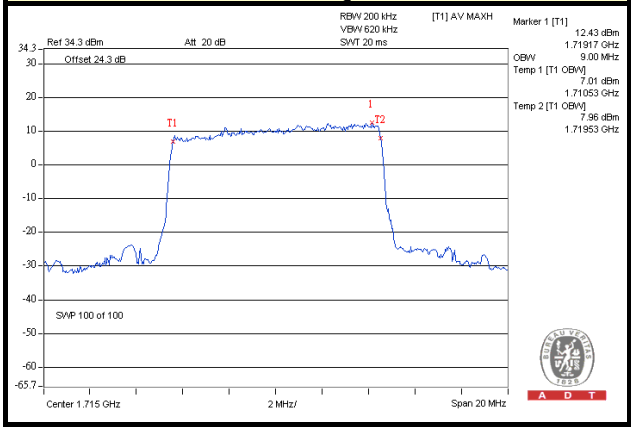
5MHz / QPSK



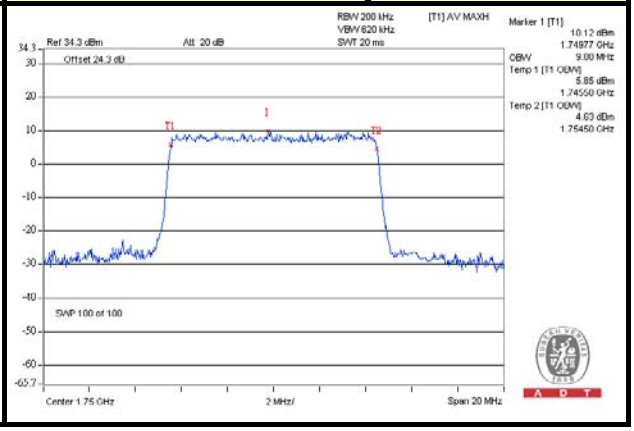
5MHz / 16QAM



10MHz / QPSK



10MHz / 16QAM

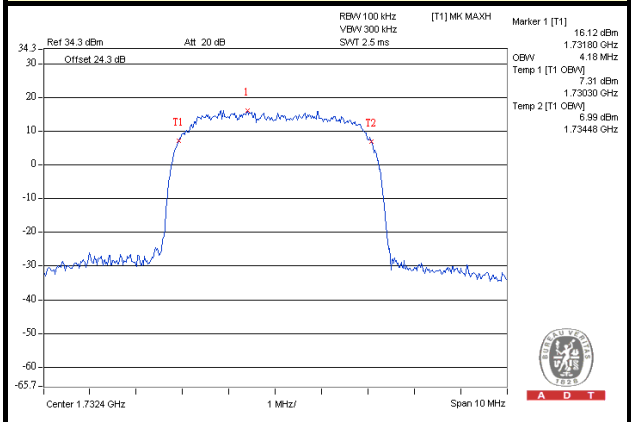


WCDMA AWS Band

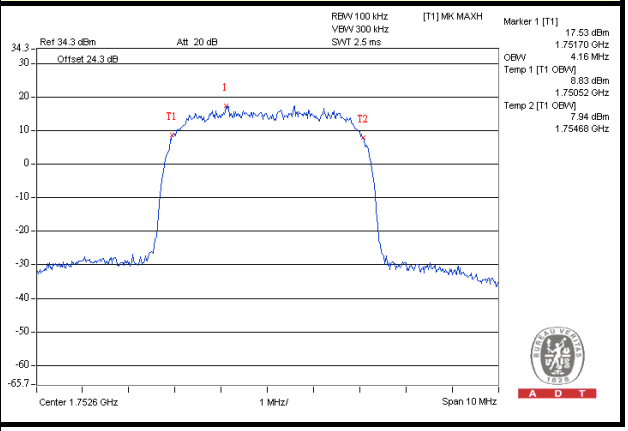
CHANNEL	FREQUENCY (MHz)	99% OCCUPIED BANDWIDTH (MHz)		
		WCDMA MODE	HSDPA	HSUPA
1312	1712.4	4.16	4.16	4.16
1412	1732.4	4.18	4.16	4.16
1513	1752.6	4.16	4.16	4.14

SPECTRUM PLOT OF WORST VALUE

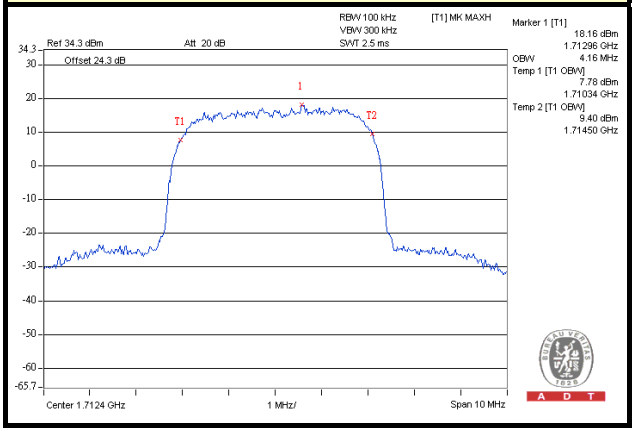
WCDMA



HSDPA



HSUPA

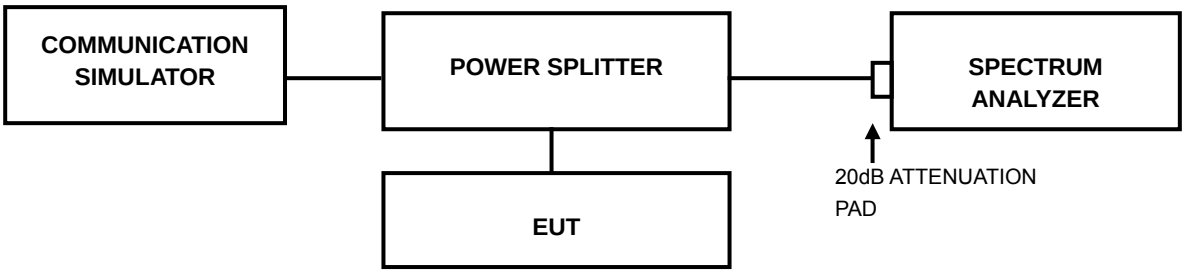


4.4 PEAK TO AVERAGE RATIO

4.4.1 LIMITS OF PEAK TO AVERAGE RATIO MEASUREMENT

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB

4.4.2 TEST SETUP



4.4.3 TEST PROCEDURES

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

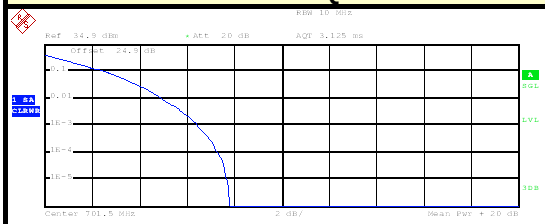
4.4.4 TEST RESULTS

LTE BAND 12

CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
23035	701.5	6.44	7.04	23060	704.0	5.32	6.36
23095	707.5	6.24	6.84	23095	707.5	5.68	6.44
23155	713.5	6.04	6.68	23130	711.0	6.04	6.96

SPECTRUM PLOT OF WORST VALUE

5MHz / QPSK



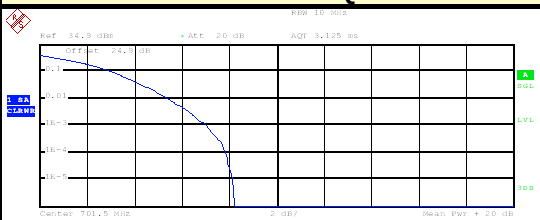
Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean 21.45 dBm
Peak 29.22 dBm
Crest 7.78 dB

10 % 2.60 dB
1 % 5.00 dB
.1 % 6.44 dB
.01 % 7.32 dB

5MHz / 16QAM



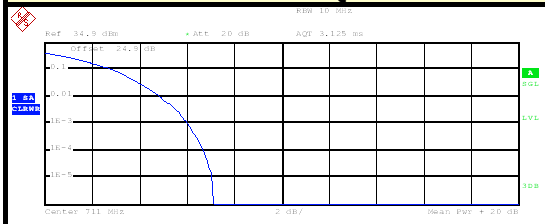
Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean 20.94 dBm
Peak 29.15 dBm
Crest 8.21 dB

10 % 3.08 dB
1 % 5.44 dB
.1 % 7.04 dB
.01 % 7.84 dB

10MHz / QPSK



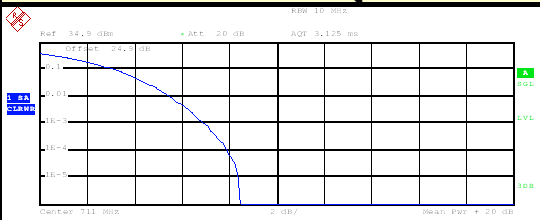
Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean 21.54 dBm
Peak 28.62 dBm
Crest 7.08 dB

10 % 2.92 dB
1 % 4.88 dB
.1 % 6.04 dB
.01 % 6.72 dB

10MHz / 16QAM



Complementary Cumulative Distribution Function (100000 samples)

Trace 1

Mean 20.67 dBm
Peak 29.11 dBm
Crest 8.44 dB

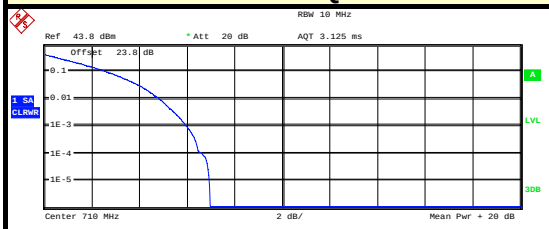
10 % 3.24 dB
1 % 5.52 dB
.1 % 6.96 dB
.01 % 7.96 dB

LTE BAND 17

CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
23755	706.5	5.90	6.63	23780	709.0	5.58	6.54
23790	710.0	5.96	6.54	23790	710.0	5.51	6.60
23825	713.5	5.90	6.41	23800	711.0	5.51	6.44

SPECTRUM PLOT OF WORST VALUE

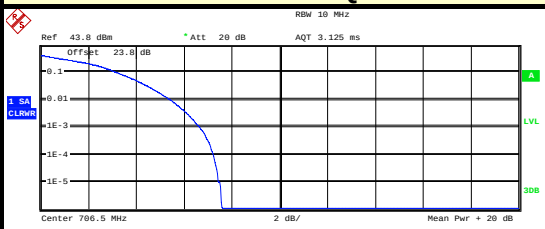
5MHz / QPSK



Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	21.71 dBm
Peak	28.68 dBm
Crest	6.96 dB
10 %	2.63 dB
1 %	4.84 dB
.1 %	5.96 dB
.01 %	6.60 dB

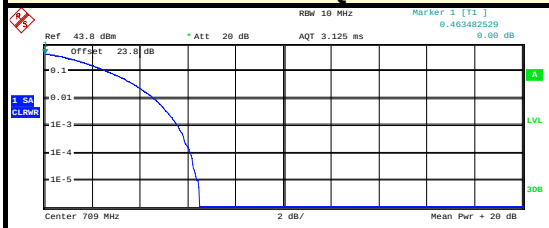
5MHz / 16QAM



Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	21.40 dBm
Peak	28.96 dBm
Crest	7.56 dB
10 %	3.17 dB
1 %	5.42 dB
.1 %	6.63 dB
.01 %	7.21 dB

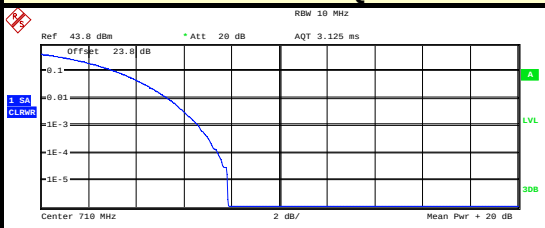
10MHz / QPSK



Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	21.68 dBm
Peak	28.18 dBm
Crest	6.50 dB
10 %	2.63 dB
1 %	4.58 dB
.1 %	5.58 dB
.01 %	6.12 dB

10MHz / 16QAM



Complementary Cumulative Distribution Function (100000 samples)

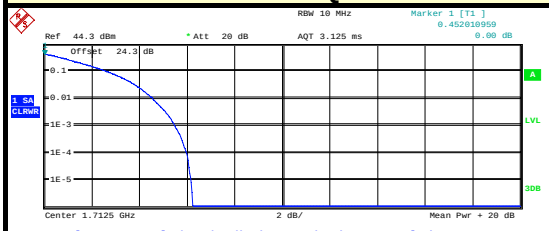
	Trace 1
Mean	20.90 dBm
Peak	28.75 dBm
Crest	7.84 dB
10 %	3.11 dB
1 %	5.32 dB
.1 %	6.60 dB
.01 %	7.40 dB

LTE BAND 4

CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
19975	1712.5	5.48	6.03	20000	1715.0	5.48	6.41
20175	1732.5	5.26	5.64	20175	1732.5	5.26	6.09
20375	1752.5	5.10	5.71	20350	1750.0	5.10	6.12

SPECTRUM PLOT OF WORST VALUE

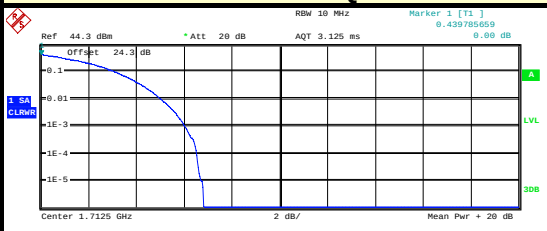
5MHz / QPSK



Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	21.61 dBm
Peak	27.84 dBm
Crest	6.23 dB
10 %	2.63 dB
1 %	4.55 dB
.1 %	5.48 dB
.01 %	5.96 dB

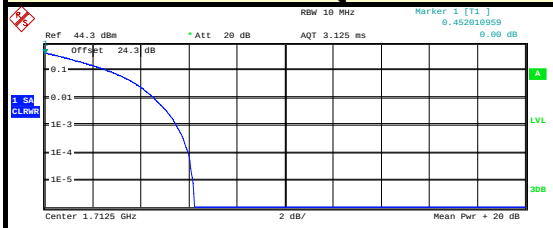
5MHz / 16QAM



Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	21.23 dBm
Peak	28.05 dBm
Crest	6.82 dB
10 %	3.11 dB
1 %	5.00 dB
.1 %	6.03 dB
.01 %	6.54 dB

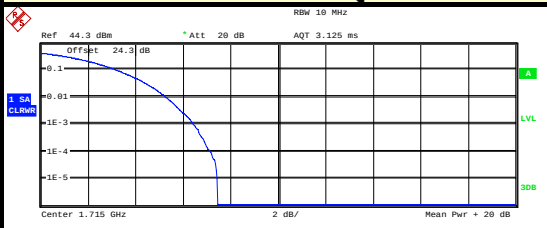
10MHz / QPSK



Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	21.61 dBm
Peak	27.84 dBm
Crest	6.23 dB
10 %	2.63 dB
1 %	4.55 dB
.1 %	5.48 dB
.01 %	5.96 dB

10MHz / 16QAM



Complementary Cumulative Distribution Function (100000 samples)

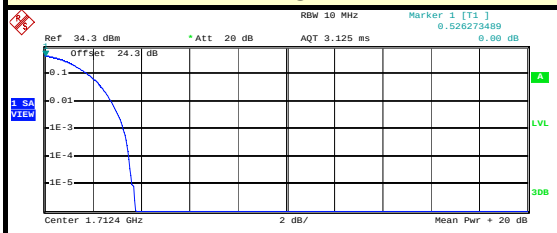
	Trace 1
Mean	21.51 dBm
Peak	28.97 dBm
Crest	7.46 dB
10 %	3.17 dB
1 %	5.26 dB
.1 %	6.41 dB
.01 %	7.12 dB

WCDMA AWS Band

CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		
		WCDMA MODE	HSDPA	HSUPA
1312	1712.4	3.28	3.24	3.28
1412	1732.4	3.00	2.96	2.96
1513	1752.6	3.12	3.12	3.16

SPECTRUM PLOT OF WORST VALUE

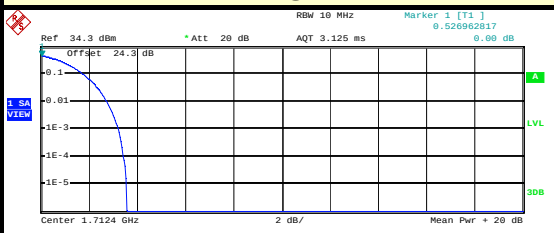
WCDMA



Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	23.19 dBm
Peak	26.96 dBm
Crest	3.77 dB
10 %	1.84 dB
1 %	2.80 dB
.1 %	3.28 dB
.01 %	3.52 dB

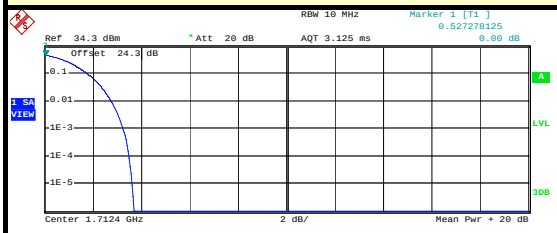
HSDPA



Complementary Cumulative Distribution Function (100000 samples)

	Trace 1
Mean	23.10 dBm
Peak	26.68 dBm
Crest	3.58 dB
10 %	1.80 dB
1 %	2.76 dB
.1 %	3.24 dB
.01 %	3.44 dB

HSUPA



Complementary Cumulative Distribution Function (100000 samples)

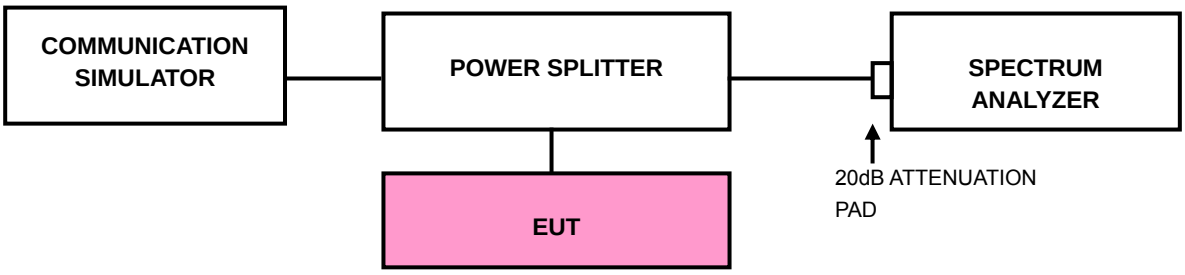
	Trace 1
Mean	22.56 dBm
Peak	26.26 dBm
Crest	3.70 dB
10 %	1.80 dB
1 %	2.80 dB
.1 %	3.28 dB
.01 %	3.52 dB

4.5 BAND EDGE MEASUREMENT

4.5.1 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.

4.5.2 TEST SETUP



4.5.3 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/ E-GPRS).

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).

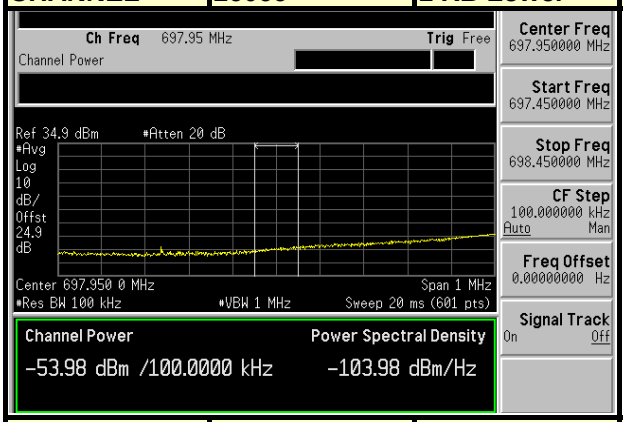
d. Record the max trace plot into the test report.

4.5.4 TEST RESULTS

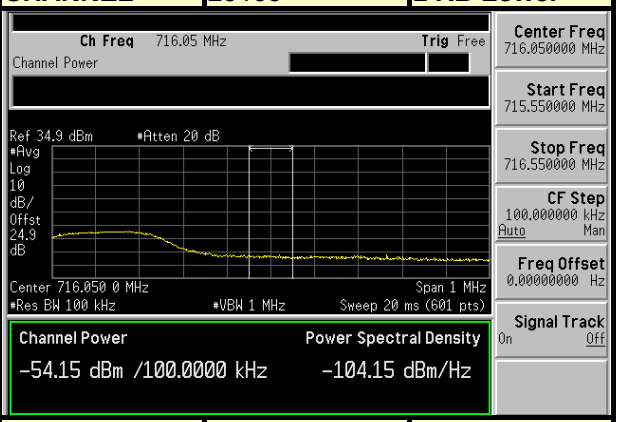
LTE BAND 12

Channel Bandwidth: 5MHz, QPSK

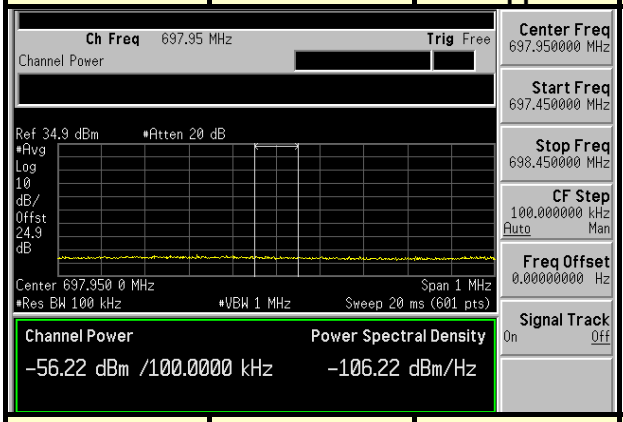
CHANNEL	23035	1 RB Lower



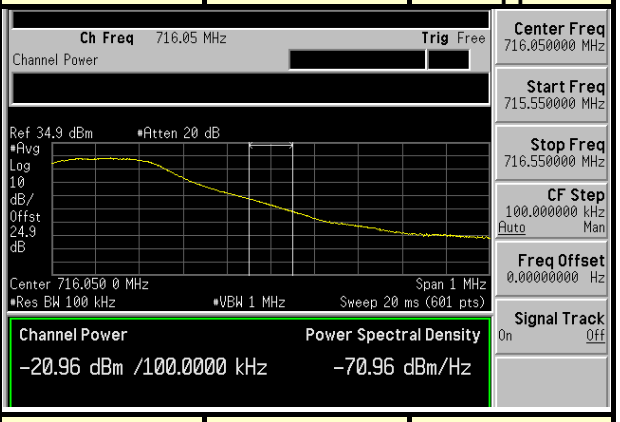
CHANNEL	23155	1 RB Lower



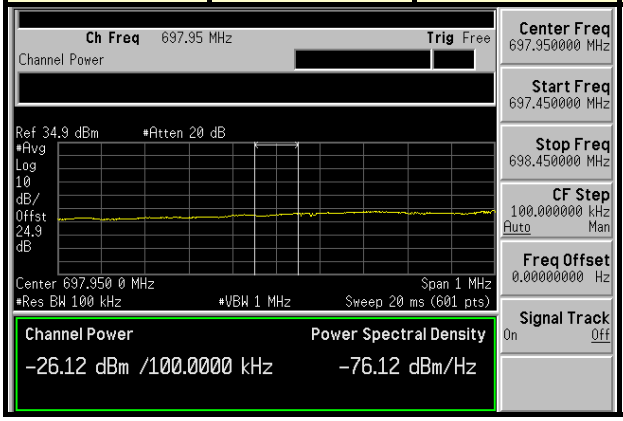
CHANNEL	23035	1 RB Upper



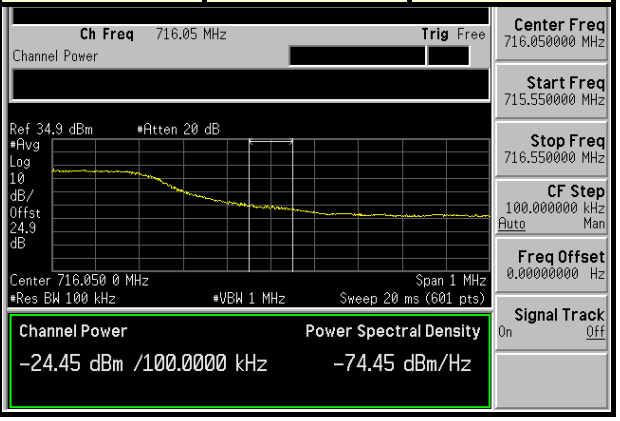
CHANNEL	23155	1 RB Upper



CHANNEL	23035	25 RB

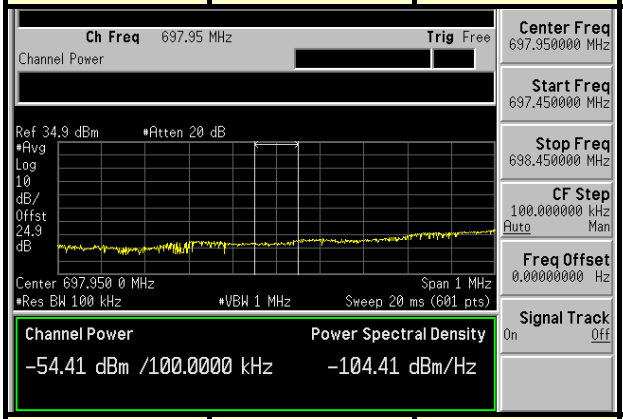


CHANNEL	23155	25 RB

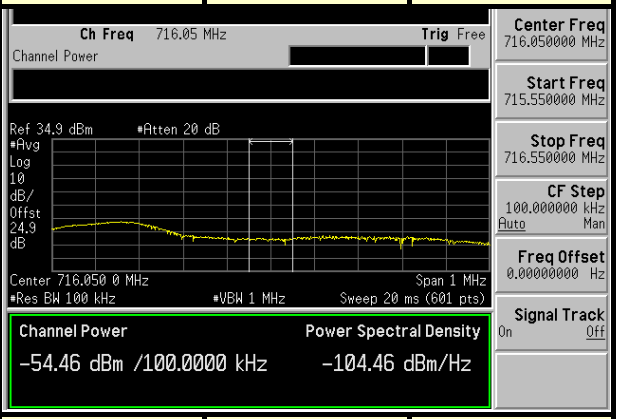


Channel Bandwidth: 5MHz, 16QAM

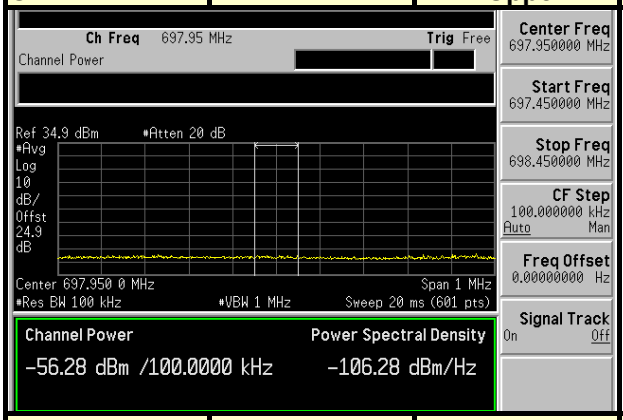
CHANNEL	23035	1 RB Lower



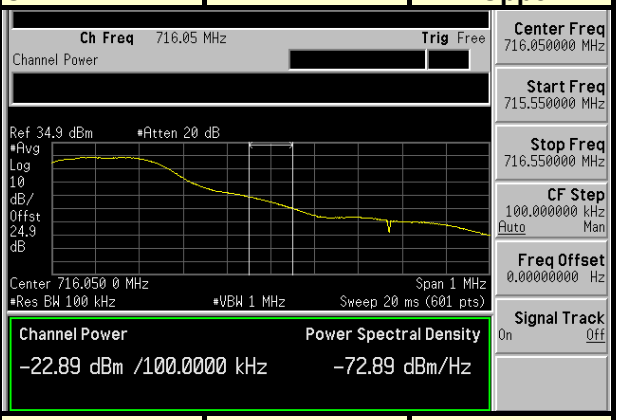
CHANNEL	23155	1 RB Lower



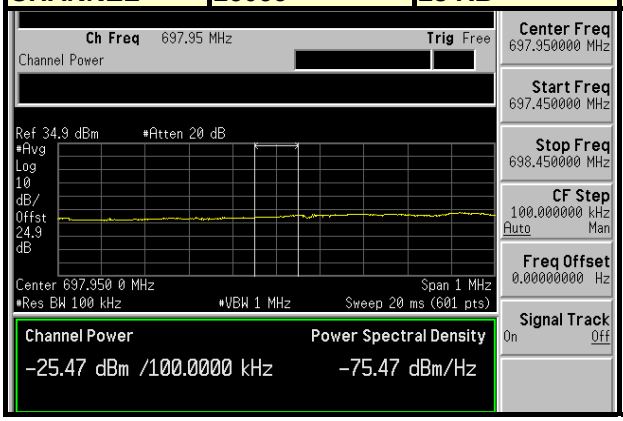
CHANNEL	23035	1 RB Upper



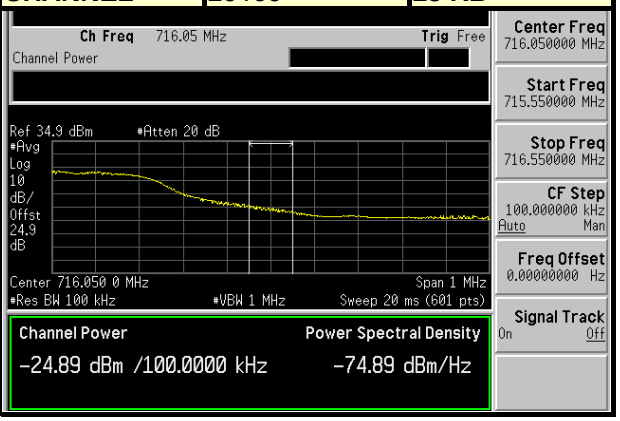
CHANNEL	23155	1 RB Upper



CHANNEL	23035	25 RB

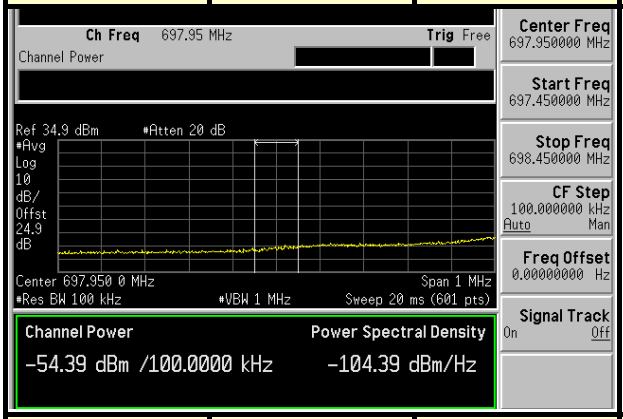


CHANNEL	23155	25 RB

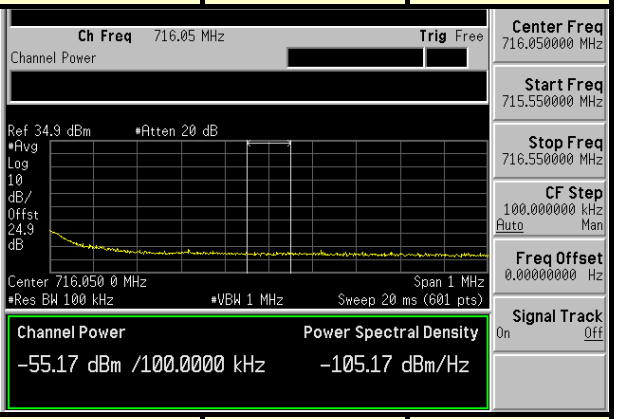


Channel Bandwidth: 10MHz, QPSK

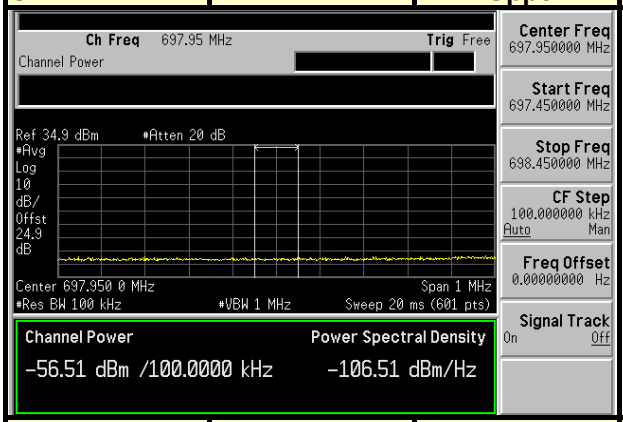
CHANNEL	23060	1 RB Lower



CHANNEL	23130	1 RB Lower

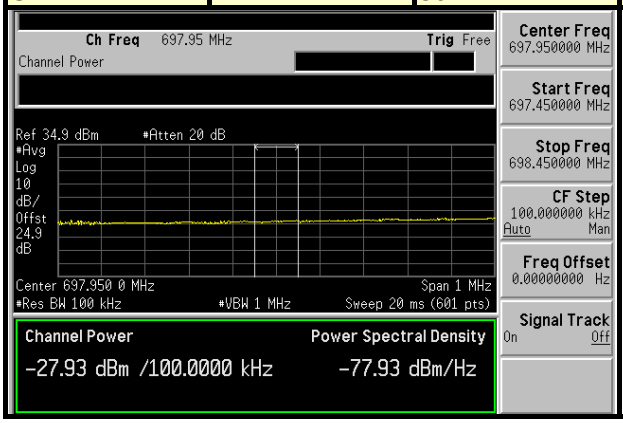


CHANNEL	23060	1 RB Upper

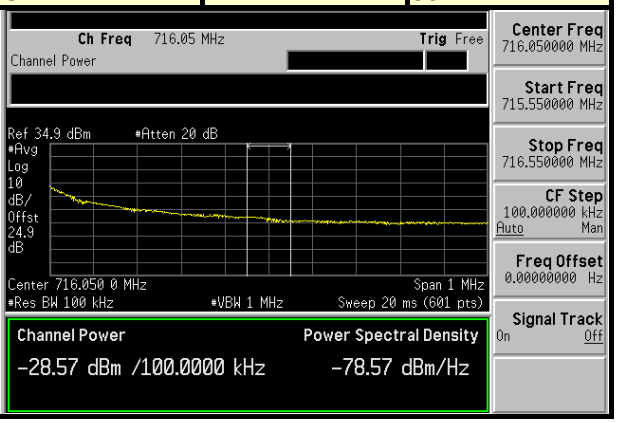


CHANNEL	23130	1 RB Upper

CHANNEL	23060	50 RB

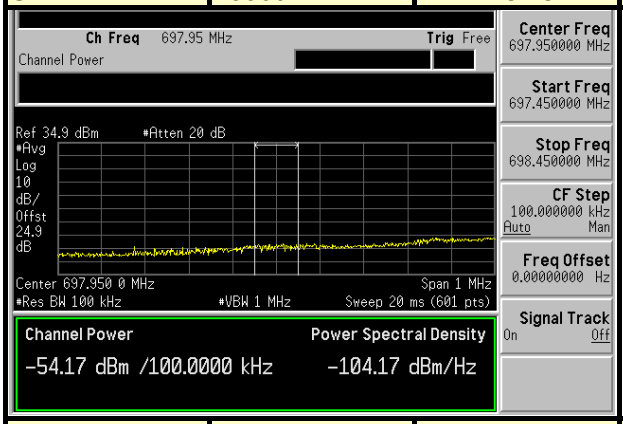


CHANNEL	23130	50 RB

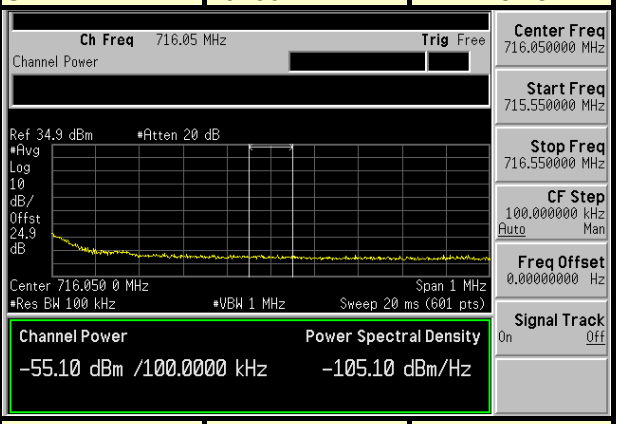


Channel Bandwidth: 10MHz, 16QAM

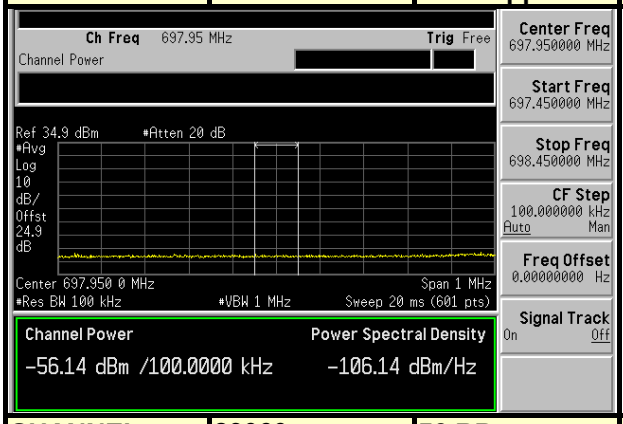
CHANNEL	23060	1 RB Lower



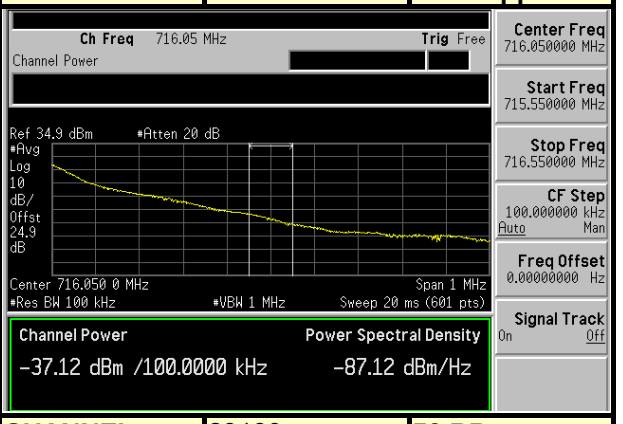
CHANNEL	23130	1 RB Lower



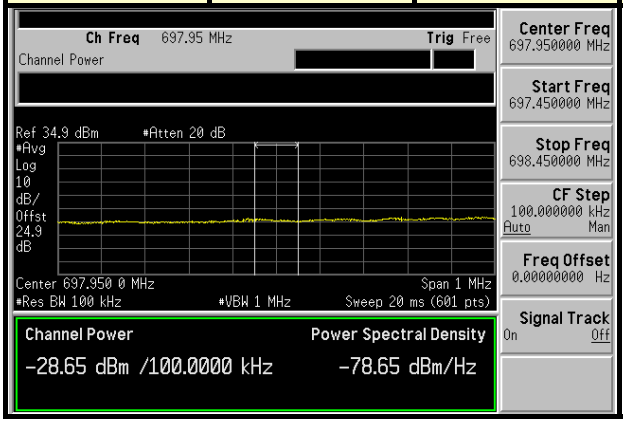
CHANNEL	23060	1 RB Upper



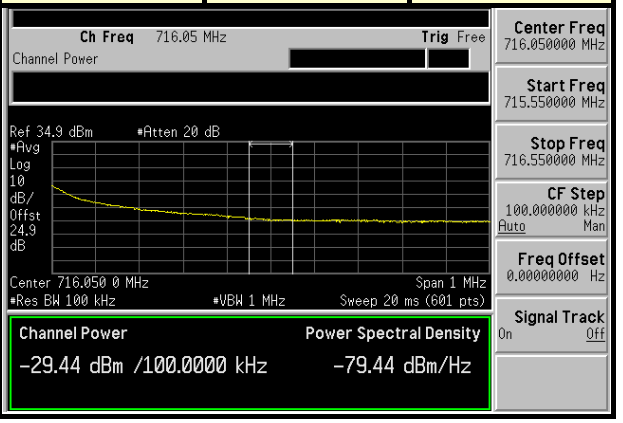
CHANNEL	23130	1 RB Upper



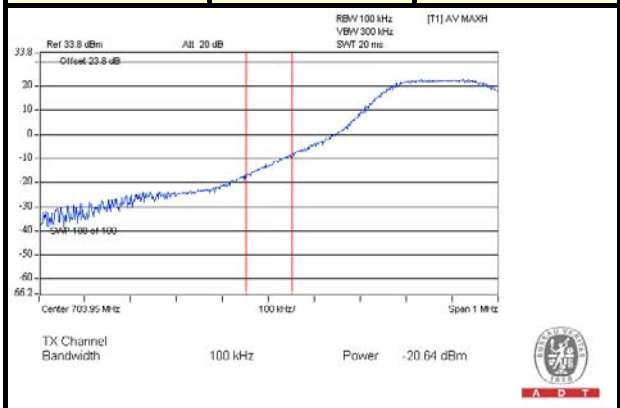
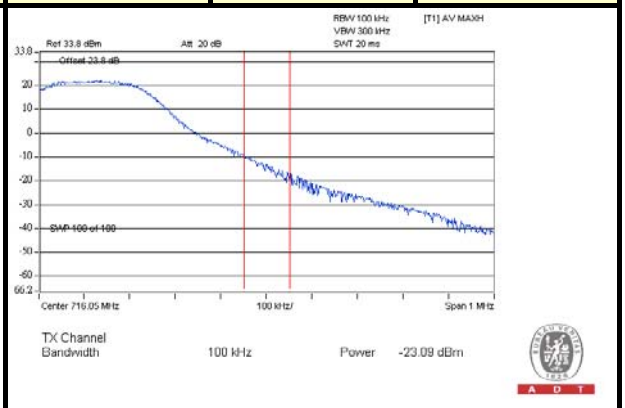
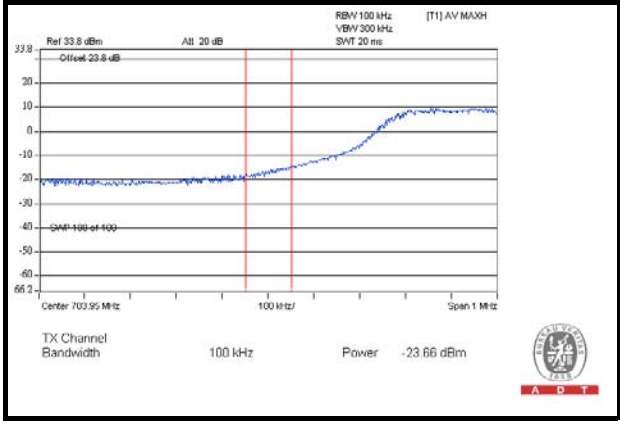
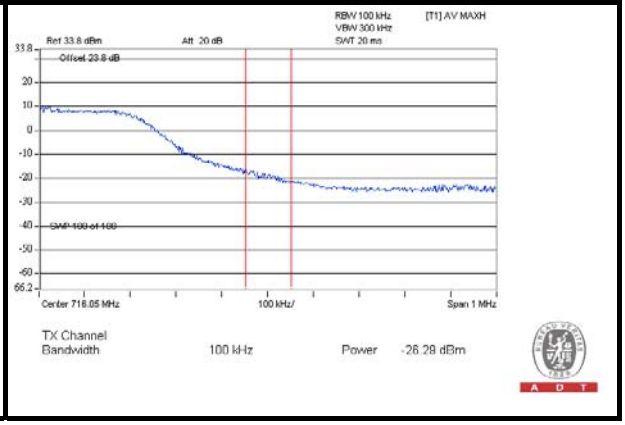
CHANNEL	23060	50 RB



CHANNEL	23130	50 RB

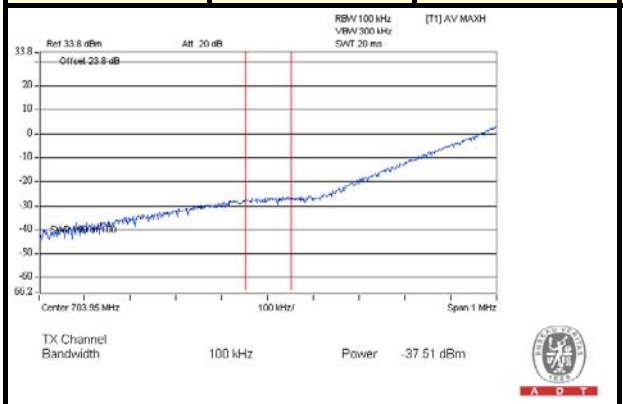


LTE BAND 17

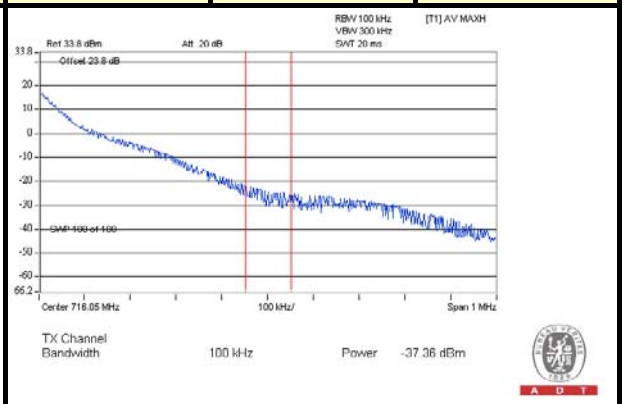
Channel Bandwidth: 5MHz, QPSK					
CHANNEL	23755	1 RB	CHANNEL	23825	1 RB
					
CHANNEL	23755	25 RB	CHANNEL	23825	25 RB
					

Channel Bandwidth: 10MHz, QPSK

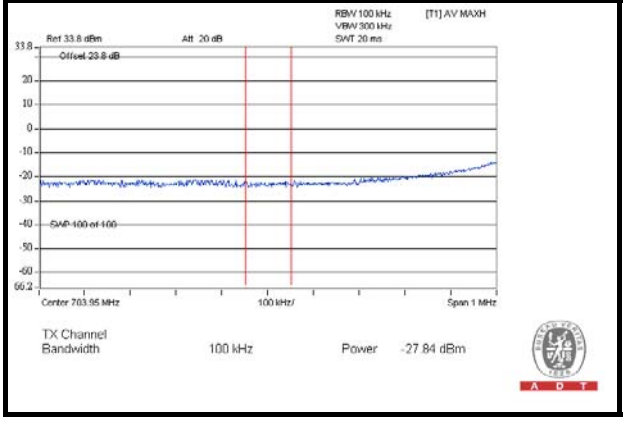
CHANNEL	23780	1 RB



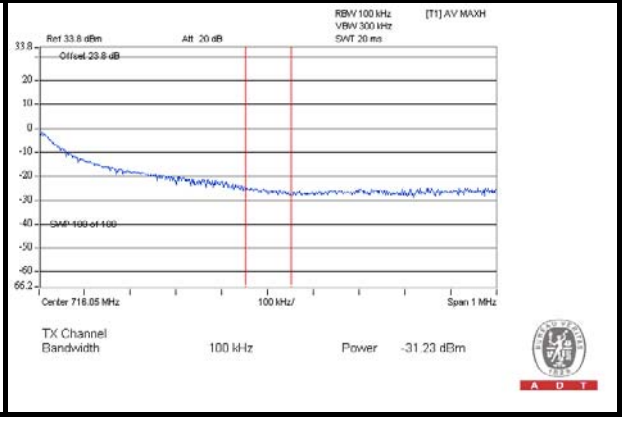
CHANNEL	23800	1 RB



CHANNEL	23780	50 RB

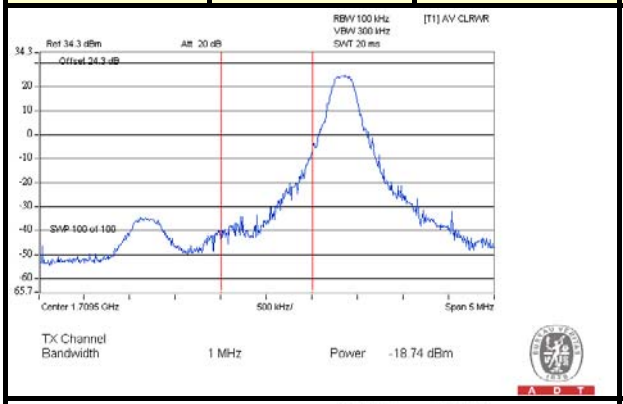


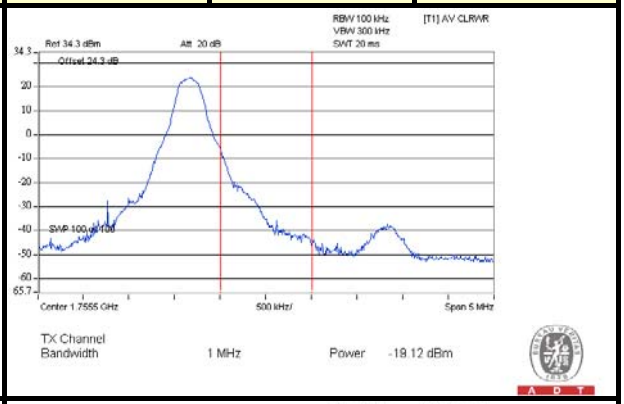
CHANNEL	23800	50 RB

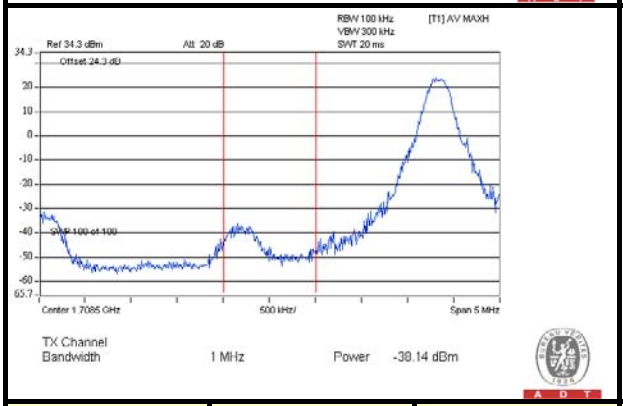


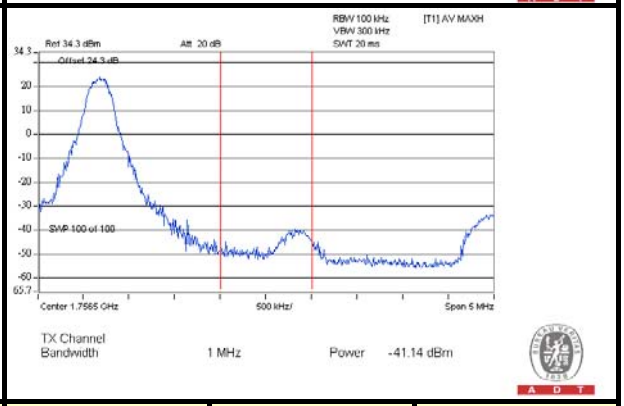
LTE BAND 4

Channel Bandwidth: 5MHz, QPSK					
CHANNEL	19975	1 RB	CHANNEL	20375	1 RB

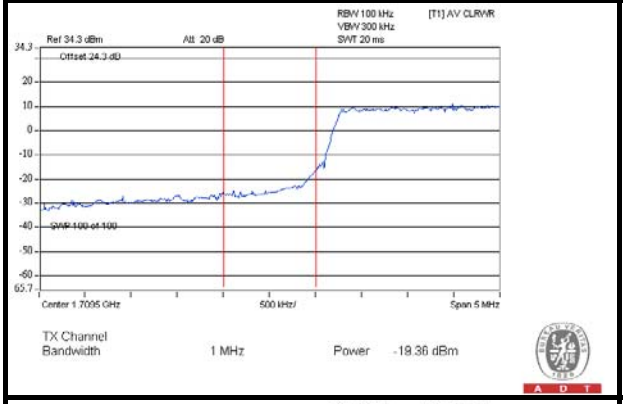


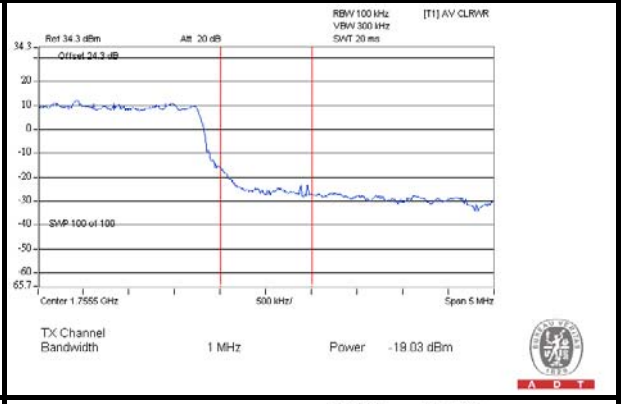


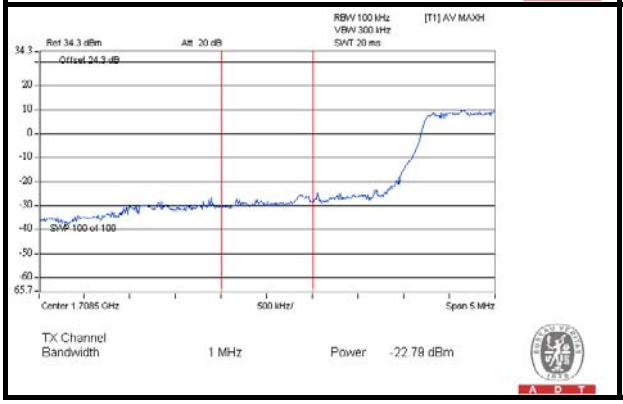


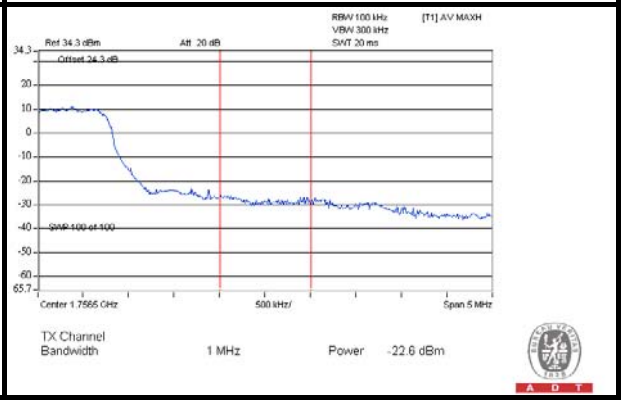


CHANNEL	19975	25 RB	CHANNEL	20375	25 RB



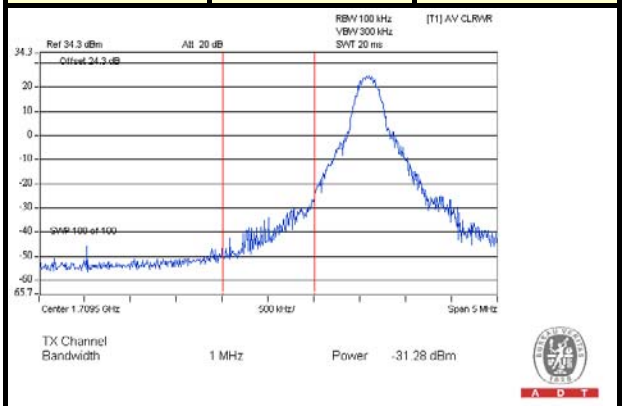


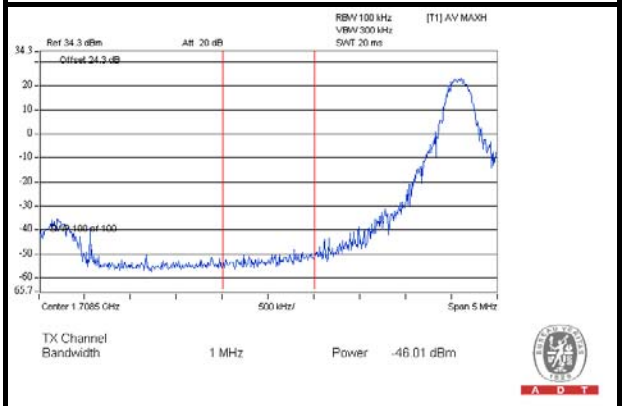




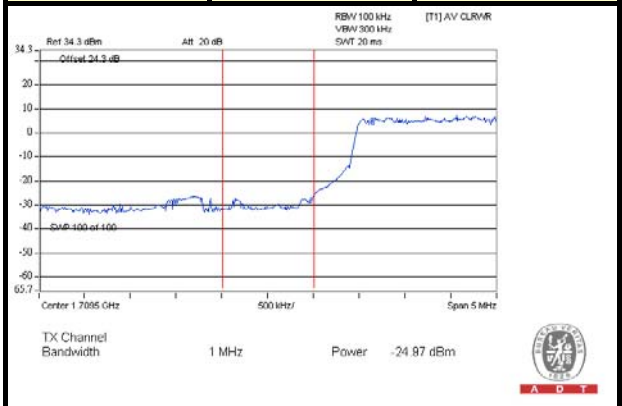
Channel Bandwidth: 10MHz, QPSK

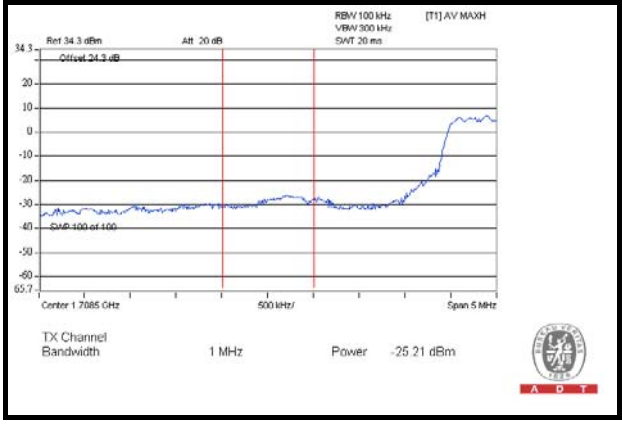
CHANNEL	20000	1 RB



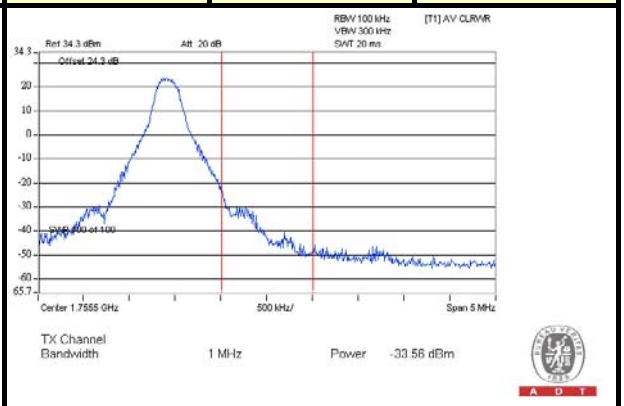


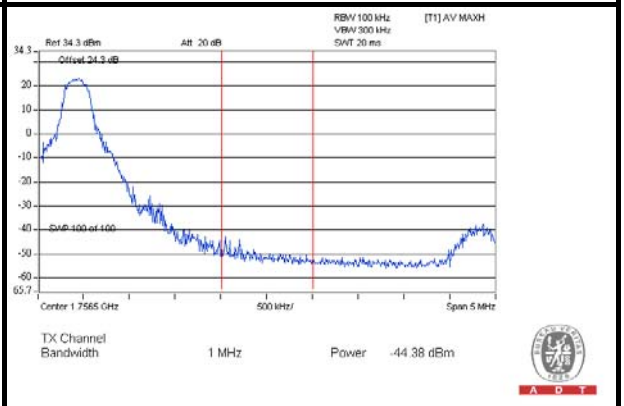
CHANNEL	20000	25 RB



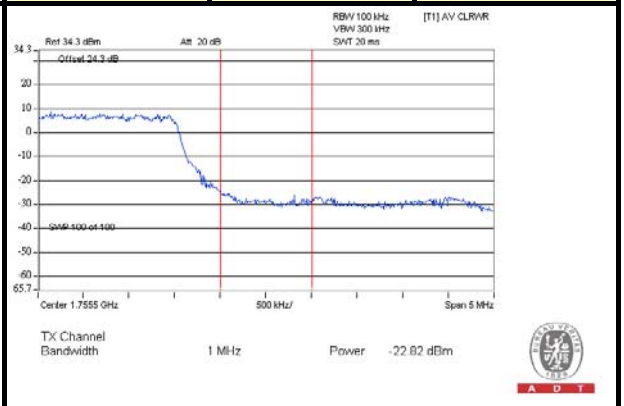


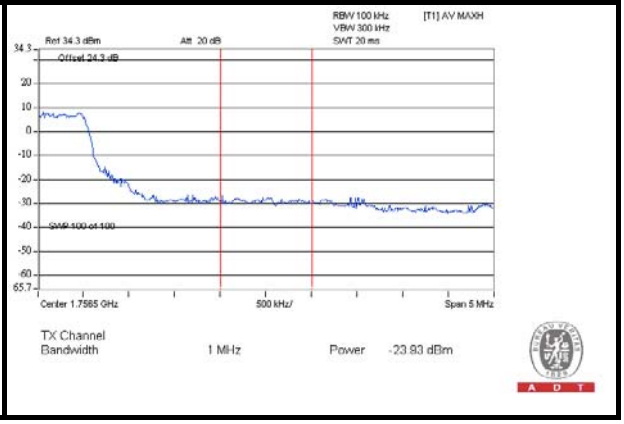
CHANNEL	20350	1 RB



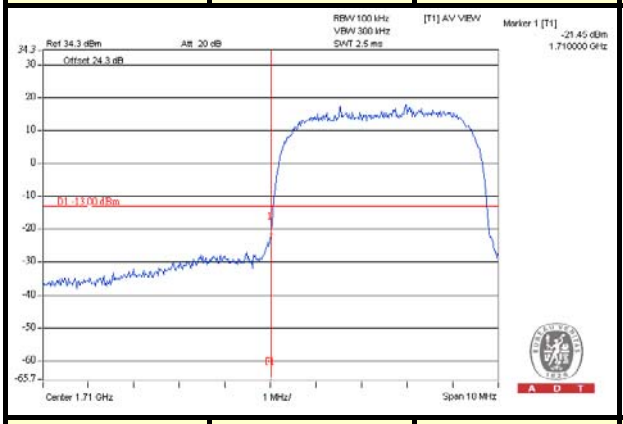
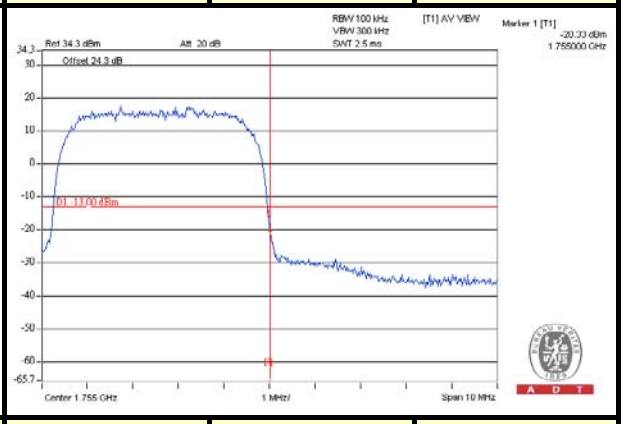
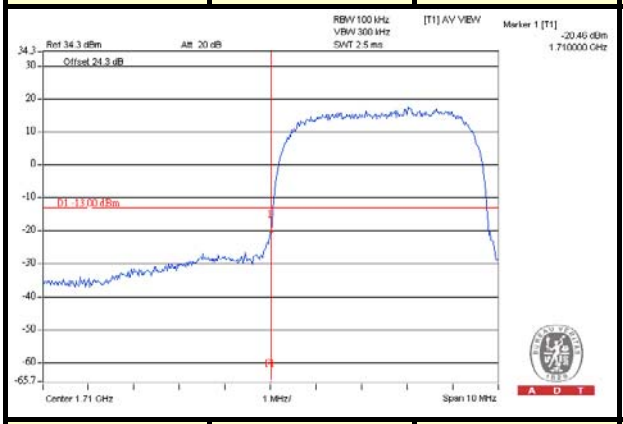
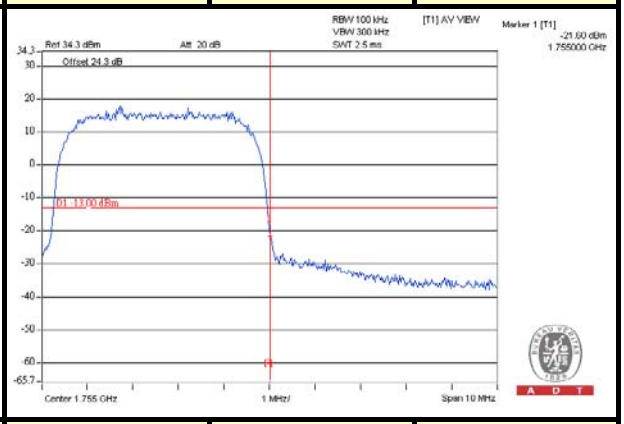
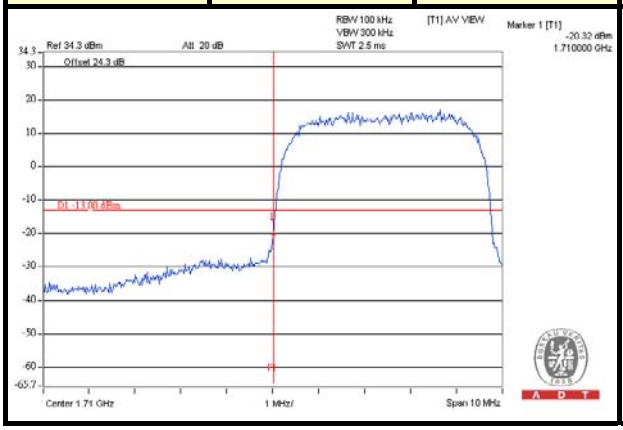
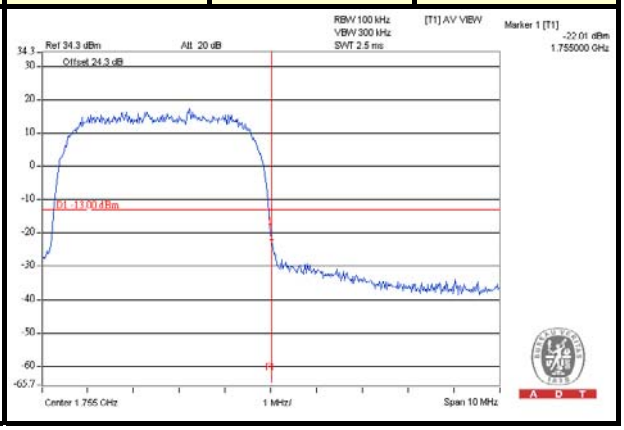


CHANNEL	20350	50 RB





FOR WCDMA AWS BAND

CHANNEL	19975	WCDMA	CHANNEL	20375	WCDMA
					
CHANNEL	19975	HSDPA	CHANNEL	20375	HSDPA
					
CHANNEL	19975	HSUPA	CHANNEL	20375	HSUPA
					

4.6 CONDUCTED SPURIOUS EMISSIONS

4.6.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

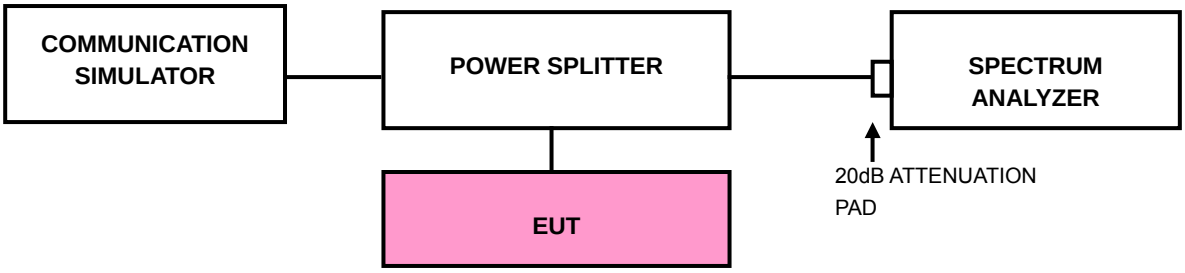
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB. The emission limit equal to –13dBm.

4.6.2 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 9 kHz to 19.1GHz. 20dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

4.6.3 TEST SETUP



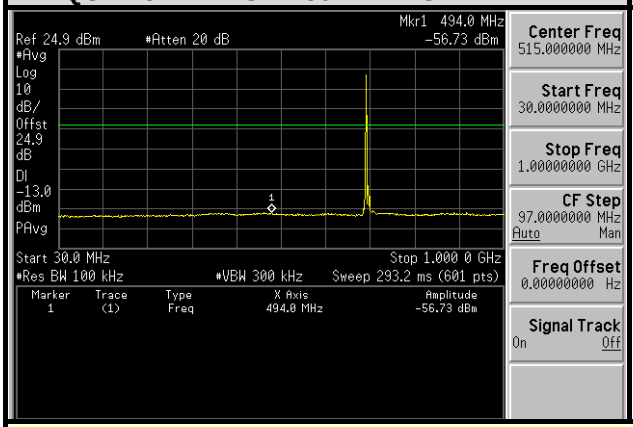
4.6.4 TEST RESULTS

LTE BAND 12

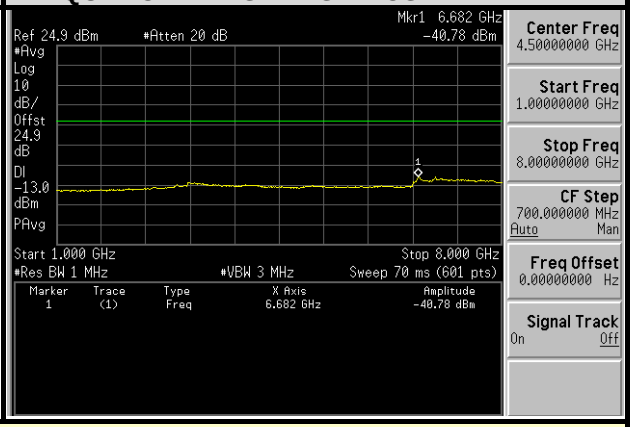
5MHz / QPSK

CHANNEL 23035

FREQUENCY RANGE : 30MHz~1GHz

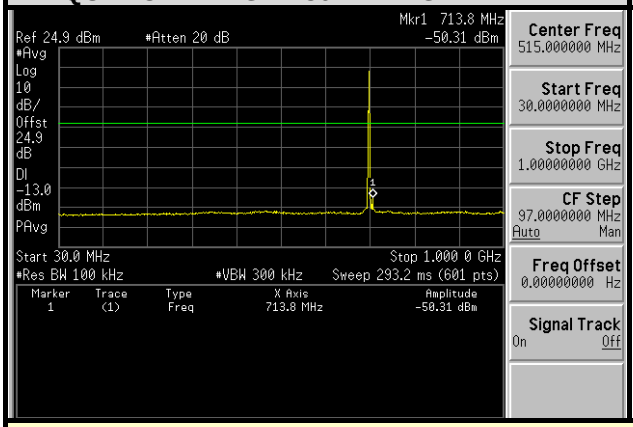


FREQUENCY RANGE : 1GHz~8GHz

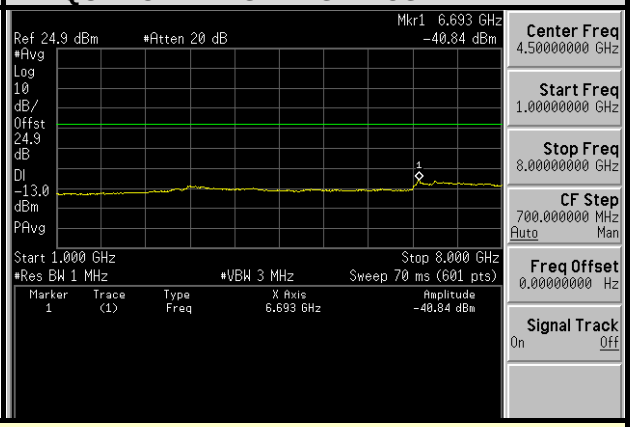


CHANNEL 23095

FREQUENCY RANGE : 30MHz~1GHz

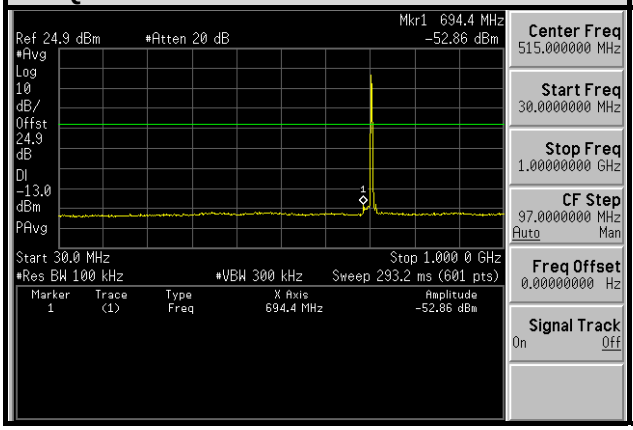


FREQUENCY RANGE : 1GHz~8GHz

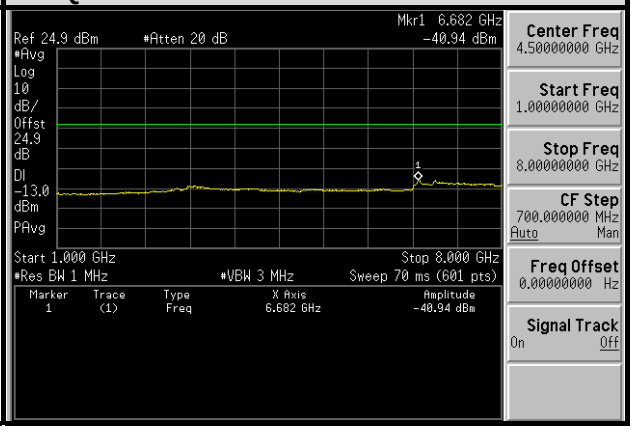


CHANNEL 23155

FREQUENCY RANGE : 30MHz~1GHz



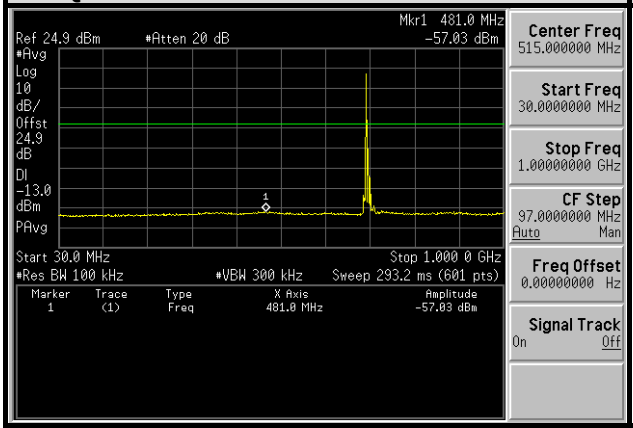
FREQUENCY RANGE : 1GHz~8GHz



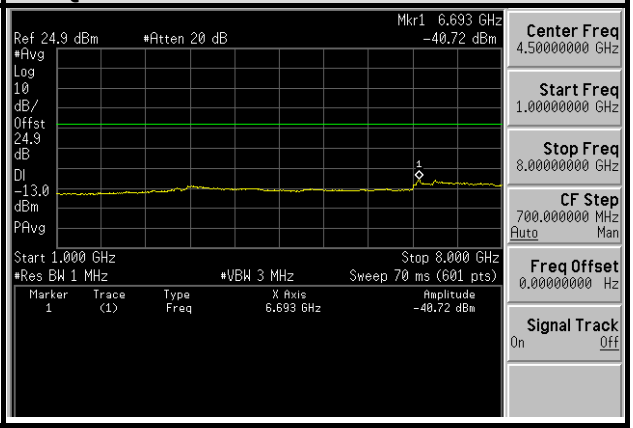
10MHz / QPSK

CHANNEL 23060

FREQUENCY RANGE : 30MHz~1GHz

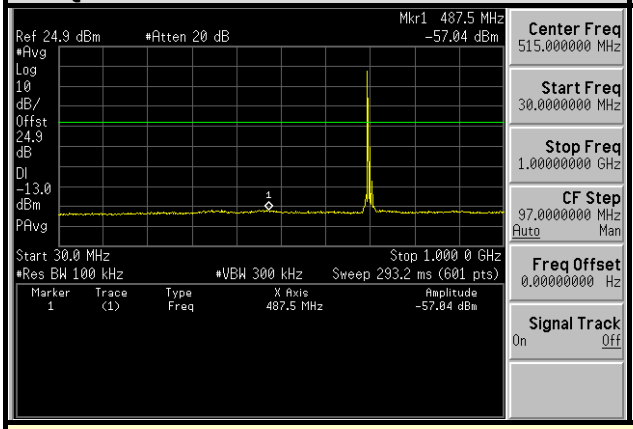


FREQUENCY RANGE : 1GHz~8GHz

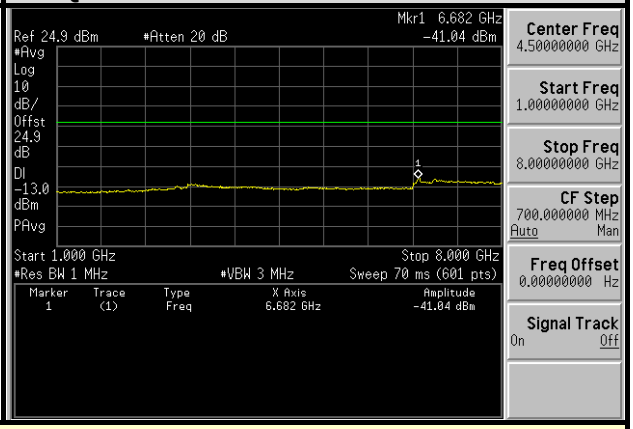


CHANNEL 23095

FREQUENCY RANGE : 30MHz~1GHz

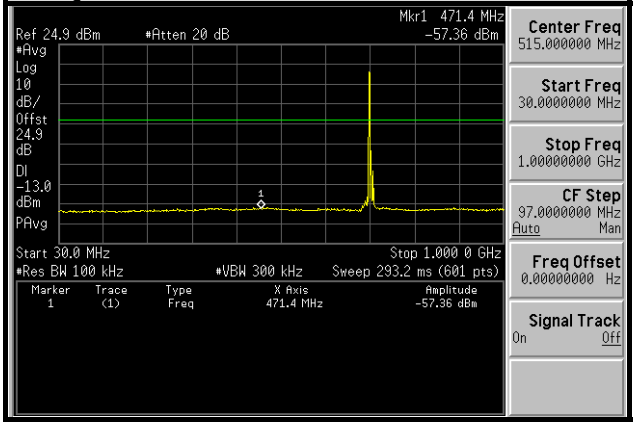


FREQUENCY RANGE : 1GHz~8GHz

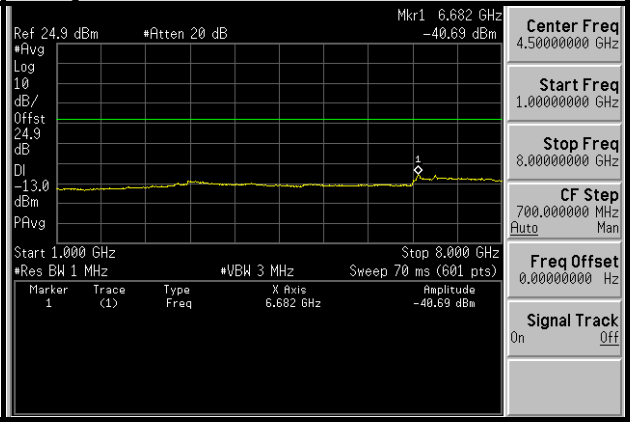


CHANNEL 23130

FREQUENCY RANGE : 30MHz~1GHz



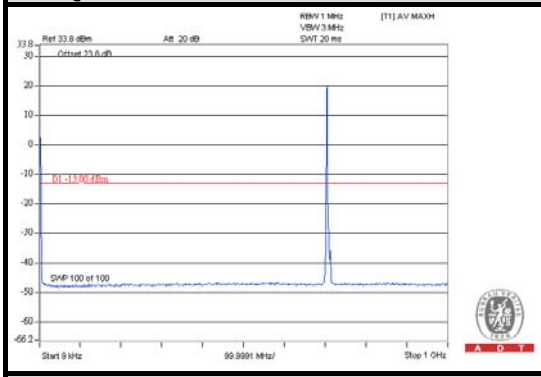
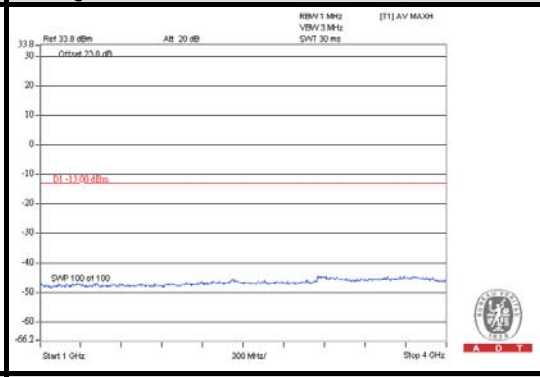
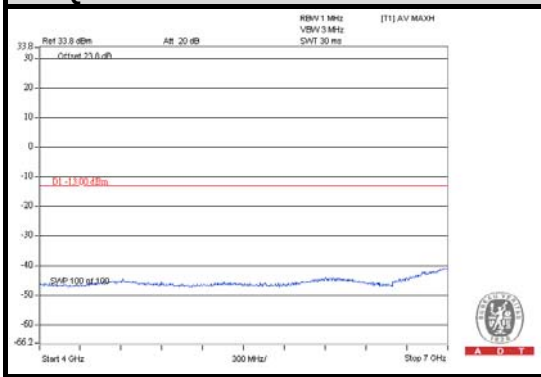
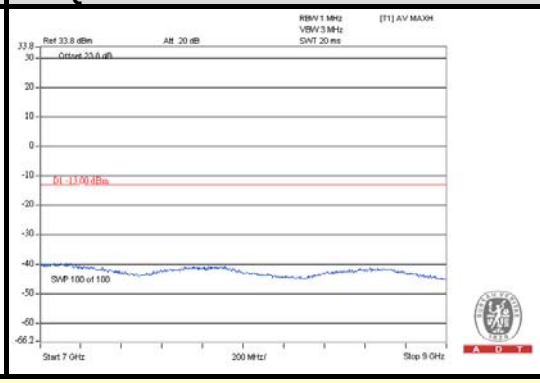
FREQUENCY RANGE : 1GHz~8GHz



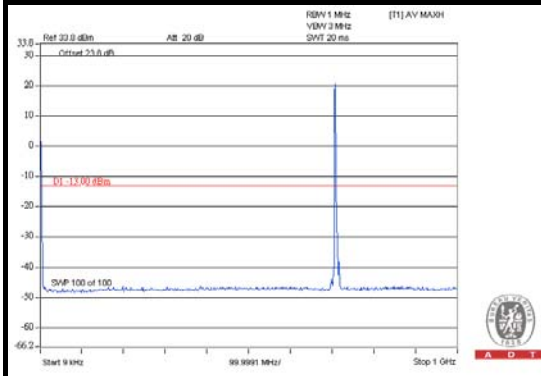
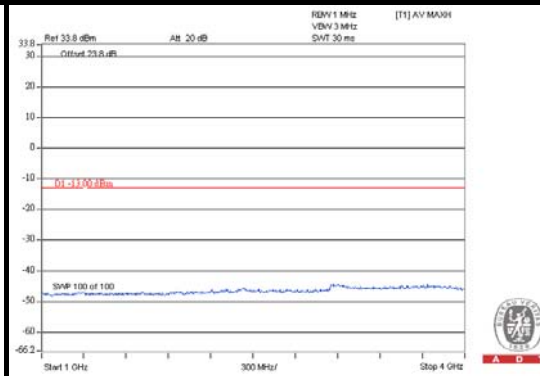
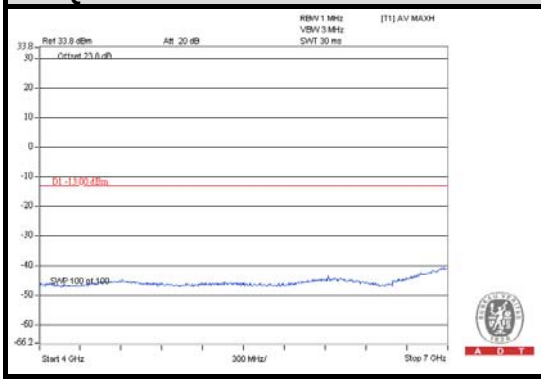
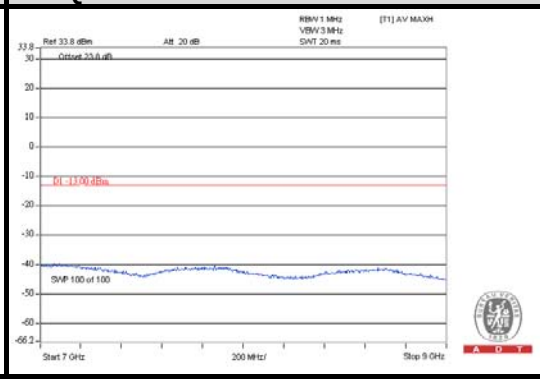
LTE BAND 17

5MHz / QPSK

CHANNEL 23755

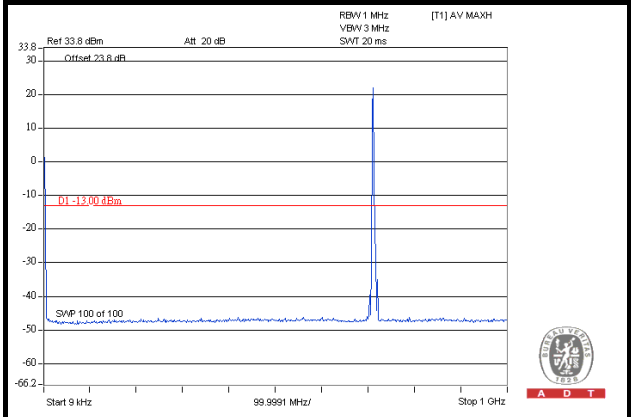
FREQUENCY RANGE : 9KHz~1GHz	FREQUENCY RANGE : 1GHz~4GHz
	
FREQUENCY RANGE : 4GHz~7GHz	**FREQUENCY RANGE : 7GHz~9GHz**
	

CHANNEL 23790

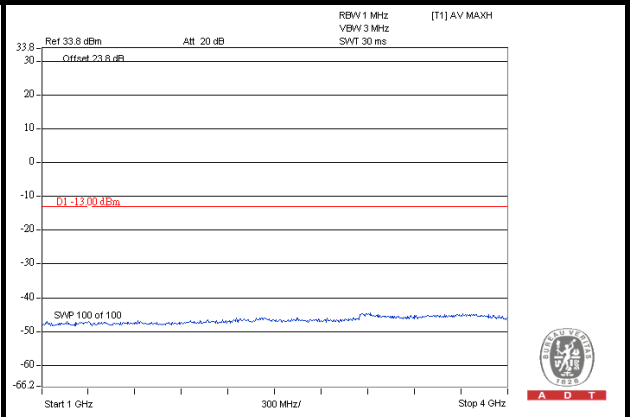
FREQUENCY RANGE : 9KHz~1GHz	FREQUENCY RANGE : 1GHz~4GHz
	
FREQUENCY RANGE : 4GHz~7GHz	**FREQUENCY RANGE : 7GHz~9GHz**
	

CHANNEL 23825

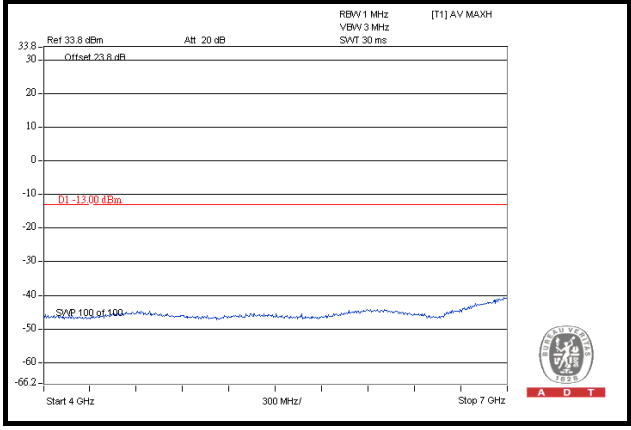
FREQUENCY RANGE : 9KHz~1GHz



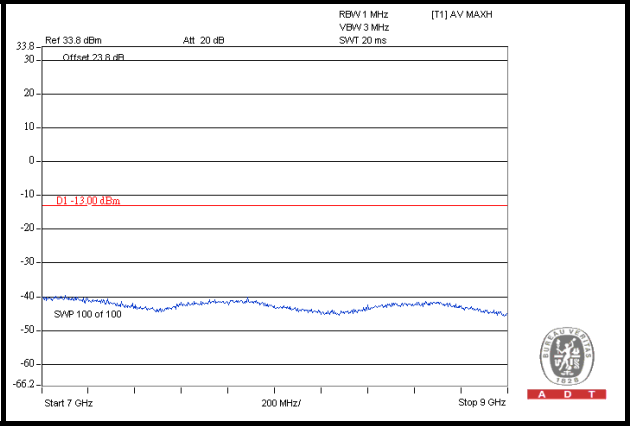
FREQUENCY RANGE : 1GHz~4GHz



FREQUENCY RANGE : 4GHz~7GHz



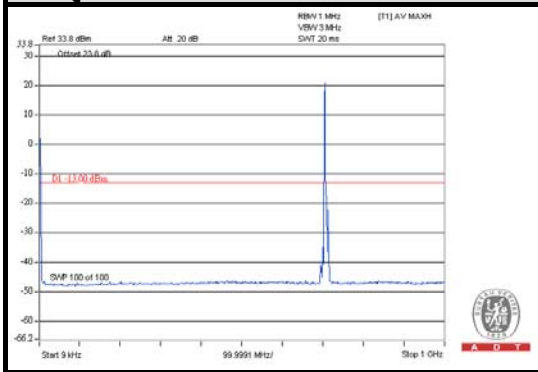
FREQUENCY RANGE : 7GHz~9GHz



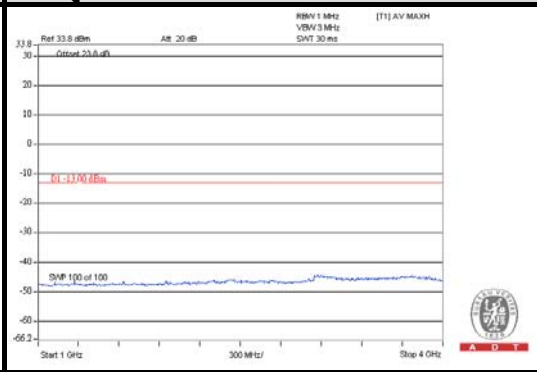
10MHz / QPSK

CHANNEL 23780

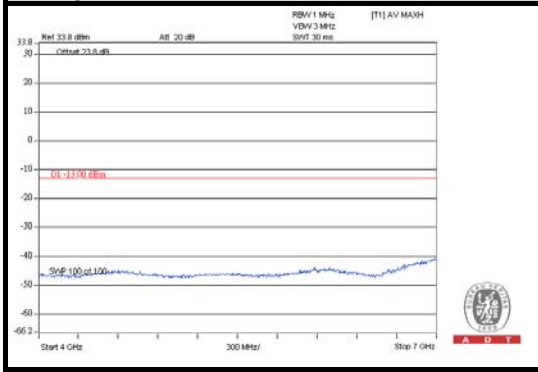
FREQUENCY RANGE : 9KHz~1GHz



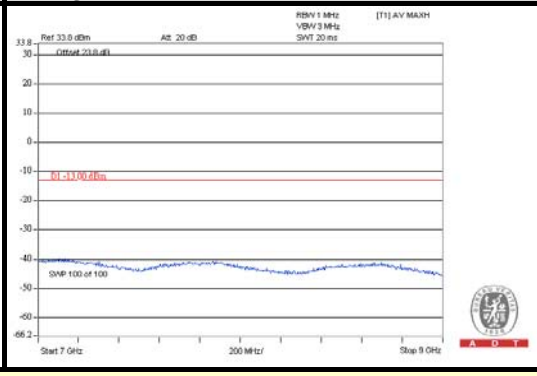
FREQUENCY RANGE : 1GHz~4GHz



FREQUENCY RANGE : 4GHz~7GHz

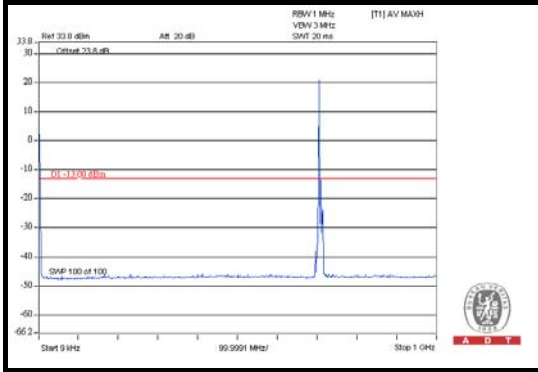


FREQUENCY RANGE : 7GHz~9GHz

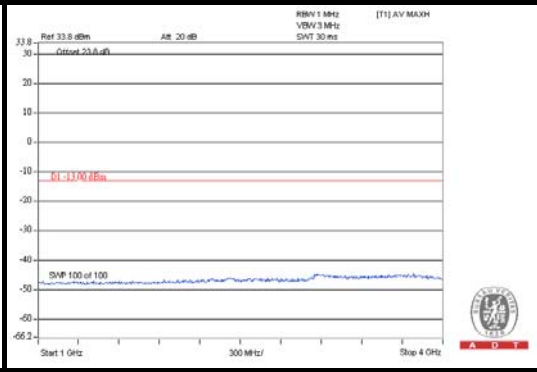


CHANNEL 23790

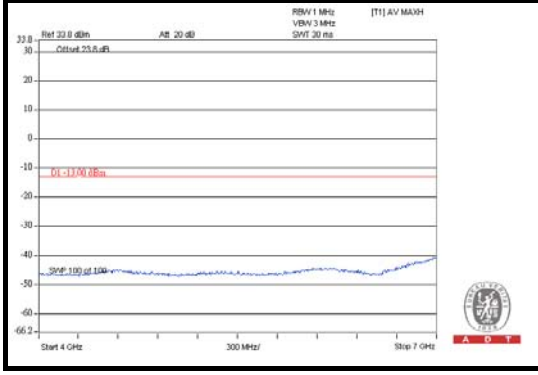
FREQUENCY RANGE : 9KHz~1GHz



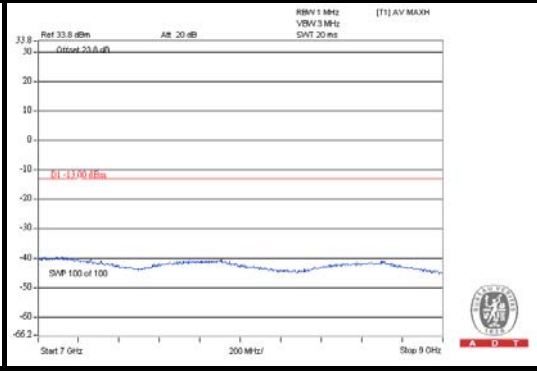
FREQUENCY RANGE : 1GHz~4GHz



FREQUENCY RANGE : 4GHz~7GHz

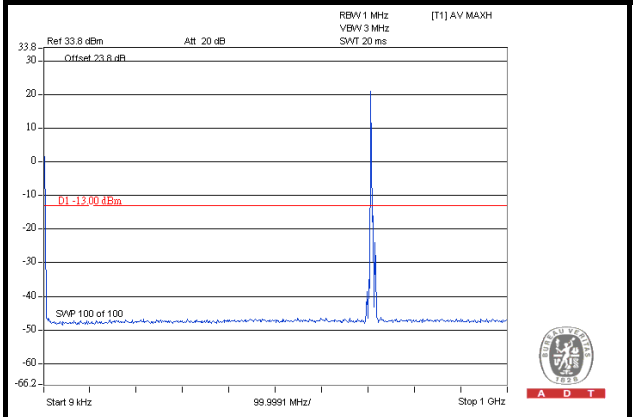


FREQUENCY RANGE : 7GHz~9GHz

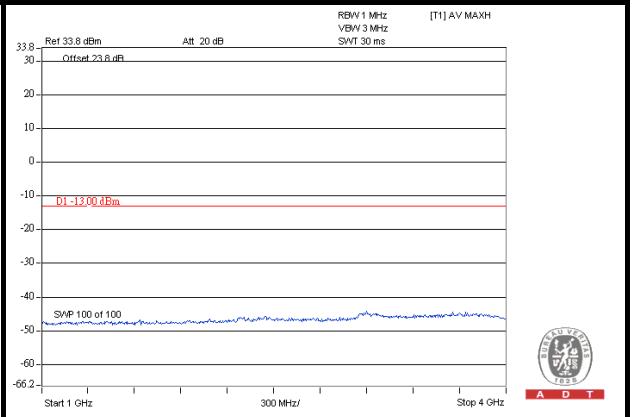


CHANNEL 23800

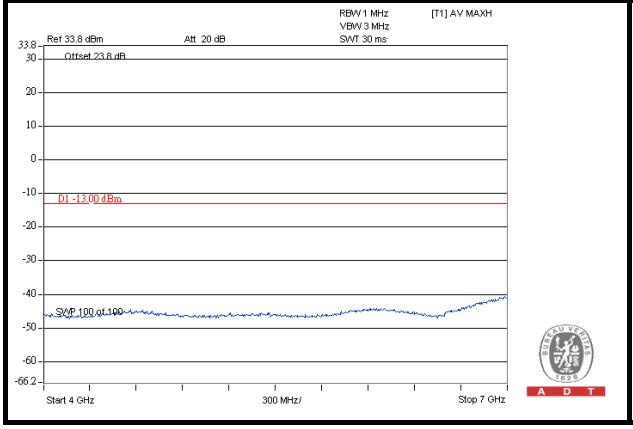
FREQUENCY RANGE : 9KHz~1GHz



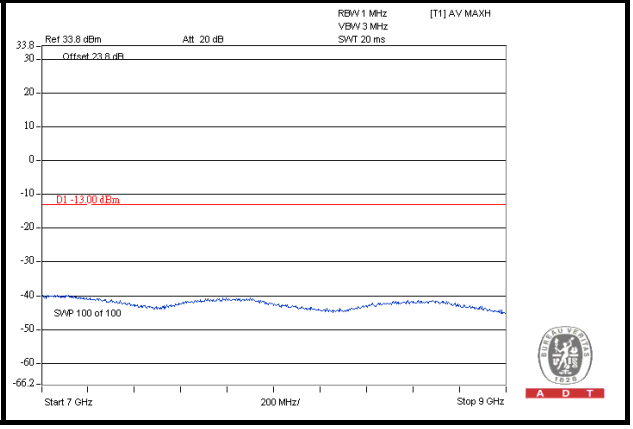
FREQUENCY RANGE : 1GHz~4GHz



FREQUENCY RANGE : 4GHz~7GHz



FREQUENCY RANGE : 7GHz~9GHz

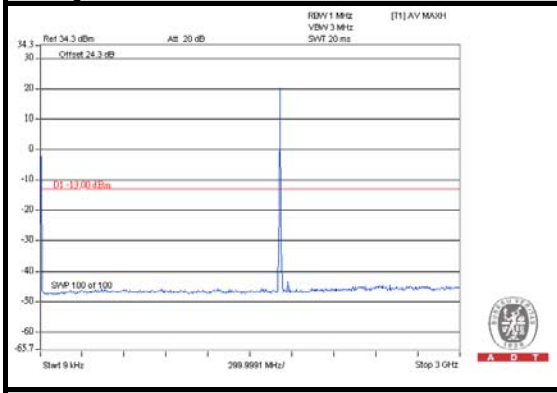


LTE BAND 4

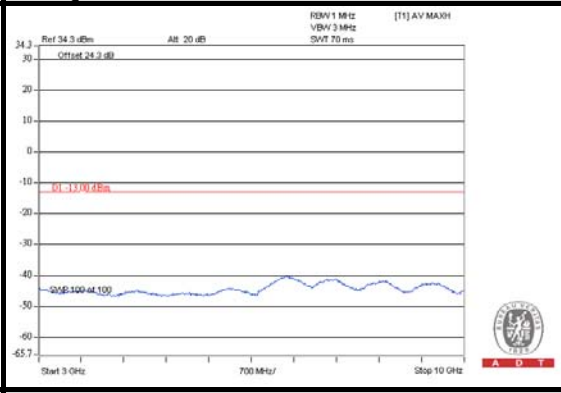
5MHz / QPSK

CHANNEL 19975

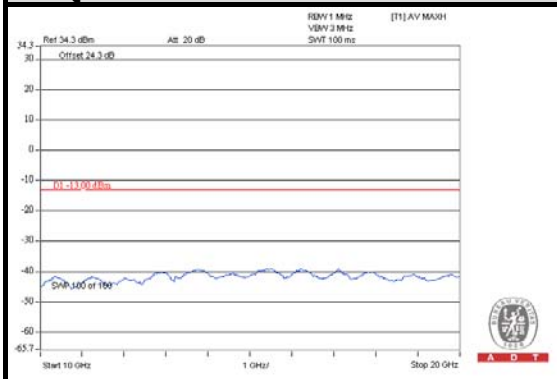
FREQUENCY RANGE : 9KHz~3GHz



FREQUENCY RANGE : 3GHz~10GHz

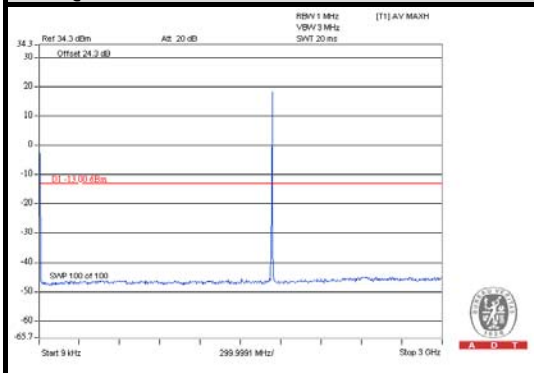


FREQUENCY RANGE : 10GHz~20GHz

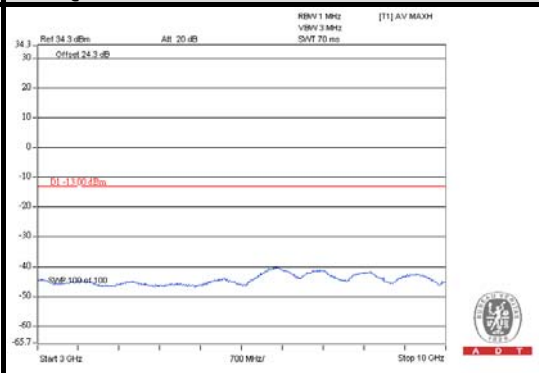


CHANNEL 20175

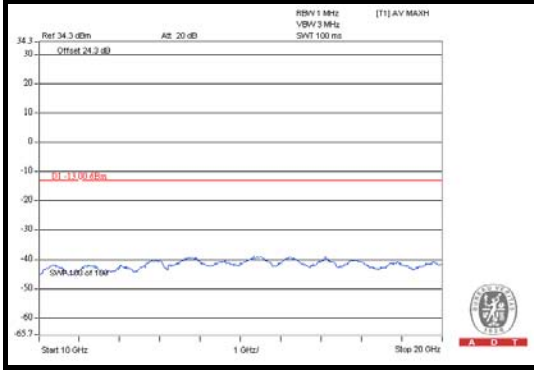
FREQUENCY RANGE : 9KHz~3GHz



FREQUENCY RANGE : 3GHz~10GHz

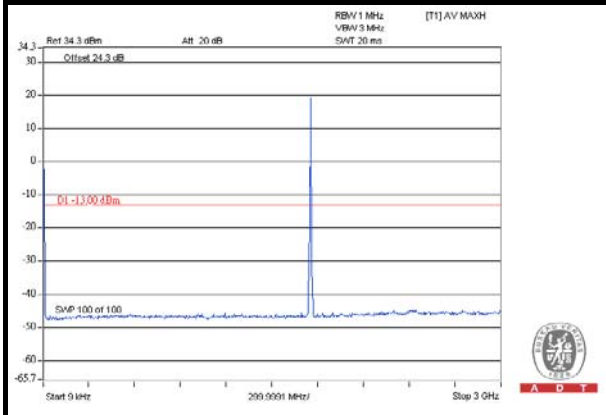


FREQUENCY RANGE : 10GHz~20GHz

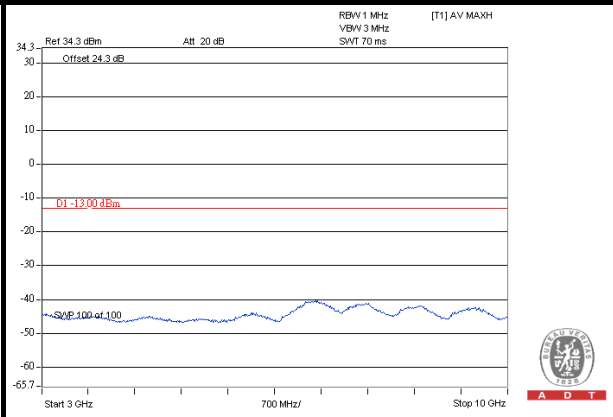


CHANNEL 20375

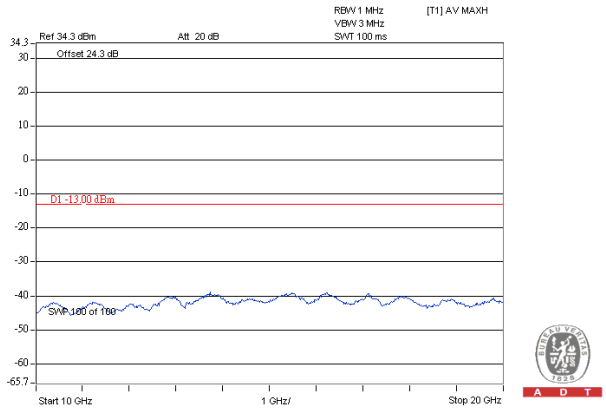
FREQUENCY RANGE : 9KHz~3GHz



FREQUENCY RANGE : 3GHz~10GHz



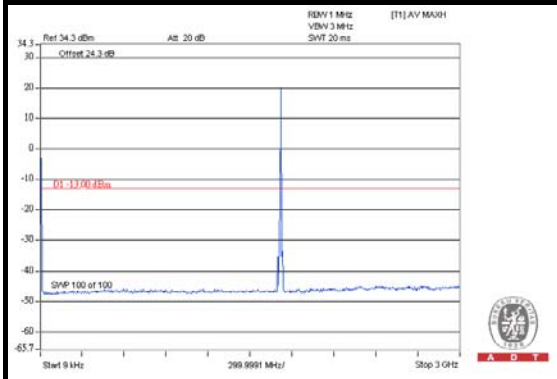
FREQUENCY RANGE : 10GHz~20GHz



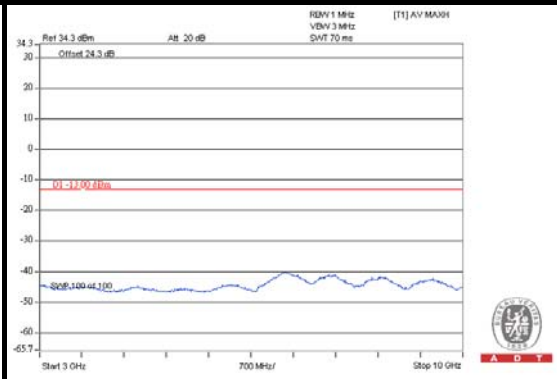
10MHz / QPSK

CHANNEL 20000

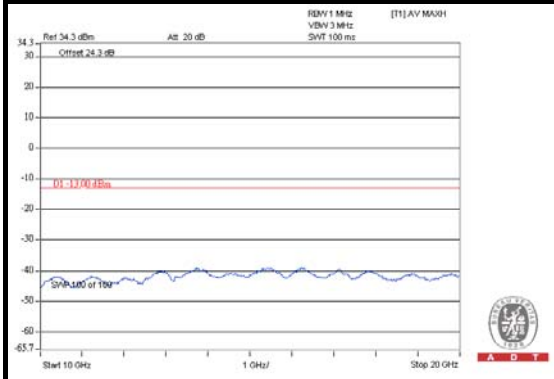
FREQUENCY RANGE : 9KHz~3GHz



FREQUENCY RANGE : 3GHz~10GHz

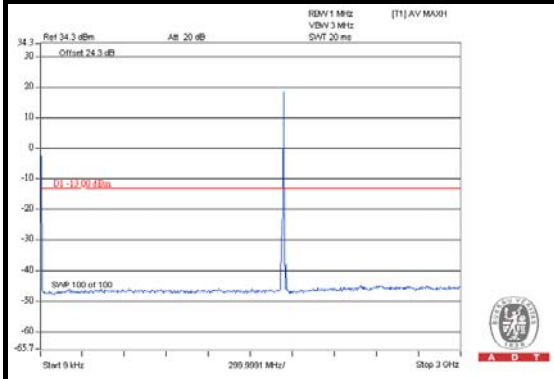


FREQUENCY RANGE : 10GHz~20GHz

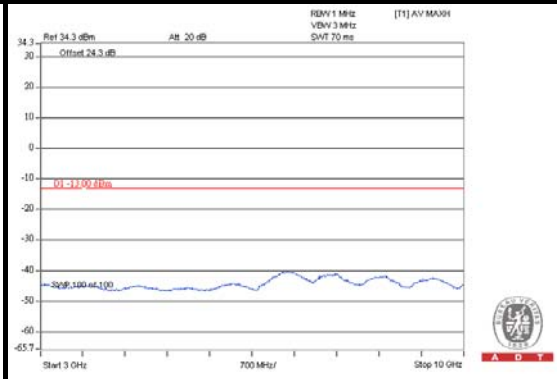


CHANNEL 20175

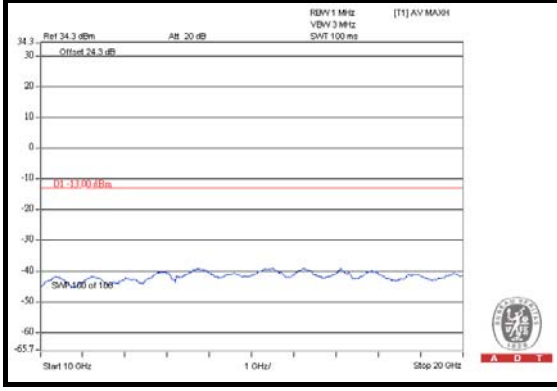
FREQUENCY RANGE : 9KHz~3GHz



FREQUENCY RANGE : 3GHz~10GHz

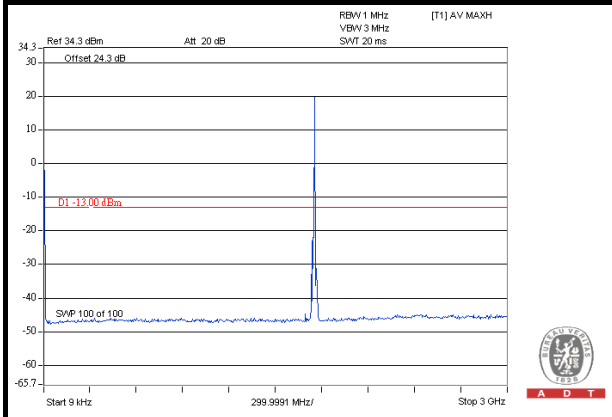


FREQUENCY RANGE : 10GHz~20GHz

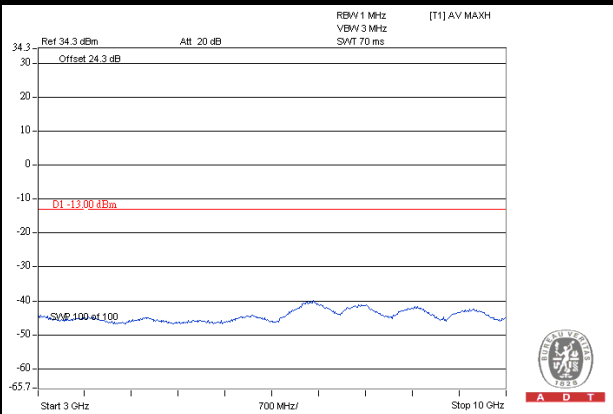


CHANNEL 20350

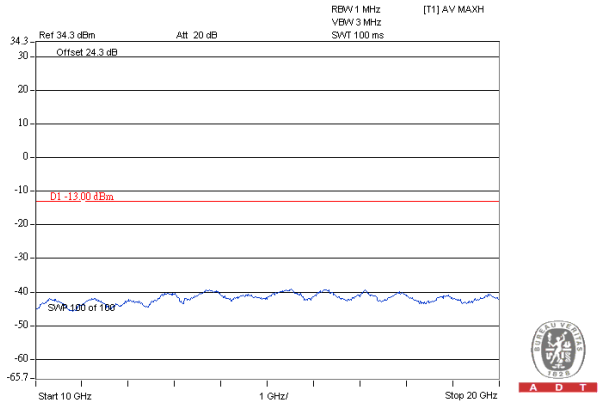
FREQUENCY RANGE : 9KHz~3GHz



FREQUENCY RANGE : 3GHz~10GHz



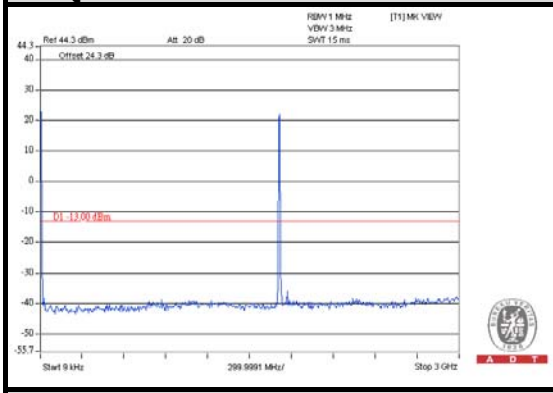
FREQUENCY RANGE : 10GHz~20GHz



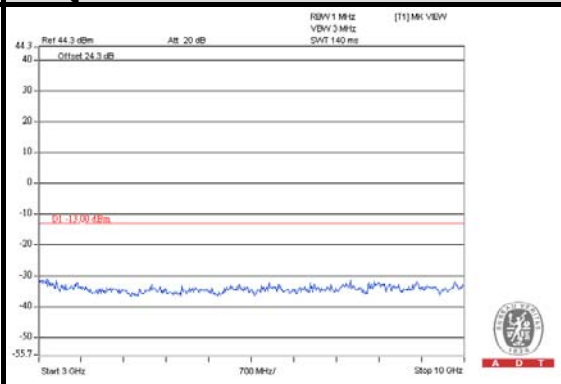
WCDMA AWS Band

CHANNEL 1312

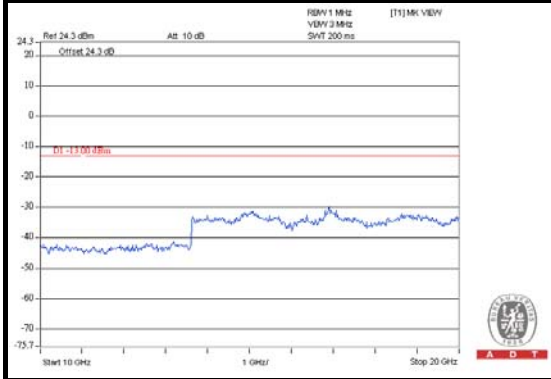
FREQUENCY RANGE : 9KHz~3GHz



FREQUENCY RANGE : 3GHz~10GHz

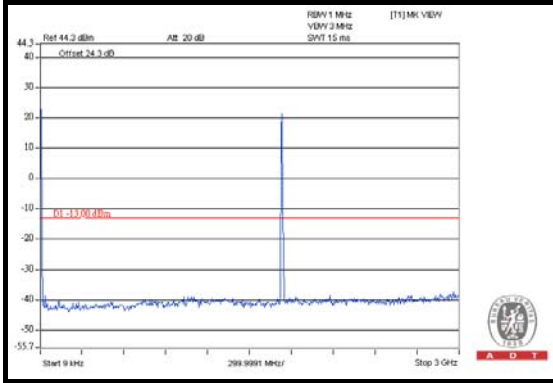


FREQUENCY RANGE : 10GHz~20GHz

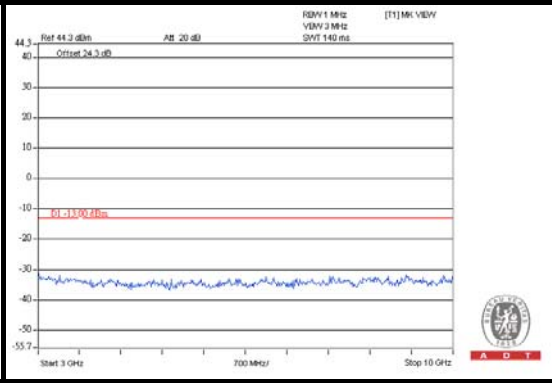


CHANNEL 1412

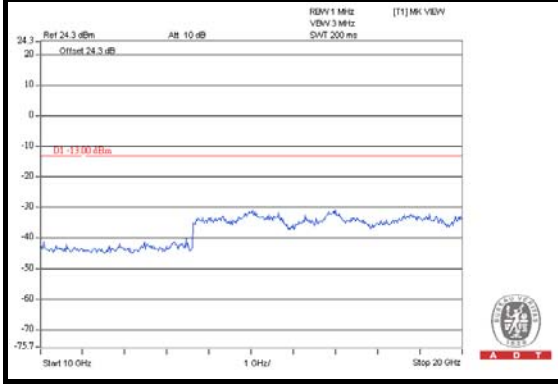
FREQUENCY RANGE : 9KHz~3GHz



FREQUENCY RANGE : 3GHz~10GHz

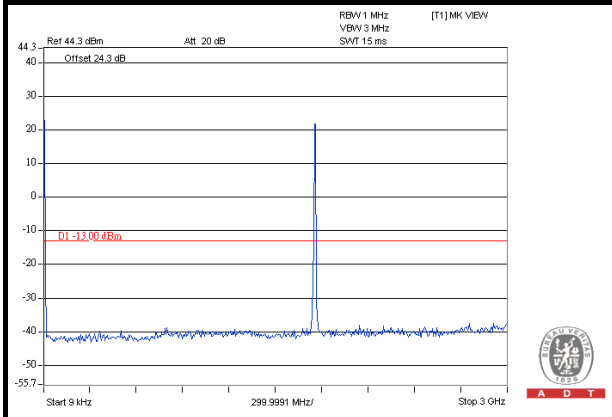


FREQUENCY RANGE : 10GHz~20GHz

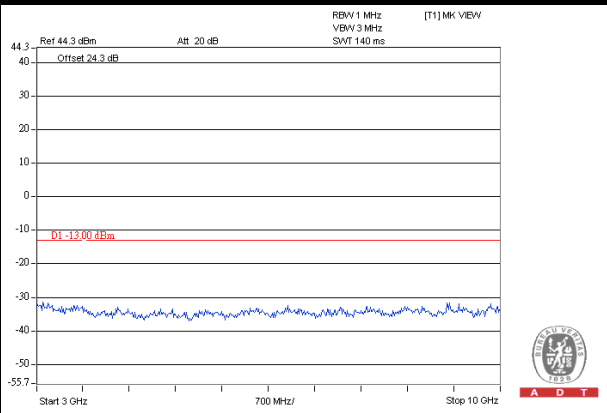


CHANNEL 1513

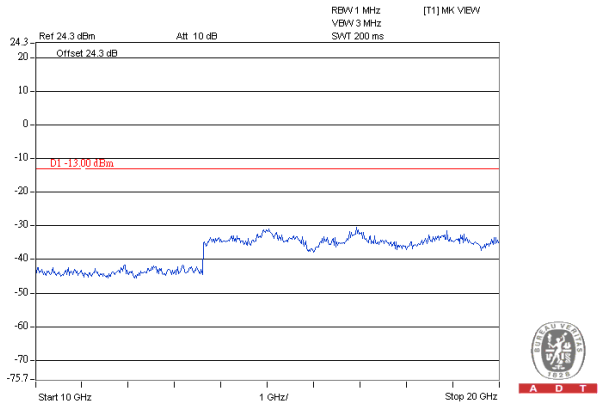
FREQUENCY RANGE : 9KHz~3GHz



FREQUENCY RANGE : 3GHz~10GHz



FREQUENCY RANGE : 10GHz~20GHz



4.7 RADIATED EMISSION MEASUREMENT

4.7.1 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.

4.7.2 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.

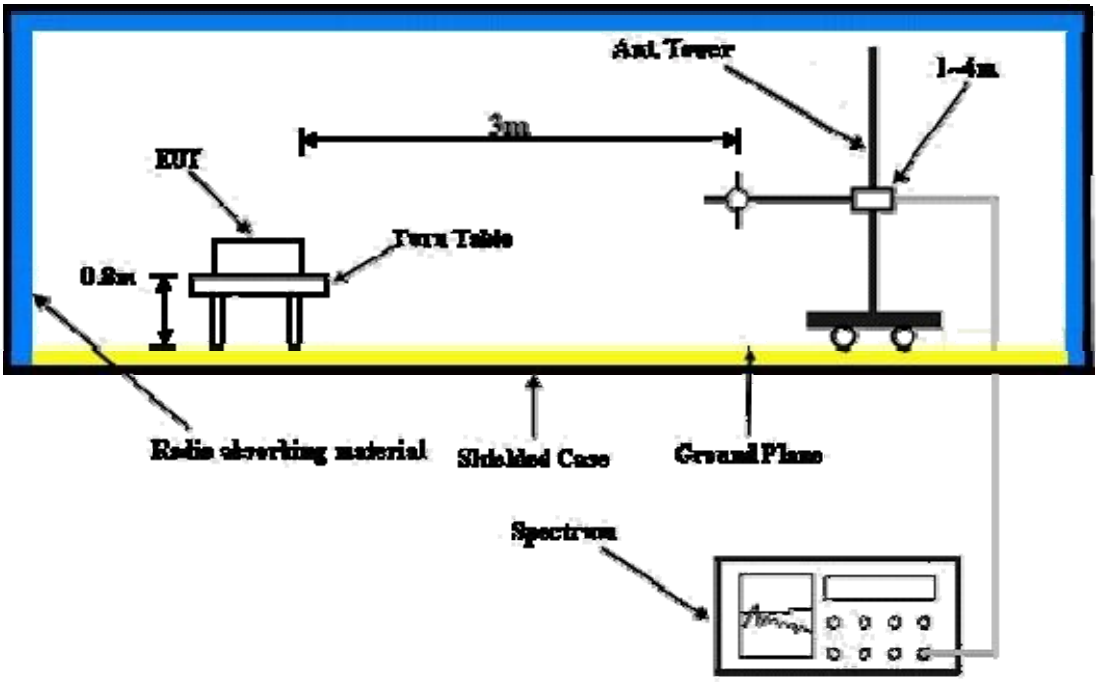
d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.P.R power - 2.15dBi.

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

4.7.3 DEVIATION FROM TEST STANDARD

No deviation

4.7.4 TEST SETUP



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

4.7.5 TEST RESULTS

LTE Band 12:

Below 1GHz

Channel Bandwidth: 5MHz

MODE	TX channel 23095	**FREQUENCY RANGE**	Below 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	**INPUT POWER**	120Vac, 60 Hz
TESTED BY	Chris Lin		

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	257.43	-57.20	-67.43	5.36	-64.22	-13.0	-51.22
2	333.25	-63.88	-72.04	5.18	-69.01	-13.0	-56.01
3	411.00	-60.22	-65.20	5.24	-62.11	-13.0	-49.11
4	510.14	-62.68	-67.28	4.84	-64.59	-13.0	-51.59
5	624.83	-63.59	-66.36	4.63	-63.88	-13.0	-50.88
6	801.72	-65.37	-64.09	4.02	-62.22	-13.0	-49.22
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	214.67	-55.49	-63.60	5.46	-60.29	-13.0	-47.29
2	315.75	-63.11	-69.27	5.15	-66.27	-13.0	-53.27
3	405.17	-65.42	-69.79	5.26	-66.68	-13.0	-53.68
4	613.17	-66.46	-66.62	4.53	-64.24	-13.0	-51.24
5	770.62	-66.97	-63.97	4.38	-61.74	-13.0	-48.74
6	850.32	-68.96	-64.90	3.97	-63.08	-13.0	-50.08

REMARKS:

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

Channel Bandwidth: 10MHz

MODE	TX channel 23095	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	Chris Lin		

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	212.73	-52.9	-64.38	5.5	-61.1	-13	-48.1
2	411.00	-60.2	-65.20	5.2	-62.1	-13	-49.1
3	529.58	-61.0	-65.55	4.7	-63.0	-13	-50.0
4	624.83	-63.6	-66.36	4.6	-63.9	-13	-50.9
5	813.39	-66.5	-65.17	4.0	-63.3	-13	-50.3
6	933.91	-69.0	-66.25	3.9	-64.5	-13	-51.5
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	214.67	-55.5	-63.60	5.5	-60.3	-13.0	-47.3
2	315.75	-63.1	-69.27	5.2	-66.3	-13.0	-53.3
3	405.17	-65.4	-69.79	5.3	-66.7	-13.0	-53.7
4	613.17	-66.5	-66.62	4.5	-64.2	-13.0	-51.2
5	770.62	-67.0	-63.97	4.4	-61.7	-13.0	-48.7
6	850.32	-69.0	-64.90	4.0	-63.1	-13.0	-50.1

REMARKS:

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

Above 1GHz

Channel Bandwidth: 5MHz

MODE	Channel 23035	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	**INPUT POWER**	120Vac, 60 Hz
TESTED BY	Chris Lin		

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	1398.8	-59.4	-58.45	4.7	-55.9	-13.0	-42.9
2	2098.2	-58.7	-56.88	6.4	-52.7	-13.0	-39.7
3	2797.6	-62.0	-58.41	6.4	-54.2	-13.0	-41.2
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	1398.8	-61.2	-62.47	4.7	-55.9	-13.0	-46.9
2	2098.2	-61.1	-59.48	6.4	-55.3	-13.0	-42.3
3	2797.6	-62.6	-59.50	6.4	-55.3	-13.0	-42.3

REMARKS:

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

MODE	Channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	Chris Lin		

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	1410.6	-61.0	-60.17	4.7	-57.6	-13.0	-44.6
2	2115.9	-61.5	-59.62	6.4	-55.4	-13.0	-42.4
3	2821.2	-62.9	-59.21	6.4	-55.0	-13.0	-42.0
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	1410.6	-60.4	-61.75	4.7	-59.2	-13.0	-46.2
2	2115.9	-60.3	-58.41	6.4	-54.2	-13.0	-41.2
3	2821.2	-62.6	-59.47	6.4	-55.2	-13.0	-42.2

REMARKS:

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

MODE	Channel 23155	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	Chris Lin		

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	1422.6	-60.6	-59.92	4.8	-57.3	-13.0	-44.3
2	2133.9	-58.9	-56.78	6.4	-52.6	-13.0	-39.6
3	2845.2	-62.5	-58.61	6.4	-54.4	-13.0	-41.4
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	1422.6	-60.1	-61.53	4.8	-58.9	-13.0	-45.9
2	2133.9	-61.0	-58.93	6.4	-54.7	-13.0	-41.7
3	2845.2	-62.2	-59.06	6.4	-54.8	-13.0	-41.8

REMARKS:

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

Channel Bandwidth: 10MHz

MODE	Channel 23060	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	**INPUT POWER**	120Vac, 60 Hz
TESTED BY	Chris Lin		

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	1416.8	-61.2	-60.44	4.8	-57.8	-13.0	-44.8
2	**2125.2**	**-41.4**	**-39.37**	**6.4**	**-35.2**	**-13.0**	**-22.2**
3	2833.6	-62.1	-58.33	6.4	-54.1	-13.0	-41.1
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	1416.8	-60.6	-62.01	4.8	-59.4	-13.0	-46.4
2	2125.2	-51.7	-49.68	6.4	-45.5	-13.0	-32.5
3	2833.6	-63.0	-59.86	6.4	-55.6	-13.0	-42.6

REMARKS:

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

MODE	Channel 23095	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	Chris Lin		

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	1423.8	-59.6	-58.89	4.8	-56.3	-13.0	-43.3
2	2135.7	-43.0	-40.90	6.4	-36.7	-13.0	-23.7
3	2847.6	-63.8	-59.96	6.4	-55.7	-13.0	-42.7
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	1423.8	-61.5	-62.9	4.8	-60.3	-13.0	-47.3
2	2135.7	-53.0	-50.87	6.4	-46.7	-13.0	-33.7
3	2847.6	-62.9	-59.7	6.4	-55.5	-13.0	-42.5

REMARKS:

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

MODE	Channel 23130	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	Chris Lin		

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	1430.8	-58.3	-57.63	4.8	-55.0	-13.0	-42.0
2	2146.2	-45.0	-42.83	6.4	-38.6	-13.0	-25.6
3	2861.6	-63.8	-59.86	6.4	-55.6	-13.0	-42.6
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	1430.8	-64.0	-65.52	4.8	-62.9	-13.0	-49.9
2	2146.2	-52.7	-50.43	6.4	-46.2	-13.0	-33.2
3	2861.6	-62.7	-59.50	6.4	-55.3	-13.0	-42.3

REMARKS:

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

LTE Band 17

Below 1GHz

Channel Bandwidth: 5MHz

MODE	TX channel 23755	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	David Huang		

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	134.97	-69.4	-55.55	0.0	-57.7	-13.0	-44.7
2	166.07	-74.0	-61.35	1.2	-62.3	-13.0	-49.3
3	333.25	-72.3	-63.65	5.2	-60.6	-13.0	-47.6
4	465.43	-69.2	-60.35	5.0	-57.5	-13.0	-44.5
5	599.56	-71.9	-62.45	4.4	-60.2	-13.0	-47.2
6	832.83	-73.5	-63.65	4.0	-61.8	-13.0	-48.8
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	119.42	-75.7	-61.85	0.0	-64.0	-13.0	-51.0
2	199.12	-76.5	-68.05	5.4	-64.8	-13.0	-51.8
3	333.25	-74.2	-65.55	5.2	-62.5	-13.0	-49.5
4	465.43	-71.3	-62.45	5.0	-59.6	-13.0	-46.6
5	597.62	-73	-63.55	4.4	-61.3	-13.0	-48.3
6	832.83	-72.6	-62.75	4.0	-60.9	-13.0	-47.9

REMARKS:

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

Channel Bandwidth: 10MHz

MODE	TX channel 23780	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	David Huang		

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	134.97	-75.4	-61.55	0	-63.7	-13.0	-50.7
2	201.06	-76.8	-68.45	5.5	-65.1	-13.0	-52.1
3	331.30	-72.7	-64.05	5.2	-61.0	-13.0	-48.0
4	465.43	-77.4	-68.55	5.0	-65.7	-13.0	-52.7
5	599.56	-75.6	-66.15	4.4	-63.9	-13.0	-50.9
6	830.88	-71.3	-61.45	4.0	-59.6	-13.0	-46.6
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	45.55	-76.1	-51.75	-10.5	-64.4	-13	-51.4
2	199.12	-75.7	-67.25	5.4	-64.0	-13	-51.0
3	331.30	-77.6	-68.95	5.2	-65.9	-13	-52.9
4	465.43	-71.1	-62.25	5	-59.4	-13	-46.4
5	599.56	-71.3	-61.85	4.4	-59.6	-13	-46.6
6	865.87	-74.0	-64.15	4.0	-62.3	-13	-49.3

REMARKS:

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

Above 1GHz

Channel Bandwidth: 5MHz

MODE	Channel 23755	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	David Huang		

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	1408.68	-64.8	-54.65	4.7	-52.1	-13	-39.1
2	2113.02	-68.2	-60.05	6.4	-55.8	-13	-42.8
3	2817.36	-66.3	-57.95	6.4	-53.7	-13	-40.7
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	1408.68	-63.9	-53.75	4.7	-51.2	-13	-38.2
2	2113.02	-65.5	-57.35	6.4	-53.1	-13	-40.1
3	2817.36	-66.3	-57.95	6.4	-53.7	-13	-40.7

REMARKS:

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

MODE	Channel 23790	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	David Huang		

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	1415.68	-61.3	-50.95	4.8	-48.3	-13	-35.3
2	2123.52	-70.6	-62.25	6.4	-58.0	-13	-45.0
3	2831.36	-65.3	-56.65	6.4	-52.4	-13	-39.4
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	**1415.68**	**-58.0**	**-47.65**	**4.8**	**-45.0**	**-13**	**-32.0**
2	2123.52	-69.0	-60.65	6.4	-56.4	-13	-43.4
3	2831.36	-62.5	-53.85	6.4	-49.6	-13	-36.6

REMARKS:

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

MODE	Channel 23825	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	David Huang		

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	1422.68	-62.7	-54.7	4.8	-49.9	-13	-36.9
2	2134.02	-71.4	-65.2	6.4	-58.8	-13	-45.8
3	2845.36	-65.8	-59.6	6.4	-53.2	-13	-40.2
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	1422.68	-58.2	-50.2	4.8	-45.4	-13	-32.4
2	2134.02	-67.7	-61.5	6.4	-55.1	-13	-42.1
3	2845.36	-62.3	-56.1	6.4	-49.7	-13	-36.7

REMARKS:

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

Channel Bandwidth: 10MHz

MODE	Channel 23780	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	**INPUT POWER**	120Vac, 60 Hz
TESTED BY	David Huang		

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	1409.18	-68	-60	4.7	-55.3	-13	-42.3
2	2113.77	-67.5	-61.5	6.4	-55.1	-13	-42.1
3	2818.36	-68.6	-62.4	6.4	-56	-13	-43.0
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	1409.18	-68.2	-60.2	4.7	-55.5	-13	-42.5
2	2113.77	-68.3	-62.3	6.4	-55.9	-13	-42.9
3	2818.36	-68.5	-62.3	6.4	-55.9	-13	-42.9

REMARKS:

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

MODE	Channel 23790	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	David Huang		

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	1411.18	-69.1	-60.8	4.7	-56.1	-13	-43.1
2	2116.77	-70.3	-64.1	6.4	-57.7	-13	-44.7
3	2822.36	-65.6	-59.1	6.4	-52.7	-13	-39.7
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	1411.18	-72.3	-64.0	4.7	-59.3	-13	-46.3
2	2116.77	-73.6	-67.4	6.4	-61.0	-13	-48.0
3	2822.36	-67.3	-60.8	6.4	-54.4	-13	-41.4

REMARKS:

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

MODE	Channel 23800	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	David Huang		

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	1413.18	-70.6	-62.5	4.7	-57.8	-13	-44.8
2	2119.77	-58.0	-51.8	6.4	-45.4	-13	-32.4
3	2826.36	-68.0	-61.8	6.4	-55.4	-13	-42.4
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	1413.18	-73.3	-65.2	4.7	-60.5	-13	-47.5
2	2119.77	-60.5	-54.3	6.4	-47.9	-13	-34.9
3	2826.36	-71.8	-65.6	6.4	-59.2	-13	-46.2

REMARKS:

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

LTE Band 4

Below 1GHz

Channel Bandwidth: 5MHz

MODE	TX channel 19975	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	David Huang		

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	131.08	-68.6	-56.9	0.0	-56.9	-13.0	-43.9
2	199.12	-74.7	-68.4	5.4	-63.0	-13.0	-50.0
3	333.25	-72.2	-65.7	5.2	-60.5	-13.0	-47.5
4	465.43	-70.0	-63.3	5.0	-58.3	-13.0	-45.3
5	597.62	-73.3	-66	4.4	-61.6	-13.0	-48.6
6	832.83	-74.6	-66.9	4.0	-62.9	-13.0	-49.9
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	119.42	-73.7	-62.0	0.0	-62	-13.0	-49.0
2	216.61	-78.4	-72.2	5.5	-66.7	-13.0	-53.7
3	331.30	-75.3	-68.8	5.2	-63.6	-13.0	-50.6
4	498.48	-72.9	-66.1	4.9	-61.2	-13.0	-48.2
5	599.56	-71.5	-64.2	4.4	-59.8	-13.0	-46.8
6	830.88	-70.9	-63.2	4.0	-59.2	-13.0	-46.2

REMARKS:

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

Channel Bandwidth: 10MHz

MODE	TX channel 20000	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	David Huang		

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	134.97	-74.6	-62.9	0.0	-62.9	-13.0	-49.9
2	199.12	-79.2	-72.9	5.4	-67.5	-13.0	-54.5
3	331.30	-72.1	-65.6	5.2	-60.4	-13.0	-47.4
4	465.43	-77.5	-70.8	5.0	-65.8	-13.0	-52.8
5	597.62	-75.7	-68.4	4.4	-64.0	-13.0	-51.0
6	830.88	-69.2	-61.5	4.0	-57.5	-13.0	-44.5
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	45.55	-74.1	-51.9	-10.5	-62.4	-13.0	-49.4
2	199.12	-75.9	-69.6	5.4	-64.2	-13.0	-51.2
3	331.30	-77	-70.5	5.2	-65.3	-13.0	-52.3
4	465.43	-70.4	-63.7	5.0	-58.7	-13.0	-45.7
5	597.62	-73	-65.7	4.4	-61.3	-13.0	-48.3
6	916.41	-73.1	-65.3	3.9	-61.4	-13.0	-48.4

REMARKS:

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

Above 1GHz

Channel Bandwidth: 5MHz

MODE	Channel 19975	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	David Huang		

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	**3429.32**	**-46.1**	**-40.3**	**7.1**	**-33.2**	**-13**	**-20.2**
2	5143.98	-64	-57.9	6.6	-51.3	-13	-38.3
3	6858.64	-58	-50.5	4.9	-45.6	-13	-32.6
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	3429.32	-55	-49.2	7.1	-42.1	-13	-29.1
2	5143.98	-60.1	-54.0	6.6	-47.4	-13	-34.4
3	6858.64	-55.5	-48.0	4.9	-43.1	-13	-30.1

REMARKS:

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

MODE	Channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	David Huang		

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	3469.32	-49.6	-44.2	7.2	-37.0	-13	-24.0
2	5203.98	-63.2	-57.5	6.7	-50.8	-13	-37.8
3	6938.64	-59.7	-52.2	4.8	-47.4	-13	-34.4
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	3469.32	-55.4	-50.0	7.2	-42.8	-13	-29.8
2	5203.98	-63.3	-57.6	6.7	-50.9	-13	-37.9
3	6938.64	-58.6	-51.1	4.8	-46.3	-13	-33.3

REMARKS:

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

MODE	Channel 20375	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	David Huang		

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	3509.32	-48.0	-42.6	7.2	-35.4	-13	-22.4
2	5263.98	-62.2	-56.6	6.7	-49.9	-13	-36.9
3	7018.64	-59.3	-51.6	4.7	-46.9	-13	-33.9
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	3509.32	-55.9	-50.5	7.2	-43.3	-13	-30.3
2	5263.98	-62.8	-57.2	6.7	-50.5	-13	-37.5
3	7018.64	-58.8	-51.1	4.7	-46.4	-13	-33.4

REMARKS:

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

Channel Bandwidth: 10MHz

MODE	Channel 20000	**FREQUENCY RANGE**	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	**INPUT POWER**	120Vac, 60 Hz
TESTED BY	David Huang		

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	3438.8	-48.2	-42.4	7.1	-35.3	-13	-22.3
2	5158.2	-62.7	-56.6	6.6	-50	-13	-37.0
3	6877.6	-59.1	-51.6	4.9	-46.7	-13	-33.7
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	3438.8	-55.2	-49.4	7.1	-42.3	-13	-29.3
2	5158.2	-63.4	-57.3	6.6	-50.7	-13	-37.7
3	6877.6	-58.1	-50.6	4.9	-45.7	-13	-32.7

REMARKS:

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

MODE	Channel 20175	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	David Huang		

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	3473.82	-47.6	-42.2	7.2	-35.0	-13	-22.0
2	5210.73	-60.3	-54.6	6.7	-47.9	-13	-34.9
3	6947.64	-60.4	-52.9	4.8	-48.1	-13	-35.1
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	3473.82	-54.6	-49.2	7.2	-42.0	-13	-29.0
2	5210.73	-62.3	-56.6	6.7	-49.9	-13	-36.9
3	6947.64	-57.4	-49.9	4.8	-45.1	-13	-32.1

REMARKS:

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

MODE	Channel 20350	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	David Huang		

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	3513.82	-47.9	-42.5	7.2	-35.3	-13	-22.3
2	5270.73	-64	-58.4	6.7	-51.7	-13	-38.7
3	7027.64	-56.7	-49.0	4.7	-44.3	-13	-31.3
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	3513.82	-51.4	-46.0	7.2	-38.8	-13	-25.8
2	5270.73	-65.8	-60.2	6.7	-53.5	-13	-40.5
3	7027.64	-60.5	-52.8	4.7	-48.1	-13	-35.1

REMARKS:

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

WCDMA AWS Band

Below 1GHz

MODE	TX channel 1312	FREQUENCY RANGE	Below 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	David Huang		

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	45.55	-72.9	-50.7	-10.5	-61.2	-13	-48.2
2	146.63	-83.3	-71.6	0.0	-71.6	-13	-58.6
3	372.12	-81.7	-75.2	5.2	-70	-13	-57.0
4	576.23	-76.1	-68.9	4.5	-64.4	-13	-51.4
5	776.45	-71.9	-64.5	4.3	-60.2	-13	-47.2
6	898.92	-70.2	-62.4	3.9	-58.5	-13	-45.5
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	45.55	-64.1	-41.9	-10.5	-52.4	-13	-39.4
2	123.31	-74.7	-63.0	0.0	-63.0	-13	-50.0
3	403.23	-70.3	-63.9	5.3	-58.6	-13	-45.6
4	593.73	-64.8	-57.6	4.5	-53.1	-13	-40.1
5	832.83	-59.7	-52.0	4.0	-48.0	-13	-35.0
6	963.07	-60.3	-52.5	3.9	-48.6	-13	-35.6

REMARKS:

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

Above 1GHz

MODE	Channel 1312	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	David Huang		

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	3424.8	-52.2	-46.4	7.1	-39.3	-13	-26.3
2	5137.2	-66.7	-60.6	6.6	-54.0	-13	-41.0
3	6849.6	-60.7	-53.3	5.0	-48.3	-13	-35.3
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	3424.8	-54.7	-48.9	7.1	-41.8	-13	-28.8
2	5137.2	-65.8	-59.7	6.6	-53.1	-13	-40.1
3	6849.6	-59.5	-52.1	5.0	-47.1	-13	-34.1

REMARKS:

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

MODE	Channel 1412	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	David Huang		

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	3464.8	-54.6	-49.2	7.2	-42.0	-13	-29.0
2	5197.2	-66.3	-60.6	6.7	-53.9	-13	-40.9
3	6929.6	-60.9	-53.4	4.8	-48.6	-13	-35.6
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	3464.8	-46.6	-41.2	7.2	-34.0	-13	-21
2	5197.2	-65.1	-59.4	6.7	-52.7	-13	-39.7
3	6929.6	-60.8	-53.3	4.8	-48.5	-13	-35.5

REMARKS:

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

MODE	Channel 1513	FREQUENCY RANGE	Above 1000MHz
ENVIRONMENTAL CONDITIONS	23deg. C, 65%RH	INPUT POWER	120Vac, 60 Hz
TESTED BY	David Huang		

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	3505.2	-49.2	-43.8	7.2	-36.6	-13	-23.6
2	5257.8	-66.3	-60.7	6.7	-54.0	-13	-41.0
3	7010.4	-61.4	-53.7	4.7	-49.0	-13	-36.0
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	3505.2	-45.6	-40.2	7.2	-33.0	-13	-20.0
2	5257.8	-64.5	-58.9	6.7	-52.2	-13	-39.2
3	7010.4	-59.3	-51.6	4.7	-46.9	-13	-33.9

REMARKS:

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

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 are made to the EUT by the lab during the test.

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