FCC TEST REPORT

(PART 24)

REPORT NO.:	RF141218E07-1
MODEL NO.:	T77W595
FCC ID:	MCLT77W595
RECEIVED:	Dec. 18, 2014
TESTED:	Dec. 26, 2014 to Jan. 13, 2015
ISSUED:	Jan. 27, 2015

APPLICANT:	HON HAI PRECISION IND. CO., LTD.
ADDRESS:	5F-1,5 Hsin-An Road Hsinchu, Science-Based Industrial Park Taiwan, R.O.C.

ISSUED BY:	Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory
LAB ADDRESS:	No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.
TEST LOCATION (1):	No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan, R.O.C.
TEST LOCATION (2):	No. 49, Ln. 206, Wende Rd., Shangshan Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, 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.

This report is for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence, provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification

TABLE OF CONTENTS

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF141218E07-1	Original release	Jan. 27, 2015

1 CERTIFICATION

PRODUCT:	LTE Cat4 PCI Express M.2 Module
MODEL:	T77W595
BRAND:	FOXCONN
APPLICANT:	HON HAI PRECISION IND. CO., LTD.
TESTED:	Dec. 26, 2014 to Jan. 13, 2015
TEST SAMPLE:	ENGINEERING SAMPLE
STANDARDS:	**FCC Part 24, Subpart E**

The above equipment (model: T77W595) 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:** Jan. 27, 2015
(Lori Chung, Specialist)

Approved by : _____ , **Date:** Jan. 27, 2015
(May Chen, Manager)

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 24 & Part 2			
STANDARD SECTION	**TEST TYPE**	**RESULT**	**REMARK**
2.1046 24.232	Equivalent Isotropically Radiated Power	PASS	Meet the requirement of limit.
2.1055 24.235	Frequency Stability	PASS	Meet the requirement of limit.
2.1049 24.238(b)	Occupied Bandwidth	PASS	Meet the requirement of limit.
24.232(d)	Peak to average ratio	PASS	Meet the requirement of limit.
24.238(b)	Band Edge Measurements	PASS	Meet the requirement of limit.
2.1051 24.238	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 24.238	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -3.97dB at 3760MHz.

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
Radiated emissions	30MHz ~ 1GHz – Chamber G	5.37 dB
	30MHz ~ 1GHz – Chamber H	5.43 dB
	1GHz ~6GHz – Chamber G	3.65 dB
	1GHz ~6GHz – Chamber H	3.72 dB
	6GHz ~ 18GHz – Chamber G	3.88 dB
	6GHz ~ 18GHz – Chamber H	4.00 dB
	18GHz ~ 40GHz	4.11 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

For Radiated Spurious Emissions test – GPRS, EDGE, WCDMA, CDMA2000:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
MXE EMI Receiver Agilent	N9038A	MY51210105	July 21, 2014	July 20, 2015
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-03	Nov. 12, 2014	Nov. 11, 2015
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-360	Feb. 26, 2014	Feb. 25, 2015
RF Cable	NA	CHGCAB_001	Oct. 04, 2014	Oct. 03, 2015
Horn_Antenna AISI	AIH.8018	0000320091110	Aug. 27, 2014	Aug. 26, 2015
Pre-Amplifier Agilent	8449B	3008A02578	June 24, 2014	June 23, 2015
RF Cable	NA	131205 131214 SNMY23684/4	Jan. 17, 2014	Jan. 16, 2015
Spectrum Analyzer R&S	FSV40	100964	July 05, 2014	July 04, 2015
Pre-Amplifier EMCI	EMC184045	980143	Jan. 17, 2014	Jan. 16, 2015
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Aug. 26, 2014	Aug. 25, 2015
RF Cable	NA	RF104-121 RF104-204	Dec. 11, 2014	Dec. 10, 2015
Antenna Tower & Turn Table CT	NA	NA	NA	NA

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 horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3 The test was performed in 966 Chamber No. G.
4. The FCC Site Registration No. is 966073.
5 The VCCI Site Registration No. is G-137.
6 The CANADA Site Registration No. is IC 7450H-2.
7 Tested Date: Jan. 08, 2015

For Radiated Spurious Emissions test – LTE band 2 & 25:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
MXE EMI Receiver Agilent	N9038A	MY50010156	Aug. 11, 2014	Aug. 10, 2015
Pre-Amplifier Mini-Circuits	ZFL-1000VH2 B	AMP-ZFL-04	Nov. 12, 2014	Nov. 11, 2015
Trilog Broadband Antenna SCHWARZBECK	VULB 9168	9168-361	Feb. 27, 2014	Feb. 26, 2015
RF Cable	NA	CHHCAB_001	Oct. 05, 2014	Oct. 04, 2015
Horn_Antenna AISI	AIH.8018	0000220091110	Aug. 26, 2014	Aug. 25, 2015
Pre-Amplifier Agilent	8449B	300801923	Oct. 28, 2014	Oct. 27, 2015
RF Cable	NA	131206 131215 SNMY23685/4	Jan. 17, 2014	Jan. 16, 2015
Spectrum Analyzer R&S	FSV40	100964	July 05, 2014	July 04, 2015
Pre-Amplifier EMCI	EMC184045	980143	Jan. 17, 2014	Jan. 16, 2015
Horn_Antenna SCHWARZBECK	BBHA 9170	9170-424	Aug. 26, 2014	Aug. 25, 2015
RF Cable	NA	RF104-121 RF104-204	Dec. 11, 2014	Dec. 10, 2015
Software	ADT_Radiated _V8.7.07	NA	NA	NA
Antenna Tower & Turn Table CT	NA	NA	NA	NA

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 horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3 The test was performed in 966 Chamber No. H.
4. The FCC Site Registration No. is 797305.
5 The CANADA Site Registration No. is IC 7450H-3.
6 Tested Date: Jan. 08, 2015

For other test items:

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Spectrum Analyzer R&S	FSP 40	100037	Oct. 30, 2014	Oct. 29, 2015
Spectrum Analyzer Agilent	E4446A	MY48250253	Dec. 18, 2014	Dec. 17, 2015
AC Power Source EXTECH Electronics	6502	1140503	NA	NA
Temperature & Humidity Chamber TERCHY	MHU-225AU	911033	Dec. 08, 2014	Dec. 07, 2015
DC Power Supply GOOD WILL INSTRUMENT CO., LTD.	GPC - 3030D	7700087	NA	NA
ESG Vector signal generator Agilent	E4438C	MY47271330 506 602 UNJ	Apr. 28, 2014	Apr. 27, 2015
Upgrade the software license on current E4438C ESG Agilent	E4438CK-403	ESG E4_010004	NA	NA
ESG Vector signal generator Agilent	E4438C	MY45094468/ 005 506 602 UK6 UNJ	Dec. 05, 2014	Dec. 04, 2015
Upgrade the software license on current E4438C ESG Agilent	E4438CK-403	ESG E4_010001	NA	NA
Power meter Anritsu	ML2495A	0824006	May 22, 2014	May 21, 2015
Power sensor Anritsu	MA2411B	0738172	May 22, 2014	May 21, 2015
Software	Total Power Measurement Tools V7.1	NA	NA	NA
Software	ADT_RF Test Software V6.6.5.3	NA	NA	NA

NOTE: 1. The test was performed in Oven room A.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. Tested Date: Dec. 26, 2014 to Jan. 13, 2015

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

EUT	LTE Cat4 PCI Express M.2 Module	
MODEL NO.	T77W595	
POWER SUPPLY	3.3Vdc from host equipment	
MODULATION TYPE	**GPRS**	GMSK
	EDGE	GMSK, 8PSK
	WCDMA	BPSK
	CDMA2000 & EVDO	QPSK, OQPSK, HPSK
	LTE Band 2	QPSK, 16QAM
	LTE Band 25	QPSK, 16QAM
FREQUENCY RANGE	**GPRS/EDGE**	1850.2MHz ~ 1909.8MHz
	WCDMA	1852.4MHz ~ 1907.6MHz
	CDMA2000 & EVDO	1851.25MHz ~ 1908.75MHz
	LTE Band 2 (Channel Bandwidth: 1.4MHz)	1850.7MHz ~ 1909.3MHz
	LTE Band 2 (Channel Bandwidth: 3MHz)	1851.5MHz ~ 1908.5MHz
	LTE Band 2 (Channel Bandwidth: 5MHz)	1852.5MHz ~ 1907.5MHz
	LTE Band 2 (Channel Bandwidth: 10MHz)	1855.0MHz ~ 1905.0MHz
	LTE Band 2 (Channel Bandwidth: 15MHz)	1857.5MHz ~ 1902.5MHz
	LTE Band 2 (Channel Bandwidth: 20MHz)	1860.0MHz ~ 1900.0MHz
	LTE Band 25 (Channel Bandwidth: 1.4MHz)	1850.7MHz ~ 1914.3MHz
	LTE Band 25 (Channel Bandwidth: 3MHz)	1851.5MHz ~ 1913.5MHz
	LTE Band 25 (Channel Bandwidth: 5MHz)	1852.5MHz ~ 1912.5MHz
	LTE Band 25 (Channel Bandwidth: 10MHz)	1855.0MHz ~ 1910.0MHz
	LTE Band 25 (Channel Bandwidth: 15MHz)	1857.5MHz ~ 1907.5MHz
	LTE Band 25 (Channel Bandwidth: 20MHz)	1860.0MHz ~ 1905.0MHz

MAX. EIRP POWER	GPRS	1949.8mW
	EDGE	1000.0mW
	WCDMA	829.9mW
	CDMA2000 & EVDO	891.25mW
	LTE Band 2 (Channel Bandwidth: 1.4MHz)	535.0mW
	LTE Band 2 (Channel Bandwidth: 3MHz)	565.4mW
	LTE Band 2 (Channel Bandwidth: 5MHz)	572.0mW
	LTE Band 2 (Channel Bandwidth: 10MHz)	556.4mW
	LTE Band 2 (Channel Bandwidth: 15MHz)	505.1mW
	LTE Band 2 (Channel Bandwidth: 20MHz)	555.1mW
	LTE Band 25 (Channel Bandwidth: 1.4MHz)	616.2mW
	LTE Band 25 (Channel Bandwidth: 3MHz)	588.5mW
	LTE Band 25 (Channel Bandwidth: 5MHz)	588.5mW
	LTE Band 25 (Channel Bandwidth: 10MHz)	513.7mW
	LTE Band 25 (Channel Bandwidth: 15MHz)	593.9mW
	LTE Band 25 (Channel Bandwidth: 20MHz)	475.0mW
EMISSION DESIGNATOR	GPRS	244KGXW
	EDGE	246KG7W
	WCDMA	4M18F9W
	CDMA2000 & EVDO	1M28F9W
	LTE Band 2 (Channel Bandwidth: 1.4MHz)	QPSK: 1M25G7D
		16QAM: 1M24W7D
	LTE Band 2 (Channel Bandwidth: 3MHz)	QPSK: 2M73G7D
		16QAM: 2M74W7D
	LTE Band 2 (Channel Bandwidth: 5MHz)	QPSK: 4M52G7D
		16QAM: 4M52W7D
	LTE Band 2 (Channel Bandwidth: 10MHz)	QPSK: 9M00G7D
		16QAM: 9M03W7D
	LTE Band 2 (Channel Bandwidth: 15MHz)	QPSK: 13M4G7D
		16QAM: 13M4W7D
	LTE Band 2 (Channel Bandwidth: 20MHz)	QPSK: 18M0G7D
		16QAM: 17M9W7D
	LTE Band 25 (Channel Bandwidth: 1.4MHz)	QPSK: 1M25G7D
		16QAM: 1M24W7D
	LTE Band 25 (Channel Bandwidth: 3MHz)	QPSK: 2M73G7D
		16QAM: 2M73W7D
	LTE Band 25 (Channel Bandwidth: 5MHz)	QPSK: 4M50G7D
		16QAM: 4M50W7D
	LTE Band 25 (Channel Bandwidth: 10MHz)	QPSK: 9M00G7D

		16QAM: 9M00W7D
	LTE Band 25 (Channel Bandwidth: 15MHz)	QPSK: 13M4G7D
		16QAM: 13M4W7D
	LTE Band 25 (Channel Bandwidth: 20MHz)	QPSK: 18M0G7D
		16QAM: 17M9W7D
ANTENNA TYPE	Refer to NOTE	
I/O PORTS	Refer to users' manual	
DATA CABLE	NA	
ACCESSORY DEVICES	NA	

NOTE:

1. The antennas provided to the EUT, please refer to the following table:

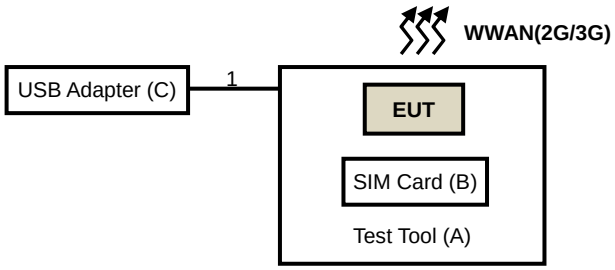
Ant. Set	Transmitter Circuit	Brand	Model	Operation Band	Ant. Gain(dBi) <including cable loss>	Frequency range (MHz ~ MHz)	Ant. Type	Connecter Type
LTE 1	Main	NA	NA	LTE(4G) B12 / B17	5.19	699 ~ 716	PIFA	I-PEX MHF IV
				LTE(4G) B28	5.2	703 ~ 748		
	Aux			LTE(4G) B12 / B17	5.19	699 ~ 716		
				LTE(4G) B28	5.2	703 ~ 748		
LTE 2	Main	NA	NA	LTE(4G) B13	6.14	777 ~ 787	PIFA	I-PEX MHF IV
				LTE(4G) B20	3.77	832 ~ 862		
				CDMA(3G) BC10	3.22	816 ~ 824		
				LTE(4G) B26	3.4	814 ~ 849		
				WCDMA(3G) B5 / GSM850(2G) / LTE(4G) B5 / CDMA(3G) BC0	3.4	824 ~ 849		
				WCDMA(3G) B8 / E-GSM900(2G) / LTE(4G) B8	4.39	880 ~ 915		
	Aux			LTE(4G) B13	6.14	777 ~ 787		
				LTE(4G) B20	3.77	832 ~ 862		
				CDMA(3G) BC10	3.22	816 ~ 824		
				LTE(4G) B26	3.4	814 ~ 849		
				WCDMA(3G) B5 / GSM850(2G) / LTE(4G) B5 / CDMA(3G) BC0	3.4	824 ~ 849		
				WCDMA(3G) B8 / E-GSM900(2G) / LTE(4G) B8	4.39	880 ~ 915		

Ant. Set	Transmitter Circuit	Brand	Model	Operation Band	Ant. Gain(dBi) <including cable loss>	Frequency range (MHz ~ MHz)	Ant. Type	Connecter Type
LTE 3	Main	NA	NA	WCDMA(3G) B2 / LTE(4G) B2 / B25 / PCS1900(2G) / CDMA(3G) BC1	3.62	1850 to 1915	PIFA	I-PEX MHF IV
				WCDMA(3G) B4 / DCS1800(2G) / LTE(4G) B3 / B4	4.25	1710 to 1785		
				LTE(4G) B7	4.37	2500 to 2570		
				WCDMA(3G) B1/ LTE(4G) B1	3.82	1920 to 1980		
				GPS	2.19	1575.42 ~ 1602		
	Aux			WCDMA(3G) B2 / LTE(4G) B2 / B25 / PCS1900(2G) / CDMA(3G) BC1	3.62	1850 to 1915		
				WCDMA(3G) B4 / DCS1800(2G) / LTE(4G) B3 / B4	4.25	1710 to 1785		
				LTE(4G) B7	4.37	2500 to 2570		
				WCDMA(3G) B1/ LTE(4G) B1	3.82	1920 to 1980		
				GPS	2.19	1575.42 ~ 1602		

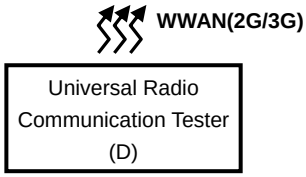
2. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

3.2 CONFIGURATION OF SYSTEM UNDER TEST

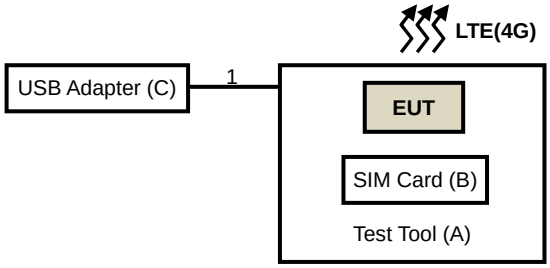
For GPRS, EDGE, WCDMA, CDMA2000 mode:



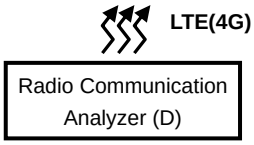
Remote site



For LTE mode:



Remote site



3.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units.

No.	Product	Brand	Model No.	Serial No.	FCC ID	Remark
A	Test Tool	FOXCONN	NA	NA	NA	Supplied by Client
B	SIM Card	NA	NA	NA	NA	Provided by Lab
C	USB Adapter	NICELINK	US-T128	NA	NA	Provided by Lab
D	Universal Radio Communication Tester (For GPRS, EDGE, WCDMA, CDMA2000 & EVDO mode)	R&S	CMU200	121040	NA	Provided by Lab
	Radio Communication Analyzer (For LTE mode)	Anritsu	MT8820C	6201127458	NA	Provided by Lab

NOTE:

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

No.	Cable	Qty.	Length (m)	Shielded (Yes/ No)	Cores (Number)	Remark
1	DC	1	1	No	0	Provided by Lab

3.4 TEST ITEM AND TEST CONFIGURATION

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

GPRS & EDGE MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
EIRP	512 to 810	512, 661, 810	GPRS, EDGE
FREQUENCY STABILITY	512 to 810	661	GPRS, EDGE
OCCUPIED BANDWIDTH	512 to 810	512, 661, 810	GPRS, EDGE
PEAK TO AVERAGE RATIO	512 to 810	512, 661, 810	GPRS, EDGE
BAND EDGE	512 to 810	512, 810	GPRS, EDGE
CONDCUDETED EMISSION	512 to 810	661	GPRS, EDGE
RADIATED EMISSION	512 to 810	661	GPRS, EDGE

WCDMA MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
EIRP	9262 to 9538	9262, 9400, 9538	WCDMA
FREQUENCY STABILITY	9262 to 9538	9400	WCDMA
OCCUPIED BANDWIDTH	9262 to 9538	9262, 9400, 9538	WCDMA
PEAK TO AVERAGE RATIO	9262 to 9538	9262, 9400, 9538	WCDMA
BAND EDGE	9262 to 9538	9262, 9538	WCDMA
CONDCUDETED EMISSION	9262 to 9538	9400	WCDMA
RADIATED EMISSION	9262 to 9538	9400	WCDMA

CDMA2000 & EVDO MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	MODE
EIRP	25 to 1175	25, 600, 1175	CDMA2000
FREQUENCY STABILITY	25 to 1175	600	CDMA2000
OCCUPIED BANDWIDTH	25 to 1175	25, 600, 1175	CDMA2000
PEAK TO AVERAGE RATIO	25 to 1175	25, 600, 1175	CDMA2000
BAND EDGE	25 to 1175	25, 1175	CDMA2000
CONDCUDETED EMISSION	25 to 1175	600	CDMA2000
RADIATED EMISSION	25 to 1175	600	CDMA2000

Note: This device was tested under EVDO mode and CDMA2000 mode. The worst case was found in CDMA2000 mode.

LTE BAND 2 MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
EIRP	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK	1 RB / 0 RB Offset
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK	1 RB / 0 RB Offset
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK	1 RB / 0 RB Offset
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK	1 RB / 0 RB Offset
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK	1 RB / 0 RB Offset
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK	1 RB / 0 RB Offset
FREQUENCY STABILITY	18607 to 19193	18900	1.4MHz	QPSK	1 RB / 0 RB Offset
	18615 to 19185	18900	3MHz	QPSK	1 RB / 0 RB Offset
	18625 to 19175	18900	5MHz	QPSK	1 RB / 0 RB Offset
	18650 to 19150	18900	10MHz	QPSK	1 RB / 0 RB Offset
	18675 to 19125	18900	15MHz	QPSK	1 RB / 0 RB Offset
	18700 to 19100	18900	20MHz	QPSK	1 RB / 0 RB Offset
OCCUPIED BANDWIDTH	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK, 16QAM	6 RB / 0 RB Offset
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK, 16QAM	15 RB / 0 RB Offset
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK, 16QAM	75 RB / 0 RB Offset
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK, 16QAM	100 RB / 0 RB Offset
PEAK TO AVERAGE RATIO	18607 to 19193	18607, 18900, 19193	1.4MHz	QPSK, 16QAM	1 RB / 2 RB Offset
	18615 to 19185	18615, 18900, 19185	3MHz	QPSK, 16QAM	1 RB / 7 RB Offset
	18625 to 19175	18625, 18900, 19175	5MHz	QPSK, 16QAM	1 RB / 12 RB Offset
	18650 to 19150	18650, 18900, 19150	10MHz	QPSK, 16QAM	1 RB / 24 RB Offset
	18675 to 19125	18675, 18900, 19125	15MHz	QPSK, 16QAM	1 RB / 37 RB Offset
	18700 to 19100	18700, 18900, 19100	20MHz	QPSK, 16QAM	1 RB / 50 RB Offset
BAND EDGE	18607 to 19193	18607	1.4MHz	QPSK	1 RB / 0 RB Offset
					6 RB / 0 RB Offset
		19193	1.4MHz	QPSK	1 RB / 5 RB Offset
					6 RB / 0 RB Offset
	18615 to 19185	18615	3MHz	QPSK	1 RB / 0 RB Offset
					15 RB / 0 RB Offset
		19185	3MHz	QPSK	1 RB / 14 RB Offset
					15 RB / 0 RB Offset
	18625 to 19175	18625	5MHz	QPSK	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
		19175	5MHz	QPSK	1 RB / 24 RB Offset
					25 RB / 0 RB Offset
	18650 to 19150	18650	10MHz	QPSK	1 RB / 0 RB Offset
					50 RB / 0 RB Offset
		19150	10MHz	QPSK	1 RB / 49 RB Offset
					50 RB / 0 RB Offset
	18675 to 19125	18675	15MHz	QPSK	1 RB / 0 RB Offset
					75 RB / 0 RB Offset
		19125	15MHz	QPSK	1 RB / 74 RB Offset
					75 RB / 0 RB Offset
	18700 to 19100	18700	20MHz	QPSK	1 RB / 0 RB Offset
					100 RB / 0 RB Offset
		19100	20MHz	QPSK	1 RB / 99 RB Offset
					100 RB / 0 RB Offset

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
CONDCUDETED EMISSION	18607 to 19193	18900	1.4MHz	QPSK	1 RB / 0 RB Offset
	18615 to 19185	18900	3MHz	QPSK	1 RB / 0 RB Offset
	18625 to 19175	18900	5MHz	QPSK	1 RB / 0 RB Offset
	18650 to 19150	18900	10MHz	QPSK	1 RB / 0 RB Offset
	18675 to 19125	18900	15MHz	QPSK	1 RB / 0 RB Offset
	18700 to 19100	18900	20MHz	QPSK	1 RB / 0 RB Offset
RADIATED EMISSION	18700 to 19100	18900	20MHz	QPSK	1 RB / 0 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

LTE BAND 25 MODE

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
EIRP	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK	1 RB / 0 RB Offset
	26055 to 26675	26055, 26365, 26675	3MHz	QPSK	1 RB / 0 RB Offset
	26065 to 26665	26065, 26365, 26665	5MHz	QPSK	1 RB / 0 RB Offset
	26090 to 26640	26090, 26365, 26640	10MHz	QPSK	1 RB / 0 RB Offset
	26115 to 26615	26115, 26365, 26615	15MHz	QPSK	1 RB / 0 RB Offset
	26140 to 26590	26140, 26365, 26590	20MHz	QPSK	1 RB / 0 RB Offset
FREQUENCY STABILITY	26047 to 26683	26365	1.4MHz	QPSK	1 RB / 0 RB Offset
	26055 to 26675	26365	3MHz	QPSK	1 RB / 0 RB Offset
	26065 to 26665	26365	5MHz	QPSK	1 RB / 0 RB Offset
	26090 to 26640	26365	10MHz	QPSK	1 RB / 0 RB Offset
	26115 to 26615	26365	15MHz	QPSK	1 RB / 0 RB Offset
	26140 to 26590	26365	20MHz	QPSK	1 RB / 0 RB Offset
OCCUPIED BANDWIDTH	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK / 16QAM	6 RB / 0 RB Offset
	26055 to 26675	26055, 26365, 26675	3MHz	QPSK / 16QAM	15 RB / 0 RB Offset
	26065 to 26665	26065, 26365, 26665	5MHz	QPSK / 16QAM	25 RB / 0 RB Offset
	26090 to 26640	26090, 26365, 26640	10MHz	QPSK / 16QAM	50 RB / 0 RB Offset
	26115 to 26615	26115, 26365, 26615	15MHz	QPSK / 16QAM	75 RB / 0 RB Offset
	26140 to 26590	26140, 26365, 26590	20MHz	QPSK / 16QAM	100 RB / 0 RB Offset
PEAK TO AVERAGE RATIO	26047 to 26683	26047, 26365, 26683	1.4MHz	QPSK / 16QAM	1 RB / 2 RB Offset
	26055 to 26675	26055, 26365, 26675	3MHz	QPSK / 16QAM	1 RB / 7 RB Offset
	26065 to 26665	26065, 26365, 26665	5MHz	QPSK / 16QAM	1 RB / 12 RB Offset
	26090 to 26640	26090, 26365, 26640	10MHz	QPSK / 16QAM	1 RB / 24 RB Offset
	26115 to 26615	26115, 26365, 26615	15MHz	QPSK / 16QAM	1 RB / 37 RB Offset
	26140 to 26590	26140, 26365, 26590	20MHz	QPSK / 16QAM	1 RB / 50 RB Offset

TEST ITEM	AVAILABLE CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE
BAND EDGE	26047 to 26683	26047	1.4MHz	QPSK	1 RB / 0 RB Offset
					6 RB / 0 RB Offset
		26683	1.4MHz	QPSK	1 RB / 5 RB Offset
					6 RB / 0 RB Offset
	26055 to 26675	26055	3MHz	QPSK	1 RB / 0 RB Offset
					15 RB / 0 RB Offset
		26675	3MHz	QPSK	1 RB / 14 RB Offset
					15 RB / 0 RB Offset
	26065 to 26665	26065	5MHz	QPSK	1 RB / 0 RB Offset
					25 RB / 0 RB Offset
		26665	5MHz	QPSK	1 RB / 24 RB Offset
					25 RB / 0 RB Offset
	26090 to 26640	26090	10MHz	QPSK	1 RB / 0 RB Offset
					50 RB / 0 RB Offset
		26640	10MHz	QPSK	1 RB / 49 RB Offset
					50 RB / 0 RB Offset
	26115 to 26615	26115	15MHz	QPSK	1 RB / 0 RB Offset
					75 RB / 0 RB Offset
		26615	15MHz	QPSK	1 RB / 74 RB Offset
					75 RB / 0 RB Offset
	26140 to 26590	26140	20MHz	QPSK	1 RB / 0 RB Offset
					100 RB / 0 RB Offset
		26590	20MHz	QPSK	1 RB / 99 RB Offset
					100 RB / 0 RB Offset
CONDCUDETED EMISSION	26047 to 26683	26365	1.4MHz	QPSK	1 RB / 0 RB Offset
	26055 to 26675	26365	3MHz	QPSK	1 RB / 0 RB Offset
	26065 to 26665	26365	5MHz	QPSK	1 RB / 0 RB Offset
	26090 to 26640	26365	10MHz	QPSK	1 RB / 0 RB Offset
	26115 to 26615	26365	15MHz	QPSK	1 RB / 0 RB Offset
	26140 to 26590	26365	20MHz	QPSK	1 RB / 0 RB Offset
RADIATED EMISSION	26047 to 26683	26365	1.4MHz	QPSK	1 RB / 0 RB Offset
	26055 to 26675	26365	3MHz	QPSK	1 RB / 0 RB Offset
	26065 to 26665	26365	5MHz	QPSK	1 RB / 0 RB Offset
	26090 to 26640	26365	10MHz	QPSK	1 RB / 0 RB Offset
	26115 to 26615	26365	15MHz	QPSK	1 RB / 0 RB Offset
	26140 to 26590	26365	20MHz	QPSK	1 RB / 0 RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

TEST CONDITION:

TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER (SYSTEM)	TESTED BY
EIRP	25deg. C, 63%RH	120Vac, 60Hz	James Chan
FREQUENCY STABILITY	25deg. C, 63%RH	120Vac, 60Hz	James Chan
OCCUPIED BANDWIDTH	25deg. C, 63%RH	120Vac, 60Hz	James Chan
PEAK TO AVERAGE RATIO	25deg. C, 63%RH	120Vac, 60Hz	James Chan
BAND EDGE	25deg. C, 63%RH	120Vac, 60Hz	James Chan
CONDCUDETED EMISSION	25deg. C, 63%RH	120Vac, 60Hz	James Chan
RADIATED EMISSION	25deg. C, 65%RH	120Vac, 60Hz	Robert Cheng

3.5 EUT OPERATING CONDITIONS

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

3.6 GENERAL DESCRIPTION OF APPLIED STANDARDS

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

FCC 47 CFR Part 2
FCC 47 CFR Part 24
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

Mobile and portable stations are limited to 2 watts EIRP.

4.1.2 TEST PROCEDURES

EIRP MEASUREMENT:

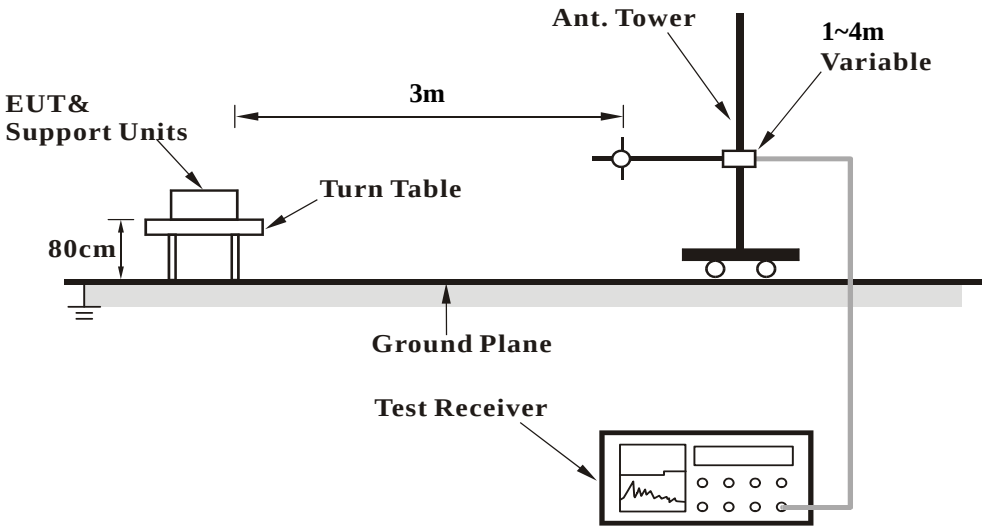
a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 1MHz for GPRS & EDGE, 5MHz for WCDMA, and 10MHz for LTE mode.
b. Substitution method is used for EIRP measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.
c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step b. Record the power level of S.G
d. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn.

CONDUCTED POWER MEASUREMENT:

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

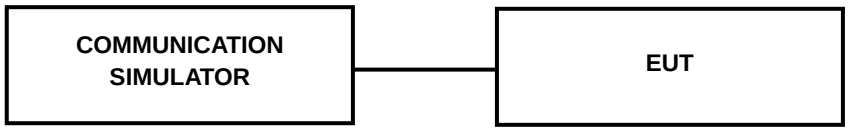
4.1.3 TEST SETUP

EIRP / ERP MEASUREMENT:



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

CONDUCTED POWER MEASUREMENT:



4.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

Band	GPRS1900		
Channel	512	661	810
Frequency (MHz)	1850.2	1880.0	1909.8
GPRS 8	29.60	29.58	**29.87**
GPRS 10	29.55	29.53	29.77
GPRS 11	29.54	29.52	29.76
GPRS 12	29.49	29.47	29.71
EDGE 8 (MCS1)	29.65	29.63	29.82
EDGE 10 (MCS1)	29.59	29.57	29.81
EDGE 11 (MCS1)	29.53	29.51	29.75
EDGE 12 (MCS1)	29.49	29.47	29.71
EDGE 8 (MCS9)	25.65	25.63	25.87
EDGE 10 (MCS9)	25.58	25.56	25.80
EDGE 11 (MCS9)	25.50	25.48	25.72
EDGE 12 (MCS9)	25.47	25.45	25.69

Band	WCDMA II		
Channel	9262	9400	9538
Frequency (MHz)	1852.4	1880.0	1907.6
RMC 12.2K	24.88	**24.90**	24.77
HSDPA Subtest-1	23.83	23.80	23.82
HSDPA Subtest-2	23.72	23.76	23.68
HSDPA Subtest-3	23.19	23.24	23.26
HSDPA Subtest-4	23.23	23.30	23.22
HSUPA Subtest-1	23.70	23.80	23.80
HSUPA Subtest-2	22.67	22.71	22.76
HSUPA Subtest-3	22.25	22.33	22.26
HSUPA Subtest-4	22.61	22.67	22.77
HSUPA Subtest-5	23.50	23.13	23.31

Band	CDMA2000 BC1		
Channel	25	600	1175
Frequency (MHz)	1851.25	1880.0	1908.75
RC1+SO55	24.68	24.66	24.66
RC3+SO55	24.59	**24.75**	24.57
RC3+SO32(+ F-SCH)	24.59	24.66	24.57
RC3+SO32(+SCH)	24.58	24.65	24.56
RTAP 153.6	24.59	24.66	24.57
RETAP 4096	24.64	24.71	24.62

LTE Band / BW (Hz)	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 18607 1850.7 MHz	Mid CH 18900 1880.0 MHz	High CH 19193 1909.3 MHz		Low CH 18607 1850.7 MHz	Mid CH 18900 1880.0 MHz	High CH 19193 1909.3 MHz	
2 / 1.4M	1	0	23.83	**23.93**	23.85	0	22.73	**22.83**	22.75	1
	1	2	23.78	23.70	23.58	0	22.68	22.60	22.48	1
	1	5	23.69	23.68	23.67	0	22.59	22.58	22.57	1
	3	0	23.76	23.87	23.79	0	22.66	22.77	22.69	1
	3	1	23.75	23.78	23.78	0	22.65	22.68	22.68	1
	3	3	23.80	23.81	23.72	0	22.70	22.71	22.62	1
	6	0	22.79	22.79	22.80	1	21.69	21.69	21.70	2

LTE Band / BW (Hz)	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 18615 1851.5 MHz	Mid CH 18900 1880.0 MHz	High CH 19185 1908.5 MHz		Low CH 18615 1851.5 MHz	Mid CH 18900 1880.0 MHz	High CH 19185 1908.5 MHz	
2 / 3M	1	0	23.78	**23.89**	23.81	0	22.71	**22.82**	22.74	1
	1	7	23.80	23.72	23.60	0	22.73	22.65	22.53	1
	1	14	23.71	23.70	23.69	0	22.64	22.63	22.62	1
	8	0	22.85	22.95	22.87	1	21.78	21.88	21.80	2
	8	3	22.77	22.80	22.80	1	21.70	21.73	21.73	2
	8	7	22.82	22.83	22.74	1	21.75	21.76	21.67	2
	15	0	22.81	22.81	22.82	1	21.74	21.74	21.75	2

LTE Band / BW (Hz)	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 18625 1852.5 MHz	Mid CH 18900 1880.0 MHz	High CH 19175 1907.5 MHz		Low CH 18625 1852.5 MHz	Mid CH 18900 1880.0 MHz	High CH 19175 1907.5 MHz	
2 / 5M	1	0	23.82	**23.93**	23.85	0	22.79	**22.90**	22.82	1
	1	12	23.84	23.76	23.64	0	22.81	22.73	22.61	1
	1	24	23.75	23.74	23.73	0	22.72	22.71	22.70	1
	12	0	22.89	22.99	22.91	1	21.86	21.96	21.88	2
	12	6	22.81	22.84	22.84	1	21.78	21.81	21.81	2
	12	13	22.86	22.87	22.78	1	21.83	21.84	21.75	2
	25	0	22.85	22.85	22.86	1	21.82	21.82	21.83	2

LTE Band / BW (Hz)	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 18650 1855.0 MHz	Mid CH 18900 1880.0 MHz	High CH 19150 1905.0 MHz		Low CH 18650 1855.0 MHz	Mid CH 18900 1880.0 MHz	High CH 19150 1905.0 MHz	
2 / 10M	1	0	23.88	**23.99**	23.91	0	22.83	**22.94**	22.86	1
	1	24	23.90	23.82	23.70	0	22.85	22.77	22.65	1
	1	49	23.81	23.80	23.79	0	22.76	22.75	22.74	1
	25	0	22.95	23.05	22.97	1	21.90	22.00	21.92	2
	25	12	22.87	22.90	22.90	1	21.82	21.85	21.85	2
	25	25	22.92	22.93	22.84	1	21.87	21.88	21.79	2
	50	0	22.91	22.91	22.92	1	21.86	21.86	21.87	2

LTE Band / BW (Hz)	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 18675	Mid CH 18900	High CH 19125		Low CH 18675	Mid CH 18900	High CH 19125	
			1857.5 MHz	1880.0 MHz	1902.5 MHz		1857.5 MHz	1880.0 MHz	1902.5 MHz	
2 / 15M	1	0	23.92	**24.03**	23.95	0	22.85	**22.96**	22.88	1
	1	37	23.94	23.86	23.74	0	22.87	22.79	22.67	1
	1	74	23.85	23.84	23.83	0	22.78	22.77	22.76	1
	36	0	22.99	23.09	23.01	1	21.92	22.02	21.94	2
	36	19	22.91	22.94	22.94	1	21.84	21.87	21.87	2
	36	39	22.96	22.97	22.88	1	21.89	21.90	21.81	2
	75	0	22.95	22.95	22.96	1	21.88	21.88	21.89	2

LTE Band / BW (Hz)	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 18700	Mid CH 18900	High CH 19100		Low CH 18700	Mid CH 18900	High CH 19100	
			1860.0 MHz	1880.0 MHz	1900.0 MHz		1860.0 MHz	1880.0 MHz	1900.0 MHz	
2 / 20M	1	0	23.99	**24.10**	24.02	0	22.91	**23.02**	22.94	1
	1	50	24.01	23.93	23.81	0	22.93	22.85	22.73	1
	1	99	23.92	23.91	23.90	0	22.84	22.83	22.82	1
	50	0	23.06	23.16	23.08	1	21.98	22.08	22.00	2
	50	25	22.98	23.01	23.01	1	21.90	21.93	21.93	2
	50	50	23.03	23.04	22.95	1	21.95	21.96	21.87	2
	100	0	23.02	23.02	23.03	1	21.94	21.94	21.95	2

LTE Band / BW (Hz)	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 26047 1850.7 MHz	Mid CH 26365 1882.5 MHz	High CH 26683 1914.3 MHz		Low CH 26047 1850.7 MHz	Mid CH 26365 1882.5 MHz	High CH 26683 1914.3 MHz	
25 / 1.4M	1	0	23.74	**24.06**	23.89	0	22.62	**22.94**	22.77	1
	1	2	23.79	23.72	23.62	0	22.67	22.60	22.50	1
	1	5	23.47	23.52	23.98	0	22.35	22.40	22.86	1
	3	0	23.89	23.86	23.81	0	22.77	22.74	22.69	1
	3	1	23.72	23.78	23.82	0	22.60	22.66	22.70	1
	3	3	23.82	23.82	23.86	0	22.70	22.70	22.74	1
	6	0	22.86	22.78	22.82	1	21.74	21.66	21.70	2

LTE Band / BW (Hz)	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 26055 1851.5 MHz	Mid CH 26365 1882.5 MHz	High CH 26675 1913.5 MHz		Low CH 26055 1851.5 MHz	Mid CH 26365 1882.5 MHz	High CH 26675 1913.5 MHz	
25 / 3M	1	0	23.75	**24.07**	23.90	0	22.70	**23.02**	22.85	1
	1	7	23.80	23.73	23.63	0	22.75	22.68	22.58	1
	1	14	23.48	23.53	23.99	0	22.43	22.48	22.94	1
	8	0	22.90	22.87	22.82	1	21.85	21.82	21.77	2
	8	3	22.73	22.79	22.83	1	21.68	21.74	21.78	2
	8	7	22.83	22.83	22.87	1	21.78	21.78	21.82	2
	15	0	22.87	22.79	22.83	1	21.82	21.74	21.78	2

LTE Band / BW (Hz)	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 26065 1852.5 MHz	Mid CH 26365 1882.5 MHz	High CH 26665 1912.5 MHz		Low CH 26065 1852.5 MHz	Mid CH 26365 1882.5 MHz	High CH 26665 1912.5 MHz	
25 / 5M	1	0	23.81	**24.13**	23.96	0	22.72	**23.04**	22.87	1
	1	12	23.86	23.79	23.69	0	22.77	22.70	22.60	1
	1	24	23.54	23.59	24.05	0	22.45	22.50	22.96	1
	12	0	22.96	22.93	22.88	1	21.87	21.84	21.79	2
	12	6	22.79	22.85	22.89	1	21.70	21.76	21.80	2
	12	13	22.89	22.89	22.93	1	21.80	21.80	21.84	2
	25	0	22.93	22.85	22.89	1	21.84	21.76	21.80	2

LTE Band / BW (Hz)	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 26090 1855.0 MHz	Mid CH 26365 1882.5 MHz	High CH 26640 1910.0 MHz		Low CH 26090 1855.0 MHz	Mid CH 26365 1882.5 MHz	High CH 26640 1910.0 MHz	
25 / 10M	1	0	23.87	**24.19**	24.02	0	22.75	**23.07**	22.90	1
	1	24	23.92	23.85	23.75	0	22.80	22.73	22.63	1
	1	49	23.60	23.65	24.11	0	22.48	22.53	22.99	1
	25	0	23.02	22.99	22.94	1	21.90	21.87	21.82	2
	25	12	22.85	22.91	22.95	1	21.73	21.79	21.83	2
	25	25	22.95	22.95	22.99	1	21.83	21.83	21.87	2
	50	0	22.99	22.91	22.95	1	21.87	21.79	21.83	2

LTE Band / BW (Hz)	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 26115	Mid CH 26365	High CH 26615		Low CH 26115	Mid CH 26365	High CH 26615	
			1857.5 MHz	1882.5 MHz	1907.5 MHz		1857.5 MHz	1882.5 MHz	1907.5 MHz	
25 / 15M	1	0	23.90	**24.22**	24.05	0	22.84	**23.16**	22.99	1
	1	37	23.95	23.88	23.78	0	22.89	22.82	22.72	1
	1	74	23.63	23.68	24.14	0	22.57	22.62	23.08	1
	36	0	23.05	23.02	22.97	1	21.99	21.96	21.91	2
	36	19	22.88	22.94	22.98	1	21.82	21.88	21.92	2
	36	39	22.98	22.98	23.02	1	21.92	21.92	21.96	2
	75	0	23.02	22.94	22.98	1	21.96	21.88	21.92	2

LTE Band / BW (Hz)	RB Size	RB Offset	QPSK			3GPP MPR (dB)	16QAM			3GPP MPR (dB)
			Low CH 26140	Mid CH 26365	High CH 26590		Low CH 26140	Mid CH 26365	High CH 26590	
			1860.0 MHz	1882.5 MHz	1905.0 MHz		1860.0 MHz	1882.5 MHz	1905.0 MHz	
25 / 20M	1	0	23.96	**24.28**	24.11	0	22.91	**23.23**	23.06	1
	1	50	24.01	23.94	23.84	0	22.96	22.89	22.79	1
	1	99	23.69	23.74	24.20	0	22.64	22.69	23.15	1
	50	0	23.08	23.11	23.03	1	22.03	22.06	21.98	2
	50	25	22.94	23.00	23.04	1	21.89	21.95	21.99	2
	50	50	23.04	23.04	23.08	1	21.99	21.99	22.03	2
	100	0	23.08	23.00	23.04	1	22.03	21.95	21.99	2

EIRP POWER (dBm)

GPRS						
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)
X	512	1850.2	26.2	6.6	32.8	1905.5
	661	1880.0	26.0	6.7	32.7	1862.1
	810	1909.8	26.2	6.7	32.9	1949.8

EDGE						
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)
X	512	1850.2	23.0	6.6	29.6	912.0
	661	1880.0	23.3	6.7	30.0	1000.0
	810	1909.8	23.3	6.7	30.0	1000.0

WCDMA						
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)
X	9262	1852.4	22.6	6.6	29.2	824.1
	9400	1880.0	22.5	6.7	29.2	827.9
	9538	1907.6	22.5	6.7	29.2	829.9

CDMA2000						
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)
X	25	1851.25	22.8	6.7	29.5	891.25
	600	1880.0	22.7	6.7	29.4	870.96
	1175	1908.75	22.6	6.7	29.3	851.14

LTE Band 2						
Channel Bandwidth: 1.4MHz / QPSK						
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)
X	18607	1850.7	20.4	6.6	27.0	499.3
	18900	1880.0	20.6	6.7	27.3	535.0
	19193	1909.3	20.5	6.7	27.2	525.3

LTE Band 2						
Channel Bandwidth: 3MHz / QPSK						
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)
X	18615	1851.5	20.6	6.6	27.2	522.9
	18900	1880.0	20.8	6.7	27.5	565.4
	19185	1908.5	20.6	6.7	27.3	535.0

LTE Band 2						
Channel Bandwidth: 5MHz / QPSK						
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)
X	18625	1852.5	20.7	6.6	27.3	535.0
	18900	1880.0	20.9	6.7	27.6	572.0
	19175	1907.5	20.6	6.7	27.3	535.0

LTE Band 2						
Channel Bandwidth: 10MHz / QPSK						
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)
X	18650	1855.0	20.1	6.6	26.7	463.9
	18900	1880.0	20.8	6.7	27.5	556.4
	19150	1905.0	20.2	6.7	26.9	488.0

LTE Band 2						
Channel Bandwidth: 15MHz / QPSK						
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)
X	18675	1857.5	20.3	6.6	26.9	492.5
	18900	1880.0	20.3	6.7	27.0	505.1
	19125	1902.5	20.1	6.7	26.8	480.2

LTE Band 2						
Channel Bandwidth: 20MHz / QPSK						
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)
X	18700	1860.0	20.4	6.6	27.0	502.8
	18900	1880.0	20.7	6.7	27.4	555.1
	19100	1900.0	20.2	6.7	26.9	489.1

LTE Band 25						
Channel Bandwidth: 1.4MHz / QPSK						
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)
X	26047	1850.7	20.9	6.6	27.5	565.9
	26365	1882.5	21.2	6.7	27.9	616.2
	26683	1914.3	20.9	6.7	27.6	576.4

LTE Band 25						
Channel Bandwidth: 3MHz / QPSK						
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)
X	26055	1851.5	20.3	6.6	26.9	490.6
	26365	1882.5	21.0	6.7	27.7	588.5
	26675	1913.5	20.1	6.7	26.8	481.7

LTE Band 25						
Channel Bandwidth: 5MHz / QPSK						
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)
X	26065	1852.5	20.6	6.6	27.2	525.7
	26365	1882.5	21.0	6.7	27.7	588.5
	26665	1912.5	20.5	6.7	27.2	530.6

LTE Band 25						
Channel Bandwidth: 10MHz / QPSK						
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)
X	26090	1855	20.1	6.6	26.7	472.9
	26365	1882.5	20.4	6.7	27.1	513.7
	26640	1910	20.2	6.7	26.9	490.6

LTE Band 25						
Channel Bandwidth: 15MHz / QPSK						
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)
X	26115	1857.5	20.2	6.6	26.8	476.1
	26365	1882.5	21.1	6.7	27.7	593.9
	26615	1907.5	20.3	6.7	27.0	502.0

LTE Band 25						
Channel Bandwidth: 20MHz / QPSK						
Plane	Channel	Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	EIRP(dBm)	EIRP(mW)
X	26140	1860	19.6	6.6	26.2	420.5
	26365	1882.5	20.1	6.7	26.8	475.0
	26590	1905	19.8	6.7	26.5	444.4

4.2 FREQUENCY STABILITY MEASUREMENT

4.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

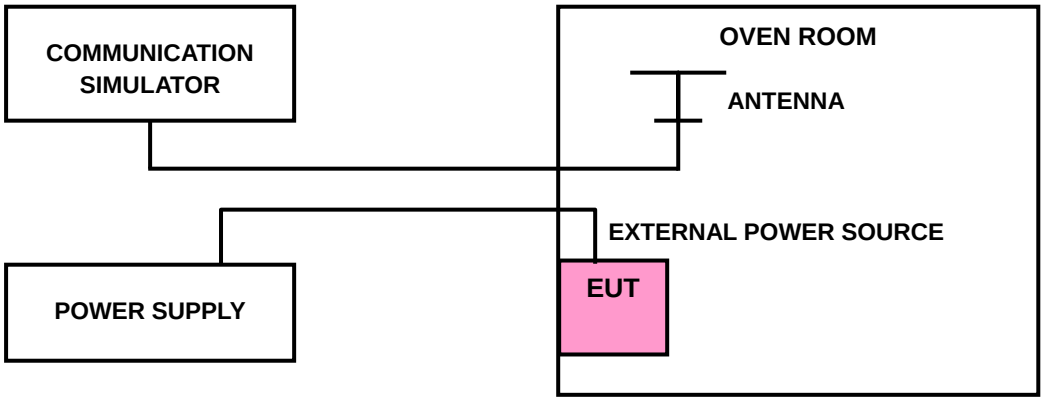
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

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 input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

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

4.2.3 TEST SETUP



4.2.4 TEST RESULTS

FREQUENCY ERROR vs. VOLTAGE

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)			LIMIT (ppm)
	GPRS	WCDMA	CDMA2000	
102	0.006	0.010	-0.010	2.5
138	0.007	0.009	-0.009	2.5

NOTE: The applicant defined the normal working voltage of the host equipment is from 102Vac to 138Vac.

FREQUENCY ERROR vs. TEMPERATURE

TEMP. (℃)	FREQUENCY ERROR (ppm)			LIMIT (ppm)
	GPRS	WCDMA	CDMA2000	
75	0.016	0.018	-0.016	2.5
70	0.015	0.016	-0.015	2.5
60	0.015	0.016	-0.014	2.5
50	0.013	0.013	-0.013	2.5
40	0.012	0.011	-0.013	2.5
30	0.010	0.011	-0.012	2.5
20	0.008	0.010	-0.009	2.5
10	0.007	0.010	-0.009	2.5
0	0.010	0.011	-0.008	2.5
-10	0.011	0.012	-0.010	2.5
-20	0.014	0.013	-0.012	2.5
-30	0.018	0.014	-0.013	2.5

FREQUENCY ERROR vs. VOLTAGE

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)						LIMIT (ppm)
	LTE Band 2						
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz	
102	0.001	0.002	0.002	0.002	0.001	0.002	2.5
138	0.002	0.002	0.002	0.002	0.002	0.002	2.5

NOTE: The applicant defined the normal working voltage of the host equipment is from 102Vac to 138Vac.

FREQUENCY ERROR vs. TEMPERATURE

TEMP. (℃)	FREQUENCY ERROR (ppm)						LIMIT (ppm)
	LTE Band 2						
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz	
75	0.001	0.001	0.002	0.002	0.002	0.002	2.5
70	0.001	0.002	0.002	0.001	0.002	0.001	2.5
60	0.002	0.002	0.001	0.002	0.001	0.002	2.5
50	0.001	0.002	0.001	0.001	0.002	0.001	2.5
40	0.002	0.002	0.002	0.001	0.001	0.002	2.5
30	0.001	0.002	0.001	0.002	0.002	0.002	2.5
20	0.001	0.002	0.002	0.002	0.002	0.002	2.5
10	0.001	0.001	0.001	0.002	0.002	0.002	2.5
0	0.001	0.002	0.002	0.002	0.001	0.001	2.5
-10	0.002	0.002	0.002	0.002	0.001	0.002	2.5
-20	0.002	0.001	0.002	0.002	0.002	0.002	2.5
-30	0.002	0.002	0.001	0.002	0.002	0.002	2.5

FREQUENCY ERROR vs. VOLTAGE

VOLTAGE (Volts)	FREQUENCY ERROR (ppm)						LIMIT (ppm)
	LTE Band 25						
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz	
102	0.001	0.001	0.001	0.002	0.001	0.002	2.5
138	0.001	0.002	0.001	0.002	0.001	0.001	2.5

NOTE: The applicant defined the normal working voltage of the host equipment is from 102Vac to 138Vac.

FREQUENCY ERROR vs. TEMPERATURE

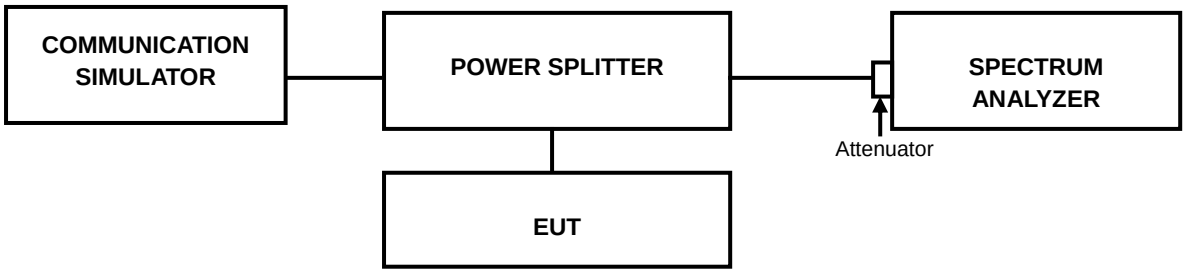
TEMP. (℃)	FREQUENCY ERROR (ppm)						LIMIT (ppm)
	LTE Band 25						
	1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz	
75	0.001	0.001	0.001	0.001	0.001	0.002	2.5
70	0.002	0.002	0.002	0.001	0.001	0.001	2.5
60	0.001	0.001	0.001	0.002	0.001	0.002	2.5
50	0.002	0.001	0.002	0.001	0.002	0.001	2.5
40	0.002	0.001	0.001	0.001	0.001	0.001	2.5
30	0.001	0.001	0.002	0.001	0.002	0.001	2.5
20	0.001	0.002	0.002	0.001	0.002	0.001	2.5
10	0.001	0.001	0.002	0.001	0.002	0.001	2.5
0	0.001	0.001	0.001	0.001	0.001	0.001	2.5
-10	0.001	0.001	0.001	0.001	0.001	0.001	2.5
-20	0.001	0.001	0.001	0.001	0.001	0.002	2.5
-30	0.002	0.001	0.001	0.001	0.002	0.002	2.5

4.3 OCCUPIED BANDWIDTH MEASUREMENT

4.3.1 TEST PROCEDURES

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

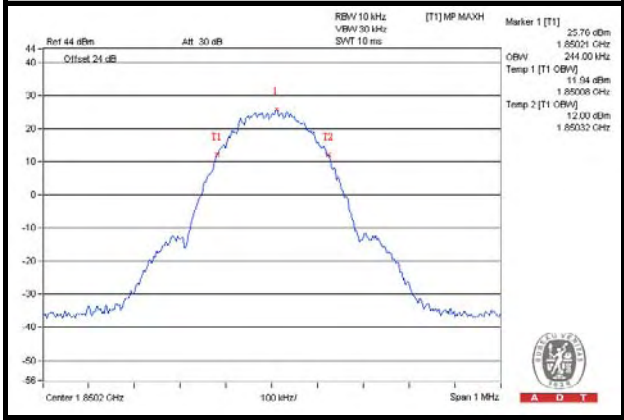
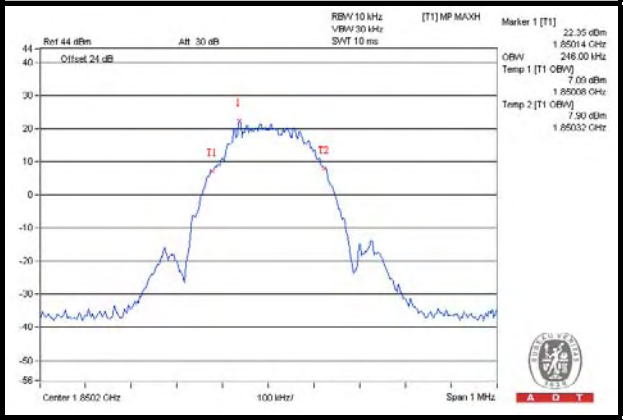
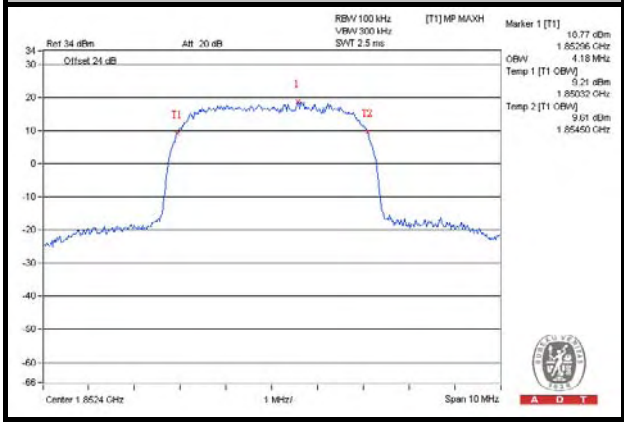
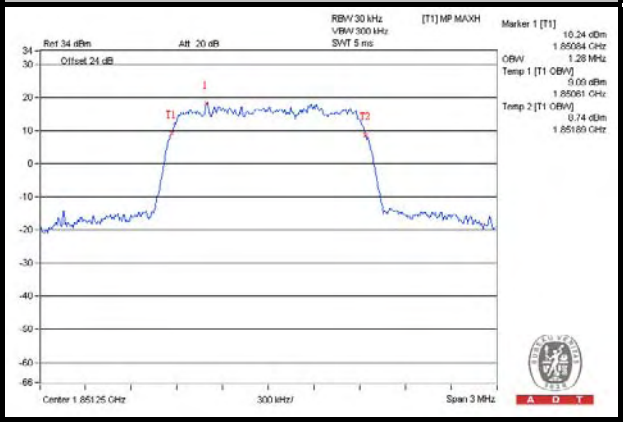
4.3.2 TEST SETUP



4.3.3 TEST RESULTS

CHANNEL	FREQUENCY	99% OCCUPIED BANDWIDTH (kHz)		CHANNEL	FREQUENCY	99% OCCUPIED BANDWIDTH (MHz)
		GPRS	EDGE			WCDMA
512	1850.2	244	246	9262	1852.4	4.18
661	1880.0	242	240	9400	1880.0	4.16
810	1909.8	242	238	9538	1907.6	4.18

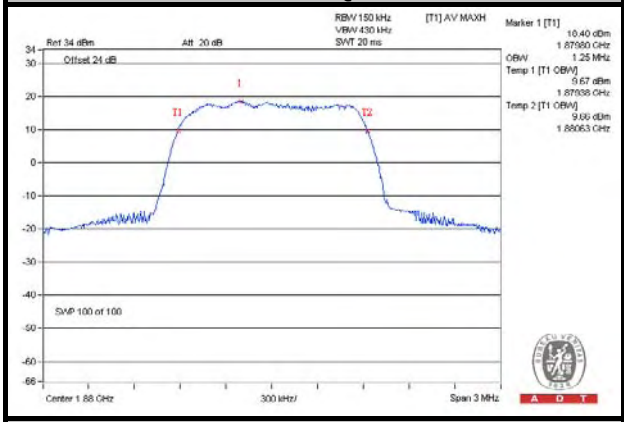
CHANNEL	FREQUENCY	99% OCCUPIED BANDWIDTH (MHz)
		CDMA2000
25	1851.25	1.28
600	1880.0	1.28
1175	1908.75	1.28

SPECTRUM PLOT OF WORST VALUE	
GPRS	EDGE
	
WCDMA	CDMA2000
	

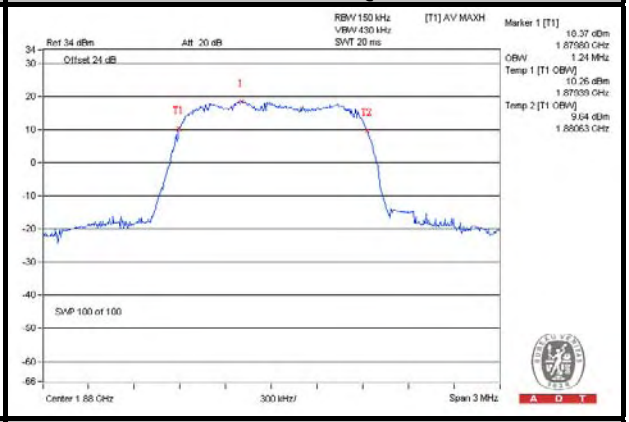
LTE BAND 2							
CHANNEL BANDWIDTH: 1.4MHz				CHANNEL BANDWIDTH: 3MHz			
CHANNEL	FREQUENCY	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
18607	1850.7	1.24	1.23	18615	1851.5	2.73	2.73
18900	1880.0	1.25	1.24	18900	1880.0	2.73	2.74
19193	1909.3	1.23	1.23	19185	1908.5	2.73	2.74
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
18625	1852.5	4.50	4.50	18650	1855.0	9.00	9.00
18900	1880.0	4.48	4.50	18900	1880.0	9.00	9.00
19175	1907.5	4.52	4.52	19150	1905.0	9.00	9.03
CHANNEL BANDWIDTH: 15MHz				CHANNEL BANDWIDTH: 20MHz			
CHANNEL	FREQUENCY	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
18675	1857.5	13.40	13.40	18700	1860.0	17.87	17.93
18900	1880.0	13.40	13.40	18900	1880.0	18.00	17.93
19125	1902.5	13.40	13.40	19100	1900.0	17.93	17.93

SPECTRUM PLOT OF WORST VALUE

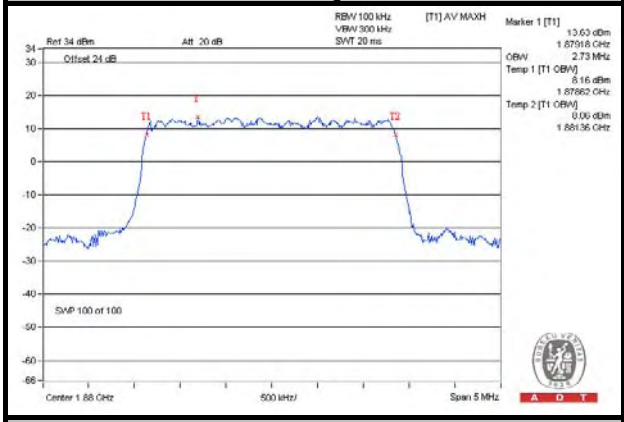
1.4MHz / QPSK



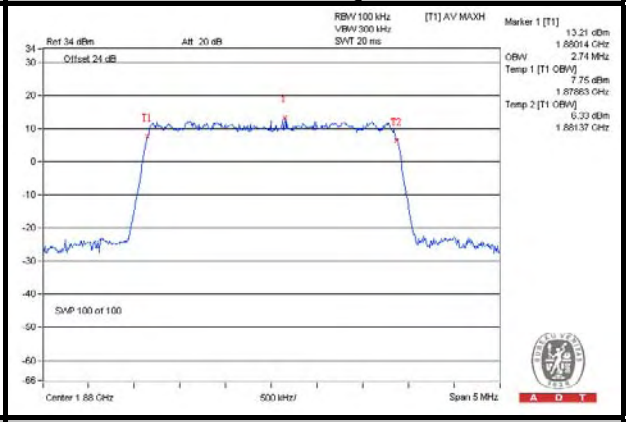
1.4MHz / 16QAM



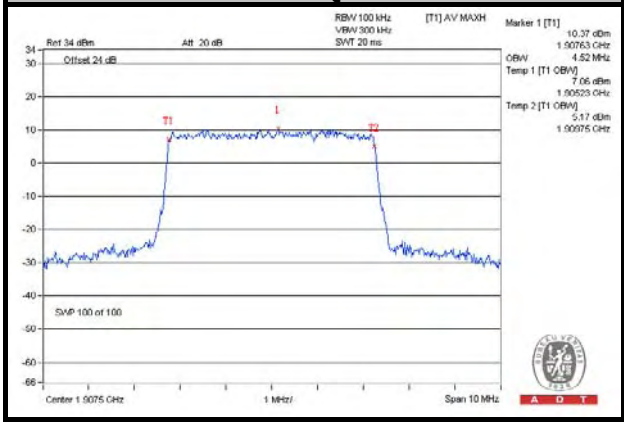
3MHz / QPSK



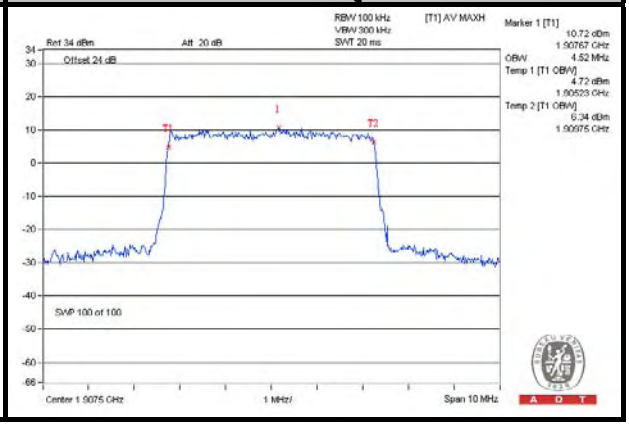
3MHz / 16QAM

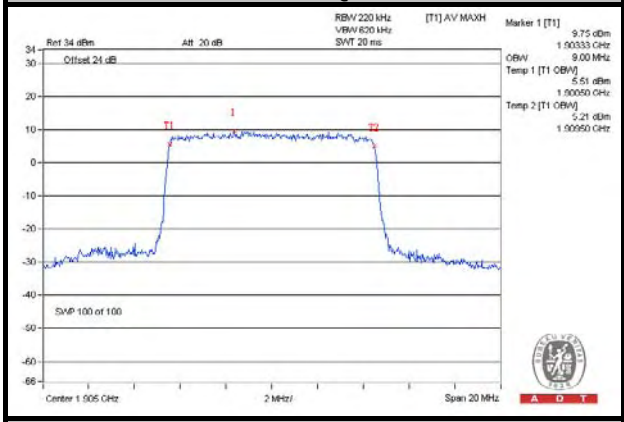
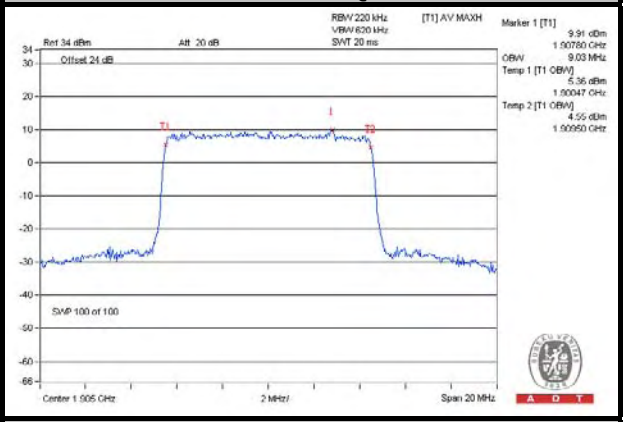
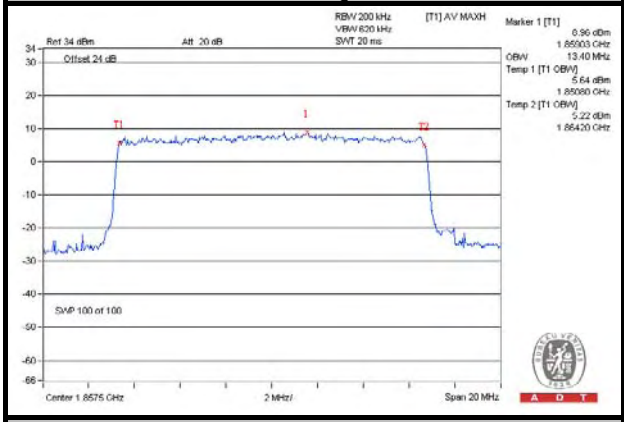
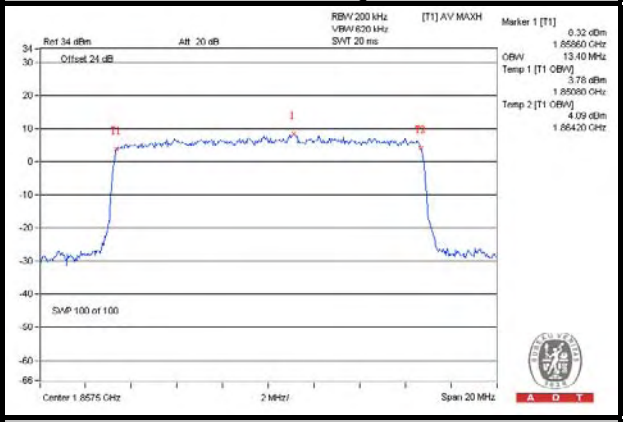
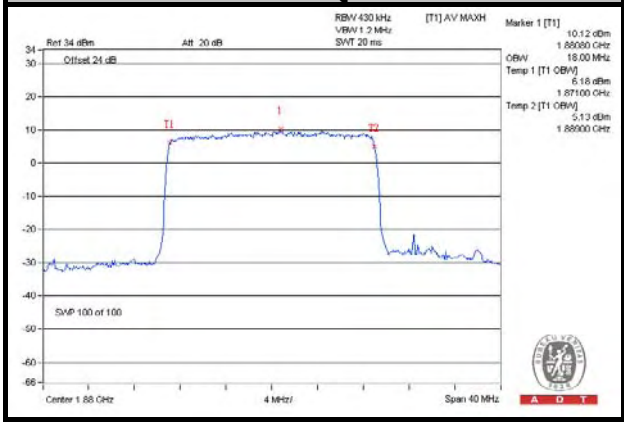
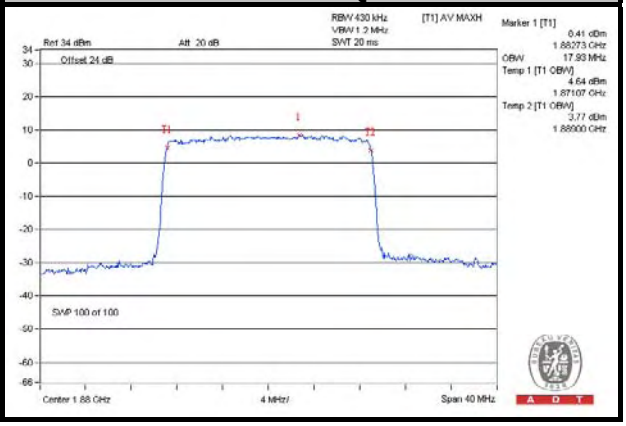


5MHz / QPSK



5MHz / 16QAM

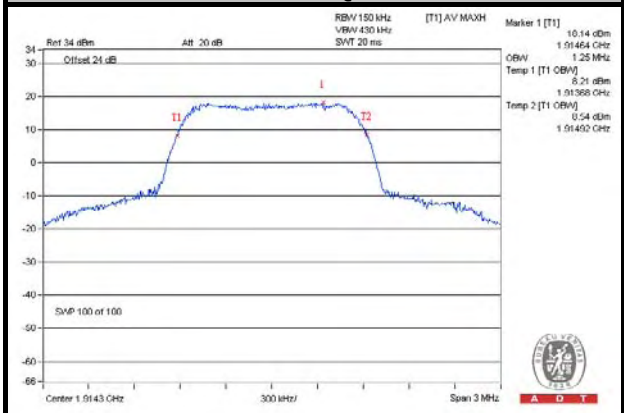


SPECTRUM PLOT OF WORST VALUE	
10MHz / QPSK	10MHz / 16QAM
	
15MHz / QPSK	15MHz / 16QAM
	
20MHz / QPSK	20MHz / 16QAM
	

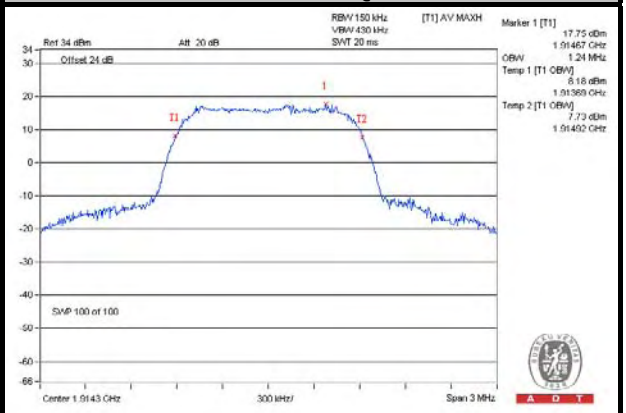
LTE BAND 25							
CHANNEL BANDWIDTH: 1.4MHz				CHANNEL BANDWIDTH: 3MHz			
CHANNEL	FREQUENCY	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
26047	1850.7	1.24	1.23	26055	1851.5	2.72	2.72
26365	1882.5	1.24	1.23	26365	1882.5	2.73	2.73
26683	1914.3	1.25	1.24	26675	1913.5	2.73	2.72
CHANNEL BANDWIDTH: 5MHz				CHANNEL BANDWIDTH: 10MHz			
CHANNEL	FREQUENCY	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
26065	1852.5	4.50	4.48	26090	1855.0	8.97	9.00
26365	1882.5	4.50	4.50	26365	1882.5	9.00	9.00
26665	1912.5	4.50	4.50	26640	1910.0	9.00	8.97
CHANNEL BANDWIDTH: 15MHz				CHANNEL BANDWIDTH: 20MHz			
CHANNEL	FREQUENCY	99% OCCUPIED BANDWIDTH (MHz)		CHANNEL	FREQUENCY	99% OCCUPIED BANDWIDTH (MHz)	
		QPSK	16QAM			QPSK	16QAM
26115	1857.5	13.47	13.40	26140	1860	17.73	17.87
26365	1882.5	13.47	13.40	26365	1882.5	18.00	17.93
26615	1907.5	13.40	13.43	26590	1905	17.93	17.93

SPECTRUM PLOT OF WORST VALUE

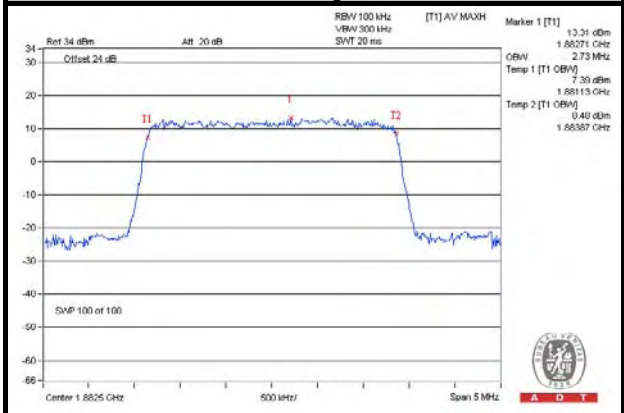
1.4MHz / QPSK



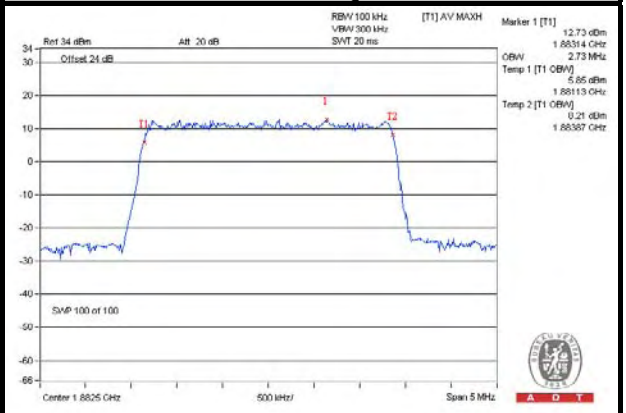
1.4MHz / 16QAM



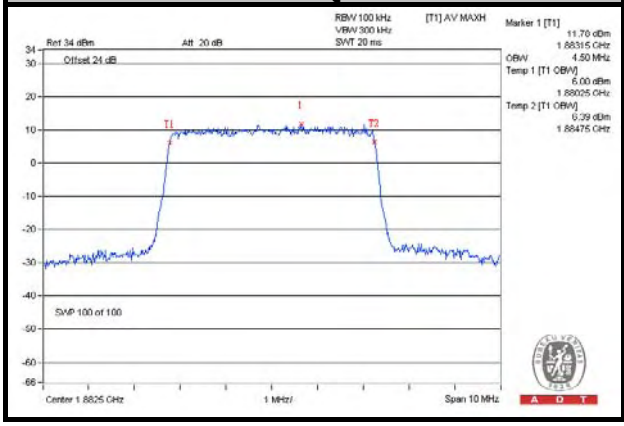
3MHz / QPSK



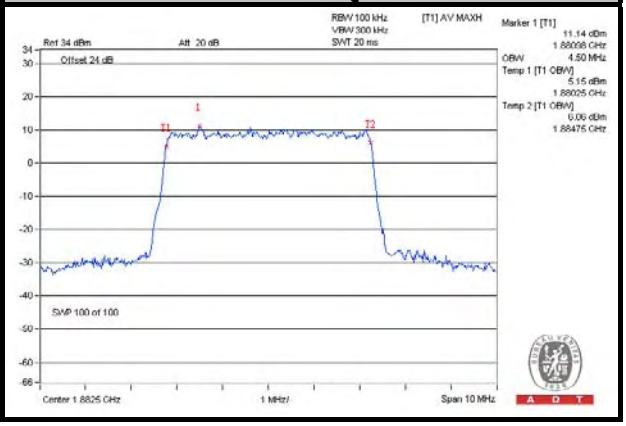
3MHz / 16QAM

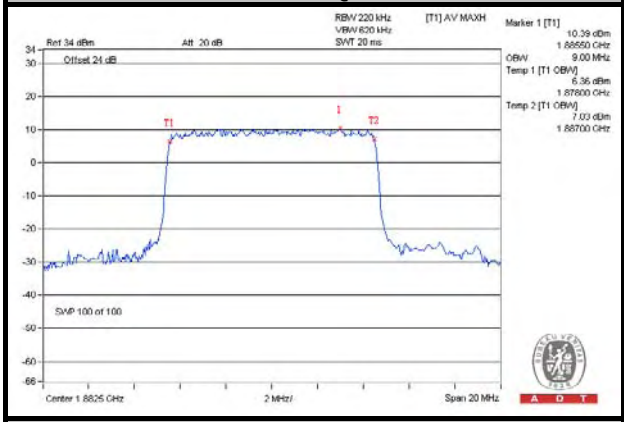
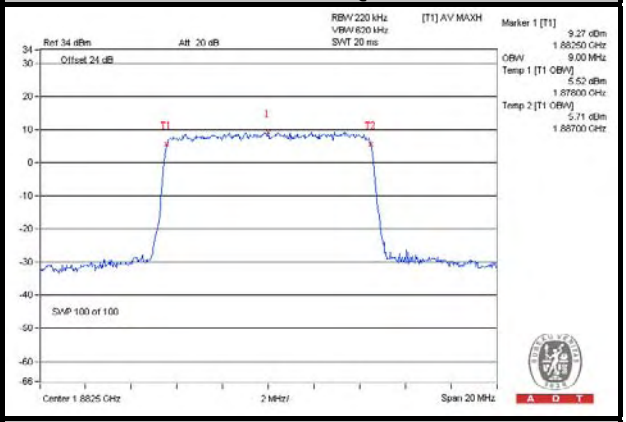
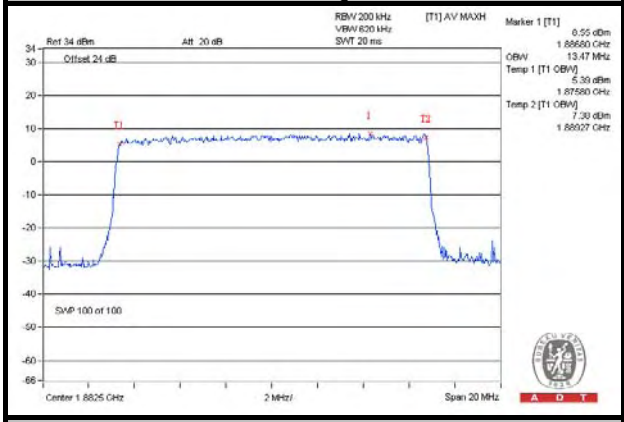
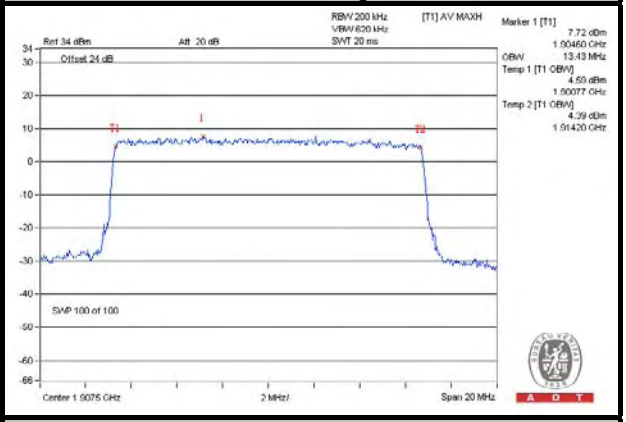
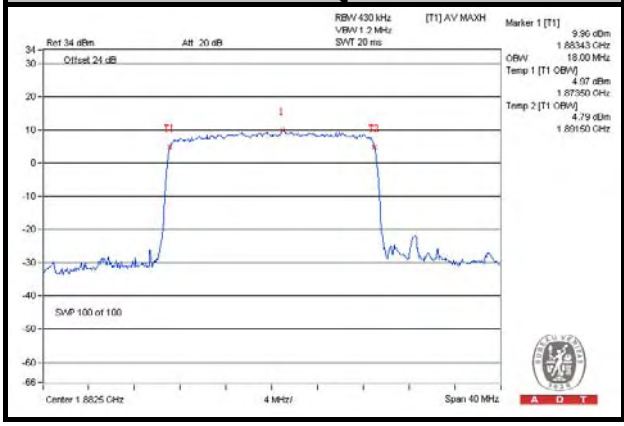
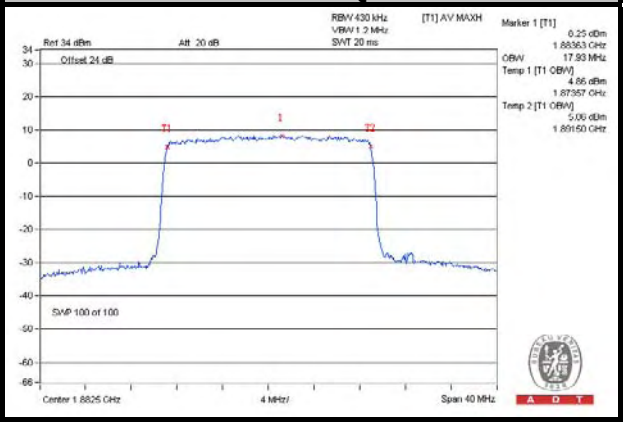


5MHz / QPSK



5MHz / 16QAM



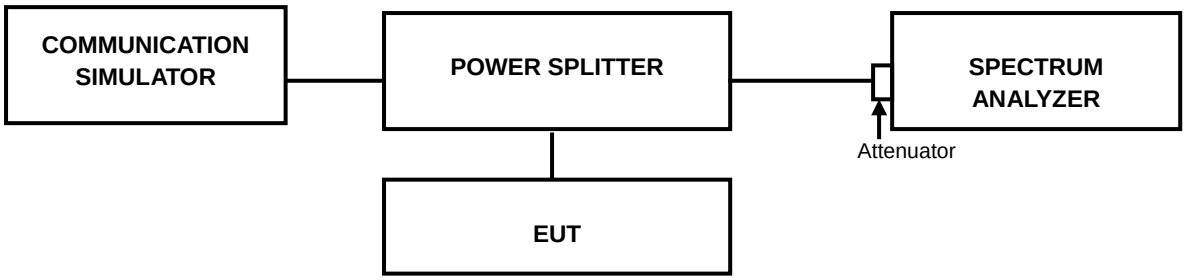
SPECTRUM PLOT OF WORST VALUE	
10MHz / QPSK	10MHz / 16QAM
	
15MHz / QPSK	15MHz / 16QAM
	
20MHz / QPSK	20MHz / 16QAM
	

4.4 PEAK TO AVERAGE RATIO MEASUREMENT

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

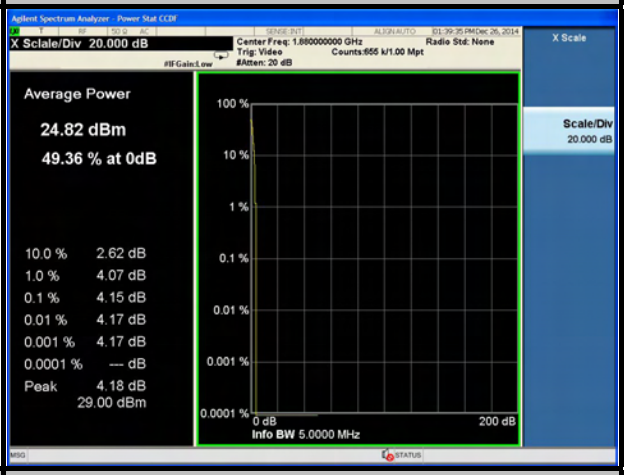
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
		GPRS	EDGE			WCDMA
512	1850.2	0.13	3.19	9262	1852.4	2.42
661	1880.0	0.13	4.15	9400	1880.0	2.76
810	1909.8	0.12	3.94	9538	1907.6	2.45

CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)
		CDMA2000
25	1851.25	2.77
600	1880.0	3.19
1175	1908.75	2.5

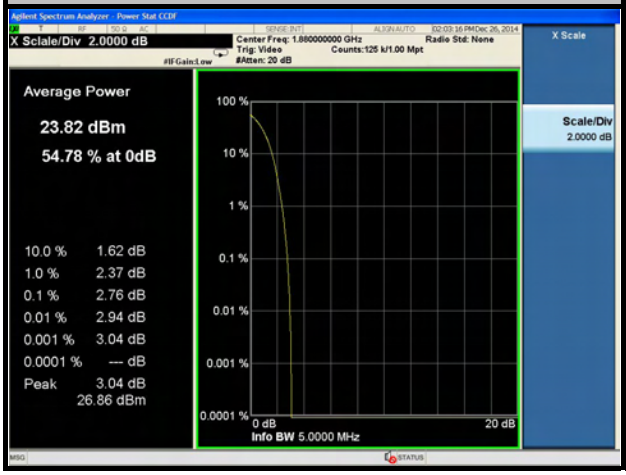
SPECTRUM PLOT OF WORST VALUE

GPRS

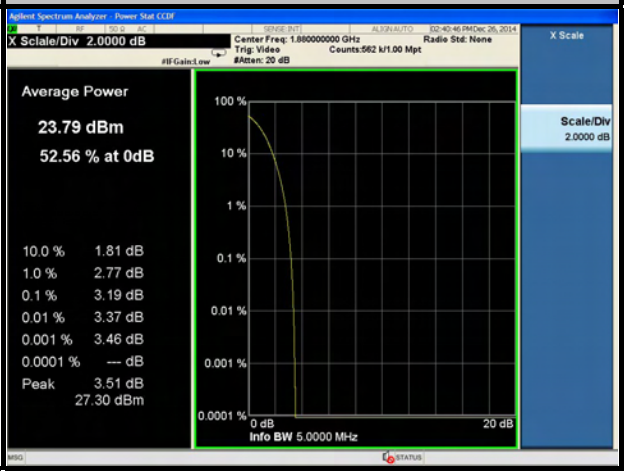
EDGE



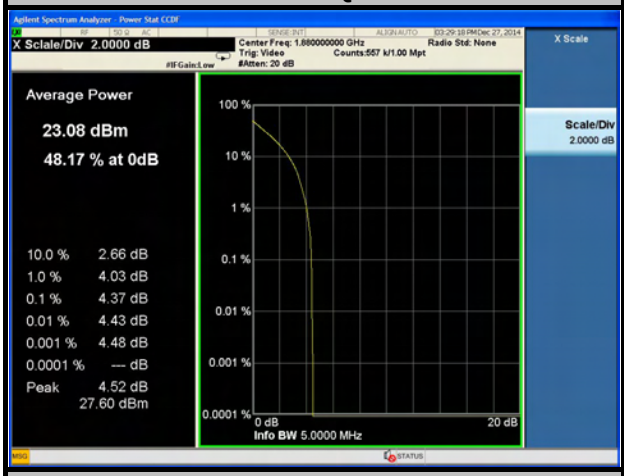
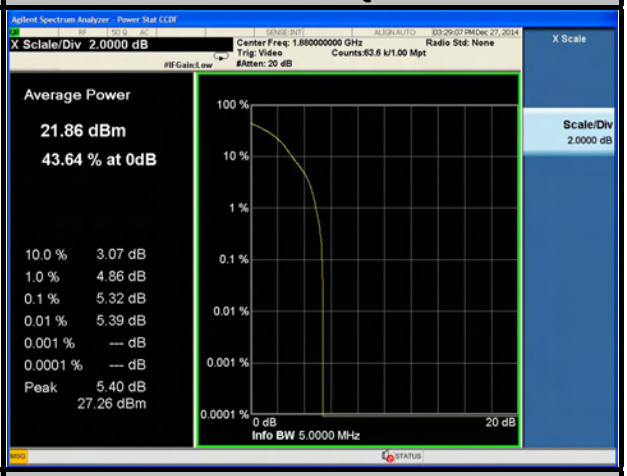
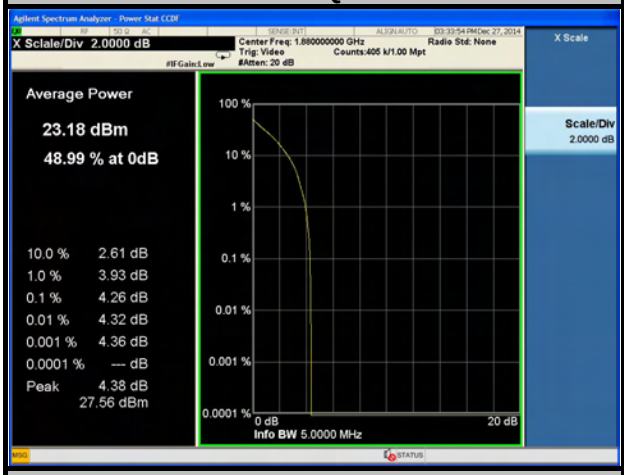
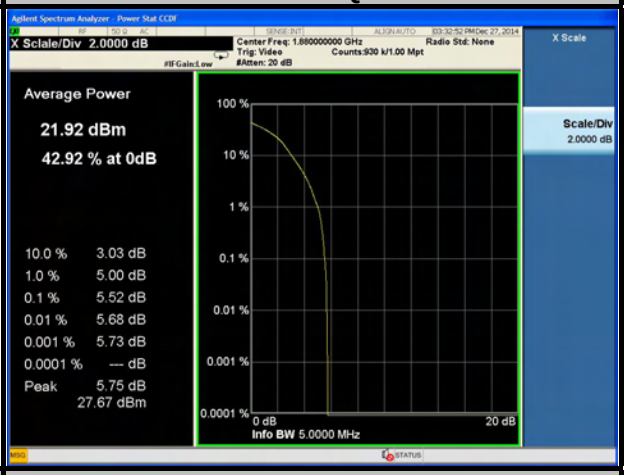
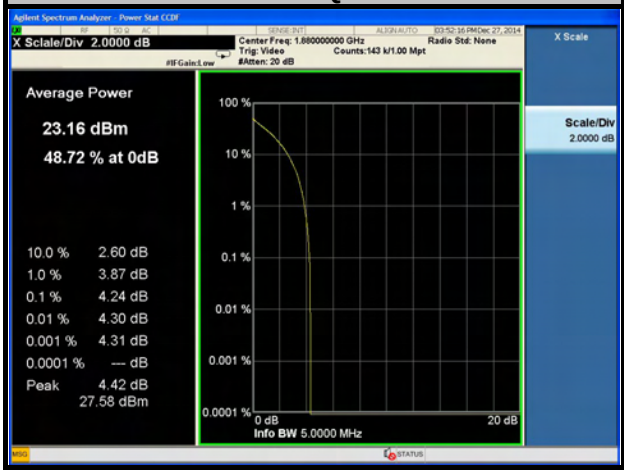
WCDMA

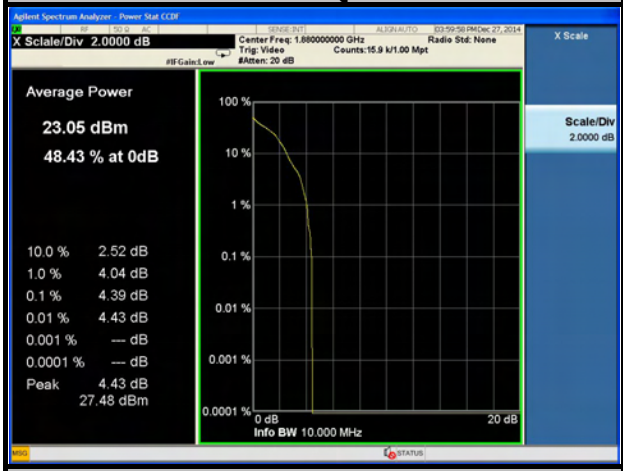
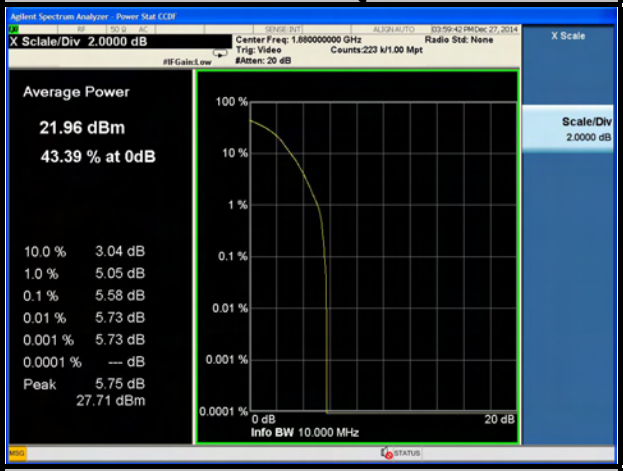
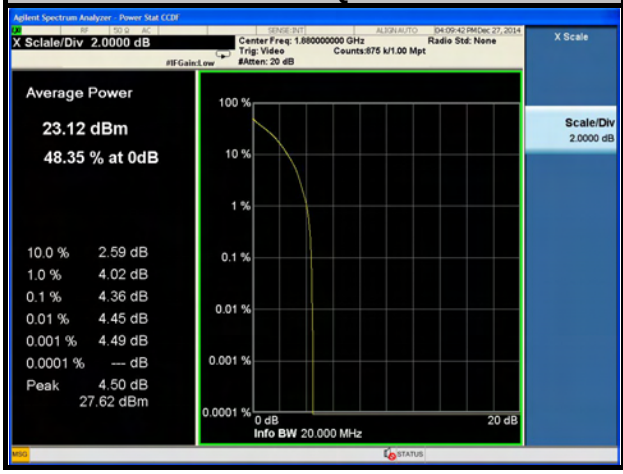


CDMA2000



LTE BAND 2							
CHANNEL BANDWIDTH: 1.4MHz				CHANNEL BANDWIDTH: 3MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
18607	1850.7	4	4.98	18615	1851.5	4.05	4.92
18900	1880.0	4.37	5.32	18900	1880.0	4.26	5.52
19193	1909.3	3.49	4.59	19185	1908.5	3.43	4.66
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
18625	1852.5	3.97	4.84	18650	1855.0	3.86	4.77
18900	1880.0	4.24	5.51	18900	1880.0	4.39	5.58
19175	1907.5	3.58	4.86	19150	1905.0	3.83	4.99
CHANNEL BANDWIDTH: 15MHz				CHANNEL BANDWIDTH: 20MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
18675	1857.5	3.8	4.81	18700	1860.0	3.66	4.63
18900	1880.0	4.4	5.55	18900	1880.0	4.36	5.65
19125	1902.5	3.98	5.04	19100	1900.0	3.86	4.97

SPECTRUM PLOT OF WORST VALUE	
1.4MHz / QPSK	1.4MHz / 16QAM
	
3MHz / QPSK	3MHz / 16QAM
	
5MHz / QPSK	5MHz / 16QAM
	

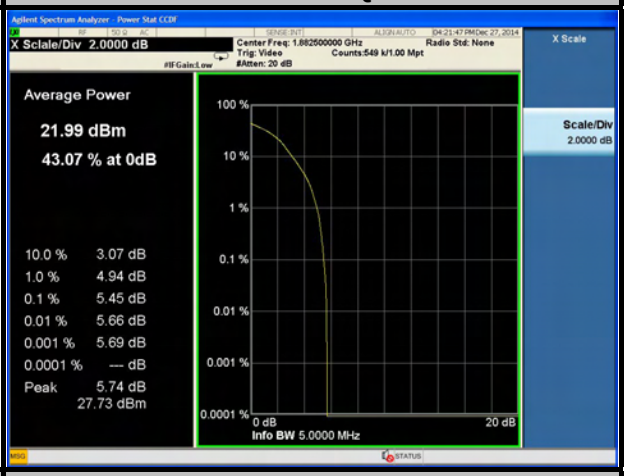
10MHz / QPSK	10MHz / 16QAM
	
15MHz / QPSK	**15MHz / 16QAM**
	
20MHz / QPSK	**20MHz / 16QAM**
	

LTE BAND 25							
CHANNEL BANDWIDTH: 1.4MHz				CHANNEL BANDWIDTH: 3MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
26047	1850.7	3.97	4.86	26055	1851.5	3.79	4.69
26365	1882.5	4.32	5.45	26365	1882.5	4.33	5.49
26683	1914.3	2.69	3.82	26675	1913.5	2.9	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
26065	1852.5	3.81	4.8	26090	1855.0	3.67	4.59
26365	1882.5	4.34	5.55	26365	1882.5	4.31	5.53
26665	1912.5	3.11	4.14	26640	1910.0	3.37	4.48
CHANNEL BANDWIDTH: 15MHz				CHANNEL BANDWIDTH: 20MHz			
CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)		CHANNEL	FREQUENCY (MHz)	PEAK TO AVERAGE RATIO (dB)	
		QPSK	16QAM			QPSK	16QAM
26115	1857.5	3.56	4.54	26140	1860.0	3.78	4.6
26365	1882.5	4.32	5.38	26365	1882.5	4.31	5.5
26615	1907.5	3.51	4.66	26590	1905.0	3.64	4.82

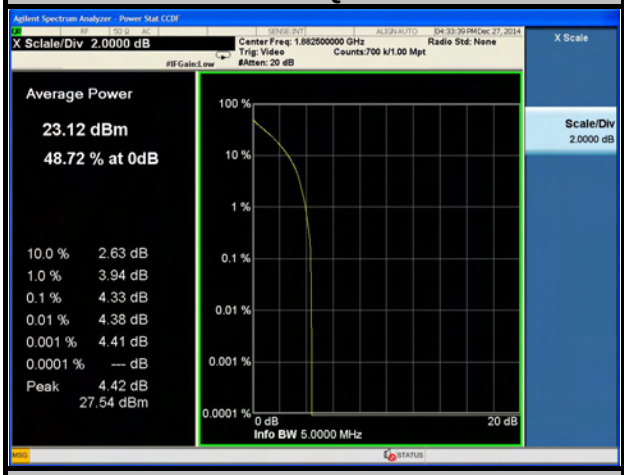
SPECTRUM PLOT OF WORST VALUE

1.4MHz / QPSK

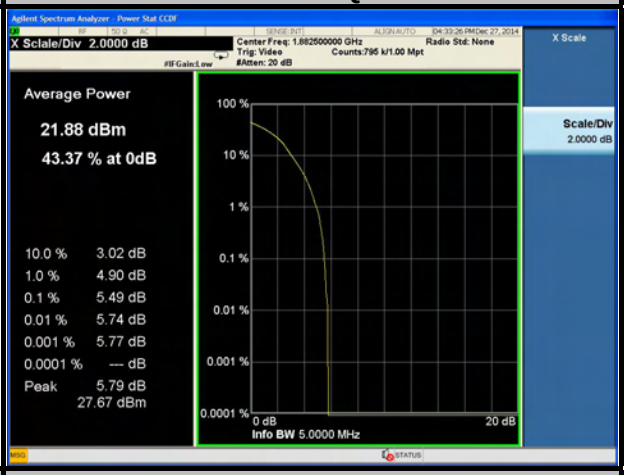
1.4MHz / 16QAM



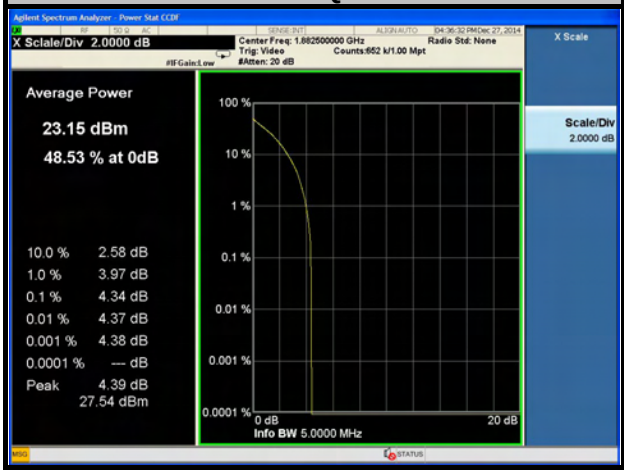
3MHz / QPSK



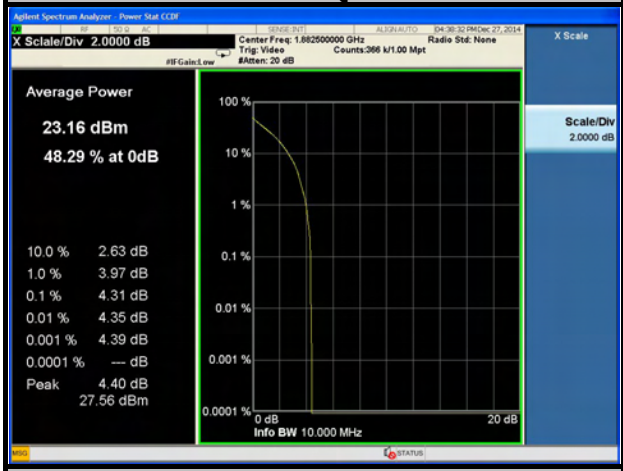
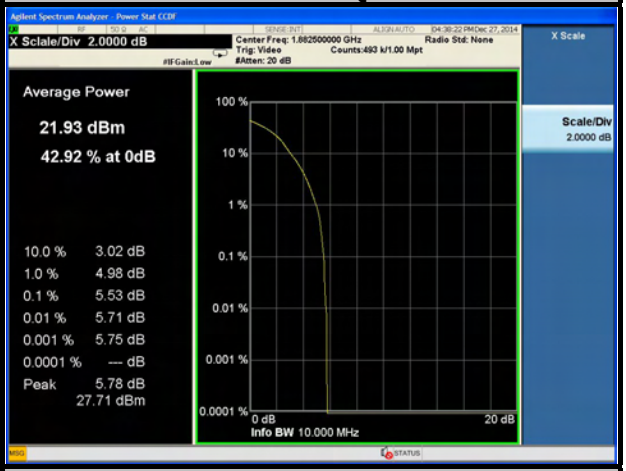
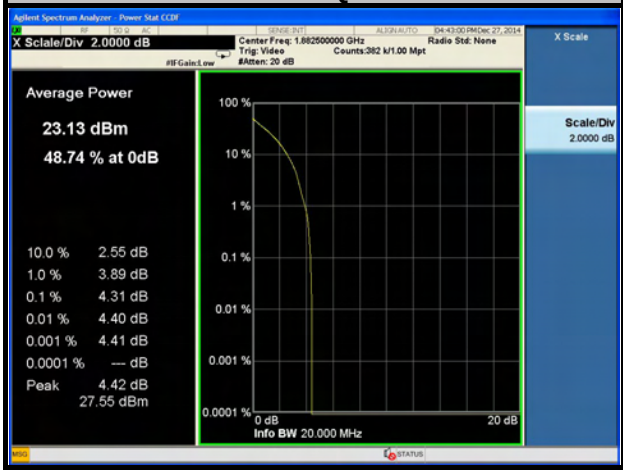
3MHz / 16QAM



5MHz / QPSK



5MHz / 16QAM

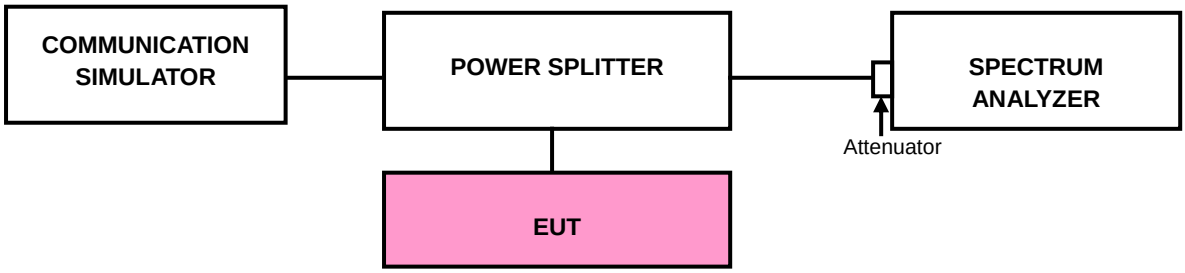
10MHz / QPSK	10MHz / 16QAM
	
15MHz / QPSK	**15MHz / 16QAM**
	
20MHz / QPSK	**20MHz / 16QAM**
	

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.

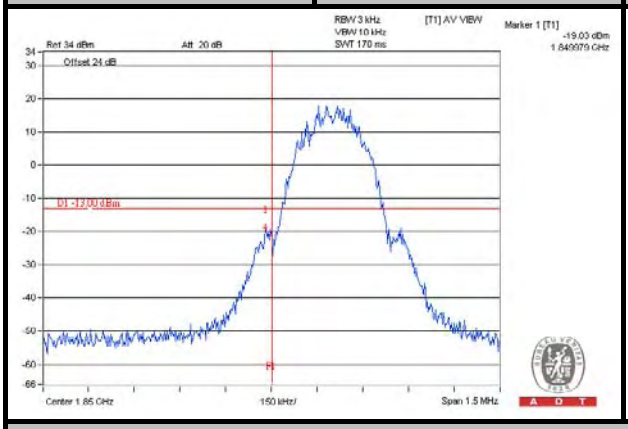
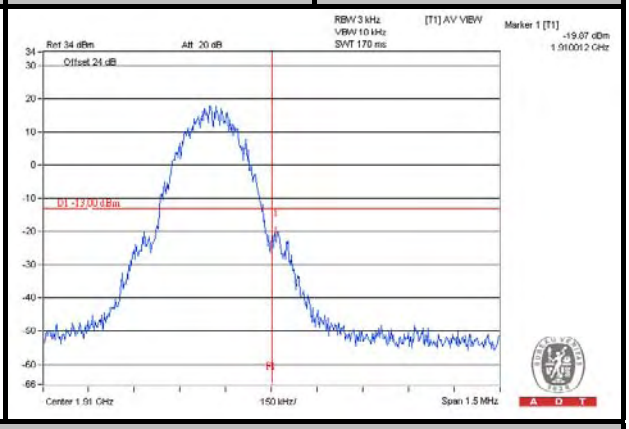
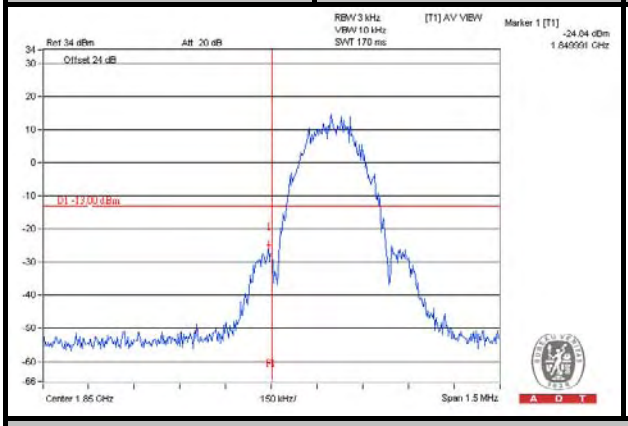
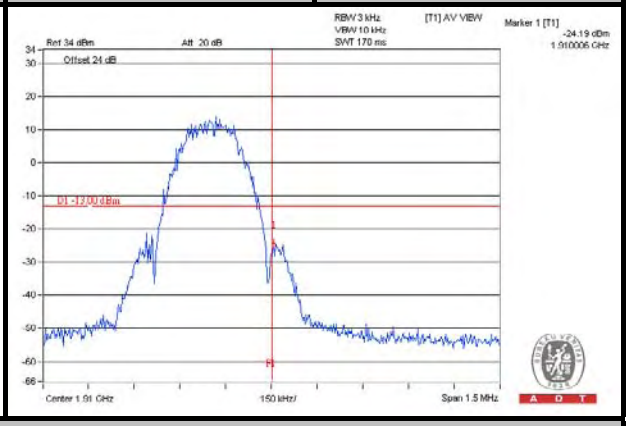
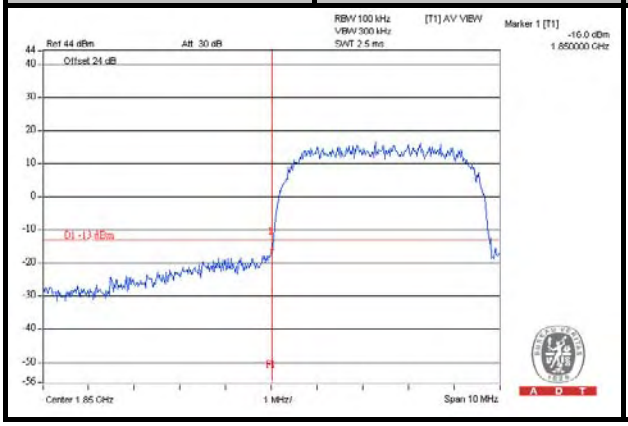
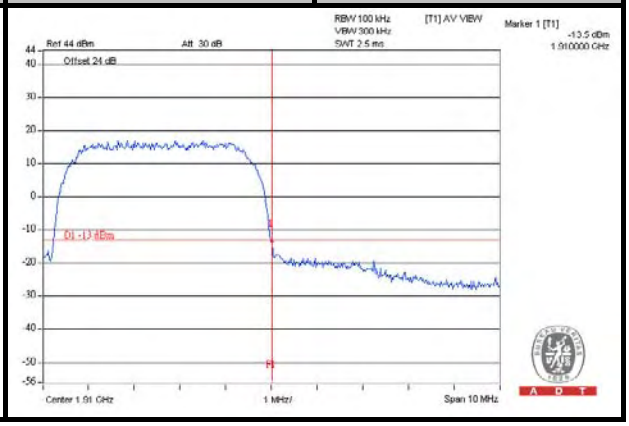
4.5.2 TEST SETUP

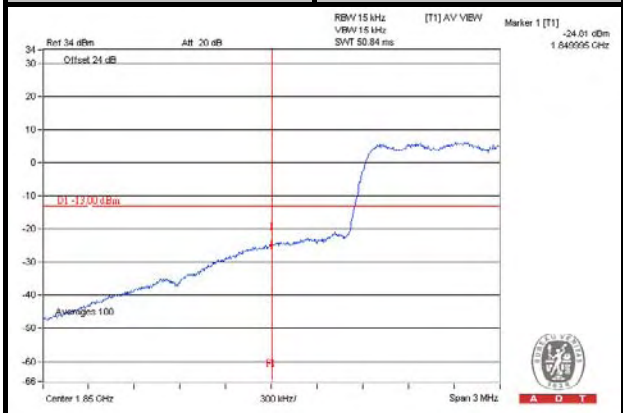
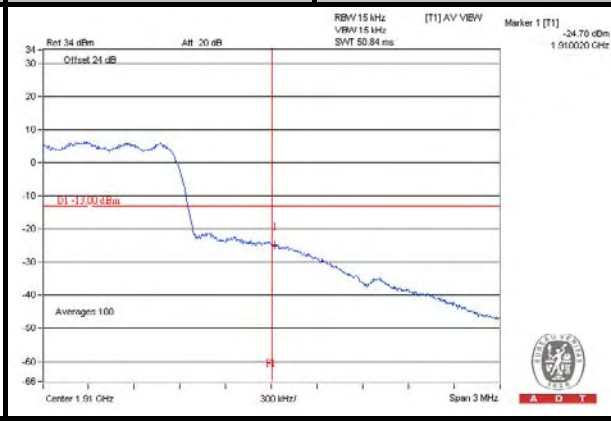


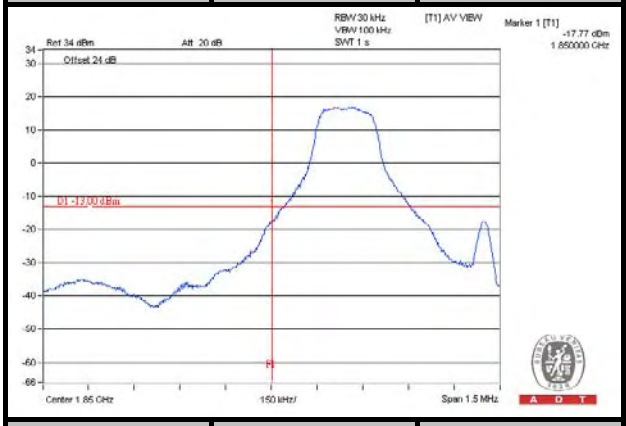
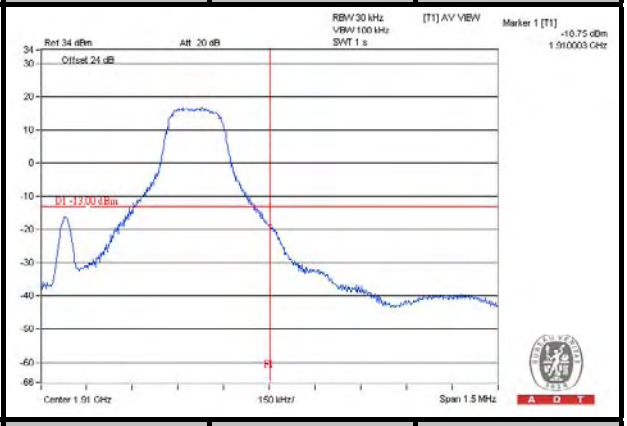
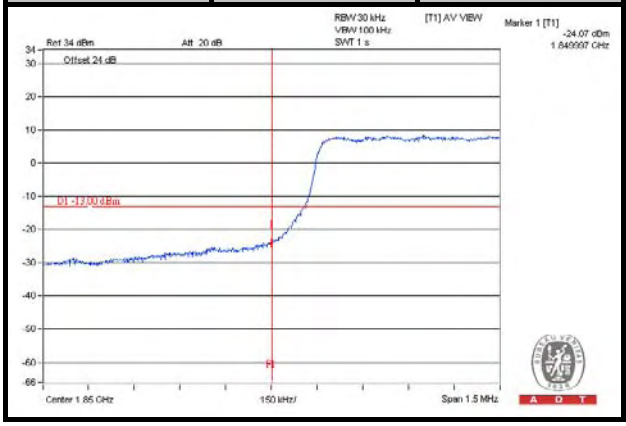
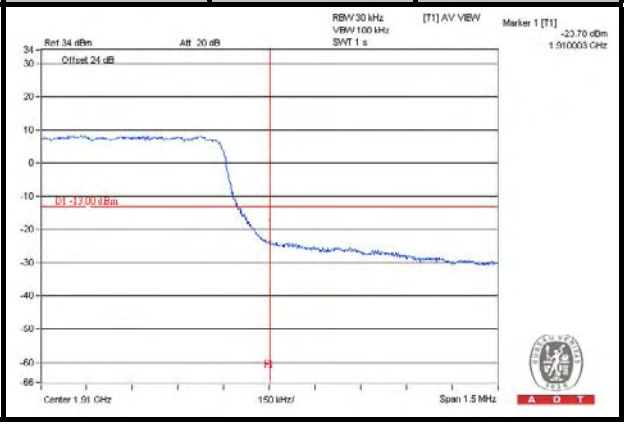
4.5.3 TEST PROCEDURES

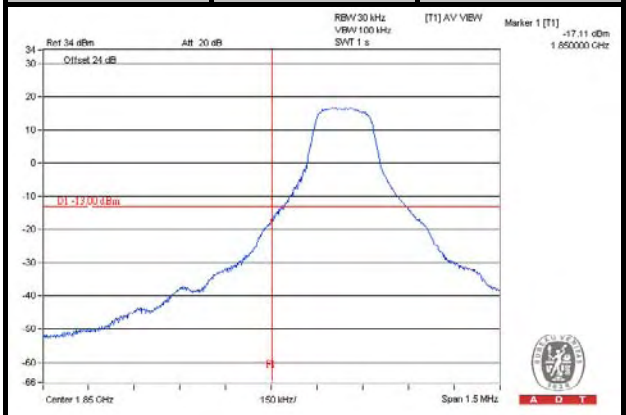
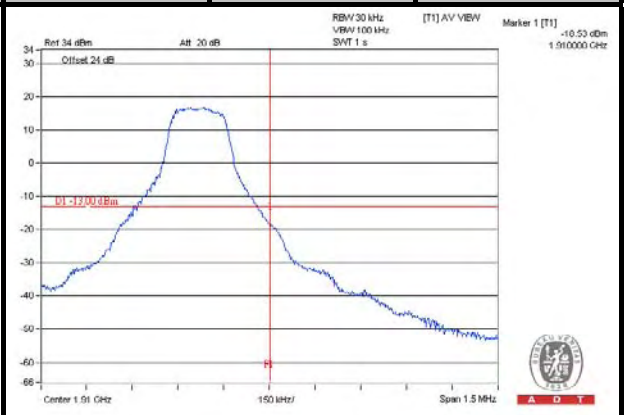
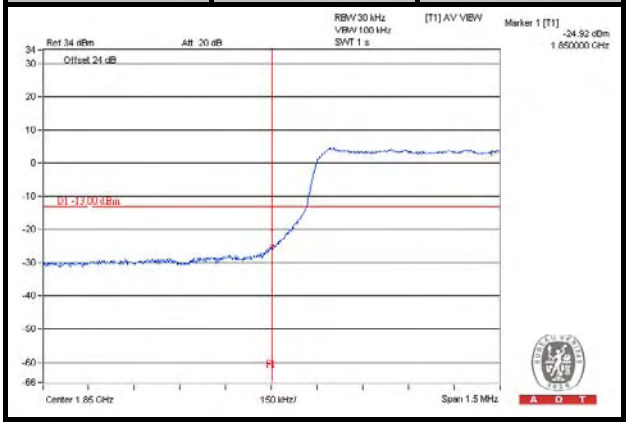
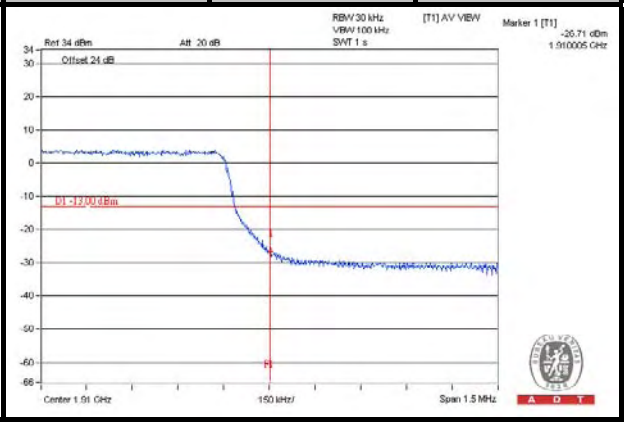
a. All measurements were done at low and high operational frequency range.
b. The center frequency of spectrum is the band edge frequency and s RB of the spectrum is >1% OCCUPIED BANDWIDTH and VB of the spectrum is ≧ 3*RB.
c. Record the max trace plot into the test report.

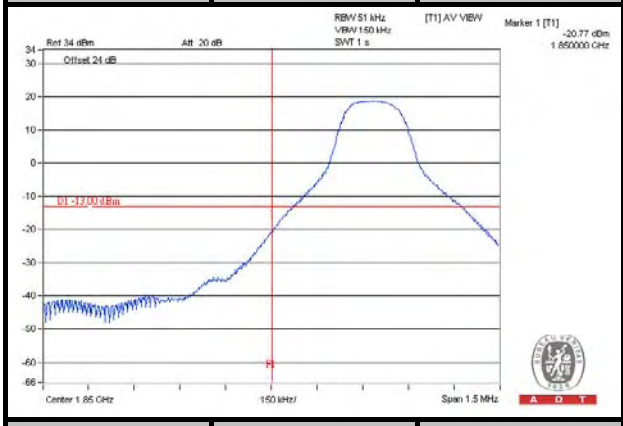
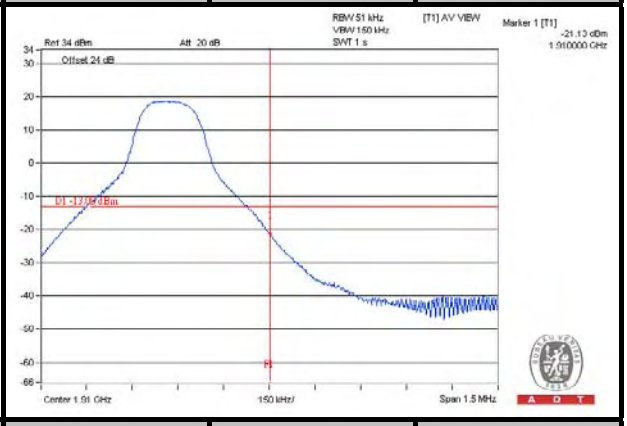
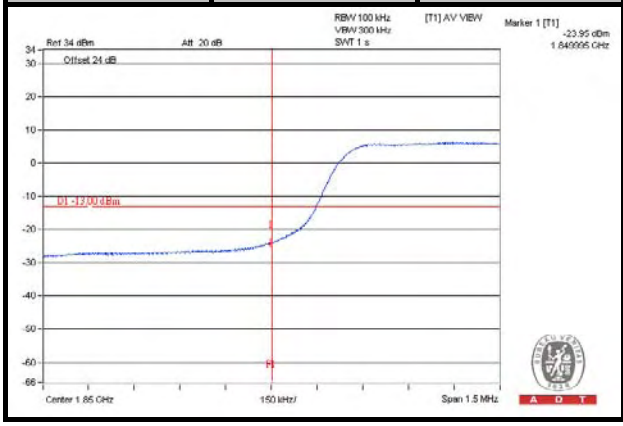
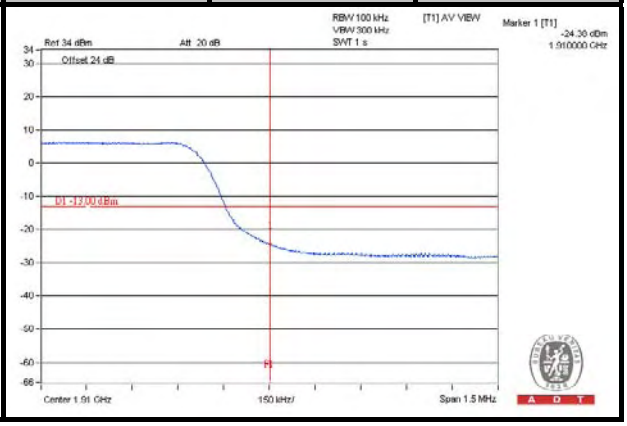
4.5.4 TEST RESULTS

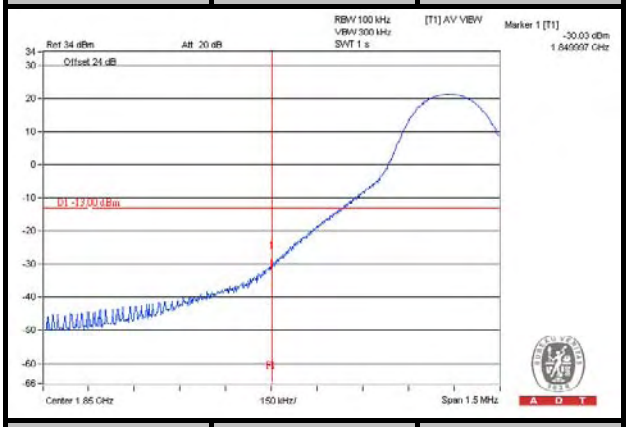
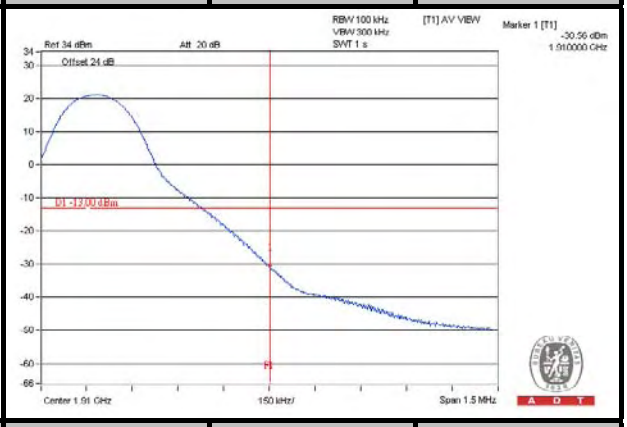
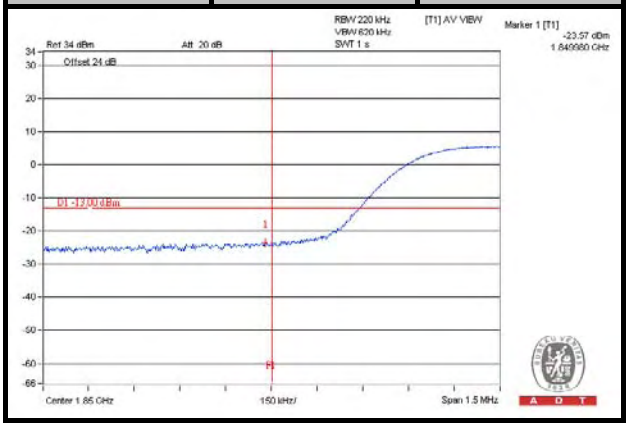
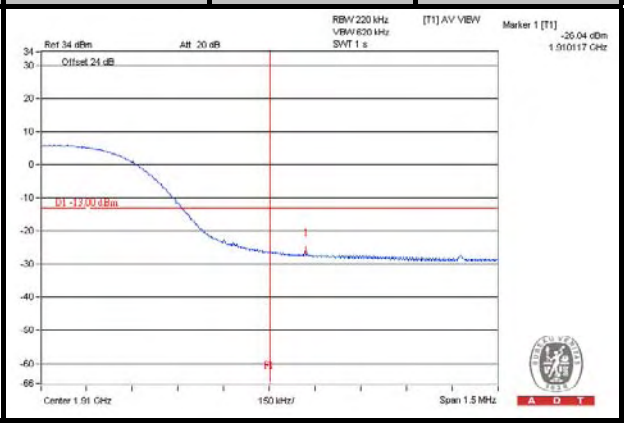
GPRS			
CHANNEL	512	CHANNEL	810
			
EDGE			
CHANNEL	512	CHANNEL	810
			
WCDMA			
CHANNEL	9262	CHANNEL	9538
			

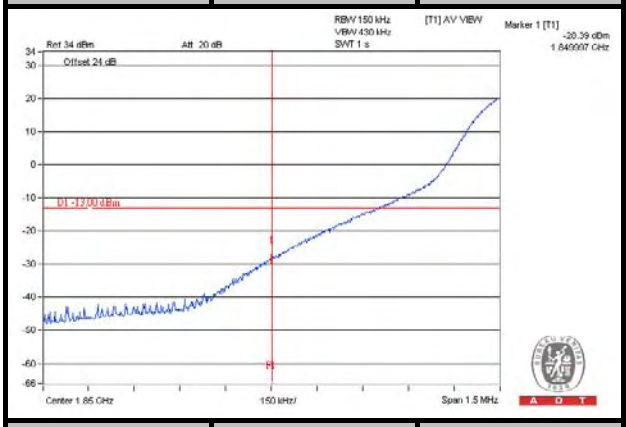
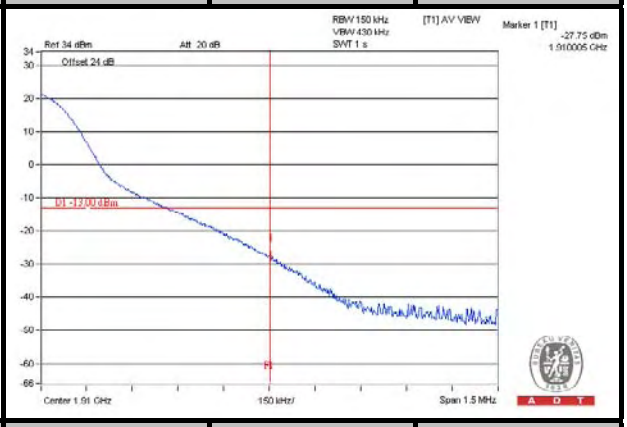
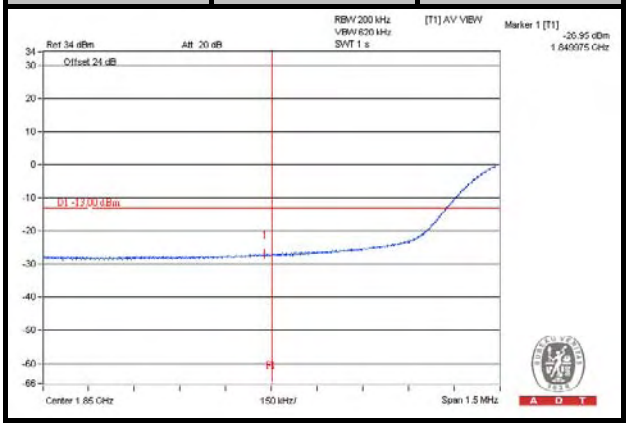
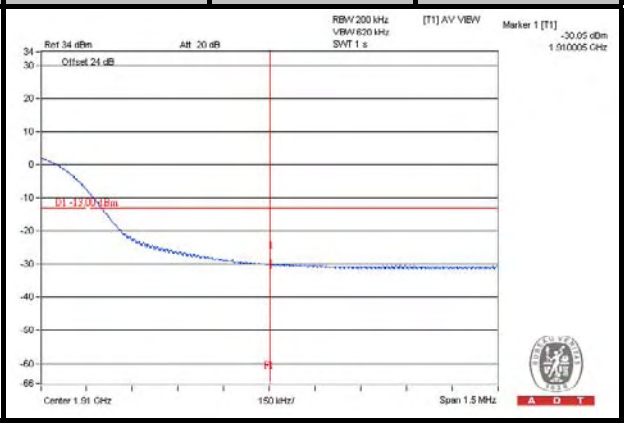
CDMA2000			
CHANNEL	25	CHANNEL	1175
			

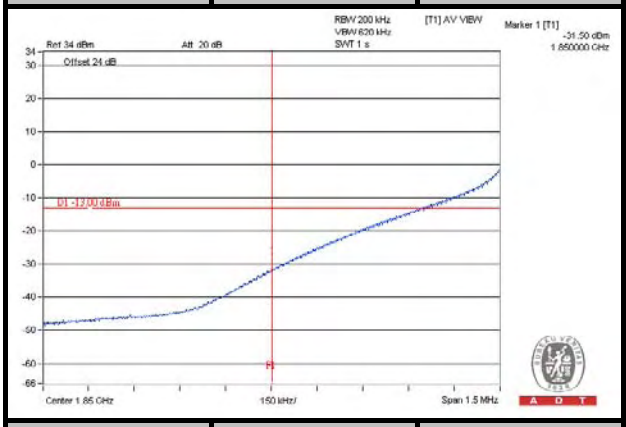
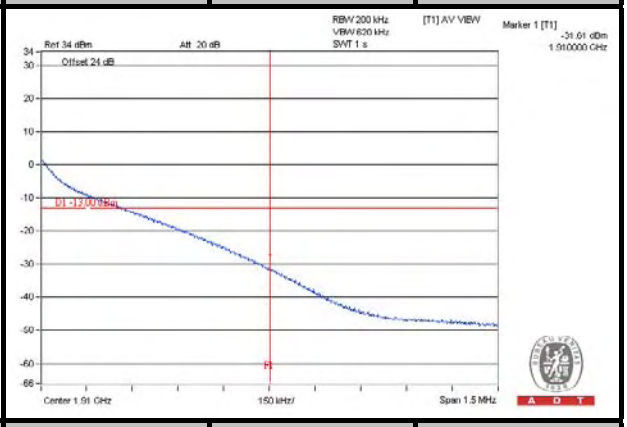
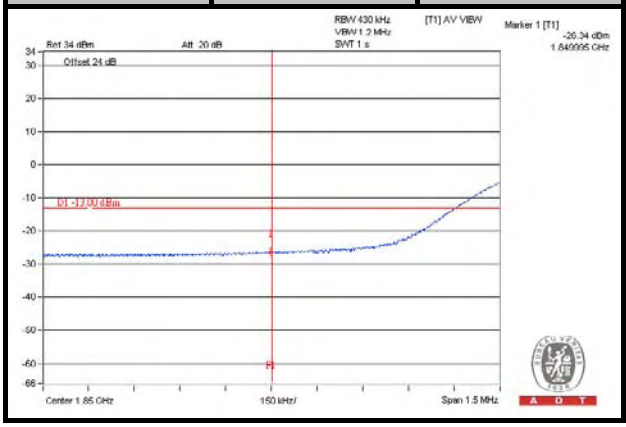
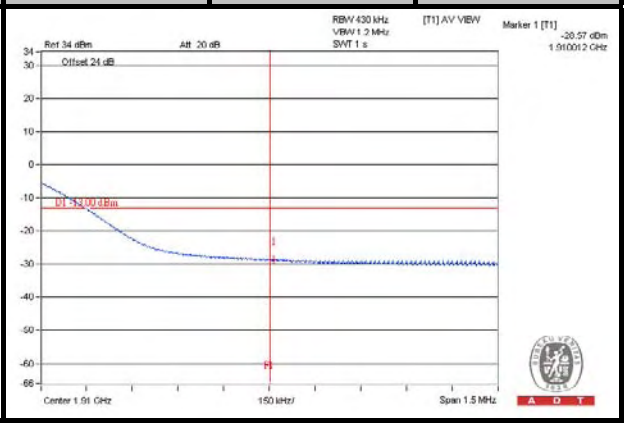
LTE BAND 2					
CHANNEL BANDWIDTH: 1.4MHz					
CHANNEL	18607	1 RB	CHANNEL	19193	1 RB
					
CHANNEL	18607	6 RB	CHANNEL	19193	6 RB
					

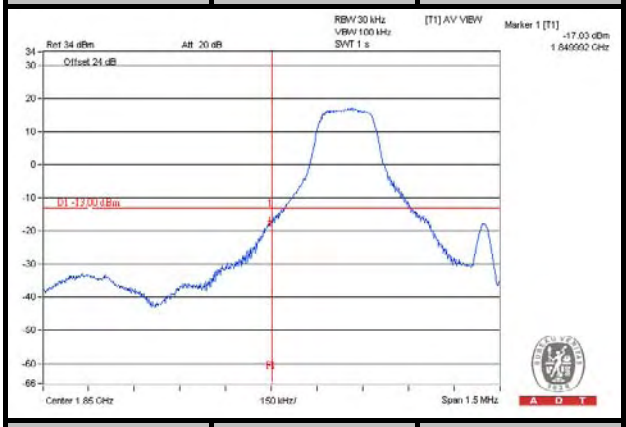
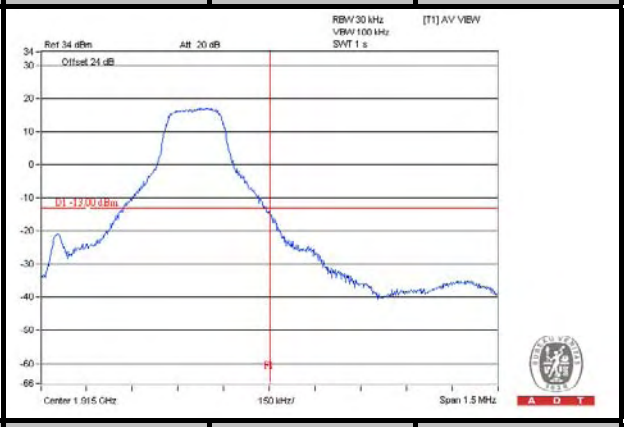
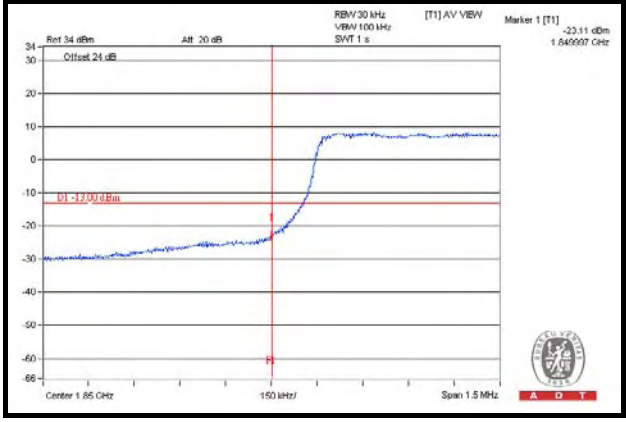
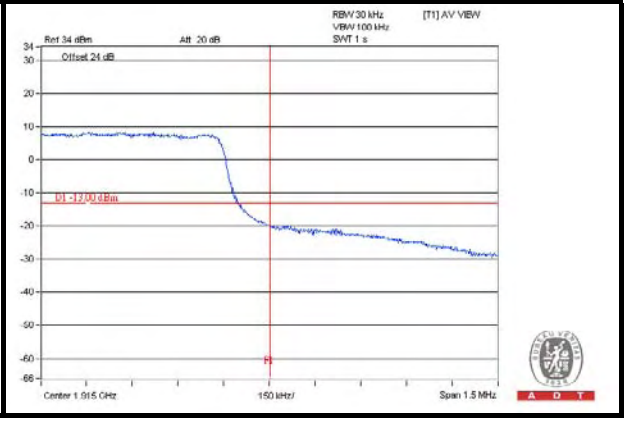
LTE BAND 2					
CHANNEL BANDWIDTH: 3MHz					
CHANNEL	18615	1 RB	CHANNEL	19185	1 RB
					
CHANNEL	18615	15 RB	CHANNEL	19185	15 RB
					

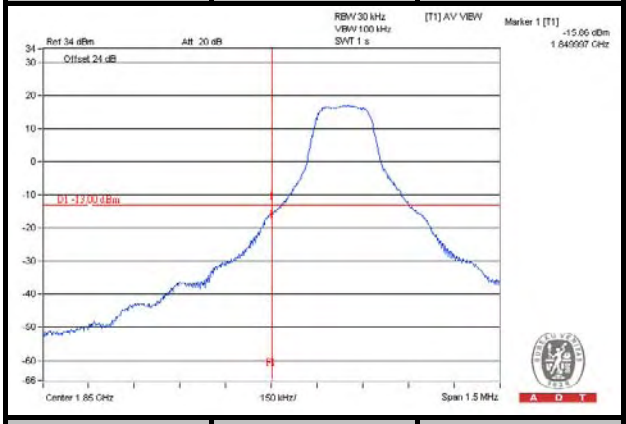
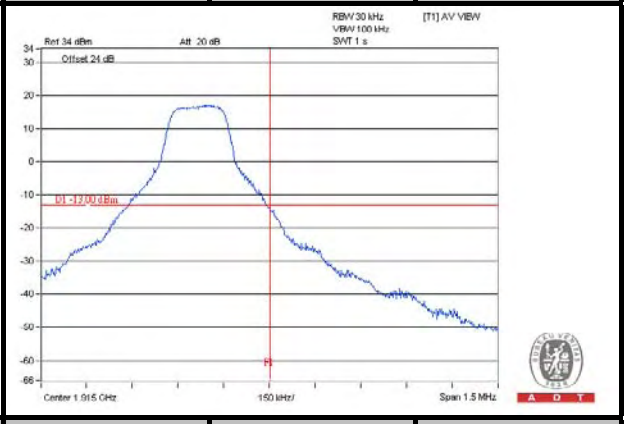
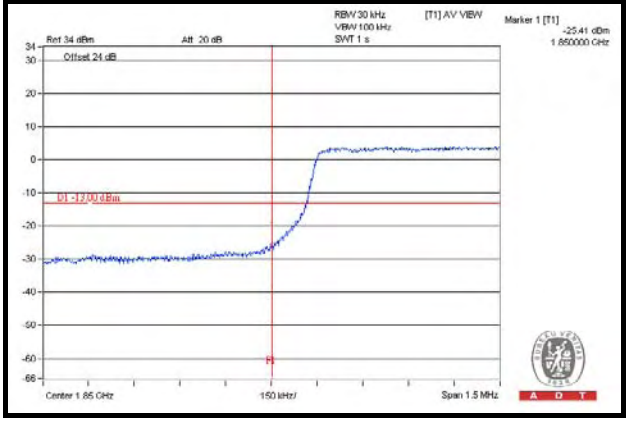
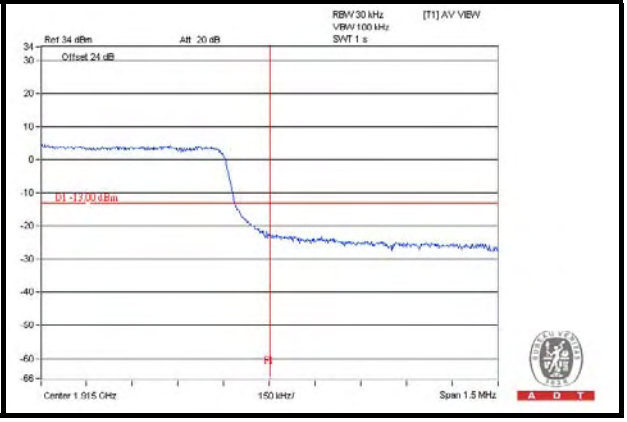
LTE BAND 2					
CHANNEL BANDWIDTH: 5MHz					
CHANNEL	18625	1 RB	CHANNEL	19175	1 RB
					
CHANNEL	18625	25 RB	CHANNEL	19175	25 RB
					

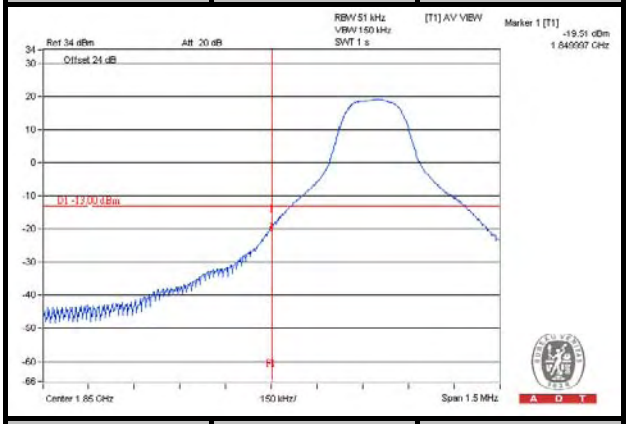
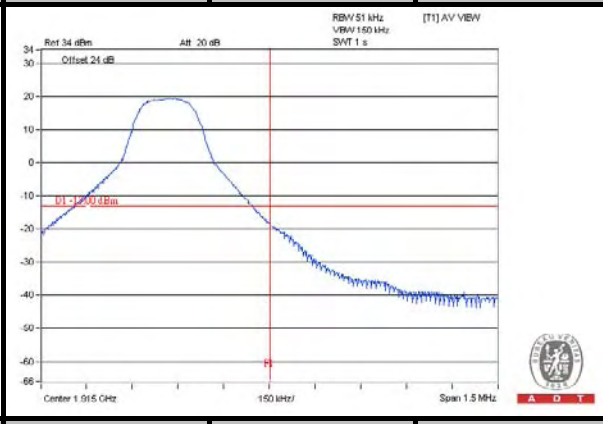
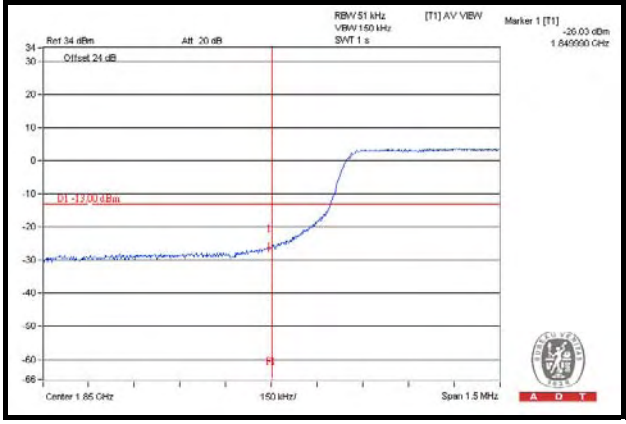
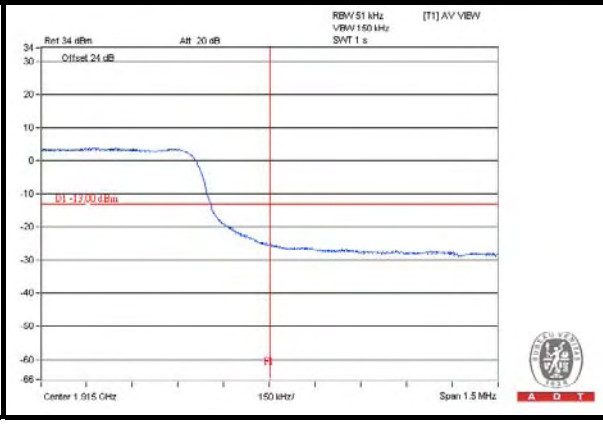
LTE BAND 2					
CHANNEL BANDWIDTH: 10MHz					
CHANNEL	18650	1 RB	CHANNEL	19150	1 RB
					
CHANNEL	18650	50 RB	CHANNEL	19150	50 RB
					

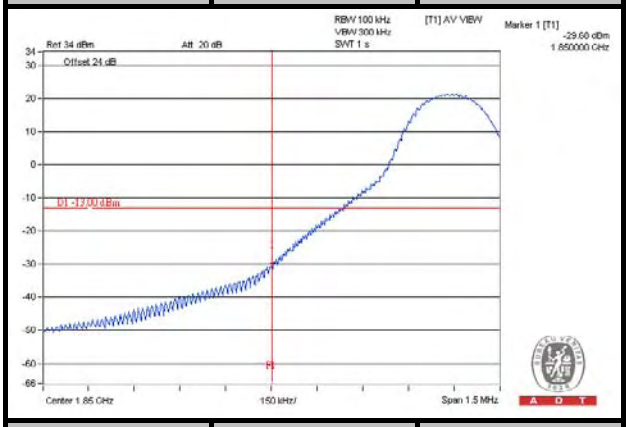
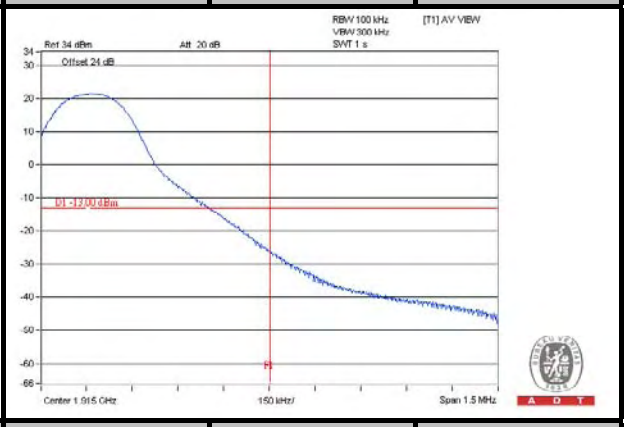
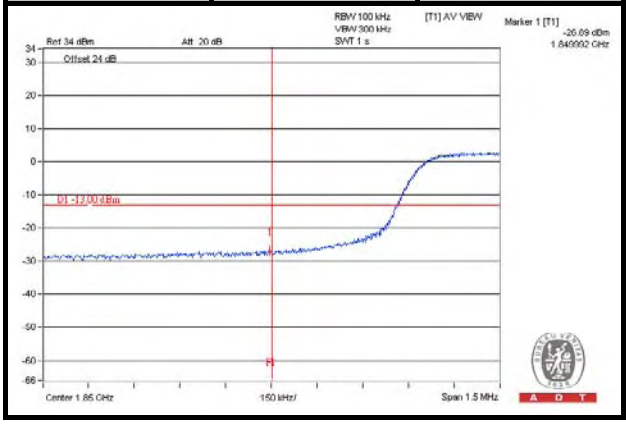
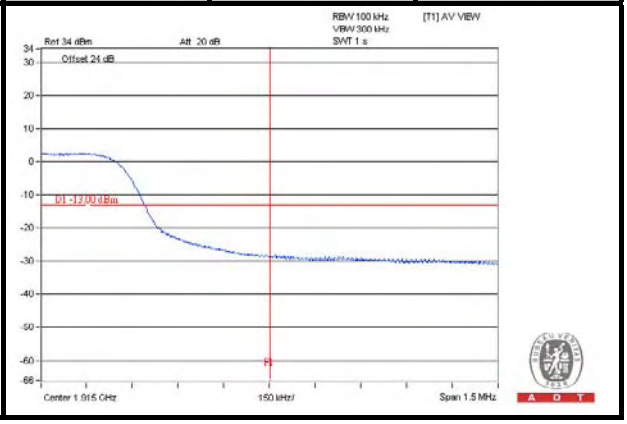
LTE BAND 2					
CHANNEL BANDWIDTH: 15MHz					
CHANNEL	18675	1 RB	CHANNEL	19125	1 RB
					
CHANNEL	18675	75 RB	CHANNEL	19125	75 RB
					

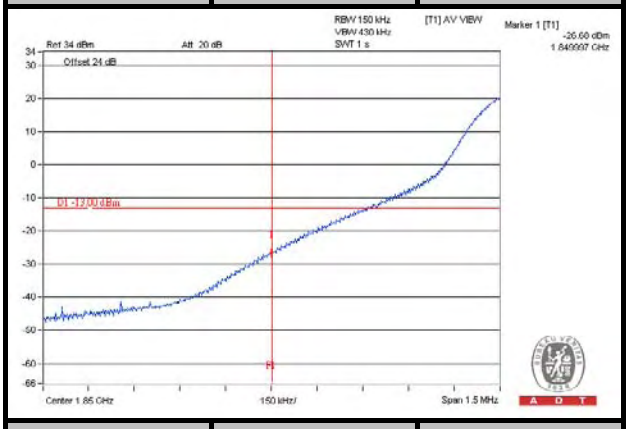
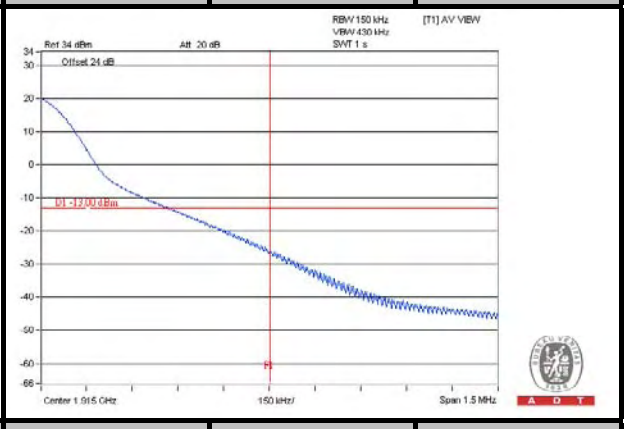
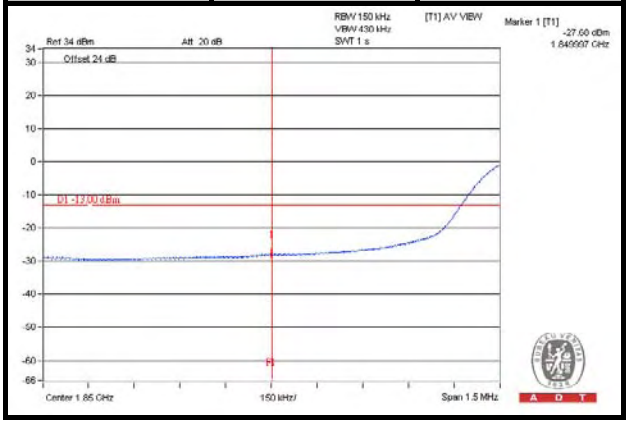
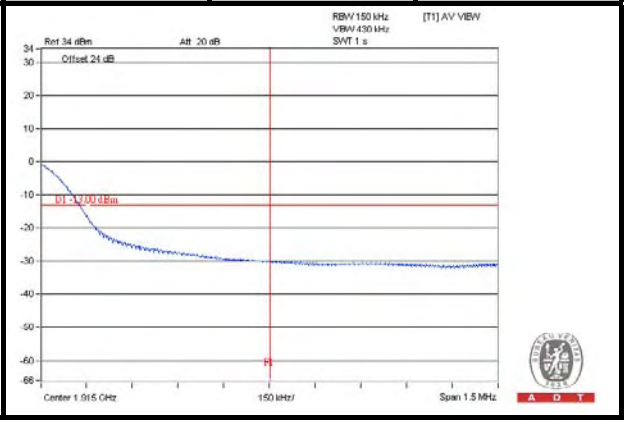
LTE BAND 2					
CHANNEL BANDWIDTH: 20MHz					
CHANNEL	18700	1 RB	CHANNEL	19100	1 RB
					
CHANNEL	18700	100 RB	CHANNEL	19100	100 RB
					

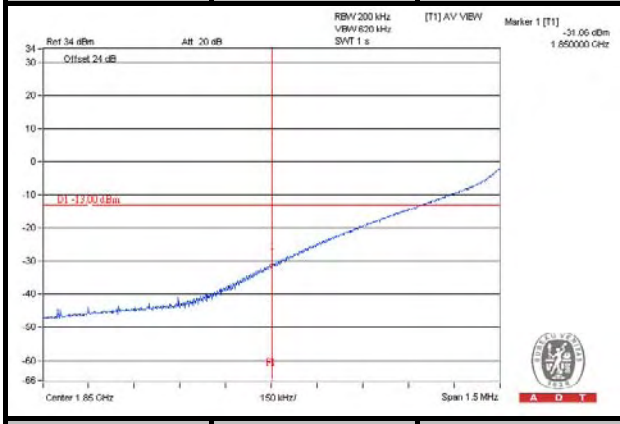
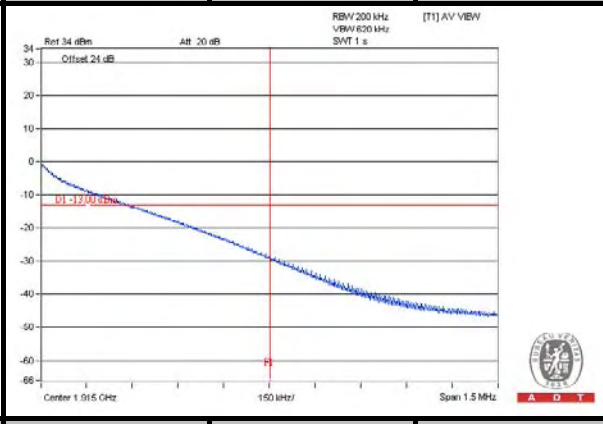
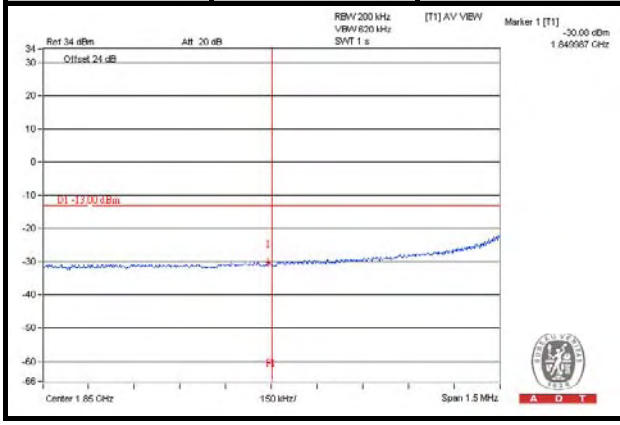
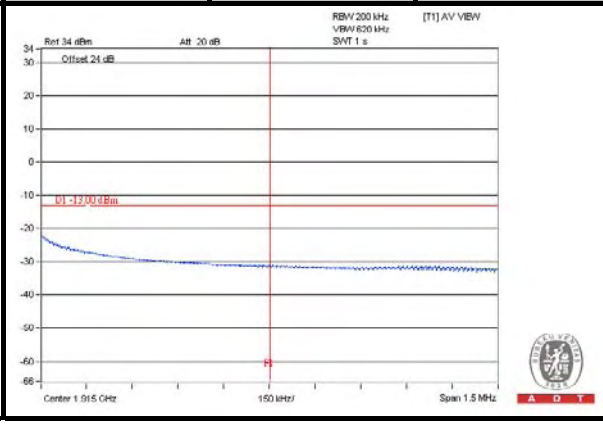
LTE BAND 25					
CHANNEL BANDWIDTH: 1.4MHz					
CHANNEL	26047	1 RB	CHANNEL	26683	1 RB
					
CHANNEL	26047	6 RB	CHANNEL	26683	6 RB
					

LTE BAND 25					
CHANNEL BANDWIDTH: 3MHz					
CHANNEL	26055	1 RB	CHANNEL	26675	1 RB
					
CHANNEL	26055	15 RB	CHANNEL	26675	15 RB
					

LTE BAND 25					
CHANNEL BANDWIDTH: 5MHz					
CHANNEL	26065	1 RB	CHANNEL	26665	1 RB
					
CHANNEL	26065	25 RB	CHANNEL	26665	25 RB
					

LTE BAND 25					
CHANNEL BANDWIDTH: 10MHz					
CHANNEL	26090	1 RB	CHANNEL	26640	1 RB
					
CHANNEL	26090	50 RB	CHANNEL	26640	50 RB
					

LTE BAND 25					
CHANNEL BANDWIDTH: 15MHz					
CHANNEL	26115	1 RB	CHANNEL	26615	1 RB
					
CHANNEL	26115	75 RB	CHANNEL	26615	75 RB
					

LTE BAND 25					
CHANNEL BANDWIDTH: 20MHz					
CHANNEL	26140	1 RB	CHANNEL	26590	1 RB
					
CHANNEL	26140	100 RB	CHANNEL	26590	100 RB
					

4.6 CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

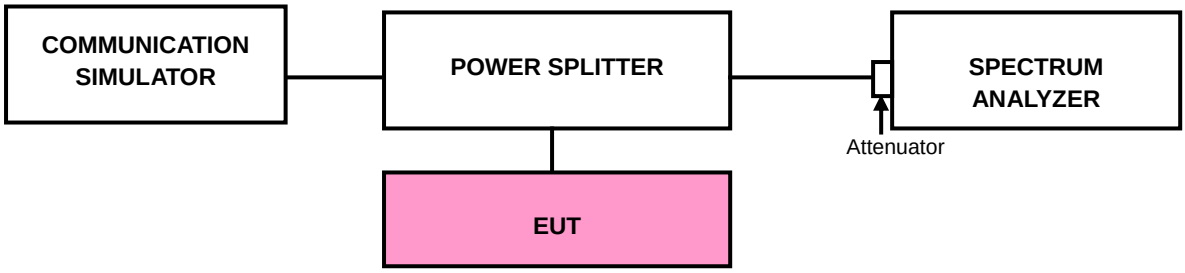
4.6.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

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 is equal to -13dBm.

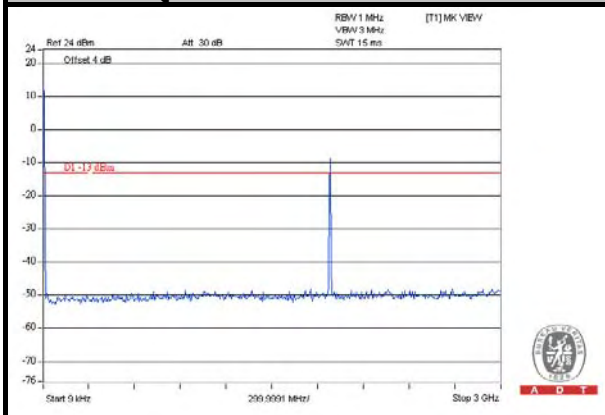
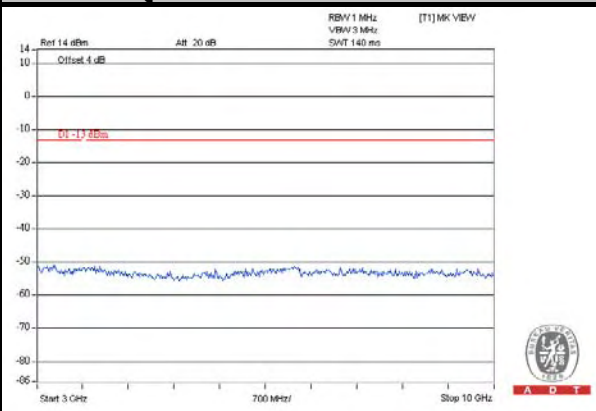
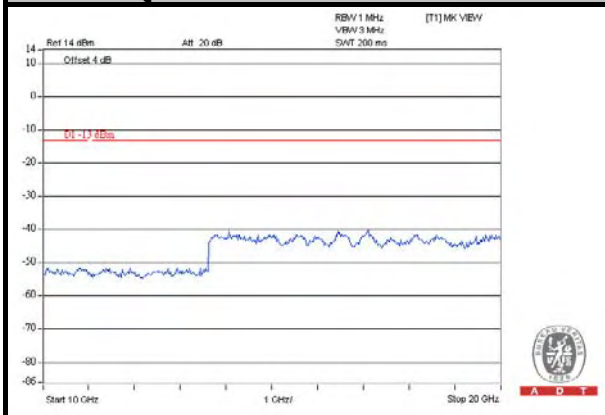
4.6.2 TEST PROCEDURE

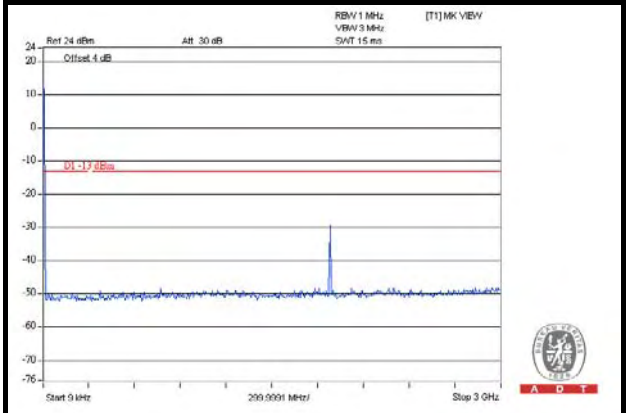
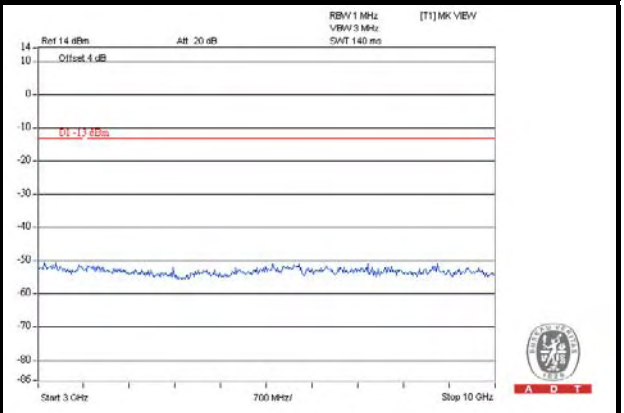
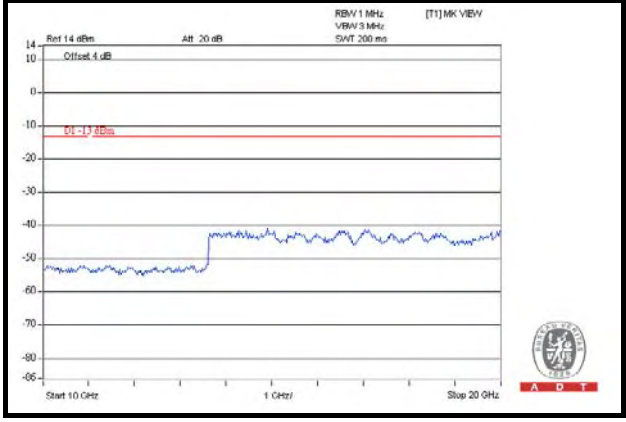
a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
b. Measuring frequency range is from 9kHz to 20GHz. Attenuator is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

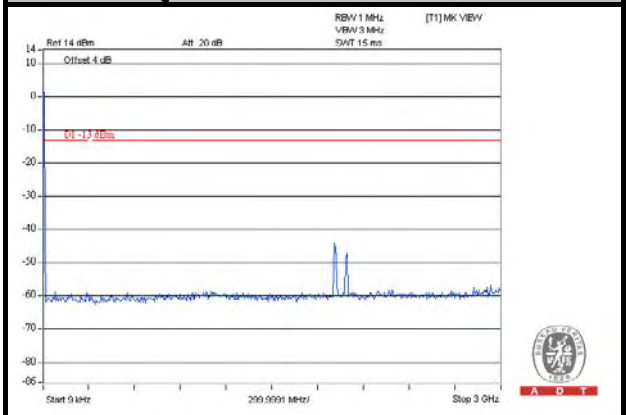
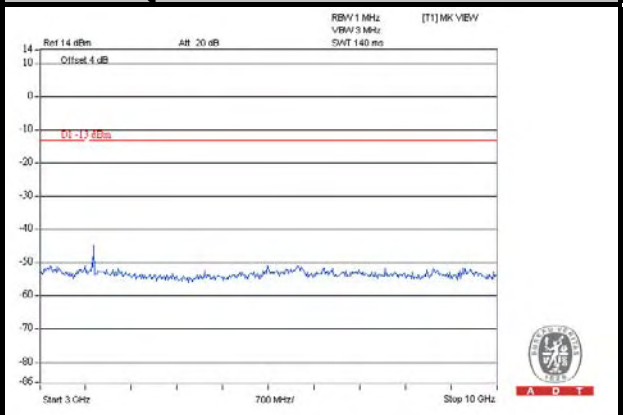
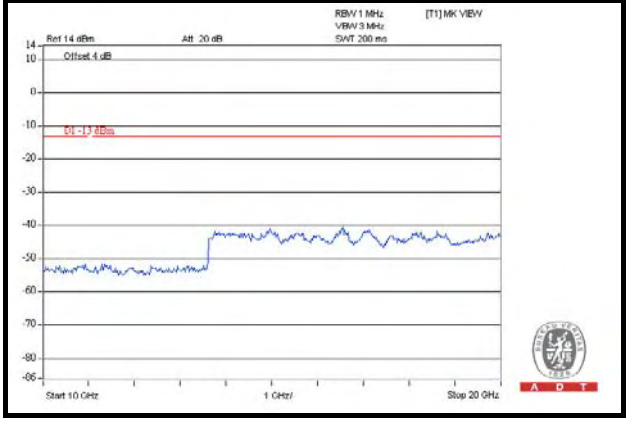
4.6.3 TEST SETUP

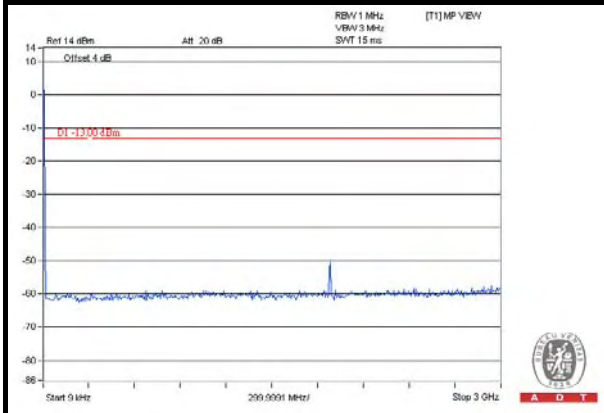
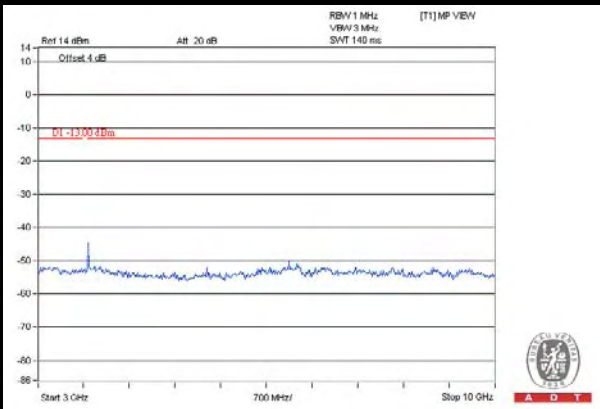
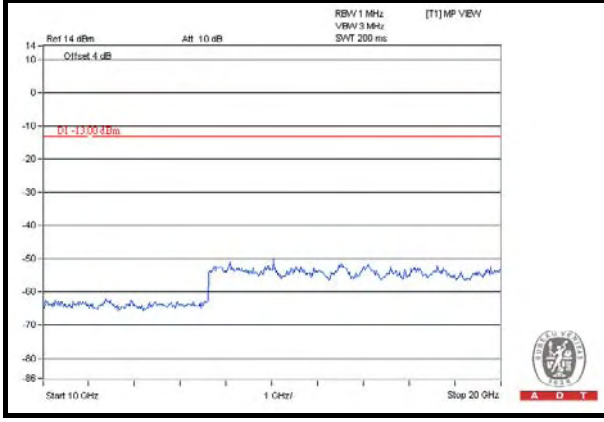


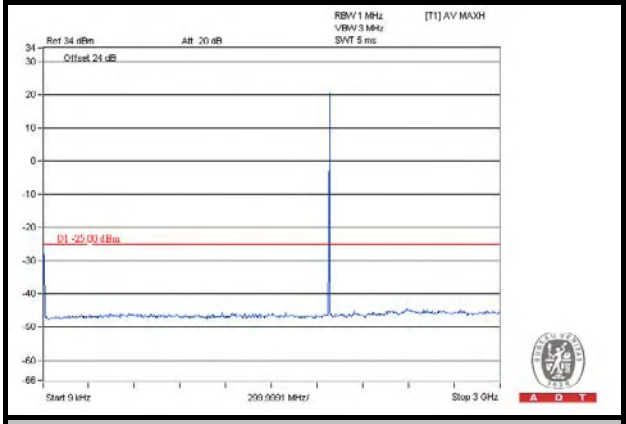
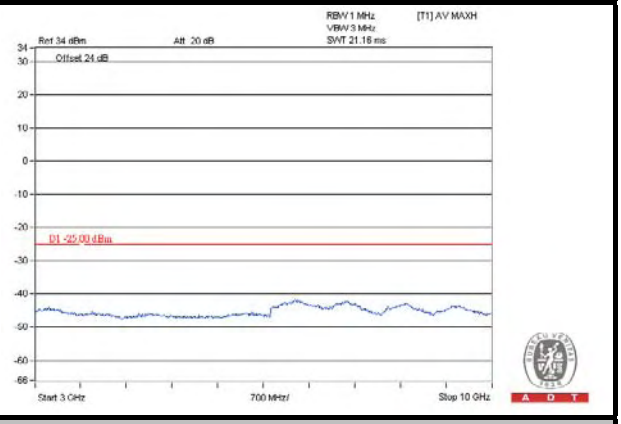
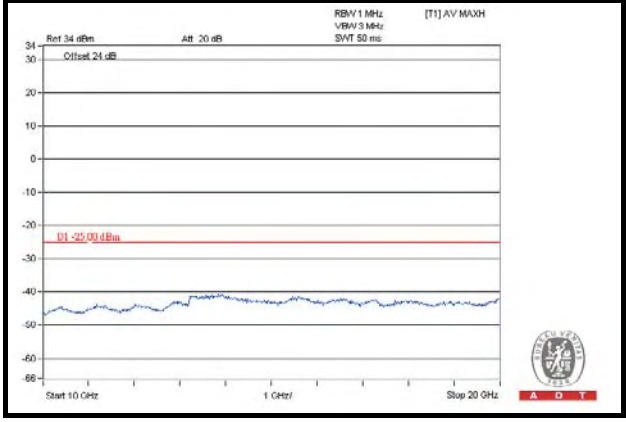
4.6.4 TEST RESULTS

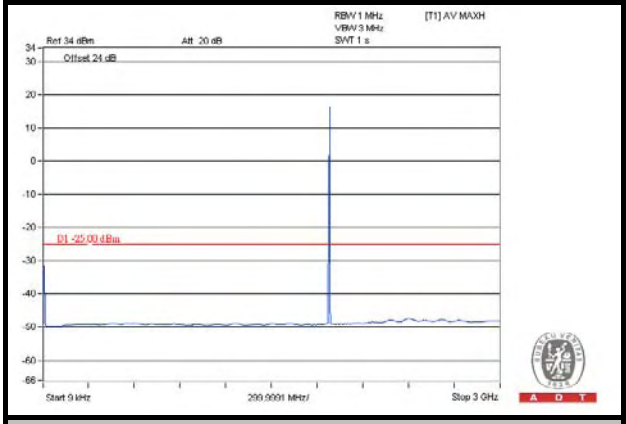
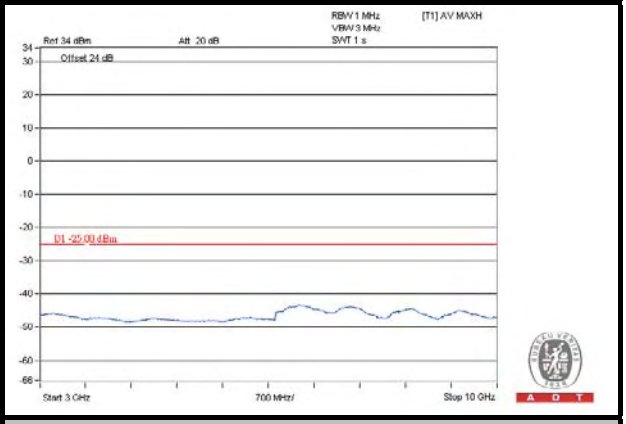
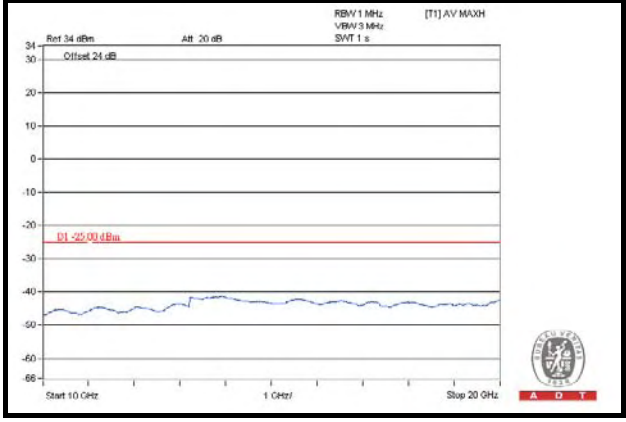
GPRS	
CHANNEL 661	
FREQUENCY RANGE: 9kHz~3GHz	FREQUENCY RANGE: 3GHz~10GHz
	
FREQUENCY RANGE: 10GHz~20GHz	
	

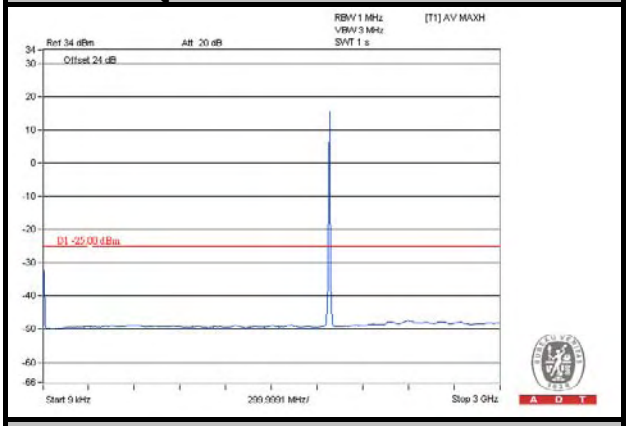
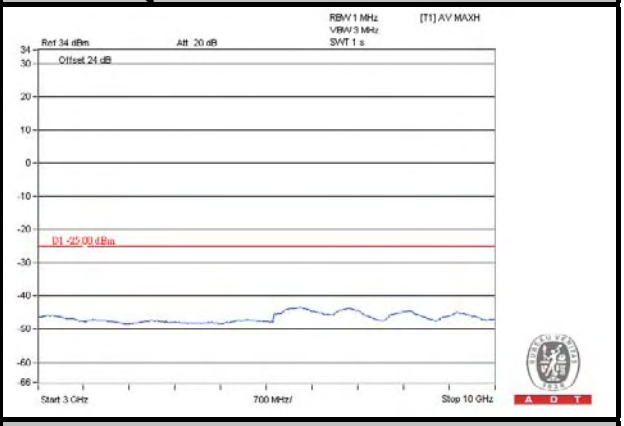
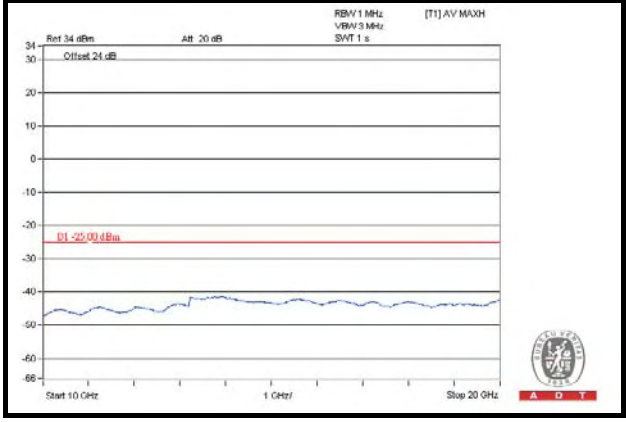
EDGE	
CHANNEL 661	
FREQUENCY RANGE: 9kHz~3GHz	FREQUENCY RANGE: 3GHz~10GHz
	
FREQUENCY RANGE: 10GHz~20GHz	
	

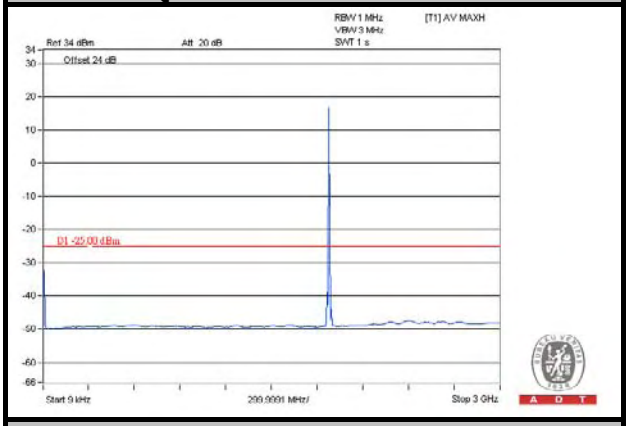
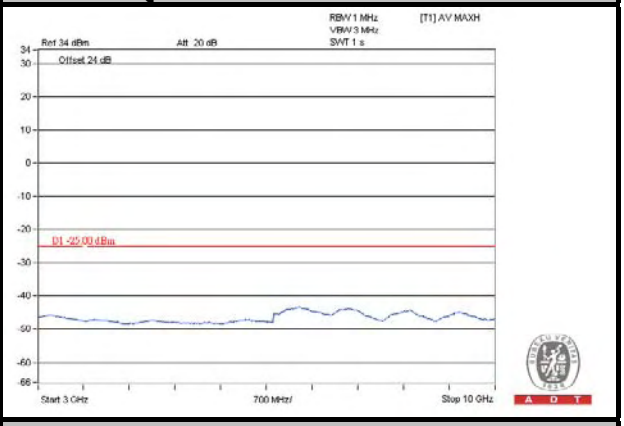
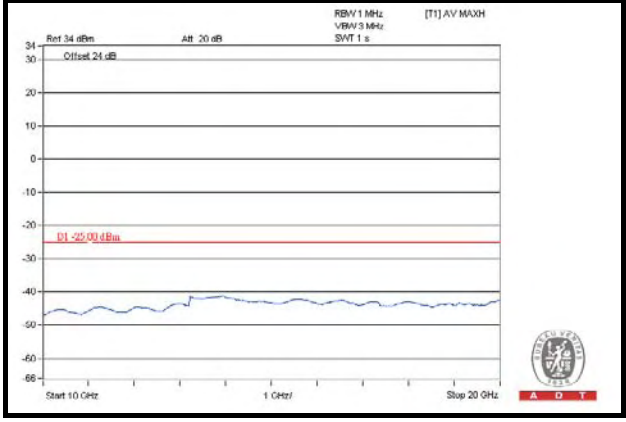
WCDMA	
CHANNEL 9400	
FREQUENCY RANGE: 9kHz~3GHz	FREQUENCY RANGE: 3GHz~10GHz
	
FREQUENCY RANGE: 10GHz~20GHz	
	

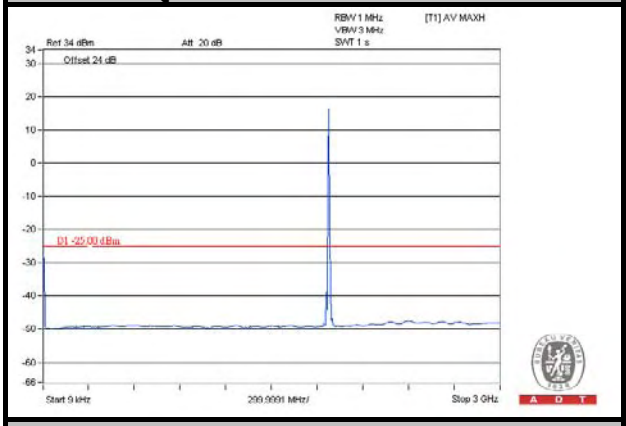
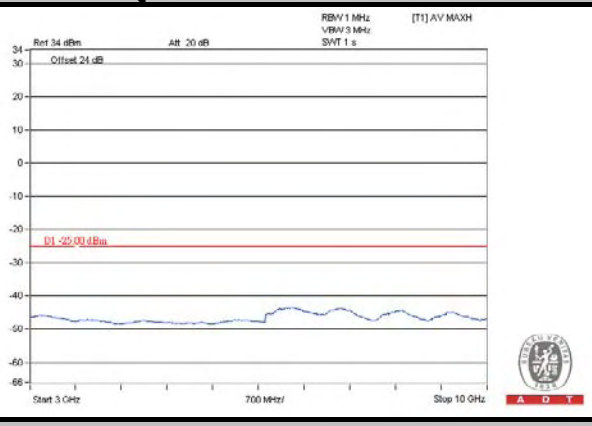
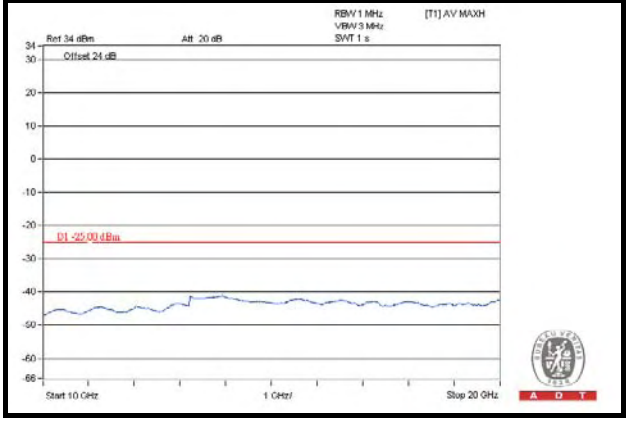
CDMA2000	
CHANNEL 600	
FREQUENCY RANGE: 9kHz~3GHz	FREQUENCY RANGE: 3GHz~10GHz
	
FREQUENCY RANGE: 10GHz~20GHz	
	

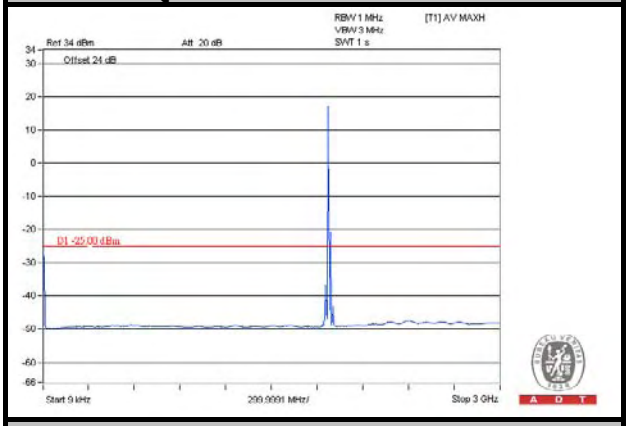
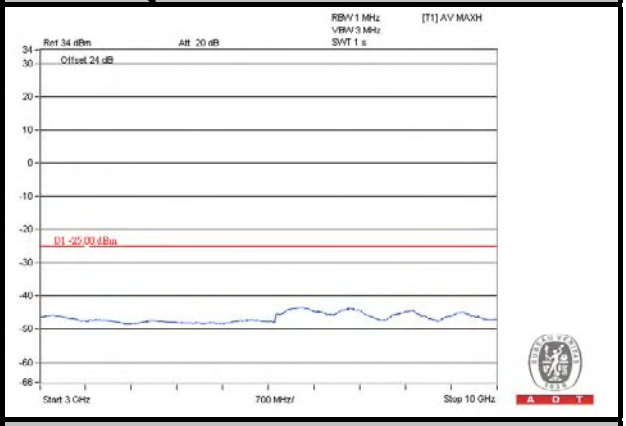
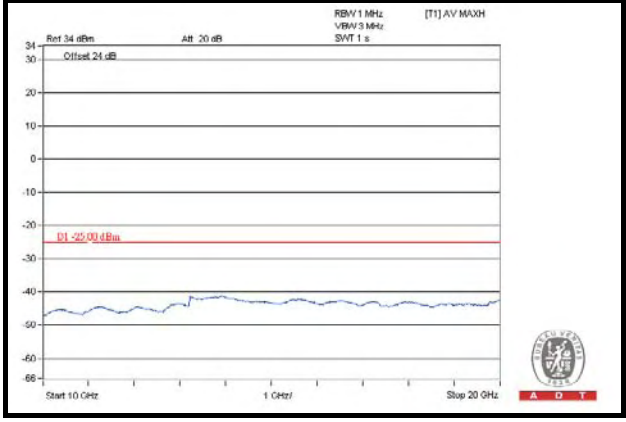
LTE BAND 2 (Channel Bandwidth: 1.4MHz)	
CHANNEL 18900	
FREQUENCY RANGE: 9kHz~3GHz	FREQUENCY RANGE: 3GHz~10GHz
	
FREQUENCY RANGE: 10GHz~20GHz	
	

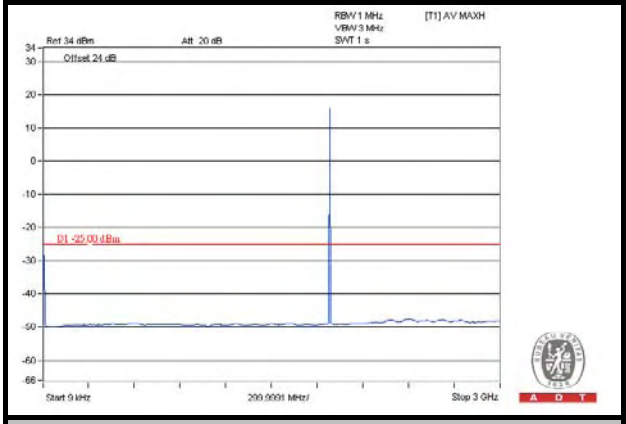
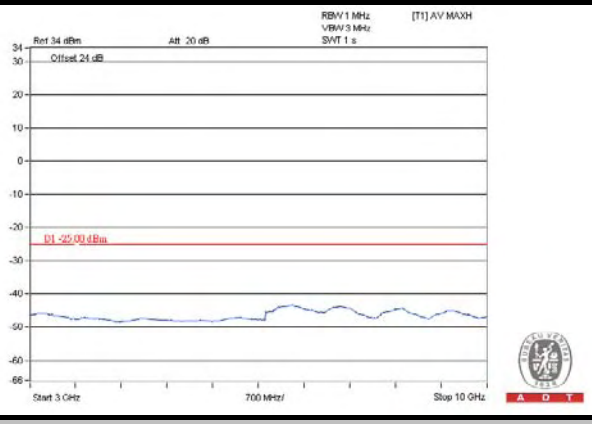
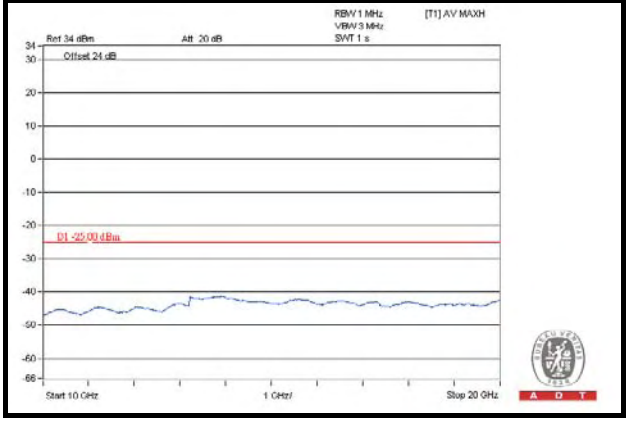
LTE BAND 2 (Channel Bandwidth: 3MHz)	
CHANNEL 18900	
FREQUENCY RANGE: 9kHz~3GHz	FREQUENCY RANGE: 3GHz~10GHz
	
FREQUENCY RANGE: 10GHz~20GHz	
	

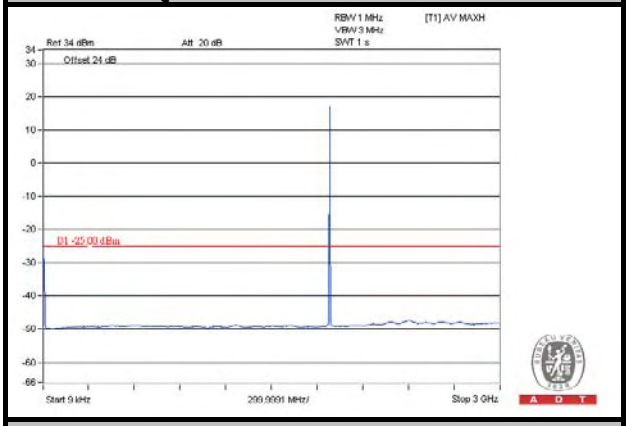
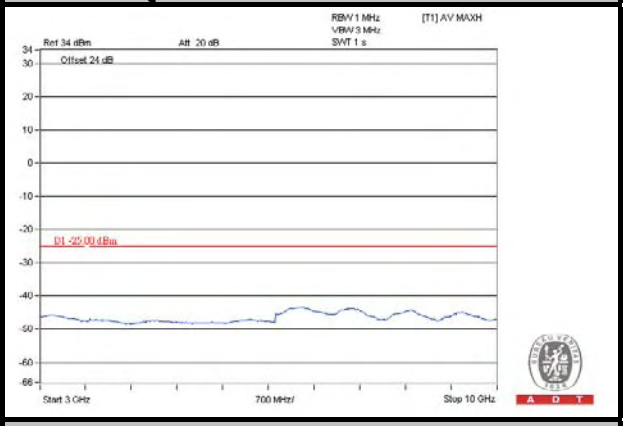
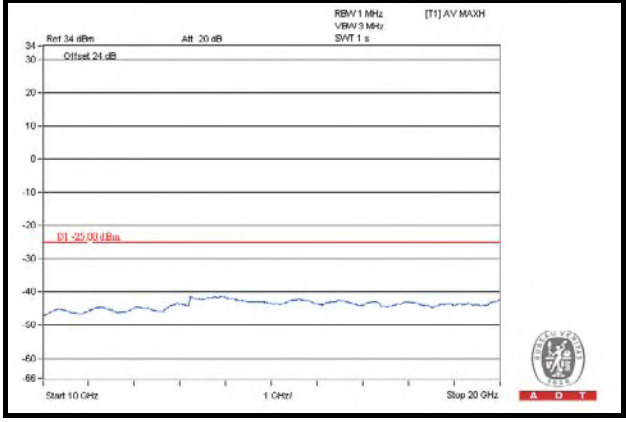
LTE BAND 2 (Channel Bandwidth: 5MHz)	
CHANNEL 18900	
FREQUENCY RANGE: 9kHz~3GHz	FREQUENCY RANGE: 3GHz~10GHz
	
FREQUENCY RANGE: 10GHz~20GHz	
	

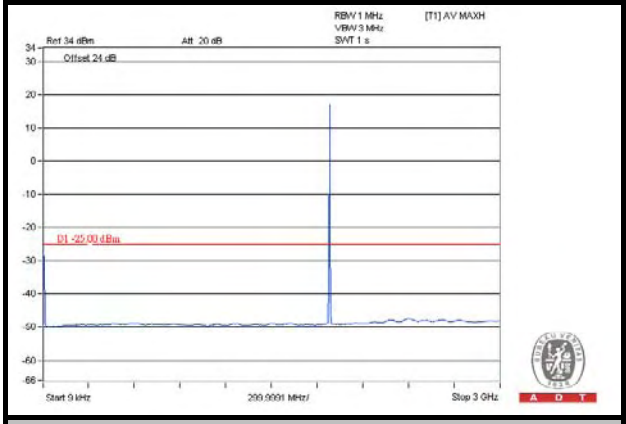
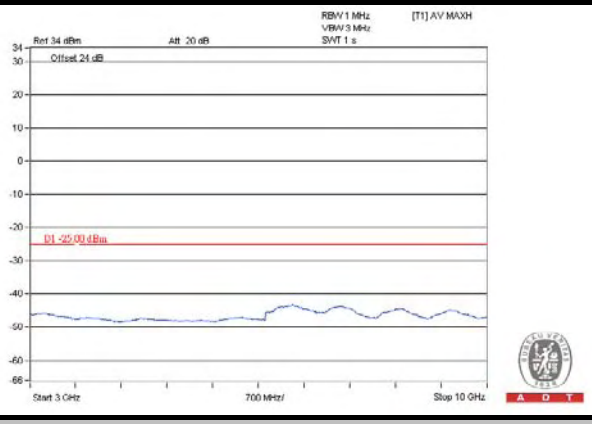
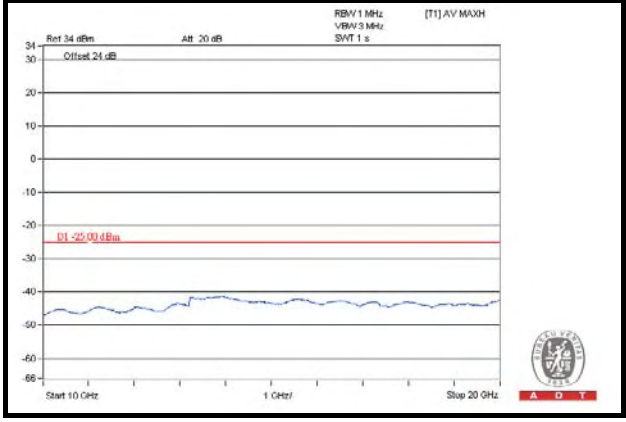
LTE BAND 2 (Channel Bandwidth: 10MHz)	
CHANNEL 18900	
FREQUENCY RANGE: 9kHz~3GHz	FREQUENCY RANGE: 3GHz~10GHz
	
FREQUENCY RANGE: 10GHz~20GHz	
	

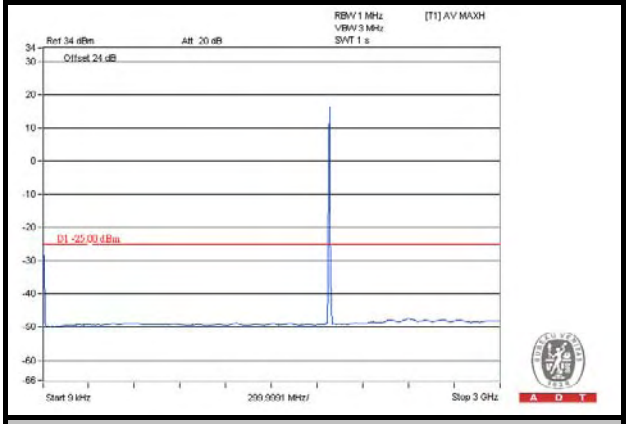
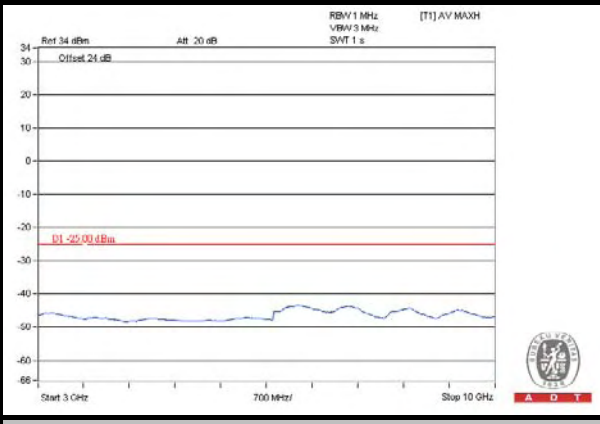
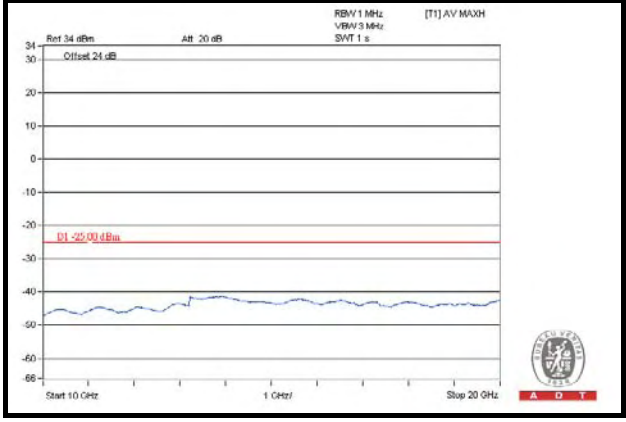
LTE BAND 2 (Channel Bandwidth: 15MHz)	
CHANNEL 18900	
FREQUENCY RANGE: 9kHz~3GHz	FREQUENCY RANGE: 3GHz~10GHz
	
FREQUENCY RANGE: 10GHz~20GHz	
	

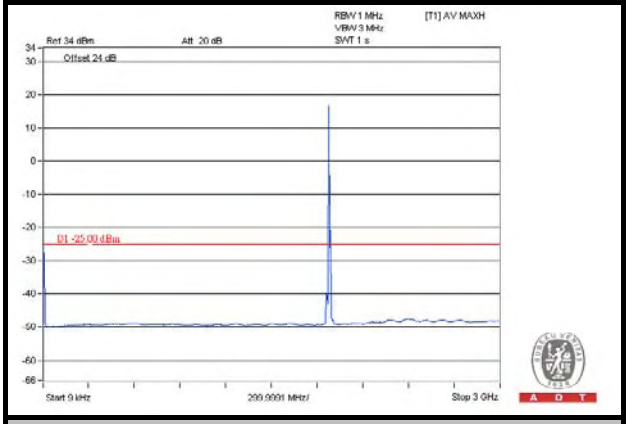
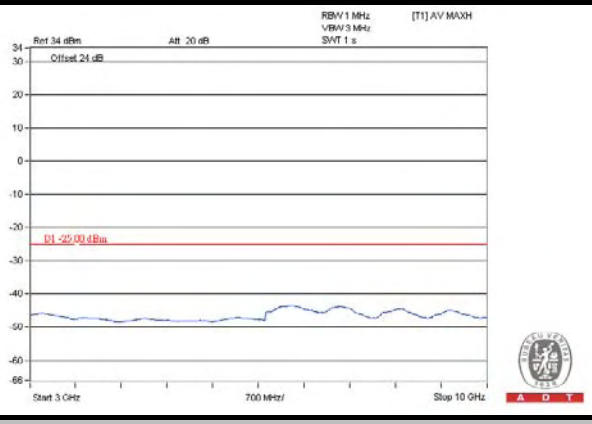
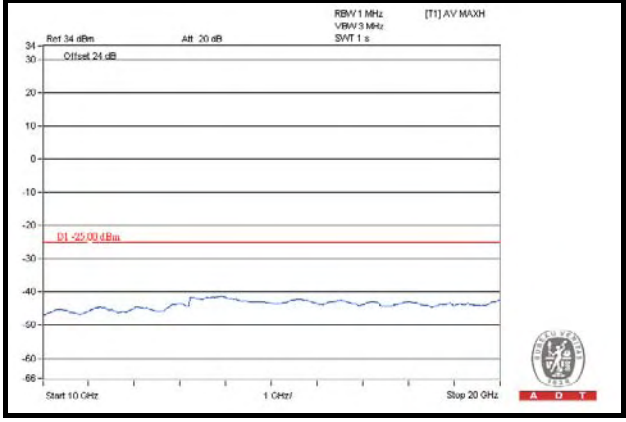
LTE BAND 2 (Channel Bandwidth: 20MHz)	
CHANNEL 18900	
FREQUENCY RANGE: 9kHz~3GHz	FREQUENCY RANGE: 3GHz~10GHz
	
FREQUENCY RANGE: 10GHz~20GHz	
	

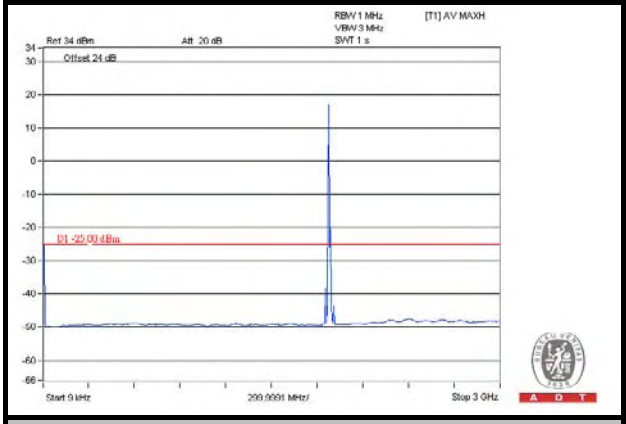
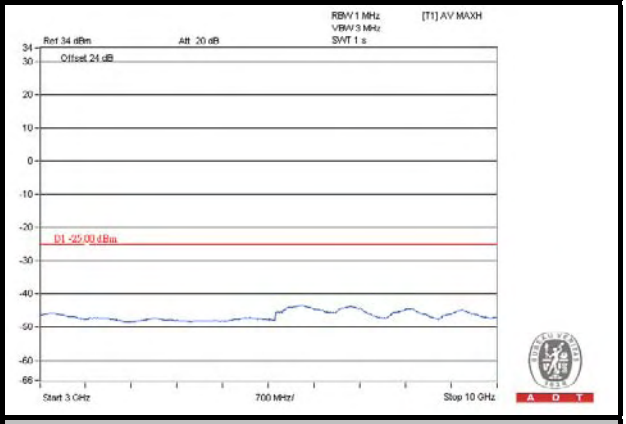
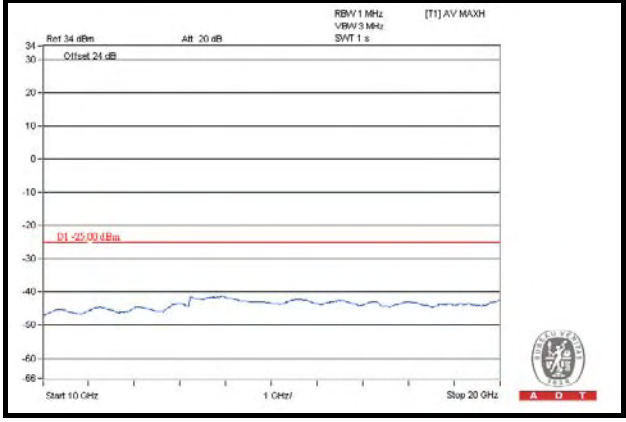
LTE BAND 25 (Channel Bandwidth: 1.4MHz)	
CHANNEL 26365	
FREQUENCY RANGE: 9kHz~3GHz	FREQUENCY RANGE: 3GHz~10GHz
	
FREQUENCY RANGE: 10GHz~20GHz	
	

LTE BAND 25 (Channel Bandwidth: 3MHz)	
CHANNEL 26365	
FREQUENCY RANGE: 9kHz~3GHz	FREQUENCY RANGE: 3GHz~10GHz
	
FREQUENCY RANGE: 10GHz~20GHz	
	

LTE BAND 25 (Channel Bandwidth: 5MHz)	
CHANNEL 26365	
FREQUENCY RANGE: 9kHz~3GHz	FREQUENCY RANGE: 3GHz~10GHz
	
FREQUENCY RANGE: 10GHz~20GHz	
	

LTE BAND 25 (Channel Bandwidth: 10MHz)	
CHANNEL 26365	
FREQUENCY RANGE: 9kHz~3GHz	FREQUENCY RANGE: 3GHz~10GHz
	
FREQUENCY RANGE: 10GHz~20GHz	
	

LTE BAND 25 (Channel Bandwidth: 15MHz)	
CHANNEL 26365	
FREQUENCY RANGE: 9kHz~3GHz	FREQUENCY RANGE: 3GHz~10GHz
	
FREQUENCY RANGE: 10GHz~20GHz	
	

LTE BAND 25 (Channel Bandwidth: 20MHz)	
CHANNEL 26365	
FREQUENCY RANGE: 9kHz~3GHz	FREQUENCY RANGE: 3GHz~10GHz
	
FREQUENCY RANGE: 10GHz~20GHz	
	

4.7 RADIATED SPURIOUS EMISSION MEASUREMENT

4.7.1 LIMITS OF RADIATED SPURIOUS 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 is equal to -13dBm.

4.7.2 TEST PROCEDURES

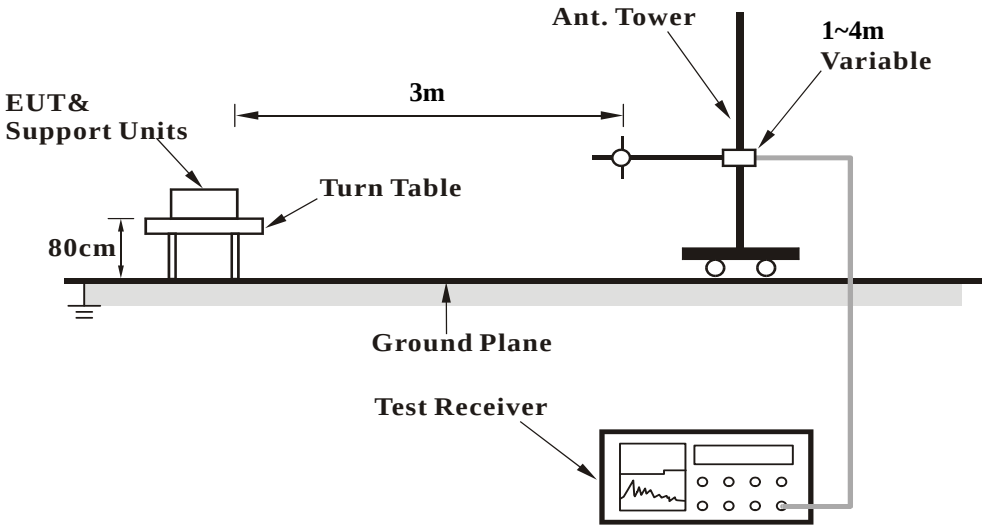
a. Substitution method is used for EIRP measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m 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. ERP power can be calculated form EIRP power by subtracting the gain of dipole, ERP power = EIRP 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

GPRS:

MODE	TX channel 661	FREQUENCY RANGE	Below 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	32.74	30.91	-13	-41.34	-14.23	-55.57	-42.57
2	49.85	36.20	-13	-42.25	-10.06	-52.30	-39.30
3	107.14	37.39	-13	-52.90	-0.83	-53.72	-40.72
4	270.11	35.19	-13	-59.69	3.91	-55.78	-42.78
5	346.52	37.55	-13	-60.31	3.61	-56.70	-43.70
6	357.1	39.24	-13	-58.63	3.56	-55.07	-42.07
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	32.56	39.71	-13	-32.48	-14.27	-46.75	-33.75
2	51.66	40.52	-13	-36.60	-10.00	-46.60	-33.60
3	63.17	43.78	-13	-40.25	-6.66	-46.90	-33.90
4	106.27	42.18	-13	-48.15	-0.80	-48.95	-35.95
5	368.58	36.06	-13	-61.80	3.50	-58.30	-45.30
6	380.89	38.45	-13	-59.23	3.54	-55.69	-42.69

REMARKS:

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

MODE	TX channel 661	FREQUENCY RANGE	Above 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	74.20	-13	-29.95	7.68	-22.27	-9.27
2	5640	66.10	-13	-38.64	7.02	-31.62	-18.62
3	7520	59.20	-13	-43.42	4.53	-38.89	-25.89
4	9400	65.2	-13	-36.67	4.21	-32.47	-19.47
5	11280	57.3	-13	-44.19	3.48	-40.71	-27.71
6	13160	59.6	-13	-41.01	4.06	-36.94	-23.94
7	15040	62.5	-13	-34.85	3.70	-31.15	-18.15
8	16920	66.5	-13	-30.85	3.70	-27.15	-14.15
9	18800	68.8	-13	-30.13	3.76	-26.36	-13.36
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	**3760**	**79.5**	**-13**	**-24.65**	**7.68**	**-16.97**	**-3.97**
2	5640	70.2	-13	-34.54	7.02	-27.52	-14.52
3	7520	65.3	-13	-37.32	4.53	-32.79	-19.79
4	9400	69.6	-13	-32.27	4.21	-28.07	-15.07
5	11280	63.5	-13	-37.99	3.48	-34.51	-21.51
6	13160	60.2	-13	-40.41	4.06	-36.34	-23.34
7	15040	61.9	-13	-35.45	3.70	-31.75	-18.75
8	16920	65.1	-13	-32.25	3.70	-28.55	-15.55
9	18800	68	-13	-30.93	3.76	-27.16	-14.16

REMARKS:

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

EDGE:

MODE	TX channel 661	FREQUENCY RANGE	Below 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	32.74	30.96	-13	-41.29	-14.23	-55.52	-42.52
2	49.85	36.28	-13	-42.17	-10.06	-52.22	-39.22
3	107.14	37.48	-13	-52.81	-0.83	-53.63	-40.63
4	270.11	35.18	-13	-59.70	3.91	-55.79	-42.79
5	346.52	37.55	-13	-60.32	3.61	-56.70	-43.70
6	357.1	39.29	-13	-58.57	3.56	-55.01	-42.01
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	32.56	39.77	-13	-32.42	-14.27	-46.69	-33.69
2	51.66	40.47	-13	-36.65	-10.00	-46.65	-33.65
3	63.17	43.72	-13	-40.30	-6.66	-46.96	-33.96
4	106.27	42.22	-13	-48.12	-0.80	-48.92	-35.92
5	368.58	36.07	-13	-61.79	3.50	-58.29	-45.29
6	380.89	38.36	-13	-59.32	3.54	-55.78	-42.78

REMARKS:

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

MODE	TX channel 661	FREQUENCY RANGE	Above 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	73.99	-13	-30.16	7.68	-22.48	-9.48
2	5640	65.87	-13	-38.87	7.02	-31.85	-18.85
3	7520	59.00	-13	-43.62	4.53	-39.09	-26.09
4	9400	64.86	-13	-37.01	4.21	-32.81	-19.81
5	11280	57.08	-13	-44.41	3.48	-40.93	-27.93
6	13160	59.31	-13	-41.30	4.06	-37.23	-24.23
7	15040	62.47	-13	-34.88	3.70	-31.18	-18.18
8	16920	66.07	-13	-31.28	3.70	-27.58	-14.58
9	18800	68.75	-13	-30.18	3.76	-26.41	-13.41
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	79.03	-13	-25.12	7.68	-17.44	-4.44
2	5640	69.91	-13	-34.83	7.02	-27.81	-14.81
3	7520	65.07	-13	-37.55	4.53	-33.02	-20.02
4	9400	69.16	-13	-32.71	4.21	-28.51	-15.51
5	11280	63.23	-13	-38.26	3.48	-34.78	-21.78
6	13160	60.06	-13	-40.55	4.06	-36.48	-23.48
7	15040	61.51	-13	-35.84	3.70	-32.14	-19.14
8	16920	65.1	-13	-32.25	3.70	-28.55	-15.55
9	18800	67.68	-13	-31.25	3.76	-27.48	-14.48

REMARKS:

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

WCDMA:

MODE	TX channel 9400	FREQUENCY RANGE	Below 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	53.41	35.82	-13	-42.35	-9.49	-51.84	-38.84
2	162.75	30.82	-13	-58.15	-0.30	-58.45	-45.45
3	228.84	34.38	-13	-61.01	3.96	-57.05	-44.05
4	479.65	28.65	-13	-67.98	2.86	-65.13	-52.13
5	712.63	32.07	-13	-64.28	1.42	-62.86	-49.86
6	849.3	31.98	-13	-62.61	1.04	-61.58	-48.58
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	54.03	26.99	-13	-52.97	-9.03	-62.01	-49.01
2	140.63	26.69	-13	-67.07	-1.29	-68.36	-55.36
3	265.14	29.33	-13	-65.40	3.94	-61.46	-48.46
4	306.63	28.82	-13	-67.24	3.70	-63.54	-50.54
5	479.11	33.67	-13	-62.99	2.85	-60.14	-47.14
6	745.81	30.30	-13	-65.88	0.75	-65.13	-52.13

REMARKS:

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

MODE	TX channel 9400	FREQUENCY RANGE	Above 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	47.72	-13	-56.43	7.68	-48.75	-35.75
2	5640	49.67	-13	-55.07	7.02	-48.05	-35.05
3	7520	57.15	-13	-45.47	4.53	-40.94	-27.94
4	9400	55.08	-13	-46.79	4.21	-42.59	-29.59
5	11280	55.71	-13	-45.78	3.48	-42.30	-29.30
6	13160	59.49	-13	-41.12	4.06	-37.05	-24.05
7	15040	61.4	-13	-35.95	3.70	-32.25	-19.25
8	16920	63.63	-13	-33.72	3.70	-30.02	-17.02
9	18800	67.22	-13	-31.71	3.76	-27.94	-14.94
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	47.04	-13	-57.11	7.68	-49.43	-36.43
2	5640	49.4	-13	-55.34	7.02	-48.32	-35.32
3	7520	54.23	-13	-48.39	4.53	-43.86	-30.86
4	9400	55.06	-13	-46.81	4.21	-42.61	-29.61
5	11280	56.76	-13	-44.73	3.48	-41.25	-28.25
6	13160	59.48	-13	-41.13	4.06	-37.06	-24.06
7	15040	62.34	-13	-35.01	3.70	-31.31	-18.31
8	16920	62.22	-13	-35.13	3.70	-31.43	-18.43
9	18800	66.98	-13	-31.95	3.76	-28.18	-15.18

REMARKS:

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

CDMA2000:

MODE	TX channel 600	FREQUENCY RANGE	Below 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	54.62	33.55	-13	-45.35	-9.14	-54.48	-41.48
2	162.83	30.54	-13	-58.45	-0.29	-58.74	-45.74
3	227.26	33.28	-13	-62.12	3.98	-58.14	-45.14
4	479.09	25.79	-13	-70.87	2.85	-68.02	-55.02
5	711.9	31.26	-13	-65.09	1.43	-63.66	-50.66
6	849.57	31.36	-13	-63.26	1.04	-62.22	-49.22
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	53.61	28.71	-13	-49.58	-9.43	-59.01	-46.01
2	143.14	26.05	-13	-66.99	-1.21	-68.20	-55.20
3	264.34	26.90	-13	-67.81	3.95	-63.86	-50.86
4	303.44	27.81	-13	-68.12	3.70	-64.41	-51.41
5	479.43	33.57	-13	-63.08	2.86	-60.22	-47.22
6	745.72	27.65	-13	-68.52	0.75	-67.77	-54.77

REMARKS:

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

MODE	TX channel 600	FREQUENCY RANGE	Above 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	47.91	-13	-56.24	7.68	-48.56	-35.56
2	5640	50.41	-13	-54.33	7.02	-47.31	-34.31
3	7520	57.78	-13	-44.84	4.53	-40.31	-27.31
4	9400	55.3	-13	-46.57	4.21	-42.37	-29.37
5	11280	55.06	-13	-46.43	3.48	-42.95	-29.95
6	13160	59.55	-13	-41.06	4.06	-36.99	-23.99
7	15040	61.78	-13	-35.57	3.70	-31.87	-18.87
8	16920	63.82	-13	-33.53	3.70	-29.83	-16.83
9	18800	66.45	-13	-30.90	3.70	-27.20	-14.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	48	-13	-56.15	7.68	-48.47	-35.47
2	5640	49.12	-13	-55.62	7.02	-48.60	-35.60
3	7520	54.12	-13	-48.50	4.53	-43.97	-30.97
4	9400	54.96	-13	-46.91	4.21	-42.71	-29.71
5	11280	56.87	-13	-44.62	3.48	-41.14	-28.14
6	13160	60.47	-13	-40.14	4.06	-36.07	-23.07
7	15040	62.12	-13	-35.23	3.70	-31.53	-18.53
8	16920	61.8	-13	-35.55	3.70	-31.85	-18.85
9	18800	66.58	-13	-30.77	3.70	-27.07	-14.07

REMARKS:

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

LTE BAND 2

CHANNEL BANDWIDTH: 1.4MHz / QPSK

MODE	TX channel 18900	FREQUENCY RANGE	Below 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	31.24	28.44	-13	-43.27	-14.60	-57.87	-44.87
2	74.436	19.40	-13	-75.67	-2.10	-77.77	-64.77
3	134.739	23.57	-13	-71.88	-1.47	-73.35	-60.35
4	159.428	22.63	-13	-65.41	-0.78	-66.19	-53.19
5	206.204	26.22	-13	-69.25	4.26	-64.99	-51.99
6	239.895	26.96	-13	-68.40	3.81	-64.58	-51.58
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	31.67	41.03	-13	-30.84	-14.49	-45.33	-32.33
2	126.417	28.17	-13	-62.82	-1.22	-64.04	-51.04
3	158.648	25.40	-13	-62.43	-0.89	-63.32	-50.32
4	169.301	28.99	-13	-61.81	0.64	-61.17	-48.17
5	205.274	26.75	-13	-68.72	4.27	-64.45	-51.45
6	956.051	36.15	-13	-61.81	0.37	-61.44	-48.44

REMARKS:

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

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	62.86	-13	-41.29	7.68	-33.61	-20.61
2	5640	62.43	-13	-42.31	7.02	-35.29	-22.29
3	7520	64.83	-13	-37.79	4.53	-33.26	-20.26
4	9400	56.97	-13	-44.92	4.22	-40.70	-27.70
5	11280	49.79	-13	-51.66	3.52	-48.14	-35.14
6	13160	52.48	-13	-48.13	4.06	-44.06	-31.06
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	68.3	-13	-35.85	7.68	-28.17	-15.17
2	5640	67.04	-13	-37.70	7.02	-30.68	-17.68
3	7520	59.58	-13	-43.04	4.53	-38.51	-25.51
4	9400	52.22	-13	-49.41	4.22	-45.19	-32.19
5	11280	52.28	-13	-49.17	3.52	-45.65	-32.65
6	13160	55.98	-13	-44.63	4.06	-40.56	-27.56

REMARKS:

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

LTE BAND 2

CHANNEL BANDWIDTH: 3MHz / QPSK

MODE	TX channel 18900	FREQUENCY RANGE	Below 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	31.26	27.91	-13	-43.81	-14.59	-58.40	-45.40
2	75.286	18.77	-13	-76.15	-2.05	-78.20	-65.20
3	134.869	23.29	-13	-72.12	-1.47	-73.59	-60.59
4	158.898	21.65	-13	-66.25	-0.86	-67.10	-54.10
5	206.314	26.51	-13	-68.96	4.26	-64.70	-51.70
6	239.625	26.56	-13	-68.81	3.81	-65.00	-52.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	30.74	40.91	-13	-30.62	-14.72	-45.34	-32.34
2	127.097	28.50	-13	-62.64	-1.23	-63.87	-50.87
3	159.058	25.77	-13	-62.17	-0.83	-63.00	-50.00
4	169.411	29.43	-13	-61.40	0.66	-60.75	-47.75
5	204.864	26.63	-13	-68.85	4.28	-64.57	-51.57
6	955.991	36.88	-13	-61.09	0.37	-60.72	-47.72

REMARKS:

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

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	62.31	-13	-41.84	7.68	-34.16	-21.16
2	5640	62.71	-13	-42.03	7.02	-35.01	-22.01
3	7520	63.04	-13	-39.58	4.53	-35.05	-22.05
4	9400	54.95	-13	-46.68	4.22	-42.46	-29.46
5	11280	50.4	-13	-51.05	3.52	-47.53	-34.53
6	13160	52.78	-13	-47.83	4.06	-43.76	-30.76
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	66.99	-13	-37.16	7.68	-29.48	-16.48
2	5640	66.04	-13	-38.70	7.02	-31.68	-18.68
3	7520	58.78	-13	-43.84	4.53	-39.31	-26.31
4	9400	52.97	-13	-48.66	4.22	-44.44	-31.44
5	11280	51.51	-13	-49.94	3.52	-46.42	-33.42
6	13160	55.5	-13	-45.11	4.06	-41.04	-28.04

REMARKS:

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

LTE BAND 2

CHANNEL BANDWIDTH: 5MHz / QPSK

MODE	TX channel 18900	FREQUENCY RANGE	Below 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	31.58	28.75	-13	-43.08	-14.51	-57.60	-44.60
2	74.296	19.22	-13	-75.87	-2.11	-77.98	-64.98
3	134.479	23.37	-13	-72.15	-1.48	-73.63	-60.63
4	159.488	23.07	-13	-64.99	-0.77	-65.76	-52.76
5	206.344	25.53	-13	-69.94	4.26	-65.68	-52.68
6	239.695	27.35	-13	-68.02	3.81	-64.20	-51.20
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	31.16	40.97	-13	-30.71	-14.62	-45.33	-32.33
2	125.637	28.59	-13	-62.23	-1.22	-63.45	-50.45
3	159.618	24.60	-13	-63.50	-0.75	-64.25	-51.25
4	169.461	28.34	-13	-62.51	0.67	-61.84	-48.84
5	206.024	27.20	-13	-68.27	4.26	-64.01	-51.01
6	956.641	36.51	-13	-61.43	0.37	-61.06	-48.06

REMARKS:

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

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	62.59	-13	-41.56	7.68	-33.88	-20.88
2	5640	63.10	-13	-41.64	7.02	-34.62	-21.62
3	7520	63.72	-13	-38.90	4.53	-34.37	-21.37
4	9400	54.57	-13	-47.06	4.22	-42.84	-29.84
5	11280	49.96	-13	-51.49	3.52	-47.97	-34.97
6	13160	53.07	-13	-47.54	4.06	-43.47	-30.47
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	66.6	-13	-37.55	7.68	-29.87	-16.87
2	5640	65.01	-13	-39.73	7.02	-32.71	-19.71
3	7520	59.42	-13	-43.20	4.53	-38.67	-25.67
4	9400	53.32	-13	-48.31	4.22	-44.09	-31.09
5	11280	51.11	-13	-50.34	3.52	-46.82	-33.82
6	13160	54.5	-13	-46.11	4.06	-42.04	-29.04

REMARKS:

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

LTE BAND 2

CHANNEL BANDWIDTH: 10MHz / QPSK

MODE	TX channel 18900	FREQUENCY RANGE	Below 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	30.49	28.97	-13	-42.47	-14.78	-57.25	-44.25
2	74.936	19.62	-13	-75.36	-2.07	-77.43	-64.43
3	134.639	24.39	-13	-71.09	-1.47	-72.56	-59.56
4	158.748	21.77	-13	-66.08	-0.88	-66.96	-53.96
5	205.534	25.29	-13	-70.18	4.27	-65.91	-52.91
6	238.895	26.04	-13	-69.36	3.81	-65.55	-52.55
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	32.13	40.94	-13	-31.09	-14.38	-45.47	-32.47
2	126.427	27.97	-13	-63.02	-1.22	-64.25	-51.25
3	159.218	25.14	-13	-62.84	-0.81	-63.65	-50.65
4	169.211	28.57	-13	-62.21	0.63	-61.58	-48.58
5	205.744	26.78	-13	-68.69	4.27	-64.43	-51.43
6	956.041	36.45	-13	-61.52	0.37	-61.14	-48.14

REMARKS:

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

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	61.21	-13	-42.94	7.68	-35.26	-22.26
2	5640	61.96	-13	-42.78	7.02	-35.76	-22.76
3	7520	63.27	-13	-39.35	4.53	-34.82	-21.82
4	9400	53.63	-13	-48.00	4.22	-43.78	-30.78
5	11280	50.93	-13	-50.52	3.52	-47.00	-34.00
6	13160	53.4	-13	-47.21	4.06	-43.14	-30.14
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	65.86	-13	-38.29	7.68	-30.61	-17.61
2	5640	63.75	-13	-40.99	7.02	-33.97	-20.97
3	7520	59.4	-13	-43.22	4.53	-38.69	-25.69
4	9400	53.32	-13	-48.31	4.22	-44.09	-31.09
5	11280	52	-13	-49.45	3.52	-45.93	-32.93
6	13160	54.26	-13	-46.35	4.06	-42.28	-29.28

REMARKS:

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

LTE BAND 2

CHANNEL BANDWIDTH: 15MHz / QPSK

MODE	TX channel 18900	FREQUENCY RANGE	Below 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	31.59	28.80	-13	-43.04	-14.51	-57.55	-44.55
2	75.156	19.28	-13	-75.66	-2.06	-77.72	-64.72
3	133.829	22.94	-13	-72.77	-1.50	-74.27	-61.27
4	159.758	23.29	-13	-64.85	-0.73	-65.58	-52.58
5	206.214	26.72	-13	-68.75	4.26	-64.49	-51.49
6	239.045	27.91	-13	-67.48	3.81	-63.67	-50.67
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	31.87	40.29	-13	-31.65	-14.44	-46.09	-33.09
2	126.537	27.54	-13	-63.48	-1.22	-64.70	-51.70
3	159.318	26.37	-13	-61.64	-0.79	-62.44	-49.44
4	169.391	28.26	-13	-62.57	0.66	-61.91	-48.91
5	205.434	26.54	-13	-68.93	4.27	-64.66	-51.66
6	955.551	35.25	-13	-62.73	0.37	-62.36	-49.36

REMARKS:

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

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	60.54	-13	-43.61	7.68	-35.93	-22.93
2	5640	61.57	-13	-43.17	7.02	-36.15	-23.15
3	7520	63.04	-13	-39.58	4.53	-35.05	-22.05
4	9400	53.21	-13	-48.42	4.22	-44.20	-31.20
5	11280	50.64	-13	-50.81	3.52	-47.29	-34.29
6	13160	52.54	-13	-48.07	4.06	-44.00	-31.00
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	65.71	-13	-38.44	7.68	-30.76	-17.76
2	5640	64.57	-13	-40.17	7.02	-33.15	-20.15
3	7520	58.6	-13	-44.02	4.53	-39.49	-26.49
4	9400	52.57	-13	-49.06	4.22	-44.84	-31.84
5	11280	51.02	-13	-50.43	3.52	-46.91	-33.91
6	13160	53.68	-13	-46.93	4.06	-42.86	-29.86

REMARKS:

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

LTE BAND 2

CHANNEL BANDWIDTH: 20MHz / QPSK

MODE	TX channel 18900	FREQUENCY RANGE	Below 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	31.57	29.39	-13	-42.44	-14.52	-56.96	-43.96
2	73.826	20.10	-13	-75.07	-2.13	-77.21	-64.21
3	135.539	24.16	-13	-71.06	-1.45	-72.51	-59.51
4	158.488	22.19	-13	-65.59	-0.91	-66.51	-53.51
5	206.394	26.68	-13	-68.79	4.26	-64.53	-51.53
6	240.225	26.22	-13	-69.13	3.82	-65.31	-52.31
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	32.46	41.81	-13	-30.34	-14.30	-44.64	-31.64
2	125.627	27.69	-13	-63.13	-1.22	-64.35	-51.35
3	159.578	25.15	-13	-62.94	-0.76	-63.69	-50.69
4	168.361	29.39	-13	-61.15	0.51	-60.64	-47.64
5	205.114	27.09	-13	-68.39	4.28	-64.11	-51.11
6	956.981	36.77	-13	-61.16	0.38	-60.79	-47.79

REMARKS:

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

MODE	TX channel 18900	FREQUENCY RANGE	Above 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	61.05	-13	-43.10	7.68	-35.42	-22.42
2	5640	59.43	-13	-45.31	7.02	-38.29	-25.29
3	7520	62.04	-13	-40.58	4.53	-36.05	-23.05
4	9400	52.86	-13	-48.77	4.22	-44.55	-31.55
5	11280	50.47	-13	-50.98	3.52	-47.46	-34.46
6	13160	51.66	-13	-48.95	4.06	-44.88	-31.88
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3760	66.42	-13	-37.73	7.68	-30.05	-17.05
2	5640	63.89	-13	-40.85	7.02	-33.83	-20.83
3	7520	58.01	-13	-44.61	4.53	-40.08	-27.08
4	9400	51.85	-13	-49.78	4.22	-45.56	-32.56
5	11280	52.45	-13	-49.00	3.52	-45.48	-32.48
6	13160	55.74	-13	-44.87	4.06	-40.80	-27.80

REMARKS:

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

LTE BAND 25

CHANNEL BANDWIDTH: 1.4MHz / QPSK

MODE	TX channel 26365	FREQUENCY RANGE	Below 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	31.148	26.83	-13	-44.85	-14.62	-59.47	-46.47
2	74.606	21.33	-13	-73.71	-2.09	-75.80	-62.80
3	134.899	22.63	-13	-72.77	-1.47	-74.24	-61.24
4	158.288	23.33	-13	-64.39	-0.94	-65.34	-52.34
5	205.544	24.78	-13	-70.69	4.27	-66.42	-53.42
6	240.985	26.42	-13	-68.90	3.82	-65.07	-52.07
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	32.31	39.83	-13	-32.27	-14.34	-46.60	-33.60
2	125.117	27.75	-13	-62.96	-1.22	-64.17	-51.17
3	159.218	24.29	-13	-63.69	-0.81	-64.50	-51.50
4	168.401	27.90	-13	-64.91	0.93	-63.98	-50.98
5	207.854	26.47	-13	-69.00	4.24	-64.76	-51.76
6	957.641	34.25	-13	-63.66	0.38	-63.28	-50.28

REMARKS:

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

MODE	TX channel 26365	FREQUENCY RANGE	Above 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3765	63.41	-13	-40.76	7.68	-33.08	-20.08
2	5647.5	62.62	-13	-42.11	7.02	-35.10	-22.10
3	7530	63.91	-13	-38.71	4.52	-34.19	-21.19
4	9412.5	56.78	-13	-44.85	4.22	-40.63	-27.63
5	11295	52.02	-13	-49.47	3.50	-45.97	-32.97
6	13177.5	52.04	-13	-48.55	4.03	-44.52	-31.52
7	15060	56.53	-13	-41.18	3.72	-37.47	-24.47
8	16942.5	58.18	-13	-51.75	4.18	-47.57	-34.57
9	18825	61.94	-13	-60.20	4.65	-55.55	-42.55
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3765	68.52	-13	-35.65	7.68	-27.97	-14.97
2	5647.5	67.1	-13	-37.63	7.02	-30.62	-17.62
3	7530	59.74	-13	-42.88	4.52	-38.36	-25.36
4	9412.5	51.63	-13	-50.00	4.22	-45.78	-32.78
5	11295	52.6	-13	-48.89	3.50	-45.39	-32.39
6	13177.5	56.33	-13	-44.26	4.03	-40.23	-27.23
7	15060	56.63	-13	-41.08	3.72	-37.37	-24.37
8	16942.5	62.09	-13	-47.84	4.18	-43.66	-30.66
9	18825	62.33	-13	-59.81	4.65	-55.16	-42.16

REMARKS:

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

LTE BAND 25

CHANNEL BANDWIDTH: 3MHz / QPSK

MODE	TX channel 26365	FREQUENCY RANGE	Below 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	30.428	27.40	-13	-44.02	-14.79	-58.81	-45.81
2	75.246	21.19	-13	-73.74	-2.05	-75.79	-62.79
3	133.719	22.36	-13	-73.38	-1.50	-74.88	-61.88
4	157.778	22.38	-13	-65.20	-1.02	-66.22	-53.22
5	206.804	24.34	-13	-71.13	4.25	-66.88	-53.88
6	240.335	24.66	-13	-70.68	3.82	-66.86	-53.86
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	31.51	40.60	-13	-31.21	-14.53	-45.74	-32.74
2	125.607	27.86	-13	-62.96	-1.22	-64.17	-51.17
3	159.268	25.28	-13	-62.72	-0.80	-63.52	-50.52
4	168.091	28.57	-13	-64.21	0.90	-63.31	-50.31
5	208.064	26.58	-13	-68.89	4.24	-64.65	-51.65
6	957.911	34.95	-13	-62.95	0.38	-62.57	-49.57

REMARKS:

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

MODE	TX channel 26365	FREQUENCY RANGE	Above 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3765	62.43	-13	-41.74	7.68	-34.06	-21.06
2	5647.5	63.70	-13	-41.03	7.02	-34.02	-21.02
3	7530	56.54	-13	-46.08	4.52	-41.56	-28.56
4	9412.5	52.1	-13	-49.53	4.22	-45.31	-32.31
5	11295	52.49	-13	-49.00	3.50	-45.50	-32.50
6	13177.5	55.96	-13	-44.63	4.03	-40.60	-27.60
7	15060	57.64	-13	-40.07	3.72	-36.36	-23.36
8	16942.5	61.82	-13	-48.11	4.18	-43.93	-30.93
9	18825	64.07	-13	-58.07	4.65	-53.42	-40.42
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3765	68.01	-13	-36.16	7.68	-28.48	-15.48
2	5647.5	67.71	-13	-37.02	7.02	-30.01	-17.01
3	7530	59.78	-13	-42.84	4.52	-38.32	-25.32
4	9412.5	52.12	-13	-49.51	4.22	-45.29	-32.29
5	11295	52.56	-13	-48.93	3.50	-45.43	-32.43
6	13177.5	55.36	-13	-45.23	4.03	-41.20	-28.20
7	15060	56.19	-13	-41.52	3.72	-37.81	-24.81
8	16942.5	61.82	-13	-48.11	4.18	-43.93	-30.93
9	18825	62.85	-13	-59.29	4.65	-54.64	-41.64

REMARKS:

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

LTE BAND 25

CHANNEL BANDWIDTH: 5MHz / QPSK

MODE	TX channel 26365	FREQUENCY RANGE	Below 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	30.438	26.62	-13	-44.80	-14.79	-59.59	-46.59
2	74.666	20.22	-13	-74.81	-2.09	-76.89	-63.89
3	134.859	23.57	-13	-71.84	-1.47	-73.31	-60.31
4	158.728	23.16	-13	-64.69	-0.88	-65.57	-52.57
5	206.354	24.37	-13	-71.10	4.26	-66.84	-53.84
6	239.495	26.21	-13	-69.16	3.81	-65.35	-52.35
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	32.71	40.69	-13	-31.55	-14.24	-45.79	-32.79
2	126.247	28.61	-13	-62.34	-1.22	-63.57	-50.57
3	158.578	25.13	-13	-62.68	-0.90	-63.58	-50.58
4	166.981	27.82	-13	-64.87	0.78	-64.09	-51.09
5	206.334	27.14	-13	-68.33	4.26	-64.07	-51.07
6	957.091	34.22	-13	-63.71	0.38	-63.33	-50.33

REMARKS:

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

MODE	TX channel 26365	FREQUENCY RANGE	Above 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3765	63.10	-13	-41.07	7.68	-33.39	-20.39
2	5647.5	64.60	-13	-40.13	7.02	-33.12	-20.12
3	7530	56.30	-13	-46.32	4.52	-41.80	-28.80
4	9412.5	51.2	-13	-50.43	4.22	-46.21	-33.21
5	11295	53.2	-13	-48.29	3.50	-44.79	-31.79
6	13177.5	56.8	-13	-43.79	4.03	-39.76	-26.76
7	15060	57.1	-13	-40.61	3.72	-36.90	-23.90
8	16942.5	62.3	-13	-47.63	4.18	-43.45	-30.45
9	18825	63.7	-13	-58.44	4.65	-53.79	-40.79
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3765	68.4	-13	-35.77	7.68	-28.09	-15.09
2	5647.5	68.3	-13	-36.43	7.02	-29.42	-16.42
3	7530	59.6	-13	-43.02	4.52	-38.50	-25.50
4	9412.5	51.8	-13	-49.83	4.22	-45.61	-32.61
5	11295	53	-13	-48.49	3.50	-44.99	-31.99
6	13177.5	55	-13	-45.59	4.03	-41.56	-28.56
7	15060	56.4	-13	-41.31	3.72	-37.60	-24.60
8	16942.5	61.6	-13	-48.33	4.18	-44.15	-31.15
9	18825	62.2	-13	-59.94	4.65	-55.29	-42.29

REMARKS:

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

LTE BAND 25

CHANNEL BANDWIDTH: 10MHz / QPSK

MODE	TX channel 26365	FREQUENCY RANGE	Below 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	32.15	25.76	-13	-46.28	-14.37	-60.65	-47.65
2	74.606	20.64	-13	-74.40	-2.09	-76.49	-63.49
3	134.559	23.21	-13	-72.29	-1.48	-73.77	-60.77
4	158.958	23.00	-13	-64.91	-0.85	-65.76	-52.76
5	206.964	25.38	-13	-70.09	4.25	-65.84	-52.84
6	239.975	24.93	-13	-70.43	3.81	-66.61	-53.61
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	31.29	40.75	-13	-30.98	-14.58	-45.56	-32.56
2	126.457	27.60	-13	-63.40	-1.22	-64.62	-51.62
3	159.538	24.49	-13	-63.84	-0.71	-64.56	-51.56
4	167.501	27.80	-13	-62.50	0.38	-62.12	-49.12
5	206.434	26.89	-13	-68.58	4.26	-64.32	-51.32
6	957.381	35.29	-13	-62.63	0.38	-62.25	-49.25

REMARKS:

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

MODE	TX channel 26365	FREQUENCY RANGE	Above 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3765	62.56	-13	-41.61	7.68	-33.93	-20.93
2	5647.5	64.96	-13	-39.77	7.02	-32.76	-19.76
3	7530	56.38	-13	-46.24	4.52	-41.72	-28.72
4	9412.5	50.71	-13	-50.92	4.22	-46.70	-33.70
5	11295	53.83	-13	-47.66	3.50	-44.16	-31.16
6	13177.5	56.46	-13	-44.13	4.03	-40.10	-27.10
7	15060	57.76	-13	-39.95	3.72	-36.24	-23.24
8	16942.5	62.5	-13	-47.43	4.18	-43.25	-30.25
9	18825	63.94	-13	-58.20	4.65	-53.55	-40.55
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3765	68.13	-13	-36.04	7.68	-28.36	-15.36
2	5647.5	68.16	-13	-36.57	7.02	-29.56	-16.56
3	7530	60.17	-13	-42.45	4.52	-37.93	-24.93
4	9412.5	52.73	-13	-48.90	4.22	-44.68	-31.68
5	11295	53.04	-13	-48.45	3.50	-44.95	-31.95
6	13177.5	54.01	-13	-46.58	4.03	-42.55	-29.55
7	15060	56.4	-13	-41.31	3.72	-37.60	-24.60
8	16942.5	62.22	-13	-47.71	4.18	-43.53	-30.53
9	18825	62.6	-13	-59.54	4.65	-54.89	-41.89

REMARKS:

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

LTE BAND 25

CHANNEL BANDWIDTH: 15MHz / QPSK

MODE	TX channel 26365	FREQUENCY RANGE	Below 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	33.54	27.42	-13	-45.12	-14.04	-59.16	-46.16
2	75.946	20.31	-13	-74.50	-2.01	-76.51	-63.51
3	133.139	22.59	-13	-73.32	-1.52	-74.84	-61.84
4	157.338	22.84	-13	-64.62	-1.08	-65.70	-52.70
5	205.534	25.54	-13	-69.93	4.27	-65.66	-52.66
6	240.175	25.54	-13	-69.81	3.82	-65.99	-52.99
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	31.25	40.78	-13	-30.93	-14.59	-45.53	-32.53
2	126.697	27.03	-13	-64.02	-1.23	-65.25	-52.25
3	160.138	24.80	-13	-63.44	-0.68	-64.12	-51.12
4	168.471	28.51	-13	-64.31	0.94	-63.37	-50.37
5	207.834	25.80	-13	-69.67	4.24	-65.43	-52.43
6	956.761	34.57	-13	-63.37	0.37	-63.00	-50.00

REMARKS:

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

MODE	TX channel 26365	FREQUENCY RANGE	Above 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3765	63.42	-13	-40.75	7.68	-33.07	-20.07
2	5647.5	64.51	-13	-40.22	7.02	-33.21	-20.21
3	7530	57.16	-13	-45.46	4.52	-40.94	-27.94
4	9412.5	50.41	-13	-51.22	4.22	-47.00	-34.00
5	11295	53.08	-13	-48.41	3.50	-44.91	-31.91
6	13177.5	56.13	-13	-44.46	4.03	-40.43	-27.43
7	15060	57.47	-13	-40.24	3.72	-36.53	-23.53
8	16942.5	62.21	-13	-47.72	4.18	-43.54	-30.54
9	18825	64.18	-13	-57.96	4.65	-53.31	-40.31
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3765	67.14	-13	-37.03	7.68	-29.35	-16.35
2	5647.5	67.46	-13	-37.27	7.02	-30.26	-17.26
3	7530	59.22	-13	-43.40	4.52	-38.88	-25.88
4	9412.5	52.35	-13	-49.28	4.22	-45.06	-32.06
5	11295	53.03	-13	-48.46	3.50	-44.96	-31.96
6	13177.5	54.13	-13	-46.46	4.03	-42.43	-29.43
7	15060	55.58	-13	-42.13	3.72	-38.42	-25.42
8	16942.5	62.9	-13	-47.03	4.18	-42.85	-29.85
9	18825	62.75	-13	-59.39	4.65	-54.74	-41.74

REMARKS:

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

LTE BAND 25

CHANNEL BANDWIDTH: 20MHz / QPSK

MODE	TX channel 26365	FREQUENCY RANGE	Below 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	31.49	25.93	-13	-45.87	-14.54	-60.41	-47.41
2	75.916	20.41	-13	-74.40	-2.01	-76.42	-63.42
3	133.069	23.66	-13	-72.27	-1.52	-73.79	-60.79
4	158.388	22.28	-13	-65.47	-0.93	-66.40	-53.40
5	205.314	25.47	-13	-70.00	4.27	-65.73	-52.73
6	241.155	24.62	-13	-70.69	3.82	-66.87	-53.87
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	31.94	40.10	-13	-31.86	-14.43	-46.29	-33.29
2	126.487	27.49	-13	-63.52	-1.22	-64.74	-51.74
3	158.768	25.44	-13	-62.42	-0.87	-63.29	-50.29
4	166.631	29.02	-13	-63.64	0.74	-62.90	-49.90
5	206.624	26.19	-13	-69.28	4.26	-65.02	-52.02
6	956.441	35.50	-13	-62.45	0.37	-62.08	-49.08

REMARKS:

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

MODE	TX channel 26365	FREQUENCY RANGE	Above 1000MHz

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3765	62.86	-13	-41.31	7.68	-33.63	-20.63
2	5647.5	64.54	-13	-40.19	7.02	-33.18	-20.18
3	7530	57.14	-13	-45.48	4.52	-40.96	-27.96
4	9412.5	50.38	-13	-51.25	4.22	-47.03	-34.03
5	11295	53.89	-13	-47.60	3.50	-44.10	-31.10
6	13177.5	56.58	-13	-44.01	4.03	-39.98	-26.98
7	15060	57.73	-13	-39.98	3.72	-36.27	-23.27
8	16942.5	61.93	-13	-48.00	4.18	-43.82	-30.82
9	18825	64.5	-13	-57.64	4.65	-52.99	-39.99
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M							
No.	Freq. (MHz)	Reading (dBu V/m)	Limit (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	Level (dBm)	Margin (dB)
1	3765	66.48	-13	-37.69	7.68	-30.01	-17.01
2	5647.5	67.59	-13	-37.14	7.02	-30.13	-17.13
3	7530	60.17	-13	-42.45	4.52	-37.93	-24.93
4	9412.5	53.01	-13	-48.62	4.22	-44.40	-31.40
5	11295	52.94	-13	-48.55	3.50	-45.05	-32.05
6	13177.5	55.12	-13	-45.47	4.03	-41.44	-28.44
7	15060	55.38	-13	-42.33	3.72	-38.62	-25.62
8	16942.5	63.49	-13	-46.44	4.18	-42.26	-29.26
9	18825	63.22	-13	-58.92	4.65	-54.27	-41.27

REMARKS:

1. Level (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/Telecom Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Lab:
Tel: 886-3-3183232
Fax: 886-3-3270892

Email: service.adt@tw.bureauveritas.com
Web Site: www.bureauveritas-adt.com

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

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

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

---END---