

# FCC Test Report

## (Part 27 – LTE Band 4, 13, 14)

**Report No.:** RF141118C01-7

**FCC ID:** AZ489FT7062

**Test Model:** LEX L10

**Received Date:** Dec. 16, 2014

**Test Date:** Dec. 23, 2014 ~ Mar. 26, 2015

**Issued Date:** Mar. 27, 2015

**Applicant:** Motorola Solutions Inc

**Address:** 1301 East Algonquin Road, Schaumburg, Illinois 60196

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

**Lab Address:** No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan, R.O.C.

**Test Location:** No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei Shan Hsiang, Taoyuan Hsien 333, Taiwan, R.O.C.



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### Release Control Record

Issue No.	Description	Date Issued
RF141118C01-7	Original release	Mar. 27, 2015

## 1 Certificate of Conformity

**Product:** Smart phone

**Brand:** Motorola Solutions Inc

**Test Model:** LEX L10

**Sample Status:** Prototype

**Applicant:** Motorola Solutions Inc

**Test Date:** Dec. 23, 2014 ~ Mar. 26, 2015

**Standards:** FCC Part 27, Subpart C,M

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

**Prepared by :** Celine Chou , **Date:** Mar. 27, 2015  
Celine Chou / Specialist

**Approved by :** Ken Lin , **Date:** Mar. 27, 2015  
Bruce Chen / Project Engineer

## 2 Summary of Test Results

Applied Standard: FCC Part 27 & Part 2			
FCC Clause	Test Item	Result	Remarks
2.1046 27.50(b)(10)	Equivalent Isotropically radiated power (for LTE Band 13)	PASS	Meet the requirement of limit.
2.1046 27.50(d)(4)	Equivalent Isotropically radiated power (for LTE Band 4)	PASS	Meet the requirement of limit.
2.1055 27.54	Frequency Stability Stay with the authorized bands of operation	PASS	Meet the requirement of limit.
2.1049 27.53(m)(6)	Emission Bandwidth	PASS	Meet the requirement of limit.
2.1051 27.53(m)(4)(6)	Band Edge Measurements	PASS	Meet the requirement of limit.
---	Peak To Average Ratio	PASS	Meet the requirement of limit.
2.1051 27.53(m)(4)(6)	Conducted Spurious Emissions	PASS	Meet the requirement of limit.
2.1053 27.53(m)(4)(6)	Radiated Spurious Emissions	PASS	Meet the requirement of limit. Minimum passing margin is -30.19dB at 43.58MHz.

### 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	Expended Uncertainty (k=2) (±)
Conducted Emissions at mains ports	150kHz ~ 30MHz	2.44 dB
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	3.59 dB
	200MHz ~ 1000MHz	3.60 dB
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	2.29 dB
	18GHz ~ 40GHz	2.29 dB

## 2.2 Test Site and Instruments

Description & Manufacturer	Model No.	Serial No.	Date Of Calibration	Due Date Of Calibration
Test Receiver ROHDE & SCHWARZ	ESCI	100424	Oct. 06, 2014	Oct. 05, 2015
Spectrum Analyzer ROHDE & SCHWARZ	FSU 43	100115	Dec. 18, 2014	Dec. 17, 2015
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Feb. 26, 2014	Feb. 25, 2015
			Feb. 26, 2015	Feb. 25, 2016
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-404	Jan. 05, 2014	Jan. 04, 2015
			Jan. 05, 2015	Jan. 04, 2016
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170241	Feb. 17, 2014	Feb. 16, 2015
			Feb. 17, 2015	Feb. 16, 2016
Preamplifier Agilent	8449B	3008A01961	Oct. 18, 2014	Oct. 17, 2015
Preamplifier Agilent	8447D	2944A10738	Oct. 18, 2014	Oct. 17, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	309220/4	Aug. 09, 2014	Aug. 08, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	250724/4	Aug. 09, 2014	Aug. 08, 2015
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	295012/4	Aug. 09, 2014	Aug. 08, 2015
Software BV ADT	ADT_Radiated_ V7.6.15.9.4	NA	NA	NA
Antenna Tower inn-co GmbH	MA 4000	010303	NA	NA
Antenna Tower Controller inn-co GmbH	CO2000	019303	NA	NA
Turn Table BV ADT	TT100.	TT93021704	NA	NA
Turn Table Controller BV ADT	SC100.	SC93021704	NA	NA
Mini-Circuits Power Splitter	ZN2PD-9G	NA	Apr. 25, 2014	Apr. 24, 2015
JFW 20dB attenuation	50HF-020-SMA	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 test was performed in HwaYa Chamber 4.

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

4. The FCC Site Registration No. is 460141.

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

### 3 General Information

#### 3.1 General Description of EUT

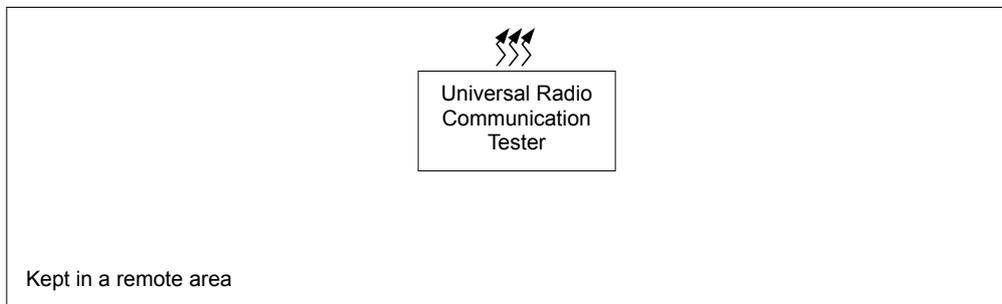
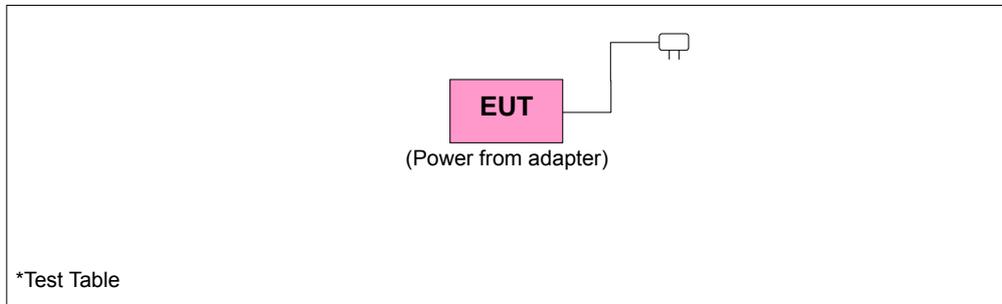
Product	Smart phone		
Brand	Motorola Solutions Inc		
Test Model	LEX L10		
Status of EUT	Prototype		
Power Supply Rating	3.7Vdc (Battery) 5Vdc (Adapter)		
Mode of operation	LTE Band 4, 13, 14		
Modulation Type	QPSK, 16QAM		
Operating Frequency	LTE Band 4	Channel Bandwidth 1.4MHz	1710.7MHz ~ 1754.3MHz
		Channel Bandwidth 3MHz	1711.5MHz ~ 1753.5MHz
		Channel Bandwidth 5MHz	1712.5MHz ~ 1752.5MHz
		Channel Bandwidth 10MHz	1715MHz ~ 1750MHz
		Channel Bandwidth 15MHz	1715.5MHz ~ 1747.5MHz
		Channel Bandwidth 20MHz	1720MHz ~ 1745MHz
	LTE Band 13	Channel Bandwidth 5MHz	779.5MHz ~ 784.5MHz
		Channel Bandwidth 10MHz	782MHz
	LTE Band 14	Channel Bandwidth 5MHz	790.5MHz
Max. EIRP Power	LTE Band 4	Channel Bandwidth 1.4MHz	387.258mW (25.88dBm)
		Channel Bandwidth 3MHz	293.765mW (24.68dBm)
		Channel Bandwidth 5MHz	298.538mW (24.75dBm)
		Channel Bandwidth 10MHz	281.190mW (24.49dBm)
		Channel Bandwidth 15MHz	271.019mW (24.33dBm)
		Channel Bandwidth 20MHz	301.995mW (24.80dBm)
Max. ERP Power	LTE Band 13	Channel Bandwidth 5MHz	199.526mW (23.00dBm)
		Channel Bandwidth 10MHz	110.154mW (20.42dBm)
	LTE Band 14	Channel Bandwidth 5MHz	253.513mW (24.04dBm)
Antenna Type	LTE Band 4	Inverted-L with parasitic element antenna with -0.23dBi gain	
	LTE Band 13	Inverted-L with parasitic element antenna with -0.93dBi gain	
	LTE Band 14	Inverted-L with parasitic element antenna with -1.13dBi gain	
Antenna Connector	Coaxial connector with switch		
Accessory Device	Refer to Note for more details		
Data Cable Supplied	Refer to Note for more details		
SW Version	M8974AAAAANLYD4050.1		
HW Version	MSM-8974-1-990BPNSP-TR-01-0-AB		

Note:

1. The EUT contains following accessory devices and data cable.

Item	Brand	Model or P/N	Specification
Rechargeable Lithium ion battery	MOTOROLA	PMNN4472A	3.7Vdc, 2340mAh, 8.7Wh
Rechargeable Lithium ion battery	MOTOROLA	PMNN4475A	3.7Vdc, 4560mAh, 16.9Wh
ITE power supply	MOTOROLA	IU08-2050120-WP (P/N: HKTN4008A)	I/P: 100-240Vac, 50-60Hz, 0.2A O/P: 5Vdc, 1.2A
USB cable (CABLE: ES400 USB SYNC AND CHARGE)	N/A	P/N: CKN6969A	1.4m shielded cable without core
Holster	N/A	P/N: HKLN4618A	-

### 3.2 Configuration of System Under Test



#### 3.2.1 Description of Support Units

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

No.	Product	Brand	Model No.	Serial No.	FCC ID
1	Universal Radio Communication Tester	R&S	CMU200	123112	NA

NO.	Signal Cable Description Of The Above Support Units
1	NA

Note:

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

### 3.3 Test Mode Applicability and Tested Channel Detail

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports

The worst case was found when positioned on Z-plane for LTE Band 4 and X-plane for LTE Band 4. Following channel(s) was (were) selected for the final test as listed below:

#### LTE Band 4

Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	1 RB / 0 RB Offset
Frequency Stability	19957 to 20393	20175	1.4MHz	QPSK	1 RB / 0 RB Offset
	19965 to 20385	20175	3MHz	QPSK	1 RB / 0 RB Offset
	19975 to 20375	20175	5MHz	QPSK	1 RB / 0 RB Offset
	20000 to 20350	20175	10MHz	QPSK	1 RB / 0 RB Offset
	20025 to 20325	20175	15MHz	QPSK	1 RB / 0 RB Offset
	20050 to 20300	20175	20MHz	QPSK	1 RB / 0 RB Offset
Emission Bandwidth	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM	6 RB / 0 RB Offset
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM	15 RB / 0 RB Offset
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM	75 RB / 0 RB Offset
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM	100 RB / 0 RB Offset
Channel Edge	19957 to 20393	19957, 20393	1.4MHz	QPSK	1 RB / 0 RB Offset 1 RB / 5 RB Offset 6 RB / 0 RB Offset
	19965 to 20385	19965, 20385	3MHz	QPSK	1 RB / 0 RB Offset 1 RB / 14 RB Offset 15 RB / 0 RB Offset
	19975 to 20375	19975, 20375	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
	20000 to 20350	20000, 20350	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
	20025 to 20325	20025, 20325	15MHz	QPSK	1 RB / 0 RB Offset 1 RB / 74 RB Offset 75 RB / 0 RB Offset
	20050 to 20300	20050, 20300	20MHz	QPSK	1 RB / 0 RB Offset 1 RB / 99 RB Offset 100 RB / 0 RB Offset

Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Conducted Emission	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK	1 RB / 0 RB Offset
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK	1 RB / 0 RB Offset
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK	1 RB / 0 RB Offset
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK	1 RB / 0 RB Offset
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK	1 RB / 0 RB Offset
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK	1 RB / 0 RB Offset
Radiated Emission Below 1GHz	19957 to 20393	19957	1.4MHz	QPSK	1 RB / 0 RB Offset
	19965 to 20385	19965	3MHz	QPSK	1 RB / 0 RB Offset
	19975 to 20375	19975	5MHz	QPSK	1 RB / 0 RB Offset
	20000 to 20350	20000	10MHz	QPSK	1 RB / 0 RB Offset
	20025 to 20325	20025	15MHz	QPSK	1 RB / 0 RB Offset
	20050 to 20300	20050	20MHz	QPSK	1 RB / 0 RB Offset
Radiated Emission Above 1GHz	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK	1 RB / 0 RB Offset
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK	1 RB / 0 RB Offset
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK	1 RB / 0 RB Offset
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK	1 RB / 0 RB Offset
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK	1 RB / 0 RB Offset
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK	1 RB / 0 RB Offset

**LTE Band 13**

Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
	23230	23230	10MHz	QPSK, 16QAM	1 RB / 0 RB Offset
Frequency Stability	23205 to 23255	23230	5MHz	QPSK	1 RB / 0 RB Offset
	23230	23230	10MHz	QPSK	1 RB / 0 RB Offset
Emission Bandwidth	23205 to 23255	23205, 23230, 23255	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
	23230	23230	10MHz	QPSK, 16QAM	50 RB / 0 RB Offset
Channel Edge	23205 to 23255	23205, 23255	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
	23230	23230	10MHz	QPSK	1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
Conducted Emission	23205 to 23255	23205, 23230, 23255	5MHz	QPSK	1 RB / 0 RB Offset
	23230	23230	10MHz	QPSK	1 RB / 0 RB Offset
Radiated Emission Below 1GHz	23205 to 23255	23205	5MHz	QPSK	1 RB / 0 RB Offset
	23230	23230	10MHz	QPSK	1 RB / 0 RB Offset
Radiated Emission Above 1GHz	23205 to 23255	23205, 23230, 23255	5MHz	QPSK	1 RB / 0 RB Offset
	23230	23230	10MHz	QPSK	1 RB / 0 RB Offset

**LTE Band 14**

Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power	23305	23305	5MHz	QPSK, 16QAM	1 RB / 0 RB Offset
Frequency Stability	23305	23305	5MHz	QPSK	1 RB / 0 RB Offset
Emission Bandwidth	23305	23305	5MHz	QPSK, 16QAM	25 RB / 0 RB Offset
Channel Edge	23305	23305	5MHz	QPSK	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
Conducted Emission	23305	23305	5MHz	QPSK	1 RB / 0 RB Offset
Radiated Emission Below 1GHz	23305	23305	5MHz	QPSK	1 RB / 0 RB Offset
Radiated Emission Above 1GHz	23305	23305	5MHz	QPSK	1 RB / 0 RB Offset

**NOTE:**

1. For radiated emission below 1 GHz, the low, mid and high channels were pre-tested in chamber. The low channel was the worst case and chosen for final test.
2. The conducted output power for QPSK and 16QAM, measured value of QPSK is higher than 16QAM mode. Therefore, only Output Power, Emission Bandwidth had been tested under QPSK and 16QAM modes, the others test items were performed under QPSK mode only.

**Test Condition:**

Test Item	Environmental Conditions	Input Power	Tested By
Output Power	24deg. C, 63%RH	120Vac, 60Hz	Chris Lin
Frequency Stability	24deg. C, 64%RH	3.7Vdc	Match Tsui
Emission Bandwidth	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui
Channel Edge	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui
Conducted Emission	24deg. C, 64%RH	120Vac, 60Hz	Match Tsui
Radiated Emission	24deg. C, 63%RH	120Vac, 60Hz	Chris Lin

### **3.4 EUT Operating Conditions**

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

### **3.5 General Description of Applied Standards**

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

**FCC 47 CFR Part 2**

**FCC 47 CFR Part 27**

**KDB 971168 D01 Power Meas License Digital Systems v02r02**

**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 / Portable station are limited to 1 watts e.i.r.p for LTE Band 4 and 3 watts e.r.p for LTE Band 13 & 14.

#### 4.1.2 Test Procedures

##### EIRP / ERP Measurement:

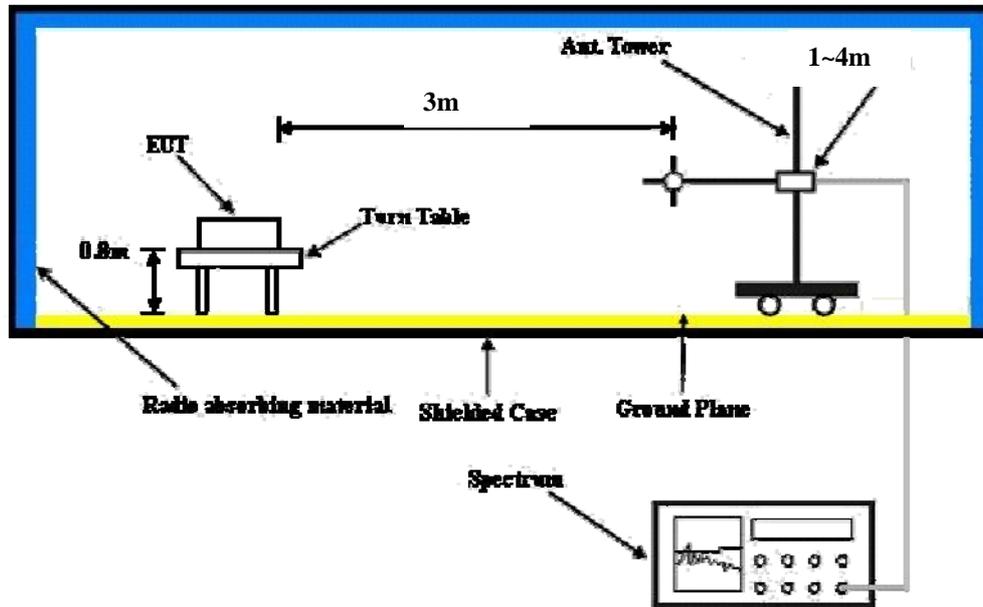
- a. All measurements were done at low, middle and high operational frequency range. RWB and VBW is 5MHz for LTE.
- b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step b. Record the power level of S.G
- d.  $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$ . E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole,  $E.R.P \text{ power} = E.I.R.P \text{ power} - 2.15\text{dBi}$ .

##### Conducted Power Measurement:

A power sensor was used on the output port of the EUT. A power meter was used to read the response of the power sensor. Record the power level.

### 4.1.3 Test Setup

EIRP / ERP MEASUREMENT:



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

CONDUCTED POWER MEASUREMENT:



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

**4.1.4 Test Results**
**CONDUCTED OUTPUT POWER (dBm)**

Band / BW	RB Size	RB Offset	QPSK			16QAM		
			Low CH 19957	Mid CH 20175	High CH 20393	Low CH 19957	Mid CH 20175	High CH 20393
			1710.7 MHz	1732.5 MHz	1754.3 MHz	1710.7 MHz	1732.5 MHz	1754.3 MHz
4 / 1.4M	1	0	22.89	23.05	<b>23.07</b>	21.88	22.04	<b>22.06</b>
	1	2	22.80	22.96	22.98	21.79	21.95	21.97
	1	5	22.66	22.82	22.84	21.65	21.81	21.83
	3	0	21.95	22.11	22.13	20.94	21.10	21.12
	3	1	21.92	22.08	22.10	20.91	21.07	21.09
	3	3	21.83	21.99	22.01	20.82	20.98	21.00
	6	0	21.81	21.97	21.99	20.80	20.96	20.98
Band / BW	RB Size	RB Offset	QPSK			16QAM		
			Low CH 19965	Mid CH 20175	High CH 20385	Low CH 19965	Mid CH 20175	High CH 20385
			1711.5 MHz	1732.5 MHz	1753.5 MHz	1711.5 MHz	1732.5 MHz	1753.5 MHz
4 / 3M	1	0	23.01	23.17	<b>23.19</b>	22.00	22.16	<b>22.18</b>
	1	7	22.92	23.08	23.10	21.91	22.07	22.09
	1	14	22.78	22.94	22.96	21.77	21.93	21.95
	8	0	22.07	22.23	22.25	21.06	21.22	21.24
	8	3	22.04	22.20	22.22	21.03	21.19	21.21
	8	7	21.95	22.11	22.13	20.94	21.10	21.12
	15	0	21.93	22.09	22.11	20.92	21.08	21.10
Band / BW	RB Size	RB Offset	QPSK			16QAM		
			Low CH 19975	Mid CH 20175	High CH 20375	Low CH 19975	Mid CH 20175	High CH 20375
			1712.5 MHz	1732.5 MHz	1752.5 MHz	1712.5 MHz	1732.5 MHz	1752.5 MHz
4 / 5M	1	0	23.13	23.29	<b>23.31</b>	22.12	22.28	<b>22.30</b>
	1	12	23.04	23.20	23.22	22.03	22.19	22.21
	1	24	22.90	23.06	23.08	21.89	22.05	22.07
	12	0	22.19	22.35	22.37	21.18	21.34	21.36
	12	6	22.16	22.32	22.34	21.15	21.31	21.33
	12	13	22.07	22.23	22.25	21.06	21.22	21.24
	25	0	22.05	22.21	22.23	21.04	21.20	21.22

Band / BW	RB Size	RB Offset	QPSK			16QAM		
			Low CH 20000	Mid CH 20175	High CH 20350	Low CH 20000	Mid CH 20175	High CH 20350
			1715 MHz	1732.5 MHz	1750 MHz	1715 MHz	1732.5 MHz	1750 MHz
4 / 10M	1	0	23.25	23.41	<b>23.43</b>	22.24	22.40	<b>22.42</b>
	1	24	23.16	23.32	23.34	22.15	22.31	22.33
	1	49	23.02	23.18	23.20	22.01	22.17	22.19
	25	0	22.31	22.47	22.49	21.30	21.46	21.48
	25	12	22.28	22.44	22.46	21.27	21.43	21.45
	25	25	22.19	22.35	22.37	21.18	21.34	21.36
	50	0	22.17	22.33	22.35	21.16	21.32	21.34
Band / BW	RB Size	RB Offset	QPSK			16QAM		
			Low CH 20025	Mid CH 20175	High CH 20325	Low CH 20025	Mid CH 20175	High CH 20325
			1717.5 MHz	1732.5 MHz	1747.5 MHz	1717.5 MHz	1732.5 MHz	1747.5 MHz
4 / 15M	1	0	23.37	23.53	<b>23.55</b>	22.36	22.52	<b>22.54</b>
	1	37	23.28	23.44	23.46	22.27	22.43	22.45
	1	74	23.14	23.30	23.32	22.13	22.29	22.31
	36	0	22.43	22.59	22.61	21.42	21.58	21.60
	36	19	22.40	22.56	22.58	21.39	21.55	21.57
	36	39	22.31	22.47	22.49	21.30	21.46	21.48
	75	0	22.29	22.45	22.47	21.28	21.44	21.46
Band / BW	RB Size	RB Offset	QPSK			16QAM		
			Low CH 20050	Mid CH 20175	High CH 20300	Low CH 20050	Mid CH 20175	High CH 20300
			1720 MHz	1732.5 MHz	1745 MHz	1720 MHz	1732.5 MHz	1745 MHz
4 / 20M	1	0	23.49	23.65	<b>23.67</b>	22.48	22.64	<b>22.66</b>
	1	50	23.40	23.56	23.58	22.39	22.55	22.57
	1	99	23.26	23.42	23.44	22.25	22.41	22.43
	50	0	22.55	22.71	22.73	21.54	21.70	21.72
	50	25	22.52	22.68	22.70	21.51	21.67	21.69
	50	50	22.43	22.59	22.61	21.42	21.58	21.60
	100	0	22.41	22.57	22.59	21.40	21.56	21.58
Band / BW	RB Size	RB Offset	QPSK			16QAM		
			Low CH 23205	Mid CH 23230	High CH 23255	Low CH 23205	Mid CH 23230	High CH 23255
			779.5 MHz	782 MHz	784.5 MHz	779.5 MHz	782 MHz	784.5 MHz
13 / 5M	1	0	<b>23.75</b>	23.65	23.66	<b>22.73</b>	22.63	22.64
	1	12	23.73	23.63	23.64	22.71	22.61	22.62
	1	24	23.72	23.62	23.63	22.70	22.60	22.61
	12	0	22.71	22.61	22.62	21.69	21.59	21.60
	12	6	22.66	22.56	22.57	21.64	21.54	21.55
	12	13	22.67	22.57	22.58	21.65	21.55	21.56
	25	0	22.68	22.58	22.59	21.66	21.56	21.57

Band / BW	RB Size	RB Offset	QPSK	16QAM
			Mid CH 23230	Mid CH 23230
			782MHz	782MHz
13 / 10M	1	0	<b>23.71</b>	<b>22.68</b>
	1	24	23.66	22.63
	1	49	23.64	22.61
	25	0	22.60	21.57
	25	12	22.55	21.52
	25	25	22.56	21.53
	50	0	22.61	21.58
Band / BW	RB Size	RB Offset	QPSK	16QAM
			Low CH 23305	Low CH 23305
			790.5MHz	790.5MHz
14 / 5M	1	0	23.64	22.62
	1	12	23.51	22.49
	1	24	23.56	22.54
	12	0	22.50	21.48
	12	6	22.44	21.42
	12	13	22.47	21.45
	25	0	22.48	21.46

EIRP Power (dBm)

LTE Band 4

For Channel Bandwidth:

1.4MHz QPSK

MODE		TX channel 19957					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1710.70	-15.69	22.76	0.99	23.75	30.00	-6.25
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1710.70	-14.51	24.72	0.99	25.71	30.00	-4.29

MODE		TX channel 20175					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-14.95	23.70	1.01	24.71	30.00	-5.29
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
<b>1</b>	<b>1732.50</b>	<b>-14.33</b>	<b>24.87</b>	<b>1.01</b>	<b>25.88</b>	<b>30.00</b>	<b>-4.12</b>

MODE		TX channel 20393					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1754.30	-15.42	23.43	1.02	24.45	30.00	-5.55
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1754.30	-14.98	24.20	1.02	25.22	30.00	-4.78

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

**1.4MHz 16QAM**

<b>MODE</b>		TX channel 19957					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1710.70	-16.19	22.26	0.99	23.25	30.00	-6.75
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1710.70	-15.01	24.22	0.99	25.21	30.00	-4.79

<b>MODE</b>		TX channel 20175					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-15.45	23.20	1.01	24.21	30.00	-5.79
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-14.83	24.37	1.01	25.38	30.00	-4.62

<b>MODE</b>		TX channel 20393					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1754.30	-15.92	22.93	1.02	23.95	30.00	-6.05
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1754.30	-15.48	23.70	1.02	24.72	30.00	-5.28

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

For Channel Bandwidth:

3MHz QPSK

MODE		TX channel 19965					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1711.50	-16.63	21.83	0.99	22.82	30.00	-7.18
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
<b>1</b>	<b>1711.50</b>	<b>-15.54</b>	<b>23.69</b>	<b>0.99</b>	<b>24.68</b>	<b>30.00</b>	<b>-5.32</b>

MODE		TX channel 20175					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-17.54	21.11	1.01	22.12	30.00	-7.88
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-16.00	23.20	1.01	24.21	30.00	-5.79

MODE		TX channel 20385					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1753.50	-17.35	21.49	1.02	22.51	30.00	-7.49
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1753.50	-15.70	23.48	1.02	24.50	30.00	-5.50

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

## 3MHz 16QAM

MODE		TX channel 19965					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1711.50	-17.13	21.33	0.99	22.32	30.00	-7.68
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1711.50	-16.04	23.19	0.99	24.18	30.00	-5.82

MODE		TX channel 20175					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-18.04	20.61	1.01	21.62	30.00	-8.38
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-16.50	22.70	1.01	23.71	30.00	-6.29

MODE		TX channel 20385					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1753.50	-17.85	20.99	1.02	22.01	30.00	-7.99
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1753.50	-16.20	22.98	1.02	24.00	30.00	-6.00

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

For Channel Bandwidth:

5MHz QPSK

MODE		TX channel 19975					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1712.50	-16.85	21.62	0.99	22.61	30.00	-7.39
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1712.50	-15.90	23.33	0.99	24.32	30.00	-5.68

MODE		TX channel 20175					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-16.78	21.87	1.01	22.88	30.00	-7.12
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-15.63	23.57	1.01	24.58	30.00	-5.42

MODE		TX channel 20375					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1752.50	-17.20	21.63	1.02	22.65	30.00	-7.35
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
<b>1</b>	<b>1752.50</b>	<b>-15.45</b>	<b>23.73</b>	<b>1.02</b>	<b>24.75</b>	<b>30.00</b>	<b>-5.25</b>

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

**5MHz 16QAM**

<b>MODE</b>		TX channel 19975					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1712.50	-17.35	21.12	0.99	22.11	30.00	-7.89
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1712.50	-16.40	22.83	0.99	23.82	30.00	-6.18

<b>MODE</b>		TX channel 20175					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-17.28	21.37	1.01	22.38	30.00	-7.62
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-16.13	23.07	1.01	24.08	30.00	-5.92

<b>MODE</b>		TX channel 20375					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1752.50	-17.70	21.13	1.02	22.15	30.00	-7.85
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1752.50	-15.95	23.23	1.02	24.25	30.00	-5.75

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

For Channel Bandwidth:

10MHz QPSK

MODE		TX channel 20000					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1715.00	-17.18	21.32	0.99	22.31	30.00	-7.69
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
<b>1</b>	<b>1715.00</b>	<b>-15.73</b>	<b>23.50</b>	<b>0.99</b>	<b>24.49</b>	<b>30.00</b>	<b>-5.51</b>

MODE		TX channel 20175					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-17.61	21.04	1.01	22.05	30.00	-7.95
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-16.19	23.01	1.01	24.02	30.00	-5.98

MODE		TX channel 20350					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1750.00	-17.06	21.76	1.01	22.77	30.00	-7.23
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1750.00	-15.76	23.44	1.01	24.45	30.00	-5.55

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

**10MHz 16QAM**

<b>MODE</b>		<b>TX channel 20000</b>					
<b>Antenna Polarity &amp; Test Distance: Horizontal at 3 M</b>							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1715.00	-17.68	20.82	0.99	21.81	30.00	-8.19
<b>Antenna Polarity &amp; Test Distance: Vertical at 3 M</b>							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1715.00	-16.23	23.00	0.99	23.99	30.00	-6.01

<b>MODE</b>		<b>TX channel 20175</b>					
<b>Antenna Polarity &amp; Test Distance: Horizontal at 3 M</b>							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-18.11	20.54	1.01	21.55	30.00	-8.45
<b>Antenna Polarity &amp; Test Distance: Vertical at 3 M</b>							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-16.69	22.51	1.01	23.52	30.00	-6.48

<b>MODE</b>		<b>TX channel 20350</b>					
<b>Antenna Polarity &amp; Test Distance: Horizontal at 3 M</b>							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1750.00	-17.56	21.26	1.01	22.27	30.00	-7.73
<b>Antenna Polarity &amp; Test Distance: Vertical at 3 M</b>							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1750.00	-16.26	22.94	1.01	23.95	30.00	-6.05

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

For Channel Bandwidth:

15MHz QPSK

MODE		TX channel 20025					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1717.50	-16.78	21.74	0.99	22.73	30.00	-7.27
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1717.50	-16.12	23.11	0.99	24.10	30.00	-5.90

MODE		TX channel 20175					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-17.09	21.56	1.01	22.57	30.00	-7.43
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-15.88	23.32	1.01	24.33	30.00	-5.67

MODE		TX channel 20325					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1747.50	-16.82	21.97	1.01	22.98	30.00	-7.02
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1747.50	-16.05	23.15	1.01	24.16	30.00	-5.84

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

**15MHz 16QAM**

<b>MODE</b>		TX channel 20025					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1717.50	-17.28	21.24	0.99	22.23	30.00	-7.77
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1717.50	-16.62	22.61	0.99	23.60	30.00	-6.40

<b>MODE</b>		TX channel 20175					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-17.59	21.06	1.01	22.07	30.00	-7.93
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-16.38	22.82	1.01	23.83	30.00	-6.17

<b>MODE</b>		TX channel 20325					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1747.50	-17.32	21.47	1.01	22.48	30.00	-7.52
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1747.50	-16.55	22.65	1.01	23.66	30.00	-6.34

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

For Channel Bandwidth:

20MHz QPSK

MODE		TX channel 20050					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1720.00	-17.18	21.35	1.00	22.35	30.00	-7.65
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1720.00	-15.91	23.31	1.00	24.31	30.00	-5.69

MODE		TX channel 20175					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-17.36	21.29	1.01	22.30	30.00	-7.70
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-15.63	23.57	1.01	24.58	30.00	-5.42

MODE		TX channel 20300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1745.00	-17.33	21.44	1.01	22.45	30.00	-7.55
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
<b>1</b>	<b>1745.00</b>	<b>-15.41</b>	<b>23.79</b>	<b>1.01</b>	<b>24.80</b>	<b>30.00</b>	<b>-5.20</b>

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

**20MHz 16QAM**

<b>MODE</b>		TX channel 20050					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1720.00	-17.68	20.85	1.00	21.85	30.00	-8.15
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1720.00	-16.41	22.81	1.00	23.81	30.00	-6.19

<b>MODE</b>		TX channel 20175					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-17.86	20.79	1.01	21.80	30.00	-8.20
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1732.50	-16.13	23.07	1.01	24.08	30.00	-5.92

<b>MODE</b>		TX channel 20300					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1745.00	-17.83	20.94	1.01	21.95	30.00	-8.05
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	1745.00	-15.91	23.29	1.01	24.30	30.00	-5.70

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



LTE Band 13

For Channel Bandwidth:

5MHz QPSK

MODE		TX channel 23205					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	779.50	-7.87	23.67	-1.07	22.60	34.77	-12.17
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	779.50	-14.02	18.97	-1.07	17.90	34.77	-16.87

MODE		TX channel 23230					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	782.00	-8.22	23.21	-1.01	22.20	34.77	-12.57
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	782.00	-14.08	18.70	-1.01	17.69	34.77	-17.08

MODE		TX channel 23255					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	<b>784.50</b>	<b>-7.55</b>	<b>23.95</b>	<b>-0.95</b>	<b>23.00</b>	<b>34.77</b>	<b>-11.77</b>
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	784.50	-13.73	18.98	-0.95	18.03	34.77	-16.74

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

**5MHz 16QAM**

<b>MODE</b>		TX channel 23205					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	779.50	-8.37	23.17	-1.07	22.10	34.77	-12.67
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	779.50	-14.52	18.47	-1.07	17.40	34.77	-17.37

<b>MODE</b>		TX channel 23230					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	782.00	-8.72	22.71	-1.01	21.70	34.77	-13.07
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	782.00	-14.58	18.20	-1.01	17.19	34.77	-17.58

<b>MODE</b>		TX channel 23255					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	784.50	-8.05	23.45	-0.95	22.50	34.77	-12.27
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	784.50	-14.23	18.48	-0.95	17.53	34.77	-17.24

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

For Channel Bandwidth:

10MHz QPSK

MODE		TX channel 23230					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	782.00	-10.00	21.43	-1.01	20.42	34.77	-14.35
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	782.00	-17.38	15.40	-1.01	14.39	34.77	-20.38

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

10MHz 16QAM

MODE		TX channel 23230					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	782.00	-10.50	20.93	-1.01	19.92	34.77	-14.85
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	782.00	-17.88	14.90	-1.01	13.89	34.77	-20.88

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

LTE Band 14

For Channel Bandwidth:

5MHz QPSK

MODE		TX channel 23305					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	790.50	-6.80	24.85	-0.81	24.04	34.77	-10.73
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	790.50	-15.40	17.16	-0.81	16.35	34.77	-18.42

5MHz 16QAM

MODE		TX channel 23305					
Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	790.50	-7.31	24.34	-0.81	23.53	34.77	-11.24
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	790.50	-15.90	16.66	-0.81	15.85	34.77	-18.92

## 4.2 Frequency Stability Measurement

### 4.2.1 Limits of Frequency Stability Measurement

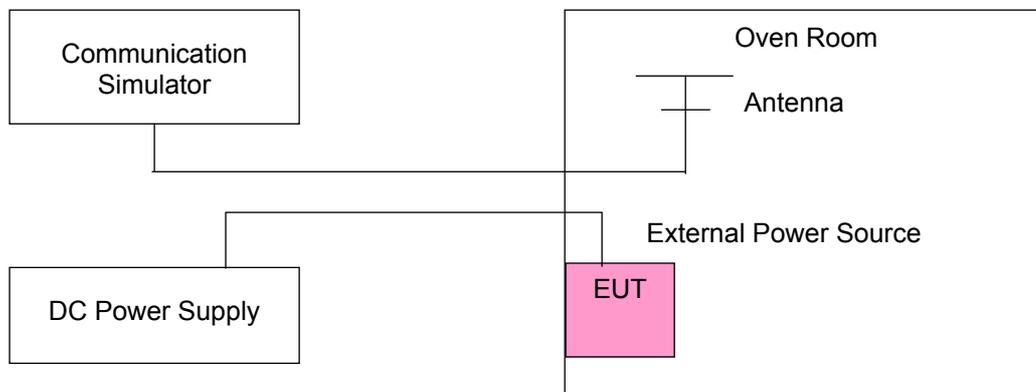
According to the FCC part 2.1055 shall be tested the frequency stability. The rule is defined that "The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block." The test extreme voltage is according to the 2.1055(d)(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment and the extreme temperature rule is comply with specification of EUT  $-30^{\circ}\text{C} \sim 50^{\circ}\text{C}$ .

### 4.2.2 Test Procedure

- 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.
- EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the  $\pm 0.5^{\circ}\text{C}$  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

LTE Band 4

Frequency Error vs. Voltage

Voltage (Volts)	Frequency Error (ppm)						Limit (ppm)
	1.4M	3M	5M	10M	15M	20M	
4.25	-0.008	-0.008	-0.008	-0.007	-0.007	-0.006	2.5
3.70	-0.008	-0.007	-0.008	-0.006	-0.008	-0.008	2.5
3.45	-0.007	-0.006	-0.008	-0.006	-0.008	-0.007	2.5

**NOTE:** The applicant defined the normal working voltage of the battery is from 3.45Vdc to 4.25Vdc.

Frequency Error vs. Temperature.

TEMP. (°C)	Frequency Error (ppm)						Limit (ppm)
	1.4M	3M	5M	10M	15M	20M	
60	-0.012	-0.014	-0.012	-0.015	-0.017	-0.017	2.5
50	-0.012	-0.012	-0.012	-0.014	-0.017	-0.018	2.5
40	-0.011	-0.012	-0.011	-0.012	-0.016	-0.016	2.5
30	-0.010	-0.010	-0.009	-0.009	-0.009	-0.014	2.5
20	-0.008	-0.007	-0.008	-0.006	-0.008	-0.008	2.5
10	-0.009	-0.009	-0.009	-0.009	-0.012	-0.011	2.5
0	-0.011	-0.012	-0.010	-0.011	-0.014	-0.017	2.5
-10	-0.015	-0.015	-0.015	-0.016	-0.017	-0.018	2.5
-20	-0.016	-0.017	-0.017	-0.018	-0.017	-0.018	2.5

## LTE Band 13

## Frequency Error vs. Voltage

Voltage (Volts)	Frequency Error (ppm)		Limit (ppm)
	5M	10M	
4.25	-0.020	-0.019	2.5
3.70	-0.018	-0.017	2.5
3.45	-0.019	-0.018	2.5

**NOTE:** The applicant defined the normal working voltage of the battery is from 3.45Vdc to 4.25Vdc.

## Frequency Error vs. Temperature.

TEMP. (°C)	Frequency Error (ppm)		Limit (ppm)
	5M	10M	
60	-0.028	-0.032	2.5
50	-0.026	-0.033	2.5
40	-0.027	-0.031	2.5
30	-0.024	-0.022	2.5
20	-0.018	-0.017	2.5
10	-0.020	-0.020	2.5
0	-0.024	-0.028	2.5
-10	-0.031	-0.033	2.5
-20	-0.038	-0.037	2.5

LTE Band 14

Frequency Error vs. Voltage

Voltage (Volts)	Frequency Error (ppm)	Limit (ppm)
	5M	
4.25	-0.018	2.5
3.70	-0.014	2.5
3.45	-0.013	2.5

**NOTE:** The applicant defined the normal working voltage of the battery is from 3.45Vdc to 4.25Vdc.

Frequency Error vs. Temperature.

TEMP. (°C)	Frequency Error (ppm)	Limit (ppm)
	5M	
60	-0.029	2.5
50	-0.030	2.5
40	-0.027	2.5
30	-0.020	2.5
20	-0.014	2.5
10	-0.019	2.5
0	-0.027	2.5
-10	-0.034	2.5
-20	-0.043	2.5

### 4.3 Emission Bandwidth Measurement

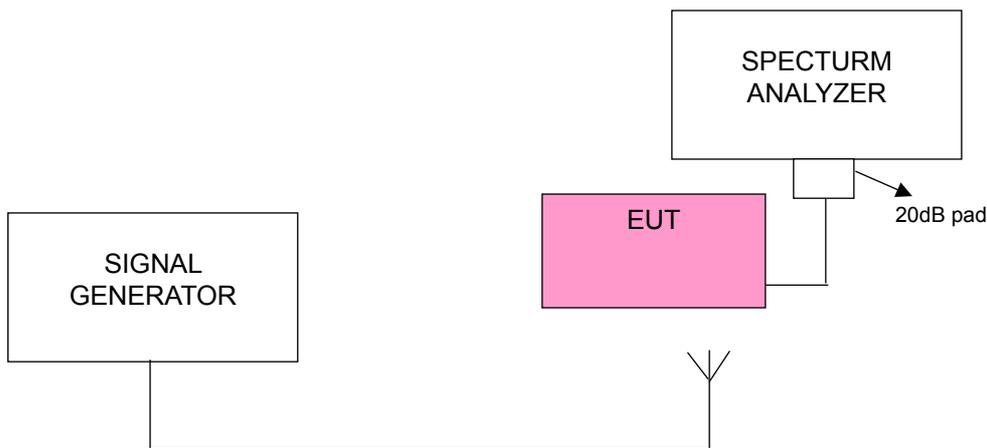
#### 4.3.1 Limits of Emission Bandwidth Measurement

According to FCC 27.53(m)(6) specified that emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power.

#### 4.3.2 Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with RBW = 30kHz and VBW = 100kHz (Channel Bandwidth: 1.4MHz), RBW = 51kHz and VBW = 150kHz (Channel Bandwidth: 3MHz and 5MHz), RBW = 100kHz and VBW = 300kHz (Channel Bandwidth: 10MHz), RBW = 200kHz and VBW = 620kHz (Channel Bandwidth: 15MHz) and RBW = 430kHz and VBW = 1.2MHz (Channel Bandwidth: 20MHz). The 26dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 26dB.

#### 4.3.3 Test Setup



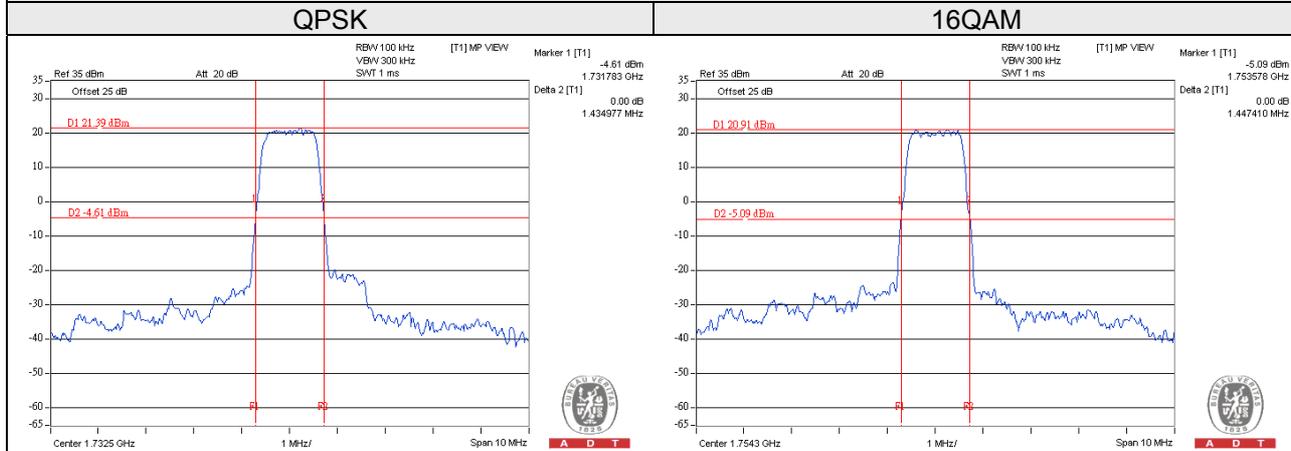
### 4.3.4 Test Result

#### LTE Band 4

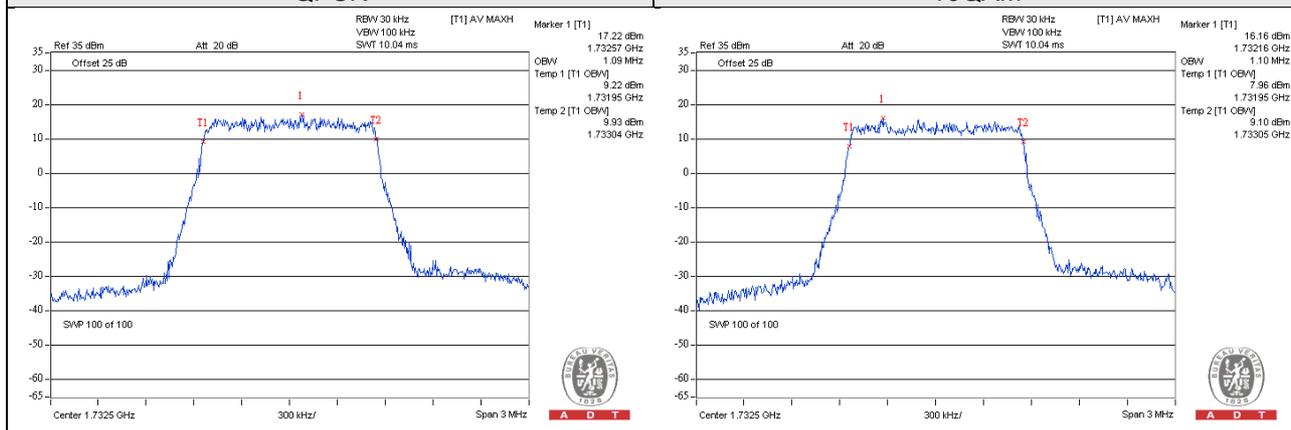
Channel Bandwidth: 1.4MHz					
Channel	Frequency (MHz)	-26dBc Bandwidth (MHz)		Occupied Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
19957	1710.7	1.41	1.43	1.09	1.09
20175	1732.5	1.43	1.43	1.09	1.10
20393	1754.3	1.43	1.45	1.09	1.09

#### SPECTRUM PLOT OF WORST VALUE

##### -26dBc Bandwidth

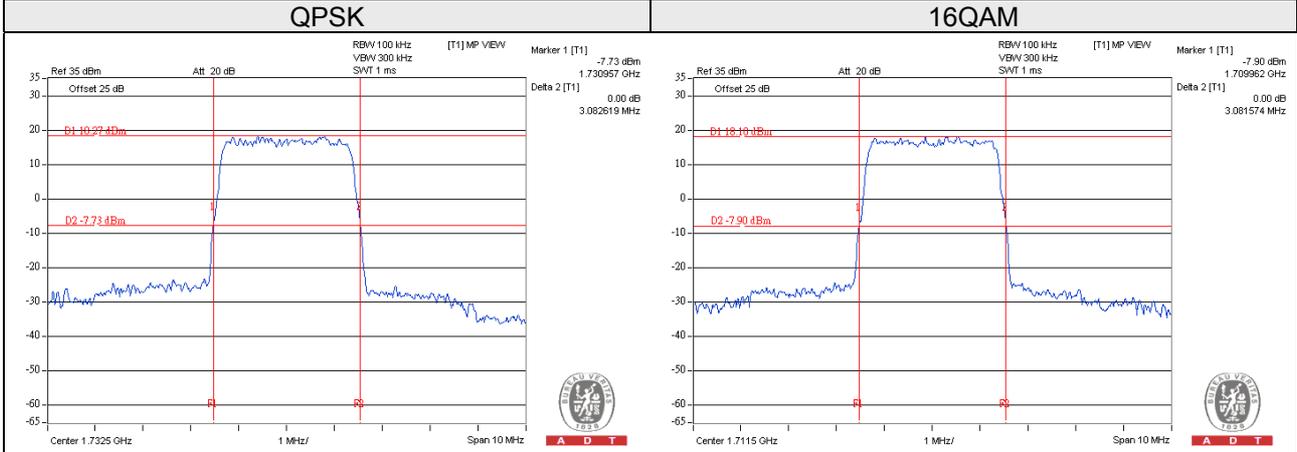


#### Occupied Bandwidth

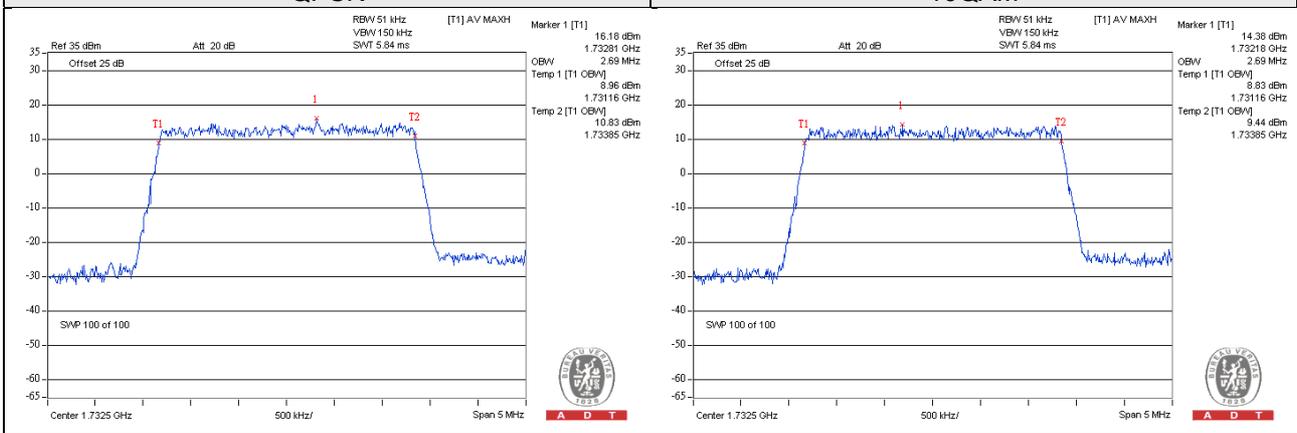


Channel Bandwidth: 3MHz					
Channel	Frequency (MHz)	-26dBc Bandwidth (MHz)		Occupied Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
19965	1711.5	3.06	3.08	2.68	2.69
20175	1732.5	3.08	3.07	2.69	2.69
20385	1753.5	3.05	3.07	2.68	2.69

**SPECTRUM PLOT OF WORST VALUE**  
-26dBc Bandwidth

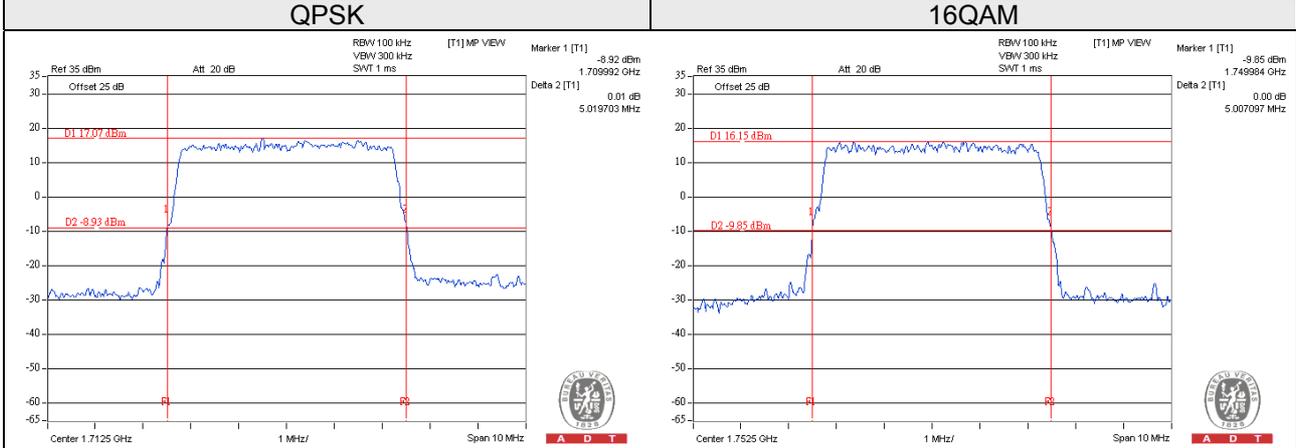


**Occupied Bandwidth**

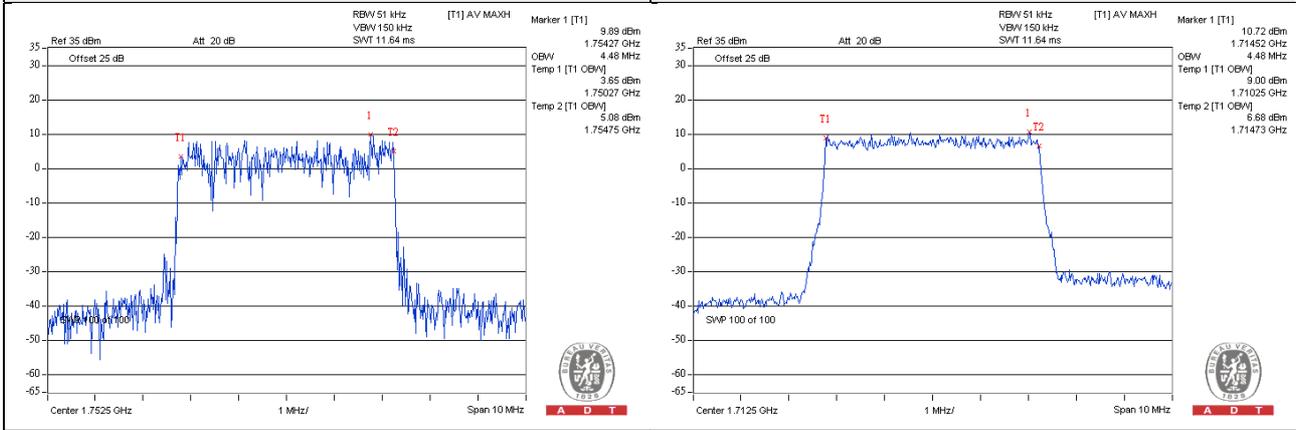


Channel Bandwidth: 5MHz					
Channel	Frequency (MHz)	-26dBc Bandwidth (MHz)		Occupied Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
19975	1712.5	5.02	4.99	4.47	4.48
20175	1732.5	4.95	4.98	4.48	4.45
20375	1752.5	4.98	5.01	4.48	4.47

**SPECTRUM PLOT OF WORST VALUE**  
-26dBc Bandwidth

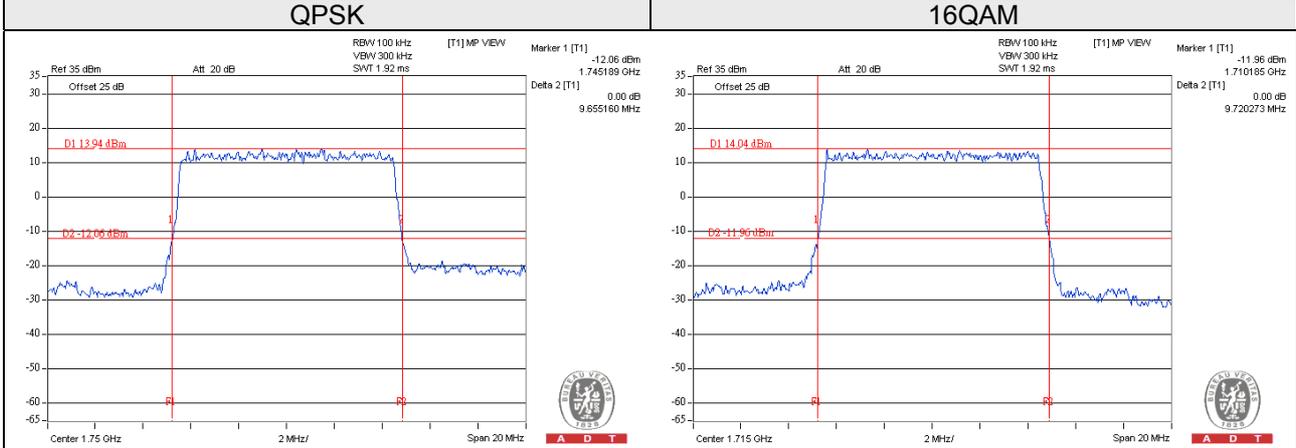


**Occupied Bandwidth**

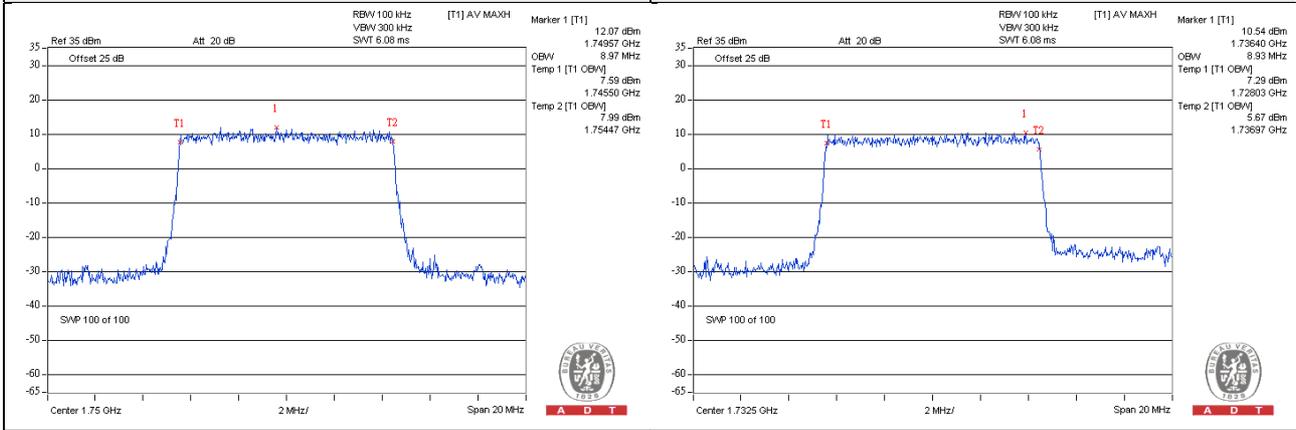


Channel Bandwidth: 10MHz					
Channel	Frequency (MHz)	-26dBc Bandwidth (MHz)		Occupied Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
20000	1715.0	9.63	9.72	8.93	8.90
20175	1732.5	9.63	9.72	8.93	8.93
20350	1750.0	9.66	9.63	8.97	8.90

**SPECTRUM PLOT OF WORST VALUE**  
-26dBc Bandwidth

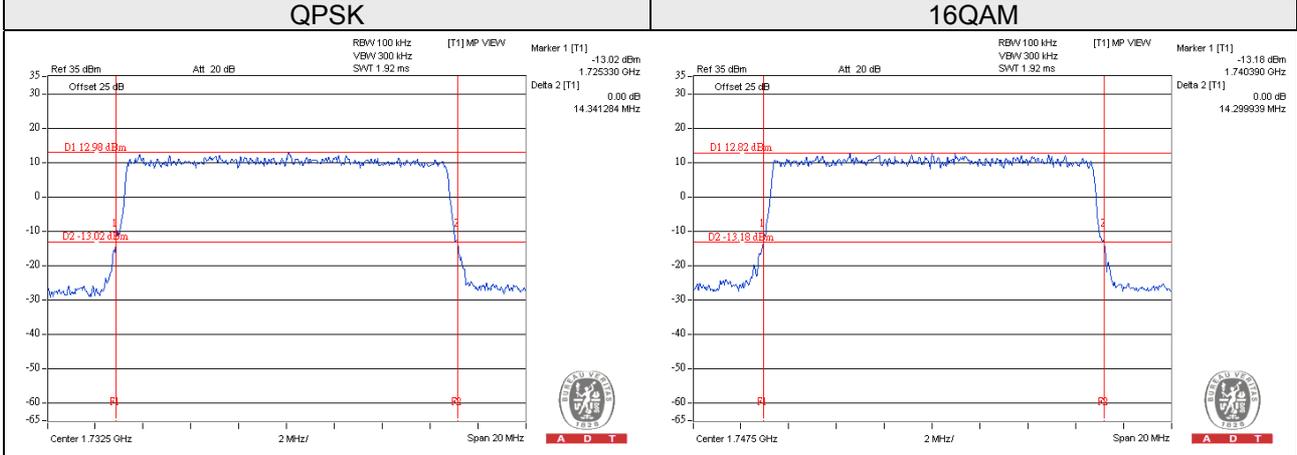


**Occupied Bandwidth**

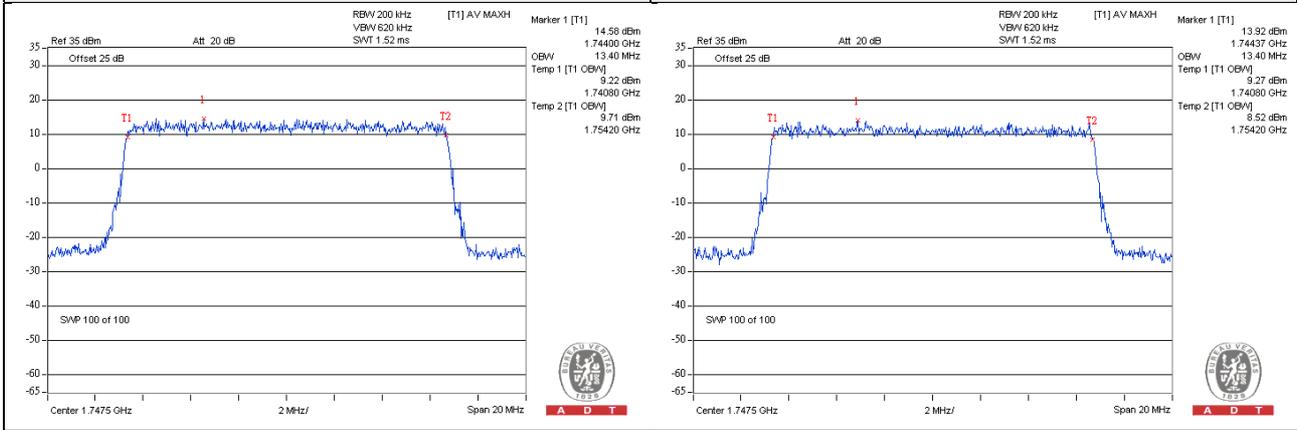


Channel Bandwidth: 15MHz					
Channel	Frequency (MHz)	-26dBc Bandwidth (MHz)		Occupied Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
20025	1717.5	14.25	14.22	13.37	13.37
20175	1732.5	14.34	14.24	13.37	13.37
20325	1747.5	14.22	14.30	13.40	13.40

**SPECTRUM PLOT OF WORST VALUE**  
-26dBc Bandwidth

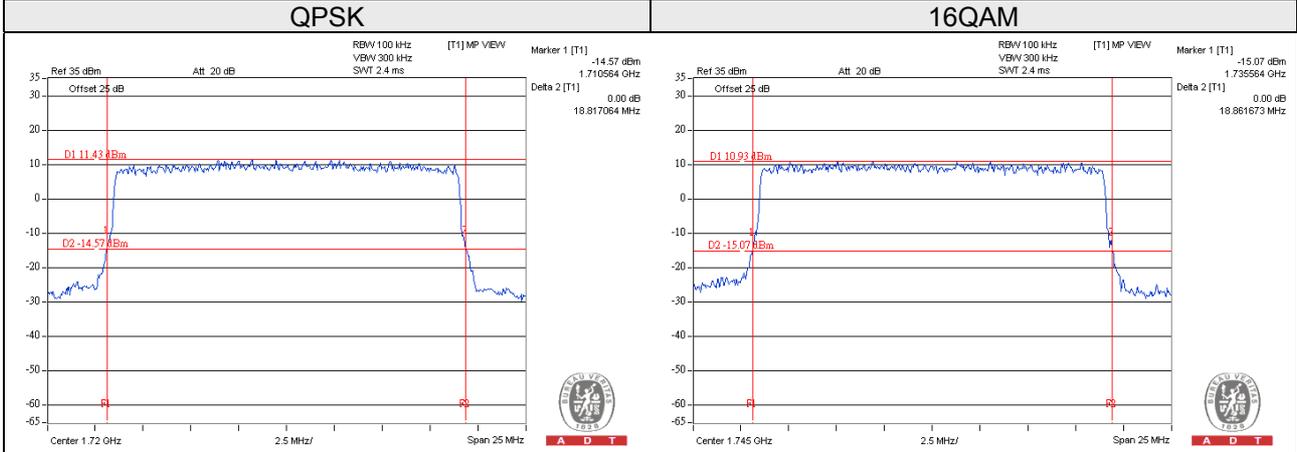


**Occupied Bandwidth**

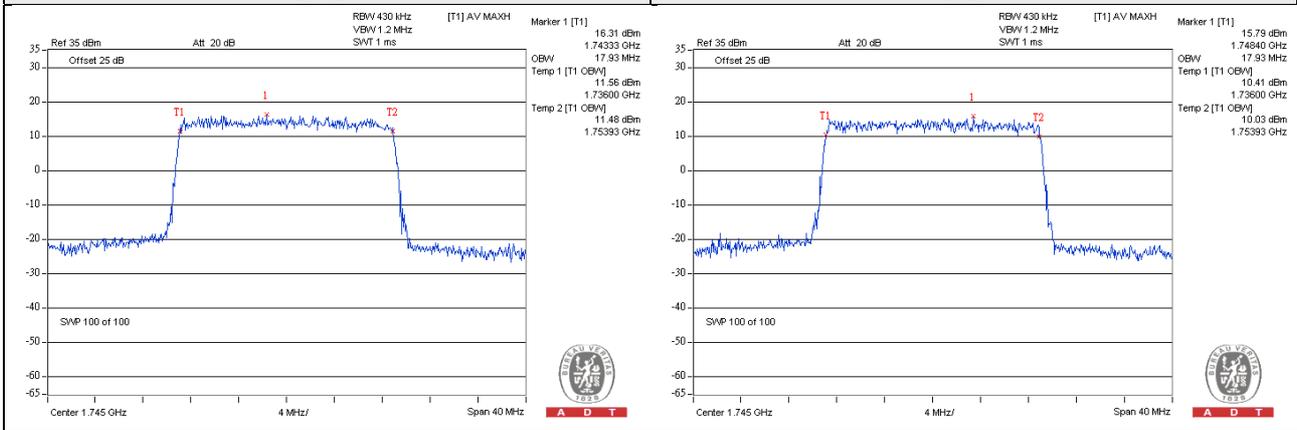


Channel Bandwidth: 20MHz					
Channel	Frequency (MHz)	-26dBc Bandwidth (MHz)		Occupied Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
20050	1720.0	18.82	18.81	17.93	17.93
20175	1732.5	18.79	18.76	17.93	17.93
20300	1745.0	18.77	18.86	17.93	17.93

**SPECTRUM PLOT OF WORST VALUE**  
-26dBc Bandwidth



**Occupied Bandwidth**

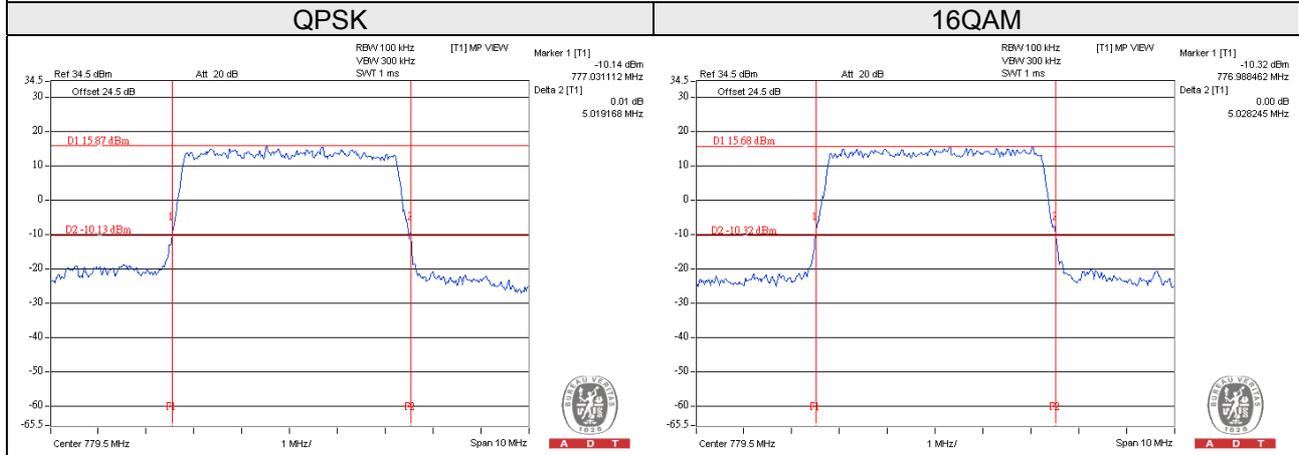


LTE Band 13

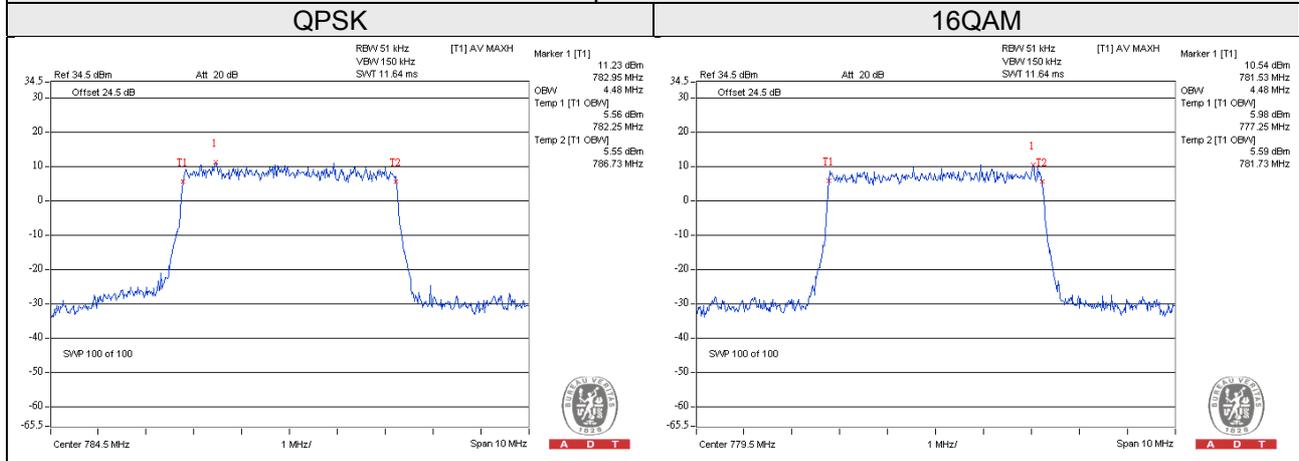
Channel Bandwidth: 5MHz					
Channel	Frequency (MHz)	-26dBc Bandwidth (MHz)		Occupied Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
23205	779.5	5.02	5.03	4.47	4.48
23230	782.0	5.00	5.02	4.47	4.47
23255	784.5	4.90	5.02	4.48	4.47

SPECTRUM PLOT OF WORST VALUE

-26dBc Bandwidth

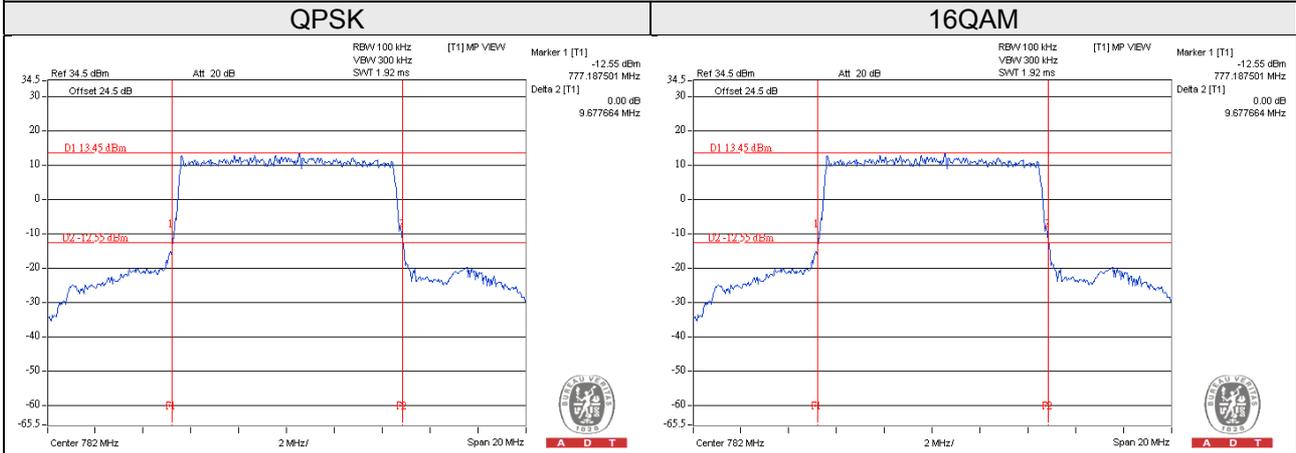


Occupied Bandwidth

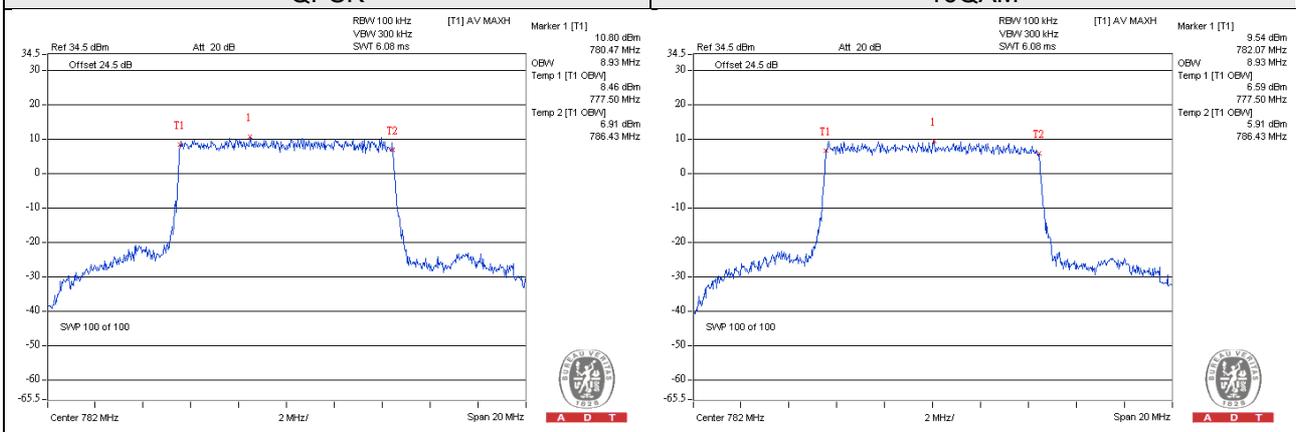


Channel Bandwidth: 10MHz					
Channel	Frequency (MHz)	-26dBc Bandwidth (MHz)		Occupied Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
23230	782.0	9.68	9.68	8.93	8.93

**SPECTRUM PLOT OF WORST VALUE**  
-26dBc Bandwidth



**Occupied Bandwidth**

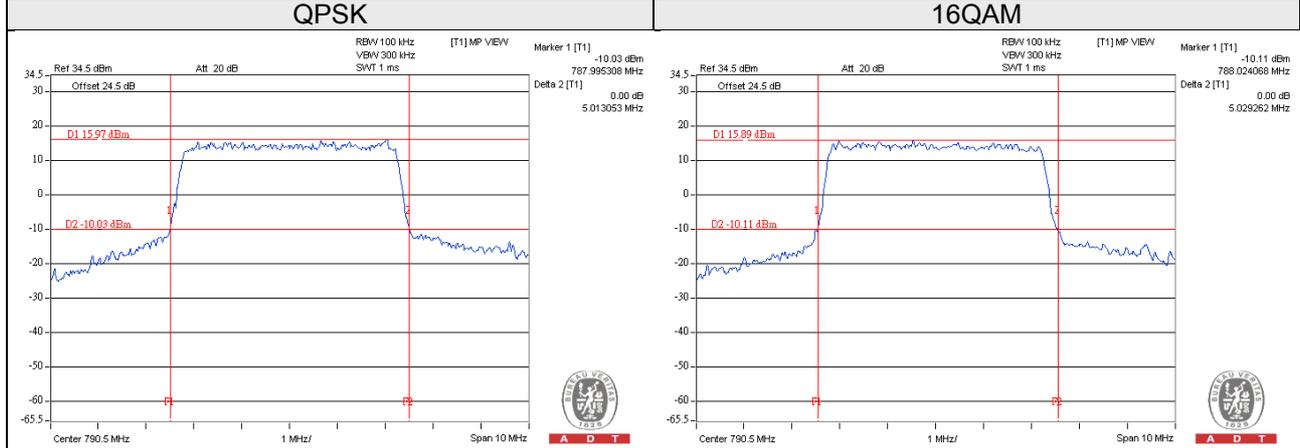


LTE Band 14

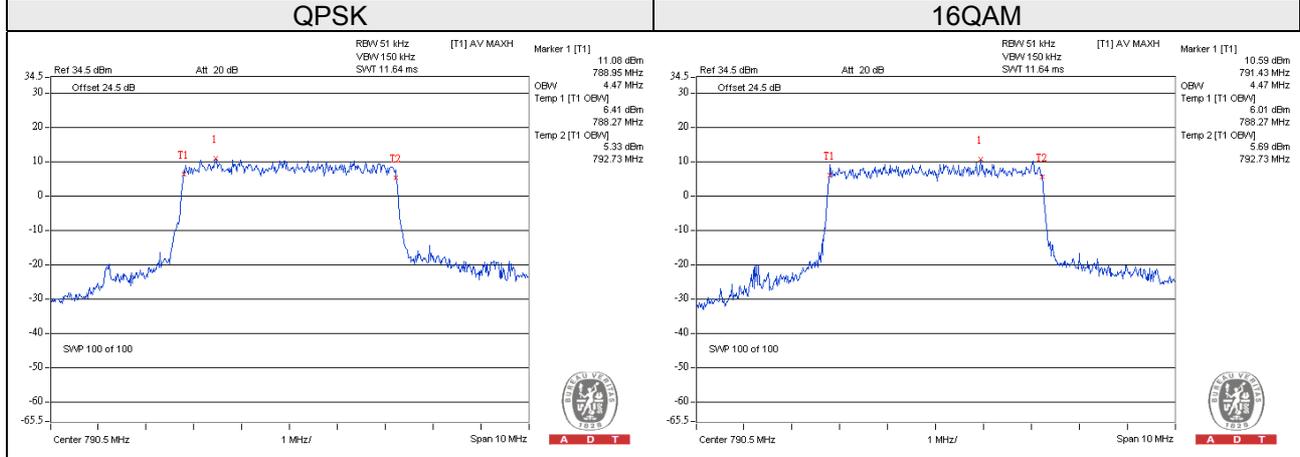
Channel Bandwidth: 5MHz					
Channel	Frequency (MHz)	-26dBc Bandwidth (MHz)		Occupied Bandwidth (MHz)	
		QPSK	16QAM	QPSK	16QAM
23305	790.5	5.01	5.03	4.47	4.47

SPECTRUM PLOT OF WORST VALUE

-26dBc Bandwidth



Occupied Bandwidth

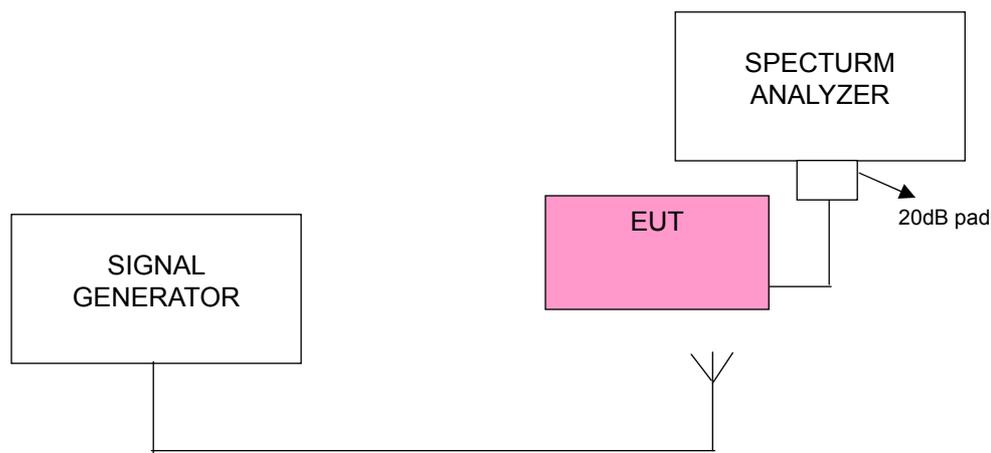


## 4.4 Channel Edge Measurement

### 4.4.1 Limits of Band Edge Measurement

According to FCC 27.53(m)(4) specified that power of any emission outside of the channel edge must be attenuated below the transmitting power ( $P$ ) by a factor shall be not less than  $43 + 10 \log (P)$  dB at the channel edge, the limit of emission equal to  $-13$ dBm. And  $55 + 10 \log (P)$  dB at 5.5 MHz from the channel edges, the limit of emission equal to  $-25$ dBm. In the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

### 4.4.2 Test Setup



### 4.4.3 Test Procedures

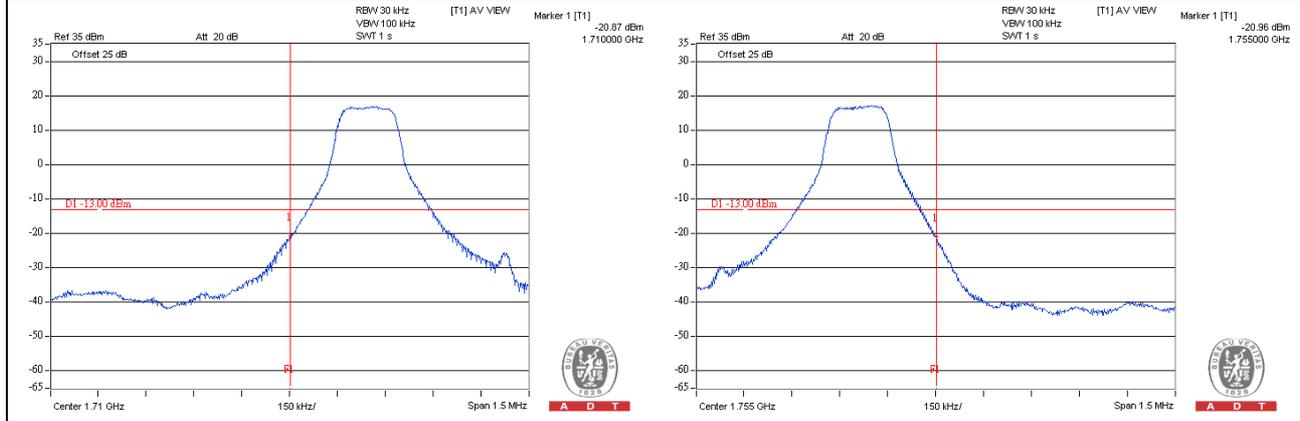
- The EUT was set up for the rated peak power. The power was measured with Spectrum Analyzer. All measurements were done at 3 channels: low, middle and high operational frequency range.
- The center frequency of spectrum is the band edge frequency and span is 1.5MHz. RBW = 30kHz and VBW = 100kHz (Channel Bandwidth: 1.4MHz), RBW = 51kHz and VBW = 150kHz (Channel Bandwidth: 3MHz and 5MHz), RBW = 100kHz and VBW = 300kHz (Channel Bandwidth: 10MHz), RBW = 200kHz and VBW = 620kHz (Channel Bandwidth: 15MHz) and RBW = 430kHz and VBW = 1.2MHz (Channel Bandwidth: 20MHz).
- Record the max trace plot into the test report.

### 4.4.4 Test Results

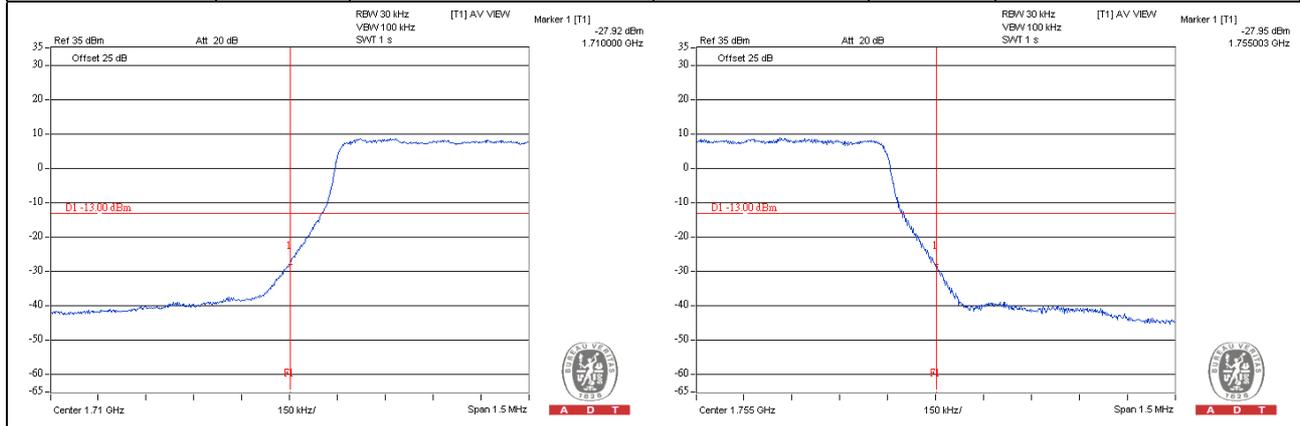
#### LTE Band 4

Channel Bandwidth: 1.4MHz

Channel 19957	QPSK	1 RB / 0 RB Offset	Channel 20393	QPSK	1 RB / 5 RB Offset
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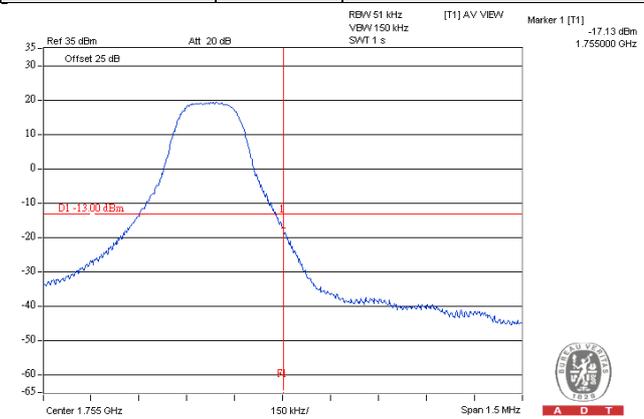
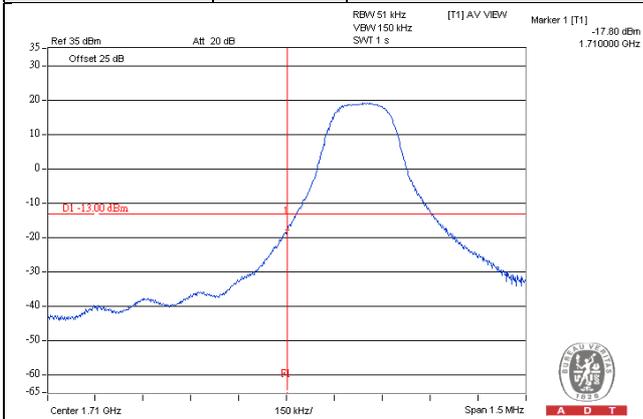


Channel 19957	QPSK	6 RB / 0 RB Offset	Channel 20393	QPSK	6 RB / 0 RB Offset
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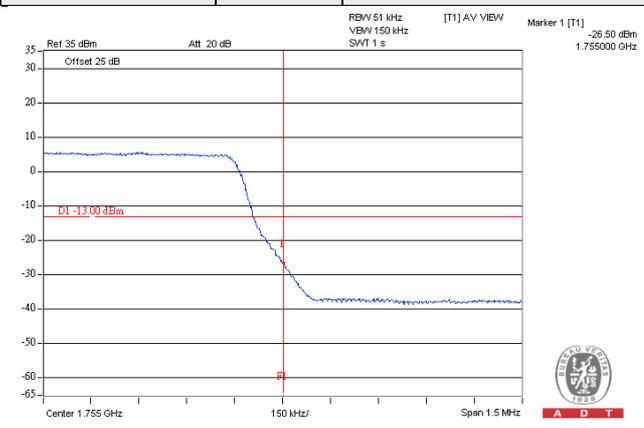
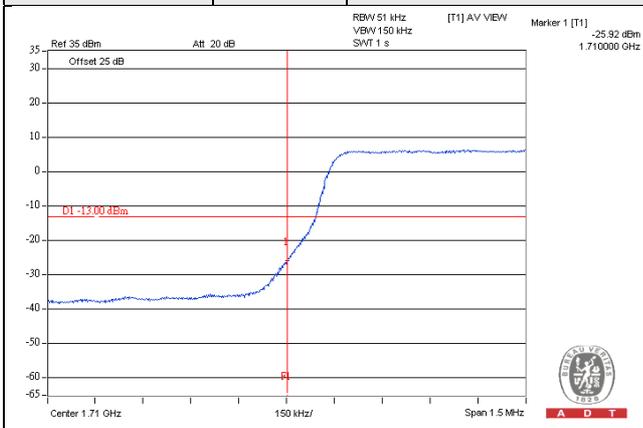


**Channel Bandwidth: 3MHz**

<b>Channel 19965</b>	<b>QPSK</b>	<b>1 RB / 0 RB Offset</b>	<b>Channel 20385</b>	<b>QPSK</b>	<b>1 RB / 14 RB Offset</b>
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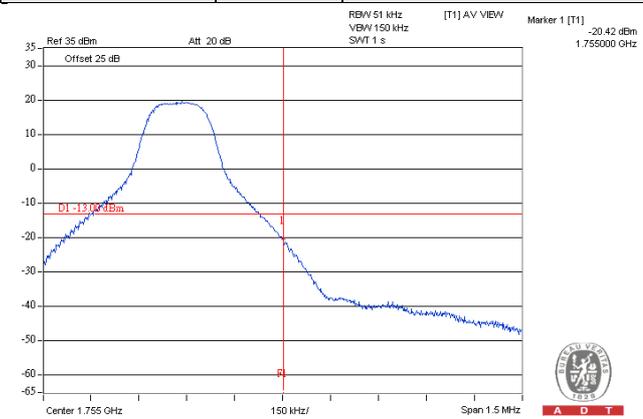
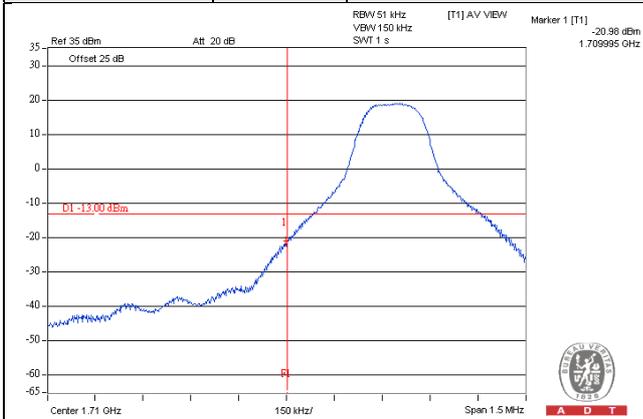


<b>Channel 19965</b>	<b>QPSK</b>	<b>15 RB / 0 RB Offset</b>	<b>Channel 20385</b>	<b>QPSK</b>	<b>15 RB / 0 RB Offset</b>
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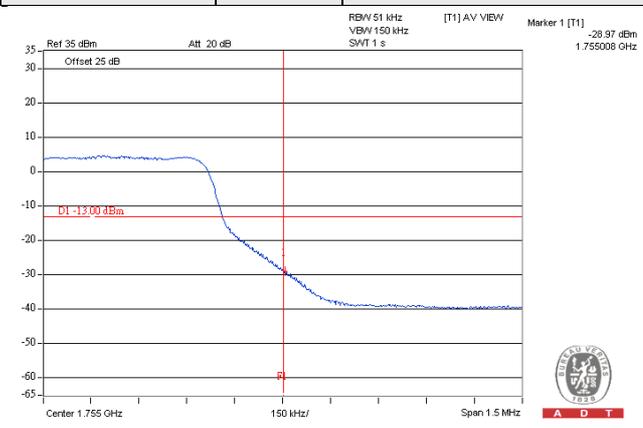
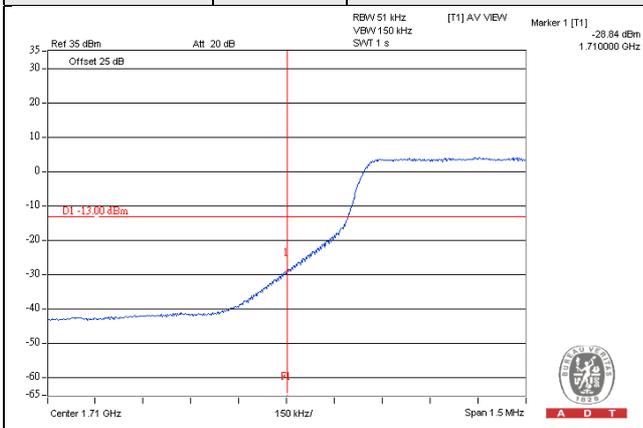


**Channel Bandwidth: 5MHz**

<b>Channel 19975</b>	<b>QPSK</b>	<b>1 RB / 0 RB Offset</b>	<b>Channel 20375</b>	<b>QPSK</b>	<b>1 RB / 24 RB Offset</b>
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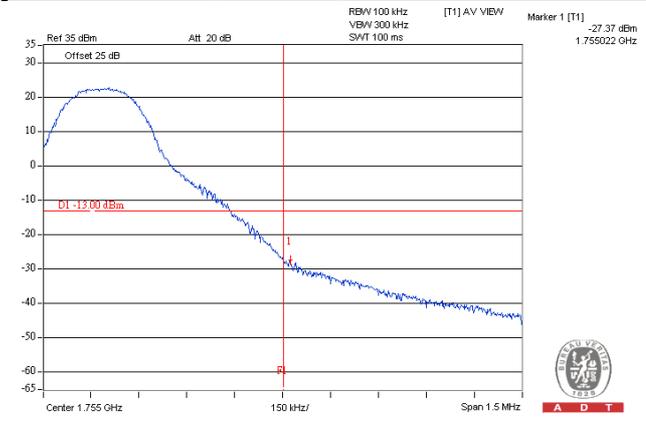
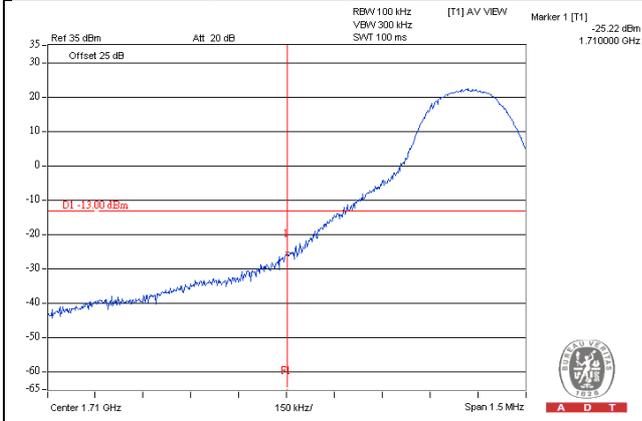


<b>Channel 19975</b>	<b>QPSK</b>	<b>25 RB / 0 RB Offset</b>	<b>Channel 20375</b>	<b>QPSK</b>	<b>25 RB / 0 RB Offset</b>
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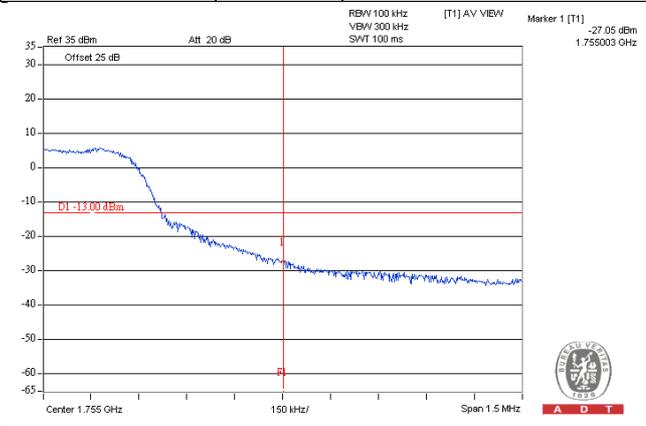
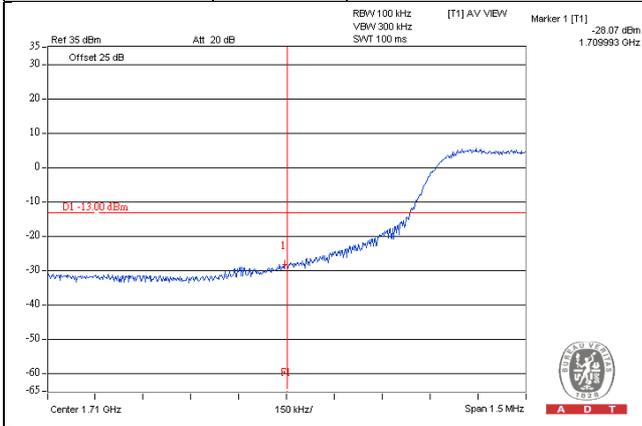


**Channel Bandwidth: 10MHz**

<b>Channel 20000</b>	<b>QPSK</b>	<b>1 RB / 0 RB Offset</b>	<b>Channel 20350</b>	<b>QPSK</b>	<b>1 RB / 49 RB Offset</b>
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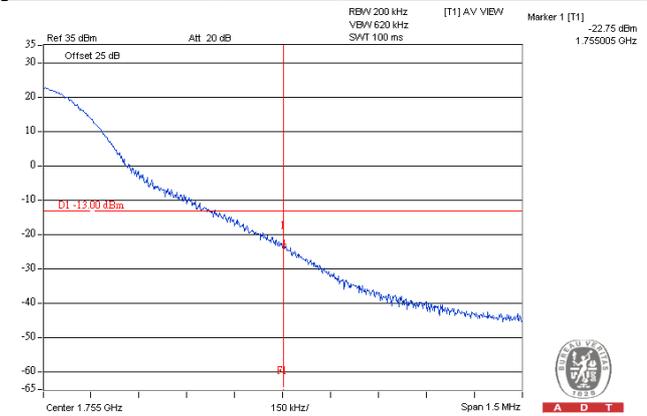
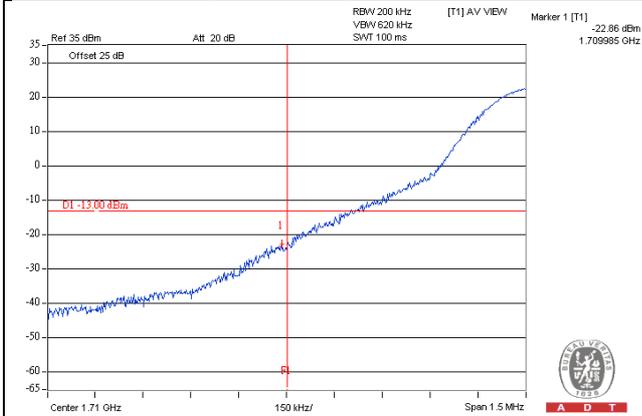


<b>Channel 20000</b>	<b>QPSK</b>	<b>50 RB / 0 RB Offset</b>	<b>Channel 20350</b>	<b>QPSK</b>	<b>50 RB / 0 RB Offset</b>
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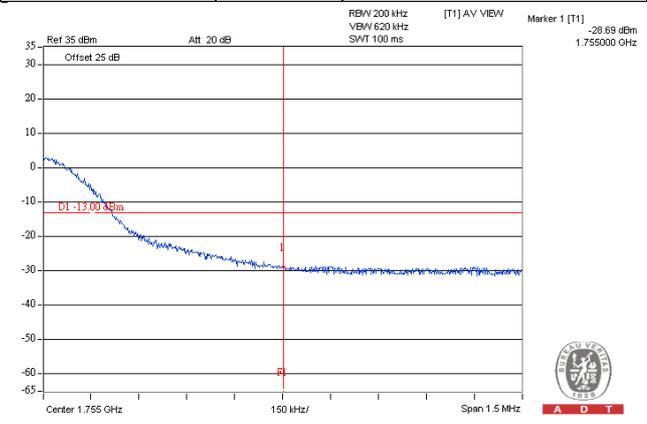
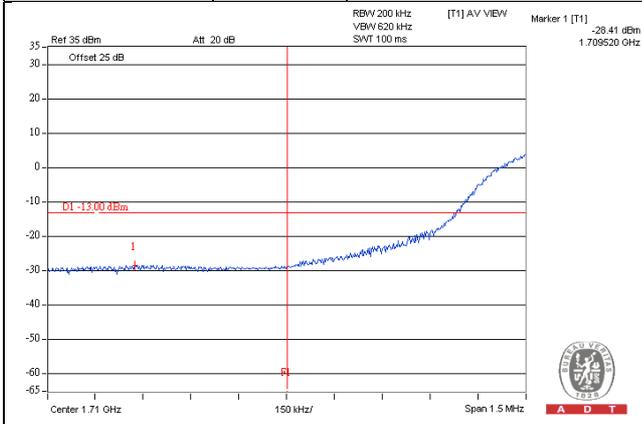


Channel Bandwidth: 15MHz

Channel 20025	QPSK	1 RB / 0 RB Offset	Channel 20325	QPSK	1 RB / 74 RB Offset
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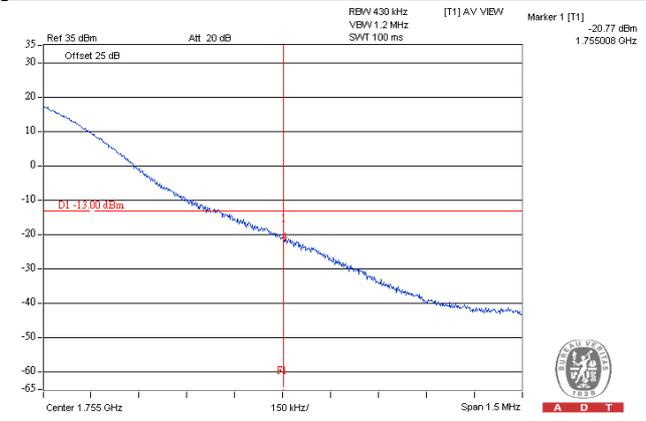
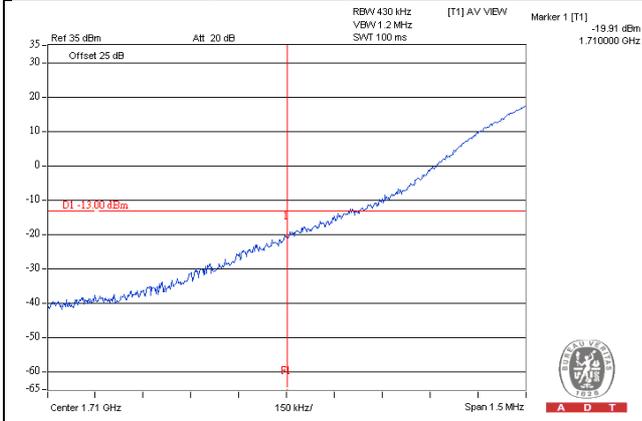


Channel 20025	QPSK	75 RB / 0 RB Offset	Channel 20325	QPSK	75 RB / 0 RB Offset
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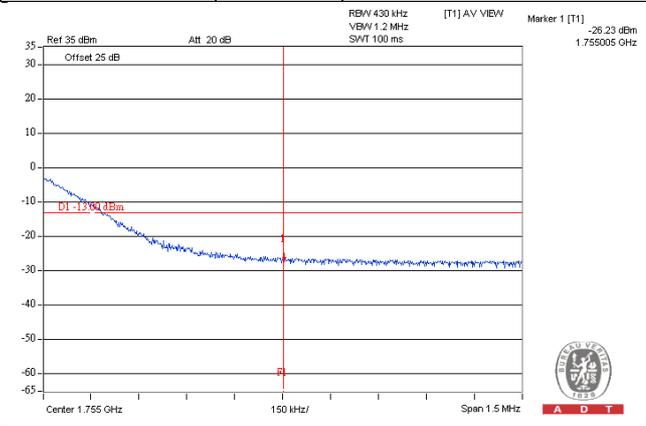
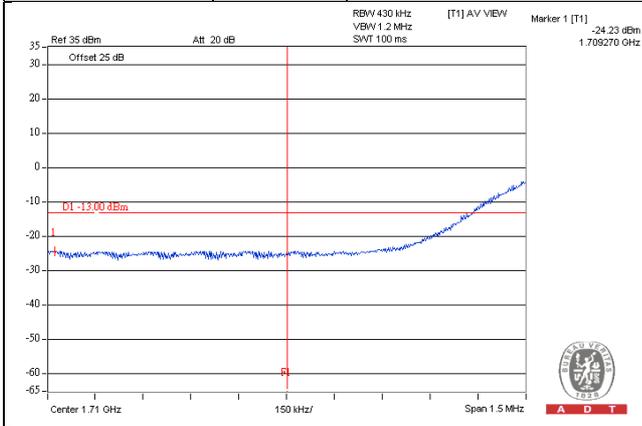


**Channel Bandwidth: 20MHz**

<b>Channel 20050</b>	<b>QPSK</b>	<b>1 RB / 0 RB Offset</b>	<b>Channel 20300</b>	<b>QPSK</b>	<b>1 RB / 99 RB Offset</b>
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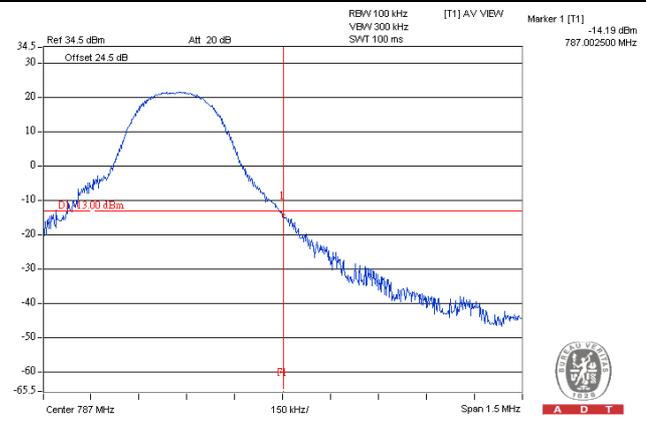
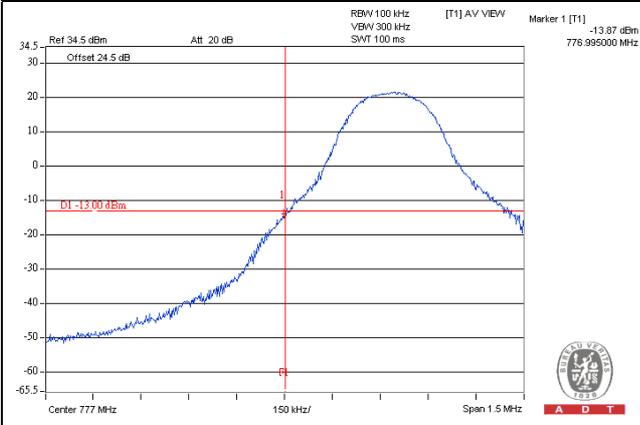
<b>Channel 20050</b>	<b>QPSK</b>	<b>100 RB / 0 RB Offset</b>	<b>Channel 20300</b>	<b>QPSK</b>	<b>100 RB / 0 RB Offset</b>
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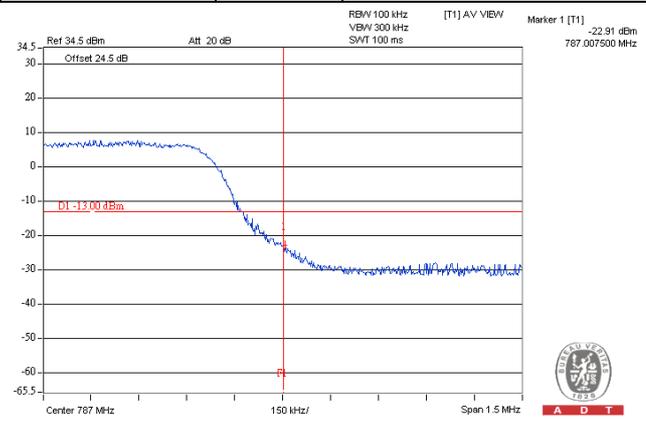
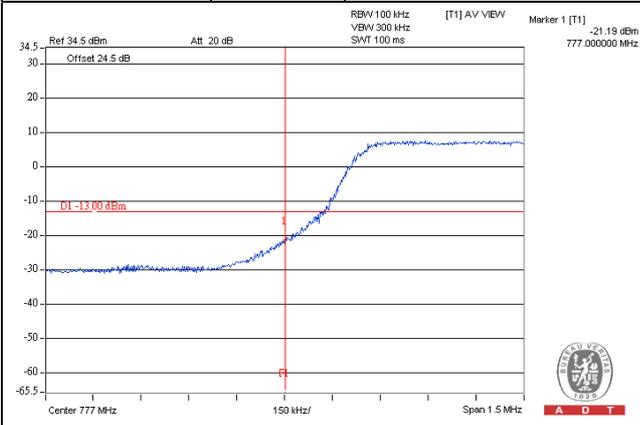
LTE Band 13

Channel Bandwidth: 5MHz

Channel 23205	QPSK	1 RB / 0 RB Offset	Channel 23255	QPSK	1 RB / 24 RB Offset
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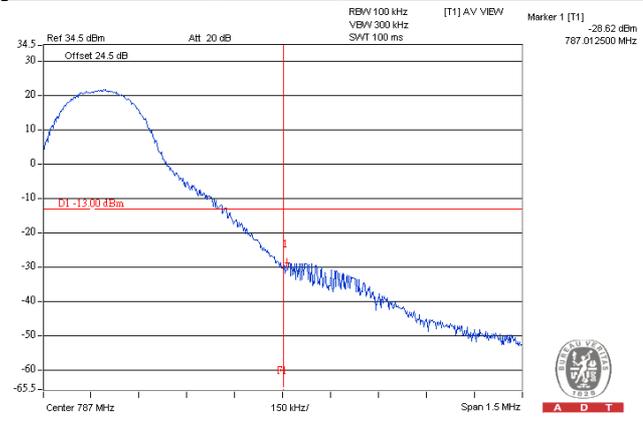
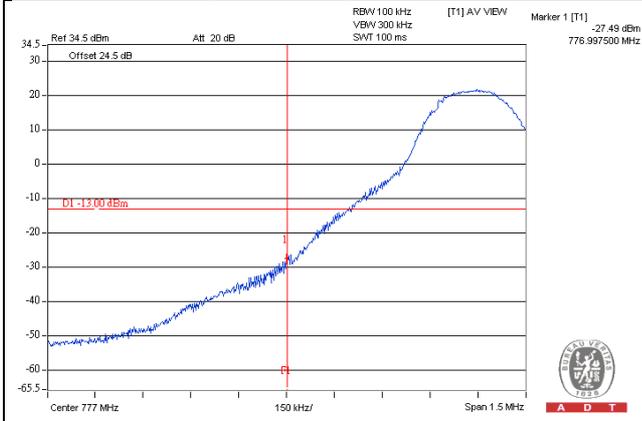


Channel 23205	QPSK	25 RB / 0 RB Offset	Channel 23255	QPSK	25 RB / 0 RB Offset
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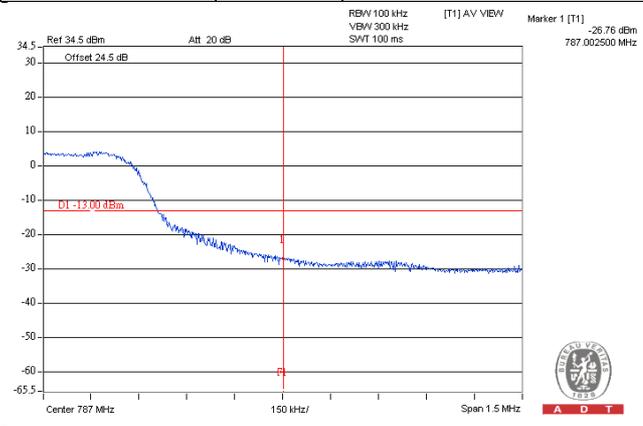
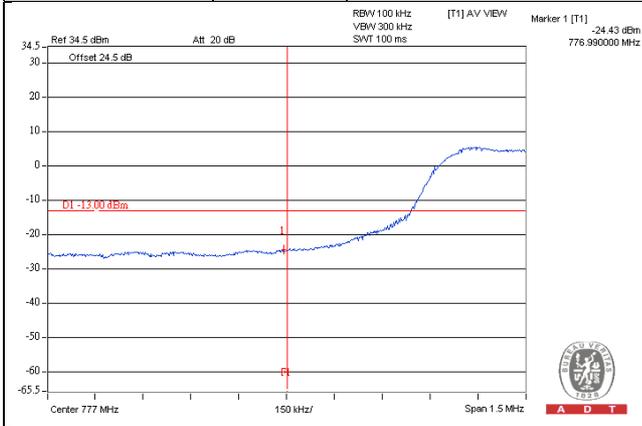


**Channel Bandwidth: 10MHz**

<b>Channel 23230</b>	<b>QPSK</b>	<b>1 RB / 0 RB Offset</b>	<b>Channel 23230</b>	<b>QPSK</b>	<b>1 RB / 49 RB Offset</b>
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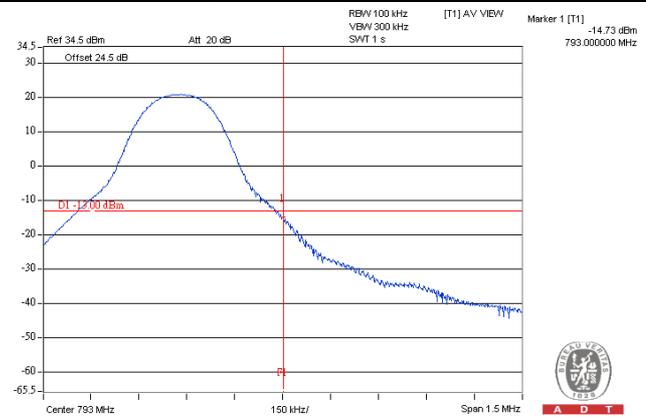
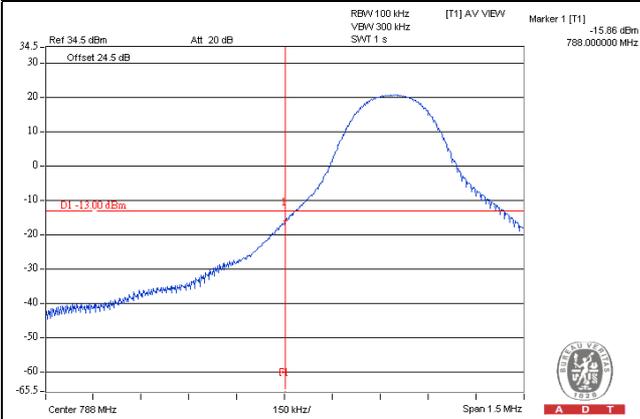


<b>Channel 23230</b>	<b>QPSK</b>	<b>50 RB / 0 RB Offset</b>	<b>Channel 23230</b>	<b>QPSK</b>	<b>50 RB / 0 RB Offset</b>
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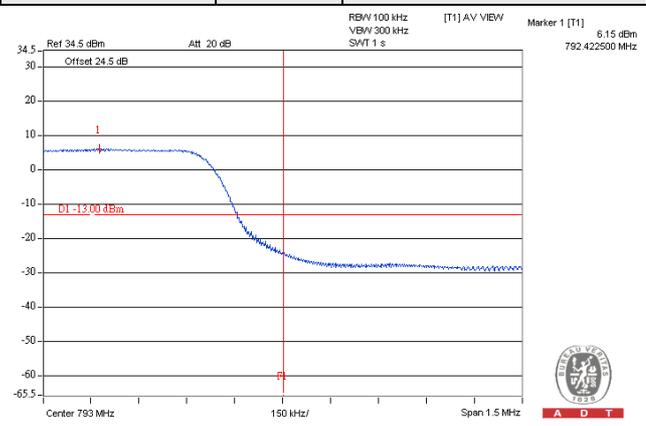
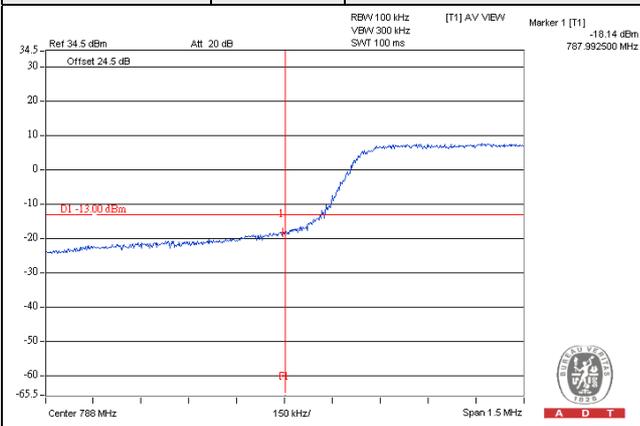


**LTE Band 14**
**Channel Bandwidth: 5MHz**

<b>Channel 23305</b>	<b>QPSK</b>	<b>1 RB / 0 RB Offset</b>	<b>Channel 23305</b>	<b>QPSK</b>	<b>1 RB / 24 RB Offset</b>
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<b>Channel 23305</b>	<b>QPSK</b>	<b>25 RB / 0 RB Offset</b>	<b>Channel 23305</b>	<b>QPSK</b>	<b>25 RB / 0 RB Offset</b>
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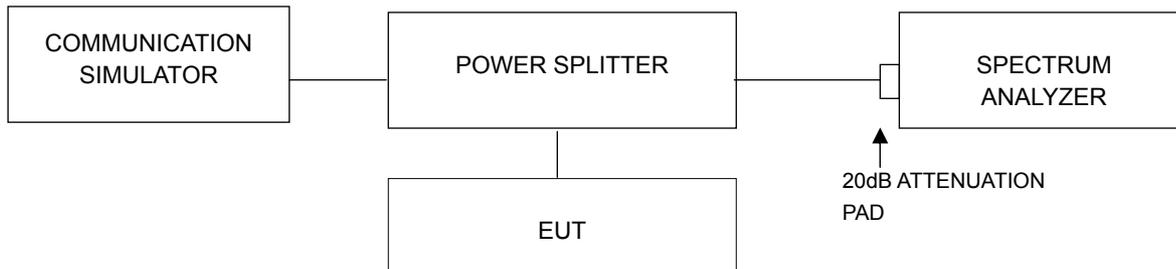


## 4.5 Peak to Average Ratio

### 4.5.1 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

### 4.5.2 Test Setup



### 4.5.3 Test Procedures

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

### 4.5.4 Test Results

LTE Band 4

Channel Bandwidth: 1.4MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM
19957	1710.7	3.03	3.73
20175	1732.5	3.06	3.77
20393	1754.3	3.15	3.96



Channel Bandwidth: 3MHz

Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM
19965	1711.5	2.40	3.06
20175	1732.5	2.42	3.13
20385	1753.5	2.47	3.24

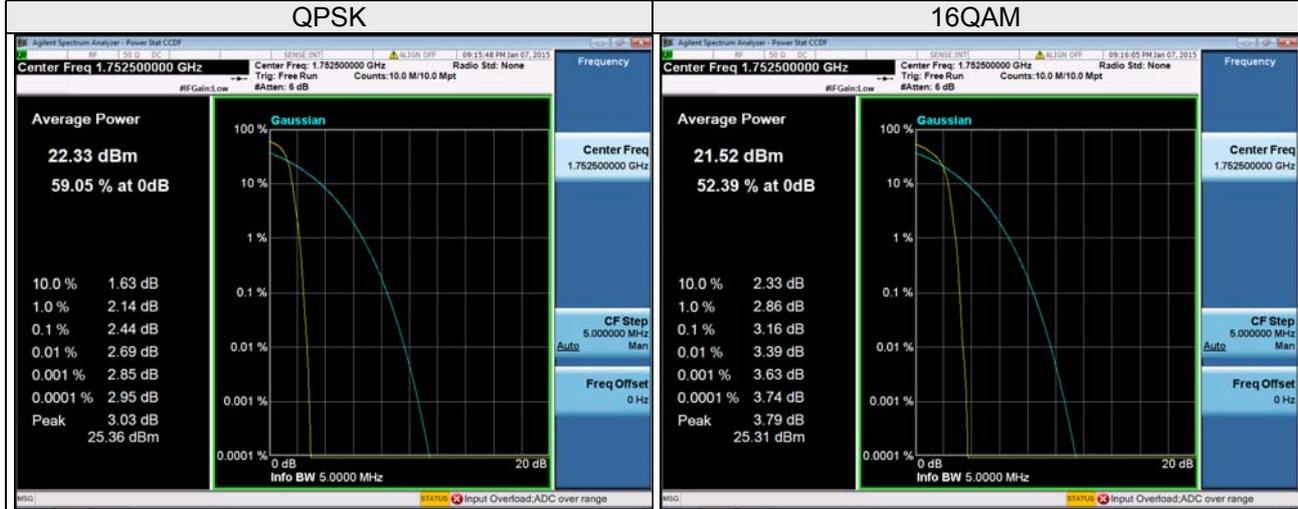
SPECTRUM PLOT OF WORST VALUE



Channel Bandwidth: 5MHz

Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM
19975	1712.5	2.31	3.00
20175	1732.5	2.32	3.05
20375	1752.5	2.44	3.16

SPECTRUM PLOT OF WORST VALUE



Channel Bandwidth: 10MHz

Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM
20000	1715.0	3.51	4.01
20175	1732.5	3.51	3.99
20350	1750.0	3.53	4.04

SPECTRUM PLOT OF WORST VALUE



Channel Bandwidth: 15MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM
20025	1717.5	3.80	3.26
20175	1732.5	3.77	3.28
20325	1747.5	3.80	3.29

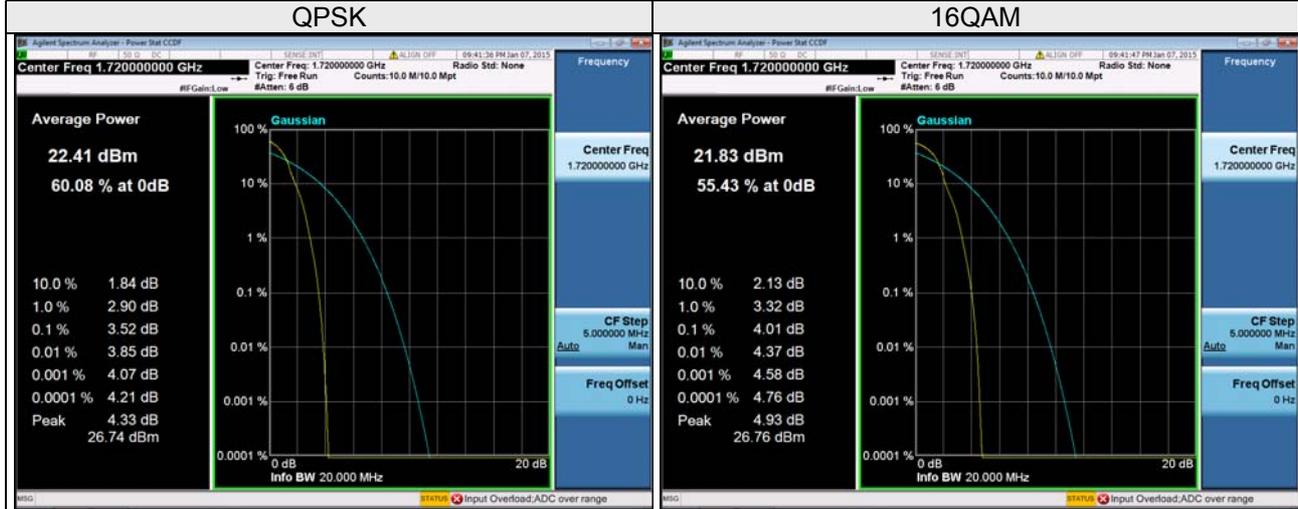
SPECTRUM PLOT OF WORST VALUE



Channel Bandwidth: 20MHz

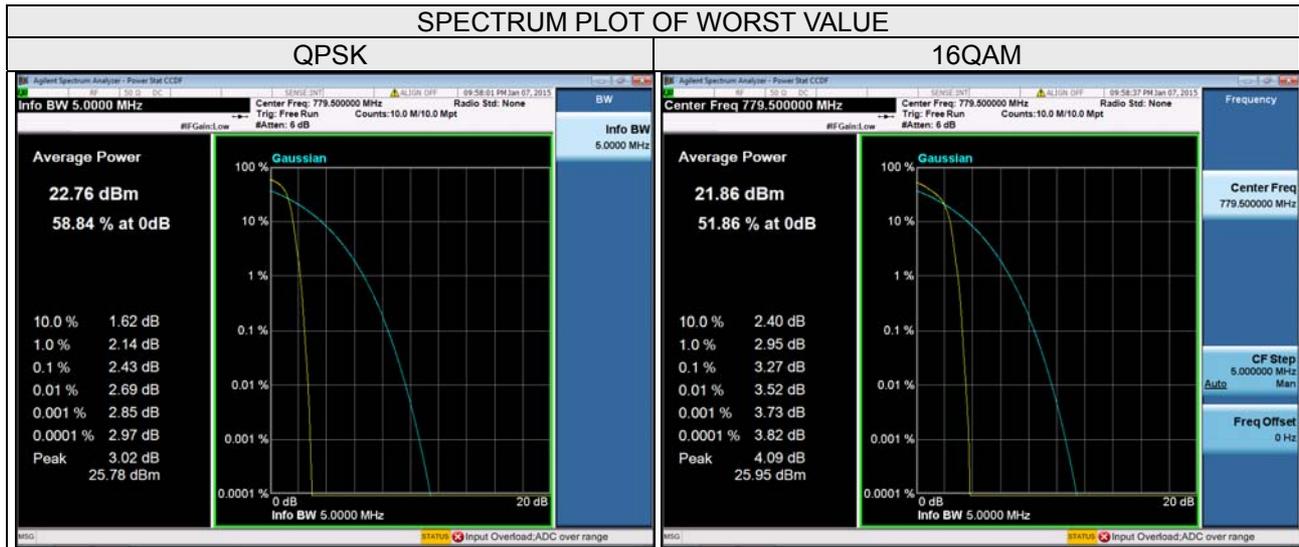
Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM
20050	1720.0	3.52	4.01
20175	1732.5	2.77	3.26
20300	1745.0	3.50	4.01

SPECTRUM PLOT OF WORST VALUE



LTE Band 13

Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM
23205	779.5	2.43	3.27
23230	782.0	2.38	3.27
23255	784.5	2.22	2.78



Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM
23230	782.0	3.54	4.10

SPECTRUM PLOT OF WORST VALUE



LTE Band 14

Channel Bandwidth: 5MHz			
Channel	Frequency (MHz)	Peak To Average Ratio (dB)	
		QPSK	16QAM
23305	790.5	2.19	2.84

SPECTRUM PLOT OF WORST VALUE



## 4.6 Conducted Spurious Emissions

### 4.6.1 Limits of Conducted Spurious Emissions Measurement

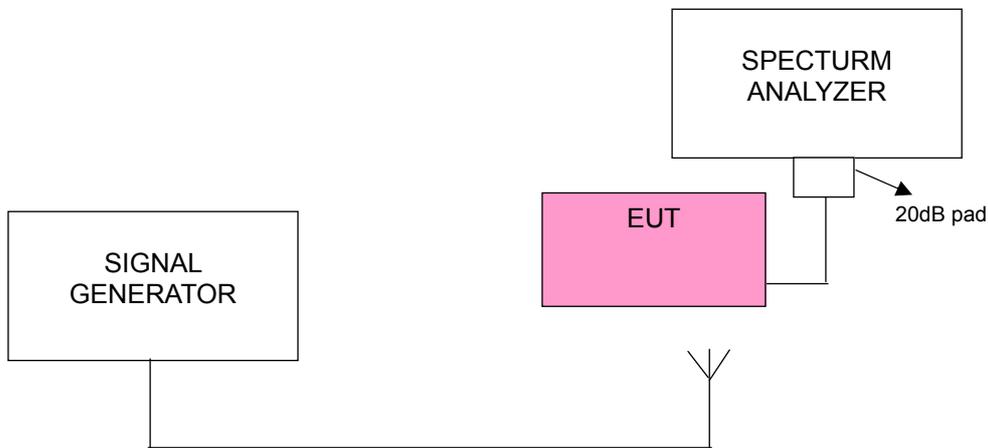
In the FCC 27.53,

For LTE band 13 and 14 operations in the 746-758MHz band and the 776-788 MHz band should meet 27.53 (c) (1) (2)  $43+10\log(P)$ .

For LTE band 4 operations in the 1710 MHz to 1755 MHz band and the 2110 MHz to 2155 MHz band should meet 27.53 (h) (1) (2)  $43+10\log(P)$

The emission limit equal to  $-13\text{dBm}$ .

### 4.6.2 Test Setup



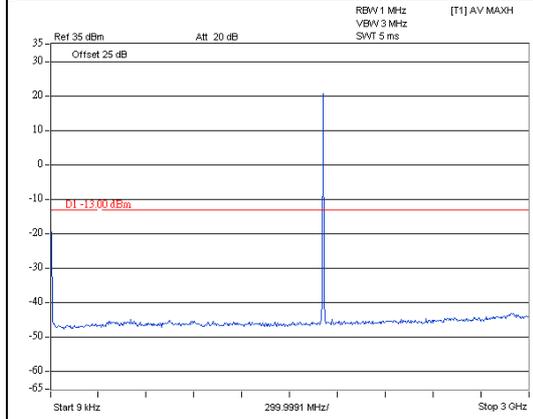
### 4.6.3 Test Procedure

- a. All measurements were done at 3 channels: low, middle and high operational frequency range.
- b. When the spectrum scanned from 9kHz to 20GHz, it shall be connected to the 20dB pad attenuated the carried frequency. The spectrum set RB = 1MHz, VB = 3MHz.

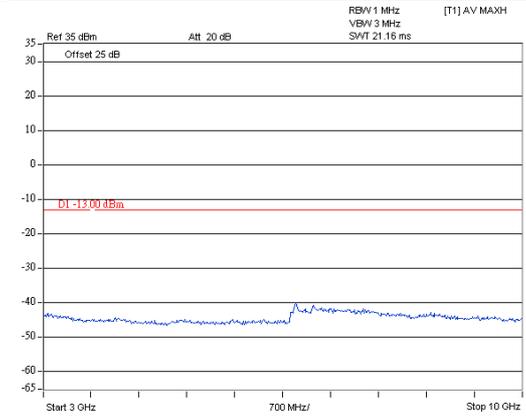
### 4.6.4 Test Results

LTE Band 4

Channel Bandwidth: 1.4MHz	
Channel 19957	
Frequency Range : 9kHz~3GHz	Frequency Range : 3GHz~10GHz

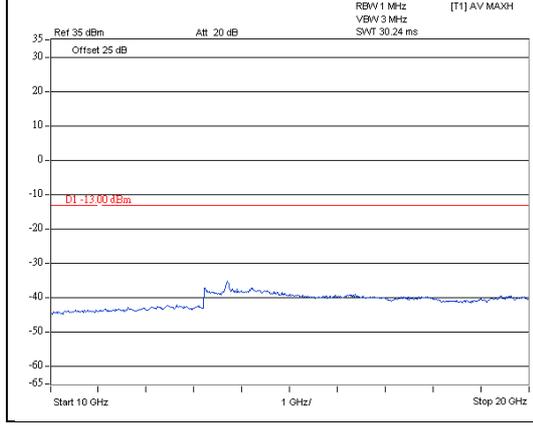


A D T



A D T

Frequency Range : 10GHz~20GHz
-------------------------------



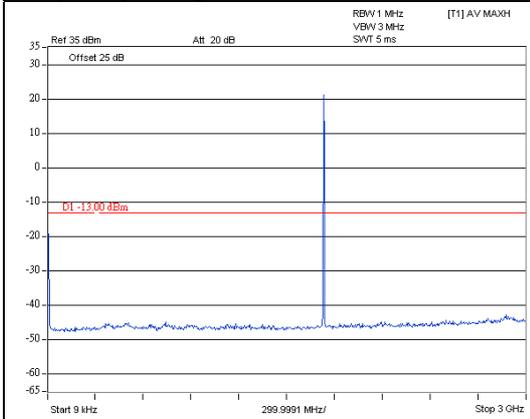
A D T

Channel Bandwidth: 1.4MHz

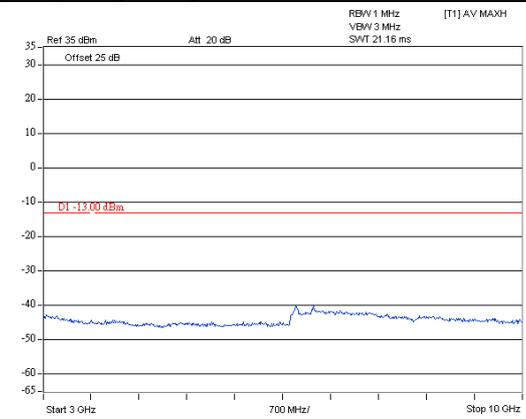
Channel 20175

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz

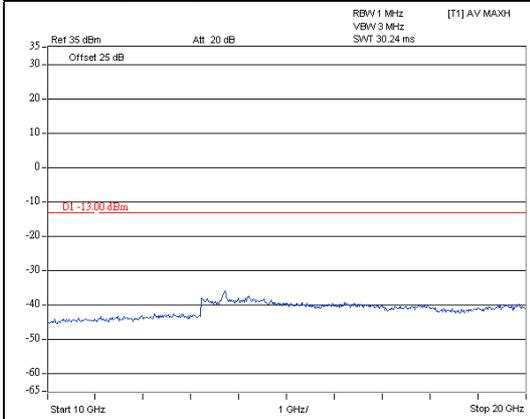


A D T



A D T

Frequency Range : 10GHz~20GHz



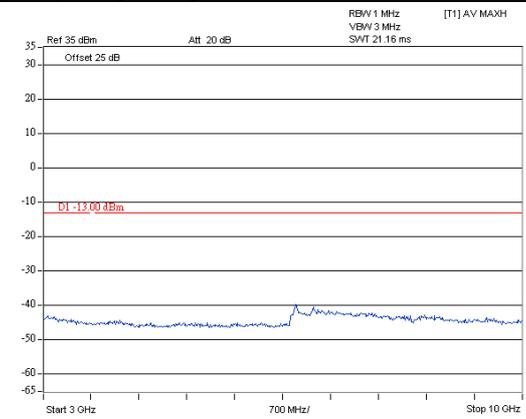
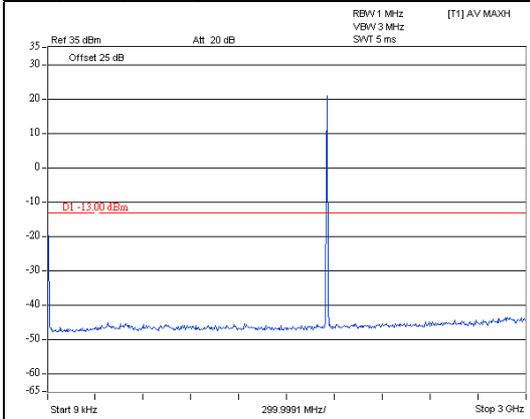
A D T

Channel Bandwidth: 1.4MHz

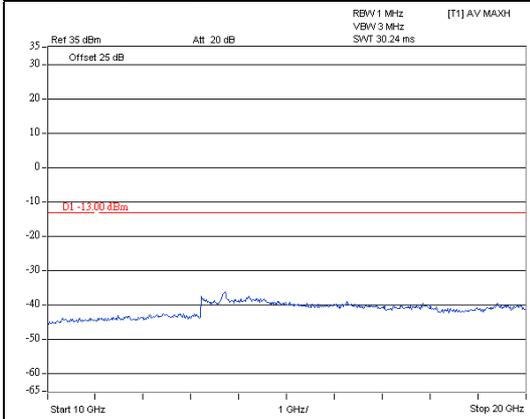
Channel 20393

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz



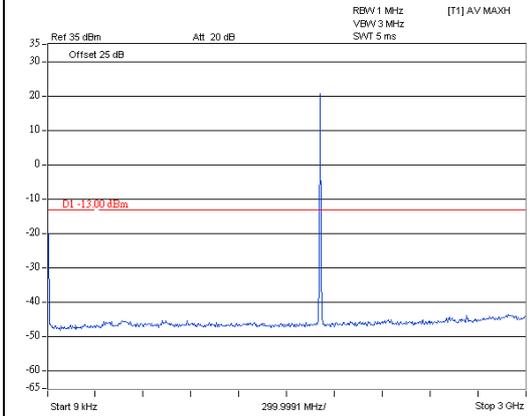
Frequency Range : 10GHz~20GHz



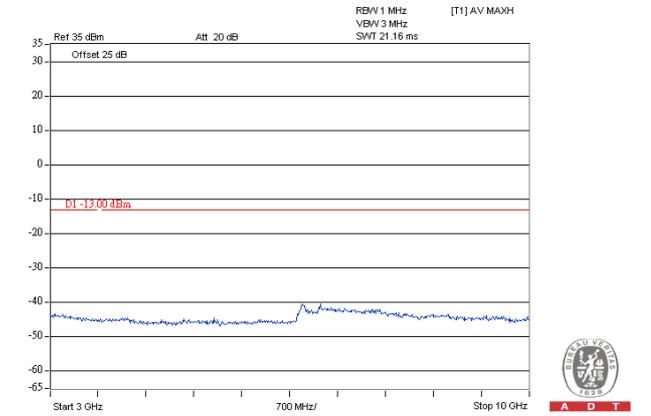
Channel Bandwidth: 3MHz

Channel 19965

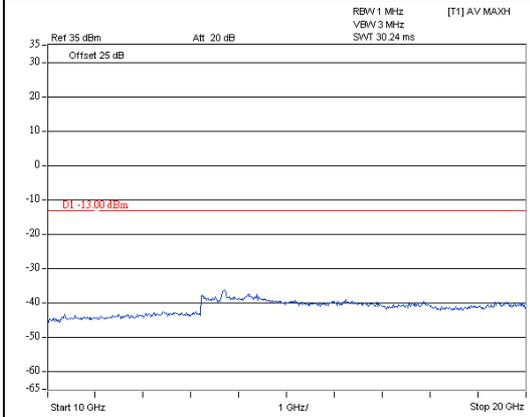
Frequency Range : 9kHz~3GHz



Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~20GHz

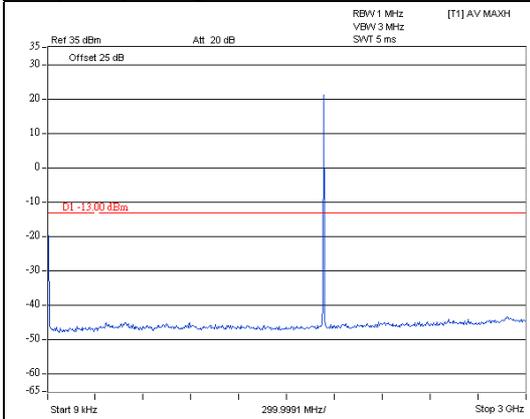


Channel Bandwidth: 3MHz

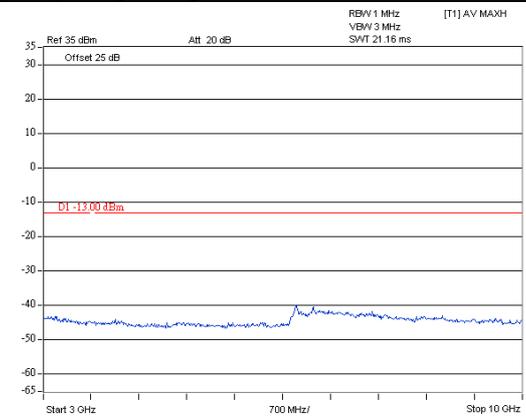
Channel 20175

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz

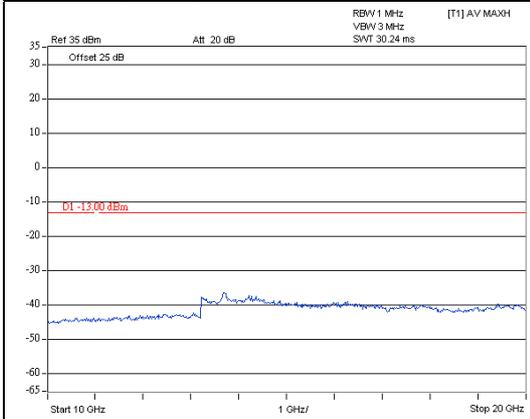


A D T



A D T

Frequency Range : 10GHz~20GHz



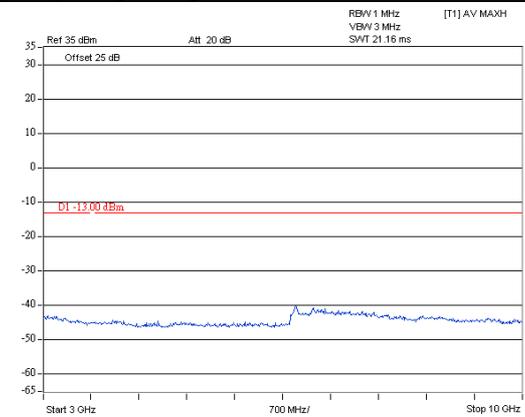
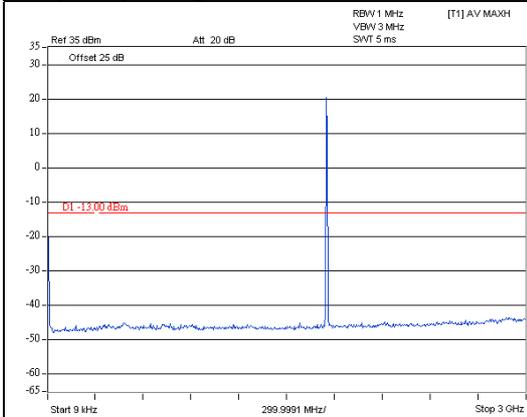
A D T

Channel Bandwidth: 3MHz

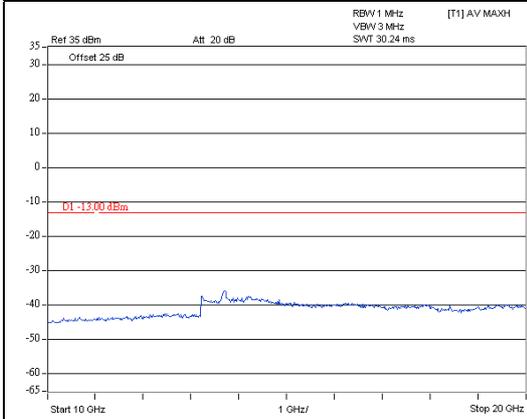
Channel 20385

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~20GHz

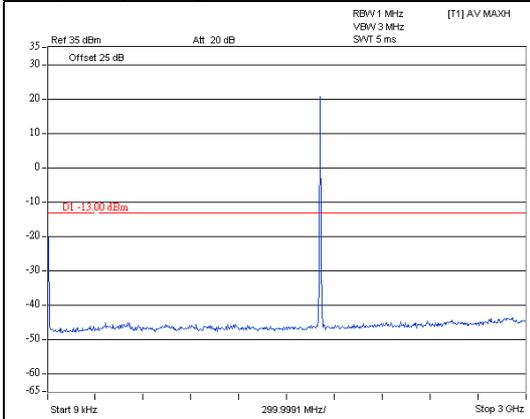


Channel Bandwidth: 5MHz

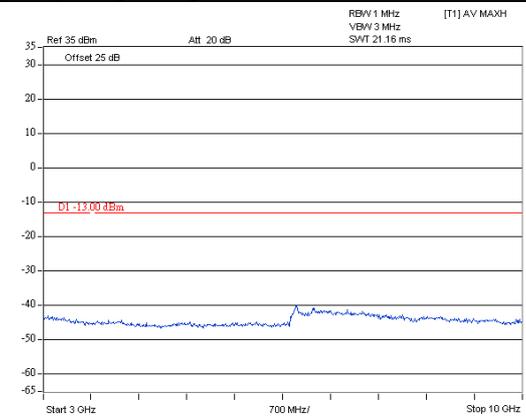
Channel 19975

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz

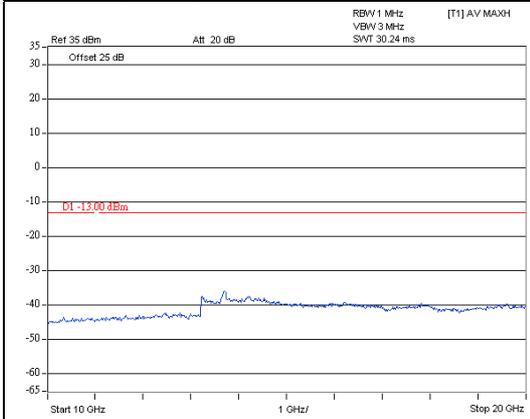


A D T



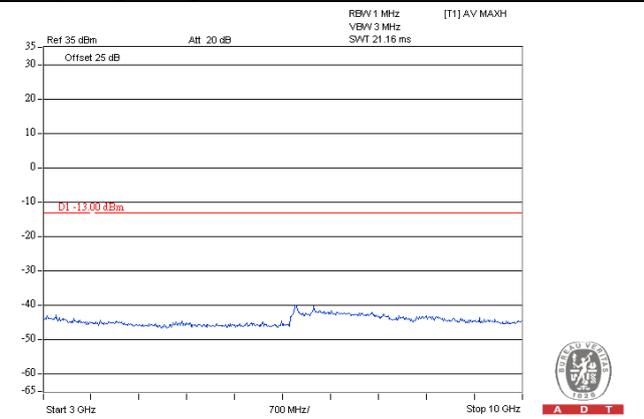
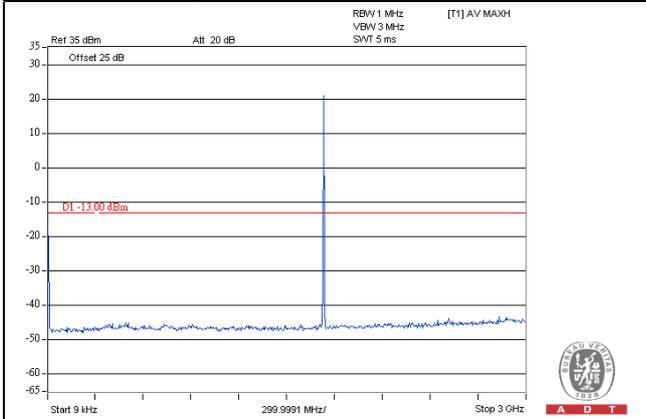
A D T

Frequency Range : 10GHz~20GHz

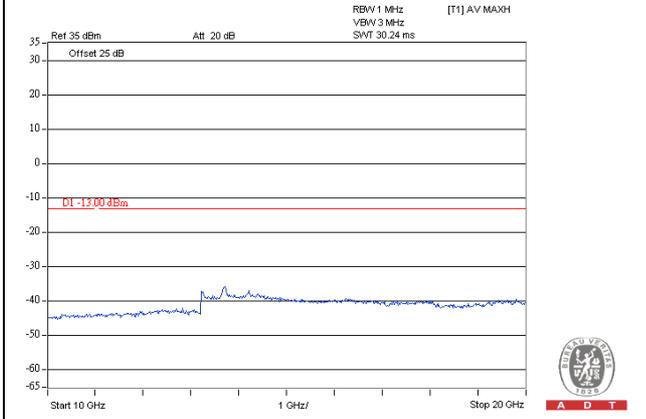


A D T

Channel Bandwidth: 5MHz  
Channel 20175  
Frequency Range : 9kHz~3GHz      Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~20GHz

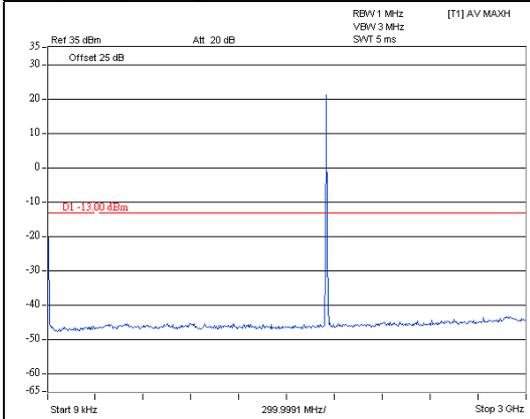


Channel Bandwidth: 5MHz

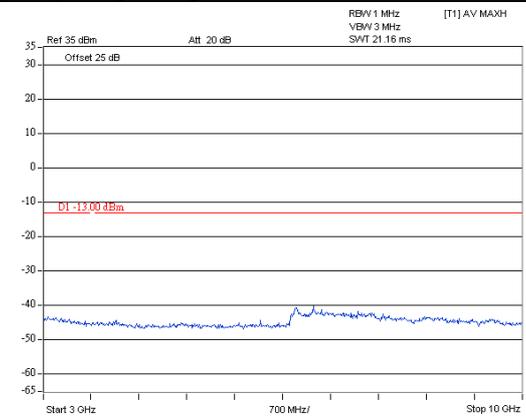
Channel 20375

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz

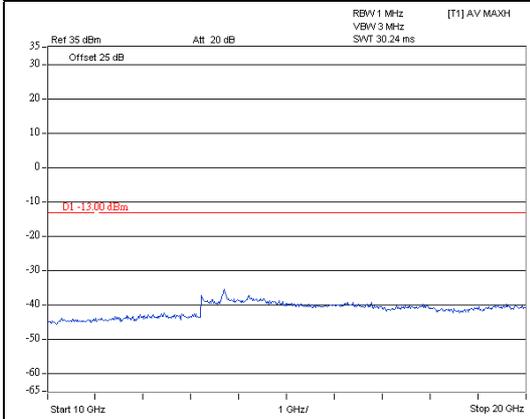


A D T



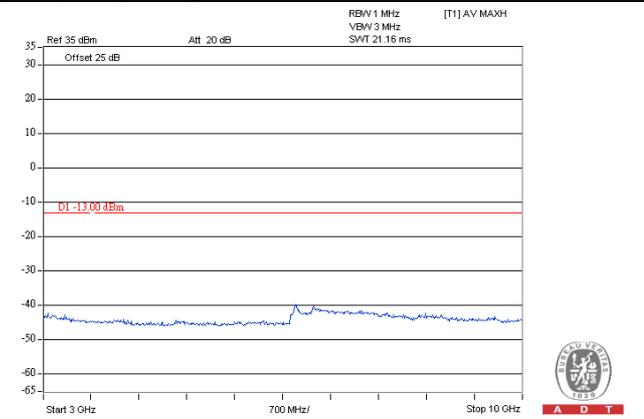
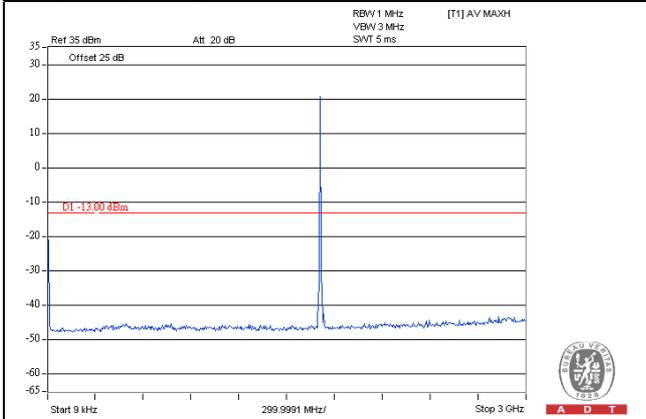
A D T

Frequency Range : 10GHz~20GHz

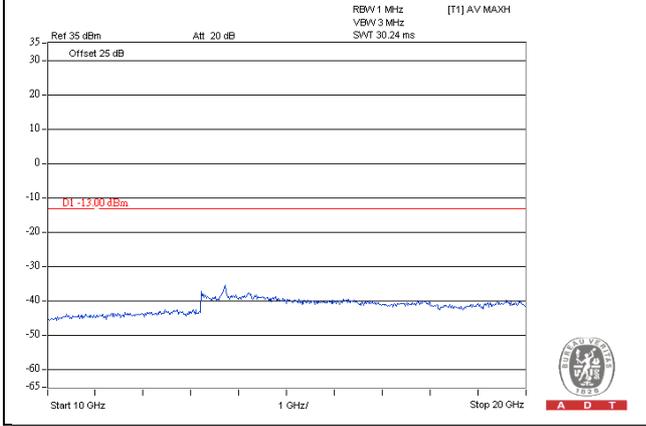


A D T

Channel Bandwidth: 10MHz  
Channel 20000  
Frequency Range : 9kHz~3GHz      Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~20GHz

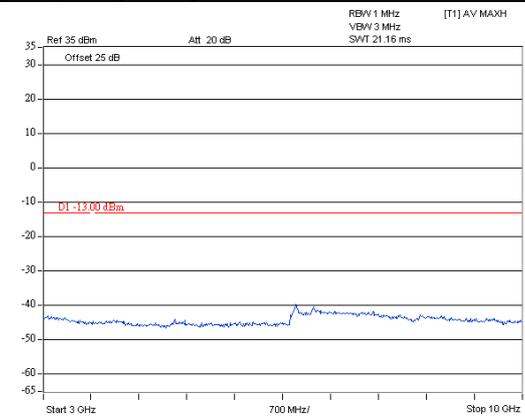
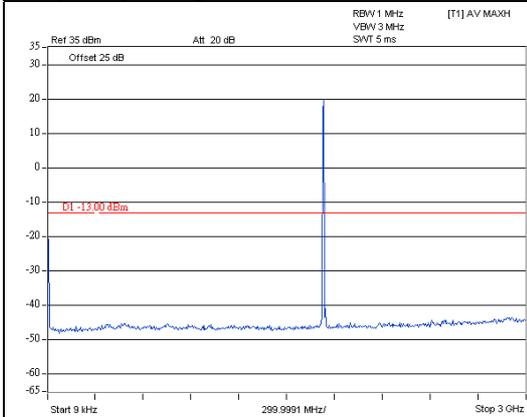


Channel Bandwidth: 10MHz

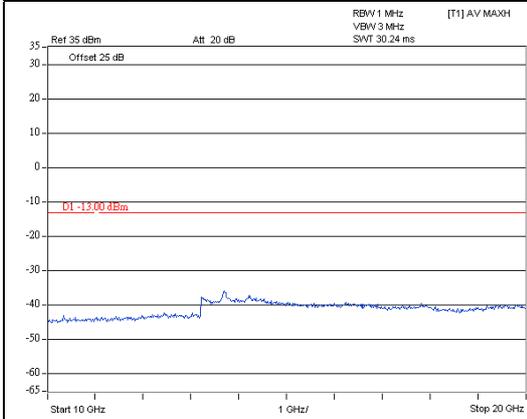
Channel 20175

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~20GHz

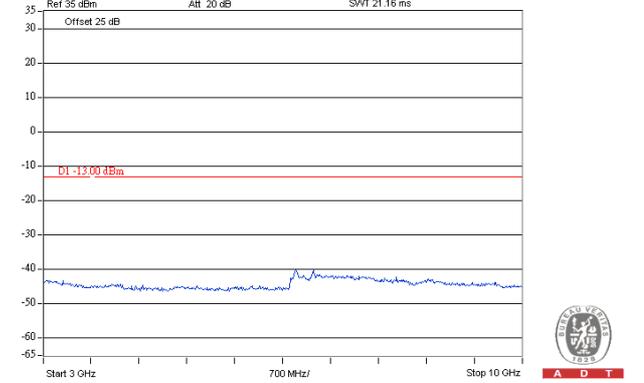
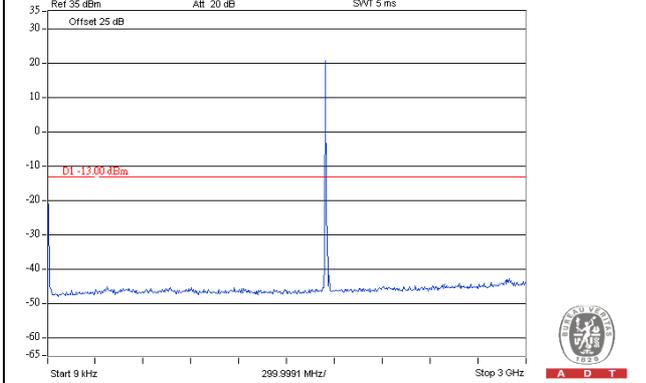


Channel Bandwidth: 10MHz

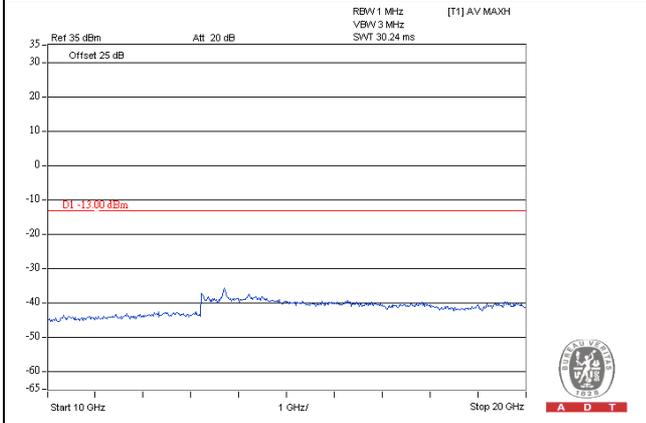
Channel 20350

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~20GHz

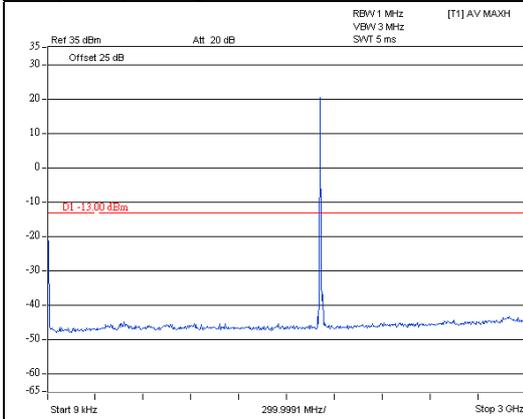


Channel Bandwidth: 15MHz

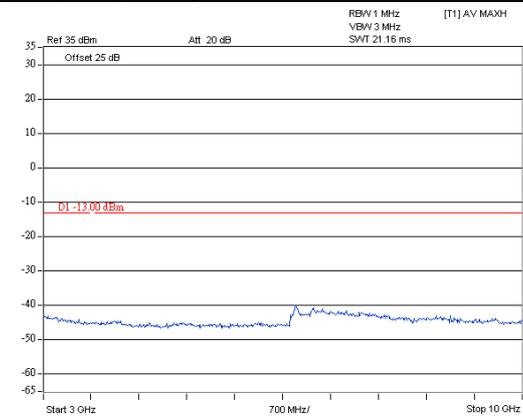
Channel 20025

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz

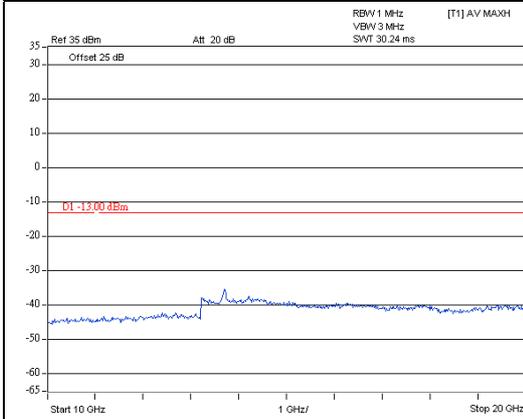


A D T



A D T

Frequency Range : 10GHz~20GHz



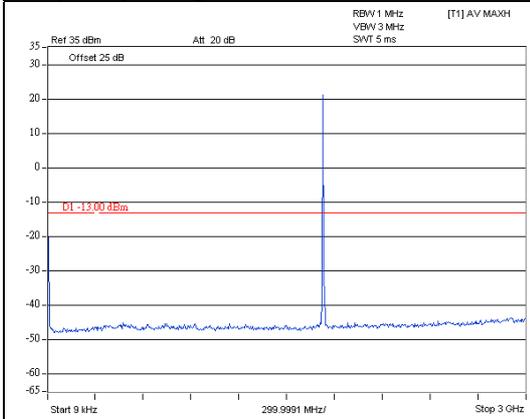
A D T

Channel Bandwidth: 15MHz

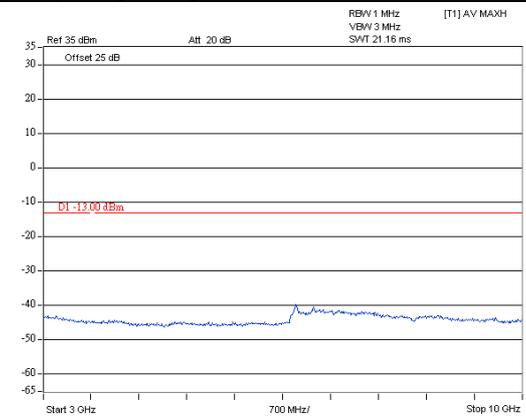
Channel 20175

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz

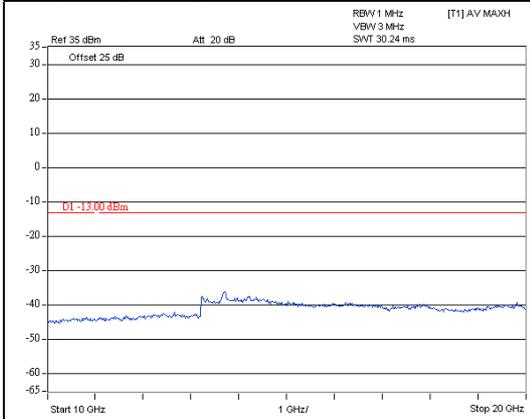


A D T

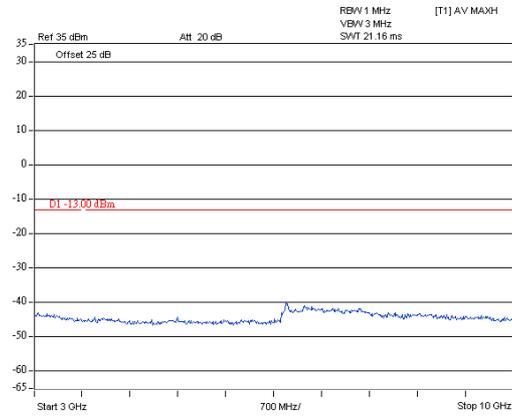
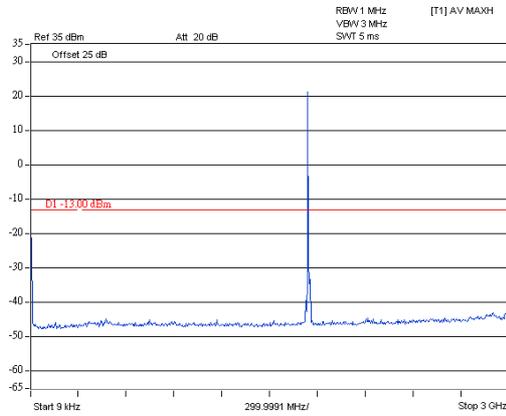
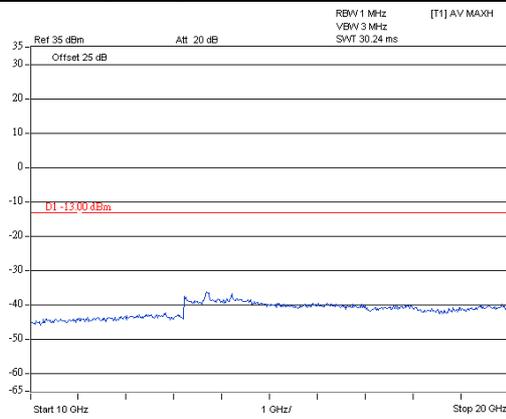


A D T

Frequency Range : 10GHz~20GHz



A D T

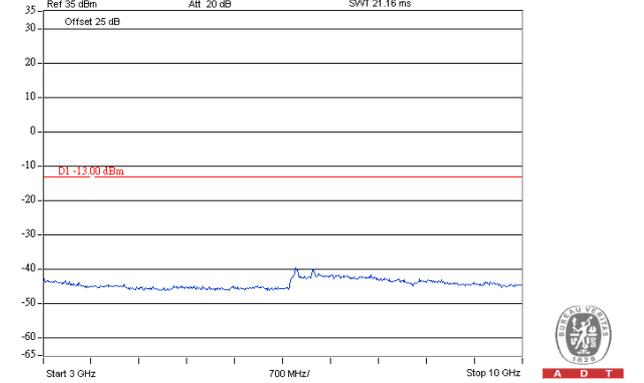
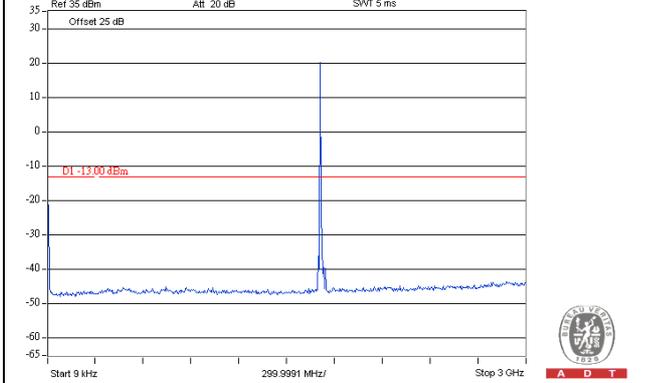
**Channel Bandwidth: 15MHz****Channel 20325****Frequency Range : 9kHz~3GHz****Frequency Range : 3GHz~10GHz****Frequency Range : 10GHz~20GHz**

Channel Bandwidth: 20MHz

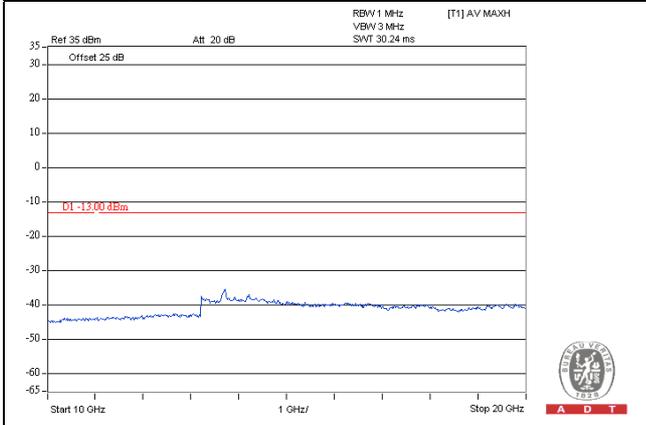
Channel 20050

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~20GHz

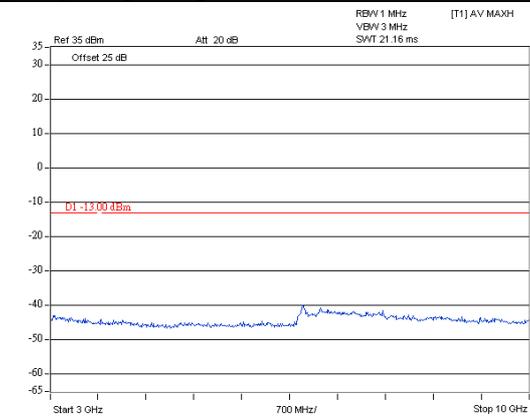
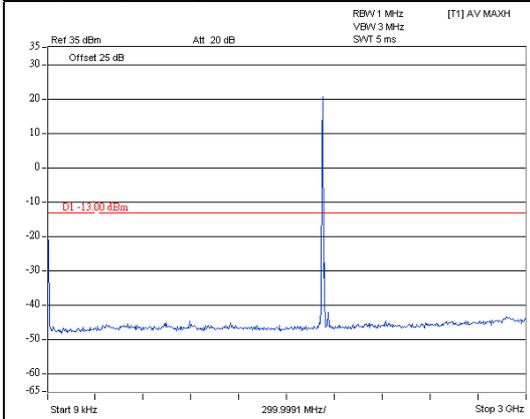


Channel Bandwidth: 20MHz

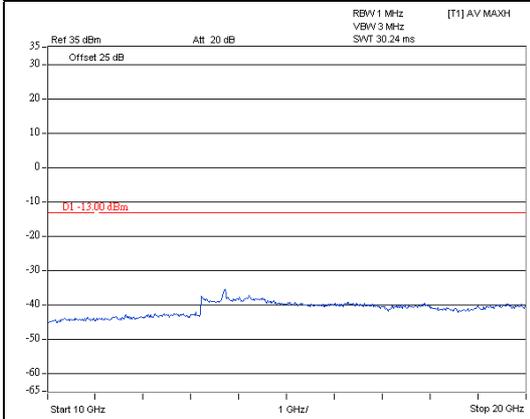
Channel 20175

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz



Frequency Range : 10GHz~20GHz

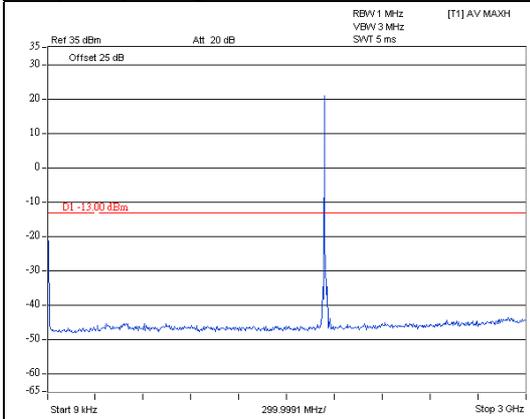


Channel Bandwidth: 20MHz

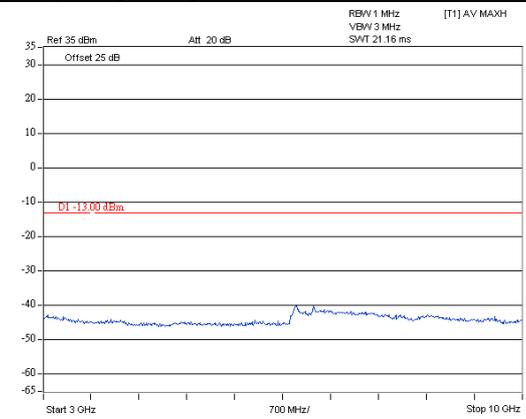
Channel 20300

Frequency Range : 9kHz~3GHz

Frequency Range : 3GHz~10GHz

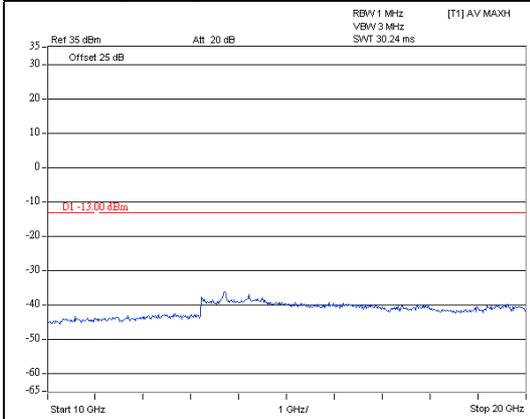


A D T



A D T

Frequency Range : 10GHz~20GHz



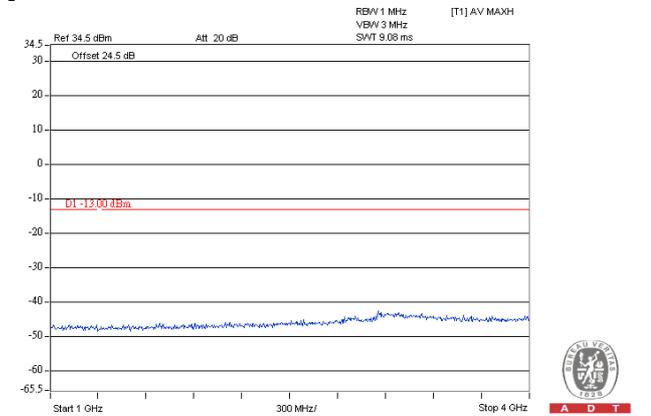
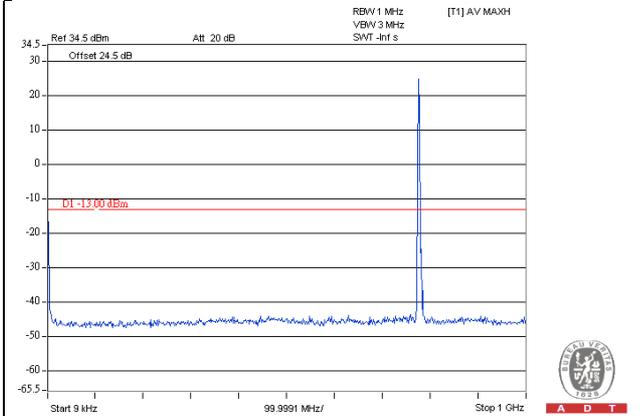
A D T

### LTE Band 13

Channel Bandwidth: 5MHz

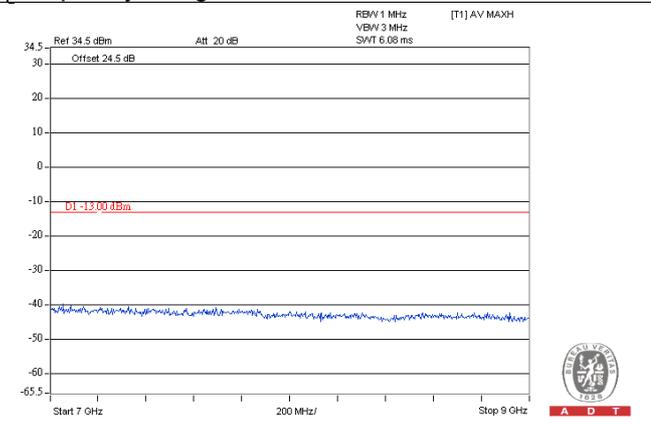
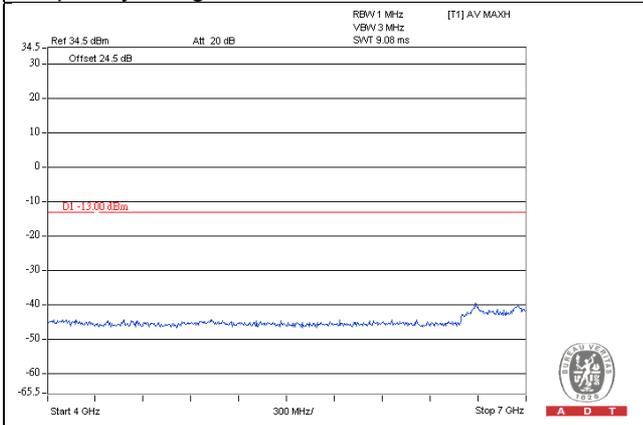
Channel 23205

Frequency Range : 9kHz~1GHz | Frequency Range : 1GHz~4GHz



Frequency Range : 4GHz~7GHz

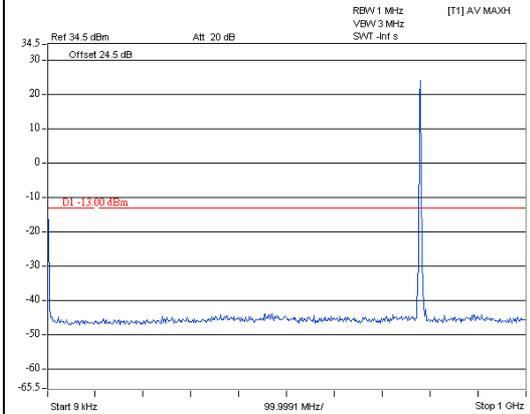
Frequency Range : 7GHz~9GHz



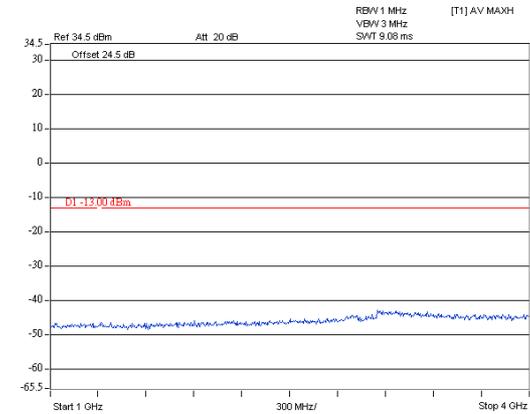
Channel Bandwidth: 5MHz

Channel 23230

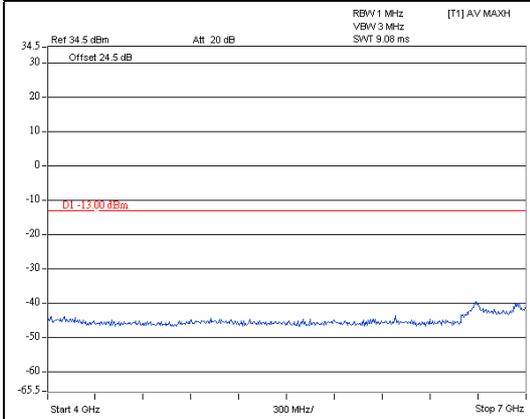
Frequency Range : 9kHz~1GHz



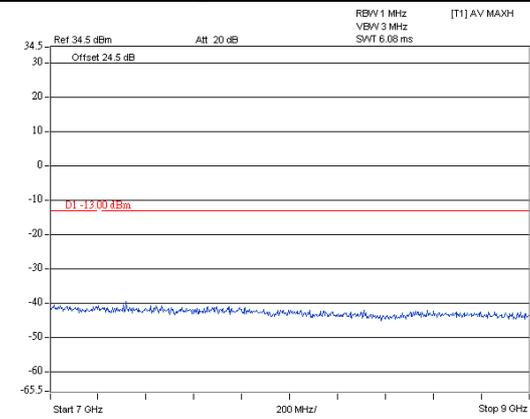
Frequency Range : 1GHz~4GHz



Frequency Range : 4GHz~7GHz



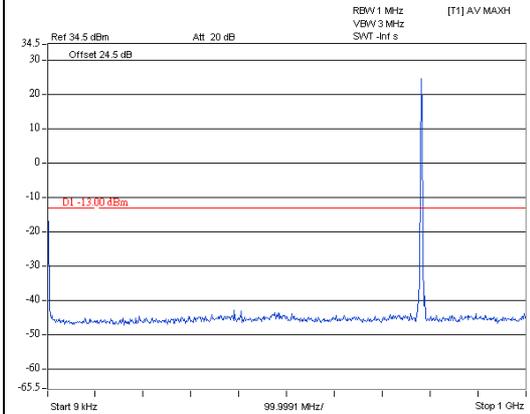
Frequency Range : 7GHz~9GHz



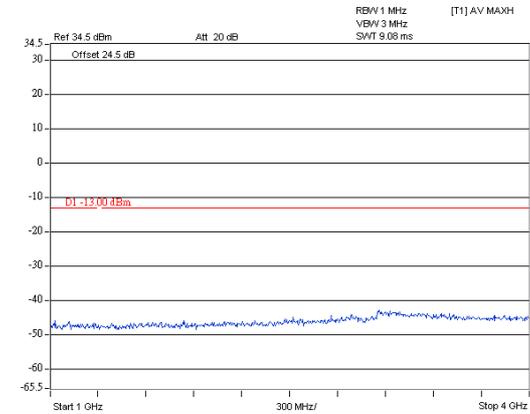
Channel Bandwidth: 5MHz

Channel 23255

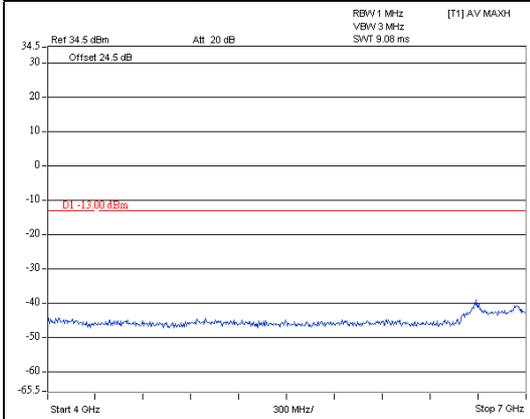
Frequency Range : 9kHz~1GHz



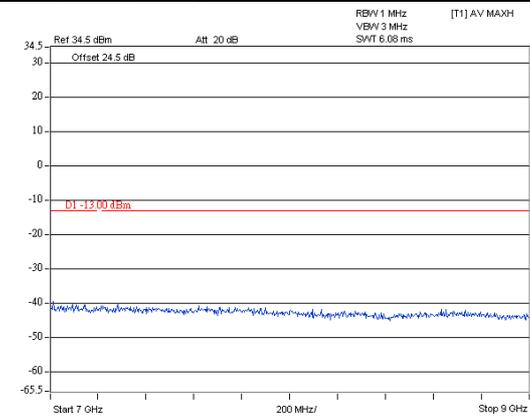
Frequency Range : 1GHz~4GHz



Frequency Range : 4GHz~7GHz



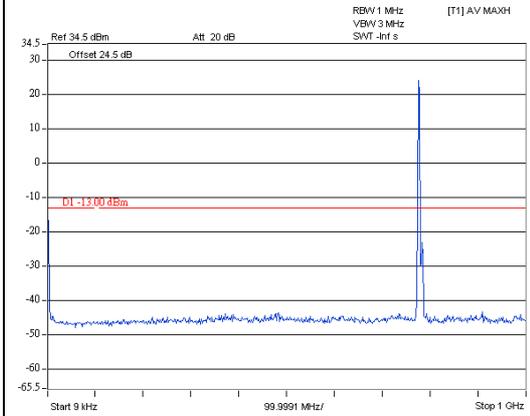
Frequency Range : 7GHz~9GHz



Channel Bandwidth: 10MHz

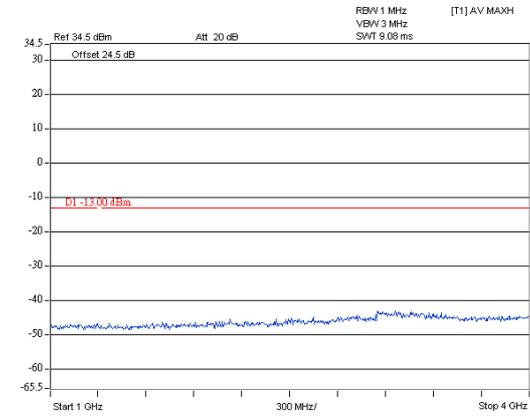
Channel 23230

Frequency Range : 9kHz~1GHz



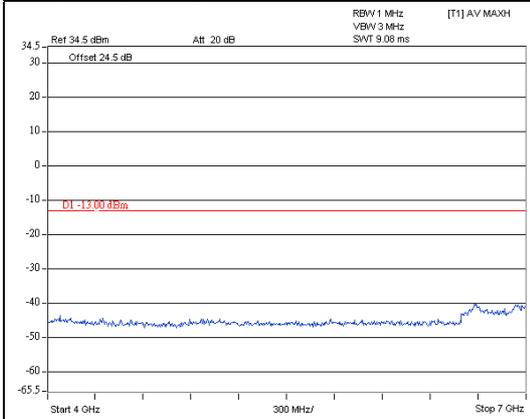
A D T

Frequency Range : 1GHz~4GHz



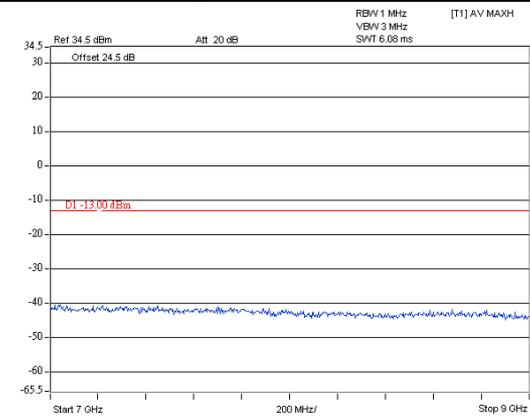
A D T

Frequency Range : 4GHz~7GHz

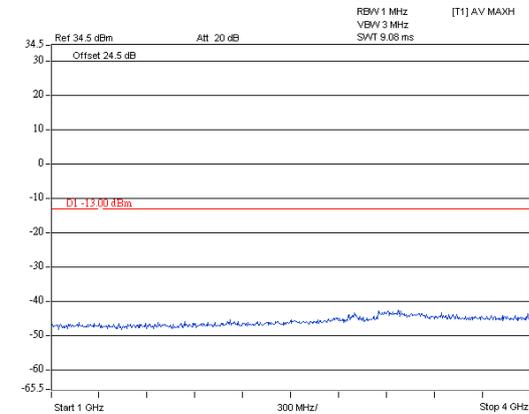
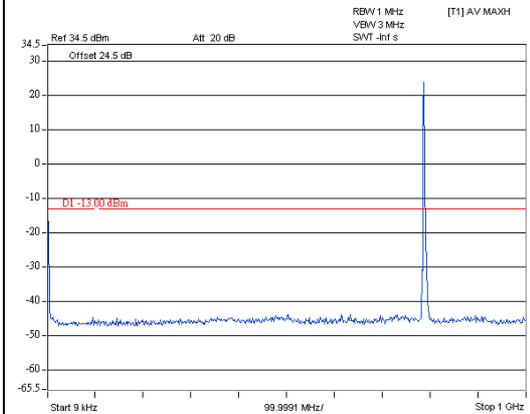
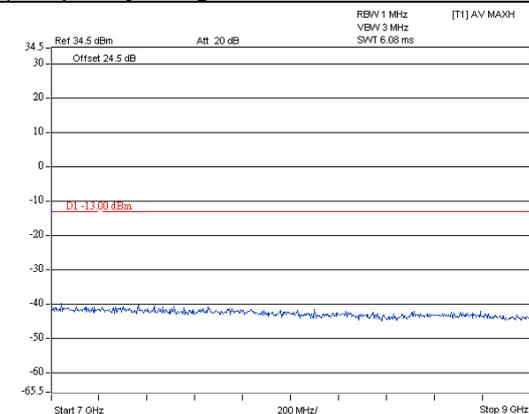
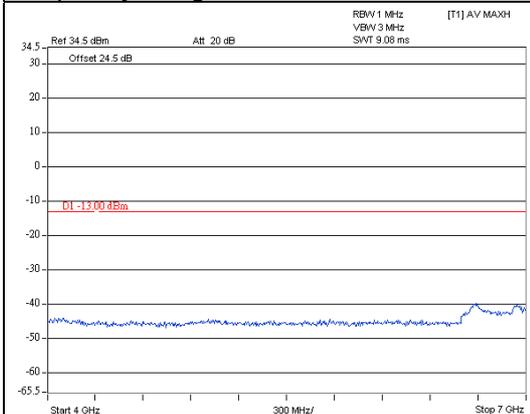


A D T

Frequency Range : 7GHz~9GHz



A D T

**LTE Band 14****Channel Bandwidth: 5MHz****Channel 23305****Frequency Range : 9kHz~1GHz** | **Frequency Range : 1GHz~4GHz****Frequency Range : 4GHz~7GHz** | **Frequency Range : 7GHz~9GHz**

## 4.7 Radiated Emission Measurement

### 4.7.1 Limits of Radiated Emission Measurement

In the FCC 27.53(m) (4), On any frequency outside a licensee's frequency block, The power of any emission shall be attenuated below the transmitter power (P) by at least  $43 + 10 \log (P)$  dB. The emission limit equal to  $-13\text{dBm}$ .

### 4.7.2 Test Procedure

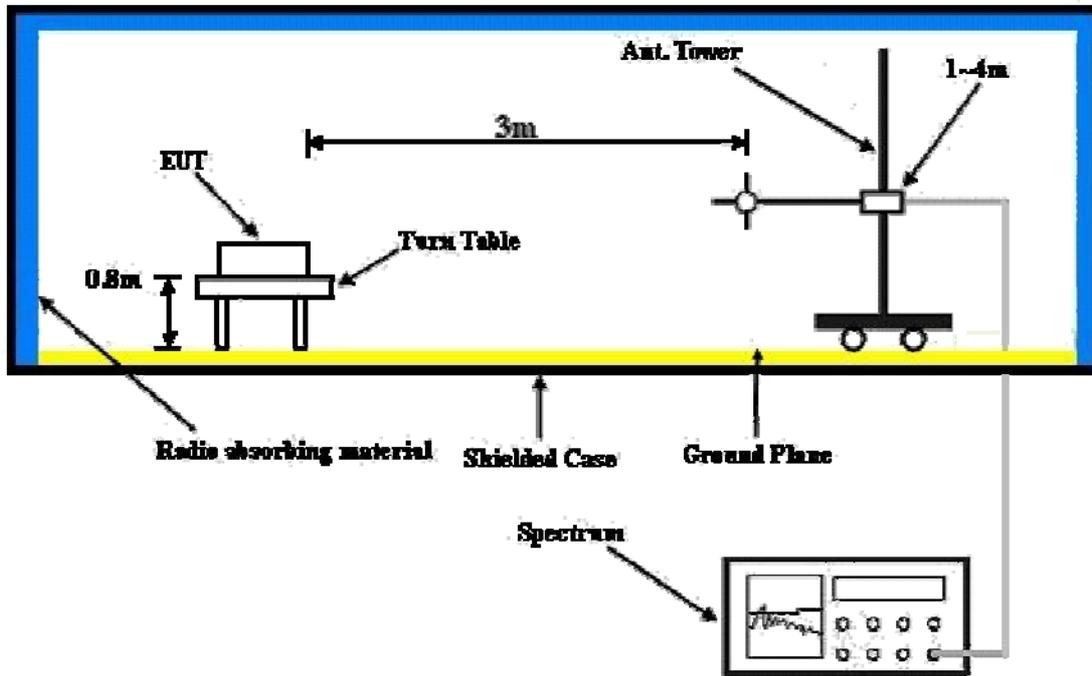
- a. The power was measured with R&S Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high channel of operational frequency range.)
- b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- c. The substitution 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.  $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution antenna}$ .

**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

Below 1GHz

LTE Band 4

Channel Bandwidth: 1.4MHz

Mode	TX channel 19957	Frequency Range	Below 1000 MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	80.44	-47.96	-52.32	-1.52	-53.84	-13.00	-40.84
2	130.88	-54.39	-61.36	-0.13	-61.49	-13.00	-48.49
3	171.62	-51.09	-59.74	1.86	-57.88	-13.00	-44.88
4	307.42	-56.04	-65.92	5.15	-60.77	-13.00	-47.77
5	377.26	-57.17	-63.86	5.24	-58.62	-13.00	-45.62
6	794.36	-67.92	-66.64	4.10	-62.54	-13.00	-49.54
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
<b>1</b>	<b>43.58</b>	<b>-36.96</b>	<b>-32.89</b>	<b>-10.30</b>	<b>-43.19</b>	<b>-13.00</b>	<b>-30.19</b>
2	171.62	-58.71	-60.20	1.86	-58.34	-13.00	-45.34
3	256.98	-59.16	-63.81	5.37	-58.44	-13.00	-45.44
4	613.94	-67.26	-66.94	4.53	-62.41	-13.00	-49.41
5	784.66	-66.40	-64.39	4.23	-60.16	-13.00	-47.16
6	939.86	-66.16	-61.30	3.93	-57.37	-13.00	-44.37

Remarks:

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

Channel Bandwidth: 3MHz

Mode	TX channel 19965	Frequency Range	Below 1000 MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

**Antenna Polarity & Test Distance: Horizontal at 3 M**

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	51.34	-51.87	-43.61	-9.46	-53.07	-13.00	-40.07
2	167.74	-51.87	-59.80	1.37	-58.43	-13.00	-45.43
3	313.24	-55.44	-65.05	5.15	-59.90	-13.00	-46.90
4	377.26	-57.13	-63.82	5.24	-58.58	-13.00	-45.58
5	792.42	-68.49	-67.17	4.12	-63.05	-13.00	-50.05
6	937.92	-65.25	-62.05	3.92	-58.13	-13.00	-45.13

**Antenna Polarity & Test Distance: Vertical at 3 M**

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	39.70	-44.80	-41.86	-10.93	-52.79	-13.00	-39.79
2	74.62	-46.03	-47.06	-3.45	-50.51	-13.00	-37.51
3	171.62	-55.82	-57.31	1.86	-55.45	-13.00	-42.45
4	264.74	-60.85	-63.55	5.33	-58.22	-13.00	-45.22
5	390.84	-61.45	-67.72	5.24	-62.48	-13.00	-49.48
6	939.86	-66.32	-61.46	3.93	-57.53	-13.00	-44.53

**Remarks:**

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



Channel Bandwidth: 5MHz

Mode	TX channel 19975	Frequency Range	Below 1000 MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

## Antenna Polarity &amp; Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	31.94	-61.14	-45.59	-11.93	-57.52	-13.00	-44.52
2	189.08	-46.06	-58.80	4.08	-54.72	-13.00	-41.72
3	307.42	-57.32	-67.20	5.15	-62.05	-13.00	-49.05
4	447.10	-64.35	-70.45	5.10	-65.35	-13.00	-52.35
5	802.12	-66.33	-65.05	4.02	-61.03	-13.00	-48.03
6	937.92	-67.52	-64.32	3.92	-60.40	-13.00	-47.40

## Antenna Polarity &amp; Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	74.62	-50.65	-51.68	-3.45	-55.13	-13.00	-42.13
2	175.50	-57.88	-60.70	2.34	-58.36	-13.00	-45.36
3	260.86	-61.27	-64.98	5.35	-59.63	-13.00	-46.63
4	377.26	-64.43	-71.00	5.24	-65.76	-13.00	-52.76
5	720.64	-68.32	-67.65	5.00	-62.65	-13.00	-49.65
6	792.42	-66.80	-64.63	4.12	-60.51	-13.00	-47.51

## Remarks:

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



Channel Bandwidth: 10MHz

Mode	TX channel 20000	Frequency Range	Below 1000 MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

## Antenna Polarity &amp; Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	31.94	-61.99	-46.44	-11.93	-58.37	-13.00	-45.37
2	187.14	-49.40	-61.85	3.84	-58.01	-13.00	-45.01
3	307.42	-57.03	-66.91	5.15	-61.76	-13.00	-48.76
4	377.26	-61.07	-67.76	5.24	-62.52	-13.00	-49.52
5	798.24	-67.68	-66.42	4.05	-62.37	-13.00	-49.37
6	980.60	-69.51	-65.65	3.93	-61.72	-13.00	-48.72

## Antenna Polarity &amp; Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	68.80	-50.05	-50.82	-5.32	-56.14	-13.00	-43.14
2	165.80	-56.85	-58.20	1.12	-57.08	-13.00	-44.08
3	264.74	-60.78	-63.48	5.33	-58.15	-13.00	-45.15
4	629.46	-68.03	-67.79	4.66	-63.13	-13.00	-50.13
5	792.42	-66.50	-64.33	4.12	-60.21	-13.00	-47.21
6	939.86	-67.42	-62.56	3.93	-58.63	-13.00	-45.63

## Remarks:

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



Channel Bandwidth: 15MHz

Mode	TX channel 20025	Frequency Range	Below 1000 MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

## Antenna Polarity &amp; Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	37.76	-60.25	-45.98	-11.18	-57.16	-13.00	-44.16
2	187.14	-46.65	-59.10	3.84	-55.26	-13.00	-42.26
3	313.24	-56.23	-65.84	5.15	-60.69	-13.00	-47.69
4	377.26	-57.63	-64.32	5.24	-59.08	-13.00	-46.08
5	794.36	-66.53	-65.25	4.10	-61.15	-13.00	-48.15
6	937.92	-67.51	-64.31	3.92	-60.39	-13.00	-47.39

## Antenna Polarity &amp; Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	68.80	-50.50	-51.27	-5.32	-56.59	-13.00	-43.59
2	171.62	-58.20	-59.69	1.86	-57.83	-13.00	-44.83
3	266.68	-61.25	-63.56	5.31	-58.25	-13.00	-45.25
4	617.82	-67.51	-67.08	4.58	-62.50	-13.00	-49.50
5	800.18	-65.94	-63.62	4.02	-59.60	-13.00	-46.60
6	937.92	-66.03	-61.15	3.92	-57.23	-13.00	-44.23

## Remarks:

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



Channel Bandwidth: 20MHz

Mode	TX channel 20050	Frequency Range	Below 1000 MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

## Antenna Polarity &amp; Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	39.70	-62.08	-48.86	-10.93	-59.79	-13.00	-46.79
2	187.14	-46.73	-59.18	3.84	-55.34	-13.00	-42.34
3	307.42	-55.27	-65.15	5.15	-60.00	-13.00	-47.00
4	685.72	-66.71	-70.21	5.12	-65.09	-13.00	-52.09
5	800.18	-67.68	-66.41	4.02	-62.39	-13.00	-49.39
6	903.00	-60.37	-57.48	3.90	-53.58	-13.00	-40.58

## Antenna Polarity &amp; Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	82.38	-51.40	-54.44	-0.98	-55.42	-13.00	-42.42
2	171.62	-56.96	-58.45	1.86	-56.59	-13.00	-43.59
3	262.80	-61.01	-64.24	5.33	-58.91	-13.00	-45.91
4	639.16	-67.28	-67.66	4.76	-62.90	-13.00	-49.90
5	792.42	-67.89	-65.72	4.12	-61.60	-13.00	-48.60
6	904.94	-68.62	-65.32	3.91	-61.41	-13.00	-48.41

## Remarks:

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



LTE Band 13

Channel Bandwidth: 5MHz

Mode	TX channel 23205	Frequency Range	Below 1000 MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

## Antenna Polarity &amp; Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	35.82	-62.69	-50.15	-11.43	-61.58	-13.00	-48.58
2	189.08	-45.94	-60.83	4.08	-56.75	-13.00	-43.75
3	307.42	-54.92	-66.95	5.15	-61.80	-13.00	-48.80
4	447.10	-64.28	-72.53	5.10	-67.43	-13.00	-54.43
5	769.14	-67.49	-69.18	4.39	-64.79	-13.00	-51.79
6	937.92	-67.54	-66.49	3.92	-62.57	-13.00	-49.57

## Antenna Polarity &amp; Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	76.56	-52.12	-55.89	-2.80	-58.69	-13.00	-45.69
2	175.50	-58.09	-63.06	2.34	-60.72	-13.00	-47.72
3	274.44	-60.35	-65.07	5.26	-59.81	-13.00	-46.81
4	615.88	-67.84	-69.56	4.56	-65.00	-13.00	-52.00
5	753.62	-67.83	-68.67	4.58	-64.09	-13.00	-51.09
6	937.92	-65.97	-63.24	3.92	-59.32	-13.00	-46.32

Remarks:

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



Channel Bandwidth: 10MHz

Mode	TX channel 23230	Frequency Range	Below 1000 MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

## Antenna Polarity &amp; Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	41.64	-60.13	-48.71	-10.62	-59.33	-13.00	-46.33
2	189.08	-46.72	-61.61	4.08	-57.53	-13.00	-44.53
3	307.42	-55.48	-67.51	5.15	-62.36	-13.00	-49.36
4	377.26	-61.35	-70.19	5.24	-64.95	-13.00	-51.95
5	796.30	-67.65	-68.51	4.07	-64.44	-13.00	-51.44
6	980.60	-68.64	-66.93	3.93	-63.00	-13.00	-50.00

## Antenna Polarity &amp; Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	41.64	-47.22	-45.49	-10.62	-56.11	-13.00	-43.11
2	171.62	-51.50	-55.14	1.86	-53.28	-13.00	-40.28
3	262.80	-61.56	-66.94	5.33	-61.61	-13.00	-48.61
4	385.02	-59.94	-68.61	5.25	-63.36	-13.00	-50.36
5	745.86	-65.66	-66.86	4.68	-62.18	-13.00	-49.18
6	937.92	-65.39	-62.66	3.92	-58.74	-13.00	-45.74

## Remarks:

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



LTE Band 14

Channel Bandwidth: 5MHz

Mode	TX channel 23305	Frequency Range	Below 1000 MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

## Antenna Polarity &amp; Test Distance: Horizontal at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	70.74	-55.30	-58.96	-4.76	-63.72	-13.00	-50.72
2	189.08	-46.28	-61.17	4.08	-57.09	-13.00	-44.09
3	309.36	-56.64	-68.59	5.15	-63.44	-13.00	-50.44
4	377.26	-60.85	-69.69	5.24	-64.45	-13.00	-51.45
5	800.18	-67.27	-68.15	4.02	-64.13	-13.00	-51.13
6	937.92	-66.02	-64.97	3.92	-61.05	-13.00	-48.05

## Antenna Polarity &amp; Test Distance: Vertical at 3 M

No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	68.80	-50.39	-53.31	-5.32	-58.63	-13.00	-45.63
2	138.64	-52.39	-58.32	-0.30	-58.62	-13.00	-45.62
3	264.74	-62.55	-67.40	5.33	-62.07	-13.00	-49.07
4	613.94	-67.69	-69.52	4.53	-64.99	-13.00	-51.99
5	802.12	-67.11	-66.94	4.02	-62.92	-13.00	-49.92
6	937.92	-63.99	-61.26	3.92	-57.34	-13.00	-44.34

Remarks:

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



Above 1GHz

Channel Bandwidth: 1.4MHz

Mode	TX channel 19957	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3421.40	-60.32	-56.13	7.07	-49.06	-13.00	-36.06

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3421.40	-58.74	-52.20	7.07	-45.13	-13.00	-32.13

Remarks:

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

Mode	TX channel 20175	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3465.00	-60.40	-55.50	7.16	-48.34	-13.00	-35.34

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3465.00	-59.87	-53.11	7.16	-45.95	-13.00	-32.95

Remarks:

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



Mode	TX channel 20393	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3508.60	-60.31	-54.82	7.21	-47.61	-13.00	-34.61
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3508.60	-58.79	-51.86	7.21	-44.65	-13.00	-31.65

Remarks:

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



Channel Bandwidth: 3MHz

Mode	TX channel 19965	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3423.00	-60.01	-55.80	7.08	-48.72	-13.00	-35.72
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3423.00	-59.87	-53.33	7.08	-46.25	-13.00	-33.25

Remarks:

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

Mode	TX channel 20175	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3465.00	-60.02	-59.76	7.16	-52.60	-13.00	-39.60
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3465.00	-59.14	-52.38	7.16	-45.22	-13.00	-32.22

Remarks:

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



Mode	TX channel 20385	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3507.00	-60.13	-54.65	7.21	-47.44	-13.00	-34.44
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3507.00	-58.64	-51.70	7.21	-44.49	-13.00	-31.49

Remarks:

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



Channel Bandwidth: 5MHz

Mode	TX channel 19975	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3425.00	-60.03	-55.78	7.08	-48.70	-13.00	-35.70
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3425.00	-58.74	-52.18	7.08	-45.10	-13.00	-32.10

Remarks:

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

Mode	TX channel 20175	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3465.00	-60.30	-55.42	7.16	-48.26	-13.00	-35.26
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3465.00	-58.76	-52.00	7.16	-44.84	-13.00	-31.84

Remarks:

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



Mode	TX channel 20375	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3505.00	-60.17	-54.69	7.21	-47.48	-13.00	-34.48
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3505.00	-59.78	-52.84	7.21	-45.63	-13.00	-32.63

Remarks:

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



Channel Bandwidth: 10MHz

Mode	TX channel 20000	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3430.00	-61.30	-56.97	7.09	-49.88	-13.00	-36.88

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3430.00	-59.04	-52.46	7.09	-45.37	-13.00	-32.37

Remarks:

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

Mode	TX channel 20175	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3465.00	-62.36	-57.48	7.16	-50.32	-13.00	-37.32

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3465.00	-59.78	-53.02	7.16	-45.86	-13.00	-32.86

Remarks:

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



Mode	TX channel 20350	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3500.00	-61.23	-55.78	7.22	-48.56	-13.00	-35.56
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3500.00	-59.41	-52.46	7.22	-45.24	-13.00	-32.24

Remarks:

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



Channel Bandwidth: 15MHz

Mode	TX channel 20025	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3435.00	-61.39	-56.97	7.09	-49.88	-13.00	-36.88
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3435.00	-59.97	-53.35	7.09	-46.26	-13.00	-33.26

Remarks:

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

Mode	TX channel 20175	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3465.00	-61.03	-56.15	7.16	-48.99	-13.00	-35.99
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3465.00	-59.78	-53.02	7.16	-45.86	-13.00	-32.86

Remarks:

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



Mode	TX channel 20325	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3495.00	-61.22	-55.85	7.21	-48.64	-13.00	-35.64
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3495.00	-59.47	-52.55	7.21	-45.34	-13.00	-32.34

Remarks:

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



Channel Bandwidth: 20MHz

Mode	TX channel 20050	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3440.00	-62.07	-57.58	7.11	-50.47	-13.00	-37.47

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3440.00	-60.36	-53.73	7.11	-46.62	-13.00	-33.62

Remarks:

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

Mode	TX channel 20175	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3465.00	-62.30	-57.42	7.16	-50.26	-13.00	-37.26

Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3465.00	-60.14	-53.39	7.14	-46.25	-13.00	-33.25

Remarks:

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



Mode	TX channel 20300	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3490.00	-62.36	-57.07	7.20	-49.87	-13.00	-36.87
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	EIRP (dBm)	Limit (dBm)	Margin (dB)
1	3490.00	-60.01	-53.11	7.20	-45.91	-13.00	-32.91

Remarks:

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



LTE Band 13

Channel Bandwidth: 5MHz

Mode	TX channel 23205	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1559.00	-57.55	-60.63	5.27	-55.36	-13.00	-42.36
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1559.00	-59.15	-60.99	5.27	-55.72	-13.00	-42.72

Remarks:

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

Mode	TX channel 23230	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1564.00	-56.41	-59.56	5.28	-54.28	-13.00	-41.28
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1564.00	-58.97	-60.79	5.28	-55.51	-13.00	-42.51

Remarks:

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



Mode	TX channel 23255	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1569.00	-56.74	-59.96	5.29	-54.67	-13.00	-41.67
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1569.00	-59.64	-61.45	5.29	-56.16	-13.00	-43.16

Remarks:

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



Channel Bandwidth: 10MHz

Mode	TX channel 23230	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1564.00	-56.31	-59.46	5.28	-54.18	-13.00	-41.18
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1564.00	-58.64	-60.46	5.28	-55.18	-13.00	-42.18

Remarks:

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



LTE Band 14

Channel Bandwidth: 5MHz

Mode	TX channel 23305	Frequency Range	Above 1000MHz
Environmental Conditions	24deg. C, 63%RH	Input Power	120Vac, 60Hz
Tested By	Chris Lin		

Antenna Polarity & Test Distance: Horizontal at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1559.00	-57.41	-60.49	5.27	-55.22	-13.00	-42.22
Antenna Polarity & Test Distance: Vertical at 3 M							
No.	Freq. (MHz)	Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)
1	1559.00	-57.69	-59.53	5.27	-54.26	-13.00	-41.26

Remarks:

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



## 5 Pictures of Test Arrangements

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

## Appendix – Information 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.

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

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