



FCC RF Test Report

Product Name: LTE CPE

Model Number: B593u-501

Report No: SYBH(Z-RF)023062012-2002

FCC ID:QISB593U-501

IC ID:6369A-B593U501

Reliability Laboratory of Huawei Technologies Co., Ltd.

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Applicant:	Huawei Technologies Co., Ltd.
Address:	Huawei Base, Bantian, Longgang District, Shenzhen 518129, P.R. China
Date of Receipt Test Item:	Jun., 21, 2012
Start Date of Test:	July., 03, 2012
End Date of Test:	July., 09, 2012
Test Result:	Pass

Approved By Senior Engineer July, 12, 2012 Dai Linjun
 Date Name Signature

Reviewed By July, 12, 2012 Cousy Xu
 Date Name Signature

Operated By July, 12, 2012 Huang Qiuliang
 Date Name Signature



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1 General Information

1.1 Applied Standard	
Applied Rules:	47 CFR FCC Part 2:2011, Subpart J 47 CFR FCC Part 27:2011, Subpart C&L ANSI/TIA 603C:2004 IC RSS-Gen Issue 3 IC RSS-139 Issue 2
1.2 Test Location	
Test Location 1:	Reliability Laboratory of Huawei Technologies Co., Ltd.
Address:	Huawei Base, Bantian, Longgang District, Shenzhen 518129, P.R. China
1.3 Test Environmental Condition	
Ambient Temperature:	20 – 25 °C
Ambient Relative Humidity:	45 – 55 %
Atmospheric Pressure:	101 kPa



2 Summary

Table 1 Summary of results

Test Case	FCC Part No.	Requirements	Result
AWS Band			
Transmitter Output Power	2.1046 & 27.50(d)	Peak EIRP not exceed 1 W	Pass
Modulation Characteristics	2.1047	Digital modulation	Pass
Occupied Bandwidth	2.1049	(Not specified)	Pass
Band Edges Compliance	2.1051 & 27.53(h)	Below -13 dBm/1%*EBW, in 1 MHz range	Pass
Spurious Emission at Antenna Terminals	2.1051 & 27.53(h)	Below -13 dBm/1 MHz, 30 MHz to 10 th harmonics	Pass
Field Strength of Spurious Radiation	2.1053 & 27.53(h)	Below -13 dBm/1 MHz	Pass
Frequency Stability	2.1055 & 27.54	Stay within the authorized bands of operation	Pass

Table 2 Summary of results

Test Case	IC Standard No.	Requirements	Result
AWS Band			
Transmitter Output Power	RSS-Gen, §4.8; RSS-139, §6.4	EIRP not exceed 1 W Peak-to-average ratio not exceed 13 dB	Pass
Modulation Characteristics	RSS-139, §6.2	Digital modulation	Pass
Occupied Bandwidth	RSS-Gen, §4.6	(Not specified)	Pass
Band Edges Compliance	RSS-Gen, §4.9; RSS-139, §6.5	Below -13 dBm/1%*EBW, in 1 MHz range	Pass
Spurious Emission at Antenna Terminals	RSS-Gen, §4.9; RSS-139, §6.5	Below -13 dBm/1 MHz, 30 MHz to 5 th harmonics	Pass
Field Strength of Spurious Radiation	RSS-Gen, §4.9; RSS-139, §6.5	Below -13 dBm/1 MHz	Pass
Frequency Stability	RSS-Gen, §4.7; RSS-139, §6.3	Stay within the authorized frequency block	Pass
Receiver Spurious Emissions (Conducted)	RSS-Gen, §4.10; RSS-Gen, §6; RSS-139, §6.6	Below 2 nW/4 kHz (-57 dBm/4 kHz), for 30 MHz - 1000 MHz Below 5 nW/MHz (-53 dBm/MHz), for above 1 GHz	Pass

3 Product Description

3.1 Product Information

3.1.1 General Description

B593u-501 LTE/WCDMA/GSM three mode 10 bands CPE is subscriber equipment in the LTE/UMTS/GSM system and support wifi 802.11b/g/n. B593u-501 implement such functions as RF signal receiving/transmitting, LTE/WCDMA/GSM protocol processing, data service etc. Externally it provides USB interface (to connect to the printer etc.), USIM card interface , RJ45 Ethernet interface. B593u-501 has two internal antennas and two External Antenna, can automatic switch.

3.1.2 Board Information

Table 3 Board Information

LTE CPE		
B593u-501		
Board and Module		
Equipment Designation / Description	Hardware Version	Software Version
MAINBOARD	B593RW2A CL2EM930U501M	V100R003

3.1.3 Adapter Technical Data

AC/DCAdapter Model	HW-120200U1W
Manufacturer	FUHUA
Input Voltage	90Vac~270Vac 50/60Hz 0.8A
Output Voltage	+12V 2.0A
Rated Power	24W(max)

AC/DCAdapter Model	HW-120200U1W
Manufacturer	HuntKey
Input Voltage	90Vac~270Vac 50/60Hz 0.8A
Output Voltage	+12V 2.0A
Rated Power	24W(max)



4 Test Description

4.1 Supported Frequency Range

Characteristics	Description
Downlink	2110 to 2155 MHz
Uplink	1710 to 1755 MHz

4.2 Transmitter / Receiver Characteristics

Characteristics	Description
System Type	UMTS LTE
TX Output Power (per Antenna Port)	UMTS system: 24dBm LTE system: 23 dBm
Channel Spacing(s) / Bandwidth(s)	UMTS system: 5 MHz LTE system: 10 MHz, 20 MHz
Designation of Emissions	UMTS system: 4M01F6W LTE system: 8M97D9W (10 MHz channel bandwidth) 17M93D9W (20 MHz channel bandwidth)

4.3 Antenna Gain

Antenna Gain(dBi) to WCDMA	2
Antenna Gain(dBi) to LTE	2

4.4 Power Supply

Specification	Description
Power Supply Type	Directly Connected to DC /AC Power Supply
Input to EUT (DC power)	DC Voltage Nominal: -12 V
Input to EUT (AC power)	AC Voltage Nominal: ~ 230 V (50/60 Hz) AC Voltage Range: ~ 90 V to 270 V



5 General Test Conditionss / Configurations

5.1 RF Channels under Test

Test Mode	TX / RX	RF Channel		
		Low (L)	Middle (M)	High (H)
TM1/TM2/TM3	TX	Channel1312	Channel1412	Channel1513
		1712.4MHz	1732.4MHz	1752.6MHz
	RX	Channel 1537	Channel 1637	Channel 1738
		2112.4 MHz	2132.4 MHz	2152.6 MHz
LTE	TX(10M)	Channel19950	Channel20175	Channel20350
		1715MHz	1732.5MHz	1750MHz
	RX(10M)	Channel 1537	Channel 1637	Channel 1738
		2115 MHz	2132.5 MHz	2150 MHz
	TX(20M)	Channel20050	Channel20175	Channel20300
		1720MHz	1732.5MHz	1745MHz
	RX(20M)	Channel 1537	Channel 1637	Channel 1738
		2120 MHz	2132.5 MHz	2145 MHz



5.2 Test Modes

Test Mode	Test Modes Description
TM1	WCDMA, QPSK modulation
TM2	HSDPA, QPSK modulation
TM3	HSUPA, QPSK modulation
TM4	LTE QPSK modulation
TM5	LTE 16QAM modulation

5.3 Test Environment

Environment Parameter	Selected Values During Tests	
Relative Humidity	Ambient	
Temperature	TN	Ambient
Voltage	VL	9.6V
	VN	12V
	VH	14.4V

NOTE: VL= lower extreme test voltage

VN= nominal voltage

VH= upper extreme test voltage

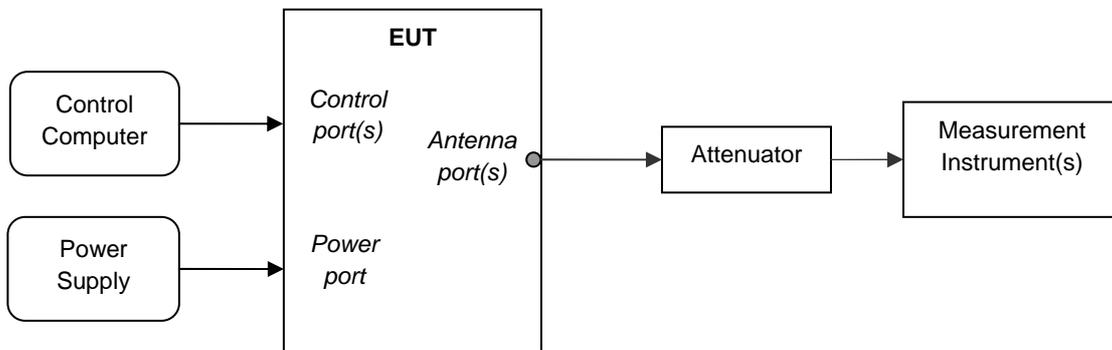
TN= normal temperature

5.4 Test Setup

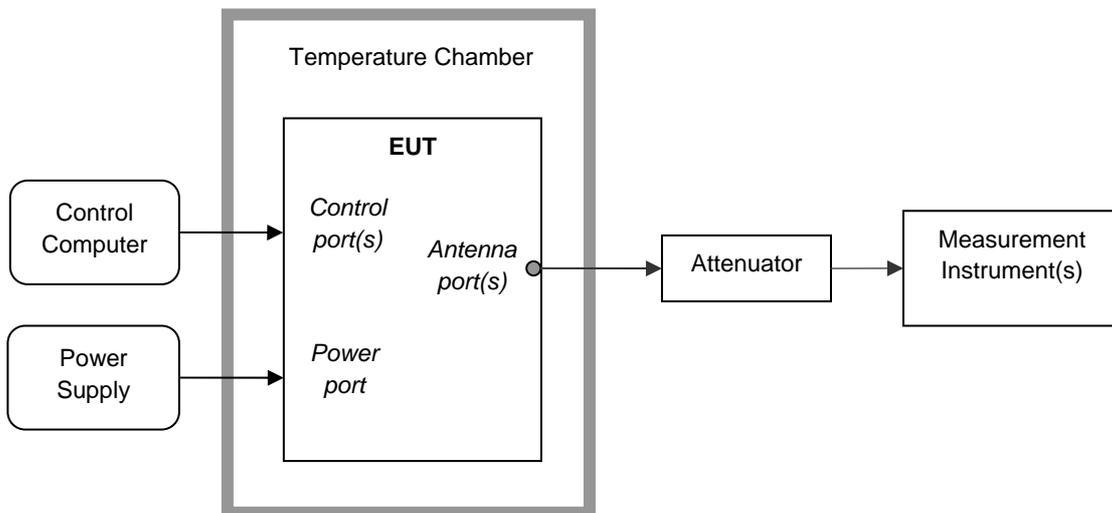
5.4.1 General Test Setup Configurations

Configuration	Description
Test Antenna Ports	Until otherwise declared, all TX tests are ONLY performed at the main Transmitter antenna port (e.g. TRXA, TXA and so on) of the EUT, and all RX tests are ONLY performed at the main Receiver antenna port (e.g. TRXA, RXA and so on) of the EUT.
Multiple RF Sources	Other than the tested RF source of the EUT, other RF source(s) are disabled or shutdown during measurements.

5.4.2 Test Setup 1



5.4.3 Test Setup 2



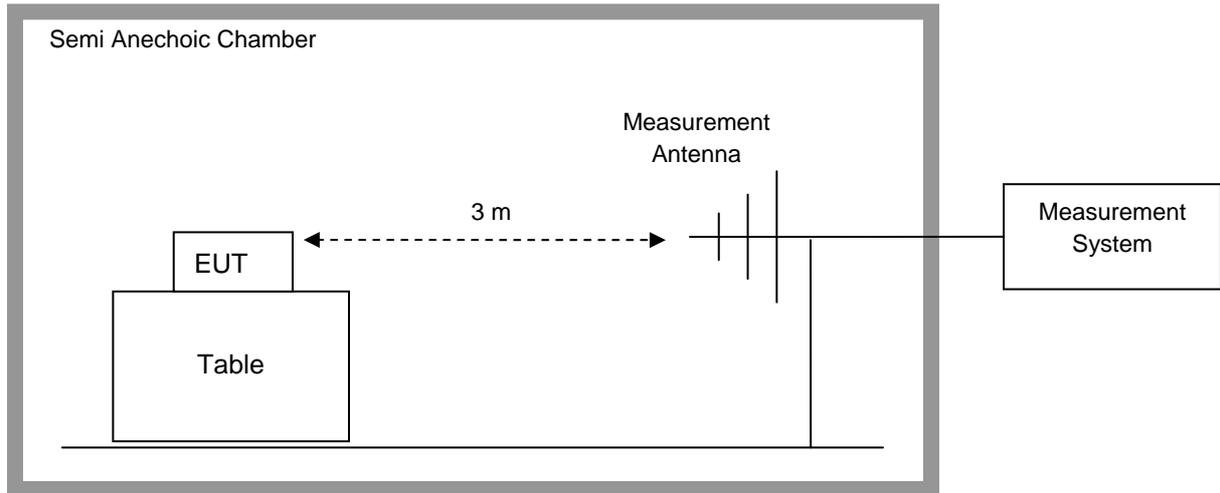
5.4.4 Test Setup 3

NOTE1: Effective radiated power (ERP) or Effective Isotropic radiated power (EIRP) refers to the EUT radiation power output, assuming all emissions are radiated from half-wave dipole antennas or horn antennas.

NOTE2: The EUT was set on insulator 80cm above the Ground Plane. The setup and test methods were according to ANSI-TIA-603C 2004. The measurements were carried through with a Rohde and Schwarz Test Receiver and control software.

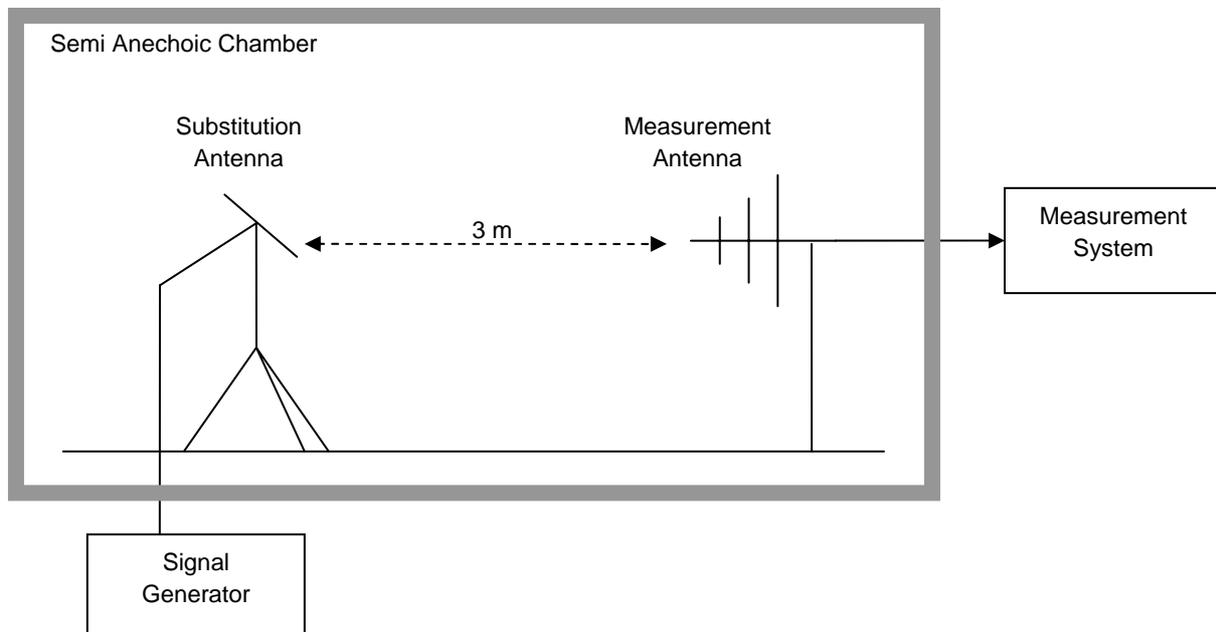
Step 1: Pre-test to find the Maximum ERP or EIRP

1. Connect the test system according to the following figure. EUT is running for 30 minutes before test, and measurement instruments are warming-up for 30 minutes.
2. Set up communication link between Universal radio communication tester and EUT, set EUT working frequency, and control EUT to transmit at maximum power.
3. Set the center frequency of the signal analyzer or receiver to the EUT's operating frequency, the RBW is equal to the emission bandwidth of the signal. Set RMS detector for the test, and the span is equal to 2 times of emission bandwidth, the other settings should remain automatic. Normally, the height range of antenna was 1m to 4m, the azimuth range of turntable was 0° to 360°. The receiver antenna has two polarizations V and H. A portable or small unlicensed wireless device shall be placed on a non-metallic test fixture or other non-metallic support during testing. The supporting fixture shall permit orientation of the EUT in each of three orthogonal (x, y, z) axis positions such that emissions from the EUT are maximized. Measure the EUT maximum RF power and record the result.
4. Changing EUT working frequency and measuring the RF power at channel L, M, H respectively.
Complete the test data.



Step 2: Substitution method to verify the maximum ERP or EIRP

1. Measurement setup is according to the following figure. EUT was substituted by antenna, and the polarization is identical with the test antenna; the signal generator was connected to the substitution antenna.
2. The radiated output power, measured by signal analyzer set, is the same as recorded in above item 5). Then this power level is matched by a signal from a calibrated signal generator which is substituted for EUT. The power supplied by the generator is then equal to the ERP or EIRP after corrected by the antenna gain and cable loss.



5.5 Test Conditions

Test Case	Test Conditions	
Transmitter Output Power	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 1 & Test Setup 3
	RBW	> emission bandwidth
	VBW	> 3 x RBW
	Detector	RMS
	RF Channels (TX)	L, M, H
	Test Mode	TM1/TM2/TM3/TM4/TM5
Modulation Characteristics	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 1
	RF Channels (TX)	M
	Test Mode	TM1/ TM4/TM5
Occupied Bandwidth	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 1
	Detector	PK
	RF Channels (TX)	L, M, H
	Test Mode	TM1/ TM4/TM5
Band Edges Compliance	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 1
	Detector	RMS
	RF Channels (TX)	B, T
	Test Mode	TM1 /TM4/TM5
Spurious Emission at Antenna Terminals	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 1
	Detector	PK
	RF Channels (TX)	L, M,H
	Test Mode	TM1/ TM4
Field Strength of Spurious Radiation	Test Configuration	Ambient Temperature & Rated Voltage
	Test Setup	Test Setup 3
	Detector	PK
	RF Channels (TX)	M
	Test Mode	TM1/TM2/TM3/ TM4/TM5
Frequency Stability	Test Configuration	(1) -30 °C to +50 °C with step 10 °C at Rated Voltage; (2) 85%, 100% and 115% of Rated Voltage at Ambient



Test Case	Test Conditions	
		Temperature.
	Test Setup	Test Setup 2
	RF Channels (TX)	M
	Test Mode	TM1/TM4

6 Main Test Instruments

Table 4 Main Test Equipments

Equipment Description	Manufacturer	Model	Serial Number	Calibrated until
Power supply	KEITHLEY	2303	1288003	Sept., 27, 2012
Universal Radio Communication Tester	R&S	CMU200	105822	Oct., 24, 2012
Wireless Communication Test set	Agilent	N4010A	MY49081592	Dec., 14, 2012
Universal Radio Communication Tester	Agilent	E5515C	MY50260239	Aug., 31, 2012
Spectrum Analyzer	Agilent	E4440A	MY49420179	Apr., 20, 2013
Signal Analyzer	R&S	FSQ31	200021	Sept., 27, 2012
Temperature Chamber	WEISS	WKL64	24600294	Jan., 03, 2013
Signal generator	Agilent	E8257D	MY49281095	Jul., 09, 2013
Vector Signal Generator	R&S	SMU200A	104162	Sept., 07, 2012
Test receiver	R&S	ESU26	100150	May., 24, 2013
Tunable Dipole	Schwarzbeck	D69250-UHAP/D69250-VHAP	919/1009	Dec., 13, 2012
Tunable Dipole	Schwarzbeck	D69250-UHAP/D69250-VHAP	979/917	Dec., 13, 2012
Horn Antenna	R & S	HF906	100683	May., 16, 2013
Horn Antenna	R & S	HF906	100684	May., 16, 2013
Broadband Antenna	Schwarzbeck	VULB 9163	9163-357	Sept., 15, 2012
Broadband Antenna	Schwarzbeck	VULB 9163	9163-356	Sept., 15, 2012

Note: All the equipments are calibrated once a year. When it's almost due, we will arrange calibration again before the calibration deadline.



7 Test Results

No.	Test Item	Test Result
1	Transmitter Output Power	Appendix A
2	Modulation Characteristics	Appendix B
3	Occupied Bandwidth	Appendix C
4	Band Edges Compliance	Appendix D
5	Spurious Emission at Antenna Terminals	Appendix E
6	Field Strength of Spurious Radiation	Appendix F
7	Frequency Stability	Appendix G
8	Receiver Spurious Emissions	Appendix H
9	Photos of Test Setup	Appendix I

NOTE: There is no test data in Appendix H, only Photos of Test Setup for Field Strength of Spurious Radiation.

8 Measurement Uncertainty

For a 95% confidence level (k=2), the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 as following:

Test Item		Extended Uncertainty
Transmitter Output Power	Power (dBm)	U =0.39 dB
Occupied Bandwidth	Magnitude (%)	U=0.2%
Band Edge Compliance	Disturbance Power (dBm)	U=2.0 dB
Conducted Spurious Emissions	Disturbance Power (dBm)	U=2.0 dB
Field Strength of Spurious Radiation	ERP (dBm)	U=4.6 dB (30 MHz – 1GHz) U=3.0 dB (above 1 GHz)
Frequency Stability	Frequency Accuracy (ppm)	U=0.21 ppm

-----The END-----



Appendix A

Transmitter Output Power According to FCC Part 2.1046 & Part 27 Subpart C&L & RSS-139



Conducted Power of Transmitter

Table 1 Measurement Results

TEST CONDITIONS		RF Output Power (Conducted)					
		Channel 1312(L)		Channel 1412(M)		Channel 1513(H)	
		1712.4MHz		1732.4MHz		1752.6MHz	
		dBm		dBm		dBm	
T_{nom} / V_{nom}		Measured	Limit	Measured	Limit	Measured	Limit
TM1		21.05	30	21.18	30	20.97	30
TM2	Case1	21.03	30	21.18	30	20.92	30
	Case2	20.63	30	20.88	30	20.73	30
	Case3	20.23	30	20.34	30	20.08	30
	Case4	20.21	30	20.42	30	20.14	30
TM3	Case1	20.62	30	20.77	30	20.53	30
	Case2	20.68	30	20.79	30	20.59	30
	Case3	21.21	30	21.36	30	21.08	30
	Case4	21.18	30	21.23	30	21.06	30
	Case5	21.18	30	21.34	30	21.06	30

Note: RBW > emission bandwidth, VBW > 3 x RBW.



Table 2 Measurement Results(LTE)

TM4 & TM5 RF Output Power(Conducted)				
Test Mode	TN/VN			
	Modulation	RB	Measured (dBm)	Limit (dBm)
Channel (B) 10MHz(BW)	QPSK	1 RB/#0	21.06	30.0
		1 RB/#max	20.98	30.0
		25 RB/#13	20.12	30.0
		Full	20.03	30.0
	16QAM	1 RB/#0	20.29	30.0
		1 RB/#max	20.28	30.0
		25 RB/#13	19.35	30.0
		Full	19.28	30.0
Channel (B) 20MHz(BW)	QPSK	1 RB/#0	21.14	30.0
		1 RB/#max	21.23	30.0
		50 RB/#25	20.08	30.0
		Full	20.11	30.0
	16QAM	1 RB/#0	20.57	30.0
		1 RB/#max	20.71	30.0
		50 RB/#25	19.12	30.0
		Full	19.19	30.0
Channel (M) 10MHz(BW)	QPSK	1 RB/#0	21.15	30.0
		1 RB/#max	21.24	30.0
		25 RB/#13	20.12	30.0
		Full	20.18	30.0
	16QAM	1 RB/#0	20.03	30.0
		1 RB/#max	20.04	30.0
		25 RB/#13	19.24	30.0
		Full	19.36	30.0



Channel (M) 20MHz(BW)	QPSK	1 RB/#0	21.22	30.0
		1 RB/#max	21.19	30.0
		50 RB/#25	20.25	30.0
		Full	20.27	30.0
	16QAM	1 RB/#0	20.6	30.0
		1 RB/#max	20.45	30.0
		50 RB/#25	19.15	30.0
		Full	19.28	30.0
Channel (T) 10MHz(BW)	QPSK	1 RB/#0	21.03	30.0
		1 RB/#max	21.08	30.0
		25 RB/#13	20.08	30.0
		Full	20.04	30.0
	16QAM	1 RB/#0	20.42	30.0
		1 RB/#max	20.53	30.0
		25 RB/#13	18.84	30.0
		Full	19.04	30.0
Channel (T) 20MHz(BW)	QPSK	1 RB/#0	21.22	30.0
		1 RB/#max	21.2	30.0
		50 RB/#25	20.04	30.0
		Full	20.17	30.0
	16QAM	1 RB/#0	20.69	30.0
		1 RB/#max	20.62	30.0
		50 RB/#25	19.24	30.0
		Full	19.22	30.0

Note: RBW > emission bandwidth, VBW > 3 x RBW.



Peak-to-Average Ratio

Table 3 Measurement Results

TEST CONDITIONS		Channel 1312(L)		Channel 1412(M)		Channel 1513(H)	
		1712.4MHz		1732.4MHz		1752.6MHz	
		dBm		dBm		dBm	
T_{nom} / V_{nom}		Measured	Limit	Measured	Limit	Measured	Limit
TM3		3.08	13.0	3.14	13.0	3.12	13.0
TM4	Case1	3.05	13.0	3.01	13.0	3.04	13.0
	Case2	2.98	13.0	2.97	13.0	2.96	13.0
	Case3	2.95	13.0	2.93	13.0	2.91	13.0
	Case4	2.86	13.0	2.87	13.0	2.89	13.0
TM5	Case1	2.85	13.0	2.83	13.0	2.82	13.0
	Case2	2.78	13.0	2.76	13.0	2.79	13.0
	Case3	2.71	13.0	2.73	13.0	2.75	13.0
	Case4	2.69	13.0	2.67	13.0	2.65	13.0
	Case5	2.64	13.0	2.63	13.0	2.61	13.0



Table 4 Measurement Results(LTE)

TM4 & TM5 RF Output Power(Conducted)				
Test Mode	TN/VN			
	Modulation	RB	Measured (dBm)	Limit (dBm)
Channel (B) 10MHz(BW)	QPSK	1 RB/#0	5.35	13.0
		1 RB/#max	5.33	13.0
		25 RB/#13	5.32	13.0
		Full	5.26	13.0
	16QAM	1 RB/#0	5.74	13.0
		1 RB/#max	5.69	13.0
		25 RB/#13	5.62	13.0
		Full	5.65	13.0
Channel (B) 20MHz(BW)	QPSK	1 RB/#0	5.06	13.0
		1 RB/#max	5.01	13.0
		50 RB/#25	4.98	13.0
		Full	4.95	13.0
	16QAM	1 RB/#0	5.83	13.0
		1 RB/#max	5.78	13.0
		50 RB/#25	5.75	13.0
		Full	5.71	13.0
Channel (M) 10MHz(BW)	QPSK	1 RB/#0	5.23	13.0
		1 RB/#max	5.21	13.0
		25 RB/#13	5.25	13.0
		Full	5.14	13.0
	16QAM	1 RB/#0	5.62	13.0
		1 RB/#max	5.57	13.0
		25 RB/#13	5.51	13.0
		Full	5.53	13.0



Channel (M) 20MHz(BW)	QPSK	1 RB/#0	4.94	13.0
		1 RB/#max	4.89	13.0
		50 RB/#25	4.86	13.0
		Full	4.83	13.0
	16QAM	1 RB/#0	5.14	13.0
		1 RB/#max	5.12	13.0
		50 RB/#25	5.11	13.0
		Full	5.05	13.0
Channel (T) 10MHz(BW)	QPSK	1 RB/#0	5.53	13.0
		1 RB/#max	5.48	13.0
		25 RB/#13	5.41	13.0
		Full	5.44	13.0
	16QAM	1 RB/#0	4.85	13.0
		1 RB/#max	4.82	13.0
		25 RB/#13	4.77	13.0
		Full	4.74	13.0
Channel (T) 20MHz(BW)	QPSK	1 RB/#0	5.62	13.0
		1 RB/#max	5.57	13.0
		50 RB/#25	5.54	13.0
		Full	5.52	13.0
	16QAM	1 RB/#0	5.14	13.0
		1 RB/#max	5.12	13.0
		50 RB/#25	5.11	13.0
		Full	5.05	13.0



Test Plot of Peak-to-Average Ratio

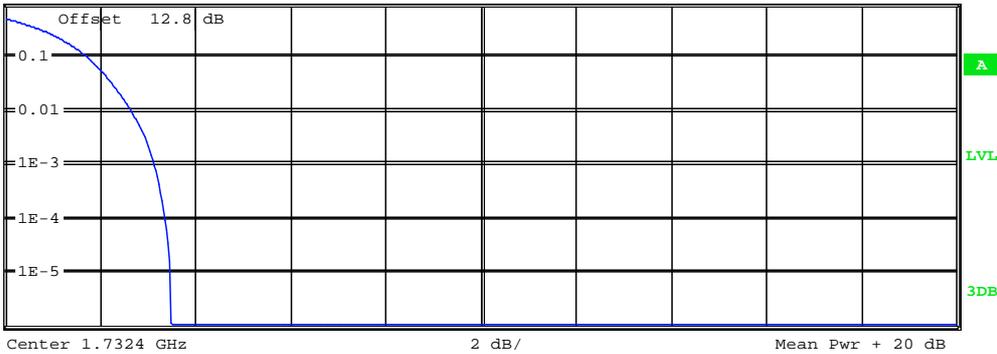
Note: All relevant operation modes have been tested, and the worst case Plot is included in this report.

TM1/TM2/TM3



RBW 5 MHz

Ref 42.8 dBm Att 55 dB AQT 12.5 ms



Complementary Cumulative Distribution Function
 NOF samples: 100000, Usable BW: 7.1MHz

Trace 1	
Mean	22.12 dBm
Peak	25.60 dBm
Crest	3.48 dB
10 %	1.73 dB
1 %	2.66 dB
.1 %	3.14 dB
.01 %	3.37 dB

Date: 29.JUN.2012 09:44:35

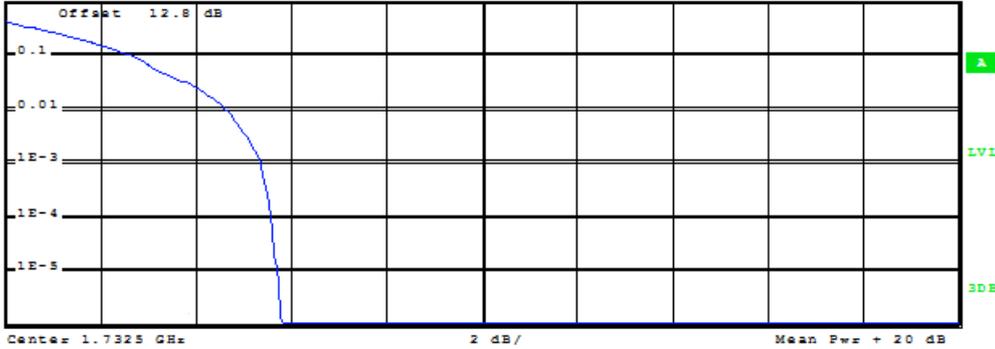


LTE 10MHz(BW)-(QPSK)



RBW 20 MHz

Ref 39.8 dBm Att 55 dB AQT 3.125 ms



Complementary Cumulative Distribution Function
 NOF samples: 100000, Usable BW: 23.7MHz

Trace 1	
Mean	20.86 dBm
Peak	26.63 dBm
Crest	5.77 dB
10 %	2.66 dB
1 %	4.62 dB
.1 %	5.35 dB
.01 %	5.58 dB

Date: 27.JUN.2012 20:24:41

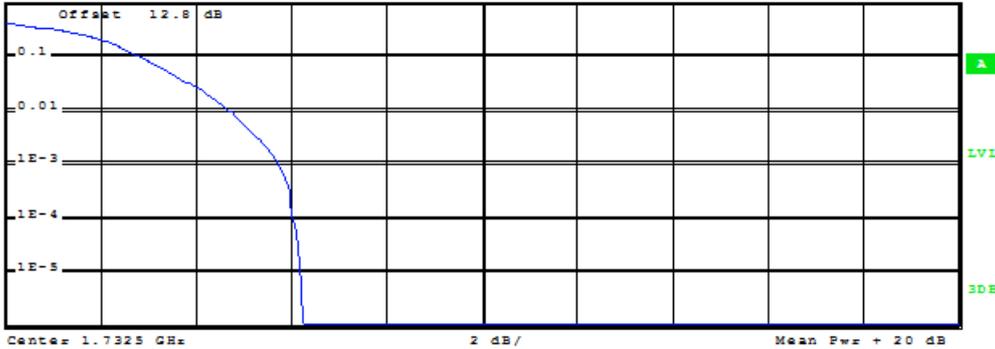


LTE 10MHz(BW)-(16QAM)



RBW 20 MHz

Ref 39.8 dBm Att 55 dB AQT 3.125 ms



Complementary Cumulative Distribution Function
 NOF samples: 100000, Usable BW: 23.7MHz

Trace 1	
Mean	19.91 dBm
Peak	26.13 dBm
Crest	6.23 dB
10 %	2.82 dB
1 %	4.68 dB
.1 %	5.74 dB
.01 %	6.03 dB

Date: 27.JUN.2012 20:25:10

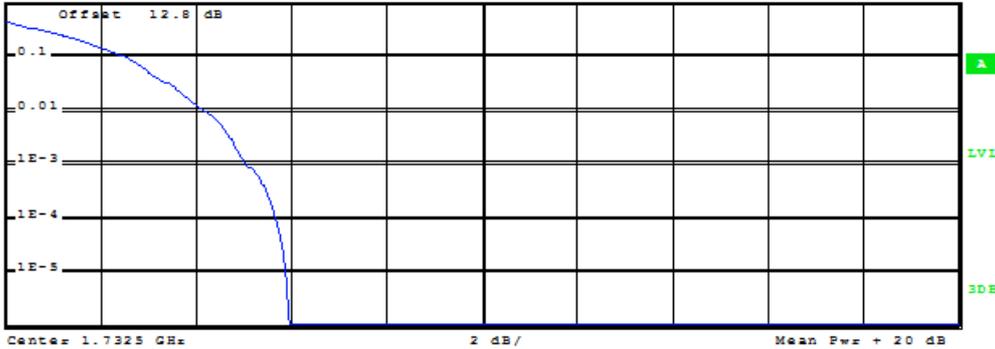


LTE 20MHz(BW)-(QPSK)



RBW 20 MHz

Ref 39.8 dBm Att 55 dB AQT 3.125 ms



Complementary Cumulative Distribution Function
 NOF samples: 100000, Usable BW: 23.7MHz

Trace 1	
Mean	21.05 dBm
Peak	26.98 dBm
Crest	5.93 dB
10 %	2.50 dB
1 %	4.17 dB
.1 %	5.06 dB
.01 %	5.67 dB

Date: 27.JUN.2012 20:22:08

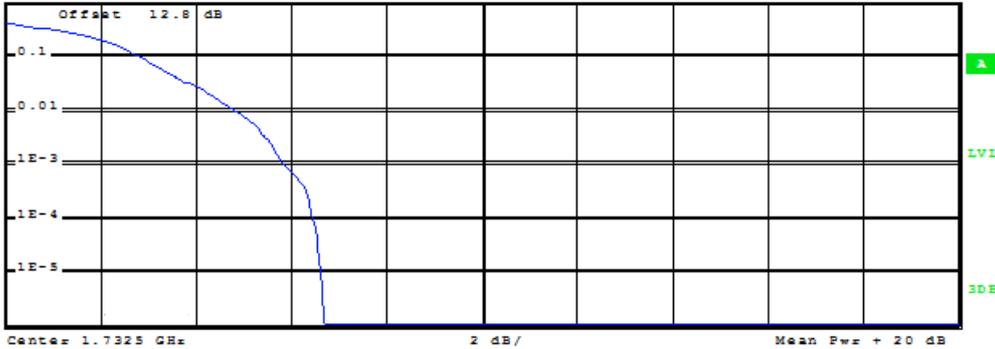


LTE 20MHz(BW)-(16QAM)



RBW 20 MHz

Ref 39.8 dBm Att 55 dB AQT 3.125 ms



Complementary Cumulative Distribution Function
 NOF samples: 100000, Usable BW: 23.7MHz

Trace 1	
Mean	20.15 dBm
Peak	26.84 dBm
Crest	6.69 dB
10 %	2.82 dB
1 %	4.81 dB
.1 %	5.83 dB
.01 %	6.44 dB

Date: 27.JUN.2012 20:22:42



Efficient Isotropic Radiated Power (EIRP)

Table 2 Substitution Results

Test Mode	Freq. [MHz]	Meas. Level [dBm]	Substitution Antenna Type	SGP [dBm]	Substitution Gain [dBi]	Cable Loss [dB]	Substitution Level (EIRP) [dBm]	Limit [dBm]	Result
TM1	1712.4	23.05	Horn Ant.	19.61	4.5	1.0	23.11	30	Pass
TM1	1732.4	23.18	Horn Ant.	19.84	4.5	1.0	23.34	30	Pass
TM1	1752.6	22.97	Horn Ant.	19.25	4.8	1.0	23.05	30	Pass



Table 5 Substitution Results (LTE)

Test Mode			Meas. Level [dBm]	Substitution Antenna Type	SGP[dBm]	Substitution Gain [dBi]	Cable Loss [dB]	Substitution Level (EIRP) [dBm]	FCC limit [dBm]	Result
Channel	Modulation	RB								
Channel (B) 10MHz(BW)	QPSK	1 RB/#0	23.06	Horn Ant.	19.48	4.5	1	22.98	30	Pass
		1 RB/#max	22.98	Horn Ant.	19.4	4.5	1	22.9	30	Pass
		25 RB/#13	22.12	Horn Ant.	18.54	4.5	1	22.04	30	Pass
		Full	22.03	Horn Ant.	18.45	4.5	1	21.95	30	Pass
	16QAM	1 RB/#0	22.29	Horn Ant.	18.71	4.5	1	22.21	30	Pass
		1 RB/#max	22.28	Horn Ant.	18.7	4.5	1	22.2	30	Pass
		25 RB/#13	21.35	Horn Ant.	17.77	4.5	1	21.27	30	Pass
		Full	21.28	Horn Ant.	17.7	4.5	1	21.2	30	Pass
Channel (B) 20MHz(BW)	QPSK	1 RB/#0	23.14	Horn Ant.	19.56	4.5	1	23.06	30	Pass
		1 RB/#max	23.23	Horn Ant.	19.65	4.5	1	23.15	30	Pass
		50 RB/#25	22.08	Horn Ant.	18.5	4.5	1	22	30	Pass
		Full	22.11	Horn Ant.	18.53	4.5	1	22.03	30	Pass
	16QAM	1 RB/#0	22.57	Horn Ant.	18.99	4.5	1	22.49	30	Pass
		1 RB/#max	22.71	Horn Ant.	19.13	4.5	1	22.63	30	Pass
		50 RB/#25	21.12	Horn Ant.	17.54	4.5	1	21.04	30	Pass
		Full	21.19	Horn Ant.	17.61	4.5	1	21.11	30	Pass
Channel (M) 10MHz(BW)	QPSK	1 RB/#0	23.15	Horn Ant.	19.57	4.5	1	23.07	30	Pass
		1 RB/#max	23.24	Horn Ant.	19.66	4.5	1	23.16	30	Pass
		25 RB/#13	22.12	Horn Ant.	18.54	4.5	1	22.04	30	Pass
		Full	22.18	Horn Ant.	18.6	4.5	1	22.1	30	Pass
	16QAM	1 RB/#0	22.03	Horn Ant.	18.45	4.5	1	21.95	30	Pass



		1 RB/#max	22.04	Horn Ant.	18.46	4.5	1	21.96	30	Pass
		25 RB/#13	21.24	Horn Ant.	17.66	4.5	1	21.16	30	Pass
		Full	21.36	Horn Ant.	17.78	4.5	1	21.28	30	Pass
Channel (M) 20MHz(BW)	QPSK	1 RB/#0	23.22	Horn Ant.	19.64	4.5	1	23.14	30	Pass
		1 RB/#max	23.19	Horn Ant.	19.61	4.5	1	23.11	30	Pass
		50 RB/#25	22.25	Horn Ant.	18.67	4.5	1	22.17	30	Pass
		Full	22.27	Horn Ant.	18.69	4.5	1	22.19	30	Pass
	16QAM	1 RB/#0	22.6	Horn Ant.	19.02	4.5	1	22.52	30	Pass
		1 RB/#max	22.45	Horn Ant.	18.87	4.5	1	22.37	30	Pass
		50 RB/#25	21.15	Horn Ant.	17.57	4.5	1	21.07	30	Pass
		Full	21.28	Horn Ant.	17.7	4.5	1	21.2	30	Pass
Channel (T) 10MHz(BW)	QPSK	1 RB/#0	23.03	Horn Ant.	19.15	4.8	1	22.95	30	Pass
		1 RB/#max	23.08	Horn Ant.	19.2	4.8	1	23	30	Pass
		25 RB/#13	22.08	Horn Ant.	18.2	4.8	1	22	30	Pass
		Full	22.04	Horn Ant.	18.16	4.8	1	21.96	30	Pass
	16QAM	1 RB/#0	22.42	Horn Ant.	18.54	4.8	1	22.34	30	Pass
		1 RB/#max	22.53	Horn Ant.	18.65	4.8	1	22.45	30	Pass
		25 RB/#13	20.84	Horn Ant.	16.96	4.8	1	20.76	30	Pass
		Full	21.04	Horn Ant.	17.16	4.8	1	20.96	30	Pass
Channel (T) 20MHz(BW)	QPSK	1 RB/#0	23.22	Horn Ant.	19.34	4.8	1	23.14	30	Pass
		1 RB/#max	23.2	Horn Ant.	19.32	4.8	1	23.12	30	Pass
		50 RB/#25	22.04	Horn Ant.	18.16	4.8	1	21.96	30	Pass
		Full	22.17	Horn Ant.	18.29	4.8	1	22.09	30	Pass
	16QAM	1 RB/#0	22.69	Horn Ant.	18.81	4.8	1	22.61	30	Pass



		1 RB/#max	22.62	Horn Ant.	18.74	4.8	1	22.54	30	Pass
		50 RB/#25	21.24	Horn Ant.	17.36	4.8	1	21.16	30	Pass
		Full	21.22	Horn Ant.	17.34	4.8	1	21.14	30	Pass

Note: a, For getting the EIRP (Efficient Isotropic Radiated Power) in substitution method, the following formula should take to calculate it,

$$\text{EIRP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBi]}$$

b, SGP=Signal Generator Level

-----The END-----



FCC Test Report of B593u-501
FCC ID: QISB593U-501
IC ID : 6369A-B593U501



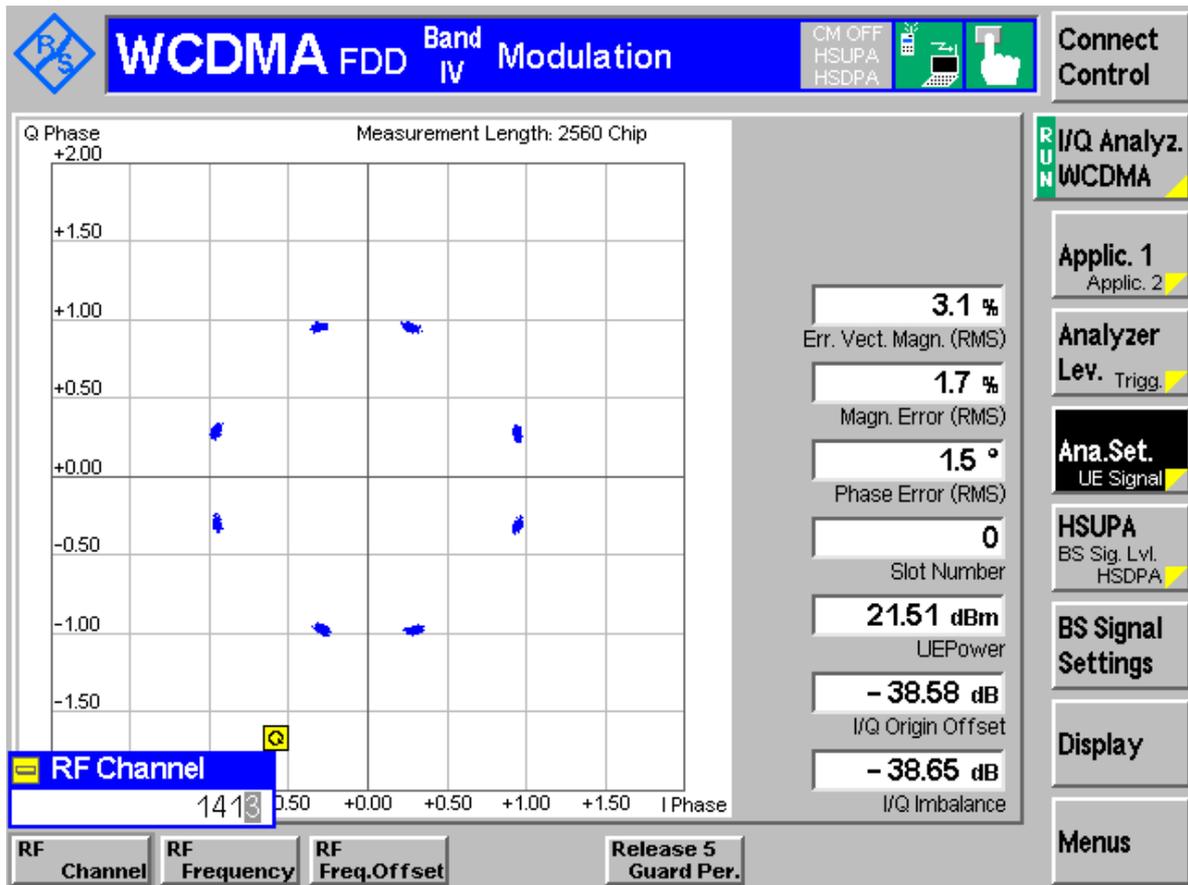
Appendix B

Modulation Characteristics

According to FCC Part 2.1047 & Part 27 Subpart C&L &
RSS-139

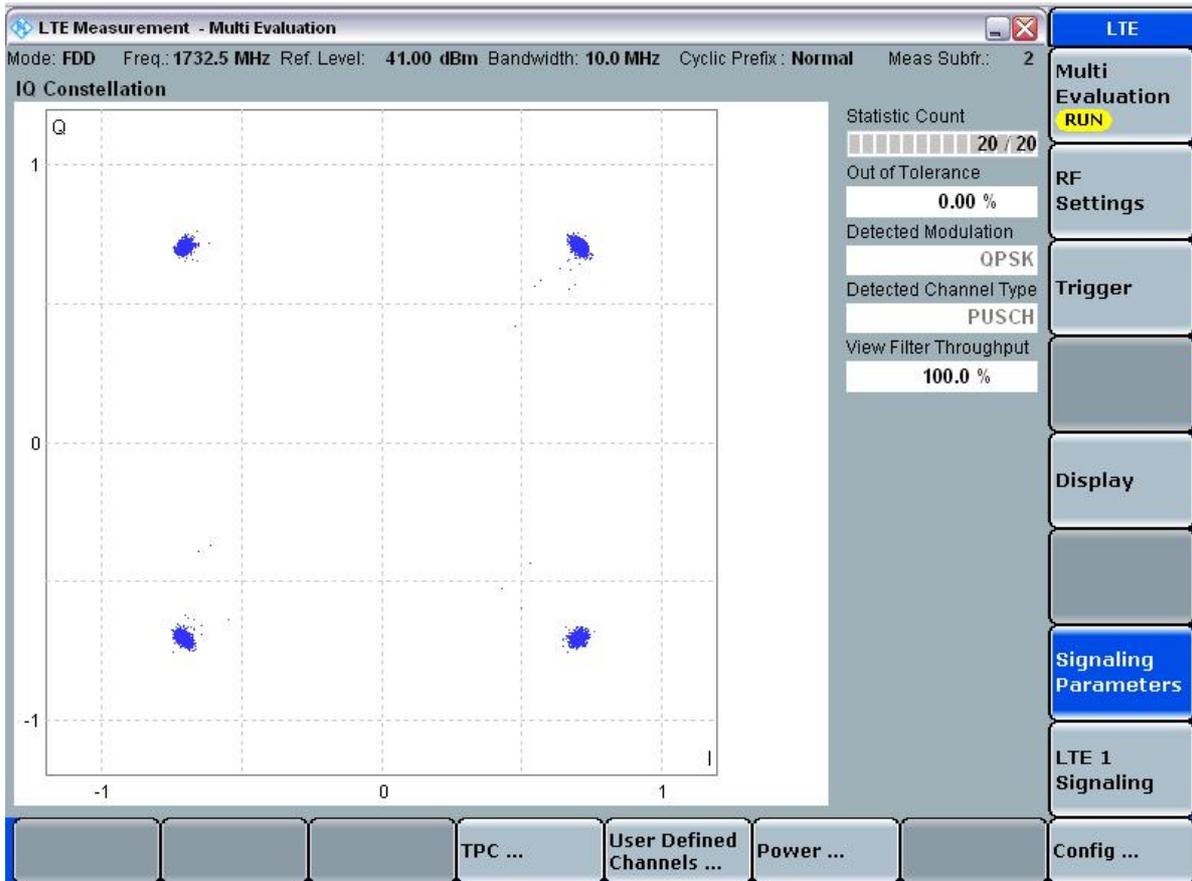


TM1: WCDMA Channel 1412



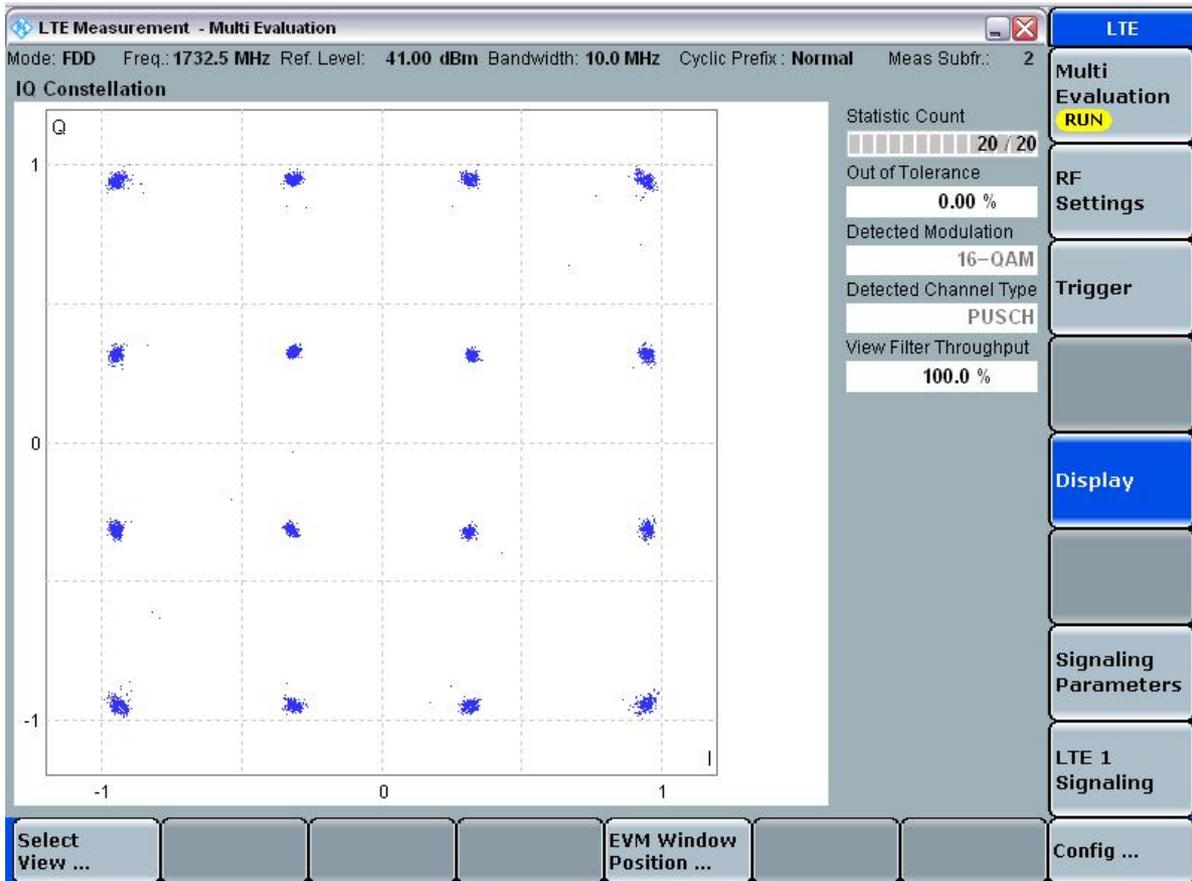


TM2: LTE Band4 Channel 20175 10MHz (BW) QPSK



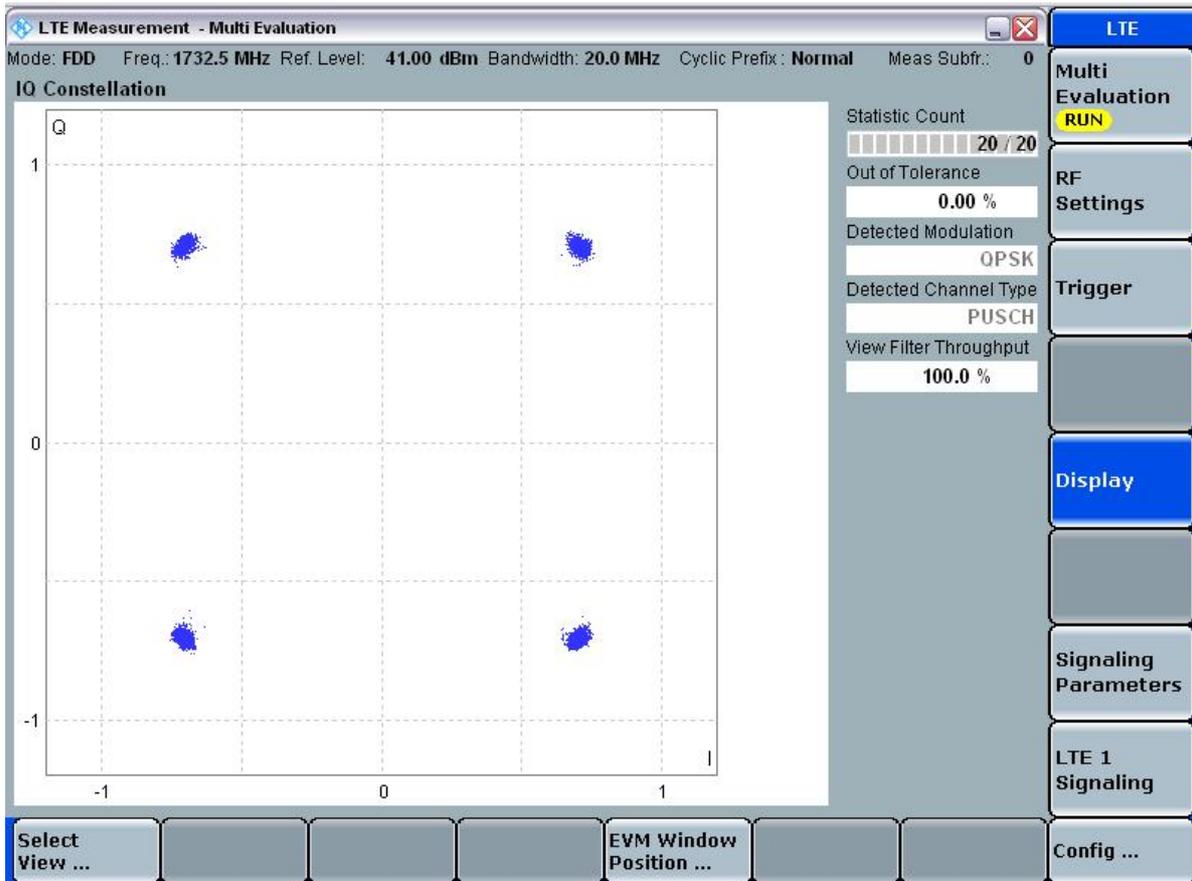


TM3: LTE Band4 Channel 20175 10MHz (BW) 16QAM



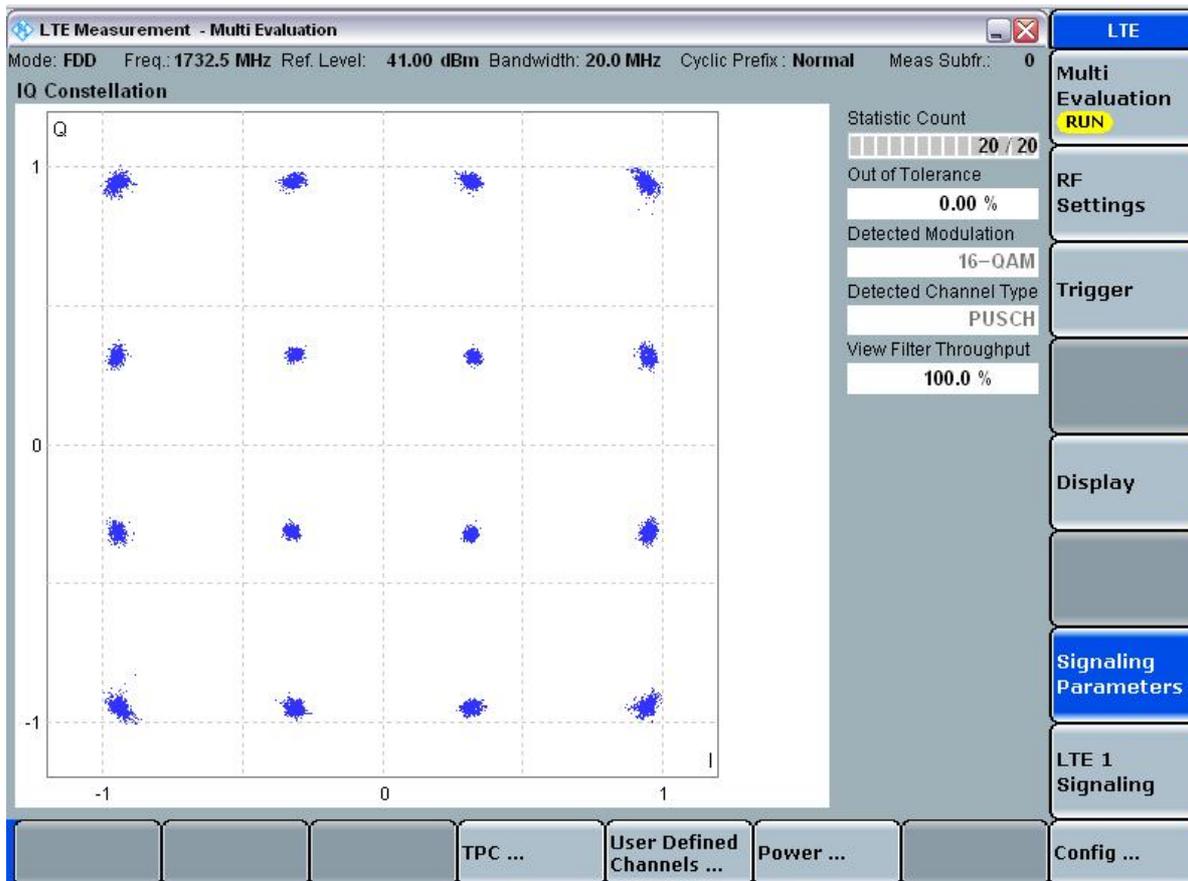


TM2: LTE Band4 Channel 20175 20MHz (BW) QPSK





TM3: LTE Band4 Channel 20175 10MHz (BW) 16-QAM



-----The END-----



FCC Test Report of B593u-501
FCC ID: QISB593U-501
IC ID : 6369A-B593U501



Appendix C

Occupied Bandwidth

According to FCC Part 2.1049 & Part 27 Subpart C&L
& RSS-139



Result Table

Table 1 Measurement Results

Test Mode	RF Channel	Occupied Bandwidth [MHz]	Verdict
TM1	1312	4.13	Pass
	1412	4.14	Pass
	1513	4.12	Pass

Test Mode	Carrier Conf.	RF Channel	RB/RB SIZE	Modulation	Occupied Bandwidth [MHz]	Verdict
TM2	10MHz	20000	Full	QPSK	8.93	Pass
			Full	16QAM	8.93	Pass
		20175	Full	QPSK	8.94	Pass
			Full	16QAM	8.96	Pass
		20350	Full	QPSK	8.94	Pass
			Full	16QAM	8.96	Pass
TM3	20 MHz	20050	Full	QPSK	17.85	Pass
			Full	16QAM	17.85	Pass
		20175	Full	QPSK	17.84	Pass
			Full	16QAM	17.82	Pass
		20300	Full	QPSK	17.79	Pass
			Full	16QAM	17.84	Pass



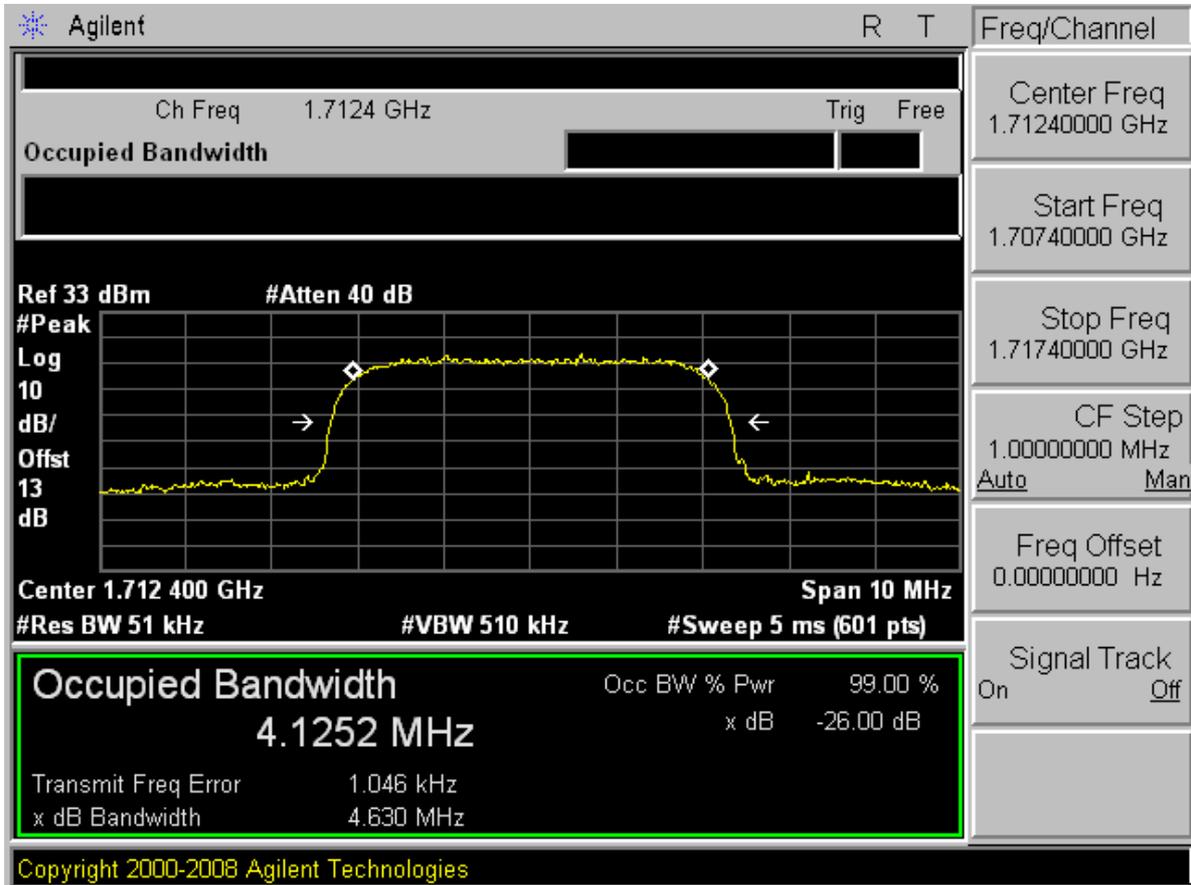
26dB Bandwidth

Test Mode	RF Channel	Occupied Bandwidth [MHz]	Verdict
TM1	1312	4.63	Pass
	1412	4.64	Pass
	1513	4.64	Pass

Test Mode	Carrier Conf.	RF Channel	RB/RB SIZE	Modulation	Occupied Bandwidth [MHz]	Verdict
TM2	10MHz	20000	Full	QPSK	9.71	Pass
			Full	16QAM	9.74	Pass
		20175	Full	QPSK	9.79	Pass
			Full	16QAM	9.66	Pass
		20350	Full	QPSK	9.80	Pass
			Full	16QAM	9.71	Pass
TM3	20 MHz	20050	Full	QPSK	19.60	Pass
			Full	16QAM	19.21	Pass
		20175	Full	QPSK	19.36	Pass
			Full	16QAM	19.20	Pass
		20300	Full	QPSK	19.28	Pass
			Full	16QAM	19.32	Pass

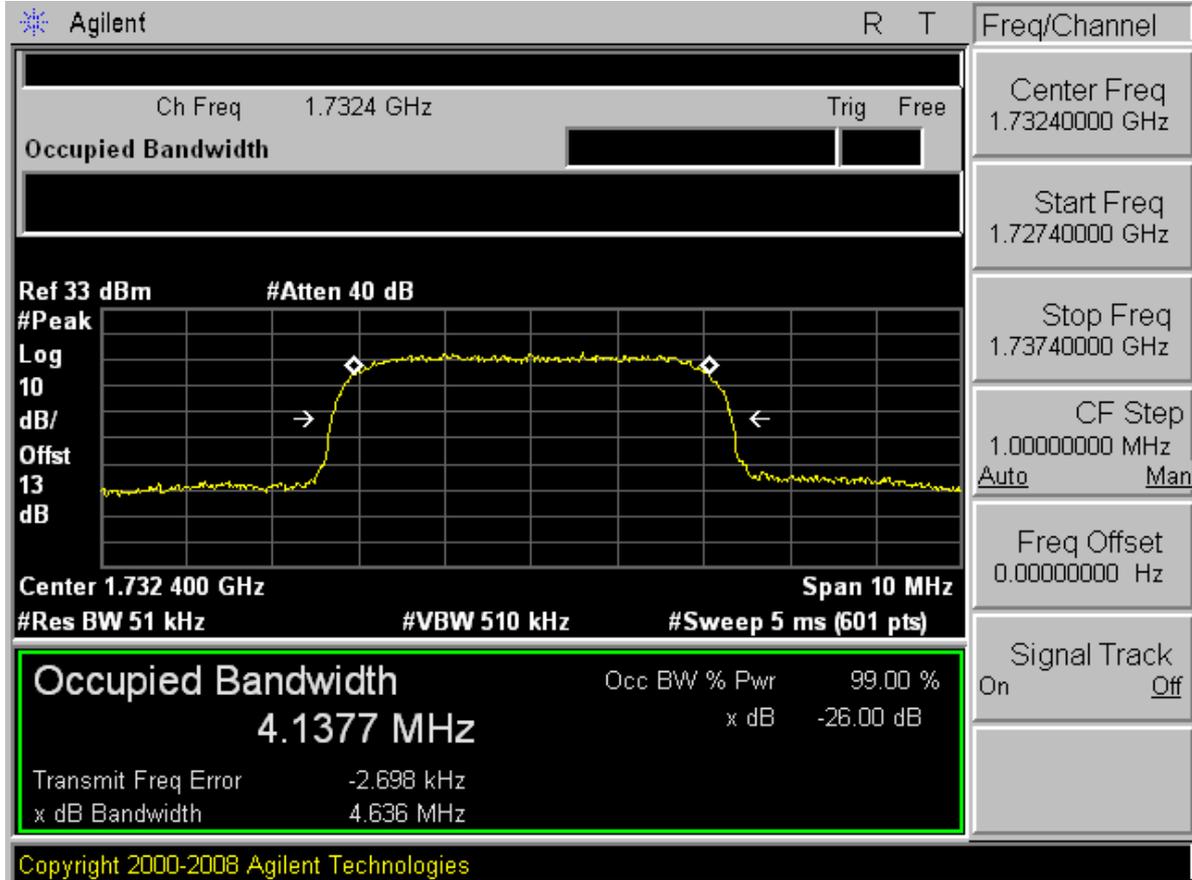


TM1: WCDMA Channel 1312



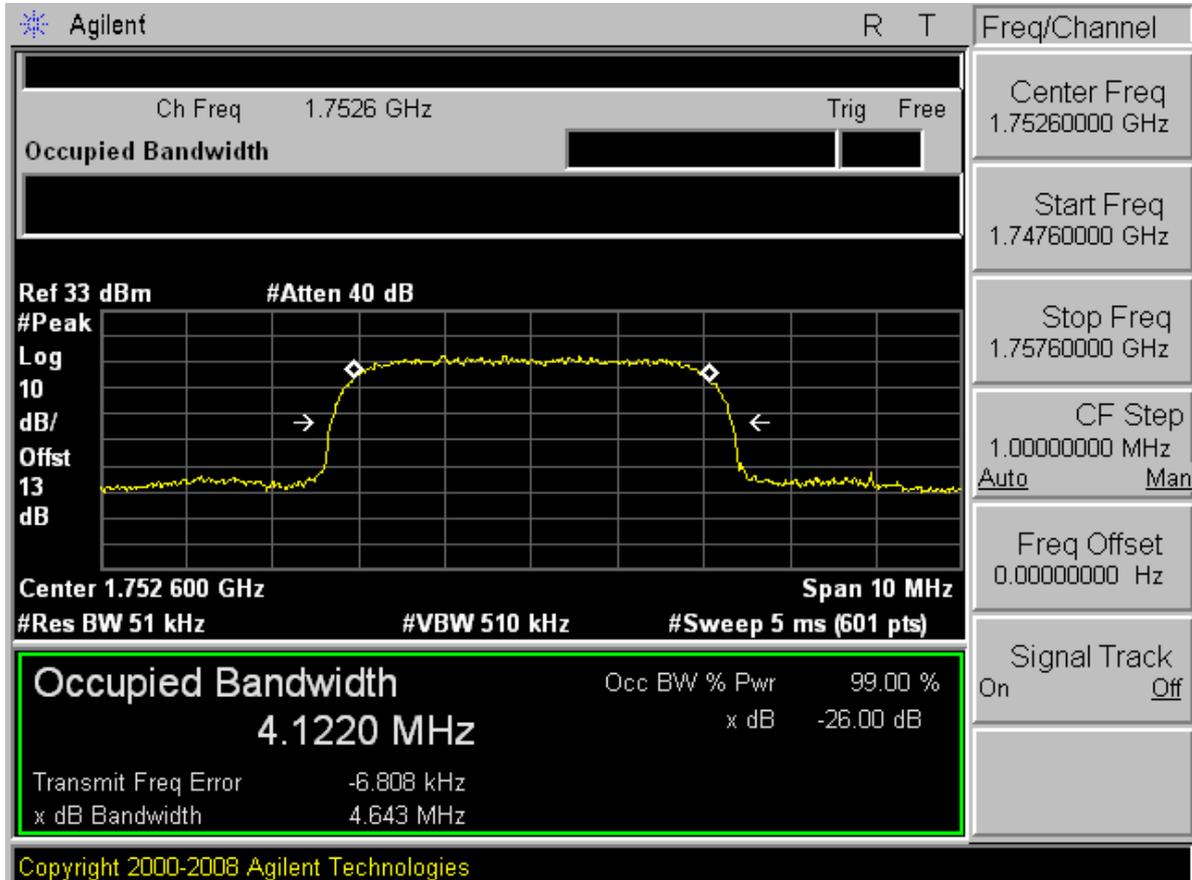


Channel 1412



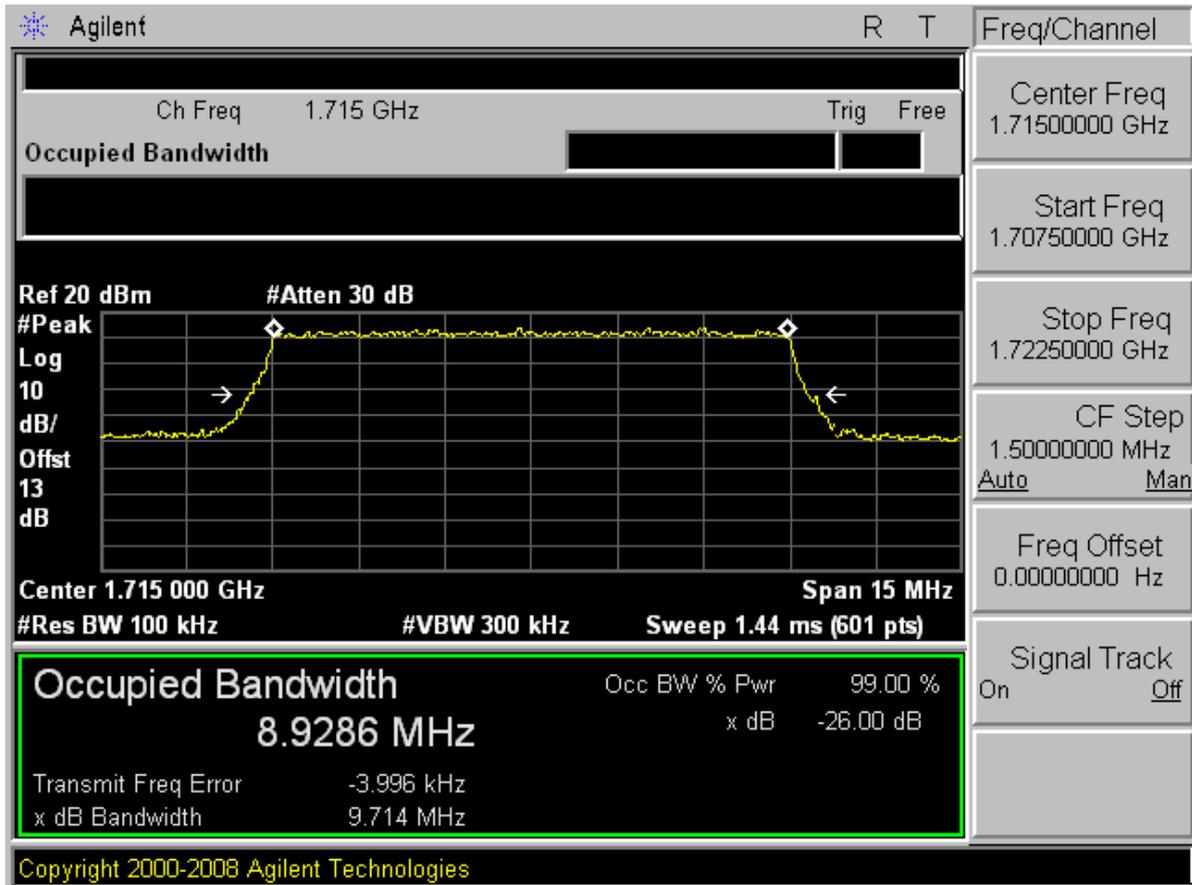


Channel 1513



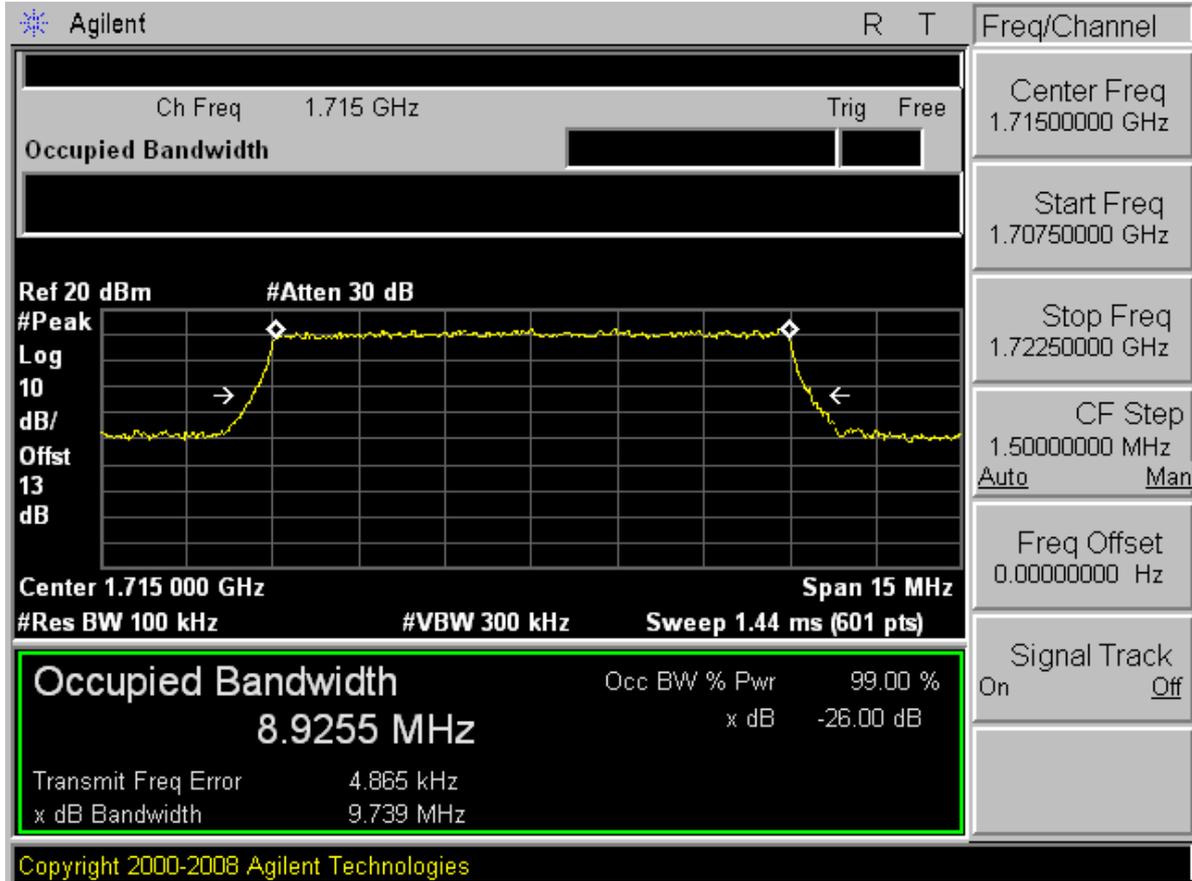


TM2: LTE Band4
 Channel 20000
 10MHz (BW)
 QPSK



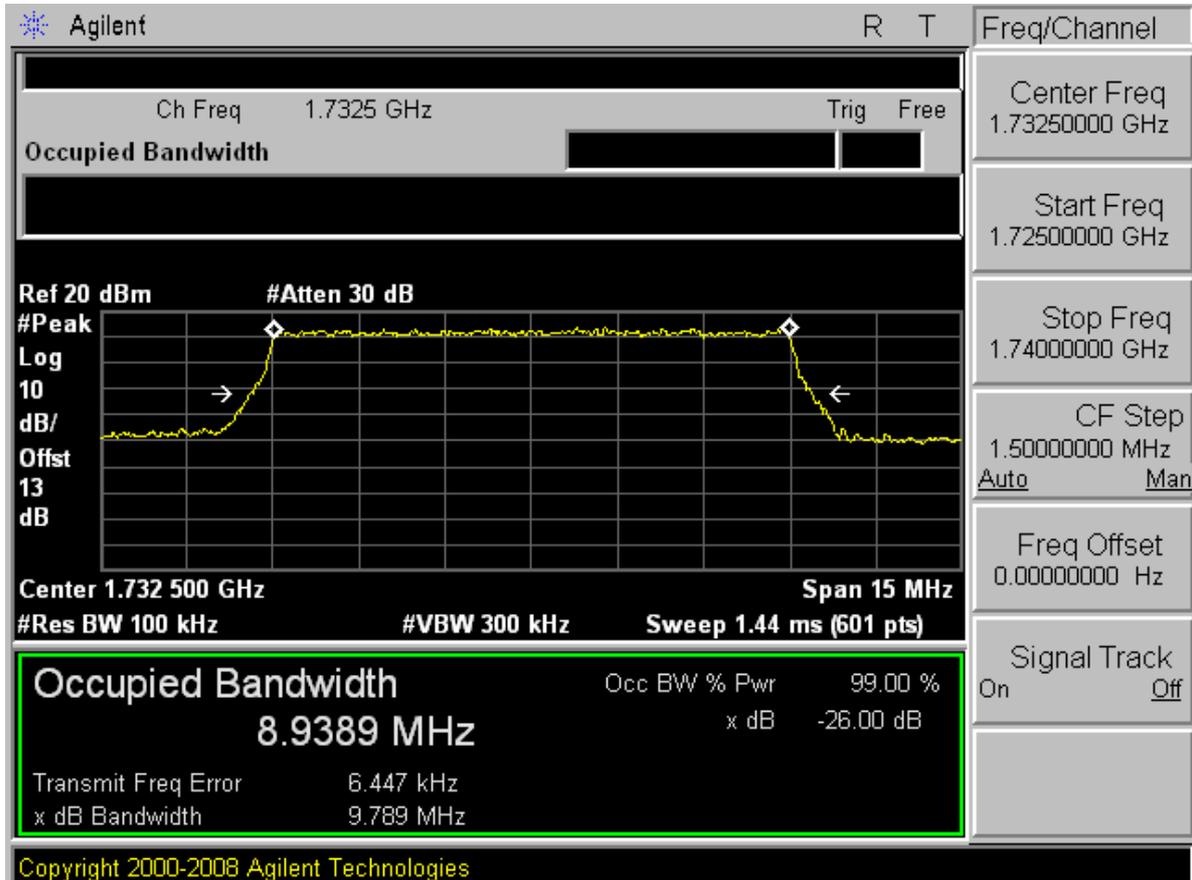


Channel 20000
 10MHz (BW)
 16QAM



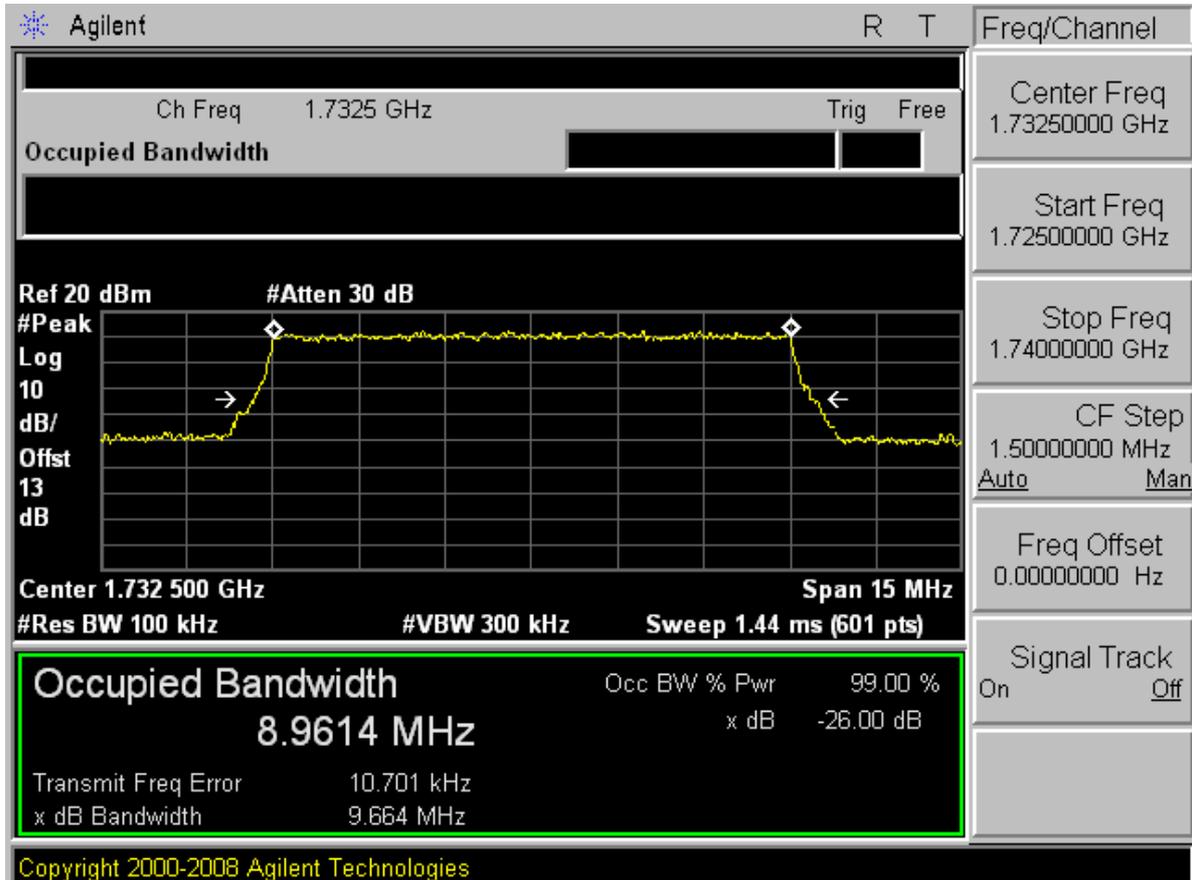


Channel 20175
 10MHz (BW)
 QPSK



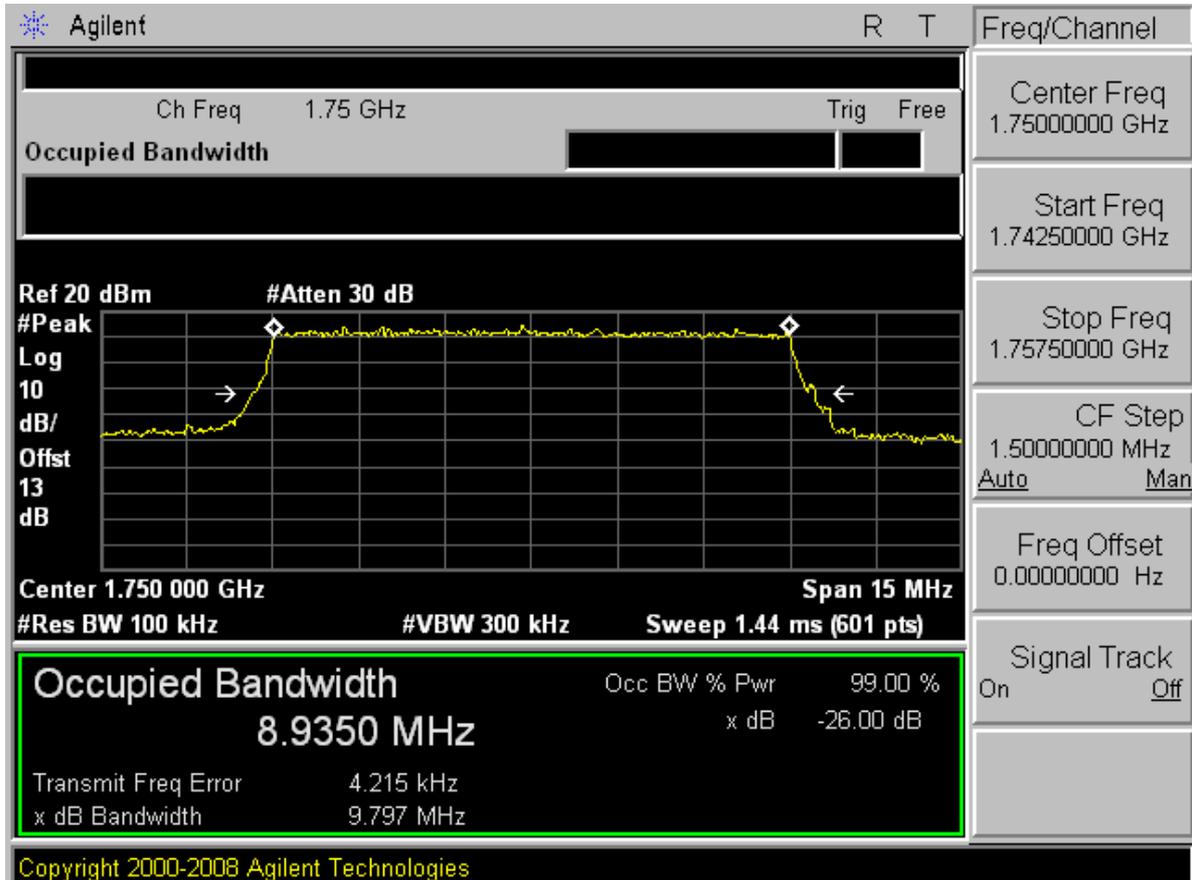


Channel 20175
 10MHz (BW)
 16QAM



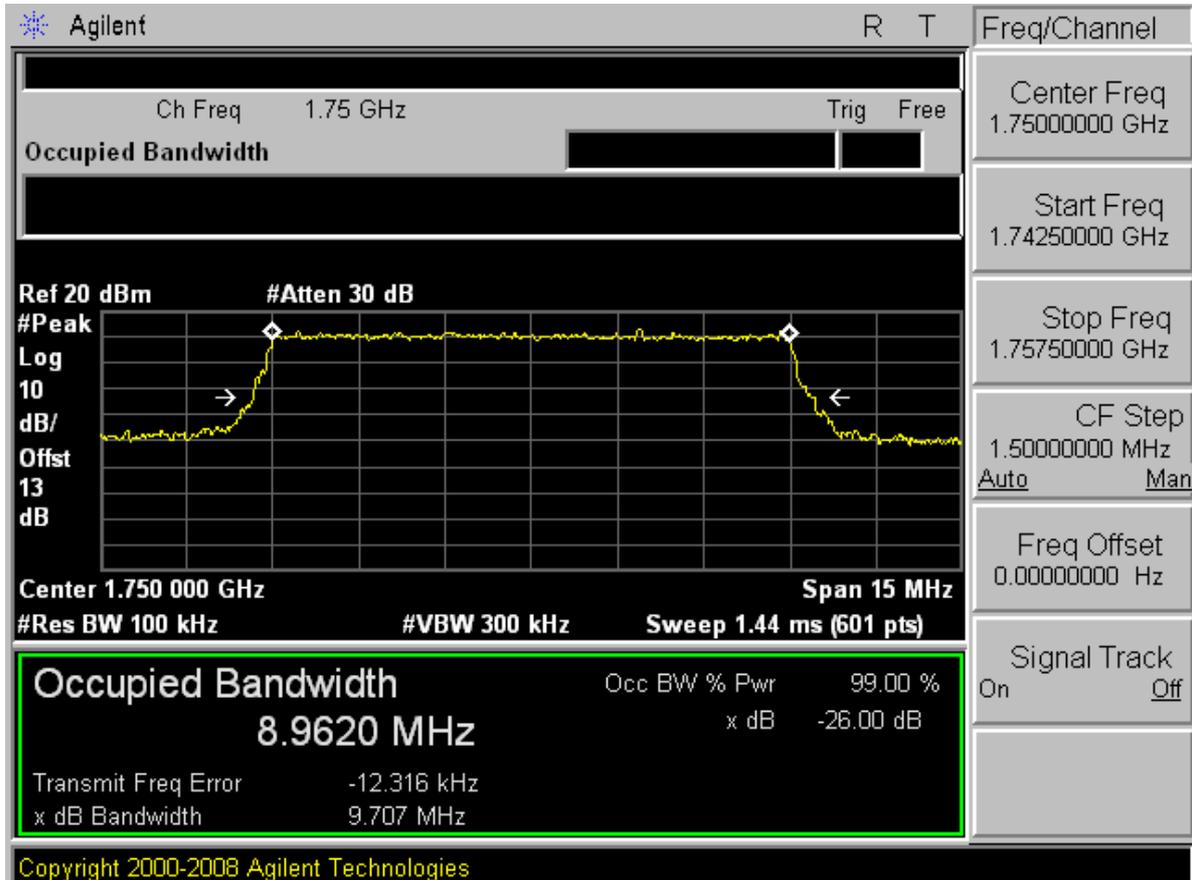


Channel 20350
 10MHz (BW)
 QPSK



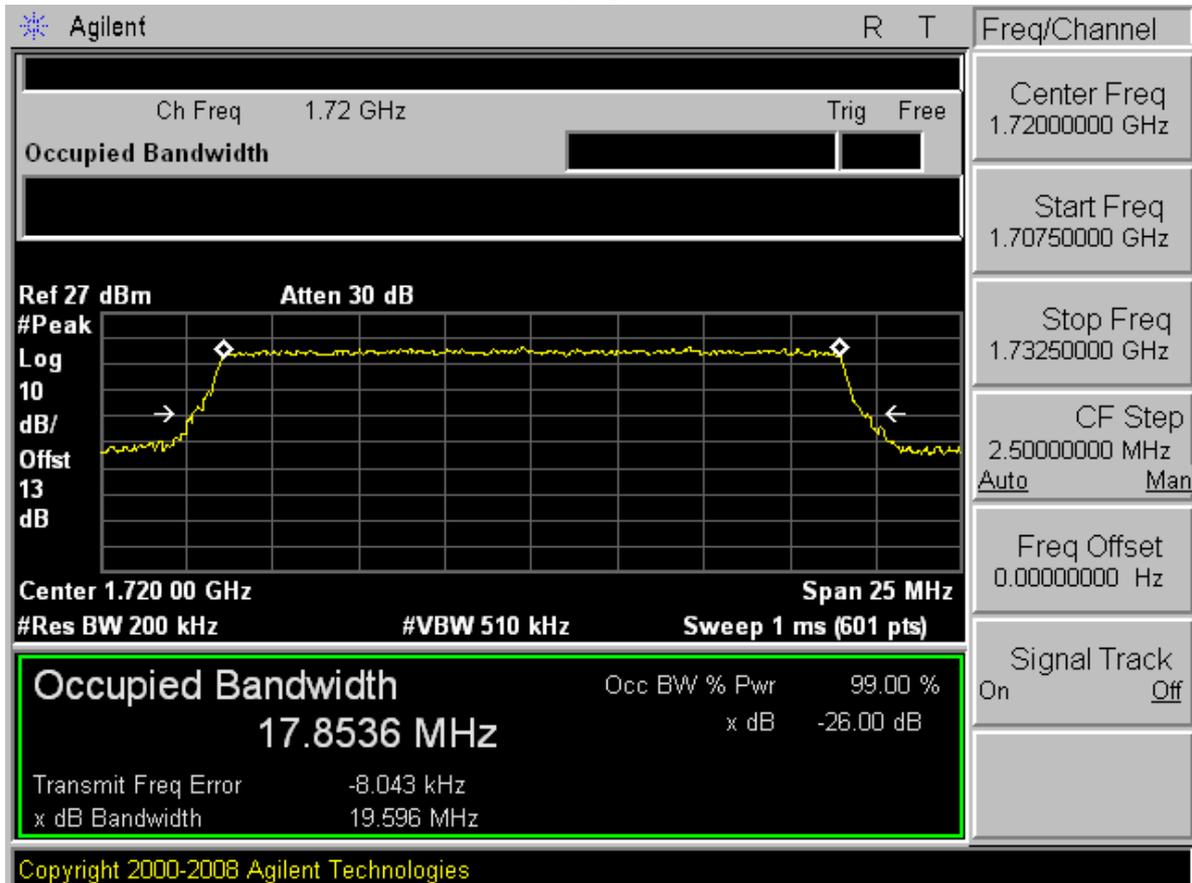


Channel 20350
 10MHz (BW)
 16QAM



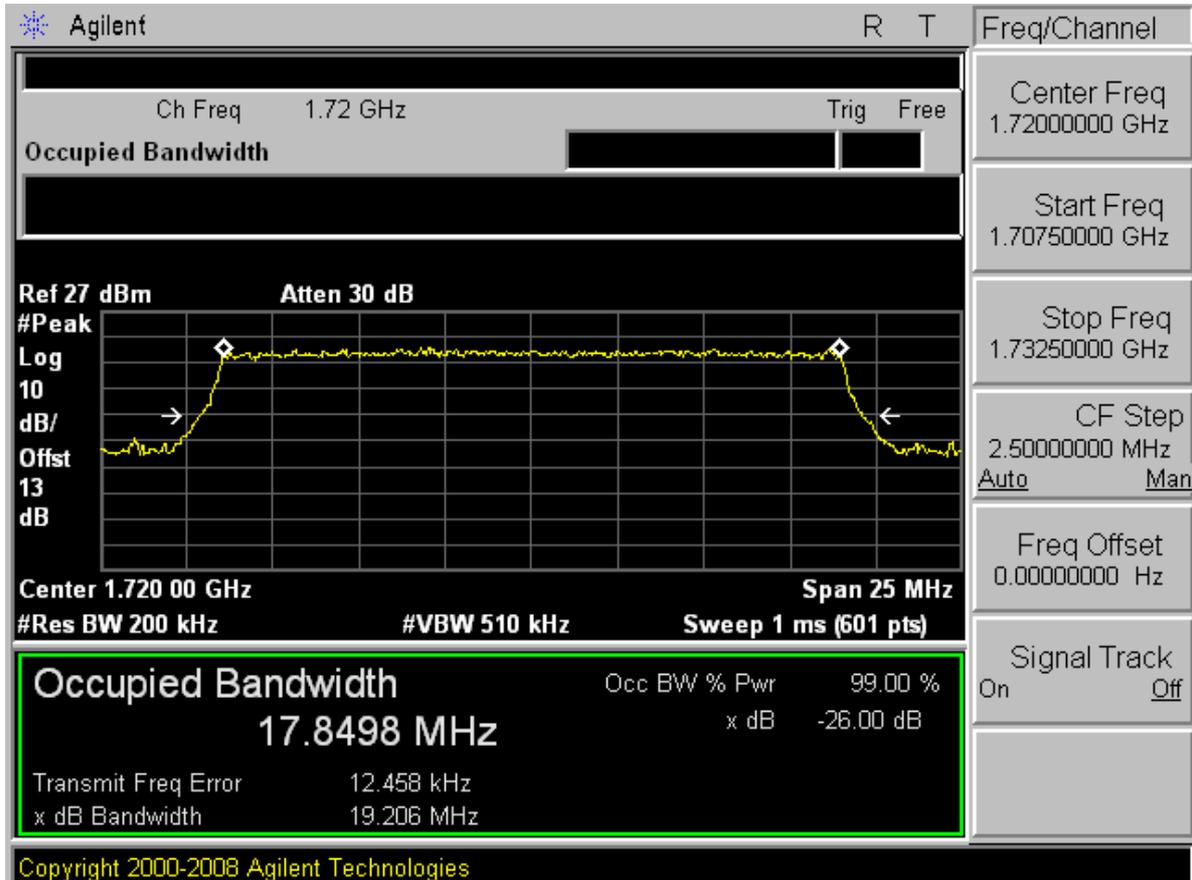


TM3: LTE Band4
 Channel 20050
 20MHz (BW)
 QPSK



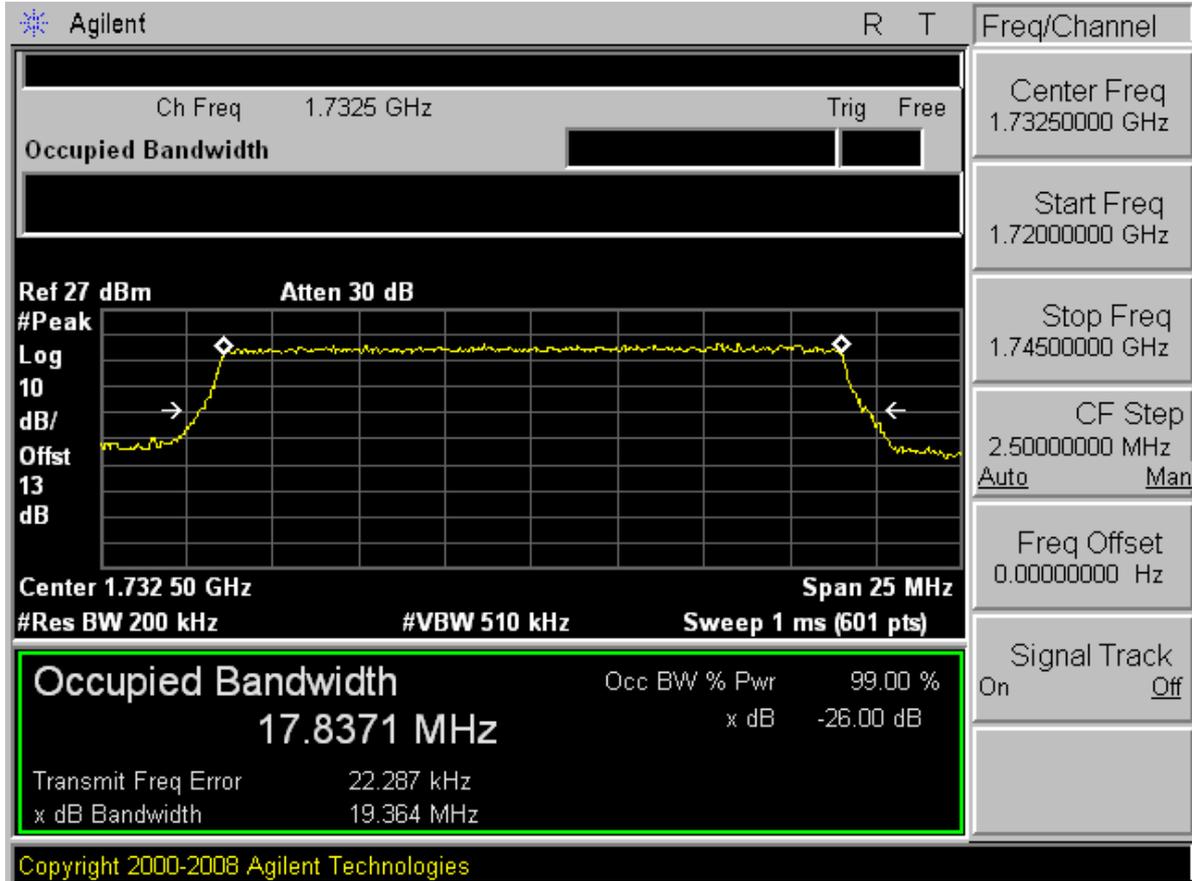


Channel 20050
 20MHz (BW)
 16QAM



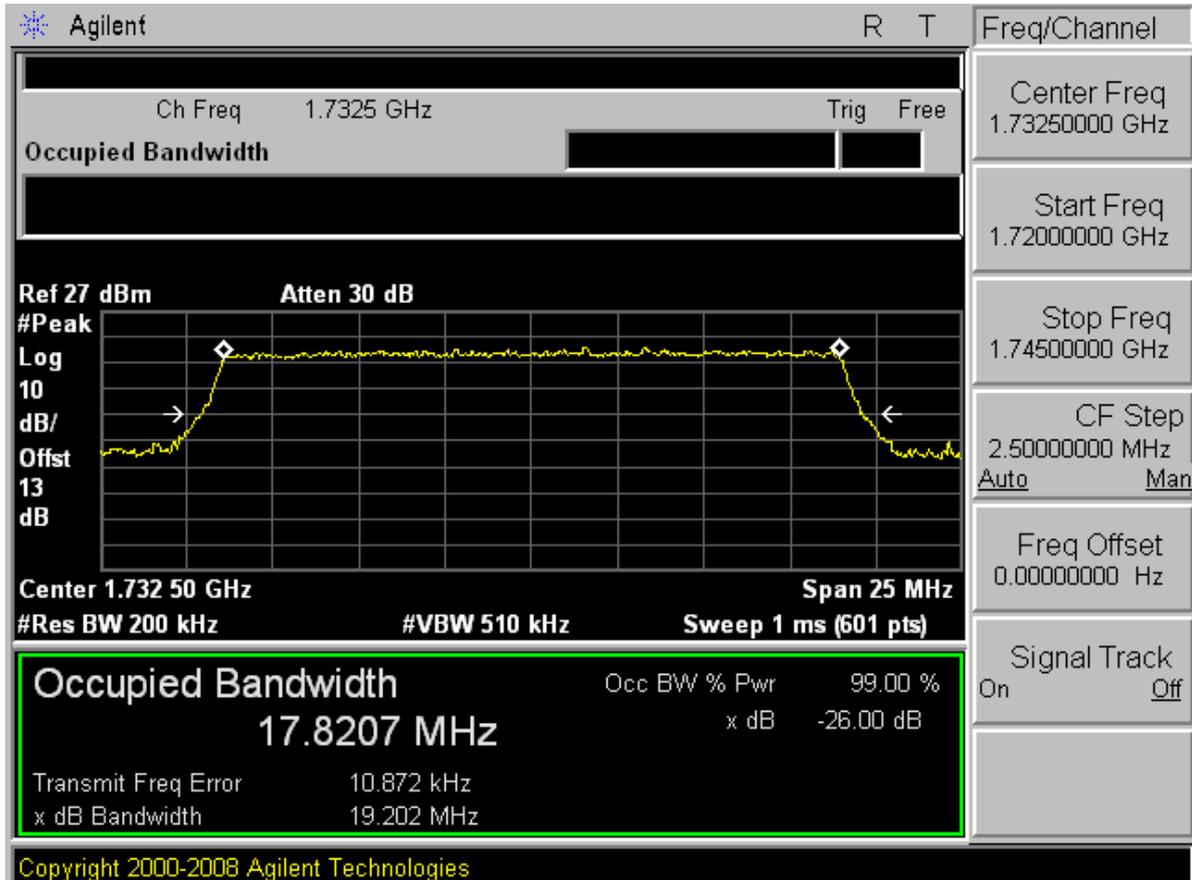


Channel 20175
 20MHz (BW)
 QPSK



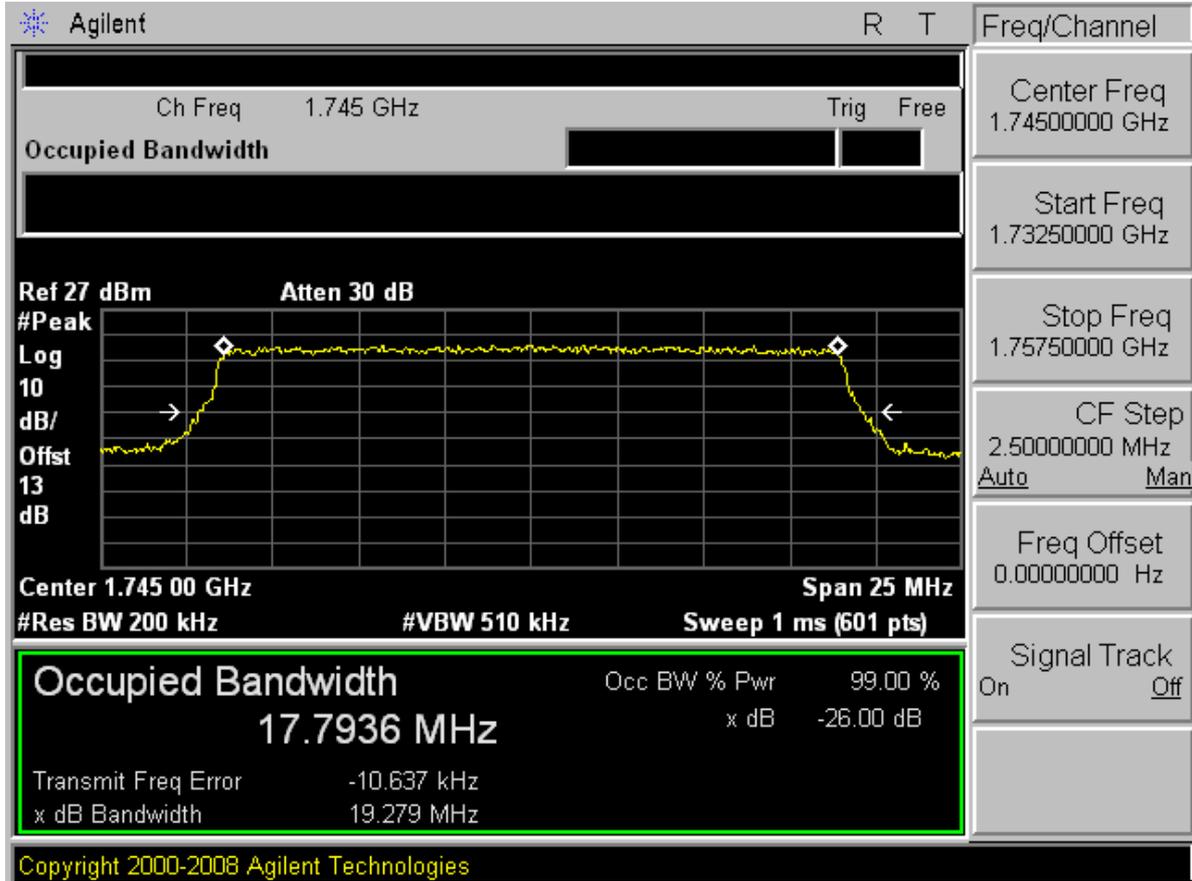


Channel 20175
 20MHz (BW)
 16QAM



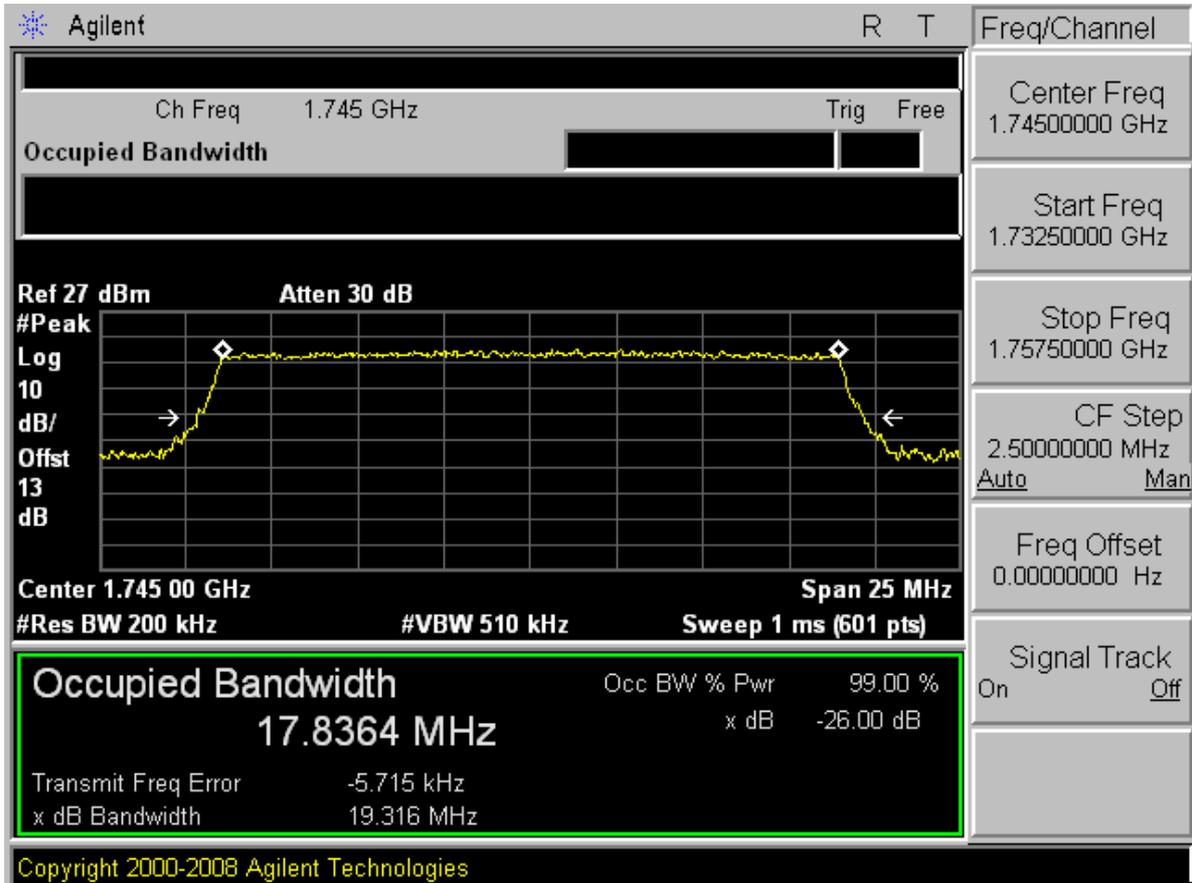


Channel 20300
 20MHz (BW)
 QPSK





Channel 20300
 20MHz (BW)
 16QAM



-----END-----



FCC Test Report of B593u-501
FCC ID: QISB593U-501
IC ID : 6369A-B593U501



Appendix C

Band Edges Compliance

According to FCC Part 2.1051 & Part 27 Subpart C&L
& RSS-139



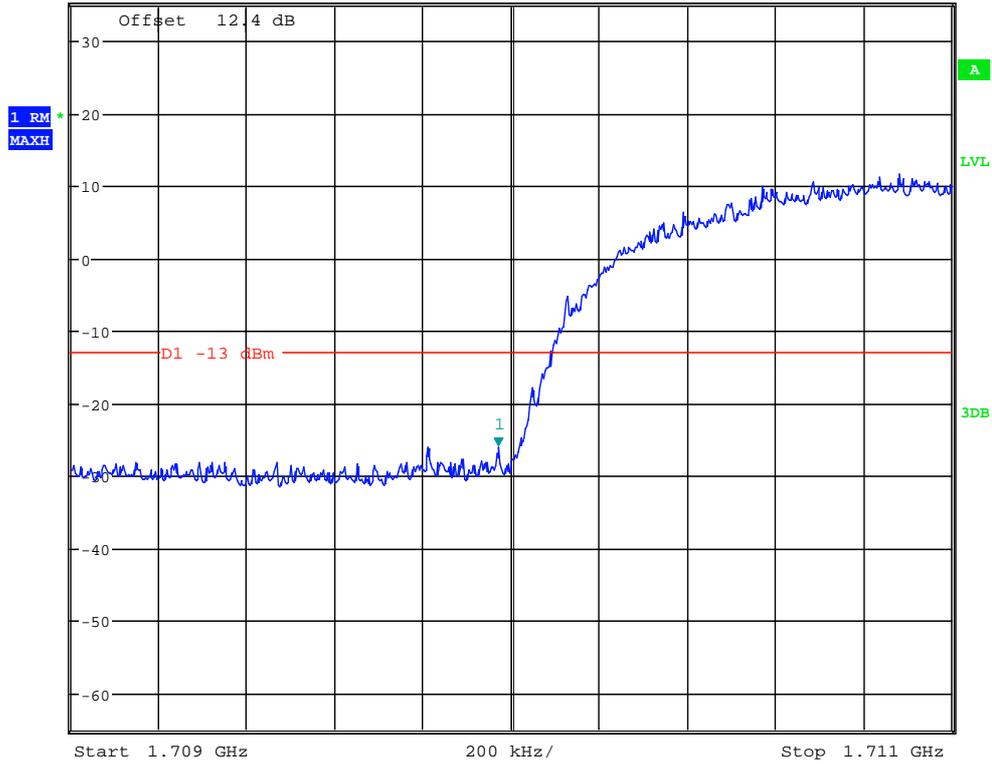
TM1: WCDMA

Left Edge

Channel 1312



Ref 35 dBm Att 50 dB *RBW 50 kHz Marker 1 [T1] -26.11 dBm
*VBW 200 kHz SWT 2.5 ms 1.709970000 GHz



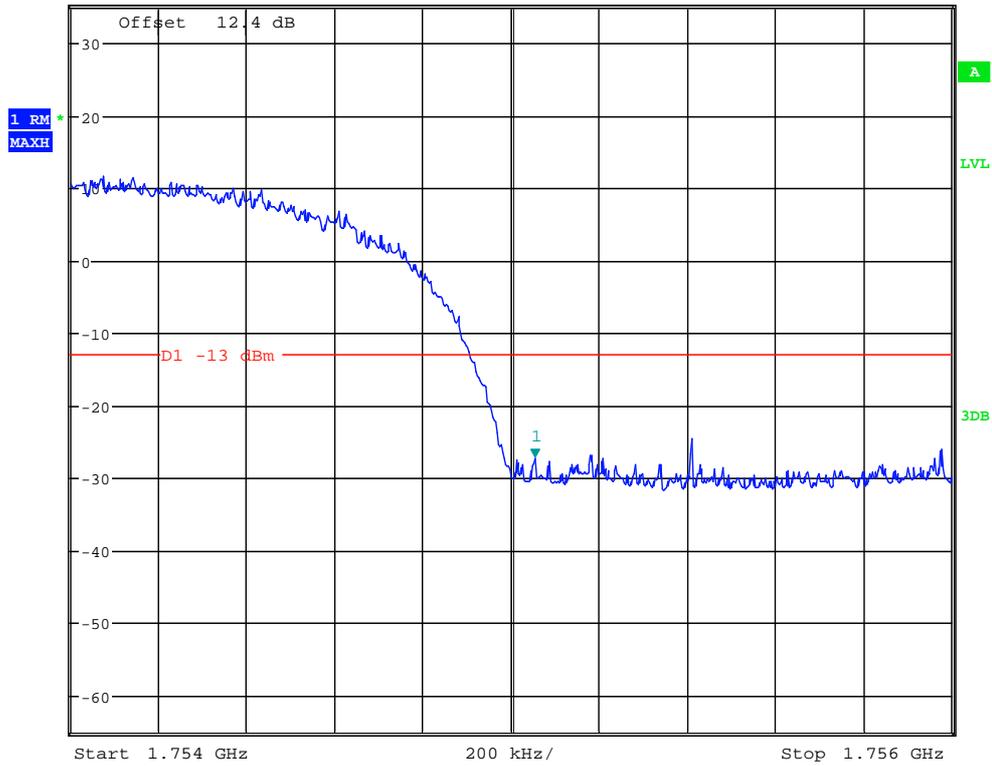
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Right Edge Channel 1513



Ref 35 dBm Att 50 dB *RBW 50 kHz Marker 1 [T1]
*VBW 200 kHz -27.34 dBm
SWT 2.5 ms 1.755055000 GHz



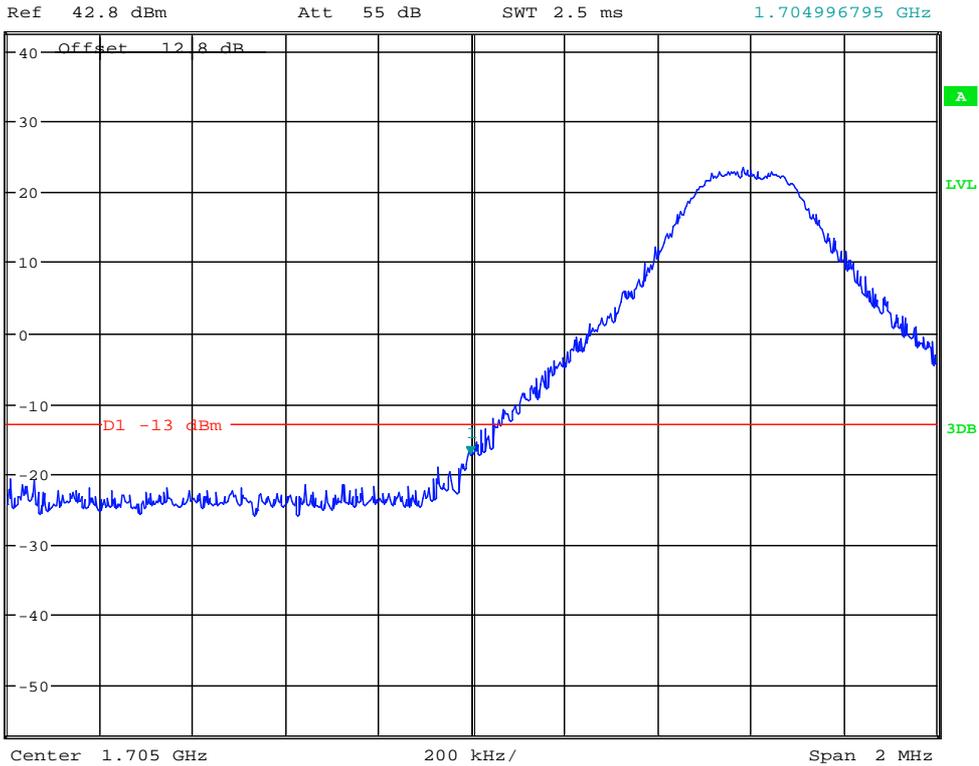
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TM2
 Left Edge
 10MHz (BW)
 Channel 20000
 QPSK/1 RB/RB #0



* RBW 100 kHz Marker 1 [T1]
 * VBW 300 kHz -17.49 dBm
 SWT 2.5 ms 1.704996795 GHz



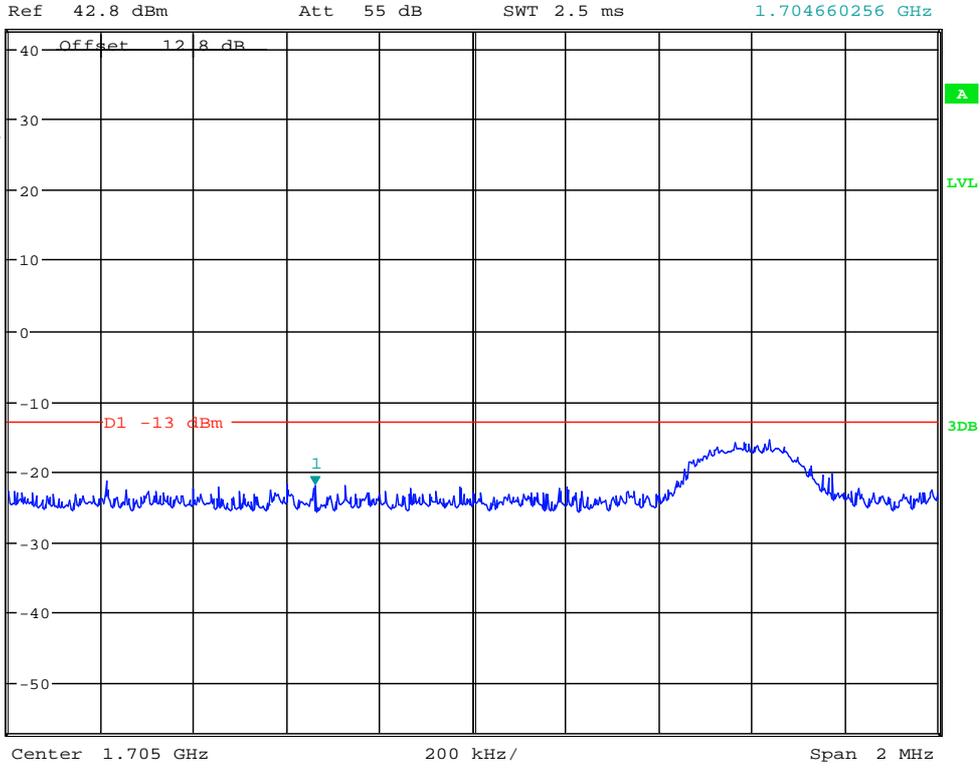
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QPSK/1 RB/RB #Max



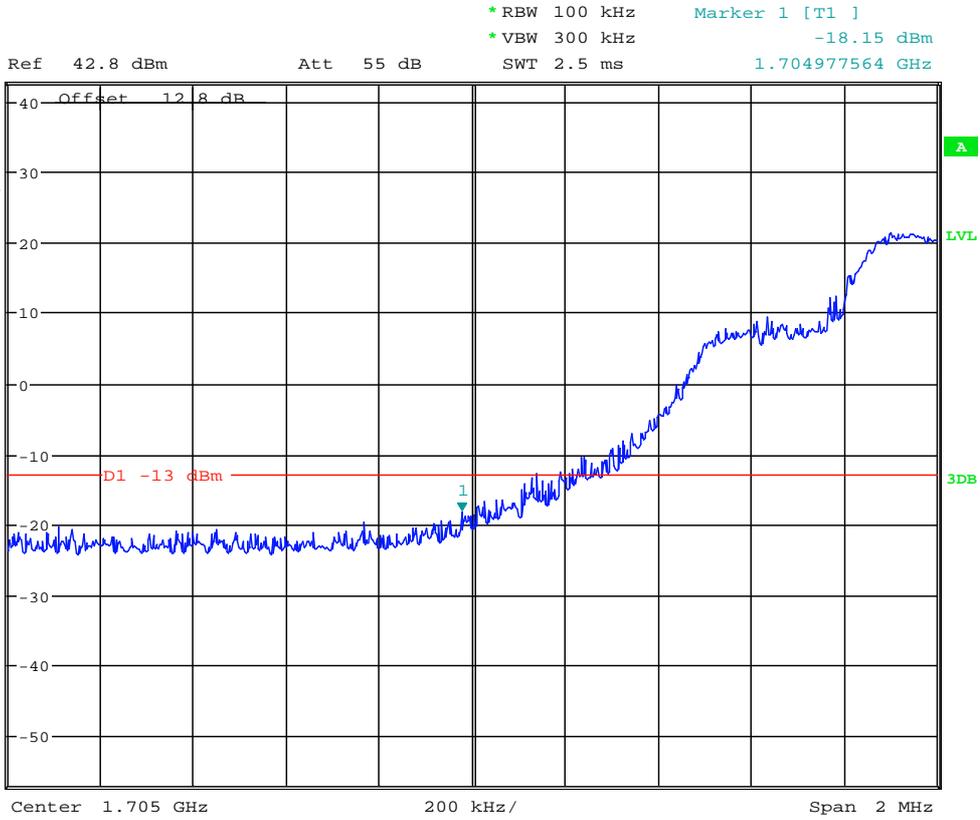
*RBW 100 kHz Marker 1 [T1]
 *VBW 300 kHz -21.97 dBm
 SWT 2.5 ms 1.704660256 GHz



Date: 27.JUN.2012 18:42:05



QPSK/full RBs



Date: 27.JUN.2012 18:45:24



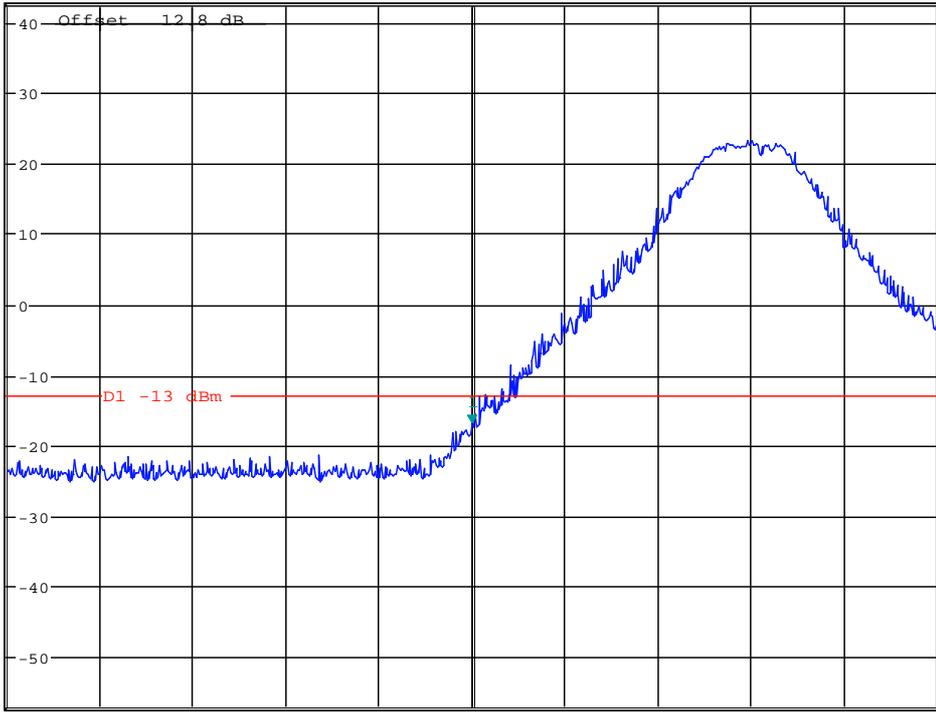
TM3

Left Edge
 10MHz (BW)
 Channel 20000
 16QAM/1 RB/RB #0



* RBW 100 kHz Marker 1 [T1]
 * VBW 300 kHz -17.02 dBm
 SWT 2.5 ms 1.705000000 GHz

Ref 42.8 dBm Att 55 dB



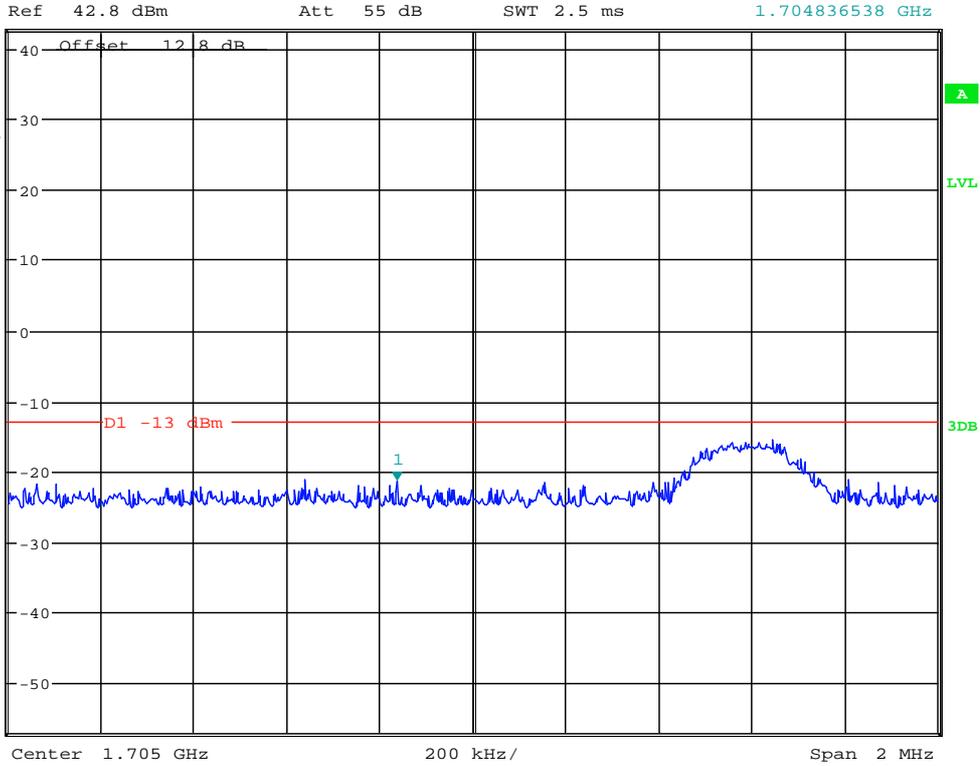
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16QAM /1 RB/RB #max



*RBW 100 kHz Marker 1 [T1]
 *VBW 300 kHz -21.29 dBm
 SWT 2.5 ms 1.704836538 GHz



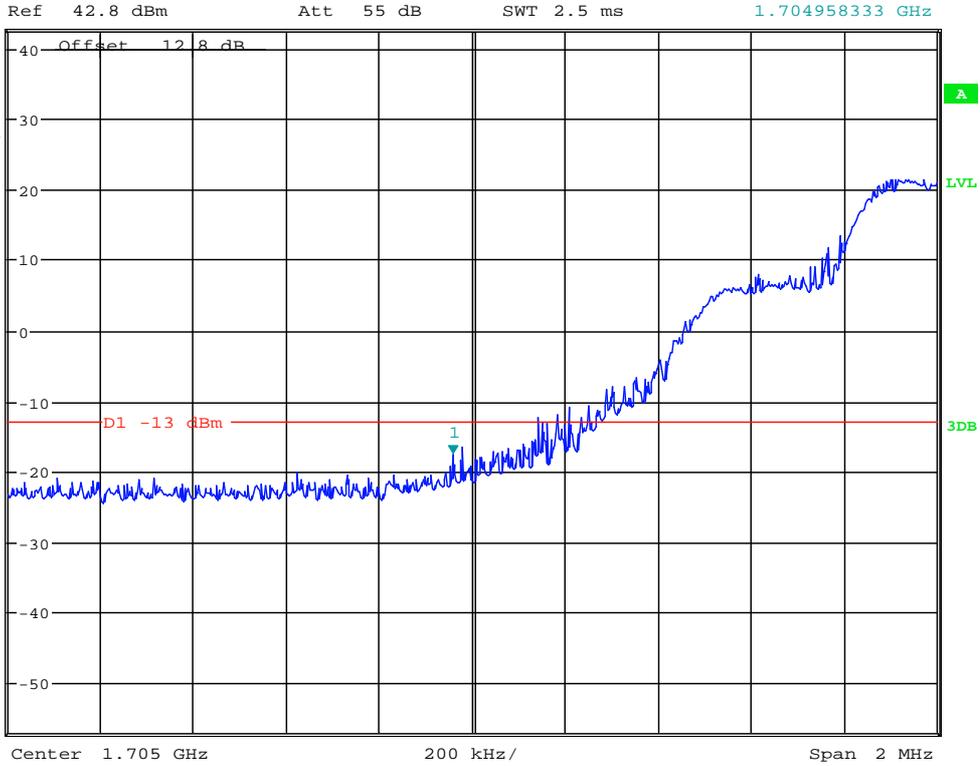
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16QAM/full RBs



*RBW 100 kHz Marker 1 [T1]
*VBW 300 kHz -17.50 dBm
SWT 2.5 ms 1.704958333 GHz



Date: 27.JUN.2012 18:44:42



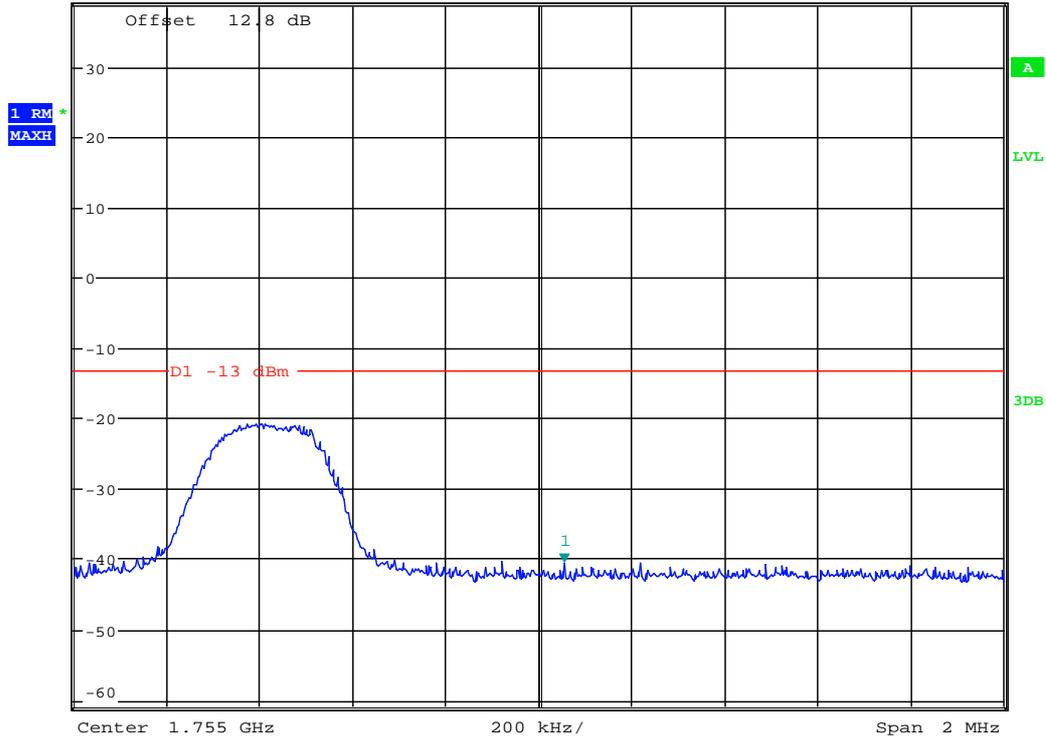
TM2

Right Edge
 10MHz (BW)
 Channel 20350
 QPSK/1 RB/RB #0



* RBW 100 kHz Marker 1 [T1]
 * VBW 300 kHz -40.56 dBm
 * SWT 50 ms 1.755054487 GHz

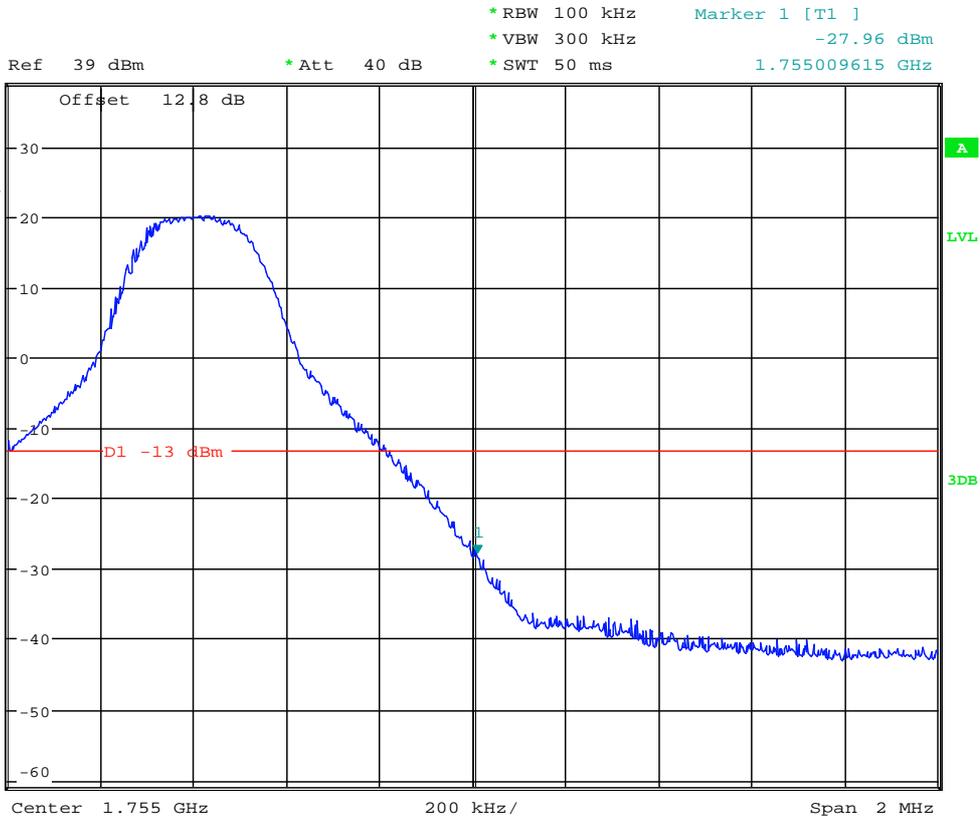
Ref 39 dBm * Att 40 dB



Date: 28.JUN.2012 09:55:17



QPSK/1 RB/RB #max



Date: 28.JUN.2012 09:55:49



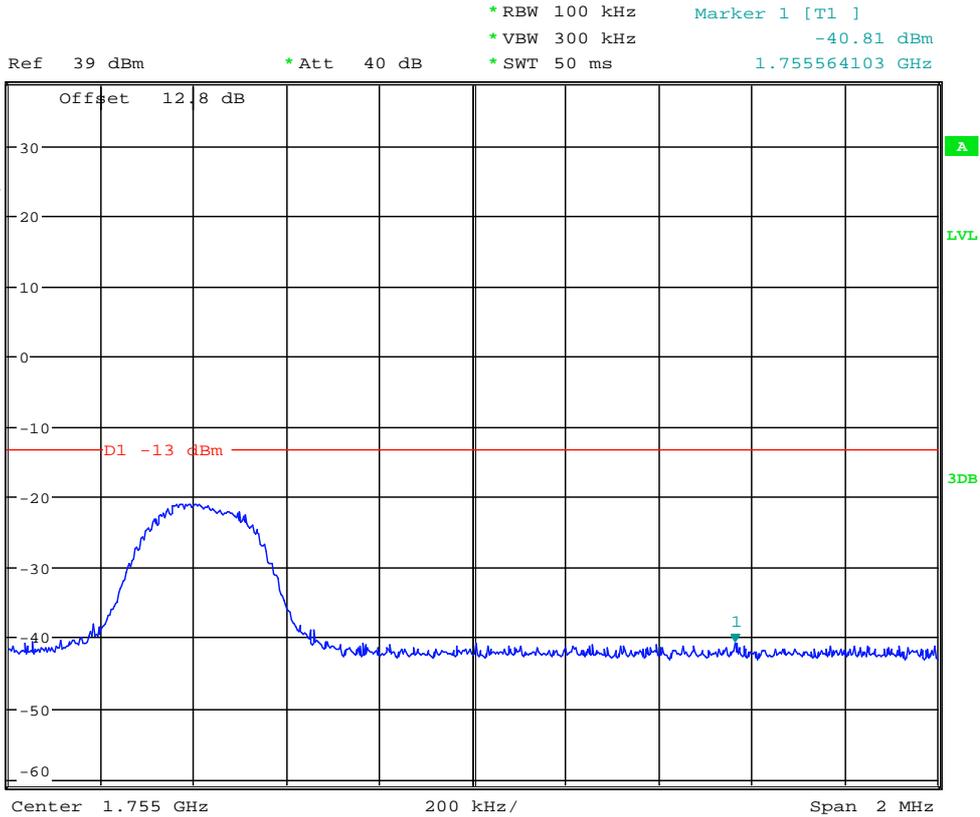
TM3

Right Edge

10MHz(BW)

Channel 20350

16QAM /1 RB/RB #0



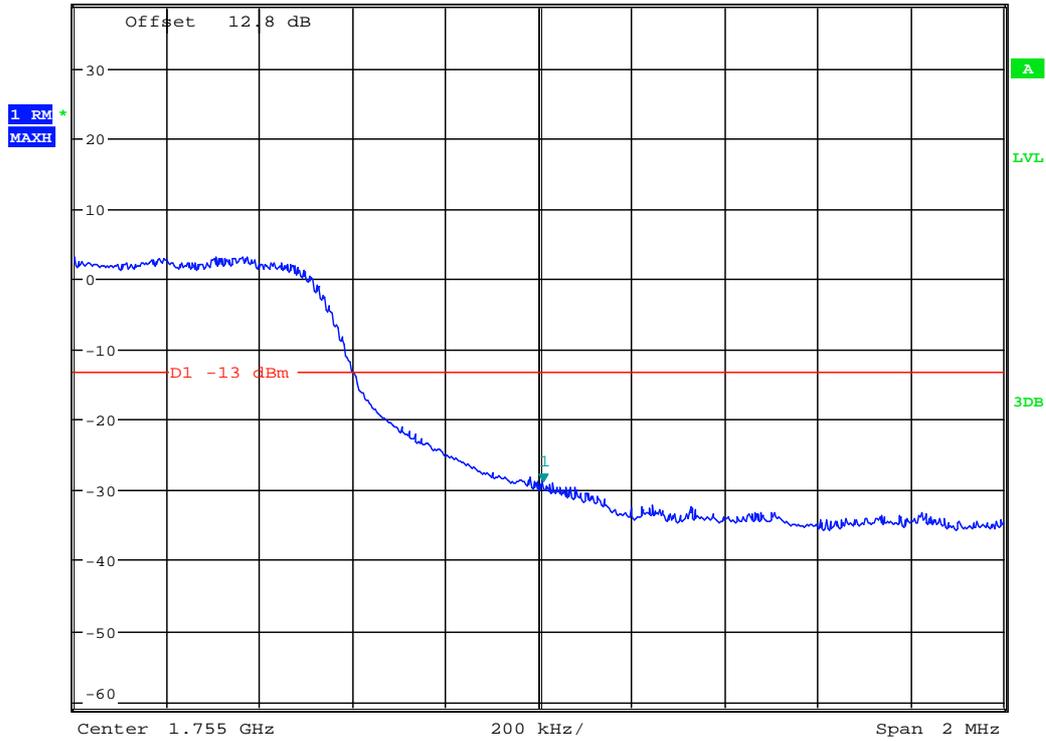
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16QAM /full RBS



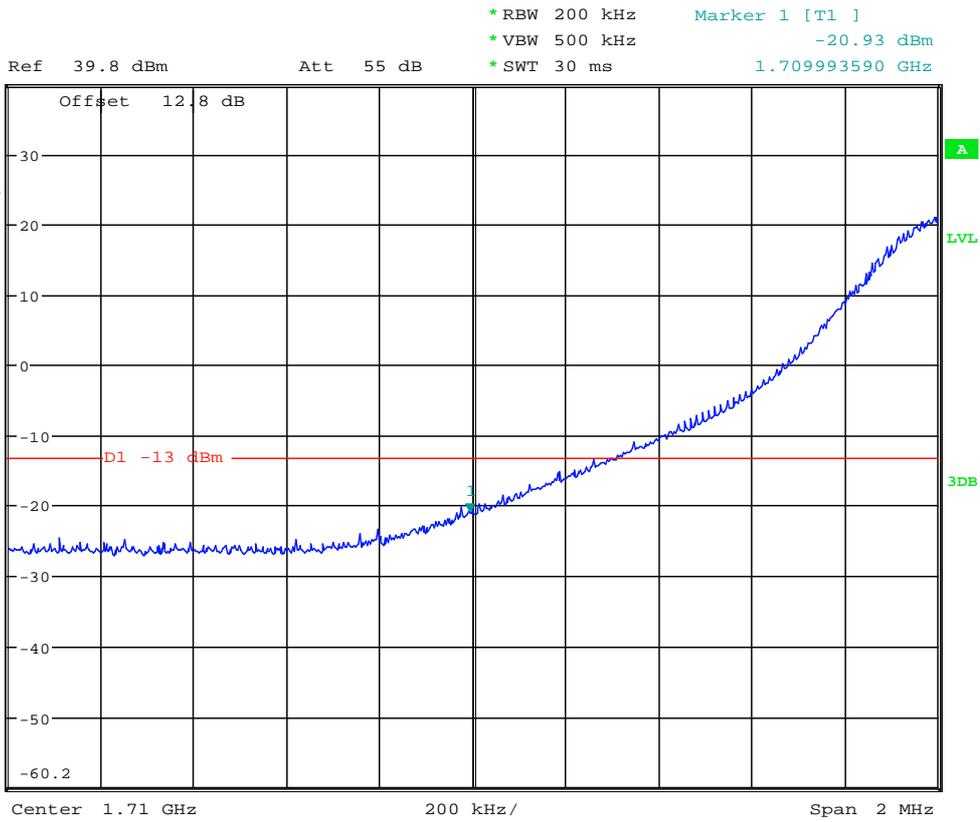
Ref 39 dBm * Att 40 dB * RBW 100 kHz Marker 1 [T1]
 * VBW 300 kHz -28.98 dBm
 * SWT 50 ms 1.755009615 GHz



Date: 28.JUN.2012 10:00:46



TM4
 Left Edge
 20MHz(BW)
 Channel 20050
 QPSK /1 RB/RB #0



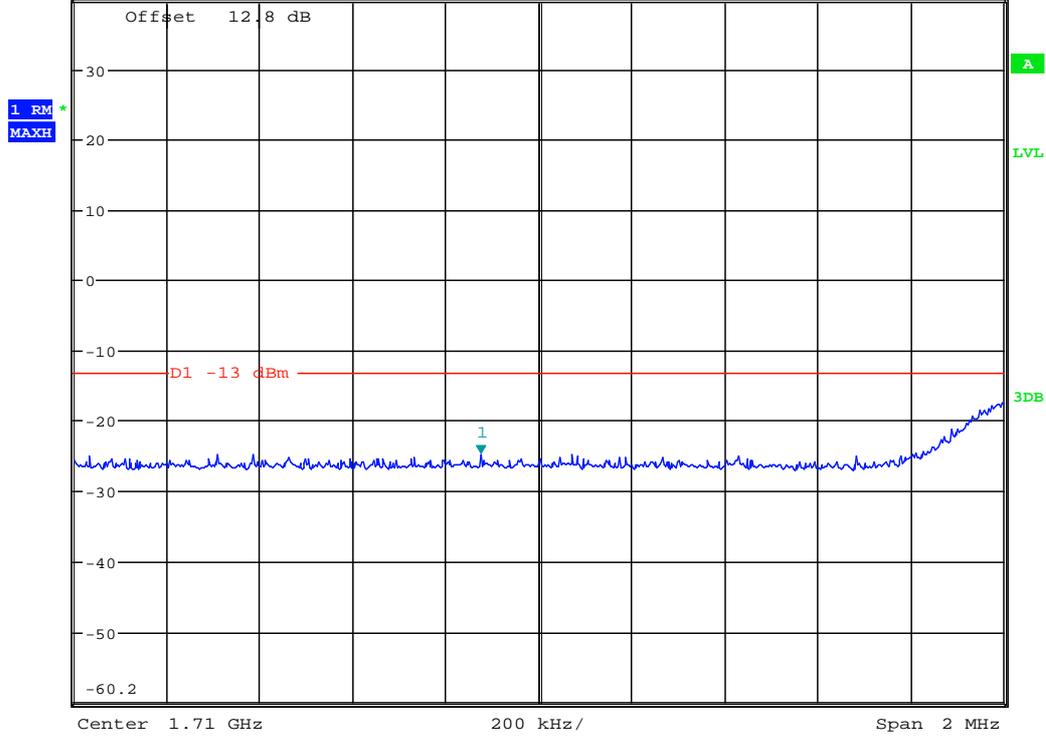
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QPSK /1 RB/RB #Max



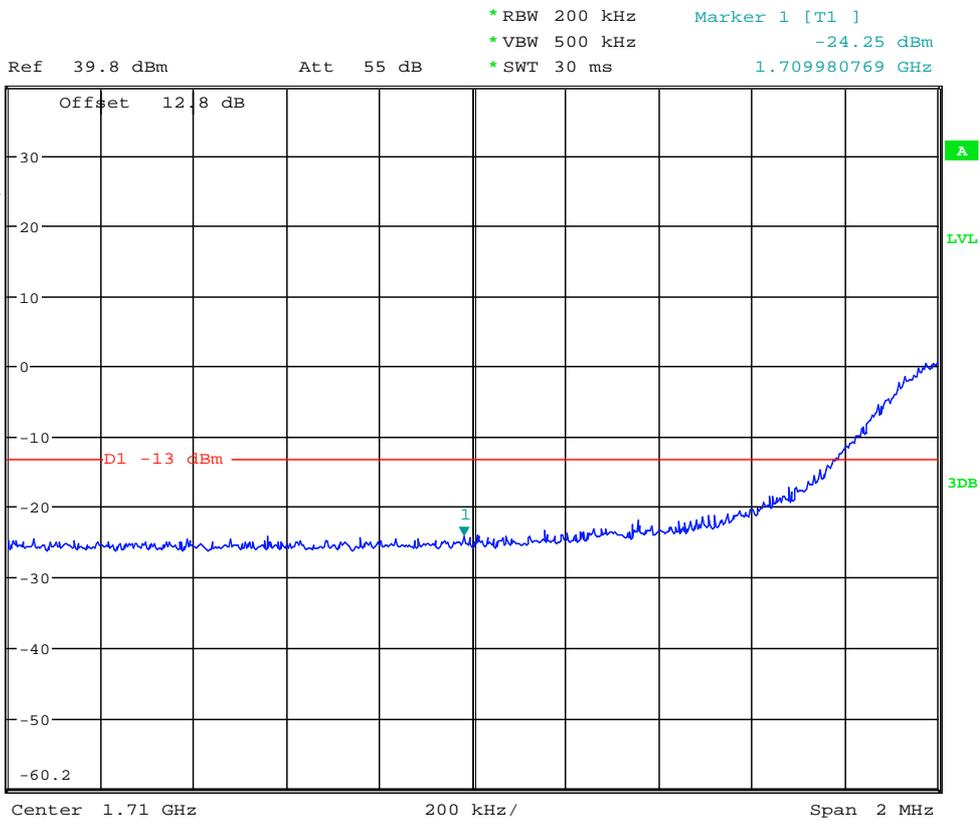
Ref 39.8 dBm Att 55 dB
 *RBW 200 kHz *VBW 500 kHz *SWT 30 ms
 Marker 1 [T1] -24.80 dBm
 1.709875000 GHz



Date: 27.JUN.2012 20:11:14



QPSK /full RBS

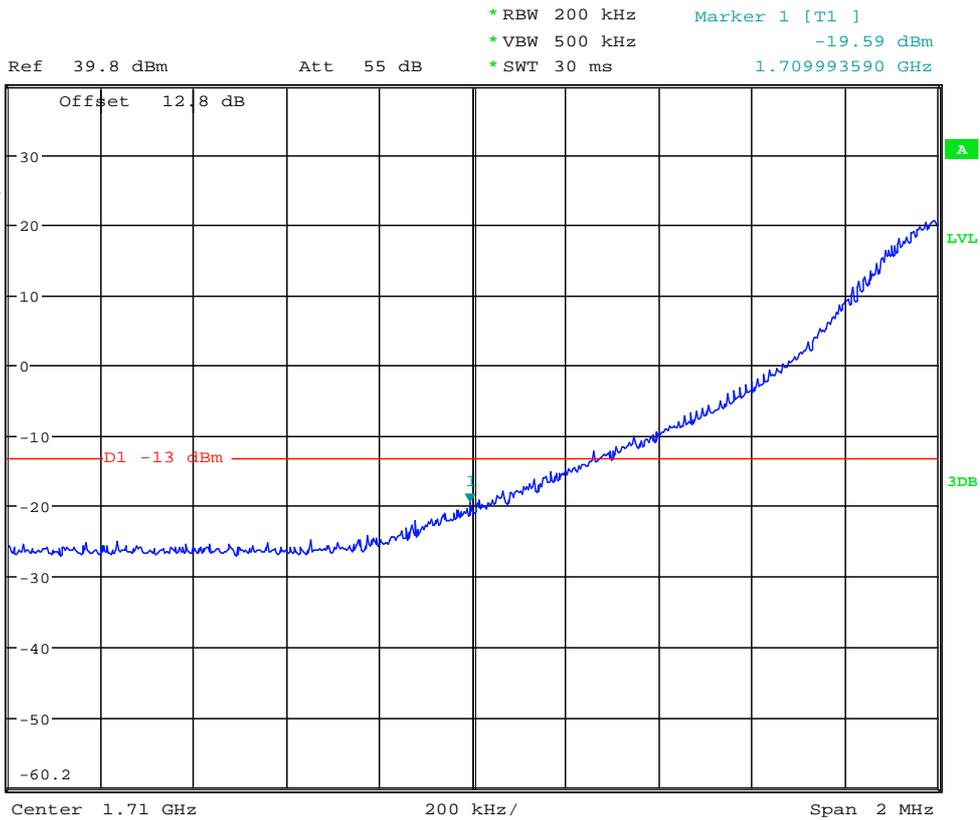


Date: 27.JUN.2012 20:12:36



TM5

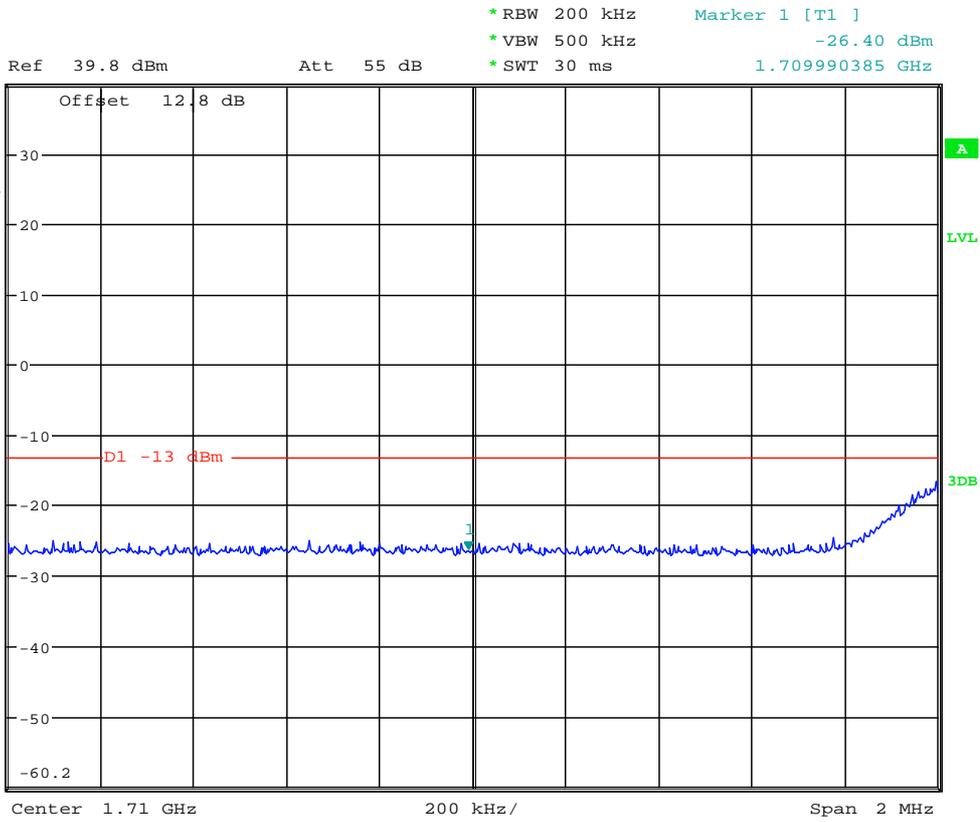
Left Edge 20MHz(BW) Channel 20050 16QAM /1 RB/RB #0



Date: 27.JUN.2012 20:09:06



16QAM /1 RB/RB #Max



Date: 27.JUN.2012 20:09:55



16QAM /full RBS

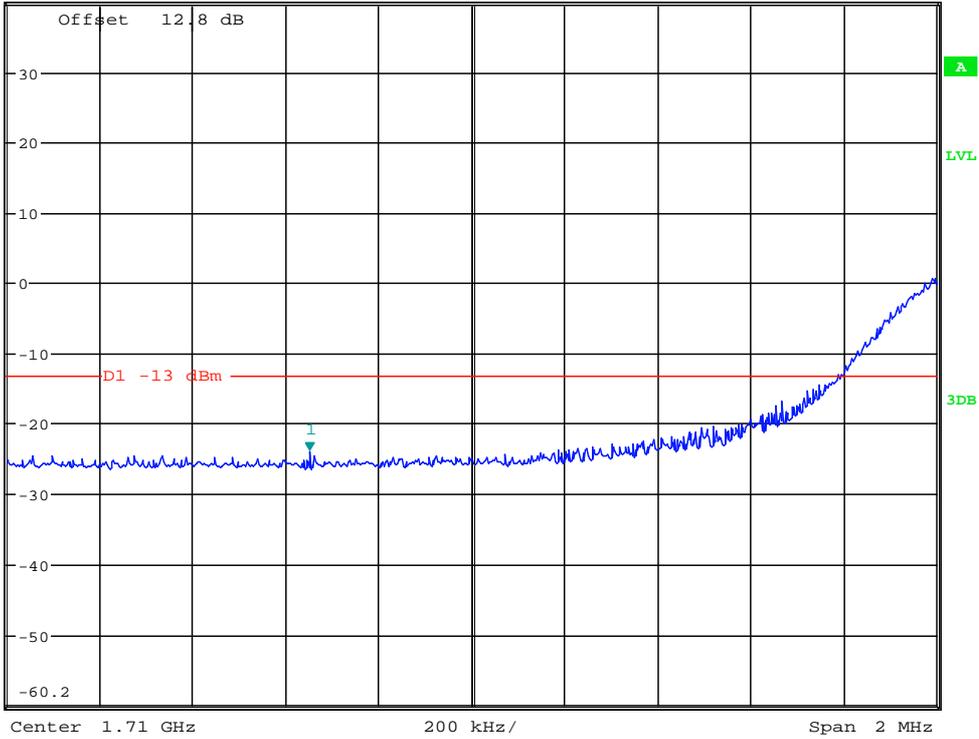


* RBW 200 kHz Marker 1 [T1]
 * VBW 500 kHz -23.98 dBm
 * SWT 30 ms 1.709650641 GHz

Ref 39.8 dBm

Att 55 dB

1 RM *
 MAXH

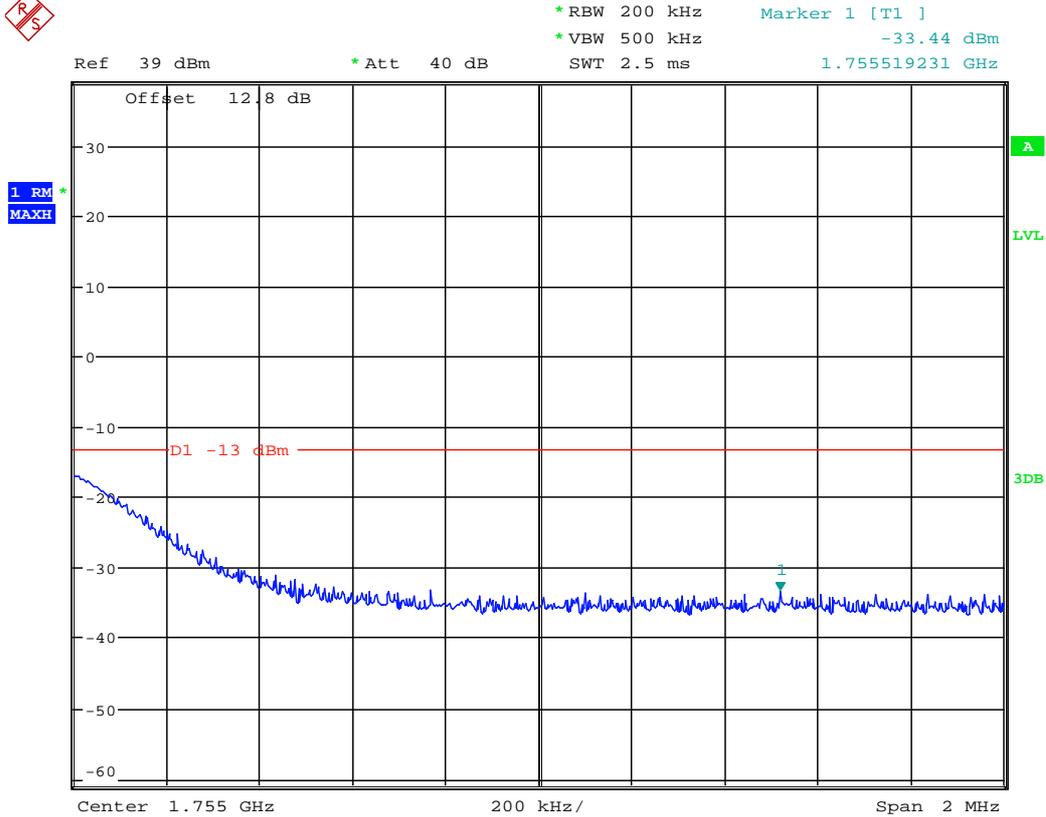


Date: 27.JUN.2012 20:11:58



TM4

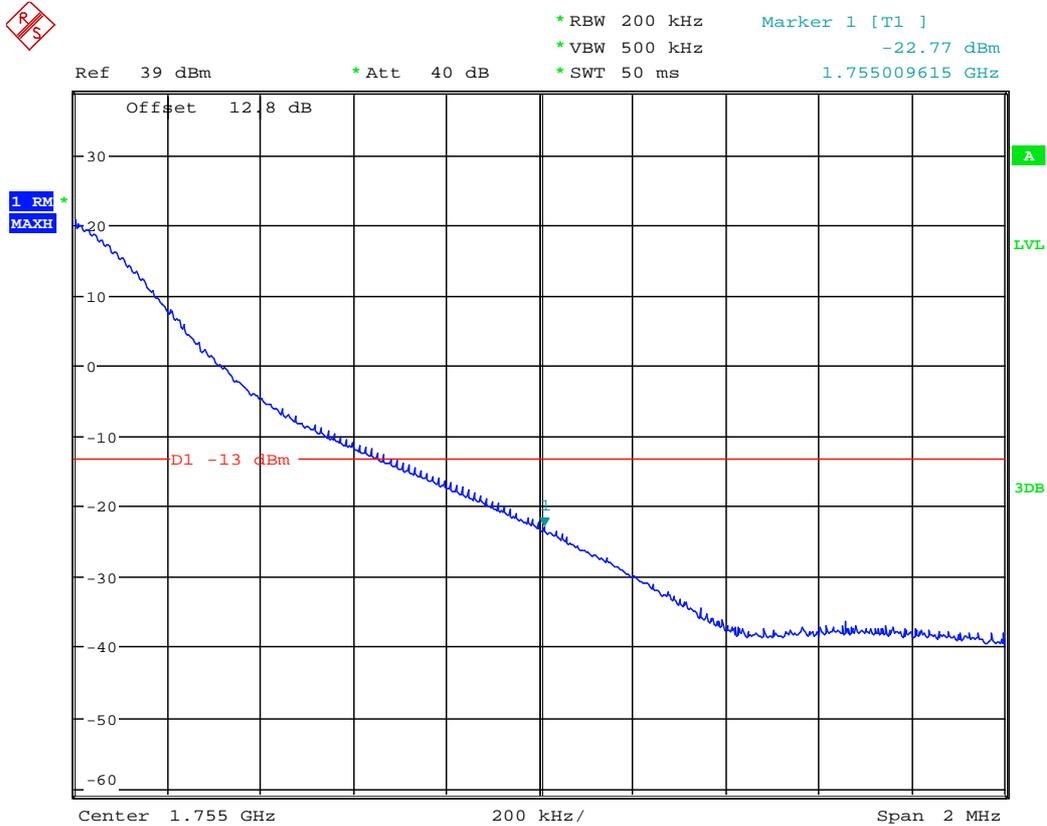
Right Edge
20MHz (BW)
Channel 20300
QPSK /1 RB/RB #0



Date: 28.JUN.2012 09:47:02



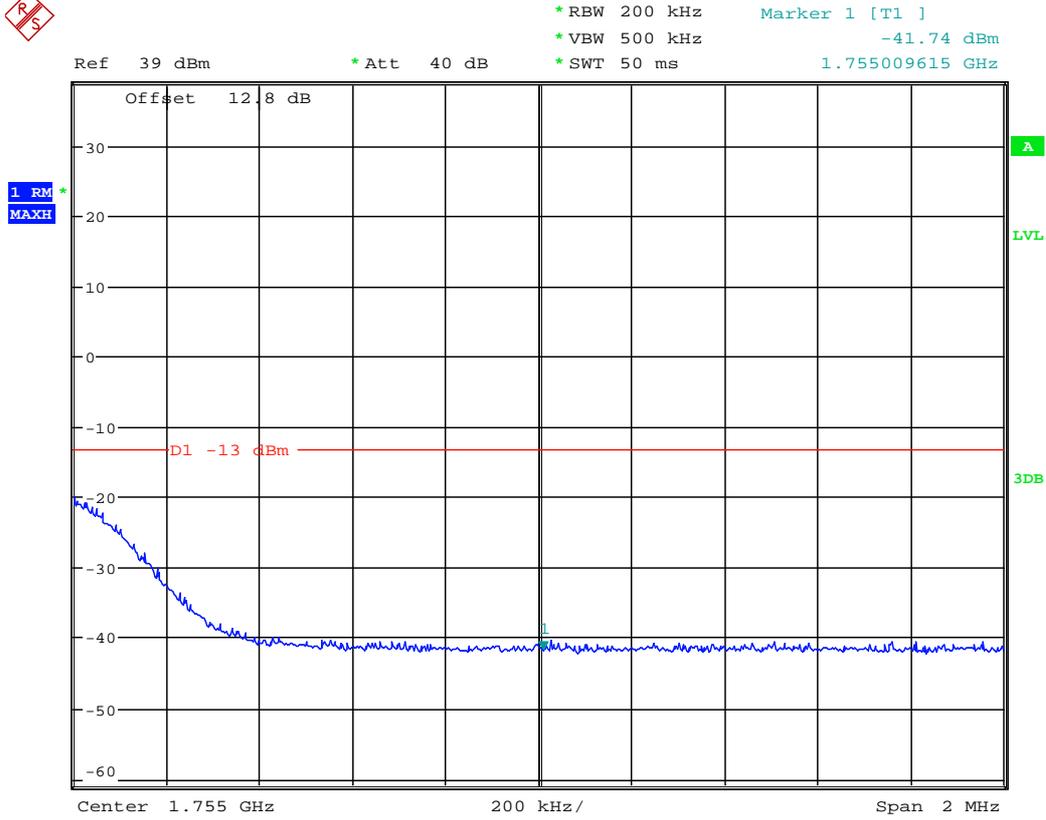
QPSK /1 RB/RB #Max



Date: 28.JUN.2012 09:49:33



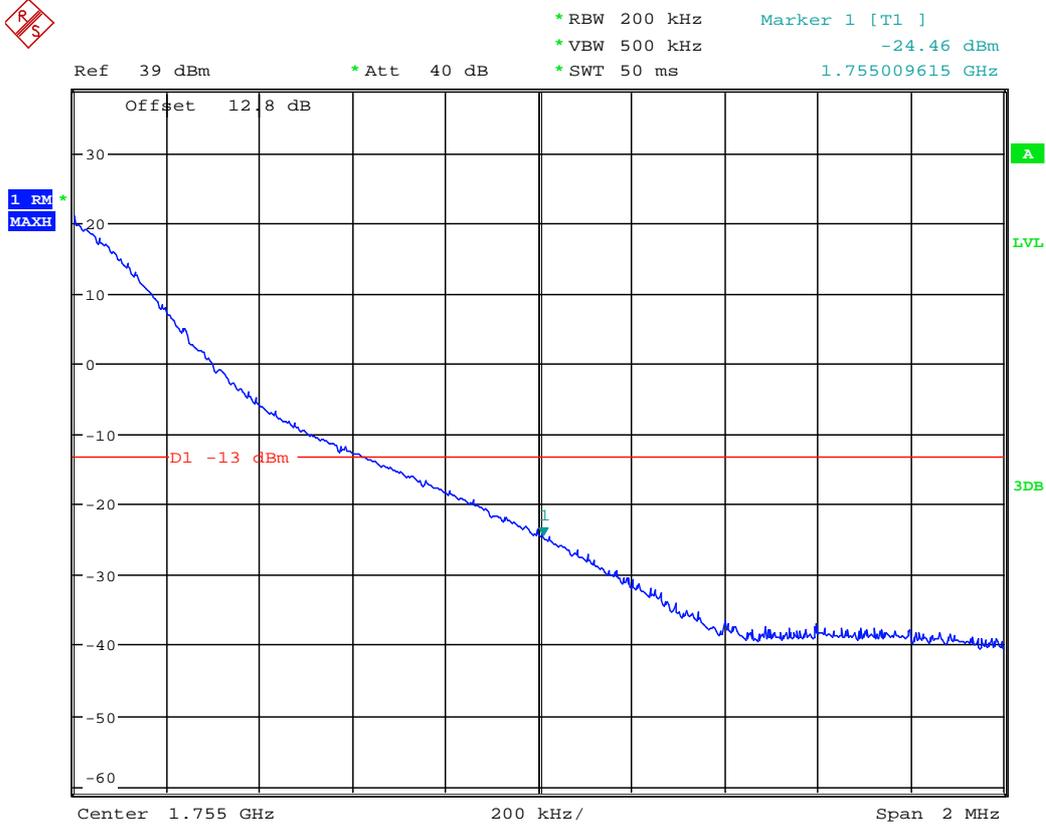
TM5
 Right Edge
 20MHz(BW)
 Channel 20300
 16QAM /1 RB/RB #0



Date: 28.JUN.2012 09:50:26



16QAM /1 RB/RB #Max



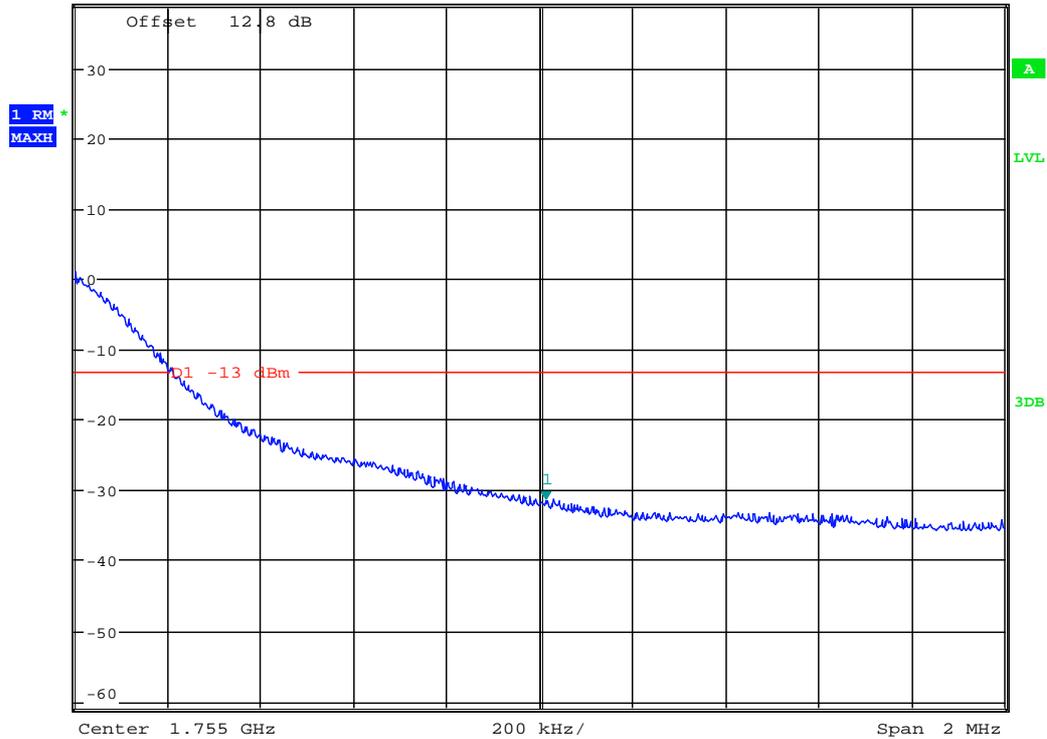
Date: 28.JUN.2012 09:50:57



16QAM /full RBS



Ref 39 dBm * Att 40 dB * RBW 200 kHz Marker 1 [T1]
 * VBW 500 kHz -31.56 dBm
 * SWT 50 ms 1.755012821 GHz



Date: 28.JUN.2012 09:51:59

-----END-----



FCC Test Report of B593u-501
FCC ID: QISB593U-501
IC ID : 6369A-B593U501



Appendix D

Spurious Emission at Antenna Terminal

According to FCC Part 2.1051 & Part 27 Subpart C&L
& RSS-139

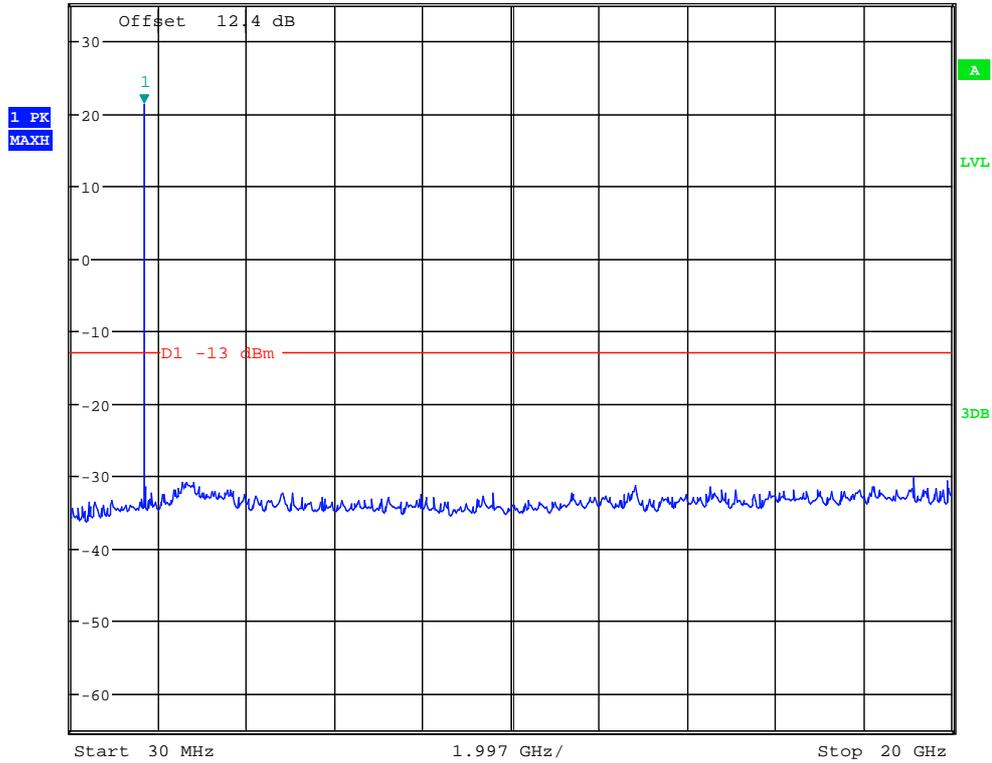


TM1: WCDMA

Channel 1312



*RBW 1 MHz Marker 1 [T1]
*VBW 3 MHz 21.28 dBm
Ref 35 dBm *Att 35 dB SWT 115 ms 1.694166667 GHz



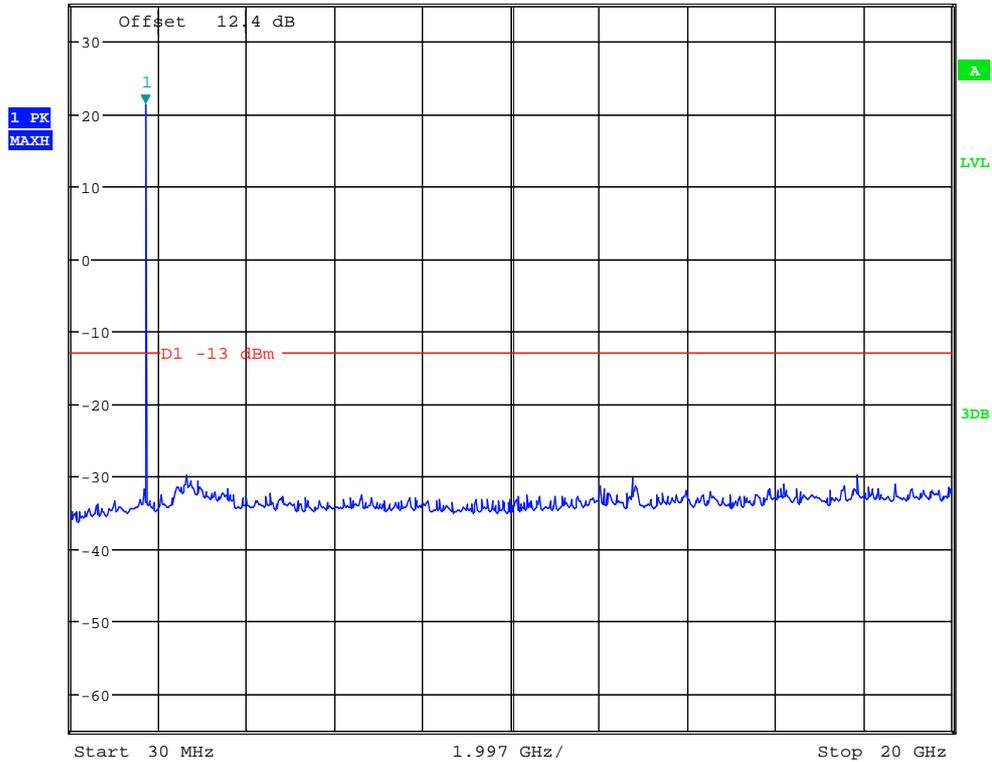
Date: 24.JUN.2012 15:43:20



Channel 1412



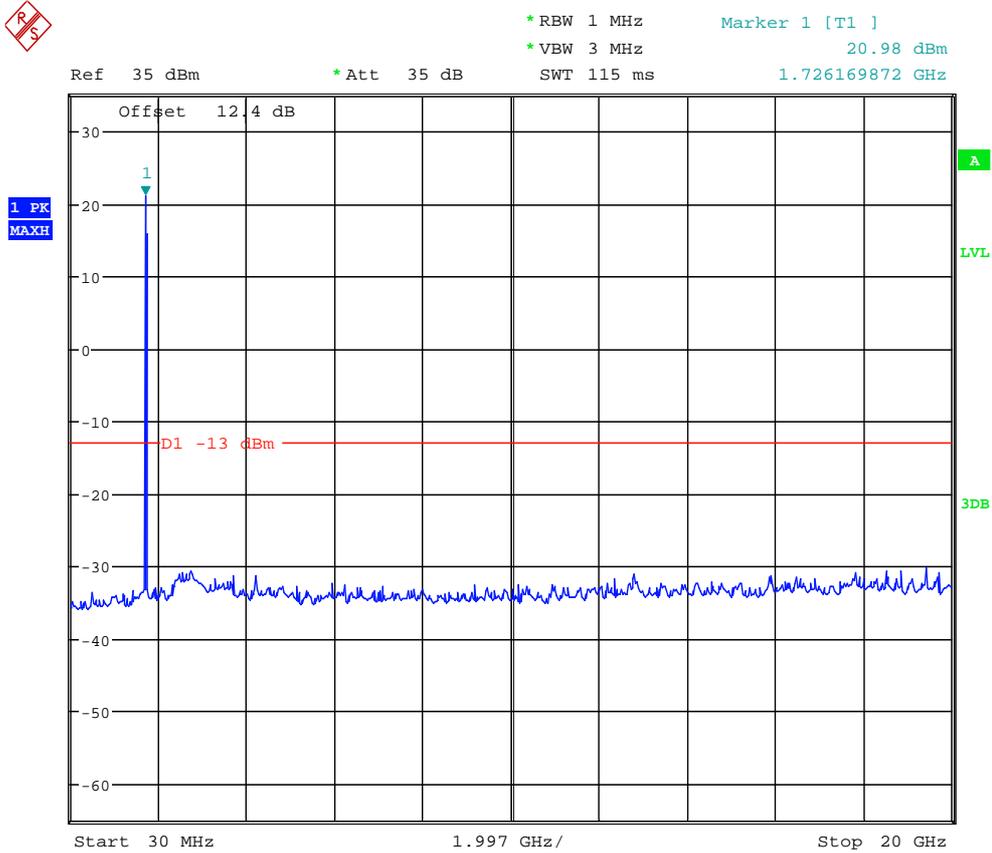
*RBW 1 MHz Marker 1 [T1]
*VBW 3 MHz 21.27 dBm
Ref 35 dBm *Att 35 dB SWT 115 ms 1.726169872 GHz



Date: 24.JUN.2012 15:43:35



Channel 1513



Date: 24.JUN.2012 15:43:49



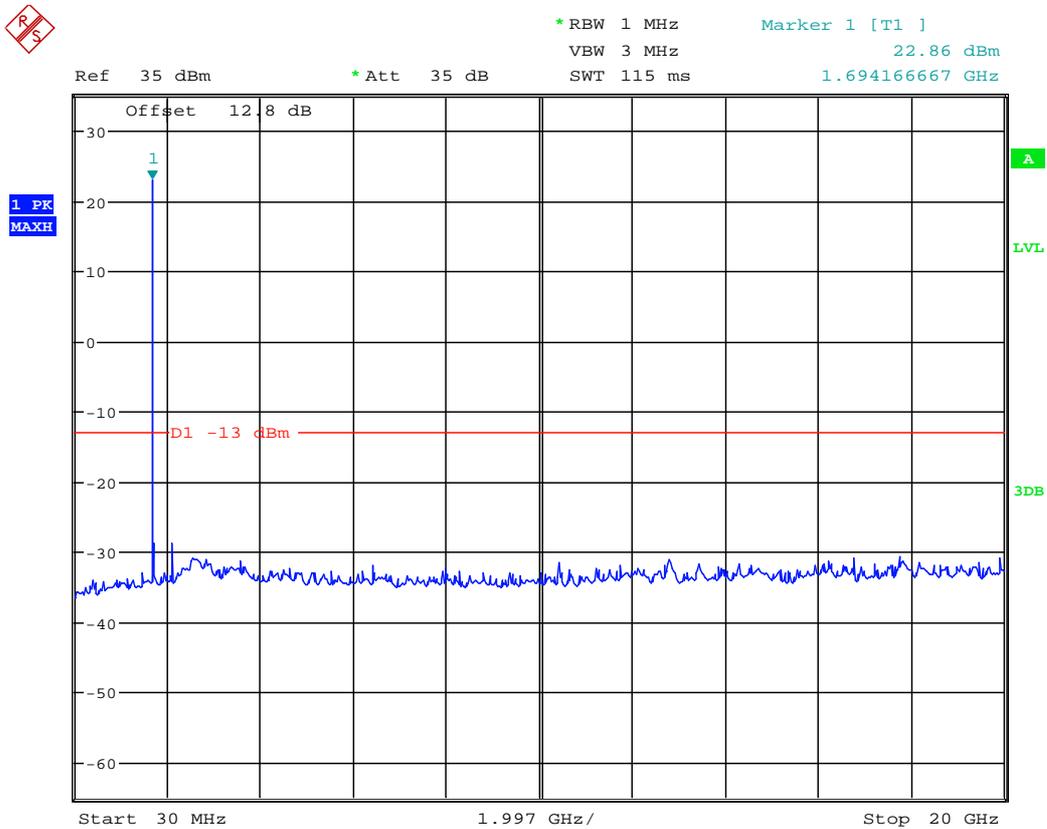
TM2 (QPSK)

NOTE1: QPSK output power higher than 16QAM, so only test the QPSK mode.

NOTE2: All relevant operation modes have been tested, and the worst case data (1RB&full RB) is included in this report.

10MHz (BW)
 Channel 20000

1 RB/RB #0



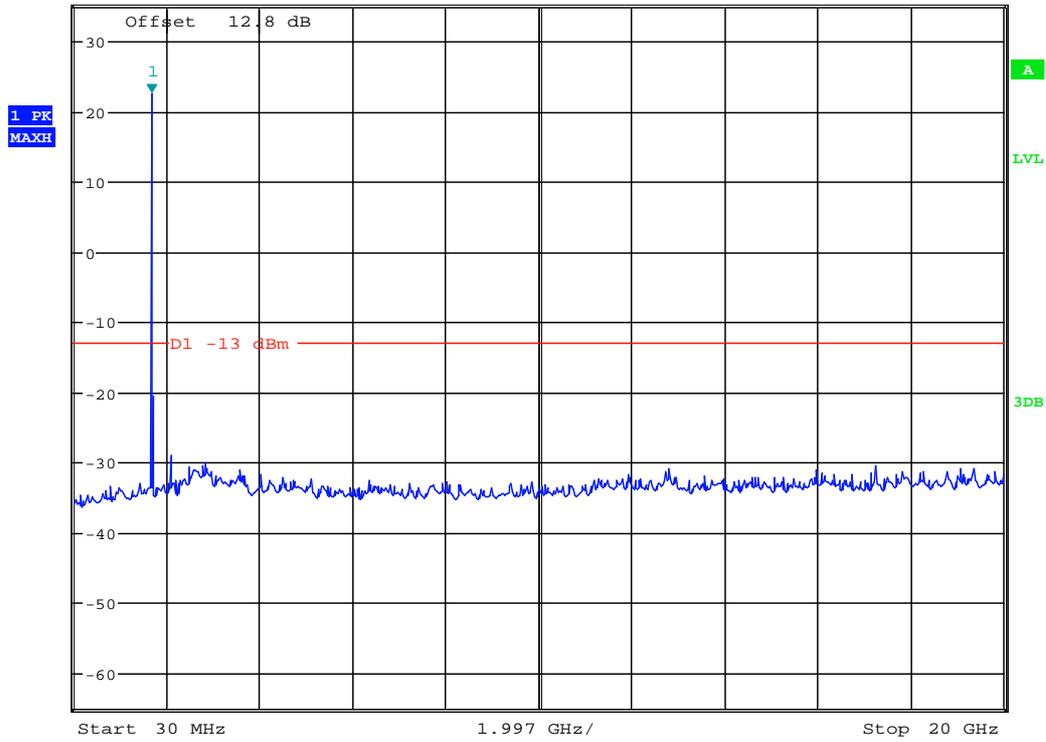
Date: 28.JUN.2012 11:42:47



1 RB/RB #max



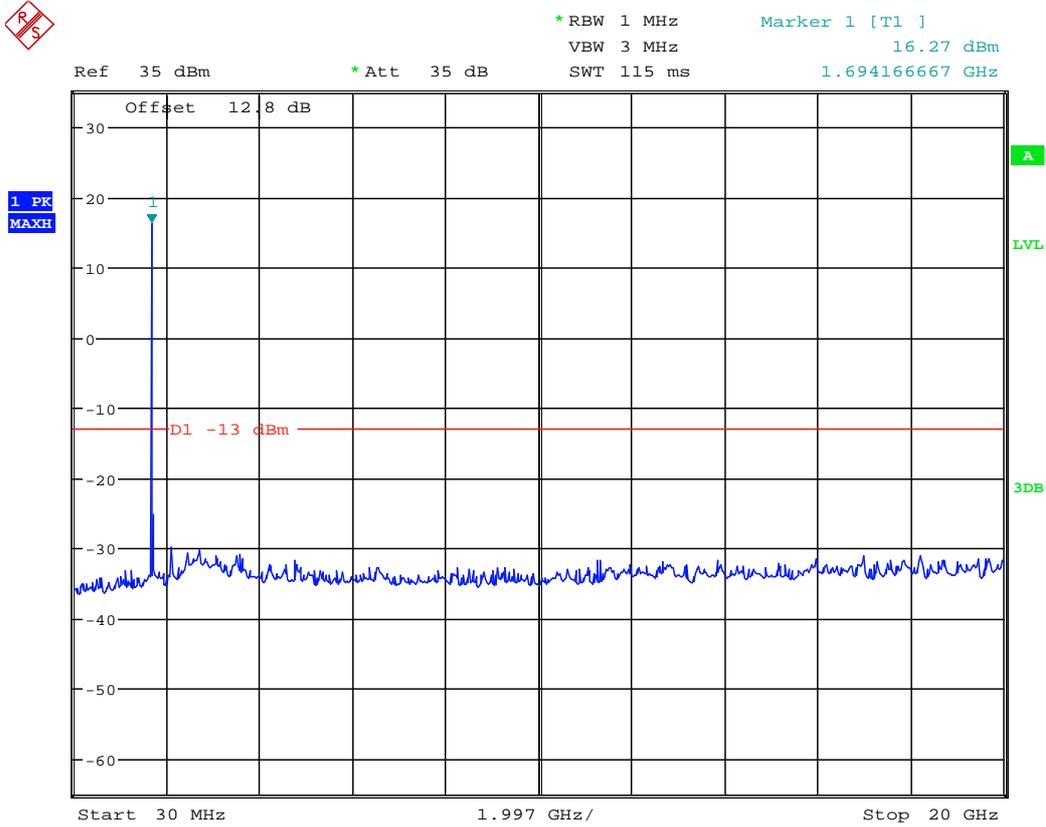
Ref 35 dBm * Att 35 dB * RBW 1 MHz Marker 1 [T1]
VBW 3 MHz 22.57 dBm
SWT 115 ms 1.694166667 GHz



Date: 28.JUN.2012 11:43:09



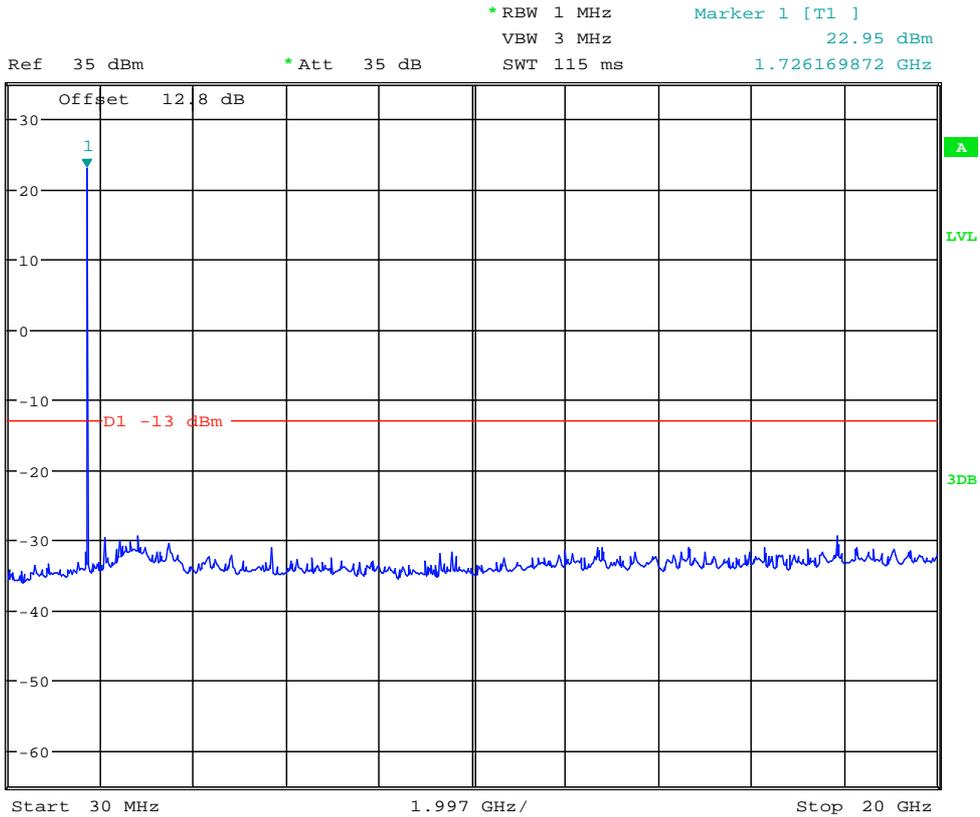
full RBs



Date: 28.JUN.2012 11:43:37



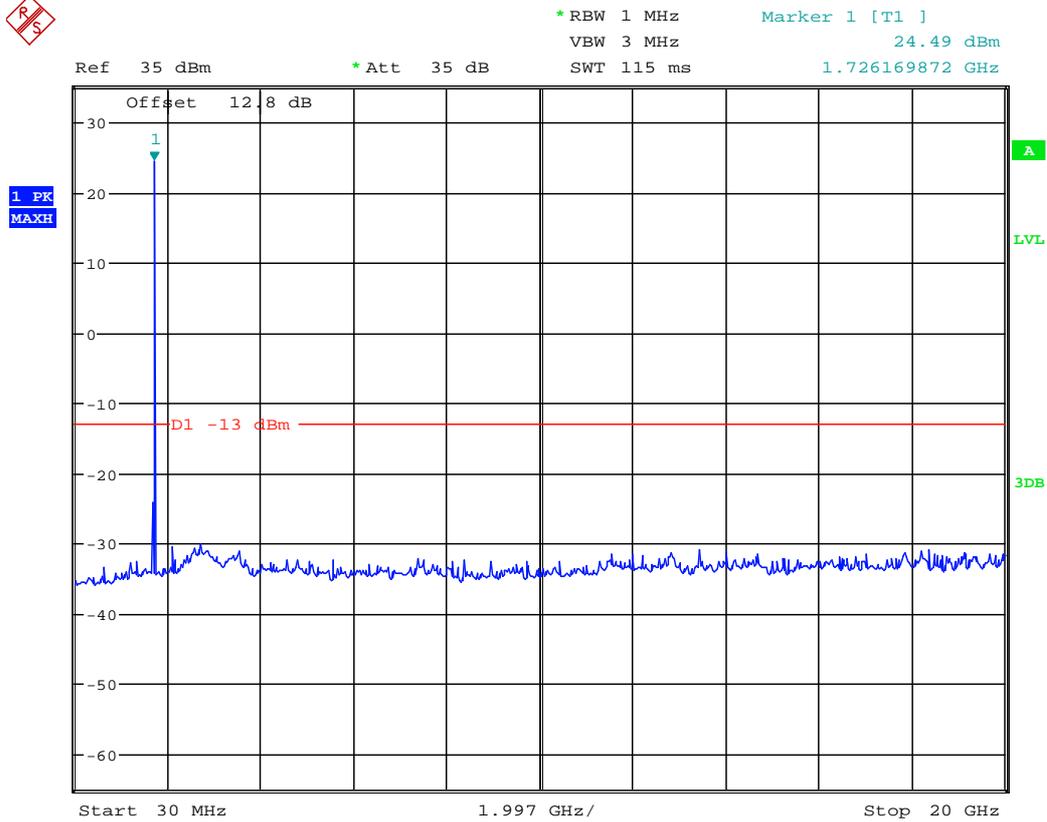
10MHz (BW)
Channel 20175
1 RB/RB #0



Date: 28.JUN.2012 11:38:51



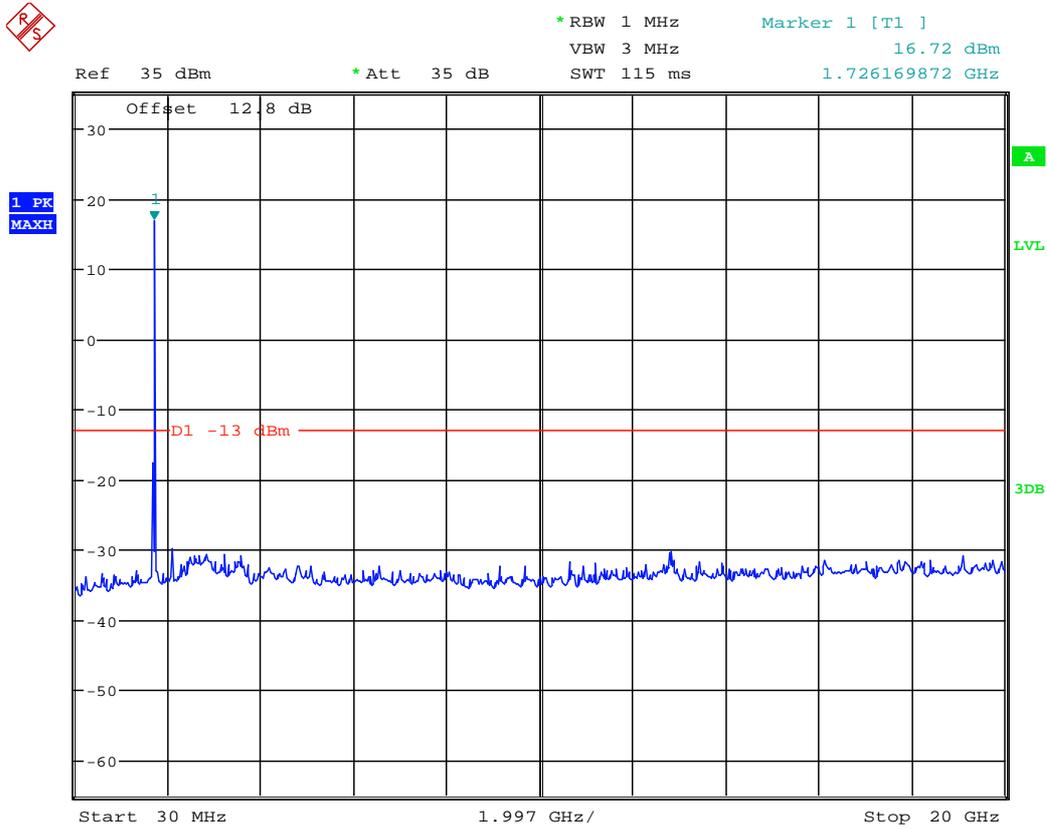
1 RB/RB #max



Date: 28.JUN.2012 11:39:15



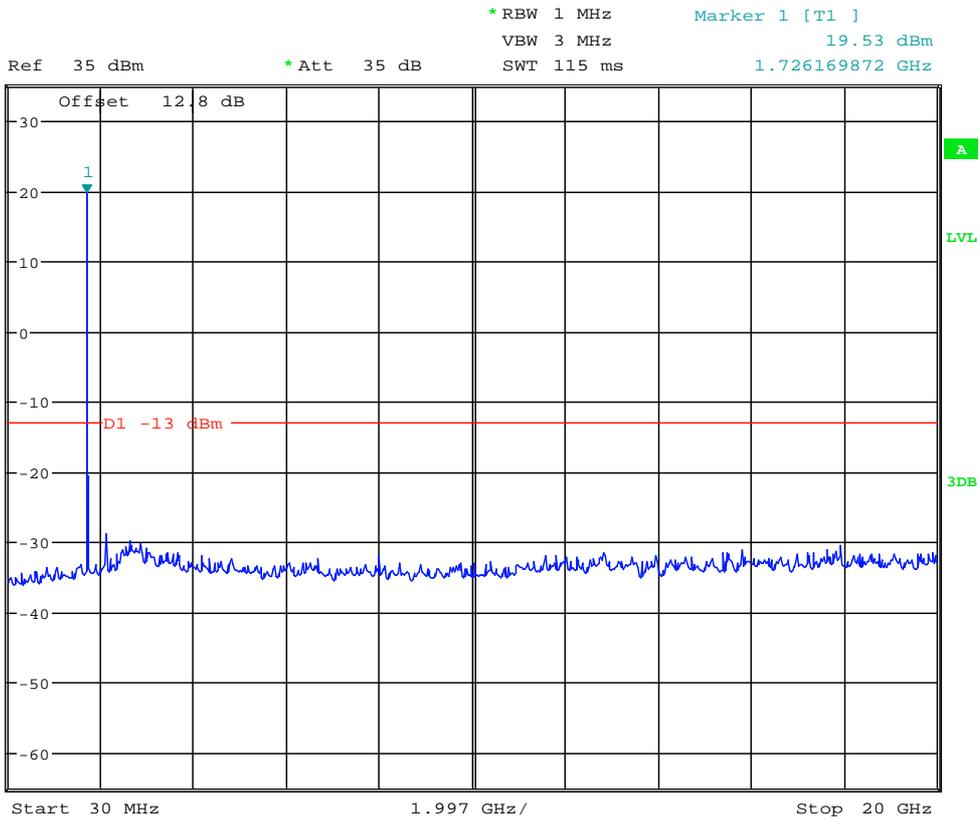
full RBs



Date: 28.JUN.2012 11:39:53



10MHz (BW)
 Channel 20350
 1 RB/RB #0



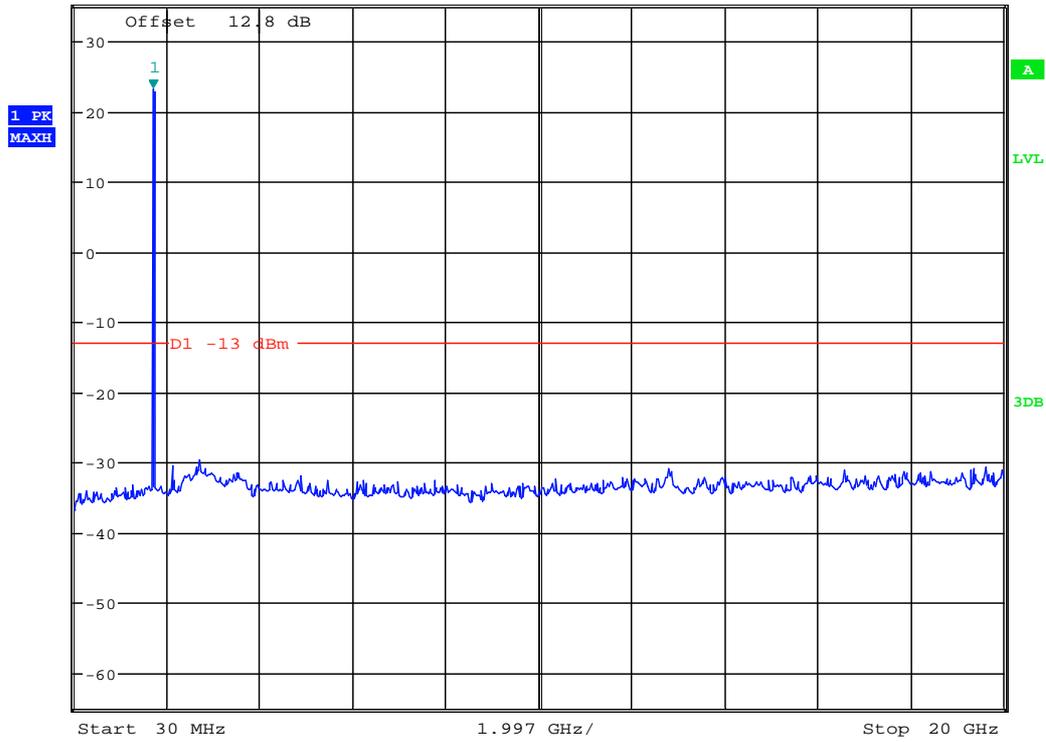
Date: 28.JUN.2012 11:40:51



1 RB/RB #max



Ref 35 dBm * Att 35 dB * RBW 1 MHz Marker 1 [T1]
VBW 3 MHz 23.03 dBm
SWT 115 ms 1.726169872 GHz



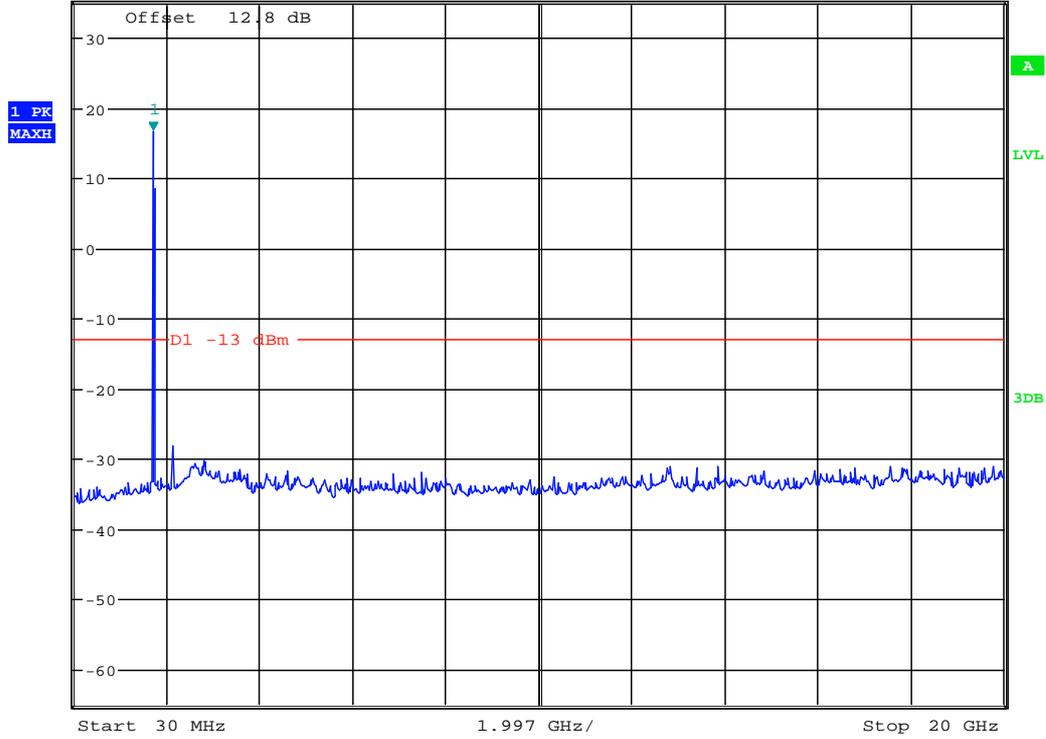
Date: 28.JUN.2012 11:41:15



full RBs



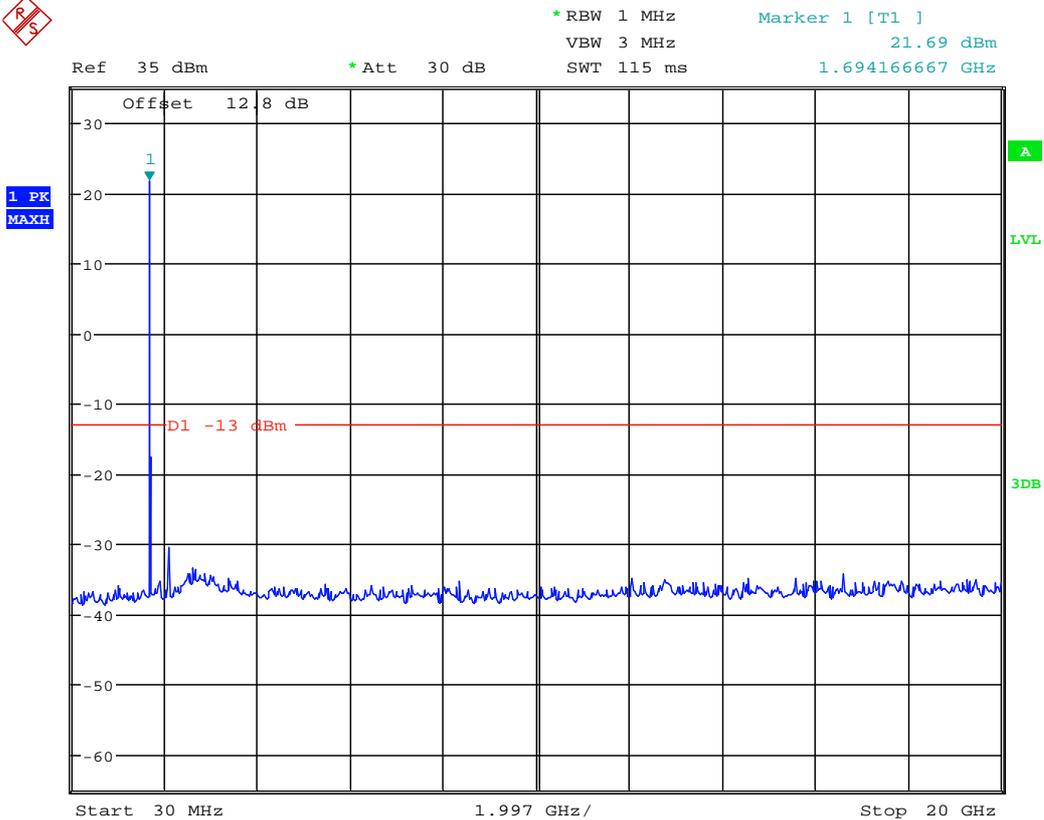
Ref 35 dBm *Att 35 dB *RBW 1 MHz Marker 1 [T1]
VBW 3 MHz 16.59 dBm
SWT 115 ms 1.726169872 GHz



Date: 28.JUN.2012 11:41:59



20MHz (BW)
Channel 20050
1 RB/RB #0



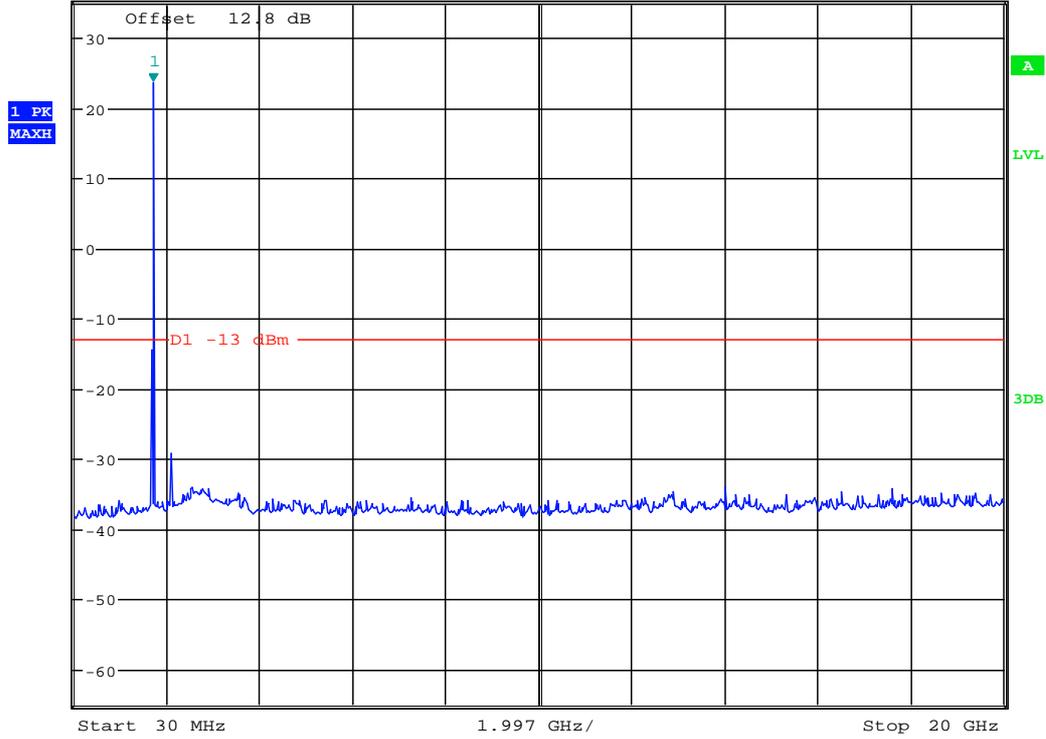
Date: 28.JUN.2012 11:23:26



1 RB/RB #max



Ref 35 dBm * Att 30 dB * RBW 1 MHz Marker 1 [T1]
 VBW 3 MHz 23.48 dBm
 SWT 115 ms 1.726169872 GHz



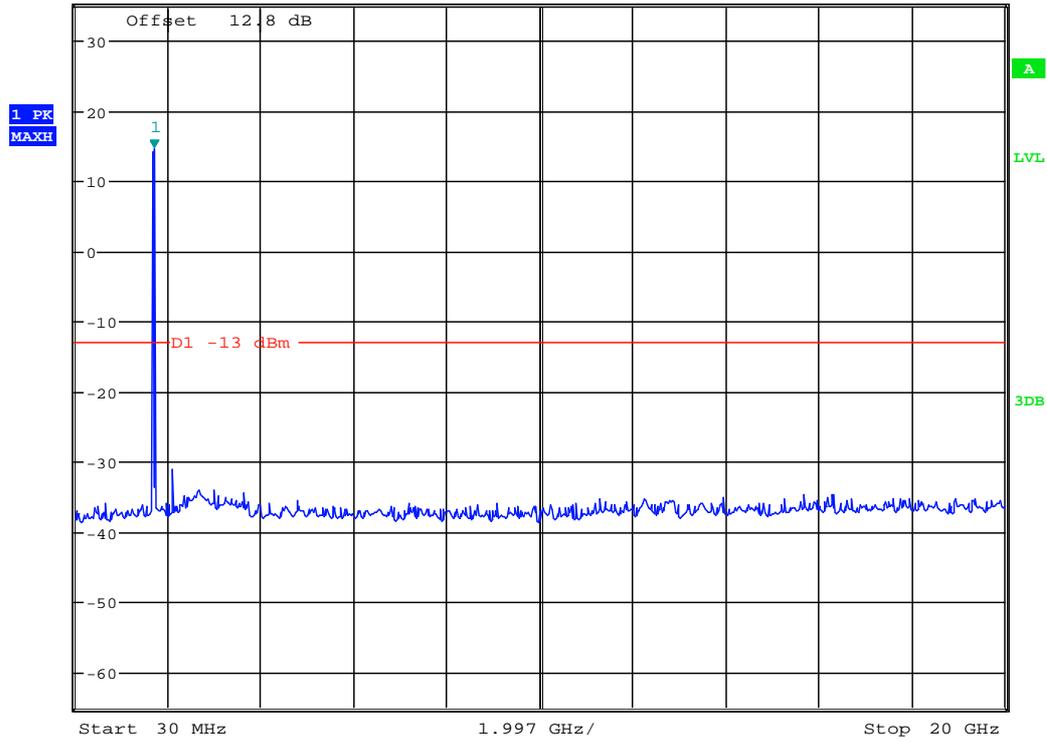
Date: 28.JUN.2012 11:23:58



full RBs



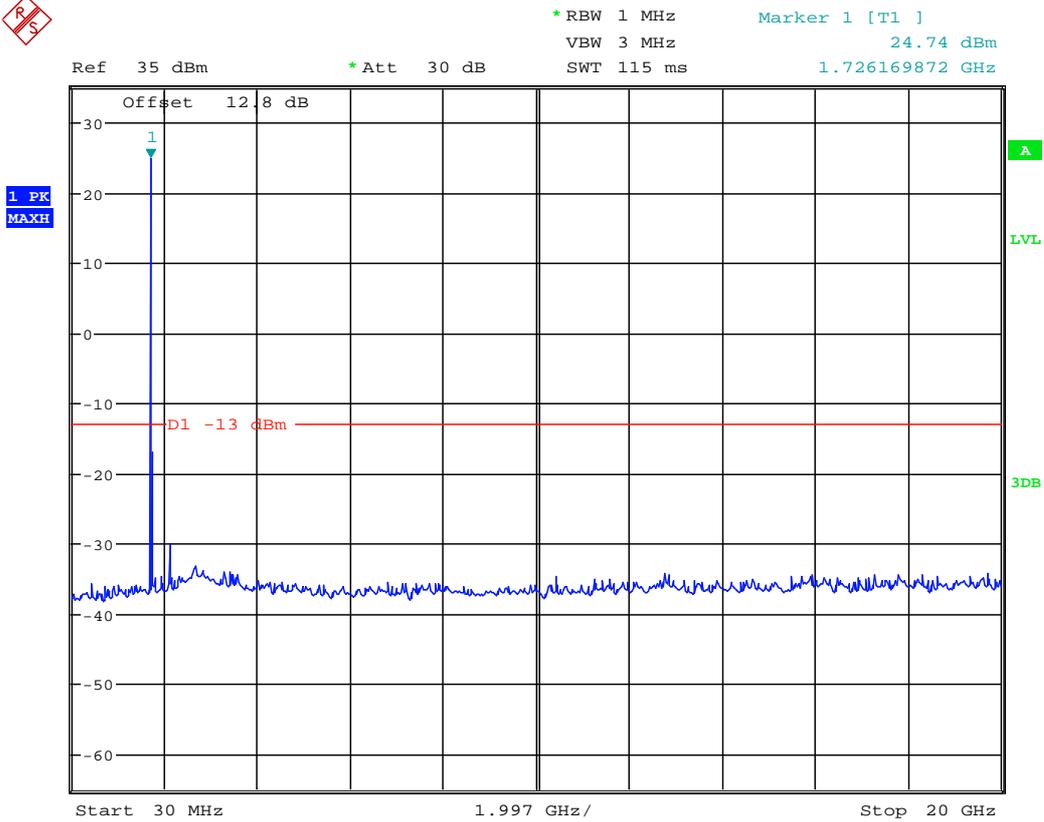
Ref 35 dBm *Att 30 dB *RBW 1 MHz Marker 1 [T1]
VBW 3 MHz 14.41 dBm
SWT 115 ms 1.726169872 GHz



Date: 28.JUN.2012 11:24:24



20MHz (BW) Channel 20175 1 RB/RB #0



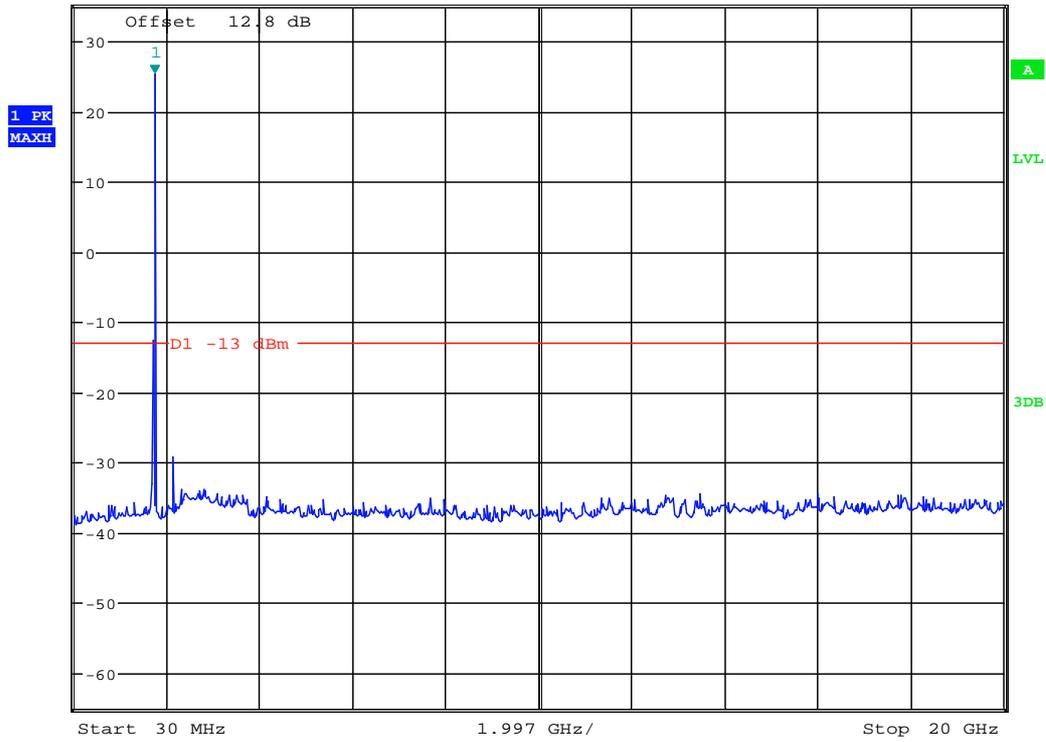
Date: 28.JUN.2012 10:45:51



1 RB/RB #max



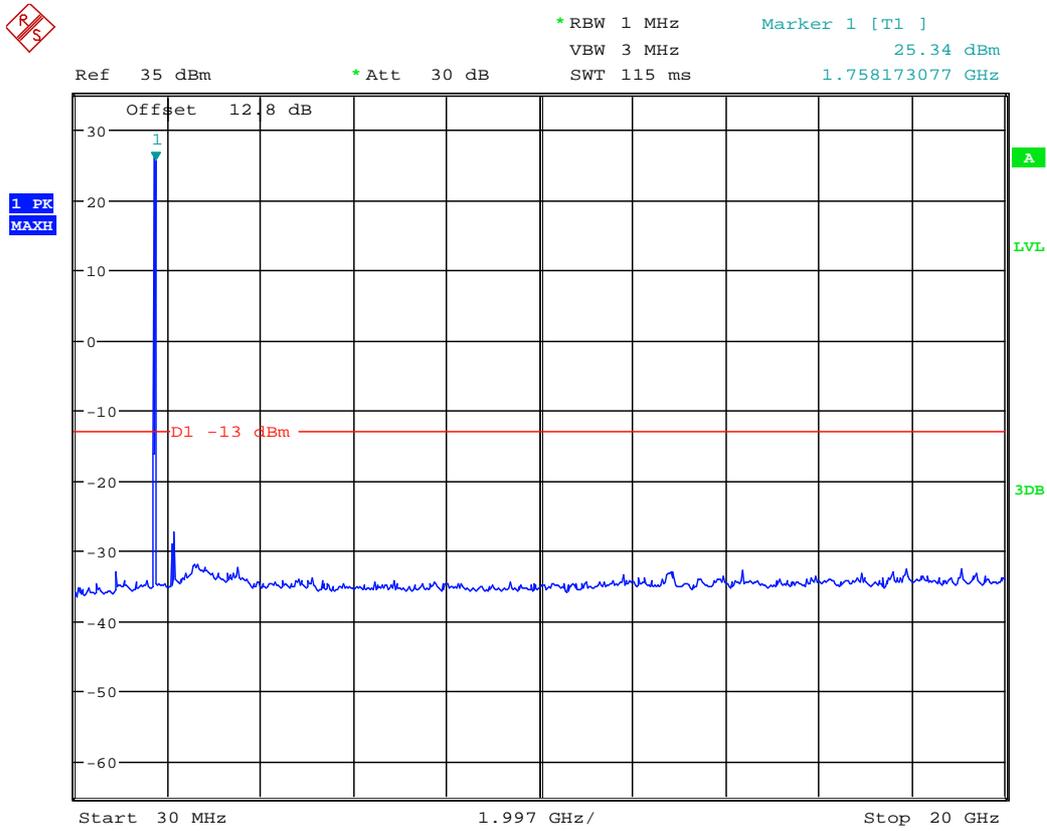
Ref 35 dBm *Att 30 dB *RBW 1 MHz Marker 1 [T1] 25.27 dBm
VBW 3 MHz SWT 115 ms 1.758173077 GHz



Date: 28.JUN.2012 10:46:18



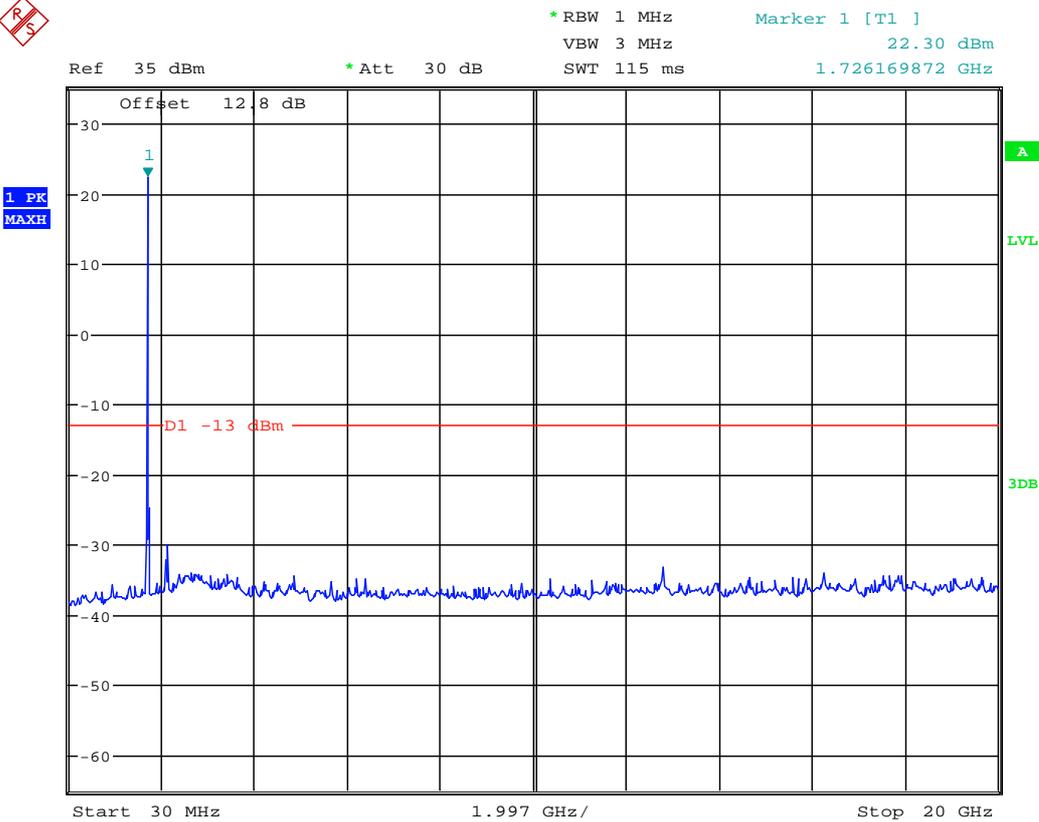
full RBs



Date: 28.JUN.2012 11:20:16



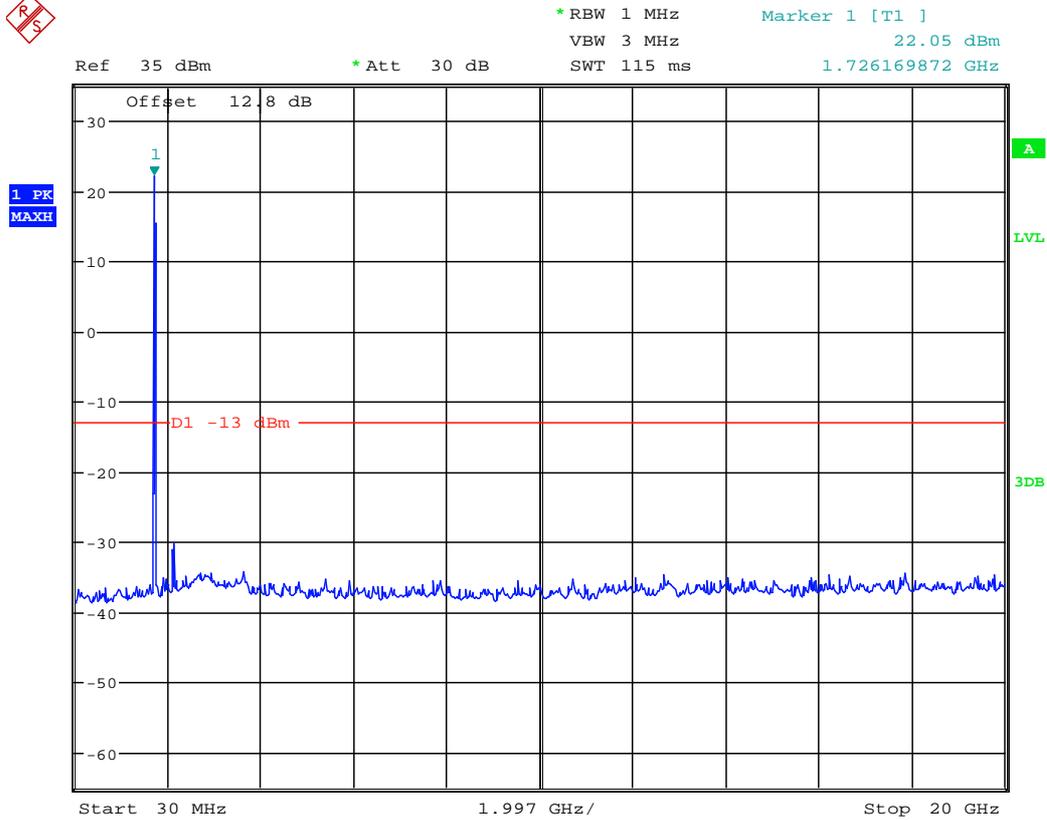
20MHz (BW)
Channel 20300
1 RB/RB #0



Date: 28.JUN.2012 11:20:58



1 RB/RB #max



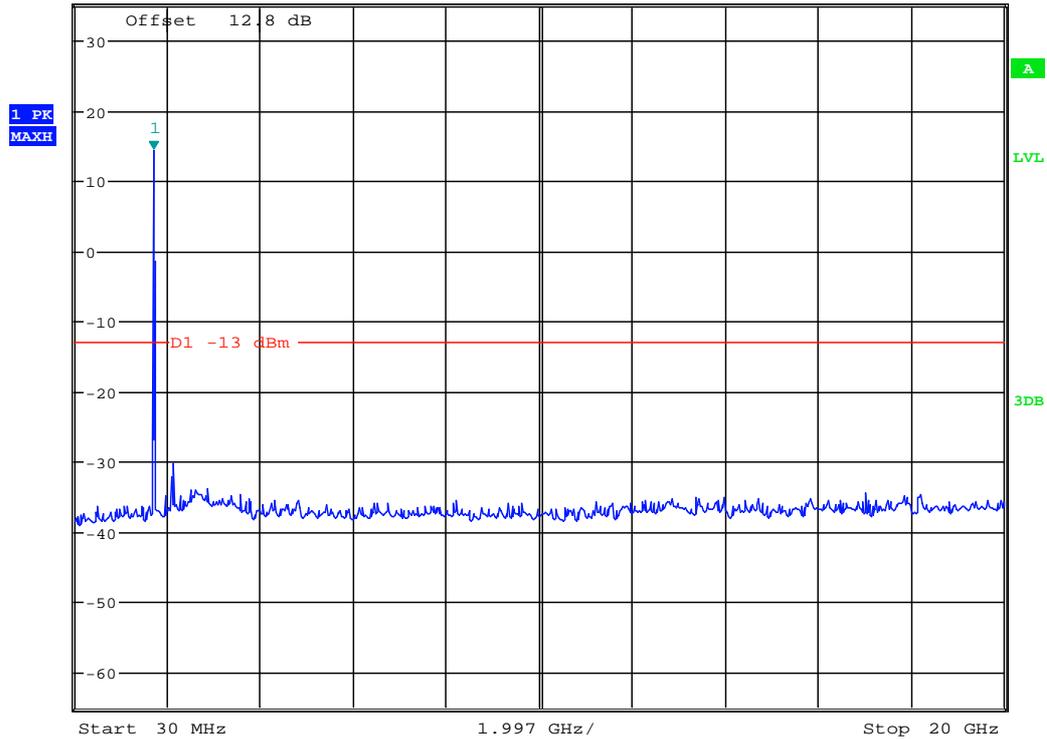
Date: 28.JUN.2012 11:21:23



full RBs



Ref 35 dBm *Att 30 dB *RBW 1 MHz Marker 1 [T1]
VBW 3 MHz 14.30 dBm
SWT 115 ms 1.726169872 GHz



Date: 28.JUN.2012 11:22:12

-----END-----



Appendix F

Radiated spurious emission

According to FCC Part 2.1053 & Part27.917 & RSS-132



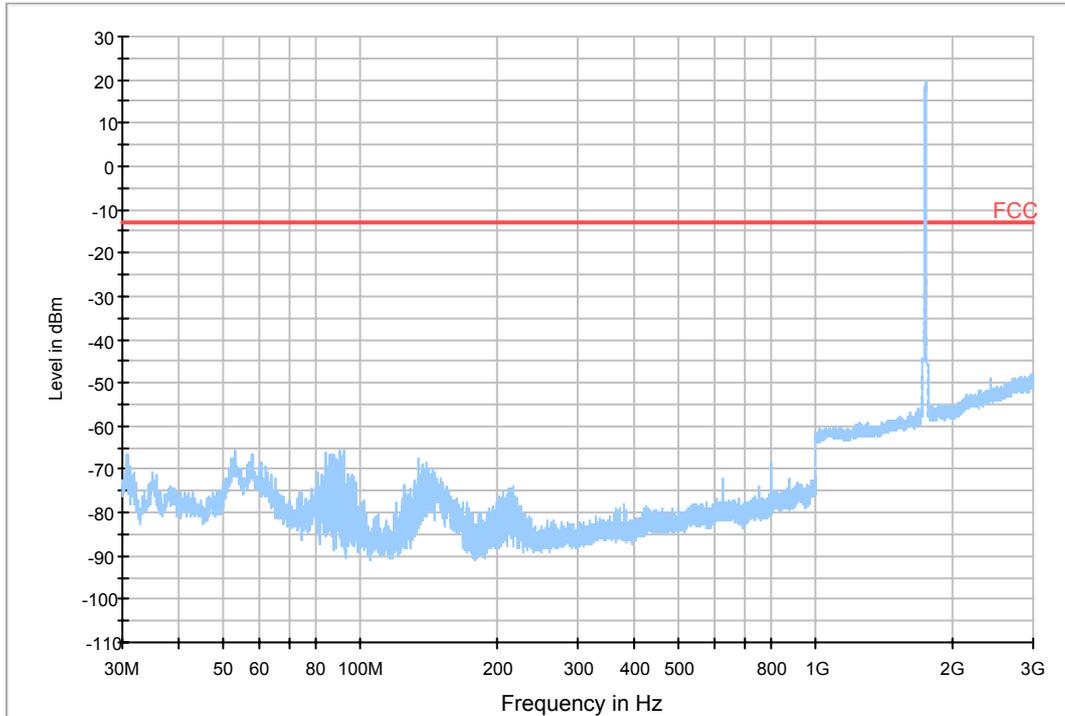
Note: 1. Simultaneous transmission was investigated and no new emissions were found.

2. RBW \geq 1MHz, VBW $>$ 3 x RBW.

WCDMA 1700

Traffic Mode (30MHz-3GHz)

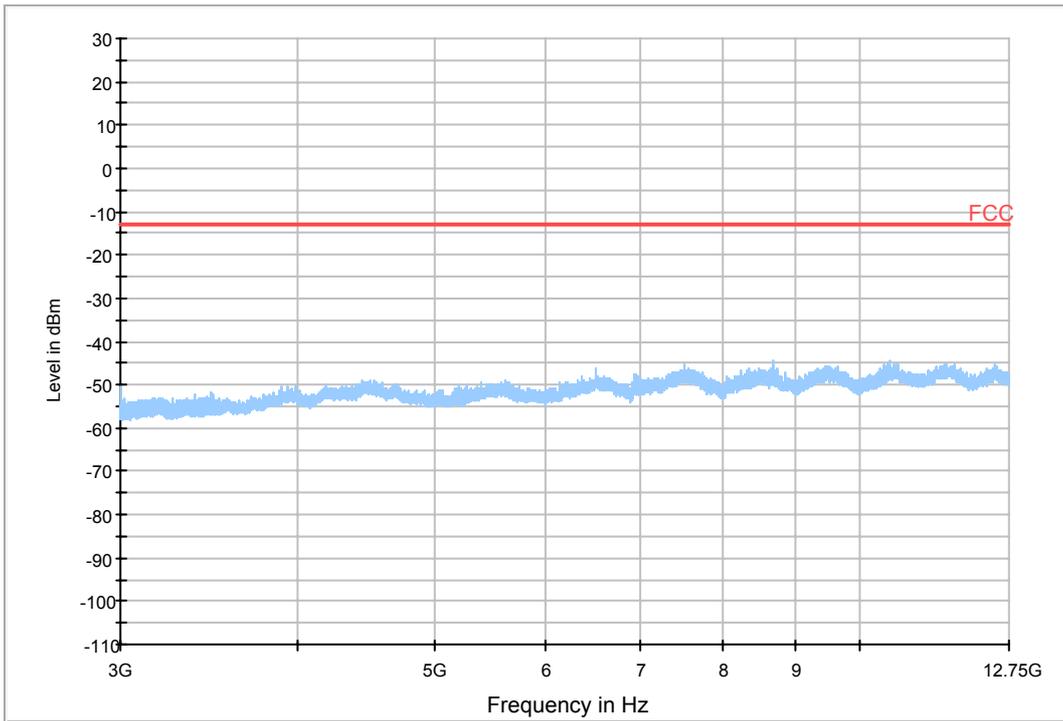
Copy of RSE - TX - UMTS BAND IV_L



Traffic Mode (3GHz-12.75GHz)



Copy of RSE - TX - UMTS BAND IV_H

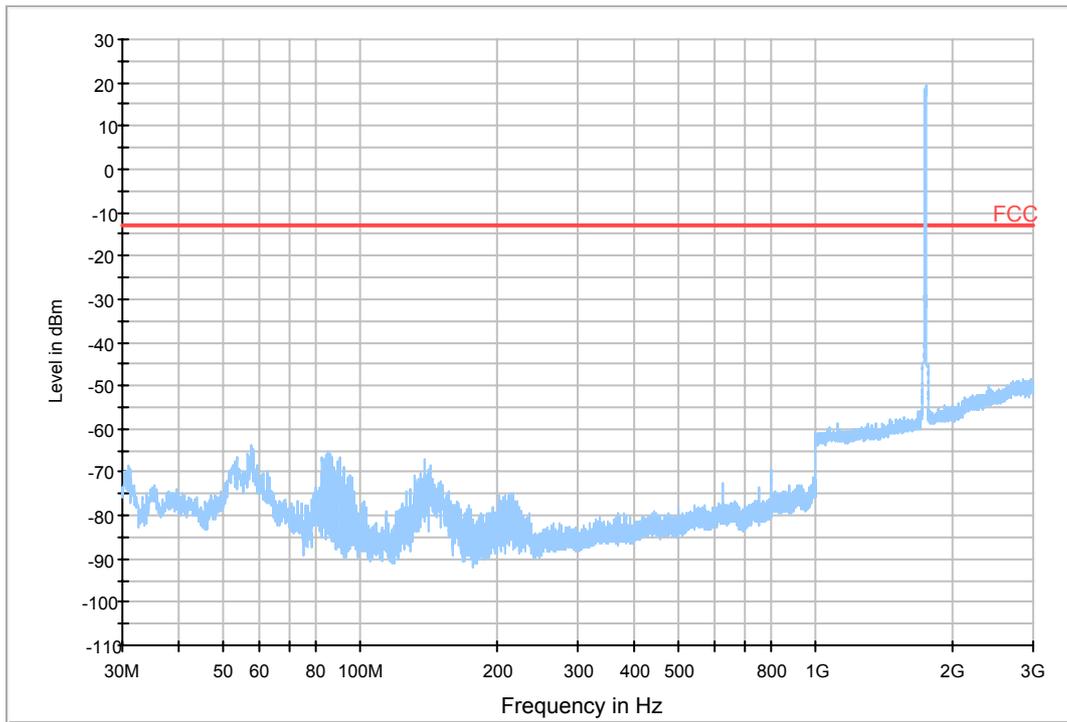




HSDPA 1700

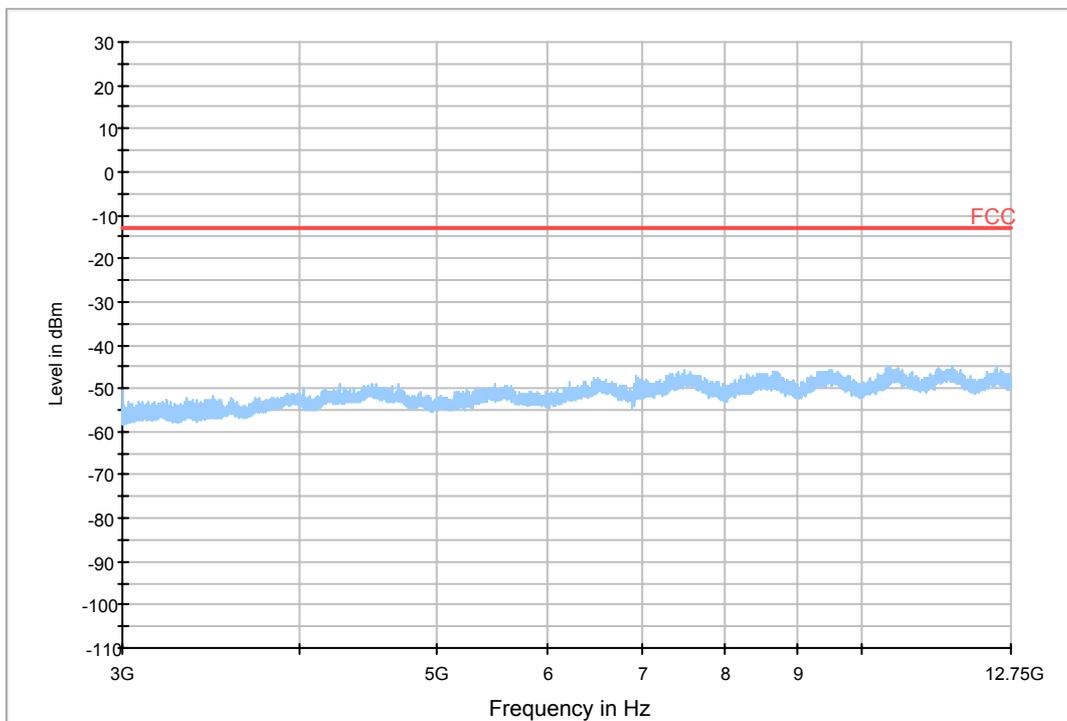
Traffic Mode (30MHz-3GHz)

Copy of RSE - TX - UMTS BAND IV_L



Traffic Mode (3GHz-12.75GHz)

Copy of RSE - TX - UMTS BAND IV_H

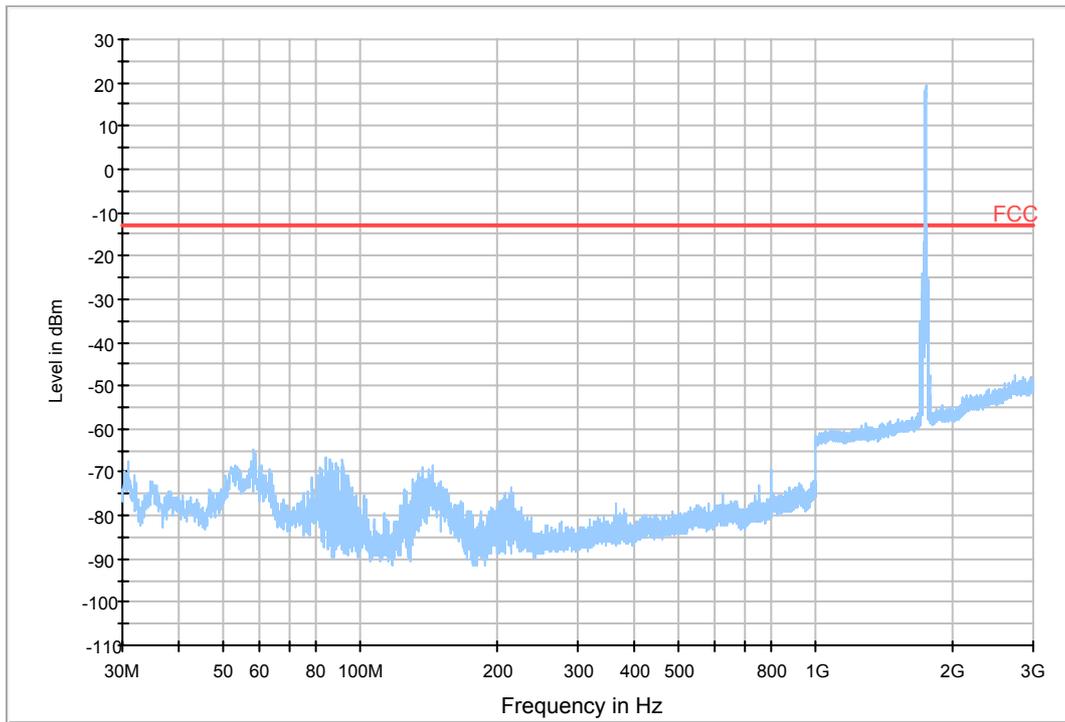




HSUPA 1700

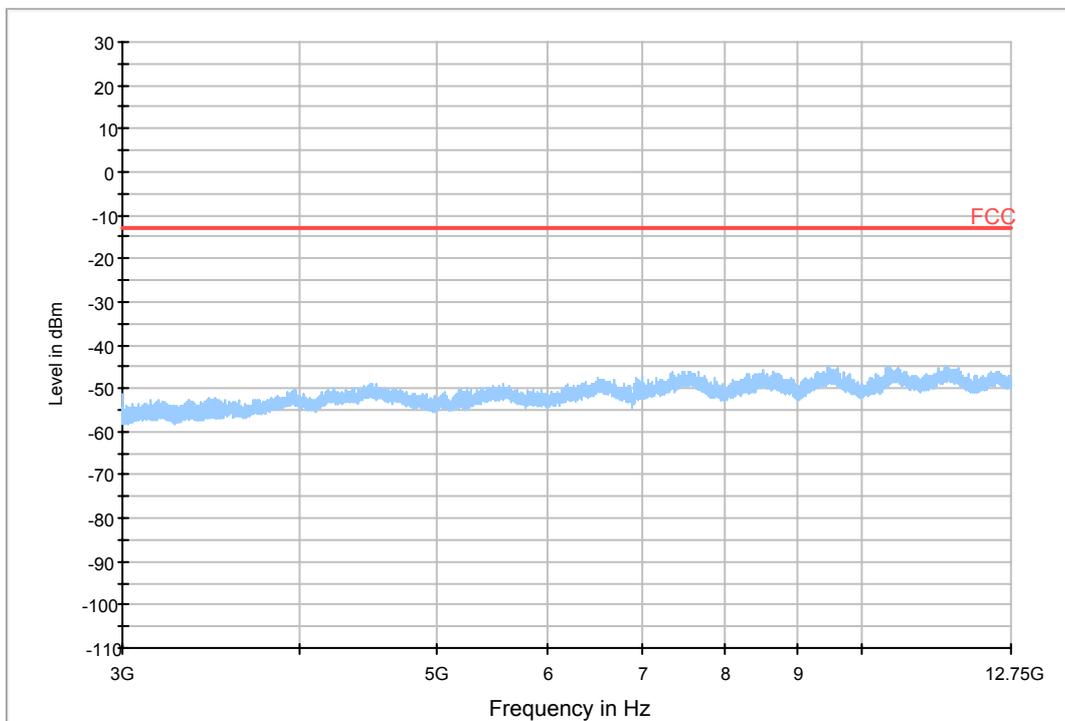
Traffic Mode (30MHz-3GHz)

Copy of RSE - TX - UMTS BAND IV_L



Traffic Mode (3GHz-12.75GHz)

Copy of RSE - TX - UMTS BAND IV_H



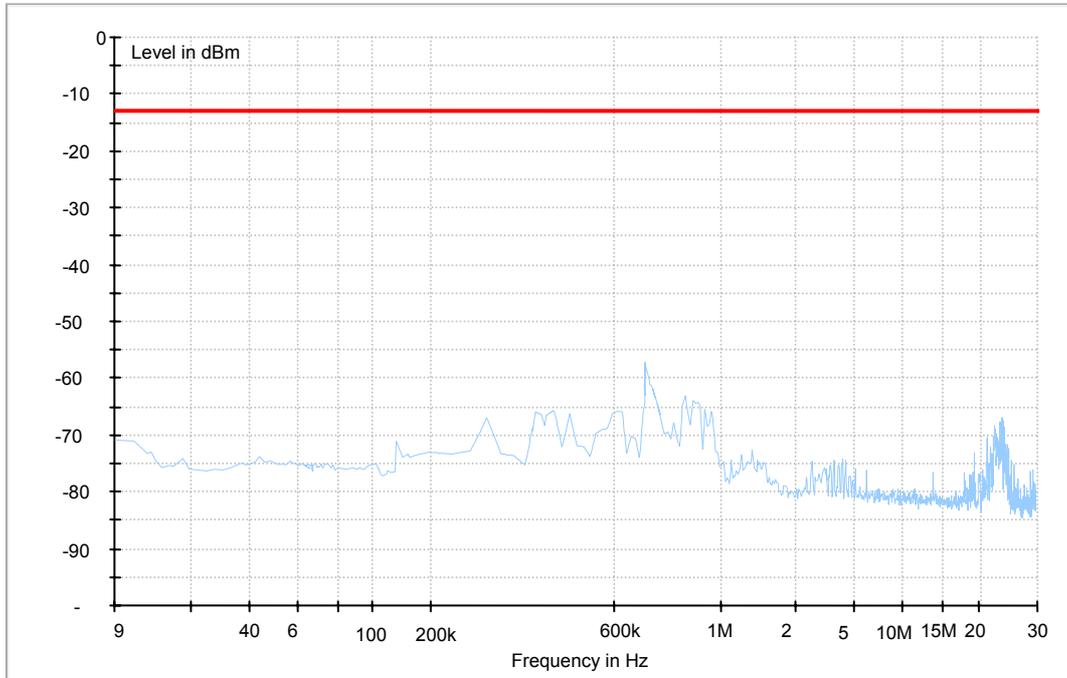


LTE BAND 4

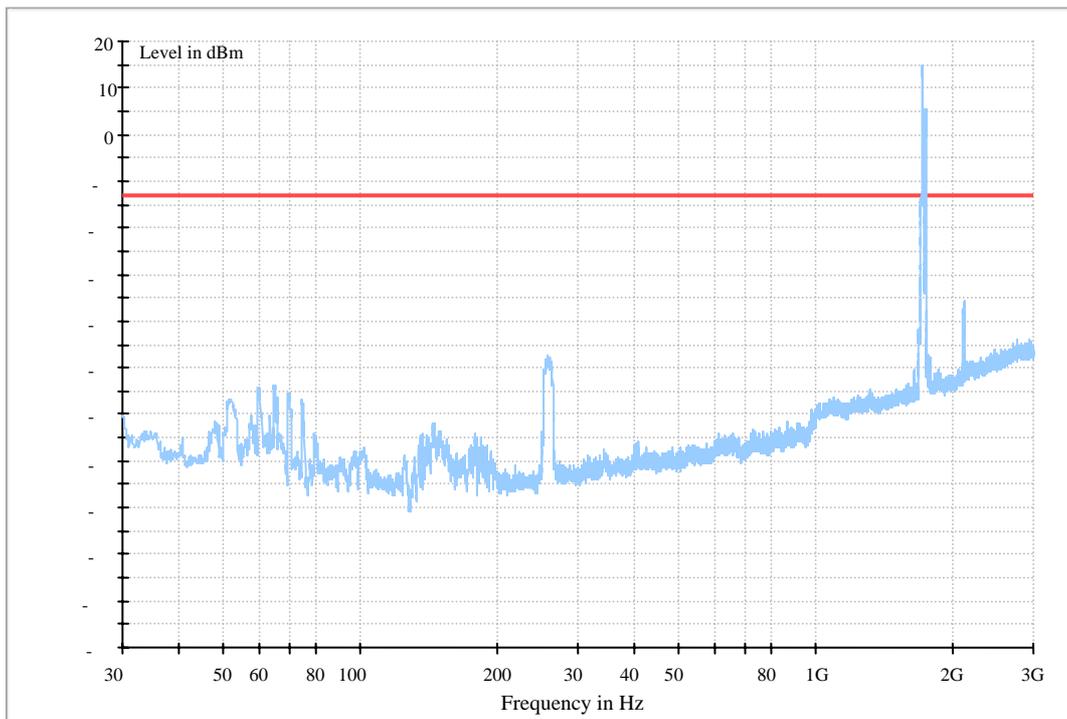
BAND 4

Bandwidth =10M

Traffic Mode (9kHz-30MHz)

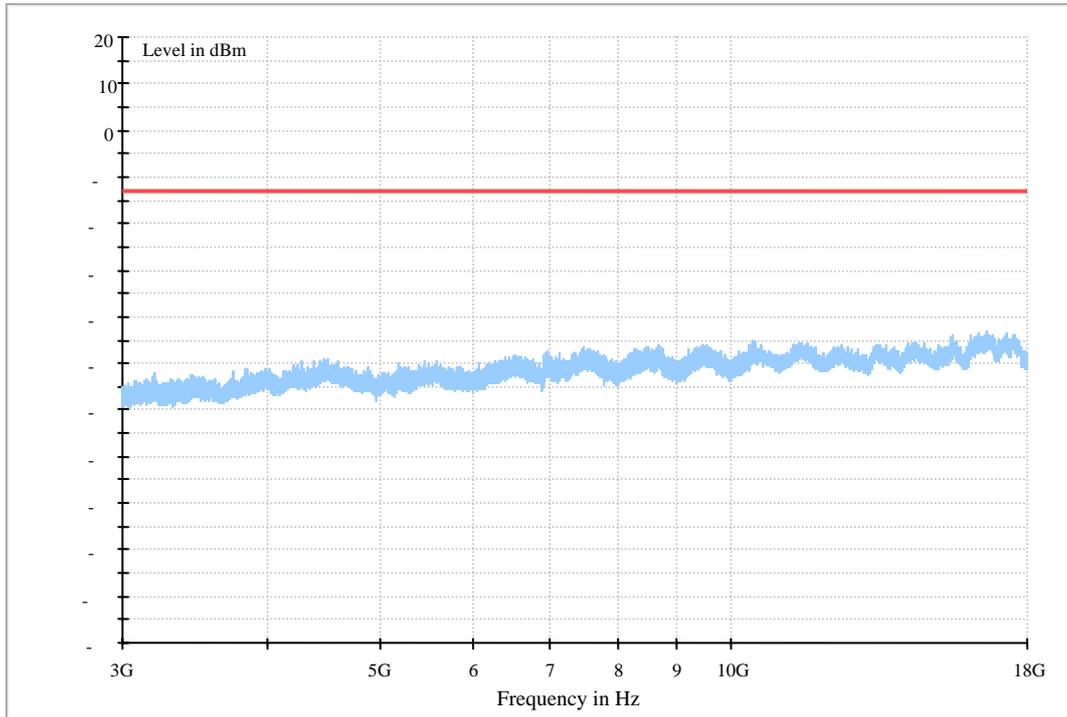


Traffic Mode (30MHz-3GHz)



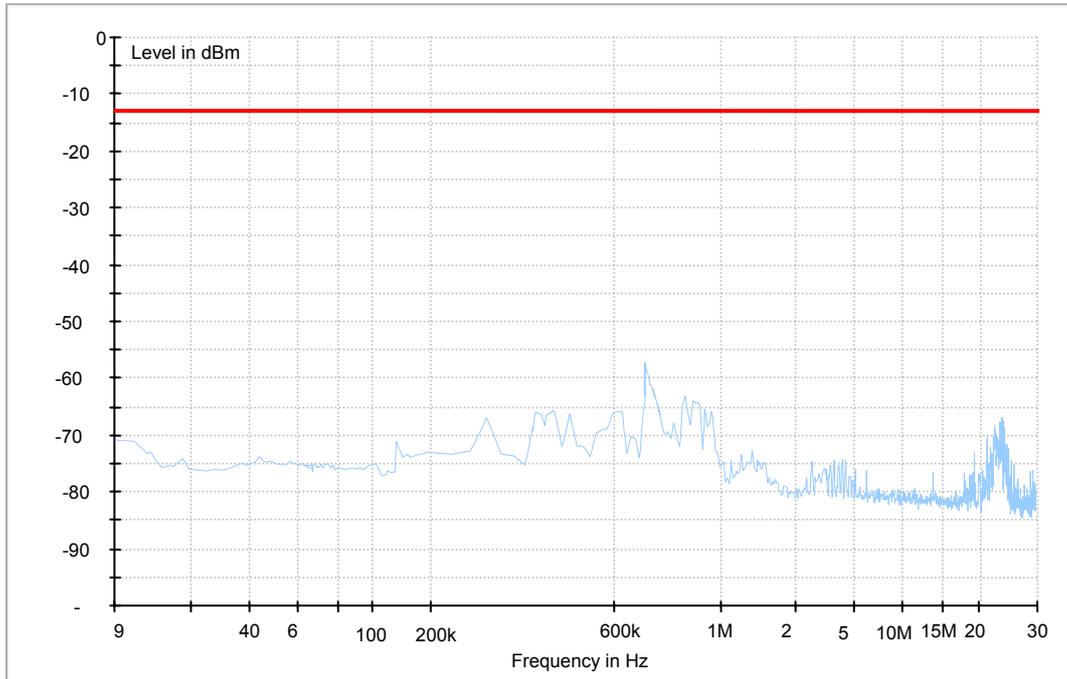


Traffic Mode (3GHz-18GHz)

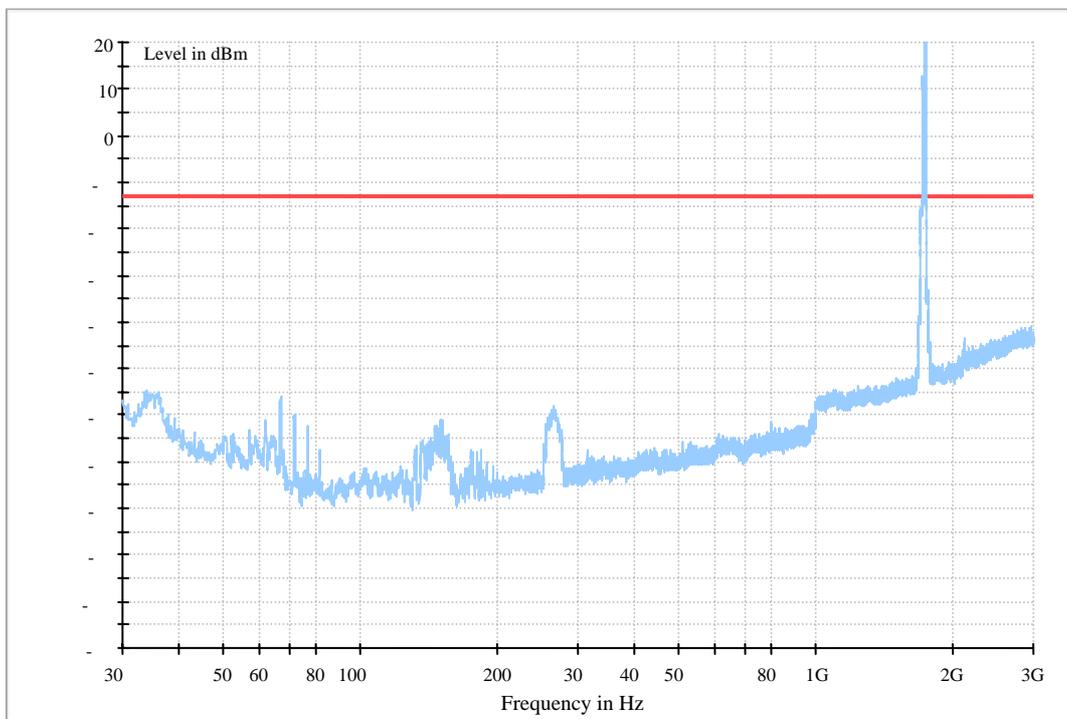


Bandwidth =20M

Traffic Mode (9kHz-30MHz)

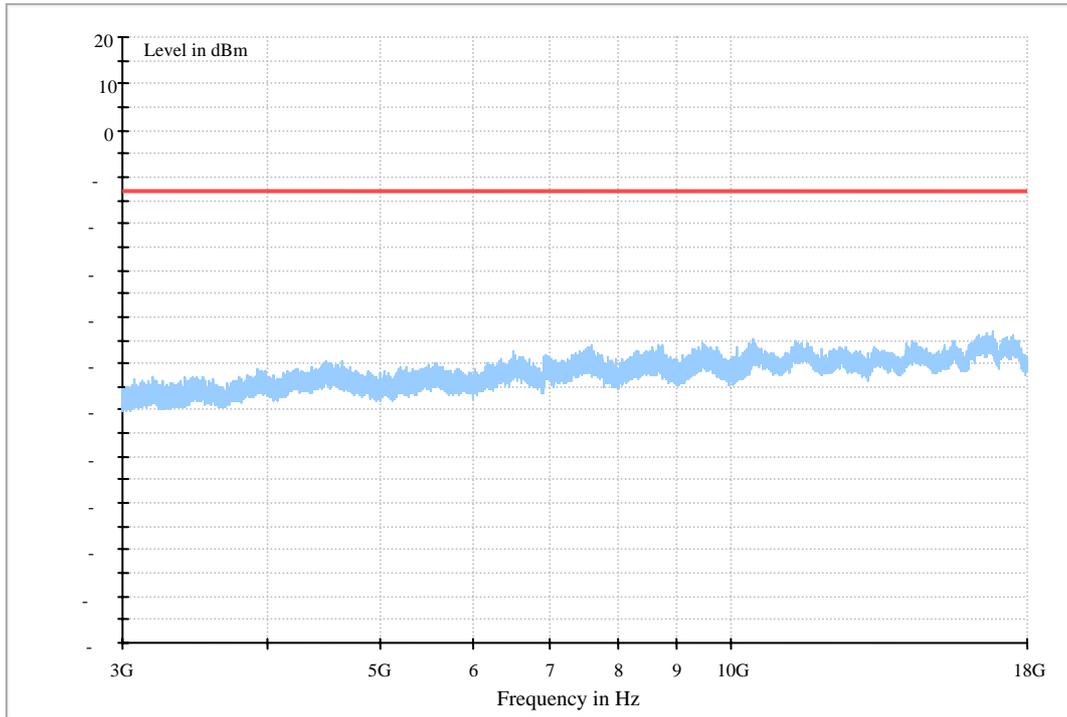


Traffic Mode (30MHz-3GHz)





Traffic Mode (3GHz-18GHz)





FCC Test Report of B593u-501
FCC ID: QISB593U-501
IC ID : 6369A-B593U501



Appendix G

Frequency Stability According to FCC Part 2.1055 & Part 27.54 & RSS-139



Frequency Error vs. Temperature:

Test Mode	RF Ch.	Volt.	Temp.	Freq. Error [Hz]	Freq. rated vs. [ppm]	Freq. 20 vs. [ppm]	Limit [ppm]	Verdict
TM 1	M	VN	-30 °C	-15	-0.0087	---	±2.5	Pass
			-20 °C	-13	-0.0075	---	±2.5	Pass
			-10 °C	17	0.00981	---	±2.5	Pass
			0 °C	-16	-0.0092	---	±2.5	Pass
			10 °C	15	0.00866	---	±2.5	Pass
			20 °C	-18	-0.0104	---	±2.5	Pass
			30 °C	-17	-0.0098	---	±2.5	Pass
			40 °C	13	0.0075	---	±2.5	Pass
			50 °C	-19	-0.011	---	±2.5	Pass
TM2(10M)	M	VN	-30 °C	12	0.00693	---	±2.5	Pass
			-20 °C	-11	-0.0063	---	±2.5	Pass
			-10 °C	22	0.0127	---	±2.5	Pass
			0 °C	17	0.00981	---	±2.5	Pass
			10 °C	-11	-0.0063	---	±2.5	Pass
			20 °C	-19	-0.011	---	±2.5	Pass
			30 °C	14	0.00808	---	±2.5	Pass
			40 °C	13	0.0075	---	±2.5	Pass
			50 °C	-12	-0.0069	---	±2.5	Pass
TM2(20M)	M	VN	-30 °C	-20	-0.0115	---	±2.5	Pass
			-20 °C	-11	-0.0063	---	±2.5	Pass
			-10 °C	17	0.00981	---	±2.5	Pass
			0 °C	16	0.00924	---	±2.5	Pass
			10 °C	16	0.00924	---	±2.5	Pass
			20 °C	17	0.00981	---	±2.5	Pass
			30 °C	23	0.01328	---	±2.5	Pass
			40 °C	22	0.0127	---	±2.5	Pass
			50 °C	-13	-0.0075	---	±2.5	Pass



Frequency Error vs. Voltage:

Test Mode	RF Ch.	Temp .	Volt.	Freq. Error [Hz]	Freq. vs. rated [ppm]	Freq. vs. 20 [ppm]	Limit [ppm]	Verdict
TM 1	M	20 °C	VL	16	0.00924	---	±2.5	Pass
			VN	-17	-0.0098	---	±2.5	Pass
			VH	14	0.00808	---	±2.5	Pass
TM2(10M)	M	20 °C	VL	17	0.00981	---	±2.5	Pass
			VN	-22	-0.0127	---	±2.5	Pass
			VH	19	0.01097	---	±2.5	Pass
TM2(20M)	M	20 °C	VL	-21	-0.0121	---	±2.5	Pass
			VN	14	0.00808	---	±2.5	Pass
			VH	15	0.00866	---	±2.5	Pass

-----The END-----



FCC Test Report of B593u-501
FCC ID: QISB593U-501
IC ID : 6369A-B593U501



Appendix H

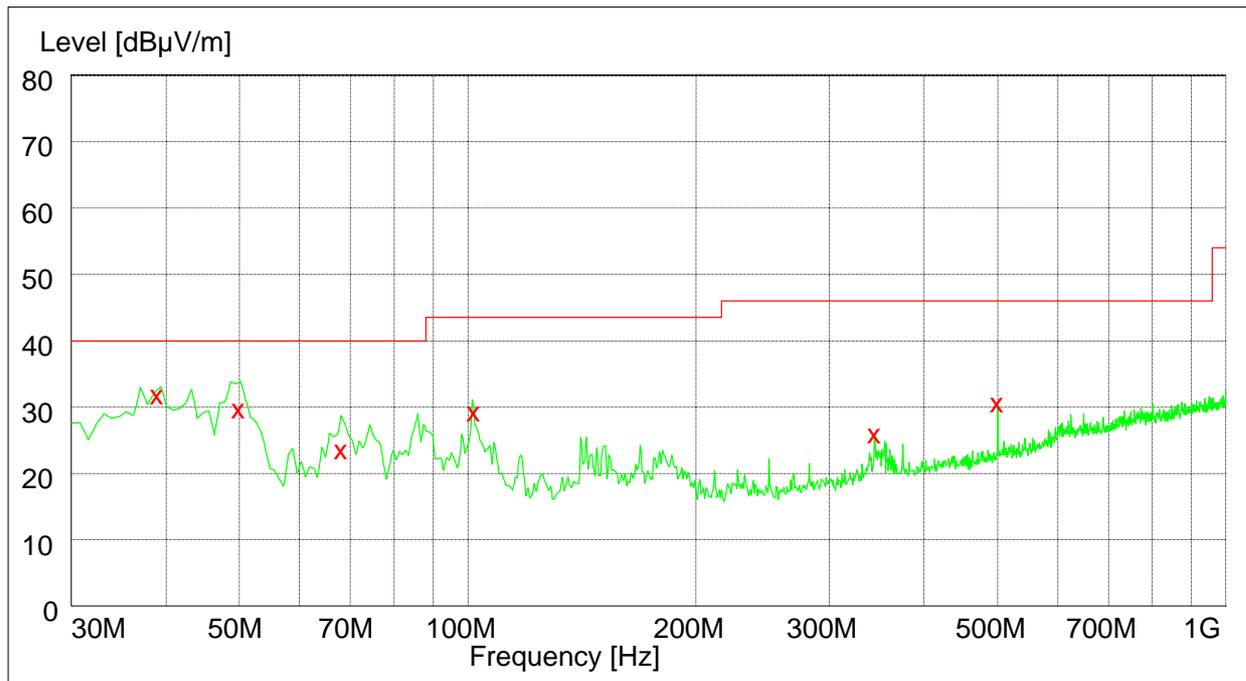
Receiver Spurious Emissions

According to RSS-132



This test was carried out in all the test modes, Here only the worst test result was shown.

30MHz-1GHz

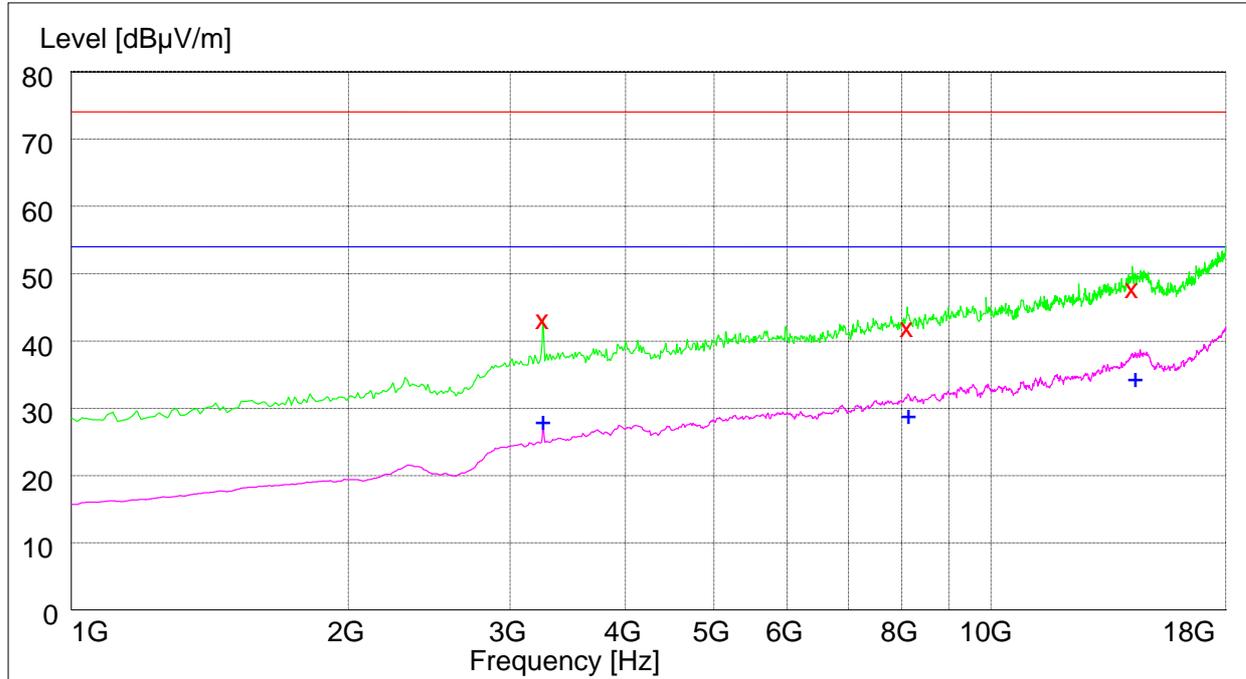


MEASUREMENT RESULT: QP Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
38.940000	32.60	15.3	40.0	7.4	104.0	352.00	VERTICAL
49.860000	30.60	15.0	40.0	9.4	100.0	101.00	VERTICAL
68.220000	24.30	11.2	40.0	15.7	100.0	19.00	VERTICAL
101.880000	30.10	13.4	43.5	13.4	131.0	95.00	VERTICAL
344.400000	26.70	16.4	46.0	19.3	105.0	332.00	HORIZONTAL
499.980000	31.40	19.2	46.0	14.6	104.0	37.00	HORIZONTAL



1GHz-18GHz



MEASUREMENT RESULT: PK Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
3256.100000	44.00	-7.2	74.0	30.0	100.0	138.00	VERTICAL
8112.800000	42.80	4.9	74.0	31.2	200.0	359.00	HORIZONTAL
14240.400000	48.60	14.1	74.0	25.4	159.0	68.00	VERTICAL

MEASUREMENT RESULT: AV Detector

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Height cm	Azimuth deg	Polarisation
3256.100000	28.90	-7.2	54.0	25.1	100.0	140.00	VERTICAL
8136.000000	29.80	5.1	54.0	24.2	200.0	300.00	VERTICAL
14345.600000	35.30	14.8	54.0	18.7	200.0	172.00	VERTICAL



Appendix G

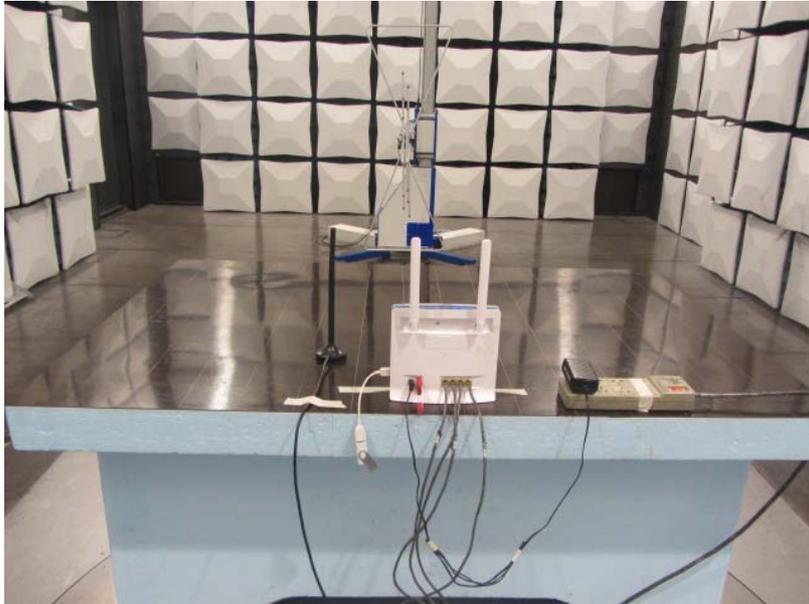
Photos of Radiated Spurious Emissions



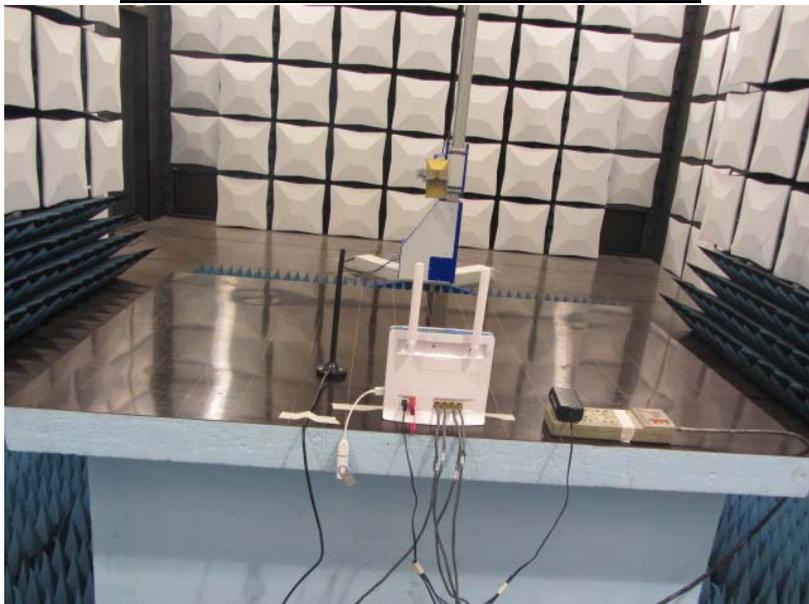
Photos of Test Setup



1 Receiver Spurious Emissions



Receiver Spurious Emissions (30MHz-1GHz)



Receiver Spurious Emissions (above 1GHz)