

# ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

## INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 22 SUBPART H, PART 24 SUBPART E and PART 27 SUBPART C & SUBPART L

OF

**Product Name:** Mobile Hotspot

**Brand Name:** N/A

**Model Name:** AirCard 754S

**Model Difference:** N/A

**FCC ID:** N7NAC754S

**Report No.:** EH/2011/40003

**Issue Date:** May. 11, 2011

**FCC Rule Part:** 2 , 22H & 24E & 27

**Prepared for:** Sierra Wireless

13811 Wireless Way Richmond, BC, Canada,  
V6V 3A4

**Prepared by:** SGS Taiwan Ltd.

Electronics & Communication Laboratory

No. 134, Wu Kung Rd., Wuku Industrial  
Zone, Taipei County, Taiwan.

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**VERIFICATION OF COMPLIANCE**

**Applicant:** Sierra Wireless  
13811 Wireless Way Richmond, BC, Canada, V6V 3A4

**Product Name:** Mobile Hotspot

**Brand Name:** N/A

**Model No.:** AirCard 754S

**Model Difference:** N/A

**FCC ID:** N7NAC754S

**File Number:** EH/2011/40003

**Date of test:** Apr. 07, 2011 ~ May. 11, 2011

**Date of EUT Received:** Apr. 07, 2011

**We hereby certify that:**

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in TIA/EIA-603-C-2004 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rule FCC PART 22 subpart H, PART 24 subpart E and PART 27.

The test results of this report relate only to the tested sample identified in this report.

**Test By:**

Jazz Huang

**Date:**

May. 11, 2011

*Jazz Huang / Engineer***Prepared By:**

Tiffany Kao

**Date:**

May. 11, 2011

*Tiffany Kao / Clerk***Approved By:**

Jim Chang

**Date:**

May. 11, 2011

*Jim Chang / Supervisor*

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## Version

Version No.	Date	Description
00	May. 11, 2011	Initial creation of document

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## 1. GENERAL PRODUCT INFORMATION

### General:

Product Name:	Mobile Hotspot	
Brand Name:	N/A	
Model Name:	AirCard 754S	
Model Difference:	N/A	
Data Cable (USB):	M/N: SSW-2012, Supplier: Xiamen Hung's Co. Ltd.	
Power Supply:	3.7 Vdc re-chargeable battery or 5.2Vdc by AC/DC power adapter	
	Battery:	M/N: W-1, Supplier: Sierra Wireless
	Adapter:	M/N: SSW-2012A, Supplier: Sierra Wireless

### GSM / WCDMA LTE:

Cellular Phone Standards Frequency Range:	GSM / GPRS 850, Class 10	824.2 MHz– 848.8 MHz	33 dBm
	EDGE 850, Class 12	824.2 MHz– 848.8 MHz	27 dBm
	GSM / GPRS 1900, Class 10	1850.2MHz – 1909.8MHz	30 dBm
	EDGE 1900, Class 12	1850.2MHz – 1909.8MHz	26 dBm
	WCDMA/HSUPA/HSDPA /HSPA+ Band II	1852.4MHz – 1907.6MHz	24 dBm
	WCDMA/HSUPA/HSDPA /HSPA+ Band V	826.4MHz - 846.6MHz	24 dBm
	5MHz BW LTE-Band 4	1712.5MHz – 1752.5MHz	23 dBm
	10MHz BW LTE-Band 4	1715MHz – 1750MHz	23 dBm
	5MHz BW LTE-Band 17	706.5MHz – 713.5MHz	23 dBm
	10MHz BW LTE-Band 17	709MHz - 711MHz	23 dBm
IMEI:	001027009999998		
Hardware Version:	N/A		
Software Version:	N/A		

This test report applies for 850 /1900 GSM / GPRS/EDGE / WCDMA / HSDPA / HSUPA and LTE Band 4 and 17.

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## Final Amplifier Voltage and Current Information:

Test Mode	DC voltage (V)	DC current (mA)
GPRS 850	3.7 Vdc	290
GPRS 1900	3.7 Vdc	280
EDGE 850	3.7 Vdc	220
EDGE 1900	3.7 Vdc	250
WCDMA B2	3.7 Vdc	650
WCDMA B5	3.7 Vdc	580
HSDPA B2	3.7 Vdc	640
HSDPA B5	3.7 Vdc	590
HSUPA B2	3.7 Vdc	650
HSUPA B5	3.7 Vdc	580
LTE B4 5M QPSK	3.7 Vdc	750
LTE B4 5M 16QAM	3.7 Vdc	700
LTE B4 10M QPSK	3.7 Vdc	770
LTE B4 10M 16QAM	3.7 Vdc	730
LTE B17 5M QPSK	3.7 Vdc	630
LTE B17 5M 16QAM	3.7 Vdc	610
LTE B17 10M QPSK	3.7 Vdc	670
LTE B17 10M 16QAM	3.7 Vdc	640

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### 1.1. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID: N7NAC754S** filing to comply with Section Part 22 subpart H, Part 24 subpart E and Part 27 subpart C & subpart L of the FCC CFR 47 Rules.

### 1.2. Test Methodology

Both conducted and radiated testing were performed according to the procedures document of TIA/EIA 603C and FCC CFR 47.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057.

The Output power Procedure of KDB941225 (SAR Measurement Procedures for 3G devices, WCDMA / HSPA / LTE) was used for EUT and Base station setting.

### 1.3. Test Facility

The measurement facilities used to collect the 3m Radiated Emission and AC power line conducted data are located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003. FCC Registration Number are: 990257 and 236194, Canada Registration Number: 4620A-4

The 10 m Open Area Test Sites located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 29, Pau-Tou-Tsuo Valley Chia-Pau Tsuen, Linkou Hsiang, Taipei county, which is constructed and calibrated to meet the CISPR 22/EN 55022 requirements. SGS Site No. 1(3 & 10 meters) and FCC Registration Number: 94644.

All equipment is calibrated externally and traceable to SI (International System of Unit).

### 1.4. Special Accessories

Not available for this EUT intended for grant.

### 1.5. Equipment Modifications

Not available for this EUT intended for grant.

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## 2. SYSTEM TEST CONFIGURATION

### 2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### 2.2. EUT Exercise

The EUT (Transmitter) was operated in the engineering mode to fix the Tx frequency which was for the purpose of the measurements.

### 2.3. Test Procedure

#### 2.3.1 AC Power Line Conducted Emissions

The EUT is placed on a turn table which is 0.8 m above ground plane. According to the requirements in Section 7 and 13 of ANSI C63.4: 2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and Average detector mode.

#### 2.3.2 Conducted Measurement at Antenna Port:

According to measurement procured TIA/EIA 603C, the EUT is placed on a turn table which is 0.8 m above ground plane. A low loss of RF cable was used to connect the antenna port of EUT to measurement equipment.

#### 2.3.3 Radiated Emissions (ERP/EIRP):

The EUT is placed on a turn table which is 80 cm above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both Horizontal and Vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna according to the requirements in Section 2 of TIA/EIA 603C.

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## 2.4. Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2010	04/18/2012
Spectrum Analyzer	Agilent	E4440A	US41160416	01/23/2010	01/22/2012
Radio Communication Analyzer	R&S	CMU200	102189	05/13/2010	05/13/2012
800 – 1000MHz Filter	Micro-Tronics	BRM13462	001	01/05/2011	01/04/2012
1800 – 2000MHz Filter	Micro-Tronics	BRM13463	001	01/05/2011	01/04/2012
Temperature Chamber	TERCHY	MHG-120LF	911009	04/14/2010	04/13/2012
Temperature Chamber	GIANT FORCE	GTH-150-40-CP-AR	MAA0512-018	02/05/2010	02/04/2012
DC Block	Agilent	BLK-18	155452	07/05/2010	07/04/2011
Attenuator	Mini-Circuit	BW-S20W5	N/A	07/05/2010	07/04/2011
Attenuator	Mini-Circuit	BW-S10W5	N/A	07/05/2010	07/04/2011
Attenuator	Mini-Circuit	BW-S6W5	N/A	07/05/2010	07/04/2011
Splitter	Agilent	11636B	N/A	07/05/2010	07/04/2011
DC Power Supply	HP	6038A	2929A-07548	06/27/2010	06/26/2011
DC Power Supply	Topward	3303D	981327	10/26/2010	10/25/2011
Power Meter	Anritsu	ML2495A	1005007	02/17/2010	02/16/2012
Power Sensor	Anritsu	MA2411B	917032	01/21/2010	01/20/2012

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**ERP, EIRP MEASUREMENT EQUIPMENT List 966 Chamber**

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	R&S	FSP 40	100034	02/12/2010	02/11/2012
Bilog Antenna	SCHWAZBECK	VULB9160	9160-3136	11/15/2010	11/14/2011
Dipole Antenna	SCHWAZBECK	VHAP	908/909	07/10/2010	07/09/2012
Dipole Antenna	SCHWAZBECK	UHAP	891/892	07/10/2010	07/09/2012
Horn antenna	SCHWAZBECK	BBHA 9120D	309/320	01/22/2010	01/21/2012
Horn antenna	SCHWAZBECK	BBHA 9120D	9120D-673	05/09/2010	05/08/2012
Signal Generator	R&S	SMR40	100210	01/22/2010	01/21/2012
Signal Generator	Agilent	E4438C	MY45093613	06/11/2010	06/10/2011
Pre-Amplifier	Agilent	8447D	1937A02834	11/30/2010	11/29/2011
Pre-Amplifier	Agilent	8449B	3008A01973	01/05/2011	01/04/2012
Attenuator	Mini-Circuit	BW-S20W5	001	07/05/2010	07/04/2011
Attenuator	Mini-Circuit	BW-S10W5	001	07/05/2010	07/04/2011
Attenuator	Mini-Circuit	BW-S6W5	001	07/05/2010	07/04/2011
Radio Communication Analyzer	R&S	CMU200	102189	05/13/2010	05/12/2012
Turn Table	HD	DT420	N/A	N.C.R	N.C.R
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R
Controller	HD	HD100	N/A	N.C.R	N.C.R
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-10M	10m	01/05/2011	01/04/2012
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	01/05/2011	01/04/2012
Filter 800-1000	Micro-Tronics	BRM13462	1	01/05/2011	01/04/2012
Filter 1800-2000	Micro-Tronics	BRM13463	1	01/05/2011	01/04/2012
3m Site	SGS	966 chamber	N/A	11/08/2010	11/09/2011

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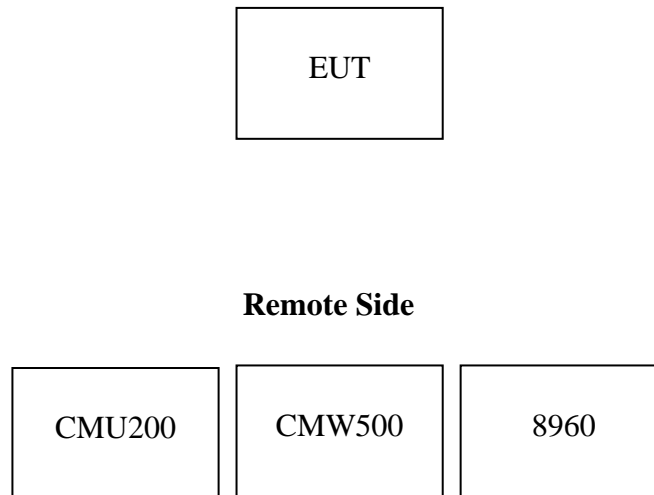
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## 2.5. Configuration of Tested System

**Fig. 2-1 Configuration of Tested System (Fixed Channel)**



**Table 2-1 Equipment Used in Tested System**

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1.	Universal Radio Communication Tester	R&S	CMU200	102189	shielded	Un-shielded
2.	Wireless communications Test set	Agilent	8960	GB47050617	shielded	Un-shielded
3.	Universal Radio Communication Tester	R&S	CMW500	12010002K50	shielded	Un-shielded

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### 3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§2.1046(a) §22.913(a)(2) §24.232(c) §27.50(c)(10) §27.50(d)(4)	RF Power Output	Compliant
§2.1046(a) §22.913(a)(2) §24.232(c) §27.50(c)(10) §27.50(d)(4)	ERP/ EIRP measurement	Compliant
§2.1049(h)	99% Occupied Bandwidth	Compliant
§2.1051 §22.917(a) §24.238(a) §27.53(g)	Out of Band Emissions at Antenna Terminals and Band Edge	Compliant
§2.1053 §22.917(a) §24.238(a) §27.53(c)(2) §27.53(g) §27.53(h)	Field Strength of Spurious Radiation	Compliant
§27.50(i)	Peak to Average Ratio	Compliant
§27.53f	Spurious emission in 1559 -1610MHz Band	N/A
§2.1055(a)(1) §22.355 §24.235 §27.54	Frequency Stability vs. Temperature	Compliant
§2.1055(d)(2) §22.355 §24.235 §27.54	Frequency Stability vs. Voltage	Compliant

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Max ERP/EIRP measurement result:

	dBm		W
GPRS 850 Band	33.30	ERP	2.138
GPRS 1900 Band	27.52	EIRP	0.565
EDGE 850 Band	29.60	ERP	0.912
EDGE 1900 Band	26.76	EIRP	0.474
WCDMA Band II	25.63	EIRP	0.366
WCDMA Band V	26.57	ERP	0.454
HSUPA Band II	24.21	EIRP	0.264
HSUPA Band V	25.01	ERP	0.317
LTE Band 4/5MMz /QPSK RB 12 Offset 6	17.62	EIRP	0.058
LTE Band 4/5MMz /16QAM RB 12 Offset	17.76	EIRP	0.060
LTE Band 4/5MMz /QPSK RB 25 Offset 0	20.20	EIRP	0.105
LTE Band 4/5MMz /16QAM RB 25 Offset	16.30	EIRP	0.043
LTE Band 4/5MMz /QPSK RB 1 Offset 24	18.99	EIRP	0.079
LTE Band 4/5MMz /16QAM RB 1 Offset	18.94	EIRP	0.078
LTE Band 4/5MMz /QPSK RB 1 Offset 0	18.49	EIRP	0.071
LTE Band 4/5MMz /16QAM RB 1 Offset 0	18.76	EIRP	0.075
LTE Band 4/10MMz /QPSK RB 25 Offset	21.19	EIRP	0.132
LTE Band 4/10MMz /16QAM RB 25	21.27	EIRP	0.134
LTE Band 4/10MMz /QPSK RB 50 Offset	19.57	EIRP	0.091
LTE Band 4/10MMz /16QAM RB 50	19.26	EIRP	0.084
LTE Band 4/10MMz /QPSK RB 1 Offset	24.25	EIRP	0.266
LTE Band 4/10MMz /16QAM RB 1 Offset	23.50	EIRP	0.224
LTE Band 4/10MMz /QPSK RB 1 Offset 0	23.33	EIRP	0.215
LTE Band 4/10MMz /16QAM RB 1 Offset	23.90	EIRP	0.245

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	dBm		W
LTE Band 17/5MMz /QPSK RB 12 Offset	20.43	ERP	0.110
LTE Band 17/5MMz /16QAM RB 12	20.09	ERP	0.102
LTE Band 17/5MMz /QPSK RB 25 Offset	17.75	ERP	0.060
LTE Band 17/5MMz /16QAM RB 25	18.09	ERP	0.064
LTE Band 17/5MMz /QPSK RB 1 Offset	20.72	ERP	0.118
LTE Band 17/5MMz /16QAM RB 1 Offset	21.02	ERP	0.126
LTE Band 17/5MMz /QPSK RB 1 Offset 0	20.80	ERP	0.120
LTE Band 17/5MMz /16QAM RB 1 Offset	21.17	ERP	0.131
LTE Band 17/10MMz /QPSK RB 25 Offset	20.60	ERP	0.115
LTE Band 17/10MMz /16QAM RB 25	20.64	ERP	0.116
LTE Band 17/10MMz /QPSK RB 50 Offset	18.27	ERP	0.067
LTE Band 17/10MMz /16QAM RB 50	18.72	ERP	0.074
LTE Band 17/10MMz /QPSK RB 1 Offset	23.43	ERP	0.220
LTE Band 17/10MMz /16QAM RB 1	23.69	ERP	0.234
LTE Band 17/10MMz /QPSK RB 1 Offset	23.36	ERP	0.217
LTE Band 17/10MMz /16QAM RB 1	23.77	ERP	0.238

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#### 4. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

EUT staying in continuous transmitting mode. Channel Low, Mid and High for each type band with rated data rate were chosen for full testing.

The field strength of spurious radiation emission was measured as EUT stand-up position(H mode)and lie down position (E1, E2 mode) for GSM/EDGE and WCDMA Band II and V with power adaptor. The worst-case of E2 position for GSM850/ GSM1900/ WCDMA Band II Band V and LTE Band 4 and 17 were reported.

In comparison among the RSE data of the all modulations (GPRS/EDGE/WCDMA/HSPA/HSPA+) we found that while the radiation is in GPRS mode, the spurious emission is found to be the worst, and therefore documenting the data of radiated spurious emission on GPRS 850/1900 mode would be representative sufficiently.

The RSE Data for all combinations have been measured, and only the results being measured close to the required limit are shown on the report by correlation.

In comparison among all CSE data of the variety of combination on LTE band 4 & 17, respectively, It's found to generate the highest emission at 5MHz and 10 MHz Transmission Band-width while RB size = 1 with 0 offset. Be aware of that only CSE data that yields the worst measurement with supported modulation scheme (QPSK, 16QAM) are shown on the corresponding section.

For Peak to Average Ratio test, all combination (RB arrangement with different modulation scheme) has been evaluated, the data with the following setting: RB number = 25; Offset = 0 for 5MHz with 16QAM, and RB number = 50; Offset =0 for 10MHz with 16QAM are shown as representative plot on the report.

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For Band edge, all combinations has been assessed and measured, only data output the emission close to limit are presented on the corresponding section of this report. The following lists the combinational setting of measurement representation as documents on the report.

Band 4		
QPSK		
	Low Channel	High Channel
5MHz	RB Size = 1 ; Offset = 0	RB Size = 1 ; Offset = 24
10MHz	RB Size = 1 ; Offset = 0	RB Size = 1 ; Offset = 49

Band 4		
16QAM		
	Low Channel	High Channel
5MHz	RB Size = 1 ; Offset = 0	RB Size = 1 ; Offset = 24
10MHz	RB Size = 1 ; Offset = 0	RB Size = 1 ; Offset = 49

Band 17		
QPSK		
	Low Channel	High Channel
5MHz	RB Size = 1 ; Offset = 0	RB Size = 1 ; Offset = 24
10MHz	RB Size = 1 ; Offset = 0	RB Size = 1 ; Offset = 49

Band 17		
16QAM		
	Low Channel	High Channel
5MHz	RB Size = 1 ; Offset = 0	RB Size = 1 ; Offset = 24
10MHz	RB Size = 1 ; Offset = 0	RB Size = 1 ; Offset = 49

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## 5. RF POWER OUTPUT MEASUREMENT

### 5.1. Standard Applicable:

According to FCC §2.1046.

FCC 22.913(a) Mobile station are limited to 7W.

FCC 24.232(c) Peak Power Measurement limited to 2W

Part 27, 50(c)(10) Portable stations are limited to 3W

Part 27, 50(d)(4) Portable stations are limited to 1W

According to IC RSS-133 §6.4

The peak e.i.r.p. for transmitters operating in the band 1850-1910 MHz shall not exceed the limits 2W which given in SRSP-510.

According to issue 2 of RSS 132, section 4.4. The transmitter output power shall not exceed the limits given in SRSP-503.

3GPP Power limitation for HSDPA and HSUPA

#### Maximum Output Powers for HSDPA

Sub-test in table C.10.1.4	Power Class 3		Power Class 4	
	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)
1	+24	+1.7/-3.7	+21	+2.7/-2.7
2	+24	+1.7/-3.7	+21	+2.7/-2.7
3	+23.5	+2.2/-3.7	+20.5	+3.2/-2.7
4	+23.5	+2.2/-3.7	+20.5	+3.2/-2.7

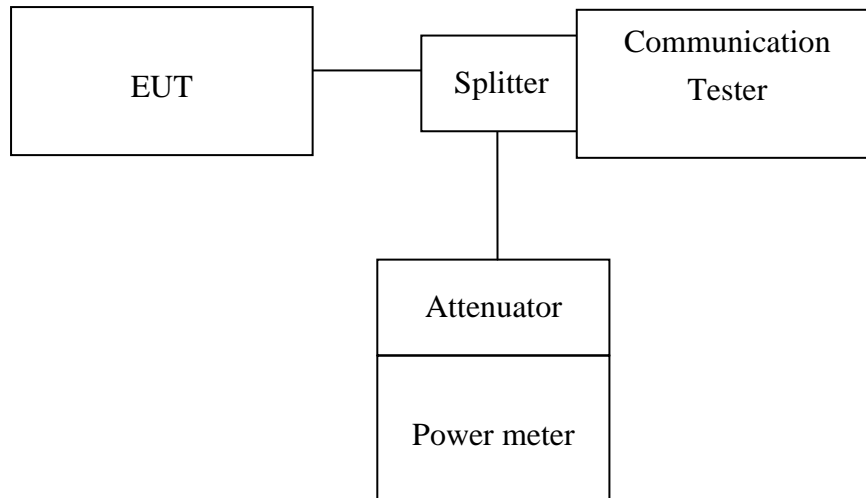
#### Maximum Output Powers for HSUPA

Sub-test in table C.11.1.3	Power Class 3		Power Class 4	
	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)
1	+24	+1.7/-6.7	+21	+2.7/-5.7
2	+22	+3.7/-5.2	+19	+4.7/-4.2
3	+23	+2.7/-5.2	+20	+3.7/-4.2
4	+22	+3.7/-5.2	+19	+4.7/-4.2
5	+24	+1.7/-6.7	+21	+2.7/-5.7

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## 5.2. Test Set-up:



*Note: Measurement setup for testing on Antenna connector*

## 5.3. Measurement Procedure:

The transmitter output was connected to a calibrated attenuator, the other end of which was connected to a power meter. Transmitter output was read off the power meter in dBm. The power output at the transmitter antenna port was determined by adding the value of the attenuator to the power meter reading. The Procedure of KDB941225 (SAR Measurement Procedures for 3G devices, WCDMA/HSPA/LTE) was used for EUT and Base station setting. RMC 12.2kps is used for this testing

## 5.4. Measurement Equipment Used:

Refer to section 2.4 in this report

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## 5.5. Measurement Result:

### 5.5.1. RF Conducted Output Power

#### 5.5.1.1.: GSM/EDGE (GMSK; 8-PSK)

#### Result:

Frequency (MHz)	CH	1 Time Slot				2 Time Slot			
		GMSK Mode		8-PSK Mode		GMSK Mode		8-PSK Mode	
		Peak Power (dBm)	AV Power (dBm)	Peak Power (dBm)	AV Power (dBm)	Peak Power (dBm)	AV Power (dBm)	Peak Power (dBm)	AV Power (dBm)
824.2	128	32.30	32.00	28.90	25.50	28.60	28.50	28.70	25.40
836.6	190	32.70	32.40	29.00	25.60	28.70	28.60	28.70	25.40
848.8	251	33.00	32.60	29.00	25.60	28.60	28.50	28.70	25.40
1850.2	512	29.60	29.50	28.50	25.20	29.00	28.80	28.10	25.00
1880.0	661	30.00	29.90	28.80	25.60	28.80	28.60	28.50	25.20
1909.8	810	29.90	29.80	28.90	25.60	28.90	28.70	28.60	25.40

Frequency (MHz)	CH	3 Time Slot		4 Time Slot	
		8-PSK Mode		8-PSK Mode	
		Peak Power (dBm)	AV Power (dBm)	Peak Power (dBm)	AV Power (dBm)
824.2	128	28.50	25.20	28.40	25.10
836.6	190	28.50	25.20	28.30	25.00
848.8	251	28.50	25.20	28.30	25.00
1850.2	512	27.60	24.40	27.60	24.30
1880.0	661	28.00	24.70	28.00	24.70
1909.8	810	28.10	24.80	28.00	24.80

offset : 850:0.3 dBm, 1900:0.6 dBm

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**5.5.1.2.: WCDMA mode**

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 V8.4.0 specification. The EUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7). RMC 12.2kps is used for this testing.

**Results:**

EUT Mode	Frequency (MHz)	CH	Peak Power (dBm)	Avg. Power (dBm)
WCDMA Band II	1852.4	9262	26.60	23.10
	1880.0	9400	26.11	22.46
	1907.6	9538	25.91	22.91

EUT Mode	Frequency (MHz)	CH	Peak Power (dBm)	Avg. Power (dBm)
WCDMA Band V	826.4	4132	26.33	22.90
	836.6	4183	26.50	23.06
	846.6	4233	26.41	23.01

offset : b2:0.6 dbm b5:0.3 dbm

Note: The results above reflect max power with all up bits.

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### 5.5.1.3.: MPR Table

#### LTE Band 4 \_5 MHz

BW (MHz)	Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Conducted power(dBm)	Target Power(dBm)	MPR Tar- get(dB)
5	QPSK	19975	1712.5	1	24	23.52	23.5	0
				1	0	23.74	23.5	0
				12	6	22.29	23.5	1
				25	0	22.20	23.5	1
		20175	1732.5	1	24	23.41	23.5	0
				1	0	23.36	23.5	0
				12	6	22.09	23.5	1
				25	0	22.01	23.5	1
		20375	1752.5	1	24	23.33	23.5	0
				1	0	23.48	23.5	0
				12	6	22.06	23.5	1
				25	0	22.04	23.5	1
5	16 QAM	19975	1712.5	1	24	22.76	23.5	1
				1	0	22.75	23.5	1
				12	6	21.11	23.5	2
				25	0	21.21	23.5	2
		20175	1732.5	1	24	22.80	23.5	1
				1	0	22.95	23.5	1
				12	6	21.03	23.5	2
				25	0	20.86	23.5	2
		20375	1752.5	1	24	22.65	23.5	1
				1	0	22.91	23.5	1
				12	6	21.04	23.5	2
				25	0	20.94	23.5	2

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# LTE Band 4 \_10 MHz

BW (MHz)	Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Conducted power(dBm)	Target Power(dBm)	MPR Target(dB)
10	QPSK	20000	1715	1	49	23.53	23.5	0
				1	0	23.75	23.5	0
				25	12	22.33	23.5	1
				50	0	22.21	23.5	1
		20175	1732.5	1	49	23.45	23.5	0
				1	0	23.37	23.5	0
				25	12	22.17	23.5	1
				50	0	22.05	23.5	1
		20350	1750	1	49	23.35	23.5	0
				1	0	23.49	23.5	0
				25	12	22.11	23.5	1
				50	0	22.08	23.5	1
10	16 QAM	2000	1715	1	49	22.83	23.5	1
				1	0	22.76	23.5	1
				25	12	21.16	23.5	2
				50	0	21.38	23.5	2
		20175	1732.5	1	49	23.10	23.5	1
				1	0	22.99	23.5	1
				25	12	21.17	23.5	2
				50	0	21.15	23.5	2
		20350	1750	1	49	22.72	23.5	1
				1	0	22.91	23.5	1
				25	12	21.15	23.5	2
				50	0	21.14	23.5	2

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# LTE Band 17 \_5 MHz

BW (MHz)	Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Conducted power(dBm)	Target Power(dBm)	MPR Target(dB)
5	QPSK	23755	706.5	1	24	23.23	23.5	0
				1	0	23.21	23.5	0
				12	6	22.10	23.5	1
				25	0	22.15	23.5	1
		23790	710	1	24	23.24	23.5	0
				1	0	23.25	23.5	0
				12	6	22.04	23.5	1
				25	0	22.17	23.5	1
		23825	713.5	1	24	23.25	23.5	0
				1	0	23.36	23.5	0
				12	6	22.06	23.5	1
				25	0	22.27	23.5	1
5	16 QAM	23755	706.5	1	24	22.77	23.5	1
				1	0	22.53	23.5	1
				12	6	21.04	23.5	2
				25	0	20.90	23.5	2
		23790	710	1	24	22.67	23.5	1
				1	0	22.55	23.5	1
				12	6	21.03	23.5	2
				25	0	21.10	23.5	2
		23825	713.5	1	24	22.99	23.5	1
				1	0	22.92	23.5	1
				12	6	21.15	23.5	2
				25	0	21.01	23.5	2

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# LTE Band 17 \_10 MHz

BW (MHz)	Modulation	Channel	Frequency (MHz)	RB Size	RB Offset	Conducted power(dBm)	Target Power(dBm)	MPR Target(dB)
10	QPSK	23780	709	1	49	23.34	23.5	0
				1	0	23.75	23.5	0
				25	12	22.26	23.5	1
				50	0	22.29	23.5	1
		23790	710	1	49	23.25	23.5	0
				1	0	23.30	23.5	0
				25	12	22.21	23.5	1
				50	0	22.19	23.5	1
		23800	711	1	49	23.31	23.5	0
				1	0	23.38	23.5	0
				25	12	22.19	23.5	1
				50	0	22.35	23.5	1
10	16 QAM	23780	709	1	49	22.78	23.5	1
				1	0	22.63	23.5	1
				25	12	21.11	23.5	2
				50	0	21.18	23.5	2
		23790	710	1	49	22.77	23.5	1
				1	0	22.68	23.5	1
				25	12	21.07	23.5	2
				50	0	21.14	23.5	2
		23800	711	1	49	23.07	23.5	1
				1	0	23.04	23.5	1
				25	12	21.21	23.5	2
				50	0	21.23	23.5	2

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**5.5.1.4.:HSDPA Release 6 mode**

The following 4 Sub-Tests were completed according to the test requirements outlined in section 5.2A of the 3GPP TS34.121-1 V8.4.0 specification. All TX RMS power requirements for Power Class 3 were met according to table 5.2AA.5 and 5.2B.5 All UE channels and power ratio's are set according to table C10.1.4 & C11.1.3 in the 3GPP TS34.121-1 V8.4.0. RMC 12.2kps is used for this testing

**HSDPA SUB-TEST Setting**Table C.10.1.4:  $\beta$  values for transmitter characteristics tests with HS-DPCCH(FOR HSDPA)

Sub-test	$\beta_c$	$\beta_a$	$\beta_a$ (SF)	$\beta_c/\beta_a$	$\beta_{HS}$ (Note 1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)	RMC (Kbps)
1	2/15	15/15	64	2/15	4/15	0.0	0.0	12.2
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	0.0	12.2
3	15/15	8/15	64	15/8	30/15	1.5	0.5	12.2
4	15/15	4/15	64	15/4	30/15	1.5	0.5	12.2

**Note:** The recommended HSDPA MPRs are implemented as per following sub-tests.

**Results:**

Mode	Sub-test	Avg. Power (dBm) Channel			Power Class 3 Limita- tion (dBm)	Comments
		9262	9400	9538		
<b>HSDPA (B2)</b>	<b>1</b>	23.39	22.72	23.18	20.3dBm – 25.7dBm	<b>Pass</b>
	<b>2</b>	22.98	22.32	22.76	20.3dBm – 25.7dBm	<b>Pass</b>
	<b>3</b>	22.91	22.27	22.65	19.8dBm – 25.7dBm	<b>Pass</b>
	<b>4</b>	22.98	22.28	22.77	19.8dBm – 25.7dBm	<b>Pass</b>

Mode	Sub-test	Avg. Power (dBm) Channel			Power Class 3 Limita- tion (dBm)	Comments
		4132	4183	4233		
<b>HSDPA (B5)</b>	<b>1</b>	23.12	23.26	23.20	20.3dBm – 25.7dBm	<b>Pass</b>
	<b>2</b>	22.83	22.90	22.88	20.3dBm – 25.7dBm	<b>Pass</b>
	<b>3</b>	22.66	22.78	22.71	19.8dBm – 25.7dBm	<b>Pass</b>
	<b>4</b>	22.71	22.82	22.77	19.8dBm – 25.7dBm	<b>Pass</b>

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### 5.5.1.5.: HSPA (HSDPA & HSUPA) Release 6 mode

The following 5 Sub-Tests were completed according to the test requirements outlined in section 5.2A of the 3GPP TS34.121-1 V8.4.0 specification. All TX RMS power requirements for Power Class 3 were met according to table 5.2AA.5 and 5.2B.5 All UE channels and power ratio's are set according to table C11.1.3 in the 3GPP TS34.121-1 V8.4.0. RMC 12.2kps is used for this testing

### HSPA SUB-TEST Setting

Table C.11.1.3:  $\beta$  values for transmitter characteristics tests with HS-DPCCH and E-DCH(FOR HSUPA)

Sub-test	$\beta_c$	$\beta_d$	$\beta_d$ (SF)	$\beta_c/\beta_d$	$\beta_{HS}$	$\beta_{ec}$	$\beta_{ed}$	$\beta_{ed}$ (SF)	$\beta_{ed}$ (Codes)	CM (dB)	MPR (dB)	AG Index	E-TFCI	RMC (Kbps)
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75	12.2
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67	12.2
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed1}: 47/15$ $\beta_{ed2}: 47/15$	4 4	2	2.0	1.0	15	92	12.2
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71	12.2
5	15/15 (Note 4)	15/15 (Note 4)	64	15/15 (Note 4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81	12.2

**Note: The recommended HSUPA MPRs are implemented as per following sub-tests.**

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# Results:

Mode	Sub-test	Avg. Power (dBm) Channel			Power Class 3 Limita- tion (dBm)	Comments
		9262	9400	9538		
HSUPA(B2)	1	23.02	22.44	22.85	18.8dBm – 25.7dBm	Pass
	2	21.07	20.51	20.89	16.8dBm – 25.7dBm	Pass
	3	22.08	21.46	21.93	17.8dBm – 25.7dBm	Pass
	4	21.20	20.56	20.93	16.8dBm – 25.7dBm	Pass
	5	22.91	22.30	22.76	18.8dBm – 25.7dBm	Pass

Mode	Sub-test	Avg. Power (dBm) Channel			Power Class 3 Limita- tion (dBm)	Comments
		4132	4183	4233		
HSUPA(B5)	1	22.86	22.94	22.93	18.8dBm – 25.7dBm	Pass
	2	20.92	21.02	20.97	16.8dBm – 25.7dBm	Pass
	3	21.90	22.00	22.01	17.8dBm – 25.7dBm	Pass
	4	20.97	21.08	21.05	16.8dBm – 25.7dBm	Pass
	5	20.97	22.77	22.82	18.8dBm – 25.7dBm	Pass

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### 5.5.2. Minimum Communications Power Measurement PCS 1900 band

PCL	0	1	2	3	4	5	6	7	8
Output power (dBm)	29.8	27.7	25.4	23.5	21.6	19.7	17.6	14.9	12.9
PCL	9	10	11	12	13	14	15		
Output power (dBm)	10.9	8.9	6.7	4.9	2.8	0.9	-0.7		

Note: The EUT output power was controlled by simulator. Set Communication Tester CMU200 PCL as above, and get the mobile phone output power reading.

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## 6. PEAK TO AVERAGE RATIO

### 6.1. Standard Applicable:

FCC 27.50(i)

Peak transmit power shall be measured over any interval of continuous transmission using instrumentation calibrated in terms of rms-equivalent voltage.

The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, etc., so as to obtain a true peak measurement for the emission in question over the full bandwidth of the channel.

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

### 6.2. Test SET-UP (Block Diagram of Configuration):

Refer to section 2.4 in this report

### 6.3. Measurement Procedure:

Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth;

Set the number of counts to a value that stabilizes the measured CCDF curve;

### 6.4. Measurement Result:

Refer to next page for plot.

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Figure 6-1: 5MHz BW LTE-Band 4(16QAM Number: 25 Offset: 0) Channel Low

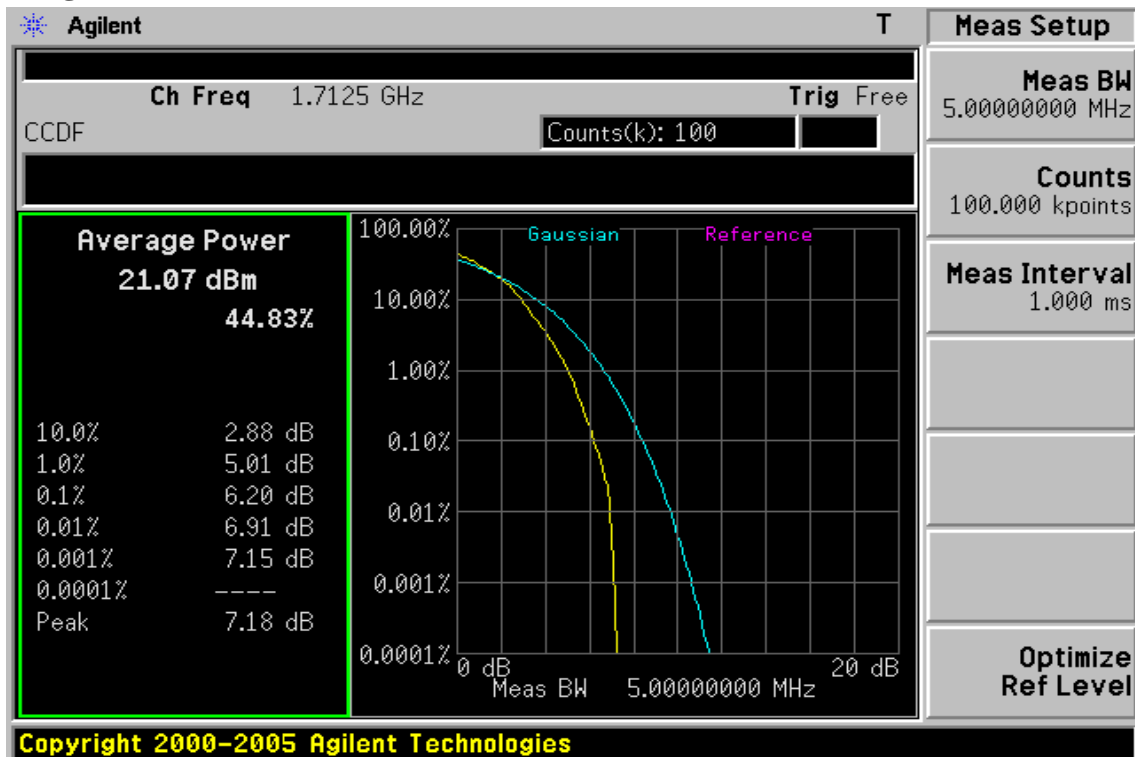
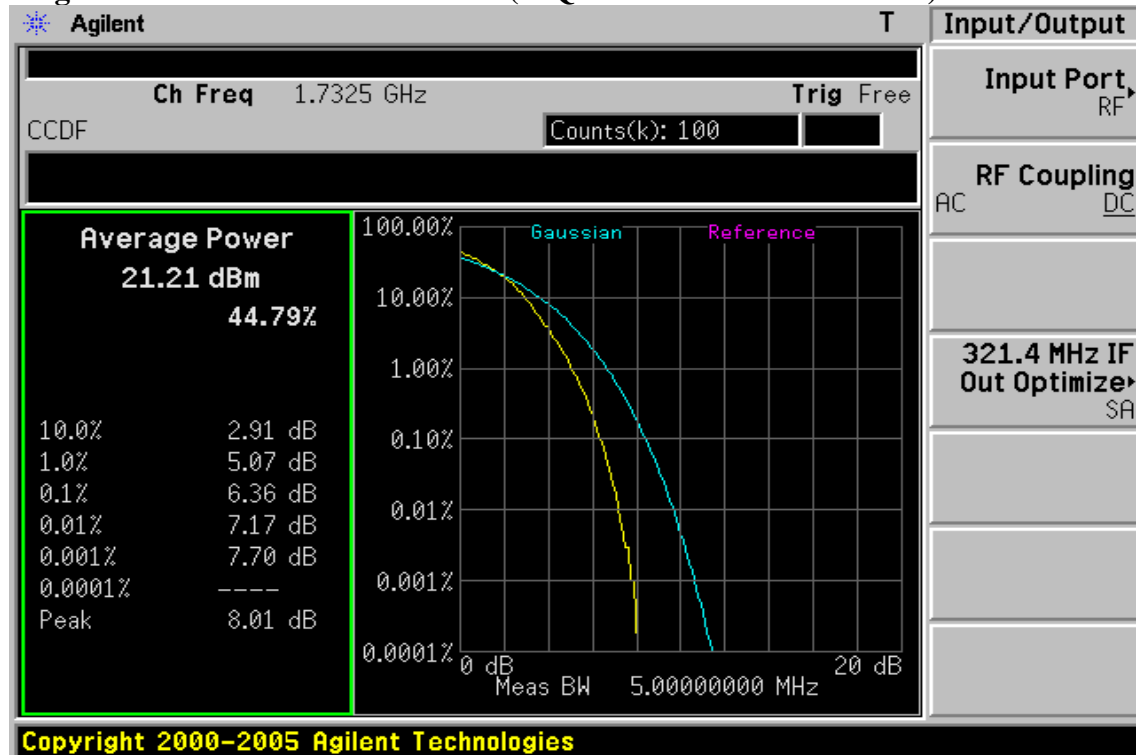


Figure 6-2: 5MHz BW LTE-Band 4(16QAM Number: 25 Offset: 0) Channel Mid



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Figure 6-3: 5MHz BW LTE-Band 4(16QAM Number: 25 Offset: 0) Channel High

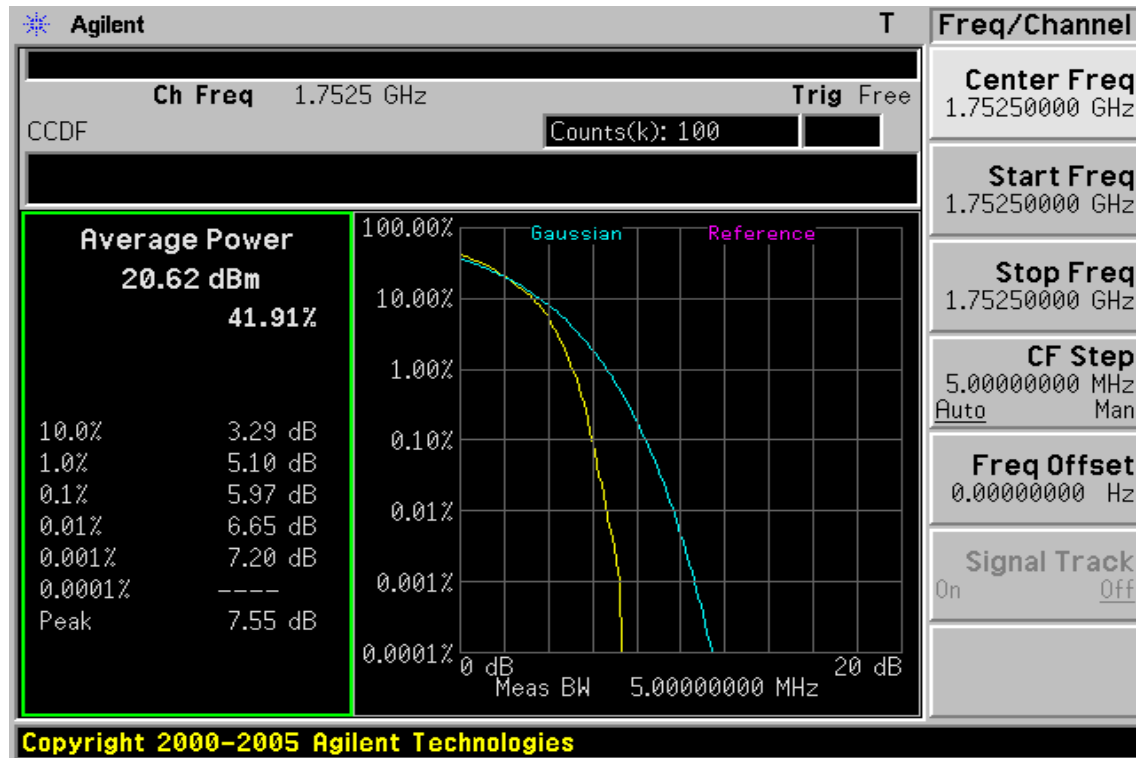


Figure 6-4: 10MHz BW LTE-Band 4(16QAM Number: 50 Offset: 0) Channel Low



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Figure 6-5: 10MHz BW LTE-Band 4(16QAM Number: 50 Offset: 0) Channel Mid

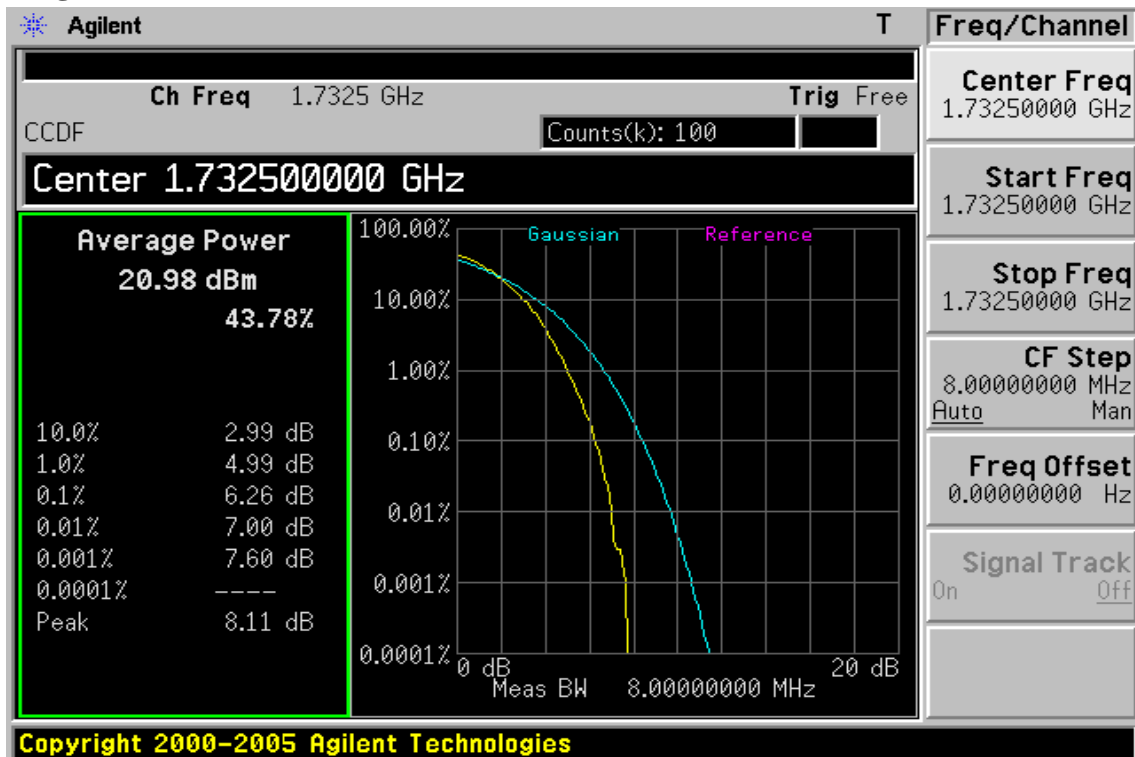
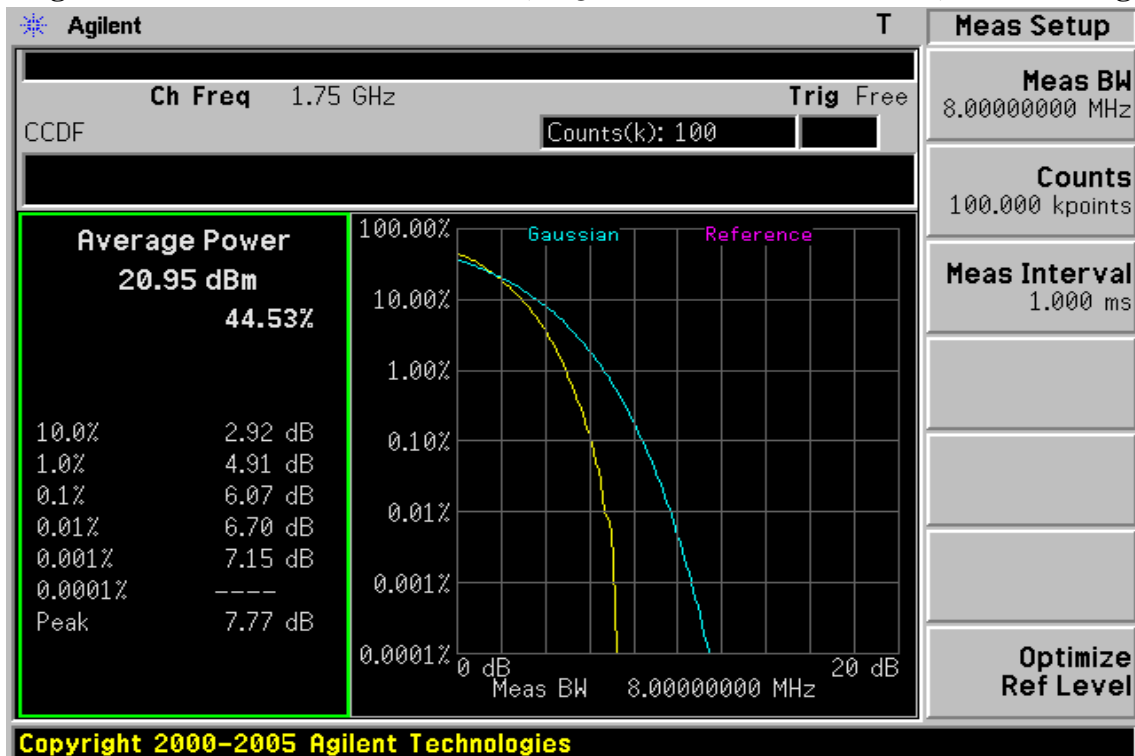


Figure 6-6: 10MHz BW LTE-Band 4(16QAM Number: 50 Offset: 0) Channel High



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Figure 6-7: 5MHz BW LTE-Band 17(16QAM Number: 25 Offset: 0) Channel Low

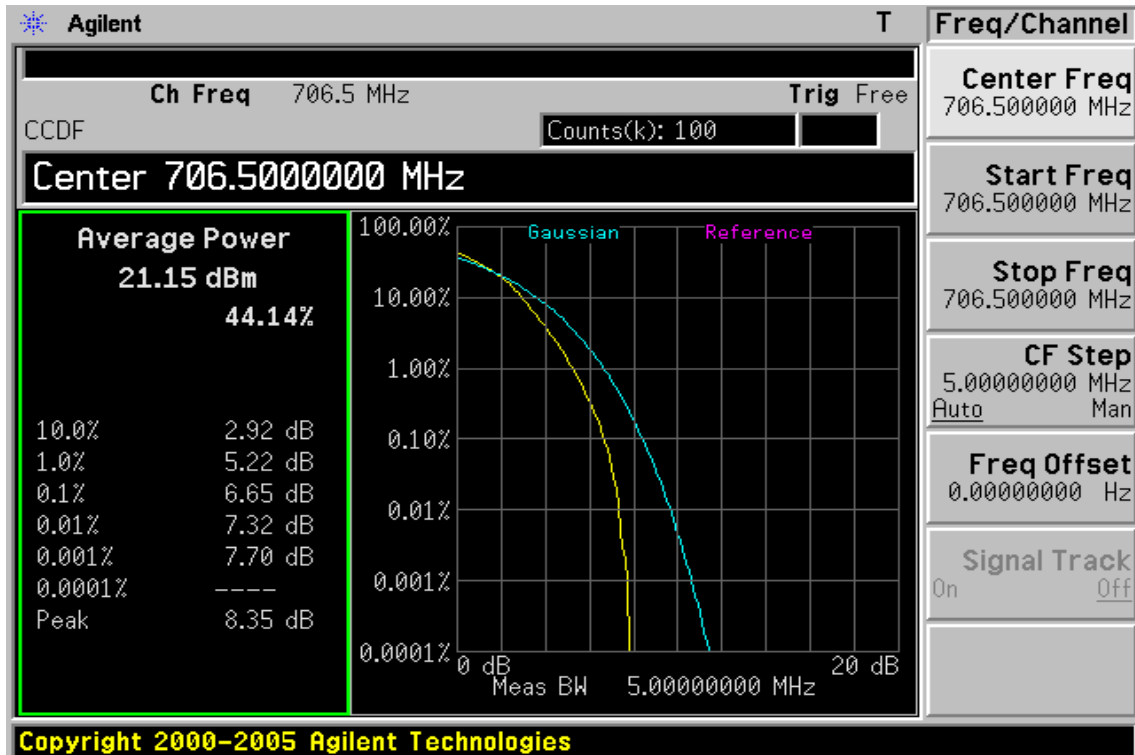
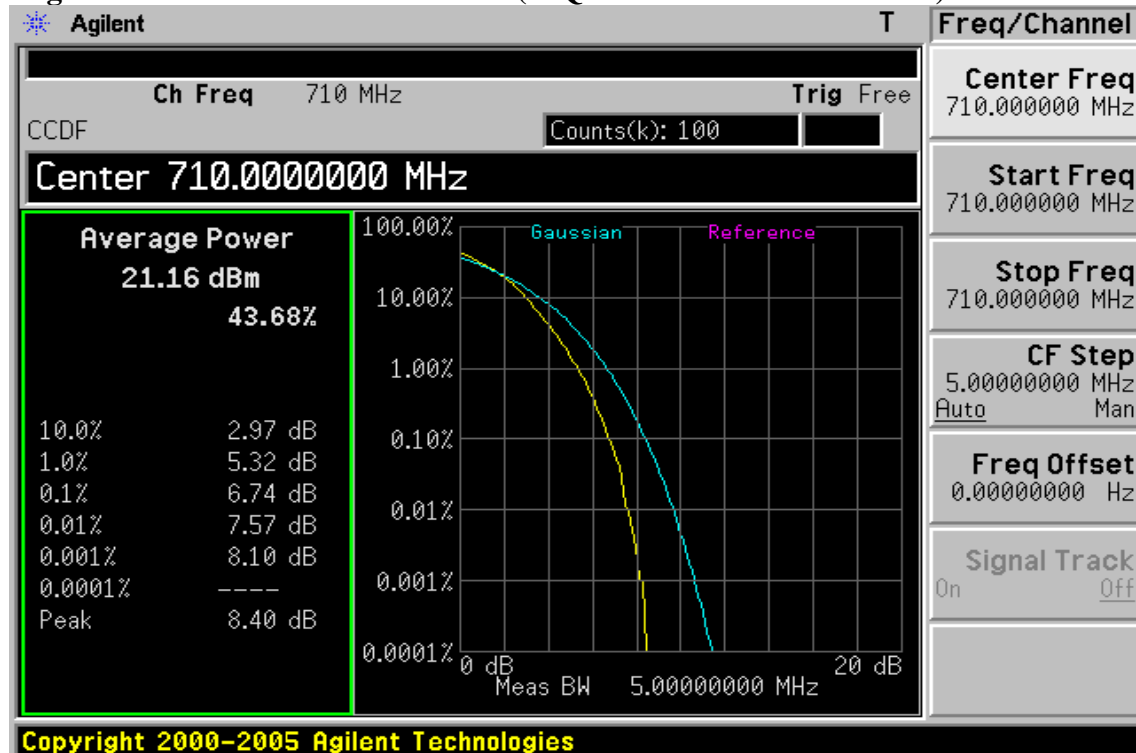


Figure 6-8: 5MHz BW LTE-Band 17(16QAM Number: 25 Offset: 0) Channel Mid



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Figure 6-9: 5MHz BW LTE-Band 17(16QAM Number: 25 Offset: 0) Channel High

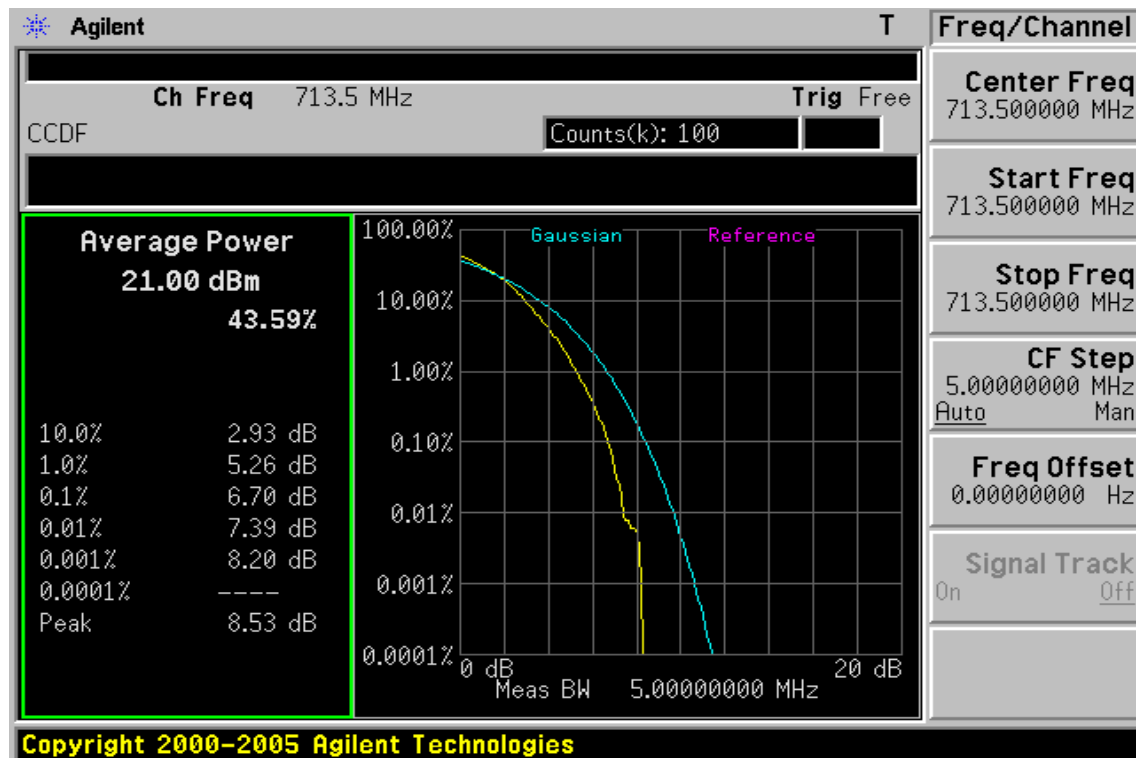
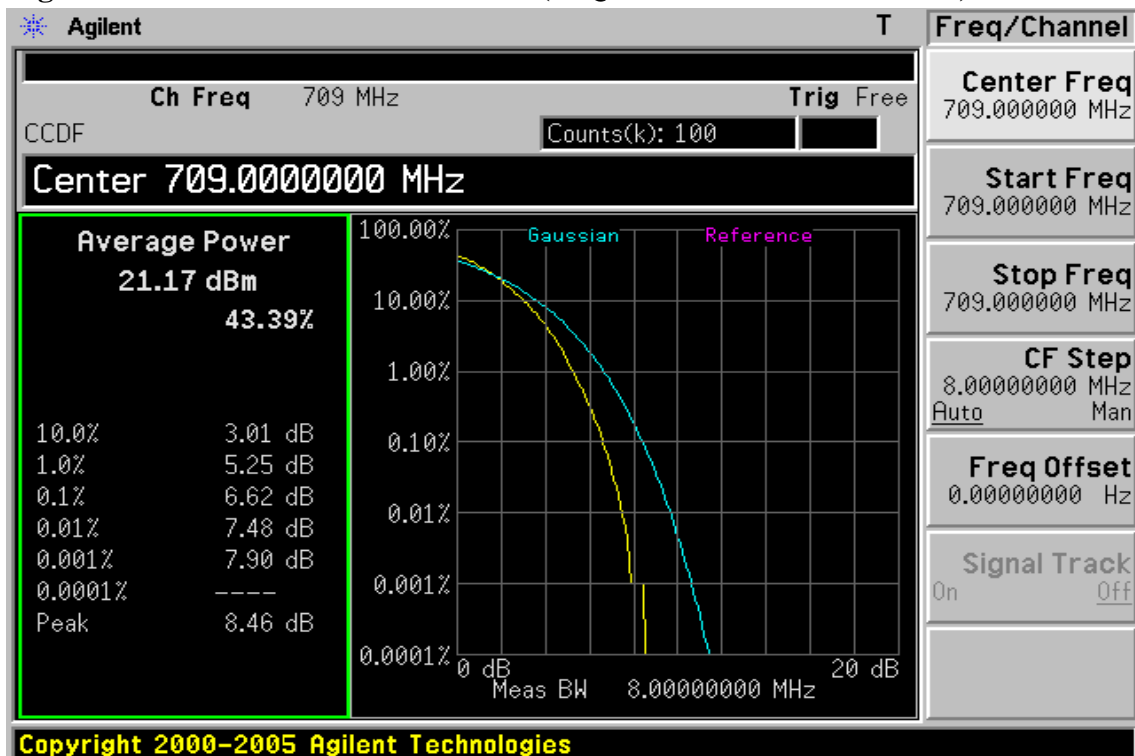


Figure 6-10: 10MHz BW LTE-Band 17(16QAM Number: 50 Offset: 0) Channel Low



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Figure 6-11: 10MHz BW LTE-Band 17(16QAM Number: 50 Offset: 0) Channel Mid

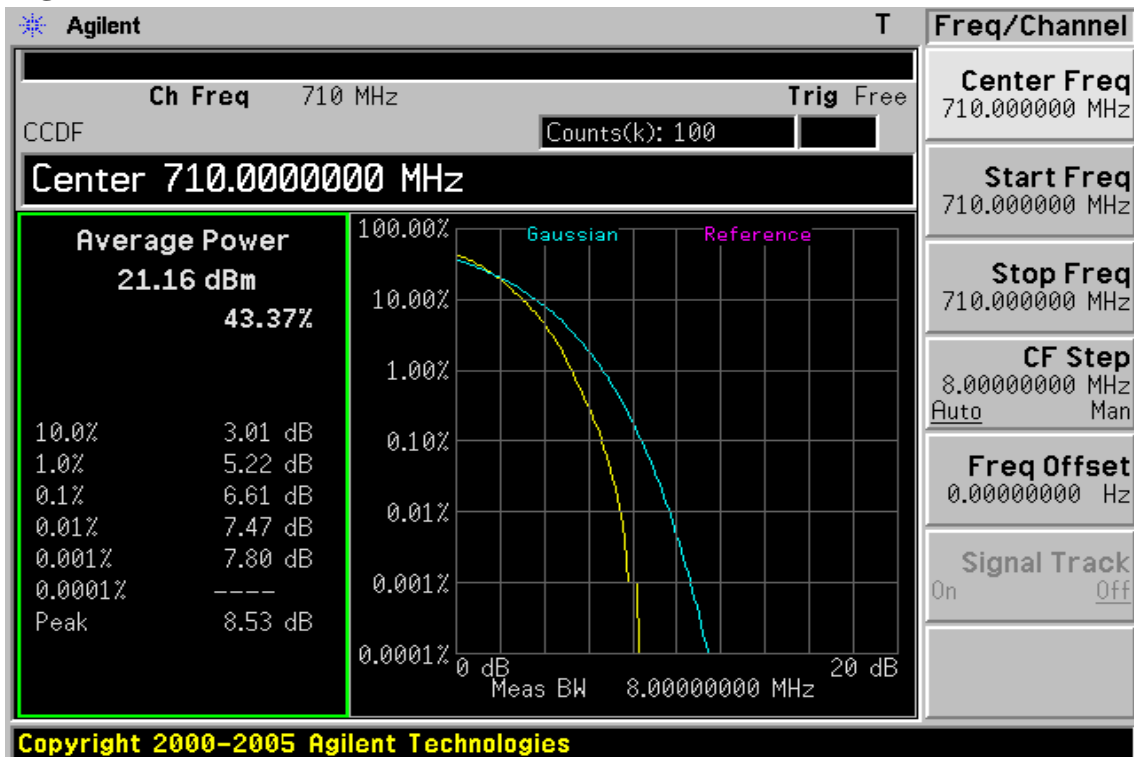
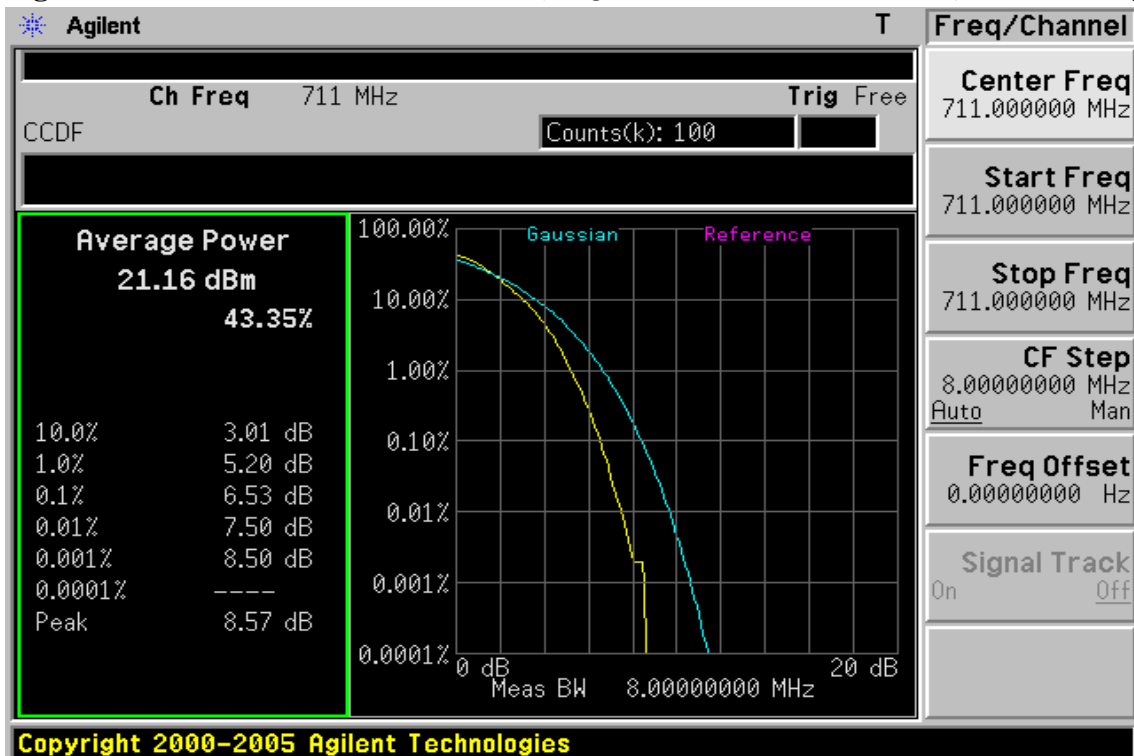


Figure 6-12: 10MHz BW LTE-Band 17(16QAM Number: 50 Offset: 0) Channel High



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## 7. ERP, EIRP MEASUREMENT

### 7.1. Standard Applicable:

According to FCC §2.1046

FCC 22.913(a) Mobile station are limited to 7W ERP.

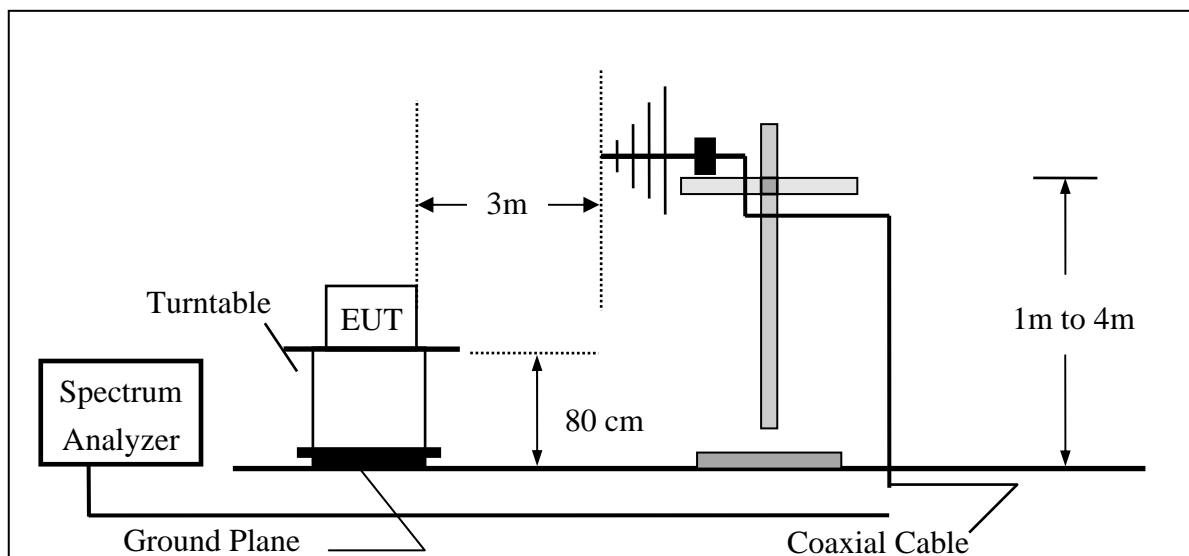
FCC 24.232(b) Mobile station are limited to 2W EIRP.

FCC 27.50(d)(2) Fixed, mobile, and portable (hand-held) stations are limited to 1W EIRP.

FCC 27.50(c)(10) Portable station are limited to 3W ERP.

### 7.2. Test SET-UP (Block Diagram of Configuration):

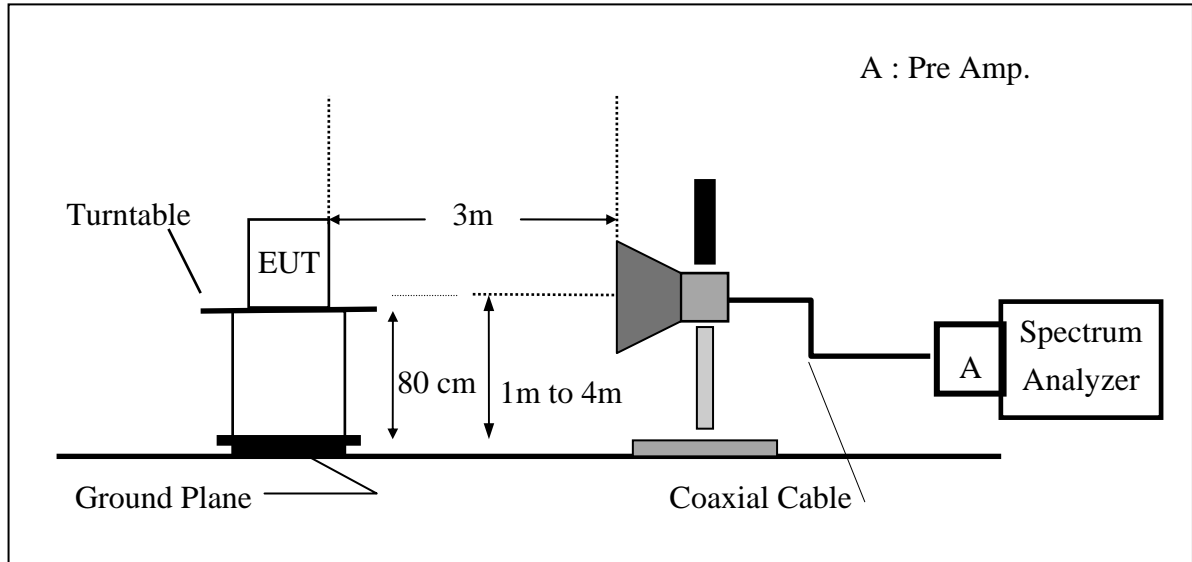
(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



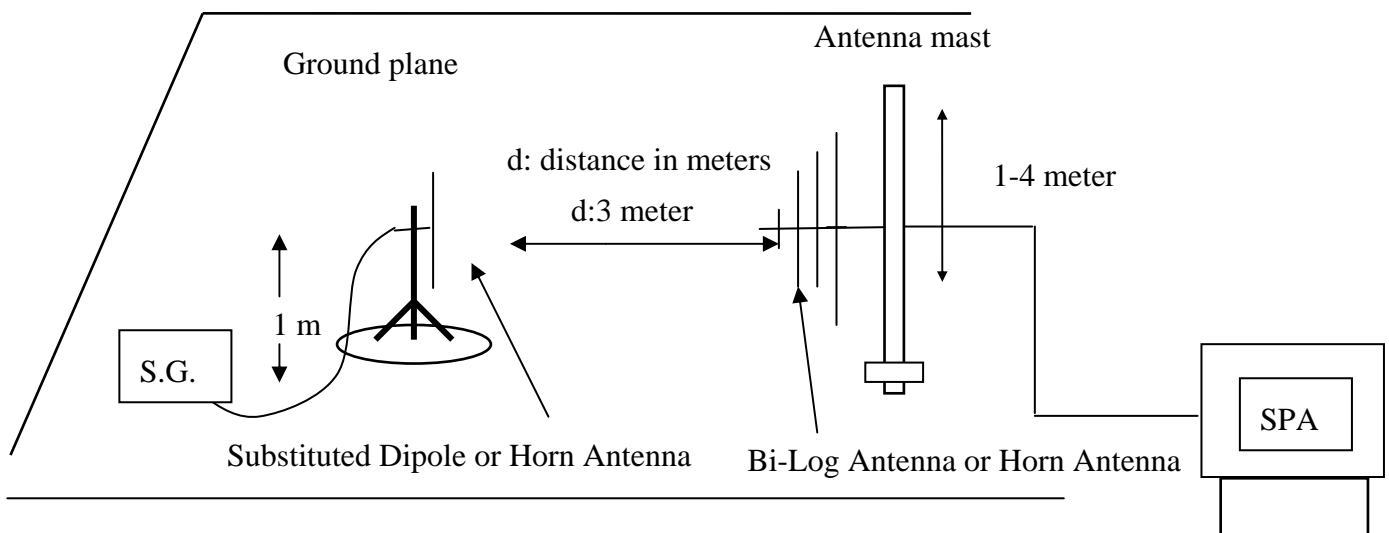
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### (B) Radiated Emission Test Set-UP Frequency Over 1 GHz



### (C) Substituted Method Test Set-UP



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### 7.3. Measurement Procedure:

The EUT was placed on a non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.

During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.

ERP in frequency band 698MHz, - 746MHz, 824.2 –848.80MHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:

EIRP in frequency band 1710-1755MHz and 1850.2 –1909.8MHz were measured using a substitution method. The EUT was replaced by a horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:

$$\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable Loss (dB)}$$

$$\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable Loss (dB)}$$

### 7.4. Measurement Equipment Used:

Refer to section 2.4 in this report

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## 7.5. Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
GSM 850	824.20	128	H	V	117.52	31.13	-7.87	3.62	19.63	38.45
				H	129.67	43.40	-7.87	3.62	31.90	38.45
			E1	V	121.37	34.98	-7.87	3.62	23.48	38.45
				H	130.09	43.82	-7.87	3.62	32.32	38.45
			E2	V	129.52	43.13	-7.87	3.62	31.63	38.45
				H	120.60	34.33	-7.87	3.62	22.83	38.45
	836.60	190	H	V	118.12	31.87	-7.88	3.65	20.34	38.45
				H	130.72	44.49	-7.88	3.65	32.96	38.45
			E1	V	120.45	34.20	-7.88	3.65	22.67	38.45
				H	131.06	44.83	-7.88	3.65	<b>33.30</b>	38.45
			E2	V	130.34	44.09	-7.88	3.65	32.56	38.45
				H	121.64	35.41	-7.88	3.65	23.88	38.45
	848.80	251	H	V	117.71	31.59	-7.88	3.68	20.03	38.45
				H	130.78	44.59	-7.88	3.68	33.03	38.45
			E1	V	120.30	34.18	-7.88	3.68	22.62	38.45
				H	130.92	44.73	-7.88	3.68	33.17	38.45
			E2	V	130.30	44.18	-7.88	3.68	32.62	38.45
				H	121.86	35.67	-7.88	3.68	24.11	38.45

### Remark :

(1) The RBW,VBW of SPA for frequency

RBW=300 KHz, VBW=1MHz

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EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
GSM 1900	1850.20	512	H	V	113.20	8.81	9.90	5.56	13.15	33.00
				H	127.30	23.12	9.90	5.56	27.46	33.00
			E1	V	127.57	23.18	9.90	5.56	<b>27.52</b>	33.00
				H	124.26	20.08	9.90	5.56	24.42	33.00
			E2	V	126.26	21.87	9.90	5.56	26.21	33.00
				H	125.61	21.43	9.90	5.84	25.49	33.00
	1880.00	661	H	V	112.57	8.21	9.99	5.61	12.59	33.00
				H	125.73	21.59	9.99	5.61	25.96	33.00
			E1	V	127.19	22.83	9.99	5.61	27.21	33.00
				H	123.42	19.28	9.99	5.61	23.65	33.00
			E2	V	125.73	21.37	9.99	5.61	25.75	33.00
				H	124.08	19.94	9.99	5.61	24.31	33.00
	1909.80	810	H	V	111.62	7.29	10.08	5.66	11.71	33.00
				H	126.11	22.00	10.08	5.66	26.42	33.00
			E1	V	126.32	21.99	10.08	5.66	26.41	33.00
				H	122.47	18.36	10.08	5.66	22.78	33.00
			E2	V	123.83	19.50	10.08	5.66	23.92	33.00
				H	123.71	19.60	10.08	5.66	24.02	33.00

### Remark :

(1) The RBW,VBW of SPA for frequency

RBW=300 KHz, VBW=1MHz

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EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
EDGE 850	824.20	128	H	V	113.70	27.31	-7.87	3.62	15.81	38.45
				H	126.49	40.22	-7.87	3.62	28.72	38.45
			E1	V	118.25	31.86	-7.87	3.62	20.36	38.45
				H	126.91	40.64	-7.87	3.62	29.14	38.45
			E2	V	126.33	39.94	-7.87	3.62	28.44	38.45
				H	117.57	31.30	-7.87	3.62	19.80	38.45
	836.60	190	H	V	114.79	28.54	-7.88	3.65	17.01	38.45
				H	127.30	41.07	-7.88	3.65	29.54	38.45
			E1	V	117.09	30.84	-7.88	3.65	19.31	38.45
				H	125.53	39.30	-7.88	3.65	27.77	38.45
			E2	V	126.67	40.42	-7.88	3.65	28.89	38.45
				H	118.20	31.97	-7.88	3.65	20.44	38.45
	848.80	251	H	V	112.98	26.86	-7.88	3.68	15.30	38.45
				H	127.35	41.16	-7.88	3.68	<b>29.60</b>	38.45
			E1	V	108.63	22.51	-7.88	3.68	10.95	38.45
				H	127.28	41.09	-7.88	3.68	29.53	38.45
			E2	V	126.67	40.55	-7.88	3.68	28.99	38.45
				H	118.31	32.12	-7.88	3.68	20.56	38.45

### Remark :

- (1) The RBW,VBW of SPA for frequency

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EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
EDGE 1900	1850.20	512	H	V	111.72	7.33	9.90	5.56	11.67	33.00
				H	126.60	22.42	9.90	5.56	<b>26.76</b>	33.00
			E1	V	123.08	18.69	9.90	5.56	23.03	33.00
				H	122.95	18.77	9.90	5.56	23.11	33.00
			E2	V	124.79	20.40	9.90	5.56	24.74	33.00
				H	123.75	19.57	9.90	5.84	23.63	33.00
	1880.00	661	H	V	111.25	6.89	9.99	5.61	11.27	33.00
				H	125.49	21.35	9.99	5.61	25.72	33.00
			E1	V	125.13	20.77	9.99	5.61	25.15	33.00
				H	121.79	17.65	9.99	5.61	22.02	33.00
			E2	V	124.38	20.02	9.99	5.61	24.40	33.00
				H	123.89	19.75	9.99	5.61	24.12	33.00
	1909.80	810	H	V	111.26	6.93	10.08	5.66	11.35	33.00
				H	125.27	21.16	10.08	5.66	25.58	33.00
			E1	V	124.31	19.98	10.08	5.66	24.40	33.00
				H	120.45	16.34	10.08	5.66	20.76	33.00
			E2	V	122.02	17.69	10.08	5.66	22.11	33.00
				H	121.76	17.65	10.08	5.66	22.07	33.00

### Remark :

(1) The RBW,VBW of SPA for frequency

RBW=300 KHz, VBW=1MHz

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WCDMA II	1852.40	9262	H	V	114.73	10.21	9.48	5.33	14.35	33.00
				H	125.37	21.04	9.48	5.33	25.18	33.00
			E1	V	124.21	19.69	9.48	5.33	23.83	33.00
				H	121.86	17.53	9.48	5.33	21.67	33.00
			E2	V	122.80	18.28	9.48	5.33	22.42	33.00
				H	124.63	20.30	9.90	5.84	24.36	33.00
	1880.00	9400	H	V	115.37	10.87	9.54	5.36	15.04	33.00
				H	125.77	21.46	9.54	5.36	<b>25.63</b>	33.00
			E1	V	123.66	19.16	9.54	5.36	23.33	33.00
				H	121.19	16.88	9.54	5.36	21.05	33.00
			E2	V	123.18	18.68	9.54	5.36	22.85	33.00
				H	125.24	20.93	9.54	5.36	25.10	33.00
	1907.60	9538	H	V	111.85	7.37	9.61	5.40	11.57	33.00
				H	121.90	17.61	9.61	5.40	21.82	33.00
			E1	V	120.50	16.02	9.61	5.40	20.22	33.00
				H	118.12	13.83	9.61	5.40	18.04	33.00
			E2	V	119.17	14.69	9.61	5.40	18.89	33.00
				H	121.37	17.08	9.61	5.40	21.29	33.00

**Remark :**

- (1) The RBW,VBW of SPA for frequency

RBW=300 KHz, VBW=1MHz

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EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
HSUPA Band II	1852.40	9262	H	V	113.55	9.03	9.48	5.33	13.17	33.00
				H	124.13	19.80	9.48	5.33	23.94	33.00
			E1	V	123.12	18.60	9.48	5.33	22.74	33.00
				H	120.82	16.49	9.48	5.33	20.63	33.00
			E2	V	120.56	16.04	9.48	5.33	20.18	33.00
				H	122.73	18.40	9.90	5.84	22.46	33.00
	1880.00	9400	H	V	113.99	9.49	9.54	5.36	13.66	33.00
				H	124.35	20.04	9.54	5.36	<b>24.21</b>	33.00
			E1	V	122.72	18.22	9.54	5.36	22.39	33.00
				H	120.22	15.91	9.54	5.36	20.08	33.00
			E2	V	120.71	16.21	9.54	5.36	20.38	33.00
				H	122.67	18.36	9.54	5.36	22.53	33.00
	1907.60	9538	H	V	111.72	7.24	9.61	5.40	11.44	33.00
				H	121.68	17.39	9.61	5.40	21.60	33.00
			E1	V	120.65	16.17	9.61	5.40	20.37	33.00
				H	118.46	14.17	9.61	5.40	18.38	33.00
			E2	V	118.46	13.98	9.61	5.40	18.18	33.00
				H	120.92	16.63	9.61	5.40	20.84	33.00

### Remark :

- (1) The RBW,VBW of SPA for frequency

RBW=300 KHz, VBW=1MHz

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WCDMA Band V	826.40	4132	H	V	102.77	16.41	-7.88	3.63	4.90	38.45
				H	124.07	37.81	-7.88	3.63	26.31	38.45
			E1	V	111.99	25.63	-7.88	3.63	14.12	38.45
				H	124.33	38.07	-7.88	3.63	26.57	38.45
			E2	V	122.74	36.38	-7.88	3.63	24.87	38.45
				H	112.14	25.88	-7.88	3.63	14.38	38.45
	836.60	4183	H	V	108.59	22.33	-7.88	3.65	10.80	38.45
				H	123.83	37.60	-7.88	3.65	26.07	38.45
			E1	V	112.45	26.19	-7.88	3.65	14.66	38.45
				H	124.40	38.17	-7.88	3.65	<b>26.64</b>	38.45
			E2	V	122.79	36.53	-7.88	3.65	25.00	38.45
				H	112.46	26.23	-7.88	3.65	14.70	38.45
	846.60	4233	H	V	109.53	23.38	-7.88	3.67	11.83	38.45
				H	123.57	37.37	-7.88	3.67	25.82	38.45
			E1	V	113.46	27.30	-7.88	3.67	15.75	38.45
				H	124.08	37.88	-7.88	3.67	26.33	38.45
			E2	V	122.41	36.26	-7.88	3.67	24.71	38.45
				H	112.82	26.62	-7.88	3.67	15.07	38.45

### Remark:

- (1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

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**Measurement Result:**

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
HSUPA Band V	826.40	4132	H	V	107.52	21.16	-7.88	3.63	9.65	38.45
				H	122.77	36.51	-7.88	3.63	25.01	38.45
			E1	V	110.26	23.90	-7.88	3.63	12.39	38.45
				H	122.75	36.49	-7.88	3.63	24.99	38.45
			E2	V	121.42	35.06	-7.88	3.63	23.55	38.45
				H	111.16	24.90	-7.88	3.63	13.40	38.45
	836.60	4183	H	V	107.20	20.94	-7.88	3.65	9.41	38.45
				H	122.34	36.11	-7.88	3.65	24.58	38.45
			E1	V	110.63	24.37	-7.88	3.65	12.84	38.45
				H	122.84	36.61	-7.88	3.65	<b>25.08</b>	38.45
			E2	V	121.34	35.08	-7.88	3.65	23.55	38.45
				H	111.02	24.79	-7.88	3.65	13.26	38.45
	846.60	4233	H	V	105.52	19.37	-7.88	3.67	7.82	38.45
				H	122.09	35.89	-7.88	3.67	24.34	38.45
			E1	V	111.68	25.52	-7.88	3.67	13.97	38.45
				H	122.37	36.17	-7.88	3.67	24.62	38.45
			E2	V	120.98	34.83	-7.88	3.67	23.28	38.45
				H	111.76	25.56	-7.88	3.67	14.01	38.45

**Remark:**

- (1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
5MHz BW LTE-Band 4 (QPSK RB 12 Offset 6)	1712.5	19975	H	V	108.73	4.21	9.48	5.33	8.36	30.00
				H	116.19	11.86	9.48	5.33	16.01	30.00
			E1	V	116.79	12.27	9.48	5.33	16.42	30.00
				H	116.18	11.85	9.48	5.33	16.00	30.00
			E2	V	117.99	13.47	9.48	5.33	<b>17.62</b>	30.00
				H	115.87	11.54	9.48	5.84	15.18	30.00
	1732.5	20175	H	V	108.88	4.38	9.54	5.37	8.55	30.00
				H	116.63	12.32	9.54	5.37	16.50	30.00
			E1	V	113.78	9.28	9.54	5.37	13.45	30.00
				H	114.18	9.87	9.54	5.37	14.05	30.00
			E2	V	115.39	10.89	9.54	5.37	15.06	30.00
				H	112.26	7.95	9.54	5.37	12.13	30.00
	1752.5	20375	H	V	107.36	2.88	9.60	5.40	7.08	30.00
				H	116.06	11.77	9.60	5.40	15.98	30.00
			E1	V	115.66	11.18	9.60	5.40	15.38	30.00
				H	116.08	11.79	9.60	5.40	16.00	30.00
			E2	V	117.57	13.09	9.60	5.40	17.29	30.00
				H	116.67	12.38	9.60	5.40	16.59	30.00

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
5MHz BW LTE-Band 4 (16QAM RB 12 Offset 6)	1712.5	19975	H	V	106.38	1.86	9.48	5.33	6.01	30.00
				H	115.45	11.12	9.48	5.33	15.27	30.00
			E1	V	116.96	12.44	9.48	5.33	16.59	30.00
				H	116.53	12.20	9.48	5.33	16.35	30.00
			E2	V	118.13	13.61	9.48	5.33	<b>17.76</b>	30.00
				H	116.12	11.79	9.48	5.84	15.43	30.00
	1732.5	20175	H	V	109.79	5.29	9.54	5.37	9.46	30.00
				H	116.70	12.39	9.54	5.37	16.57	30.00
			E1	V	111.60	7.10	9.54	5.37	11.27	30.00
				H	110.86	6.55	9.54	5.37	10.73	30.00
			E2	V	115.94	11.44	9.54	5.37	15.61	30.00
				H	113.06	8.75	9.54	5.37	12.93	30.00
	1752.5	20375	H	V	106.37	1.89	9.60	5.40	6.09	30.00
				H	115.50	11.21	9.60	5.40	15.42	30.00
			E1	V	115.40	10.92	9.60	5.40	15.12	30.00
				H	115.47	11.18	9.60	5.40	15.39	30.00
			E2	V	110.89	6.41	9.60	5.40	10.61	30.00
				H	117.10	12.81	9.60	5.40	17.02	30.00

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

Detector = Peak

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### Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
5MHz BW LTE-Band 4 (QPSK RB 25 Offset 0)	1712.5	19975	H	V	106.60	2.08	9.48	5.33	6.23	30.00
				H	114.27	9.94	9.48	5.33	14.09	30.00
			E1	V	114.93	10.41	9.48	5.33	14.56	30.00
				H	114.42	10.09	9.48	5.33	14.24	30.00
			E2	V	116.16	11.64	9.48	5.33	15.79	30.00
				H	114.01	9.68	9.48	5.84	13.32	30.00
	1732.5	20175	H	V	106.62	2.12	9.54	5.37	6.29	30.00
				H	114.64	10.33	9.54	5.37	14.51	30.00
			E1	V	113.22	8.72	9.54	5.37	12.89	30.00
				H	113.62	9.31	9.54	5.37	13.49	30.00
			E2	V	114.96	10.46	9.54	5.37	14.63	30.00
				H	111.96	7.65	9.54	5.37	11.83	30.00
	1752.5	20375	H	V	104.25	-0.23	9.60	5.40	3.97	30.00
				H	112.71	8.42	9.60	5.40	12.63	30.00
			E1	V	120.48	16.00	9.60	5.40	<b>20.20</b>	30.00
				H	113.71	9.42	9.60	5.40	13.63	30.00
			E2	V	115.89	11.41	9.60	5.40	15.61	30.00
				H	115.18	10.89	9.60	5.40	15.10	30.00

### Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
5MHz BW LTE-Band 4 (16QAM RB 25 Offset 0)	1712.5	19975	H	V	107.12	2.60	9.48	5.33	6.75	30.00
				H	115.14	10.81	9.48	5.33	14.96	30.00
			E1	V	115.50	10.98	9.48	5.33	15.13	30.00
				H	114.81	10.48	9.48	5.33	14.63	30.00
			E2	V	116.67	12.15	9.48	5.33	<b>16.30</b>	30.00
				H	114.54	10.21	9.48	5.84	13.85	30.00
	1732.5	20175	H	V	107.73	3.23	9.54	5.37	7.40	30.00
				H	115.06	10.75	9.54	5.37	14.93	30.00
			E1	V	111.89	7.39	9.54	5.37	11.56	30.00
				H	111.13	6.82	9.54	5.37	11.00	30.00
			E2	V	115.33	10.83	9.54	5.37	15.00	30.00
				H	112.70	8.39	9.54	5.37	12.57	30.00
	1752.5	20375	H	V	104.59	0.11	9.60	5.40	4.31	30.00
				H	113.41	9.12	9.60	5.40	13.33	30.00
			E1	V	113.77	9.29	9.60	5.40	13.49	30.00
				H	113.71	9.42	9.60	5.40	13.63	30.00
			E2	V	109.13	4.65	9.60	5.40	8.85	30.00
				H	115.14	10.85	9.60	5.40	15.06	30.00

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
5MHz BW LTE-Band 4 (QPSK RB 1 Offset 24)	1712.5	19975	H	V	109.86	5.34	9.48	5.33	9.49	30.00
				H	117.40	13.07	9.48	5.33	17.22	30.00
			E1	V	117.86	13.34	9.48	5.33	17.49	30.00
				H	117.33	13.00	9.48	5.33	17.15	30.00
			E2	V	119.36	14.84	9.48	5.33	<b>18.99</b>	30.00
				H	117.07	12.74	9.48	5.84	16.38	30.00
	1732.5	20175	H	V	109.87	5.37	9.54	5.37	9.54	30.00
				H	117.39	13.08	9.54	5.37	17.26	30.00
			E1	V	113.85	9.35	9.54	5.37	13.52	30.00
				H	114.46	10.15	9.54	5.37	14.33	30.00
			E2	V	114.73	10.23	9.54	5.37	14.40	30.00
				H	111.62	7.31	9.54	5.37	11.49	30.00
	1752.5	20375	H	V	106.22	1.74	9.60	5.40	5.94	30.00
				H	114.81	10.52	9.60	5.40	14.73	30.00
			E1	V	114.03	9.55	9.60	5.40	13.75	30.00
				H	112.82	8.53	9.60	5.40	12.74	30.00
			E2	V	118.86	14.38	9.60	5.40	18.58	30.00
				H	118.06	13.77	9.60	5.40	17.98	30.00

## Remark :

- (1) The RBW,VBW of SPA for frequency

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Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
5MHz BW LTE-Band 4 (16QAM RB 1 Offset 24)	1712.5	19975	H	V	109.75	5.23	9.48	5.33	9.38	30.00
				H	117.37	13.04	9.48	5.33	17.19	30.00
			E1	V	118.65	14.13	9.48	5.33	18.28	30.00
				H	117.74	13.41	9.48	5.33	17.56	30.00
			E2	V	119.31	14.79	9.48	5.33	<b>18.94</b>	30.00
				H	117.21	12.88	9.48	5.84	16.52	30.00
	1732.5	20175	H	V	110.37	5.87	9.54	5.37	10.04	30.00
				H	117.85	13.54	9.54	5.37	17.72	30.00
			E1	V	111.76	7.26	9.54	5.37	11.43	30.00
				H	111.14	6.83	9.54	5.37	11.01	30.00
			E2	V	115.66	11.16	9.54	5.37	15.33	30.00
				H	112.62	8.31	9.54	5.37	12.49	30.00
	1752.5	20375	H	V	106.39	1.91	9.60	5.40	6.11	30.00
				H	115.11	10.82	9.60	5.40	15.03	30.00
			E1	V	116.75	12.27	9.60	5.40	16.47	30.00
				H	116.71	12.42	9.60	5.40	16.63	30.00
			E2	V	112.49	8.01	9.60	5.40	12.21	30.00
				H	117.76	13.47	9.60	5.40	17.68	30.00

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

Detector = Peak

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### Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
5MHz BW LTE-Band 4 (QPSK RB 1 Offset 0)	1712.5	19975	H	V	109.54	5.02	9.48	5.33	9.17	30.00
				H	117.40	13.07	9.48	5.33	17.22	30.00
			E1	V	117.56	13.04	9.48	5.33	17.19	30.00
				H	116.97	12.64	9.48	5.33	16.79	30.00
			E2	V	118.86	14.34	9.48	5.33	<b>18.49</b>	30.00
				H	116.68	12.35	9.48	5.84	15.99	30.00
	1732.5	20175	H	V	110.37	5.87	9.54	5.37	10.04	30.00
				H	117.79	13.48	9.54	5.37	17.66	30.00
			E1	V	116.38	11.88	9.54	5.37	16.05	30.00
				H	116.16	11.85	9.54	5.37	16.03	30.00
			E2	V	114.98	10.48	9.54	5.37	14.65	30.00
				H	111.96	7.65	9.54	5.37	11.83	30.00
	1752.5	20375	H	V	106.64	2.16	9.60	5.40	6.36	30.00
				H	115.35	11.06	9.60	5.40	15.27	30.00
			E1	V	117.07	12.59	9.60	5.40	16.79	30.00
				H	116.00	11.71	9.60	5.40	15.92	30.00
			E2	V	118.61	14.13	9.60	5.40	18.33	30.00
				H	118.01	13.72	9.60	5.40	17.93	30.00

### Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
5MHz BW LTE-Band 4 (16QAM RB 1 Offset 0)	1712.5	19975	H	V	109.61	5.09	9.48	5.33	9.24	30.00
				H	117.71	13.38	9.48	5.33	17.53	30.00
			E1	V	117.84	13.32	9.48	5.33	17.47	30.00
				H	117.57	13.24	9.48	5.33	17.39	30.00
			E2	V	119.13	14.61	9.48	5.33	<b>18.76</b>	30.00
				H	116.87	12.54	9.48	5.84	16.18	30.00
	1732.5	20175	H	V	111.34	6.84	9.54	5.37	11.01	30.00
				H	118.58	14.27	9.54	5.37	18.45	30.00
			E1	V	118.14	13.64	9.54	5.37	17.81	30.00
				H	116.35	12.04	9.54	5.37	16.22	30.00
			E2	V	115.74	11.24	9.54	5.37	15.41	30.00
				H	112.83	8.52	9.54	5.37	12.70	30.00
	1752.5	20375	H	V	106.57	2.09	9.60	5.40	6.29	30.00
				H	115.54	11.25	9.60	5.40	15.46	30.00
			E1	V	116.27	11.79	9.60	5.40	15.99	30.00
				H	116.56	12.27	9.60	5.40	16.48	30.00
			E2	V	118.69	14.21	9.60	5.40	18.41	30.00
				H	118.11	13.82	9.60	5.40	18.03	30.00

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
10MHz BW LTE-Band 4 (QPSK RB 25 Offset 12)	1715	20000	H	V	110.47	2.95	9.49	5.34	10.10	30.00
				H	118.52	11.19	9.49	5.34	18.34	30.00
			E1	V	116.93	9.41	9.49	5.34	16.56	30.00
				H	116.94	9.61	9.49	5.34	16.76	30.00
			E2	V	119.86	12.34	9.49	5.34	19.49	30.00
				H	121.87	14.54	9.49	5.84	<b>21.19</b>	30.00
	1732.5	20175	H	V	110.17	2.67	9.54	5.37	9.84	30.00
				H	117.69	10.38	9.54	5.37	17.56	30.00
			E1	V	116.82	9.32	9.54	5.37	16.49	30.00
				H	116.56	9.25	9.54	5.37	16.43	30.00
			E2	V	119.68	12.18	9.54	5.37	19.35	30.00
				H	120.38	13.07	9.54	5.37	20.25	30.00
	1750	20350	H	V	108.35	0.86	9.60	5.40	8.06	30.00
				H	117.19	9.90	9.60	5.40	17.10	30.00
			E1	V	116.80	9.32	9.60	5.40	16.52	30.00
				H	116.79	9.50	9.60	5.40	16.70	30.00
			E2	V	120.07	12.59	9.60	5.40	19.79	30.00
				H	120.79	13.50	9.60	5.40	20.70	30.00

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 10MHz , VBW= 10MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
10MHz BW LTE-Band 4 (16QAM RB 25 Offset 12)	1715	20000	H	V	109.81	5.29	9.49	5.34	9.44	30.00
				H	118.04	13.71	9.49	5.34	17.86	30.00
			E1	V	117.83	13.31	9.49	5.34	17.46	30.00
				H	118.05	13.72	9.49	5.34	17.87	30.00
			E2	V	120.13	15.61	9.49	5.34	19.76	30.00
				H	121.05	16.72	9.49	5.84	20.37	30.00
	1732.5	20175	H	V	107.19	2.69	9.54	5.37	6.86	30.00
				H	119.84	15.53	9.54	5.37	19.71	30.00
			E1	V	117.20	12.70	9.54	5.37	16.87	30.00
				H	117.03	12.72	9.54	5.37	16.90	30.00
			E2	V	120.05	15.55	9.54	5.37	19.72	30.00
				H	121.40	17.09	9.54	5.37	<b>21.27</b>	30.00
	1750	20350	H	V	110.21	5.72	9.60	5.40	9.92	30.00
				H	117.42	13.13	9.60	5.40	17.33	30.00
			E1	V	117.58	13.10	9.60	5.40	17.30	30.00
				H	117.73	13.44	9.60	5.40	17.64	30.00
			E2	V	120.55	16.07	9.60	5.40	20.27	30.00
				H	120.86	16.57	9.60	5.40	20.77	30.00

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 10MHz , VBW= 10MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
10MHz BW LTE-Band 4 (QPSK RB 50 Offset 0)	1715	20000	H	V	109.23	4.71	9.49	5.34	8.86	30.00
				H	117.09	12.76	9.49	5.34	16.91	30.00
			E1	V	115.88	11.36	9.49	5.34	15.51	30.00
				H	115.45	11.12	9.49	5.34	15.27	30.00
			E2	V	118.31	13.79	9.49	5.34	17.94	30.00
				H	120.25	15.92	9.49	5.84	<b>19.57</b>	30.00
	1732.5	20175	H	V	108.41	3.91	9.54	5.37	8.08	30.00
				H	116.27	11.96	9.54	5.37	16.14	30.00
			E1	V	114.80	10.30	9.54	5.37	14.47	30.00
				H	114.42	10.11	9.54	5.37	14.29	30.00
			E2	V	117.82	13.32	9.54	5.37	17.49	30.00
				H	118.46	14.15	9.54	5.37	18.33	30.00
	1750	20350	H	V	106.61	2.13	9.60	5.40	6.33	30.00
				H	115.73	11.44	9.60	5.40	15.64	30.00
			E1	V	115.12	10.64	9.60	5.40	14.84	30.00
				H	115.28	10.99	9.60	5.40	15.19	30.00
			E2	V	118.83	14.35	9.60	5.40	18.55	30.00
				H	119.11	14.82	9.60	5.40	19.02	30.00

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 10MHz , VBW= 10MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
10MHz BW LTE-Band 4 (16QAM RB 50 Offset 0)	1715	20000	H	V	109.43	4.91	9.49	5.34	9.06	30.00
				H	117.08	12.75	9.49	5.34	16.90	30.00
			E1	V	116.56	12.04	9.49	5.34	16.19	30.00
				H	116.36	12.03	9.49	5.34	16.18	30.00
			E2	V	118.95	14.43	9.49	5.34	18.58	30.00
				H	119.25	14.92	9.49	5.84	18.57	30.00
	1732.5	20175	H	V	108.75	4.25	9.54	5.37	8.42	30.00
				H	116.32	12.01	9.54	5.37	16.19	30.00
			E1	V	115.85	11.35	9.54	5.37	15.52	30.00
				H	115.87	11.56	9.54	5.37	15.74	30.00
			E2	V	118.12	13.62	9.54	5.37	17.79	30.00
				H	119.39	15.08	9.54	5.37	<b>19.26</b>	30.00
	1750	20350	H	V	108.93	4.45	9.60	5.40	8.65	30.00
				H	116.04	11.75	9.60	5.40	15.95	30.00
			E1	V	115.77	11.29	9.60	5.40	15.49	30.00
				H	116.09	11.80	9.60	5.40	16.00	30.00
			E2	V	119.12	14.64	9.60	5.40	18.84	30.00
				H	119.35	15.06	9.60	5.40	19.26	30.00

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 10MHz , VBW= 10MHz

Detector = Peak

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### Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
10MHz BW LTE-Band 4 (QPSK RB 1 Offset 49)	1715	20000	H	V	113.24	8.72	9.49	5.34	12.87	30.00
				H	120.95	16.62	9.49	5.34	20.77	30.00
			E1	V	120.03	15.51	9.49	5.34	19.66	30.00
				H	119.93	15.60	9.49	5.34	19.75	30.00
			E2	V	122.67	18.15	9.49	5.34	22.30	30.00
				H	124.93	20.60	9.49	5.84	<b>24.25</b>	30.00
	1732.5	20175	H	V	112.81	8.31	9.54	5.37	12.48	30.00
				H	120.45	16.14	9.54	5.37	20.32	30.00
			E1	V	111.87	7.37	9.54	5.37	11.54	30.00
				H	109.27	4.96	9.54	5.37	9.14	30.00
			E2	V	103.81	-0.69	9.54	5.37	3.48	30.00
				H	118.06	13.75	9.54	5.37	17.93	30.00
	1750	20350	H	V	112.21	7.72	9.60	5.40	11.93	30.00
				H	119.72	15.43	9.60	5.40	19.63	30.00
			E1	V	117.21	12.73	9.60	5.40	16.93	30.00
				H	117.11	12.82	9.60	5.40	17.02	30.00
			E2	V	122.20	17.72	9.60	5.40	21.92	30.00
				H	122.95	18.66	9.60	5.40	22.86	30.00

### Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 10MHz , VBW= 10MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
10MHz BW LTE-Band 4 (16QAM RB 1 Offset 49)	1715	20000	H	V	114.18	9.66	9.49	5.34	13.81	30.00
				H	121.53	17.20	9.49	5.34	21.35	30.00
			E1	V	120.36	15.84	9.49	5.34	19.99	30.00
				H	120.58	16.25	9.49	5.34	20.40	30.00
			E2	V	123.00	18.48	9.49	5.34	22.63	30.00
				H	124.18	19.85	9.49	5.84	<b>23.50</b>	30.00
	1732.5	20175	H	V	113.34	8.84	9.54	5.37	13.01	30.00
				H	120.70	16.39	9.54	5.37	20.57	30.00
			E1	V	120.64	16.14	9.54	5.37	20.31	30.00
				H	119.66	15.35	9.54	5.37	19.53	30.00
			E2	V	122.49	17.99	9.54	5.37	22.16	30.00
				H	123.52	19.21	9.54	5.37	23.39	30.00
	1750	20350	H	V	112.56	8.08	9.60	5.40	12.28	30.00
				H	120.24	15.95	9.60	5.40	20.15	30.00
			E1	V	119.26	14.78	9.60	5.40	18.98	30.00
				H	118.67	14.38	9.60	5.40	18.58	30.00
			E2	V	123.50	19.02	9.60	5.40	23.22	30.00
				H	123.10	18.81	9.60	5.40	23.01	30.00

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 10MHz , VBW= 10MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
10MHz BW LTE-Band 4 (QPSK RB 1 Offset 0)	1715	20000	H	V	111.95	7.43	9.49	5.34	11.58	30.00
				H	120.68	16.35	9.49	5.34	20.50	30.00
			E1	V	119.82	15.30	9.49	5.34	19.45	30.00
				H	119.91	15.58	9.49	5.34	19.73	30.00
			E2	V	122.09	17.57	9.49	5.34	21.72	30.00
				H	123.14	18.81	9.49	5.84	22.46	30.00
	1732.5	20175	H	V	113.10	8.60	9.54	5.37	12.77	30.00
				H	120.59	16.28	9.54	5.37	20.46	30.00
			E1	V	119.80	15.30	9.54	5.37	19.47	30.00
				H	119.84	15.53	9.54	5.37	19.71	30.00
			E2	V	122.80	18.30	9.54	5.37	22.47	30.00
				H	123.46	19.15	9.54	5.37	<b>23.33</b>	30.00
	1750	20350	H	V	112.21	7.72	9.60	5.40	11.93	30.00
				H	119.45	15.16	9.60	5.40	19.36	30.00
			E1	V	117.09	12.61	9.60	5.40	16.81	30.00
				H	116.93	12.64	9.60	5.40	16.84	30.00
			E2	V	122.40	17.92	9.60	5.40	22.12	30.00
				H	123.04	18.75	9.60	5.40	22.95	30.00

## Remark :

(1) The RBW,VBW of SPA for frequency

RBW= 10MHz , VBW= 10MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
10MHz BW LTE-Band 4 (16QAM RB 1 Offset 0)	1715	20000	H	V	112.63	8.11	9.49	5.34	12.26	30.00
				H	120.91	16.58	9.49	5.34	20.73	30.00
			E1	V	120.08	15.56	9.49	5.34	19.71	30.00
				H	120.17	15.84	9.49	5.34	19.99	30.00
			E2	V	122.36	17.84	9.49	5.34	21.99	30.00
				H	123.32	18.99	9.49	5.84	22.64	30.00
	1732.5	20175	H	V	113.61	9.11	9.54	5.37	13.28	30.00
				H	120.90	16.59	9.54	5.37	20.77	30.00
			E1	V	120.57	16.07	9.54	5.37	20.24	30.00
				H	120.10	15.79	9.54	5.37	19.97	30.00
			E2	V	122.90	18.40	9.54	5.37	22.57	30.00
				H	124.03	19.72	9.54	5.37	<b>23.90</b>	30.00
	1750	20350	H	V	112.45	7.97	9.60	5.40	12.17	30.00
				H	119.52	15.23	9.60	5.40	19.43	30.00
			E1	V	118.52	14.04	9.60	5.40	18.24	30.00
				H	117.84	13.55	9.60	5.40	17.75	30.00
			E2	V	122.90	18.42	9.60	5.40	22.62	30.00
				H	123.05	18.76	9.60	5.40	22.96	30.00

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 10MHz , VBW= 10MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
5MHz BW LTE-Band 17 (QPSK RB 12 Offset 6)	706.5	23755	H	V	110.57	21.43	-7.86	3.31	10.26	34.77
				H	119.33	30.48	-7.86	3.31	19.31	34.77
			E1	V	109.99	20.85	-7.86	3.31	9.68	34.77
				H	116.07	27.22	-7.86	3.31	16.05	34.77
			E2	V	117.94	28.80	-7.86	3.31	17.63	34.77
				H	110.38	21.53	-7.86	5.84	7.83	34.77
	710	23790	H	V	110.51	21.54	-7.86	3.33	10.35	34.77
				H	118.52	29.02	-7.86	3.33	17.83	34.77
			E1	V	107.66	18.69	-7.86	3.33	7.50	34.77
				H	117.04	27.54	-7.86	3.33	16.35	34.77
			E2	V	120.59	31.62	-7.86	3.33	<b>20.43</b>	34.77
				H	112.90	23.40	-7.86	3.33	12.21	34.77
	713.5	23825	H	V	109.93	21.12	-7.86	3.34	9.92	34.77
				H	119.62	29.47	-7.86	3.34	18.26	34.77
			E1	V	110.85	22.04	-7.86	3.34	10.84	34.77
				H	117.15	27.00	-7.86	3.34	15.79	34.77
			E2	V	118.69	29.88	-7.86	3.34	18.68	34.77
				H	111.24	21.09	-7.86	3.34	9.88	34.77

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
5MHz BW LTE-Band 17 (16QAM RB 12 Offset 6)	706.5	23755	H	V	110.22	21.08	-7.86	3.31	9.91	34.77
				H	119.09	30.24	-7.86	3.31	19.07	34.77
			E1	V	110.08	20.94	-7.86	3.31	9.77	34.77
				H	116.09	27.24	-7.86	3.31	16.07	34.77
			E2	V	120.10	30.96	-7.86	3.31	19.79	34.77
				H	112.63	23.78	-7.86	5.84	10.08	34.77
	710	23790	H	V	110.72	21.75	-7.86	3.33	10.56	34.77
				H	118.87	29.37	-7.86	3.33	18.18	34.77
			E1	V	107.87	18.90	-7.86	3.33	7.71	34.77
				H	116.86	27.36	-7.86	3.33	16.17	34.77
			E2	V	120.25	31.28	-7.86	3.33	<b>20.09</b>	34.77
				H	112.53	23.03	-7.86	3.33	11.84	34.77
	713.5	23825	H	V	109.81	21.00	-7.86	3.34	9.80	34.77
				H	119.05	28.90	-7.86	3.34	17.69	34.77
			E1	V	109.89	21.08	-7.86	3.34	9.88	34.77
				H	117.38	27.23	-7.86	3.34	16.02	34.77
			E2	V	118.37	29.56	-7.86	3.34	18.36	34.77
				H	111.33	21.18	-7.86	3.34	9.97	34.77

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

Detector = Peak

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### Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
5MHz BW LTE-Band 17 (QPSK RB 25 Offset 0)	706.5	23755	H	V	108.40	19.26	-7.86	3.31	8.09	34.77
				H	117.30	28.45	-7.86	3.31	17.28	34.77
			E1	V	108.03	18.89	-7.86	3.31	7.72	34.77
				H	114.33	25.48	-7.86	3.31	14.31	34.77
			E2	V	116.04	26.90	-7.86	3.31	15.73	34.77
				H	108.14	19.29	-7.86	5.84	5.59	34.77
	710	23790	H	V	108.51	19.54	-7.86	3.33	8.35	34.77
				H	116.78	27.28	-7.86	3.33	16.09	34.77
			E1	V	105.65	16.68	-7.86	3.33	5.49	34.77
				H	114.64	25.14	-7.86	3.33	13.95	34.77
			E2	V	117.91	28.94	-7.86	3.33	<b>17.75</b>	34.77
				H	110.38	20.88	-7.86	3.33	9.69	34.77
	713.5	23825	H	V	107.74	18.93	-7.86	3.34	7.73	34.77
				H	117.50	27.35	-7.86	3.34	16.14	34.77
			E1	V	110.60	21.79	-7.86	3.34	10.59	34.77
				H	115.31	25.16	-7.86	3.34	13.95	34.77
			E2	V	116.55	27.74	-7.86	3.34	16.54	34.77
				H	109.49	19.34	-7.86	3.34	8.13	34.77

### Remark :

- (1) The RBW,VBW of SPA for frequency

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Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
5MHz BW LTE-Band 17 (16QAM RB 25 Offset 0)	706.5	23755	H	V	108.72	19.58	-7.86	3.31	8.41	34.77
				H	117.45	28.60	-7.86	3.31	17.43	34.77
			E1	V	108.51	19.37	-7.86	3.31	8.20	34.77
				H	114.57	25.72	-7.86	3.31	14.55	34.77
			E2	V	118.29	29.15	-7.86	3.31	17.98	34.77
				H	110.85	22.00	-7.86	5.84	8.30	34.77
	710	23790	H	V	109.54	20.57	-7.86	3.33	9.38	34.77
				H	117.42	27.92	-7.86	3.33	16.73	34.77
			E1	V	106.29	17.32	-7.86	3.33	6.13	34.77
				H	115.08	25.58	-7.86	3.33	14.39	34.77
			E2	V	118.25	29.28	-7.86	3.33	<b>18.09</b>	34.77
				H	109.02	19.52	-7.86	3.33	8.33	34.77
	713.5	23825	H	V	108.38	19.57	-7.86	3.34	8.37	34.77
				H	117.67	27.52	-7.86	3.34	16.31	34.77
			E1	V	108.34	19.53	-7.86	3.34	8.33	34.77
				H	116.08	25.93	-7.86	3.34	14.72	34.77
			E2	V	116.96	28.15	-7.86	3.34	16.95	34.77
				H	109.15	19.00	-7.86	3.34	7.79	34.77

## Remark :

- (1) The RBW,VBW of SPA for frequency

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
5MHz BW LTE-Band 17 (QPSK RB 1 Offset 24)	706.5	23755	H	V	112.10	22.96	-7.86	3.31	11.79	34.77
				H	120.47	31.62	-7.86	3.31	20.45	34.77
			E1	V	111.34	22.20	-7.86	3.31	11.03	34.77
				H	117.89	29.04	-7.86	3.31	17.87	34.77
			E2	V	119.38	30.24	-7.86	3.31	19.07	34.77
				H	111.40	22.55	-7.86	5.84	8.85	34.77
	710	23790	H	V	111.39	22.42	-7.86	3.33	11.23	34.77
				H	119.61	30.11	-7.86	3.33	18.92	34.77
			E1	V	108.64	19.67	-7.86	3.33	8.48	34.77
				H	117.52	28.02	-7.86	3.33	16.83	34.77
			E2	V	120.88	31.91	-7.86	3.33	<b>20.72</b>	34.77
				H	113.41	23.91	-7.86	3.33	12.72	34.77
	713.5	23825	H	V	110.52	21.71	-7.86	3.34	10.51	34.77
				H	119.96	29.81	-7.86	3.34	18.60	34.77
			E1	V	111.99	23.18	-7.86	3.34	11.98	34.77
				H	117.98	27.83	-7.86	3.34	16.62	34.77
			E2	V	119.24	30.43	-7.86	3.34	19.23	34.77
				H	111.95	21.80	-7.86	3.34	10.59	34.77

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
5MHz BW LTE-Band 17 (16QAM RB 1 Offset 24)	706.5	23755	H	V	112.25	23.11	-7.86	3.31	11.94	34.77
				H	120.61	31.76	-7.86	3.31	20.59	34.77
			E1	V	111.77	22.63	-7.86	3.31	11.46	34.77
				H	118.20	29.35	-7.86	3.31	18.18	34.77
			E2	V	121.33	32.19	-7.86	3.31	<b>21.02</b>	34.77
				H	114.30	25.45	-7.86	5.84	11.75	34.77
	710	23790	H	V	112.46	23.49	-7.86	3.33	12.30	34.77
				H	120.43	30.93	-7.86	3.33	19.74	34.77
			E1	V	109.04	20.07	-7.86	3.33	8.88	34.77
				H	117.84	28.34	-7.86	3.33	17.15	34.77
			E2	V	120.84	31.87	-7.86	3.33	20.68	34.77
				H	112.04	22.54	-7.86	3.33	11.35	34.77
	713.5	23825	H	V	111.14	22.33	-7.86	3.34	11.13	34.77
				H	120.42	30.27	-7.86	3.34	19.06	34.77
			E1	V	111.43	22.62	-7.86	3.34	11.42	34.77
				H	118.39	28.24	-7.86	3.34	17.03	34.77
			E2	V	119.65	30.84	-7.86	3.34	19.64	34.77
				H	112.25	22.10	-7.86	3.34	10.89	34.77

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

Detector = Peak

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### Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
5MHz BW LTE-Band 17 (QPSK RB 1 Offset 0)	706.5	23755	H	V	110.70	21.56	-7.86	3.31	10.39	34.77
				H	119.48	30.63	-7.86	3.31	19.46	34.77
			E1	V	110.62	21.48	-7.86	3.31	10.31	34.77
				H	116.47	27.62	-7.86	3.31	16.45	34.77
			E2	V	118.22	29.08	-7.86	3.31	17.91	34.77
				H	110.32	21.47	-7.86	5.84	7.77	34.77
	710	23790	H	V	111.40	22.43	-7.86	3.33	11.24	34.77
				H	119.68	30.18	-7.86	3.33	18.99	34.77
			E1	V	108.57	19.60	-7.86	3.33	8.41	34.77
				H	117.49	27.99	-7.86	3.33	16.80	34.77
			E2	V	120.96	31.99	-7.86	3.33	<b>20.80</b>	34.77
				H	113.39	23.89	-7.86	3.33	12.70	34.77
	713.5	23825	H	V	111.05	22.24	-7.86	3.34	11.04	34.77
				H	120.28	30.13	-7.86	3.34	18.92	34.77
			E1	V	112.20	23.39	-7.86	3.34	12.19	34.77
				H	118.41	28.26	-7.86	3.34	17.05	34.77
			E2	V	119.55	30.74	-7.86	3.34	19.54	34.77
				H	112.46	22.31	-7.86	3.34	11.10	34.77

### Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
5MHz BW LTE-Band 17 (16QAM RB 1 Offset 0)	706.5	23755	H	V	111.04	21.90	-7.86	3.31	10.73	34.77
				H	119.78	30.93	-7.86	3.31	19.76	34.77
			E1	V	110.88	21.74	-7.86	3.31	10.57	34.77
				H	116.96	28.11	-7.86	3.31	16.94	34.77
			E2	V	120.94	31.80	-7.86	3.31	20.63	34.77
				H	113.55	24.70	-7.86	5.84	11.00	34.77
	710	23790	H	V	112.10	23.13	-7.86	3.33	11.94	34.77
				H	119.99	30.49	-7.86	3.33	19.30	34.77
			E1	V	108.73	19.76	-7.86	3.33	8.57	34.77
				H	117.98	28.48	-7.86	3.33	17.29	34.77
			E2	V	121.33	32.36	-7.86	3.33	<b>21.17</b>	34.77
				H	113.70	24.20	-7.86	3.33	13.01	34.77
	713.5	23825	H	V	111.39	22.58	-7.86	3.34	11.38	34.77
				H	120.72	30.57	-7.86	3.34	19.36	34.77
			E1	V	111.76	22.95	-7.86	3.34	11.75	34.77
				H	118.90	28.75	-7.86	3.34	17.54	34.77
			E2	V	120.08	31.27	-7.86	3.34	20.07	34.77
				H	112.76	22.61	-7.86	3.34	11.40	34.77

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
10MHz BW LTE-Band 17 (QPSK RB 25 Offset 12)	709	23780	H	V	112.14	23.12	-7.86	3.32	11.94	34.77
				H	118.56	29.25	-7.86	3.32	18.06	34.77
			E1	V	109.04	20.02	-7.86	3.32	8.84	34.77
				H	117.89	28.58	-7.86	3.32	17.39	34.77
			E2	V	120.48	31.46	-7.86	3.32	20.28	34.77
				H	111.67	22.36	-7.86	5.84	8.66	34.77
	710	23790	H	V	113.64	24.67	-7.86	3.33	13.48	34.77
				H	119.19	29.69	-7.86	3.33	18.50	34.77
			E1	V	114.26	25.29	-7.86	3.33	14.10	34.77
				H	118.38	28.88	-7.86	3.33	17.69	34.77
			E2	V	120.03	31.06	-7.86	3.33	19.87	34.77
				H	111.61	22.11	-7.86	3.33	10.92	34.77
	711	23800	H	V	112.92	23.99	-7.86	3.33	12.80	34.77
				H	119.00	29.31	-7.86	3.33	18.12	34.77
			E1	V	112.57	23.64	-7.86	3.33	12.45	34.77
				H	118.19	28.50	-7.86	3.33	17.31	34.77
			E2	V	120.72	31.79	-7.86	3.33	<b>20.60</b>	34.77
				H	113.11	23.42	-7.86	3.33	12.23	34.77

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 10MHz , VBW= 10MHz

Detector = Peak

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### Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
10MHz BW LTE-Band 17 (16QAM RB 25 Offset 12)	709	23780	H	V	112.37	23.35	-7.86	3.32	12.17	34.77
				H	118.90	29.59	-7.86	3.32	18.40	34.77
			E1	V	109.19	20.17	-7.86	3.32	8.99	34.77
				H	117.99	28.68	-7.86	3.32	17.49	34.77
			E2	V	120.39	31.37	-7.86	3.32	20.19	34.77
				H	111.37	22.06	-7.86	5.84	8.36	34.77
	710	23790	H	V	114.29	25.32	-7.86	3.33	14.13	34.77
				H	119.10	29.60	-7.86	3.33	18.41	34.77
			E1	V	113.78	24.81	-7.86	3.33	13.62	34.77
				H	119.68	30.18	-7.86	3.33	18.99	34.77
			E2	V	120.80	31.83	-7.86	3.33	<b>20.64</b>	34.77
				H	116.94	27.44	-7.86	3.33	16.25	34.77
	711	23800	H	V	113.18	24.25	-7.86	3.33	13.06	34.77
				H	119.50	29.81	-7.86	3.33	18.62	34.77
			E1	V	111.92	22.99	-7.86	3.33	11.80	34.77
				H	118.46	28.77	-7.86	3.33	17.58	34.77
			E2	V	120.64	31.71	-7.86	3.33	20.52	34.77
				H	111.75	22.06	-7.86	3.33	10.87	34.77

### Remark :

(1) The RBW,VBW of SPA for frequency

RBW= 10MHz , VBW= 10MHz

Detector = Peak

)

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
10MHz BW LTE-Band 17 (QPSK RB 50 Offset 0)	709	23780	H	V	109.40	20.38	-7.86	3.32	9.20	34.77
				H	116.01	26.70	-7.86	3.32	15.51	34.77
			E1	V	106.40	17.38	-7.86	3.32	6.20	34.77
				H	115.43	26.12	-7.86	3.32	14.93	34.77
			E2	V	118.25	29.23	-7.86	3.32	18.05	34.77
				H	107.93	18.62	-7.86	5.84	4.92	34.77
	710	23790	H	V	111.01	22.04	-7.86	3.33	10.85	34.77
				H	116.30	26.80	-7.86	3.33	15.61	34.77
			E1	V	112.40	23.43	-7.86	3.33	12.24	34.77
				H	116.47	26.97	-7.86	3.33	15.78	34.77
			E2	V	117.59	28.62	-7.86	3.33	17.43	34.77
				H	108.75	19.25	-7.86	3.33	8.06	34.77
	711	23800	H	V	110.03	21.10	-7.86	3.33	9.91	34.77
				H	116.06	26.37	-7.86	3.33	15.18	34.77
			E1	V	109.72	20.79	-7.86	3.33	9.60	34.77
				H	115.07	25.38	-7.86	3.33	14.19	34.77
			E2	V	118.39	29.46	-7.86	3.33	<b>18.27</b>	34.77
				H	110.58	20.89	-7.86	3.33	9.70	34.77

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 10MHz , VBW= 10MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
10MHz BW LTE-Band 17 (16QAM RB 50 Offset 0)	709	23780	H	V	110.43	21.41	-7.86	3.32	10.23	34.77
				H	117.07	27.76	-7.86	3.32	16.57	34.77
			E1	V	107.19	18.17	-7.86	3.32	6.99	34.77
				H	116.43	27.12	-7.86	3.32	15.93	34.77
			E2	V	118.92	29.90	-7.86	3.32	<b>18.72</b>	34.77
				H	110.30	20.99	-7.86	5.84	7.29	34.77
	710	23790	H	V	111.56	22.59	-7.86	3.33	11.40	34.77
				H	117.11	27.61	-7.86	3.33	16.42	34.77
			E1	V	112.14	23.17	-7.86	3.33	11.98	34.77
				H	117.42	27.92	-7.86	3.33	16.73	34.77
			E2	V	118.57	29.60	-7.86	3.33	18.41	34.77
				H	114.91	25.41	-7.86	3.33	14.22	34.77
	711	23800	H	V	110.75	21.82	-7.86	3.33	10.63	34.77
				H	117.13	27.44	-7.86	3.33	16.25	34.77
			E1	V	109.93	21.00	-7.86	3.33	9.81	34.77
				H	115.85	26.16	-7.86	3.33	14.97	34.77
			E2	V	118.34	29.41	-7.86	3.33	18.22	34.77
				H	109.69	20.00	-7.86	3.33	8.81	34.77

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 10MHz , VBW= 10MHz

Detector = Peak

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### Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
10MHz BW LTE-Band 17 (QPSK RB 1 Offset 49)	709	23780	H	V	117.08	28.06	-7.86	3.32	16.88	34.77
				H	119.68	30.37	-7.86	3.32	19.18	34.77
			E1	V	111.54	22.52	-7.86	3.32	11.34	34.77
				H	120.75	31.44	-7.86	3.32	20.25	34.77
			E2	V	123.63	34.61	-7.86	3.32	<b>23.43</b>	34.77
				H	115.01	25.70	-7.86	5.84	12.00	34.77
	710	23790	H	V	117.44	28.47	-7.86	3.33	17.28	34.77
				H	121.60	32.10	-7.86	3.33	20.91	34.77
			E1	V	116.79	27.82	-7.86	3.33	16.63	34.77
				H	120.58	31.08	-7.86	3.33	19.89	34.77
			E2	V	122.79	33.82	-7.86	3.33	22.63	34.77
				H	114.37	24.87	-7.86	3.33	13.68	34.77
	711	23800	H	V	115.65	26.72	-7.86	3.33	15.53	34.77
				H	121.86	32.17	-7.86	3.33	20.98	34.77
			E1	V	114.33	25.40	-7.86	3.33	14.21	34.77
				H	120.68	30.99	-7.86	3.33	19.80	34.77
			E2	V	122.78	33.85	-7.86	3.33	22.66	34.77
				H	115.33	25.64	-7.86	3.33	14.45	34.77

### Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 10MHz , VBW= 10MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
10MHz BW LTE-Band 17 (16QAM RB 1 Offset 49)	709	23780	H	V	115.09	26.07	-7.86	3.32	14.89	34.77
				H	121.72	32.41	-7.86	3.32	21.22	34.77
			E1	V	112.00	22.98	-7.86	3.32	11.80	34.77
				H	121.25	31.94	-7.86	3.32	20.75	34.77
			E2	V	123.89	34.87	-7.86	3.32	<b>23.69</b>	34.77
				H	115.16	25.85	-7.86	5.84	12.15	34.77
	710	23790	H	V	116.57	27.60	-7.86	3.33	16.41	34.77
				H	121.98	32.48	-7.86	3.33	21.29	34.77
			E1	V	116.82	27.85	-7.86	3.33	16.66	34.77
				H	122.32	32.82	-7.86	3.33	21.63	34.77
			E2	V	123.59	34.62	-7.86	3.33	23.43	34.77
				H	119.44	29.94	-7.86	3.33	18.75	34.77
	711	23800	H	V	116.17	27.24	-7.86	3.33	16.05	34.77
				H	121.83	32.14	-7.86	3.33	20.95	34.77
			E1	V	114.62	25.69	-7.86	3.33	14.50	34.77
				H	119.89	30.20	-7.86	3.33	19.01	34.77
			E2	V	123.75	34.82	-7.86	3.33	23.63	34.77
				H	116.68	26.99	-7.86	3.33	15.80	34.77

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 10MHz , VBW= 10MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
10MHz BW LTE-Band 17 (QPSK RB 1 Offset 0)	709	23780	H	V	115.46	26.44	-7.86	3.32	15.26	34.77
				H	120.88	31.57	-7.86	3.32	20.38	34.77
			E1	V	111.66	22.64	-7.86	3.32	11.46	34.77
				H	119.71	30.40	-7.86	3.32	19.21	34.77
			E2	V	122.48	33.46	-7.86	3.32	22.28	34.77
				H	113.79	24.48	-7.86	5.84	10.78	34.77
	710	23790	H	V	116.44	27.47	-7.86	3.33	16.28	34.77
				H	120.97	31.47	-7.86	3.33	20.28	34.77
			E1	V	115.74	26.77	-7.86	3.33	15.58	34.77
				H	120.24	30.74	-7.86	3.33	19.55	34.77
			E2	V	122.56	33.59	-7.86	3.33	22.40	34.77
				H	113.74	24.24	-7.86	3.33	13.05	34.77
	711	23800	H	V	115.23	26.30	-7.86	3.33	15.11	34.77
				H	121.41	31.72	-7.86	3.33	20.53	34.77
			E1	V	115.32	26.39	-7.86	3.33	15.20	34.77
				H	120.58	30.89	-7.86	3.33	19.70	34.77
			E2	V	123.48	34.55	-7.86	3.33	<b>23.36</b>	34.77
				H	115.45	25.76	-7.86	3.33	14.57	34.77

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 10MHz , VBW= 10MHz

Detector = Peak

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
10MHz BW LTE-Band 17 (16QAM RB 1 Offset 0)	709	23780	H	V	114.94	25.92	-7.86	3.32	14.74	34.77
				H	121.34	32.03	-7.86	3.32	20.84	34.77
			E1	V	111.32	22.30	-7.86	3.32	11.12	34.77
				H	120.32	31.01	-7.86	3.32	19.82	34.77
			E2	V	122.86	33.84	-7.86	3.32	22.66	34.77
				H	113.91	24.60	-7.86	5.84	10.90	34.77
	710	23790	H	V	116.02	27.05	-7.86	3.33	15.86	34.77
				H	121.86	32.36	-7.86	3.33	21.17	34.77
			E1	V	116.00	27.03	-7.86	3.33	15.84	34.77
				H	122.07	32.57	-7.86	3.33	21.38	34.77
			E2	V	123.93	34.96	-7.86	3.33	<b>23.77</b>	34.77
				H	120.24	30.74	-7.86	3.33	19.55	34.77
	711	23800	H	V	115.79	26.86	-7.86	3.33	15.67	34.77
				H	122.10	32.41	-7.86	3.33	21.22	34.77
			E1	V	113.11	24.18	-7.86	3.33	12.99	34.77
				H	119.02	29.33	-7.86	3.33	18.14	34.77
			E2	V	123.71	34.78	-7.86	3.33	23.59	34.77
				H	115.78	26.09	-7.86	3.33	14.90	34.77

## Remark :

- (1) The RBW,VBW of SPA for frequency

RBW= 10MHz , VBW= 10MHz

Detector = Peak

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## 8. 99% OCCUPIED BANDWIDTH MEASUREMENT

### 8.1. Standard Applicable:

According to §FCC 2.1049.

### 8.2. Test Set-up:

Refer to section 5.2 in this report

### 8.3. Measurement Procedure:

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW (10/30KHz) was set to about 1% of emission BW, VBW= 3 times RBW(30/100KHz), -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

### 8.4. Measurement Equipment Used:

Refer to section 2.4 in this report

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## Measurement Result:

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
GSM 850	824.20	128	0.2400
	836.60	190	0.2438
	848.80	251	0.2418

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
PCS 1900	1850.20	512	0.2448
	1880.00	661	0.2430
	1909.80	810	0.2435

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
EDGE 850	824.20	128	0.2434
	836.60	190	0.2462
	848.80	251	0.2426

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
EDGE 1900	1850.20	512	0.2507
	1880.00	661	0.2465
	1909.80	810	0.2487

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EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
WCDMA II	1852.40	9262	4.1357
	1880.00	9400	4.1421
	1907.60	9538	4.1362

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
WCDMA V	826.40	4132	4.1373
	836.00	4180	4.1394
	846.60	4233	4.1338

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
HSUPA II	1852.4	9262	4.1655
	1880.0	9400	4.1460
	1907.6	9538	4.1268

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
HSUPA V	826.40	4132	4.1743
	836.60	4183	4.1647
	846.60	4233	4.1529

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EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
5MHz BW LTE-Band 4 (QPSK RB Number: 25 Offset: 0)	1712.5	19975	4.5185
	1732.5	20175	4.5220
	1752.5	20375	4.5019

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
5MHz BW LTE-Band 4 (16QAM RB Number: 25 Offset: 0)	1712.5	19975	4.5224
	1732.5	20175	4.5110
	1752.5	20375	4.5310

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
10MHz BW LTE-Band 4 (QPSK RB Number: 50 Offset: 0)	1715	20000	8.9736
	1732.5	20175	8.9732
	1750	20350	9.0059

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
10MHz BW LTE-Band 4 (16QAM RB Number: 50 Offset: 0)	1715	20000	8.9867
	1732.5	20175	8.9848
	1750	20350	8.9829

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EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
5MHz BW LTE-Band 17 (QPSK RB Number: 25 Offset: 0)	706.5	23755	4.5229
	710	23790	4.5027
	713.5	23835	4.5193

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
5MHz BW LTE-Band 17 (16QAM RB Number: 25 Offset: 0)	706.5	23755	4.5208
	710	23790	4.5053
	713.5	23835	4.5301

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
10MHz BW LTE-Band 17 (QPSK RB Number: 50 Offset: 0)	709	23780	8.9845
	710	23790	8.9826
	711	23800	8.9728

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
10MHz BW LTE-Band 4 (16QAM RB Number: 50 Offset: 0)	709	23780	8.9994
	710	23790	8.9866
	711	23800	8.9674

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Figure 7-1: GSM 850 Channel Low

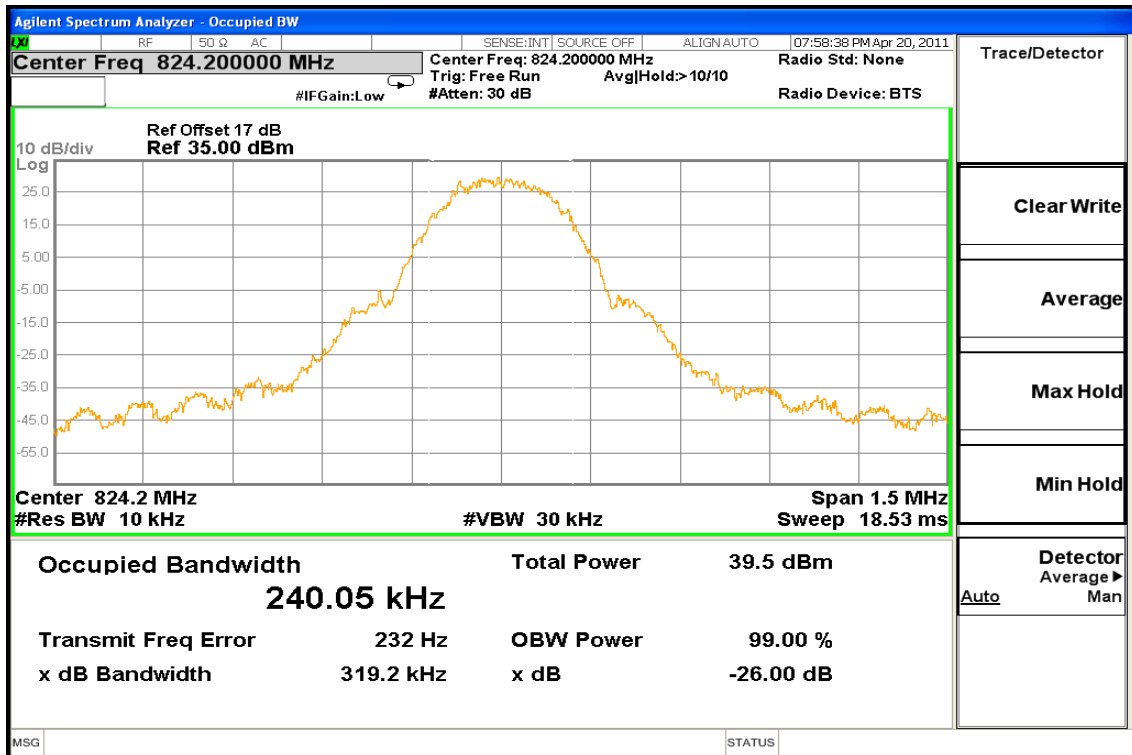
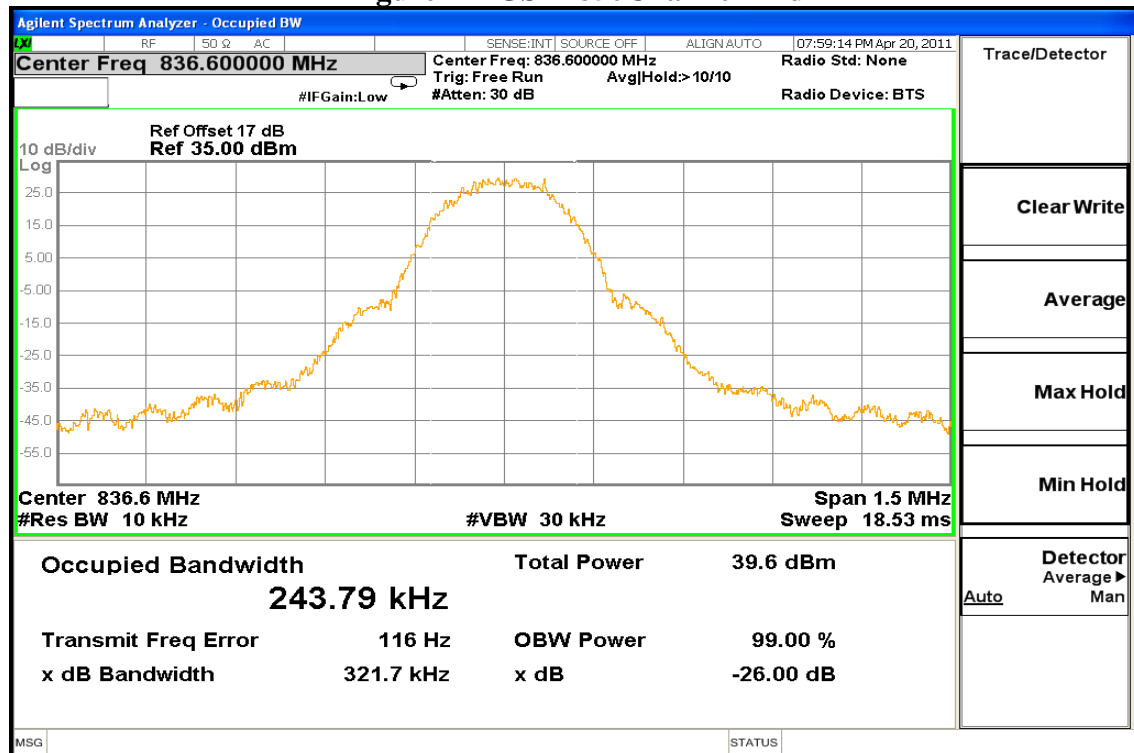


Figure 7-2 GSM 850 Channel Mid



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GPRS Figure 7-3: GSM 850 Channel High

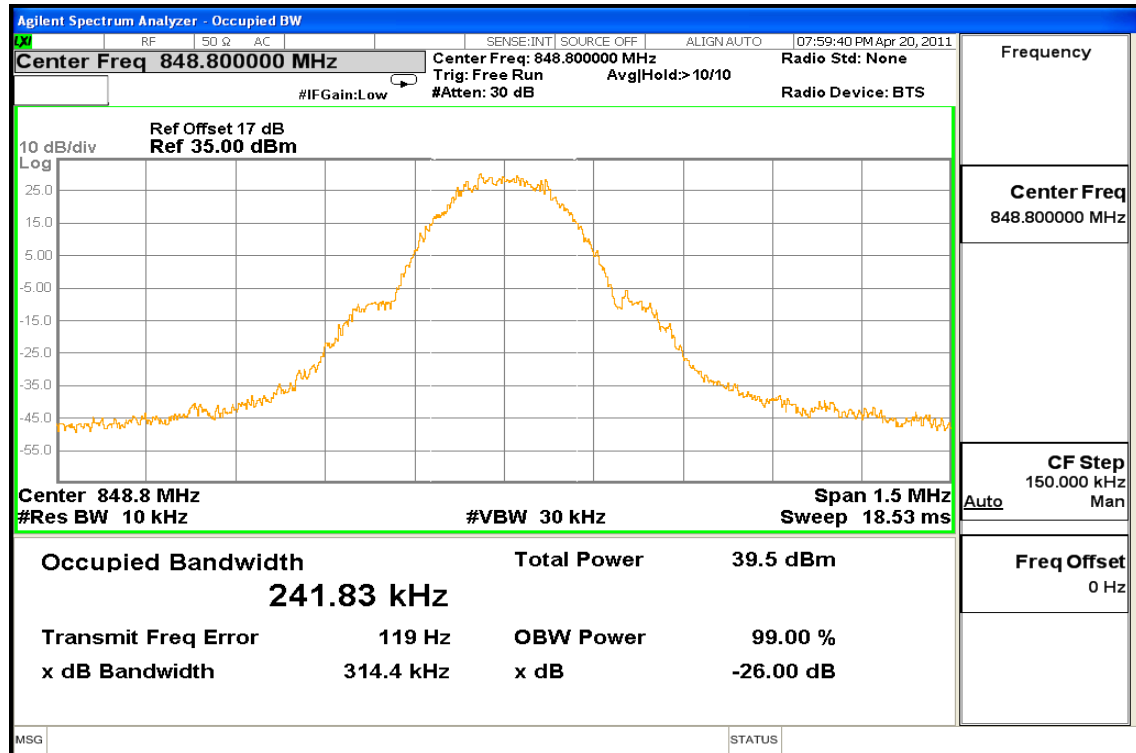
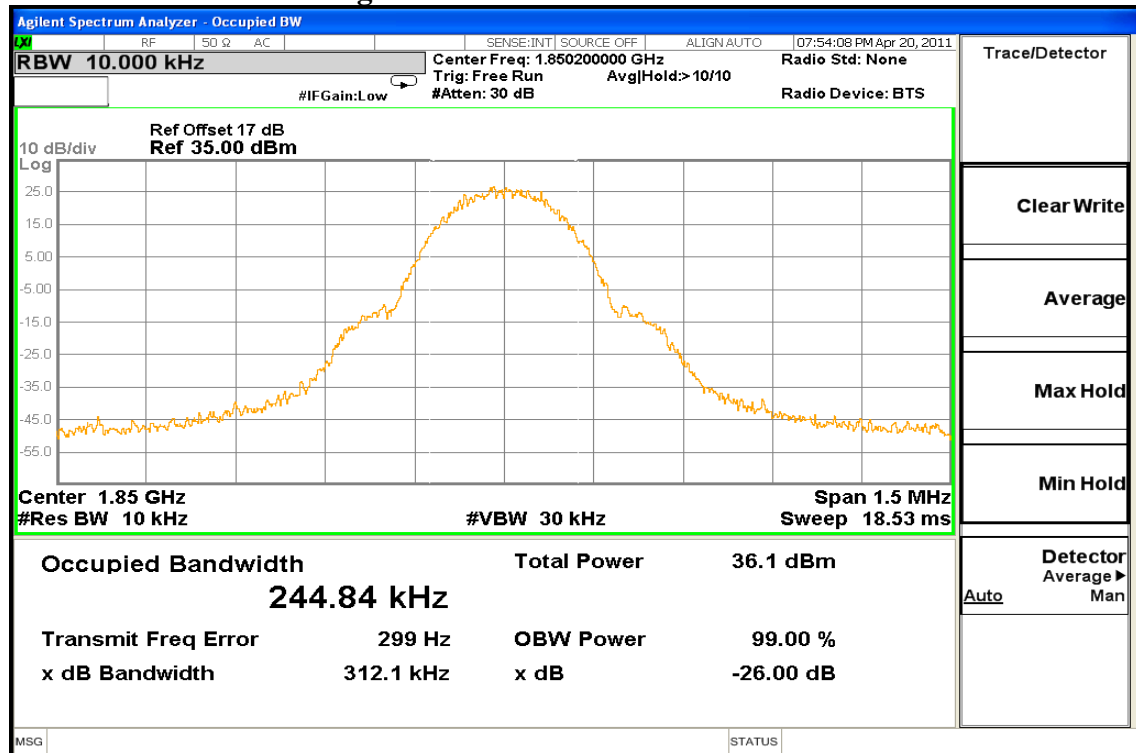


Figure 7-4: GSM 1900 Channel Low



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Figure 7-5 GSM 1900 Channel Mid

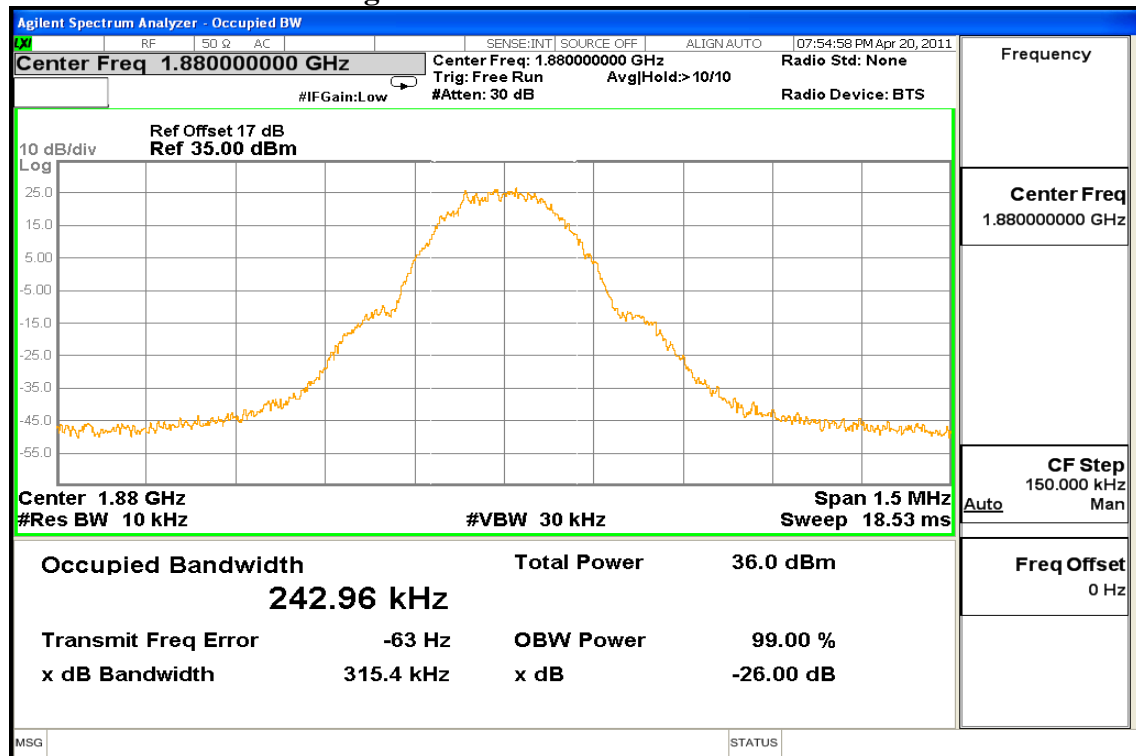
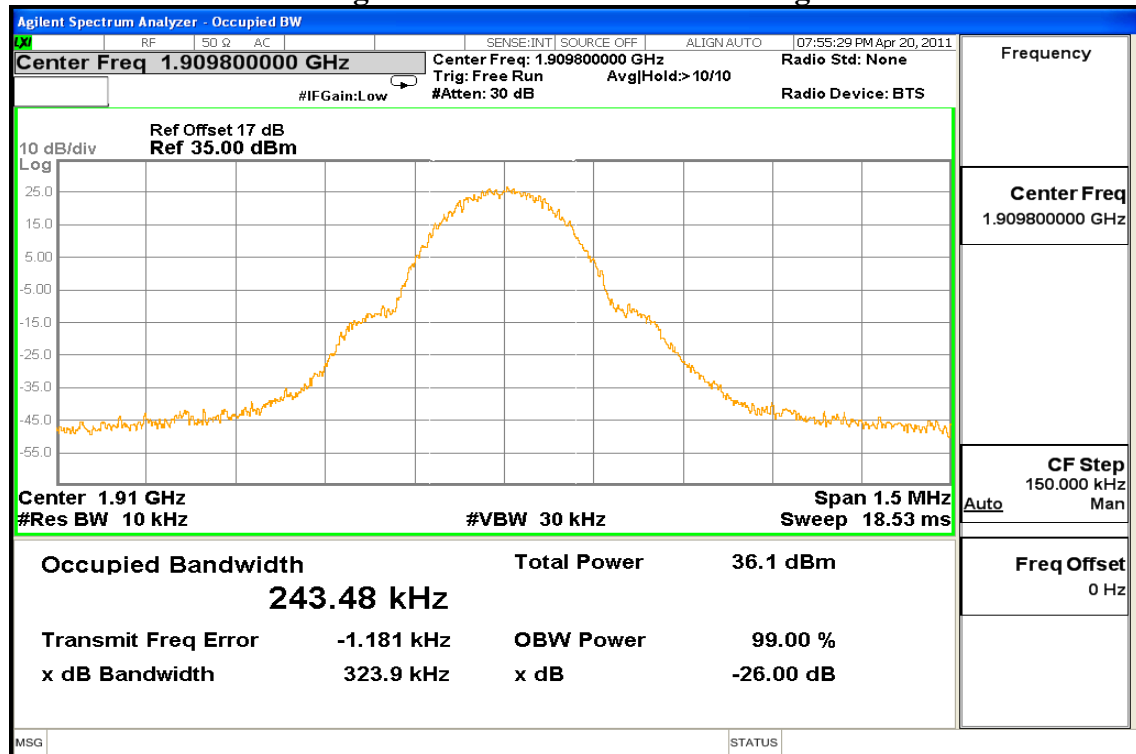


Figure 7-6: GSM 1900 Channel High



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Figure 7-7: EDGE 850 Channel Low

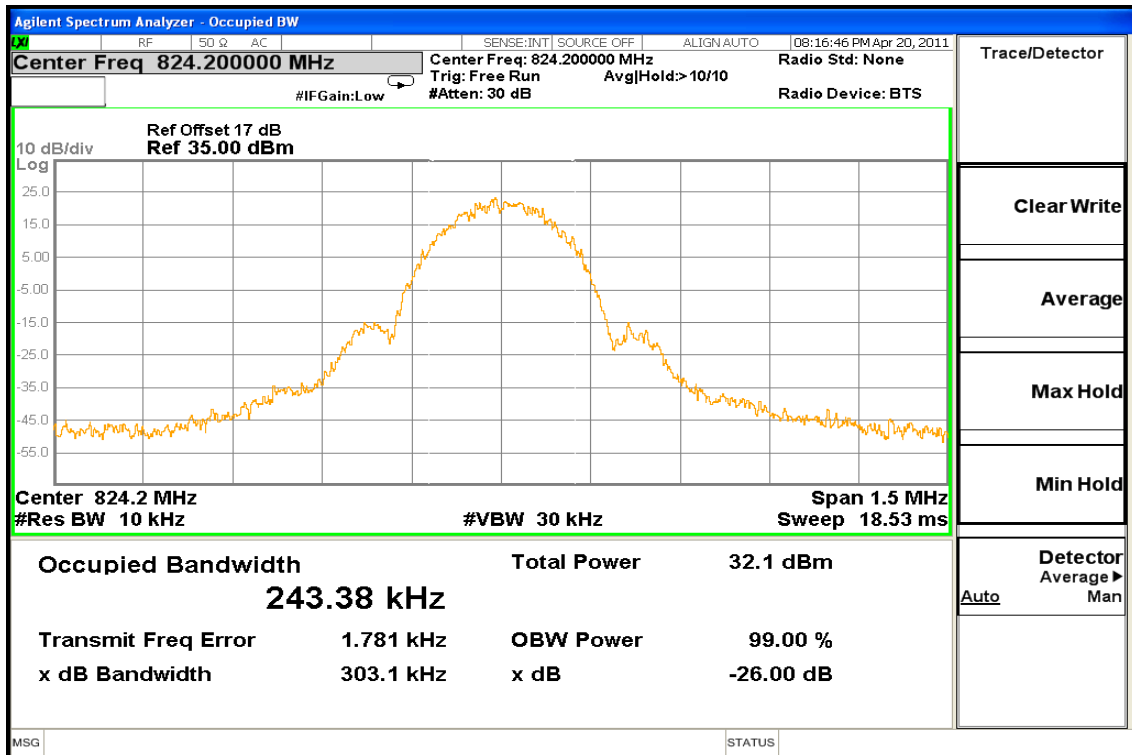
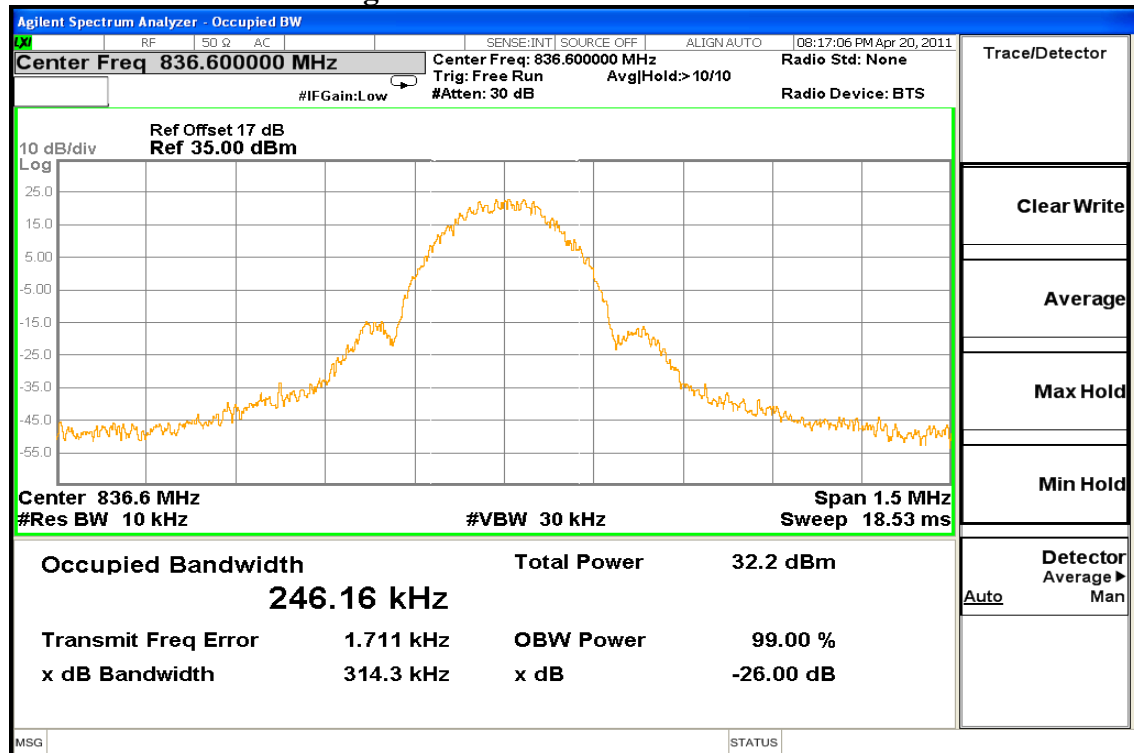


Figure 7-8 EDGE 850 Channel Mid



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GPRS Figure 7-9: EDGE 850 Channel High

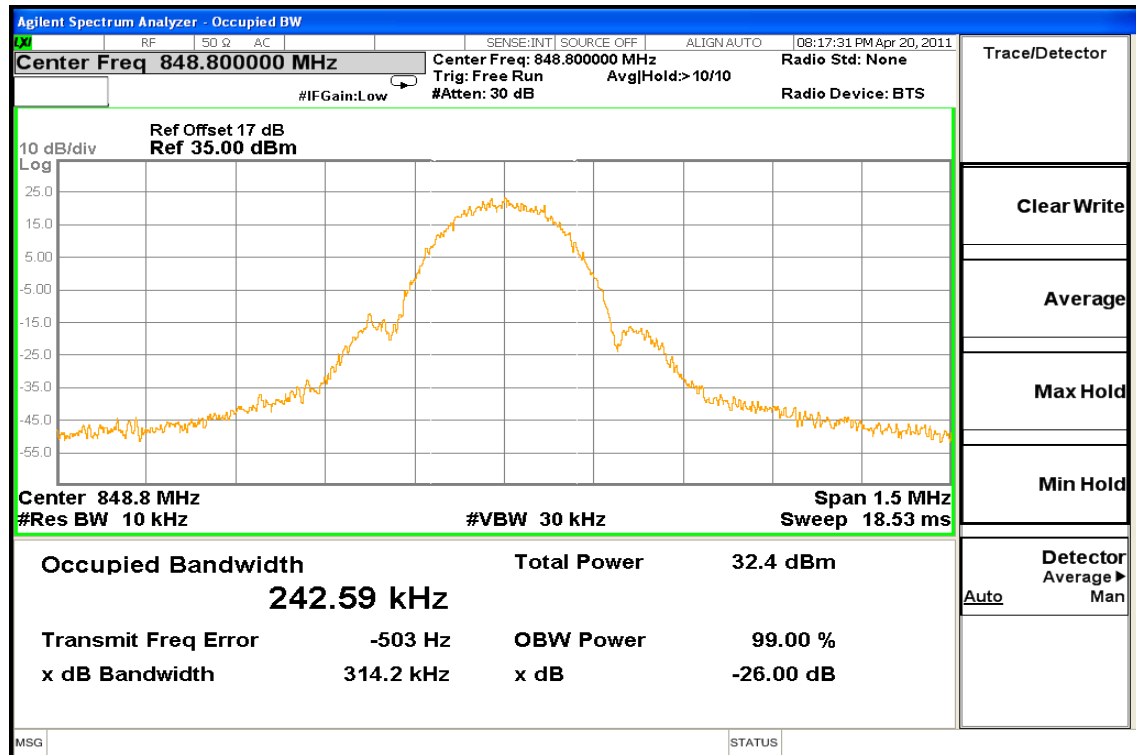
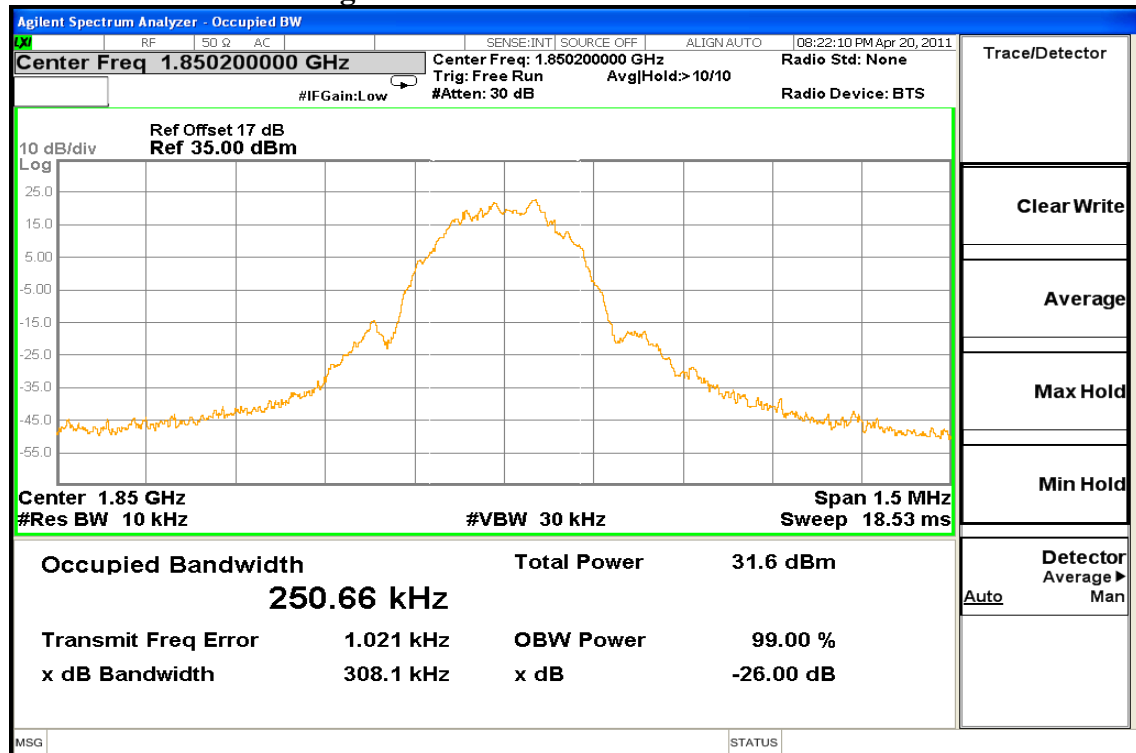


Figure 7-10: EDGE 1900 Channel Low



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Figure 7-11 EDGE 1900 Channel Mid

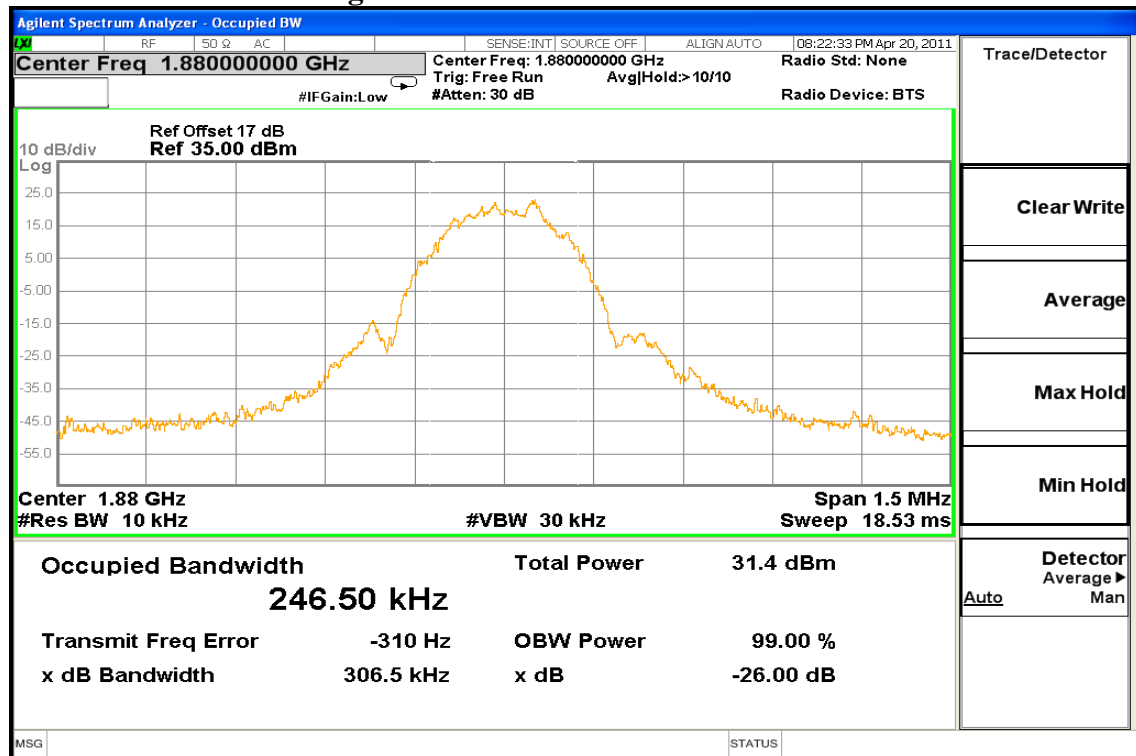
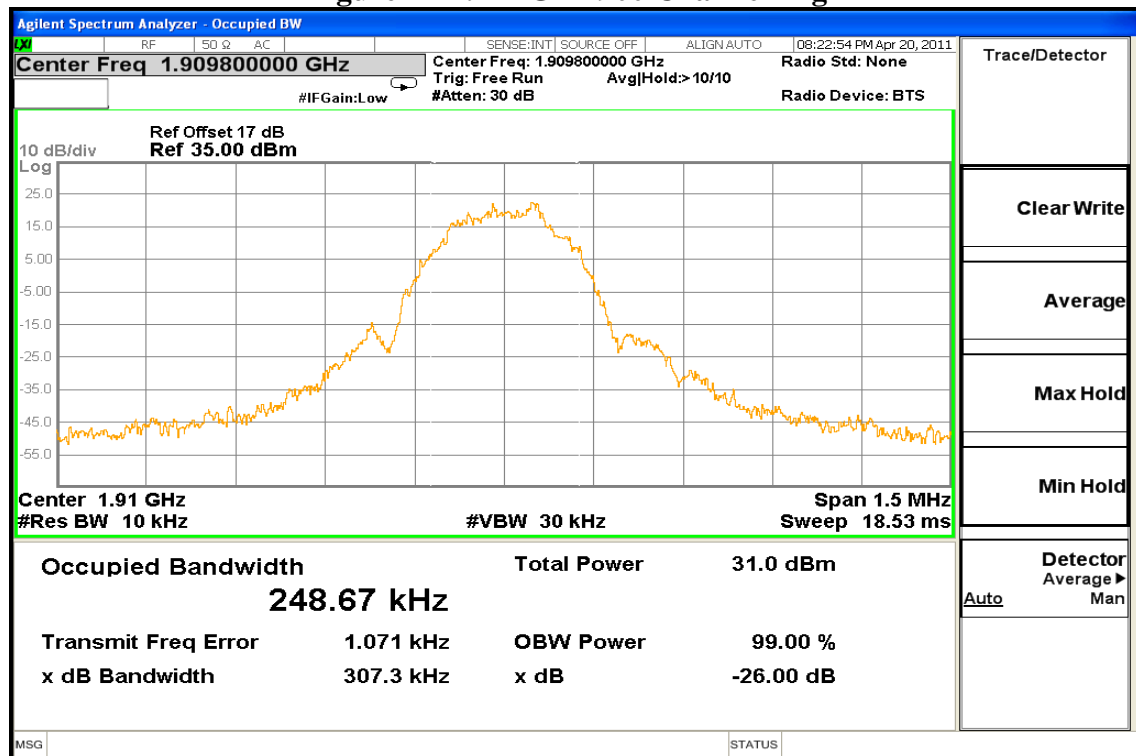


Figure 7-12: EDGE 1900 Channel High



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Figure 7-13: WCDMA II Channel Low

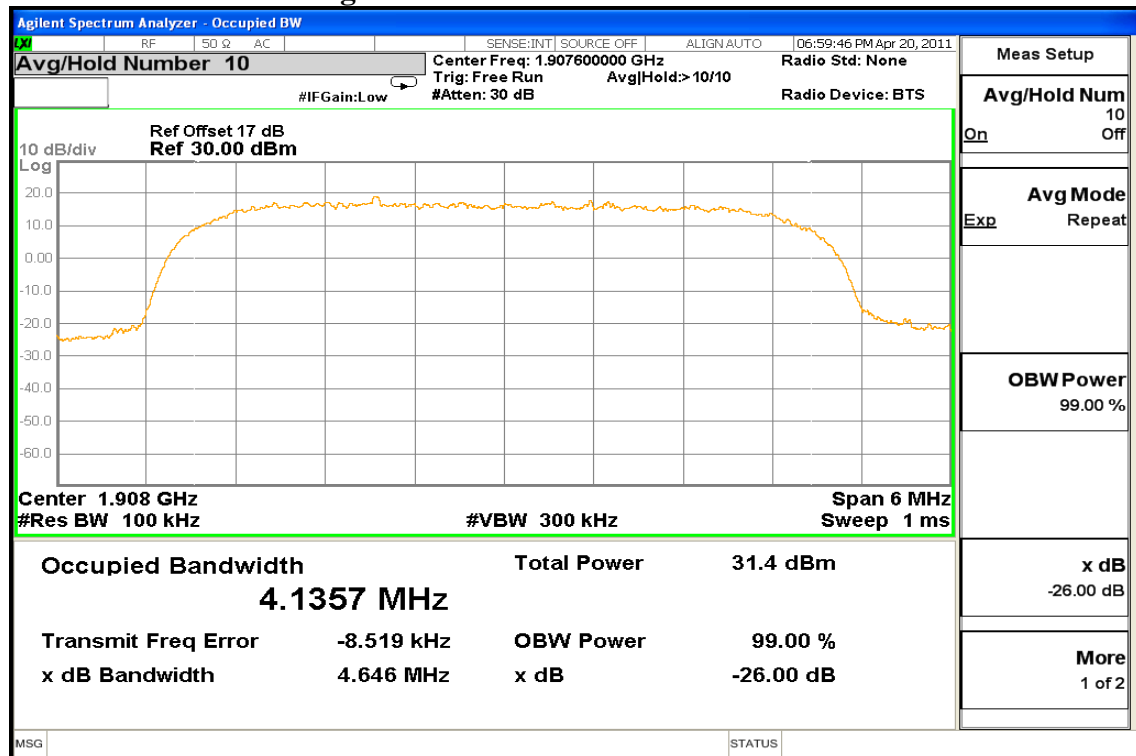
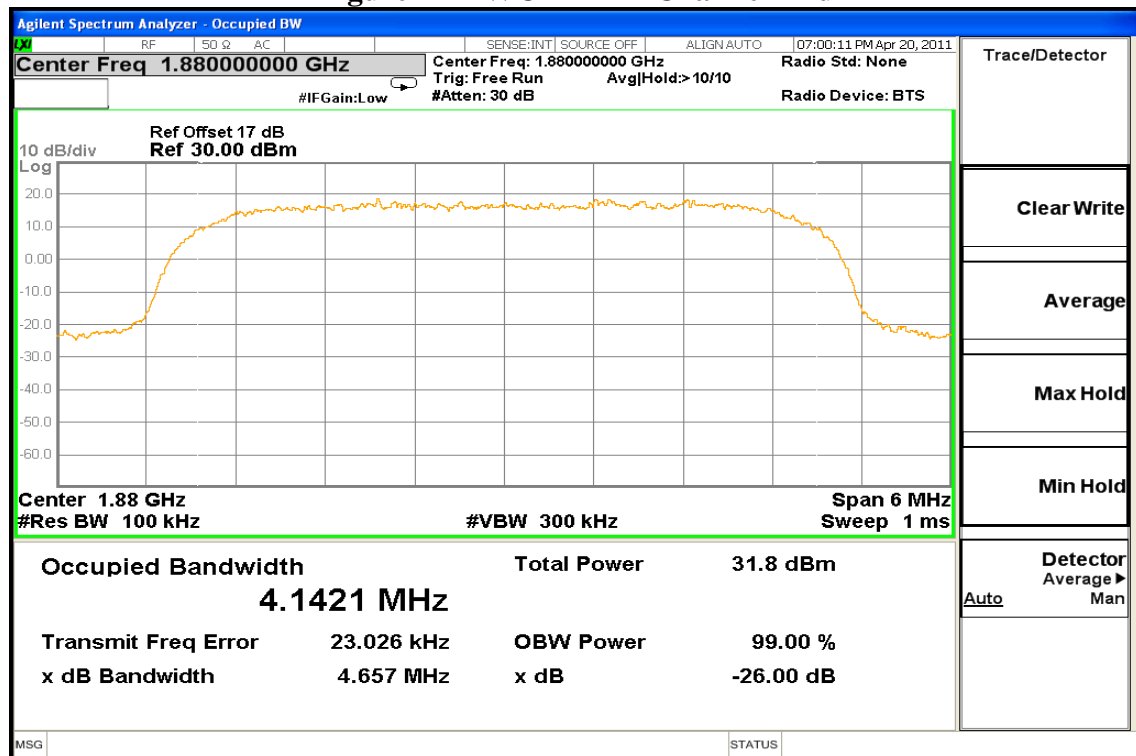


Figure 7-14 WCDMA II Channel Mid



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Figure 7-15: WCDMA II Channel High

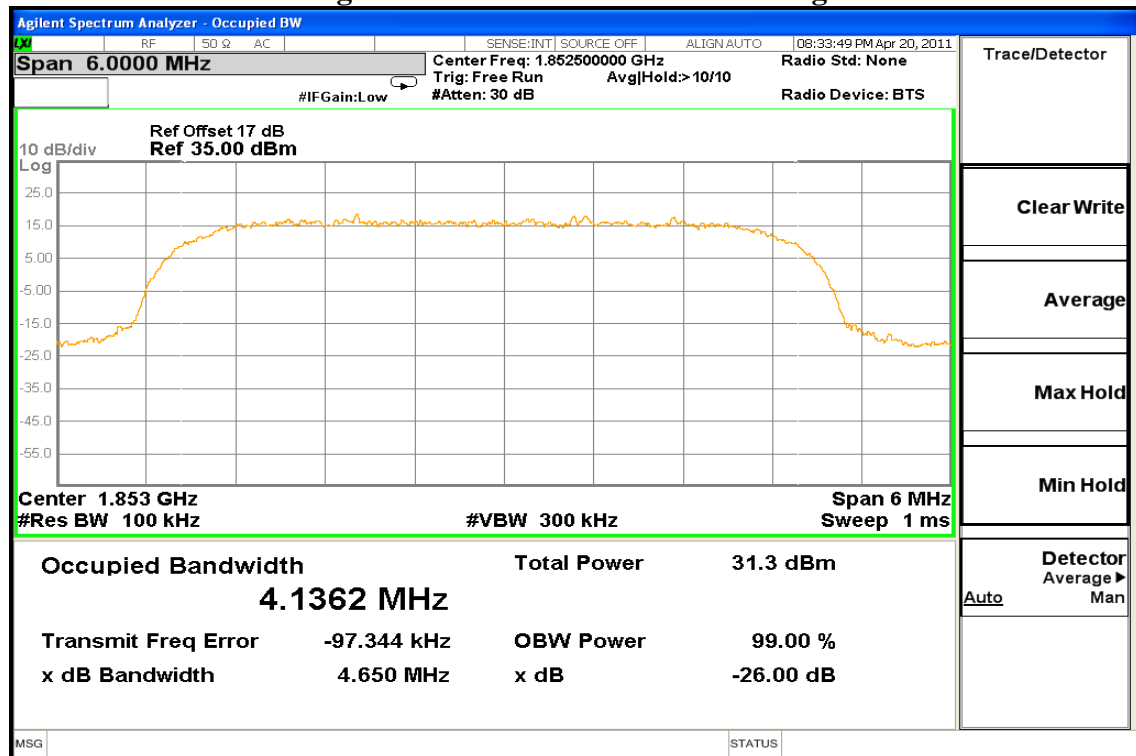
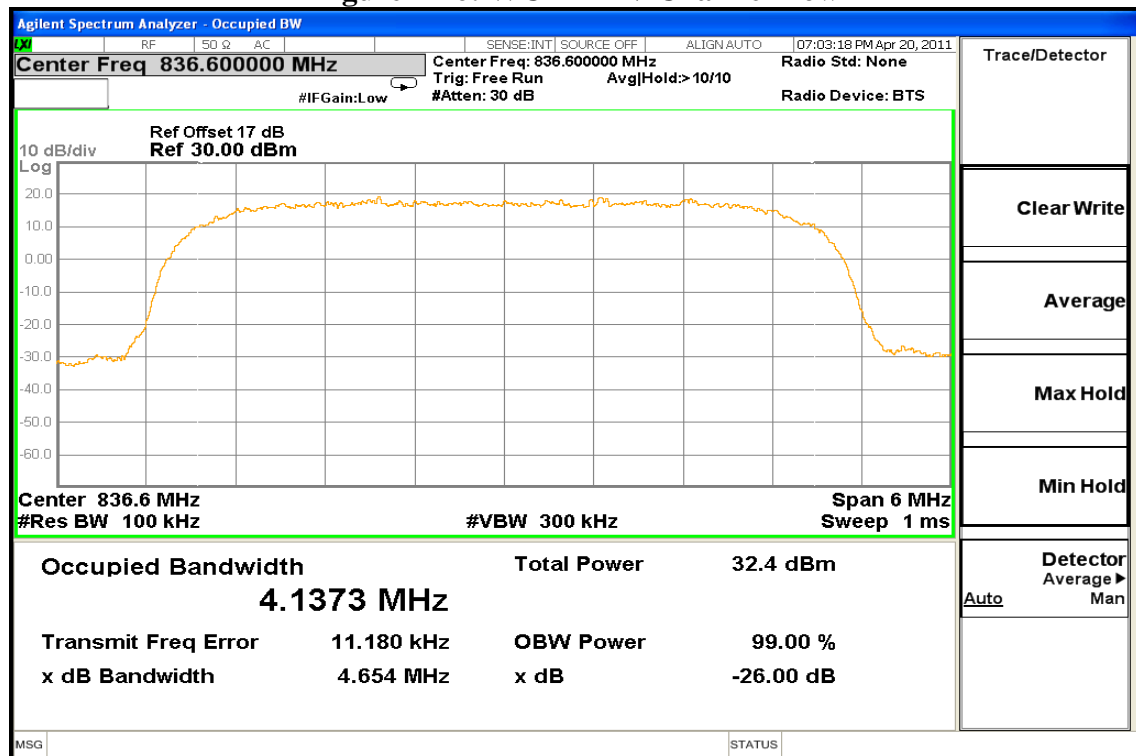


Figure 7-16: WCDMA V Channel Low



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Figure 7-17: WCDMA II Channel Mid

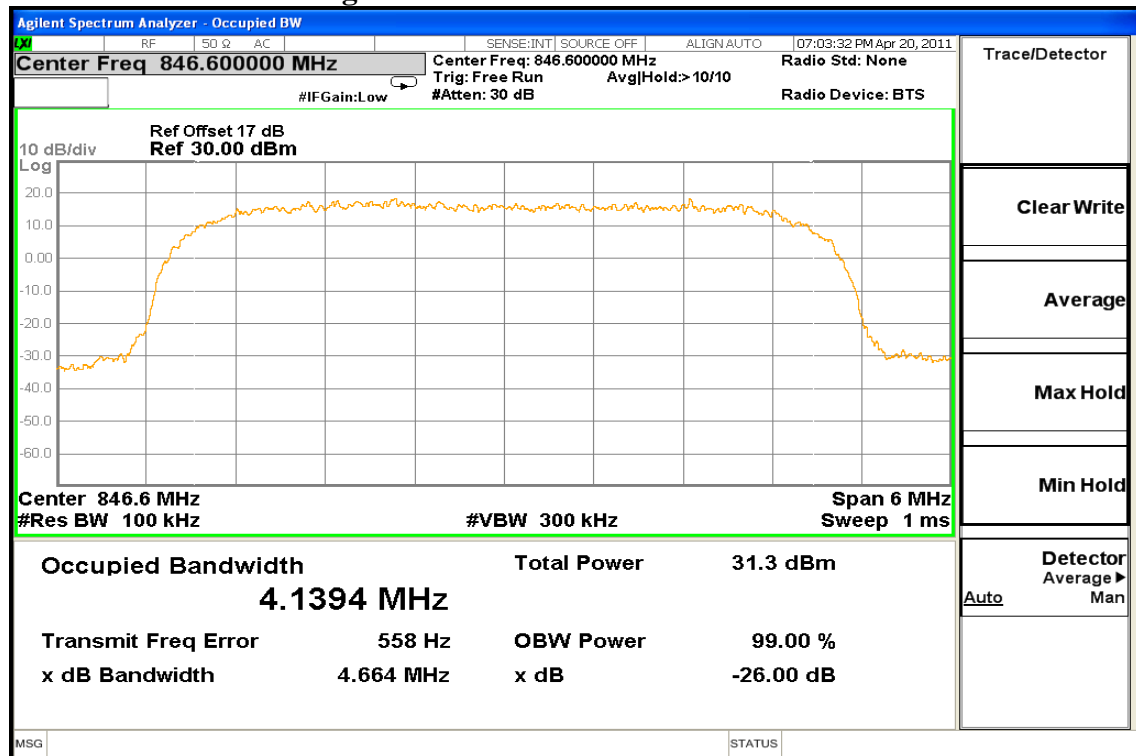
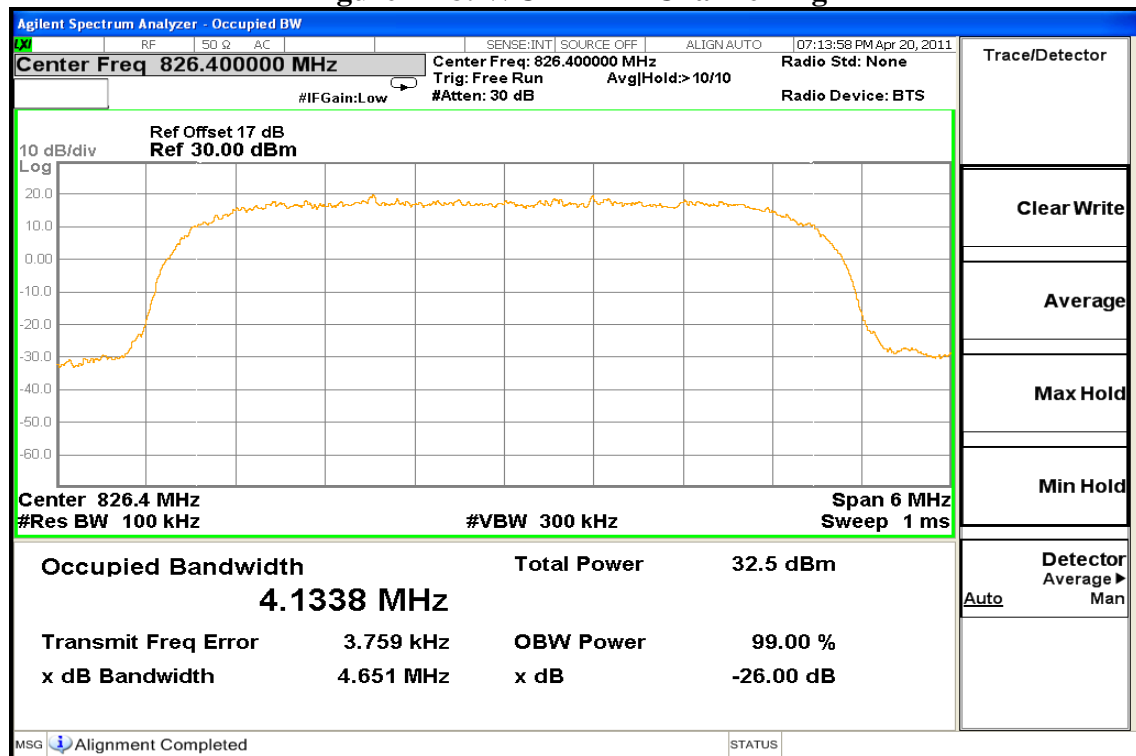


Figure 7-18: WCDMA II Channel High



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Figure 7-19: HSUPA II Channel Low

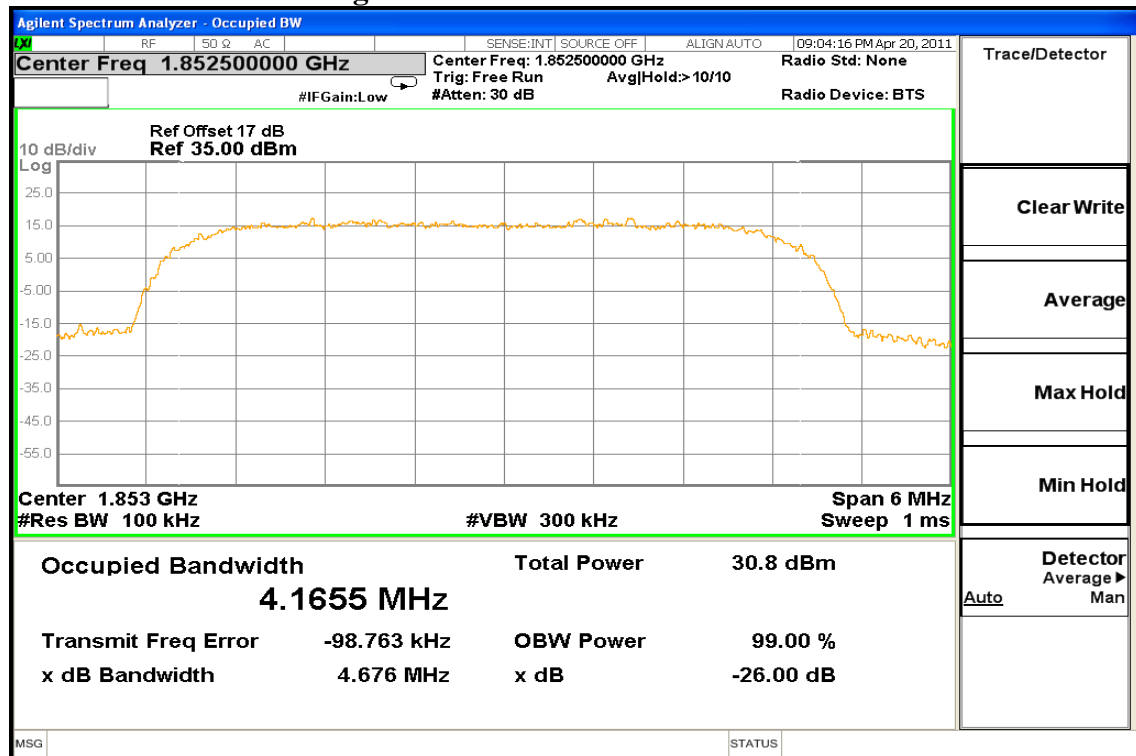
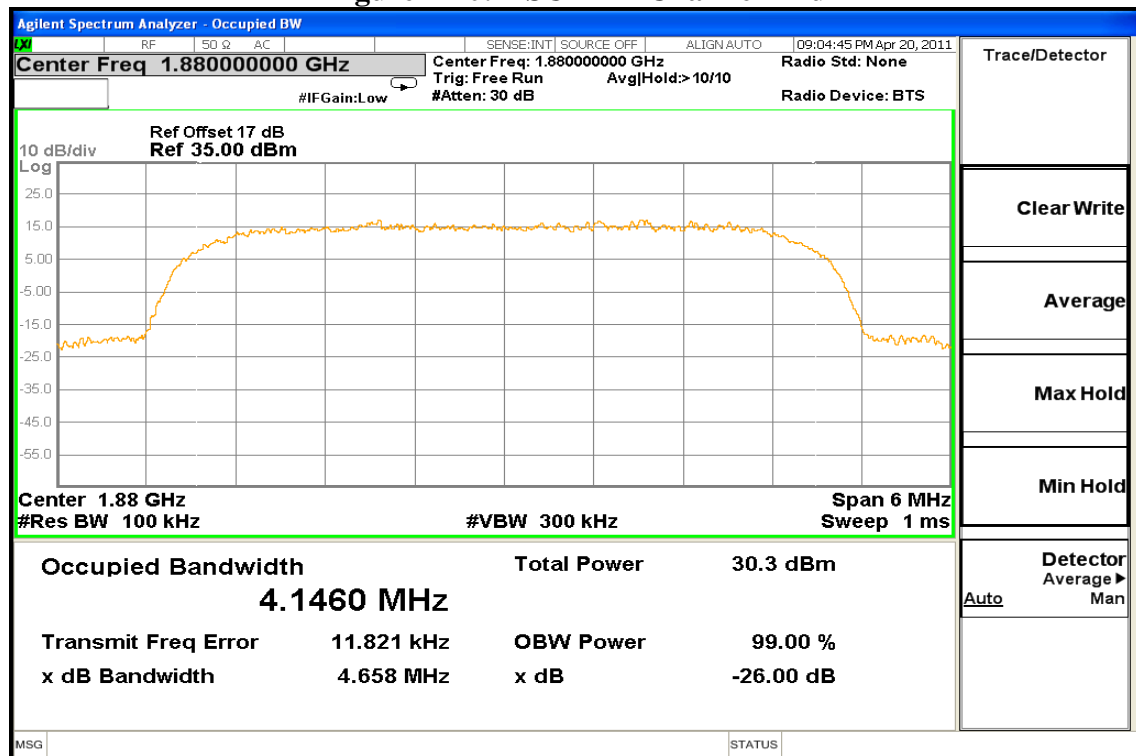


Figure 7-20: HSUPA II Channel Mid



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Figure 7-21: HSUPA II Channel High

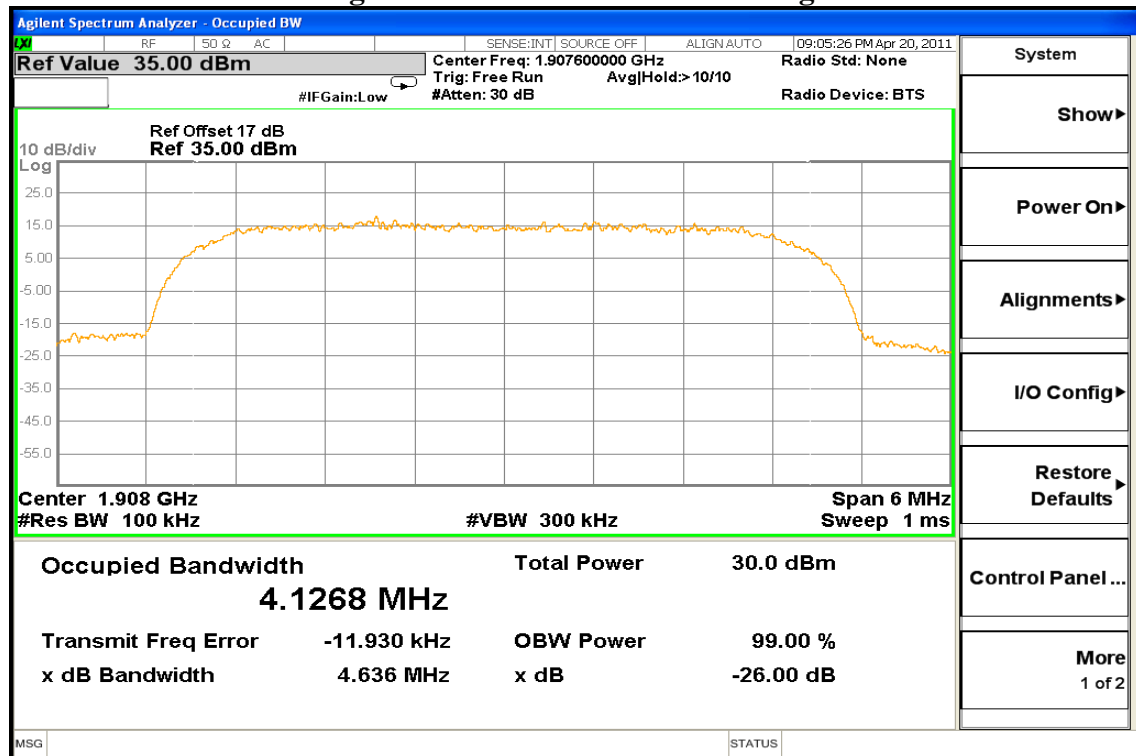
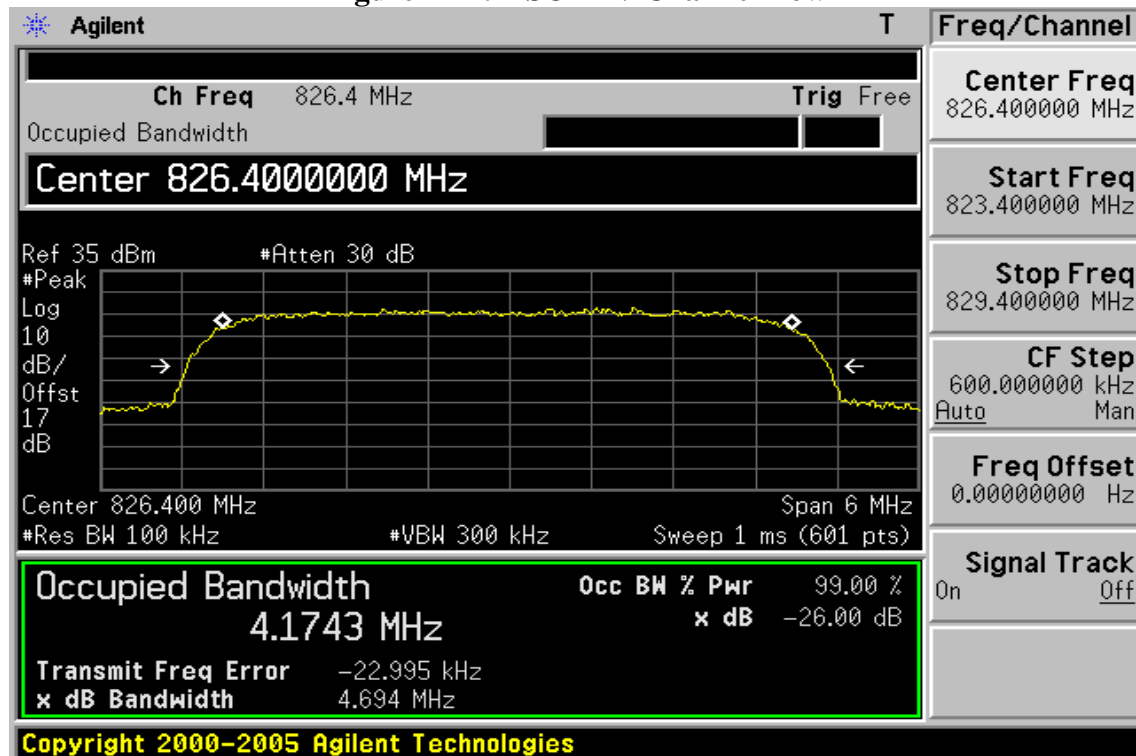


Figure 7-22: HSUPA V Channel Low



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Figure 7-23: HSUPA V Channel Mid

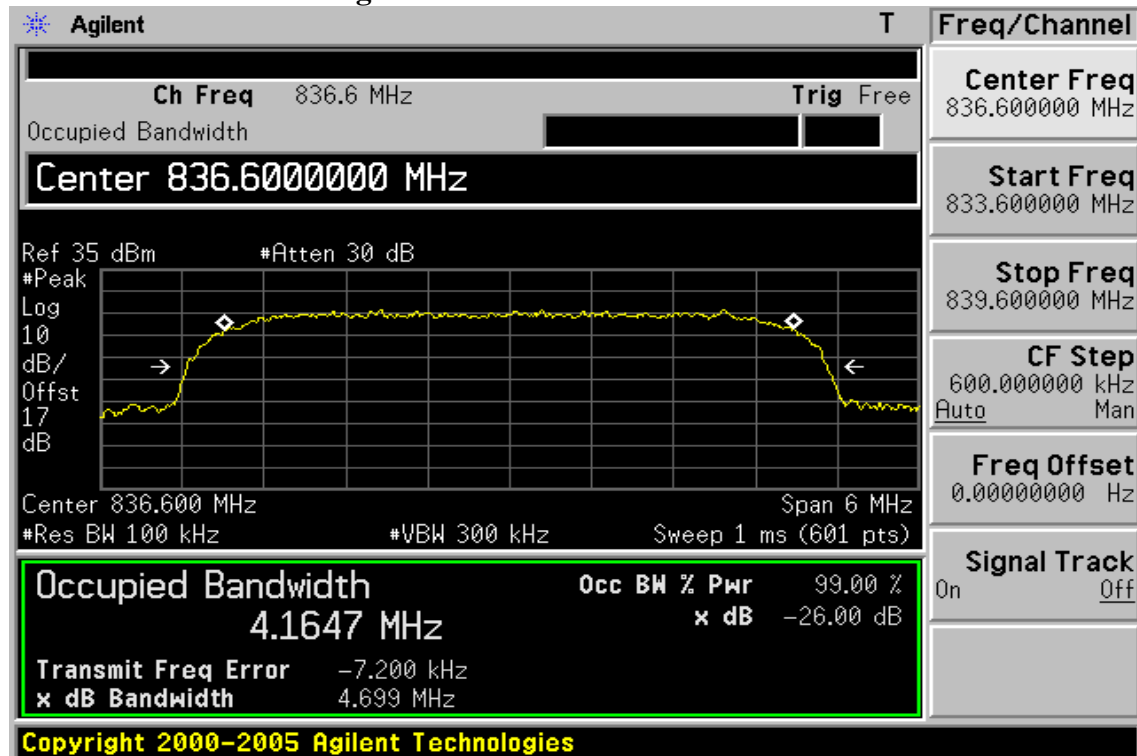
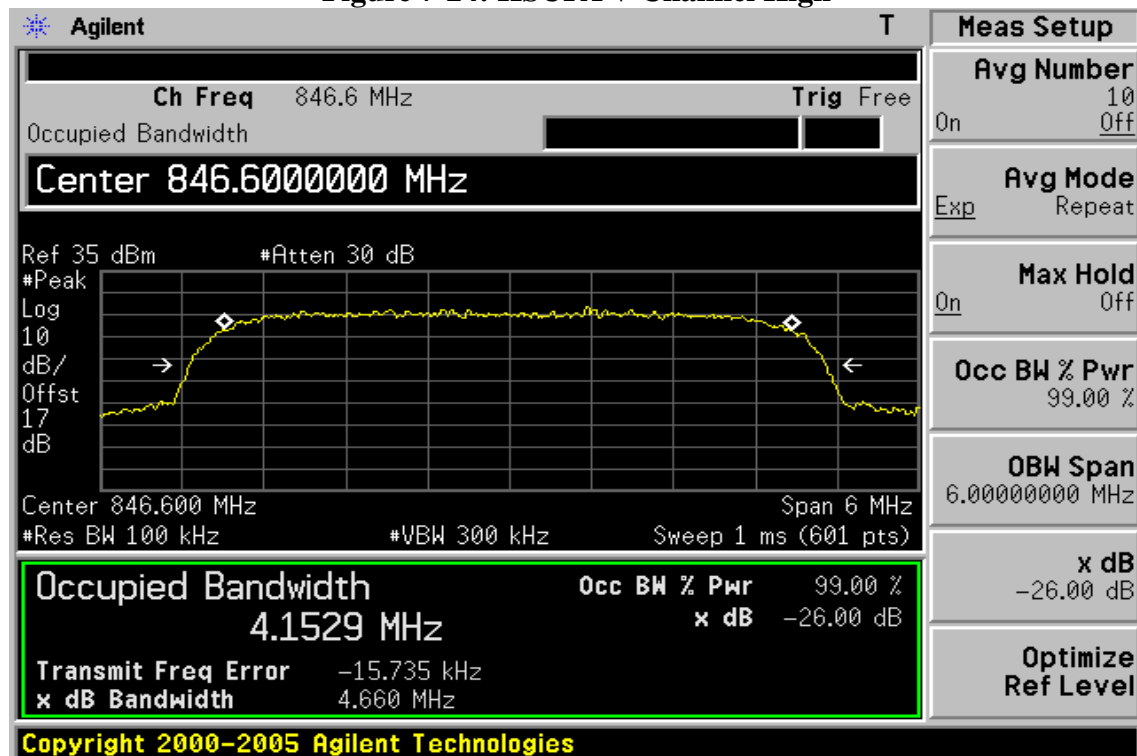


Figure 7-24: HSUPA V Channel High



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Figure 7-25: 5MHz BW LTE-Band 4(QPSK RB Number: 25 Offset: 0) Channel Low

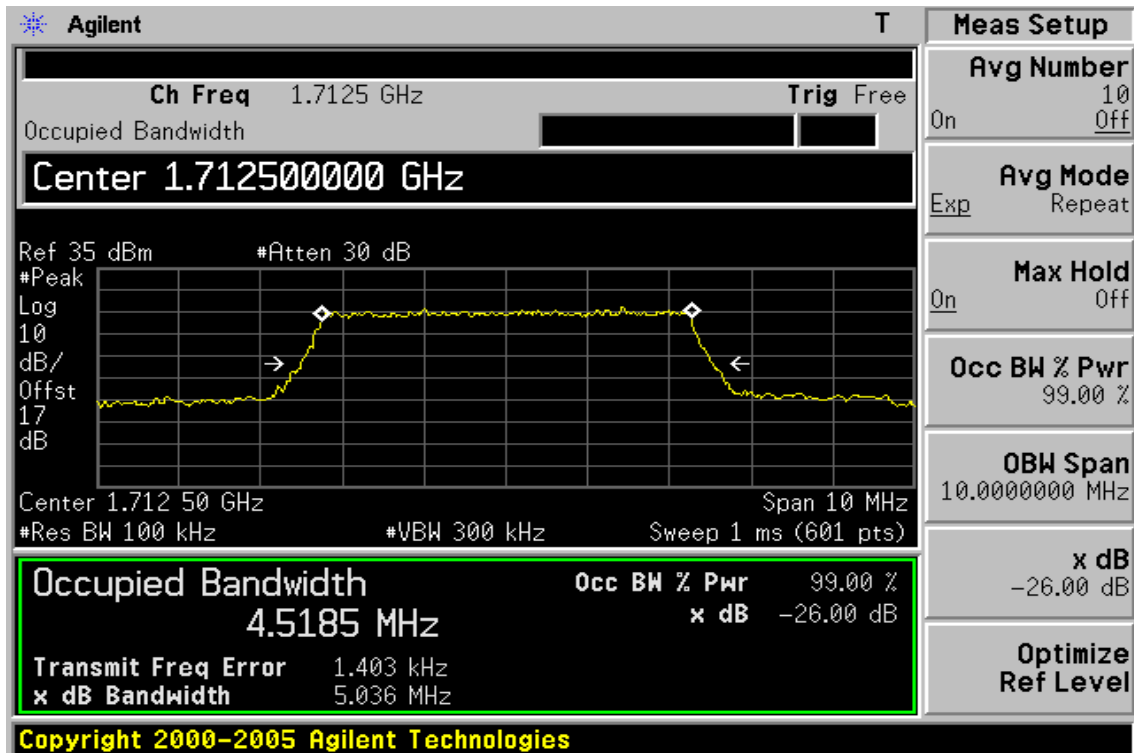
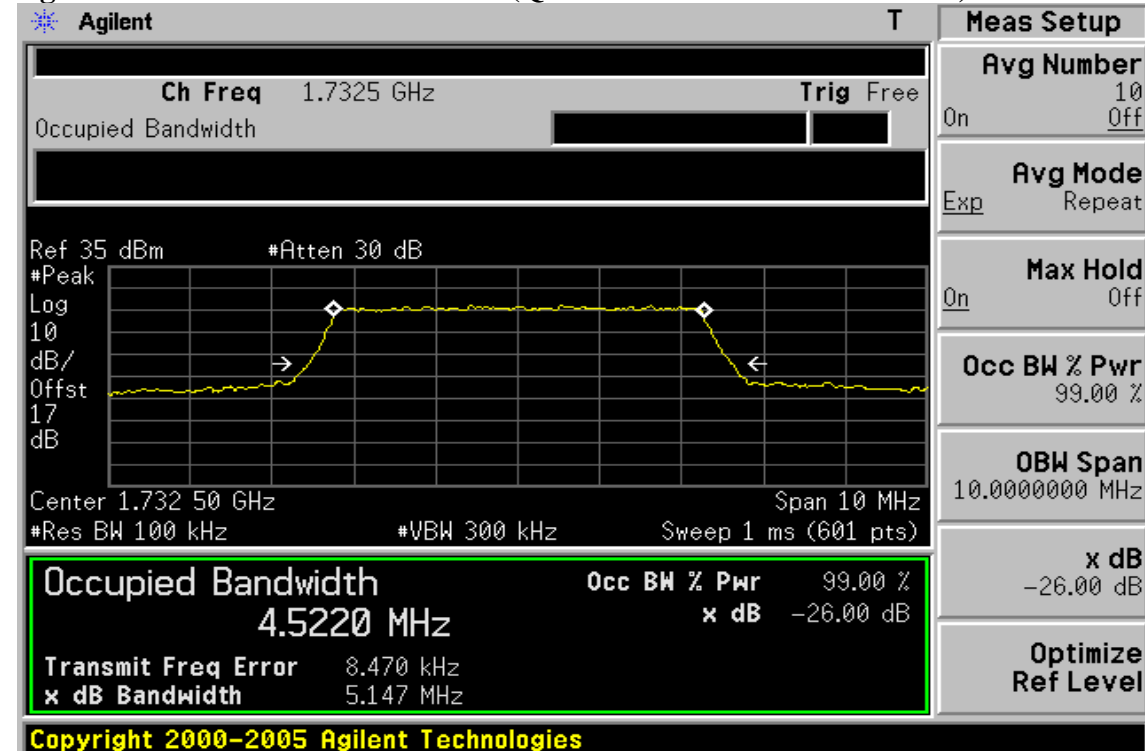


Figure 7-26: 5MHz BW LTE-Band 4(QPSK RB Number: 25 Offset: 0) Channel Mid



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Figure 7-27: 5MHz BW LTE-Band 4(QPSK RB Number: 25 Offset: 0) Channel High

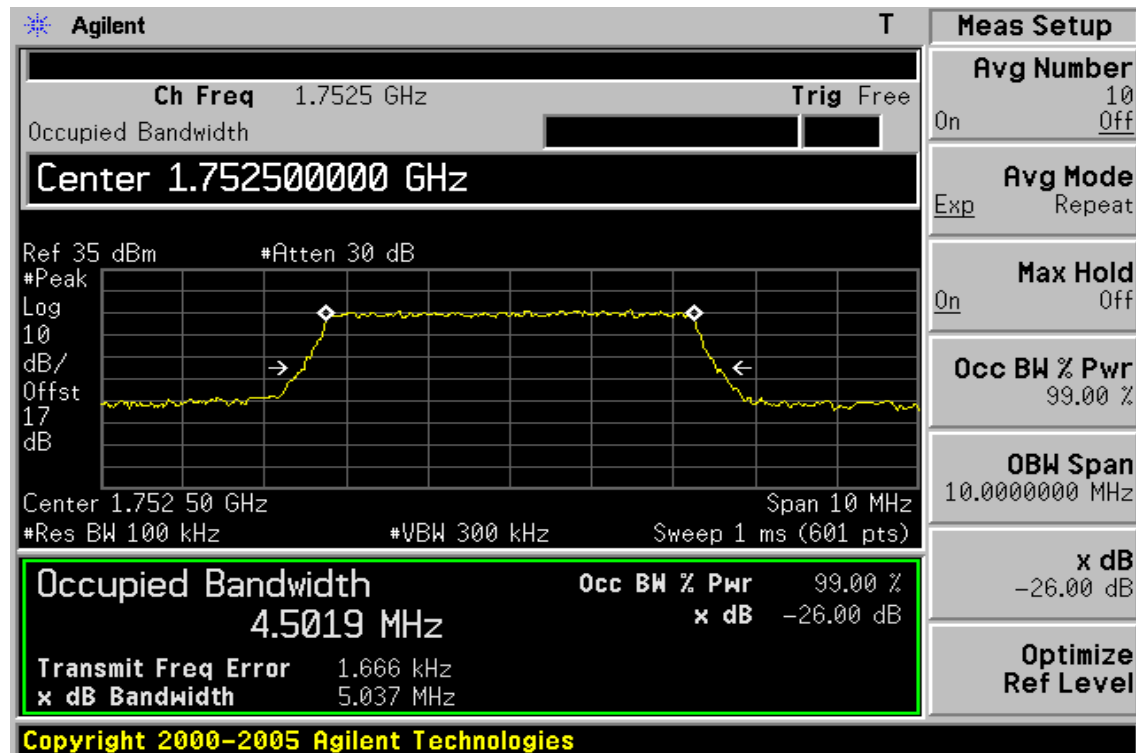
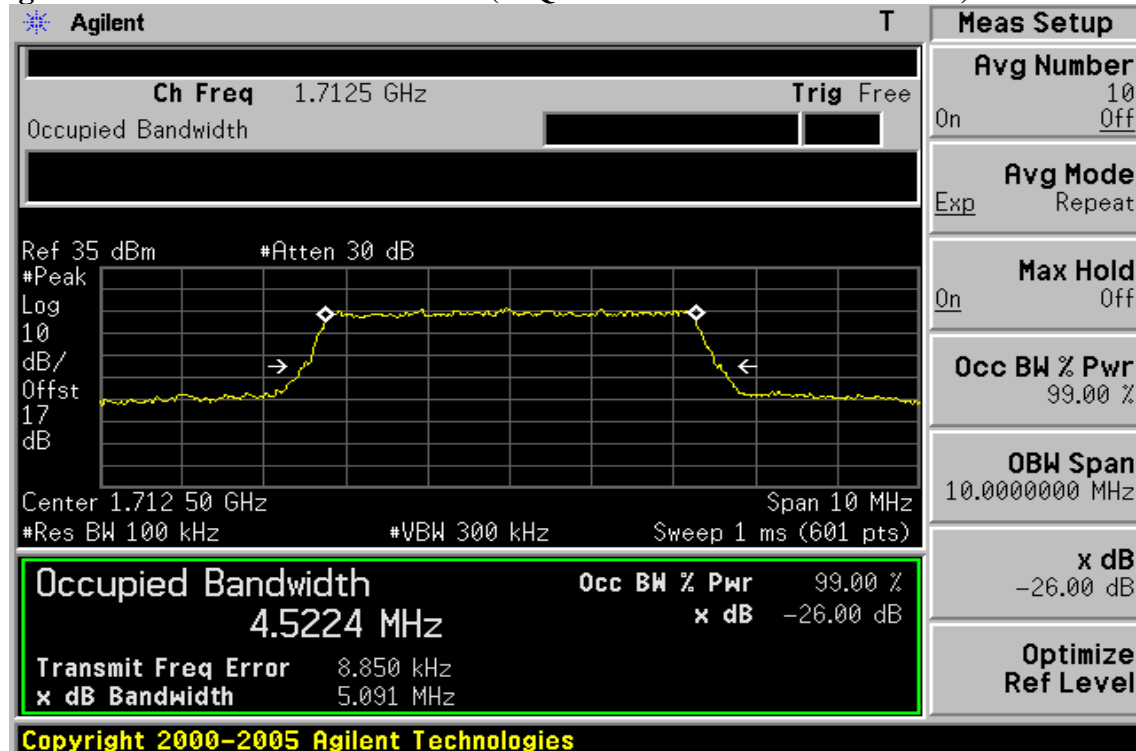


Figure 7-28: 5MHz BW LTE-Band 4(16QAM RB Number: 25 Offset: 0) Channel Low



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Figure 7-29: 5MHz BW LTE-Band 4(16QAM RB Number: 25 Offset: 0) Channel Mid

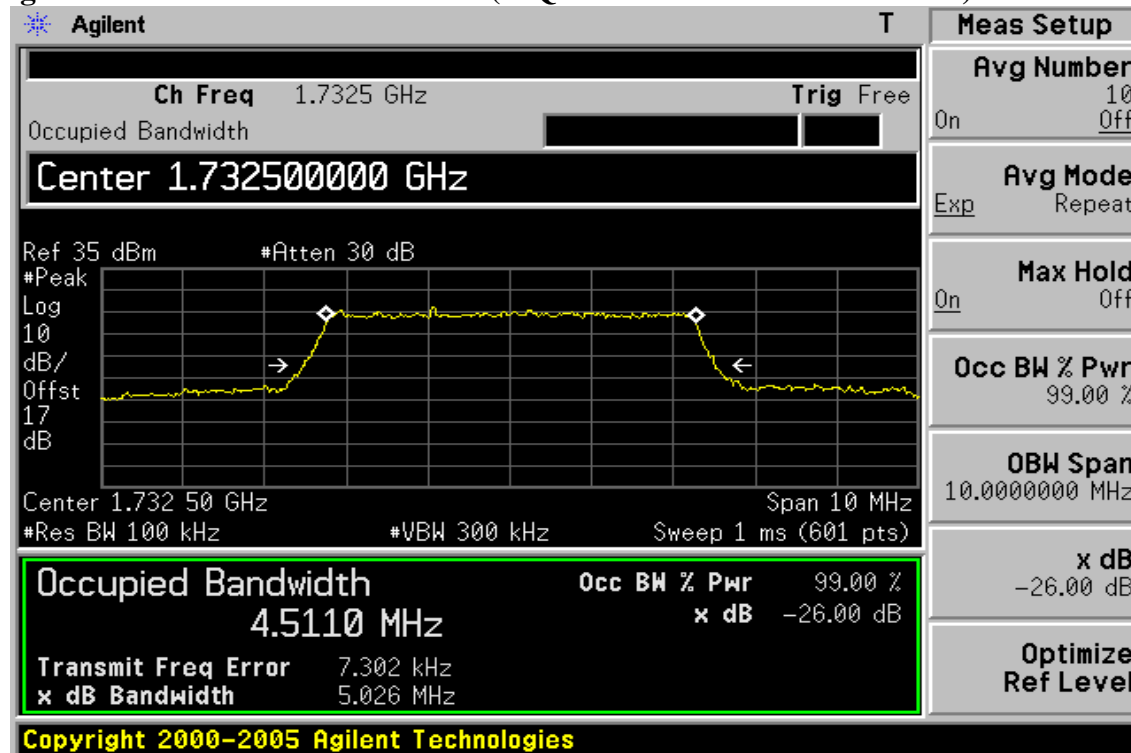
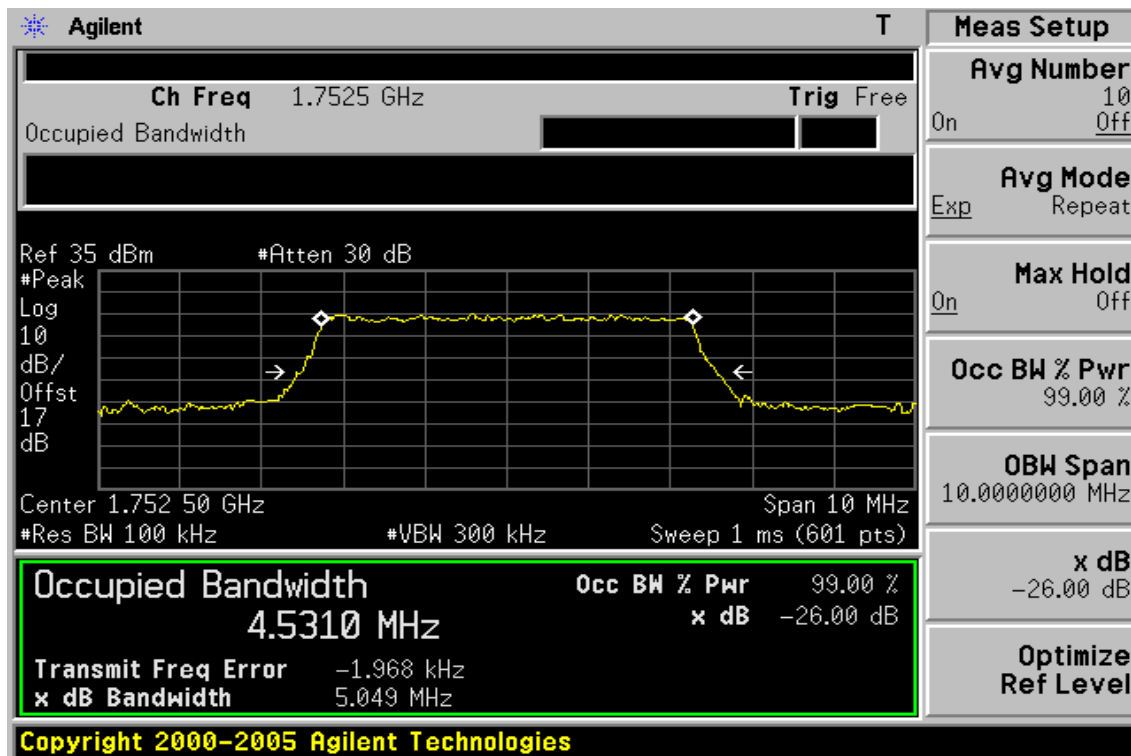


Figure 7-30: 5MHz BW LTE-Band 4(16QAM RB Number: 25 Offset: 0) Channel High



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Figure 7-31: 10MHz BW LTE-Band 4(QPSK RB Number: 50 Offset: 0) Channel Low

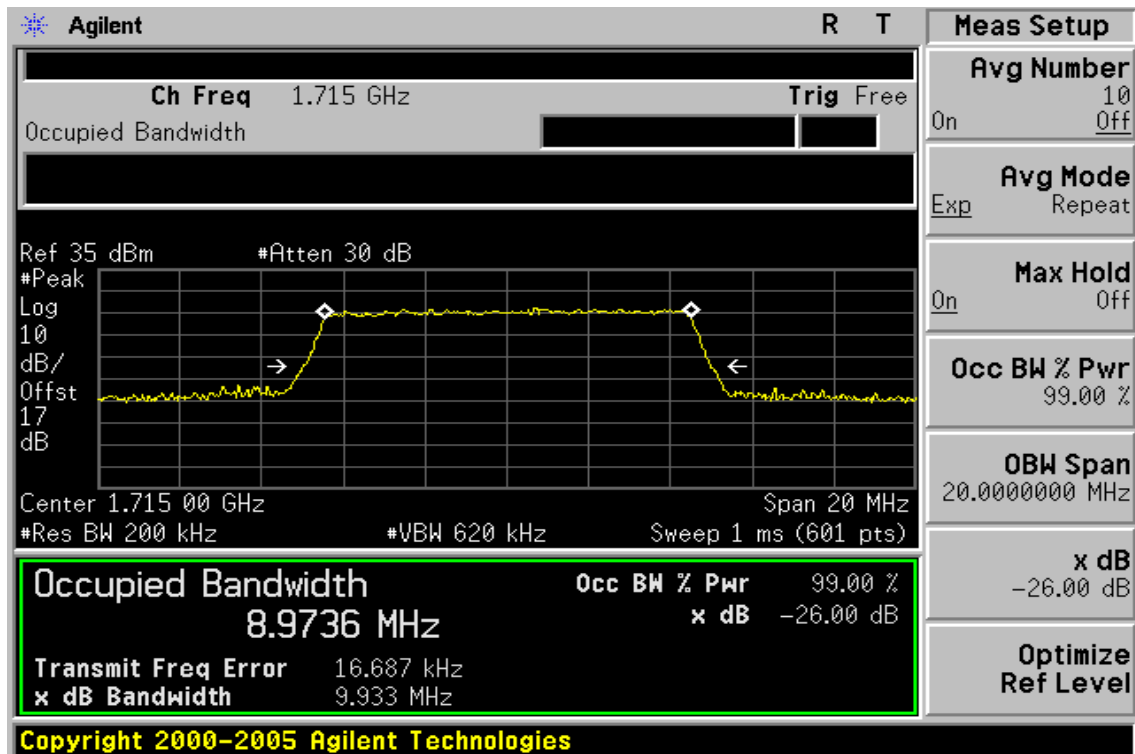
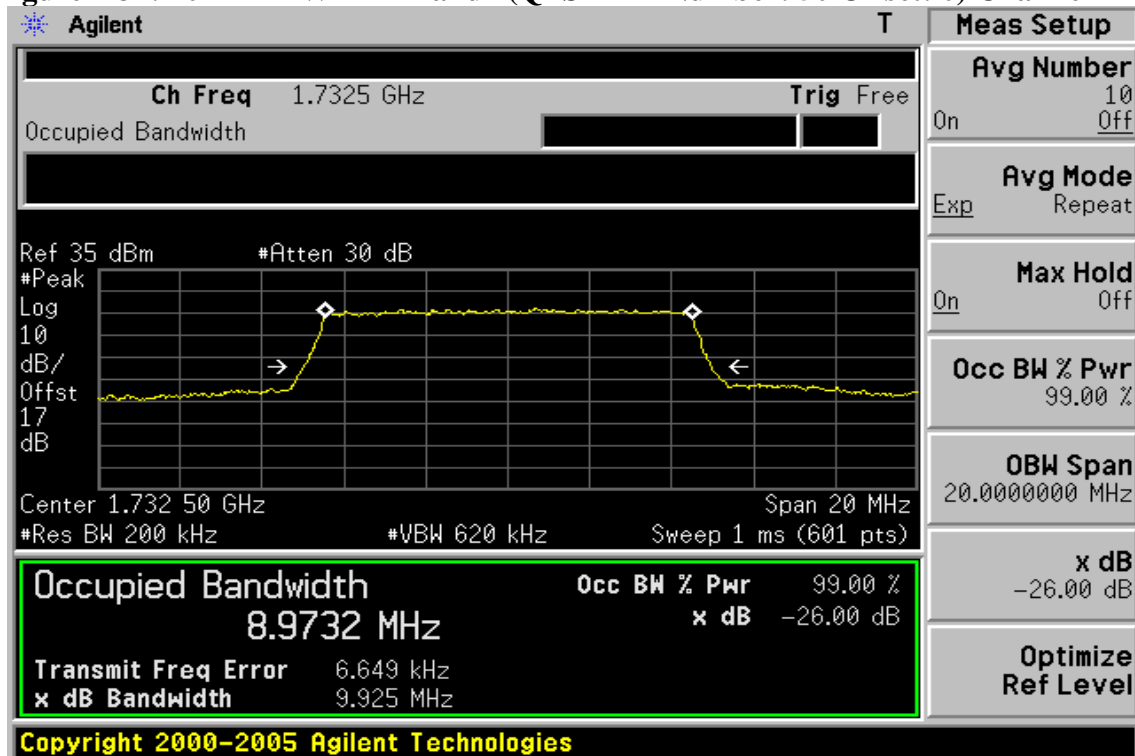


Figure 7-32: 10MHz BW LTE-Band 4(QPSK RB Number: 50 Offset: 0) Channel Mid



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Figure 7-33: 10MHz BW LTE-Band 4(QPSK RB Number: 50 Offset: 0) Channel High

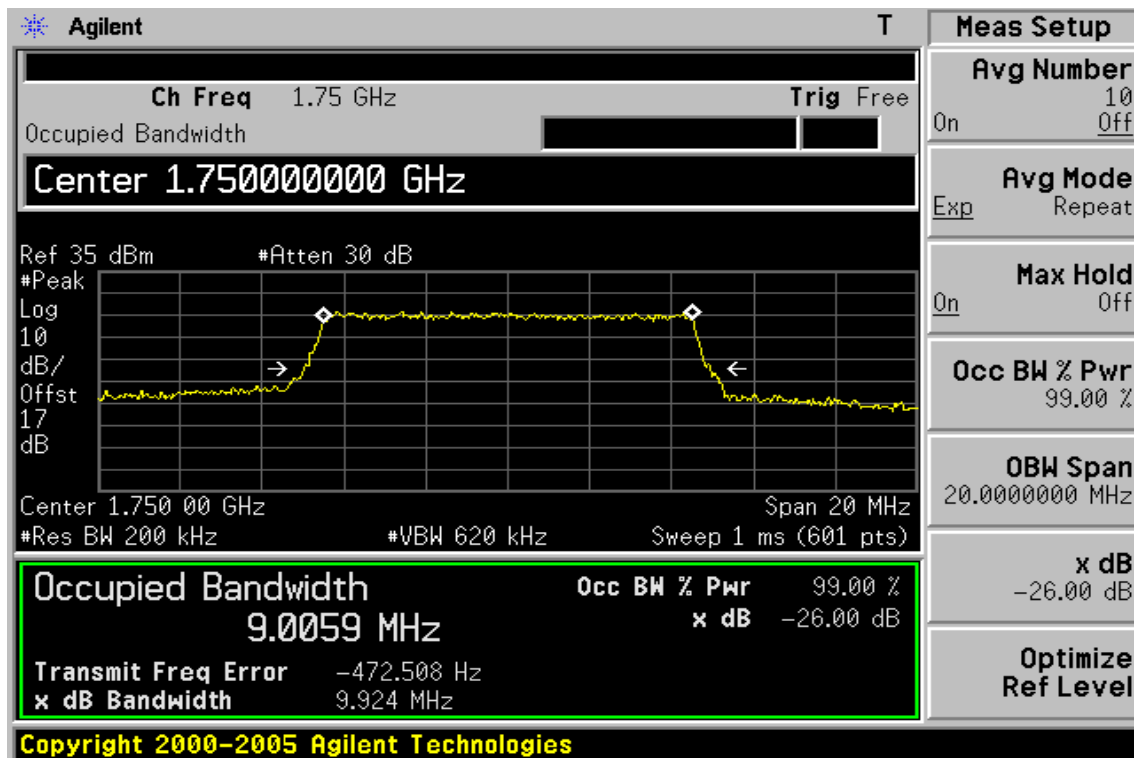
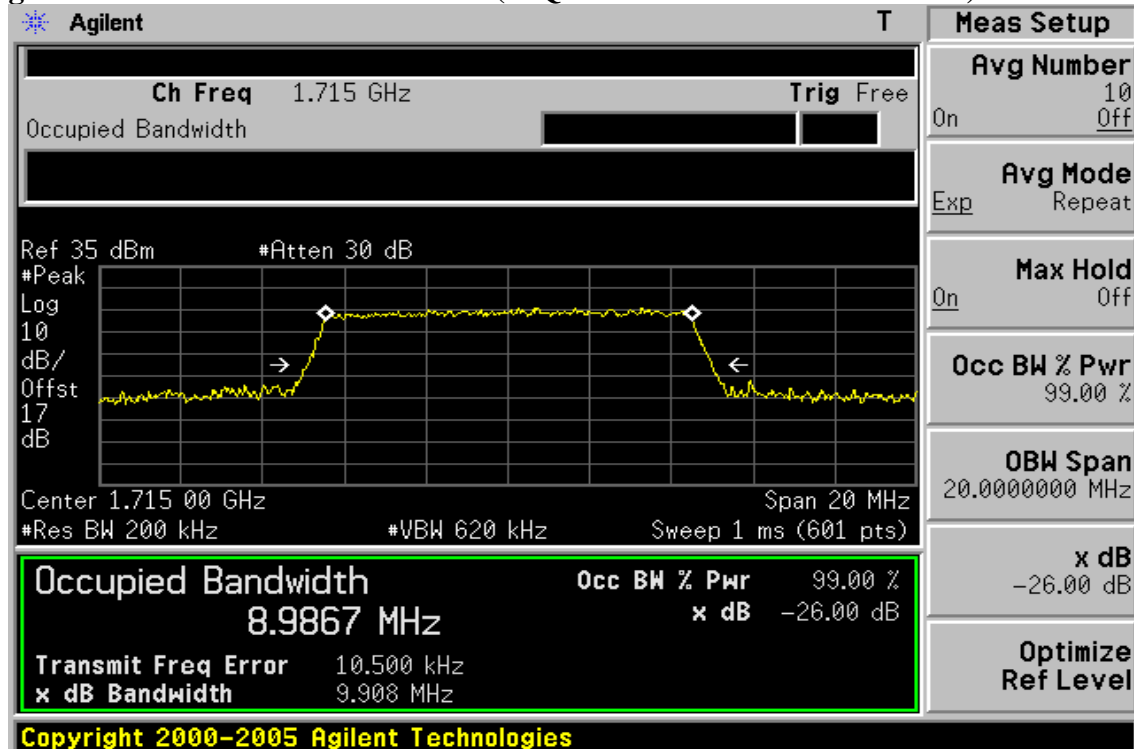


Figure 7-34: 10MHz BW LTE-Band 4(16QAM RB Number: 50 Offset: 0) Channel Low



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Figure 7-35: 10MHz BW LTE-Band 4(16QAM RB Number: 50 Offset: 0) Channel Mid

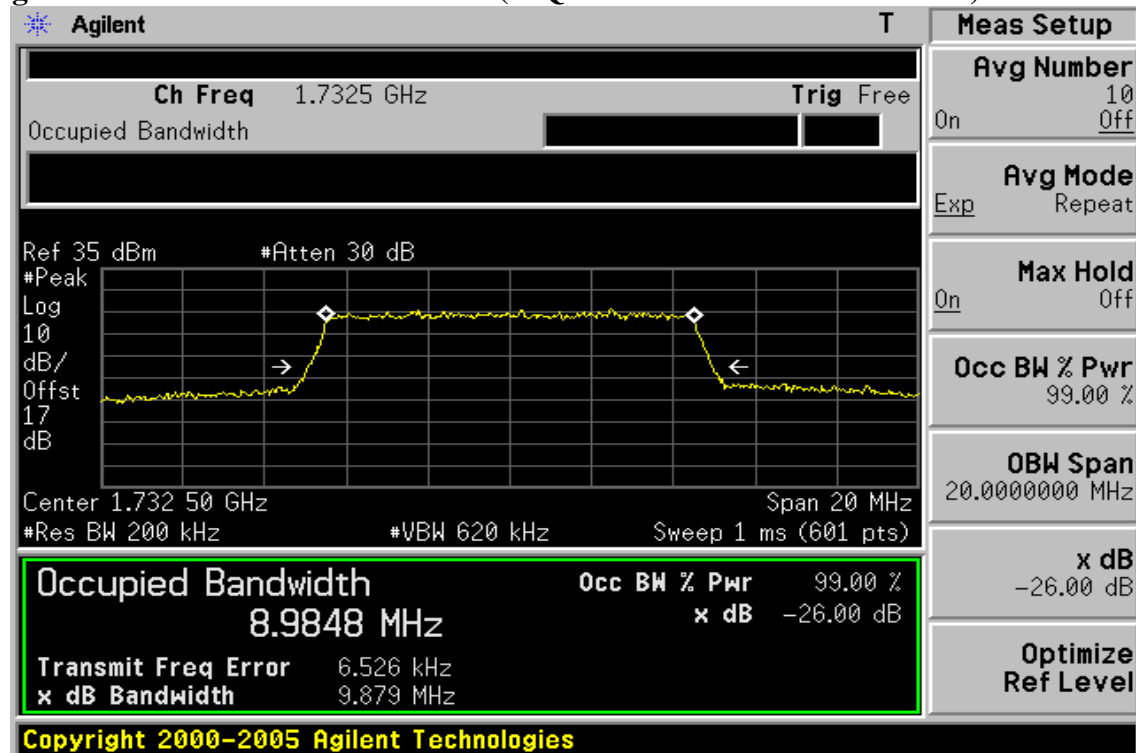
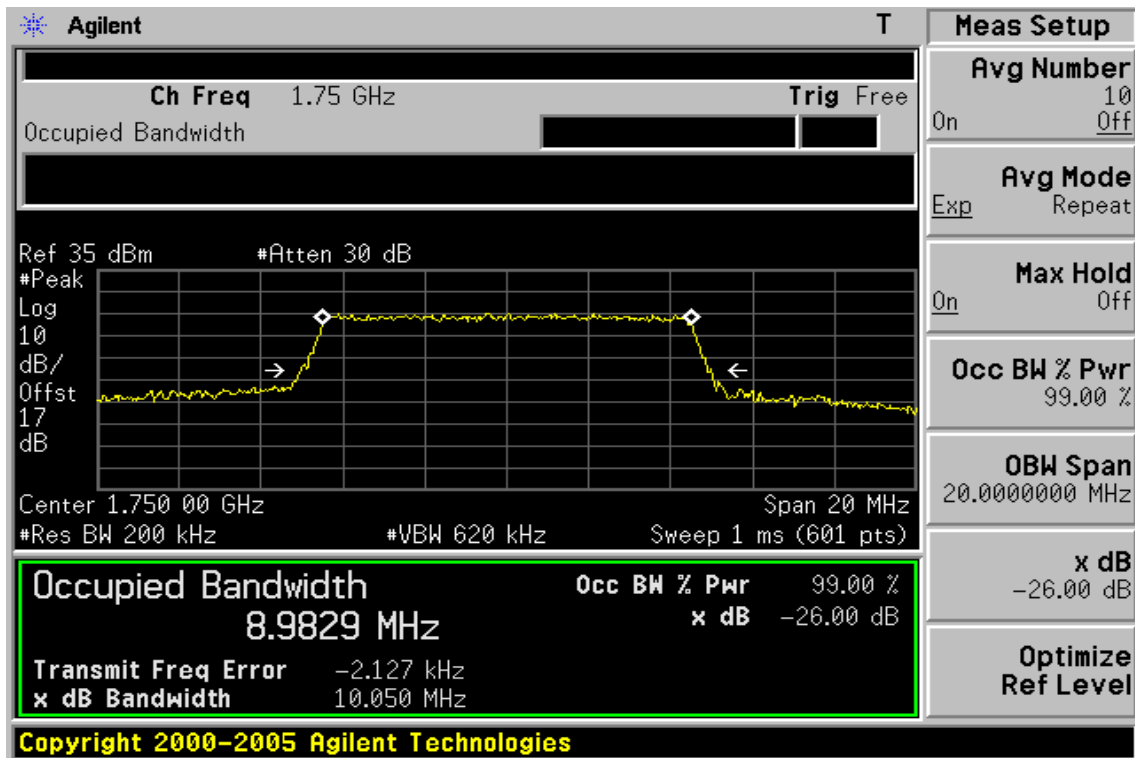


Figure 7-36: 10MHz BW LTE-Band 4(16QAM RB Number: 50 Offset: 0) Channel High



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Figure 7-37: 5MHz BW LTE-Band 17(QPSK RB Number: 25 Offset: 0) Channel Low

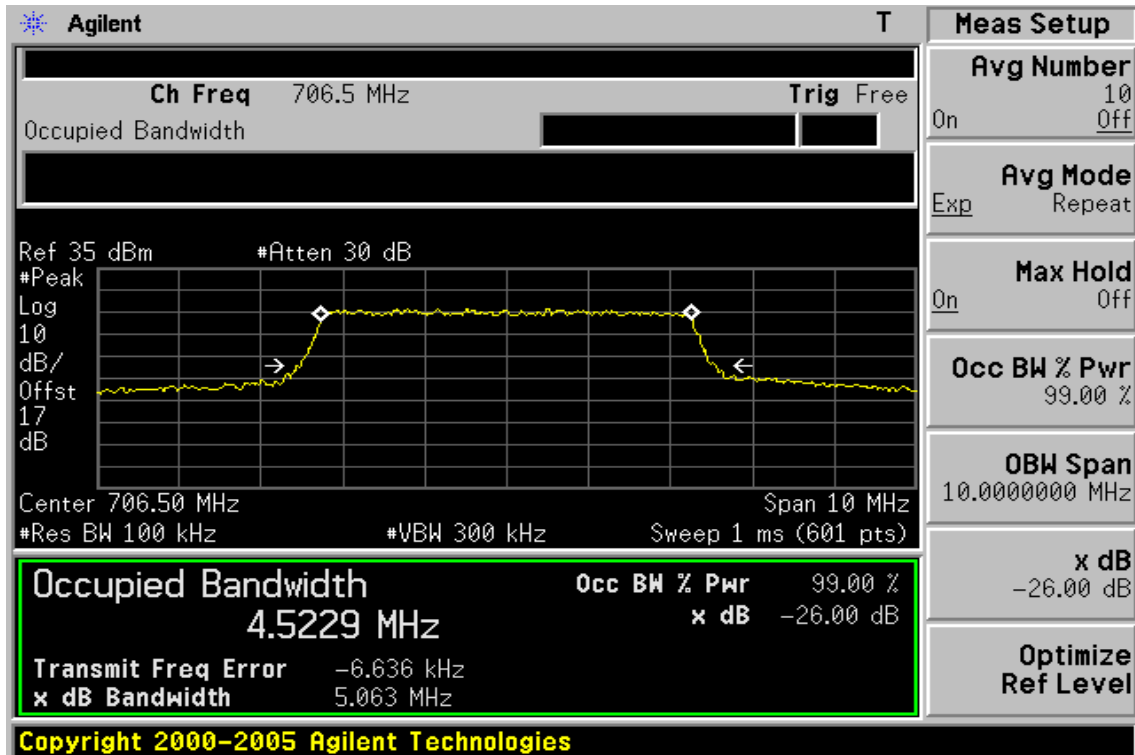
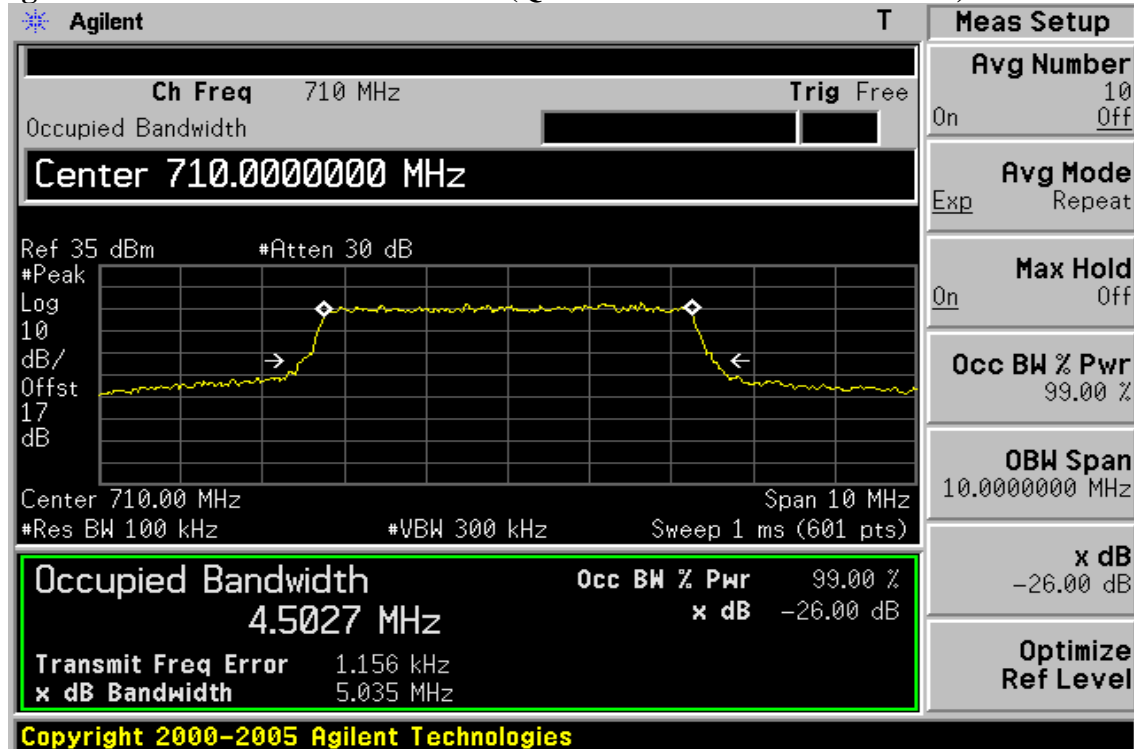


Figure 7-38: 5MHz BW LTE-Band 17(QPSK RB Number: 25 Offset: 0) Channel Mid



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Figure 7-39: 5MHz BW LTE-Band 17(QPSK RB Number: 25 Offset: 0) Channel High

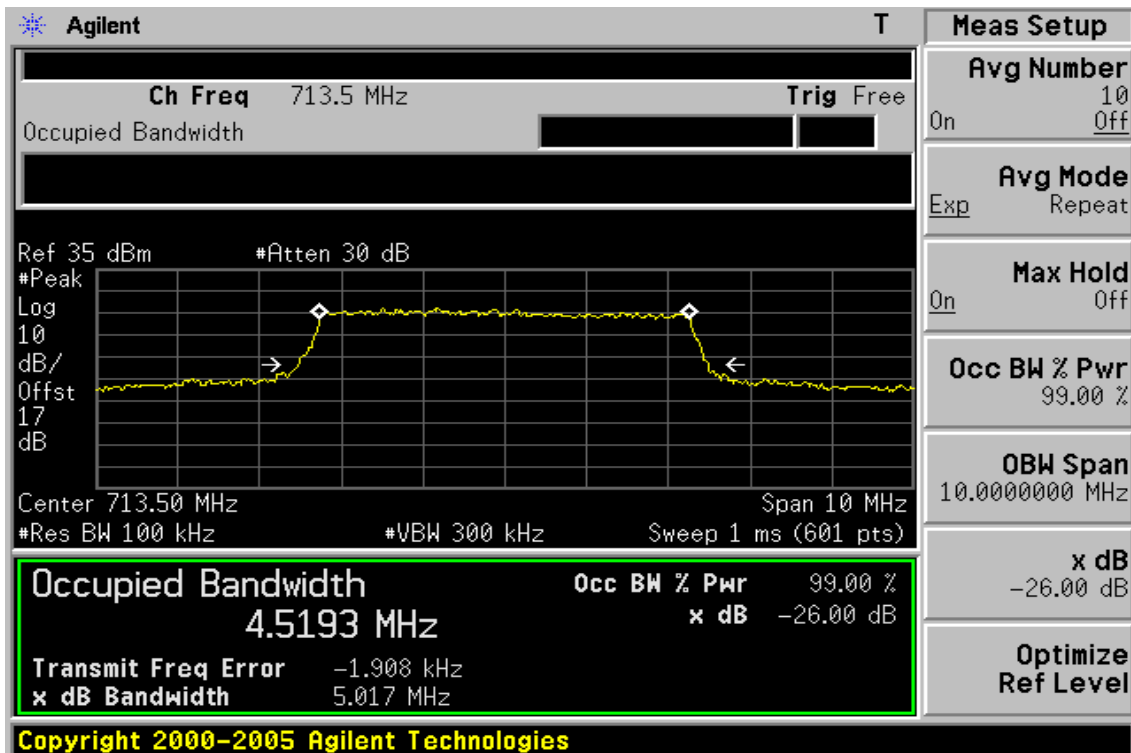
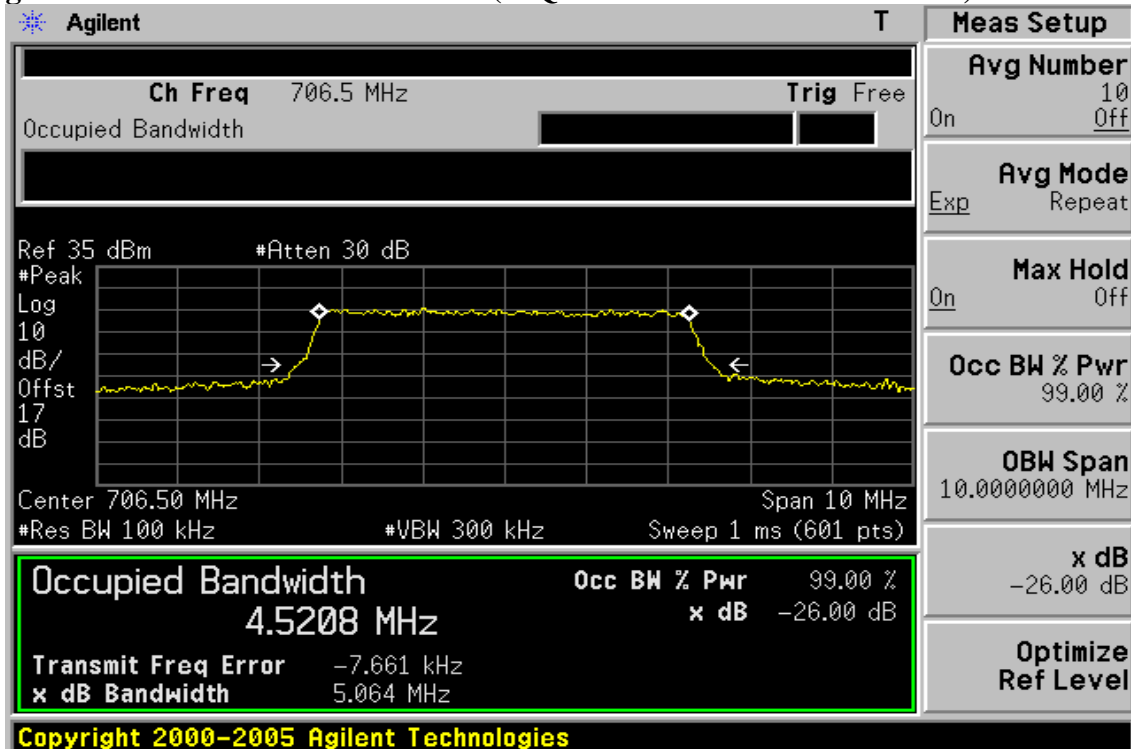


Figure 7-40: 5MHz BW LTE-Band 17(16QAM RB Number: 25 Offset: 0) Channel Low



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Figure 7-41: 5MHz BW LTE-Band 17(16QAM RB Number: 25 Offset: 0) Channel Mid

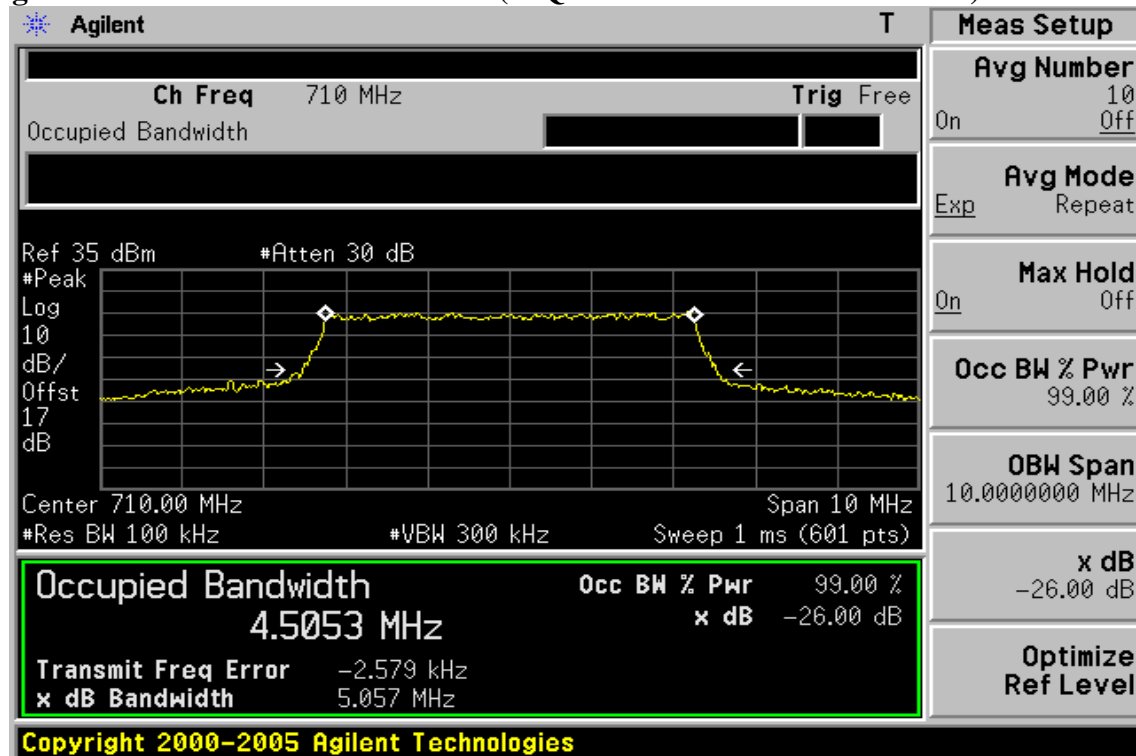
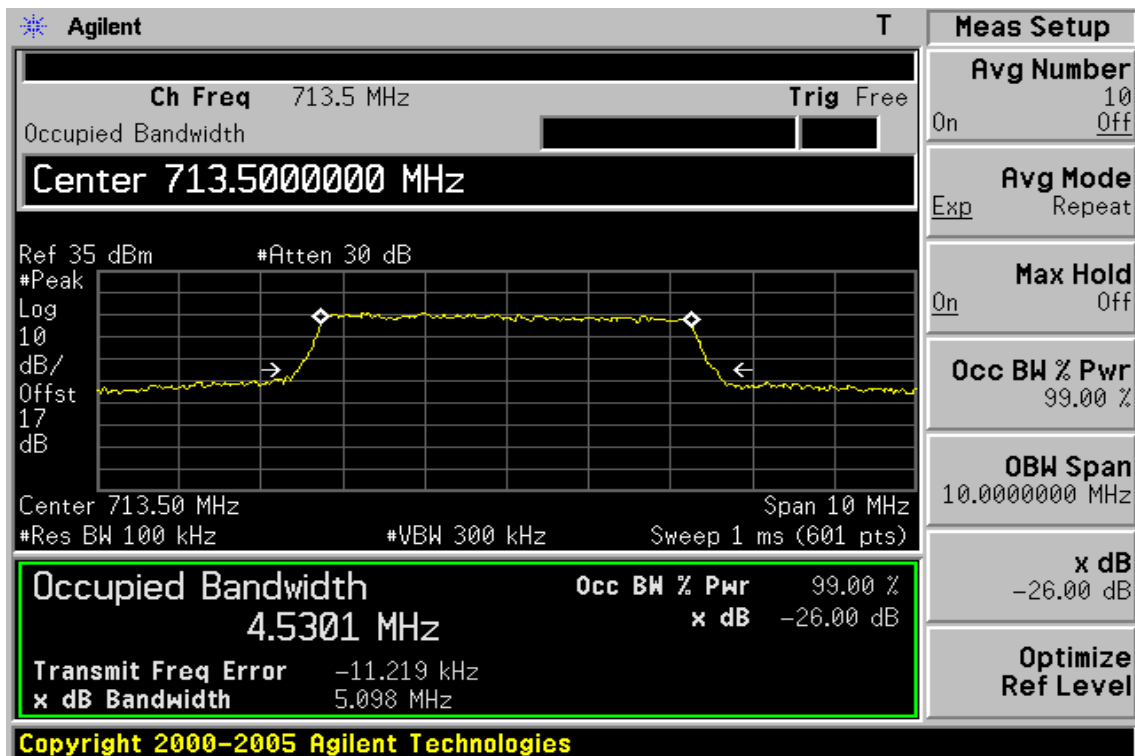


Figure 7-42: 5MHz BW LTE-Band 17(16QAM RB Number: 25 Offset: 0) Channel High



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Figure 7-43: 10MHz BW LTE-Band 17(QPSK RB Number: 50 Offset: 0) Channel Low

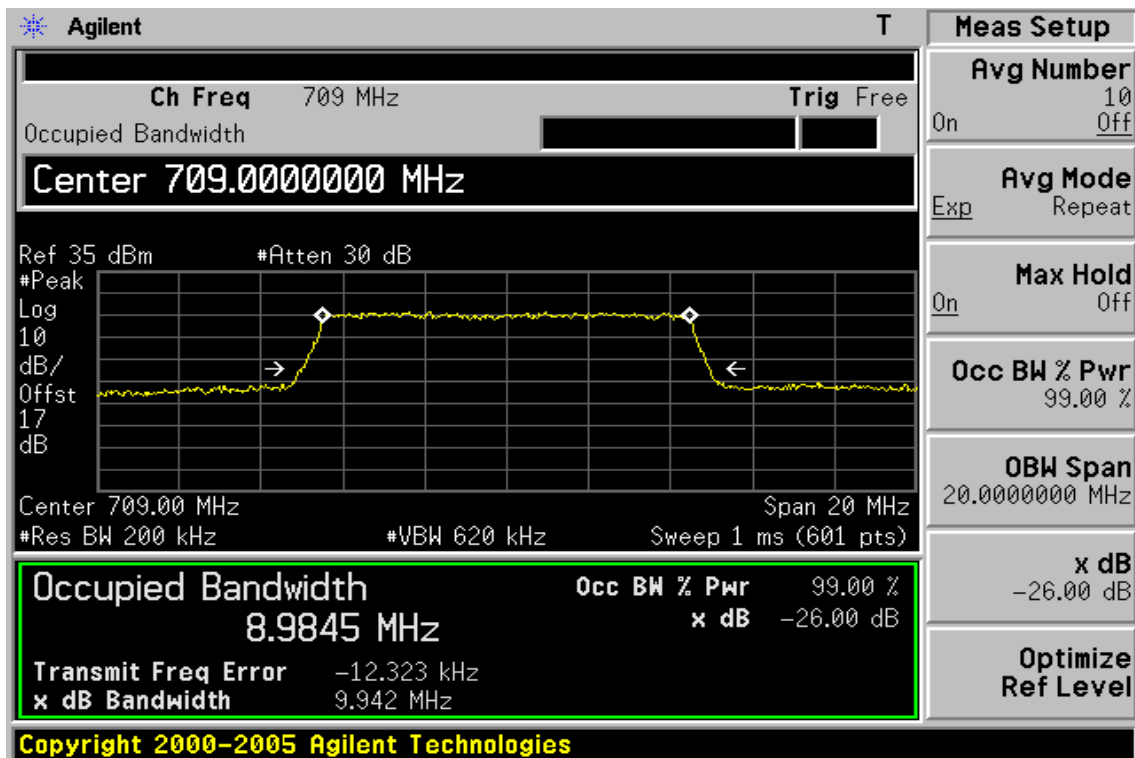
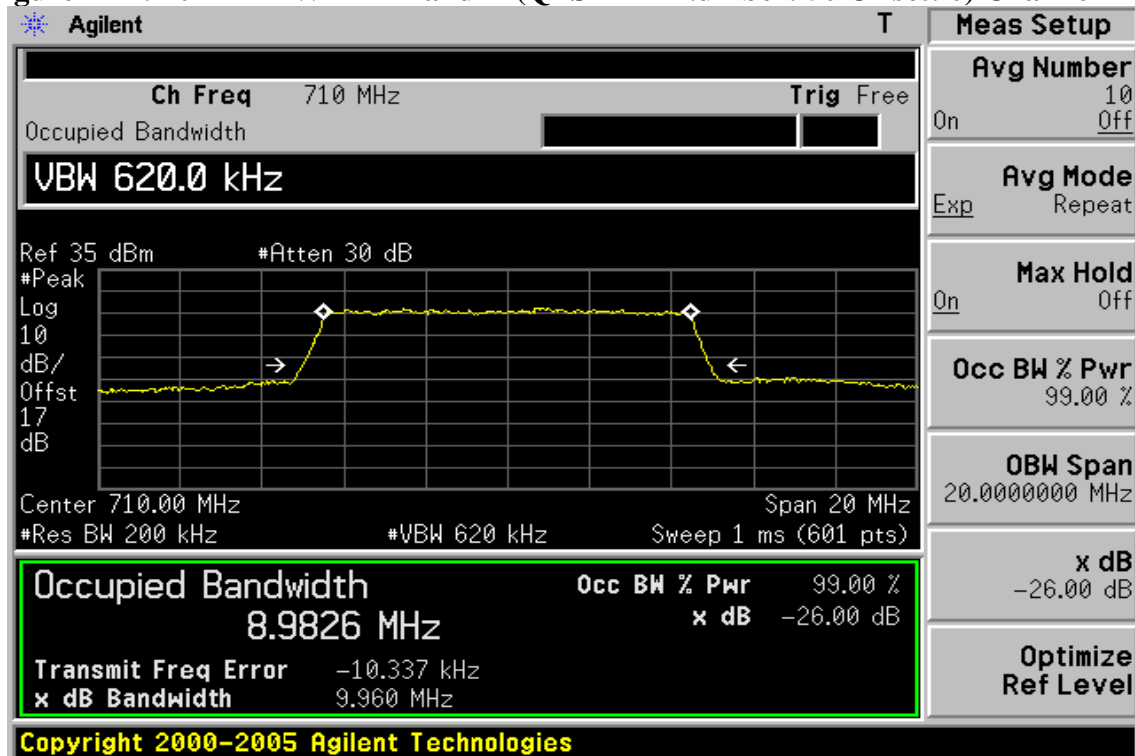


Figure 7-44: 10MHz BW LTE-Band 17(QPSK RB Number: 50 Offset: 0) Channel Mid



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Figure 7-45: 10MHz BW LTE-Band 17(QPSK RB Number: 50 Offset: 0) Channel High

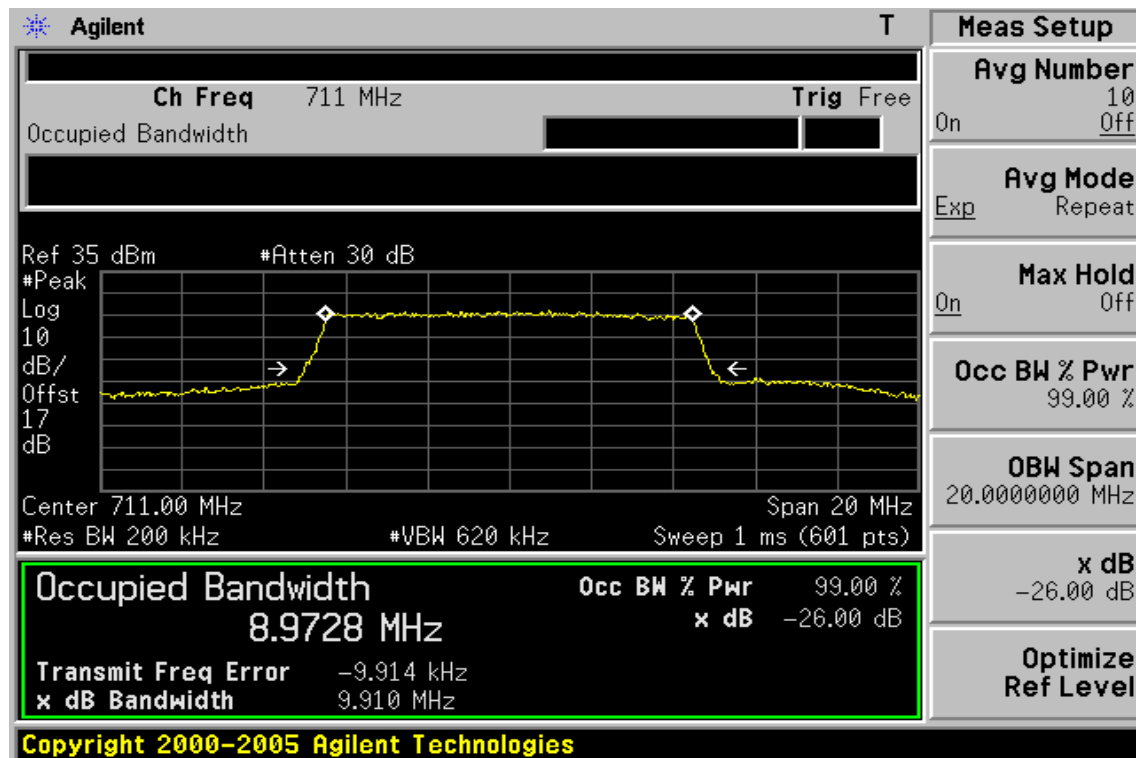
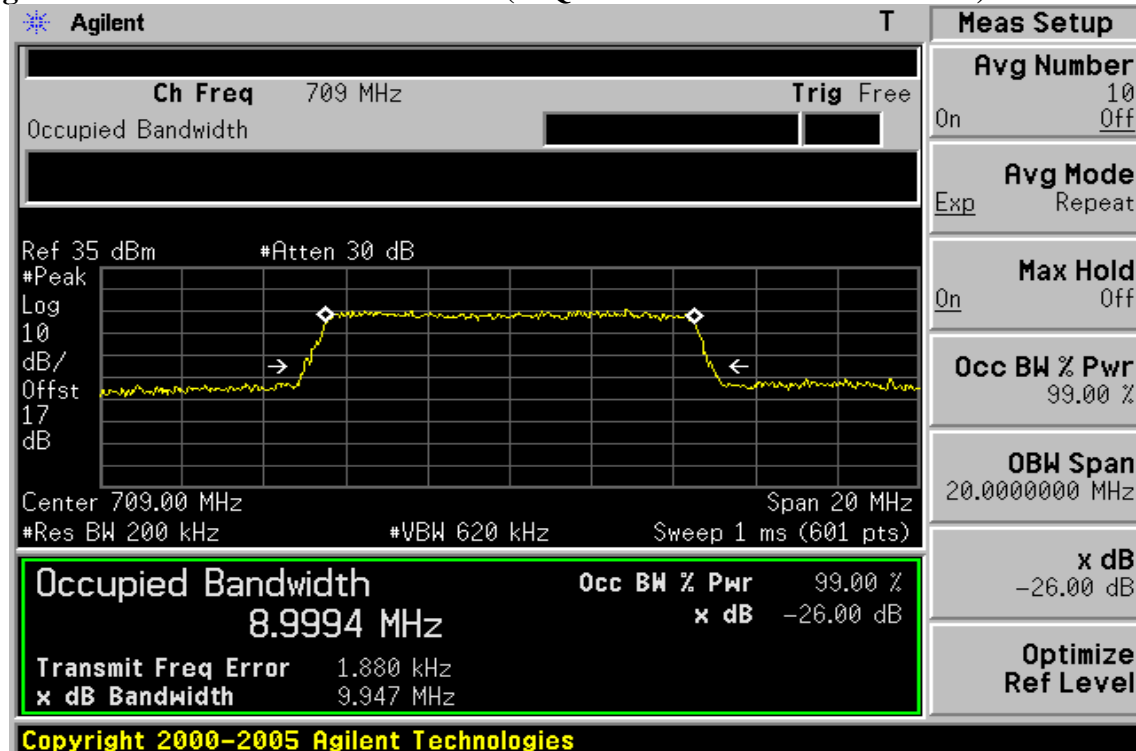


Figure 7-46: 10MHz BW LTE-Band 17(16QAM RB Number: 50 Offset: 0) Channel Low



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Figure 7-47: 10MHz BW LTE-Band 17(16QAM RB Number: 50 Offset: 0) Channel Mid

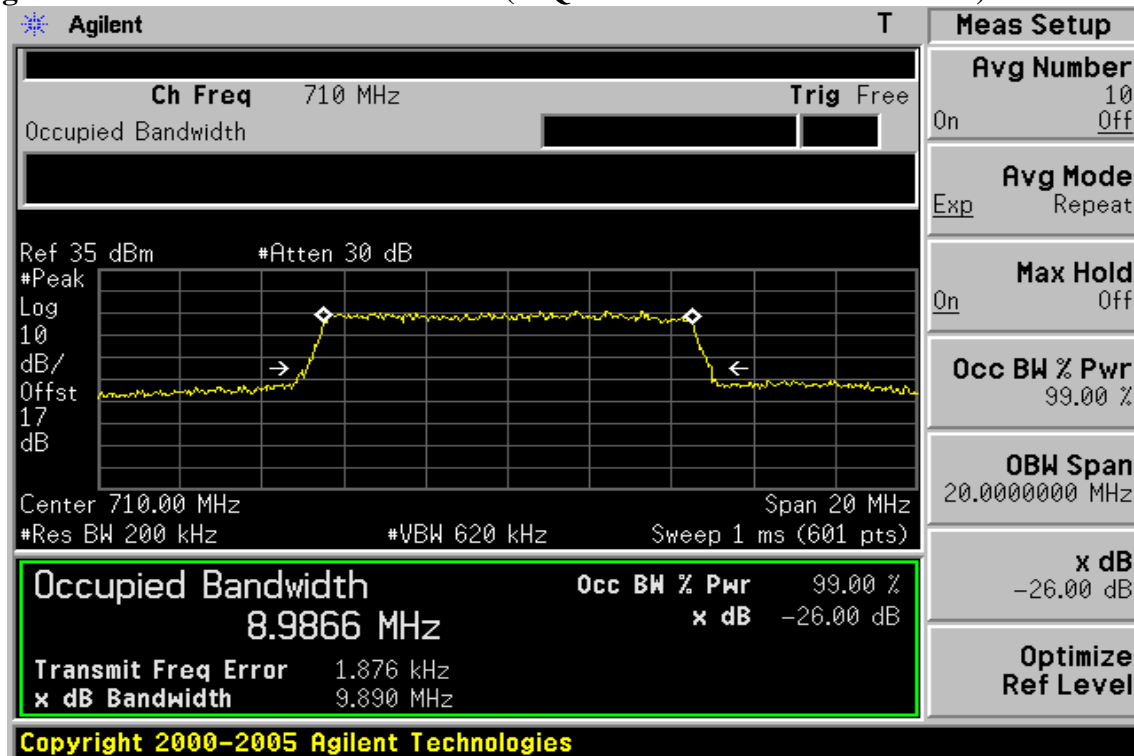
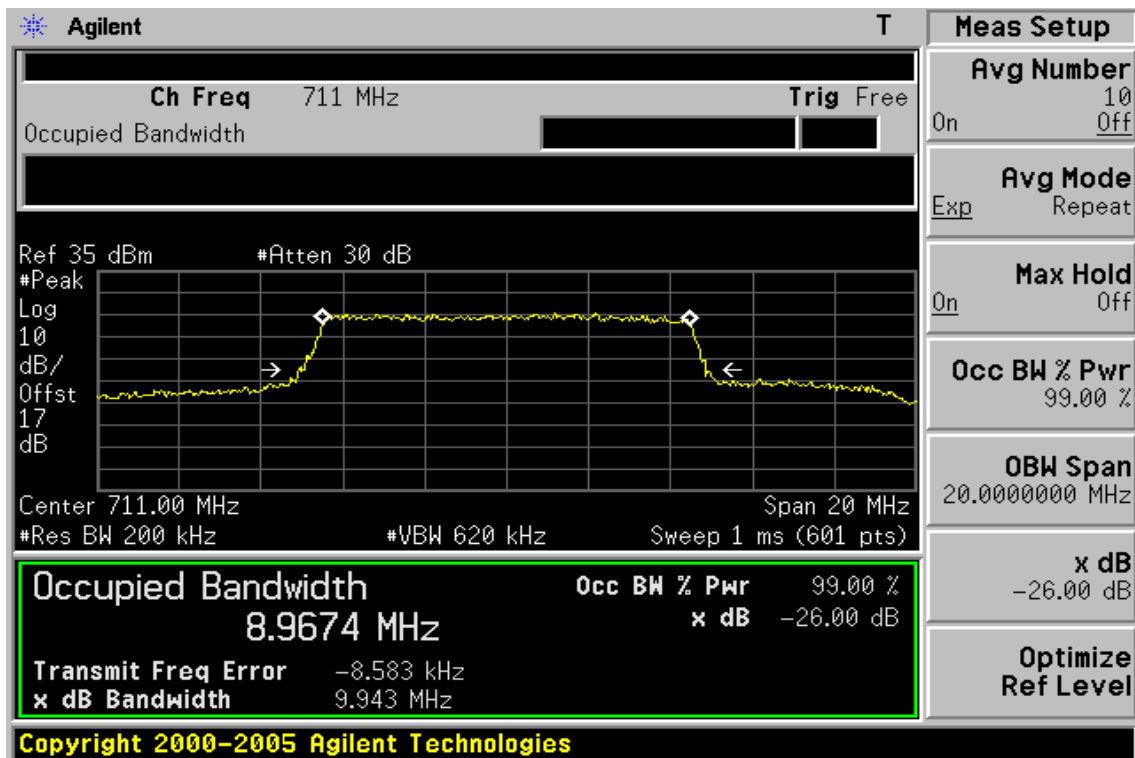


Figure 7-48: 10MHz BW LTE-Band 17(16QAM RB Number: 50 Offset: 0) Channel High



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## 9. OUT OF BAND EMISSION AT ANTENNA TERMINALS

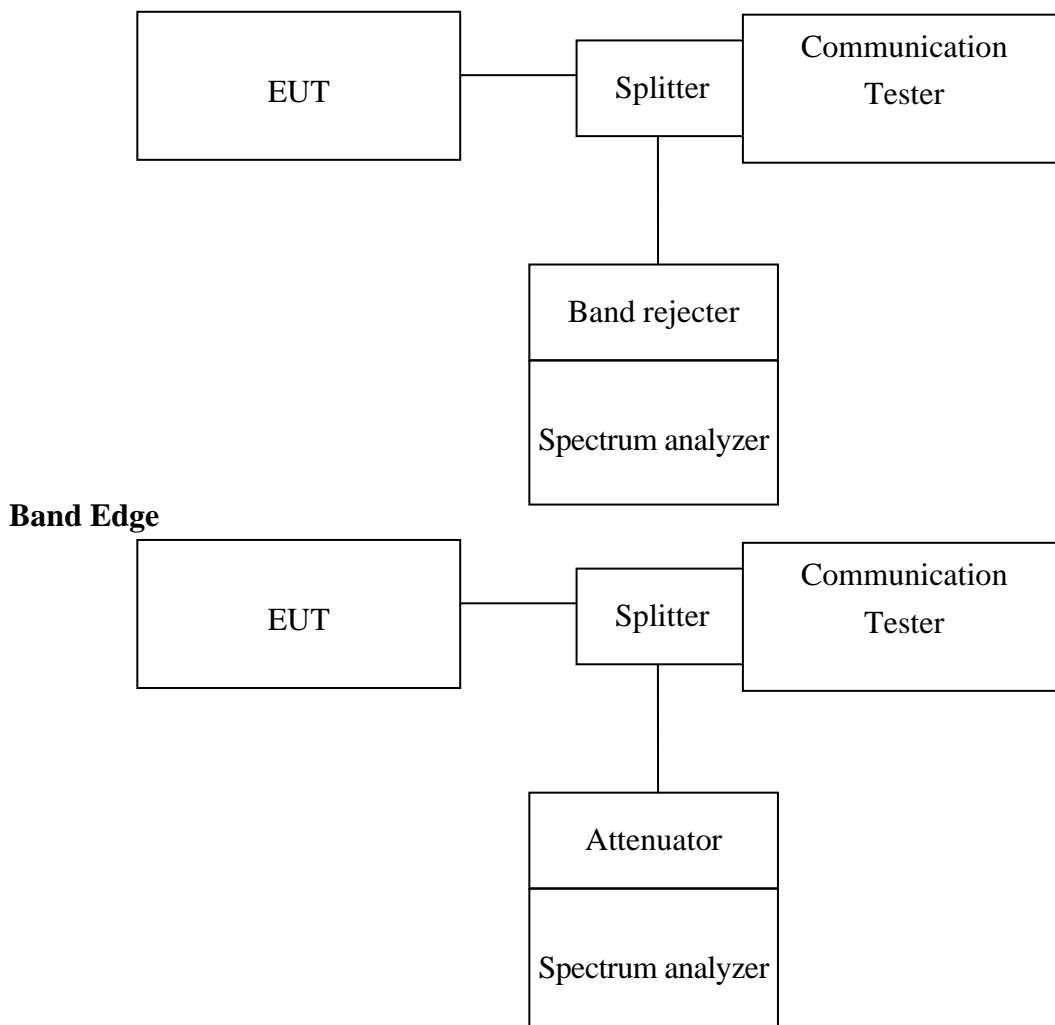
### 9.1. Standard Applicable:

According to FCC §2.1051.

FCC §22.917(a), §24.238(a), §27.53(g) the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specified in the instruction manual and/ or alignment procedure, shall not be less than  $43 + 10 \log$  (mean output power in watts) dBc below the mean power output outside a license's frequency block (-13dBm)

### 9.2. Test SET-UP:

#### Out of band emission



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### 9.3. Measurement Procedure:

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.

For the out of band: Set the RBW, VBW = 1MHz, Start=30MHz, Stop= 10th harmonic. Limit = -13dBm

Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions. Limit, -13dBm.

For operations in the 698–746 MHz band, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed. Limit, -13dBm.

#### Conducted Emission:

- 1、To connect Antenna Port of EUT to Spectrum.
- 2、Set RBW = 1MHz & VBW = 1MHz on Spectrum.
- 3、Sweep the frequency to determine spurious emission as seen on spectrum from span of 30 to 1G, 1G to 2.5G, 2.5G to 7.5G, 7.5G to 10G, 10G to 15G and 15G to 20GHz
- 4、Via Software, combine 6 spans of frequency range into one plot

### 9.4. Measurement Equipment Used:

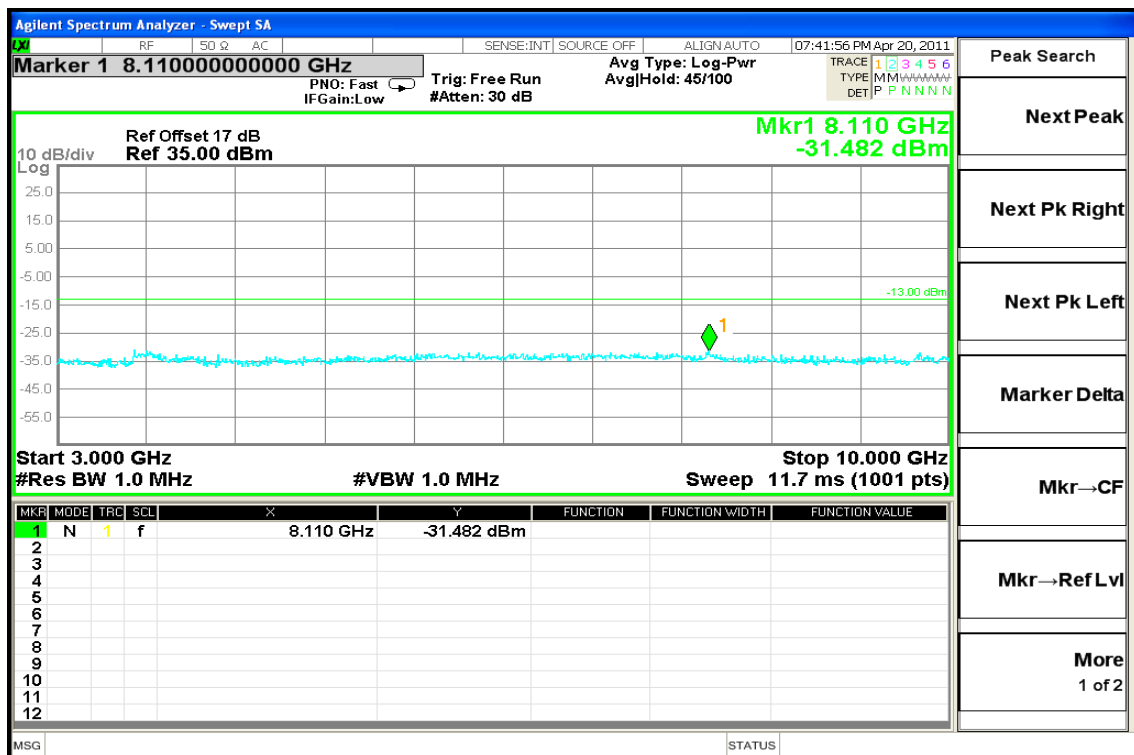
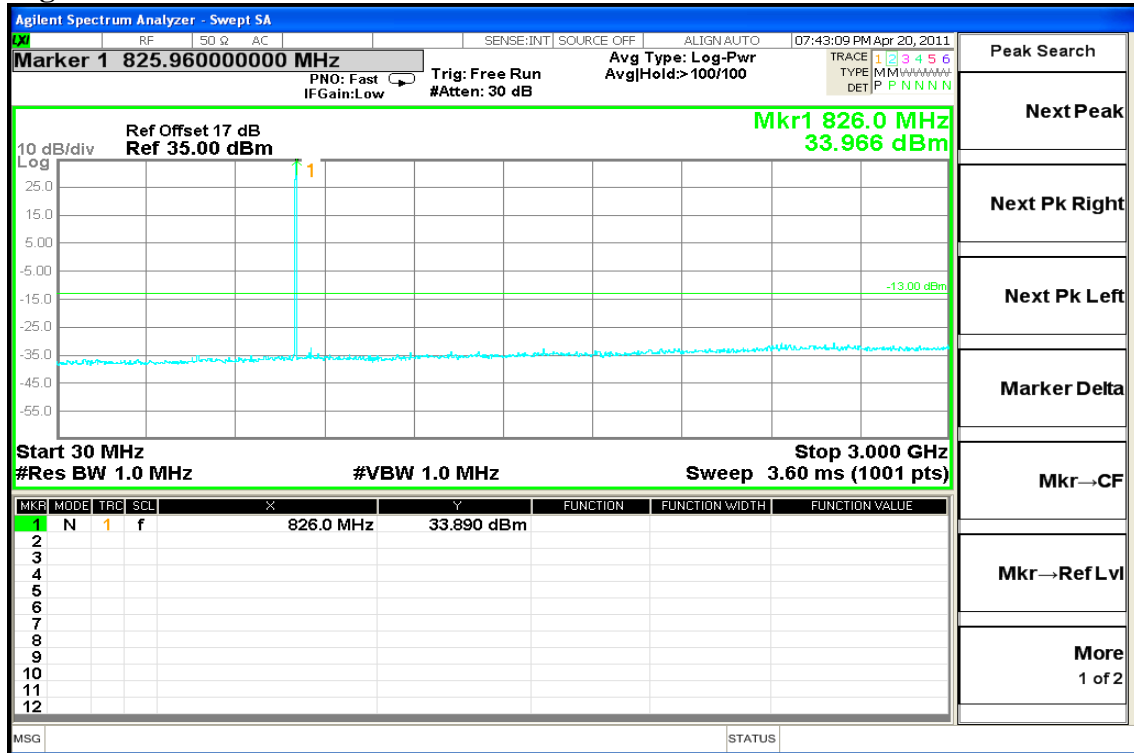
Refer to section 2.4 in this report

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## 9.5. Measurement Result:

Figure 8-1: Out of Band emission at antenna terminals– GSM 850 Channel Lowest

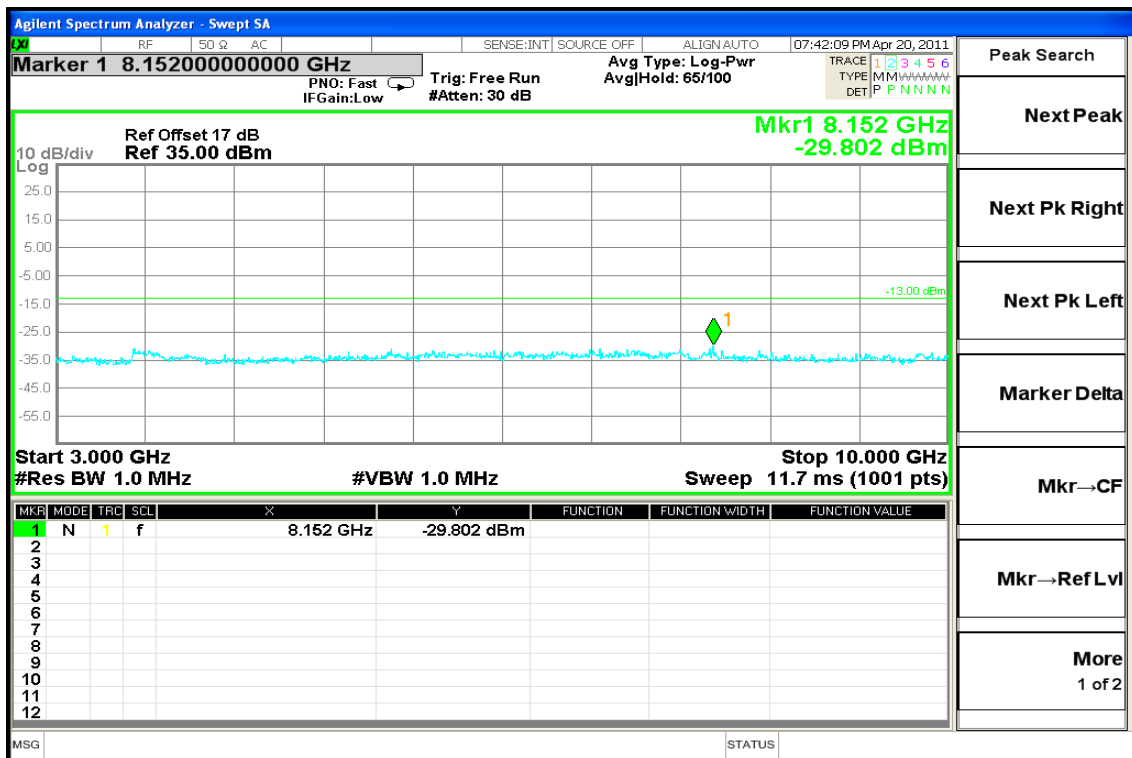
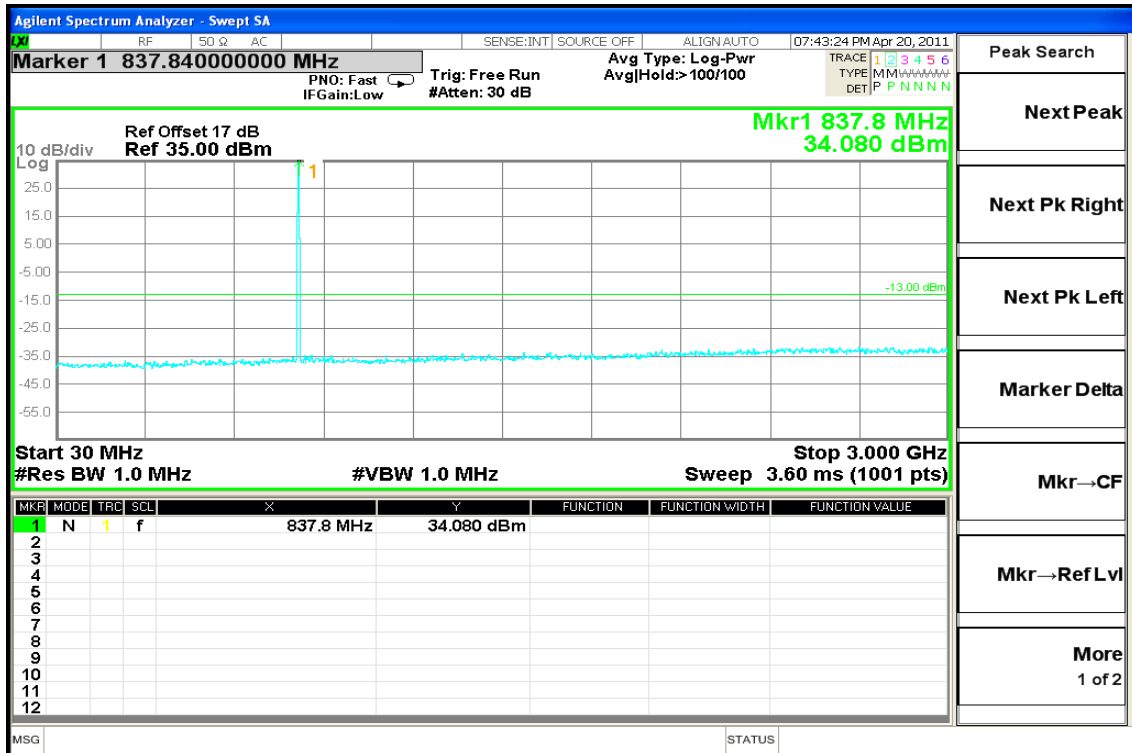


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Figure 8-2: Out of Band emission at antenna terminals –GSM 850 Channel Mid

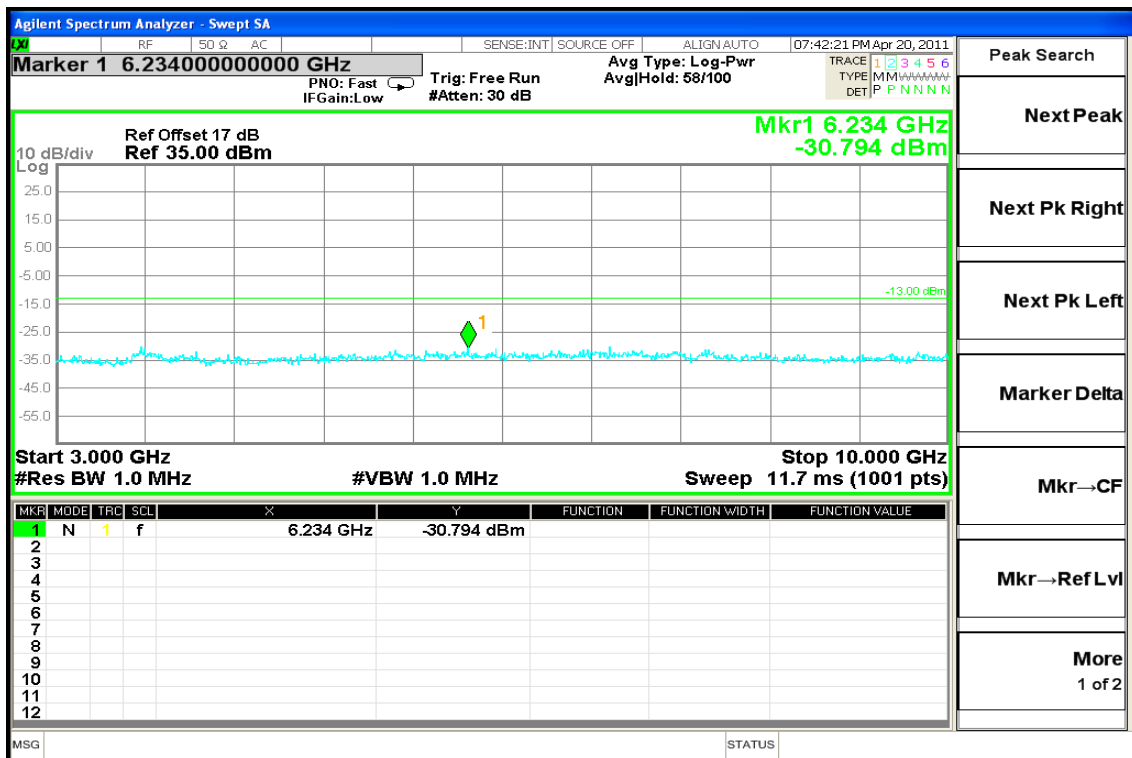
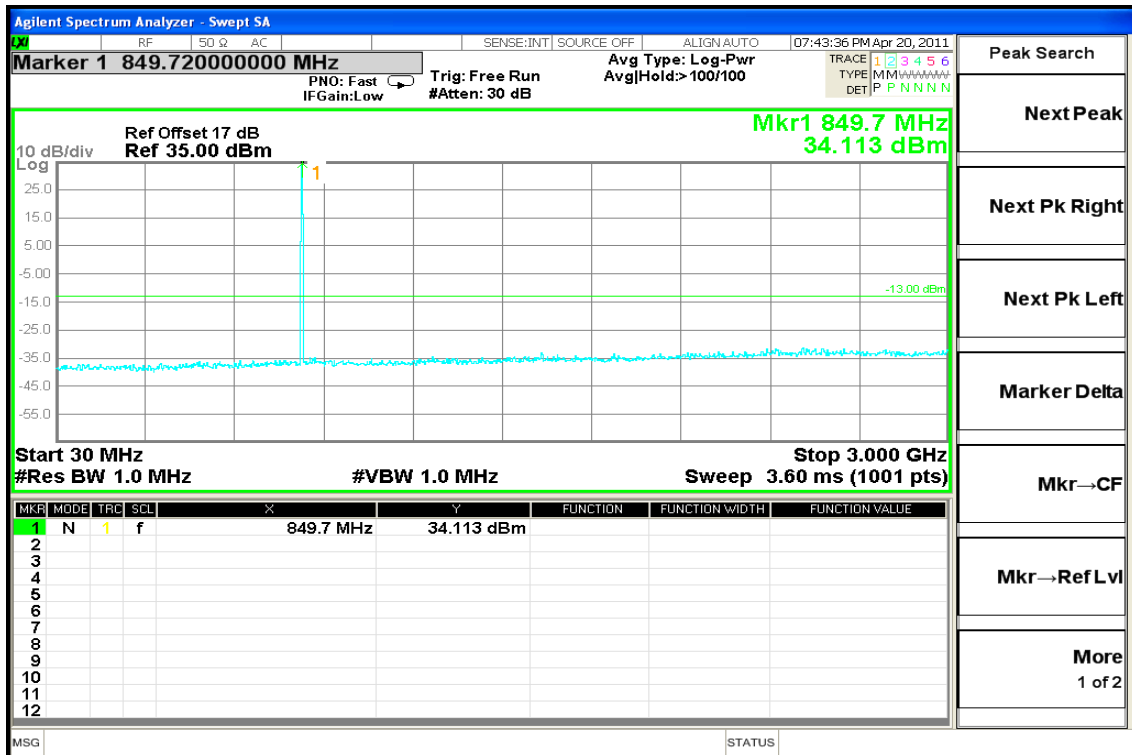


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Figure 8-3: Out of Band emission at antenna terminals–GSM 850 Channel Highest



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Figure 8-4: Band edge emission at antenna terminals –GSM 850 Channel Lowest

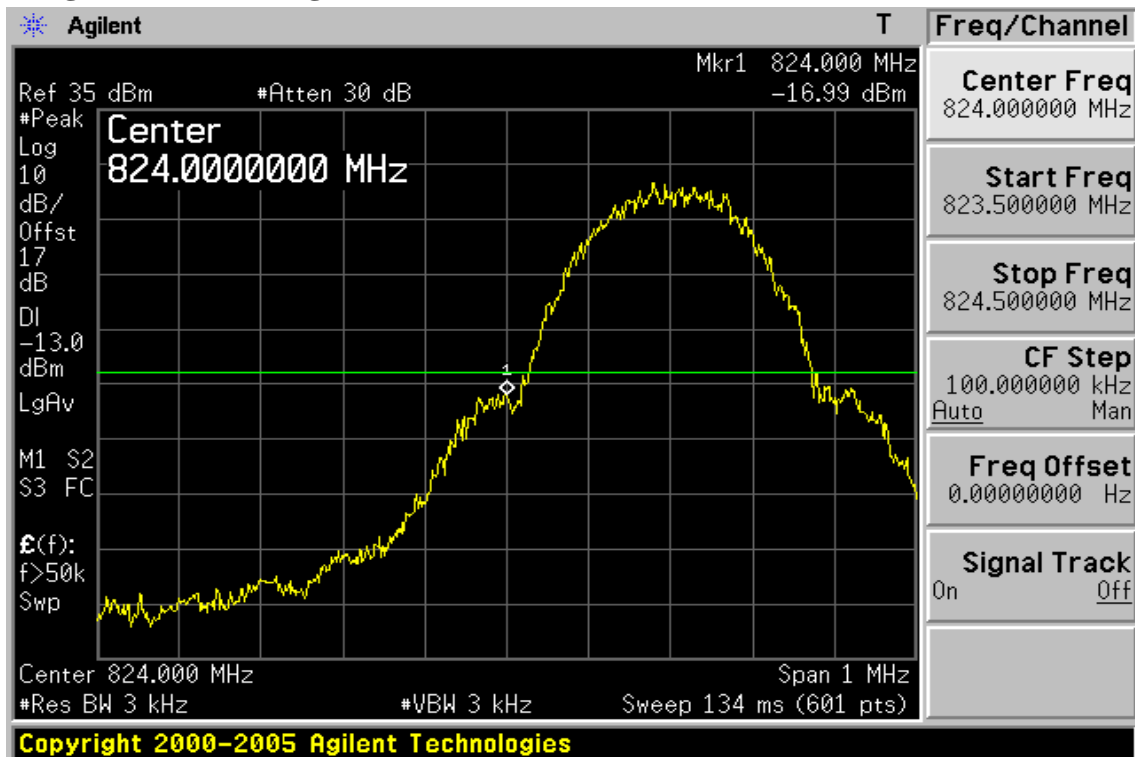
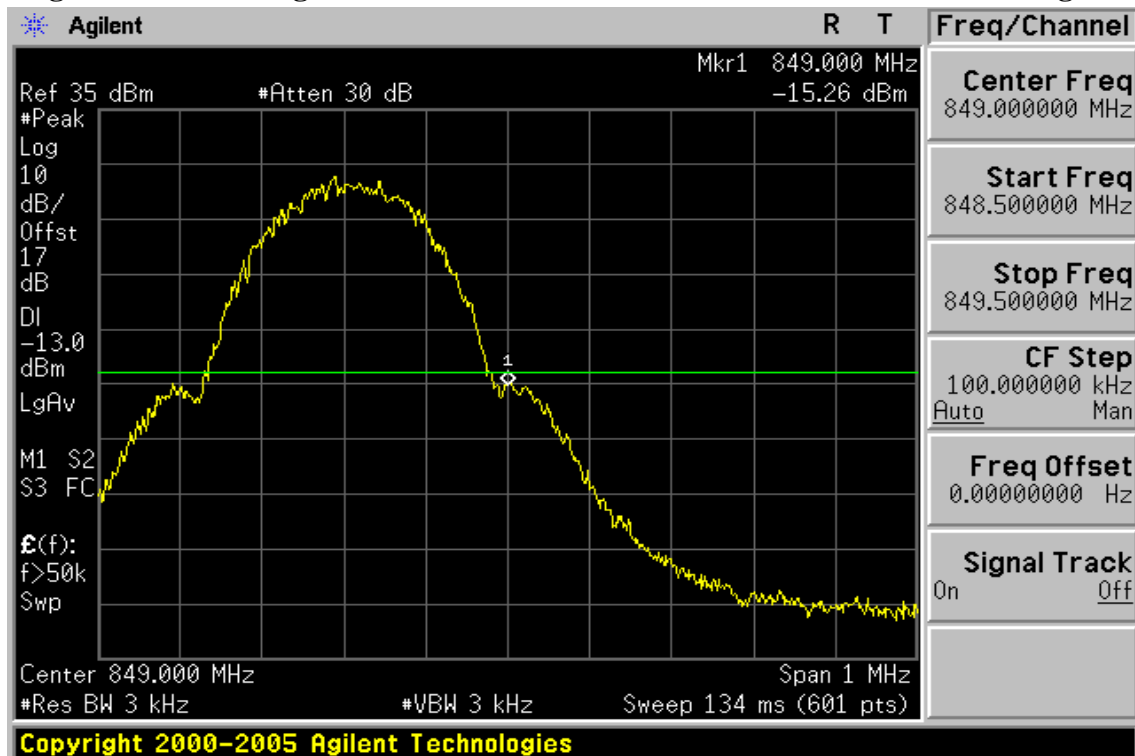


Figure 8-5: Band edge emission at antenna terminals –GSM 850 Channel Highest



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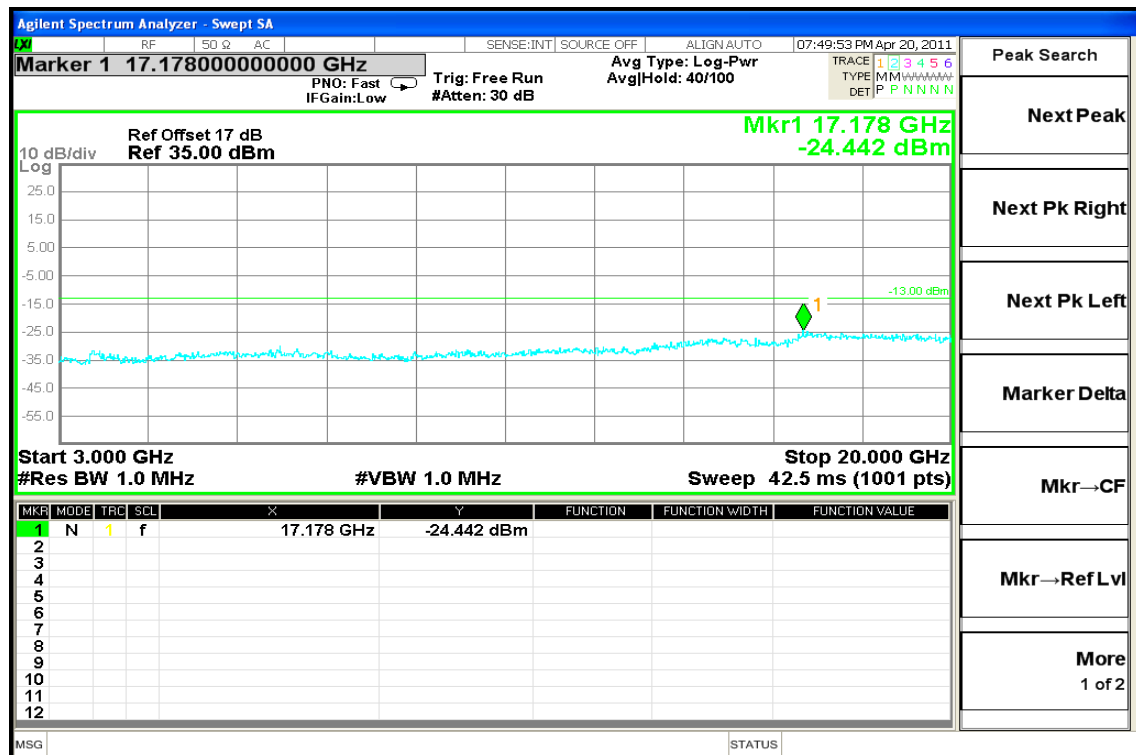
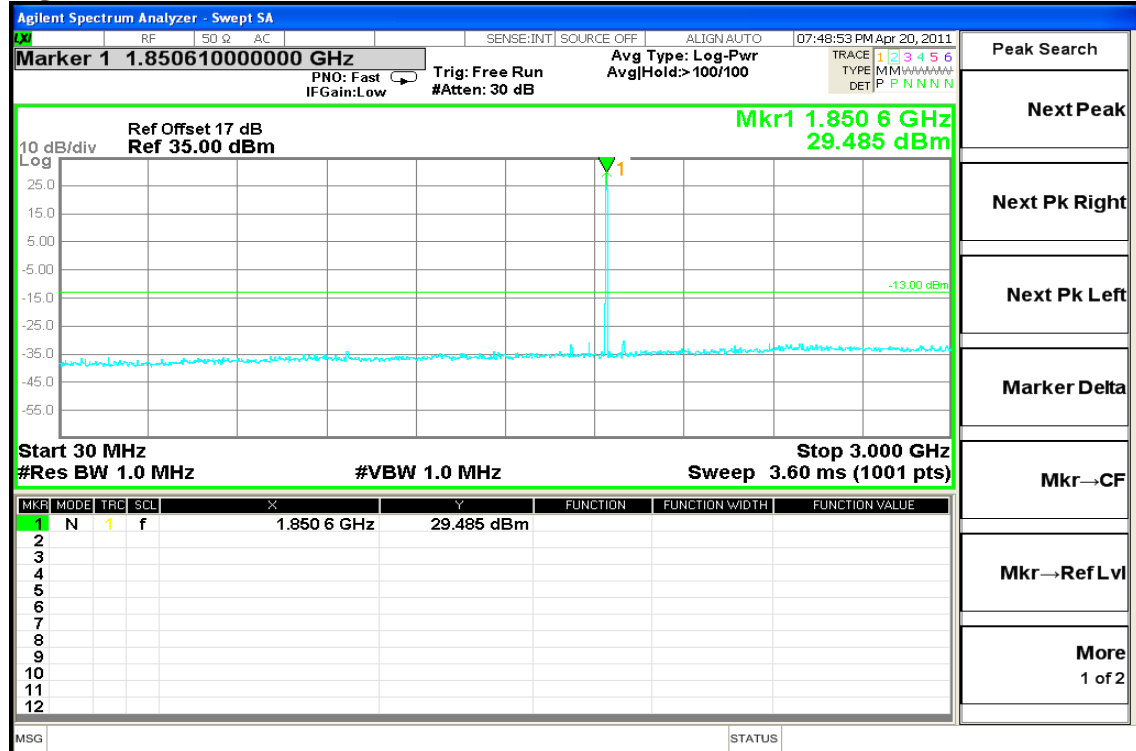
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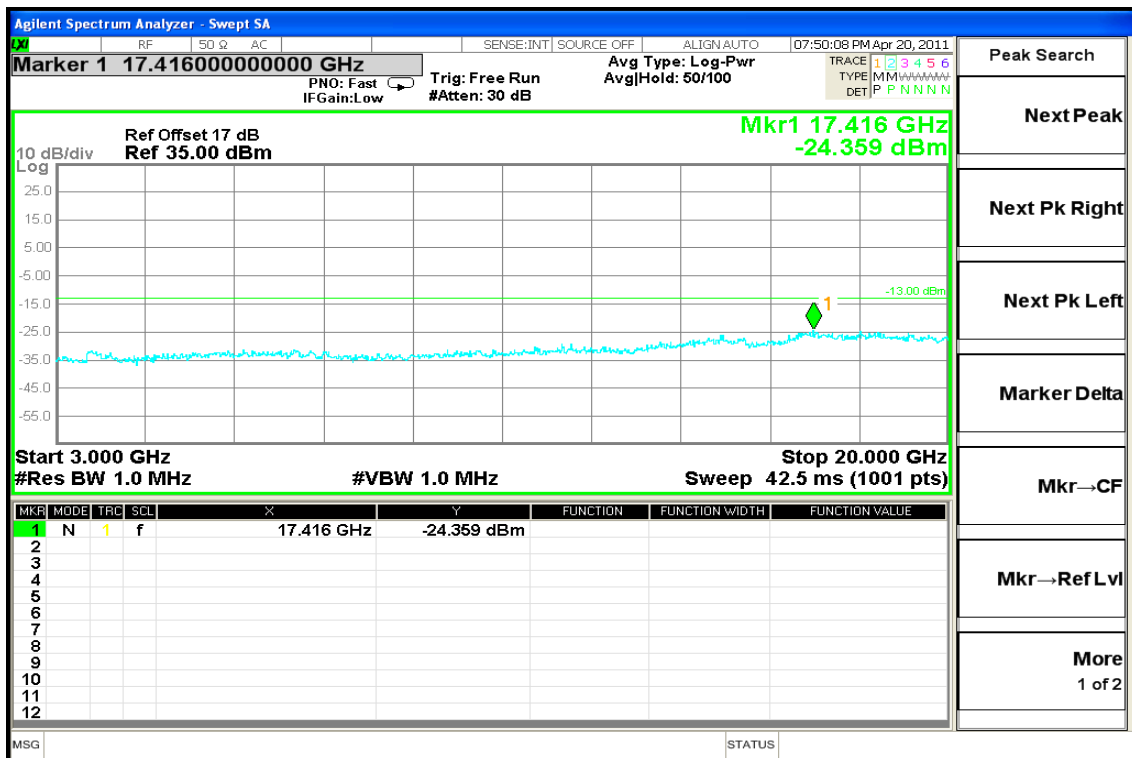
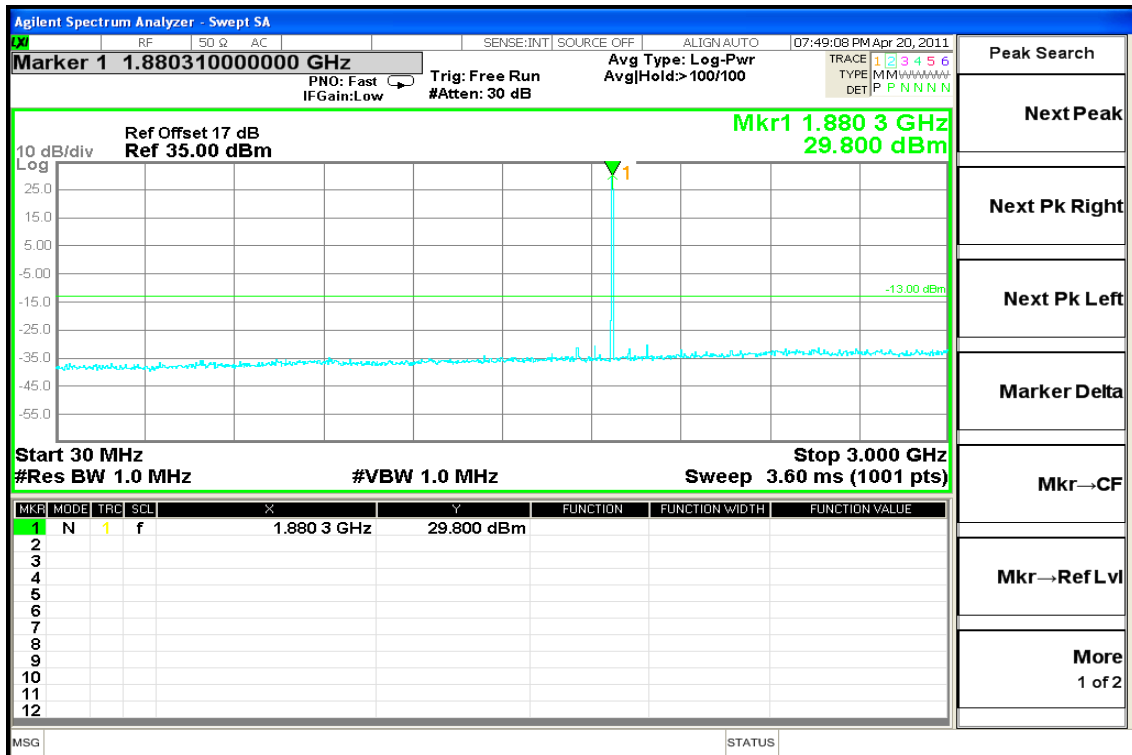
**Figure 8-6: Out of Band emission at antenna terminals–GSM 1900 Channel Lowest**



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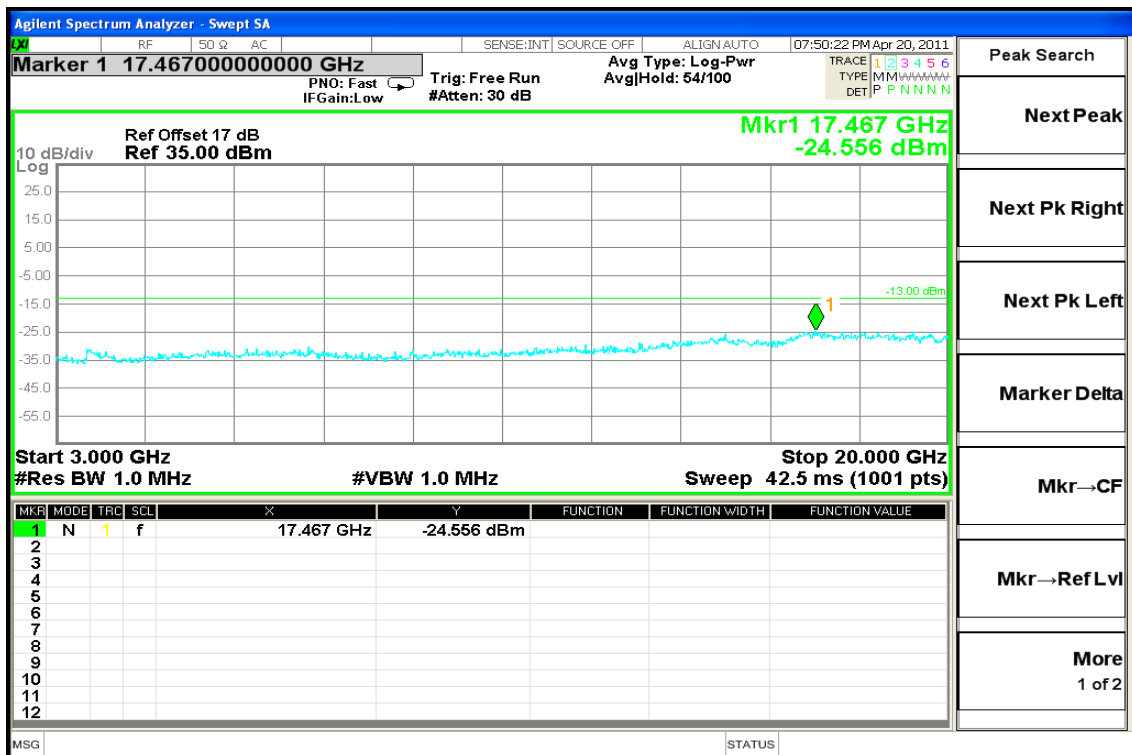
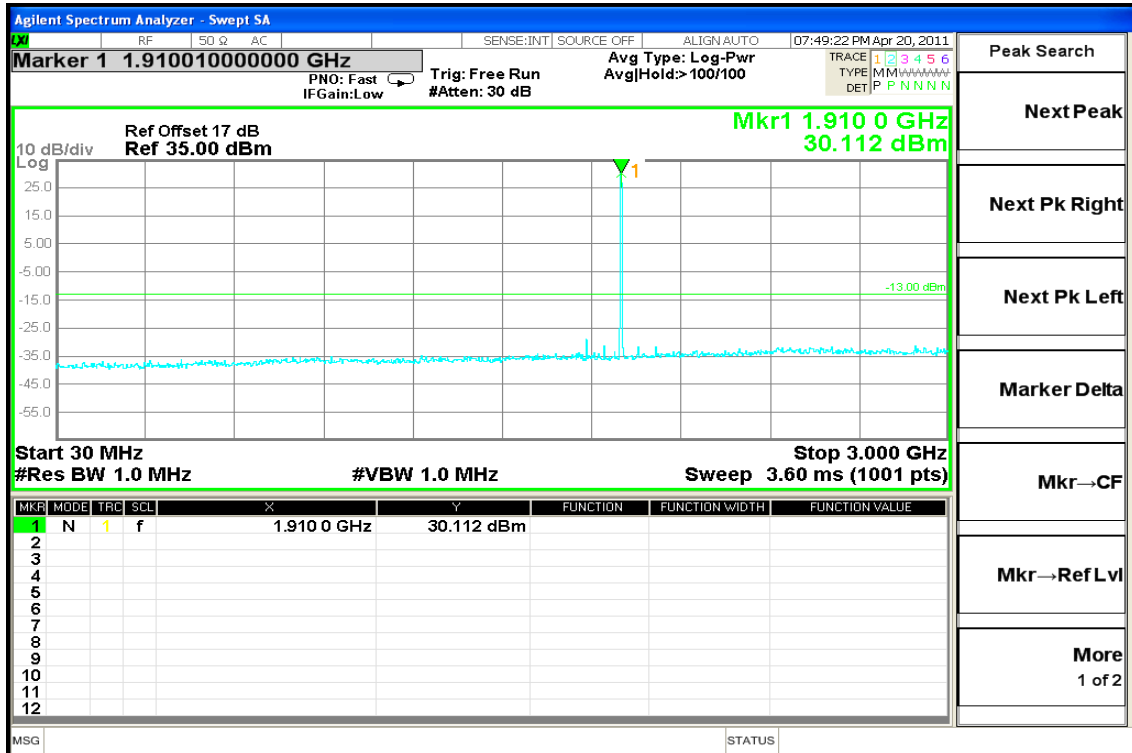
Figure 8-7: Out of Band emission at antenna terminals –GSM 1900 Channel Mid



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Figure 8-8: Out of Band emission at antenna terminals –GSM 1900 Channel Highest



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Figure 8-9: Bad edge emission at antenna terminals –GSM 1900 Channel Lowest

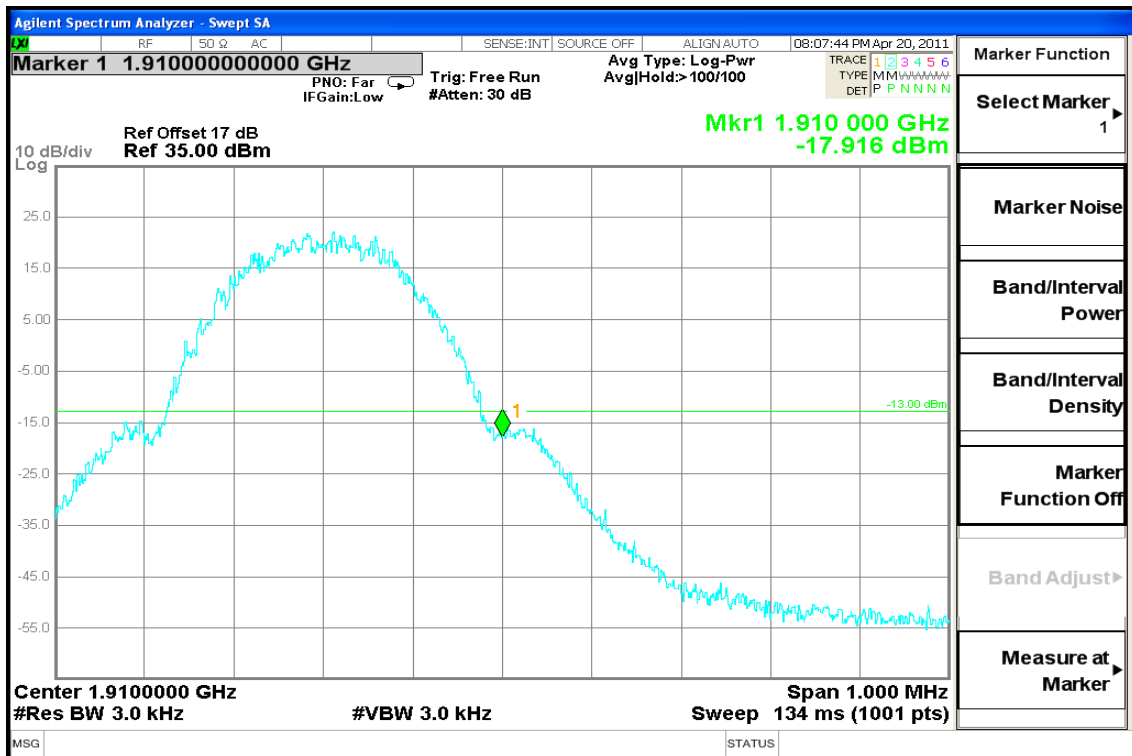
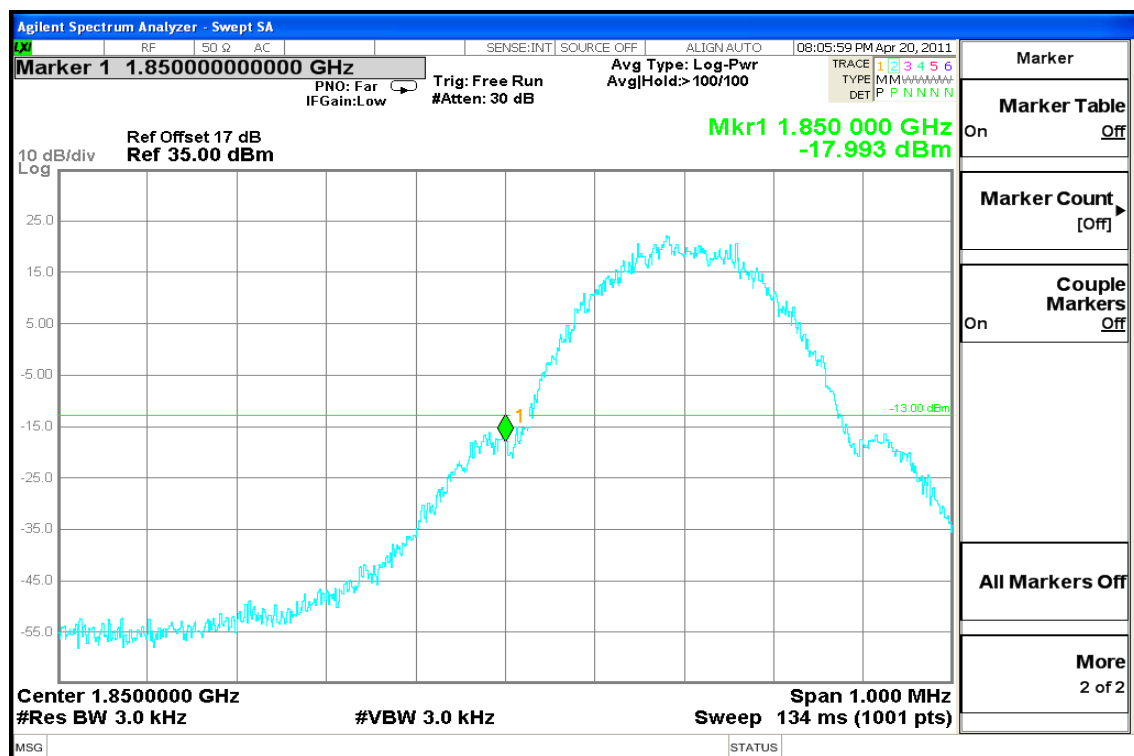


Figure 8-10: Band edge emission at antenna terminals –GSM 1900 Channel Highest



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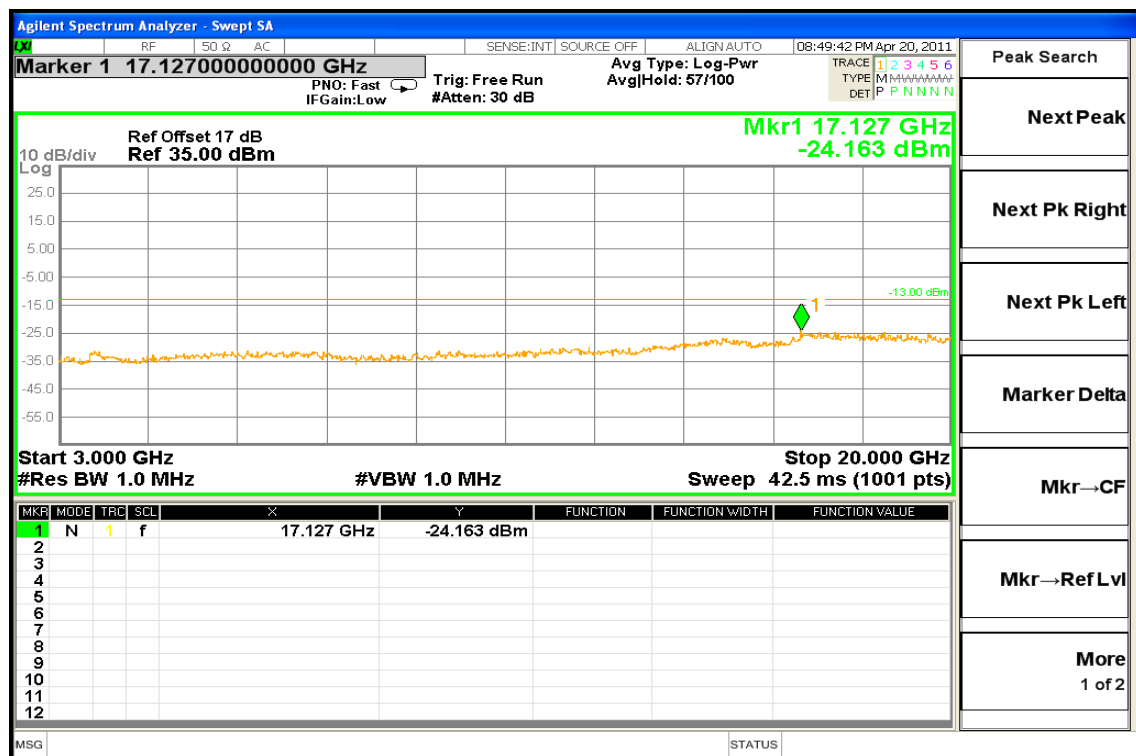
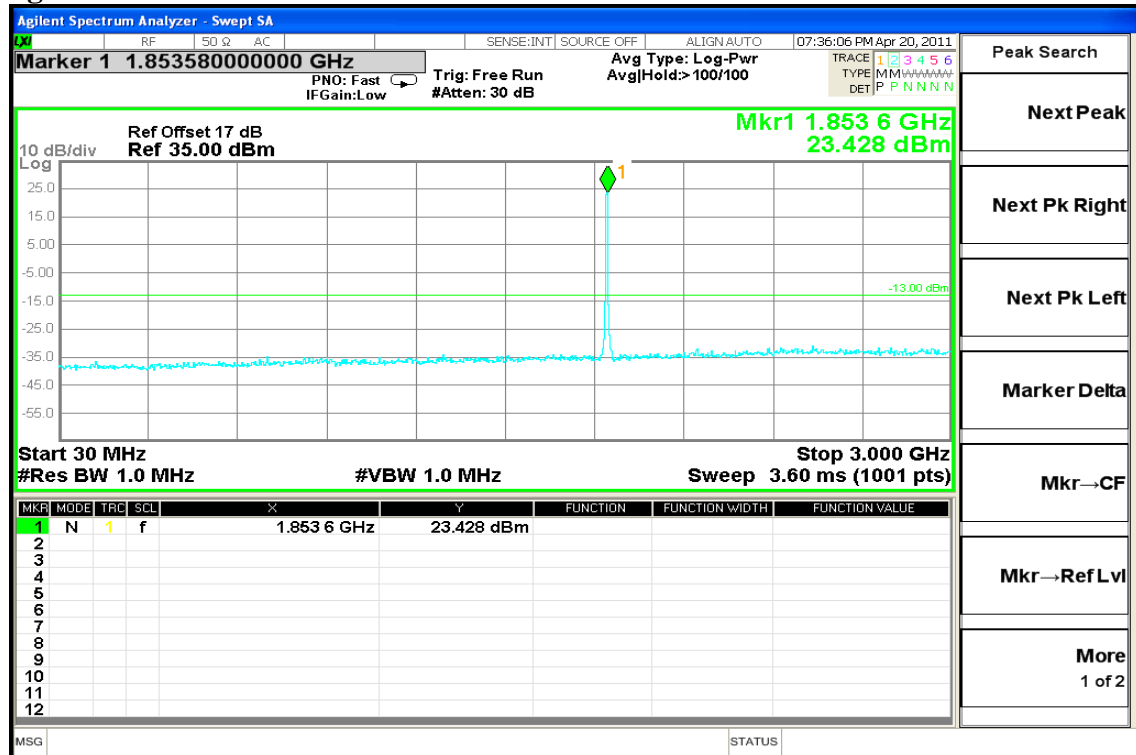
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Figure 8-11: Out of Band emission at antenna terminals– WCDMA II Channel Lowest



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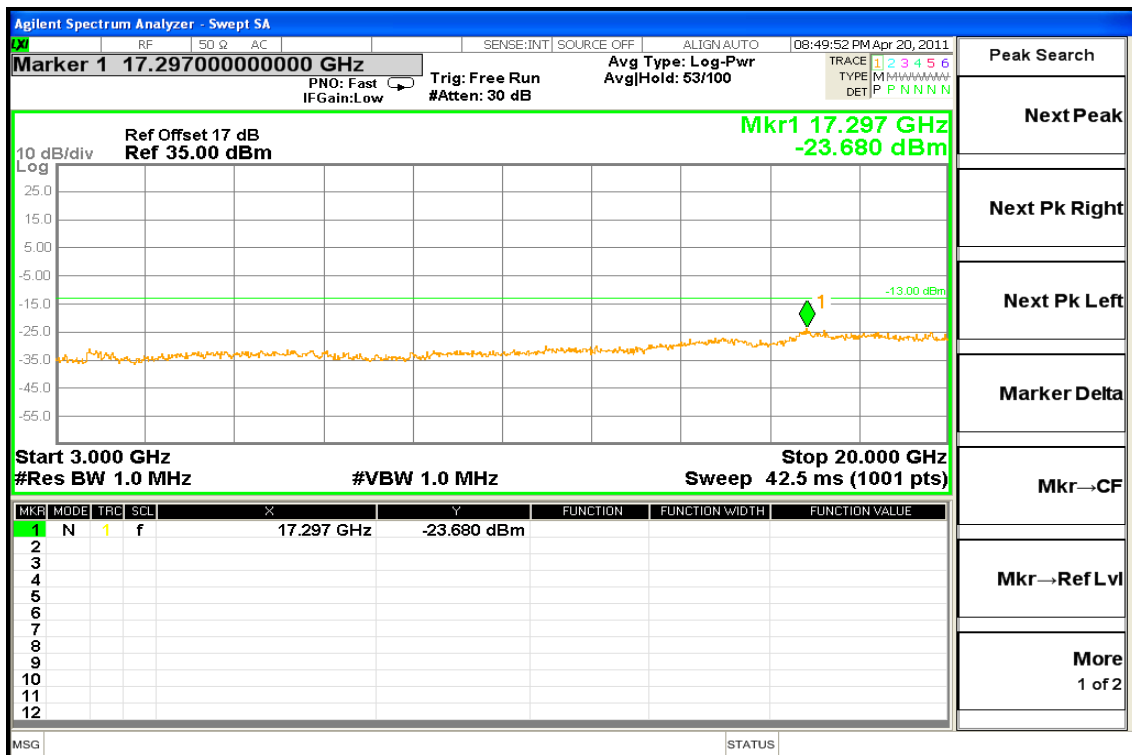
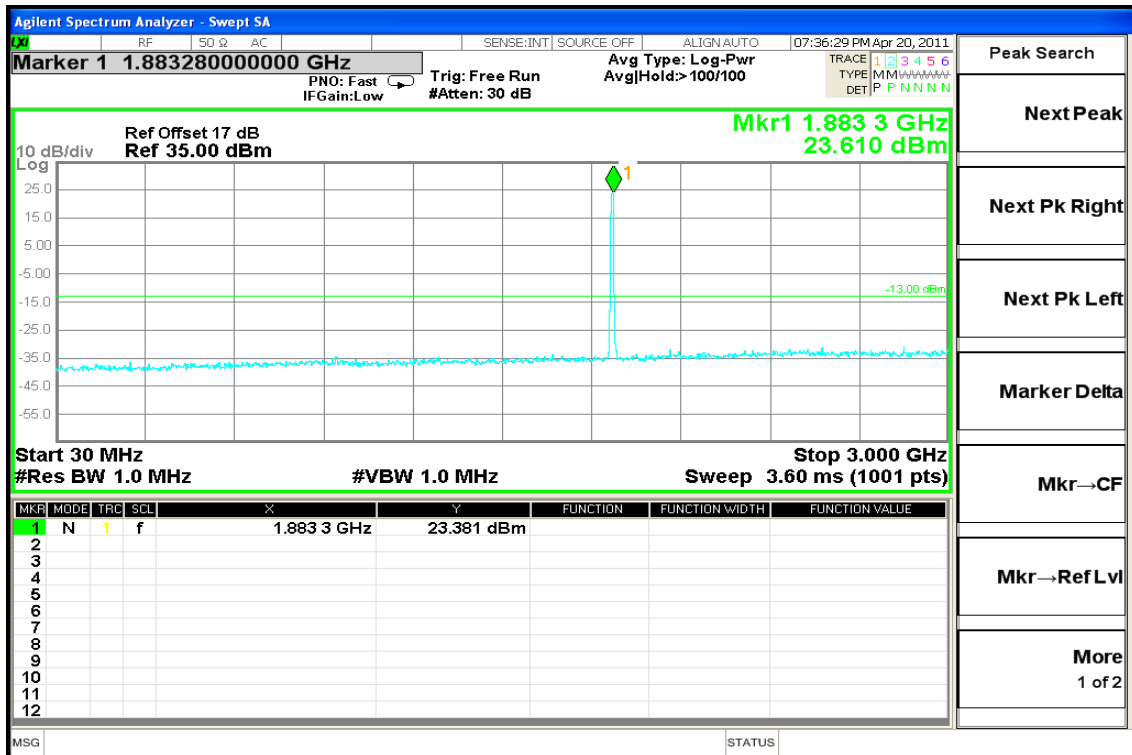
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Figure 8-12: Out of Band emission at antenna terminals –WCDMA II Channel Mid

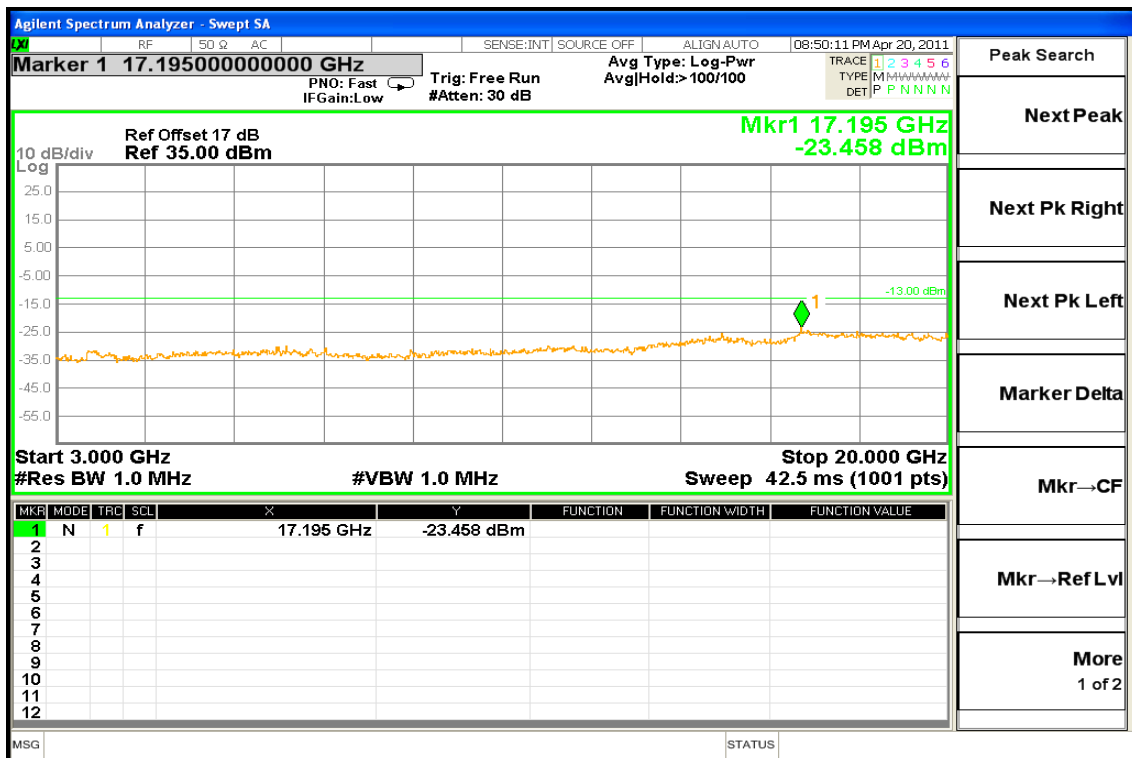
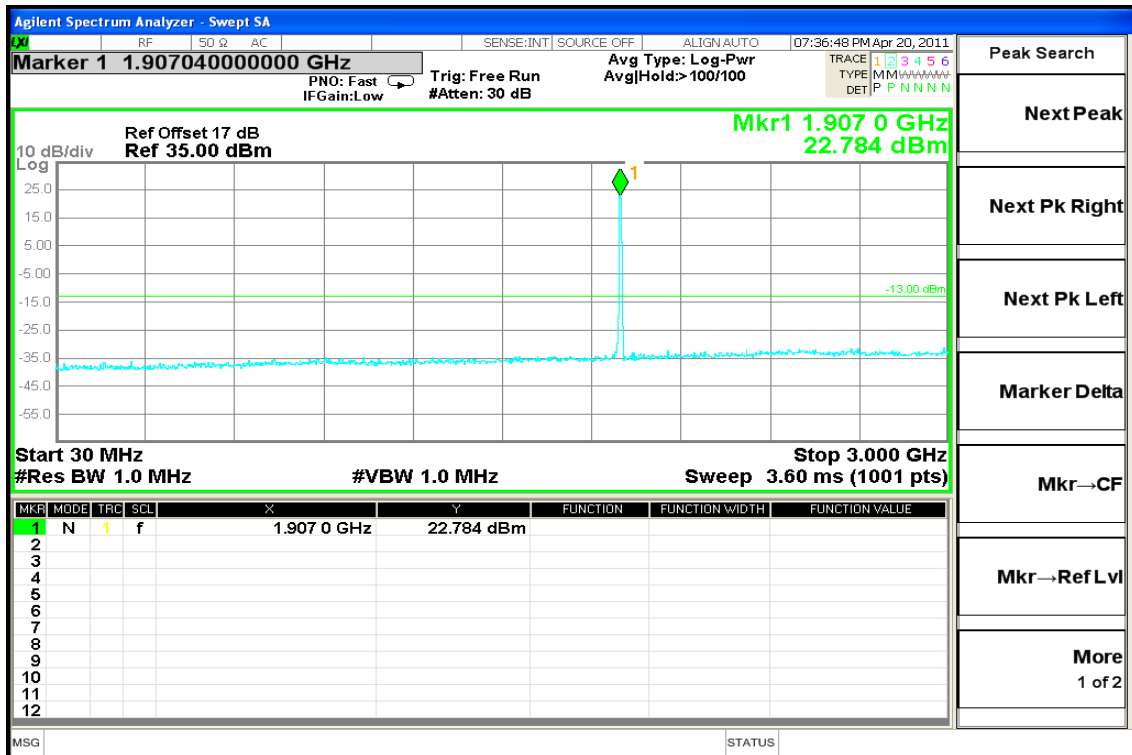


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Figure 8-13: Out of Band emission at antenna terminals–WCDMA II Channel Highest



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Figure 8-14: Bad edge emission at antenna terminals –WCDMA II Channel Lowest

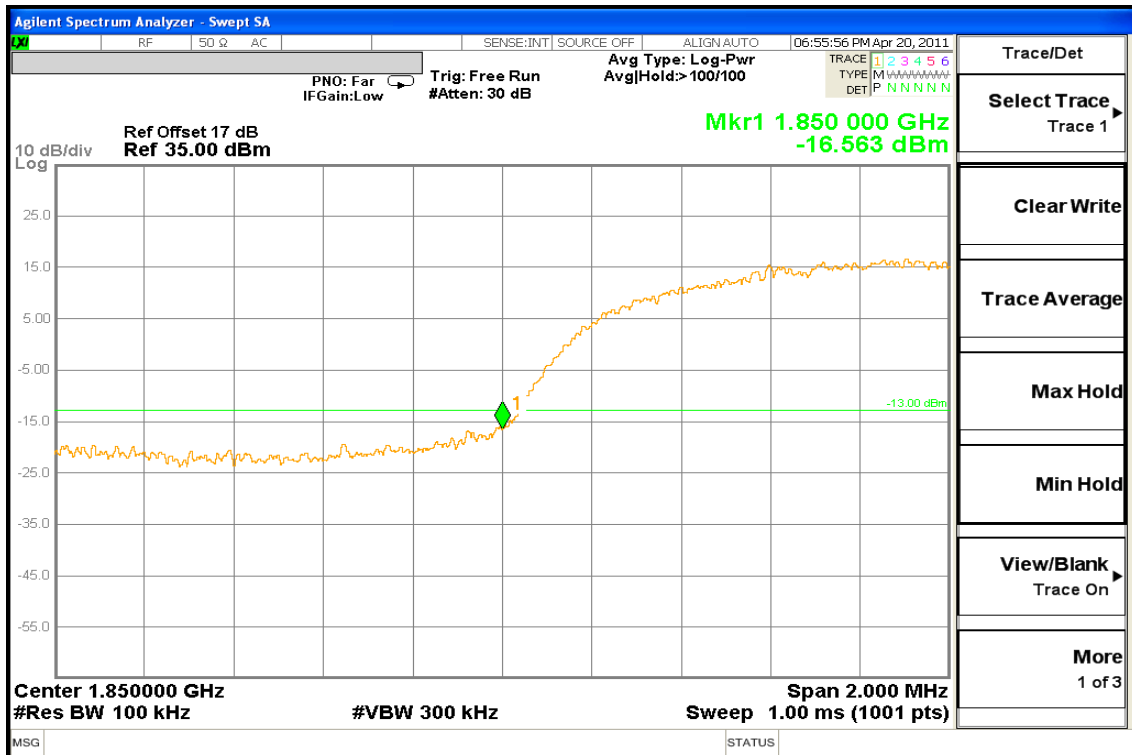
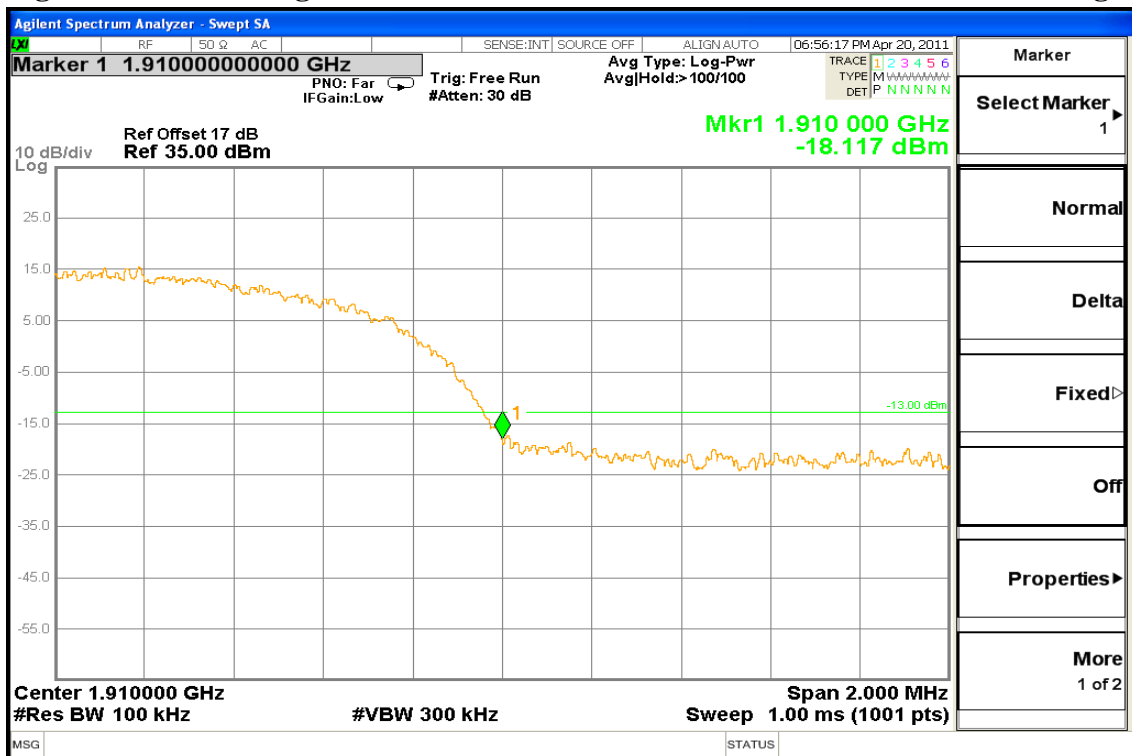


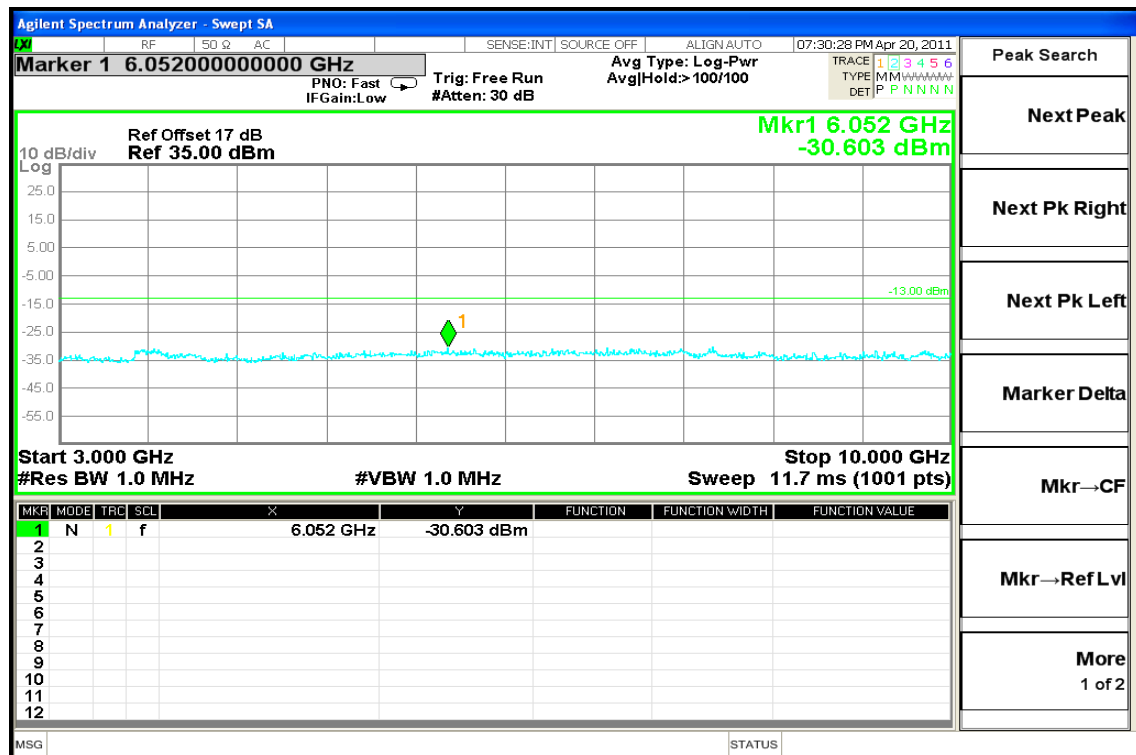
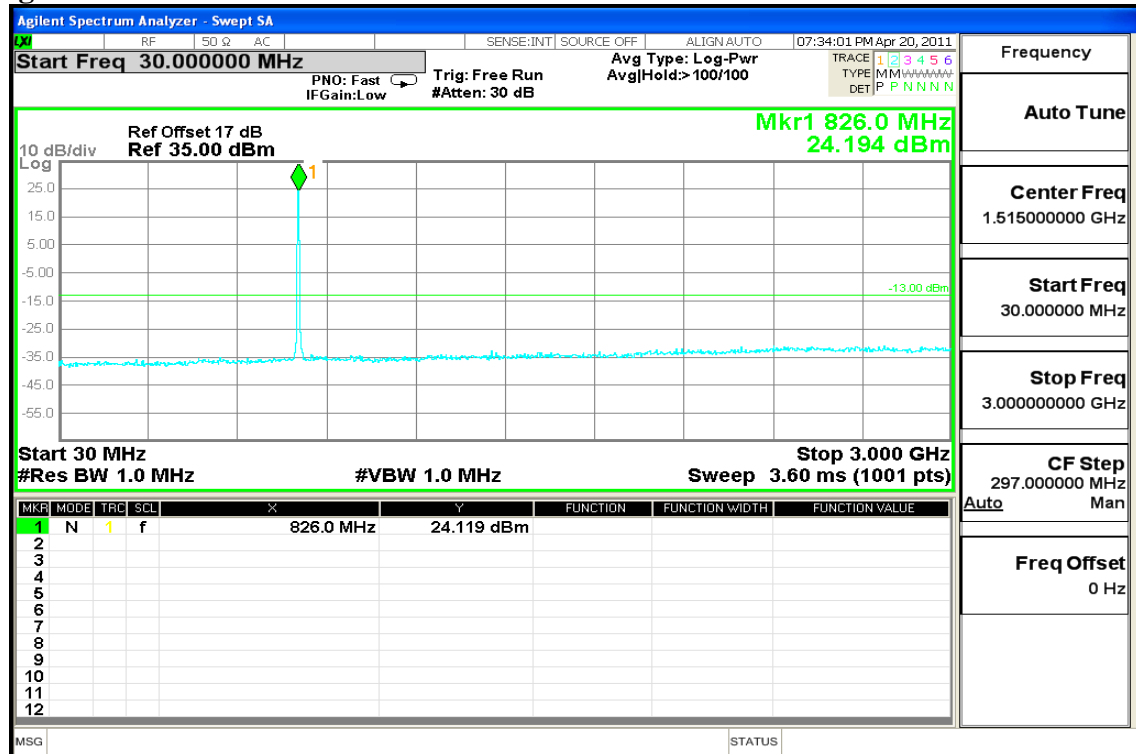
Figure 8-15: Band edge emission at antenna terminals –WCDMA II Channel Highest



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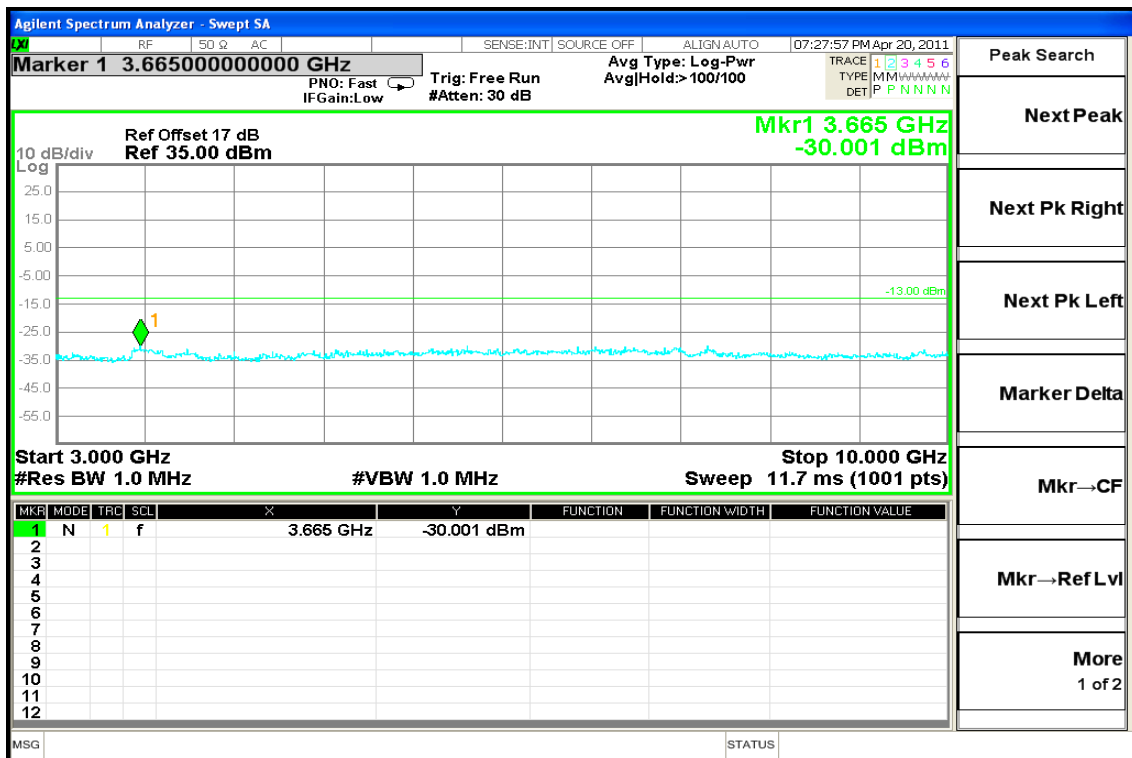
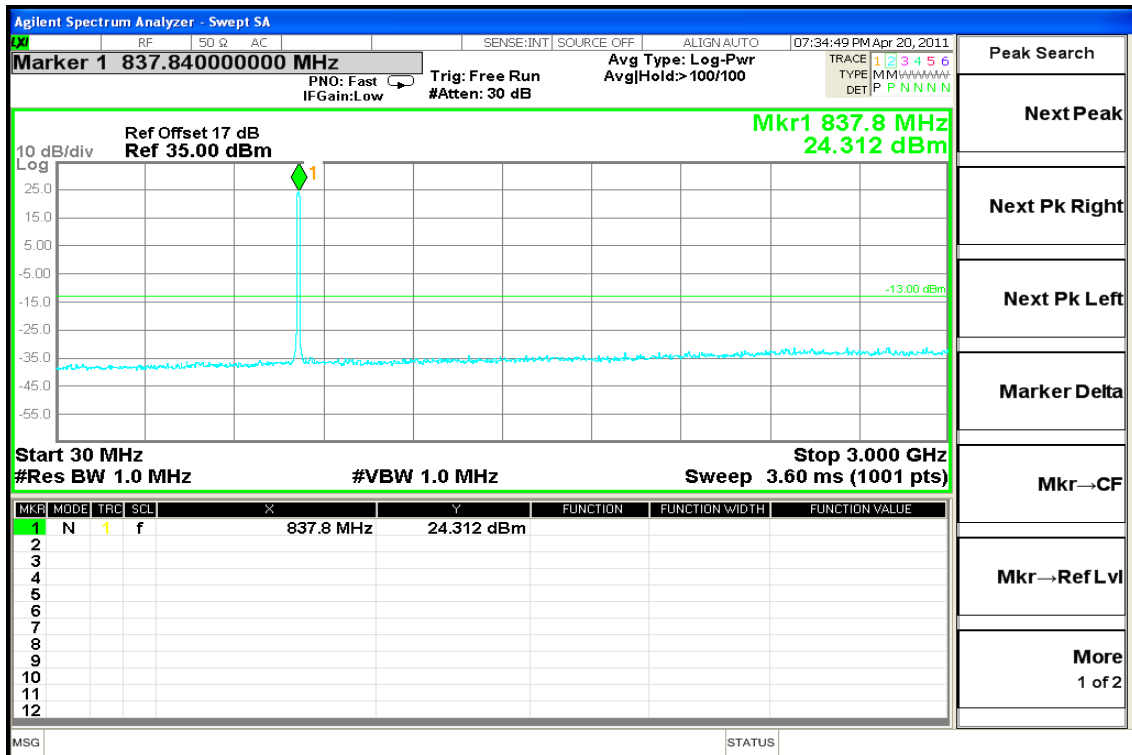
Figure 8-16: Out of Band emission at antenna terminals– WCDMA V Channel Lowest



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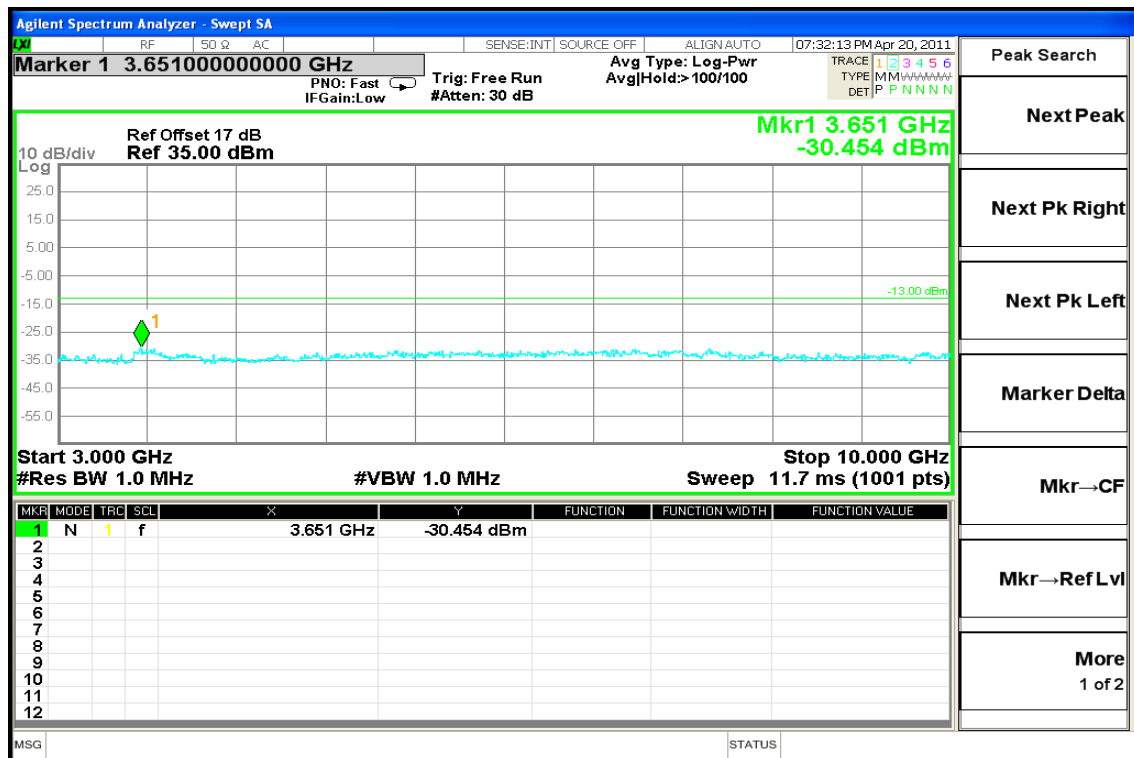
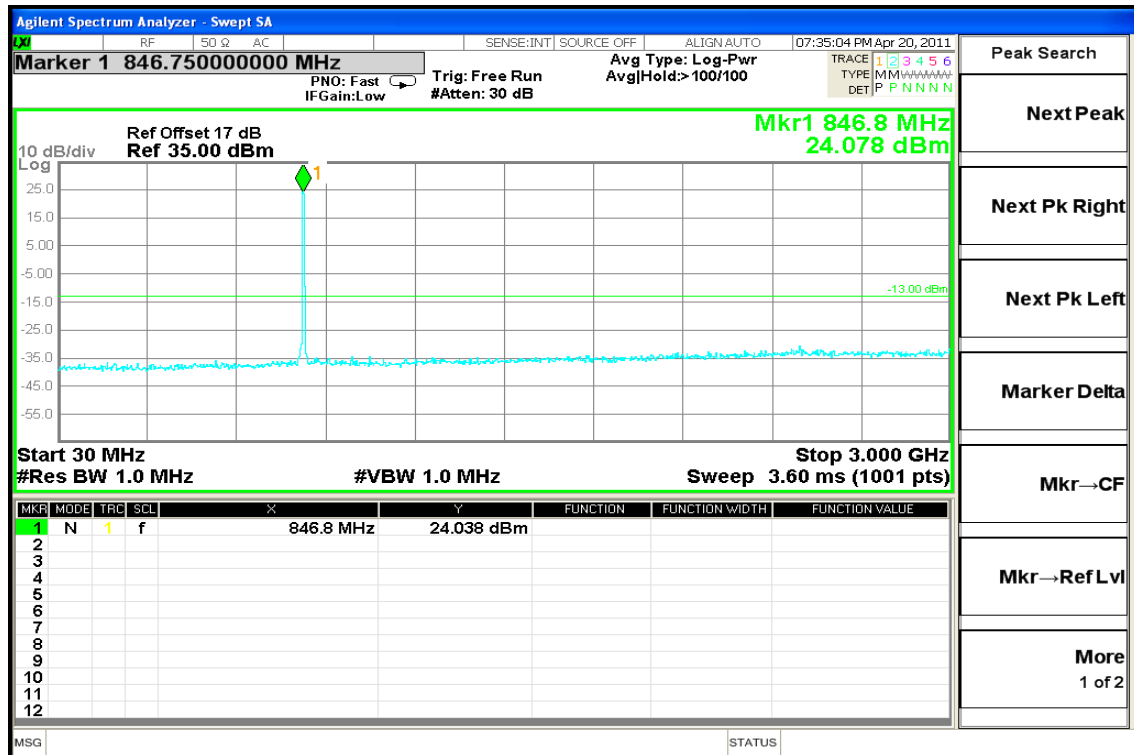
Figure 8-17: Out of Band emission at antenna terminals –WCDMA V Channel Mid



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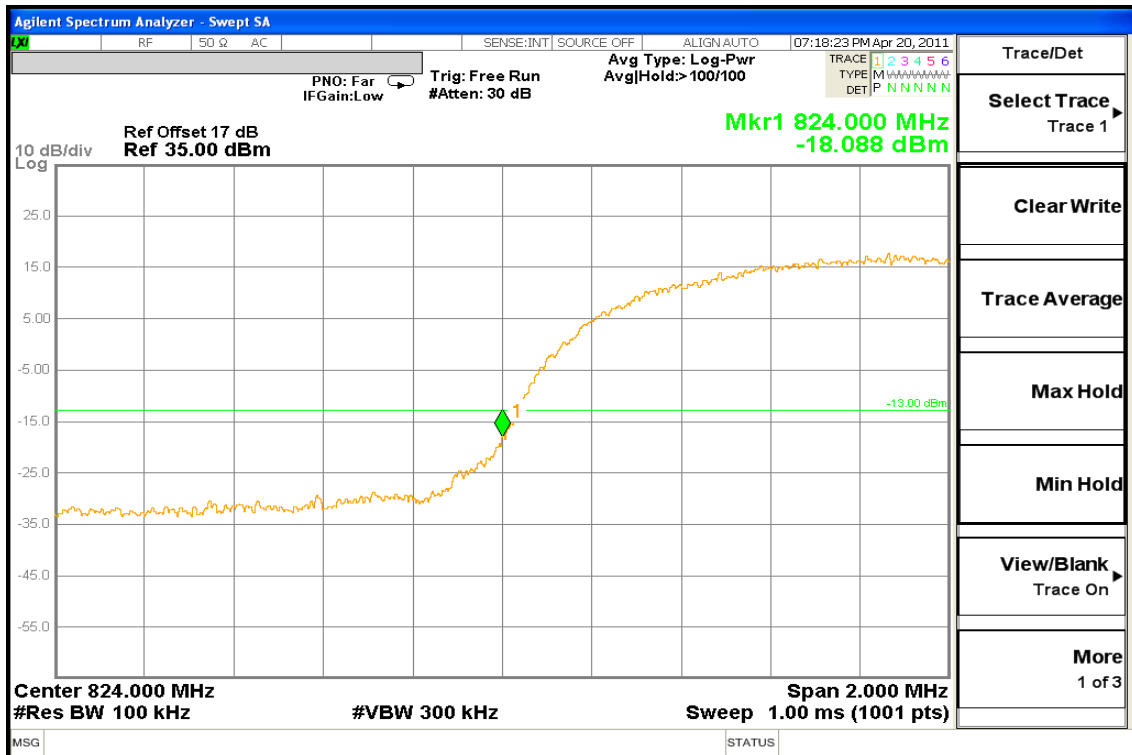
Figure 8-18: Out of Band emission at antenna terminals–WCDMA V Channel Highest



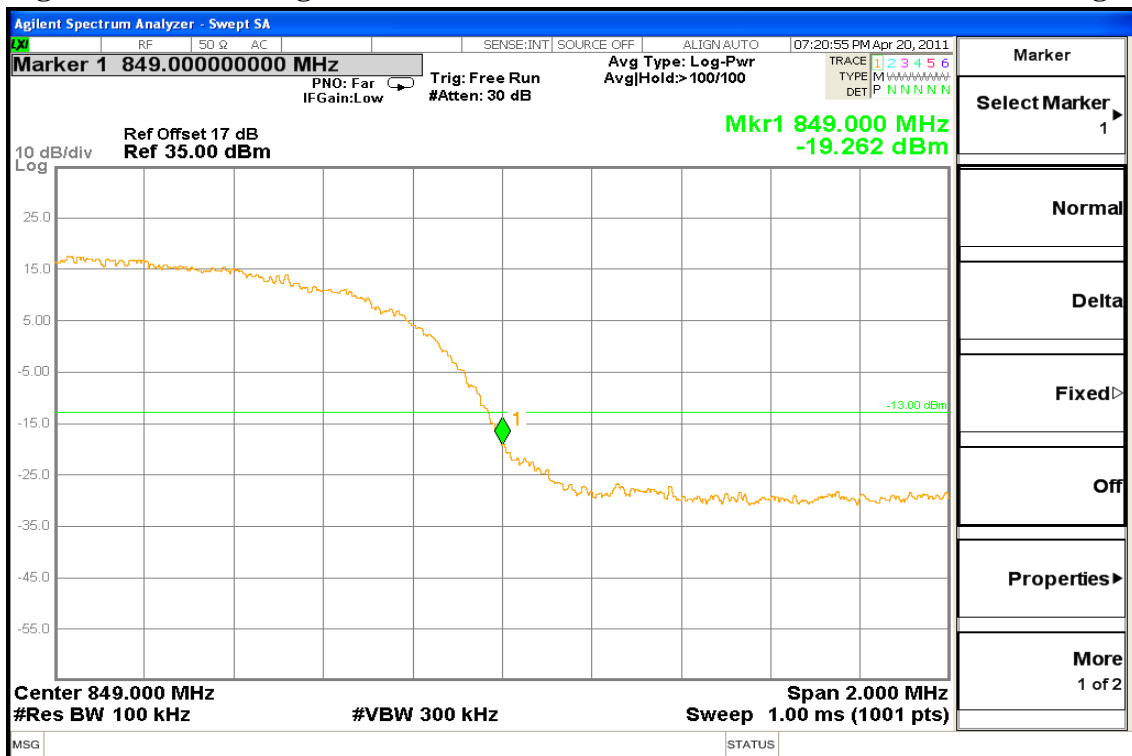
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**Figure 8-19: Bad edge emission at antenna terminals –WCDMA V Channel Lowest**



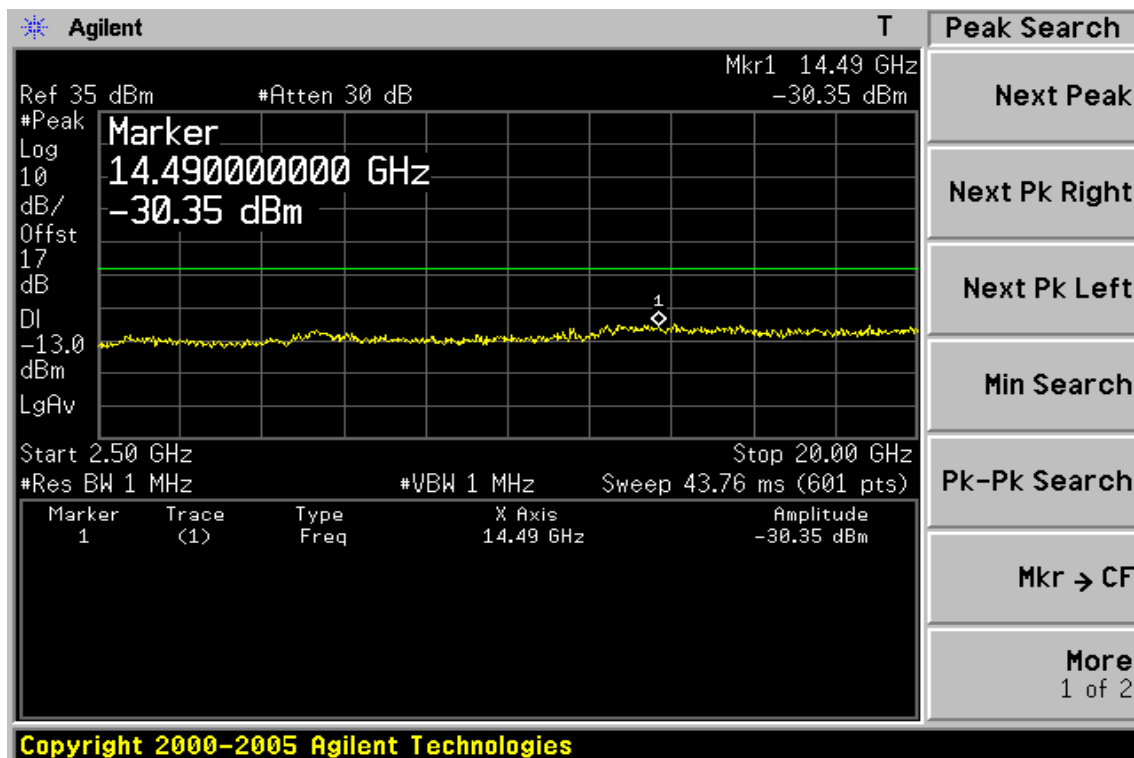
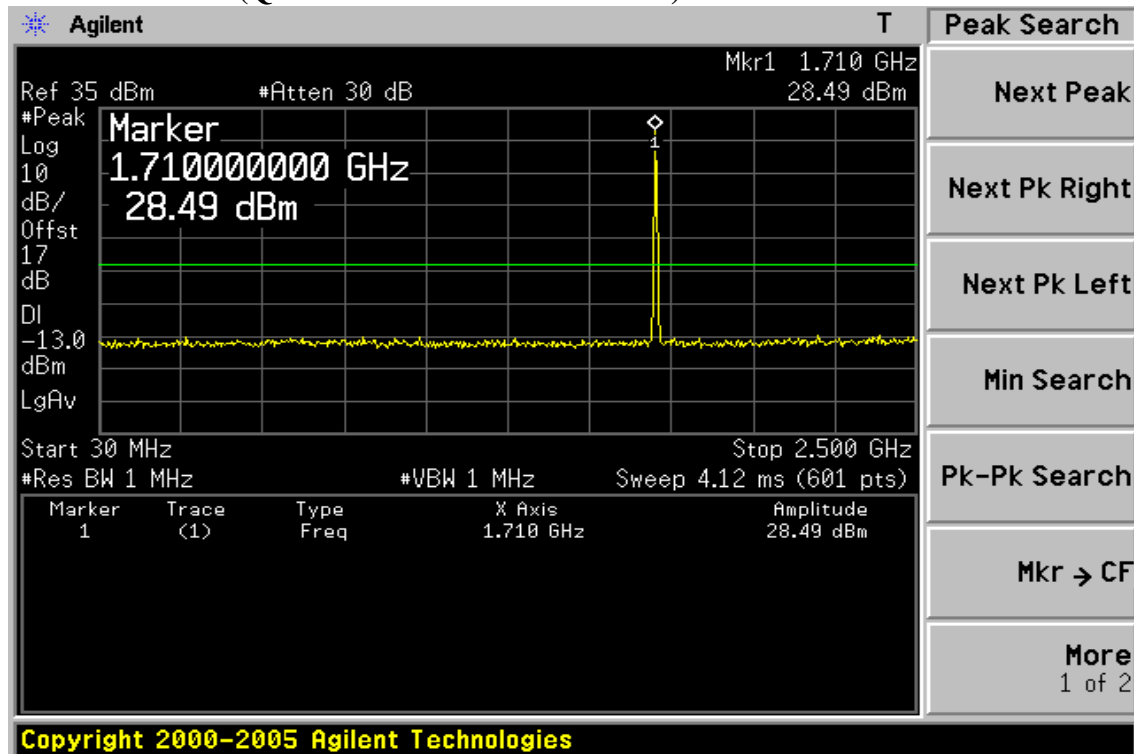
**Figure 8-20: Band edge emission at antenna terminals –WCDMA V Channel Highest**



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**Figure 8-21: Out of Band emission at antenna terminals–5MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 0) Channel Lowest**



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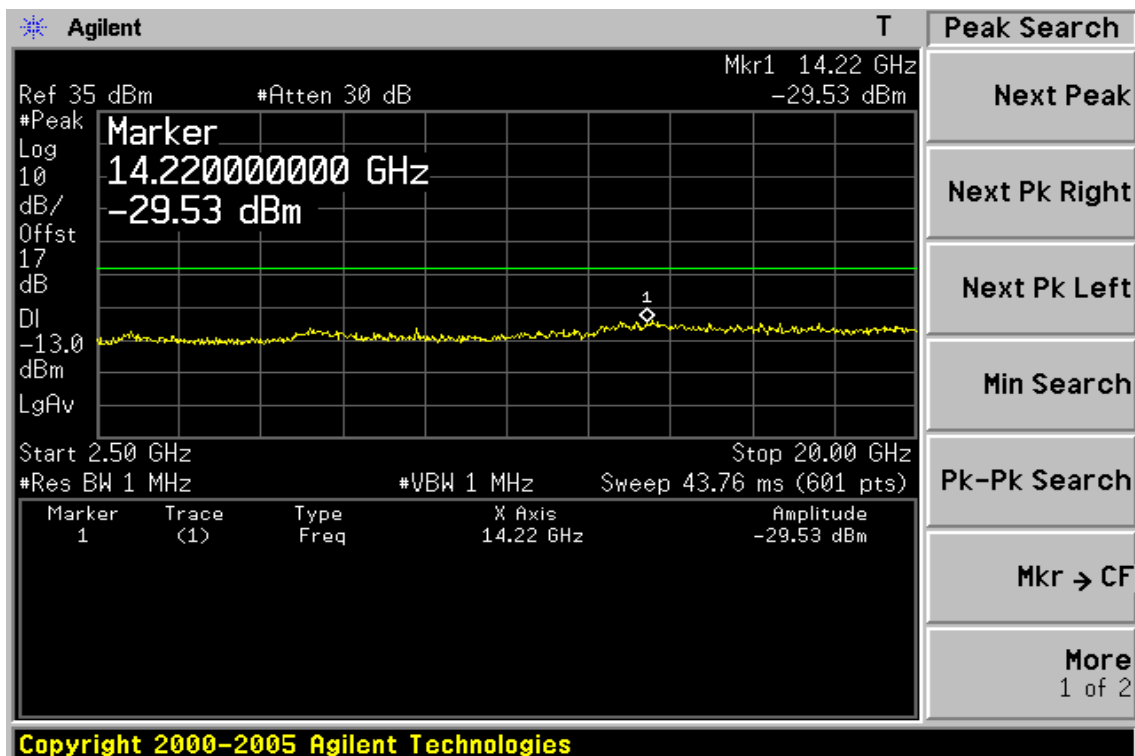
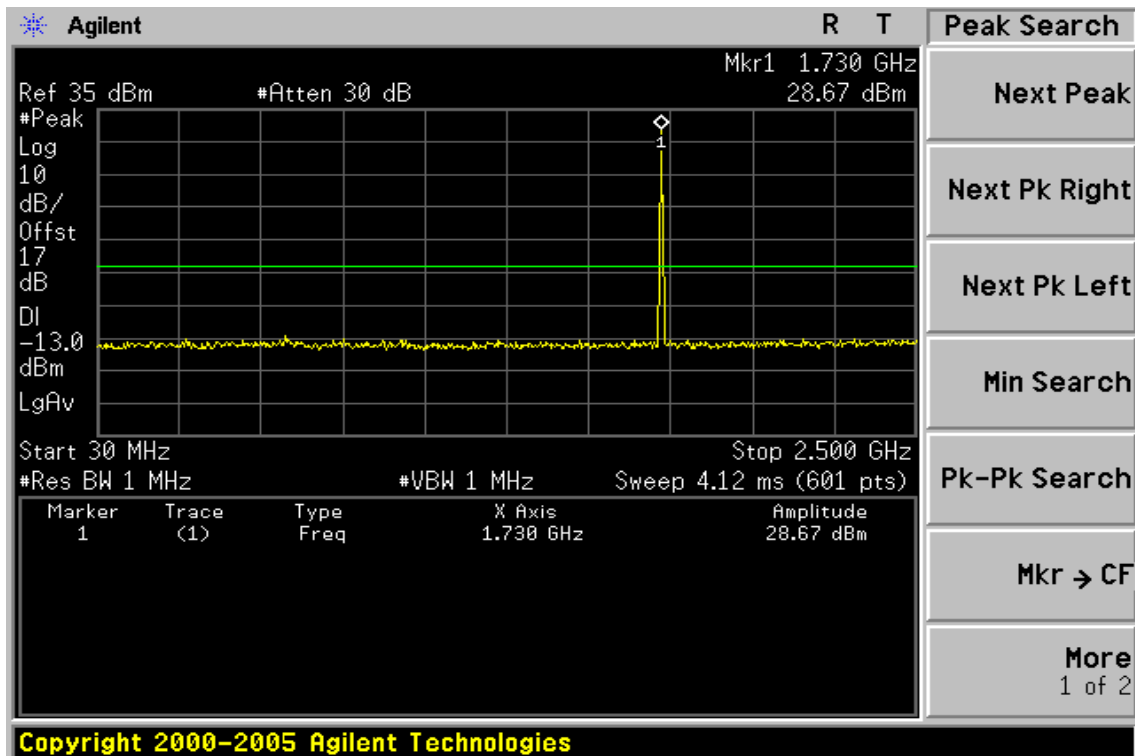
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**Figure 8-22: Out of Band emission at antenna terminals –5MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 0) Channel Mid**

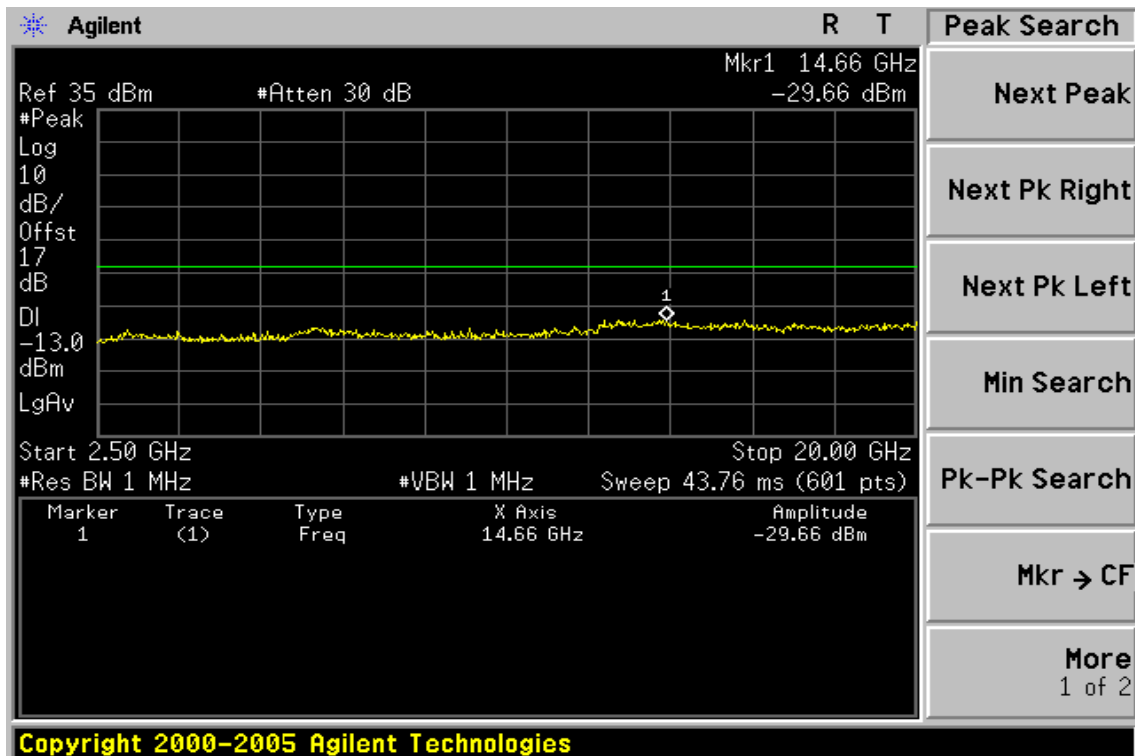
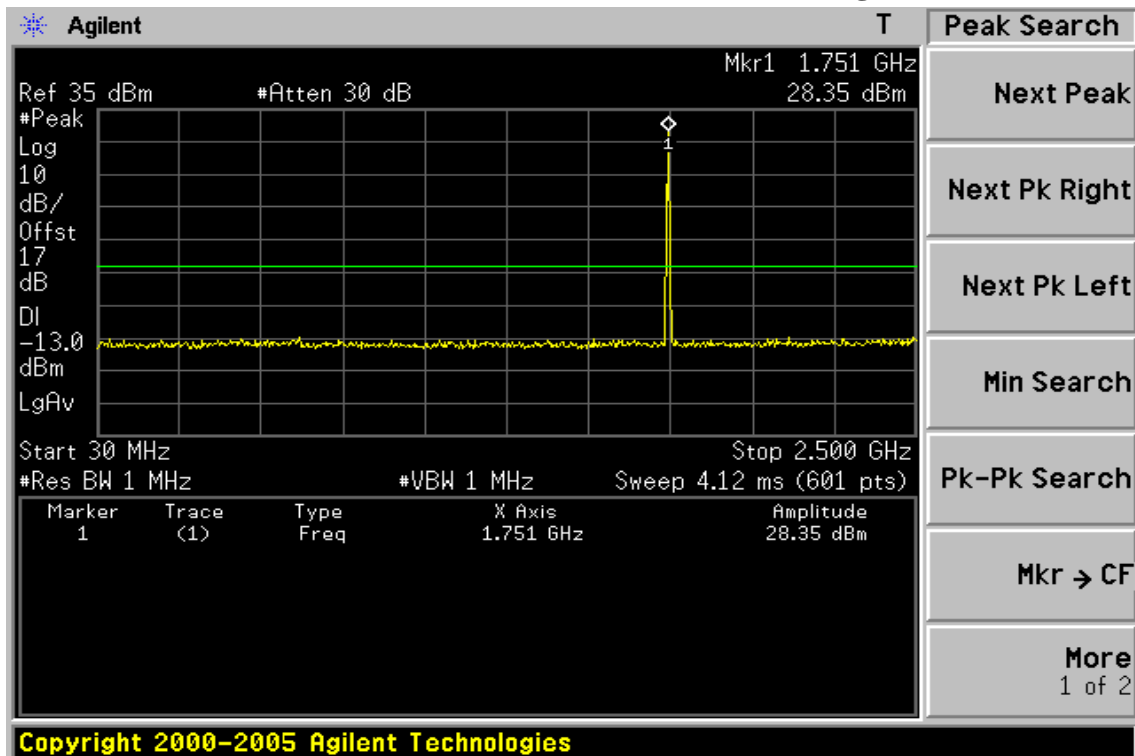


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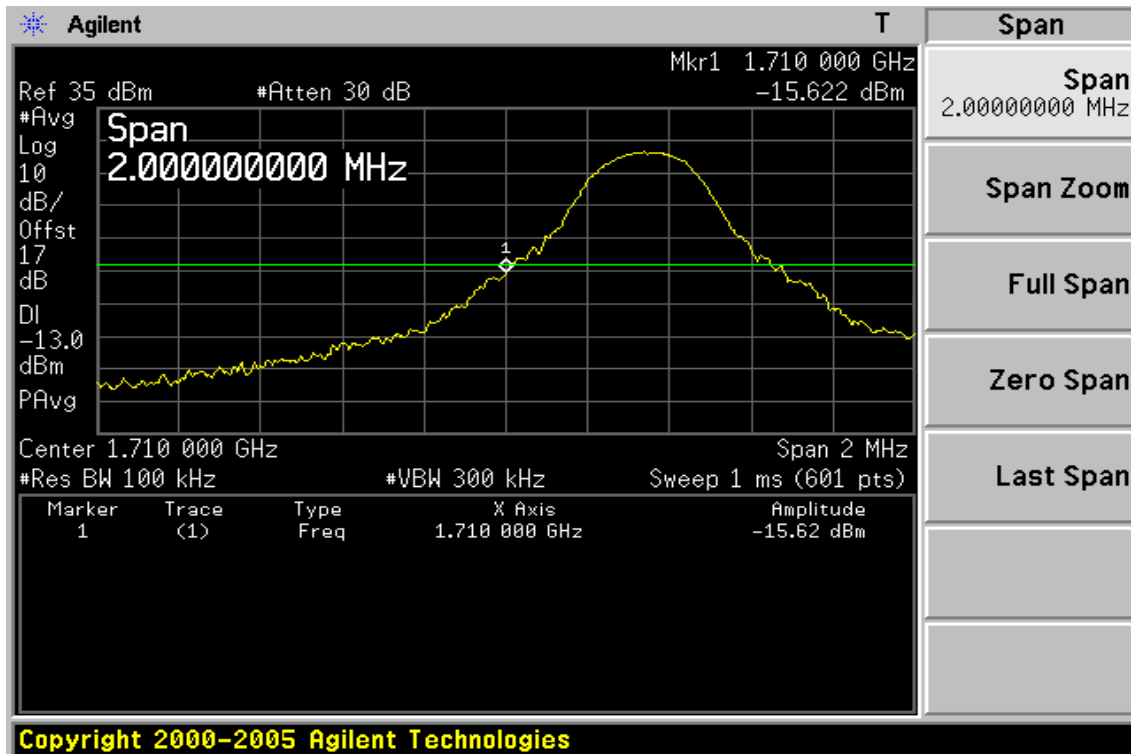
**Figure 8-23: Out of Band emission at antenna terminals–5MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 0) Channel Highest**



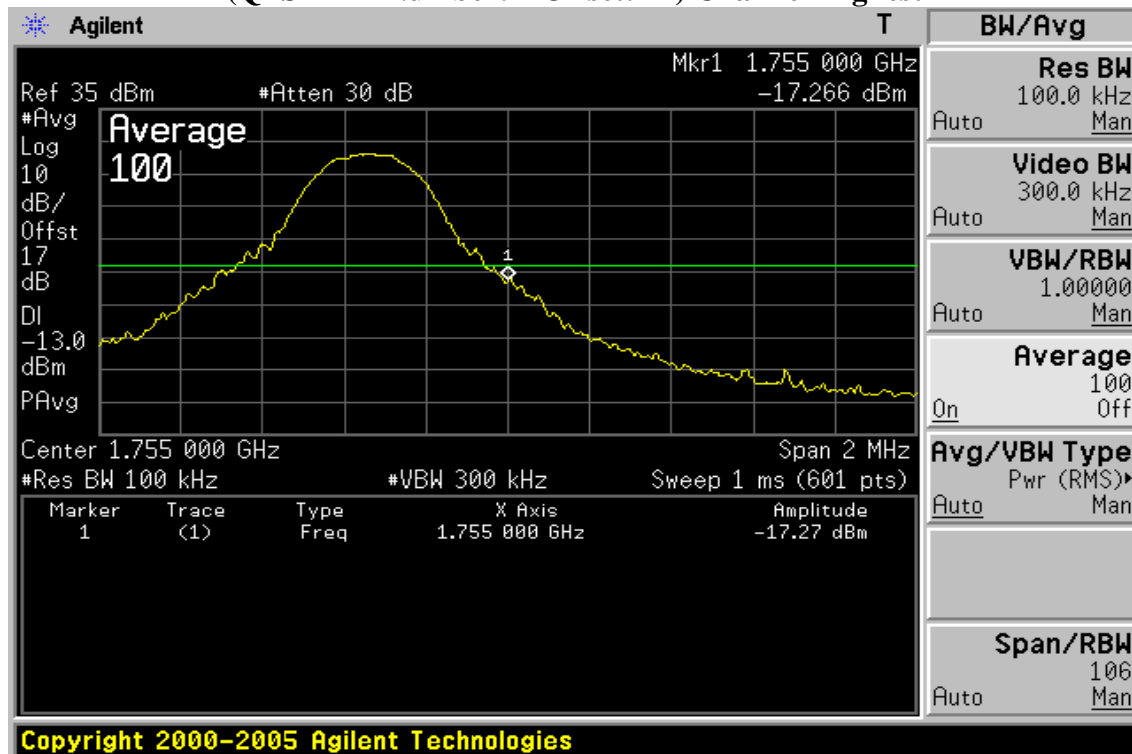
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**Figure 8-24: Band edge emission at antenna terminals –5MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 0) Channel Lowest**



**Figure 8-25: Band edge emission at antenna terminals –5MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 24) Channel Highest**



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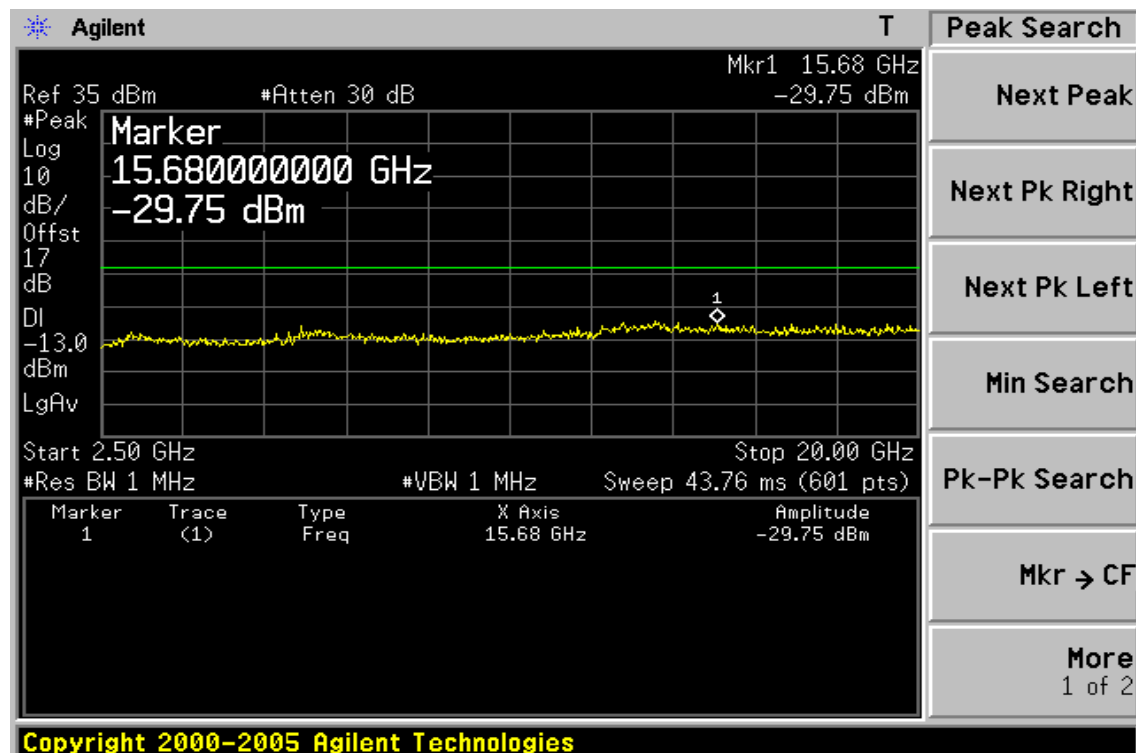
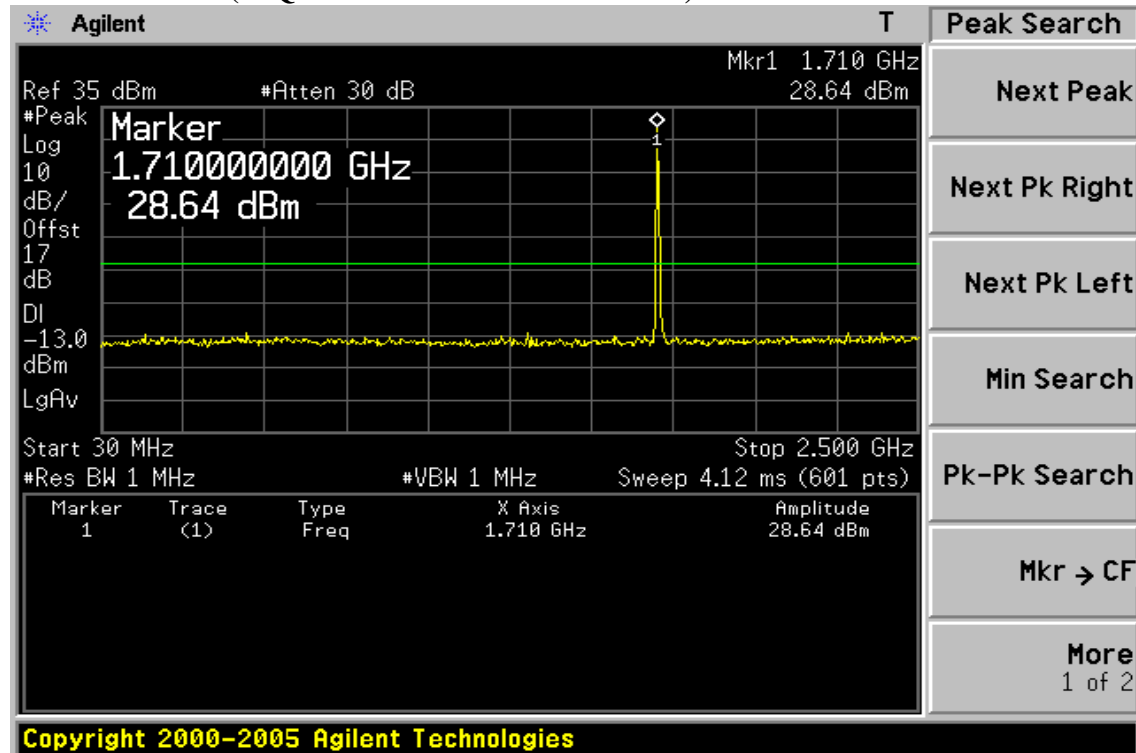
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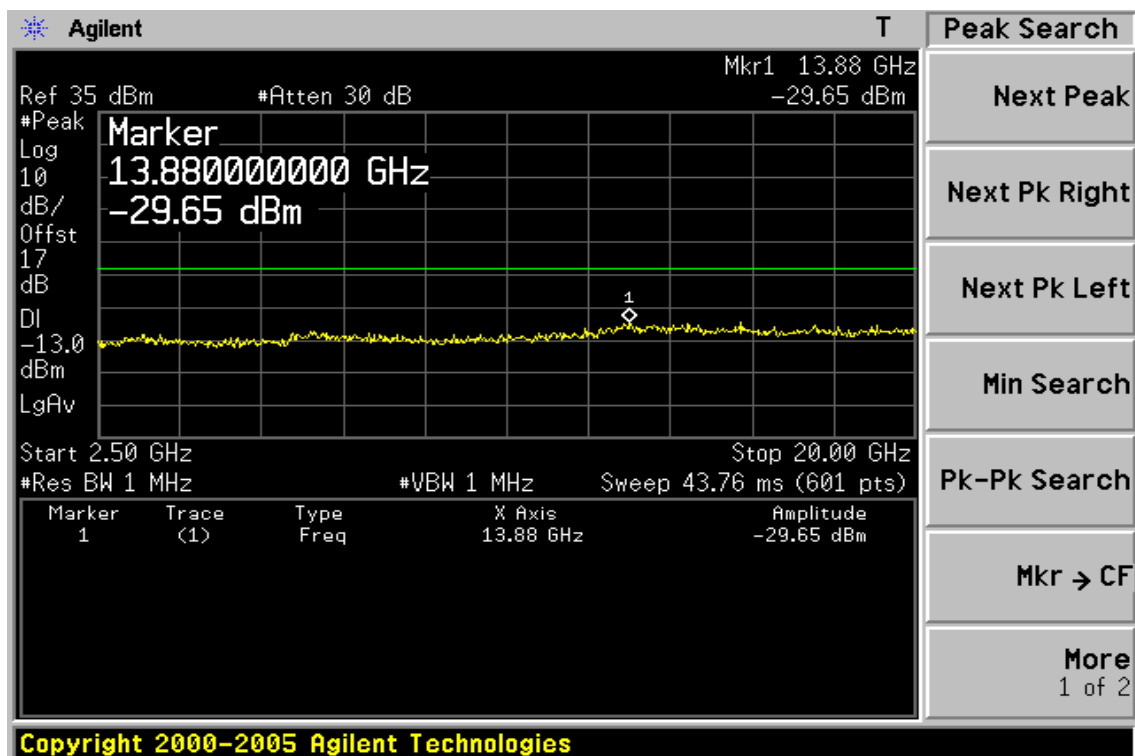
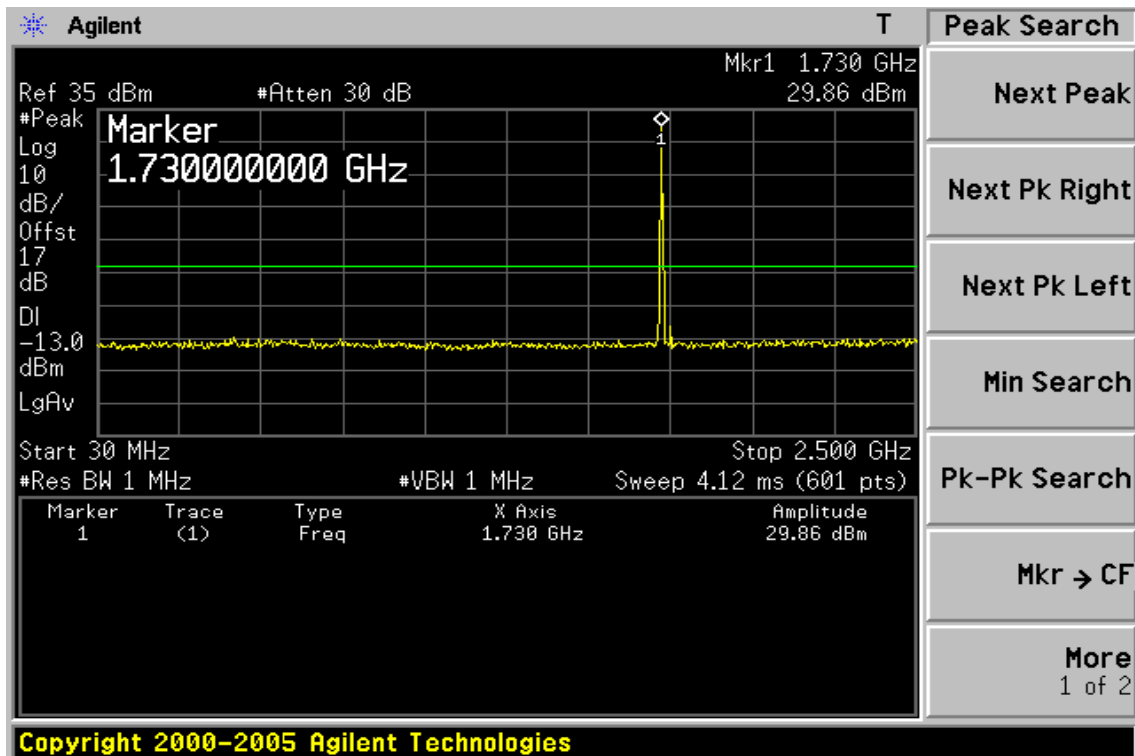
**Figure 8-26: Out of Band emission at antenna terminals–5MHz BW LTE-Band 4  
(16QAM RB Number: 1 Offset: 0) Channel Lowest**



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**Figure 8-27: Out of Band emission at antenna terminals –5MHz BW LTE-Band 4  
(16QAM RB Number: 1 Offset: 0) Channel Mid**



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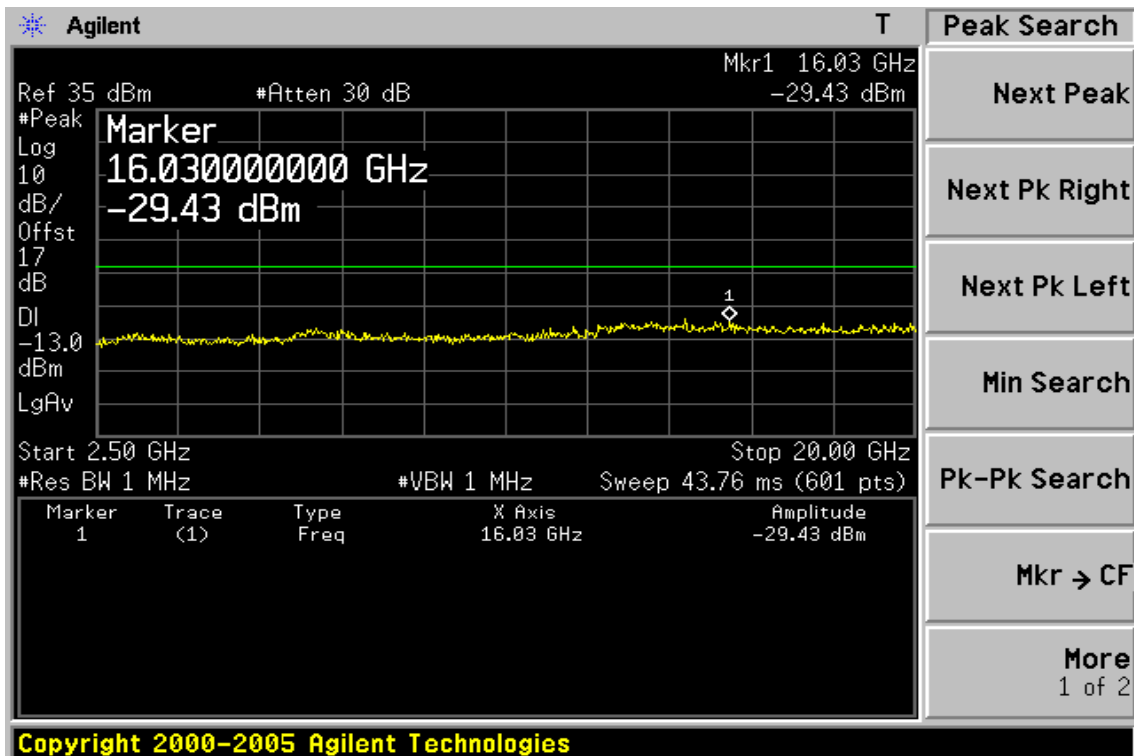
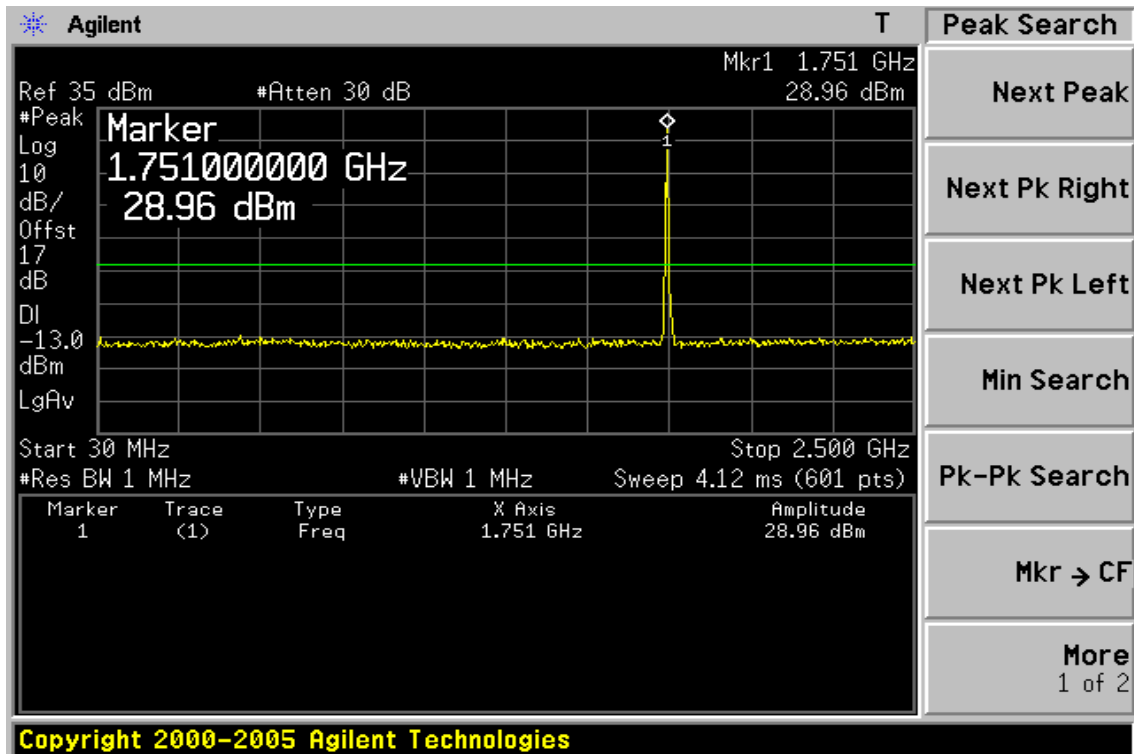
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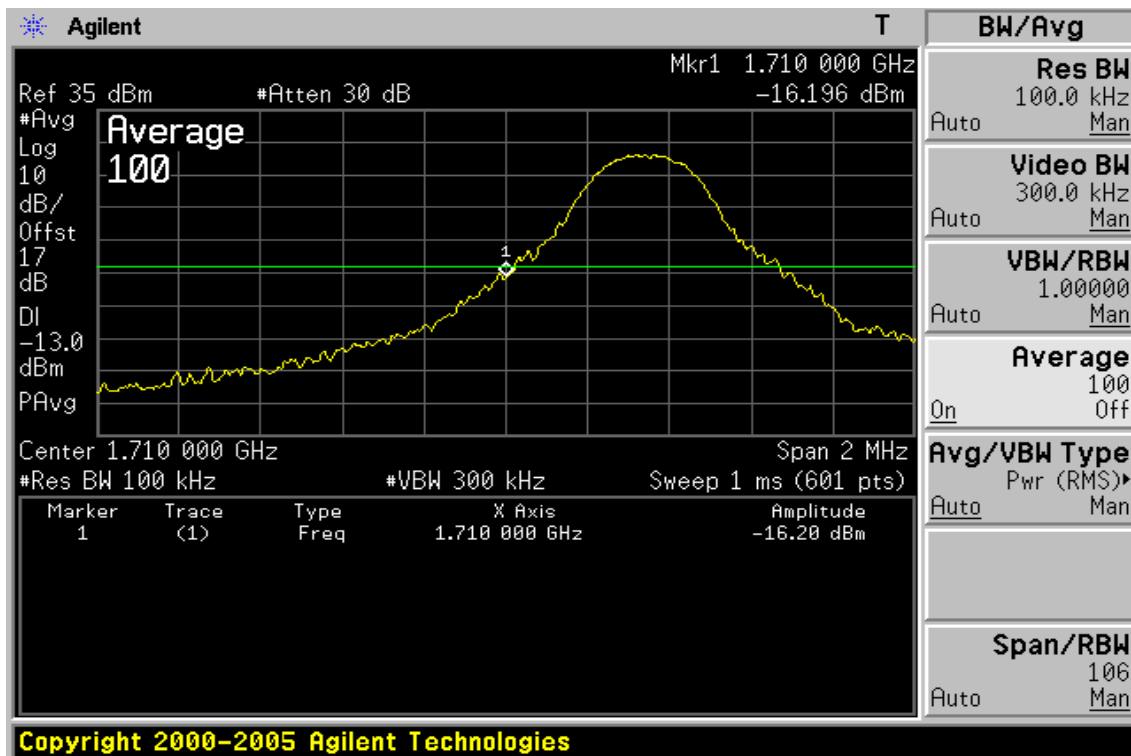
**Figure 8-28: Out of Band emission at antenna terminals–5MHz BW LTE-Band 4  
(16QAM RB Number: 1 Offset: 0) Channel Highest**



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**Figure 8-29: Band edge emission at antenna terminals –5MHz BW LTE-Band 4  
(16QAM RB Number: 1 Offset: 0) Channel Lowest**



**Figure 8-30: Band edge emission at antenna terminals –5MHz BW LTE-Band 4  
(16QAM RB Number: 1 Offset: 24) Channel Highest**



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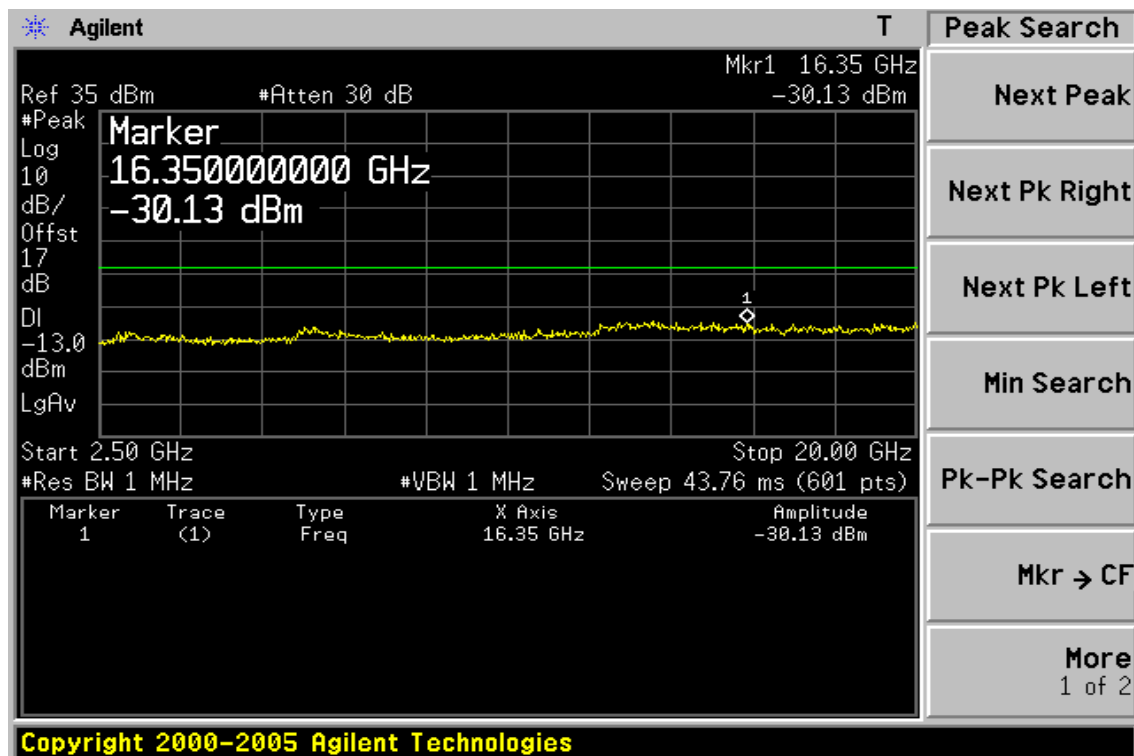
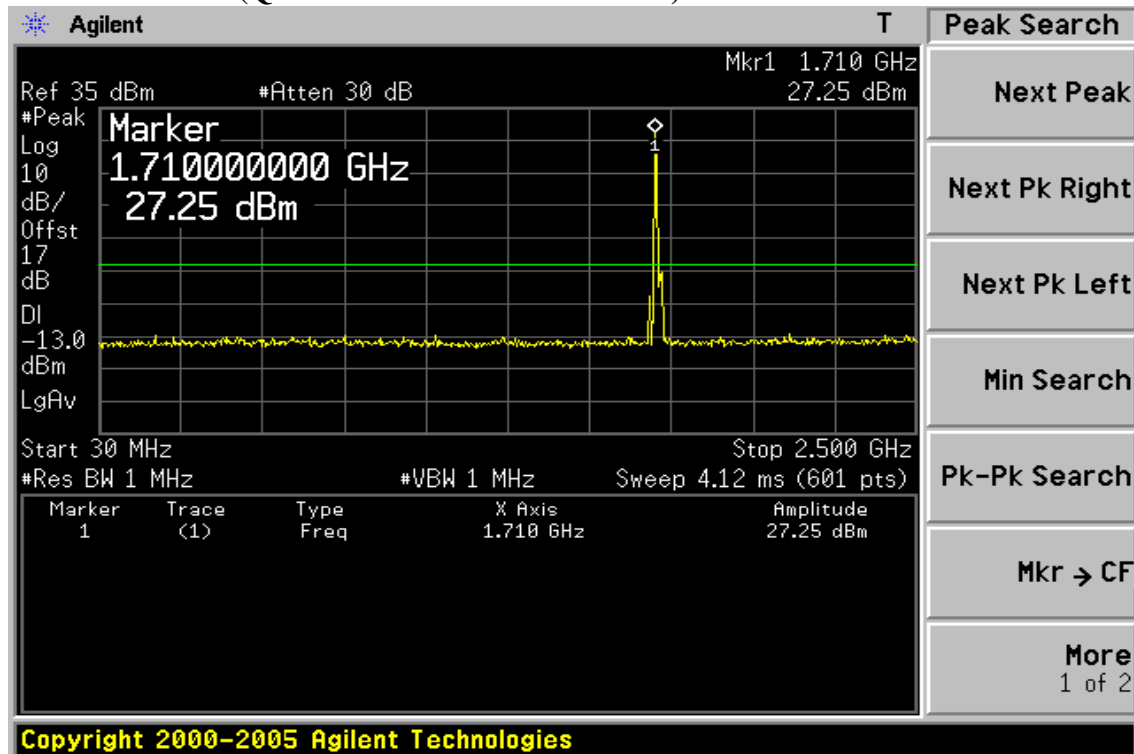
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**Figure 8-31: Out of Band emission at antenna terminals–10MHz BW LTE-Band 4 (QPSK RB Number: 1 Offset: 0) Channel Lowest**



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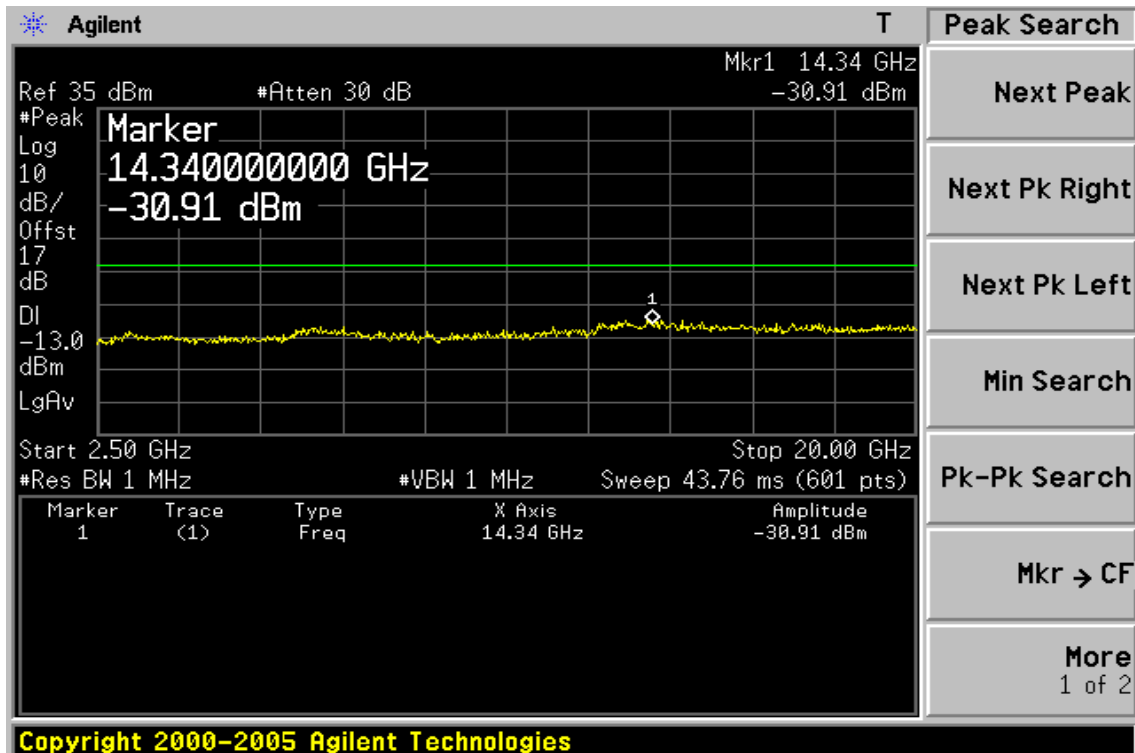
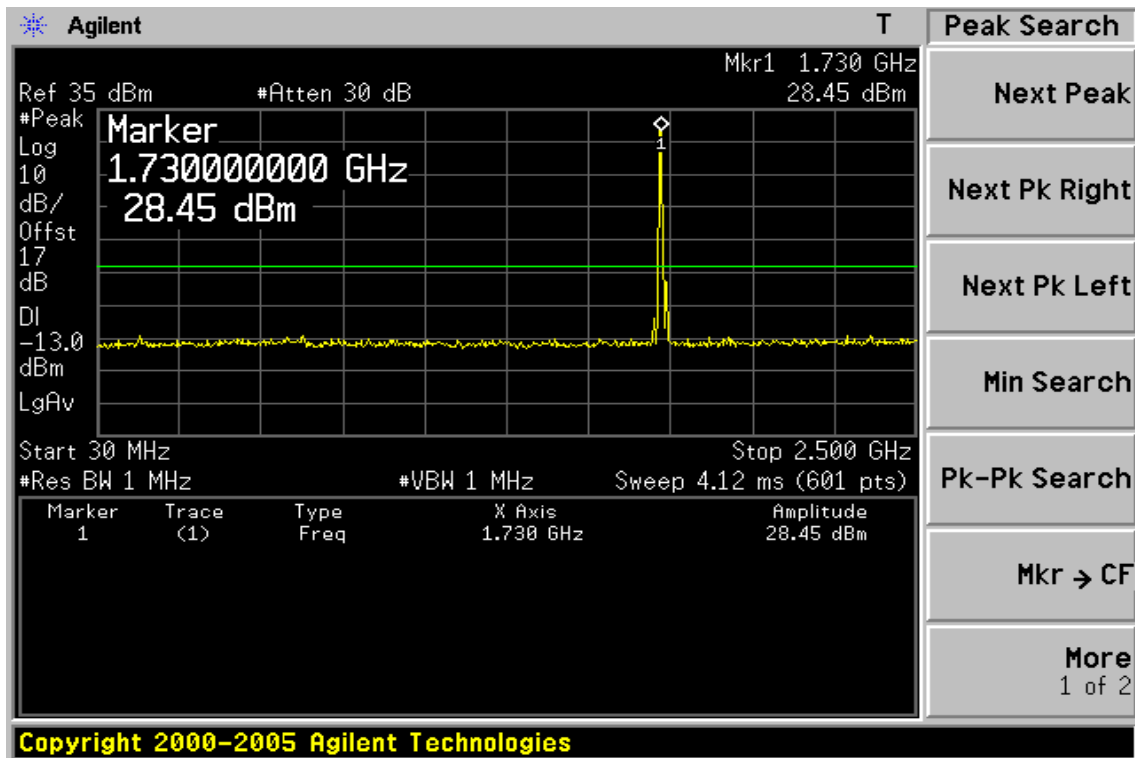
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**Figure 8-32: Out of Band emission at antenna terminals –10MHz BW LTE-Band 4 (QPSK RB Number: 1 Offset: 0) Channel Mid**

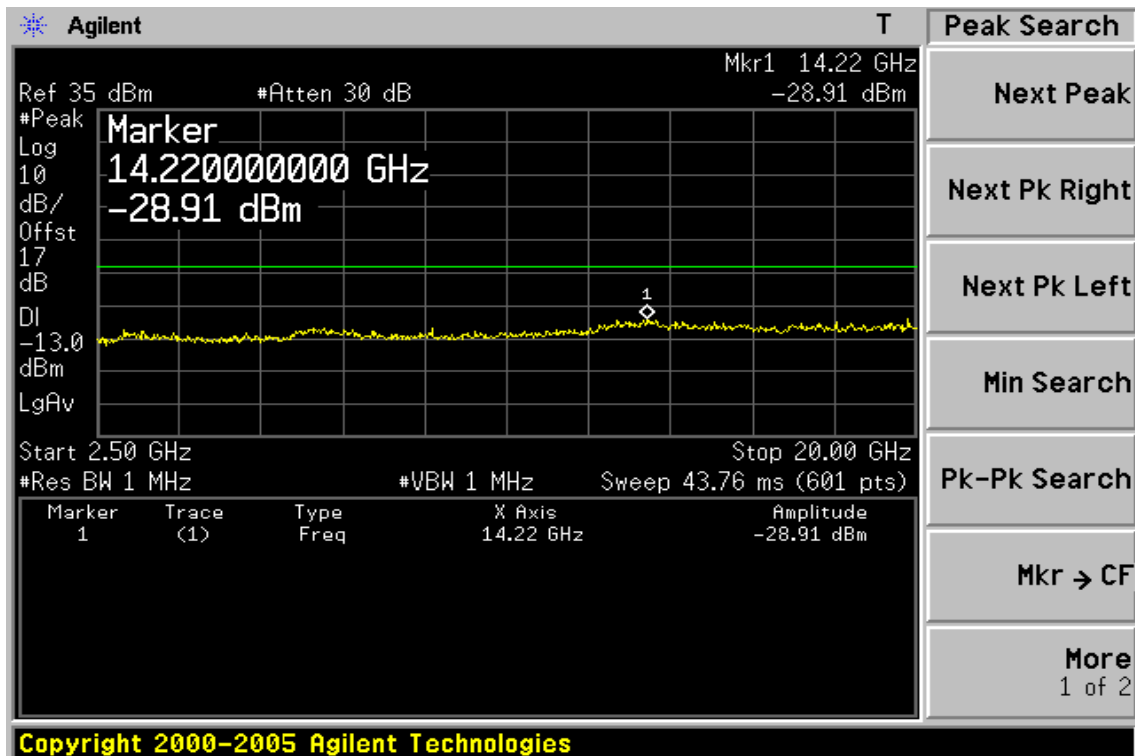
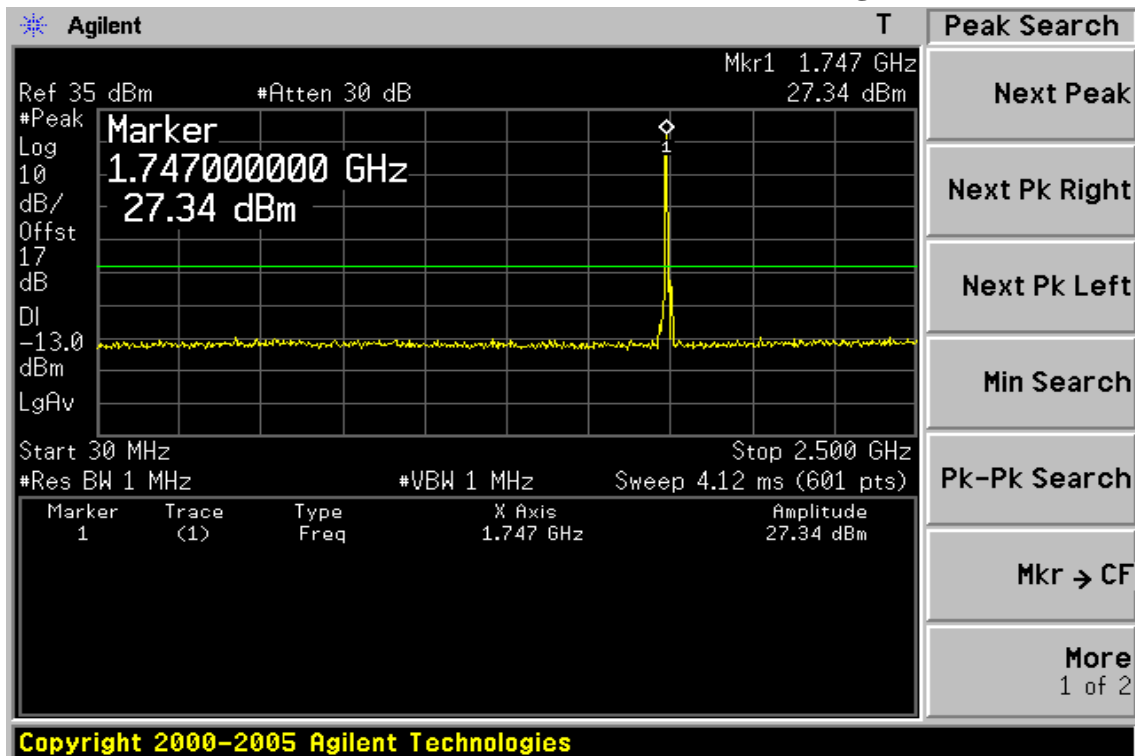


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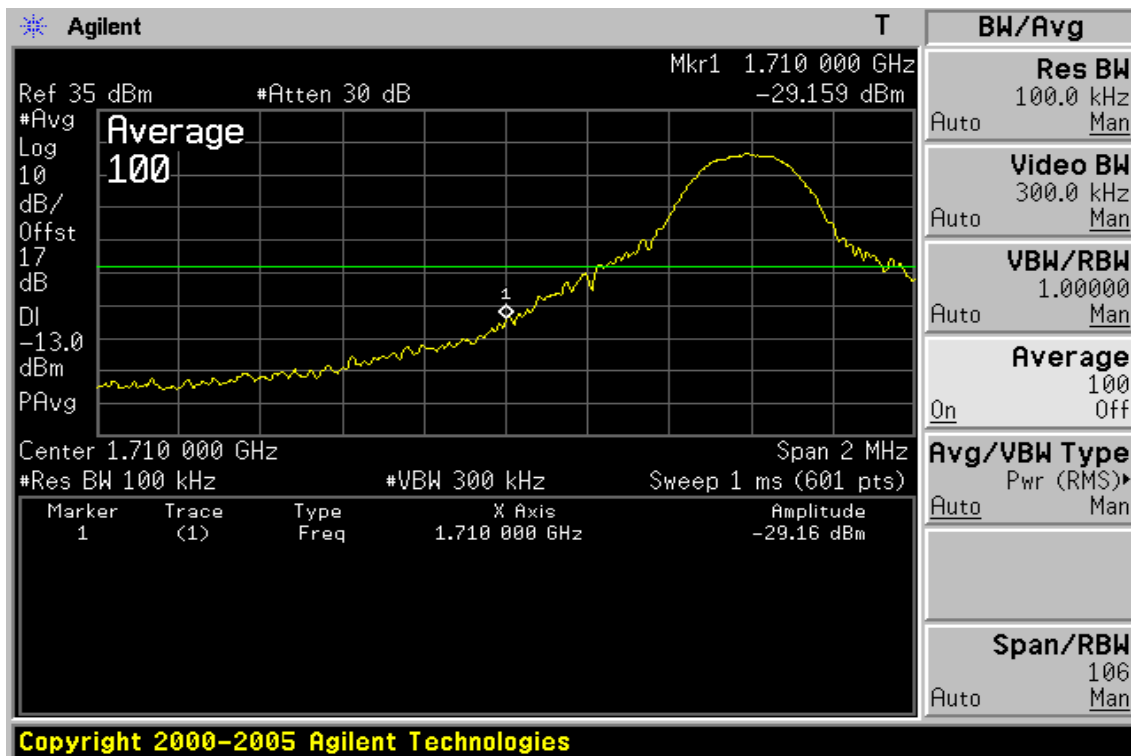
**Figure 8-33: Out of Band emission at antenna terminals–10MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 0) Channel Highest**



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**Figure 8-34: Band edge emission at antenna terminals –10MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset: 0) Channel Lowest**



**Figure 8-35: Band edge emission at antenna terminals –10MHz BW LTE-Band 4  
(QPSK RB Number: 1 Offset:49) Channel Highest**



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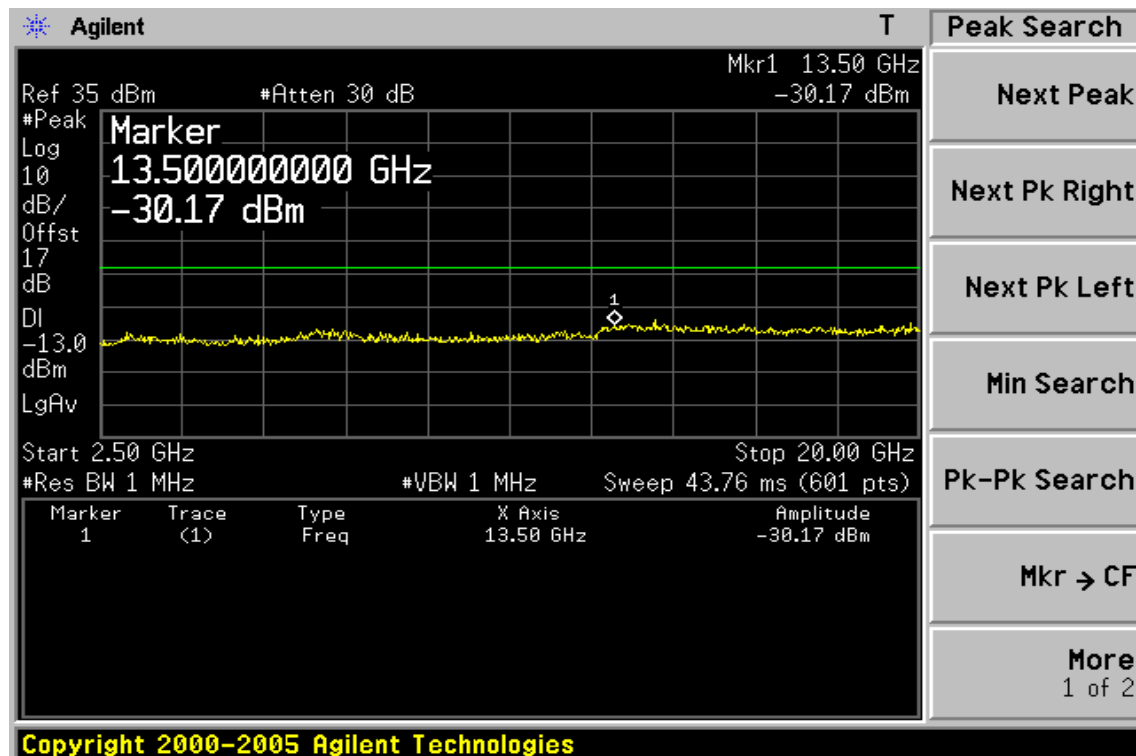
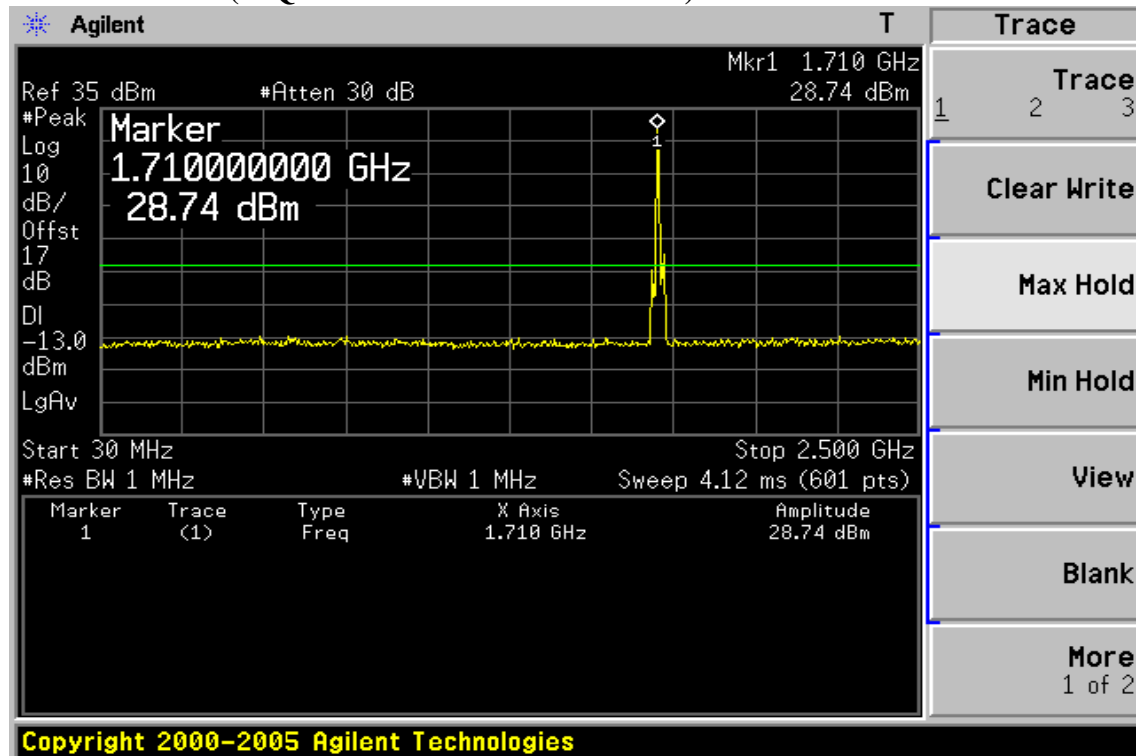
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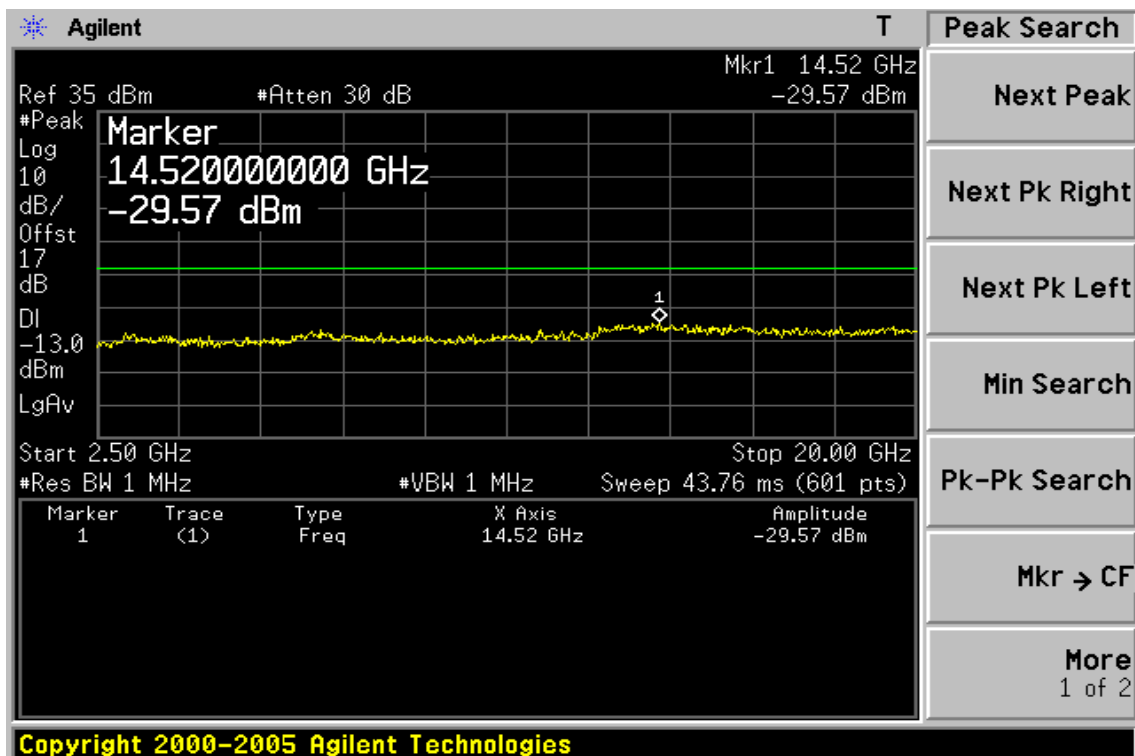
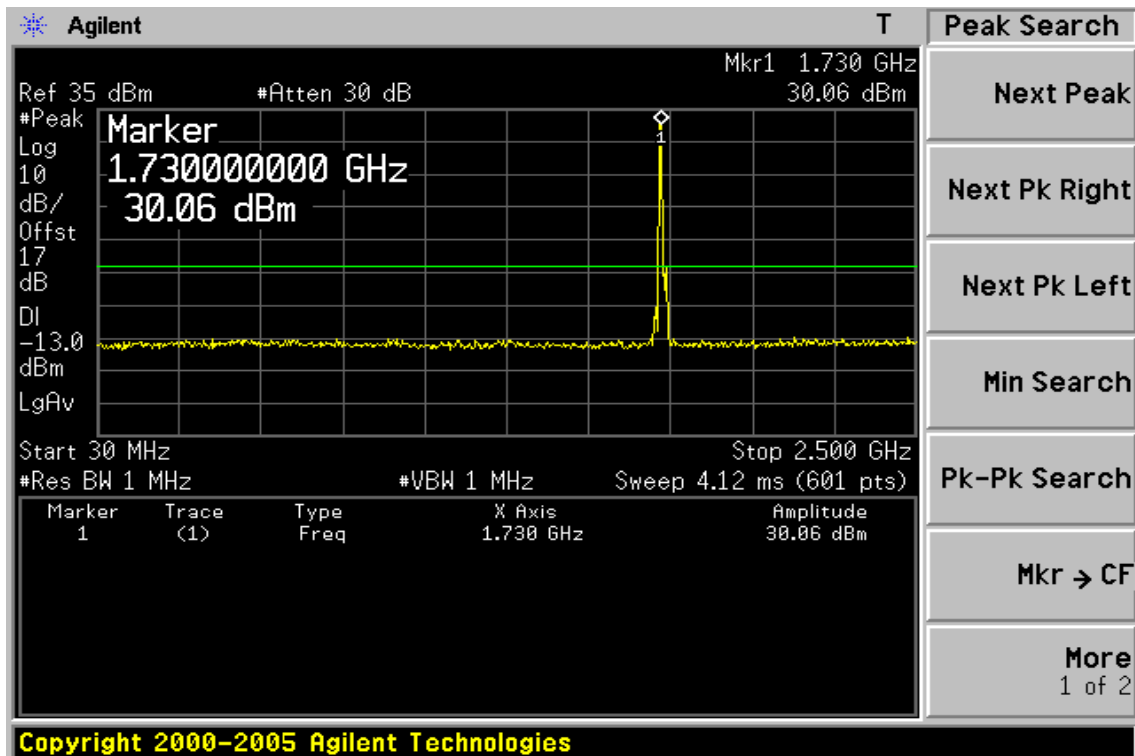
**Figure 8-36: Out of Band emission at antenna terminals–10MHz BW LTE-Band 4  
(16QAM RB Number: 1 Offset: 0) Channel Lowest**



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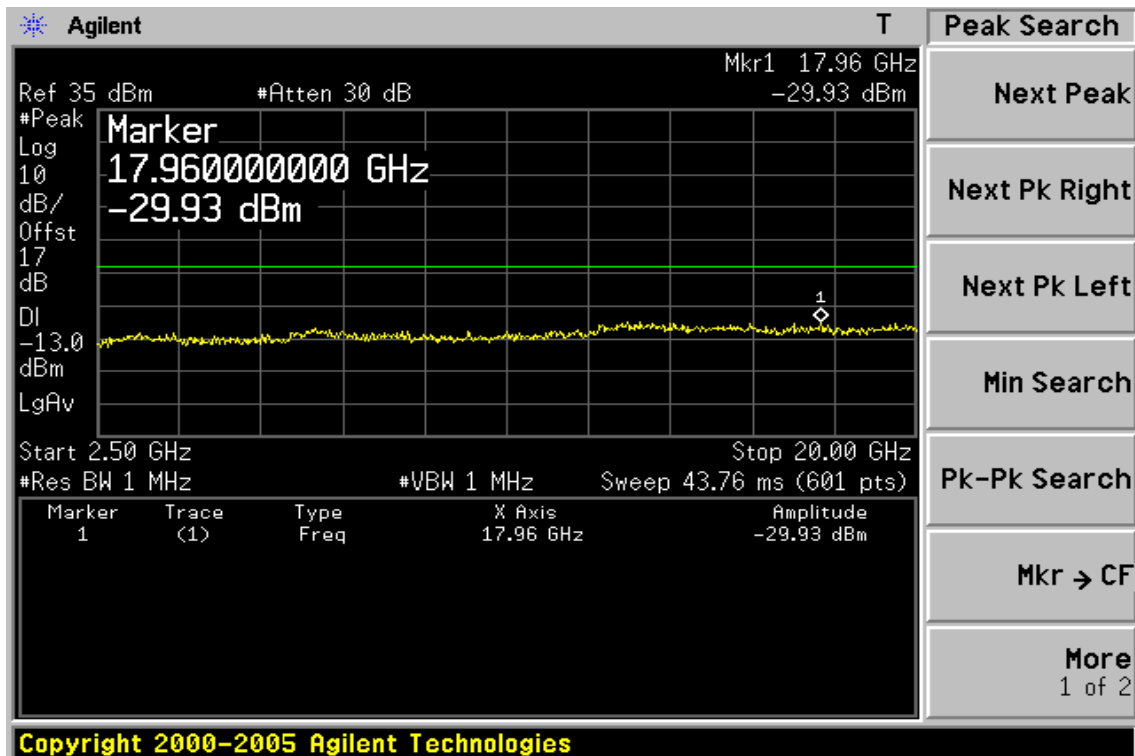
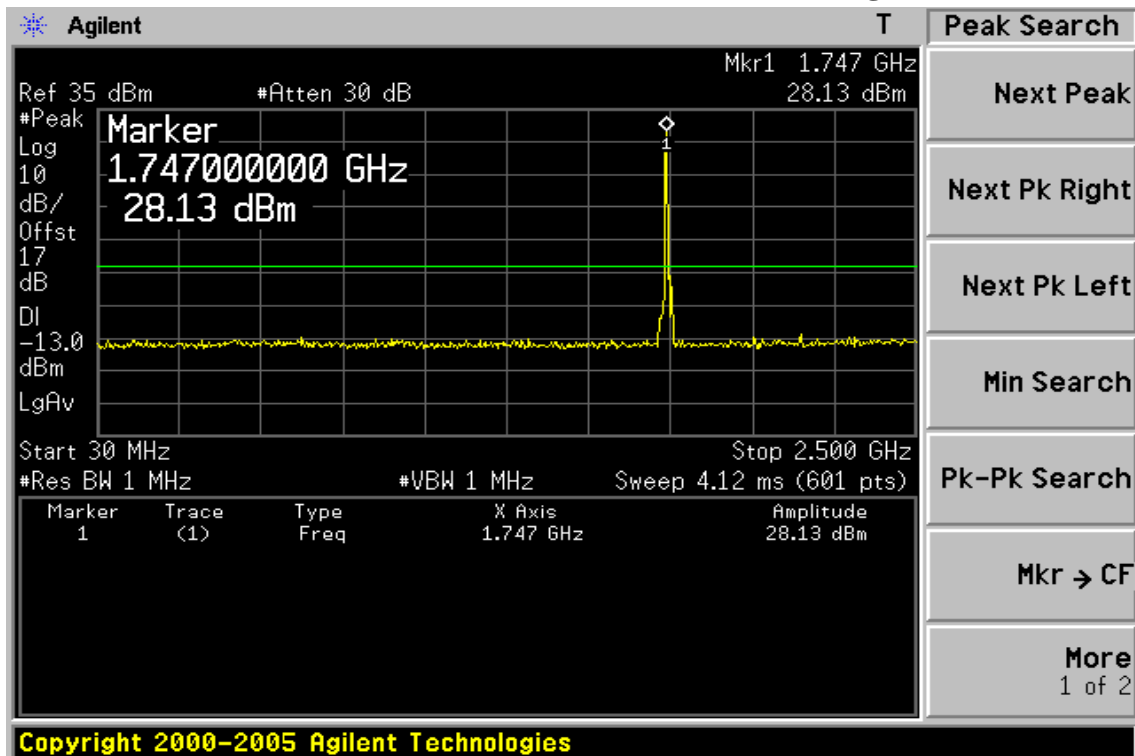
**Figure 8-37: Out of Band emission at antenna terminals –10MHz BW LTE-Band 4  
(16QAM RB Number: 1 Offset: 0) Channel Mid**



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**Figure 8-38: Out of Band emission at antenna terminals–10MHz BW LTE-Band 4  
(16QAM RB Number: 1 Offset: 0) Channel Highest**



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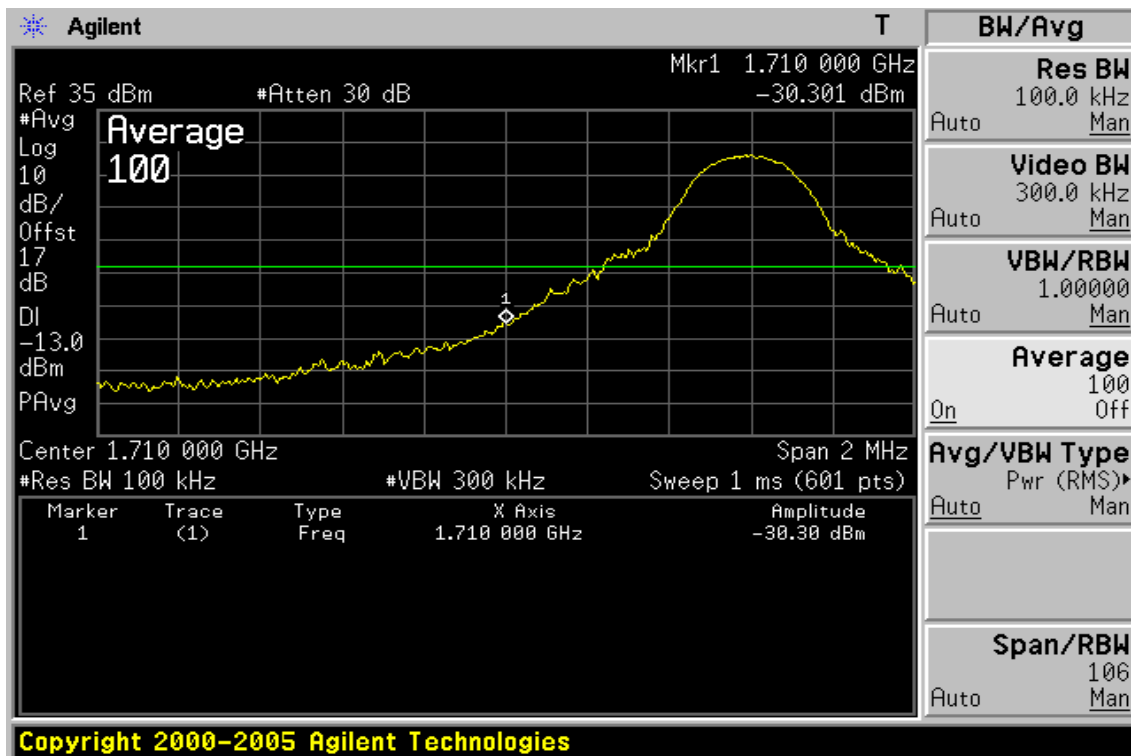
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**Figure 8-39: Band edge emission at antenna terminals –10MHz BW LTE-Band 4  
(16QAM RB Number: 1 Offset: 0) Channel Lowest**



**Figure 8-40: Band edge emission at antenna terminals –10MHz BW LTE-Band 4  
(16QAM RB Number: 1 Offset: 49) Channel Highest**



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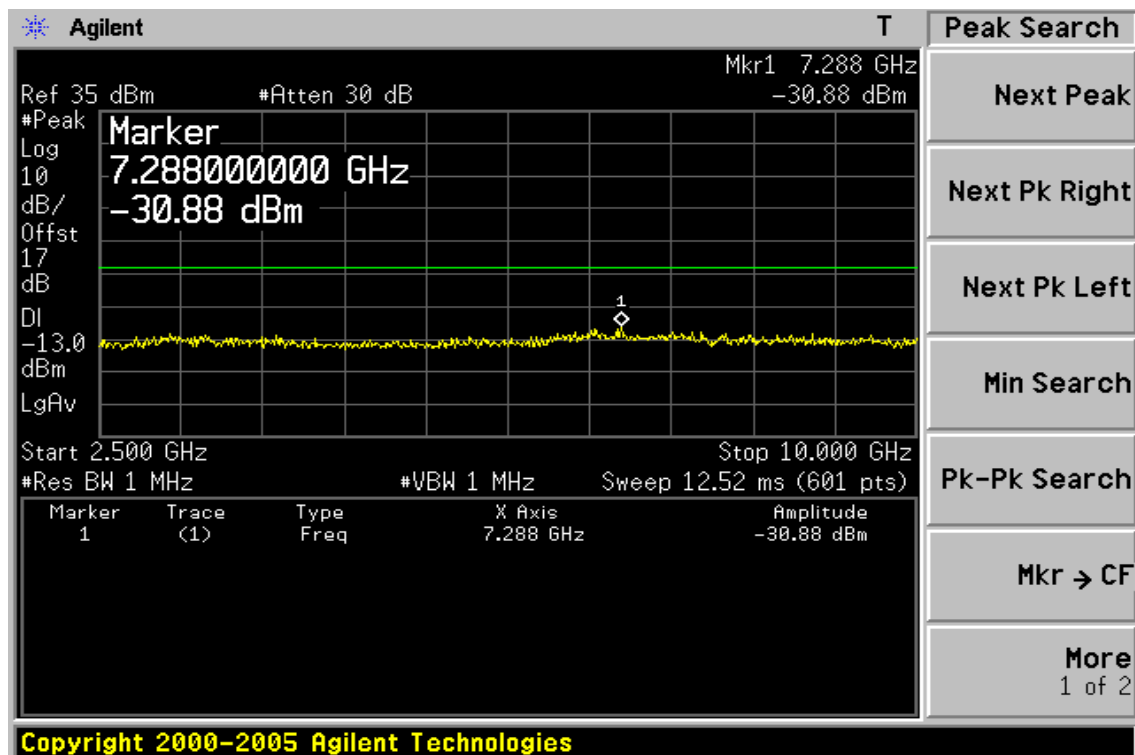
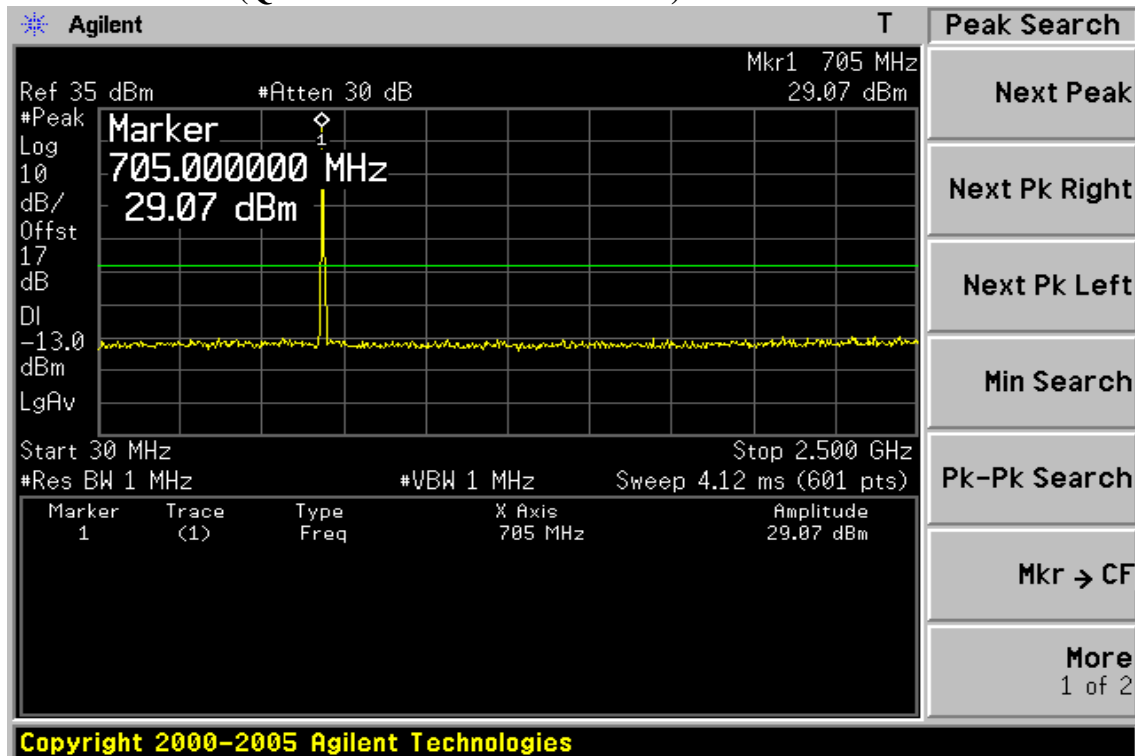
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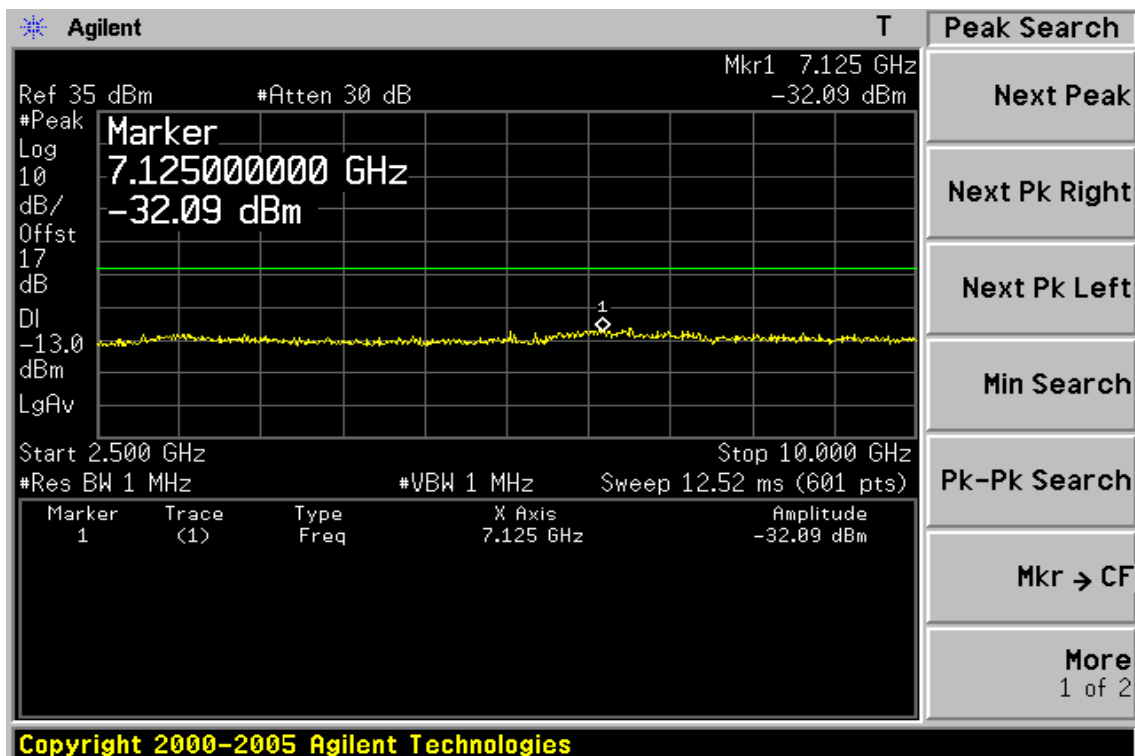
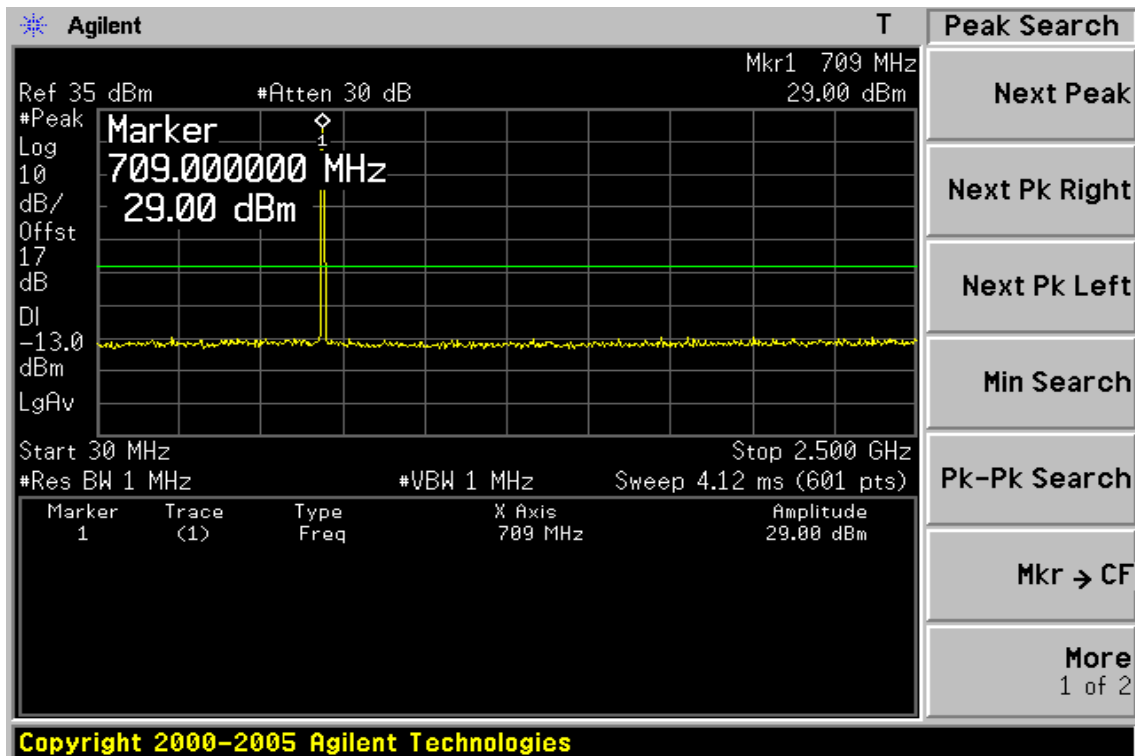
**Figure 8-41: Out of Band emission at antenna terminals–5MHz BW LTE-Band 17 (QPSK RB Number: 1 Offset: 0) Channel Lowest**



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**Figure 8-42: Out of Band emission at antenna terminals –5MHz BW LTE-Band 17  
(QPSK RB Number: 1 Offset: 0) Channel Mid**

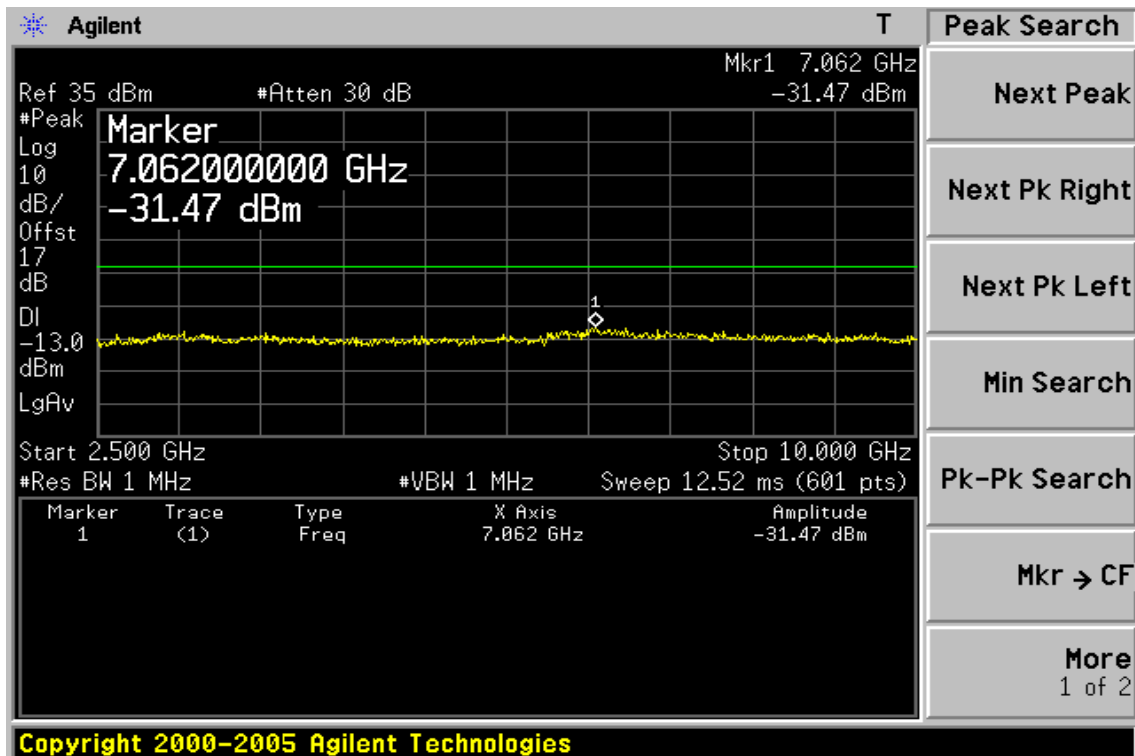
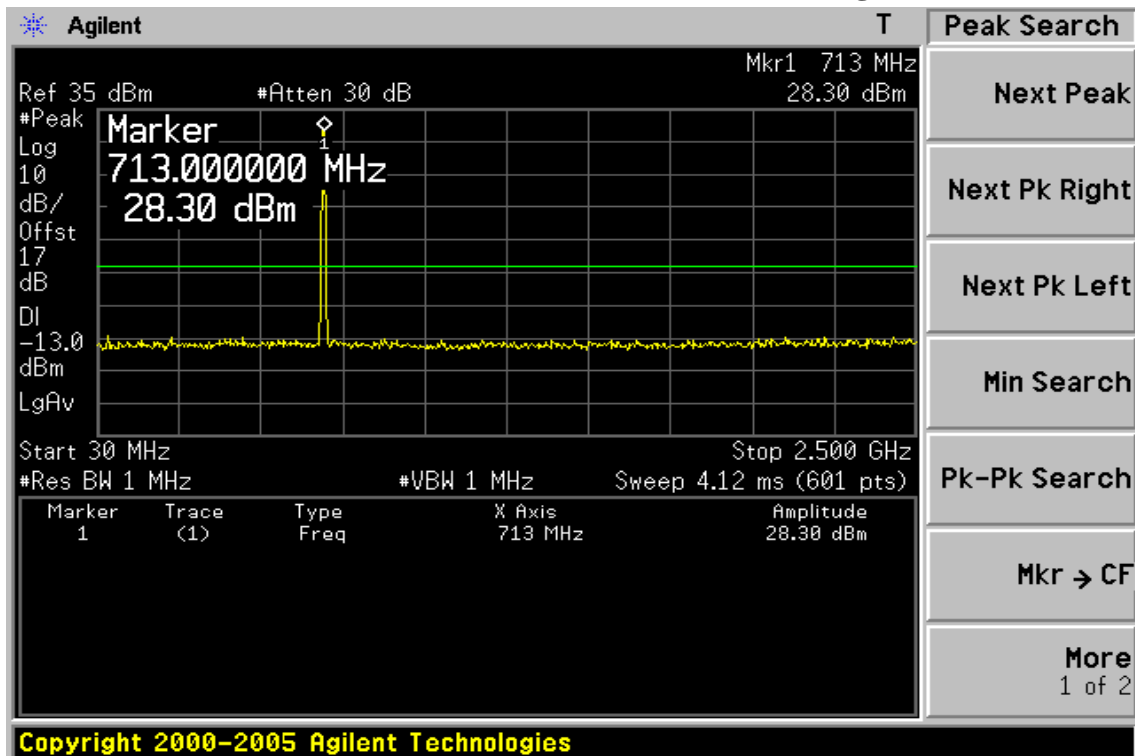


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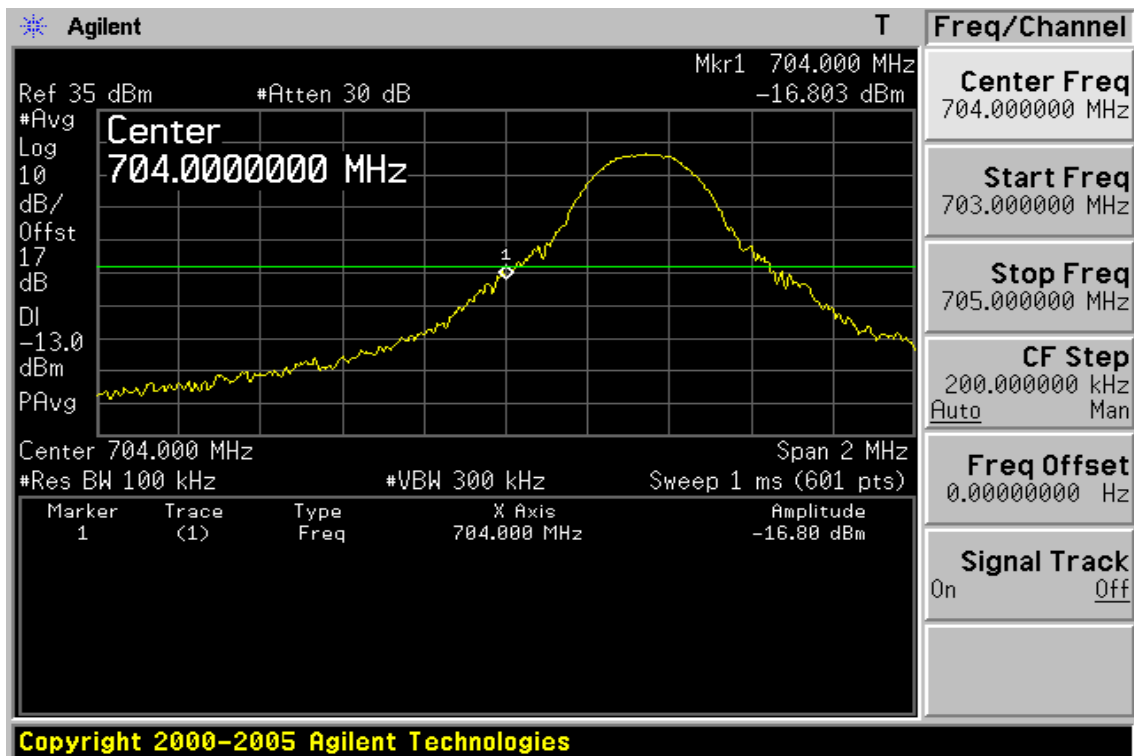
**Figure 8-43: Out of Band emission at antenna terminals–5MHz BW LTE-Band 17  
(QPSK RB Number: 1 Offset: 0) Channel Highest**



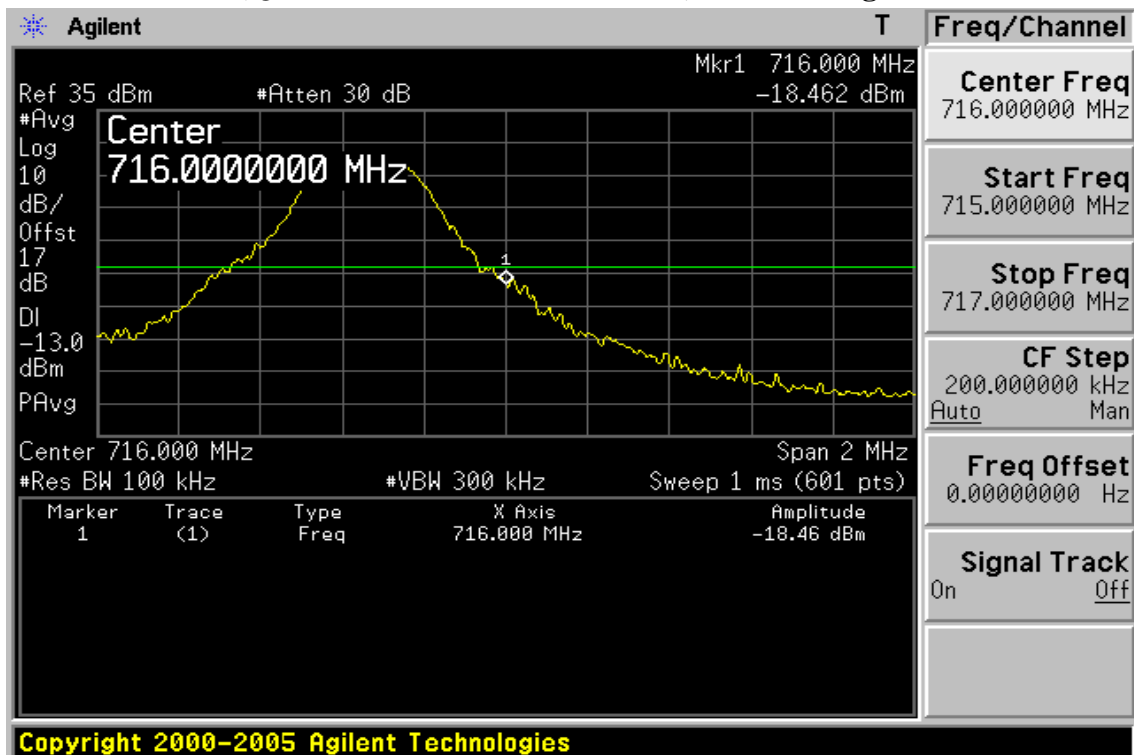
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**Figure 8-44: Band edge emission at antenna terminals –5MHz BW LTE-Band 17  
(QPSK RB Number: 1 Offset: 0) Channel Lowest**



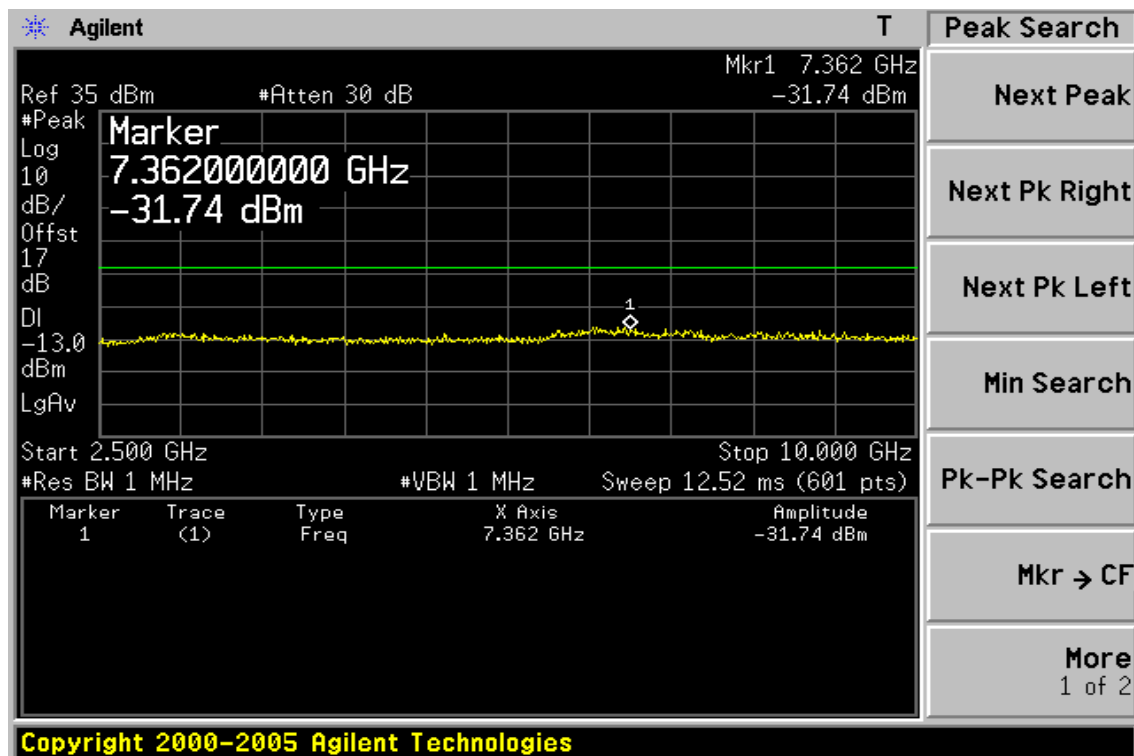
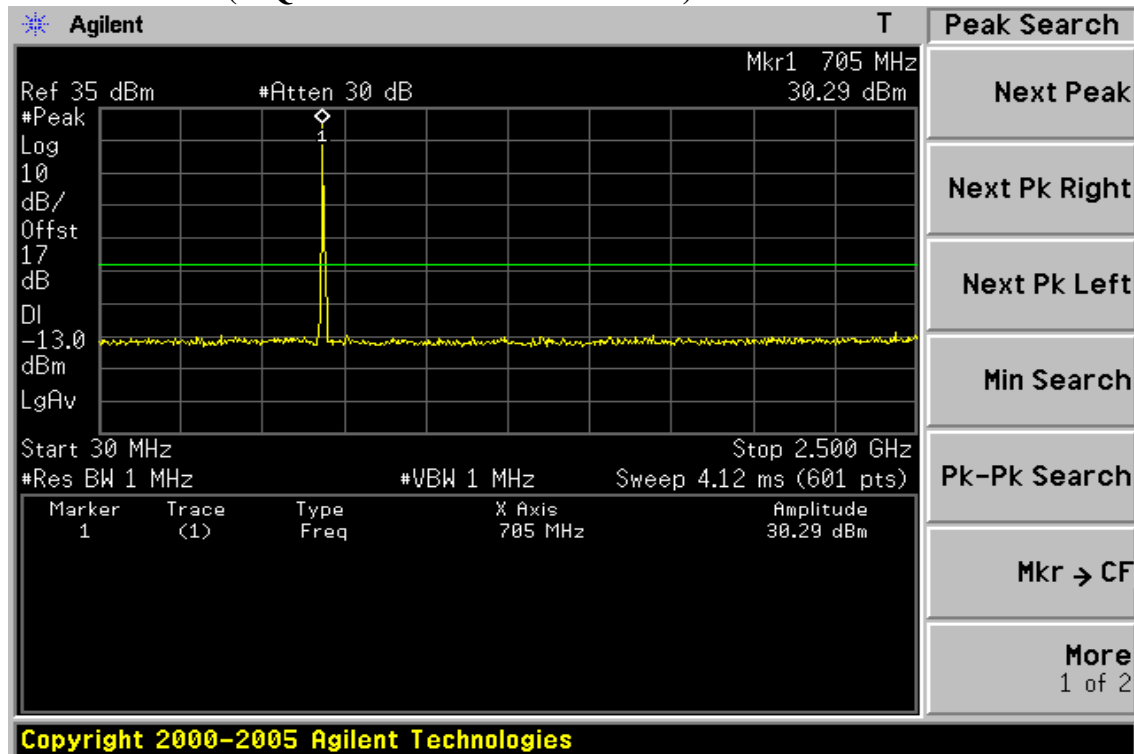
**Figure 8-45: Band edge emission at antenna terminals –5MHz BW LTE-Band 17  
(QPSK RB Number: 1 Offset: 24) Channel Highest**



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**Figure 8-46: Out of Band emission at antenna terminals–5MHz BW LTE-Band 17  
(16QAM RB Number: 1 Offset: 0) Channel Lowest**



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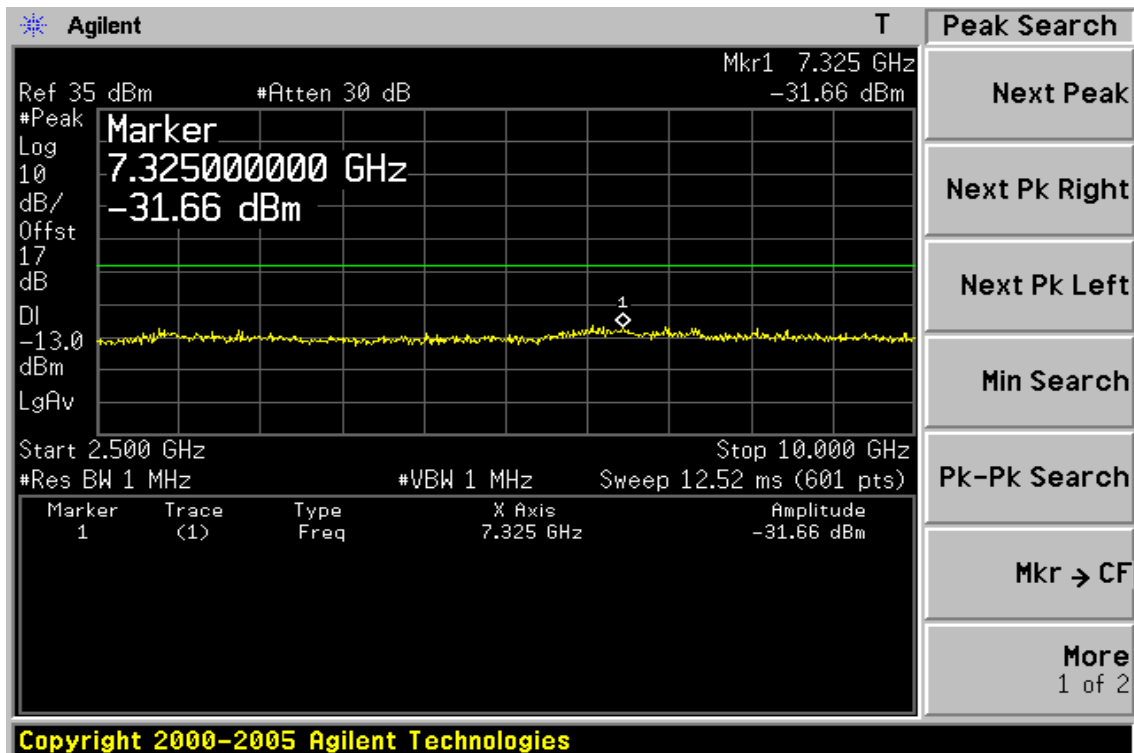
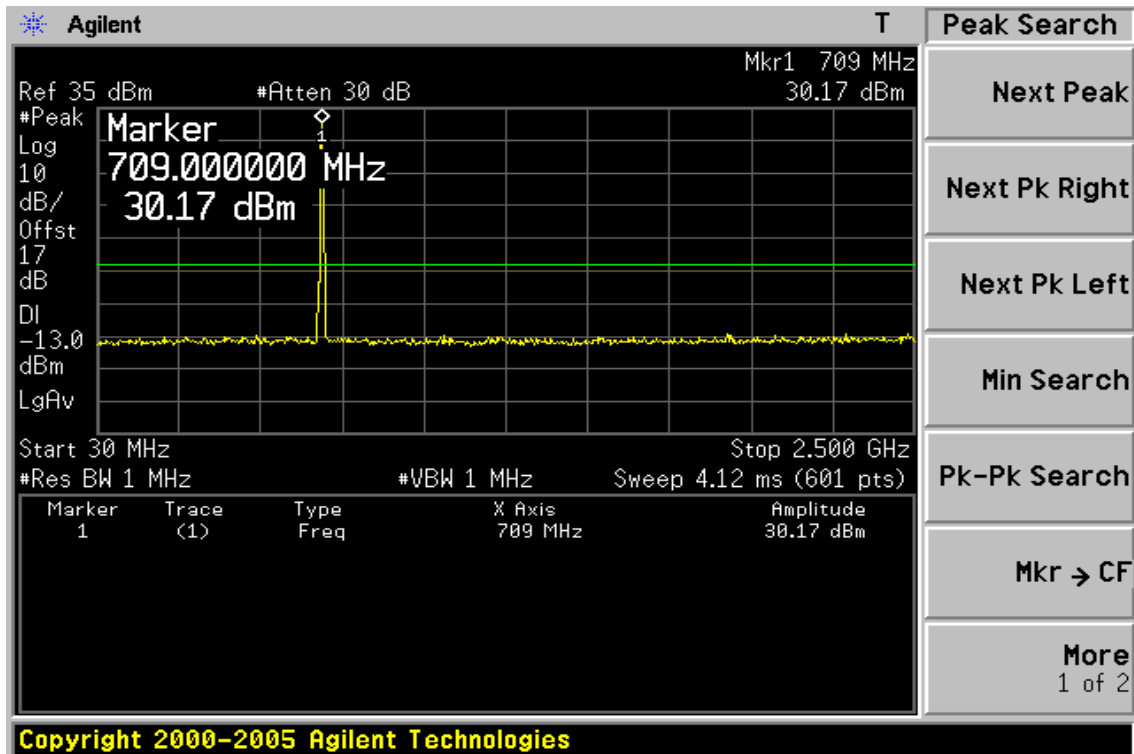
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**Figure 8-47: Out of Band emission at antenna terminals –5MHz BW LTE-Band 17  
(16QAM RB Number: 1 Offset: 0) Channel Mid**



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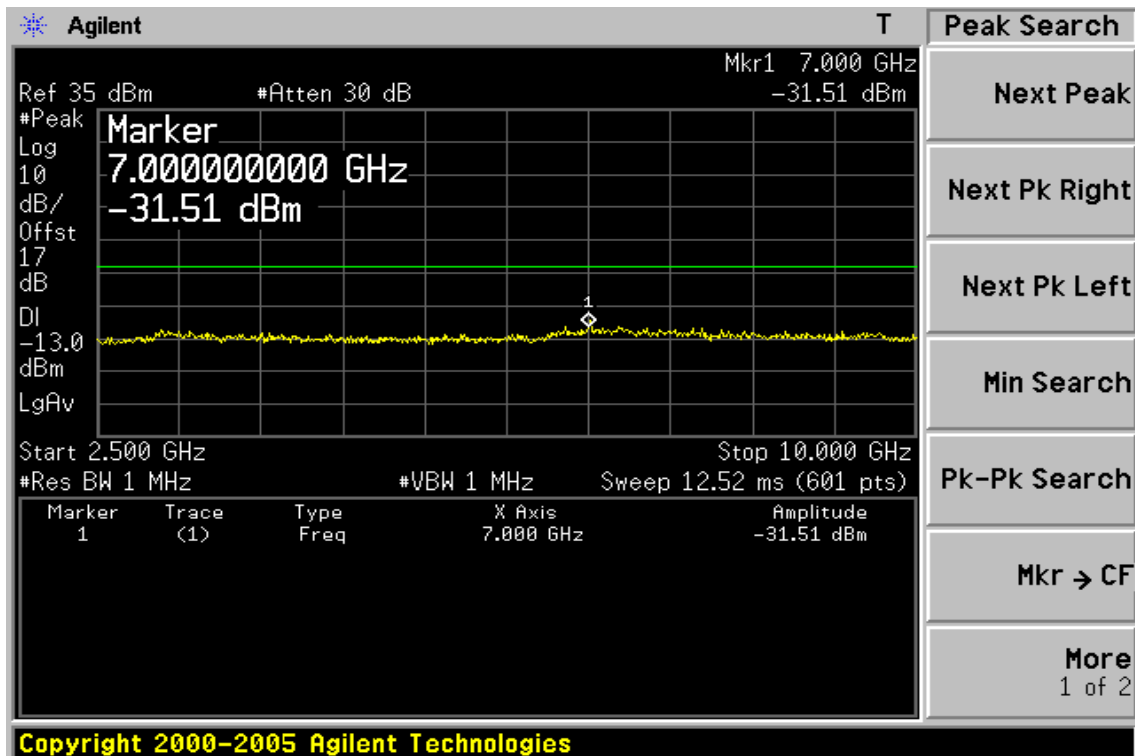
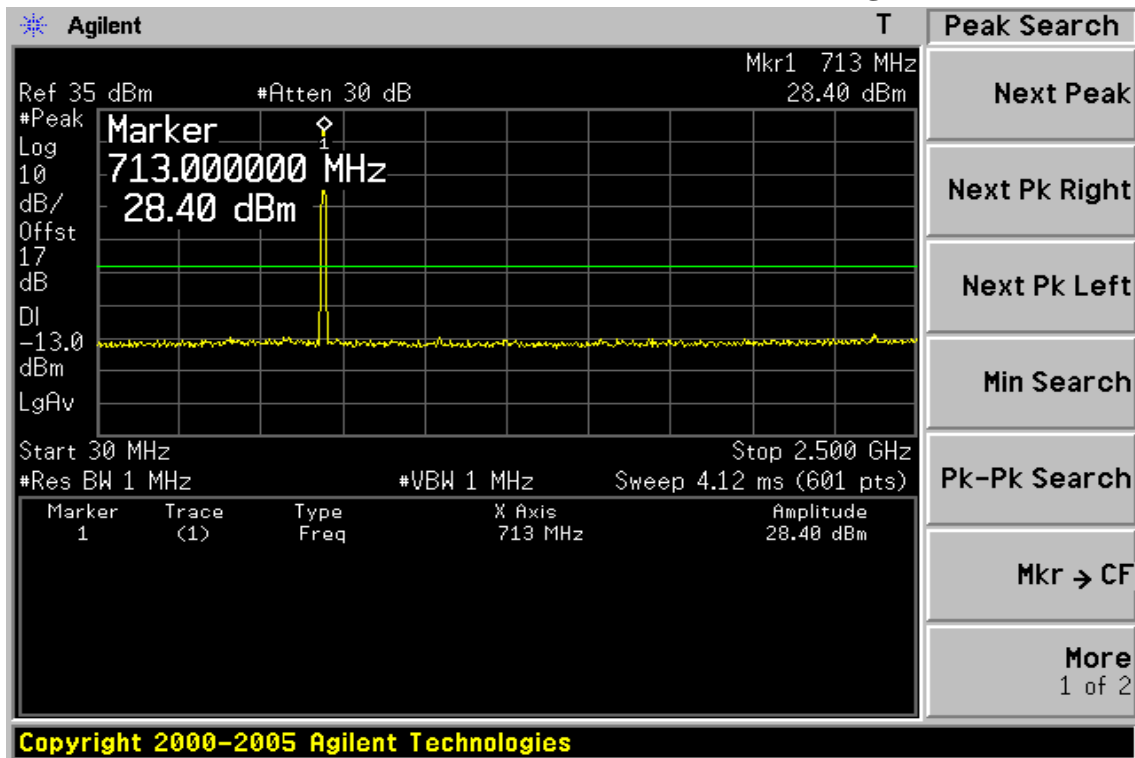
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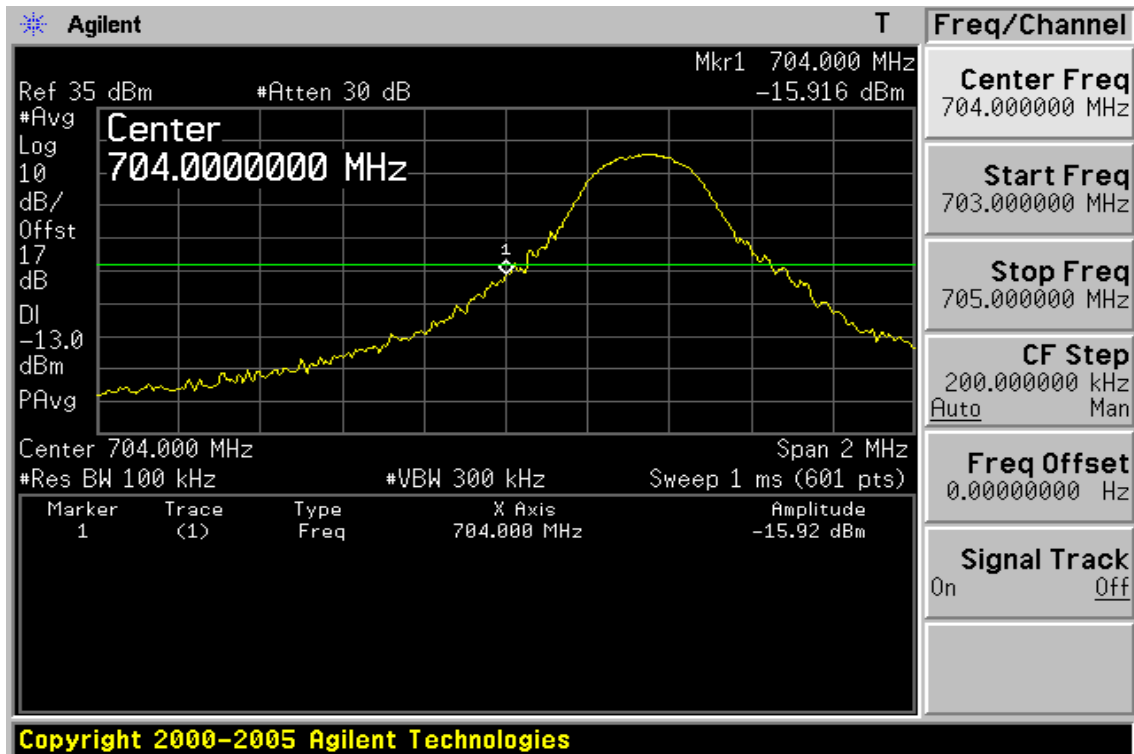
**Figure 8-48: Out of Band emission at antenna terminals–5MHz BW LTE-Band 17  
(16QAM RB Number: 1 Offset: 0) Channel Highest**



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**Figure 8-49 Band edge emission at antenna terminals –5MHz BW LTE-Band 17  
(16QAM RB Number: 1 Offset: 0) Channel Lowest**



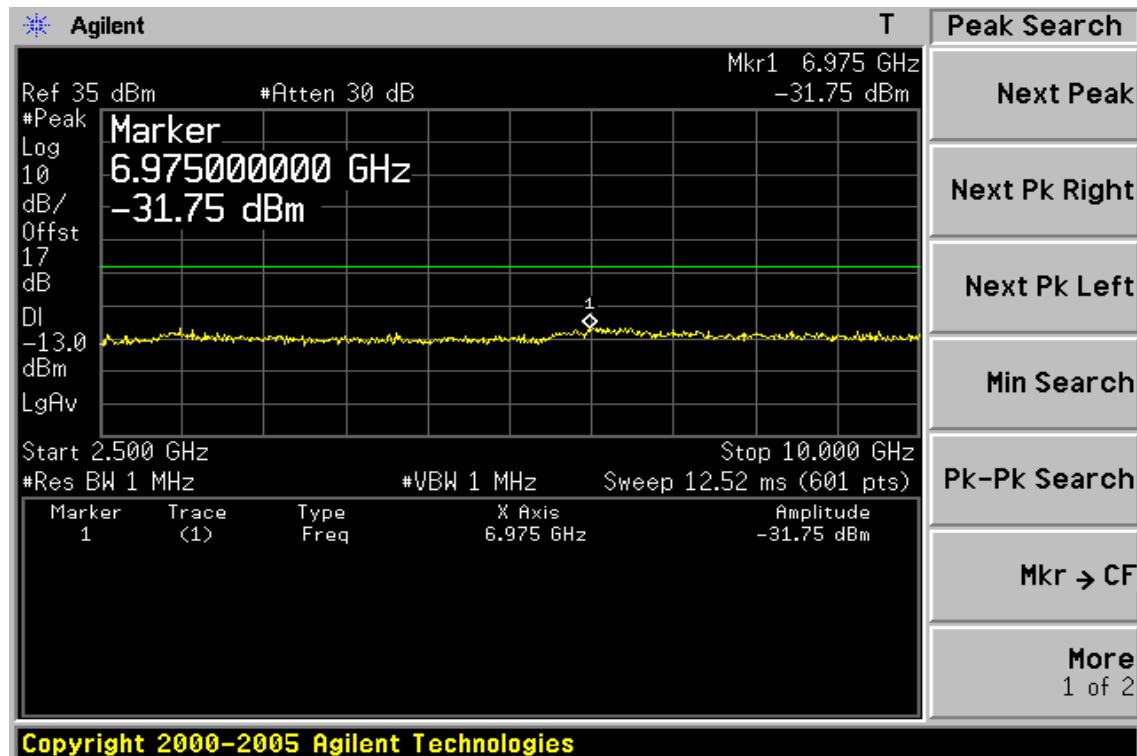
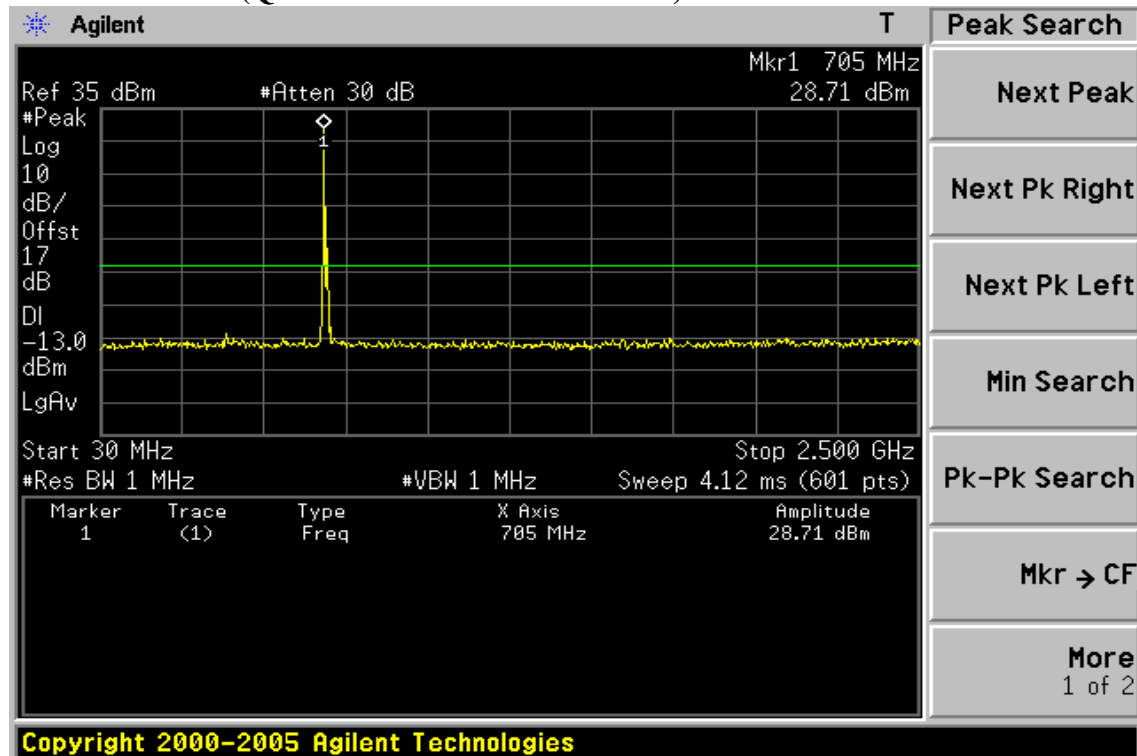
**Figure 8-50: Band edge emission at antenna terminals –5MHz BW LTE-Band 17  
(16QAM RB Number: 1 Offset: 24) Channel Highest**



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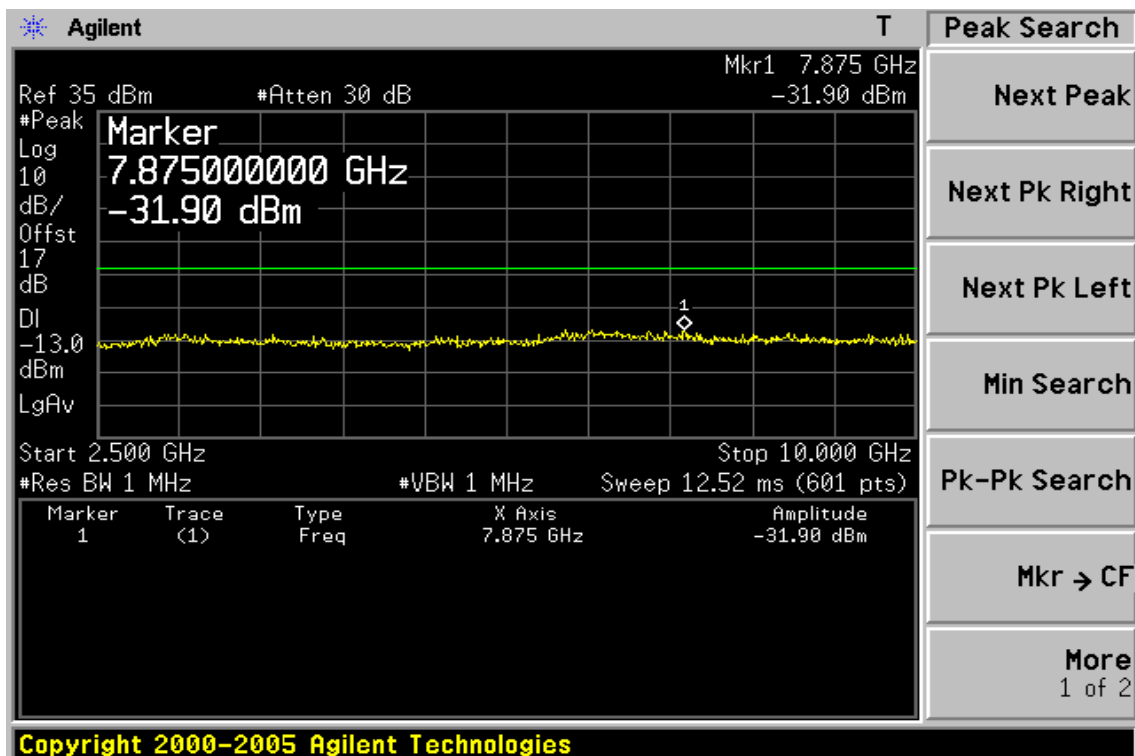
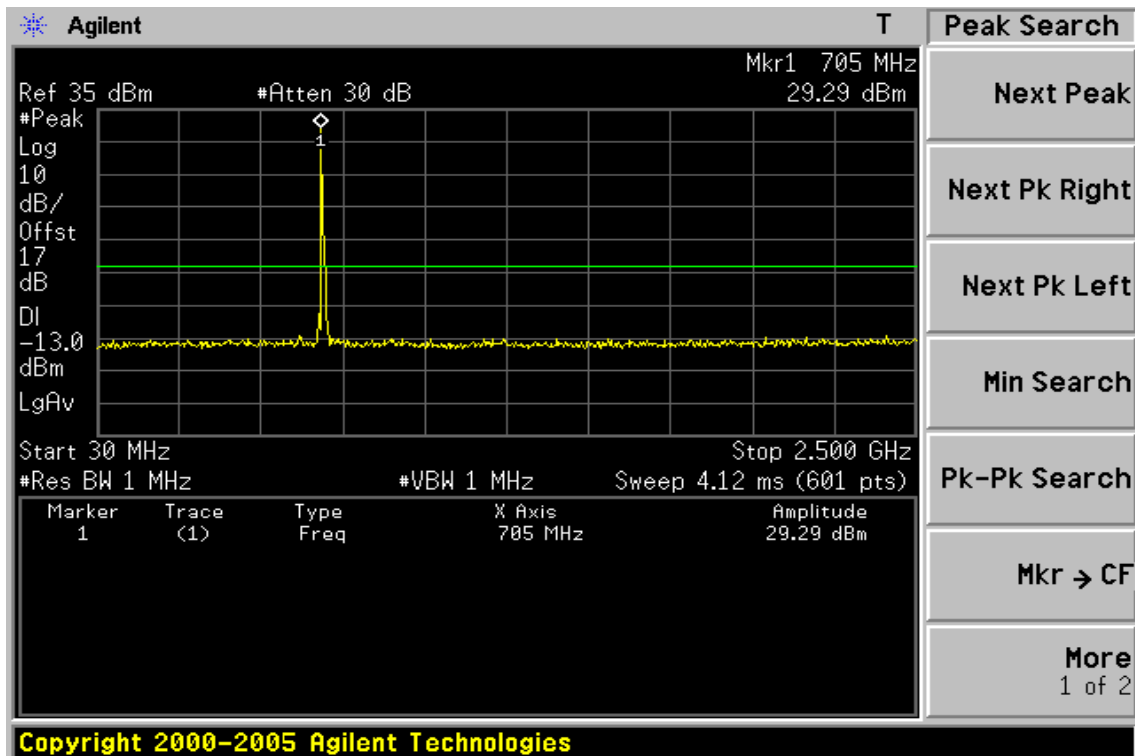
**Figure 8-51: Out of Band emission at antenna terminals–10MHz BW LTE-Band 17  
(QPSK RB Number: 1 Offset: 0) Channel Lowest**



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**Figure 8-52: Out of Band emission at antenna terminals –10MHz BW LTE-Band 17  
(QPSK RB Number: 1 Offset: 0) Channel Mid**



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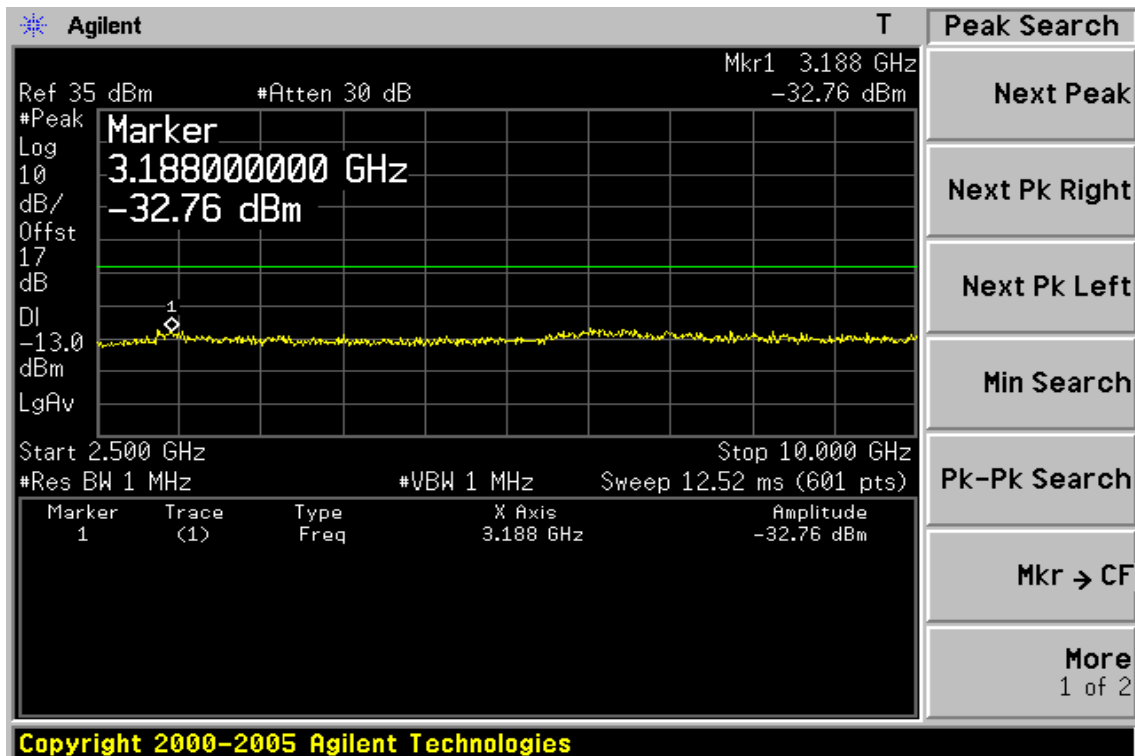
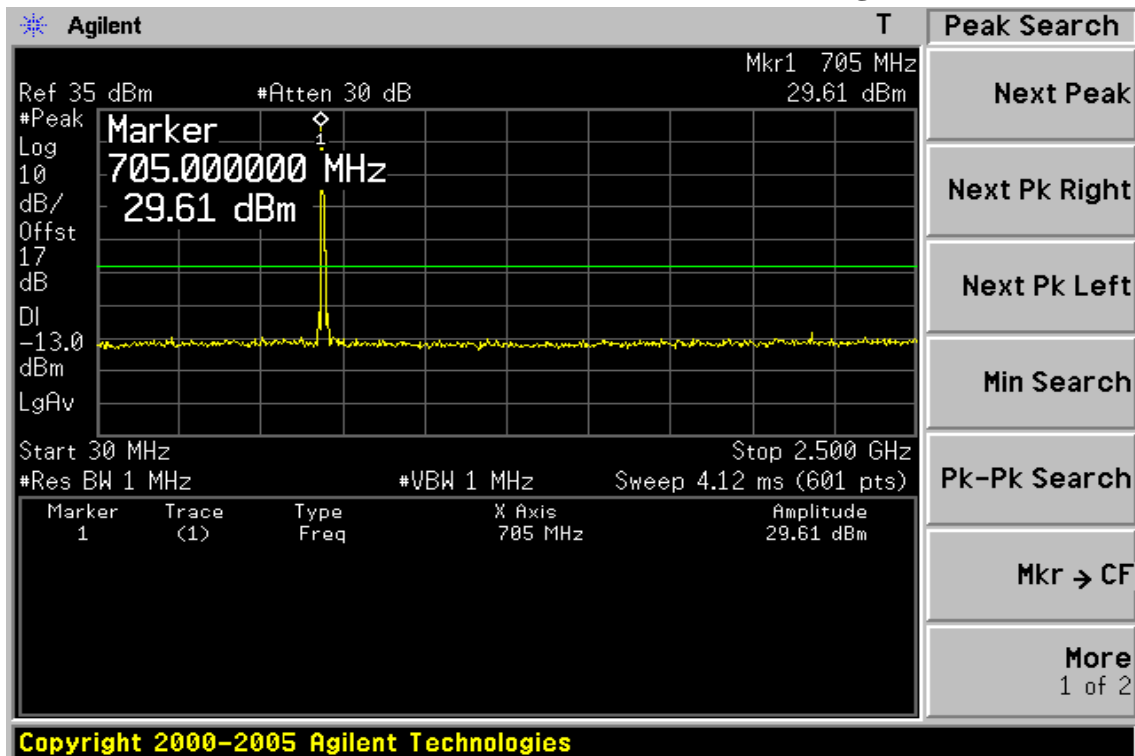
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**Figure 8-53: Out of Band emission at antenna terminals–10MHz BW LTE-Band 17  
(QPSK RB Number: 1 Offset: 0) Channel Highest**



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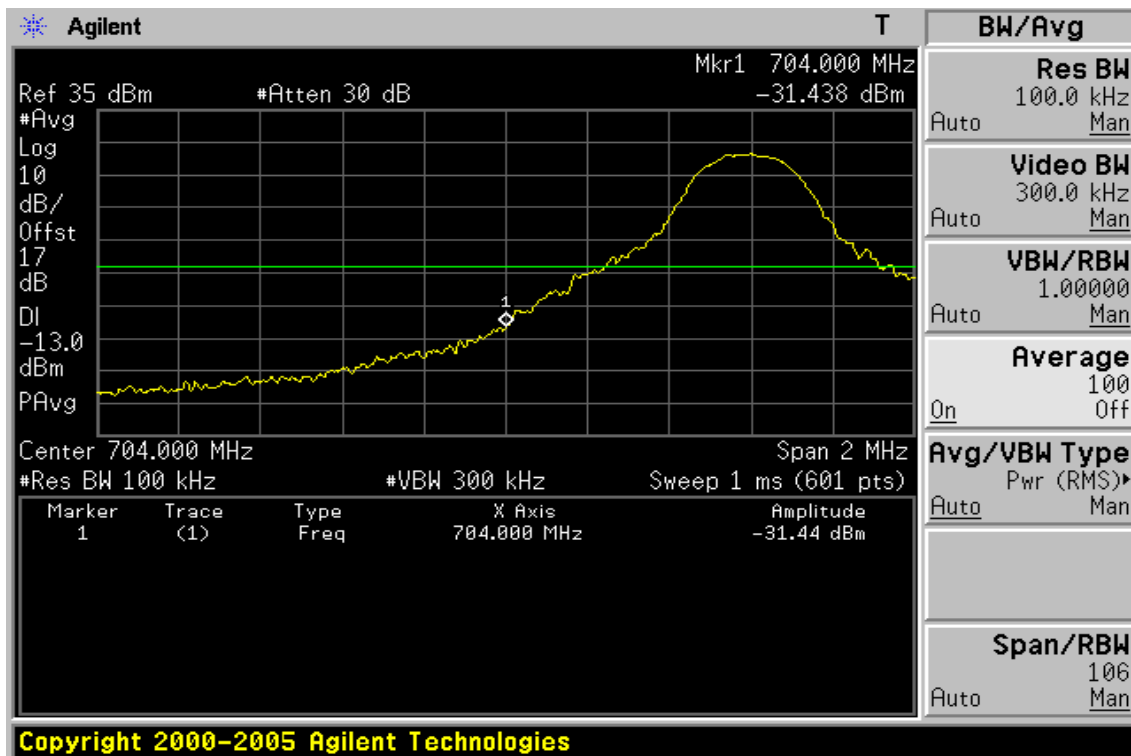
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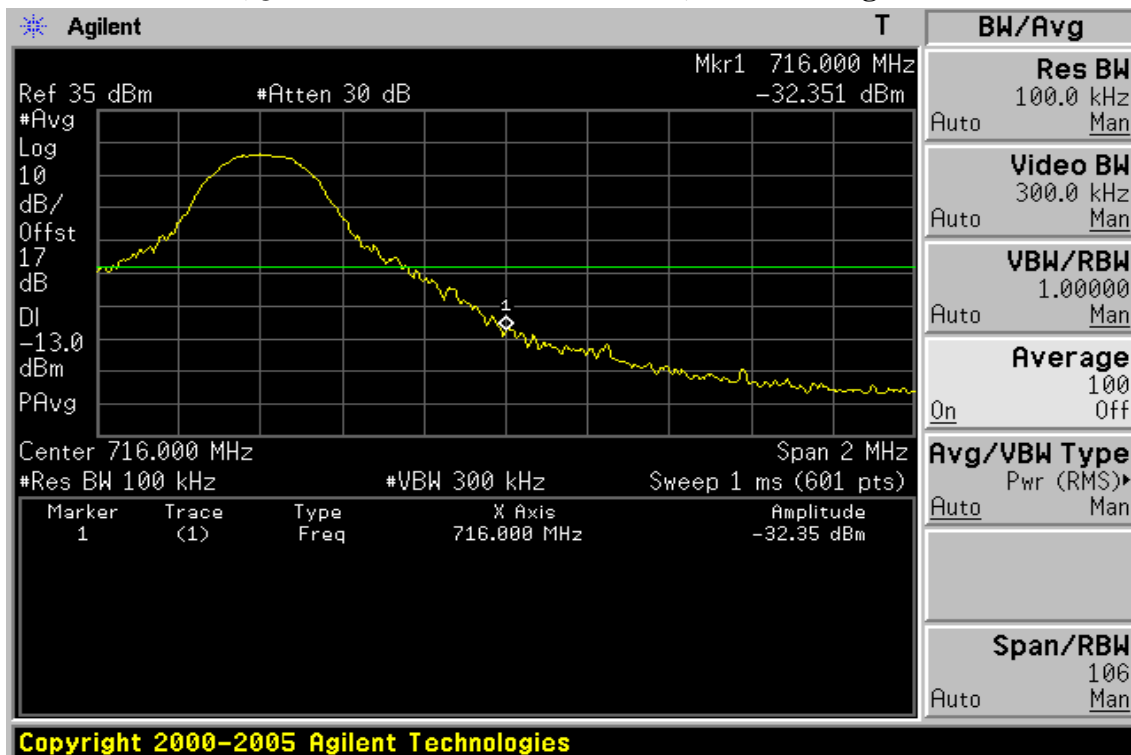
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**Figure 8-54: Band edge emission at antenna terminals –10MHz BW LTE-Band 17  
(QPSK RB Number: 1 Offset: 0) Channel Lowest**



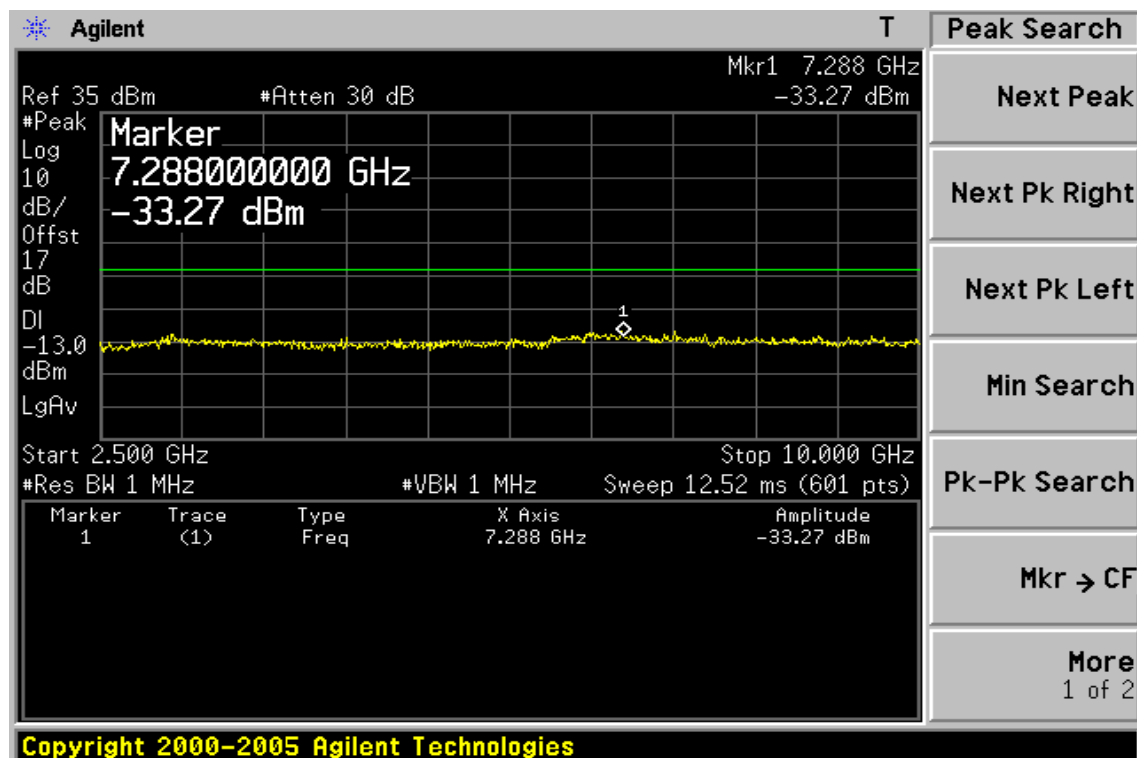
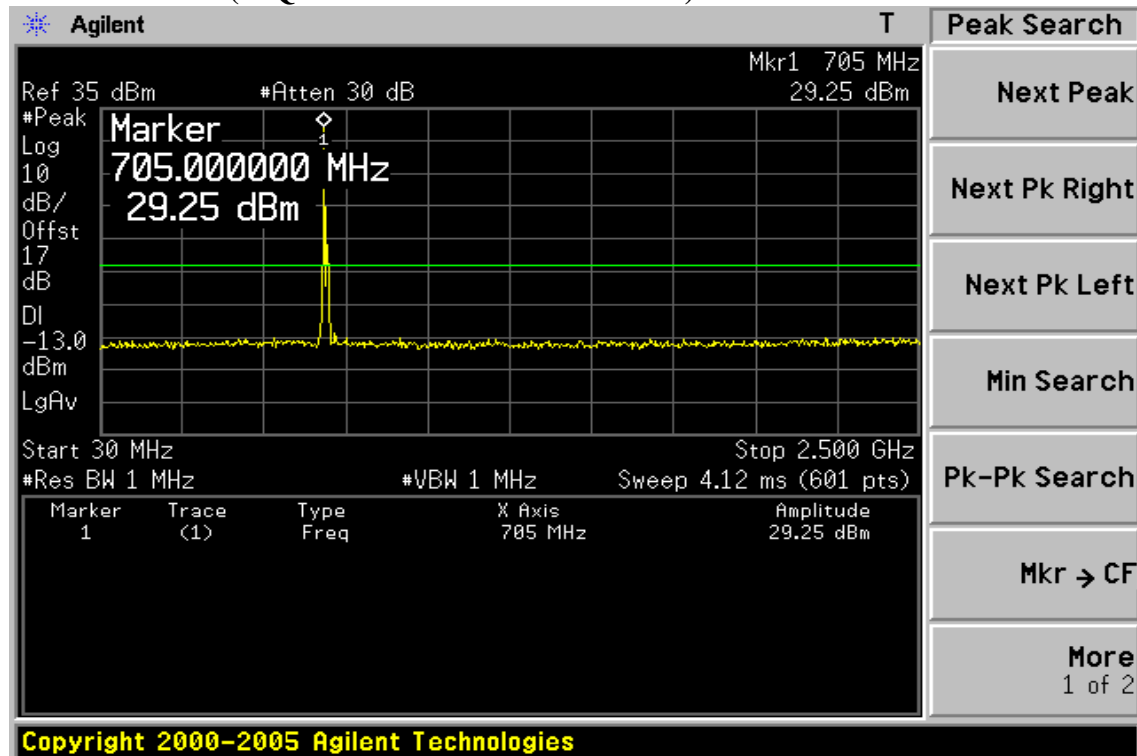
**Figure 8-55: Band edge emission at antenna terminals –10MHz BW LTE-Band 17  
(QPSK RB Number: 1 Offset: 49) Channel Highest**



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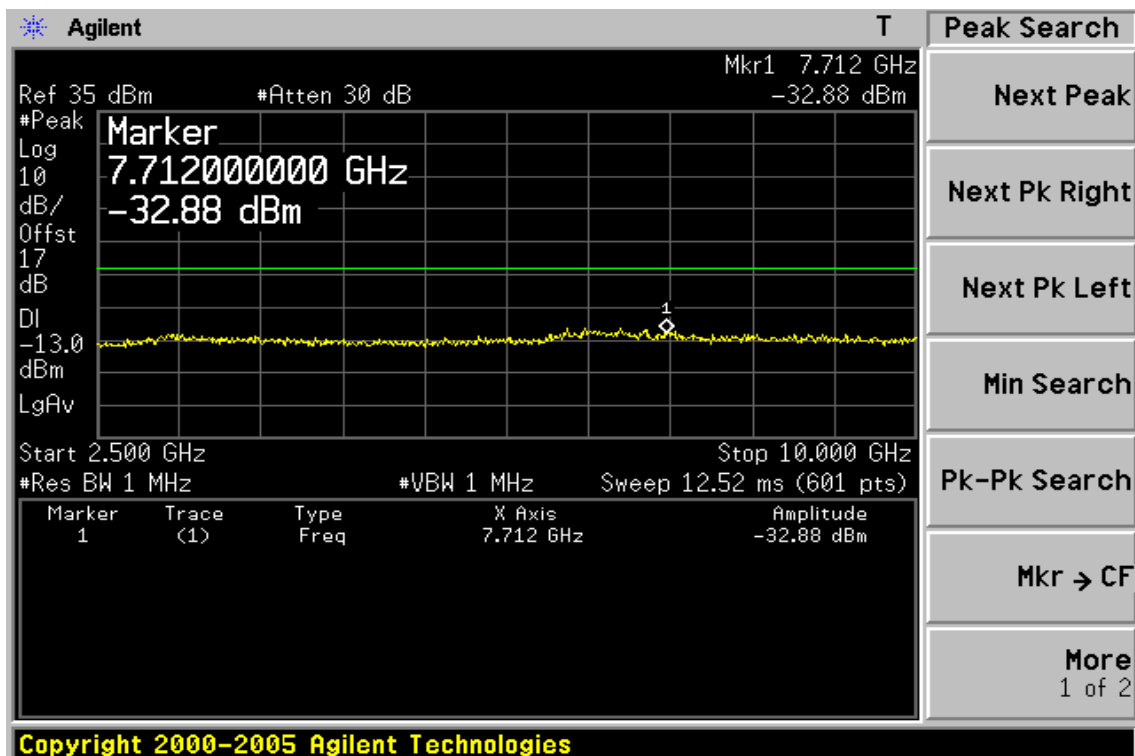
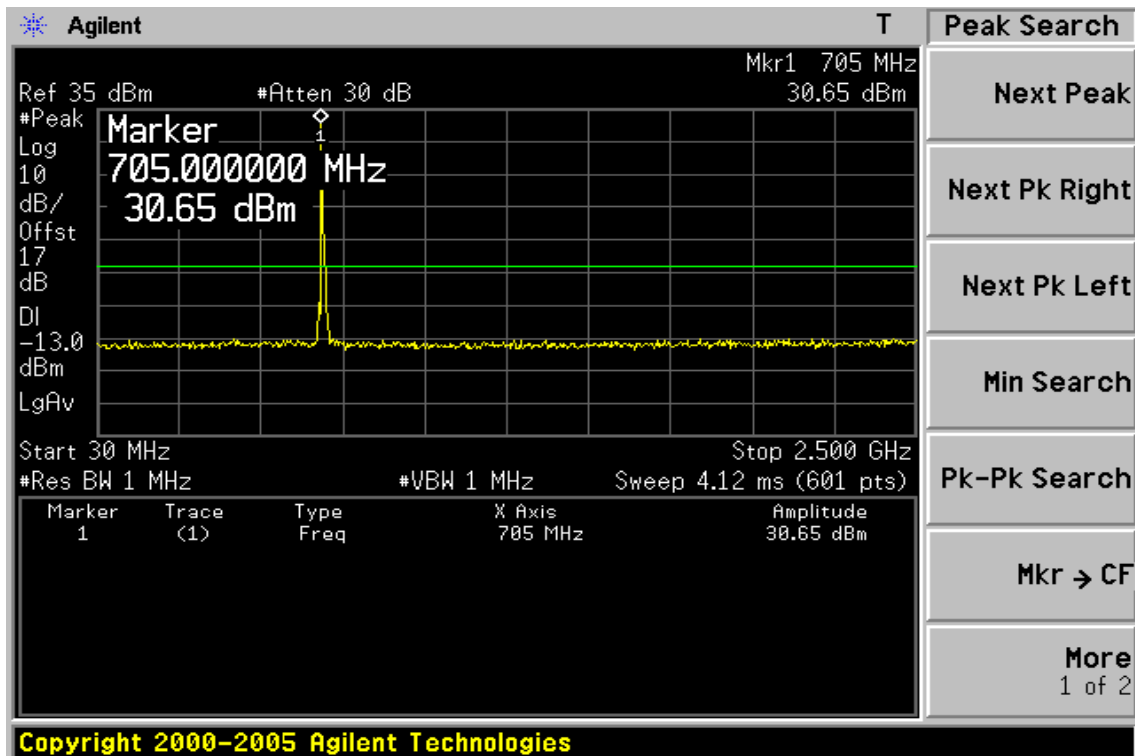
**Figure 8-56: Out of Band emission at antenna terminals–10MHz BW LTE-Band 17  
(16QAM RB Number: 1 Offset: 0) Channel Lowest**



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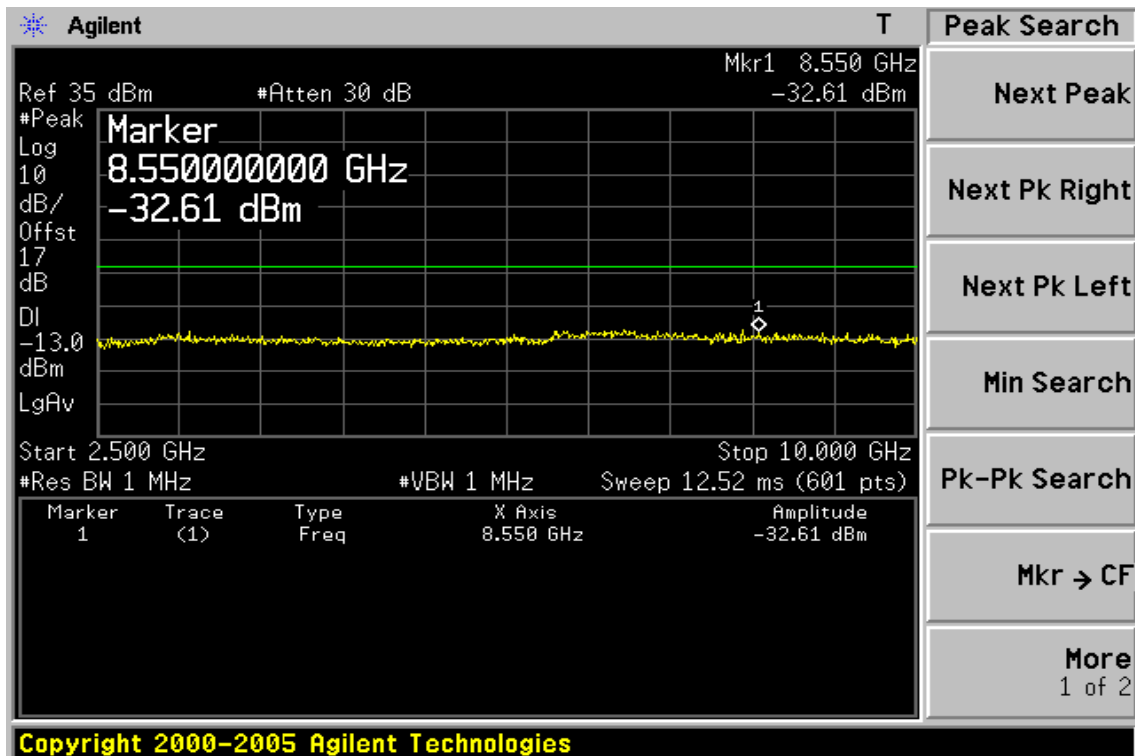
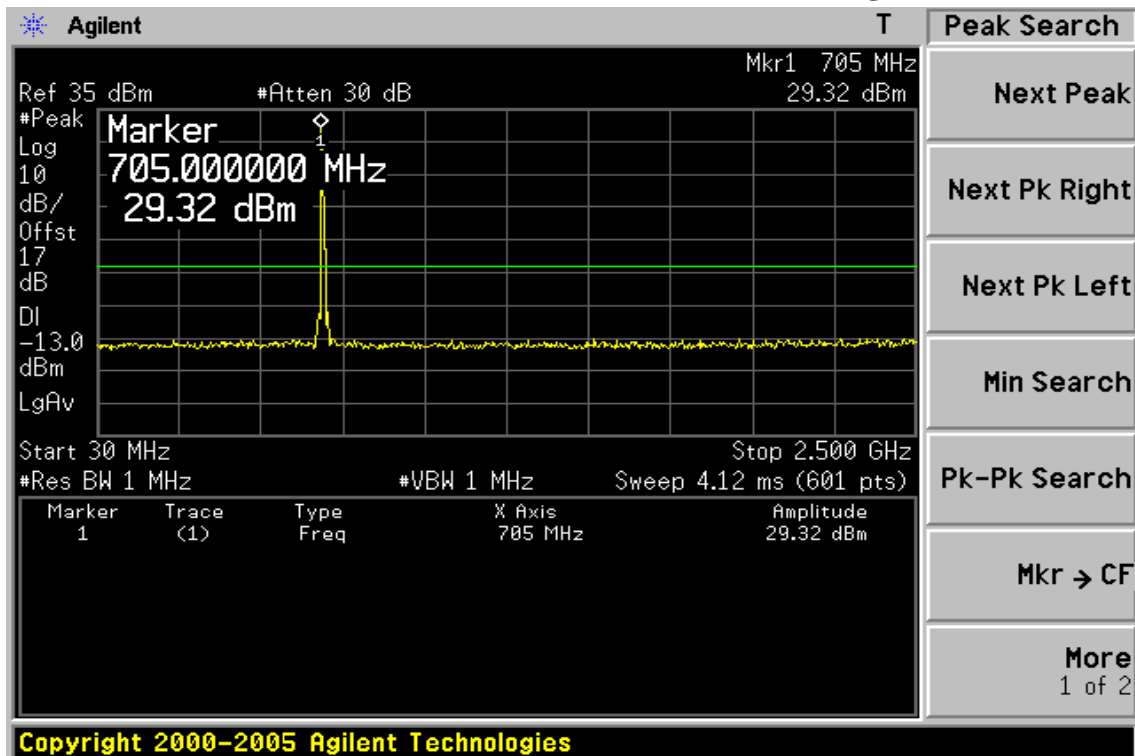
**Figure 8-57: Out of Band emission at antenna terminals –10MHz BW LTE-Band 17  
(16QAM RB Number: 1 Offset: 0) Channel Mid**



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**Figure 8-58: Out of Band emission at antenna terminals–10MHz BW LTE-Band 17  
(16QAM RB Number: 1 Offset: 0) Channel Highest**



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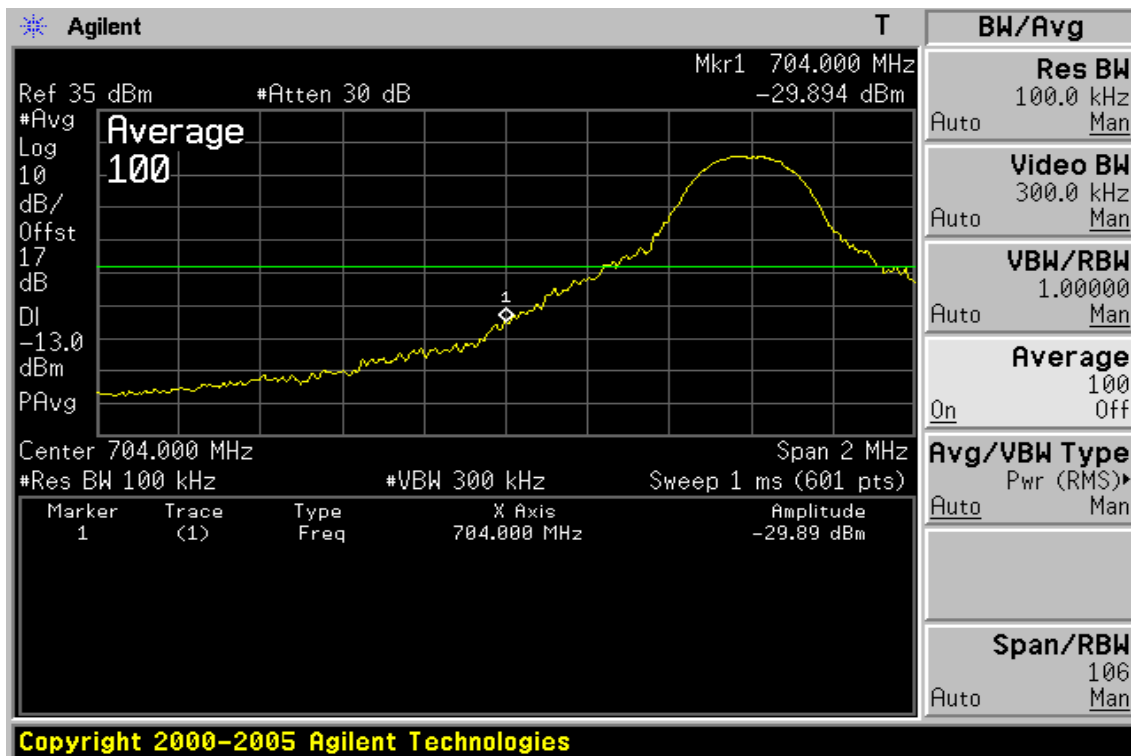
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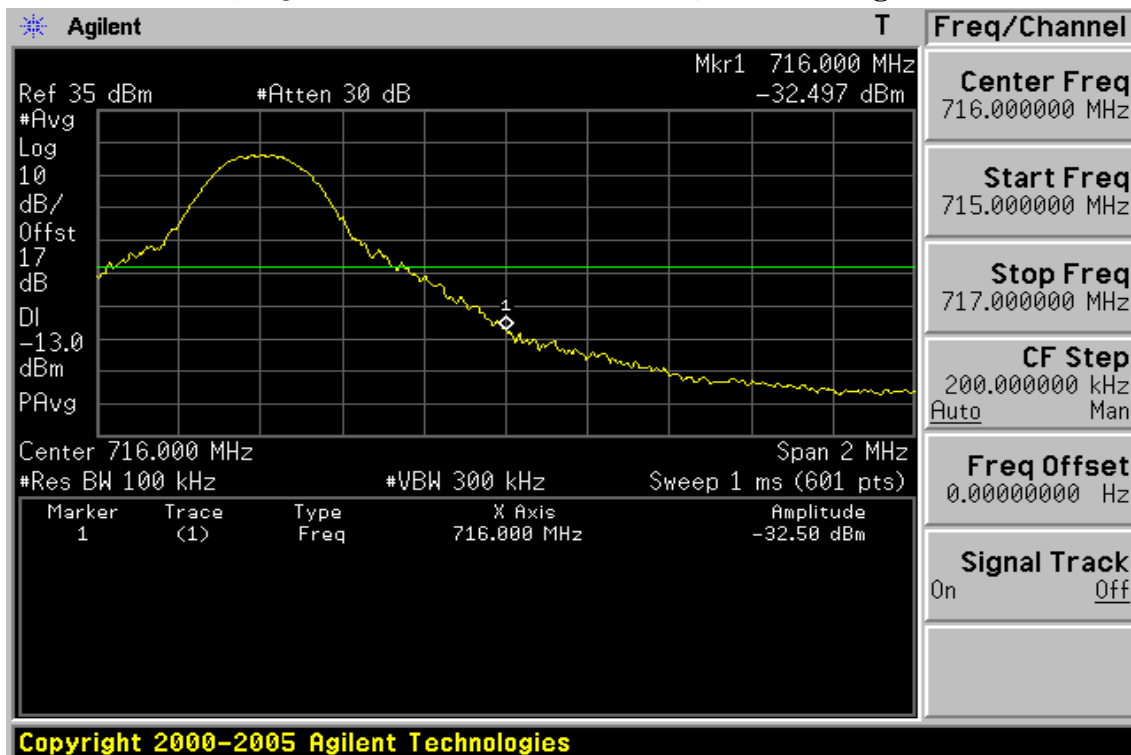
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**Figure 8-59: Band edge emission at antenna terminals –10MHz BW LTE-Band 17  
(16QAM RB Number: 1 Offset: 0) Channel Lowest**



**Figure 8-60: Band edge emission at antenna terminals –10MHz BW LTE-Band 17  
(16QAM RB Number: 1 Offset: 49) Channel Highest**



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## 10. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

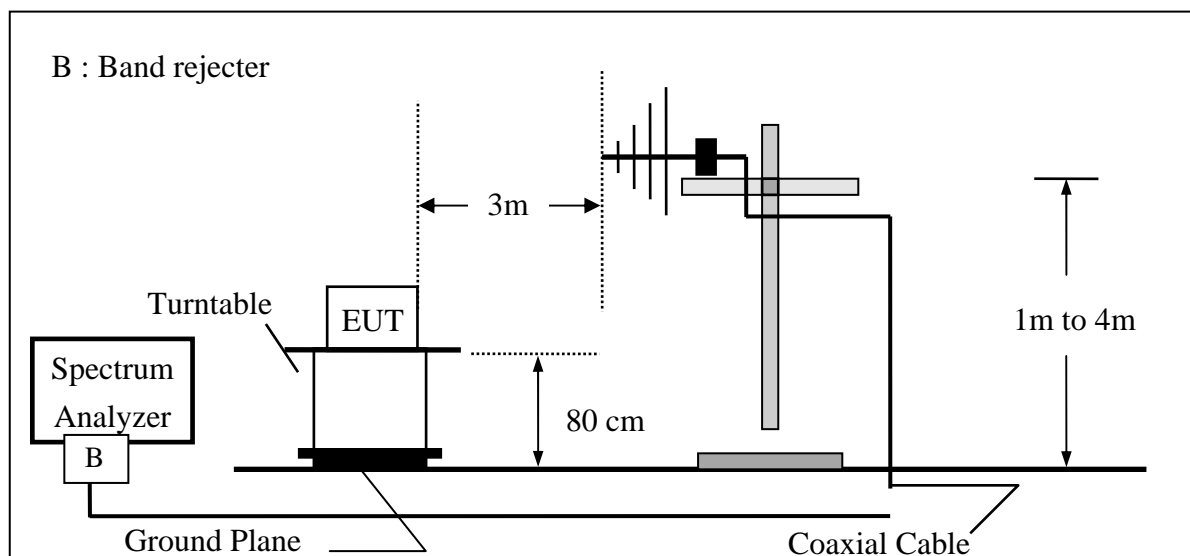
### 10.1. Standard Applicable:

According to FCC §2.1053,

FCC §22.917(a), §24.238(a), §27.53(g) the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specified in the instruction manual and/ or alignment procedure, shall not be less than  $43 + 10 \log$  (mean output power in watts) dBc below the mean power output outside a license's frequency block (-13dBm)

### 10.2. EUT Setup (Block Diagram of Configuration):

Radiated Emission Test Set-Up, Frequency Below 1000MHz



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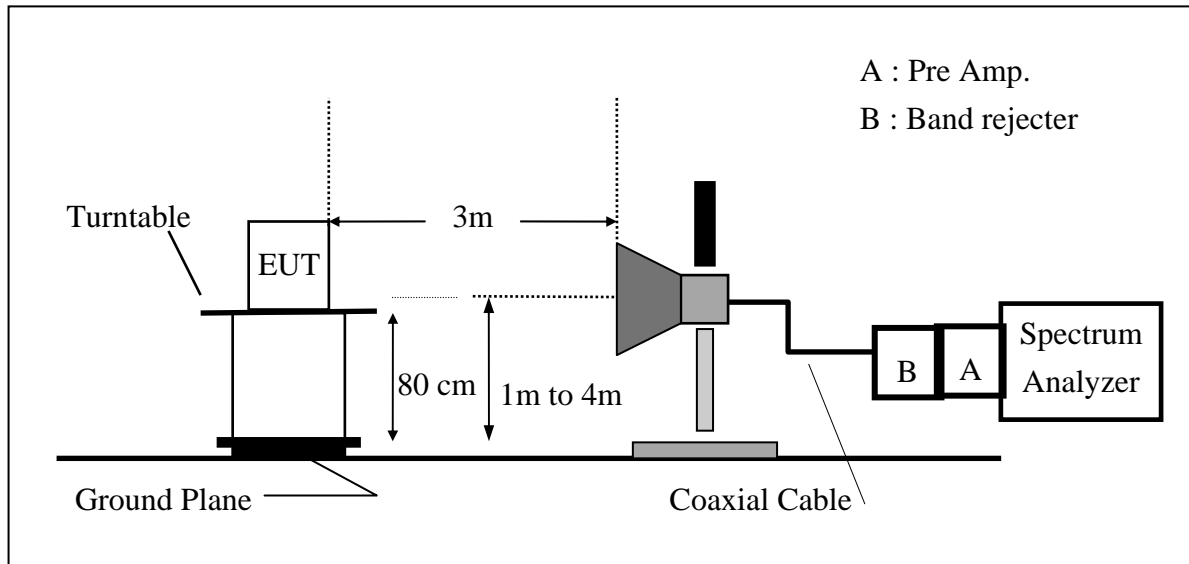
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## Radiated Emission Test Set-UP Frequency Over 1 GHz

**10.3. Measurement Procedure:**

The EUT was placed on a non-conductive; The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequency (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

$$\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable Loss (dB)}$$

$$\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable Loss (dB)}$$

**10.4. Measurement Equipment Used:**

Refer to section 2.4 in this report

**10.5. Measurement Result:**

Refer to attach tabular data sheets.

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### Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode : TX CH Low Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 824.20 MHz

Test By: Jazz

Temperature : 25°C

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
187.14	50.92	V	-49.71	-7.83	1.68	-59.21	-13.00	-46.21
297.95	48.52	V	-49.80	-7.92	2.16	-59.88	-13.00	-46.88
322.94	45.50	V	-52.47	-7.79	2.26	-62.51	-13.00	-49.51
398.60	38.42	V	-57.14	-7.66	2.51	-67.30	-13.00	-54.30
621.70	32.75	V	-56.54	-7.80	3.09	-67.42	-13.00	-54.42
736.16	33.24	V	-54.51	-7.87	3.42	-65.80	-13.00	-52.80
824.00	71.58	V	-14.81	-7.87	3.62	-26.31	-13.00	-13.31
1648.40	50.20	V	-54.38	9.29	5.23	-50.32	-13.00	-37.32
2472.60	---	V		10.08	6.53		-13.00	
3296.80	---	V		12.17	7.71		-13.00	
4121.00	---	V		12.61	8.86		-13.00	
4945.20	---	V		12.65	9.74		-13.00	
5769.40	---	V		13.55	10.54		-13.00	
6593.60	---	V		12.05	11.30		-13.00	
7417.80	---	V		11.49	12.10		-13.00	
8242.00	---	V		11.48	12.71		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

#### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dBd/dBi) - Cable \text{ loss} (dB)$

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### Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode : TX CH Low Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 824.20 MHz

Test By: Jazz

Temperature : 25°C

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
251.16	45.32	H	-53.86	-7.89	1.99	-63.75	-13.00	-50.75
322.94	46.48	H	-50.97	-7.79	2.26	-61.02	-13.00	-48.02
398.60	35.14	H	-61.31	-7.66	2.51	-71.48	-13.00	-58.48
485.74	33.51	H	-60.07	-7.71	2.76	-70.54	-13.00	-57.54
621.70	32.80	H	-57.47	-7.80	3.09	-68.36	-13.00	-55.36
704.15	33.43	H	-54.98	-7.86	3.30	-66.14	-13.00	-53.14
824.00	82.56	H	-3.71	-7.87	3.62	-15.21	-13.00	-2.21
1648.40	46.10	H	-58.30	9.29	5.23	-54.24	-13.00	-41.24
2472.60	---	H		10.08	6.53		-13.00	
3296.80	---	H		12.17	7.71		-13.00	
4121.00	---	H		12.61	8.86		-13.00	
4945.20	---	H		12.65	9.74		-13.00	
5769.40	---	H		13.55	10.54		-13.00	
6593.60	---	H		12.05	11.30		-13.00	
7417.80	---	H		11.49	12.10		-13.00	
8242.00	---	H		11.48	12.71		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

#### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dBd/dBi) - Cable \text{ loss} (dB)$

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### Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode : TX CH Mid Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 836.60 MHz

Test By: Jazz

Temperature : 25°C

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
257.95	49.33	V	-50.30	-7.89	2.02	-60.21	-13.00	-47.21
325.85	45.53	V	-52.40	-7.78	2.27	-62.44	-13.00	-49.44
396.66	38.18	V	-57.46	-7.66	2.50	-67.62	-13.00	-54.62
524.70	32.39	V	-60.93	-7.74	2.88	-71.55	-13.00	-58.55
616.85	32.72	V	-56.63	-7.80	3.07	-67.50	-13.00	-54.50
694.45	33.74	V	-55.64	-7.85	3.28	-66.77	-13.00	-53.77
1673.20	51.68	V	-52.88	9.36	5.27	-48.78	-13.00	-35.78
1686.00	50.39	V	-54.16	9.40	5.29	-50.04	-13.00	-37.04
2509.80	---	V		10.09	6.58		-13.00	
3346.40	---	V		12.28	7.79		-13.00	
4183.00	---	V		12.62	8.93		-13.00	
5019.60	---	V		12.67	9.81		-13.00	
5856.20	---	V		13.68	10.62		-13.00	
6692.80	---	V		11.95	11.39		-13.00	
7529.40	---	V		11.45	12.20		-13.00	
8366.00	---	V		11.59	12.81		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

#### Remark:

- 1 The emission behaviors belongs to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP\ (dBm) = SG\ Setting(dBm) + Antenna\ Gain\ (dBd/dBi) - Cable\ loss\ (dB)$

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### Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode : TX CH Mid Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 836.60 MHz

Test By: Jazz

Temperature : 25°C

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
253.10	45.47	H	-53.65	-7.89	2.00	-63.55	-13.00	-50.55
322.94	45.15	H	-52.30	-7.79	2.26	-62.35	-13.00	-49.35
398.60	35.27	H	-61.18	-7.66	2.51	-71.35	-13.00	-58.35
461.65	32.47	H	-61.32	-7.70	2.69	-71.71	-13.00	-58.71
612.00	32.52	H	-57.94	-7.79	3.06	-68.80	-13.00	-55.80
730.34	33.43	H	-59.87	-7.87	3.40	-71.14	-13.00	-58.14
1673.20	---	H		9.36	5.27		-13.00	
1840.00	42.88	H	-61.31	9.87	5.54	-56.99	-13.00	-43.99
2509.80	---	H		10.09	6.58		-13.00	
3346.40	---	H		12.28	7.79		-13.00	
4183.00	---	H		12.62	8.93		-13.00	
5019.60	---	H		12.67	9.81		-13.00	
5856.20	---	H		13.68	10.62		-13.00	
6692.80	---	H		11.95	11.39		-13.00	
7529.40	---	H		11.45	12.20		-13.00	
8366.00	---	H		11.59	12.81		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

#### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
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- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + \text{Antenna Gain (dBd/dBi)} - \text{Cable loss (dB)}$

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### Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode : TX CH High Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 848.80 MHz

Test By: Jazz

Temperature : 25°C

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
255.04	48.53	V	-51.19	-7.89	2.01	-61.10	-13.00	-48.10
322.94	45.19	V	-52.78	-7.79	2.26	-62.82	-13.00	-49.82
396.66	38.11	V	-57.53	-7.66	2.50	-67.69	-13.00	-54.69
466.50	33.94	V	-60.06	-7.71	2.71	-70.47	-13.00	-57.47
529.55	34.63	V	-58.53	-7.74	2.89	-69.17	-13.00	-56.17
697.36	33.49	V	-55.92	-7.86	3.28	-67.06	-13.00	-54.06
850.00	73.14	V	-12.97	-7.88	3.68	-24.53	-13.00	-11.53
1697.60	54.83	V	-49.71	9.44	5.31	-45.58	-13.00	-32.58
2546.40	---	V		10.20	6.63		-13.00	
3395.20	---	V		12.38	7.87		-13.00	
4244.00	---	V		12.63	9.00		-13.00	
5092.80	---	V		12.74	9.88		-13.00	
5941.60	---	V		13.81	10.70		-13.00	
6790.40	---	V		11.86	11.48		-13.00	
7639.20	---	V		11.40	12.27		-13.00	
8488.00	---	V		11.70	12.91		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

#### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + \text{Antenna Gain (dBd/dBi)} - \text{Cable loss (dB)}$

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### Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode : TX CH High Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 848.80 MHz

Test By: Jazz

Temperature : 25°C

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
253.10	46.57	H	-52.55	-7.89	2.00	-62.45	-13.00	-49.45
325.85	45.12	H	-52.30	-7.78	2.27	-62.35	-13.00	-49.35
398.60	36.44	H	-60.01	-7.66	2.51	-70.18	-13.00	-57.18
519.85	32.62	H	-60.14	-7.74	2.86	-70.74	-13.00	-57.74
582.90	32.58	H	-58.47	-7.78	3.01	-69.25	-13.00	-56.25
699.30	33.91	H	-53.75	-7.86	3.29	-64.90	-13.00	-51.90
850.00	82.84	H	-3.35	-7.88	3.68	-14.91	-13.00	-1.91
1697.60	46.99	H	-57.36	9.44	5.31	-53.23	-13.00	-40.23
2546.40	---	H		10.20	6.63		-13.00	
3395.20	---	H		12.38	7.87		-13.00	
4244.00	---	H		12.63	9.00		-13.00	
5092.80	---	H		12.74	9.88		-13.00	
5941.60	---	H		13.81	10.70		-13.00	
6790.40	---	H		11.86	11.48		-13.00	
7639.20	---	H		11.40	12.27		-13.00	
8488.00	---	H		11.70	12.91		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

#### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + \text{Antenna Gain (dBd/dBi)} - \text{Cable loss (dB)}$

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### Radiated Spurious Emission Measurement Result: GSM 1900 Mode

Operation Mode : TX CH Low Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 1850.20MHz

Test By: Jazz

Temperature : 25°C

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
185.20	45.84	V	-54.61	-7.83	1.67	-64.11	-13.00	-51.11
253.10	45.48	V	-54.31	-7.89	2.00	-64.20	-13.00	-51.20
325.85	41.12	V	-56.81	-7.78	2.27	-66.85	-13.00	-53.85
393.75	34.88	V	-60.89	-7.66	2.49	-71.04	-13.00	-58.04
612.00	33.14	V	-56.27	-7.79	3.06	-67.13	-13.00	-54.13
972.84	79.25	V	-4.84	-8.00	3.95	-16.79	-13.00	-3.79
3700.40	39.92	V	-58.01	12.61	8.31	-53.71	-13.00	-40.71
5550.60	---	V		13.23	10.33		-13.00	
7400.80	---	V		11.50	12.08		-13.00	
9251.00	---	V		11.92	13.50		-13.00	
11101.20	---	V		11.66	15.11		-13.00	
12951.40	---	V		13.63	16.60		-13.00	
14801.60	---	V		12.76	17.95		-13.00	
16651.80	---	V		15.92	19.14		-13.00	
18502.00	---	V		18.75	10.40		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

#### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + \text{Antenna Gain (dBd/dBi)} - \text{Cable loss (dB)}$

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**Radiated Spurious Emission Measurement Result: GSM 1900 Mode**

Operation Mode : TX CH Low Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 1850.20MHz

Test By: Jazz

Temperature : 25°C

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
187.14	45.39	H	-55.26	-7.83	1.68	-64.77	-13.00	-51.77
253.10	41.43	H	-57.69	-7.89	2.00	-67.59	-13.00	-54.59
321.00	40.65	H	-56.82	-7.80	2.25	-66.87	-13.00	-53.87
451.65	33.00	H	-60.88	-7.70	2.66	-71.24	-13.00	-58.24
515.00	32.32	H	-60.61	-7.73	2.85	-71.19	-13.00	-58.19
660.50	32.59	H	-56.69	-7.82	3.19	-67.70	-13.00	-54.70
1850.00	77.81	H	-26.37	9.90	5.56	-22.03	-13.00	-9.03
3700.40	47.19	H	-50.85	12.61	8.31	-46.55	-13.00	-33.55
5550.60	---	H		13.23	10.33		-13.00	
7400.80	---	H		11.50	12.08		-13.00	
9251.00	---	H		11.92	13.50		-13.00	
11101.20	---	H		11.66	15.11		-13.00	
12951.40	---	H		13.63	16.60		-13.00	
14801.60	---	H		12.76	17.95		-13.00	
16651.80	---	H		15.92	19.14		-13.00	
18502.00	---	H		18.75	10.40		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
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- 4  $ERP/EIRP\ (dBm) = SG\ Setting(dBm) + Antenna\ Gain\ (dBd/dBi) - Cable\ loss\ (dB)$

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**Radiated Spurious Emission Measurement Result: GSM 1900 Mode**

Operation Mode : TX CH Mid Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 1880MHz

Test By: Jazz

Temperature : 25°C

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
257.95	43.57	V	-56.06	-7.89	2.02	-65.97	-13.00	-52.97
325.85	40.80	V	-57.13	-7.78	2.27	-67.17	-13.00	-54.17
398.60	34.68	V	-60.88	-7.66	2.51	-71.04	-13.00	-58.04
546.04	31.65	V	-60.97	-7.76	2.95	-71.67	-13.00	-58.67
619.76	32.78	V	-56.53	-7.80	3.08	-67.41	-13.00	-54.41
804.06	32.22	V	-54.39	-7.87	3.58	-65.84	-13.00	-52.84
3760.00	38.90	V	-58.76	12.60	8.39	-54.54	-13.00	-41.54
5640.00	---	V		13.36	10.41		-13.00	
7520.00	---	V		11.45	12.19		-13.00	
9400.00	---	V		11.93	13.61		-13.00	
11280.00	---	V		11.92	15.27		-13.00	
13160.00	---	V		13.33	16.71		-13.00	
15040.00	---	V		13.76	18.15		-13.00	
16920.00	---	V		15.27	19.32		-13.00	
18800.00	---	V		18.68	16.58		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + \text{Antenna Gain (dBd/dBi)} - \text{Cable loss (dB)}$

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**Radiated Spurious Emission Measurement Result: GSM 1900 Mode**

Operation Mode : TX CH Mid Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 1880MHz

Test By: Jazz

Temperature : 25°C

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
253.10	40.45	H	-58.67	-7.89	2.00	-68.57	-13.00	-55.57
322.94	41.24	H	-56.21	-7.79	2.26	-66.26	-13.00	-53.26
429.64	32.75	H	-62.17	-7.68	2.60	-72.46	-13.00	-59.46
548.95	31.99	H	-59.77	-7.76	2.96	-70.48	-13.00	-57.48
604.24	33.94	H	-56.68	-7.79	3.04	-67.51	-13.00	-54.51
738.10	32.34	H	-62.41	-7.87	3.43	-73.71	-13.00	-60.71
3760.00	45.57	H	-52.20	12.60	8.39	-47.99	-13.00	-34.99
5640.00	41.52	H	-49.23	13.36	10.41	-46.28	-13.00	-33.28
7520.00	---	H		11.45	12.19		-13.00	
9400.00	---	H		11.93	13.61		-13.00	
11280.00	---	H		11.92	15.27		-13.00	
13160.00	---	H		13.33	16.71		-13.00	
15040.00	---	H		13.76	18.15		-13.00	
16920.00	---	H		15.27	19.32		-13.00	
18800.00	---	H		18.68	16.58		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
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**Radiated Spurious Emission Measurement Result: GSM 1900 Mode**

Operation Mode : TX CH High Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 1909.8 MHz

Test By: Jazz

Temperature : 25°C

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
185.20	46.23	V	-54.22	-7.83	1.67	-63.72	-13.00	-50.72
253.10	42.95	V	-56.84	-7.89	2.00	-66.73	-13.00	-53.73
322.94	42.15	V	-55.82	-7.79	2.26	-65.86	-13.00	-52.86
400.54	34.56	V	-60.92	-7.66	2.51	-71.10	-13.00	-58.10
568.35	33.38	V	-58.04	-7.77	2.99	-68.80	-13.00	-55.80
668.26	32.77	V	-56.34	-7.83	3.21	-67.38	-13.00	-54.38
1910.00	77.63	V	-26.70	10.08	5.66	-22.28	-13.00	-9.28
3819.60	36.69	V	-60.70	12.60	8.47	-56.57	-13.00	-43.57
5729.40	---	V		13.49	10.50		-13.00	
7639.20	---	V		11.40	12.27		-13.00	
9549.00	---	V		11.95	13.74		-13.00	
11458.80	---	V		12.17	15.43		-13.00	
13368.60	---	V		12.97	16.82		-13.00	
15278.40	---	V		15.00	18.29		-13.00	
17188.20	---	V		14.47	19.52		-13.00	
19098.00	---	V		18.66	20.78		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
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**Radiated Spurious Emission Measurement Result: GSM 1900 Mode**

Operation Mode : TX CH High Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 1909.8 MHz

Test By: Jazz

Temperature : 25°C

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
257.95	41.07	H	-57.90	-7.89	2.02	-67.82	-13.00	-54.82
328.76	39.33	H	-58.07	-7.76	2.28	-68.10	-13.00	-55.10
447.10	32.22	H	-61.82	-7.70	2.65	-72.17	-13.00	-59.17
558.65	32.99	H	-58.55	-7.77	2.97	-69.29	-13.00	-56.29
660.50	32.56	H	-56.72	-7.82	3.19	-67.73	-13.00	-54.73
844.80	32.42	H	-53.79	-7.88	3.67	-65.33	-13.00	-52.33
1910.00	76.54	H	-27.57	10.08	5.66	-23.15	-13.00	-10.15
3819.60	37.78	H	-59.73	12.60	8.47	-55.59	-13.00	-42.59
5729.40	---	H		13.49	10.50		-13.00	
7639.20	---	H		11.40	12.27		-13.00	
9549.00	---	H		11.95	13.74		-13.00	
11458.80	---	H		12.17	15.43		-13.00	
13368.60	---	H		12.97	16.82		-13.00	
15278.40	---	H		15.00	18.29		-13.00	
17188.20	---	H		14.47	19.52		-13.00	
19098.00	---	H		18.66	20.78		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark"---" means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP\ (dBm) = SG\ Setting(dBm) + Antenna\ Gain\ (dBd/dBi) - Cable\ loss\ (dB)$

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### Radiated Spurious Emission Measurement Result: WCDMA II Mode

Operation Mode : TX CH Low Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 1852.4MHz

Test By: Jazz

Temperature : 25°C

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
134.76	39.59	V	-59.11	-7.79	1.52	-68.42	-13.00	-55.42
270.56	40.09	V	-59.13	-7.90	2.06	-69.09	-13.00	-56.09
386.96	37.09	V	-58.97	-7.65	2.47	-69.09	-13.00	-56.09
403.45	36.42	V	-58.97	-7.66	2.52	-69.15	-13.00	-56.15
584.84	32.79	V	-57.67	-7.78	3.01	-68.46	-13.00	-55.46
648.86	33.44	V	-55.49	-7.81	3.16	-66.46	-13.00	-53.46
1850.00	66.41	V	-37.98	9.90	5.56	-33.64	-13.00	-20.64
3704.80	37.31	V	-60.60	12.61	8.31	-56.31	-13.00	-43.31
5557.20	---	V		13.24	10.33		-13.00	
7409.60	---	V		11.49	12.09		-13.00	
9262.00	---	V		11.92	13.51		-13.00	
11114.40	---	V		11.68	15.12		-13.00	
12966.80	---	V		13.62	16.61		-13.00	
14819.20	---	V		12.83	17.96		-13.00	
16671.60	---	V		15.87	19.15		-13.00	
18524.00	---	V		18.74	10.86		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

#### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + \text{Antenna Gain (dB/dBi)} - \text{Cable loss (dB)}$

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**Radiated Spurious Emission Measurement Result: WCDMA II Mode**

Operation Mode : TX CH Low Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 1852.4MHz

Test By: Jazz

Temperature : 25°C

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
107.60	43.39	H	-58.82	-7.77	1.39	-67.98	-13.00	-54.98
141.55	34.74	H	-63.91	-7.79	1.55	-73.26	-13.00	-60.26
322.94	32.46	H	-64.99	-7.79	2.26	-75.04	-13.00	-62.04
471.35	32.25	H	-61.45	-7.71	2.72	-71.88	-13.00	-58.88
561.56	32.92	H	-58.56	-7.77	2.98	-69.31	-13.00	-56.31
730.34	32.22	H	-61.08	-7.87	3.40	-72.35	-13.00	-59.35
1850.00	74.44	H	-29.74	9.90	5.56	-25.40	-13.00	-12.40
3704.80	---	H		12.61	8.31		-13.00	
3716.00	36.46	H	-61.51	12.61	8.33	-57.24	-13.00	-44.24
5557.20	---	H		13.24	10.33		-13.00	
7409.60	---	H		11.49	12.09		-13.00	
9262.00	---	H		11.92	13.51		-13.00	
11114.40	---	H		11.68	15.12		-13.00	
12966.80	---	H		13.62	16.61		-13.00	
14819.20	---	H		12.83	17.96		-13.00	
16671.60	---	H		15.87	19.15		-13.00	
18524.00	---	H		18.74	10.86		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + \text{Antenna Gain (dB/dBi)} - \text{Cable loss (dB)}$

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**Radiated Spurious Emission Measurement Result: WCDMA II Mode**

Operation Mode : TX CH Mid Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 1880MHz

Test By: Jazz

Temperature : 25°C

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
141.55	39.28	V	-58.79	-7.79	1.55	-68.14	-13.00	-55.14
199.75	35.72	V	-66.04	-7.84	1.71	-75.59	-13.00	-62.59
303.54	36.05	V	-62.16	-7.90	2.18	-72.24	-13.00	-59.24
447.10	32.17	V	-61.85	-7.70	2.65	-72.20	-13.00	-59.20
602.30	32.69	V	-56.85	-7.79	3.04	-67.68	-13.00	-54.68
689.60	33.32	V	-56.01	-7.85	3.26	-67.12	-13.00	-54.12
3760.00	35.28	V	-62.38	12.60	8.39	-58.16	-13.00	-45.16
5640.00	---	V		13.36	10.41		-13.00	
7520.00	---	V		11.45	12.19		-13.00	
9400.00	---	V		11.93	13.61		-13.00	
11280.00	---	V		11.92	15.27		-13.00	
13160.00	---	V		13.33	16.71		-13.00	
15040.00	---	V		13.76	18.15		-13.00	
16920.00	---	V		15.27	19.32		-13.00	
18800.00	---	V		18.68	16.58		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + \text{Antenna Gain (dB/dBi)} - \text{Cable loss (dB)}$

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**Radiated Spurious Emission Measurement Result: WCDMA II Mode**

Operation Mode : TX CH Mid Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 1880MHz

Test By: Jazz

Temperature : 25°C

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
107.60	42.83	H	-59.38	-7.77	1.39	-68.54	-13.00	-55.54
141.55	33.98	H	-64.67	-7.79	1.55	-74.02	-13.00	-61.02
260.86	32.93	H	-65.95	-7.90	2.03	-75.88	-13.00	-62.88
374.35	32.37	H	-64.46	-7.65	2.43	-74.54	-13.00	-61.54
463.59	31.91	H	-61.86	-7.71	2.70	-72.26	-13.00	-59.26
631.40	33.48	H	-56.60	-7.80	3.11	-67.52	-13.00	-54.52
3760.00	34.16	H	-63.61	12.60	8.39	-59.40	-13.00	-46.40
5640.00	---	H		13.36	10.41		-13.00	
7520.00	---	H		11.45	12.19		-13.00	
9400.00	---	H		11.93	13.61		-13.00	
11280.00	---	H		11.92	15.27		-13.00	
13160.00	---	H		13.33	16.71		-13.00	
15040.00	---	H		13.76	18.15		-13.00	
16920.00	---	H		15.27	19.32		-13.00	
18800.00	---	H		18.68	16.58		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + \text{Antenna Gain (dB/dBi)} - \text{Cable loss (dB)}$

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**Radiated Spurious Emission Measurement Result: WCDMA II Mode**

Operation Mode : TX CH High Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 1907.6MHz

Test By: Jazz

Temperature : 25°C

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
107.60	46.94	V	-54.28	-7.77	1.39	-63.44	-13.00	-50.44
180.35	41.70	V	-58.32	-7.82	1.66	-67.80	-13.00	-54.80
386.96	32.38	V	-63.68	-7.65	2.47	-73.80	-13.00	-60.80
449.04	32.20	V	-61.76	-7.70	2.66	-72.12	-13.00	-59.12
648.86	32.95	V	-55.98	-7.81	3.16	-66.95	-13.00	-53.95
759.44	31.88	V	-55.14	-7.87	3.49	-66.50	-13.00	-53.50
1910.00	65.27	V	-39.06	10.08	5.66	-34.64	-13.00	-21.64
3815.20	35.09	V	-62.32	12.60	8.46	-58.18	-13.00	-45.18
5722.80	---	V		13.48	10.49		-13.00	
7630.40	---	V		11.41	12.27		-13.00	
9538.00	---	V		11.95	13.73		-13.00	
11445.60	---	V		12.15	15.42		-13.00	
13353.20	---	V		13.00	16.81		-13.00	
15260.80	---	V		14.91	18.28		-13.00	
17168.40	---	V		14.53	19.50		-13.00	
19076.00	---	V		18.65	20.76		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP\ (dBm) = SG\ Setting(dBm) + Antenna\ Gain\ (dB/dBi) - Cable\ loss\ (dB)$

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**Radiated Spurious Emission Measurement Result: WCDMA II Mode**

Operation Mode : TX CH High Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 1907.6MHz

Test By: Jazz

Temperature : 25°C

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
107.60	43.28	H	-58.93	-7.77	1.39	-68.09	-13.00	-55.09
156.10	33.79	H	-64.45	-7.80	1.60	-73.86	-13.00	-60.86
284.14	33.37	H	-64.78	-7.91	2.11	-74.81	-13.00	-61.81
641.65	32.37	H	-57.51	-7.81	3.14	-68.46	-13.00	-55.46
607.15	32.92	H	-57.64	-7.79	3.05	-68.48	-13.00	-55.48
662.44	32.86	H	-56.34	-7.82	3.19	-67.35	-13.00	-54.35
1910.00	70.78	H	-33.33	10.08	5.66	-28.91	-13.00	-15.91
3815.20	33.47	H	-64.06	12.60	8.46	-59.92	-13.00	-46.92
5722.80	---	H		13.48	10.49		-13.00	
7630.40	---	H		11.41	12.27		-13.00	
9538.00	---	H		11.95	13.73		-13.00	
11445.60	---	H		12.15	15.42		-13.00	
13353.20	---	H		13.00	16.81		-13.00	
15260.80	---	H		14.91	18.28		-13.00	
17168.40	---	H		14.53	19.50		-13.00	
19076.00	---	H		18.65	20.76		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP\ (dBm) = SG\ Setting(dBm) + Antenna\ Gain\ (dB/dBi) - Cable\ loss\ (dB)$

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### Radiated Spurious Emission Measurement Result: WCDMA V Mode

Operation Mode : TX CH Low Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 826.4MHz

Test By: Jazz

Temperature : 25°C

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
107.60	46.48	V	-54.74	-7.77	1.39	-63.90	-13.00	-50.90
194.90	36.12	V	-65.20	-7.84	1.70	-74.74	-13.00	-61.74
377.26	33.61	V	-62.86	-7.65	2.44	-72.95	-13.00	-59.95
495.60	32.48	V	-61.64	-7.72	2.79	-72.15	-13.00	-59.15
553.80	32.95	V	-59.32	-7.76	2.97	-70.05	-13.00	-57.05
648.75	33.50	V	-55.44	-7.81	3.16	-66.40	-13.00	-53.40
823.00	60.41	V	-25.99	-7.87	3.62	-37.49	-13.00	-24.49
936.95	33.53	V	-51.12	-7.99	3.86	-62.97	-13.00	-49.97
1651.00	35.56	V	-69.02	9.30	5.23	-64.96	-13.00	-51.96
1652.80	---	V		9.30	5.23		-13.00	
2479.20	---	V		10.07	6.54		-13.00	
3305.60	---	V		12.19	7.73		-13.00	
4132.00	---	V		12.62	8.87		-13.00	
4958.40	---	V		12.65	9.75		-13.00	
5784.80	---	V		13.58	10.55		-13.00	
6611.20	---	V		12.03	11.31		-13.00	
7437.60	---	V		11.48	12.12		-13.00	
8264.00	---	V		11.50	12.73		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

#### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + \text{Antenna Gain (dB/dBi)} - \text{Cable loss (dB)}$

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### Radiated Spurious Emission Measurement Result: WCDMA V Mode

Operation Mode : TX CH Low Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 826.4MHz

Test By: Jazz

Temperature : 25°C

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
107.60	42.92	H	-59.29	-7.77	1.39	-68.45	-13.00	-55.45
148.34	33.52	H	-64.42	-7.80	1.58	-73.80	-13.00	-60.80
366.59	31.47	H	-65.47	-7.65	2.41	-75.53	-13.00	-62.53
464.56	32.80	H	-60.96	-7.71	2.70	-71.37	-13.00	-58.37
532.46	32.81	H	-59.52	-7.75	2.90	-70.17	-13.00	-57.17
704.15	34.13	H	-54.28	-7.86	3.30	-65.44	-13.00	-52.44
823.00	67.32	H	-18.95	-7.87	3.62	-30.45	-13.00	-17.45
932.10	34.10	H	-50.34	-7.98	3.85	-62.17	-13.00	-49.17
1652.80	36.47	H	-67.93	9.30	5.23	-63.86	-13.00	-50.86
2479.20	---	H		10.07	6.54		-13.00	
3305.60	---	H		12.19	7.73		-13.00	
4132.00	---	H		12.62	8.87		-13.00	
4958.40	---	H		12.65	9.75		-13.00	
5784.80	---	H		13.58	10.55		-13.00	
6611.20	---	H		12.03	11.31		-13.00	
7437.60	---	H		11.48	12.12		-13.00	
8264.00	---	H		11.50	12.73		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

#### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + Antenna \text{ Gain (dB/dBi)} - Cable \text{ loss (dB)}$

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**Radiated Spurious Emission Measurement Result: WCDMA V Mode**

Operation Mode : TX CH Mid Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 836.6MHz

Test By: Jazz

Temperature : 25°C

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
185.20	36.44	V	-64.01	-7.83	1.67	-73.51	-13.00	-60.51
257.95	38.01	V	-61.62	-7.89	2.02	-71.53	-13.00	-58.53
384.05	35.24	V	-60.94	-7.65	2.46	-71.06	-13.00	-58.06
470.38	32.34	V	-61.68	-7.71	2.72	-72.10	-13.00	-59.10
629.46	33.00	V	-56.19	-7.80	3.11	-67.10	-13.00	-54.10
704.15	34.57	V	-54.68	-7.86	3.30	-65.84	-13.00	-52.84
1673.20	36.36	V	-68.20	9.36	5.27	-64.10	-13.00	-51.10
2509.80	---	V		10.09	6.58		-13.00	
3346.40	---	V		12.28	7.79		-13.00	
4183.00	---	V		12.62	8.93		-13.00	
5019.60	---	V		12.67	9.81		-13.00	
5856.20	---	V		13.68	10.62		-13.00	
6692.80	---	V		11.95	11.39		-13.00	
7529.40	---	V		11.45	12.20		-13.00	
8366.00	---	V		11.59	12.81		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dB/dBi) - Cable \text{ loss} (dB)$

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**Radiated Spurious Emission Measurement Result: WCDMA V Mode**

Operation Mode : TX CH Mid Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 836.6MHz

Test By: Jazz

Temperature : 25°C

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
105.66	43.27	H	-59.14	-7.76	1.39	-68.29	-13.00	-55.29
156.10	33.36	H	-64.88	-7.80	1.60	-74.29	-13.00	-61.29
214.30	34.19	H	-66.77	-7.85	1.79	-76.41	-13.00	-63.41
390.84	32.29	H	-64.28	-7.66	2.48	-74.42	-13.00	-61.42
485.90	32.75	H	-60.82	-7.71	2.76	-71.30	-13.00	-58.30
619.76	32.88	H	-57.43	-7.80	3.08	-68.31	-13.00	-55.31
1673.20	35.14	H	-69.24	9.36	5.27	-65.14	-13.00	-52.14
2509.80	---	H		10.09	6.58		-13.00	
3346.40	---	H		12.28	7.79		-13.00	
4183.00	---	H		12.62	8.93		-13.00	
5019.60	---	H		12.67	9.81		-13.00	
5856.20	---	H		13.68	10.62		-13.00	
6692.80	---	H		11.95	11.39		-13.00	
7529.40	---	H		11.45	12.20		-13.00	
8366.00	---	H		11.59	12.81		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + \text{Antenna Gain (dB/dBi)} - \text{Cable loss (dB)}$

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### Radiated Spurious Emission Measurement Result: WCDMA V Mode

Operation Mode : TX CH High Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 846.6MHz

Test By: Jazz

Temperature : 25°C

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
141.55	36.97	V	-61.10	-7.79	1.55	-70.45	-13.00	-57.45
262.80	39.03	V	-60.44	-7.90	2.04	-70.37	-13.00	-57.37
354.95	37.68	V	-59.74	-7.64	2.37	-69.76	-13.00	-56.76
478.14	32.62	V	-61.43	-7.71	2.74	-71.88	-13.00	-58.88
575.14	32.41	V	-58.61	-7.78	3.00	-69.38	-13.00	-56.38
652.74	32.46	V	-56.49	-7.81	3.17	-67.47	-13.00	-54.47
850.00	57.94	V	-28.17	-7.88	3.68	-39.73	-13.00	-26.73
1693.20	---	V		9.42	5.30		-13.00	
2539.80	39.30	V	-61.37	10.18	6.62	-57.82	-13.00	-44.82
3386.40	---	V		12.36	7.85		-13.00	
4233.00	---	V		12.63	8.99		-13.00	
5079.60	---	V		12.73	9.87		-13.00	
5926.20	---	V		13.79	10.69		-13.00	
6772.80	---	V		11.87	11.47		-13.00	
7619.40	---	V		11.41	12.26		-13.00	
8466.00	---	V		11.68	12.89		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

#### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + \text{Antenna Gain (dB/dBi)} - \text{Cable loss (dB)}$

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### Radiated Spurious Emission Measurement Result: WCDMA V Mode

Operation Mode : TX CH High Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 846.6MHz

Test By: Jazz

Temperature : 25°C

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
105.66	43.60	H	-58.81	-7.76	1.39	-67.96	-13.00	-54.96
146.40	33.24	H	-64.91	-7.80	1.57	-74.28	-13.00	-61.28
338.46	32.37	H	-64.94	-7.70	2.32	-74.96	-13.00	-61.96
471.35	33.65	H	-60.05	-7.71	2.72	-70.48	-13.00	-57.48
594.54	32.80	H	-58.01	-7.79	3.02	-68.82	-13.00	-55.82
655.65	33.04	H	-56.44	-7.82	3.17	-67.43	-13.00	-54.43
850.00	65.57	H	-20.62	-7.88	3.68	-32.18	-13.00	-19.18
1693.20	38.19	H	-66.16	9.42	5.30	-62.04	-13.00	-49.04
2539.80	---	H		10.18	6.62		-13.00	
2855.00	38.00	H	-61.72	11.10	7.05	-57.68	-13.00	-44.68
3386.40	---	H		12.36	7.85		-13.00	
4233.00	---	H		12.63	8.99		-13.00	
5079.60	---	H		12.73	9.87		-13.00	
5926.20	---	H		13.79	10.69		-13.00	
6772.80	---	H		11.87	11.47		-13.00	
7619.40	---	H		11.41	12.26		-13.00	
8466.00	---	H		11.68	12.89		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

#### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + \text{Antenna Gain (dB/dBi)} - \text{Cable loss (dB)}$

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## Radiated Spurious Emission Measurement Result: 5MHz BW LTE-Band 4

### (16QAM RB 1 Offset 24) (Worst case for each band)

Operation Mode : TX CH Low Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 1712.5MHz

Test By: Jazz

Temperature : 25°C

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
158.04	37.31	V	-60.70	-7.81	1.61	-70.12	-13.00	-57.12
250.19	37.34	V	-62.54	-7.89	1.99	-72.42	-13.00	-59.42
321.00	41.56	V	-56.43	-7.80	2.25	-66.48	-13.00	-53.48
500.45	35.60	V	-58.53	-7.72	2.80	-69.05	-13.00	-56.05
622.44	33.11	V	-56.17	-7.80	3.09	-67.06	-13.00	-54.06
972.84	32.41	V	-51.68	-8.00	3.95	-63.63	-13.00	-50.63
3425.00	48.19	V	-50.65	12.47	7.93	-46.11	-13.00	-33.11
5137.50	---	V		12.79	9.92		-13.00	
6850.00	---	V		11.80	11.54		-13.00	
8562.50	---	V		11.73	12.97		-13.00	
10275.00	---	V		11.85	14.50		-13.00	
11987.50	---	V		13.16	15.91		-13.00	
13700.00	---	V		12.32	17.04		-13.00	
15412.50	---	V		15.70	18.36		-13.00	
17125.00	---	V		14.67	19.47		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + Antenna \text{ Gain (dB/dBi)} - Cable \text{ loss (dB)}$

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# Radiated Spurious Emission Measurement Result: 5MHz BW LTE-Band 4

## (16QAM RB 1 Offset 24)

Operation Mode : TX CH Low Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 1712.5MHz

Test By: Jazz

Temperature : 25°C

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
151.25	39.22	H	-58.65	-7.80	1.59	-68.04	-13.00	-55.04
243.40	36.60	H	-62.94	-7.88	1.95	-72.78	-13.00	-59.78
319.06	42.20	H	-55.28	-7.81	2.24	-65.34	-13.00	-52.34
553.80	32.71	H	-58.93	-7.76	2.97	-69.66	-13.00	-56.66
655.65	33.39	H	-56.09	-7.82	3.17	-67.08	-13.00	-54.08
972.84	33.29	H	-50.78	-8.00	3.95	-62.73	-13.00	-49.73
3425.00	47.01	H	-51.99	12.47	7.93	-47.44	-13.00	-34.44
5137.50	---	H		12.79	9.92		-13.00	
6850.00	---	H		11.80	11.54		-13.00	
8562.50	---	H		11.73	12.97		-13.00	
10275.00	---	H		11.85	14.50		-13.00	
11987.50	---	H		13.16	15.91		-13.00	
13700.00	---	H		12.32	17.04		-13.00	
15412.50	---	H		15.70	18.36		-13.00	
17125.00	---	H		14.67	19.47		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP\ (dBm) = SG\ Setting(dBm) + Antenna\ Gain\ (dB/dBi) - Cable\ loss\ (dB)$

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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# Radiated Spurious Emission Measurement Result: 5MHz BW LTE-Band 4

## (16QAM RB 1 Offset 24)

Operation Mode : TX CH Mid Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 1732.5MHz

Test By: Jazz

Temperature : 25°C

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
167.74	38.02	V	-60.86	-7.81	1.63	-70.31	-13.00	-57.31
241.46	36.41	V	-63.80	-7.88	1.94	-73.63	-13.00	-60.63
319.06	43.04	V	-54.97	-7.81	2.24	-65.03	-13.00	-52.03
500.45	35.29	V	-58.84	-7.72	2.80	-69.36	-13.00	-56.36
639.16	33.32	V	-55.74	-7.81	3.13	-66.68	-13.00	-53.68
961.20	32.42	V	-51.94	-8.00	3.91	-63.85	-13.00	-50.85
3465.00	42.75	V	-56.09	12.53	7.98	-51.53	-13.00	-38.53
5197.50	---	V		12.85	9.98		-13.00	
6930.00	---	V		11.72	11.61		-13.00	
8662.50	---	V		11.77	13.05		-13.00	
10395.00	---	V		11.75	14.59		-13.00	
12127.50	---	V		13.35	16.03		-13.00	
13860.00	---	V		11.98	17.16		-13.00	
15592.50	---	V		16.35	18.47		-13.00	
17325.00	---	V		14.02	19.62		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP\ (dBm) = SG\ Setting(dBm) + Antenna\ Gain\ (dB/dBi) - Cable\ loss\ (dB)$

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**Radiated Spurious Emission Measurement Result: 5MHz BW LTE-Band 4****(16QAM RB 1 Offset 24)**

Operation Mode : TX CH Mid Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 1732.5MHz

Test By: Jazz

Temperature : 25°C

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
150.28	39.51	H	-58.28	-7.80	1.59	-67.67	-13.00	-54.67
241.46	38.00	H	-61.64	-7.88	1.94	-71.46	-13.00	-58.46
319.06	37.42	H	-60.06	-7.81	2.24	-70.12	-13.00	-57.12
555.74	33.42	H	-58.18	-7.76	2.97	-68.91	-13.00	-55.91
613.94	33.44	H	-56.99	-7.80	3.07	-67.85	-13.00	-54.85
956.35	32.60	H	-51.57	-8.00	3.90	-63.47	-13.00	-50.47
3465.00	38.52	H	-60.46	12.53	7.98	-55.90	-13.00	-42.90
5197.50	---	H		12.85	9.98		-13.00	
6930.00	---	H		11.72	11.61		-13.00	
8662.50	---	H		11.77	13.05		-13.00	
10395.00	---	H		11.75	14.59		-13.00	
12127.50	---	H		13.35	16.03		-13.00	
13860.00	---	H		11.98	17.16		-13.00	
15592.50	---	H		16.35	18.47		-13.00	
17325.00	---	H		14.02	19.62		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + \text{Antenna Gain (dB/dBi)} - \text{Cable loss (dB)}$

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## Radiated Spurious Emission Measurement Result: 5MHz BW LTE-Band 4

### (16QAM RB 1 Offset 24)

Operation Mode : TX CH High Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 1752.5MHz

Test By: Jazz

Temperature : 25°C

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
167.74	39.11	V	-59.77	-7.81	1.63	-69.22	-13.00	-56.22
250.19	41.20	V	-58.68	-7.89	1.99	-68.56	-13.00	-55.56
319.06	41.20	V	-56.81	-7.81	2.24	-66.87	-13.00	-53.87
497.54	35.54	V	-58.59	-7.72	2.79	-69.10	-13.00	-56.10
650.80	33.19	V	-55.74	-7.81	3.16	-66.71	-13.00	-53.71
978.66	32.53	V	-51.43	-7.99	3.97	-63.39	-13.00	-50.39
3505.00	49.26	V	-49.55	12.61	8.04	-44.97	-13.00	-31.97
5257.50	---	V		12.91	10.04		-13.00	
7010.00	---	V		11.65	11.69		-13.00	
8762.50	---	V		11.80	13.13		-13.00	
10515.00	---	V		11.66	14.68		-13.00	
12267.50	---	V		13.54	16.14		-13.00	
14020.00	---	V		11.67	17.28		-13.00	
15772.50	---	V		16.74	18.60		-13.00	
17525.00	---	V		13.22	19.76		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + \text{Antenna Gain (dB/dBi)} - \text{Cable loss (dB)}$

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## Radiated Spurious Emission Measurement Result: 5MHz BW LTE-Band 4

### (16QAM RB 1 Offset 24)

Operation Mode : TX CH High Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 1752.5MHz

Test By: Jazz

Temperature : 25°C

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
151.25	39.50	H	-58.37	-7.80	1.59	-67.76	-13.00	-54.76
245.34	36.20	H	-63.25	-7.89	1.96	-73.10	-13.00	-60.10
322.94	39.08	H	-58.37	-7.79	2.26	-68.42	-13.00	-55.42
555.74	32.64	H	-58.96	-7.76	2.97	-69.69	-13.00	-56.69
652.74	32.60	H	-57.01	-7.81	3.17	-67.99	-13.00	-54.99
985.45	32.35	H	-51.65	-7.99	3.99	-63.63	-13.00	-50.63
3505.00	45.63	H	-53.30	12.61	8.04	-48.72	-13.00	-35.72
5257.50	---	H		12.91	10.04		-13.00	
7010.00	---	H		11.65	11.69		-13.00	
8762.50	---	H		11.80	13.13		-13.00	
10515.00	---	H		11.66	14.68		-13.00	
12267.50	---	H		13.54	16.14		-13.00	
14020.00	---	H		11.67	17.28		-13.00	
15772.50	---	H		16.74	18.60		-13.00	
17525.00	---	H		13.22	19.76		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + Antenna \text{ Gain (dB/dBi)} - Cable \text{ loss (dB)}$

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## Radiated Spurious Emission Measurement Result: 5MHz BW LTE-Band 17

### (16QAM RB 1 Offset 24) (Worst case for each band)

Operation Mode : TX CH Low Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 706.5MHz

Test By: Jazz

Temperature : 25°C

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
158.04	37.65	V	-60.36	-7.81	1.61	-69.78	-13.00	-56.78
250.19	35.49	V	-64.39	-7.89	1.99	-74.27	-13.00	-61.27
319.06	41.46	V	-56.55	-7.81	2.24	-66.61	-13.00	-53.61
500.45	35.43	V	-58.70	-7.72	2.80	-69.22	-13.00	-56.22
697.36	33.03	V	-56.38	-7.86	3.28	-67.52	-13.00	-54.52
972.84	33.76	V	-50.33	-8.00	3.95	-62.28	-13.00	-49.28
1413.00	---	V		8.34	4.11		-13.00	
2119.50	---	V		10.28	5.99		-13.00	
2826.00	---	V		11.01	7.01		-13.00	
3532.50	---	V		12.61	8.07		-13.00	
4239.00	---	V		12.63	9.00		-13.00	
4945.50	---	V		12.65	9.74		-13.00	
5652.00	---	V		13.38	10.43		-13.00	
6358.50	---	V		12.64	11.08		-13.00	
7065.00	---	V		11.63	11.75		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dB/dBi) - Cable \text{ loss} (dB)$

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# Radiated Spurious Emission Measurement Result: 5MHz BW LTE-Band 17

## (16QAM RB 1 Offset 24)

Operation Mode : TX CH Low Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 706.5MHz

Test By: Jazz

Temperature : 25°C

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
154.16	41.70	H	-56.39	-7.80	1.60	-65.80	-13.00	-52.80
243.40	37.67	H	-61.87	-7.88	1.95	-71.71	-13.00	-58.71
319.06	41.38	H	-56.10	-7.81	2.24	-66.16	-13.00	-53.16
359.80	37.33	H	-59.72	-7.64	2.39	-69.75	-13.00	-56.75
662.44	32.68	H	-56.52	-7.82	3.19	-67.53	-13.00	-54.53
972.84	32.42	H	-51.65	-8.00	3.95	-63.60	-13.00	-50.60
1413.00	---	H		8.34	4.11		-13.00	
2119.50	39.31	H	-63.92	10.28	5.99	-59.63	-13.00	-46.63
2826.00	---	H		11.01	7.01		-13.00	
3532.50	---	H		12.61	8.07		-13.00	
4239.00	---	H		12.63	9.00		-13.00	
4945.50	---	H		12.65	9.74		-13.00	
5652.00	---	H		13.38	10.43		-13.00	
6358.50	---	H		12.64	11.08		-13.00	
7065.00	---	H		11.63	11.75		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP\ (dBm) = SG\ Setting(dBm) + Antenna\ Gain\ (dB/dBi) - Cable\ loss\ (dB)$

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**Radiated Spurious Emission Measurement Result: 5MHz BW LTE-Band 17****(16QAM RB 1 Offset 24)**

Operation Mode : TX CH Mid Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 710MHz

Test By: Jazz

Temperature : 25°C

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
160.95	37.13	V	-61.14	-7.81	1.62	-70.57	-13.00	-57.57
250.19	35.75	V	-64.13	-7.89	1.99	-74.01	-13.00	-61.01
319.06	40.93	V	-57.08	-7.81	2.24	-67.14	-13.00	-54.14
500.45	35.70	V	-58.43	-7.72	2.80	-68.95	-13.00	-55.95
697.36	34.25	V	-55.16	-7.86	3.28	-66.30	-13.00	-53.30
966.05	32.64	V	-51.61	-8.00	3.93	-63.54	-13.00	-50.54
1420.00	---	V		8.38	4.18		-13.00	
2130.00	---	V		10.27	6.01		-13.00	
2840.00	---	V		11.05	7.03		-13.00	
3550.00	---	V		12.61	8.10		-13.00	
4260.00	---	V		12.63	9.02		-13.00	
4970.00	---	V		12.65	9.76		-13.00	
5680.00	---	V		13.42	10.45		-13.00	
6390.00	---	V		12.53	11.11		-13.00	
7100.00	---	V		11.61	11.78		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

**Remark:**

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + Antenna \text{ Gain (dB/dBi)} - Cable \text{ loss (dB)}$

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# Radiated Spurious Emission Measurement Result: 5MHz BW LTE-Band 17

## (16QAM RB 1 Offset 24)

Operation Mode : TX CH Mid Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 710MHz

Test By: Jazz

Temperature : 25°C

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
151.25	41.27	H	-56.60	-7.80	1.59	-65.99	-13.00	-52.99
243.40	38.74	H	-60.80	-7.88	1.95	-70.64	-13.00	-57.64
282.20	40.54	H	-57.68	-7.91	2.11	-67.69	-13.00	-54.69
352.04	37.23	H	-59.94	-7.64	2.37	-69.95	-13.00	-56.95
691.54	33.15	H	-54.83	-7.85	3.27	-65.95	-13.00	-52.95
978.66	33.00	H	-51.04	-7.99	3.97	-63.00	-13.00	-50.00
1420.00	---	H		8.38	4.18		-13.00	
2130.00	---	H		10.27	6.01		-13.00	
2840.00	---	H		11.05	7.03		-13.00	
3550.00	---	H		12.61	8.10		-13.00	
4260.00	---	H		12.63	9.02		-13.00	
4970.00	---	H		12.65	9.76		-13.00	
5680.00	---	H		13.42	10.45		-13.00	
6390.00	---	H		12.53	11.11		-13.00	
7100.00	---	H		11.61	11.78		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz - 1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP\ (dBm) = SG\ Setting(dBm) + Antenna\ Gain\ (dB/dBi) - Cable\ loss\ (dB)$

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## Radiated Spurious Emission Measurement Result: 5MHz BW LTE-Band 17

### (16QAM RB 1 Offset 24)

Operation Mode : TX CH High Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 713.5MHz

Test By: Jazz

Temperature : 25°C

Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
156.10	37.61	V	-60.23	-7.80	1.60	-69.64	-13.00	-56.64
245.34	37.07	V	-63.00	-7.89	1.96	-72.85	-13.00	-59.85
321.00	41.56	V	-56.43	-7.80	2.25	-66.48	-13.00	-53.48
500.45	35.77	V	-58.36	-7.72	2.80	-68.88	-13.00	-55.88
655.65	33.31	V	-55.67	-7.82	3.17	-66.66	-13.00	-53.66
978.66	32.66	V	-51.30	-7.99	3.97	-63.26	-13.00	-50.26
1427.00	---	V		8.42	4.25		-13.00	
2140.50	---	V		10.27	6.02		-13.00	
2854.00	---	V		11.09	7.05		-13.00	
3567.50	---	V		12.61	8.12		-13.00	
4281.00	---	V		12.63	9.05		-13.00	
4994.50	---	V		12.65	9.78		-13.00	
5708.00	---	V		13.46	10.48		-13.00	
6421.50	---	V		12.42	11.14		-13.00	
7135.00	---	V		11.60	11.82		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + Antenna \text{ Gain (dB/dBi)} - Cable \text{ loss (dB)}$

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## Radiated Spurious Emission Measurement Result: 5MHz BW LTE-Band 17

### (16QAM RB 1 Offset 24)

Operation Mode : TX CH High Mode

Test Date: Apr. 23, 2011

Fundamental Frequency : 713.5MHz

Test By: Jazz

Temperature : 25°C

Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
154.16	40.13	H	-57.96	-7.80	1.60	-67.37	-13.00	-54.37
241.46	36.67	H	-62.97	-7.88	1.94	-72.79	-13.00	-59.79
321.00	41.66	H	-55.81	-7.80	2.25	-65.86	-13.00	-52.86
526.64	33.04	H	-59.49	-7.74	2.89	-70.11	-13.00	-57.11
655.65	33.29	H	-56.19	-7.82	3.17	-67.18	-13.00	-54.18
985.45	32.25	H	-51.75	-7.99	3.99	-63.73	-13.00	-50.73
1427.00	---	H		8.42	4.25		-13.00	
2140.50	---	H		10.27	6.02		-13.00	
2854.00	---	H		11.09	7.05		-13.00	
3567.50	---	H		12.61	8.12		-13.00	
4281.00	---	H		12.63	9.05		-13.00	
4994.50	---	H		12.65	9.78		-13.00	
5708.00	---	H		13.46	10.48		-13.00	
6421.50	---	H		12.42	11.14		-13.00	
7135.00	---	H		11.60	11.82		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

### Remark:

- 1 The emission behaviors belong to narrowband spurious emission.
- 2 Remark “---” means that the emission level is too low to be measured
- 3 The result basic equation calculation is as follows:
- 4  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + \text{Antenna Gain (dB/dBi)} - \text{Cable loss (dB)}$

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## 11. FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

### 11.1. Standard Applicable:

According to FCC §2.1055(a) (1)

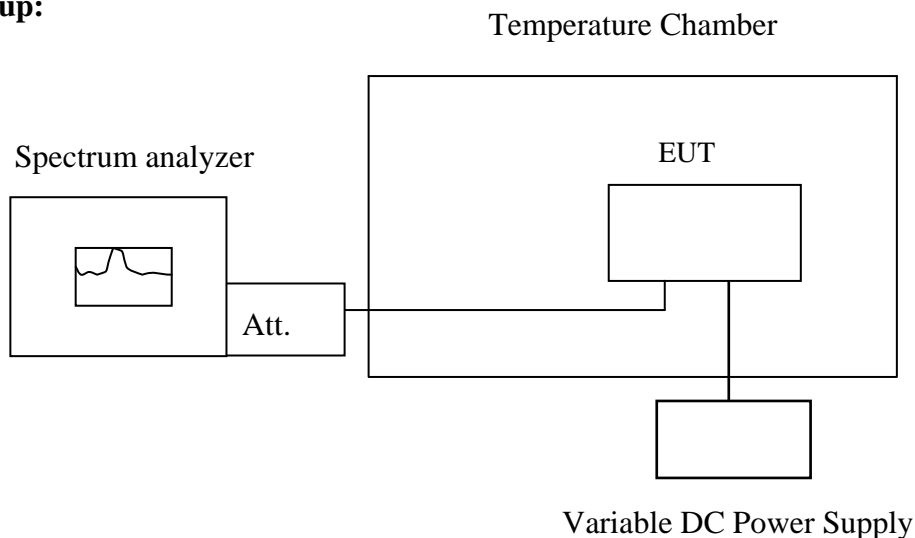
Frequency Tolerance:  $\pm 2.5$ ppm for 850MHz band

$\pm 2.5$ ppm for 1900MHz band

$\pm 2.5$ ppm for 1700MHz band

$\pm 2.5$ ppm for 700MHz band

### 11.2. Test Set-up:



**Note :** Measurement setup for testing on Antenna connector

### 11.3. Measurement Procedure:

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

### 11.4. Measurement Equipment Used:

Refer to section 2.4 in this report

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## 11.5. Measurement Result:

Reference Frequency: GSM Mid Channel 836.6 MHz @ 25°C				
Limit: +/- 2.5 ppm = 2091 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
3.70	-30	836.599995	15.00	2091
3.70	-20	836.599999	11.00	2091
3.70	-10	836.599998	12.00	2091
3.70	0	836.600012	-2.00	2091
3.70	10	836.600008	2.00	2091
3.70	20	836.600010	0.00	2091
3.70	30	836.600005	5.00	2091
3.70	40	836.600006	4.00	2091
3.70	50	836.600013	-3.00	2091

Reference Frequency: PCS Mid Channel 1880 MHz @ 25°C				
Limit: +/- 2.5 ppm = 4700 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
3.70	-30	1880.000035	-8.00	4700
3.70	-20	1880.000037	-10.00	4700
3.70	-10	1880.000025	2.00	4700
3.70	0	1880.000027	0.00	4700
3.70	10	1880.000028	-1.00	4700
3.70	20	1880.000023	4.00	4700
3.70	30	1880.000020	7.00	4700
3.70	40	1880.000011	16.00	4700
3.70	50	1880.000019	8.00	4700

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Reference Frequency: WCDMA II Mid Channel 1880 (ARFCN9400) MHz @ 20°C				
Limit: +/- 2.5 ppm = 4700 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
3.70	-30	1880.000008	-5.00	4700
3.70	-20	1880.000009	-6.00	4700
3.70	-10	1880.000003	0.00	4700
3.70	0	1880.000005	-2.00	4700
3.70	10	1880.000006	-3.00	4700
3.70	20	1880.000003	0.00	4700
3.70	30	1880.000009	-6.00	4700
3.70	40	1880.000006	-3.00	4700
3.70	50	1880.000004	-1.00	4700

Reference Frequency: WCDMA V Mid Channel 836.6 (ARFCN4183) MHz @ 20°C				
Limit: +/- 2.5 ppm = 2090 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
3.7	-30	836.600004	-6.00	2091
3.7	-20	836.600002	-4.00	2091
3.7	-10	836.600003	-5.00	2091
3.7	0	836.599991	7.00	2091
3.7	10	836.599995	3.00	2091
3.7	20	836.599998	0.00	2091
3.7	30	836.599996	2.00	2091
3.7	40	836.600001	-3.00	2091
3.7	50	836.600001	-3.30	2091

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Reference Frequency: LTE B4 Mid Channel 1732.5 MHz 5M QPSK CH 20175				
Limit: +/- 2.5 ppm = Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
3.7	-30	1732.49999500	8.80	4331
3.7	-20	1732.49999600	7.80	4331
3.7	-10	1732.49999800	5.80	4331
3.7	0	1732.49999900	4.80	4331
3.7	10	1732.50000230	1.50	4331
3.7	20	1732.50000380	0.00	4331
3.7	30	1732.50000180	2.00	4331
3.7	40	1732.50000050	3.30	4331
3.7	50	1732.50000130	2.50	4331

Reference Frequency: LTE B4 Mid Channel 1732.5 MHz 5M 16QAM CH 20175				
Limit: +/- 2.5 ppm = Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
3.7	-30	1732.49999660	0.40	4331
3.7	-20	1732.49999690	0.10	4331
3.7	-10	1732.49999790	-0.90	4331
3.7	0	1732.49999990	-2.90	4331
3.7	10	1732.50000160	-4.60	4331
3.7	20	1732.49999700	0.00	4331
3.7	30	1732.50000008	-3.08	4331
3.7	40	1732.49999500	2.00	4331
3.7	50	1732.49999600	1.00	4331

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Reference Frequency: LTE B4 Mid Channel 1732.5 MHz 10M QPSK CH 20175				
Limit: +/- 2.5 ppm = Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
3.7	-30	1732.49999300	7.70	4331
3.7	-20	1732.49999500	5.70	4331
3.7	-10	1732.49999700	3.70	4331
3.7	0	1732.49999900	1.70	4331
3.7	10	1732.49999990	0.80	4331
3.7	20	1732.50000070	0.00	4331
3.7	30	1732.50000170	-1.00	4331
3.7	40	1732.49999960	1.10	4331
3.7	50	1732.50000290	-2.20	4331

Reference Frequency: LTE B4 Mid Channel 1732.5 MHz 10M 16QAM CH 20175				
Limit: +/- 2.5 ppm = Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
3.7	-30	1732.49999960	4.20	4331
3.7	-20	1732.49999890	4.90	4331
3.7	-10	1732.49999920	4.60	4331
3.7	0	1732.50000020	3.60	4331
3.7	10	1732.50000060	3.20	4331
3.7	20	1732.50000380	0.00	4331
3.7	30	1732.50000120	2.60	4331
3.7	40	1732.50000200	1.80	4331
3.7	50	1732.50000700	-3.20	4331

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Reference Frequency: LTE B17 Mid Channel 710 MHz @ 5M QPSK CH 23790				
Limit: +/- 2.5 ppm = Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
3.7	-30	710.00000180	-1.80	1775
3.7	-20	710.00000150	-1.50	1775
3.7	-10	710.00000120	-1.20	1775
3.7	0	710.00000250	-2.50	1775
3.7	10	710.00000180	-1.80	1775
3.7	20	710.00000000	0.00	1775
3.7	30	709.99999900	1.00	1775
3.7	40	710.00000220	-2.20	1775
3.7	50	710.00000060	-0.60	1775

Reference Frequency: LTE B17 Mid Channel 710 MHz 5M 16QAM CH 23790				
Limit: +/- 2.5 ppm = Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
3.7	-30	709.99999300	8.10	1775
3.7	-20	709.99999500	6.10	1775
3.7	-10	709.99999600	5.10	1775
3.7	0	709.99999990	1.20	1775
3.7	10	709.99999980	1.30	1775
3.7	20	710.00000110	0.00	1775
3.7	30	710.00000190	-0.80	1775
3.7	40	710.00000020	0.90	1775
3.7	50	710.00000030	0.80	1775

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Reference Frequency: LTE B17 Mid Channel 710 MHz 10M QPSK CH 23790				
Limit: +/- 2.5 ppm = Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
3.7	-30	710.00000150	-1.16	1775
3.7	-20	710.00000100	-0.66	1775
3.7	-10	710.00000090	-0.56	1775
3.7	0	710.00000004	0.30	1775
3.7	10	710.00000024	0.10	1775
3.7	20	710.00000034	0.00	1775
3.7	30	710.00000045	-0.11	1775
3.7	40	710.00000055	-0.21	1775
3.7	50	710.00000290	-2.56	1775

Reference Frequency: LTE B17 Mid Channel 710 MHz 10M 16QAM CH 23790				
Limit: +/- 2.5 ppm = Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
3.7	-30	710.00000210	-0.10	1775
3.7	-20	710.00000200	0.00	1775
3.7	-10	710.00000100	1.00	1775
3.7	0	710.00000090	1.10	1775
3.7	10	710.00000100	1.00	1775
3.7	20	710.00000200	0.00	1775
3.7	30	709.99999800	4.00	1775
3.7	40	709.99999600	6.00	1775
3.7	50	709.99999400	8.00	1775

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## 12. FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

### 12.1. Standard Applicable:

According to FCC §2.1055(a) (1)

Frequency Tolerance: +/-2.5ppm for 850MHz band

+/-2.5ppm for 1900MHz band

+/-2.5ppm for 1700MHz band

+/-2.5ppm for 700MHz band

### 12.2. Test Set-up:

Refer to section 10.2 in this report

### 12.3. Measurement Procedure:

Set chamber temperature to 25°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specified extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.

### 12.4. Measurement Equipment Used:

Refer to section 2.4 in this report

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## 12.5. Measurement Result:

Reference Frequency: GSM Mid Channel 836.6 MHz @ 25°C				
Limit: +/- 2.5 ppm = 2091 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
4.20	25.00	836.600013	-3.00	2091.00
3.70	25.00	836.600010	0.00	2091.00
3.15	25.00	836.600011	-1.00	2091.00
3.145 (Endpoint)	25.00	836.600012	1.00	2091.00

Reference Frequency: PCS Mid Channel 1880 MHz @ 25°C				
Limit: +/- 2.5 ppm = 4700 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
4.20	25	1880.000022	1.00	4700
3.70	25	1880.000023	0.00	4700
3.15	25	1880.000027	-4.00	4700
3.145 (Endpoint)	25	1880.000026	-3.00	4700

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Reference Frequency: WCDMA II Mid Channel 1880 (ARFCN9400) MHz				
Limit: +/- 2.5 ppm = 4700 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
4.20	25	1880.000003	0.00	4700
3.70	25	1880.000003	0.00	4700
3.15	25	1880.000002	1.00	4700
3.145 (Endpoint)	25	1880.000002	1.00	4700

Reference Frequency: WCDMA V Mid Channel 836.6 (ARFCN4183) MHz				
Limit: +/- 2.5 ppm = 2090 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
4.20	25.00	836.599999	-1.00	2091.00
3.70	25.00	836.599998	0.00	2091.00
3.15	25.00	836.599999	-1.00	2091.00
3.145 (Endpoint)	25.00	836.599999	-1.00	2091.00

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Reference Frequency: LTE B4 Mid Channel 1732.5 MHz @ 25°C 5M QPSK CH 20175				
Limit: +/- 2.5 ppm = Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
4.2	25.00	1732.5000012	2.60	4331
3.7	25.00	1732.5000038	0.00	4331
3.2	25.00	1732.5000015	2.30	4331
3.2 (End Point)	25.00	1732.5000014	2.40	4331

Reference Frequency: LTE B4 Mid Channel 1732.5 MHz @ 25°C 5M 16QAM CH 20175				
Limit: +/- 2.5 ppm = Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
4.2	25	1732.4999930	4.00	4331
3.7	25	1732.4999970	6.80	4331
3.2	25	1732.4999915	5.50	4331
3.2 (End Point)	25	1732.4999910	6.00	4331

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Reference Frequency: LTE B4 Mid Channel 1732.5 MHz @ 25°C 10M QPSK CH 20175				
Limit: +/- 2.5 ppm = 2091 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
4.2	25.00	1732.5000001	0.56	4331
3.7	25.00	1732.5000007	0.00	4331
3.2	25.00	1732.5000001	0.65	4331
3.2 (End Point)	25.00	1732.5000001	0.65	4331

Reference Frequency: LTE B4 Mid Channel 1732.5 MHz @ 25°C 10M 16QAM CH 20175				
Limit: +/- 2.5 ppm = Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
4.2	25	1732.5000035	0.30	4331
3.7	25	1732.5000038	0.00	4331
3.2	25	1732.5000040	-0.20	4331
3.2 (End Point)	25	1732.5000039	-0.10	4331

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SGS Taiwan Ltd.

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Reference Frequency: LTE B17 Mid Channel 710 MHz @ 25°C 5M QPSK CH 23790				
Limit: +/- 2.5 ppm = Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
4.2	25.00	709.9999985	1.50	1775
3.7	25.00	710.0000000	0.00	1775
3.2	25.00	710.0000004	-0.40	1775
3.2 (End Point)	25.00	709.9999998	0.25	1775

Reference Frequency: LTE B17 Mid Channel 710 MHz @ 25°C 5M 16QAM CH 23790				
Limit: +/- 2.5 ppm = Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
4.2	25	710.0000010	0.20	1775
3.7	25	710.0000012	0.00	1775
3.2	25	710.0000013	-0.10	1775
3.2 (End Point)	25	710.0000018	-0.60	1775

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Reference Frequency: LTE B17 Mid Channel 710 MHz @ 25°C 10M QPSK CH 23790				
Limit: +/- 2.5 ppm = 2091 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
4.2	25.00	709.9999995	0.84	1775
3.7	25.00	710.0000003	0.00	1775
3.2	25.00	710.0000016	-1.28	1775
3.2 (End Point)	25.00	709.9999990	1.34	1775

Reference Frequency: LTE B17 Mid Channel 710 MHz @ 25°C 10M 16QAM CH 23790				
Limit: +/- 2.5 ppm = Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
4.2	25	710.0000001	1.90	1775
3.7	25	710.0000020	0.00	1775
3.2	25	710.0000003	1.71	1775
3.2 (End Point)	25	710.0000004	1.65	1775

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