ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 22 SUBPART H, PART 24 SUBPART E

OF

Product Name:	**Smart Phone**
Brand Name:	**DELL**
Model Name:	**V02S**
Model Difference:	**N/A**
FCC ID:	**E2KV02S001**
Report No.:	**EH/2010/70040**
Issue Date:	**Oct. 03, 2010**
FCC Rule Part:	**2 , 22H & 24E**
Prepared for:	**DELL Inc.** **One Dell Way, Round Rock, Tx 78682**
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:	DELL Inc. One Dell Way, Round Rock, Tx 78682
Product Name:	Smart Phone
Brand Name:	DELL
Model No.:	V02S
Model Difference:	N/A
FCC ID:	E2KV02S001
File Number:	EH/2010/70040
Date of test:	Jul. 28, 2010 ~ Sep. 15, 2010
Date of EUT Received:	Jul. 28, 2010

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.

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

Test By:		***Date:***	Oct. 03, 2010
	Bondi Liu / Engineer		
Prepared By:		***Date:***	Oct. 03, 2010
	Eva Kao / Asst. Supervisor		
Approved By:		***Date:***	Oct. 03, 2010
	Arno Hsieh /Asst. Supervisor		

Version

Version No.	Date	Description
00	Oct. 03, 2010	Initial creation of document

Table of Contents

1. GENERAL PRODUCT INFORMATION

General:

Product Name	Smart Phone	
Brand Name	DELL	
Model Name	V02S	
Model Difference	N/A	
Micro USB Cable	Model No.: 5K.16R01.001 / CU04C04U05-K66-EF, Supplier: HELM	
Simple Hands-free (SHF)	1. Model No.: 525283 / TY.2C190.003, Supplier: Foster 2. Model No.: C055T / TY.2C190.001, Supplier: PCH	
Power Supply	3.7 Vdc re-chargeable battery or 5Vdc by AC/DC power adapter	
	Battery:	Model: 214L0 / 2C.214L0.001, Supplier: CHENG UEI
	Adapter:	Model No.: 32HD9/ 0005ADUUS, Supplier: PCH
	Car Charge:	Model No.: DT933 / LD5V50-00, Supplier: PCH

GSM and WCDMA:

Cellular Phone Standards Frequency Range and Power:	Operating Frequency		Rated Power
	GSM/GPRS 850, Class 12	824.2 MHz– 848.8MHz	32.5 dBm
	EDGE 850, Class 12	824.2 MHz– 848.8MHz	26.5 dBm
	GSM/GPRS 1900, Class 12	1850.2MHz–1909.8MHz	29.5 dBm
	EDGE 1900, Class 12	1850.2MHz–1909.8MHz	25.5 dBm
	WCDMA/HSUPA/HSDPA Band II	1852.4MHz–1907.6MHz	23.5 dBm
	WCDMA/HSUPA/HSDPA Band V	826.4MHz–846.6MHz	23.5 dBm
Hardware Version:	N/A		
Software Version:	N/A		
IMEI:	01228600XXXXXX		

Final Amplifier Voltage and Current Information:

Test Mode	DC voltage (V)	DC current (mA)
GPRS 850	3.7V	450
GPRS 1900	3.7V	380
EDGE 850	3.7V	360
EDGE 1900	3.7V	320
WCDMA Band II	3.7V	610
HSUPA Band II	3.7V	620
WCDMA Band V	3.7V	550
HSUPA Band V	3.7V	560

WLAN: 802.11 b/g

Frequency Range:	2412 – 2462MHz
Channel number:	11 channels
Max. Output Power:	802.11 b: 17.38 dBm 802.11 g: 13.84 dBm
Modulation Technology:	DSSS, OFDM
Modulation type:	CCK, DQPSK, DBPSK for DSSS 64QAM. 16QAM, QPSK, BPSK for OFDM
Transition Rate:	802.11 b: 1/2/5.5/11 Mbps; 802.11 g: 6/9/12/18/24/36/48/54 Mbps
Antenna Designation:	PIFA Antenna, -0.02dBi.

Bluetooth:

Bluetooth Version:	V2.1 + EDR (GFSK + π/4DQPSK + 8DPSK)
Channel number:	79 channels
Modulation type:	Frequency Hopping Spread Spectrum
Transmit Power:	6.76 dBm
Frequency Range:	2.402GHz – 2.480GHz
Dwell Time:	<= 0.4s
Operating Mode:	Point-to-Point
Antenna Designation:	PIFA Antenna, -0.02dBi.

This test report applies for GSM/GPRS/EDGE 850/1900, WCDMA/HSDPA/HSUPA band II, V.

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

This submittal(s) (test report) is intended for FCC ID: **E2KV02S001** filing to comply with Section Part 22 subpart H, Part 24 subpart E 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 / HSDPA) 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 is: 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.

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 a placed on as 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.

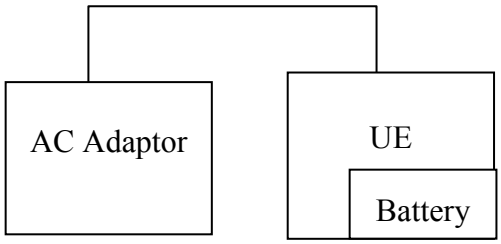
2.4. Measurement Equipment Used:

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	01/25/2010	01/24/2011
Radio Communication Analyzer	R&S	CMU200	111787	10/31/2008	10/30/2010
800 – 1000MHz Filter	Micro-Tronics	BRM13462	001	01/05/2010	01/04/2011
1800 – 2000MHz Filter	Micro-Tronics	BRM13463	001	01/05/2010	01/04/2011
Temperature Chamber	TERCHY	MHG-120LF	911009	04/30/2010	04/29/2012
Temperature Chamber	GIANT FORCE	GTH-150-40-CP-AR	MAA0512-018	02/24/2010	02/23/2012
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	Chroma	41901	777188	04/15/2010	04/14/2012

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	02/11/2011
Bilog Antenna	SCHWAZBECK	VULB9160	3136	11/19/2009	11/18/2010
Dipole Antenna	SCHWAZBECK	VHAP	908/909	07/17/2010	07/16/2012
Dipole Antenna	SCHWAZBECK	UHAP	891/892	07/17/2010	07/16/2012
Horn antenna	SCHWAZBECK	BBHA 9120D	309/320	03/09/2009	03/08/2011
Signal Generator	R&S	SMR40	100210	02/10/2010	02/09/2012
Signal Generator	Agilent	E4438C	MY45093613	07/08/2010	07/07/2011
Pre-Amplifier	Agilent	8447D	1937A02834	11/28/2009	11/27/2010
Pre-Amplifier	Agilent	8449B	3008A01973	01/05/2010	01/04/2011
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	111787	10/31/2008	10/30/2010
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	01/05/2010	01/04/2011
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	01/05/2010	01/04/2011
Filter 800-1000	Micro-Tronics	BRM13462	1	01/05/2010	01/04/2011
Filter 1800-2000	Micro-Tronics	BRM13463	1	01/05/2010	01/04/2011
3m Site	SGS	966 chamber	N/A	11/08/2009	11/09/2010

2.5. Configuration of Tested System

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



Remote Side

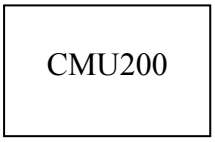


Table 2-1 Equipment Used in Tested System

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

3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§2.1046(a)	RF Power Output	Compliant
§2.1046(a) §22.913(a)(2) §24.232(c)	ERP/ EIRP measurement	Compliant
§2.1049(h)	99% Occupied Bandwidth	Compliant
§2.1051 §22.917(a) §24.238(a)	Out of Band Emissions at Antenna Terminals and Band Edge	Compliant
§2.1053 §22.917(a) §24.238(a)	Field Strength of Spurious Radiation	Compliant
§2.1055(a)(1) §22.355 §24.235	Frequency Stability vs. Temperature	Compliant
§2.1055(d)(2) §22.355 §24.235	Frequency Stability vs. Voltage	Compliant
§15.107;§15.207	AC Power Line Conducted Emission	Compliant

Max ERP/EIRP measurement result:

	dBm		W
GPRS 850 Band	33.10	ERP	2.042
PCS 1900 Band	29.41	EIRP	0.873
EDGE 850 Band	30.36	ERP	1.086
EDGE 1900 Band	29.14	EIRP	0.820
WCDMA Band II	24.93	EIRP	0.311
HSUPA Band II	25.78	EIRP	0.378
WCDMA Band V	23.82	ERP	0.241
HSUPA Band V	26.04	ERP	0.402

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/GPRS/EDGE and WCDMA Band IV with power adaptors. The worst-case of E2 position for GPRS 850 band, E2 position for GPRS 1900, H position, E2 position HSUPA Band II and E1 position HSUPA Band V were reported.

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

3GPP Power limitation for HSDPA and HSUPA

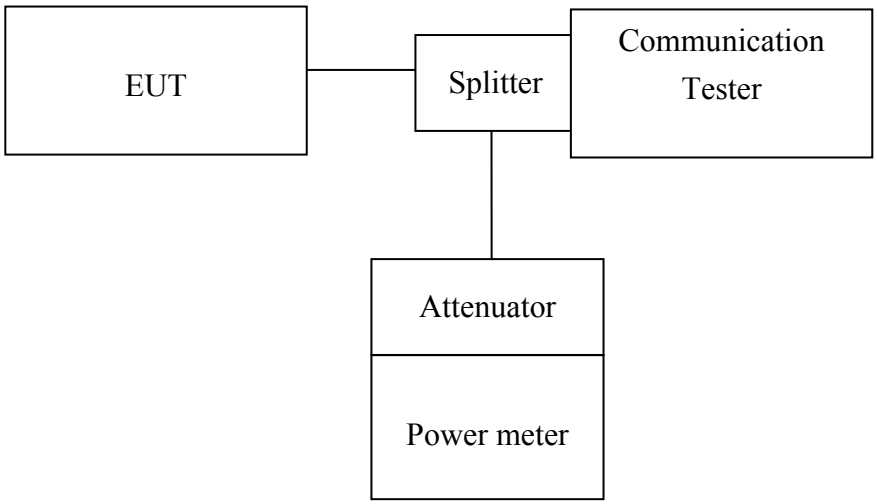
Maximum Output Powers for HSDPA

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

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/HSDPA) 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

5.5 Measurement Result:

5.1 RF Conducted Output Power

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	32.20	29.90	26.60	32.30	32.10	30.00	26.70
836.6	190	32.30	32.20	30.00	26.70	32.30	32.10	30.00	26.70
848.8	251	32.30	32.20	30.00	26.70	32.30	32.10	30.00	26.70
1850.2	512	29.00	28.90	28.70	25.40	28.90	28.70	28.60	25.40
1880.0	661	29.10	29.00	28.80	25.50	29.00	28.90	28.70	25.40
1909.8	810	29.10	29.00	28.80	25.50	29.00	28.90	28.70	25.40

Frequency (MHz)	CH	3 Time Slot				4 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	30.70	30.50	27.80	24.60	28.60	28.50	25.70	22.50
836.6	190	30.70	30.50	27.90	24.60	28.60	28.50	25.80	22.60
848.8	251	30.70	30.50	27.90	24.60	28.60	28.50	25.80	22.50
1850.2	512	28.80	28.70	28.60	25.40	28.80	28.60	28.60	25.30
1880.0	661	28.90	28.80	28.70	25.40	28.90	28.70	28.60	25.40
1909.8	810	29.00	28.80	28.70	25.40	28.90	28.80	28.70	25.50

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	26.23	22.8
	1880	9400	26.2	22.87
	1907.6	9538	25.84	22.71

EUT Mode	Frequency (MHz)	CH	Peak Power (dBm)	AVG. Power (dBm)
HSUPA Band II	1852.4	9262	26.39	22.54
	1880	9400	26.32	22.64
	1907.6	9538	25.89	22.41

EUT Mode	Frequency (MHz)	CH	Peak Power (dBm)	AVG. Power (dBm)
WCDMA Band V	826.4	4132	27.05	23.68
	836.6	4183	26.75	23.82
	846.6	4233	27.03	23.75

EUT Mode	Frequency (MHz)	CH	Peak Power (dBm)	AVG. Power (dBm)
HSUPA Band V	826.4	4132	27.22	23.41
	836.6	4183	26.86	23.47
	846.6	4233	27.12	23.42

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

5.5.13: 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 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: β values for transmitter characteristics tests with HS-DPCCH(FOR HSDPA)

Sub-test	β_c	β_d	β_d *(SF)*	β_c/β_d	β_{HS} (*Note1, 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	Transmitter Power (dBm) Channel			Power Class 3 Limitation (dBm)	Comments
		1312	1413	1513		
HSDPA(B2)	1	23.09	23.13	22.98	20.3dBm – 25.7dBm	Pass
	2	22.68	22.73	22.56	20.3dBm – 25.7dBm	Pass
	3	22.61	22.68	22.45	19.8dBm – 25.7dBm	Pass
	4	22.68	22.69	22.57	19.8dBm – 25.7dBm	Pass

Mode	Sub-test	Transmitter Power (dBm) Channel			Power Class 3 Limitation (dBm)	Comments
		1312	1413	1513		
HSDPA(B5)	1	23.97	24.08	24.02	20.3dBm – 25.7dBm	Pass
	2	23.56	23.68	23.60	20.3dBm – 25.7dBm	Pass
	3	23.49	23.63	23.49	19.8dBm – 25.7dBm	Pass
	4	23.56	23.64	23.61	19.8dBm – 25.7dBm	Pass

5.5.1.4: 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 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: β values for transmitter characteristics tests with HS-DPCCH and E-DCH(FOR HSUPA)

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS}	β_{ec}	β_{ed}	β_{ed} (SF)	β_{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	$\beta_{ed}1$: 47/15 $\beta_{ed}2$: 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 are implemented as per following sub-tests.

Results:

Mode	Sub-test	TX Power (dBm) Channel			Power Class 3 Limitation (dBm)	Comments
		1312	1413	1513		
HSUPA(B2)	1	22.72	22.85	22.65	18.8dBm – 25.7dBm	Pass
	2	20.77	20.92	20.69	16.8dBm – 25.7dBm	Pass
	3	21.78	21.87	21.73	17.8dBm – 25.7dBm	Pass
	4	20.90	20.97	20.73	16.8dBm – 25.7dBm	Pass
	5	22.61	22.71	22.56	18.8dBm – 25.7dBm	Pass

Mode	Sub-test	TX Power (dBm) Channel			Power Class 3 Limitation (dBm)	Comments
		1312	1413	1513		
HSUPA(B5)	1	23.60	23.80	23.69	18.8dBm – 25.7dBm	Pass
	2	21.65	21.87	21.73	16.8dBm – 25.7dBm	Pass
	3	22.66	22.82	22.77	17.8dBm – 25.7dBm	Pass
	4	21.78	21.92	21.77	16.8dBm – 25.7dBm	Pass
	5	23.49	23.66	23.60	18.8dBm – 25.7dBm	Pass

6. ERP, EIRP MEASUREMENT

6.1. Standard Applicable:

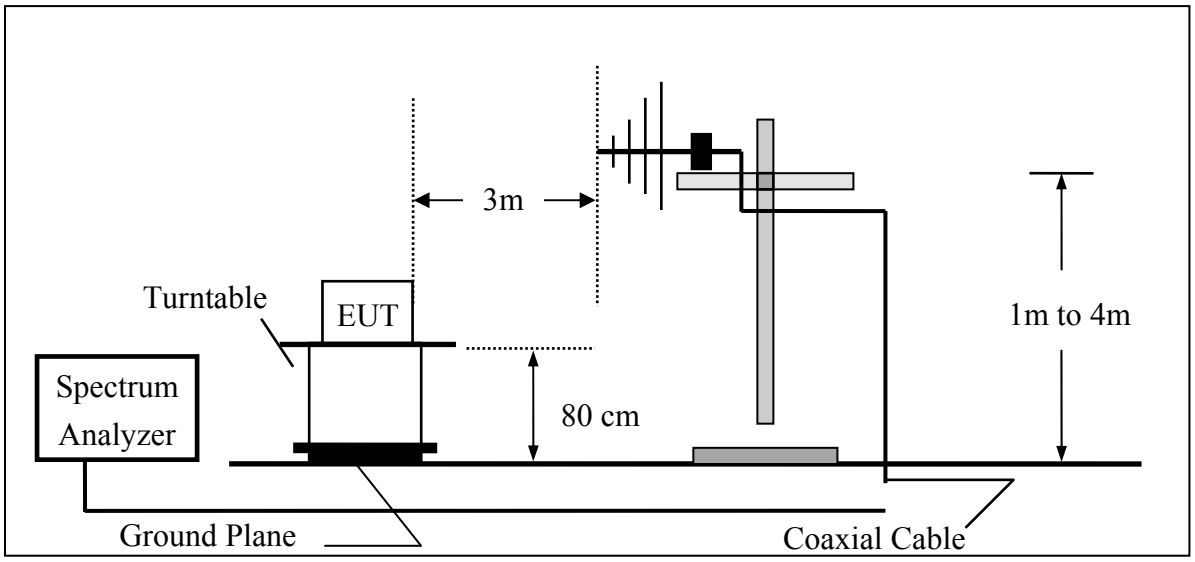
According to FCC §2.1046

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

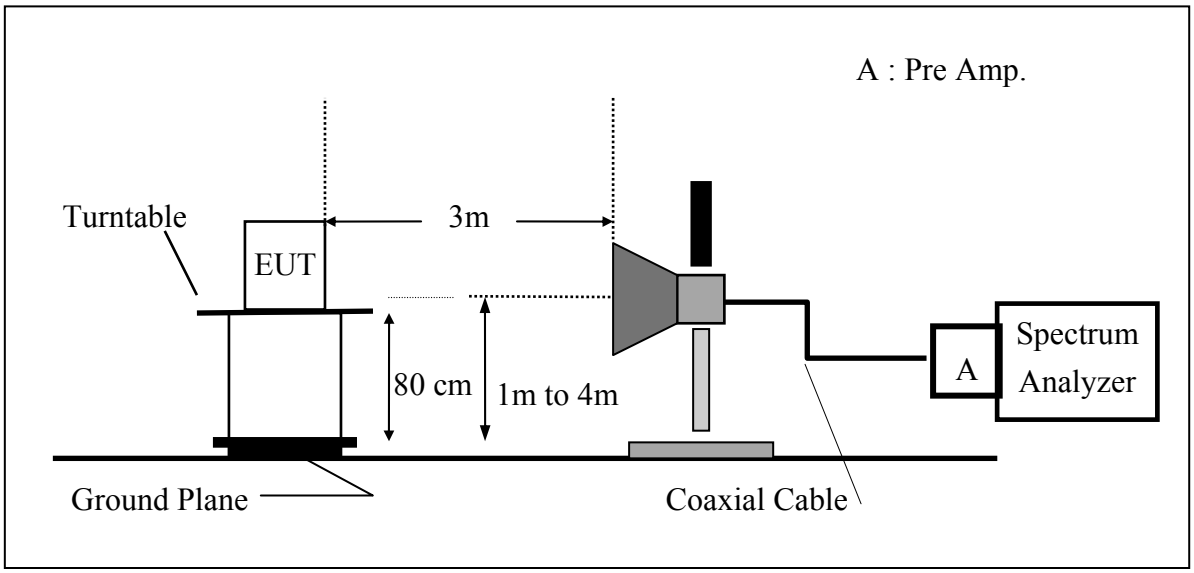
FCC 24.232(b) Mobile station are limited to 2W EIRP.

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

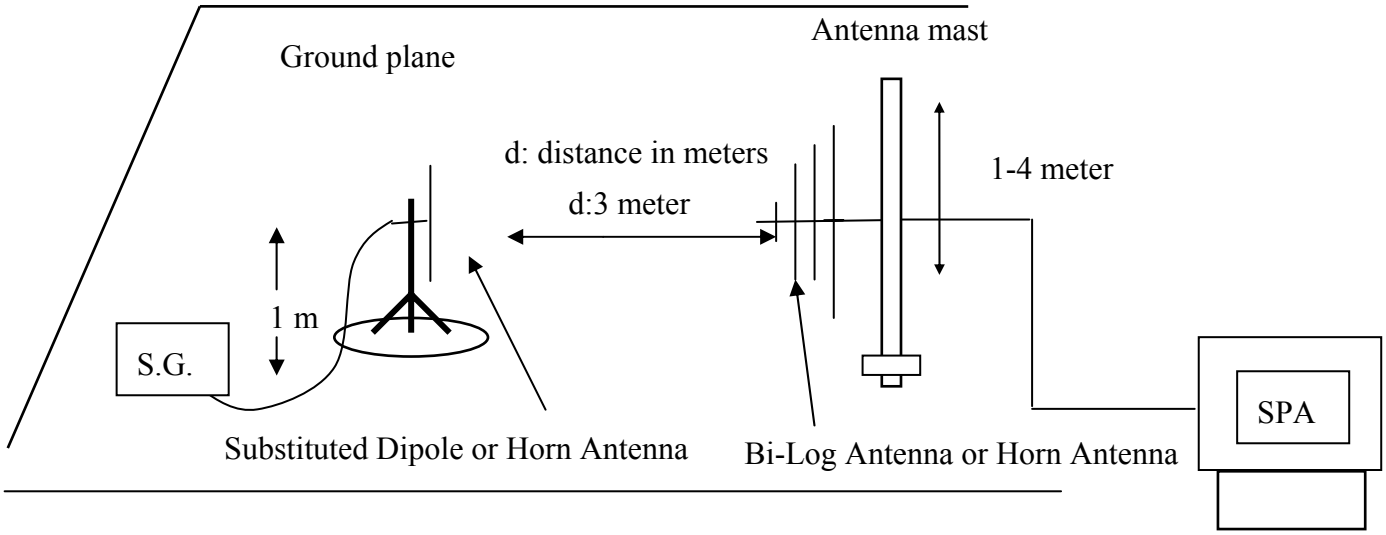
(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



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



(C) Substituted Method Test Set-UP



6.3. Measurement Procedure:

The EUT was placed on an 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 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 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:

ERP = S.G. output (dBm) + Antenna Gain (dBd) – Cable Loss (dB)
EIRP = S.G. output (dBm) + Antenna Gain (dBi) – Cable Loss (dB)

6.4. Measurement Equipment Used:

Refer to section 2.4 in this report

6.5. Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
GSM 850	824.20	128	H	V	129.68	43.29	-7.87	3.62	31.79	38.45
				H	118.71	32.44	-7.87	3.62	20.94	38.45
			E1	V	118.44	32.05	-7.87	3.62	20.55	38.45
				H	130.01	43.74	-7.87	3.62	32.24	38.45
			E2	V	119.20	32.81	-7.87	3.62	21.31	38.45
				H	130.10	43.83	-7.87	3.62	32.33	38.45
	836.60	190	H	V	129.60	43.35	-7.88	3.65	31.82	38.45
				H	119.32	33.09	-7.88	3.65	21.56	38.45
			E1	V	119.07	32.82	-7.88	3.65	21.29	38.45
				H	130.69	44.46	-7.88	3.65	32.93	38.45
			E2	V	119.35	33.10	-7.88	3.65	21.57	38.45
				H	130.71	44.48	-7.88	3.65	32.95	38.45
	848.80	251	H	V	129.22	43.10	-7.88	3.68	31.54	38.45
				H	118.37	32.18	-7.88	3.68	20.62	38.45
			E1	V	119.41	33.29	-7.88	3.68	21.73	38.45
				H	130.64	44.45	-7.88	3.68	32.89	38.45
			E2	V	119.28	33.16	-7.88	3.68	21.60	38.45
				H	130.85	44.66	-7.88	3.68	**33.10**	38.45

Remark：

(1) The RBW,VBW of SPA for frequency

RBW=300 KHz, VBW=1MHz,

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)
PCS 1900	1850.20	512	H	V	124.14	19.75	9.90	5.56	24.09	33.00
				H	121.04	16.86	9.90	5.56	21.20	33.00
			E1	V	123.91	19.52	9.90	5.56	23.86	33.00
				H	128.31	24.13	9.90	5.56	28.47	33.00
			E2	V	117.94	13.55	9.90	5.56	17.89	33.00
				H	128.66	24.48	9.90	5.84	28.54	33.00
	1880.00	661	H	V	124.75	20.39	9.99	5.61	24.77	33.00
				H	121.38	17.24	9.99	5.61	21.61	33.00
			E1	V	124.66	20.30	9.99	5.61	24.68	33.00
				H	129.04	24.90	9.99	5.61	29.27	33.00
			E2	V	118.29	13.93	9.99	5.61	18.31	33.00
				H	129.18	25.04	9.99	5.61	**29.41**	33.00
	1909.80	810	H	V	123.34	19.01	10.08	5.66	23.43	33.00
				H	120.51	16.40	10.08	5.66	20.82	33.00
			E1	V	123.74	19.41	10.08	5.66	23.83	33.00
				H	128.49	24.38	10.08	5.66	28.80	33.00
			E2	V	118.07	13.74	10.08	5.66	18.16	33.00
				H	129.10	24.99	10.08	5.66	29.41	33.00

Remark：

(1) The RBW,VBW of SPA for frequency

RBW=300 KHz, VBW=1MHz,

Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
EDGE 850	824.20	128	H	V	127.71	41.32	-7.87	3.62	29.82	38.45
				H	116.54	30.27	-7.87	3.62	18.77	38.45
			E1	V	117.15	30.76	-7.87	3.62	19.26	38.45
				H	127.25	40.98	-7.87	3.62	29.48	38.45
			E2	V	117.75	31.36	-7.87	3.62	19.86	38.45
				H	127.28	41.01	-7.87	3.62	29.51	38.45
	836.60	190	H	V	127.57	41.32	-7.88	3.65	29.79	38.45
				H	117.11	30.88	-7.88	3.65	19.35	38.45
			E1	V	117.52	31.27	-7.88	3.65	19.74	38.45
				H	127.84	41.61	-7.88	3.65	30.08	38.45
			E2	V	117.43	31.18	-7.88	3.65	19.65	38.45
				H	127.73	41.50	-7.88	3.65	29.97	38.45
	848.80	251	H	V	127.28	41.16	-7.88	3.68	29.60	38.45
				H	116.62	30.43	-7.88	3.68	18.87	38.45
			E1	V	117.70	31.58	-7.88	3.68	20.02	38.45
				H	127.89	41.70	-7.88	3.68	30.14	38.45
			E2	V	117.47	31.35	-7.88	3.68	19.79	38.45
				H	128.11	41.92	-7.88	3.68	**30.36**	38.45

Remark：

(1) The RBW,VBW of SPA for frequency

RBW=300 KHz, VBW=1MHz,

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)
EDGE 1900	1850.20	512	H	V	123.89	19.50	9.90	5.56	23.84	33.00
				H	120.73	16.55	9.90	5.56	20.89	33.00
			E1	V	124.17	19.78	9.90	5.56	24.12	33.00
				H	128.29	24.11	9.90	5.56	28.45	33.00
			E2	V	118.17	13.78	9.90	5.56	18.12	33.00
				H	128.62	24.44	9.90	5.84	28.50	33.00
	1880.00	661	H	V	124.57	20.21	9.99	5.61	24.59	33.00
				H	121.17	17.03	9.99	5.61	21.40	33.00
			E1	V	125.16	20.80	9.99	5.61	25.18	33.00
				H	128.62	24.48	9.99	5.61	28.85	33.00
			E2	V	118.70	14.34	9.99	5.61	18.72	33.00
				H	128.91	24.77	9.99	5.61	**29.14**	33.00
	1909.80	810	H	V	123.05	18.72	10.08	5.66	23.14	33.00
				H	120.37	16.26	10.08	5.66	20.68	33.00
			E1	V	123.88	19.55	10.08	5.66	23.97	33.00
				H	127.94	23.83	10.08	5.66	28.25	33.00
			E2	V	118.72	14.39	10.08	5.66	18.81	33.00
				H	128.61	24.50	10.08	5.66	28.92	33.00

Remark：

(1) The RBW,VBW of SPA for frequency

RBW=300 KHz, VBW=1MHz,

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)
WCDMA II	1852.40	9262	H	V	119.50	15.12	9.90	5.56	19.45	33.00
				H	116.00	11.82	9.90	5.56	16.16	33.00
			E1	V	119.50	15.12	9.90	5.56	19.45	33.00
				H	123.50	19.32	9.90	5.56	23.66	33.00
			E2	V	112.40	8.02	9.90	5.56	12.35	33.00
				H	124.90	20.72	9.90	5.84	24.78	33.00
	1880.00	9400	H	V	119.00	14.64	9.99	5.61	19.02	33.00
				H	115.90	11.76	9.99	5.61	16.13	33.00
			E1	V	118.50	14.14	9.99	5.61	18.52	33.00
				H	123.10	18.96	9.99	5.61	23.33	33.00
			E2	V	110.80	6.44	9.99	5.61	10.82	33.00
				H	124.70	20.56	9.99	5.61	**24.93**	33.00
	1907.60	9538	H	V	118.40	14.07	10.07	5.66	18.48	33.00
				H	115.30	11.19	10.07	5.66	15.60	33.00
			E1	V	118.50	14.17	10.07	5.66	18.58	33.00
				H	122.80	18.69	10.07	5.66	23.10	33.00
			E2	V	110.80	6.47	10.07	5.66	10.88	33.00
				H	123.80	19.69	10.07	5.66	24.10	33.00

Remark:

(1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

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)
HSUPA II	1852.40	9262	H	V	120.30	15.92	9.90	5.56	20.25	33.00
				H	116.50	12.32	9.90	5.56	16.66	33.00
			E1	V	120.20	15.82	9.90	5.56	20.15	33.00
				H	124.30	20.12	9.90	5.56	24.46	33.00
			E2	V	113.10	8.72	9.90	5.56	13.05	33.00
				H	125.90	21.72	9.90	5.84	**25.78**	33.00
	1880.00	9400	H	V	119.80	15.44	9.99	5.61	19.82	33.00
				H	116.30	12.16	9.99	5.61	16.53	33.00
			E1	V	119.40	15.01	9.90	5.56	19.35	33.00
				H	124.00	19.86	9.99	5.61	24.23	33.00
			E2	V	111.60	7.24	9.99	5.61	11.62	33.00
				H	125.50	21.36	9.99	5.61	25.73	33.00
	1907.60	9538	H	V	119.50	15.17	10.07	5.66	19.58	33.00
				H	115.70	11.59	10.07	5.66	16.00	33.00
			E1	V	119.40	15.07	10.07	5.66	19.48	33.00
				H	123.50	19.39	10.07	5.66	23.80	33.00
			E2	V	111.50	7.17	10.07	5.66	11.58	33.00
				H	124.60	20.49	10.07	5.66	24.90	33.00

Remark:

(1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
WCDMA Band V	826.40	4132	H	V	119.60	33.24	-7.88	3.63	21.73	38.45
				H	108.40	22.14	-7.88	3.63	10.64	38.45
			E1	V	109.10	22.74	-7.88	3.63	11.23	38.45
				H	119.40	33.14	-7.88	3.63	21.64	38.45
			E2	V	109.30	22.94	-7.88	3.63	11.43	38.45
				H	119.40	33.14	-7.88	3.63	21.64	38.45
	836.60	4183	H	V	121.60	35.35	-7.88	3.65	**23.82**	38.45
				H	110.90	24.67	-7.88	3.65	13.14	38.45
			E1	V	110.70	24.45	-7.88	3.65	12.92	38.45
				H	121.50	35.27	-7.88	3.65	23.74	38.45
			E2	V	110.40	24.15	-7.88	3.65	12.62	38.45
				H	120.90	34.67	-7.88	3.65	23.14	38.45
	846.60	4233	H	V	120.70	34.55	-7.88	3.67	23.00	38.45
				H	110.30	24.10	-7.88	3.67	12.55	38.45
			E1	V	110.50	24.34	-7.88	3.67	12.79	38.45
				H	121.00	34.80	-7.88	3.67	23.25	38.45
			E2	V	109.20	23.05	-7.88	3.67	11.50	38.45
				H	119.90	33.70	-7.88	3.67	22.15	38.45

Remark:

(1) The RBW,VBW of SPA for frequency

RBW=300 KHz, VBW=1MHz,

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	128	H	V	120.70	34.34	-7.88	3.63	22.83	38.45
				H	107.90	21.64	-7.88	3.63	10.14	38.45
			E1	V	111.90	25.54	-7.88	3.63	14.03	38.45
				H	120.70	34.44	-7.88	3.63	22.94	38.45
			E2	V	109.70	23.34	-7.88	3.63	11.83	38.45
				H	120.40	34.14	-7.88	3.63	22.64	38.45
	836.60	190	H	V	122.60	36.34	-7.88	3.65	24.81	38.45
				H	110.60	24.37	-7.88	3.65	12.84	38.45
			E1	V	114.30	28.04	-7.88	3.65	16.51	38.45
				H	123.80	37.57	-7.88	3.65	**26.04**	38.45
			E2	V	110.90	24.64	-7.88	3.65	13.11	38.45
				H	122.20	35.97	-7.88	3.65	24.44	38.45
	846.60	251	H	V	121.80	35.65	-7.88	3.67	24.10	38.45
				H	109.60	23.40	-7.88	3.67	11.85	38.45
			E1	V	112.20	26.04	-7.88	3.67	14.49	38.45
				H	122.80	36.60	-7.88	3.67	25.05	38.45
			E2	V	110.70	24.55	-7.88	3.67	13.00	38.45
				H	121.30	35.10	-7.88	3.67	23.55	38.45

Remark:

(1) The RBW,VBW of SPA for frequency

RBW=300 KHz, VBW=1MHz,

7. 99% OCCUPIED BANDWIDTH MEASUREMENT

7.1. Standard Applicable:

According to §FCC 2.1049.

7.2. Test Set-up:

Refer to section 5.2 in this report

7.3. 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.

7.4. Measurement Equipment Used:

Refer to section 2.4 in this report

7.5. Measurement Result:

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
GPRS 850	824.20	128	0.2453
	836.60	190	0.2454
	848.80	251	0.2440

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
DEGE 850	824.20	128	0.2460
	836.60	190	0.2471
	848.80	251	0.2428

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
GPRS 1900	1850.20	512	0.2438
	1880.00	661	0.2461
	1909.80	810	0.2464

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
DEGE 1900	1850.20	512	0.2436
	1880.00	661	0.2408
	1909.80	810	0.2428

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
WCDMA Band II	1852.4	9262	4.1677
	1880.0	9400	4.1785
	1907.6	9538	4.1482

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
HSUPA Band II	1852.40	9262	4.1587
	1880.00	9400	4.1775
	1907.60	9538	4.1549

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
WCDMA Band V	826.40	4132	4.1618
	836.60	4183	4.1809
	846.60	4233	4.1534

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
HSUPA Band V	826.40	4132	4.1737
	836.00	4180	4.1819
	846.60	4233	4.1693

Figure 7-1: GPRS 850 Channel Low

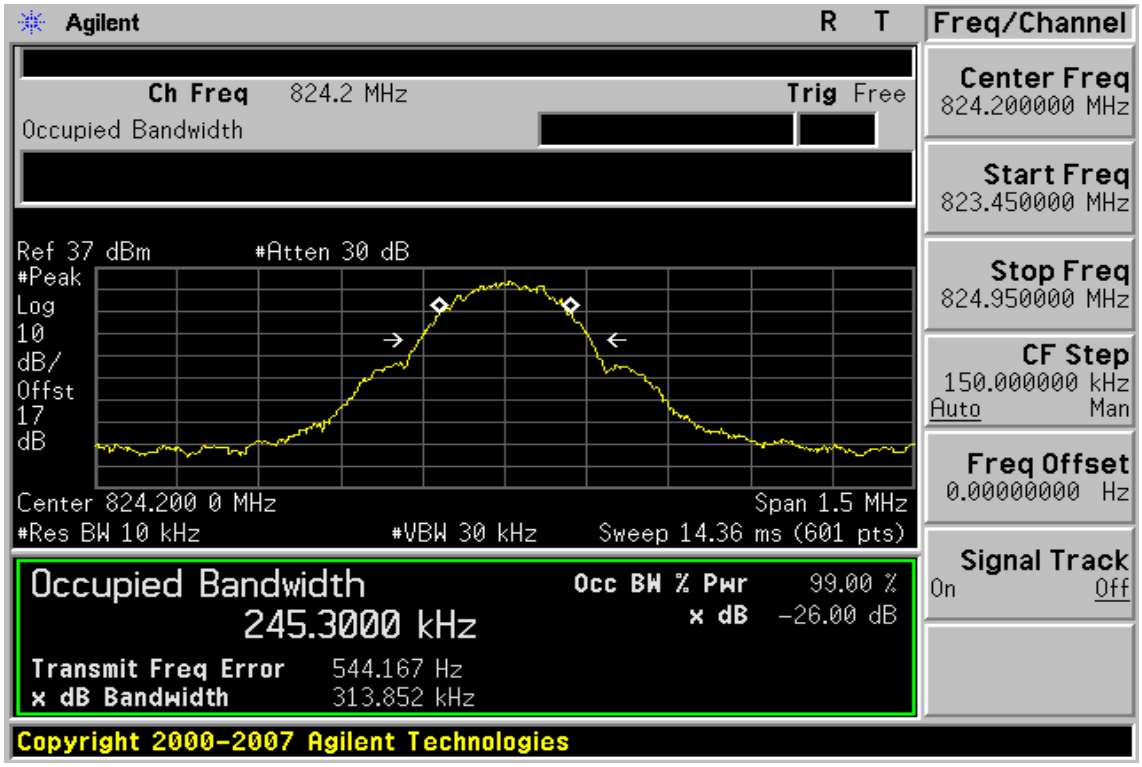


Figure 7-2 GPRS 850 Channel Mid

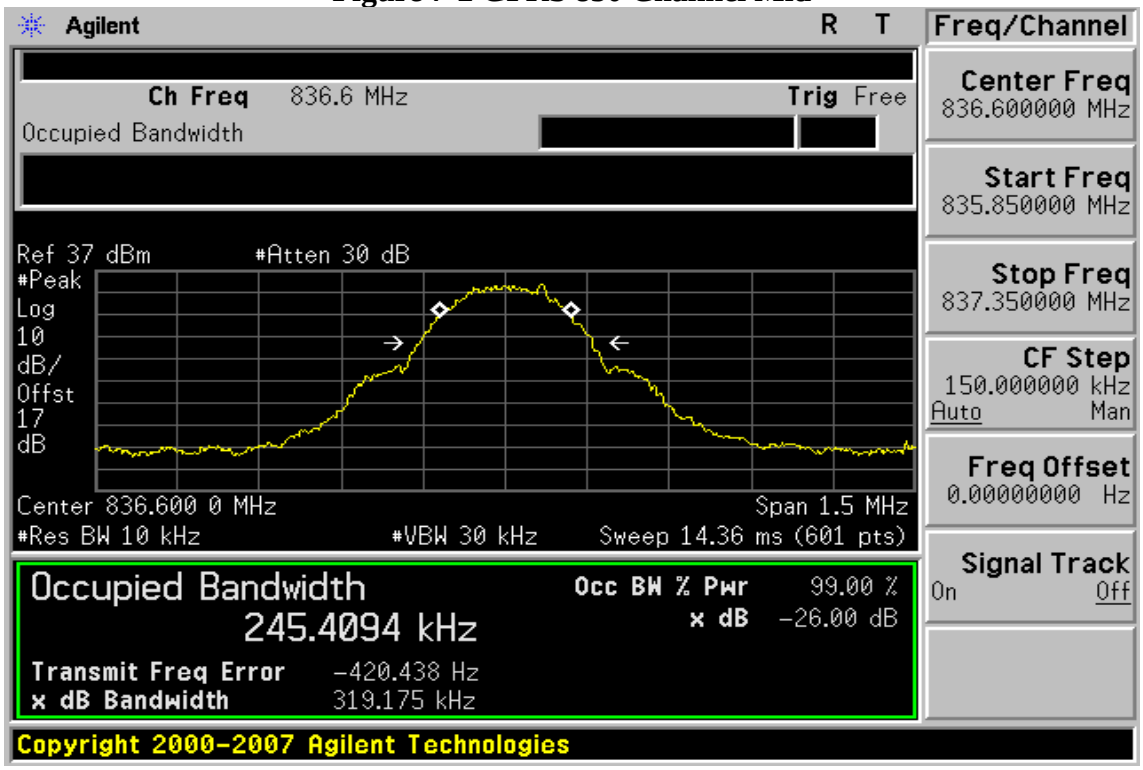


Figure 7-3: GPRS 850 Channel High

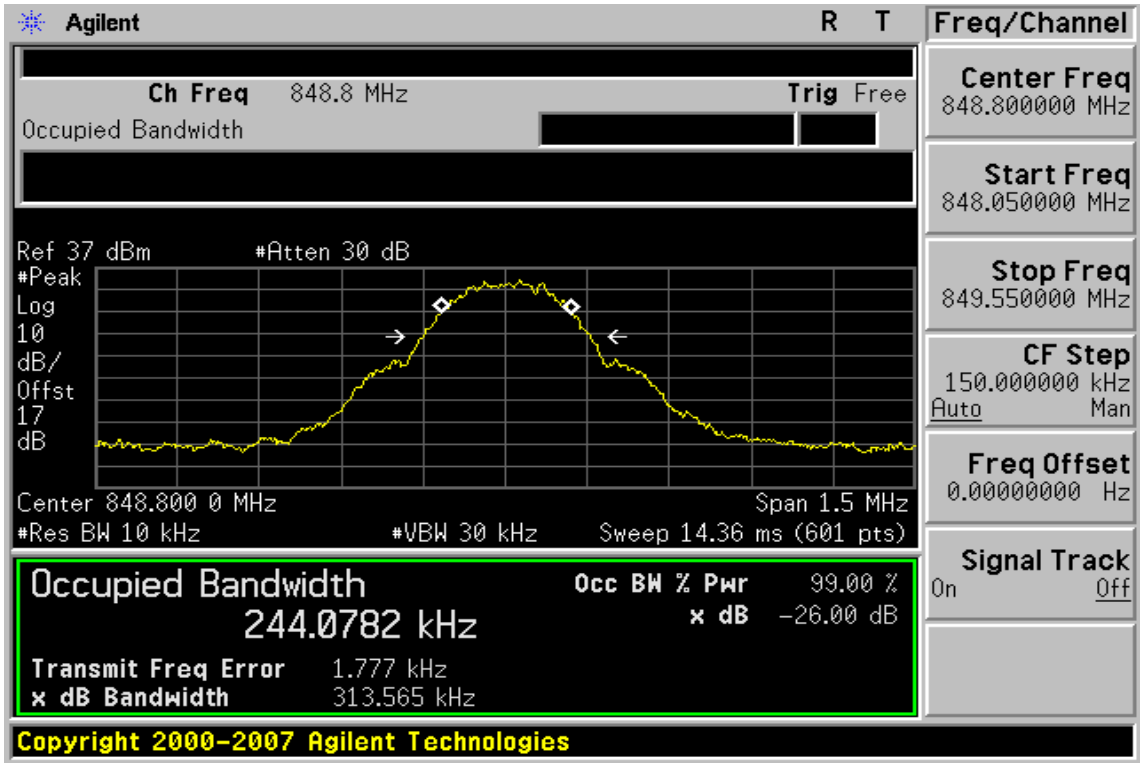


Figure 7-4: GPRS 1900 Channel Low

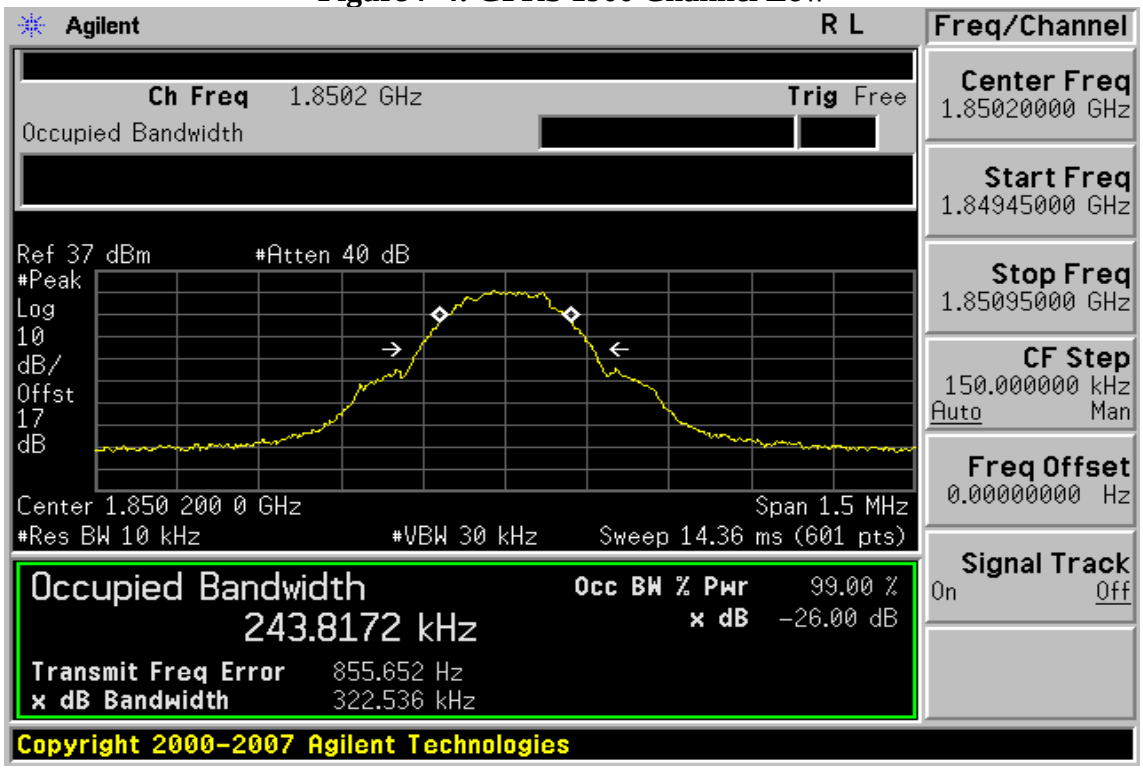


Figure 7-5 GPRS 1900 Channel Mid

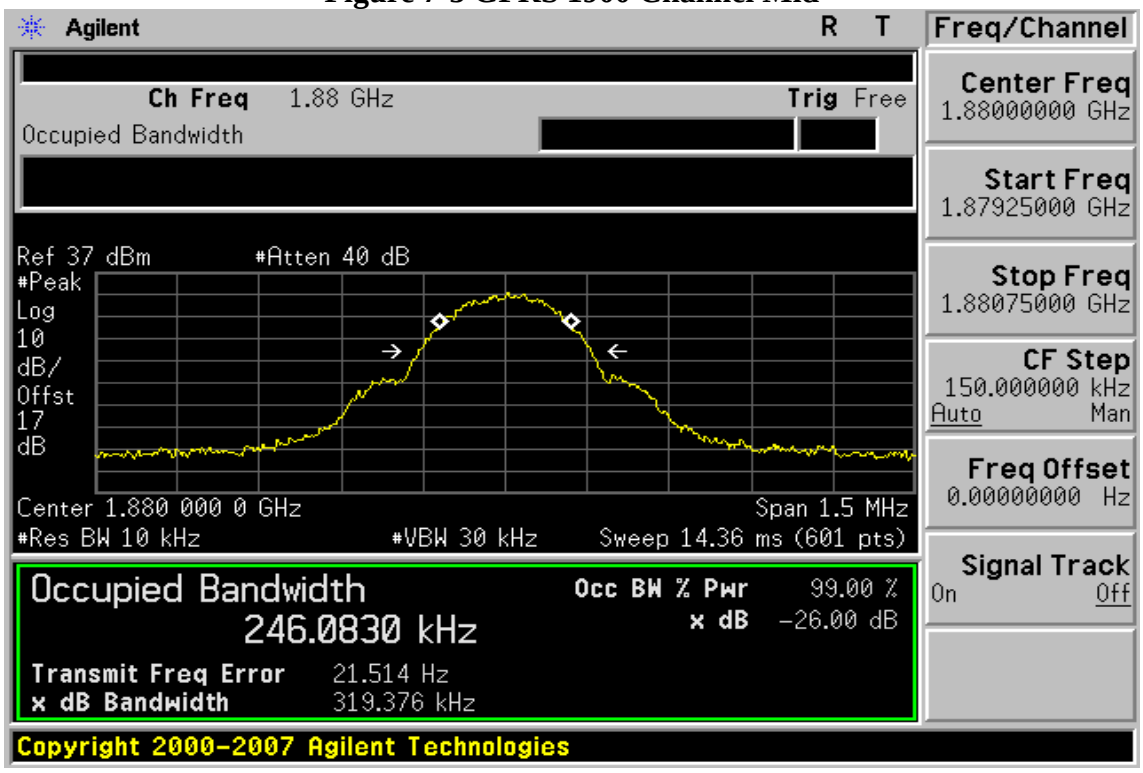


Figure 7-6: GPRS 1900 Channel High

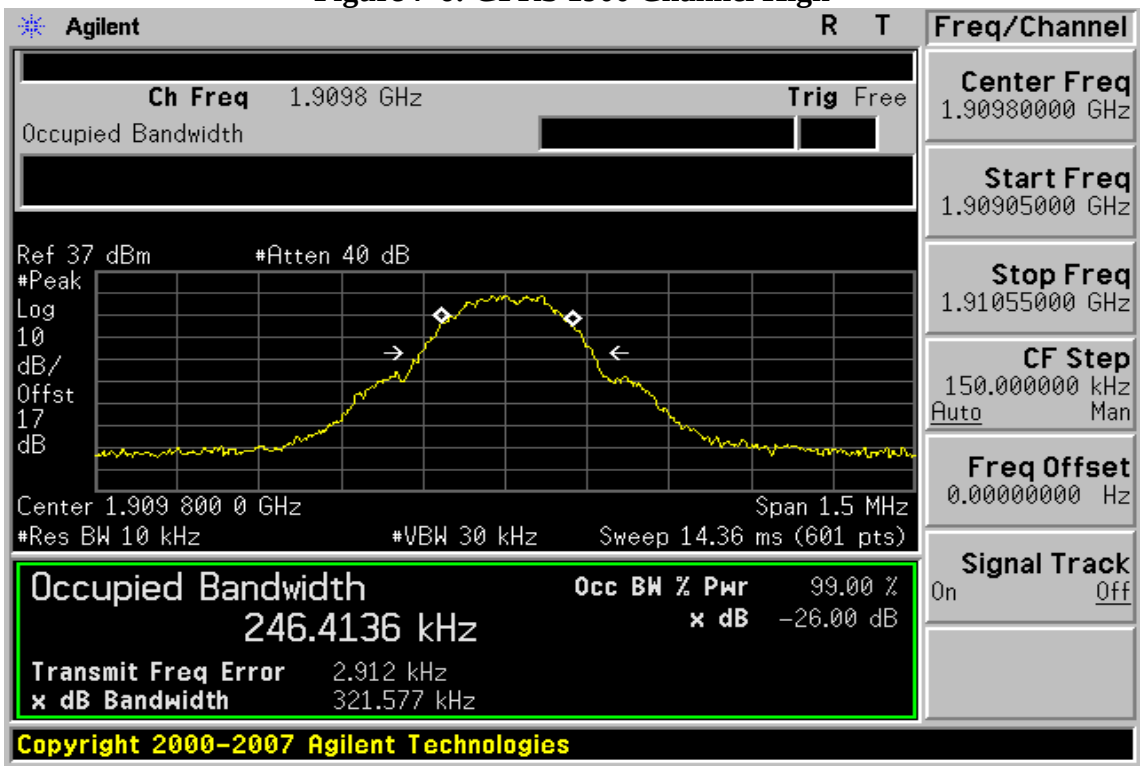


Figure 7-7: EDGE 850 Channel Low

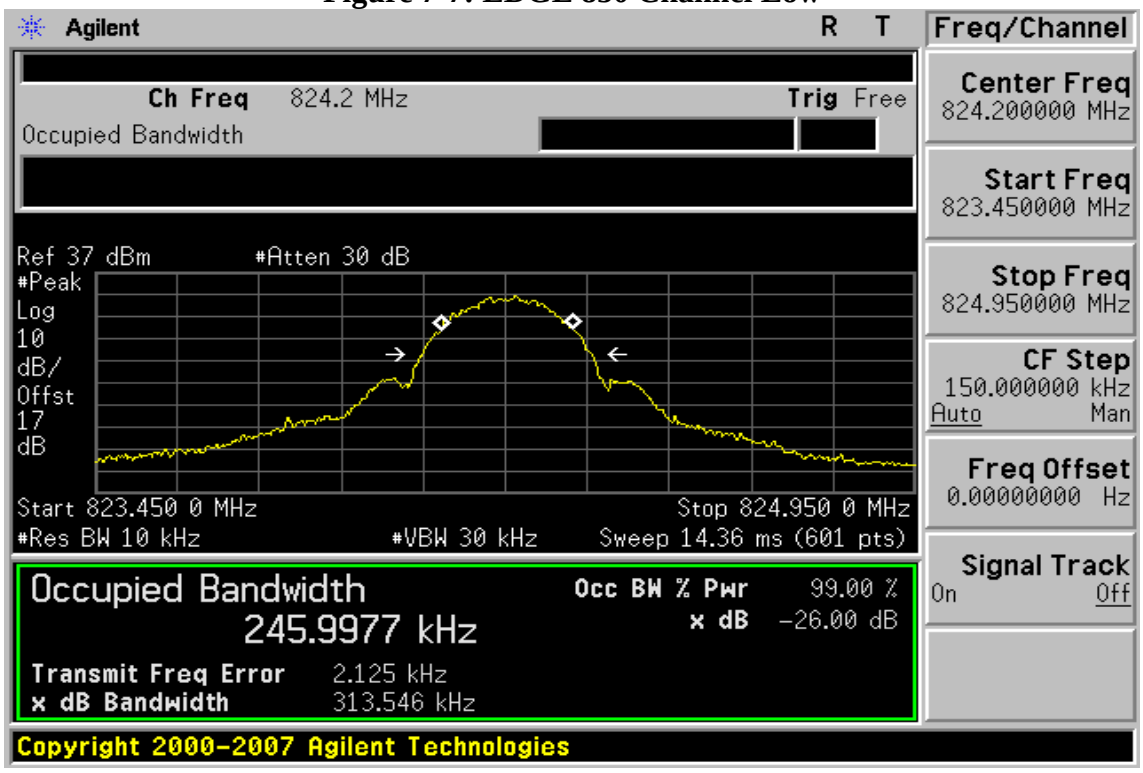


Figure 7-8 EDGE 850 Channel Mid

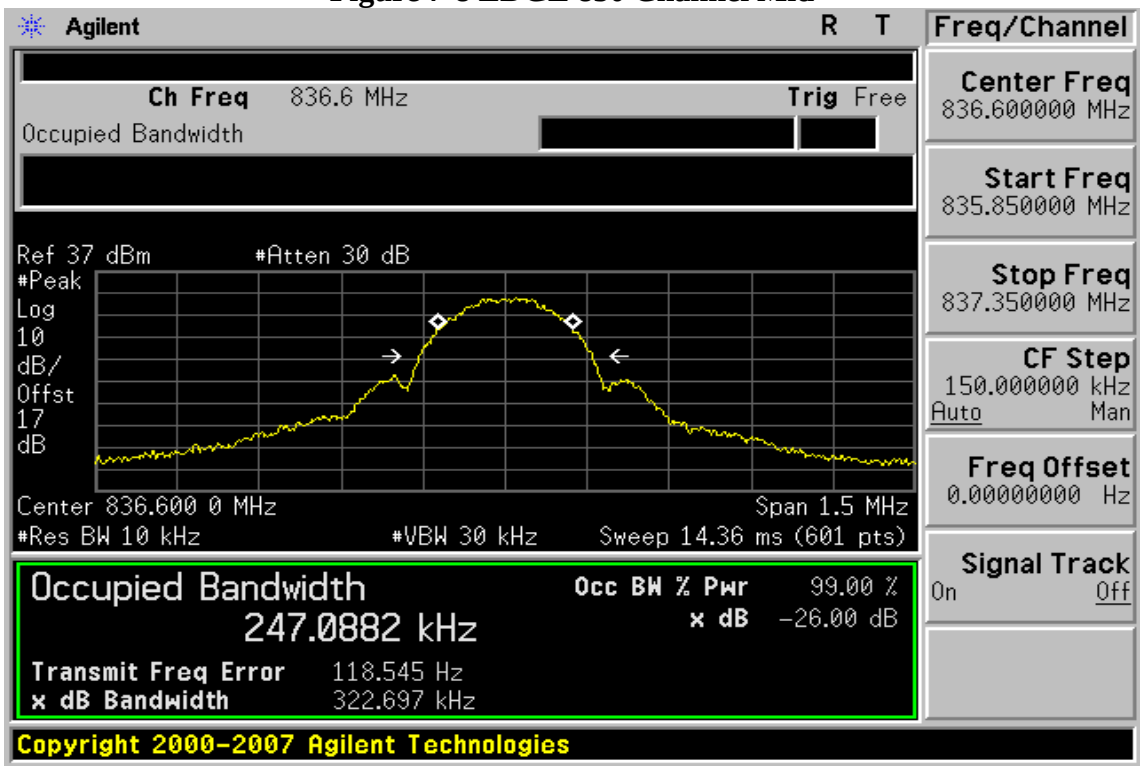


Figure 7-9: EDGE 850 Channel High

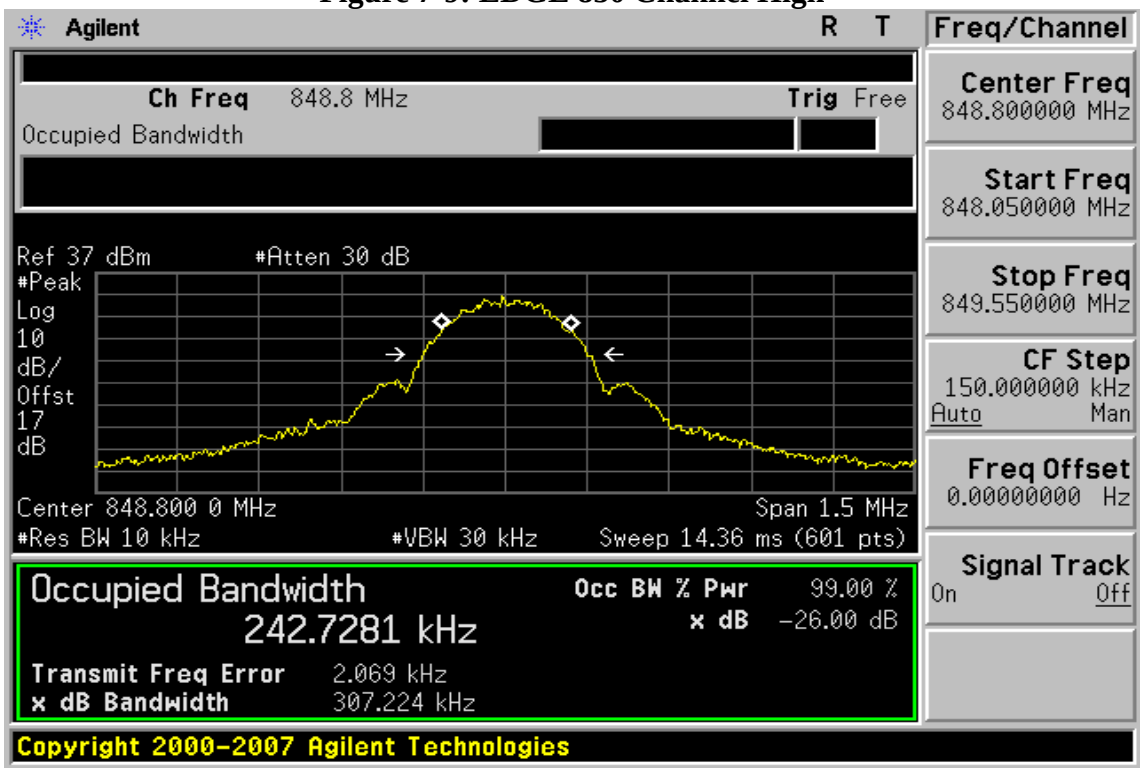


Figure 7-10: EDGE 1900 Channel Low

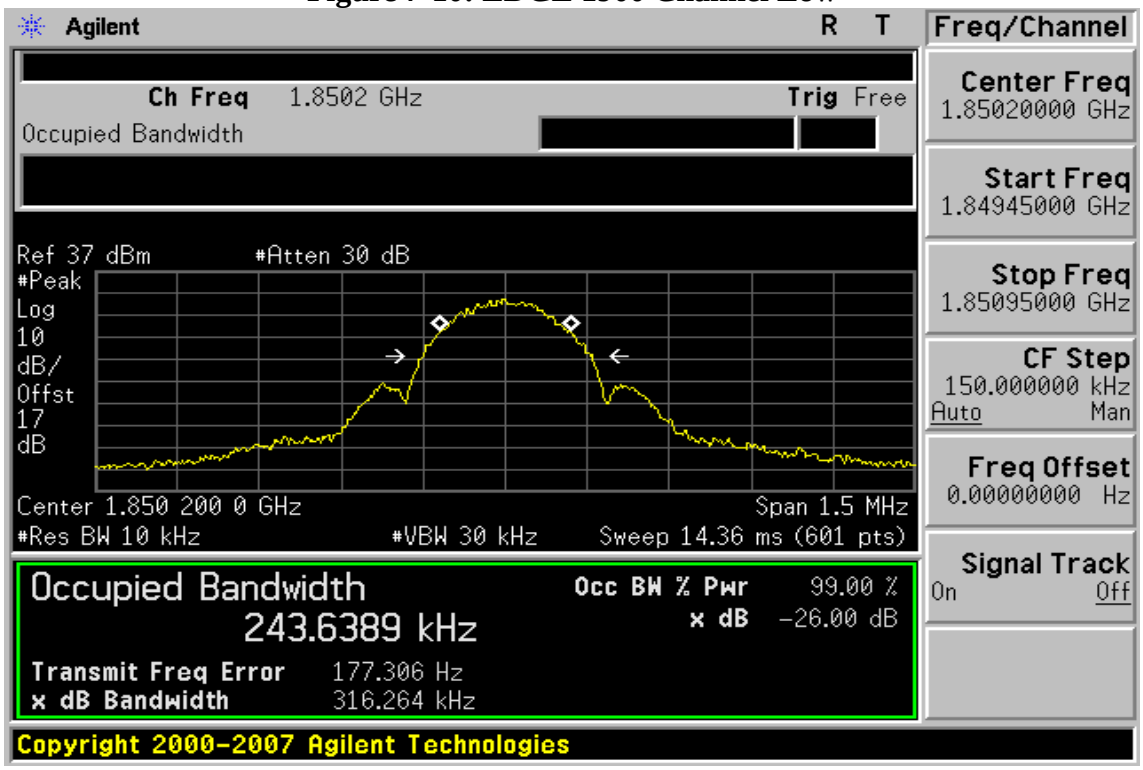


Figure 7-11 EDGE 1900 Channel Mid

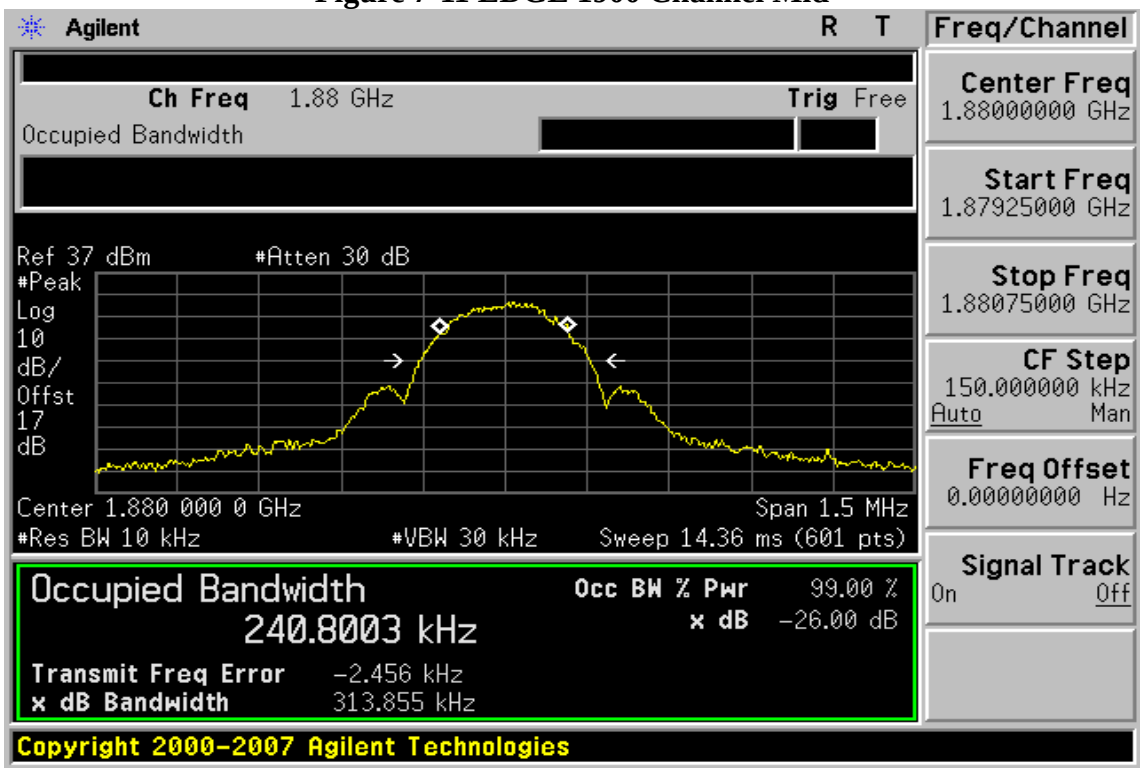


Figure 7-12: EDGE 1900 Channel High

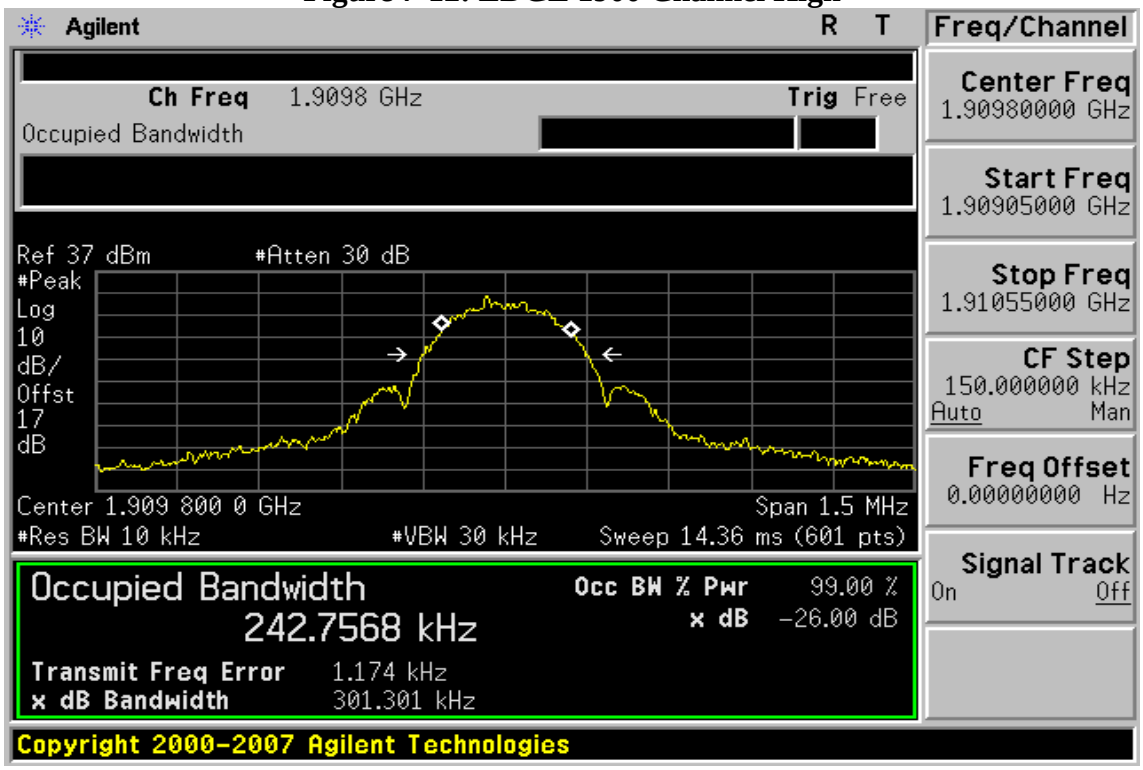


Figure 7-13 WCDMA B2 Channel Low

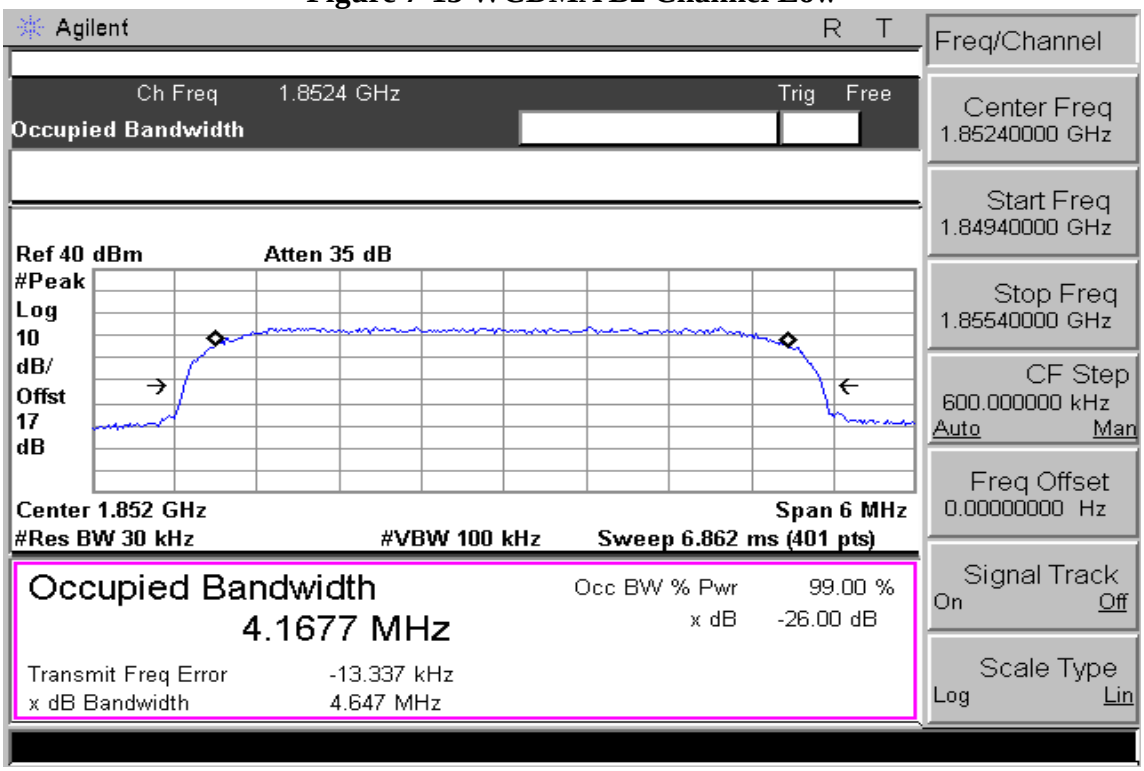


Figure 7-14 WCDMA B2 Channel Mid

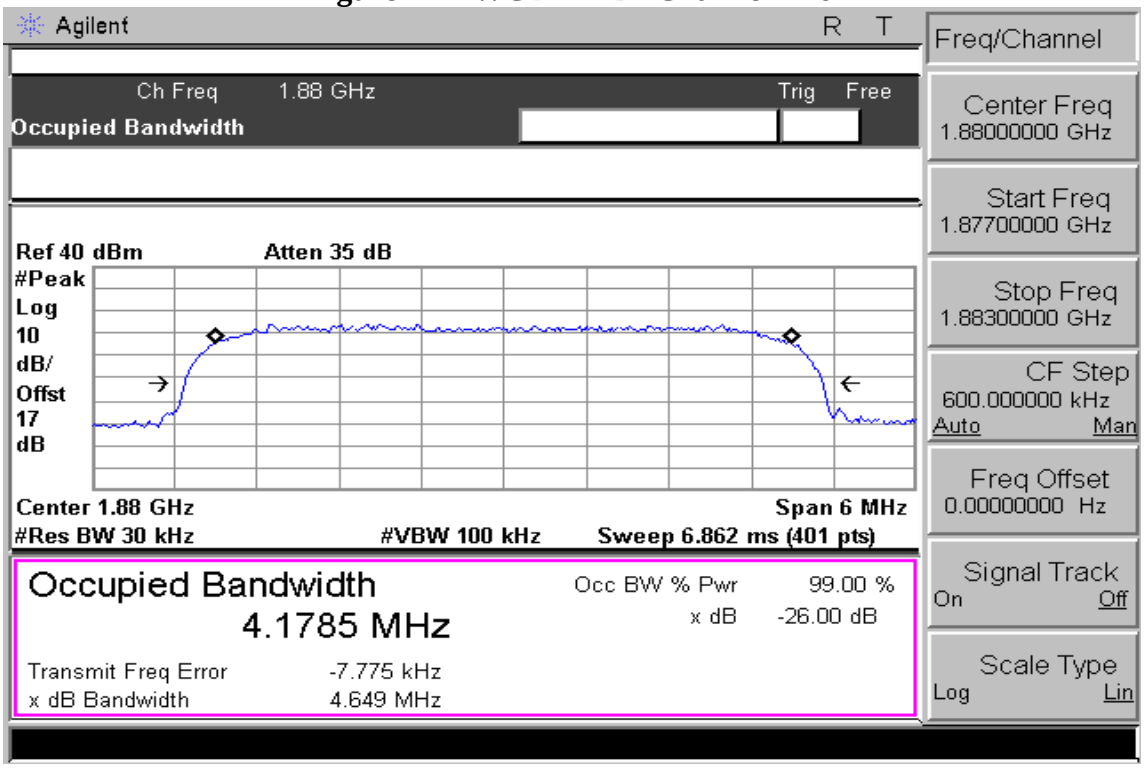


Figure 7-15: WCDMA B2 Channel High

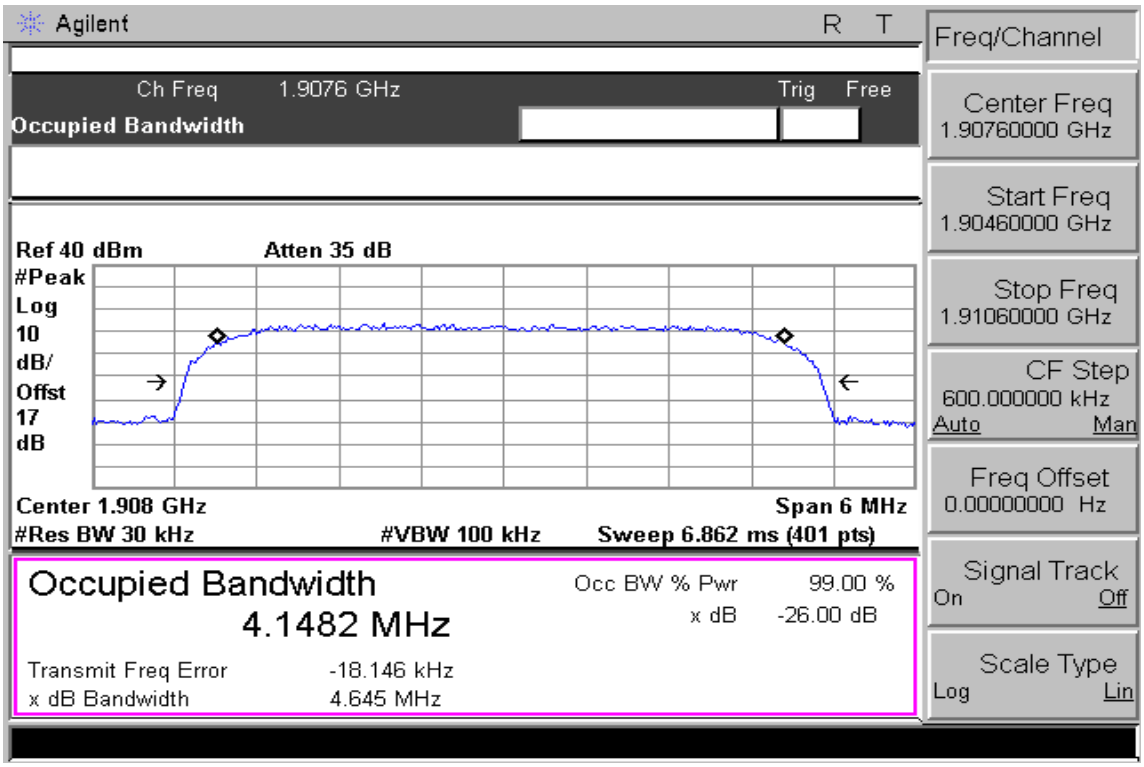


Figure 7-16 HSUPA B2 Channel Low

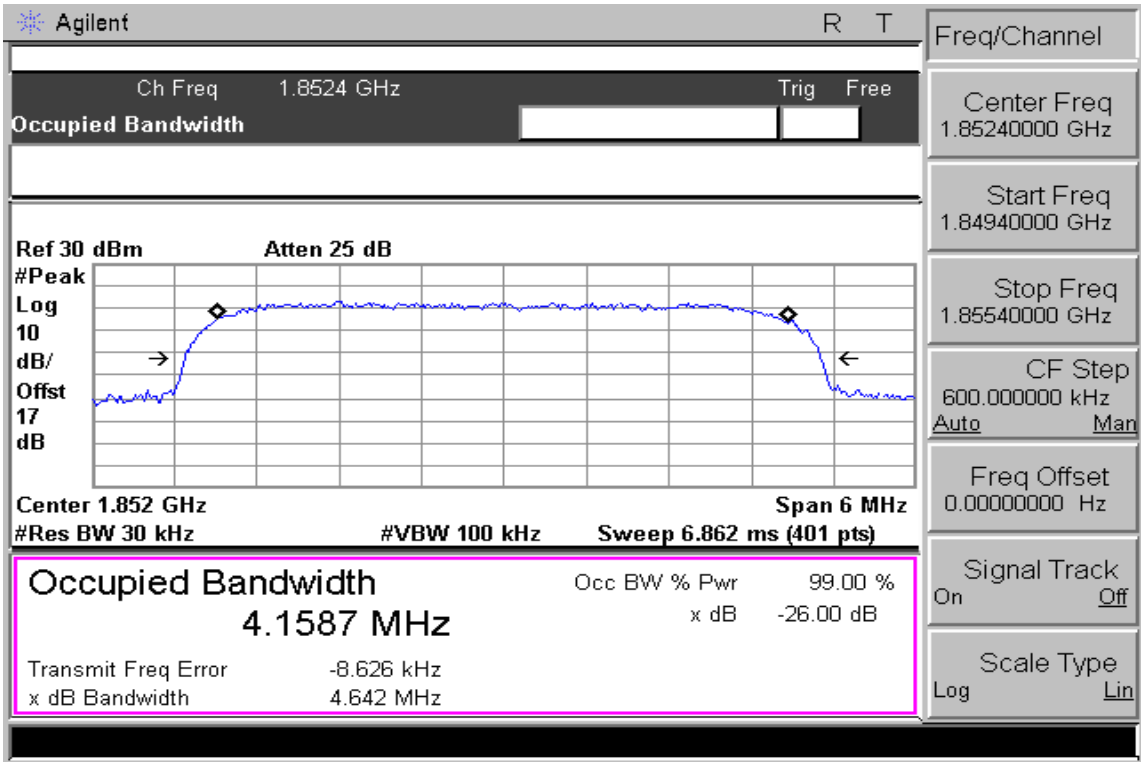


Figure 7-17 HSUPA B2 Channel Mid

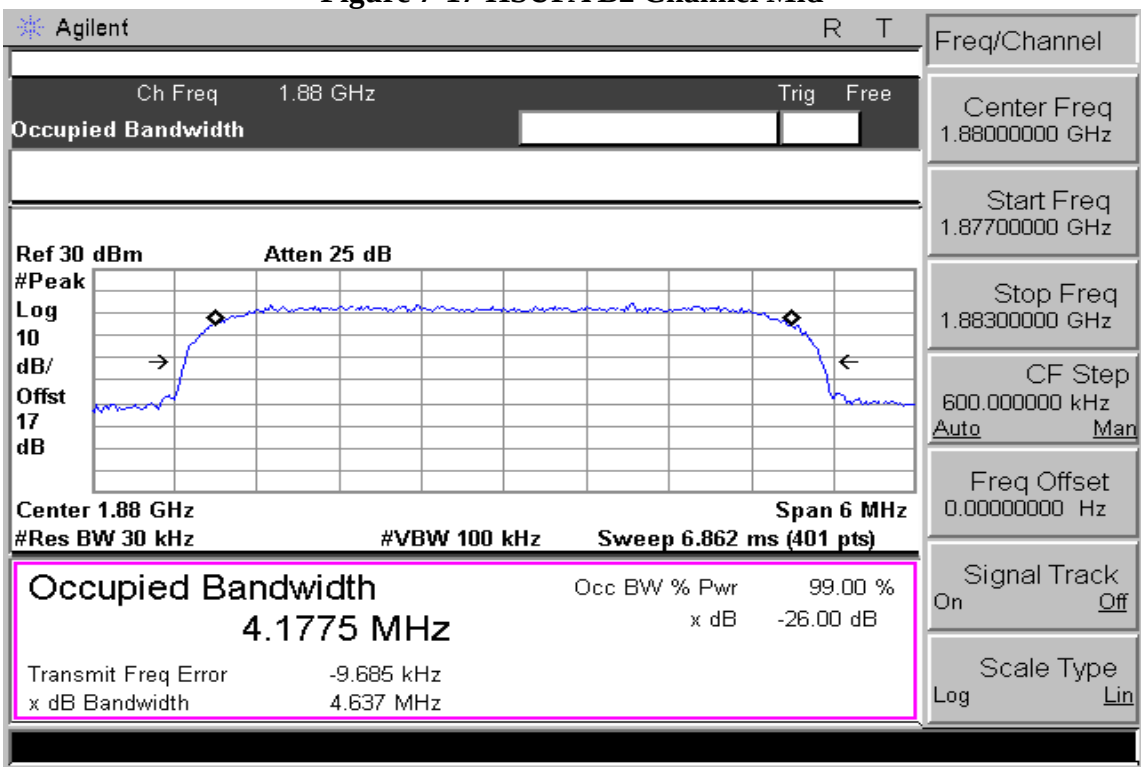


Figure 7-18: HSUPA B2 Channel High

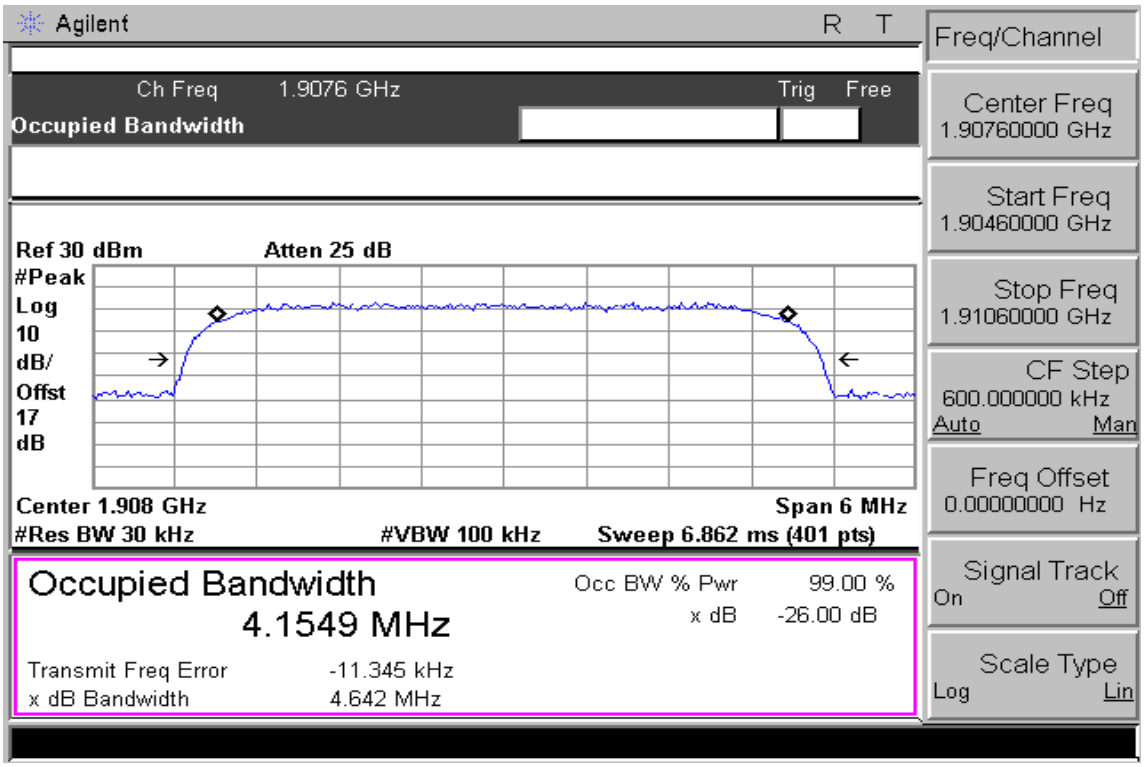


Figure 7-19 WCDMA B5 Channel Low

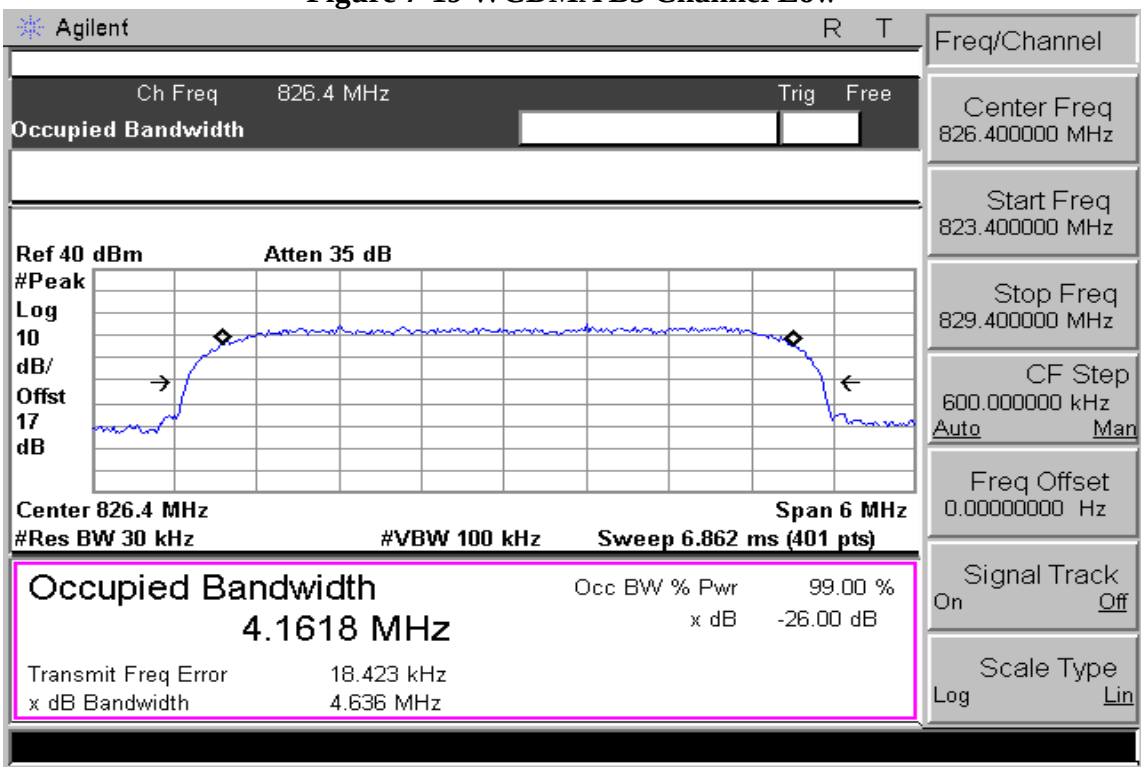


Figure 7-20 WCDMA B5 Channel Mid

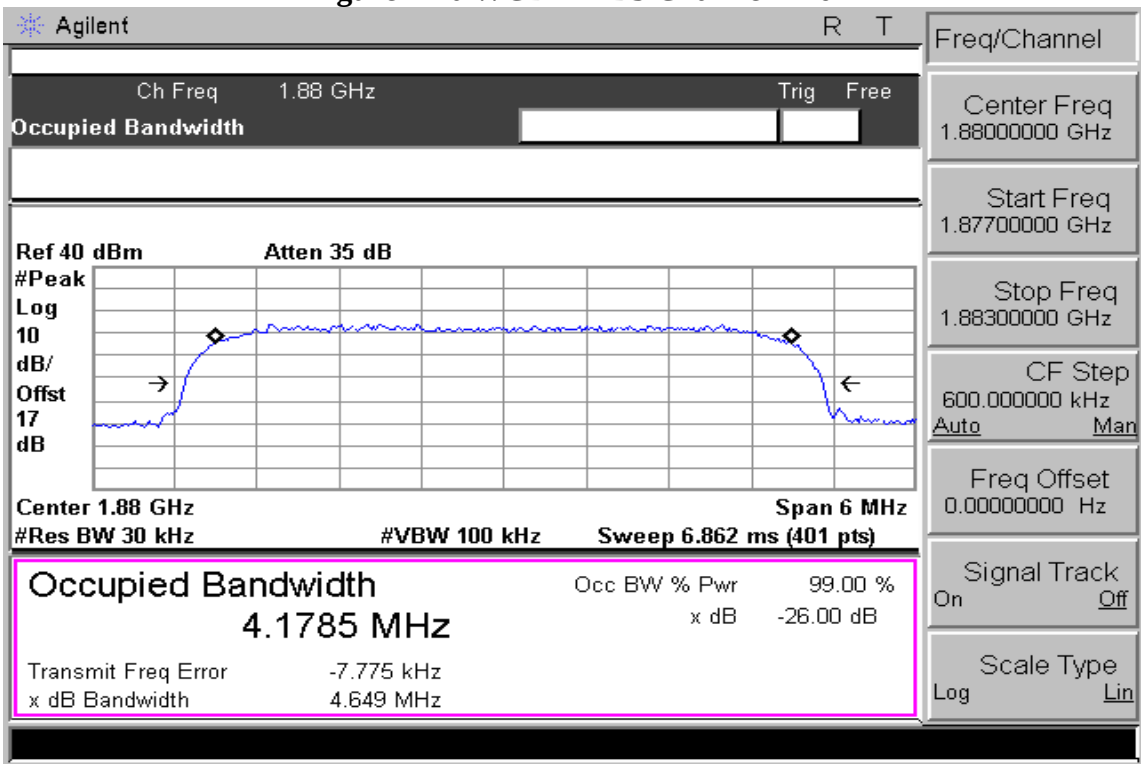


Figure 7-21 WCDMA B5 Channel High

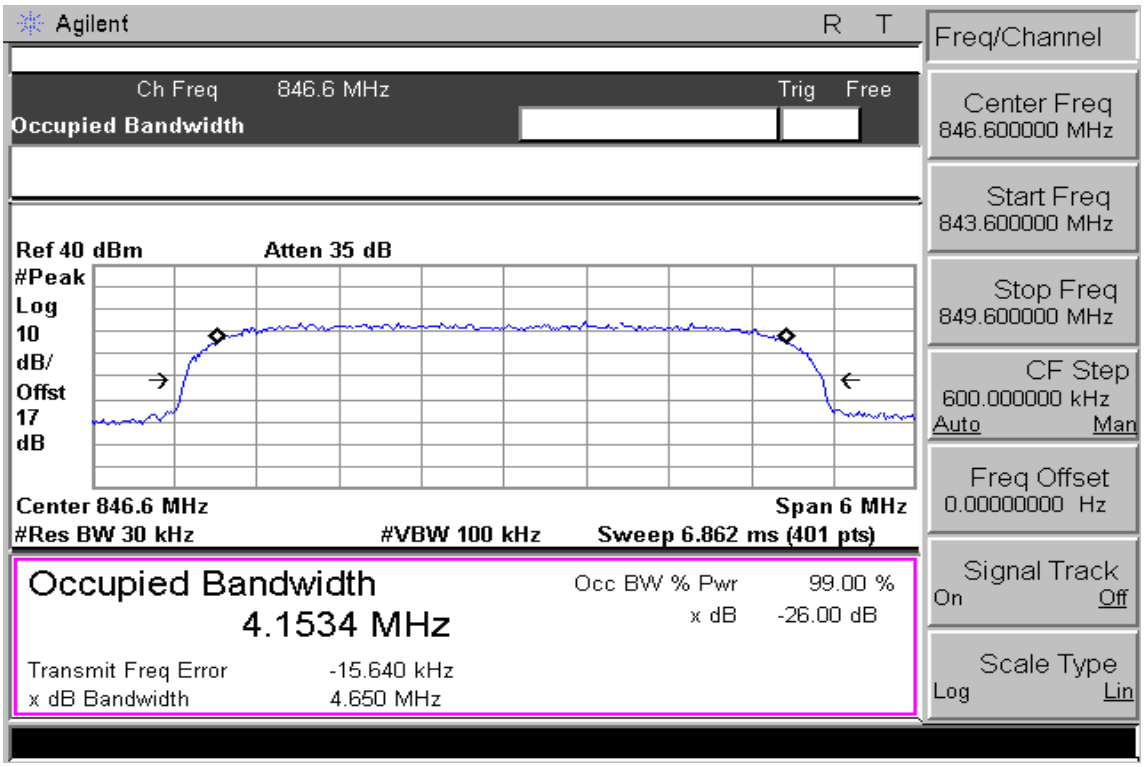


Figure 7-22 HSUPA B5 Channel Low

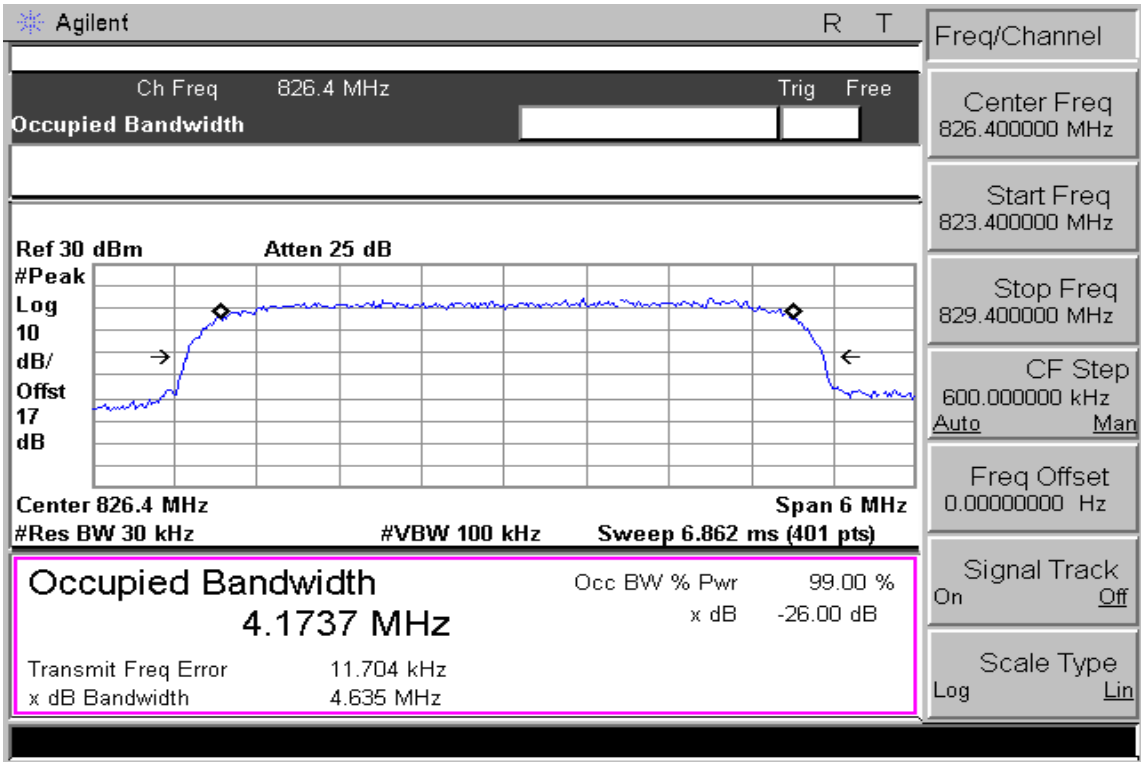


Figure 7-23 HSUPA B5 Channel Mid

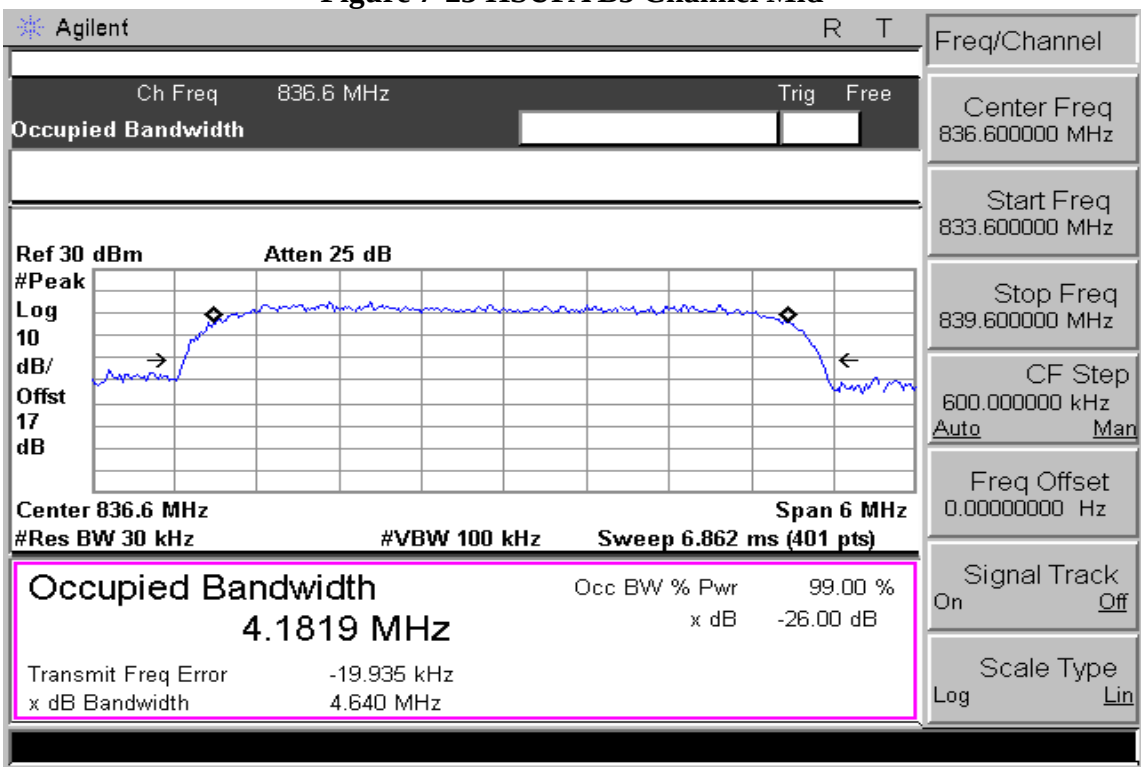
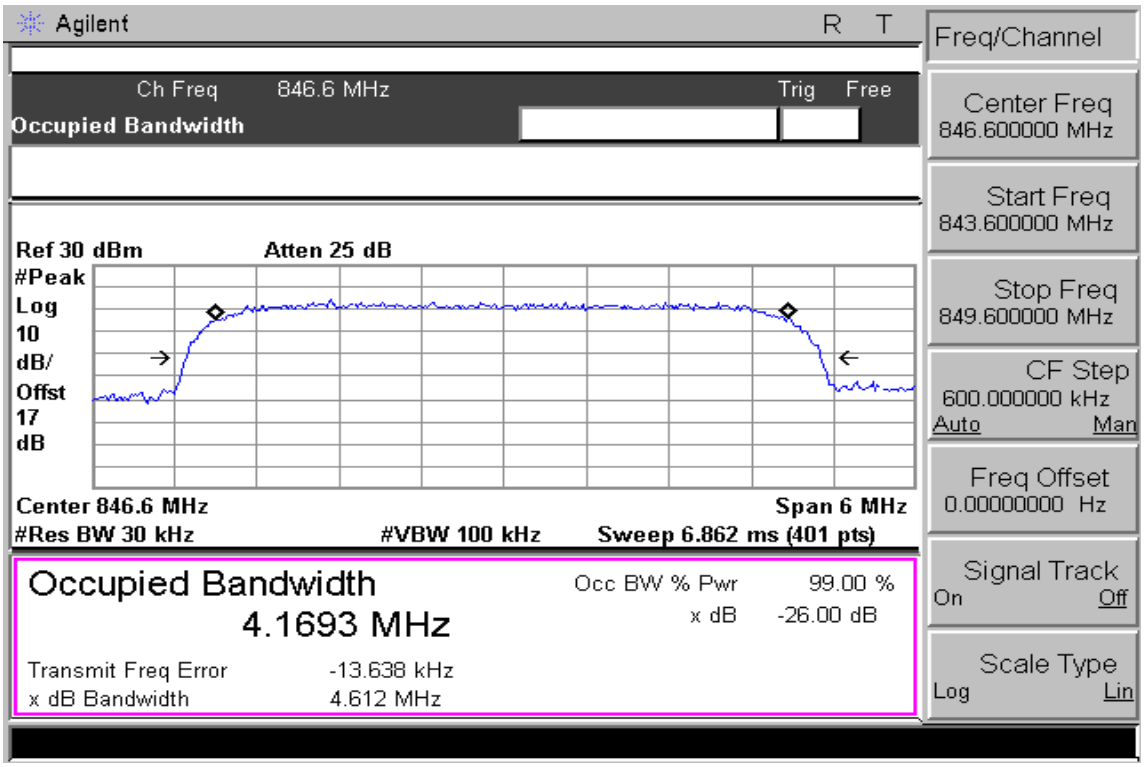


Figure 7-24 HSUPA B5 Channel High



8. OUT OF BAND EMISSION AT ANTENNA TERMINALS

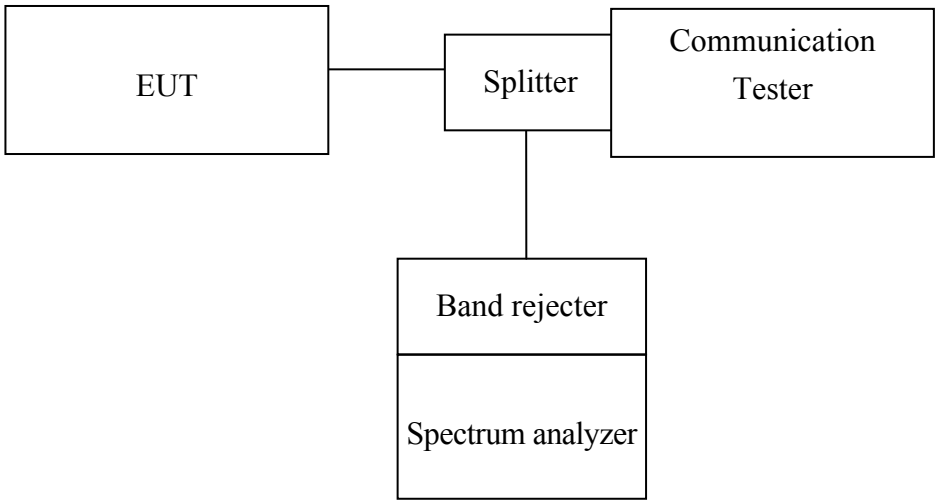
8.1. Standard Applicable:

According to FCC §2.1051.

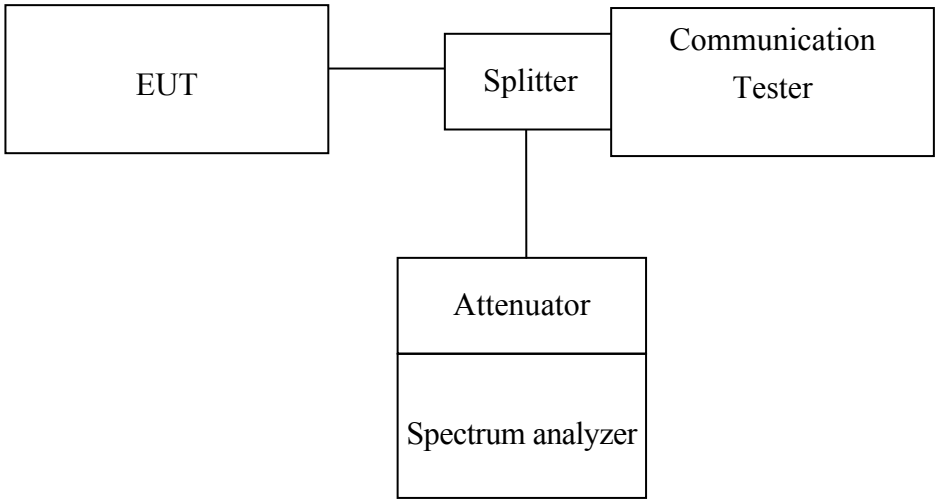
FCC §22.917(a),§24.238(a) the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specified in the instruction manual and/ or alignment procedure, shall not be less than 43 + 10 log (mean output power in watts) dBc below the mean power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

8.2. Test SET-UP:

Out of band emission



Band Edge



8.3. 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= 10 th harmonic. Limit = -13dBm

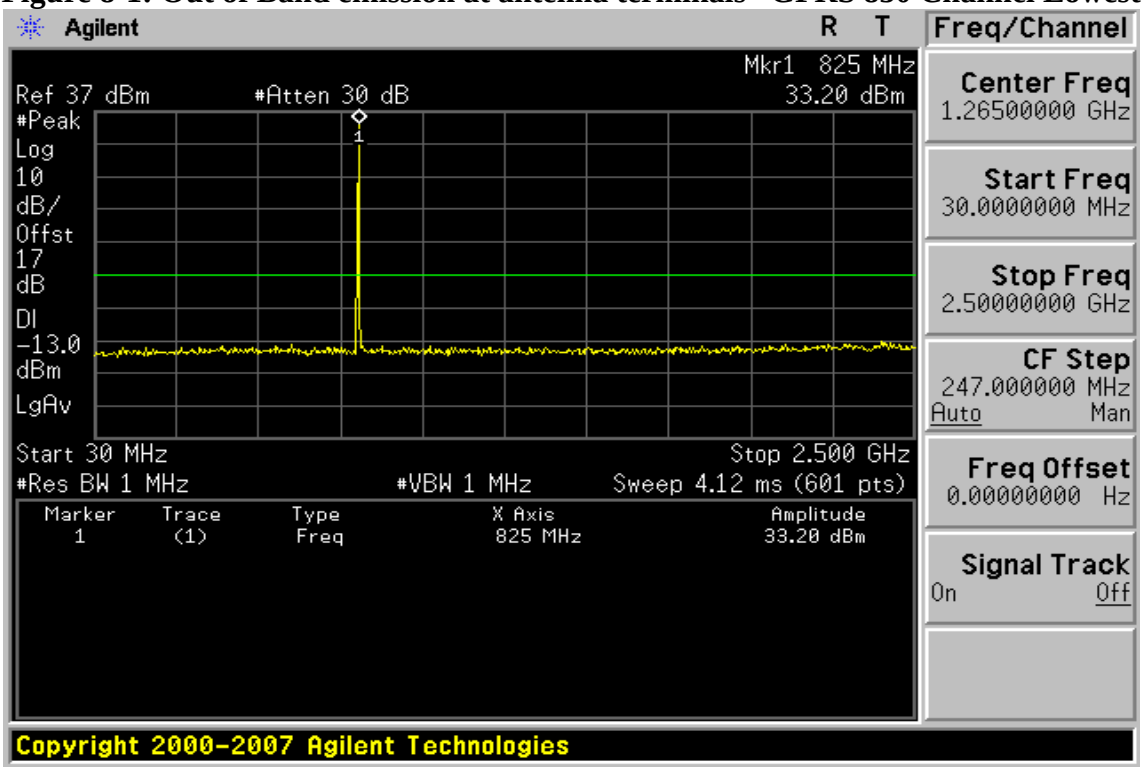
Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions. Limit, -13dBm.

8.4. Measurement Equipment Used:

Refer to section 2.4 in this report

8.5. Measurement Result:

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



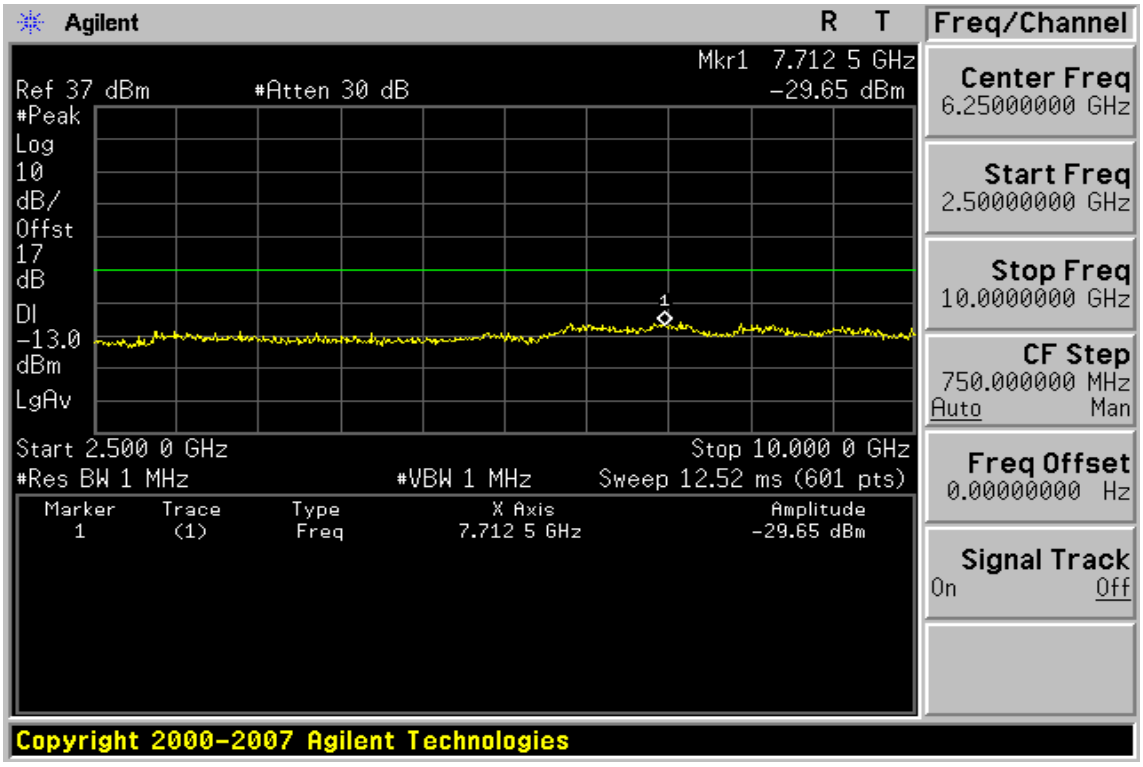
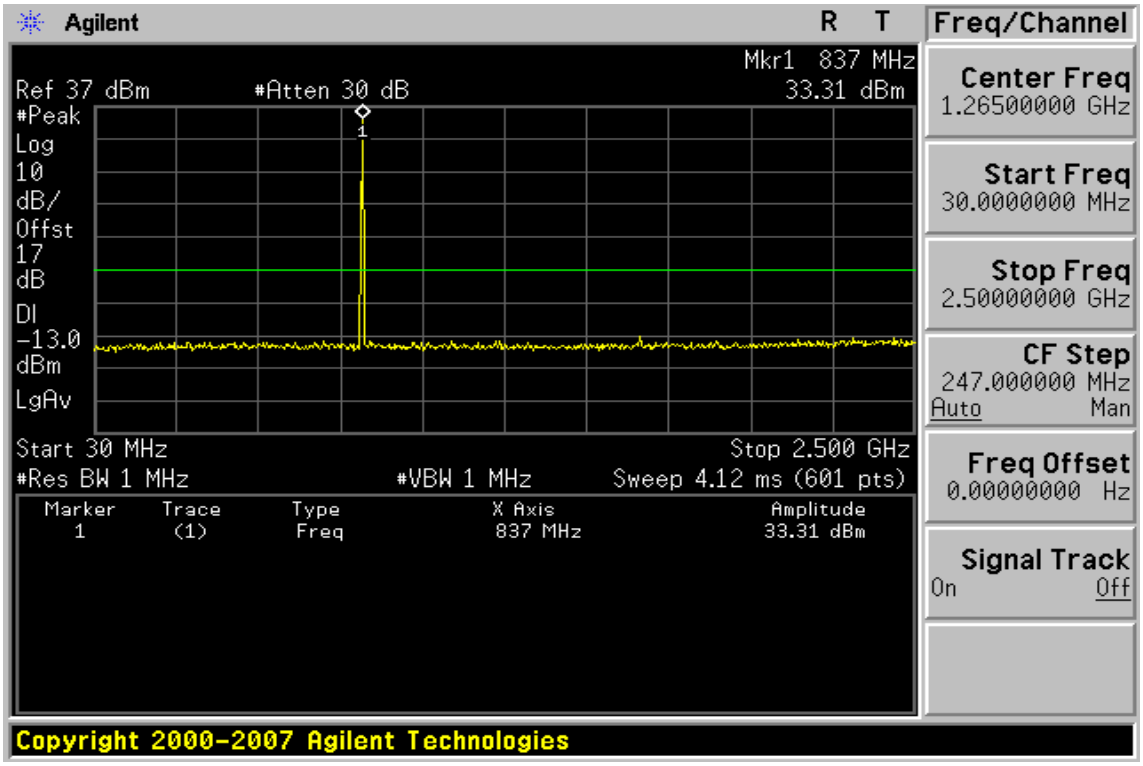


Figure 8-2: Out of Band emission at antenna terminals –GPRS 850 Channel Mid



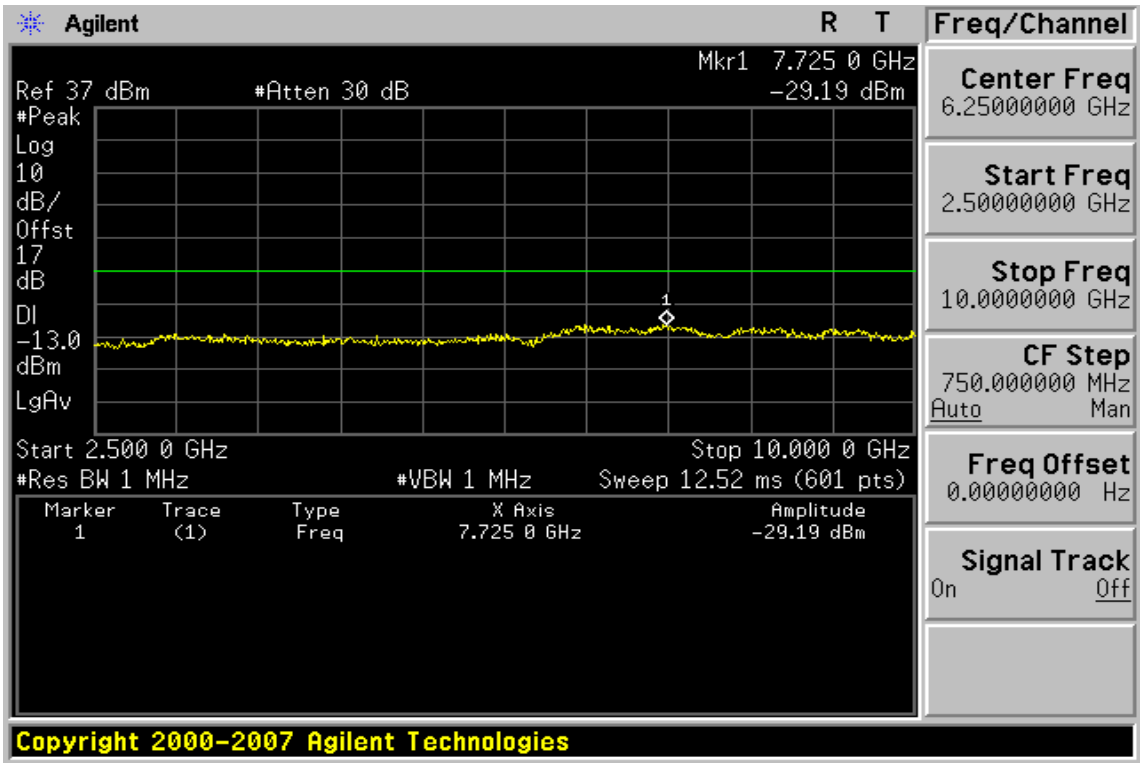
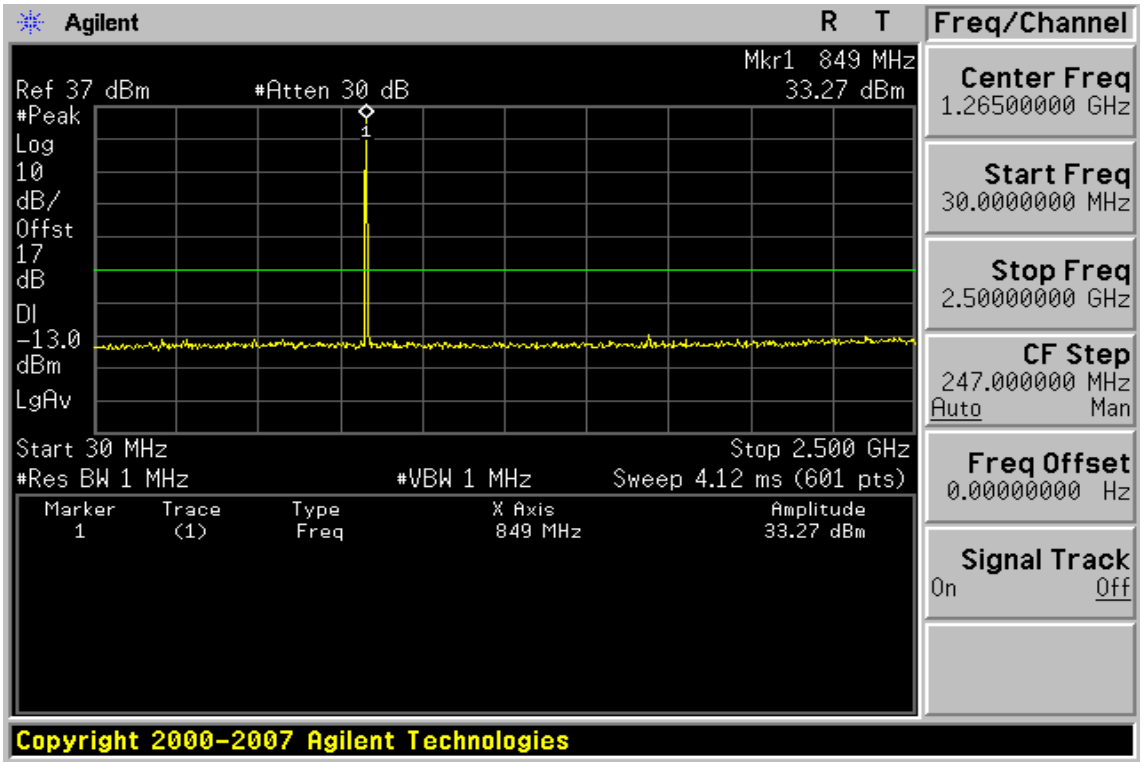


Figure 8-3: Out of Band emission at antenna terminals–GPRS 850 Channel Highest



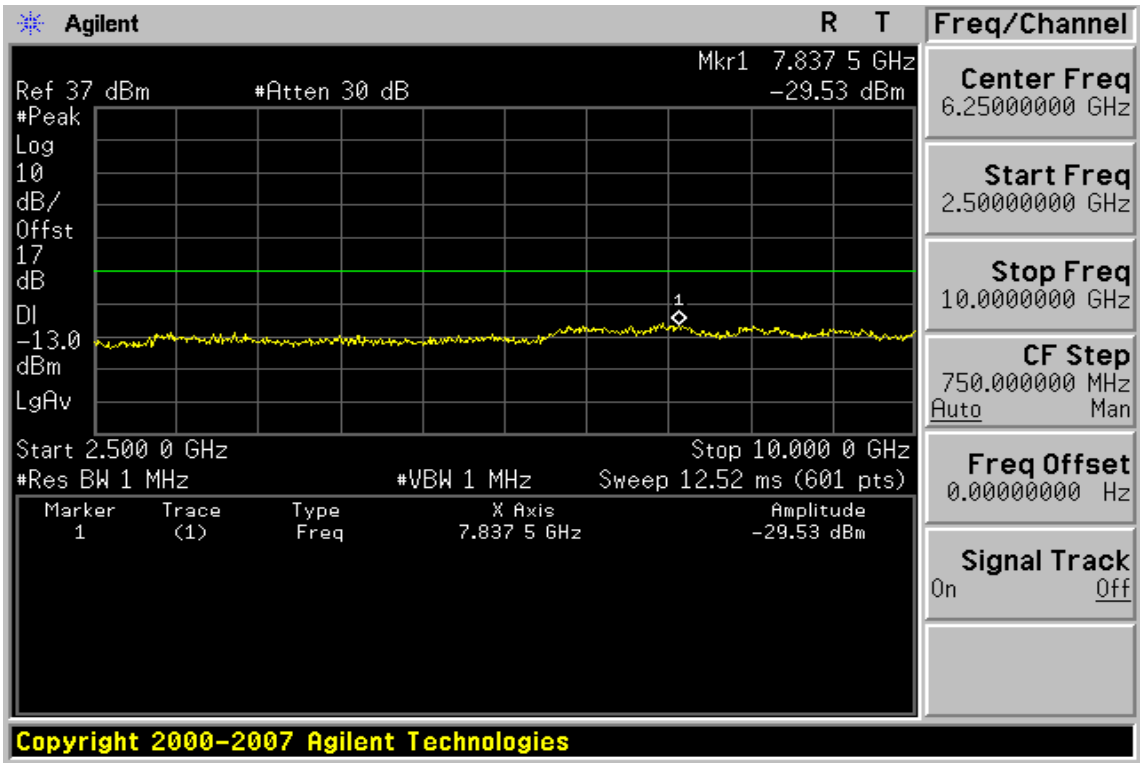


Figure 8-4: Band edge emission at antenna terminals –GPRS 850 Channel Lowest

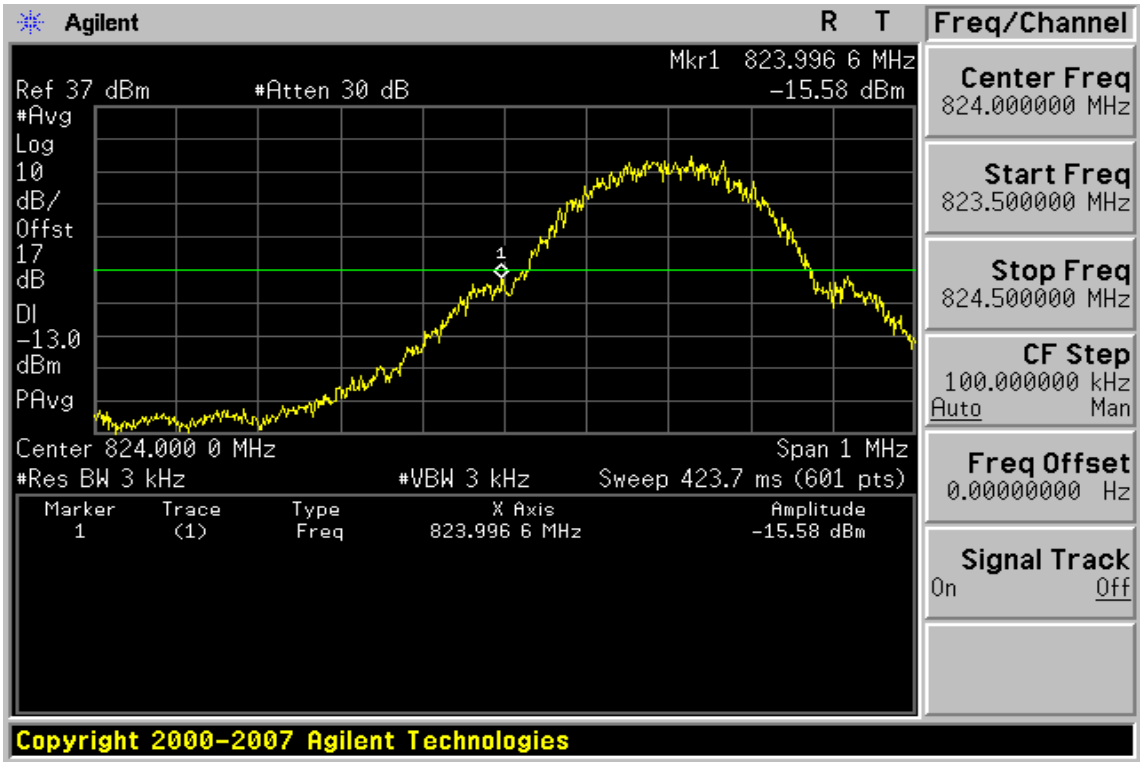


Figure 8-5: Band edge emission at antenna terminals –GPRS 850 Channel Highest

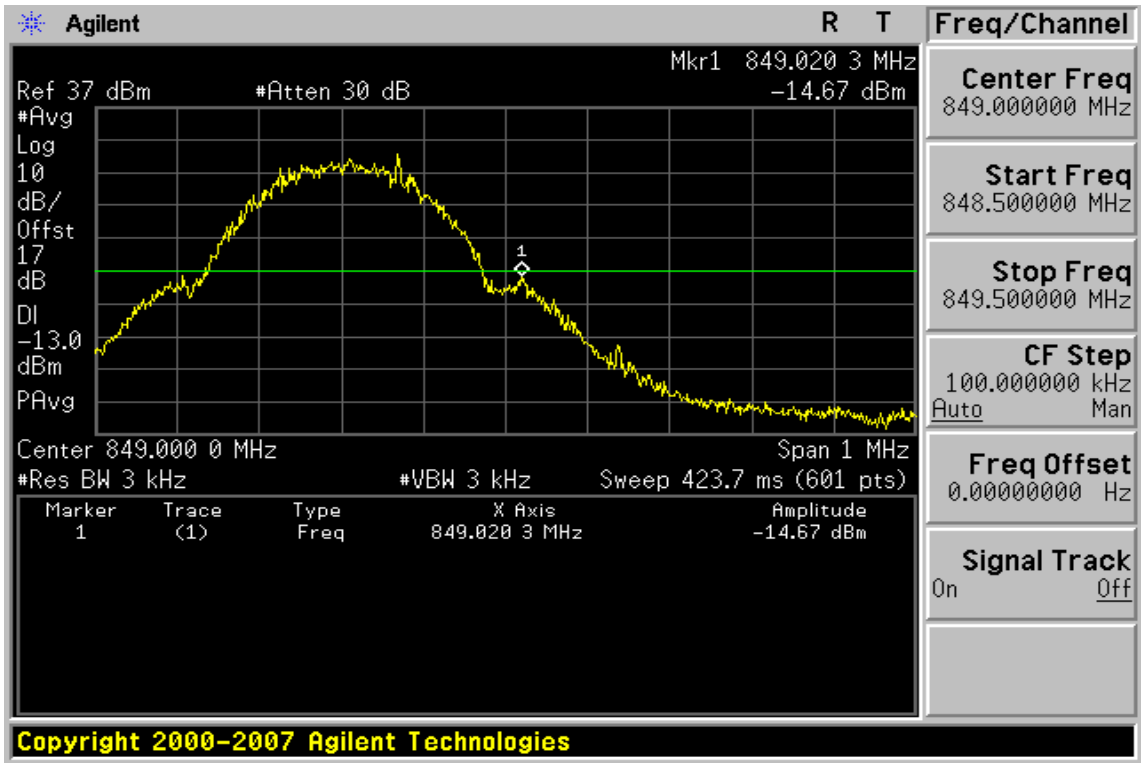
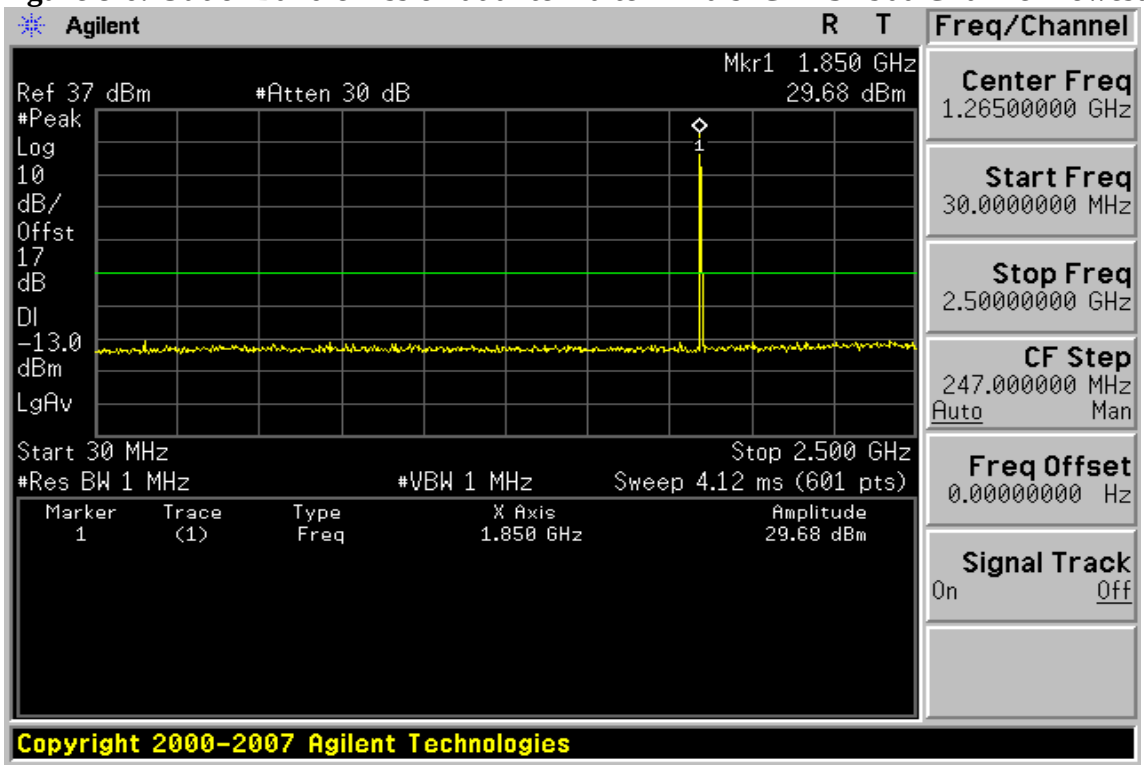


Figure 8-6: Out of Band emission at antenna terminals–GPRS 1900 Channel Lowest



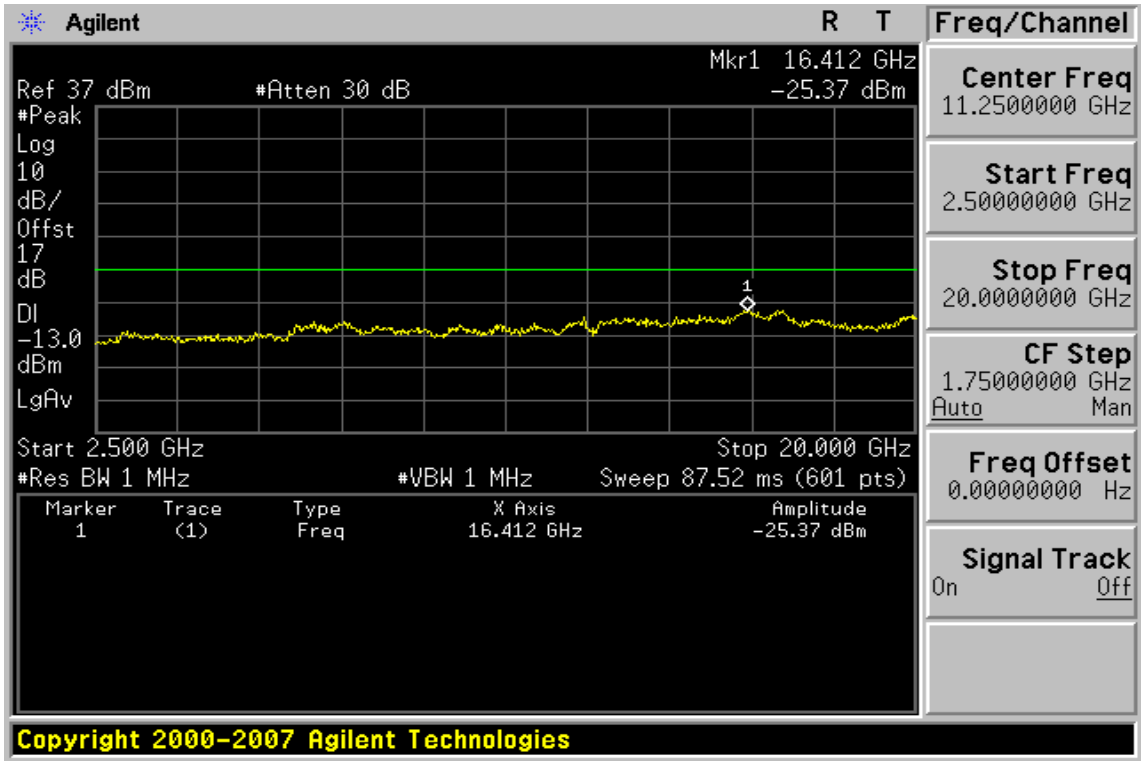
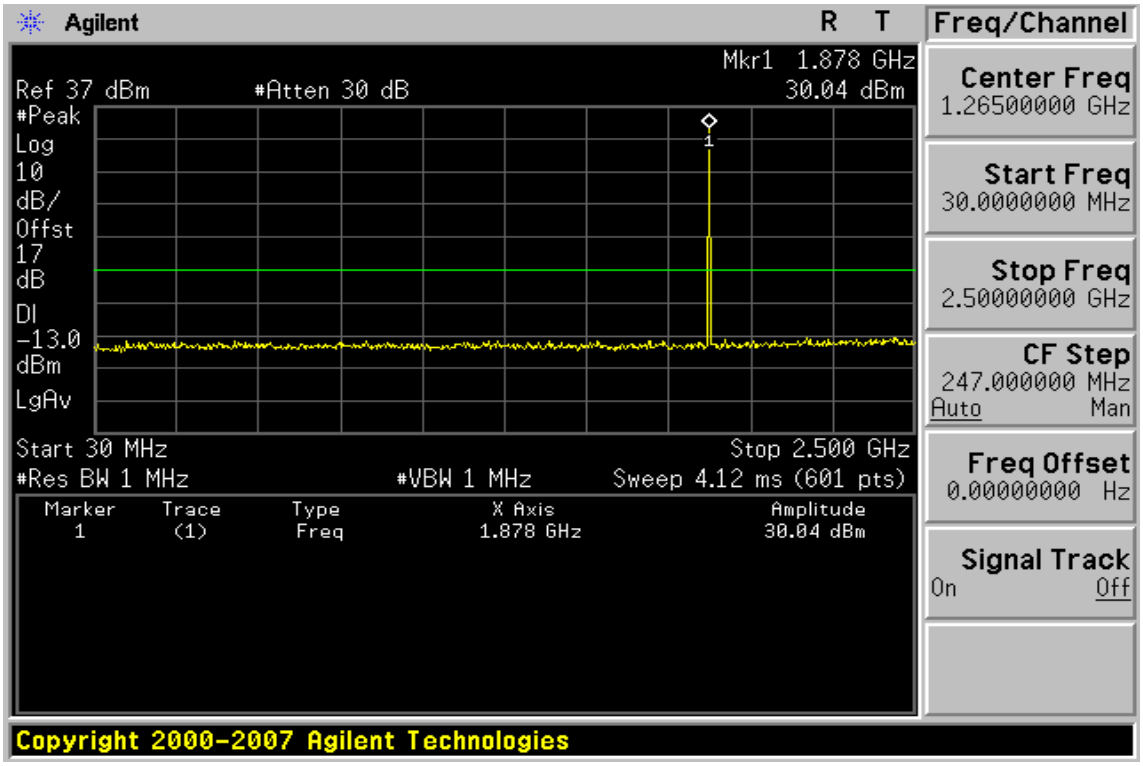


Figure 8-7: Out of Band emission at antenna terminals –GPRS 1900 Channel Mid



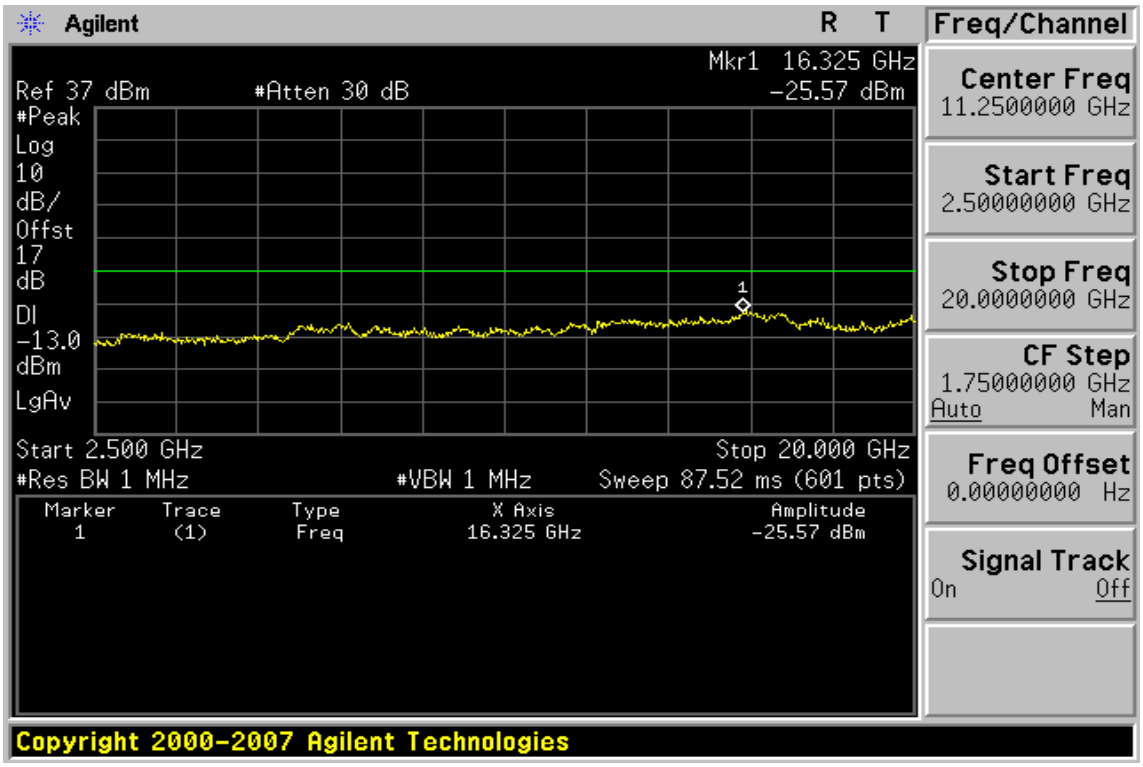
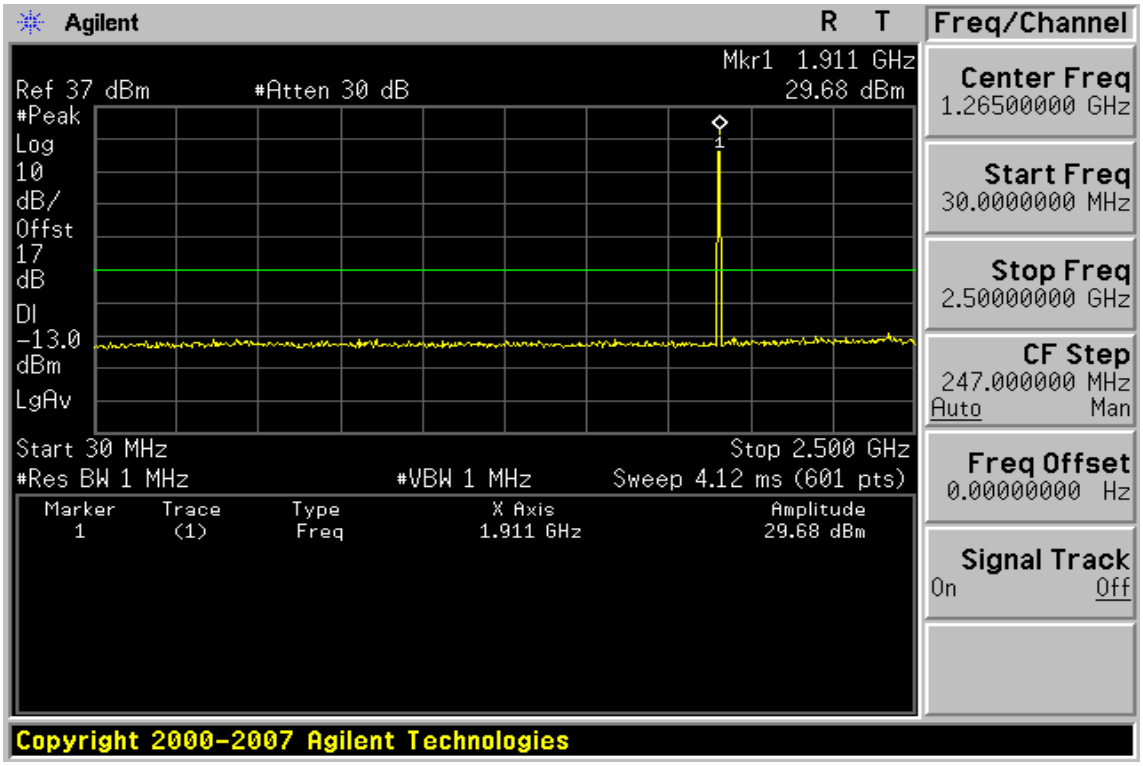


Figure 8-8: Out of Band emission at antenna terminals–GPRS 1900 Channel Highest



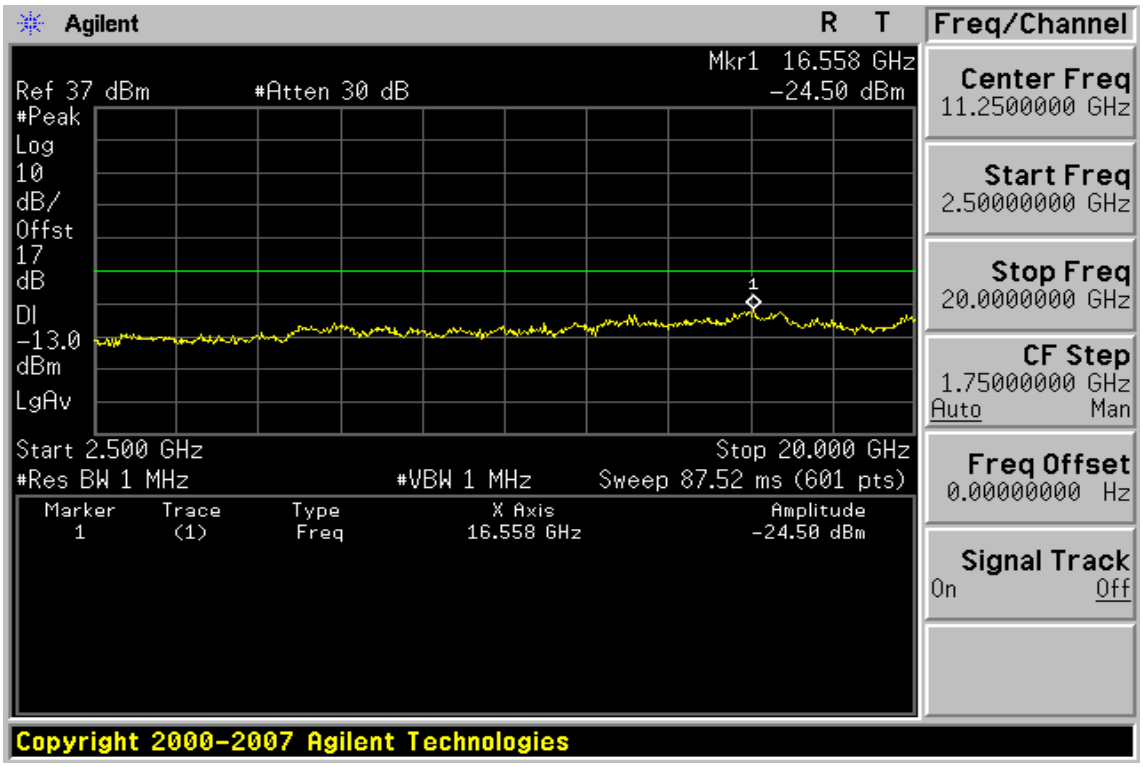


Figure 8-9: Bad edge emission at antenna terminals –GPRS 1900 Channel Lowest

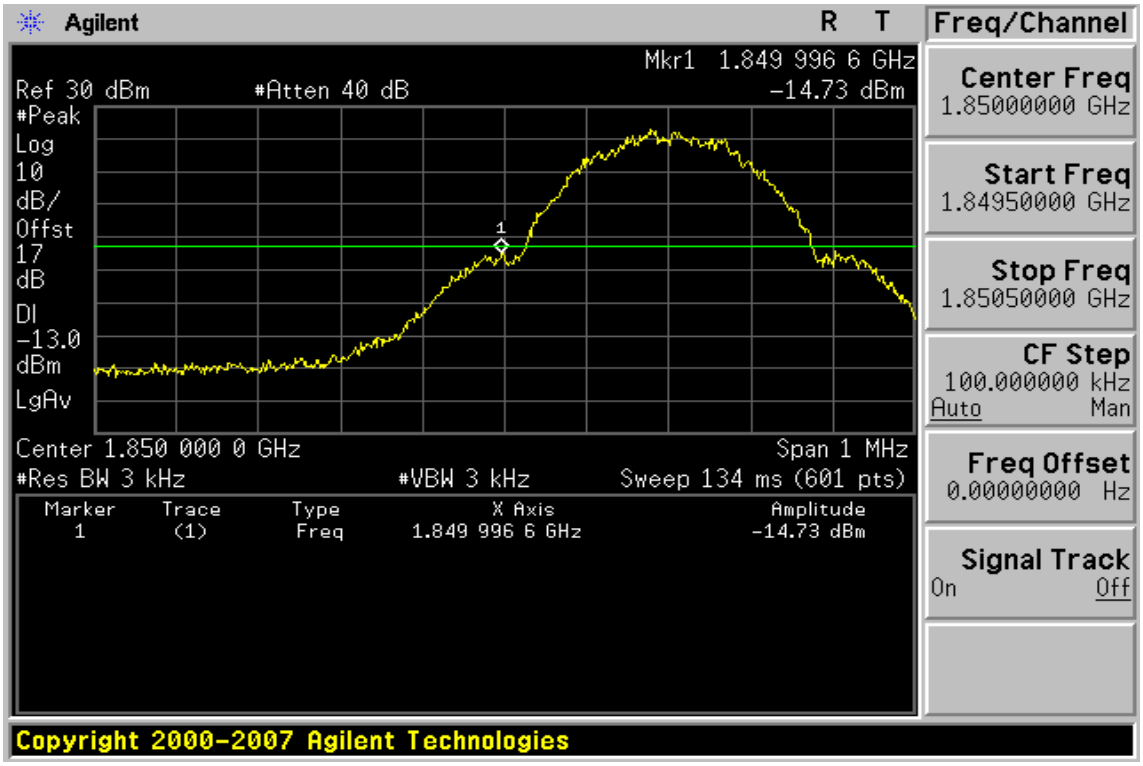


Figure 8-10: Band edge emission at antenna terminals –GPRS 1900 Channel Highest

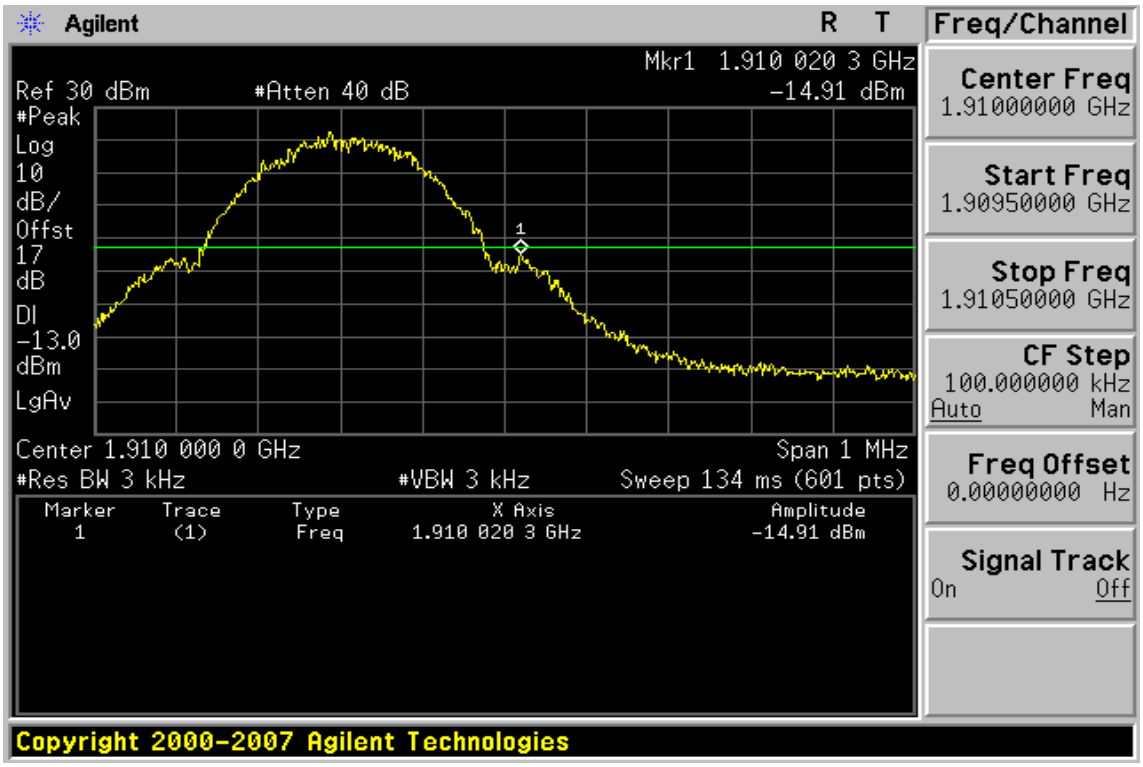
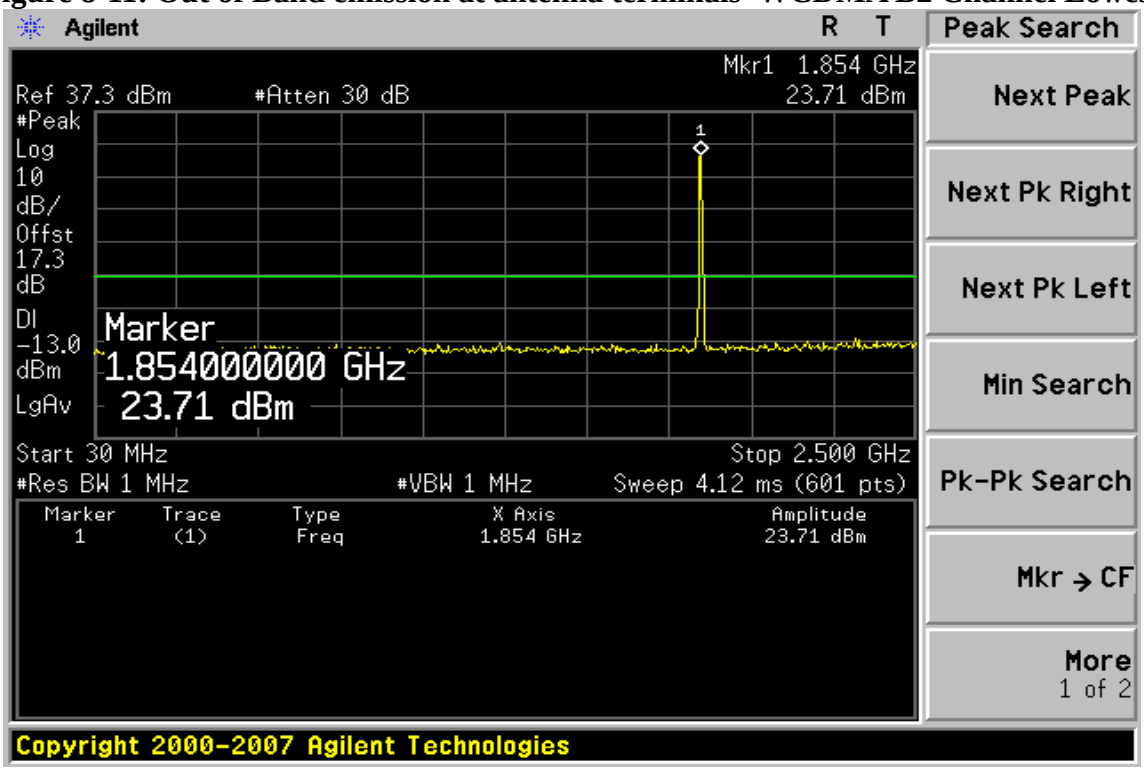


Figure 8-11: Out of Band emission at antenna terminals–WCDMA B2 Channel Lowest



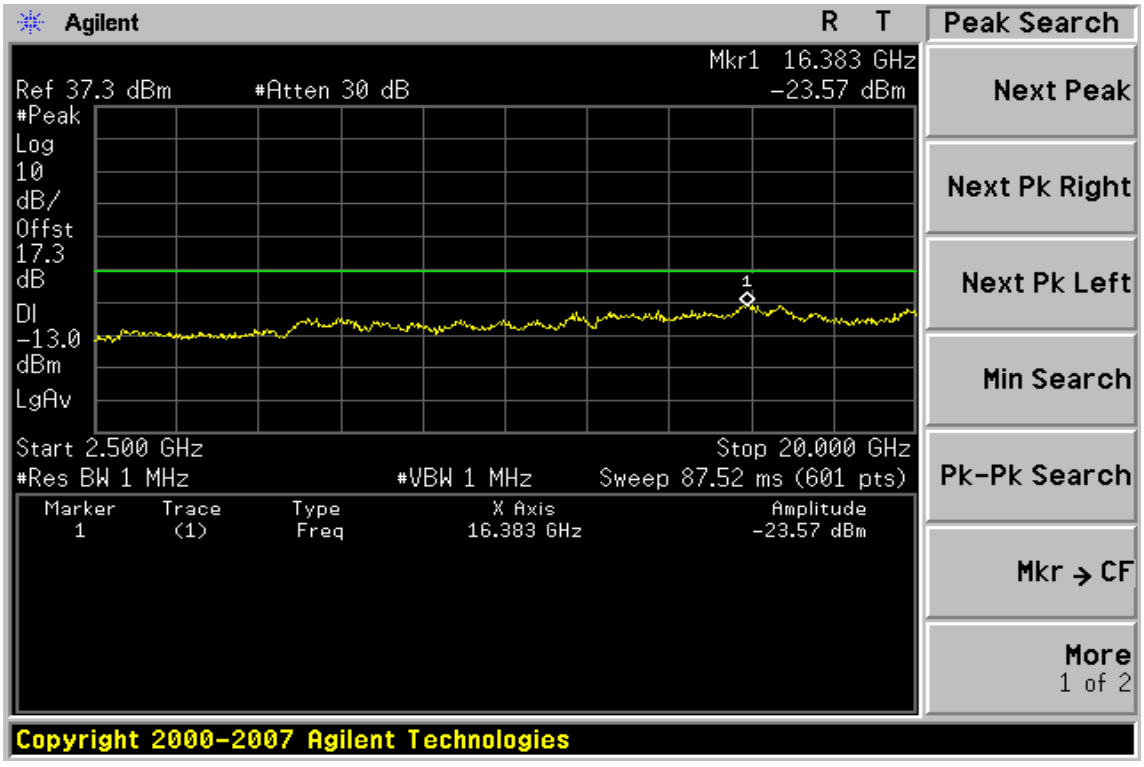
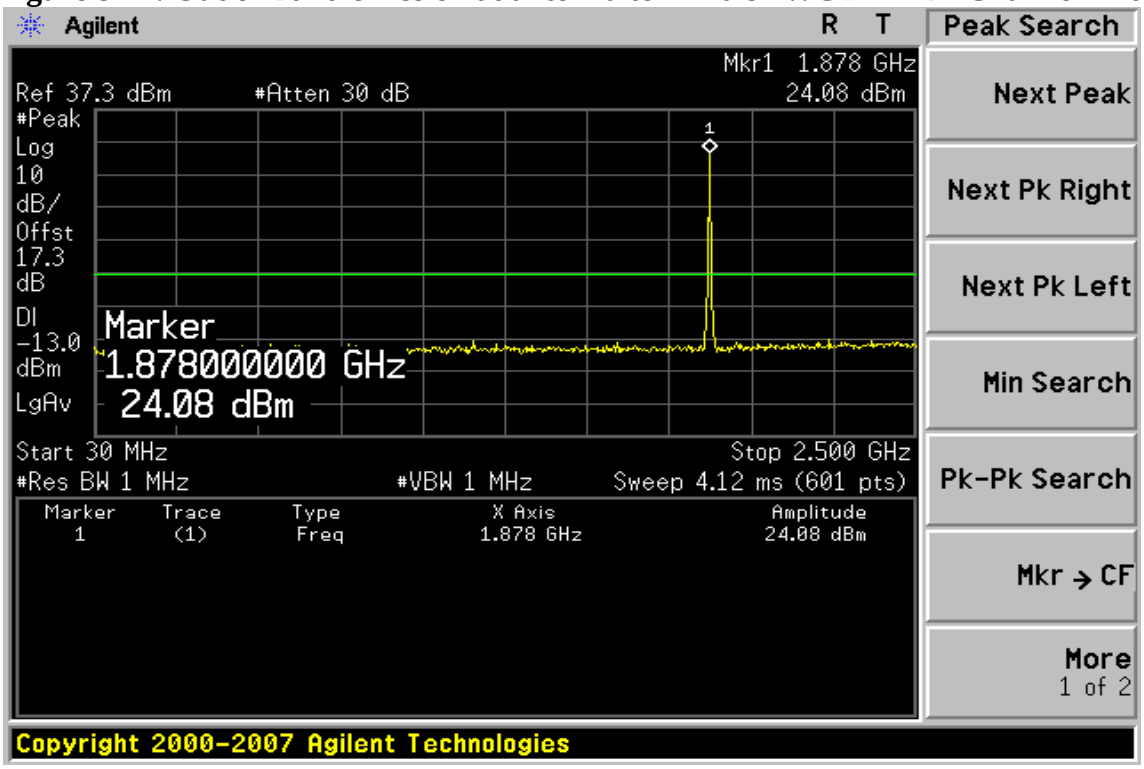


Figure 8-12: Out of Band emission at antenna terminals –WCDMA B2 Channel Mid



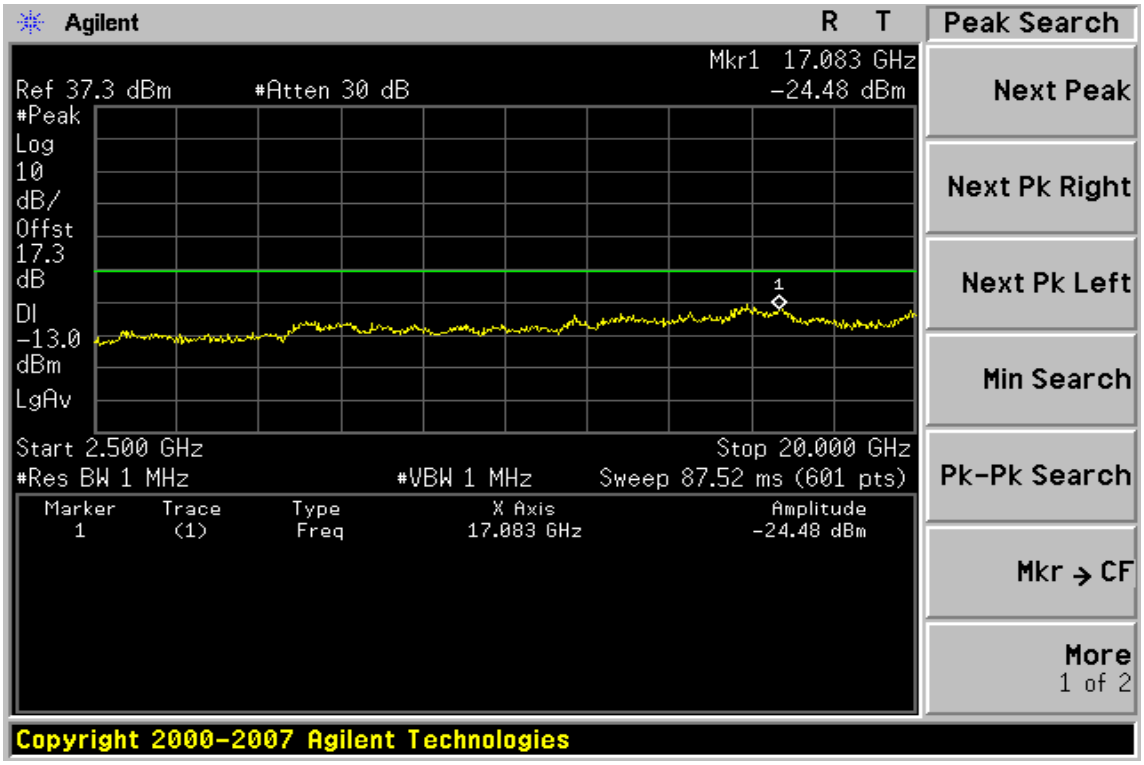
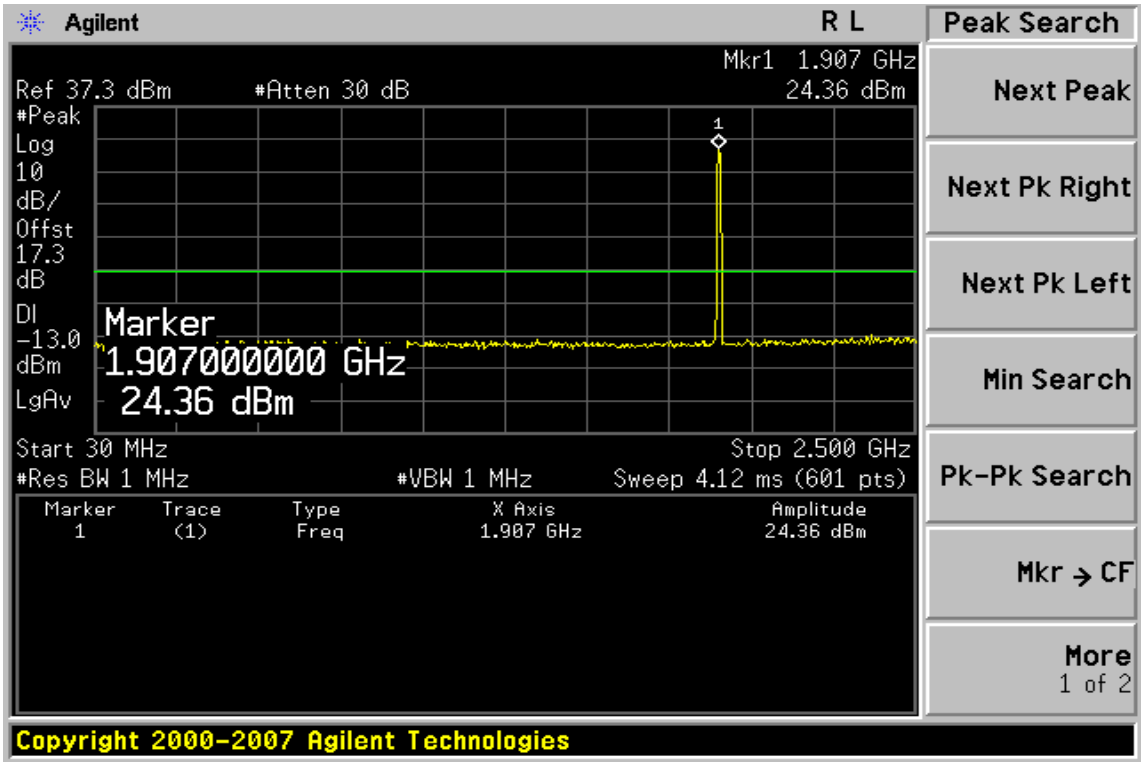


Figure 8-13: Out of Band emission at antenna terminals–WCDMA B2 Channel Highest



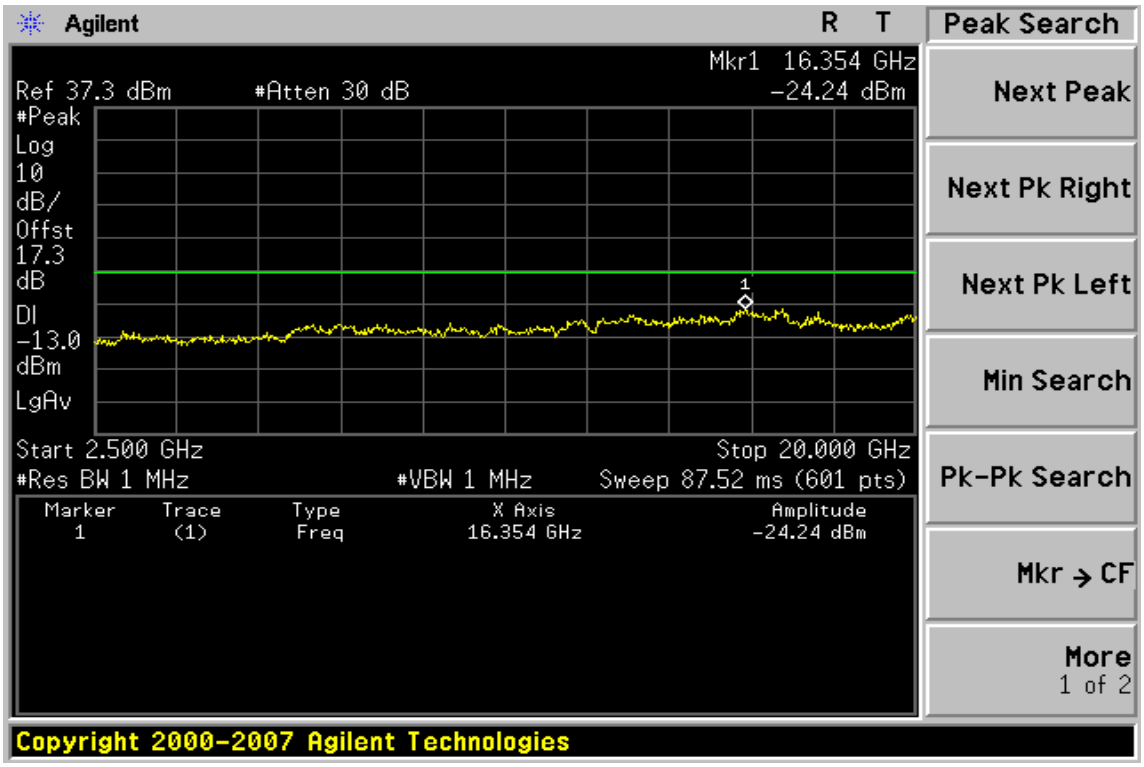


Figure 8-14: Band edge emission at antenna terminals –WCDMA B2 Channel Lowest

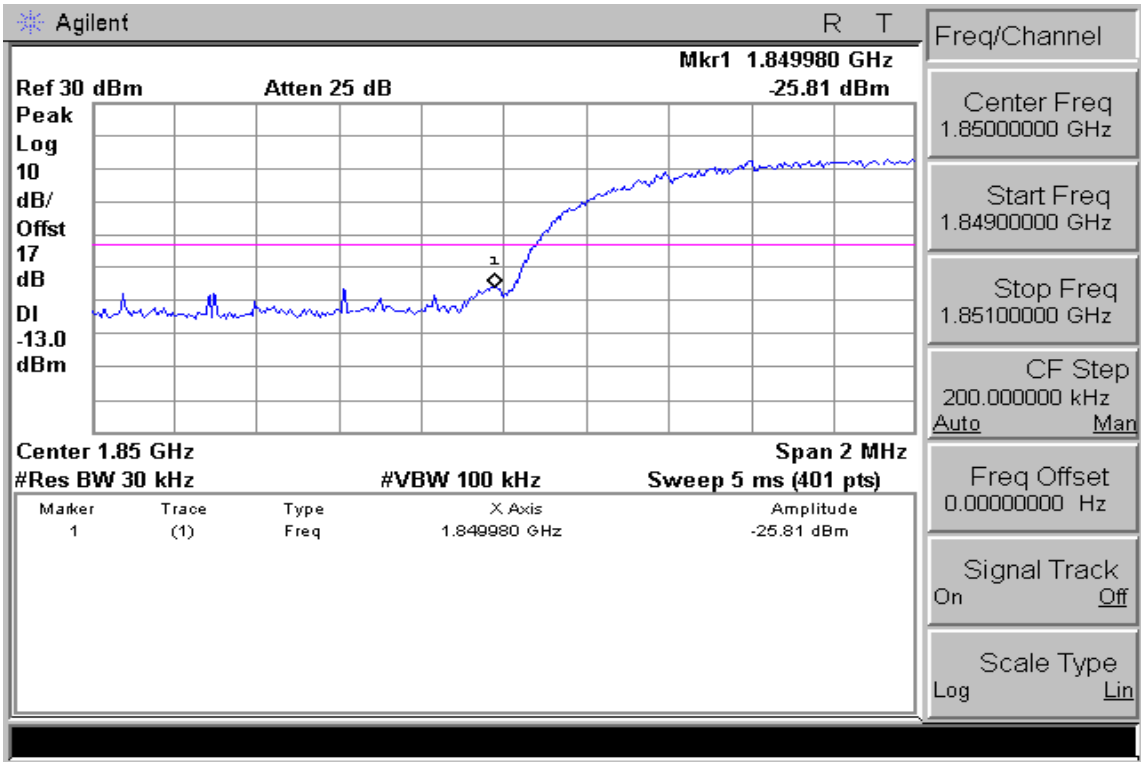


Figure 8-15: Band edge emission at antenna terminals –WCDMA B2 Channel Highest

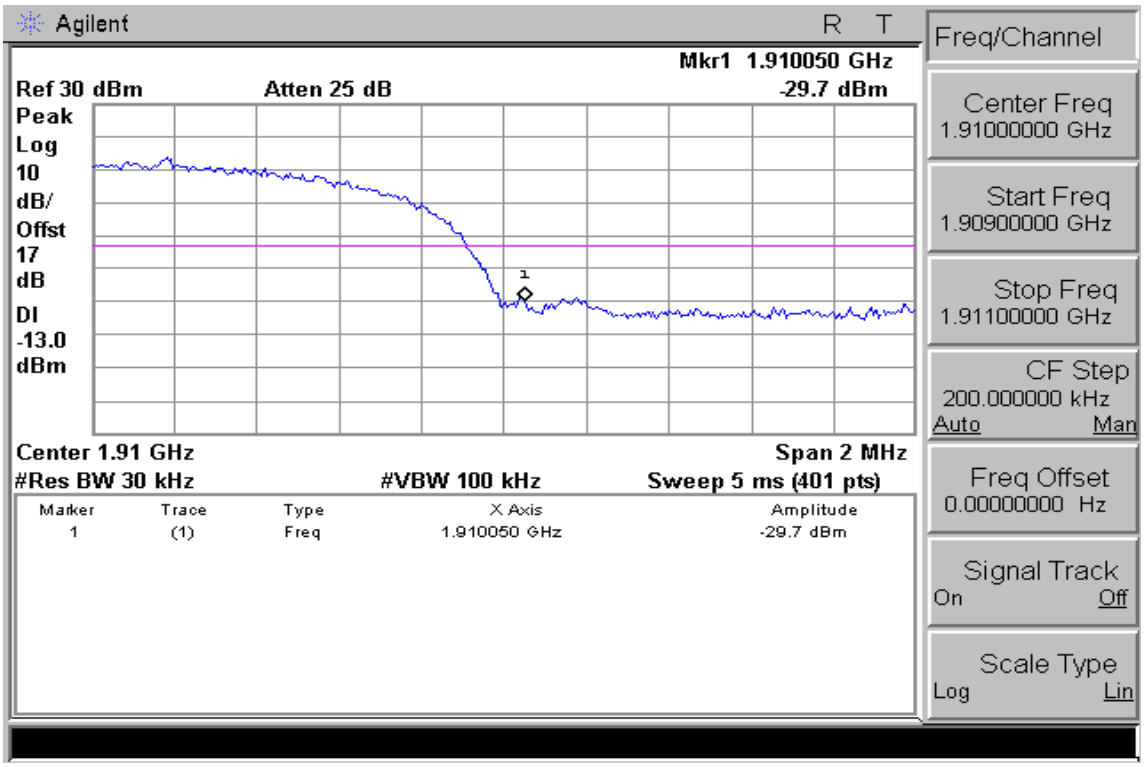
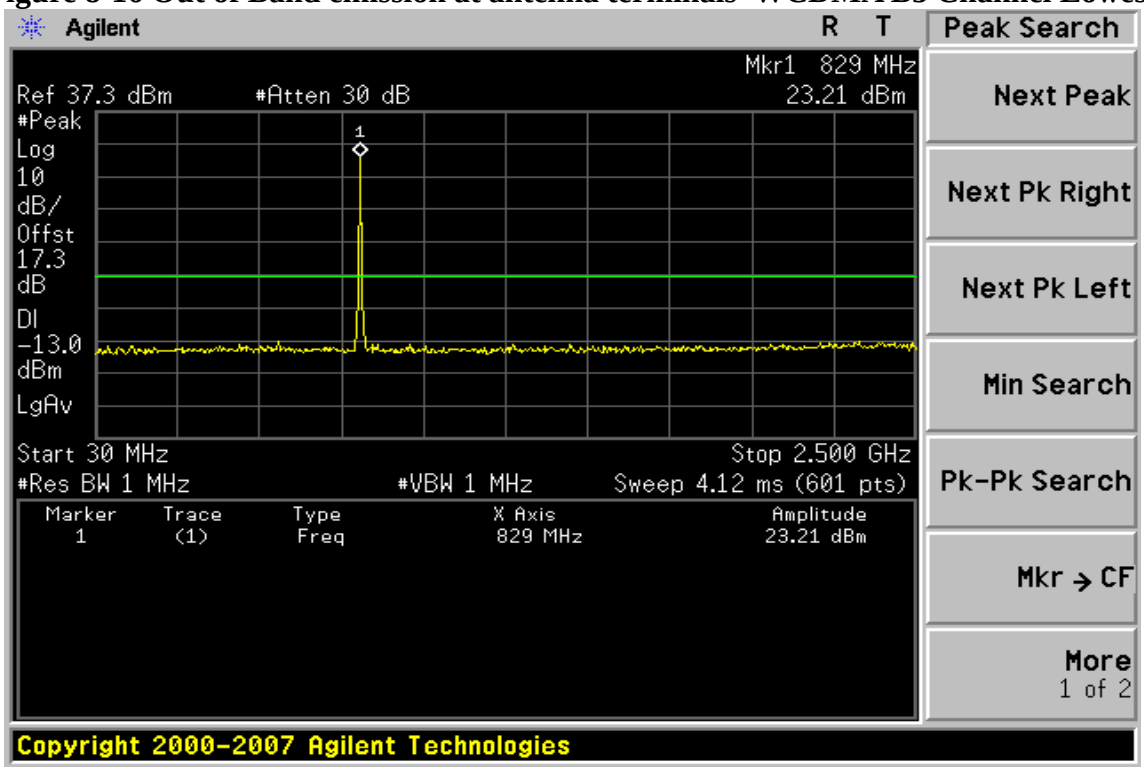


Figure 8-16 Out of Band emission at antenna terminals–WCDMA B5 Channel Lowest



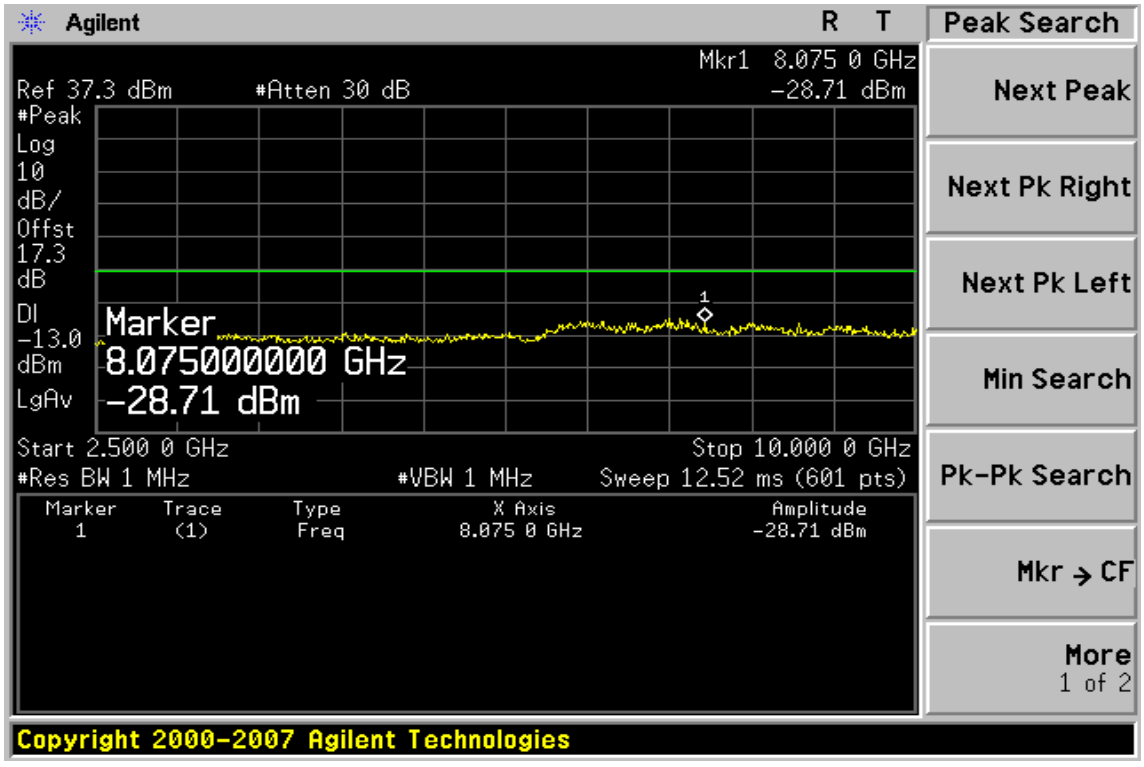
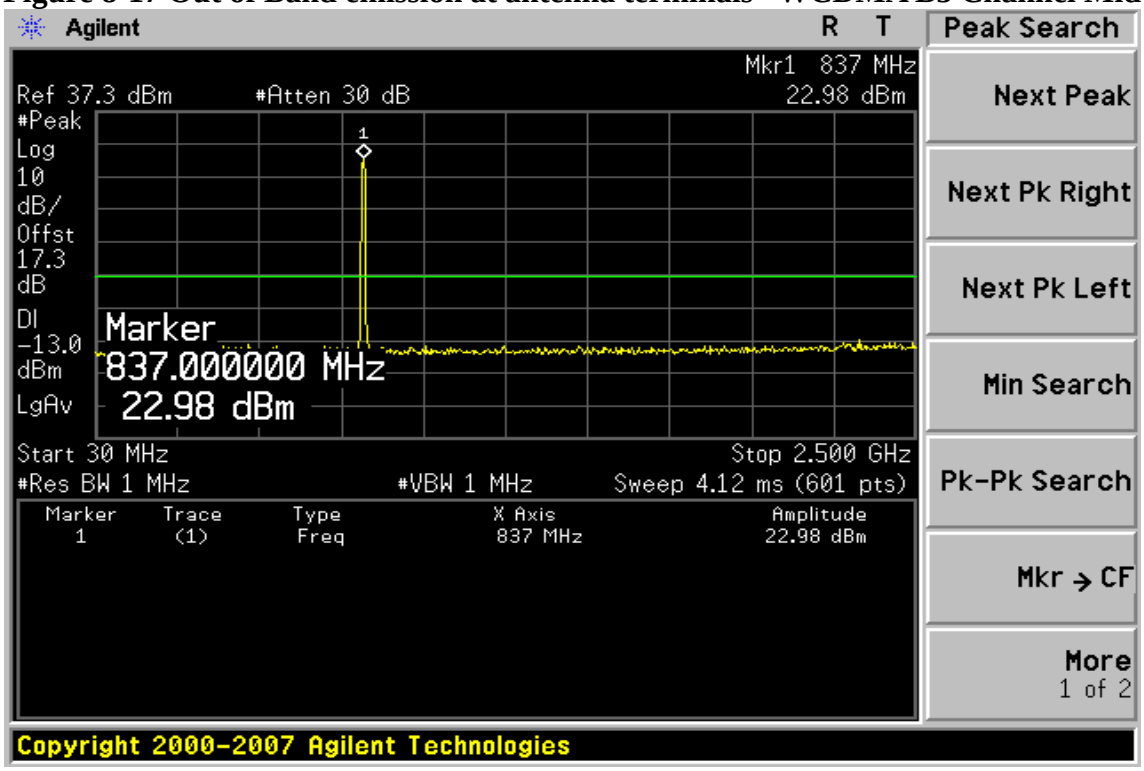


Figure 8-17 Out of Band emission at antenna terminals –WCDMA B5 Channel Mid



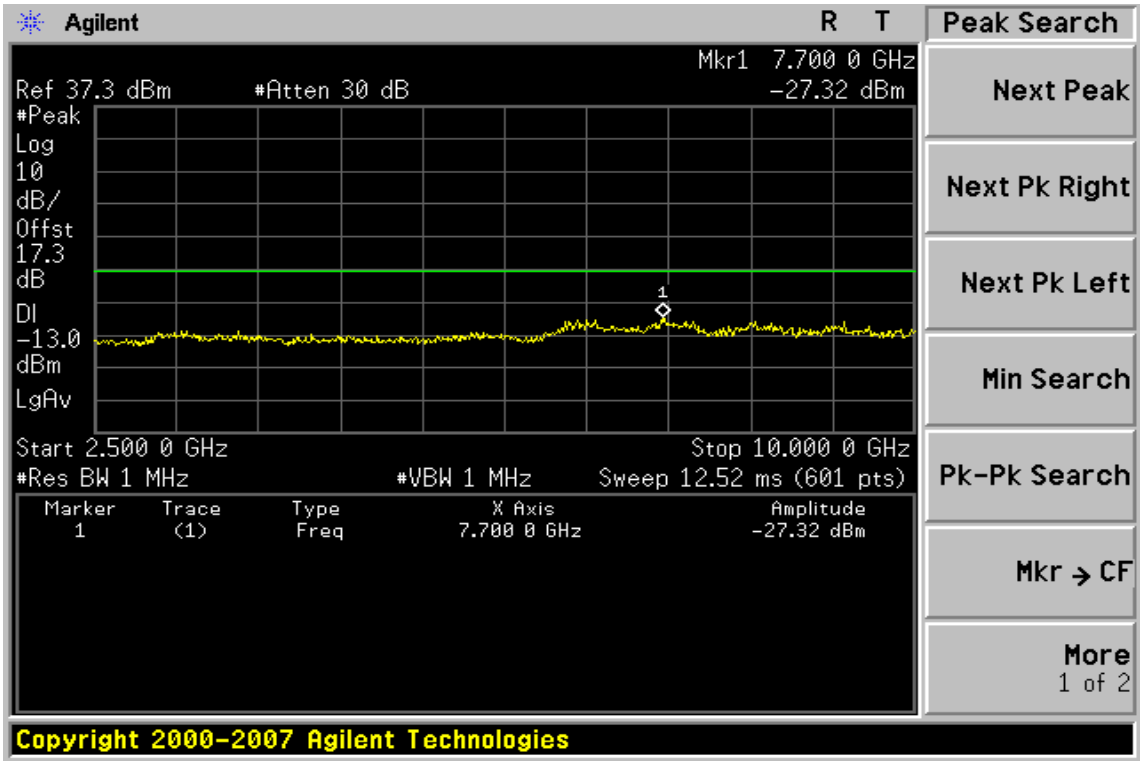
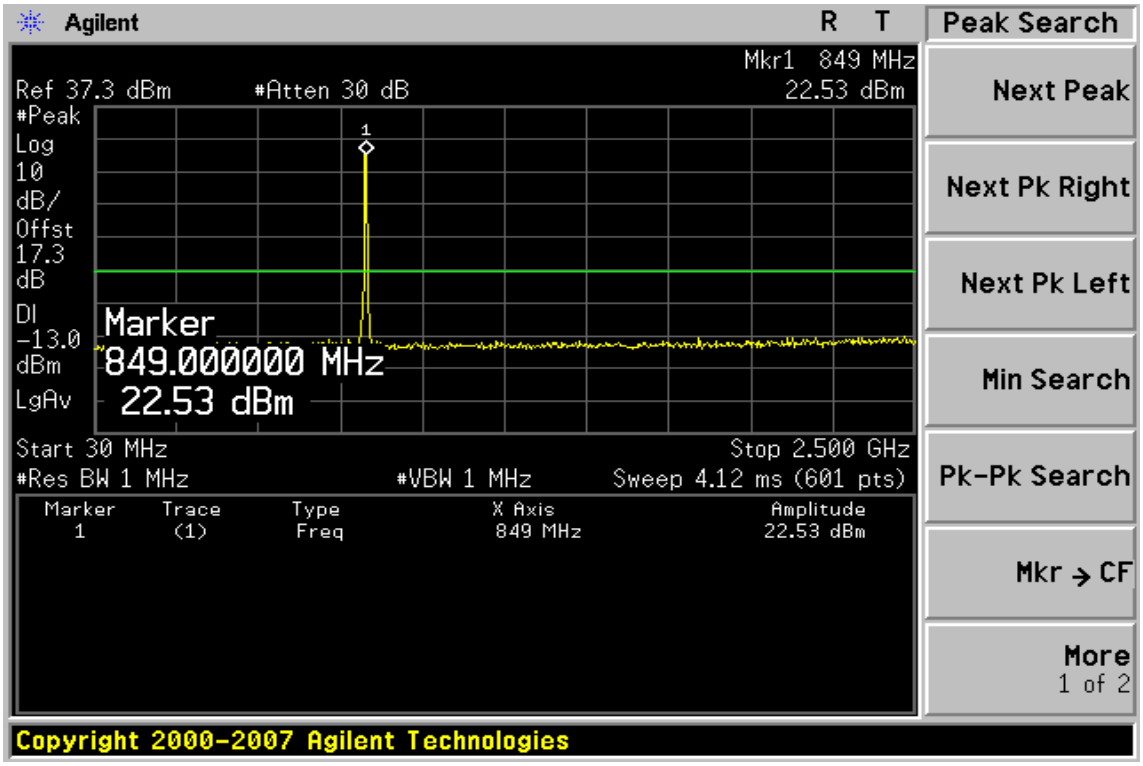


Figure 8-18 Out of Band emission at antenna terminals–WCDMA B5 Channel Highest



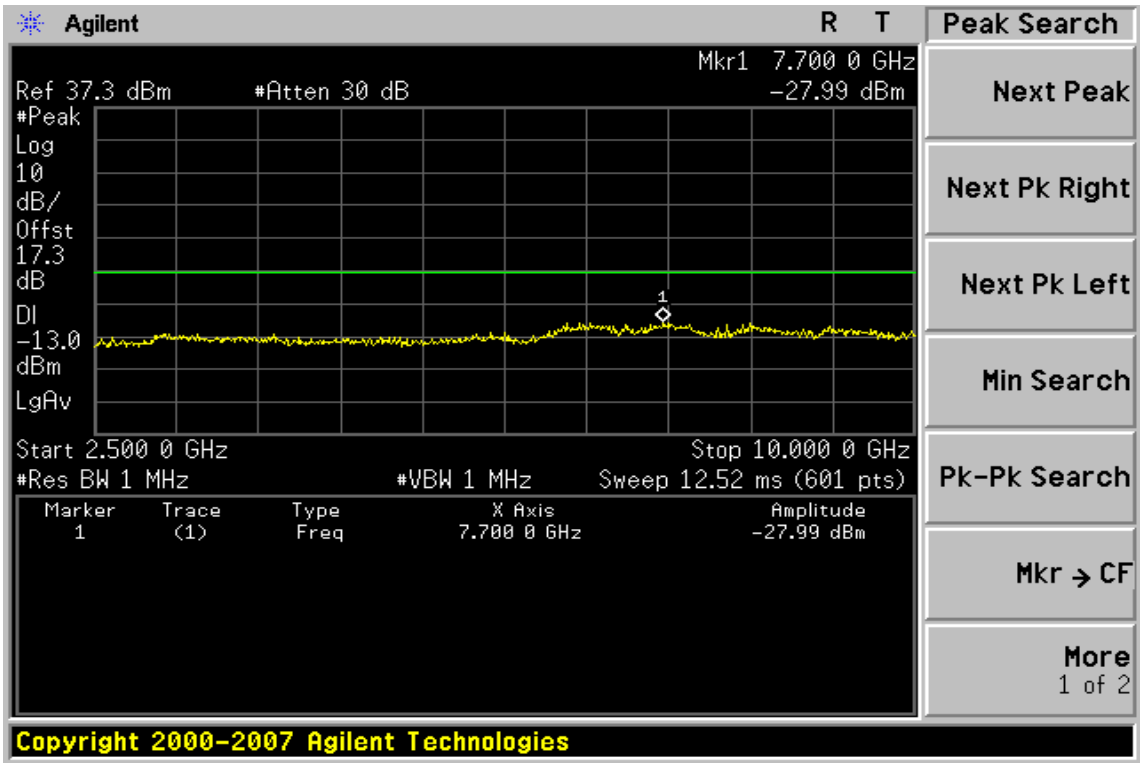


Figure 8-19 Band edge emission at antenna terminals –WCDMA B5 Channel Lowest

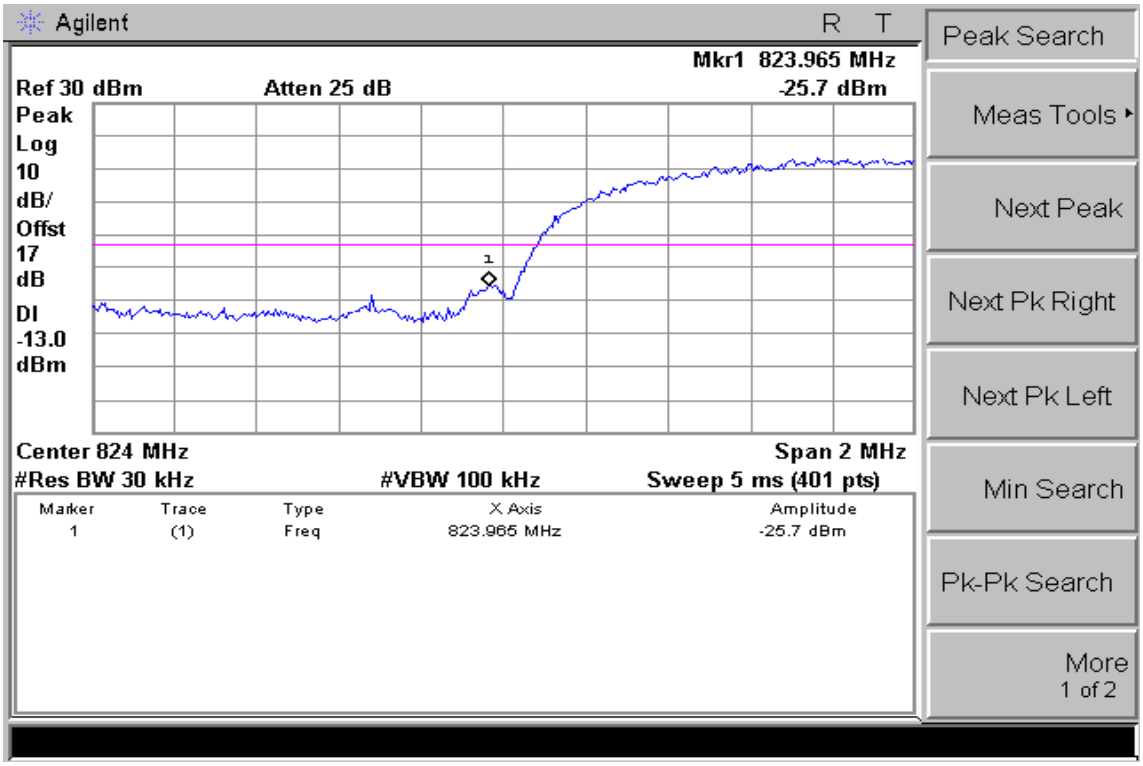
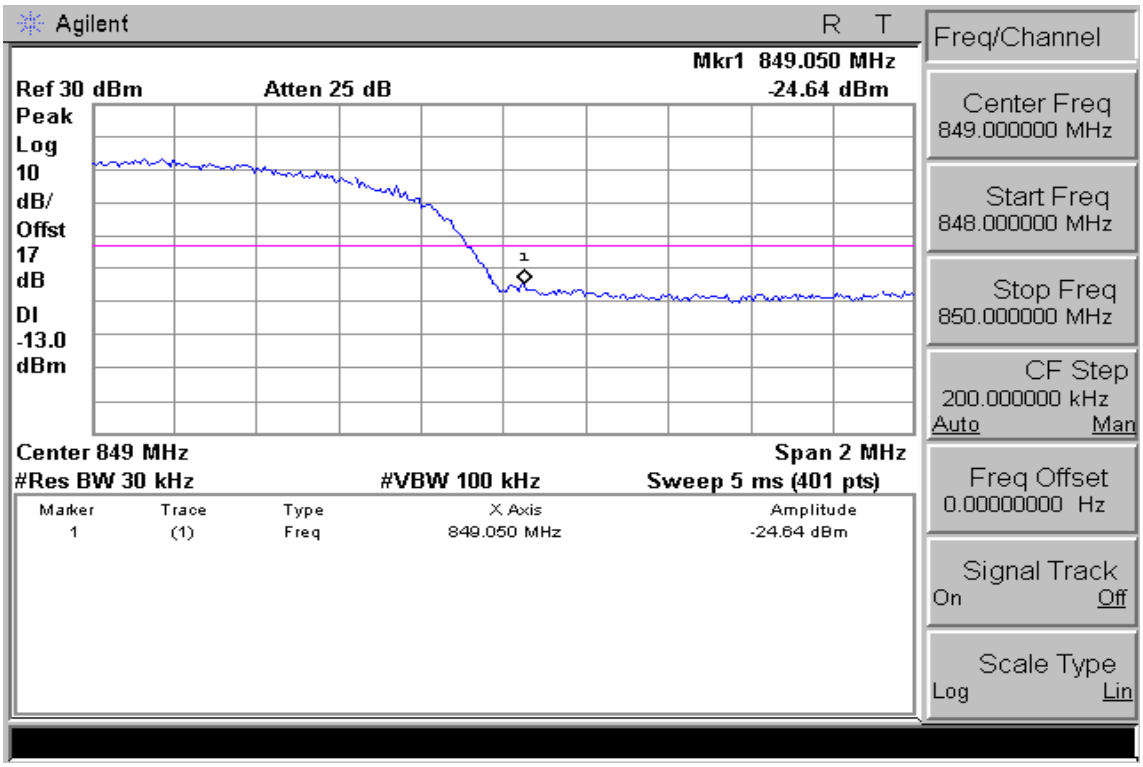


Figure 8-20 Band edge emission at antenna terminals –WCDMA B5 Channel Highest



9. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

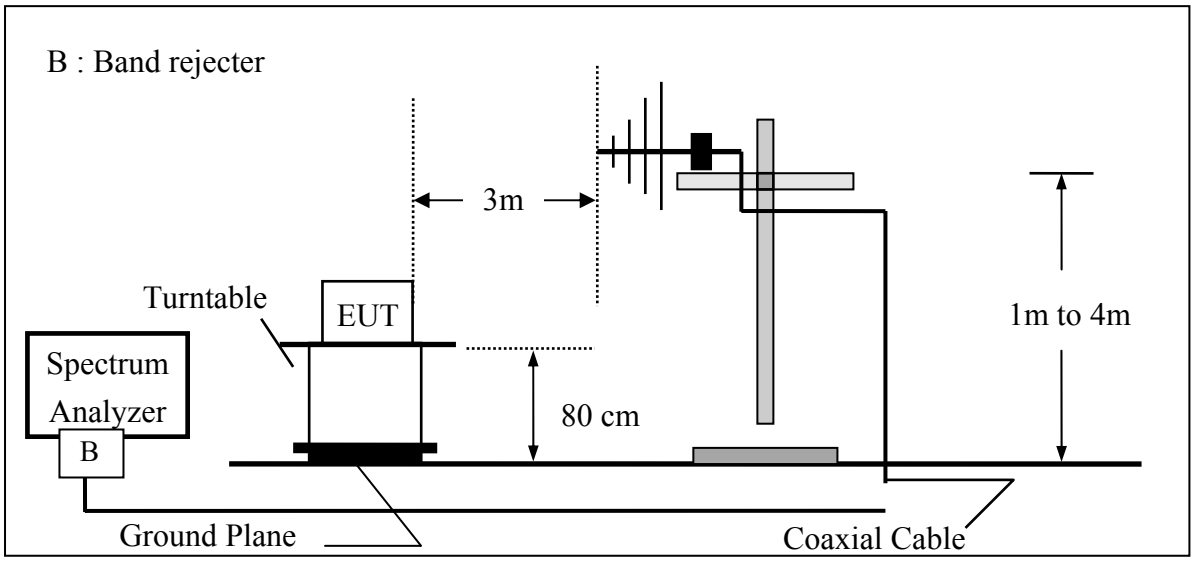
9.1. Standard Applicable:

According to FCC §2.1053,

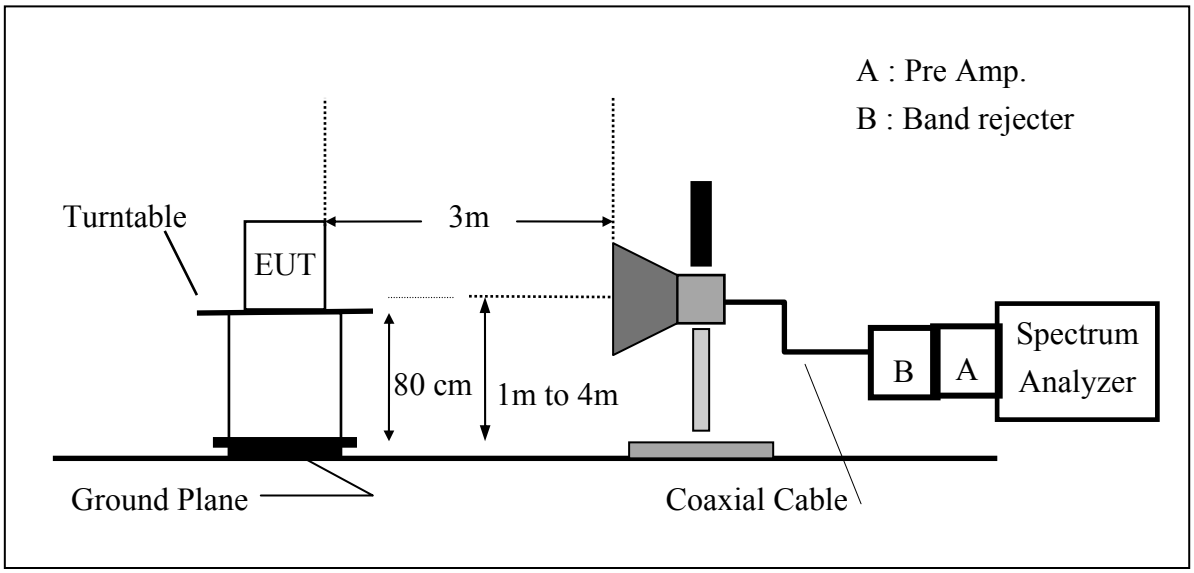
FCC §22.917(a),§24.238(a) the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specified in the instruction manual and/ or alignment procedure, shall not be less than 43 + 10 log (mean output power in watts) dBc below the mean power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

9.2. EUT Setup (Block Diagram of Configuration):

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



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



9.3. 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.

ERP= S.G. output (dBm) + Antenna Gain (dBd) – Cable Loss (dB)

EIRP = S.G. output (dBm) + Antenna Gain(dBi) – Cable Loss (dB)

9.4. Measurement Equipment Used:

Refer to section 2.4 in this report

9.5. Measurement Result:

Refer to attach tabular data sheets.

Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Mode	: TX CH Low E2 Mode	Test Date:	Sep. 21, 2010
Fundamental Frequency	: 824.20 MHz	Test By:	Bondi
Temperature	: 25℃	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)
36.79	48.31	V	-54.42	-4.16	0.91	-59.49	-13.00	-46.49
90.14	47.81	V	-55.37	-7.75	1.27	-64.39	-13.00	-51.39
104.69	46.48	V	-55.01	-7.76	1.38	-64.15	-13.00	-51.15
824.00	71.22	V	-15.17	-7.87	3.62	-26.67	-13.00	-13.67
1648.40	---	V		9.29	5.23		-13.00	
2472.60	42.76	V	-58.25	10.08	6.53	-54.70	-13.00	-41.70
3296.80	---	V		12.17	7.71		-13.00	
4121.00	---	V		12.61	8.86		-13.00	
4945.20	39.23	V	-53.24	12.65	9.74	-50.33	-13.00	-37.33
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 Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Mode	: TX CH Low E2 Mode	Test Date:	Sep. 21, 2010
Fundamental Frequency	: 824.20 MHz	Test By:	Bondi
Temperature	: 25℃	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)
38.73	46.69	H	-56.50	-3.25	0.90	-60.65	-13.00	-47.65
92.08	49.43	H	-54.16	-7.75	1.29	-63.20	-13.00	-50.20
104.69	45.76	H	-56.75	-7.76	1.38	-65.89	-13.00	-52.89
824.00	84.58	H	-1.69	-7.87	3.62	-13.19	-13.00	-0.19
1648.40	44.19	H	-60.21	9.29	5.23	-56.15	-13.00	-43.15
2472.60	42.01	H	-58.90	10.08	6.53	-55.35	-13.00	-42.35
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 Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Mode	: TX CH Mid E2 Mode	Test Date:	Sep. 21, 2010
Fundamental Frequency	: 836.60 MHz	Test By:	Bondi
Temperature	: 25℃	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)
33.88	48.62	V	-54.95	-5.52	0.93	-61.40	-13.00	-48.40
90.14	48.56	V	-54.62	-7.75	1.27	-63.64	-13.00	-50.64
104.69	46.71	V	-54.78	-7.76	1.38	-63.92	-13.00	-50.92
1673.20	41.47	V	-63.09	9.36	5.27	-58.99	-13.00	-45.99
2509.80	43.60	V	-57.18	10.09	6.58	-53.68	-13.00	-40.68
3346.40	---	V		12.28	7.79		-13.00	
4183.00	---	V		12.62	8.93		-13.00	
5019.60	37.71	V	-54.44	12.67	9.81	-51.58	-13.00	-38.58
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 (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Mode	: TX CH Mid E2 Mode	Test Date:	Sep. 21, 2010
Fundamental Frequency	: 836.60 MHz	Test By:	Bondi
Temperature	: 25℃	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)
38.73	44.35	H	-58.84	-3.25	0.90	-62.99	-13.00	-49.99
92.08	49.82	H	-53.77	-7.75	1.29	-62.81	-13.00	-49.81
104.69	45.02	H	-57.49	-7.76	1.38	-66.63	-13.00	-53.63
1673.20	45.75	H	-58.63	9.36	5.27	-54.53	-13.00	-41.53
2509.80	41.09	H	-59.61	10.09	6.58	-56.11	-13.00	-43.11
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 (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Mode	: TX CH High E2 Mode	Test Date:	Sep. 21, 2010
Fundamental Frequency	: 848.80 MHz	Test By:	Bondi
Temperature	: 25℃	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)
33.88	48.86	V	-54.71	-5.52	0.93	-61.16	-13.00	-48.16
92.08	47.97	V	-54.96	-7.75	1.29	-64.00	-13.00	-51.00
106.63	47.05	V	-54.26	-7.77	1.39	-63.41	-13.00	-50.41
849.00	71.77	V	-14.35	-7.88	3.68	-25.91	-13.00	-12.91
1697.60	41.20	V	-63.34	9.44	5.31	-59.21	-13.00	-46.21
2546.40	41.18	V	-59.46	10.20	6.63	-55.90	-13.00	-42.90
3395.20	---	V		12.38	7.87		-13.00	
4244.00	---	V		12.63	9.00		-13.00	
5092.80	37.18	V	-54.80	12.74	9.88	-51.93	-13.00	-38.93
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 (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Mode	: TX CH High E2 Mode	Test Date:	Sep. 21, 2010
Fundamental Frequency	: 848.80 MHz	Test By:	Bondi
Temperature	: 25℃	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)
38.73	43.70	H	-59.49	-3.25	0.90	-63.64	-13.00	-50.64
92.08	50.17	H	-53.42	-7.75	1.29	-62.46	-13.00	-49.46
104.69	44.95	H	-57.56	-7.76	1.38	-66.70	-13.00	-53.70
849.00	84.05	H	-2.14	-7.88	3.68	-13.70	-13.00	-0.70
1697.60	45.95	H	-58.40	9.44	5.31	-54.27	-13.00	-41.27
2546.40	42.27	H	-58.33	10.20	6.63	-54.77	-13.00	-41.77
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	41.17	H	-48.57	13.81	10.70	-45.46	-13.00	-32.46
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 (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Mode	: TX CH Low E2 Mode	Test Date:	Sep. 21, 2010
Fundamental Frequency	: 1850.20MHz	Test By:	Bondi
Temperature	: 25℃	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)
33.88	50.41	V	-53.16	-5.52	0.93	-59.61	-13.00	-46.61
67.83	45.06	V	-66.63	-0.95	1.14	-68.72	-13.00	-55.72
101.78	44.98	V	-56.78	-7.76	1.37	-65.90	-13.00	-52.90
1850.00	69.34	V	-35.05	9.90	5.56	-30.71	-13.00	-17.71
3700.40	---	V		12.61	8.31		-13.00	
5550.60	54.43	V	-36.41	13.23	10.33	-33.51	-13.00	-20.51
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 (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Mode	: TX CH Low E2 Mode	Test Date:	Sep. 21, 2010
Fundamental Frequency	: 1850.20MHz	Test By:	Bondi
Temperature	: 25℃	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)
33.88	45.55	H	-59.15	-5.52	0.93	-65.59	-13.00	-52.59
101.78	46.41	H	-56.40	-7.76	1.37	-65.53	-13.00	-52.53
1850.00	82.96	H	-21.22	9.90	5.56	-16.88	-13.00	-3.88
3700.40	---	H		12.61	8.31		-13.00	
5550.60	52.10	H	-38.95	13.23	10.33	-36.05	-13.00	-23.05
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

3 The result basic equation calculation is as follows:

4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Mode : TX CH Mid E2 Mode
Fundamental Frequency : 1880MHz
Temperature : 25℃
Humidity : 65%

Test Date: Sep. 21, 2010
Test By: Bondi
Pol: Ver

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)
33.88	47.68	V	-55.89	-5.52	0.93	-62.34	-13.00	-49.34
101.78	46.32	V	-55.44	-7.76	1.37	-64.56	-13.00	-51.56
3760.00	---	V		12.60	8.39		-13.00	
5640.00	44.60	V	-45.98	13.36	10.41	-43.03	-13.00	-30.03
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 (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Mode	: TX CH Mid E2 Mode	Test Date:	Sep. 21, 2010
Fundamental Frequency	: 1880MHz	Test By:	Bondi
Temperature	: 25℃	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)
33.88	45.40	H	-59.30	-5.52	0.93	-65.74	-13.00	-52.74
101.78	45.40	H	-57.41	-7.76	1.37	-66.54	-13.00	-53.54
3760.00	---	H		12.60	8.39		-13.00	
5640.00	43.39	H	-47.36	13.36	10.41	-44.41	-13.00	-31.41
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 (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Mode	: TX CH High E2 Mode	Test Date:	Sep. 21, 2010
Fundamental Frequency	: 1909.8 MHz	Test By:	Bondi
Temperature	: 25℃	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)
72.68	43.70	V	-67.97	-1.45	1.18	-70.59	-13.00	-57.59
101.78	46.28	V	-55.48	-7.76	1.37	-64.60	-13.00	-51.60
1910.00	68.76	V	-35.57	10.08	5.66	-31.15	-13.00	-18.15
3819.60	---	V		12.60	8.47		-13.00	
5729.40	43.97	V	-46.35	13.49	10.50	-43.35	-13.00	-30.35
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.

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)

Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Mode	: TX CH High E2 Mode	Test Date:	Sep. 21, 2010
Fundamental Frequency	: 1909.8 MHz	Test By:	Bondi
Temperature	: 25℃	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)
33.88	44.94	H	-59.76	-5.52	0.93	-66.20	-13.00	-53.20
101.78	44.75	H	-58.06	-7.76	1.37	-67.19	-13.00	-54.19
1910.00	81.43	H	-22.68	10.08	5.66	-18.26	-13.00	-5.26
3819.60	---	H		12.60	8.47		-13.00	
5729.40	43.55	H	-46.90	13.49	10.50	-43.91	-13.00	-30.91
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 (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: HSUPA Band II Mode

Operation Mode : TX CH Low E2 Mode
Fundamental Frequency : 1712.40MHz
Temperature : 25℃
Humidity : 65%

Test Date: Oct. 27, 2010
Test By: Bondi
Pol: Ver

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)
56.19	44.00	V	-65.66	-0.51	1.09	-67.27	-13.00	-54.27
104.69	48.20	V	-53.29	-7.76	1.38	-62.43	-13.00	-49.43
1850.00	60.20	V	-44.19	9.90	5.56	-39.85	-13.00	-26.85
3704.80	---	V		12.61	8.31		-13.00	
5557.20	35.20	V	-55.62	13.24	10.33	-52.72	-13.00	-39.72
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 (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: HSUPA Band II Mode

Operation Mode	: TX CH Low E2 Mode	Test Date:	Oct. 27, 2010
Fundamental Frequency	: 1712.40MHz	Test By:	Bondi
Temperature	: 25℃	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)
36.79	45.80	H	-58.00	-4.16	0.91	-63.06	-13.00	-50.06
92.08	47.50	H	-56.09	-7.75	1.29	-65.13	-13.00	-52.13
1850.00	73.60	H	-30.58	9.90	5.56	-26.24	-13.00	-13.24
3704.80	---	H		12.61	8.31		-13.00	
5557.20	33.70	H	-57.33	13.24	10.33	-54.43	-13.00	-41.43
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 (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: HSUPA Band II Mode

Operation Mode	: TX CH Mid E2 Mode	Test Date:	Oct. 27, 2010
Fundamental Frequency	: 1732.6MHz	Test By:	Bondi
Temperature	: 25℃	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)
58.13	43.50	V	-67.00	-0.49	1.08	-68.56	-13.00	-55.56
92.08	53.00	V	-49.93	-7.75	1.29	-58.97	-13.00	-45.97
3760.00	---	V		12.60	8.39		-13.00	
5640.00	34.70	V	-55.88	13.36	10.41	-52.93	-13.00	-39.93
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 (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: HSUPA Band II Mode

Operation Mode	: TX CH Mid E2 Mode	Test Date:	Oct. 27, 2010
Fundamental Frequency	: 1732.6MHz	Test By:	Bondi
Temperature	: 25℃	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)
36.79	46.10	H	-57.70	-4.16	0.91	-62.76	-13.00	-49.76
92.08	48.30	H	-55.29	-7.75	1.29	-64.33	-13.00	-51.33
3760.00	---	H		12.60	8.39		-13.00	
5640.00	34.60	H	-56.15	13.36	10.41	-53.20	-13.00	-40.20
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 (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: HSUPA Band II Mode

Operation Mode	: TX CH High E2 Mode	Test Date:	Oct. 27, 2010
Fundamental Frequency	: 1752.6 MHz	Test By:	Bondi
Temperature	: 25℃	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)
56.19	44.00	V	-65.66	-0.51	1.09	-67.27	-13.00	-54.27
104.69	53.50	V	-47.99	-7.76	1.38	-57.13	-13.00	-44.13
1910.00	60.80	V	-43.53	10.08	5.66	-39.11	-13.00	-26.11
3815.20	---	V		12.60	8.46		-13.00	
5722.80	36.70	V	-53.63	13.48	10.49	-50.64	-13.00	-37.64
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)

Radiated Spurious Emission Measurement Result: HSUPA Band II Mode

Operation Mode	: TX CH High E2 Mode	Test Date:	Oct. 27, 2010
Fundamental Frequency	: 1752.6 MHz	Test By:	Bondi
Temperature	: 25℃	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)
36.79	45.60	H	-58.20	-4.16	0.91	-63.26	-13.00	-50.26
92.08	49.10	H	-54.49	-7.75	1.29	-63.53	-13.00	-50.53
1910.00	67.30	H	-36.81	10.08	5.66	-32.39	-13.00	-19.39
3815.20	---	H		12.60	8.46		-13.00	
5722.80	34.50	H	-55.97	13.48	10.49	-52.98	-13.00	-39.98
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)

Radiated Spurious Emission Measurement Result: HSUPA Band V Mode

Operation Mode : TX CH Low E1 Mode
Fundamental Frequency : 1712.40MHz
Temperature : 25℃
Humidity : 65%

Test Date: Oct. 27, 2010
Test By: Bondi
Pol: Ver

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)
38.73	40.50	V	-61.67	-3.25	0.90	-65.81	-13.00	-52.81
104.69	44.00	V	-57.49	-7.76	1.38	-66.63	-13.00	-53.63
825.00	63.10	V	-23.28	-7.88	3.63	-34.78	-13.00	-21.78
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 (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: HSUPA Band V Mode

Operation Mode	: TX CH Low E1 Mode	Test Date:	Oct. 27, 2010
Fundamental Frequency	: 1712.40MHz	Test By:	Bondi
Temperature	: 25℃	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)
38.73	42.90	H	-60.29	-3.25	0.90	-64.44	-13.00	-51.44
90.14	43.40	H	-60.33	-7.75	1.27	-69.35	-13.00	-56.35
825.00	69.60	H	-16.67	-7.88	3.63	-28.17	-13.00	-15.17
1652.80	41.80	H	-62.60	9.30	5.23	-58.53	-13.00	-45.53
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 (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: HSUPA Band V Mode

Operation Mode	: TX CH Mid E1 Mode	Test Date:	Oct. 27, 2010
Fundamental Frequency	: 1732.6MHz	Test By:	Bondi
Temperature	: 25℃	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)
38.73	41.20	V	-60.97	-3.25	0.90	-65.11	-13.00	-52.11
62.98	39.30	V	-72.15	-0.64	1.10	-73.89	-13.00	-60.89
92.08	42.00	V	-60.93	-7.75	1.29	-69.97	-13.00	-56.97
1658.00	---	V		9.32	5.24		-13.00	
1673.20	---	V		9.36	5.27		-13.00	
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 Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: HSUPA Band V Mode

Operation Mode	: TX CH Mid E1 Mode	Test Date:	Oct. 27, 2010
Fundamental Frequency	: 1732.6MHz	Test By:	Bondi
Temperature	: 25℃	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)
38.73	42.20	H	-60.99	-3.25	0.90	-65.14	-13.00	-52.14
90.14	42.80	H	-60.93	-7.75	1.27	-69.95	-13.00	-56.95
1673.20	43.90	H	-60.48	9.36	5.27	-56.38	-13.00	-43.38
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 (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: HSUPA Band V Mode

Operation Mode	: TX CH High E1 Mode	Test Date:	Oct. 27, 2010
Fundamental Frequency	: 1752.6 MHz	Test By:	Bondi
Temperature	: 25℃	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)
38.73	40.40	V	-61.77	-3.25	0.90	-65.91	-13.00	-52.91
62.98	39.70	V	-71.75	-0.64	1.10	-73.49	-13.00	-60.49
104.69	42.00	V	-59.49	-7.76	1.38	-68.63	-13.00	-55.63
701.24	33.90	V	-55.48	-7.86	3.29	-66.64	-13.00	-53.64
850.00	61.10	V	-25.01	-7.88	3.68	-36.57	-13.00	-23.57
1693.20	---	V		9.42	5.30		-13.00	
2539.80	37.30	V	-63.37	10.18	6.62	-59.82	-13.00	-46.82
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 (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: HSUPA Band V Mode

Operation Mode	: TX CH High E1 Mode	Test Date:	Oct. 27, 2010
Fundamental Frequency	: 1752.6 MHz	Test By:	Bondi
Temperature	: 25℃	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)
38.73	41.70	H	-61.49	-3.25	0.90	-65.64	-13.00	-52.64
104.69	41.50	H	-61.01	-7.76	1.38	-70.15	-13.00	-57.15
696.36	34.40	H	-53.38	-7.86	3.28	-64.52	-13.00	-51.52
850.00	69.20	H	-16.99	-7.88	3.68	-28.55	-13.00	-15.55
1693.20	43.10	H	-61.25	9.42	5.30	-57.13	-13.00	-44.13
2539.80	---	H		10.18	6.62		-13.00	
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 (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

10. FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

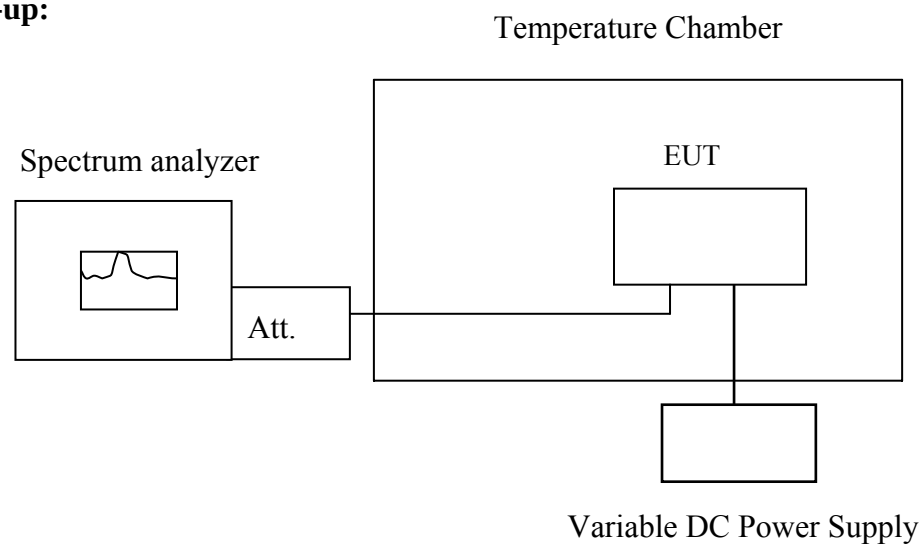
10.1. Standard Applicable:

According to FCC §2.1055(a) (1)

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

+/-2.5ppm for 1900MHz band

10.2. Test Set-up:



Note : Measurement setup for testing on Antenna connector

10.3. 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.

10.4. Measurement Equipment Used:

Refer to section 2.4 in this report

10.5. Measurement Result:

Reference Frequency: GPRS 850 Mid Channel 836.6 MHz @ 25℃				
Limit: +/- 2.5 ppm = 2091 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (℃)	(MHz)		
3.7	-30	836.599989	6.00	2091
3.7	-20	836.599995	0.00	2091
3.7	-10	836.599993	2.00	2091
3.7	0	836.599989	6.00	2091
3.7	10	836.599987	8.00	2091
3.7	20	836.599995	0.00	2091
3.7	30	836.599991	4.00	2091
3.7	40	836.599985	10.00	2091
3.7	50	836.599988	7.00	2091

Reference Frequency: GPRS 1900 Mid Channel 1880 MHz @ 20℃				
Limit: +/- 2.5 ppm = 4700 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (℃)	(MHz)		
3.7	-30	1879.999982	-5.00	4700
3.7	-20	1879.999980	-3.00	4700
3.7	-10	1879.999983	-6.00	4700
3.7	0	1879.999979	-2.00	4700
3.7	10	1879.999981	-4.00	4700
3.7	20	1879.999977	0.00	4700
3.7	30	1879.999971	6.00	4700
3.7	40	1879.999979	-2.00	4700
3.7	50	1879.999967	10.00	4700

Reference Frequency: WCDMA II Mid Channel 1880 (ARFCN9400) MHz @ 20℃				
Limit: +/- 2.5 ppm = 4700 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (℃)	(MHz)		
3.7	-30	1880.000002	-4.00	4700
3.7	-20	1879.999999	-1.00	4700
3.7	-10	1880.000005	-7.00	4700
3.7	0	1880.000001	-3.00	4700
3.7	10	1880.000000	-2.00	4700
3.7	20	1879.999998	0.00	4700
3.7	30	1880.000000	-2.00	4700
3.7	40	1880.000002	-4.00	4700
3.7	50	1879.999997	1.00	4700

Reference Frequency: WCDMA V Mid Channel 836.6 (ARFCN4183) MHz @ 20℃				
Limit: +/- 2.5 ppm = 2090 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (℃)	(MHz)		
3.7	-30	836.599991	6.00	2091
3.7	-20	836.599992	5.00	2091
3.7	-10	836.599999	-2.00	2091
3.7	0	836.599998	-1.00	2091
3.7	10	836.599998	-1.00	2091
3.7	20	836.599997	0.00	2091
3.7	30	836.600003	-6.00	2091
3.7	40	836.599999	-2.00	2091
3.7	50	836.600003	-6.00	2091

Note: The battery is rated 3.7V dc.

11. FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

11.1. Standard Applicable:

According to FCC §2.1055(a) (1)

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

+/-2.5ppm for 1900MHz band

11.2. Test Set-up:

Refer to section 10.2 in this report

11.3. Measurement Procedure:

Set chamber temperature to 25℃. 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.

11.4. Measurement Equipment Used:

Refer to section 2.4 in this report

11.5. Measurement Result:

Reference Frequency: GPRS 850 Mid Channel 836.6 MHz @ 25℃				
Limit: +/- 2.5 ppm = 2091 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (℃)	(MHz)		
4.2	25.00	836.599992	3.00	2091
3.7	25.00	836.599995	0.00	2091
3.5	25.00	836.599993	2.00	2091
3.4 (Endpoint)	25.00	836.599986	9.00	2091

Reference Frequency: GPRS 1900 Mid Channel 1880 MHz @ 25℃				
Limit: +/- 2.5 ppm = 4700 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (℃)	(MHz)		
4.2	25	1879.999975	2.00	4700
3.7	25	1879.999977	0.00	4700
3.5	25	1879.999974	3.00	4700
3.4 (Endpoint)	25	1879.999968	9.00	4700

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 (℃)	(MHz)		
4.2	25	1879.999997	1.00	4700
3.7	25	1879.999998	0.00	4700
3.5	25	1879.999995	3.00	4700
3.4 (Endpoint)	25	1879.999993	5.00	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 (℃)	(MHz)		
4.2	25.00	836.599998	-1.00	2091
3.7	25.00	836.599997	0.00	2091
3.5	25.00	836.599994	3.00	2091
3.4 (Endpoint)	25.00	836.599991	6.00	2091

Note: The battery is rated 3.7V dc.