

Report No.: EH/2013/40027 Issue Date: Jun. 13, 2013

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ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 22 SUBPART H, PART 24 SUBPART E AND INDUSTRY CANADA RSS-132 and RSS-133 REQUIREMENT

OF

Product Name: Juno T41/5

Brand Name: Trimble

RH42G **Marketing Name:**

Model No.: JUNO/T41/5-BWCG

Model Difference: N/A

FCC ID: S9E-JNOBWCG

IC: 5817A-JNOBWCG

EH/2013/40027 **Report No.:**

Issue Date: Jun. 13, 2013

FCC Rule Part: 2,22H & 24E

IC Rule Part: RSS 132, Issue 3 and RSS 133, Issue 6

Trimble Navigation Limited Prepared for:

345 SW Avery Avenue, Corvallis, OR 97333

SGS Taiwan Ltd.

Electronics & Communication Laboratory Prepared by: No.134, Wu Kung Road, New Taipei Indus-

trial Park, Wuku District, New Taipei City,

Taiwan 24803

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VERIFICATION OF COMPLIANCE

Applicant: Trimble Navigation Limited

345 SW Avery Avenue, Corvallis, OR 97333

Product Name: Juno T41/5

Brand Name: Trimble
Marketing Name: RH42G

Model No.: JUNO/T41/5-BWCG

Model Difference: N/A

 FCC ID:
 S9E-JNOBWCG

 IC:
 5817A-JNOBWCG

 File Number:
 EH/2013/40027

Date of test: Apr. 11, 2013 ~ Jun. 10, 2013

Date of EUT Received: Apr. 11, 2013

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, Issue 3 of RSS-Gen 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 PART 22 subpart H, PART 24 subpart E and IC standards Issue 3 of RSS-132, Issue 6 of RSS-133.

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

Test By:	Nick Lin	Date:	Jun. 13, 2013	
-	Nick Lin / Engineer			
Prepared By:	Tiffany Kao	Date:	Jun. 13, 2013	
Approved By:	Tiffany Kao / Clerk Jim Chang / Supervisor	Date:	Jun. 13, 2013	

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Version

Version No.	Date	Description
00	Jun. 13, 2013	Initial creation of document

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1. GENERAL PRODUCT INFORMATION

General:

Product Name:	Juno T41/5		
Brand Name:	Trimble		
Marketing Name:	RH42G		
Model No.:	JUNO/T41/	/5-BWCG	
Model difference:	N/A		
Hardware Version:	2.0		
Software Version:	2.1		
Data Cable:	Model No.:	A9136939, Supplier: Sinbon	
	3.7Vdc Rec	chargeable Li-polymer battery or 5Vdc from adapter	
Power Supply:	Battery:	Model No.: S11GD103A, Supplier: LICO	
	Adapter:	Model No.: PSA10F-050Q, Supplier: PHIHONG TECHNOLOGY CO., LTD	

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GSM/GPRS and WCDMA:

	Operating Frequency	Rated Power		
	GSM/GPRS 850, Class 12 824.2 MHz– 848.8 MHz		33 dBm	
Cellular Phone	EDGE 850, Class 12	824.2 MHz– 848.8 MHz	33 dBm	
Standards	GSM/GPRS 1900, Class 12	1850.2MHz – 1909.8MHz	30 dBm	
Frequency Range and Power:	EDGE 1900, Class 12	1850.2MHz – 1909.8MHz	30 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	
Type of Emission	GSM 850: 246KGXW, GSM 1900: 249KGXW GPRS 850: 248KGXW, GPRS 1900: 246KGXW EDGE 850: 251KG7W, EDGE 1900: 246KG7W WCDMA Band II: 4M10F9W, WCDMA Band V: 4M12F9W HSUPA Band II: 4M20F9W, HSUPA Band V: 4M19F9W HSDPA Band II: 4M19F9W, HSDPA Band V: 4M20F9W			
IMEI:	359998040813190			

This test report applies for 850 /1900 GSM / GPRS / EDGE, WCDMA / HSDPA / HSDPA / HSPA+ Band II/V.

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Final Amplifier Voltage and Current Information:

Test Mode	DC voltage (V)	DC current (mA)
GSM 850	3.7	410
GSM 1900	3.7	350
GPRS 850	3.7	260
GPRS 1900	3.7	220
EDGE 850	3.7	170
EDGE 1900	3.7	170
WCDMA B2	3.7	670
WCDMA B5	3.7	780
HSUPA B2	3.7	710
HSUPA B5	3.7	820
HSDPA B2	3.7	700
HSDPA B5	3.7	810

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

This submittal(s) (test report) is intended for **FCC ID: S9E-JNOBWCG** filing to comply with Section Part 22 subpart H, Part 24 subpart E of the FCC CFR 47 Rules and **IC: 5817A-JNOBWCG** filing to comply with Issue 3 of RSS-132, Issue 6 of RSS-133.

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, 2.1057, issue 3 of RSS-132 and issue 6 of RSS-133...

TS 151 010-1 is used to set, and measure the output power.

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

KDB971168 D01 Power Meas license Digital System v01 as the supplemental guideline to conduct the measurement, including Peak to Power Average Ratio, Average Power over the fundamental signal BW (EIRP/ERP) and Signal Bandwidth..

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, 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

he EUT (Transmitter) was operated in the continuous transmission mode employed with the simulator of the Base Station that fixates at test default channels to fix the Tx frequency which was for the purpose of the measurements.

2.3. Test Procedure

2.3.1 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.

2.3.2 Radiated Emissions (ERP/EIRP):

According to measurement procured TIA/EIA 603C and RSS-Gen Issue 3, The EUT is a placed on as turn table which is 0.8 m 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 8 and 13 of ANSI C63.4:2009.

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2.4. Measurement Equipment Used:

Conducted Emission (measured at antenna port) Test Site					
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE		NUMBER	NUMBER	CAL.	
Power Sensor	Anritsu	ML2495A	1005007	02/08/2012	02/07/2014
Power Meter	Anritsu	MA2411B	917032	02/08/2012	02/07/2014
Spectrum Analyzer	Agilent	E4446A	MY51100003	04/15/2013	04/14/2014
Spectrum Analyzer	Agilent	E4440A	US41160416	03/17/2012	03/16/2014
Radio Communication Analyzer	R & S	CMU200	102189	08/12/2012	08/11/2014
Temperature Chamber	TERCHY	MHG-120LF	911009	04/16/2012	04/15/2014
DC Block	Mini-Circuits	BLK-18-S+	1	02/28/2013	02/27/2014
Attenuator	Mini-Circuit	BW-S10W2+	002	02/28/2013	02/27/2014
Splitter	Agilent	11636B	N/A	02/28/2013	02/27/2014
DC Power Supply	Agilent	E3640A	MY40005907	07/15/2011	07/14/2013

ERP, EIRP MEASUREMENT EQUIPMENT List 966 Chamber					
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE		NUMBER	NUMBER	CAL.	
Spectrum Analyzer	Agilent	E4446A	MY51100003	04/15/2013	04/14/2014
EXA Spectrum Analyzer	Agilent	N9010A	MY50420195	02/06/2013	02/07/2014
Spectrum Analyzer	R&S	FSV-30	101398	10/18/2011	10/17/2013
Bilog Antenna	SCHWAZBECK	VULB9168	378	01/10/2012	01/09/2014
Bilog Antenna	SCHWAZBECK	VULB9160	3158	11/24/2011	11/23/2013
Dipole Antenna	SCHWAZBECK	VHAP	908/909	07/17/2010	07/16/2013
Dipole Antenna	SCHWAZBECK	UHAP	891/892	07/17/2010	07/16/2013
Horn antenna	ETS.LINDGREN	3117	123995	05/31/2013	05/30/2014
Horn antenna	ETS.LINDGREN	3117	123991	01/21/2013	01/20/2015
Horn Antenna	Schwarzbeck	BBHA9170	184	01/17/2012	01/17/2014
Horn Antenna	Schwarzbeck	BBHA9170	185	07/11/2011	07/10/2013
RF amplifier	Miteq	AMF-6F-2600 400-40-8P	971576	01/29/2013	01/28/2014
Signal Generator	R&S	SMR40	100210	02/02/2012	02/01/2014

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					1
Signal Generator	Agilent	E4438C	MY45093613	07/15/2011	07/14/2013
Pre-Amplifier	Agilent	8447D	1937A02834	01/04/2013	01/03/2014
Pre-Amplifier	EMC Instruments Corp.	EMC0126530	980038	01/04/2013	01/03/2014
Attenuator	Mini-Circuit	BW-S10W2+	004	02/28/2013	02/27/2014
Radio Communication Analyzer	R & S	CMU200	102189	08/12/2012	08/11/2014
Radio Communication	Anritsu	MT8820C	6200995019	10/17/2012	10/16/2013
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	966_Tx	10m	01/04/2013	01/03/2014
Low Loss Cable	HUBER+SUHNER	966_Rx	3m	01/04/2013	01/03/2014
Filter 800-1000	Micro-Tronics	EWT	M2	02/28/2013	02/28/2014
Filter 1800-2000	Micro-Tronics	EWT	M2	02/28/2013	02/28/2014
Filter 1700-1800	Micro-Tronics	BRC15751	001	02/28/2013	02/28/2014
1GHz High Pass Filter	Micro-Tronics	HPM50108	32	02/28/2013	02/28/2014
2GHz High Pass Filter	Micro-Tronics	HPM50110	36	02/28/2013	02/28/2014
3m Site NSA	SGS	966 chamber	N/A	07/15/2012	07/14/2013

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2.5. Configuration of Tested System

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

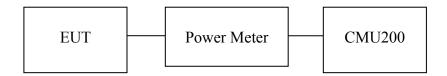


Fig. 2-2 Configuration of Tested System (Fixed Channel-Radiated)

EUT

Remote Side

CMU200

Table 2-1 Equipment Used in

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1.	Universal Radio Com- munication Tester	R&S	CMU200	102189	shielded	Un-shielded
2.	Power Meter	Anritsu	ML2495A	1005007	shielded	Un-shielded

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3. SUMMARY OF TEST RESULTS

FCC Rules	IC Rules	Description Of Test	Result
\$2.1046(a) \$22.913(a)(2) \$24.232(c)	N/A	RF Power Output	Compliant
\$2.1046(a) \$22.913(a)(2) \$24.232(c)	§4.8 (RSS-Gen Issue 3) §5.4 (RSS-132) §6.4 (RSS-133)	ERP/ EIRP measurement	Compliant
§2.1049(h)	§4.6.1 (RSS-Gen Issue 3) §2.3 (RSS-133)	99% Occupied Bandwidth	Compliant
\$2.1051 \$22.917(a) \$24.238(a)	§4.9 (RSS-Gen Issue 3) §5.5 (RSS-132) §6.5 (RSS-133)	Out of Band Emissions at Antenna Terminals and Band Edge	Compliant
\$2.1053 \$22.917(a) \$24.238(a)	§4.9 (RSS-Gen Issue 3) §5.5 (RSS-132) §6.5 (RSS-133)	Field Strength of Spurious Radiation	Compliant
§24.232(d)	\$6.4 (RSS-133) \$5.4 (RSS-132)	Peak to Average Ratio	Compliant
\$2.1055(a)(1) \$22.355 \$24.235	§4.7 (RSS-Gen Issue 3) §4.3 (RSS-132) §6.3 (RSS-133)	Frequency Stability vs. Temperature	Compliant
\$2.1055(d)(2) \$22.355 \$24.235	§4.7 (RSS-Gen Issue 3) §5.3 (RSS-132) §6.3 (RSS-133)	Frequency Stability vs. Voltage	Compliant
N/A	§4.10 (RSS-Gen Issue 3) §5.6 (RSS-132) §6.5 (RSS-133)	Receiver Spurious Emissions	Compliant

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Max ERP/EIRP measurement result:

	dBm		W
GSM 850 Band	27.06	ERP	0.508
GSM 1900 Band	31.65	EIRP	1.462
GPRS 850 Band	27.08	ERP	0.511
GPRS 1900 Band	31.95	EIRP	1.567
EDGE 850 Band	24.81	ERP	0.303
EDGE 1900 Band	31.45	EIRP	1.396
WCDMA Band II	30.44	EIRP	1.107
WCDMA Band V	23.22	ERP	0.210
HSUPA Band II	30.76	EIRP	1.191
HSUPA Band V	24.49	ERP	0.281
HSDPA Band II	30.59	EIRP	1.146
HSDPA Band V	24.42	ERP	0.277

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4. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

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

The list of channel selected to conduct the measurements

GSM/GPRS/EDGE 850:

Channel Low: AFRCN 128 at 824.2MHz, Channel Mid: AFRCN 190 at 836.6MHz, Channel High: AFRCN 251 at 848.8MHz.

GSM/GPRS/EDGE 1900:

Channel Low: AFRCN 512 at 1850.2MHz, Channel Mid: AFRCN 661 at 1880.0MHz, Channel High AFRCN 810 at 1909.8MHz

WCDMA/HSPA BII:

Channel Low: UAFRCN 9262 at 1852.4MHz, Channel Mid: UAFRCN 9400 at 1880.0MHz, Channel High: UAFRCN 9538 at 1907.6MHz.

WCDMA/HSPA BV:

Channel Low: UAFRCN 4132 at 826.4MHz, Channel Mid: UAFRCN 4183 at 836.6MHz, Channel High: UAFRCN 4233 at 846.6MHz.

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/HSPA Band II / V. The worst-case of H position for GSM/GPRS 850/ 1900; WCDMA/HSPA Band II/ Band V were reported.

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5. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty		
RF Power Output	+/- 1.42 dB		
ERP/ EIRP measurement	Vertical Polarization = +/- 4.74dB Horizontal Polarization =+/- 4.62dB		
99% Occupied Bandwidth	+/- 123.36 Hz		
Out of Band Emissions at Antenna	+/- 1.55 dB		
Terminals and Band Edge			
Peak to Average Ratio	+/- 1.55 dB		
Frequency Stability vs. Temperature	+/- 123.36 Hz		
Frequency Stability vs. Voltage	+/- 123.36 Hz		
Temperature	+/- 0.8 °C		
Humidity	+/- 4.7 %		
DC / AC Power Source	DC= +/- 1%, AC=+/- 0.2%		

Radiated Spurious Emission:

	30MHz - 180MHz: +/- 3.37dB
Management	180MHz -417MHz: +/- 3.19dB
Measurement uncertainty (Polarization : Vertical)	0.417GHz-1GHz: +/- 3.19dB
(1 olarization : Vertical)	1GHz - 18GHz: +/- 4.04dB
	18GHz - 40GHz: +/- 4.04dB

	30MHz - 167MHz: +/- 4.22dB
M	167MHz -500MHz: +/- 3.44dB
Measurement uncertainty (Polarization : Horizontal)	0.5GHz-1GHz: +/- 3.39dB
	1GHz - 18GHz: +/- 4.08dB
	18GHz - 40GHz: +/- 4.08dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

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6. RF POWER OUTPUT MEASUREMENT

6.1 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

FCC 24.232(c) Equipment must employ means to limit the power to the minimum necessary for successful communication.

3GPP Power limitation for HSDPA and HSUPA

Maximum Output Powers for HSDPA

Sub-test in table	Power	Class 3	Power Class 4		
C.10.1.4	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	Power	Class 3	Power Class 4		
C.11.1.3	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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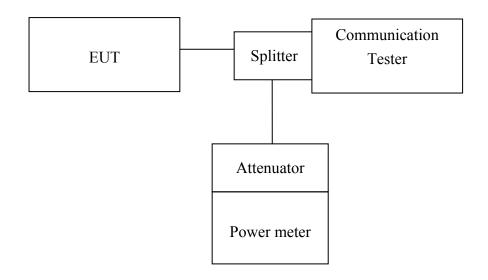
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6.2 Test Set-up:



Note: Measurement setup for testing on Antenna connector

6.3 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 attenua tor to the power meter reading. TS 151 010-1 is reference to conduct the test measurement of output power.

The Procedure of KDB941225 (SAR Measurement Procedures for 3G devices, (WCDMA/HSPA) was used for EUT and Base station setting. RMC 12.2kps is used for this testing, and KDB 971168 D01 Power Meas License Digital System as the supplemental test methodology to adjust the proper setting obtaining the measurement results

Necessary Communication complying with 24.232 (c) and 27.5(d)(4) Set CMU200 (base-station simulator) MS Signal with packet data submenu; SLOT Configuration Set appropriate level to verify if or not power on mobile station's link with simulator still exists.

6.4 Measurement Equipment Used:

Refer to section 2.4 in this report

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6.5 Measurement Result:

6.5.1 RF Conducted Output Power

6.5.1.1. GSM/GPRS/EDGE (GMSK; 8-PSK)

Result:

EUT Mode	Frequency (MHz)	СН	Peak Power (dBm)	Average Burst Power (dBm)
	824.2	128	33.10	32.90
GSM 850	836.6	190	33.20	33.00
	848.8	251	33.20	32.90

EUT Mode	Frequency (MHz)	СН	Peak Power (dBm)	Average Burst Power (dBm)
	1850.2	512	29.50	29.40
GSM 1900	1880.0	661	29.00	28.70
	1909.8	810	28.60	28.30

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EUT Mode	Frequency (MHz)	СН	Peak Power (4DN 1UP) Class 8 (dBm)	Average Burst Power (4DN 1UP) Class 8 (dBm)	Peak Power (4DN 2UP) Class 10 (dBm)	Average Burst Power (4DN 2UP) Class 10 (dBm)
	824.2	128	33.10	32.90	29.90	29.70
GPRS 850	836.6	190	33.20	33.00	29.80	29.60
	848.8	251	33.20	32.90	29.70	29.50

EUT Mode	Frequency (MHz)	СН	Peak Power (4DN 3UP) Class 11 (dBm)	Average Burst Power (4DN 3UP) Class 11 (dBm)	Peak Power (4DN 4UP) Class 12 (dBm)	Average Burst Power (4DN 4UP) Class 12 (dBm)
	824.2	128	28.20	28.00	26.40	26.20
GPRS 850	836.6	190	28.20	28.10	26.50	26.30
	848.8	251	27.80	27.60	26.40	26.20

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EUT Mode	Frequency (MHz)	СН	Peak Power (4DN 1UP) Class 8 (dBm)	Average Burst Power (4DN 1UP) Class 8 (dBm)	Peak Power (4DN 2UP) Class 10 (dBm)	Average Burst Power (4DN 2UP) Class 10 (dBm)
	1850.2	512	29.50	29.40	26.10	25.90
GPRS 1900	1880.0	661	29.00	28.70	25.40	25.20
	1909.8	810	28.60	28.30	24.90	24.70

EUT Mode	Frequency (MHz)	СН	Peak Power (4DN 3UP) Class 11 (dBm)	Average Burst Power (4DN 3UP) Class 11 (dBm)	Peak Power (4DN 4UP) Class 12 (dBm)	Average Burst Power (4DN 4UP) Class 12 (dBm)
	1850.2	512	23.80	23.70	22.30	22.00
GPRS 1900	1880.0	661	23.20	23.10	21.70	21.50
	1909.8	810	22.40	22.20	21.30	21.20

EUT Mode	Frequency (MHz)	СН	Peak Power (4DN 1UP) Class 8 (dBm)	Average Burst Power (4DN 1UP) Class 8 (dBm)	Peak Power (4DN 2UP) Class 10 (dBm)	Average Burst Power (4DN 2UP) Class 10 (dBm)
	824.2	128	30.80	26.60	23.80	23.60
EDGE 850	836.6	190	30.90	26.70	23.70	23.50
	848.8	251	30.80	26.60	26.60	23.40

EUT Mode	Frequency (MHz)	СН	Peak Power (4DN 3UP) Class 11 (dBm)	Average Burst Power (4DN 3UP) Class 11 (dBm)	Peak Power (4DN 4UP) Class 12 (dBm)	Average Burst Power (4DN 4UP) Class 12 (dBm)
	824.2	128	25.00	21.80	24.20	20.70
EDGE 850	836.6	190	24.70	21.50	23.90	20.40
	848.8	251	24.90	21.70	24.10	20.60

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EUT Mode	Frequency (MHz)	СН	Peak Power (4DN 1UP) Class 8 (dBm)	Average Burst Power (4DN 1UP) Class 8 (dBm)	Peak Power (4DN 2UP) Class 10 (dBm)	Average Burst Power (4DN 2UP) Class 10 (dBm)
	1850.2	512	28.00	24.80	24.50	21.80
EDGE 1900	1880.0	661	26.80	23.50	23.80	20.50
	1909.8	810	26.60	23.40	23.70	20.40

EUT Mode	Frequency (MHz)	СН	Peak Power (4DN 3UP) Class 11 (dBm)	Average Burst Power (4DN 3UP) Class 11 (dBm)	Peak Power (4DN 4UP) Class 12 (dBm)	Average Burst Power (4DN 4UP) Class 12 (dBm)
	1850.2	512	22.80	19.50	22.20	18.90
EDGE 1900	1880.0	661	22.30	19.10	20.70	17.30
	1909.8	810	23.20	19.00	21.10	18.10

Cable loss offset Low Band: 14.03dB Cable loss offset High Band: 14.49dB

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6.5.1.2 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)	СН	Peak Power (dBm)	Average Power (dBm)
	1852.4	9262	25.81	23.42
WCDMA Band II	1880.0	9400	25.62	23.17
Dung II	1907.6	9538	25.22	22.82

EUT Mode	Frequency (MHz)	СН	Peak Power (dBm)	Average Power (dBm)
	826.40	4132	27.53	23.81
WCDMA Band V	836.60	4183	27.69	23.92
20114	846.60	4233	27.52	23.71

EUT Mode	Frequency (MHz)	СН	Peak Power (dBm)	Average Power (dBm)
	1852.40	9262	26.82	22.73
HSUPA Band II	1880.00	9400	26.42	22.51
2010 11	1907.60	9538	25.89	21.79

EUT Mode	Frequency (MHz)	СН	Peak Power (dBm)	Average Power (dBm)
	826.40	4132	27.26	23.35
HSUPA Band V	836.60	4183	27.55	23.61
2014	846.60	4233	27.38	23.42

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EUT Mode	Frequency (MHz)	СН	Peak Power (dBm)	Average Power (dBm)
	1852.40	9262	26.80	22.81
HSDPA Band II	1880.00	9400	26.51	22.66
Dung II	1907.60	9538	26.02	21.93

EUT Mode	Frequency (MHz)	СН	Peak Power (dBm)	Average Power (dBm)
	826.40	4132	27.33	23.61
HSDPA Band V	836.60	4183	27.63	23.75
2014	846.60	4233	27.53	23.51

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

Cable loss offset Low Band: 14.03dB Cable loss offset High Band: 14.49dB

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

Sub-test	$eta_{ m c}$	$eta_{ m d}$	$eta_{ m d} \ (SF)$	β_c/β_d	β _{HS} (Note1, Note 2)	CM (dB) (<i>Note 3</i>)	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		RMS	S Power (d Channel	lBm)	Power Class 3	Comments
2.20 0.00		9262	9400	9538	Limitation (dBm)	
	1	23.59	23.06	22.68	20.3dBm – 25.7dBm	Pass
HCDDA (D2)	2	23.30	23.03	22.67	20.3dBm – 25.7dBm	Pass
HSDPA(B2)	3	23.11	22.61	22.15	19.8dBm – 25.7dBm	Pass
	4	23.18	22.62	22.27	19.8dBm – 25.7dBm	Pass

Mode	Sub-test		Power (d Channel	Bm)	Power Class 3	Comments	
		4132	4172	4233	Limitation (dBm)		
	1	23.60	23.78	23.83	20.3dBm – 25.7dBm	Pass	
HSDPA(B5)	2	23.74	23.81	23.58	20.3dBm – 25.7dBm	Pass	
nspra(bs)	3	23.14	23.30	23.34	19.8dBm – 25.7dBm	Pass	
	4	23.19	23.34	23.40	19.8dBm – 25.7dBm	Pass	

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

Sub- test	$eta_{ m c}$	$eta_{ m d}$	β _d (SF)	β_c/β_d	$eta_{ m HS}$	$eta_{ m ec}$	$eta_{ m ed}$	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	β _{ed} 1: 47/15 β _{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 MPRs are implemented as per following sub-tests.

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Results:

Mode	Sub-test	Avg. Power (dBm) Channel			Power Class 3 Limita-	Comments	
		9262	9400	9538	tion (dBm)		
	1	23.34	23.15	22.76	18.8dBm – 25.7dBm	Pass	
	2	21.39	21.22	20.80	16.8dBm – 25.7dBm	Pass	
HSUPA(B2)	3	22.40	22.17	21.84	17.8dBm – 25.7dBm	Pass	
	4	21.52	21.27	20.84	16.8dBm – 25.7dBm	Pass	
	5	23.23	23.01	22.67	18.8dBm – 25.7dBm	Pass	

Mode	Sub-test	Avg.	Power (d Channel	Bm)	Power Class 3 Limita-	Comments
		4132	4183	4233	tion (dBm)	
	1	23.77	23.85	23.63	18.8dBm – 25.7dBm	Pass
	2	21.83	21.93	21.67	16.8dBm – 25.7dBm	Pass
HSUPA(B5)	3	22.81	22.91	22.71	17.8dBm – 25.7dBm	Pass
	4	21.88	21.99	21.75	16.8dBm – 25.7dBm	Pass
	5	23.63	23.68	23.52	18.8dBm – 25.7dBm	Pass

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6.5.2. Minimum Communications Power Measurement

PCS 1900 band

PCL	0	1	2	3	4	5	6	7	8
Output power (dBm)	27.3	25.1	23.3	21.1	18.8	17.4	15.4	13.3	12.2
PCL	9	10	11	12	13	14	15		
Output power (dBm)	10.3	8.5	6.6	4.6	2.5	0.5	-1.5		

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

WCDMA/HSDPA/HSUPA band II / V

The EUT output power was controlled by simulator. Set Communication Tester CMU200 function key "UE Power Control" and enter max rated power 24dBm. The EUT is going to be set to max output power to 24dBm. then record the read(see page 15 for measurement data). The min. power was measures by a function key "minimum power" then record the read. It is -52.3dBm. The power variation can be 0.1dB step by setting.

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f (886-2) 2298-0488

台灣檢驗科技股份有限公司

t (886-2) 2299-3279



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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.

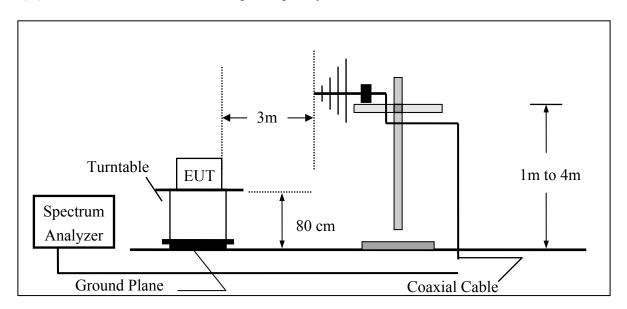
According to IC RSS-133 §6.4

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 3 of RSS 132, section 5.4. The transmitter output power shall not exceed the limits 11.5W given in SRSP-503.

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

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



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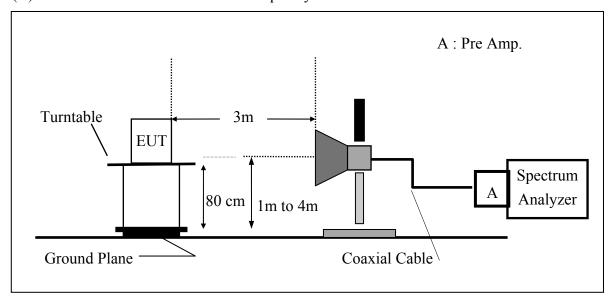
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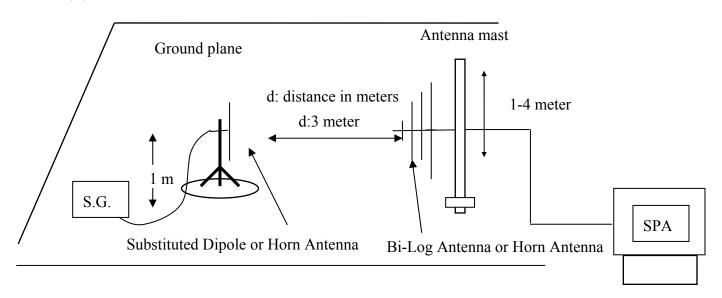
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(B) Radiated Emission Test Set-UP Frequency Over 1 GHz



(C) Substituted Method Test Set-UP



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7.3. Measurement Procedure:

The EUT was placed on 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)

Spectrum setting:

- 1. Detector = Peak, marker the highest value of the detector by maximum hold, set RBW wide enough to capture the entire signal of emission, and VBW > =3xRBW.

 Or,
- 2. KDB 971168 D01 Power Meas License Digital Systems v01 is adopted, and the procedure as lists under item 4, Measurement of the Average Power over the Fundamental Signal Bandwidth, is followed to set correspondingly for the acquisition of proper measurement data.

Set frequency = nominal signal center frequency;

Set span = $2 \times \text{occupied BW}$;

Set RBW $\approx 1 \sim 5\%$ of the span, not to exceed 1 MHz

Set $VBW = 3 \times RBW$;

Select average power (RMS) detector

Set sweep time and number of measurement points to achieve a minimum of 1 millisecond/pt integration time (ex. Point = 601points, then sweet time = $601*10^-3 = 6$ s.

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Activate trace averaging routine over a minimum of 10 sweeps;

Activate marker/span pair and set span = signal or channel bandwidth;

Activate the band/interval power marker function;

Record the band power level;

Record adjusted value as the average signal power level. Then activate the occupied bandwidth measurement function.

7.4. Measurement Equipment Used:

Refer to section 2.4 in this report

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7.5. Measurement Result: (Peak) –using option of peak measurement

7.5. Wieast		EUT		Measurement						
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit	
		MHz		V/H	dBm	dBd	dB	dBm	dBm	
		024.2	120	V	25.20	3.96	-2.80	26.36	38.45	
		824.2	128	Н	22.89	3.96	-2.80	24.05	38.45	
	TT	926.6	100	V	25.78	4.00	-2.82	26.96	38.45	
	Н	836.6	190	Н	24.15	4.00	-2.82	25.33	38.45	
		848.8	251	V	25.87	4.03	-2.84	27.06	38.45	
			251	Н	23.33	4.03	-2.84	24.52	38.45	
	F.1	9242 12	120	V	23.61	3.96	-2.80	24.77	38.45	
		824.2	128	Н	23.81	3.96	-2.80	24.97	38.45	
GGM050			190	V	23.42	4.00	-2.82	24.60	38.45	
GSM850	E1			Н	23.90	4.00	-2.82	25.08	38.45	
				V	22.77	4.03	-2.84	23.96	38.45	
		848.8	251	Н	23.64	4.03	-2.84	24.83	38.45	
		0242	120	V	21.03	3.96	-2.80	22.19	38.45	
		824.2	128	Н	24.22	3.96	-2.80	25.38	38.45	
	F2	026.6	190	V	20.70	4.00	-2.82	21.88	38.45	
	E2	836.6		Н	24.86	4.00	-2.82	26.04	38.45	
		0.40.0	0.51	V	20.54	4.03	-2.84	21.73	38.45	
		848.8	251	Н	24.27	4.03	-2.84	25.46	38.45	

Remark:

(1) The RBW, VBW of SPA for measurement RBW=300 KHz, VBW=1MHz

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]	EUT		Measurement						
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit	
		MHz		V/H	dBm	dBi	dB	dBm	dBm	
		1950.2	510	V	31.77	4.17	-4.29	31.65	33.00	
		1850.2	512	Н	25.44	4.51	-4.29	25.66	33.00	
		1880.0	661	V	31.10	4.17	-4.29	30.98	33.00	
	Н	1880.0	001	Н	24.34	4.51	-4.29	24.56	33.00	
		1909.8	810	V	26.95	4.17	-4.29	26.83	33.00	
		1909.8		Н	25.03	4.51	-4.29	25.25	33.00	
		1850.2	512	V	31.60	4.13	-4.33	31.40	33.00	
				Н	26.55	4.44	-4.33	26.66	33.00	
GSM 1900		1880.0 661	661	V	31.77	4.13	-4.33	31.57	33.00	
GSW 1900	E1		001	Н	23.87	4.44	-4.33	23.98	33.00	
			010	V	30.48	4.13	-4.33	30.28	33.00	
		1909.8	810	Н	26.99	4.44	-4.33	27.10	33.00	
				V	31.06	4.10	-4.37	30.79	33.00	
		1850.2	512	Н	26.21	4.36	-4.37	26.20	33.00	
		1000.0	661	V	30.17	4.09	-4.37	29.89	33.00	
	E2	1880.0	661	Н	22.56	4.36	-4.37	22.55	33.00	
		1000.0	010	V	29.32	4.09	-4.37	29.04	33.00	
		1909.8	810	Н	27.18	4.36	-4.37	27.17	33.00	

Remark:

(1) The RBW, VBW of SPA for measurement RBW=300K, VBW=1MHz

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	I	EUT		Measurement						
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit	
		MHz		V/H	dBm	dBd	dB	dBm	dBm	
		824.20	128	V	25.08	3.96	-2.8	26.24	38.45	
		824.20	120	Н	22.51	3.96	-2.8	23.67	38.45	
	Н	836.60	190	V	25.46	4	-2.82	26.64	38.45	
	п	830.00	170	Н	23.33	4	-2.82	24.51	38.45	
		848.80	251	V	25.89	4.03	-2.84	27.08	38.45	
				Н	24.4	4.03	-2.84	25.59	38.45	
	E1	824.20	128	V	23.42	3.96	-2.8	24.58	38.45	
		024.20		Н	23.91	3.96	-2.8	25.07	38.45	
GPRS 850		836.60	190	V	23.3	4	-2.82	24.48	38.45	
G1 K5 650	LI	830.00	170	Н	23.9	4	-2.82	25.08	38.45	
		848.80	251	V	23.82	4.03	-2.84	25.01	38.45	
		040.00	231	Н	24.24	4.03	-2.84	25.43	38.45	
		824.20	128	V	20.4	3.96	-2.8	21.56	38.45	
		024.20	120	Н	24.98	3.96	-2.8	26.14	38.45	
	E2	836.60	190	V	21.12	4	-2.82	22.3	38.45	
	152	830.00	190	Н	24.4	4	-2.82	25.58	38.45	
		949 90	251	V	20.32	4.03	-2.84	21.51	38.45	
		848.80	231	Н	23.95	4.03	-2.84	25.14	38.45	

Remark:

(1) The RBW, VBW of SPA for measurement RBW=300 KHz, VBW=1MHz

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	J	EUT			N	Ieasurem	ent		
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
		MHz		V/H	dBm	dBi	dB	dBm	dBm
		1850.20	512	V	32.07	4.17	-4.29	31.95	33
		1830.20	312	Н	26.79	4.51	-4.29	27.01	33
	Н	1880.00	661	V	31.11	4.17	-4.29	30.99	33
	11	1880.00	001	Н	23.5	4.51	-4.29	23.72	33
		1909.80	810	V	27.92	4.17	-4.29	27.8	33
			010	Н	24.9	4.51	-4.29	25.12	33
			512	V	31.27	4.13	-4.33	31.07	33
			312	Н	26.64	4.44	-4.33	26.75	33
GPRS 1900	E1	1880.00	661	V	31.35	4.13	-4.33	31.15	33
GI K5 1700	Li	1000.00	001	Н	24.44	4.44	-4.33	24.55	33
		1909.80	810	V	30.86	4.13	-4.33	30.66	33
		1707.00	010	Н	26.92	4.44	-4.33	27.03	33
		1850.20	512	V	30.19	4.09	-4.37	29.91	33
		E2 1880.00 661 -	312	Н	26.64	4.36	-4.37	26.63	33
	F2		661	V	30.58	4.09	-4.37	30.3	33
	1-2-		001	Н	23.04	4.36	-4.37	23.03	33
			V	28.63	4.09	-4.37	28.35	33	
		1707.00	909.80 810	Н	27.27	4.36	-4.37	27.26	33

Remark:

(1) The RBW, VBW of SPA for measurement RBW=300 KHz, VBW=1MHz

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]	EUT			N	1easureme	ent		
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
		MHz		V/H	dBm	dBd	dB	dBm	dBm
		824.20	128	V	22.89	3.96	-2.80	24.05	38.45
		824.20	128	Н	18.95	3.96	-2.80	20.11	38.45
	Н	836.60	190	V	22.96	4.00	-2.82	24.14	38.45
	11	830.00	190	Н	20.38	4.00	-2.82	21.56	38.45
		848.80	251	V	23.62	4.03	-2.84	24.81	38.45
		040.00 2.	231	Н	20.73	4.03	-2.84	21.92	38.45
		824.20	128	V	21.04	3.96	-2.80	22.20	38.45
		021.20	120	Н	20.96	3.96	-2.80	22.12	38.45
EDGE 850	GE 850 E1	836.60	190	V	20.17	4.00	-2.82	21.35	38.45
EDGE 030	ы	050.00	170	Н	21.26	4.00	-2.82	22.44	38.45
	-	848.80	251	V	20.76	4.03	-2.84	21.95	38.45
		0.000	231	Н	21.20	4.03	-2.84	22.39	38.45
		824 20	128	V	17.38	3.96	-2.80	18.54	38.45
		021.20	824.20 128	Н	22.75	3.96	-2.80	23.91	38.45
	E2	836.60 190	190	V	17.62	4.00	-2.82	18.80	38.45
	112		170	Н	22.29	4.00	-2.82	23.47	38.45
		848.80	251	V	16.72	4.03	-2.84	17.91	38.45
		0.10.00	251	Н	21.63	4.03	-2.84	22.82	38.45

Remark:

(1) The RBW, VBW of SPA for measurement RBW=300 KHz, VBW=1MHz

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]	EUT		Measurement							
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit		
		MHz		V/H	dBm	dBi	dB	dBm	dBm		
		1850.20	512	V	31.57	4.17	-4.29	31.45	33.00		
		1830.20	312	Н	25.86	4.51	-4.29	26.08	33.00		
	Н	1880.00	661	V	30.75	4.17	-4.29	30.63	33.00		
	11	1880.00	001	Н	22.86	4.51	-4.29	23.08	33.00		
		1909.80	810	V	27.11	4.17	-4.29	26.99	33.00		
		1909.80 8	810	Н	23.83	4.51	-4.29	24.05	33.00		
		1850.20	512	V	29.57	4.13	-4.33	29.37	33.00		
		1630.20	312	Н	24.69	4.44	-4.33	24.80	33.00		
EDGE 1900	0 E1	1880.00	661	V	29.95	4.13	-4.33	29.75	33.00		
EDGE 1900	121	1880.00	001	Н	22.71	4.44	-4.33	22.82	33.00		
		1909.80	810	V	28.55	4.13	-4.33	28.35	33.00		
		1909.80	810	Н	26.02	4.44	-4.33	26.13	33.00		
		1850.20	512	V	27.56	4.09	-4.37	27.28	33.00		
		1850.20 512 E2 1880.00 661	314	Н	24.31	4.36	-4.37	24.30	33.00		
	F2		661	V	28.71	4.09	-4.37	28.43	33.00		
	E2 1880.00 66	001	Н	21.75	4.36	-4.37	21.74	33.00			
		1000 20	210	V	28.83	4.09	-4.37	28.55	33.00		
		1909.80	80 810	Н	26.08	4.36	-4.37	26.07	33.00		

Remark:

(1) The RBW, VBW of SPA for measurement RBW=300 KHz, VBW=1MHz

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		EUT			N	Measurem	ent		
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
		MHz		V/H	dBm	dBi	dB	dBm	dBm
		1852.4	9262	V	30.57	4.17	-4.3	30.44	33
		1632.4	9202	Н	23.66	4.51	-4.3	23.87	33
	Н	1880.0	9400	V	27.96	4.17	-4.3	27.83	33
	11	1880.0	9400	Н	21.49	4.51	-4.3	21.7	33
		1907.6	9538	V	25.7	4.17	-4.3	25.57	33
		1907.0	9336	Н	22.83	4.51	-4.3	23.04	33
		1852.4	2.4 9262	V	27.09	4.13	-4.33	26.89	33
				Н	23.33	4.44	-4.33	23.44	33
WCDMA	E1	1880.0	9400	V	29.11	4.13	-4.33	28.91	33
Band II	БI	1880.0	9400	Н	21.62	4.44	-4.33	21.73	33
		1907.6	9538	V	26.76	4.13	-4.33	26.56	33
		1907.0	9336	Н	23.03	4.44	-4.33	23.14	33
		1952 /	9262	V	26.7	4.1	-4.36	26.44	33
			9202	Н	22.61	4.37	-4.36	22.62	33
	E2		9400	V	25.79	4.1	-4.36	25.53	33
	E2 1880.0 9	7 4 00	Н	19.98	4.37	-4.37	19.98	33	
		1007 (9538	V	24.09	4.1	-4.36	23.83	33
		1907.6	7338	Н	24.02	4.37	-4.36	24.03	33

Remark:

(1) The RBW, VBW of SPA for measurement RBW= 5MHz, VBW= 8MHz

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]	EUT		Measurement							
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit		
		MHz		V/H	dBm	dBd	dB	dBm	dBm		
		826.40	4132	V	15.52	3.97	-2.80	16.69	38.45		
		820.40	4132	Н	21.01	3.97	-2.80	22.18	38.45		
	Н	836.60	4183	V	15.35	4.00	-2.82	16.53	38.45		
	11	830.00	4103	Н	20.42	4.00	-2.82	21.60	38.45		
		846.60	4233	V	13.13	4.02	-2.84	14.31	38.45		
		040.00	7233	Н	19.10	4.02	-2.84	20.28	38.45		
		826.40	4132	V	21.89	3.97	-2.80	23.06	38.45		
		826.40 41	4132	Н	17.16	3.97	-2.80	18.33	38.45		
WCDMA	E1	836.60	4183	V	22.04	4.00	-2.82	23.22	38.45		
Band V	LI	050.00	1103	Н	18.91	4.00	-2.82	20.09	38.45		
		846.60	4233	V	21.30	4.02	-2.84	22.48	38.45		
		040.00	4233	Н	18.62	4.02	-2.84	19.80	38.45		
		826.40	4132	V	17.38	3.97	-2.80	18.55	38.45		
		020.40	826.40 4132	Н	19.28	3.97	-2.80	20.45	38.45		
	E2	836.60 418	4183	V	17.38	4.00	-2.82	18.56	38.45		
			1105	Н	20.16	4.00	-2.82	21.34	38.45		
		846.60	4233	V	17.61	4.02	-2.84	18.79	38.45		
		070.00	60 4233	Н	19.36	4.02	-2.84	20.54	38.45		

Remark:

(1) The RBW, VBW of SPA for measurement RBW= 5MHz, VBW= 8MHz

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]	EUT		Measurement							
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit		
		MHz		V/H	dBm	dBi	dB	dBm	dBm		
		1852.4	9262	V	30.89	4.17	-4.30	30.76	33.00		
		1832.4	9202	Н	24.11	4.51	-4.30	24.32	33.00		
	Н	1880.0	9400	V	28.16	4.17	-4.30	28.03	33.00		
	11	1880.0	9400	Н	21.88	4.51	-4.30	22.09	33.00		
		1907.6	9538	V	24.69	4.17	-4.29	24.57	33.00		
	1907.6	9556	Н	24.13	4.51	-4.30	24.34	33.00			
		1852 /	9262	V	28.21	4.13	-4.33	28.01	33.00		
		1852.4 92	7202	Н	24.42	4.44	-4.33	24.53	33.00		
HSUPA	E1	1880.0	9400	V	28.38	4.13	-4.33	28.18	33.00		
Band II	Li	1000.0	7400	Н	23.40	4.44	-4.33	23.51	33.00		
		1907.6	9538	V	28.65	4.13	-4.33	28.45	33.00		
		1707.0	7556	Н	25.46	4.44	-4.33	25.57	33.00		
		1852 4	9262	V	26.20	4.10	-4.36	25.94	33.00		
		1032.7	1852.4 9262 -	Н	24.10	4.37	-4.36	24.11	33.00		
	F2	E2 1880.0 9400 1907.6 9538	9400	V	26.64	4.10	-4.36	26.38	33.00		
	1-2		7400	Н	20.45	4.37	-4.36	20.46	33.00		
			9538	V	27.05	4.10	-4.36	26.79	33.00		
		1707.0	7.6 9538	Н	25.07	4.37	-4.36	25.08	33.00		

Remark:

(1) The RBW, VBW of SPA for measurement RBW= 5MHz, VBW= 8MHz

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	J	EUT			N	Ieasureme	ent		
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
		MHz		V/H	dBm	dBd	dB	dBm	dBm
		826.40	4132	V	21.67	3.97	-2.80	22.84	38.45
		820.40	4132	Н	17.87	3.97	-2.80	19.04	38.45
	Н	836.60	4183	V	23.31	4.00	-2.82	24.49	38.45
	11	830.00	4103	Н	20.23	4.00	-2.82	21.41	38.45
		846.60	4233	V	22.82	4.02	-2.84	24.00	38.45
			4233	Н	18.64	4.02	-2.84	19.82	38.45
			4132	V	18.97	3.97	-2.80	20.14	38.45
			7132	Н	20.98	3.97	-2.80	22.15	38.45
HSUPA	E1	836.60	4183	V	19.25	4.00	-2.82	20.43	38.45
Band V	Li	830.00	7103	Н	21.59	4.00	-2.82	22.77	38.45
		846.60	4233	V	18.27	4.02	-2.84	19.45	38.45
		040.00	7233	Н	21.47	4.02	-2.84	22.65	38.45
		826.40	4132	V	16.42	3.97	-2.80	17.59	38.45
		826.40 4132 82 836.60 4182	7132	Н	20.44	3.97	-2.80	21.61	38.45
	F2		4183	V	16.73	4.00	-2.82	17.91	38.45
	E2 836.60 4	7103	Н	22.13	4.00	-2.82	23.31	38.45	
		846.60 42	4233	V	15.18	4.02	-2.84	16.36	38.45
		040.00	4233	Н	20.45	4.02	-2.84	21.63	38.45

Remark:

(1) The RBW, VBW of SPA for measurement RBW= 5MHz, VBW= 8MHz

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]	EUT			N	1easureme	ent		
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
		MHz		V/H	dBm	dBi	dB	dBm	dBm
		1852.4	9262	V	30.72	4.17	-4.30	30.59	33.00
		1832.4	9202	Н	24.86	4.51	-4.30	25.07	33.00
	Н	1880.0	9400	V	27.61	4.17	-4.30	27.48	33.00
	11	1880.0	9400	Н	21.13	4.51	-4.30	21.34	33.00
		1907.6	07.6 9538	V	25.90	4.17	-4.30	25.77	33.00
	1907.6	1907.0	9556	Н	23.75	4.51	-4.30	23.96	33.00
		1852 /	9262	V	28.17	4.13	-4.33	27.97	33.00
		1852.4 92	7202	Н	24.96	4.44	-4.33	25.07	33.00
HSDPA	E1	1880.0	9400	V	29.17	4.13	-4.33	28.97	33.00
Band II	Li	1000.0	7400	Н	22.74	4.44	-4.33	22.85	33.00
		1907.6	9538	V	28.56	4.13	-4.33	28.36	33.00
		1707.0	7556	Н	24.18	4.44	-4.33	24.29	33.00
		1852 4	9262	V	25.87	4.10	-4.36	25.61	33.00
		1032.7	1852.4 9262	Н	23.03	4.37	-4.36	23.04	33.00
	E2		9400	V	26.82	4.10	-4.36	26.56	33.00
	1-2		7400	Н	19.58	4.37	-4.36	19.59	33.00
			V	27.38	4.10	-4.36	27.12	33.00	
		1707.0	9538	Н	25.22	4.37	-4.36	25.23	33.00

Remark:

(1) The RBW, VBW of SPA for measurement RBW= 5MHz, VBW= 8MHz

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]	EUT		Measurement							
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit		
		MHz		V/H	dBm	dBd	dB	dBm	dBm		
		826.40	4132	V	17.94	3.97	-2.80	19.11	38.45		
		820.40	4132	Н	20.99	3.97	-2.80	22.16	38.45		
	Н	836.60	4183	V	17.15	4.00	-2.82	18.33	38.45		
	11	830.00	4103	Н	22.05	3.99	-2.82	23.22	38.45		
		846.60	46.60 4233	V	15.43	4.02	-2.84	16.61	38.45		
	826.40	840.00	4233	Н	20.19	4.02	-2.84	21.37	38.45		
		4132	V	23.07	3.97	-2.80	24.24	38.45			
		826.40	4132	Н	17.73	3.97	-2.80	18.90	38.45		
HSDPA	E1	836.60	4183	V	23.24	4.00	-2.82	24.42	38.45		
Band V	Li	830.00	7103	Н	20.07	3.99	-2.82	21.24	38.45		
		846.60	4233	V	22.51	4.02	-2.84	23.69	38.45		
		840.00	4233	Н	19.30	4.02	-2.84	20.48	38.45		
		826.40	1132	V	18.13	3.97	-2.80	19.30	38.45		
		826.40 4132 E2 836.60 4183	7134	Н	19.50	3.97	-2.80	20.67	38.45		
	F2		4183	V	19.82	4.00	-2.82	21.00	38.45		
	L'2		7103	Н	21.76	4.00	-2.82	22.94	38.45		
			1233	V	18.52	4.02	-2.84	19.70	38.45		
		070.00	4233	Н	20.91	4.02	-2.84	22.09	38.45		

Remark:

(1) The RBW, VBW of SPA for measurement RBW= 5MHz, VBW= 8MHz

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7.6. Measurement Result: (Average) – using option of RMS measurement

	J	EUT	<i>y</i>	Measurement						
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit	
		MHz		V/H	dBm	dBd	dB	dBm	dBm	
		824.20	128	V	17.45	3.96	-2.80	18.61	40.60	
		624.20	120	Н	14.92	3.96	-2.80	16.08	40.60	
	Н	836.60	190	V	17.08	4.00	-2.82	18.26	40.60	
	11	830.00	190	Н	15.40	4.00	-2.82	16.58	40.60	
		848.80	251	V	17.82	4.03	-2.84	19.01	40.60	
			231	Н	15.19	4.03	-2.84	16.38	40.60	
		824.20	128	V	15.12	3.96	-2.80	16.28	40.60	
			120	Н	15.67	3.96	-2.80	16.83	40.60	
GSM 850	E1	836.60	190	V	15.44	4.00	-2.82	16.62	40.60	
G5141 05 0	LI	030.00	170	Н	15.65	4.00	-2.82	16.83	40.60	
		848.80	251	V	16.15	4.03	-2.84	17.34	40.60	
		0.00	231	Н	16.08	4.03	-2.84	17.27	40.60	
		824 20	128	V	11.67	3.96	-2.80	12.83	40.60	
	E2 836.60	120	Н	17.07	3.96	-2.80	18.23	40.60		
		836 60	190	V	12.31	4.00	-2.82	13.49	40.60	
		030.00	170	Н	16.15	4.00	-2.82	17.33	40.60	
		251	V	11.39	4.03	-2.84	12.58	40.60		
		070.00	231	Н	15.04	4.03	-2.84	16.23	40.60	

Remark:

(1) The RBW,VBW of SPA for frequency RBW=6 kHz, VBW=20 kHz

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	I	EUT			N	1 easureme	ent		
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
		MHz		V/H	dBm	dBi	dB	dBm	dBm
		1850.20	512	V	25.38	4.17	-4.29	25.26	33.00
		1830.20	312	Н	17.68	4.51	-4.29	17.90	33.00
	Н	1880.00	661	V	22.78	4.17	-4.29	22.66	33.00
	11	1880.00	001	Н	16.05	4.51	-4.29	16.27	33.00
		1909.80	810	V	19.72	4.17	-4.29	19.60	33.00
	1909.80	810	Н	16.95	4.51	-4.29	17.17	33.00	
		1850.20	512	V	23.84	4.13	-4.33	23.64	33.00
		1030.20	312	Н	17.21	4.44	-4.33	17.32	33.00
GSM 1900	900 E1	1880.00	661	V	23.31	4.13	-4.33	23.11	33.00
GBW 1700	Di	1000.00	001	Н	15.36	4.44	-4.33	15.47	33.00
		1909.80	810	V	22.42	4.13	-4.33	22.22	33.00
		1707.00	010	Н	17.97	4.44	-4.33	18.08	33.00
		1850.20	512	V	22.38	4.09	-4.37	22.10	33.00
		1030.20	1850.20 512	Н	18.24	4.36	-4.37	18.23	33.00
	E2	E2 1880.00 66	661	V	21.17	4.09	-4.37	20.89	33.00
	E2 1880.00 60	001	Н	13.75	4.36	-4.37	13.74	33.00	
		1000.90	V	19.23	4.09	-4.37	18.95	33.00	
		1707.00	09.80 810	Н	17.91	4.36	-4.37	17.90	33.00

Remark:

(1) The RBW, VBW of SPA for frequency RBW=6 kHz, VBW=20 kHz

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	I	EUT		Measurement							
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit		
		MHz		V/H	dBm	dBd	dB	dBm	dBm		
		824.20	128	V	16.35	3.96	-2.80	17.51	40.60		
		824.20	128	Н	14.05	3.96	-2.80	15.21	40.60		
	Н	836.60	190	V	17.00	4.00	-2.82	18.18	40.60		
	11	830.00	190	Н	15.24	4.00	-2.82	16.42	40.60		
		848.80	251	V	17.56	4.03	-2.84	18.75	40.60		
		040.00	231	Н	16.07	4.03	-2.84	17.26	40.60		
		824.20 1	128	V	14.55	3.96	-2.80	15.71	40.60		
			120	Н	16.74	3.96	-2.80	17.90	40.60		
GPRS 850	E1	836.60	190	V	14.62	4.00	-2.82	15.80	40.60		
GI K5 650	LI	630.00	170	Н	15.21	4.00	-2.82	16.39	40.60		
		848.80	251	V	14.95	4.03	-2.84	16.14	40.60		
		040.00	231	Н	16.38	4.03	-2.84	17.57	40.60		
		824.20	128	V	12.13	3.96	-2.80	13.29	40.60		
		824.20 128	120	Н	16.53	3.96	-2.80	17.69	40.60		
	E2 836.60	190	V	13.02	4.00	-2.82	14.20	40.60			
		170	Н	16.80	4.00	-2.82	17.98	40.60			
		848.80	251	V	11.91	4.03	-2.84	13.10	40.60		
		040.00	80 251	Н	16.42	4.03	-2.84	17.61	40.60		

Remark:

(1) The RBW, VBW of SPA for frequency RBW=6 kHz, VBW=20 kHz

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]	EUT			N	1easureme	ent		
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
		MHz		V/H	dBm	dBi	dB	dBm	dBm
		1850.20	512	V	23.77	4.17	-4.29	23.65	33.00
		1830.20	312	Н	18.36	4.51	-4.29	18.58	33.00
	Н	1880.00	661	V	22.57	4.17	-4.29	22.45	33.00
	11	1880.00	001	Н	14.98	4.51	-4.29	15.20	33.00
		1909.80	810	V	19.01	4.17	-4.29	18.89	33.00
		1707.00	010	Н	16.47	4.51	-4.29	16.69	33.00
		1850.20	512	V	22.91	4.13	-4.33	22.71	33.00
		1030.20	312	Н	17.68	4.44	-4.33	17.79	33.00
GPRS 1900	E1	1880.00	661	V	21.45	4.13	-4.33	21.25	33.00
GIRS 1900	Li	1000.00	001	Н	16.47	4.44	-4.33	16.58	33.00
		1909.80	810	V	21.22	4.13	-4.33	21.02	33.00
		1707.00	010	Н	18.52	4.44	-4.33	18.63	33.00
		1850.20	512	V	21.57	4.09	-4.37	21.29	33.00
		1030.20	J12	Н	17.69	4.36	-4.37	17.68	33.00
	E2	1880.00	661	V	21.39	4.09	-4.37	21.11	33.00
	L/L	1880.00 661	Н	14.77	4.36	-4.37	14.76	33.00	
		1909.80	909.80 810	V	20.62	4.09	-4.37	20.34	33.00
		1707.00	010	Н	18.60	4.36	-4.37	18.59	33.00

Remark:

(1) The RBW, VBW of SPA for frequency RBW=6 kHz, VBW=20 kHz

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	I	EUT			N	Ieasurem	ent		
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
		MHz		V/H	dBm	dBd	dB	dBm	dBm
		824.20	128	V	13.31	3.96	-2.80	14.47	40.60
		824.20	120	Н	7.65	3.96	-2.80	8.81	40.60
	Н	836.60	190	V	11.80	4.00	-2.82	12.98	40.60
	11	830.00	190	Н	9.28	4.00	-2.82	10.46	40.60
		848.80	251	V	12.88	4.03	-2.84	14.07	40.60
		848.80	231	Н	11.21	4.03	-2.84	12.40	40.60
		824.20	128	V	9.37	3.96	-2.80	10.53	40.60
		824.20	120	Н	10.57	3.96	-2.80	11.73	40.60
EDGE 850	E1	836.60	190	V	8.96	4.00	-2.82	10.14	40.60
EDGE 650	151	830.00	190	Н	9.65	4.00	-2.82	10.83	40.60
		848.80	251	V	8.50	4.03	-2.84	9.69	40.60
		040.00	231	Н	9.70	4.03	-2.84	10.89	40.60
		824.20	128	V	5.74	3.96	-2.80	6.90	40.60
		824.20	120	Н	12.03	3.96	-2.80	13.19	40.60
	E2	836.60	190	V	5.68	4.00	-2.82	6.86	40.60
	EZ	830.00	190	Н	12.30	4.00	-2.82	13.48	40.60
		848.80	251	V	5.25	4.03	-2.84	6.44	40.60
		040.00	231	Н	10.42	4.03	-2.84	11.61	40.60

Remark:

(1) The RBW, VBW of SPA for frequency RBW=6 kHz, VBW=20 kHz

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	J	EUT			N	1easureme	ent		
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
		MHz		V/H	dBm	dBi	dB	dBm	dBm
		1850.20	512	V	20.88	4.17	-4.29	20.76	33.00
		1830.20	312	Н	13.90	4.51	-4.29	14.12	33.00
	Н	1880.00	661	V	18.80	4.17	-4.29	18.68	33.00
	11	1880.00	001	Н	10.70	4.51	-4.29	10.92	33.00
		1909.80	810	V	15.69	4.17	-4.29	15.57	33.00
		1909.80	9.80	Н	12.40	4.51	-4.29	12.62	33.00
		1850.20	512	V	17.24	4.13	-4.33	17.04	33.00
		1030.20	312	Н	13.77	4.44	-4.33	13.88	33.00
EDGE 1900	E1	1880.00	661	V	18.58	4.13	-4.33	18.38	33.00
LDGL 1700	Li	1000.00	001	Н	12.56	4.44	-4.33	12.67	33.00
		1909.80	810	V	18.40	4.13	-4.33	18.20	33.00
		1707.00	010	Н	13.51	4.44	-4.33	13.62	33.00
		1850.20	512	V	16.51	4.09	-4.37	16.23	33.00
		1630.20	312	Н	13.23	4.36	-4.37	13.22	33.00
	E2	1880.00	661	V	17.86	4.09	-4.37	17.58	33.00
	Ľ4	1880.00 661	Н	9.46	4.36	-4.37	9.45	33.00	
		1909.80	810	V	17.73	4.09	-4.37	17.45	33.00
		1909.00	810	Н	14.95	4.36	-4.37	14.94	33.00

Remark:

(1) The RBW, VBW of SPA for frequency RBW=6 kHz, VBW=20 kHz

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]	EUT			N	1 easureme	ent		
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
		MHz		V/H	dBm	dBi	dB	dBm	dBm
		1852.40	9262	V	26.49	4.17	-4.30	26.36	33.00
		1832.40	9202	Н	20.28	4.51	-4.30	20.49	33.00
	Н	1880.00	9400	V	23.64	4.17	-4.30	23.51	33.00
	П	1880.00	9400	Н	16.93	4.51	-4.30	17.14	33.00
		1907.60	9538	V	21.46	4.17	-4.30	21.33	33.00
		1907.00	9336	Н	19.60	4.51	-4.30	19.81	33.00
		1852.40	9262	V	23.78	4.13	-4.33	23.58	33.00
		1632.40	9202	Н	18.97	4.44	-4.33	19.08	33.00
WCDMA	E1	1880.00	9400	V	24.71	4.13	-4.33	24.51	33.00
Band II	LI	1880.00	3400	Н	16.85	4.44	-4.33	16.96	33.00
		1907.60	9538	V	23.01	4.13	-4.33	22.81	33.00
		1907.00	9336	Н	19.87	4.44	-4.33	19.98	33.00
		1852.40	9262	V	22.61	4.10	-4.36	22.35	33.00
		1032.40	7202	Н	19.51	4.37	-4.36	19.52	33.00
	E2	1880.00	9400	V	22.19	4.10	-4.36	21.93	33.00
	L/L	1000.00	7400	Н	15.85	4.37	-4.36	15.86	33.00
		1907.60	9538	V	21.63	4.10	-4.36	21.37	33.00
		1907.00	9330	Н	20.11	4.37	-4.36	20.12	33.00

Remark:

(1) The RBW, VBW of SPA for frequency RBW= 1MHz, VBW= 3MHz

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	I	EUT			N	Ieasureme	ent		
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
		MHz		V/H	dBm	dBd	dB	dBm	dBm
		826.40	4132	V	17.58	3.97	-2.80	18.75	40.60
		820.40	4132	Н	12.88	3.97	-2.80	14.05	40.60
	Н	836.60	4183	V	17.84	4.00	-2.82	19.02	40.60
	11	830.00	4103	Н	14.44	4.00	-2.82	15.62	40.60
		846.60	4233	V	17.88	4.02	-2.84	19.06	40.60
		840.00 423	4233	Н	14.22	4.02	-2.84	15.40	40.60
		826.40	4132	V	13.42	3.97	-2.80	14.59	40.60
		020.40	7132	Н	16.49	3.97	-2.80	17.66	40.60
WCDMA	E1	836.60	4183	V	12.94	3.99	-2.82	14.11	40.60
Band V	Di	050.00	1103	Н	16.20	4.00	-2.82	17.38	40.60
		846.60	4233	V	13.83	4.02	-2.84	15.01	40.60
		040.00	7233	Н	15.71	4.02	-2.84	16.89	40.60
		826.40	4132	V	12.51	3.97	-2.80	13.68	40.60
		020.40	F132	Н	16.82	3.97	-2.80	17.99	40.60
	F2	836.60	4183	V	11.45	4.00	-2.82	12.63	40.60
	E2 836.60 4	1103	Н	16.41	4.00	-2.82	17.59	40.60	
		846 60	846.60 4233	V	10.10	4.02	-2.84	11.28	40.60
		040.00	74233	Н	15.41	4.02	-2.84	16.59	40.60

Remark:

(1) The RBW, VBW of SPA for frequency RBW= 1MHz, VBW= 3MHz

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]	EUT			N	1easureme	ent		
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
		MHz		V/H	dBm	dBi	dB	dBm	dBm
		1852.4	9262	V	26.67	4.17	-4.30	26.54	33.00
		1632.4	9202	Н	20.26	4.51	-4.30	20.47	33.00
	Н	1880.0	9400	V	23.72	4.17	-4.30	23.59	33.00
	11	1880.0	9400	Н	17.24	4.51	-4.30	17.45	33.00
		1907.6	9538	V	21.00	4.17	-4.30	20.87	33.00
		1907.0	9336	Н	19.78	4.51	-4.30	19.99	33.00
		1852.4	9262	V	23.42	4.13	-4.33	23.22	33.00
		1832.4	9202	Н	19.59	4.44	-4.33	19.70	33.00
HSUPA	E1	1880.0	9400	V	22.92	4.13	-4.33	22.72	33.00
Band II	EI	1880.0	9400	Н	16.55	4.44	-4.33	16.66	33.00
		1907.6	9538	V	22.44	4.13	-4.33	22.24	33.00
		1907.0	9336	Н	19.74	4.44	-4.33	19.85	33.00
		1852.4	9262	V	20.62	4.10	-4.36	20.36	33.00
		1032.4	7202	Н	19.06	4.37	-4.36	19.07	33.00
	E2	1880.0	9400	V	22.31	4.10	-4.36	22.05	33.00
	Ľ4	1000.0	9400	Н	15.62	4.37	-4.36	15.63	33.00
		1907.6	9538	V	22.01	4.10	-4.36	21.75	33.00
		1907.0	3330	Н	20.16	4.37	-4.36	20.17	33.00

Remark:

(1) The RBW, VBW of SPA for frequency RBW= 1MHz, VBW= 3MHz

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]	EUT			N	1easureme	ent		
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
		MHz		V/H	dBm	dBd	dB	dBm	dBm
		826.40	4132	V	17.21	3.97	-2.80	18.38	40.60
		820.40	4132	Н	12.55	3.97	-2.80	13.72	40.60
	Н	836.60	4183	V	17.77	4.00	-2.82	18.95	40.60
	11	830.00	4103	Н	14.54	4.00	-2.82	15.72	40.60
		846.60	4233	V	17.97	4.02	-2.84	19.15	40.60
		840.00	4233	Н	13.91	4.02	-2.84	15.09	40.60
		826.40	4132	V	12.93	3.97	-2.80	14.10	40.60
		020.40	7132	Н	15.86	3.97	-2.80	17.03	40.60
HSUPA	E1	836.60	4183	V	12.95	4.00	-2.82	14.13	40.60
Band V	LI	050.00	1103	Н	16.40	4.00	-2.82	17.58	40.60
		846.60	4233	V	13.56	4.02	-2.84	14.74	40.60
		040.00	4233	Н	15.60	4.02	-2.84	16.78	40.60
		826.40	4132	V	12.49	3.97	-2.80	13.66	40.60
		020.40	F1.J2	Н	16.30	3.97	-2.80	17.47	40.60
	E2	836.60	4183	V	10.30	4.00	-2.82	11.48	40.60
	114	050.00	1105	Н	16.31	4.00	-2.82	17.49	40.60
		846.60	4233	V	9.77	4.02	-2.84	10.95	40.60
		070.00	1233	Н	16.50	4.02	-2.84	17.68	40.60

Remark:

(1) The RBW, VBW of SPA for frequency RBW= 1MHz, VBW= 3MHz

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台灣檢驗科技股份有限公司

t (886-2) 2299-3279



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]	EUT			N	1easureme	ent		
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
		MHz		V/H	dBm	dBi	dB	dBm	dBm
		1852.40	9262	V	27.09	4.17	-4.30	26.96	33.00
		1832.40	9202	Н	20.17	4.51	-4.30	20.38	33.00
	Н	1880.00	9400	V	24.24	4.17	-4.30	24.11	33.00
	11	1880.00	3400	Н	17.85	4.51	-4.30	18.06	33.00
		1907.60	9538	V	21.09	4.17	-4.30	20.96	33.00
		1707.00	7556	Н	19.21	4.51	-4.30	19.42	33.00
		1852.40	9262	V	23.28	4.13	-4.33	23.08	33.00
		1032.10	7202	Н	19.54	4.44	-4.33	19.65	33.00
HSDPA	E1	1880.00	9400	V	23.68	4.13	-4.33	23.48	33.00
Band II	LI	1000.00	7100	Н	17.27	4.44	-4.33	17.38	33.00
		1907.60	9538	V	22.99	4.13	-4.33	22.79	33.00
		1707.00	7550	Н	19.08	4.44	-4.33	19.19	33.00
		1852.40	9262	V	21.82	4.10	-4.37	21.55	33.00
		1032.40	7202	Н	18.54	4.37	-4.36	18.55	33.00
	E2	1880.00	9400	V	22.16	4.10	-4.36	21.90	33.00
	114	1000.00	7100	Н	15.24	4.37	-4.36	15.25	33.00
		1907.60	9538	V	22.39	4.10	-4.36	22.13	33.00
		1707.00	7550	Н	20.71	4.37	-4.36	20.72	33.00

Remark:

(1) The RBW, VBW of SPA for frequency RBW= 1MHz, VBW= 3MHz

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	J	EUT		Measurement						
Operation Band	Pol.	Fundamental Frequency	СН	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit	
		MHz		V/H	dBm	dBd	dB	dBm	dBm	
		826.40	4132	V	17.13	3.97	-2.80	18.30	40.60	
		820.40	4132	Н	13.12	3.97	-2.80	14.29	40.60	
	Н	836.60	4183	V	17.40	4.00	-2.82	18.58	40.60	
	11	830.00	4103	Н	14.65	4.00	-2.82	15.83	40.60	
		846.60	4233	V	18.06	4.02	-2.84	19.24	40.60	
		840.00	4233	Н	13.55	4.02	-2.84	14.73	40.60	
		826.40	4132	V	13.13	3.97	-2.80	14.30	40.60	
		020.40	7132	Н	15.59	3.97	-2.80	16.76	40.60	
HSDPA	E1	836.60	4183	V	12.77	4.00	-2.82	13.95	40.60	
Band V	Li	830.00	7103	Н	16.19	4.00	-2.82	17.37	40.60	
		846.60	4233	V	12.61	4.02	-2.84	13.79	40.60	
		040.00	7233	Н	15.46	4.02	-2.84	16.64	40.60	
		826.40	4132	V	11.82	3.97	-2.80	12.99	40.60	
		020.40	7134	Н	16.34	3.97	-2.80	17.51	40.60	
	E2	836.60	4183	V	10.67	3.99	-2.82	11.84	40.60	
	1-2	030.00	1103	Н	16.22	4.00	-2.82	17.40	40.60	
		846 60	846.60 4233	V	9.08	4.02	-2.84	10.26	40.60	
		040.00	74233	Н	15.27	4.02	-2.84	16.45	40.60	

Remark:

(1) The RBW, VBW of SPA for frequency RBW= 1MHz, VBW= 3MHz

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8. OCCUPIED BANDWIDTH MEASUREMENT

8.1. Standard Applicable:

According to §FCC 2.1049 (99%)

According to IC RSS-Gen Issue 3 §4.6.1 (99%)

According to IC RSS-133 §2.3 (20dB)

8.2. Test Set-up:

Refer to section 6.2 in this report

8.3. Measurement Procedure:

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW was set to about 1% of emission BW, VBW= 3 times RBW, -20dBc display line was placed on the screen (or 20dB bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace. Then set RBW to 99% bandwidth, RBW= 1%, VBW= 3 RBW, with span > 2 * Signal BW, set % Power = 99%.

NOTE: For the plot of bandwidth measurement, the marker of the 99% bandwidth is diamond-shape while the marker of the 20dB BW is arrow-mark

8.4. Measurement Equipment Used:

Refer to section 2.4 in this report

8.5. Measurement Result:

Refer to next pages.

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99% Bandwidth

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (kHz)
	824.20	128	246.1685
GSM 850	836.60	190	239.3630
	848.80	251	244.8149

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (kHz)
	1850.20	512	247.2190
GSM 1900	1880.00	661	248.8594
	1909.80	810	243.0142

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (kHz)
	824.20	128	247.7568
GPRS 850	836.60	190	242.1543
	848.80	251	245.1273

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (kHz)
GPRS 1900	1850.20	512	244.1087
	1880.00	661	241.8908
	1909.80	810	246.4358

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (kHz)
EDGE 850	824.20	128	246.9709
	836.60	190	251.3668
	848.80	251	250.8310

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (kHz)
EDGE 1900	1850.20	512	246.1881
	1880.00	661	245.2496
	1909.80	810	245.5234

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EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
WCDMA Band II	1852.40	9262	4.0579
	1880.00	9400	4.1023
	1907.60	9538	4.0817

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
WCDMA Band V	826.40	4132	4.0639
	836.60	4183	4.1233
	846.60	4233	4.0796

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
HSUPA II	1852.40	9262	4.2010
	1880.00	9400	4.1155
	1907.60	9538	4.1908

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
HSUPA V	826.40	4132	4.1017
	836.60	4183	4.1353
	846.60	4233	4.1863

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
HSDPA Band II	1852.40	9262	4.1931
	1880.00	9400	4.0152
	1907.60	9538	4.0886

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
HSDPA Band V	826.40	4132	4.1146
	836.60	4183	4.1992
	846.60	4233	4.1228

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20dB Bandwidth

EUT Mode	Frequency (MHz)	СН	20dB Bandwidth (MHz)
GSM 850	824.20	128	0.293
	836.60	190	0.283
	848.80	251	0.281

EUT Mode	Frequency (MHz)	СН	20dB Bandwidth (MHz)
GSM 1900	1850.20	512	0.289
	1880.00	661	0.293
	1909.80	810	0.282

EUT Mode	Frequency (MHz)	СН	20dB Bandwidth (MHz)
	824.20	128	0.292
GPRS 850	836.60	190	0.286
	848.80	251	0.285

EUT Mode	Frequency (MHz)	СН	20dB Bandwidth (MHz)
GPRS 1900	1850.20	512	0.288
	1880.00	661	0.287
	1909.80	810	0.284

EUT Mode	Frequency (MHz)	СН	20dB Bandwidth (MHz)
EDGE 850	824.20	128	0.285
	836.60	190	0.281
	848.80	251	0.291

EUT Mode	Frequency (MHz)	СН	20dB Bandwidth (MHz)
EDGE 1900	1850.20	512	0.289
	1880.00	661	0.290
	1909.80	810	0.288

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EUT Mode	Frequency (MHz)	СН	20dB Bandwidth (MHz)
WCDMA II	1852.40	9262	4.506
	1880.00	9400	4.401
	1907.60	9538	4.424

EUT Mode	Frequency (MHz)	СН	20dB Bandwidth (MHz)
WCDMA V	826.40	4132	4.459
	836.00	4183	4.426
	846.60	4233	4.466

EUT Mode	Frequency (MHz)	СН	20dB Bandwidth (MHz)
HSUPA II	1852.40	9262	4.488
	1880.00	9400	4.396
	1907.60	9538	4.485

EUT Mode	Frequency (MHz)	СН	20dB Bandwidth (MHz)
HSUPA V	826.40	4132	4.449
	836.60	4183	4.521
	846.60	4233	4.492

EUT Mode	Frequency (MHz)	СН	20dB Bandwidth (MHz)
HSDPA II	1852.40	9262	4.488
	1880.00	9400	4.389
	1907.60	9538	4.295

EUT Mode	Frequency (MHz)	СН	20dB Bandwidth (MHz)
HSDPA V	826.40	4132	4.501
	836.60	4183	4.469
	846.60	4233	4.461

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99% & 20dB Bandwidth Test Data

Figure 8-1: GSM 850 Channel Low

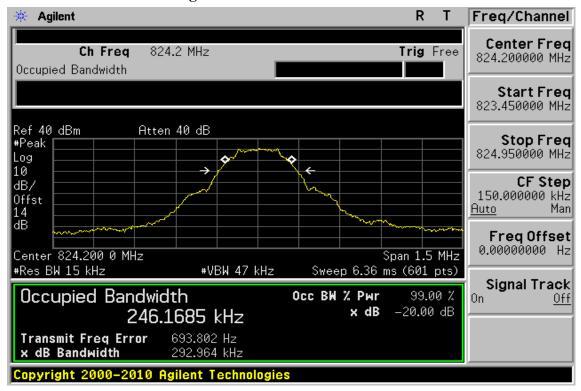
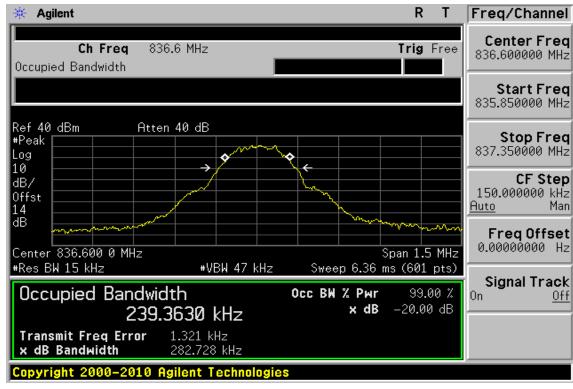


Figure 8-2: GSM 850 Channel Mid



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Figure 8-3: GSM 850 Channel High

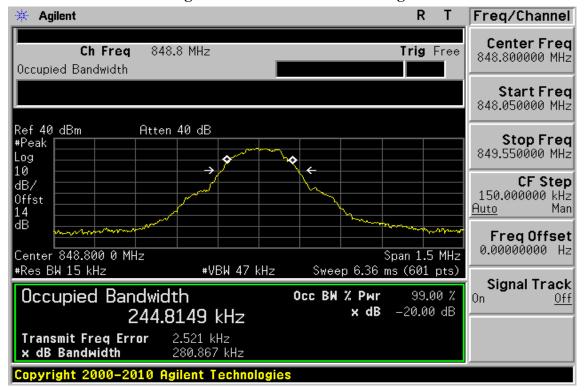
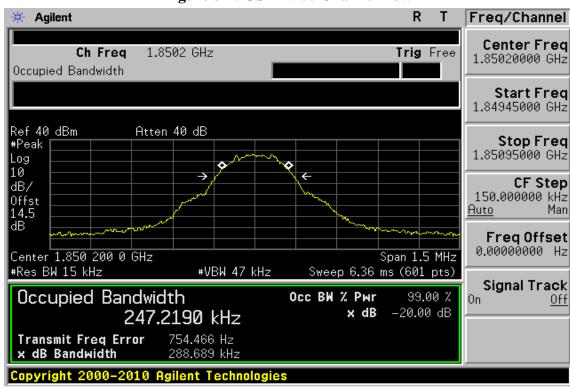


Figure 8-4: GSM 1900 Channel Low



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Figure 8-5: GSM 1900 Channel Mid

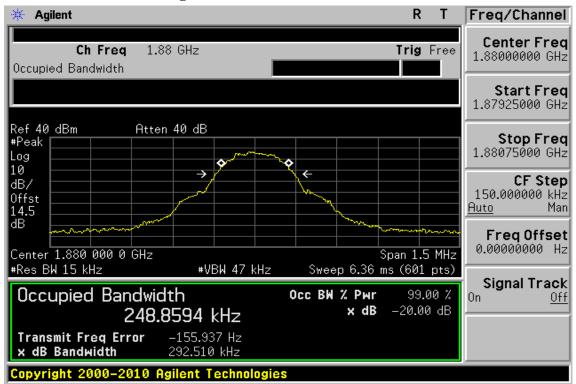


Figure 8-6: GSM 1900 Channel High



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Figure 8-7: GPRS 850 Channel Low

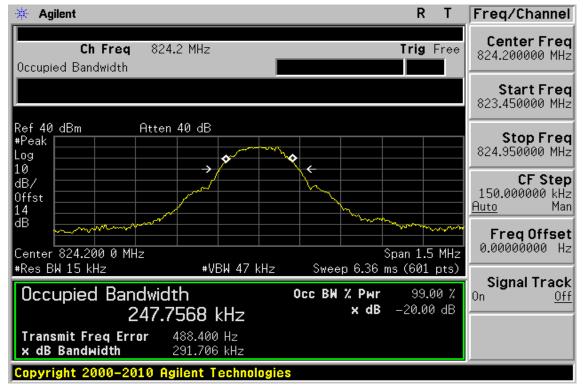
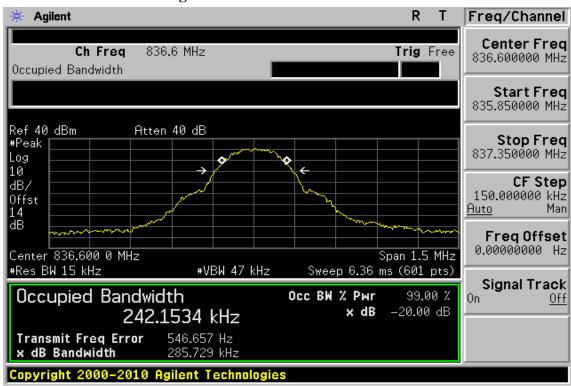


Figure 8-8: GPRS 850 Channel Mid



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Figure 8-9: GPRS 850 Channel High

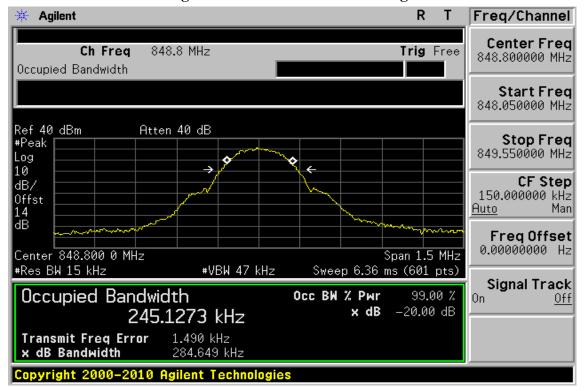
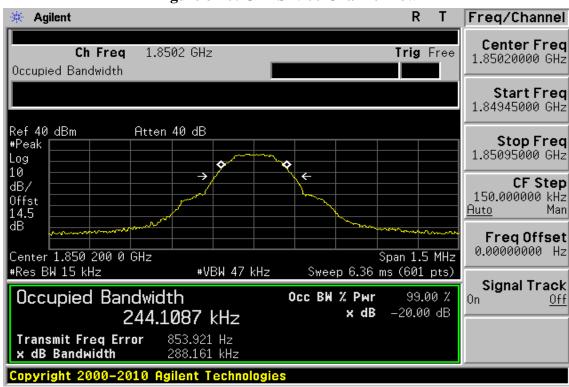


Figure 8-10: GPRS 1900 Channel Low



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Figure 8-11: GPRS 1900 Channel Mid

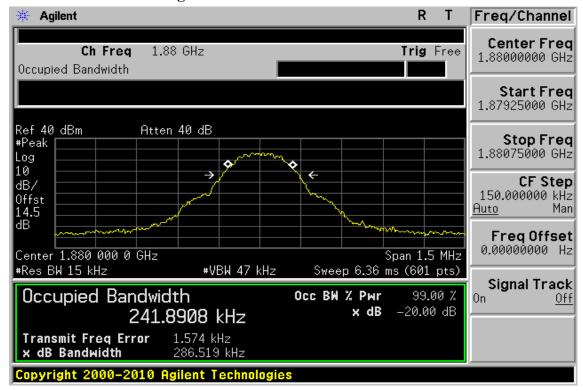


Figure 8-12: GPRS 1900 Channel High



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Figure 8-13: EDGE 850 Channel Low

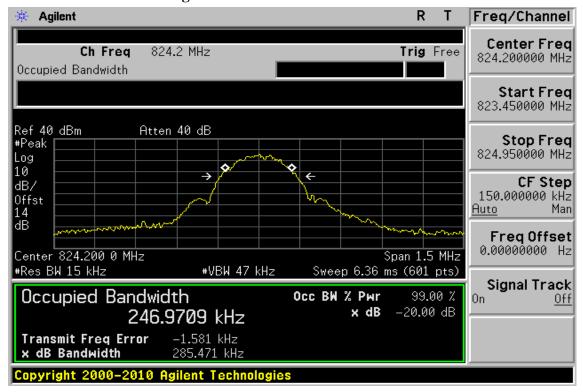
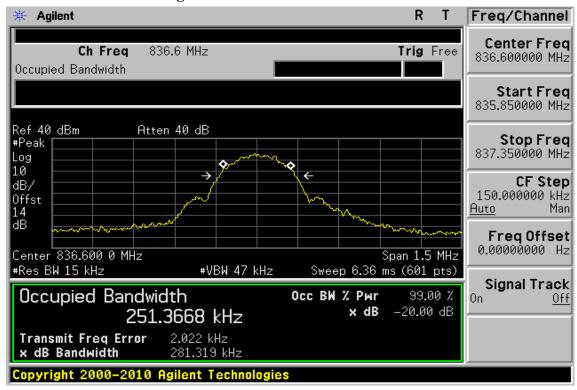


Figure 8-14: EDGE 850 Channel Mid



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Figure 8-15: EDGE 850 Channel High

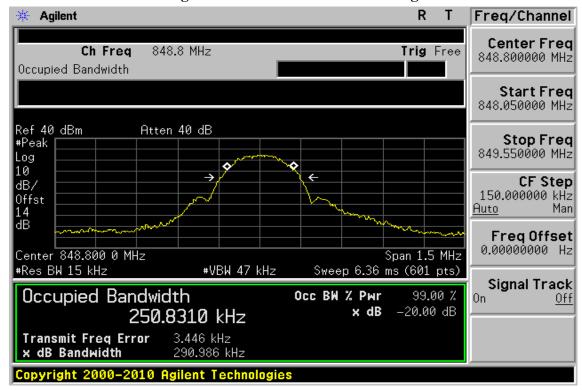
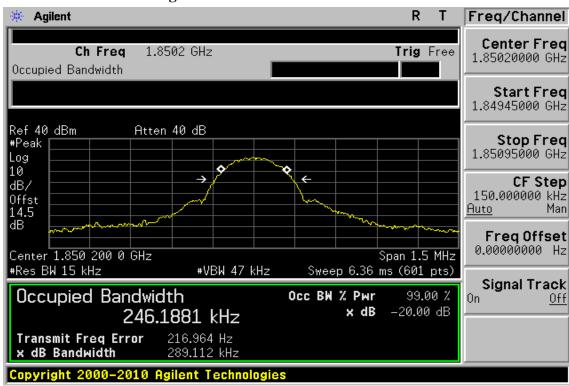


Figure 8-16: EDGE 1900 Channel Low



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Figure 8-17: EDGE 1900 Channel Mid

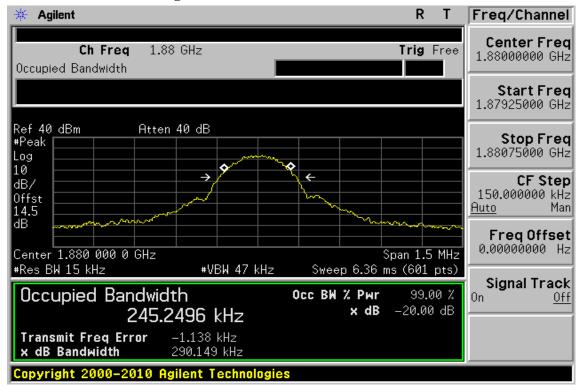
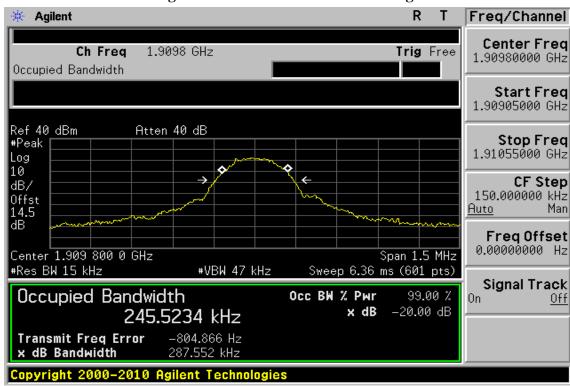


Figure 8-18: EDGE 1900 Channel High



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Figure 8-19: WCDMA Band II Channel Low

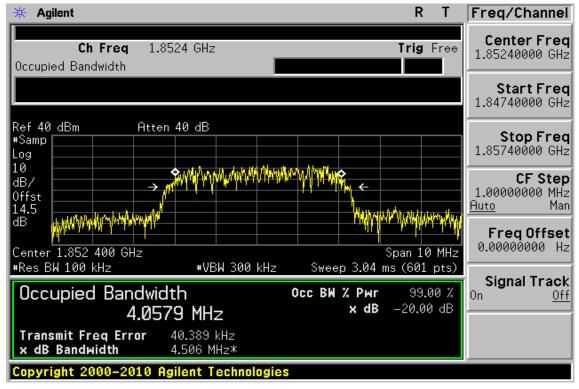
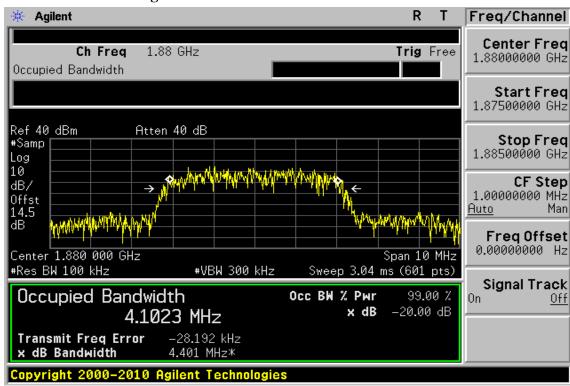


Figure 8-20: WCDMA Band II Channel Mid



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Figure 8-21: WCDMA Band II Channel High

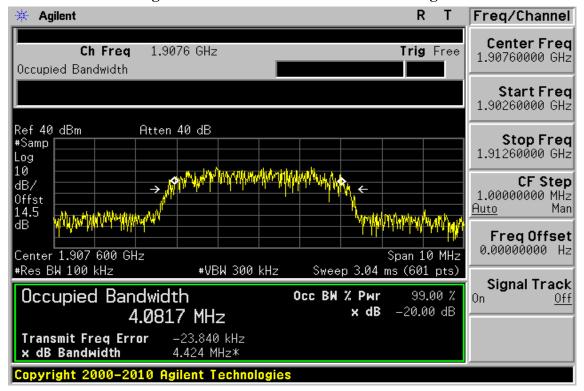
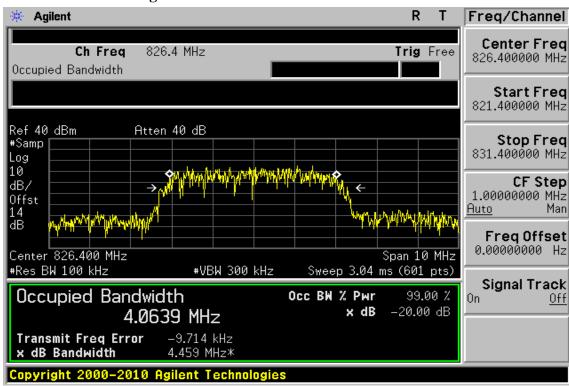


Figure 8-22: WCDMA Band V Channel Low



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Figure 8-23: WCDMA Band V Channel Mid

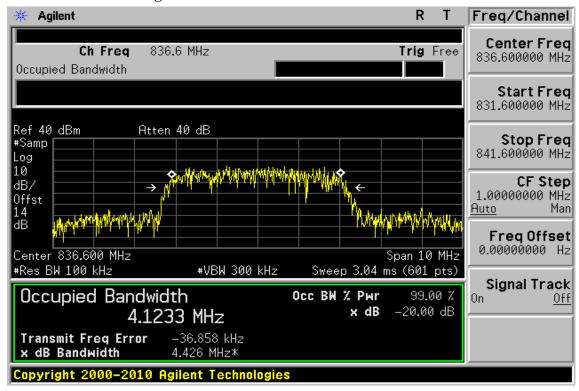
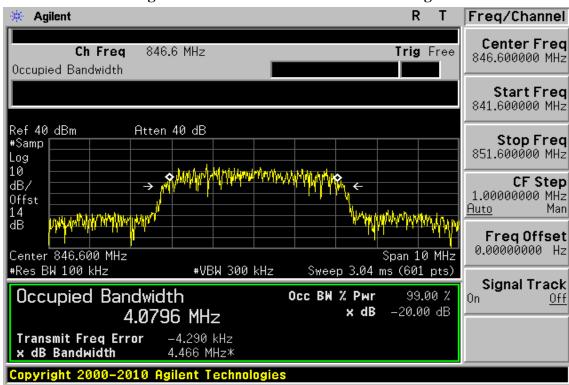


Figure 8-24: WCDMA Band V Channel High



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Figure 8-25: HSUPA Band II Channel Low

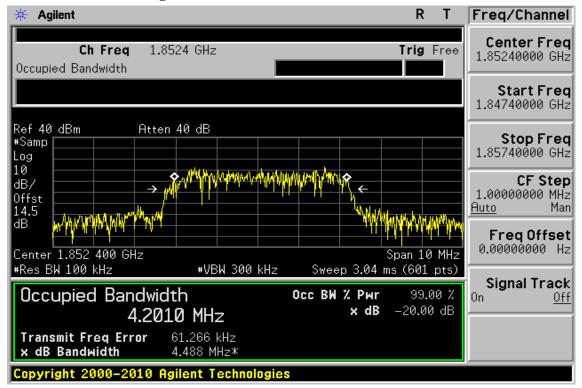
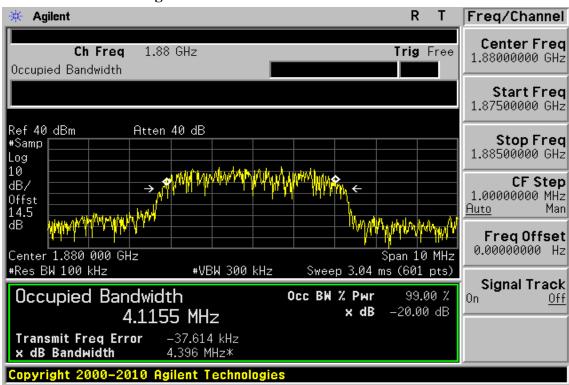


Figure 8-26: HSUPA Band II Channel Mid



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Figure 8-27: HSUPA Band II Channel High

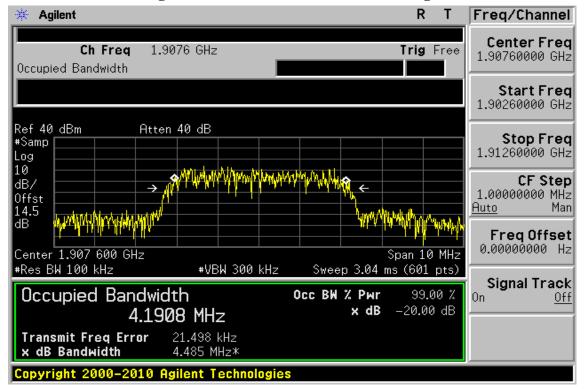
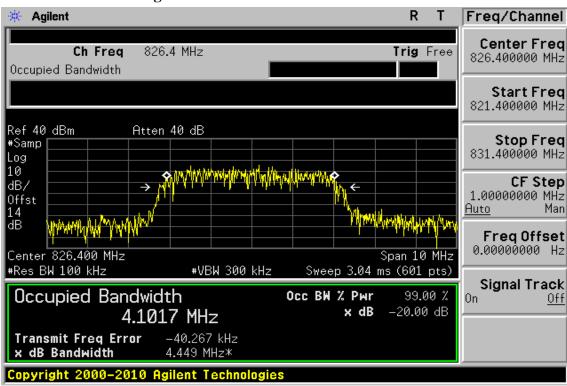


Figure 8-28: HSUPA Band V Channel Low



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Figure 8-29: HSUPA Band V Channel Mid

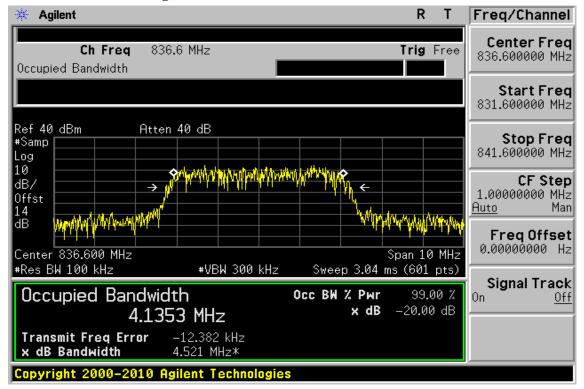
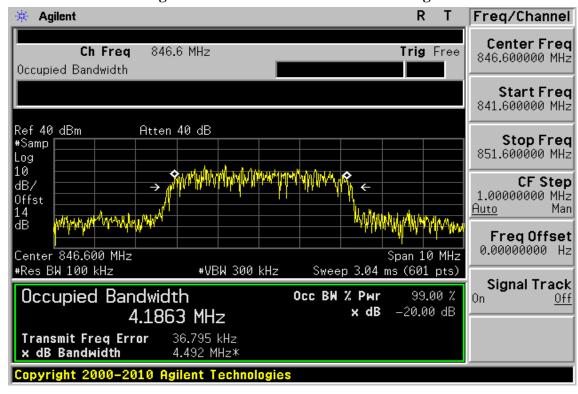


Figure 8-30: HSUPA Band V Channel High



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Figure 8-31: HSDPA Band II Channel Low

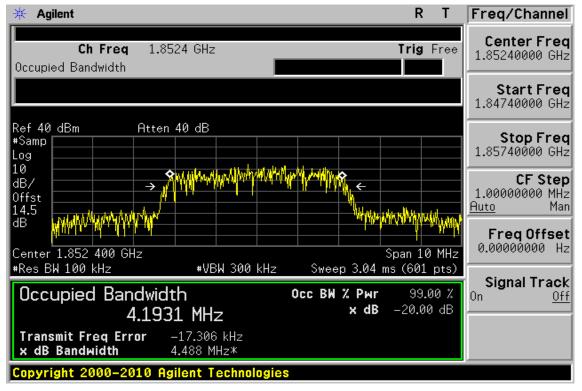
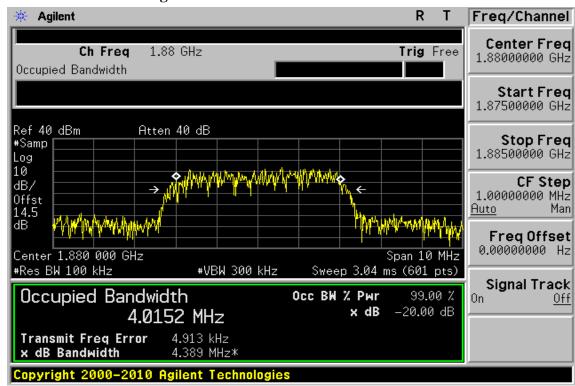


Figure 8-32: HSDPA Band II Channel Mid



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Figure 8-33: HSDPA Band II Channel High

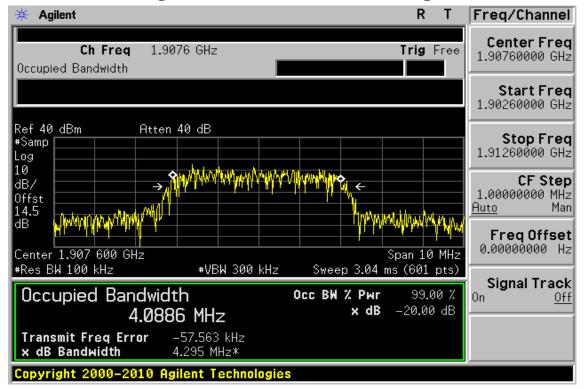
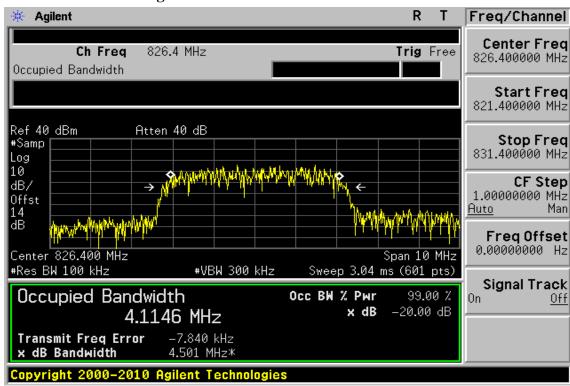


Figure 8-34: HSDPA Band V Channel Low



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Figure 8-35: HSDPA Band V Channel Mid

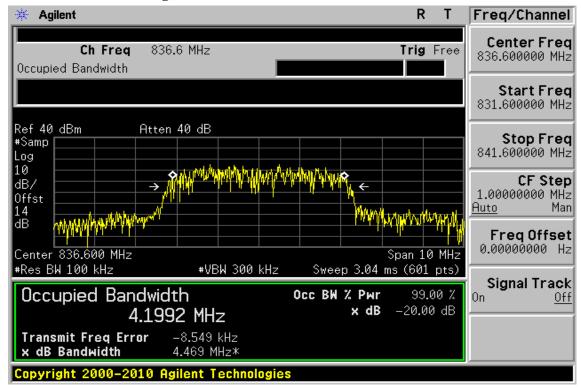
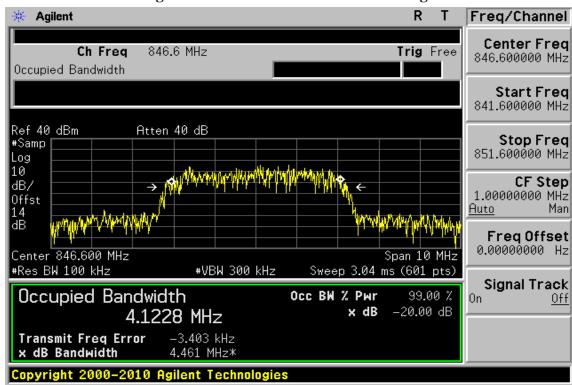


Figure 8-36: HSDPA Band V Channel High



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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), 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)

According to RSS-132 §5.5

Mobile and base station equipment shall comply with the limits in (i) and (ii) below.

- (i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts).
- (ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

According to RSS-133 §6.5

6.5.1 Out-of-Block Emissions

Equipment shall comply with the limits in (i) and (ii) below.

- (i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p(watts).
- (ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p(watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required.

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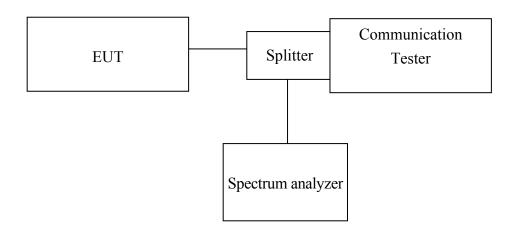


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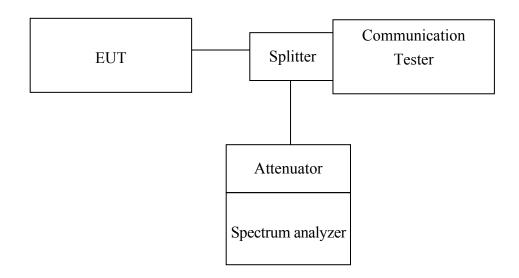
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9.2. Test SET-UP:

Out of band emission



Band Edge



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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= 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.

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

9.5. Measurement Result:

Refer to next pages.

NOTE: the occurrence of the spike on the conducted emission is the signal of the fundamental emission.

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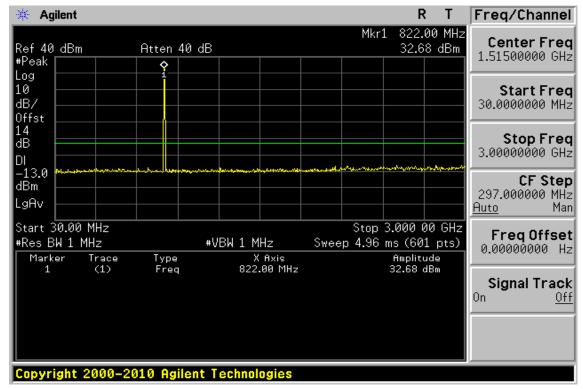
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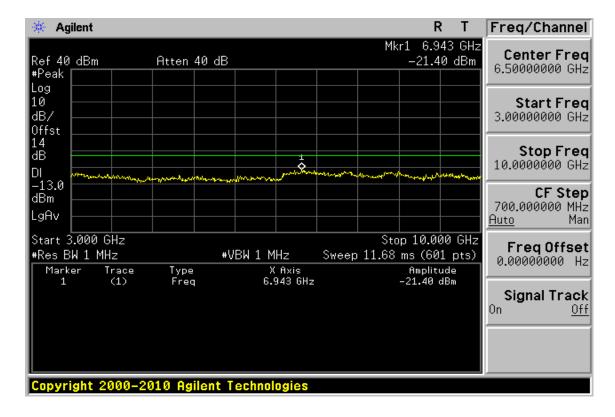


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Figure 9-1: Out of Band emission at antenna terminals – GSM 850 Channel Lowest





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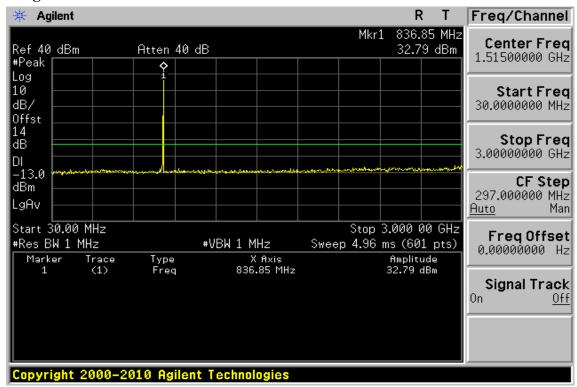
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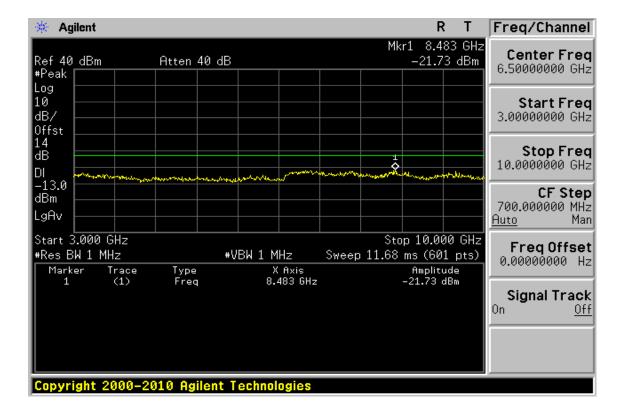


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Figure 9-2: Out of Band emission at antenna terminals -GSM 850 Channel Mid





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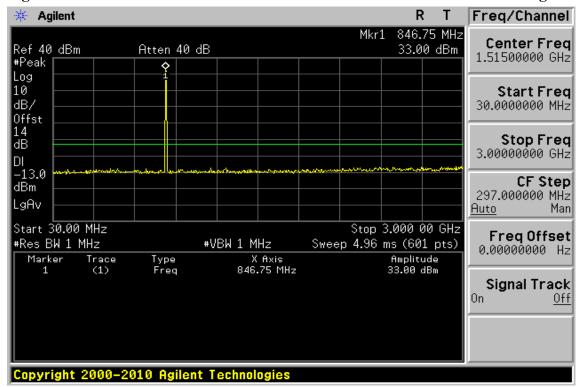
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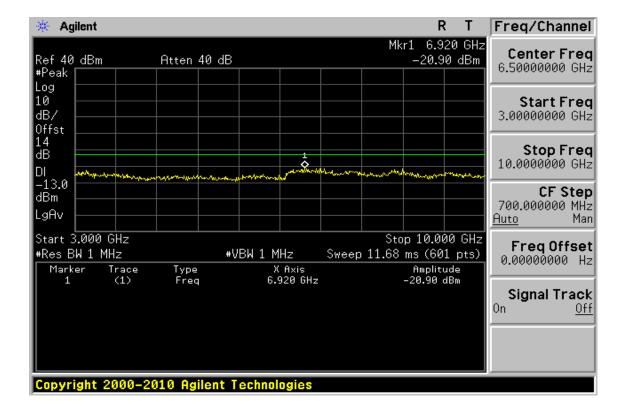


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Figure 9-3: Out of Band emission at antenna terminals -GSM 850 Channel Highest





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Figure 9-4: Band edge emission at antenna terminals -GSM 850 Channel Lowest

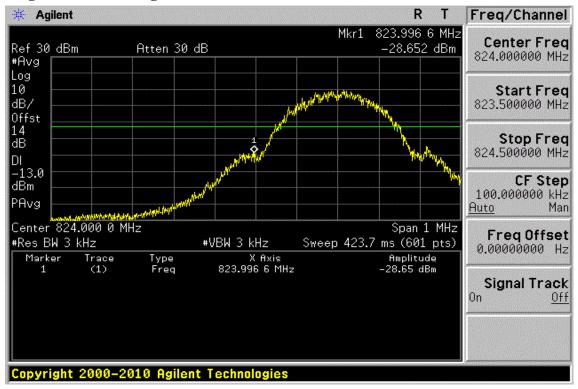
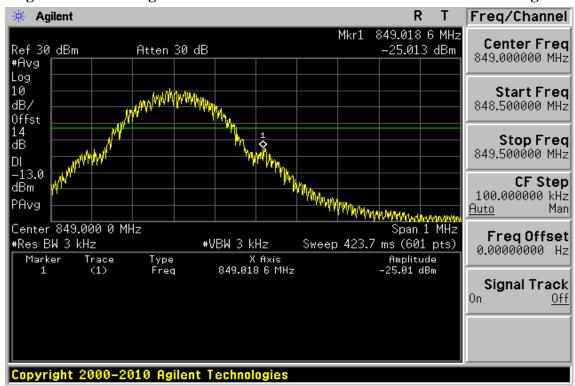


Figure 9-5: Band edge emission at antenna terminals –GSM 850 Channel Highest



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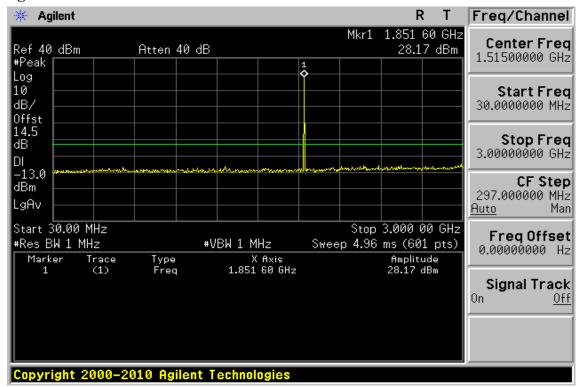
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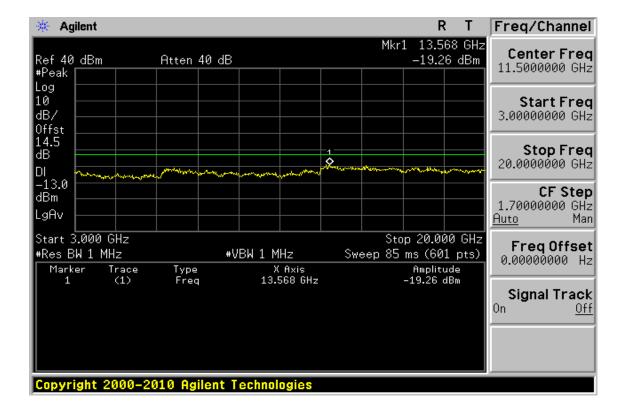


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Figure 9-6: Out of Band emission at antenna terminals – GSM 1900 Channel Lowest





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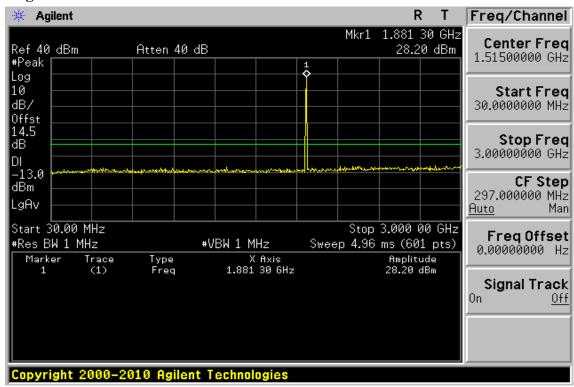
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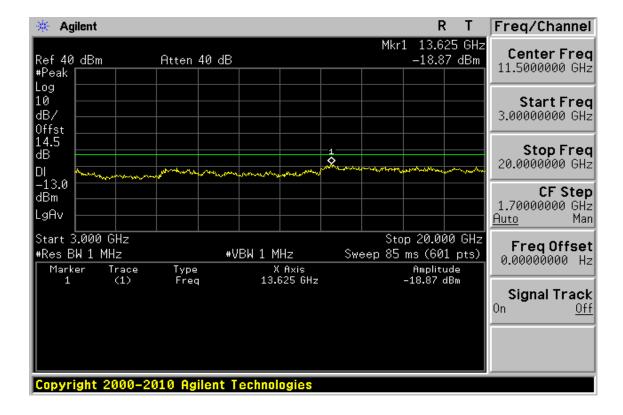


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Figure 9-7: Out of Band emission at antenna terminals – GSM 1900 Channel Mid





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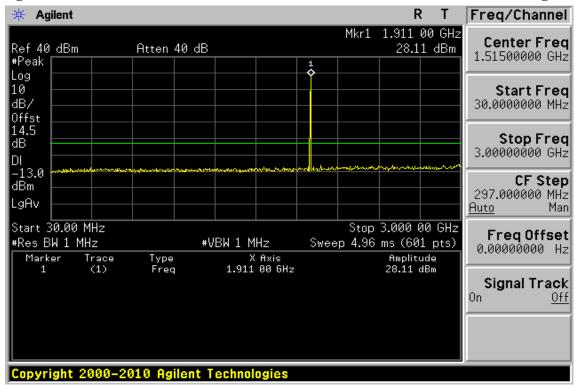
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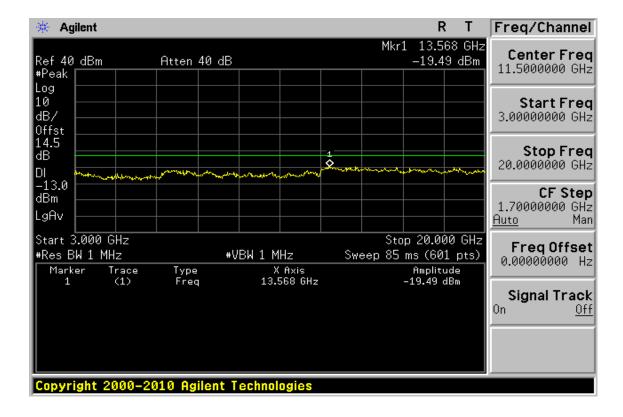


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Figure 9-8: Out of Band emission at antenna terminals -GSM 1900 Channel Highest





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Figure 9-9: Band edge emission at antenna terminals -GSM 1900 Channel Lowest

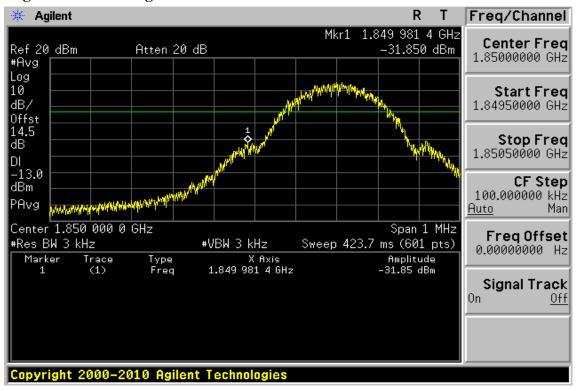
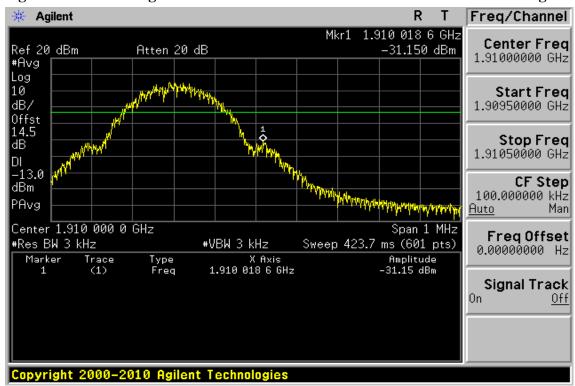


Figure 9-10: Band edge emission at antenna terminals –GSM 1900 Channel Highest



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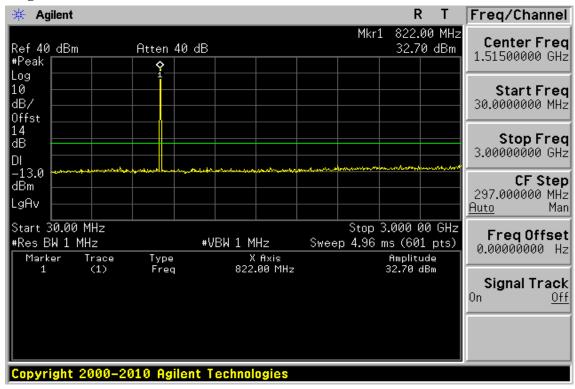
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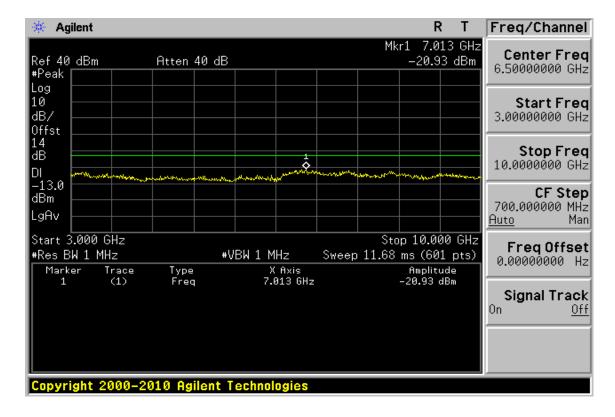


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Figure 9-11: Out of Band emission at antenna terminals – GPRS 850 Channel Lowest





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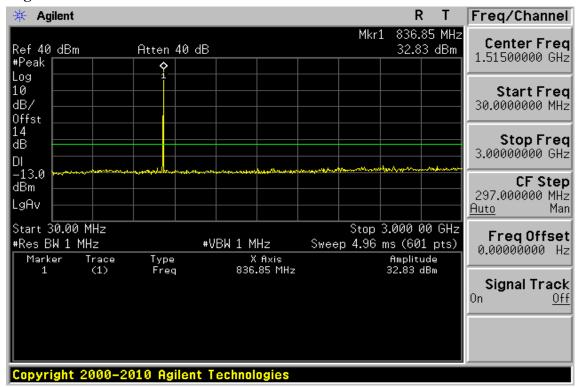
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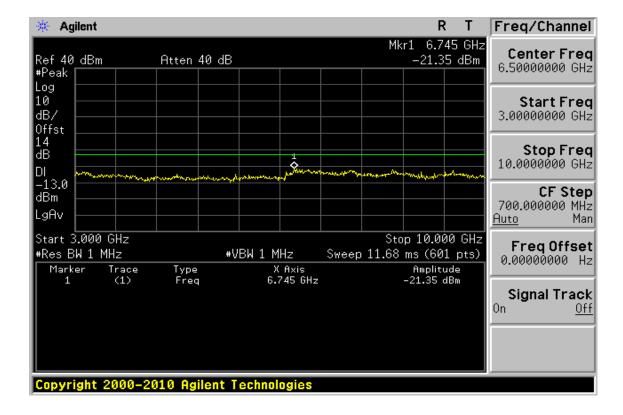


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Figure 9-12: Out of Band emission at antenna terminals – GPRS 850 Channel Mid





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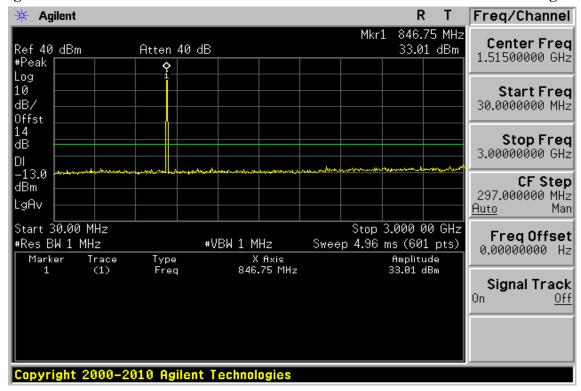
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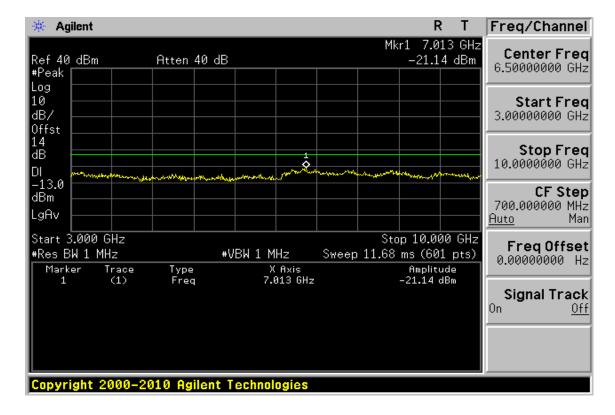


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Figure 9-13: Out of Band emission at antenna terminals – GPRS 850 Channel Highest





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Figure 9-14: Band edge emission at antenna terminals – GPRS 850 Channel Lowest

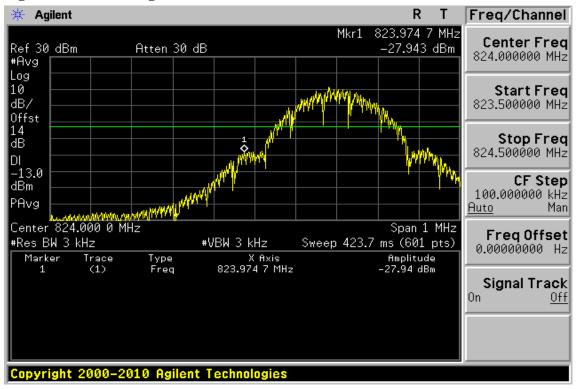
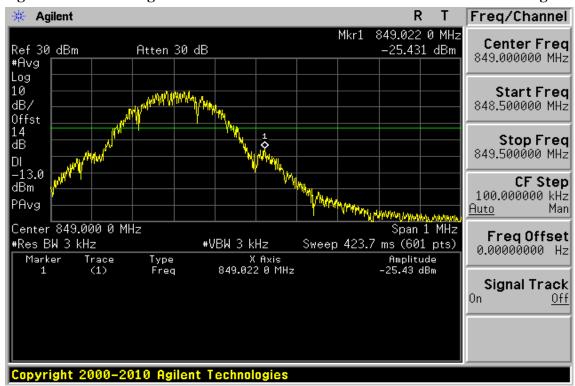


Figure 9-15: Band edge emission at antenna terminals – GPRS 850 Channel Highest



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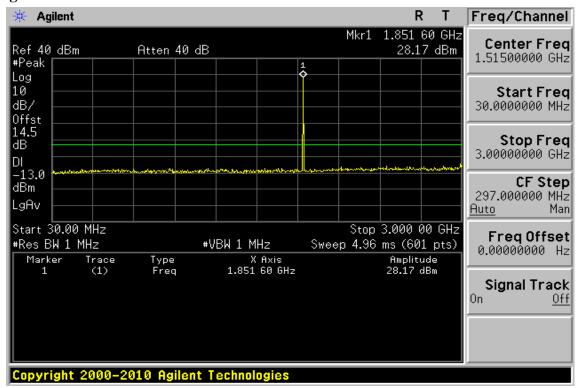
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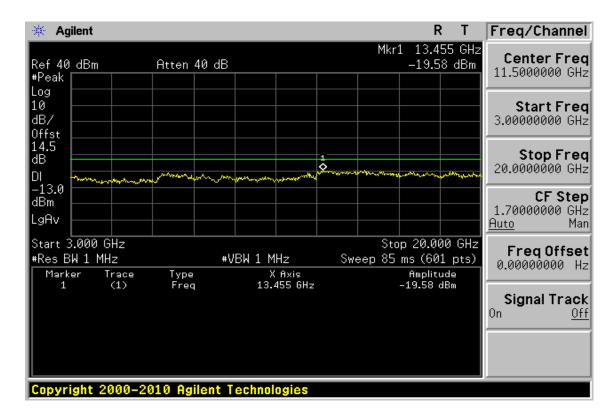


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Figure 9-16: Out of Band emission at antenna terminals – GPRS 1900 Channel Lowest





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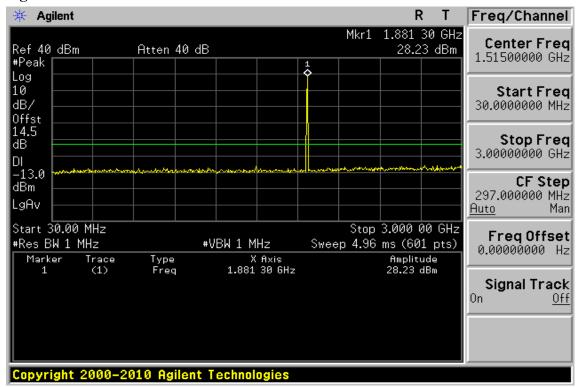
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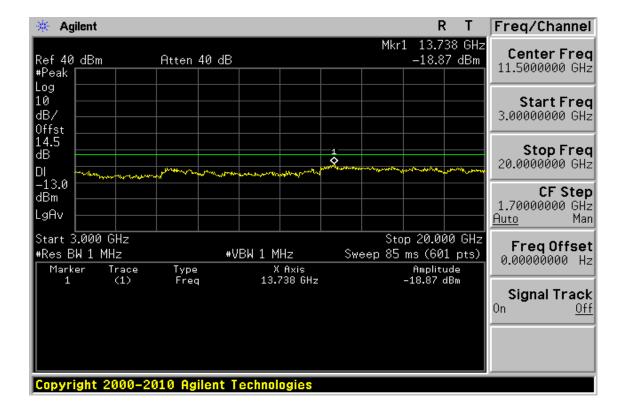


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Figure 9-17: Out of Band emission at antenna terminals – GPRS 1900 Channel Mid





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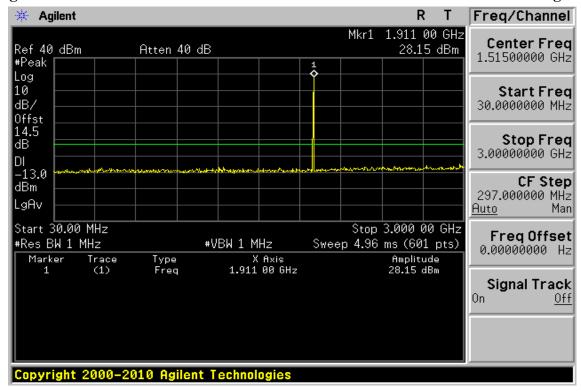
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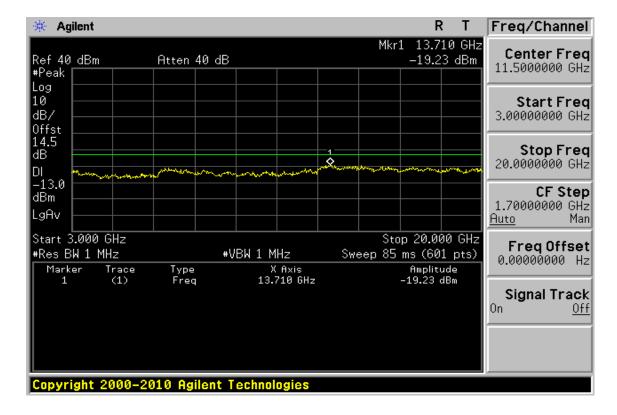


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Figure 9-18: Out of Band emission at antenna terminals – GPRS 1900 Channel Highest





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Figure 9-19: Band edge emission at antenna terminals – GPRS 1900 Channel Lowest

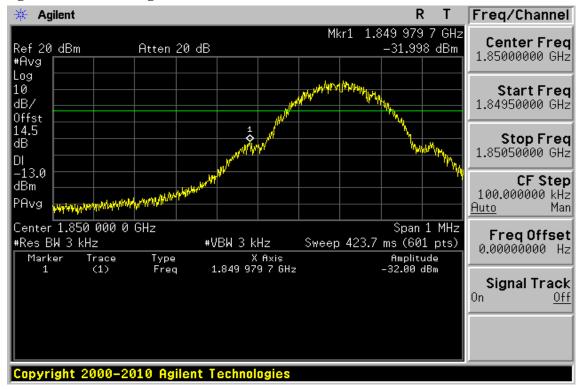
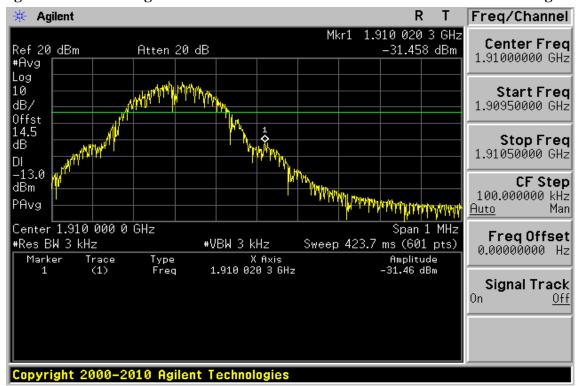


Figure 9-20: Band edge emission at antenna terminals – GPRS 1900 Channel Highest



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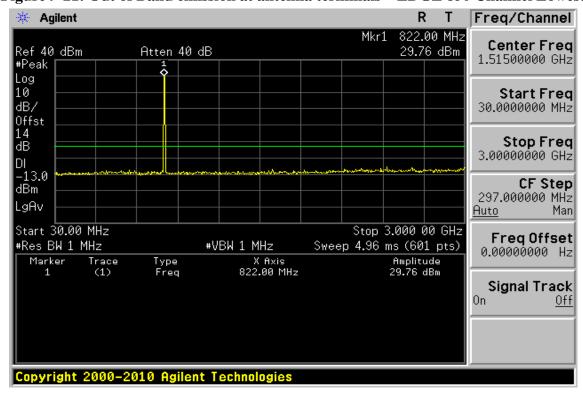
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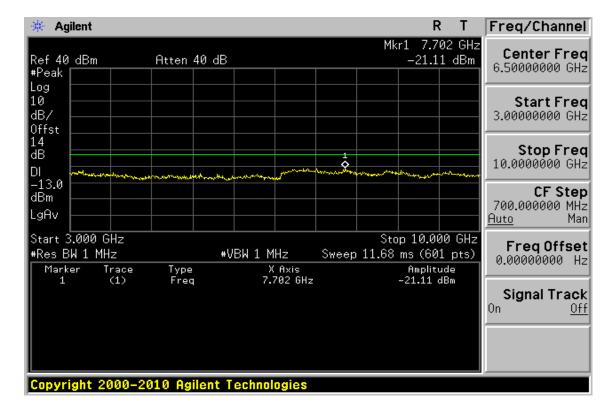


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Figure 9-21: Out of Band emission at antenna terminals – EDGE 850 Channel Lowest





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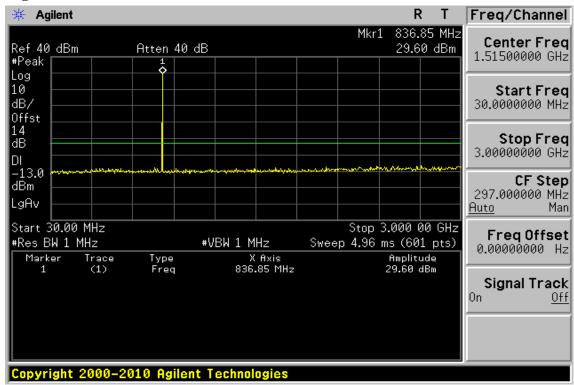
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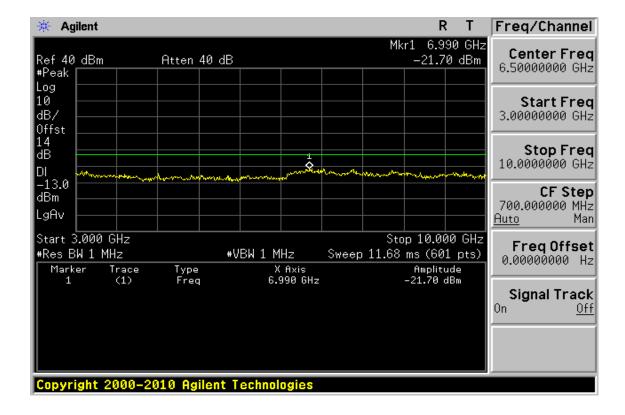


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Figure 9-22: Out of Band emission at antenna terminals – EDGE 850 Channel Mid





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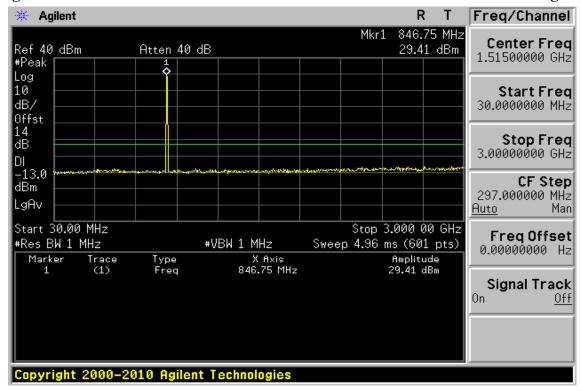
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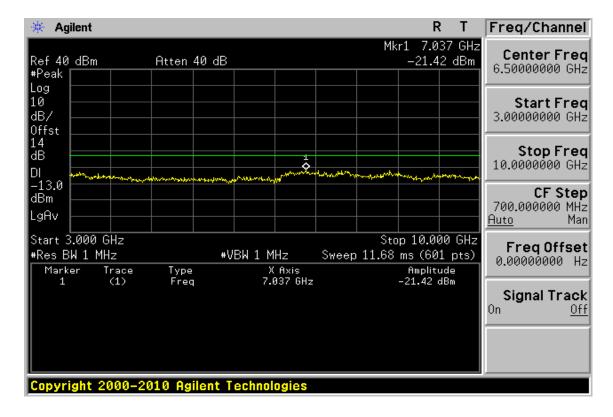


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Figure 9-23: Out of Band emission at antenna terminals – EDGE 850 Channel Highest





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Figure 9-24: Band edge emission at antenna terminals – EDGE 850 Channel Lowest

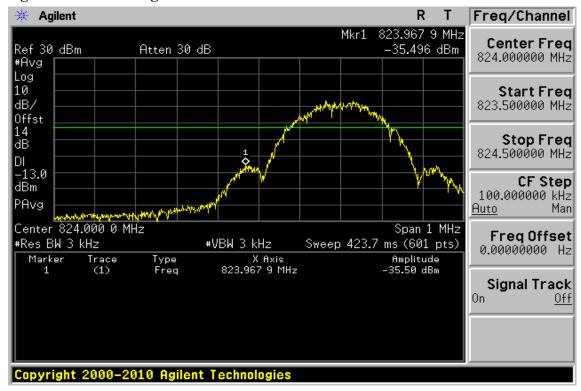
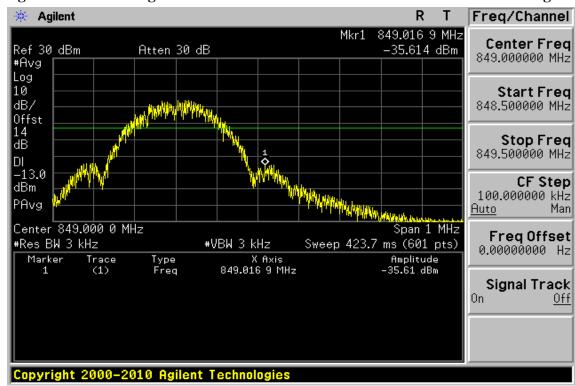


Figure 9-25: Band edge emission at antenna terminals – EDGE 850 Channel Highest



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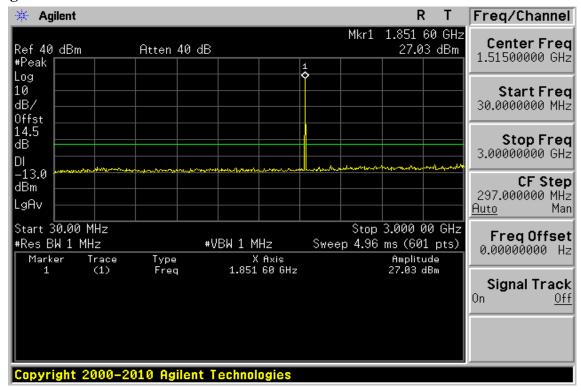
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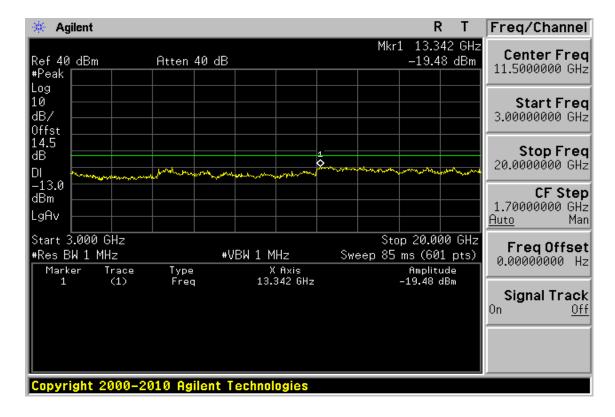


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Figure 9-26: Out of Band emission at antenna terminals – EDGE 1900 Channel Lowest





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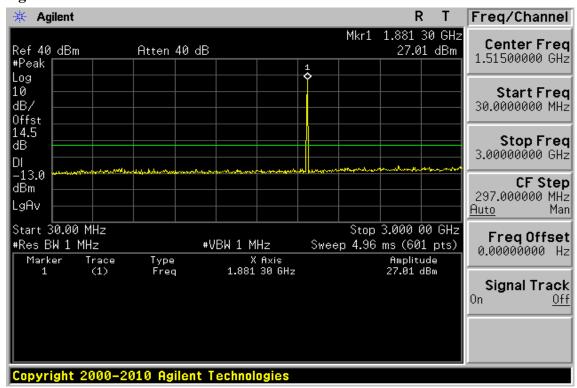
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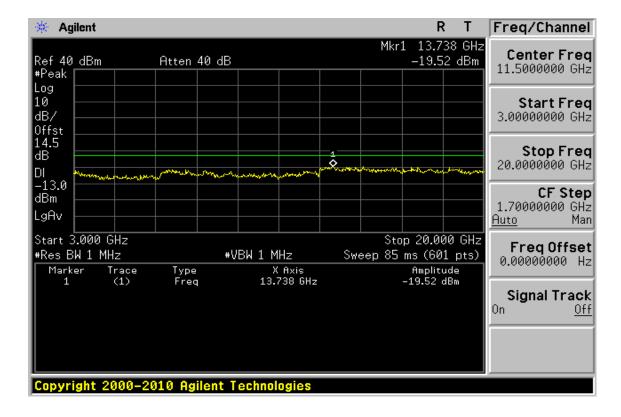


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Figure 9-27: Out of Band emission at antenna terminals – EDGE 1900 Channel Mid





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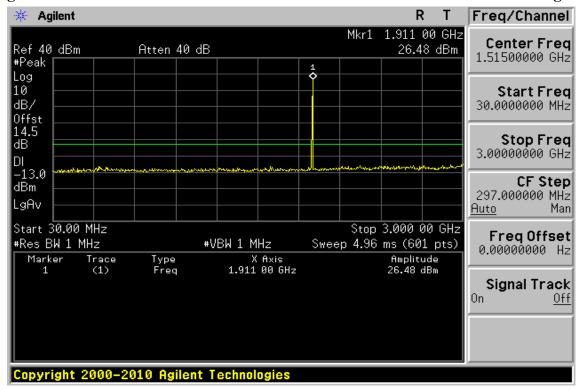
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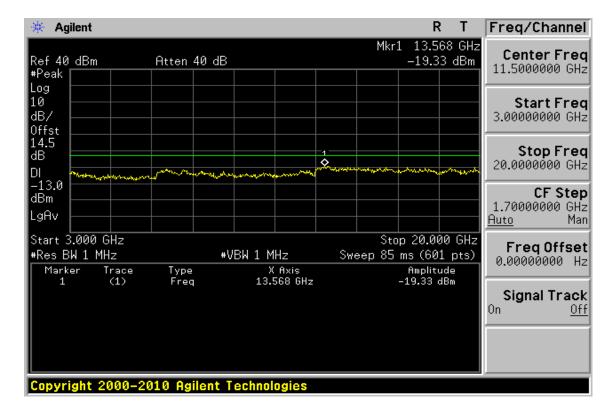


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Figure 9-28: Out of Band emission at antenna terminals – EDGE 1900 Channel Highest





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Figure 9-29: Band edge emission at antenna terminals – EDGE 1900 Channel Lowest

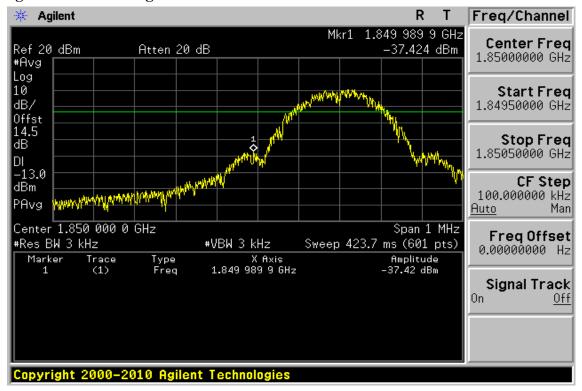
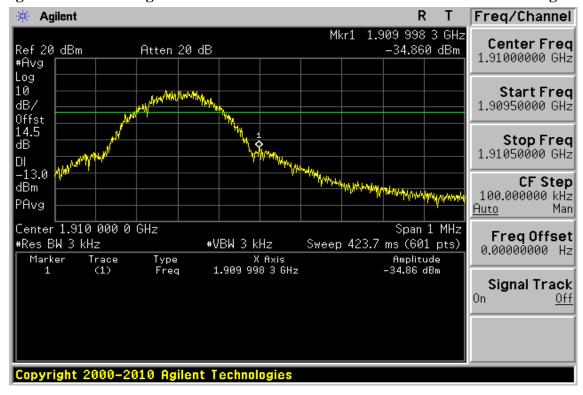


Figure 9-30: Band edge emission at antenna terminals – EDGE 1900 Channel Highest



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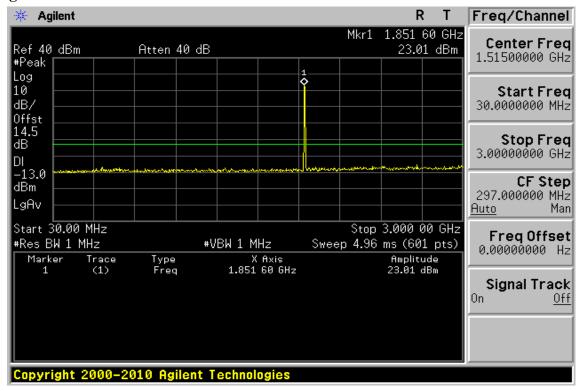
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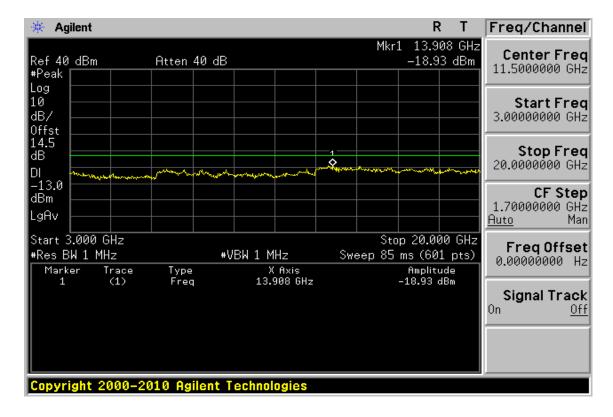


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Figure 9-31: Out of Band emission at antenna terminals – WCDMA II Channel Lowest





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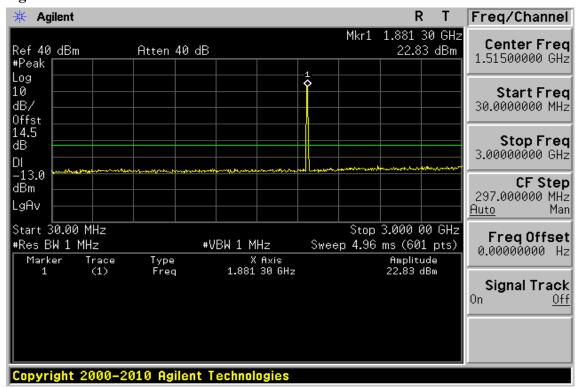
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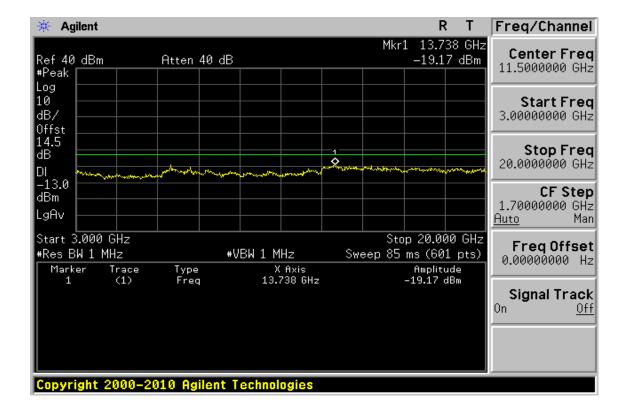


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Figure 9-32: Out of Band emission at antenna terminals – WCDMA II Channel Mid





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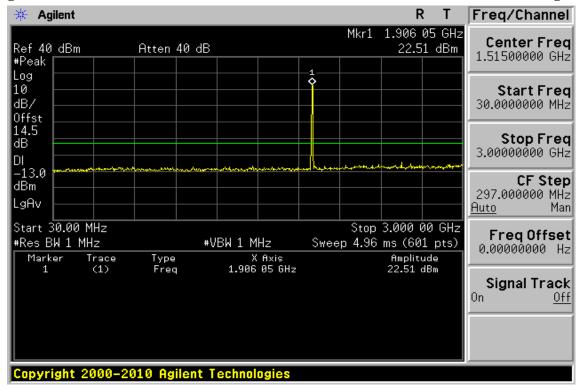
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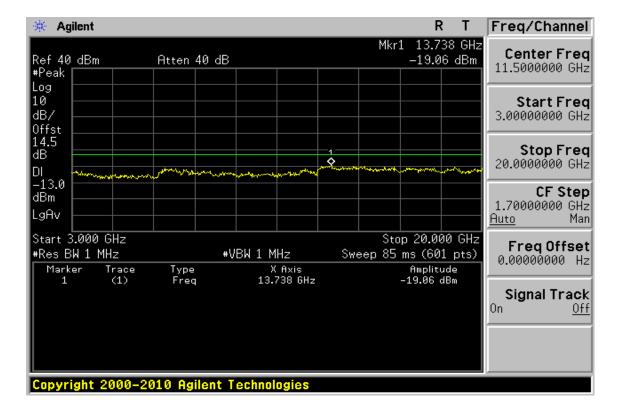


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Figure 9-33: Out of Band emission at antenna terminals – WCDMA II Channel Highest





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Figure 9-34: Band edge emission at antenna terminals – WCDMA II Channel Lowest

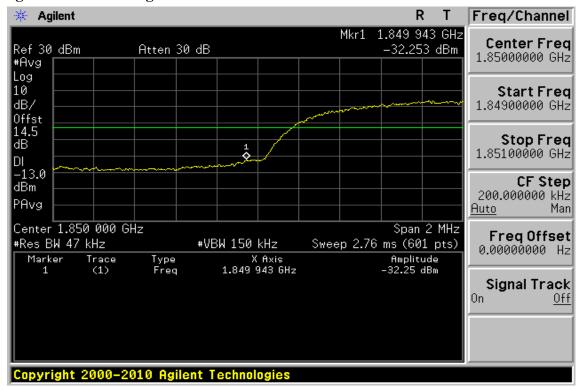
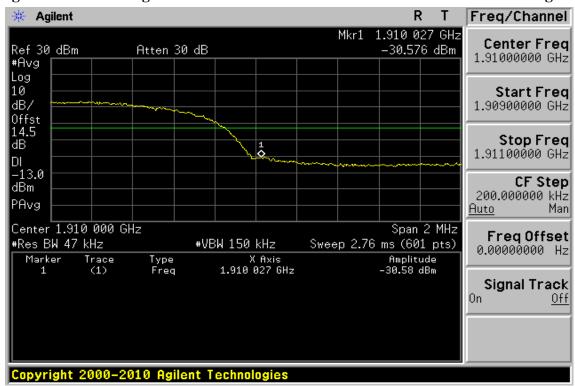


Figure 9-35: Band edge emission at antenna terminals – WCDMA II Channel Highest



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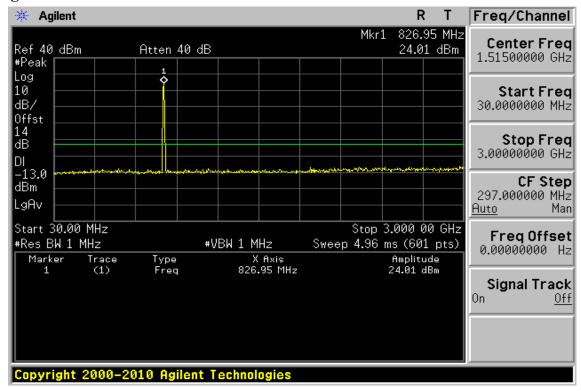
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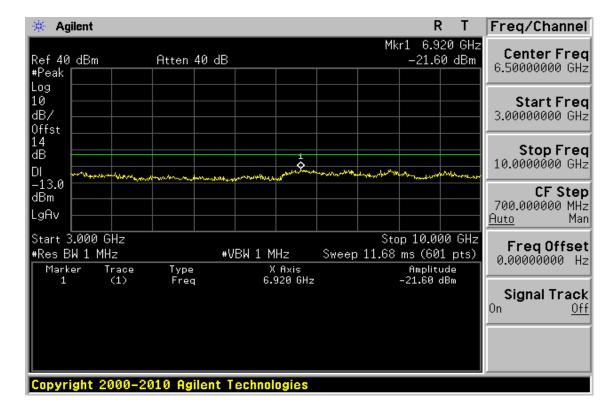


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Figure 9-36: Out of Band emission at antenna terminals – WCDMA V Channel Lowest





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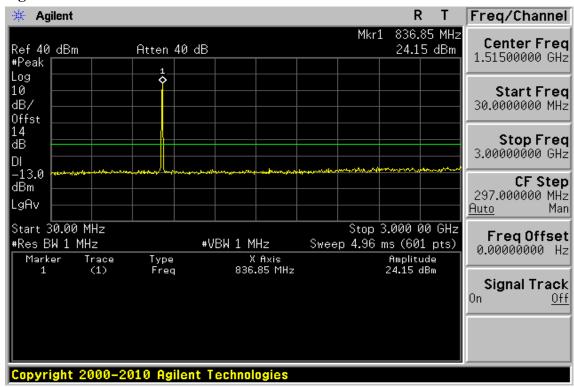
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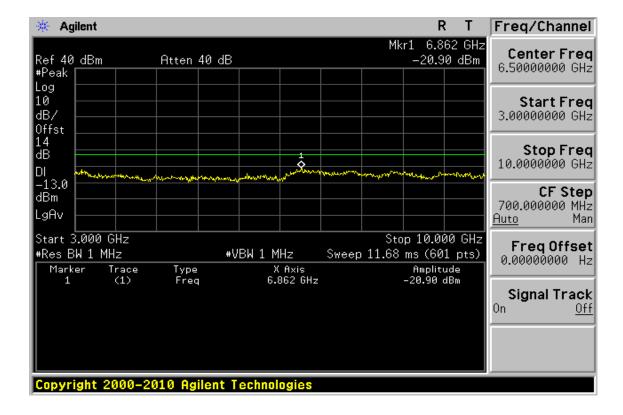


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Figure 9-37: Out of Band emission at antenna terminals – WCDMA V Channel Mid





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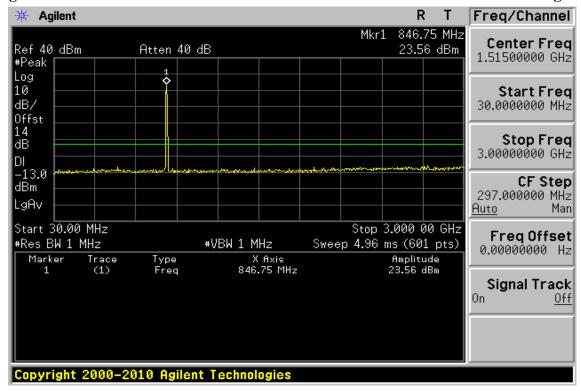
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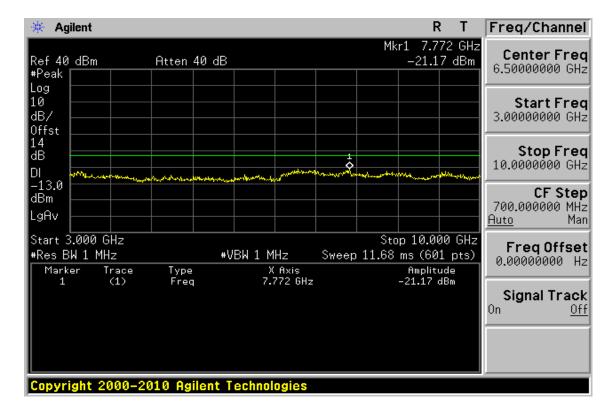


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Figure 9-38: Out of Band emission at antenna terminals – WCDMA V Channel Highest





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Figure 9-39: Band edge emission at antenna terminals – WCDMA V Channel Lowest

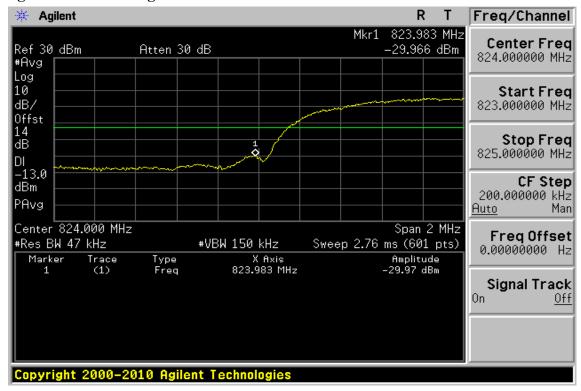
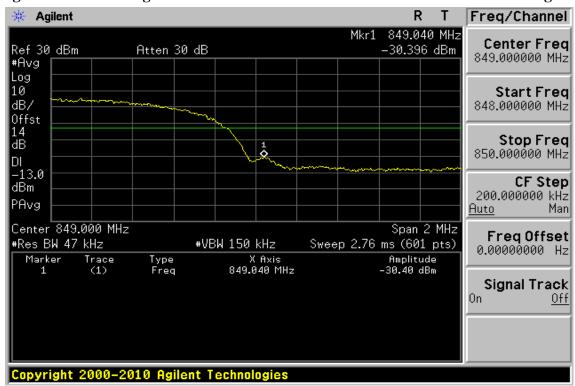


Figure 9-40: Band edge emission at antenna terminals – WCDMA V Channel Highest



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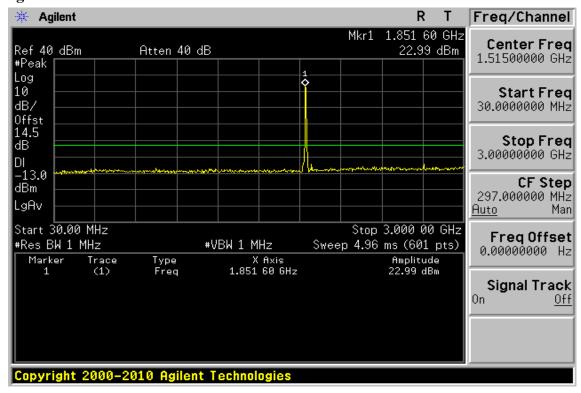
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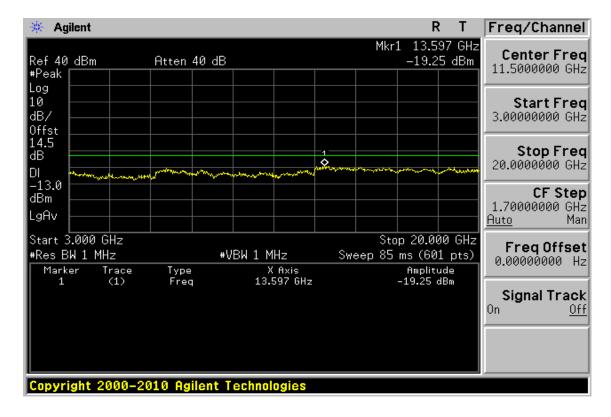


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Figure 9-41: Out of Band emission at antenna terminals – HSUPA II Channel Lowest





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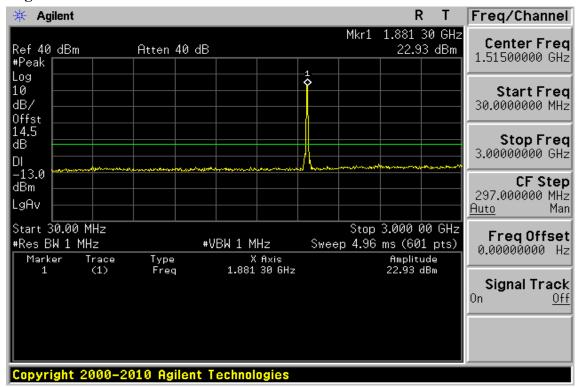
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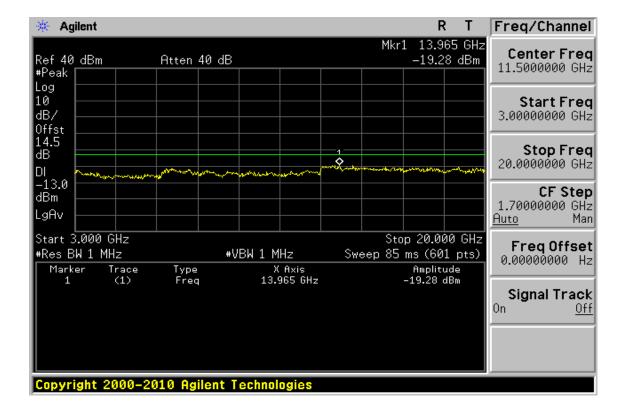


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Figure 9-42: Out of Band emission at antenna terminals – HSUPA II Channel Mid





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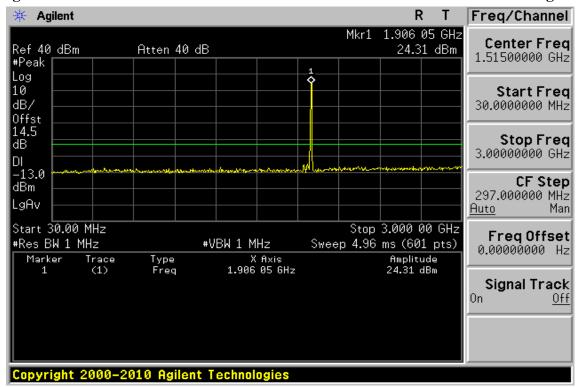
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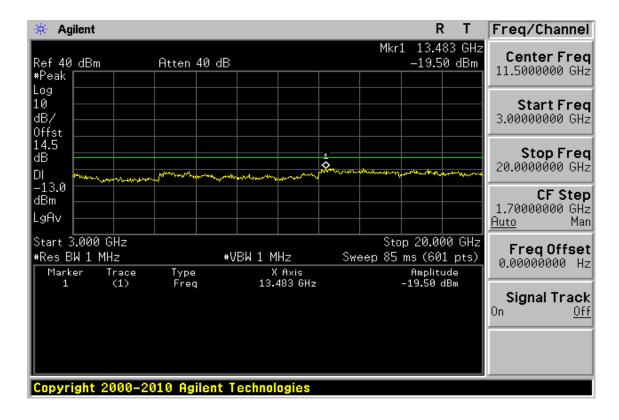


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Figure 9-43: Out of Band emission at antenna terminals – HSUPA II Channel Highest





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Figure 9-44: Band edge emission at antenna terminals – HSUPA II Channel Lowest

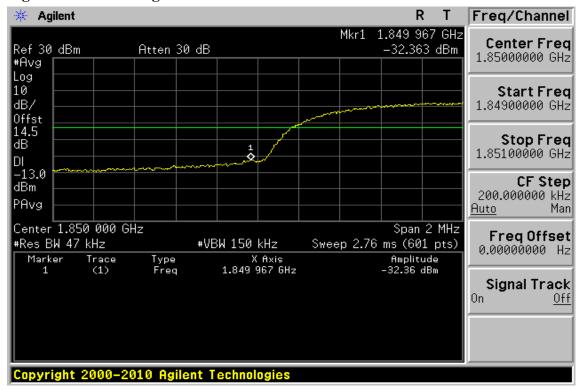
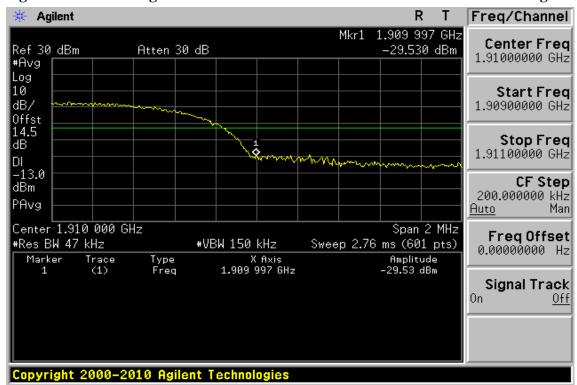


Figure 9-45: Band edge emission at antenna terminals – HSUPA II Channel Highest



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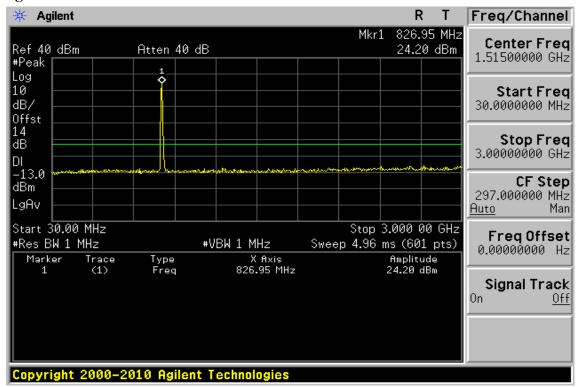
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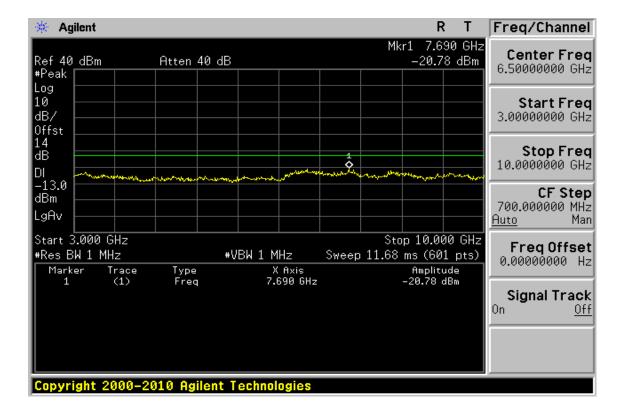


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Figure 9-46: Out of Band emission at antenna terminals – HSUPA V Channel Lowest





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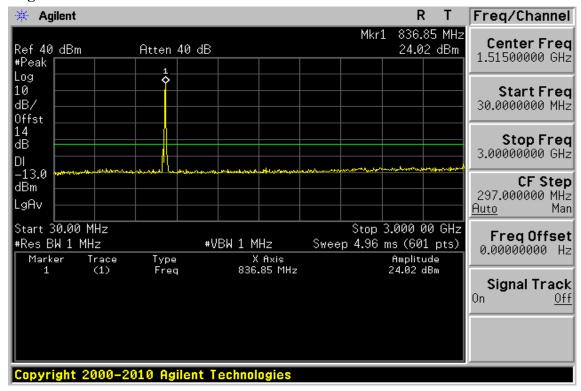
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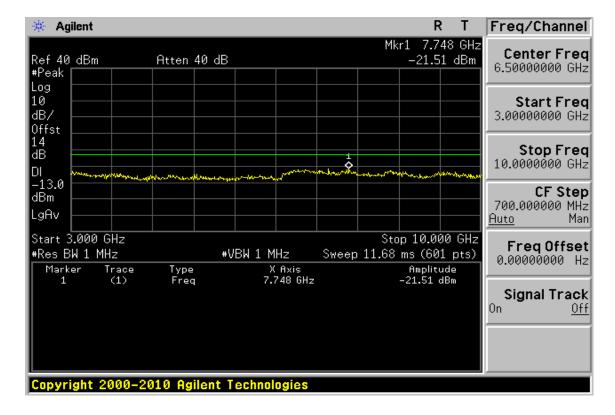


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Figure 9-47: Out of Band emission at antenna terminals – HSUPA V Channel Mid





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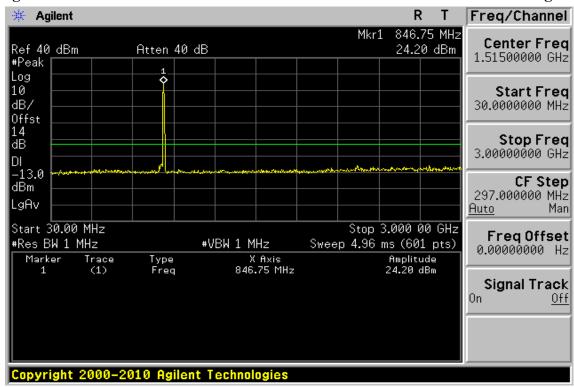
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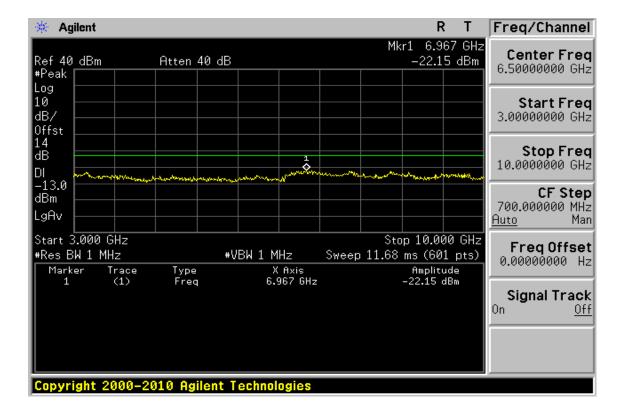


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Figure 9-48: Out of Band emission at antenna terminals – HSUPA V Channel Highest





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Figure 9-49: Band edge emission at antenna terminals – HSUPA V Channel Lowest

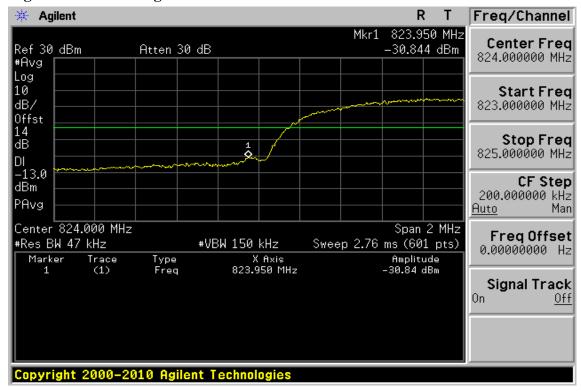
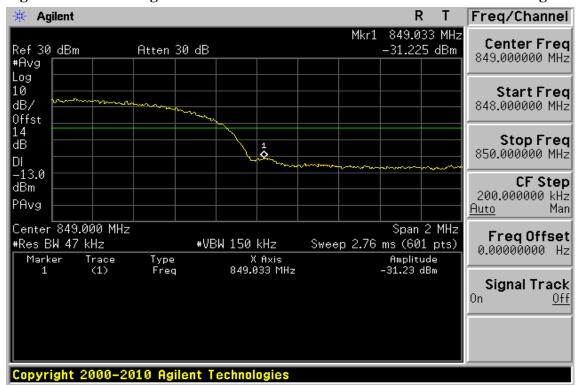


Figure 9-50: Band edge emission at antenna terminals – HSUPA V Channel Highest



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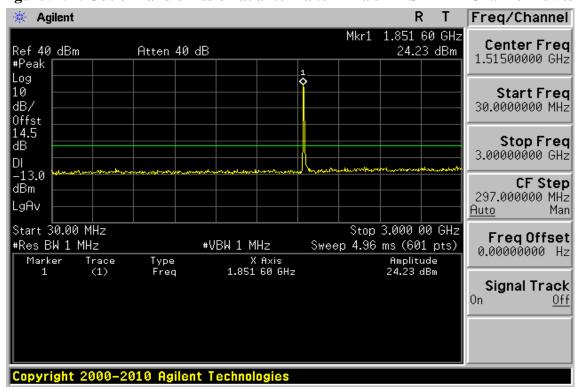
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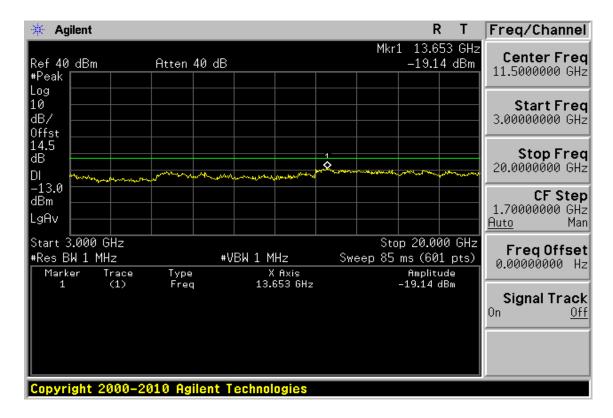


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Figure 9-51: Out of Band emission at antenna terminals – HSDPA II Channel Lowest





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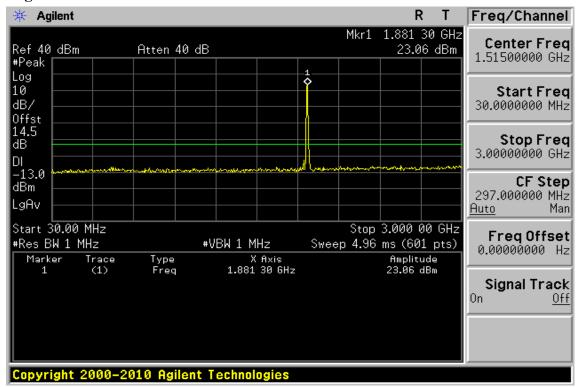
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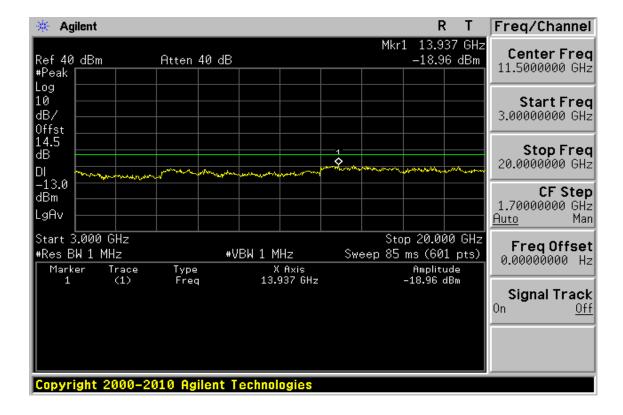


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Figure 9-52: Out of Band emission at antenna terminals – HSDPA II Channel Mid





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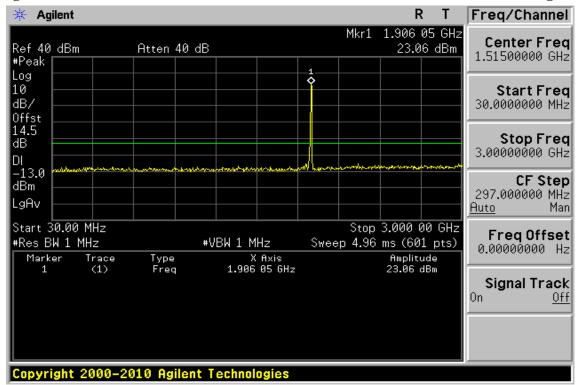
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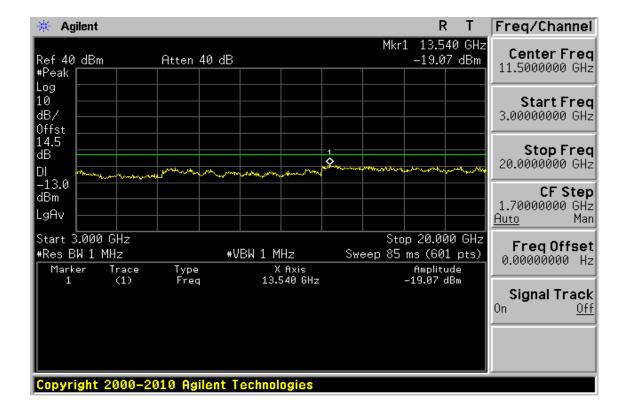


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Figure 9-53: Out of Band emission at antenna terminals – HSDPA II Channel Highest





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Figure 9-54: Band edge emission at antenna terminals – HSDPA II Channel Lowest

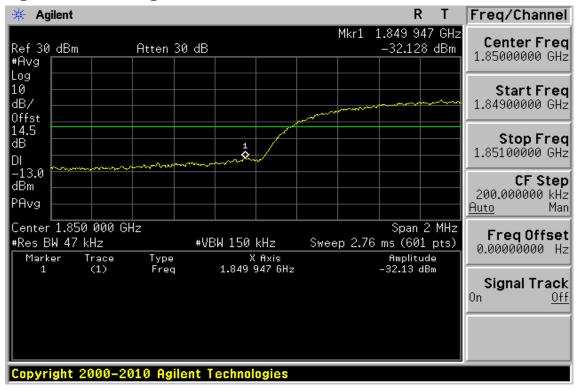
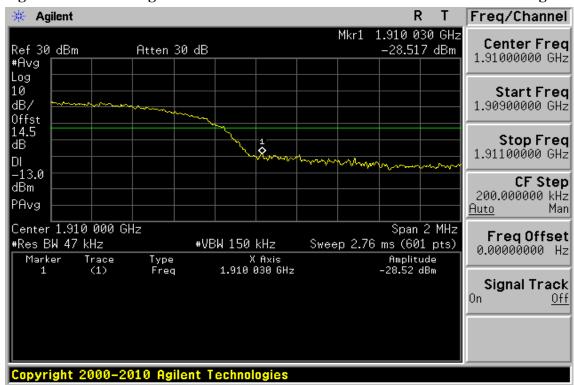


Figure 9-55: Band edge emission at antenna terminals – HSDPA II Channel Highest



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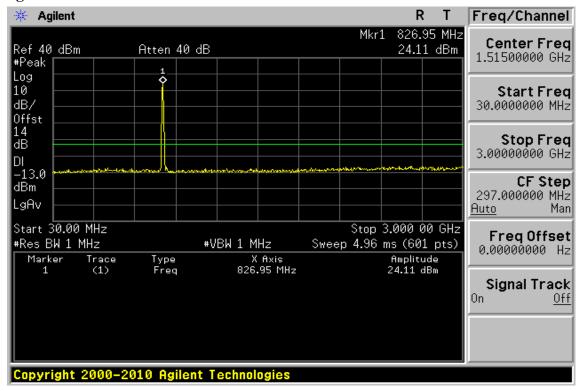
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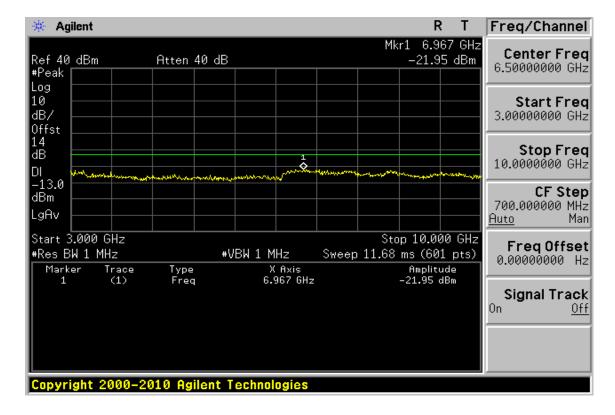


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Figure 9-56: Out of Band emission at antenna terminals – HSDPA V Channel Lowest





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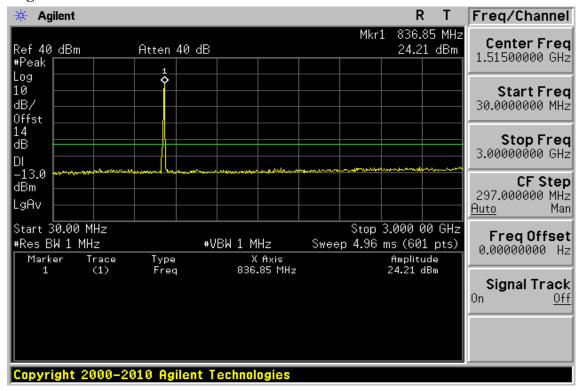
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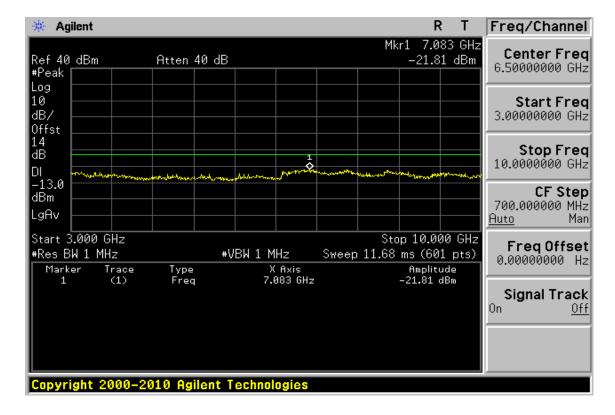


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Figure 9-57: Out of Band emission at antenna terminals – HSDPA V Channel Mid





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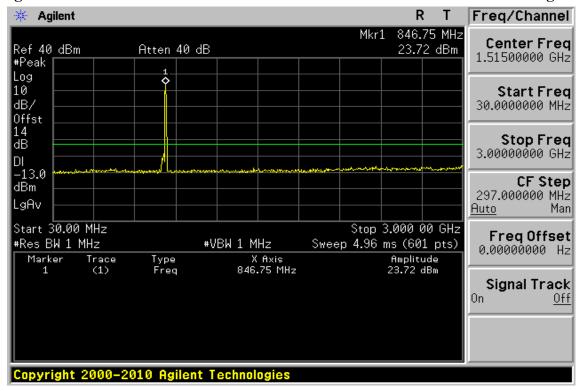
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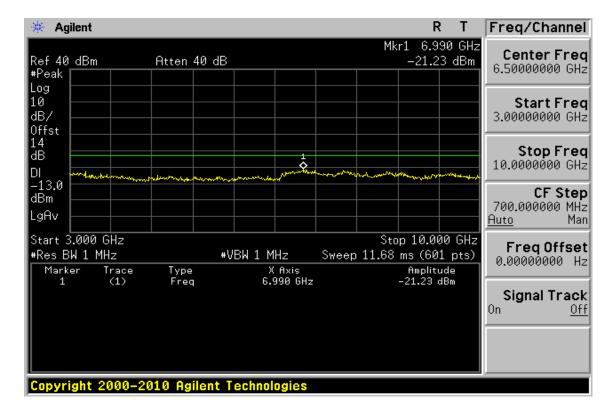


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Figure 9-58: Out of Band emission at antenna terminals – HSDPA V Channel Highest





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Figure 9-59: Band edge emission at antenna terminals – HSDPA V Channel Lowest

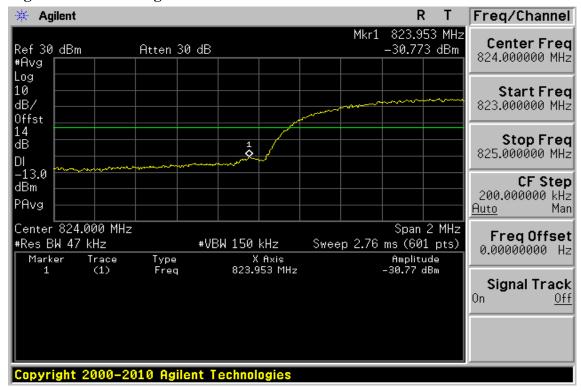
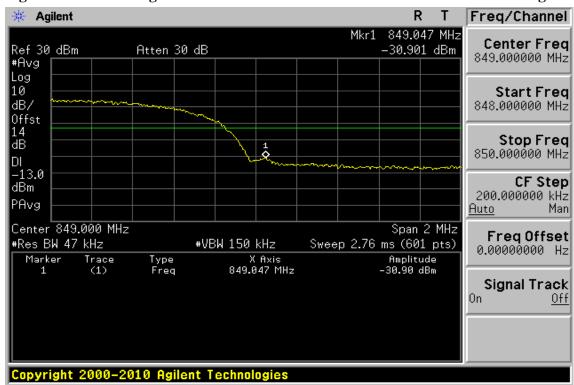


Figure 9-60: Band edge emission at antenna terminals – HSDPA V Channel Highest



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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), 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)

According to RSS-132 §5.5

Mobile and base station equipment shall comply with the limits in (i) and (ii) below.

- (i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts).
- (ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

According to RSS-133 §6.5

6.5.1 Out-of-Block Emissions

Equipment shall comply with the limits in (i) and (ii) below.

- (i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p(watts).
- (ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10 p(watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required.

6.5.2 Out-of-Sub-band Emissions

Outside the sub-bands 1850-1910 MHz and 1930-1990 MHz, the attenuation shall be equal to or greater than the out-of-block emission limits in Section 6.5.1.

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Receiver Spurious Emissions

Receiver spurious emissions shall comply with the limits specified in RSS-Gen. Spurious emissions from receivers shall not exceed the radiated limits shown in the table below:

Radiated Limits of Receiver Spurious Emissions

Frequency (MHz)	Field Strength (microvolts/m at 3 metres)*
30-88	100
88-216	150
216-960	200
Above 960	500

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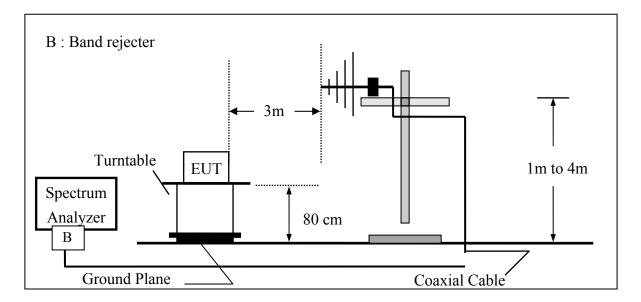


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10.2. EUT Setup (Block Diagram of Configuration):

Radiated Emission Test Set-Up, Frequency Below 1000MHz



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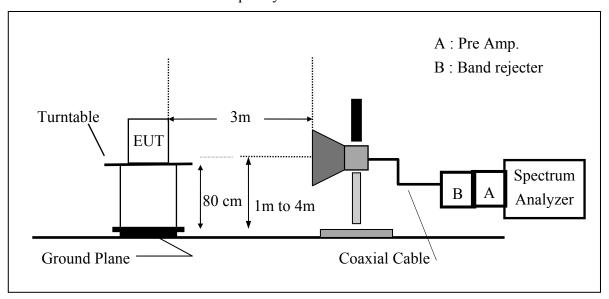
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Radiated Emission Test Set-UP Frequency Over 1 GHz



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.

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

EIRP = S.G. output (dBm) + Antenna Gain(dBi) - 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: GPRS 850 Mode

Operation Band :GPRS 850

ARFCN :CH 128 Test Date :2013-06-04

Fundamental Frequency :824.2 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX LOW Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :VERTICAL

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
143.49	S	-84.85	-82.37	-1.26	-1.22	-13.00	-71.85
256.98	S	-83.90	-86.97	4.65	-1.58	-13.00	-70.90
341.37	S	-82.97	-85.89	4.73	-1.81	-13.00	-69.97
466.50	S	-81.66	-84.12	4.55	-2.09	-13.00	-68.66
623.64	S	-77.25	-78.89	4.07	-2.42	-13.00	-64.25
915.61	S	-74.48	-75.14	3.64	-2.98	-13.00	-61.48
1648.40	Н	-39.08	-37.43	2.40	-4.05	-13.00	-26.08
2472.60	Н	-42.59	-40.69	3.14	-5.03	-13.00	-29.59
3288.00	Н						
4121.00	Н						
4945.20	Н						
5769.40	Н						
6593.60	Н						
7417.80	Н						
8242.00	Н						

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :GPRS 850

ARFCN :CH 128 Test Date :2013-06-04

Fundamental Frequency :824.2 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX LOW Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :HORIZONTAL

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
138.64	S	-87.10	-84.64	-1.26	-1.20	-13.00	-74.10
373.38	S	-83.70	-86.44	4.62	-1.88	-13.00	-70.70
437.40	S	-82.54	-85.04	4.52	-2.03	-13.00	-69.54
515.00	S	-79.82	-82.30	4.68	-2.19	-13.00	-66.82
679.90	S	-80.05	-81.66	4.14	-2.53	-13.00	-67.05
930.16	S	-76.51	-77.14	3.64	-3.01	-13.00	-63.51
1648.40	Н	-36.80	-35.43	2.68	-4.05	-13.00	-23.80
2472.60	Н	-45.18	-43.67	3.52	-5.03	-13.00	-32.18
3288.00	Н						
4121.00	Н						
4945.20	Н						
5769.40	Н						
6593.60	Н						
7417.80	Н						
8242.00	Н						

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :GPRS 850

ARFCN :CH 190 Test Date :2013-06-04

Fundamental Frequency :836.6 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX MID Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :VERTICAL

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
114.39	S	-79.81	-77.49	-1.20	-1.11	-13.00	-66.81
198.78	S	-84.71	-87.90	4.60	-1.41	-13.00	-71.71
343.31	S	-83.25	-86.18	4.75	-1.82	-13.00	-70.25
536.34	S	-79.88	-82.26	4.62	-2.24	-13.00	-66.88
698.33	S	-77.33	-78.92	4.15	-2.56	-13.00	-64.33
916.58	S	-74.01	-74.68	3.64	-2.98	-13.00	-61.01
1673.20	Н	-40.92	-39.18	2.34	-4.08	-13.00	-27.92
2509.80	Н	-51.01	-49.14	3.19	-5.07	-13.00	-38.01
3346.40	Н						
4183.00	Н						
5019.60	Н						
5856.20	Н						
6692.80	Н						
7529.40	Н						
8366.00	Н						

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :GPRS 850

ARFCN :CH 190 Test Date :2013-06-04

Fundamental Frequency :836.6 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX MID Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :HORIZONTAL

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
56.19	S	-89.86	-79.70	-9.24	-0.91	-13.00	-76.86
160.95	S	-87.96	-86.26	-0.43	-1.27	-13.00	-74.96
255.04	S	-88.99	-92.04	4.63	-1.58	-13.00	-75.99
360.77	S	-83.73	-86.58	4.71	-1.86	-13.00	-70.73
478.14	S	-82.97	-85.46	4.61	-2.12	-13.00	-69.97
602.30	S	-80.63	-82.29	4.03	-2.38	-13.00	-67.63
1673.20	Н	-37.93	-36.51	2.66	-4.08	-13.00	-24.93
2509.80	Н	-47.34	-45.83	3.56	-5.07	-13.00	-34.34
3346.40	Н						
4183.00	Н						
5019.60	Н						
5856.20	Н						
6692.80	Н						
7529.40	Н						
8366.00	Н						

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :GPRS 850

ARFCN :CH 251 Test Date :2013-06-04

Fundamental Frequency :848.8 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX HIGH Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :VERTICAL

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
157.07	S	-84.17	-82.19	-0.72	-1.26	-13.00	-71.17
268.62	S	-83.84	-86.79	4.58	-1.62	-13.00	-70.84
507.24	S	-80.80	-83.32	4.70	-2.18	-13.00	-67.80
641.10	S	-78.04	-79.69	4.10	-2.46	-13.00	-65.04
796.30	S	-76.45	-77.57	3.87	-2.75	-13.00	-63.45
945.68	S	-75.03	-75.61	3.63	-3.05	-13.00	-62.03
1697.60	Н	-41.57	-39.74	2.28	-4.11	-13.00	-28.57
2546.40	Н	-49.95	-48.15	3.30	-5.11	-13.00	-36.95
3395.20	Н						
4244.00	Н						
5092.80	Н						
5941.60	Н						
6790.40	Н						
7639.20	Н						
8488.00	Н						

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :GPRS 850

ARFCN :CH 251 Test Date :2013-06-04

Fundamental Frequency :848.8 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX HIGH Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :HORIZONTAL

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
137.67	S	-87.45	-85.05	-1.20	-1.20	-13.00	-74.45
378.23	S	-81.90	-84.64	4.63	-1.89	-13.00	-68.90
479.11	S	-82.79	-85.29	4.61	-2.12	-13.00	-69.79
601.33	S	-81.38	-83.04	4.03	-2.38	-13.00	-68.38
722.58	S	-78.21	-79.48	3.86	-2.60	-13.00	-65.21
904.94	S	-76.19	-76.89	3.65	-2.95	-13.00	-63.19
1697.60	Н	-39.18	-37.72	2.65	-4.11	-13.00	-26.18
2546.40	Н	-48.20	-46.75	3.66	-5.11	-13.00	-35.20
3395.20	Н						
4244.00	Н						
5092.80	Н						
5941.60	Н						
6790.40	Н						
7639.20	Н						
8488.00	Н						

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Band :GPRS 1900

ARFCN :CH 512 Test Date :2013-06-04

Fundamental Frequency :1850.2 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX LOW Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :VERTICAL

Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
143.49	S	-82.15	-81.82	0.89	-1.22	-13.00	-69.15
309.36	S	-81.56	-86.62	6.80	-1.73	-13.00	-68.56
510.15	S	-78.97	-83.62	6.84	-2.18	-13.00	-65.97
721.61	S	-75.55	-78.99	6.03	-2.59	-13.00	-62.55
855.47	S	-74.44	-77.73	6.14	-2.85	-13.00	-61.44
983.51	S	-72.41	-75.35	6.03	-3.10	-13.00	-59.41
3700.40	Н	-52.78	-53.95	7.40	-6.23	-13.00	-39.78
5550.60	Н						
7400.80	Н						
9251.00	Н						
11101.20	Н						
12951.40	Н						
14801.60	Н						
16651.80	Н						
18502.00	Н						

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :GPRS 1900

ARFCN :CH 512 Test Date :2013-06-04

Fundamental Frequency :1850.2 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX LOW Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :HORIZONTAL

Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
164.83	S	-82.96	-83.95	2.28	-1.29	-13.00	-69.96
348.16	S	-81.03	-86.13	6.93	-1.83	-13.00	-68.03
561.56	S	-76.85	-81.16	6.60	-2.28	-13.00	-63.85
707.06	S	-76.37	-80.01	6.21	-2.57	-13.00	-63.37
842.86	S	-74.51	-77.84	6.16	-2.83	-13.00	-61.51
986.42	S	-72.40	-75.36	6.05	-3.10	-13.00	-59.40
3700.40	Н	-51.94	-52.62	6.91	-6.23	-13.00	-38.94
5550.60	Н						
7400.80	Н						
9251.00	Н						
11101.20	Н						
12951.40	Н						
14801.60	Н						
16651.80	Н						
18502.00	Н						

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :GPRS 1900

ARFCN :CH 661 Test Date :2013-06-04

Fundamental Frequency :1880.0 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX MID Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :VERTICAL

Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
202.66	S	-82.82	-88.30	6.90	-1.42	-13.00	-69.82
343.31	S	-80.74	-85.82	6.90	-1.82	-13.00	-67.74
537.31	S	-77.60	-82.13	6.76	-2.24	-13.00	-64.60
712.88	S	-75.65	-79.21	6.14	-2.58	-13.00	-62.65
810.85	S	-74.98	-78.28	6.08	-2.78	-13.00	-61.98
892.33	S	-73.66	-76.60	5.86	-2.92	-13.00	-60.66
3760.00	Н	-52.57	-53.67	7.42	-6.32	-13.00	-39.57
5640.00	Н						
7520.00	Н						
9400.00	Н						
11280.00	Н						
13160.00	Н						
15040.00	Н						
16920.00	Н						
18800.00	Н						

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :GPRS 1900

ARFCN :CH 661 Test Date :2013-06-04

Fundamental Frequency :1880.0 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX MID Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :HORIZONTAL

Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
128.94	S	-85.21	-85.41	1.37	-1.17	-13.00	-72.21
222.06	S	-81.79	-87.27	6.96	-1.48	-13.00	-68.79
340.40	S	-81.24	-86.31	6.88	-1.81	-13.00	-68.24
467.47	S	-79.42	-84.03	6.70	-2.09	-13.00	-66.42
803.09	S	-75.59	-78.88	6.06	-2.77	-13.00	-62.59
950.53	S	-72.72	-75.44	5.78	-3.06	-13.00	-59.72
3760.00	Н	-53.75	-54.28	6.85	-6.32	-13.00	-40.75
5640.00	Н						
7520.00	Н						
9400.00	Н						
11280.00	Н						
13160.00	Н						
15040.00	Н						
16920.00	Н						
18800.00	Н						

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :GPRS 1900

ARFCN :CH 810 Test Date :2013-06-04

Fundamental Frequency :1909.8 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX HIGH Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :VERTICAL

Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
157.07	S	-82.75	-82.91	1.43	-1.26	-13.00	-69.75
307.42	S	-81.36	-86.43	6.80	-1.73	-13.00	-68.36
531.49	S	-77.26	-81.81	6.78	-2.23	-13.00	-64.26
723.55	S	-75.74	-79.15	6.00	-2.60	-13.00	-62.74
845.77	S	-74.77	-78.11	6.17	-2.84	-13.00	-61.77
991.27	S	-71.78	-74.76	6.09	-3.10	-13.00	-58.78
3819.60	Н	-53.37	-54.49	7.51	-6.39	-13.00	-40.37
5729.40	Н						
7639.20	Н						
9549.00	Н						
11458.80	Н						
13368.60	Н						
15278.40	Н						
17188.20	Н						
19098.00	Н						

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :GPRS 1900

ARFCN :CH 810 Test Date :2013-06-04

Fundamental Frequency :1909.8 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX HIGH Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :HORIZONTAL

Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
154.16	S	-82.99	-83.01	1.27	-1.25	-13.00	-69.99
271.53	S	-81.57	-86.62	6.69	-1.63	-13.00	-68.57
475.23	S	-80.21	-84.84	6.74	-2.11	-13.00	-67.21
610.06	S	-76.20	-80.00	6.20	-2.40	-13.00	-63.20
767.20	S	-74.79	-77.91	5.81	-2.69	-13.00	-61.79
956.35	S	-72.67	-75.43	5.83	-3.07	-13.00	-59.67
3819.60	Н	-54.19	-54.85	7.05	-6.39	-13.00	-41.19
5729.40	Н						
7639.20	Н						
9549.00	Н						
11458.80	Н						
13368.60	Н						
15278.40	Н						
17188.20	Н						
19098.00	Н						

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Radiated Spurious Emission Measurement Result: HSUPA II Mode

Operation Band :HSUPA B2

ARFCN :CH 9262 Test Date :2013-06-04

Fundamental Frequency :1852.4 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX LOW Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :VERTICAL

Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
128.94	S	-83.15	-83.36	1.37	-1.17	-13.00	-70.15
279.29	S	-81.78	-86.71	6.58	-1.65	-13.00	-68.78
381.14	S	-81.17	-86.07	6.80	-1.90	-13.00	-68.17
551.86	S	-76.77	-81.22	6.71	-2.26	-13.00	-63.77
706.09	S	-75.57	-79.23	6.22	-2.57	-13.00	-62.57
926.28	S	-73.16	-75.95	5.79	-3.00	-13.00	-60.16
3704.80	Н	-51.90	-53.07	7.40	-6.24	-13.00	-38.90
5557.20	Н						
7409.60	Н						
9262.00	Н						
11114.40	Н						
12966.80	Н						
14819.20	Н						
16671.60	Н						
18524.00	Н						

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :HSUPA B2

ARFCN :CH 9262 Test Date :2013-06-04

Fundamental Frequency :1852.4 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX LOW Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :HORIZONTAL

Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
131.85	S	-85.09	-85.23	1.32	-1.18	-13.00	-72.09
201.69	S	-82.57	-88.04	6.89	-1.42	-13.00	-69.57
385.99	S	-81.02	-85.94	6.84	-1.91	-13.00	-68.02
643.04	S	-75.91	-79.70	6.26	-2.47	-13.00	-62.91
816.67	S	-74.95	-78.26	6.09	-2.79	-13.00	-61.95
932.10	S	-73.06	-75.83	5.79	-3.02	-13.00	-60.06
3704.80	Н	-53.07	-53.74	6.90	-6.24	-13.00	-40.07
5557.20	Н						
7409.60	Н						
9262.00	Н						
11114.40	Н						
12966.80	Н						
14819.20	Н						
16671.60	Н						
18524.00	Н						

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :HSUPA B2

ARFCN :CH 9400 Test Date :2013-06-04

Fundamental Frequency :1880.0 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX MID Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :VERTICAL

Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
159.01	S	-82.61	-82.87	1.53	-1.27	-13.00	-69.61
294.81	S	-81.46	-86.53	6.76	-1.69	-13.00	-68.46
432.55	S	-79.48	-84.16	6.70	-2.02	-13.00	-66.48
616.85	S	-75.87	-79.68	6.21	-2.41	-13.00	-62.87
770.11	S	-75.04	-78.17	5.83	-2.70	-13.00	-62.04
946.65	S	-72.09	-74.82	5.78	-3.05	-13.00	-59.09
3760.00	Н	-52.39	-53.49	7.42	-6.32	-13.00	-39.39
5640.00	Н						
7520.00	Н						
9400.00	Н						
11280.00	Н						
13160.00	Н						
15040.00	Н						
16920.00	Н						
18800.00	Н						

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :HSUPA B2

ARFCN :CH 9400 Test Date :2013-06-04

Fundamental Frequency :1880.0 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX MID Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :HORIZONTAL

Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
159.01	S	-82.69	-82.95	1.53	-1.27	-13.00	-69.69
353.01	S	-80.93	-86.01	6.92	-1.84	-13.00	-67.93
451.95	S	-79.86	-84.43	6.63	-2.06	-13.00	-66.86
612.97	S	-75.34	-79.14	6.20	-2.40	-13.00	-62.34
765.26	S	-74.86	-77.97	5.80	-2.69	-13.00	-61.86
941.80	S	-72.18	-74.93	5.78	-3.04	-13.00	-59.18
3760.00	Н	-54.12	-54.64	6.85	-6.32	-13.00	-41.12
5640.00	Н						
7520.00	Н						
9400.00	Н						
11280.00	Н						
13160.00	Н						
15040.00	Н						
16920.00	Н						
18800.00	Н						

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :HSUPA B2

ARFCN :CH 9538 Test Date :2013-06-04

Fundamental Frequency :1907.6 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX HIGH Engineer :Allen EUT Pol. :H Plan Measurement Antenna Pol. :VERTICAL

SG Freq. Note **EIRP** Antenna Cable Limit Margin Output Level Gain Loss MHz F/H/E/S dBm dBm dBi dB dBm dB 99.84 S -79.85-79.95 1.16 -1.05-13.00-66.85 191.02 S -82.17 -86.70 5.91 -1.38 -13.00 -69.17 268.62 S -81.23 -86.34 6.73 -1.62-13.00-68.23 343.31 S -80.48-85.56 6.90 -1.82-13.00-67.48690.57 S -75.34 -79.09 6.29 -2.54-13.00 -62.34 875.84 S -72.64-75.745.98 -2.88-13.00 -59.64 3815.20 Η -50.70-51.82 7.50 -6.38 -13.00 -37.705722.80 Η 7630.40 Η Н 9538.00 11445.60 Η Η 13353.20 15260.80 Н 17168.40 Η Η 19076.00

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :HSUPA B2

ARFCN :CH 9538 Test Date :2013-06-04

Fundamental Frequency :1907.6 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX HIGH Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :HORIZONTAL

Freq.	Note	EIRP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
160.95	S	-82.70	-83.15	1.72	-1.27	-13.00	-69.70
299.66	S	-78.91	-84.02	6.82	-1.71	-13.00	-65.91
414.12	S	-79.71	-84.55	6.82	-1.97	-13.00	-66.71
469.41	S	-79.13	-83.75	6.71	-2.10	-13.00	-66.13
679.90	S	-75.58	-79.34	6.29	-2.53	-13.00	-62.58
848.68	S	-73.68	-77.02	6.18	-2.84	-13.00	-60.68
3815.20	Н	-50.75	-51.40	7.03	-6.38	-13.00	-37.75
5722.80	Н						
7630.40	Н						
9538.00	Н						
11445.60	Н						
13353.20	Н						
15260.80	Н						
17168.40	Н						
19076.00	Н						

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Radiated Spurious Emission Measurement Result: HSUPA V Mode

Operation Band :HSUPA B5

ARFCN :CH 4132 Test Date :2013-06-04

Fundamental Frequency :826.4 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX LOW Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :VERTICAL

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
143.49	S	-84.19	-81.71	-1.26	-1.22	-13.00	-71.19
250.19	S	-83.95	-86.94	4.55	-1.56	-13.00	-70.95
462.62	S	-81.48	-83.92	4.53	-2.08	-13.00	-68.48
637.22	S	-78.36	-80.00	4.10	-2.45	-13.00	-65.36
778.84	S	-77.46	-78.48	3.75	-2.72	-13.00	-64.46
904.94	S	-75.39	-76.08	3.65	-2.95	-13.00	-62.39
1652.80	Н	-54.96	-53.30	2.39	-4.05	-13.00	-41.96
2479.20	Н						
3305.60	Н						
4132.00	Н						
4958.40	Н						
5784.80	Н						
6611.20	Н						
7437.60	Н						
8264.00	Н						

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :HSUPA B5

ARFCN :CH 4132 Test Date :2013-06-04

Fundamental Frequency :826.4 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX LOW Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :HORIZONTAL

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
120.21	S	-88.57	-86.08	-1.36	-1.14	-13.00	-75.57
258.92	S	-88.20	-91.30	4.68	-1.59	-13.00	-75.20
469.41	S	-83.20	-85.66	4.56	-2.10	-13.00	-70.20
650.80	S	-81.03	-82.67	4.12	-2.48	-13.00	-68.03
793.39	S	-77.80	-78.91	3.85	-2.75	-13.00	-64.80
984.48	S	-76.06	-76.85	3.89	-3.10	-13.00	-63.06
1652.80	Н	-57.28	-55.90	2.67	-4.05	-13.00	-44.28
2479.20	Н						
3305.60	Н						
4132.00	Н						
4958.40	Н						
5784.80	Н						
6611.20	Н						
7437.60	Н						
8264.00	Н						

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :HSUPA B5

ARFCN :CH 4183 Test Date :2013-06-04

Fundamental Frequency :836.6 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX MID Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :VERTICAL

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
153.19	S	-84.91	-82.72	-0.93	-1.25	-13.00	-71.91
277.35	S	-83.47	-86.28	4.46	-1.65	-13.00	-70.47
400.54	S	-82.37	-85.21	4.78	-1.94	-13.00	-69.37
524.70	S	-78.95	-81.39	4.65	-2.21	-13.00	-65.95
684.75	S	-77.45	-79.05	4.14	-2.53	-13.00	-64.45
937.92	S	-73.85	-74.45	3.63	-3.03	-13.00	-60.85
1673.20	Н	-53.52	-51.78	2.34	-4.08	-13.00	-40.52
2509.80	Н						
3346.40	Н						
4183.00	Н						
5019.60	Н						
5856.20	Н						
6692.80	Н						
7529.40	Н						
8366.00	Н						

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :HSUPA B5

ARFCN :CH 4183 Test Date :2013-06-04

Fundamental Frequency :836.6 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX MID Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :HORIZONTAL

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
152.22	S	-87.30	-85.06	-0.99	-1.25	-13.00	-74.30
291.90	S	-87.01	-89.89	4.57	-1.69	-13.00	-74.01
468.44	S	-82.11	-84.58	4.56	-2.10	-13.00	-69.11
631.40	S	-80.90	-82.55	4.09	-2.44	-13.00	-67.90
799.21	S	-77.51	-78.65	3.89	-2.76	-13.00	-64.51
973.81	S	-76.64	-77.36	3.81	-3.09	-13.00	-63.64
1673.20	Н	-57.05	-55.64	2.66	-4.08	-13.00	-44.05
2509.80	Н						
3346.40	Н						
4183.00	Н						
5019.60	Н						
5856.20	Н						
6692.80	Н						
7529.40	Н						
8366.00	Н						

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :HSUPA B5

ARFCN :CH 4233 Test Date :2013-06-04

Fundamental Frequency :846.6 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :TX HIGH Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :VERTICAL

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
184.23	S	-84.71	-86.31	2.96	-1.36	-13.00	-71.71
303.54	S	-83.41	-86.36	4.66	-1.72	-13.00	-70.41
419.94	S	-82.30	-84.94	4.62	-1.99	-13.00	-69.30
577.08	S	-78.01	-79.96	4.28	-2.32	-13.00	-65.01
767.20	S	-76.92	-77.89	3.66	-2.69	-13.00	-63.92
947.62	S	-75.16	-75.74	3.63	-3.05	-13.00	-62.16
1692.80	Н	-57.62	-55.81	2.29	-4.11	-13.00	-44.62
2539.80	Н						
3386.40	Н						
4233.00	Н						
5079.60	Н						
5926.20	Н						
6772.80	Н						
7619.40	Н						
8466.00	Н						

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Operation Band :HSUPA B5

ARFCN :CH 4233 Test Date :2013-06-04

Fundamental Frequency :846.6 MHz Temp./Humi. :26.8deg_C /55 RH
Operation Mode :TX HIGH Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :HORIZONTAL

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
			Output Level	Gain	Loss		
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
125.06	S	-88.68	-86.49	-1.03	-1.16	-13.00	-75.68
260.86	S	-87.86	-90.96	4.69	-1.60	-13.00	-74.86
370.47	S	-83.37	-86.13	4.64	-1.88	-13.00	-70.37
603.27	S	-80.73	-82.39	4.04	-2.38	-13.00	-67.73
806.00	S	-77.36	-78.50	3.92	-2.77	-13.00	-64.36
950.53	S	-76.35	-76.92	3.63	-3.06	-13.00	-63.35
1692.80	Н	-56.51	-55.06	2.65	-4.11	-13.00	-43.51
2539.80	Н						
3386.40	Н						
4233.00	Н						
5079.60	Н						
5926.20	Н						
6772.80	Н						
7619.40	Н						
8466.00	Н						

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

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Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Band :GPRS 850 Test Date :2013-06-04

Fundamental Frequency :824.2 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :RX LOW Engineer :Allen EUT Pol. :H Plan Measurement Antenna Pol. :VERTICAL

Actual FS($dB\mu V/m$) = SPA. Reading level($dB\mu V$) + Factor(dB)

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
159.98	S	Peak	27.13	-12.26	14.87	43.50	-28.63
343.31	S	Peak	27.11	-11.76	15.35	46.00	-30.65
464.56	S	Peak	28.05	-9.92	18.13	46.00	-27.87
644.98	S	Peak	27.52	-6.68	20.84	46.00	-25.16
810.85	S	Peak	27.62	-4.07	23.55	46.00	-22.45
911.73	S	Peak	27.40	-2.58	24.82	46.00	-21.18
1648.40	Н	Peak	39.04	-1.68	37.36	54.00	-16.64
2472.60	Н						
3288.00	Н						
4121.00	Н						
4945.20	Н						
5769.40	Н						
6593.60	Н						
7417.80	Н						
8242.00	Н						

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Operation Band Fundamental Frequency Operation Mode

EUT Pol.

:GPRS 850 :824.2 MHz :RX LOW :H Plan Test Date
Temp./Humi.
Engineer

:2013-06-04 :26.8deg_C /55 RH :Allen

Engineer Measurement Antenna Pol.

:HORIZONTAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
165.80	S	Peak	27.07	-12.77	14.30	43.50	-29.20
286.08	S	Peak	26.77	-12.89	13.88	46.00	-32.12
413.15	S	Peak	26.60	-10.78	15.82	46.00	-30.18
589.69	S	Peak	27.05	-7.77	19.28	46.00	-26.72
807.94	S	Peak	27.54	-4.10	23.44	46.00	-22.56
953.44	S	Peak	26.62	-2.09	24.53	46.00	-21.47
1648.40	Н	Peak	40.00	-0.96	39.04	54.00	-14.96
2472.60	Н						
3288.00	Н						
4121.00	Н						
4945.20	Н						
5769.40	Н						
6593.60	Н						
7417.80	Н						
8242.00	Н						

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Operation Band Fundamental Frequency :GPRS 850 :836.6 MHz :RX MID Test Date Temp./Humi. Engineer :2013-06-04 :26.8deg_C /55 RH

Operation Mode EUT Pol.

:H Plan

Measurement Antenna Pol.

:Allen :VERTICAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
143.49	S	Peak	27.23	-12.82	14.41	43.50	-29.09
269.59	S	Peak	25.58	-13.37	12.21	46.00	-33.79
401.51	S	Peak	26.79	-11.02	15.77	46.00	-30.23
580.96	S	Peak	27.02	-7.96	19.06	46.00	-26.94
744.89	S	Peak	27.15	-5.06	22.09	46.00	-23.91
931.13	S	Peak	26.26	-2.28	23.98	46.00	-22.02
1673.20	Н	Peak	40.97	-1.38	39.59	54.00	-14.41
2509.80	Н						
3346.40	Н						
4183.00	Н						
5019.60	Н						
5856.20	Н						
6692.80	Н						
7529.40	Н						
8366.00	Н						

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Operation Band Fundamental Frequency Operation Mode

EUT Pol.

:GPRS 850 :836.6 MHz :RX MID :H Plan

Test Date Temp./Humi.

:2013-06-04 :26.8deg C/55 RH

:Allen

Engineer

Measurement Antenna Pol. :HORIZONTAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

"F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency. Note:

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
150.28	S	Peak	27.14	-12.35	14.79	43.50	-28.71
236.61	S	Peak	30.34	-14.30	16.04	46.00	-29.96
390.84	S	Peak	27.06	-11.16	15.90	46.00	-30.10
516.94	S	Peak	28.61	-9.26	19.35	46.00	-26.65
707.06	S	Peak	27.39	-5.64	21.75	46.00	-24.25
916.58	S	Peak	27.84	-2.49	25.35	46.00	-20.65
1673.20	Н	Peak	38.69	-0.59	38.10	54.00	-15.90
2509.80	Н						
3346.40	Н						
4183.00	Н						
5019.60	Н						
5856.20	Н						
6692.80	Н						
7529.40	Н						
8366.00	Н						

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Operation Band Fundamental Frequency :GPRS 850 :848.8 MHz Test Date
Temp./Humi.

:2013-06-04 :26.8deg C /55 RH

Operation Mode EUT Pol.

:RX HIGH :H Plan

Engineer Measurement Antenna Pol.

:Allen :VERTICAL

Actual FS($dB\mu V/m$) = SPA. Reading level($dB\mu V$) + Factor(dB)

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
157.07	S	Peak	27.34	-12.29	15.05	43.50	-28.45
286.08	S	Peak	27.13	-12.89	14.24	46.00	-31.76
446.13	S	Peak	28.07	-10.09	17.98	46.00	-28.02
584.84	S	Peak	27.39	-7.88	19.51	46.00	-26.49
751.68	S	Peak	26.88	-4.93	21.95	46.00	-24.05
941.80	S	Peak	26.75	-2.18	24.57	46.00	-21.43
1697.60	Н	Peak	37.68	-1.08	36.60	54.00	-17.40
2546.40	Н						
3395.20	Н						
4244.00	Н						
5092.80	Н						
5941.60	Н						
6790.40	Н						
7639.20	Н						
8488.00	Н						

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Operation Band Fundamental Frequency :GPRS 850 :848.8 MHz Test Date Temp./Humi. Engineer :2013-06-04 :26.8deg C/55 RH

:Allen

Operation Mode :RX HIGH EUT Pol. :H Plan M

Measurement Antenna Pol. :HORIZONTAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
144.46	S	Peak	26.16	-12.74	13.42	43.50	-30.08
275.41	S	Peak	26.43	-13.19	13.24	46.00	-32.76
419.94	S	Peak	28.51	-10.65	17.86	46.00	-28.14
557.68	S	Peak	27.81	-8.42	19.39	46.00	-26.61
741.98	S	Peak	27.22	-5.10	22.12	46.00	-23.88
937.92	S	Peak	27.78	-2.21	25.57	46.00	-20.43
1697.60	Н	Peak	39.69	-0.23	39.46	54.00	-14.54
2546.40	Н						
3395.20	Н						
4244.00	Н						
5092.80	Н						
5941.60	Н						
6790.40	Н						
7639.20	Н						
8488.00	Н						

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Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Band :GPRS 1900 Test Date :2013-06-04

Fundamental Frequency :1850.2 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :RX LOW Engineer :Allen

EUT Pol. :H Plan Measurement Antenna Pol. :VERTICAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
165.80	S	Peak	26.55	-12.77	13.78	43.50	-29.72
272.50	S	Peak	25.72	-13.28	12.44	46.00	-33.56
436.43	S	Peak	26.63	-10.29	16.34	46.00	-29.66
624.61	S	Peak	27.60	-7.03	20.57	46.00	-25.43
796.30	S	Peak	27.48	-4.24	23.24	46.00	-22.76
960.23	S	Peak	26.76	-2.06	24.70	54.00	-29.30
3700.40	Н	Peak	38.36	5.18	43.54	54.00	-10.46
5550.60	Н						
7400.80	Н						
9251.00	Н						
11101.20	Н						
12951.40	Н						
14801.60	Н						
16651.80	Н						
18502.00	Н						

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Operation Band Fundamental Frequency :GPRS 1900 :1850.2 MHz :RX LOW Test Date Temp./Humi. :2013-06-04 :26.8deg C /55 RH

Operation Mode EUT Pol.

:H Plan

Engineer :Allen Measurement Antenna Pol. :HORI

:HORIZONTAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
163.86	S	Peak	26.96	-12.61	14.35	43.50	-29.15
283.17	S	Peak	26.91	-12.97	13.94	46.00	-32.06
404.42	S	Peak	26.87	-10.96	15.91	46.00	-30.09
519.85	S	Peak	27.42	-9.22	18.20	46.00	-27.80
718.70	S	Peak	27.56	-5.45	22.11	46.00	-23.89
896.21	S	Peak	26.52	-2.90	23.62	46.00	-22.38
3700.40	Н	Peak	38.36	5.12	43.48	54.00	-10.52
5550.60	Н						
7400.80	Н						
9251.00	Н						
11101.20	Н						
12951.40	Н						
14801.60	Н						
16651.80	Н						
18502.00	Н						

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Operation Band Fundamental Frequency :GPRS 1900 :1880.0 MHz :RX MID Test Date Temp./Humi. Engineer :2013-06-04 :26.8deg_C /55 RH

Operation Mode EUT Pol.

:H Plan

Measurement Antenna Pol.

:Allen :VERTICAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

 $Factor(dB) = Antenna \ Factor(dB\mu V/m) + Cable \ Loss(dB) - Pre_Amplifier \ Gain(dB)$

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
160.95	S	Peak	26.65	-12.36	14.29	43.50	-29.21
286.08	S	Peak	26.74	-12.89	13.85	46.00	-32.15
452.92	S	Peak	26.85	-10.01	16.84	46.00	-29.16
628.49	S	Peak	27.41	-6.96	20.45	46.00	-25.55
750.71	S	Peak	27.50	-4.95	22.55	46.00	-23.45
936.95	S	Peak	26.70	-2.23	24.47	46.00	-21.53
3760.00	Н	Peak	38.31	5.53	43.84	54.00	-10.16
5640.00	Н						
7520.00	Н						
9400.00	Н						
11280.00	Н						
13160.00	Н						
15040.00	Н						
16920.00	Н						
18800.00	Н						

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f (886-2) 2298-0488



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Operation Band Fundamental Frequency

:GPRS 1900 :1880.0 MHz :RX MID Test Date Temp./Humi. Engineer :2013-06-04 :26.8deg_C /55 RH

Operation Mode EUT Pol.

:H Plan

Measurement Antenna Pol.

:Allen :HORIZONTAL

Actual FS($dB\mu V/m$) = SPA. Reading level($dB\mu V$) + Factor(dB)

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
159.98	S	Peak	25.98	-12.26	13.72	43.50	-29.78
286.08	S	Peak	26.85	-12.89	13.96	46.00	-32.04
456.80	S	Peak	27.21	-10.00	17.21	46.00	-28.79
634.31	S	Peak	27.30	-6.87	20.43	46.00	-25.57
810.85	S	Peak	27.07	-4.07	23.00	46.00	-23.00
904.94	S	Peak	26.98	-2.70	24.28	46.00	-21.72
3760.00	Н	Peak	37.68	5.54	43.22	54.00	-10.78
5640.00	Н						
7520.00	Н						
9400.00	Н						
11280.00	Н						
13160.00	Н						
15040.00	Н						
16920.00	Н						
18800.00	Н						

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f (886-2) 2298-0488



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Operation Band Fundamental Frequency :GPRS 1900 :1909.8 MHz :RX HIGH Test Date Temp./Humi. Engineer :2013-06-04 :26.8deg C /55 RH

Operation Mode :RX HIGHEUT Pol. :H Plan

Engineer :Allen
Measurement Antenna Pol. :VERTICAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

 $Factor(dB) = Antenna \ Factor(dB\mu V/m) + Cable \ Loss(dB) - Pre_Amplifier \ Gain(dB)$

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
171.62	S	Peak	26.90	-13.37	13.53	43.50	-29.97
334.58	S	Peak	26.00	-11.87	14.13	46.00	-31.87
470.38	S	Peak	27.40	-9.90	17.50	46.00	-28.50
606.18	S	Peak	27.49	-7.42	20.07	46.00	-25.93
701.24	S	Peak	26.52	-5.73	20.79	46.00	-25.21
823.46	S	Peak	27.18	-3.94	23.24	46.00	-22.76
3819.60	Н	Peak	37.97	5.34	43.31	54.00	-10.69
5729.40	Н						
7639.20	Н						
9549.00	Н						
11458.80	Н						
13368.60	Н						
15278.40	Н						
17188.20	Н						
19098.00	Н						

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Operation Band Fundamental Frequency Operation Mode

EUT Pol.

:GPRS 1900 :1909.8 MHz :RX HIGH :H Plan Test Date
Temp./Humi.

:2013-06-04 :26.8deg_C /55 RH :Allen

Engineer

Measurement Antenna Pol. :HORIZONTAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
176.47	S	Peak	26.35	-14.03	12.32	43.50	-31.18
341.37	S	Peak	26.25	-11.79	14.46	46.00	-31.54
501.42	S	Peak	26.91	-9.55	17.36	46.00	-28.64
638.19	S	Peak	27.31	-6.80	20.51	46.00	-25.49
815.70	S	Peak	26.83	-4.02	22.81	46.00	-23.19
938.89	S	Peak	27.09	-2.20	24.89	46.00	-21.11
3819.60	Н	Peak	37.63	5.40	43.03	54.00	-10.97
5729.40	Н						
7639.20	Н						
9549.00	Н						
11458.80	Н						
13368.60	Н						
15278.40	Н						
17188.20	Н						
19098.00	Н						

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Radiated Spurious Emission Measurement Result: HSUPA II Mode

Operation Band :HSUPA B2 Test Date :2013-06-04

Fundamental Frequency :1852.4 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :RX LOW Engineer :Allen EUT Pol. :H Plan Measurement Antenna Pol. :VERTICAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
170.65	S	Peak	26.56	-13.22	13.34	43.50	-30.16
323.91	S	Peak	25.96	-12.02	13.94	46.00	-32.06
505.30	S	Peak	27.14	-9.48	17.66	46.00	-28.34
714.82	S	Peak	27.10	-5.51	21.59	46.00	-24.41
826.37	S	Peak	26.82	-3.91	22.91	46.00	-23.09
904.94	S	Peak	27.39	-2.70	24.69	46.00	-21.31
3704.80	Н	Peak	36.70	5.22	41.92	54.00	-12.08
5557.20	Н						
7409.60	Н						
9262.00	Н						
11114.40	Н						
12966.80	Н						
14819.20	Н						
16671.60	Н						
18524.00	Н						

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Operation Band Fundamental Frequency :HSUPA B2 :1852.4 MHz :RX LOW Test Date Temp./Humi. Engineer :2013-06-04 :26.8deg_C /55 RH :Allen

Operation Mode EUT Pol.

:H Plan

Measurement Antenna Pol. :HORIZO

:HORIZONTAL

Actual FS($dB\mu V/m$) = SPA. Reading level($dB\mu V$) + Factor(dB)

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
169.68	S	Peak	25.65	-13.09	12.56	43.50	-30.94
310.33	S	Peak	26.16	-12.32	13.84	46.00	-32.16
403.45	S	Peak	27.20	-10.99	16.21	46.00	-29.79
508.21	S	Peak	28.24	-9.43	18.81	46.00	-27.19
627.52	S	Peak	27.26	-6.97	20.29	46.00	-25.71
894.27	S	Peak	26.56	-2.93	23.63	46.00	-22.37
3704.80	Н	Peak	36.88	5.17	42.05	54.00	-11.95
5557.20	Н						
7409.60	Н						
9262.00	Н						
11114.40	Н						
12966.80	Н						
14819.20	Н						
16671.60	Н						
18524.00	Н						

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Operation Band Fundamental Frequency :HSUPA B2 :1880.0 MHz :RX MID Test Date Temp./Humi. Engineer :2013-06-04 :26.8deg_C /55 RH

Operation Mode :RX EUT Pol. :H I

:H Plan

Measurement Antenna Pol.

:Allen :VERTICAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

 $Factor(dB) = Antenna \ Factor(dB\mu V/m) + Cable \ Loss(dB) - Pre_Amplifier \ Gain(dB)$

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
99.84	S	Peak	28.75	-16.84	11.91	43.50	-31.59
288.99	S	Peak	26.45	-12.83	13.62	46.00	-32.38
431.58	S	Peak	27.27	-10.40	16.87	46.00	-29.13
603.27	S	Peak	27.32	-7.49	19.83	46.00	-26.17
760.41	S	Peak	26.78	-4.80	21.98	46.00	-24.02
899.12	S	Peak	26.98	-2.83	24.15	46.00	-21.85
3760.00	Н	Peak	38.03	5.53	43.56	54.00	-10.44
5640.00	Н						
7520.00	Н						
9400.00	Н						
11280.00	Н						
13160.00	Н						
15040.00	Н						
16920.00	Н						
18800.00	Н						

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Operation Band Fundamental Frequency

Operation Mode EUT Pol.

:HSUPA B2 :1880.0 MHz :RX MID :H Plan

Test Date Temp./Humi.

Engineer Measurement Antenna Pol. :2013-06-04

:26.8deg C/55 RH :Allen

:HORIZONTAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

"F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency. Note:

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
252.13	S	Peak	26.48	-13.95	12.53	46.00	-33.47
383.08	S	Peak	26.70	-11.25	15.45	46.00	-30.55
545.07	S	Peak	28.50	-8.67	19.83	46.00	-26.17
699.30	S	Peak	26.88	-5.76	21.12	46.00	-24.88
823.46	S	Peak	27.43	-3.94	23.49	46.00	-22.51
961.20	S	Peak	26.50	-2.06	24.44	54.00	-29.56
3760.00	Н	Peak	37.22	5.54	42.76	54.00	-11.24
5640.00	Н						
7520.00	Н						
9400.00	Н						
11280.00	Н						
13160.00	Н						
15040.00	Н						
16920.00	Н						
18800.00	Н						

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Operation Band Fundamental Frequency :HSUPA B2 :1907.6 MHz :RX HIGH Test Date Temp./Humi. Engineer :2013-06-04 :26.8deg C /55 RH

Operation Mode EUT Pol.

:H Plan

Measurement Antenna Pol.

:Allen :VERTICAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

 $Factor(dB) = Antenna \ Factor(dB\mu V/m) + Cable \ Loss(dB) - Pre_Amplifier \ Gain(dB)$

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
179.38	S	Peak	26.83	-14.45	12.38	43.50	-31.12
286.08	S	Peak	26.51	-12.89	13.62	46.00	-32.38
424.79	S	Peak	27.53	-10.54	16.99	46.00	-29.01
565.44	S	Peak	27.35	-8.27	19.08	46.00	-26.92
653.71	S	Peak	26.69	-6.51	20.18	46.00	-25.82
858.38	S	Peak	27.57	-3.56	24.01	46.00	-21.99
3815.20	Н	Peak	38.03	5.32	43.35	54.00	-10.65
5722.80	Н						
7630.40	Н						
9538.00	Н						
11445.60	Н						
13353.20	Н						
15260.80	Н						
17168.40	Н						
19076.00	Н						

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Operation Band Fundamental Frequency Operation Mode

EUT Pol.

:HSUPA B2 :1907.6 MHz :RX HIGH

Test Date Temp./Humi.

:2013-06-04 :26.8deg C/55 RH

:Allen

Engineer

Measurement Antenna Pol. :HORIZONTAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

:H Plan

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

"F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency. Note:

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
166.77	S	Peak	26.36	-12.87	13.49	43.50	-30.01
327.79	S	Peak	26.47	-11.95	14.52	46.00	-31.48
479.11	S	Peak	27.06	-9.82	17.24	46.00	-28.76
585.81	S	Peak	27.65	-7.86	19.79	46.00	-26.21
749.74	S	Peak	26.65	-4.96	21.69	46.00	-24.31
902.03	S	Peak	26.92	-2.77	24.15	46.00	-21.85
3815.20	Н	Peak	38.68	5.37	44.05	54.00	-9.95
5722.80	Н						
7630.40	Н						
9538.00	Н						
11445.60	Н						
13353.20	Н						
15260.80	Н						
17168.40	Н						
19076.00	Н						

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Radiated Spurious Emission Measurement Result: HSUPA V Mode

Operation Band :HSUPA B5 Test Date :2013-06-04

Fundamental Frequency :826.4 MHz Temp./Humi. :26.8deg_C /55 RH

Operation Mode :RX LOW Engineer :Allen EUT Pol. :H Plan Measurement Antenna Pol. :VERTICAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
143.49	S	Peak	28.08	-12.82	15.26	43.50	-28.24
271.53	S	Peak	26.35	-13.32	13.03	46.00	-32.97
439.34	S	Peak	26.99	-10.24	16.75	46.00	-29.25
597.45	S	Peak	27.77	-7.61	20.16	46.00	-25.84
801.15	S	Peak	27.12	-4.18	22.94	46.00	-23.06
958.29	S	Peak	26.71	-2.07	24.64	46.00	-21.36
1652.80	Н	Peak	41.35	-1.62	39.73	54.00	-14.27
2479.20	Н						
3305.60	Н						
4132.00	Н						
4958.40	Н						
5784.80	Н						
6611.20	Н						
7437.60	Н						
8264.00	Н						

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Operation Band Fundamental Frequency Operation Mode

EUT Pol.

:HSUPA B5 :826.4 MHz :RX LOW Test Date Temp./Humi. :2013-06-04 :26.8deg C /55 RH

:Allen

RX LOW Engineer

Measurement Antenna Pol. :HORIZONTAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

:H Plan

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre_Amplifier Gain(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
173.56	S	Peak	27.05	-13.62	13.43	43.50	-30.07
284.14	S	Peak	26.43	-12.94	13.49	46.00	-32.51
436.43	S	Peak	26.61	-10.29	16.32	46.00	-29.68
612.00	S	Peak	27.81	-7.30	20.51	46.00	-25.49
853.53	S	Peak	26.70	-3.64	23.06	46.00	-22.94
978.66	S	Peak	26.62	-1.97	24.65	54.00	-29.35
1652.80	Н	Peak	38.98	-0.89	38.09	54.00	-15.91
2479.20	Н						
3305.60	Н						
4132.00	Н						
4958.40	Н						
5784.80	Н						
6611.20	Н						
7437.60	Н						
8264.00	Н						

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Operation Band Fundamental Frequency

:HSUPA B5 :836.6 MHz :RX MID Test Date Temp./Humi. Engineer :2013-06-04 :26.8deg_C /55 RH

Operation Mode EUT Pol.

:H Plan

Measurement Antenna Pol.

:Allen :VERTICAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

 $Factor(dB) = Antenna \ Factor(dB\mu V/m) + Cable \ Loss(dB) - Pre_Amplifier \ Gain(dB)$

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
160.95	S	Peak	26.51	-12.36	14.15	43.50	-29.35
286.08	S	Peak	26.26	-12.89	13.37	46.00	-32.63
477.17	S	Peak	27.45	-9.83	17.62	46.00	-28.38
676.99	S	Peak	27.38	-6.09	21.29	46.00	-24.71
838.98	S	Peak	27.33	-3.80	23.53	46.00	-22.47
974.78	S	Peak	27.10	-1.99	25.11	54.00	-28.89
1673.20	Н	Peak	38.76	-1.38	37.38	54.00	-16.62
2509.80	Н						
3346.40	Н						
4183.00	Н						
5019.60	Н						
5856.20	Н						
6692.80	Н						
7529.40	Н						
8366.00	Н						

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:Allen

Operation Band Fundamental Frequency

Operation Mode

EUT Pol.

:HSUPA B5 :836.6 MHz :RX MID Test Date Temp./Humi. :2013-06-04 :26.8deg C /55 RH

Engineer

Measurement Antenna Pol. :HORIZONTAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

:H Plan

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
160.95	S	Peak	26.78	-12.36	14.42	43.50	-29.08
322.94	S	Peak	26.46	-12.03	14.43	46.00	-31.57
487.84	S	Peak	27.48	-9.73	17.75	46.00	-28.25
663.41	S	Peak	27.25	-6.32	20.93	46.00	-25.07
825.40	S	Peak	26.96	-3.92	23.04	46.00	-22.96
971.87	S	Peak	26.28	-2.01	24.27	54.00	-29.73
1673.20	Н	Peak	39.42	-0.59	38.83	54.00	-15.17
2509.80	Н						
3346.40	Н						
4183.00	Н						
5019.60	Н						
5856.20	Н						
6692.80	Н						
7529.40	Н						
8366.00	Н						

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Operation Band Fundamental Frequency :HSUPA B5 :846.6 MHz :RX HIGH

Test Date Temp./Humi. Engineer

:2013-06-04 :26.8deg C/55 RH :Allen

Operation Mode EUT Pol.

:H Plan

Measurement Antenna Pol.

:VERTICAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

"F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency. Note:

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBμV/m	dB
143.49	S	Peak	27.60	-12.82	14.78	43.50	-28.72
274.44	S	Peak	26.94	-13.21	13.73	46.00	-32.27
428.67	S	Peak	27.00	-10.46	16.54	46.00	-29.46
604.24	S	Peak	27.90	-7.47	20.43	46.00	-25.57
810.85	S	Peak	27.02	-4.07	22.95	46.00	-23.05
935.01	S	Peak	26.42	-2.24	24.18	46.00	-21.82
1693.20	Н	Peak	38.16	-1.14	37.02	54.00	-16.98
2539.80	Н						
3386.40	Н						
4233.00	Н						
5079.60	Н						
5926.20	Н						
6772.80	Н						
7619.40	Н						
8466.00	Н						

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:2013-06-04

Operation Band Fundamental Frequency

ental Frequency :846.6 MHz on Mode :RX HIGH

:HSUPA B5 Test Date :846.6 MHz Temp./Humi. :RX HIGH Engineer

:26.8deg_C /55 RH

Operation Mode EUT Pol.

:H Plan

Engineer :Allen Measurement Antenna Pol. :HORI

:HORIZONTAL

Actual $FS(dB\mu V/m) = SPA$. Reading level $(dB\mu V) + Factor(dB)$

Factor(dB) = Antenna Factor(dB μ V/m) + Cable Loss(dB) – Pre Amplifier Gain(dB)

Note: "F": denotes Fundamental Frequency.; "H": denotes Harmonic Frequency.

"E": denotes Band Edge Frequency.; "S": denotes Spurious Frequency.

"---": denotes Noise Floor.

Freq.	Note	Detector	Spectrum	Factor	Actual	Limit	Margin
		Mode	Reading Level		FS	@3m	
MHz	F/H/E/S	PK/QP/AV	dΒμV	dB	dBμV/m	dBµV/m	dB
171.62	S	Peak	26.66	-13.37	13.29	43.50	-30.21
343.31	S	Peak	26.78	-11.76	15.02	46.00	-30.98
477.17	S	Peak	27.07	-9.83	17.24	46.00	-28.76
628.49	S	Peak	27.22	-6.96	20.26	46.00	-25.74
762.35	S	Peak	27.37	-4.77	22.60	46.00	-23.40
923.37	S	Peak	26.49	-2.36	24.13	46.00	-21.87
1693.20	Н	Peak	38.94	-0.30	38.64	54.00	-15.36
2539.80	Н						
3386.40	Н						
4233.00	Н						
5079.60	Н						
5926.20	Н						
6772.80	Н						
7619.40	Н						
8466.00	Н						

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11. FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

11.1. Standard Applicable:

According to FCC §2.1055(a) (1)

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

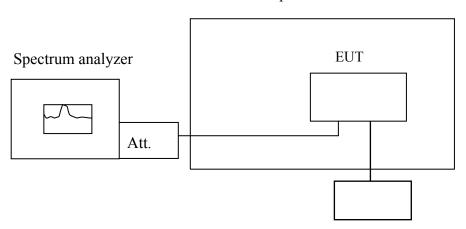
+/-2.5ppm for 1900MHz band

According to RSS-133 §6.3, RSS-132 §5.3

The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations

11.2. Test Set-up:

Temperature Chamber



Variable DC Power Supply

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 25oC operating frequency as reference frequency. Turn EUT off and set the chamber temperature to –30oC. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10oC increased per stage until the highest temperature of +50oC reached.

11.4. Measurement Equipment Used:

Refer to section 2.4 in this report

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11.5. Measurement Result:

Reference Frequency: GPRS 850 Mid Channel 836.6 MHz					
	Limit	: +/- 2.5 ppm = 209	91 Hz		
Power Supply	Environment	Frequency	Dolto (Uz)	T : (TT)	
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)	
3.7	50	836600008	-3	2091	
3.7	40	836600010	-1	2091	
3.7	30	836599999	-12	2091	
3.7	20	836600011	0	2091	
3.7	10	836600001	-10	2091	
3.7	0	836600001	-10	2091	
3.7	-10	836600003	-8	2091	
3.7	-20	836600008	-3	2091	
3.7	-30	836599997	-14	2091	

Reference Frequency: GPRS 1900 Mid Channel 1880 MHz					
	Limit	+/-2.5 ppm = 470	00 Hz		
Power Supply	Environment	Frequency	Dolto (Hz)	Limit (Hz)	
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)	
3.7	50	1879999989	-5	4700	
3.7	40	1879999996	2	4700	
3.7	30	1880000007	13	4700	
3.7	20	1879999994	0	4700	
3.7	10	1880000009	15	4700	
3.7	0	1880000000	6	4700	
3.7	-10	1879999991	-3	4700	
3.7	-20	1880000003	9	4700	
3.7	-30	1879999996	2	4700	

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Reference Frequency: WCDMA II Mid Channel 1880 MHz					
	Limit	+/-2.5 ppm = 470	00 Hz		
Power Supply	Environment	Frequency	Dolto (Hz)	Limit (Hz)	
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)	
3.7	50	1879999997	-14	4700	
3.7	40	1879999997	-14	4700	
3.7	30	1880000003	-8	4700	
3.7	20	1880000011	0	4700	
3.7	10	1880000007	-4	4700	
3.7	0	1880000003	-8	4700	
3.7	-10	1880000011	0	4700	
3.7	-20	1880000003	-8	4700	
3.7	-30	1879999991	-20	4700	

Reference Frequency: WCDMA V Mid Channel 836.6 MHz					
	Limit	+/-2.5 ppm = 20	91 Hz		
Power Supply	Environment	Frequency	Dolto (Hz)	Limit (Hz)	
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)	
3.7	50	836599992	-1	2091	
3.7	40	836599994	1	2091	
3.7	30	836600010	17	2091	
3.7	20	836599993	0	2091	
3.7	10	836600005	12	2091	
3.7	0	836600002	9	2091	
3.7	-10	836600009	16	2091	
3.7	-20	836600000	7	2091	
3.7	-30	836599992	-1	2091	

Note: The battery is rated 3.7V dc.

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12. FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

12.1. Standard Applicable:

According to FCC §2.1055(d) (2)

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

+/-2.5ppm for 1900MHz band

According to RSS-133 §6.3, RSS-132 §5.3

The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations.

12.2. Test Set-up:

Refer to section 11.2 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: GPRS 850 Mid Channel 836.6 MHz					
	Limit	$\pm +/- 2.5 \text{ ppm} = 209$	91 Hz		
Power Supply	Environment	Frequency			
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)	
4.2	20	836600000	-11	2091	
3.7	20	836600011	0	2091	
3.6	20	836600005	-6	2091	
3.00	20	836599993	-18	2091	
(Shutdown point)	20	630399993	-18	2091	

Reference Frequency: GPRS 1900 Mid Channel 1880 MHz					
	Limit	$\pm +/- 2.5 \text{ ppm} = 470$	00 Hz		
Power Supply	Environment	Frequency	D 1((II) I : '((II)		
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)	
4.2	20	1880000011	17	4700	
3.7	20	1879999994	0	4700	
3.6	20	1879999989	-5	4700	
3.00	20	199000000	1.4	4700	
(Shutdown point)	20	1880000008	14	4700	

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Reference Frequency: WCDMA II Mid Channel 1880 MHz					
	Limit	:: +/- 2.5 ppm = 470	00 Hz		
Power Supply	Environment	Frequency			
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)	
4.2	20	1880000002	-9	4700	
3.7	20	1880000011	0	4700	
3.6	20	1880000002	-9	4700	
3.00	20	197000000	22	4700	
(Shutdown point)	20	1879999989	-22	4700	

Reference Frequency: WCDMA V Mid Channel 836.6 MHz					
	Limit	: +/- 2.5 ppm = 209	91 Hz		
Power Supply	Environment	Frequency			
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)	
4.2	20	836600002	9	2091	
3.7	20	836599993	0	2091	
3.6	20	836600006	13	2091	
3.00	20	836600000	7	2091	
(Shutdown point)			,		

Note: The battery is rated 3.7V dc.

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13. PEAK TO AVERAGE RATIO

13.1. Standard Applicable:

According FCC 24.232(d) – The peak-to-average ration (PAR) of the transmission may not exceed 13dB.

According to issue 3 of RSS 132, section 5.4, issue 6 of RSS 133, section 6.4. Transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

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

Refer to section 2.4 in this report

13.3. Measurement Procedure:

KDB 971168 D01 is employed as the following procedure is proper adjusted accordingly: Set resolution/measurement bandwidth ≥ signal's occupied bandwidth; & internal =1ms Set the number of counts to a value that stabilizes the measured CCDF curve.

13.4. Measurement Equipment Used:

Refer to section 2.4 in this report

13.5. Measurement Result:

Refer to next page for plot.

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Figure 13-1: GSM 850 Channel Low



Figure 13-2: GSM 850 Channel Mid



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Figure 13-3: GSM 850 Channel High

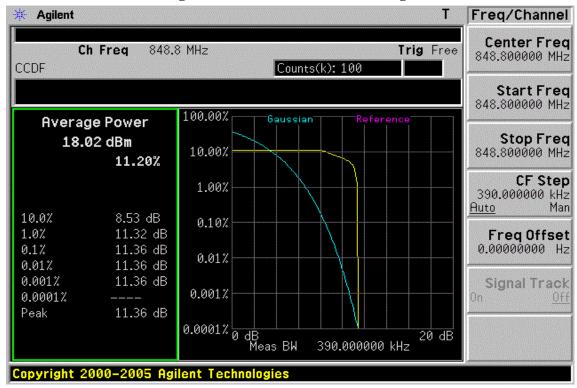


Figure 13-4: GSM 1900 Channel Low



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Figure 13-5: GSM 1900 Channel Mid

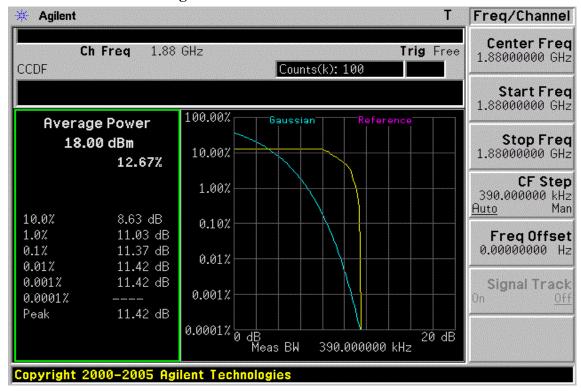


Figure 13-6: GSM 1900 Channel High



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Figure 13-7: GPRS 850 Channel Low

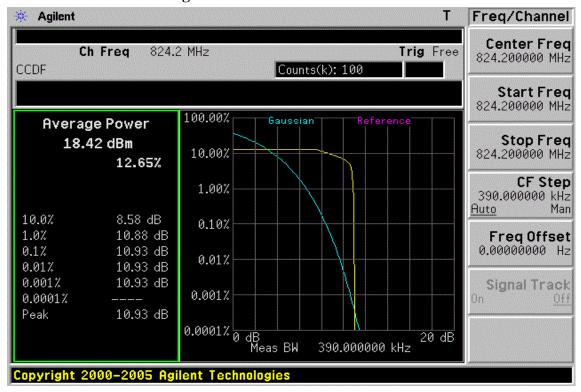
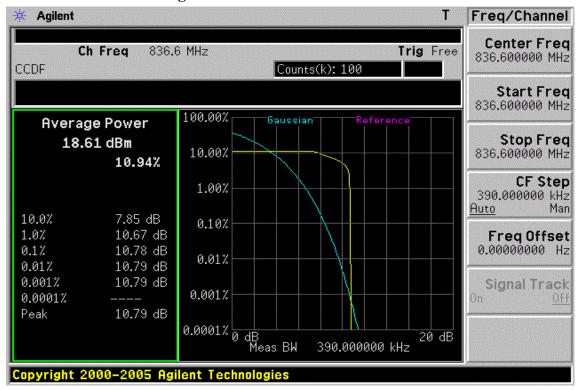


Figure 13-8: GPRS 850 Channel Mid



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Figure 13-9: GPRS 850 Channel High



Figure 13-10: GPRS 1900 Channel Low



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Figure 13-11: GPRS 1900 Channel Mid

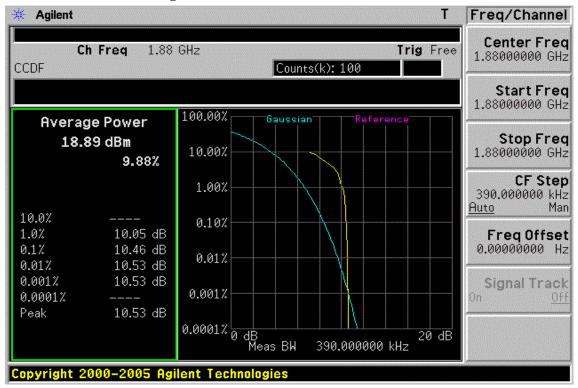


Figure 13-12: GPRS 1900 Channel High



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Figure 13-13: EDGE 850 Channel Low

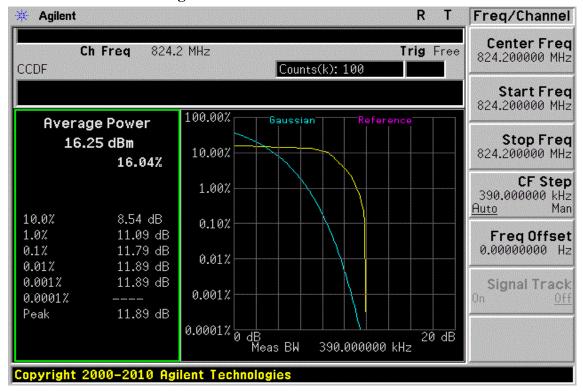


Figure 13-14: EDGE 850 Channel Mid



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Figure 13-15: EDGE 850 Channel High

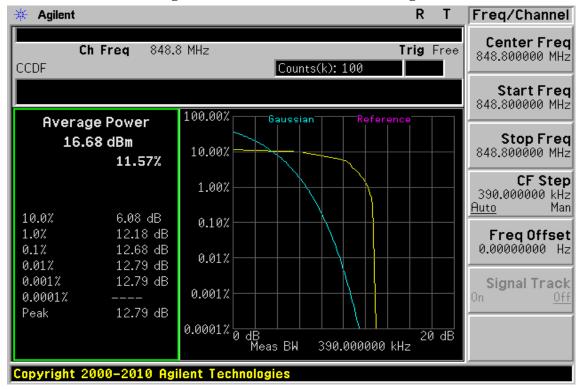


Figure 13-16: EDGE 1900 Channel Low



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Figure 13-17: EDGE 1900 Channel Mid

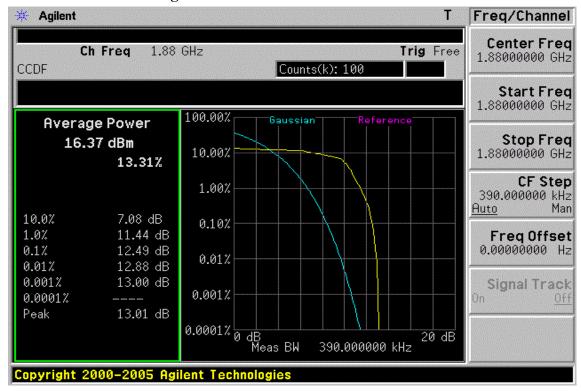


Figure 13-18: EDGE 1900 Channel High



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Figure 13-19: WCDMA Band II Channel Low

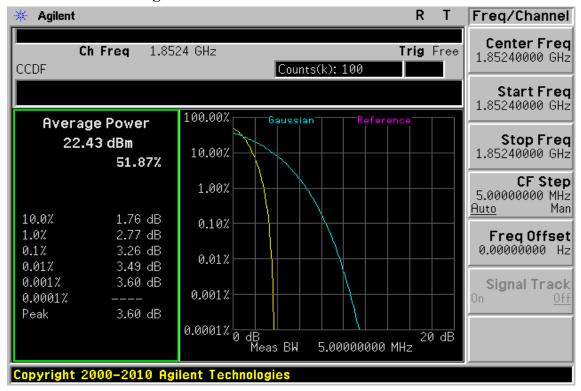
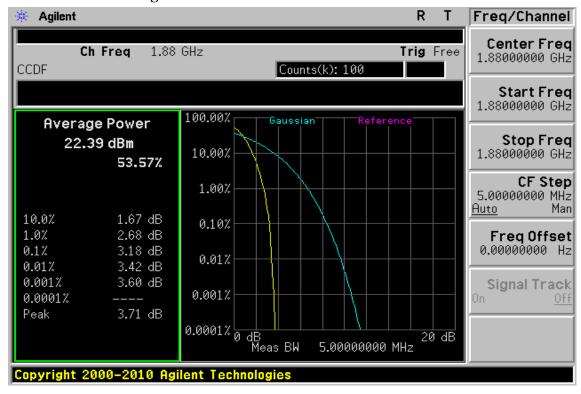


Figure 13-20: WCDMA Band II Channel Mid



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Figure 13-21: WCDMA Band II Channel High



Figure 13-22: WCDMA Band V Channel Low



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Figure 13-23: WCDMA Band V Channel Mid

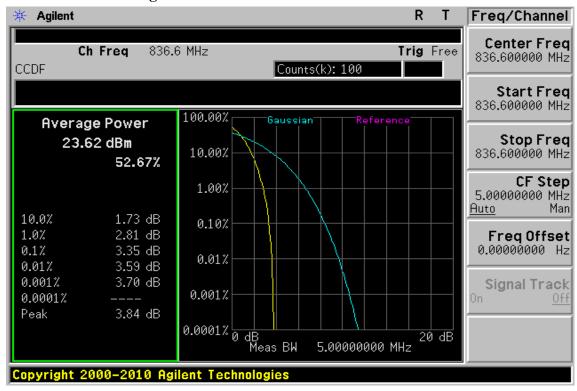


Figure 13-24: WCDMA Band V Channel High



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Figure 13-25: HSUPA Band II Channel Low

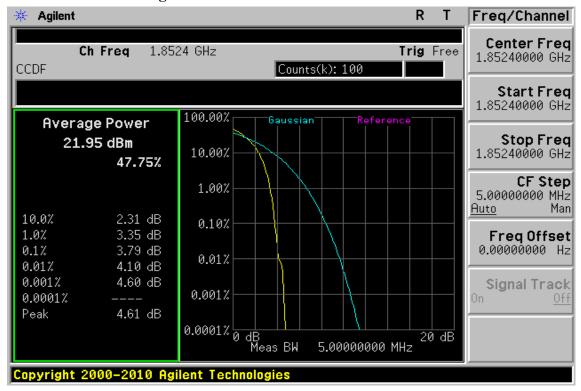


Figure 13-26: HSUPA Band II Channel Mid



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Figure 13-27: HSUPA Band II Channel High

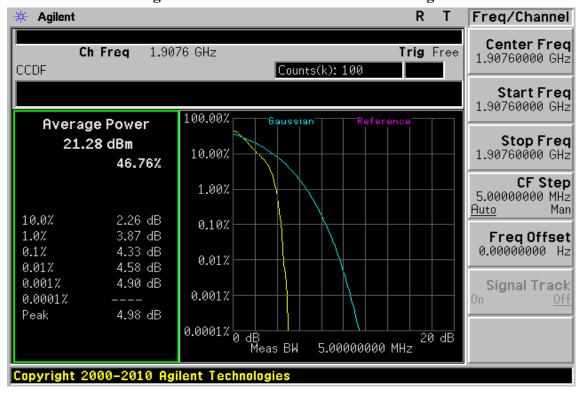


Figure 13-28: HSUPA Band V Channel Low



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Figure 13-29: HSUPA Band V Channel Mid

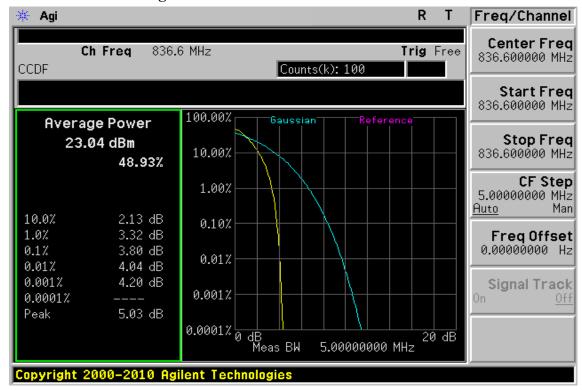


Figure 13-30: HSUPA Band V Channel High



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Figure 13-31: HSDPA Band II Channel Low

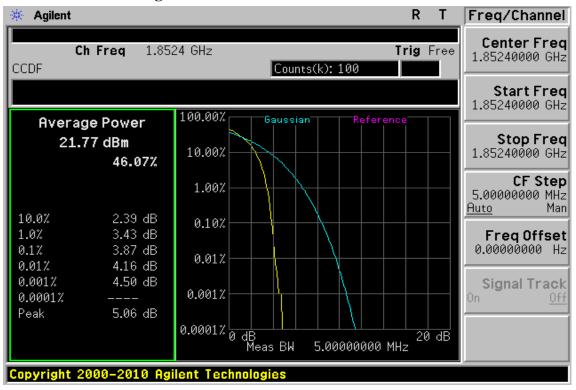
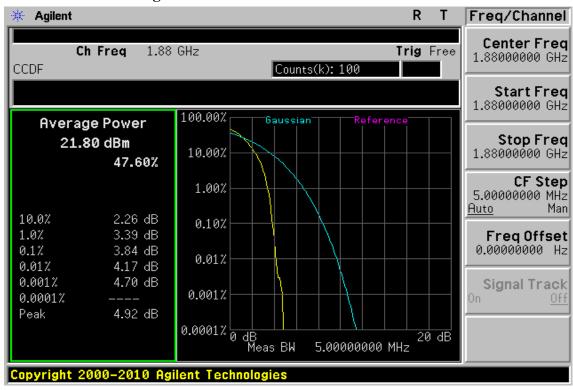


Figure 13-32: HSDPA Band II Channel Mid



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Figure 13-33: HSDPA Band II Channel High

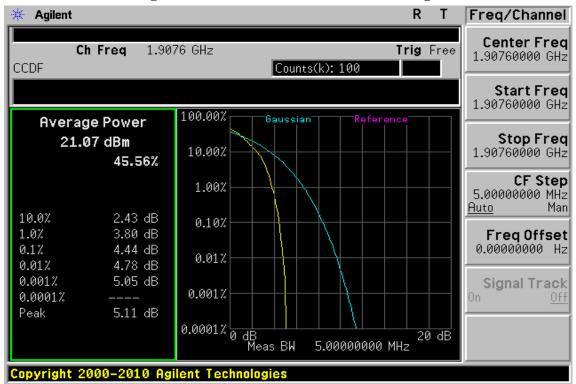


Figure 13-34: HSDPA Band V Channel Low



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Figure 13-35: HSDPA Band V Channel Mid

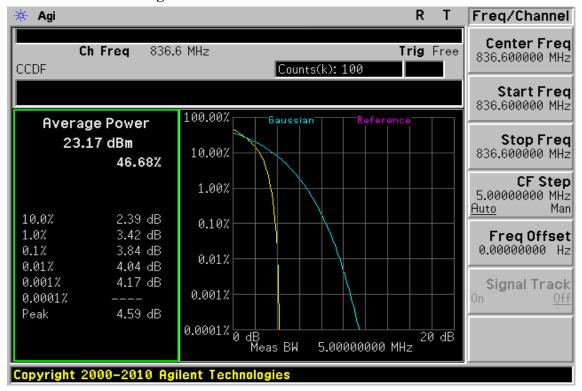


Figure 13-36: HSDPA Band V Channel High



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SGS Taiwan Ltd. No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號