

Report No.: EH/2010/20038 Issue Date: Mar. 05, 2010

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ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 22 SUBPART H, PART 24 SUBPART E and PART 27

OF

Product Name: Mobile Internet Device

Brand Name: DELL

Model Name: M01M002

Model Difference: N/A

FCC ID: **VRSM01M002**

Report No.: EH/2010/20038

Issue Date: Mar. 05, 2010

FCC Rule Part: 2,22H & 24E

Qisda Corporation Prepared for:

157 Shan-Ying Road, Gueishan

Prepared by: SGS Taiwan Ltd.

Electronics & Communication Laboratory

No. 134, Wu Kung Rd., Wuku Industrial

Zone, Taipei County, Taiwan.

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Report No.: EH/2010/20038 Issue Date: Mar. 05, 2010

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VERIFICATION OF COMPLIANCE

Applicant: Qisda Corporation Qisda Corporation

157 Shan-Ying Road, Gueishan

Product Name: Mobile Internet Device

Brand Name: DELL

Model No.: M01M002

Model Difference: N/A

FCC ID: VRSM01M002

File Number: EH/2010/20038

Date of test: Feb. 24, 2010 ~ Mar. 02, 2010

Date of EUT Received: Feb. 24, 2010

We hereby certify that:

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

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

Test By:	Bondi Jin	Date:	Mar. 05, 2010	
_	Bondi Liu / Engineer			
Prepared By:	Alex Hsieh	Date:	Mar. 05, 2010	
_	Alex Hsieh / Sr. Engineer			
Approved By:	Timent Su	Date:	Mar. 05, 2010	
	Vincent Su / Manager			

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Version

Version No.	Date	Description	
00	Mar. 05, 2010	Initial creation of document	

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1. GENERAL PRODUCT INFORMATION

General:

Product Name: Mobile Internet Device				
Brand Name:	DELL			
Model Name:	M01M002			
Model Difference:	N/A			
30pin data cable	Part No.: TY.	5K190.001,Supplier:PCH		
Mini USB data cable	Part No.: TY.5K190.003,Supplier:PCH			
DC cable	Part No.: TY.5K190.002,Supplier:PCH			
Homedock	Part No.: 6K.0QF08.001,Supplier: Qisda			
Earphone	Part No.: TY.2C190.001,Supplier:PCH			
	3.7 Vdc re-chargeable battery or 5V dc by AC/DC power adapter			
Power Supply	Adapter:	Part No.: 79GTM, Supplier : DELL		
	Battery:	Model No.: 20QF0, Supplier: TD Hitech		

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GSM:

	Operating Frequency		Rated Power		
	GSM/GPRS, Class 12 824.2 MHz– 848.8MHz		33 dBm		
	GSM/GPRS, Class 12	880.0MHz - 914.8MHz	33 dBm		
	GSM/GPRS, Class 12	1710.2MHz-1784.8MHz	30 dBm		
Cellular Phone Standards	GSM/GPRS 1900, Class 12	1850.2MHz – 1909.8MHz	30 dBm		
Frequency Range and Power:	WCDMA/HSUPA/HSDPA Band IV 1712.4MHz –1752.6MHz		24 dBm		
	EDGE 850, Class 12	824.2 MHz- 848.8MHz	27 dBm		
	EDGE 900, Class 12	880.0MHz - 914.8MHz	27 dBm		
	EDGE 1800, Class 12	1710.2MHz-1784.8MHz	26 dBm		
	EDGE 1900, Class 12	1850.2MHz – 1909.8MHz	26 dBm		
Hardware Version:	N/A				
Software Version:	N/A	N/A			
Type of Emission	GPRS 850: 245KGXW, GPRS 1900 :248KGXW EDGE 850: 242KG7W, EDGE 1900:246KG7W WCDMA Band IV: 3M46F9W,HSDPA Band IV: 3M49F9W				
IMEI:	01195400				



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XX/I	Λ.	NI	•
vv i	<i>_</i>	IN	_

Frequency Range & Channel number:	802.11 b/g: 2412 – 2462 MHz
Output Power:	802.11 b: 17.68 dBm (FCC output power) 802.11 g: 18.63 dBm (FCC output power)
Modulation type:	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
Transmission Rate:	802.11 b: 1/2/5.5/11 Mbps; 802.11 g: 6/9/12/18/24/36/48/54 Mbps
Antenna Designation:	Monopole Antenna with 1.21dBi peak gain
Type of Emission	15M6G1D

The EUT is compliance with IEEE 802.11 b/g Standard.

Bluetooth:

Bluetooth Version:	 V1.1 (GFSK) V1.2 (GFSK) V2.0 (GFSK) V2.0 + EDR (GFSK + π/4DQPSK + 8DPSK) V2.1 + EDR (GFSK + π/4DQPSK + 8DPSK) 		
Channel number:	79 channels		
Modulation type:	$GFSK + \pi/4DQPSK + 8DPSK$		
Output Power:	6.71 dBm (FCC output power)		
Frequency Range:	2.402GHz – 2.480GHz		
Dwell Time:	<= 0.4s		
Operating Mode:	Point-to-Point		
Antenna Designation:	Monopole Antenna with 1.21dBi peak gain		
Type of Emission	1M31F7D		

GPS:

Receiver Frequency	L1 Band, 1575.42MHz
Frequency Conversion oscillator	3.6864MHz and 32.768kHz

The EUT is compliance with Bluetooth 2.0 + EDR Standard.

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

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

This submittal(s) (test report) is intended for FCC ID: **VRSM01M002** filing to comply with Section Part 22 subpart H, Part 24 subpart E and Part27 of the FCC CFR 47 Rules.

1.2. Test Methodology

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

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

1.3. Test Facility

The measurement facilities used to collect the 3m Radiated Emission and AC power line conducted data are located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003. FCC Registration Number are: 990257 and 236194, Canada Registration Number: 4620A-1

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

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

1.4. Special Accessories

Not available for this EUT intended for grant.

1.5. Equipment Modifications

Not available for this EUT intended for grant.

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2. SYSTEM TEST CONFIGURATION

2.1. EUT Configuration

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

2.2. EUT Exercise

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

2.3. Test Procedure

2.3.1 AC Power Line Conducted Emissions

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

2.3.2 Conducted Measurement at Antenna Port:

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

2.3.3 Radiated Emissions (ERP/EIRP):

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

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2.4. Measurement Equipment Used:

AC POWER LINE CONDUCTED EMISSION EQUIPMENT List						
EQUIPMENT	SERIAL	LAST	CAL DUE.			
TYPE		NUMBER	NUMBER	CAL.		
EMI Test Receiver	R&S	ESCS30	828985/004	09/16/2009	09/15/2010	
LISN	Rolf-Heine	NNB-2/16Z	99012	04/28/2009	04/27/2010	
LISN	FCC	FCC-LISN-50 /250-25-2-01	04034	04/28/2009	04/27/2010	
Coaxial Cables	N/A	WK CE Cable	N/A	10/30/2009	10/29/2010	

Conducted Emission Test Site					
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE		NUMBER	NUMBER	CAL.	
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010
Spectrum Analyzer	Agilent	E4440A	US41160416	01/23/2010	01/22/2012
Radio Communication Analyzer	R&S	CMU200	102189	05/13/208	05/13/2010
800 – 1000MHz Filter	Micro-Tronics	BRM13462	001	01/05/2010	01/04/2011
1800 – 2000MHz Filter	Micro-Tronics	BRM13463	001	01/05/2010	01/04/2011
Temperature Chamber	TERCHY	MHG-120LF	911009	04/14/2008	04/13/2010
Temperature Chamber	GIANT FORCE	GTH-150-40- CP-AR	MAA0512-018	02/05/2010	02/04/2012
DC Block	Agilent	BLK-18	155452	07/05/2009	07/04/2010
Attenuator	Mini-Circuit	BW-S20W5	N/A	07/05/2009	07/04/2010
Attenuator	Mini-Circuit	BW-S10W5	N/A	07/05/2009	07/04/2010
Attenuator	Mini-Circuit	BW-S6W5	N/A	07/05/2009	07/04/2010
Splitter	Agilent	11636B	N/A	07/05/2009	07/04/2010
DC Power Supply	HP	6038A	2929A-07548	06/27/2009	06/26/2010
DC Power Supply	Topward	3303D	981327	10/26/2009	10/25/2010

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ERP, E	IRP MEASUREM	ENT EQUIPN	MENT List 966	Chamber	
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
TYPE		NUMBER	NUMBER	CAL.	
Spectrum Analyzer	R&S	FSP 40	100034	02/12/2010	02/11/2012
Bilog Antenna	SCHWAZBECK	VULB9160	9160-3136	11/15/2009	11/14/2010
Dipole Antenna	SCHWAZBECK	VHAP	908/909	07/10/2008	07/09/2010
Dipole Antenna	SCHWAZBECK	UHAP	891/892	07/10/2008	07/09/2010
Hor.n antenna	SCHWAZBECK	BBHA 9120D	309	01/22/2010	01/21/2012
Horn antenna	SCHWAZBECK	BBHA 9120D	9120D-673	05/09/2008	05/08/2010
Signal Generator	R&S	SMR40	100210	01/22/2010	01/21/2012
Signal Generator	Agilent	E4438C	MY45093613	06/11/2009	06/10/2010
Pre-Amplifier	Agilent	8447D	1937A02834	11/30/2009	11/29/2010
Pre-Amplifier	Agilent	8449B	3008A01973	01/05/2010	01/04/2011
Attenuator	Mini-Circuit	BW-S20W5	001	07/05/2009	07/04/2010
Attenuator	Mini-Circuit	BW-S10W5	001	07/05/2009	07/04/2010
Attenuator	Mini-Circuit	BW-S6W5	001	07/05/2009	07/04/2010
Radio Communication Analyzer	R&S	CMU200	102189	05/13/208	05/12/2010
Turn Table	HD	DT420	N/A	N.C.R	N.C.R
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R
Controller	HD	HD100	N/A	N.C.R	N.C.R
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-10M	10m	01/05/2010	01/04/2011
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M 3m		01/05/2010	01/04/2011
3m Site	SGS	966 chamber	N/A	11/08/2009	11/09/2010

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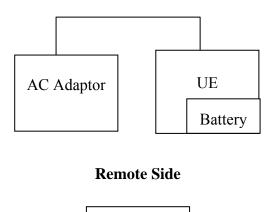


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2.5. Configuration of Tested System

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



CMU200

Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord	
1.	Universal Radio Communication Tester	R&S	CMU200	102189	shielded	Un-shielded	

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3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§2.1046(a)	RF Power Output	Compliant
§2.1046(a)		
§22.913(a)(2)	ERP/ EIRP measurement	Compliant
§24.232(c)	ERIT EIRI Incastrement	Compilant
§27.50(d)(2)		
§2.1049(h)	99% Occupied Bandwidth	Compliant
§2.1051	Out of Band Emissions at Antenna	
§22.917(a)	Terminals and	Compliant
§24.238(a)	Band Edge	Compilant
§27.53(g)	Build Edge	
§2.1053		
§22.917(a)	Field Strength of Spurious Radiation	Compliant
§24.238(a)	Tiola surengui of sparious frautation	Compilant
§27.53(g)		
§2.1055(a)(1)		
§22.355	Frequency Stability vs. Temperature	Compliant
§24.235	and the second s	_F
§27.54		
§2.1055(d)(2)		
§22.355	Frequency Stability vs. Voltage	Compliant
§24.235	Thereby Edwards and Compe	I
§27.54		
§15.107;§15.207	AC Power Line Conducted Emission	Compliant

Max ERP/EIRP measurement result:

measarement resure.	1D	1	117
	dBm		W
GPRS 850 Band	33.64	ERP	2.312
EDGE 850 Band	31.14	ERP	1.300
GPRS 1900 Band	31.75	EIRP	1.496
EDGE 1900 Band	31.06	EIRP	1.276
WCDMA Band IV	24.11	EIRP	0.258
HSUPA Band IV	24.11	EIRP	0.258
HSDPA Band IV	23.63	EIRP	0.231

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4. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

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

The field strength of spurious radiation emission was measured as EUT stand-up position (E1 mode) and lie down position (E1, E2 mode) for GSM/GPRS/EDGE and WCDMA Band IV with power adaptors. The worst-case of E2 position for GPRS 850 band, H position for GPRS 1900, H position, E2 position HSUPA Band IV were reported.

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5. RF POWER OUTPUT MEASUREMENT

5.1 Standard Applicable:

According to FCC §2.1046.

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

FCC 24.232(c) Peak Power Measurement

3GPP Power limitation for HSDPA and HSUPA

Maximum Output Powers for HSDPA

Sub-test in ta-	Power (Class 3	Power Class 4			
ble 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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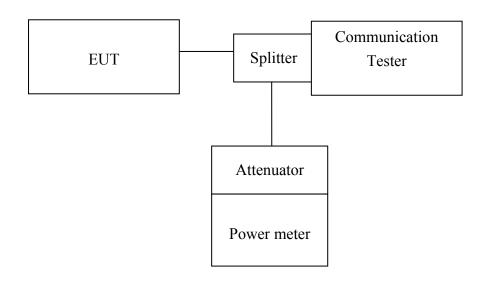
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5.2 Test Set-up:



Note: Measurement setup for testing on Antenna connector

5.3 Measurement Procedure:

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

5.4 Measurement Equipment Used:

Refer to section 2.4 in this report

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5.5 Measurement Result:

5.1 RF Conducted Output Power

5.1.1.: GSM/EDGE (**GMSK**; **8-PSK**)

Result:

	СН		1 Tim	e Slot		2 Time Slot				
Fre- quency		GMSK	Mode	8-PSK	8-PSK Mode		GMSK Mode		8-PSK Mode	
(MHz)		Peak Power	AV Power	Peak Power	AV Power	Peak Power	AV Power	Peak Power	AV Power	
		(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	
824.2	128	32.81	32.77	30.14	27.22	32.73	32.64	29.88	27.12	
836.6	190	32.89	32.78	30.31	27.41	32.78	32.67	30.05	27.24	
848.8	251	32.86	32.76	30.52	27.62	32.77	32.65	30.19	27.42	
1850.2	512	29.84	29.75	29.12	26.08	29.82	29.70	28.84	25.92	
1880.0	661	29.93	29.85	29.33	26.38	29.92	29.77	29.03	26.01	
1909.8	810	29.99	29.88	29.16	26.16	29.93	2982	29.01	25.98	

	СН		3 Tim	ne Slot		4 Time Slot				
Fre- quency		GMSK Mode		8-PSK	8-PSK Mode		Mode	8-PSK	8-PSK Mode	
(MHz)		Peak Power	AV Power	Peak Power	AV Power	Peak Power	AV Power	Peak Power	AV Power	
		(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	(dBm)	
824.2	128	30.64	30.53	29.82	27.07	29.62	29.51	28.57	25.58	
836.6	190	30.69	30.59	29.98	27.18	29.64	29.53	28.96	25.94	
848.8	251	30.67	30.58	30.12	27.29	29.67	29.51	28.83	25.87	
1850.2	512	29.69	29.58	28.89	25.81	27.25	27.14	27.12	24.28	
1880.0	661	29.91	29.82	28.84	25.87	27.28	27.27	27.61	24.52	
1909.8	810	29.73	29.73	28.81	25.85	27.34	27.22	27.14	24.11	

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5.5.1.2: WCDMA mode

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

Results:

EUT Mode	Frequency (MHz)	СН	Peak Power (dBm)	AVG. Power (dBm)
WCDMA Band IV	1712.4	1312	25.63	22.31
	1732.6	1413	25.62	22.32
	1752.6	1513	25.60	22.34

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

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5.5.13: HSDPA Release 6 mode

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

HSDPA SUB-TEST Setting

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH(FOR HSDPA)

Sub-test	βc	βа	β _d (SF)	βc/βd	βнs (Note1, Note 2)	CM (dB) (Note 3)	MPR (dB) (Note 3)	RMC (Kbps)
1	2/15	15/15	64	2/15	4/15	0.0	0.0	12.2
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	0.0	12.2
3	15/15	8/15	64	15/8	30/15	1.5	0.5	12.2
4	15/15	4/15	64	15/4	30/15	1.5	0.5	12.2

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

Recults.

itcsuits.						
Mode	Sub-test	Transmi	tter Powe Channel	r (dBm)	Power Class 3 Limitation (dBm)	Comments
		1312	1413	1513		
HSDPA(B4)	1	22.60	22.58	22.61	20.3dBm – 25.7dBm	Pass
	2	22.19	22.18	22.19	20.3dBm – 25.7dBm	Pass
	3	22.12	22.13	22.08	19.8dBm – 25.7dBm	Pass
	4	22.19	22.14	22.20	19.8dBm – 25.7dBm	Pass

5.5.1.4: HSPA (HSDPA & HSUPA) Release 6 mode

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

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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	$eta_{ ext{HS}}$	eta_{ec}	eta_{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	209/22	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 are implemented as per following sub-tests.

Results:

Mode	Sub-test	TX	Power (dI Channel	Bm)	Power Class 3 Limitation (dBm)	Comments
		1312			tion (dbin)	
HSUPA(B4)	1	22.23	22.30	22.28	18.8dBm – 25.7dBm	Pass
	2	20.28	20.37	20.32	16.8dBm – 25.7dBm	Pass
	3	21.29	21.32	21.36	17.8dBm – 25.7dBm	Pass
	4	20.41	20.42	20.36	16.8dBm – 25.7dBm	Pass
	5	22.16	22.16	22.19	18.8dBm – 25.7dBm	Pass

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6. ERP, EIRP MEASUREMENT

6.1. Standard Applicable:

According to FCC §2.1046

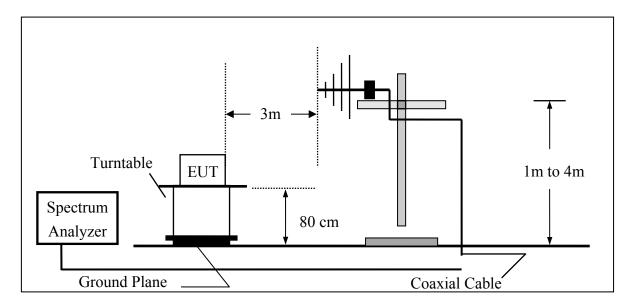
FCC 22.913(a) Mobile station are limited to 7W ERP.

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

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

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

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



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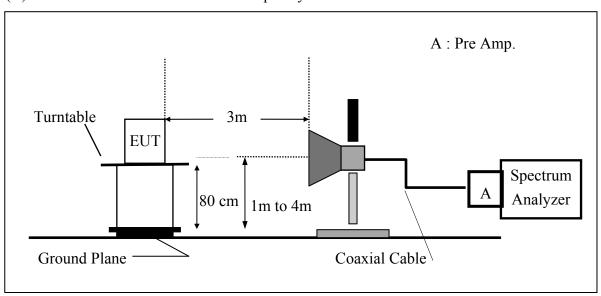
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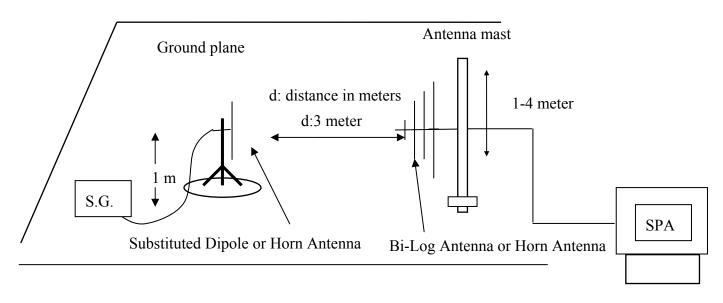
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(B) Radiated Emission Test Set-UP Frequency Over 1 GHz



(C) Substituted Method Test Set-UP

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6.3. Measurement Procedure:

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

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

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

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

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

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

6.4. Measurement Equipment Used:

Refer to section 2.4 in this report

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6.5. Measurement Result:

EUT Mode	Frequency (MHz)	СН	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
			Н	V	121.81	35.42	-7.87	3.62	23.92	38.45
				Н	130.01	43.74	-7.87	3.62	32.24	38.45
	824.20	128	E1	V	130.88	44.49	-7.87	3.62	32.99	38.45
	024.20	120	LI	Н	125.01	38.74	-7.87	3.62	27.24	38.45
			E2	V	123.63	37.24	-7.87	3.62	25.74	38.45
			E2	Н	131.41	45.14	-7.87	3.62	33.64	38.45
			Н	V	118.72	32.47	-7.88	3.65	20.94	38.45
		190	П	Н	129.37	43.14	-7.88	3.65	31.61	38.45
GPRS 850	836.60		E1	V	130.47	44.22	-7.88	3.65	32.69	38.45
Grks 650	830.00			Н	125.40	39.17	-7.88	3.65	27.64	38.45
			E2	V	122.19	35.94	-7.88	3.65	24.41	38.45
			EZ	Н	130.95	44.72	-7.88	3.65	33.19	38.45
			Н	V	117.66	31.54	-7.88	3.68	19.98	38.45
			11	Н	128.55	42.36	-7.88	3.68	30.80	38.45
	848.80 2	251	E1	V	130.54	44.42	-7.88	3.68	32.86	38.45
		251	EI	Н	125.76	39.57	-7.88	3.68	28.01	38.45
			E2	V	121.66	35.54	-7.88	3.68	23.98	38.45
			ĽZ	Н	130.36	44.17	-7.88	3.68	32.61	38.45

Remark:

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

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Measurement Result:

EUT Mode	Frequency (MHz)	СН	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
			Н	V	116.83	12.44	9.90	5.56	16.78	33.00
			11	Н	130.60	26.42	9.90	5.56	30.76	33.00
	1850.20	512	E1	V	124.95	20.56	9.90	5.56	24.90	33.00
	1030.20	312	L1	Н	125.81	21.63	9.90	5.56	25.97	33.00
			E2	V	129.02	24.63	9.90	5.56	28.97	33.00
			1.2	Н	126.22	22.04	9.90	5.84	26.10	33.00
			Н	V	119.14	14.78	9.99	5.61	19.16	33.00
		0.00 661	11	Н	131.25	27.11	9.99	5.61	31.48	33.00
GPRS 1900	1880.00		61 E1	V	125.59	21.23	9.99	5.61	25.61	33.00
G1 K5 1900	1000.00	001		Н	126.97	22.83	9.99	5.61	27.20	33.00
			E2	V	129.88	25.52	9.99	5.61	29.90	33.00
			152	Н	125.93	21.79	9.99	5.61	26.16	33.00
			Н	V	119.20	14.87	10.08	5.66	19.29	33.00
			11	Н	131.44	27.33	10.08	5.66	31.75	33.00
	1909.80 810	810	E1	V	125.93	21.60	10.08	5.66	26.02	33.00
		010	151	Н	128.11	24.00	10.08	5.66	28.42	33.00
			E2	V	130.44	26.11	10.08	5.66	30.53	33.00
			152	Н	124.42	20.31	10.08	5.66	24.73	33.00

Remark:

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

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Measurement Result:

EUT Mode	Frequency (MHz)	СН	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
			Н	V	118.99	32.60	-7.87	3.62	21.10	38.45
			11	Н	127.89	41.62	-7.87	3.62	30.12	38.45
	824.20	128	E1	V	128.44	42.05	-7.87	3.62	30.55	38.45
	024.20	120	1.71	Н	122.62	36.35	-7.87	3.62	24.85	38.45
			E2	V	121.32	34.93	-7.87	3.62	23.43	38.45
			LZ	Н	128.91	42.64	-7.87	3.62	31.14	38.45
			Н	V	117.57	31.32	-7.88	3.65	19.79	38.45
		0 190	П	Н	127.60	41.37	-7.88	3.65	29.84	38.45
EDGE 850	836.60		00 E1	V	128.09	41.84	-7.88	3.65	30.31	38.45
EDGE 830	830.00	190		Н	123.09	36.86	-7.88	3.65	25.33	38.45
			E2	V	119.53	33.28	-7.88	3.65	21.75	38.45
			E2	Н	128.06	41.83	-7.88	3.65	30.30	38.45
			Н	V	116.86	30.74	-7.88	3.68	19.18	38.45
			11	Н	127.35	41.16	-7.88	3.68	29.60	38.45
	848.80 251	251	E1	V	128.11	41.99	-7.88	3.68	30.43	38.45
		251	151	Н	123.39	37.20	-7.88	3.68	25.64	38.45
		E2	V	118.96	32.84	-7.88	3.68	21.28	38.45	
			E2	Н	127.66	41.47	-7.88	3.68	29.91	38.45

Remark:

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

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Measurement Result:

EUT Mode	Frequency (MHz)	СН	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
			Н	V	116.05	11.66	9.90	5.56	16.00	33.00
			11	Н	129.94	25.76	9.90	5.56	30.10	33.00
	1850.20	512	E1	V	124.21	19.82	9.90	5.56	24.16	33.00
	1630.20	312	LI	Н	125.11	20.93	9.90	5.56	25.27	33.00
			E2	V	128.28	23.89	9.90	5.56	28.23	33.00
			E2	Н	124.34	20.16	9.90	5.84	24.22	33.00
		661	Н	V	118.14	13.78	9.99	5.61	18.16	33.00
			11	Н	130.56	26.42	9.99	5.61	30.79	33.00
EDGE 1900	1880.00		E2	V	124.74	20.38	9.99	5.61	24.76	33.00
EDGE 1900	1880.00	001		Н	126.23	22.09	9.99	5.61	26.46	33.00
				V	129.19	24.83	9.99	5.61	29.21	33.00
			EZ	Н	123.97	19.83	9.99	5.61	24.20	33.00
			Н	V	118.39	14.06	10.08	5.66	18.48	33.00
	1909.80 810		11	Н	130.75	26.64	10.08	5.66	31.06	33.00
		Q10	E1	V	125.05	20.72	10.08	5.66	25.14	33.00
		010	151	Н	127.42	23.31	10.08	5.66	27.73	33.00
			F2	V	129.47	25.14	10.08	5.66	29.56	33.00
		E2	Н	124.44	20.33	10.08	5.66	24.75	33.00	

Remark:

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

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Measurement Result:

EUT Mode	Frequency (MHz)	СН	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
			Н	V	120.27	13.31	9.90	5.41	17.81	33.00
			11	Н	115.94	9.05	9.90	5.41	13.55	33.00
	1712.40	1312	E1	V	123.72	16.76	9.90	5.41	21.26	33.00
	1/12.40	1312	E1	Н	122.32	15.43	9.90	5.41	19.93	33.00
			E2	V	110.27	3.31	9.90	5.41	7.81	33.00
			E2	Н	125.27	18.38	9.90	5.84	22.44	33.00
		50 1413	Н	V	121.72	14.77	9.99	5.46	19.30	33.00
			11	Н	117.86	10.99	9.99	5.46	15.52	33.00
WCDMA	1732.60		E1	V	124.59	17.64	9.99	5.46	22.17	33.00
Band IV	1/32.00	1413		Н	123.48	16.61	9.99	5.46	21.14	33.00
			E2	V	110.74	3.79	9.99	5.46	8.32	33.00
			Ľ2	Н	125.32	18.45	9.99	5.46	22.98	33.00
			Н	V	121.69	14.75	10.07	5.51	19.32	33.00
	1752.60 1513		11	Н	118.11	11.25	10.07	5.51	15.82	33.00
		1513	E1	V	124.44	17.50	10.07	5.51	22.07	33.00
		1313	151	Н	123.33	16.47	10.07	5.51	21.04	33.00
			E2	V	109.74	2.80	10.07	5.51	7.37	33.00
			Lì2	Н	125.27	18.41	10.07	5.51	22.98	33.00

Remark:

(1) The RBW, VBW of SPA for frequency

RBW = 5MHz, VBW = 8MHz

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Measurement Result:

EUT Mode	Frequency (MHz)	СН	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
			Н	V	120.72	13.76	9.90	5.41	18.26	33.00
			11	Н	116.75	9.86	9.90	5.41	14.36	33.00
	1712.40	1312	E1	V	124.10	17.14	9.90	5.41	21.64	33.00
	1/12.40	1312	Li	Н	122.75	15.86	9.90	5.41	20.36	33.00
			E2	V	110.80	3.84	9.90	5.41	8.34	33.00
			1:2	Н	125.68	18.79	9.90	5.84	22.85	33.00
			Н	V	122.36	15.41	9.99	5.46	19.94	33.00
		1413		Н	118.64	11.77	9.99	5.46	16.30	33.00
HSUPA	1732.60		3 E1	V	125.43	18.48	9.99	5.46	23.01	33.00
Band IV	1732.00	1713		Н	124.22	17.35	9.99	5.46	21.88	33.00
			E2	V	111.24	4.29	9.99	5.46	8.82	33.00
			1:2	Н	126.14	19.27	9.99	5.46	23.80	33.00
			Н	V	122.62	15.68	10.07	5.51	20.25	33.00
	1752.60 151		11	Н	118.86	12.00	10.07	5.51	16.57	33.00
		1513	E1	V	125.36	18.42	10.07	5.51	22.99	33.00
		1513	151	Н	124.04	17.18	10.07	5.51	21.75	33.00
			E2	V	110.24	3.30	10.07	5.51	7.87	33.00
			Lì2	Н	126.40	19.54	10.07	5.51	24.11	33.00

Remark:

(1) The RBW, VBW of SPA for frequency

RBW = 5MHz, VBW = 8MHz

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Measurement Result:

EUT Mode	Frequency (MHz)	СН	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
			Н	V	120.67	13.71	9.90	5.41	18.21	33.00
			11	Н	117.01	10.12	9.90	5.41	14.62	33.00
	1712.40	1312	E1	V	124.17	17.21	9.90	5.41	21.71	33.00
	1/12.40	1312	LI	Н	122.79	15.90	9.90	5.41	20.40	33.00
			E2	V	110.56	3.60	9.90	5.41	8.10	33.00
			EZ	Н	125.23	18.34	9.90	5.84	22.40	33.00
			H 1413 E1	V	122.08	15.13	9.99	5.46	19.66	33.00
				Н	118.60	11.73	9.99	5.46	16.26	33.00
HSDPA	1732.60	1/113		V	125.02	18.07	9.99	5.46	22.60	33.00
Band IV	1/32.00	1413		Н	124.09	17.22	9.99	5.46	21.75	33.00
			E2	V	111.18	4.23	9.99	5.46	8.76	33.00
			E2	Н	125.97	19.10	9.99	5.46	23.63	33.00
			Н	V	122.28	15.34	10.07	5.51	19.91	33.00
			11	Н	119.38	12.52	10.07	5.51	17.09	33.00
	1752.60 151	1512	E1	V	125.28	18.34	10.07	5.51	22.91	33.00
		1513	L'1	Н	123.89	17.03	10.07	5.51	21.60	33.00
			E2	V	110.53	3.59	10.07	5.51	8.16	33.00
			ĽZ	Н	125.80	18.94	10.07	5.51	23.51	33.00

Remark:

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

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7. 99% OCCUPIED BANDWIDTH MEASUREMENT

7.1. Standard Applicable:

According to §FCC 2.1049.

7.2. Test Set-up:

Refer to section 5.2 in this report

7.3. Measurement Procedure:

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

7.4. Measurement Equipment Used:

Refer to section 2.4 in this report

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7.5. Measurement Result:

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
	824.20	128	0.2452
GPRS 850	836.60	190	0.2475
	848.80	251	0.2443

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
	1850.20	512	0.2442
GPRS 1900	1880.00	661	0.2452
	1909.80	810	0.2461

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
	824.20	128	0.2430
EDGE 850	836.60	190	0.2439
	848.80	251	0.2463

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
	1850.20	512	0.2467
EDGE 1900	1880.00	661	0.2449
	1909.80	810	0.2452

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
WCDMA Band IV	1712.40	1312	4.1603
	1732.60	1413	4.1691
	1752.60	1513	4.1787

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EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
HSUPA IV	1712.40	1312	4.1705
	1732.60	1413	4.1547
	1752.60	1513	4.1718

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
HSDPA IV	1712.40	1312	4.1813
	1732.60	1413	4.1770
	1752.60	1513	4.1830

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Figure 7-1: GPRS 850 Channel Low

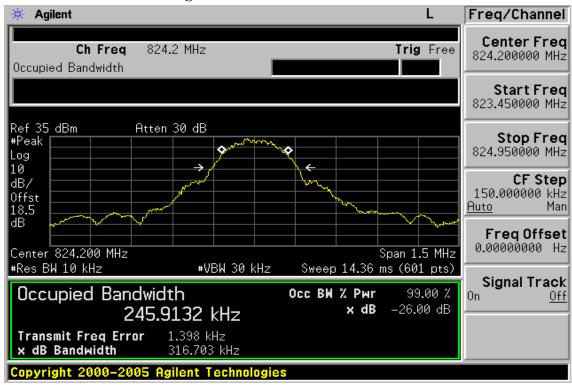


Figure 7-2 GPRS 850 Channel Mid



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Figure 7-3: GPRS 850 Channel High

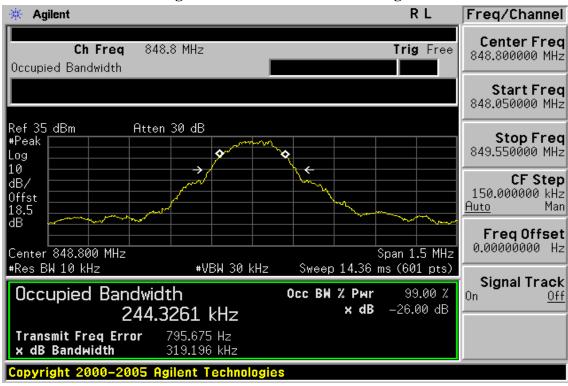
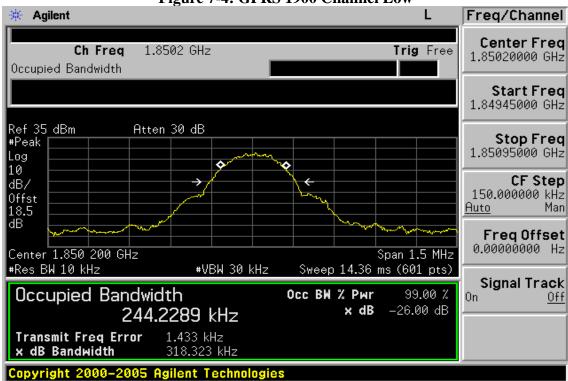


Figure 7-4: GPRS 1900 Channel Low



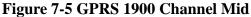
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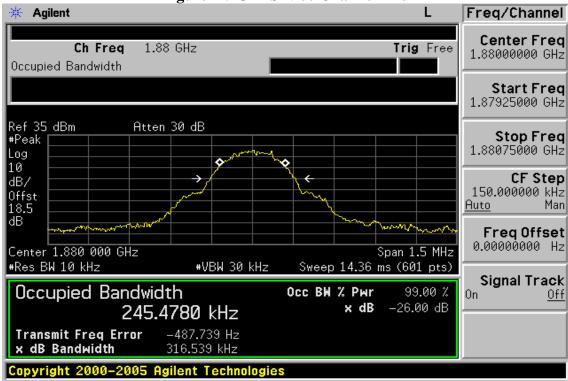
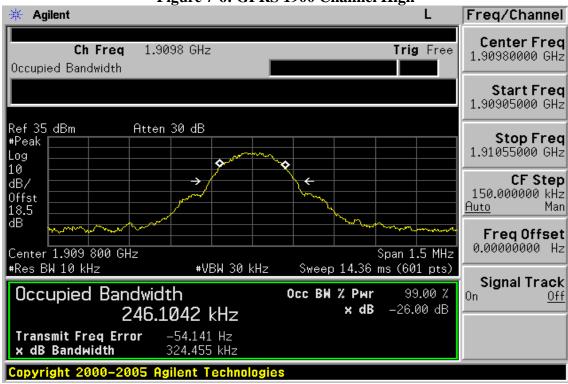


Figure 7-6: GPRS 1900 Channel High



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Figure 7-7: EDGE 850 Channel Low

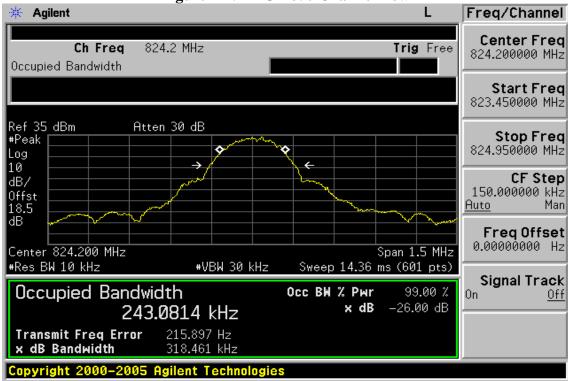
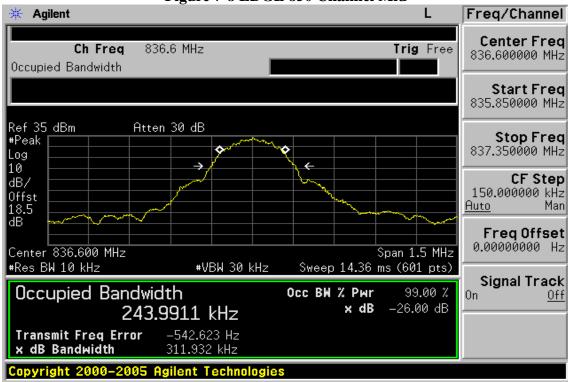


Figure 7-8 EDGE 850 Channel Mid



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Figure 7-9: EDGE 850 Channel High

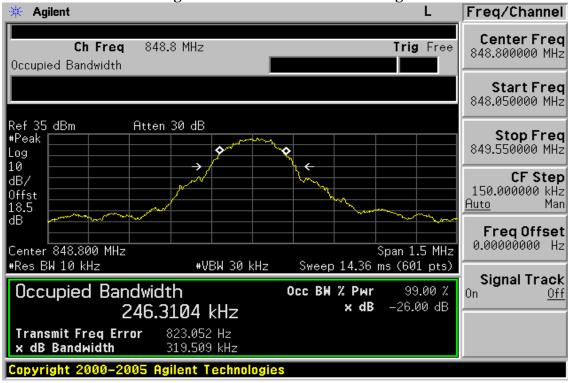
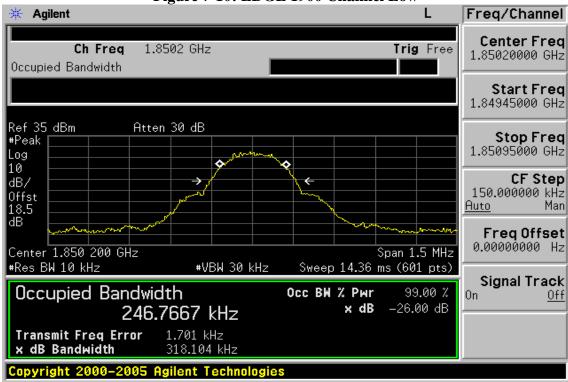


Figure 7-10: EDGE 1900 Channel Low



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Figure 7-11 EDGE 1900 Channel Mid

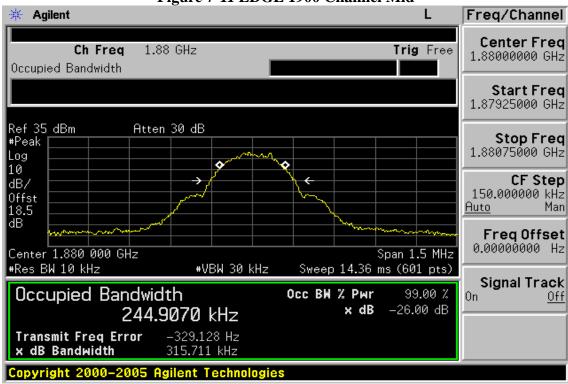
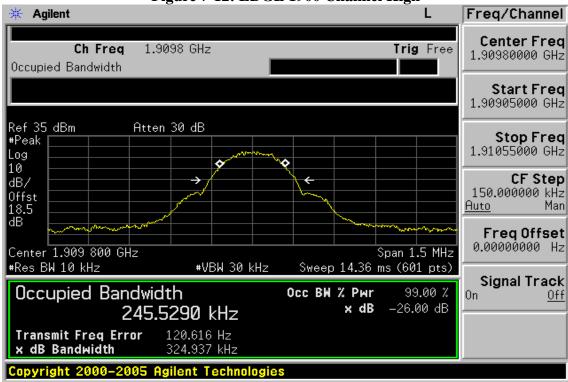


Figure 7-12: EDGE 1900 Channel High



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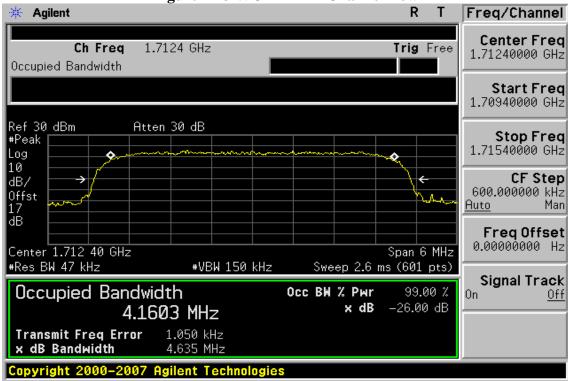
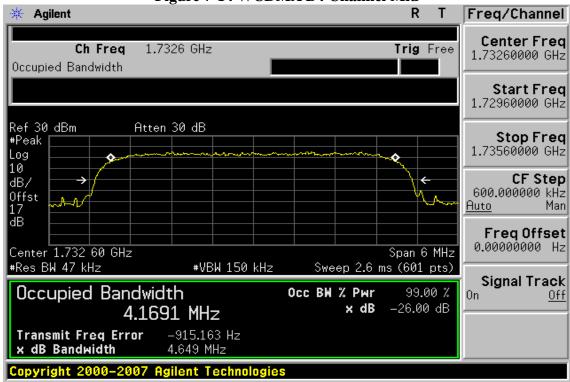


Figure 7-14 WCDMA B4 Channel Mid



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Figure 7-15: WCDMA B4 Channel High

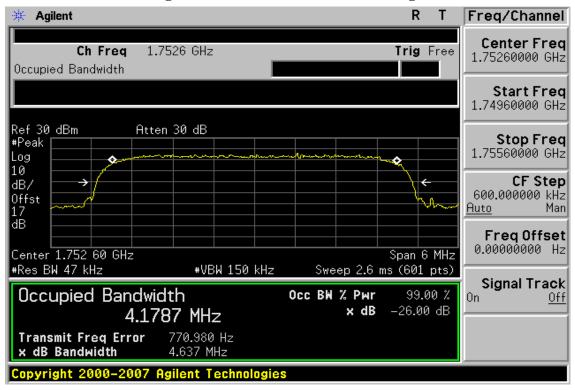
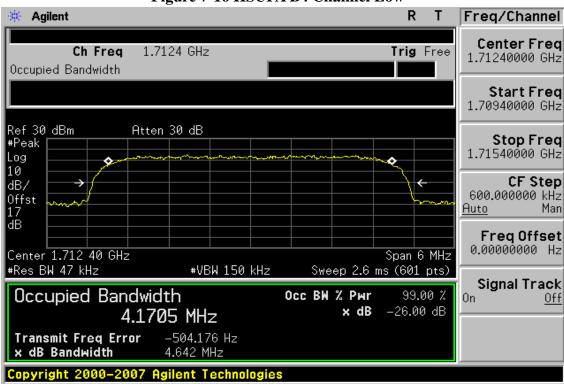


Figure 7-16 HSUPA B4 Channel Low



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Figure 7-17 HSUPA B4 Channel Mid

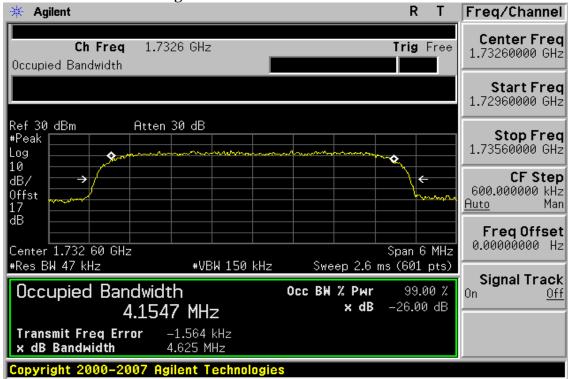
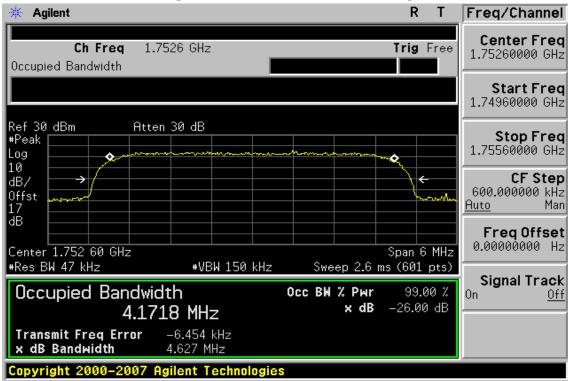


Figure 7-18: HSUPA B4 Channel High



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Figure 7-19 HSDPA B4 Channel Low

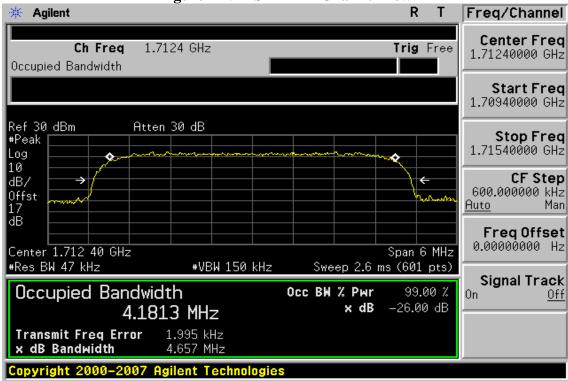
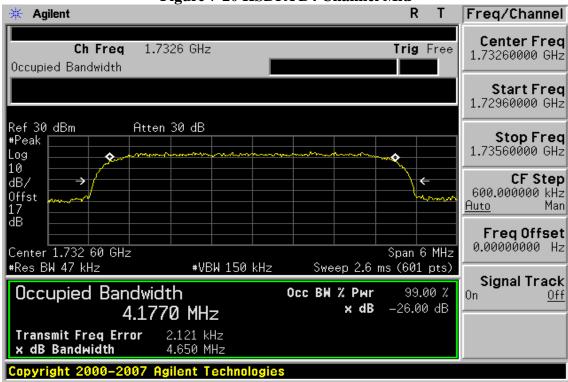


Figure 7-20 HSDPA B4 Channel Mid



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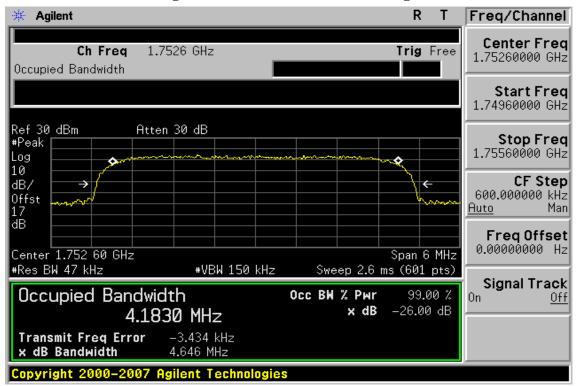
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Figure 7-21: HSDPA B4 Channel High



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8. OUT OF BAND EMISSION AT ANTENNA TERMINALS

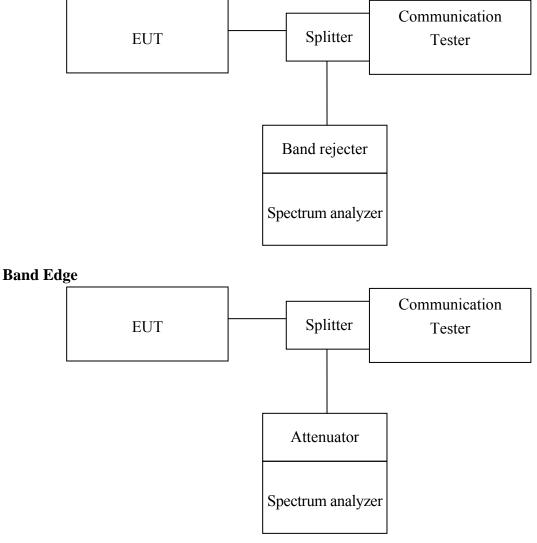
8.1. Standard Applicable:

According to FCC §2.1051.

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

8.2. Test SET-UP:

Out of band emission



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8.3. Measurement Procedure:

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

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

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

8.4. Measurement Equipment Used:

Refer to section 2.4 in this report

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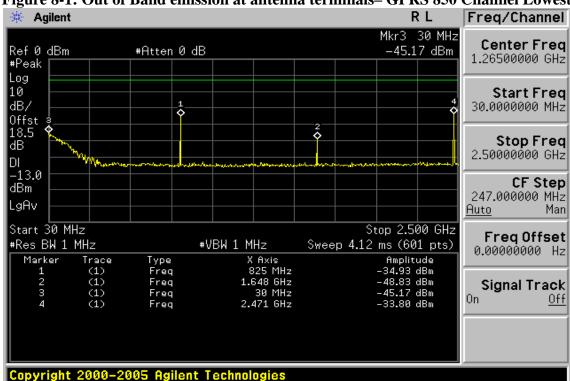


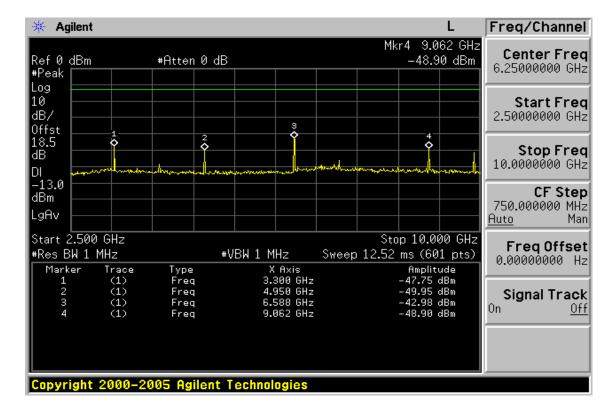
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8.5. Measurement Result:

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





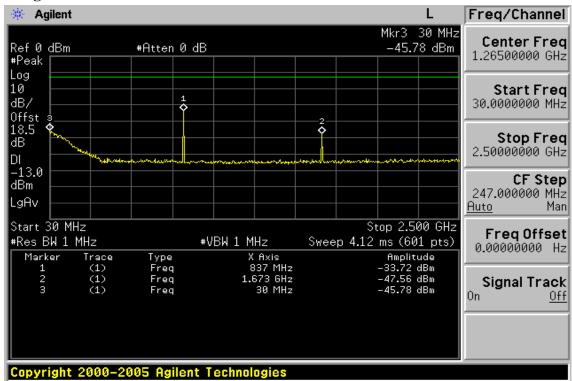
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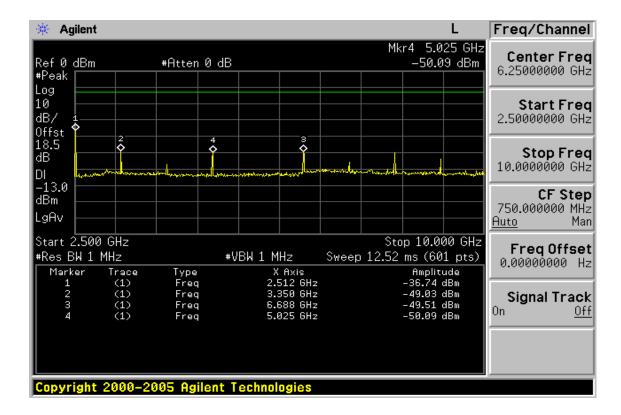
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Figure 8-2: Out of Band emission at antenna terminals -GPRS 850 Channel Mid





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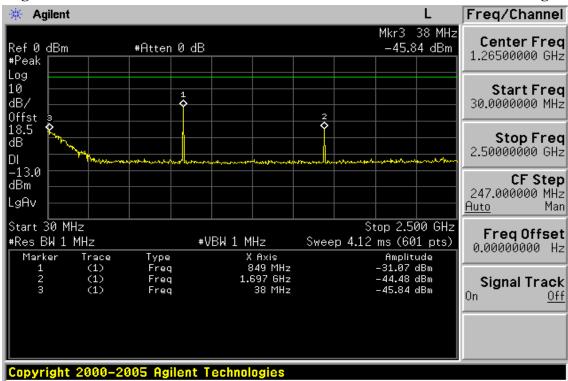
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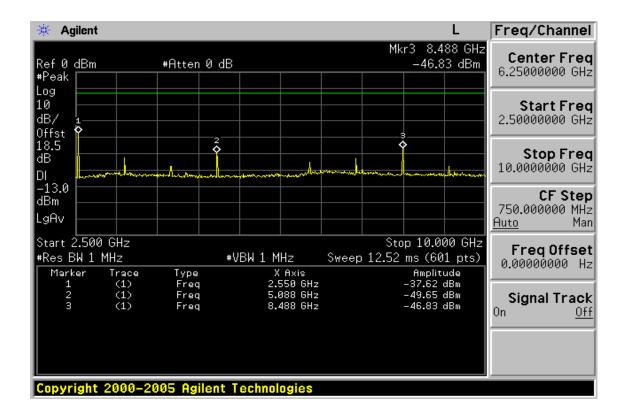


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Figure 8-3: Out of Band emission at antenna terminals-GPRS 850 Channel Highest





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



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



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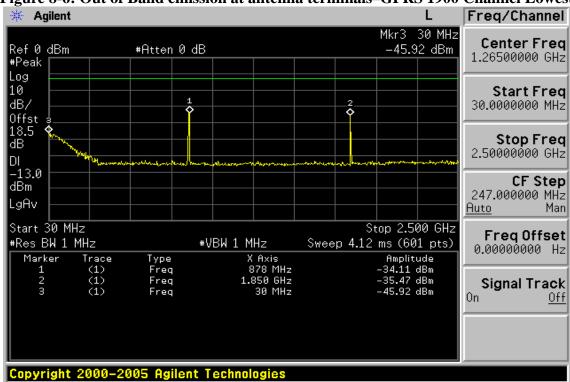
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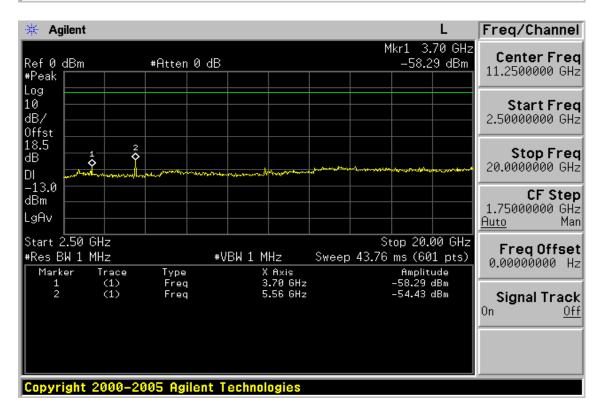
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Figure 8-6: Out of Band emission at antenna terminals-GPRS 1900 Channel Lowest





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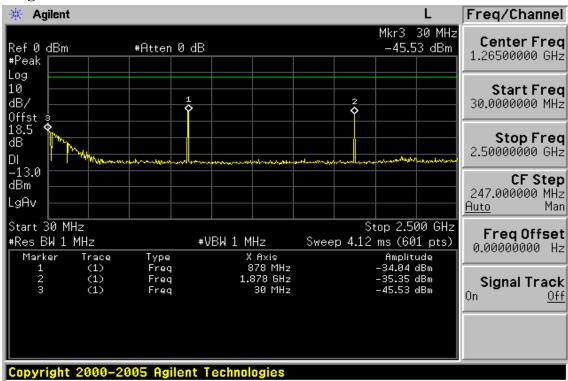
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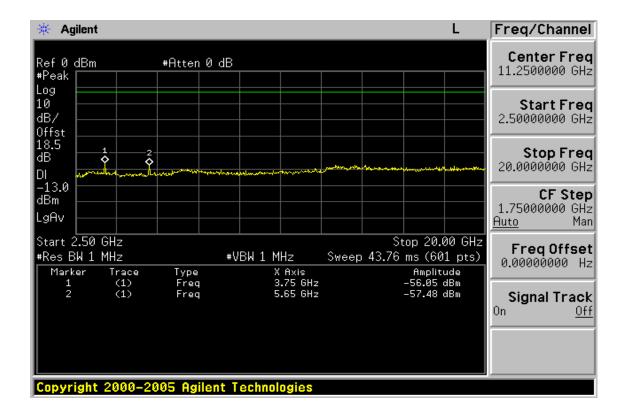


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Figure 8-7: Out of Band emission at antenna terminals -GPRS 1900 Channel Mid





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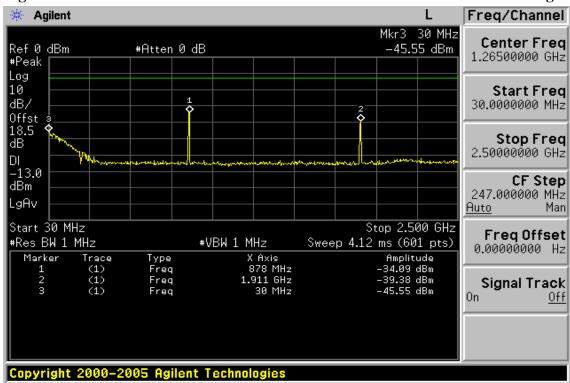
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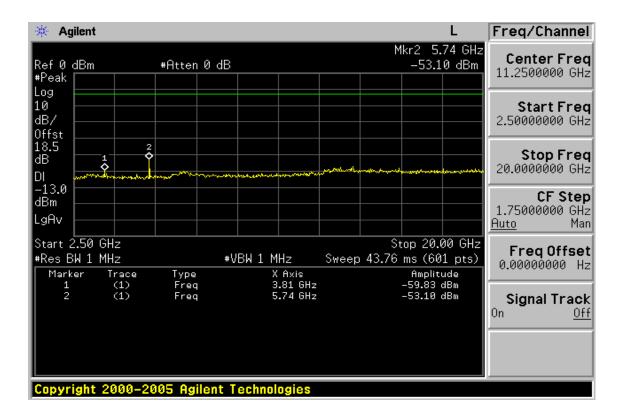


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Figure 8-8: Out of Band emission at antenna terminals-GPRS 1900 Channel Highest





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

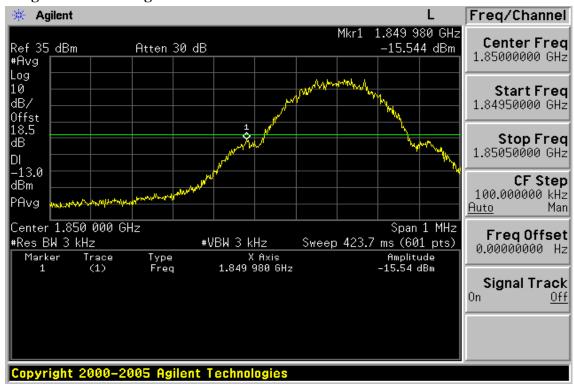
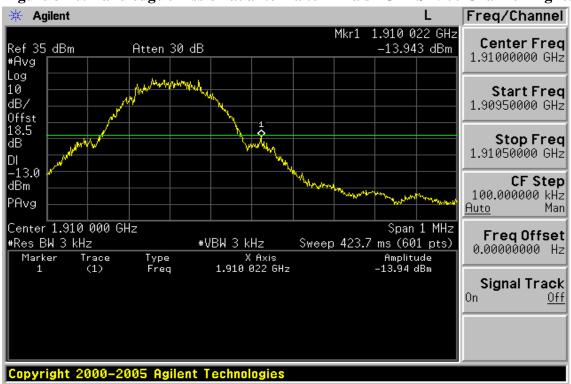


Figure 8-10: Band edge emission at antenna terminals –GPRS 1900 Channel Highest



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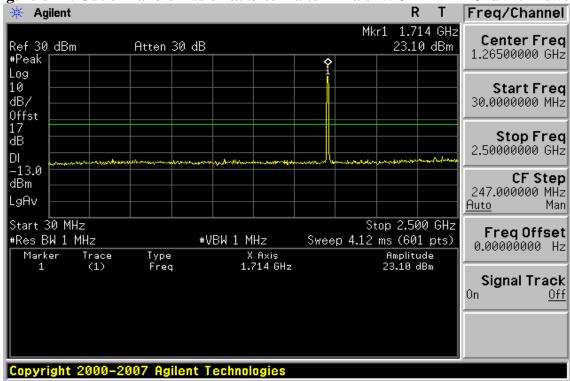
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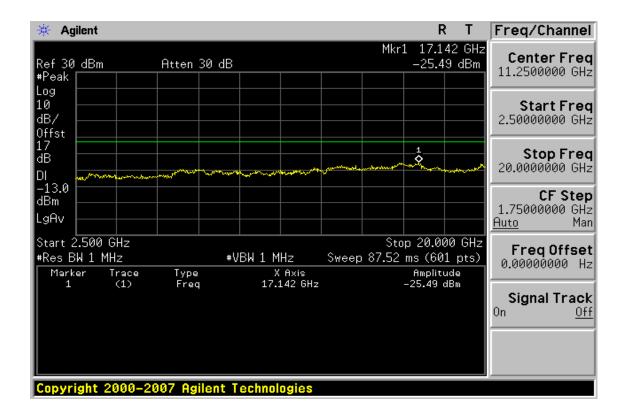


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Figure 8-11: Out of Band emission at antenna terminals-WCDMA B4 Channel Lowest





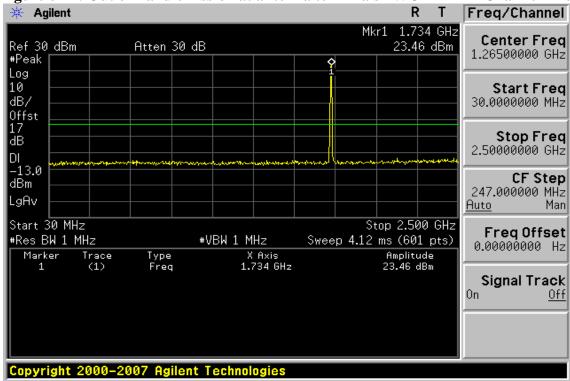
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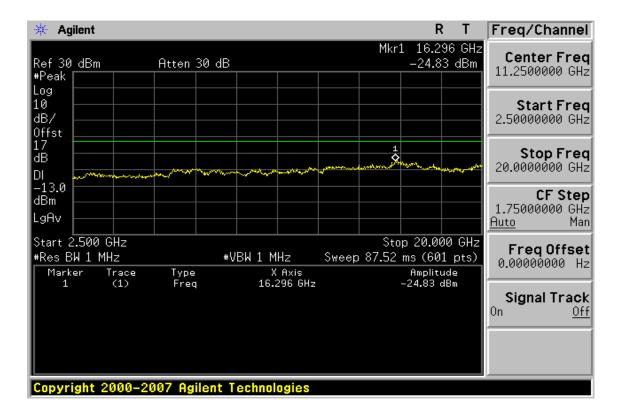
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Figure 8-12: Out of Band emission at antenna terminals –WCDMA B4 Channel Mid





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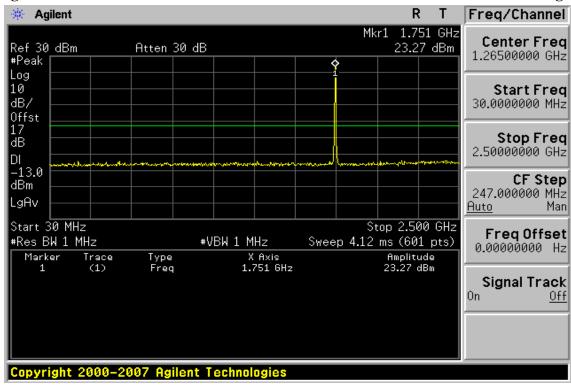
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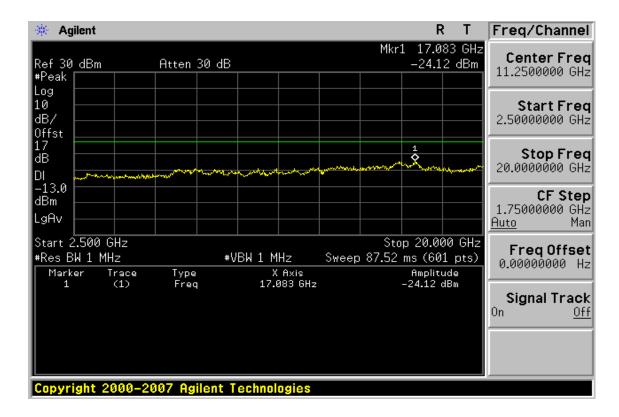


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Figure 8-13: Out of Band emission at antenna terminals-WCDMA B4 Channel Highest





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Figure 8-14: Band edge emission at antenna terminals –WCDMA B4 Channel Lowest

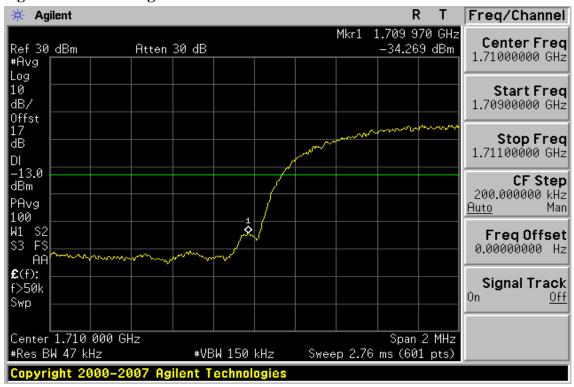


Figure 8-15: Band edge emission at antenna terminals –WCDMA B4 Channel Highest



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9. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

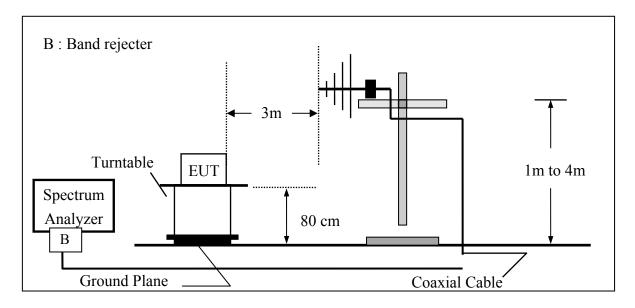
9.1. Standard Applicable:

According to FCC §2.1053,

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

9.2. EUT Setup (Block Diagram of Configuration):

Radiated Emission Test Set-Up, Frequency Below 1000MHz



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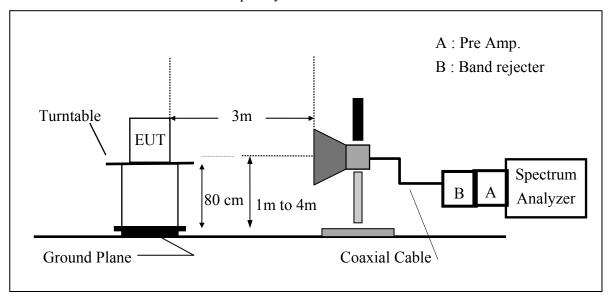
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Radiated Emission Test Set-UP Frequency Over 1 GHz



9.3. Measurement Procedure:

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

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

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

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

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

9.4. Measurement Equipment Used:

Refer to section 2.4 in this report

9.5. Measurement Result:

Refer to attach tabular data sheets.

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Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Mode : TX CH Low E2 Mode Test Date: Feb. 27, 2010

Fundamental Frequency : 824.20 MHz Test By: Bondi
Temperature · 25 Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
36.79	50.08	V	-52.65	-4.16	0.91	-57.72	-13.00	-44.72
67.83	45.53	V	-66.16	-0.95	1.14	-68.25	-13.00	-55.25
92.08	48.90	V	-54.03	-7.75	1.29	-63.07	-13.00	-50.07
126.03	42.52	V	-56.99	-7.78	1.48	-66.25	-13.00	-53.25
823.98	71.37	V	-15.02	-7.87	3.62	-26.52	-13.00	-13.52
1643.50	60.83	V	-43.76	9.27	5.22	-39.70	-13.00	-26.70
2475.50	53.63	V	-47.36	10.07	6.53	-43.82	-13.00	-30.82
3288.00		V		12.15	7.70		-13.00	
4121.00		V		12.61	8.86		-13.00	
4945.20		V		12.65	9.74		-13.00	
5769.40		V		13.55	10.54		-13.00	
6593.60		V		12.05	11.30		-13.00	
7417.80		V		11.49	12.10		-13.00	
8242.00		V		11.48	12.71		-13.00	

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

Remark:

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

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Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Mode : TX CH Low E2 Mode Test Date: Feb. 27, 2010

Fundamental Frequency : 824.20 MHz Test By: Bondi
Temperature · 25 Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	45.37	Н	-57.82	-3.25	0.90	-61.97	-13.00	-48.97
58.13	41.14	Н	-69.29	-0.49	1.08	-70.86	-13.00	-57.86
92.08	46.90	Н	-56.69	-7.75	1.29	-65.73	-13.00	-52.73
126.03	41.73	Н	-58.55	-7.78	1.48	-67.81	-13.00	-54.81
201.69	42.13	Н	-59.44	-7.84	1.72	-69.00	-13.00	-56.00
823.98	83.38	Н	-2.89	-7.87	3.62	-14.39	-13.00	-1.39
1643.50	60.11	Н	-44.30	9.27	5.22	-40.24	-13.00	-27.24
2475.50	57.18	Н	-43.71	10.07	6.53	-40.17	-13.00	-27.17
2963.00		Н		11.41	7.20		-13.00	
4121.00		Н		12.61	8.86		-13.00	
4945.20		Н		12.65	9.74		-13.00	
5769.40		Н		13.55	10.54		-13.00	
6593.60		Н		12.05	11.30		-13.00	
7417.80		Н		11.49	12.10		-13.00	
8242.00		Н		11.48	12.71		-13.00	

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

Remark:

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

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Report No.: EH/2010/20038 Issue Date: Mar. 05, 2010

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Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Mode : TX CH Mid E2 Mode Test Date: Feb. 27, 2010

Fundamental Frequency: 836.60 MHz
Temperature: 25
Test By: Bondi
Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
36.79	49.40	V	-53.33	-4.16	0.91	-58.40	-13.00	-45.40
67.83	44.79	V	-66.90	-0.95	1.14	-68.99	-13.00	-55.99
92.08	47.18	V	-55.75	-7.75	1.29	-64.79	-13.00	-51.79
126.03	43.48	V	-56.03	-7.78	1.48	-65.29	-13.00	-52.29
1663.00	61.38	V	-43.19	9.33	5.25	-39.11	-13.00	-26.11
2508.00	52.22	V	-48.57	10.08	6.58	-45.07	-13.00	-32.07
3346.40		V		12.28	7.79		-13.00	
4183.00		V		12.62	8.93		-13.00	
5019.60		V		12.67	9.81		-13.00	
5856.20		V		13.68	10.62		-13.00	
6692.80		V		11.95	11.39		-13.00	
7529.40		V		11.45	12.20		-13.00	
8366.00		V		11.59	12.81		-13.00	

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

Remark:

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

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Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Mode : TX CH Mid E2 Mode Test Date: Feb. 27, 2010

Fundamental Frequency: 836.60 MHz
Temperature: 25
Test By: Bondi
Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
39.70	45.01	Н	-57.88	-2.79	0.89	-61.57	-13.00	-48.57
58.13	40.56	Н	-69.87	-0.49	1.08	-71.44	-13.00	-58.44
92.08	46.40	Н	-57.19	-7.75	1.29	-66.23	-13.00	-53.23
126.03	42.79	Н	-57.49	-7.78	1.48	-66.75	-13.00	-53.75
201.69	41.31	Н	-60.26	-7.84	1.72	-69.82	-13.00	-56.82
1663.00	60.37	Н	-44.02	9.33	5.25	-39.94	-13.00	-26.94
2508.00	54.83	Н	-45.88	10.08	6.58	-42.37	-13.00	-29.37
3346.40		Н		12.28	7.79		-13.00	
4183.00		Н		12.62	8.93		-13.00	
5019.60		Н		12.67	9.81		-13.00	
5856.20		Н		13.68	10.62		-13.00	
6692.80		Н		11.95	11.39		-13.00	
7529.40		Н		11.45	12.20		-13.00	
8366.00		Н		11.59	12.81		-13.00	

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

Remark:

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

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Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Mode : TX CH High E2 Mode Test Date: Feb. 27, 2010

Fundamental Frequency: 848.80 MHz
Temperature: 25
Test By: Bondi
Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
36.79	49.75	V	-52.98	-4.16	0.91	-58.05	-13.00	-45.05
67.83	44.34	V	-67.35	-0.95	1.14	-69.44	-13.00	-56.44
92.08	45.95	V	-56.98	-7.75	1.29	-66.02	-13.00	-53.02
126.03	42.60	V	-56.91	-7.78	1.48	-66.17	-13.00	-53.17
184.23	37.52	V	-62.84	-7.83	1.67	-72.34	-13.00	-59.34
849.03	73.94	V	-12.18	-7.88	3.68	-23.74	-13.00	-10.74
1695.50	61.95	V	-42.59	9.43	5.30	-38.46	-13.00	-25.46
2540.50	53.44	V	-47.23	10.18	6.63	-43.67	-13.00	-30.67
3395.20		V		12.38	7.87		-13.00	
4244.00		V		12.63	9.00		-13.00	
5092.80		V		12.74	9.88		-13.00	
5941.60		V		13.81	10.70		-13.00	
6790.40		V		11.86	11.48		-13.00	
7639.20		V		11.40	12.27		-13.00	
8488.00		V		11.70	12.91		-13.00	

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

Remark:

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

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Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Mode : TX CH High E2 Mode Test Date: Feb. 27, 2010

Fundamental Frequency: 848.80 MHz
Temperature: 25
Test By: Bondi
Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
41.64	45.57	Н	-57.94	-2.31	0.93	-61.18	-13.00	-48.18
56.19	40.40	Н	-69.24	-0.51	1.09	-70.84	-13.00	-57.84
92.08	45.00	Н	-58.59	-7.75	1.29	-67.63	-13.00	-54.63
128.94	41.48	Н	-58.49	-7.78	1.49	-67.77	-13.00	-54.77
849.00	80.56	Н	-5.63	-7.88	3.68	-17.19	-13.00	-4.19
1695.50	60.37	Н	-43.98	9.43	5.30	-39.86	-13.00	-26.86
2540.50	53.65	Н	-46.96	10.18	6.63	-43.41	-13.00	-30.41
3395.20		Н		12.38	7.87		-13.00	
4244.00		Н		12.63	9.00		-13.00	
5092.80		Н		12.74	9.88		-13.00	
5941.60		Н		13.81	10.70		-13.00	
6790.40		Н		11.86	11.48		-13.00	
7639.20		Н		11.40	12.27		-13.00	
8488.00		Н		11.70	12.91		-13.00	

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

Remark:

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

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Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Mode : TX CH Low H Mode Test Date: Feb. 27, 2010

Fundamental Frequency: 1850.20MHz
Temperature: 25
Test By: Bondi
Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	45.65	V	-56.52	-3.25	0.90	-60.66	-13.00	-47.66
77.53	44.65	V	-66.77	-2.12	1.21	-70.10	-13.00	-57.10
90.14	49.32	V	-53.86	-7.75	1.27	-62.88	-13.00	-49.88
106.63	44.72	V	-56.59	-7.77	1.39	-65.74	-13.00	-52.74
1850.00	66.11	V	-38.28	9.90	5.56	-33.94	-13.00	-20.94
3700.40		V		12.61	8.31		-13.00	
5550.60	45.76	V	-45.08	13.23	10.33	-42.18	-13.00	-29.18
7400.80		V		11.50	12.08		-13.00	
9251.00		V		11.92	13.50		-13.00	
11101.20		V		11.66	15.11		-13.00	
12951.40		V		13.63	16.60		-13.00	
14801.60		V		12.76	17.95		-13.00	
16651.80		V		15.92	19.14		-13.00	

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

Remark:

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

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Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Mode : TX CH Low H Mode Test Date: Feb. 27, 2010

Fundamental Frequency: 1850.20MHz
Temperature: 25
Test By: Bondi
Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
39.70	46.96	Н	-55.93	-2.79	0.89	-59.62	-13.00	-46.62
56.19	39.60	Н	-70.04	-0.51	1.09	-71.64	-13.00	-58.64
90.14	46.10	Н	-57.63	-7.75	1.27	-66.65	-13.00	-53.65
106.63	39.95	Н	-62.36	-7.77	1.39	-71.51	-13.00	-58.51
1850.00	79.12	Н	-25.06	9.90	5.56	-20.72	-13.00	-7.72
3700.40		Н		12.61	8.31		-13.00	
5550.60	43.92	Н	-47.13	13.23	10.33	-44.23	-13.00	-31.23
7400.80		Н		11.50	12.08		-13.00	
9251.00		Н		11.92	13.50		-13.00	
11101.20		Н		11.66	15.11		-13.00	
12951.40		Н		13.63	16.60		-13.00	
14801.60		Н		12.76	17.95		-13.00	
16651.80		Н		15.92	19.14	_	-13.00	

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

Remark:

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

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Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Mode : TX CH Mid H Mode Test Date: Feb. 27, 2010

Fundamental Frequency: 1880MHz
Temperature: 25
Test By: Bondi
Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	46.05	V	-56.12	-3.25	0.90	-60.26	-13.00	-47.26
77.53	45.72	V	-65.70	-2.12	1.21	-69.03	-13.00	-56.03
90.14	48.76	V	-54.42	-7.75	1.27	-63.44	-13.00	-50.44
106.63	47.62	V	-53.69	-7.77	1.39	-62.84	-13.00	-49.84
3760.00		V		12.60	8.39		-13.00	
5640.00	44.85	V	-45.73	13.36	10.41	-42.78	-13.00	-29.78
7520.00		V		11.45	12.19		-13.00	
9400.00		V		11.93	13.61		-13.00	
11280.00		V		11.92	15.27		-13.00	
13160.00		V		13.33	16.71		-13.00	
15040.00		V		13.76	18.15		-13.00	
16920.00		V		15.27	19.32		-13.00	

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

Remark:

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

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Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Mode : TX CH Mid H Mode Test Date: Feb. 27, 2010

Fundamental Frequency: 1880MHz
Temperature: 25
Test By: Bondi
Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
39.70	45.85	Н	-57.04	-2.79	0.89	-60.73	-13.00	-47.73
56.19	38.50	Н	-71.14	-0.51	1.09	-72.74	-13.00	-59.74
90.14	43.13	Н	-60.60	-7.75	1.27	-69.62	-13.00	-56.62
106.63	40.56	Н	-61.75	-7.77	1.39	-70.90	-13.00	-57.90
3760.00		Н		12.60	8.39		-13.00	
5640.00	44.01	Н	-46.74	13.36	10.41	-43.79	-13.00	-30.79
7520.00		Н		11.45	12.19		-13.00	
9400.00		Н		11.93	13.61		-13.00	
11280.00		Н		11.92	15.27		-13.00	
13160.00		Н		13.33	16.71		-13.00	
15040.00		Н		13.76	18.15		-13.00	
16920.00		Н		15.27	19.32		-13.00	

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

Remark:

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

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Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Mode : TX CH High H Mode Test Date: Feb. 27, 2010

Fundamental Frequency: 1909.8 MHz
Temperature: 25
Test By: Bondi
Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	46.57	V	-55.60	-3.25	0.90	-59.74	-13.00	-46.74
65.89	41.85	V	-69.74	-0.83	1.12	-71.69	-13.00	-58.69
92.08	48.39	V	-54.54	-7.75	1.29	-63.58	-13.00	-50.58
106.63	47.35	V	-53.96	-7.77	1.39	-63.11	-13.00	-50.11
1910.00	66.16	V	-38.17	10.08	5.66	-33.75	-13.00	-20.75
3819.60	46.72	V	-50.67	12.60	8.47	-46.54	-13.00	-33.54
5729.40		V		13.49	10.50		-13.00	
7639.20		V		11.40	12.27		-13.00	
9549.00		V		11.95	13.74		-13.00	
11458.80		V		12.17	15.43		-13.00	
13368.60		V		12.97	16.82		-13.00	
15278.40		V		15.00	18.29		-13.00	
17188.20		V		14.47	19.52		-13.00	
19098.00		V		18.66	20.78		-13.00	

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

Remark:

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

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Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Mode : TX CH High H Mode Test Date: Feb. 27, 2010

Fundamental Frequency: 1909.8 MHz
Temperature: 25
Test By: Bondi
Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
39.70	46.91	Н	-55.98	-2.79	0.89	-59.67	-13.00	-46.67
56.19	39.18	Н	-70.46	-0.51	1.09	-72.06	-13.00	-59.06
90.14	45.34	Н	-58.39	-7.75	1.27	-67.41	-13.00	-54.41
106.63	41.45	Н	-60.86	-7.77	1.39	-70.01	-13.00	-57.01
1910.01	80.53	Н	-23.58	10.08	5.66	-19.16	-13.00	-6.16
3819.60		Н		12.60	8.47		-13.00	
5729.40	48.14	Н	-42.31	13.49	10.50	-39.32	-13.00	-26.32
7639.20		Н		11.40	12.27		-13.00	
9549.00		Н		11.95	13.74		-13.00	
11458.80		Н		12.17	15.43		-13.00	
13368.60		Н		12.97	16.82		-13.00	
15278.40		Н		15.00	18.29		-13.00	
17188.20		Н		14.47	19.52		-13.00	
19098.00		Н		18.66	20.78		-13.00	

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

Remark:

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

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Radiated Spurious Emission Measurement Result: HSUPA Band IV Mode

Operation Mode : TX CH Low E2 Mode Test Date: Mar. 01, 2009

Fundamental Frequency: 1712.40MHz
Temperature: 25
Test By: Bondi
Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
36.79	46.54	V	-56.19	-4.16	0.75	-61.10	-13.00	-48.10
101.78	45.98	V	-57.50	-7.76	1.23	-66.49	-13.00	-53.49
153.19	34.04	V	-63.86	-7.80	1.47	-73.13	-13.00	-60.13
223.03	38.98	V	-62.48	-7.86	1.76	-72.10	-13.00	-59.10
284.14	35.06	V	-64.88	-7.91	1.99	-74.77	-13.00	-61.77
1709.85	56.59	V	-50.43	9.47	5.16	-46.11	-13.00	-33.11
3424.80	37.57	V	-64.96	12.45	7.35	-59.87	-13.00	-46.87
5137.20		V		12.79	9.36		-13.00	
6849.60		V		11.80	10.94		-13.00	
8562.00		V		11.73	12.66		-13.00	
10274.40		V		11.85	13.80		-13.00	
11986.80		V		13.15	15.25		-13.00	
13699.20		V		12.32	16.55		-13.00	
15411.60		V		15.69	18.06		-13.00	
17124.00		V		14.68	19.79		-13.00	

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

Remark:

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

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Radiated Spurious Emission Measurement Result: HSUPA Band IV Mode

Operation Mode : TX CH Low E2 Mode Test Date: Mar. 01, 2009

Fundamental Frequency: 1712.40MHz
Temperature: 25
Test By: Bondi
Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	42.26	Н	-60.93	-3.25	0.77	-64.95	-13.00	-51.95
104.69	40.77	Н	-62.00	-7.76	1.24	-71.00	-13.00	-58.00
155.13	33.52	Н	-65.39	-7.80	1.48	-74.67	-13.00	-61.67
274.44	34.48	Н	-65.79	-7.90	1.99	-75.68	-13.00	-62.68
390.84	33.49	Н	-63.00	-7.66	2.42	-73.08	-13.00	-60.08
1709.85	68.08	Н	-38.89	9.47	5.16	-34.58	-13.00	-21.58
3424.80	51.34	Н	-50.92	12.45	7.35	-45.83	-13.00	-32.83
5137.20		Н		12.79	9.36		-13.00	
6849.60		Н		11.80	10.94		-13.00	
8562.00		Н		11.73	12.66		-13.00	
10274.40		Н		11.85	13.80		-13.00	
11986.80		Н		13.15	15.25		-13.00	
13699.20		Н		12.32	16.55		-13.00	
15411.60		Н		15.69	18.06		-13.00	
17124.00		Н		14.68	19.79		-13.00	

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

Remark:

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

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Radiated Spurious Emission Measurement Result: HSUPA Band IV Mode

Operation Mode : TX CH Mid E2 Mode Test Date: Mar. 01, 2009

Fundamental Frequency: 1732.6MHz
Temperature: 25
Test By: Bondi
Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
31.94	48.96	V	-55.18	-6.43	0.70	-62.31	-13.00	-49.31
56.19	40.19	V	-69.47	-0.51	0.93	-70.91	-13.00	-57.91
101.78	44.87	V	-58.61	-7.76	1.23	-67.60	-13.00	-54.60
155.13	33.80	V	-64.27	-7.80	1.48	-73.55	-13.00	-60.55
284.14	33.84	V	-66.10	-7.91	1.99	-75.99	-13.00	-62.99
3465.20	37.38	V	-65.13	12.53	7.38	-59.98	-13.00	-46.98
5197.80		V		12.85	9.41		-13.00	
6930.40		V		11.72	11.05		-13.00	
8663.00		V		11.77	12.74		-13.00	
10395.60		V		11.75	13.95		-13.00	
12128.20		V		13.35	15.32		-13.00	
13860.80		V		11.98	16.77		-13.00	
15593.40		V		16.35	18.21		-13.00	
17326.00		V		14.02	19.68		-13.00	

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

Remark:

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

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Radiated Spurious Emission Measurement Result: HSUPA Band IV Mode

Operation Mode : TX CH Mid E2 Mode Test Date: Mar. 01, 2009

Fundamental Frequency: 1732.6MHz
Temperature: 25
Test By: Bondi
Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	42.65	Н	-60.54	-3.25	0.77	-64.56	-13.00	-51.56
104.69	40.35	Н	-62.42	-7.76	1.24	-71.42	-13.00	-58.42
148.34	33.01	Н	-65.72	-7.80	1.46	-74.98	-13.00	-61.98
276.38	33.61	Н	-66.61	-7.91	1.99	-76.50	-13.00	-63.50
349.13	33.96	Н	-63.25	-7.64	2.47	-73.37	-13.00	-60.37
3465.20	37.90	Н	-64.33	12.53	7.38	-59.18	-13.00	-46.18
5197.80		Н		12.85	9.41		-13.00	
6930.40		Н		11.72	11.05		-13.00	
8663.00		Н		11.77	12.74		-13.00	
10395.60		Н		11.75	13.95		-13.00	
12128.20		Н		13.35	15.32		-13.00	
13860.80		Н		11.98	16.77		-13.00	
15593.40		Н		16.35	18.21		-13.00	
17326.00		Н		14.02	19.68		-13.00	

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

Remark:

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

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Radiated Spurious Emission Measurement Result: HSUPA Band IV Mode

Operation Mode : TX CH High E2 Mode Test Date: Mar. 01, 2009

Fundamental Frequency: 1752.6 MHz
Temperature: 25
Test By: Bondi
Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
36.79	44.19	V	-58.54	-4.16	0.75	-63.45	-13.00	-50.45
56.19	40.32	V	-69.34	-0.51	0.93	-70.78	-13.00	-57.78
101.78	45.55	V	-57.93	-7.76	1.23	-66.92	-13.00	-53.92
126.03	37.69	V	-62.84	-7.78	1.35	-71.97	-13.00	-58.97
284.14	34.48	V	-65.46	-7.91	1.99	-75.35	-13.00	-62.35
1755.06	56.96	V	-50.04	9.61	5.24	-45.67	-13.00	-32.67
3505.20	38.68	V	-63.80	12.61	7.42	-58.60	-13.00	-45.60
5257.80		V		12.91	9.46		-13.00	
7010.40		V		11.65	11.14		-13.00	
8763.00		V		11.80	12.82		-13.00	
10515.60		V		11.66	14.08		-13.00	
12268.20		V		13.54	15.39		-13.00	
14020.80		V		11.67	16.95		-13.00	
15773.40		V		16.75	18.27		-13.00	
17526.00		V		13.21	19.62		-13.00	

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

Remark:

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

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Radiated Spurious Emission Measurement Result: HSUPA Band IV Mode

Operation Mode : TX CH High E2 Mode Test Date: Mar. 01, 2009

Fundamental Frequency: 1752.6 MHz
Temperature: 25
Test By: Bondi
Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Output (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
39.70	42.09	Н	-60.81	-2.79	0.78	-64.38	-13.00	-51.38
104.69	40.14	Н	-62.63	-7.76	1.24	-71.63	-13.00	-58.63
148.34	33.17	Н	-65.56	-7.80	1.46	-74.82	-13.00	-61.82
250.19	33.33	Н	-67.57	-7.89	1.99	-77.44	-13.00	-64.44
439.34	33.40	Н	-62.20	-7.69	2.53	-72.42	-13.00	-59.42
1755.06	68.02	Н	-38.93	9.61	5.24	-34.56	-13.00	-21.56
3505.20	36.20	Н	-65.98	12.61	7.42	-60.79	-13.00	-47.79
5257.80		Н		12.91	9.46		-13.00	
7010.40		Н		11.65	11.14		-13.00	
8763.00		Н		11.80	12.82		-13.00	
10515.60		Н		11.66	14.08		-13.00	
12268.20		Н		13.54	15.39		-13.00	
14020.80		Н		11.67	16.95		-13.00	
15773.40		Н		16.75	18.27		-13.00	
17526.00		Н		13.21	19.62		-13.00	

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

Remark:

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

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10. FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

10.1. Standard Applicable:

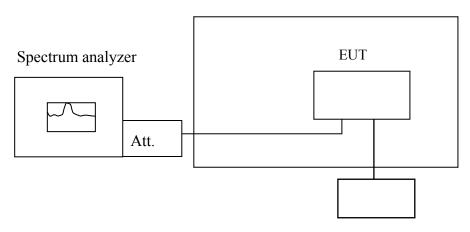
According to FCC §2.1055(a) (1)

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

+/-2.5ppm for 1900MHz band

10.2. Test Set-up:

Temperature Chamber



Variable DC Power Supply

Note: Measurement setup for testing on Antenna connector

10.3. Measurement Procedure:

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

10.4. Measurement Equipment Used:

Refer to section 2.4 in this report

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10.5. Measurement Result:

Reference Frequency: GPRS 850 Mid Channel 836.6 MHz @ 25°C							
	Limit: +/- 2.5 ppm = 2091 Hz						
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Uz)			
Vdc	Temperature (°C)	(MHz)	Della (HZ)	Limit (Hz)			
3.7	-30	836.599997	-29.00	2091			
3.7	-20	836.599998	-30.00	2091			
3.7	-10	836.599959	9.00	2091			
3.7	0	836.599975	-7.00	2091			
3.7	10	836.599979	-11.00	2091			
3.7	20	836.599968	0.00	2091			
3.7	30	836.600003	-35.00	2091			
3.7	40	836.599993	-25.00	2091			
3.7	50	836.599960	8.00	2091			

Reference Frequency: GPRS 1900 Mid Channel 1880 MHz @ 25°C							
	Limit: +/- 2.5 ppm = 4700 Hz						
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)			
Vdc	Temperature ($^{\circ}$ C)	(MHz)	Delta (112)	Lillit (112)			
3.7	-30	1879.999964	-29.00	4700			
3.7	-20	1879.99995	-15.00	4700			
3.7	-10	1879.999943	-8.00	4700			
3.7	0	1879.999937	-2.00	4700			
3.7	10	1879.999969	-34.00	4700			
3.7	20	1879.999935	0.00	4700			
3.7	30	1879.999978	-43.00	4700			
3.7	40	1879.999984	-49.00	4700			
3.7	50	1879.999940	-5.00	4700			

Note: The battery is rated 3.7V dc.

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Reference Frequency: WCDMA IV Mid Channel 1732.6(ARFCN1413) MHz @ 25°C							
	Limit: +/- 2.5 ppm = 4331 Hz						
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)			
Vdc	Temperature ($^{\circ}$ C)	(MHz)	Della (HZ)	Lillit (HZ)			
3.7	-30	1732.599990	6.00	4331			
3.7	-20	1732.599998	-2.00	4331			
3.7	-10	1732.599982	14.00	4331			
3.7	0	1732.599981	15.00	4331			
3.7	10	1732.599986	10.00	4331			
3.7	20	1732.599996	0.00	4331			
3.7	30	1732.599988	8.00	4331			
3.7	40	1732.599978	18.00	4331			
3.7	50	1732.599982	14.00	4331			

Note: The battery is rated 3.7V dc.

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11. FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

11.1. Standard Applicable:

According to FCC §2.1055(a) (1)

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

+/-2.5ppm for 1900MHz band

11.2. Test Set-up:

Refer to section 10.2 in this report

11.3. Measurement Procedure:

Set chamber temperature to 25° 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.

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 @ 25°C							
	Limit: +/- 2.5 ppm = 2091 Hz						
Power Supply	Environment Frequency						
Vdc	Temperature ($^{\circ}$ C)	(MHz)	Delta (Hz)	Limit (Hz)			
4.25	25.00	836.599964	4.00	2091.00			
3.70	25.00	836.599968	0.00	2091.00			
3.20	25.00	836.599971	-3.00	2091.00			
2.9	25.00	026 500004	164.00	2091.00			
(End Point)	25.00	836.599804	164.00	2091.00			

Reference Frequency: GPRS 1900 Mid Channel 1880 MHz @ 25°C					
Limit: +/- 2.5 ppm = 4700 Hz					
Power Supply	Environment	Frequency	Dolto (II-) Limit (II-)		
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)	
4.25	25	1879.999945	-10.00	4700	
3.70	25	1879.999935	0.00	4700	
3.20	25	1879.999958	-23.00	4700	
2.90	25	1070 000072	27.00	4700	
(Endpoint)	25	1879.999972	-37.00	4700	

Reference Frequency: WCDMA IV Mid Channel 1732.6 MHz(ARFCN1413) @ 25°C							
	Limit: +/- 2.5 ppm = 4331 Hz						
Power Supply	Environment	Frequency	Delta (Hz) Limit (Hz)				
Vdc	Temperature (°C)	(MHz)	Della (HZ)	Limit (Hz)			
4.25	25	1732.599976	20.00	4331			
3.7	25	1732.599996	0.00	4331			
3.2	25	1732.599977	19.00	4331			
2.9	25	1722 500002	12.00	4331			
(Endpoint)	25	1732.599983	13.00	4331			

Note: The battery is rated 3.7V dc.

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