

FCC ID: NCMOMO6012

Report No.: EH/2010/A0010 Issue Date: Nov. 18, 2010 Page: 1 of 95

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

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

	OF
Product Name:	GTM601W
Brand Name:	Option
Model Name:	MO6012
Model Difference:	N/A
FCC ID:	NCMOMO6012
Report No.:	EH/2010/A0010
Issue Date:	Nov. 18, 2010
FCC Rule Part:	2,22H & 24E
Prepared for:	Option NV
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Prepared by:	SGS Taiwan Ltd.
	Electronics & Communication Laboratory
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FCC ID: NCMOMO6012

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VERIFICATION OF COMPLIANCE

Applicant:	Option NV Gaston Geenslaan 14, 3001 Leuven, Belgium
Product Name:	GTM601W
Brand Name:	Option
Model No.:	MO6012
Model Difference:	N/A
FCC ID:	NCMOMO6012
File Number:	EH/2010/A0010
Date of test:	Oct. 13, 2010 ~ Nov. 08, 2010
Date of EUT Received:	Oct. 13, 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.

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

Test By:	Jason Whe	Date:	Nov. 18, 2010
_	Jason Wu / Asst. Supervisor		
Prepared By:	Gigi yeh	Date:	Nov. 18, 2010
_	Gigi Yeh / Clerk		
Approved By:	ALNO HSieh	Date:	Nov. 18, 2010

Arno Hsieh /Asst. Supervisor

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Version

Version No.	Date	Description
00	Nov. 09, 2010	Initial creation of document
01	Nov. 15, 2010	According to Option comments on Nov. 15, 2010
02	Nov. 16, 2010	According to Option comments on Nov. 16, 2010
03	Nov. 18, 2010	According to Option comments on Nov. 18, 2010

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1. GENERAL PRODUCT INFORMATION

General:

Product Name	GTM601W
Brand Name	Option
Model Name	MO6012
Model Difference	N/A
Power Supply	3.7Vdc

GSM and WCDMA:

	Operating Frequency	Rated Power			
	GPRS 850, Class 12	824 MHz- 849MHz	33 dBm		
Calludar Dhana Stor darda	EDGE 850, Class 12	824 MHz- 849MHz	27 dBm		
Cellular Phone Standards Frequency Range and Power:	GPRS 1900, Class 12	1850MHz – 1910MHz	30 dBm		
	EDGE 1900, Class 12	1850MHz – 1910MHz	26 dBm		
	WCDMA/HSUPA/HSDPA Band II	1852.4MHz – 1907.6MHz	24 dBm		
	WCDMA/HSUPA/HSDPA Band V 826.4 - 846.6 MHz		24 dBm		
Hardware Version:	3.0				
Software Version:	1.2.0.0				
Type of Emission	GPRS 850: 249KGXW, GPRS 1900 :246KGXW EDGE 850: 248KG7W, EDGE 1900:247KG7W WCDMA Band II: 4M16F9W,HSUPA Band II: 4M16F9W WCDMA Band V: 4M15F9W,HSUPA Band II: 4M15F9W				
IMEI:	004401441392863				

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Final Amplifier Voltage and Current Information:

Test Mode	DC voltage (V)	DC current (mA)
GPRS 850	3.7Vdc	280
EDGE 850	3.7Vdc	215
GPRS 1900	3.7Vdc	225
EDGE 1900	3.7Vdc	190
WCDMA B5	3.7Vdc	525
HSUPA B5	3.7Vdc	555
WCDMA B2	3.7Vdc	595
HSUPA B2	3.7Vdc	635

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

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

This submittal(s) (test report) is intended for FCC ID: <u>NCMOMO6012</u> filing to comply with Section Part 22 subpart H, Part 24 subpart E of the FCC CFR 47 Rules.

1.2. Test Methodology

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

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

1.3. Test Facility

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

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

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

1.4. Special Accessories

Not available for this EUT intended for grant.

1.5. Equipment Modifications

Not available for this EUT intended for grant.

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2. SYSTEM TEST CONFIGURATION

2.1. EUT Configuration

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

2.2. EUT Exercise

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

2.3. Test Procedure

2.3.1 AC Power Line Conducted Emissions

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

2.3.2 Conducted Measurement at Antenna Port:

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

2.3.3 Radiated Emissions (ERP/EIRP):

The EUT is 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:

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

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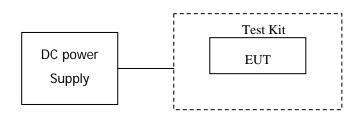
ERP, EIRP MEASUREMENT EQUIPMENT List 966 Chamber					
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.
ТҮРЕ		NUMBER	NUMBER	CAL.	
Spectrum Analyzer	R&S	FSP 40	100034	02/12/2010	02/11/2012
Bilog Antenna	SCHWAZBECK	VULB9160	9160-3136	11/15/2009	11/14/2010
Dipole Antenna	SCHWAZBECK	VHAP	908/909	07/10/2010	07/09/2012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

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2.5. Configuration of Tested System





Remote Side



Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1.	Universal Radio Communication Tester	R&S	CMU200	102189	shielded	Un-shielded
2.	DC Power Supply	Chroma	41901	777188	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)		
§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	
§2.1053		
§22.917(a)	Field Strength of Spurious Radiation	Compliant
§24.238(a)		
§2.1055(a)(1)		
§22.355	Frequency Stability vs. Temperature	Compliant
§24.235		
§2.1055(d)(2)		
§22.355	Frequency Stability vs. Voltage	Compliant
§24.235		

Max ERP/EIRP measurement result:

	dBm		W
GPRS 850 Band	34.59	ERP	2.877
GPRS 1900 Band	25.09	EIRP	0.323
EDGE 850 Band	32.67	ERP	1.849
EDGE 1900 Band	24.69	EIRP	0.294
WCDMA Band II	19.87	EIRP	0.097
HSUPA Band II	20.52	EIRP	0.113
WCDMA Band V	25.04	ERP	0.319
HSUPA Band V	25.09	ERP	0.323

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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 for GPRS/EDGE and WCDMA Band II/V. 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 table C.10.1.4	Power Class 3		Power Class 4		
	Power Tol (dBm) (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

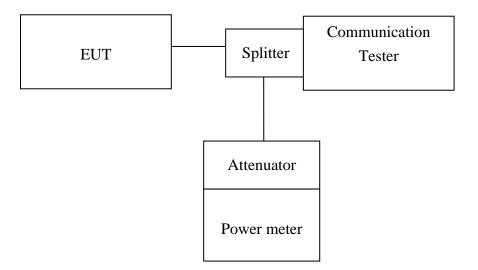
Sub-test in table	Power	Class 3	Power Class 4		
C.11.1.3	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)	
1	+24	+1.7/-6.7	+21	+2.7/-5.7	
2	+22	+3.7/-5.2	+19	+4.7/-4.2	
3	+23	+2.7/-5.2	+20	+3.7/-4.2	
4	+22	+3.7/-5.2	+19	+4.7/-4.2	
5	+24	+1.7/-6.7	+21	+2.7/-5.7	

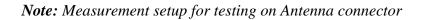
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5.2 Test Set-up:





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.: GPRS/EDGE (GMSK; 8-PSK)

Result:

EUT Mode	Frequency (MHz)	СН	Peak Power (1TS) (dBm)	Peak Power (2TS) (dBm)	Peak Power (3TS) (dBm)	Peak Power (4TS) (dBm)
GPRS 850	824.2	128	32.70	29.60	27.80	26.10
	836.6	190	32.30	29.70	27.70	26.10
	848.8	251	32.50	29.70	27.60	26.30

EUT Mode	Frequency (MHz)	СН	Average Power (1TS) (dBm)	Average Power (2TS) (dBm)	Average Power (3TS) (dBm)	Average Power (4TS) (dBm)
GPRS 850	824.2	128	32.50	29.40	27.60	25.90
	836.6	190	32.10	29.50	27.50	25.90
	848.8	251	32.30	29.50	27.50	26.10

EUT Mode	Frequency (MHz)	СН	Peak Power (1TS) (dBm)	Peak Power (2TS) (dBm)	Peak Power (3TS) (dBm)	Peak Power (4TS) (dBm)
EDGE 850	824.2	128	30.70	29.70	27.60	26.40
	836.6	190	30.60	29.70	27.50	26.30
	848.8	251	30.50	29.40	27.40	26.30

EUT Mode	Frequency (MHz)	СН	Average Power (1TS) (dBm)	Average Power (2TS) (dBm)	Average Power (3TS) (dBm)	Average Power (4TS) (dBm)
EDGE 850	824.2	128	27.50	26.50	24.40	23.20
	836.6	190	27.40	26.50	24.30	23.10
	848.8	251	27.30	26.20	24.20	23.10

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EUT Mode	Frequency (MHz)	СН	Peak Power (1TS) (dBm)	Peak Power (2TS) (dBm)	Peak Power (3TS) (dBm)	Peak Power (4TS) (dBm)
GPRS 1900	1850.2	512	28.60	25.70	23.60	22.40
	1880.0	661	28.50	25.20	23.80	22.30
	1909.8	810	28.80	25.80	23.80	22.60

EUT Mode	Frequency (MHz)	СН	Average Power (1TS) (dBm)	Average Power (2TS) (dBm)	Average Power (3TS) (dBm)	Average Power (4TS) (dBm)
GPRS 1900	1850.2	512	28.50	25.50	23.40	22.20
	1880.0	661	28.40	25.10	23.60	22.10
	1909.8	810	28.70	25.70	23.70	22.50

EUT Mode	Frequency (MHz)	СН	Peak Power (1TS) (dBm)	Peak Power (2TS) (dBm)	Peak Power (3TS) (dBm)	Peak Power (4TS) (dBm)
EDGE 1900	1850.2	512	28.70	27.80	26.10	24.70
	1880.0	661	28.70	27.90	26.00	24.60
	1909.8	810	28.90	28.00	26.20	24.80

EUT Mode	Frequency (MHz)	СН	Average Power (1TS) (dBm)	Average Power (2TS) (dBm)	Average Power (3TS) (dBm)	Average Power (4TS) (dBm)
EDGE 1900	1850.2	512	25.60	24.50	22.90	21.50
	1880.0	661	25.50	24.60	22.80	21.40
	1909.8	810	25.70	24.80	23.00	21.60

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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/-3). RMC 12.2kps is used for this testing.

Results:

EUT Mode	Frequency (MHz)	СН	Peak Power (dBm)	Avg Power (dBm)
	1852.4	9262	24.31	21.02
WCDMA Band II	1880.0	9400	24.75	21.37
	1907.6	9538	24.48	21.11

EUT Mode	Frequency	СН	Peak Power	Avg Power
	(MHz)		(dBm)	(dBm)
	826.40	4132	25.65	22.09
WCDMA Band V	836.60	4183	25.68	22.06
20114	846.60	4233	25.60	22.01

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

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

Results:

Mode	Sub-test	RMS	Power (d	Bm)	Power Class 3 Limita-	Comments
			Channel		tion (dBm)	
		9262	9400	9538		
HSDPA	1	21.19	21.26	20.97	20.3dBm – 25.7dBm	Pass
B2	2	20.90	21.23	20.96	20.3dBm - 25.7dBm	Pass
	3	20.71	20.81	20.44	19.8dBm – 25.7dBm	Pass
	4	20.78	20.82	20.56	19.8dBm – 25.7dBm	Pass

Results:

Mode	Sub-test	RMS	Power (d	Bm)	Power Class 3 Limita-	Comments
			Channel		tion (dBm)	
		4132	4172	4233		
HSDPA	1	21.88	21.92	22.13	20.3dBm - 25.7dBm	Pass
B5	2	22.02	21.95	21.88	20.3dBm - 25.7dBm	Pass
	3	21.42	21.44	21.64	19.8dBm – 25.7dBm	Pass
	4	21.47	21.48	21.70	19.8dBm – 25.7dBm	Pass

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5.5.1.4: HSPA (HSDPA & HSUPA) Release 6 mode

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

HSPA SUB-TEST Setting

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

Sub- test	β _c	βa	β _d (SF)	β_c/β_d	$\beta_{\rm HS}$	β _{ec}	β_{ed}	β _{ed} (SF)	$\begin{array}{c} \beta_{ed} \\ (Codes) \end{array}$	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 5	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

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

Mode	Sub-test	RMS	Power (d Channel	Bm)	Power Class 3 Limita- tion (dBm)	Comments
		9262	9400	9538		
		9202	2400	9550		
HSUPA	1	20.94	21.35	21.05	17.3dBm – 25.7dBm	Pass
B2	2	18.99	19.42	19.09	16.8dBm – 25.7dBm	Pass
	3	20.00	20.37	20.13	17.8dBm – 25.7dBm	Pass
	4	19.82	20.27	19.83	16.8dBm – 25.7dBm	Pass
	5	20.83	21.21	20.96	17.3dBm – 25.7dBm	Pass

Results:

Mode	Sub-test	RMS	Power (d	Bm)	Power Class 3 Limita-	Comments
		4132	Channel 4172	4233	tion (dBm)	
HSUPA	1	22.05	21.99	21.93	17.3dBm – 25.7dBm	Pass
B5	2	20.11	20.07	19.97	16.8dBm – 25.7dBm	Pass
	3	21.09	21.05	21.01	17.8dBm – 25.7dBm	Pass
	4	21.25	21.13	21.05	16.8dBm – 25.7dBm	Pass
	5	21.91	21.82	21.82	17.3dBm – 25.7dBm	Pass

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PCL	0	1	2	3	4	5	6	7	8	
Output power (dBm)	28.4	28.4	28.4	28.4	27.1	25.4	23.4	21.3	19.3	
PCL	9	10	11	12	13	14	15	16	17	18
Output power (dBm)	17.4	15.4	13.7	11.5	9.6	7.6	5.8	3.7	1.6	-0.3

5.5.2 Maximum Power Reduction: PCS1900 band

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 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 19 for measurement data). The min. power was measures by a function key "minimum power" then record the read. It is -52.5dBm. The power variation can be 0.1dB step by setting.

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6. ERP, EIRP MEASUREMENT

6.1. Standard Applicable:

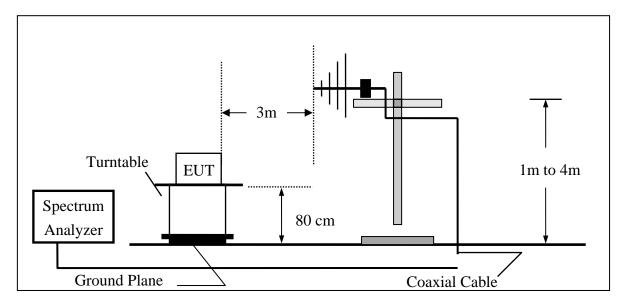
According to FCC §2.1046

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

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

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

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



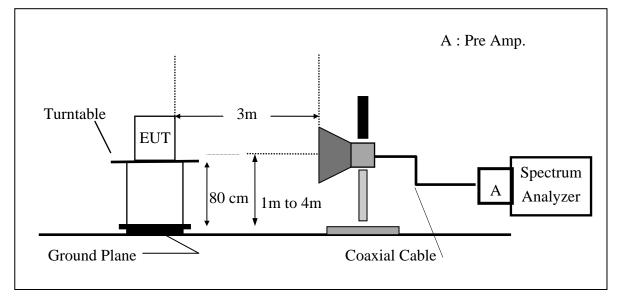
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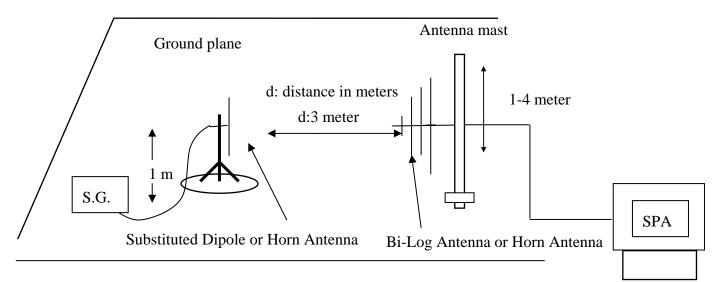
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(B) Radiated Emission Test Set-UP Frequency Over 1 GHz

(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 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)
	824.20	128		V	126.38	39.99	-7.87	3.62	28.49	38.45
82	824.20	120	E2	Н	131.79	45.52	-7.87	3.62	34.02	38.45
GPRS 850	836.60	190) E2	V	125.87	39.62	-7.88	3.65	28.09	38.45
UFK5 050	830.00			Н	131.70	45.47	-7.88	3.65	33.94	38.45
848.8	848 80	251		V	126.33	40.21	-7.88	3.68	28.65	38.45
	040.00	231	E2	Н	132.34	46.15	-7.88	3.68	34.59	38.45

Remark:

(1) The RBW,VBW of SPA for frequency

RBW=300 KHz, VBW=1MHz

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)
	1850.20	512		V	114.57	10.18	9.90	5.56	14.52	33.00
	1850.20	512	E2	Н	124.96	20.78	9.90	5.84	24.84	33.00
CDDS 1000	1000.00	((1	E2	V	115.80	11.44	9.99	5.61	15.82	33.00
GPRS 1900	1880.00	661		Н	122.69	18.55	9.99	5.61	22.92	33.00
	1000.90	810	E2	V	118.14	13.81	10.08	5.66	18.23	33.00
	1909.80			Н	124.78	20.67	10.08	5.66	25.09	33.00

Remark :

(1) The RBW, VBW of SPA for frequency

RBW=300 KHz, VBW=1MHz

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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)
	824.20	128		V	124.67	38.28	-7.87	3.62	26.78	38.45
	824.20	120	E2	Н	130.05	43.78	-7.87	3.62	32.28	38.45
EDGE 850	836.60	190	0 _{E2}	V	124.35	38.10	-7.88	3.65	26.57	38.45
EDGE 850	830.00	190		Н	129.94	43.71	-7.88	3.65	32.18	38.45
-	848.80	251	E2	V	124.58	38.46	-7.88	3.68	26.90	38.45
	040.80			Н	130.42	44.23	-7.88	3.68	32.67	38.45

Remark :

(1) The RBW,VBW of SPA for frequency

RBW=300 KHz, VBW=1MHz

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)
	1850.20	512		V	115.08	10.69	9.90	5.56	15.03	33.00
	1850.20	512	E2	Н	124.79	20.61	9.90	5.84	24.67	33.00
EDGE 1900	1880.00	661	51 E2	V	116.58	12.22	9.99	5.61	16.60	33.00
EDGE 1900	1880.00			Н	123.33	19.19	9.99	5.61	23.56	33.00
1909.80	1000.00	810		V	118.45	14.12	10.08	5.66	16.60 33.00 23.56 33.00 18.54 33.00	
	810	E2	Н	124.38	20.27	10.08	5.66	24.69	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.		SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
			V	108.70	4.32	9.90	5.56	8.65	33.00	
	1852.40	0 9262	E2	Н	119.27	15.09	9.90	5.84	19.15	33.00
WCDMA	1990.00	0400	E2	V	111.44	7.08	9.99	5.61	11.46	33.00
Band II	1880.00	9400	E2	Н	118.21	14.07	9.99	5.61	18.44	33.00
	1007.60	0529		V	112.93	8.60	10.07	5.66	13.01	33.00
	1907.60 9538	E2	Н	119.57	15.46	10.07	5.66	19.87	33.00	

Remark :

(1) The RBW, VBW of SPA for frequency

RBW=5MHz, VBW=8MHz

Measurement Result:

EUT Mode	Frequency (MHz)	СН	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBd)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
	1852.40 926	00.00		V	109.09	4.71	9.90	5.56	9.04	33.00
		9262	262 E2	Н	119.48	15.30	9.90	5.84	19.36	33.00
HSUPA	1880.00	0400		V	112.25	7.89	9.99	5.61	12.27	33.00
Band II	1880.00	9400	E2	Н	118.61	14.47	9.99	5.61	18.84	33.00
	1907.60 9	9538		V	113.18	8.85	10.07	5.66	13.26	33.00
			E2	Н	120.22	16.11	10.07	5.66	20.52	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.		SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
			V	118.40	32.04	-10.02	3.63	18.39	38.45	
	826.40	4132	E2	Н	124.06	37.80	-10.02	3.63	24.16	38.45
WCDMA	926.60	4102	E2	V	118.32	32.06	-10.02	3.65	18.39	38.45
Band V	836.60	4183	E2	Н	124.32	38.09	-10.02	3.65	24.42	38.45
	946.60	846.60 4233	E2	V	118.71	32.56	-10.02	3.67	18.87	38.45
	040.00		E2	Н	124.93	38.73	-10.02	3.67	25.04	38.45

Remark :

(1) The RBW, VBW of SPA for frequency

RBW=5MHz, VBW=8MHz

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)
	826.40 4	4100		V	118.58	32.22	-10.02	3.63	18.57	38.45
		4132	E2	Н	124.31	38.05	-10.02	3.63	24.41	38.45
HSUPA	836.60	4183		V	118.45	32.19	-10.02	3.65	18.52	38.45
Band V	830.00	4165	4183 E2	Н	124.58	38.35	-10.02	3.65	24.68	38.45
	846.60	4233		V	118.53	32.38	-10.02	3.67	18.69	38.45
			E2	Н	124.98	38.78	-10.02	3.67	25.09	38.45

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	0.2443
GPRS 850	836.60	190	0.2464
	848.80	251	0.2449

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
	1850.20	512	0.2459
GPRS 1900	1880.00	661	0.2432
	1909.80	810	0.2466

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
	824.20	128	0.2470
EDGE 850	836.60	190	0.2486
	848.80	251	0.2478

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
	1850.20	512	0.2475
EDGE 1900	1880.00	661	0.2454
	1909.80	810	0.2460

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
WCDMA II	1852.4	9262	4.1635
	1880.0	9400	4.1586
	1907.6	9538	4.1498

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EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
	1852.4	9296	4.1531
HSUPA II	1880.0	9400	4.1486
	1907.6	9538	4.1665

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
	826.40	4132	4.1537
WCDMA V	836.60	4183	4.1570
	846.60	4233	4.1429

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
HSUPA V	826.40	4132	4.1560
	836.60	4183	4.1577
	846.60	4233	4.1470

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Figure 7-1: GPRS 850 Channel Low

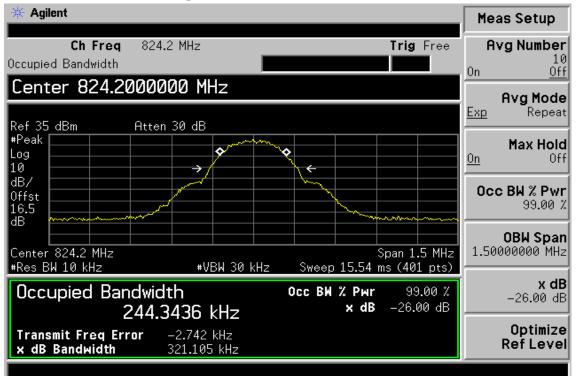
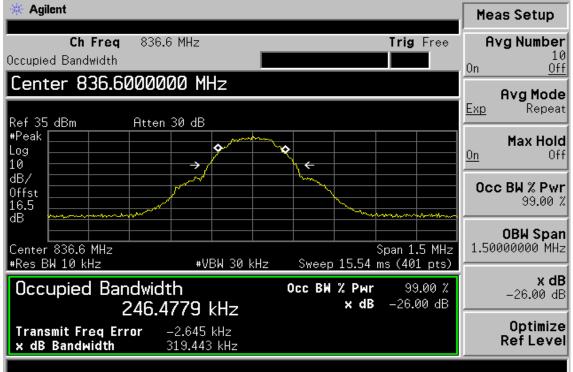


Figure 7-2 GPRS 850 Channel Mid



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GPRS Figure 7-3: GPRS 850 Channel High

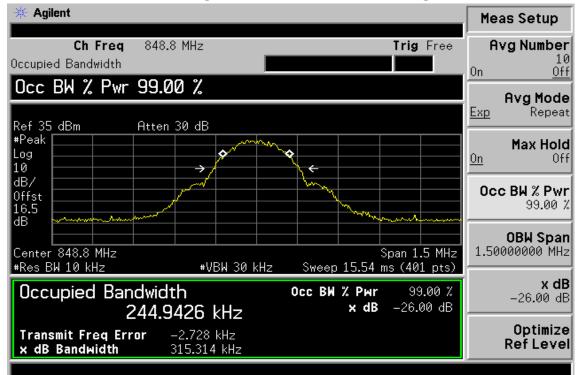
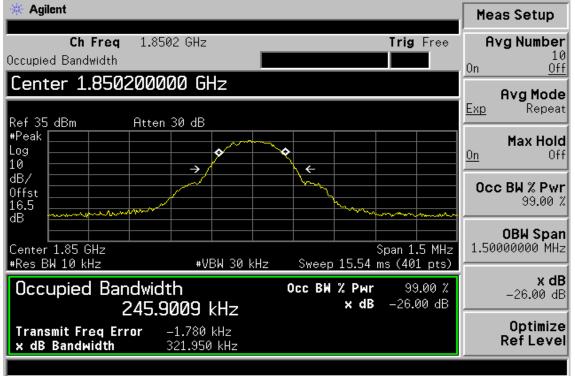


Figure 7-4: GPRS 1900 Channel Low



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Figure 7-5 GPRS 1900 Channel Mid

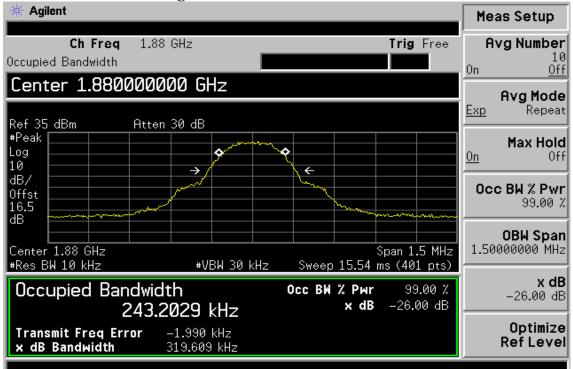


Figure 7-6: GPRS 1900 Channel High



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Figure 7-7: EDGE 850 Channel Low

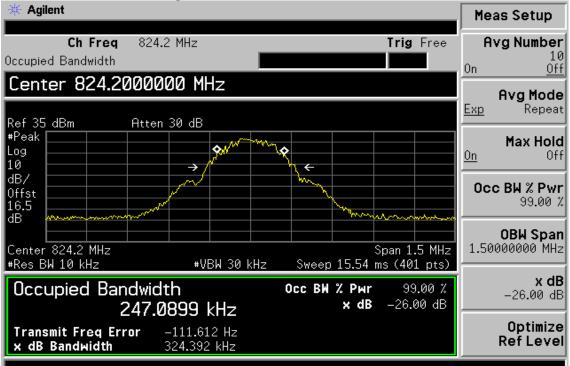


Figure 7-8 EDGE 850 Channel Mid



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Figure 7-9 EDGE 850 Channel High

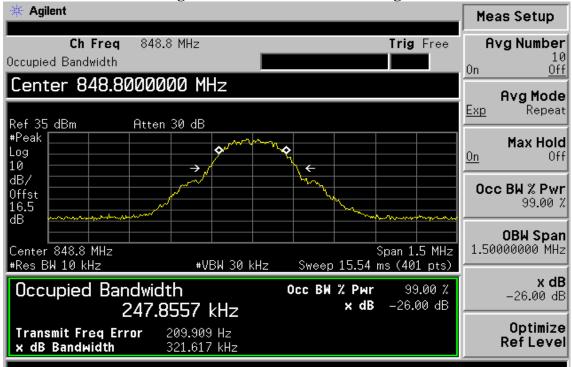


Figure 7-10 EDGE 1900 Channel Low



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Figure 7-11 EDGE 1900 Channel Mid

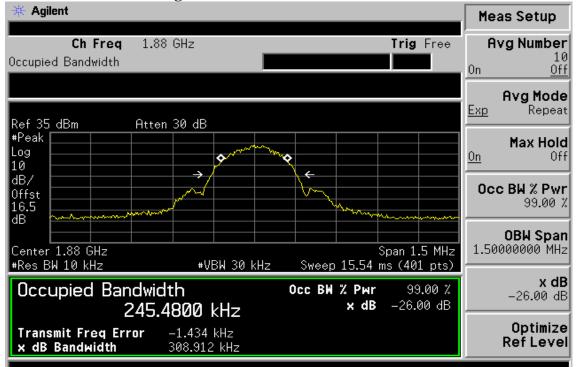
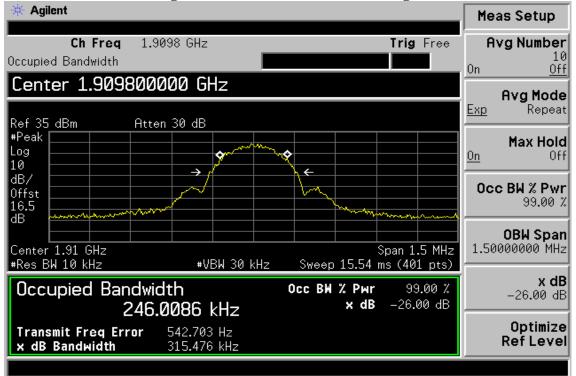


Figure 7-12 EDGE 1900 Channel High



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Figure 7-13 WCDMA II Channel Low

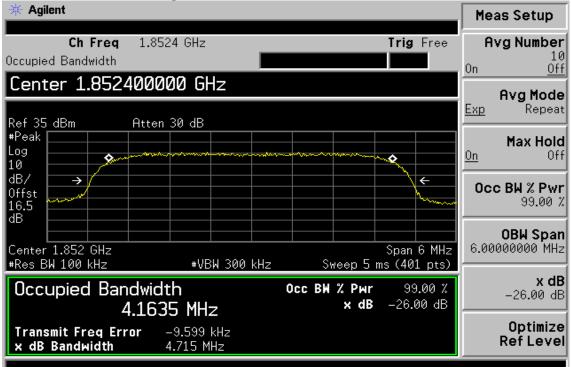


Figure 7-14 WCDMA II Channel Mid



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Figure 7-15 WCDMA II Channel High

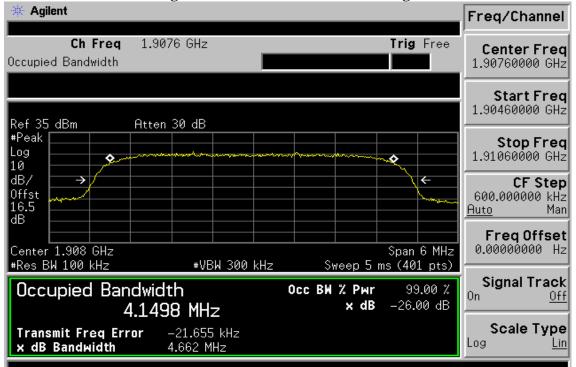
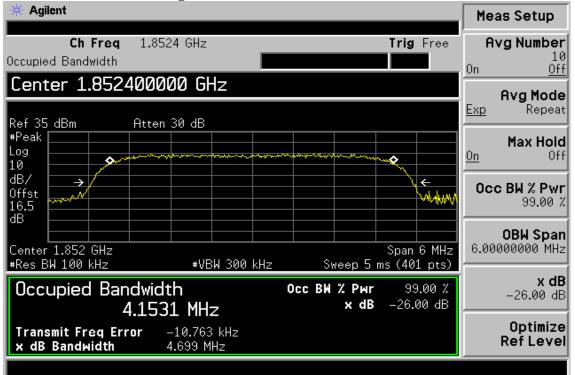


Figure 7-16 HSUPA II Channel Low



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Figure 7-17 HSUPA II Channel Mid

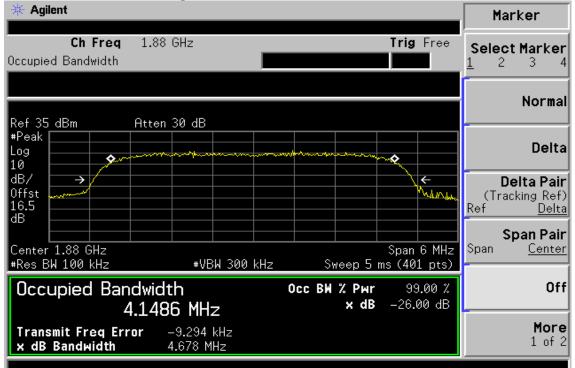


Figure 7-18 HSUPA II Channel High



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Figure 7-19 WCDMA V Channel Low

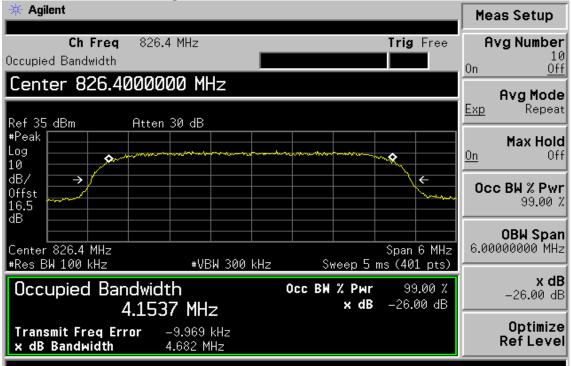
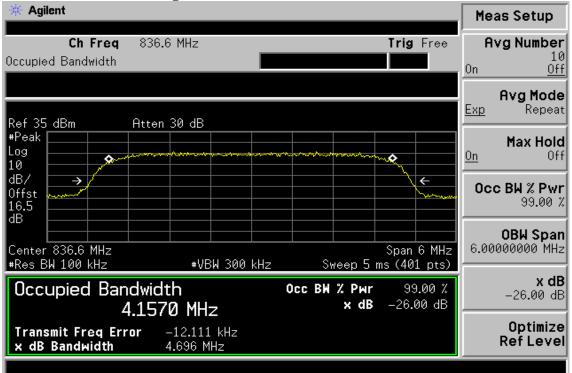


Figure 7-20 WCDMA V Channel Mid



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Figure 7-21 WCDMA V Channel High

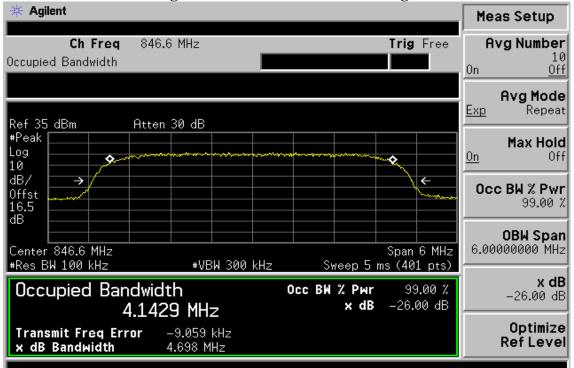
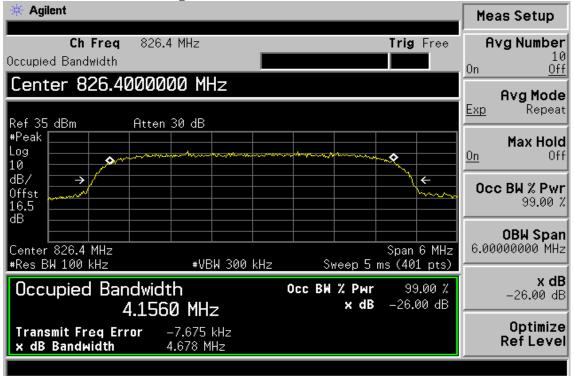


Figure 7-22 HSUPA V Channel Low



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Figure 7-23 HSUPA V Channel Mid

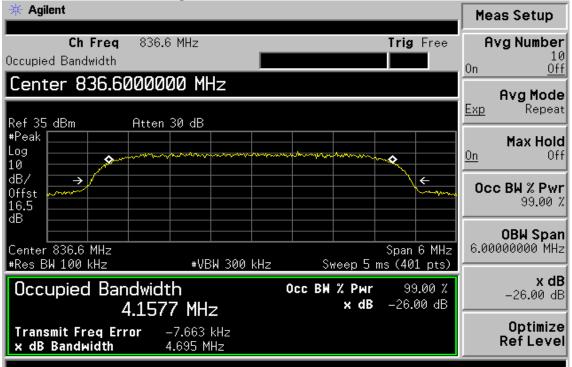
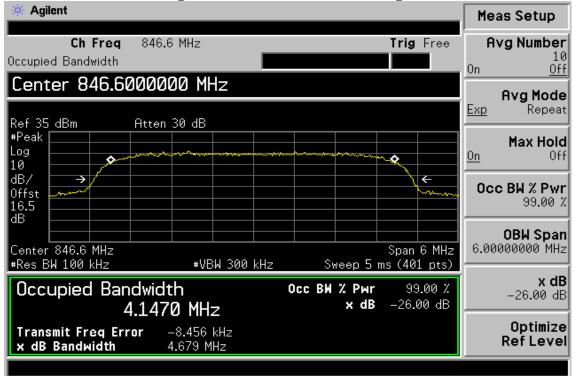


Figure 7-24 HSUPA V Channel High



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8. OUT OF BAND EMISSION AT ANTENNA TERMINALS

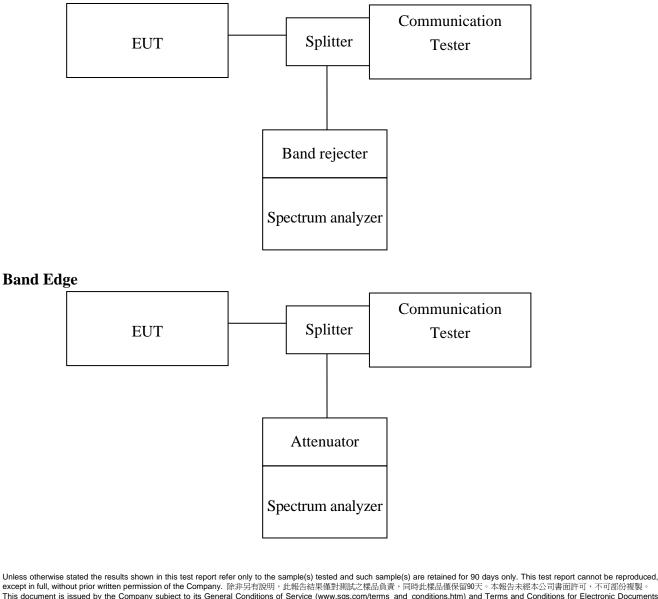
8.1. Standard Applicable:

According to FCC §2.1051.

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

8.2. Test SET-UP:

Out of band emission



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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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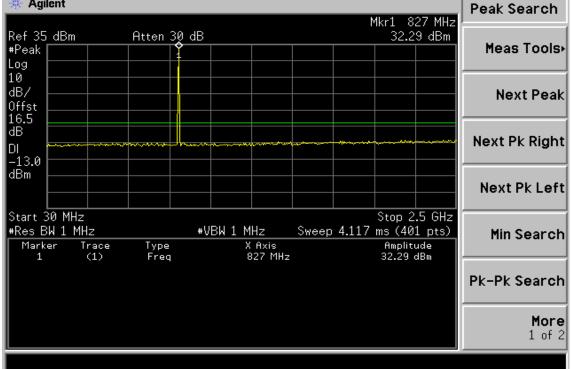
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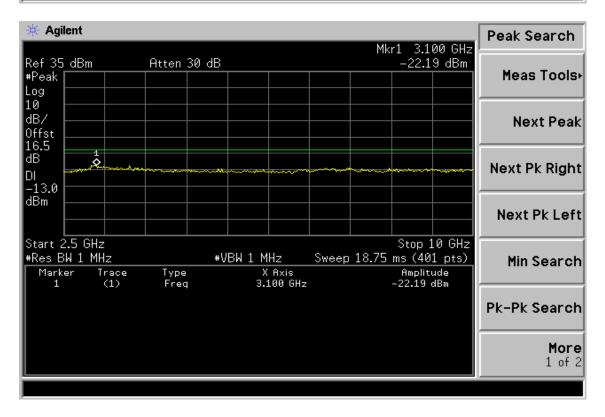


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8.5. Measurement Result:

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





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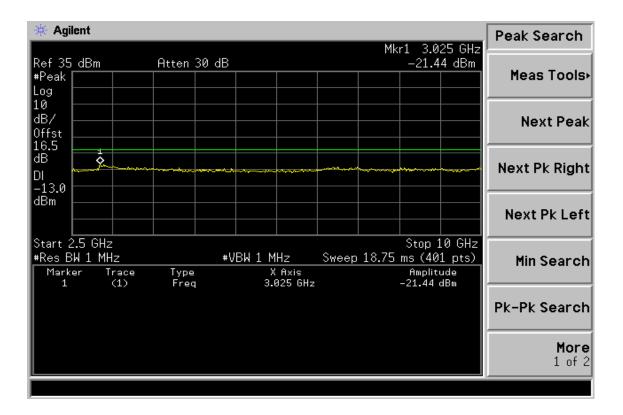
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🔆 Agilent							Peak Search
Ref 35 dB #Peak Log	im	Atten 30 dB				39 MHz 1 dBm	Meas Tools•
10							Next Peak
16.5 dB DI -13.0							Next Pk Right
dBm							Next Pk Left
Start 30 M #Res BW 1 Marker 1		#\ Type Freq	/BW 1 MHz X Axis 839 MHz	Sweep 4	Stop 2 4 <u>.117 ms (40</u> Amplit 32.11	ude	Min Search
	(1)	1124	03571112		52.11		Pk-Pk Search
							More 1 of 2

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



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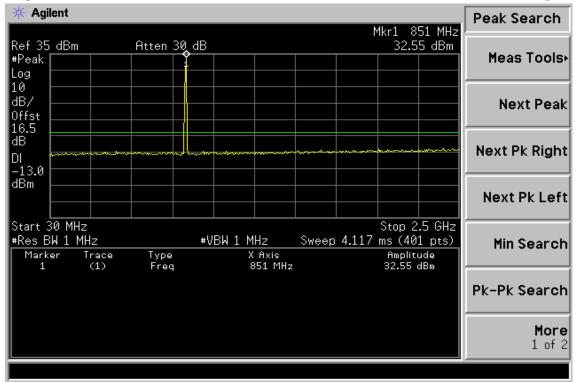
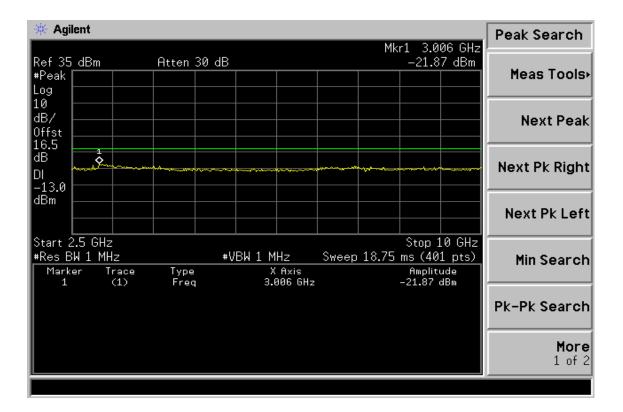


Figure 8-3: Out of Band emission at antenna terminals-GPRS 850 Channel Highest



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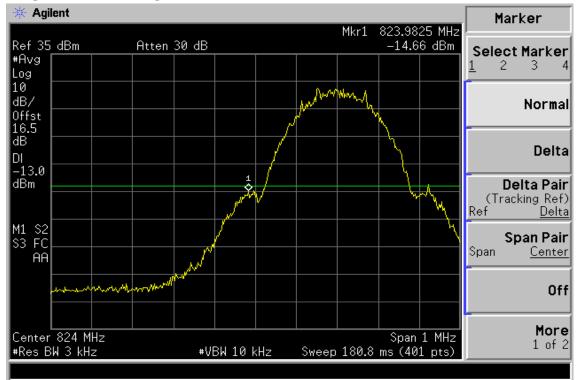
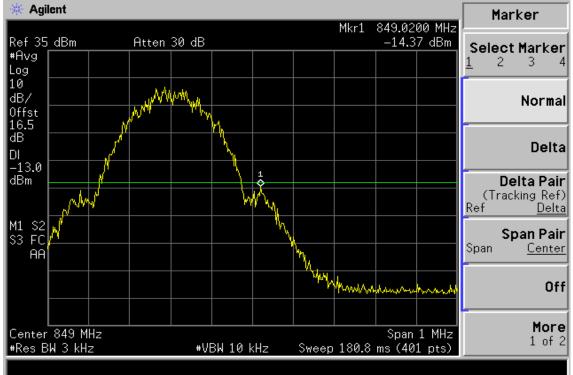


Figure 8-4: Band edge emission at antenna terminals -GPRS 850 Channel Lowest

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



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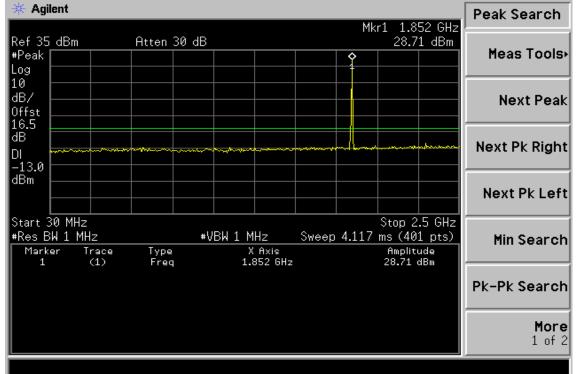
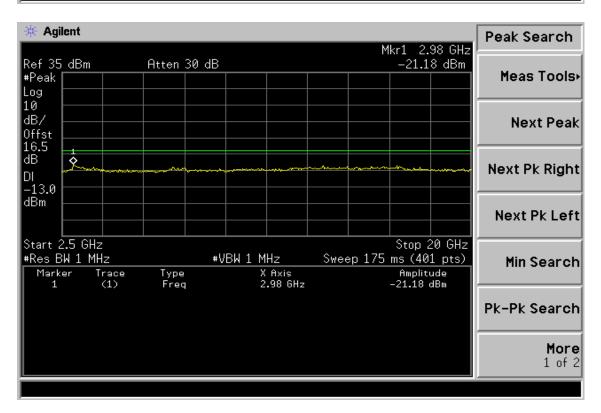


Figure 8-6: Out of Band emission at antenna terminals-GPRS 1900 Channel Lowest



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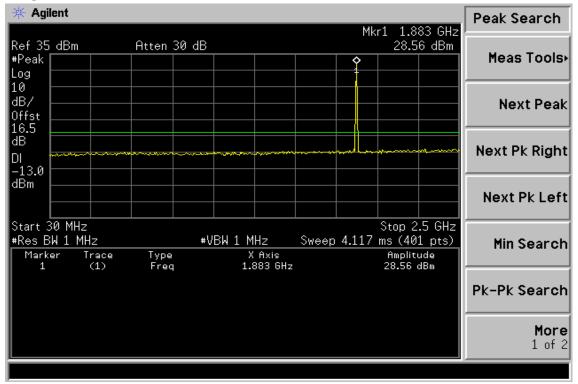
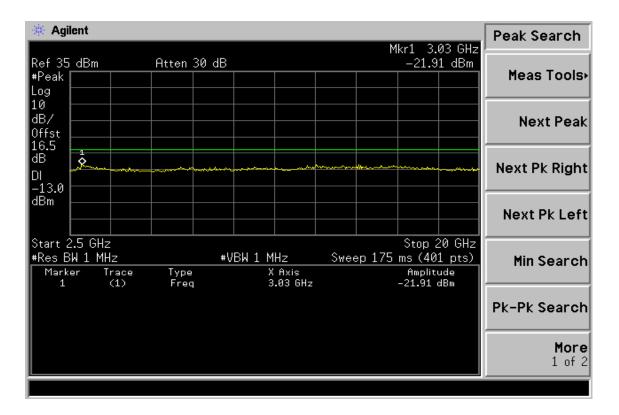


Figure 8-7: Out of Band emission at antenna terminals -GPRS 1900 Channel Mid



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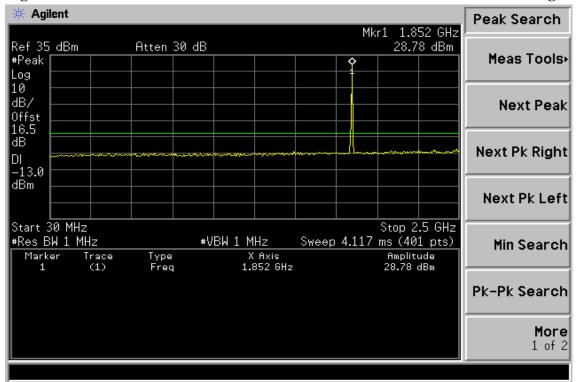
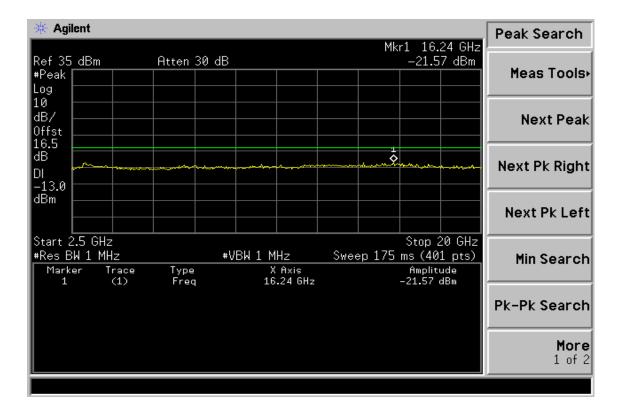


Figure 8-8: Out of Band emission at antenna terminals-GPRS 1900 Channel Highest



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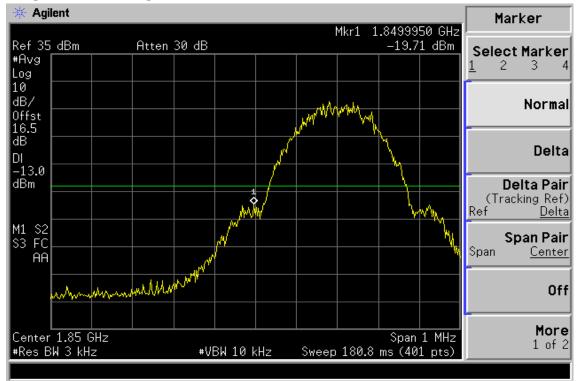
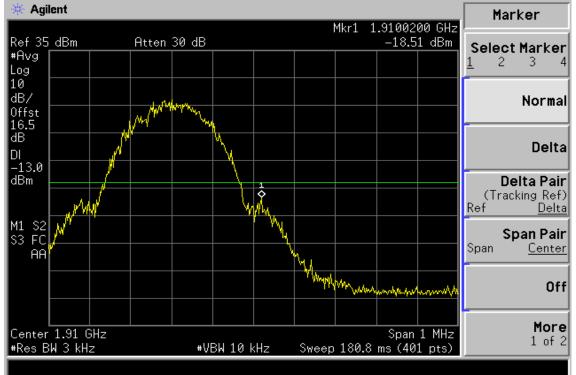


Figure 8-9: Bad edge emission at antenna terminals –GPRS 1900 Channel Lowest

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



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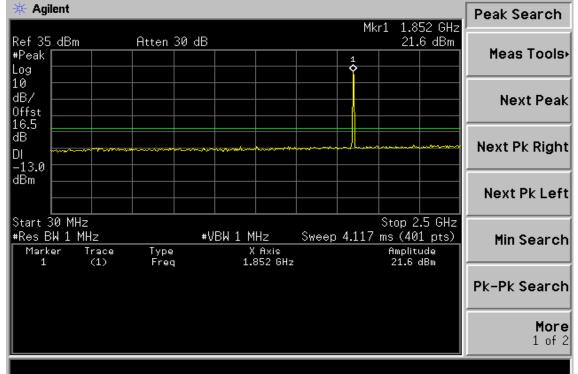
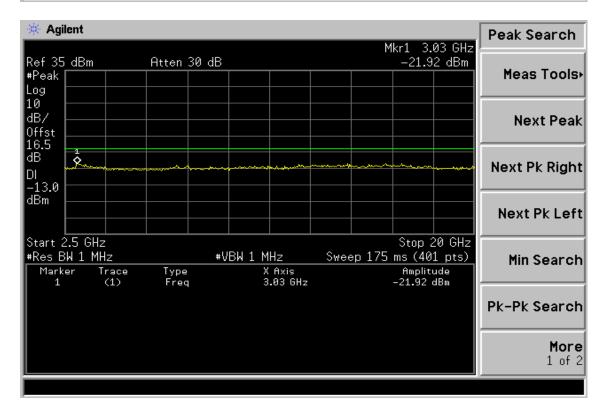


Figure 8-11: Out of Band emission at antenna terminals-WCDMA II Channel Lowest



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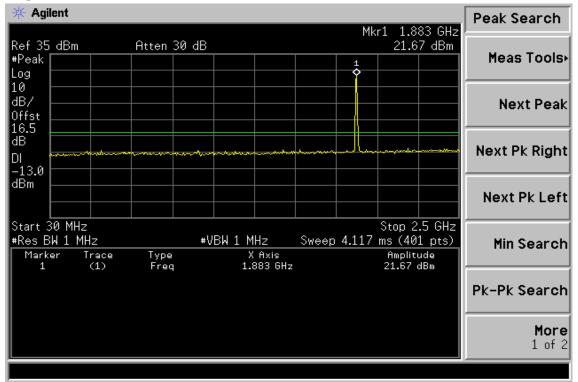
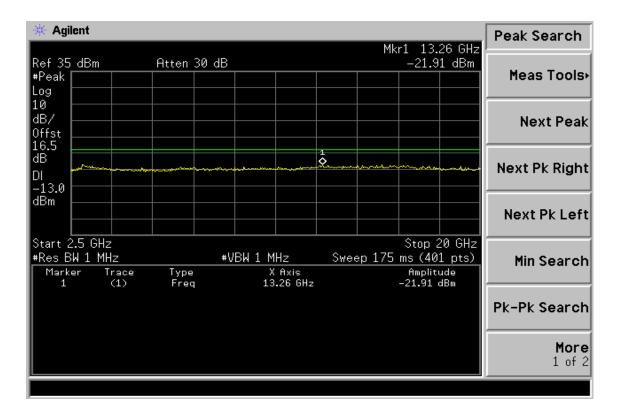


Figure 8-12: Out of Band emission at antenna terminals –WCDMA II Channel Mid



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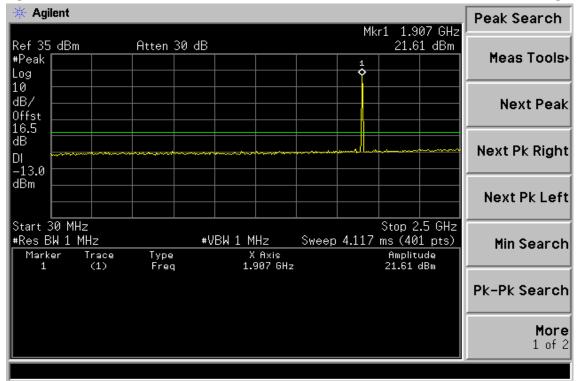
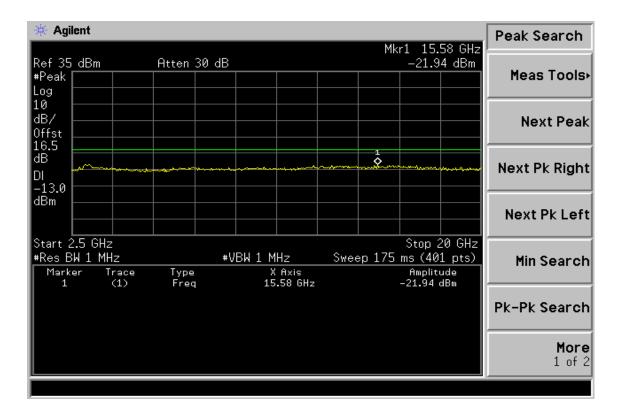


Figure 8-13: Out of Band emission at antenna terminals–WCDMA II Channel Highest



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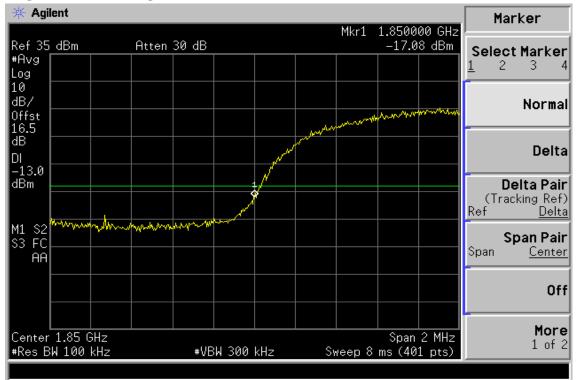
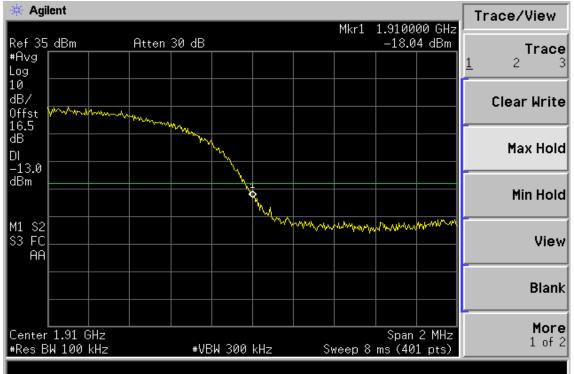


Figure 8-14: Bad edge emission at antenna terminals –WCDMA II Channel Lowest

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



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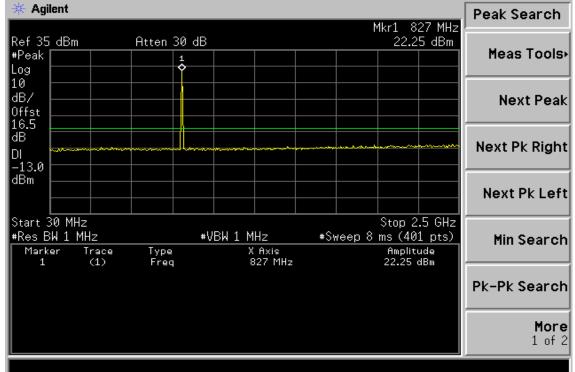
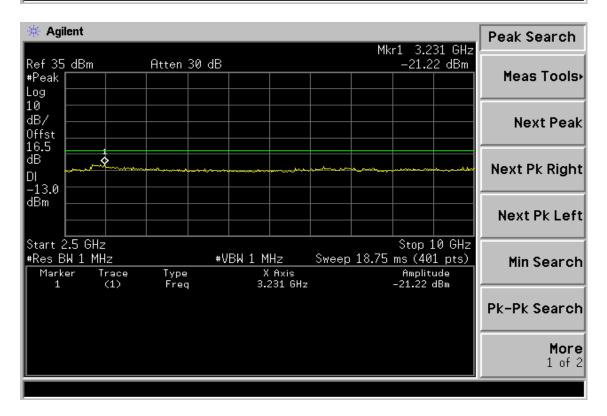


Figure 8-16: Out of Band emission at antenna terminals-WCDMA V Channel Lowest



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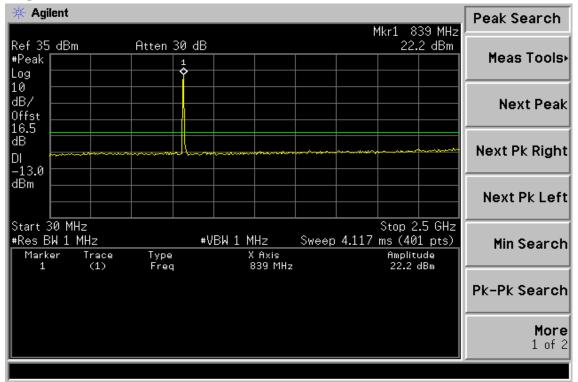
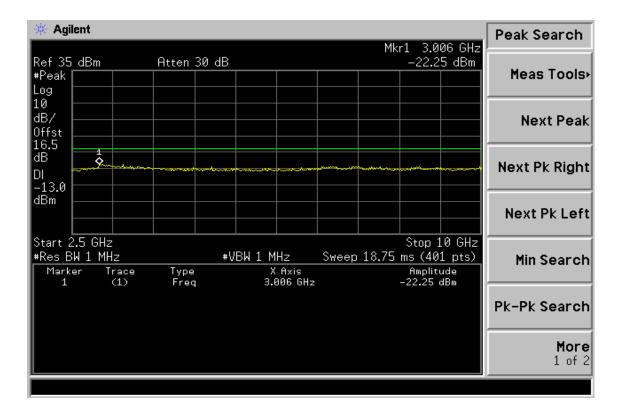


Figure 8-17: Out of Band emission at antenna terminals –WCDMA V Channel Mid



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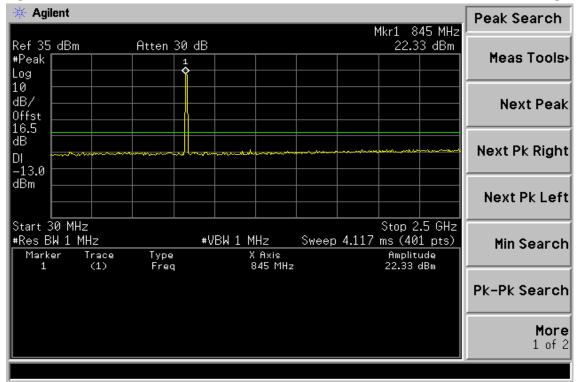
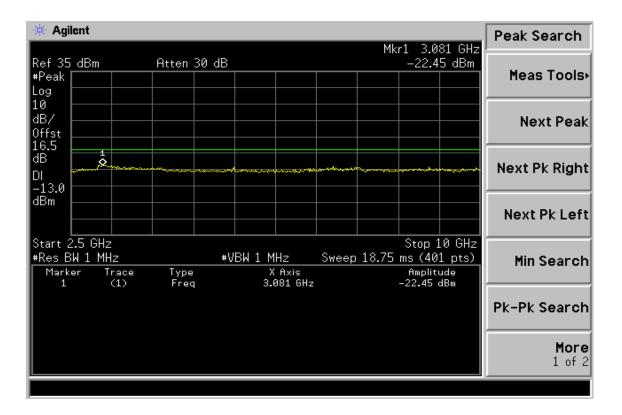


Figure 8-18: Out of Band emission at antenna terminals-WCDMA V Channel Highest



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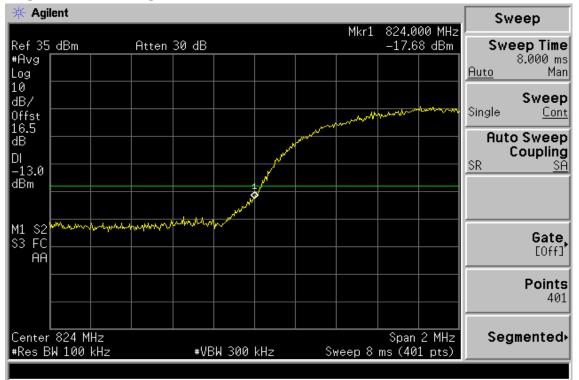
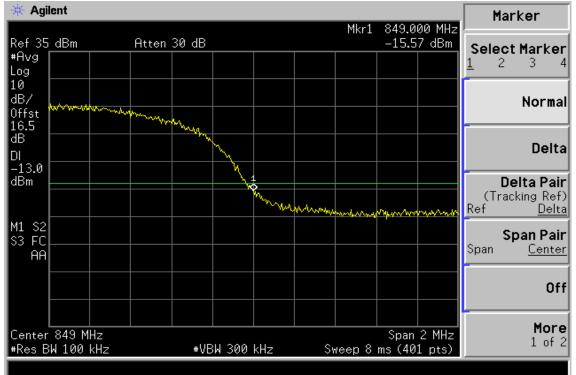


Figure 8-19: Bad edge emission at antenna terminals –WCDMA V Channel Lowest

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



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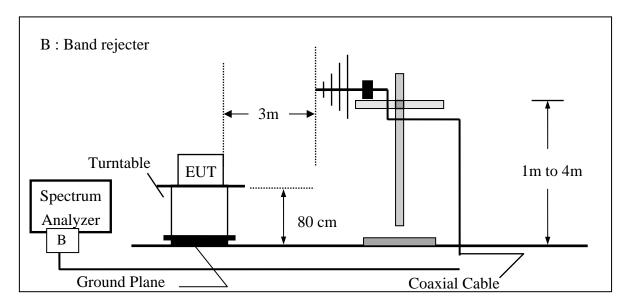
9. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

9.1. Standard Applicable:

According to FCC §2.1053,

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

9.2. EUT Setup (Block Diagram of Configuration):

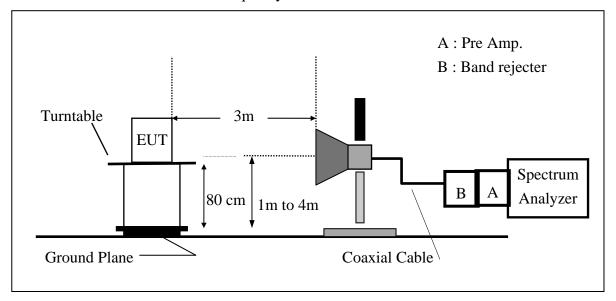


Radiated Emission Test Set-Up, Frequency Below 1000MHz

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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)

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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 Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 824.20 MHz	Test By:	Jason
Temperature	: 25	Pol:	Ver
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	46.57	V	-55.60	-3.25	0.90	-59.74	-13.00	-46.74
77.53	43.70	V	-67.72	-2.12	1.21	-71.05	-13.00	-58.05
92.08	49.60	V	-53.33	-7.75	1.29	-62.37	-13.00	-49.37
104.69	45.44	V	-56.05	-7.76	1.38	-65.19	-13.00	-52.19
153.19	34.09	V	-63.49	-7.80	1.60	-72.89	-13.00	-59.89
662.44	33.90	V	-55.15	-7.82	3.19	-66.16	-13.00	-53.16
823.98	77.04	V	-9.35	-7.87	3.62	-20.85	-13.00	-7.85
1648.40	52.47	V	-52.11	9.29	5.23	-48.05	-13.00	-35.05
2472.60	45.23	V	-55.78	10.08	6.53	-52.23	-13.00	-39.23
3296.80	39.45	V	-59.42	12.17	7.71	-54.97	-13.00	-41.97
4121.00	40.67	V	-55.45	12.61	8.86	-51.70	-13.00	-38.70
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:

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



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Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Mode	: TX CH Low Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 824.20 MHz	Test By:	Jason
Temperature	: 25	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
36.79	49.24	Н	-54.56	-4.16	0.91	-59.62	-13.00	-46.62
92.08	49.44	Н	-54.15	-7.75	1.29	-63.19	-13.00	-50.19
135.73	35.68	Н	-63.58	-7.79	1.52	-72.90	-13.00	-59.90
424.79	33.33	Н	-61.84	-7.68	2.58	-72.10	-13.00	-59.10
727.43	33.68	Н	-59.08	-7.87	3.39	-70.33	-13.00	-57.33
823.98	81.83	Н	-4.44	-7.87	3.62	-15.94	-13.00	-2.94
969.93	33.72	Н	-50.37	-8.00	3.94	-62.31	-13.00	-49.31
1648.40	49.50	Н	-54.90	9.29	5.23	-50.84	-13.00	-37.84
2472.60	47.03	Н	-53.88	10.08	6.53	-50.33	-13.00	-37.33
3296.80	49.95	Н	-49.15	12.17	7.71	-44.69	-13.00	-31.69
4121.00	36.22	Н	-60.03	12.61	8.86	-56.28	-13.00	-43.28
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:

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



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Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Mode	: TX CH Mid Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 836.60 MHz	Test By:	Jason
Temperature	: 25	Pol:	Ver
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	47.37	V	-54.80	-3.25	0.90	-58.94	-13.00	-45.94
75.59	43.97	V	-67.55	-1.85	1.19	-70.60	-13.00	-57.60
92.08	48.86	V	-54.07	-7.75	1.29	-63.11	-13.00	-50.11
453.89	32.75	V	-61.20	-7.70	2.67	-71.57	-13.00	-58.57
625.58	32.72	V	-56.52	-7.80	3.10	-67.41	-13.00	-54.41
960.23	34.47	V	-49.91	-8.00	3.91	-61.82	-13.00	-48.82
1673.20	48.41	V	-56.15	9.36	5.27	-52.05	-13.00	-39.05
2509.80	41.65	V	-59.13	10.09	6.58	-55.63	-13.00	-42.63
3346.40	43.63	V	-55.23	12.28	7.79	-50.75	-13.00	-37.75
4183.00	39.63	V	-56.26	12.62	8.93	-52.57	-13.00	-39.57
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 (dBd/dBi) - Cable loss (dB)

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Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Mode	: TX CH Mid Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 836.60 MHz	Test By:	Jason
Temperature	: 25	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
36.79	49.60	Н	-54.20	-4.16	0.91	-59.26	-13.00	-46.26
77.53	44.47	Н	-67.91	-2.12	1.21	-71.23	-13.00	-58.23
92.08	48.64	Н	-54.95	-7.75	1.29	-63.99	-13.00	-50.99
135.73	34.98	Н	-64.28	-7.79	1.52	-73.60	-13.00	-60.60
541.19	33.45	Н	-58.57	-7.75	2.93	-69.26	-13.00	-56.26
701.24	34.83	Н	-53.03	-7.86	3.29	-64.19	-13.00	-51.19
1673.20	49.98	Н	-54.40	9.36	5.27	-50.30	-13.00	-37.30
2509.80	43.01	Н	-57.69	10.09	6.58	-54.19	-13.00	-41.19
3346.40	46.84	Н	-52.22	12.28	7.79	-47.74	-13.00	-34.74
4183.00	35.94	Н	-60.09	12.62	8.93	-56.40	-13.00	-43.40
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	

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

Remark:

1 The emission behaviors belong to narrowband spurious emission.

2 Remark"----" means that the emission level is too low to be measured

3 The result basic equation calculation is as follows:

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

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Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Mode	: TX CH High Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 848.80 MHz	Test By:	Jason
Temperature	: 25	Pol:	Ver
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
36.79	48.39	V	-54.34	-4.16	0.91	-59.41	-13.00	-46.41
92.08	48.59	V	-54.34	-7.75	1.29	-63.38	-13.00	-50.38
153.19	34.23	V	-63.35	-7.80	1.60	-72.75	-13.00	-59.75
575.14	33.31	V	-57.71	-7.78	3.00	-68.48	-13.00	-55.48
667.29	33.07	V	-56.03	-7.83	3.20	-67.06	-13.00	-54.06
849.03	76.86	V	-9.26	-7.88	3.68	-20.82	-13.00	-7.82
950.53	34.61	V	-50.00	-8.00	3.88	-61.88	-13.00	-48.88
1697.60	52.15	V	-52.39	9.44	5.31	-48.26	-13.00	-35.26
2546.40	43.33	V	-57.31	10.20	6.63	-53.75	-13.00	-40.75
3395.20	46.61	V	-52.24	12.38	7.87	-47.73	-13.00	-34.73
4244.00	41.16	V	-54.50	12.63	9.00	-50.87	-13.00	-37.87
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:

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



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Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Mode	: TX CH High Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 848.80 MHz	Test By:	Jason
Temperature	: 25	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	48.90	Н	-54.29	-3.25	0.90	-58.44	-13.00	-45.44
62.98	42.14	Н	-69.39	-0.64	1.10	-71.13	-13.00	-58.13
92.08	48.13	Н	-55.46	-7.75	1.29	-64.50	-13.00	-51.50
133.79	35.01	Н	-64.46	-7.79	1.52	-73.76	-13.00	-60.76
444.19	32.56	Н	-61.63	-7.70	2.64	-71.96	-13.00	-58.96
691.54	34.09	Н	-53.89	-7.85	3.27	-65.01	-13.00	-52.01
849.00	83.33	Н	-2.86	-7.88	3.68	-14.42	-13.00	-1.42
1697.60	51.67	Н	-52.68	9.44	5.31	-48.55	-13.00	-35.55
2546.40	46.59	Н	-54.01	10.20	6.63	-50.45	-13.00	-37.45
3395.20	43.92	Н	-55.11	12.38	7.87	-50.59	-13.00	-37.59
4244.00	38.14	Н	-57.67	12.63	9.00	-54.05	-13.00	-41.05
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	

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

Remark:

1 The emission behaviors belong to narrowband spurious emission.

2 Remark"---" means that the emission level is too low to be measured

3 The result basic equation calculation is as follows:

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



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Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Mode	: TX CH Low Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 1850.20MHz	Test By:	Jason
Temperature	: 25	Pol:	Ver
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	48.05	V	-54.12	-3.25	0.90	-58.26	-13.00	-45.26
64.92	41.90	V	-69.65	-0.77	1.11	-71.53	-13.00	-58.53
90.14	46.02	V	-57.16	-7.75	1.27	-66.18	-13.00	-53.18
104.69	44.30	V	-57.19	-7.76	1.38	-66.33	-13.00	-53.33
458.74	32.25	V	-61.72	-7.70	2.68	-72.10	-13.00	-59.10
829.28	33.10	V	-53.23	-7.88	3.63	-64.74	-13.00	-51.74
1850.00	68.06	V	-36.33	9.90	5.56	-31.99	-13.00	-18.99
3700.40	60.70	V	-37.23	12.61	8.31	-32.93	-13.00	-19.93
5550.60	48.65	V	-42.19	13.23	10.33	-39.29	-13.00	-26.29
7400.80	37.38	V	-43.86	11.50	12.08	-44.44	-13.00	-31.44
9251.00	36.20	V	-42.30	11.92	13.50	-43.88	-13.00	-30.88
11101.20		V		11.66	15.11		-13.00	
12951.40		V		13.63	16.60		-13.00	
14801.60		V		12.76	17.95		-13.00	
16651.80		V		15.92	19.14		-13.00	
18502.00		V		18.75	10.40		-13.00	

	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 (dBd/dBi) - Cable loss (dB)

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Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Mode	: TX CH Low Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 1850.20MHz	Test By:	Jason
Temperature	: 25	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	46.36	Н	-56.83	-3.25	0.90	-60.98	-13.00	-47.98
70.74	39.65	Н	-72.66	-1.18	1.16	-75.00	-13.00	-62.00
92.08	44.28	Н	-59.31	-7.75	1.29	-68.35	-13.00	-55.35
426.73	37.81	Н	-57.26	-7.68	2.59	-67.53	-13.00	-54.53
618.79	33.00	Н	-57.33	-7.80	3.08	-68.21	-13.00	-55.21
790.48	33.08	Н	-55.29	-7.87	3.55	-66.71	-13.00	-53.71
1850.00	78.66	Н	-25.52	9.90	5.56	-21.18	-13.00	-8.18
3700.40	61.37	Н	-36.67	12.61	8.31	-32.37	-13.00	-19.37
5550.60	44.23	Н	-46.82	13.23	10.33	-43.92	-13.00	-30.92
7400.80	35.36	Н	-45.87	11.50	12.08	-46.45	-13.00	-33.45
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	
18502.00		Н		18.75	10.40		-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 (dBd/dBi) - Cable loss (dB)

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Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Mode	: TX CH Mid Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 1880MHz	Test By:	Jason
Temperature	: 25	Pol:	Ver
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	47.77	V	-54.40	-3.25	0.90	-58.54	-13.00	-45.54
64.92	41.42	V	-70.13	-0.77	1.11	-72.01	-13.00	-59.01
92.08	45.33	v	-57.60	-7.75	1.29	-66.64	-13.00	-53.64
104.69	44.23	v	-57.26	-7.76	1.38	-66.40	-13.00	-53.40
164.83	33.86	v	-64.76	-7.81	1.63	-74.20	-13.00	-61.20
473.29	33.06	V	-60.97	-7.71	2.73	-71.40	-13.00	-58.40
3760.00	64.14	V	-33.52	12.60	8.39	-29.30	-13.00	-16.30
5640.00	47.72	v	-42.86	13.36	10.41	-39.91	-13.00	-26.91
7520.00	37.14	v	-43.52	11.45	12.19	-44.26	-13.00	-31.26
9400.00		v		11.93	13.61		-13.00	
11280.00		v		11.92	15.27		-13.00	
13160.00		V		13.33	16.71		-13.00	
15040.00		V		13.76	18.15		-13.00	
16920.00		V		15.27	19.32		-13.00	
18800.00		V		18.68	16.58		-13.00	

	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 (dBd/dBi) - Cable loss (dB)

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Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Mode	: TX CH Mid Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 1880MHz	Test By:	Jason
Temperature	: 25	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	46.36	Н	-56.83	-3.25	0.90	-60.98	-13.00	-47.98
70.74	39.26	Н	-73.05	-1.18	1.16	-75.39	-13.00	-62.39
92.08	43.81	Н	-59.78	-7.75	1.29	-68.82	-13.00	-55.82
286.08	33.12	Н	-64.97	-7.91	2.12	-75.01	-13.00	-62.01
562.53	33.37	Н	-58.09	-7.77	2.98	-68.84	-13.00	-55.84
834.13	32.45	Н	-53.79	-7.88	3.65	-65.31	-13.00	-52.31
3760.00	60.38	Н	-37.39	12.60	8.39	-33.18	-13.00	-20.18
5640.00	42.70	Н	-48.05	13.36	10.41	-45.10	-13.00	-32.10
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	
18800.00		Н		18.68	16.58		-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 (dBd/dBi) - Cable loss (dB)

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Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Mode	: TX CH High Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 1909.8 MHz	Test By:	Jason
Temperature	: 25	Pol:	Ver
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
36.79	48.66	V	-54.07	-4.16	0.91	-59.14	-13.00	-46.14
65.89	41.83	V	-69.76	-0.83	1.12	-71.71	-13.00	-58.71
90.14	46.28	V	-56.90	-7.75	1.27	-65.92	-13.00	-52.92
104.69	45.00	V	-56.49	-7.76	1.38	-65.63	-13.00	-52.63
145.43	38.77	V	-58.94	-7.80	1.57	-68.31	-13.00	-55.31
654.68	32.90	V	-56.07	-7.81	3.17	-67.06	-13.00	-54.06
1910.00	71.18	V	-33.15	10.08	5.66	-28.73	-13.00	-15.73
3819.60	67.77	V	-29.62	12.60	8.47	-25.49	-13.00	-12.49
5729.40	47.70	V	-42.62	13.49	10.50	-39.62	-13.00	-26.62
7639.20	35.80	V	-44.68	11.40	12.27	-45.55	-13.00	-32.55
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 (dBd/dBi) - Cable loss (dB)

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Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Mode	: TX CH High Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 1909.8 MHz	Test By:	Jason
Temperature	: 25	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
36.79	47.34	Н	-56.46	-4.16	0.91	-61.52	-13.00	-48.52
53.28	38.40	Н	-70.04	-0.55	1.11	-71.71	-13.00	-58.71
92.08	42.61	Н	-60.98	-7.75	1.29	-70.02	-13.00	-57.02
148.34	32.62	Н	-65.32	-7.80	1.58	-74.70	-13.00	-61.70
450.98	31.96	Н	-61.92	-7.70	2.66	-72.28	-13.00	-59.28
644.98	32.48	Н	-57.34	-7.81	3.15	-68.29	-13.00	-55.29
1910.01	79.40	Н	-24.71	10.08	5.66	-20.29	-13.00	-7.29
3819.60	65.74	Н	-31.77	12.60	8.47	-27.63	-13.00	-14.63
5729.40	43.84	Н	-46.61	13.49	10.50	-43.62	-13.00	-30.62
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:

t (886-2) 2299-3279

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



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Radiated Spurious Emission Measurement Result: WCDMA II Mode

Operation Mode	: TX CH Low Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 1852.4MHz	Test By:	Jason
Temperature	: 25	Pol:	Ver
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
36.79	49.81	V	-52.92	-4.16	0.91	-57.99	-13.00	-44.99
65.89	42.49	V	-69.10	-0.83	1.12	-71.05	-13.00	-58.05
90.14	45.26	V	-57.92	-7.75	1.27	-66.94	-13.00	-53.94
104.69	44.20	V	-57.29	-7.76	1.38	-66.43	-13.00	-53.43
383.08	32.62	V	-63.60	-7.65	2.46	-73.71	-13.00	-60.71
659.53	32.99	V	-56.03	-7.82	3.18	-67.03	-13.00	-54.03
1854.00	60.07	V	-44.31	9.91	5.57	-39.97	-13.00	-26.97
3704.80	33.90	V	-64.01	12.61	8.31	-59.72	-13.00	-46.72
5557.20	33.32	V	-57.50	13.24	10.33	-54.60	-13.00	-41.60
7409.60		V		11.49	12.09		-13.00	
9262.00		V		11.92	13.51		-13.00	
11114.40		V		11.68	15.12		-13.00	
12966.80		V		13.62	16.61		-13.00	
14819.20		V		12.83	17.96		-13.00	
16671.60		V		15.87	19.15		-13.00	
18524.00		V		18.74	10.86		-13.00	

	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:

t (886-2) 2299-3279

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



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Radiated Spurious Emission Measurement Result: WCDMA II Mode

Operation Mode	: TX CH Low Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 1852.4MHz	Test By:	Jason
Temperature	: 25	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
36.79	47.05	Н	-56.75	-4.16	0.91	-61.81	-13.00	-48.81
56.19	39.50	Н	-70.14	-0.51	1.09	-71.74	-13.00	-58.74
92.08	43.66	Н	-59.93	-7.75	1.29	-68.97	-13.00	-55.97
155.13	32.46	Н	-65.71	-7.80	1.60	-75.11	-13.00	-62.11
390.84	32.66	Н	-63.91	-7.66	2.48	-74.05	-13.00	-61.05
647.89	32.63	Н	-57.13	-7.81	3.15	-68.10	-13.00	-55.10
1854.00	62.96	Н	-41.21	9.91	5.57	-36.87	-13.00	-23.87
3704.80	34.66	Н	-63.36	12.61	8.31	-59.07	-13.00	-46.07
5557.20	33.07	Н	-57.96	13.24	10.33	-55.06	-13.00	-42.06
7409.60		Н		11.49	12.09		-13.00	
9262.00		Н		11.92	13.51		-13.00	
11114.40		Н		11.68	15.12		-13.00	
12966.80		Н		13.62	16.61		-13.00	
14819.20		Н		12.83	17.96		-13.00	
16671.60		Н		15.87	19.15		-13.00	
18524.00		Н		18.74	10.86		-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:

t (886-2) 2299-3279

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



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Radiated Spurious Emission Measurement Result: WCDMA II Mode

Operation Mode	: TX CH Mid Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 1880MHz	Test By:	Jason
Temperature	: 25	Pol:	Ver
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	48.93	V	-53.24	-3.25	0.90	-57.38	-13.00	-44.38
65.89	42.03	V	-69.56	-0.83	1.12	-71.51	-13.00	-58.51
92.08	43.75	V	-59.18	-7.75	1.29	-68.22	-13.00	-55.22
104.69	44.19	V	-57.30	-7.76	1.38	-66.44	-13.00	-53.44
172.59	33.01	V	-66.31	-7.82	1.64	-75.77	-13.00	-62.77
611.03	33.00	V	-56.43	-7.79	3.06	-67.28	-13.00	-54.28
3760.00	39.36	V	-58.30	12.60	8.39	-54.08	-13.00	-41.08
5640.00	32.73	V	-57.85	13.36	10.41	-54.90	-13.00	-41.90
7520.00		V		11.45	12.19		-13.00	
9400.00		V		11.93	13.61		-13.00	
11280.00		V		11.92	15.27		-13.00	
13160.00		V		13.33	16.71		-13.00	
15040.00		V		13.76	18.15		-13.00	
16920.00		V		15.27	19.32		-13.00	
18800.00		V		18.68	16.58		-13.00	

	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 (dBd/dBi) - Cable loss (dB)

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Radiated Spurious Emission Measurement Result: WCDMA II Mode

Operation Mode	: TX CH Mid Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 1880MHz	Test By:	Jason
Temperature	: 25	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	46.17	Н	-57.02	-3.25	0.90	-61.17	-13.00	-48.17
92.08	42.08	Н	-61.51	-7.75	1.29	-70.55	-13.00	-57.55
104.69	41.29	Н	-61.22	-7.76	1.38	-70.36	-13.00	-57.36
155.13	33.72	Н	-64.45	-7.80	1.60	-73.85	-13.00	-60.85
405.39	32.87	Н	-63.29	-7.66	2.53	-73.48	-13.00	-60.48
652.74	32.68	Н	-56.93	-7.81	3.17	-67.91	-13.00	-54.91
3760.00	41.58	Н	-56.19	12.60	8.39	-51.98	-13.00	-38.98
5640.00	32.83	Н	-57.92	13.36	10.41	-54.97	-13.00	-41.97
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	
18800.00		Н		18.68	16.58		-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 (dBd/dBi) - Cable loss (dB)

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Radiated Spurious Emission Measurement Result: WCDMA II Mode

Operation Mode	: TX CH High Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 1907.6 MHz	Test By:	Jason
Temperature	: 25	Pol:	Ver
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	48.84	V	-53.33	-3.25	0.90	-57.47	-13.00	-44.47
65.89	42.54	V	-69.05	-0.83	1.12	-71.00	-13.00	-58.00
104.69	44.36	V	-57.13	-7.76	1.38	-66.27	-13.00	-53.27
417.03	32.58	V	-62.39	-7.67	2.56	-72.62	-13.00	-59.62
572.23	32.92	V	-58.27	-7.77	2.99	-69.04	-13.00	-56.04
807.94	32.91	V	-53.65	-7.87	3.59	-65.11	-13.00	-52.11
1910.00	60.46	V	-43.87	10.08	5.66	-39.45	-13.00	-26.45
3815.20	35.59	V	-61.82	12.60	8.46	-57.68	-13.00	-44.68
5722.80	32.90	V	-57.43	13.48	10.49	-54.44	-13.00	-41.44
7630.40		V		11.41	12.27		-13.00	
9538.00		V		11.95	13.73		-13.00	
11445.60		V		12.15	15.42		-13.00	
13353.20		V		13.00	16.81		-13.00	
15260.80		V		14.91	18.28		-13.00	
17168.40		V		14.53	19.50		-13.00	
19076.00		V		18.65	20.76		-13.00	

	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:

t (886-2) 2299-3279

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



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Radiated Spurious Emission Measurement Result: WCDMA II Mode

Operation Mode	: TX CH High Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 1907.6MHz	Test By:	Jason
Temperature	: 25	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	46.39	Н	-56.80	-3.25	0.90	-60.95	-13.00	-47.95
53.28	38.73	Н	-69.71	-0.55	1.11	-71.38	-13.00	-58.38
101.78	41.02	Н	-61.79	-7.76	1.37	-70.92	-13.00	-57.92
155.13	32.12	Н	-66.05	-7.80	1.60	-75.45	-13.00	-62.45
434.49	32.43	Н	-62.25	-7.69	2.61	-72.55	-13.00	-59.55
793.39	32.78	Н	-54.97	-7.87	3.56	-66.39	-13.00	-53.39
1910.00	63.22	Н	-40.89	10.08	5.66	-36.47	-13.00	-23.47
3815.20	36.86	Н	-60.67	12.60	8.46	-56.53	-13.00	-43.53
5722.80	32.99	Н	-57.48	13.48	10.49	-54.49	-13.00	-41.49
7630.40		Н		11.41	12.27		-13.00	
9538.00		Н		11.95	13.73		-13.00	
11445.60		Н		12.15	15.42		-13.00	
13353.20		Н		13.00	16.81		-13.00	
15260.80		Н		14.91	18.28		-13.00	
17168.40		Н		14.53	19.50		-13.00	
19076.00		Н		18.65	20.76		-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:

t (886-2) 2299-3279

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



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Radiated Spurious Emission Measurement Result: WCDMA V Mode

Operation Mode	: TX CH High Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 826.40 MHz	Test By:	Jason
Temperature	: 25	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
36.79	44.78	V	-57.95	-6.30	0.91	-65.16	-13.00	-52.16
75.59	42.99	V	-68.53	-2.01	1.19	-71.73	-13.00	-58.73
92.08	45.46	V	-57.47	-9.86	1.29	-68.62	-13.00	-55.62
104.69	44.81	V	-56.68	-9.94	1.38	-68.00	-13.00	-55.00
153.19	33.72	V	-63.86	-9.94	1.60	-75.40	-13.00	-62.40
825.00	64.28	V	-22.10	-10.02	3.63	-35.74	-13.00	-22.74
895.24	38.17	V	-46.71	-10.08	3.78	-60.57	-13.00	-47.57
1652.80	37.56	V	-67.02	9.30	5.23	-62.95	-13.00	-49.95
2479.20	36.16	V	-64.80	10.07	6.54	-61.27	-13.00	-48.27
3305.60	34.95	V	-63.92	12.19	7.73	-59.46	-13.00	-46.46
4132.00		V		12.62	8.87		-13.00	
4958.40		V		12.65	9.75		-13.00	
5784.80		V		13.58	10.55		-13.00	
6611.20		V		12.03	11.31		-13.00	
7437.60		V		11.48	12.12		-13.00	
8264.00		V		11.50	12.73		-13.00	

	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:

t (886-2) 2299-3279

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



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Radiated Spurious Emission Measurement Result: WCDMA V Mode

Operation Mode	: TX CH Low Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 826.40MHz	Test By:	Jason
Temperature	: 25	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
36.79	47.75	Н	-56.05	-6.30	0.91	-63.25	-13.00	-50.25
64.92	41.23	Н	-70.51	-0.77	1.11	-72.39	-13.00	-59.39
92.08	44.98	Н	-58.61	-9.86	1.29	-69.76	-13.00	-56.76
101.78	47.22	Н	-55.59	-9.94	1.37	-66.90	-13.00	-53.90
509.18	34.29	Н	-58.84	-9.87	2.83	-71.54	-13.00	-58.54
825.00	68.91	Н	-17.36	-10.02	3.63	-31.00	-13.00	-18.00
897.18	34.12	Н	-50.81	-10.09	3.78	-64.68	-13.00	-51.68
1652.80	39.74	Н	-64.66	9.30	5.23	-60.59	-13.00	-47.59
2479.20	36.86	Н	-64.01	10.07	6.54	-60.47	-13.00	-47.47
3305.60	34.17	Н	-64.92	12.19	7.73	-60.46	-13.00	-47.46
4132.00		Н		12.62	8.87		-13.00	
4958.40		Н		12.65	9.75		-13.00	
5784.80		Н		13.58	10.55		-13.00	
6611.20		Н		12.03	11.31		-13.00	
7437.60		Н		11.48	12.12		-13.00	
8264.00		Н		11.50	12.73		-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:

t (886-2) 2299-3279

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



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Radiated Spurious Emission Measurement Result: WCDMA V Mode

Operation Mode	: TX CH Mid Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 836.60MHz	Test By:	Jason
Temperature	: 25	Pol:	Ver
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	44.99	V	-57.18	-5.39	0.90	-63.46	-13.00	-50.46
75.59	42.98	V	-68.54	-2.01	1.19	-71.74	-13.00	-58.74
92.08	47.25	V	-55.68	-9.86	1.29	-66.83	-13.00	-53.83
104.69	45.65	V	-55.84	-9.94	1.38	-67.16	-13.00	-54.16
252.13	33.24	V	-66.58	-10.03	2.00	-78.61	-13.00	-65.61
659.53	32.35	V	-56.67	-9.96	3.18	-69.81	-13.00	-56.81
1672.00	35.80	V	-68.76	9.36	5.27	-64.67	-13.00	-51.67
2508.00	36.39	V	-64.40	10.08	6.58	-60.90	-13.00	-47.90
3344.00	34.83	V	-64.03	12.27	7.79	-59.55	-13.00	-46.55
4180.00		V		12.62	8.93		-13.00	
5016.00		V		12.67	9.81		-13.00	
5852.00		V		13.68	10.62		-13.00	
6033.00	35.86	V	-53.43	13.78	10.79	-50.43	-13.00	-37.43
6688.00		V		11.96	11.39		-13.00	
7524.00		V		11.45	12.20		-13.00	
8360.00		V		11.58	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:

t (886-2) 2299-3279

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



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Radiated Spurious Emission Measurement Result: WCDMA V Mode

Operation Mode	: TX CH Mid Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 836.60MHz	Test By:	Jason
Temperature	: 25	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	47.20	Н	-55.99	-5.39	0.90	-62.28	-13.00	-49.28
64.92	41.04	Н	-70.70	-0.77	1.11	-72.58	-13.00	-59.58
92.08	44.93	Н	-58.66	-9.86	1.29	-69.81	-13.00	-56.81
101.78	46.37	Н	-56.44	-9.94	1.37	-67.75	-13.00	-54.75
164.83	34.89	Н	-64.03	-9.95	1.63	-75.61	-13.00	-62.61
741.98	33.75	Н	-61.73	-10.01	3.44	-75.18	-13.00	-62.18
1672.00	39.30	Н	-65.08	9.36	5.27	-60.98	-13.00	-47.98
2508.00	36.25	Н	-64.46	10.08	6.58	-60.95	-13.00	-47.95
3344.00	35.75	Н	-63.31	12.27	7.79	-58.83	-13.00	-45.83
4180.00		Н		12.62	8.93		-13.00	
5016.00		Н		12.67	9.81		-13.00	
5852.00		Н		13.68	10.62		-13.00	
6688.00		Н		11.96	11.39		-13.00	
7524.00		Н		11.45	12.20		-13.00	
8360.00		Н		11.58	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 (dBd/dBi) - Cable loss (dB)

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Radiated Spurious Emission Measurement Result: WCDMA V Mode

Operation Mode	: TX CH High Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 846.60 MHz	Test By:	Jason
Temperature	: 25	Pol:	Ver
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
36.79	46.08	V	-56.65	-6.30	0.91	-63.86	-13.00	-50.86
92.08	45.46	V	-57.47	-9.86	1.29	-68.62	-13.00	-55.62
104.69	46.84	V	-54.65	-9.94	1.38	-65.97	-13.00	-52.97
565.44	33.35	V	-58.24	-9.91	2.98	-71.13	-13.00	-58.13
727.43	33.92	V	-54.24	-10.01	3.39	-67.64	-13.00	-54.64
850.00	66.38	V	-19.73	-10.02	3.68	-33.43	-13.00	-20.43
960.23	34.39	V	-49.99	-10.14	3.91	-64.04	-13.00	-51.04
1693.20	36.11	V	-68.43	9.42	5.30	-64.31	-13.00	-51.31
2539.80	35.90	V	-64.77	10.18	6.62	-61.22	-13.00	-48.22
3386.40	35.20	V	-63.65	12.36	7.85	-59.14	-13.00	-46.14
4233.00		V		12.63	8.99		-13.00	
5079.60		V		12.73	9.87		-13.00	
5926.20		V		13.79	10.69		-13.00	
6772.80		V		11.87	11.47		-13.00	
7619.40		V		11.41	12.26		-13.00	
8466.00		V		11.68	12.89		-13.00	

	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:

t (886-2) 2299-3279

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

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Radiated Spurious Emission Measurement Result: WCDMA V Mode

Operation Mode	: TX CH High Mode	Test Date:	Nov. 01, 2010
Fundamental Frequency	: 846.60 MHz	Test By:	Jason
Temperature	: 25	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	47.98	Н	-55.21	-5.39	0.90	-61.50	-13.00	-48.50
64.92	41.48	Н	-70.26	-0.77	1.11	-72.14	-13.00	-59.14
92.08	44.53	Н	-59.06	-9.86	1.29	-70.21	-13.00	-57.21
104.69	47.02	Н	-55.49	-9.94	1.38	-66.81	-13.00	-53.81
470.38	33.38	Н	-60.33	-9.85	2.72	-72.90	-13.00	-59.90
657.59	33.21	Н	-56.19	-9.96	3.18	-69.33	-13.00	-56.33
850.00	70.77	Н	-15.42	-10.02	3.68	-29.12	-13.00	-16.12
1693.20	39.09	Н	-65.26	9.42	5.30	-61.14	-13.00	-48.14
2539.80	35.72	Н	-64.90	10.18	6.62	-61.34	-13.00	-48.34
3386.40	35.10	Н	-63.93	12.36	7.85	-59.42	-13.00	-46.42
4233.00		Н		12.63	8.99		-13.00	
5079.60		Н		12.73	9.87		-13.00	
5926.20		Н		13.79	10.69		-13.00	
6772.80		Н		11.87	11.47		-13.00	
7619.40		Н		11.41	12.26		-13.00	
8466.00		Н		11.68	12.89		-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:

t (886-2) 2299-3279

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



10. FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

10.1. Standard Applicable:

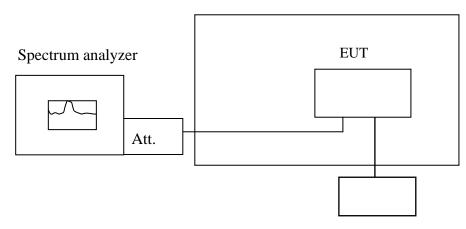
According to FCC (1)

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 (Hz)		
Vdc	Temperature (°C)	(MHz)	Della (HZ)	Lillint (HZ)		
3.70	-30	836.599996	-3.00	2091		
3.70	-20	836.599998	-5.00	2091		
3.70	-10	836.600003	-10.00	2091		
3.70	0	836.600015	-22.00	2091		
3.70	10	836.600009	-16.00	2091		
3.70	20	836.599993	0.00	2091		
3.70	30	836.599978	15.00	2091		
3.70	40	836.599971	22.00	2091		
3.70	50	836.599985	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 (IIZ)	Linit (112)		
3.70	-30	1880.000001	28.00	4700		
3.70	-20	1880.000014	15.00	4700		
3.70	-10	1880.000034	-5.00	4700		
3.70	0	1880.000051	-22.00	4700		
3.70	10	1880.000038	-9.00	4700		
3.70	20	1880.000029	0.00	4700		
3.70	30	1880.000042	-13.00	4700		
3.70	40	1880.000018	11.00	4700		
3.70	50	1880.000014	15.00	4700		

Note: The battery is rated 3.7V dc.

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Reference Frequency: WCDMA II Mid Channel 1880 MHz						
	Limit: +/- 2.5 ppm = 4700 Hz					
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)		
Vdc	Temperature (°C)	(MHz)	Delta (IIZ)	Liniit (112)		
3.70	-30	1879.999993	-2.00	4700		
3.70	-20	1879.999988	3.00	4700		
3.70	-10	1879.999972	19.00	4700		
3.70	0	1879.999984	7.00	4700		
3.70	10	1879.999994	-3.00	4700		
3.70	20	1879.999991	0.00	4700		
3.70	30	1880.000010	-19.00	4700		
3.70	40	1880.000005	-14.00	4700		
3.70	50	1880.000014	-23.00	4700		

Reference Frequency: WCDMA V Mid Channel 836.6 MHz						
	Limit: +/- 2.5 ppm = 4700 Hz					
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)		
Vdc	Temperature (°C)	(MHz)	Delta (IIZ)	Linit (112)		
3.70	-30	836.599985	9.00	2091		
3.70	-20	836.599976	18.00	2091		
3.70	-10	836.599990	4.00	2091		
3.70	0	836.599984	10.00	2091		
3.70	10	836.599991	3.00	2091		
3.70	20	836.599994	0.00	2091		
3.70	30	836.599999	-5.00	2091		
3.70	40	836.600001	-7.00	2091		
3.70	50	836.600008	-14.00	2091		

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 = 209	91 Hz	
Power Supply	Environment	Frequency	Dolto (Uz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)
4.20	25.00	836.599978	7.00	2091.00
3.70	25.00	836.599985	0.00	2091.00
3.20	25.00	836.600013	-28.00	2091.00
2.6	25.00	006 500007	140.00	2001.00
(End Point)	25.00	836.599837	148.00	2091.00

Reference Frequency: GPRS 1900 Mid Channel 1880 MHz @ 25°C				
	Limit	: +/- 2.5 ppm = 470)0 Hz	
Power Supply	Environment	Frequency	Dolto (Uz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Linit (HZ)
4.20	25	1879.999994	-10.00	4700
3.70	25	1879.999984	0.00	4700
3.20	25	1880.000024	-40.00	4700
2.6	25	1970 000905	170.00	4700
(End Point)	25	1879.999805	179.00	4700

Reference Frequency: WCDMA II Mid Channel 1880 (ARFCN9400) MHz				
	Limit	: +/- 2.5 ppm = 470)0 Hz	
Power Supply	Environment	Frequency	Dolta (Uz)	Limit (Uz)
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)
4.20	25	1880.000005	-2.00	4700
3.70	25	1880.000003	0.00	4700
3.20	25	1879.999999	4.00	4700
2.6	25	1970 000004	141.00	1700
(Endpoint)	25	1879.999864	141.00	4700

Note: The battery is rated 3.7V dc.

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Reference Frequency: WCDMA V Mid Channel 836.6 (ARFCN9400) MHz				
	Limit	: +/- 2.5 ppm = 290)1 Hz	
Power Supply	Environment	Frequency	Dolto (Uz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)
4.2	25.00	836.599997	0.00	2091.00
3.7	25.00	836.599996	1.00	2091.00
3.2	25.00	836.599995	2.00	2091.00
2.6	25.00	826 500826	171.00	2001.00
(Endpoint)	25.00	836.599826	171.00	2091.00

Note: The battery is rated 3.7V dc.

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