

Report No.: EH/2009/C0008 Issue Date: Dec. 21, 2009

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# ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

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

OF

**Product Name:** PDA Phone

**Brand Name:** HTC

Model Name: PB99110

**Model Different:** N/A

FCC ID: NM8PB99110

IC: 4115B-PB99110

**Report No.:** EH/2009/C0008

**Issue Date:** Dec. 21, 2009

FCC Rule Part: 2,22H & 24E

IC Rule Part: RSS 132, Issue 2 and RSS 133, Issue 5

**Prepared for:** HTC Corporation

No.23, Xinghua Rd., Taoyuan City, Taoyuan

County 330, Taiwan, R.O.C

Prepared by: SGS Taiwan Ltd.

**Electronics & Communication Laboratory** 

No. 134, Wu Kung Rd., Wuku Industrial Zone,

Taipei County, Taiwan.

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# VERIFICATION OF COMPLIANCE

**HTC Corporation** 

**Applicant:** No.23, Xinghua Rd., Taoyuan City, Taoyuan County 330,

Taiwan, R.O.C

**Product Name:** PDA Phone

**Brand Name:** HTC

FCC ID: NM8PB99110

**IC:** 4115B-PB99110

**Model No.:** PB99110

**Model Difference:** N/A

**File Number:** EH/2009/C0008

**Date of Test:** Dec. 01, 2009~ Dec. 18, 2009

**Date of EUT Received:** Dec. 01, 2009

# We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in TIA/EIA-603-C-2004, Issue 2 of RSS-Gen and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rule PART 22 subpart H, PART 24 subpart E and IC standards Issue 2 of RSS-132, Issue 5 of RSS-133.

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

Test By:	Lazz Huang	Date:	Dec. 21, 2009	
	Jazz Huang / Engineer			
Prepared By:	Gigi yeh	Date:	Dec. 21, 2009	
-	Gigi Yeh / Clerk			
Approved By	Timent Su	Date:	Dec. 21, 2009	
-	Vincent Su / Manager			

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# Version

Version No.	Date	Description
00	Dec. 21, 2009	Initial creation of document

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# 1. GENERAL PRODUCT INFORMATION

#### General:

General.			
Product Name:	PDA Phone		
Brand Name:	HTC		
Model Name:	PB99110		
Model Difference:	N/A		
Simple Hands-Free (SHF):	1. Model:	RC E151, Supplier: Merry	
Data Cable (USB):	1. Model No.: DC M400, Supplier name : MEC		
LCM:	1. Main source : Model No.: AMS369FG03-0, Supplier name : SAMSUNG		
Camera	<ol> <li>Main source : Model No.: 08PM15A, Supplier name : LITEON</li> <li>2nd source : Model No.: 08PM15B, Supplier name : LITI</li> </ol>		
	3.7 Vdc re-ch	nargeable battery or 5Vdc by AC/DC power adapter	
Power Supply:	Battery:	<ol> <li>Model: BB99100, Supplier: HT ENERGY</li> <li>Model: BB99100, Supplier: FORMOSA</li> </ol>	
	Adapter:	1. Model: PSAA05A-050, Supplier: PHIHONG	

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### GSM / WCDMA

	Operating Frequency	ating Frequency			
	E-GSM/GPRS 850 Class 10 824.2 MHz– 848.8 MHz		33 dBm		
	E-GSM/GPRS 900 Class 10	880.2MHz – 914.8MHz	33 dBm		
Cellular Phone Standards	E-GSM/GPRS 1800 Class 10	1710.2MHz – 1784.8MHz	30 dBm		
Frequency Range and	E-GSM/GPRS 1900 Class 10	1850.2MHz – 1909.8MHz	30 dBm		
Power	WCDMA/HSUPA/HSDPA Band I	1920MHz – 1980MHz	24 dBm		
	WCDMA/HSUPA/HSDPA Band II	1852.4MHz – 1907.6MHz	24 dBm		
	WCDMA/HSUPA/HSDPA Band V	A 826.4MHz – 846.6MHz			
	HSUPA data rate: uplink up to 2Mbps				
	HSDPA data rate: downlink up	to 7.2Mbps			
	GSM850: 248KGXW, GSM19				
Type of Emission:	EDGE 850: 248KG7W, EDGE				
	WCDMA Band II: 4M18F9W,	WCDMA Band V: 4M20F9W			
IMEI	35495803011788				
Software Version	N/A				
Hardware Version	N/A				

WLAN: 802 11 b/g

WLAN: 802.11 0/g			
Frequency Range:	2412 – 2462 MHz		
Channel number:	11 channels		
Max. Output Power:	⊠802.11 b: 20.12 dBm (Peak) / 17.59 dBm (Avg.) ⊠802.11 g: 15.55 dBm (Peak) / 12.09 dBm (Avg.)		
Modulation Technology:	⊠DSSS, ⊠OFDM		
Modulation type:	CCK, DQPSK, DBPSK for DSSS 64QAM. 16QAM, QPSK, BPSK for OFDM		
Transition Rate:	802.11 b: 1/2/5.5/11 Mbps; 802.11 g: 6/9/12/18/24/36/48/54 Mbps		
Antenna Designation:	PIFA Antenna, 1.1dBi.		
Type of Emission:	16M3D1D		

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Frequency Range:	2402 – 2480MHz
Bluetooth Version:	<ul> <li>V1.1 (GFSK)</li> <li>V1.2 (GFSK)</li> <li>V2.0 (GFSK)</li> <li>V2.0 + EDR (GFSK + π/4DQPSK + 8DPSK)</li> <li>V2.1 + EDR (GFSK + π/4DQPSK + 8DPSK)</li> </ul>
Channel number:	79 channels
Modulation type:	Frequency Hopping Spread Spectrum
Transmit Power:	0.91 dBm
Dwell Time:	<= 0.4s
Operating Mode:	Point-to-Point
Antenna Designation:	PIFA Antenna, 1.1dBi.
Type of Emission:	1M17FXD

The EUT is compliance with Bluetooth 2.1 + EDR Standard.

### GPS:

Receiver Frequency	L1 Band, 1575.42MHz
Frequency Conversion os- cillator	19.2MHz
Antenna Designation	mono pole

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

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

This submittal(s) (test report) is intended for FCC ID: <u>NM8PB99110</u> filing to comply with Section Part 22 subpart H, Part 24 subpart E of the FCC CFR 47 Rules and IC: <u>4115B-PB99110</u> filing to comply with Issue 2 of RSS-132, Issue 5 of RSS-133

### 1.2. Test Methodology

Both conducted and radiated testing were performed according to the procedures document on chapter 13 of TIA/EIA 603C and FCC 47 CFR 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, issue 2 of RSS-132 and issue 3 of RSS-133.

### 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 TIA/EIA 603C. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz us- ing CISPR Quasi-Peak and Average detector mode.

#### 2.3.2 Conducted Measurement at Antenna Port:

According to measurement procured TIA/EIA 603C and RSS-Gen, 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):

According to measurement procured TIA/EIA 603C and RSS-Gen, The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both Horizontal and Vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna according to the requirements in Section 8 and 13 of ANSI C63.4:2003.

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# 2.4. Measurement Equipment Used:

AC POWER LINE CONDUCTED EMISSION EQUIPMENT List										
EQUIPMENT	MFR	MFR MODEL SERIAL LAST								
TYPE		NUMBER	NUMBER	CAL.						
EMI Test Receiver	R&S	ESCS30	828985/004	09/15/2009	09/14/2010					
LISN	Rolf-Heine	NNB-2/16Z	99012	02/02/2009	02/01/2010					
LISN	FCC	FCC-LISN-50/250-25-2-01	04034	02/02/2009	02/01/2010					
Coaxial Cables	N/A	WK CE Cable	N/A	11/28/2009	11/27/2010					

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	01/23/2008	01/22/2010					
Radio Communication Analyzer	R&S	CMU200	102189	05/13/208	05/12/2010					
800 – 1000MHz Filter	00MHz Micro-Tronics		001	01/05/2009	01/04/2010					
1800 – 2000MHz Filter	Micro-Tronics	BRM13463	001	01/05/2009	01/04/2010					
Temperature Chamber	TERCHY	MHG-120LF	911009	04/14/2008	04/13/2010					
Temperature Chamber	GIANT FORCE	GTH-150-40- CP-AR	MAA0512-018	02/05/2008	02/04/2010					
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	Attenuator Mini-Circuit		N/A	07/05/2009	07/04/2010					
Splitter	Agilent	11636B	N/A	07/05/2009	07/04/2010					
DC Power Supply	Chroma	41901	777188	04/17/2008	04/16/2010					

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966 Chamber									
EQUIPMENT	MFR	MODEL	SERIAL	LAST	CAL DUE.				
TYPE		NUMBER	NUMBER	CAL.					
Spectrum Analyzer	R&S	FSP 40	100034	02/12/2009	02/11/2010				
Bilog Antenna	SCHWAZBECK	VULB9160	3136	11/19/2009	11/18/2010				
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	01/22/2008	01/21/2010				
Horn antenna	SCHWAZBECK	BBHA 9120D	9120D-673	05/09/2008	05/08/2010				
Signal Generator	R&S	SMR40	100210	01/22/2008	01/21/2010				
Signal Generator	Agilent	E4438C	MY45093613	06/11/2009	06/10/2010				
Pre-Amplifier	Agilent	8447D	1937A02834	11/28/2009	11/27/2010				
Pre-Amplifier	Agilent	8449B	3008A01973	01/05/2009	01/04/2010				
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	01/05/2009	01/04/2010				
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	01/05/2009	01/04/2010				
Filter 800-1000	Micro-Tronics	BRM13462	1	01/05/2009	01/04/2010				
Filter 1800-2000	Micro-Tronics	BRM13463	1	01/05/2009	01/04/2010				
3m Site	SGS	966 chamber	N/A	11/08/2009	11/09/2010				

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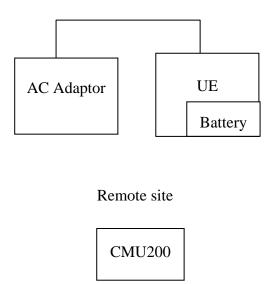


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### 2.5. Configuration of Tested System

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



**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.	AC Adaptor	PHIHONG	TC U100	79H00055-38P	N/A	180cm, Un-shielded

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# 3. SUMMARY OF TEST RESULTS

FCC Rules	FCC Rules	Description Of Test	Result
§2.1046(a)	N/A	RF Power Output	Compliant
\$2.1046(a) \$22.913(a)(2) \$24.232(c)	§4.8 (RSS-Gen) §4.4 (RSS-132) §6.4 (RSS-133)	ERP/ EIRP measurement	Compliant
§2.1049(h)	§4.6.1 (RSS-Gen) §2.3 (RSS-133)	99% Occupied Bandwidth	Compliant
\$2.1051 \$22.917(a) \$24.238(a)	§4.9 (RSS-Gen) §4.5 (RSS-132) §6.5 (RSS-133)	Out of Band Emissions at Antenna Terminals and Band Edge	Compliant
\$2.1053 \$22.917(a) \$24.238(a)	§4.9 (RSS-Gen) §4.5 (RSS-132) §6.5 (RSS-133)	Field Strength of Spurious Radiation	Compliant
\$2.1055(a)(1) \$22.355 \$24.235	§4.7 (RSS-Gen) §4.3 (RSS-132) §6.3 (RSS-133)	Frequency Stability vs. Temperature	Compliant
\$2.1055(d)(2) \$22.355 \$24.235	§4.7 (RSS-Gen) §4.3 (RSS-132) §6.3 (RSS-133)	Frequency Stability vs. Voltage	Compliant
N/A	§4.10 (RSS-Gen) §4.6 (RSS-132) §6.6 (RSS-133)	Receiver Spurious Emissions	Compliant
TIA/EIA 603C 2.1.3	§7.2.2 (RSS-Gen)	AC Power Line Conducted Emission	N/A

### Max ERP/EIRP measurement result:

	dBm	dB	W
GSM 850 Band	31.90	ERP	1.549
GSM 1900 Band	26.94	EIRP	0.494
EDGE 850 Band	28.49	ERP	0.706
EDGE 1900 Band	27.87	EIRP	0.612
WCDMA Band II	22.25	EIRP	0.168
WCDMA Band V	23.42	ERP	0.220
HSUPA Band II	20.92	EIRP	0.124
HSUPA Band V	21.79	ERP	0.151

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### 4. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

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

The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for GSM/GPRS/EDGE and WCDMA/HSDPA/HSUPA Band II, V with power adaptor. The worst-case of E1 position for GSM 850 band, E1 position for GSM 1900, H position for WCDMA Band II and E1 position for WCDMA Band 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 to 2W.

3GPP Power limitation for HSDPA and HSUPA

### Maximum Output Powers for HSDPA

Sub-test in table	Power	Class 3	Power Class 4		
C.10.1.4	Power (dBm)			Tol (dB)	
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)	
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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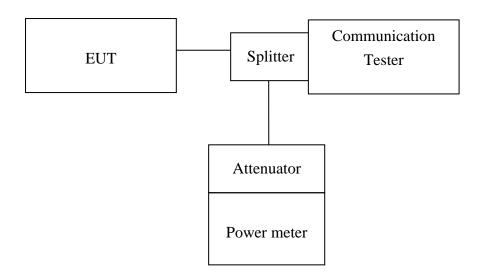
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## 5.2. Test Set-up:



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 KDB941125 (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:

# 5.5.1. RF Conducted Output Power

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

#### **Result:**

	СН		1 Time Slot				2 Time Slot			
Frequency	Frequency		GMSK Mode		8-PSK Mode		GMSK Mode		8-PSK Mode	
(MHz)		Peak Power (dBm)	AV Power (dBm)	Peak Power (dBm)	AV Power (dBm)	Peak Power (dBm)	AV Power (dBm)	Peak Power (dBm)	AV Power (dBm)	
824.2	128	32.9	32.8	30.6	27.4	32.4	32.3	29.6	26.4	
836.6	190	33.0	32.9	30.7	27.5	32.5	32.4	29.7	26.5.	
848.8	251	33.0	32.9	30.7	27.5	32.5	32.4	29.7	26.5	
1850.2	512	29.4	29.3	29.3	26.2	28.8	28.7	28.1	25.0	
1880.0	661	29.5	29.4	29.2	26.1	29.0	28.9	28.2	25.1	
1909.8	810	29.3	29.2	29.0	25.9	28.8	28.7	28.0	25.0	

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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)	RMS. Power (dBm)
WYCD) (A	1852.4	9262	26.13	22.93
WCDMA Band II	1880.0	9400	26.05	22.86
	1907.6	9538	25.36	22.76

EUT Mode	Frequency (MHz)	СН	Peak Power (dBm)	RMS. Power (dBm)
	826.4	4132	26.35	22.30
WCDMA Band V	836.6	4183	26.00	22.80
Dulla V	846.6	4233	26.26	22.78

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

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#### 5.5.1.3.:HSDPA Release 6 mode

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

# **HSDPA SUB-TEST Setting**

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

Sub-test	$eta_{ m c}$	$eta_{ m d}$	$eta_{ m d} \ (SF)$	$\beta_c/\beta_d$	β <sub>HS</sub> (Note1, Note 2)	<b>CM (dB)</b> ( <i>Note 3</i> )	MPR (dB) (Note 3)	RMC (Kbps)
1	2/15	15/15	64	2/15	4/15	0.0	0.0	12.2
2	12/15 (Note 4)	15/15 (Note 4)	64	12/15 (Note 4)	24/15	1.0	0.0	12.2
3	15/15	8/15	64	15/8	30/15	1.5	0.5	12.2
4	15/15	4/15	64	15/4	30/15	1.5	0.5	12.2

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

#### **Results:**

ixesuits.							
Mode	Sub-test	RMS	Power (d Channel	Bm)	Power Class 3 Limita-	Comments	
			9400	9538	tion (dBm)		
	1	22.57	22.77	22.56	20.3dBm – 25.7dBm	Pass	
HSDPA	2	22.43	22.45	22.41	20.3dBm – 25.7dBm	Pass	
(B2)	3	21.95	21.93	21.92	19.8dBm – 25.7dBm	Pass	
	4	21.89	21.92	21.87	19.8dBm – 25.7dBm	Pass	

Mode	Sub-test		Power (d Channel	Bm)	Power Class 3 Limita-	Comments
		4132	4183	4233	tion (dBm)	
	1	23.22	23.05	22.97	20.3dBm – 25.7dBm	Pass
HSDPA	2	22.93	22.69	22.65	20.3dBm – 25.7dBm	Pass
(B5)	3	22.76	22.57	22.48	19.8dBm – 25.7dBm	Pass
	4	22.81	22.61	22.54	19.8dBm – 25.7dBm	Pass

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

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

### **HSPA SUB-TEST Setting**

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

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

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

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#### **Results:**

Mode	Sub-test	RMS	Power (d Channel	Bm)	Power Class 3 Limita-	Comments
		9262	9400	9538	tion (dBm)	
1		22.85	22.84	22.70	18.8dBm – 25.7dBm	Pass
	2	21.09	20.91	20.74	16.8dBm – 25.7dBm	Pass
HSUPA(B2)	3	21.91	21.86	21.78	17.8dBm – 25.7dBm	Pass
	4-	21.03	20.96	20.78	16.8dBm – 25.7dBm	Pass
	5	22.74	22.70	22.61	18.8dBm – 25.7dBm	Pass

Mode	Sub-test	RMS	Power (d Channel	Bm)	Power Class 3 Limitation (dBm)	Comments	
		4132	4183	4233	uon (ubm)		
	1	22.96	22.73	22.70	18.8dBm – 25.7dBm	Pass	
	2	21.02	20.81	20.74	16.8dBm – 25.7dBm	Pass	
HSUPA(B5)	3	22.00	21.79	21.78	17.8dBm – 25.7dBm	Pass	
	4	21.07	20.87	20.82	16.8dBm – 25.7dBm	Pass	
	5	22.82	22.56	22.59	18.8dBm – 25.7dBm	Pass	

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### 5.5.2. Minimum Communications Power Measurement

#### PCS 1900 band

PCL	0	1	2	3	4	5	6	7	8
Output power (dBm)	29.4	27.4	25.4	23.4	21.4	19.4	17.4	15.4	13.4
PCL	9	10	11	12	13	14	15	16	17
Output power (dBm)	11.4	9.3	7.3	5.3	3.3	1.3	0.1		

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

#### WCDMA/HSDPA/HSUPA band II

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

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# 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(c) Mobile station are limited to 2W EIRP.

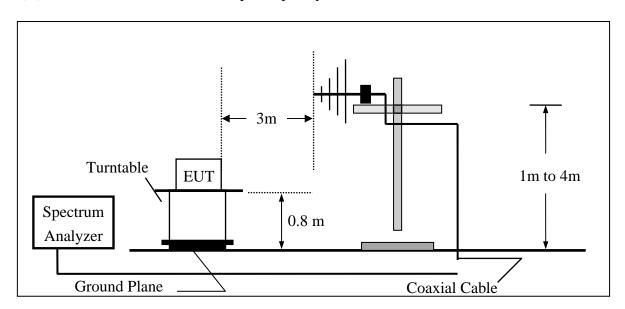
According to IC RSS-133 §6.4

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

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

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

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



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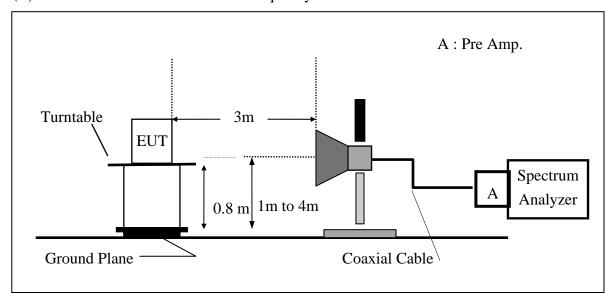
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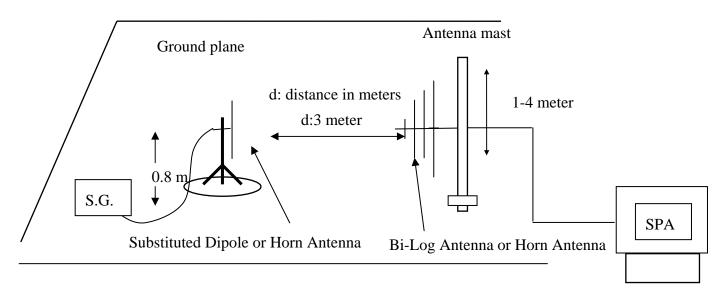
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## (B) Radiated Emission Test Set-UP Frequency Over 1 GHz



### (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 (dBi)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
				V	117.78	31.39	-7.87	3.62	19.89	38.45
			Н	Н	128.80	42.53	-7.87	3.62	31.03	38.45
	004.00	400	E1	V	129.00	42.61	-7.87	3.62	31.11	38.45
	824.20	128	EI	Н	117.27	31.00	-7.87	3.62	19.50	38.45
			E2	V	117.01	30.62	-7.87	3.62	19.12	38.45
			EZ	Н	128.44	42.17	-7.87	3.62	30.67	38.45
	850 836,60		Н	V	117.59	31.34	-7.88	3.65	19.81	38.45
		190	П	Н	128.35	42.12	-7.88	3.65	30.59	38.45
GG3.6.050			E1	V	129.00	42.75	-7.88	3.65	31.22	38.45
GSM 850	830.00	190	EI	Н	117.55	31.32	-7.88	3.65	19.79	38.45
			E2	V	117.09	30.84	-7.88	3.65	19.31	38.45
			EZ	Н	128.35	42.12	-7.88	3.65	30.59	38.45
			Н	V	118.72	32.60	-7.88	3.68	21.04	38.45
	848.80 2		11	Н	128.43	42.24	-7.88	3.68	30.68	38.45
		251	E1	V	129.58	43.46	-7.88	3.68	31.90	38.45
		48.80 251	1 E1	Н	118.42	32.23	-7.88	3.68	20.67	38.45
			E2 -	V	115.89	29.77	-7.88	3.68	18.21	38.45
				Н	129.06	42.87	-7.88	3.68	31.31	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)
			**	V	118.19	13.80	9.90	5.56	18.14	33.00
			Н	Н	127.49	23.31	9.90	5.56	27.65	33.00
	1050 20	710	E1	V	125.75	21.36	9.90	5.56	25.70	33.00
	1850.20	512	151	Н	127.50	23.32	9.90	5.56	27.66	33.00
			E2	V	129.42	25.03	9.90	5.56	29.37	33.00
			EZ	Н	124.35	20.17	9.90	5.84	24.23	33.00
		661 E1	П	V	117.83	13.47	9.99	5.61	17.85	33.00
			Н	Н	129.60	25.46	9.99	5.61	29.83	33.00
DGG 1000	1880.00		E 1	V	125.43	21.07	9.99	5.61	25.45	33.00
PCS 1900	1000.00		EI	Н	127.66	23.52	9.99	5.61	27.89	33.00
			E2	V	128.26	23.90	9.99	5.61	28.28	33.00
			EZ	Н	124.92	20.78	9.99	5.61	25.15	33.00
			Н	V	116.23	11.90	10.08	5.66	16.32	33.00
			П	Н	128.54	24.43	10.08	5.66	28.85	33.00
	1909.80	810	E1	V	124.34	20.01	10.08	5.66	24.43	33.00
		810	EI	Н	126.63	22.52	10.08	5.66	26.94	33.00
			E2	V	129.35	25.02	10.08	5.66	29.44	33.00
			E2	Н	126.14	22.03	10.08	5.66	26.45	33.00

#### Remark:

(1) The RBW,VBW of SPA for frequency RBW=300K, 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)	ERP (dBm)	Limit (dBm)
				V	115.12	28.73	-7.87	3.62	17.23	38.45
			Н	Н	125.52	39.25	-7.87	3.62	27.75	38.45
	02420	100	E1	V	125.56	39.17	-7.87	3.62	27.67	38.45
	824.20	128	EI	Н	114.10	27.83	-7.87	3.62	16.33	38.45
			E2	V	113.90	27.51	-7.87	3.62	16.01	38.45
			Li2	Н	125.23	38.96	-7.87	3.62	27.46	38.45
		100	Н	V	114.85	28.60	-7.88	3.65	17.07	38.45
				Н	124.96	38.73	-7.88	3.65	27.20	38.45
	836.60		E1	V	125.27	39.02	-7.88	3.65	27.49	38.45
EDGE 850	830.00	190	190 E1	Н	113.06	26.83	-7.88	3.65	15.30	38.45
			E2	V	113.93	27.68	-7.88	3.65	16.15	38.45
			EZ	Н	124.55	38.32	-7.88	3.65	26.79	38.45
			Н	V	114.86	28.74	-7.88	3.68	17.18	38.45
			П	Н	124.71	38.52	-7.88	3.68	26.96	38.45
	848.80 2	251	E1	V	126.17	40.05	-7.88	3.68	28.49	38.45
		251	EI	Н	115.23	29.04	-7.88	3.68	17.48	38.45
			E2	V	114.42	28.30	-7.88	3.68	16.74	38.45
			EZ	Н	125.27	39.08	-7.88	3.68	27.52	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)
				V	116.14	11.75	9.90	5.56	16.09	33.00
			Н	Н	126.96	22.78	9.90	5.56	27.12	33.00
	1070 20	710	E1	V	122.04	17.65	9.90	5.56	21.99	33.00
	1850.20	512	EI	Н	123.91	19.73	9.90	5.56	24.07	33.00
			E2	V	127.92	23.53	9.90	5.56	27.87	33.00
			EZ	Н	122.68	18.50	9.90	5.84	22.56	33.00
			н	V	116.13	11.77	9.99	5.61	16.15	33.00
		H	Н	126.93	22.79	9.99	5.61	27.16	33.00	
	1880.00	661	61 E1	V	123.21	18.85	9.99	5.61	23.23	33.00
EDGE 1900	1000.00		EI	Н	124.97	20.83	9.99	5.61	25.20	33.00
			E2	V	127.83	23.47	9.99	5.61	27.85	33.00
			EZ	Н	123.81	19.67	9.99	5.61	24.04	33.00
			Н	V	115.67	11.34	10.08	5.66	15.76	33.00
	1909.80		П	Н	126.04	21.93	10.08	5.66	26.35	33.00
		810	E1	V	123.57	19.24	10.08	5.66	23.66	33.00
		810	EI	Н	124.90	20.79	10.08	5.66	25.21	33.00
			E2	V	126.93	22.60	10.08	5.66	27.02	33.00
			EZ	Н	123.41	19.30	10.08	5.66	23.72	33.00

#### Remark:

(1) The RBW,VBW of SPA for frequency RBW=300K, 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)
			**	V	111.34	6.82	9.48	5.33	10.96	33.00
			Н	Н	122.24	17.91	9.48	5.33	22.05	33.00
	1070 10	00.60	E1	V	120.55	16.03	9.48	5.33	20.17	33.00
	1852.40	9262	LI	Н	121.53	17.20	9.48	5.33	21.34	33.00
			E2	V	120.99	16.47	9.48	5.33	20.61	33.00
			EZ	Н	115.53	11.20	9.90	5.84	15.26	33.00
	[A II 1880.00 9	9400	П	V	110.68	6.18	9.54	5.36	10.35	33.00
			Н	Н	122.39	18.08	9.54	5.36	22.25	33.00
****			E1	V	120.07	15.57	9.54	5.36	19.74	33.00
WCDMA II	1000.00	9400	EI	Н	121.85	17.54	9.54	5.36	21.71	33.00
			E2	V	121.42	16.92	9.54	5.36	21.09	33.00
			EZ	Н	116.41	12.10	9.54	5.36	16.27	33.00
			Н	V	108.73	4.25	9.61	5.40	8.45	33.00
			11	Н	119.43	15.14	9.61	5.40	19.35	33.00
	1907.60	0529	E1	V	117.04	12.56	9.61	5.40	16.76	33.00
		9538	EI	Н	118.59	14.30	9.61	5.40	18.51	33.00
			E2	V	119.19	14.71	9.61	5.40	18.91	33.00
			EZ	Н	114.73	10.44	9.61	5.40	14.65	33.00

#### Remark:

(1) The RBW, VBW of SPA for frequency

RBW = 5MHz, VBW = 5MHz

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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)	ERP (dBm)	Limit (dBm)						
			**	V	109.84	23.48	-7.88	3.63	11.97	38.45						
			Н	Н	120.41	34.15	-7.88	3.63	22.65	38.45						
	025.40	4400	E1	V	120.35	33.99	-7.88	3.63	22.48	38.45						
	826.40	4132	EI	Н	110.00	23.74	-7.88	3.63	12.24	38.45						
			E2	V	108.08	21.72	-7.88	3.63	10.21	38.45						
			EZ	Н	120.23	33.97	-7.88	3.63	22.47	38.45						
		4183	П	V	110.37	24.11	-7.88	3.65	12.58	38.45						
			Н	Н	120.88	34.65	-7.88	3.65	23.12	38.45						
WCDMA	836.60		E1	V	121.21	34.95	-7.88	3.65	23.42	38.45						
Band V	830.00		4183	4183	4183	4183	4183	4183	4183	EI	Н	110.40	24.17	-7.88	3.65	12.64
			E2	V	108.22	21.96	-7.88	3.65	10.43	38.45						
			EZ	Н	120.35	34.12	-7.88	3.65	22.59	38.45						
			Н	V	109.23	23.08	-7.88	3.67	11.53	38.45						
846.60			П	Н	119.56	33.36	-7.88	3.67	21.81	38.45						
	946 60		T/ 1	V	120.45	34.29	-7.88	3.67	22.74	38.45						
	840.00	4233	E1	Н	109.73	23.53	-7.88	3.67	11.98	38.45						
			E2 -	V	107.58	21.43	-7.88	3.67	9.88	38.45						
			E2	Н	120.02	33.82	-7.88	3.67	22.27	38.45						

#### Remark:

(1) The RBW, VBW of SPA for frequency

RBW = 5MHz, VBW = 5MHz

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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)
HSUPA Band II	1852.40	9262	Н	V	109.20	4.68	9.48	5.33	8.82	33.00
				Н	119.33	15.00	9.48	5.33	19.14	33.00
			E1	V	118.53	14.01	9.48	5.33	18.15	33.00
				Н	120.22	15.89	9.48	5.33	20.03	33.00
			E2	V	121.30	16.78	9.48	5.33	20.92	33.00
				Н	116.09	11.76	9.90	5.84	15.82	33.00
	1880.00	9400	Н	V	109.68	5.18	9.54	5.36	9.35	33.00
				Н	119.01	14.70	9.54	5.36	18.87	33.00
			E1	V	117.82	13.32	9.54	5.36	17.49	33.00
				Н	120.61	16.30	9.54	5.36	20.47	33.00
			E2	V	121.06	16.56	9.54	5.36	20.73	33.00
				Н	116.87	12.56	9.54	5.36	16.73	33.00
	1907.60	9538	Н	V	108.09	3.61	9.61	5.40	7.81	33.00
				Н	117.59	13.30	9.61	5.40	17.51	33.00
			E1	V	115.63	11.15	9.61	5.40	15.35	33.00
				Н	118.18	13.89	9.61	5.40	18.10	33.00
			E2	V	118.73	14.25	9.61	5.40	18.45	33.00
				Н	114.50	10.21	9.61	5.40	14.42	33.00

#### Remark:

(1) The RBW, VBW of SPA for frequency

RBW = 5MHz, VBW = 5MHz

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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)	ERP (dBm)	Limit (dBm)
HSUPA Band V	826.40	4132	Н	V	108.64	22.28	-7.88	3.63	10.77	38.45
				Н	119.65	33.39	-7.88	3.63	21.89	38.45
			E1	V	119.47	33.11	-7.88	3.63	21.60	38.45
				Н	107.51	21.25	-7.88	3.63	9.75	38.45
			E2	V	108.32	21.96	-7.88	3.63	10.45	38.45
				Н	118.85	32.59	-7.88	3.63	21.09	38.45
	836.60	4183	Н	V	109.23	22.97	-7.88	3.65	11.44	38.45
				Н	119.57	33.34	-7.88	3.65	21.81	38.45
			E1	V	120.27	34.01	-7.88	3.65	22.48	38.45
				Н	108.67	22.44	-7.88	3.65	10.91	38.45
			E2	V	108.56	22.30	-7.88	3.65	10.77	38.45
				Н	119.55	33.32	-7.88	3.65	21.79	38.45
	846.60	4233	Н	V	107.92	21.77	-7.88	3.67	10.22	38.45
				Н	118.31	32.11	-7.88	3.67	20.56	38.45
			E1	V	119.23	33.07	-7.88	3.67	21.52	38.45
				Н	108.33	22.13	-7.88	3.67	10.58	38.45
			E2	V	107.34	21.19	-7.88	3.67	9.64	38.45
				Н	118.54	32.34	-7.88	3.67	20.79	38.45

### Remark:

(1) The RBW, VBW of SPA for frequency

RBW = 5MHz, VBW = 5MHz

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### 7. 99% OCCUPIED BANDWIDTH MEASUREMENT

## 7.1. Standard Applicable:

According to §FCC 2.1049.

According to IC RSS-Gen §4.6.1

According to IC RSS-133 §2.3

### 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 was set to about 1% of emission BW, VBW= 3 times RBW (10/30KHz) for GSM/EDGE; VBW= 3 times RBW (47/150KHz) for WCDMA/HSUPA, -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	0.2488
GSM 850	836.60	190	0.2438
	848.80	251	0.2466

EUT Mode	Frequency (MHz)	CH 99% Bandwid (MHz)	
	1850.20	512	0.2438
PCS 1900	1880.00	661	0.2529
	1909.80	810	0.2447

EUT Mode	* * (CH		99% Bandwidth (MHz)
	824.20	128	0.2475
EDGE 850	836.60	190	0.2484
	848.80	251	0.2450

EUT Mode	Frequency (MHz)	CH 99% Bandwid (MHz)	
	1850.20	512	0.2483
EDGE 1900	1880.00	661	0.2474
	1909.80	810	0.2426

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EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
	1852.40	9262	4.1761
WCDMA II	1880.00	9400	4.1601
	1907.60	9538	4.1859

EUT Mode	1 * 1 (CH		99% Bandwidth (MHz)
	826.40	4132	4.2087
WCDMA V	836.00	4180	4.1654
	846.60	4233	4.1506

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
	1852.4	9262	4.1846
HSUPA II	1880.0	9400	4.1836
	1907.6	9538	4.1565

EUT Mode	Frequency (MHz)	СН	99% Bandwidth (MHz)
	826.40	4132	4.1910
HSUPA V	836.60	4183	4.1804
	846.60	4233	4.1576

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Figure 7-1: GSM Channel Low

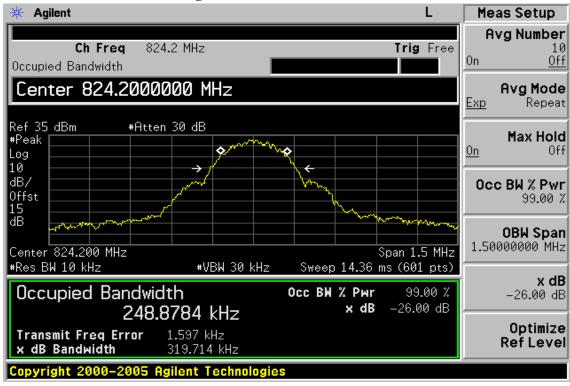
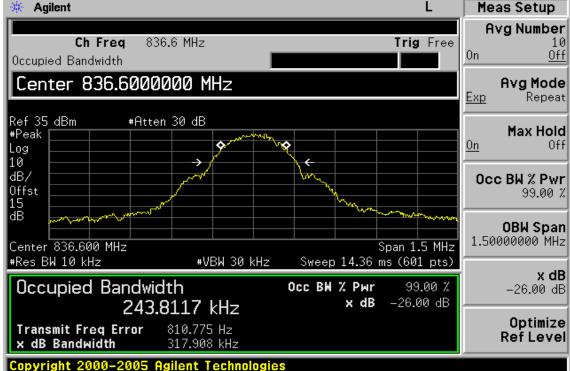


Figure 7-2 GSM Channel Mid



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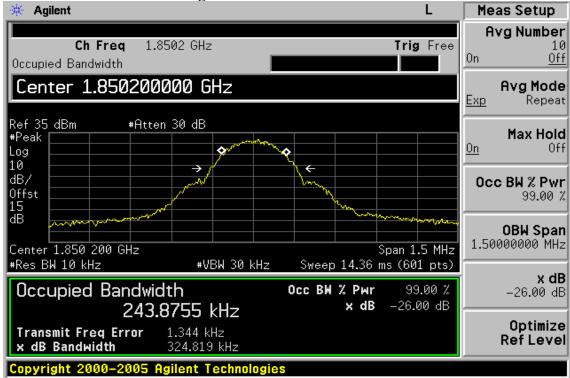
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Figure 7-3: GSM Channel High







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Figure 7-5 PCS Channel Mid

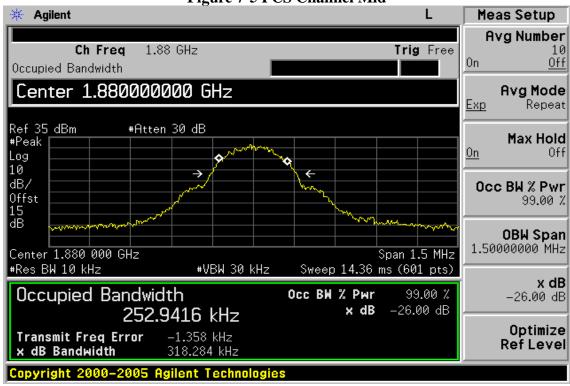
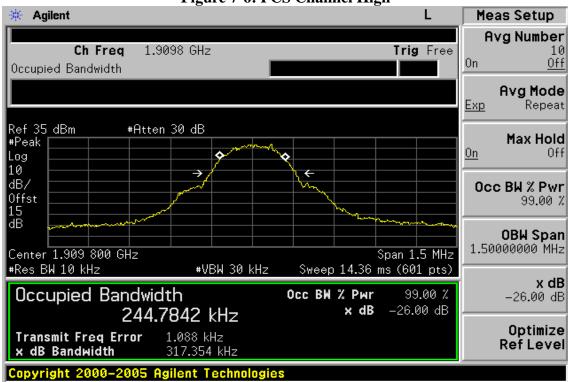


Figure 7-6: PCS Channel High



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Figure 7-7: EDGE 850 Channel Low

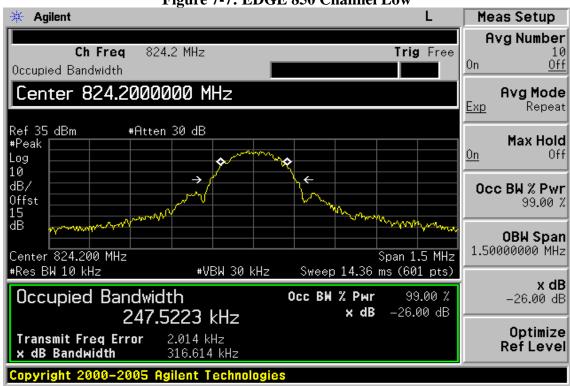
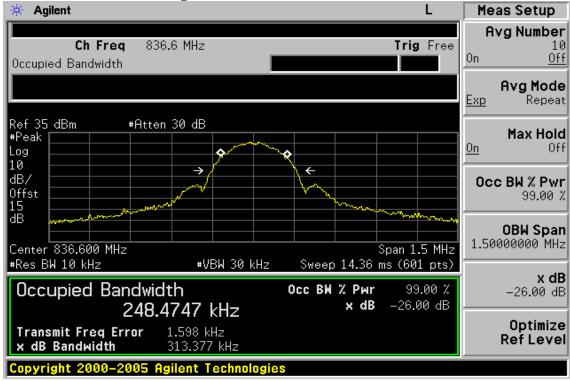


Figure 7-8 EDGE 850 Channel Mid



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Figure 7-9: EDGE 850 Channel High

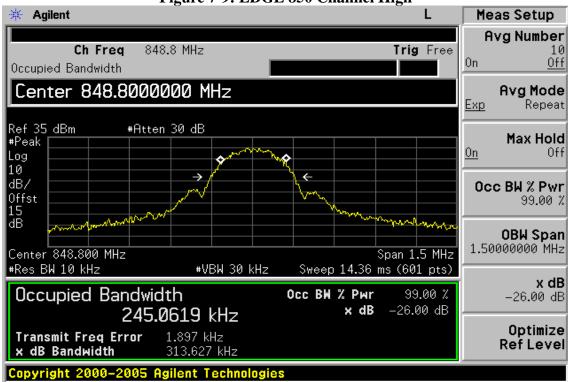
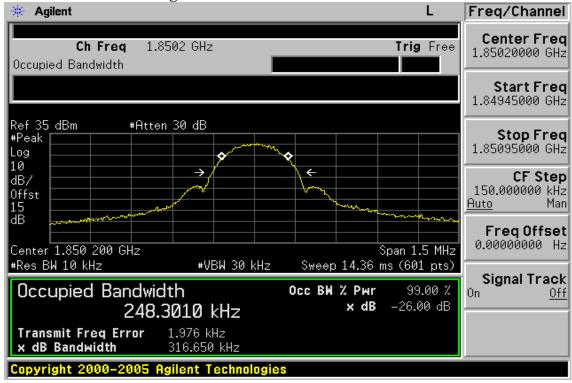


Figure 7-10: EDGE 1900 Channel Low



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Figure 7-11 EDGE 1900 Channel Mid

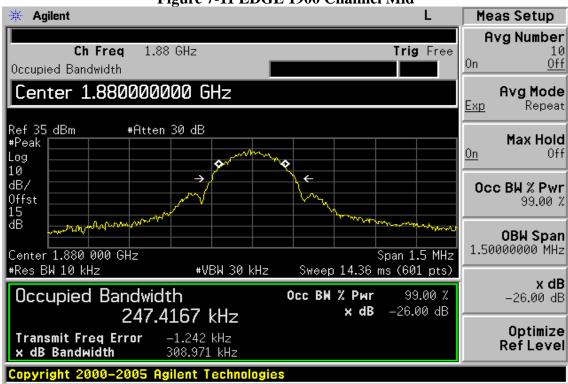
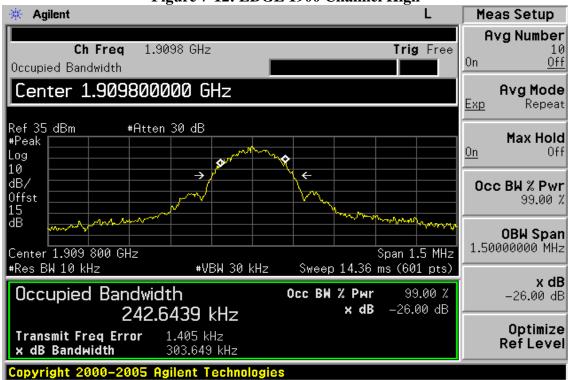


Figure 7-12: EDGE 1900 Channel High



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Figure 7-13: WCDMA II Channel Low

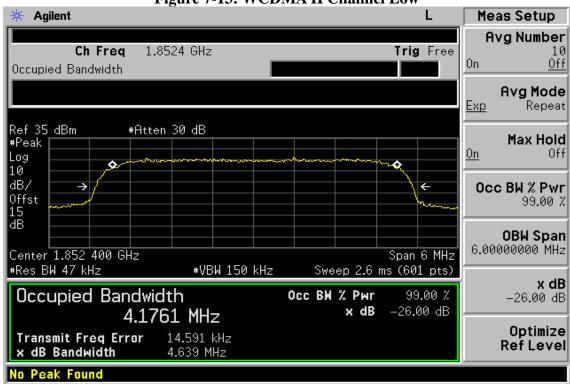
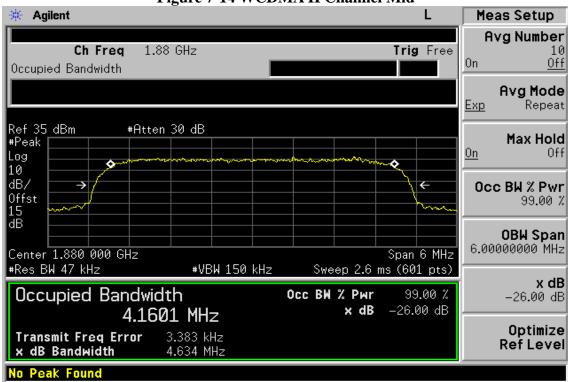


Figure 7-14 WCDMA II Channel Mid



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Figure 7-15: WCDMA II Channel High

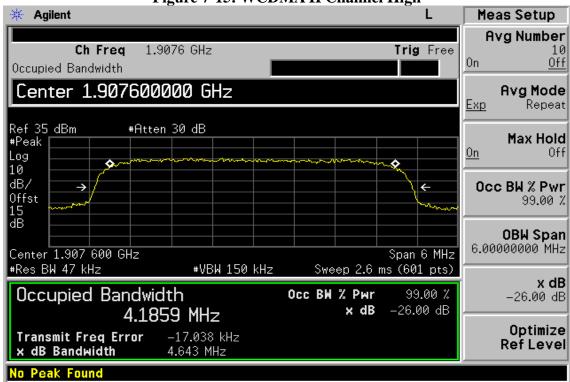
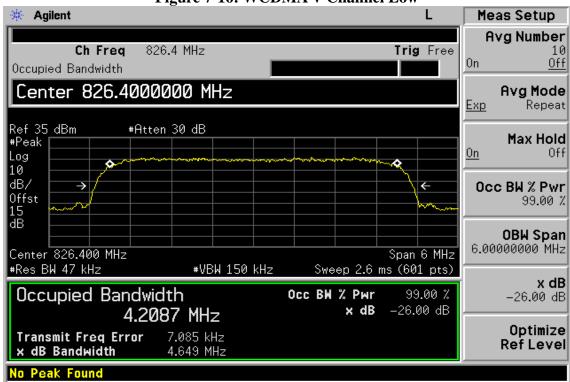


Figure 7-16: WCDMA V Channel Low



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**Figure 7-17 WCDMA II Channel Mid** 

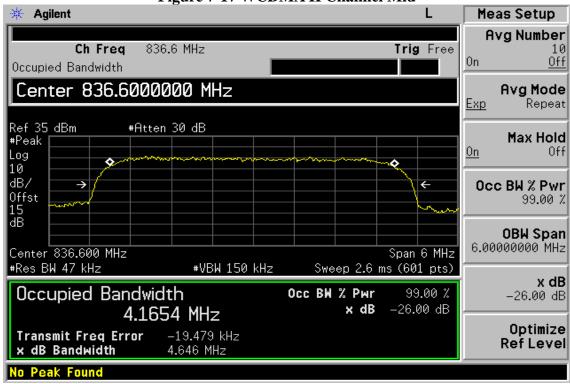
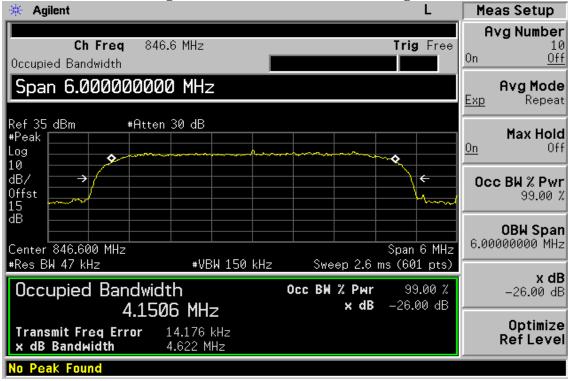


Figure 7-18: WCDMA II Channel High



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Figure 7-19: HSUPA II Channel Low

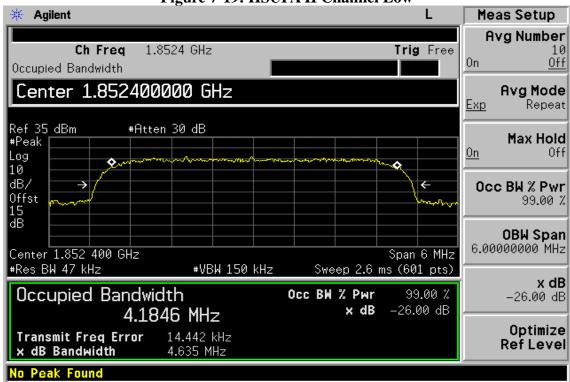
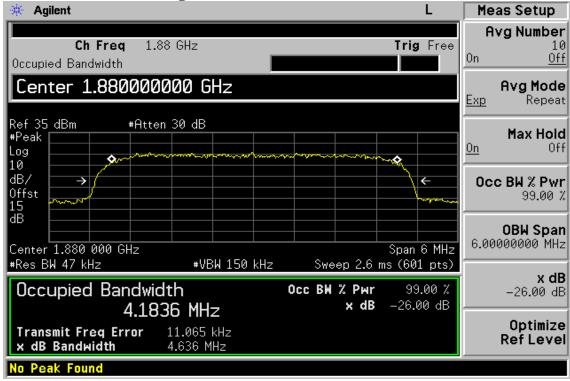


Figure 7-20 HSUPA II Channel Mid



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Figure 7-21: HSUPA II Channel High

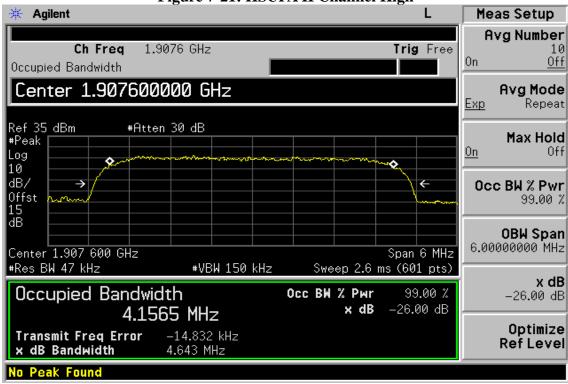
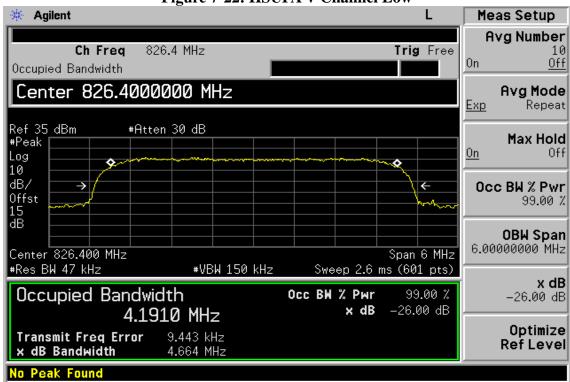


Figure 7-22: HSUPA V Channel Low



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Figure 7-23 HSUPA V Channel Mid

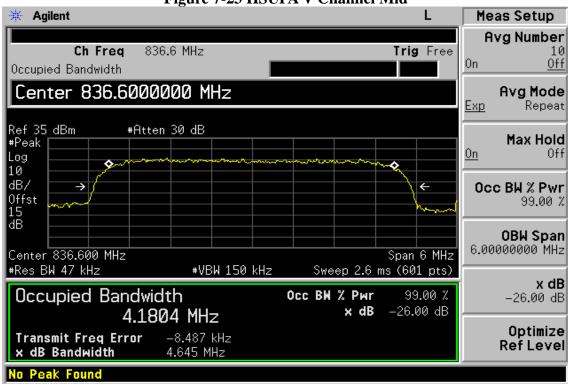
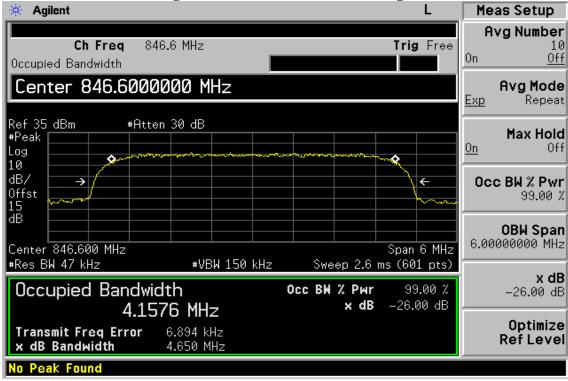


Figure 7-24: HSUPA V Channel High



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## 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)

According to RSS-132 §4.5

#### 4.5.1 Out-of-block Emissions

Mobile and base station equipment with emission bandwidth less than or equal to 4 MHz shall comply with 4.5.1.1. Mobile station equipment with emission bandwidth greater than 4 MHz shall comply with 4.5.1.2. Base station equipment with emission bandwidth greater than 4 MHz shall comply with either 4.5.1.2 or 4.5.1.3.

- 4.5.1.1 In the first 1.0 MHz band immediately outside and adjacent to the licensee's frequency block, the power of emissions per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in watts) by at least 43 + 10 log (P), dB. After the first 1.0 MHz, the power of emissions shall be attenuated below the transmitter output power by at least
- $43 + 10 \log (P)$ , dB, in any 100 kHz bandwidth.
- 4.5.1.2 In the first 1.0 MHz band immediately outside and adjacent to the licensee's frequency block, the power of emissions per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in watts) by at least 43 + 10 log (P), dB. After the first 1.0 MHz, the power of emissions shall be attenuated below the transmitter output power by at least
- 43 + 10 log (P), dB, in any 1 MHz bandwidth

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According to RSS-133 §6.5

#### 6.5.1 Out-of-Block Emissions

a. Mobile stations must comply with subsection i. below.

In the first 1.0MHz band immediately outside and adjacent to the licensee's frequency block. the power of emissions per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in watts) by at least  $43 + 10 \log (P) dB$ .

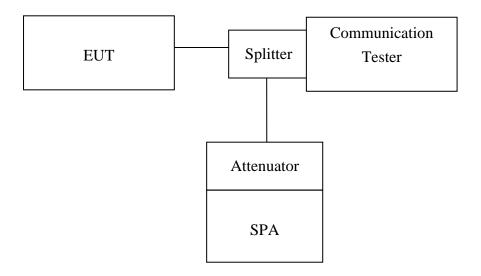
b. After the first 1.0 MHz (for equipment that complies with a.i. of this subsection) or 1.5 MHz (for equipment that complies with all of this subsection), the power of emissions shall be attenuated below the transmitter output power by at least  $43 + 10 \log (P)$ , dB, per any MHz of bandwidth.

(Note: If the test result using 1% of the emission bandwidth is used, then power integration over 1.0 MHz is required; alternatively, the spectrum analyzer resolution and video bandwidths can be increased to 1.0 MHz for this measurement).

#### 6.5.2 Out-of-Sub-band Emissions

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

## 8.2. Test SET-UP:



Note: Measurement setup for testing on Antenna connector

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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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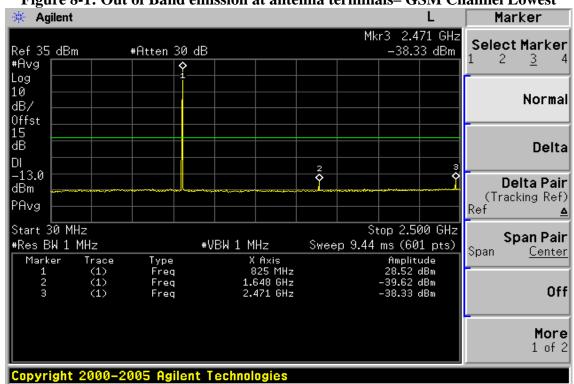


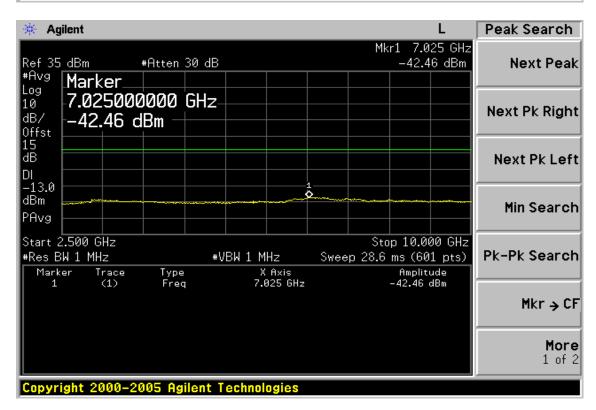
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## 8.5. Measurement Result:

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





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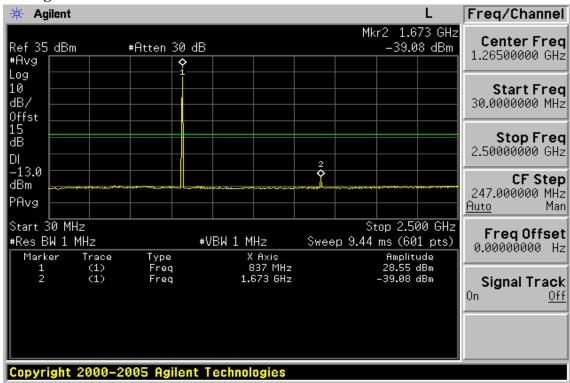
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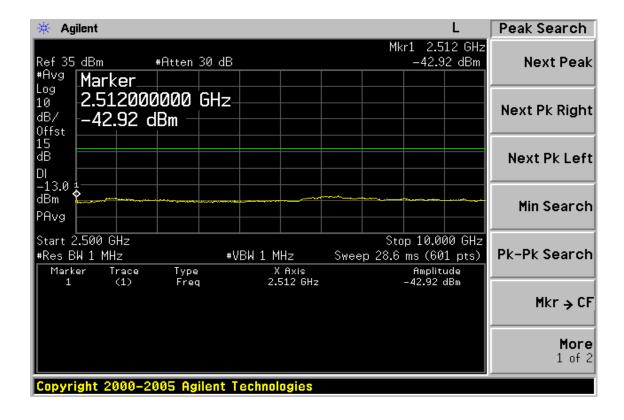


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Figure 8-2: Out of Band emission at antenna terminals –GSM Channel Mid





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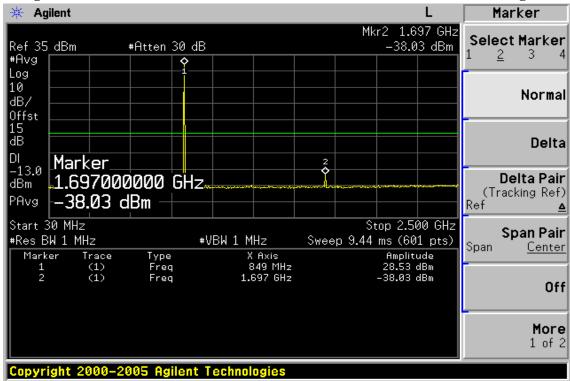
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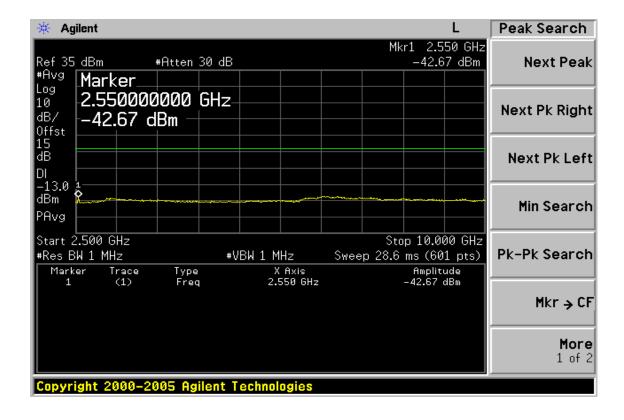


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Figure 8-3: Out of Band emission at antenna terminals-GSM Channel Highest





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



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



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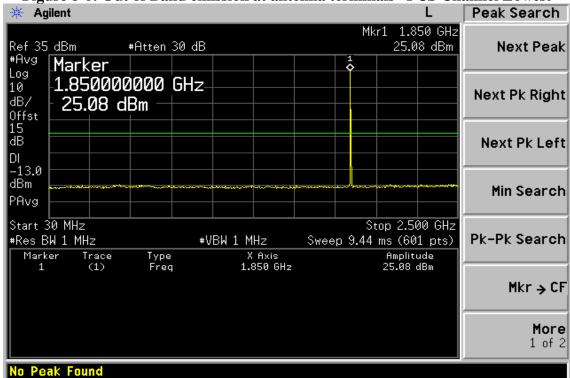
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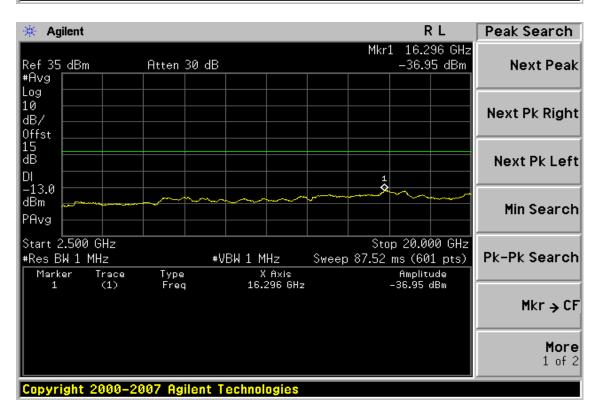


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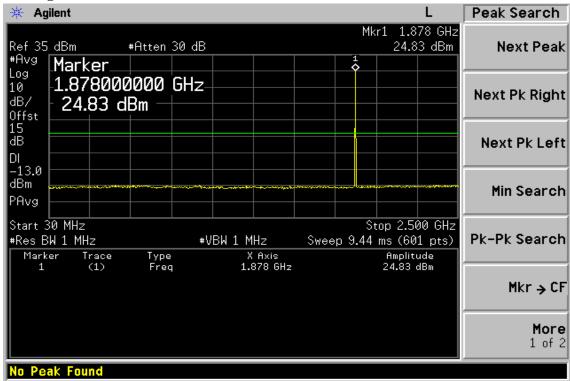


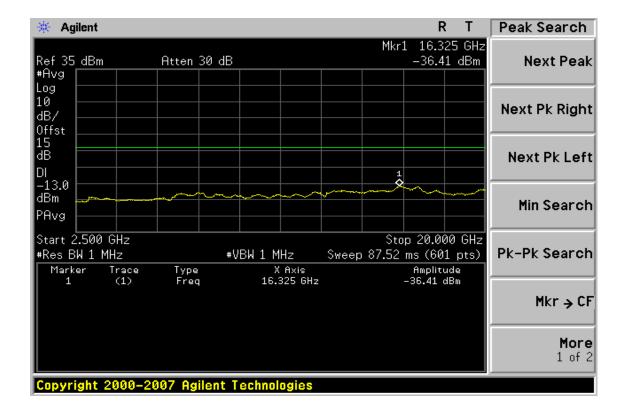
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Figure 8-7: Out of Band emission at antenna terminals –PCS Channel Mid





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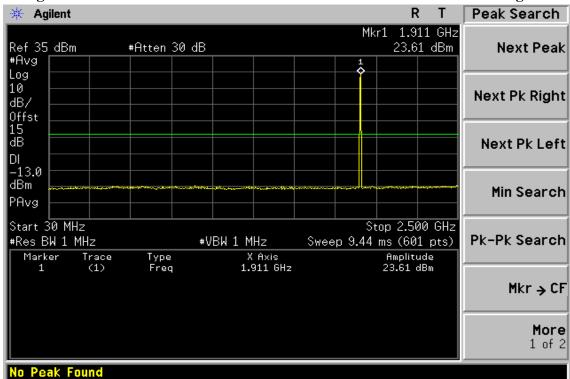
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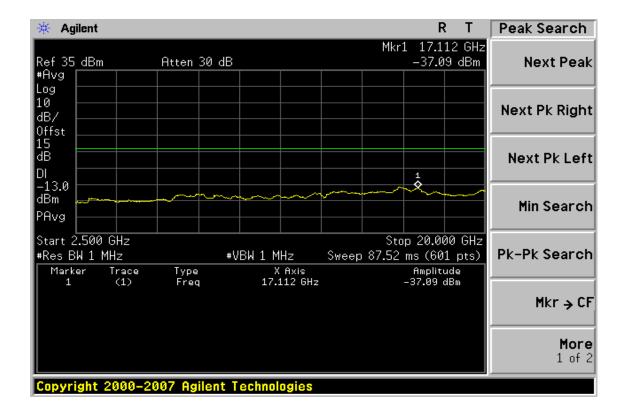


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Figure 8-8: Out of Band emission at antenna terminals-PCS Channel Highest





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Figure 8-9: Band edge emission at antenna terminals – PCS Channel Lowest

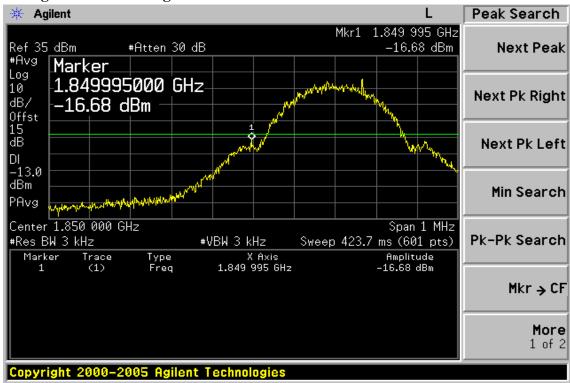
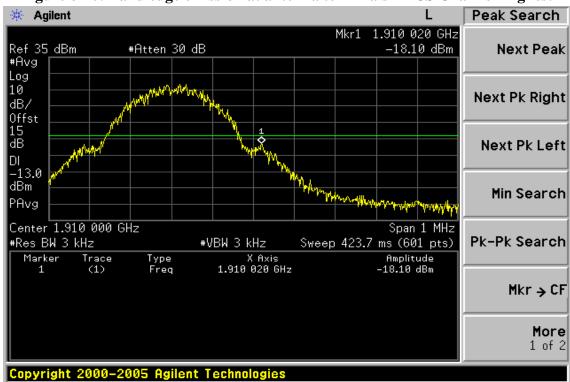


Figure 8-10: Band edge emission at antenna terminals – PCS Channel Highest



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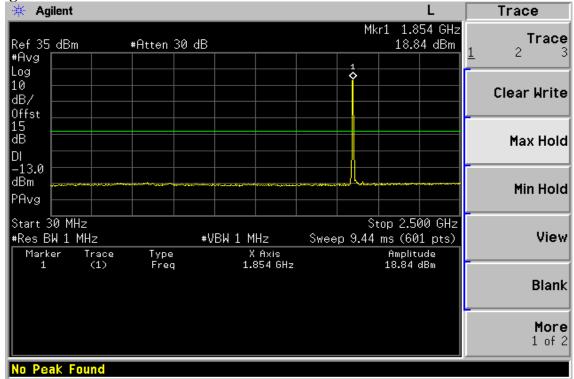
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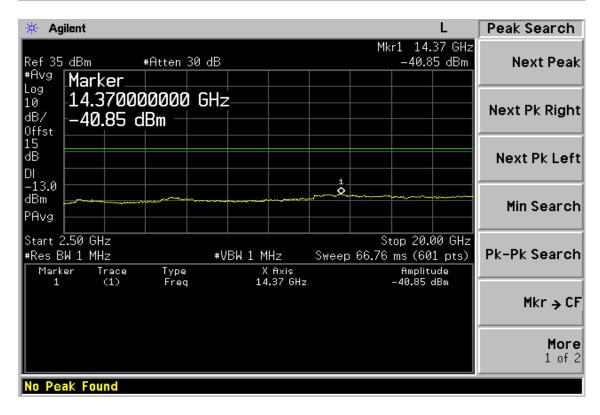


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Figure 8-11: Out of Band emission at antenna terminals- WCDMA II Channel Lowest





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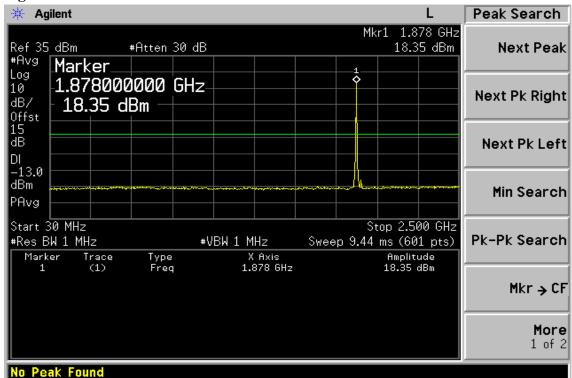
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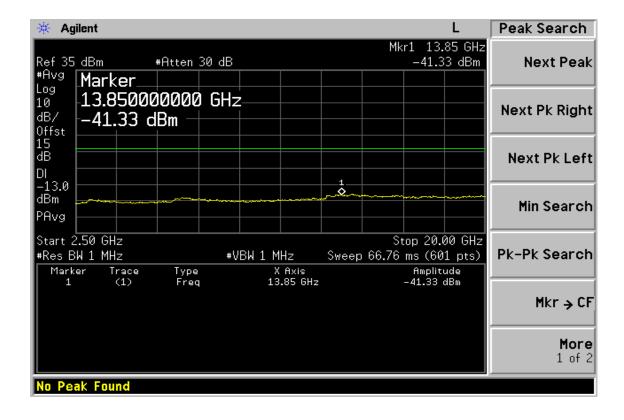


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Figure 8-12: Out of Band emission at antenna terminals –WCDMA II Channel Mid





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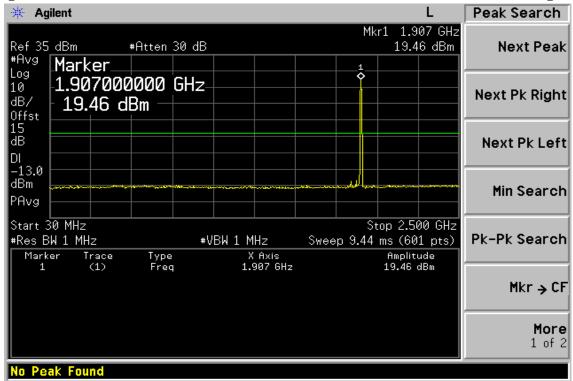
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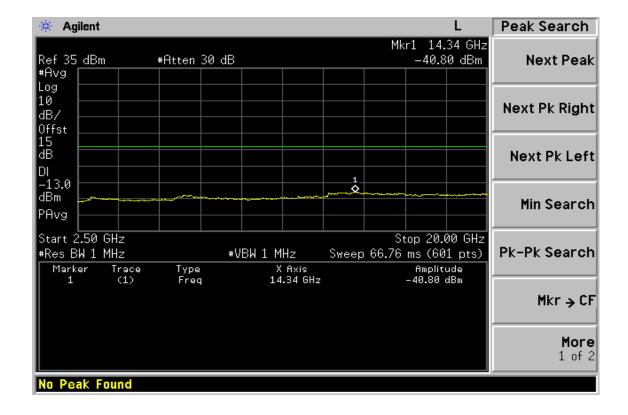


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Figure 8-13: Out of Band emission at antenna terminals-WCDMA II Channel Highest





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

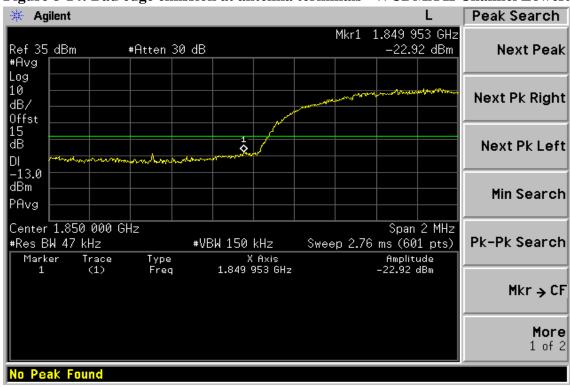
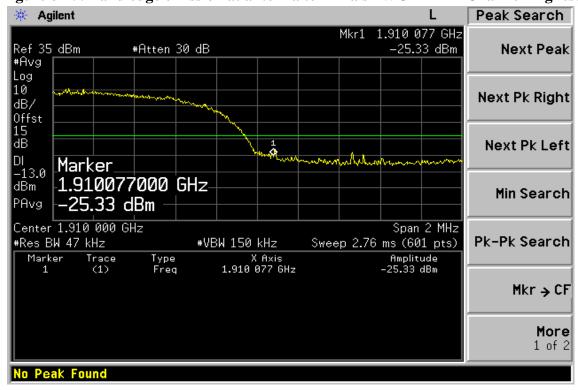


Figure 8-15: Band edge emission at antenna terminals –WCDMA II Channel Highest



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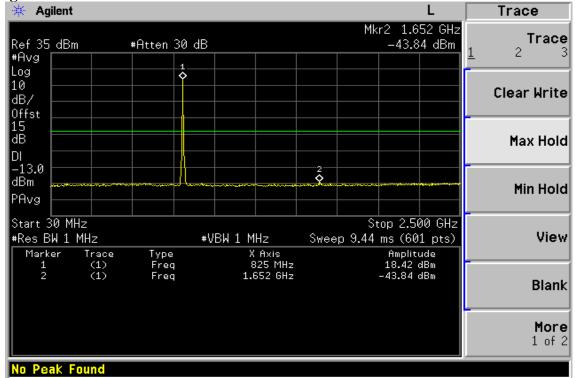
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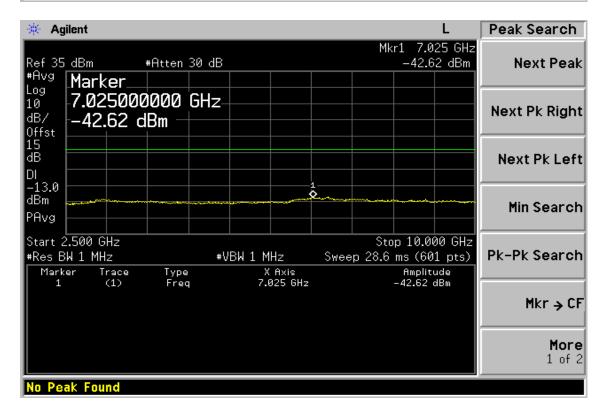


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Figure 8-16: Out of Band emission at antenna terminals-WCDMA V Channel Lowest





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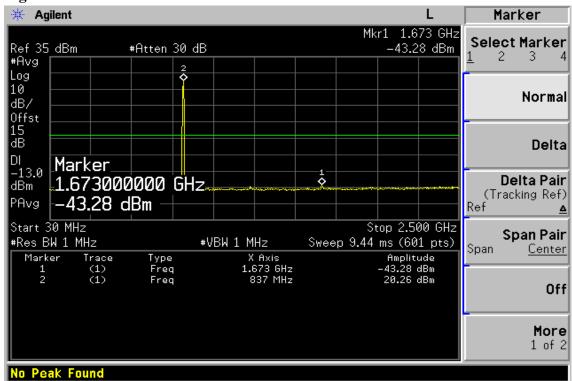
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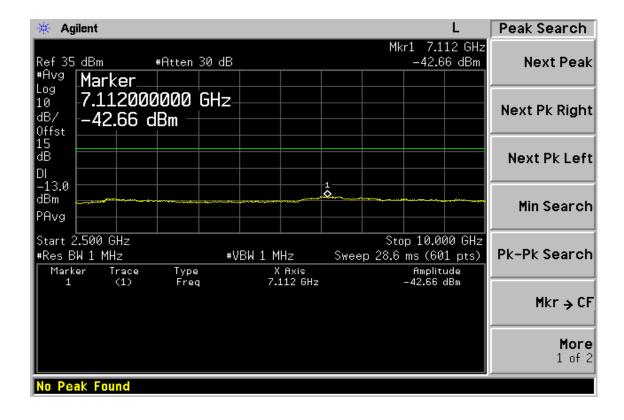


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Figure 8-17: Out of Band emission at antenna terminals –WCDMA V Channel Mid





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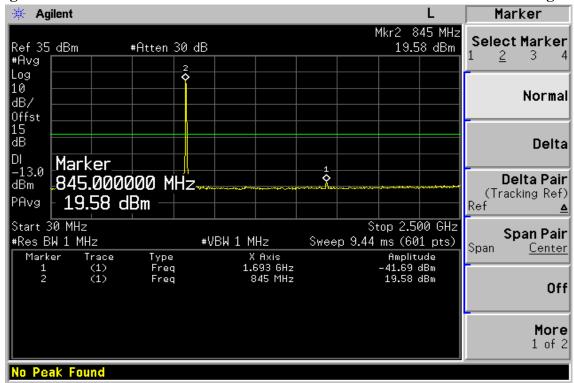
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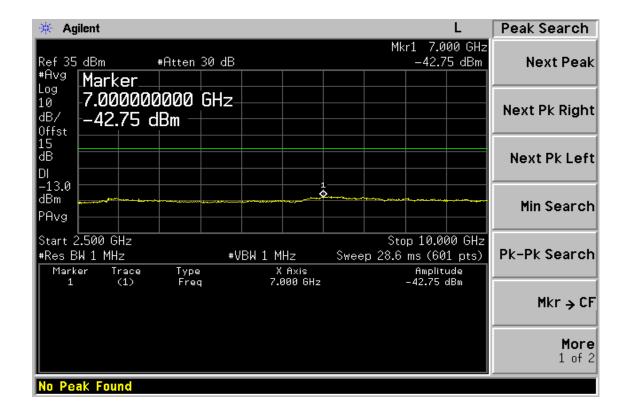


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Figure 8-18: Out of Band emission at antenna terminals-WCDMA V Channel Highest





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

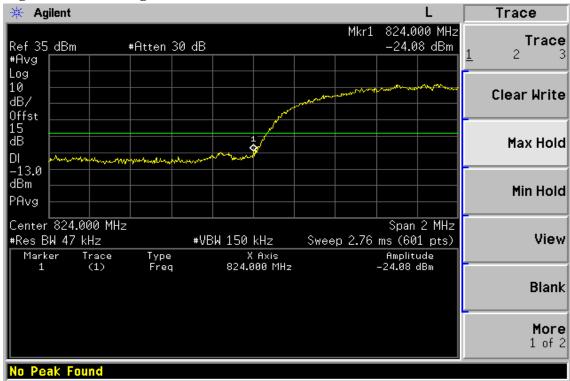
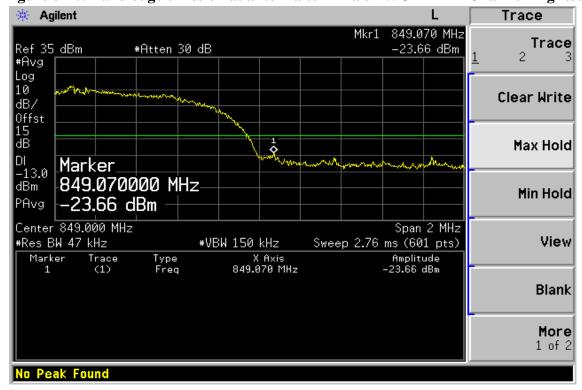


Figure 8-20: Band edge emission at antenna terminals –WCDMA II Channel Highest



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# 9. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT (TX)

# 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)

According to RSS-132 §4.5

## 4.5.1 Out-of-block Emissions

Mobile and base station equipment with emission bandwidth less than or equal to 4 MHz shall comply with 4.5.1.1. Mobile station equipment with emission bandwidth greater than 4 MHz shall comply with 4.5.1.2. Base station equipment with emission bandwidth greater than 4 MHz shall comply with either 4.5.1.2 or 4.5.1.3.

4.5.1.1 In the first 1.0 MHz band immediately outside and adjacent to the licensee's frequency block, the power of emissions per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in watts) by at least  $43 + 10 \log (P)$ , dB. After the first 1.0 MHz, the power of emissions shall be attenuated below the transmitter output power by at least

 $43 + 10 \log (P)$ , dB, in any 100 kHz bandwidth.

4.5.1.2 In the first 1.0 MHz band immediately outside and adjacent to the licensee's frequency block, the power of emissions per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in watts) by at least  $43 + 10 \log (P)$ , dB. After the first 1.0 MHz, the power of emissions shall be attenuated below the transmitter output power by at least

 $43 + 10 \log (P)$ , dB, in any 1 MHz bandwidth

According to RSS-133 §6.5

## 6.5.1 Out-of-Block Emissions

a. Mobile stations must comply with subsection i. below.

In the first 1.0MHz band immediately outside and adjacent to the licensee's frequency block, the power of emissions per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in watts) by at least  $43 + 10 \log (P) dB$ .

b. After the first 1.0 MHz (for equipment that complies with a.i. of this subsection) or 1.5 MHz (for equipment that complies with all of this subsection), the power of emissions shall be attenuated below the transmitter output power by at least  $43 + 10 \log (P)$ , dB, per any MHz of bandwidth.

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(Note: If the test result using 1% of the emission bandwidth is used, then power integration over 1.0 MHz is required; alternatively, the spectrum analyzer resolution and video bandwidths can be increased to 1.0 MHz for this measurement).

## 6.5.2 Out-of-Sub-band Emissions

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

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

Refer to section 6.2 in this report

#### 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 <math>(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: GSM 850 Mode

Operation Mode : TX CH Low Mode Test Date: Dec. 14, 2009

Fundamental Frequency : 824.20 MHz Test By: Jazz Temperature :  $25^{\circ}\text{C}$  Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
153.19	33.37	V	-64.21	-7.80	1.60	-73.61	-13.00	-60.61
284.14	31.30	V	-67.47	-7.91	2.11	-77.49	-13.00	-64.49
421.88	32.39	V	-62.42	-7.68	2.58	-72.68	-13.00	-59.68
649.83	32.30	V	-56.62	-7.81	3.16	-67.59	-13.00	-54.59
824.00	82.12	V	-4.27	-7.87	3.62	-15.77	-13.00	-2.77
1648.40	49.13	V	-55.45	9.29	5.23	-51.39	-13.00	-38.39
2472.60	56.18	V	-44.83	10.08	6.53	-41.28	-13.00	-28.28
3296.80		V		12.17	7.71		-13.00	
4121.00		V		12.61	8.86		-13.00	
4945.20		V		12.65	9.74		-13.00	
5769.40		V		13.55	10.54		-13.00	
6593.60		V		12.05	11.30		-13.00	
7417.80		V		11.49	12.10		-13.00	
8242.00		V		11.48	12.71		-13.00	

	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:
- $4 \text{ ERP/EIRP } (dBm) = SG \text{ Setting}(dBm) + Antenna Gain } (dB/dBi) Cable loss } (dB)$

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# Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode : TX CH Low Mode Test Date: Dec. 14, 2009

Fundamental Frequency : 824.20 MHz Test By: Jazz Temperature :  $25^{\circ}\text{C}$  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)
153.19	30.67	Н	-67.35	-7.80	1.60	-76.75	-13.00	-63.75
329.73	32.32	Н	-65.07	-7.75	2.28	-75.10	-13.00	-62.10
507.24	30.92	Н	-62.28	-7.73	2.82	-72.83	-13.00	-59.83
579.99	31.81	Н	-59.30	-7.78	3.00	-70.08	-13.00	-57.08
780.78	30.99	Н	-59.44	-7.87	3.53	-70.84	-13.00	-57.84
824.00	72.80	Н	-13.47	-7.87	3.62	-24.97	-13.00	-11.97
1648.40	47.08	Н	-57.32	9.29	5.23	-53.26	-13.00	-40.26
2472.60	59.60	Н	-41.31	10.08	6.53	-37.76	-13.00	-24.76
3296.80		Н		12.17	7.71		-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/2009/C0008 Issue Date: Dec. 21, 2009

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Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode : TX CH Mid Mode Test Date: Dec. 14, 2009

Fundamental Frequency : 836.60 MHz Test By: Jazz Temperature :  $25^{\circ}$ C 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)
153.19	33.71	V	-63.87	-7.80	1.60	-73.27	-13.00	-60.27
295.78	32.15	V	-66.24	-7.92	2.15	-76.31	-13.00	-63.31
406.36	31.37	V	-63.93	-7.67	2.53	-74.12	-13.00	-61.12
599.39	32.27	V	-57.34	-7.79	3.03	-68.15	-13.00	-55.15
722.58	31.87	V	-56.52	-7.86	3.37	-67.75	-13.00	-54.75
1673.20	40.24	V	-64.32	9.36	5.27	-60.22	-13.00	-47.22
2509.80	56.20	V	-44.58	10.09	6.58	-41.08	-13.00	-28.08
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: GSM 850 Mode

Operation Mode : TX CH Mid Mode Test Date: Dec. 14, 2009

Fundamental Frequency :  $836.60 \, \text{MHz}$  Test By: Jazz Temperature :  $25 \, ^{\circ}\text{C}$  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)
148.34	32.15	Н	-65.79	-7.80	1.58	-75.17	-13.00	-62.17
255.04	31.61	Н	-67.45	-7.89	2.01	-77.35	-13.00	-64.35
339.43	31.93	Н	-65.37	-7.70	2.32	-75.39	-13.00	-62.39
494.63	31.97	Н	-61.53	-7.72	2.78	-72.03	-13.00	-59.03
643.04	32.45	Н	-57.41	-7.81	3.14	-68.36	-13.00	-55.36
1673.20	46.72	Н	-57.66	9.36	5.27	-53.56	-13.00	-40.56
2509.80	49.67	Н	-51.03	10.09	6.58	-47.53	-13.00	-34.53
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: GSM 850 Mode

Operation Mode : TX CH High Mode Test Date: Dec. 14, 2009

Fundamental Frequency :  $848.80 \, \text{MHz}$  Test By: Jazz Temperature :  $25^{\circ}\text{C}$  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)
153.19	32.40	V	-65.18	-7.80	1.60	-74.58	-13.00	-61.58
264.74	31.72	V	-67.69	-7.90	2.04	-77.63	-13.00	-64.63
463.59	32.00	V	-61.99	-7.71	2.70	-72.39	-13.00	-59.39
620.73	31.92	V	-57.38	-7.80	3.08	-68.26	-13.00	-55.26
788.54	30.61	V	-56.15	-7.87	3.55	-67.56	-13.00	-54.56
850.00	82.12	V	-3.99	-7.88	3.68	-15.55	-13.00	-2.55
1697.60	48.64	V	-55.90	9.44	5.31	-51.77	-13.00	-38.77
2546.40	54.40	V	-46.24	10.20	6.63	-42.68	-13.00	-29.68
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: GSM 850 Mode

Operation Mode : TX CH High Mode Test Date: Dec. 14, 2009

Fundamental Frequency :  $848.80 \, \text{MHz}$  Test By: Jazz Temperature :  $25 \, ^{\circ} \text{C}$  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)
150.28	30.79	Н	-67.00	-7.80	1.59	-76.39	-13.00	-63.39
264.74	31.96	Н	-66.80	-7.90	2.04	-76.74	-13.00	-63.74
410.24	32.24	Н	-63.67	-7.67	2.54	-73.88	-13.00	-60.88
550.89	32.69	Н	-59.01	-7.76	2.96	-69.73	-13.00	-56.73
850.00	72.80	Н	-13.39	-7.88	3.68	-24.95	-13.00	-11.95
1697.60	45.65	Н	-58.70	9.44	5.31	-54.57	-13.00	-41.57
2546.40	43.54	Н	-57.06	10.20	6.63	-53.50	-13.00	-40.50
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: PCS 1900 Mode

Operation Mode : TX CH Low Mode Test Date: Dec. 14, 2009

Fundamental Frequency : 1850.20 MHz Test By: Jazz Temperature :  $25^{\circ}\text{C}$  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)
104.69	41.26	V	-60.23	-7.76	1.38	-69.37	-13.00	-56.37
153.19	32.95	V	-64.63	-7.80	1.60	-74.03	-13.00	-61.03
271.53	32.12	V	-67.06	-7.90	2.07	-77.03	-13.00	-64.03
370.47	31.32	V	-65.44	-7.65	2.42	-75.51	-13.00	-62.51
538.28	32.42	V	-60.46	-7.75	2.92	-71.13	-13.00	-58.13
744.89	31.76	V	-55.59	-7.87	3.45	-66.91	-13.00	-53.91
1850.00	83.74	V	-20.65	9.90	5.56	-16.31	-13.00	-3.31
3700.40		V		12.61	8.31		-13.00	
5550.60	42.20	V	-48.64	13.23	10.33	-45.74	-13.00	-32.74
7400.80		V		11.50	12.08		-13.00	
9251.00		V		11.92	13.50		-13.00	
11101.20		V		11.66	15.11		-13.00	
12951.40		V		13.63	16.60		-13.00	
14801.60		V		12.76	17.95		-13.00	
16651.80		V		15.92	19.14		-13.00	
18502.00		V		18.75	10.40		-13.00	

	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:
- $4 \text{ ERP/EIRP } (dBm) = SG \text{ Setting}(dBm) + Antenna Gain } (dB/dBi) Cable loss } (dB)$

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## Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode : TX CH Low Mode Test Date: Dec. 14, 2009

Fundamental Frequency : 1850.20 MHz Test By: Jazz Temperature :  $25^{\circ}\text{C}$  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)
240.49	32.48	Н	-67.20	-7.88	1.94	-77.02	-13.00	-64.02
371.44	31.50	Н	-65.37	-7.65	2.42	-75.44	-13.00	-62.44
586.78	31.78	Н	-59.19	-7.78	3.01	-69.98	-13.00	-56.98
693.48	32.22	Н	-55.68	-7.85	3.27	-66.81	-13.00	-53.81
1850.00	76.08	Н	-28.10	9.90	5.56	-23.76	-13.00	-10.76
3700.40		Н		12.61	8.31		-13.00	
5550.60	39.92	Н	-51.13	13.23	10.33	-48.23	-13.00	-35.23
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	
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 (dB/dBi) Cable loss (dB)

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# Radiated Spurious Emission Measurement Result: PCS 1900 Mode

: TX CH Mid Mode Dec. 14, 2009 Operation Mode Test Date:

Fundamental Frequency: 1880MHz Test By: Jazz Temperature Pol: Ver : 25°C

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)
104.69	41.69	V	-59.80	-7.76	1.38	-68.94	-13.00	-55.94
153.19	32.92	V	-64.66	-7.80	1.60	-74.06	-13.00	-61.06
284.14	32.28	V	-66.49	-7.91	2.11	-76.51	-13.00	-63.51
419.94	32.46	V	-62.41	-7.68	2.57	-72.66	-13.00	-59.66
590.66	31.86	V	-58.26	-7.78	3.02	-69.06	-13.00	-56.06
644.98	32.59	V	-56.40	-7.81	3.15	-67.35	-13.00	-54.35
3760.00		V		12.60	8.39		-13.00	
5640.00	37.66	V	-52.92	13.36	10.41	-49.97	-13.00	-36.97
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 (dB/dBi) Cable loss (dB)

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# Radiated Spurious Emission Measurement Result: PCS 1900 Mode

: TX CH Mid Mode Dec. 14, 2009 Operation Mode Test Date:

Fundamental Frequency: 1880MHz Test By: Jazz Temperature Pol: Hor : 25°C

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)
104.69	41.69	V	-59.80	-7.76	1.38	-68.94	-13.00	-55.94
153.19	32.92	V	-64.66	-7.80	1.60	-74.06	-13.00	-61.06
284.14	32.28	V	-66.49	-7.91	2.11	-76.51	-13.00	-63.51
419.94	32.46	V	-62.41	-7.68	2.57	-72.66	-13.00	-59.66
590.66	31.86	V	-58.26	-7.78	3.02	-69.06	-13.00	-56.06
644.98	32.59	V	-56.40	-7.81	3.15	-67.35	-13.00	-54.35
3760.00		V		12.60	8.39		-13.00	
5640.00	37.66	V	-52.92	13.36	10.41	-49.97	-13.00	-36.97
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 (dB/dBi) Cable loss (dB)

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# Radiated Spurious Emission Measurement Result: PCS 1900 Mode

: TX CH High Mode Dec. 14, 2009 Operation Mode Test Date:

Fundamental Frequency: 1909.8 MHz Test By: Jazz Temperature Pol: Ver : 25℃

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)
168.89	31.77	Н	-67.47	-7.82	1.64	-76.92	-13.00	-63.92
278.32	31.60	Н	-66.74	-7.91	2.09	-76.74	-13.00	-63.74
381.14	31.50	Н	-65.22	-7.65	2.45	-75.33	-13.00	-62.33
473.29	31.59	Н	-62.10	-7.71	2.73	-72.53	-13.00	-59.53
618.79	32.23	Н	-58.10	-7.80	3.08	-68.98	-13.00	-55.98
3760.00		Н		12.60	8.39		-13.00	
5640.00	39.15	Н	-51.60	13.36	10.41	-48.65	-13.00	-35.65
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: PCS 1900 Mode

Operation Mode : TX CH High Mode Test Date: Dec. 14, 2009

Fundamental Frequency : 1909.8 MHz Test By: Jazz Temperature :  $25^{\circ}$ C 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)
153.19	30.99	Н	-67.03	-7.80	1.60	-76.43	-13.00	-63.43
264.74	32.28	Н	-66.48	-7.90	2.04	-76.42	-13.00	-63.42
482.99	31.20	Н	-62.40	-7.71	2.75	-72.87	-13.00	-59.87
613.94	32.49	Н	-57.94	-7.80	3.07	-68.80	-13.00	-55.80
783.69	31.79	Н	-58.02	-7.87	3.54	-69.43	-13.00	-56.43
1910.00	78.05	Н	-26.06	10.08	5.66	-21.64	-13.00	-8.64
3819.60		Н		12.60	8.47		-13.00	
5729.40	39.60	Н	-50.85	13.49	10.50	-47.86	-13.00	-34.86
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: WCDMA II Mode

Operation Mode : TX CH Low Mode Test Date: Dec. 14, 2009

Fundamental Frequency : 1852.4 MHz Test By: Jazz Temperature :  $25^{\circ}\text{C}$  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)
101.78	40.39	V	-61.37	-7.76	1.37	-70.49	-13.00	-57.49
174.53	32.83	V	-66.66	-7.82	1.65	-76.13	-13.00	-63.13
320.03	32.09	V	-65.91	-7.81	2.25	-75.97	-13.00	-62.97
455.83	30.96	V	-62.99	-7.70	2.68	-73.37	-13.00	-60.37
638.19	31.68	V	-57.39	-7.81	3.13	-68.33	-13.00	-55.33
829.28	32.04	V	-54.29	-7.88	3.63	-65.80	-13.00	-52.80
1850.00	60.61	V	-43.78	9.90	5.56	-39.44	-13.00	-26.44
3704.80		V		12.61	8.31		-13.00	
5557.20	37.92	V	-52.90	13.24	10.33	-50.00	-13.00	-37.00
7409.60		V		11.49	12.09		-13.00	
9262.00		V		11.92	13.51		-13.00	
11114.40		V		11.68	15.12		-13.00	
12966.80		V		13.62	16.61		-13.00	
14819.20		V		12.83	17.96		-13.00	
16671.60		V		15.87	19.15		-13.00	
18524.00		V		18.74	10.86		-13.00	

	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:
- $4 \text{ ERP/EIRP } (dBm) = SG \text{ Setting}(dBm) + Antenna Gain } (dB/dBi) Cable loss } (dB)$

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## Radiated Spurious Emission Measurement Result: WCDMA II Mode

Operation Mode : TX CH Low Mode Test Date: Dec. 14, 2009

Fundamental Frequency : 1852.4 MHz Test By: Jazz Temperature :  $25^{\circ}\text{C}$  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)
104.69	37.00	Н	-65.51	-7.76	1.38	-74.65	-13.00	-61.65
159.98	30.99	Н	-67.55	-7.81	1.61	-76.98	-13.00	-63.98
305.48	30.77	Н	-66.84	-7.89	2.19	-76.92	-13.00	-63.92
402.48	30.94	Н	-65.36	-7.66	2.52	-75.54	-13.00	-62.54
463.59	30.77	Н	-63.00	-7.71	2.70	-73.40	-13.00	-60.40
771.08	30.86	Н	-61.63	-7.87	3.51	-73.02	-13.00	-60.02
1850.00	68.60	Н	-35.58	9.90	5.56	-31.24	-13.00	-18.24
3704.80		Н		12.61	8.31		-13.00	
5557.20	34.45	Н	-56.58	13.24	10.33	-53.68	-13.00	-40.68
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:
- $4 \text{ ERP/EIRP } (dBm) = SG \text{ Setting}(dBm) + Antenna Gain } (dB/dBi) Cable loss } (dB)$

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Radiated Spurious Emission Measurement Result: WCDMA II Mode

Operation Mode : TX CH Mid Mode Test Date: Dec. 14, 2009

Fundamental Frequency : 1880 MHz Test By: Jazz Temperature :  $25^{\circ}\text{C}$  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)
101.78	41.20	V	-60.56	-7.76	1.37	-69.68	-13.00	-56.68
153.19	32.31	V	-65.27	-7.80	1.60	-74.67	-13.00	-61.67
284.14	32.22	V	-66.55	-7.91	2.11	-76.57	-13.00	-63.57
421.88	31.11	V	-63.70	-7.68	2.58	-73.96	-13.00	-60.96
550.89	31.55	V	-60.89	-7.76	2.96	-71.61	-13.00	-58.61
872.93	32.53	V	-52.96	-7.91	3.73	-64.60	-13.00	-51.60
3760.00	36.54	V	-61.12	12.60	8.39	-56.90	-13.00	-43.90
5640.00		V		13.36	10.41		-13.00	
7520.00		V		11.45	12.19		-13.00	
9400.00		V		11.93	13.61		-13.00	
11280.00		V		11.92	15.27		-13.00	
13160.00		V		13.33	16.71		-13.00	
15040.00		V		13.76	18.15		-13.00	
16920.00		V		15.27	19.32		-13.00	
18800.00		V		18.68	16.58		-13.00	

	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:
- $4 \text{ ERP/EIRP } (dBm) = SG \text{ Setting}(dBm) + Antenna Gain } (dB/dBi) Cable loss } (dB)$

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# Radiated Spurious Emission Measurement Result: WCDMA II Mode

Operation Mode : TX CH Mid Mode Test Date: Dec. 14, 2009

Fundamental Frequency : 1880 MHz Test By: Jazz Temperature :  $25^{\circ}\text{C}$  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)
104.69	37.92	Н	-64.59	-7.76	1.38	-73.73	-13.00	-60.73
153.19	30.73	Н	-67.29	-7.80	1.60	-76.69	-13.00	-63.69
313.24	31.56	Н	-65.98	-7.85	2.22	-76.04	-13.00	-63.04
347.19	31.02	Н	-66.21	-7.66	2.35	-76.21	-13.00	-63.21
591.63	32.92	Н	-57.95	-7.78	3.02	-68.75	-13.00	-55.75
827.34	31.52	Н	-54.74	-7.88	3.63	-66.24	-13.00	-53.24
3760.00	34.48	Н	-63.29	12.60	8.39	-59.08	-13.00	-46.08
5640.00		Н		13.36	10.41		-13.00	
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:
- $4 \text{ ERP/EIRP } (dBm) = SG \text{ Setting}(dBm) + Antenna Gain } (dB/dBi) Cable loss } (dB)$

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Radiated Spurious Emission Measurement Result: WCDMA II Mode

Operation Mode : TX CH High Mode Test Date: Dec. 14, 2009

Fundamental Frequency : 1907.6MHz Test By: Jazz Temperature :  $25^{\circ}$ C Pol: Ver

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
101.78	38.99	V	-62.77	-7.76	1.37	-71.89	-13.00	-58.89
153.19	31.67	V	-65.91	-7.80	1.60	-75.31	-13.00	-62.31
263.77	30.31	V	-69.13	-7.90	2.04	-79.07	-13.00	-66.07
385.99	30.92	V	-65.18	-7.65	2.47	-75.30	-13.00	-62.30
547.98	30.79	V	-61.77	-7.76	2.95	-72.48	-13.00	-59.48
657.59	31.56	V	-57.44	-7.82	3.18	-68.44	-13.00	-55.44
1910.00	58.12	V	-46.21	10.08	5.66	-41.79	-13.00	-28.79
3815.20	35.30	V	-62.11	12.60	8.46	-57.97	-13.00	-44.97
5722.80		V		13.48	10.49		-13.00	
7630.40		V		11.41	12.27		-13.00	
9538.00		V		11.95	13.73		-13.00	
11445.60		V		12.15	15.42		-13.00	
13353.20		V		13.00	16.81		-13.00	
15260.80		V		14.91	18.28		-13.00	
17168.40		V		14.53	19.50		-13.00	
19076.00		V		18.65	20.76		-13.00	

	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: WCDMA II Mode

Operation Mode : TX CH High Mode Test Date: Dec. 14, 2009

Fundamental Frequency : 1907.6MHz Test By: Jazz Temperature :  $25^{\circ}$ C Pol: Hor

Humidity : 65%

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out- put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
104.69	37.66	Н	-64.85	-7.76	1.38	-73.99	-13.00	-60.99
148.34	29.94	Н	-68.00	-7.80	1.58	-77.38	-13.00	-64.38
320.03	30.87	Н	-66.61	-7.81	2.25	-76.66	-13.00	-63.66
410.24	31.53	Н	-64.38	-7.67	2.54	-74.59	-13.00	-61.59
601.33	32.45	Н	-58.22	-7.79	3.03	-69.05	-13.00	-56.05
741.98	30.51	Н	-64.97	-7.87	3.44	-76.28	-13.00	-63.28
1910.00	65.51	Н	-38.60	10.08	5.66	-34.18	-13.00	-21.18
3815.20	34.37	Н	-63.16	12.60	8.46	-59.02	-13.00	-46.02
5722.80		Н		13.48	10.49		-13.00	
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:
- 4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) Cable loss (dB)

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## Radiated Spurious Emission Measurement Result: WCDMA V Mode

Operation Mode : TX CH Low Mode Test Date: Dec. 14, 2009

Fundamental Frequency : 826.4 MHz Test By: Jazz Temperature :  $25^{\circ}\text{C}$  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)
104.69	42.47	V	-59.02	-7.76	1.38	-68.16	-13.00	-55.16
153.19	32.97	V	-64.61	-7.80	1.60	-74.01	-13.00	-61.01
227.88	33.53	V	-67.20	-7.87	1.87	-76.93	-13.00	-63.93
436.43	31.81	V	-62.55	-7.69	2.62	-72.85	-13.00	-59.85
604.24	33.33	V	-56.18	-7.79	3.04	-67.02	-13.00	-54.02
823.00	65.41	V	-20.99	-7.87	3.62	-32.49	-13.00	-19.49
1652.80	38.50	V	-66.08	9.30	5.23	-62.01	-13.00	-49.01
3305.60		V		12.19	7.73		-13.00	
4132.00		V		12.62	8.87		-13.00	
4958.40		V		12.65	9.75		-13.00	
5784.80		V		13.58	10.55		-13.00	
6611.20		V		12.03	11.31		-13.00	
7437.60		V		11.48	12.12		-13.00	
8264.00		V		11.50	12.73		-13.00	

	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: WCDMA V Mode

Operation Mode : TX CH Low Mode Test Date: Dec. 14, 2009

Fundamental Frequency : 826.4 MHz Test By: Jazz Temperature :  $25^{\circ}\text{C}$  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)
90.14	42.61	Н	-61.12	-7.75	1.27	-70.14	-13.00	-57.14
148.34	31.36	Н	-66.58	-7.80	1.58	-75.96	-13.00	-62.96
337.49	31.77	Н	-65.55	-7.71	2.31	-75.57	-13.00	-62.57
441.28	32.03	Н	-62.30	-7.69	2.63	-72.63	-13.00	-59.63
565.44	32.53	Н	-58.88	-7.77	2.98	-69.63	-13.00	-56.63
647.89	32.49	Н	-57.27	-7.81	3.15	-68.24	-13.00	-55.24
823.00	57.20	Н	-29.07	-7.87	3.62	-40.57	-13.00	-27.57
1652.80	40.07	Н	-64.33	9.30	5.23	-60.26	-13.00	-47.26
2479.20		Н		10.07	6.54		-13.00	
3305.60		Н		12.19	7.73		-13.00	
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:
- $4 \text{ ERP/EIRP } (dBm) = SG \text{ Setting}(dBm) + Antenna Gain } (dB/dBi) Cable loss } (dB)$

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Radiated Spurious Emission Measurement Result: WCDMA V Mode

Operation Mode : TX CH Mid Mode Test Date: Dec. 14, 2009

Fundamental Frequency : 836.6MHz Test By: Jazz Temperature :  $25^{\circ}$ C 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)
140.58	41.25	V	-56.91	-7.79	1.55	-66.25	-13.00	-53.25
162.89	32.17	V	-66.28	-7.81	1.62	-75.71	-13.00	-62.71
288.99	31.14	V	-67.47	-7.91	2.13	-77.51	-13.00	-64.51
424.79	31.68	V	-63.04	-7.68	2.58	-73.31	-13.00	-60.31
643.04	32.40	V	-56.61	-7.81	3.14	-67.56	-13.00	-54.56
1673.20	38.30	V	-66.26	9.36	5.27	-62.16	-13.00	-49.16
2509.80		V		10.09	6.58		-13.00	
3346.40		V		12.28	7.79		-13.00	
4183.00		V		12.62	8.93		-13.00	
5019.60		V		12.67	9.81		-13.00	
5856.20		V		13.68	10.62		-13.00	
6692.80		V		11.95	11.39		-13.00	
7529.40		V		11.45	12.20		-13.00	
8366.00		V		11.59	12.81		-13.00	

	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: WCDMA V Mode

Operation Mode : TX CH Mid Mode Test Date: Dec. 14, 2009

Fundamental Frequency : 836.6MHz Test By: Jazz Temperature :  $25^{\circ}$ C 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)
159.98	31.51	Н	-67.03	-7.81	1.61	-76.46	-13.00	-63.46
255.04	31.49	Н	-67.57	-7.89	2.01	-77.47	-13.00	-64.47
347.19	30.93	Н	-66.30	-7.66	2.35	-76.30	-13.00	-63.30
446.13	31.06	Н	-63.03	-7.70	2.65	-73.37	-13.00	-60.37
759.44	31.21	Н	-63.76	-7.87	3.49	-75.12	-13.00	-62.12
1673.20	41.29	Н	-63.09	9.36	5.27	-58.99	-13.00	-45.99
2509.80		Н		10.09	6.58		-13.00	
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: WCDMA V Mode

: TX CH High Mode Dec. 14, 2009 Operation Mode Test Date:

Fundamental Frequency: 846.6MHz Test By: Jazz Ver Temperature Pol: : 25°C

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)
153.19	32.86	V	-64.72	-7.80	1.60	-74.12	-13.00	-61.12
295.78	31.89	V	-66.50	-7.92	2.15	-76.57	-13.00	-63.57
433.52	31.06	V	-63.39	-7.69	2.61	-73.68	-13.00	-60.68
577.08	30.97	V	-59.94	-7.78	3.00	-70.71	-13.00	-57.71
649.83	32.03	V	-56.89	-7.81	3.16	-67.86	-13.00	-54.86
850.00	64.68	V	-21.43	-7.88	3.68	-32.99	-13.00	-19.99
1693.20		V		9.42	5.30		-13.00	
2539.80		V		10.18	6.62		-13.00	
3386.40		V		12.36	7.85		-13.00	
4233.00		V		12.63	8.99		-13.00	
5079.60		V		12.73	9.87		-13.00	
5926.20		V		13.79	10.69		-13.00	
6772.80		V		11.87	11.47		-13.00	
7619.40		V		11.41	12.26		-13.00	
8466.00		V		11.68	12.89		-13.00	

	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: WCDMA V Mode

: TX CH High Mode Dec. 14, 2009 Operation Mode Test Date:

Fundamental Frequency: 846.6MHz Test By: Jazz Temperature Pol: Hor : 25°C

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)
159.98	31.84	Н	-66.70	-7.81	1.61	-76.13	-13.00	-63.13
271.53	31.65	Н	-66.90	-7.90	2.07	-76.87	-13.00	-63.87
347.19	31.28	Н	-65.95	-7.66	2.35	-75.95	-13.00	-62.95
484.93	31.39	Н	-62.19	-7.71	2.76	-72.66	-13.00	-59.66
599.39	33.69	Н	-57.02	-7.79	3.03	-67.84	-13.00	-54.84
850.00	58.83	Н	-27.36	-7.88	3.68	-38.92	-13.00	-25.92
1693.20	43.10	Н	-61.25	9.42	5.30	-57.13	-13.00	-44.13
2539.80		Н		10.18	6.62		-13.00	
3386.40		Н		12.36	7.85		-13.00	
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:
- 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

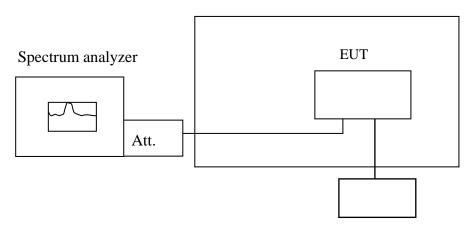
+/-2.5ppm for 1900MHz band

According to RSS-133 §6.3, RSS-132 §4.3

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

# 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°C reached.

### 10.4. Measurement Equipment Used:

Refer to section 2.4 in this report

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## 10.5. Measurement Result:

Re	Reference Frequency: GSM Mid Channel 836.6 MHz @ 20°C						
	Limit	: +/- 2.5 ppm = 209	91 Hz				
Power Supply	Environment	Frequency	Dolto (Uz)	Limit (Hz)			
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Lillit (HZ)			
3.7	-30	836.599988	-3.00	2091			
3.7	-20	836.599991	-6.00	2091			
3.7	-10	836.599982	3.00	2091			
3.7	0	836.599986	-1.00	2091			
3.7	10	836.599988	-3.00	2091			
3.7	20	836.599985	0.00	2091			
3.7	30	836.599982	3.00	2091			
3.7	40	836.599984	1.00	2091			
3.7	50	836.59998	5.00	2091			

Re	Reference Frequency: PCS Mid Channel 1880 MHz @ 20°C						
	Limit	+/-2.5  ppm = 470	00 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Uz)			
Vdc	Temperature ( $^{\circ}$ C)	(MHz)	Dena (HZ)	Limit (Hz)			
3.7	-30	1879.999980	4.00	4700			
3.7	-20	1879.999982	2.00	4700			
3.7	-10	1879.999980	4.00	4700			
3.7	0	1879.999977	7.00	4700			
3.7	10	1879.999982	2.00	4700			
3.7	20	1879.999984	0.00	4700			
3.7	30	1879.999982	2.00	4700			
3.7	40	1879.999975	9.00	4700			
3.7	50	1879.999977	7.00	4700			

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Reference Frequency: WCDMA II Mid Channel 1880 (ARFCN9400) MHz @ 20°C									
Limit: +/- 2.5 ppm = 4700 Hz									
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)					
Vdc	Temperature ( $^{\circ}$ C)	(MHz)	Della (HZ)	Lilliit (HZ)					
3.7	-30	836.599999	-2.00	2091					
3.7	-20	836.599998	-1.00	2091					
3.7	-10	836.599998	-1.00	2091					
3.7	0	836.599999	-2.00	2091					
3.7	10	836.599998	-1.00	2091					
3.7	20	836.599997	0.00	2091					
3.7	30	836.599996	1.00	2091					
3.7	40	836.599997	0.00	2091					
3.7	50	836.599995	2.00	2091					

Reference Frequency: WCDMA V Mid Channel 836.6 (ARFCN4183) MHz @ 20°C									
Limit: +/- 2.5 ppm = 2090 Hz									
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)					
Vdc	Temperature (°C)	(MHz)	Della (112)	Limit (112)					
3.7	-30	1879.999995	3.00	4700					
3.7	-20	1879.999996	2.00	4700					
3.7	-10	1879.999999	-1.00	4700					
3.7	0	1879.999997	1.00	4700					
3.7	10	1879.999997	1.00	4700					
3.7	20	1879.999998	0.00	4700					
3.7	30	1879.999999	-1.00	4700					
3.7	40	1879.999997	1.00	4700					
3.7	50	1879.999996	2.00	4700					

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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

According to RSS-133 §6.3, RSS-132 §4.3

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

## 11.2. Test Set-up:

Refer to section 10.2 in this report

### 11.3. Measurement Procedure:

Set chamber temperature to  $25^{\circ}$ 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:

or measurement result.										
Reference Frequency: GSM Mid Channel 836.6 MHz @ 25°C										
	Limit: +/- 2.5 ppm = 2091 Hz									
Power Supply	Environment	nt Frequency								
Vdc	Temperature (°C)	(MHz)	Delta (Hz)	Limit (Hz)						
4.2	25.00	836.599996	0.00	2091.00						
3.7	25.00	836.599997	-1.00	2091.00						
3.2	25.00	836.599987	9.00	2091.00						
3.1	25.00	026 500005	11.00	2001.00						
(Endpoint)	25.00	836.599985	11.00	2091.00						

Reference Frequency: PCS Mid Channel 1880 MHz @ 25°C									
	Limit: +/- 2.5 ppm = 4700 Hz								
Power Supply	Environment	Environment Frequency D. L. (II)							
Vdc	Temperature ( $^{\circ}$ C)	(MHz)	Delta (Hz)	Limit (Hz)					
4.2	25	1879.999991	0.00	4700					
3.7	25	1879.999985	6.00	4700					
3.2	25	1879.999973	18.00	4700					
3.1	25	1070 000070	10.00	4700					
(Endpoint)	25	1879.999972	19.00	4700					

Reference Frequency: WCDMA II Mid Channel 1880 (ARFCN9400) MHz								
Limit: +/- 2.5 ppm = 4700 Hz								
Power Supply	Environment	Frequency	Dolto (Uz)	Limit (Uz)				
Vdc	Temperature ( $^{\circ}$ C)	(MHz)	Delta (Hz)	Limit (Hz)				
4.2	25	1879.999991	0.00	4700				
3.7	25	1879.999985	6.00	4700				
3.2	25	1879.999973	18.00	4700				
3.1	25	1070 000070	10.00	4700				
(Endpoint)	25	1879.999972	19.00	4700				

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Reference Frequency: WCDMA V Mid Channel 836.6 (ARFCN4183) MHz									
Limit: +/- 2.5 ppm = 2090 Hz									
Power Supply	Environment	Environment Frequency							
Vdc	Temperature ( $^{\circ}$ C)	(MHz)	Delta (Hz)	Limit (Hz)					
4.2	25.00	836.599996	0.00	2091.00					
3.7	25.00	836.599997	-1.00	2091.00					
3.2	25.00	836.599987	9.00	2091.00					
3.1	25.00	927 500095	11.00	2001.00					
(Endpoint)	25.00	836.599985	11.00	2091.00					

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## 12. AC POWER LINE CONDUCTED EMISSION TEST

# 12.1. Standard Applicable:

According to §15.207. The emission value for frequency within 150KHz to 30MHz shall not exceed criteria of below chart.

Frequency range	Limits dB(uV)				
MHz	Quasi-peak	Average			
0.15 to 0.50	66 to 56	56 to 46			
0.50 to 5	56	46			
5 to 30	60	50			

#### Note

1. The lower limit shall apply at the transition frequencies

2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

# 12.2. EUT Setup:

- 1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.4-2001.
- 2. The EUT was plug-in DC power adaptort and was placed on the center of the back edge on the test table. The peripherals like earphone was placed on the side of the EUT. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
- 3. The Power adaptor was connected with 120Vac/60Hz power source.

## 12.3. Measurement Procedure:

- 1. The EUT was placed on a table which is 0.8m above ground plane.
- 2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 3. Repeat above procedures until all frequency measured were complete.

### 12.4. Measurement Equipment Used:

Refer to section 2.4 in this report

## 12.5. Measurement Result;

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

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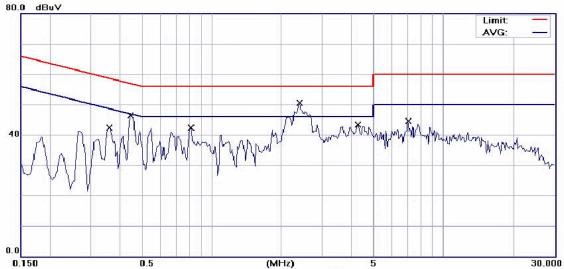


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# AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	GSM 850 LINK			Test Date:	Dec. 15, 2009
Temperature:	23 °C	Humidity:	57 %	Test By:	Jazz



Phase:

Site SGS CONDUCTED #1

Limit: CISPR22/11/EN55022 Class B

EUT: PDA Phone M/N: PB99110

Note: GSM 850 LINK MODE

Power:	AC120V/60Hz	Humidity:	57 %
Distance:		Air Pressure:	hpa

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Temperature:

Member of SGS Group

23 °C

No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBu∀	dBu∀	dB	Detector	Comment
1	0.3600	40.10	0.09	40.19	58.73	-18.54	QP	
2	0.3600	30.00	0.09	30.09	48.73	-18.64	AVG	
3	0.4450	43.30	0.08	43.38	56.97	-13.59	QP	
4	0.4450	30.40	0.08	30.48	46.97	-16.49	AVG	
5	0.8100	38.30	0.08	38.38	56.00	-17.62	QP	
6	0.8100	21.50	0.08	21.58	46.00	-24.42	AVG	
7 *	2.3900	44.80	0.13	44.93	56.00	-11.07	QP	
8	2.3900	34.20	0.13	34.33	46.00	-11.67	AVG	
9	4.2900	36.70	0.15	36.85	56.00	-19.15	QP	
10	4.2900	26.00	0.15	26.15	46.00	-19.85	AVG	
11	7.0400	38.00	0.25	38.25	60.00	-21.75	QP	
12	7.0400	27.60	0.25	27.85	50.00	-22.15	AVG	

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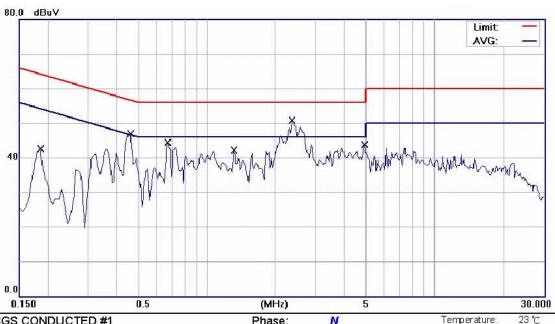
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Site SGS CONDUCTED #1

Limit: CISPR22/11/EN55022 Class B

EUT: PDA Phone M/N: PB99110

Note: GSM 850 LINK MODE

Phase: N

Power:

Distance:

AC120V/60Hz

Temperature:

Humidity:

Air Pressure: hpa

۷o. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBu∀	dBuV	dB	Detector	Comment
1	0.1850	37.10	0.16	37.26	64.26	-27.00	QP	
2	0.1850	26.70	0.16	26.86	54.26	-27.40	AVG	
3	0.4600	44.40	0.10	44.50	56.69	-12.19	QP	
4	0.4600	33.70	0.10	33.80	46.69	-12.89	AVG	
5	0.6700	41.60	0.11	41.71	56.00	-14.29	QP	
6	0.6700	28.50	0.11	28.61	46.00	-17.39	AVG	
7	1.3100	35.10	0.13	35.23	56.00	-20.77	QP	
8	1.3100	20.10	0.13	20.23	46.00	-25.77	AVG	
9 *	2.3700	44.40	0.15	44.55	56.00	-11.45	QP	
10	2.3700	33.10	0.15	33.25	46.00	-12.75	AVG	
11	4.9200	36.70	0.18	36.88	56.00	-19.12	QP	
12	4.9200	25.70	0.18	25.88	46.00	-20.12	AVG	

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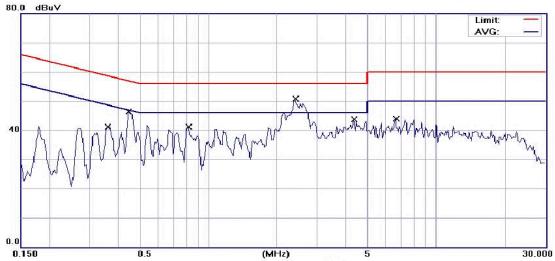


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# AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	GSM 1900 LINK		Test Date:	Dec. 15, 2009	
Temperature:	23 °C	Humidity:	57 %	Test By:	Jazz



Site SGS CONDUCTED #1

Limit: CISPR22/11/EN55022 Class B

EUT: PDA Phone M/N: PB99110

Note: GSM 1900 LINK MODE

Phase: L1 Temperature: 23 °C Power: AC120V/60Hz Humidity: 57 % Distance:

Air Pressure:

Member of SGS Group

No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBu∀	dBuV	dB	Detector	Comment
1		0.3600	37.80	0.09	37.89	58.73	-20.84	QP	
2		0.3600	25.10	0.09	25.19	48.73	-23.54	AVG	
3		0.4450	43.30	0.08	43.38	56.97	-13.59	QP	
4		0.4450	30.60	0.08	30.68	46.97	-16.29	AVG	
5		0.8200	36.40	0.08	36.48	56.00	-19.52	QP	
6		0.8200	20.50	0.08	20.58	46.00	-25.42	AVG	
7	*	2.4000	44.40	0.13	44.53	56.00	-11.47	QP	
8		2.4000	34.30	0.13	34.43	46.00	-11.57	AVG	
9		4.3400	37.00	0.15	37.15	56.00	-18.85	QP	
10		4.3400	26.90	0.15	27.05	46.00	-18.95	AVG	
11		6.6600	37.30	0.24	37.54	60.00	-22.46	QP	
12		6.6600	29.10	0.24	29.34	50.00	-20.66	AVG	

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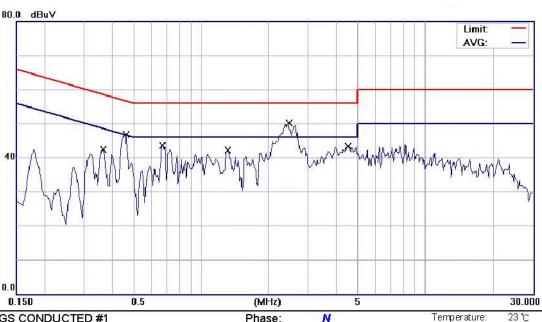
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Site SGS CONDUCTED #1

Limit: CISPR22/11/EN55022 Class B

EUT: PDA Phone M/N: PB99110

Note: GSM 1900 LINK MODE

Phase:

Power:

AC120V/60Hz

Temperature:

Humidity: 57 %

Distance:

Air Pressure:

hpa

No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
	MHz	dBu∀	dB	dBuV	dBuV	dB	Detector	Comment
1	0.3650	39.80	0.12	39.92	58.61	-18.69	QP	
2	0.3650	29.30	0.12	29.42	48.61	-19.19	AVG	
3	0.4600	44.30	0.10	44.40	56.69	-12.29	QP	
4	0.4600	33.70	0.10	33.80	46.69	-12.89	AVG	
5	0.6700	41.20	0.11	41.31	56.00	-14.69	QP	
6	0.6700	28.40	0.11	28.51	46.00	-17.49	AVG	
7	1.3100	35.70	0.13	35.83	56.00	-20.17	QP	
8	1.3100	18.80	0.13	18.93	46.00	-27.07	AVG	
9 *	2.4500	43.70	0.15	43.85	56.00	-12.15	QP	
10	2.4500	33.00	0.15	33.15	46.00	-12.85	AVG	
11	4.5200	35.20	0.18	35.38	56.00	-20.62	QP	
12	4.5200	25.10	0.18	25.28	46.00	-20.72	AVG	

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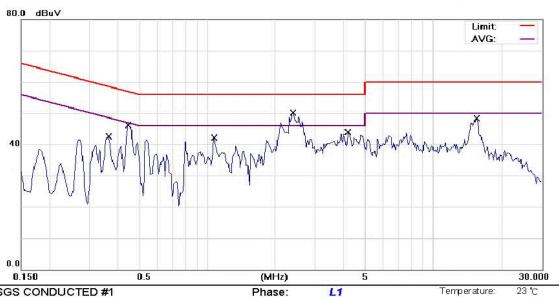


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# AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	WCDMA Band II	LINK		Test Date:	Dec. 15, 2009
Temperature:	23 °C	Humidity:	57 %	Test By:	Jazz



Site SGS CONDUCTED #1

Limit: CISPR22/11/EN55022 Class B

EUT: PDA Phone M/N: PB99110

Note: WCDMA B2 LINK MODE

Power: AC120V/60Hz Humidity: Distance:

Air Pressure: hpa

No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB	dBu∀	dBuV	dB	Detector	Comment
1	0.3650	40.30	0.09	40.39	58.61	-18.22	QP	
2	0.3650	29.40	0.09	29.49	48.61	-19.12	AVG	
3	0.4450	43.30	0.08	43.38	56.97	-13.59	QP	
4	0.4450	31.10	0.08	31.18	46.97	-15.79	AVG	
5	1.0700	37.00	0.09	37.09	56.00	-18.91	QP	
6	1.0700	20.00	0.09	20.09	46.00	-25.91	AVG	
7 *	2.3900	44.70	0.13	44.83	56.00	-11.17	QP	
8	2.3900	34.10	0.13	34.23	46.00	-11.77	AVG	
9	4.1900	35.80	0.15	35.95	56.00	-20.05	QP	
10	4.1900	25.50	0.15	25.65	46.00	-20.35	AVG	
11	15.5400	43.00	0.38	43.38	60.00	-16.62	QP	
12	15.5400	32.70	0.38	33.08	50.00	-16.92	AVG	

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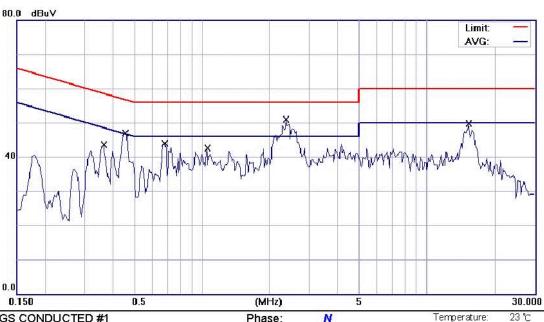
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Site SGS CONDUCTED #1

Limit: CISPR22/11/EN55022 Class B

EUT: PDA Phone M/N: PB99110

Note: WCDMA B2 LINK MODE

Phase:

AC120V/60Hz Power: Humidity: 57 % Air Pressure: hpa Distance:

No. Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
	MHz	dBu∀	dB	dBu∀	dBuV	dB	Detector	Comment
1	0.3650	41.00	0.12	41.12	58.61	-17.49	QP	
2	0.3650	30.30	0.12	30.42	48.61	-18.19	AVG	
3	0.4550	44.50	0.10	44.60	56.78	-12.18	QP	
4	0.4550	33.50	0.10	33.60	46.78	-13.18	AVG	
5	0.6800	41.50	0.11	41.61	56.00	-14.39	QP	
6	0.6800	29.20	0.11	29.31	46.00	-16.69	AVG	
7	1.0500	36.20	0.12	36.32	56.00	-19.68	QP	
8	1.0500	20.70	0.12	20.82	46.00	-25.18	AVG	
9 *	2.3700	44.10	0.15	44.25	56.00	-11.75	QP	
10	2.3700	33.60	0.15	33.75	46.00	-12.25	AVG	
11	15.3200	43.40	0.41	43.81	60.00	-16.19	QP	
12	15.3200	32.80	0.41	33.21	50.00	-16.79	AVG	

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Temperature

Air Pressure:

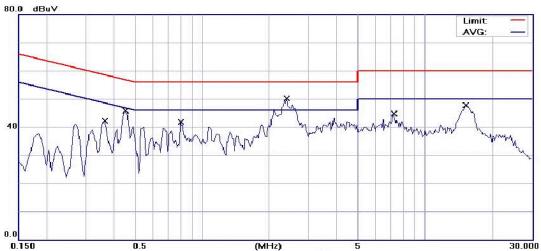
Humidity:

23 °C

hpa

## AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	WCDMA Band V	LINK	Test Date:	Dec. 15, 2009	
Temperature:	23 °C	Humidity:	57 %	Test By:	Jazz



Phase:

Power:

Distance:

Site SGS CONDUCTED #1

Limit: CISPR22/11/EN55022 Class B

EUT: PDA Phone M/N: PB99110

No. Mk.

1

2

3

4

5 6

7

8 9

10

11

12

Note: WCDMA B5 LINK MODE

15.2000

15.2000

Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
0.3650	39.10	0.09	39.19	58.61	-19.42	QP	
0.3650	27.00	0.09	27.09	48.61	-21.52	AVG	
0.4500	42.50	0.07	42.57	56.88	-14.31	QP	
0.4500	29.00	0.07	29.07	46.88	-17.81	AVG	
0.8000	38.00	0.08	38.08	56.00	-17.92	QP	
0.8000	21.20	0.08	21.28	46.00	-24.72	AVG	
2.3900	43.80	0.13	43.93	56.00	-12.07	QP	
2.3900	33.20	0.13	33.33	46.00	-12.67	AVG	
7.2200	36.10	0.26	36.36	60.00	-23.64	QP	
7.2200	25.00	0.26	25.26	50.00	-24.74	AVG	

-17.61

-18.11

QP

AVG

AC120V/60Hz

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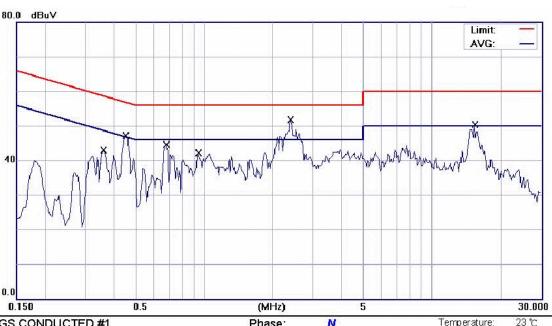
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Site SGS CONDUCTED #1

Limit: CISPR22/11/EN55022 Class B

EUT: PDA Phone M/N: PB99110

Note: WCDMA B5 LINK MODE

Phase:

Power:

Distance:

N AC120V/60Hz Temperature:

Air Pressure:

Humidity: 57 %

hpa

No.	Mk.	Freq.	Reading Level	Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBu∀	dBuV	dB	Detector	Comment
1		0.3600	39.80	0.12	39.92	58.73	-18.81	QP	
2		0.3600	31.50	0.12	31.62	48.73	-17.11	AVG	
3		0.4500	43.40	0.10	43.50	56.88	-13.38	QP	
4		0.4500	34.20	0.10	34.30	46.88	-12.58	AVG	
5		0.6800	40.60	0.11	40.71	56.00	-15.29	QP	
6		0.6800	28.20	0.11	28.31	46.00	-17.69	AVG	
7		0.9400	38.00	0.12	38.12	56.00	-17.88	QP	
8		0.9400	23.80	0.12	23.92	46.00	-22.08	AVG	
9	*	2.3900	43.40	0.15	43.55	56.00	-12.45	QP	
10		2.3900	33.00	0.15	33.15	46.00	-12.85	AVG	
11		15.4600	42.00	0.40	42.40	60.00	-17.60	QP	
12		15.4600	34.20	0.40	34.60	50.00	-15.40	AVG	

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# 13. SPURIOUS RADIATED EMISSION TEST (RX)

### 13.1. Standard Applicable

According to RSS 132 §4.6, all spurious emissions shall comply with the limits of Table 2. The resolution bandwidth of the spectrum analyzer shall be 100 kHz for spurious emissions measurements below 1.0 GHz, and 1.0 MHz for measurements above 1.0 GHz.

Frequency (MHz)	Field strength $\mu V/m$	Distance (m)	Field strength at 3m dBµV/m
30-88	100	3	40
88-216	150	3	43.5
216-960	200	3	46
Above 960	500	3	54

According to RSS 133 §6.6, Receiver spurious emissions shall comply with the limits specified in RSS-Gen.

### 13.2. EUT Setup

- 1. The radiated emission tests were performed in the 3 meter open-test site, using the setup in accordance with the ANSI C63.4-2003.
- 2. The EUT was put in the front of the test table. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
- 3. The spacing between the peripherals was 10 centimeters.
- 4. External I/O cables were draped along the edge of the test table and bundle when necessary.
- 5. The host was connected with 110Vac/60Hz power source.

#### 13.3. Measurement Procedure

- 1. The EUT was placed on a turn table which is 0.8m above ground plane.
- 2. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
- 3. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
- 4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 5. Repeat above procedures until all frequency measured were complete.

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

Refer to section 6.2 in this report

### 13.5. Measurement Equipment Used:

Refer to section 2.4 in this report

### 13.6. Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

#### 13.7. Measurement Result

Refer to attach tabular data sheets.

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## **Radiated Spurious Emission Measurement Result (below 1GHz)**

Operation Mode GSM 850 CH Low Mode Test Date Dec 14, 2009

Fundamental Frequency 824.2 MHz Test By Jazz
Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
153.19	V	Peak	32.90	-13.00	19.90	43.50	-23.60
284.14	V	Peak	31.08	-13.28	17.80	46.00	-28.20
368.53	V	Peak	31.69	-11.10	20.59	46.00	-25.41
468.44	V	Peak	31.56	-8.55	23.01	46.00	-22.99
609.09	V	Peak	31.56	-5.83	25.73	46.00	-20.27
154.16	Н	Peak	30.94	-13.06	17.88	43.50	-25.62
368.53	Н	Peak	31.59	-11.10	20.49	46.00	-25.51
473.29	Н	Peak	31.78	-8.56	23.22	46.00	-22.78
601.23	Н	Peak	32.52	-5.98	26.54	46.00	-19.46
764.29	Н	Peak	32.27	-3.91	28.36	46.00	-17.64

#### Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz.
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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# Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode GSM 850 CH Mid Mode Dec. 14, 2009 Test Date

Test By Fundamental Frequency 836.6 MHz Jazz **Temperature** Pol Ver./Hor 25 °C

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
153.19	V	Peak	32.56	-13.00	19.56	43.50	-23.94
269.59	V	Peak	32.01	-13.55	18.46	46.00	-27.54
482.99	V	Peak	31.37	-8.57	22.80	46.00	-23.20
652.74	V	Peak	32.24	-4.96	27.28	46.00	-18.72
824.43	V	Peak	31.42	-2.52	28.90	46.00	-17.10
153.19	Н	Peak	32.01	-13.00	19.01	43.50	-24.49
305.48	Н	Peak	31.26	-12.89	18.37	46.00	-27.63
415.09	Н	Peak	31.74	-9.51	22.23	46.00	-23.77
586.78	Н	Peak	32.05	-6.46	25.59	46.00	-20.41
730.34	Н	Peak	31.76	-4.54	27.22	46.00	-18.78

#### Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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# Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode GSM 850 CH High Mode Test Date Dec. 14, 2009

Fundamental Frequency 848.8 MHz
Test By
Jazz
Temperature 25 °C
Pol
Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
153.19	V	Peak	32.98	-13.00	19.98	43.50	-23.52
281.23	V	Peak	31.96	-13.31	18.65	46.00	-27.35
463.59	V	Peak	31.57	-8.55	23.02	46.00	-22.98
630.43	V	Peak	32.46	-5.37	27.09	46.00	-18.91
829.28	V	Peak	32.06	-2.43	29.63	46.00	-16.37
145.43	Н	Peak	31.08	-13.14	17.94	43.50	-25.56
266.68	Н	Peak	31.67	-13.57	18.10	46.00	-27.90
371.44	Н	Peak	31.62	-11.02	20.60	46.00	-25.40
547.98	Н	Peak	32.58	-7.68	24.90	46.00	-21.10
662.44	Н	Peak	32.22	-5.01	27.21	46.00	-18.79

#### Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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## Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode GSM 1900 CH Low Mode Dec. 14, 2009 Test Date

Fundamental Frequency 1850.2 MHz Test By Jazz **Temperature** Pol Ver./Hor 25 °C

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
153.19	V	Peak	32.87	-13.00	19.87	43.50	-23.63
315.18	V	Peak	31.69	-12.66	19.03	46.00	-26.97
431.58	V	Peak	31.63	-9.09	22.54	46.00	-23.46
547.98	V	Peak	32.08	-7.68	24.40	46.00	-21.60
657.59	V	Peak	32.69	-4.98	27.71	46.00	-18.29
155.13	Н	Peak	31.62	-13.12	18.50	43.50	-25.00
324.88	Н	Peak	31.94	-12.43	19.51	46.00	-26.49
460.68	Н	Peak	31.37	-8.61	22.76	46.00	-23.24
640.13	Н	Peak	31.31	-5.19	26.12	46.00	-19.88

### Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz.
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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## **Radiated Spurious Emission Measurement Result (below 1GHz)**

Operation Mode GSM 1900 CH Mid Mode Test Date Dec. 14, 2009

Fundamental Frequency 1880 MHz

Temperature 25 °C

Test By Jazz

Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
153.19	V	Peak	33.46	-13.00	20.46	43.50	-23.04
261.83	V	Peak	31.54	-13.30	18.24	46.00	-27.76
419.94	V	Peak	31.83	-9.39	22.44	46.00	-23.56
649.83	V	Peak	32.28	-4.95	27.33	46.00	-18.67
819.58	V	Peak	32.24	-2.61	29.63	46.00	-16.37
105.28	Н	Peak	31.41	-12.83	18.58	43.50	-24.92
288.99	Н	Peak	31.90	-13.23	18.67	46.00	-27.33
449.04	Н	Peak	32.06	-8.61	23.45	46.00	-22.55
647.89	Н	Peak	32.56	-4.99	27.57	46.00	-18.43
790.48	Н	Peak	31.90	-3.26	28.64	46.00	-17.36

#### Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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## **Radiated Spurious Emission Measurement Result (below 1GHz)**

Operation Mode GSM 1900 CH High Mode Test Date Dec. 14, 2009

Fundamental Frequency 1909.8 MHz Test By Jazz
Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
153.19	V	Peak	32.31	-13.00	19.31	43.50	-24.19
286.08	V	Peak	31.42	-13.26	18.16	46.00	-27.84
410.24	V	Peak	31.46	-9.64	21.82	46.00	-24.18
528.58	V	Peak	31.42	-8.02	23.40	46.00	-22.60
615.88	V	Peak	32.34	-5.70	26.64	46.00	-19.36
150.28	Н	Peak	30.80	-12.83	17.97	43.50	-25.53
322.94	Н	Peak	31.94	-12.47	19.47	46.00	-26.53
395.69	Н	Peak	30.89	-10.15	20.74	46.00	-25.26
643.04	Н	Peak	31.95	-5.14	26.81	46.00	-19.19
824.43	Н	Peak	31.57	-2.52	29.05	46.00	-16.95

#### Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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# Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode WCDMA Band II CH Low Mode Test Date Dec. 14, 2009

Fundamental Frequency 1852.4 MHz Test By Jazz
Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
153.19	V	Peak	32.21	-13.00	19.21	43.50	-24.29
381.14	V	Peak	32.19	-10.69	21.50	46.00	-24.50
465.52	V	Peak	31.52	-8.55	22.97	46.00	-23.03
630.43	V	Peak	33.06	-5.37	27.69	46.00	-18.31
735.19	V	Peak	32.52	-4.48	28.04	46.00	-17.96
164.83	Н	Peak	31.07	-13.69	17.38	43.50	-26.12
242.43	Н	Peak	31.84	-14.06	17.78	46.00	-28.22
439.34	Н	Peak	31.98	-8.80	23.18	46.00	-22.82
579.02	Н	Peak	31.21	-6.71	24.50	46.00	-21.50
654.68	Н	Peak	31.33	-4.97	26.36	46.00	-19.64

#### Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz.
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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## **Radiated Spurious Emission Measurement Result (below 1GHz)**

Operation Mode WCDMA Band II CH Mid Mode Test Date Dec. 14, 2009

Fundamental Frequency 1880 MHz Test By Jazz
Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
153.19	V	Peak	33.61	-13.00	20.61	43.50	-22.89
318.09	V	Peak	31.49	-12.59	18.90	46.00	-27.10
405.39	V	Peak	31.84	-9.86	21.98	46.00	-24.02
644.98	V	Peak	32.37	-5.10	27.27	46.00	-18.73
788.54	V	Peak	32.21	-3.30	28.91	46.00	-17.09
153.19	Н	Peak	31.79	-13.00	18.79	43.50	-24.71
327.79	Н	Peak	32.23	-12.36	19.87	46.00	-26.13
463.59	Н	Peak	32.43	-8.55	23.88	46.00	-22.12
611.03	Н	Peak	33.16	-5.79	27.37	46.00	-18.63
785.63	Н	Peak	31.84	-3.37	28.47	46.00	-17.53

#### Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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## Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode WCDMA Band II CH High Mode Dec. 14, 2009 Test Date

Fundamental Frequency 1907.6 MHz Test By Jazz **Temperature** Pol Ver./Hor 25 °C

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
153.19	V	Peak	32.92	-13.00	19.92	43.50	-23.58
366.59	V	Peak	31.51	-11.17	20.34	46.00	-25.66
460.68	V	Peak	32.40	-8.61	23.79	46.00	-22.21
618.79	V	Peak	32.62	-5.64	26.98	46.00	-19.02
809.88	V	Peak	32.12	-2.79	29.33	46.00	-16.67
177.44	Н	Peak	32.37	-14.38	17.99	43.50	-25.51
327.79	Н	Peak	31.50	-12.36	19.14	46.00	-26.86
444.19	Н	Peak	32.13	-8.70	23.43	46.00	-22.57
643.04	Н	Peak	33.03	-5.14	27.89	46.00	-18.11
778.84	Н	Peak	32.00	-3.58	28.42	46.00	-17.58

#### Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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## **Radiated Spurious Emission Measurement Result (below 1GHz)**

Operation Mode WCDMA Band V CH Low Mode Test Date Dec. 14, 2009

Fundamental Frequency 826.40 MHz Test By Jazz
Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
153.19	V	Peak	32.97	-13.00	19.97	43.50	-23.53
313.24	V	Peak	31.53	-12.70	18.83	46.00	-27.17
646.56	V	Peak	30.97	-8.54	22.43	46.00	-23.57
594.54	V	Peak	33.35	-6.18	27.17	46.00	-18.83
771.08	V	Peak	31.91	-3.75	28.16	46.00	-17.84
153.19	Н	Peak	31.08	-13.00	18.08	43.50	-25.42
361.74	Н	Peak	31.23	-11.33	19.90	46.00	-26.10
543.13	Н	Peak	31.31	-7.74	23.57	46.00	-22.43
649.83	Н	Peak	31.94	-4.95	26.99	46.00	-19.01
785.63	Н	Peak	31.41	-3.37	28.04	46.00	-17.96

#### Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz.
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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## Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode WCDMA Band V CH Mid Mode Dec. 14, 2009 Test Date

Fundamental Frequency 836.60 MHz Test By Jazz **Temperature** Pol Ver./Hor 25 °C

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
153.19	V	Peak	32.20	-18.09	14.11	43.50	-29.39
276.38	V	Peak	31.06	-10.72	20.34	46.00	-25.66
429.64	V	Peak	31.83	-8.75	23.08	46.00	-22.92
567.38	V	Peak	31.87	-8.75	23.12	46.00	-22.88
657.59	V	Peak	32.56	-8.75	23.81	46.00	-22.19
153.19	Н	Peak	31.54	-13.00	18.54	43.50	-24.96
313.24	Н	Peak	31.90	-12.70	19.20	46.00	-26.80
395.69	Н	Peak	31.35	-10.15	21.20	46.00	-24.80
596.48	Н	Peak	32.26	-6.12	26.14	46.00	-19.86
829.28	Н	Peak	31.87	-2.43	29.44	46.00	-16.56

#### Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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## **Radiated Spurious Emission Measurement Result (below 1GHz)**

Operation Mode WCDMA Band V CH High Mode Test Date Dec. 14, 2009

Fundamental Frequency 846.60 MHz Test By Jazz
Temperature 25 °C Pol Ver./Hor

Humidity 65 %

Freq.	Ant.Pol.	Detector Mode	Reading	Factor	Actual FS	Limit3m	Safe Margin
(MHz)	H/V	(PK/QP)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)
271.53	V	Peak	32.25	-18.50	13.75	46.00	-32.25
332.64	V	Peak	31.74	-7.81	23.93	46.00	-22.07
415.09	V	Peak	31.97	-7.81	24.16	46.00	-21.84
628.49	V	Peak	32.74	-7.81	24.93	46.00	-21.07
827.34	V	Peak	32.81	-7.81	25.00	46.00	-21.00
153.19	Н	Peak	31.35	-13.00	18.35	43.50	-25.15
303.54	Н	Peak	31.30	-12.93	18.37	46.00	-27.63
417.03	Н	Peak	31.93	-9.46	22.47	46.00	-23.53
615.88	Н	Peak	32.95	-5.70	27.25	46.00	-18.75
870.99	Н	Peak	32.60	-1.58	31.02	46.00	-14.98

#### Remark:

- (1) Measuring frequencies from 30 MHz to the 1GHz •
- (2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.
- (3) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

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## **Radiated Spurious Emission Measurement Result (above 1GHz)**

Operation Mode GSM 850 CH Low Mode Test Date Dec. 14, 2009

Fundamental Frequency 824.2 MHz Test By Jazz

Temperature 25 °C Pol Ver. / Hor.

Humidity 65 %

		Peak	$\mathbf{AV}$		Actual	Actual	Peak Limit	AV Limit	
Freq.	Ant.Pol.	Reading	Reading	Factor	Peak FS	<b>AV FS</b>	at 3m	at 3m	Margin
(MHz)	H/V	(dBuV)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
1648.4	V	36.11		-5.22	30.89		74.00	54.00	-23.11
2472.6	V						74.00	54.00	
3296.8	V						74.00	54.00	
4121.0	V						74.00	54.00	
4945.2	V						74.00	54.00	
1648.4	Н	36.12		-5.22	30.90		74.00	54.00	-23.10
2472.6	Н						74.00	54.00	
3296.8	Н						74.00	54.00	
4121.0	Н						74.00	54.00	
4945.2	Н						74.00	54.00	

#### Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency o
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column  $\circ$
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW=1MHz, VBW=1MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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## **Radiated Spurious Emission Measurement Result (above 1GHz)**

Operation Mode GSM 850 CH Mid Mode Test Date Dec. 14, 2009

Fundamental Frequency 836.6 MHz Test By Jazz

Temperature 25 °C Pol Ver. / Hor.

Humidity 65 %

		Peak	$\mathbf{AV}$		Actual	Actual	Peak Limit	AV Limit	
Freq.	Ant.Pol.	Reading	Reading	Factor	Peak FS	<b>AV FS</b>	at 3m	at 3m	Margin
(MHz)	H/V	(dBuV)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
1673.2	V	36.57		-5.08	31.49		74.00	54.00	-22.51
2509.8	V						74.00	54.00	
3346.4	V						74.00	54.00	
4183.0	V						74.00	54.00	
5019.6	V						74.00	54.00	
1673.2	Н	35.59		-5.08	30.51		74.00	54.00	-23.49
2509.8	Н						74.00	54.00	
3346.4	Н						74.00	54.00	
4183.0	Н						74.00	54.00	
5019.6	Н						74.00	54.00	

#### Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency o
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column  $\circ$
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW=1MHz, VBW=1MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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# Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode GSM 850 CH High Mode Test Date Dec. 14, 2009

Fundamental Frequency 848.8 MHz Test By Jazz

Temperature 25 °C Pol Ver. / Hor.

Humidity 65 %

		Peak	$\mathbf{AV}$		Actual	Actual	Peak Limit	AV Limit	
Freq.	Ant.Pol.	Reading	Reading	Factor	Peak FS	<b>AV FS</b>	at 3m	at 3m	Margin
(MHz)	H/V	(dBuV)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
1697.6	V	36.34		-4.96	31.38		74.00	54.00	-22.62
2546.4	V						74.00	54.00	
3395.2	V						74.00	54.00	
4244.0	V						74.00	54.00	
5092.8	V						74.00	54.00	
1697.6	Н	35.75		-4.96	30.79		74.00	54.00	-23.21
2546.4	Н						74.00	54.00	
3395.2	Н						74.00	54.00	
4244.0	Н						74.00	54.00	
5092.8	Н						74.00	54.00	

### Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency o
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW=1MHz, VBW=1MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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## Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode GSM 1900 CH Low Mode Dec. 14, 2009 Test Date

Test By Fundamental Frequency 1850.2 MHz Jazz

**Temperature** Pol Ver. / Hor. 25 °C

Humidity 65 %

		Peak	$\mathbf{AV}$		Actual	Actual	Peak Limit	AV Limit	
Freq.	Ant.Pol.	Reading	Reading	Factor	Peak FS	AV FS	at 3m	at 3m	Margin
(MHz)	H/V	(dBuV)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
3700.4	V	35.31		6.83	42.14		74.00	54.00	-11.86
5550.6	V						74.00	54.00	
7400.8	V						74.00	54.00	
9251.0	V						74.00	54.00	
11101.2	V						74.00	54.00	
3700.4	Н	34.80		6.83	41.63		74.00	54.00	-12.37
5550.6	Н						74.00	54.00	
7400.8	Н						74.00	54.00	
9251.0	Н						74.00	54.00	
11101.2	Н						74.00	54.00	

#### Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency o
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW=1MHz, VBW=1MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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## **Radiated Spurious Emission Measurement Result (above 1GHz)**

Operation Mode GSM 1900 CH Mid Mode Test Date Dec. 14, 2009

Fundamental Frequency 1880 MHz Test By Jazz

Temperature 25 °C Pol Ver. / Hor.

Humidity 65 %

		Peak	$\mathbf{AV}$		Actual	Actual	Peak Limit	AV Limit	
Freq.	Ant.Pol.	Reading	Reading	Factor	Peak FS	AV FS	at 3m	at 3m	Margin
(MHz)	H/V	(dBuV)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
3760.0	V	35.31		6.89	42.20		74.00	54.00	-11.80
5640.0	V						74.00	54.00	
7520.0	V						74.00	54.00	
9400.0	V						74.00	54.00	
11280.0	V						74.00	54.00	
3760.0	Н	34.08		6.89	40.97		74.00	54.00	-13.03
5640.0	Н						74.00	54.00	
7520.0	Н						74.00	54.00	
9400.0	Н						74.00	54.00	
11280.0	Н						74.00	54.00	

#### Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency o
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column  $\circ$
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW=1MHz, VBW=1MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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## **Radiated Spurious Emission Measurement Result (above 1GHz)**

Operation Mode GSM 1900 CH High Mode Test Date Dec. 14, 2009

Fundamental Frequency 1909.8 MHz Test By Jazz

Temperature 25 °C Pol Ver. / Hor.

Humidity 65 %

		Peak	$\mathbf{AV}$		Actual	Actual	Peak Limit	AV Limit	
Freq.	Ant.Pol.	Reading	Reading	Factor	Peak FS	AV FS	at 3m	at 3m	Margin
(MHz)	H/V	(dBuV)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
3819.6	V	33.44		6.96	40.40		74.00	54.00	-13.60
5729.4	V						74.00	54.00	
7639.2	V						74.00	54.00	
9549.0	V						74.00	54.00	
11458.8	V						74.00	54.00	
3819.6	H	34.32		6.96	41.28		74.00	54.00	-12.72
5729.4	Н						74.00	54.00	
7639.2	Н						74.00	54.00	
9549.0	Н						74.00	54.00	
11458.8	Н						74.00	54.00	

### Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency o
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW=1MHz, VBW=1MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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# Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode WCDMA Band II CH Low Mode Dec. 14, 2009 Test Date

Test By Fundamental Frequency 1852.4 MHz Jazz

**Temperature** Pol Ver. / Hor. 25 °C

Humidity 65 %

		Peak	$\mathbf{AV}$		Actual	Actual	Peak Limit	AV Limit	
Freq.	Ant.Pol.	Reading	Reading	Factor	Peak FS	AV FS	at 3m	at 3m	Margin
(MHz)	H/V	(dBuV)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
3704.8	V	35.13		6.83	41.96		74.00	54.00	-12.04
5557.2	V						74.00	54.00	
7409.6	V						74.00	54.00	
9262.0	V						74.00	54.00	
11114.4	V						74.00	54.00	
3704.8	Н	35.39		6.83	42.22		74.00	54.00	-11.78
5557.2	Н						74.00	54.00	
7409.6	Н						74.00	54.00	
9262.0	Н						74.00	54.00	
11114.4	Н						74.00	54.00	

#### Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency o
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW=1MHz, VBW=1MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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Report No.: EH/2009/C0008 **Issue Date: Dec. 21, 2009** 

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## Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode WCDMA Band II CH Mid Mode Dec. 14, 2009 Test Date

Test By Fundamental Frequency 1880 MHz Jazz

**Temperature** Pol Ver. / Hor. 25 °C

Humidity 65 %

Enog	A == 4 Dol	Peak	AV	Eastan	Actual	Actual	Peak Limit	AV Limit	Manain
Freq.		Reading	O	Factor	Peak FS	AV FS	at 3m	at 3m	Margin
(MHz)	H/V	(dBuV)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
3760.0	V	33.97		6.89	40.86		74.00	54.00	-13.14
5640.0	V						74.00	54.00	
7520.0	V						74.00	54.00	
9400.0	V						74.00	54.00	
11280.0	V						74.00	54.00	
3760.0	Н	34.28		6.89	41.17		74.00	54.00	-12.83
5640.0	Н						74.00	54.00	
7520.0	Н						74.00	54.00	
9400.0	Н						74.00	54.00	
11280.0	Н						74.00	54.00	

### Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency o
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW=1MHz, VBW=1MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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## **Radiated Spurious Emission Measurement Result (above 1GHz)**

Operation Mode WCDMA Band II CH High Mode Test Date Dec. 14, 2009

Fundamental Frequency 1907.6 MHz Test By Jazz

Temperature 25 °C Pol Ver. / Hor.

Humidity 65 %

E	A 4 D - 1	Peak	AV	E4	Actual	Actual	Peak Limit	AV Limit	<b>N</b> /
Freq.		Reading	O	Factor	Peak FS	AV FS	at 3m	at 3m	Margin
(MHz)	H/V	(dBuV)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
3815.2	V	33.08		6.96	40.04		74.00	54.00	-13.96
5722.8	V						74.00	54.00	
7630.4	V						74.00	54.00	
9538.0	V						74.00	54.00	
11445.6	V						74.00	54.00	
3815.2	Н	34.19		6.96	41.15		74.00	54.00	-12.85
5722.8	Н						74.00	54.00	
7630.4	Н						74.00	54.00	
9538.0	Н						74.00	54.00	
11445.6	Н						74.00	54.00	

#### Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency o
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW=1MHz, VBW=1MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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### **Radiated Spurious Emission Measurement Result (above 1GHz)**

Operation Mode WCDMA Band V CH Low Mode Test Date Dec. 14, 2009

Fundamental Frequency 826.40 MHz Test By Jazz

Temperature 25 °C Pol Ver. / Hor.

Humidity 65 %

		Peak	$\mathbf{AV}$		Actual	Actual	Peak Limit	AV Limit	
Freq.	Ant.Pol.	Reading	Reading	Factor	Peak FS	AV FS	at 3m	at 3m	Margin
(MHz)	H/V	(dBuV)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
1652.8	V	36.38		-5.18	31.20		74.00	54.00	-22.80
2479.2	V						74.00	54.00	
3305.6	V						74.00	54.00	
4132.0	V						74.00	54.00	
4958.4	V						74.00	54.00	
1652.8	Н	35.66		-5.18	30.48		74.00	54.00	-23.52
2479.2	Н						74.00	54.00	
3305.6	Н						74.00	54.00	
4132.0	Н						74.00	54.00	
4958.4	Н						74.00	54.00	

#### Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency o
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column  $\circ$
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW=1MHz, VBW=1MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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## Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode WCDMA Band V CH Mid Mode Dec. 14, 2009 Test Date

Test By Fundamental Frequency 836.60 MHz Jazz

**Temperature** Pol Ver. / Hor. 25 °C

Humidity 65 %

		Peak	$\mathbf{AV}$		Actual	Actual	Peak Limit	AV Limit	
Freq.	Ant.Pol.	Reading	Reading	Factor	Peak FS	AV FS	at 3m	at 3m	Margin
(MHz)	H/V	(dBuV)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
1673.2	V	35.75		-5.08	30.67		74.00	54.00	-23.33
2509.8	V						74.00	54.00	
3346.4	V						74.00	54.00	
4183.0	V						74.00	54.00	
5019.6	V						74.00	54.00	
1673.2	Н	36.20		-5.08	31.12		74.00	54.00	-22.88
2509.8	Н						74.00	54.00	
3346.4	Н						74.00	54.00	
4183.0	Н						74.00	54.00	
5019.6	Н						74.00	54.00	

#### Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency o
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW=1MHz, VBW=1MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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## Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode WCDMA Band V CH High Mode Dec. 14, 2009 Test Date

Test By Fundamental Frequency 846.60 MHz Jazz

**Temperature** Pol Ver. / Hor. 25 °C

Humidity 65 %

Freq.	Ant Dol	Peak Reading	AV Pooding	Factor	Actual Peak FS	Actual AV FS	Peak Limit at 3m	AV Limit at 3m	Margin
(MHz)	H/V	(dBuV)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)
1693.2	V	35.28		-4.96	30.32		74.00	54.00	-23.68
2539.8	V						74.00	54.00	
3386.4	V						74.00	54.00	
4233.0	V						74.00	54.00	
5079.6	V						74.00	54.00	
1693.2	Н	35.66		-4.96	30.70		74.00	54.00	-23.30
2539.8	Н						74.00	54.00	
3386.4	Н						74.00	54.00	
4233.0	Н						74.00	54.00	
5079.6	Н						74.00	54.00	

#### Remark:

- (1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency o
- (2) Data of measurement within this frequency range shown "-" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column o
- (4) Spectrum Peak Setting: 1GHz-13GHz, RBW=1MHz, VBW=1MHz, Sweep time=200 ms.
- (5) Spectrum AV Setting: 1GHz-13GHz, RBW=1MHz, VBW=10Hz, Sweep time=200 ms.

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