FCC CFR47 PART 22 SUBPART H
FCC CFR47 PART 24 SUBPART E

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA + BLUETOOTH, DTS/UNII a/b/g/n/ac, ANT+ and NFC

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Prepared for

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Revision History

Rev.	Issue Date	Revisions	Revised By
-	2015-04-16	Initial Release	Jeff Moser
1	2015-04-22	Removed model designators.	Jeff Moser

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SONY MOBILE COMMUNICATION, INC.

EUT DESCRIPTION: GSM/WCDMA + BLUETOOTH, DTS/UNII a/b/g/n/ac, ANT+ and NFC

SERIAL NUMBER: SN 00440245-427882-3 and SN 00440245-396119-9

DATE TESTED: 2015-03-13 THROUGH 2015-04-13

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 22H and 24E	PASS

UL LLC tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL LLC based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL LLC and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL LLC will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released
For UL LLC By:

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-C, FCC CFR 47 Part 22 and FCC CFR Part 24.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 12 Laboratory Dr., Research Triangle Park, NC 27709, USA.

12 Laboratory Dr., RTP, NC 27709
☐ Chamber A
☒ Chamber C

The onsite chambers (A & C) are covered under Industry Canada company address code 2180C with site numbers 2180C -1 through 2180C-2, respectively.

UL LLC (RTP) is accredited by NVLAP, Laboratory Code 200246-0. The full scope of accreditation can be viewed at http://ts.nist.gov/standards/scopes/2002460.htm.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

EIRP = PSA reading with EUT worst orientation (dBm) + Path loss (dB) – cable loss(between the SG and substitution antenna) + Substitution Antenna Factor (dBi)

ERP = PSA reading with EUT worst orientation (dBm) + Path loss (dB) – cable loss(between the SG and substitution antenna)

(Path loss = Signal generator output – PSA reading with substitution antenna)

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4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test	Uncertainty
Conducted Emissions (0.150-30MHz)	+/- 2.37 dB
Radiated Emissions (30-1000 MHz)	+/- 6.04 dB (3m)
Radiated Emissions (1-40 GHz)	+/- 6.81 dB

Uncertainty figures are valid to a confidence level of 95%.

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA Device with WLAN/Bluetooth/NFC/ANT+ capability that is manufactured by Sony.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum average conducted and radiated ERP / EIRP output powers as follows:

FCC Part 22/24						
Band	Frequency Range(MHz)	Modulation Peak	Conducted		Radiated	
			AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
GSM850	824~849	GMSK	32.2	1659.59		
	824~849	GPRS	32.2	1659.59	26.77	475.34
	824~849	EGPRS	26.7	467.74	21.51	141.58
GSM1900	1850~1910	GMSK	29.9	977.24		
	1850~1910	GPRS	29.9	977.24	28.39	690.24
	1850~1910	EGPRS	25.9	389.05	25.08	322.11
Band 5	824~849	REL99	24.6	288.40	19.08	80.91
	824~849	HSDPA	22.8	190.55	17.23	52.84
	824~849	HSUPA	22.8	190.55		

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5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PIFA antenna for the GSM 850, GSM 1900 and WCDMA Band 5 with a maximum peak gain as follow:

Frequency (MHz)	Peak Gain (dBi)
GSM850, 824~849MHz	-5.6
GSM1900, 1850~1910MHz	-1.5
Band 5, 824~849MHz	-5.6

5.4. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
AC Adapter	Sony	EP-880	3514W 01 S08499	

I/O CABLES (CONDUCTED SETUP)

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	RF Out	1	Spectrum Analyzer	Shielded	None	NA
2	Antenna Port	1	EUT	Shielded	0.1m	NA
3	RF In/Out	1	Communication Test Set	Shielded	1m	NA

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I/O CABLES (RADIATED SETUP)

I/O CABLE LIST						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length**	**Remarks**
1	USB	1	AC Adapter	Un-shielded	1.2m	No
2	RF In/out	1	Communication Test Set	Un-shielded	2m	Yes

TEST SETUP

The EUT is continuously communicated to the call box during the tests.

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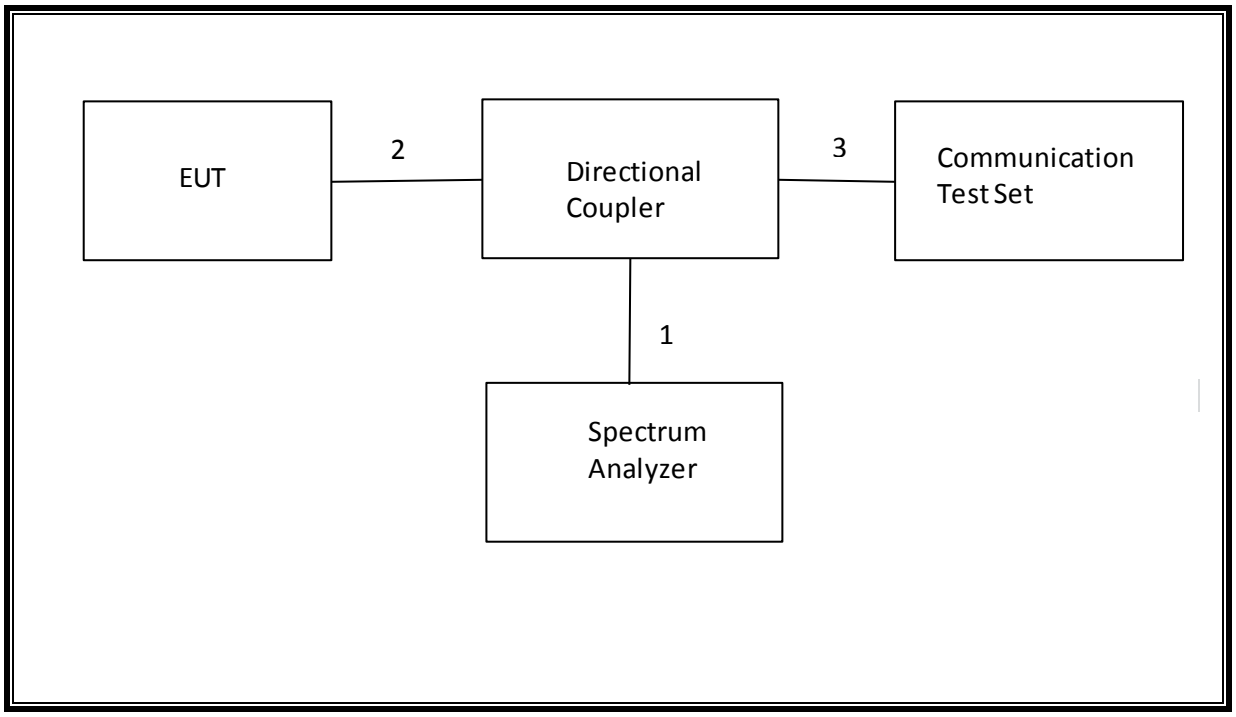
SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



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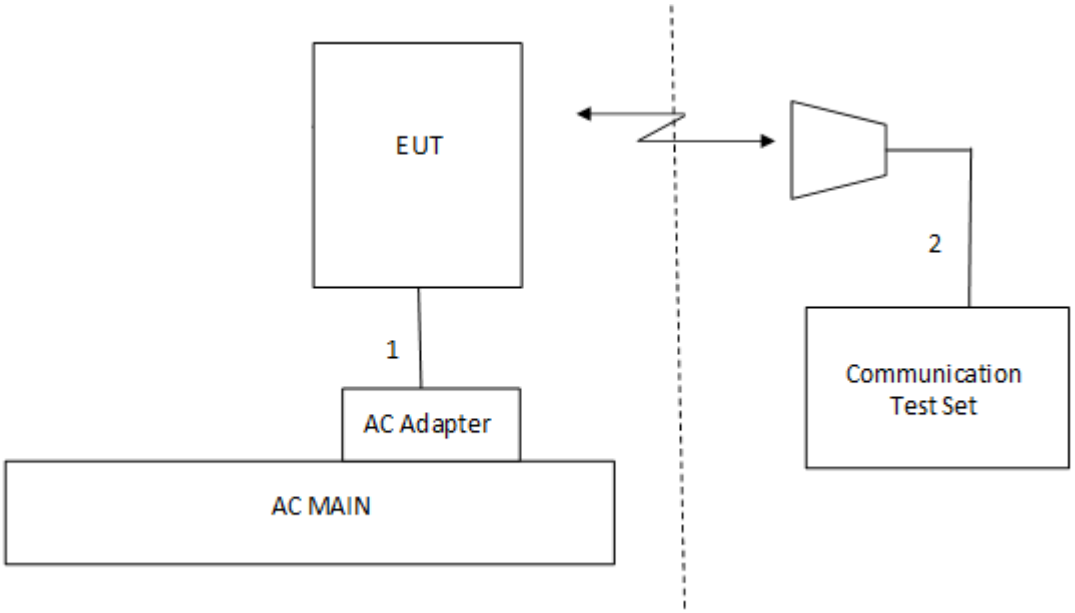
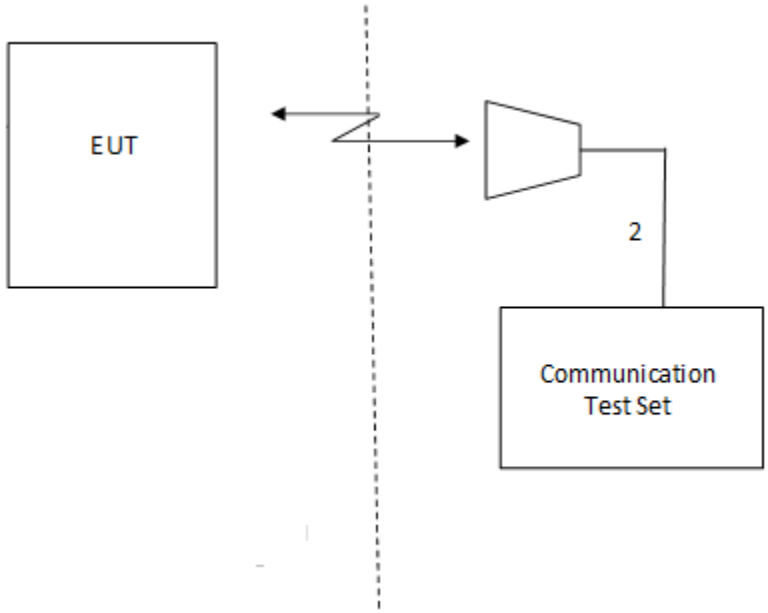
SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)

SPURIOUS



FUNDAMENTAL



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6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Wireless Conducted Measurement Equipment

Equipment ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	Common Equipment				
SA0020	Spectrum Analyzer	Agilent Technologies	E4446	2014-06-12	2015-06-30
SA0022	Network Analyzer	Agilent Technologies	8722ES	2015-03-19	2016-03-31
T374	Wideband Radio Communications Tester	Rohde and Schwartz	CMW500	2014-10-13	2015-10-31
MM0150	Digital Multimeter, 4½ Digit (True RMS AC, AC+DC measurement)	Agilent	U1252A	2014-09-04	2016-09-30
MM0151	Digital Multimeter, 4½ Digit (True RMS AC, AC+DC measurement)	Agilent	U1252A	2014-09-04	2016-09-30
HI0069	Temp/Humid/Pressure Meter	Cole-Parmer	99760-00	2014-06-27	2015-06-30
-	Directional Coupler	Mini Circuits	ZUDC10-183+	Cal on Demand	Cal on Demand

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Radiated Disturbance Emissions (E-field) – Chamber C

Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
	30-1000 MHz Range				
AT0066	Hybrid Broadband Antenna	Sunol Sciences Corp.	JB1	2014-07-10	2015-07-31
	1-18 GHz				
AT0062	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2014-07-22	2015-07-31
	Substitution Antenna				
AT0069 (Substitution Antenna)	Double-Ridged Waveguide Horn Antenna, 1 to 18 GHz	ETS Lindgren	3117	2015-02-17	2016-02-29
AT0016 (Substitution Antenna)	Dipole Antenna, 400-1000MHz	EMCO	3121C-DB4	2014-04-17	2015-04-30
	Tuned Dipole Set				
AT0013-AT0016	Four Dipole Antenna Set, 30 to 1000 MHz	EMCO	3121C-DB-1, -2, -3, -4	2014-04-17	2015-04-30
	Gain-Loss Chains				
SAC_G (Hybrid) 30-1000MHz	Gain-Loss string for Hyrbid antenna at 3m	Various	Various	2015-01-26	2016-01-31
SAC_G (BOM) 1-18GHz	Gain-Loss string for Hyrbid antenna at 3m	Various	Various	2015-01-26	2016-01-31
	Receiver & Software				
SA0018	Spectrum Analyzer	Agilent	N9030A	2014-06-24	2015-06-30
SOFTEMI	EMI Software	UL	Version 9.5	NA	NA
T918	Wideband Radio Communications Tester	Rohde and Schwartz	CMW500	2014-12-30	2015-12-31
	Additional Equipment used				
HI0069	Temp/Humid/Pressure Meter	Cole-Parmer	99760-00	2014-06-27	2015-06-30

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Equip. ID	Description	Manufacturer	Model Number	Last Cal.	Next Cal.
SIG001 (Substitution Signal Generator)	Signal Generator, 100kHz-6GHz	Agilent	N5181A	2015-02-04	2016-02-04
HPF009	1GHz High-pass Filter	Micro-Tronics	HPM17672	2015-01-28	2016-01-31

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7. Summary Table

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Note
2.1049	N/A	Occupied Band width (99%)	N/A	Conducted	Pass	4.14 MHz
22.917(a) 24.238(a) 27.53(g) 90.691	RSS-132(4.5.1) RSS-133(6.5.1) RSS-139(6.5.1)	Band Edge / Conducted Spurious Emission	-13dBm		Pass	-23.33 dBm/ -15.84 dBm
2.1046	N/A	Conducted output power	N/A		Pass	32.2 dBm
22.355 24.235 27.54 90.213	RSS-132(4.3) RSS-133(6.3) RSS-139(6.3) RSS-199(4.3)	Frequency Stability	2.5PPM		Pass	0.019 ppm
22.913(a)(2)	RSS-132(4.4)	Effective Radiated Power	38.5dBm	Radiated	Pass	26.77 dBm
24.232(c) 27.50(h)(2)	RSS-133(6.4) RSS-199(4.4)	Equivalent Isotropic Radiated Power	33dBm		Pass	28.39 dBm
22.917(a) 24.238(a) 27.53(g)	RSS-132(4.5.1) RSS-133(6.5.1) RSS-139(6.5.1)	Radiated Spurious Emission	-13dBm		Pass	-40.5 dBm

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8. RF POWER OUTPUT VERIFICATION

8.1. GSM/GPRS/EDGE

Function: Menu select > GSM Mobile Station > GSM 850/900/1800/1900

Press Connection control to choose the different menus

Press RESET > choose all to reset all settings

Connection Press Signal Off to turn off the signal and change settings

Network Support > GSM+GPRS or GSM+EGPRS

Main Service > Packet Data

Service selection > Test Mode A – Auto Slot Config. off

MS Signal Press Slot Config bottom on the right twice to select and change the number of time slots and power setting

> Slot configuration > Uplink/Gamma

> 33 dBm for GPRS 850/900

> 30 dBm for GPRS1800/1900

BS Signal Enter the same channel number for TCH channel (test channel) and BCCH channel

Frequency Offset > + 0 Hz

Mode > BCCH and TCH

BCCH Level > -85 dBm (May need to adjust if link is not stable)

BCCH Channel > choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]

Channel Type > Off

P0> 4 dB

Slot Config > Unchanged (if already set under MS Signal)

TCH > choose desired test channel

Hopping > Off

Main Timeslot > 3 (Default)

Network Coding Scheme > CS4 (GPRS) and MCS5 ~ MCS9 (EGPRS)

Bit Stream > 2E9-1PSR Bit Pattern

AF/RF Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input

Connection Press Signal On to turn on the signal and change settings

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8.1.1. GSM OUTPUT POWER RESULT

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Burst Pwr (dBm)
GSM (Voice)	CS1	1	128	824.2	32.0
			190	836.6	32.2
			251	848.8	32.1
GPRS (GMSK)	CS1	1	128	824.2	32.0
			190	836.6	32.2
			251	848.8	32.1
		2	128	824.2	31.7
			190	836.6	31.8
			251	848.8	31.3
		3	128	824.2	29.3
			190	836.6	29.4
			251	848.8	29.4
		4	128	824.2	27.9
			190	836.6	28.1
			251	848.8	28.1
EGPRS (8PSK)	MCS5	1	128	824.2	26.6
			190	836.6	26.7
			251	848.8	26.6
		2	128	824.2	25.4
			190	836.6	25.6
			251	848.8	25.4
		3	128	824.2	23.2
			190	836.6	23.3
			251	848.8	23.2
		4	128	824.2	22.6
			190	836.6	22.8
			251	848.8	22.7

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Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Burst Pwr (dBm)
GSM (Voice)	CS1	1	512	1850.2	29.6
			661	1880.0	29.8
			810	1909.8	29.9
GPRS (GMSK)	CS1	1	512	1850.2	29.6
			661	1880.0	29.8
			810	1909.8	29.9
		2	512	1850.2	27.8
			661	1880.0	28.1
			810	1909.8	28.1
		3	512	1850.2	26.7
			661	1880.0	26.8
			810	1909.8	26.9
		4	512	1850.2	25.3
			661	1880.0	25.6
			810	1909.8	25.6
EGPRS (8PSK)	MCS5	1	512	1850.2	25.8
			661	1880.0	25.7
			810	1909.8	25.9
		2	512	1850.2	24.5
			661	1880.0	24.4
			810	1909.8	24.5
		3	512	1850.2	22.2
			661	1880.0	22.0
			810	1909.8	22.1
		4	512	1850.2	21.3
			661	1880.0	21.2
			810	1909.8	21.4

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8.2. UMTS REL 99

TEST PROCEDURE

The following summary of these settings are illustrated below:

	Mode	Rel99
	Subtest	-
WCDMA General Settings	Loopback Mode	Test Mode 1
	Rel99 RMC	12.2kbps RMC
	HSDPA FRC	Not Applicable
	HSUPA Test	Not Applicable
	Power Control Algorithm	Algorithm2
	βc	Not Applicable
	βd	Not Applicable
	βec	Not Applicable
	βc/βd	8/15
	βhs	Not Applicable
	βed	Not Applicable

8.2.1. UMTS REL 99 OUTPUT POWER RESULT

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band V	Rel 99 (RMC, 12.2 kbps)	4132	826.4	0	24.5
		4183	836.6	0	24.5
		4233	846.6	0	24.6

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8.3. UMTS HSDPA

The following 4 Sub-tests were completed according to Release 5 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	Rel5 HSDPA			
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set1			
	Power Control Algorithm	Algorithm 2			
	βc	2/15	12/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	βc/βd	2/15	12/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR (dB)	0	0	0.5	0.5
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	Ahs =βhs/βc	30/15			

8.3.1. UMTS HSDPA OUTPUT POWER RESULT

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band V (HSDPA)	Subtest 1	4132	826.4	0	22.8
		4183	836.6	0	22.8
		4233	846.6	0	22.8
	Subtest 2	4132	826.4	0	22.8
		4183	836.6	0	22.8
		4233	846.6	0	22.8
	Subtest 3	4132	826.4	0.5	22.3
		4183	836.6	0.5	22.3
		4233	846.6	0.5	22.4
	Subtest 4	4132	826.4	0.5	22.3
		4183	836.6	0.5	22.3
		4233	846.6	0.5	22.4

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8.4. UMTS HSUPA

TEST PROCEDURE

The following summary of these settings are illustrated below: (ETSI TS 134.121-1 Table C.11.1)

	Mode	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA	Rel6 HSUPA
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	P-CPICH (dB)	-10				
	P-CCPCH (dB)	-12				
	SCH (dB)	-12				
	PICH(dB)	-15				
	DPCH (dB)	-9				
	HS-SCCH_1 (dB)	-8				
	HS-PDSCH (dB)	-3				
	Rel99 RMC	12.2kbps RMC				
	HSDPA FRC	H-Set1				
	HSUPA Test	HSUPA Loopback				
	Power Control Algorithm	Algorithm2				
	Bc	11/15	6/15	15/15	2/15	15/15
	Bd	15/15	15/15	9/15	15/15	15/15
	Bec	209/225	12/15	30/15	2/15	5/15
	βc/βd	11/15	6/15	15/9	2/15	15/15
	Bhs	22/15	12/15	30/15	4/15	30/15
	βed (note1)	1309/225	94/75	47/15 47/15	56/75	134/15
	MPR	0	2	1	2	0
HSDPA Specific Settings	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	Ahs = βhs/βc	30/15				
HSUPA Specific Settings	D E-DPCCH	6	8	8	5	7
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	21
	Reference E-TFCIs	5	5	2	5	5
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	81
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E_TFCIs	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27	

Note1: βed cannot be set directly, it is set by Absolute Grant Value.

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8.4.1. UMTS HSUPA OUTPUT POWER RESULT

Band	Mode	UL Ch No.	Freq. (MHz)	MPR	Avg Pwr (dBm)
W-CDMA Band V (HSUPA)	Subtest 1	4132	826.4	0	22.8
		4183	836.6	0	22.7
		4233	846.6	0	22.8
	Subtest 2	4132	826.4	2	21.2
		4183	836.6	2	21.2
		4233	846.6	2	21.2
	Subtest 3	4132	826.4	1	21.1
		4183	836.6	1	21.1
		4233	846.6	1	21.2
	Subtest 4	4132	826.4	2	21.2
		4183	836.6	2	21.2
		4233	846.6	2	21.2
	Subtest 5	4132	826.4	0	22.8
		4183	836.6	0	22.7
		4233	846.6	0	22.8

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9. PEAK TO AVERAGE RATIO

Test Procedure

Per KDB 971168 D01 Power Meas License Digital Systems v02r01

Test Spec

In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

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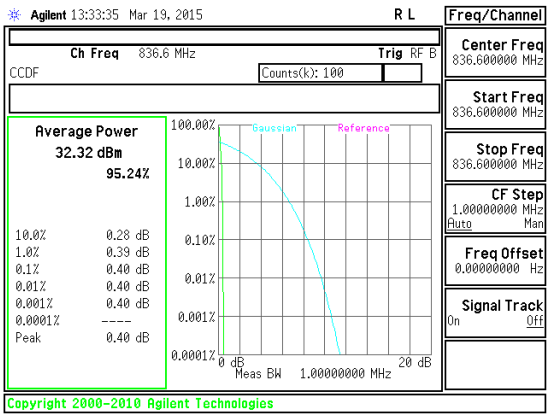
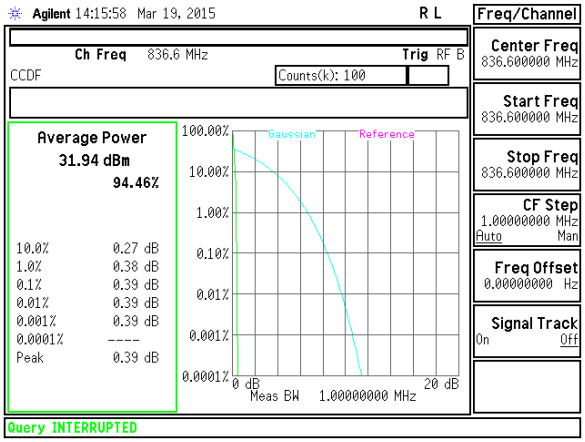
9.1. CONDUCTED PEAK TO AVERAGE RESULT

GSM

Band GSM 850	 GSM 850, GSM Mid Channel	 GSM 850, GPRS Mid Channel

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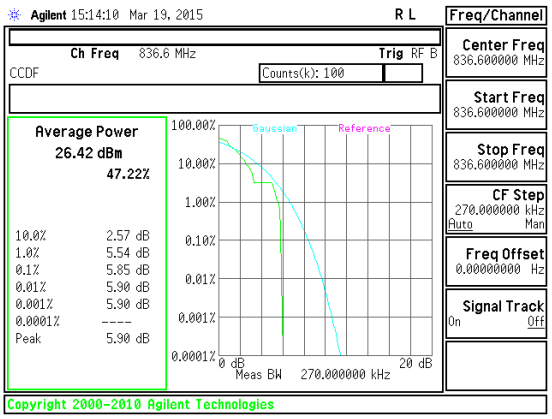
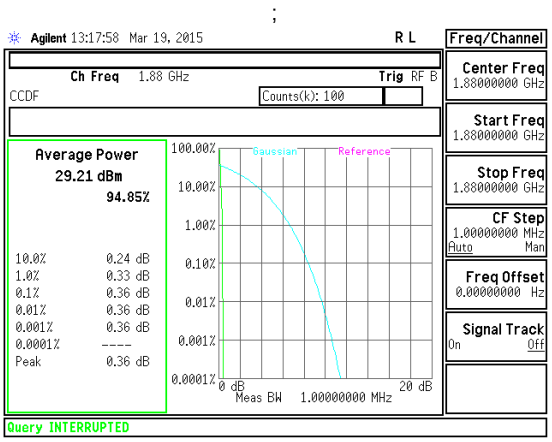
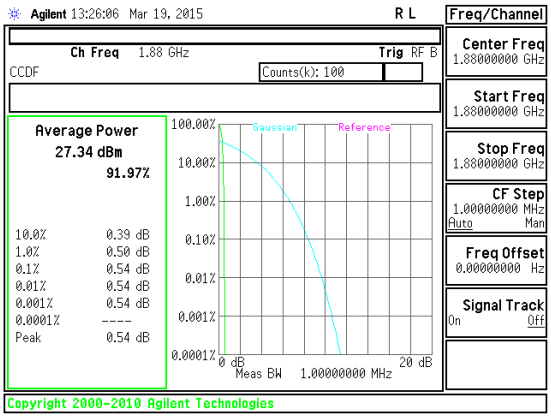
Band GSM 850	 GSM 850, EGPRS Mid Channel	BLANK
GSM 1900 Band	 GSM 1900, GSM Mid Channel	 GSM 1900, GPRS Mid Channel

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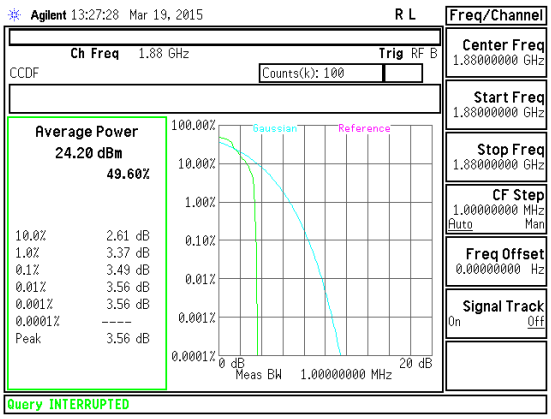
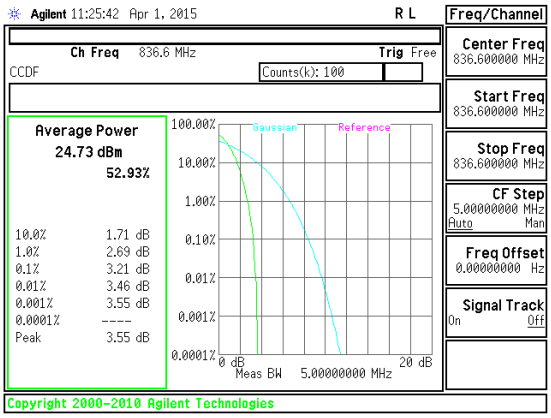
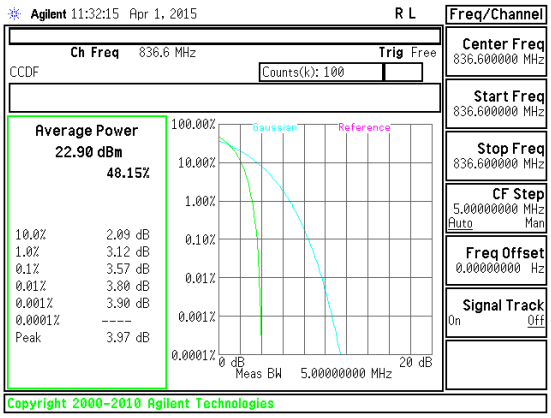
GSM 1900 Band	 GSM 1900, EGPRS Mid Channel	BLANK
UMTS Band V	 UMTS Band V, REL. 99 Mid Channel	 UMTS Band V, HSDPA Mid Channel

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10. LIMITS AND CONDUCTED RESULTS

10.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049
IC: RSS-132, 4.5; RSS-133, 6.5

LIMITS

For reporting purposes only

TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.

(KDB 971168 D01 Power Meas License Digital Systems v02r02)

MODES TESTED

GSM 850, GSM 1900 and WCDMA Band V

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10.1.1. OCCUPIED BANDWIDTH RESULTS

Band	Mode	Channel	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
GSM850	GPRS	128	824.2	241.9	317.8
		190	836.6	240.7	322.3
		251	848.8	242.9	315.9
	EGPRS	128	824.2	238.9	301.4
		190	836.6	233.7	285.7
		251	848.8	244.0	308.0
GSM 1900	GPRS	512	1850.2	243.0	311.2
		661	1880	243.1	313.1
		810	1909.8	242.1	315.4
	EGPRS	512	1850.2	239.9	315.0
		661	1880	239.3	306.2
		810	1909.8	237.1	303.4
WCDMA Band 5	REL99	4132	826.4	4137.1	4701.0
		4183	836.6	4141.6	4703.0
		4233	846.6	4126.8	4678.0
	HSDPA	4132	826.4	4144.0	4688.0
		4183	836.6	4121.6	4680.0
		4233	846.6	4129.6	4701.0

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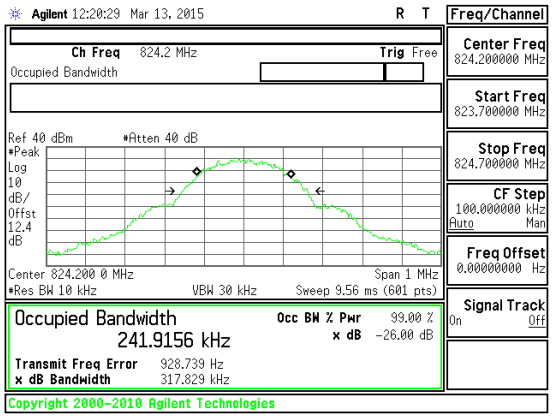
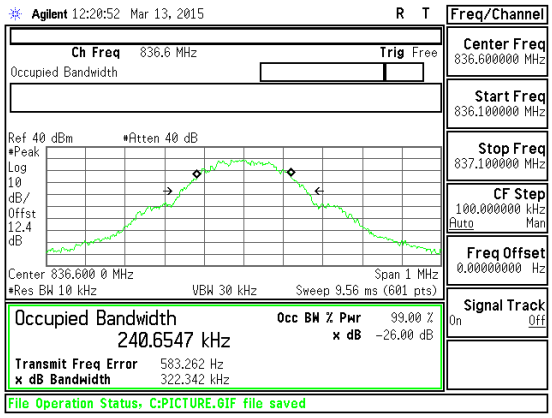
10.1.2. OCCUPIED BANDWIDTH PLOTS

GSM 850

Band GSM850 GPRS	 Band GSM850 GPRS OBW Low channel	 Band GSM850 GPRS OBW Mid channel

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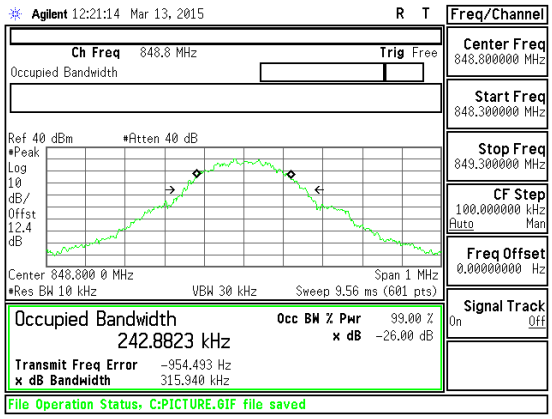
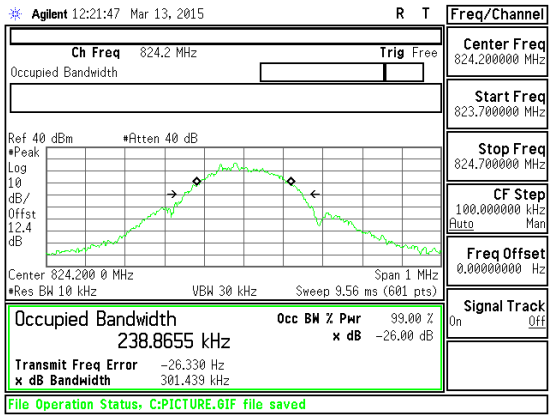
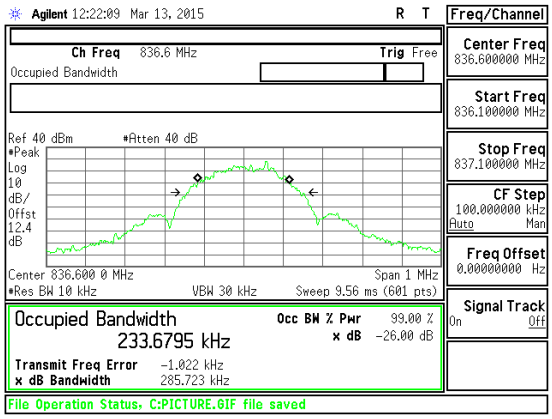
Band GSM850 GPRS	 Band GSM850 GPRS OBW High channel	BLANK
Band GSM850 EGPRS	 Band GSM850 EGPRS OBW Low channel	 Band GSM850 EGPRS OBW Mid channel

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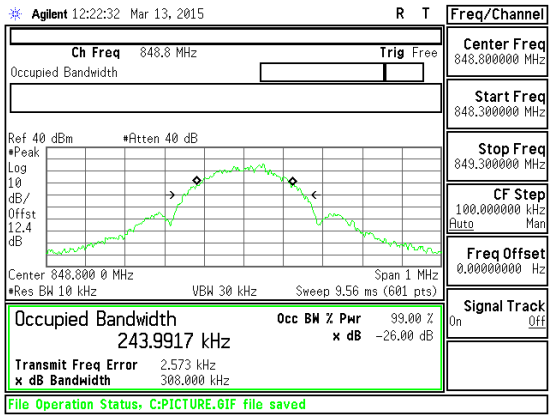
Band GSM850 EGPRS	 Band GSM850 EGPRS OBW High channel	BLANK

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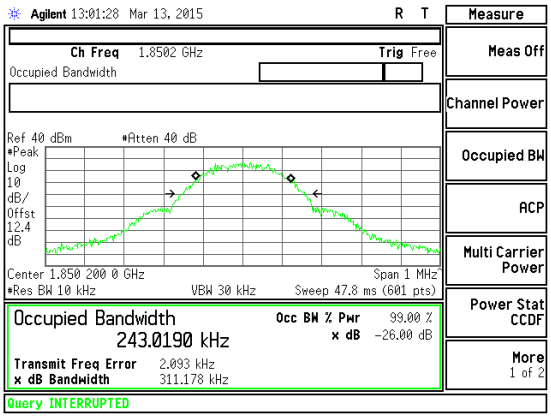
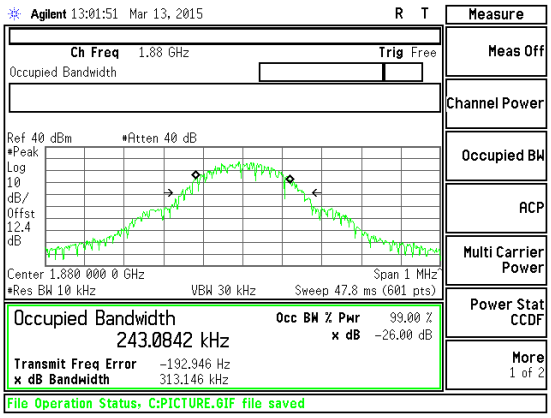
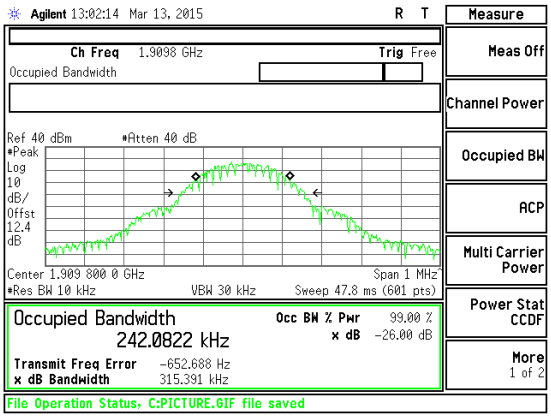
GSM 1900

Band GSM1900 GPRS	 Band GSM1900 GPRS OBW Low channel	 Band GSM1900 GPRS OBW Mid channel
Band GSM1900 GPRS	 Band GSM1900 GPRS OBW High channel	BLANK

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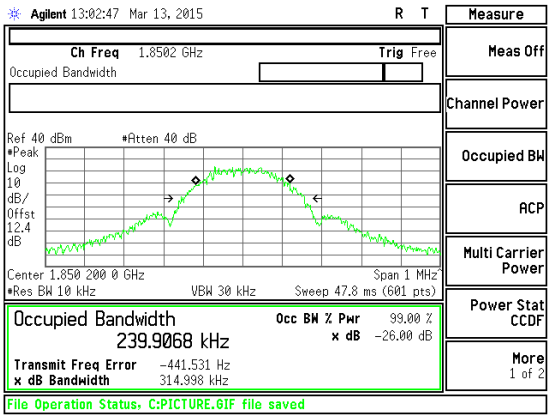
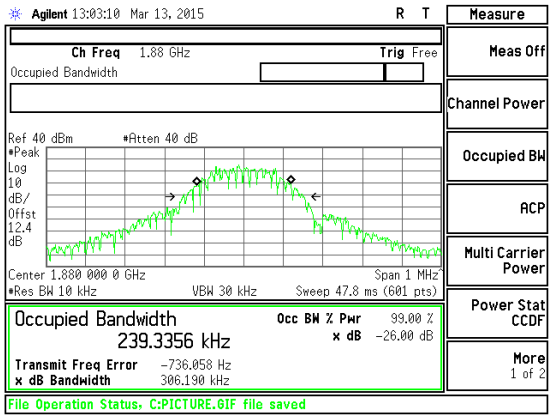
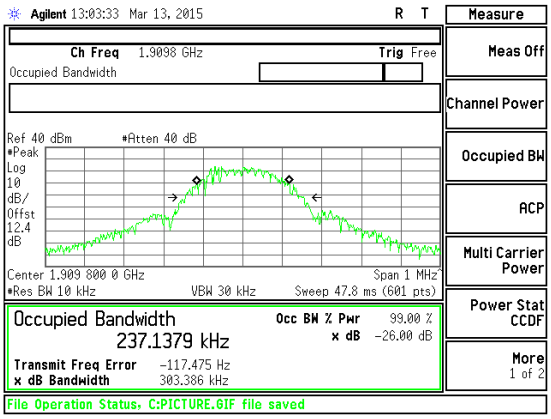
Band GSM1900 EGPRS	 Band GSM1900 EGPRS OBW Low channel	 Band GSM1900 EGPRS OBW Mid channel
Band GSM1900 EGPRS	 Band GSM1900 EGPRS OBW High channel	BLANK

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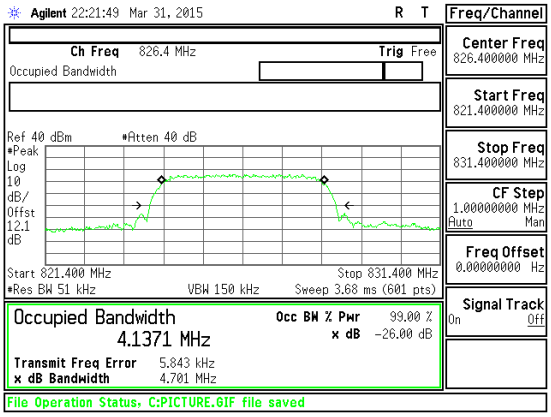
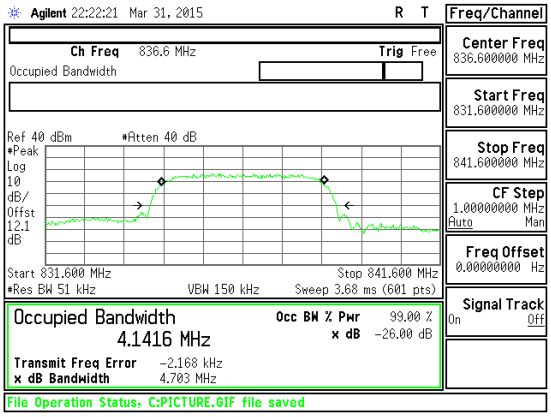
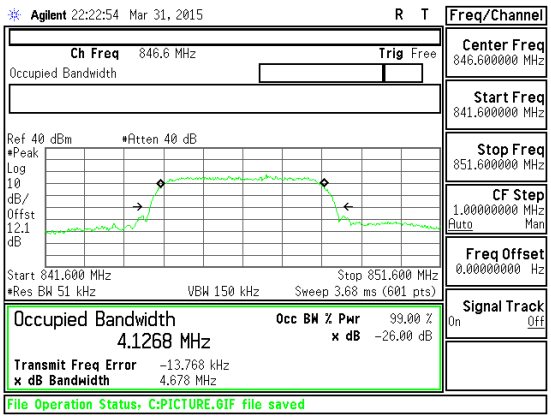
WCDMA

Band 5 REL99	 Band 5 REL99 OBW LOW CHANNEL	 Band 5 REL99 OBW MID CHANNEL
Band 5 REL99	 Band 5 REL99 OBW HIGH CHANNEL	BLANK

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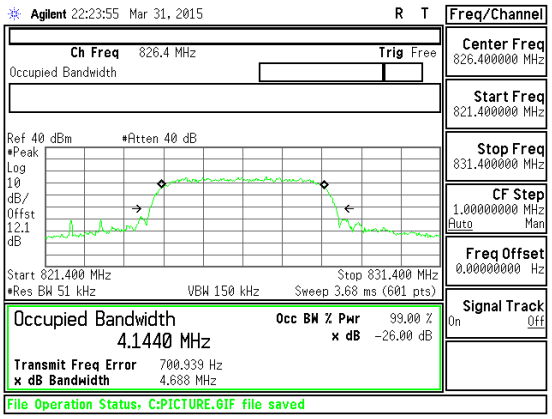
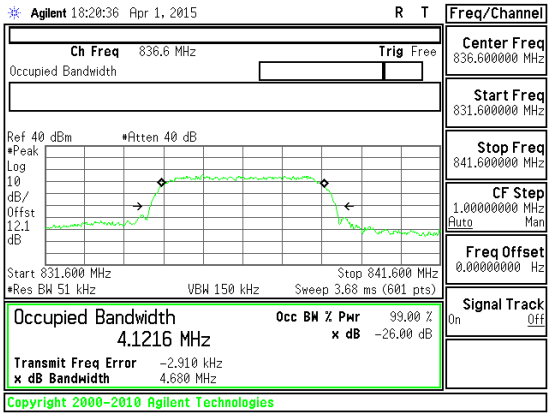
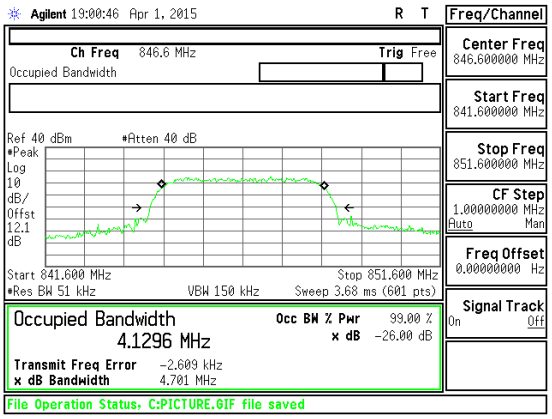
Band 5 HSDPA	 Band 5 HSDPA OBW LOW CHANNEL	 Band 5 HSDPA OBW MID CHANNEL
Band 5 HSDPA	 Band 5 HSDPA OBW HIGH CHANNEL	BLANK

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10.2. BAND EDGE EMISSIONS

RULE PART(S)

FCC: §22.359, §24.238 and § 90.691

LIMITS

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02
The transmitter output was connected to an Agilent 8960 or a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

MODES TESTED

GSM 850, GSM 1900 and WCDMA Band V

RESULTS

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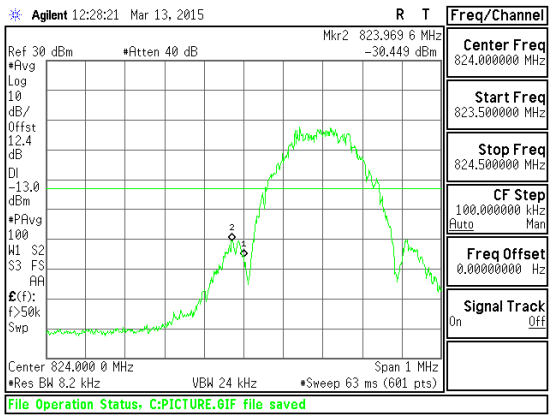
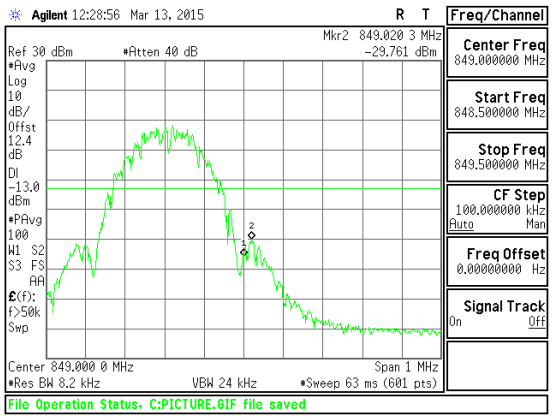
10.2.1. BAND EDGE PLOTS

GSM

Band GSM850 EGPRS	 Band GSM850 EGPRS CBE Low channel	 Band GSM850 EGPRS CBE High channel

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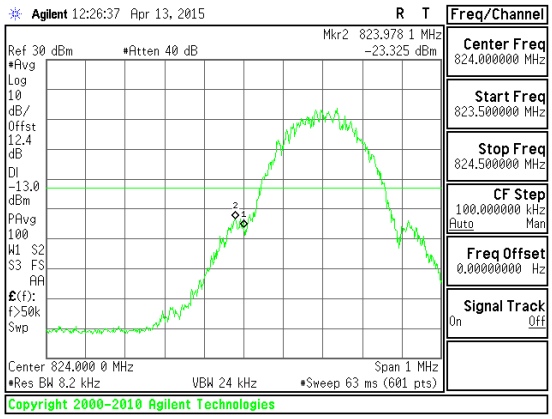
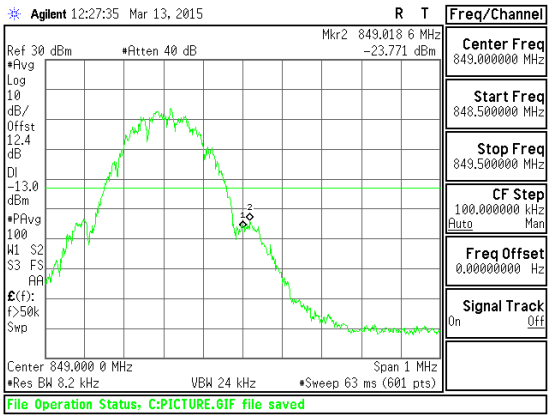
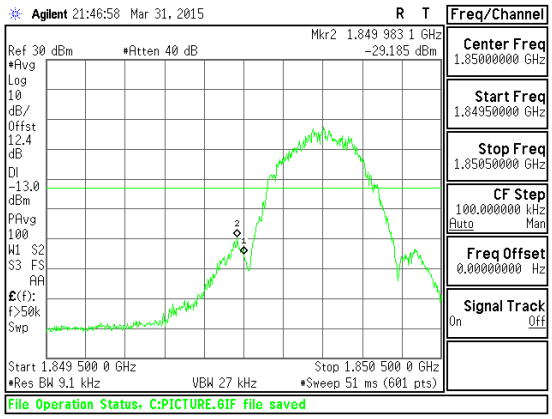
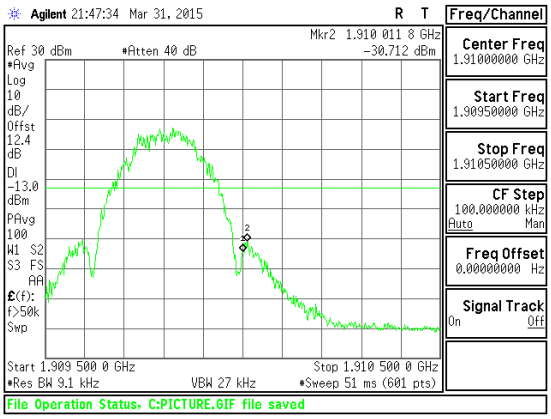
Band GSM850 GPRS	 Band GSM850 GPRS CBE Low channel	 Band GSM850 GPRS CBE High channel
Band GSM1900 EGPRS	 Band GSM1900 EGPRS CBE Low channel	 Band GSM1900 EGPRS CBE High channel

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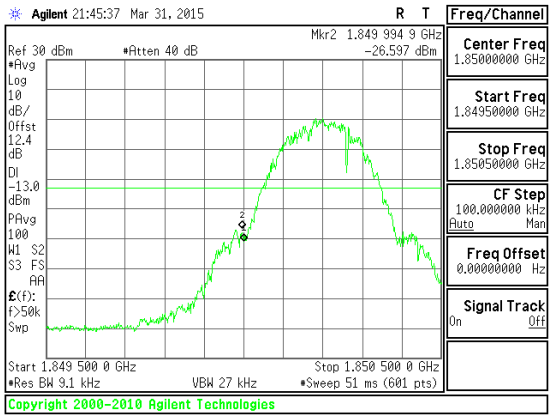
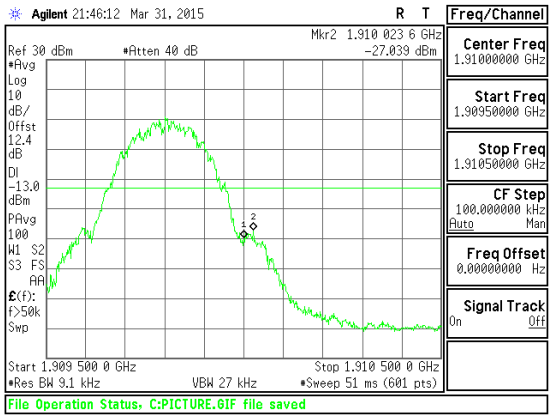
Band GSM1900 GPRS	 Band GSM1900 GPRS CBE Low channel	 Band GSM1900 GPRS CBE High channel

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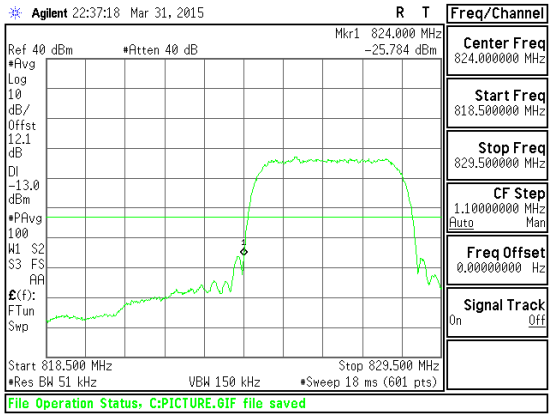
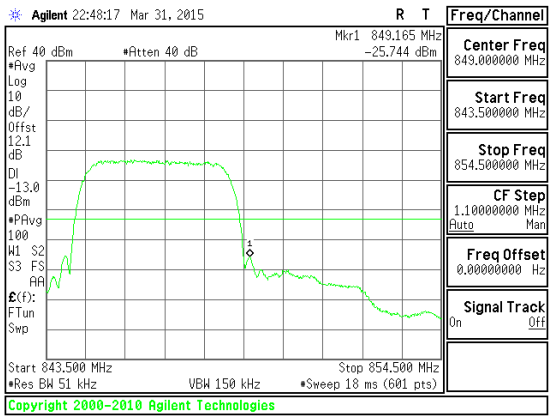
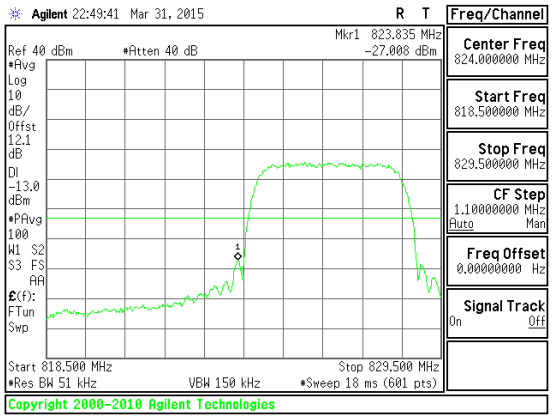
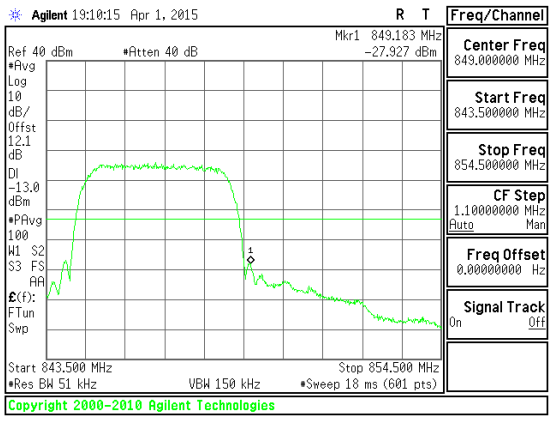
WCDMA

Band V REL 99	 Band 5 REL 99 CBE Low channel	 Band 5 REL 99 CBE High channel
Band V HSDPA	 Band 5 HSDPA GPRS CBE Low channel	 Band 5 HSDPA CBE High channel

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10.3. OUT OF BAND EMISSIONS

RULE PART(S)

FCC: §2.1051, §22.901, §22.917, §24.238 and §90.691

LIMITS

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

The RF output of the transmitter was connected to a spectrum analyzer through a calibrated coaxial cable. Sufficient scans were taken to show the out-of-band Emissions, if any, up to 10th harmonic. Multiple sweeps were recorded in maximum hold mode using a peak detector to ensure that the worst-case emissions were caught.

MODES TESTED

GSM 850, GSM 1900 and WCDMA V

RESULTS

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10.3.1. OUT OF BAND EMISSIONS RESULT

Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
GSM850	GPRS	824.2	-18.71	-13	-5.71
		836.6	-18.94	-13	-5.94
		848.8	-18.55	-13	-5.55
	EGPRS	824.2	-19.60	-13	-6.60
		836.6	-19.84	-13	-6.84
		848.8	-18.75	-13	-5.75
GSM1900	GPRS	1850.2	-17.10	-13	-4.10
		1880	-16.84	-13	-3.84
		1909.8	-16.85	-13	-3.85
	EGPRS	1850.2	-15.84	-13	-2.84
		1880	-17.03	-13	-4.03
		1909.8	-16.47	-13	-3.47
Band 5	REL99	826.4	-16.96	-13	-3.96
		836.6	-17.52	-13	-4.52
		846.6	-17.29	-13	-4.29
	HSDPA	826.4	-17.33	-13	-4.33
		836.6	-19.71	-13	-6.71
		846.6	-19.21	-13	-6.21

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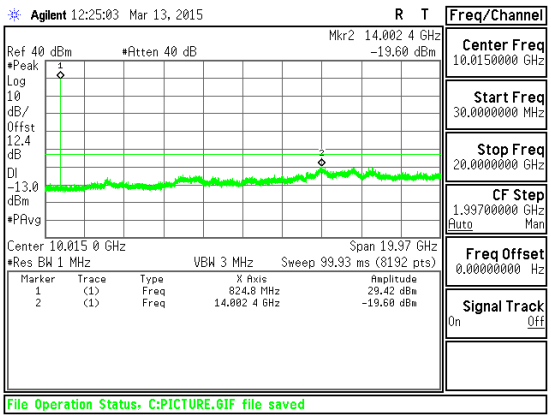
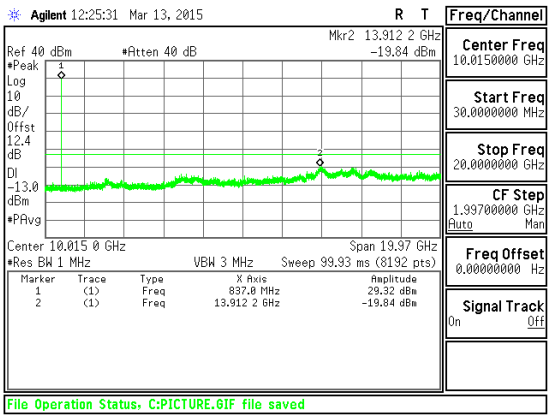
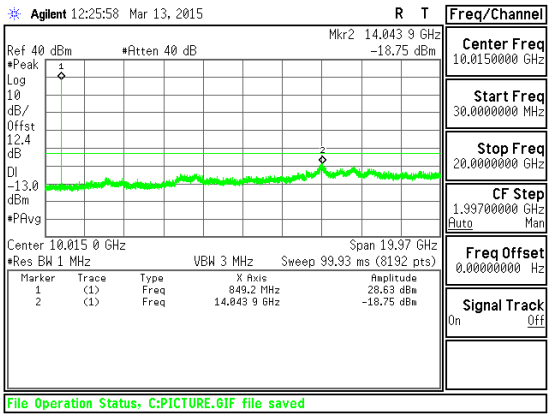
10.3.2. OUT OF BAND EMISSIONS PLOTS

GSM

Band GSM850 EGPRS	 Band GSM850 EGPRS CSE Low channel	 Band GSM850 EGPRS CSE Mid channel
Band GSM850 EGPRS	 Band GSM850 EGPRS CSE High channel	BLANK

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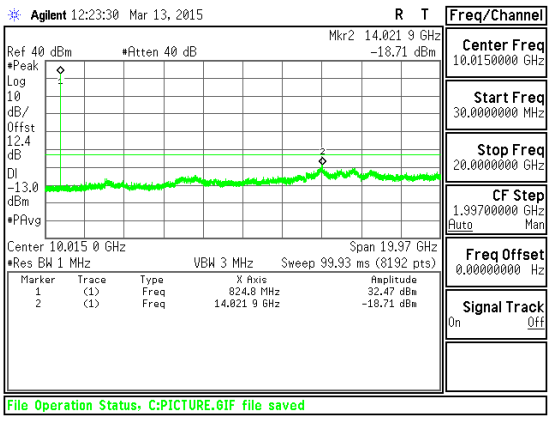
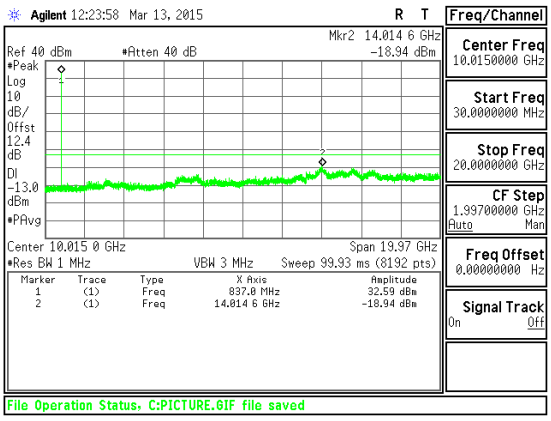
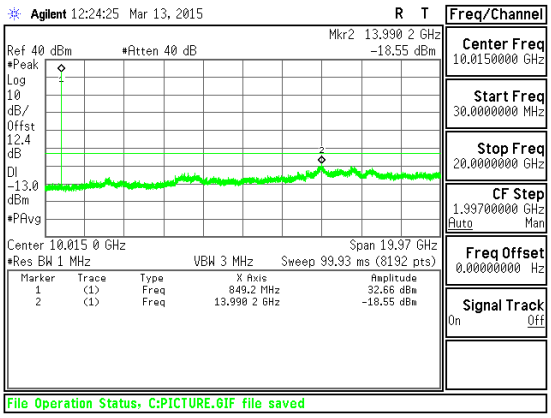
Band GSM850 GPRS	 Band GSM850 GPRS CSE Low channel	 Band GSM850 GPRS CSE Mid channel
Band GSM850 GPRS	 Band GSM850 GPRS CSE High channel	BLANK

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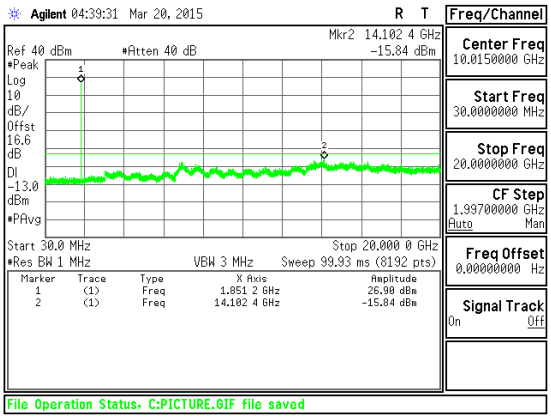
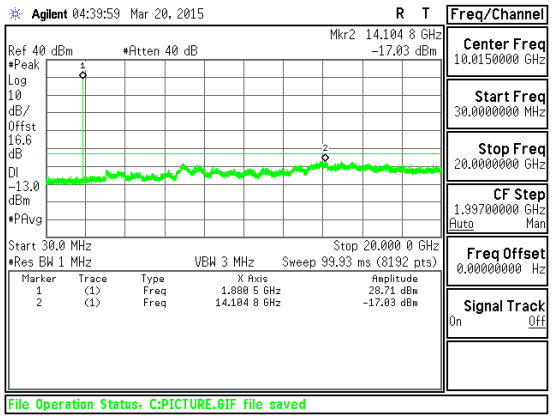
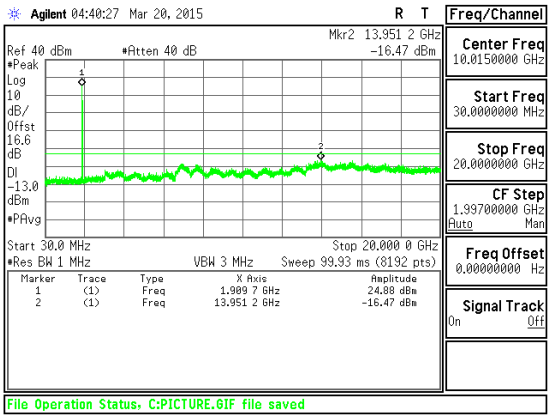
Band GSM1900 EGPRS	 Band GSM1900 EGPRS CSE Low channel	 Band GSM1900 EGPRS CSE Mid channel
Band GSM1900 EGPRS	 Band GSM1900 EGPRS CSE High channel	BLANK

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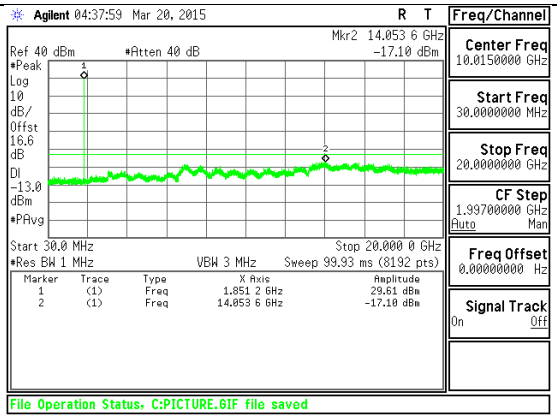
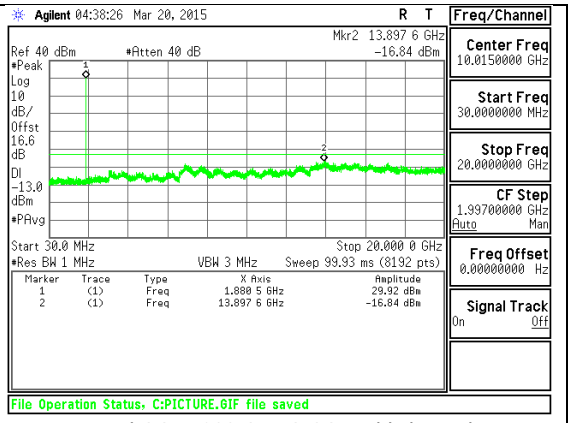
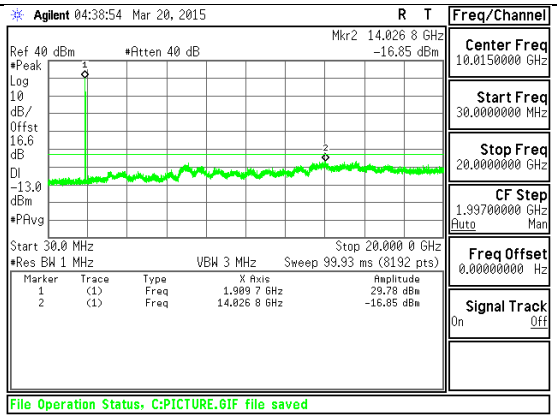
Band GSM1900 GPRS	 Band GSM1900 GPRS CSE Low channel	 Band GSM1900 GPRS CSE Mid channel
Band GSM1900 GPRS	 Band GSM1900 GPRS CSE High channel	BLANK

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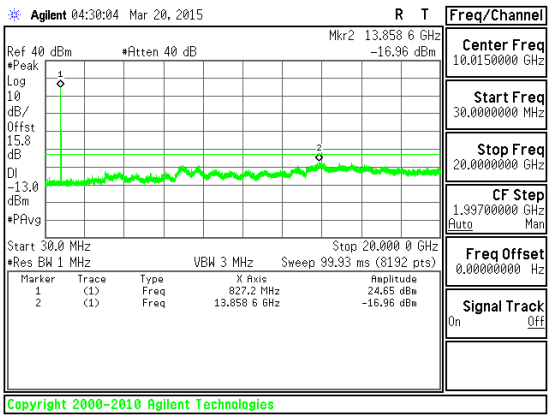
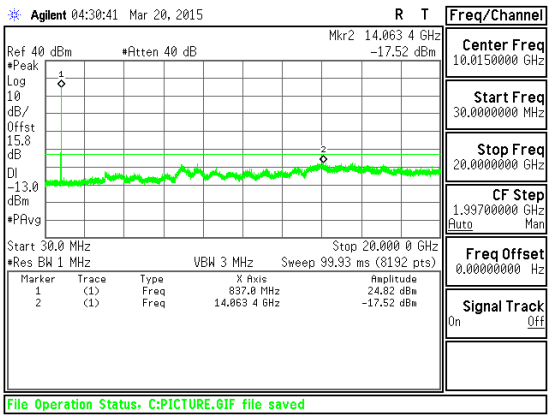
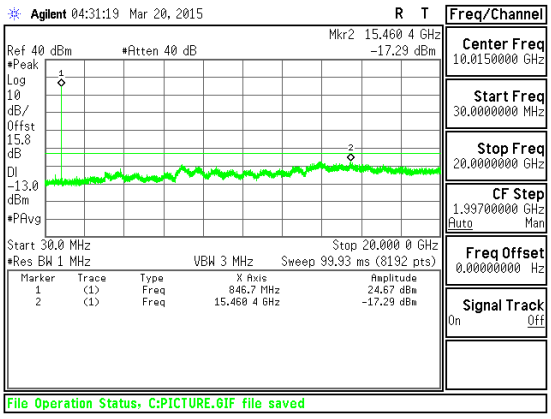
WCDMA

Band V REL 99	 Band V REL 99 CSE Low channel	 Band V REL 99 CSE MID channel
Band V REL 99	 Band V REL 99 CSE HIGH channel	BLANK

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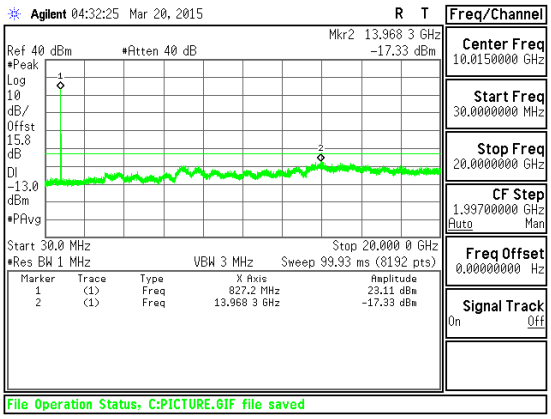
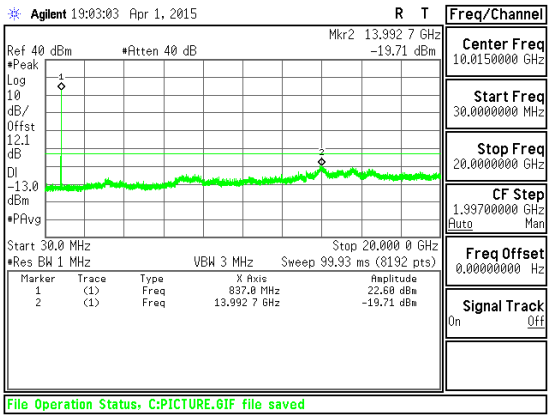
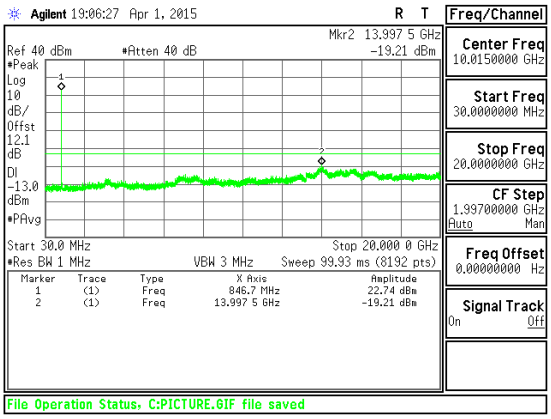
Band V HSDPA	 Band V HSDPA CSE Low channel	 Band V HSDPA CSE MID channel
Band V HSDPA	 Band V HSDPA CSE HIGH channel	BLANK

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10.4. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235, and §27.54

LIMITS

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

§24.235 - The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

§27.54 - The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

MODES TESTED

GSM 850, GSM 1900 and WCDMA V

RESULTS

See the following pages.

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10.4.1. FREQUENCY STABILITY RESULTS

GSM850, Freq: 836.6 MHz– MID CHANNEL

Reference Frequency: PCS Mid Channel		836.6	MHz @ 20°C	
Limit: to stay +- 2.5 ppm =		2091.500	Hz	
Power Supply (Vdc)	**Environment Temperature (°C)**	**Frequency Deviation Measured with Time Elapse**		
		(MHz)	**Delta (ppm)**	**Limit (ppm)**
3.80	50	836.600013	-0.003	2.5
3.80	40	836.600010	0.001	2.5
3.80	30	836.600007	0.005	2.5
3.80	***20***	**836.600010**	**0**	***2.5***
3.80	10	836.600010	0.000	2.5
3.80	0	836.600011	-0.001	2.5
3.80	-10	836.600014	-0.004	2.5
3.80	-20	836.600017	-0.008	2.5
3.80	-30	836.600014	-0.005	2.5

Reference Frequency: PCS Mid Channel		836.6	MHz @ 20°C	
Limit: to stay +- 2.5 ppm =		2091.500	Hz	
Power Supply (Vdc)	**Environment Temperature (°C)**	**Frequency Deviation Measured with Time Elapse**		
		(MHz)	**Delta (ppm)**	**Limit (ppm)**
3.80	***20***	***836.600010***	***0***	***2.5***
4.37	20	836.6000264	*-0.019*	2.5
3.23	20	836.6000265	*-0.019*	2.5

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GSM1900, Freq: 1880 MHz– MID CHANNEL

Reference Frequency: PCS Mid Channel		1880	MHz @ 20°C	
Limit: to stay +- 2.5 ppm =		4700.000	Hz	
Power Supply (Vdc)	**Environment Temperature (°C)**	**Frequency Deviation Measured with Time Elapse**		
		(MHz)	**Delta (ppm)**	**Limit (ppm)**
3.80	50	1880.000027	0.000	2.5
3.80	40	1880.000026	0.001	2.5
3.80	30	1880.000027	0.000	2.5
3.80	***20***	**1880.000027**	**0**	***2.5***
3.80	10	1880.000026	0.000	2.5
3.80	0	1880.000030	-0.002	2.5
3.80	-10	1880.000023	0.002	2.5
3.80	-20	1880.000021	0.003	2.5
3.80	-30	1880.000039	-0.006	2.5

Reference Frequency: PCS Mid Channel		1880	MHz @ 20°C	
Limit: to stay +- 2.5 ppm =		4700.000	Hz	
Power Supply (Vdc)	**Environment Temperature (°C)**	**Frequency Deviation Measured with Time Elapse**		
		(MHz)	**Delta (ppm)**	**Limit (ppm)**
3.80	***20***	***1880.000027***	***0***	***2.5***
4.37	20	1880.000031	*-0.002*	2.5
3.23	20	1880.000036	*-0.005*	2.5

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11. RADIATED TEST RESULTS

11.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232, and § 90.635.

LIMITS

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(c) - Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17, PXA setting reference to 971168 D01 v02r02

MODES TESTED

GSM 850, GSM 1900 and WCDMA V

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TEST RESULTS

11.1.1. ERP/EIRP Results

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
GSM850	GPRS	128	824.2	26.58	454.99
		190	836.6	26.67	464.52
		251	848.8	26.77	475.34
	EGPRS	128	824.2	21.51	141.58
		190	836.6	21.21	132.13
		251	848.8	21.43	139.00

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
GSM1900	GPRS	512	1850.2	28.39	690.24
		661	1880	28.12	648.63
		810	1909.8	26.98	498.88
	EGPRS	512	1850.2	24.92	310.46
		661	1880	23.61	229.61
		810	1909.8	25.09	322.85

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
Band 5	REL99	4132	826.4	17.38	54.70
		4183	836.6	18.79	75.68
		4233	846.6	19.08	80.91
	HSDPA	4132	826.4	14.83	30.41
		4183	836.6	16.43	43.95
		4233	846.6	17.23	52.84

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11.1.2. ERP/EIRP PLOTS

GSM 850 – GPRS

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: Sony
Project #: 10701108
Date: 4/4/2015
Test Engineer: M. Nolting
Configuration: FCC ID: PY7-PM0794; Stand-alone (X (Flat) orientation); s/n 00440245-427892-3
Mode: GPRS 850

Test Equipment:
Receiving: Hybrid AT0066 & SMA cables
Substitution: Dipole AT0016, sig-gen SIG001, & cable CBL010

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.20	20.42	V	0.6	-1.0	18.90	38.5	-19.6	
824.20	28.10	H	0.6	-1.0	26.58	38.5	-11.9	
Mid Ch								
836.60	21.96	V	0.6	-0.9	20.48	38.5	-18.0	
836.60	28.15	H	0.6	-0.9	26.67	38.5	-11.8	
High Ch								
848.80	22.04	V	0.6	-0.9	20.61	38.5	-17.9	
848.80	28.21	H	0.6	-0.9	26.77	38.5	-11.7	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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GSM 850 EGPRS

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: Sony
Project #: 10701108
Date: 4/4/2015
Test Engineer: M. Nolting
Configuration: FCC ID: PY7-PM0794 ; Stand-alone (X (Flat) orientation); s/n 00440245-427892-3
Mode: EGPRS 850

Test Equipment:
Receiving: Hybrid AT0066 & SMA cables
Substitution: Dipole AT0016, sig-gen SIG001, & cable CBL010

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
824.20	15.17	V	0.6	-1.0	13.65	38.5	-24.9	
824.20	23.04	H	0.6	-1.0	21.51	38.5	-17.0	
Mid Ch								
836.60	16.61	V	0.6	-0.9	15.13	38.5	-23.4	
836.60	22.69	H	0.6	-0.9	21.21	38.5	-17.3	
High Ch								
848.80	16.03	V	0.6	-0.9	14.59	38.5	-23.9	
848.80	22.87	H	0.6	-0.9	21.43	38.5	-17.1	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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GSM 1900 GPRS

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: Sony
Project #: 10707861
Date: 4/3/2015
Test Engineer: B. Kiewra
Configuration: FCC ID: PY7-PM0794; Stand-alone (Y (landscape) orientaiton); s/n 00440245-427882-3
Mode: GPRS 1900

Test Equipment:
Receiving: Horn AT0062 & SMA cables
Substitution: Horn AT069, sig-gen SIG001, & cable CBL010

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.20	15.44	V	0.9	5.4	19.95	33.0	-13.0	
1850.20	23.88	H	0.9	5.4	28.39	33.0	-4.6	
Mid Ch								
1880.00	17.64	V	0.9	5.3	22.05	33.0	-11.0	
1880.00	23.72	H	0.9	5.3	28.12	33.0	-4.9	
High Ch								
1909.80	18.45	V	0.9	5.2	22.75	33.0	-10.2	
1909.80	22.69	H	0.9	5.2	26.98	33.0	-6.0	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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GSM 1900 EGPRS

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: Sony
Project #: 10707861
Date: 4/3/2015
Test Engineer: B. Kiewra
Configuration: FCC ID: PY7-PM0794; Stand-alone (Y (landscape) orientaiton); s/n 00440245-427882-3
Mode: EGPRS 1900

Test Equipment:
Receiving: Horn AT0062 & SMA cables
Substitution: Horn AT069, sig-gen SIG001, & cable CBL010

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
1850.20	15.46	V	0.9	5.4	19.97	33.0	-13.0	
1850.20	20.41	H	0.9	5.4	24.92	33.0	-8.1	
Mid Ch								
1880.00	18.06	V	0.9	5.3	22.47	33.0	-10.5	
1880.00	19.21	H	0.9	5.3	23.61	33.0	-9.4	
High Ch								
1909.80	16.51	V	0.9	5.2	20.81	33.0	-12.2	
1909.80	20.79	H	0.9	5.2	25.08	33.0	-7.9	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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WCDMA BAND 5 REL 99

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: Sony
Project #: 10707861
Date: 3/18/2015
Test Engineer: B. Kiewra/M. Nolting
Configuration: FCC ID: PY7-PM0794; Stand-alone (Y (landscape) orientation); s/n 00440245-427882-3
Mode: WCDMA BD5

Test Equipment:
Receiving: Hybrid AT0066 & SMA cables
Substitution: Dipole AT0016, sig-gen SIG001, & cable CBL010

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.40	13.15	V	0.6	-0.9	11.64	38.5	-26.9	
826.40	18.89	H	0.6	-0.9	17.38	38.5	-21.1	
Mid Ch								
836.60	13.00	V	0.6	-0.9	11.52	38.5	-27.0	
836.60	20.26	H	0.6	-0.9	18.79	38.5	-19.7	
High Ch								
846.60	13.23	V	0.6	-0.9	11.79	38.5	-26.7	
846.60	20.53	H	0.6	-0.9	19.08	38.5	-19.4	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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WCDMA BAND 5 HSDPA

High Frequency Substitution Measurement
UL Verification Services, Inc. Chamber C

Company: Sony
Project #: 10707861
Date: 3/18/2015
Test Engineer: B. Kiewra/M. Nolting
Configuration: FCC ID: PY7-PM0794; Stand-alone (Y (landscape) orientation); s/n 00440245-427882-3
Mode: HSDPA BD5

Test Equipment:
Receiving: Hybrid AT0066 & SMA cables
Substitution: Dipole AT0016, sig-gen SIG001, & cable CBL010

f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch								
826.40	11.21	V	0.6	-0.9	9.70	38.5	-28.8	
826.40	16.34	H	0.6	-0.9	14.83	38.5	-23.7	
Mid Ch								
836.60	11.57	V	0.6	-0.9	10.09	38.5	-28.4	
836.60	17.91	H	0.6	-0.9	16.43	38.5	-22.1	
High Ch								
846.60	11.44	V	0.6	-0.9	9.99	38.5	-28.5	
846.60	18.67	H	0.6	-0.9	17.23	38.5	-21.3	

Rev. 3.17.11
Note: For Band 4 EIRP limit is 30dBm

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11.2. FIELD STRENGTH OF SPURIOUS RADIATION

RULE PART(S)

FCC: §2.1053, §22.917, §24.238, and §27.53

LIMIT

§22.917 (e) and §24.238 (a): Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB

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TEST PROCEDURE

For Cellular equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

For PCS equipment - Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

MODES TESTED

GSM 850, GSM 1900 and WCDMA Band 5

RESULTS

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11.2.1. SPURIOUS RADIATION PLOTS

GSM 850 GRPS

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Sony
Project #: 10707861
Date: 3/20/2015
Test Engineer: M. Nolting
Configuration: FCC ID: PY7-PM0794 with charger (Y (landscape) orientation); s/n 00440245-427882-3
Mode: GPRS 850

Chamber	Pre-amplifer	Filter	Limit
3m Chamber		Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.2MHz								
1.648	-52.0	V	3.0	1.0	-50.9	-13.0	-37.9	
2.473	-48.7	V	3.0	1.0	-47.6	-13.0	-34.6	
3.297	-53.1	V	3.0	1.0	-52.0	-13.0	-39.0	
1.648	-50.1	H	3.0	1.0	-49.0	-13.0	-36.0	
2.473	-47.5	H	3.0	1.0	-46.4	-13.0	-33.4	
3.297	-53.2	H	3.0	1.0	-52.2	-13.0	-39.2	
Mid Ch,836.6MHz								
1.673	-54.5	V	3.0	1.0	-53.5	-13.0	-40.5	
2.510	-46.4	V	3.0	1.0	-45.3	-13.0	-32.3	
3.346	-51.6	V	3.0	1.0	-50.6	-13.0	-37.6	
1.673	-52.1	H	3.0	1.0	-51.0	-13.0	-38.0	
2.510	-47.7	H	3.0	1.0	-46.7	-13.0	-33.7	
3.346	-52.8	H	3.0	1.0	-51.7	-13.0	-38.7	
High Ch, 848.8MHz								
1.698	-57.1	V	3.0	1.0	-56.0	-13.0	-43.0	
2.546	-49.8	V	3.0	1.0	-48.8	-13.0	-35.8	
3.395	-52.9	V	3.0	1.0	-51.9	-13.0	-38.9	
1.698	-55.0	H	3.0	1.0	-54.0	-13.0	-41.0	
2.546	-50.5	H	3.0	1.0	-49.4	-13.0	-36.4	
3.395	-53.3	H	3.0	1.0	-52.2	-13.0	-39.2	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

Note – Pre-amp is part of substitution measurement.

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GSM 850 EGPRS

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Sony
Project #: 10707861
Date: 3/20/2015
Test Engineer: B. Kiewra
Configuration: FCC ID: PY7-PM0794 with charger (Y (landscape) orientation); s/n 00440245-427882-3
Mode: EGPRS 850 CS

Chamber	Pre-amplifer	Filter	Limit
3m Chamber		Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 824.2MHz								
1.648	-52.5	V	3.0	1.0	-51.5	-13.0	-38.5	
2.473	-46.6	V	3.0	1.0	-45.6	-13.0	-32.6	
3.297	-50.6	V	3.0	1.0	-49.6	-13.0	-36.6	
1.648	-55.5	H	3.0	1.0	-54.5	-13.0	-41.5	
2.473	-52.0	H	3.0	1.0	-50.9	-13.0	-37.9	
3.297	-51.2	H	3.0	1.0	-50.2	-13.0	-37.2	
Mid Ch,836.6MHz								
1.673	-51.6	V	3.0	1.0	-50.6	-13.0	-37.6	
2.510	-41.6	V	3.0	1.0	-40.5	-13.0	-27.5	
3.346	-52.5	V	3.0	1.0	-51.5	-13.0	-38.5	
1.673	-49.5	H	3.0	1.0	-48.4	-13.0	-35.4	
2.510	-42.2	H	3.0	1.0	-41.1	-13.0	-28.1	
3.346	-52.1	H	3.0	1.0	-51.1	-13.0	-38.1	
High Ch, 848.8MHz								
1.698	-52.7	V	3.0	1.0	-51.7	-13.0	-38.7	
2.546	-46.3	V	3.0	1.0	-45.2	-13.0	-32.2	
3.395	-52.7	V	3.0	1.0	-51.7	-13.0	-38.7	
1.698	-52.0	H	3.0	1.0	-51.0	-13.0	-38.0	
2.546	-44.5	H	3.0	1.0	-43.4	-13.0	-30.4	
3.395	-51.6	H	3.0	1.0	-50.6	-13.0	-37.6	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

Note – Pre-amp is part of substitution measurement.

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GSM1900 GPRS

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Sony
Project #: 10707861
Date: 3/24/2015
Test Engineer: B. Kiewra
Configuration: FCC ID: PY7-PM0794 with charger (Y (landscape) orientation); s/n 00440245-427882-3
Mode: GPRS 1900

Chamber	Pre-amplifer	Filter	Limit
3m Chamber		Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.2MHz								
3.700	-52.0	V	3.0	1.2	-50.8	-13.0	-37.8	
5.551	-49.0	V	3.0	1.2	-47.8	-13.0	-34.8	
7.401	-45.6	V	3.0	1.2	-44.4	-13.0	-31.4	
3.700	-52.6	H	3.0	1.2	-51.4	-13.0	-38.4	
5.551	-48.5	H	3.0	1.2	-47.3	-13.0	-34.3	
7.401	-45.7	H	3.0	1.2	-44.5	-13.0	-31.5	
Mid Ch, 1880MHz								
3.760	-52.3	V	3.0	1.2	-51.1	-13.0	-38.1	
5.640	-48.8	V	3.0	1.2	-47.6	-13.0	-34.6	
7.520	-44.8	V	3.0	1.2	-43.6	-13.0	-30.6	
3.760	-52.6	H	3.0	1.2	-51.4	-13.0	-38.4	
5.640	-49.1	H	3.0	1.2	-47.9	-13.0	-34.9	
7.520	-45.4	H	3.0	1.2	-44.2	-13.0	-31.2	
High Ch, 1909.8MHz								
3.820	-52.9	V	3.0	1.2	-51.7	-13.0	-38.7	
5.729	-48.1	V	3.0	1.2	-46.9	-13.0	-33.9	
7.639	-46.0	V	3.0	1.2	-44.8	-13.0	-31.8	
3.820	-53.2	H	3.0	1.2	-52.0	-13.0	-39.0	
5.729	-48.0	H	3.0	1.2	-46.8	-13.0	-33.8	
7.639	-45.9	H	3.0	1.2	-44.7	-13.0	-31.7	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

Note – Pre-amp is part of substitution measurement.

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GSM 1900 EGPRS

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Sony
Project #: 10707861
Date: 3/23/2015
Test Engineer: B. Kiewra
Configuration: FCC ID: PY7-PM0794 with charger (Y (landscape) orientation); s/n 00440245-427882-3
Mode: EGPRS 1900

Chamber	Pre-amplifer	Filter	Limit
3m Chamber		Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 1850.2MHz								
3.700	-51.9	V	3.0	1.2	-50.7	-13.0	-37.7	
5.551	-48.9	V	3.0	1.2	-47.7	-13.0	-34.7	
7.401	-45.5	V	3.0	1.2	-44.3	-13.0	-31.3	
3.700	-52.9	H	3.0	1.2	-51.7	-13.0	-38.7	
5.551	-51.3	H	3.0	1.2	-50.1	-13.0	-37.1	
7.401	-45.6	H	3.0	1.2	-44.4	-13.0	-31.4	
Mid Ch, 1880MHz								
3.760	-51.7	V	3.0	1.2	-50.5	-13.0	-37.5	
5.640	-49.8	V	3.0	1.2	-48.6	-13.0	-35.6	
7.520	-46.4	V	3.0	1.2	-45.2	-13.0	-32.2	
3.760	-51.9	H	3.0	1.2	-50.7	-13.0	-37.7	
5.640	-49.4	H	3.0	1.2	-48.1	-13.0	-35.1	
7.520	-45.7	H	3.0	1.2	-44.5	-13.0	-31.5	
High Ch, 1909.8MHz								
3.820	-51.7	V	3.0	1.2	-50.5	-13.0	-37.5	
5.729	-47.4	V	3.0	1.2	-46.2	-13.0	-33.2	
7.639	-46.2	V	3.0	1.2	-45.0	-13.0	-32.0	
3.820	-51.3	H	3.0	1.2	-50.1	-13.0	-37.1	
5.729	-48.2	H	3.0	1.2	-47.0	-13.0	-34.0	
7.639	-45.7	H	3.0	1.2	-44.5	-13.0	-31.5	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

Note – Pre-amp is part of substitution measurement.

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WCDMA Band 5 REL 99

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Sony
Project #: 10707861
Date: 3/24/2015
Test Engineer: B. Kiewra
Configuration: FCC ID: PY7-PM0794 with charger (Y (landscape) orientation); s/n 00440245-427882-3
Mode: WCDMA REL99

Chamber	Pre-amplifer	Filter	Limit
3m Chamber		Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.4MHz								
1.653	-51.4	V	3.0	1.0	-50.4	-13.0	-37.4	
2.479	-51.5	V	3.0	1.0	-50.5	-13.0	-37.5	
3.306	-50.7	V	3.0	1.0	-49.7	-13.0	-36.7	
1.653	-48.9	H	3.0	1.0	-47.9	-13.0	-34.9	
2.479	-52.0	H	3.0	1.0	-51.0	-13.0	-38.0	
3.306	-51.2	H	3.0	1.0	-50.2	-13.0	-37.2	
Mid Ch, 836.6MHz								
1.673	-51.0	V	3.0	1.0	-50.0	-13.0	-37.0	
2.510	-51.4	V	3.0	1.0	-50.4	-13.0	-37.4	
3.346	-50.5	V	3.0	1.0	-49.5	-13.0	-36.5	
1.673	-48.8	H	3.0	1.0	-47.8	-13.0	-34.8	
2.510	-51.7	H	3.0	1.0	-50.7	-13.0	-37.7	
3.346	-50.6	H	3.0	1.0	-49.6	-13.0	-36.6	
High Ch, 846.6MHz								
1.693	-49.6	V	3.0	1.0	-48.6	-13.0	-35.6	
2.540	-47.7	V	3.0	1.0	-46.7	-13.0	-33.7	
3.386	-50.3	V	3.0	1.0	-49.3	-13.0	-36.3	
1.693	-48.1	H	3.0	1.0	-47.1	-13.0	-34.1	
2.540	-51.2	H	3.0	1.0	-50.2	-13.0	-37.2	
3.386	-50.8	H	3.0	1.0	-49.8	-13.0	-36.8	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

Note – Pre-amp is part of substitution measurement.

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WCDMA BAND 5 HSDPA

UL Verification Services, Inc.
Above 1GHz High Frequency Substitution Measurement

Company: Sony
Project #: 10707861
Date: 3/24/2015
Test Engineer: B. Kiewra
Configuration: FCC ID: PY7-PM0794 with charger (Y (landscape) orientation); s/n 00440245-427882-3
Mode: WCDMA HSDPA

Chamber	Pre-amplifer	Filter	Limit
3m Chamber		Filter 1	Part 22

f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.4MHz								
1.653	-53.2	V	3.0	1.0	-52.2	-13.0	-39.2	
2.479	-53.8	V	3.0	1.0	-52.8	-13.0	-39.8	
3.306	-52.8	V	3.0	1.0	-51.8	-13.0	-38.8	
1.653	-53.4	H	3.0	1.0	-52.4	-13.0	-39.4	
2.479	-53.9	H	3.0	1.0	-52.9	-13.0	-39.9	
3.306	-52.4	H	3.0	1.0	-51.4	-13.0	-38.4	
Mid Ch, 836.6MHz								
1.673	-55.8	V	3.0	1.0	-54.8	-13.0	-41.8	
2.510	-53.7	V	3.0	1.0	-52.7	-13.0	-39.7	
3.346	-51.0	V	3.0	1.0	-50.0	-13.0	-37.0	
1.673	-52.9	H	3.0	1.0	-51.9	-13.0	-38.9	
2.510	-53.7	H	3.0	1.0	-52.7	-13.0	-39.7	
3.346	-52.6	H	3.0	1.0	-51.6	-13.0	-38.6	
High Ch, 846.6MHz								
1.693	-55.3	V	3.0	1.0	-54.3	-13.0	-41.3	
2.540	-52.2	V	3.0	1.0	-51.2	-13.0	-38.2	
3.386	-52.7	V	3.0	1.0	-51.7	-13.0	-38.7	
1.693	-54.5	H	3.0	1.0	-53.5	-13.0	-40.5	
2.540	-54.3	H	3.0	1.0	-53.3	-13.0	-40.3	
3.386	-52.0	H	3.0	1.0	-51.0	-13.0	-38.0	

Rev. 03.03.09
Note: No other emissions were detected above the system noise floor.

Note – Pre-amp is part of substitution measurement.

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