



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

FCC ID: PY7-PM0794

REPORT NUMBER: R10707861-RF1

ISSUE DATE: 2015-04-22

Prepared for

**SONY MOBILE COMMUNICATIONS, INC.
1-8-15 KONAN, MINATO-KU, TOKYO, 108-0075 JAPAN**

Prepared by

**UL LLC
12 LABORATORY DR.
RESEARCH TRIANGLE PARK, NC 27709 USA
TEL: (919) 549-1400**



NVLAP LAB CODE 200246-0

Revision History

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

TABLE OF CONTENTS

1.	ATTESTATION OF TEST RESULTS	5
2.	TEST METHODOLOGY	6
3.	FACILITIES AND ACCREDITATION	6
4.	CALIBRATION AND UNCERTAINTY	6
4.1.	MEASURING INSTRUMENT CALIBRATION	6
4.2.	SAMPLE CALCULATION	6
4.3.	MEASUREMENT UNCERTAINTY	7
5.	EQUIPMENT UNDER TEST	8
5.1.	DESCRIPTION OF EUT	8
5.2.	MAXIMUM OUTPUT POWER.....	8
5.3.	DESCRIPTION OF AVAILABLE ANTENNAS	9
5.4.	DESCRIPTION OF TEST SETUP.....	9
6.	TEST AND MEASUREMENT EQUIPMENT.....	13
7.	Summary Table.....	16
8.	RF POWER OUTPUT VERIFICATION.....	17
8.1.	GSM/GPRS/EDGE	17
8.1.1.	GSM OUTPUT POWER RESULT	18
8.2.	UMTS REL 99.....	20
8.2.1.	UMTS REL 99 OUTPUT POWER RESULT	20
8.3.	UMTS HSDPA	21
8.3.1.	UMTS HSDPA OUTPUT POWER RESULT.....	21
8.4.	UMTS HSUPA	22
8.4.1.	UMTS HSUPA OUTPUT POWER RESULT.....	23
9.	PEAK TO AVERAGE RATIO	24
9.1.	CONDUCTED PEAK TO AVERAGE RESULT.....	25
10.	LIMITS AND CONDUCTED RESULTS	28
10.1.	OCCUPIED BANDWIDTH.....	28
10.1.1.	OCCUPIED BANDWIDTH RESULTS.....	29
10.1.2.	OCCUPIED BANDWIDTH PLOTS	30
10.2.	BAND EDGE EMISSIONS	37
10.2.1.	BAND EDGE PLOTS	38

10.3.	OUT OF BAND EMISSIONS	42
10.3.1.	OUT OF BAND EMISSIONS RESULT	43
10.3.2.	OUT OF BAND EMISSIONS PLOTS.....	44
10.4.	FREQUENCY STABILITY	50
10.4.1.	FREQUENCY STABILITY RESULTS.....	51
11.	RADIATED TEST RESULTS	53
11.1.	RADIATED POWER (ERP & EIRP).....	53
11.1.1.	ERP/EIRP Results.....	54
11.1.2.	ERP/EIRP PLOTS.....	55
11.2.	FIELD STRENGTH OF SPURIOUS RADIATION	61
11.2.1.	SPURIOUS RADIATION PLOTS.....	63
12.	SETUP PHOTOS	69

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:



Choon Sian Ooi
EMC Project Lead
UL – Consumer Technology Division

Prepared By:



Jeff Moser
EMC Program Manager
UL – Consumer Technology Division

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)

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%.

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		

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

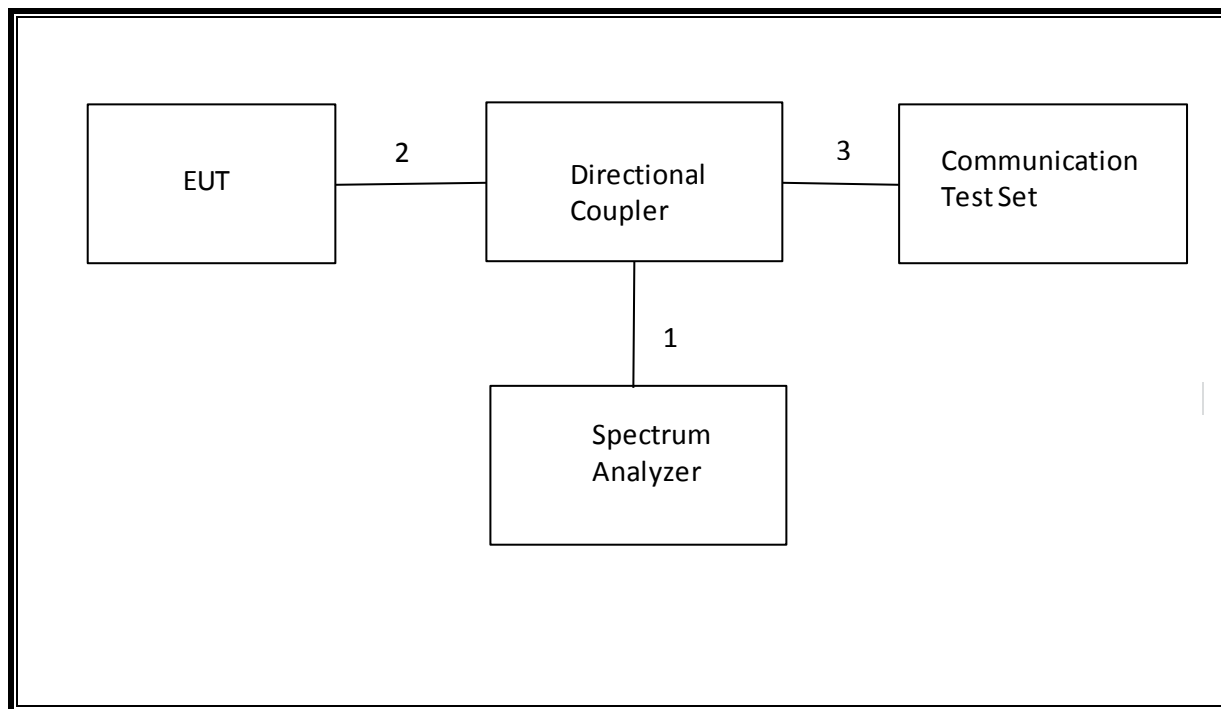
I/O CABLES (RADIATED SETUP)

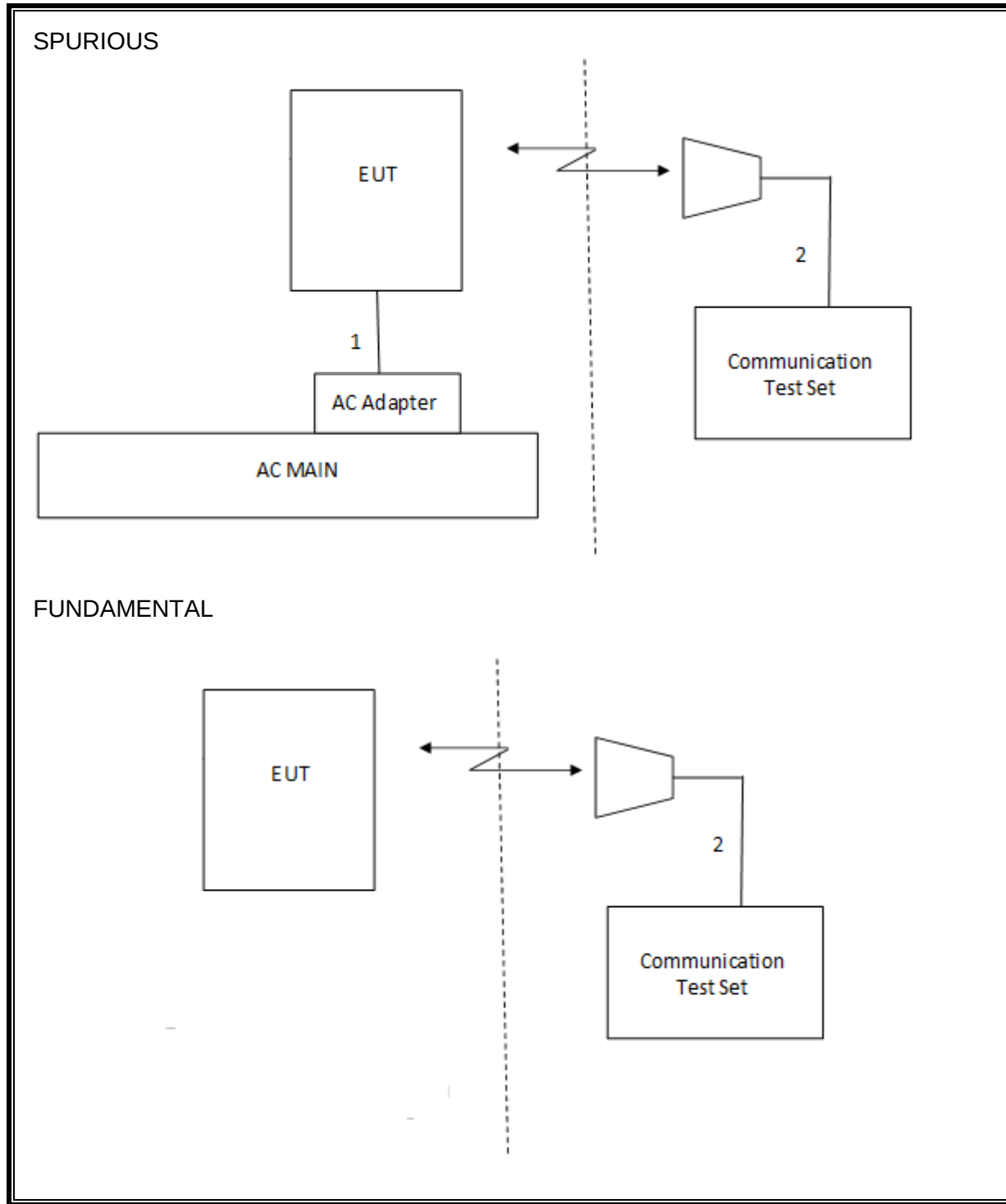
I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	USB	1	AC Adapter	Un-shielded	1.2m	No
2	RF In/out	1	Communication Test Set	Un-shielded	2m	Yes

TEST SETUP

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

SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)

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

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 Hybrid antenna at 3m	Various	Various	2015-01-26	2016-01-31
SAC_G (BOM) 1-18GHz	Gain-Loss string for Hybrid 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

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

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

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

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

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

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
	β_c	Not Applicable
	β_d	Not Applicable
	β_{ec}	Not Applicable
	β_c/β_d	8/15
	β_{hs}	Not Applicable
	β_{ed}	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

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			
	β_c	2/15	12/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	β_c/β_d	2/15	12/15	15/8	15/4
	β_{hs}	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			
	$A_{hs} = \beta_{hs}/\beta_c$	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

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
HSDPA Specific Settings	β_c/β_d	11/15	6/15	15/9	2/15	15/15
	Bhs	22/15	12/15	30/15	4/15	30/15
	β_{ed} (note1)	1309/225	94/75	47/15	56/75	134/15
	MPR	0	2	1	2	0
	DACK	8				
	DNAK	8				
	DCQI	8				
	Ack-Nack repetition factor	3				
HSUPA Specific Settings	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
	Ahs = β_{hs}/β_c	30/15				
	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: β_{ed} cannot be set directly, it is set by Absolute Grant Value.

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

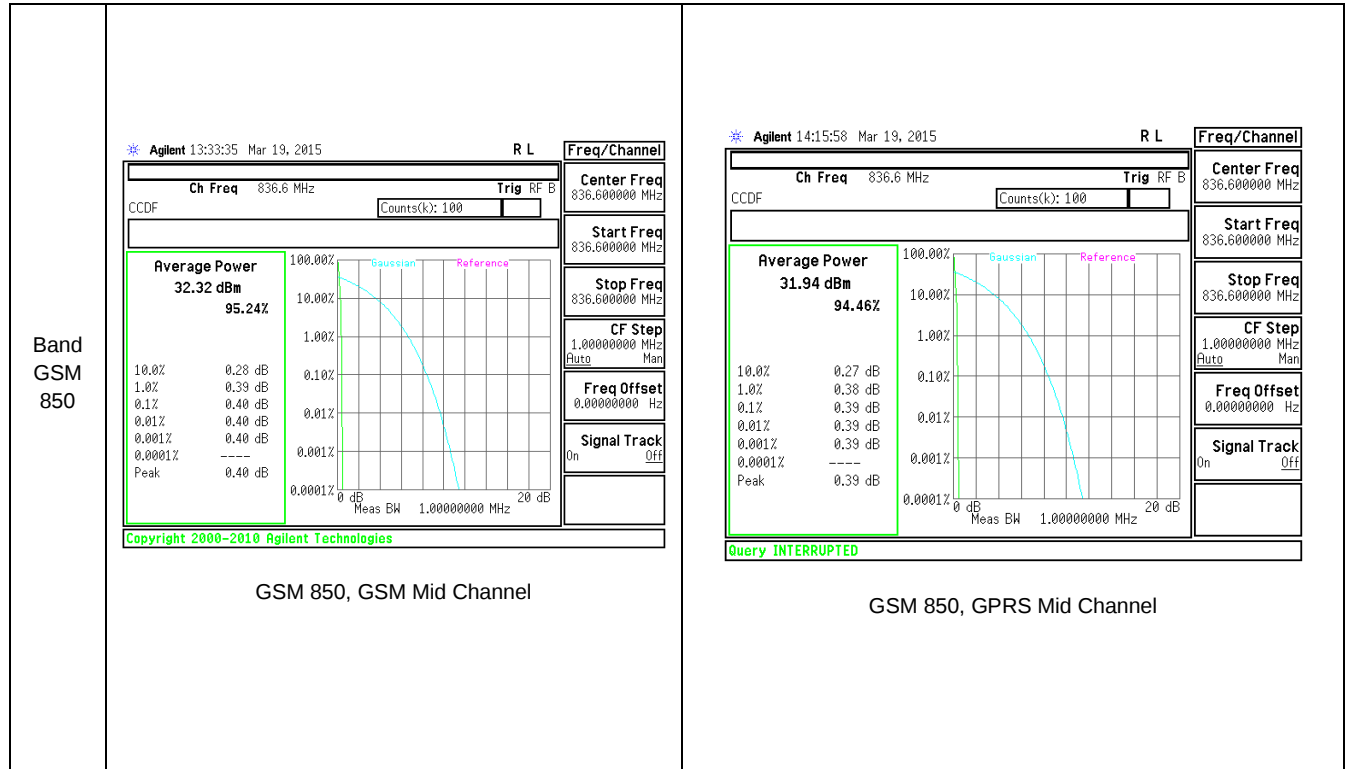
9. PEAK TO AVERAGE RATIO

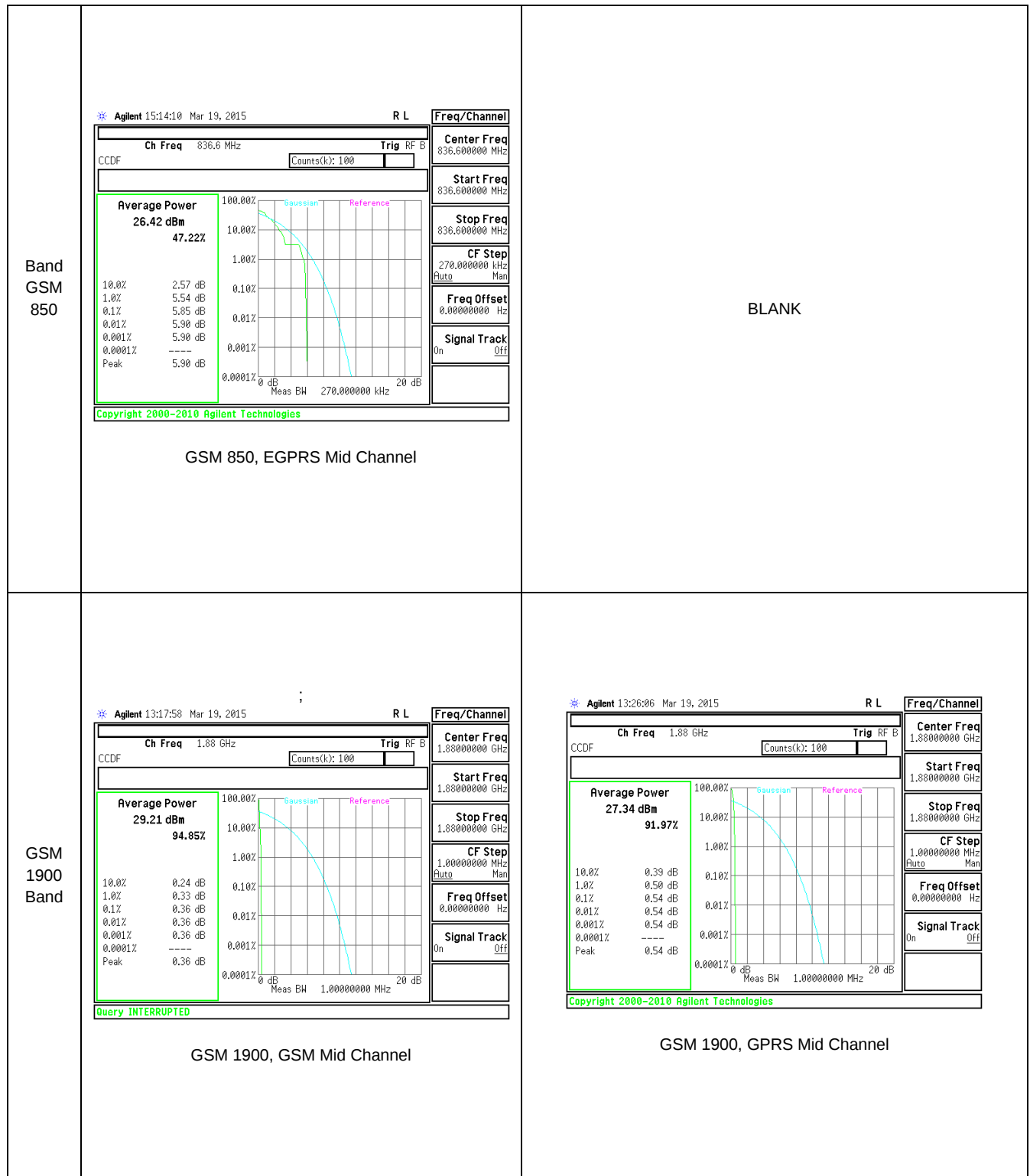
Test Procedure

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.

9.1. CONDUCTED PEAK TO AVERAGE RESULT**GSM**



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.

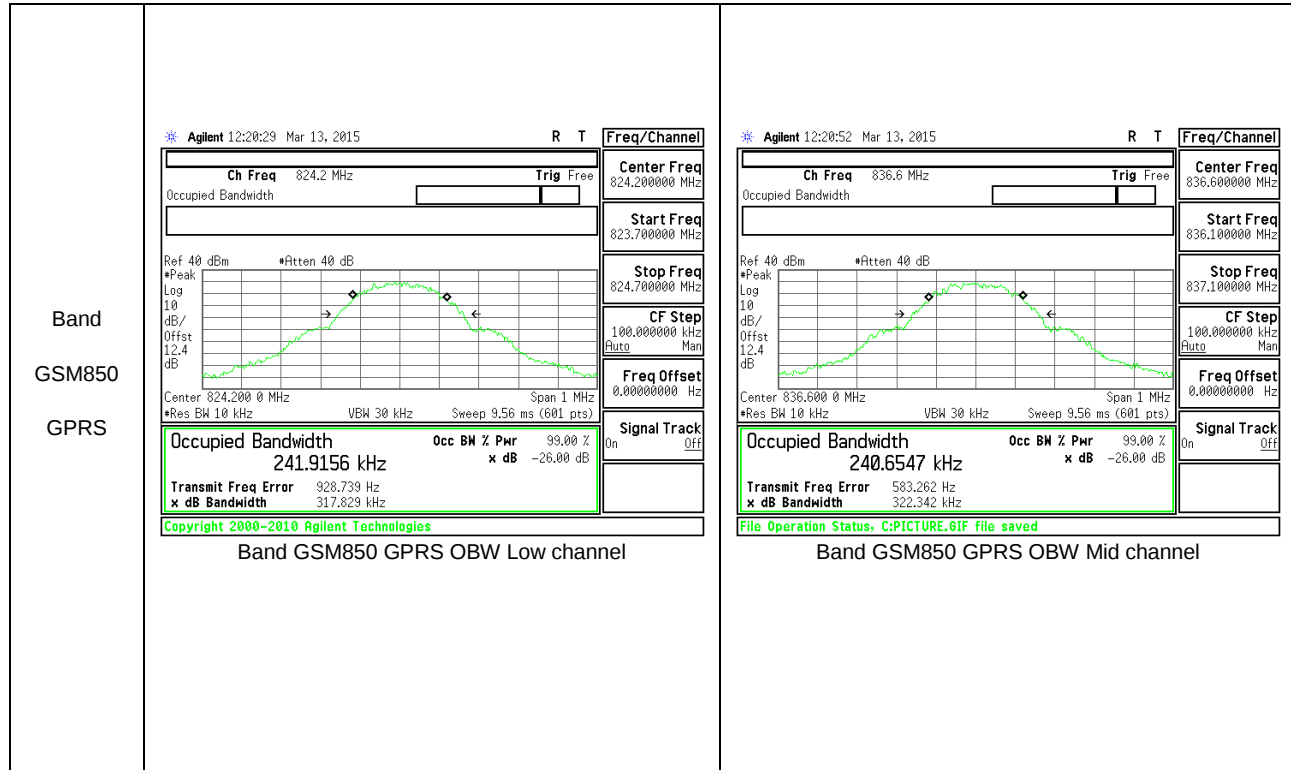
(KDB 971168 D01 Power Meas License Digital Systems v02r02)

MODES TESTED

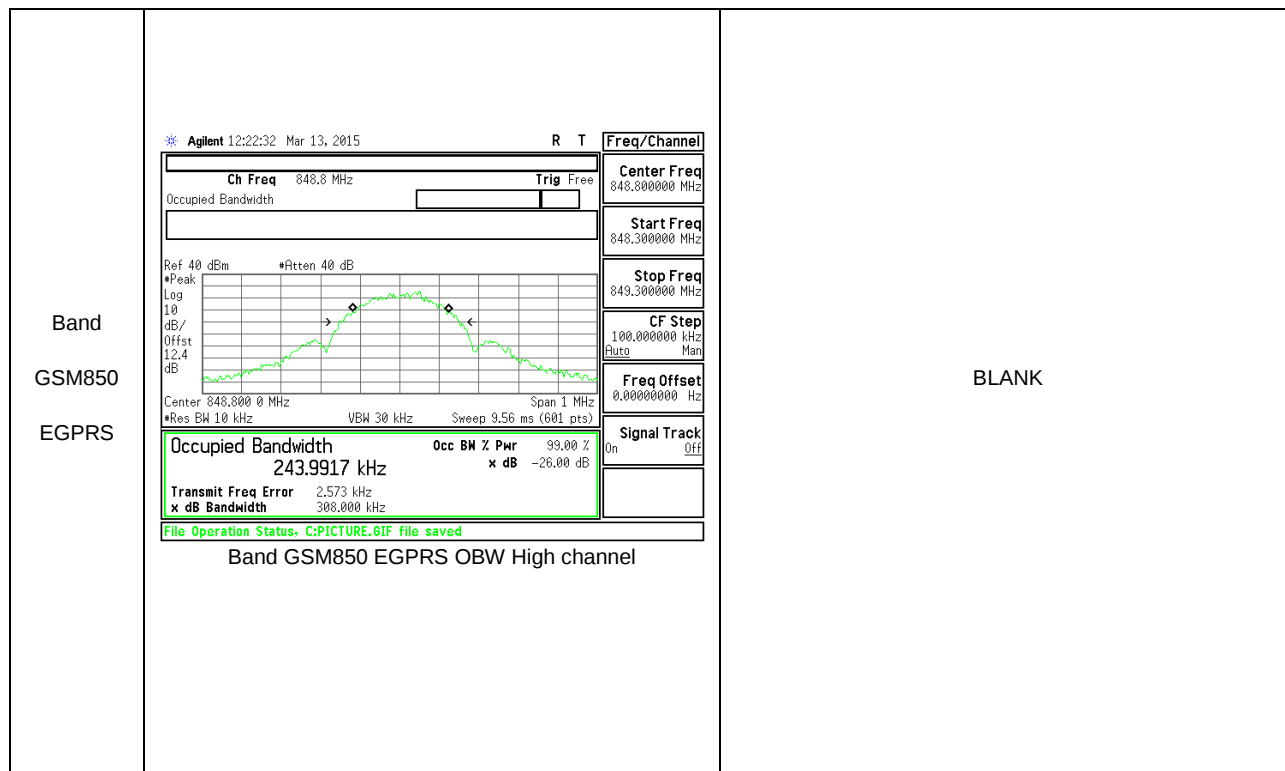
GSM 850, GSM 1900 and WCDMA Band V

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

10.1.2. OCCUPIED BANDWIDTH PLOTS**GSM 850**

Band GSM850 GPRS	Agilent 12:21:14 Mar 13, 2015 R T Ch Freq 848.8 MHz Trig Free Occupied Bandwidth Ref 40 dBm *Aatten 40 dB Peak Log 10 dB/Offst 12.4 dB Center 848.8000 MHz Span 1 MHz *Res BW 10 kHz VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth 242.8823 kHz Occ BW Z Pwr 99.00 Z x dB -26.00 dB Transmit Freq Error -954.493 Hz x dB Bandwidth 315.940 kHz File Operation Status: C:PICTURE.6IF file saved Band GSM850 GPRS OBW High channel Freq/Channel Center Freq 848.800000 MHz Start Freq 848.300000 MHz Stop Freq 849.300000 MHz CF Step 100.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off	BLANK
Band GSM850 EGPRS	Agilent 12:21:47 Mar 13, 2015 R T Ch Freq 824.2 MHz Trig Free Occupied Bandwidth Ref 40 dBm *Aatten 40 dB Peak Log 10 dB/Offst 12.4 dB Center 824.2000 MHz Span 1 MHz *Res BW 10 kHz VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth 238.8655 kHz Occ BW Z Pwr 99.00 Z x dB -26.00 dB Transmit Freq Error -26.330 Hz x dB Bandwidth 301.439 kHz File Operation Status: C:PICTURE.6IF file saved Band GSM850 EGPRS OBW Low channel Freq/Channel Center Freq 824.200000 MHz Start Freq 823.700000 MHz Stop Freq 824.700000 MHz CF Step 100.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off	Agilent 12:22:09 Mar 13, 2015 R T Ch Freq 836.6 MHz Trig Free Occupied Bandwidth Ref 40 dBm *Aatten 40 dB Peak Log 10 dB/Offst 12.4 dB Center 836.6000 MHz Span 1 MHz *Res BW 10 kHz VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth 233.6795 kHz Occ BW Z Pwr 99.00 Z x dB -26.00 dB Transmit Freq Error -1.022 kHz x dB Bandwidth 285.723 kHz File Operation Status: C:PICTURE.6IF file saved Band GSM850 EGPRS OBW Mid channel Freq/Channel Center Freq 836.600000 MHz Start Freq 836.100000 MHz Stop Freq 837.100000 MHz CF Step 100.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off

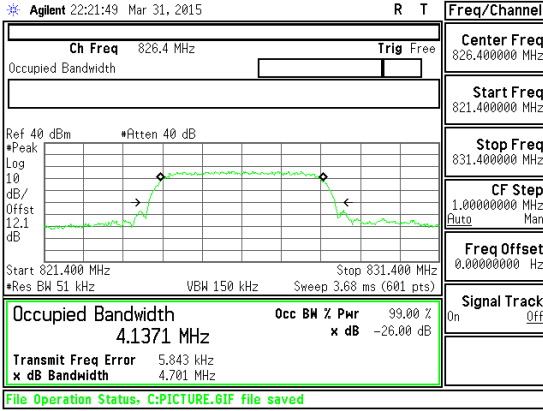
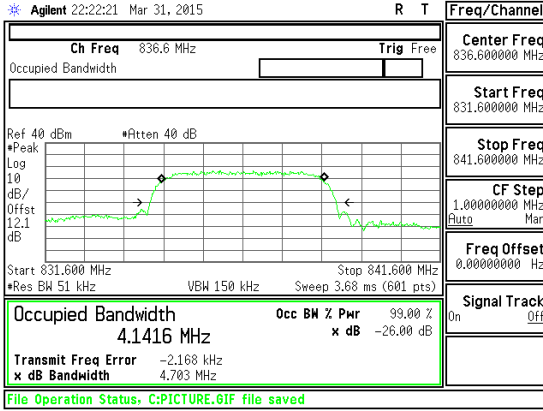
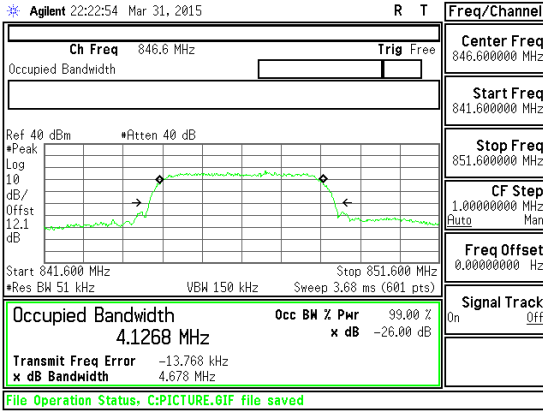


GSM 1900

Band GSM1900 GPRS	Agilent 13:01:28 Mar 13, 2015 R T Measure Ch Freq 1.8502 GHz Trig Free Occupied Bandwidth Ref 40 dBm *Atten 40 dB Peak Log dB/Offset 10 12.4 dB Center 1.850 200 0 GHz Span 1 MHz *Res BW 10 kHz VBW 30 kHz Sweep 47.8 ms (601 pts) Occupied Bandwidth 243.0190 kHz Occ BW % Pwr 99.00 2 x dB -26.00 dB Transmit Freq Error 2.093 kHz x dB Bandwidth 311.178 kHz Query INTERRUPTED Band GSM1900 GPRS OBW Low channel	Agilent 13:01:51 Mar 13, 2015 R T Measure Ch Freq 1.88 GHz Trig Free Occupied Bandwidth Ref 40 dBm *Atten 40 dB Peak Log dB/Offset 10 12.4 dB Center 1.880 000 0 GHz Span 1 MHz *Res BW 10 kHz VBW 30 kHz Sweep 47.8 ms (601 pts) Occupied Bandwidth 243.0842 kHz Occ BW % Pwr 99.00 2 x dB -26.00 dB Transmit Freq Error -192.946 Hz x dB Bandwidth 313.146 kHz File Operation Status, C:PICTURE.GIF file saved Band GSM1900 GPRS OBW Mid channel
Band GSM1900 GPRS	Agilent 13:02:14 Mar 13, 2015 R T Measure Ch Freq 1.9098 GHz Trig Free Occupied Bandwidth Ref 40 dBm *Atten 40 dB Peak Log dB/Offset 10 12.4 dB Center 1.909 800 0 GHz Span 1 MHz *Res BW 10 kHz VBW 30 kHz Sweep 47.8 ms (601 pts) Occupied Bandwidth 242.0822 kHz Occ BW % Pwr 99.00 2 x dB -26.00 dB Transmit Freq Error -652.688 Hz x dB Bandwidth 315.391 kHz File Operation Status, C:PICTURE.GIF file saved Band GSM1900 GPRS OBW High channel	BLANK

Band GSM1900 EGPRS	Agilent 13:02:47 Mar 13, 2015 R T Measure Ch Freq 1.8502 GHz Trig Free Meas Off Occupied Bandwidth Channel Power Occupied BW ACP Multi Carrier Power Power Stat CCDF More 1 of 2 File Operation Status, C:PICTURE.GIF file saved Band GSM1900 EGPRS OBW Low channel	Agilent 13:03:10 Mar 13, 2015 R T Measure Ch Freq 1.88 GHz Trig Free Meas Off Occupied Bandwidth Channel Power Occupied BW ACP Multi Carrier Power Power Stat CCDF More 1 of 2 File Operation Status, C:PICTURE.GIF file saved Band GSM1900 EGPRS OBW Mid channel
Band GSM1900 EGPRS	Agilent 13:03:33 Mar 13, 2015 R T Measure Ch Freq 1.9038 GHz Trig Free Meas Off Occupied Bandwidth Channel Power Occupied BW ACP Multi Carrier Power Power Stat CCDF More 1 of 2 File Operation Status, C:PICTURE.GIF file saved Band GSM1900 EGPRS OBW High channel	BLANK

WCDMA

Band 5 REL99	 Agilent 22:21:49 Mar 31, 2015 Ch Freq 826.4 MHz Trig Free Center Freq 826.400000 MHz Start Freq 821.400000 MHz Stop Freq 831.400000 MHz CF Step 1.00000000 MHz Freq Offset 0.00000000 Hz Signal Track On Occupied Bandwidth 4.1371 MHz Transmit Freq Error 5.843 kHz x dB Bandwidth 4.701 MHz File Operation Status, C:PICTURE.GIF file saved Band 5 REL99 OBW LOW CHANNEL	 Agilent 22:22:21 Mar 31, 2015 Ch Freq 836.6 MHz Trig Free Center Freq 836.600000 MHz Start Freq 831.600000 MHz Stop Freq 841.600000 MHz CF Step 1.00000000 MHz Freq Offset 0.00000000 Hz Signal Track On Occupied Bandwidth 4.1416 MHz Transmit Freq Error -2.168 kHz x dB Bandwidth 4.703 MHz File Operation Status, C:PICTURE.GIF file saved Band 5 REL99 OBW MID CHANNEL
Band 5 REL99	 Agilent 22:22:54 Mar 31, 2015 Ch Freq 846.6 MHz Trig Free Center Freq 846.600000 MHz Start Freq 841.600000 MHz Stop Freq 851.600000 MHz CF Step 1.00000000 MHz Freq Offset 0.00000000 Hz Signal Track On Occupied Bandwidth 4.1268 MHz Transmit Freq Error -13.768 kHz x dB Bandwidth 4.678 MHz File Operation Status, C:PICTURE.GIF file saved Band 5 REL99 OBW HIGH CHANNEL	BLANK

Band 5 HSDPA	Agilent 22:23:55 Mar 31, 2015 R T Ch Freq 826.4 MHz Trig Free Center Freq 826.400000 MHz Start Freq 821.400000 MHz Stop Freq 831.400000 MHz CF Step 1.00000000 MHz Freq Offset 0.00000000 Hz Signal Track On Off Ref 40 dBm *Atten 40 dB Peak Log 10 dB/Offst 12.1 dB Start 821.400 MHz Stop 831.400 MHz *Res BW 51 kHz VBW 150 kHz Sweep 3.68 ms (601 pts) Occupied Bandwidth 4.1440 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 700.939 Hz x dB Bandwidth 4.688 MHz File Operation Status: C:PICTURE.01F file saved Band 5 HSDPA OBW LOW CHANNEL	Agilent 18:20:36 Apr 1, 2015 R T Ch Freq 836.6 MHz Trig Free Center Freq 836.600000 MHz Start Freq 831.600000 MHz Stop Freq 841.600000 MHz CF Step 1.00000000 MHz Freq Offset 0.00000000 Hz Signal Track On Off Ref 40 dBm *Atten 40 dB Peak Log 10 dB/Offst 12.1 dB Start 831.600 MHz Stop 841.600 MHz *Res BW 51 kHz VBW 150 kHz Sweep 3.68 ms (601 pts) Occupied Bandwidth 4.1216 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -2.910 kHz x dB Bandwidth 4.680 MHz Copyright 2000-2010 Agilent Technologies Band 5 HSDPA OBW MID CHANNEL
Band 5 HSDPA	Agilent 19:00:46 Apr 1, 2015 R T Ch Freq 846.6 MHz Trig Free Center Freq 846.600000 MHz Start Freq 841.600000 MHz Stop Freq 851.600000 MHz CF Step 1.00000000 MHz Freq Offset 0.00000000 Hz Signal Track On Off Ref 40 dBm *Atten 40 dB Peak Log 10 dB/Offst 12.1 dB Start 841.600 MHz Stop 851.600 MHz *Res BW 51 kHz VBW 150 kHz Sweep 3.68 ms (601 pts) Occupied Bandwidth 4.1296 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -2.609 kHz x dB Bandwidth 4.701 MHz File Operation Status: C:PICTURE.01F file saved Band 5 HSDPA OBW HIGH CHANNEL	BLANK

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.

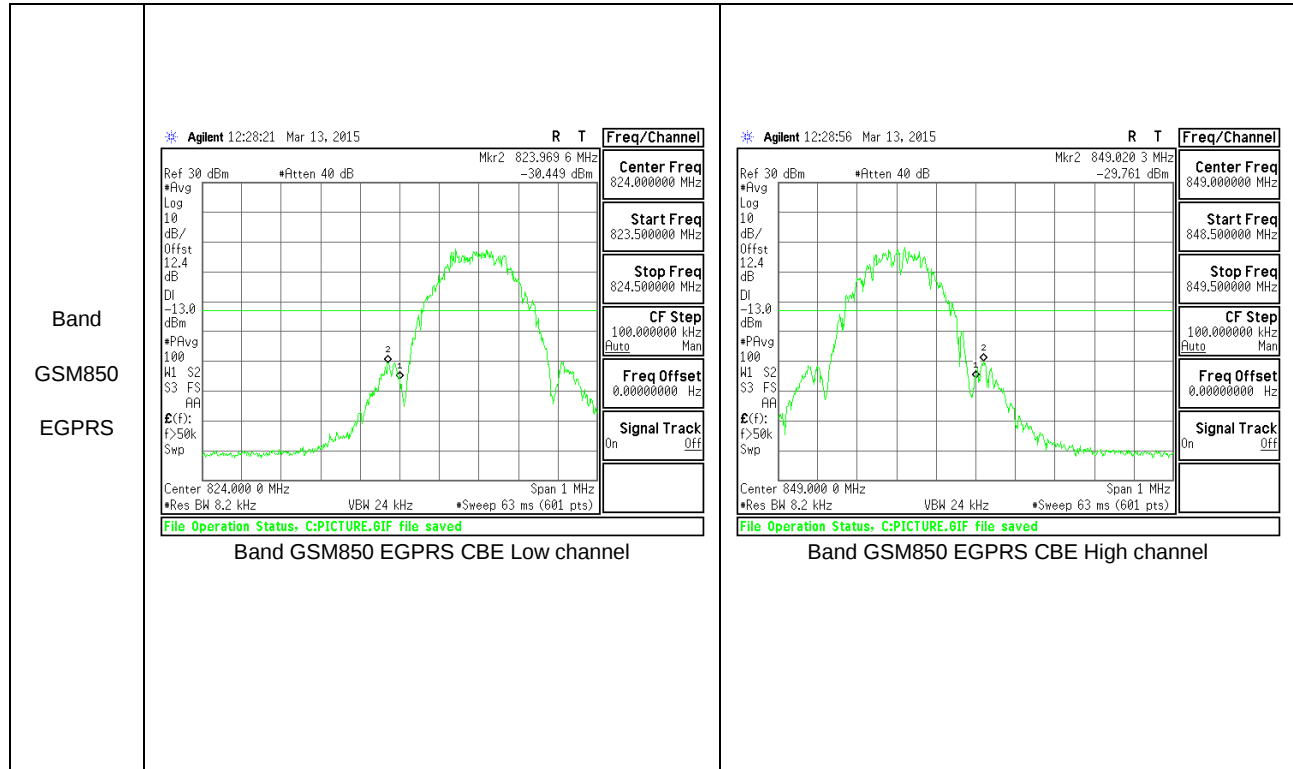
MODES TESTED

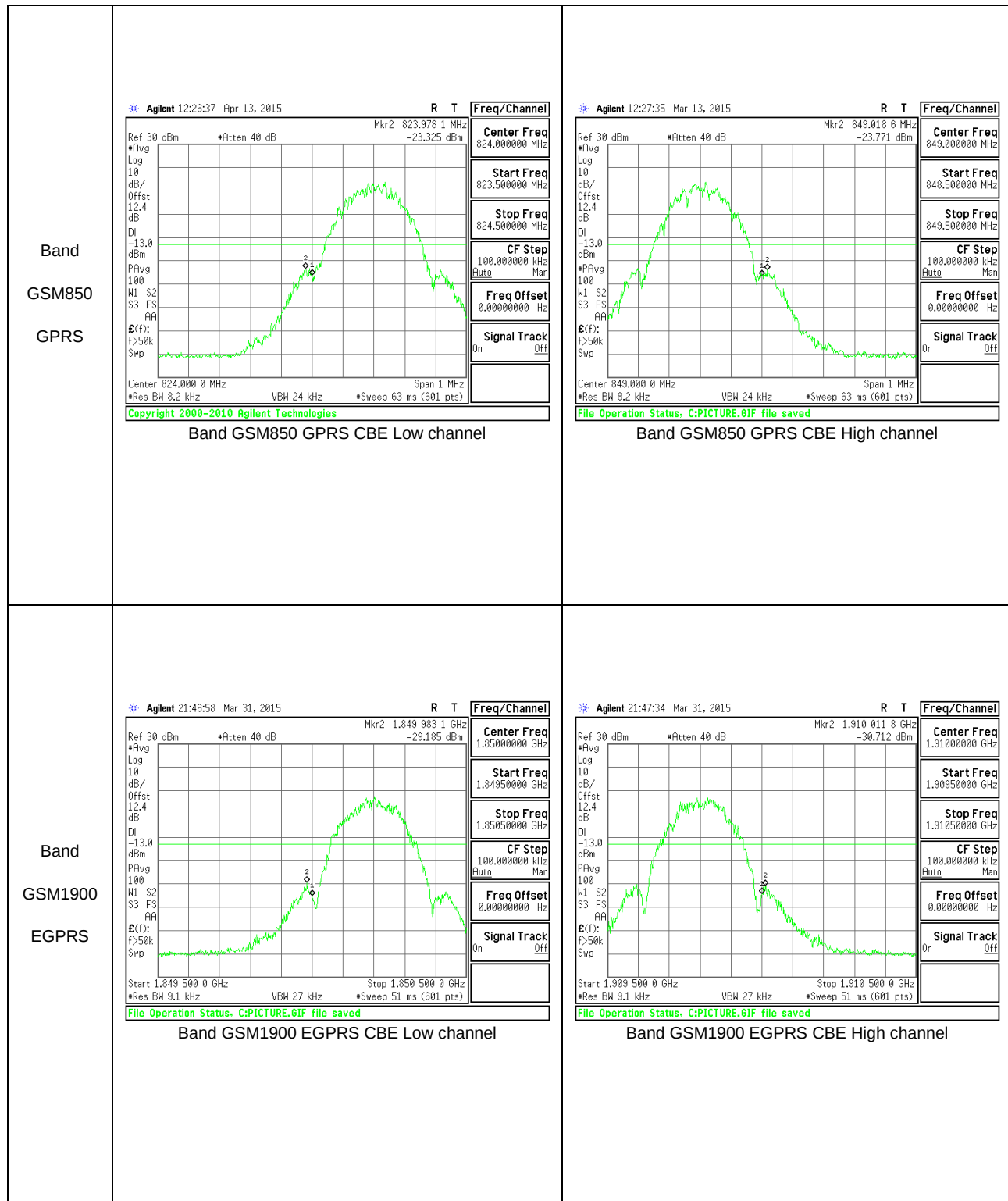
GSM 850, GSM 1900 and WCDMA Band V

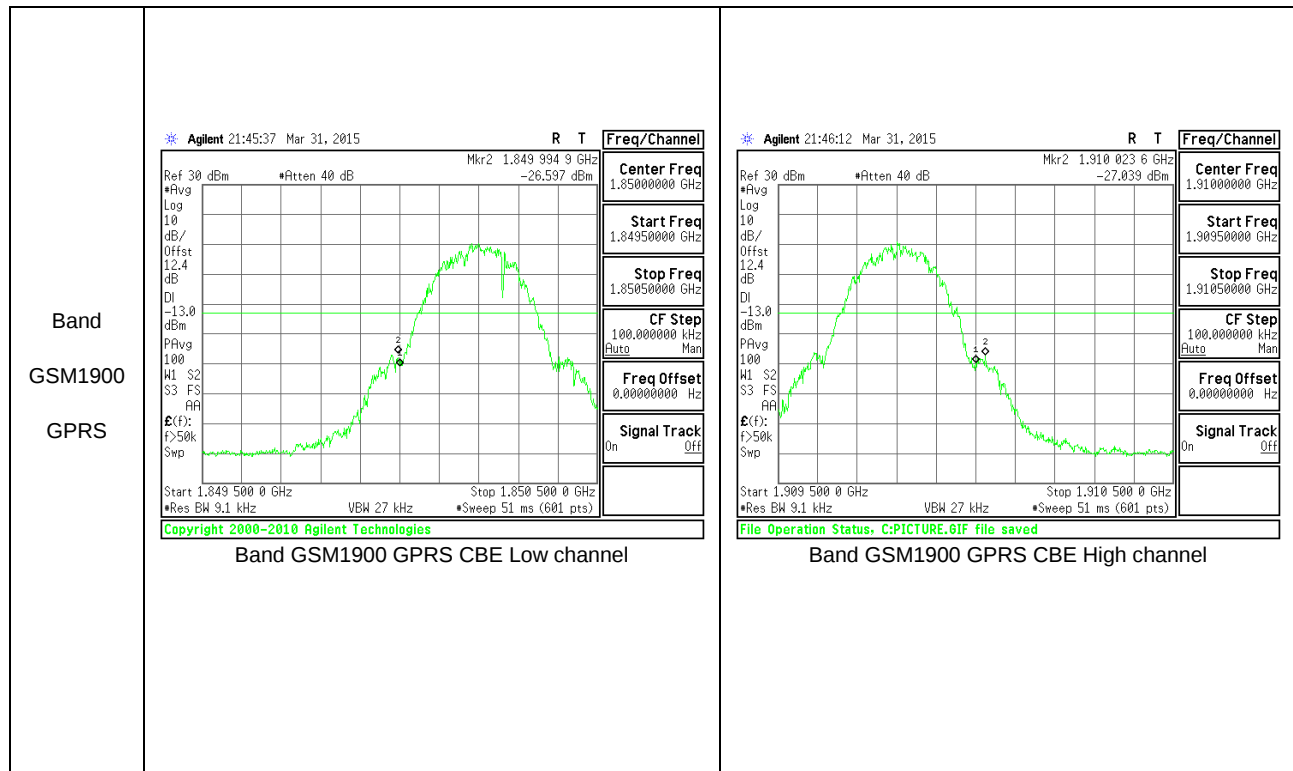
RESULTS

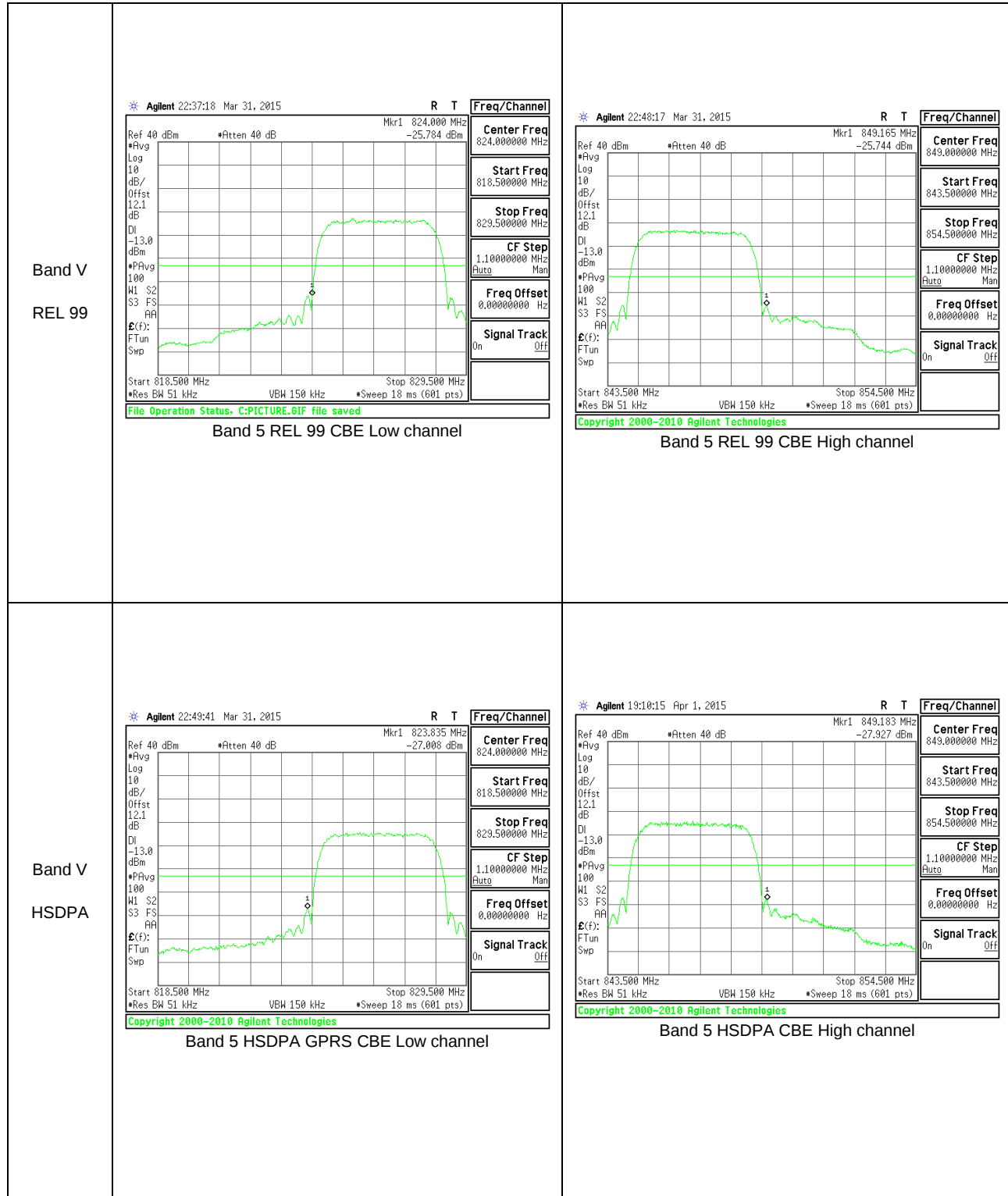
10.2.1. BAND EDGE PLOTS

GSM







WCDMA

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.

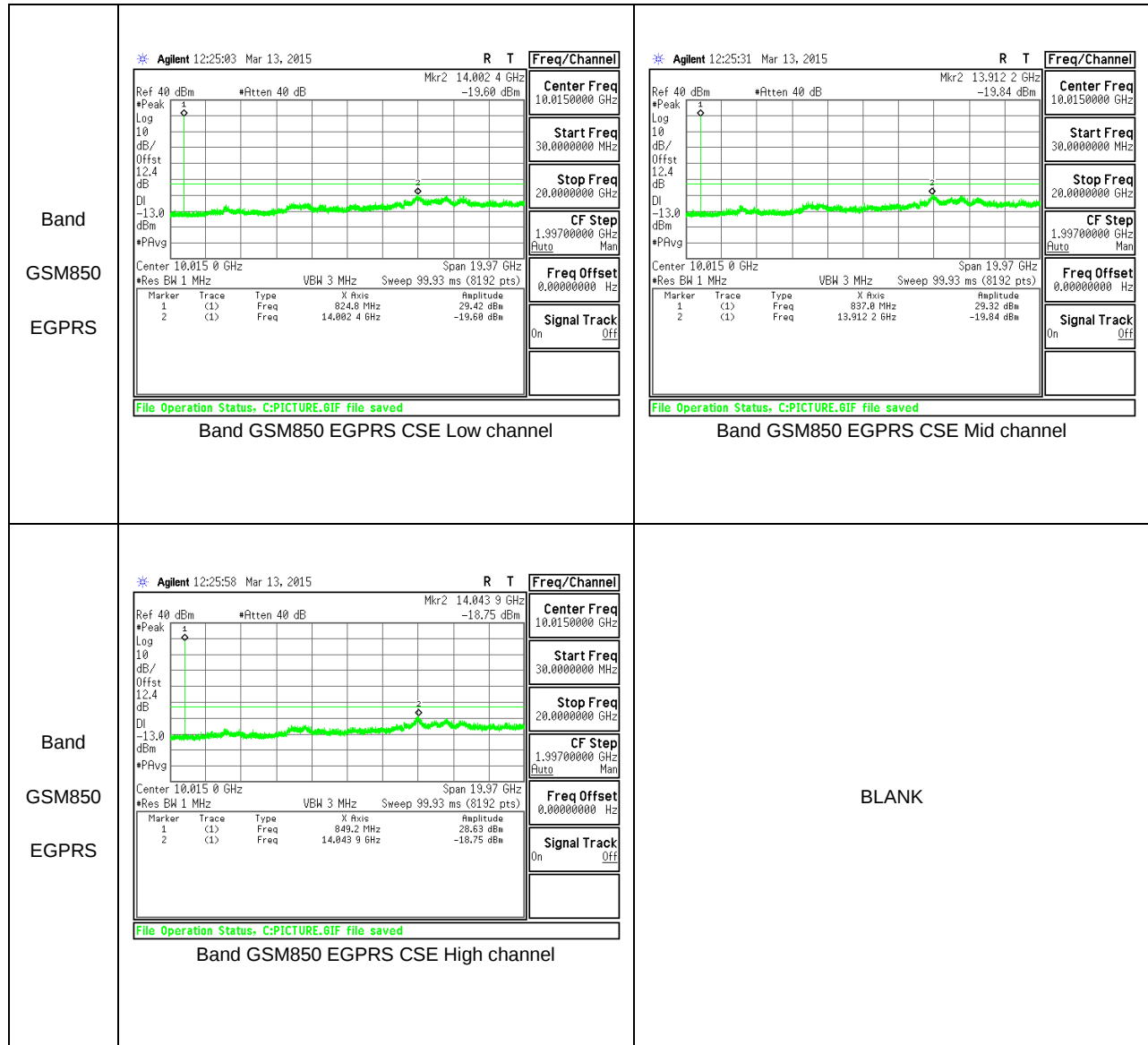
MODES TESTED

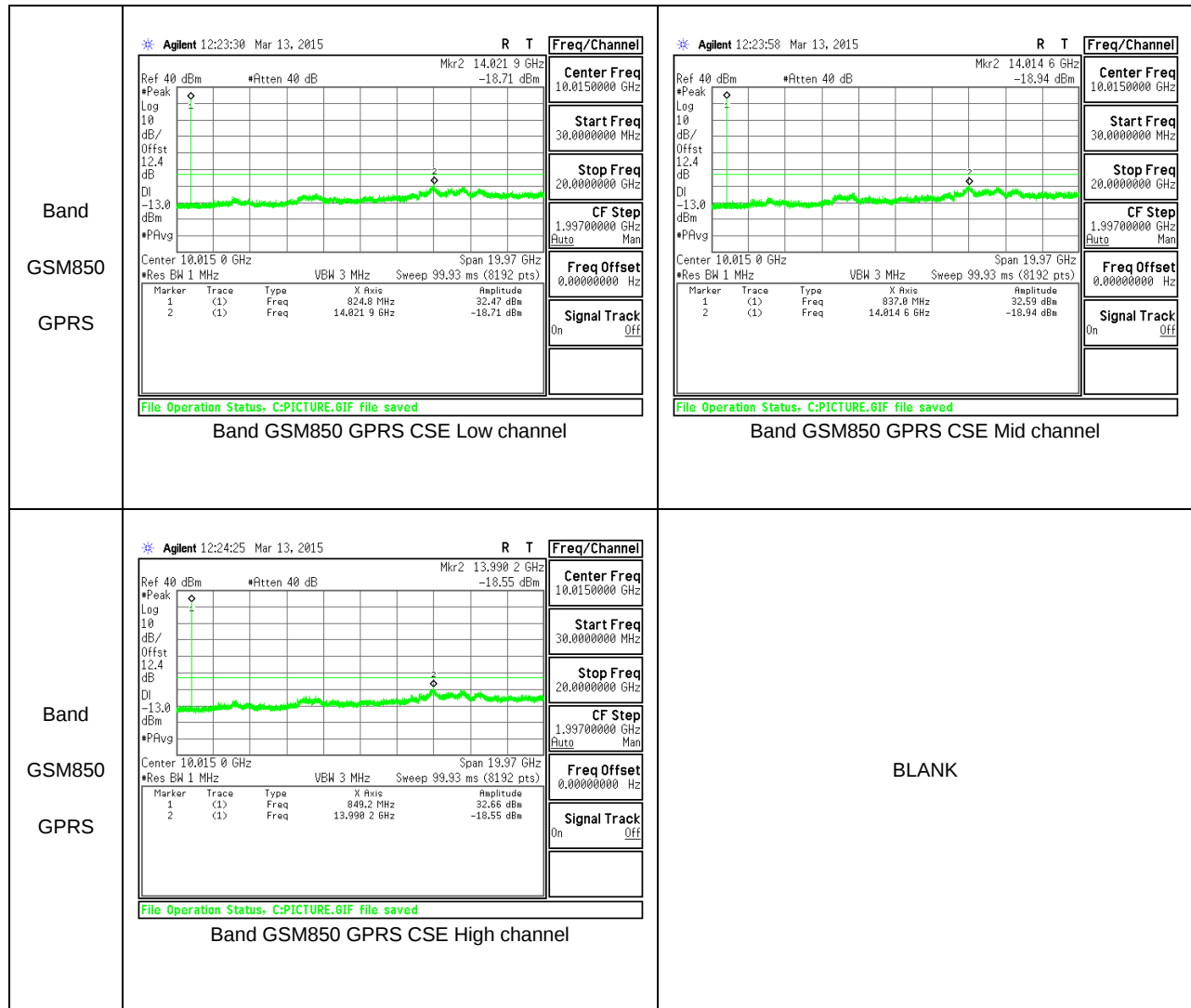
GSM 850, GSM 1900 and WCDMA V

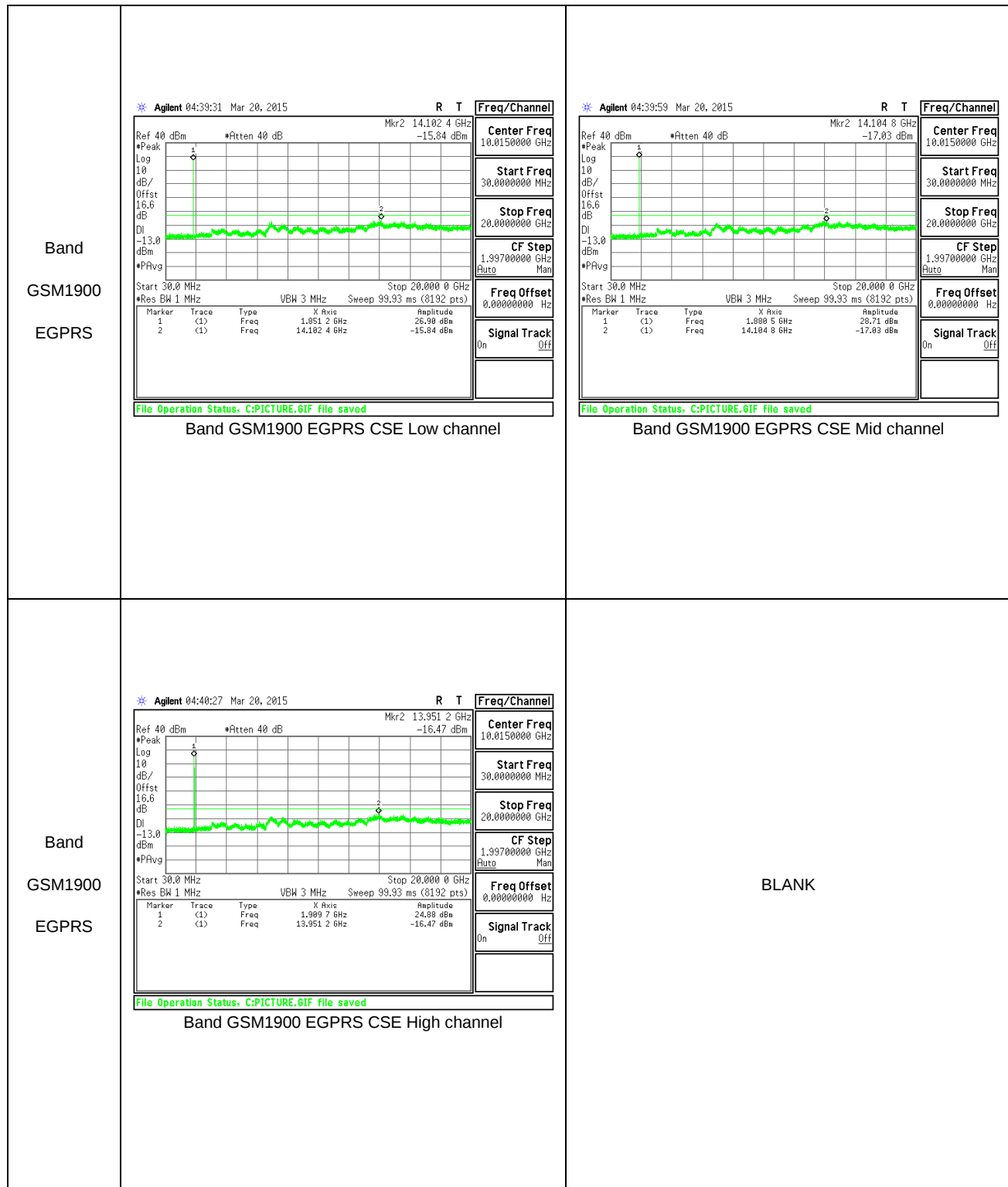
RESULTS

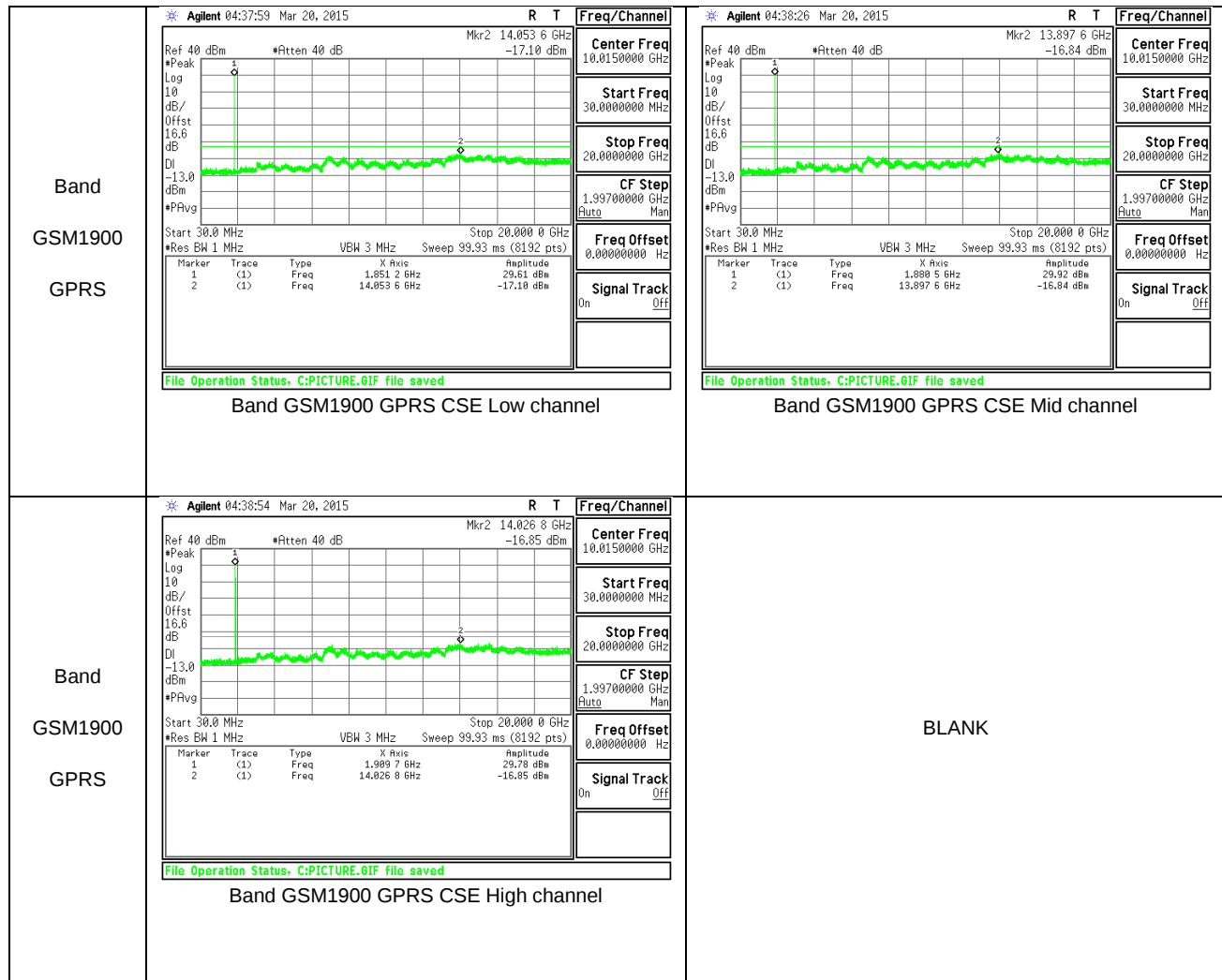
10.3.1. OUT OF BAND EMISSIONS RESULT

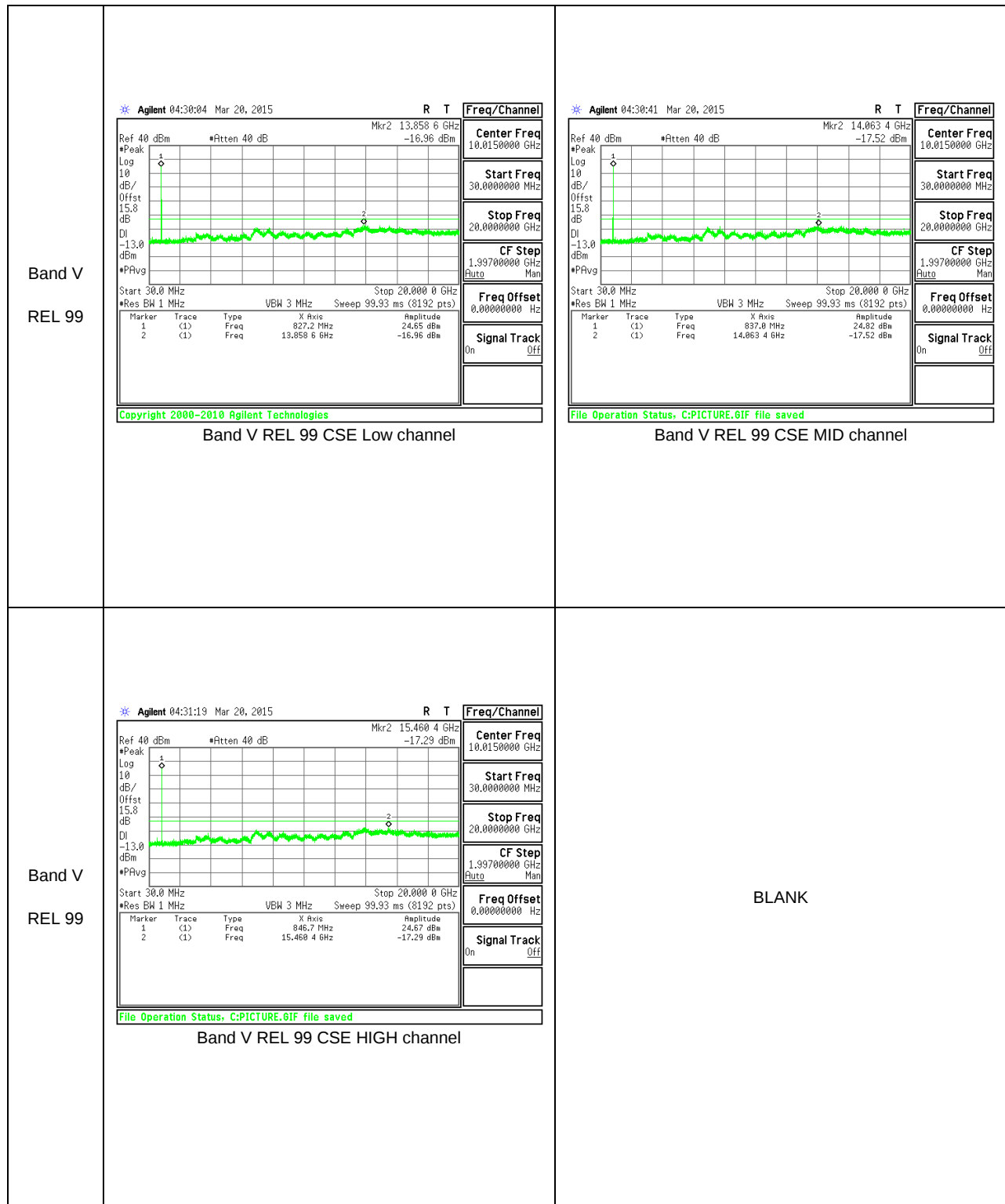
Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
GSM850	GPRS	824.2	-18.71	-13	-5.71
		836.6	-18.94	-13	-5.94
		848.8	-18.55	-13	-5.55
	EGPRS	824.2	-19.60	-13	-6.60
		836.6	-19.84	-13	-6.84
		848.8	-18.75	-13	-5.75
GSM1900	GPRS	1850.2	-17.10	-13	-4.10
		1880	-16.84	-13	-3.84
		1909.8	-16.85	-13	-3.85
	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

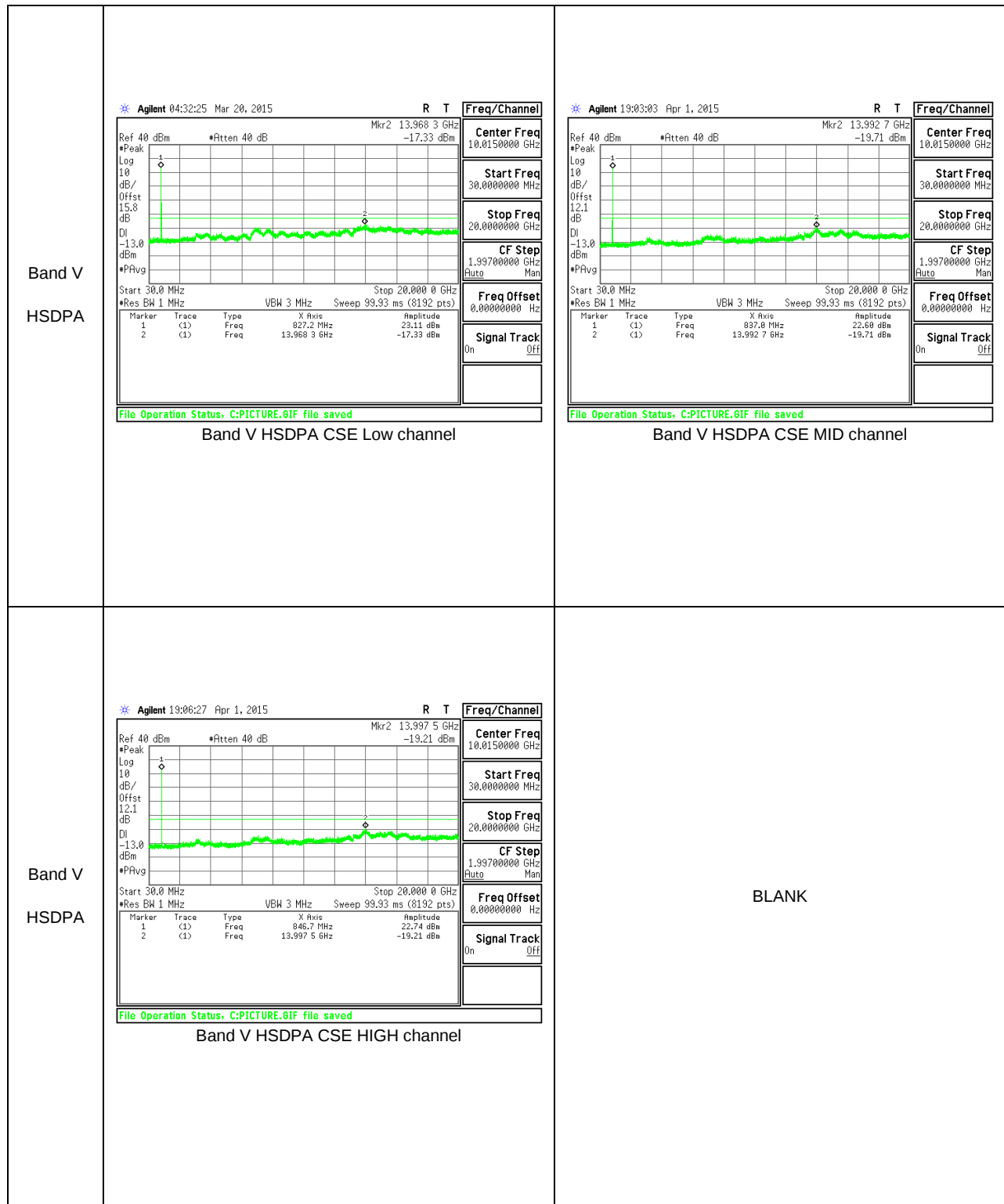
10.3.2. OUT OF BAND EMISSIONS PLOTS**GSM**







WCDMA



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.

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

GSM1900, Freq: 1880 MHz– MID CHANNEL

Reference Frequency: PCS Mid Channel Limit: to stay +/- 2.5 ppm =			1880 4700.000	MHz @ 20°C 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

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

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

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								

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

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

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

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. Kievra/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

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. Kievra/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

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

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

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 3m Chamber		Pre-amplifier 		Filter Filter 1		Limit 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.

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 3m Chamber Pre-amplifier Filter Filter 1 Limit 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.

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 3m Chamber Pre-amplifier Filter Filter 1 Limit 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.

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 3m Chamber Pre-amplifier Filter Filter 1 Limit 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.

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 3m Chamber Pre-amplifier Filter Filter 1 Limit 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.

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-amplifier	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.