



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

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE Tablet + Bluetooth, DTS/UNII a/b/g/n/ac & ANT+

MODEL NUMBER: SM-T805Y

FCC ID: A3LSMT805Y

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Prepared for

**SAMSUNG ELECTRONICS CO., LTD.
416, MAETAN 3-DONG, YEONGTONG-GU
SUWON-CITY, GYEONGGI-DO 443-742, SOUTH KOREA**

Prepared by

**UL VERIFICATION SERVICES, INC.
47173 BENICIA STREET
FREMONT, CA 94538, U.S.A.
TEL: (510) 771-1000
FAX: (510) 661-0888**



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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.
416, MAETAN 3-DONG, YEONGTONG-GU
SUWON-CITY, GYEONGGI-DO 443-742, SOUTH KOREA

EUT DESCRIPTION: GSM/WCDMA/LTE Tablet + Bluetooth, DTS/UNII a/b/g/n/ac & ANT+

MODEL: SM-T805Y

Serial Number: R32F500BEQT, R32F500BFHY (conducted & radiated)

DATE TESTED: MAY 15 – JUNE 6, 2014

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

UL Verification Services Inc. 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 Verification Services Inc. 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 Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. 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 Verification Services Inc. By: Tested By:



PENG ZHANG

CONSUMER TECHNOLOGY DIVISION
PROJECT LEAD
UL Verification Services Inc.



STEVEN TRAN

CONSUMER TECHNOLOGY DIVISION
LAB ENGINEER
UL Verification Services Inc.

2. TEST METHODOLOGY

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

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
☐ Chamber A	☐ Chamber D
☒ Chamber B	☒ Chamber E
☐ Chamber C	☒ Chamber F

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://ts.nist.gov/standards/scopes/2000650.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:

$$\text{EIRP} = \text{PSA reading with EUT worst orientation (dBm)} + \text{Path loss (dB)} - \text{cable loss (between the SG and substitution antenna)} + \text{Substitution Antenna Factor (dBi)}$$

$$\text{ERP} = \text{PSA reading with EUT worst orientation (dBm)} + \text{Path loss (dB)} - \text{cable loss (between the SG and substitution antenna)}$$

$$(\text{Path loss} = \text{Signal generator output} - \text{PSA reading with substitution antenna})$$

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 18000 MHz	4.94 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/LTE Tablet + Bluetooth, DTS/UNII a/b/g/n/ac & ANT+.

5.2. MAXIMUM OUTPUT POWER

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

FCC Part 22/24						
Band	Frequency Range(MHz)	Modulation Peak	Conducted		Radiated	
			Peak(dBm)	Peak (mW)	Peak (dBm)	Peak (mW)
GSM850	824~849	GMSK	32.7	1862.09		
	824~849	GPRS	32.8	1905.46	28.746	749.2
	824~849	EGPRS	26.8	478.63	26.439	440.45
GSM1900	1850~1910	GMSK	30.2	1047.13		
	1850~1910	GPRS	30.4	1096.48	31.904	1550.24
	1850~1910	EGPRS	26.3	426.58	30.048	1011.11

FCC Part 22/24						
Band	Frequency Range(MHz)	Modulation Peak	Conducted		Radiated	
			Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
Band 5	824~849	REL99	23.8	239.88	23.101	204.22
	824~849	HSDPA	23.9	245.47	23.481	222.89
	824~849	HSUPA	23.0	199.53		
Band 2	1850~1910	REL99	22.7	186.21	26.29	425.60
	1850~1910	HSDPA	22.5	177.83	26.61	458.14
	1850~1910	HSUPA	22.5	177.83		

5.3. MAXIMUM OUTPUT POWER (LTE)

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

FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE5	824~849	10MHz	QPSK	23.26	211.84	20.801	120.25
	824~849	10MHz	16QAM	22.67	184.93	20.001	100.02

FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE5	824~849	5MHz	QPSK	22.31	170.22	20.301	107.18
	824~849	5MHz	16QAM	22.01	158.85	19.201	83.2

FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE5	824~849	3MHz	QPSK	23.28	212.81	20.801	120.25
	824~849	3MHz	16QAM	22.2	165.96	20.001	100.02

FCC Part 22							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation Peak	Conducted		Radiated	
				Avg (dBm)	Avg (mW)	Avg (dBm)	Avg (mW)
LTE5	824~849	1.4MHz	QPSK	23.37	217.27	21.001	125.92
	824~849	1.4MHz	16QAM	22.38	172.98	19.801	95.52

5.4. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PIFA antenna for the [List the bands supported] with a maximum peak gain as follow:

Frequency (MHz)	Peak Gain (dBi)
Band 5, 824~849MHz	-0.7
Band 2, 1850~1910MHz	3.3

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	Samsung	ETA-U90CBC	N/A	N/A
Earphone	Samsung	N/A	N/A	N/A

I/O CABLES (CONDUCTED SETUP)

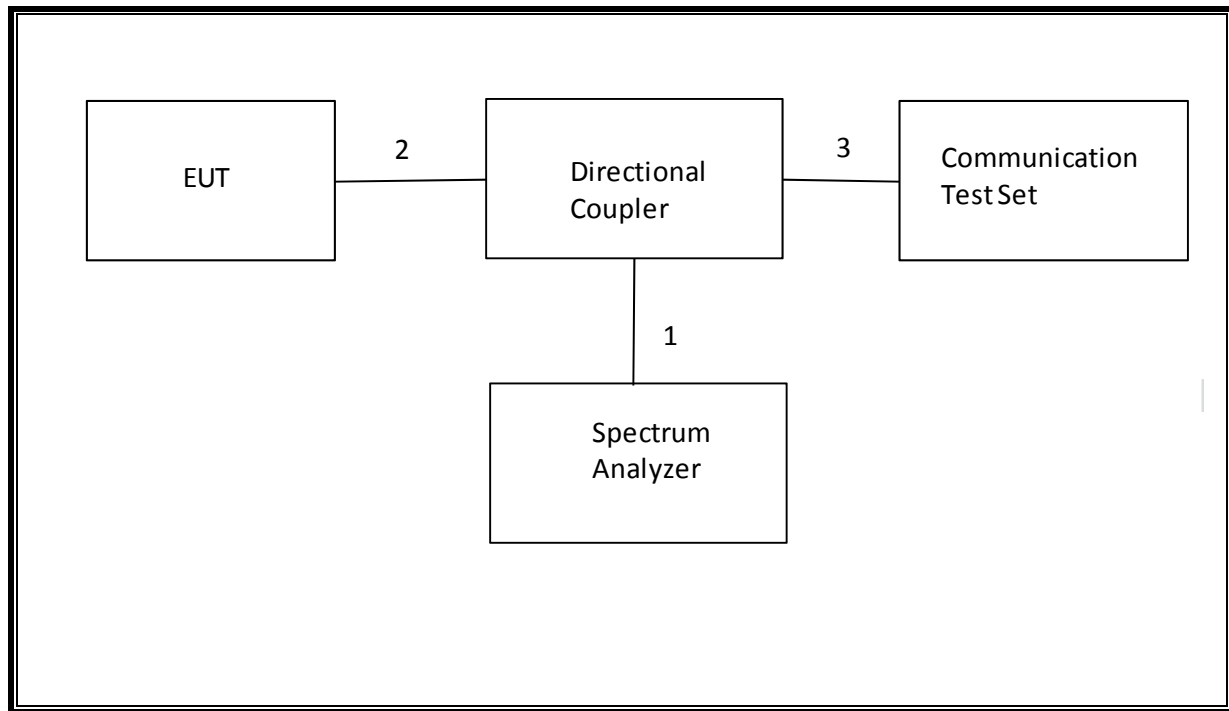
I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	RF Out	1	Spectrum Analyzer	Shielded	None	NA
2	Antenna Port	1	EUT	Shielded	0.1m	NA
3	RF In/Out	1	Communication Test Set	Shielded	1m	NA

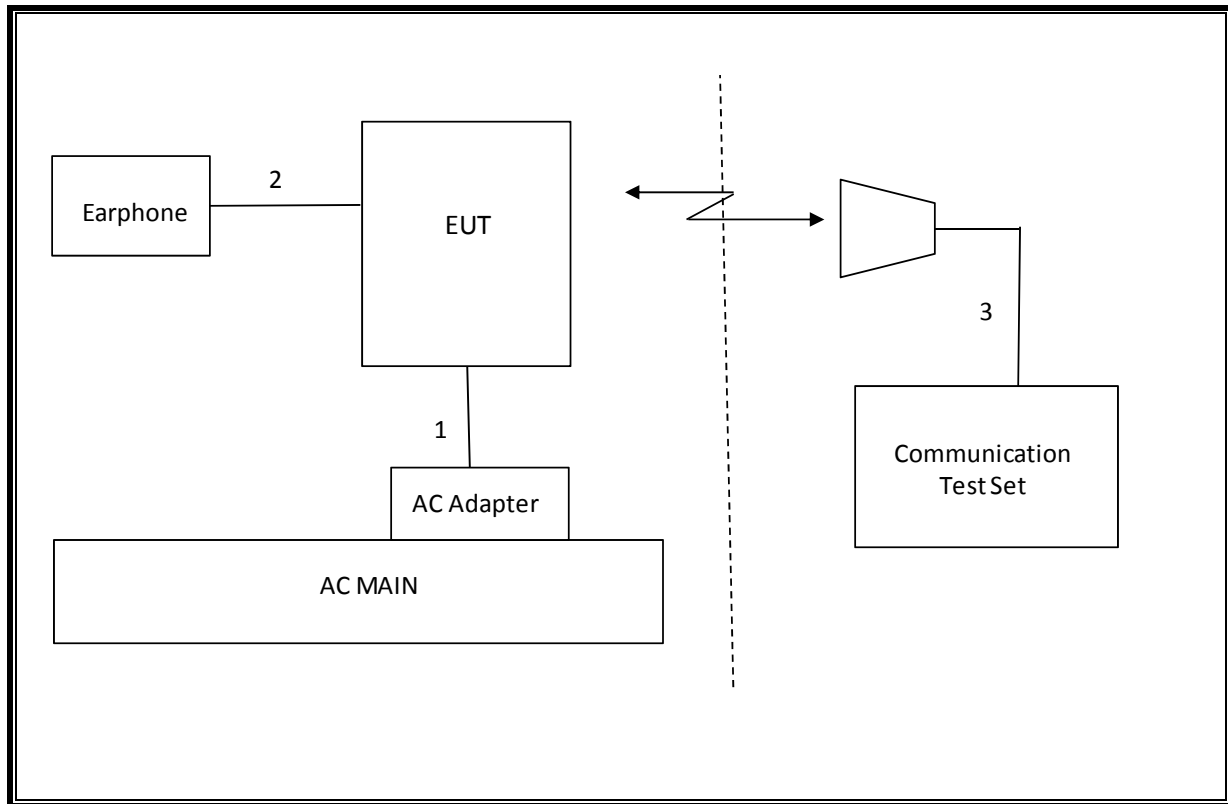
I/O CABLES (RADIATED SETUP)

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	Jack	1	Headset	Shielded	1m	No
3	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:

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Asset	Cal Due
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C01179	02/26/15
Antenna, Bilog, 2 GHz	Sunol Sciences	JB1	C01011	08/14/14
Antenna, Horn, 18 GHz	EMCO	3115	C00783	10/25/14
Antenna, Horn, 18 GHz	EMCO	3115	C00784	09/25/14
Highpass Filter, 2.7 GHz	Micro-Tronics	HPM13194	N02687	CNR
Highpass Filter, 1.5 GHz	Micro-Tronics	HPM13193	N02688	CNR
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	C00930	01/09/15
Communications Test Set	R&S	CMW500	T159	07/02/14
DC power supply, 8 V @ 3 A or 15 V	Agilent / HP	E3610A	None	CNR
Vector signal generator, 6 GHz	Agilent / HP	E4438C	None	07/06/14
Antenna, Tuned Dipole 400~1000	ETS	3121C DB4	C00993	02/14/15
Directional Coupler	RF-Lambda	RFDC5M06G15	None	CNR
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00980	11/14/14

7. Summary Table

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Worst Case
2.1049	RSS Gen	Occupied Band width (99%)	N/A	Conducted	Pass	8.958MHz
22.917(a) 24.238(a)	RSS-132(4.5.1) RSS-133(6.5.1)	Band Edge / Conducted Spurious Emission	-13dBm		Pass	-13.067dBm
2.1046	N/A	Conducted output power	N/A		Pass	32.8dBm
22.355 24.235	RSS-132(4.3) RSS-133(6.3)	Frequency Stability	2.5PPM		Pass	0.0037PPM
22.913(a)(2)	RSS-132(4.4)	Effective Radiated Power	38 dBm	Radiated	Pass	28.746dBm
24.232(c)	RSS-133(6.4)	Equivalent Isotropic Radiated Power	33dBm		Pass	31.904dBm
22.917(a) 24.238(a)	RSS-132(4.5.1) RSS-133(6.5.1)	Radiated Spurious Emission	-13dBm		Pass	-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

Band	Mode	Ch.	f(MHz)	1 time slot	2 time slot	3 time slot	4 time slot
				Peak (dBm)	Peak (dBm)	Peak (dBm)	Peak (dBm)
GSM850	GMSK	128	824.2	32.6			
		190	836.6	32.6			
		251	848.8	32.7			
	GPRS	128	824.2	32.7	31.5	29.4	28.0
		190	836.6	32.7	31.5	29.4	28.0
		251	848.8	32.8	31.6	29.5	28.1
	EGPRS	128	824.2	26.8	25.7	23.6	22.2
		190	836.6	26.6	25.6	23.5	22.0
		251	848.8	26.5	25.5	23.4	21.9
GSM1900	GMSK	512	1850.2	30.2			
		661	1880	29.5			
		810	1909.8	30.2			
	GPRS	512	1850.2	30.4	28.0	26.0	24.0
		661	1880	29.7	27.4	25.4	23.4
		810	1909.8	30.3	28.0	26.0	24.0
	EGPRS	512	1850.2	26.3	24.3	22.2	20.2
		661	1880	26.2	24.3	22.2	20.2
		810	1909.8	26.2	24.2	22.1	20.1

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	Ch.	f(MHz)	Conducted Power (dBm)
				Avg (dBm)
Band 5	REL99	4132	826.4	23.8
		4183	836.6	23.6
		4233	846.6	23.7
Band 2	REL99	9262	1852.4	22.7
		9400	1880	22.1
		9538	1907.6	22.6

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
HSDPA Specific Settings	MPR (dB)	0	0	0.5	0.5
	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	Subset	Ch.	f(MHz)	Conducted Power (dBm)
					Avg (dBm)
Band 5	HSDPA	1	4132	826.4	23.8
			4183	836.6	23.8
			4233	846.6	23.9
		2	4132	826.4	23.3
			4183	836.6	23.3
			4233	846.6	23.4
		3	4132	826.4	23.0
			4183	836.6	22.9
			4233	846.6	23.0
		4	4132	826.4	22.9
			4183	836.6	22.8
			4233	846.6	22.8
Band 2	HSDPA	1	9262	1852.4	22.5

			9400	1880	21.9
			9538	1907.6	22.1
		2	9262	1852.4	21.9
			9400	1880	21.4
			9538	1907.6	21.9
		3	9262	1852.4	21.7
			9400	1880	21.1
			9538	1907.6	21.6
		4	9262	1852.4	21.5
			9400	1880	21.0
			9538	1907.6	21.4

8.3.2. 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: β_{ed} cannot be set directly, it is set by Absolute Grant Value.

8.3.3. UMTS HSUPA OUTPUT POWER RESULT

Band	Mode	Subset	Ch.	f(MHz)	Conducted Power (dBm)
					Avg (dBm)
Band 5	HSUPA	1	4132	826.4	22.7
			4183	836.6	21.7
			4233	846.6	22.7
		2	4132	826.4	21.0
			4183	836.6	21.0
			4233	846.6	21.0
		3	4132	826.4	21.9
			4183	836.6	21.9
			4233	846.6	21.9
		4	4132	826.4	21.1
			4183	836.6	21.1
			4233	846.6	21.1
		5	4132	826.4	23.0
			4183	836.6	23.0
			4233	846.6	23.0
Band 2	HSUPA	1	9262	1852.4	22.3
			9400	1880	21.8
			9538	1907.6	22.3
		2	9262	1852.4	20.8
			9400	1880	20.5
			9538	1907.6	20.6
		3	9262	1852.4	21.6
			9400	1880	21.0
			9538	1907.6	21.4
		4	9262	1852.4	21.4
			9400	1880	20.6
			9538	1907.6	20.6
		5	9262	1852.4	22.5
			9400	1880	21.9
			9538	1907.6	22.5

8.3.4. DC-HSDPA

The following tests were completed according to procedures in section 7.3.13 of 3GPP TS34.108 v9.5.0. A summary of these settings are illustrated below:

Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0

Table E.5.0: Levels for HSDPA connection setup

Parameter During Connection setup	Unit	Value
P-CPICH_Ec/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH_Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13

The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Processes	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.		
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

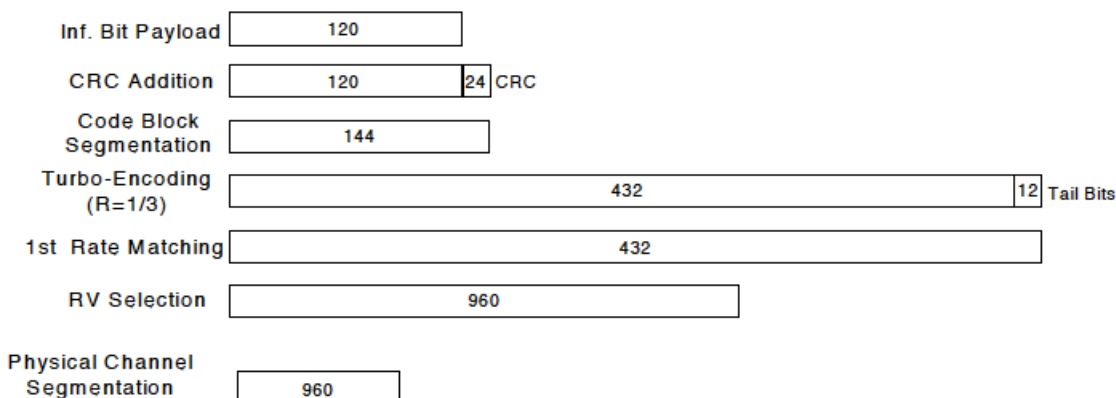


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

The following 4 Sub-tests for HSDPA were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121. A summary of subtest settings are illustrated below:

	Mode	Rel6 HSDPA	Rel6 HSDPA	Rel6 HSDPA	Rel6 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	Algorithm2			
	β_c	2/15	12/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	β_d (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	0	0	0.5	0.5
HSDPA Specific Settings	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack Repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	Ahs = β_{hs}/β_c	30/15			

Up commands are set continuously to set the UE to Max power.

8.3.1. UMTS DC-HSDPA OUTPUT POWER RESULT

Band	Mode	Subset	Ch.	f(MHz)	Conducted Power (dBm)
					Avg (dBm)
Band 5	DC-HSDPA	1	4132	826.4	23.9
			4183	836.6	23.8
			4233	846.6	23.9
		2	4132	826.4	23.4
			4183	836.6	23.4
			4233	846.6	23.5
		3	4132	826.4	23.1
			4183	836.6	23.0
			4233	846.6	23.1
		4	4132	826.4	22.9
			4183	836.6	22.9
			4233	846.6	22.9
Band 2	DC-HSDPA	1	9262	1852.4	22.5
			9400	1880	22.0
			9538	1907.6	22.4
		2	9262	1852.4	22.1
			9400	1880	21.6
			9538	1907.6	22.1
		3	9262	1852.4	21.9

			9400	1880	21.4
			9538	1907.6	21.7
		4	9262	1852.4	21.7
			9400	1880	21.1
			9538	1907.6	21.6

8.5. LTE OUTPUT VERIFICATION

8.5.1. LTE OUTPUT RESULT

Band	Frequency	Modulation	BW (MHz)	RB Size	RB Offset	Average
LTE5	829	QPSK	10	1	0	23.26
				1	24	23.24
				1	49	23.04
				25	0	22.25
				25	11	22.20
				25	24	22.10
	829	16QAM		50	0	22.20
				1	0	22.67
				1	24	22.56
				1	49	22.42
				25	0	21.23
				25	11	21.18
	829	16QAM		25	24	21.10
				50	0	21.15
				1	0	23.13
				1	24	23.04
				1	49	22.77
				25	0	22.16
	836.5	QPSK		25	11	22.08
				25	24	22.00
				50	0	22.06
				1	0	22.15
				1	24	22.05
				1	49	21.84
	836.5	16QAM		25	0	21.12
				25	11	21.03
				25	24	20.98
				50	0	21.06
				1	0	23.06
				1	24	22.98
	844	QPSK		1	49	22.81
				25	0	22.06
				25	11	21.97
				25	24	21.92
				50	0	22.00
				1	0	22.01
	844	16QAM		1	24	21.86
				1	49	21.76
				25	0	21.00
				25	11	20.93
				25	24	20.87
				50	0	21.05

Band	Frequency	Modulation	BW (MHz)	RB Size	RB Offset	Average
LTE5	826.5	QPSK	5	1	0	22.30
				1	11	22.31
				1	24	22.24
				12	0	22.30

	826.5	16QAM	12	5	22.28
			12	11	22.24
			25	0	22.24
			1	0	21.54
			1	11	21.60
			1	24	21.50
			12	0	21.25
			12	5	21.30
			12	11	21.23
			25	0	21.20
			1	0	22.18
			1	11	22.12
	836.5	QPSK	1	24	22.00
			12	0	22.16
			12	5	22.15
			12	11	22.11
			25	0	22.14
			1	0	22.01
			1	11	21.88
			1	24	21.80
			12	0	21.20
			12	5	21.10
			12	11	21.06
			25	0	21.00
	846.5	QPSK	1	0	22.05
			1	11	22.00
			1	24	21.97
			12	0	22.08
			12	5	22.02
			12	11	22.00
			25	0	22.02
			1	0	21.10
			1	11	21.05
			1	24	21.03
			12	0	20.97
			12	5	20.83
	846.5	16QAM	12	11	20.91
			25	0	21.02

Band	Frequency	Modulation	BW (MHz)	RB Size	RB Offset	Average
LTE5	825.5	QPSK	3	1	0	23.22
				1	7	23.28
				1	14	23.24
				7	0	22.29
				7	2	22.24
				7	6	22.28
				15	0	22.25
	825.5	16QAM		1	0	22.10
				1	7	22.20
				1	14	22.16
				7	0	21.18
				7	2	21.20
				7	6	21.17

				15	0	21.24
	836.5	QPSK		1	0	23.10
				1	7	23.09
				1	14	23.00
				7	0	22.14
				7	2	22.13
				7	6	22.14
				15	0	22.13
				1	0	22.04
	836.5	16QAM		1	7	22.08
				1	14	21.98
				7	0	21.09
				7	2	21.05
				7	6	21.06
				15	0	21.03
				1	0	23.02
				1	7	23.00
	847.5	QPSK		1	14	22.96
				7	0	22.07
				7	2	22.02
				7	6	22.04
				15	0	22.05
				1	0	21.95
				1	7	21.94
				1	14	21.86
	847.5	16QAM		7	0	21.11
				7	2	21.07
				7	6	21.07
				15	0	21.04

Band	Frequency	Modulation	BW (MHz)	RB Size	RB Offset	Average		
LTE5	824.7	QPSK	1.4	1	0	23.37		
				1	2	23.35		
				1	5	23.33		
				3	0	23.31		
				3	0	23.33		
				3	2	23.32		
				6	0	21.27		
	824.7	16QAM		1	0	22.37		
				1	2	22.35		
				1	5	22.38		
				3	0	22.35		
				3	0	22.35		
				3	2	22.35		
				6	0	21.11		
	836.5	QPSK		1	0	23.14		
				1	2	23.11		
				1	5	23.11		
				3	0	23.20		
				3	0	23.22		
				3	2	23.19		
				6	0	21.11		
				836.5	16QAM	1	0	22.20

			1	2	22.27
			1	5	22.26
			3	0	22.37
			3	0	22.40
			3	2	22.36
			6	0	21.34
	848.3	QPSK	1	0	23.09
			1	2	23.03
			1	5	23.08
			3	0	23.03
			3	0	23.01
			3	2	23.00
	848.3	16QAM	6	0	20.92
			1	0	22.17
			1	2	22.14
			1	5	22.14
			3	0	22.10
			3	0	22.10
			3	2	22.06
			6	0	21.06

9. PEAK TO AVERAGE RATIO

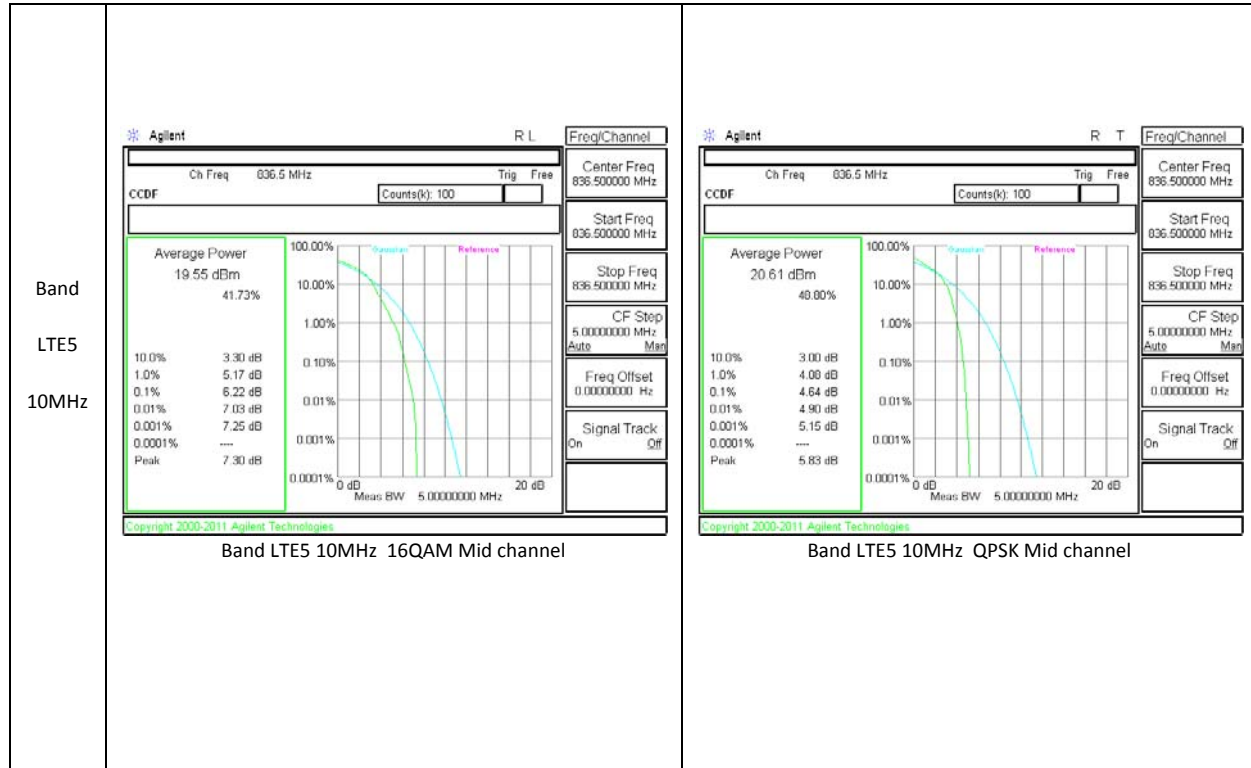
Test Procedure

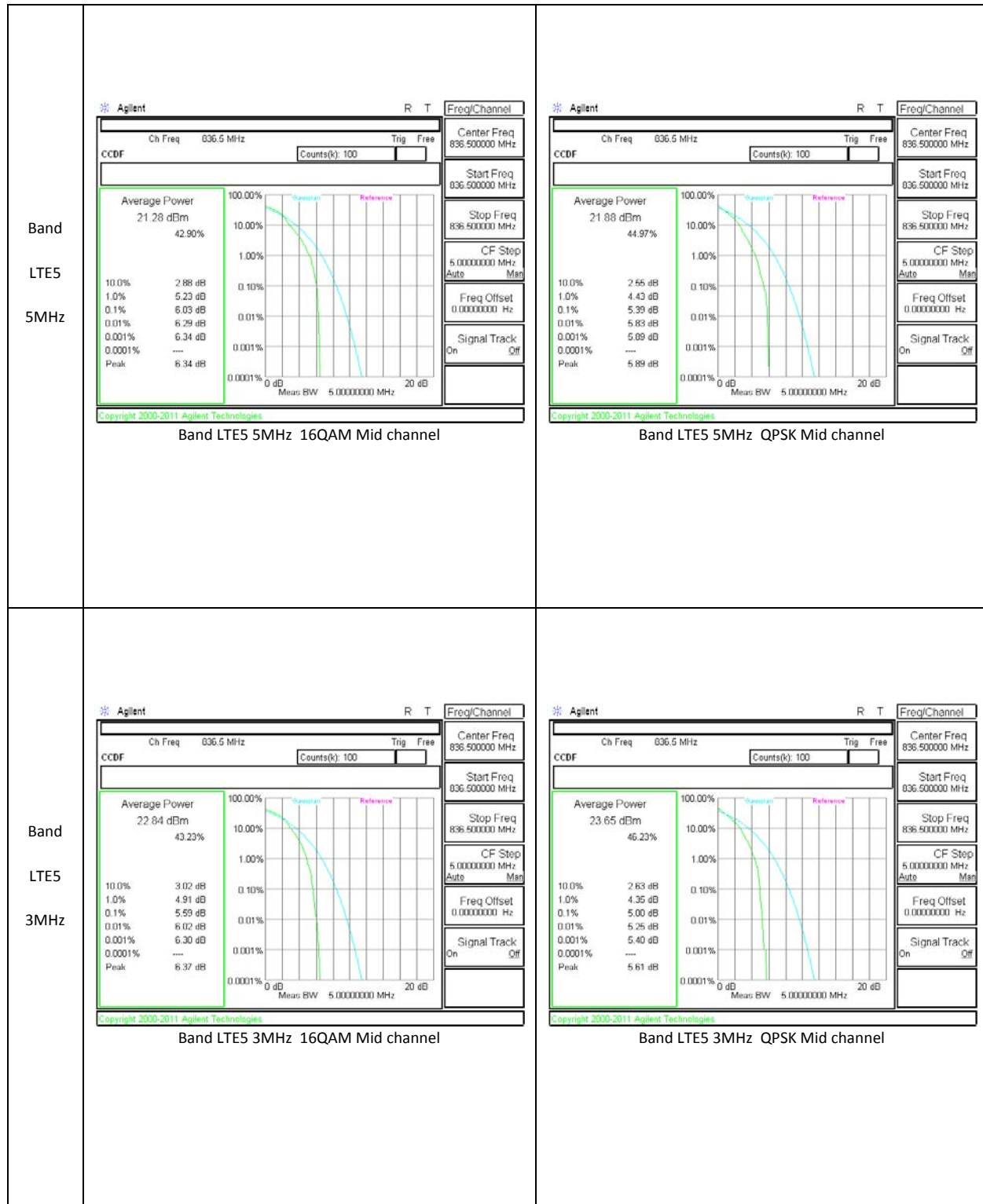
Per KDB 971168 D01 Power Meas License Digital Systems v02r01

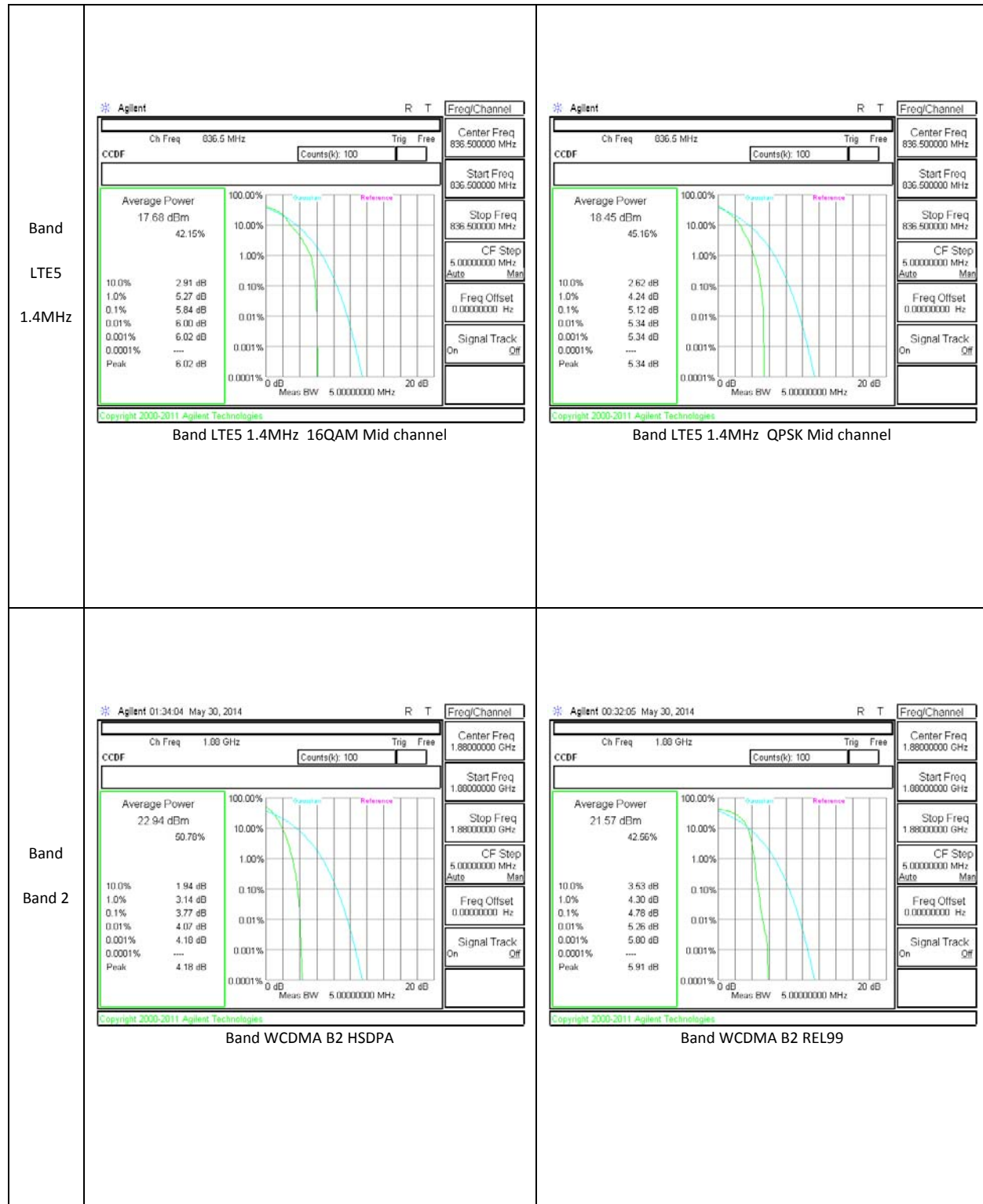
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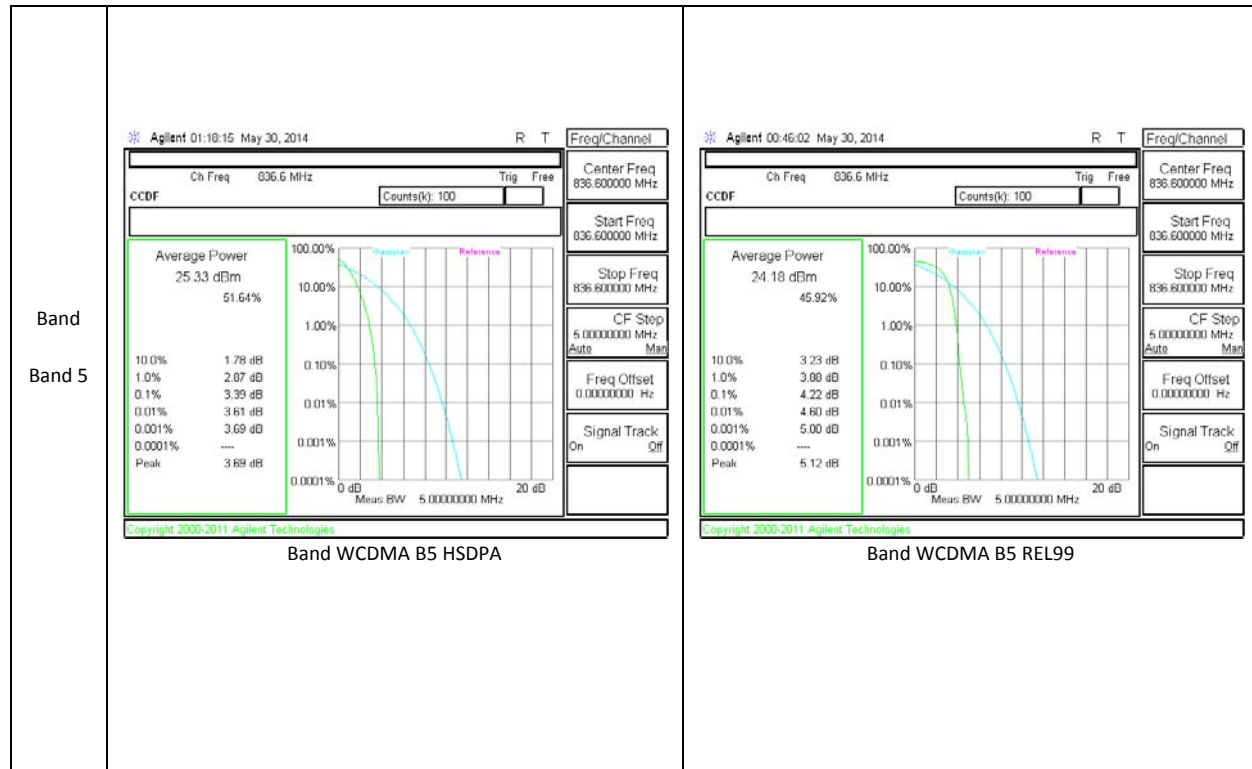
In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

9.1. CONDUCTED PEAK TO AVERAGE RESULT









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 v02r01 - 06/07/2013)

10.1.1. OCCUPIED BANDWIDTH RESULTS

Band	Mode	Channel	f (MHz)	99% BW (KHz)	-26dB BW (KHz)
GSM850	GPRS	128	824.2	245	325
		190	836.6	249	326
		251	848.8	248	332
	EGPRS	128	824.2	250	327
		190	836.6	249	333
		251	848.8	250	328
GSM1900	GPRS	512	1850.2	249	330
		661	1880	249	331
		810	1909.8	244	330
	EGPRS	512	1850.2	245	328
		661	1880	249	332
		810	1909.8	249	330
Band 5	REL99	4132	826.4	4062	4568
		4183	836.6	4075	4582
		4233	846.6	4051	4615
	HSDPA	4132	826.4	4055	4566
		4183	836.6	4046	4607
		4233	846.6	4066	4592
Band 2	REL99	9262	1852.4	4050	4604
		9400	1880	4055	4569
		9538	1907.6	4037	4602
	HSDPA	9262	1852.4	4059	4607
		9400	1880	4056	4574
		9538	1907.6	4053	4622

10.1.2. LTE OCCUPIED BANDWIDTH RESULTS

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE5	10	QPSK	50/0	829	8.955	10.076
			50/0	836.5	8.930	9.828
			50/0	844	8.932	9.874
		16QAM	50/0	829	8.936	9.943
			50/0	836.5	8.958	9.764
			50/0	844	8.939	9.931

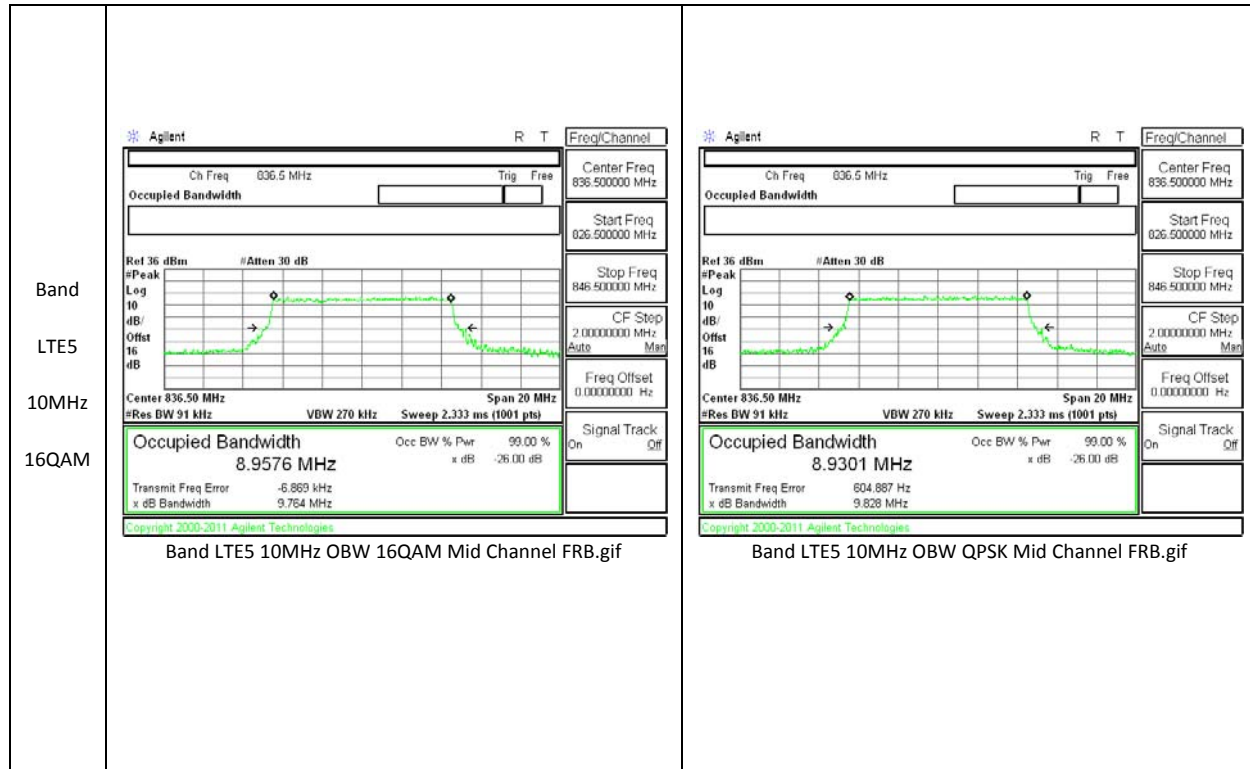
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE5	5	QPSK	25/0	826.5	4.469	5.177
			25/0	836.5	4.457	5.028
			25/0	846.5	4.459	5.056
		16QAM	25/0	826.5	4.465	5.155
			25/0	836.5	4.470	5.199
			25/0	846.5	4.494	5.032

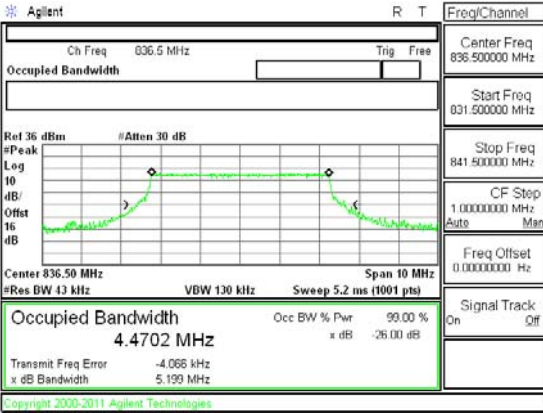
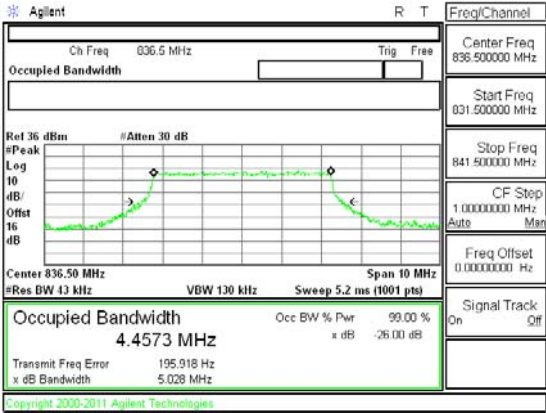
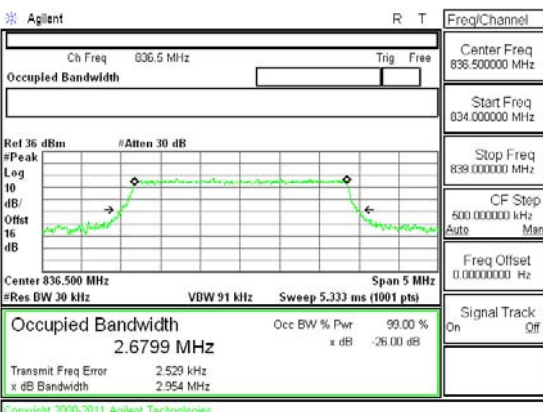
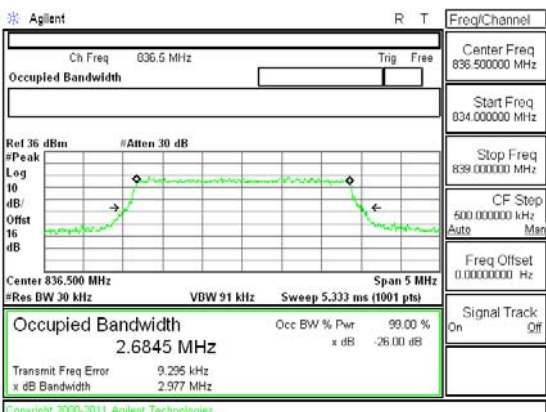
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE5	3	QPSK	15/0	825.5	2.680	2.963
			15/0	836.5	2.685	2.977
			15/0	847.5	2.677	2.958
		16QAM	15/0	825.5	2.673	2.975
			15/0	836.5	2.680	2.954
			15/0	847.5	2.683	2.997

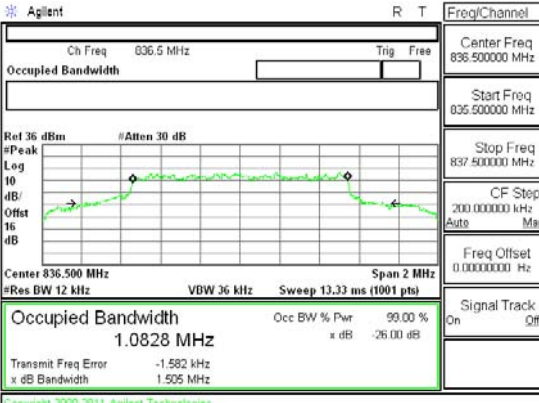
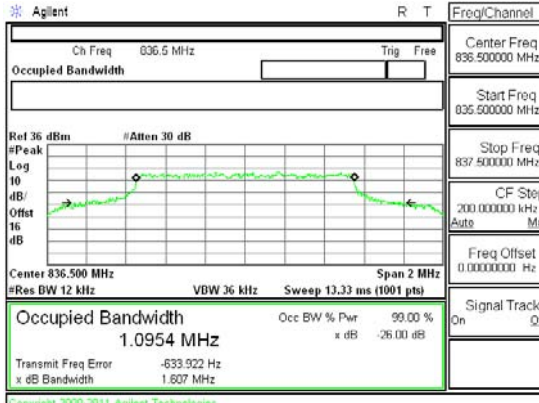
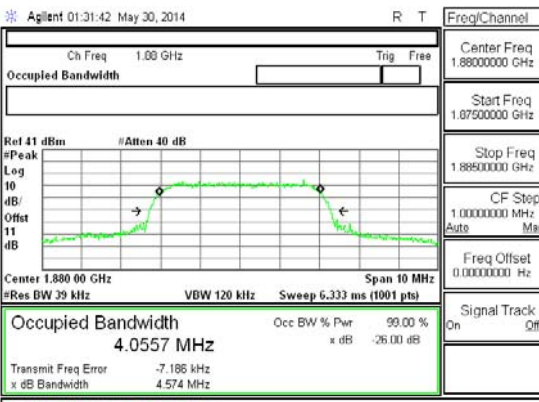
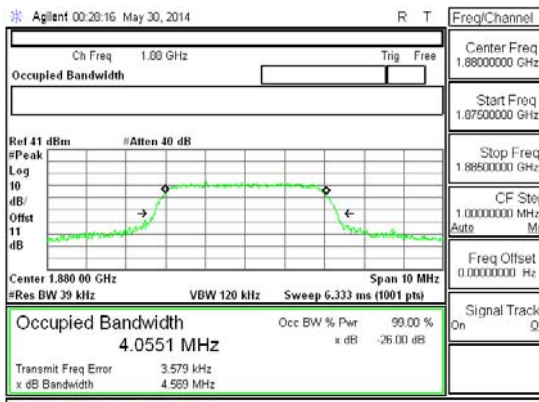
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE5	1.4	QPSK	6/0	824.7	1.079	1.533
			6/0	836.5	1.095	1.607
			6/0	848.3	1.088	1.566
		16QAM	6/0	824.7	1.086	1.532
			6/0	836.5	1.083	1.505

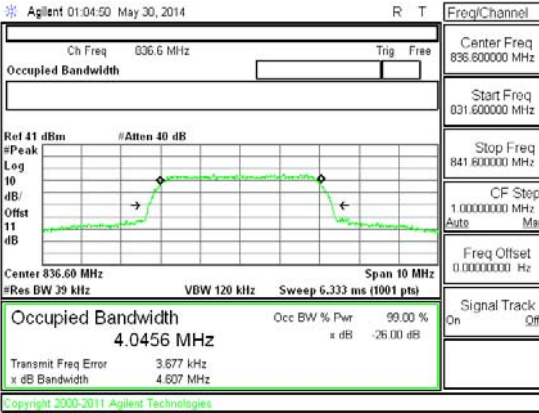
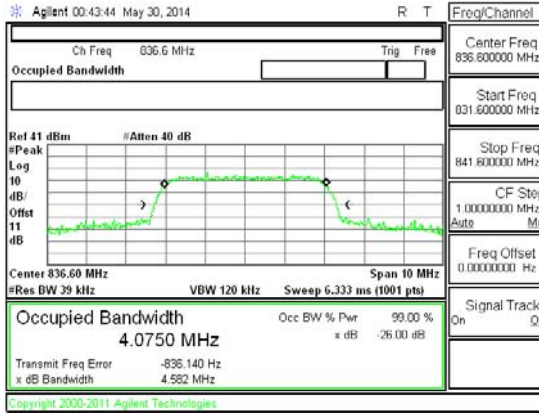
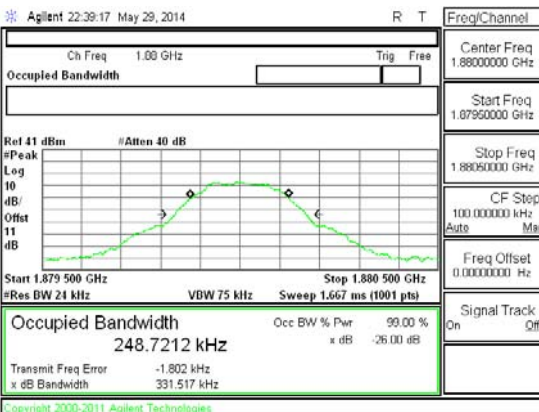
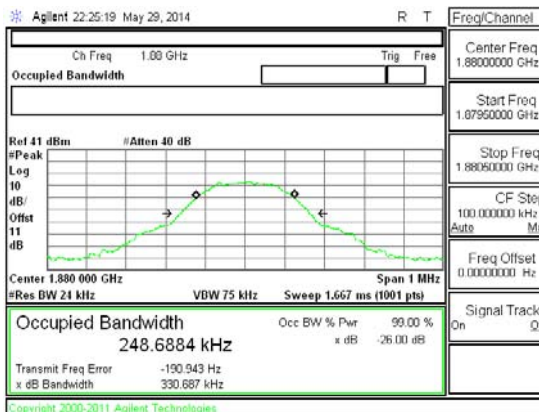
			6/0	848.3	1.091	1.508
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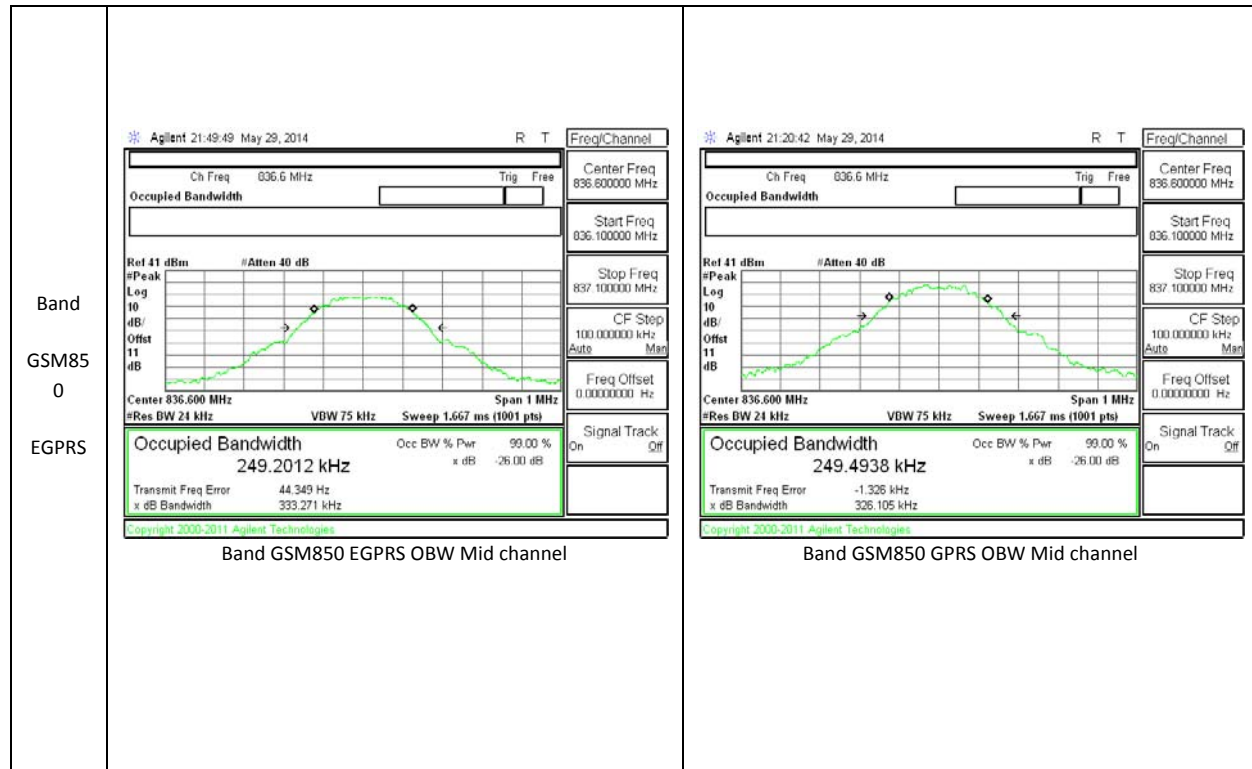
10.1.3. OCCUPIED BANDWIDTH PLOTS



Band LTE5 5MHz	 Band LTE5 5MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE5 5MHz OBW QPSK Mid Channel FRB.gif
Band LTE5 3MHz	 Band LTE5 3MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE5 3MHz OBW QPSK Mid Channel FRB.gif

Band LTE5 1.4MHz 16QAM	 Band LTE5 1.4MHz OBW 16QAM Mid Channel FRB.gif	 Band LTE5 1.4MHz OBW QPSK Mid Channel FRB.gif
Band Band 2 HSDPA	 Band WCDMA B2 HSDPA OBW	 Band WCDMA B2 REL99 OBW

Band Band 5 HSDPA	 Agilent 01:04:50 May 30, 2014 R T Freq/Channel Ch Freq 836.6 MHz Trig Free Center Freq 836.600000 MHz Occupied Bandwidth Start Freq 831.600000 MHz Stop Freq 841.600000 MHz CF Step 1.000000 MHz Auto Man Freq Offset 0.000000 Hz Center 836.60 MHz Span 10 MHz Res BW 39 kHz VBW 120 kHz Sweep 6.333 ms (1001 pts) Occupied Bandwidth 4.0456 MHz Occ BW % 99.00% x dB -26.00 dB Transmit Freq Error 3.677 kHz x dB Bandwidth 4.607 MHz Copyright 2000-2011 Agilent Technologies Band WCDMA B5 HSDPA OBW	 Agilent 00:43:44 May 30, 2014 R T Freq/Channel Ch Freq 836.6 MHz Trig Free Center Freq 836.600000 MHz Occupied Bandwidth Start Freq 831.600000 MHz Stop Freq 841.600000 MHz CF Step 1.000000 MHz Auto Man Freq Offset 0.000000 Hz Center 836.60 MHz Span 10 MHz Res BW 39 kHz VBW 120 kHz Sweep 6.333 ms (1001 pts) Occupied Bandwidth 4.0750 MHz Occ BW % 99.00% x dB -26.00 dB Transmit Freq Error -836.140 Hz x dB Bandwidth 4.582 MHz Copyright 2000-2011 Agilent Technologies Band WCDMA B5 REL99 OBW
Band GSM1900 EGPRS	 Agilent 22:39:17 May 29, 2014 R T Freq/Channel Ch Freq 1.00 GHz Trig Free Center Freq 1.88000000 GHz Occupied Bandwidth Start Freq 1.07950000 GHz Stop Freq 1.88050000 GHz CF Step 100.000000 kHz Auto Man Freq Offset 0.000000 Hz Center 1.880 000 GHz Span 1 MHz Res BW 21 kHz VBW 75 kHz Sweep 1.667 ms (1001 pts) Occupied Bandwidth 248.7212 kHz Occ BW % 99.00% x dB -26.00 dB Transmit Freq Error -1.802 kHz x dB Bandwidth 331.517 kHz Copyright 2000-2011 Agilent Technologies Band GSM1900 EGPRS OBW Mid channel	 Agilent 22:25:19 May 29, 2014 R T Freq/Channel Ch Freq 1.00 GHz Trig Free Center Freq 1.88000000 GHz Occupied Bandwidth Start Freq 1.07950000 GHz Stop Freq 1.88050000 GHz CF Step 100.000000 kHz Auto Man Freq Offset 0.000000 Hz Center 1.880 000 GHz Span 1 MHz Res BW 21 kHz VBW 75 kHz Sweep 1.667 ms (1001 pts) Occupied Bandwidth 248.6884 kHz Occ BW % 99.00% x dB -26.00 dB Transmit Freq Error -190.943 Hz x dB Bandwidth 330.687 kHz Copyright 2000-2011 Agilent Technologies Band GSM1900 GPRS OBW Mid channel



10.2. BAND EDGE EMISSIONS

RULE PART(S)

FCC: §22.359, §24.238

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.

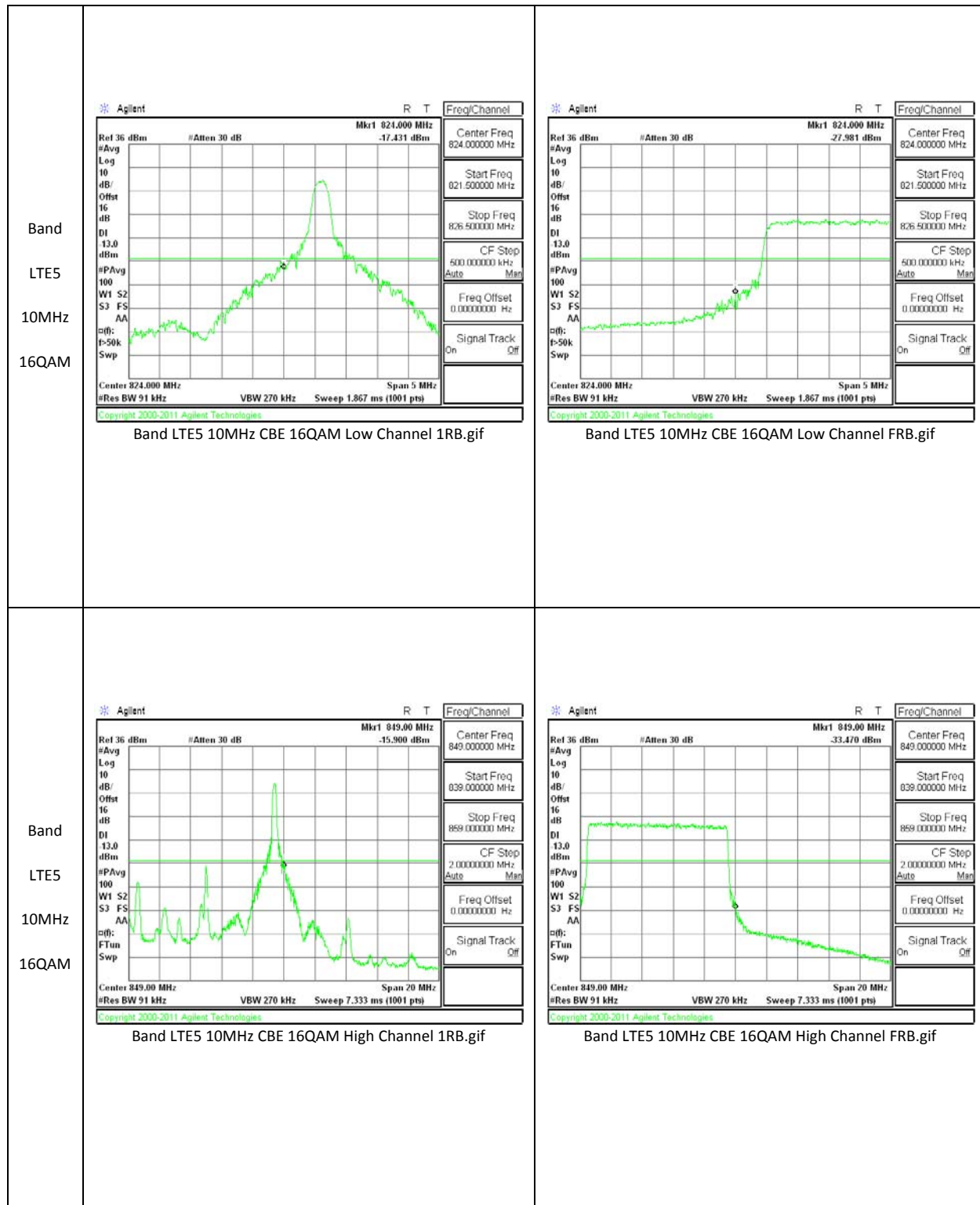
TEST PROCEDURE

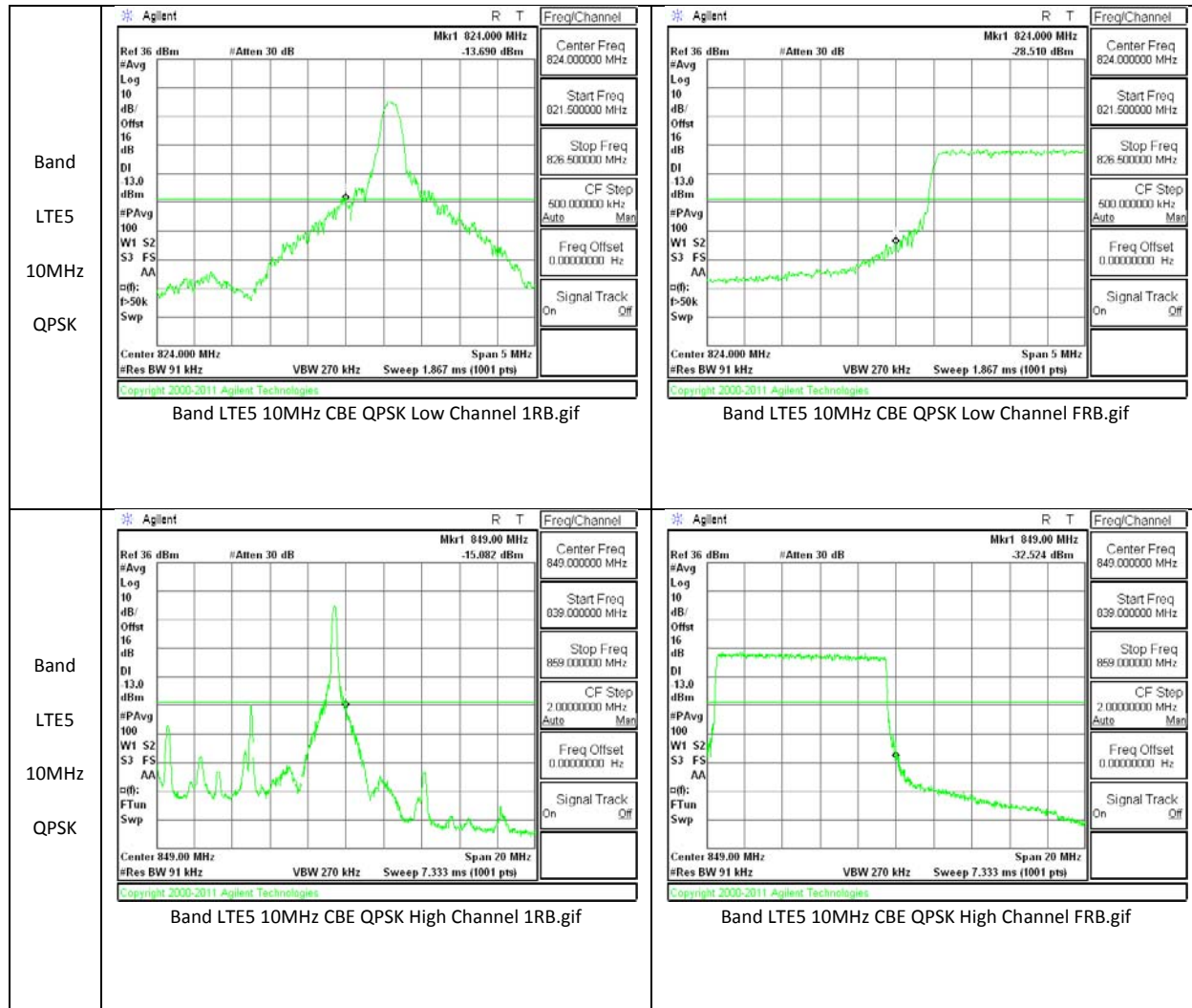
Per KDB 971168 D01 Power Meas License Digital Systems v02r01

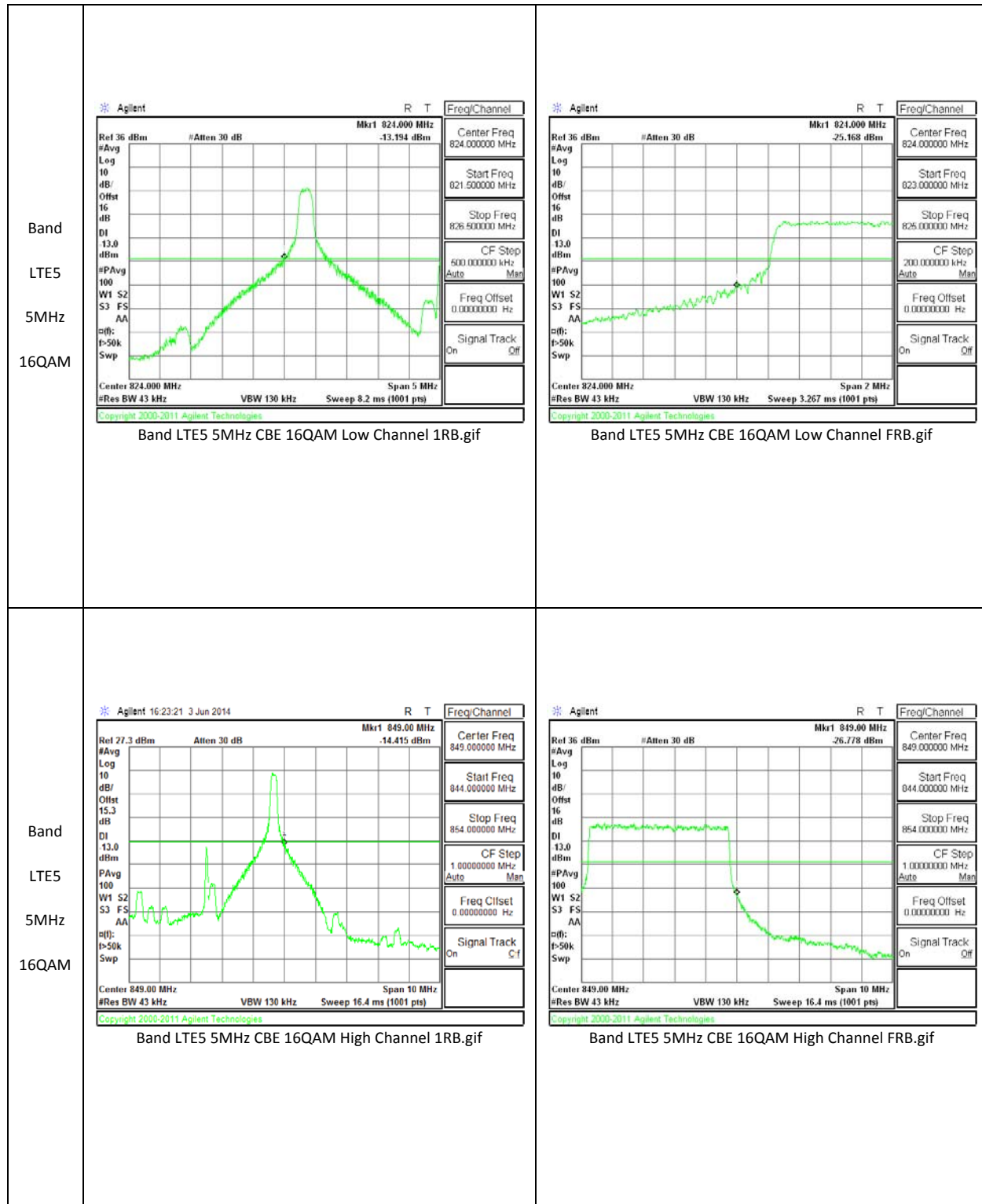
The transmitter output was connected to an Agilent 8960 or a CMW500 Test Set and configured to operate at maximum power. The band edge emissions were measured at the required operating frequencies in each band on the Spectrum Analyzer.

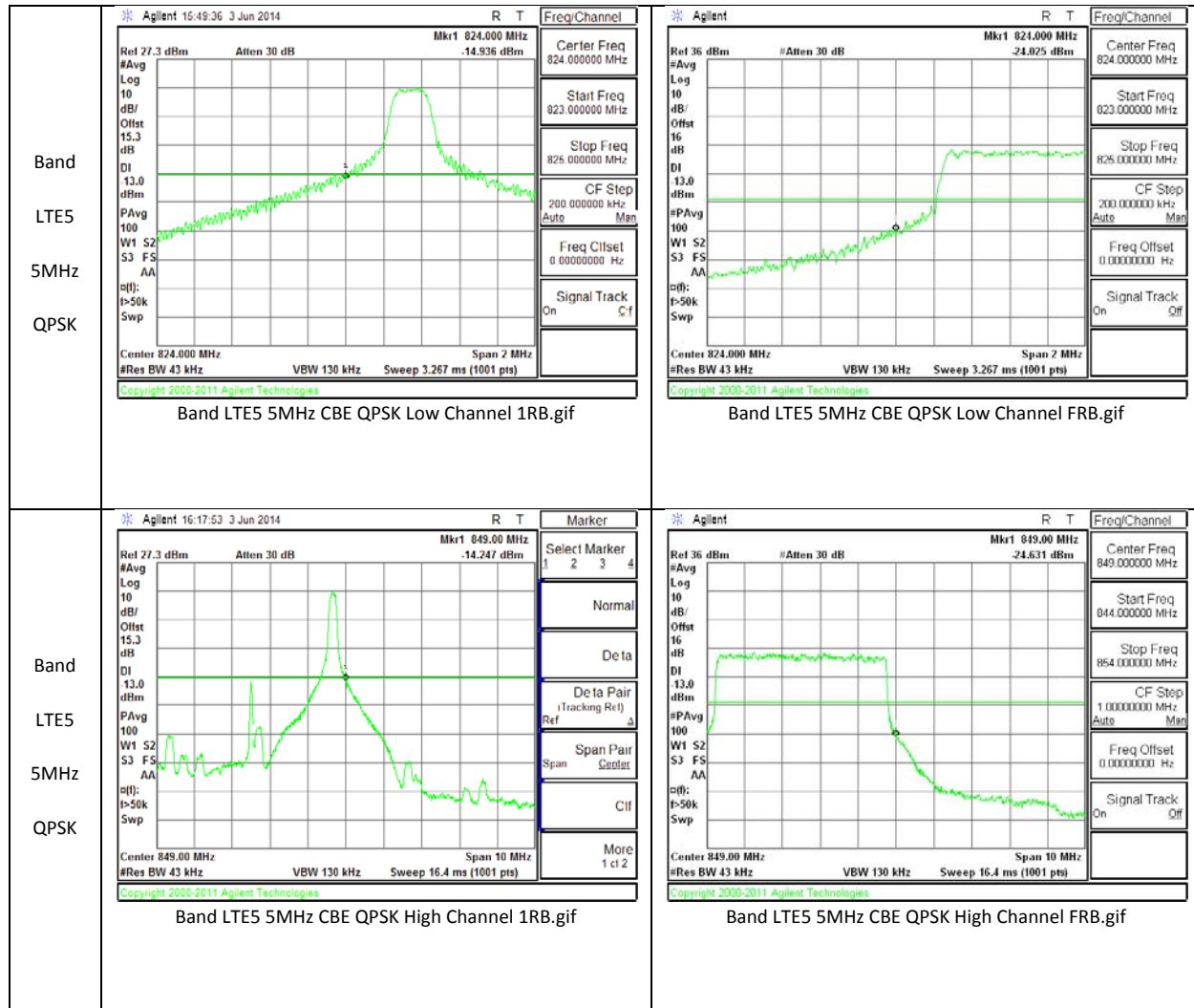
RESULTS

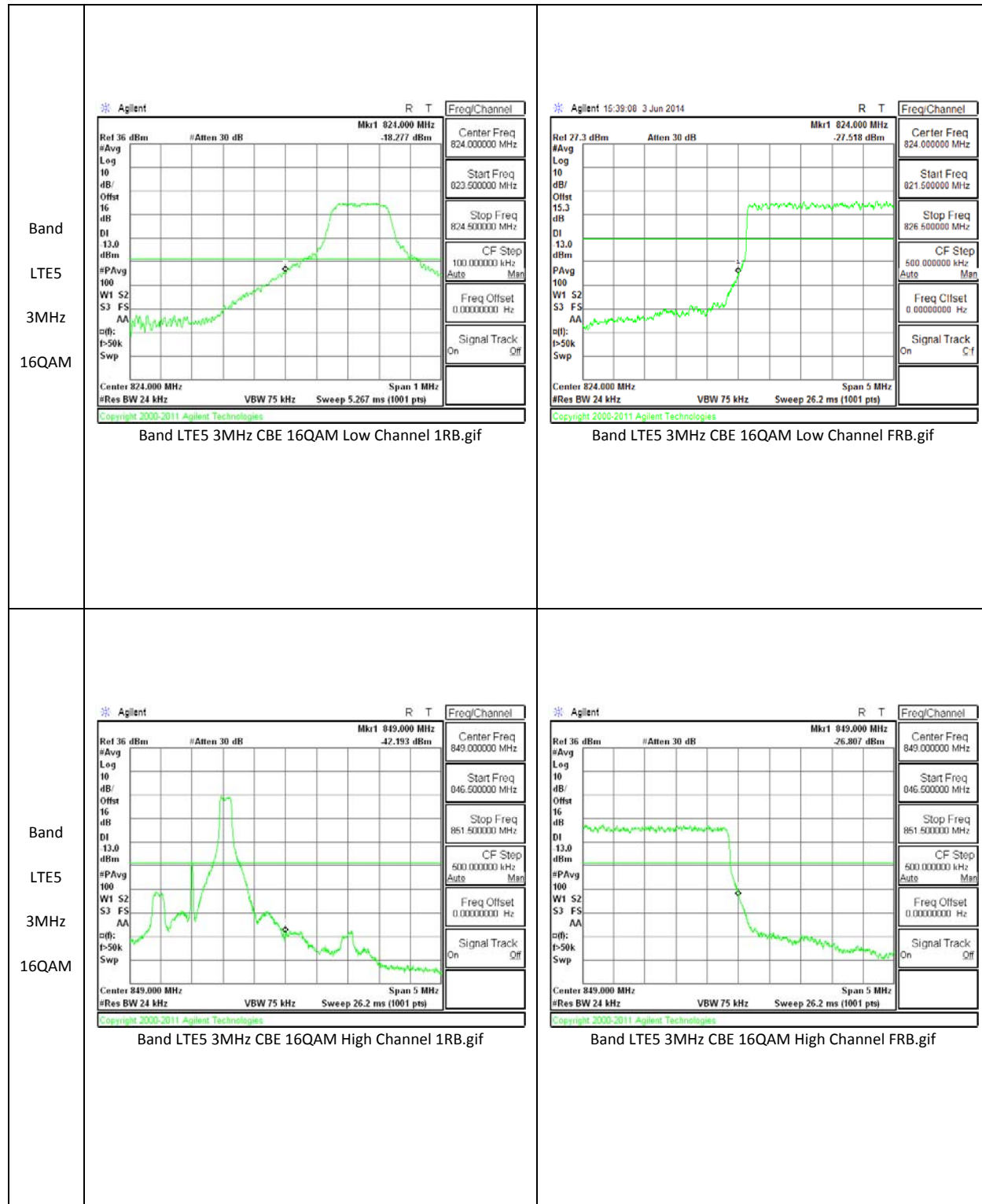
10.2.1. BAND EDGE PLOTS

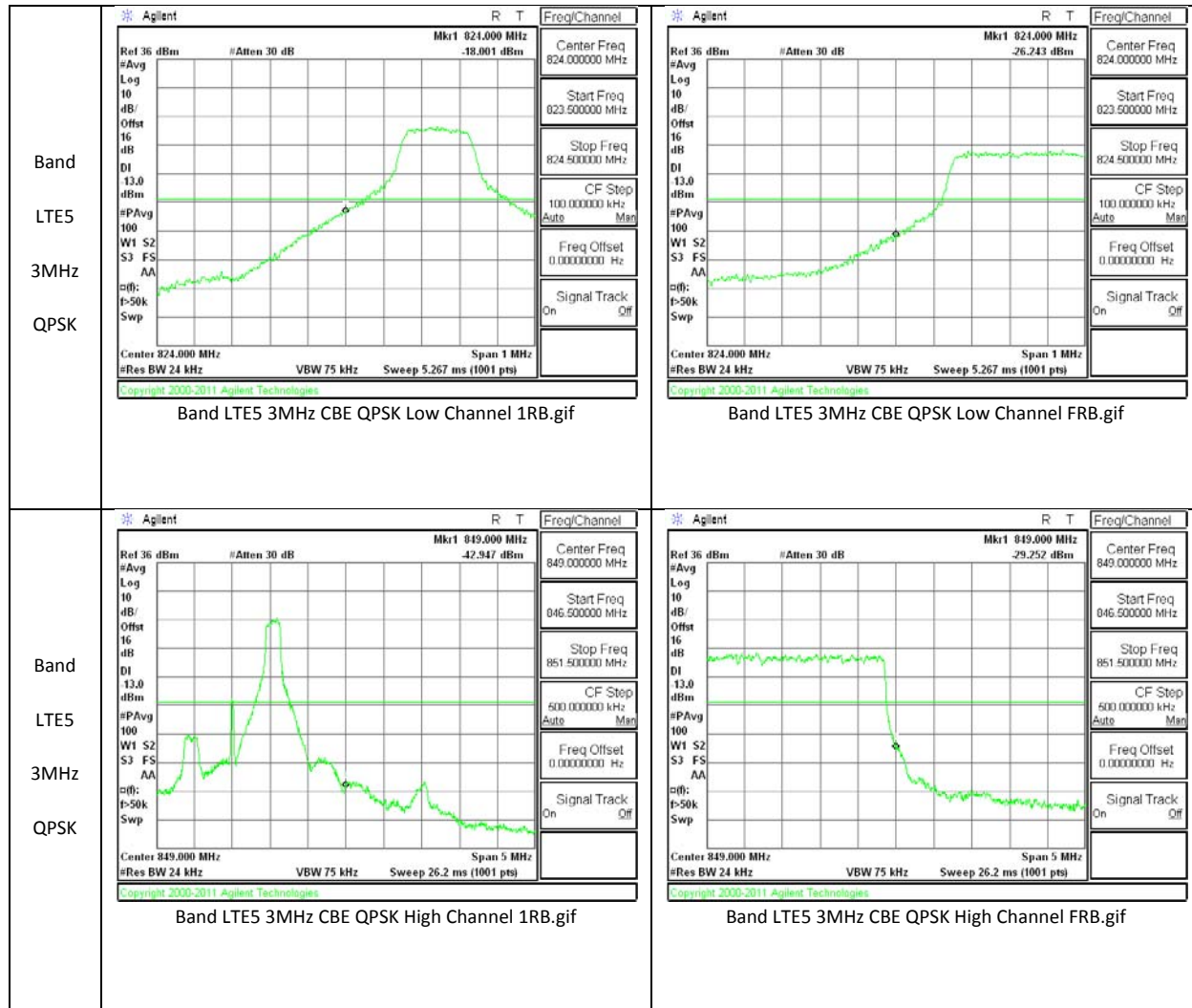


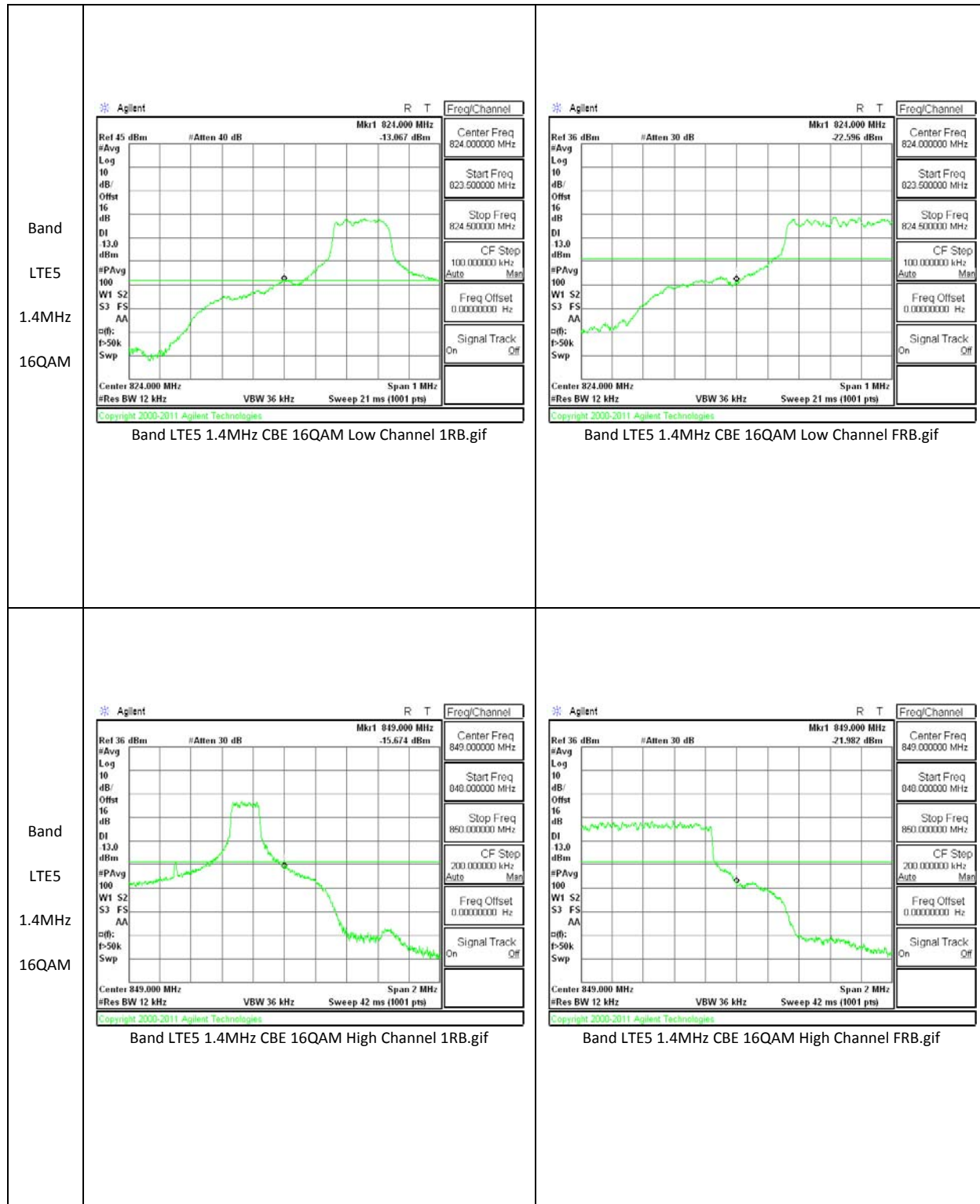


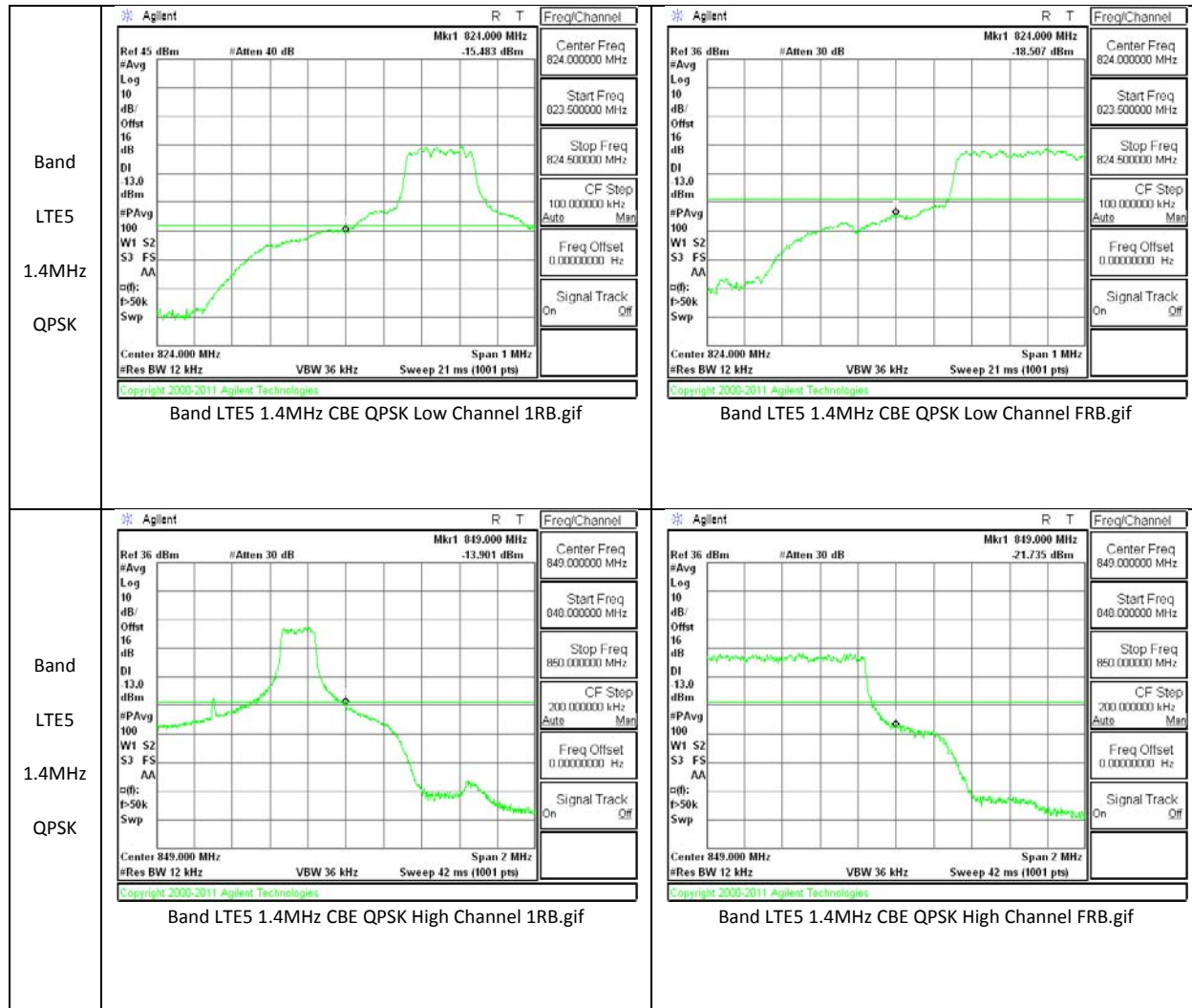


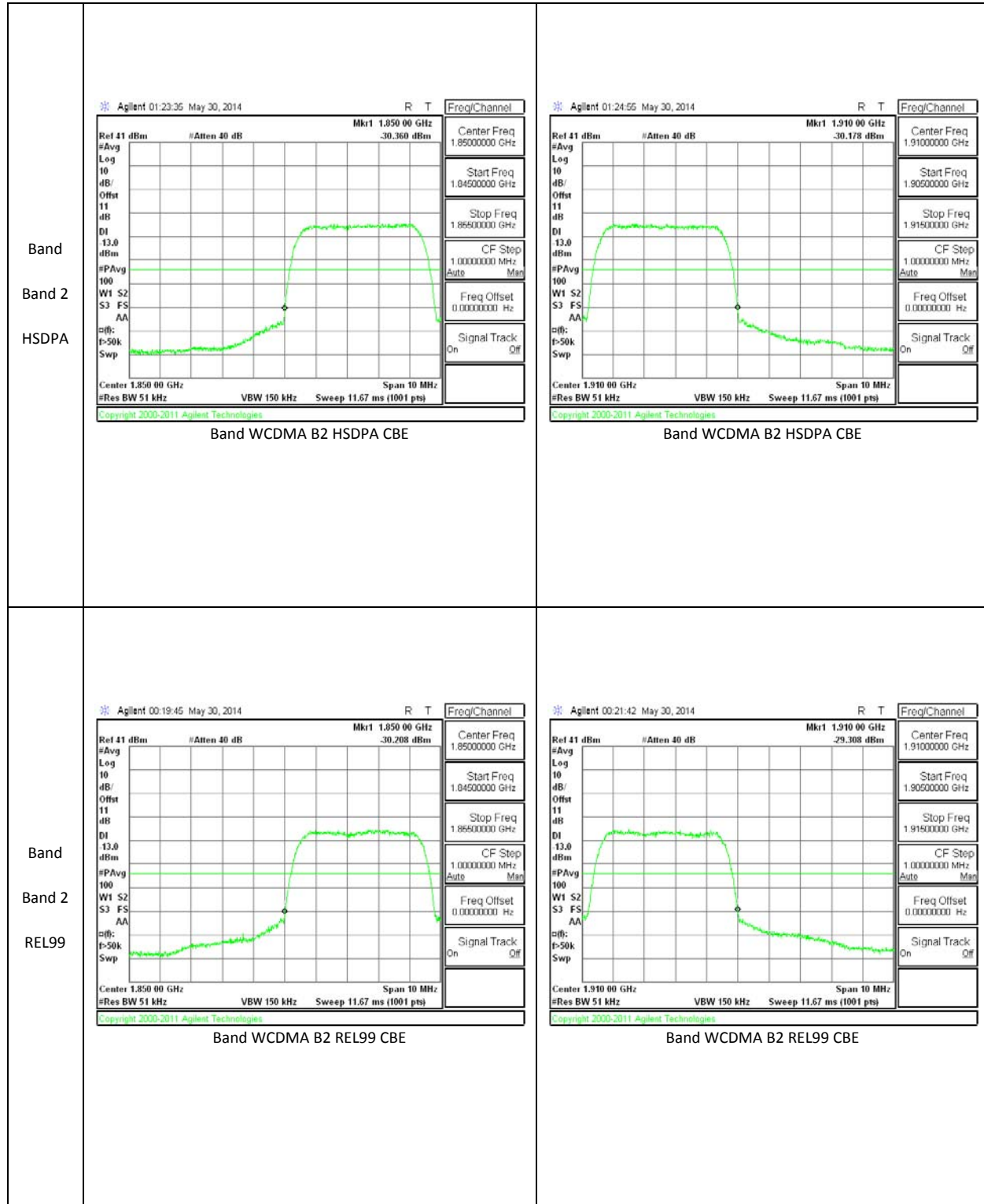


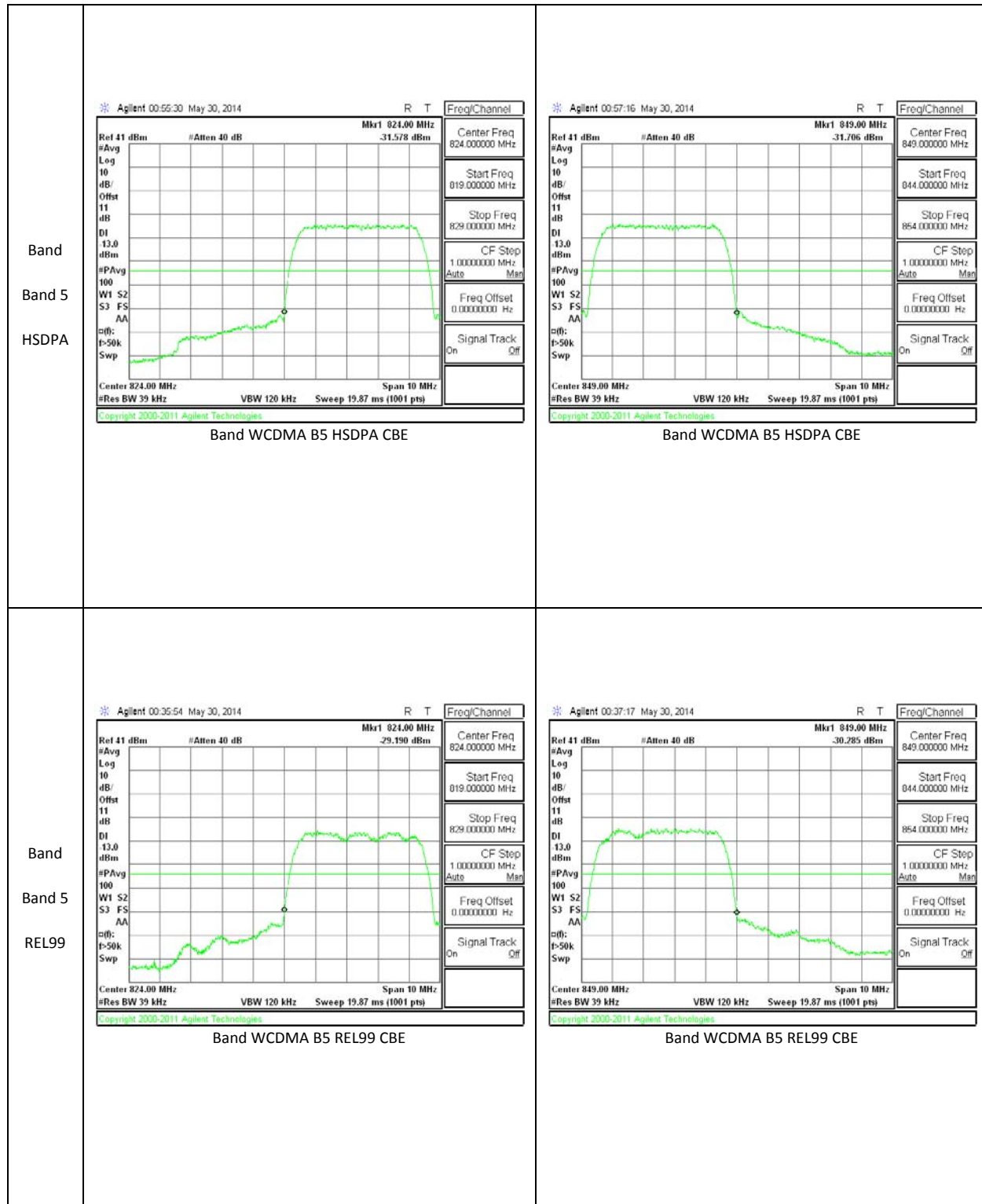


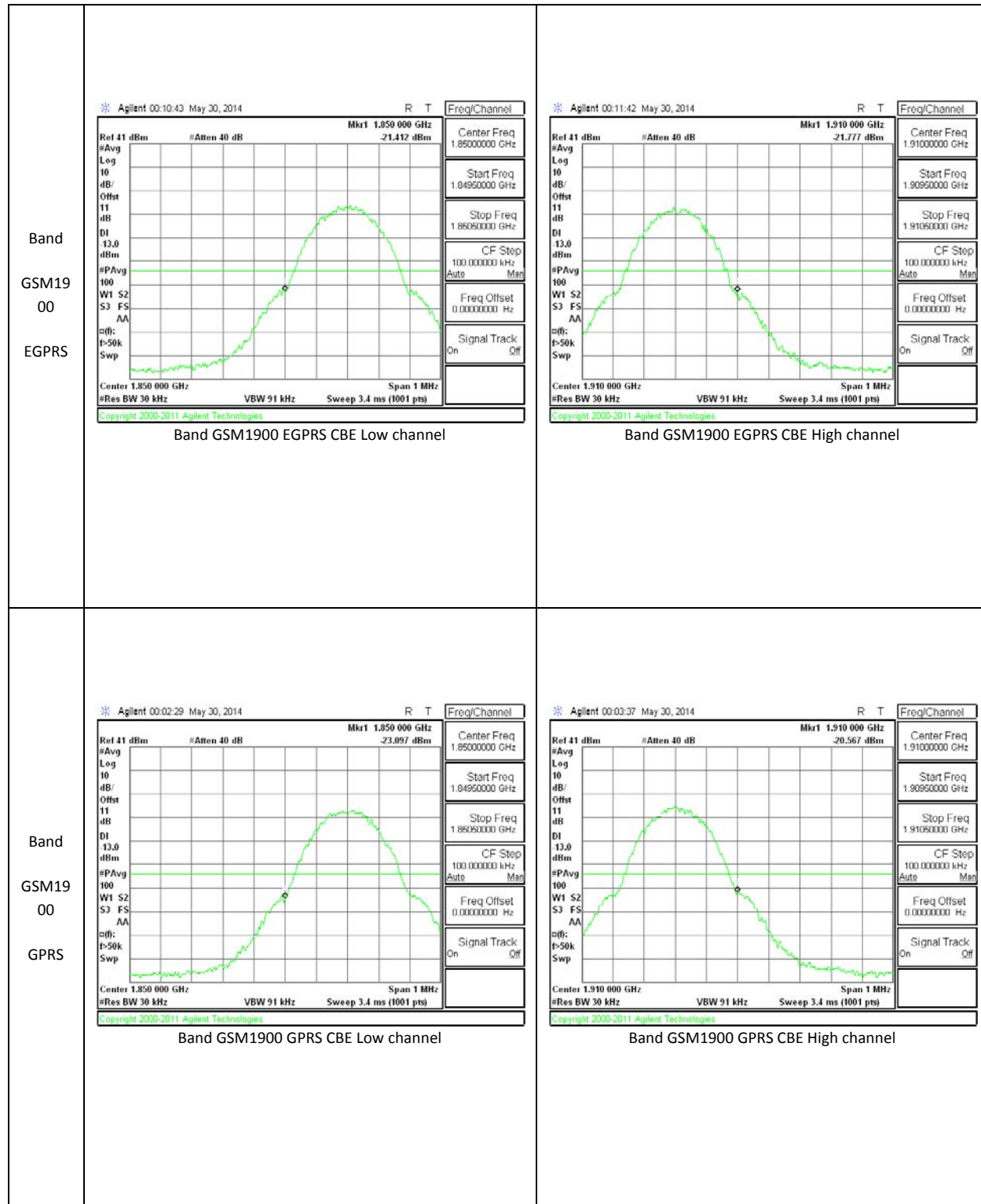


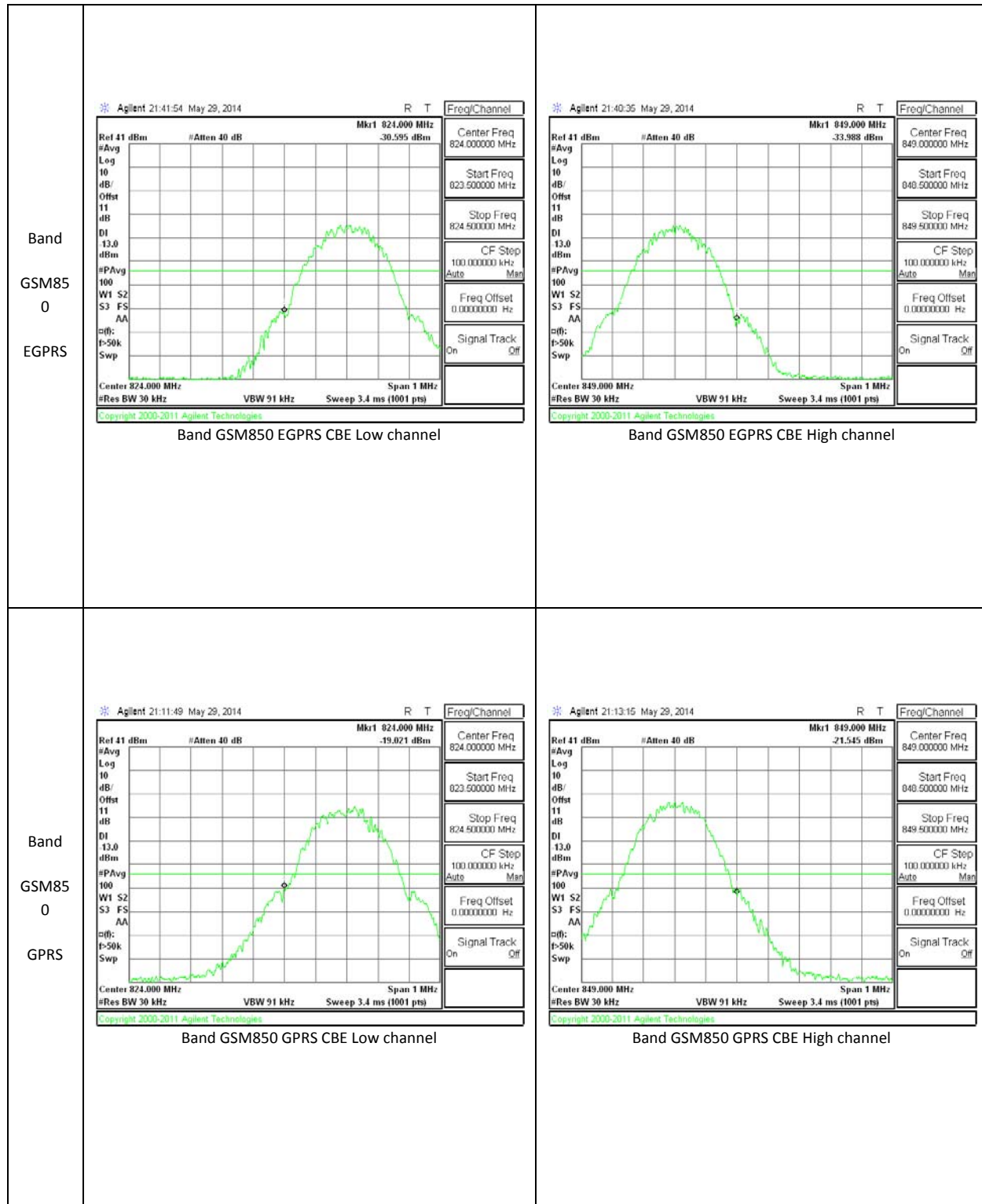












10.3. OUT OF BAND EMISSIONS

RULE PART(S)

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

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 v02r01

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.

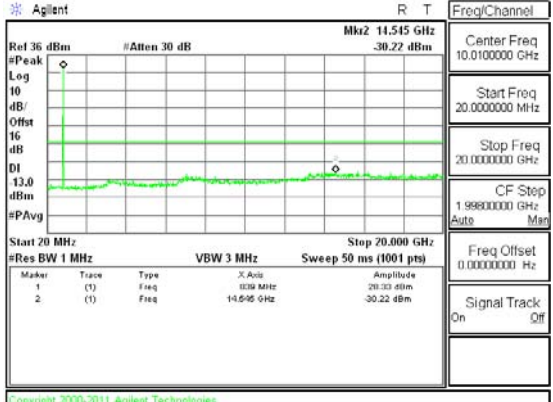
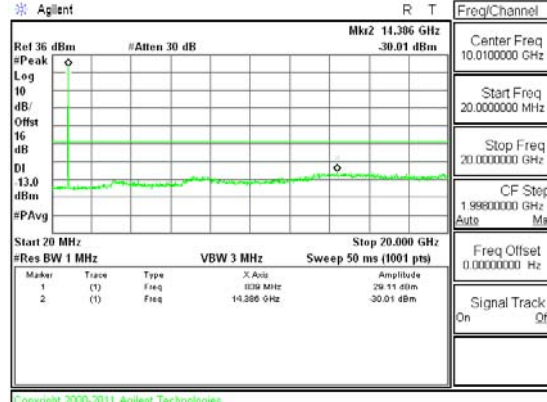
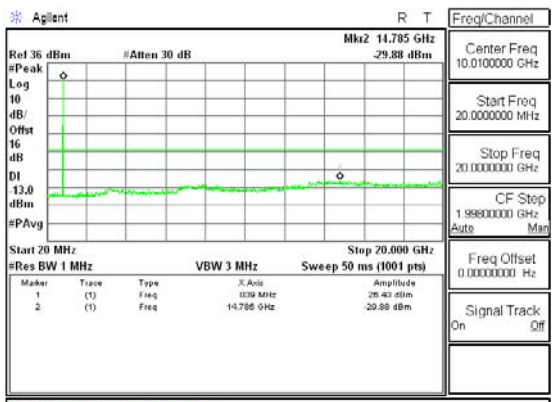
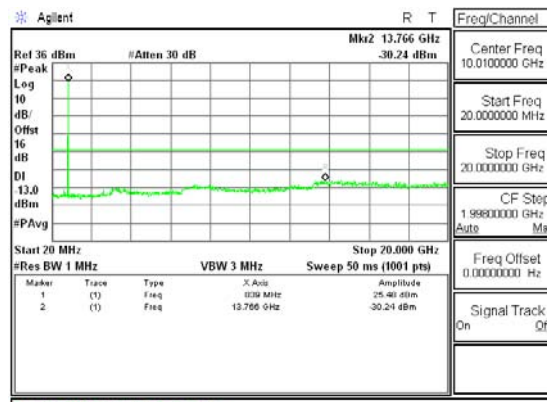
RESULTS

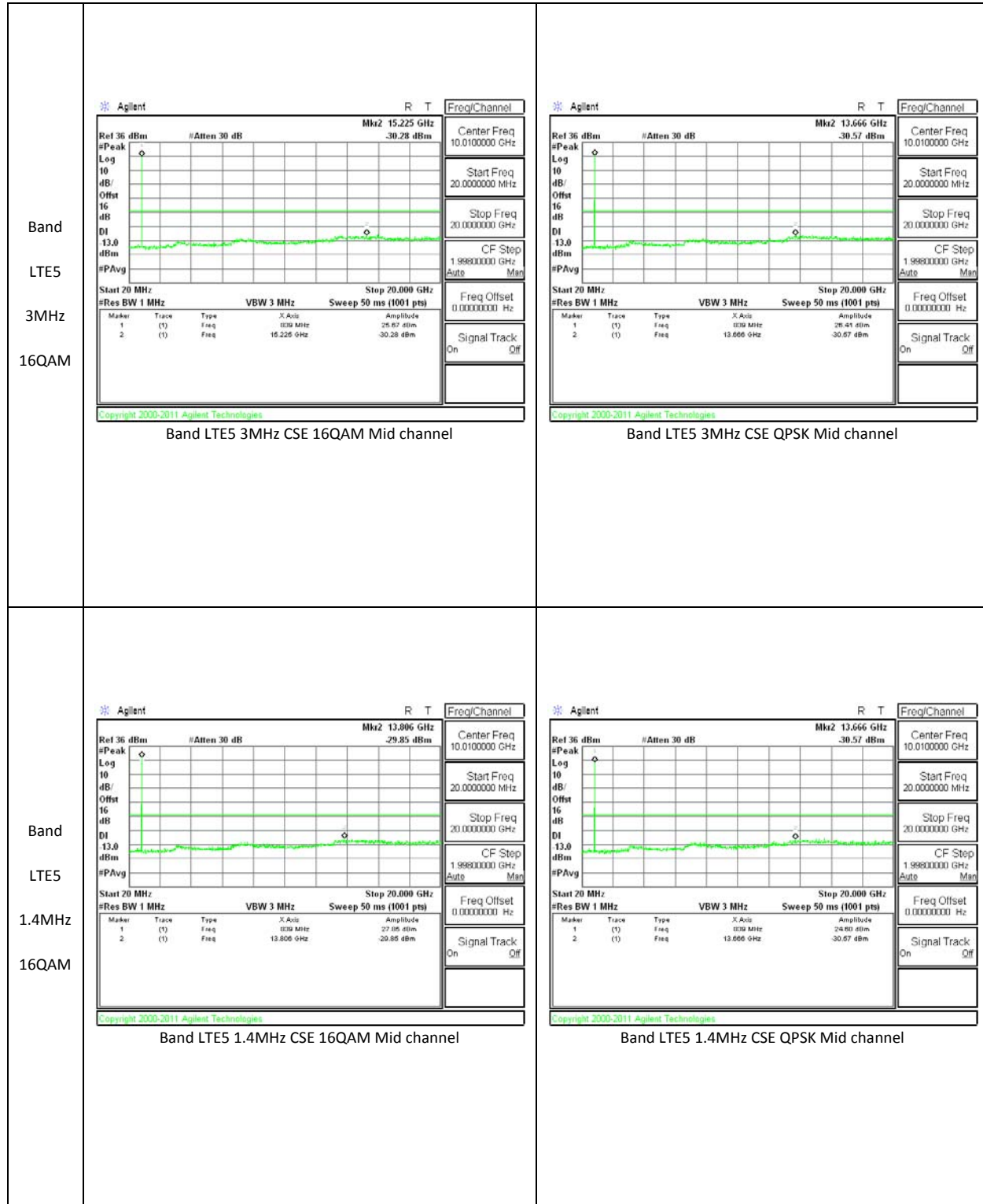
10.3.1. OUT OF BAND EMISSIONS RESULT

Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	10	QPSK	829	-29.91	-13	-16.91
			836.5	-30.01	-13	-17.01
			844	-29.14	-13	-16.14
		16QAM	829	-30.12	-13	-17.12
			836.5	-30.22	-13	-17.22
			844	-30.07	-13	-17.07
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	5	QPSK	826.5	-29.92	-13	-16.92
			836.5	-30.24	-13	-17.24
			846.5	-29.96	-13	-16.96
		16QAM	826.5	-29.3	-13	-16.3
			836.5	-29.88	-13	-16.88
			846.5	-29.88	-13	-16.88
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	3	QPSK	825.5	-30.2	-13	-17.2
			836.5	-30.57	-13	-17.57
			847.5	-28.46	-13	-15.46
		16QAM	825.5	-30.6	-13	-17.6
			836.5	-30.28	-13	-17.28
			847.5	-30.05	-13	-17.05
Band	BW (MHz)	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
LTE5	1.4	QPSK	824.7	-29.61	-13	-16.61
			836.5	-30.57	-13	-17.57
			848.3	-30.14	-13	-17.14
		16QAM	824.7	-29.88	-13	-16.88
			836.5	-29.85	-13	-16.85
			848.3	-30.57	-13	-17.57

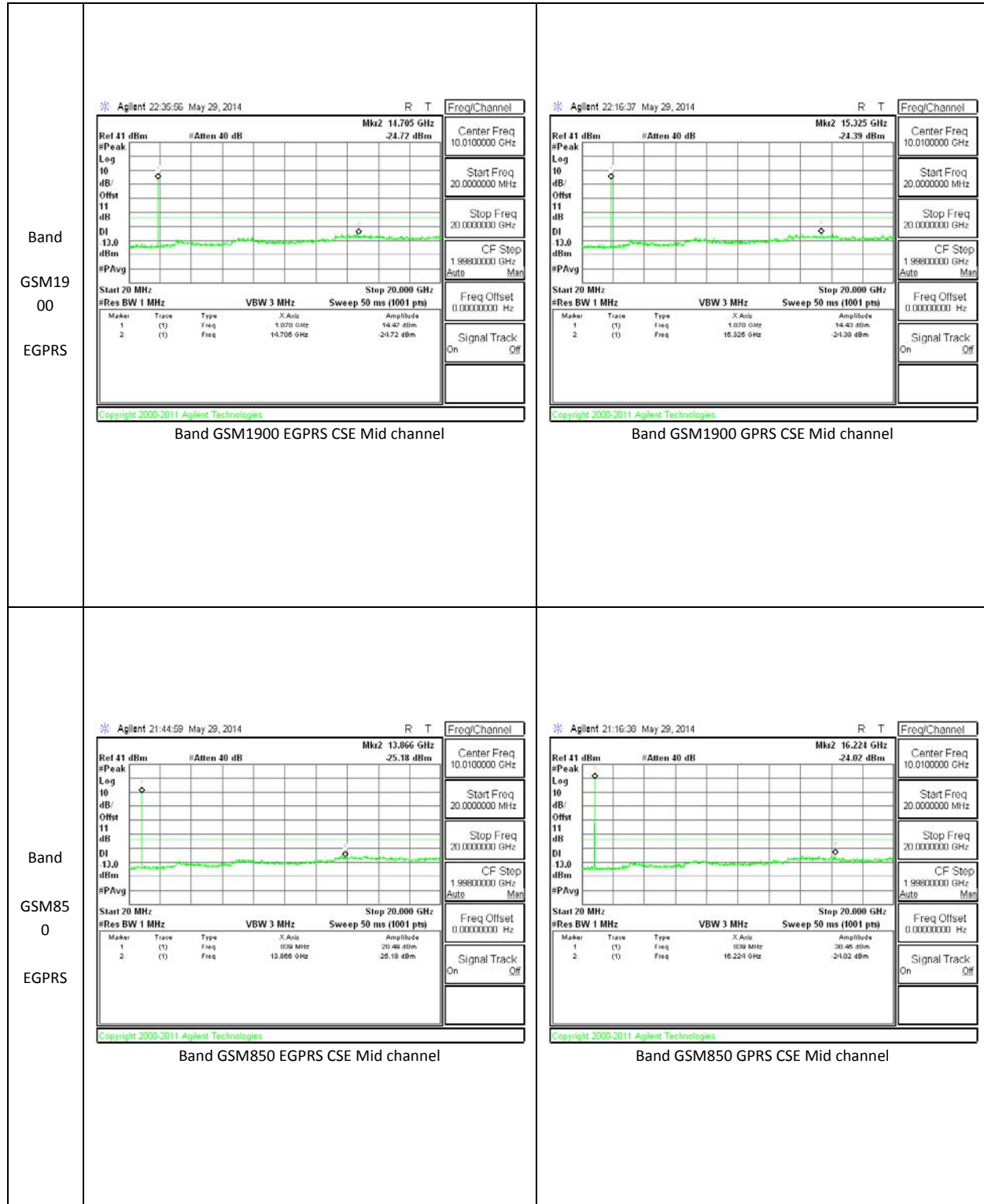
Band	Mode	f (MHz)	Spur (dBm)	Spec (dBm)	Delta (dB)
GSM850	GPRS	824.2	-24.59	-13	-11.59
		836.6	-24.02	-13	-11.02
		848.8	-24.28	-13	-11.28
	EGPRS	824.2	-24.43	-13	-11.43
		836.6	-25.18	-13	-12.18
		848.8	-24.22	-13	-11.22
GSM1900	GPRS	1850.2	-24.72	-13	-11.72
		1880	-24.39	-13	-11.39
		1909.8	-24.86	-13	-11.86
	EGPRS	1850.2	-24.67	-13	-11.67
		1880	-24.72	-13	-11.72
		1909.8	-24.94	-13	-11.94
Band 5	REL99	826.4	-24.85	-13	-11.85
		836.6	-24.74	-13	-11.74
		846.6	-24.28	-13	-11.28
	HSDPA	826.4	-25.22	-13	-12.22
		836.6	-24.69	-13	-11.69
		846.6	-24.6	-13	-11.6
Band 2	REL99	1852.4	-24.59	-13	-11.59
		1880	-24.94	-13	-11.94
		1907.6	-24.73	-13	-11.73
	HSDPA	1852.4	-24.7	-13	-11.7
		1880	-24.19	-13	-11.19
		1907.6	-25.61	-13	-12.61

10.3.2. OUT OF BAND EMISSIONS PLOTS

Band LTE5 10MHz 16QAM	 Band LTE5 10MHz CSE 16QAM Mid channel	 Band LTE5 10MHz CSE QPSK Mid channel
Band LTE5 5MHz 16QAM	 Band LTE5 5MHz CSE 16QAM Mid channel	 Band LTE5 5MHz CSE QPSK Mid channel







10.4. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235

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.

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r01

RESULTS

See the following pages.

10.4.1. FREQUENCY STABILITY RESULTS

LTE BAND 5 – MID CHANNEL (836.5 MHz)

Reference Frequency: Cellular Mid Channel 836.500004MHz @ 20°C Limit: to stay +/- 2.5 ppm = 2091.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
4.20	50	836.500003	0.002	2.5
4.20	40	836.500004	0.001	2.5
4.20	30	836.500002	0.003	2.5
4.20	20	836.500004	0	2.5
4.20	10	836.500005	-0.001	2.5
4.20	0	836.500002	0.003	2.5
4.20	-10	836.500007	-0.003	2.5
4.20	-20	836.500005	-0.001	2.5
4.20	-30	836.500007	-0.003	2.5
Reference Frequency: Cellular Mid Channel 836.500004 MHz @ 20°C Limit: to stay +/- 2.5 ppm = 2091.250 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
4.80	20	836.500001	0	2.5
4.20	20	836.500021	0	2.5
3.60	20	836.500014	-0.016	2.5

PCS WCDMA – MID CHANNEL

Reference Frequency: PCS Mid Channel 1879.999988MHz @ 20°C Limit: within the authorized block or +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
4.20	50	1879.999991	-0.002	2.5
4.20	40	1879.999987	0.001	2.5
4.20	30	1879.999985	0.002	2.5
4.20	20	1879.999988	0	2.5
4.20	10	1879.999990	-0.001	2.5
4.20	0	1879.999989	-0.001	2.5
4.20	-10	1879.999991	-0.002	2.5
4.20	-20	1879.999988	0.000	2.5
4.20	-30	1879.999984	0.002	2.5
Reference Frequency: PCS Mid Channel 1879.999988 MHz @ 20°C Limit: within the authorized block or +/- 2.5 ppm = 4700.000 Hz				
Power Supply (Vdc)	Environment Temperature (°C)	Frequency Deviation Measured with Time Elapse		
		(MHz)	Delta (ppm)	Limit (ppm)
4.80	20	1879.999988	0.00000	2.5
4.20	20	1879.999986	0.00106	2.5
3.60	20	1879.999981	0.00372	2.5

11. RADIATED TEST RESULTS

11.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232

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.

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

TEST PROCEDURE

ANSI / TIA / EIA 603C Clause 2.2.17

TEST RESULTS

11.1.1. ERP/EIRP Results

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
Band 2	REL99	9262	1852.4	24.40	275.42
		9400	1880	26.29	425.60
		9538	1907.6	25.34	341.98
	HSDPA	9262	1852.4	26.19	415.91
		9400	1880	26.61	458.14
		9538	1907.6	24.62	289.73

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
Band 5	REL99	4132	826.4	22.341	171.44
		4183	836.6	22.691	185.82
		4233	846.6	23.101	204.22
	HSDPA	4132	826.4	22.511	178.28
		4183	836.6	23.041	201.42

		4233	846.6	23.481	222.89
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Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
GSM1900	GPRS	512	1850.2	31.6	1445.44
		661	1880	31.904	1550.24
		810	1909.8	31.5086	1415.34
	EGPRS	512	1850.2	30.006	1001.38
		661	1880	30.048	1011.11
		810	1909.8	29.3546	861.91

Band	Mode	Channel	f(MHz)	ERP / EIRP	
				dBm	mW
GSM850	GPRS	128	824.2	26.387	435.21
		190	836.6	27.634	579.96
		251	848.8	28.746	749.2
	EGPRS	128	824.2	26.439	440.45
		190	836.6	23.142	206.16
		251	848.8	25.758	376.53

11.1.2. LTE ERP/EIRP Results

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	10	QPSK	1/0	829	19.731	93.99
			1/0	836.5	20.671	116.71
			1/0	844	20.801	120.25
		16QAM	1/0	829	18.831	76.4
			1/0	836.5	19.771	94.86
			1/0	844	20.001	100.02

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	5	QPSK	1/0	826.5	18.931	78.18
			1/0	836.5	19.971	99.33
			1/0	846.5	20.301	107.18
		16QAM	1/0	826.5	18.031	63.55
			1/0	836.5	19.071	80.74
			1/0	846.5	19.201	83.2

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	3	QPSK	1/0	825.5	19.301	85.13
			1/0	836.5	20.601	114.84
			1/0	847.5	20.801	120.25
		16QAM	1/0	825.5	18.401	69.2
			1/0	836.5	19.501	89.15
			1/0	847.5	20.001	100.02

Band	BW (MHz)	Mode	RB/RB Size	f (MHz)	ERP / EIRP	
					dBm	mW
LTE5	1.4	QPSK	1/0	824.7	19.401	87.12
			1/0	836.5	20.401	109.67
			1/0	848.3	21.001	125.92
		16QAM	1/0	824.7	18.731	74.66
			1/0	836.5	19.371	86.52
			1/0	848.3	19.801	95.52

11.1.3. ERP/EIRP DATA

Band LTE5 10MHz 16QAM	High Frequency Substitution Measurement Compliance Certification Services Chamber B Company: Samsung Project #: 14U17785 Date: 05/21/14 Test Engineer: K.Kedida Configuration: EUT, X Position Mode: LTE510MHz 16QAM Test Equipment: Receiving: Sunol T243, and Chamber B N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse. <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>f MHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Cable Loss (dB)</th> <th>Antenna Gain (dBd)</th> <th>ERP (dBm)</th> <th>Limit (dBm)</th> <th>Margin (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>Low Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>829.00</td> <td>8.86</td> <td>V</td> <td>0.5</td> <td>0.0</td> <td>8.36</td> <td>38.5</td> <td>-30.1</td> <td></td> </tr> <tr> <td>829.00</td> <td>19.33</td> <td>H</td> <td>0.5</td> <td>0.0</td> <td>18.83</td> <td>38.5</td> <td>-19.6</td> <td></td> </tr> <tr> <td>Mid Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>836.50</td> <td>8.89</td> <td>V</td> <td>0.5</td> <td>0.0</td> <td>8.39</td> <td>38.5</td> <td>-30.1</td> <td></td> </tr> <tr> <td>836.50</td> <td>20.27</td> <td>H</td> <td>0.5</td> <td>0.0</td> <td>19.77</td> <td>38.5</td> <td>-18.7</td> <td></td> </tr> <tr> <td>High Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>844.00</td> <td>9.10</td> <td>V</td> <td>0.5</td> <td>0.0</td> <td>8.60</td> <td>38.5</td> <td>-29.8</td> <td></td> </tr> <tr> <td>844.00</td> <td>20.50</td> <td>H</td> <td>0.5</td> <td>0.0</td> <td>20.00</td> <td>38.5</td> <td>-18.4</td> <td></td> </tr> </tbody> </table> Rev. 3.17.11	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									829.00	8.86	V	0.5	0.0	8.36	38.5	-30.1		829.00	19.33	H	0.5	0.0	18.83	38.5	-19.6		Mid Ch									836.50	8.89	V	0.5	0.0	8.39	38.5	-30.1		836.50	20.27	H	0.5	0.0	19.77	38.5	-18.7		High Ch									844.00	9.10	V	0.5	0.0	8.60	38.5	-29.8		844.00	20.50	H	0.5	0.0	20.00	38.5	-18.4	
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																			
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829.00	8.86	V	0.5	0.0	8.36	38.5	-30.1																																																																																				
829.00	19.33	H	0.5	0.0	18.83	38.5	-19.6																																																																																				
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836.50	8.89	V	0.5	0.0	8.39	38.5	-30.1																																																																																				
836.50	20.27	H	0.5	0.0	19.77	38.5	-18.7																																																																																				
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844.00	9.10	V	0.5	0.0	8.60	38.5	-29.8																																																																																				
844.00	20.50	H	0.5	0.0	20.00	38.5	-18.4																																																																																				

Band LTE5 10MHz QPSK	High Frequency Substitution Measurement Compliance Certification Services Chamber B Company: Samsung Project #: 14U17785 Date: 05/21/14 Test Engineer: K.Kedida Configuration: EUT, X Position Mode: LTE5 10MHz QPSK Test Equipment: Receiving: Sunol T243, and Chamber B N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse. <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>f MHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Cable Loss (dB)</th> <th>Antenna Gain (dBd)</th> <th>ERP (dBm)</th> <th>Limit (dBm)</th> <th>Margin (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td></tr> <tr> <td>829.00</td><td>9.76</td><td>V</td><td>0.5</td><td>0.0</td><td>9.26</td><td>38.5</td><td>-29.2</td><td></td></tr> <tr> <td>829.00</td><td>20.23</td><td>H</td><td>0.5</td><td>0.0</td><td>19.73</td><td>38.5</td><td>-18.7</td><td></td></tr> <tr> <td colspan="9">Mid Ch</td></tr> <tr> <td>836.50</td><td>9.69</td><td>V</td><td>0.5</td><td>0.0</td><td>9.19</td><td>38.5</td><td>-29.3</td><td></td></tr> <tr> <td>836.50</td><td>21.17</td><td>H</td><td>0.5</td><td>0.0</td><td>20.67</td><td>38.5</td><td>-17.8</td><td></td></tr> <tr> <td colspan="9">High Ch</td></tr> <tr> <td>844.00</td><td>9.80</td><td>V</td><td>0.5</td><td>0.0</td><td>9.30</td><td>38.5</td><td>-29.1</td><td></td></tr> <tr> <td>844.00</td><td>21.30</td><td>H</td><td>0.5</td><td>0.0</td><td>20.80</td><td>38.5</td><td>-17.6</td><td></td></tr> </tbody> </table> Rev. 3.17.11	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									829.00	9.76	V	0.5	0.0	9.26	38.5	-29.2		829.00	20.23	H	0.5	0.0	19.73	38.5	-18.7		Mid Ch									836.50	9.69	V	0.5	0.0	9.19	38.5	-29.3		836.50	21.17	H	0.5	0.0	20.67	38.5	-17.8		High Ch									844.00	9.80	V	0.5	0.0	9.30	38.5	-29.1		844.00	21.30	H	0.5	0.0	20.80	38.5	-17.6	
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																			
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848.30	8.80	V	0.5	0.0	8.30	38.5	-30.1																																																																																				
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Band LTE5 1.4MHz QPSK	High Frequency Substitution Measurement Compliance Certification Services Chamber B Company: Samsung Project #: 14U17785 Date: 05/21/14 Test Engineer: K.Kedida Configuration: EUT, X Position Mode: LTE5 1.4MHz QPSK Test Equipment: Receiving: Sunol T243, and Chamber B N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 208947003) Warehouse. <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>f MHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Cable Loss (dB)</th> <th>Antenna Gain (dBd)</th> <th>ERP (dBm)</th> <th>Limit (dBm)</th> <th>Margin (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>Low Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>824.70</td> <td>9.80</td> <td>V</td> <td>0.5</td> <td>0.0</td> <td>9.30</td> <td>38.5</td> <td>-29.1</td> <td></td> </tr> <tr> <td>824.70</td> <td>19.90</td> <td>H</td> <td>0.5</td> <td>0.0</td> <td>19.40</td> <td>38.5</td> <td>-19.0</td> <td></td> </tr> <tr> <td>Mid Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>836.50</td> <td>10.00</td> <td>V</td> <td>0.5</td> <td>0.0</td> <td>9.50</td> <td>38.5</td> <td>-28.9</td> <td></td> </tr> <tr> <td>836.50</td> <td>20.90</td> <td>H</td> <td>0.5</td> <td>0.0</td> <td>20.40</td> <td>38.5</td> <td>-18.0</td> <td></td> </tr> <tr> <td>High Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>848.30</td> <td>9.90</td> <td>V</td> <td>0.5</td> <td>0.0</td> <td>9.40</td> <td>38.5</td> <td>-29.0</td> <td></td> </tr> <tr> <td>848.30</td> <td>21.50</td> <td>H</td> <td>0.5</td> <td>0.0</td> <td>21.00</td> <td>38.5</td> <td>-17.4</td> <td></td> </tr> </tbody> </table> Rev. 3.17.11	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									824.70	9.80	V	0.5	0.0	9.30	38.5	-29.1		824.70	19.90	H	0.5	0.0	19.40	38.5	-19.0		Mid Ch									836.50	10.00	V	0.5	0.0	9.50	38.5	-28.9		836.50	20.90	H	0.5	0.0	20.40	38.5	-18.0		High Ch									848.30	9.90	V	0.5	0.0	9.40	38.5	-29.0		848.30	21.50	H	0.5	0.0	21.00	38.5	-17.4	
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Band Band 2 HSDPA	High Frequency Fundamental Measurement Compliance Certification Services Chamber A								
	Company:		Samsung						
	Project #:		14U17785						
	Date:		05/21/14						
	Test Engineer:		O. Stoelting						
	Configuration:		EUT ONLY, X Position						
	Mode:		HSDPA 1900MHz						
	Test Equipment:								
	Receiving: T136, and Chamber A SMA Cables								
	Substitution: Horn T60 Substitution, 4ft SMA Cable (227086002) Warehouse								
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch								
	1.853	18.6	V	0.85	8.49	26.19	33.0	-6.8	
	1.853	18.4	H	0.85	8.49	26.01	33.0	-7.0	
	Mid Ch								
	1.880	16.9	V	0.85	8.34	24.34	33.0	-8.7	
	1.880	19.1	H	0.85	8.34	26.61	33.0	-6.4	
	High Ch								
	1.907	16.6	V	0.85	8.21	23.92	33.0	-9.1	
	1.907	17.3	H	0.85	8.21	24.62	33.0	-8.4	
	Rev. 3.17.11								

Band Band 2 REL99	High Frequency Fundamental Measurement Compliance Certification Services Chamber A Company: Samsung Project #: 14U17785 Date: 05/21/14 Test Engineer: O. Stoelting Configuration: EUT ONLY, X Position Mode: REL99 1900MHz Test Equipment: Receiving: T136, and Chamber A SMA Cables Substitution: Horn T60 Substitution, 4ft SMA Cable (227086002) Warehouse <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>f GHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Cable Loss (dB)</th> <th>Antenna Gain (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td> </tr> <tr> <td>1.853</td> <td>8.6</td> <td>V</td> <td>0.85</td> <td>8.49</td> <td>16.19</td> <td>33.0</td> <td>-16.8</td> <td></td> </tr> <tr> <td>1.853</td> <td>16.8</td> <td>H</td> <td>0.85</td> <td>8.49</td> <td>24.40</td> <td>33.0</td> <td>-8.6</td> <td></td> </tr> <tr> <td colspan="9">Mid Ch</td> </tr> <tr> <td>1.880</td> <td>16.7</td> <td>V</td> <td>0.85</td> <td>8.34</td> <td>24.18</td> <td>33.0</td> <td>-8.8</td> <td></td> </tr> <tr> <td>1.880</td> <td>18.8</td> <td>H</td> <td>0.85</td> <td>8.34</td> <td>26.29</td> <td>33.0</td> <td>-6.7</td> <td></td> </tr> <tr> <td colspan="9">High Ch</td> </tr> <tr> <td>1.907</td> <td>16.3</td> <td>V</td> <td>0.85</td> <td>8.21</td> <td>23.71</td> <td>33.0</td> <td>-9.3</td> <td></td> </tr> <tr> <td>1.907</td> <td>18.0</td> <td>H</td> <td>0.85</td> <td>8.21</td> <td>25.34</td> <td>33.0</td> <td>-7.7</td> <td></td> </tr> </tbody> </table> Rev. 3.17.11	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1.853	8.6	V	0.85	8.49	16.19	33.0	-16.8		1.853	16.8	H	0.85	8.49	24.40	33.0	-8.6		Mid Ch									1.880	16.7	V	0.85	8.34	24.18	33.0	-8.8		1.880	18.8	H	0.85	8.34	26.29	33.0	-6.7		High Ch									1.907	16.3	V	0.85	8.21	23.71	33.0	-9.3		1.907	18.0	H	0.85	8.21	25.34	33.0	-7.7	
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Band Band 5 HSDPA	High Frequency Substitution Measurement Compliance Certification Services Chamber F Company: Samsung Project #: 14U17785 Date: 05/21/14 Test Engineer: R. Alegre Configuration: EUT, X position Mode: WCDMA_HSDPA_850 Test Equipment: Receiving: Sunol T122, and Chamber F N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) Warehouse. <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>f MHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Cable Loss (dB)</th> <th>Antenna Gain (dBd)</th> <th>ERP (dBm)</th> <th>Limit (dBm)</th> <th>Margin (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>Low Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>826.40</td> <td>13.30</td> <td>V</td> <td>0.5</td> <td>0.0</td> <td>12.80</td> <td>38.5</td> <td>-25.6</td> <td></td> </tr> <tr> <td>826.40</td> <td>23.01</td> <td>H</td> <td>0.5</td> <td>0.0</td> <td>22.51</td> <td>38.5</td> <td>-15.9</td> <td></td> </tr> <tr> <td>Mid Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>836.60</td> <td>13.34</td> <td>V</td> <td>0.5</td> <td>0.0</td> <td>12.84</td> <td>38.5</td> <td>-25.6</td> <td></td> </tr> <tr> <td>836.60</td> <td>23.54</td> <td>H</td> <td>0.5</td> <td>0.0</td> <td>23.04</td> <td>38.5</td> <td>-15.4</td> <td></td> </tr> <tr> <td>High Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>846.60</td> <td>13.88</td> <td>V</td> <td>0.5</td> <td>0.0</td> <td>13.38</td> <td>38.5</td> <td>-25.1</td> <td></td> </tr> <tr> <td>846.60</td> <td>23.98</td> <td>H</td> <td>0.5</td> <td>0.0</td> <td>23.48</td> <td>38.5</td> <td>-15.0</td> <td></td> </tr> </tbody> </table> Rev. 3.17.11	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									826.40	13.30	V	0.5	0.0	12.80	38.5	-25.6		826.40	23.01	H	0.5	0.0	22.51	38.5	-15.9		Mid Ch									836.60	13.34	V	0.5	0.0	12.84	38.5	-25.6		836.60	23.54	H	0.5	0.0	23.04	38.5	-15.4		High Ch									846.60	13.88	V	0.5	0.0	13.38	38.5	-25.1		846.60	23.98	H	0.5	0.0	23.48	38.5	-15.0	
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Band Band 5 REL99	High Frequency Substitution Measurement Compliance Certification Services Chamber F Company: Samsung Project #: 14U17785 Date: 05/21/14 Test Engineer: R. Alegre Configuration: EUT, X position Mode: WCDMA_REL99_850 Test Equipment: Receiving: Sunol T122, and Chamber F N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00022117, 4ft SMA Cable (SN # 245200 001) Warehouse. <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>f MHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Cable Loss (dB)</th> <th>Antenna Gain (dBd)</th> <th>ERP (dBm)</th> <th>Limit (dBm)</th> <th>Margin (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>Low Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>826.40</td> <td>12.99</td> <td>V</td> <td>0.5</td> <td>0.0</td> <td>12.49</td> <td>38.5</td> <td>-26.0</td> <td></td> </tr> <tr> <td>826.40</td> <td>22.84</td> <td>H</td> <td>0.5</td> <td>0.0</td> <td>22.34</td> <td>38.5</td> <td>-16.1</td> <td></td> </tr> <tr> <td>Mid Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>836.60</td> <td>13.15</td> <td>V</td> <td>0.5</td> <td>0.0</td> <td>12.65</td> <td>38.5</td> <td>-25.8</td> <td></td> </tr> <tr> <td>836.60</td> <td>23.19</td> <td>H</td> <td>0.5</td> <td>0.0</td> <td>22.69</td> <td>38.5</td> <td>-15.8</td> <td></td> </tr> <tr> <td>High Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>846.60</td> <td>12.27</td> <td>V</td> <td>0.5</td> <td>0.0</td> <td>11.77</td> <td>38.5</td> <td>-26.7</td> <td></td> </tr> <tr> <td>846.60</td> <td>23.60</td> <td>H</td> <td>0.5</td> <td>0.0</td> <td>23.10</td> <td>38.5</td> <td>-15.3</td> <td></td> </tr> </tbody> </table> Rev. 3.17.11	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									826.40	12.99	V	0.5	0.0	12.49	38.5	-26.0		826.40	22.84	H	0.5	0.0	22.34	38.5	-16.1		Mid Ch									836.60	13.15	V	0.5	0.0	12.65	38.5	-25.8		836.60	23.19	H	0.5	0.0	22.69	38.5	-15.8		High Ch									846.60	12.27	V	0.5	0.0	11.77	38.5	-26.7		846.60	23.60	H	0.5	0.0	23.10	38.5	-15.3	
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Band GSM19 00 EGPRS	High Frequency Fundamental Measurement Compliance Certification Services Chamber A Company: Samsung Project #: 14U17785 Date: 05/21/14 Test Engineer: O. Stoelting Configuration: EUT ONLY, X Position Mode: EGPRS 1900MHz Test Equipment: Receiving: Horn T136, and Chamber A SMA Cables Substitution: Horn T60 Substitution, 4ft SMA Cable (227086002) Warehouse <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>f GHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Cable Loss (dB)</th> <th>Antenna Gain (dBi)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>Low Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1.850</td> <td>22.4</td> <td>V</td> <td>0.85</td> <td>8.49</td> <td>30.01</td> <td>33.0</td> <td>-3.0</td> <td></td> </tr> <tr> <td>1.850</td> <td>22.0</td> <td>H</td> <td>0.85</td> <td>8.49</td> <td>29.63</td> <td>33.0</td> <td>-3.4</td> <td></td> </tr> <tr> <td>Mid Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1.880</td> <td>21.9</td> <td>V</td> <td>0.85</td> <td>8.34</td> <td>29.34</td> <td>33.0</td> <td>-3.7</td> <td></td> </tr> <tr> <td>1.880</td> <td>22.6</td> <td>H</td> <td>0.85</td> <td>8.34</td> <td>30.05</td> <td>33.0</td> <td>-3.0</td> <td></td> </tr> <tr> <td>High Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>1.910</td> <td>22.0</td> <td>V</td> <td>0.85</td> <td>8.21</td> <td>29.35</td> <td>33.0</td> <td>-3.6</td> <td></td> </tr> <tr> <td>1.910</td> <td>21.9</td> <td>H</td> <td>0.85</td> <td>8.21</td> <td>29.25</td> <td>33.0</td> <td>-3.8</td> <td></td> </tr> </tbody> </table> Rev. 3.17.11	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch									1.850	22.4	V	0.85	8.49	30.01	33.0	-3.0		1.850	22.0	H	0.85	8.49	29.63	33.0	-3.4		Mid Ch									1.880	21.9	V	0.85	8.34	29.34	33.0	-3.7		1.880	22.6	H	0.85	8.34	30.05	33.0	-3.0		High Ch									1.910	22.0	V	0.85	8.21	29.35	33.0	-3.6		1.910	21.9	H	0.85	8.21	29.25	33.0	-3.8	
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High Ch																																																																																											
1.910	22.0	V	0.85	8.21	29.35	33.0	-3.6																																																																																				
1.910	21.9	H	0.85	8.21	29.25	33.0	-3.8																																																																																				

Band GSM19 00 GPRS	High Frequency Fundamental Measurement Compliance Certification Services Chamber A								
	Company:		Samsung						
	Project #:		14U17785						
	Date:		05/21/14						
	Test Engineer:		O. Stoelting						
	Configuration:		EUT ONLY, X Position						
	Mode:		GPRS 1900MHz						
	Test Equipment:								
	Receiving: T136, and Chamber A SMA Cables								
	Substitution: Horn T60 Substitution, 4ft SMA Cable (227086002) Warehouse								
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch								
	1.850	23.8	V	0.85	8.49	31.45	33.0	-1.5	
	1.850	24.0	H	0.85	8.49	31.60	33.0	-1.4	
	Mid Ch								
	1.880	22.4	V	0.85	8.34	29.85	33.0	-3.2	
	1.880	24.4	H	0.85	8.34	31.90	33.0	-1.1	
	High Ch								
	1.910	24.1	V	0.85	8.21	31.51	33.0	-1.5	
	1.910	23.8	H	0.85	8.21	31.18	33.0	-1.8	
	Rev. 3.17.11								

Band GSM850 EGPRS	High Frequency Substitution Measurement Compliance Certification Services Chamber D Company: Samsung Project #: 14U17785 Date: 05/30/14 Test Engineer: O. Stoelting Configuration: EUT ONLY, X Position Mode: EGRPS 850MHz Test Equipment: Receiving: T712, and Chamber D Cable (Setup this one for testing EUT) Substitution: Dipole T416, 22ft SMA Cable <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>f MHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Cable Loss (dB)</th> <th>Antenna Gain (dBd)</th> <th>ERP (dBm)</th> <th>Limit (dBm)</th> <th>Margin (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>Low Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>824.20</td> <td>19.44</td> <td>V</td> <td>0.9</td> <td>0.0</td> <td>18.54</td> <td>38.5</td> <td>-19.9</td> <td></td> </tr> <tr> <td>824.20</td> <td>27.34</td> <td>H</td> <td>0.9</td> <td>0.0</td> <td>26.44</td> <td>38.5</td> <td>-12.0</td> <td></td> </tr> <tr> <td>Mid Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>836.60</td> <td>18.83</td> <td>V</td> <td>0.9</td> <td>0.0</td> <td>17.93</td> <td>38.5</td> <td>-20.5</td> <td></td> </tr> <tr> <td>836.60</td> <td>24.04</td> <td>H</td> <td>0.9</td> <td>0.0</td> <td>23.14</td> <td>38.5</td> <td>-15.3</td> <td></td> </tr> <tr> <td>High Ch</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>848.80</td> <td>15.50</td> <td>V</td> <td>0.9</td> <td>0.0</td> <td>14.60</td> <td>38.5</td> <td>-23.8</td> <td></td> </tr> <tr> <td>848.80</td> <td>26.66</td> <td>H</td> <td>0.9</td> <td>0.0</td> <td>25.76</td> <td>38.5</td> <td>-12.7</td> <td></td> </tr> </tbody> </table> Rev. 3.17.11	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									824.20	19.44	V	0.9	0.0	18.54	38.5	-19.9		824.20	27.34	H	0.9	0.0	26.44	38.5	-12.0		Mid Ch									836.60	18.83	V	0.9	0.0	17.93	38.5	-20.5		836.60	24.04	H	0.9	0.0	23.14	38.5	-15.3		High Ch									848.80	15.50	V	0.9	0.0	14.60	38.5	-23.8		848.80	26.66	H	0.9	0.0	25.76	38.5	-12.7	
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																			
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Band GSM850 GPRS	High Frequency Substitution Measurement Compliance Certification Services Chamber D Company: Samsung Project #: 14U17785 Date: 05/30/14 Test Engineer: O. Stoelting Configuration: EUT ONLY, X Position Mode: GRPS 850MHz Test Equipment: Receiving: T712, and Chamber D Cable (Setup this one for testing EUT) Substitution: Dipole T416, 22ft SMA Cable <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th>f MHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Cable Loss (dB)</th> <th>Antenna Gain (dBd)</th> <th>ERP (dBm)</th> <th>Limit (dBm)</th> <th>Margin (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td colspan="9">Low Ch</td></tr> <tr> <td>824.20</td><td>19.98</td><td>V</td><td>0.9</td><td>0.0</td><td>19.08</td><td>38.5</td><td>-19.4</td><td></td></tr> <tr> <td>824.20</td><td>27.29</td><td>H</td><td>0.9</td><td>0.0</td><td>26.39</td><td>38.5</td><td>-12.1</td><td></td></tr> <tr> <td colspan="9">Mid Ch</td></tr> <tr> <td>836.60</td><td>20.04</td><td>V</td><td>0.9</td><td>0.0</td><td>19.14</td><td>38.5</td><td>-19.3</td><td></td></tr> <tr> <td>836.60</td><td>28.53</td><td>H</td><td>0.9</td><td>0.0</td><td>27.63</td><td>38.5</td><td>-10.8</td><td></td></tr> <tr> <td colspan="9">High Ch</td></tr> <tr> <td>848.80</td><td>19.55</td><td>V</td><td>0.9</td><td>0.0</td><td>18.65</td><td>38.5</td><td>-19.8</td><td></td></tr> <tr> <td>848.80</td><td>29.65</td><td>H</td><td>0.9</td><td>0.0</td><td>28.75</td><td>38.5</td><td>-9.7</td><td></td></tr> </tbody> </table> Rev. 3.17.11	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes	Low Ch									824.20	19.98	V	0.9	0.0	19.08	38.5	-19.4		824.20	27.29	H	0.9	0.0	26.39	38.5	-12.1		Mid Ch									836.60	20.04	V	0.9	0.0	19.14	38.5	-19.3		836.60	28.53	H	0.9	0.0	27.63	38.5	-10.8		High Ch									848.80	19.55	V	0.9	0.0	18.65	38.5	-19.8		848.80	29.65	H	0.9	0.0	28.75	38.5	-9.7	
f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes																																																																																			
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11.2. FIELD STRENGTH OF SPURIOUS RADIATION**RULE PART(S)**

FCC: §2.1053, §22.917, §24.238

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

RESULTS

11.2.1. SPURIOUS RADIATION DATA

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:	Samsung									
Project #:	14U17785									
Date:	05/21/14									
Test Engineer:	O. Stoelting									
Configuration:	XPosition, AC Charger,Headphones									
Mode:	TX, LTE BAND 5, 10MHz BW,16QAM									
Chamber Pre-amplifier Filter Limit 5m Chamber B T34 8449B Filter 1 Part 22										
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE5	Low Channel (826.5MHz)									
10MHz	1.653	-18.0	V	3.0	37.4	1.0	-54.4	-13.0	-41.4	
	2.480	-21.7	V	3.0	36.4	1.0	-57.1	-13.0	-44.1	
	3.306	-26.5	V	3.0	35.8	1.0	-61.3	-13.0	-48.3	
16QAM	1.653	-13.4	H	3.0	37.4	1.0	-49.7	-13.0	-36.7	
	2.480	-12.7	H	3.0	36.4	1.0	-48.1	-13.0	-35.1	
	3.306	-28.0	H	3.0	35.8	1.0	-62.8	-13.0	-49.8	
	Mid Channel (836.5MHz)									
	1.673	-13.4	V	3.0	37.3	1.0	-49.8	-13.0	-36.8	
	2.509	-24.5	V	3.0	36.4	1.0	-59.8	-13.0	-46.8	
	3.346	-28.2	V	3.0	35.8	1.0	-62.9	-13.0	-49.9	
	1.673	-13.1	H	3.0	37.3	1.0	-49.4	-13.0	-36.4	
	2.509	-14.1	H	3.0	36.4	1.0	-49.5	-13.0	-36.5	
	3.346	-27.9	H	3.0	35.8	1.0	-62.7	-13.0	-49.7	
	High Channel (846.5MHz)									
	1.693	-9.5	V	3.0	37.3	1.0	-45.8	-13.0	-32.8	
	2.540	-7.3	V	3.0	36.3	1.0	-42.7	-13.0	-29.7	
	3.386	-20.2	V	3.0	35.7	1.0	-54.9	-13.0	-41.9	
	1.693	-5.0	H	3.0	37.3	1.0	-41.3	-13.0	-28.3	
	2.540	-2.8	H	3.0	36.3	1.0	-38.1	-13.0	-25.1	
	3.386	-19.0	H	3.0	35.7	1.0	-53.7	-13.0	-40.7	
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:	Samsung									
Project #:	14U17785									
Date:	05/21/14									
Test Engineer:	O. Stoelting									
Configuration:	XPosition, AC Charger, Headphones									
Mode:	TX, LTE BAND 5, 10MHz BW, QPSK									
Chamber Pre-amplifier Filter Limit 5m Chamber B T34 8449B Filter 1 Part 22										
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE5 10MHz QPSK	Low Channel (826.5MHz)									
	1.653	-18.8	V	3.0	37.4	1.0	-55.1	-13.0	-42.1	
	2.480	-21.0	V	3.0	36.4	1.0	-56.4	-13.0	-43.4	
	3.306	-26.5	V	3.0	35.8	1.0	-61.3	-13.0	-48.3	
	1.653	-13.7	H	3.0	37.4	1.0	-50.1	-13.0	-37.1	
	2.480	-14.0	H	3.0	36.4	1.0	-49.4	-13.0	-36.4	
	3.306	-28.4	H	3.0	35.8	1.0	-63.2	-13.0	-50.2	
	Mid Channel (836.5MHz)									
	1.673	-15.8	V	3.0	37.3	1.0	-52.1	-13.0	-39.1	
	2.509	-25.1	V	3.0	36.4	1.0	-60.5	-13.0	-47.5	
	3.346	-28.1	V	3.0	35.8	1.0	-62.8	-13.0	-49.8	
	1.673	-13.6	H	3.0	37.3	1.0	-49.9	-13.0	-36.9	
	2.509	-14.7	H	3.0	36.4	1.0	-50.0	-13.0	-37.0	
	3.346	-28.4	H	3.0	35.8	1.0	-63.1	-13.0	-50.1	
	High Channel (846.5MHz)									
	1.693	-9.2	V	3.0	37.3	1.0	-45.5	-13.0	-32.5	
	2.540	-6.9	V	3.0	36.3	1.0	-42.2	-13.0	-29.2	
	3.386	-20.3	V	3.0	35.7	1.0	-55.0	-13.0	-42.0	
	1.693	-4.4	H	3.0	37.3	1.0	-40.7	-13.0	-27.7	
	2.540	-2.8	H	3.0	36.3	1.0	-38.2	-13.0	-25.2	
	3.386	-18.0	H	3.0	35.7	1.0	-52.7	-13.0	-39.7	
	Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.									

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:	Samsung									
Project #:	14U17785									
Date:	05/21/14									
Test Engineer:	O. Stoelting									
Configuration:	XPosition, AC Charger, Headphones									
Mode:	TX, LTE BAND 5, 5MHz BW, 16QAM									
Chamber Pre-amplifier Filter Limit 5m Chamber B T34 8449B Filter 1 Part 22										
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE5 5MHz 16QAM	Low Channel (826.5MHz)									
	1.653	-18.7	V	3.0	37.4	1.0	-55.0	-13.0	-42.0	
	2.480	-23.2	V	3.0	36.4	1.0	-58.6	-13.0	-45.6	
	3.306	-28.5	V	3.0	35.8	1.0	-63.3	-13.0	-50.3	
	1.653	-19.5	H	3.0	37.4	1.0	-55.9	-13.0	-42.9	
	2.480	-24.7	H	3.0	36.4	1.0	-60.0	-13.0	-47.0	
	3.306	-28.9	H	3.0	35.8	1.0	-63.7	-13.0	-50.7	
	Mid Channel (836.5MHz)									
	1.673	-17.1	V	3.0	37.3	1.0	-53.4	-13.0	-40.4	
	2.509	-12.0	V	3.0	36.4	1.0	-47.4	-13.0	-34.4	
	3.346	-26.6	V	3.0	35.8	1.0	-61.4	-13.0	-48.4	
	1.673	-2.5	H	3.0	37.3	1.0	-38.9	-13.0	-25.9	
	2.509	1.4	H	3.0	36.4	1.0	-34.0	-13.0	-21.0	
	3.346	-20.2	H	3.0	35.8	1.0	-54.9	-13.0	-41.9	
	High Channel (846.5MHz)									
	1.693	-11.2	V	3.0	37.3	1.0	-47.5	-13.0	-34.5	
	2.540	-9.3	V	3.0	36.3	1.0	-44.7	-13.0	-31.7	
	3.386	-20.1	V	3.0	35.7	1.0	-54.8	-13.0	-41.8	
	1.693	-6.1	H	3.0	37.3	1.0	-42.5	-13.0	-29.5	
	2.540	-5.1	H	3.0	36.3	1.0	-40.5	-13.0	-27.5	
	3.386	-20.3	H	3.0	35.7	1.0	-55.0	-13.0	-42.0	
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:	Samsung									
Project #:	14U17785									
Date:	05/21/14									
Test Engineer:	O. Stoelting									
Configuration:	XPosition, AC Charger, Headphones									
Mode:	TX, LTE BAND 5, 5MHz BW, QPSK									
Chamber Pre-amplifier Filter Limit 5m Chamber B T34 8449B Filter 1 Part 22										
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE5	Low Channel (826.5MHz)									
	1.653	-19.0	V	3.0	37.4	1.0	-55.3	-13.0	-42.3	
5MHz	2.480	-24.2	V	3.0	36.4	1.0	-59.5	-13.0	-46.5	
	3.306	-28.3	V	3.0	35.8	1.0	-63.0	-13.0	-50.0	
QPSK	1.653	-18.9	H	3.0	37.4	1.0	-55.3	-13.0	-42.3	
	2.480	-24.7	H	3.0	36.4	1.0	-60.1	-13.0	-47.1	
	3.306	-27.0	H	3.0	35.8	1.0	-61.8	-13.0	-48.8	
	Mid Channel (836.5MHz)									
	1.673	-17.5	V	3.0	37.3	1.0	-53.8	-13.0	-40.8	
	2.509	-14.5	V	3.0	36.4	1.0	-49.9	-13.0	-36.9	
	3.346	-27.0	V	3.0	35.8	1.0	-61.8	-13.0	-48.8	
	1.673	-4.4	H	3.0	37.3	1.0	-40.7	-13.0	-27.7	
	2.509	-0.9	H	3.0	36.4	1.0	-36.2	-13.0	-23.2	
	3.346	-21.1	H	3.0	35.8	1.0	-55.9	-13.0	-42.9	
	High Channel (846.5MHz)									
	1.693	-10.7	V	3.0	37.3	1.0	-47.0	-13.0	-34.0	
	2.540	-8.7	V	3.0	36.3	1.0	-44.1	-13.0	-31.1	
	3.386	-20.3	V	3.0	35.7	1.0	-55.0	-13.0	-42.0	
	1.693	-6.1	H	3.0	37.3	1.0	-42.5	-13.0	-29.5	
	2.540	-5.1	H	3.0	36.3	1.0	-40.5	-13.0	-27.5	
	3.386	-20.3	H	3.0	35.7	1.0	-55.0	-13.0	-42.0	
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:	Samsung									
Project #:	14U17785									
Date:	05/21/14									
Test Engineer:	O. Stoelting									
Configuration:	XPosition, AC Charger, Headphones									
Mode:	TX, LTE BAND 5, 3MHz BW, 16QAM									
Chamber		Pre-amplifier		Filter		Limit				
5m Chamber B		T34 8449B		Filter 1		Part 22				
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE5 3MHz 16QAM	Low Channel (825.5MHz)									
	1.651	-15.8	V	3.0	37.4	1.0	-52.1	-13.0	-39.1	
	2.477	-22.3	V	3.0	36.4	1.0	-57.7	-13.0	-44.7	
	3.302	-27.8	V	3.0	35.8	1.0	-62.6	-13.0	-49.6	
	1.651	-12.3	H	3.0	37.4	1.0	-48.7	-13.0	-35.7	
	2.477	-11.4	H	3.0	36.4	1.0	-46.8	-13.0	-33.8	
	3.302	-27.1	H	3.0	35.8	1.0	-61.9	-13.0	-48.9	
	Mid Channel (836.5MHz)									
	1.673	-9.9	V	3.0	37.3	1.0	-46.2	-13.0	-33.2	
	2.509	-5.8	V	3.0	36.4	1.0	-41.1	-13.0	-28.1	
	3.346	-25.9	V	3.0	35.8	1.0	-60.7	-13.0	-47.7	
	1.673	-1.4	H	3.0	37.3	1.0	-37.7	-13.0	-24.7	
	2.509	2.0	H	3.0	36.4	1.0	-33.3	-13.0	-20.3	
	3.346	-20.3	H	3.0	35.8	1.0	-55.1	-13.0	-42.1	
	High Channel (847.5MHz)									
	1.695	-8.7	V	3.0	37.3	1.0	-45.0	-13.0	-32.0	
	2.543	-6.7	V	3.0	36.3	1.0	-42.0	-13.0	-29.0	
	3.390	-30.6	V	3.0	35.7	1.0	-65.3	-13.0	-52.3	
	1.695	-5.0	H	3.0	37.3	1.0	-41.3	-13.0	-28.3	
	2.543	-2.5	H	3.0	36.3	1.0	-37.8	-13.0	-24.8	
	3.390	-20.6	H	3.0	35.7	1.0	-55.3	-13.0	-42.3	
	Rev. 03.03.09									
	Note: No other emissions were detected above the system noise floor.									

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:	Samsung									
Project #:	14U17785									
Date:	05/21/14									
Test Engineer:	O. Stoelting									
Configuration:	XPosition, AC Charger,Headphones									
Mode:	TX, LTE BAND 5, 3MHz BW,QPSK									
Chamber Pre-amplifier Filter Limit 5m Chamber B T34 8449B Filter 1 Part 22										
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE5	Low Channel (825.5MHz)									
	1.651	-16.5	V	3.0	37.4	1.0	-52.8	-13.0	-39.8	
	2.477	-24.2	V	3.0	36.4	1.0	-59.5	-13.0	-46.5	
3MHz	3.302	-27.9	V	3.0	35.8	1.0	-62.7	-13.0	-49.7	
	1.651	-13.5	H	3.0	37.4	1.0	-49.9	-13.0	-36.9	
	2.477	-13.8	H	3.0	36.4	1.0	-49.2	-13.0	-36.2	
QPSK	3.302	-27.4	H	3.0	35.8	1.0	-62.2	-13.0	-49.2	
	Mid Channel (836.5MHz)									
	1.673	-11.0	V	3.0	37.3	1.0	-47.4	-13.0	-34.4	
	2.509	-6.8	V	3.0	36.4	1.0	-42.1	-13.0	-29.1	
	3.346	-26.2	V	3.0	35.8	1.0	-61.0	-13.0	-48.0	
	1.673	-3.3	H	3.0	37.3	1.0	-39.6	-13.0	-26.6	
	2.509	0.6	H	3.0	36.4	1.0	-34.8	-13.0	-21.8	
	3.346	-19.6	H	3.0	35.8	1.0	-54.4	-13.0	-41.4	
	High Channel (847.5MHz)									
	1.695	-7.2	V	3.0	37.3	1.0	-43.5	-13.0	-30.5	
	2.543	-4.8	V	3.0	36.3	1.0	-40.1	-13.0	-27.1	
	3.390	-20.0	V	3.0	35.7	1.0	-54.7	-13.0	-41.7	
	1.695	-4.7	H	3.0	37.3	1.0	-41.0	-13.0	-28.0	
	2.543	-2.2	H	3.0	36.3	1.0	-37.6	-13.0	-24.6	
	3.390	-20.5	H	3.0	35.7	1.0	-55.2	-13.0	-42.2	
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.										

Company: Samsung
Project #: 14U17785
Date: 05/21/14
Test Engineer: K.Kedida
Configuration: XPosition, AC Charger,Headphones
Mode: TX, LTE BAND 5, 1.4MHz BW,16QAM

Chamber	Pre-amplifier	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 22

Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE5	Low Channel (824.7MHz)									
	1.649	-29.7	V	3.0	37.4	1.0	-66.0	-13.0	-53.0	
	2.474	-24.3	V	3.0	36.4	1.0	-59.6	-13.0	-46.6	
1.4MHz	3.299	-20.6	V	3.0	35.8	1.0	-55.4	-13.0	-42.4	
	1.649	-28.5	H	3.0	37.4	1.0	-64.9	-13.0	-51.9	
16QAM	2.474	-25.3	H	3.0	36.4	1.0	-60.7	-13.0	-47.7	
	3.299	-21.8	H	3.0	35.8	1.0	-56.6	-13.0	-43.6	
	Mid Channel (836.5MHz)									
	1.673	-29.1	V	3.0	37.3	1.0	-65.4	-13.0	-52.4	
	2.509	-24.6	V	3.0	36.4	1.0	-59.9	-13.0	-46.9	
	3.346	108.3	V	3.0	35.8	1.0	73.6	-13.0	86.6	
	1.673	-29.9	H	3.0	37.3	1.0	-66.2	-13.0	-53.2	
	2.509	-26.7	H	3.0	36.4	1.0	-62.1	-13.0	-49.1	
	3.346	-20.0	H	3.0	35.8	1.0	-54.7	-13.0	-41.7	
	High Channel (846.5MHz)									
	1.693	-28.2	V	3.0	37.3	1.0	-64.5	-13.0	-51.5	
	2.540	-24.5	V	3.0	36.3	1.0	-59.8	-13.0	-46.8	
	3.386	-22.9	V	3.0	35.7	1.0	-57.6	-13.0	-44.6	
	1.693	-29.7	H	3.0	37.3	1.0	-66.0	-13.0	-53.0	
	2.540	-25.1	H	3.0	36.3	1.0	-60.5	-13.0	-47.5	
	3.386	-20.9	H	3.0	35.7	1.0	-55.6	-13.0	-42.6	

Rev. 03.03.09

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

Company: Samsung
Project #: 14U17785
Date: 05/21/14
Test Engineer: K.Kedida
Configuration: XPosition, AC Charger,Headphones
Mode: TX, LTE BAND 5, 1.4MHz BW,QPSK

Chamber	Pre-amplifier	Filter	Limit
3m Chamber	T34 8449B	Filter 1	Part 22

Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
LTE5	Low Channel (824.7MHz)									
	1.649	-29.3	V	3.0	37.4	1.0	-65.7	-13.0	-52.7	
	2.474	-23.8	V	3.0	36.4	1.0	-59.2	-13.0	-46.2	
1.4MHz	3.299	-19.6	V	3.0	35.8	1.0	-54.4	-13.0	-41.4	
	1.649	-27.5	H	3.0	37.4	1.0	-63.9	-13.0	-50.9	
	2.474	-24.9	H	3.0	36.4	1.0	-60.3	-13.0	-47.3	
QPSK	3.299	-21.5	H	3.0	35.8	1.0	-56.3	-13.0	-43.3	
	Mid Channel (836.5MHz)									
	1.673	-28.5	V	3.0	37.3	1.0	-64.8	-13.0	-51.8	
	2.509	-24.0	V	3.0	36.4	1.0	-59.3	-13.0	-46.3	
	3.346	-20.1	V	3.0	35.8	1.0	-54.9	-13.0	-41.9	
	1.673	-28.9	H	3.0	37.3	1.0	-65.2	-13.0	-52.2	
	2.509	-26.2	H	3.0	36.4	1.0	-61.6	-13.0	-48.6	
	3.346	-19.5	H	3.0	35.8	1.0	-54.2	-13.0	-41.2	
	High Channel (846.5MHz)									
	1.693	-26.8	V	3.0	37.3	1.0	-63.1	-13.0	-50.1	
	2.540	-24.1	V	3.0	36.3	1.0	-59.4	-13.0	-46.4	
	3.386	-21.6	V	3.0	35.7	1.0	-56.3	-13.0	-43.3	
	1.693	-29.0	H	3.0	37.3	1.0	-65.4	-13.0	-52.4	
	2.540	-24.4	H	3.0	36.3	1.0	-59.8	-13.0	-46.8	
	3.386	-20.2	H	3.0	35.7	1.0	-54.9	-13.0	-41.9	

Rev. 03.03.09

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

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:	Samsung									
Project #:	14U17785									
Date:	05/21/14									
Test Engineer:	O. Stoelting									
Configuration:	X Position, EUT and AC Adapter									
Mode:	WCDMA_HSDPA 1900									
Chamber Pre-amplifier Filter Limit 5m Chamber A T343 8449B Filter 1 Part 24										
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Band 2 HSDPA	Low Ch, 1852.4MHz									
	3.705	-16.3	V	3.0	35.4	1.0	-50.7	-13.0	-37.7	
	5.557	-14.6	V	3.0	34.7	1.0	-48.3	-13.0	-35.3	
	7.409	-13.3	V	3.0	34.9	1.0	-47.2	-13.0	-34.2	
	3.705	-16.3	H	3.0	35.4	1.0	-50.7	-13.0	-37.7	
	5.557	-14.5	H	3.0	34.7	1.0	-48.2	-13.0	-35.2	
	7.409	-11.8	H	3.0	34.9	1.0	-45.7	-13.0	-32.7	
	Mid Ch, 1880.0MHz									
	3.760	-14.7	V	3.0	35.3	1.0	-49.0	-13.0	-36.0	
	5.640	-14.9	V	3.0	34.7	1.0	-48.6	-13.0	-35.6	
	7.520	-11.8	V	3.0	34.9	1.0	-45.7	-13.0	-32.7	
	3.760	-16.2	H	3.0	35.3	1.0	-50.5	-13.0	-37.5	
	5.640	-13.8	H	3.0	34.7	1.0	-47.6	-13.0	-34.6	
	7.520	-11.7	H	3.0	34.9	1.0	-45.6	-13.0	-32.6	
	High Ch, 1907.6 MHz									
	3.820	-14.3	V	3.0	35.3	1.0	-48.5	-13.0	-35.5	
	5.723	-13.7	V	3.0	34.7	1.0	-47.5	-13.0	-34.5	
	7.630	-12.9	V	3.0	34.9	1.0	-46.9	-13.0	-33.9	
	3.820	-15.8	H	3.0	35.3	1.0	-50.1	-13.0	-37.1	
	5.723	-12.4	H	3.0	34.7	1.0	-46.2	-13.0	-33.2	
	7.630	-12.1	H	3.0	34.9	1.0	-46.0	-13.0	-33.0	
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:	Samsung									
Project #:	14U17785									
Date:	05/21/14									
Test Engineer:	O. Stoelting									
Configuration:	X Position, EUT and AC Adapter									
Mode:	WCDMA_REI99_B2 1900									
Chamber Pre-amplifier Filter Limit 5m Chamber A T343 8449B Filter 1 Part 24										
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, 1852.4MHz									
	3.705	-13.7	V	3.0	35.4	1.0	-48.1	-13.0	-35.1	
	5.557	-15.1	V	3.0	34.7	1.0	-48.8	-13.0	-35.8	
	7.409	-10.2	V	3.0	34.9	1.0	-44.1	-13.0	-31.1	
	3.705	-15.4	H	3.0	35.4	1.0	-49.8	-13.0	-36.8	
	5.557	-14.2	H	3.0	34.7	1.0	-47.9	-13.0	-34.9	
	7.409	-12.1	H	3.0	34.9	1.0	-46.0	-13.0	-33.0	
	Mid Ch, 1880.0MHz									
	3.760	-13.6	V	3.0	35.3	1.0	-48.0	-13.0	-35.0	
	5.640	-14.8	V	3.0	34.7	1.0	-48.5	-13.0	-35.5	
	7.520	-10.6	V	3.0	34.9	1.0	-44.6	-13.0	-31.6	
	3.760	-15.4	H	3.0	35.3	1.0	-49.7	-13.0	-36.7	
	5.640	-13.7	H	3.0	34.7	1.0	-47.4	-13.0	-34.4	
	7.520	-11.7	H	3.0	34.9	1.0	-45.6	-13.0	-32.6	
	High Ch, 1907.6 MHz									
	3.820	-13.0	V	3.0	35.3	1.0	-47.3	-13.0	-34.3	
	5.723	-13.8	V	3.0	34.7	1.0	-47.5	-13.0	-34.5	
	7.630	-13.0	V	3.0	34.9	1.0	-46.9	-13.0	-33.9	
	3.820	-13.6	H	3.0	35.3	1.0	-47.9	-13.0	-34.9	
	5.723	-13.2	H	3.0	34.7	1.0	-46.9	-13.0	-33.9	
	7.630	-11.7	H	3.0	34.9	1.0	-45.6	-13.0	-32.6	
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement									
Company:		Samsung							
Project #:		14U17785							
Date:		05/21/14							
Test Engineer:		R. Alegre							
Configuration:		EUT with AC charger & HS							
Mode:		WCDMA_HSDPA_850							
Chamber		Pre-amplifier		Filter		Limit			
5m Chamber A		T34 8449B		Filter 1		Part 22			
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.40MHz									
Band	1.652	-26.7	V	3.0	37.4	1.0	-63.1	-13.0	-50.1
	2.479	-22.4	V	3.0	36.4	1.0	-57.8	-13.0	-44.8
Band 5	3.306	-20.2	V	3.0	35.8	1.0	-55.0	-13.0	-42.0
	1.652	-25.7	H	3.0	37.4	1.0	-62.1	-13.0	-49.1
HSDPA	2.479	-24.4	H	3.0	36.4	1.0	-59.8	-13.0	-46.8
	3.306	-20.4	H	3.0	35.8	1.0	-55.2	-13.0	-42.2
Mid Ch, 836.6MHz									
	1.673	-27.3	V	3.0	37.3	1.0	-63.6	-13.0	-50.6
	2.510	-19.4	V	3.0	36.4	1.0	-54.7	-13.0	-41.7
	3.346	-18.4	V	3.0	35.8	1.0	-53.2	-13.0	-40.2
	1.673	-29.3	H	3.0	37.3	1.0	-65.7	-13.0	-52.7
	2.510	-23.5	H	3.0	36.4	1.0	-58.9	-13.0	-45.9
	3.346	-18.6	H	3.0	35.8	1.0	-53.3	-13.0	-40.3
High Ch, 846.6MHz									
	1.693	-26.4	V	3.0	37.3	1.0	-62.7	-13.0	-49.7
	2.539	-19.5	V	3.0	36.3	1.0	-54.9	-13.0	-41.9
	3.386	-18.2	V	3.0	35.7	1.0	-52.9	-13.0	-39.9
	1.693	-28.2	H	3.0	37.3	1.0	-64.6	-13.0	-51.6
	2.539	-23.5	H	3.0	36.3	1.0	-58.9	-13.0	-45.9
	3.386	-20.6	H	3.0	35.7	1.0	-55.4	-13.0	-42.4
Rev. 03.03.09									
Note: No other emissions were detected above the system noise floor.									

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement									
Company:		Samsung							
Project #:		14U17785							
Date:		05/21/14							
Test Engineer:		R. Alegre							
Configuration:		EUT with AC charger & HS							
Mode:		WCDMA_Rel 99_ 850							
Chamber		Pre-amplifer		Filter		Limit			
5m Chamber A		T34 8449B		Filter 1		Part 22			
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
Low Ch, 826.40MHz									
Band	1.652	-27.3	V	3.0	37.4	1.0	-63.7	-13.0	-50.7
	2.479	-22.7	V	3.0	36.4	1.0	-58.1	-13.0	-45.1
Band 5	3.306	-20.6	V	3.0	35.8	1.0	-55.4	-13.0	-42.4
	1.652	-25.8	H	3.0	37.4	1.0	-62.1	-13.0	-49.1
REL99	2.479	-24.5	H	3.0	36.4	1.0	-59.8	-13.0	-46.8
	3.306	-20.7	H	3.0	35.8	1.0	-55.5	-13.0	-42.5
Mid Ch, 836.6MHz									
	1.673	-27.6	V	3.0	37.3	1.0	-63.9	-13.0	-50.9
	2.510	-19.6	V	3.0	36.4	1.0	-55.0	-13.0	-42.0
	3.346	-18.5	V	3.0	35.8	1.0	-53.2	-13.0	-40.2
	1.673	-29.6	H	3.0	37.3	1.0	-66.0	-13.0	-53.0
	2.510	-25.1	H	3.0	36.4	1.0	-60.5	-13.0	-47.5
	3.346	-18.7	H	3.0	35.8	1.0	-53.4	-13.0	-40.4
High Ch, 846.6MHz									
	1.693	-27.2	V	3.0	37.3	1.0	-63.5	-13.0	-50.5
	2.539	-21.9	V	3.0	36.3	1.0	-57.2	-13.0	-44.2
	3.386	-18.3	V	3.0	35.7	1.0	-53.0	-13.0	-40.0
	1.693	-28.3	H	3.0	37.3	1.0	-64.6	-13.0	-51.6
	2.539	-23.0	H	3.0	36.3	1.0	-58.3	-13.0	-45.3
	3.386	-20.5	H	3.0	35.7	1.0	-55.2	-13.0	-42.2
Rev. 03.03.09									
Note: No other emissions were detected above the system noise floor.									

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:	Samsung									
Project #:	14U17785									
Date:	05/21/14									
Test Engineer:	O. Stoelting									
Configuration:	X Position, EUT and AC Adapter									
Mode:	EGPRS 1900									
Chamber Pre-amplifier Filter Limit 5m Chamber A T343 8449B Filter 1 Part 24										
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
GSM19 00 EGPRS	Low Ch, 1850.2MHz									
	3.700	-16.1	V	3.0	35.4	1.0	-50.5	-13.0	-37.5	
	5.551	-24.6	V	3.0	34.7	1.0	-58.3	-13.0	-45.3	
	7.401	-22.0	V	3.0	34.9	1.0	-55.9	-13.0	-42.9	
	3.700	-22.8	H	3.0	35.4	1.0	-57.2	-13.0	-44.2	
	5.551	-21.7	H	3.0	34.7	1.0	-55.4	-13.0	-42.4	
	7.401	-19.3	H	3.0	34.9	1.0	-53.2	-13.0	-40.2	
	Mid Ch, 1880.0MHz									
	3.760	-25.5	V	3.0	35.3	1.0	-59.8	-13.0	-46.8	
	5.640	-24.4	V	3.0	34.7	1.0	-58.1	-13.0	-45.1	
	7.520	-21.2	V	3.0	34.9	1.0	-55.1	-13.0	-42.1	
	3.760	-23.9	H	3.0	35.3	1.0	-58.3	-13.0	-45.3	
	5.640	-21.6	H	3.0	34.7	1.0	-55.4	-13.0	-42.4	
	7.520	-18.9	H	3.0	34.9	1.0	-52.9	-13.0	-39.9	
	High Ch, 1909.8 MHz									
	3.820	-15.0	V	3.0	35.3	1.0	-49.3	-13.0	-36.3	
	5.729	-15.4	V	3.0	34.7	1.0	-49.1	-13.0	-36.1	
	7.639	-13.2	V	3.0	35.0	1.0	-47.2	-13.0	-34.2	
	3.820	-20.0	H	3.0	35.3	1.0	-54.2	-13.0	-41.2	
	5.729	-21.3	H	3.0	34.7	1.0	-55.1	-13.0	-42.1	
7.639	-22.0	H	3.0	35.0	1.0	-56.0	-13.0	-43.0		
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										

Compliance Certification Services Above 1GHz High Frequency Substitution Measurement										
Company:	Samsung									
Project #:	14U17785									
Date:	05/21/14									
Test Engineer:	O. Stoelting									
Configuration:	X Position, EUT and AC Adapter									
Mode:	GPRS 1900									
Chamber Pre-amplifier Filter Limit 5m Chamber A T343 8449B Filter 1 Part 24										
Band	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
GSM1900 GPRS	Low Ch, 1850.2MHz									
	3.700	-9.1	V	3.0	35.4	1.0	-43.5	-13.0	-30.5	
	5.551	-11.8	V	3.0	34.7	1.0	-45.6	-13.0	-32.6	
	7.401	-13.3	V	3.0	34.9	1.0	-47.2	-13.0	-34.2	
	3.700	-9.1	H	3.0	35.4	1.0	-43.5	-13.0	-30.5	
	5.551	-12.3	H	3.0	34.7	1.0	-46.0	-13.0	-33.0	
	7.401	-12.7	H	3.0	34.9	1.0	-46.6	-13.0	-33.6	
	Mid Ch, 1880.0MHz									
	3.760	-10.0	V	3.0	35.3	1.0	-44.4	-13.0	-31.4	
	5.640	-14.5	V	3.0	34.7	1.0	-48.2	-13.0	-35.2	
	7.520	-10.4	V	3.0	34.9	1.0	-44.3	-13.0	-31.3	
	3.760	-14.2	H	3.0	35.3	1.0	-48.6	-13.0	-35.6	
	5.640	-13.9	H	3.0	34.7	1.0	-47.6	-13.0	-34.6	
	7.520	-12.1	H	3.0	34.9	1.0	-46.1	-13.0	-33.1	
	High Ch, 1909.8 MHz									
	3.820	-10.5	V	3.0	35.3	1.0	-44.8	-13.0	-31.8	
	5.729	-12.6	V	3.0	34.7	1.0	-46.4	-13.0	-33.4	
	7.639	-12.0	V	3.0	35.0	1.0	-46.0	-13.0	-33.0	
3.820	-10.5	H	3.0	35.3	1.0	-44.8	-13.0	-31.8		
5.729	-8.9	H	3.0	34.7	1.0	-42.7	-13.0	-29.7		
7.639	-11.0	H	3.0	35.0	1.0	-44.9	-13.0	-31.9		
Rev. 03.03.09										
Note: No other emissions were detected above the system noise floor.										

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