



CERTIFICATION TEST REPORT

Report Number. : 11783639-E1V3

Applicant : SONY MOBILE COMMUNICATIONS INC.
4-12-3 HIGASHI-SHINAGAWA,
SHINAGAWA -KU,TOKYO, 140-0002, JAPAN

FCC ID : PY7-88607S

EUT Description : GSM/WCDMA/LTE Phone with BT,DTS/UNII a/b/g/n/ac, GPS & NFC

Test Standard(s) : FCC CFR47 PART 22 SUBPART H
FCC CFR47 PART 24 SUBPART E
FCC CFR47 PART 27 SUBPART F, H, L, and M

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NVLAP LAB CODE 200065-0

Revision History

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V1	08/03/17	Initial Issue	D. Corona
V2	08/08/17	Updated Section 11.8 & added Section 6	D. Corona
V3	08/10/17	Updated Section 14.1, 16.1 and added Section 6.2 & 6.3	D. Corona

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SONY MOBILE COMMUNICATIONS, INC.
4-12-3 HIGASHI-SHINAGAWA,
SHINAGAWA-KU, TOKYO, 140-0002, JAPAN

EUT DESCRIPTION: GSM/WCDMA/LTE PHONE with BT, DTS/UNII a/b/g/n/ac, GPS & NFC

SERIAL NUMBER: BH90004K83, BH9000KF83 (Condcuted)
BH9000F983, BH9000G283(Radaited)

DATE TESTED: July 8 – 21, 2017

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 22H, 24E, 27H, 27F, 27L, 27M	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.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with TIA-603-D, FCC CFR 47 Part 2, FCC KDB 971168 D01 v02r02, Part 22, Part 24, and Part 27.

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(IC: 2324B-1)	☐ Chamber D(IC: 22541-1)
☐ Chamber B(IC: 2324B-2)	☐ Chamber E(IC: 22541-2)
☒ Chamber C(IC: 2324B-3)	☐ Chamber F(IC: 22541-3)
	☐ Chamber G(IC: 22541-4)
	☐ Chamber H(IC: 22541-5)

The above test sites and facilities are covered under FCC Test Firm Registration # 208313.

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0.

Chambers A through C are covered under Industry Canada company address code 2324B with site numbers 2324B -1 through 2324B-3, respectively. Chambers D through H are covered under Industry Canada company address code 22541 with site numbers 22541 -1 through 22541-5, respectively.

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:

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

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

(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:

PARAMETER	UNCERTAINTY
Occupied Channel Bandwidth	± 1.1 %
RF output power, conducted	± 0.35 dB
Power Spectral Density, conducted	± 0.39 dB
Unwanted Emissions, conducted	± 2.9 dB
All emissions, radiated	± 5.36 dB
Temperature	± 0.9 °C
Humidity	± 2.26 % RH
Supply Voltages	± 0.45 %
Time	± 0.2 %

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

This EUT is a GSM/WCDMA/LTE PHONE with BT, DTS/UNII a/b/g/n/ac, GPS & NFC.

6. REUSE OF TEST DATA

6.1. EQUIPMENT UNDER TEST

According to manufacturer, FCC ID: PY7-65365K and FCC ID: PY7-88607S licensed radios (GSM850, LTE Band 12, and LTE Band 17) are electrically identical. They share the same chipset and same power. The FCC ID: PY7-65365K test data (all conducted test data) shall remain representative of FCC ID: PY7-88607S so, FCC ID: PY7-88607S leverages all conducted test data from FCC ID: PY7-65365K.

NOTE: GSM850, LTE Band 12 and LTE Band 17, Radiated Spurious Emissions was verified and presented in the test report (Section 19.1).

The applicant takes full responsibility that the test data as referenced in this section represent compliance for this FCC ID.

6.2. VERIFICATION RESULTS SUMMARY

Full verification for GSM850, LTE Band 12 and LTE Band 17 has been done on device PY7-88607S for RSE (Radiated Spurious Emissions). The data from the application has been verified through appropriate RSE testing to demonstrate compliance for this device as shown in Section 19.1.

6.3. REFERENCE DETAIL

Equipment Class	Reference FCC ID	Report Title/Section
WWAN (PCE)	PY7-65365K	11785223-E1V2 FCC Report WWAN

7. MAXIMUM OUTPUT POWER

7.1. MAXIMUM OUTPUT POWER (GSM/EGPRS)

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

FCC Part 22/24						
Band	Frequency Range(MHz)	Modulation	Conducted (Average)		ERP/EIRP (Average)	
			AVG(dBm)	AVG(mW)	dBm	mW
850	824~849	GPRS	33.4	2208.00	23.60	229.09
	824~849	EGPRS	28.6	716.14	18.80	75.86
1900	1850~1910	GPRS	26.6	460.26	25.13	325.84
	1850~1910	EGPRS	26.0	398.11	14.50	28.18

7.2. MAXIMUM OUTPUT POWER (WCDMA)

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

FCC Part 24/27						
Band	Frequency Range(MHz)	Modulation	Conducted (Average)		ERP/EIRP (Average)	
			AVG(dBm)	AVG(mW)	dBm	mW
Band 2	1850~1910	REL99	18.1	64.57	16.6	45.71
	1850~1910	HSDPA	17.2	52.48	15.7	37.15
	1850~1910	HSUPA	17.3	53.70	15.8	38.02
Band 4	1710~1755	REL99	19.6	91.20	17.3	53.70
	1710~1755	HSDPA	18.8	75.86	16.5	44.67
	1710~1755	HSUPA	18.9	77.62	16.6	45.71

7.3. MAXIMUM OUTPUT POWER (LTE)

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

LTE Band 2

FCC Part 24							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted (Average)		ERIP (Average)	
				AVG(dBm)	AVG(mW)	dBm	mW
LTE2	1850~1915	1.4MHz	QPSK	18.1	64.57	16.6	45.71
			16QAM	17.9	61.66	16.4	43.65
		3MHz	QPSK	18.2	66.07	16.7	46.77
			16QAM	18.1	64.57	16.6	45.71
		5MHz	QPSK	18.3	67.61	16.8	47.86
			16QAM	18.2	66.07	16.7	46.77
		10MHz	QPSK	18.4	69.18	16.9	48.98
			16QAM	18.3	67.61	16.8	47.86
		15MHz	QPSK	18.4	69.18	16.9	48.98
			16QAM	18.3	67.61	16.8	47.86
		20MHz	QPSK	18.5	70.79	17.0	50.12
			16QAM	18.4	69.18	16.9	48.98

LTE Band 4

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted (Average)		ERIP (Average)	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE4	1710~1755	1.4MHz	QPSK	19.90	97.72	17.60	57.54
			16QAM	19.70	93.33	17.40	54.95
		3MHz	QPSK	20.10	102.33	17.80	60.26
			16QAM	19.70	93.33	17.40	54.95
		5MHz	QPSK	20.00	100.00	17.70	58.88
			16QAM	20.00	100.00	17.70	58.88
		10MHz	QPSK	20.00	100.00	17.70	58.88
			16QAM	19.80	95.50	17.50	56.23
		15MHz	QPSK	20.00	100.00	17.70	58.88
			16QAM	20.00	100.00	17.70	58.88
		20MHz	QPSK	20.00	100.00	17.70	58.88
			16QAM	20.00	100.00	17.70	58.88

LTE Band 12

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted (Average)		ERIP (Average)	
				AVG(dBm)	AVG(mW)	AVG(dBm)	AVG(mW)
LTE12	699~716	1.4MHz	QPSK	25.00	316.23	14.60	28.84
			16QAM	24.00	251.19	13.60	22.91
		3MHz	QPSK	24.30	269.15	13.90	24.55
			16QAM	24.00	251.19	13.60	22.91
		5MHz	QPSK	24.30	269.15	13.90	24.55
			16QAM	24.00	251.19	13.60	22.91
		10MHz	QPSK	24.30	269.15	13.90	24.55
			16QAM	23.80	239.88	13.40	21.88

LTE Band 41

FCC Part 27							
Band	Frequency Range(MHz)	BandWidth (MHz)	Modulation	Conducted (Average)		ERIP (Average)	
				AVG(dBm)	AVG(mW)	PEAK(dBm)	PEAK(mW)
LTE41	2496~2690	5MHz	QPSK	23.90	245.47	20.10	102.33
			16QAM	23.40	218.78	19.60	91.20
		10MHz	QPSK	23.90	245.47	20.10	102.33
			16QAM	23.40	218.78	19.60	91.20
		15MHz	QPSK	23.90	245.47	20.10	102.33
			16QAM	23.50	223.87	19.70	93.33
		20MHz	QPSK	23.90	245.47	20.10	102.33
			16QAM	23.50	223.87	19.70	93.33

8. 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)
GSM850, 824~849MHz	-7.3
GSM1900, 1850~1910MHz	-1.5
WCDMA Band 2, 1850~1910	-1.5
WCDMA Band 4, 1710~1755	-2.3
LTE Band 2, 1850~1910	-1.5
LTE Band 4, 1710~1755	-2.3
LTE Band 12, 699~716MHz	-7.9
LTE Band 17, 704~716MHz	-7.9
LTE Band 38, 2570~2620MHz	-3.8
LTE Band 41, 2496~2690MHz	-3.8

9. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	SONY	1300-7137.1	4016W40310044	NA
Earphone	SONY	N/A	N/A	N/A

I/O CABLES (CONDUCTED SETUP)

I/O Cable List						
Cable No	Port	# of Identical ports	Connector Type	Serial 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

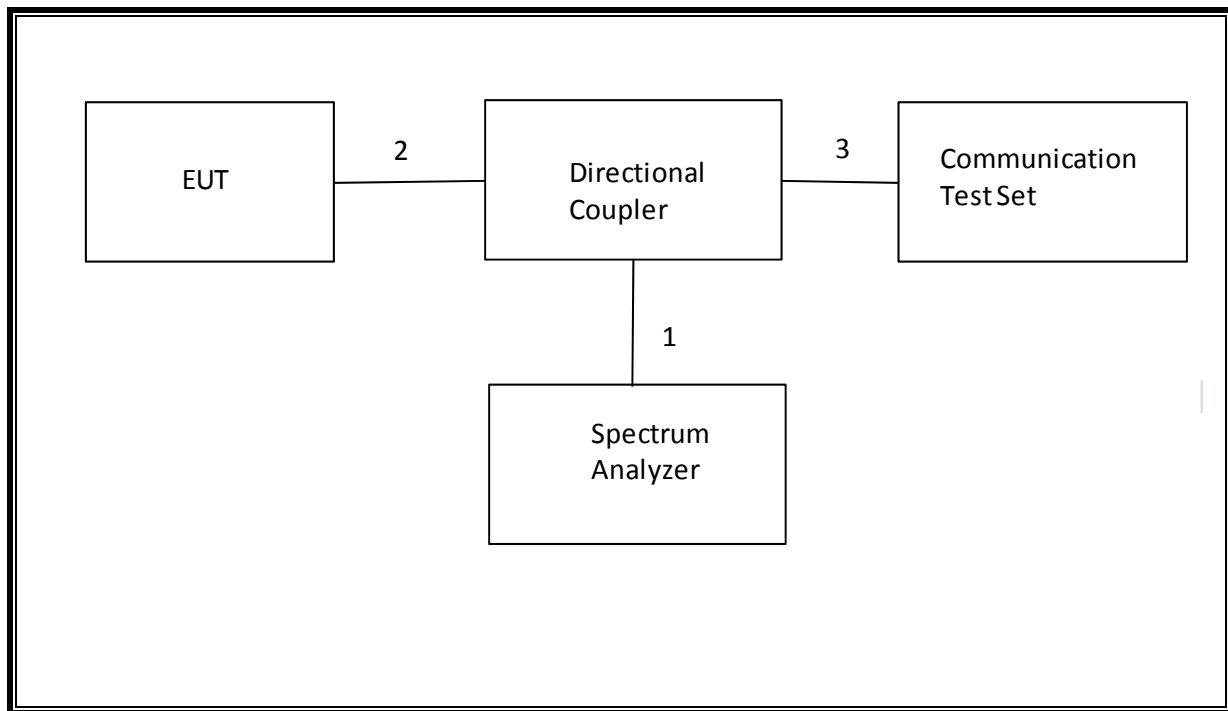
I/O CABLES (RADIATED SETUP)

I/O Cable List						
Cable No	Port	# of Identical ports	Connector Type	Serial Type	Cable Length (m)	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

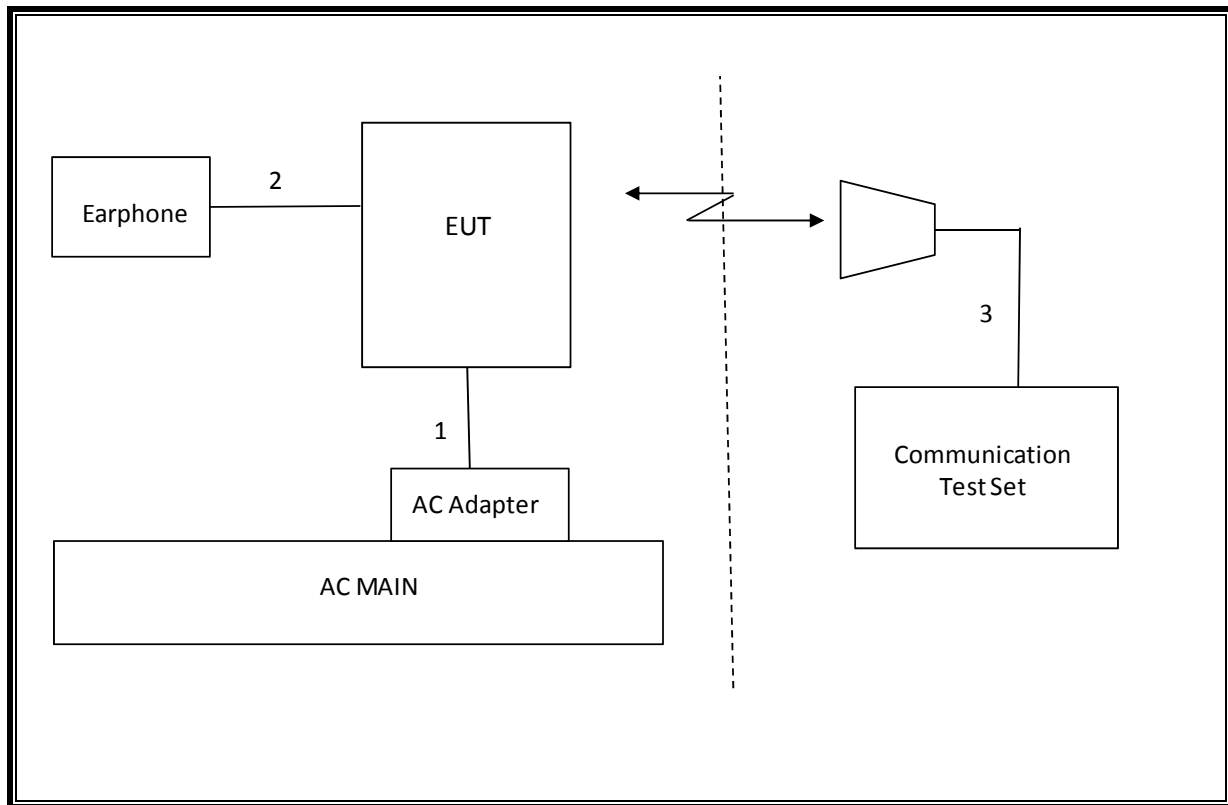
TEST SETUP

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)



10. 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	T Number	Cal Date	Cal Due
Amplifier, 1 to 18 GHz	Miteq	AFS43-00101800-25-S-42	493	02/15/17	02/15/18
Amplifier, 1 to 8 GHz	Miteq	AMF-4D-01000800-30-29P	1156	02/15/17	02/15/18
Amplifier, 10KHz to 1GHz, 32dB	Keysight	8447D	10	02/15/17	02/15/18
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences	JB3	408	11/10/16	11/10/17
Spectrum Analyzer, PXA 3Hz to 44GHz	Keysight	N9030A	907	01/23/17	01/23/18
Highpass Filter, 2.7 GHz	Micro-Circuits	H2G518G6	T772	07/05/16	07/05/18
Highpass Filter, 1 GHz	Micro-Tronics	HPM18129	T889	02/21/17	02/21/18
Highpass Filter, 4GHz	Micro-Tronics	HPM13351	T1241	06/17/17	06/17/18
Amplifier, 1-18GHz	Miteq	AFS42-00101800-25-S-42	931	08/26/16	08/26/17
Amplifier, 10KHz to 1GHz, 32dB	Keysight	8447D	15	08/26/16	08/26/17
Antenna, Broadband Hybrid 30MHz to 2000MHz	Sunol Sciences	JB3	408	11/10/16	11/10/17
Antenna, Horn 1-18GHz	ETS Lindgren	3117	712	01/30/17	01/30/18
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight	N9030A	905	01/11/17	01/11/18
DC power supply, 8 V @ 3 A or 15 V @ 2 A	Agilent / HP	E3610A	None	CNR	None
Antenna, Tuned Dipole 400~1000 MHz	ETS	3121C DB4	T273	06/08/17	06/08/18
Directional Coupler	Mini-Circuits	ZUDC10-183+	T1136	06/18/17	06/18/18

Test Equipment List			
Description	Manufacturer	Model	T Number
Radiated Software	UL	UL EMC	Ver 9.5, June 24, 2015
Conducted Software	UL	UL EMC	Ver 9.5, May 26, 2015
CLT Software	UL	UL RF	Ver 1.0, Feb 2, 2015
Antenna Port Software	UL	UL RF	Ver 3.7, Nov 12, 2015

11. SUMMARY TABLE

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result
2.1049	Occupied Bandwidth (99%)	N/A	Conducted	Pass
22.917(a) 24.238(a) 27.53(g)	Band Edge / Conducted Spurious Emission	-13dBm		Pass
27.53(m)		-25dBm		
2.1046	Conducted output power	N/A		Pass
27.53(m)	Emission Mask	Please refer to limit under section 14		Pass
22.355	Frequency Stability	2.5PPM		Pass
24.235 27.54		Please refer to limit under section 16		Pass
22.913(a)(2)	Effective Radiated Power	38dBm	Radiated	Pass
27.50©(10)		34.77dBm		Pass
24.232(c) 27.50(h)(2)	Equivalent Isotropic Radiated Power	36.98dBm		Pass
		40.6dBm		
		33dBm		Pass
27.50(d)(4)		30dBm		Pass
22.917(a) 24.238(a) 27.53(g)	Radiated Spurious Emission	-13dBm		Pass
27.53(m)		-25dBm		Pass

12. RF POWER OUTPUT VERIFICATION

TEST PROCEDURE

ANSI C63.26:2015/ TIA / EIA 603-D Clause 2.2.17
KDB 971168 Section 5.6

$$\text{ERP/EIRP} = \text{PMeas} + \text{GT} - \text{LC}$$

where: ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as PMeas, typically dBW or dBm);

PMeas = measured transmitter output power or PSD, in dBm or dBW;

GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.

MODES TESTED

- GSM 850
- GSM 1900
- WCDMA Band 2
- WCDMA Band 4
- LTE Band 2
- LTE Band 4
- LTE Band 12
- LTE Band 17
- LTE Band 38
- LTE Band 41

12.1. GSM/GPRS/EDGE

Using CMW500 Communication Test Set

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 > 27 dBm for EGPRS 850/900 > 30 dBm for GPRS1800/1900 > 26 dBm for EGPRS1800/1900
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 > CS 4 (GPRS) and MCS5-9 (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

12.2. GSM OUTPUT POWER RESULT

Tested By	Coltyce Sanders
Date	7/24/2017

GSM 850

Antenna gain (dBi)		-7.30					
Mode	Ch.	f (MHz)	Modulation	Conducted Average (dBm)	ERP Average (dBm)	ERP Limit (dBm)	Margin (dB)
GPRS	128	824.2	1 Time slot	33.4	23.6	38.5	-14.9
	190	836.6		33.4	23.6	38.5	-14.9
	251	848.8		33.4	23.6	38.5	-14.9
	128	824.2	2 Time slot	33.4	23.6	38.5	-14.9
	190	836.6		33.4	23.6	38.5	-14.9
	251	848.8		33.4	23.6	38.5	-14.9
	128	824.2	3 Time slot	31.7	21.9	38.5	-16.6
	190	836.6		31.7	21.9	38.5	-16.6
	251	848.8		31.7	21.9	38.5	-16.7
	128	824.2	4 Time slot	29.7	19.9	38.5	-18.6
	190	836.6		29.7	19.9	38.5	-18.6
	251	848.8		29.6	19.8	38.5	-18.7
EGPRS	128	824.2	1 Time slot	28.5	18.7	38.5	-19.8
	190	836.6		28.6	18.8	38.5	-19.8
	251	848.8		28.5	18.7	38.5	-19.8
	128	824.2	2 Time slot	27.3	17.5	38.5	-21.0
	190	836.6		27.3	17.5	38.5	-21.0
	251	848.8		27.2	17.4	38.5	-21.1
	128	824.2	3 Time slot	25.0	15.2	38.5	-23.3
	190	836.6		25.2	15.4	38.5	-23.2
	251	848.8		25.1	15.3	38.5	-23.2
	128	824.2	4 Time slot	23.2	13.4	38.5	-25.1
	190	836.6		23.1	13.3	38.5	-25.2
	251	848.8		23.0	13.2	38.5	-25.3

GSM 1900

Antenna gain (dBi)		-1.50					
Mode	Ch.	f (MHz)	Modulation	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
GPRS	512	1850.2	1 Time slot	26.4	24.9	33.0	-8.1
	661	1880		26.6	25.1	33.0	-7.9
	810	1909.8		26.6	25.1	33.0	-8.0
	512	1850.2	2 Time slot	26.4	24.9	33.0	-8.1
	661	1880		26.6	25.1	33.0	-7.9
	810	1909.8		26.6	25.1	33.0	-7.9
	512	1850.2	3 Time slot	24.0	22.5	33.0	-10.5
	661	1880		24.2	22.7	33.0	-10.3
	810	1909.8		24.6	23.1	33.0	-9.9
	512	1850.2	4 Time slot	23.0	21.5	33.0	-11.5
	661	1880		23.2	21.7	33.0	-11.3
	810	1909.8		23.3	21.8	33.0	-11.3
EGPRS	512	1850.2	1 Time slot	21.4	19.9	33.0	-13.1
	661	1880		21.4	19.9	33.0	-13.1
	810	1909.8		21.6	20.1	33.0	-12.9
	512	1850.2	2 Time slot	26.0	24.5	33.0	-8.6
	661	1880		26.0	24.5	33.0	-8.6
	810	1909.8		25.9	24.4	33.0	-8.6
	512	1850.2	3 Time slot	23.7	22.2	33.0	-10.8
	661	1880		23.8	22.3	33.0	-10.7
	810	1909.8		23.9	22.4	33.0	-10.6
	512	1850.2	4 Time slot	22.2	20.7	33.0	-12.3
	661	1880		22.3	20.8	33.0	-12.2
	810	1909.8		22.3	20.8	33.0	-12.2

12.3. UMTS REL 99

TEST PROCEDURE

The following summary of these settings are illustrated below:

Mode	Subtest	Rel99
WCDMA General Settings	Loopback Mode	Test Mode 2
	Rel99 RMC	12.2kbps RMC
	Power Control Algorithm	Algorithm2
	β_c/β_d	8/15

RESULTS

Tested By	AJ Newcomer
Date	7/6/2017

12.4. UMTS REL 99 OUTPUT POWER RESULT

Antenna gain Band 2 (dBi)	-1.50
Antenna gain Band 4 (dBi)	-2.30

Part 24 / RSS 133 1900MHz Band

Band	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	ERIP Average (dBm)	ERIP Limit (dBm)	Margin (dB)
UMTS Rel. 99 1900MHz	9262	9662	1852.4	18.1	16.6	33.0	-16.4
	9400	9800	1880.0	18.0	16.5	33.0	-16.5
	9538	9938	1907.6	18.0	16.5	33.0	-16.5

Part 27 / RSS 139 1700MHz Band

Band	UL Channel	DL Channel	Frequency (MHz)	Peak Power (dBm)	ERIP Average (dBm)	ERIP Limit (dBm)	Margin (dB)
UMTS Rel. 99 1700MHz	1312	1537	1712.4	19.5	17.2	30.0	-12.8
	1413	1638	1732.6	19.5	17.2	30.0	-12.8
	1513	1738	1752.6	19.6	17.3	30.0	-12.7

12.5. UMTS HSDPA

The following 4 Sub-tests were completed according to Release 5 procedures in section 5.2 of 3GPP TS34.121.

Summary of settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
W-CDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set 1			
	Power Control Algorithm	Algorithm 2			
	β_c	2/15	11/15	15/15	15/15
	β_d	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	β_c/β_d	2/15	11/15	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			

RESULTS

Tested By	Vanessa Moestopo
Date	7/8/2017

12.6. UMTS HSDPA OUTPUT POWER RESULT

Antenna gain Band 2 (dBi)	-1.50
Antenna gain Band 4 (dBi)	-2.30

Part 24 / RSS 133 1900MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Limit (dBm)	Margin (dB)
UMTS HSDPA 1900MHz	1	9262	9662	1852.4	17.2	15.7	33.0	-15.8
		9400	9800	1880.0	17.2	15.7	33.0	-15.8
		9538	9938	1907.6	17.0	15.5	33.0	-16.0
	2	9262	9662	1852.4	17.2	15.7	33.0	-15.8
		9400	9800	1880.0	17.1	15.6	33.0	-15.9
		9538	9938	1907.6	17.1	15.6	33.0	-15.9
	3	9262	9662	1852.4	16.9	15.4	33.0	-16.1
		9400	9800	1880.0	16.5	15.0	33.0	-16.5
		9538	9938	1907.6	16.6	15.1	33.0	-16.4
	4	9262	9662	1852.4	16.9	15.4	33.0	-16.1
		9400	9800	1880.0	16.5	15.0	33.0	-16.5
		9538	9938	1907.6	16.6	15.1	33.0	-16.4

Part 27 / RSS 139 1700MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Limit (dBm)	Margin (dB)
UMTS HSDPA 1700MHz	1	1312	1537	1712.4	18.5	16.2	30.0	-11.5
		1413	1638	1732.6	18.7	16.4	30.0	-11.3
		1513	1738	1752.6	18.8	16.5	30.0	-11.2
	2	1312	1537	1712.4	18.3	16.0	30.0	-11.7
		1413	1638	1732.6	18.5	16.2	30.0	-11.5
		1513	1738	1752.6	18.4	16.1	30.0	-11.6
	3	1312	1537	1712.4	17.8	15.5	30.0	-12.2
		1413	1638	1732.6	18.1	15.8	30.0	-11.9
		1513	1738	1752.6	18.1	15.8	30.0	-11.9
	4	1312	1537	1712.4	17.8	15.5	30.0	-12.2
		1413	1638	1732.6	18.1	15.8	30.0	-11.9
		1513	1738	1752.6	18.1	15.8	30.0	-11.9

12.7. UMTS HSUPA

The following 5 Sub-tests were completed according to Release 6 procedures in section 5.2 of 3GPP TS34.121.

Summary of settings are illustrated below:

	Mode	HSPA				
	Subtest	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1				
	Rel99 RMC	12.2 kbps RMC				
	HSDPA FRC	H-Set 1				
	HSUPA Test	HSPA				
	Power Control Algorithm	Algorithm 2				Algorithm 1
	β_c	11/15	6/15	15/15	2/15	15/15
	β_d	15/15	15/15	9/15	15/15	0
	β_{ec}	209/225	12/15	30/15	2/15	5/15
	β_c/β_d	11/15	6/15	15/9	2/15	-
	β_{hs}	22/15	12/15	30/15	4/15	5/15
	β_{ed}	1309/225	94/75	47/15	56/75	47/15
	CM (dB)	1	3	2	3	1
	MPR (dB)	0	2	1	2	0
HSDPA Specific Settings	DACK	8				0
	DNAK	8				0
	DCQI	8				0
	Ack-Nack repetition factor	3				
	CQI Feedback (Table 5.2B.4)	4ms				
	CQI Repetition Factor (Table 5.2B.4)	2				
HSUPA Specific Settings	$A_{hs} = \beta_{hs}/\beta_c$	30/15				
	E-DPDCCH	6	8	8	5	0
	DHARQ	0	0	0	0	0
	AG Index	20	12	15	17	12
	ETFCI (from 34.121 Table C.11.1.3)	75	67	92	71	67
	Associated Max UL Data Rate kbps	242.1	174.9	482.8	205.8	308.9
	Reference E-TFCIs	5	5	2	5	1
	Reference E-TFCI	11	11	11	11	67
	Reference E-TFCI PO	4	4	4	4	18
	Reference E-TFCI	67	67	92	67	67
	Reference E-TFCI PO	18	18	18	18	18
	Reference E-TFCI	71	71	71	71	71
	Reference E-TFCI PO	23	23	23	23	23
	Reference E-TFCI	75	75	75	75	75
	Reference E-TFCI PO	26	26	26	26	26
	Reference E-TFCI	81	81	81	81	81
	Reference E-TFCI PO	27	27	27	27	27
	Maximum Channelization Codes	2xSF2				SF4

Note1: β_{ed} cannot be set directly, it is set by Absolute Grant Value.

RESULT

Tested By	Vanessa Moestopo
Date	7/8/2017

12.8. UMTS HSUPA OUTPUT POWER RESULT

Antenna gain Band 2 (dBi)	-1.50
Antenna gain Band 4 (dBi)	-2.30

Part 24 / RSS 133 1900MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Limit (dBm)	Margin (dB)
UMTS HSUPA 1900MHz	1	9262	9662	1852.4	17.3	15.8	33.0	-15.7
		9400	9800	1880.0	17.3	15.8	33.0	-15.7
		9538	9938	1907.6	17.2	15.7	33.0	-15.8
	2	9262	9662	1852.4	15.3	13.8	33.0	-17.7
		9400	9800	1880.0	15.3	13.8	33.0	-17.7
		9538	9938	1907.6	15.1	13.6	33.0	-17.9
	3	9262	9662	1852.4	16.4	14.9	33.0	-16.6
		9400	9800	1880.0	16.2	14.7	33.0	-16.8
		9538	9938	1907.6	16.2	14.7	33.0	-16.8
	4	9262	9662	1852.4	15.3	13.8	33.0	-17.7
		9400	9800	1880.0	15.3	13.8	33.0	-17.7
		9538	9938	1907.6	15.1	13.6	33.0	-17.9
	5	9262	9662	1852.4	17.3	15.8	33.0	-15.7
		9400	9800	1880.0	17.2	15.7	33.0	-15.8
		9538	9938	1907.6	17.0	15.5	33.0	-16.0

Part 27 / RSS 139 1700MHz Band

Band	Subtest	UL Channel	DL Channel	Frequency (MHz)	Conducted Average (dBm)	ERP Average (dBm)	ERP Limit (dBm)	Margin (dB)
UMTS HSUPA 1700MHz	1	1312	1537	1712.4	18.3	16.0	30.0	-11.7
		1413	1638	1732.6	18.6	16.3	30.0	-11.4
		1513	1738	1752.6	18.9	16.6	30.0	-11.1
	2	1312	1537	1712.4	16.5	14.2	30.0	-13.5
		1413	1638	1732.6	16.8	14.5	30.0	-13.2
		1513	1738	1752.6	16.9	14.6	30.0	-13.1
	3	1312	1537	1712.4	17.5	15.2	30.0	-12.5
		1413	1638	1732.6	17.7	15.4	30.0	-12.3
		1513	1738	1752.6	17.8	15.5	30.0	-12.2
	4	1312	1537	1712.4	16.5	14.2	30.0	-13.5
		1413	1638	1732.6	16.8	14.5	30.0	-13.2
		1513	1738	1752.6	16.9	14.6	30.0	-13.1
	5	1312	1537	1712.4	18.3	16.0	30.0	-11.7
		1413	1638	1732.6	18.6	16.3	30.0	-11.4
		1513	1738	1752.6	18.9	16.6	30.0	-11.1

12.9. LTE OUTPUT POWER RESULT

Note(s):

LTE Band 17 Measured Results

LTE Band 17 (Frequency range: 704-716) is covered by LTE Band 12 (Frequency range: 699-716MHz) no testing is necessary due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth and same modulations.

LTE Band 38 Measured Results

LTE Band 38 (Frequency range: 2570-2620 MHz) is covered by LTE Band 41 (Frequency range: 2496-2690 MHz) and no testing is necessary due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth and same modulations.

64QAM Measured Results

Measured QPSK, 16QAM & 64QAM Mode Output power and found that QPSK and 16QAM results was the worst case. All testing were performed using QPSK and 16QAM mode to represent the worst case mode.

Tested By	Vanessa Moestopo/Nathan Sousa
Date	7/6-8/2017

LTE Band 2

Antenna gain (dBi)		-1.50							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
1.4	18607	1850.7	QPSK	1	0	18.1	16.6	33.0	-16.5
				1	3	18.1	16.6	33.0	-16.4
				1	5	18.1	16.6	33.0	-16.4
				3	0	18.1	16.6	33.0	-16.4
				3	1	18.1	16.6	33.0	-16.4
				3	3	18.1	16.6	33.0	-16.4
				6	0	18.1	16.6	33.0	-16.4
			16QAM	1	0	17.6	16.1	33.0	-16.9
				1	3	17.7	16.2	33.0	-16.8
				1	5	17.6	16.1	33.0	-16.9
				3	0	17.8	16.3	33.0	-16.7
				3	1	17.9	16.4	33.0	-16.6
				3	3	17.9	16.4	33.0	-16.6
				6	0	17.8	16.3	33.0	-16.7
			64QAM	1	0	17.2	15.7	33.0	-17.3
				1	3	17.5	16.0	33.0	-17.0
				1	5	17.5	16.0	33.0	-17.0
				3	0	17.3	15.8	33.0	-17.2
				3	1	17.2	15.7	33.0	-17.3
				3	3	17.2	15.7	33.0	-17.3
				6	0	17.1	15.6	33.0	-17.4
1.4	18900	1880.0	QPSK	1	0	18.0	16.5	33.0	-16.5
				1	3	18.1	16.6	33.0	-16.4
				1	5	18.0	16.5	33.0	-16.5
				3	0	18.0	16.5	33.0	-16.5
				3	1	18.1	16.6	33.0	-16.4
				3	3	18.1	16.6	33.0	-16.4
				6	0	18.0	16.5	33.0	-16.5
			16QAM	1	0	17.9	16.4	33.0	-16.6
				1	3	17.9	16.4	33.0	-16.6
				1	5	17.9	16.4	33.0	-16.6
				3	0	17.8	16.3	33.0	-16.8
				3	1	17.8	16.3	33.0	-16.7
				3	3	17.8	16.3	33.0	-16.7
				6	0	17.5	16.0	33.0	-17.0
			64QAM	1	0	17.2	15.7	33.0	-17.3
				1	3	17.2	15.7	33.0	-17.3
				1	5	17.1	15.6	33.0	-17.4
				3	0	17.1	15.6	33.0	-17.4
				3	1	17.1	15.6	33.0	-17.4
				3	3	17.1	15.6	33.0	-17.4
				6	0	17.1	15.6	33.0	-17.4

Antenna gain (dBi)		-1.50							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
1.4	19193	1919.3	QPSK	1	0	18.0	16.5	33.0	-16.5
				1	8	18.1	16.6	33.0	-16.4
				1	14	18.0	16.5	33.0	-16.5
				3	0	18.0	16.5	33.0	-16.5
				3	4	18.1	16.6	33.0	-16.5
				3	7	18.1	16.6	33.0	-16.4
			16QAM	6	0	18.0	16.5	33.0	-16.5
				1	0	17.6	16.1	33.0	-16.9
				1	8	17.7	16.2	33.0	-16.9
				1	14	17.6	16.1	33.0	-16.9
				3	0	17.6	16.1	33.0	-16.9
				3	4	17.7	16.2	33.0	-16.8
				3	7	17.7	16.2	33.0	-16.8
			64QAM	6	0	17.7	16.2	33.0	-16.8
				1	0	17.3	15.8	33.0	-17.2
				1	8	17.4	15.9	33.0	-17.1
				1	14	17.4	15.9	33.0	-17.1
				3	0	17.1	15.6	33.0	-17.4
				3	4	17.2	15.7	33.0	-17.3
				3	7	17.2	15.7	33.0	-17.3
				6	0	17.2	15.7	33.0	-17.3

Antenna gain (dBi)		-1.50							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
3.0	18615	1851.5	QPSK	1	0	18.2	16.7	33.0	-16.4
				1	8	18.2	16.7	33.0	-16.3
				1	14	18.1	16.6	33.0	-16.4
				8	0	18.2	16.7	33.0	-16.3
				8	4	18.2	16.7	33.0	-16.3
				8	7	18.2	16.7	33.0	-16.3
				15	0	18.2	16.7	33.0	-16.3
			16QAM	1	0	17.8	16.3	33.0	-16.7
				1	8	17.8	16.3	33.0	-16.7
				1	14	17.7	16.2	33.0	-16.8
				8	0	17.8	16.3	33.0	-16.7
				8	4	17.8	16.3	33.0	-16.7
				8	7	17.8	16.3	33.0	-16.7
				15	0	17.7	16.2	33.0	-16.8
			64QAM	1	0	17.2	15.7	33.0	-17.3
				1	8	17.5	16.0	33.0	-17.0
				1	14	17.5	16.0	33.0	-17.0
				8	0	17.2	15.7	33.0	-17.3
				8	4	17.2	15.7	33.0	-17.3
				8	7	17.2	15.7	33.0	-17.3
				15	0	17.2	15.7	33.0	-17.3
3.0	18900	1880.0	QPSK	1	0	18.2	16.7	33.0	-16.3
				1	8	18.2	16.7	33.0	-16.3
				1	14	18.1	16.6	33.0	-16.4
				8	0	18.1	16.6	33.0	-16.4
				8	4	18.1	16.6	33.0	-16.4
				8	7	18.1	16.6	33.0	-16.4
				15	0	18.1	16.6	33.0	-16.4
			16QAM	1	0	18.0	16.5	33.0	-16.5
				1	8	18.1	16.6	33.0	-16.4
				1	14	18.0	16.5	33.0	-16.5
				8	0	17.7	16.2	33.0	-16.8
				8	4	17.7	16.2	33.0	-16.8
				8	7	17.7	16.2	33.0	-16.8
				15	0	17.7	16.2	33.0	-16.8
			64QAM	1	0	17.4	15.9	33.0	-17.1
				1	8	17.3	15.8	33.0	-17.2
				1	14	17.3	15.8	33.0	-17.2
				8	0	17.0	15.5	33.0	-17.5
				8	4	17.1	15.6	33.0	-17.4
				8	7	17.0	15.5	33.0	-17.5
				15	0	17.1	15.6	33.0	-17.4

Antenna gain (dBi)		-1.50							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
3.0	19185	1908.5	QPSK	1	0	18.1	16.6	33.0	-16.4
				1	8	18.2	16.7	33.0	-16.3
				1	14	18.1	16.6	33.0	-16.4
				8	0	18.2	16.7	33.0	-16.4
				8	4	18.2	16.7	33.0	-16.3
				8	7	18.2	16.7	33.0	-16.3
				15	0	18.2	16.7	33.0	-16.4
			16QAM	1	0	17.6	16.1	33.0	-17.0
				1	8	17.6	16.1	33.0	-16.9
				1	14	17.5	16.0	33.0	-17.0
				8	0	17.8	16.3	33.0	-16.7
				8	4	17.8	16.3	33.0	-16.7
				8	7	17.8	16.3	33.0	-16.7
				15	0	17.7	16.2	33.0	-16.8
			64QAM	1	0	17.4	15.9	33.0	-17.1
				1	8	17.4	15.9	33.0	-17.1
				1	14	17.4	15.9	33.0	-17.1
				8	0	17.1	15.6	33.0	-17.4
				8	4	17.2	15.7	33.0	-17.3
				8	7	17.1	15.6	33.0	-17.4
				15	0	17.1	15.6	33.0	-17.4

Antenna gain (dBi)		-1.50							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
5.0	625	1852.5	QPSK	1	0	18.3	16.8	33.0	-16.2
				1	12	18.2	16.7	33.0	-16.3
				1	24	18.1	16.6	33.0	-16.4
				12	0	18.2	16.7	33.0	-16.3
				12	7	18.2	16.7	33.0	-16.3
				12	13	18.2	16.7	33.0	-16.3
				25	0	18.2	16.7	33.0	-16.3
			16QAM	1	0	17.9	16.4	33.0	-16.6
				1	12	17.8	16.3	33.0	-16.7
				1	24	17.8	16.3	33.0	-16.8
				12	0	17.9	16.4	33.0	-16.6
				12	7	17.8	16.3	33.0	-16.7
				12	13	17.8	16.3	33.0	-16.7
				25	0	17.7	16.2	33.0	-16.8
			64QAM	1	0	17.7	16.2	33.0	-16.8
				1	12	17.5	16.0	33.0	-17.0
				1	24	17.5	16.0	33.0	-17.0
				12	0	17.3	15.8	33.0	-17.2
				12	7	17.2	15.7	33.0	-17.3
				12	13	17.2	15.7	33.0	-17.3
				25	0	17.2	15.7	33.0	-17.3
5.0	18900	1880.0	QPSK	1	0	18.2	16.7	33.0	-16.3
				1	12	18.1	16.6	33.0	-16.4
				1	24	18.1	16.6	33.0	-16.4
				12	0	18.1	16.6	33.0	-16.4
				12	7	18.1	16.6	33.0	-16.4
				12	13	18.1	16.6	33.0	-16.4
				25	0	18.1	16.6	33.0	-16.4
			16QAM	1	0	18.2	16.7	33.0	-16.3
				1	2	18.2	16.7	33.0	-16.4
				1	5	18.2	16.7	33.0	-16.3
				3	0	17.9	16.4	33.0	-16.6
				3	1	17.8	16.3	33.0	-16.7
				3	2	17.8	16.3	33.0	-16.7
				6	0	17.7	16.2	33.0	-16.8
			64QAM	1	0	17.5	16.0	33.0	-17.0
				1	12	17.5	16.0	33.0	-17.0
				1	24	17.5	16.0	33.0	-17.0
				12	0	17.2	15.7	33.0	-17.3
				12	7	17.1	15.6	33.0	-17.4
				12	13	17.1	15.6	33.0	-17.4
				25	0	17.1	15.6	33.0	-17.4

Antenna gain (dBi)		-1.50							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
5.0	19175	1907.5	QPSK	1	0	18.2	16.7	33.0	-16.3
				1	12	18.2	16.7	33.0	-16.4
				1	24	18.1	16.6	33.0	-16.4
				12	0	18.1	16.6	33.0	-16.4
				12	7	18.1	16.6	33.0	-16.4
				12	13	18.1	16.6	33.0	-16.4
				25	0	18.1	16.6	33.0	-16.4
			16QAM	1	0	17.9	16.4	33.0	-16.6
				1	12	17.8	16.3	33.0	-16.7
				1	24	17.8	16.3	33.0	-16.7
				12	0	17.8	16.3	33.0	-16.8
				12	7	17.7	16.2	33.0	-16.8
				12	13	17.7	16.2	33.0	-16.8
				25	0	17.7	16.2	33.0	-16.8
			64QAM	1	0	17.5	16.0	33.0	-17.0
				1	12	17.4	15.9	33.0	-17.1
				1	24	17.4	15.9	33.0	-17.1
				12	0	17.2	15.7	33.0	-17.3
				12	7	17.2	15.7	33.0	-17.3
				12	13	17.1	15.6	33.0	-17.4
				25	0	17.2	15.7	33.0	-17.3

Antenna gain (dBi)		-1.50							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
10.0	18650	1855.0	QPSK	1	0	18.4	16.9	33.0	-16.1
				1	25	18.1	16.6	33.0	-16.5
				1	49	18.3	16.8	33.0	-16.2
				25	0	18.3	16.8	33.0	-16.2
				25	12	18.2	16.7	33.0	-16.4
				25	25	18.1	16.6	33.0	-16.4
				50	0	18.2	16.7	33.0	-16.3
			16QAM	1	0	18.0	16.5	33.0	-16.5
				1	25	17.6	16.1	33.0	-16.9
				1	49	17.9	16.4	33.0	-16.6
				25	0	17.9	16.4	33.0	-16.6
				25	12	17.8	16.3	33.0	-16.7
				25	25	17.7	16.2	33.0	-16.8
				50	0	17.8	16.3	33.0	-16.7
			64QAM	1	0	17.9	16.4	33.0	-16.6
				1	25	17.6	16.1	33.0	-16.9
				1	49	17.5	16.0	33.0	-17.0
				25	0	17.1	15.6	33.0	-17.4
				25	12	17.2	15.7	33.0	-17.3
				25	25	17.0	15.5	33.0	-17.5
				50	0	17.1	15.6	33.0	-17.4
10.0	18900	1880.0	QPSK	1	0	18.4	16.9	33.0	-16.1
				1	25	18.1	16.6	33.0	-16.4
				1	49	18.3	16.8	33.0	-16.2
				25	0	18.2	16.7	33.0	-16.3
				25	12	18.1	16.6	33.0	-16.4
				25	25	18.1	16.6	33.0	-16.4
				50	0	18.2	16.7	33.0	-16.4
			16QAM	1	0	18.3	16.8	33.0	-16.2
				1	25	18.0	16.5	33.0	-16.5
				1	49	18.1	16.6	33.0	-16.4
				25	0	17.8	16.3	33.0	-16.7
				25	12	17.7	16.2	33.0	-16.8
				25	25	17.7	16.2	33.0	-16.8
				50	0	17.7	16.2	33.0	-16.8
			64QAM	1	0	17.7	16.2	33.0	-16.8
				1	25	17.5	16.0	33.0	-17.0
				1	49	17.5	16.0	33.0	-17.0
				25	0	17.3	15.8	33.0	-17.2
				25	12	17.1	15.6	33.0	-17.4
				25	25	17.1	15.6	33.0	-17.4
				50	0	17.1	15.6	33.0	-17.4

Antenna gain (dBi)		-1.50							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
10.0	19150	1905.0	QPSK	1	0	18.2	16.7	33.0	-16.3
				1	25	18.1	16.6	33.0	-16.4
				1	49	18.1	16.6	33.0	-16.5
				25	0	18.2	16.7	33.0	-16.3
				25	12	18.2	16.7	33.0	-16.3
				25	25	18.1	16.6	33.0	-16.4
				50	0	18.2	16.7	33.0	-16.4
			16QAM	1	0	17.7	16.2	33.0	-16.8
				1	25	17.5	16.0	33.0	-17.0
				1	49	17.5	16.0	33.0	-17.0
				25	0	17.8	16.3	33.0	-16.7
				25	12	17.7	16.2	33.0	-16.8
				25	25	17.7	16.2	33.0	-16.8
				50	0	17.7	16.2	33.0	-16.8
			64QAM	1	0	17.3	15.8	33.0	-17.2
				1	25	17.3	15.8	33.0	-17.2
				1	49	17.2	15.7	33.0	-17.3
				25	0	17.2	15.7	33.0	-17.3
				25	12	17.1	15.6	33.0	-17.4
				25	25	17.1	15.6	33.0	-17.4
				50	0	17.1	15.6	33.0	-17.4

Antenna gain (dBi)		-1.50							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
15.0	18675	1857.5	QPSK	1	0	18.4	16.9	33.0	-16.1
				1	37	18.1	16.6	33.0	-16.4
				1	74	18.1	16.6	33.0	-16.4
				36	0	18.2	16.7	33.0	-16.3
				36	20	18.2	16.7	33.0	-16.3
				36	39	18.2	16.7	33.0	-16.3
				75	0	18.2	16.7	33.0	-16.3
			16QAM	1	0	18.3	16.8	33.0	-16.2
				1	37	18.0	16.5	33.0	-16.5
				1	74	18.0	16.5	33.0	-16.5
				36	0	17.7	16.2	33.0	-16.8
				36	20	17.7	16.2	33.0	-16.8
				36	39	17.7	16.2	33.0	-16.8
				75	0	17.8	16.3	33.0	-16.7
			64QAM	1	0	17.6	16.1	33.0	-16.9
				1	37	17.4	15.9	33.0	-17.1
				1	74	17.5	16.0	33.0	-17.0
				36	0	17.3	15.8	33.0	-17.2
				36	20	17.2	15.7	33.0	-17.3
				36	39	17.2	15.7	33.0	-17.3
				75	0	17.2	15.7	33.0	-17.3
15.0	18900	1880.0	QPSK	1	0	18.3	16.8	33.0	-16.2
				1	37	18.2	16.7	33.0	-16.3
				1	74	18.1	16.6	33.0	-16.4
				36	0	18.2	16.7	33.0	-16.3
				36	20	18.2	16.7	33.0	-16.3
				36	39	18.1	16.6	33.0	-16.4
				75	0	18.2	16.7	33.0	-16.3
			16QAM	1	0	18.2	16.7	33.0	-16.3
				1	37	18.0	16.5	33.0	-16.5
				1	74	18.0	16.5	33.0	-16.5
				36	0	17.9	16.4	33.0	-16.6
				36	20	17.8	16.3	33.0	-16.7
				36	39	17.7	16.2	33.0	-16.8
				75	0	17.8	16.3	33.0	-16.8
			64QAM	1	0	17.5	16.0	33.0	-17.0
				1	37	17.4	15.9	33.0	-17.1
				1	74	17.2	15.7	33.0	-17.3
				36	0	17.2	15.7	33.0	-17.3
				36	20	17.1	15.6	33.0	-17.4
				36	39	17.1	15.6	33.0	-17.4
				75	0	17.1	15.6	33.0	-17.4

Antenna gain (dBi)		-1.50							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
15.0	19125	1902.5	QPSK	1	0	18.4	16.9	33.0	-16.1
				1	37	18.1	16.6	33.0	-16.4
				1	74	18.1	16.6	33.0	-16.4
				36	0	18.3	16.8	33.0	-16.2
				36	20	18.2	16.7	33.0	-16.3
				36	39	18.1	16.6	33.0	-16.4
				75	0	18.2	16.7	33.0	-16.3
			16QAM	1	0	17.8	16.3	33.0	-16.7
				1	37	17.6	16.1	33.0	-16.9
				1	74	17.5	16.0	33.0	-17.0
				36	0	17.8	16.3	33.0	-16.7
				36	20	17.8	16.3	33.0	-16.8
				36	39	17.7	16.2	33.0	-16.8
				75	0	17.7	16.2	33.0	-16.8
			64QAM	1	0	17.6	16.1	33.0	-16.9
				1	37	17.5	16.0	33.0	-17.0
				1	74	17.3	15.8	33.0	-17.2
				36	0	17.3	15.8	33.0	-17.2
				36	20	17.2	15.7	33.0	-17.3
				36	39	17.3	15.8	33.0	-17.2
				75	0	17.1	15.6	33.0	-17.4

Antenna gain (dBi)		-1.50							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
20.0	18700	1860.0	QPSK	1	0	18.5	17.0	33.0	-16.1
				1	49	18.1	16.6	33.0	-16.4
				1	99	18.0	16.5	33.0	-16.5
				50	0	18.3	16.8	33.0	-16.2
				50	24	18.2	16.7	33.0	-16.4
				50	50	18.1	16.6	33.0	-16.4
			16QAM	100	0	18.2	16.7	33.0	-16.3
				1	0	18.4	16.9	33.0	-16.1
				1	49	18.0	16.5	33.0	-16.5
				1	99	18.0	16.5	33.0	-16.5
				50	0	17.8	16.3	33.0	-16.7
				50	24	17.7	16.2	33.0	-16.8
				50	50	17.7	16.2	33.0	-16.9
				100	0	17.7	16.2	33.0	-16.8
			64QAM	1	0	17.5	16.0	33.0	-17.0
				1	49	17.3	15.8	33.0	-17.2
				1	99	17.4	15.9	33.0	-17.1
				50	0	17.1	15.6	33.0	-17.4
				50	24	17.2	15.7	33.0	-17.3
				50	50	17.1	15.6	33.0	-17.4
20.0	18900	1880.0	QPSK	100	0	17.1	15.6	33.0	-17.4
				1	0	18.4	16.9	33.0	-16.1
				1	49	18.1	16.6	33.0	-16.4
				1	99	18.2	16.7	33.0	-16.3
				50	0	18.3	16.8	33.0	-16.2
				50	24	18.2	16.7	33.0	-16.3
			16QAM	50	50	18.1	16.6	33.0	-16.4
				100	0	18.2	16.7	33.0	-16.3
				1	0	18.4	16.9	33.0	-16.1
				1	49	18.1	16.6	33.0	-16.4
				1	99	18.3	16.8	33.0	-16.2
				50	0	17.8	16.3	33.0	-16.7
			64QAM	50	24	17.8	16.3	33.0	-16.8
				50	50	17.7	16.2	33.0	-16.8
				100	0	17.8	16.3	33.0	-16.7
				1	0	17.8	16.3	33.0	-16.7
				1	49	17.0	15.5	33.0	-17.5
				1	99	17.6	16.1	33.0	-16.9
			64QAM	50	0	17.2	15.7	33.0	-17.3
				50	24	17.1	15.6	33.0	-17.4
				50	50	17.1	15.6	33.0	-17.4
				100	0	17.1	15.6	33.0	-17.4

Antenna gain (dBi)		-1.50							
Bandwidth	UL Channel	-1.5	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
20.0	19100	1900.0	QPSK	1	0	18.2	16.7	33.0	-16.3
				1	49	18.1	16.6	33.0	-16.4
				1	99	18.2	16.7	33.0	-16.3
				50	0	18.3	16.8	33.0	-16.2
				50	24	18.2	16.7	33.0	-16.3
				50	50	18.1	16.6	33.0	-16.4
				100	0	18.2	16.7	33.0	-16.3
			16QAM	1	0	18.4	16.9	33.0	-16.1
				1	49	18.1	16.6	33.0	-16.4
				1	99	18.3	16.8	33.0	-16.2
				50	0	17.8	16.3	33.0	-16.7
				50	24	17.8	16.3	33.0	-16.8
				50	50	17.7	16.2	33.0	-16.8
				100	0	17.8	16.3	33.0	-16.7
			64QAM	1	0	17.5	16.0	33.0	-17.0
				1	49	17.4	15.9	33.0	-17.1
				1	99	17.3	15.8	33.0	-17.2
				50	0	17.2	15.7	33.0	-17.3
				50	24	17.2	15.7	33.0	-17.3
				50	50	17.2	15.7	33.0	-17.3
				100	0	17.2	15.7	33.0	-17.3

LTE Band 4

Antenna gain (dBi)		-2.30							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
1.4	19957	1710.7	QPSK	1	0	19.7	17.4	33.0	-15.6
				1	3	19.8	17.5	33.0	-15.5
				1	5	19.7	17.4	33.0	-15.6
				3	0	19.7	17.4	33.0	-15.6
				3	1	19.8	17.5	33.0	-15.5
				3	3	19.8	17.5	33.0	-15.5
			16QAM	6	0	19.7	17.4	33.0	-15.6
				1	0	19.3	17.0	33.0	-16.1
				1	3	19.3	17.0	33.0	-16.0
				1	5	19.3	17.0	33.0	-16.1
				3	0	19.4	17.1	33.0	-15.9
				3	1	19.5	17.2	33.0	-15.8
				3	3	19.5	17.2	33.0	-15.8
				6	0	19.5	17.2	33.0	-15.9
			64QAM	1	0	18.9	16.6	33.0	-16.4
				1	3	19.0	16.7	33.0	-16.3
				1	5	18.9	16.6	33.0	-16.4
				3	0	18.9	16.6	33.0	-16.4
				3	1	18.8	16.5	33.0	-16.5
				3	3	18.8	16.5	33.0	-16.5
				6	0	18.7	16.4	33.0	-16.6
1.4	20175	1732.5	QPSK	1	0	19.8	17.5	33.0	-15.5
				1	3	19.9	17.6	33.0	-15.5
				1	5	19.8	17.5	33.0	-15.5
				3	0	19.8	17.5	33.0	-15.5
				3	1	19.9	17.6	33.0	-15.5
				3	3	19.8	17.5	33.0	-15.5
			16QAM	6	0	19.8	17.5	33.0	-15.5
				1	0	19.7	17.4	33.0	-15.6
				1	3	19.7	17.4	33.0	-15.6
				1	5	19.6	17.3	33.0	-15.7
				3	0	19.5	17.2	33.0	-15.8
				3	1	19.5	17.2	33.0	-15.8
				3	3	19.5	17.2	33.0	-15.8
				6	0	19.2	16.9	33.0	-16.1
			64QAM	1	0	19.0	16.7	33.0	-16.3
				1	3	19.2	16.9	33.0	-16.1
				1	5	19.2	16.9	33.0	-16.1
				3	0	18.9	16.6	33.0	-16.4
				3	1	18.8	16.5	33.0	-16.5
				3	3	18.9	16.6	33.0	-16.4
				6	0	18.8	16.5	33.0	-16.5

Antenna gain (dBi)		-2.30							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
1.4	20393	1754.3	QPSK	1	0	19.8	17.5	33.0	-15.5
				1	3	19.9	17.6	33.0	-15.5
				1	5	19.8	17.5	33.0	-15.5
				3	0	19.8	17.5	33.0	-15.5
				3	1	19.8	17.5	33.0	-15.5
				3	3	19.8	17.5	33.0	-15.5
				6	0	19.8	17.5	33.0	-15.5
			16QAM	1	0	19.4	17.1	33.0	-15.9
				1	3	19.5	17.2	33.0	-15.8
				1	5	19.4	17.1	33.0	-15.9
				3	0	19.4	17.1	33.0	-15.9
				3	1	19.4	17.1	33.0	-15.9
				3	3	19.4	17.1	33.0	-15.9
				6	0	19.4	17.1	33.0	-15.9
			64QAM	1	0	19.2	16.9	33.0	-16.1
				1	3	19.2	16.9	33.0	-16.1
				1	5	19.1	16.8	33.0	-16.2
				3	0	19.0	16.7	33.0	-16.3
				3	1	18.9	16.6	33.0	-16.4
				3	3	18.9	16.6	33.0	-16.4
				6	0	18.9	16.6	33.0	-16.4

Antenna gain (dBi)		-2.30							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
3.0	19965	1711.5	QPSK	1	0	19.8	17.5	33.0	-15.5
				1	8	19.8	17.5	33.0	-15.5
				1	14	19.7	17.4	33.0	-15.6
				8	0	19.9	17.6	33.0	-15.4
				8	4	19.9	17.6	33.0	-15.4
				8	7	19.7	17.4	33.0	-15.6
			16QAM	15	0	19.7	17.4	33.0	-15.6
				1	0	19.4	17.1	33.0	-15.9
				1	8	19.3	17.0	33.0	-16.0
				1	14	19.2	16.9	33.0	-16.1
				8	0	19.4	17.1	33.0	-15.9
				8	4	19.4	17.1	33.0	-15.9
				8	7	19.3	17.0	33.0	-16.0
				15	0	19.2	16.9	33.0	-16.1
			64QAM	1	0	18.9	16.6	33.0	-16.4
				1	8	18.8	16.5	33.0	-16.5
				1	14	18.8	16.5	33.0	-16.5
				8	0	18.8	16.5	33.0	-16.5
				8	4	18.8	16.5	33.0	-16.5
				8	7	18.7	16.4	33.0	-16.6
3.0	20175	1732.5	QPSK	15	0	18.7	16.4	33.0	-16.6
				1	0	20.0	17.7	33.0	-15.3
				1	8	20.0	17.7	33.0	-15.3
				1	14	20.0	17.7	33.0	-15.3
				8	0	20.1	17.8	33.0	-15.2
				8	4	20.1	17.8	33.0	-15.2
			16QAM	8	7	20.1	17.8	33.0	-15.2
				15	0	20.1	17.8	33.0	-15.2
				1	0	19.5	17.2	33.0	-15.8
				1	8	19.5	17.2	33.0	-15.8
				1	14	19.5	17.2	33.0	-15.8
				8	0	19.7	17.4	33.0	-15.6
				8	4	19.7	17.4	33.0	-15.6
				8	7	19.6	17.3	33.0	-15.7
				15	0	19.7	17.4	33.0	-15.6
			64QAM	1	0	18.6	16.3	33.0	-16.7
				1	8	18.5	16.2	33.0	-16.8
				1	14	18.5	16.2	33.0	-16.8
				8	0	18.7	16.4	33.0	-16.6
				8	4	18.8	16.5	33.0	-16.5
				8	7	18.7	16.4	33.0	-16.6
				15	0	18.7	16.4	33.0	-16.6

Antenna gain (dBi)		-2.30							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
3.0	20385	1753.5	QPSK	1	0	19.8	17.5	33.0	-15.5
				1	8	19.9	17.6	33.0	-15.4
				1	14	19.8	17.5	33.0	-15.5
				8	0	19.9	17.6	33.0	-15.5
				8	4	19.9	17.6	33.0	-15.5
				8	7	19.9	17.6	33.0	-15.5
				15	0	19.8	17.5	33.0	-15.5
			16QAM	1	0	19.3	17.0	33.0	-16.0
				1	8	19.4	17.1	33.0	-15.9
				1	14	19.2	16.9	33.0	-16.1
				8	0	19.5	17.2	33.0	-15.8
				8	4	19.5	17.2	33.0	-15.8
				8	7	19.5	17.2	33.0	-15.8
				15	0	19.4	17.1	33.0	-15.9
			64QAM	1	0	19.1	16.8	33.0	-16.2
				1	8	19.2	16.9	33.0	-16.1
				1	14	19.2	16.9	33.0	-16.1
				8	0	18.9	16.6	33.0	-16.4
				8	4	18.9	16.6	33.0	-16.4
				8	7	18.9	16.6	33.0	-16.4
				15	0	18.9	16.6	33.0	-16.4

Antenna gain (dBi)		-2.30							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
5.0	19975	1712.5	QPSK	1	0	20.0	17.7	33.0	-15.4
				1	12	19.8	17.5	33.0	-15.6
				1	24	19.7	17.4	33.0	-15.6
				12	0	19.9	17.6	33.0	-15.5
				12	7	19.8	17.5	33.0	-15.6
				12	13	19.7	17.4	33.0	-15.6
				25	0	19.7	17.4	33.0	-15.6
			16QAM	1	0	19.5	17.2	33.0	-15.8
				1	12	19.3	17.0	33.0	-16.0
				1	24	19.3	17.0	33.0	-16.0
				12	0	19.5	17.2	33.0	-15.9
				12	7	19.3	17.0	33.0	-16.0
				12	13	19.3	17.0	33.0	-16.0
				25	0	19.2	16.9	33.0	-16.1
			64QAM	1	0	19.0	16.7	33.0	-16.3
				1	12	18.8	16.5	33.0	-16.5
				1	24	18.8	16.5	33.0	-16.5
				12	0	18.7	16.4	33.0	-16.6
				12	7	18.6	16.3	33.0	-16.7
				12	13	18.6	16.3	33.0	-16.7
				25	0	18.5	16.2	33.0	-16.8
5.0	20175	1732.5	QPSK	1	0	19.9	17.6	33.0	-15.4
				1	12	19.8	17.5	33.0	-15.5
				1	24	19.9	17.6	33.0	-15.4
				12	0	19.9	17.6	33.0	-15.4
				12	7	19.9	17.6	33.0	-15.4
				12	13	19.8	17.5	33.0	-15.5
				25	0	19.9	17.6	33.0	-15.4
			16QAM	1	0	20.0	17.7	33.0	-15.3
				1	2	19.9	17.6	33.0	-15.4
				1	5	19.9	17.6	33.0	-15.4
				3	0	19.6	17.3	33.0	-15.7
				3	1	19.6	17.3	33.0	-15.7
				3	2	19.5	17.2	33.0	-15.8
				6	0	19.5	17.2	33.0	-15.9
			64QAM	1	0	19.0	16.7	33.0	-16.3
				1	12	19.0	16.7	33.0	-16.3
				1	24	18.9	16.6	33.0	-16.4
				12	0	18.7	16.4	33.0	-16.6
				12	7	18.7	16.4	33.0	-16.6
				12	13	18.7	16.4	33.0	-16.6
				25	0	18.6	16.3	33.0	-16.7

Antenna gain (dBi)		-2.30							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
5.0	20375	1752.5	QPSK	1	0	20.0	17.7	33.0	-15.3
				1	12	19.9	17.6	33.0	-15.4
				1	24	20.0	17.7	33.0	-15.3
				12	0	19.9	17.6	33.0	-15.5
				12	7	19.9	17.6	33.0	-15.4
				12	13	19.8	17.5	33.0	-15.5
				25	0	19.9	17.6	33.0	-15.5
			16QAM	1	0	19.6	17.3	33.0	-15.7
				1	12	19.5	17.2	33.0	-15.8
				1	24	19.5	17.2	33.0	-15.8
				12	0	19.5	17.2	33.0	-15.8
				12	7	19.5	17.2	33.0	-15.8
				12	13	19.5	17.2	33.0	-15.8
				25	0	19.4	17.1	33.0	-15.9
			64QAM	1	0	19.0	16.7	33.0	-16.3
				1	12	19.0	16.7	33.0	-16.3
				1	24	19.1	16.8	33.0	-16.2
				12	0	18.8	16.5	33.0	-16.5
				12	7	18.7	16.4	33.0	-16.6
				12	13	18.7	16.4	33.0	-16.6
				25	0	18.7	16.4	33.0	-16.6

Antenna gain (dBi)		-2.30							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
10.0	20000	1715.0	QPSK	1	0	19.9	17.6	33.0	-15.4
				1	25	19.7	17.4	33.0	-15.6
				1	49	19.6	17.3	33.0	-15.7
				25	0	19.8	17.5	33.0	-15.5
				25	12	19.8	17.5	33.0	-15.6
				25	25	19.7	17.4	33.0	-15.6
				50	0	19.8	17.5	33.0	-15.5
			16QAM	1	0	19.4	17.1	33.0	-15.9
				1	25	19.2	16.9	33.0	-16.1
				1	49	19.2	16.9	33.0	-16.1
				25	0	19.4	17.1	33.0	-15.9
				25	12	19.4	17.1	33.0	-15.9
				25	25	19.3	17.0	33.0	-16.0
				50	0	19.3	17.0	33.0	-16.0
			64QAM	1	0	19.2	16.9	33.0	-16.1
				1	25	18.9	16.6	33.0	-16.4
				1	49	18.9	16.6	33.0	-16.4
				25	0	18.6	16.3	33.0	-16.7
				25	12	18.5	16.2	33.0	-16.8
				25	25	18.5	16.2	33.0	-16.8
				50	0	18.5	16.2	33.0	-16.8
10.0	20175	1732.5	QPSK	1	0	20.0	17.7	33.0	-15.3
				1	25	19.8	17.5	33.0	-15.5
				1	49	19.8	17.5	33.0	-15.5
				25	0	19.9	17.6	33.0	-15.4
				25	12	19.9	17.6	33.0	-15.4
				25	25	19.8	17.5	33.0	-15.5
				50	0	19.9	17.6	33.0	-15.4
			16QAM	1	0	19.8	17.5	33.0	-15.5
				1	25	19.7	17.4	33.0	-15.6
				1	49	19.7	17.4	33.0	-15.6
				25	0	19.5	17.2	33.0	-15.8
				25	12	19.4	17.1	33.0	-15.9
				25	25	19.4	17.1	33.0	-15.9
				50	0	19.4	17.1	33.0	-15.9
			64QAM	1	0	19.0	16.7	33.0	-16.3
				1	25	18.8	16.5	33.0	-16.5
				1	49	18.8	16.5	33.0	-16.5
				25	0	18.6	16.3	33.0	-16.7
				25	12	18.7	16.4	33.0	-16.6
				25	25	18.7	16.4	33.0	-16.6
				50	0	18.7	16.4	33.0	-16.6

Antenna gain (dBi)		-2.30							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
10.0	20350	1750.0	QPSK	1	0	19.8	17.5	33.0	-15.5
				1	25	19.8	17.5	33.0	-15.5
				1	49	19.8	17.5	33.0	-15.5
				25	0	19.9	17.6	33.0	-15.4
				25	12	19.8	17.5	33.0	-15.5
				25	25	19.8	17.5	33.0	-15.5
				50	0	19.9	17.6	33.0	-15.5
			16QAM	1	0	19.3	17.0	33.0	-16.0
				1	25	19.3	17.0	33.0	-16.1
				1	49	19.2	16.9	33.0	-16.1
				25	0	19.5	17.2	33.0	-15.8
				25	12	19.4	17.1	33.0	-15.9
				25	25	19.4	17.1	33.0	-15.9
				50	0	19.4	17.1	33.0	-15.9
			64QAM	1	0	18.8	16.5	33.0	-16.5
				1	25	18.8	16.5	33.0	-16.5
				1	49	18.9	16.6	33.0	-16.4
				25	0	18.8	16.5	33.0	-16.5
				25	12	18.7	16.4	33.0	-16.6
				25	25	18.7	16.4	33.0	-16.6
				50	0	18.7	16.4	33.0	-16.6

Antenna gain (dBi)		-2.30							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
15.0	20025	1717.5	QPSK	1	0	20.0	17.7	33.0	-15.3
				1	37	19.8	17.5	33.0	-15.5
				1	74	19.8	17.5	33.0	-15.5
				36	0	19.9	17.6	33.0	-15.4
				36	20	19.9	17.6	33.0	-15.4
				36	39	19.8	17.5	33.0	-15.5
				75	0	19.8	17.5	33.0	-15.5
			16QAM	1	0	20.0	17.7	33.0	-15.3
				1	37	19.7	17.4	33.0	-15.6
				1	74	19.7	17.4	33.0	-15.7
				36	0	19.4	17.1	33.0	-15.9
				36	20	19.4	17.1	33.0	-16.0
				36	39	19.3	17.0	33.0	-16.0
				75	0	19.4	17.1	33.0	-15.9
			64QAM	1	0	19.3	17.0	33.0	-16.0
				1	37	19.1	16.8	33.0	-16.2
				1	74	19.0	16.7	33.0	-16.3
				36	0	18.7	16.4	33.0	-16.6
				36	20	18.7	16.4	33.0	-16.6
				36	39	18.7	16.4	33.0	-16.6
				75	0	18.7	16.4	33.0	-16.6
15.0	20175	1732.5	QPSK	1	0	20.0	17.7	33.0	-15.3
				1	37	19.8	17.5	33.0	-15.5
				1	74	19.9	17.6	33.0	-15.4
				36	0	19.9	17.6	33.0	-15.4
				36	20	19.9	17.6	33.0	-15.4
				36	39	19.9	17.6	33.0	-15.5
				75	0	19.9	17.6	33.0	-15.4
			16QAM	1	0	20.0	17.7	33.0	-15.3
				1	37	19.8	17.5	33.0	-15.5
				1	74	19.8	17.5	33.0	-15.5
				36	0	19.6	17.3	33.0	-15.8
				36	20	19.5	17.2	33.0	-15.8
				36	39	19.4	17.1	33.0	-15.9
				75	0	19.4	17.1	33.0	-15.9
			64QAM	1	0	19.2	16.9	33.0	-16.1
				1	37	19.0	16.7	33.0	-16.3
				1	74	19.0	16.7	33.0	-16.3
				36	0	18.8	16.5	33.0	-16.5
				36	20	18.7	16.4	33.0	-16.6
				36	39	18.7	16.4	33.0	-16.6
				75	0	18.7	16.4	33.0	-16.6

Antenna gain (dBi)		-2.30							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
15.0	20325	1747.5	QPSK	1	0	20.0	17.7	33.0	-15.4
				1	37	19.8	17.5	33.0	-15.5
				1	74	19.8	17.5	33.0	-15.5
				36	0	19.9	17.6	33.0	-15.4
				36	20	19.9	17.6	33.0	-15.4
				36	39	19.8	17.5	33.0	-15.5
				75	0	19.8	17.5	33.0	-15.5
			16QAM	1	0	19.4	17.1	33.0	-16.0
				1	37	19.3	17.0	33.0	-16.0
				1	74	19.3	17.0	33.0	-16.0
				36	0	19.4	17.1	33.0	-15.9
				36	20	19.4	17.1	33.0	-15.9
				36	39	19.4	17.1	33.0	-15.9
				75	0	19.3	17.0	33.0	-16.0
			64QAM	1	0	19.0	16.7	33.0	-16.3
				1	37	19.0	16.7	33.0	-16.3
				1	74	19.1	16.8	33.0	-16.2
				36	0	18.8	16.5	33.0	-16.5
				36	20	18.7	16.4	33.0	-16.6
				36	39	18.8	16.5	33.0	-16.5
				75	0	18.7	16.4	33.0	-16.6

Antenna gain (dBi)		-2.30							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
20.0	20175	1732.5	QPSK	1	0	20.0	17.7	33.0	-15.3
				1	12	19.8	17.5	33.0	-15.5
				1	24	19.9	17.6	33.0	-15.5
				12	0	20.0	17.7	33.0	-15.3
				12	7	19.9	17.6	33.0	-15.4
				12	13	19.8	17.5	33.0	-15.5
				25	0	19.9	17.6	33.0	-15.4
			16QAM	1	0	20.0	17.7	33.0	-15.3
				1	12	19.8	17.5	33.0	-15.5
				1	24	19.8	17.5	33.0	-15.5
				12	0	19.5	17.2	33.0	-15.8
				12	7	19.4	17.1	33.0	-15.9
				12	13	19.4	17.1	33.0	-15.9
				25	0	19.4	17.1	33.0	-15.9
			64QAM	1	0	19.2	16.9	33.0	-16.1
				1	12	19.0	16.7	33.0	-16.3
				1	24	18.9	16.6	33.0	-16.4
				12	0	18.8	16.5	33.0	-16.5
				12	7	18.8	16.5	33.0	-16.5
				12	13	18.7	16.4	33.0	-16.6
				25	0	18.7	16.4	33.0	-16.6

LTE Band 12

Antenna gain (dBi)		-7.90							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	ERP Average (dBm)	ERP Limit (dBm)	Margin (dB)
1.4	23017	699.7	QPSK	1	0	24.9	14.5	34.7	-20.2
				1	3	25.0	14.6	34.7	-20.1
				1	5	24.9	14.5	34.7	-20.2
				3	0	24.9	14.5	34.7	-20.2
				3	1	25.0	14.6	34.7	-20.1
				3	3	25.0	14.6	34.7	-20.1
				6	0	23.9	13.5	34.7	-21.2
			16QAM	1	0	24.0	13.6	34.7	-21.1
				1	3	24.0	13.6	34.7	-21.1
				1	5	24.0	13.6	34.7	-21.1
				3	0	24.0	13.6	34.7	-21.1
				3	1	24.0	13.6	34.7	-21.1
				3	3	24.0	13.6	34.7	-21.1
				6	0	23.0	12.6	34.7	-22.1
			64QAM	1	0	22.9	12.5	34.7	-22.2
				1	3	23.0	12.6	34.7	-22.1
				1	5	22.9	12.5	34.7	-22.2
				3	0	22.8	12.4	34.7	-22.3
				3	1	22.8	12.4	34.7	-22.3
				3	3	22.9	12.5	34.7	-22.2
				6	0	21.8	11.4	34.7	-23.3
1.4	23095	707.5	QPSK	1	0	24.9	14.5	34.7	-20.2
				1	3	25.0	14.6	34.7	-20.1
				1	5	24.9	14.5	34.7	-20.2
				3	0	24.9	14.5	34.7	-20.2
				3	1	25.0	14.6	34.7	-20.1
				3	3	25.0	14.6	34.7	-20.1
				6	0	23.9	13.5	34.7	-21.2
			16QAM	1	0	23.6	13.2	34.7	-21.5
				1	3	23.7	13.3	34.7	-21.4
				1	5	23.7	13.3	34.7	-21.4
				3	0	24.0	13.6	34.7	-21.1
				3	1	24.0	13.6	34.7	-21.1
				3	3	24.0	13.6	34.7	-21.1
				6	0	22.8	12.4	34.7	-22.3
			64QAM	1	0	22.5	12.1	34.7	-22.6
				1	3	23.0	12.6	34.7	-22.1
				1	5	22.6	12.2	34.7	-22.5
				3	0	22.7	12.3	34.7	-22.4
				3	1	23.0	12.6	34.7	-22.1
				3	3	23.0	12.6	34.7	-22.1
				6	0	21.7	11.3	34.7	-23.4

Antenna gain (dBi)		-7.90							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	ERP Average (dBm)	ERP Limit (dBm)	Margin (dB)
1.4	23173	715.3	QPSK	1	0	23.8	13.4	34.7	-21.3
				1	3	24.9	14.5	34.7	-20.2
				1	5	24.7	14.3	34.7	-20.4
				3	0	24.8	14.4	34.7	-20.3
				3	1	24.8	14.4	34.7	-20.3
				3	3	24.8	14.4	34.7	-20.3
			16QAM	6	0	23.8	13.4	34.7	-21.3
				1	0	23.9	13.5	34.7	-21.2
				1	3	23.9	13.5	34.7	-21.2
				1	5	23.8	13.4	34.7	-21.3
				3	0	23.9	13.5	34.7	-21.2
				3	1	24.0	13.6	34.7	-21.1
				3	3	24.0	13.6	34.7	-21.1
			64QAM	6	0	22.9	12.5	34.7	-22.2
				1	0	22.7	12.3	34.7	-22.4
				1	3	23.0	12.6	34.7	-22.1
				1	5	22.8	12.4	34.7	-22.3
				3	0	22.7	12.3	34.7	-22.4
				3	1	22.7	12.3	34.7	-22.4
				3	3	22.6	12.2	34.7	-22.5
				6	0	21.5	11.1	34.7	-23.6

Antenna gain (dBi)		-7.90							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	ERP Average (dBm)	ERP Limit (dBm)	Margin (dB)
3.0	23025	700.5	QPSK	1	0	24.3	13.9	34.7	-20.8
				1	8	24.3	13.9	34.7	-20.8
				1	14	24.2	13.8	34.7	-20.9
				8	0	24.0	13.6	34.7	-21.1
				8	4	24.0	13.6	34.7	-21.1
				8	7	24.0	13.6	34.7	-21.1
				15	0	24.0	13.6	34.7	-21.1
			16QAM	1	0	24.0	13.6	34.7	-21.1
				1	8	24.0	13.6	34.7	-21.1
				1	14	24.0	13.6	34.7	-21.1
				8	0	23.0	12.6	34.7	-22.1
				8	4	23.0	12.6	34.7	-22.1
				8	7	23.0	12.6	34.7	-22.1
				15	0	22.9	12.5	34.7	-22.2
			64QAM	1	0	23.0	12.6	34.7	-22.1
				1	8	23.0	12.6	34.7	-22.1
				1	14	22.8	12.4	34.7	-22.3
				8	0	21.8	11.4	34.7	-23.3
				8	4	21.7	11.3	34.7	-23.4
				8	7	21.7	11.3	34.7	-23.4
				15	0	21.7	11.3	34.7	-23.4
3.0	23095	707.5	QPSK	1	0	24.2	13.8	34.7	-20.9
				1	8	24.4	14.0	34.7	-20.7
				1	14	24.2	13.8	34.7	-20.9
				8	0	24.0	13.6	34.7	-21.1
				8	4	24.0	13.6	34.7	-21.1
				8	7	24.0	13.6	34.7	-21.1
				15	0	24.0	13.6	34.7	-21.1
			16QAM	1	0	23.7	13.3	34.7	-21.4
				1	8	23.8	13.4	34.7	-21.3
				1	14	23.8	13.4	34.7	-21.3
				8	0	23.0	12.6	34.7	-22.1
				8	4	23.0	12.6	34.7	-22.1
				8	7	23.0	12.6	34.7	-22.1
				15	0	23.0	12.6	34.7	-22.1
			64QAM	1	0	22.6	12.2	34.7	-22.5
				1	8	23.0	12.6	34.7	-22.1
				1	14	22.8	12.4	34.7	-22.3
				8	0	21.7	11.3	34.7	-23.4
				8	4	21.8	11.4	34.7	-23.3
				8	7	21.8	11.4	34.7	-23.3
				15	0	21.7	11.3	34.7	-23.4

Antenna gain (dBi)		-9.00							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	ERP Average (dBm)	ERP Limit (dBm)	Margin (dB)
3.0	23165	714.5	QPSK	1	0	24.2	12.7	34.7	-22.0
				1	8	24.2	12.7	34.7	-22.0
				1	14	24.1	12.6	34.7	-22.1
				8	0	23.9	12.4	34.7	-22.3
				8	4	23.9	12.4	34.7	-22.3
				8	7	23.9	12.4	34.7	-22.3
				15	0	23.9	12.4	34.7	-22.3
			16QAM	1	0	23.8	12.3	34.7	-22.4
				1	8	23.8	12.3	34.7	-22.4
				1	14	23.7	12.2	34.7	-22.5
				8	0	23.0	11.5	34.7	-23.2
				8	4	23.0	11.5	34.7	-23.2
				8	7	23.0	11.5	34.7	-23.2
				15	0	22.9	11.4	34.7	-23.3
			64QAM	1	0	22.6	11.1	34.7	-23.6
				1	8	22.6	11.1	34.7	-23.6
				1	14	22.7	11.2	34.7	-23.5
				8	0	21.8	10.3	34.7	-24.4
				8	4	21.6	10.1	34.7	-24.6
				8	7	21.6	10.1	34.7	-24.6
				15	0	21.5	10.0	34.7	-24.7

Antenna gain (dBi)		-7.90							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	ERP Average (dBm)	ERP Limit (dBm)	Margin (dB)
5.0	23035	701.5	QPSK	1	0	24.3	13.9	34.7	-20.8
				1	12	24.3	13.9	34.7	-20.8
				1	24	24.2	13.8	34.7	-20.9
				12	0	24.0	13.6	34.7	-21.1
				12	7	24.0	13.6	34.7	-21.1
				12	13	24.0	13.6	34.7	-21.1
				25	0	24.0	13.6	34.7	-21.1
			16QAM	1	0	23.8	13.4	34.7	-21.3
				1	12	23.9	13.5	34.7	-21.2
				1	24	23.8	13.4	34.7	-21.3
				12	0	23.0	12.6	34.7	-22.1
				12	7	23.0	12.6	34.7	-22.1
				12	13	23.0	12.6	34.7	-22.1
				25	0	23.0	12.6	34.7	-22.1
			64QAM	1	0	23.0	12.6	34.7	-22.1
				1	12	23.0	12.6	34.7	-22.1
				1	24	23.0	12.6	34.7	-22.1
				12	0	22.0	11.6	34.7	-23.1
				12	7	21.6	11.2	34.7	-23.5
				12	13	21.7	11.3	34.7	-23.4
				25	0	21.6	11.2	34.7	-23.5
5.0	23095	707.5	QPSK	1	0	24.3	13.9	34.7	-20.8
				1	12	24.3	13.9	34.7	-20.8
				1	24	24.2	13.8	34.7	-20.9
				12	0	24.0	13.6	34.7	-21.1
				12	7	24.0	13.6	34.7	-21.1
				12	13	24.0	13.6	34.7	-21.1
				25	0	24.0	13.6	34.7	-21.1
			16QAM	1	0	24.0	13.6	34.7	-21.1
				1	2	24.0	13.6	34.7	-21.1
				1	5	24.0	13.6	34.7	-21.1
				3	0	23.0	12.6	34.7	-22.1
				3	1	23.0	12.6	34.7	-22.1
				3	2	23.0	12.6	34.7	-22.1
				6	0	23.0	12.6	34.7	-22.1
			64QAM	1	0	22.4	12.0	34.7	-22.7
				1	12	22.6	12.2	34.7	-22.5
				1	24	22.4	12.0	34.7	-22.7
				12	0	21.7	11.3	34.7	-23.4
				12	7	21.7	11.3	34.7	-23.4
				12	13	21.6	11.2	34.7	-23.5
				25	0	21.6	11.2	34.7	-23.5

Antenna gain (dBi)		-7.90							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	ERP Average (dBm)	ERP Limit (dBm)	Margin (dB)
5.0	23155	713.5	QPSK	1	0	24.3	13.9	34.7	-20.8
				1	12	24.2	13.8	34.7	-20.9
				1	24	24.2	13.8	34.7	-20.9
				12	0	23.9	13.5	34.7	-21.2
				12	7	23.9	13.5	34.7	-21.2
				12	13	23.9	13.5	34.7	-21.2
				25	0	23.9	13.5	34.7	-21.2
			16QAM	1	0	24.0	13.6	34.7	-21.1
				1	12	24.0	13.6	34.7	-21.1
				1	24	24.0	13.6	34.7	-21.1
				12	0	23.0	12.6	34.7	-22.1
				12	7	23.0	12.6	34.7	-22.1
				12	13	22.9	12.5	34.7	-22.2
				25	0	22.9	12.5	34.7	-22.2
			64QAM	1	0	22.9	12.5	34.7	-22.2
				1	12	23.0	12.6	34.7	-22.1
				1	24	23.0	12.6	34.7	-22.1
				12	0	21.6	11.2	34.7	-23.5
				12	7	21.6	11.2	34.7	-23.5
				12	13	21.6	11.2	34.7	-23.5
				25	0	21.6	11.2	34.7	-23.5

Antenna gain (dBi)		-7.90							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	ERP Average (dBm)	ERP Limit (dBm)	Margin (dB)
10.0	23095	707.5	QPSK	1	0	24.3	13.9	34.7	-20.8
				1	25	24.3	13.9	34.7	-20.8
				1	49	24.2	13.8	34.7	-20.9
				25	0	23.9	13.5	34.7	-21.2
				25	12	24.0	13.6	34.7	-21.1
				25	25	23.8	13.4	34.7	-21.3
			16QAM	50	0	23.9	13.5	34.7	-21.2
				1	0	23.7	13.3	34.7	-21.4
				1	25	23.8	13.4	34.7	-21.3
				1	49	23.6	13.2	34.7	-21.5
				25	0	23.0	12.6	34.7	-22.1
				25	12	23.0	12.6	34.7	-22.1
				25	25	22.9	12.5	34.7	-22.2
				50	0	22.9	12.5	34.7	-22.2
			64QAM	1	0	22.8	12.4	34.7	-22.3
				1	25	22.9	12.5	34.7	-22.2
				1	49	22.8	12.4	34.7	-22.3
				25	0	21.5	11.1	34.7	-23.6
				25	12	21.7	11.3	34.7	-23.4
				25	25	21.5	11.1	34.7	-23.6
				50	0	21.6	11.2	34.7	-23.5

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Antenna gain (dBi)		-3.80							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
5.0	39675	2498.5	QPSK	1	0	23.8	20.0	33.0	-13.0
				1	12	23.7	19.9	33.0	-13.1
				1	24	23.7	19.9	33.0	-13.1
				12	0	23.8	20.0	33.0	-13.0
				12	7	23.8	20.0	33.0	-13.0
				12	13	23.7	19.9	33.0	-13.1
				25	0	23.8	20.0	33.0	-13.0
			16QAM	1	0	23.2	19.4	33.0	-13.6
				1	12	23.2	19.4	33.0	-13.6
				1	24	23.1	19.3	33.0	-13.7
				12	0	22.2	18.4	33.0	-14.6
				12	7	22.3	18.5	33.0	-14.6
				12	13	22.2	18.4	33.0	-14.6
				25	0	22.3	18.5	33.0	-14.6
			64QAM	1	0	21.7	17.9	33.0	-15.1
				1	12	21.8	18.0	33.0	-15.0
				1	24	21.7	17.9	33.0	-15.1
				12	0	20.7	16.9	33.0	-16.1
				12	7	20.7	16.9	33.0	-16.1
				12	13	20.7	16.9	33.0	-16.1
				25	0	20.7	16.9	33.0	-16.1
5.0	40620	2593.0	QPSK	1	0	23.9	20.1	33.0	-13.0
				1	12	23.8	20.0	33.0	-13.0
				1	24	23.7	19.9	33.0	-13.1
				12	0	23.8	20.0	33.0	-13.0
				12	7	23.9	20.1	33.0	-12.9
				12	13	23.8	20.0	33.0	-13.0
				25	0	23.8	20.0	33.0	-13.0
			16QAM	1	0	23.4	19.6	33.0	-13.4
				1	12	23.4	19.6	33.0	-13.4
				1	24	23.3	19.5	33.0	-13.5
				12	0	22.4	18.6	33.0	-14.4
				12	7	22.4	18.6	33.0	-14.4
				12	13	22.4	18.6	33.0	-14.5
				25	0	22.3	18.5	33.0	-14.5
			64QAM	1	0	22.3	18.5	33.0	-14.5
				1	12	22.0	18.2	33.0	-14.8
				1	24	21.9	18.1	33.0	-14.9
				12	0	20.9	17.1	33.0	-15.9
				12	7	20.9	17.1	33.0	-15.9
				12	13	20.8	17.0	33.0	-16.0
				25	0	20.9	17.1	33.0	-15.9

Antenna gain (dBi)		-3.80							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
5.0	41565	2687.5	QPSK	1	0	23.4	19.6	33.0	-13.4
				1	12	23.4	19.6	33.0	-13.4
				1	24	23.3	19.5	33.0	-13.5
				12	0	23.3	19.5	33.0	-13.5
				12	7	23.3	19.5	33.0	-13.5
				12	13	23.3	19.5	33.0	-13.5
				25	0	23.2	19.4	33.0	-13.6
			16QAM	1	0	23.3	19.5	33.0	-13.5
				1	12	23.3	19.5	33.0	-13.5
				1	24	23.2	19.4	33.0	-13.6
				12	0	22.4	18.6	33.0	-14.5
				12	7	22.3	18.5	33.0	-14.5
				12	13	22.3	18.5	33.0	-14.5
				25	0	22.3	18.5	33.0	-14.5
			64QAM	1	0	21.6	17.8	33.0	-15.2
				1	12	21.6	17.8	33.0	-15.2
				1	24	21.7	17.9	33.0	-15.1
				12	0	20.6	16.8	33.0	-16.2
				12	7	20.6	16.8	33.0	-16.2
				12	13	20.5	16.7	33.0	-16.3
				25	0	20.0	16.2	33.0	-16.8

Antenna gain (dBi)		-3.80										
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)			
10.0	39700	2501.0	QPSK	1	0	23.7	19.9	33.0	-13.2			
				1	25	23.6	19.8	33.0	-13.3			
				1	49	23.5	19.7	33.0	-13.3			
				25	0	23.7	19.9	33.0	-13.1			
				25	12	23.7	19.9	33.0	-13.1			
				25	25	23.6	19.8	33.0	-13.2			
			16QAM	50	0	23.6	19.8	33.0	-13.2			
				1	0	23.2	19.4	33.0	-13.7			
				1	25	23.1	19.3	33.0	-13.8			
				1	49	23.0	19.2	33.0	-13.8			
				25	0	22.2	18.4	33.0	-14.6			
				25	12	22.2	18.4	33.0	-14.6			
			64QAM	25	25	22.1	18.3	33.0	-14.7			
				50	0	22.2	18.4	33.0	-14.7			
				1	0	21.7	17.9	33.0	-15.1			
				1	25	21.8	18.0	33.0	-15.0			
				1	49	21.7	17.9	33.0	-15.1			
				25	0	20.7	16.9	33.0	-16.1			
			10.0	40620	2593.0	QPSK	25	12	20.7	16.9	33.0	-16.1
							25	25	20.7	16.9	33.0	-16.1
50	0	20.7					16.9	33.0	-16.1			
1	0	23.8					20.0	33.0	-13.0			
1	25	23.7					19.9	33.0	-13.1			
1	49	23.7					19.9	33.0	-13.1			
16QAM	25	0				23.9	20.1	33.0	-12.9			
	25	12				23.8	20.0	33.0	-13.0			
	25	25				23.8	20.0	33.0	-13.1			
	50	0				23.7	19.9	33.0	-13.1			
	1	0				23.4	19.6	33.0	-13.4			
	1	25				23.4	19.6	33.0	-13.4			
64QAM	1	49				23.3	19.5	33.0	-13.5			
	25	0				22.4	18.6	33.0	-14.4			
	25	12				22.3	18.5	33.0	-14.5			
	25	25				22.3	18.5	33.0	-14.5			
	50	0				22.3	18.5	33.0	-14.5			
	1	0				22.3	18.5	33.0	-14.5			
	1	25				22.0	18.2	33.0	-14.8			
	1	49				21.9	18.1	33.0	-14.9			
25	0	20.9	17.1	33.0	-15.9							
25	12	20.9	17.1	33.0	-15.9							
25	25	20.8	17.0	33.0	-16.0							
50	0	20.9	17.1	33.0	-15.9							

Antenna gain (dBi)		-3.80							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
10.0	41540	2685.0	QPSK	1	0	23.6	19.8	33.0	-13.2
				1	25	23.4	19.6	33.0	-13.4
				1	49	23.4	19.6	33.0	-13.4
				25	0	23.1	19.3	33.0	-13.7
				25	12	23.1	19.3	33.0	-13.7
				25	25	23.0	19.2	33.0	-13.8
				50	0	23.1	19.3	33.0	-13.7
			16QAM	1	0	23.0	19.2	33.0	-13.8
				1	25	23.0	19.2	33.0	-13.8
				1	49	22.9	19.1	33.0	-13.9
				25	0	22.1	18.3	33.0	-14.7
				25	12	22.1	18.3	33.0	-14.7
				25	25	22.1	18.3	33.0	-14.7
				50	0	22.1	18.3	33.0	-14.7
			64QAM	1	0	21.6	17.8	33.0	-15.2
				1	25	21.6	17.8	33.0	-15.2
				1	49	21.7	17.9	33.0	-15.1
				25	0	20.6	16.8	33.0	-16.2
				25	12	20.6	16.8	33.0	-16.2
				25	25	20.5	16.7	33.0	-16.3
				50	0	20.0	16.2	33.0	-16.8

Antenna gain (dBi)		-3.80							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
15.0	39725	2503.5	QPSK	1	0	23.8	20.0	33.0	-13.0
				1	37	23.6	19.8	33.0	-13.2
				1	74	23.6	19.8	33.0	-13.2
				36	0	23.6	19.8	33.0	-13.2
				36	20	23.7	19.9	33.0	-13.1
				36	39	23.6	19.8	33.0	-13.2
				75	0	23.4	19.6	33.0	-13.4
			16QAM	1	0	23.3	19.5	33.0	-13.5
				1	37	23.1	19.3	33.0	-13.7
				1	74	23.0	19.2	33.0	-13.8
				36	0	22.2	18.4	33.0	-14.6
				36	20	22.2	18.4	33.0	-14.7
				36	39	22.1	18.3	33.0	-14.7
				75	0	22.2	18.4	33.0	-14.7
			64QAM	1	0	21.7	17.9	33.0	-15.1
				1	37	21.8	18.0	33.0	-15.0
				1	74	21.7	17.9	33.0	-15.1
				36	0	20.7	16.9	33.0	-16.1
				36	20	20.7	16.9	33.0	-16.1
				36	39	20.7	16.9	33.0	-16.1
				75	0	20.7	16.9	33.0	-16.1
15.0	40620	2593.0	QPSK	1	0	23.9	20.1	33.0	-12.9
				1	37	23.8	20.0	33.0	-13.0
				1	74	23.7	19.9	33.0	-13.1
				36	0	23.8	20.0	33.0	-13.0
				36	20	23.8	20.0	33.0	-13.0
				36	39	23.8	20.0	33.0	-13.0
				75	0	23.7	19.9	33.0	-13.1
			16QAM	1	0	23.5	19.7	33.0	-13.3
				1	37	23.3	19.5	33.0	-13.5
				1	74	23.2	19.4	33.0	-13.6
				36	0	22.3	18.5	33.0	-14.5
				36	20	22.4	18.6	33.0	-14.4
				36	39	22.3	18.5	33.0	-14.5
				75	0	22.3	18.5	33.0	-14.5
			64QAM	1	0	22.3	18.5	33.0	-14.5
				1	37	22.0	18.2	33.0	-14.8
				1	74	21.9	18.1	33.0	-14.9
				36	0	20.9	17.1	33.0	-15.9
				36	20	20.9	17.1	33.0	-15.9
				36	39	20.8	17.0	33.0	-16.0
				75	0	20.9	17.1	33.0	-15.9

Antenna gain (dBi)		-3.80							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
15.0	41515	2682.5	QPSK	1	0	23.5	19.7	33.0	-13.3
				1	37	23.3	19.5	33.0	-13.5
				1	74	23.2	19.4	33.0	-13.6
				36	0	23.2	19.4	33.0	-13.6
				36	20	23.2	19.4	33.0	-13.6
				36	39	23.1	19.3	33.0	-13.7
				75	0	22.8	19.0	33.0	-14.0
			16QAM	1	0	23.2	19.4	33.0	-13.6
				1	37	22.9	19.1	33.0	-13.9
				1	74	23.0	19.2	33.0	-13.8
				36	0	22.3	18.5	33.0	-14.5
				36	20	22.2	18.4	33.0	-14.7
				36	39	22.1	18.3	33.0	-14.7
				75	0	22.0	18.2	33.0	-14.8
			64QAM	1	0	21.6	17.8	33.0	-15.2
				1	37	21.6	17.8	33.0	-15.2
				1	74	21.7	17.9	33.0	-15.1
				36	0	20.6	16.8	33.0	-16.2
				36	20	20.6	16.8	33.0	-16.2
				36	39	20.5	16.7	33.0	-16.3
				75	0	20.0	16.2	33.0	-16.8

Antenna gain (dBi)		-3.80							
Bandwidth	UL Channel	Frequency (MHz)	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
20.0	39750	2506.0	QPSK	1	0	23.8	20.0	33.0	-13.0
				1	49	23.6	19.8	33.0	-13.2
				1	99	23.5	19.7	33.0	-13.3
				50	0	23.6	19.8	33.0	-13.2
				50	24	23.6	19.8	33.0	-13.2
				50	50	23.5	19.7	33.0	-13.3
			16QAM	100	0	23.4	19.6	33.0	-13.4
				1	0	23.1	19.3	33.0	-13.7
				1	49	22.9	19.1	33.0	-13.9
				1	99	22.8	19.0	33.0	-14.0
				50	0	22.2	18.4	33.0	-14.6
				50	24	22.1	18.3	33.0	-14.7
				50	50	22.0	18.2	33.0	-14.8
			64QAM	100	0	22.1	18.3	33.0	-14.7
				1	0	21.7	17.9	33.0	-15.1
				1	49	21.8	18.0	33.0	-15.0
				1	99	21.7	17.9	33.0	-15.1
				50	0	20.7	16.9	33.0	-16.1
				50	24	20.7	16.9	33.0	-16.1
				50	50	20.7	16.9	33.0	-16.1
				100	0	20.7	16.9	33.0	-16.1
20.0	40620	2593.0	QPSK	1	0	23.9	20.1	33.0	-12.9
				1	49	23.7	19.9	33.0	-13.1
				1	99	23.6	19.8	33.0	-13.2
				50	0	23.8	20.0	33.0	-13.0
				50	24	23.8	20.0	33.0	-13.0
				50	50	23.7	19.9	33.0	-13.1
			16QAM	100	0	23.7	19.9	33.0	-13.1
				1	0	23.4	19.6	33.0	-13.4
				1	49	23.2	19.4	33.0	-13.6
				1	99	23.1	19.3	33.0	-13.7
				50	0	22.3	18.5	33.0	-14.5
				50	24	22.3	18.5	33.0	-14.6
				50	50	22.2	18.4	33.0	-14.7
			64QAM	100	0	22.3	18.5	33.0	-14.5
				1	0	22.3	18.5	33.0	-14.5
				1	49	22.0	18.2	33.0	-14.8
				1	99	21.9	18.1	33.0	-14.9
				50	0	20.9	17.1	33.0	-15.9
				50	24	20.9	17.1	33.0	-15.9
				50	50	20.8	17.0	33.0	-16.0
				100	0	20.9	17.1	33.0	-15.9

Antenna gain (dBi)		-3.80							
Bandwidth	UL Channel	-1.5	Modulation	RB Size	RB Offset	Conducted Average (dBm)	EIRP Average (dBm)	EIRP Limit (dBm)	Margin (dB)
20.0	41490	2680.0	QPSK	1	0	23.8	20.0	33.0	-13.0
				1	49	23.6	19.8	33.0	-13.2
				1	99	23.4	19.6	33.0	-13.4
				50	0	23.7	19.9	33.0	-13.2
				50	24	23.6	19.8	33.0	-13.2
				50	50	23.4	19.6	33.0	-13.4
				100	0	23.3	19.5	33.0	-13.5
			16QAM	1	0	23.5	19.7	33.0	-13.3
				1	49	23.2	19.4	33.0	-13.6
				1	99	22.9	19.1	33.0	-13.9
				50	0	22.2	18.4	33.0	-14.6
				50	24	22.2	18.4	33.0	-14.6
				50	50	22.0	18.2	33.0	-14.8
				100	0	22.1	18.3	33.0	-14.7
			64QAM	1	0	21.4	17.6	33.0	-15.4
				1	49	21.3	17.5	33.0	-15.5
				1	99	21.1	17.3	33.0	-15.7
				50	0	20.3	16.5	33.0	-16.5
				50	24	20.3	16.5	33.0	-16.5
				50	50	20.2	16.4	33.0	-16.6
				100	0	20.2	16.4	33.0	-16.6

13. PEAK TO AVERAGE RATIO

TEST PROCEDURE

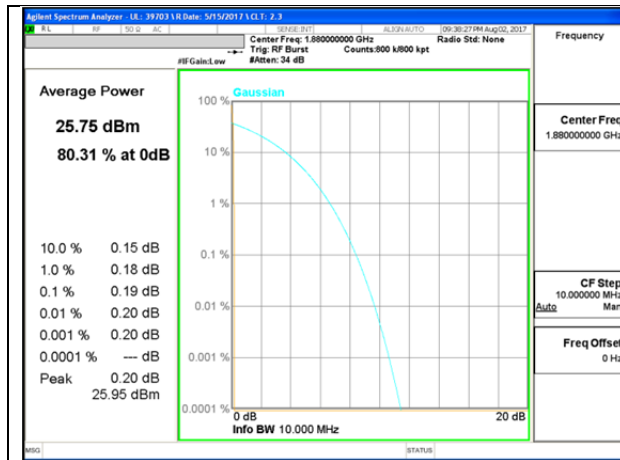
Per KDB 971168 D01 Power Meas License Digital Systems v02r02

TEST SPEC

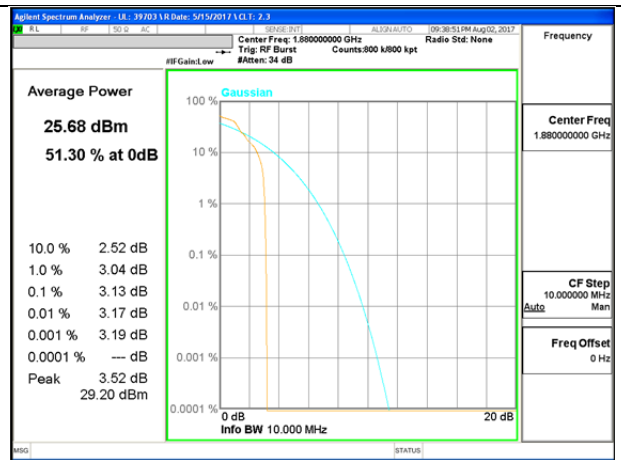
In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13 dB.

13.1. CONDUCTED PEAK TO AVERAGE RESULT

GSM

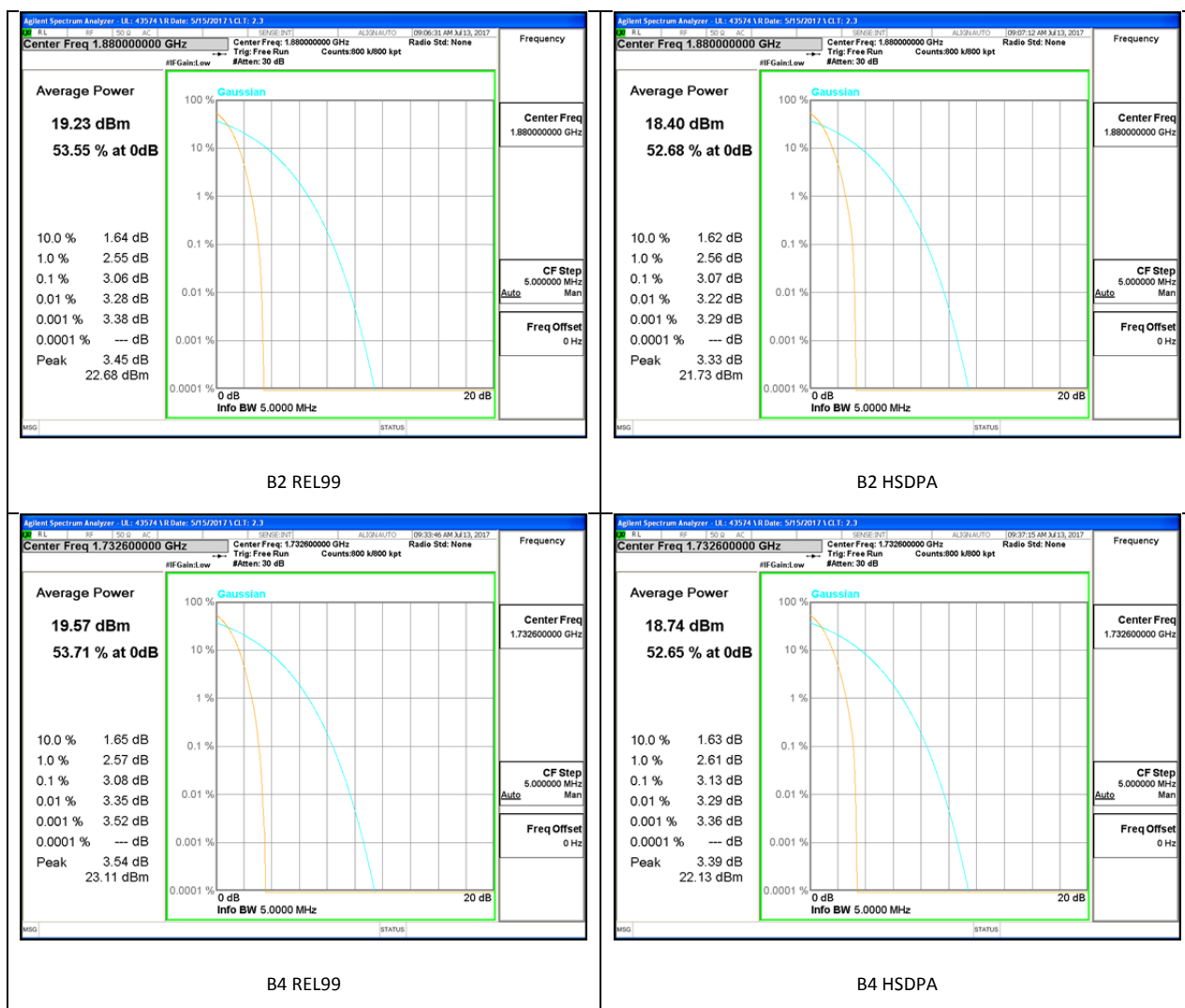


GSM1900 GPRS Middle Channel

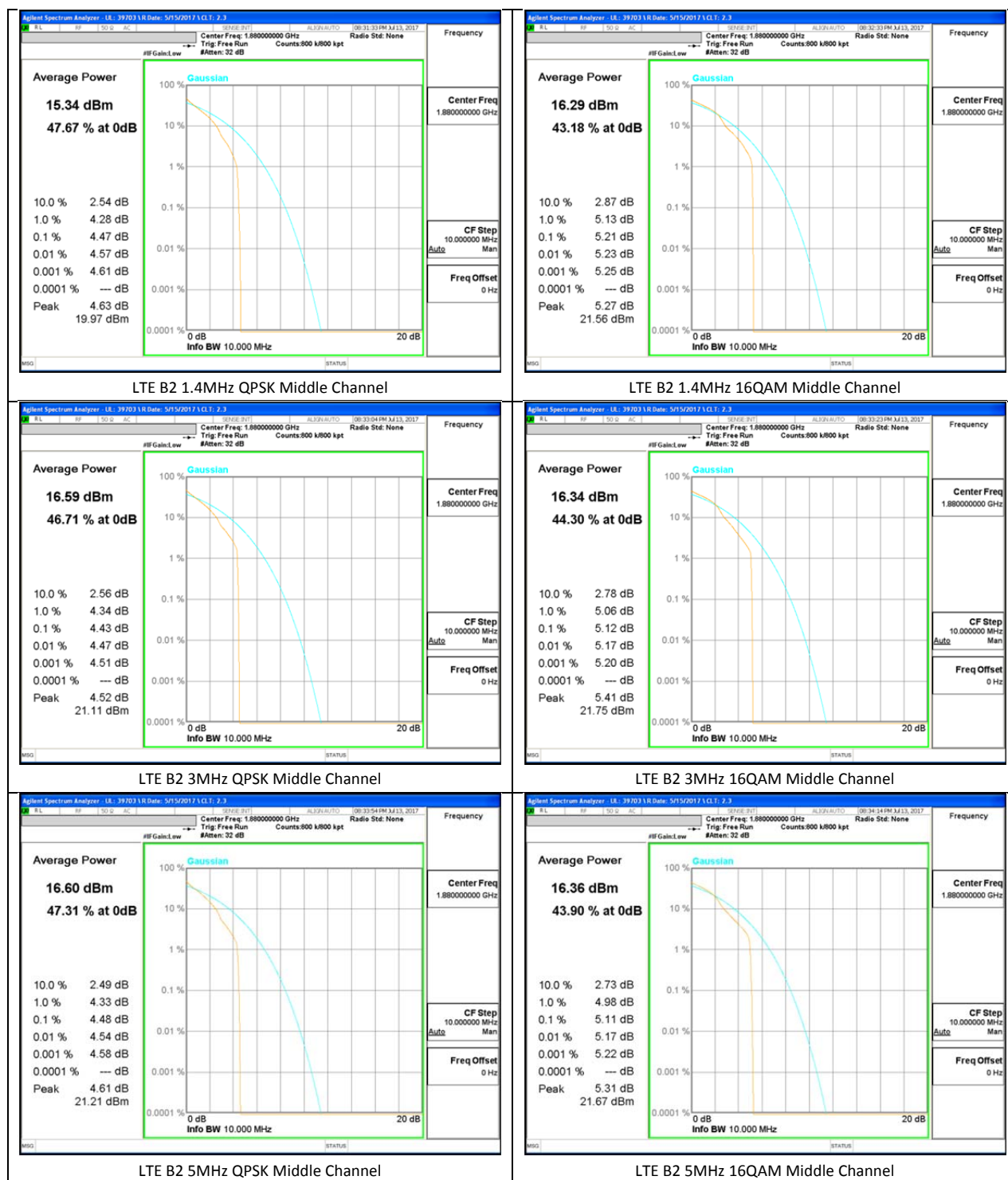


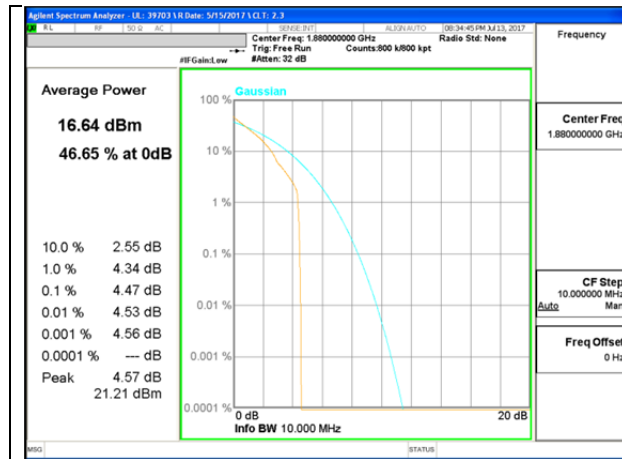
GSM1900 EGPRS Middle Channel

WCDMA

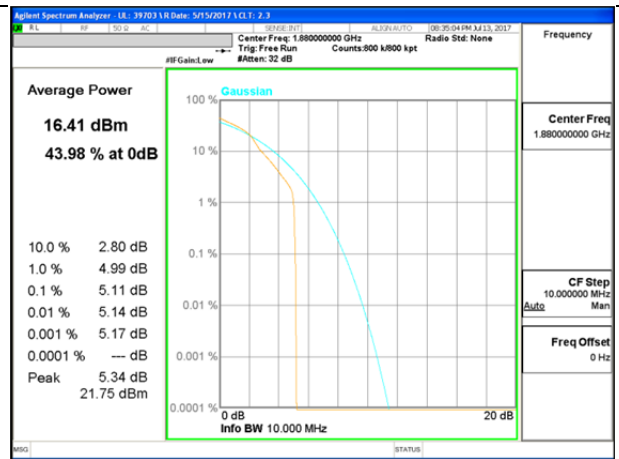


LTE Band 2

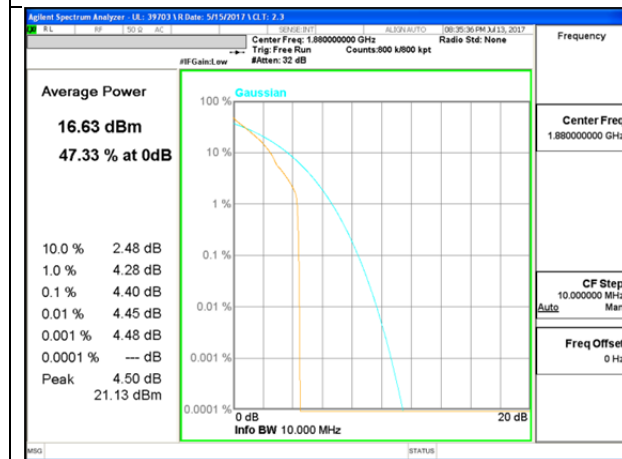




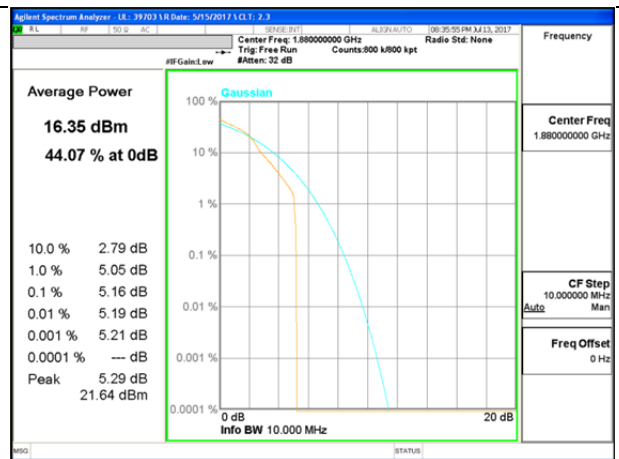
LTE B2 10MHz QPSK Middle Channel



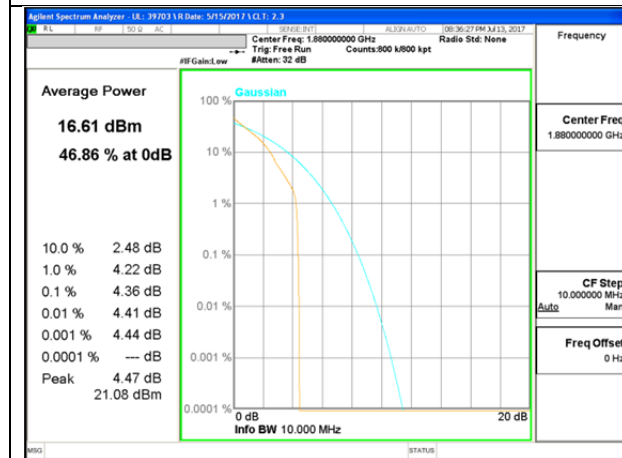
LTE B2 10MHz 16QAM Middle Channel



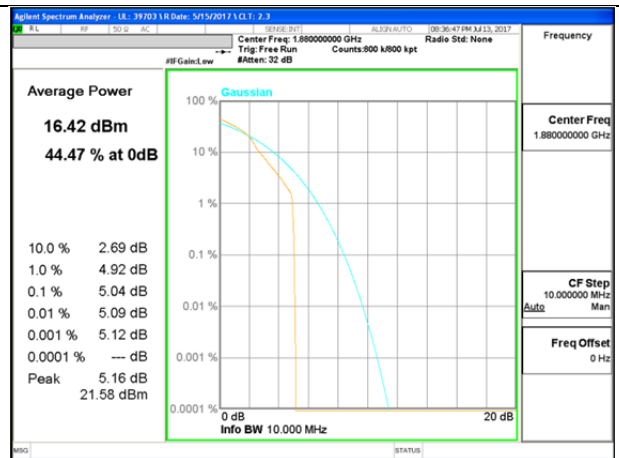
LTE B2 15MHz QPSK Middle Channel



LTE B2 15MHz 16QAM Middle Channel

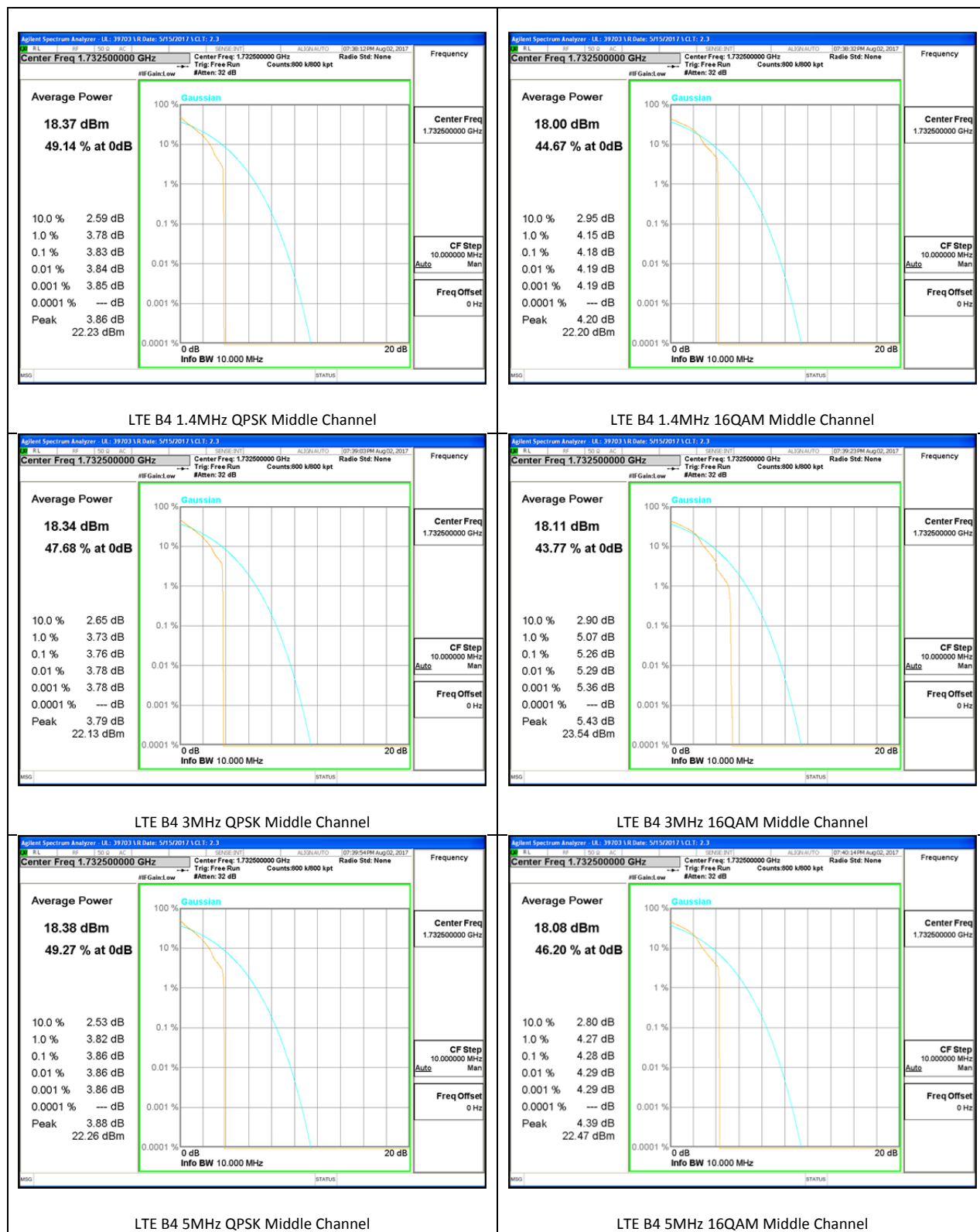


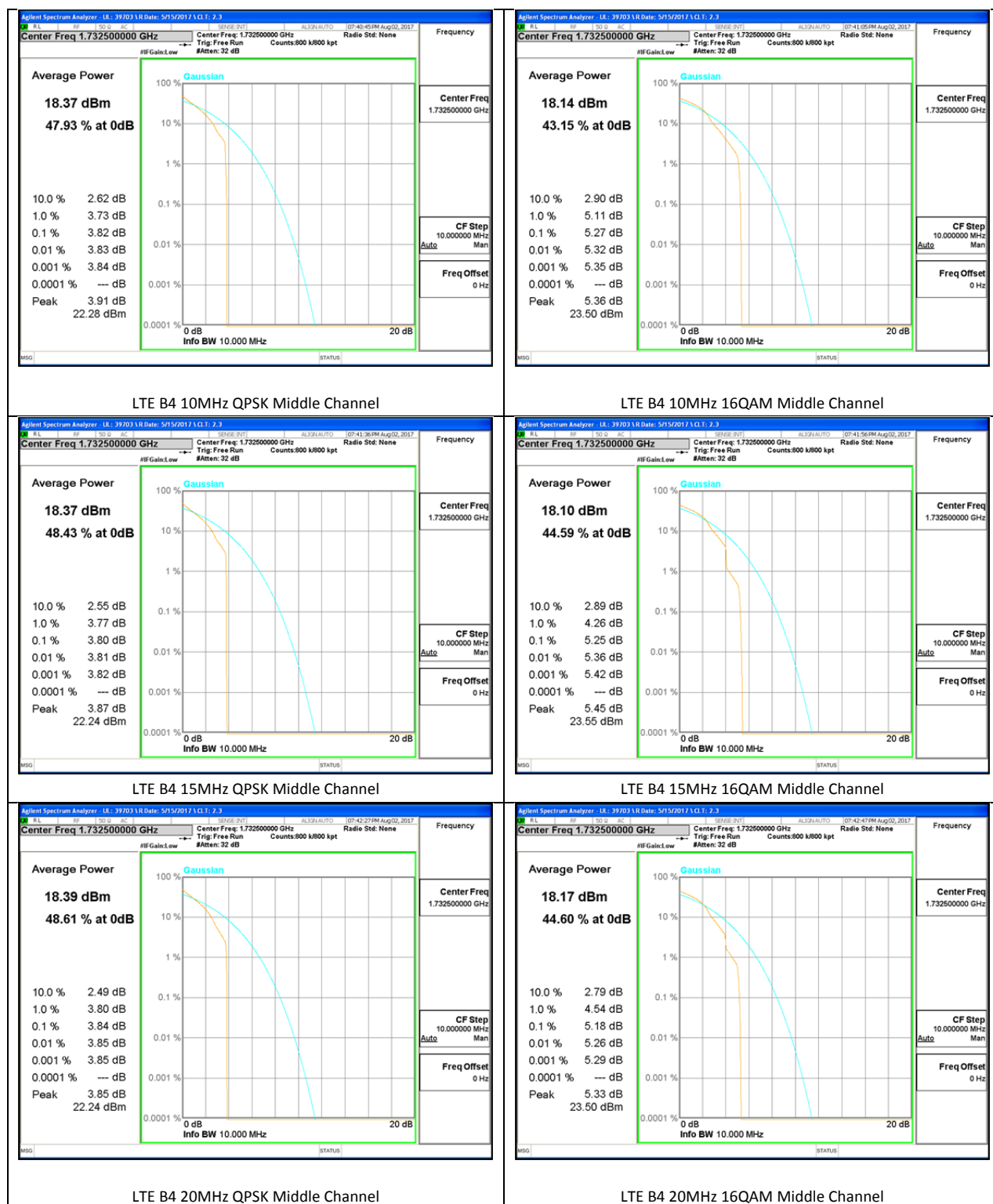
LTE B2 20MHz QPSK Middle Channel



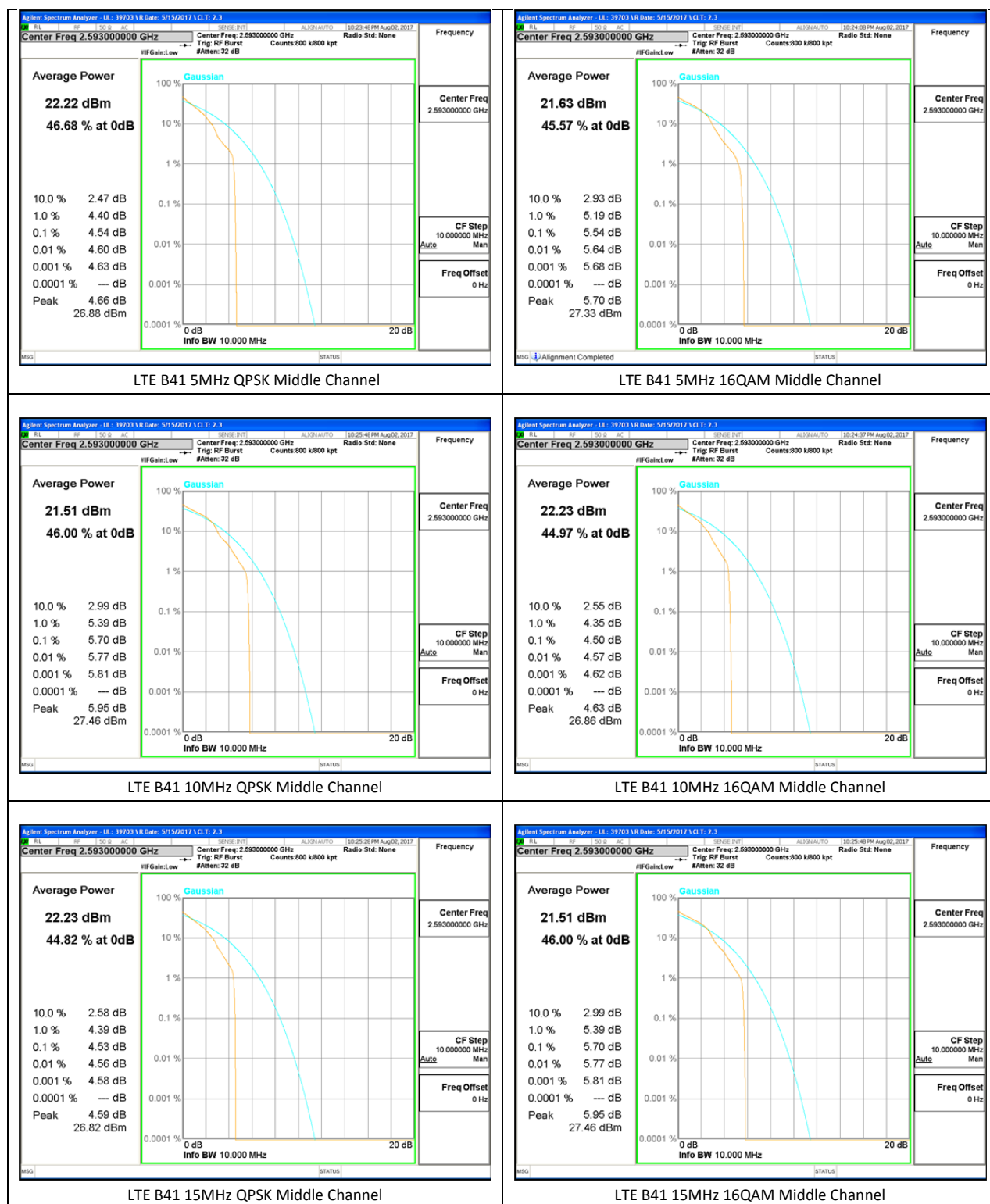
LTE B2 20MHz 16QAM Middle Channel

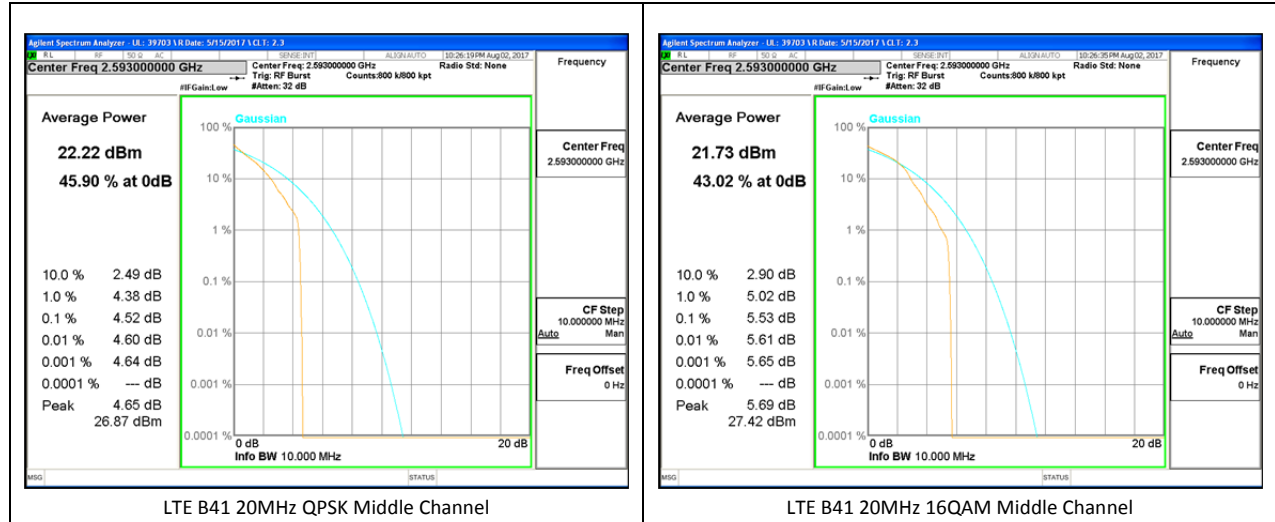
LTE Band 4





LTE Band 41





14. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

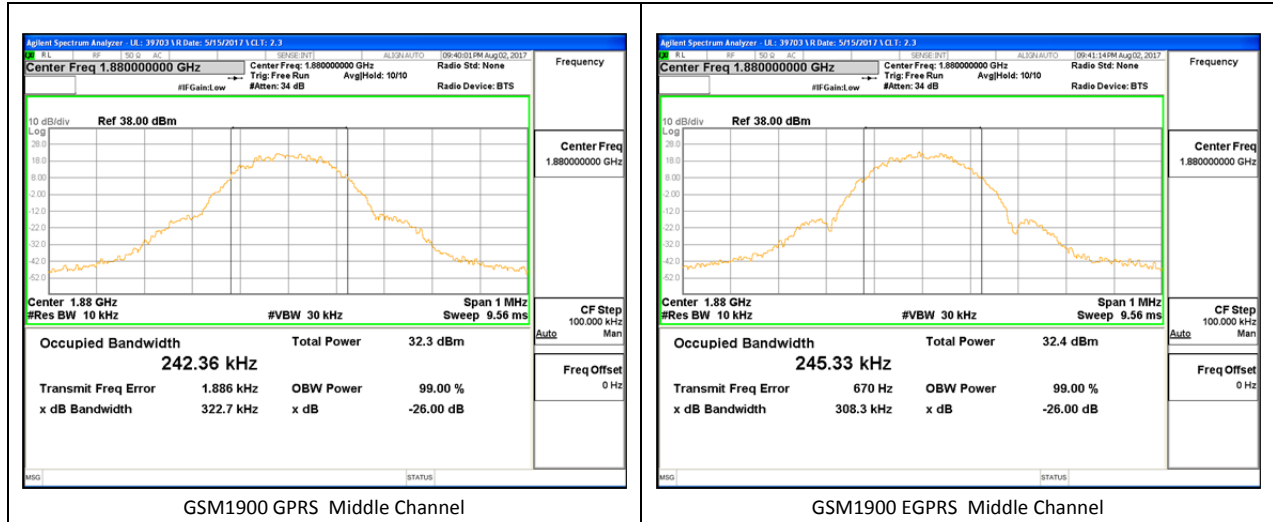
The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The -26dB bandwidth was also measured and recorded.

(KDB 971168 D01 Power Meas License Digital Systems v02r02)

14.1. OCCUPIED BANDWIDTH RESULTS AND PLOTS

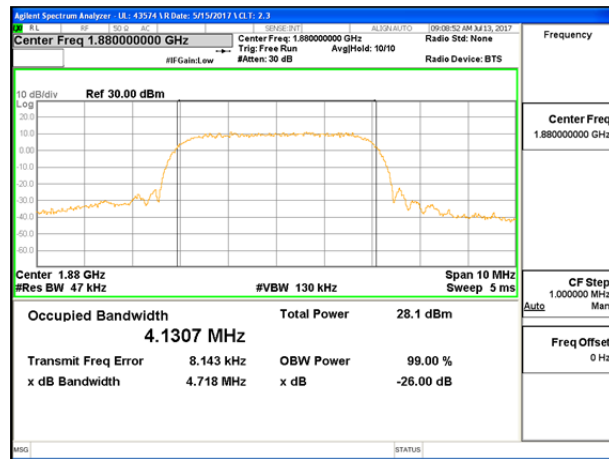
GSM

Band	Mode	Channel	f (MHz)	99% BW (kHz)	-26dB (kHz)
GSM 1900	GPRS	512	1850.2	245.4	314.2
		661	1880	242.4	322.7
		810	1909.8	246.9	311.7
	EGPRS	512	1850.2	239.9	318
		661	1880	245.3	308.3
		810	1909.8	244.9	308.6

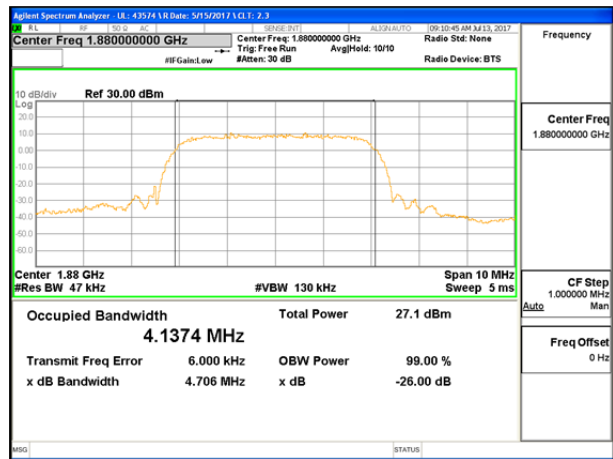


WCDMA

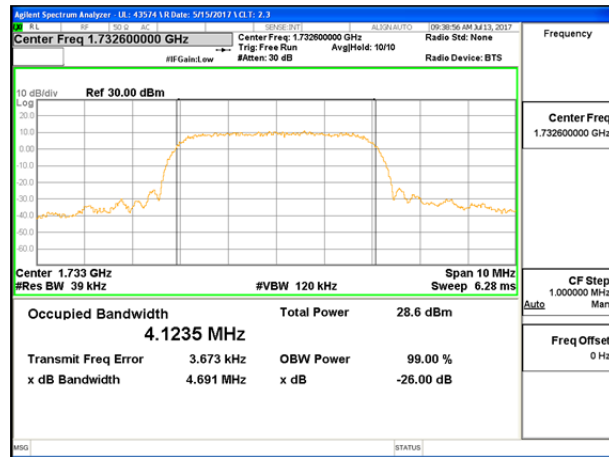
Band	Mode	Channel	f (MHz)	99% BW (MHz)	-26dB (MHz)
Band 2	REL99	9262	1852.4	4.126	4.697
		9400	1880	4.131	4.718
		9538	1907.6	4.116	4.692
	HSDPA	9262	1852.4	4.127	4.699
		9400	1880	4.137	4.706
		9538	1907.6	4.134	4.689
Band 4	REL99	9262	1712.4	4.119	4.698
		9400	1732.6	4.124	4.691
		9538	1752.6	4.122	4.674
	HSDPA	9262	1712.4	4.145	4.696
		9400	1732.6	4.138	4.686
		9538	1752.6	4.14	4.691



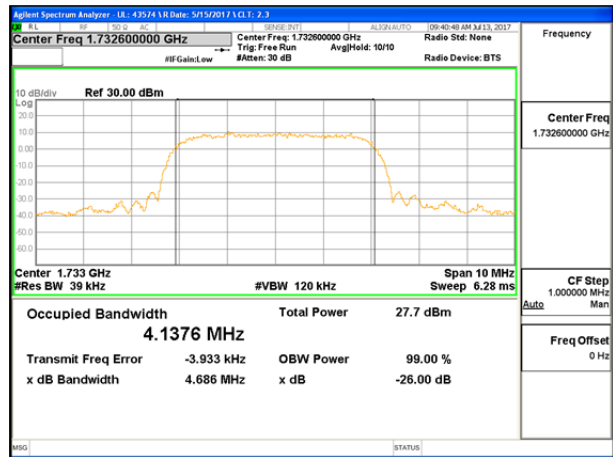
B2 REL99 Middle Channel



B2 HSDPA Middle Channel



B4 REL99 Middle Channel

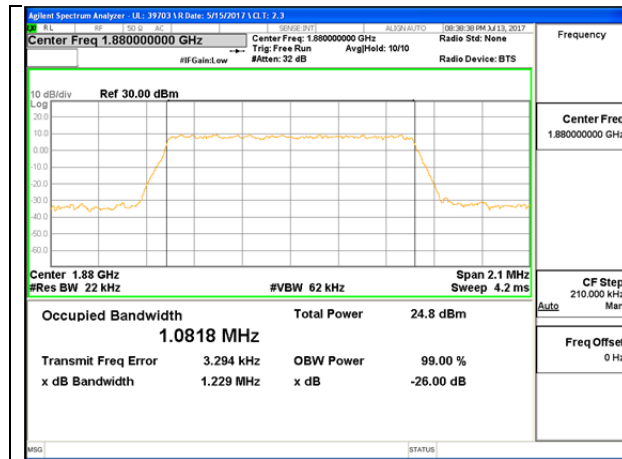


B4 HSDPA Middle Channel

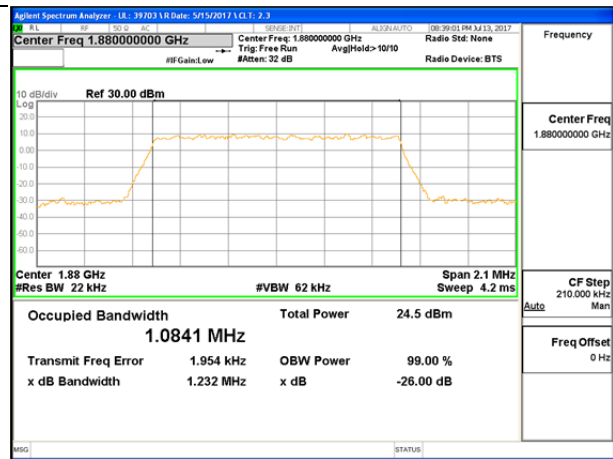
LTE Band 2

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE2	1.4	QPSK	6/0	1850.7	1.1	1.25
			6/0	1880	1.08	1.23
			6/0	1909.3	1.09	1.23
		16QAM	6/0	1850.7	1.08	1.24
			6/0	1880	1.08	1.23
			6/0	1909.3	1.09	1.24
	3	QPSK	15/0	1851.5	2.7	3.0
			15/0	1880	2.7	3.0
			15/0	1908.5	2.7	2.98
		16QAM	15/0	1851.5	2.7	3.01
			15/0	1880	2.7	3.0
			15/0	1908.5	2.69	3.0
	5	QPSK	25/0	1852.5	4.52	4.92
			25/0	1880	4.49	4.95
			25/0	1907.5	4.5	4.93
		16QAM	25/0	1852.5	4.5	4.98
			25/0	1880	4.49	4.94
			25/0	1907.5	4.48	4.91
	10	QPSK	50/0	1855	8.96	9.8
			50/0	1880	8.97	9.77
			50/0	1905	8.98	9.74
		16QAM	50/0	1855	8.96	9.72
			50/0	1880	8.94	9.72
			50/0	1905	8.98	9.79

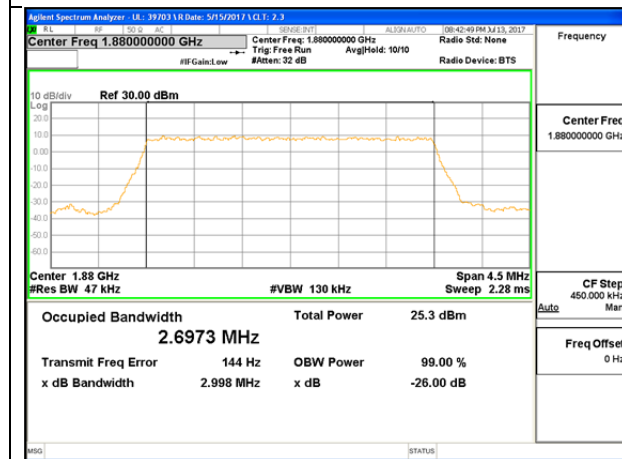
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE2	15	QPSK	75/0	1857.5	13.41	14.56
			75/0	1880	13.42	14.59
			75/0	1902.5	13.42	14.55
		16QAM	75/0	1857.5	13.43	14.56
			75/0	1880	13.45	14.46
			75/0	1902.5	13.44	14.5
	20	QPSK	100/0	1860	17.9	19.31
			100/0	1880	17.9	19.22
			100/0	1900	17.87	19.28
		16QAM	100/0	1860	17.9	19.34
			100/0	1880	17.88	19.33
			100/0	1900	17.88	19.3



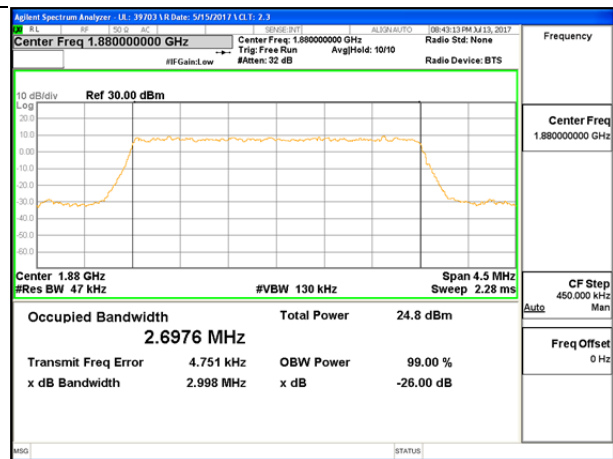
LTE B2 1.4MHz QPSK Middle Channel



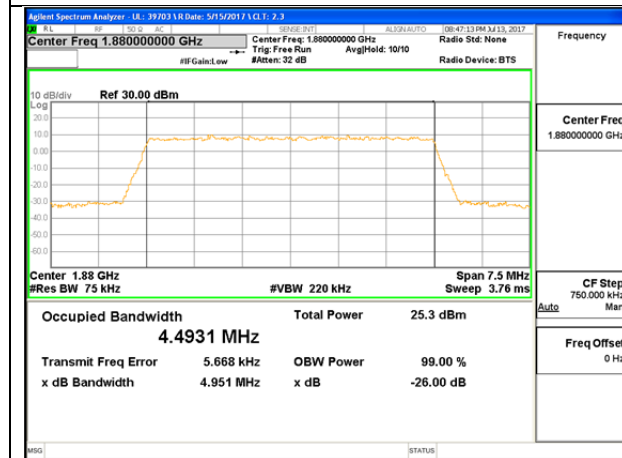
LTE B2 1.4MHz 16QAM Middle Channel



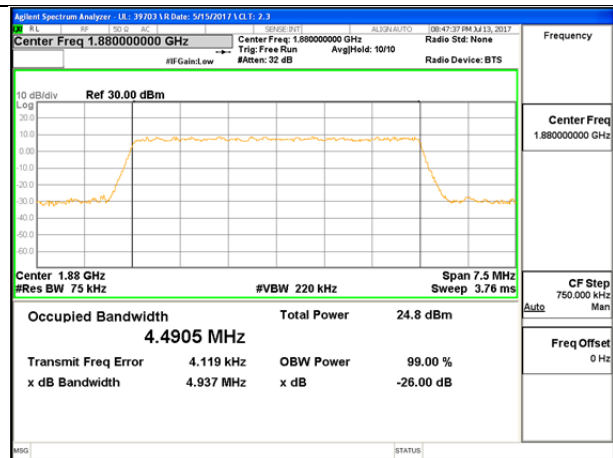
LTE B2 3MHz QPSK Middle Channel



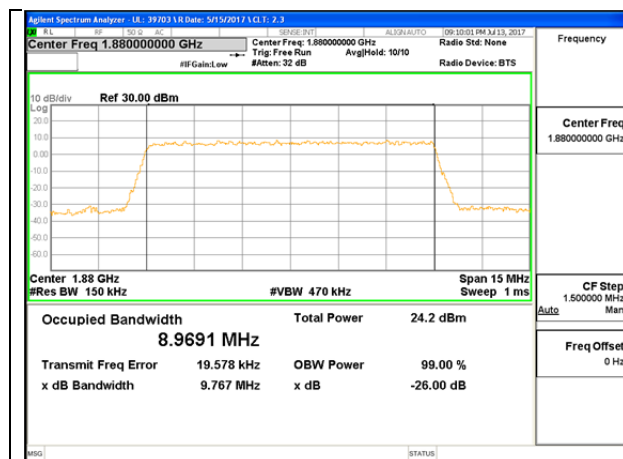
LTE B2 3MHz 16QAM Middle Channel



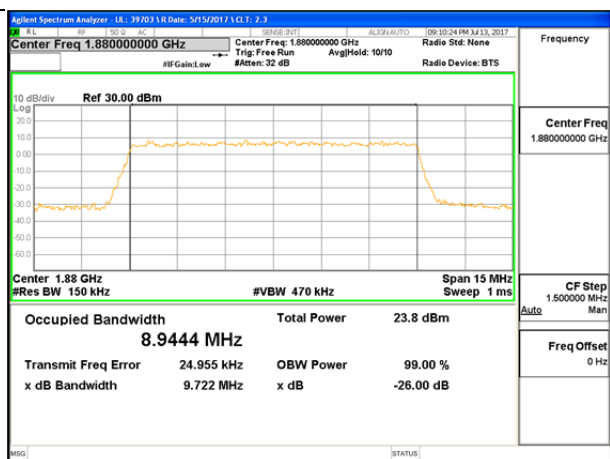
LTE B2 5MHz QPSK Middle Channel



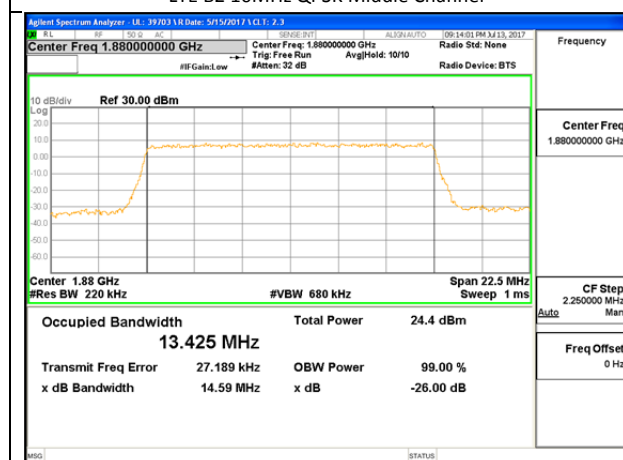
LTE B2 5MHz 16QAM Middle Channel



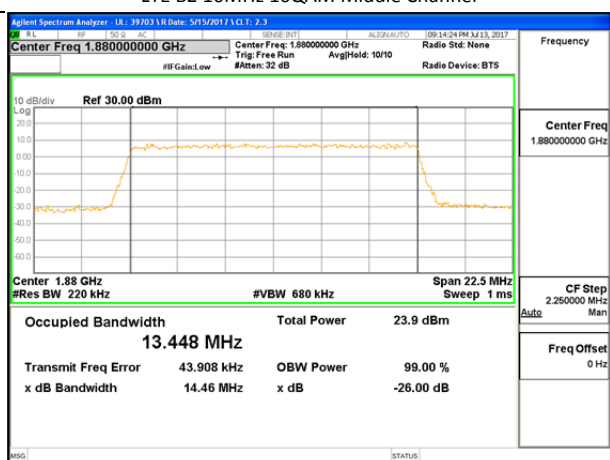
LTE B2 10MHz QPSK Middle Channel



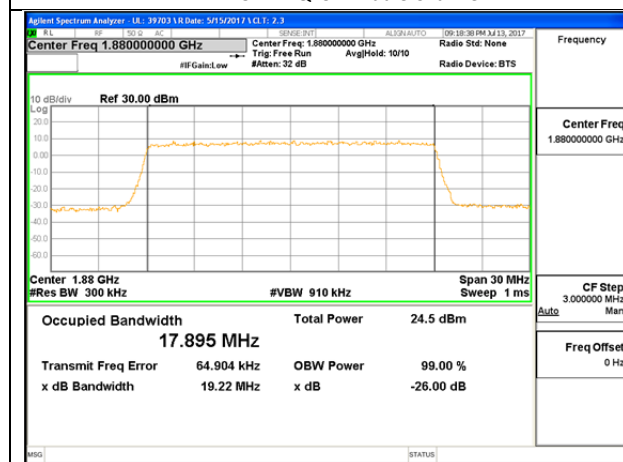
LTE B2 10MHz 16QAM Middle Channel



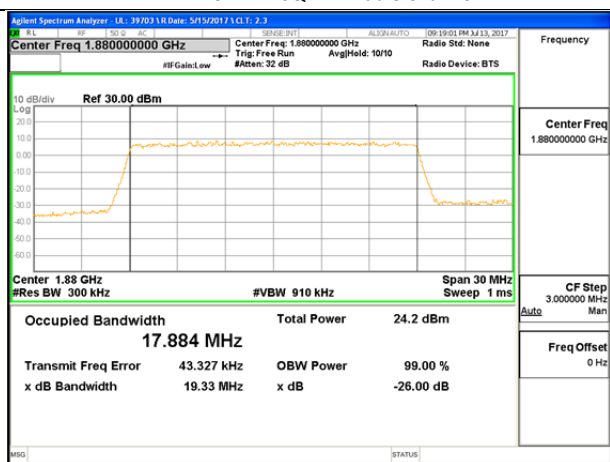
LTE B2 15MHz QPSK Middle Channel



LTE B2 15MHz 16QAM Middle Channel



LTE B25 20MHz QPSK Middle Channel

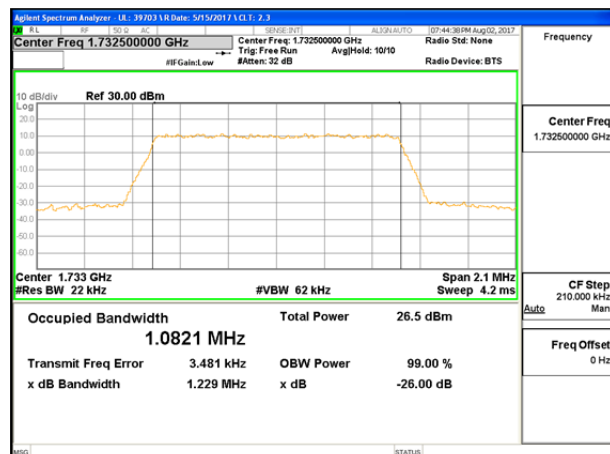


LTE B2 20MHz 16QAM Middle Channel

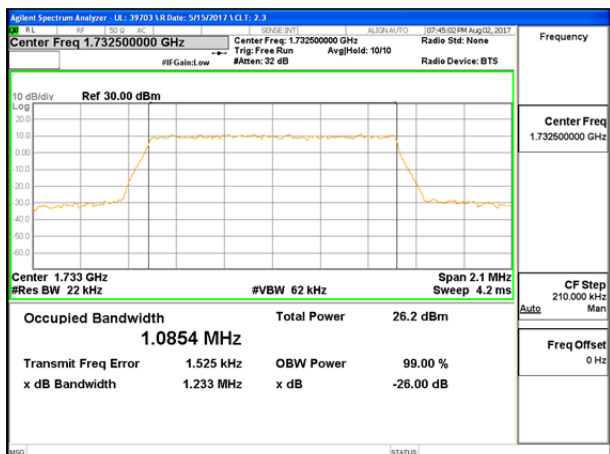
LTE Band 4

Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE4	1.4	QPSK	6/0	1710.7	1.09	1.24
			6/0	1732.5	1.08	1.23
			6/0	1754.3	1.09	1.22
		16QAM	6/0	1710.7	1.08	1.24
			6/0	1732.5	1.08	1.23
			6/0	1754.3	1.09	1.23
	3	QPSK	15/0	1711.5	2.7	3
			15/0	1732.5	2.7	2.99
			15/0	1753.5	2.7	2.99
		16QAM	15/0	1711.5	2.7	2.98
			15/0	1732.5	2.7	2.99
			15/0	1753.5	2.69	3
	5	QPSK	25/0	1712.5	4.5	4.94
			25/0	1732.5	4.49	4.93
			25/0	1752.5	4.5	4.91
		16QAM	25/0	1712.5	4.5	4.97
			25/0	1732.5	4.49	4.93
			25/0	1752.5	4.48	4.9
	10	QPSK	50/0	1715	8.96	9.79
			50/0	1732.5	8.96	9.84
			50/0	1750	8.97	9.82
		16QAM	50/0	1715	8.99	9.74
			50/0	1732.5	8.97	9.76
			50/0	1750	8.95	9.79

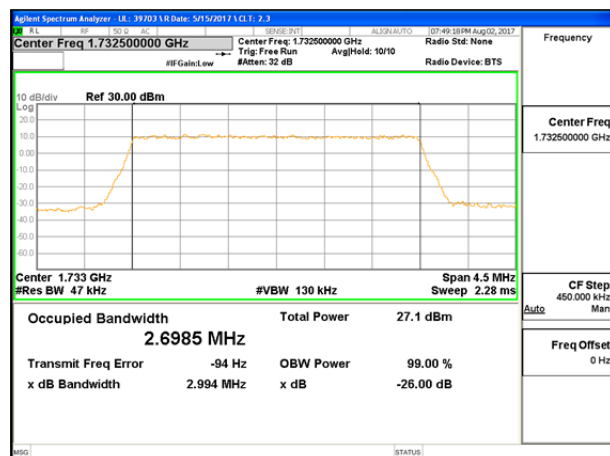
Band	BW(MHz)	Mode	RB/RB Size	f (MHz)	99% BW (MHz)	-26dB BW (MHz)
LTE4	15	QPSK	75/0	1717.5	13.44	14.65
			75/0	1732.5	13.45	14.52
			75/0	1747.5	13.42	14.56
		16QAM	75/0	1717.5	13.44	14.51
			75/0	1732.5	13.44	14.57
			75/0	1747.5	13.42	14.58
	20	QPSK	100/0	1720	17.91	19.37
			100/0	1732.5	17.87	19.19
			100/0	1745	17.86	19.27
		16QAM	100/0	1720	17.89	19.33
			100/0	1732.5	17.89	19.33
			100/0	1745	17.87	19.36



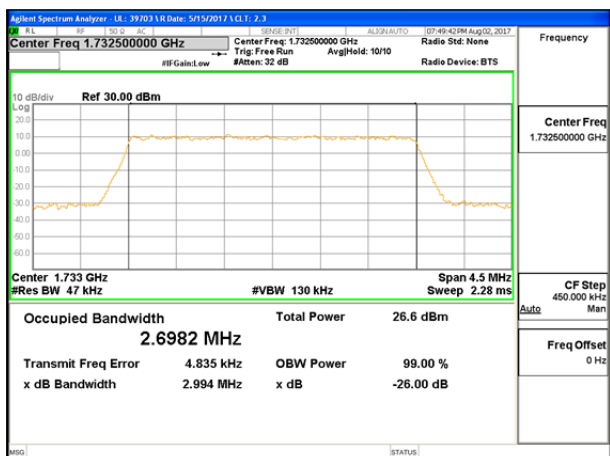
LTE B4 1.4MHz QPSK Middle Channel



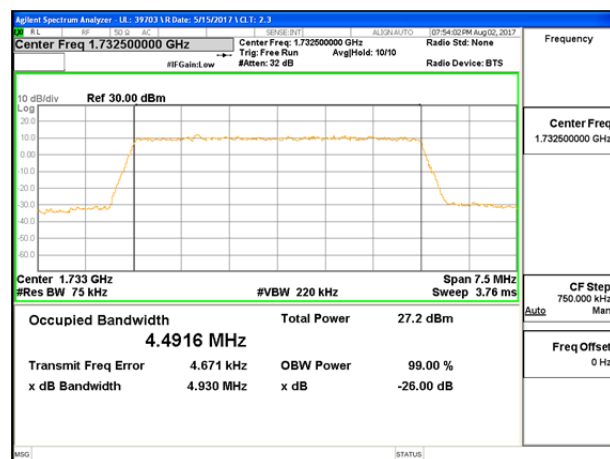
LTE B4 1.4MHz 16QAM Middle Channel



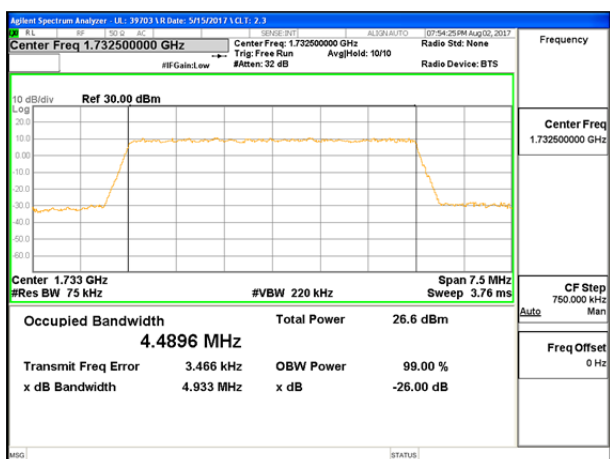
LTE B4 3MHz QPSK Middle Channel



LTE B4 3MHz 16QAM Middle Channel



LTE B4 5MHz QPSK Middle Channel



LTE B4 5MHz 16QAM Middle Channel