

FCC TEST REPORT



Issued to

SGP Technologies S.A.

For

Smartphone

Model Name: BP1
Trade Name: N/A
Brand Name: blackphone
FCC ID : 2ACDKBP1
Standard: 47 CFR Part 27, Subpart L
Test date: 2014-6-24 to 2014-7-14
Issue date: 2014-7-17

By

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Change History		
Issue	Date	Reason for change
1.0	July 17, 2014	First edition

1. GENERAL INFORMATION

1.1 EUT Description

EUT Type: Smartphon
Serial No.: (n.a, marked #1 by test site)
Hardware Version: 1.0
Software Version.....: V07
Applicant: SGP Technologies S.A.
Rue du 31 Decembre, 47, Geneva, Switzerland.
Manufacturer: Tinno Mobile Technology Corp.
OCT Eastern Industrial Park. NO.1 XiangShan East Road., Nan Shan
District, Shenzhen, P.R. China.
Modulation Type.....: LTE Band 17: QPSK, 16QAM
LTE Band 4: QPSK, 16QAM
Tx Frequency Range: LTE Band 17: 704MHz~716MHz
LTE Band 4: 1710MHz~1755MHz
Rx Frequency Range: LTE Band 17: 734MHz~746MHz
LTE Band 4: 2110MHz~2155MHz
Emission Designator: 4M52G7D (LTE Band 17, QPSK, BW 5MHz)
4M52W7D (LTE Band 17, 16QAM, BW 5MHz)
9M02G7D (LTE Band 17, QPSK, BW 10MHz)
9M02W7D (LTE Band 17, 16QAM, BW 10MHz)
1M11G7D (LTE Band 4, QPSK, BW 1.4MHz)
1M11W7D (LTE Band 4, 16QAM, BW 1.4MHz)
2M72G7D (LTE Band 4, QPSK, BW 3MHz)
2M73 W7D (LTE Band 4, 16QAM, BW 3MHz)
4M53G7D (LTE Band 4, QPSK, BW 5MHz)
4M54 W7D (LTE Band 4, 16QAM, BW 5MHz)
9M06G7D (LTE Band 4, QPSK, BW 10MHz)
9M03 W7D (LTE Band 4, 16QAM, BW 10MHz)
13M54G7D (LTE Band 4, QPSK, BW 15MHz)
13M52 W7D (LTE Band 4, 16QAM, BW 15MHz)
17M99G7D (LTE Band 4, QPSK, BW 20MHz)
18M04W7D (LTE Band 4, 16QAM, BW 20MHz)
Antenna Type.....: PIFA Antenna
Power Supply: 3.8V DC Power

1.2 Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 2 and Part 27 for the EUT FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 27	Miscellaneous Wireless Communications Services

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Result
1	2.1046	Transmitter Conducted Output Power	<u>PASS</u>
2	27.50(d)(5)	Occupied Bandwidth	<u>PASS</u>
3	2.1049,27.53(g)	Frequency Stability	<u>PASS</u>
4	2.1055, 27.54	Peak to Average Ratio	<u>PASS</u>
5	2.1051,2.1057,27.53(g)	Conducted Spurious Emissions	<u>PASS</u>
6	2.1051,2.1057 27.53(g)(h)	Band Edge	<u>PASS</u>
7	27.50(d)(4)	Equivalent Isotropic Radiated Power	<u>PASS</u>
8	2.1053,2.1057 27.53(g)	Radiated Spurious Emissions	<u>PASS</u>

1.3 Facilities and Accreditations

1.3.1 Facilities

Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L3572.

All measurement facilities used to collect the measurement data are located at 3/F, Electronic Testing Building, Shahe Road, Xili, Nanshan District, Shenzhen, 518055 P. R. China. The test site is constructed in conformance with the requirements of TIA/EIA 603.D: 2010, ANSI C63.4: 2009 and CISPR Publication 22: 2010. The FCC registration number is 695796.

1.3.2 Test Environment Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 - 60
Atmospheric Pressure (kPa):	86 - 106

2. 47 CFR PART 2, PART 27L REQUIREMENTS

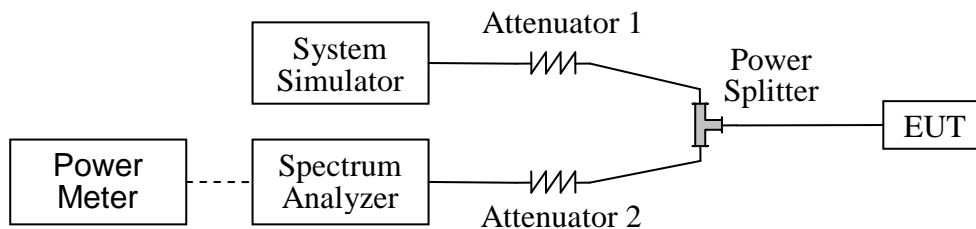
2.1 Transmitter Conducted Output Power

2.1.1 Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

2.1.2 Test Description

1. Test Setup:



The EUT, which is powered 5V DC power (USB port), is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with Attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power. A call is established between the EUT and the SS.

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Rohde& Schwarz	CMW500	1201.0002k50 /124534/wk	2014.02.26	2015.02.25
Spectrum Analyzer	Rohde& Schwarz	FSL	10246	2014.02.26	2015.02.25
Spectrum Analyzer	Agilent	E4445A	MY44200685	2014.02.26	2015.02.25
Power Meter	Agilent	E4418B	GB43318055	2014.02.26	2015.02.25
Power Meter	Agilent	E4418B	GB43318055	2014.02.26	2015.02.25
Power Sensor	Agilent	8482A	MY41091706	2014.02.26	2015.02.25
Power Splitter	Weinschel	1506A	NW521	2014.02.26	2015.02.25
Attenuator 1	Resnet	20dB	(n.a.)	2014.02.26	2015.02.25



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Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
Attenuator 2	Resnet	3dB	(n.a.)	2014.02.26	2015.02.25

2.1.3 Test Results

LTE BAND 4

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
20MHz	L 20050	1720.0	QPSK	1	0	22.28
				1	49	22.17
				1	99	22.43
				50	0	21.64
				50	25	21.83
				50	49	21.70
			16-QAM	100	0	21.78
				1	0	21.68
				1	49	22.25
				1	99	22.40
				50	0	21.90
				50	25	21.96
				50	49	21.89
				100	0	21.59
	M 20175	1732.5	QPSK	1	0	22.39
				1	49	22.44
				1	99	22.45
				50	0	21.86
				50	25	21.89
				50	49	21.91
			16-QAM	100	0	21.64
				1	0	21.88
				1	49	22.22
				1	99	22.41
				50	0	21.90
				50	25	21.89
				50	49	21.94
				100	0	21.38
	H 20300	1745.0	QPSK	1	0	22.30
				1	49	22.32
				1	99	22.41
				50	0	21.89
				50	25	21.91
				50	49	21.94
			16-QAM	100	0	21.48
				1	0	21.77
				1	49	22.03
				1	99	22.15



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				50	0	21.94
				50	25	21.99
				50	49	21.94
				100	0	21.37

LTE BAND 4 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
15MHz	L 20025	1717.5	QPSK	1	0	22.47
				1	37	21.57
				1	74	21.73
				36	0	21.89
				36	18	21.96
				36	35	21.92
				75	0	21.49
			16-QAM	1	0	21.56
				1	37	21.96
				1	74	22.08
				36	0	22.09
				36	18	21.96
				36	35	21.98
				75	0	21.80
	M 20175	1732.5	QPSK	1	0	22.42
				1	37	22.36
				1	74	22.67
				36	0	21.96
				36	18	21.94
				36	35	21.91
				75	0	21.38
			16-QAM	1	0	21.88
				1	37	22.30
				1	74	22.23
				36	0	21.86
				36	18	21.89
				36	35	21.97
				75	0	21.44
	H 20325	1747.5	QPSK	1	0	22.36
				1	37	22.42
				1	74	22.46
				36	0	22.64
				36	18	21.72
				36	35	21.76
				75	0	21.43
			16-QAM	1	0	21.61
				1	37	21.98



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				1	74	21.90
				36	0	21.99
				36	18	21.93
				36	35	21.88
				75	0	21.35

LTE BAND 4 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
10MHz	L 20000	1715.0	QPSK	1	0	22.50
				1	24	22.28
				1	49	22.37
				25	0	21.65
				25	12	21.90
				25	24	21.87
				50	0	21.32
			16-QAM	1	0	21.65
				1	24	22.13
				1	49	22.17
				25	0	22.08
				25	12	22.12
				25	24	22.13
				50	0	21.34
	M 20175	1732.5	QPSK	1	0	22.56
				1	24	22.02
				1	49	21.90
				25	0	22.03
				25	12	22.08
				25	24	22.06
				50	0	21.18
			16-QAM	1	0	21.61
				1	24	21.17
				1	49	21.21
				25	0	21.18
				25	12	21.11
				25	24	21.04
				50	0	21.01
	H 20350	1750.0	QPSK	1	0	22.37
				1	24	21.69
				1	49	21.73
				25	0	21.68
				25	12	21.80
				25	24	21.71



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				50	0	21.90
			16-QAM	1	0	21.61
				1	24	21.75
				1	49	21.75
				25	0	21.82
				25	12	21.83
				25	24	21.92
				50	0	21.11

LTE BAND 4 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
5MHz	L 19975	1712.5	QPSK	1	0	22.60
				1	12	21.89
				1	24	21.91
				12	0	21.89
				12	6	21.82
				12	11	21.87
				25	0	21.84
			16-QAM	1	0	21.55
				1	12	21.60
				1	24	21.65
				12	0	21.87
				12	6	21.88
				12	11	21.83
				25	0	21.82
	M 20175	1732.5	QPSK	1	0	21.55
				1	12	21.79
				1	24	21.76
				12	0	21.77
				12	6	21.80
				12	11	21.87
				25	0	21.91
			16-QAM	1	0	21.75
				1	12	21.83
				1	24	21.87
				12	0	21.90
				12	6	21.92
				12	11	21.87
				25	0	21.01
	H 20375	1752.5	QPSK	1	0	22.49
				1	12	21.91
				1	24	21.88
				12	0	21.87



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				12	6	21.91
				12	11	21.88
				25	0	21.92
			16-QAM	1	0	21.56
				1	12	21.41
				1	24	21.33
				12	0	21.12
				12	6	21.18
				12	11	21.09
				25	0	20.92

LTE BAND 4 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
3MHz	L 19965	1711.5	QPSK	1	0	22.57
				1	7	21.80
				1	14	21.87
				8	0	21.80
				8	4	21.78
				8	7	21.81
				15	0	21.82
			16-QAM	1	0	21.63
				1	7	21.11
				1	14	21.15
				8	0	21.01
				8	4	21.69
				8	7	21.72
				15	0	21.63
	M 20175	1732.5	QPSK	1	0	22.56
				1	7	21.50
				1	14	21.79
				8	0	21.59
				8	4	21.61
				8	7	21.69
				15	0	21.67
			16-QAM	1	0	21.63
				1	7	21.39
				1	14	21.48
				8	0	21.51
				8	4	21.49
				8	7	21.52
				15	0	21.91
	H	1753.4	QPSK	1	0	22.52
				1	7	21.89



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	20384			1	14	21.80
				8	0	22.79
				8	4	22.81
				8	7	22.82
				15	0	22.80
			16-QAM	1	0	21.53
				1	7	21.11
				1	14	21.13
				8	0	21.03
				8	4	21.59
				8	7	21.42
				15	0	21.43

LTE BAND 4 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
1.4MHz	L 19957	1710.7	QPSK	1	0	22.39
				1	2	21.81
				1	5	22.57
				3	0	21.78
				3	1	21.82
				3	2	21.89
			16-QAM	6	0	21.88
				1	0	21.97
				1	2	21.89
				1	5	21.60
				3	0	21.10
				3	1	21.12
				3	2	21.18
				6	0	21.88
	M 20175	1732.5	QPSK	1	0	21.93
				1	2	21.89
				1	5	21.56
				3	0	21.92
				3	1	22.91
				3	2	21.89
			16-QAM	6	0	21.99
				1	0	21.18
				1	2	21.14
				1	5	21.63
				3	0	21.05
				3	2	21.07
				3	5	21.04
				6	0	21.03



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	H 20392	1754.2	QPSK	1	0	21.34
				1	2	21.20
				1	5	21.52
				3	0	21.81
				3	1	21.82
				3	2	21.81
				6	0	20.89
			16-QAM	1	0	21.78
				1	2	21.76
				1	5	21.78
				3	0	21.82
				3	1	21.80
				3	2	21.79
				6	0	20.80

LTE BAND 17

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
10MHz	L 23780	709.0	QPSK	1	0	22.86
				1	24	22.98
				1	49	23.03
				25	0	22.01
				25	12	22.03
				25	24	22.02
				50	0	22.10
			16-QAM	1	0	22.19
				1	24	22.07
				1	49	22.20
				25	0	20.95
				25	12	20.94
				25	24	20.93
				50	0	21.06
	M 23790	710.0	QPSK	1	0	22.82
				1	24	22.93
				1	49	23.13
				25	0	21.95
				25	12	21.96
				25	24	22.19
				50	0	21.59
			16-QAM	1	0	22.10
				1	24	22.10
				1	49	22.47
			16-QAM	25	0	21.01
				25	12	21.05
				25	24	21.03



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	H 23800	711.0	QPSK	50	0	21.10
				1	0	22.78
				1	24	22.90
				1	49	23.12
				25	0	22.08
				25	12	22.04
				25	24	22.11
				50	0	22.18
			16-QAM	1	0	22.05
				1	24	22.08
				1	49	22.40
				25	0	21.13
				25	12	21.10
				25	24	21.17
				50	0	21.14

LTE BAND 17 (Continue)

Band Width	Channel	Freq.(MHZ)	Modulation	RB Configuration		Average Power (dBm)
				RB Size	RB Offset	
5MHz	L 23755	706.5	QPSK	1	0	23.14
				1	12	22.79
				1	24	22.85
				12	0	21.89
				12	6	21.92
				12	11	21.90
				25	0	21.93
			16-QAM	1	0	21.96
				1	12	21.94
				1	24	21.87
				12	0	20.88
				12	6	20.93
				12	11	20.88
				25	0	20.79
	M 23790	710.0	QPSK	1	0	23.12
				1	12	23.05
				1	24	23.14
				12	0	22.02
				12	6	22.04
				12	11	22.03
				25	0	21.10
			16-QAM	1	0	22.23
				1	12	21.96
				1	24	22.23
				12	0	21.12



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				12	6	21.10
				12	11	21.15
				25	0	21.14
	H 23825	713.5	QPSK	1	0	23.08
				1	12	22.55
				1	24	22.57
				12	0	21.26
				12	6	21.22
				12	11	21.27
				25	0	21.20
				1	0	22.00
			16-QAM	1	12	22.03
				1	24	22.11
				12	0	22.17
				12	6	22.14
				12	11	22.15
				25	0	21.28

2.2 Occupied Bandwidth

2.2.1 Definition

According to FCC section 2.1049 and 27.53(g), the occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Occupied bandwidth is also known as the 99% emission bandwidth.

2.2.2 Test Description

See section 2.1.2 of this report.

2.2.3 Test Results

LTE Band 17

Low channel:

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
23755	706.5	4.5136	4.5059	23780	709	9.0199	9.0201
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
23755	706.5	5.078	5.128	23780	709	10.18	10.13

Middle channel:

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
23790	710.0	4.5193	4.5202	23790	710.0	9.0133	8.9993
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
23790	710.0	5.168	5.087	23790	710.0	10.16	10.00



High channel:

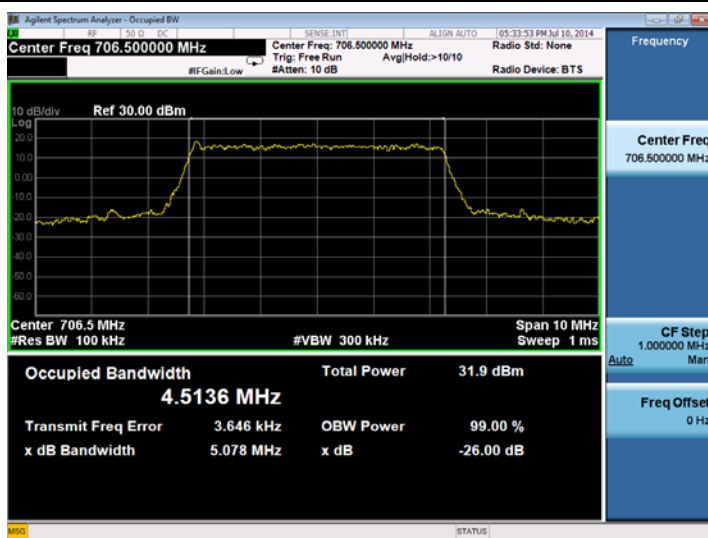
Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	99% Bandwidth (MHz)		Channel	Frequency (MHz)	99% Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
23825	713.5	4.5140	4.5140	23800	711	8.9989	9.0132

Channel Bandwidth: 5MHz				Channel Bandwidth: 10MHz			
Channel	Frequency (MHz)	26dB Bandwidth (MHz)		Channel	Frequency (MHz)	26dB Bandwidth(MHz)	
		QPSK	16QAM			QPSK	16QAM
23825	713.5	5.060	5.042	23800	711	10.04	10.15

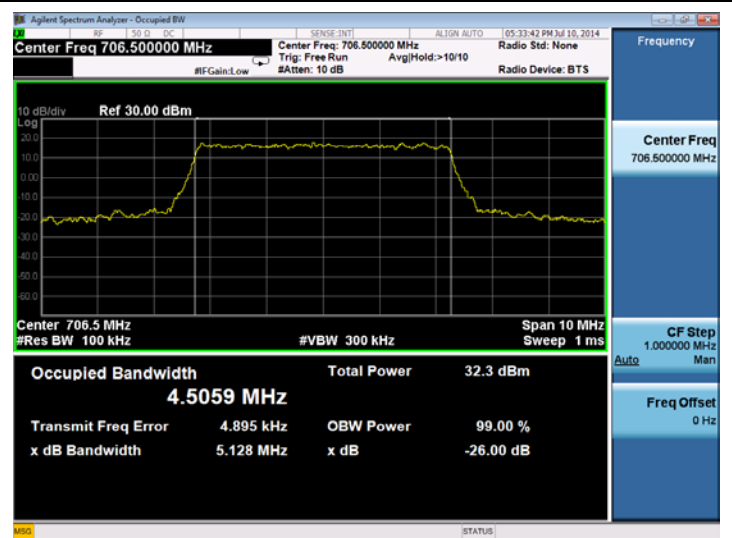
Low channel:

Spectrum Plot of Worst Value

5MHz/QPSK

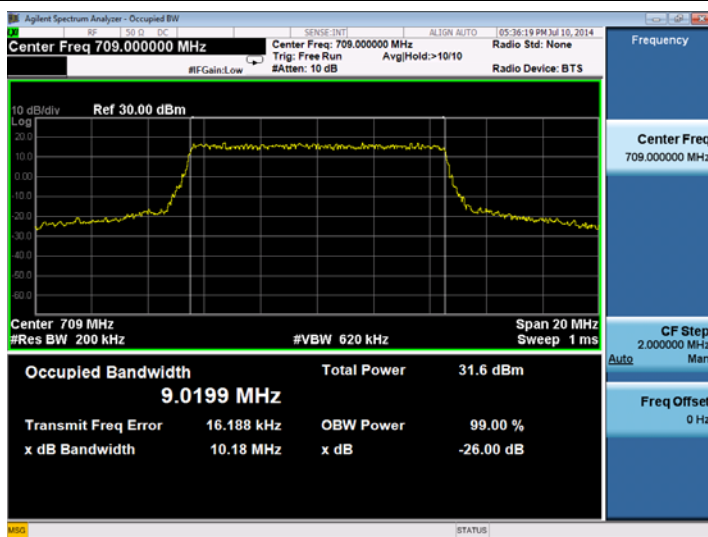


5MHz/16QAM

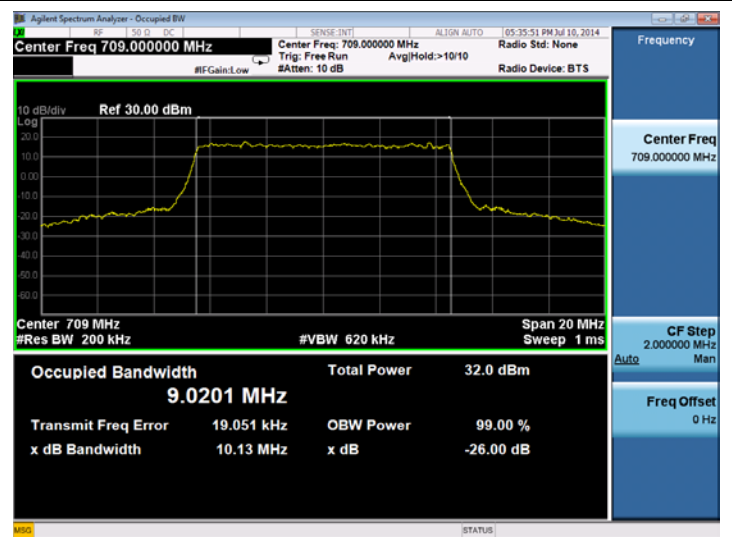


Spectrum Plot of Worst Value

10MHz/QPSK



10MHz/16QAM





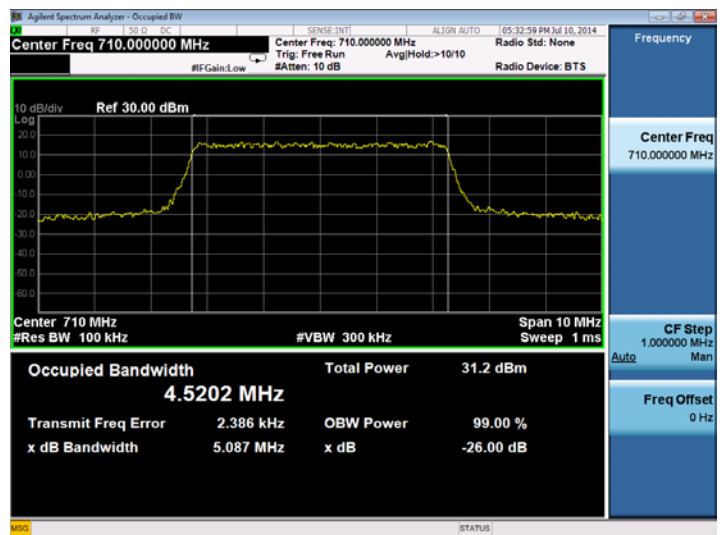
Middle channel:

Spectrum Plot of Worst Value

5MHz/QPSK



5MHz/16QAM

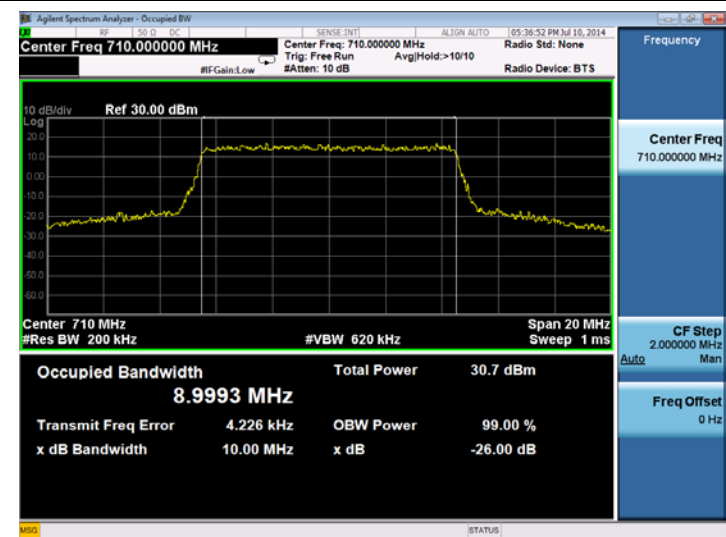


Spectrum Plot of Worst Value

10MHz/QPSK



10MHz/16QAM

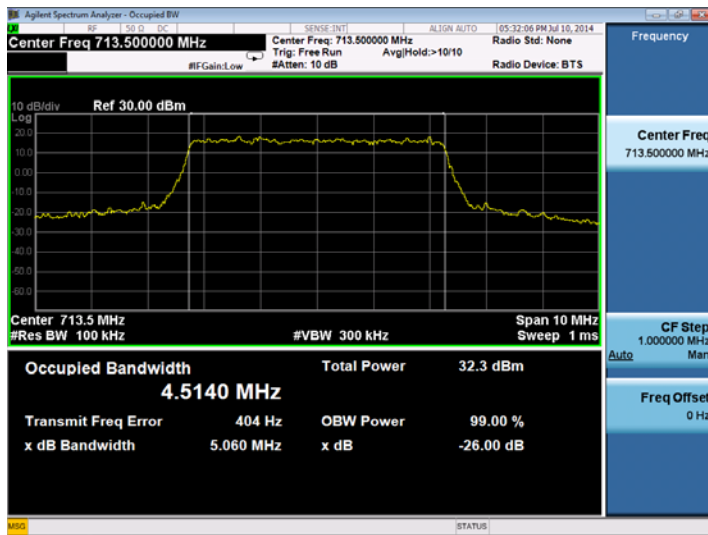




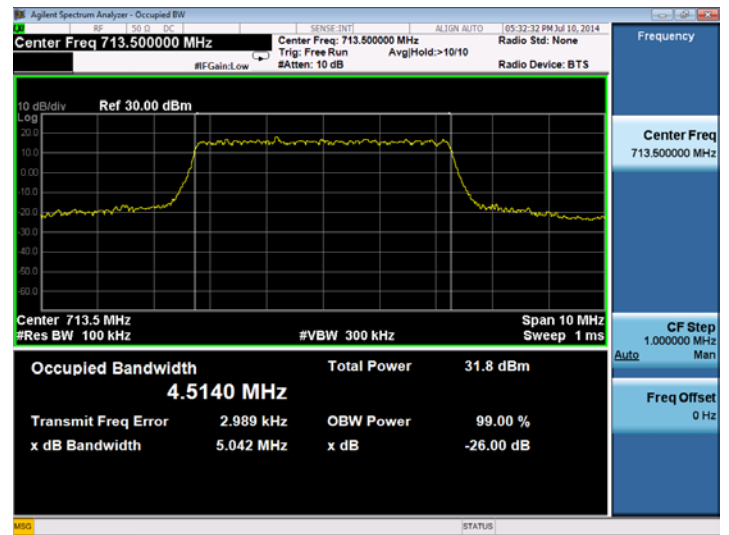
High channel:

Spectrum Plot of Worst Value

5MHz/QPSK

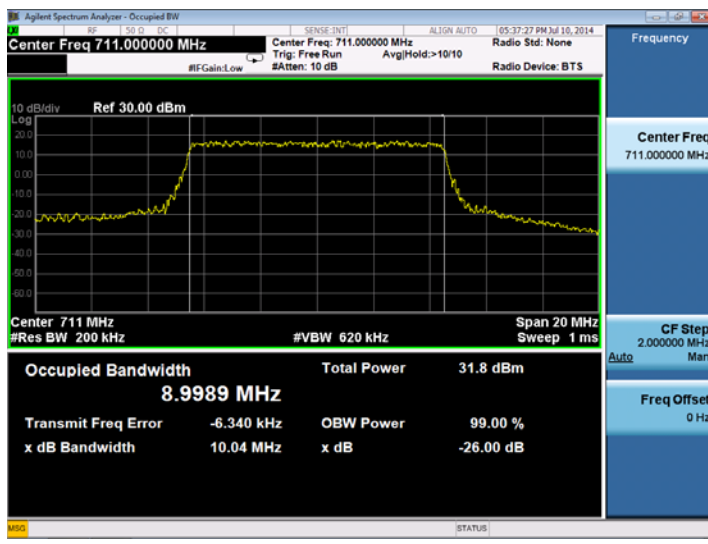


5MHz/16QAM



Spectrum Plot of Worst Value

10MHz/QPSK



10MHz/16QAM

