



TEST REPORT

APPLICANT : Mitsui Bussan Electronics Ltd.

PRODUCT NAME : Mobile Digital Video Recorder

MODEL NAME : DV429CGW4

BRAND NAME : N/A

FCC ID : 2AS4L-DV429CGW4

STANDARD(S) : 47 CFR Part 22, Subpart H
47 CFR Part 24, Subpart E
47 CFR Part 27, Subpart H&L&M

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REPORT No.: SZ19040220W02

Change History		
Version	Date	Reason for change
1.0	2019-05-08	First edition



1. Technical Information

Note: Provide by applicant.

1.1. Applicant and Manufacturer Information

Applicant:	Mitsui Bussan Electronics Ltd.
Applicant Address:	Shiba Park Building, A-10F, 4-1, Shibakoen 2-chome, Minato-ku, Tokyo 105-0011, Japan
Manufacturer:	STONKAM CO., LTD
ManufacturerAddress:	Floor 5, Building #3, Huangzhou Industrial Park, Chebei Road, Tianhe District, 510660 Guangzhou, China

1.2. Equipment Under Test (EUT) Description

Product Name:	Mobile Digital Video Recorder	
Serial No:	(N/A, marked #1 by test site)	
Hardware Version:	V1.1	
Software Version:	V1.0.0	
Modulation Type:	QPSK, 16QAM, 64QAM	
Operation Band:	Band 2 / 4 / 5 /17	
Frequency Range:	LTE Band 2	Tx: 1850.7MHz -1909.3MHz
		Rx: 1930.7MHz -1989.3MHz
	LTE Band 4	Tx: 1710.7MHz -1754.3MHz
		Rx: 2110.7MHz - 2154.3MHz
	LTE Band 5	Tx: 824.7MHz -848.3MHz
		Rx: 869.7MHz – 893.3MHz
	LTE Band 17	Tx: 706.5MHz - 713.5MHz
		Rx: 736.5MHz– 743.5MHz
Channel Bandwidth	LTE Band 2	1.4MHz, 3 MHz, 5 MHz, 10MHz, 15 MHz, 20 MHz
	LTE Band 4	1.4MHz, 3 MHz, 5 MHz, 10MHz, 15 MHz, 20 MHz
	LTE Band 5	1.4MHz, 3 MHz, 5 MHz, 10MHz
	LTE Band 17	5 MHz, 10MHz
Emission Designator:	1M11G7D (LTE Band 2, QPSK, BW 1.4MHz) 1M11W7D (LTE Band 2, 16QAM, BW 1.4MHz) 1M11D7W (LTE Band 2, 64QAM, BW 1.4MHz) 2M71G7D (LTE Band 2, QPSK, BW 3MHz)	



	2M71W7D (LTE Band 2, 16QAM, BW 3MHz)
	2M71D7W (LTE Band 2, 64QAM, BW 3MHz)
	4M51G7D (LTE Band 2, QPSK, BW 5MHz)
	4M52W7D (LTE Band 2, 16QAM, BW 5MHz)
	4M52D7W (LTE Band 2, 64QAM, BW 5MHz)
	9M03G7D (LTE Band 2, QPSK, BW 10MHz)
	8M99W7D (LTE Band 2, 16QAM, BW 10MHz)
	8M99D7W (LTE Band 2, 64QAM, BW 10MHz)
	13M5G7D (LTE Band 2, QPSK, BW 15MHz)
	13M5W7D (LTE Band 2, 16QAM, BW 15MHz)
	13M5D7W (LTE Band 2, 64QAM, BW 15MHz)
	18M0G7D (LTE Band 2, QPSK, BW 20MHz)
	18M0W7D (LTE Band 2, 16QAM, BW 20MHz)
	18M0D7W (LTE Band 2, 64QAM, BW 20MHz)
	1M11G7D (LTE Band 4, QPSK, BW 1.4MHz)
	1M11W7D (LTE Band 4, 16QAM, BW 1.4MHz)
	1M10D7W (LTE Band 4, 64QAM, BW 1.4MHz)
	2M71G7D (LTE Band 4, QPSK, BW 3MHz)
	2M71W7D (LTE Band 4, 16QAM, BW 3MHz)
	2M70D7W (LTE Band 4, 64QAM, BW 3MHz)
	4M52G7D (LTE Band 4, QPSK, BW 5MHz)
	4M51W7D (LTE Band 4, 16QAM, BW 5MHz)
	4M51D7W (LTE Band 4, 64QAM, BW 5MHz)
	9M04G7D (LTE Band 4, QPSK, BW 10MHz)
	8M98W7D (LTE Band 4, 16QAM, BW 10MHz)
	8M98D7W (LTE Band 4, 64QAM, BW 10MHz)
	13M5G7D (LTE Band 4, QPSK, BW 15MHz)
	13M5W7D (LTE Band 4, 16QAM, BW 15MHz)
	13M5D7W (LTE Band 4, 64QAM, BW 15MHz)
	18M0G7D (LTE Band 4, QPSK, BW 20MHz)
	18M0W7D (LTE Band 4, 16QAM, BW 20MHz)
	18M0D7W (LTE Band 4, 64QAM, BW 20MHz)
	1M10G7D (LTE Band 5, QPSK, BW 1.4MHz)
	1M10W7D (LTE Band 5, 16QAM, BW 1.4MHz)
	1M10D7W (LTE Band 5, 64QAM, BW 1.4MHz)
	2M70G7D (LTE Band 5, QPSK, BW 3MHz)
	2M70W7D (LTE Band 5, 16QAM, BW 3MHz)
	2M70D7W (LTE Band 5, 64QAM, BW 3MHz)
	4M50G7D (LTE Band 5, QPSK, BW 5MHz)



	4M50W7D (LTE Band 5, 16QAM, BW 5MHz) 4M50D7W (LTE Band 5, 64QAM, BW 5MHz) 9M00G7D (LTE Band 5, QPSK, BW 10MHz) 8M97W7D (LTE Band 5, 16QAM, BW 10MHz) 8M97D7W (LTE Band 5, 64QAM, BW 10MHz) 4M52G7D (LTE Band 17, QPSK, BW 5MHz) 4M52W7D (LTE Band 17, 16QAM, BW 5MHz) 4M52D7W (LTE Band 17, 64QAM, BW 5MHz) 9M02G7D (LTE Band 17, QPSK, BW 10MHz) 8M98W7D (LTE Band 17, 16QAM, BW 10MHz) 8M99D7W (LTE Band 17, 64QAM, BW 10MHz)	
Antenna Type:	PIFA Antenna	
Antenna Gain:	LTE Band 2	-2.48 dBi
	LTE Band 4	-2.05 dBi
	LTE Band 5	-3.67 dBi
	LTE Band 17	-2.84 dBi

Note 1: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

1.3. Test Standards and Results

The objective of the report is to perform testing according to Part 2, Part 22, Part 24 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 22	Public Mobile Services
3	47 CFR Part 24	Personal Communications Services
4	47 CFR Part 27	Miscellaneous Wireless Communications Services

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

Section	Description	Test Date	Test Engineer	Result
2.1046, 22.913(a)(2), 24.232(c), 27.50(c)(10) 27.50(d)(4), 27.50(h)(2)	Transmitter Conducted Output Power and ERP/EIRP	Apr23, 2019 May05, 2019 May07, 2019	Gao Mingzhou Peng Xuewei	PASS
2.1049	Occupied Bandwidth	Apr23, 2019 May07, 2019	Gao Mingzhou	PASS
2.1055, 22.355,	Frequency Stability	May05, 2019	Gao Mingzhou	PASS



24.235, 27.54				
24.232(d), 27.50(d)(5)	Peak to Average Ratio	Apr23, 2019 May07, 2019	Gao Mingzhou	PASS
2.1051, 22.917(a), 24.238, 27.53(g)(h)(m)(4)	Conducted Spurious Emissions	Apr23, 2019 May07, 2019	Gao Mingzhou	PASS
2.1051, 22.917(a), 24.238, 27.53(g)(h)(m)(4)	Band Edge	Apr23, 2019 May07, 2019	Gao Mingzhou	PASS
2.1051, 22.917(a), 24.238, 27.53(g)(h)(m)(4)	Radiated Spurious Emissions	May05, 2019	Peng Xuwei	PASS
Note 1: The tests were performed according to the method of measurements prescribed in KDB 971168 D01 V03R01 (Oct 27, 2017) and ANSI/TIA-603-E-2016. Note 2: The path loss during the RF test is calibrated to correct the results by the offset setting in the test equipments. The ref offset 26.5dB contains two parts that cable loss 16.5dB and Attenuator 10dB.				

1.4. Environmental 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 22H, Part 24E and 27H&L&M Requirements

2.1. Transmitter Conducted Output Power And ERP/EIRP

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).

According to FCC section 24.232 (c) for LTE Band 2/25, Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

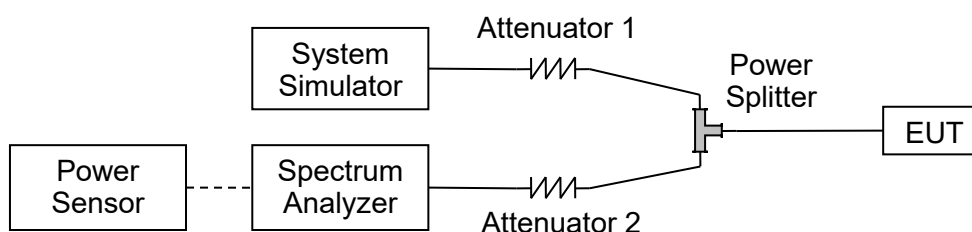
According to FCC section 27.50 (d) for LTE Band 4, fixed, mobile and portable (hand-held) stations in the 1710-1755MHz band are limited to 1wat EIRP.

According to FCC section 22.913 (a.2) for LTE Band 5/26, the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC section 27.50 (h) for LTE Band 7/41, Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

According to FCC section 27.50 (c) for LTE Band 12/17, Portable stations (hand-held devices) operating in the 704-716MHz band are limited to 3watts ERP.

2.1.2. Test Description



The EUT 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 50 Ohm; 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.

2.1.3. Test procedure

KDB 971168 D01v03 Section 5.2 and ANSI/TIA-603-E-2016.

$EIRP \text{ (dBm)} = \text{Conducted Output Power (dBm)} + \text{Antenna Gain (dBi)}$

$ERP \text{ (dBm)} = EIPR \text{ (dBm)} - 2.15$

2.1.4. Result



Transmitter Conducted Output Power

LTE Band2						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				18700	18900	19100
Frequency (MHz)				1860	1880	1900
20	QPSK	1	0	23.37	22.99	23.37
20	QPSK	1	49	23.87	22.85	23.23
20	QPSK	1	99	23.32	23.11	23.52
20	QPSK	50	0	22.49	21.86	22.2
20	QPSK	50	24	22.5	21.78	22.03
20	QPSK	50	50	22.41	21.96	21.56
20	QPSK	100	0	22.53	21.86	22.06
20	16QAM	1	0	22.27	22.43	22.54
20	16QAM	1	49	22.4	21.73	21.99
20	16QAM	1	99	22.43	22.4	21.65
20	16QAM	50	0	21.64	20.8	21.28
20	16QAM	50	24	21.48	20.78	21.06
20	16QAM	50	50	21.38	20.91	20.72
20	16QAM	100	0	21.55	20.85	21.19
20	64QAM	1	0	22.36	22.07	22.2
20	64QAM	1	49	22.46	21.45	21.45
20	64QAM	1	99	22.22	22.16	21.74
20	64QAM	50	0	20.63	20.78	20.17
20	64QAM	50	24	20.55	20.74	20.98
20	64QAM	50	50	21.44	20.91	20.54
20	64QAM	100	0	20.51	20.8	20.98
Channel				18675	18900	19125
Frequency (MHz)				1857.5	1880	1902.5
15	QPSK	1	0	23.15	22.86	23.37
15	QPSK	1	37	23.74	22.79	22.98
15	QPSK	1	74	23.43	22.99	22.58
15	QPSK	36	0	22.37	21.68	22.08
15	QPSK	36	20	22.45	21.57	21.72
15	QPSK	36	39	22.33	21.67	21.6



15	QPSK	75	0	22.27	21.61	21.83
15	16QAM	1	0	22.48	21.99	21.92
15	16QAM	1	37	22.28	22	22.07
15	16QAM	1	74	22.2	21.64	21.62
15	16QAM	36	0	21.29	20.86	21.25
15	16QAM	36	20	21.4	20.81	20.88
15	16QAM	36	39	21.32	20.87	20.75
15	16QAM	75	0	21.35	20.77	20.8
15	64QAM	1	0	22.13	21.99	21.45
15	64QAM	1	37	21.74	21.53	21.66
15	64QAM	1	74	21.43	20.93	21.1
15	64QAM	36	0	21.43	20.76	20.81
15	64QAM	36	20	21.41	20.86	20.62
15	64QAM	36	39	21.28	20.72	20.94
15	64QAM	75	0	21.15	20.52	20.86

LTE Band2

BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				18650	18900	19150
Frequency (MHz)				1855	1880	1905
10	QPSK	1	0	23.08	22.61	22.88
10	QPSK	1	25	23.6	22.64	22.7
10	QPSK	1	49	23.75	22.86	22.57
10	QPSK	25	0	22.41	21.67	21.73
10	QPSK	25	12	22.38	21.66	21.7
10	QPSK	25	25	22.47	21.78	21.62
10	QPSK	50	0	22.29	21.56	21.69
10	16QAM	1	0	21.98	22.11	21.99
10	16QAM	1	25	22.7	21.94	21.87
10	16QAM	1	49	22.96	21.71	21.58
10	16QAM	25	0	21.4	20.82	20.78
10	16QAM	25	12	21.53	20.75	20.78
10	16QAM	25	25	21.64	20.81	20.71
10	16QAM	50	0	21.36	20.67	20.71
10	64QAM	1	0	22.26	21.91	21.99
10	64QAM	1	25	22.31	22.08	21.76



10	64QAM	1	49	21.92	21.92	21.18
10	64QAM	25	0	20.64	20.84	20.75
10	64QAM	25	12	20.54	20.76	20.76
10	64QAM	25	25	20.54	20.91	20.63
10	64QAM	50	0	21.35	20.69	20.65
Channel				18625	18900	19175
Frequency (MHz)				1852.5	1880	1907.5
5	QPSK	1	0	23.04	22.52	22.51
5	QPSK	1	12	23.56	22.65	22.64
5	QPSK	1	24	23.61	22.73	22.75
5	QPSK	12	0	22.26	21.76	21.59
5	QPSK	12	7	22.45	21.61	21.5
5	QPSK	12	13	22.45	21.76	21.56
5	QPSK	25	0	22.33	21.6	21.58
5	16QAM	1	0	21.78	21.72	21.55
5	16QAM	1	12	22.14	21.97	21.78
5	16QAM	1	24	22.87	22.03	22.45
5	16QAM	12	0	21.35	20.85	20.73
5	16QAM	12	7	21.46	20.84	20.65
5	16QAM	12	13	21.57	20.81	20.83
5	16QAM	25	0	21.39	20.77	20.59
5	64QAM	1	0	21.45	21.58	21.29
5	64QAM	1	12	22.38	21.45	21.2
5	64QAM	1	24	21.75	21.69	21.16
5	64QAM	12	0	21.33	20.96	20.9
5	64QAM	12	7	21.45	20.85	20.52
5	64QAM	12	13	21.49	20.94	20.47
5	64QAM	25	0	21.5	20.71	20.57

LTE Band2						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				18615	18900	19185
Frequency (MHz)				1851.5	1880	1908.5
3	QPSK	1	0	23.2	22.58	22.63
3	QPSK	1	8	23.27	22.54	22.57



3	QPSK	1	14	23.42	22.64	22.59
3	QPSK	8	0	22.18	21.66	22.45
3	QPSK	8	4	22.34	21.68	21.53
3	QPSK	8	7	22.36	21.64	21.58
3	QPSK	15	0	22.28	21.61	21.68
3	16QAM	1	0	22.21	21.61	21.54
3	16QAM	1	8	22.05	21.59	21.68
3	16QAM	1	14	22.44	21.69	21.66
3	16QAM	8	0	21.14	20.54	20.54
3	16QAM	8	4	21.33	20.65	20.56
3	16QAM	8	7	21.32	20.66	20.52
3	16QAM	15	0	21.38	20.81	20.55
3	64QAM	1	0	22.09	21.86	21.28
3	64QAM	1	8	22.34	22.07	21.36
3	64QAM	1	14	22.45	21.9	21.13
3	64QAM	8	0	21.11	20.67	20.41
3	64QAM	8	4	21.33	20.57	20.39
3	64QAM	8	7	21.37	20.7	20.35
3	64QAM	15	0	21.36	20.72	20.32
Channel				18607	18900	19193
Frequency (MHz)				1850.7	1880	1909.3
1.4	QPSK	1	0	23.01	22.5	22.51
1.4	QPSK	1	3	23.09	22.56	22.51
1.4	QPSK	1	5	23.21	22.5	22.53
1.4	QPSK	3	0	23.1	22.59	22.52
1.4	QPSK	3	1	23.17	22.6	22.51
1.4	QPSK	3	3	23.13	22.56	22.51
1.4	QPSK	6	0	22.08	21.69	21.56
1.4	16QAM	1	0	21.99	21.78	21.53
1.4	16QAM	1	3	21.87	21.56	21.52
1.4	16QAM	1	5	22.03	21.58	21.52
1.4	16QAM	3	0	22.09	21.71	21.56
1.4	16QAM	3	1	22.02	21.9	21.51
1.4	16QAM	3	3	22.17	21.7	21.77
1.4	16QAM	6	0	21.24	20.72	20.57
1.4	64QAM	1	0	22.15	22.03	20.98
1.4	64QAM	1	3	22.19	21.66	21.21
1.4	64QAM	1	5	22.29	21.68	21.04



1.4	64QAM	3	0	22.11	21.8	21.22
1.4	64QAM	3	1	22.16	22.07	21.23
1.4	64QAM	3	3	22.22	21.33	21.11
1.4	64QAM	6	0	21.11	20.67	20.36

LTE Band4						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				20050	20175	20300
Frequency (MHz)				1720	1732.5	1745
20	QPSK	1	0	22.89	22.97	22.99
20	QPSK	1	49	22.78	23.29	22.77
20	QPSK	1	99	23.03	22.88	22.52
20	QPSK	50	0	21.51	22.05	21.83
20	QPSK	50	24	21.57	22.05	21.63
20	QPSK	50	50	21.75	22.02	21.56
20	QPSK	100	0	21.59	22	21.55
20	16QAM	1	0	21.7	21.96	21.76
20	16QAM	1	49	22.25	22.06	22.01
20	16QAM	1	99	22.34	21.67	21.98
20	16QAM	50	0	20.59	21.11	21.03
20	16QAM	50	24	20.56	21.06	20.64
20	16QAM	50	50	20.66	20.99	20.53
20	16QAM	100	0	20.61	20.97	20.6
20	64QAM	1	0	21.96	22.45	22.18
20	64QAM	1	49	22.18	22.05	21.67
20	64QAM	1	99	22.44	22.29	20.9
20	64QAM	50	0	20.66	21.05	20.97
20	64QAM	50	24	20.7	21.08	20.65
20	64QAM	50	50	20.81	20.95	20.3
20	64QAM	100	0	20.8	21.05	20.56
Channel				20025	20175	20325
Frequency (MHz)				1717.5	1732.5	1747.5
15	QPSK	1	0	22.77	23.16	23.01
15	QPSK	1	37	22.81	23.12	22.51
15	QPSK	1	74	23.08	22.84	22.65



15	QPSK	36	0	21.54	21.93	21.68
15	QPSK	36	20	21.62	21.95	21.56
15	QPSK	36	39	21.71	21.92	21.65
15	QPSK	75	0	21.59	21.83	21.56
15	16QAM	1	0	21.66	22.25	22.15
15	16QAM	1	37	21.74	21.77	21.57
15	16QAM	1	74	21.93	21.79	21.52
15	16QAM	36	0	20.57	21.08	20.7
15	16QAM	36	20	20.58	21.11	20.56
15	16QAM	36	39	20.68	21.05	20.56
15	16QAM	75	0	20.54	20.95	20.52
15	64QAM	1	0	21.85	22.38	22.42
15	64QAM	1	37	21.54	21.92	21.4
15	64QAM	1	74	21.53	21.12	20.68
15	64QAM	36	0	20.56	21.04	20.39
15	64QAM	36	20	20.61	21.06	20.36
15	64QAM	36	39	20.53	21.08	20.43
15	64QAM	75	0	20.56	21.05	20.39

LTE Band4

BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				20000	20175	20350
Frequency (MHz)				1715	1732.5	1750
10	QPSK	1	0	22.98	23.1	22.69
10	QPSK	1	25	22.81	23.11	22.56
10	QPSK	1	49	22.7	23.1	22.65
10	QPSK	25	0	21.63	22.1	21.59
10	QPSK	25	12	21.62	22.15	21.52
10	QPSK	25	25	21.69	22.12	21.56
10	QPSK	50	0	21.5	21.91	21.61
10	16QAM	1	0	22.09	22.33	21.66
10	16QAM	1	25	21.68	22.18	21.57
10	16QAM	1	49	21.96	22.15	21.56
10	16QAM	25	0	21.1	21.21	20.53
10	16QAM	25	12	20.53	21.14	20.51



10	16QAM	25	25	20.67	21.16	20.56
10	16QAM	50	0	20.52	21.09	21
10	64QAM	1	0	22.1	22.22	21.51
10	64QAM	1	25	21.76	22.26	21.32
10	64QAM	1	49	21.59	22.37	21.44
10	64QAM	25	0	20.59	21.32	20.9
10	64QAM	25	12	20.62	21.27	20.61
10	64QAM	25	25	20.7	21.19	20.44
10	64QAM	50	0	20.42	21.05	20.6
Channel				19975	20175	20375
Frequency (MHz)				1712.5	1732.5	1752.5
5	QPSK	1	0	22.95	23.08	22.56
5	QPSK	1	12	22.82	23.19	22.55
5	QPSK	1	24	22.81	23.04	22.53
5	QPSK	12	0	21.69	22.24	22.49
5	QPSK	12	7	21.78	22.31	22.45
5	QPSK	12	13	21.53	22.22	22.3
5	QPSK	25	0	21.61	22.21	22.4
5	16QAM	1	0	21.58	22.16	21.56
5	16QAM	1	12	21.58	22.09	21.52
5	16QAM	1	24	21.57	21.99	21.51
5	16QAM	12	0	21.23	21.37	21.47
5	16QAM	12	7	20.76	21.34	21.44
5	16QAM	12	13	20.57	21.28	21.15
5	16QAM	25	0	20.54	21.27	21.45
5	64QAM	1	0	22.05	22.09	21.36
5	64QAM	1	12	22.2	22.11	21.78
5	64QAM	1	24	21.8	21.98	21.28
5	64QAM	12	0	21.07	21.34	20.46
5	64QAM	12	7	20.65	21.24	20.45
5	64QAM	12	13	20.54	21.34	20.38
5	64QAM	25	0	20.56	21.33	20.37



LTE Band4						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				19965	20175	20385
Frequency (MHz)				1711.5	1732.5	1753.5
3	QPSK	1	0	22.93	23.09	22.52
3	QPSK	1	8	22.97	23.19	22.56
3	QPSK	1	14	22.9	23.21	22.53
3	QPSK	8	0	21.91	22.36	22.48
3	QPSK	8	4	21.93	22.32	21.51
3	QPSK	8	7	21.9	22.33	22.35
3	QPSK	15	0	21.9	22.36	22.42
3	16QAM	1	0	22.19	22.07	21.55
3	16QAM	1	8	22.1	22.16	22.52
3	16QAM	1	14	21.9	22.5	21.55
3	16QAM	8	0	20.94	21.02	20.51
3	16QAM	8	4	20.9	21.28	21.53
3	16QAM	8	7	20.71	21.32	21.52
3	16QAM	15	0	20.88	21.38	21.52
3	64QAM	1	0	22.13	22.31	21.2
3	64QAM	1	8	21.75	21.56	21.42
3	64QAM	1	14	21.88	22.25	21.4
3	64QAM	8	0	20.95	21.37	20.47
3	64QAM	8	4	20.89	21.33	20.45
3	64QAM	8	7	20.79	21.28	20.55
3	64QAM	15	0	20.8	21.4	20.42
Channel				19957	20175	20393
Frequency (MHz)				1710.7	1732.5	1754.3
1.4	QPSK	1	0	22.96	23.19	22.54
1.4	QPSK	1	3	23.06	23.27	22.65
1.4	QPSK	1	5	23.01	23.28	22.58
1.4	QPSK	3	0	22.97	23.19	22.56
1.4	QPSK	3	1	23.06	23.22	22.5
1.4	QPSK	3	3	23.02	23.28	22.56
1.4	QPSK	6	0	22.56	22.43	22.41
1.4	16QAM	1	0	21.95	22.53	21.74
1.4	16QAM	1	3	22.05	22.54	21.63



1.4	16QAM	1	5	21.81	22.16	21.7
1.4	16QAM	3	0	22.16	22.5	21.68
1.4	16QAM	3	1	22.09	22.43	21.58
1.4	16QAM	3	3	21.98	22.48	21.53
1.4	16QAM	6	0	21.02	21.45	20.58
1.4	64QAM	1	0	22.02	22.22	21.47
1.4	64QAM	1	3	21.93	22.26	21.79
1.4	64QAM	1	5	22.11	22.21	21.51
1.4	64QAM	3	0	21.84	22.47	21.56
1.4	64QAM	3	1	21.83	22.4	21.57
1.4	64QAM	3	3	21.89	22.44	21.48
1.4	64QAM	6	0	20.96	21.39	20.45

LTE Band5						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				20450	20525	20600
Frequency (MHz)				829	836.5	844
10	QPSK	1	0	22.61	22.28	22.45
10	QPSK	1	25	22.53	22.66	22.63
10	QPSK	1	49	22.56	22.75	22.51
10	QPSK	25	0	21.7	21.67	21.54
10	QPSK	25	12	21.72	21.65	21.66
10	QPSK	25	25	21.63	21.7	21.61
10	QPSK	50	0	21.52	21.59	21.58
10	16QAM	1	0	21.82	21.76	21.96
10	16QAM	1	25	21.55	21.89	21.85
10	16QAM	1	49	21.65	21.33	21.76
10	16QAM	25	0	20.59	20.52	20.5
10	16QAM	25	12	20.58	20.69	20.59
10	16QAM	25	25	20.61	20.6	20.42
10	16QAM	50	0	20.6	20.43	20.33
10	64QAM	1	0	21.45	21.45	21.48
10	64QAM	1	25	21.47	21.43	21.3
10	64QAM	1	49	21.44	21.4	20.35
10	64QAM	25	0	20.39	20.3	20.45



10	64QAM	25	12	20.4	20.2	20.35
10	64QAM	25	25	20.36	20.35	20.25
10	64QAM	50	0	20.35	20.38	20.33
Channel				20425	20525	20625
Frequency (MHz)				826.5	836.5	846.5
5	QPSK	1	0	22.65	22.38	22.6
5	QPSK	1	12	22.66	22.56	22.62
5	QPSK	1	24	22.6	22.45	22.62
5	QPSK	12	0	21.71	21.63	21.71
5	QPSK	12	7	21.71	21.57	21.54
5	QPSK	12	13	21.64	21.63	21.61
5	QPSK	25	0	21.56	21.51	21.54
5	16QAM	1	0	21.53	21.5	21.32
5	16QAM	1	12	21.37	21.52	21.42
5	16QAM	1	24	21.36	21.53	21.65
5	16QAM	12	0	20.71	20.48	20.71
5	16QAM	12	7	20.51	20.68	20.62
5	16QAM	12	13	20.54	20.76	20.56
5	16QAM	25	0	20.42	20.61	20.56
5	64QAM	1	0	21.45	21.38	21.39
5	64QAM	1	12	21.46	21.46	21.31
5	64QAM	1	24	21.26	21.25	21.34
5	64QAM	12	0	20.45	20.41	20.36
5	64QAM	12	7	20.49	20.4	20.39
5	64QAM	12	13	20.36	20.38	20.36
5	64QAM	25	0	20.42	20.49	20.35

LTE Band5						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				20415	20525	20635
Frequency (MHz)				825.5	836.5	847.5
3	QPSK	1	0	22.54	22.45	22.7
3	QPSK	1	8	22.43	22.67	22.57
3	QPSK	1	14	22.49	22.53	22.7



3	QPSK	8	0	21.75	21.6	21.5
3	QPSK	8	4	21.64	21.65	21.64
3	QPSK	8	7	21.67	21.65	21.64
3	QPSK	15	0	21.71	21.62	21.64
3	16QAM	1	0	21.94	21.5	21.51
3	16QAM	1	8	21.81	21.58	21.34
3	16QAM	1	14	21.48	21.36	21.53
3	16QAM	8	0	20.45	20.55	20.63
3	16QAM	8	4	20.59	20.37	20.51
3	16QAM	8	7	20.63	20.6	20.63
3	16QAM	15	0	20.6	20.74	20.68
3	64QAM	1	0	21.45	21.34	21.43
3	64QAM	1	8	20.45	20.45	21.45
3	64QAM	1	14	21.31	21.41	21.47
3	64QAM	8	0	20.35	20.27	20.34
3	64QAM	8	4	20.39	20.26	20.39
3	64QAM	8	7	20.42	20.38	20.36
3	64QAM	15	0	20.26	20.31	20.42
Channel				20407	20525	20643
Frequency (MHz)				824.7	836.5	848.3
1.4	QPSK	1	0	22.51	22.49	22.59
1.4	QPSK	1	3	22.66	22.64	22.58
1.4	QPSK	1	5	22.62	22.61	22.57
1.4	QPSK	3	0	22.54	22.57	22.53
1.4	QPSK	3	1	22.6	22.55	22.58
1.4	QPSK	3	3	22.66	22.64	22.6
1.4	QPSK	6	0	21.66	21.6	21.59
1.4	16QAM	1	0	21.97	21.78	21.57
1.4	16QAM	1	3	21.79	21.85	21.24
1.4	16QAM	1	5	21.38	21.79	21.91
1.4	16QAM	3	0	21.59	21.57	21.62
1.4	16QAM	3	1	21.65	21.46	21.67
1.4	16QAM	3	3	21.69	21.62	21.57
1.4	16QAM	6	0	20.6	20.62	20.72
1.4	64QAM	1	0	20.84	21.35	21.29
1.4	64QAM	1	3	21.25	20.31	21.41
1.4	64QAM	1	5	21.45	21.46	21.43
1.4	64QAM	3	0	20.52	21.31	21.06



1.4	64QAM	3	1	20.56	20.31	21.45
1.4	64QAM	3	3	20.85	20.68	20.65
1.4	64QAM	6	0	20.41	20.45	20.36

LTE Band 17						
BW [MHz]	Modulation	RB Size	RB Offset	Average Power Low Ch. / Freq.	Average Power Middle Ch. / Freq.	Average Power High Ch. / Freq.
Channel				23780	23790	23800
Frequency (MHz)				709	710	711
10	QPSK	1	0	23.96	23.58	23.4
10	QPSK	1	25	22.89	22.57	22.94
10	QPSK	1	49	22.64	22.35	22.36
10	QPSK	25	0	22.39	22.13	21.92
10	QPSK	25	12	21.89	21.4	21.05
10	QPSK	25	25	21.56	21.53	21.42
10	QPSK	50	0	21.49	21.06	21.09
10	16QAM	1	0	22.53	22.53	22.61
10	16QAM	1	25	21.82	21.9	21.16
10	16QAM	1	49	21.53	21.56	21.73
10	16QAM	25	0	21.32	21.2	20.94
10	16QAM	25	12	20.86	20.56	20.39
10	16QAM	25	25	20.86	20.47	20.38
10	16QAM	50	0	20.47	20.31	20.45
10	64QAM	1	0	21.75	21.99	21.85
10	64QAM	1	25	21.89	21.69	21.32
10	64QAM	1	49	20.35	20.32	20.32
10	64QAM	25	0	20.98	20.82	20.82
10	64QAM	25	12	20.97	20.63	20.31
10	64QAM	25	25	20.84	20.46	20.35
10	64QAM	50	0	20.56	20.37	20.31
Channel				23035	23095	23155
Frequency (MHz)				706.5	707.5	713.5
5	QPSK	1	0	23.75	23.09	22.65
5	QPSK	1	12	23.53	22.67	22.45
5	QPSK	1	24	23.07	23.56	22.46
5	QPSK	12	0	22.66	22	22.45



5	QPSK	12	7	22.52	21.49	21.65
5	QPSK	12	13	22.29	21.63	21.52
5	QPSK	25	0	22.38	21.3	21.56
5	16QAM	1	0	22.76	22.23	21.96
5	16QAM	1	12	22.51	21.83	21.52
5	16QAM	1	24	22.11	22.05	21.85
5	16QAM	12	0	21.71	21.03	20.41
5	16QAM	12	7	21.57	20.57	20.36
5	16QAM	12	13	21.25	20.39	20.41
5	16QAM	25	0	21.24	20.43	20.36
5	64QAM	1	0	21.63	21.96	20.73
5	64QAM	1	12	21.86	21.41	20.36
5	64QAM	1	24	21.75	20.4	20.51
5	64QAM	12	0	20.52	20.49	20.65
5	64QAM	12	7	20.58	20.67	20.78
5	64QAM	12	13	20.65	20.39	20.36
5	64QAM	25	0	20.46	20.57	20.74

Effective Radiated Power and Effective Isotropic Radiated Power

LTE Band2				Measured EIRP		
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				18700	18900	19100
Frequency (MHz)				1860	1880	1900
20	QPSK	1	0	18.91	18.03	18.41
20	QPSK	1	49	18.36	17.89	18.27
20	QPSK	1	99	17.53	18.15	17.08
20	QPSK	50	0	17.54	16.9	17.24
20	QPSK	50	24	17.45	16.82	17.07
20	QPSK	50	50	17.57	17	16.6
20	QPSK	100	0	17.31	16.9	17.1
20	16QAM	1	0	17.44	17.47	17.58
20	16QAM	1	49	17.47	16.77	17.03
20	16QAM	1	99	16.68	17.44	16.69
20	16QAM	50	0	16.52	15.84	16.32
20	16QAM	50	24	16.42	15.82	16.1



20	16QAM	50	50	16.59	15.95	15.76
20	16QAM	100	0	17.4	15.89	16.23
20	64QAM	1	0	17.6	17.11	17.74
20	64QAM	1	49	17.26	16.49	16.49
20	64QAM	1	99	16.67	17.2	16.78
20	64QAM	50	0	16.59	15.82	18.21
20	64QAM	50	24	16.48	15.78	16.02
20	64QAM	50	50	16.55	15.95	15.58
20	64QAM	100	0	19.03	15.84	16.02
Channel				18675	18900	19125
Frequency (MHz)				1857.5	1880	1902.5
15	QPSK	1	0	20.67	20.38	20.89
15	QPSK	1	37	21.26	20.31	20.5
15	QPSK	1	74	20.95	20.51	20.1
15	QPSK	36	0	19.89	19.2	19.6
15	QPSK	36	20	19.97	19.09	19.24
15	QPSK	36	39	19.85	19.19	19.12
15	QPSK	75	0	19.79	19.13	19.35
15	16QAM	1	0	20	19.51	19.44
15	16QAM	1	37	19.8	19.52	19.59
15	16QAM	1	74	19.72	19.16	18.51
15	16QAM	36	0	18.81	18.38	18.77
15	16QAM	36	20	18.92	18.33	18.4
15	16QAM	36	39	18.84	18.39	18.27
15	16QAM	75	0	18.87	18.29	18.32
15	64QAM	1	0	19.65	19.51	20.37
15	64QAM	1	37	20.26	19.05	19.18
15	64QAM	1	74	18.95	18.45	18.62
15	64QAM	36	0	18.95	18.28	18.33
15	64QAM	36	20	18.93	18.38	18.14
15	64QAM	36	39	18.8	18.24	18.46
15	64QAM	75	0	18.67	18.04	18.38

LTE Band2	Measured EIRP
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BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				18650	18900	19150
Frequency (MHz)				1855	1880	1905
10	QPSK	1	0	20.6	20.13	20.4
10	QPSK	1	25	21.12	20.16	20.22
10	QPSK	1	49	21.27	20.38	19.69
10	QPSK	25	0	19.93	19.19	19.25
10	QPSK	25	12	19.9	19.18	19.22
10	QPSK	25	25	19.99	19.3	19.14
10	QPSK	50	0	19.81	18.99	19.21
10	16QAM	1	0	19.5	19.63	19.51
10	16QAM	1	25	20.22	19.46	19.39
10	16QAM	1	49	20.48	19.23	18.6
10	16QAM	25	0	18.92	18.34	18.3
10	16QAM	25	12	19.05	18.27	18.3
10	16QAM	25	25	19.16	18.33	18.23
10	16QAM	50	0	18.88	18.19	18.23
10	64QAM	1	0	19.78	19.43	19.51
10	64QAM	1	25	19.83	19.6	19.28
10	64QAM	1	49	20.24	19.44	18.7
10	64QAM	25	0	19.13	18.36	18.27
10	64QAM	25	12	19.06	18.28	18.28
10	64QAM	25	25	19.04	18.43	18.15
10	64QAM	50	0	18.87	18.21	18.17
Channel				18625	18900	19175
Frequency (MHz)				1852.5	1880	1907.5
5	QPSK	1	0	20.56	20.04	19.96
5	QPSK	1	12	21.08	20.17	19.9
5	QPSK	1	24	21.13	20.25	19.48
5	QPSK	12	0	19.78	19.28	19.11
5	QPSK	12	7	19.97	19.13	19.02
5	QPSK	12	13	19.97	19.28	18.88
5	QPSK	25	0	19.85	19.12	19.1
5	16QAM	1	0	19.3	19.24	19.07
5	16QAM	1	12	19.66	19.49	19.3
5	16QAM	1	24	20.39	19.55	18.63
5	16QAM	12	0	18.87	18.37	18.25



5	16QAM	12	7	18.98	18.36	18.17
5	16QAM	12	13	19.09	18.33	17.82
5	16QAM	25	0	18.91	18.29	18.01
5	64QAM	1	0	20.07	19.1	18.81
5	64QAM	1	12	19.9	18.97	18.72
5	64QAM	1	24	20.06	19.21	18.68
5	64QAM	12	0	18.85	18.48	18.42
5	64QAM	12	7	19.09	18.37	18.04
5	64QAM	12	13	19.21	18.46	17.99
5	64QAM	25	0	19.02	18.23	18.09

LTE Band2				Measured EIRP		
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				18615	18900	19185
Frequency (MHz)				1851.5	1880	1908.5
3	QPSK	1	0	20.72	20.1	19.69
3	QPSK	1	8	20.79	20	19.79
3	QPSK	1	14	20.94	20.16	19.59
3	QPSK	8	0	19.7	19.18	18.9
3	QPSK	8	4	19.86	19.2	18.89
3	QPSK	8	7	19.88	19.16	18.8
3	QPSK	15	0	19.8	19.13	18.8
3	16QAM	1	0	19.73	19.13	19.06
3	16QAM	1	8	19.57	18.91	19
3	16QAM	1	14	19.96	19.21	18.58
3	16QAM	8	0	18.66	18.06	17.85
3	16QAM	8	4	18.85	18.17	17.84
3	16QAM	8	7	18.84	18.18	17.84
3	16QAM	15	0	18.9	18.33	17.87
3	64QAM	1	0	19.61	19.38	18.8
3	64QAM	1	8	19.86	19.59	18.88
3	64QAM	1	14	19.97	19.42	18.65
3	64QAM	8	0	18.63	18.19	17.93
3	64QAM	8	4	18.85	18.09	17.91



3	64QAM	8	7	18.89	18.22	17.87
3	64QAM	15	0	18.88	18.24	17.84
Channel				18607	18900	19193
Frequency (MHz)				1850.7	1880	1909.3
1.4	QPSK	1	0	20.53	20.02	19.58
1.4	QPSK	1	3	20.61	20.08	19.63
1.4	QPSK	1	5	20.73	20.02	19.55
1.4	QPSK	3	0	20.62	20.11	19.64
1.4	QPSK	3	1	20.69	20.12	19.63
1.4	QPSK	3	3	20.65	20	19.62
1.4	QPSK	6	0	19.6	19.21	18.71
1.4	16QAM	1	0	19.51	19.3	18.64
1.4	16QAM	1	3	19.39	18.78	18.84
1.4	16QAM	1	5	19.55	19	18.74
1.4	16QAM	3	0	19.61	19.23	18.68
1.4	16QAM	3	1	19.54	19.42	18.63
1.4	16QAM	3	3	19.69	19.22	18.59
1.4	16QAM	6	0	18.76	18.24	17.89
1.4	64QAM	1	0	19.67	19.55	18.5
1.4	64QAM	1	3	19.71	19.18	18.73
1.4	64QAM	1	5	19.81	19.2	18.56
1.4	64QAM	3	0	19.63	19.32	18.74
1.4	64QAM	3	1	19.68	19.59	18.75
1.4	64QAM	3	3	19.74	18.85	18.63
1.4	64QAM	6	0	18.63	18.19	17.88

LTE Band4				Measured EIRP		
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				20050	20175	20300
Frequency (MHz)				1720	1732.5	1745
20	QPSK	1	0	20.41	20.49	20.51
20	QPSK	1	49	20.3	20.81	20.29
20	QPSK	1	99	20.55	20.4	19.43
20	QPSK	50	0	19.03	19.57	19.35
20	QPSK	50	24	19.09	19.57	19.15



20	QPSK	50	50	19.27	19.54	18.68
20	QPSK	100	0	19.11	19.52	19.07
20	16QAM	1	0	19.22	19.48	19.28
20	16QAM	1	49	19.77	19.58	19.53
20	16QAM	1	99	19.86	19.19	18.5
20	16QAM	50	0	18.01	18.63	18.55
20	16QAM	50	24	18.08	18.58	18.16
20	16QAM	50	50	18.18	18.51	17.83
20	16QAM	100	0	18.13	18.49	18.12
20	64QAM	1	0	19.48	19.97	19.7
20	64QAM	1	49	19.7	19.57	19.19
20	64QAM	1	99	19.96	19.81	18.42
20	64QAM	50	0	18.18	18.57	18.49
20	64QAM	50	24	18.22	18.6	18.17
20	64QAM	50	50	18.33	18.47	17.82
20	64QAM	100	0	18.32	18.57	18.08
Channel				20025	20175	20325
Frequency (MHz)				1717.5	1732.5	1747.5
15	QPSK	1	0	20.29	20.68	20.53
15	QPSK	1	37	20.33	20.64	20.03
15	QPSK	1	74	20.6	20.36	19.36
15	QPSK	36	0	19.06	19.45	19.2
15	QPSK	36	20	19.14	19.47	18.88
15	QPSK	36	39	19.23	19.44	18.73
15	QPSK	75	0	19.11	19.35	18.92
15	16QAM	1	0	19.18	19.77	19.67
15	16QAM	1	37	19.26	19.29	18.99
15	16QAM	1	74	19.45	19.31	18.77
15	16QAM	36	0	17.99	18.6	18.22
15	16QAM	36	20	18.1	18.63	17.88
15	16QAM	36	39	18.2	18.57	17.88
15	16QAM	75	0	18.06	18.47	17.94
15	64QAM	1	0	19.37	19.9	19.94
15	64QAM	1	37	19.06	19.44	18.92
15	64QAM	1	74	17.94	18.64	18.2
15	64QAM	36	0	18.08	18.56	17.91
15	64QAM	36	20	18.13	18.58	17.88
15	64QAM	36	39	18.05	18.6	17.95



15	64QAM	75	0	18.08	18.57	17.91
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LTE Band4				Measured EIRP		
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				20000	20175	20350
Frequency (MHz)				1715	1732.5	1750
10	QPSK	1	0	20.5	20.62	20.21
10	QPSK	1	25	20.33	20.63	19.68
10	QPSK	1	49	20.22	20.62	19.53
10	QPSK	25	0	19.15	19.62	18.94
10	QPSK	25	12	19.14	19.67	18.64
10	QPSK	25	25	19.21	19.64	18.81
10	QPSK	50	0	19.02	19.43	19.13
10	16QAM	1	0	19.61	19.85	19.18
10	16QAM	1	25	19.2	19.7	19.09
10	16QAM	1	49	19.48	19.67	18.55
10	16QAM	25	0	18.62	18.73	17.95
10	16QAM	25	12	18.05	18.66	17.83
10	16QAM	25	25	18.19	18.68	17.88
10	16QAM	50	0	18.04	18.61	17.83
10	64QAM	1	0	19.62	19.74	19.03
10	64QAM	1	25	19.28	19.78	18.84
10	64QAM	1	49	19.11	19.89	18.96
10	64QAM	25	0	18.11	18.84	18.42
10	64QAM	25	12	18.14	18.79	18.13
10	64QAM	25	25	18.22	18.71	17.96
10	64QAM	50	0	17.94	18.57	18.12
Channel				19975	20175	20375
Frequency (MHz)				1712.5	1732.5	1752.5
5	QPSK	1	0	20.47	20.6	19.88
5	QPSK	1	12	20.34	20.71	19.87
5	QPSK	1	24	20.33	20.56	19.75
5	QPSK	12	0	19.21	19.76	19.01
5	QPSK	12	7	19.3	19.83	18.97
5	QPSK	12	13	19.05	19.74	18.82



5	QPSK	25	0	19.13	19.73	18.92
5	16QAM	1	0	19.1	19.68	19.08
5	16QAM	1	12	19.1	19.61	19.04
5	16QAM	1	24	19.09	19.51	19.03
5	16QAM	12	0	18.75	18.89	17.99
5	16QAM	12	7	18.28	18.86	17.96
5	16QAM	12	13	18.09	18.8	17.84
5	16QAM	25	0	18.06	18.79	17.84
5	64QAM	1	0	19.57	19.61	18.88
5	64QAM	1	12	19.72	19.63	19.3
5	64QAM	1	24	19.32	19.5	18.8
5	64QAM	12	0	18.59	18.86	17.98
5	64QAM	12	7	18.17	18.76	17.97
5	64QAM	12	13	18.06	18.86	17.9
5	64QAM	25	0	18.08	18.85	17.89

LTE Band4				Measured EIRP		
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				19965	20175	20385
Frequency (MHz)				1711.5	1732.5	1753.5
3	QPSK	1	0	20.45	20.61	19.84
3	QPSK	1	8	20.49	20.71	19.88
3	QPSK	1	14	20.42	20.73	19.75
3	QPSK	8	0	19.43	19.88	19
3	QPSK	8	4	19.45	19.84	19.03
3	QPSK	8	7	19.42	19.85	18.9
3	QPSK	15	0	19.42	19.88	18.94
3	16QAM	1	0	19.71	19.59	19.07
3	16QAM	1	8	19.62	19.68	18.86
3	16QAM	1	14	19.42	20.02	18.77
3	16QAM	8	0	18.46	18.54	18.03
3	16QAM	8	4	18.42	18.8	17.88
3	16QAM	8	7	18.23	18.84	17.91
3	16QAM	15	0	18.4	18.9	18



3	64QAM	1	0	19.65	19.83	18.72
3	64QAM	1	8	19.27	20.22	18.94
3	64QAM	1	14	19.4	19.77	18.92
3	64QAM	8	0	18.47	18.89	17.99
3	64QAM	8	4	18.41	18.85	17.97
3	64QAM	8	7	18.31	18.8	18.07
3	64QAM	15	0	18.32	18.92	17.94
Channel				19957	20175	20393
Frequency (MHz)				1710.7	1732.5	1754.3
1.4	QPSK	1	0	20.48	20.71	19.96
1.4	QPSK	1	3	20.58	20.79	19.97
1.4	QPSK	1	5	20.53	20.8	19.9
1.4	QPSK	3	0	20.49	20.71	19.88
1.4	QPSK	3	1	20.58	20.74	20.02
1.4	QPSK	3	3	20.54	20.8	19.85
1.4	QPSK	6	0	20.08	19.95	18.94
1.4	16QAM	1	0	19.47	20.05	19.26
1.4	16QAM	1	3	19.57	20.06	19.15
1.4	16QAM	1	5	19.33	19.68	19.22
1.4	16QAM	3	0	19.68	20.02	18.88
1.4	16QAM	3	1	19.61	19.95	18.92
1.4	16QAM	3	3	19.5	20	19.05
1.4	16QAM	6	0	18.54	18.97	18
1.4	64QAM	1	0	19.54	19.74	18.99
1.4	64QAM	1	3	19.45	19.78	19.31
1.4	64QAM	1	5	19.63	19.73	19.03
1.4	64QAM	3	0	19.36	19.99	19.08
1.4	64QAM	3	1	19.35	19.92	19.09
1.4	64QAM	3	3	19.41	19.96	19
1.4	64QAM	6	0	18.48	18.91	17.97

LTE Band5				Measured ERP		
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				20450	20525	20600
Frequency (MHz)				829	836.5	844



10	QPSK	1	0	16.79	16.46	16.63
10	QPSK	1	25	16.71	16.84	16.81
10	QPSK	1	49	16.74	16.88	16.69
10	QPSK	25	0	15.88	15.85	15.72
10	QPSK	25	12	15.9	15.83	15.84
10	QPSK	25	25	15.81	15.88	15.79
10	QPSK	50	0	15.7	15.77	15.76
10	16QAM	1	0	16	15.94	16.14
10	16QAM	1	25	15.73	16.07	16.86
10	16QAM	1	49	15.83	15.51	15.94
10	16QAM	25	0	14.77	14.7	14.68
10	16QAM	25	12	14.76	14.87	14.77
10	16QAM	25	25	14.79	14.78	14.6
10	16QAM	50	0	14.78	14.61	14.51
10	64QAM	1	0	15.88	15.63	16.06
10	64QAM	1	25	15.75	16.22	15.78
10	64QAM	1	49	15.62	15.78	15.89
10	64QAM	25	0	14.87	14.88	14.63
10	64QAM	25	12	14.79	14.78	14.82
10	64QAM	25	25	14.78	14.83	14.82
10	64QAM	50	0	14.73	14.76	14.51
Channel				20425	20525	20625
Frequency (MHz)				826.5	836.5	846.5
5	QPSK	1	0	16.83	16.56	16.78
5	QPSK	1	12	16.84	16.74	16.8
5	QPSK	1	24	16.78	16.63	16.8
5	QPSK	12	0	15.89	15.81	15.89
5	QPSK	12	7	15.89	15.75	15.72
5	QPSK	12	13	15.82	15.81	15.79
5	QPSK	25	0	15.74	15.69	15.72
5	16QAM	1	0	15.71	15.68	15.5
5	16QAM	1	12	15.55	15.7	15.6
5	16QAM	1	24	15.54	15.71	15.83
5	16QAM	12	0	14.89	14.66	14.89
5	16QAM	12	7	14.69	14.86	14.8
5	16QAM	12	13	14.72	14.94	14.74
5	16QAM	25	0	14.6	14.79	14.74
5	64QAM	1	0	15.93	15.76	15.57



5	64QAM	1	12	15.81	15.94	15.49
5	64QAM	1	24	15.74	15.88	15.52
5	64QAM	12	0	14.94	14.91	15.04
5	64QAM	12	7	14.67	15.04	14.77
5	64QAM	12	13	14.88	14.86	14.91
5	64QAM	25	0	14.82	14.97	14.82

LTE Band5				Measured ERP		
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				20415	20525	20635
Frequency (MHz)				825.5	836.5	847.5
3	QPSK	1	0	16.72	16.63	16.88
3	QPSK	1	8	16.61	16.85	16.75
3	QPSK	1	14	16.67	16.71	16.88
3	QPSK	8	0	15.93	15.78	15.68
3	QPSK	8	4	15.82	15.83	15.82
3	QPSK	8	7	15.85	15.83	15.82
3	QPSK	15	0	15.89	15.8	15.82
3	16QAM	1	0	16.12	15.68	15.69
3	16QAM	1	8	15.99	15.76	15.52
3	16QAM	1	14	15.66	15.54	15.71
3	16QAM	8	0	14.63	14.73	14.81
3	16QAM	8	4	14.77	14.55	14.69
3	16QAM	8	7	14.81	14.78	14.81
3	16QAM	15	0	14.78	14.92	14.86
3	64QAM	1	0	16.3	15.52	15.61
3	64QAM	1	8	15.84	15.89	15.63
3	64QAM	1	14	15.49	16.33	15.65
3	64QAM	8	0	14.7	14.95	14.72
3	64QAM	8	4	14.77	14.74	14.86
3	64QAM	8	7	14.71	14.75	14.79
3	64QAM	15	0	14.84	14.89	14.89
Channel				20407	20525	20643
Frequency (MHz)				824.7	836.5	848.3
1.4	QPSK	1	0	16.69	16.67	16.77
1.4	QPSK	1	3	16.84	16.82	16.76
1.4	QPSK	1	5	16.8	16.79	16.75



1.4	QPSK	3	0	16.72	16.75	16.71
1.4	QPSK	3	1	16.78	16.73	16.76
1.4	QPSK	3	3	16.84	16.82	16.78
1.4	QPSK	6	0	15.84	15.78	15.77
1.4	16QAM	1	0	16.15	15.96	15.75
1.4	16QAM	1	3	15.97	16.03	15.42
1.4	16QAM	1	5	15.56	15.97	16.09
1.4	16QAM	3	0	15.77	15.75	15.8
1.4	16QAM	3	1	15.83	15.64	15.85
1.4	16QAM	3	3	15.87	15.8	15.75
1.4	16QAM	6	0	14.78	14.8	14.9
1.4	64QAM	1	0	16.02	15.76	16.07
1.4	64QAM	1	3	15.76	15.89	15.59
1.4	64QAM	1	5	16.15	16.24	15.61
1.4	64QAM	3	0	15.7	15.92	16.16
1.4	64QAM	3	1	15.98	15.89	15.87
1.4	64QAM	3	3	15.93	16.14	15.73
1.4	64QAM	6	0	14.69	14.73	14.73

LTE Band 17				Measured ERP		
BW [MHz]	Modulation	RB Size	RB Offset	Low Ch. / Freq.	Middle Ch. / Freq.	High Ch. / Freq.
Channel				23780	23790	23800
Frequency (MHz)				709	710	711
10	QPSK	1	0	18.97	18.59	18.41
10	QPSK	1	25	17.9	17.58	16.95
10	QPSK	1	49	15.65	15.35	15.4
10	QPSK	25	0	17.4	17.14	16.93
10	QPSK	25	12	16.9	16.41	16.06
10	QPSK	25	25	15.87	15.33	15.41
10	QPSK	50	0	16.5	16.07	15.91
10	16QAM	1	0	18.02	17.54	17.62
10	16QAM	1	25	16.83	16.91	16.17
10	16QAM	1	49	15.64	15.39	15.34
10	16QAM	25	0	16.33	16.21	15.95
10	16QAM	25	12	15.87	15.57	15.4
10	16QAM	25	25	15.87	15.48	15.39



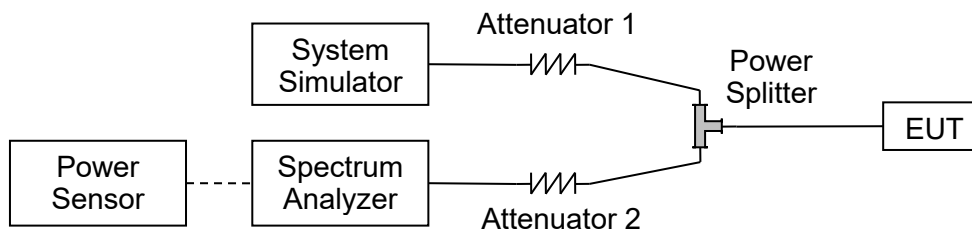
10	16QAM	50	0	15.48	15.32	15.46
10	64QAM	1	0	18.06	18	17.51
10	64QAM	1	25	16.9	16.7	16.33
10	64QAM	1	49	15.36	15.33	15.33
10	64QAM	25	0	16.43	16.23	16.03
10	64QAM	25	12	15.98	15.64	15.32
10	64QAM	25	25	15.85	15.47	15.36
10	64QAM	50	0	15.57	15.38	15.32
Channel				23035	23095	23155
Frequency (MHz)				706.5	707.5	713.5
5	QPSK	1	0	18.76	18.1	16.89
5	QPSK	1	12	18.54	17.68	15.68
5	QPSK	1	24	18.08	16.2	15.34
5	QPSK	12	0	17.67	17.01	15.41
5	QPSK	12	7	17.53	16.5	15.39
5	QPSK	12	13	17.3	15.82	15.33
5	QPSK	25	0	17.39	16.31	15.36
5	16QAM	1	0	17.77	17.24	15.54
5	16QAM	1	12	17.52	16.84	15.4
5	16QAM	1	24	17.12	15.59	15.39
5	16QAM	12	0	16.72	16.04	15.42
5	16QAM	12	7	16.58	15.58	15.37
5	16QAM	12	13	16.26	15.4	15.42
5	16QAM	25	0	16.25	15.44	15.37
5	64QAM	1	0	17.98	16.97	15.74
5	64QAM	1	12	17.87	16.42	15.37
5	64QAM	1	24	17.51	15.41	15.52
5	64QAM	12	0	16.73	16.2	15.66
5	64QAM	12	7	16.59	15.68	15.79
5	64QAM	12	13	16.32	15.4	15.37
5	64QAM	25	0	16.47	15.58	15.75

2.2. Occupied Bandwidth

2.2.1. Requirement

According to FCC section 2.1049, 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



The EUT 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 50 Ohm; 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.

2.2.3. Test procedure

KDB 971168 D01v03 Section 4.1 and ANSI/TIA-603-E-2016.

2.2.4. Test Result

LTE Band 2, BW: 1.4MHz					
Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
18607	1850.7	1.11	1.33	1.11	1.35
18900	1880.0	1.10	1.33	1.10	1.33
19192	1909.2	1.10	1.43	1.11	1.38

**LTE Band 2,BW: 3MHz**

Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
18615	1851.5	2.7	3.05	2.71	3.09
18900	1880.0	2.71	3.04	2.71	3.08
19184	1908.4	2.7	3.01	2.71	3.07

LTE Band 2,BW: 5MHz

Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
18625	1852.5	4.50	5.10	4.52	5.12
18900	1880.0	4.51	5.11	4.51	5.15
19175	1907.5	4.51	5.08	4.51	5.14

LTE Band 2,BW: 10MHz

Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
18650	1855.0	9.00	9.96	8.98	9.87
18900	1880.0	9.03	9.93	8.98	9.82
19150	1905.0	9.02	9.98	8.99	9.88

LTE Band 2,BW: 15MHz

Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
18675	1857.5	13.47	14.83	13.46	15.01
18900	1880.0	13.52	14.84	13.49	14.83
19125	1902.5	13.52	14.8	13.47	14.98

LTE Band 2,BW: 20MHz

Channel	Frequency (MHz)	QPSK		16QAM	
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	26dB Bandwidth (MHz)
18700	1860.0	17.94	19.63	17.95	19.68
18900	1880.0	17.99	19.9	17.97	19.74
19100	1900.0	17.95	19.56	17.94	19.61

**LTE Band 2,BW: 1.4MHz**

Channel	Frequency (MHz)	64QAM			
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)		
18607	1850.7	1.11	1.35		
18900	1880.0	1.10	1.32		
19192	1909.2	1.11	1.39		

LTE Band 2,BW: 3MHz

Channel	Frequency (MHz)	64QAM			
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)		
18615	1851.5	2.71	3.11		
18900	1880.0	2.71	3.08		
19184	1908.4	2.71	3.08		

LTE Band 2,BW: 5MHz

Channel	Frequency (MHz)	64QAM			
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)		
18625	1852.5	4.51	5.09		
18900	1880.0	4.52	5.15		
19175	1907.5	4.51	5.07		

LTE Band 2,BW: 10MHz

Channel	Frequency (MHz)	64QAM			
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)		
18650	1855.0	8.97	9.86		
18900	1880.0	8.98	9.86		
19150	1905.0	8.99	9.83		

LTE Band 2,BW: 15MHz

Channel	Frequency (MHz)	64QAM			
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)		
18675	1857.5	13.46	14.92		



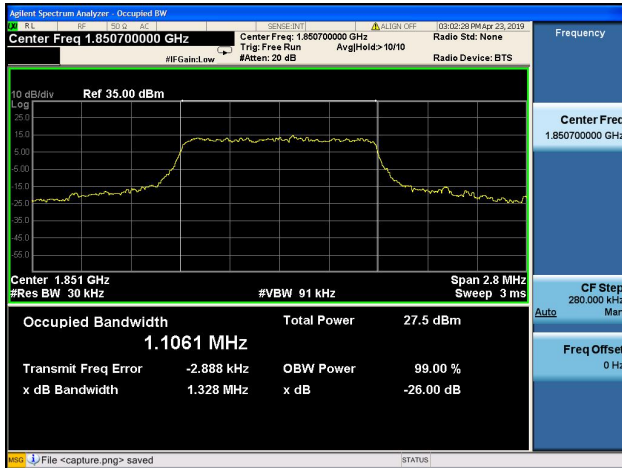
REPORT No.: SZ19040220W02

18900	1880.0	13.50	15.01		
19125	1902.5	13.49	14.88		
LTE Band 2,BW: 20MHz					
Channel	Frequency (MHz)	64QAM			
		99% Bandwidth (MHz)	26dB Bandwidth (MHz)		
18700	1860.0	17.98	19.70		
18900	1880.0	18.01	19.80		
19100	1900.0	17.98	19.55		

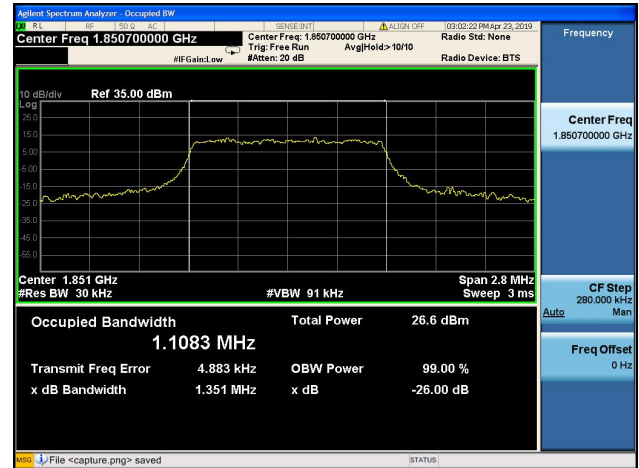


LTE Band 2 99%&26dB Bandwidth

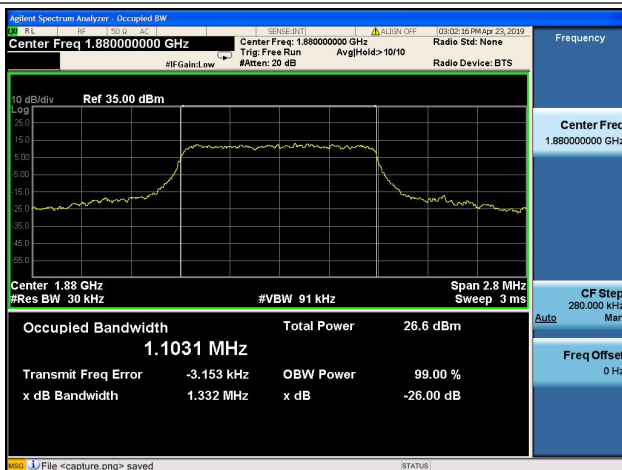
1.4MHz/QPSK/Low CH



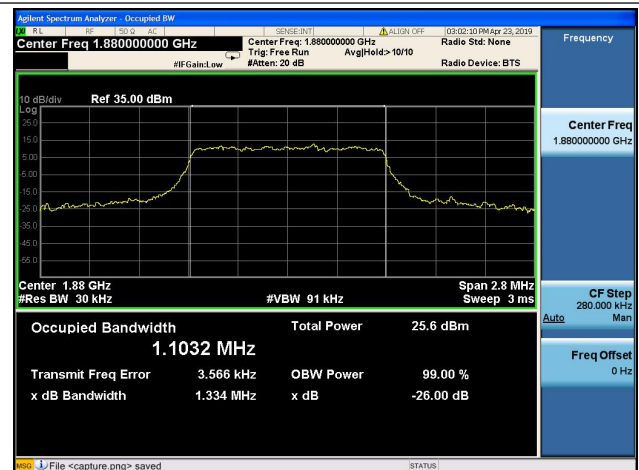
1.4MHz/16QAM/Low CH



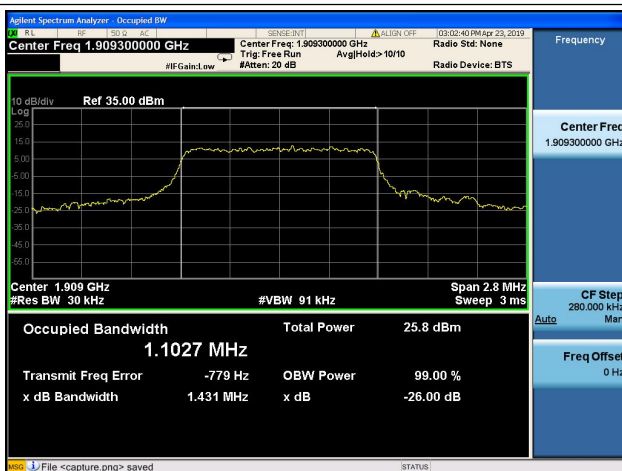
1.4MHz/QPSK/Mid CH



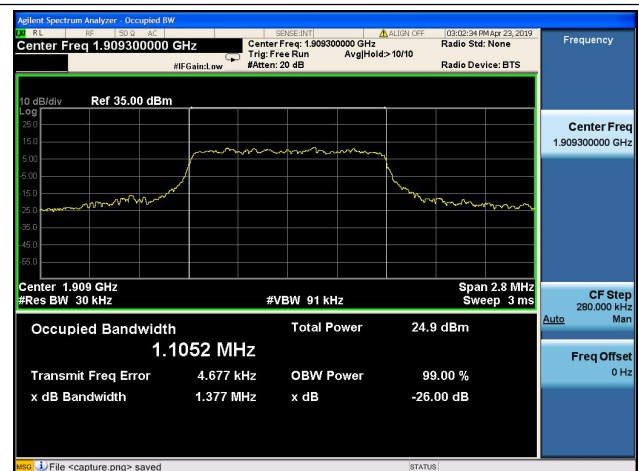
1.4MHz/16QAM/Mid CH



1.4MHz/QPSK/High CH

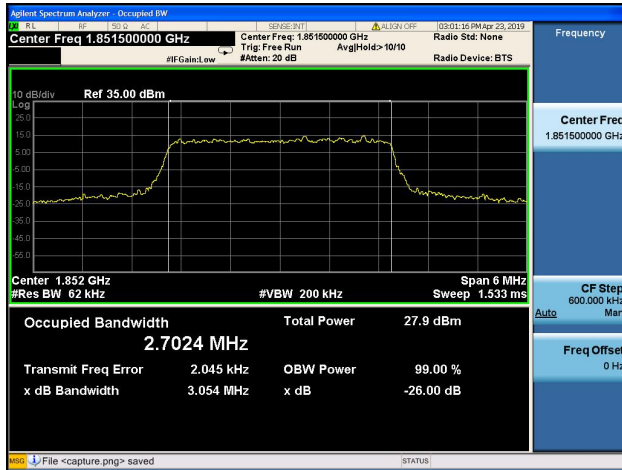


1.4MHz/16QAM/High CH

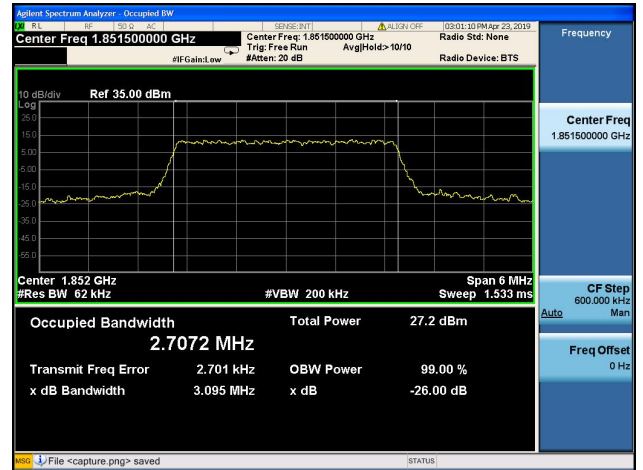




3MHz/QPSK/Low CH



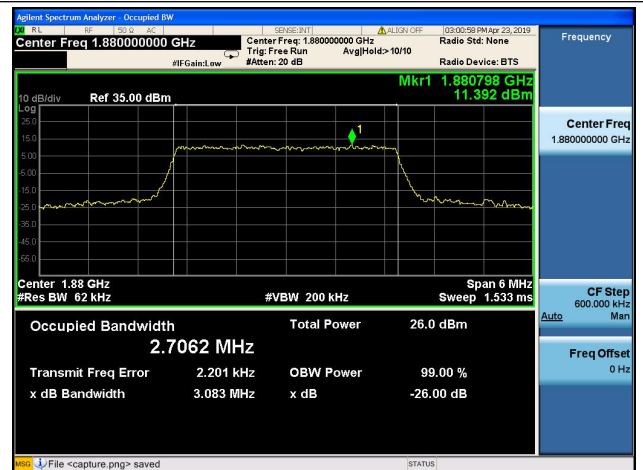
3MHz/16QAM/Low CH



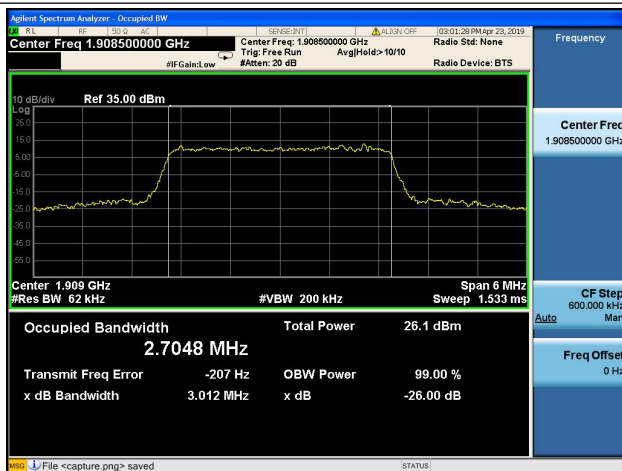
3MHz/QPSK/Mid CH



3MHz/16QAM/Mid CH



3MHz/QPSK/High CH

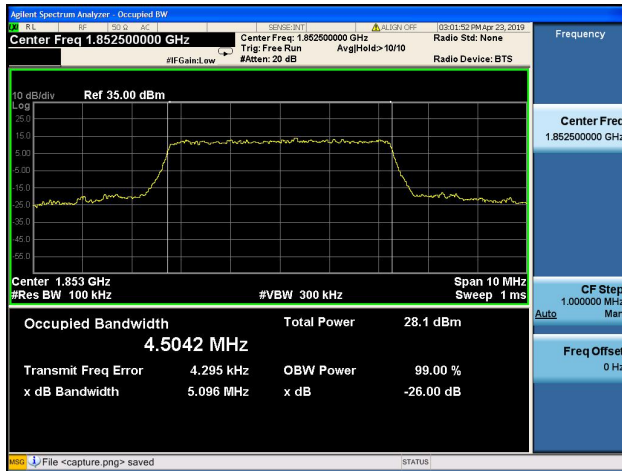


3MHz/16QAM/High CH

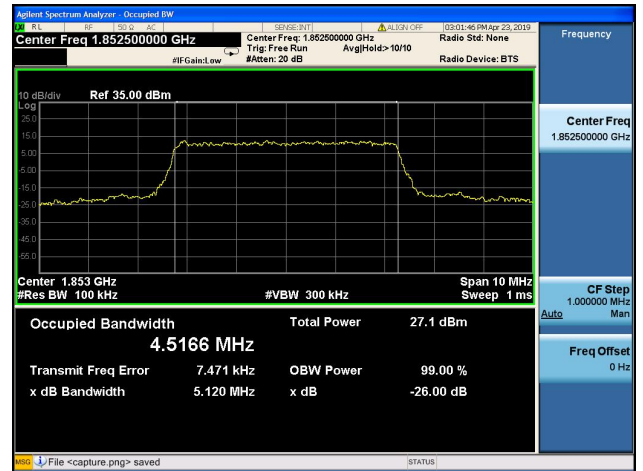




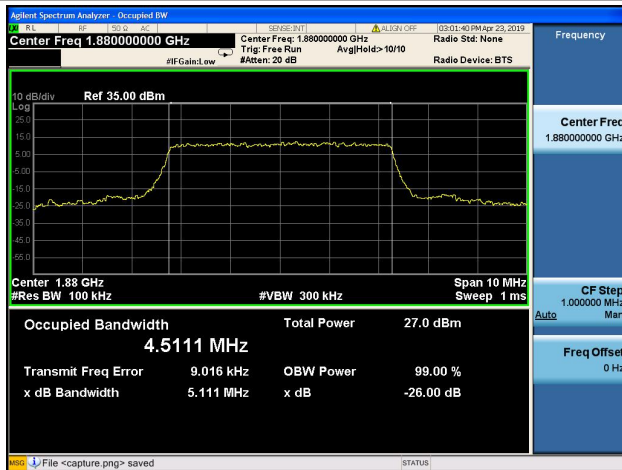
5MHz/QPSK/Low CH



5MHz/16QAM/Low CH



5MHz/QPSK/Mid CH



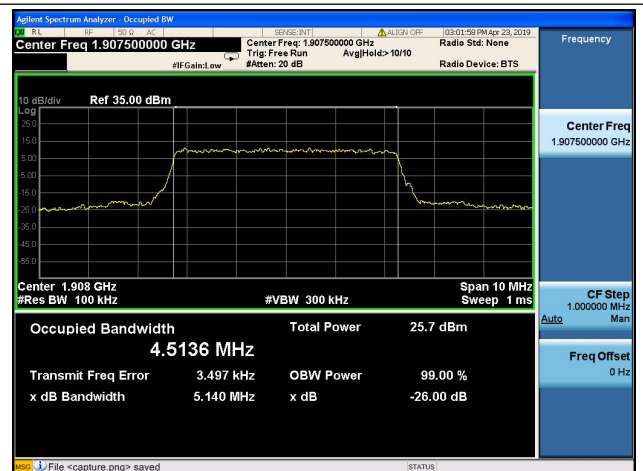
5MHz/16QAM/Mid CH



5MHz/QPSK/High CH

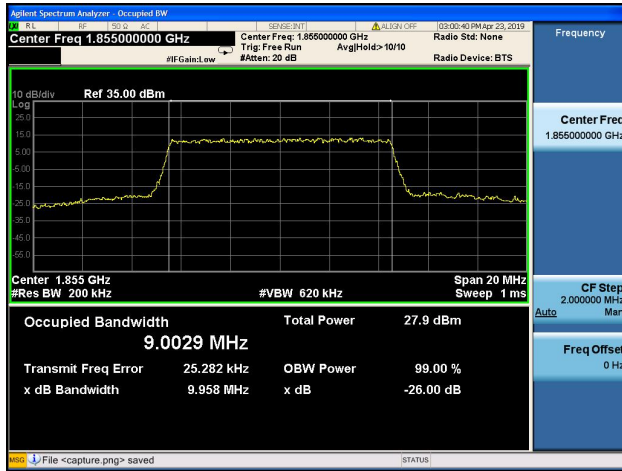


5MHz/16QAM/High CH

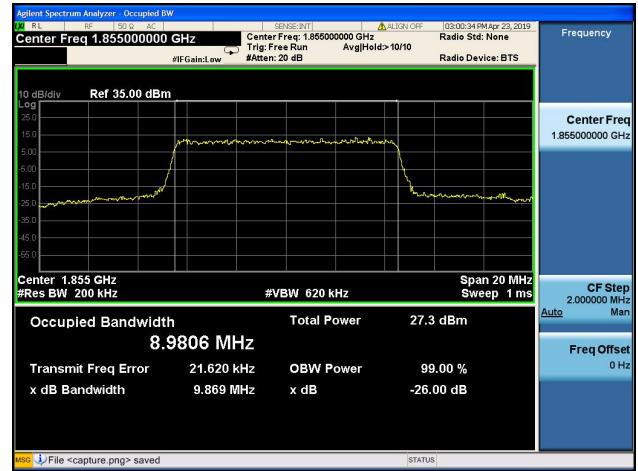




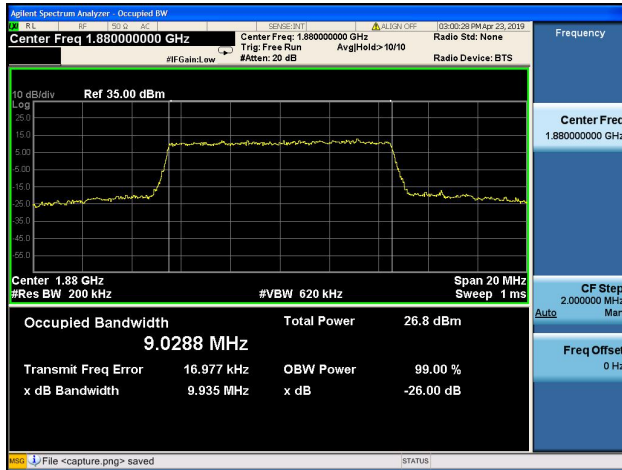
10MHz/QPSK/Low CH



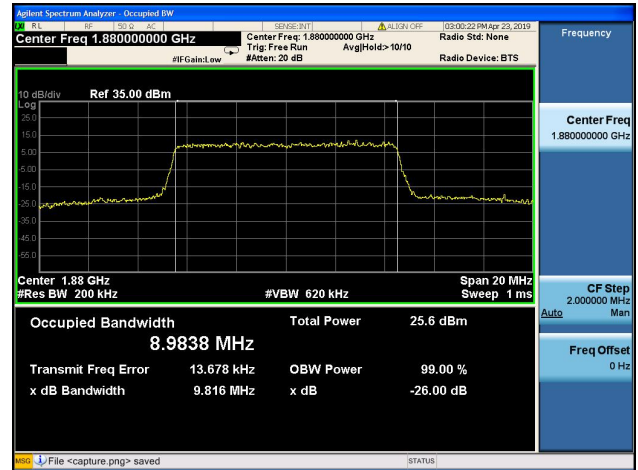
10MHz/16QAM/Low CH



10MHz/QPSK/Mid CH



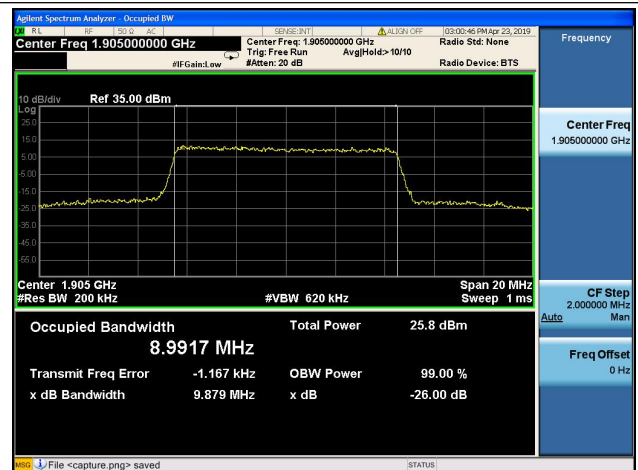
10MHz/16QAM/Mid CH



10MHz/QPSK/High CH

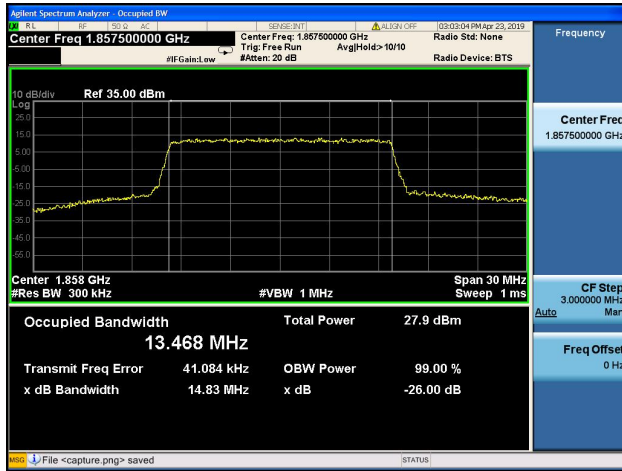


10MHz/16QAM/High CH

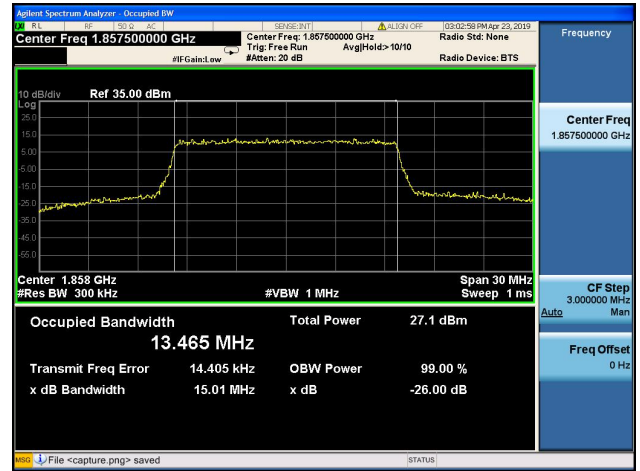




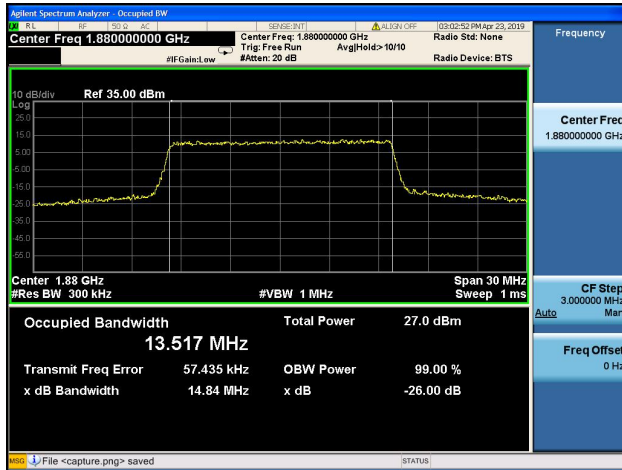
15MHz/QPSK/Low CH



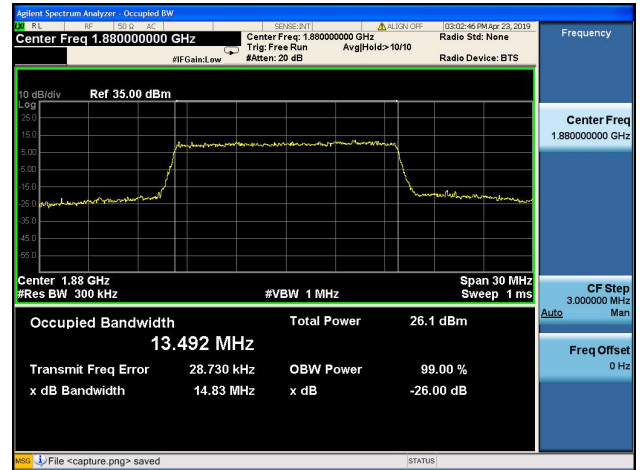
15MHz/16QAM/Low CH



15MHz/QPSK/Mid CH



15MHz/16QAM/Mid CH



15MHz/QPSK/High CH

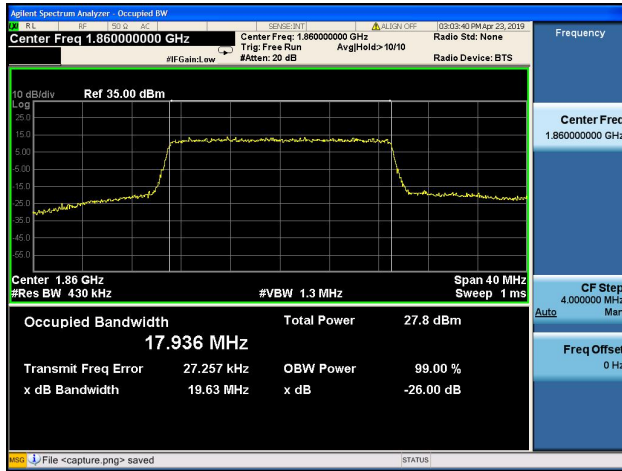


15MHz/16QAM/High CH

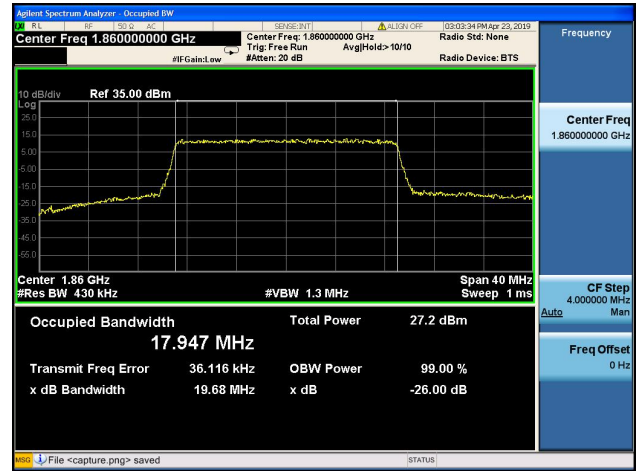




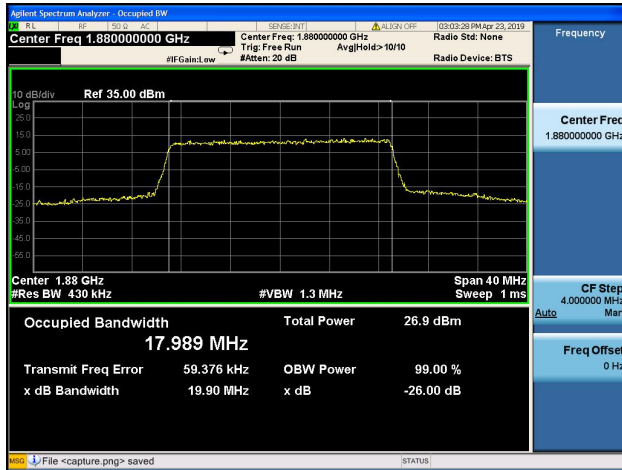
20MHz/QPSK/Low CH



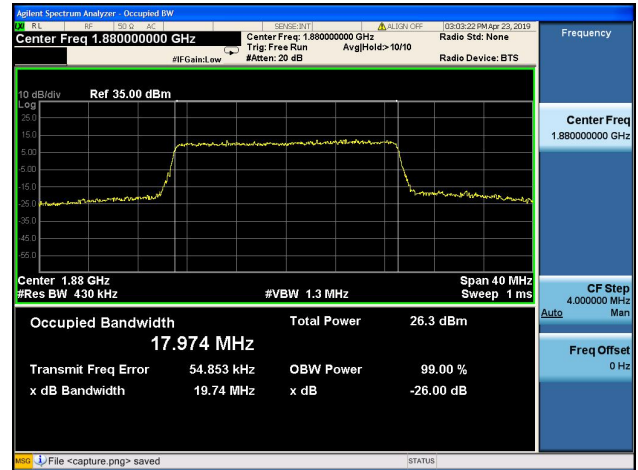
20MHz/16QAM/Low CH



20MHz/QPSK/Mid CH



20MHz/16QAM/Mid CH



20MHz/QPSK/High CH



20MHz/16QAM/High CH

