

FCC Radio Test Report

FCC ID: R9C-CPH1941

This report concerns: **Original Grant**

Project No. : 1909C106
Equipment : Mobile Phone
Brand Name : OPPO
Test Model : CPH1941
Series Model : N/A
Applicant : Guangdong Oppo Mobile Telecommunications Corp., Ltd.
Address : NO. 18 HaiBin Road, WuSha village, Chang An Town, DongGuan City,Guangdong,China.
Manufacturer : Guangdong Oppo Mobile Telecommunications Corp., Ltd.
Address : NO. 18 HaiBin Road, WuSha village, Chang An Town, DongGuan City,Guangdong,China.
Factory : Guangdong Oppo Mobile Telecommunications Corp., Ltd.
Address : NO. 18 HaiBin Road, WuSha village, Chang An Town, DongGuan City,Guangdong,China.
Date of Receipt : Sep. 19, 2019
Date of Test : Sep. 19, 2019 ~ Oct. 21, 2019
Issued Date : Oct. 24, 2019
Report Version : R00
Test Sample : Engineering Sample No.: DG2019091936 for conducted, DG20190920152 for radiated.
Standard(s) : 47 CFR FCC Part 27 Subpart L
47 CFR FCC Part 27 Subpart M
47 CFR FCC Part 2
ANSI/TIA/EIA-603-E-2016
KDB 971168 D01 Power Meas License Digital Systems v03r01

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

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BTL's laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and is not use in determining the Pass/Fail results.

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REPORT ISSUED HISTORY

Report Version	Description	Issued Date
R00	Original Issue.	Oct. 24, 2019

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part 27 Subpart L, M & Part 2			
Standard(s) Section	Test Item	Judgment	Remark
2.1046 27.50(d)(4) 27.50(h)(2)	Effective Radiated Power & Equivalent Isotropic Radiated Power	PASS	-----
2.1049	Occupied Bandwidth	PASS	-----
2.1051 27.53(h) 27.53(m)(4)	Conducted Spurious Emissions	PASS	-----
2.1053 27.53(h) 27.53(m)(4)	Radiated Spurious Emissions	PASS	-----
2.1051 27.53(h) 27.53(m)(4)	Band Edge Measurements	PASS	-----
-	Peak To Average Ratio	PASS	Record Only
2.1055 27.54	Frequency Stability	PASS	-----

Note:

(1) "N/A" denotes test is not applicable in this test report.

1.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.

BTL's Test Firm Registration Number for FCC: 357015

BTL's Designation Number for FCC: CN1240

1.2 MEASUREMENT UNCERTAINTY

The measurement uncertainty figures shall be calculated according the methods described in the ETSI TR 100 028 and shall correspond to an expansion factor (coverage factor) $k=1.96$ or $k=2$ (which provide confidence levels of respectively 90% and 95.45% in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

Measurement Uncertainty for a Level of Confidence of 95 %, $U=2 \times U_c(y)$.

The BTL measurement uncertainty as below table:

A. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U_c (dB)
DG-CB03 (3m)	CISPR	9KHz ~ 30MHz	V	3.79
		9KHz ~ 30MHz	H	3.57
		30MHz ~ 200MHz	V	4.88
		30MHz ~ 200MHz	H	4.14
		200MHz ~ 1,000MHz	V	4.62
		200MHz ~ 1,000MHz	H	4.80

Test Site	Method	Measurement Frequency Range	U_c (dB)
DG-CB03 (3m)	CISPR	1GHz ~ 6GHz	4.58
		6GHz ~ 18GHz	5.18

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By
Output Power & ERP & EIRP	23.4°C	41.5%	DC 3.87V	Vegeta Li
Occupied Bandwidth	23.4°C	41.5%	DC 3.87V	Vegeta Li
Conducted Spurious Emissions	23.4°C	41.5%	DC 3.87V	Vegeta Li
Radiated Spurious Emissions	24°C	68%	AC 120V/60Hz	Berton Luo
Band Edge	23.4°C	41.5%	DC 3.87V	Vegeta Li
Peak to Average Ratio	23.4°C	41.5%	DC 3.87V	Vegeta Li
Frequency Stability	Normal and Extreme			Vegeta Li

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	Mobile Phone			
Brand Name	OPPO			
Test Model	CPH1941			
Series Model	N/A			
Model Difference(s)	N/A			
Hardware Version	11			
Software Version	ColorOS V6.0.1			
Firmware Version	TBD			
Power Source	1. DC Voltage supplied from AC/DC adapter. 1# Model: OP52KAUH 2# Model: OP52JAUH 3# Model: OP52YAUH 2. Supplied from Li-ion Polymer battery. 1# Factory / Model: NVT / BLP727 (NA-P727-92) 2# Factory / Model: Desay / BLP727 (DA-P727-923) 3# Factory / Model: Sunwoda / BLP727 (XA-P727-922) 4# Factory / Model: Desay / BLP727 (DD-P727-918) 5# Factory / Model: Desay / BLP727 (DA-P727-931) 3. Supplied from USB port.			
Power Rating	1. I/P:100-240V~ 50/60Hz 0.4A O/P:5V --- 2A 2. 3.87Vdc, 5000mAh/19.35Wh 3. DC 5V			
IEMI No.	Radiated	868467040020432		
	Conducted	868467040020648 for Single, 868467040020341 for CA		
Modulation Type	WCDMA/HSDPA/HSUPA	UL: QPSK DL: QPSK, 16QAM		
	LTE	UL: QPSK, 16QAM, 64QAM DL: QPSK, 16QAM, 64QAM		
Max. EIRP	WCDMA Band IV	QPSK	25.60	dBm
	HSDPA Band IV	QPSK	24.50	dBm
	HSUPA Band IV	QPSK	24.53	dBm
	LTE Band 4 (Channel Bandwidth: 1.4MHz)	QPSK	25.02	dBm
		16QAM	24.60	dBm
		64QAM	23.41	dBm
	LTE Band 4 (Channel Bandwidth: 3MHz)	QPSK	25.13	dBm
		16QAM	24.69	dBm
		64QAM	23.44	dBm
	LTE Band 4 (Channel Bandwidth: 5MHz)	QPSK	25.16	dBm
		16QAM	24.85	dBm
		64QAM	23.46	dBm
	LTE Band 4 (Channel Bandwidth: 10MHz)	QPSK	25.17	dBm
		16QAM	24.71	dBm
		64QAM	23.46	dBm
	LTE Band 4 (Channel Bandwidth: 15MHz)	QPSK	25.16	dBm
		16QAM	24.17	dBm
		64QAM	23.68	dBm
	LTE Band 4 (Channel Bandwidth: 20MHz)	QPSK	25.19	dBm
		16QAM	24.92	dBm
		64QAM	23.75	dBm

Max. EIRP	LTE Band 7 (Channel Bandwidth: 5MHz)	QPSK	25.24	dBm
		16QAM	24.88	dBm
		64QAM	23.41	dBm
	LTE Band 7 (Channel Bandwidth: 10MHz)	QPSK	25.10	dBm
		16QAM	24.66	dBm
		64QAM	23.29	dBm
	LTE Band 7 (Channel Bandwidth: 15MHz)	QPSK	25.08	dBm
		16QAM	24.70	dBm
		64QAM	23.57	dBm
	LTE Band 7 (Channel Bandwidth: 20MHz)	QPSK	25.28	dBm
		16QAM	24.77	dBm
		64QAM	23.68	dBm
	LTE Band 38 (Channel Bandwidth: 5MHz)	QPSK	25.02	dBm
		16QAM	24.52	dBm
		64QAM	23.50	dBm
	LTE Band 38 (Channel Bandwidth: 10MHz)	QPSK	24.98	dBm
		16QAM	24.53	dBm
		64QAM	23.47	dBm
	LTE Band 38 (Channel Bandwidth: 15MHz)	QPSK	24.95	dBm
		16QAM	24.48	dBm
		64QAM	23.38	dBm
	LTE Band 38 (Channel Bandwidth: 20MHz)	QPSK	25.02	dBm
		16QAM	24.60	dBm
		64QAM	23.51	dBm
	LTE Band 41 (Channel Bandwidth: 5MHz)	QPSK	25.06	dBm
		16QAM	24.54	dBm
		64QAM	23.63	dBm
	LTE Band 41 (Channel Bandwidth: 10MHz)	QPSK	25.02	dBm
		16QAM	24.60	dBm
		64QAM	23.48	dBm
	LTE Band 41 (Channel Bandwidth: 15MHz)	QPSK	25.08	dBm
		16QAM	24.62	dBm
		64QAM	23.52	dBm
	LTE Band 41 (Channel Bandwidth: 20MHz)	QPSK	25.15	dBm
		16QAM	24.66	dBm
		64QAM	23.64	dBm
	LTE CA_7C (Channel Bandwidth: 10+20MHz)	QPSK	24.23	dBm
		16QAM	23.64	dBm
		64QAM	21.38	dBm
	LTE CA_7C (Channel Bandwidth: 20+10MHz)	QPSK	24.31	dBm
		16QAM	23.64	dBm
		64QAM	21.33	dBm
	LTE CA_7C (Channel Bandwidth: 15+10MHz)	QPSK	24.32	dBm
		16QAM	23.57	dBm
		64QAM	21.49	dBm
	LTE CA_7C (Channel Bandwidth: 15+15MHz)	QPSK	24.22	dBm
		16QAM	23.59	dBm
		64QAM	21.44	dBm
	LTE CA_7C (Channel Bandwidth: 15+20MHz)	QPSK	24.26	dBm
		16QAM	23.42	dBm
		64QAM	21.34	dBm
	LTE CA_7C (Channel Bandwidth: 20+15MHz)	QPSK	24.39	dBm
		16QAM	23.58	dBm
		64QAM	21.56	dBm
	LTE CA_7C (Channel Bandwidth: 20+20MHz)	QPSK	24.35	dBm
		16QAM	23.44	dBm
		64QAM	21.67	dBm

Max. EIRP	LTE CA_38C (Channel Bandwidth: 15+15MHz)	QPSK	25.01	dBm
		16QAM	23.76	dBm
		64QAM	21.32	dBm
	LTE CA_38C (Channel Bandwidth: 20+20MHz)	QPSK	25.05	dBm
		16QAM	23.53	dBm
		64QAM	21.62	dBm
	LTE CA_41C (Channel Bandwidth: 5+20MHz)	QPSK	24.43	dBm
		16QAM	23.45	dBm
		64QAM	21.59	dBm
	LTE CA_41C (Channel Bandwidth: 20+5MHz)	QPSK	24.62	dBm
		16QAM	23.84	dBm
		64QAM	21.62	dBm
	LTE CA_41C (Channel Bandwidth: 10+15MHz)	QPSK	24.75	dBm
		16QAM	23.94	dBm
		64QAM	21.34	dBm
	LTE CA_41C (Channel Bandwidth: 15+10MHz)	QPSK	24.78	dBm
		16QAM	23.97	dBm
		64QAM	26.36	dBm
	LTE CA_41C (Channel Bandwidth: 10+20MHz)	QPSK	24.58	dBm
		16QAM	23.87	dBm
		64QAM	21.67	dBm
	LTE CA_41C (Channel Bandwidth: 20+10MHz)	QPSK	24.63	dBm
		16QAM	23.83	dBm
		64QAM	21.86	dBm
	LTE CA_41C (Channel Bandwidth: 15+15MHz)	QPSK	24.63	dBm
		16QAM	23.87	dBm
		64QAM	21.68	dBm
	LTE CA_41C (Channel Bandwidth: 15+20MHz)	QPSK	24.54	dBm
		16QAM	23.84	dBm
		64QAM	21.71	dBm
	LTE CA_41C (Channel Bandwidth: 20+15MHz)	QPSK	24.64	dBm
		16QAM	23.83	dBm
		64QAM	21.88	dBm
	LTE CA_41C (Channel Bandwidth: 20+20MHz)	QPSK	24.64	dBm
		16QAM	23.73	dBm
		64QAM	21.85	dBm

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

2. Channel List:

WCDMA Band IV				
Test Frequency ID	UARFCN	Frequency of Uplink (MHz)	UARFCN	Frequency of Downlink (MHz)
Low Range	1312	1712.4	1537	2112.4
Mid Range	1413	1732.6	1638	2132.6
High Range	1513	1752.6	1738	2152.6

LTE Band 4					
Test Frequency ID	Bandwidth (MHz)	N _{UL}	Frequency of Uplink (MHz)	N _{DL}	Frequency of Downlink (MHz)
Low Range	1.4	19957	1710.7	1957	2110.7
	3	19965	1711.5	1965	2111.5
	5	19975	1712.5	1975	2112.5
	10	20000	1715	2000	2115
	15	20025	1717.5	2025	2117.5
	20	20050	1720	2050	2120
Mid Range	1.4/3/5/10/15/20	20175	1732.5	2175	2132.5
High Range	1.4	20393	1754.3	2393	2154.3
	3	20385	1753.5	2385	2153.5
	5	20375	1752.5	2375	2152.5
	10	20350	1750	2350	2150
	15	20325	1747.5	2325	2147.5
	20	20300	1745	2300	2145

LTE Band 7					
Test Frequency ID	Bandwidth (MHz)	N _{UL}	Frequency of Uplink (MHz)	N _{DL}	Frequency of Downlink (MHz)
Low Range	5	20775	2502.5	2775	2622.5
	10	20800	2505	2800	2625
	15	20825	2507.5	2825	2627.5
	20	20850	2510	2850	2630
Mid Range	5/10/15/20	21100	2535	3100	2655
High Range	5	21425	2567.5	3425	2687.5
	10	21400	2565	3400	2685
	15	21375	2562.5	3375	2682.5
	20	21350	2560	3350	2680

LTE Band 38			
Test Frequency ID	Bandwidth (MHz)	EARFCN	Frequency (UL and DL) (MHz)
Low Range	5	37775	2572.5
	10	37800	2575
	15	37825	2577.5
	20	37850	2580
Mid Range	5/10/15/20	38000	2595
High Range	5	38225	2617.5
	10	38200	2615
	15	38175	2612.5
	20	38150	2610

LTE Band 41			
Test Frequency ID	Bandwidth (MHz)	EARFCN	Frequency (UL and DL) (MHz)
Low Range	5	39675	2498.5
	10	39700	2501
	15	39725	2503.5
	20	39750	2506
Mid Range	5/10/15/20	40620	2593
High Range	5	41565	2687.5
	10	41540	2685
	15	41515	2682.5
	20	41490	2680

LTE CA_7C

Range	CC-Combo / N _{RB_agg} [RB]	CC1 Note1					CC2 Note1				
		BW [RB]	N _{UL}	f _{UL} [MHz]	N _{DL}	f _{DL} [MHz]	BW [RB]	N _{UL}	f _{UL} [MHz]	N _{DL}	f _{DL} [MHz]
Low	50+100	50	20805	2505.5	2805	2625.5	100	20949	2519.9	2949	2639.9
		100	20850	2510	2850	2630	50	20994	2524.4	2994	2644.4
	75+50	75	20825	2507.5	2825	2627.5	50	20945	2519.5	2945	2639.5
	75+75	75	20825	2507.5	2825	2627.5	75	20975	2522.5	2975	2642.5
	75+100	75	20828	2507.8	2828	2627.8	100	20999	2524.9	2999	2644.9
		100	20850	2510	2850	2630	75	21021	2527.1	3021	2647.1
Mid	50+100	50	21006	2525.6	3006	2645.6	100	21150	2540	3150	2660
		100	21051	2530.1	3051	2650.1	50	21195	2544.5	3195	2664.5
	75+50	75	21051	2530.1	3051	2650.1	50	21171	2542.1	3171	2662.1
	75+75	75	21025	2527.5	3025	2647.5	75	21175	2542.5	3175	2662.5
	75+100	75	21003	2525.3	3003	2645.3	100	21174	2542.4	3174	2662.4
		100	21026	2527.6	3026	2647.6	75	21197	2544.7	3197	2664.7
High	50+100	50	21206	2545.6	3206	2665.6	100	21350	2560	3350	2680
		100	21251	2550.1	3251	2670.1	50	21395	2564.5	3395	2684.5
	75+50	75	21277	2552.7	3277	2672.7	50	21397	2564.7	3397	2684.7
	75+75	75	21225	2547.5	3225	2667.5	75	21375	2562.5	3375	2682.5
	75+100	75	21179	2542.9	3179	2662.9	100	21350	2560	3350	2680
		100	21201	2545.1	3201	2665.1	75	21372	2562.2	3372	2682.2
High	100+100	100	21152	2540.2	3152	2660.2	100	21350	2560	3350	2680

Note 1: Carriers in increasing frequency order.

LTE CA_38C

Range	CC-Combo / N _{RB_agg} [RB]	CC1 Note1			CC2 Note1		
		BW [RB]	N _{UL/DL}	f _{UL/DL} [MHz]	BW [RB]	N _{UL/DL}	f _{UL/DL} [MHz]
Low	75+75	75	37825	2577.5	75	37975	2592.5
	100+100	100	37850	2580	100	38048	2599.8
Mid	75+75	75	37925	2587.5	75	38075	2602.5
	100+100	100	37901	2585.1	100	38099	2604.9
High	75+75	75	38025	2597.5	75	38175	2612.5
	100+100	100	37952	2590.2	100	38150	2610

Note 1: Carriers in increasing frequency order.

LTE CA_41C

Range	CC-Combo / N _{RB_agg} [RB]	CC1 Note1			CC2 Note1		
		BW [RB]	N _{UL/DL}	f _{UL/DL} [MHz]	BW [RB]	N _{UL/DL}	f _{UL/DL} [MHz]
Low	25+100	25	39683	2499.3	100	39800	2511
		100	39750	2506	25	39867	2517.7
	50+75	50	39703	2501.3	75	39823	2513.3
		75	39725	2503.5	50	39845	2515.5
	50+100	50	39705	2501.5	100	39849	2515.9
		100	39750	2506	50	39894	2520.4
	75+75	75	39725	2503.5	75	39875	2518.5
	75+100	75	39728	2503.8	100	39899	2520.9
		100	39750	2506	75	39921	2523.1
	100+100	100	39750	2506	100	39948	2525.8
Mid	25+100	25	40528	2583.8	100	40645	2595.5
		100	40595	2590.5	25	40712	2602.2
	50+75	50	40549	2585.9	75	40669	2597.9
		75	40571	2588.1	50	40691	2600.1
	50+100	50	40526	2583.6	100	40670	2598.0
		100	40571	2588.1	50	40715	2602.5
	75+75	75	40545	2585.5	75	40695	2600.5
	75+100	75	40523	2583.3	100	40694	2600.4
		100	40546	2585.6	75	40717	2602.7
	100+100	100	40521	2583.1	100	40719	2602.9
High	25+100	25	41373	2668.3	100	41490	2680
		100	41440	2675	25	41557	2686.7
	50+75	50	41395	2670.5	75	41515	2682.5
		75	41417	2672.7	50	41537	2684.7
	50+100	50	41346	2665.6	100	41490	2680
		100	41391	2670.1	50	41535	2684.5
	75+75	75	41365	2667.5	75	41515	2682.5
	75+100	75	41319	2662.9	100	41490	2680
		100	41341	2665.1	75	41512	2682.2
	100+100	100	41292	2660.2	100	41490	2680

Note 1: Carriers in increasing frequency order.

3. Table for Filed Antenna:

Main Antenna

Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
N/A	N/A	Internal	N/A	1.1	WCDMA Band IV
N/A	N/A	Internal	N/A	1.1	LTE Band 4
N/A	N/A	Internal	N/A	1.1	LTE Band 7
N/A	N/A	Internal	N/A	1.1	LTE Band 38
N/A	N/A	Internal	N/A	1.1	LTE Band 41

Second Antenna

Brand	Model Name	Antenna Type	Connector	Gain (dBi)	Note
N/A	N/A	Internal	N/A	1.1	WCDMA Band IV
N/A	N/A	Internal	N/A	1.1	LTE Band 4
N/A	N/A	Internal	N/A	1.1	LTE Band 7
N/A	N/A	Internal	N/A	1.1	LTE Band 38
N/A	N/A	Internal	N/A	1.1	LTE Band 41

2.2 DESCRIPTION OF TEST MODES

Following mode(s) is (were) found to be the worst case(s) and selected for the final test.

WCDMA BAND IV MODE			
Test Item	Available Channel	Tested Channel	Mode
Output Power & EIRP	1312 to 1513	1312, 1413, 1513	WCDMA,HSDPA, HSUPA
Occupied Bandwidth	1312 to 1513	1312, 1413, 1513	WCDMA,HSDPA, HSUPA
Conducted Spurious Emissions	1312 to 1513	1413	WCDMA
Radiated Spurious Emissions	1312 to 1513	1413	WCDMA
Band Edge	1312 to 1513	1312, 1513	WCDMA,HSDPA, HSUPA
Peak to Average Ratio	1312 to 1513	1312, 1413, 1513	WCDMA,HSDPA, HSUPA
Frequency Stability	1312 to 1513	1413	WCDMA

LTE BAND 4 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power & EIRP	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM, 64QAM	1RB/3RB/6RB
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM, 64QAM	1RB/8RB/15RB
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM, 64QAM	1RB/12RB/25RB
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM, 64QAM	1RB/25RB/50RB
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM, 64QAM	1RB/36RB/75RB
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM, 64QAM	1RB/50RB/100RB
Occupied Bandwidth	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM, 64QAM	6RB
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM, 64QAM	15RB
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM, 64QAM	25RB
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM, 64QAM	50RB
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM, 64QAM	75 RB
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM, 64QAM	100RB

LTE BAND 4 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Conducted Spurious Emissions	19957 to 20393	20175	1.4MHz	QPSK	1RB
	19975 to 20375	20175	5MHz	QPSK	1RB
	20050 to 20300	20175	20MHz	QPSK	1RB
Radiated Spurious Emissions	19957 to 20393	20175	1.4MHz	QPSK	1RB
	19975 to 20375	20175	5MHz	QPSK	1RB
	20050 to 20300	20175	20MHz	QPSK	1RB
Band Edge	19957 to 20393	19957	1.4MHz	QPSK	1RB/6RB
		20393			
	19965 to 20385	19965	3MHz	QPSK	1RB/15RB
		20385			
	19975 to 20375	19975	5MHz	QPSK	1RB/25RB
		20375			
	20000 to 20350	20000	10MHz	QPSK	1RB/50RB
		20350			
	20025 to 20325	20025	15MHz	QPSK	1RB/75RB
		20325			
	20050 to 20300	20050	20MHz	QPSK	1RB/100RB
		20300			
Peak To Average Ratio	19957 to 20393	19957, 20175, 20393	1.4MHz	QPSK, 16QAM, 64QAM	1RB
	19965 to 20385	19965, 20175, 20385	3MHz	QPSK, 16QAM, 64QAM	1RB
	19975 to 20375	19975, 20175, 20375	5MHz	QPSK, 16QAM, 64QAM	1RB
	20000 to 20350	20000, 20175, 20350	10MHz	QPSK, 16QAM, 64QAM	1RB
	20025 to 20325	20025, 20175, 20325	15MHz	QPSK, 16QAM, 64QAM	1RB
	20050 to 20300	20050, 20175, 20300	20MHz	QPSK, 16QAM, 64QAM	1RB
Frequency Stability	19957 to 20393	20175	1.4MHz	QPSK	1RB
	19965 to 20385	20175	3MHz	QPSK	1RB
	19975 to 20375	20175	5MHz	QPSK	1RB
	20000 to 20350	20175	10MHz	QPSK	1RB
	20025 to 20325	20175	15MHz	QPSK	1RB
	20050 to 20300	20175	20MHz	QPSK	1RB

LTE BAND 7 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power & EIRP	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM, 64QAM	1RB/12RB/25RB
	20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM, 64QAM	1RB/25RB/50RB
	20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM, 64QAM	1RB/36RB/75RB
	20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM, 64QAM	1RB/50RB/100RB
Occupied Bandwidth	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM, 64QAM	25RB
	20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM, 64QAM	50RB
	20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM, 64QAM	75RB
	20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM, 64QAM	100RB
Conducted Spurious Emissions	20775 to 21425	21100	5MHz	QPSK	1RB
	20850 to 21350	21100	20MHz	QPSK	1RB
Radiated Spurious Emissions	20775 to 21425	21100	5MHz	QPSK	1RB
	20850 to 21350	21100	20MHz	QPSK	1RB
Band Edge	20775 to 21425	20775	5MHz	QPSK	1RB/25RB
		21425			
	20800 to 21400	20800	10MHz	QPSK	1RB/50RB
		21400			
	20825 to 21375	20825	15MHz	QPSK	1RB/75RB
		21375			
	20850 to 21350	20850	20MHz	QPSK	1RB/100RB
		21350			
Peak To Average Ratio	20775 to 21425	20775, 21100, 21425	5MHz	QPSK, 16QAM, 64QAM	1RB
	20800 to 21400	20800, 21100, 21400	10MHz	QPSK, 16QAM, 64QAM	1RB
	20825 to 21375	20825, 21100, 21375	15MHz	QPSK, 16QAM, 64QAM	1RB
	20850 to 21350	20850, 21100, 21350	20MHz	QPSK, 16QAM, 64QAM	1RB
Frequency Stability	20775 to 21425	21100	5MHz	QPSK	1RB
	20800 to 21400	21100	10MHz	QPSK	1RB
	20825 to 21375	21100	15MHz	QPSK	1RB
	20850 to 21350	21100	20MHz	QPSK	1RB

LTE BAND 38 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power & ERP	37775 to 38225	37775, 38000, 38225	5MHz	QPSK, 16QAM, 64QAM	1RB/12RB/25RB
	37800 to 38200	37800, 38000, 38200	10MHz	QPSK, 16QAM, 64QAM	1RB/25RB/50RB
	37825 to 38175	37825, 38000, 38175	15MHz	QPSK, 16QAM, 64QAM	1RB/36RB/75RB
	37850 to 38150	37850, 38000, 38150	20MHz	QPSK, 16QAM, 64QAM	1RB/50RB/100RB
Occupied Bandwidth	37775 to 38225	37775, 38000, 38225	5MHz	QPSK, 16QAM, 64QAM	25RB
	37800 to 38200	37800, 38000, 38200	10MHz	QPSK, 16QAM, 64QAM	50RB
	37825 to 38175	37825, 38000, 38175	15MHz	QPSK, 16QAM, 64QAM	75RB
	37850 to 38150	37850, 38000, 38150	20MHz	QPSK, 16QAM, 64QAM	100RB
Conducted Spurious Emissions	37850 to 38150	38000	5MHz	QPSK	1RB
	37850 to 38150	38000	20MHz	QPSK	1RB
Radiated Spurious Emissions	37850 to 38150	38000	5MHz	QPSK	1RB
	37850 to 38150	38000	20MHz	QPSK	1RB
Band Edge	37775 to 38225	37775	5MHz	QPSK	1RB/25RB
		38225			
	37800 to 38200	37800	10MHz	QPSK	1RB/50RB
		38200			
	37825 to 38175	37825	15MHz	QPSK	1RB/75RB
		38175			
	37850 to 38150	37850	20MHz	QPSK	1RB/100RB
		38150			
Peak to Average Ratio	37775 to 38225	37775, 38000, 38225	5MHz	QPSK, 16QAM, 64QAM	1RB
	37800 to 38200	37800, 38000, 38200	10MHz	QPSK, 16QAM, 64QAM	1RB
	37825 to 38175	37825, 38000, 38175	15MHz	QPSK, 16QAM, 64QAM	1RB
	37850 to 38150	37850, 38000, 38150	20MHz	QPSK, 16QAM, 64QAM	1RB
Frequency Stability	37775 to 38225	38000	5MHz	QPSK	1RB
	37800 to 38200	38000	20MHz	QPSK	1RB
	37825 to 38175	38000	5MHz	QPSK	1RB
	37850 to 38150	38000	20MHz	QPSK	1RB

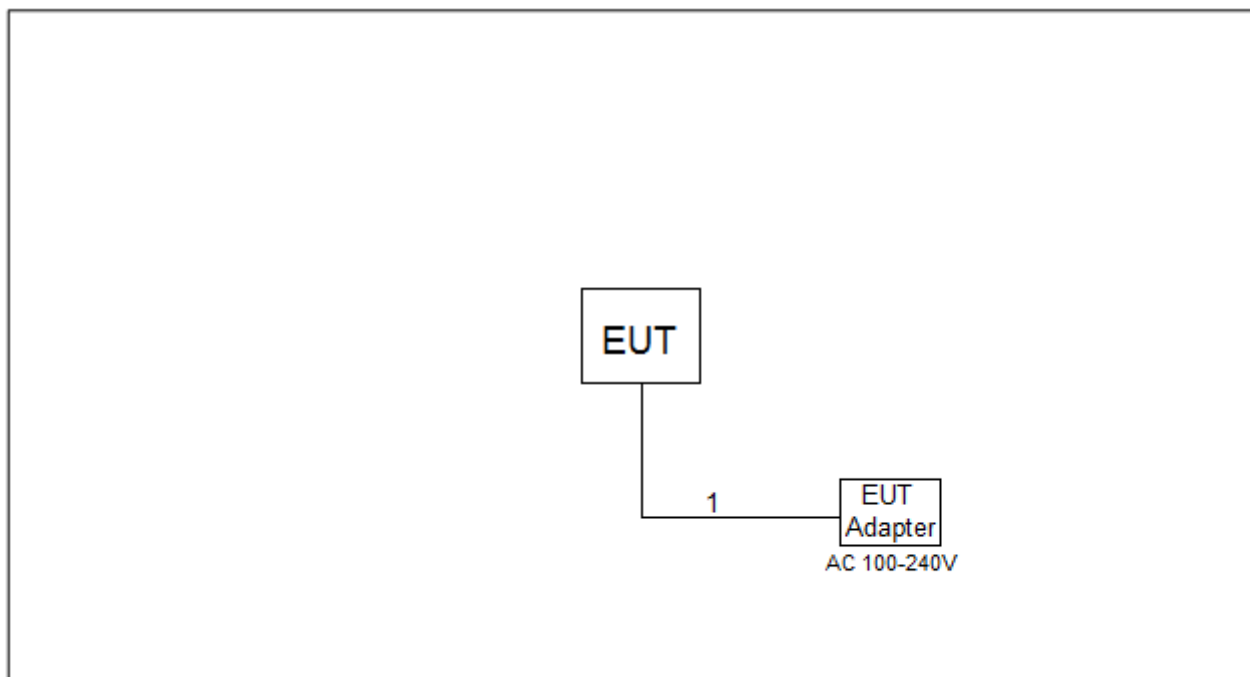
LTE BAND 41 MODE					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Output Power & ERP	39675 to 41565	39675, 40620, 41565	5MHz	QPSK, 16QAM, 64QAM	1RB/12RB/25RB
	39700 to 41540	39700, 40620, 41540	10MHz	QPSK, 16QAM, 64QAM	1RB/25RB/50RB
	39725 to 41515	39725, 40620, 41545	15MHz	QPSK, 16QAM, 64QAM	1RB/36RB/75RB
	39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM, 64QAM	1RB/50RB/100RB
Occupied Bandwidth	39675 to 41565	39675, 40620, 41565	5MHz	QPSK, 16QAM, 64QAM	25RB
	39700 to 41540	39700, 40620, 41540	10MHz	QPSK, 16QAM, 64QAM	50RB
	39725 to 41515	39725, 40620, 41545	15MHz	QPSK, 16QAM, 64QAM	75RB
	39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM, 64QAM	100RB
Conducted Spurious Emissions	39675 to 41565	40620	5MHz	QPSK	1RB
	39750 to 41490	40620	20MHz	QPSK	1RB
Radiated Spurious Emissions	39675 to 41565	40620	5MHz	QPSK	1RB
	39750 to 41490	40620	20MHz	QPSK	1RB
Band Edge	39675 to 41565	39675	5MHz	QPSK	1RB/25RB
		41565			
	39700 to 41540	39700	10MHz	QPSK	1RB/50RB
		41540			
	39725 to 41515	39725	15MHz	QPSK	1RB/75RB
		41545			
	39750 to 41490	39750	20MHz	QPSK	1RB/100RB
		41490			
Peak to Average Ratio	39675 to 41565	39675, 40620, 41565	5MHz	QPSK, 16QAM, 64QAM	1RB
	39700 to 41540	39700, 40620, 41540	10MHz	QPSK, 16QAM, 64QAM	1RB
	39725 to 41515	39725, 40620, 41545	15MHz	QPSK, 16QAM, 64QAM	1RB
	39750 to 41490	39750, 40620, 41490	20MHz	QPSK, 16QAM, 64QAM	1RB
Frequency Stability	39675 to 41565	40620	5MHz	QPSK	1RB
	39700 to 41540	40620	20MHz	QPSK	1RB
	39725 to 41515	40620	5MHz	QPSK	1RB
	39750 to 41490	40620	20MHz	QPSK	1RB

LTE CA_7C				
Test Item	Channel Range	Channel Bandwidth	Modulation	Mode
Output Power & EIRP	Low, Mid, High	10MHz+20MHz 20MHz+10MHz 15MHz+10MHz 15MHz+15MHz 15MHz+20MHz 20MHz+15MHz 20MHz+20MHz	QPSK, 16QAM, 64QAM	PCC + SCC: 1RB#High + 1RB#Low 1RB#Low + 1RB#High Full RB + Full RB
Occupied Bandwidth	Low, Mid, High	10MHz+20MHz 20MHz+10MHz 15MHz+10MHz 15MHz+15MHz 15MHz+20MHz 20MHz+15MHz 20MHz+20MHz	QPSK, 16QAM, 64QAM	PCC + SCC: Full RB + Full RB
Conducted Spurious Emissions	Mid	20MHz+10MHz 15MHz+10MHz 20MHz+15MHz 20MHz+20MHz	QPSK	PCC + SCC: 1RB#High + 1RB#Low
Radiated Spurious Emissions	Mid	20MHz+10MHz 15MHz+10MHz 20MHz+15MHz 20MHz+20MHz	QPSK	PCC + SCC: 1RB#High + 1RB#Low
Band Edge	Low, High	10MHz+20MHz 20MHz+10MHz 15MHz+10MHz 15MHz+15MHz 15MHz+20MHz 20MHz+15MHz 20MHz+20MHz	QPSK	PCC + SCC: 1RB#High + 1RB#Low 1RB#Low + 1RB#High Full RB + Full RB

LTE CA_38C				
Test Item	Channel Range	Channel Bandwidth	Modulation	Mode
Output Power & EIRP	Low, Mid, High	15MHz+15MHz 20MHz+20MHz	QPSK, 16QAM, 64QAM	PCC + SCC: 1RB#High + 1RB#Low 1RB#Low + 1RB#High Full RB + Full RB
Occupied Bandwidth	Low, Mid, High	15MHz+15MHz 20MHz+20MHz	QPSK, 16QAM, 64QAM	PCC + SCC: Full RB + Full RB
Conducted Spurious Emissions	Mid	15MHz+15MHz 20MHz+20MHz	QPSK	PCC + SCC: 1RB#High + 1RB#Low
Radiated Spurious Emissions	Mid	15MHz+15MHz 20MHz+20MHz	QPSK	PCC + SCC: 1RB#High + 1RB#Low
Band Edge	Low, High	15MHz+15MHz 20MHz+20MHz	QPSK	PCC + SCC: 1RB#High + 1RB#Low 1RB#Low + 1RB#High Full RB + Full RB

LTE CA_41C				
Test Item	Channel Range	Channel Bandwidth	Modulation	Mode
Output Power & EIRP	Low, Mid, High	5MHz+20MHz 20MHz+5MHz 10MHz+15MHz 15MHz+10MHz 10MHz+20MHz 20MHz+10MHz 15MHz+15MHz 15MHz+20MHz 20MHz+15MHz 20MHz+20MHz	QPSK, 16QAM, 64QAM	PCC + SCC: 1RB#High + 1RB#Low 1RB#Low + 1RB#High Full RB + Full RB
Occupied Bandwidth	Low, Mid, High	5MHz+20MHz 20MHz+5MHz 10MHz+15MHz 15MHz+10MHz 10MHz+20MHz 20MHz+10MHz 15MHz+15MHz 15MHz+20MHz 20MHz+15MHz 20MHz+20MHz	QPSK, 16QAM, 64QAM	PCC + SCC: Full RB + Full RB
Conducted Spurious Emissions	Mid	15MHz+10MHz 20MHz+10MHz 20MHz+15MHz 20MHz+20MHz	QPSK	PCC + SCC: 1RB#High + 1RB#Low
Radiated Spurious Emissions	Mid	15MHz+10MHz 20MHz+10MHz 20MHz+15MHz 20MHz+20MHz	QPSK	PCC + SCC: 1RB#High + 1RB#Low
Band Edge	Low, High	5MHz+20MHz 20MHz+5MHz 10MHz+15MHz 15MHz+10MHz 10MHz+20MHz 20MHz+10MHz 15MHz+15MHz 15MHz+20MHz 20MHz+15MHz 20MHz+20MHz	QPSK	PCC + SCC: 1RB#High + 1RB#Low 1RB#Low + 1RB#High Full RB + Full RB

2.3 BLOCK DIGRAM SHOWING THECONFIGURATIONOFSYSTEMTESTED



3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.
-	-	-	-	-

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	DC Cable	NO	NO	1m

3. TEST RESULT

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMIT

Mobile / Portable station are limited to 1 watts e.i.r.p. (Part 27 Subpart L)

Mobile / Portable station are limited to 2 watts e.i.r.p. (Part 27 Subpart M)

3.1.2 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 5.0.

EIRP / ERP:

$EIRP = \text{Output Power} + \text{Antenan gain}$

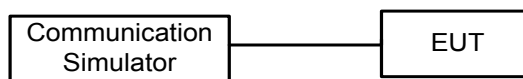
$ERP = EIPR - 2.15\text{dBi}$.

Output Power:

The EUT was set up for the maximum power with WCDMA and LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

3.1.3 TEST SETUP LAYOUT

Output Power Measurement



3.1.4 TEST DEVIATION

No deviation

3.1.5 TEST RESULTS

Please refer to the APPENDIX A.

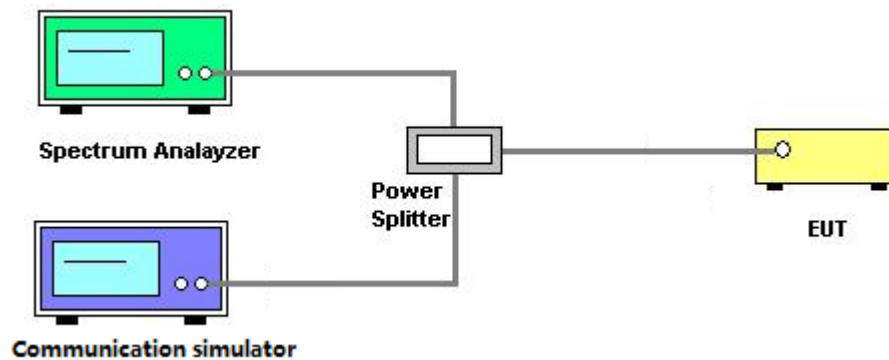
3.2 OCCUPIED BANDWIDTH MEASUREMENT

3.2.1 TEST PROCEDURE

The testing follows FCC KDB 971168 v03r01 Section 4.0.

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth and 26dB bandwidth.

3.2.2 TEST SETUP LAYOUT



3.2.3 TEST DEVIATION

No deviation

3.2.4 TEST RESULTS

Please refer to the APPENDIX B.

3.3 CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

3.3.1 LIMIT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm. (Part 27 Subpart L)

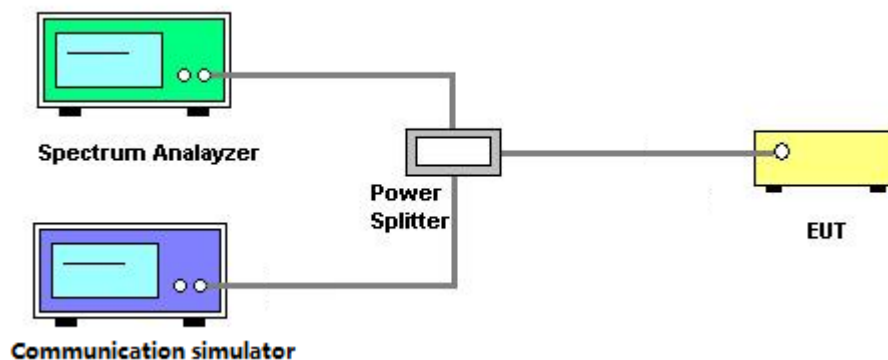
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $55 + 10 \log(P)$ dB. The emission limit equal to -25dBm. (Part 27 Subpart M)

3.3.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 6.0.

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. The band edges of low and high channels for the highest RF powers were measured. Set RBW $\geq$ 1% EBW in the 1MHz band immediately outside and adjacent to the band edge.
3. Set spectrum analyzer with RMS detector.
4. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.3.3 TEST SETUP LAYOUT



3.3.4 TEST DEVIATION

No deviation

3.3.5 TEST RESULTS

Please refer to the APPENDIX C.

3.4 RADIATED SPURIOUS EMISSIONS MEASUREMENT

3.4.1 LIMIT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm. (Part 27 Subpart L)

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $55 + 10 \log(P)$ dB. The emission limit equal to -25dBm. (Part 27 Subpart M)

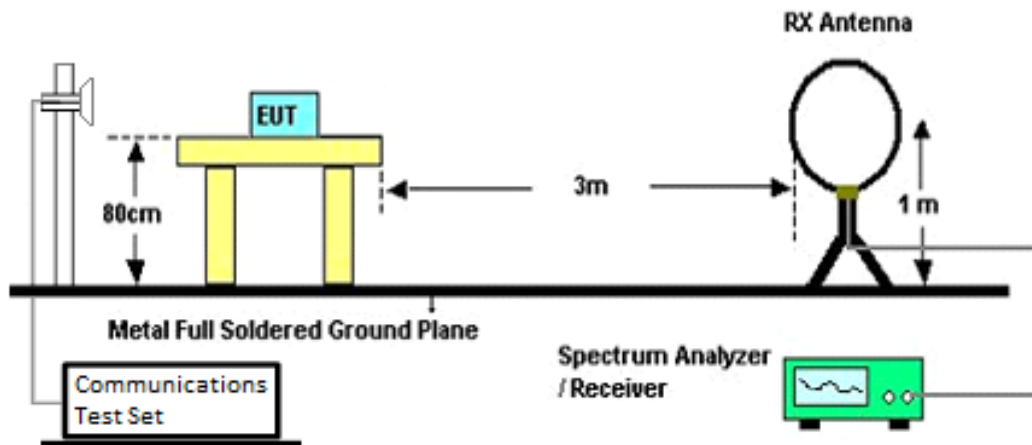
3.4.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 5.8.

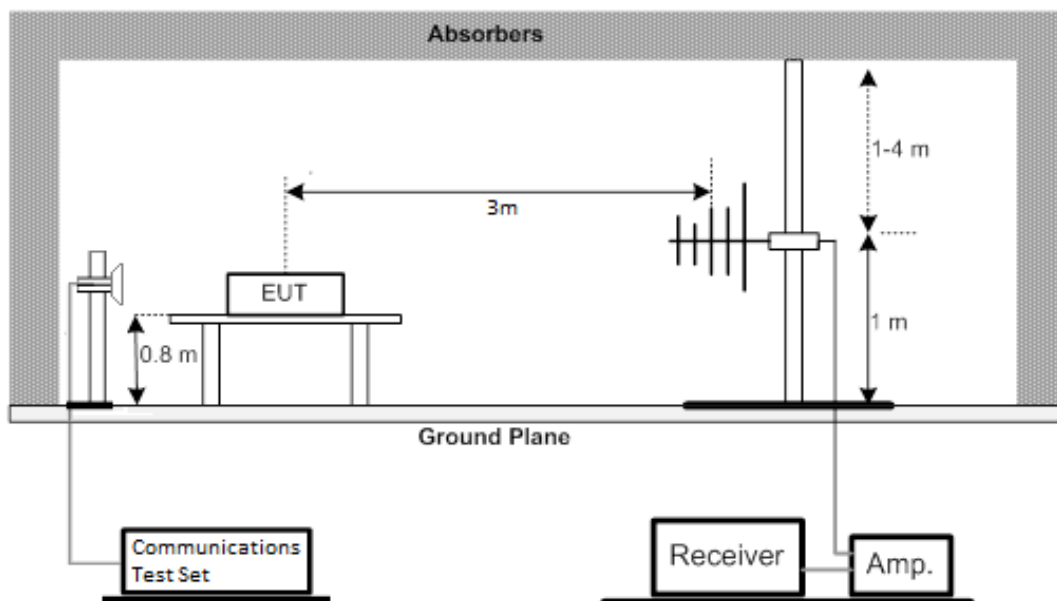
1. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
2. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step a. Record the power level of S.G
3. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}.$
4. ERP can be calculated form EIRP by subtracting the gain of dipole, $ERP = EIPR - 2.15\text{dBi}.$
5. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

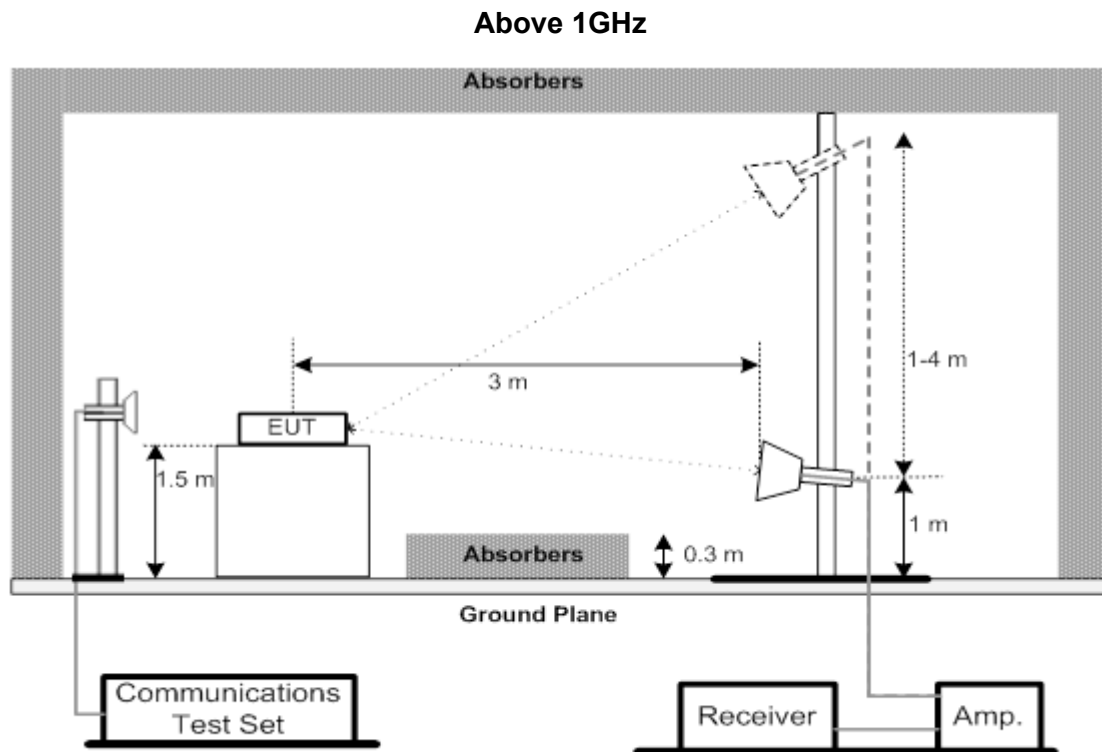
3.4.3 TEST SETUP LAYOUT

Below 30MHz



30MHz to 1GHz





3.4.4 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the APPENDIX D.

3.4.5 TEST RESULTS (30MHZ TO 1000MHZ)

Please refer to the APPENDIX E.

3.4.6 TEST RESULTS (ABOVE 1000MHZ)

Please refer to the APPENDIX F.

3.5 BAND EDGE MEASUREMENT

3.5.1 LIMIT

The power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed. (Part 27 Subpart L)

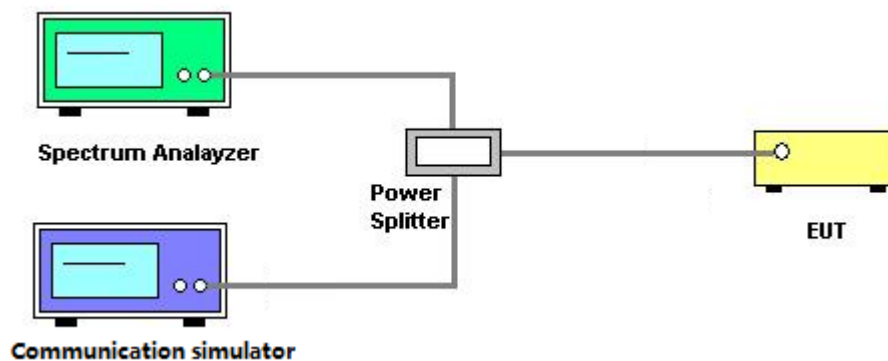
For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees. (Part 27 Subpart M)

3.5.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 6.0.

1. All measurements were done at low and high operational frequency range.
2. Record the max trace plot into the test report.

3.5.3 TEST SETUP LAYOUT



3.5.4 TEST DEVIATION

No deviation

3.5.5 TEST RESULTS

Please refer to the APPENDIX G.

3.6 PEAK TO AVERAGE RATIO MEASUREMENT

3.6.1 LIMIT

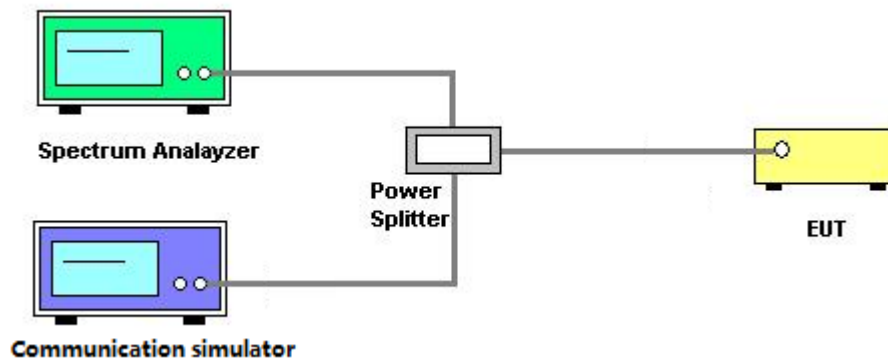
In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB.

3.6.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 5.7.

1. Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1%.

3.6.3 TEST SETUP LAYOUT



3.6.4 TEST DEVIATION

No deviation

3.6.5 TEST RESULTS

Please refer to the APPENDIX H.

3.7 FREQUENCY STABILITY MEASUREMENT

3.7.1 LIMIT

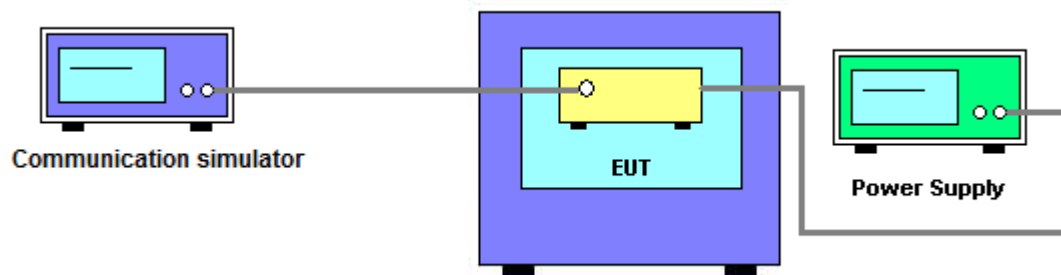
± 1.5 ppm is for base and fixed station. ± 2.5 ppm is for mobile station.

3.7.2 TEST PROCEDURES

The testing follows FCC KDB 971168 v03r01 Section 9.0.

1. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
2. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
3. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.
4. The frequency error was recorded frequency error from the communication simulator.

3.7.3 TEST SETUP LAYOUT



3.7.4 TEST DEVIATION

No deviation

3.7.5 TEST RESULTS

Please refer to the APPENDIX I.

5. LIST OF MEASUREMENT EQUIPMENTS

Radiated Spurious Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarzbeck	VULB9160	9160-3232	Mar. 09, 2020
2	Amplifier	Agilent	8449B	3008A02274	Mar. 10, 2020
3	HighPass Filter	Wairwright Instruments Gmbh	WHK 1.5/15G-10ST	11	Mar. 10, 2020
4	Band Reject Filter	Wairwright Instruments Gmbh	WRCG 1710/1785-1690/1805-60/12SS	38	Mar. 10, 2020
5	Band Reject Filter	Wairwright Instruments Gmbh	WRCG 824/849-810/863-60/9SS	7	Mar. 10, 2020
6	Band Reject Filter	Wairwright Instruments Gmbh	WRCG 880/915-860/935-60/9SS	14	Mar. 10, 2020
7	Band Reject Filter	Wairwright Instruments Gmbh	WRCG 1850/1910-1830/1930-60/10SS	17	Mar. 10, 2020
8	HighPass Filter	Wairwright Instruments Gmbh	WHK3.1/18G-10SS	24	Mar. 10, 2020
9	Wireless Communication Test SET	Agilent	E5515C	MY48364183	Mar. 10, 2020
10	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 10, 2020
11	Receiver	Agilent	N9038A	MY52130039	Aug. 03, 2020
12	wideband radio communication tester	R&S	CMW500	152372	Mar. 10, 2020
13	High pass filter	KANGMAIWEI	ZHPF-M3-12.75G-3869	B2015073763	Feb. 12, 2020
14	High pass filter	KANGMAIWEI	ZHPF-M1000-4000-1	B2015073762	Feb. 12, 2020
15	High pass filter	KANGMAIWEI	ZHPF-M6-186-1727	B2015073764	Feb. 12, 2020
16	Cable	emci	LMR-400(30MHz-1GHz)(8m+5m)	N/A	May. 24, 2020
17	Cable	mitron	B10-01-01-12M	18072744	Jun. 29, 2020
18	Controller	ETS-Lindgren	2090	N/A	N/A
19	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
20	Loop Antenna	EM	EM-6876-1	230	Jan. 15, 2020
21	Double Ridged Guide Antenna	ETS	3115	75789	Mar. 09, 2020
22	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Jun. 23, 2020

Conducted Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Wireless Communication Test SET	Agilent	E5515C	MY48364183	Mar. 10, 2020
2	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 10, 2020
3	POWER SPLITTER	Mini-Circuits	ZFRSC-123-S+	331000910-1	Mar. 10, 2020
4	wideband radio communication tester	R&S	CMW500	152372	Mar. 10, 2020

Frequency Stability Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Wireless Communication Test SET	Agilent	E5515C	MY48364183	Mar. 10, 2020
2	Multi-output DC Power Supply	GW Instek	GPC-3030DN	EK880675	Sep. 26, 2020
3	POWER SPLITTER	Mini-Circuits	ZFRSC-123-S+	331000910-1	Mar. 10, 2020
4	wideband radio communication tester	R&S	CMW500	152372	Mar. 10, 2020
5	Const Temp,& Humidity Chamber	Bell	BTH-50C	20170306001	Mar. 10, 2020

Remark: "N/A" denotes no model name, serial no. or calibration specified.
All calibration period of equipment list is one year.

APPENDIX A - OUTPUT POWER

Output Power (dBm):

Modulation	Band	WCDMA Band IV		
	Tx Channel	1312CH	1413CH	1513CH
	Frequency	1712.4MHz	1732.6MHz	1752.6MHz
QPSK	RMC 12.2K	24.4	24.43	24.5
	RMC 64K	24.36	24.42	24.33
	RMC 144K	24.34	24.44	24.26
	RMC 384K	24.35	24.38	24.32
	HSDPA Subtest-1	23.37	23.4	23.35
	HSDPA Subtest-2	23.34	23.39	23.28
	HSDPA Subtest-3	22.89	22.91	22.82
	HSDPA Subtest-4	22.84	22.85	22.82
	HSUPA Subtest-1	23.33	23.42	23.34
	HSUPA Subtest-2	21.48	21.37	21.35
	HSUPA Subtest-3	22.34	22.41	22.32
	HSUPA Subtest-4	21.38	21.39	21.27
	HSUPA Subtest-5	23.35	23.43	23.29

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19957CH	20175CH	20393CH
				1710.7MHz	1732.5MHz	1754.3MHz
4 / 1.4M	QPSK	1	0	23.88	23.82	23.69
		1	2	23.92	23.90	23.78
		1	5	23.87	23.83	23.72
		3	0	23.79	23.83	23.68
		3	1	23.83	23.88	23.73
		3	2	23.86	23.91	23.77
		6	0	23.02	23.02	22.92
	16QAM	1	0	23.21	23.45	23.00
		1	2	23.27	23.50	23.09
		1	5	23.22	23.45	23.05
		3	0	23.14	23.27	23.12
		3	1	23.21	23.32	23.23
		3	2	23.20	23.30	23.21
		6	0	22.27	22.06	22.16
	64QAM	1	0	22.08	22.03	22.17
		1	2	22.16	22.11	22.31
		1	5	22.11	22.03	22.19
		3	0	21.88	22.04	22.14
		3	1	21.95	22.12	22.18
		3	2	21.85	22.04	22.07
		6	0	21.02	21.24	20.80

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19965CH	20175CH	20385CH
				1711.5MHz	1732.5MHz	1753.5MHz
4 / 3M	QPSK	1	0	23.85	23.94	23.78
		1	7	23.98	24.03	23.86
		1	14	23.91	23.91	23.76
		8	0	23.13	23.13	22.96
		8	4	23.17	23.15	23.04
		8	7	23.11	23.14	22.98
		15	0	23.13	23.14	23.02
	16QAM	1	0	23.10	23.56	23.13
		1	7	23.17	23.59	23.16
		1	14	23.04	23.49	23.09
		8	0	22.29	22.28	22.12
		8	4	22.29	22.26	22.13
		8	7	22.27	22.23	22.06
		15	0	22.23	22.25	22.05
	64QAM	1	0	22.24	22.07	22.08
		1	7	22.34	22.19	22.16
		1	14	22.23	22.11	22.03
		8	0	21.03	21.07	20.83
		8	4	21.09	21.10	20.92
		8	7	21.02	21.04	20.84
		15	0	20.95	21.03	20.93

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19975CH	20175CH	20375CH
				1712.5MHz	1732.5MHz	1752.5MHz
4 / 5M	QPSK	1	0	24.04	23.97	23.93
		1	13	24.06	23.98	23.93
		1	24	23.99	23.94	23.82
		12	0	23.08	23.19	23.05
		12	6	23.09	23.19	23.06
		12	11	23.11	23.14	23.05
		25	0	23.17	23.16	23.02
	16QAM	1	0	23.38	23.73	23.24
		1	13	23.38	23.75	23.26
		1	24	23.34	23.65	23.19
		12	0	22.30	22.34	22.17
		12	6	22.28	22.35	22.20
		12	11	22.24	22.35	22.13
		25	0	22.22	22.27	22.05
	64QAM	1	0	21.92	22.36	22.15
		1	13	21.97	22.36	22.19
		1	24	21.92	22.25	22.13
		12	0	21.06	20.98	20.98
		12	6	21.06	20.98	20.98
		12	11	21.01	20.96	20.96
		25	0	21.00	20.99	20.92

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20000CH	20175CH	20350CH
				1715MHz	1732.5MHz	1750MHz
4 / 10M	QPSK	1	0	23.96	24.07	23.78
		1	25	23.86	23.93	23.78
		1	49	23.97	23.88	23.74
		25	0	23.17	23.17	23.08
		25	13	23.13	23.20	23.07
		25	25	23.20	23.13	23.03
		50	0	23.23	23.13	23.02
	16QAM	1	0	23.19	23.61	23.12
		1	25	23.03	23.50	23.09
		1	49	23.15	23.44	23.03
		25	0	22.25	22.32	22.22
		25	13	22.26	22.27	22.24
		25	25	22.30	22.25	22.16
		50	0	22.33	22.23	22.16
	64QAM	1	0	22.36	22.21	22.01
		1	25	22.24	22.12	22.04
		1	49	22.34	22.10	22.01
		25	0	21.05	21.14	21.00
		25	13	21.05	21.14	21.02
		25	25	21.11	21.13	21.00
		50	0	21.15	21.11	20.90

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20025CH	20175CH	20325CH
				1717.5MHz	1732.5MHz	1747.5MHz
4 / 15M	QPSK	1	0	24.06	24.01	24.02
		1	38	23.88	23.92	23.86
		1	74	23.86	23.96	23.86
		36	0	23.18	23.20	23.13
		36	18	23.20	23.15	23.09
		36	39	23.17	23.16	23.02
		75	0	23.23	23.17	23.08
	16QAM	1	0	23.21	23.61	23.55
		1	38	23.03	23.53	23.50
		1	74	23.06	23.47	23.48
		36	0	22.29	22.34	22.21
		36	18	22.34	22.28	22.18
		36	39	22.27	22.25	22.11
		75	0	22.33	22.30	22.16
	64QAM	1	0	22.36	22.17	22.58
		1	38	22.23	22.10	22.43
		1	74	22.22	22.09	22.48
		36	0	21.10	21.14	20.98
		36	18	21.16	21.10	20.97
		36	39	21.12	21.07	20.94
		75	0	21.14	21.08	20.99

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20050CH	20175CH	20300CH
				1720MHz	1732.5MHz	1745MHz
4 / 20M	QPSK	1	0	24.01	24.09	24.00
		1	50	23.97	23.91	23.74
		1	99	23.94	23.88	23.81
		50	0	23.28	23.30	23.18
		50	25	23.23	23.22	23.15
		50	50	23.17	23.15	23.03
		100	0	23.20	23.19	23.09
	16QAM	1	0	23.82	23.82	23.61
		1	50	23.74	23.57	23.36
		1	99	23.72	23.52	23.46
		50	0	22.39	22.34	22.22
		50	25	22.34	22.26	22.18
		50	50	22.29	22.23	22.13
		100	0	22.31	22.21	22.18
	64QAM	1	0	22.27	22.48	22.65
		1	50	22.22	22.27	22.41
		1	99	22.25	22.27	22.52
		50	0	21.18	21.17	21.07
		50	25	21.15	21.13	21.05
		50	50	21.10	21.05	20.97
		100	0	21.12	21.08	20.98

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20775CH	21100CH	21425CH
				2502.5MHz	2535MHz	2567.5MHz
7 / 5M	QPSK	1	0	23.85	23.97	23.88
		1	13	23.92	24.14	23.92
		1	24	23.79	24.00	23.85
		12	0	23.00	23.20	23.10
		12	6	23.02	23.20	23.12
		12	11	22.98	23.20	23.10
		25	0	22.99	23.22	23.10
	16QAM	1	0	23.22	23.63	23.29
		1	13	23.27	23.78	23.29
		1	24	23.17	23.69	23.22
		12	0	22.15	22.40	22.23
		12	6	22.13	22.42	22.24
		12	11	22.07	22.42	22.21
		25	0	22.03	22.33	22.12
	64QAM	1	0	22.07	21.89	22.24
		1	2	22.13	22.07	22.31
		1	5	22.05	21.95	22.18
		3	0	20.89	21.13	20.92
		3	1	20.90	21.14	20.94
		3	2	20.90	21.08	20.91
		6	0	20.84	21.04	20.95

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20800CH	21100CH	21400CH
				2505MHz	2535MHz	2565MHz
7 / 10M	QPSK	1	0	23.78	23.92	23.80
		1	25	23.72	24.00	23.74
		1	49	23.82	23.92	23.79
		25	0	23.03	23.25	22.99
		25	13	22.99	23.22	23.02
		25	25	23.09	23.19	22.97
		50	0	23.03	23.16	22.98
	16QAM	1	0	23.00	23.55	23.14
		1	25	22.92	23.56	23.07
		1	49	22.89	23.53	23.08
		25	0	22.06	22.31	22.18
		25	13	22.09	22.31	22.14
		25	25	22.16	22.27	22.12
		50	0	22.08	22.28	22.05
	64QAM	1	0	22.15	22.09	22.06
		1	25	22.13	22.18	22.05
		1	49	22.19	22.14	22.05
		25	0	20.91	21.16	20.92
		25	13	20.88	21.17	20.97
		25	25	21.00	21.14	20.91
		50	0	20.94	21.10	20.83

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20825CH	21100CH	21375CH
				2507.5MHz	2535MHz	2562.5MHz
7 / 15M	QPSK	1	0	23.85	23.98	23.96
		1	38	23.71	23.96	23.84
		1	74	23.66	23.97	23.91
		36	0	23.01	23.10	23.03
		36	18	23.11	23.21	22.99
		36	39	23.02	23.14	22.95
		75	0	23.06	23.16	22.99
	16QAM	1	0	23.07	23.60	23.47
		1	38	22.87	23.55	23.45
		1	74	22.86	23.51	23.49
		36	0	22.12	22.26	22.12
		36	18	22.21	22.34	22.11
		36	39	22.10	22.26	22.03
		75	0	22.17	22.27	22.10
	64QAM	1	0	22.22	22.21	22.47
		1	38	22.10	22.16	22.40
		1	74	22.06	22.14	22.46
		36	0	20.92	21.11	20.94
		36	18	21.03	21.20	20.93
		36	39	21.00	21.15	20.88
		75	0	20.95	21.11	20.91

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20850CH	21100CH	21350CH
				2510MHz	2535MHz	2560MHz
7 / 20M	QPSK	1	0	24.08	24.18	24.11
		1	50	23.91	24.04	23.89
		1	99	23.84	23.99	23.93
		50	0	23.07	23.26	23.08
		50	25	23.04	23.22	23.04
		50	50	23.05	23.14	22.94
		100	0	23.03	23.21	23.02
	16QAM	1	0	23.67	23.65	23.50
		1	50	23.56	23.60	23.43
		1	99	23.54	23.48	23.44
		50	0	22.23	22.33	22.12
		50	25	22.17	22.28	22.07
		50	50	22.09	22.23	22.03
		100	0	22.17	22.31	22.08
	64QAM	1	0	22.23	22.35	22.58
		1	50	22.17	22.30	22.50
		1	99	22.18	22.28	22.48
		50	0	21.03	21.16	20.98
		50	25	21.03	21.15	20.96
		50	50	20.92	21.10	20.88
		100	0	20.93	21.10	20.87

LTE Band / BW	Modulation	RB Sizer	RB Offset	Low CH	Mid CH	High CH
				37775CH	38000CH	38225CH
				2572.5MHz	2595MHz	2617.5MHz
38 / 5M	QPSK	1	0	23.78	23.68	23.78
		1	13	23.86	23.80	23.92
		1	24	23.77	23.74	23.84
		12	0	22.99	22.90	22.95
		12	6	22.99	22.99	23.09
		12	11	22.96	22.98	23.09
		25	0	22.96	22.96	22.96
	16QAM	1	0	23.29	23.20	23.30
		1	13	23.30	23.35	23.42
		1	24	23.19	23.23	23.34
		12	0	22.06	21.92	21.99
		12	6	22.07	22.03	22.12
		12	11	22.06	22.02	22.10
		25	0	21.99	22.04	21.92
	64QAM	1	0	22.11	21.79	22.26
		1	13	22.16	21.96	22.40
		1	24	22.05	21.86	22.30
		12	0	20.73	20.69	20.79
		12	6	20.78	20.82	20.93
		12	11	20.73	20.83	20.92
		25	0	20.70	20.87	20.70

LTE Band / BW	Modulation	RB Sizer	RB Offset	Low CH	Mid CH	High CH
				37800CH	38000CH	38200CH
				2575MHz	2595MHz	2615MHz
38 / 10M	QPSK	1	0	23.75	23.88	23.83
		1	25	23.74	23.86	23.72
		1	49	23.79	23.81	23.75
		25	0	22.98	22.99	22.96
		25	13	23.09	23.00	22.97
		25	25	23.02	22.96	22.86
		50	0	23.04	22.97	22.84
	16QAM	1	0	23.30	23.43	23.42
		1	25	23.25	23.41	23.26
		1	49	23.32	23.35	23.30
		25	0	22.00	22.05	21.98
		25	13	22.10	22.08	21.96
		25	25	22.07	22.03	21.91
		50	0	22.10	22.04	21.94
	64QAM	1	0	21.66	22.37	22.10
		1	25	21.58	22.34	21.93
		1	49	21.70	22.28	21.98
		25	0	20.84	20.77	20.67
		25	13	20.95	20.78	20.68
		25	25	20.91	20.77	20.62
		50	0	20.89	20.75	20.68

LTE Band / BW	Modulation	RB Sizer	RB Offset	Low CH	Mid CH	High CH
				37825CH	38000CH	38175CH
				2577.5MHz	2595MHz	2612.5MHz
38 / 15M	QPSK	1	0	23.79	23.85	23.81
		1	38	23.81	23.82	23.77
		1	74	23.63	23.77	23.74
		36	0	23.09	23.02	22.91
		36	18	23.05	22.97	22.86
		36	39	23.02	22.92	22.82
		75	0	23.03	22.99	22.87
	16QAM	1	0	23.35	23.38	23.34
		1	38	23.33	23.38	23.30
		1	74	23.10	23.38	23.27
		36	0	22.14	22.05	22.01
		36	18	22.12	22.05	21.97
		36	39	22.06	21.98	21.92
		75	0	22.10	22.04	21.95
	64QAM	1	0	21.70	22.27	21.94
		1	38	21.68	22.28	21.89
		1	74	21.56	22.24	21.85
		36	0	21.03	20.93	20.72
		36	18	21.01	20.92	20.71
		36	39	20.95	20.85	20.67
		75	0	20.93	20.82	20.75

LTE Band / BW	Modulation	RB Sizer	RB Offset	Low CH	Mid CH	High CH
				37850CH	38000CH	38150CH
				2580MHz	2595MHz	2610MHz
38 / 20M	QPSK	1	0	23.92	23.89	23.85
		1	50	23.72	23.84	23.78
		1	99	23.65	23.73	23.67
		50	0	23.11	23.04	22.95
		50	25	23.06	23.00	22.91
		50	50	22.87	22.93	22.80
		100	0	23.07	22.97	22.89
	16QAM	1	0	23.42	23.17	23.50
		1	50	23.29	23.14	23.38
		1	99	23.17	23.07	23.34
		50	0	22.11	22.10	22.02
		50	25	22.09	22.07	21.99
		50	50	21.93	22.01	21.92
		100	0	22.07	22.04	21.94
	64QAM	1	0	22.41	21.94	22.26
		1	50	22.30	21.95	22.17
		1	99	22.23	21.87	22.16
		50	0	20.96	20.87	20.83
		50	25	20.93	20.86	20.80
		50	50	20.75	20.80	20.72
		100	0	20.91	20.83	20.81

LTE Band / BW	Modulation	RB Sizer	RB Offset	Low CH	Mid CH	High CH
				39675CH	40620CH	41565CH
				2498.5MHz	2593MHz	2687.5MHz
41 / 5M	QPSK	1	0	23.96	23.81	23.77
		1	13	23.96	23.83	23.82
		1	24	23.91	23.75	23.74
		12	0	23.14	22.97	23.06
		12	6	23.18	23.05	23.07
		12	11	23.12	22.99	23.03
		25	0	23.12	22.99	23.04
	16QAM	1	0	23.44	23.30	23.37
		1	13	23.44	23.35	23.44
		1	24	23.35	23.24	23.35
		12	0	22.24	22.07	22.19
		12	6	22.26	22.09	22.19
		12	11	22.20	22.03	22.18
		25	0	22.15	22.07	22.10
	64QAM	1	0	22.47	22.14	21.79
		1	13	22.53	22.18	21.89
		1	24	22.44	22.11	21.77
		12	0	21.04	20.80	20.82
		12	6	21.09	20.82	20.77
		12	11	21.03	20.79	20.79
		25	0	20.91	20.71	20.79

LTE Band / BW	Modulation	RB Sizer	RB Offset	Low CH	Mid CH	High CH
				39700CH	40620CH	41540CH
				2501MHz	2593MHz	2685MHz
41 / 10M	QPSK	1	0	23.89	23.92	23.88
		1	25	23.84	23.88	23.78
		1	49	23.74	23.81	23.74
		25	0	23.13	23.03	23.10
		25	13	23.14	23.04	23.05
		25	25	23.08	22.98	23.04
		50	0	23.12	22.99	23.06
	16QAM	1	0	23.42	23.50	23.42
		1	25	23.39	23.43	23.33
		1	49	23.32	23.38	23.36
		25	0	22.19	22.07	22.13
		25	13	22.17	22.05	22.16
		25	25	22.13	22.02	22.11
		50	0	22.17	22.06	22.13
	64QAM	1	0	21.77	22.38	22.05
		1	25	21.74	22.35	21.94
		1	49	21.65	22.30	21.94
		25	0	20.99	20.77	20.76
		25	13	20.97	20.80	20.74
		25	25	20.93	20.78	20.72
		50	0	20.91	20.82	20.80

LTE Band / BW	Modulation	RB Siset	RB Offset	Low CH	Mid CH	High CH
				39725CH	40620CH	41515CH
				2503.5MHz	2593MHz	2682.5MHz
41 / 15M	QPSK	1	0	23.94	23.98	23.93
		1	38	23.85	23.81	23.81
		1	74	23.73	23.78	23.77
		36	0	23.12	22.99	23.09
		36	18	23.11	22.99	23.08
		36	39	23.07	22.92	23.00
		75	0	23.11	22.96	23.07
	16QAM	1	0	23.51	23.52	23.49
		1	38	23.41	23.42	23.33
		1	74	23.30	23.41	23.32
		36	0	22.23	22.07	22.21
		36	18	22.20	22.04	22.17
		36	39	22.18	22.00	22.14
		75	0	22.23	22.04	22.14
	64QAM	1	0	21.83	22.42	21.95
		1	38	21.74	22.31	21.83
		1	74	21.64	22.27	21.76
		36	0	21.07	20.94	20.85
		36	18	21.06	20.92	20.81
		36	39	20.99	20.86	20.77
		75	0	20.92	20.82	20.84

LTE Band / BW	Modulation	RB Siset	RB Offset	Low CH	Mid CH	High CH
				39750CH	40620CH	41490CH
				2506MHz	2593MHz	2680MHz
41 / 20M	QPSK	1	0	24.05	24.00	23.95
		1	50	23.76	23.84	23.78
		1	99	23.68	23.77	23.73
		50	0	23.14	23.08	23.12
		50	25	23.10	22.99	23.09
		50	50	22.96	22.91	23.03
		100	0	23.11	22.99	23.06
	16QAM	1	0	23.56	23.34	23.55
		1	50	23.34	23.16	23.35
		1	99	23.27	23.13	23.42
		50	0	22.18	22.12	22.21
		50	25	22.19	22.06	22.15
		50	50	22.01	22.01	22.08
		100	0	22.15	22.05	22.11
	64QAM	1	0	22.54	22.05	22.42
		1	50	22.34	21.95	22.27
		1	99	22.33	21.88	22.22
		50	0	20.98	20.89	20.94
		50	25	21.00	20.88	20.88
		50	50	20.82	20.81	20.79
		100	0	20.92	20.87	20.83

LTE CA_7C / Low Range											
Bandwidth (MHz)	PCC CH	PCC Frequency (MHz)	SCC CH	SCC Frequency (MHz)	PCC RB Size	PCC Offset	SCC RB Size	SCC Offset	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
10+20	20805	2505.5	20949	2519.9	1	49	1	0	23.04	22.02	20.28
					1	0	1	99	13.69	13.86	13.98
					50	0	100	0	20.24	19.32	19.25
20+10	20850	2510	20994	2524.4	1	99	1	0	23.21	22.28	20.07
					1	0	1	49	13.55	13.77	13.53
					100	0	50	0	20.53	19.59	19.51
15+10	20825	2507.5	20945	2519.5	1	74	1	0	23.21	22.34	20.35
					1	0	1	49	13.71	14.09	13.94
					75	0	50	0	20.39	19.45	19.39
15+15	20825	2507.5	20975	2522.5	1	74	1	0	23.09	22.17	20.15
					1	0	1	74	13.67	14.04	13.91
					75	0	75	0	19.26	18.32	19.21
15+20	20828	2507.8	20999	2524.9	1	74	1	0	23.05	22.19	20.24
					1	0	1	99	13.61	13.89	13.83
					75	0	100	0	20.19	19.26	19.18
20+15	20850	2510	21021	2527.1	1	99	1	0	23.21	22.23	20.26
					1	0	1	74	13.52	13.72	13.68
					100	0	75	0	20.41	19.48	19.39
20+20	20850	2510	21048	2529.8	1	99	1	0	23.24	22.34	20.57
					1	0	1	99	13.45	13.66	13.98
					100	0	100	0	19.39	18.48	19.74

LTE CA_7C / Mid Range											
Bandwidth (MHz)	PCC CH	PCC Frequency (MHz)	SCC CH	SCC Frequency (MHz)	PCC RB Size	PCC Offset	SCC RB Size	SCC Offset	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
10+20	21006	2525.6	21150	2540	1	49	1	0	23.13	22.54	20.09
					1	0	1	99	13.76	14.22	13.68
					50	0	100	0	20.27	19.34	19.35
20+10	21051	2530.1	21195	2544.5	1	99	1	0	23.19	22.54	20.15
					1	0	1	49	13.68	14.09	14.35
					100	0	50	0	20.52	19.57	19.52
15+10	21051	2530.1	21171	2542.1	1	74	1	0	23.22	22.47	20.29
					1	0	1	49	13.64	13.97	13.86
					75	0	50	0	20.43	19.55	19.39
15+15	21025	2527.5	21175	2542.5	1	74	1	0	23.12	22.49	20.34
					1	0	1	74	13.78	14.21	13.96
					75	0	75	0	19.31	18.44	19.25
15+20	21003	2525.3	21174	2542.4	1	74	1	0	23.16	22.32	20.19
					1	0	1	99	13.73	14.07	13.75
					75	0	100	0	20.29	19.39	19.31
20+15	21026	2527.6	21197	2544.7	1	99	1	0	23.29	22.37	20.32
					1	0	1	74	13.71	13.85	14.38
					100	0	75	0	20.41	19.52	19.43
20+20	21001	2525.1	21199	2544.9	1	99	1	0	23.25	22.33	20.07
					1	0	1	99	13.49	13.68	13.89
					100	0	100	0	19.35	18.42	19.45

LTE CA_7C / High Range											
Bandwidth (MHz)	PCC CH	PCC Frequency (MHz)	SCC CH	SCC Frequency (MHz)	PCC RB Size	PCC Offset	SCC RB Size	SCC Offset	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
10+20	21206	2545.6	21350	2560	1	49	1	0	23.02	22.12	20.01
					1	0	1	99	13.54	13.87	13.62
					50	0	100	0	20.08	19.17	19.13
20+10	21251	2550.1	21395	2564.5	1	99	1	0	23.03	22.13	20.23
					1	0	1	49	13.43	13.67	13.72
					100	0	50	0	20.27	19.37	19.21
15+10	21277	2552.7	21397	2564.7	1	74	1	0	23.08	22.33	20.39
					1	0	1	49	13.55	13.81	13.85
					75	0	50	0	20.18	19.29	19.25
15+15	21225	2547.5	21375	2562.5	1	74	1	0	23.11	22.34	19.72
					1	0	1	74	13.59	14.03	13.65
					75	0	75	0	19.11	18.19	19.15
15+20	21179	2542.9	21350	2560	1	74	1	0	23.08	22.09	19.93
					1	0	1	99	13.58	13.91	13.62
					75	0	100	0	20.03	19.18	18.97
20+15	21201	2545.1	21372	2562.2	1	99	1	0	23.13	22.48	20.46
					1	0	1	74	13.45	13.86	13.86
					100	0	75	0	20.19	19.25	19.12
20+20	21152	2540.2	21350	2560	1	99	1	0	23.16	22.14	20.13
					1	0	1	99	13.47	13.69	13.56
					100	0	100	0	19.25	18.29	19.23

LTE CA_38C / Low Range											
Bandwidth (MHz)	PCC CH	PCC Frequency (MHz)	SCC CH	SCC Frequency (MHz)	PCC RB Size	PCC Offset	SCC RB Size	SCC Offset	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
15+15	37825	2577.5	37975	2592.5	1	74	1	0	23.75	22.49	20.03
					1	0	1	74	14.67	14.62	13.94
					75	0	75	0	19.98	18.85	19.44
20+20	37850	2580	38048	2599.8	1	99	1	0	23.87	22.43	20.19
					1	0	1	99	14.33	14.07	13.93
					100	0	100	0	19.72	18.51	19.46

LTE CA_38C / Mid Range											
Bandwidth (MHz)	PCC CH	PCC Frequency (MHz)	SCC CH	SCC Frequency (MHz)	PCC RB Size	PCC Offset	SCC RB Size	SCC Offset	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
15+15	37925	2587.5	38075	2602.5	1	74	1	0	23.73	22.66	20.22
					1	0	1	74	14.55	14.34	13.86
					75	0	75	0	19.73	18.36	19.27
20+20	37901	2585.1	38099	2604.9	1	99	1	0	23.85	22.21	20.43
					1	0	1	99	14.25	13.93	14.23
					100	0	100	0	19.82	18.49	19.48

LTE CA_38C / High Range											
Bandwidth (MHz)	PCC CH	PCC Frequency (MHz)	SCC CH	SCC Frequency (MHz)	PCC RB Size	PCC Offset	SCC RB Size	SCC Offset	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
15+15	38025	2597.5	38175	2612.5	1	74	1	0	23.91	22.39	20.04
					1	0	1	74	14.38	14.07	13.73
					75	0	75	0	19.77	18.36	19.25
20+20	37952	2590.2	38150	2610	1	99	1	0	23.95	22.32	20.52
					1	0	1	99	14.37	13.88	14.21
					100	0	100	0	19.69	18.46	19.43

LTE CA_41C / Low Range											
Bandwidth (MHz)	PCC CH	PCC Frequency (MHz)	SCC CH	SCC Frequency (MHz)	PCC RB Size	PCC Offset	SCC RB Size	SCC Offset	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
5+20	39683	2499.3	39800	2511	1	24	1	0	23.26	22.35	20.16
					1	0	1	99	14.28	14.16	13.95
					25	0	100	0	18.25	18.22	18.09
20+5	39750	2506	39867	2517.7	1	99	1	0	23.52	22.74	20.45
					1	0	1	24	14.34	14.36	14.12
					100	0	25	0	19.06	18.89	18.91
10+15	39703	2501.3	39823	2513.3	1	49	1	0	23.56	22.84	20.24
					1	0	1	74	14.19	14.58	14.02
					50	0	75	0	17.76	17.79	17.72
15+10	39725	2503.5	39845	2515.5	1	74	1	0	23.68	22.87	20.72
					1	0	1	49	14.21	14.54	14.35
					75	0	50	0	18.09	18.05	17.92
10+20	39705	2501.5	39849	2515.9	1	49	1	0	23.48	22.62	20.27
					1	0	1	99	14.12	14.43	13.96
					50	0	100	0	18.37	18.35	18.33
20+10	39750	2506	39894	2520.4	1	99	1	0	23.53	22.72	20.76
					1	0	1	49	14.02	14.23	14.34
					100	0	50	0	18.72	18.73	18.68
15+15	39725	2503.5	39875	2518.5	1	74	1	0	23.53	22.77	20.58
					1	0	1	74	14.18	14.58	14.29
					75	0	75	0	18.55	18.42	18.51
15+20	39728	2503.8	39899	2520.9	1	74	1	0	23.44	22.74	20.61
					1	0	1	99	14.08	14.44	14.32
					75	0	100	0	18.39	18.41	18.31
20+15	39750	2506	39921	2523.1	1	99	1	0	23.54	22.73	20.78
					1	0	1	74	14.06	14.27	14.44
					100	0	75	0	18.56	18.59	18.55
20+20	39750	2506	39948	2525.8	1	99	1	0	23.48	22.62	20.75
					1	0	1	99	14.23	14.19	14.35
					100	0	100	0	18.49	18.47	18.43

LTE CA_41C / Mid Range											
Bandwidth (MHz)	PCC CH	PCC Frequency (MHz)	SCC CH	SCC Frequency (MHz)	PCC RB Size	PCC Offset	SCC RB Size	SCC Offset	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
5+20	40528	2583.8	40645	2595.5	1	24	1	0	23.15	22.19	19.99
					1	0	1	99	13.99	14.05	13.93
					25	0	100	0	18.37	18.34	18.36
20+5	40595	2590.5	40712	2602.2	1	99	1	0	23.29	22.68	20.52
					1	0	1	24	13.71	13.95	13.68
					100	0	25	0	18.36	18.31	18.33
10+15	40549	2585.9	40669	2597.9	1	49	1	0	23.39	22.53	20.18
					1	0	1	74	14.04	14.38	14.01
					50	0	75	0	17.59	17.52	17.49
15+10	40571	2588.1	40691	2600.1	1	74	1	0	23.51	22.66	20.31
					1	0	1	49	14.07	14.22	13.99
					75	0	50	0	17.61	17.62	17.59
10+20	40526	2583.6	40670	2598	1	49	1	0	23.32	22.62	20.14
					1	0	1	99	14.09	14.53	13.99
					50	0	100	0	18.05	18.12	18.11
20+10	40571	2588.1	40715	2602.5	1	99	1	0	23.42	22.73	20.61
					1	0	1	49	13.98	14.41	14.35
					100	0	50	0	18.29	18.31	18.22
15+15	40545	2585.5	40695	2600.5	1	74	1	0	23.26	22.43	20.29
					1	0	1	74	14.04	14.26	14.25
					75	0	75	0	17.93	17.95	17.85
15+20	40523	2583.3	40694	2600.4	1	74	1	0	23.38	22.62	20.32
					1	0	1	99	14.13	14.62	14.34
					75	0	100	0	18.01	18.04	17.96
20+15	40546	2585.6	40717	2602.7	1	99	1	0	23.44	22.73	20.52
					1	0	1	74	13.97	14.46	14.29
					100	0	75	0	18.29	18.3	18.17
20+20	40521	2583.1	40719	2602.9	1	99	1	0	23.32	22.63	20.08
					1	0	1	99	13.95	14.36	13.86
					100	0	100	0	18.09	18.17	18.06

LTE CA_41C / High Range											
Bandwidth (MHz)	PCC CH	PCC Frequency (MHz)	SCC CH	SCC Frequency (MHz)	PCC RB Size	PCC Offset	SCC RB Size	SCC Offset	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
5+20	41373	2668.3	41490	2680	1	24	1	0	23.33	22.35	20.49
					1	0	1	99	13.86	14.18	14.34
					25	0	100	0	18.11	18.05	18.07
20+5	41440	2675	41557	2686.7	1	99	1	0	23.18	22.33	20.41
					1	0	1	24	13.92	14.13	14.37
					100	0	25	0	18.81	18.7	18.73
10+15	41395	2670.5	41515	2682.5	1	49	1	0	23.65	22.56	20.15
					1	0	1	74	13.95	14.22	13.89
					50	0	75	0	17.72	17.62	17.61
15+10	41417	2672.7	41537	2684.7	1	74	1	0	23.52	22.53	20.49
					1	0	1	49	14.05	14.38	25.26
					75	0	50	0	17.77	17.66	17.52
10+20	41346	2665.6	41490	2680	1	49	1	0	23.44	22.77	20.57
					1	0	1	99	14.05	14.48	14.36
					50	0	100	0	18.18	18.1	18.07
20+10	41391	2670.1	41535	2684.5	1	99	1	0	23.37	22.44	20.11
					1	0	1	49	13.94	14.18	13.87
					100	0	50	0	18.36	18.28	18.36
15+15	41365	2667.5	41515	2682.5	1	74	1	0	23.42	22.71	20.42
					1	0	1	74	14.13	14.28	14.29
					75	0	75	0	18.21	18.09	18.15
15+20	41319	2662.9	41490	2680	1	74	1	0	23.41	22.62	20.11
					1	0	1	99	13.99	14.34	13.88
					75	0	100	0	18.07	17.99	17.95
20+15	41341	2665.1	41512	2682.2	1	99	1	0	23.51	22.54	20.22
					1	0	1	74	13.96	14.27	13.98
					100	0	75	0	18.25	18.15	18.2
20+20	41292	2660.2	41490	2680	1	99	1	0	23.54	22.52	20.51
					1	0	1	99	13.82	14.02	14.12
					100	0	100	0	18.05	17.94	17.98

EIRP (dBm):

Modulation	Band	WCDMA Band IV		
	Tx Channel	1312CH	1413CH	1513CH
	Frequency	1712.4MHz	1732.6MHz	1752.6MHz
QPSK	RMC 12.2K	25.50	25.53	25.60
	RMC 64K	25.46	25.52	25.43
	RMC 144K	25.44	25.54	25.36
	RMC 384K	25.45	25.48	25.42
	HSDPA Subtest-1	24.47	24.50	24.45
	HSDPA Subtest-2	24.44	24.49	24.38
	HSDPA Subtest-3	23.99	24.01	23.92
	HSDPA Subtest-4	23.94	23.95	23.92
	HSUPA Subtest-1	24.43	24.52	24.44
	HSUPA Subtest-2	22.58	22.47	22.45
	HSUPA Subtest-3	23.44	23.51	23.42
	HSUPA Subtest-4	22.48	22.49	22.37
	HSUPA Subtest-5	24.45	24.53	24.39

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19957CH	20175CH	20393CH
				1710.7MHz	1732.5MHz	1754.3MHz
4 / 1.4M	QPSK	1	0	24.98	24.92	24.79
		1	2	25.02	25.00	24.88
		1	5	24.97	24.93	24.82
		3	0	24.89	24.93	24.78
		3	1	24.93	24.98	24.83
		3	2	24.96	25.01	24.87
		6	0	24.12	24.12	24.02
	16QAM	1	0	24.31	24.55	24.10
		1	2	24.37	24.60	24.19
		1	5	24.32	24.55	24.15
		3	0	24.24	24.37	24.22
		3	1	24.31	24.42	24.33
		3	2	24.30	24.40	24.31
		6	0	23.37	23.16	23.26
	64QAM	1	0	23.18	23.13	23.27
		1	2	23.26	23.21	23.41
		1	5	23.21	23.13	23.29
		3	0	22.98	23.14	23.24
		3	1	23.05	23.22	23.28
		3	2	22.95	23.14	23.17
		6	0	22.12	22.34	21.90

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19965CH	20175CH	20385CH
				1711.5MHz	1732.5MHz	1753.5MHz
4 / 3M	QPSK	1	0	24.95	25.04	24.88
		1	7	25.08	25.13	24.96
		1	14	25.01	25.01	24.86
		8	0	24.23	24.23	24.06
		8	4	24.27	24.25	24.14
		8	7	24.21	24.24	24.08
		15	0	24.23	24.24	24.12
	16QAM	1	0	24.20	24.66	24.23
		1	7	24.27	24.69	24.26
		1	14	24.14	24.59	24.19
		8	0	23.39	23.38	23.22
		8	4	23.39	23.36	23.23
		8	7	23.37	23.33	23.16
		15	0	23.33	23.35	23.15
	64QAM	1	0	23.34	23.17	23.18
		1	7	23.44	23.29	23.26
		1	14	23.33	23.21	23.13
		8	0	22.13	22.17	21.93
		8	4	22.19	22.20	22.02
		8	7	22.12	22.14	21.94
		15	0	22.05	22.13	22.03

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				19975CH	20175CH	20375CH
				1712.5MHz	1732.5MHz	1752.5MHz
4 / 5M	QPSK	1	0	25.14	25.07	25.03
		1	13	25.16	25.08	25.03
		1	24	25.09	25.04	24.92
		12	0	24.18	24.29	24.15
		12	6	24.19	24.29	24.16
		12	11	24.21	24.24	24.15
		25	0	24.27	24.26	24.12
	16QAM	1	0	24.48	24.83	24.34
		1	13	24.48	24.85	24.36
		1	24	24.44	24.75	24.29
		12	0	23.40	23.44	23.27
		12	6	23.38	23.45	23.30
		12	11	23.34	23.45	23.23
		25	0	23.32	23.37	23.15
	64QAM	1	0	23.02	23.46	23.25
		1	13	23.07	23.46	23.29
		1	24	23.02	23.35	23.23
		12	0	22.16	22.08	22.08
		12	6	22.16	22.08	22.08
		12	11	22.11	22.06	22.06
		25	0	22.10	22.09	22.02

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20000CH	20175CH	20350CH
				1715MHz	1732.5MHz	1750MHz
4 / 10M	QPSK	1	0	25.06	25.17	24.88
		1	25	24.96	25.03	24.88
		1	49	25.07	24.98	24.84
		25	0	24.27	24.27	24.18
		25	13	24.23	24.30	24.17
		25	25	24.30	24.23	24.13
		50	0	24.33	24.23	24.12
	16QAM	1	0	24.29	24.71	24.22
		1	25	24.13	24.60	24.19
		1	49	24.25	24.54	24.13
		25	0	23.35	23.42	23.32
		25	13	23.36	23.37	23.34
		25	25	23.40	23.35	23.26
		50	0	23.43	23.33	23.26
	64QAM	1	0	23.46	23.31	23.11
		1	25	23.34	23.22	23.14
		1	49	23.44	23.20	23.11
		25	0	22.15	22.24	22.10
		25	13	22.15	22.24	22.12
		25	25	22.21	22.23	22.10
		50	0	22.25	22.21	22.00

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20025CH	20175CH	20325CH
				1717.5MHz	1732.5MHz	1747.5MHz
4 / 15M	QPSK	1	0	25.16	25.11	25.12
		1	38	24.98	25.02	24.96
		1	74	24.96	25.06	24.96
		36	0	24.28	24.30	24.23
		36	18	24.30	24.25	24.19
		36	39	24.27	24.26	24.12
		75	0	24.33	24.27	24.18
	16QAM	1	0	24.31	24.71	24.65
		1	38	24.13	24.63	24.60
		1	74	24.16	24.57	24.58
		36	0	23.39	23.44	23.31
		36	18	23.44	23.38	23.28
		36	39	23.37	23.35	23.21
		75	0	23.43	23.40	23.26
	64QAM	1	0	23.46	23.27	23.68
		1	38	23.33	23.20	23.53
		1	74	23.32	23.19	23.58
		36	0	22.20	22.24	22.08
		36	18	22.26	22.20	22.07
		36	39	22.22	22.17	22.04
		75	0	22.24	22.18	22.09

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20050CH	20175CH	20300CH
				1720MHz	1732.5MHz	1745MHz
4 / 20M	QPSK	1	0	25.11	25.19	25.10
		1	50	25.07	25.01	24.84
		1	99	25.04	24.98	24.91
		50	0	24.38	24.40	24.28
		50	25	24.33	24.32	24.25
		50	50	24.27	24.25	24.13
		100	0	24.30	24.29	24.19
	16QAM	1	0	24.92	24.92	24.71
		1	50	24.84	24.67	24.46
		1	99	24.82	24.62	24.56
		50	0	23.49	23.44	23.32
		50	25	23.44	23.36	23.28
		50	50	23.39	23.33	23.23
		100	0	23.41	23.31	23.28
	64QAM	1	0	23.37	23.58	23.75
		1	50	23.32	23.37	23.51
		1	99	23.35	23.37	23.62
		50	0	22.28	22.27	22.17
		50	25	22.25	22.23	22.15
		50	50	22.20	22.15	22.07
		100	0	22.22	22.18	22.08

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20775CH	21100CH	21425CH
				2502.5MHz	2535MHz	2567.5MHz
7 / 5M	QPSK	1	0	24.95	25.07	24.98
		1	13	25.02	25.24	25.02
		1	24	24.89	25.10	24.95
		12	0	24.10	24.30	24.20
		12	6	24.12	24.30	24.22
		12	11	24.08	24.30	24.20
		25	0	24.09	24.32	24.20
	16QAM	1	0	24.32	24.73	24.39
		1	13	24.37	24.88	24.39
		1	24	24.27	24.79	24.32
		12	0	23.25	23.50	23.33
		12	6	23.23	23.52	23.34
		12	11	23.17	23.52	23.31
		25	0	23.13	23.43	23.22
	64QAM	1	0	23.17	22.99	23.34
		1	2	23.23	23.17	23.41
		1	5	23.15	23.05	23.28
		3	0	21.99	22.23	22.02
		3	1	22.00	22.24	22.04
		3	2	22.00	22.18	22.01
		6	0	21.94	22.14	22.05

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20800CH	21100CH	21400CH
				2505MHz	2535MHz	2565MHz
7 / 10M	QPSK	1	0	24.88	25.02	24.90
		1	25	24.82	25.10	24.84
		1	49	24.92	25.02	24.89
		25	0	24.13	24.35	24.09
		25	13	24.09	24.32	24.12
		25	25	24.19	24.29	24.07
		50	0	24.13	24.26	24.08
	16QAM	1	0	24.10	24.65	24.24
		1	25	24.02	24.66	24.17
		1	49	23.99	24.63	24.18
		25	0	23.16	23.41	23.28
		25	13	23.19	23.41	23.24
		25	25	23.26	23.37	23.22
		50	0	23.18	23.38	23.15
	64QAM	1	0	23.25	23.19	23.16
		1	25	23.23	23.28	23.15
		1	49	23.29	23.24	23.15
		25	0	22.01	22.26	22.02
		25	13	21.98	22.27	22.07
		25	25	22.10	22.24	22.01
		50	0	22.04	22.20	21.93

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20825CH	21100CH	21375CH
				2507.5MHz	2535MHz	2562.5MHz
7 / 15M	QPSK	1	0	24.95	25.08	25.06
		1	38	24.81	25.06	24.94
		1	74	24.76	25.07	25.01
		36	0	24.11	24.20	24.13
		36	18	24.21	24.31	24.09
		36	39	24.12	24.24	24.05
		75	0	24.16	24.26	24.09
	16QAM	1	0	24.17	24.70	24.57
		1	38	23.97	24.65	24.55
		1	74	23.96	24.61	24.59
		36	0	23.22	23.36	23.22
		36	18	23.31	23.44	23.21
		36	39	23.20	23.36	23.13
		75	0	23.27	23.37	23.20
	64QAM	1	0	23.32	23.31	23.57
		1	38	23.20	23.26	23.50
		1	74	23.16	23.24	23.56
		36	0	22.02	22.21	22.04
		36	18	22.13	22.30	22.03
		36	39	22.10	22.25	21.98
		75	0	22.05	22.21	22.01

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20850CH	21100CH	21350CH
				2510MHz	2535MHz	2560MHz
7 / 20M	QPSK	1	0	25.18	25.28	25.21
		1	50	25.01	25.14	24.99
		1	99	24.94	25.09	25.03
		50	0	24.17	24.36	24.18
		50	25	24.14	24.32	24.14
		50	50	24.15	24.24	24.04
		100	0	24.13	24.31	24.12
	16QAM	1	0	24.77	24.75	24.60
		1	50	24.66	24.70	24.53
		1	99	24.64	24.58	24.54
		50	0	23.33	23.43	23.22
		50	25	23.27	23.38	23.17
		50	50	23.19	23.33	23.13
		100	0	23.27	23.41	23.18
	64QAM	1	0	23.33	23.45	23.68
		1	50	23.27	23.40	23.60
		1	99	23.28	23.38	23.58
		50	0	22.13	22.26	22.08
		50	25	22.13	22.25	22.06
		50	50	22.02	22.20	21.98
		100	0	22.03	22.20	21.97

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				37775CH	38000CH	38225CH
				2572.5MHz	2595MHz	2617.5MHz
38 / 5M	QPSK	1	0	24.88	24.78	24.88
		1	13	24.96	24.90	25.02
		1	24	24.87	24.84	24.94
		12	0	24.09	24.00	24.05
		12	6	24.09	24.09	24.19
		12	11	24.06	24.08	24.19
		25	0	24.06	24.06	24.06
	16QAM	1	0	24.39	24.30	24.40
		1	13	24.40	24.45	24.52
		1	24	24.29	24.33	24.44
		12	0	23.16	23.02	23.09
		12	6	23.17	23.13	23.22
		12	11	23.16	23.12	23.20
		25	0	23.09	23.14	23.02
	64QAM	1	0	23.21	22.89	23.36
		1	13	23.26	23.06	23.50
		1	24	23.15	22.96	23.40
		12	0	21.83	21.79	21.89
		12	6	21.88	21.92	22.03
		12	11	21.83	21.93	22.02
		25	0	21.80	21.97	21.80

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				37800CH	38000CH	38200CH
				2575MHz	2595MHz	2615MHz
38 / 10M	QPSK	1	0	24.85	24.98	24.93
		1	25	24.84	24.96	24.82
		1	49	24.89	24.91	24.85
		25	0	24.08	24.09	24.06
		25	13	24.19	24.10	24.07
		25	25	24.12	24.06	23.96
		50	0	24.14	24.07	23.94
	16QAM	1	0	24.40	24.53	24.52
		1	25	24.35	24.51	24.36
		1	49	24.42	24.45	24.40
		25	0	23.10	23.15	23.08
		25	13	23.20	23.18	23.06
		25	25	23.17	23.13	23.01
		50	0	23.20	23.14	23.04
	64QAM	1	0	22.76	23.47	23.20
		1	25	22.68	23.44	23.03
		1	49	22.80	23.38	23.08
		25	0	21.94	21.87	21.77
		25	13	22.05	21.88	21.78
		25	25	22.01	21.87	21.72
		50	0	21.99	21.85	21.78

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				37825CH	38000CH	38175CH
				2577.5MHz	2595MHz	2612.5MHz
38 / 15M	QPSK	1	0	24.89	24.95	24.91
		1	38	24.91	24.92	24.87
		1	74	24.73	24.87	24.84
		36	0	24.19	24.12	24.01
		36	18	24.15	24.07	23.96
		36	39	24.12	24.02	23.92
		75	0	24.13	24.09	23.97
	16QAM	1	0	24.45	24.48	24.44
		1	38	24.43	24.48	24.40
		1	74	24.20	24.48	24.37
		36	0	23.24	23.15	23.11
		36	18	23.22	23.15	23.07
		36	39	23.16	23.08	23.02
		75	0	23.20	23.14	23.05
	64QAM	1	0	22.80	23.37	23.04
		1	38	22.78	23.38	22.99
		1	74	22.66	23.34	22.95
		36	0	22.13	22.03	21.82
		36	18	22.11	22.02	21.81
		36	39	22.05	21.95	21.77
		75	0	22.03	21.92	21.85

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				37850CH	38000CH	38150CH
				2580MHz	2595MHz	2610MHz
38 / 20M	QPSK	1	0	25.02	24.99	24.95
		1	50	24.82	24.94	24.88
		1	99	24.75	24.83	24.77
		50	0	24.21	24.14	24.05
		50	25	24.16	24.10	24.01
		50	50	23.97	24.03	23.90
		100	0	24.17	24.07	23.99
	16QAM	1	0	24.52	24.27	24.60
		1	50	24.39	24.24	24.48
		1	99	24.27	24.17	24.44
		50	0	23.21	23.20	23.12
		50	25	23.19	23.17	23.09
		50	50	23.03	23.11	23.02
		100	0	23.17	23.14	23.04
	64QAM	1	0	23.51	23.04	23.36
		1	50	23.40	23.05	23.27
		1	99	23.33	22.97	23.26
		50	0	22.06	21.97	21.93
		50	25	22.03	21.96	21.90
		50	50	21.85	21.90	21.82
		100	0	22.01	21.93	21.91

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				39675CH	40620CH	41565CH
				2498.5MHz	2593MHz	2687.5MHz
41 / 5M	QPSK	1	0	25.06	24.91	24.87
		1	13	25.06	24.93	24.92
		1	24	25.01	24.85	24.84
		12	0	24.24	24.07	24.16
		12	6	24.28	24.15	24.17
		12	11	24.22	24.09	24.13
		25	0	24.22	24.09	24.14
	16QAM	1	0	24.54	24.40	24.47
		1	13	24.54	24.45	24.54
		1	24	24.45	24.34	24.45
		12	0	23.34	23.17	23.29
		12	6	23.36	23.19	23.29
		12	11	23.30	23.13	23.28
		25	0	23.25	23.17	23.20
	64QAM	1	0	23.57	23.24	22.89
		1	13	23.63	23.28	22.99
		1	24	23.54	23.21	22.87
		12	0	22.14	21.90	21.92
		12	6	22.19	21.92	21.87
		12	11	22.13	21.89	21.89
		25	0	22.01	21.81	21.89

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				39700CH	40620CH	41540CH
				2501MHz	2593MHz	2685MHz
41 / 10M	QPSK	1	0	24.99	25.02	24.98
		1	25	24.94	24.98	24.88
		1	49	24.84	24.91	24.84
		25	0	24.23	24.13	24.20
		25	13	24.24	24.14	24.15
		25	25	24.18	24.08	24.14
		50	0	24.22	24.09	24.16
	16QAM	1	0	24.52	24.60	24.52
		1	25	24.49	24.53	24.43
		1	49	24.42	24.48	24.46
		25	0	23.29	23.17	23.23
		25	13	23.27	23.15	23.26
		25	25	23.23	23.12	23.21
		50	0	23.27	23.16	23.23
	64QAM	1	0	22.87	23.48	23.15
		1	25	22.84	23.45	23.04
		1	49	22.75	23.40	23.04
		25	0	22.09	21.87	21.86
		25	13	22.07	21.90	21.84
		25	25	22.03	21.88	21.82
		50	0	22.01	21.92	21.90

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				39725CH	40620CH	41515CH
				2503.5MHz	2593MHz	2682.5MHz
41 / 15M	QPSK	1	0	25.04	25.08	25.03
		1	38	24.95	24.91	24.91
		1	74	24.83	24.88	24.87
		36	0	24.22	24.09	24.19
		36	18	24.21	24.09	24.18
		36	39	24.17	24.02	24.10
		75	0	24.21	24.06	24.17
	16QAM	1	0	24.61	24.62	24.59
		1	38	24.51	24.52	24.43
		1	74	24.40	24.51	24.42
		36	0	23.33	23.17	23.31
		36	18	23.30	23.14	23.27
		36	39	23.28	23.10	23.24
		75	0	23.33	23.14	23.24
	64QAM	1	0	22.93	23.52	23.05
		1	38	22.84	23.41	22.93
		1	74	22.74	23.37	22.86
		36	0	22.17	22.04	21.95
		36	18	22.16	22.02	21.91
		36	39	22.09	21.96	21.87
		75	0	22.02	21.92	21.94

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				39750CH	40620CH	41490CH
				2506MHz	2593MHz	2680MHz
41 / 20M	QPSK	1	0	25.15	25.10	25.05
		1	50	24.86	24.94	24.88
		1	99	24.78	24.87	24.83
		50	0	24.24	24.18	24.22
		50	25	24.20	24.09	24.19
		50	50	24.06	24.01	24.13
		100	0	24.21	24.09	24.16
	16QAM	1	0	24.66	24.44	24.65
		1	50	24.44	24.26	24.45
		1	99	24.37	24.23	24.52
		50	0	23.28	23.22	23.31
		50	25	23.29	23.16	23.25
		50	50	23.11	23.11	23.18
		100	0	23.25	23.15	23.21
	64QAM	1	0	23.64	23.15	23.52
		1	50	23.44	23.05	23.37
		1	99	23.43	22.98	23.32
		50	0	22.08	21.99	22.04
		50	25	22.10	21.98	21.98
		50	50	21.92	21.91	21.89
		100	0	22.02	21.97	21.93

LTE CA_7C / Low Range											
Bandwidth (MHz)	PCC CH	PCC Frequency (MHz)	SCC CH	SCC Frequency (MHz)	PCC RB Size	PCC Offset	SCC RB Size	SCC Offset	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
10+20	20805	2505.5	20949	2519.9	1	49	1	0	24.14	23.12	21.38
					1	0	1	99	14.79	14.96	15.08
					50	0	100	0	21.34	20.42	20.35
20+10	20850	2510	20994	2524.4	1	99	1	0	24.31	23.38	21.17
					1	0	1	49	14.65	14.87	14.63
					100	0	50	0	21.63	20.69	20.61
15+10	20825	2507.5	20945	2519.5	1	74	1	0	24.31	23.44	21.45
					1	0	1	49	14.81	15.19	15.04
					75	0	50	0	21.49	20.55	20.49
15+15	20825	2507.5	20975	2522.5	1	74	1	0	24.19	23.27	21.25
					1	0	1	74	14.77	15.14	15.01
					75	0	75	0	20.36	19.42	20.31
15+20	20828	2507.8	20999	2524.9	1	74	1	0	24.15	23.29	21.34
					1	0	1	99	14.71	14.99	14.93
					75	0	100	0	21.29	20.36	20.28
20+15	20850	2510	21021	2527.1	1	99	1	0	24.31	23.33	21.36
					1	0	1	74	14.62	14.82	14.78
					100	0	75	0	21.51	20.58	20.49
20+20	20850	2510	21048	2529.8	1	99	1	0	24.34	23.44	21.67
					1	0	1	99	14.55	14.76	15.08
					100	0	100	0	20.49	19.58	20.84

LTE CA_7C / Mid Range											
Bandwidth (MHz)	PCC CH	PCC Frequency (MHz)	SCC CH	SCC Frequency (MHz)	PCC RB Size	PCC Offset	SCC RB Size	SCC Offset	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
10+20	21006	2525.6	21150	2540	1	49	1	0	24.23	23.64	21.19
					1	0	1	99	14.86	15.32	14.78
					50	0	100	0	21.37	20.44	20.45
20+10	21051	2530.1	21195	2544.5	1	99	1	0	24.29	23.64	21.25
					1	0	1	49	14.78	15.19	15.45
					100	0	50	0	21.62	20.67	20.62
15+10	21051	2530.1	21171	2542.1	1	74	1	0	24.32	23.57	21.39
					1	0	1	49	14.74	15.07	14.96
					75	0	50	0	21.53	20.65	20.49
15+15	21025	2527.5	21175	2542.5	1	74	1	0	24.22	23.59	21.44
					1	0	1	74	14.88	15.31	15.06
					75	0	75	0	20.41	19.54	20.35
15+20	21003	2525.3	21174	2542.4	1	74	1	0	24.26	23.42	21.29
					1	0	1	99	14.83	15.17	14.85
					75	0	100	0	21.39	20.49	20.41
20+15	21026	2527.6	21197	2544.7	1	99	1	0	24.39	23.47	21.42
					1	0	1	74	14.81	14.95	15.48
					100	0	75	0	21.51	20.62	20.53
20+20	21001	2525.1	21199	2544.9	1	99	1	0	24.35	23.43	21.17
					1	0	1	99	14.59	14.78	14.99
					100	0	100	0	20.45	19.52	20.55

LTE CA_7C / High Range											
Bandwidth (MHz)	PCC CH	PCC Frequency (MHz)	SCC CH	SCC Frequency (MHz)	PCC RB Size	PCC Offset	SCC RB Size	SCC Offset	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
10+20	21206	2545.6	21350	2560	1	49	1	0	24.12	23.22	21.11
					1	0	1	99	14.64	14.97	14.72
					50	0	100	0	21.18	20.27	20.23
20+10	21251	2550.1	21395	2564.5	1	99	1	0	24.13	23.23	21.33
					1	0	1	49	14.53	14.77	14.82
					100	0	50	0	21.37	20.47	20.31
15+10	21277	2552.7	21397	2564.7	1	74	1	0	24.18	23.43	21.49
					1	0	1	49	14.65	14.91	14.95
					75	0	50	0	21.28	20.39	20.35
15+15	21225	2547.5	21375	2562.5	1	74	1	0	24.21	23.44	20.82
					1	0	1	74	14.69	15.13	14.75
					75	0	75	0	20.21	19.29	20.25
15+20	21179	2542.9	21350	2560	1	74	1	0	24.18	23.19	21.03
					1	0	1	99	14.68	15.01	14.72
					75	0	100	0	21.13	20.28	20.07
20+15	21201	2545.1	21372	2562.2	1	99	1	0	24.23	23.58	21.56
					1	0	1	74	14.55	14.96	14.96
					100	0	75	0	21.29	20.35	20.22
20+20	21152	2540.2	21350	2560	1	99	1	0	24.26	23.24	21.23
					1	0	1	99	14.57	14.79	14.66
					100	0	100	0	20.35	19.39	20.33

LTE CA_38C / Low Range											
Bandwidth (MHz)	PCC CH	PCC Frequency (MHz)	SCC CH	SCC Frequency (MHz)	PCC RB Size	PCC Offset	SCC RB Size	SCC Offset	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
15+15	37825	2577.5	37975	2592.5	1	74	1	0	24.85	23.59	21.13
					1	0	1	74	15.77	15.72	15.04
					75	0	75	0	21.08	19.95	20.54
20+20	37850	2580	38048	2599.8	1	99	1	0	24.97	23.53	21.29
					1	0	1	99	15.43	15.17	15.03
					100	0	100	0	20.82	19.61	20.56

LTE CA_38C / Mid Range											
Bandwidth (MHz)	PCC CH	PCC Frequency (MHz)	SCC CH	SCC Frequency (MHz)	PCC RB Size	PCC Offset	SCC RB Size	SCC Offset	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
15+15	37925	2587.5	38075	2602.5	1	74	1	0	24.83	23.76	21.32
					1	0	1	74	15.65	15.44	14.96
					75	0	75	0	20.83	19.46	20.37
20+20	37901	2585.1	38099	2604.9	1	99	1	0	24.95	23.31	21.53
					1	0	1	99	15.35	15.03	15.33
					100	0	100	0	20.92	19.59	20.58

LTE CA_38C / High Range											
Bandwidth (MHz)	PCC CH	PCC Frequency (MHz)	SCC CH	SCC Frequency (MHz)	PCC RB Size	PCC Offset	SCC RB Size	SCC Offset	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
15+15	38025	2597.5	38175	2612.5	1	74	1	0	25.01	23.49	21.14
					1	0	1	74	15.48	15.17	14.83
					75	0	75	0	20.87	19.46	20.35
20+20	37952	2590.2	38150	2610	1	99	1	0	25.05	23.42	21.62
					1	0	1	99	15.47	14.98	15.31
					100	0	100	0	20.79	19.56	20.53

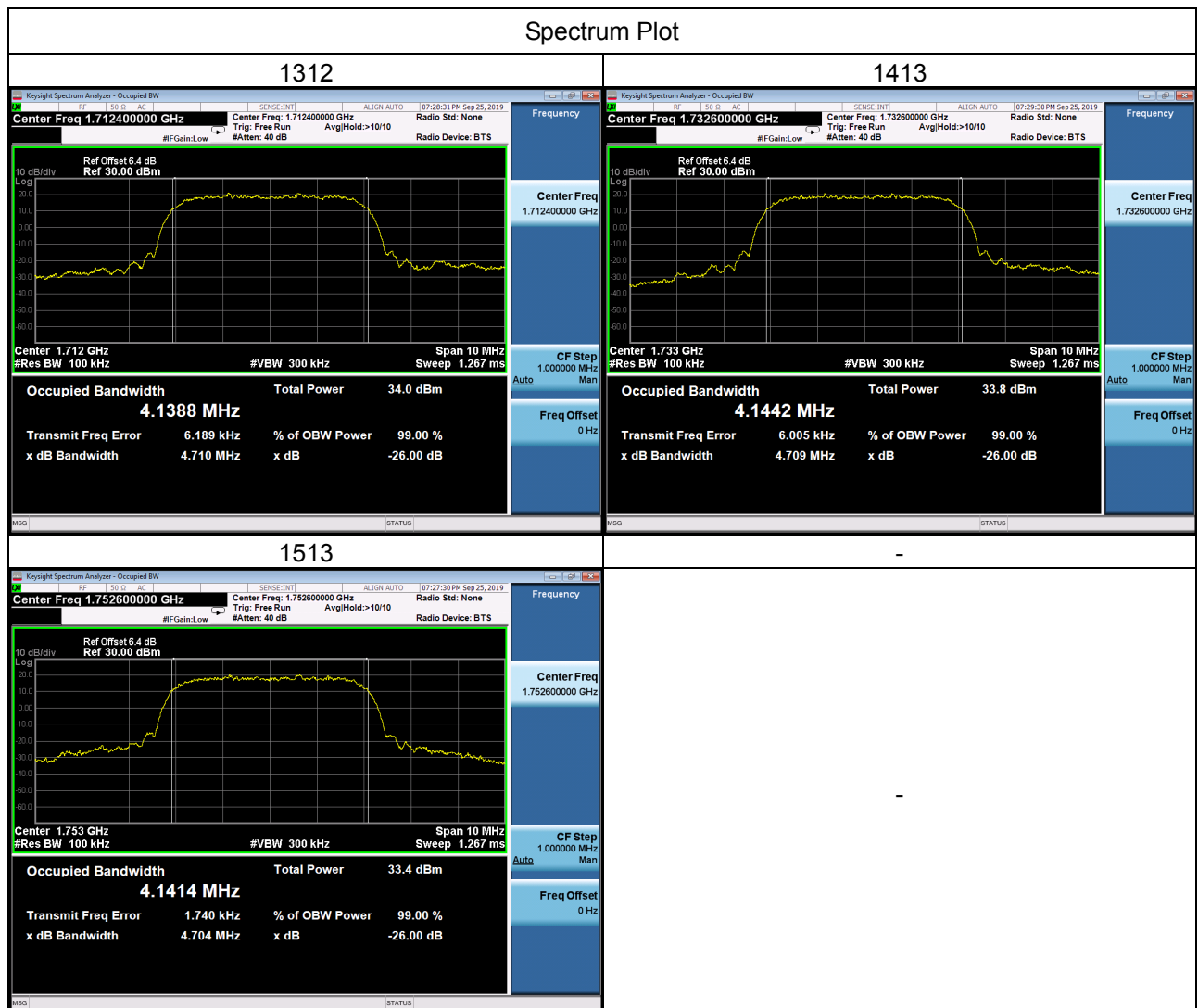
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Bandwidth (MHz)	PCC CH	PCC Frequency (MHz)	SCC CH	SCC Frequency (MHz)	PCC RB Size	PCC Offset	SCC RB Size	SCC Offset	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
5+20	39683	2499.3	39800	2511	1	24	1	0	24.36	23.45	21.26
					1	0	1	99	15.38	15.26	15.05
					25	0	100	0	19.35	19.32	19.19
20+5	39750	2506	39867	2517.7	1	99	1	0	24.62	23.84	21.55
					1	0	1	24	15.44	15.46	15.22
					100	0	25	0	20.16	19.99	20.01
10+15	39703	2501.3	39823	2513.3	1	49	1	0	24.66	23.94	21.34
					1	0	1	74	15.29	15.68	15.12
					50	0	75	0	18.86	18.89	18.82
15+10	39725	2503.5	39845	2515.5	1	74	1	0	24.78	23.97	21.82
					1	0	1	49	15.31	15.64	15.45
					75	0	50	0	19.19	19.15	19.02
10+20	39705	2501.5	39849	2515.9	1	49	1	0	24.58	23.72	21.37
					1	0	1	99	15.22	15.53	15.06
					50	0	100	0	19.47	19.45	19.43
20+10	39750	2506	39894	2520.4	1	99	1	0	24.63	23.82	21.86
					1	0	1	49	15.12	15.33	15.44
					100	0	50	0	19.82	19.83	19.78
15+15	39725	2503.5	39875	2518.5	1	74	1	0	24.63	23.87	21.68
					1	0	1	74	15.28	15.68	15.39
					75	0	75	0	19.65	19.52	19.61
15+20	39728	2503.8	39899	2520.9	1	74	1	0	24.54	23.84	21.71
					1	0	1	99	15.18	15.54	15.42
					75	0	100	0	19.49	19.51	19.41
20+15	39750	2506	39921	2523.1	1	99	1	0	24.64	23.83	21.88
					1	0	1	74	15.16	15.37	15.54
					100	0	75	0	19.66	19.69	19.65
20+20	39750	2506	39948	2525.8	1	99	1	0	24.58	23.72	21.85
					1	0	1	99	15.33	15.29	15.45
					100	0	100	0	19.59	19.57	19.53

LTE CA_41C / Mid Range											
Bandwidth (MHz)	PCC CH	PCC Frequency (MHz)	SCC CH	SCC Frequency (MHz)	PCC RB Size	PCC Offset	SCC RB Size	SCC Offset	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
5+20	40528	2583.8	40645	2595.5	1	24	1	0	24.25	23.29	21.09
					1	0	1	99	15.09	15.15	15.03
					25	0	100	0	19.47	19.44	19.46
20+5	40595	2590.5	40712	2602.2	1	99	1	0	24.39	23.78	21.62
					1	0	1	24	14.81	15.05	14.78
					100	0	25	0	19.46	19.41	19.43
10+15	40549	2585.9	40669	2597.9	1	49	1	0	24.49	23.63	21.28
					1	0	1	74	15.14	15.48	15.11
					50	0	75	0	18.69	18.62	18.59
15+10	40571	2588.1	40691	2600.1	1	74	1	0	24.61	23.76	21.41
					1	0	1	49	15.17	15.32	15.09
					75	0	50	0	18.71	18.72	18.69
10+20	40526	2583.6	40670	2598	1	49	1	0	24.42	23.72	21.24
					1	0	1	99	15.19	15.63	15.09
					50	0	100	0	19.15	19.22	19.21
20+10	40571	2588.1	40715	2602.5	1	99	1	0	24.52	23.83	21.71
					1	0	1	49	15.08	15.51	15.45
					100	0	50	0	19.39	19.41	19.32
15+15	40545	2585.5	40695	2600.5	1	74	1	0	24.36	23.53	21.39
					1	0	1	74	15.14	15.36	15.35
					75	0	75	0	19.03	19.05	18.95
15+20	40523	2583.3	40694	2600.4	1	74	1	0	24.48	23.72	21.42
					1	0	1	99	15.23	15.72	15.44
					75	0	100	0	19.11	19.14	19.06
20+15	40546	2585.6	40717	2602.7	1	99	1	0	24.54	23.83	21.62
					1	0	1	74	15.07	15.56	15.39
					100	0	75	0	19.39	19.4	19.27
20+20	40521	2583.1	40719	2602.9	1	99	1	0	24.42	23.73	21.18
					1	0	1	99	15.05	15.46	14.96
					100	0	100	0	19.19	19.27	19.16

LTE CA_41C / High Range											
Bandwidth (MHz)	PCC CH	PCC Frequency (MHz)	SCC CH	SCC Frequency (MHz)	PCC RB Size	PCC Offset	SCC RB Size	SCC Offset	QPSK (dBm)	16QAM (dBm)	64QAM (dBm)
5+20	41373	2668.3	41490	2680	1	24	1	0	24.43	23.45	21.59
					1	0	1	99	14.96	15.28	15.44
					25	0	100	0	19.21	19.15	19.17
20+5	41440	2675	41557	2686.7	1	99	1	0	24.28	23.43	21.51
					1	0	1	24	15.02	15.23	15.47
					100	0	25	0	19.91	19.8	19.83
10+15	41395	2670.5	41515	2682.5	1	49	1	0	24.75	23.66	21.25
					1	0	1	74	15.05	15.32	14.99
					50	0	75	0	18.82	18.72	18.71
15+10	41417	2672.7	41537	2684.7	1	74	1	0	24.62	23.63	21.59
					1	0	1	49	15.15	15.48	26.36
					75	0	50	0	18.87	18.76	18.62
10+20	41346	2665.6	41490	2680	1	49	1	0	24.54	23.87	21.67
					1	0	1	99	15.15	15.58	15.46
					50	0	100	0	19.28	19.2	19.17
20+10	41391	2670.1	41535	2684.5	1	99	1	0	24.47	23.54	21.21
					1	0	1	49	15.04	15.28	14.97
					100	0	50	0	19.46	19.38	19.46
15+15	41365	2667.5	41515	2682.5	1	74	1	0	24.52	23.81	21.52
					1	0	1	74	15.23	15.38	15.39
					75	0	75	0	19.31	19.19	19.25
15+20	41319	2662.9	41490	2680	1	74	1	0	24.51	23.72	21.21
					1	0	1	99	15.09	15.44	14.98
					75	0	100	0	19.17	19.09	19.05
20+15	41341	2665.1	41512	2682.2	1	99	1	0	24.61	23.64	21.32
					1	0	1	74	15.06	15.37	15.08
					100	0	75	0	19.35	19.25	19.3
20+20	41292	2660.2	41490	2680	1	99	1	0	24.64	23.62	21.61
					1	0	1	99	14.92	15.12	15.22
					100	0	100	0	19.15	19.04	19.08

APPENDIX B - OCCUPIED BANDWIDTH

WCDMA Band IV_WCDMA					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
1312	1712.4	4.139	1312	1712.4	4.710
1413	1732.6	4.144	1413	1732.6	4.709
1513	1752.6	4.141	1513	1752.6	4.704



WCDMA Band IV_HSDPA					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
1312	1712.4	4.128	1312	1712.4	4.719
1413	1732.6	4.138	1413	1732.6	4.710
1513	1752.6	4.132	1513	1752.6	4.720

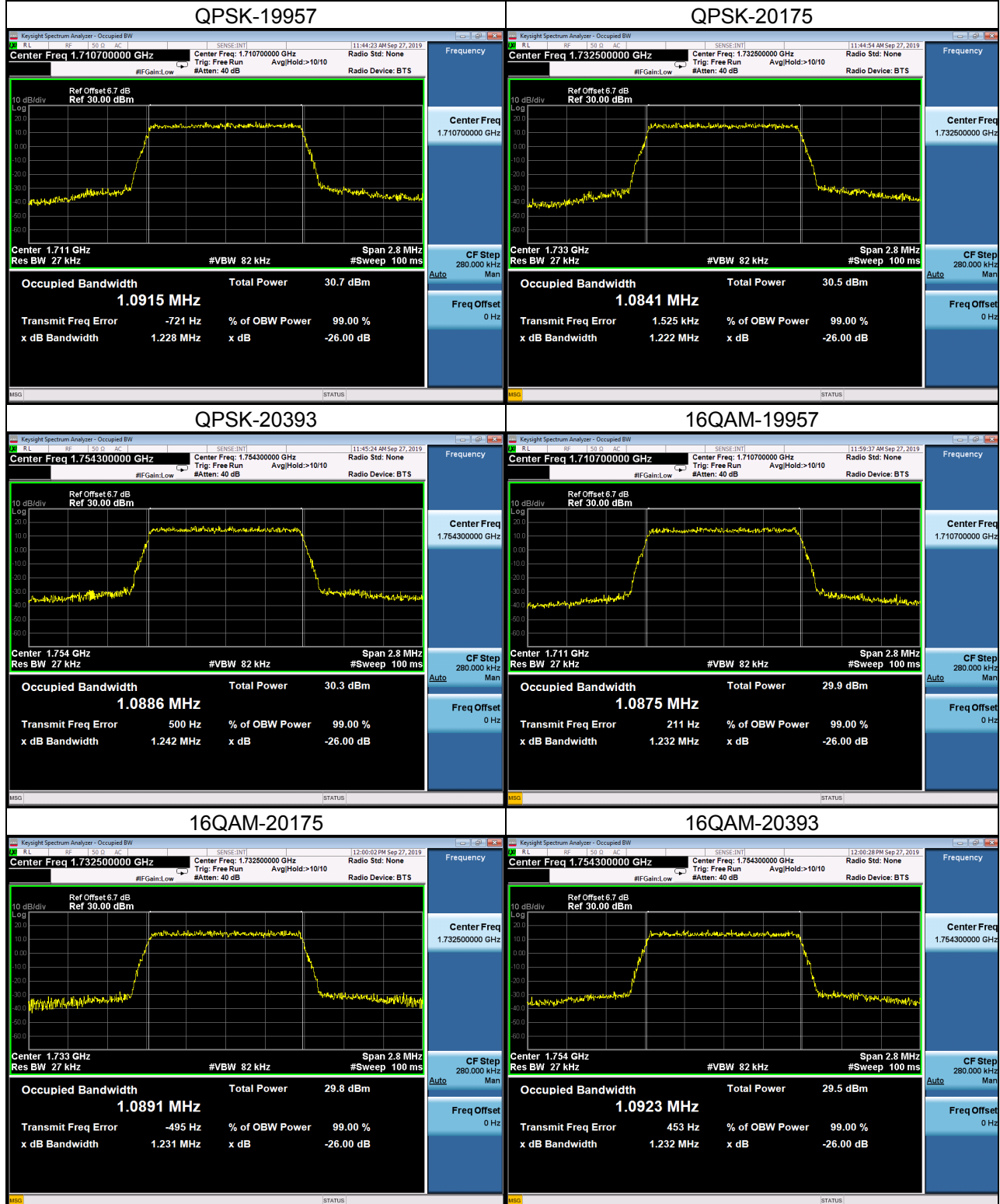


WCDMA Band IV_HSUPA					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
1312	1712.4	4.168	1312	1712.4	4.736
1413	1732.6	4.149	1413	1732.6	4.723
1513	1752.6	4.154	1513	1752.6	4.736

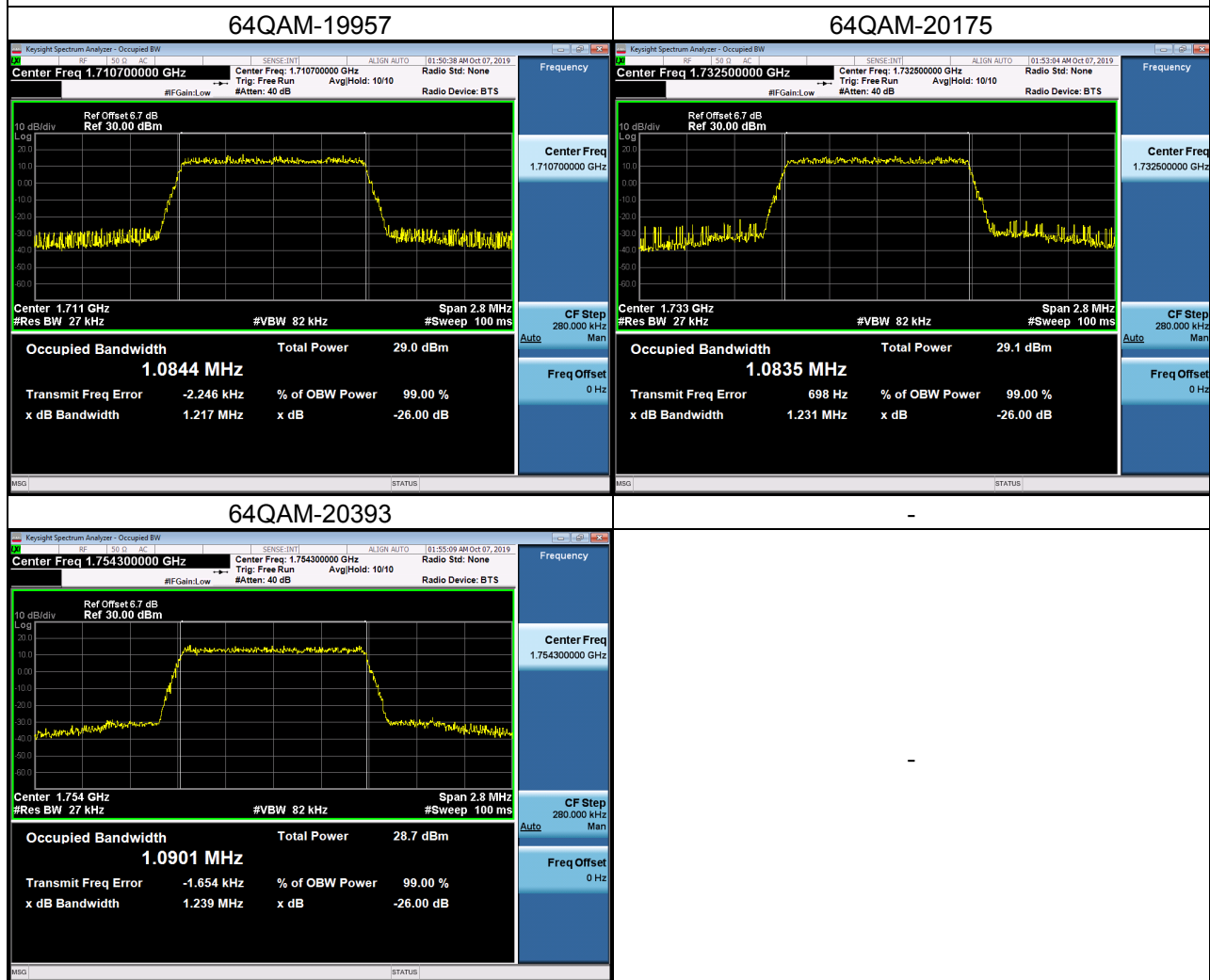


LTE Band 4_1.4M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19957	1710.7	1.091	19957	1710.7	1.228
20175	1732.5	1.084	20175	1732.5	1.222
20393	1754.3	1.089	20393	1754.3	1.242
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19957	1710.7	1.088	19957	1710.7	1.232
20175	1732.5	1.089	20175	1732.5	1.231
20393	1754.3	1.092	20393	1754.3	1.232
64QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19957	1710.7	1.084	19957	1710.7	1.217
20175	1732.5	1.084	20175	1732.5	1.231
20393	1754.3	1.090	20393	1754.3	1.239

Spectrum Plot

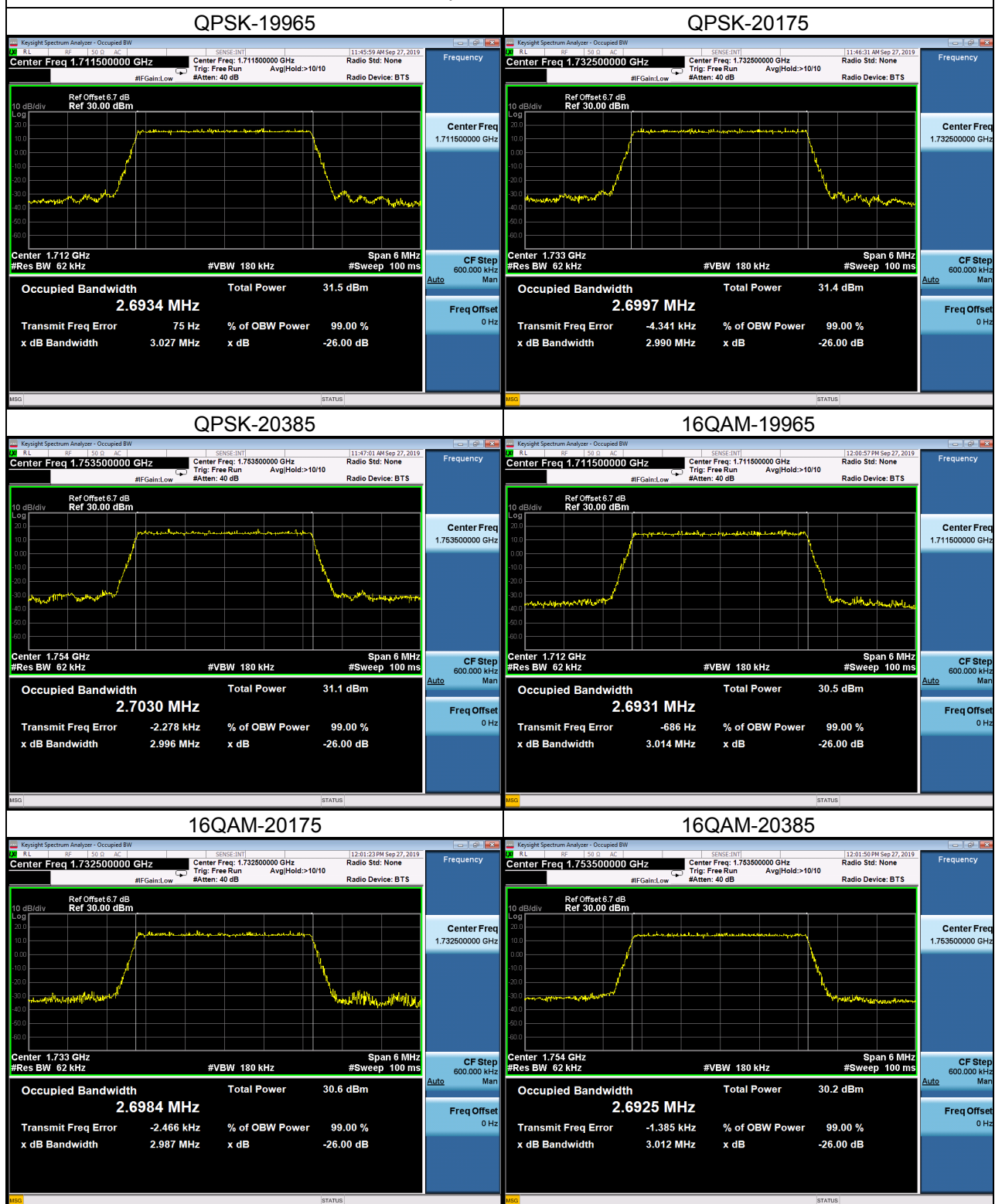


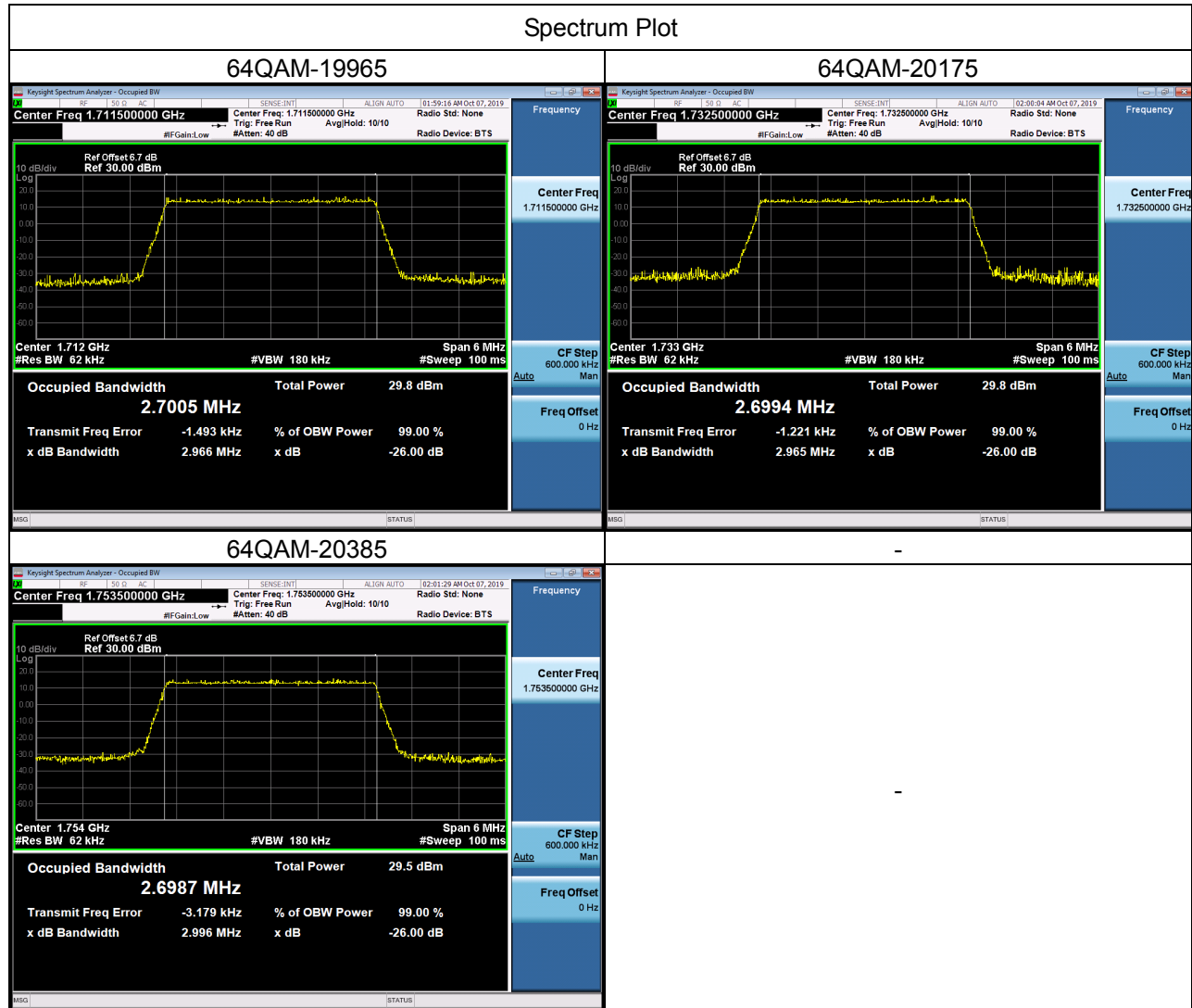
Spectrum Plot



LTE Band 4_3M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19965	1711.5	2.693	19965	1711.5	3.027
20175	1732.5	2.700	20175	1732.5	2.990
20385	1753.5	2.703	20385	1753.5	2.996
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19965	1711.5	2.693	19965	1711.5	3.014
20175	1732.5	2.698	20175	1732.5	2.987
20385	1753.5	2.693	20385	1753.5	3.012
64QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19965	1711.5	2.701	19965	1711.5	2.966
20175	1732.5	2.700	20175	1732.5	2.965
20385	1753.5	2.699	20385	1753.5	2.996

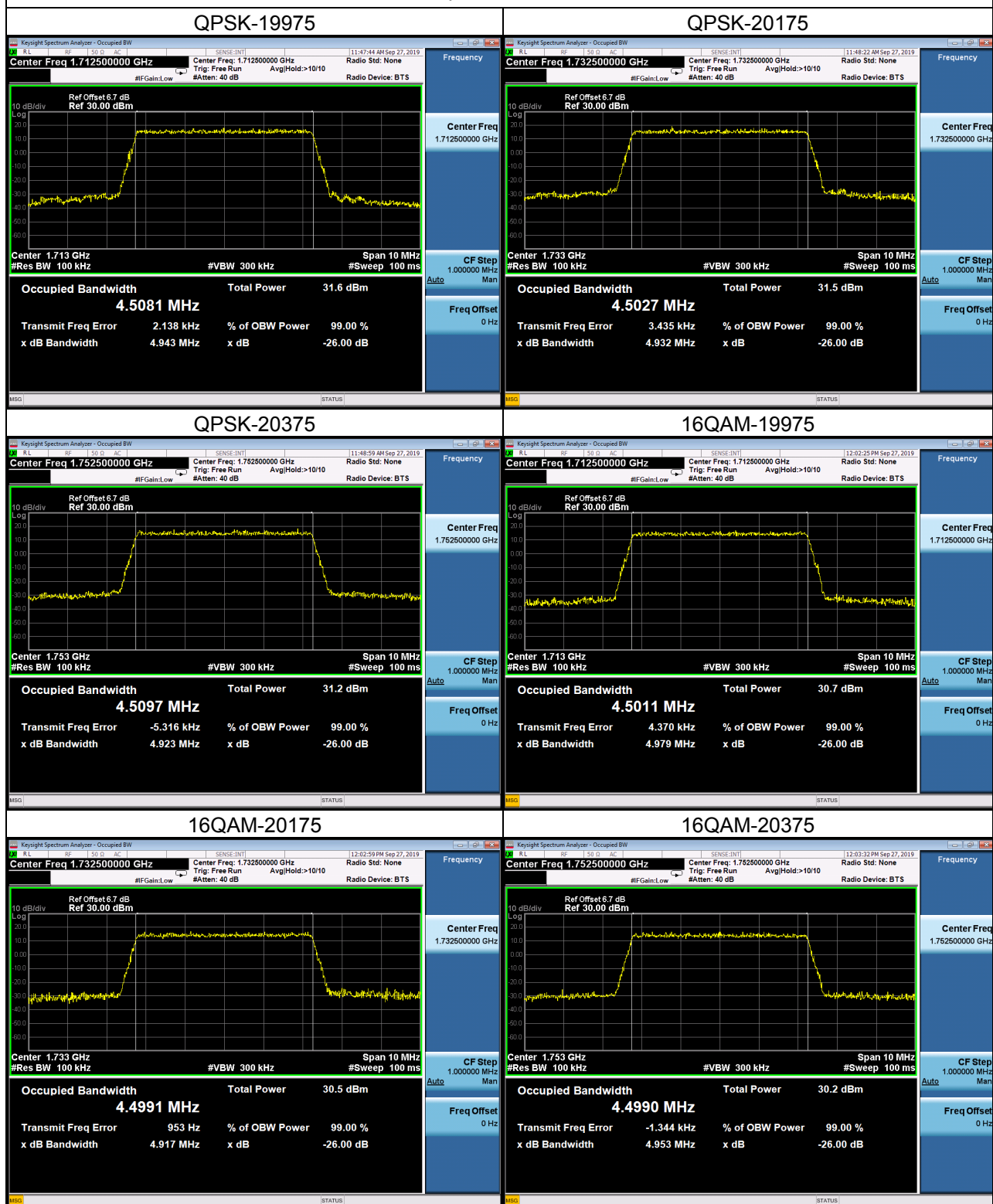
Spectrum Plot





LTE Band 4_5M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19975	1712.5	4.508	19975	1712.5	4.943
20175	1732.5	4.503	20175	1732.5	4.932
20375	1752.5	4.510	20375	1752.5	4.923
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19975	1712.5	4.501	19975	1712.5	4.979
20175	1732.5	4.499	20175	1732.5	4.917
20375	1752.5	4.499	20375	1752.5	4.953
64QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
19975	1712.5	4.500	19975	1712.5	4.944
20175	1732.5	4.513	20175	1732.5	4.944
20375	1752.5	4.503	20375	1752.5	4.949

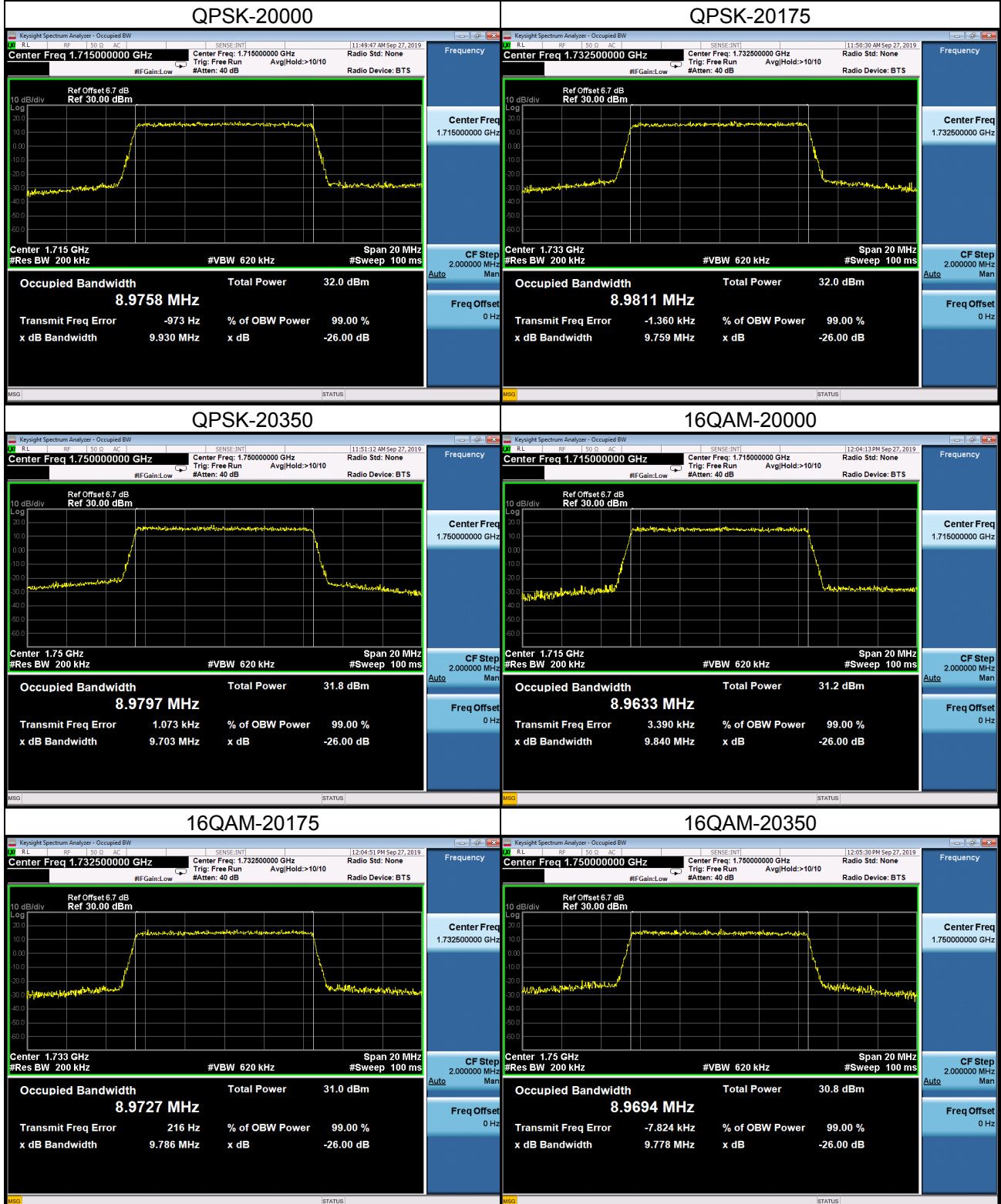
Spectrum Plot



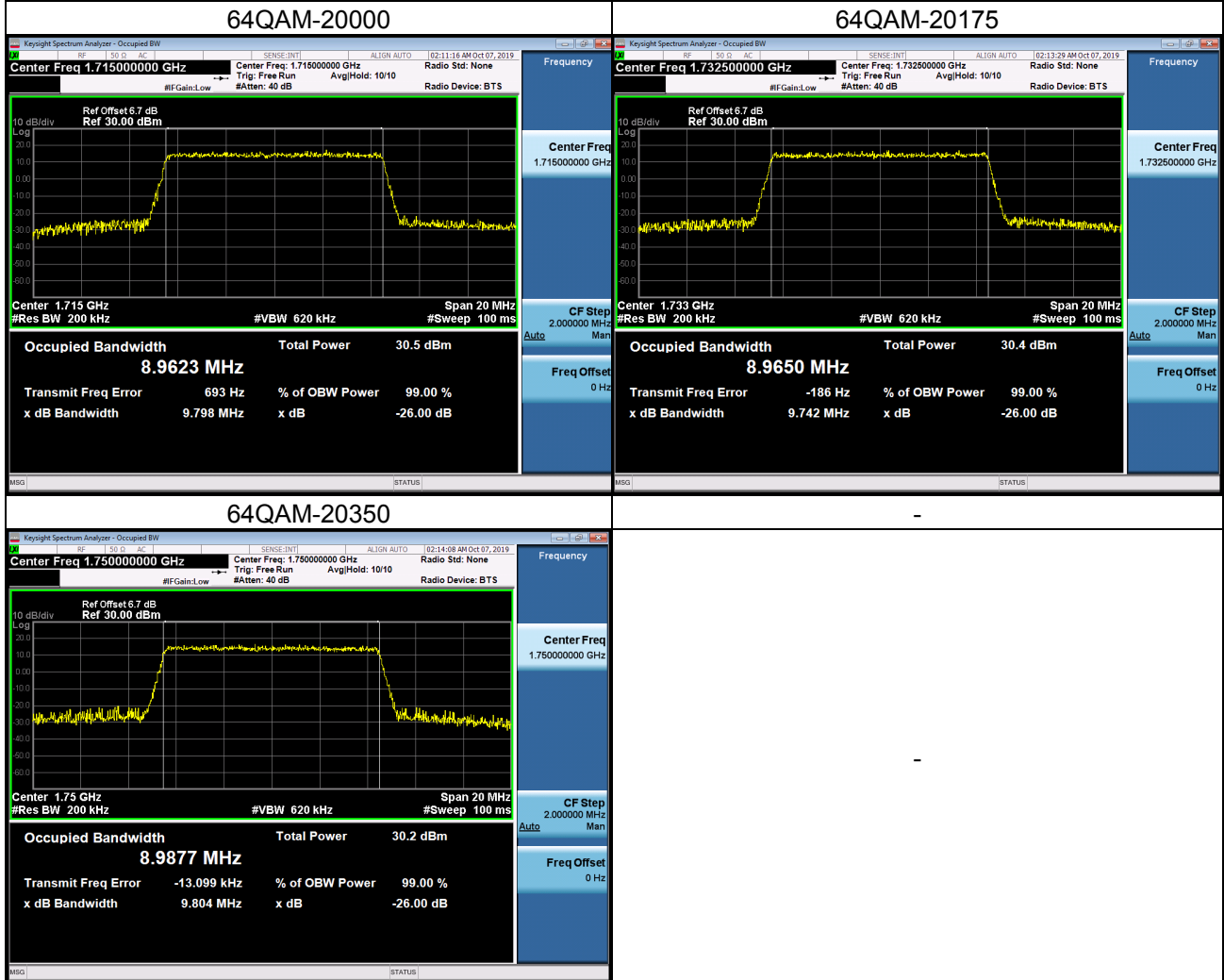


LTE Band 4_10M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20000	1715	8.976	20000	1715	9.930
20175	1732.5	8.981	20175	1732.5	9.759
20350	1750	8.980	20350	1750	9.703
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20000	1715	8.963	20000	1715	9.840
20175	1732.5	8.973	20175	1732.5	9.786
20350	1750	8.969	20350	1750	9.778
64QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20000	1715	8.962	20000	1715	9.798
20175	1732.5	8.965	20175	1732.5	9.742
20350	1750	8.988	20350	1750	9.804

Spectrum Plot

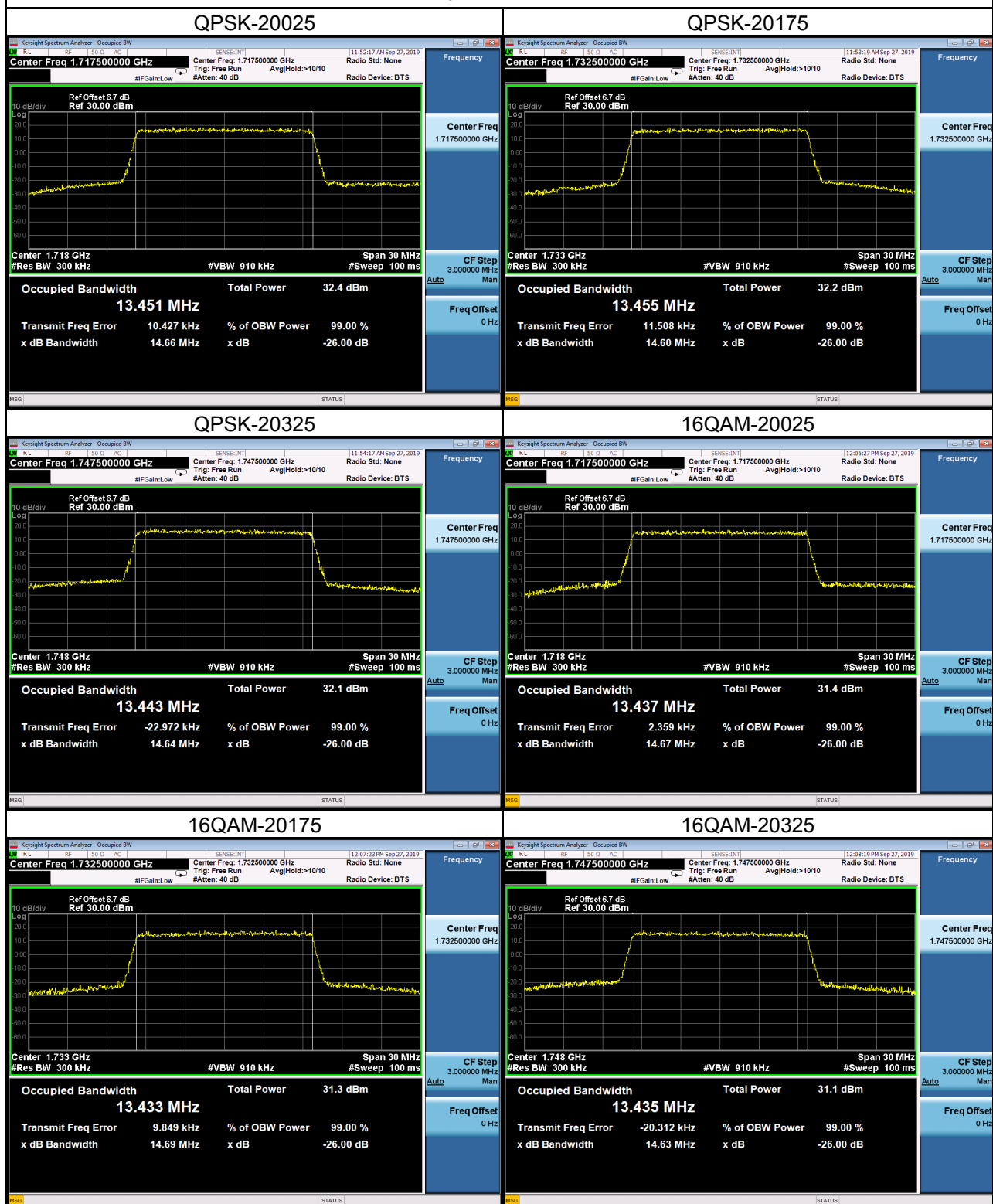


Spectrum Plot



LTE Band 4_15M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20025	1717.5	13.451	20025	1717.5	14.660
20175	1732.5	13.455	20175	1732.5	14.600
20325	1747.5	13.443	20325	1747.5	14.640
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20025	1717.5	13.437	20025	1717.5	14.670
20175	1732.5	13.433	20175	1732.5	14.690
20325	1747.5	13.435	20325	1747.5	14.630
64QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20025	1717.5	13.438	20025	1717.5	14.620
20175	1732.5	13.445	20175	1732.5	14.580
20325	1747.5	13.435	20325	1747.5	14.640

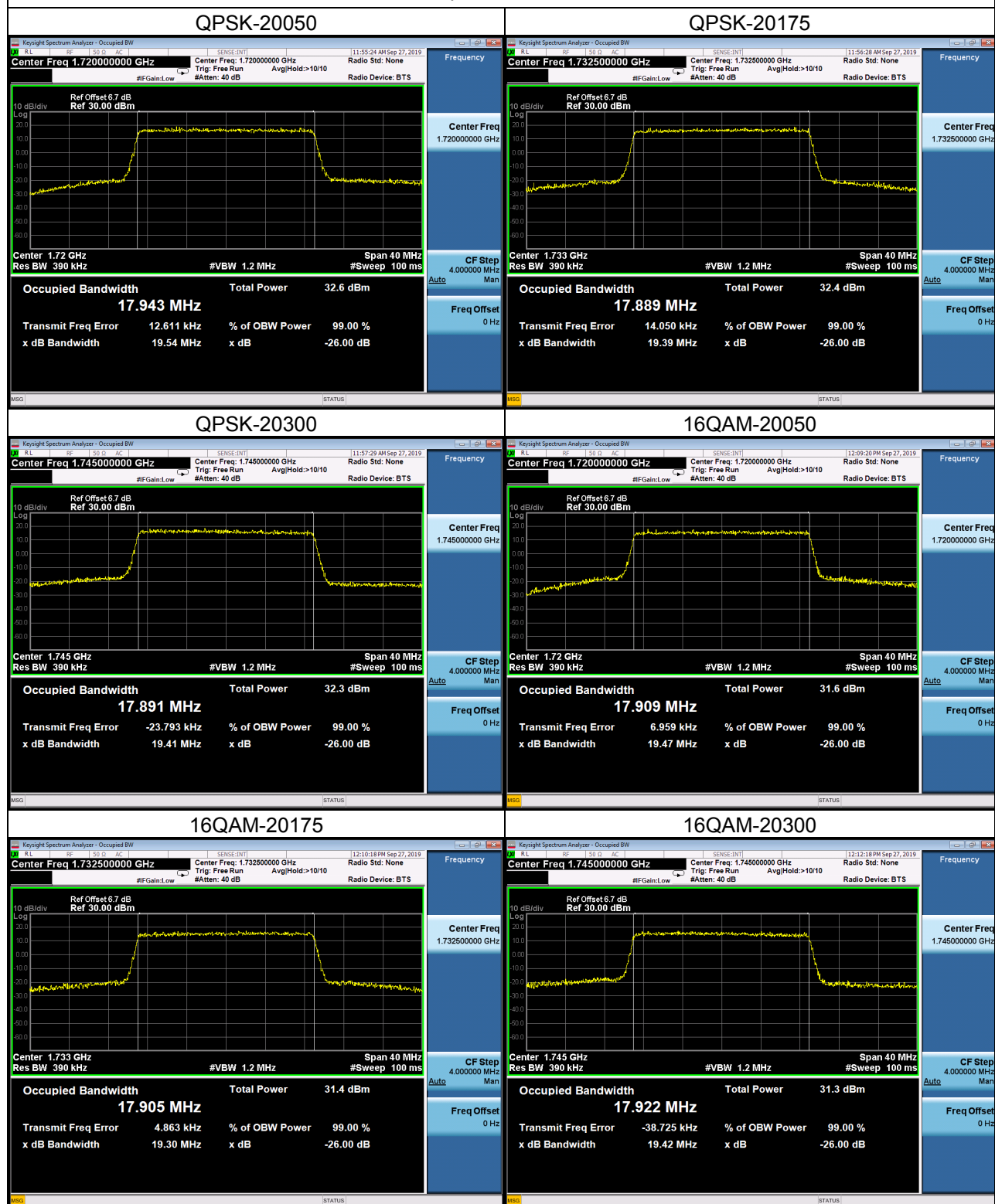
Spectrum Plot





LTE Band 4_20M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20050	1720	17.943	20050	1720	19.540
20175	1732.5	17.889	20175	1732.5	19.390
20300	1745	17.891	20300	1745	19.410
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20050	1720	17.909	20050	1720	19.470
20175	1732.5	17.905	20175	1732.5	19.300
20300	1745	17.922	20300	1745	19.420
64QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20050	1720	17.911	20050	1720	19.460
20175	1732.5	17.914	20175	1732.5	19.500
20300	1745	17.908	20300	1745	19.390

Spectrum Plot





LTE Band 7_5M					
QPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20775	2502.5	4.501	20775	2502.5	4.922
21100	2535	4.509	21100	2535	4.901
21425	2567.5	4.500	21425	2567.5	4.971
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20775	2502.5	4.499	20775	2502.5	4.910
21100	2535	4.503	21100	2535	4.990
21425	2567.5	4.503	21425	2567.5	4.952
64QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20775	2502.5	4.503	20775	2502.5	4.965
21100	2535	4.515	21100	2535	4.958
21425	2567.5	4.505	21425	2567.5	4.965