FCC CFR47 PART 22 SUBPART H
FCC CFR47 PART 24 SUBPART E
FCC CFR47 PART 27 SUBPART H
FCC CFR47 PART 27 SUBPART M

WWAN

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE Phone + BT/BLE, DTS b/g/n and NFC

MODEL NUMBER : SM-J600L, SM-J600N

FCC ID: A3LSMJ600KOR

REPORT NUMBER: 4788452485-E5V2

ISSUE DATE: MAY 15, 2018

Prepared for
SAMSUNG ELECTRONICS CO., LTD.
129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI,
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ACCREDITED
Testing Laboratory

TL-637

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	05/11/18	Initial issue	Junwhan Lee
V2	05/15/18	Updated to address TCB's question	Junwhan Lee

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TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS 5

2. TEST METHODOLOGY 6

3. FACILITIES AND ACCREDITATION 6

4. CALIBRATION AND UNCERTAINTY 6

4.1. MEASURING INSTRUMENT CALIBRATION 6

4.2. SAMPLE CALCULATION 6

4.3. MEASUREMENT UNCERTAINTY 7

5. EQUIPMENT UNDER TEST 8

5.1. DESCRIPTION OF EUT 8

5.2. MAXIMUM OUTPUT POWER 8

5.3. DESCRIPTION OF AVAILABLE ANTENNAS 10

5.4. WORST-CASE ORIENTATION 11

5.5. DESCRIPTION OF TEST SETUP 11

6. TEST AND MEASUREMENT EQUIPMENT 13

7. SUMMARY TABLE 14

8. PEAK TO AVERAGE RATIO 16

8.1. CONDUCTED PEAK TO AVERAGE RESULT 16

8.2. CONDUCTED PEAK TO AVERAGE PLOTS 18

9. LIMITS AND CONDUCTED RESULTS 22

9.1. OCCUPIED BANDWIDTH 22

9.1.1. OCCUPIED BANDWIDTH RESULTS 22

9.1.2. OCCUPIED BANDWIDTH PLOTS 27

9.2. BAND EDGE EMISSIONS 40

9.2.1. BAND EDGE PLOTS 44

9.2.2. EMISSION MASK PLOTS 52

9.3. OUT OF BAND EMISSIONS 56

9.3.1. OUT OF BAND EMISSIONS PLOTS 61

9.4. FREQUENCY STABILITY 74

9.4.1. FREQUENCY STABILITY RESULTS 75

10. RADIATED TEST RESULTS 81

10.1. RADIATED POWER (ERP & EIRP) 81

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10.1.1. ERP/EIRP Results.....82
10.1.2. ERP/EIRP DATA.....86

10.2. FIELD STRENGTH OF SPURIOUS RADIATION.....99
10.2.1. SPURIOUS RADIATION PLOTS.....100

11. SETUP PHOTOS 113

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	SAMSUNG ELECTRONICS CO., LTD.
EUT DESCRIPTION:	GSM/WCDMA/LTE Phone + BT/BLE, DTS b/g/n and NFC
MODEL NUMBER:	SM-J600L, SM-J600N
SERIAL NUMBER:	R39K30VMZRR (RADIATED); 5200c6c653423561 (CONDUCTED)
DATE TESTED:	APR 20, 2018 - MAY 14, 2018

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 22H, 24E, 27H and 27M	Pass

UL Korea, Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Korea, Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL Korea, Ltd. By:

SungGil Park
Suwon Lab Engineer
UL Korea, Ltd.

Tested By:

Junwhan Lee
Suwon Lab Engineer
UL Korea, Ltd.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with following methods.

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 22.
3. FCC CFR 47 Part 24.
4. FCC CFR 47 Part 27.
5. ANSI TIA-603-E, 2016
6. KDB 971168 D01 Power Meas License Digital Systems v03r01

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do,16675, Korea. Line conducted emissions are measured only at the 218 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

218 Maeyeong-ro
☒ Chamber 1
☒ Chamber 2
☒ Chamber 3

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4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

EIRP = PSA reading with EUT worst orientation (dBm) + Path loss (dB) – cable loss(between the SG and substitution antenna) + Substitution Antenna Factor (dBi)

ERP = PSA reading with EUT worst orientation (dBm) + Path loss (dB) – cable loss(between the SG and substitution antenna)

(Path loss = Signal generator output – PSA reading with substitution antenna)

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4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	2.32 dB
Radiated Disturbance, Below 1GHz	3.86 dB
Radiated Disturbance, Above 1 GHz	5.97 dB

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

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE Phone + BT/BLE, DTS b/g/n and NFC.
This test report addresses the WWAN operational mode.

5.2. MAXIMUM OUTPUT POWER

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

GSM

FCC Part 22/24				
Band	Frequency Range	Modulation	Radiated	
	[MHz]	Peak	Avg [dBm]	Avg [mW]
GSM1900	1850~1910	GMSK		
		GPRS	28.88	772.68
		EGPRS	27.23	528.45

WCDMA

FCC Part 22/24				
Band	Frequency Range	Modulation	Radiated	
	[MHz]	Peak	Avg [dBm]	Avg [mW]
Band 5	824~849	REL99	18.34	68.23
		HSDPA	17.05	50.70
Band 2	1850~1910	REL99	21.45	139.64
		HSDPA	21.51	141.58

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LTE Band 5

FCC Part 22					
Band	Frequency Range [MHz]	BandWidth [MHz]	Modulation Peak	Radiated	
				Avg [dBm]	Avg [mW]
Band 5	824 ~ 849	10	QPSK	17.98	62.81
			16QAM	17.33	54.08
		5	QPSK	18.60	72.44
			16QAM	17.11	51.40
		3	QPSK	19.17	82.60
			16QAM	17.28	53.46
		1.4	QPSK	18.18	65.77
			16QAM	17.45	55.59

LTE Band 17

FCC Part 27					
Band	Frequency Range [MHz]	BandWidth [MHz]	Modulation Peak	Radiated	
				Avg [dBm]	Avg [mW]
Band 17	704 ~ 716	10	QPSK	15.73	37.41
			16QAM	13.98	25.00
		5	QPSK	16.80	47.86
			16QAM	13.95	24.83

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LTE Band 41

FCC Part 27					
Band	Frequency Range [MHz]	BandWidth [MHz]	Modulation Peak	Radiated	
				Avg [dBm]	Avg [mW]
Band 41	2496-2690	20	QPSK	24.49	281.19
			16QAM	24.35	272.27
		15	QPSK	25.08	322.11
			16QAM	23.38	217.77
		10	QPSK	24.10	257.04
			16QAM	25.93	391.74
		5	QPSK	22.27	168.66
			16QAM	21.82	152.05

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

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

Frequency (MHz)	Peak Gain (dBi)
WCDMA Band 5 / LTE Band 5 824 ~ 849 MHz	-1.6
GSM1900 / WCDMA Band 2 1850 ~ 1910 MHz	-0.2
LTE Band 41 2496 ~ 2690 MHz	0.1
LTE Band 17 704 ~ 716 MHz	-9.7

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5.4. WORST-CASE ORIENTATION

For GSM1900/WCDMA Band 2 /LTE Band 17/LTE Band 41, the fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z it was determined that X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X orientation.

For WCDMA Band 5 / LTE Band 5, the fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z it was determined that Z orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Z orientation.

Note : All radiated spurious tests were performed connected with earphone and charger for evaluation of worst case mode.(For erp/eirp tests, the EUT didn't connected with earphone and charger)

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Charger	SAMSUNG	EP-TA50KWK	DW2JC11LS/A- E	N/A
Data Cable	SAMSUNG	ECB-DU68WE	N/A	N/A
Earphone	SAMSUNG	EHS64AVFWE	N/A	N/A

I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	Mini-USB	Shielded	0.8m	N/A
2	Audio	2	Mini-Jack	Unshielded	1.2m	N/A

TEST SETUP

The EUT is continuously communicated to the call box during the tests.

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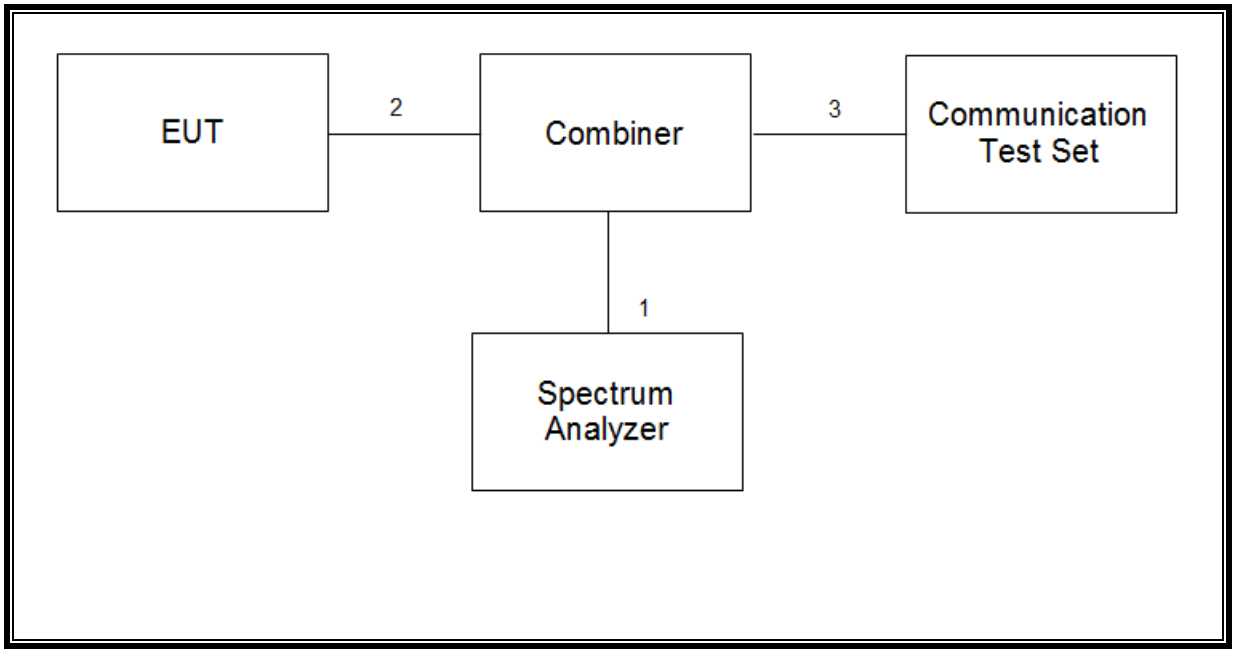
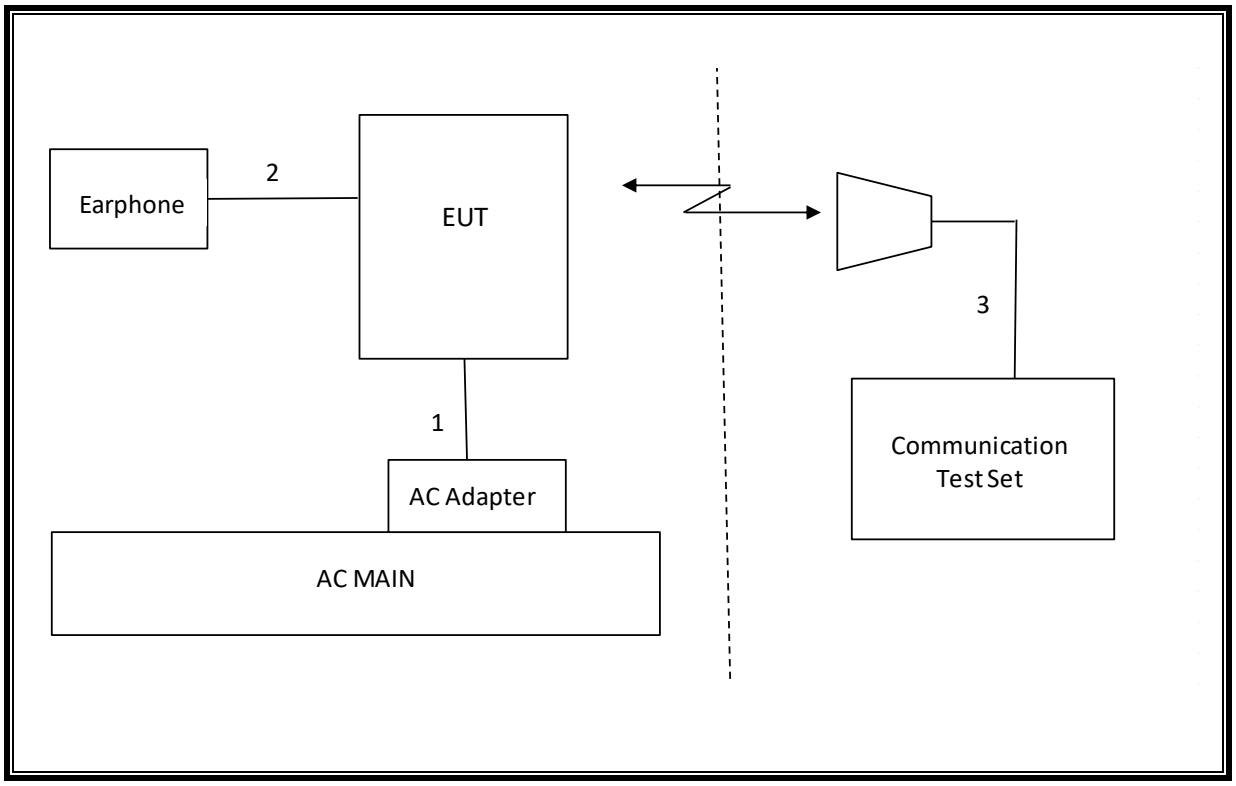
SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



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6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List				
Description	**Manufacturer**	**Model**	**S/N**	**Cal Due**
Antenna, Tuned Dipole 400~1000 MHz	ETS	3121D DB4	00164753	06-30-19
Antenna, Horn, 40 GHz	ETS	3116C	00166155	12-04-19
Preamplifier	ETS	3116C-PA	00168841	11-13-19
Antenna, Horn, 40 GHz	ETS	3116C	00168645	12-04-19
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	750	08-31-19
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	845	08-31-19
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	09-14-19
Antenna, Horn, 18 GHz	ETS	3115	00167211	10-14-18
Antenna, Horn, 18 GHz	ETS	3115	00161451	03-10-19
Antenna, Horn, 18 GHz	ETS	3117	00168724	05-31-19
Antenna, Horn, 18 GHz	ETS	3117	00205959	11-29-18
Antenna, Horn, 18 GHz	ETS	3117	00168717	05-31-19
Combiner	WEINSCHEL	1575	2152	08-08-18
Communications Test Set	R&S	CMW500	115331	08-07-18
DC Power Supply	Agilent / HP	E3640A	MY54226395	08-07-18
Preamplifier, 1000 MHz	Sonoma	310N	341282	08-09-18
Preamplifier, 1000 MHz	Sonoma	310N	370599	08-10-18
Preamplifier, 1000 MHz	Sonoma	310N	351741	08-07-18
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1876511	08-08-18
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	2029169	08-11-18
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	08-08-18
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54490312	08-08-18
EMI Test Receive, 40 GHz	R&S	ESU40	100439	08-08-18
EMI Test Receive, 40 GHz	R&S	ESU40	100457	08-08-18
EMI Test Receive, 44 GHz	R&S	ESW40	101590	08-09-18
High Pass Filter 1.2GHz	Micro-Tronics	HPM50108-02	G005	08-09-18
High Pass Filter 1.2GHz	Micro-Tronics	HPM50108-02	G006	08-08-18
High Pass Filter 2.8GHz	Micro-Tronics	HPM50111-02	010	08-09-18
High Pass Filter 2.8GHz	Micro-Tronics	HPM50111-02	011	08-08-18
High Pass Filter 4GHz	Micro-Tronics	HPM50118-02	G001	08-09-18
High Pass Filter 4GHz	Micro-Tronics	HPM50118-02	G002	08-08-18
Attenuator	PASTERNACK	PE7087-10	A009	08-08-18
Attenuator	PASTERNACK	PE7087-10	A001	08-08-18
Attenuator	PASTERNACK	PE7087-10	A008	08-08-18
Attenuator	PASTERNACK	PE7087-10	2	08-10-18
Attenuator	PASTERNACK	PE7395-10	A011	02-12-19
Antenna, Loop, 9kHz-30MHz	R&S	HFH2-Z2	100418	10-26-19
Temperature Chamber	ESPEC	SH-642	93001109	08-08-18
UL Software				
Description	**Manufacturer**	**Model**	**Version**	
Antenna port test software	UL	CLT	Ver 2.4	

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7. SUMMARY TABLE

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result
2.1049	Occupied Band width (99%)	N/A	Conducted	Pass
22.917(a) 24.238(a) 27.53(g)	Band Edge / Conducted Spurious Emission	-13dBm		Pass
27.53(m)	Conducted Spurious Emission	-25 dBm		Pass
27.53(m)	Emission mask	Section 9.2.2		Pass
22.355 24.235 27.54	Frequency Stability	2.5PPM		Pass
22.913(a)(2)	Effective Radiated Power	38.5 dBm	Radiated	Pass
27.50 (c)(10)		34.77 dBm		Pass
24.232(c) 27.50(h)(2)	Equivalent Isotropic Radiated Power	33dBm		Pass
22.917(a) 24.238(a) 27.53(g)	Radiated Spurious Emission	-13dBm		Pass
27.53 (m)	Radiated Spurious Emission	-25dBm		Pass

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FCC Rule Part	Frequency Range [MHz]	Output Power [W]	Frequency Tolerance	Emission Designator	Emission Bandwidth [MHz]	Communication Type
GSM						
24E	1850.2 - 1909.8	0.773	2.5 ppm	236KGXW		GSM1900
24E	1850.2 - 1909.8	0.528	2.5 ppm	245KG7W		EDGE1900
WCDMA						
22H	826.4 - 846.6	0.068	2.5 ppm	4M14F9W		WCDMA B5
24E	1852.4 - 1907.6	0.142	2.5 ppm	4M14F9W		WCDMA B2
LTE Band 5						
22H	829.0 - 844.0	0.063	2.5 ppm	8M96G7W	10	QPSK
22H	829.0 - 844.0	0.054	2.5 ppm	8M96D7W	10	16QAM
22H	825.5 - 847.5	0.083	2.5 ppm	2M71G7W	3	QPSK
22H	824.7 - 848.3	0.056	2.5 ppm	1M09D7W	1.4	16QAM
LTE Band 17						
27H	709.0 - 711.0	0.037	2.5 ppm	8M99G7W	10	QPSK
27H	709.0 - 711.0	0.025	2.5 ppm	8M98D7W	10	16QAM
27H	706.5 - 713.5	0.048	2.5 ppm	4M51G7W	5	QPSK
LTE Band 41						
27M	2506.0 - 2680.0	0.281	2.5 ppm	17M9G7W	20	QPSK
27M	2506.0 - 2680.0	0.272	2.5 ppm	17M9D7W	20	16QAM
27M	2503.5 - 2682.5	0.322	2.5 ppm	13M4G7W	15	QPSK
27M	2501.0 - 2685.0	0.392	2.5 ppm	8M97D7W	10	16QAM

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8. PEAK TO AVERAGE RATIO

Test Procedure

Per KDB 971168 D01 Power Meas License Digital Systems v03r01;

The transmitter output was connected to a CMW500 Test Set and configured to operate at maximum power. The PAR were measured on the Spectrum Analyzer.

Test Spec

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

8.1. CONDUCTED PEAK TO AVERAGE RESULT

GSM

Band	Channel	f [MHz]	Mode	Ratio [dB]	Limit [dB]
GSM1900	661	1880.0	GPRS	0.39	13.00
			EGPRS	2.94	

WCDMA

Band	Channel	f [MHz]	Mode	Ratio [dB]	Limit [dB]
Band 5	4183	836.6	REL99	3.09	13.00
			HSDPA	3.06	
Band 2	9400	1880.0	REL99	2.90	
			HSDPA	3.07	

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LTE Band 5

Band	BW [MHz]	Channel	f [MHz]	Mode	Ratio [dB]	Limit [dB]
Band 5	10	20525	836.5	QPSK	5.46	13.00
				16QAM	6.71	
	5			QPSK	5.43	
				16QAM	6.61	
	3			QPSK	5.41	
				16QAM	6.55	
	1.4			QPSK	5.40	
				16QAM	6.52	

LTE Band 17

Band	BW [MHz]	Channel	f [MHz]	Mode	Ratio [dB]	Limit [dB]
Band 17	10	23790	710	QPSK	4.95	13.00
				16QAM	6.26	
	5			QPSK	4.96	
				16QAM	6.13	

LTE Band41

Band	BW [MHz]	Channel	f [MHz]	Mode	Ratio [dB]	Limit [dB]
Band 41	20	40620	2593	QPSK	5.81	13.00
				16QAM	6.48	
	15			QPSK	5.90	
				16QAM	6.73	
	10			QPSK	5.78	
				16QAM	7.18	
	5			QPSK	5.87	
				16QAM	6.68	

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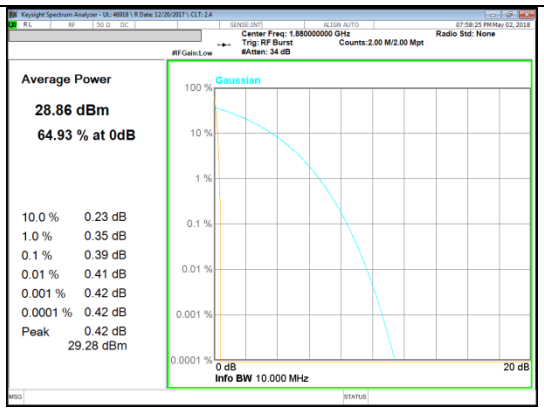
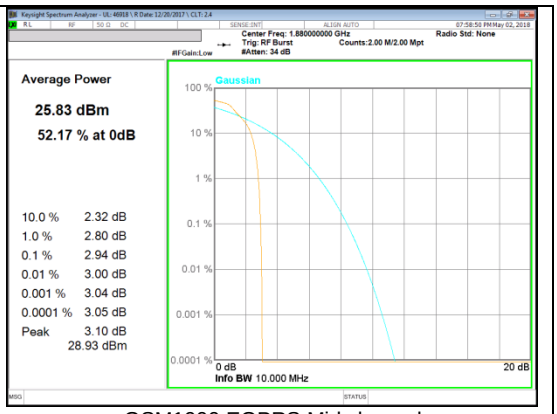
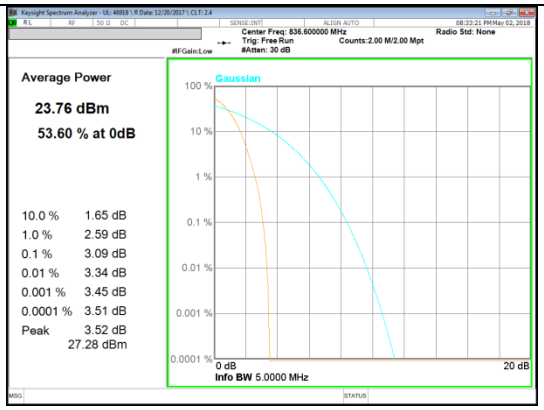
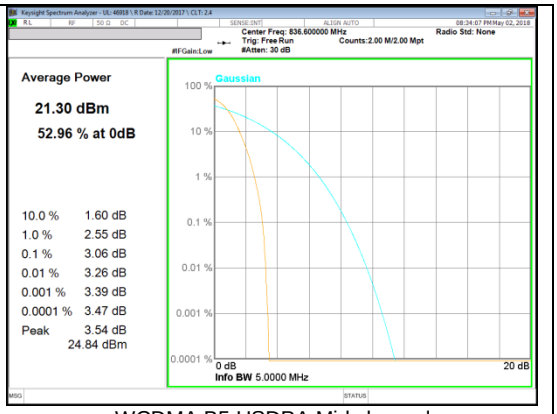
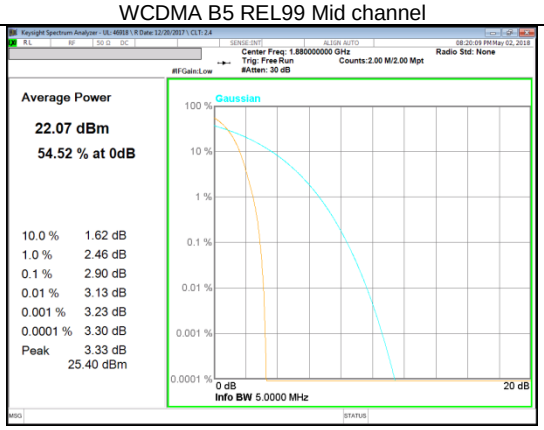
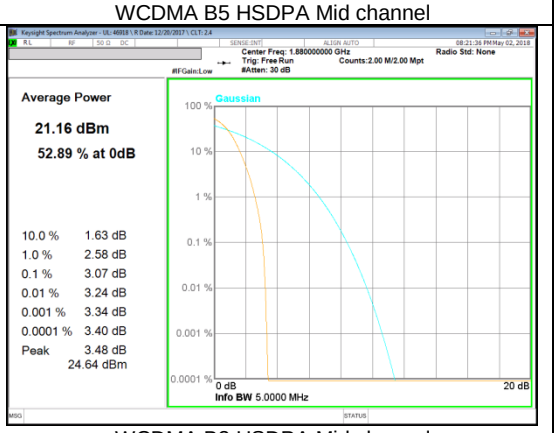
8.2. CONDUCTED PEAK TO AVERAGE PLOTS

GSM

GSM 1900	 GSM1900 GPRS Mid channel	 GSM1900 EGPRS Mid channel

WCDMA

WCDMA Band 5	 WCDMA B5 REL99 Mid channel	 WCDMA B5 HSDPA Mid channel
WCDMA Band 2	 WCDMA B2 REL99 Mid channel	 WCDMA B2 HSDPA Mid channel

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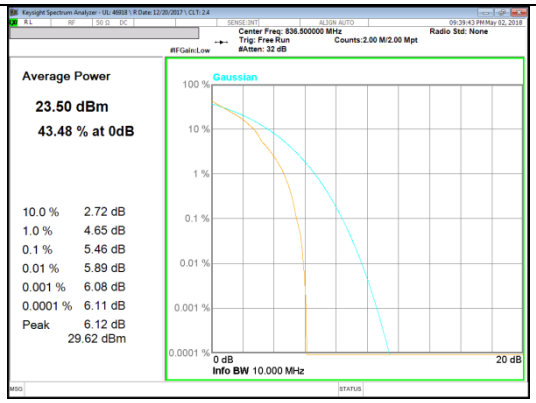
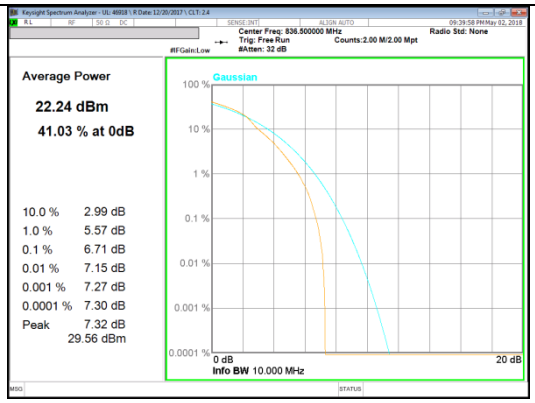
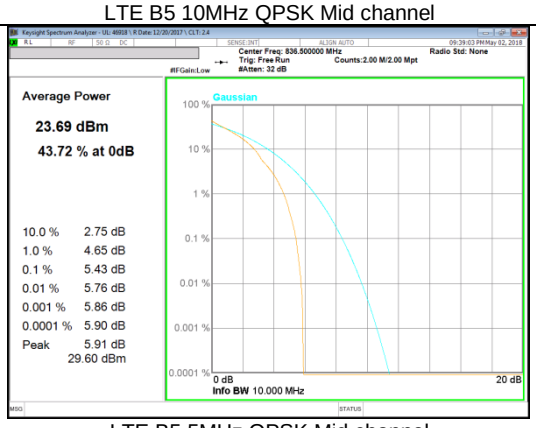
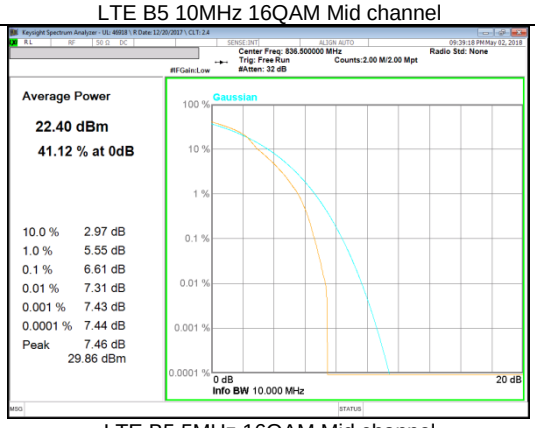
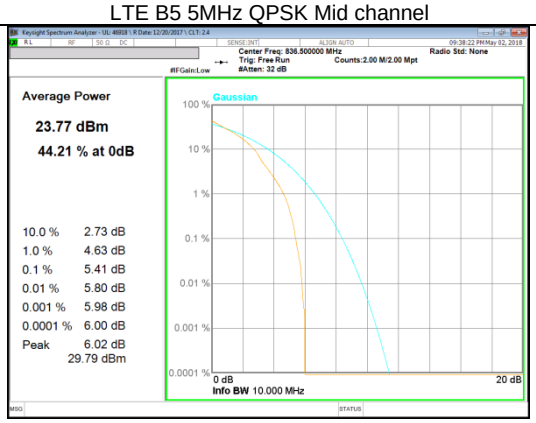
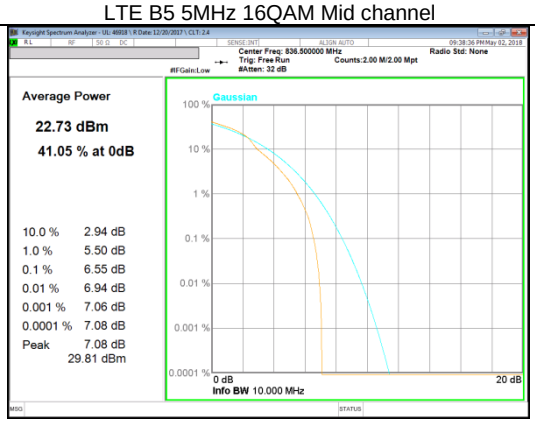
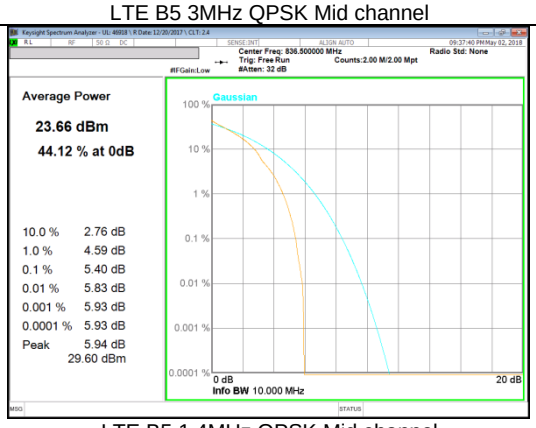
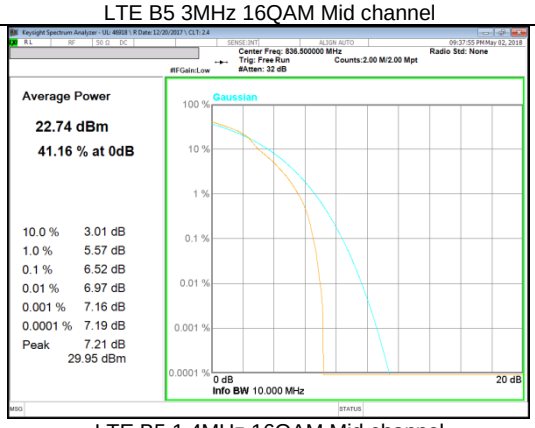
LTE Band 5

LTE Band 5 10 MHz	 LTE B5 10MHz QPSK Mid channel	 LTE B5 10MHz 16QAM Mid channel
LTE Band 5 5 MHz	 LTE B5 5MHz QPSK Mid channel	 LTE B5 5MHz 16QAM Mid channel
LTE Band 5 3 MHz	 LTE B5 3MHz QPSK Mid channel	 LTE B5 3MHz 16QAM Mid channel
LTE Band 5 1.4 MHz	 LTE B5 1.4MHz QPSK Mid channel	 LTE B5 1.4MHz 16QAM Mid channel

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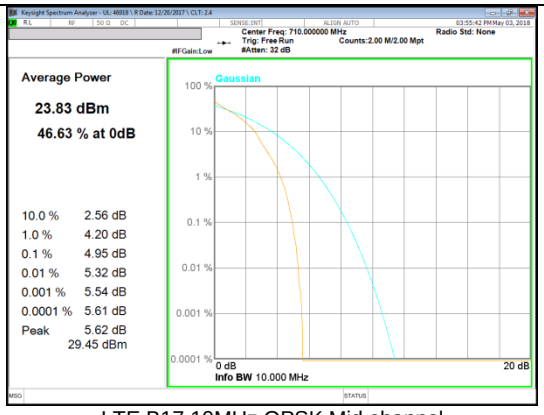
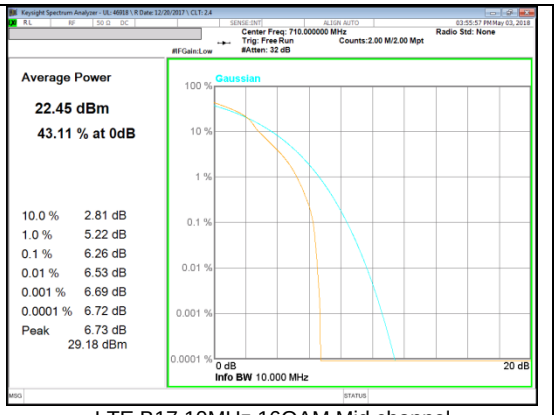
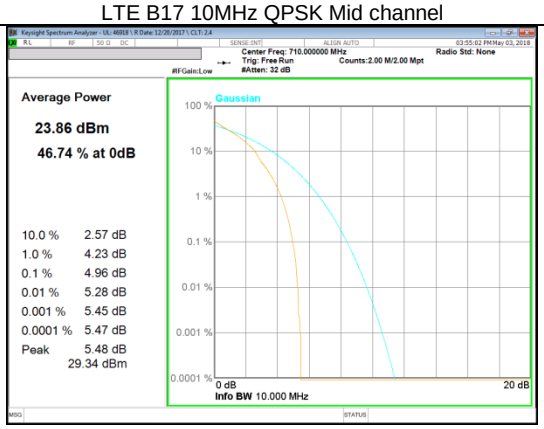
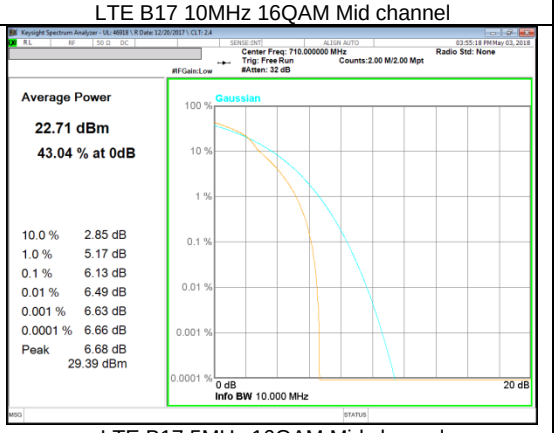
LTE Band 17

LTE Band 17 10 MHz	 LTE B17 10MHz QPSK Mid channel	 LTE B17 10MHz 16QAM Mid channel
LTE Band 17 5 MHz	 LTE B17 5MHz QPSK Mid channel	 LTE B17 5MHz 16QAM Mid channel

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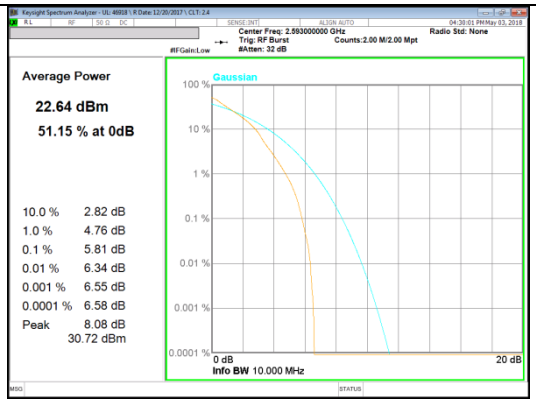
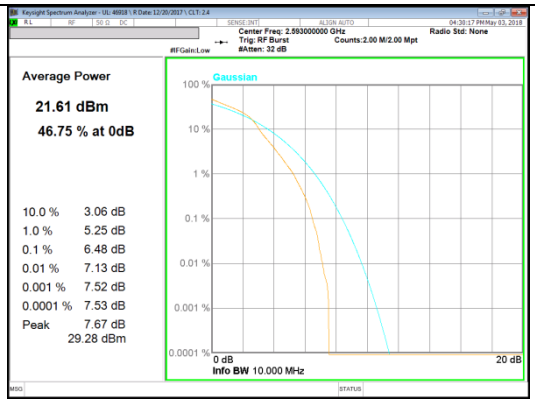
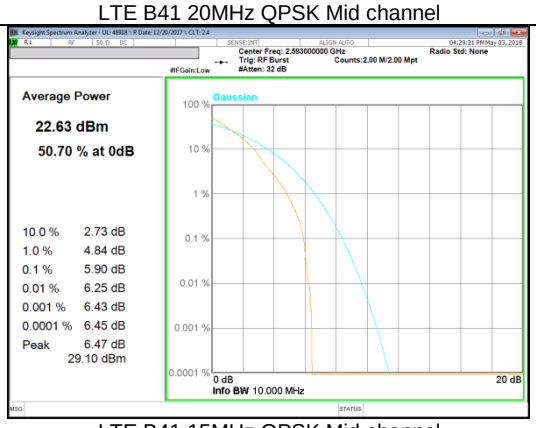
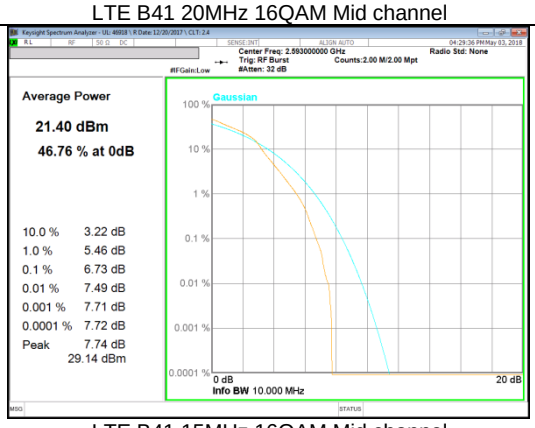
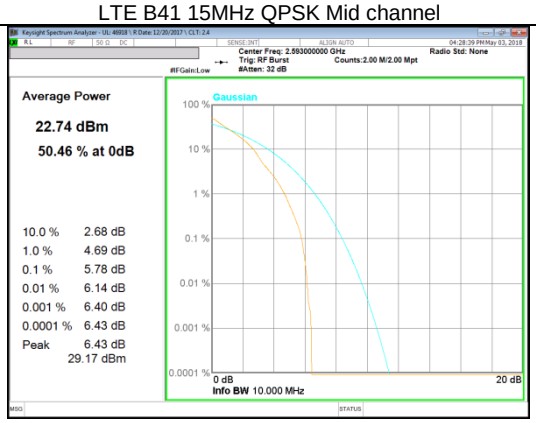
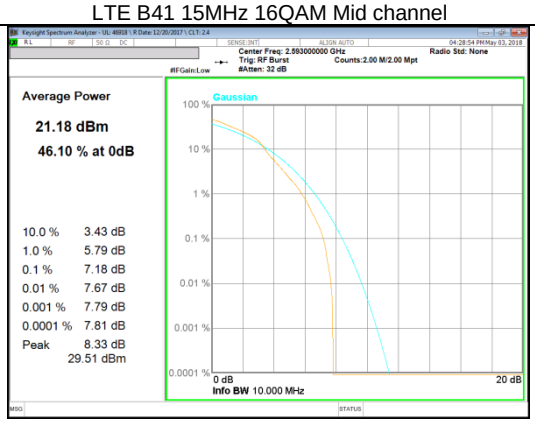
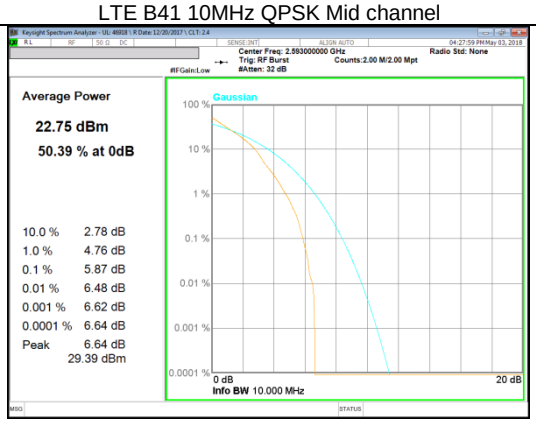
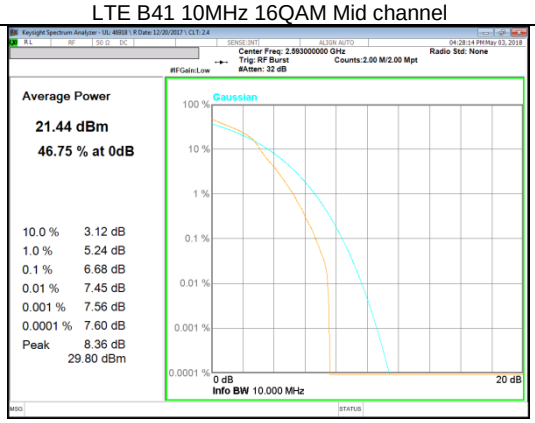
LTE Band 41

LTE Band 41 20 MHz	 LTE B41 20MHz QPSK Mid channel	 LTE B41 20MHz 16QAM Mid channel
LTE Band 41 15 MHz	 LTE B41 15MHz QPSK Mid channel	 LTE B41 15MHz 16QAM Mid channel
LTE Band 41 10 MHz	 LTE B41 10MHz QPSK Mid channel	 LTE B41 10MHz 16QAM Mid channel
LTE Band 41 5 MHz	 LTE B41 5MHz QPSK Mid channel	 LTE B41 5MHz 16QAM Mid channel

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9. LIMITS AND CONDUCTED RESULTS

9.1. OCCUPIED BANDWIDTH

RULE PART(S)

FCC: §2.1049

LIMITS

For reporting purposes only

TEST PROCEDURE

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

(KDB 971168 D01 Power Meas License Digital Systems v03r01)

9.1.1. OCCUPIED BANDWIDTH RESULTS

GSM

Band	Mode	Channel	f [MHz]	99% BW [KHz]	26dB BW [KHz]
GSM1900	GPRS	512	1850.2	238.33	289.8
		661	1880.0	236.41	307.7
		810	1909.8	233.91	291.8
	EGPRS	512	1850.2	237.67	299.7
		661	1880.0	243.13	311.0
		810	1909.8	244.64	315.7

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WCDMA

Band	Mode	Channel	f [MHz]	99% BW [MHz]	26dB BW [MHz]
Band 5	REL99	4132	826.4	4.1265	4.695
		4183	836.6	4.1365	4.682
		4233	846.6	4.1235	4.681
	HSDPA	4132	826.4	4.1346	4.701
		4183	836.6	4.1397	4.693
		4233	846.6	4.1386	4.703
Band 2	REL99	9262	1852.4	4.1374	4.716
		9400	1880.0	4.1300	4.681
		9538	1907.6	4.1309	4.705
	HSDPA	9262	1852.4	4.1354	4.697
		9400	1880.0	4.1212	4.697
		9538	1907.6	4.1385	4.717

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LTE Band 5

Band	BW [MHz]	Channel	f [MHz]	Mode	99% BW [MHz]	26dB BW [MHz]
Band 5	10	20450	829.0	QPSK	8.9437	10.21
				16QAM	8.9548	10.12
		20524	836.5	QPSK	8.9613	10.36
				16QAM	8.9640	10.02
		20599	844.0	QPSK	8.9437	10.12
				16QAM	8.9442	10.23
	5	20425	826.5	QPSK	4.5171	5.289
				16QAM	4.4898	5.145
		20524	836.5	QPSK	4.4985	5.242
				16QAM	4.4984	5.242
		20624	846.5	QPSK	4.4966	5.256
				16QAM	4.4971	5.212
	3	20415	825.5	QPSK	2.6940	3.083
				16QAM	2.6984	3.090
		20524	836.5	QPSK	2.7109	3.087
				16QAM	2.6965	3.131
		20634	847.5	QPSK	2.6947	3.093
				16QAM	2.6964	3.069
	1.4	20407	824.7	QPSK	1.0922	1.361
				16QAM	1.0949	1.390
		20524	836.5	QPSK	1.0905	1.358
				16QAM	1.0934	1.384
		20624	848.3	QPSK	1.0875	1.382
				16QAM	1.0943	1.416

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LTE Band 17

Band	BW [MHz]	Channel	f [MHz]	Mode	99% BW [MHz]	26dB BW [MHz]
Band 17	10	23780	709.0	QPSK	8.9510	10.10
				16QAM	8.9228	9.978
		23790	710.0	QPSK	8.9865	10.10
				16QAM	8.9664	10.15
		23799	711.0	QPSK	8.9654	10.24
				16QAM	8.9776	10.31
	5	23755	706.5	QPSK	4.4975	5.279
				16QAM	4.4985	5.138
		23790	710.0	QPSK	4.5039	5.231
				16QAM	4.4958	5.145
		23824	713.5	QPSK	4.5113	5.239
				16QAM	4.5048	5.248

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LTE Band 41

Band	BW [MHz]	Channel	f [MHz]	Mode	99% BW [MHz]	26dB BW [MHz]
Band 41	20	35970	2506.0	QPSK	17.876	19.70
				16QAM	17.859	19.66
		40620	2593.0	QPSK	17.855	19.45
				16QAM	17.886	19.71
		41490	2680.0	QPSK	17.905	19.80
				16QAM	17.883	19.36
	15	39725	2503.5	QPSK	13.416	14.99
				16QAM	13.420	14.78
		40620	2593.0	QPSK	13.411	14.96
				16QAM	13.422	15.42
		41515	2682.5	QPSK	13.440	15.19
				16QAM	13.435	15.03
	10	39700	2501.0	QPSK	8.9781	10.30
				16QAM	8.9422	10.23
		40620	2593.0	QPSK	8.9529	10.26
				16QAM	8.9619	10.03
		41540	2685.0	QPSK	8.9516	10.07
				16QAM	8.9652	10.24
	5	39675	2498.5	QPSK	4.4976	5.294
				16QAM	4.4894	5.172
		40620	2593.0	QPSK	4.4958	5.132
				16QAM	4.4834	5.176
		41565	2687.5	QPSK	4.4948	5.248
				16QAM	4.4974	5.305

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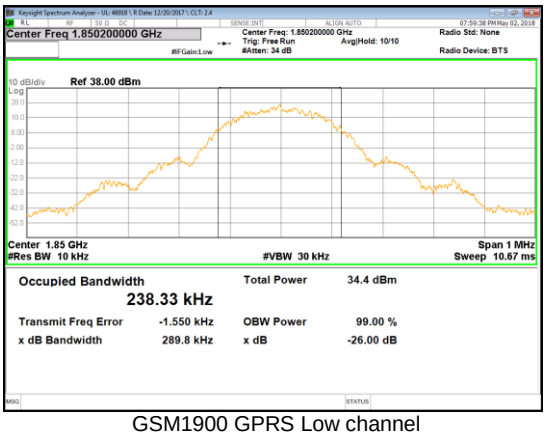
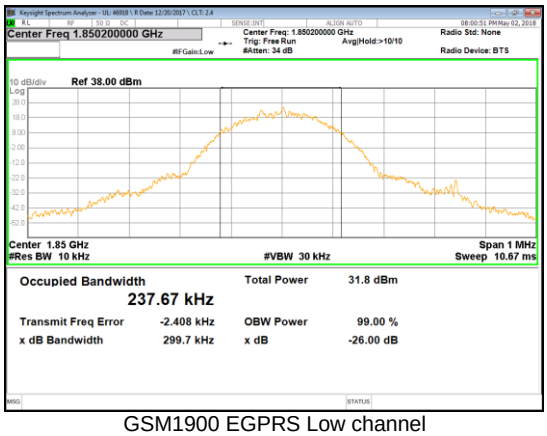
9.1.2. OCCUPIED BANDWIDTH PLOTS

GSM 1900

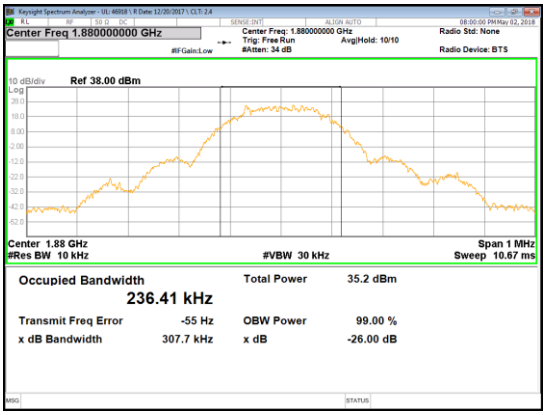
GSM 1900



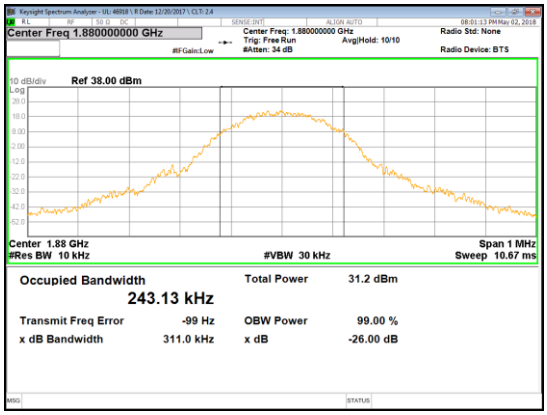
GSM1900 GPRS Low channel



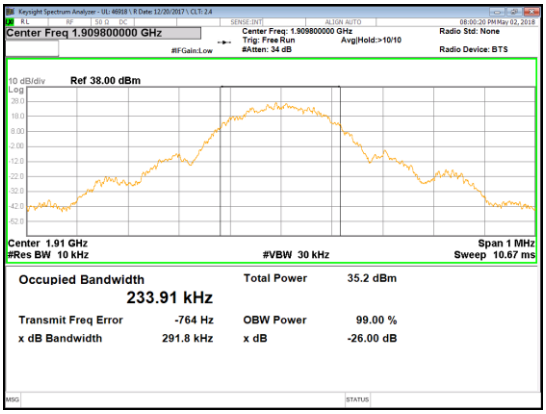
GSM1900 EGPRS Low channel



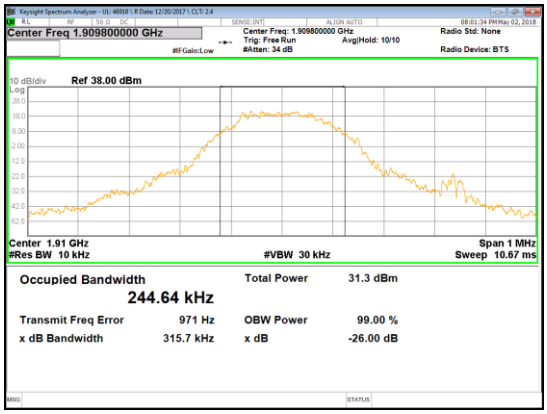
GSM1900 GPRS Mid channel



GSM1900 EGPRS Mid channel



GSM1900 GPRS High channel



GSM1900 EGPRS High channel

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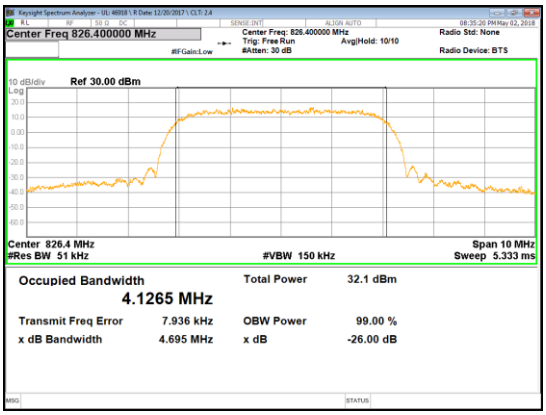
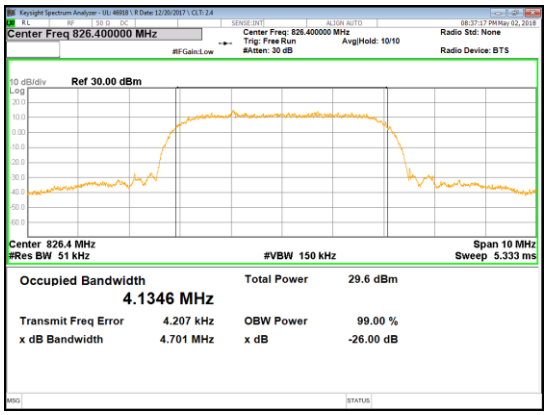
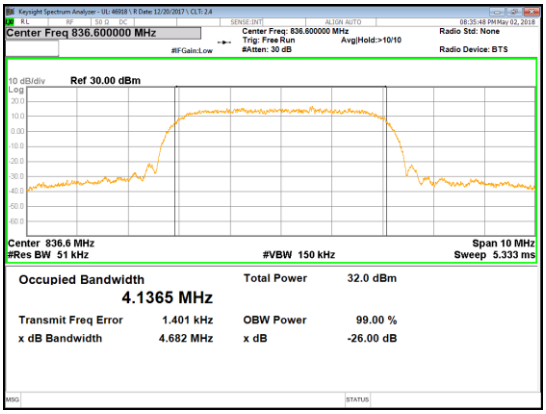
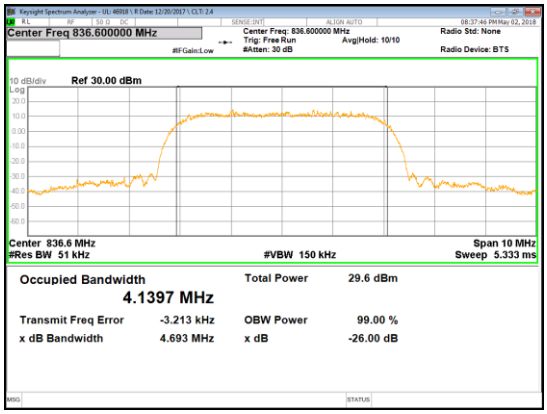
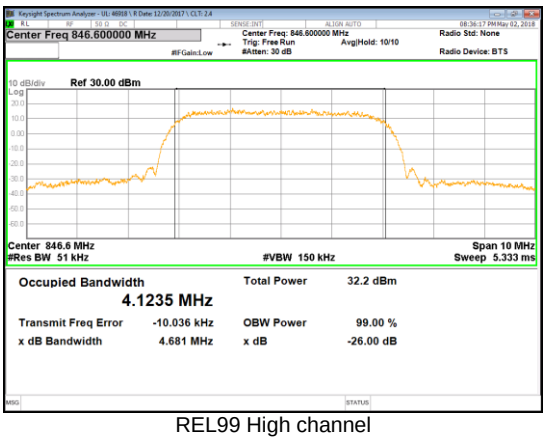
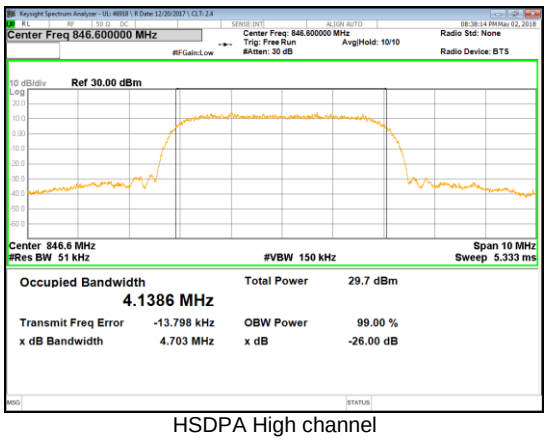
WCDMA Band 5

Band 5	 REL99 Low channel	 HSDPA Low channel
	 REL99 Mid channel	 HSDPA Mid channel
	 REL99 High channel	 HSDPA High channel

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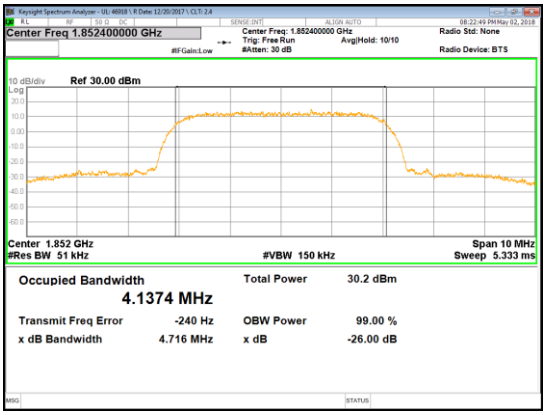
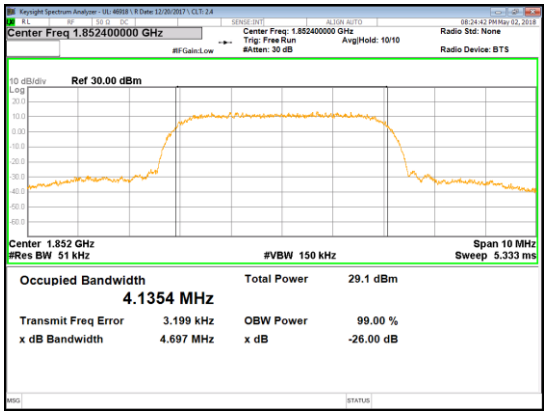
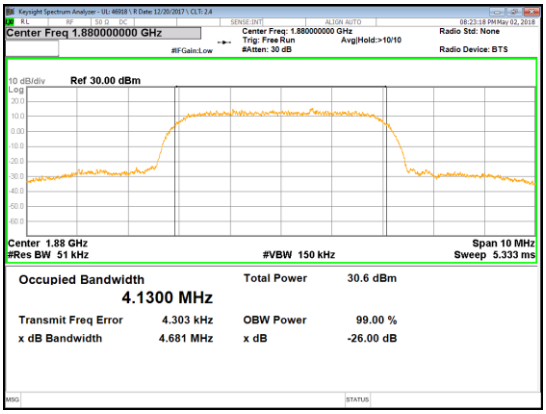
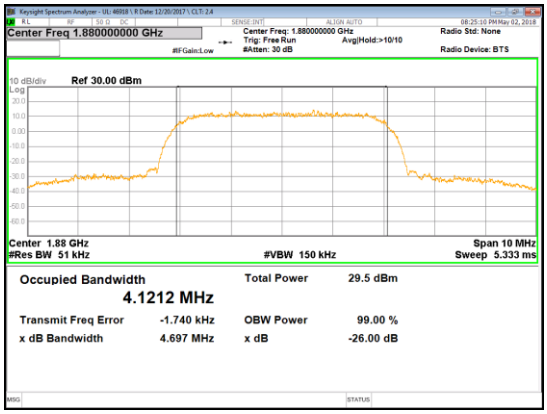
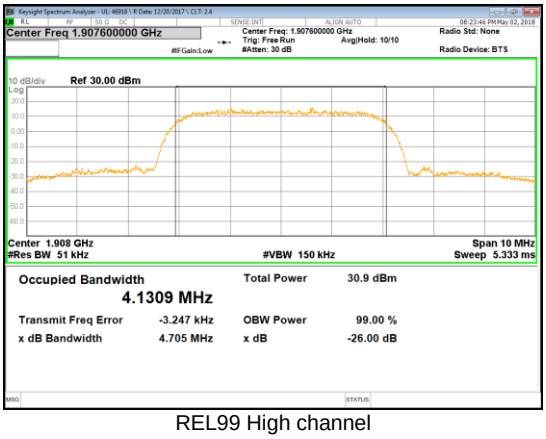
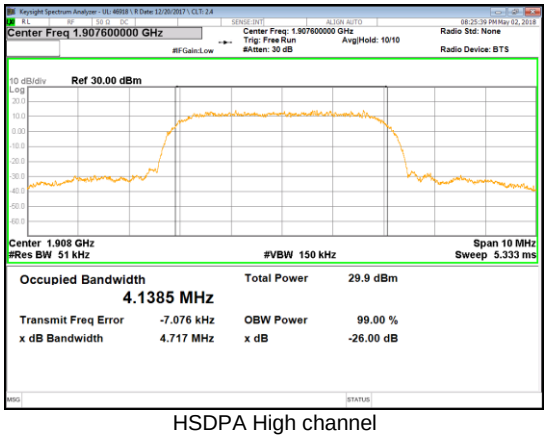
WCDMA Band 2

Band 2	 REL99 Low channel	 HSDPA Low channel
	 REL99 Mid channel	 HSDPA Mid channel
	 REL99 High channel	 HSDPA High channel

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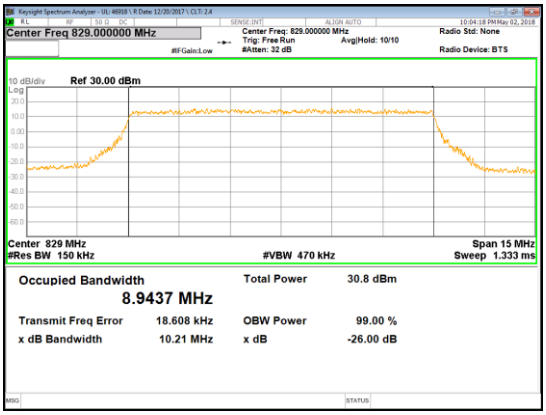
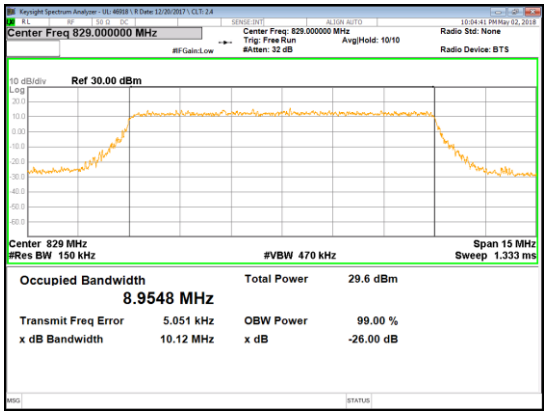
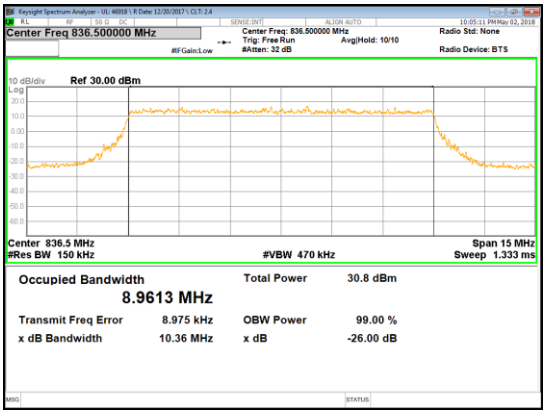
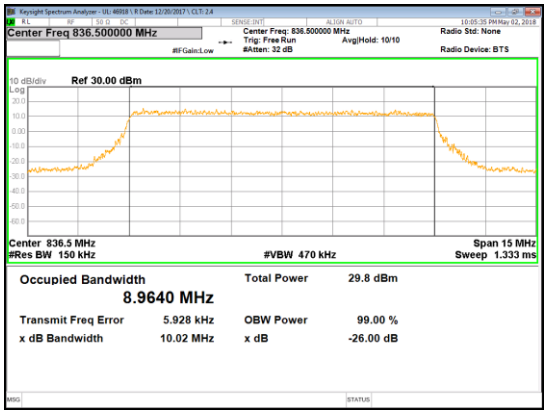
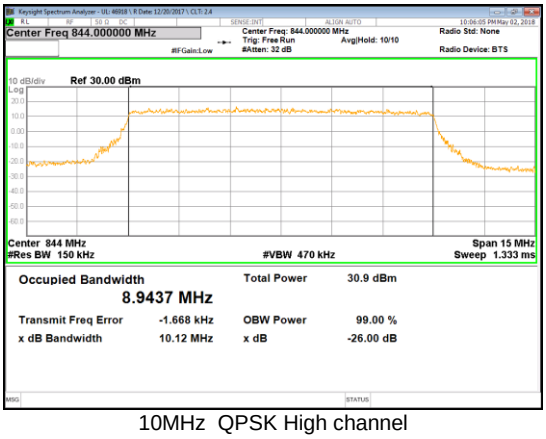
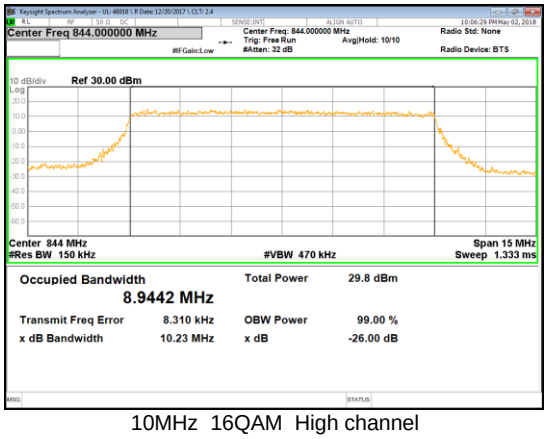
LTE Band 5

Band 5 10MHz	 10MHz QPSK Low channel	 10MHz 16QAM Low channel
	 10MHz QPSK Mid channel	 10MHz 16QAM Mid channel
	 10MHz QPSK High channel	 10MHz 16QAM High channel

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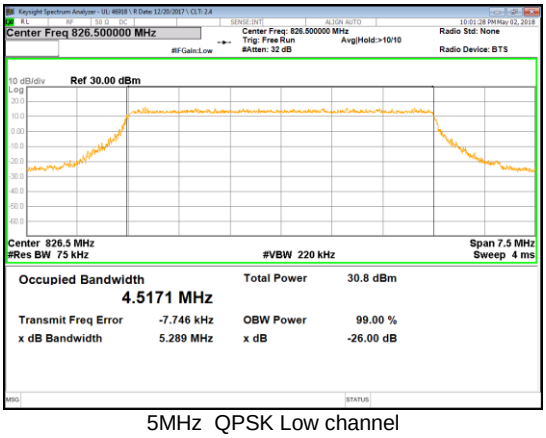
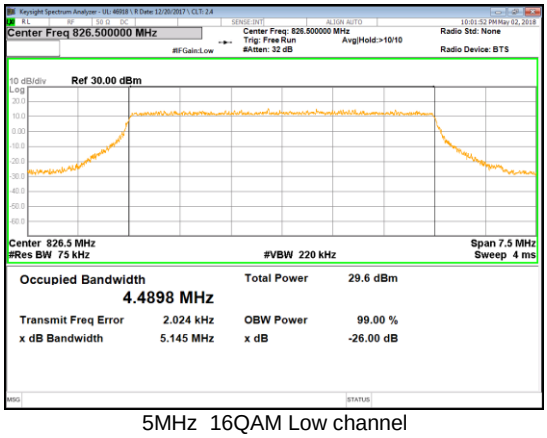
Band 5

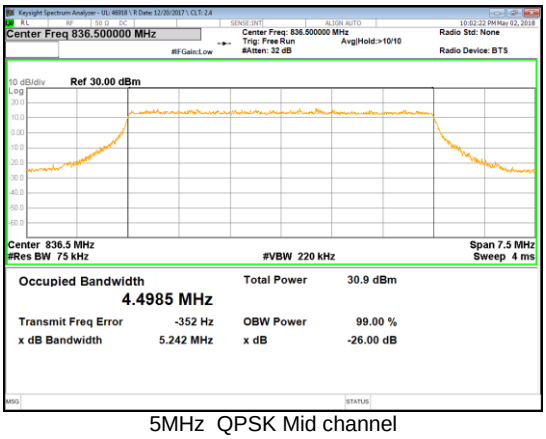
5MHz



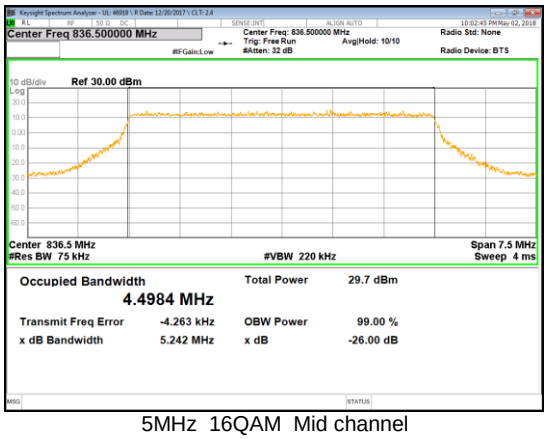
5MHz QPSK Low channel



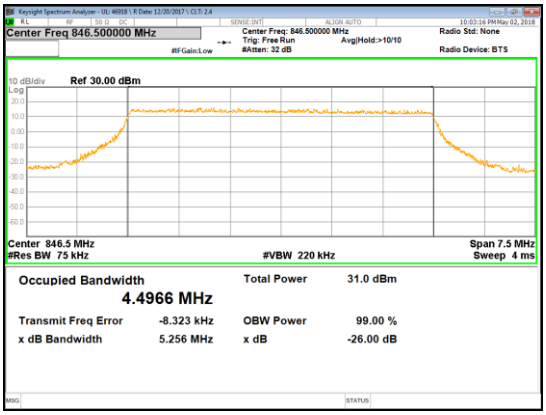
5MHz 16QAM Low channel



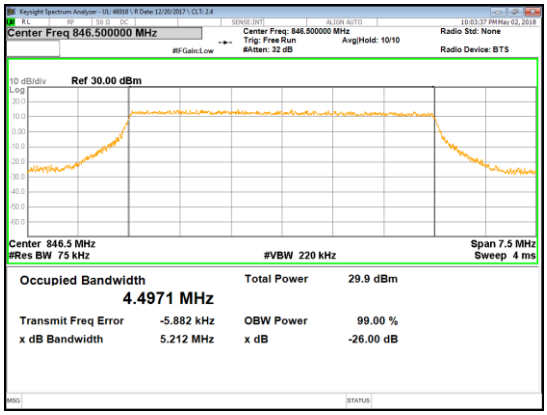
5MHz QPSK Mid channel



5MHz 16QAM Mid channel



5MHz QPSK High channel



5MHz 16QAM High channel

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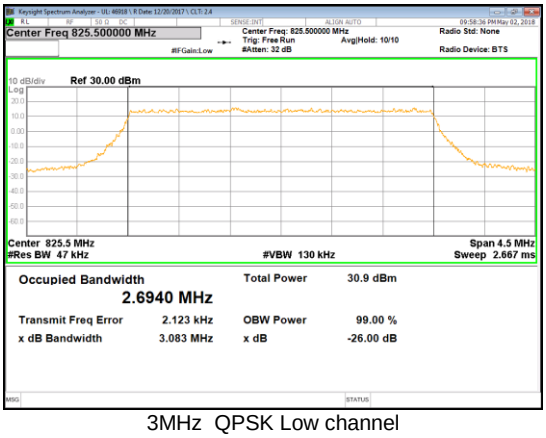
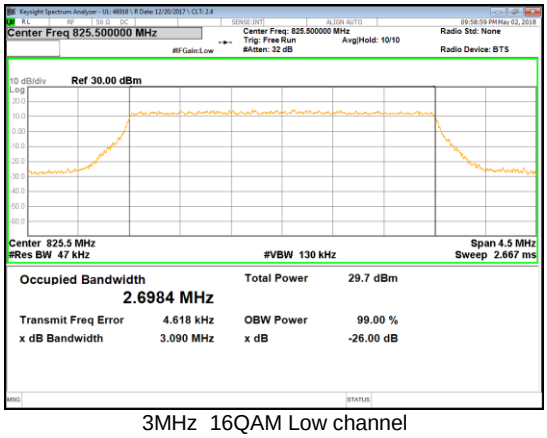
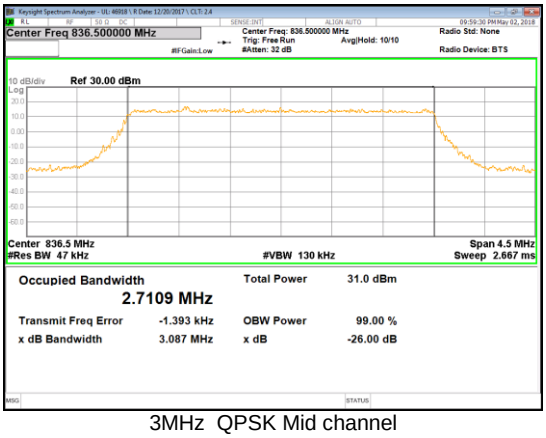
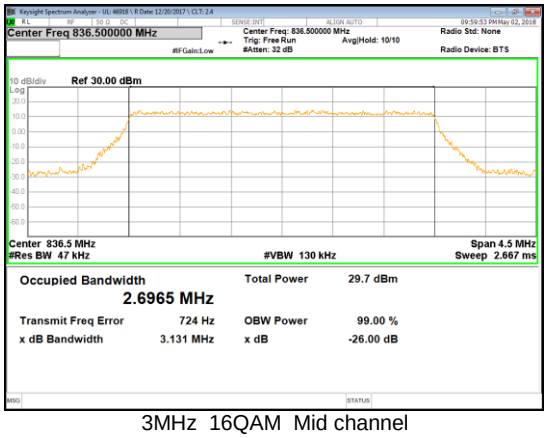
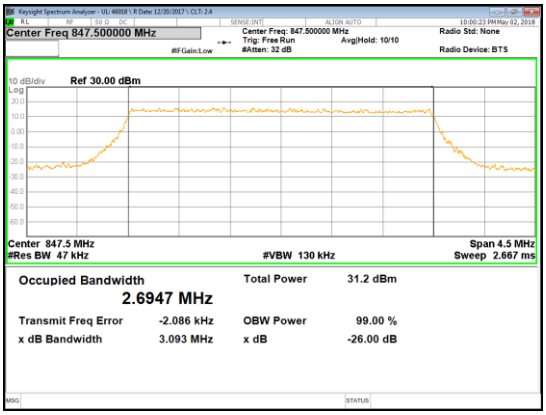
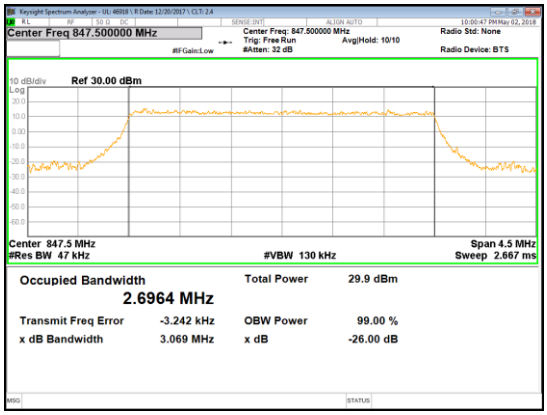
Band 5 3MHz	 3MHz QPSK Low channel	 3MHz 16QAM Low channel
	 3MHz QPSK Mid channel	 3MHz 16QAM Mid channel
	 3MHz QPSK High channel	 3MHz 16QAM High channel

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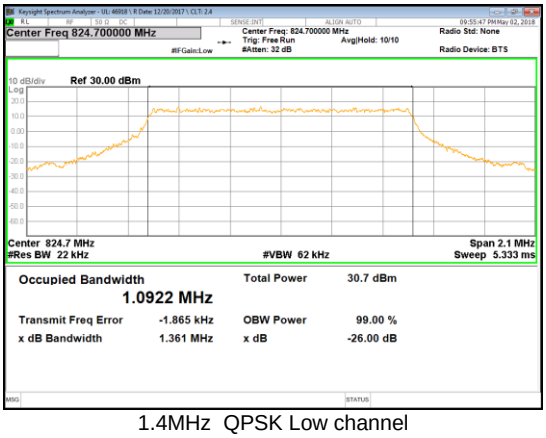
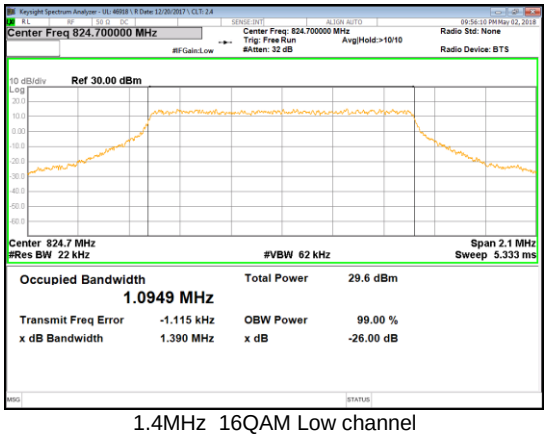
Band 5

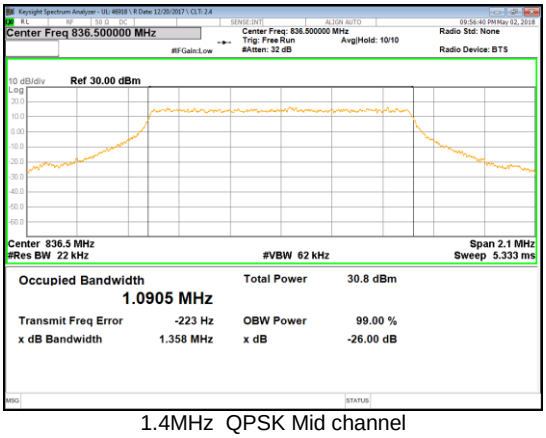
1.4MHz



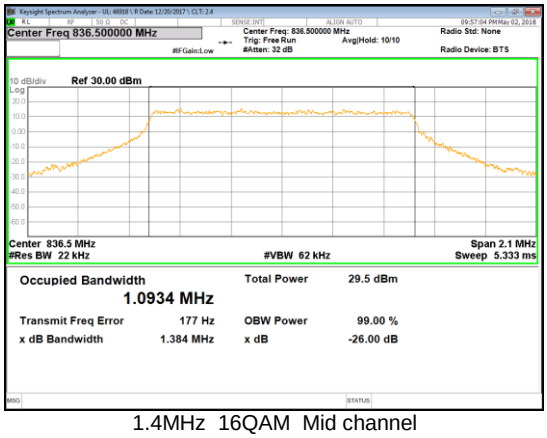
1.4MHz QPSK Low channel



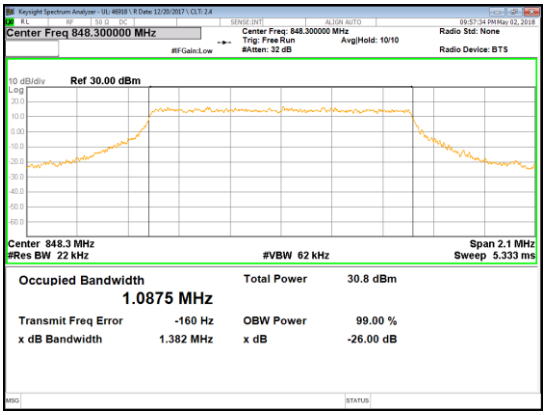
1.4MHz 16QAM Low channel



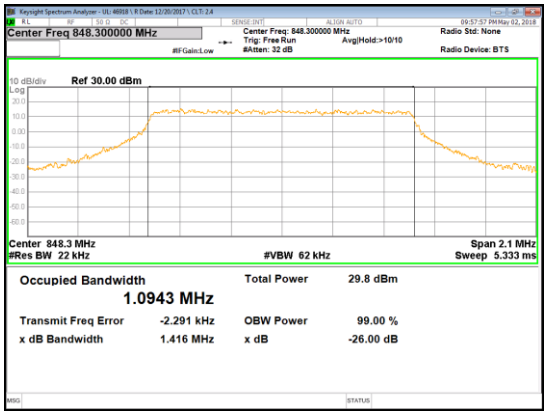
1.4MHz QPSK Mid channel



1.4MHz 16QAM Mid channel



1.4MHz QPSK High channel



1.4MHz 16QAM High channel

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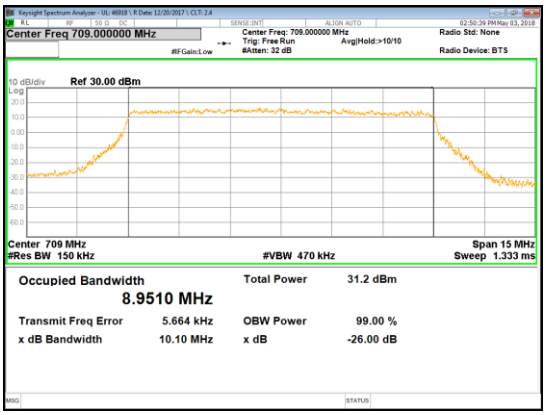
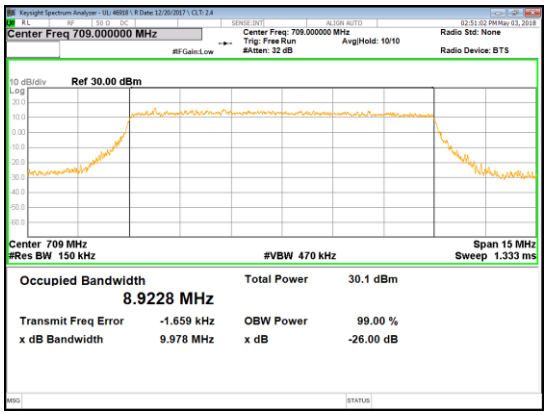
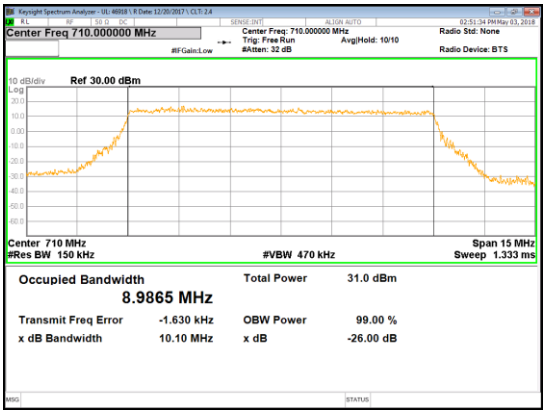
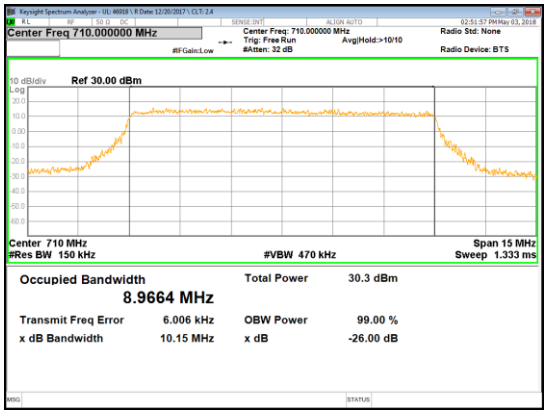
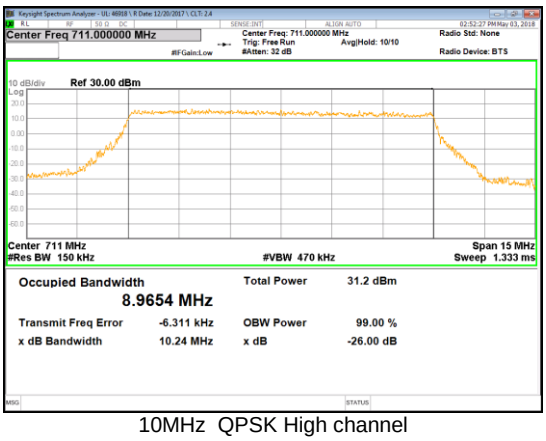
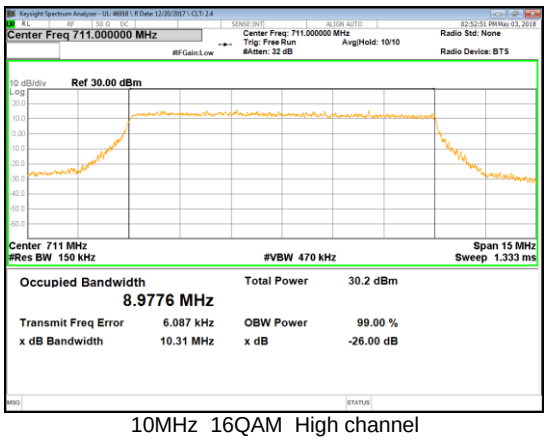
LTE Band 17

Band 17 10MHz	 10MHz QPSK Low channel	 10MHz 16QAM Low channel
	 10MHz QPSK Mid channel	 10MHz 16QAM Mid channel
	 10MHz QPSK High channel	 10MHz 16QAM High channel

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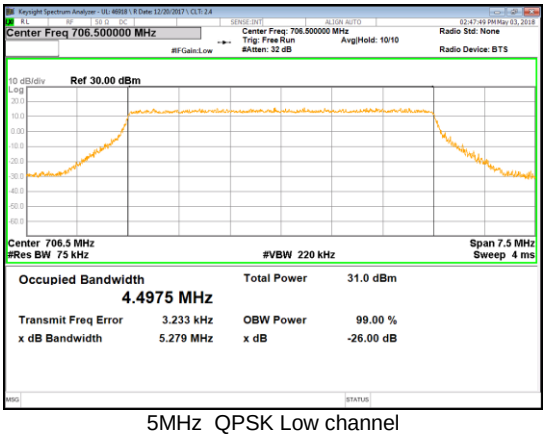
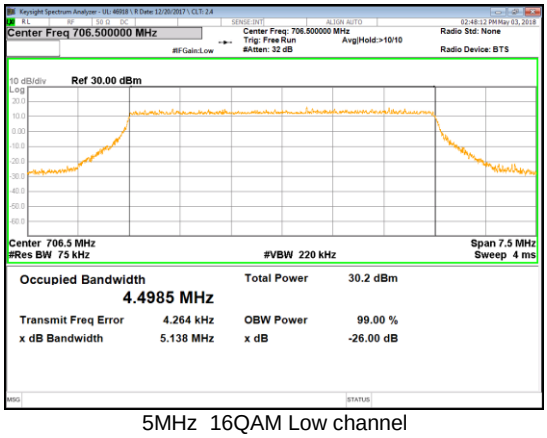
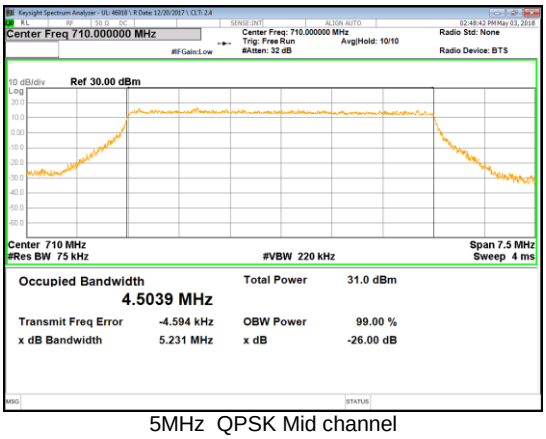
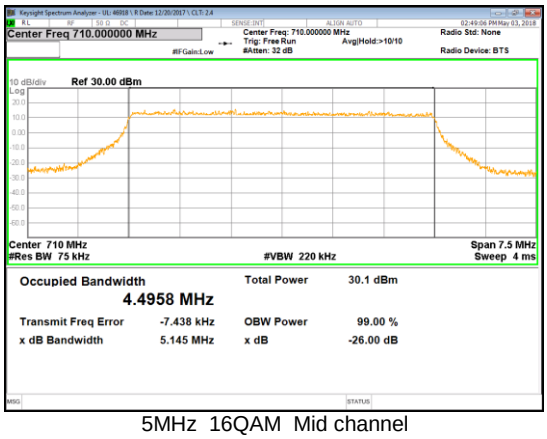
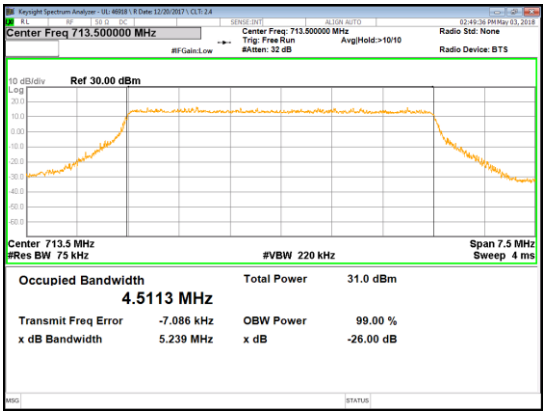
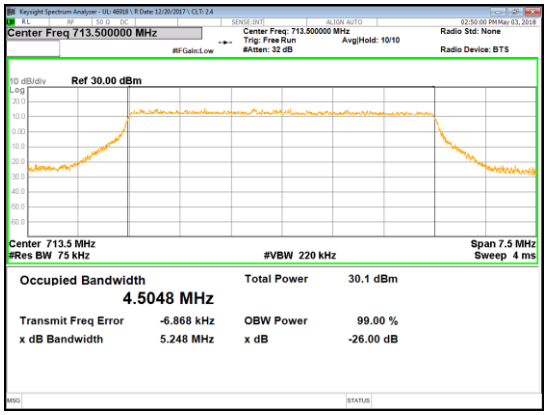
Band 17 5MHz	 5MHz QPSK Low channel	 5MHz 16QAM Low channel
	 5MHz QPSK Mid channel	 5MHz 16QAM Mid channel
	 5MHz QPSK High channel	 5MHz 16QAM High channel

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