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

WWAN

CERTIFICATION TEST REPORT

FOR

GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac, ANT+ and NFC

MODEL NUMBER : SM-A705YN

FCC ID: A3LSMA705YN

REPORT NUMBER: 12810836 -E1V3

ISSUE DATE: MAY 01, 2019

Prepared for
SAMSUNG ELECTRONICS CO., LTD.
129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI,
GYEONGGI-DO, 16677, KOREA

Prepared by
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ACCREDITED
Testing Laboratory

TL-637

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	04/24/19	Initial issue	Seokhwan Hong
V2	04/29/19	Updated to address about TCB's question	Seokhwan Hong
V2	05/01/19	Updated to address about TCB's question	Seokhwan Hong

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.

EUT DESCRIPTION: GSM/WCDMA/LTE Phone with BT, DTS/UNII a/b/g/n/ac,ANT+ and NFC

MODEL NUMBER: SM-A705YN

SERIAL NUMBER: R38M4046PBD, R38M4046M1P (CONDUCTED)
R38M4046RCB, R38M4046LGB (RADIATED);

DATE TESTED: APR 10, 2019 – APR 29, 2019;

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 22H, 24E, 27H, 27L, 27F 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:

Seokhwan Hong
Suwon Lab Engineer
UL Korea, Ltd.

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

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637. The full scope of accreditation can be viewed at http://www.iasonline.org/PDF/TL/TL-637.pdf.

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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)

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%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

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

5.2. MAXIMUM OUTPUT POWER

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

GSM

FCC Part 22/24						
Band	Frequency Range	Modulation	Conducted		Radiated	
	[MHz]		Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
GSM850	824~849	GPRS	**32.95**	**1972.42**	**26.30**	**426.58**
		EGPRS	26.10	407.38	20.16	103.75
GSM1900	1850~1910	GPRS	**28.65**	**732.82**	**29.71**	**935.41**
		EGPRS	24.70	295.12	26.97	497.74

WCDMA

FCC Part 22/24/27						
Band	Frequency Range	Modulation	Conducted		Radiated	
	[MHz]		Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
Band 5	824~849	REL99	**23.87**	**243.78**	**17.97**	**62.66**
		HSDPA	23.00	199.53	16.77	47.53
Band 4	1710~1755	REL99	**23.41**	**219.28**	**20.78**	**119.67**
		HSDPA	22.05	160.32	19.10	81.28
Band 2	1850~1910	REL99	**23.73**	**236.05**	**22.88**	**194.09**
		HSDPA	22.30	169.82	21.06	127.64

LTE Band 2

FCC Part 24							
Band	Frequency Range [MHz]	BandWidth [MHz]	Modulation	Conducted		Radiated	
				Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
Band 2	1850 ~ 1910	20	QPSK	23.37	217.27	21.09	128.53
			16QAM	22.91	195.43	19.87	97.05
		15	QPSK	23.37	217.27	20.96	124.74
			16QAM	22.47	176.60	19.92	98.17
		10	QPSK	23.40	218.78	21.07	127.94
			16QAM	22.33	171.00	20.22	105.20
		5	QPSK	**23.50**	**223.87**	**21.39**	**137.72**
			16QAM	22.59	181.55	20.31	107.40
		3	QPSK	23.47	222.33	21.27	133.97
			16QAM	22.40	173.78	20.34	108.14
		1.4	QPSK	23.41	219.28	20.99	125.60
			16QAM	22.49	177.42	19.75	94.41

LTE Band 4

FCC Part 27							
Band	Frequency Range [MHz]	BandWidth [MHz]	Modulation	Conducted		Radiated	
				Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
Band 4	1710 ~ 1755	20	QPSK	23.43	220.29	21.15	130.32
			16QAM	22.98	198.61	20.00	100.00
		15	QPSK	**23.44**	**220.80**	21.13	129.72
			16QAM	22.83	191.87	20.17	103.99
		10	QPSK	23.33	215.28	20.82	120.78
			16QAM	22.71	186.64	19.96	99.08
		5	QPSK	23.38	217.77	20.87	122.18
			16QAM	22.81	190.99	19.75	94.41
		3	QPSK	23.36	216.77	21.14	130.02
			16QAM	22.68	185.35	20.06	101.39
		1.4	QPSK	23.30	213.80	**21.95**	**156.68**
			16QAM	22.53	179.06	21.09	128.53

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LTE Band 5

FCC Part 22							
Band	Frequency Range [MHz]	BandWidth [MHz]	Modulation	Conducted		Radiated	
				Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
Band 5	824 ~ 849	10	QPSK	23.74	236.59	16.57	45.39
			16QAM	22.93	196.34	15.75	37.58
		5	QPSK	**23.91**	**246.04**	16.68	46.56
			16QAM	23.07	202.77	15.70	37.15
		3	QPSK	23.83	241.55	**17.08**	**51.05**
			16QAM	22.81	190.99	15.81	38.11
		1.4	QPSK	23.71	234.96	16.65	46.24
			16QAM	23.05	201.84	15.52	35.65

LTE Band 12

FCC Part 27							
Band	Frequency Range [MHz]	BandWidth [MHz]	Modulation	Conducted		Radiated	
				Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
Band 12	699 ~ 716	10	QPSK	24.08	255.86	**17.39**	**54.83**
			16QAM	23.36	216.77	16.22	41.88
		5	QPSK	**24.20**	**263.03**	17.24	52.97
			16QAM	23.32	214.78	16.18	41.50
		3	QPSK	24.14	259.42	17.21	52.60
			16QAM	23.24	210.86	15.95	39.36
		1.4	QPSK	24.17	261.22	16.99	50.00
			16QAM	23.54	225.94	15.82	38.19

LTE Band 17

LTE Band 17 (Frequency range: 704-716 MHz) is covered by LTE Band 12 (Frequency range: 699-716 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

LTE Band 13

FCC Part 27							
Band	Frequency Range [MHz]	BandWidth [MHz]	Modulation	Conducted		Radiated	
				Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
Band 13	777 ~ 787	10	QPSK	24.08	255.86	12.43	17.50
			16QAM	22.94	196.79	11.41	13.84
		5	QPSK	**24.25**	**266.07**	**12.55**	**17.99**
			16QAM	23.14	206.06	11.50	14.13

LTE Band 41

FCC Part 27							
Band	Frequency Range [MHz]	BandWidth [MHz]	Modulation	Conducted		Radiated	
				Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
Band 41	2496 ~ 2690	20	QPSK	**23.66**	**232.27**	22.98	198.61
			16QAM	22.81	190.99	23.00	199.53
		15	QPSK	23.65	231.74	22.89	194.54
			16QAM	22.76	188.80	23.58	228.03
		10	QPSK	23.59	228.56	22.67	184.93
			16QAM	22.87	193.64	**23.88**	**244.34**
		5	QPSK	23.60	229.09	22.44	175.39
			16QAM	22.67	184.93	23.75	237.14

LTE Band 66

FCC Part 27							
Band	Frequency Range [MHz]	BandWidth [MHz]	Modulation	Conducted		Radiated	
				Avg [dBm]	Avg [mW]	Avg [dBm]	Avg [mW]
Band 66	1710 ~ 1780	20	QPSK	23.03	200.91	**22.19**	**165.58**
			16QAM	22.63	183.23	20.98	125.31
		15	QPSK	23.02	200.45	21.85	153.11
			16QAM	22.44	175.39	20.91	123.31
		10	QPSK	22.99	199.07	21.54	142.56
			16QAM	22.07	161.06	20.70	117.49
		5	QPSK	**23.05**	**201.84**	22.15	164.06
			16QAM	22.24	167.49	21.28	134.28
		3	QPSK	22.97	198.15	21.86	153.46
			16QAM	22.05	160.32	20.65	116.14
		1.4	QPSK	22.92	195.88	21.93	155.96
			16QAM	22.26	168.27	20.99	125.60

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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)
GSM1900 / WCDMA Band 2 / LTE Band 2 1850 ~ 1910 MHz	-5.89
WCDMA Band 4 / LTE Band 4 / LTE Band 66 1710 ~ 1780 MHz	-6.87
GSM 850 / WCDMA Band 5 / LTE Band 5 824 ~ 849 MHz	-7.39
LTE Band 12 / LTE Band 17 699 ~ 716 MHz	-7.88
LTE Band 41 2496 ~ 2690 MHz	-6.35
LTE Band 13 777 ~ 787 MHz	-9.91

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5.4. WORST-CASE ORIENTATION

Following modes should be considered as worst-case scenario for all other measurements.

- GSM GPRS/EGPRS
- UMTS REL 99/HSDPA

For all LTE Bands, the worst-case scenario for all measurements is based on the average conducted output power measurement investigation results. Output power measurements were measured on QPSK, 16QAM and 64QAM modulations. It was found that QPSK and 16QAM results were worst case. All testing was performed using QPSK and 16QAM modulations to represent the worst case. However, the out of band emissions and spurious radiation were only performed on bandwidth and RB offset(with RB size 1) with the highest power in QPSK.

Highest power setting for each bands				
LTE Band	**Frequency (MHz)**	**Bandwidth (MHz)**	**RB size**	**RB offset**
2	1852.5	5	1	12
	1880.0		1	12
	1907.5		1	0
4	1717.5	15	1	0
	1732.5		1	0
	1747.5		1	0
5	824.7	1.4	1	5
	836.5		1	5
	848.3		1	5
12	700.5	3	1	8
	707.5		1	8
	714.5		1	8
13	779.5	5	1	0
	782.0		1	0
	784.5		1	0
41	2501.0	10	1	25
	2593.0		1	0
	2685.0		1	0
66	1712.5	5	1	0
	1745.0		1	0
	1777.5		1	0

- ERP/EIRP
For GSM1900 / WCDMA B4 / WCDMA B2 / LTE B4 / LTE B12 / LTE B66, 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.

For LTE B2 / LTE B41, the fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z it was determined that Y orientation was worst-case orientation.

For GSM850 / WCDMA B5 / LTE B5 / LTE B13, 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.

- Radiated spurious emissions
For LTE B41 / LTE B66, the spurious emissions was investigated in three orthogonal orientations X, Y and Z it was determined that X orientation was worst-case orientation.

For GSM850 / WCDMA B4 / WCDMA B2 / LTE B4 / LTE B13, the spurious emissions was investigated in three orthogonal orientations X, Y and Z it was determined that Y orientation was worst-case orientation.

For GSM1900 / WCDMA B5 / LTE B2 / LTE B5 / LTE B12, the spurious emissions was investigated in three orthogonal orientations X, Y and Z it was determined that Z orientation was worst-case 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)

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5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Charger	SAMSUNG	EP-TA800	R37M3690371SE3	N/A
Data Cable	SAMSUNG	EP-DA705BBE	N/A	N/A
Earphone	SAMSUNG	EHS64AVFBE	N/A	N/A

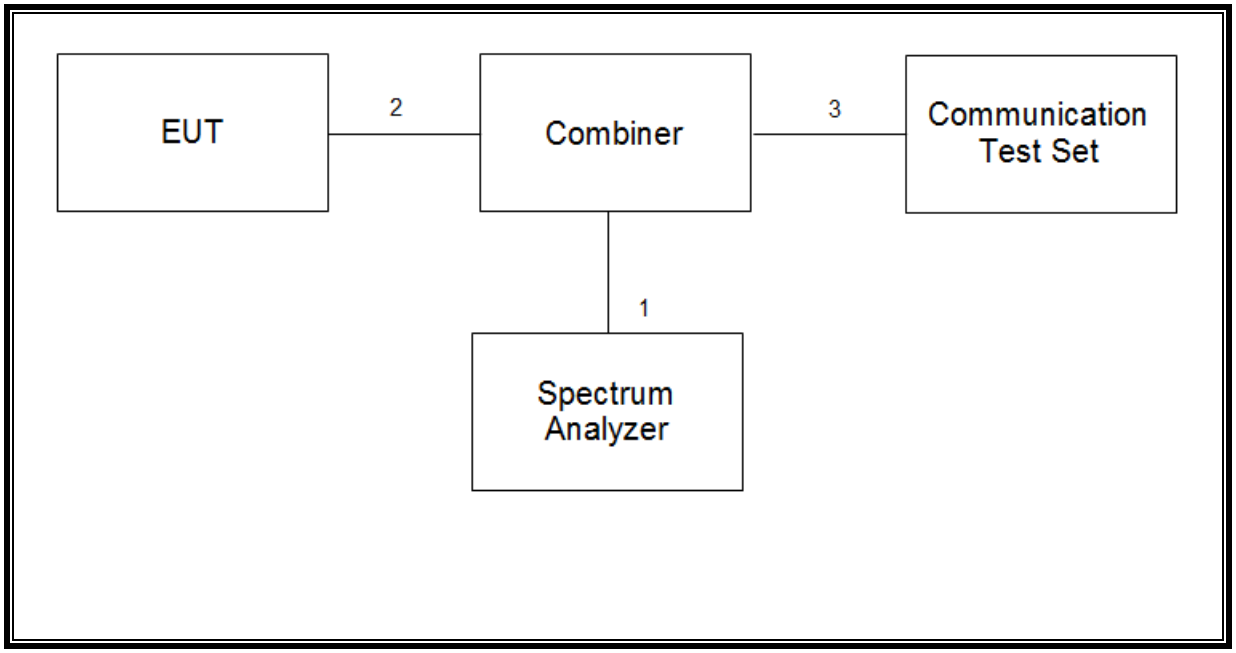
I/O CABLE

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

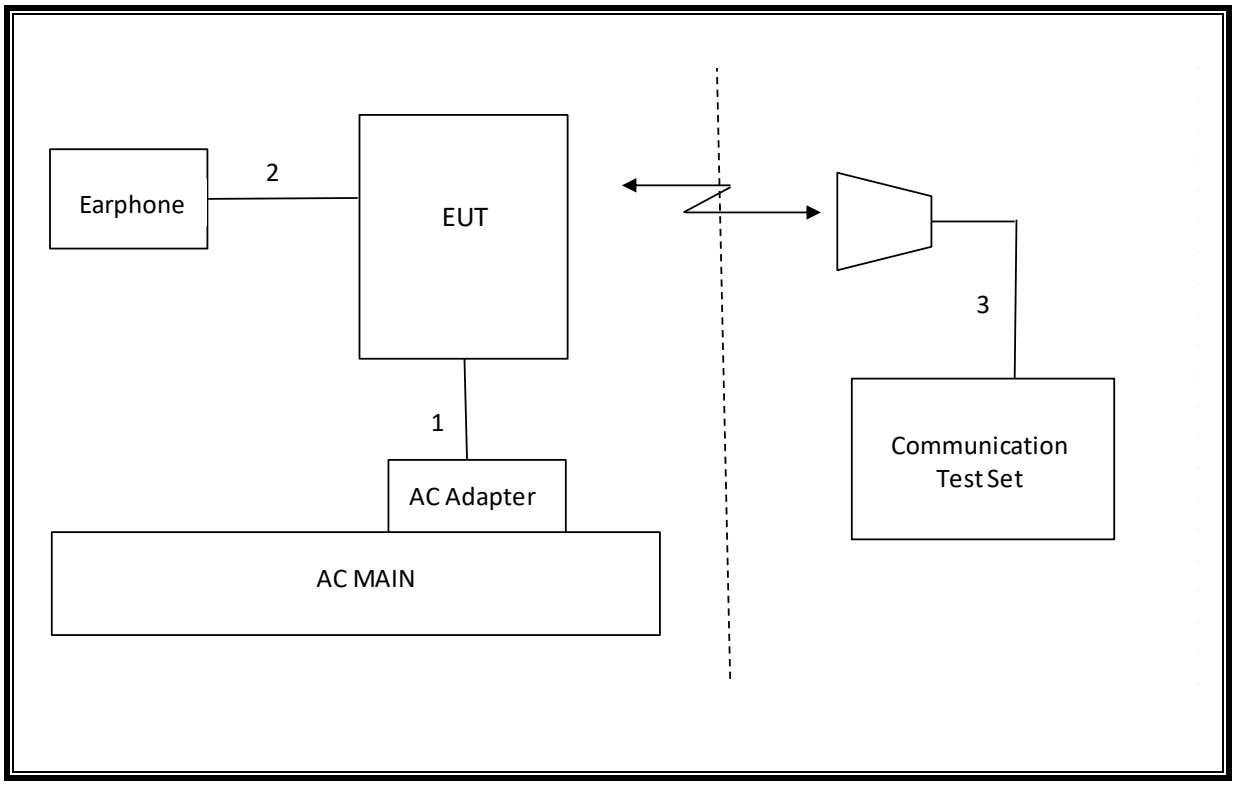
TEST SETUP

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

SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



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	08-14-20
Preamplifier	ETS	3116C-PA	00168841	08-09-19
Antenna, Horn, 40 GHz	ETS	3116C	00168645	12-04-19
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	750	08-04-20
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	845	08-04-20
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	08-04-20
Antenna, Horn, 18 GHz	ETS	3115	00167211	08-04-20
Antenna, Horn, 18 GHz	ETS	3115	00161451	08-04-20
Antenna, Horn, 18 GHz	ETS	3117	00168724	08-04-20
Antenna, Horn, 18 GHz	ETS	3117	00205959	08-04-20
Antenna, Horn, 18 GHz	ETS	3117	00168717	08-04-20
Combiner	WEINSCHEL	1575	2150	08-08-19
Communications Test Set	R&S	CMW500	115331	08-07-19
DC Power Supply	Agilent / HP	E3640A	MY54226395	08-06-19
Preamplifier, 1000 MHz	Sonoma	310N	341282	08-07-19
Preamplifier, 1000 MHz	Sonoma	310N	370599	08-06-19
Preamplifier, 1000 MHz	Sonoma	310N	351741	08-07-19
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1876511	08-07-19
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	2029169	08-07-19
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	08-07-19
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54490312	08-06-19
EMI Test Receive, 40 GHz	R&S	ESU40	100439	08-06-19
EMI Test Receive, 40 GHz	R&S	ESU40	100457	08-06-19
EMI Test Receive, 44 GHz	R&S	ESW40	101590	08-06-19
High Pass Filter 1.2GHz	Micro-Tronics	HPM50108-02	G005	08-08-19
High Pass Filter 1.2GHz	Micro-Tronics	HPM50108-02	G006	08-08-19
High Pass Filter 2.8GHz	Micro-Tronics	HPM50111-02	010	08-08-19
High Pass Filter 2.8GHz	Micro-Tronics	HPM50111-02	011	08-08-19
High Pass Filter 4GHz	Micro-Tronics	HPM50118-02	G001	08-08-19
High Pass Filter 4GHz	Micro-Tronics	HPM50118-02	G002	08-08-19
Attenuator	PASTERNACK	PE7087-10	A009	08-08-19
Attenuator	PASTERNACK	PE7087-10	A001	08-08-19
Attenuator	PASTERNACK	PE7087-10	A008	08-08-19
Attenuator	PASTERNACK	PE7087-10	2	08-07-19
Attenuator	PASTERNACK	PE7395-10	A011	08-08-19
Antenna, Loop, 9kHz-30MHz	R&S	HFH2-Z2	100418	10-26-19
Temperature Chamber	ESPEC	SH-642	93001109	08-06-19
UL Software				
Description	**Manufacturer**	**Model**	**Version**	
Antenna port test software	UL	CLT	Ver 2.5	

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(c),(g),(h)	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
2.1046	Conducted output power	N/A		Pass
22.355 24.235 27.54	Frequency Stability	2.5PPM		Pass
22.913(a)(5)	Effective Radiated Power	38.5 dBm	Radiated	Pass
27.50(c)(10) 27.50(b)(10)		34.77 dBm		Pass
24.232(c) 27.50(h)(2)	Equivalent Isotropic Radiated Power	33dBm		Pass
27.50(d)(4)		30dBm		Pass
22.917(a) 24.238(a) 27.53 (c),(g),(h)	Radiated Spurious Emission	-13dBm		Pass
27.53 (m)		-25dBm		Pass

8. RF OUTPUT POWER VERIFICATION

EUT includes different power levels for head use configuration and body use configuration and the below tables contain the highest of all configurations average conducted output powers as follows

8.1. GSM

Using CMW500 Communication Test Set
Function: Menu select > GSM Mobile Station > GSM 850/900/1800/1900

Press **Connection control** to choose the different menus
Press **RESET** > choose all to reset all settings

Connection	Press **Signal Off** to turn off the signal and change settings Network Support > GSM+GPRS or GSM+EGPRS Main Service > Packet Data Service selection > Test Mode A – Auto Slot Config. off	
MS Signal	Press Slot Config bottom on the right twice to select and change the number of time slots and power setting	
	> Slot configuration	> Uplink/Gamma > 33 dBm for GPRS 850/900 > 27 dBm for EGPRS 850/900 > 30 dBm for GPRS1800/1900 > 26 dBm for EGPRS1800/1900
BS Signal	Enter the same channel number for TCH channel (test channel) and BCCH channel	
	Frequency Offset >	+ 0 Hz
	Mode >	BCCH and TCH
	BCCH Level >	-85 dBm (May need to adjust if link is not stable)
	BCCH Channel >	choose desire test channel [Enter the same channel number for TCH channel (test channel) and BCCH channel]
	Channel Type >	Off
	P0>	4 dB
	Slot Config >	Unchanged (if already set under MS Signal)
	TCH >	choose desired test channel
	Hopping >	Off
	Main Timeslot >	3 (Default)
Network	Coding Scheme >	CS 4 (GPRS) and MCS5 (EGPRS)
	Bit Stream >	2E9-1PSR Bit Pattern
AF/RF	Enter appropriate offsets for Ext. Att. Output and Ext. Att. Input	
Connection	Press **Signal On** to turn on the signal and change settings	

RESULT

8.1.1. GSM850

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Maximum Average Power (dBm)	
					Measured	
					Burst Pwr	Frame Pwr
GPRS/EDGE (GMSK)	CS1	1	128	824.2	32.8	23.8
			190	836.6	33.0	23.9
			251	848.8	32.5	23.5
		2	128	824.2	29.6	23.6
			190	836.6	29.7	23.7
			251	848.8	29.8	23.8
		3	128	824.2	27.6	23.3
			190	836.6	27.7	23.5
			251	848.8	27.8	23.5
		4	128	824.2	26.2	23.2
			190	836.6	26.4	23.4
			251	848.8	26.4	23.4
EDGE (8PSK)	MCS5	1	128	824.2	26.1	17.1
			190	836.6	25.8	16.8
			251	848.8	25.7	16.7
		2	128	824.2	23.4	17.4
			190	836.6	23.4	17.4
			251	848.8	23.5	17.5
		3	128	824.2	22.1	17.8
			190	836.6	22.2	17.9
			251	848.8	21.9	17.6
		4	128	824.2	20.4	17.4
			190	836.6	20.4	17.4
			251	848.8	20.3	17.3

8.1.2. GSM1900

Mode	Coding Scheme	Time Slots	Ch No.	Freq. (MHz)	Maximum Average Power (dBm)	
					Measured	
					Burst Pwr	Frame Pwr
GPRS/EDGE (GMSK)	CS1	1	512	1850.2	28.5	19.5
			661	1880.0	28.5	19.5
			810	1909.8	28.7	19.6
		2	512	1850.2	26.5	20.5
			661	1880.0	27.0	21.0
			810	1909.8	26.8	20.8
		3	512	1850.2	24.5	20.2
			661	1880.0	24.7	20.4
			810	1909.8	24.5	20.2
		4	512	1850.2	23.5	20.5
			661	1880.0	23.8	20.8
			810	1909.8	23.6	20.6
EDGE (8PSK)	MCS5	1	512	1850.2	24.3	15.3
			661	1880.0	24.7	15.7
			810	1909.8	24.6	15.5
		2	512	1850.2	22.1	16.1
			661	1880.0	22.5	16.5
			810	1909.8	22.2	16.2
		3	512	1850.2	21.1	16.8
			661	1880.0	21.8	17.5
			810	1909.8	21.5	17.2
		4	512	1850.2	19.4	16.4
			661	1880.0	19.9	16.9
			810	1909.8	19.6	16.6

8.2. WCDMA

TEST PROCEDURE

The transmitter output was connected to the input terminal of Directional Coupler via calibrated coaxial cable. The output coupling terminal of the Directional Coupler was directly connected to a spectrum analyzer while the output through terminal connected to the communication test set via calibrated coaxial cable.

The output power was measured with the spectrum analyzer at the low, middle and high channel in each band.

- Set the spectrum analyzer span wide enough or greater than the modulated signal BW.
- Set a spectrum analyzer at peak detection mode with VBW ≥ RBW.≥ 26dB BW, typically 5MHz.
- Set a marker to point the corresponding peak value.

REL 99

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 specification. The DUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7).

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

HSDPA REL 5

The following 4 Sub-tests were completed according to Release 5 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
W-CDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set 1			
	Power Control Algorithm	Algorithm 2			
	Bc	2/15	12/15	15/15	15/15
	Bd	15/15	15/15	8/15	4/15
	Bd (SF)	64			
	βc/βd	2/15	12/15	15/8	15/4
	Bhs	4/15	24/15	30/15	30/15
	MPR (dB)	0	0	0.5	0.5
HSDPA Specific Settings	D_{ACK}	8			
	D_{NAK}	8			
	DCQI	8			
	Ack-Nack repetition factor	3			
	CQI Feedback (Table 5.2B.4)	4ms			
	CQI Repetition Factor (Table 5.2B.4)	2			
	Ahs=βhs/βc	30/15			

HSPA (HSDPA & HSUPA)

The following 5 Sub-tests were completed according to Release 9 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

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

DUAL CARRIER HSDPA (DC-HSDPA (REL 8, CAT 24)

The following tests were completed according to procedures in section 7.3.13 of 3GPP TS34.108 v9.5.0. A summary of these settings are illustrated below:

Downlink Physical Channels are set as per 3GPP TS34.121-1 v9.0.0 E.5.0

Table E.5.0: Levels for HSDPA connection setup

Parameter During Connection setup	Unit	Value
P-CPICH_Ec/Ior	dB	-10
P-CCPCH and SCH_Ec/Ior	dB	-12
PICH _Ec/Ior	dB	-15
HS-PDSCH	dB	off
HS-SCCH_1	dB	off
DPCH_Ec/Ior	dB	-5
OCNS_Ec/Ior	dB	-3.1

Call is set up as per 3GPP TS34.108 v9.5.0 sub clause 7.3.13

The configurations of the fixed reference channels for HSDPA RF tests are described in 3GPP TS 34.121, annex C for FDD and 3GPP TS 34.122.

Table C.8.1.12: Fixed Reference Channel H-Set 12

Parameter	Unit	Value
Nominal Avg. Inf. Bit Rate	kbps	60
Inter-TTI Distance	TTI's	1
Number of HARQ Processes	Proces ses	6
Information Bit Payload (N_{INF})	Bits	120
Number Code Blocks	Blocks	1
Binary Channel Bits Per TTI	Bits	960
Total Available SML's in UE	SML's	19200
Number of SML's per HARQ Proc.	SML's	3200
Coding Rate		0.15
Number of Physical Channel Codes	Codes	1
Modulation		QPSK
Note 1: The RMC is intended to be used for DC-HSDPA mode and both cells shall transmit with identical parameters as listed in the table.		
Note 2: Maximum number of transmission is limited to 1, i.e., retransmission is not allowed. The redundancy and constellation version 0 shall be used.		

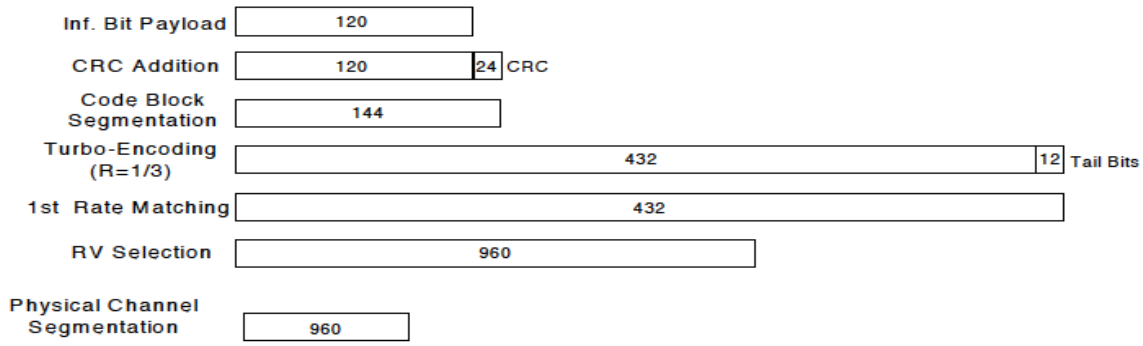


Figure C.8.19: Coding rate for Fixed reference Channel H-Set 12 (QPSK)

The following 4 Sub-tests for HSDPA were completed according to Release 8 procedures in section 5.2 of 3GPP TS34.121. A summary of subtest settings are illustrated below:

	Mode	HSDPA	HSDPA	HSDPA	HSDPA
	Subtest	1	2	3	4
WCDMA General Settings	Loopback Mode	Test Mode 1			
	Rel99 RMC	12.2kbps RMC			
	HSDPA FRC	H-Set 1			
	Power Control Algorithm	Algorithm2			
	βc	2/15	11/15	15/15	15/15
	βd	15/15	15/15	8/15	4/15
	βd (SF)	64			
	βc/βd	2/15	12/15	15/8	15/4
	βhs	4/15	24/15	30/15	30/15
	MPR (dB)	0	0	0.5	0.5
HSDPA Specific Settings	DACK	8			
	DNAK	8			
	DCQI	8			
	Ack-Nack Repetition factor	3			
	CQI Feedback	4ms			
	CQI Repetition Factor	2			
	Ahs = βhs/ βc	30/15			

HSPA+

The following 1 Sub-test was completed according to Release 9 procedures in section 5.2 of 3GPP TS34.121. A summary of these settings are illustrated below:

Table C.11.1.4: **β values for transmitter characteristics tests with HS-DPCCH and E-DCH with 16QAM**

Sub-test	β_c (Note3)	β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (2xSF2) (Note 4)	β_{ed} (2xSF4) (Note 4)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 4)	E-TFCI (Note 5)	E-TFCI (boost)
1	1	0	30/15	30/15	β_{ed}1: 30/15 β_{ed}2: 30/15	β_{ed}3: 24/15 β_{ed}4: 24/15	3.5	2.5	14	105	105

Note 1: Δ_{ACK}, Δ_{NACK} and Δ_{CQI} = 30/15 with β_{hs} = 30/15 * β_c.
Note 2: CM = 3.5 and the MPR is based on the relative CM difference, MPR = MAX(CM-1,0).
Note 3: DPDCH is not configured, therefore the β_c is set to 1 and β_d = 0 by default.
Note 4: β_{ed} can not be set directly; it is set by Absolute Grant Value.
Note 5: All the sub-tests require the UE to transmit 2SF2+2SF4 16QAM EDCH and they apply for UE using E-DPDCH category 7. E-DCH TTI is set to 2ms TTI and E-DCH table index = 2. To support these E-DCH configurations DPDCH is not allocated. The UE is signalled to use the extrapolation algorithm.

RESULT

8.2.1. WCDMA BAND5

Mode		UL Ch No.	Freq. (MHz)	Maximum Average Power (dBm)		
				Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	4132	826.4	23.9	N/A	25.0
		4183	836.6	23.9		
		4233	846.6	23.6		
HSDPA	Subtest 1	4132	826.4	23.0	0.0	24.0
		4183	836.6	23.0		
		4233	846.6	22.9		
	Subtest 2	4132	826.4	23.0	0.0	24.0
		4183	836.6	23.0		
		4233	846.6	22.9		
	Subtest 3	4132	826.4	22.5	0.5	23.5
		4183	836.6	22.4		
		4233	846.6	22.4		
	Subtest 4	4132	826.4	22.5	0.5	23.5
		4183	836.6	22.4		
		4233	846.6	22.4		
HSUPA	Subtest 1	4132	826.4	23.1	0.0	24.0
		4183	836.6	23.1		
		4233	846.6	22.9		
	Subtest 2	4132	826.4	21.2	2.0	22.0
		4183	836.6	21.2		
		4233	846.6	21.0		
	Subtest 3	4132	826.4	22.1	1.0	23.0
		4183	836.6	22.2		
		4233	846.6	21.9		
	Subtest 4	4132	826.4	21.2	2.0	22.0
		4183	836.6	21.2		
		4233	846.6	21.0		
	Subtest 5	4132	826.4	23.1	0.0	24.0
		4183	836.6	23.1		
		4233	846.6	22.9		
DC-HSDPA	Subtest 1	4132	826.4	23.0	0.0	24.0
		4183	836.6	23.0		
		4233	846.6	22.9		
	Subtest 2	4132	826.4	23.0	0.0	24.0
		4183	836.6	23.0		
		4233	846.6	22.9		
	Subtest 3	4132	826.4	22.5	0.5	23.5
		4183	836.6	22.4		
		4233	846.6	22.4		
	Subtest 4	4132	826.4	22.5	0.5	23.5
		4183	836.6	22.4		
		4233	846.6	22.4		

8.2.2. WCDMA BAND2

Mode		UL Ch No.	Freq. (MHz)	Maximum Average Power (dBm)		
				Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	9262	1852.4	23.3	N/A	24.5
		9400	1880.0	23.7		
		9538	1907.6	23.4		
HSDPA	Subtest 1	9262	1852.4	21.8	0.0	23.5
		9400	1880.0	22.3		
		9538	1907.6	21.9		
	Subtest 2	9262	1852.4	21.8	0.0	23.5
		9400	1880.0	22.3		
		9538	1907.6	21.9		
	Subtest 3	9262	1852.4	21.3	0.5	23.0
		9400	1880.0	21.6		
		9538	1907.6	21.4		
	Subtest 4	9262	1852.4	21.3	0.5	23.0
		9400	1880.0	21.8		
		9538	1907.6	21.4		
HSUPA	Subtest 1	9262	1852.4	21.7	0.0	23.5
		9400	1880.0	22.2		
		9538	1907.6	21.8		
	Subtest 2	9262	1852.4	19.8	2.0	21.5
		9400	1880.0	20.2		
		9538	1907.6	19.9		
	Subtest 3	9262	1852.4	20.8	1.0	22.5
		9400	1880.0	21.2		
		9538	1907.6	20.9		
	Subtest 4	9262	1852.4	19.8	2.0	21.5
		9400	1880.0	20.2		
		9538	1907.6	19.9		
	Subtest 5	9262	1852.4	21.8	0.0	23.5
		9400	1880.0	22.3		
		9538	1907.6	21.9		
DC-HSDPA	Subtest 1	9262	1852.4	21.8	0.0	23.5
		9400	1880.0	22.2		
		9538	1907.6	21.9		
	Subtest 2	9262	1852.4	21.8	0.0	23.5
		9400	1880.0	22.2		
		9538	1907.6	21.9		
	Subtest 3	9262	1852.4	21.3	0.5	23.0
		9400	1880.0	21.8		
		9538	1907.6	21.3		
	Subtest 4	9262	1852.4	21.3	0.5	23.0
		9400	1880.0	21.7		
		9538	1907.6	21.4		

8.2.3. WCDMA BAND4

Mode		UL Ch No.	Freq. (MHz)	Maximum Average Power (dBm)		
				Measured Pwr	MPR	Tune-up Limit
Release 99	Rel 99 (RMC, 12.2 kbps)	1312	1712.4	22.9	N/A	24.5
		1413	1732.6	23.4		
		1513	1752.6	23.1		
HSDPA	Subtest 1	1312	1712.4	21.7	0.0	23.5
		1413	1732.6	22.1		
		1513	1752.6	21.7		
	Subtest 2	1312	1712.4	21.7	0.0	23.5
		1413	1732.6	22.1		
		1513	1752.6	21.7		
	Subtest 3	1312	1712.4	21.2	0.5	23.0
		1413	1732.6	21.7		
		1513	1752.6	21.3		
	Subtest 4	1312	1712.4	21.2	0.5	23.0
		1413	1732.6	21.7		
		1513	1752.6	21.3		
HSUPA	Subtest 1	1312	1712.4	21.6	0.0	23.5
		1413	1732.6	22.2		
		1513	1752.6	21.8		
	Subtest 2	1312	1712.4	19.7	2.0	21.5
		1413	1732.6	20.2		
		1513	1752.6	19.8		
	Subtest 3	1312	1712.4	20.7	1.0	22.5
		1413	1732.6	21.2		
		1513	1752.6	20.9		
	Subtest 4	1312	1712.4	19.7	2.0	21.5
		1413	1732.6	20.2		
		1513	1752.6	19.8		
	Subtest 5	1312	1712.4	21.6	0.0	23.5
		1413	1732.6	22.2		
		1513	1752.6	21.8		
DC-HSDPA	Subtest 1	1312	1712.4	21.7	0.0	23.5
		1413	1732.6	22.1		
		1513	1752.6	21.7		
	Subtest 2	1312	1712.4	21.7	0.0	23.5
		1413	1732.6	22.1		
		1513	1752.6	21.7		
	Subtest 3	1312	1712.4	21.2	0.5	23.0
		1413	1732.6	21.7		
		1513	1752.6	21.3		
	Subtest 4	1312	1712.4	21.2	0.5	23.0
		1413	1732.6	21.7		
		1513	1752.6	21.3		

8.3. LTE

CONDUCTED OUTPUT POWER MEASUREMENT PROCEDURE

All LTE bands conducted average power is obtained from the CMW500 telecommunication test set.
The following tests were conducted according to the test requirements outlined in section 6.2 of the 3GPP TS36.101 specification.
UE Power Class: 3 (23 +/- 2dBm). The allowed Maximum Power Reduction (MPR) for the maximum output power due to higher order modulation and transmit bandwidth configuration (resource blocks) is specified in Table 6.2.3-1 of the 3GPP TS36.101.

Table 6.2.3-1: Maximum Power Reduction (MPR) for Power Class 1, 2 and 3

Modulation	Channel bandwidth / Transmission bandwidth (N_{RB})						MPR (dB)
	1.4 MHz	3.0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	
QPSK	> 5	> 4	> 8	> 12	> 16	> 18	≤ 1
16 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 1
16 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 2
64 QAM	≤ 5	≤ 4	≤ 8	≤ 12	≤ 16	≤ 18	≤ 2
64 QAM	> 5	> 4	> 8	> 12	> 16	> 18	≤ 3

The allowed A-MPR values specified below in Table 6.2.4.-1 of 3GPP TS36.101 are in addition to the allowed MPR requirements. All the measurements below were performed with A-MPR disabled, by using Network Signaling Value of “NS_01”.3

Table 6.2.4-1: Additional Maximum Power Reduction (A-MPR)

Network Signalling value	Requirements (sub-clause)	E-UTRA Band	Channel bandwidth (MHz)	Resources Blocks (N_{RB})	A-MPR (dB)
NS_01	6.6.2.1.1	Table 5.5-1	1.4, 3, 5, 10, 15, 20	Table 5.6-1	NA
NS_03	6.6.2.2.1	2, 4,10, 23, 25, 35, 36	3	>5	≤ 1
			5	>6	≤ 1
			10	>6	≤ 1
			15	>8	≤ 1
			20	>10	≤ 1
NS_04	6.6.2.2.2	41	5	>6	≤ 1
			10, 15, 20	See Table 6.2.4-4	
NS_05	6.6.3.3.1	1	10,15,20	≥ 50	≤ 1
NS_06	6.6.2.2.3	12, 13, 14, 17	1.4, 3, 5, 10	Table 5.6-1	n/a
NS_07	6.6.2.2.3 6.6.3.3.2	13	10	Table 6.2.4-2	Table 6.2.4-2
NS_08	6.6.3.3.3	19	10, 15	> 44	≤ 3
NS_09	6.6.3.3.4	21	10, 15	> 40	≤ 1
				> 55	≤ 2
NS_10		20	15, 20	Table 6.2.4-3	Table 6.2.4-3
NS_11	6.6.2.2.1	23[1]	1.4, 3, 5, 10	Table 6.2.4-5	Table 6.2.4-5
..					
NS_32	-	-	-	-	-
Note 1: Applies to the lower block of Band 23, i.e. a carrier placed in the 2000-2010 MHz region.					

MODES TESTED

- LTE 2
- LTE 4
- LTE 5
- LTE 12
- LTE 13
- LTE 41
- LTE 66

RESULTS

EUT includes different power levels for head use configuration and body use configuration and the below tables contain the highest of all configurations average conducted output powers as follows:

8.3.1. LTE 2

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				18700	18900	19100		
				1860 MHz	1880 MHz	1900 MHz		
20 MHz	QPSK	1	0	22.8	23.2	23.0	0.0	24.5
		1	49	23.0	23.4	22.9	0.0	24.5
		1	99	23.1	23.2	22.8	0.0	24.5
		50	0	21.9	22.4	22.0	1.0	23.5
		50	24	22.0	22.4	22.1	1.0	23.5
		50	50	22.0	22.4	22.0	1.0	23.5
		100	0	22.0	22.3	22.1	1.0	23.5
	16QAM	1	0	22.3	22.7	22.5	1.0	23.5
		1	49	22.4	22.9	22.4	1.0	23.5
		1	99	22.5	22.8	22.2	1.0	23.5
		50	0	21.0	21.5	21.1	2.0	22.5
		50	24	21.1	21.5	21.2	2.0	22.5
		50	50	21.1	21.5	21.0	2.0	22.5
		100	0	21.0	21.5	21.1	2.0	22.5
	64QAM	1	0	21.1	21.5	21.6	2.0	22.5
		1	49	21.1	21.6	21.5	2.0	22.5
		1	99	21.3	21.5	21.3	2.0	22.5
		50	0	19.9	20.4	20.0	3.0	21.5
		50	24	20.0	20.4	20.1	3.0	21.5
		50	50	20.1	20.4	20.0	3.0	21.5
		100	0	20.0	20.4	20.0	3.0	21.5

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				18675	18900	19125		
				1857.5 MHz	1880 MHz	1902.5 MHz		
15 MHz	QPSK	1	0	22.9	23.3	23.1	0.0	24.5
		1	37	23.0	23.4	22.9	0.0	24.5
		1	74	23.0	23.2	22.8	0.0	24.5
		36	0	21.9	22.3	22.0	1.0	23.5
		36	20	22.1	22.4	22.0	1.0	23.5
		36	39	22.0	22.4	22.0	1.0	23.5
		75	0	22.0	22.3	22.0	1.0	23.5
	16QAM	1	0	22.3	22.2	22.5	1.0	23.5
		1	37	22.4	22.3	22.3	1.0	23.5
		1	74	22.4	22.1	22.2	1.0	23.5
		36	0	21.0	21.4	21.2	2.0	22.5
		36	20	21.1	21.5	21.1	2.0	22.5
		36	39	21.0	21.4	21.1	2.0	22.5
		75	0	21.1	21.5	21.1	2.0	22.5
	64QAM	1	0	21.5	21.5	21.1	2.0	22.5
		1	37	21.5	21.6	21.0	2.0	22.5
		1	74	21.5	21.4	20.8	2.0	22.5
		36	0	19.9	20.4	20.0	3.0	21.5
		36	20	20.0	20.4	20.0	3.0	21.5
		36	39	20.0	20.4	20.0	3.0	21.5
		75	0	20.0	20.3	19.9	3.0	21.5

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				18650	18900	19150		
				1855 MHz	1880 MHz	1905 MHz		
10 MHz	QPSK	1	0	22.9	23.4	23.0	0.0	24.5
		1	25	22.9	23.4	22.9	0.0	24.5
		1	49	23.0	23.3	22.8	0.0	24.5
		25	0	21.5	21.9	21.5	1.0	23.5
		25	12	21.5	21.9	21.5	1.0	23.5
		25	25	21.5	21.9	21.5	1.0	23.5
		50	0	21.5	21.9	21.5	1.0	23.5
	16QAM	1	0	22.0	22.3	22.3	1.0	23.5
		1	25	22.0	22.3	22.2	1.0	23.5
		1	49	22.1	22.3	22.2	1.0	23.5
		25	0	21.6	21.9	21.6	2.0	22.5
		25	12	21.6	22.0	21.6	2.0	22.5
		25	25	21.7	21.9	21.5	2.0	22.5
		50	0	21.6	22.0	21.6	2.0	22.5
	64QAM	1	0	21.2	21.6	21.1	2.0	22.5
		1	25	21.2	21.6	21.0	2.0	22.5
		1	49	21.3	21.5	20.9	2.0	22.5
		25	0	20.1	20.4	20.0	3.0	21.5
		25	12	20.1	20.4	20.1	3.0	21.5
		25	25	20.2	20.4	20.0	3.0	21.5
		50	0	20.0	20.4	20.1	3.0	21.5

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				18625	18900	19175		
				1852.5 MHz	1880 MHz	1907.5 MHz		
5 MHz	QPSK	1	0	22.9	23.5	22.8	0.0	24.5
		1	12	22.9	23.5	22.9	0.0	24.5
		1	24	23.0	23.4	22.8	0.0	24.5
		12	0	21.9	22.4	21.9	1.0	23.5
		12	7	21.9	22.4	21.9	1.0	23.5
		12	13	21.9	22.4	21.9	1.0	23.5
		25	0	21.5	21.9	21.5	1.0	23.5
	16QAM	1	0	22.0	22.6	22.4	1.0	23.5
		1	12	22.0	22.6	22.4	1.0	23.5
		1	24	22.1	22.5	22.4	1.0	23.5
		12	0	21.0	21.5	21.1	2.0	22.5
		12	7	21.0	21.5	21.1	2.0	22.5
		12	13	21.0	21.5	21.1	2.0	22.5
		25	0	21.0	21.5	21.0	2.0	22.5
	64QAM	1	0	21.2	21.3	21.2	2.0	22.5
		1	12	21.2	21.3	21.2	2.0	22.5
		1	24	21.3	21.2	21.1	2.0	22.5
		12	0	20.0	20.4	19.9	3.0	21.5
		12	7	20.0	20.4	20.0	3.0	21.5
		12	13	20.0	20.4	19.9	3.0	21.5
		25	0	20.1	20.3	19.9	3.0	21.5

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				18615	18900	19185		
				1851.5 MHz	1880 MHz	1908.5 MHz		
3 MHz	QPSK	1	0	22.8	23.3	22.9	0.0	24.5
		1	8	22.9	23.5	23.0	0.0	24.5
		1	14	22.7	23.3	22.8	0.0	24.5
		8	0	21.8	22.4	21.9	1.0	23.5
		8	4	21.9	22.4	21.9	1.0	23.5
		8	7	21.9	22.4	21.9	1.0	23.5
		15	0	21.9	22.4	21.9	1.0	23.5
	16QAM	1	0	21.9	22.3	22.2	1.0	23.5
		1	8	22.1	22.4	22.3	1.0	23.5
		1	14	21.9	22.2	22.2	1.0	23.5
		8	0	21.0	21.5	21.0	2.0	22.5
		8	4	21.0	21.6	21.0	2.0	22.5
		8	7	21.0	21.5	21.0	2.0	22.5
		15	0	20.9	21.5	21.0	2.0	22.5
	64QAM	1	0	21.1	21.6	21.0	2.0	22.5
		1	8	21.2	21.7	21.1	2.0	22.5
		1	14	21.1	21.6	21.0	2.0	22.5
		8	0	19.9	20.4	20.0	3.0	21.5
		8	4	19.9	20.4	20.0	3.0	21.5
		8	7	19.9	20.4	20.0	3.0	21.5
		15	0	20.0	20.3	20.0	3.0	21.5

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				18607	18900	19193		
				1850.7 MHz	1880 MHz	1909.3 MHz		
1.4 MHz	QPSK	1	0	22.8	23.4	22.8	0.0	24.5
		1	3	22.8	23.4	22.8	0.0	24.5
		1	5	22.7	23.4	22.8	0.0	24.5
		3	0	22.7	23.2	22.8	0.0	24.5
		3	1	22.8	23.3	22.8	0.0	24.5
		3	3	22.8	23.3	22.8	0.0	24.5
		6	0	21.8	22.3	21.9	1.0	23.5
	16QAM	1	0	21.8	22.4	22.2	1.0	23.5
		1	3	21.9	22.5	22.2	1.0	23.5
		1	5	21.9	22.4	22.1	1.0	23.5
		3	0	22.0	22.3	21.9	1.0	23.5
		3	1	22.1	22.4	22.0	1.0	23.5
		3	3	22.1	22.4	22.1	1.0	23.5
		6	0	21.1	21.5	20.8	2.0	22.5
	64QAM	1	0	21.2	21.4	20.9	2.0	22.5
		1	3	21.3	21.5	21.0	2.0	22.5
		1	5	21.2	21.4	21.0	2.0	22.5
		3	0	21.2	21.3	20.7	2.0	22.5
		3	1	21.2	21.4	20.8	2.0	22.5
		3	3	21.2	21.4	20.8	2.0	22.5
		6	0	19.8	20.6	19.9	3.0	21.5

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BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				[redacted]	20175	[redacted]		
					1732.5 MHz			
20 MHz	QPSK	1	0		23.4		0.0	24.5
		1	49		23.2		0.0	24.5
		1	99		23.2		0.0	24.5
		50	0		22.4		1.0	23.5
		50	24		22.3		1.0	23.5
		50	50		22.2		1.0	23.5
		100	0		22.3		1.0	23.5
	16QAM	1	0		23.0		1.0	23.5
		1	49		22.8		1.0	23.5
		1	99		22.8		1.0	23.5
		50	0		21.5		2.0	22.5
		50	24		21.5		2.0	22.5
		50	50		21.3		2.0	22.5
		100	0		21.4		2.0	22.5
	64QAM	1	0		21.9		2.0	22.5
		1	49		21.8		2.0	22.5
		1	99		21.7		2.0	22.5
		50	0		20.7		3.0	21.5
		50	24		20.6		3.0	21.5
		50	50		20.6		3.0	21.5
		100	0		20.6		3.0	21.5

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				20025	20175	20325		
				1717.5 MHz	1732.5 MHz	1747.5 MHz		
15 MHz	QPSK	1	0	23.4	23.4	23.4	0.0	24.5
		1	37	23.3	23.2	23.2	0.0	24.5
		1	74	23.4	23.2	23.3	0.0	24.5
		36	0	22.3	22.3	22.3	1.0	23.5
		36	20	22.4	22.2	22.3	1.0	23.5
		36	39	22.3	22.2	22.3	1.0	23.5
		75	0	22.3	22.2	22.3	1.0	23.5
	16QAM	1	0	22.8	22.4	22.8	1.0	23.5
		1	37	22.7	22.2	22.6	1.0	23.5
		1	74	22.7	22.2	22.6	1.0	23.5
		36	0	21.4	21.4	21.4	2.0	22.5
		36	20	21.4	21.4	21.5	2.0	22.5
		36	39	21.4	21.3	21.4	2.0	22.5
		75	0	21.4	21.4	21.5	2.0	22.5
	64QAM	1	0	22.2	21.9	21.7	2.0	22.5
		1	37	22.1	21.7	21.5	2.0	22.5
		1	74	22.1	21.8	21.6	2.0	22.5
		36	0	20.6	20.6	20.6	3.0	21.5
		36	20	20.6	20.5	20.7	3.0	21.5
		36	39	20.5	20.5	20.5	3.0	21.5
		75	0	20.6	20.5	20.6	3.0	21.5

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				20000	20175	20350		
				1715 MHz	1732.5 MHz	1750 MHz		
10 MHz	QPSK	1	0	23.2	23.3	23.3	0.0	24.5
		1	25	23.1	23.2	23.2	0.0	24.5
		1	49	23.2	23.2	23.3	0.0	24.5
		25	0	22.2	22.3	22.3	1.0	23.5
		25	12	22.2	22.3	22.3	1.0	23.5
		25	25	22.2	22.2	22.3	1.0	23.5
		50	0	22.2	22.3	22.3	1.0	23.5
	16QAM	1	0	22.3	22.3	22.7	1.0	23.5
		1	25	22.2	22.2	22.6	1.0	23.5
		1	49	22.2	22.3	22.6	1.0	23.5
		25	0	22.4	22.5	22.4	2.0	22.5
		25	12	22.4	22.4	22.3	2.0	22.5
		25	25	22.4	22.4	22.3	2.0	22.5
		50	0	22.3	22.4	22.3	2.0	22.5
	64QAM	1	0	21.6	21.9	21.6	2.0	22.5
		1	25	21.5	21.8	21.5	2.0	22.5
		1	49	21.5	21.8	21.6	2.0	22.5
		25	0	21.5	21.5	21.5	3.0	21.5
		25	12	21.5	21.5	21.5	3.0	21.5
		25	25	21.5	21.5	21.5	3.0	21.5
		50	0	21.5	21.5	21.5	3.0	21.5

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				19975	20175	20375		
				1712.5 MHz	1732.5 MHz	1752.5 MHz		
5 MHz	QPSK	1	0	23.2	23.4	23.3	0.0	24.5
		1	12	23.2	23.3	23.3	0.0	24.5
		1	24	23.2	23.3	23.3	0.0	24.5
		12	0	22.2	22.3	22.3	1.0	23.5
		12	7	22.2	22.2	22.4	1.0	23.5
		12	13	22.1	22.2	22.4	1.0	23.5
		25	0	22.1	22.3	22.3	1.0	23.5
	16QAM	1	0	22.3	22.5	22.8	1.0	23.5
		1	12	22.3	22.5	22.8	1.0	23.5
		1	24	22.3	22.5	22.8	1.0	23.5
		12	0	21.3	21.5	21.5	2.0	22.5
		12	7	21.3	21.5	21.6	2.0	22.5
		12	13	21.3	21.4	21.5	2.0	22.5
		25	0	21.2	21.4	21.4	2.0	22.5
	64QAM	1	0	21.7	21.5	21.7	2.0	22.5
		1	12	21.6	21.4	21.7	2.0	22.5
		1	24	21.6	21.4	21.8	2.0	22.5
		12	0	20.5	20.6	20.5	3.0	21.5
		12	7	20.5	20.6	20.6	3.0	21.5
		12	13	20.5	20.5	20.5	3.0	21.5
		25	0	20.4	20.5	20.5	3.0	21.5

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				19965	20175	20385		
				1711.5 MHz	1732.5 MHz	1753.5 MHz		
3 MHz	QPSK	1	0	23.1	23.2	23.4	0.0	24.5
		1	8	23.2	23.2	23.4	0.0	24.5
		1	14	23.1	23.2	23.3	0.0	24.5
		8	0	22.1	22.2	22.4	1.0	23.5
		8	4	22.2	22.3	22.4	1.0	23.5
		8	7	22.1	22.2	22.4	1.0	23.5
		15	0	22.1	22.2	22.3	1.0	23.5
	16QAM	1	0	22.2	22.2	22.7	1.0	23.5
		1	8	22.3	22.2	22.7	1.0	23.5
		1	14	22.2	22.1	22.7	1.0	23.5
		8	0	21.2	21.4	21.4	2.0	22.5
		8	4	21.3	21.4	21.5	2.0	22.5
		8	7	21.3	21.4	21.5	2.0	22.5
		15	0	21.2	21.4	21.4	2.0	22.5
	64QAM	1	0	21.7	21.8	21.6	2.0	22.5
		1	8	21.6	21.9	21.6	2.0	22.5
		1	14	21.5	21.7	21.6	2.0	22.5
		8	0	20.3	20.5	20.6	3.0	21.5
		8	4	20.3	20.6	20.6	3.0	21.5
		8	7	20.3	20.5	20.6	3.0	21.5
		15	0	20.4	20.5	20.6	3.0	21.5

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				19957	20175	20393		
				1710.7 MHz	1732.5 MHz	1754.3 MHz		
1.4 MHz	QPSK	1	0	23.2	23.1	23.3	0.0	24.5
		1	3	23.2	23.1	23.3	0.0	24.5
		1	5	23.1	23.1	23.3	0.0	24.5
		3	0	23.1	23.1	23.1	0.0	24.5
		3	1	23.1	23.2	23.3	0.0	24.5
		3	3	23.1	23.2	23.2	0.0	24.5
		6	0	22.0	22.1	22.3	1.0	23.5
	16QAM	1	0	22.5	22.2	22.3	1.0	23.5
		1	3	22.5	22.3	22.3	1.0	23.5
		1	5	22.5	22.2	22.3	1.0	23.5
		3	0	22.3	22.4	22.3	1.0	23.5
		3	1	22.4	22.5	22.4	1.0	23.5
		3	3	22.3	22.5	22.4	1.0	23.5
		6	0	21.0	21.4	21.4	2.0	22.5
	64QAM	1	0	21.5	21.5	21.8	2.0	22.5
		1	3	21.6	21.6	21.9	2.0	22.5
		1	5	21.4	21.6	21.7	2.0	22.5
		3	0	21.4	21.3	21.7	2.0	22.5
		3	1	21.5	21.4	21.8	2.0	22.5
		3	3	21.5	21.4	21.8	2.0	22.5
		6	0	20.6	20.4	20.4	3.0	21.5

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BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				[redacted]	20525	[redacted]		
					836.5 MHz			
10 MHz	QPSK	1	0		23.7		0.0	25.0
		1	25		23.7		0.0	25.0
		1	49		23.6		0.0	25.0
		25	0		22.9		1.0	24.0
		25	12		22.9		1.0	24.0
		25	25		22.8		1.0	24.0
		50	0		22.8		1.0	24.0
	16QAM	1	0		22.6		1.0	24.0
		1	25		22.7		1.0	24.0
		1	49		22.5		1.0	24.0
		25	0		21.4		2.0	23.0
		25	12		21.4		2.0	23.0
		25	25		21.4		2.0	23.0
		50	0		21.4		2.0	23.0
	64QAM	1	0		22.0		2.0	23.0
		1	25		22.0		2.0	23.0
		1	49		21.9		2.0	23.0
		25	0		21.4		3.0	22.0
		25	12		21.4		3.0	22.0
		25	25		21.4		3.0	22.0
		50	0		21.4		3.0	22.0

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				20425	20525	20625		
				826.5 MHz	836.5 MHz	846.5 MHz		
5 MHz	QPSK	1	0	23.8	23.9	23.6	0.0	25.0
		1	12	23.7	23.8	23.4	0.0	25.0
		1	24	23.8	23.7	23.3	0.0	25.0
		12	0	22.7	22.8	22.5	1.0	24.0
		12	7	22.8	22.8	22.5	1.0	24.0
		12	13	22.8	22.8	22.4	1.0	24.0
		25	0	22.8	22.8	22.6	1.0	24.0
	16QAM	1	0	22.9	23.0	23.1	1.0	24.0
		1	12	22.8	22.9	22.9	1.0	24.0
		1	24	22.9	22.8	22.9	1.0	24.0
		12	0	21.8	22.0	21.7	2.0	23.0
		12	7	21.9	22.0	21.6	2.0	23.0
		12	13	21.9	21.9	21.6	2.0	23.0
		25	0	21.8	21.9	21.6	2.0	23.0
	64QAM	1	0	22.0	21.8	21.9	2.0	23.0
		1	12	21.9	21.7	21.8	2.0	23.0
		1	24	22.0	21.6	21.7	2.0	23.0
		12	0	20.8	20.9	20.6	3.0	22.0
		12	7	20.9	20.9	20.5	3.0	22.0
		12	13	20.9	20.9	20.5	3.0	22.0
		25	0	20.8	20.9	20.6	3.0	22.0

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BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				20415	20525	20635		
				825.5 MHz	836.5 MHz	847.5 MHz		
3 MHz	QPSK	1	0	23.7	23.8	23.5	0.0	25.0
		1	8	23.7	23.8	23.5	0.0	25.0
		1	14	23.6	23.8	23.4	0.0	25.0
		8	0	22.7	22.8	22.4	1.0	24.0
		8	4	22.7	22.8	22.4	1.0	24.0
		8	7	22.7	22.8	22.4	1.0	24.0
		15	0	22.7	22.8	22.4	1.0	24.0
	16QAM	1	0	22.8	22.7	22.8	1.0	24.0
		1	8	22.8	22.8	22.8	1.0	24.0
		1	14	22.7	22.7	22.7	1.0	24.0
		8	0	21.8	22.0	21.5	2.0	23.0
		8	4	21.8	22.0	21.5	2.0	23.0
		8	7	21.8	22.0	21.5	2.0	23.0
		15	0	21.7	21.9	21.5	2.0	23.0
	64QAM	1	0	21.9	22.1	21.6	2.0	23.0
		1	8	22.0	22.1	21.7	2.0	23.0
		1	14	21.9	22.1	21.6	2.0	23.0
		8	0	20.7	20.9	20.6	3.0	22.0
		8	4	20.7	20.9	20.6	3.0	22.0
		8	7	20.7	20.9	20.6	3.0	22.0
		15	0	20.8	20.8	20.6	3.0	22.0

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				20407	20525	20643		
				824.7 MHz	836.5 MHz	848.3 MHz		
1.4 MHz	QPSK	1	0	23.7	23.6	23.4	0.0	25.0
		1	3	23.7	23.7	23.4	0.0	25.0
		1	5	23.6	23.7	23.4	0.0	25.0
		3	0	23.6	23.6	23.2	0.0	25.0
		3	1	23.7	23.7	23.3	0.0	25.0
		3	3	23.7	23.7	23.3	0.0	25.0
		6	0	22.6	22.8	22.3	1.0	24.0
	16QAM	1	0	23.0	22.7	22.4	1.0	24.0
		1	3	23.1	22.8	22.5	1.0	24.0
		1	5	23.0	22.7	22.4	1.0	24.0
		3	0	22.8	22.9	22.4	1.0	24.0
		3	1	22.9	23.0	22.4	1.0	24.0
		3	3	22.9	22.9	22.4	1.0	24.0
		6	0	21.6	22.0	21.5	2.0	23.0
	64QAM	1	0	21.8	21.9	21.8	2.0	23.0
		1	3	21.9	21.9	21.9	2.0	23.0
		1	5	21.7	21.9	21.8	2.0	23.0
		3	0	21.8	21.7	21.7	2.0	23.0
		3	1	21.9	21.7	21.8	2.0	23.0
		3	3	21.9	21.7	21.8	2.0	23.0
		6	0	21.0	20.9	20.4	3.0	22.0

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BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				[redacted]	23095	[redacted]		
					707.5 MHz			
10 MHz	QPSK	1	0		24.0		0.0	25.0
		1	25		23.9		0.0	25.0
		1	49		23.9		0.0	25.0
		25	0		23.0		1.0	24.0
		25	12		23.0		1.0	24.0
		25	25		22.9		1.0	24.0
		50	0		23.0		1.0	24.0
	16QAM	1	0		23.0		1.0	24.0
		1	25		22.9		1.0	24.0
		1	49		22.7		1.0	24.0
		25	0		22.1		2.0	23.0
		25	12		22.1		2.0	23.0
		25	25		22.0		2.0	23.0
		50	0		22.0		2.0	23.0
	64QAM	1	0		22.3		2.0	23.0
		1	25		22.3		2.0	23.0
		1	49		22.1		2.0	23.0
		25	0		21.2		3.0	22.0
		25	12		21.1		3.0	22.0
		25	25		21.0		3.0	22.0
		50	0		21.1		3.0	22.0

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				23035	23095	23155		
				701.5 MHz	707.5 MHz	713.5 MHz		
5 MHz	QPSK	1	0	24.2	24.1	23.8	0.0	25.0
		1	12	24.2	24.0	23.8	0.0	25.0
		1	24	24.1	24.0	23.8	0.0	25.0
		12	0	23.2	23.0	22.8	1.0	24.0
		12	7	23.2	23.0	22.8	1.0	24.0
		12	13	23.1	23.0	22.8	1.0	24.0
		25	0	23.1	23.0	22.8	1.0	24.0
	16QAM	1	0	23.3	23.2	23.3	1.0	24.0
		1	12	23.2	23.2	23.3	1.0	24.0
		1	24	23.2	23.1	23.3	1.0	24.0
		12	0	22.3	22.1	22.0	2.0	23.0
		12	7	22.3	22.2	22.0	2.0	23.0
		12	13	22.3	22.1	22.0	2.0	23.0
		25	0	22.2	22.1	22.0	2.0	23.0
	64QAM	1	0	22.5	22.0	22.1	2.0	23.0
		1	12	22.4	21.9	22.0	2.0	23.0
		1	24	22.4	21.9	22.0	2.0	23.0
		12	0	21.3	21.2	20.8	3.0	22.0
		12	7	21.3	21.1	20.8	3.0	22.0
		12	13	21.3	21.1	20.8	3.0	22.0
		25	0	21.2	21.1	20.8	3.0	22.0

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				23025	23095	23165		
				700.5 MHz	707.5 MHz	714.5 MHz		
3 MHz	QPSK	1	0	24.1	24.0	23.8	0.0	25.0
		1	8	24.1	24.0	23.9	0.0	25.0
		1	14	24.1	23.9	23.8	0.0	25.0
		8	0	23.1	23.0	22.8	1.0	24.0
		8	4	23.1	23.0	22.8	1.0	24.0
		8	7	23.1	23.0	22.8	1.0	24.0
		15	0	23.1	23.0	22.8	1.0	24.0
	16QAM	1	0	23.2	22.9	23.1	1.0	24.0
		1	8	23.2	23.0	23.2	1.0	24.0
		1	14	23.1	22.8	23.1	1.0	24.0
		8	0	22.2	22.1	21.9	2.0	23.0
		8	4	22.3	22.2	21.9	2.0	23.0
		8	7	22.3	22.2	21.9	2.0	23.0
		15	0	22.2	22.1	21.9	2.0	23.0
	64QAM	1	0	22.4	22.3	21.9	2.0	23.0
		1	8	22.4	22.4	22.0	2.0	23.0
		1	14	22.3	22.3	21.9	2.0	23.0
		8	0	21.2	21.1	20.8	3.0	22.0
		8	4	21.2	21.1	20.9	3.0	22.0
		8	7	21.2	21.1	20.9	3.0	22.0
		15	0	21.3	21.1	21.0	3.0	22.0

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				23017	23095	23173		
				699.7 MHz	707.5 MHz	715.3 MHz		
1.4 MHz	QPSK	1	0	23.1	23.9	23.8	0.0	25.0
		1	3	24.2	23.9	23.8	0.0	25.0
		1	5	24.1	23.8	23.8	0.0	25.0
		3	0	24.1	23.9	23.6	0.0	25.0
		3	1	24.2	23.9	23.7	0.0	25.0
		3	3	24.1	23.9	23.7	0.0	25.0
		6	0	23.1	22.9	22.7	1.0	24.0
	16QAM	1	0	23.5	22.9	22.8	1.0	24.0
		1	3	23.5	23.0	22.8	1.0	24.0
		1	5	23.5	23.0	22.8	1.0	24.0
		3	0	23.3	23.1	22.7	1.0	24.0
		3	1	23.4	23.2	22.8	1.0	24.0
		3	3	23.4	23.2	22.8	1.0	24.0
		6	0	22.0	22.2	21.9	2.0	23.0
	64QAM	1	0	22.5	22.0	21.9	2.0	23.0
		1	3	22.6	22.1	22.0	2.0	23.0
		1	5	22.5	22.0	22.0	2.0	23.0
		3	0	22.5	22.1	21.8	2.0	23.0
		3	1	22.5	22.2	21.9	2.0	23.0
		3	3	22.5	22.2	21.9	2.0	23.0
		6	0	21.1	21.2	20.9	3.0	22.0

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BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				[redacted]	23230 / 782 MHz	[redacted]		
10 MHz	QPSK	1	0		24.1		0.0	24.5
		1	25		24.0		0.0	24.5
		1	49		24.1		0.0	24.5
		25	0		23.1		1.0	23.5
		25	12		23.1		1.0	23.5
		25	25		23.0		1.0	23.5
		50	0		23.0		1.0	23.5
	16QAM	1	0		22.9		1.0	23.5
		1	25		22.9		1.0	23.5
		1	49		22.9		1.0	23.5
		25	0		22.1		2.0	22.5
		25	12		22.2		2.0	22.5
		25	25		22.1		2.0	22.5
		50	0		22.1		2.0	22.5
	64QAM	1	0		22.1		2.0	22.5
		1	25		22.1		2.0	22.5
		1	49		22.1		2.0	22.5
		25	0		21.2		3.0	21.5
		25	12		21.2		3.0	21.5
		25	25		21.1		3.0	21.5
		50	0		21.1		3.0	21.5

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				[redacted]	23230 / 782 MHz	[redacted]		
5 MHz	QPSK	1	0		24.3		0.0	24.5
		1	12		24.1		0.0	24.5
		1	24		24.1		0.0	24.5
		12	0		23.1		1.0	23.5
		12	7		23.1		1.0	23.5
		12	13		23.0		1.0	23.5
		25	0		23.0		1.0	23.5
	16QAM	1	0		23.1		1.0	23.5
		1	12		23.1		1.0	23.5
		1	24		23.1		1.0	23.5
		12	0		22.1		2.0	22.5
		12	7		22.1		2.0	22.5
		12	13		22.1		2.0	22.5
		25	0		22.0		2.0	22.5
	64QAM	1	0		21.9		2.0	22.5
		1	12		21.8		2.0	22.5
		1	24		21.8		2.0	22.5
		12	0		21.1		3.0	21.5
		12	7		21.1		3.0	21.5
		12	13		21.1		3.0	21.5
		25	0		21.0		3.0	21.5

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BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
20 MHz	QPSK	1	0	23.2	23.3	23.2	23.6	23.7	0.0	24.0
		1	49	23.0	23.1	23.0	23.6	23.6	0.0	24.0
		1	99	23.0	23.0	23.0	23.5	23.6	0.0	24.0
		50	0	22.1	22.3	22.1	22.7	22.7	1.0	23.0
		50	24	22.2	22.1	22.1	22.6	22.6	1.0	23.0
		50	50	22.1	22.1	22.1	22.7	22.7	1.0	23.0
		100	0	22.1	22.1	22.1	22.5	22.6	1.0	23.0
	16QAM	1	0	22.3	22.4	22.1	22.8	22.7	1.0	23.0
		1	49	22.3	22.2	21.9	22.8	22.7	1.0	23.0
		1	99	22.3	22.0	22.0	22.8	22.6	1.0	23.0
		50	0	21.3	21.4	21.3	21.9	21.8	2.0	22.0
		50	24	21.2	21.2	21.2	21.9	21.8	2.0	22.0
		50	50	21.2	21.1	21.2	21.9	21.9	2.0	22.0
		100	0	21.2	21.2	21.2	21.8	21.8	2.0	22.0
	64QAM	1	0	21.3	21.8	21.2	21.8	22.0	2.0	22.0
		1	49	21.2	21.6	21.0	21.8	22.0	2.0	22.0
		1	99	21.2	21.4	21.0	21.7	22.0	2.0	22.0
		50	0	20.3	20.4	20.3	20.9	20.9	3.0	21.0
		50	24	20.3	20.2	20.2	20.9	20.8	3.0	21.0
		50	50	20.3	20.2	20.2	20.8	21.0	3.0	21.0
		100	0	20.3	20.2	20.2	20.8	20.8	3.0	21.0

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
15 MHz	QPSK	1	0	23.2	23.2	23.0	23.6	23.5	0.0	24.0
		1	37	23.1	23.1	23.0	23.7	23.5	0.0	24.0
		1	74	23.0	22.9	23.0	23.5	23.6	0.0	24.0
		36	0	22.1	22.2	22.0	22.5	22.5	1.0	23.0
		36	20	22.1	22.1	22.0	22.5	22.5	1.0	23.0
		36	39	22.0	22.1	22.0	22.5	22.6	1.0	23.0
		75	0	22.1	22.1	22.0	22.5	22.5	1.0	23.0
	16QAM	1	0	22.2	22.3	22.2	22.7	22.7	1.0	23.0
		1	37	22.2	22.2	22.1	22.8	22.6	1.0	23.0
		1	74	22.2	22.0	22.0	22.7	22.6	1.0	23.0
		36	0	21.2	21.3	21.1	21.7	21.7	2.0	22.0
		36	20	21.2	21.2	21.1	21.6	21.6	2.0	22.0
		36	39	21.2	21.1	21.1	21.7	21.7	2.0	22.0
		75	0	21.2	21.2	21.1	21.6	21.7	2.0	22.0
	64QAM	1	0	21.1	20.9	21.5	21.6	21.4	2.0	22.0
		1	37	21.0	20.8	21.4	21.6	21.3	2.0	22.0
		1	74	21.1	20.6	21.3	21.6	21.3	2.0	22.0
		36	0	20.2	20.4	20.2	20.6	20.8	3.0	21.0
		36	20	20.2	20.3	20.2	20.6	20.7	3.0	21.0
		36	39	20.2	20.2	20.1	20.6	20.8	3.0	21.0
		75	0	20.2	20.1	20.2	20.6	20.7	3.0	21.0

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BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
10 MHz	QPSK	1	0	23.1	23.2	23.1	23.5	23.5	0.0	24.0
		1	25	23.0	23.2	23.0	23.6	23.6	0.0	24.0
		1	49	23.0	23.0	23.0	23.6	23.6	0.0	24.0
		25	0	21.6	21.7	21.6	22.2	22.1	1.0	23.0
		25	12	21.6	21.6	21.6	22.2	22.1	1.0	23.0
		25	25	21.5	21.6	21.6	22.2	22.2	1.0	23.0
		50	0	21.6	21.6	21.6	22.1	22.1	1.0	23.0
	16QAM	1	0	22.2	22.3	22.1	22.8	22.7	1.0	23.0
		1	25	22.2	22.2	22.1	22.9	22.7	1.0	23.0
		1	49	22.2	22.0	22.0	22.8	22.6	1.0	23.0
		25	0	21.2	21.3	21.2	21.9	21.8	2.0	22.0
		25	12	21.2	21.2	21.2	21.9	21.7	2.0	22.0
		25	25	21.2	21.2	21.1	21.9	21.8	2.0	22.0
		50	0	21.2	21.2	21.2	21.9	21.7	2.0	22.0
	64QAM	1	0	21.2	20.9	21.4	21.8	21.3	2.0	22.0
		1	25	21.2	20.8	21.3	21.9	21.3	2.0	22.0
		1	49	21.3	20.6	21.3	21.8	21.3	2.0	22.0
		25	0	20.2	20.3	20.1	20.8	20.8	3.0	21.0
		25	12	20.2	20.2	20.1	20.7	20.8	3.0	21.0
		25	25	20.1	20.2	20.1	20.8	20.9	3.0	21.0
		50	0	20.2	20.2	20.2	20.8	20.8	3.0	21.0

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)					MPR	Tune-up Limit
				39750	40185	40620	41055	41490		
				2506 MHz	2549.5 MHz	2593 MHz	2636.5 MHz	2680 MHz		
5 MHz	QPSK	1	0	23.0	23.2	23.0	23.4	23.5	0.0	24.0
		1	12	23.0	23.2	23.0	23.5	23.6	0.0	24.0
		1	24	22.9	23.0	23.0	23.5	23.6	0.0	24.0
		12	0	22.0	22.3	22.1	22.6	22.6	1.0	23.0
		12	7	22.0	22.1	22.1	22.7	22.7	1.0	23.0
		12	13	22.0	22.1	22.1	22.7	22.7	1.0	23.0
		25	0	22.1	22.1	22.1	22.6	22.6	1.0	23.0
	16QAM	1	0	22.0	22.2	22.2	22.5	22.6	1.0	23.0
		1	12	22.0	22.2	22.2	22.7	22.6	1.0	23.0
		1	24	22.0	22.0	22.2	22.6	22.5	1.0	23.0
		12	0	21.2	21.3	21.2	21.8	21.7	2.0	22.0
		12	7	21.2	21.1	21.2	21.9	21.8	2.0	22.0
		12	13	21.1	21.1	21.2	21.9	21.8	2.0	22.0
		25	0	21.1	21.2	21.2	21.8	21.8	2.0	22.0
	64QAM	1	0	20.9	21.6	21.3	21.4	22.0	2.0	22.0
		1	12	20.9	21.6	21.2	21.5	22.0	2.0	22.0
		1	24	20.8	21.5	21.2	21.5	22.0	2.0	22.0
		12	0	20.2	20.4	20.1	20.8	20.8	3.0	21.0
		12	7	20.2	20.3	20.1	20.9	20.9	3.0	21.0
		12	13	20.2	20.3	20.1	20.8	20.9	3.0	21.0
		25	0	20.2	20.1	20.1	20.8	20.7	3.0	21.0

8.3.7. LTE 66

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				132072	132322	132572		
				1720 MHz	1745 MHz	1770 MHz		
20 MHz	QPSK	1	0	23.0	23.0	22.8	0.0	24.0
		1	49	22.9	22.9	22.6	0.0	24.0
		1	99	22.9	22.7	22.5	0.0	24.0
		50	0	22.0	22.1	21.8	1.0	23.0
		50	24	22.0	22.0	21.7	1.0	23.0
		50	50	22.0	21.9	21.7	1.0	23.0
		100	0	21.9	22.0	21.7	1.0	23.0
	16QAM	1	0	22.4	22.6	22.4	1.0	23.0
		1	49	22.4	22.5	22.1	1.0	23.0
		1	99	22.4	22.3	22.0	1.0	23.0
		50	0	21.1	21.2	20.9	2.0	22.0
		50	24	21.1	21.1	20.7	2.0	22.0
		50	50	21.1	21.0	20.7	2.0	22.0
		100	0	21.1	21.2	20.7	2.0	22.0
	64QAM	1	0	21.1	21.3	21.5	2.0	22.0
		1	49	21.1	21.2	21.1	2.0	22.0
		1	99	21.1	21.0	21.0	2.0	22.0
		50	0	20.1	20.1	19.8	3.0	21.0
		50	24	20.0	20.0	19.6	3.0	21.0
		50	50	20.0	20.0	19.6	3.0	21.0
		100	0	19.9	20.0	19.6	3.0	21.0

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				132047	132322	132597		
				1717.5 MHz	1745 MHz	1772.5 MHz		
15 MHz	QPSK	1	0	23.0	23.0	22.8	0.0	24.0
		1	37	22.9	22.9	22.7	0.0	24.0
		1	74	23.0	22.7	22.6	0.0	24.0
		36	0	22.0	22.0	21.7	1.0	23.0
		36	20	22.0	22.0	21.7	1.0	23.0
		36	39	21.9	21.9	21.7	1.0	23.0
		75	0	21.9	22.0	21.7	1.0	23.0
	16QAM	1	0	22.4	22.0	22.2	1.0	23.0
		1	37	22.3	21.9	22.1	1.0	23.0
		1	74	22.3	21.8	22.0	1.0	23.0
		36	0	21.1	21.1	20.8	2.0	22.0
		36	20	21.1	21.1	20.8	2.0	22.0
		36	39	21.0	21.0	20.8	2.0	22.0
		75	0	21.1	21.1	20.8	2.0	22.0
	64QAM	1	0	21.5	21.3	20.8	2.0	22.0
		1	37	21.4	21.2	20.7	2.0	22.0
		1	74	21.4	21.1	20.6	2.0	22.0
		36	0	19.9	20.0	19.7	3.0	21.0
		36	20	19.9	20.0	19.7	3.0	21.0
		36	39	19.9	19.9	19.6	3.0	21.0
		75	0	19.9	19.9	19.6	3.0	21.0

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				132022	132322	132622		
				1715 MHz	1745 MHz	1775 MHz		
10 MHz	QPSK	1	0	22.9	23.0	22.7	0.0	24.0
		1	25	22.8	22.8	22.6	0.0	24.0
		1	49	22.9	22.9	22.6	0.0	24.0
		25	0	21.9	22.0	21.7	1.0	23.0
		25	12	22.0	21.9	21.7	1.0	23.0
		25	25	22.0	21.9	21.6	1.0	23.0
		50	0	22.0	22.0	21.7	1.0	23.0
	16QAM	1	0	22.0	22.0	22.1	1.0	23.0
		1	25	21.9	21.9	21.9	1.0	23.0
		1	49	22.0	21.8	21.9	1.0	23.0
		25	0	21.1	21.1	20.8	2.0	22.0
		25	12	21.2	21.1	20.8	2.0	22.0
		25	25	21.2	21.0	20.7	2.0	22.0
		50	0	21.1	21.1	20.7	2.0	22.0
	64QAM	1	0	21.0	21.3	20.7	2.0	22.0
		1	25	20.9	21.2	20.5	2.0	22.0
		1	49	21.0	21.1	20.6	2.0	22.0
		25	0	19.9	20.1	19.7	3.0	21.0
		25	12	20.0	20.0	19.7	3.0	21.0
		25	25	20.0	20.0	19.5	3.0	21.0
		50	0	20.0	20.0	19.6	3.0	21.0

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				131997	132322	132647		
				1712.5 MHz	1745 MHz	1777.5 MHz		
5 MHz	QPSK	1	0	22.9	23.1	22.6	0.0	24.0
		1	12	22.8	23.0	22.5	0.0	24.0
		1	24	22.9	23.0	22.6	0.0	24.0
		12	0	21.9	22.0	21.6	1.0	23.0
		12	7	21.9	21.9	21.6	1.0	23.0
		12	13	21.9	21.9	21.6	1.0	23.0
		25	0	21.9	21.9	21.6	1.0	23.0
	16QAM	1	0	22.1	22.2	22.1	1.0	23.0
		1	12	22.0	22.2	22.1	1.0	23.0
		1	24	22.0	22.2	22.1	1.0	23.0
		12	0	21.0	21.1	20.8	2.0	22.0
		12	7	21.0	21.1	20.8	2.0	22.0
		12	13	21.0	21.1	20.8	2.0	22.0
		25	0	20.9	21.0	20.7	2.0	22.0
	64QAM	1	0	21.1	20.9	20.8	2.0	22.0
		1	12	21.0	20.8	20.8	2.0	22.0
		1	24	21.1	20.8	20.8	2.0	22.0
		12	0	19.9	20.0	19.4	3.0	21.0
		12	7	19.9	20.0	19.4	3.0	21.0
		12	13	19.9	19.9	19.4	3.0	21.0
		25	0	19.8	19.9	19.4	3.0	21.0

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				131987	132322	132657		
				1711.5 MHz	1745 MHz	1778.5 MHz		
3 MHz	QPSK	1	0	22.8	22.9	22.6	0.0	24.0
		1	8	22.9	23.0	22.7	0.0	24.0
		1	14	22.8	22.9	22.6	0.0	24.0
		8	0	21.9	21.9	21.6	1.0	23.0
		8	4	21.9	21.9	21.6	1.0	23.0
		8	7	21.9	21.9	21.6	1.0	23.0
		15	0	21.8	21.9	21.6	1.0	23.0
	16QAM	1	0	22.0	21.9	22.0	1.0	23.0
		1	8	22.0	22.0	22.1	1.0	23.0
		1	14	21.9	21.9	21.9	1.0	23.0
		8	0	21.0	21.1	20.7	2.0	22.0
		8	4	21.0	21.1	20.7	2.0	22.0
		8	7	21.0	21.1	20.7	2.0	22.0
		15	0	20.9	21.1	20.7	2.0	22.0
	64QAM	1	0	21.0	21.2	20.6	2.0	22.0
		1	8	21.1	21.3	20.7	2.0	22.0
		1	14	21.0	21.2	20.6	2.0	22.0
		8	0	19.8	19.9	19.5	3.0	21.0
		8	4	19.8	20.0	19.5	3.0	21.0
		8	7	19.8	20.0	19.5	3.0	21.0
		15	0	19.9	19.9	19.5	3.0	21.0

BW (MHz)	Mode	RB Allocation	RB offset	Maximum Average Power (dBm)			MPR	Tune-up Limit
				131979	132322	132665		
				1710.7 MHz	1745 MHz	1779.3 MHz		
1.4 MHz	QPSK	1	0	22.8	22.8	22.6	0.0	24.0
		1	3	22.8	22.9	22.6	0.0	24.0
		1	5	22.8	22.8	22.5	0.0	24.0
		3	0	22.8	22.9	22.5	0.0	24.0
		3	1	22.9	22.9	22.5	0.0	24.0
		3	3	22.9	22.9	22.5	0.0	24.0
		6	0	21.7	21.8	21.6	1.0	23.0
	16QAM	1	0	22.2	22.0	21.6	1.0	23.0
		1	3	22.3	22.0	21.7	1.0	23.0
		1	5	22.2	22.0	21.6	1.0	23.0
		3	0	22.1	22.2	21.6	1.0	23.0
		3	1	22.1	22.2	21.6	1.0	23.0
		3	3	22.1	22.2	21.6	1.0	23.0
		6	0	20.7	21.1	20.7	2.0	22.0
	64QAM	1	0	21.1	21.0	20.6	2.0	22.0
		1	3	21.2	21.0	20.6	2.0	22.0
		1	5	21.1	20.9	20.6	2.0	22.0
		3	0	21.1	21.0	20.3	2.0	22.0
		3	1	21.2	21.1	20.4	2.0	22.0
		3	3	21.2	21.1	20.4	2.0	22.0
		6	0	19.7	20.1	19.5	3.0	21.0

9. 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.

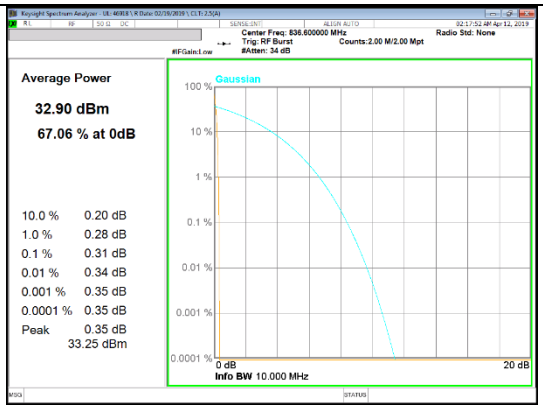
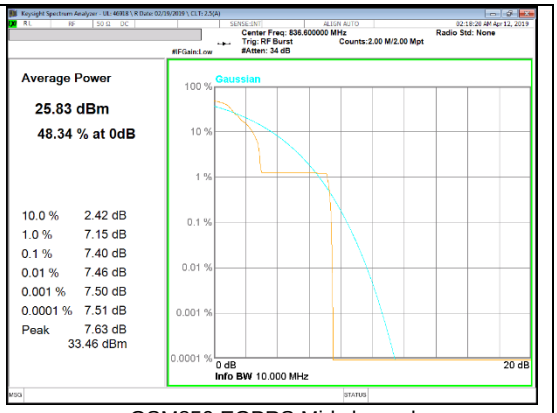
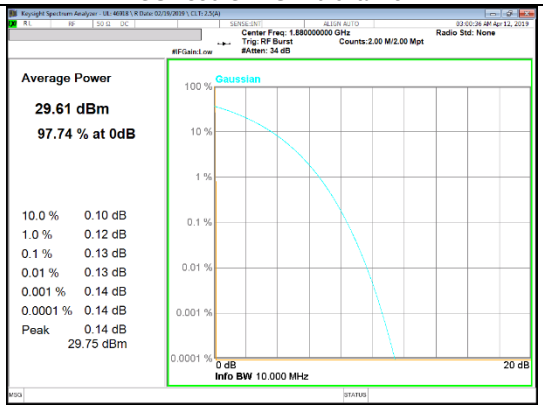
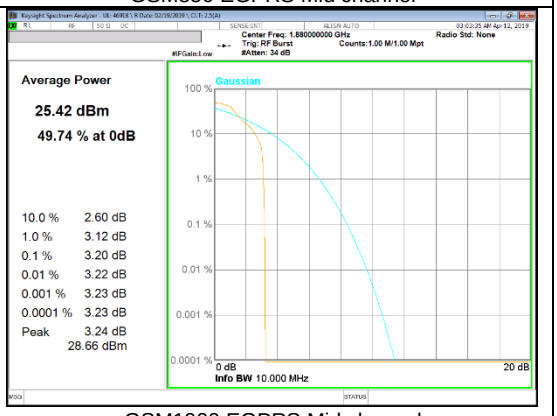
Test Spec

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.

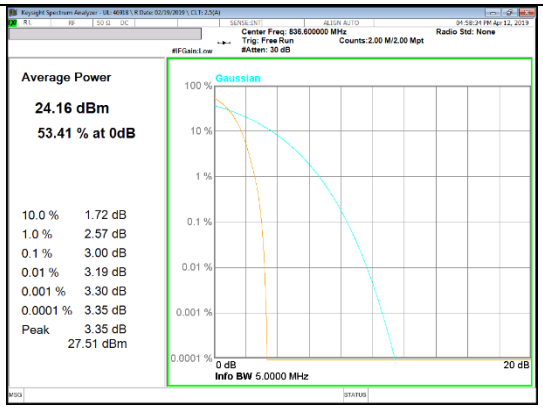
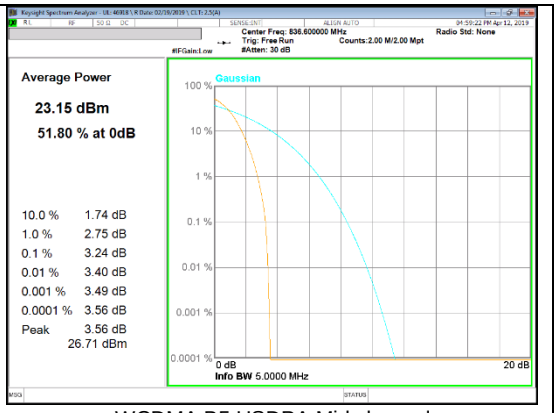
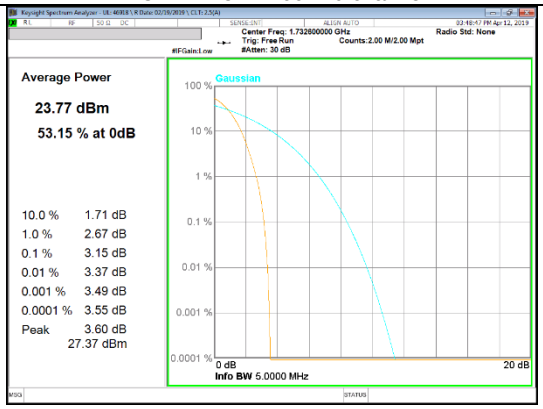
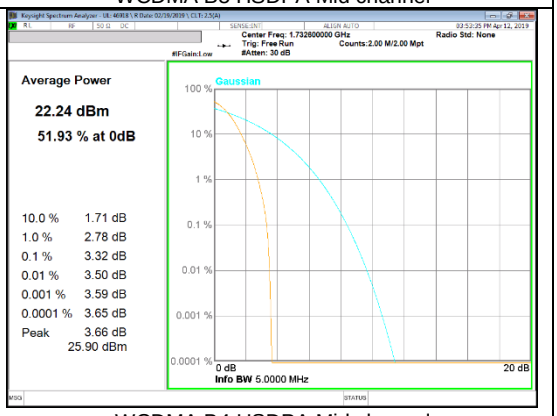
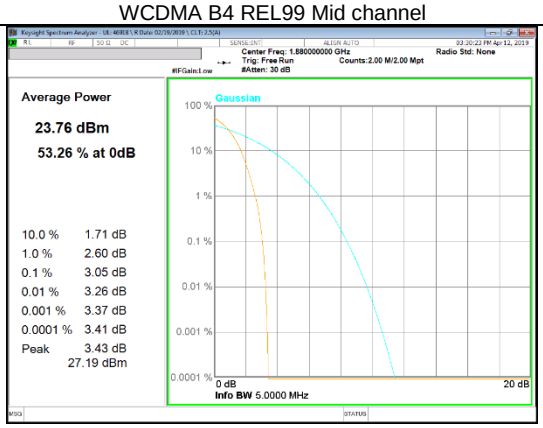
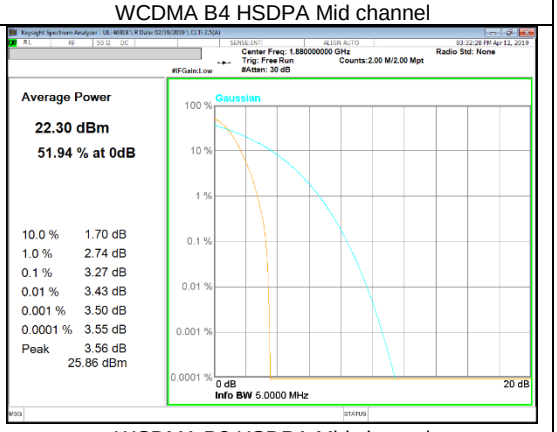
RESULTS

9.1. CONDUCTED PEAK TO AVERAGE RESULT

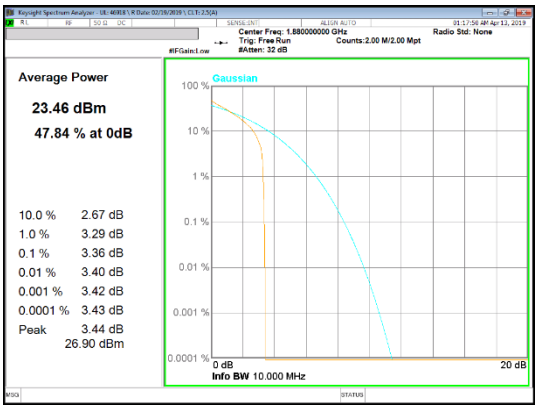
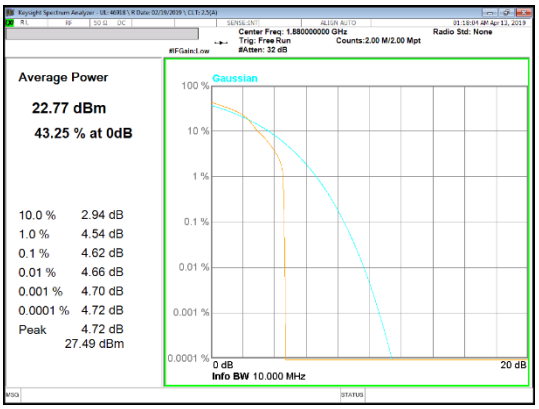
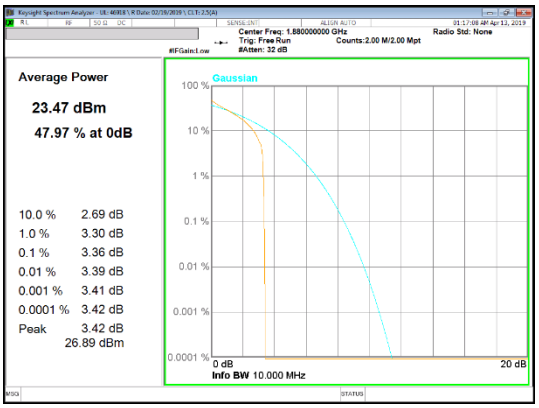
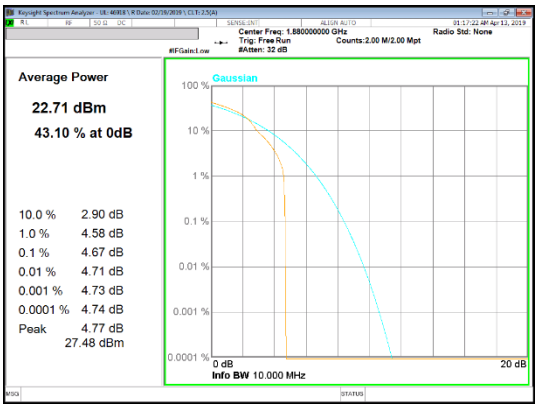
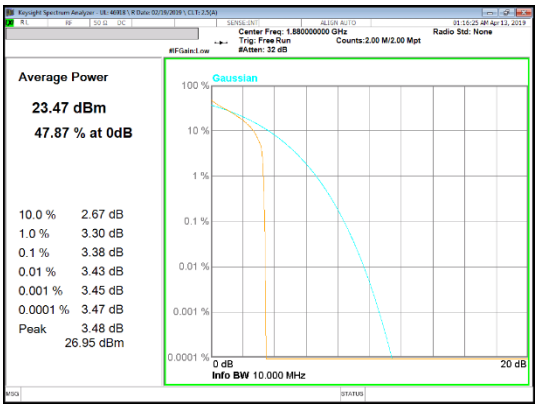
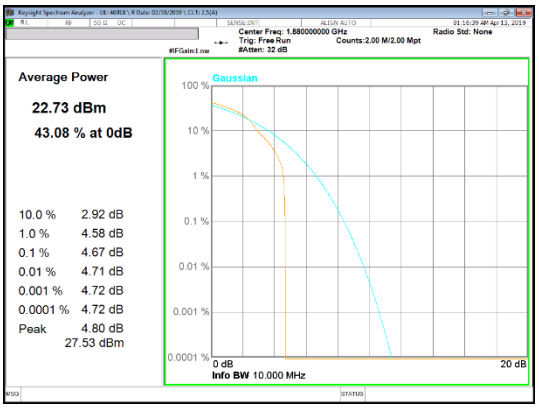
GSM

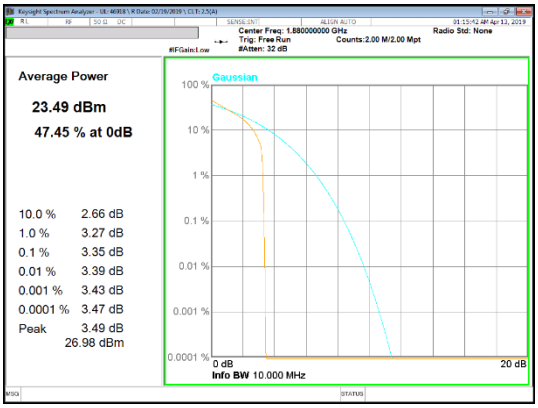
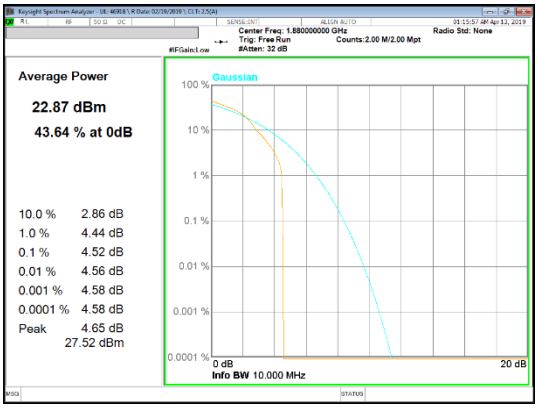
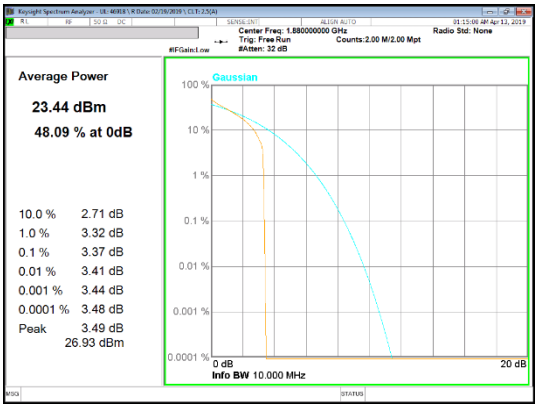
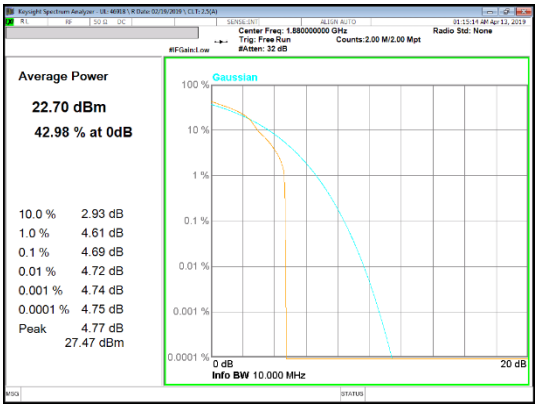
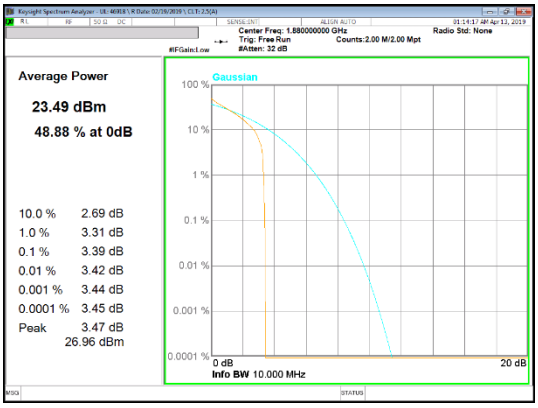
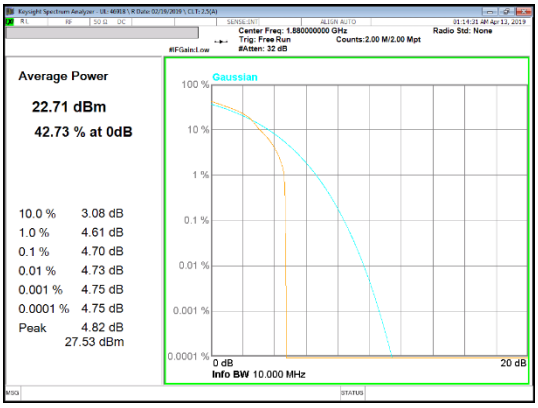
GSM 850	 GSM850 GPRS Mid channel	 GSM850 EGPRS Mid channel
GSM 1900	 GSM1900 GPRS Mid channel	 GSM1900 EGPRS Mid channel

WCDMA

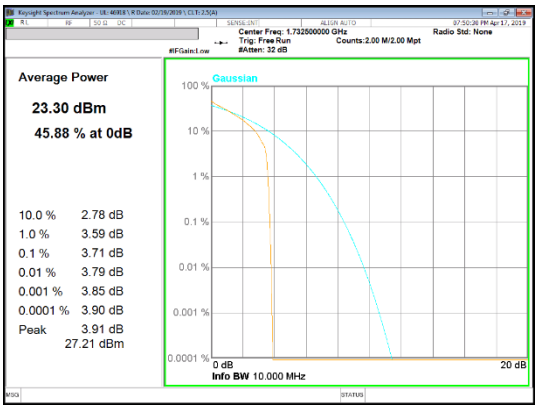
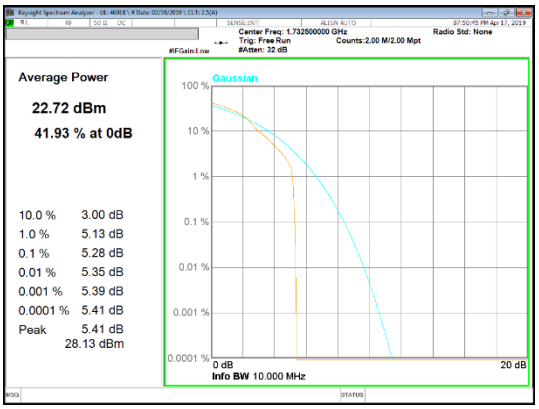
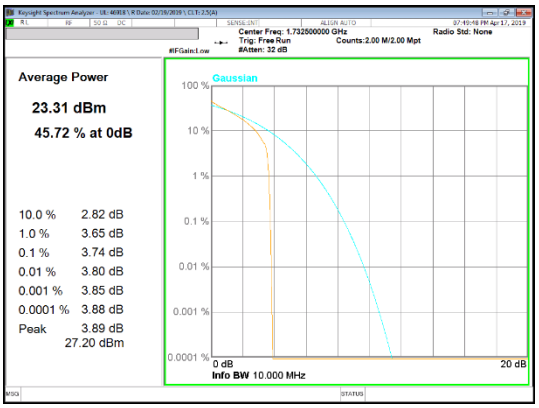
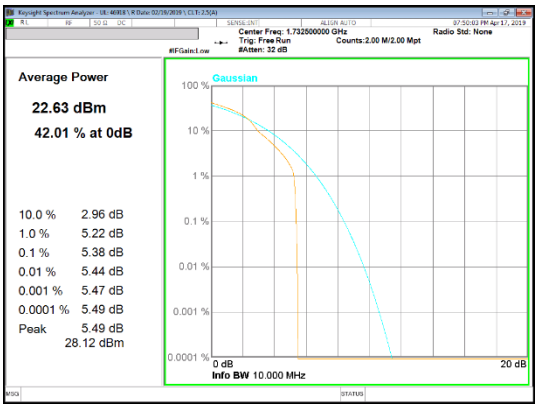
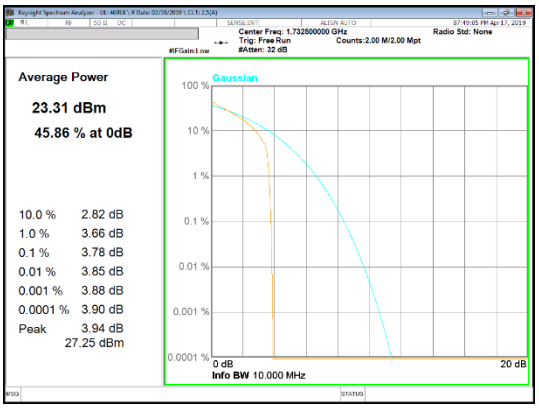
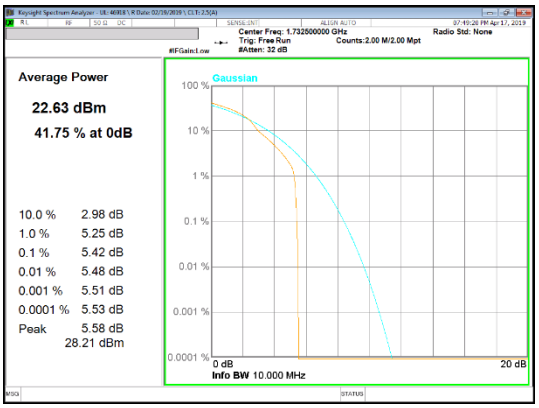
WCDMA Band 5	 WCDMA B5 REL99 Mid channel	 WCDMA B5 HSDPA Mid channel
WCDMA Band 4	 WCDMA B4 REL99 Mid channel	 WCDMA B4 HSDPA Mid channel
WCDMA Band 2	 WCDMA B2 REL99 Mid channel	 WCDMA B2 HSDPA Mid channel

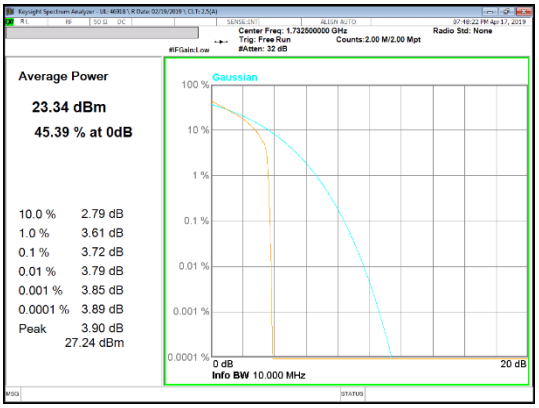
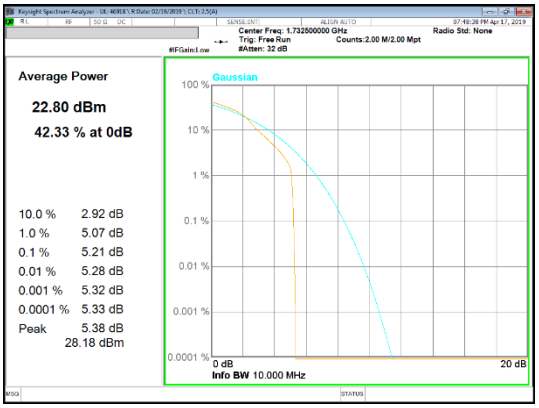
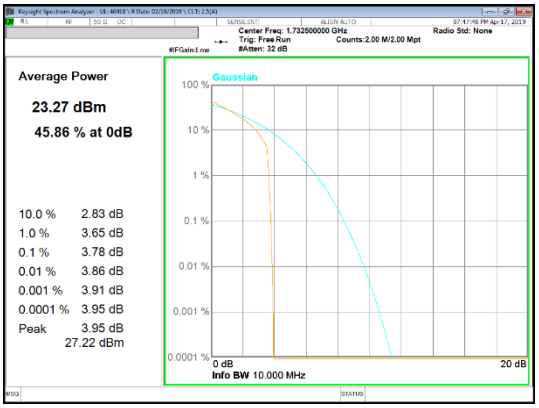
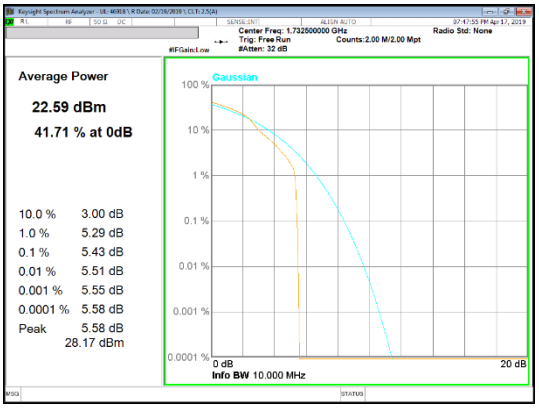
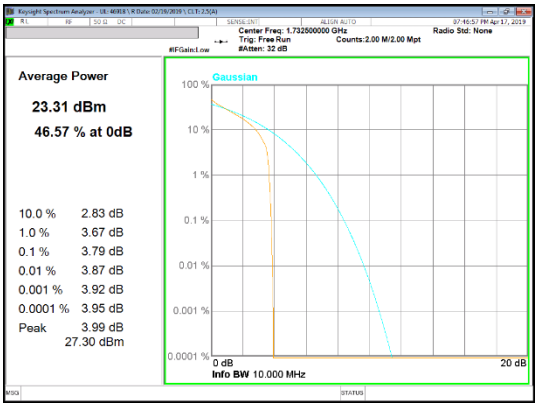
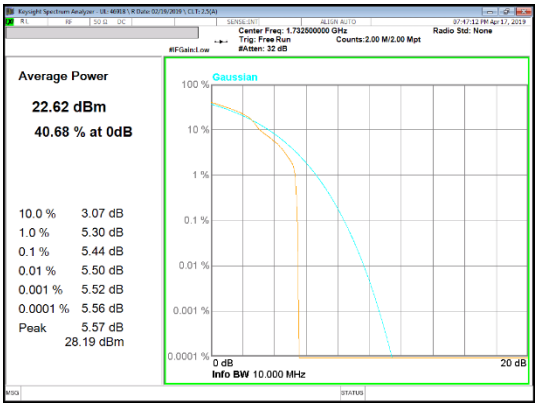
LTE Band 2

LTE Band 2 20 MHz	 LTE B2 20MHz QPSK Mid channel	 LTE B2 20MHz 16QAM Mid channel
LTE Band 2 15 MHz	 LTE B2 15MHz QPSK Mid channel	 LTE B2 15MHz 16QAM Mid channel
LTE Band 2 10 MHz	 LTE B2 10MHz QPSK Mid channel	 LTE B2 10MHz 16QAM Mid channel

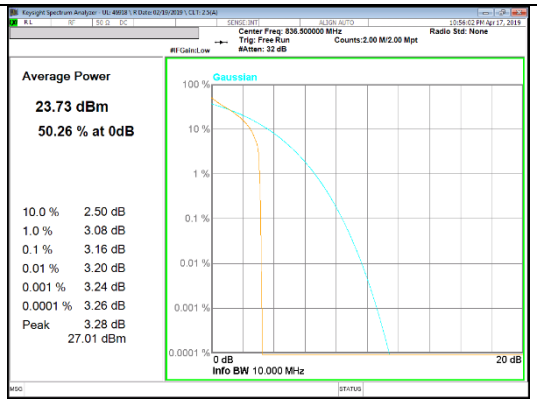
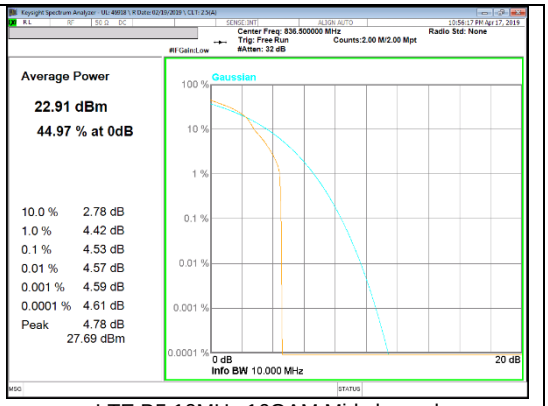
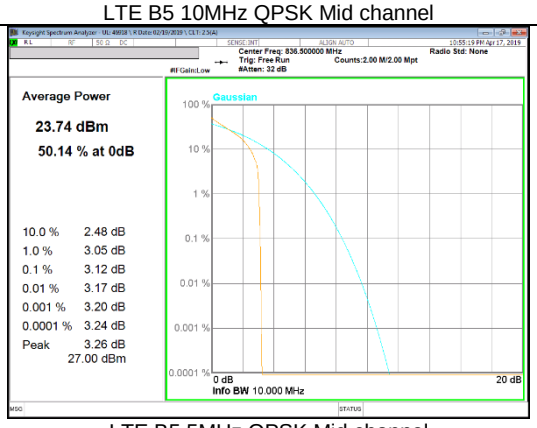
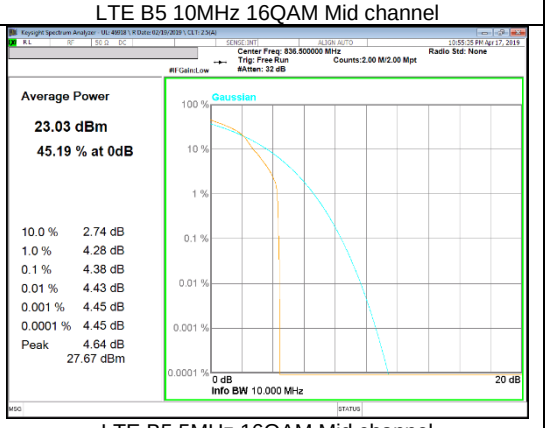
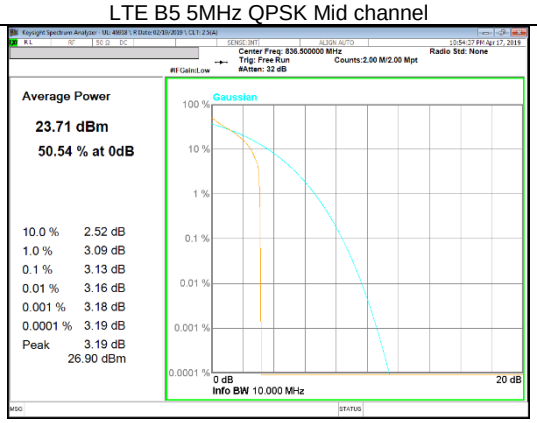
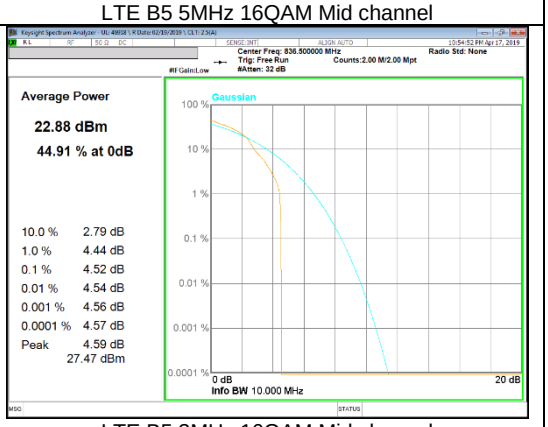
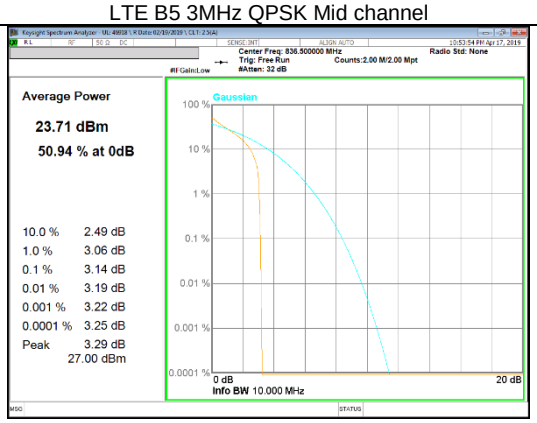
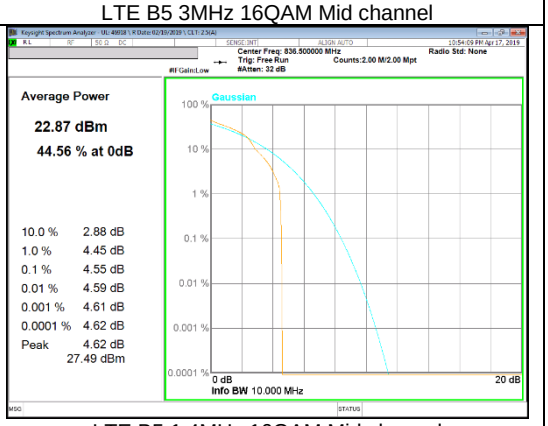
LTE Band 2 5 MHz	 LTE B2 5MHz QPSK Mid channel	 LTE B2 5MHz 16QAM Mid channel
LTE Band 2 3 MHz	 LTE B2 3MHz QPSK Mid channel	 LTE B2 3MHz 16QAM Mid channel
LTE Band 2 1.4 MHz	 LTE B2 1.4MHz QPSK Mid channel	 LTE B2 1.4MHz 16QAM Mid channel

LTE Band 4

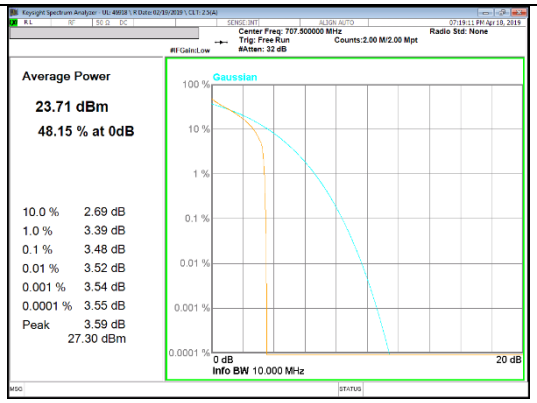
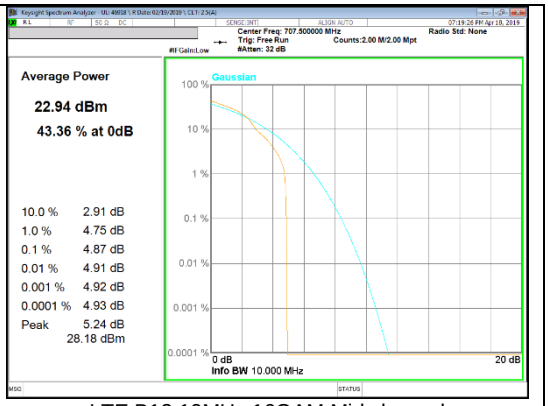
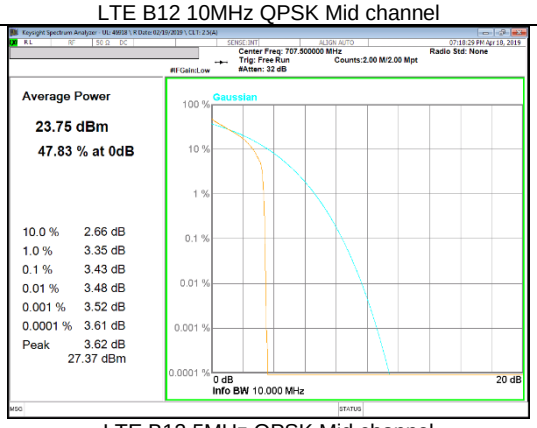
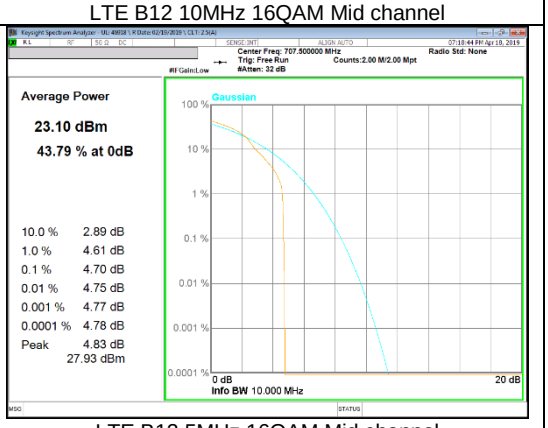
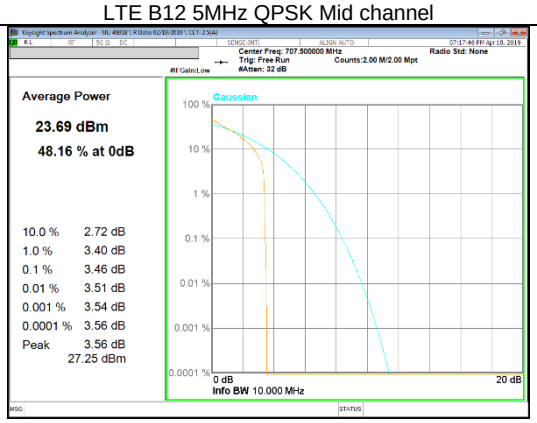
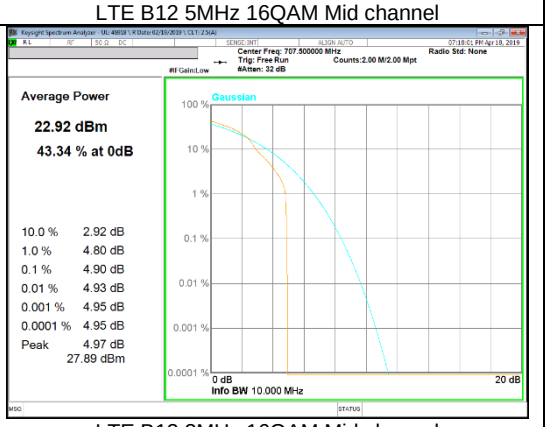
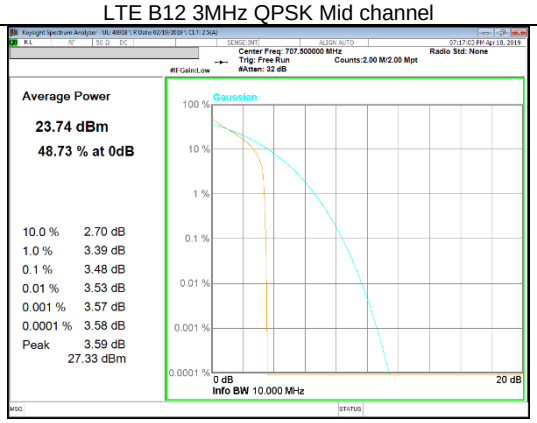
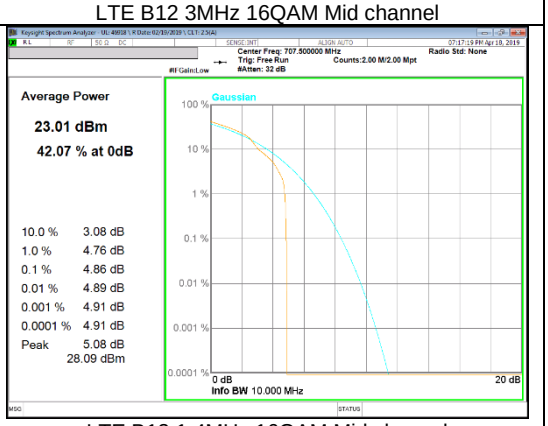
LTE Band 4 20 MHz	 LTE B4 20MHz QPSK Mid channel	 LTE B4 20MHz 16QAM Mid channel
LTE Band 4 15 MHz	 LTE B4 15MHz QPSK Mid channel	 LTE B4 15MHz 16QAM Mid channel
LTE Band 4 10 MHz	 LTE B4 10MHz QPSK Mid channel	 LTE B4 10MHz 16QAM Mid channel

LTE Band 4 5 MHz	 LTE B4 5MHz QPSK Mid channel	 LTE B4 5MHz 16QAM Mid channel
LTE Band 4 3 MHz	 LTE B4 3MHz QPSK Mid channel	 LTE B4 3MHz 16QAM Mid channel
LTE Band 4 1.4 MHz	 LTE B4 1.4MHz QPSK Mid channel	 LTE B4 1.4MHz 16QAM Mid channel

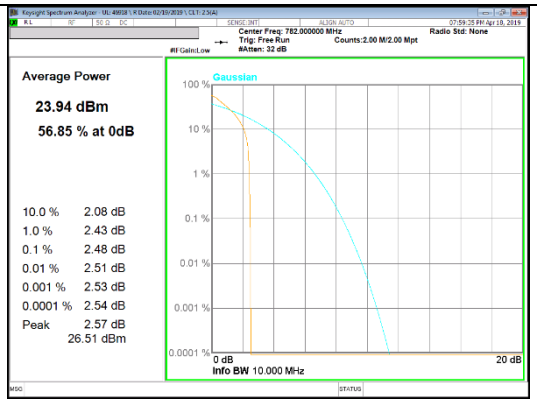
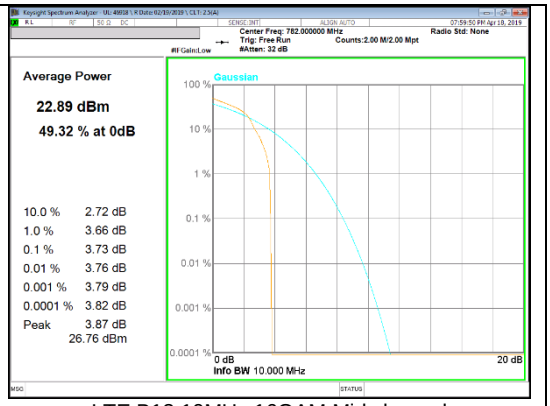
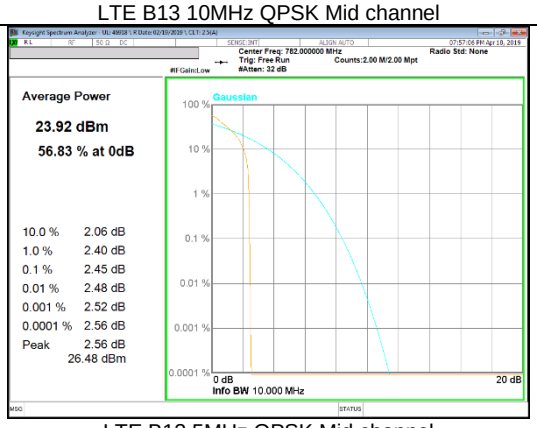
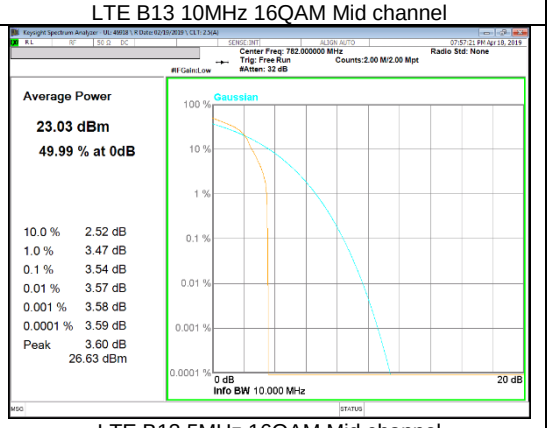
LTE Band 5

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

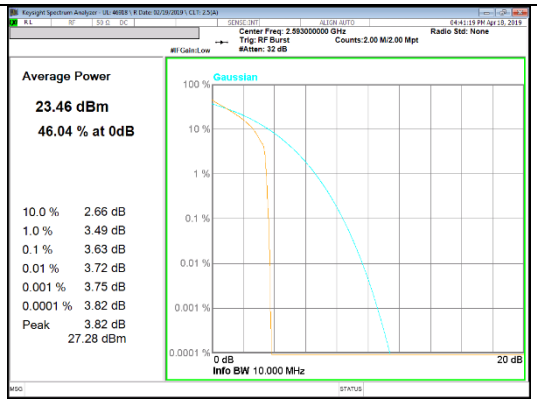
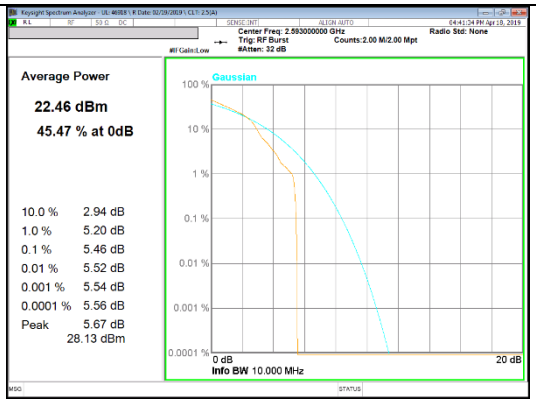
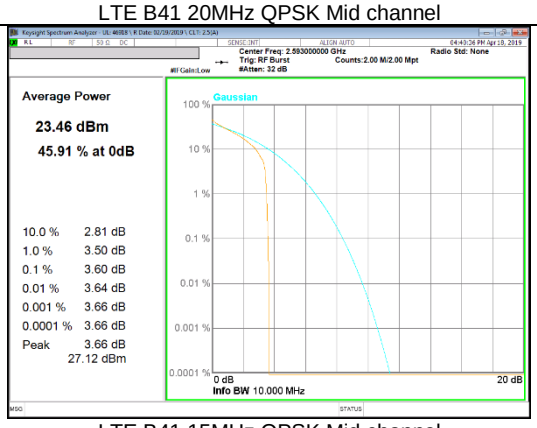
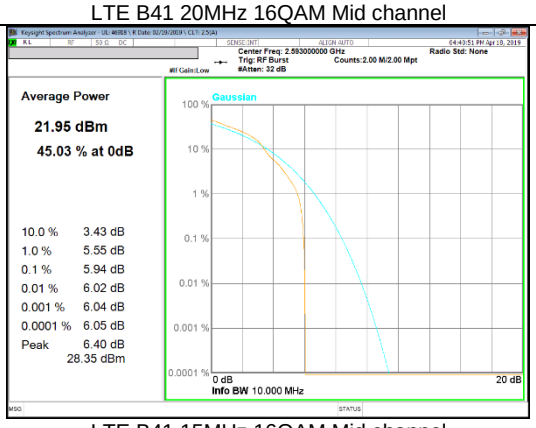
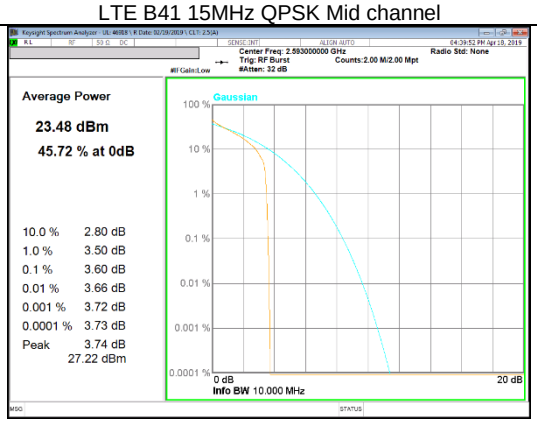
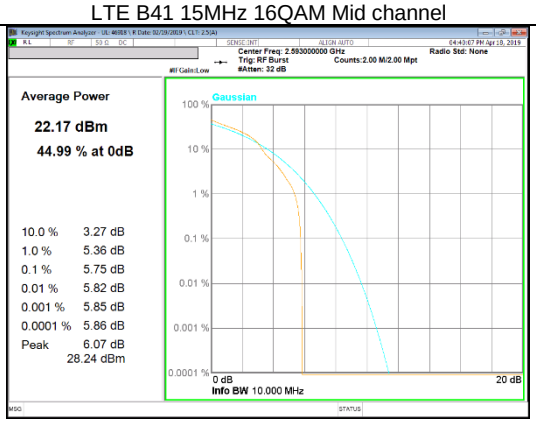
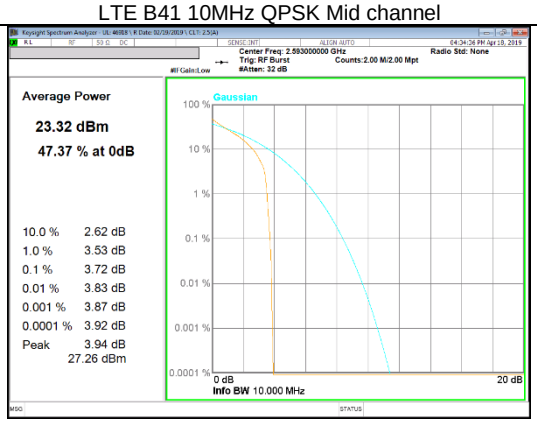
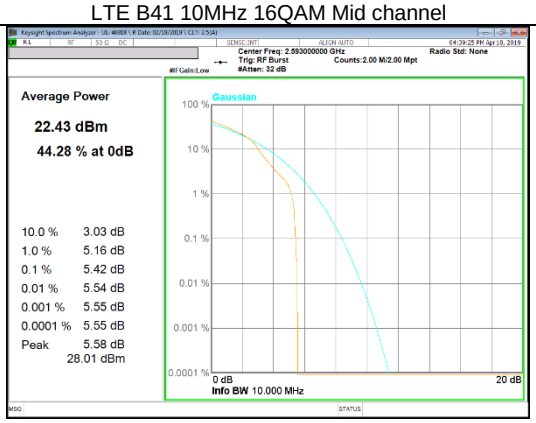
LTE Band 12

LTE Band 12 10 MHz		
	LTE B12 10MHz QPSK Mid channel	LTE B12 10MHz 16QAM Mid channel
LTE Band 12 5 MHz		
	LTE B12 5MHz QPSK Mid channel	LTE B12 5MHz 16QAM Mid channel
LTE Band 12 3 MHz		
	LTE B12 3MHz QPSK Mid channel	LTE B12 3MHz 16QAM Mid channel
LTE Band 12 1.4 MHz		
	LTE B12 1.4MHz QPSK Mid channel	LTE B12 1.4MHz 16QAM Mid channel

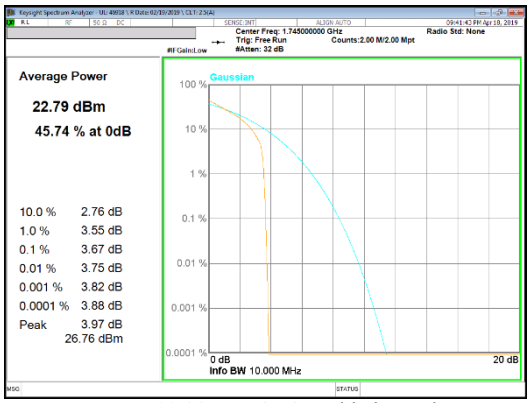
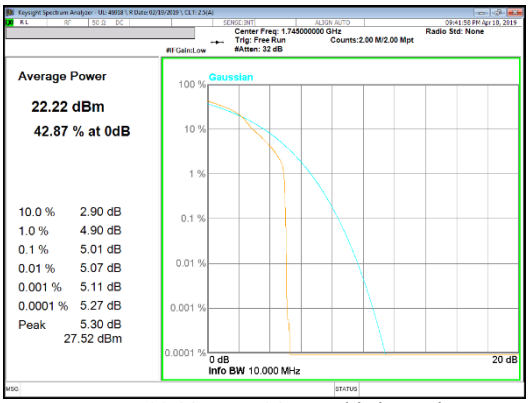
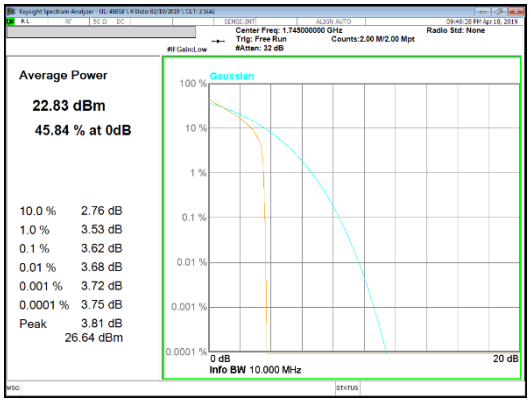
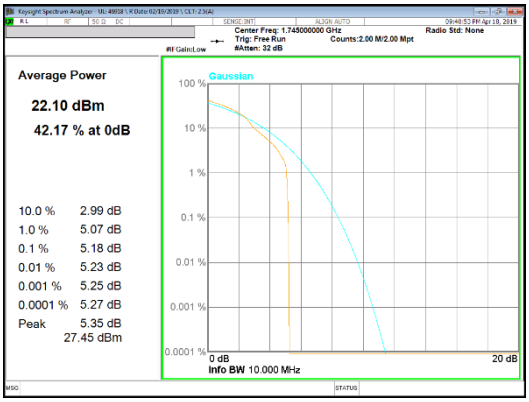
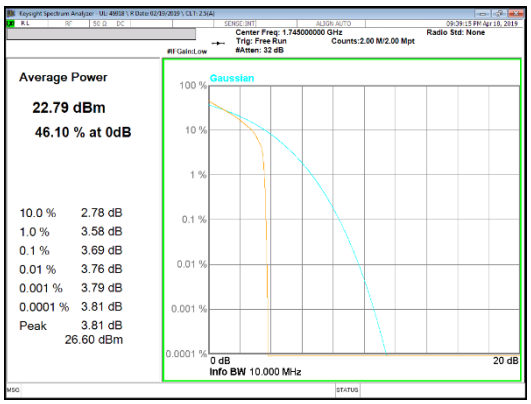
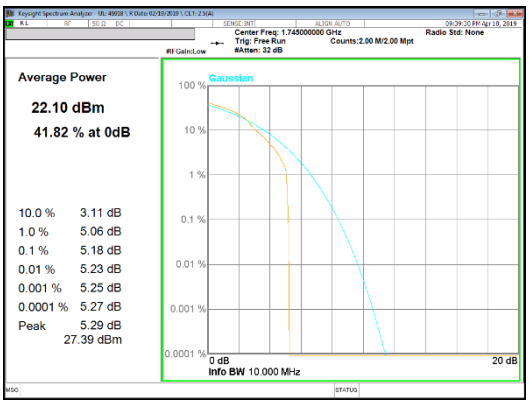
LTE Band 13

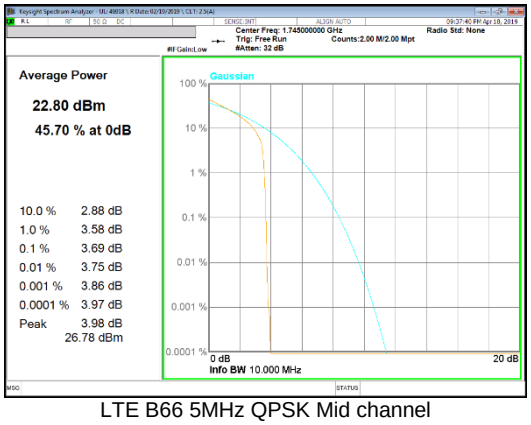
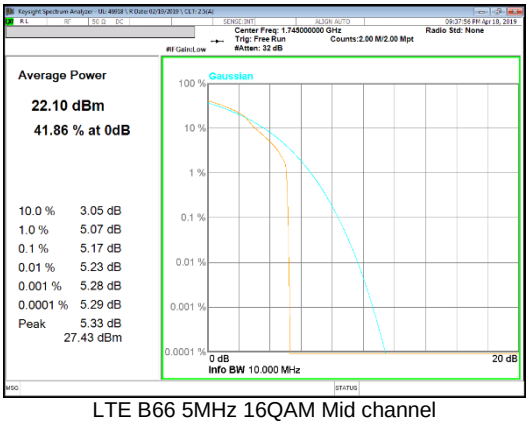
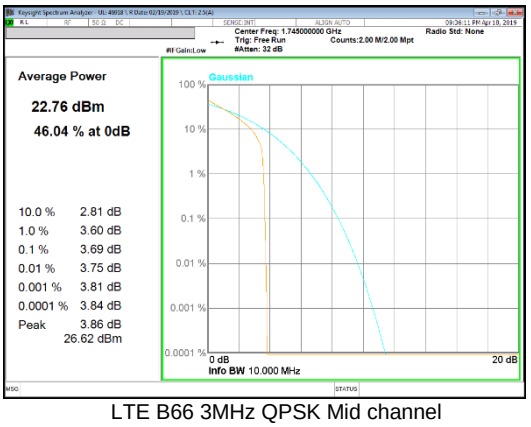
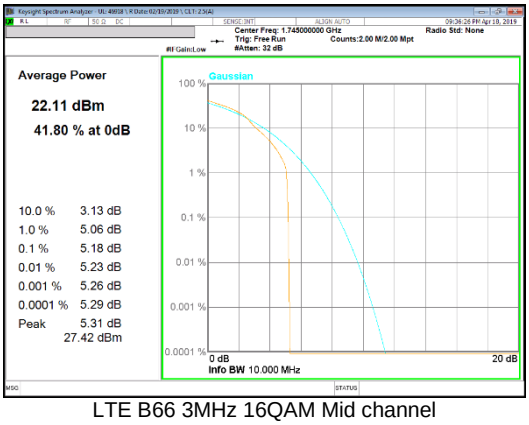
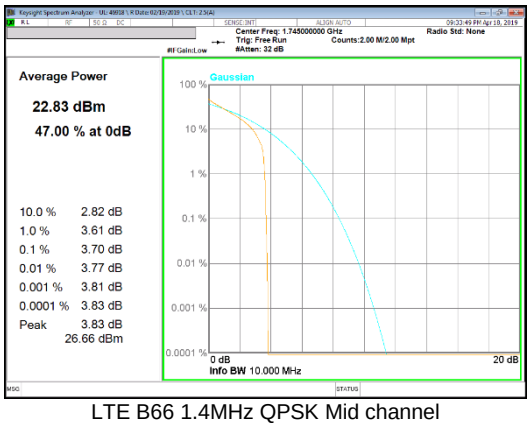
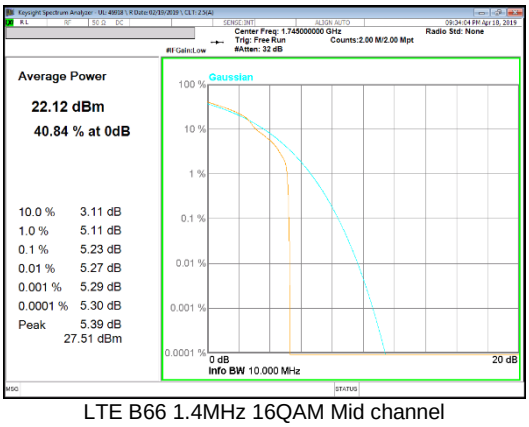
LTE Band 13 10 MHz	 LTE B13 10MHz QPSK Mid channel	 LTE B13 10MHz 16QAM Mid channel
LTE Band 13 5 MHz	 LTE B13 5MHz QPSK Mid channel	 LTE B13 5MHz 16QAM Mid channel

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

LTE Band 66

LTE Band 66 20 MHz	 LTE B66 20MHz QPSK Mid channel	 LTE B66 20MHz 16QAM Mid channel
LTE Band 66 15 MHz	 LTE B66 15MHz QPSK Mid channel	 LTE B66 15MHz 16QAM Mid channel
LTE Band 66 10 MHz	 LTE B66 10MHz QPSK Mid channel	 LTE B66 10MHz 16QAM Mid channel

LTE Band 66 5 MHz	 LTE B66 5MHz QPSK Mid channel	 LTE B66 5MHz 16QAM Mid channel
LTE Band 66 3 MHz	 LTE B66 3MHz QPSK Mid channel	 LTE B66 3MHz 16QAM Mid channel
LTE Band 66 1.4 MHz	 LTE B66 1.4MHz QPSK Mid channel	 LTE B66 1.4MHz 16QAM Mid channel

LTE Band 17

LTE Band 17 (Frequency range: 704-716 MHz) is covered by LTE Band 12 (Frequency range: 699-716 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth.

10. LIMITS AND CONDUCTED RESULTS

10.1. 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)

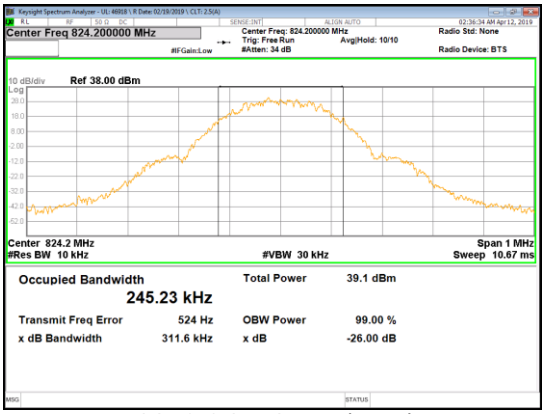
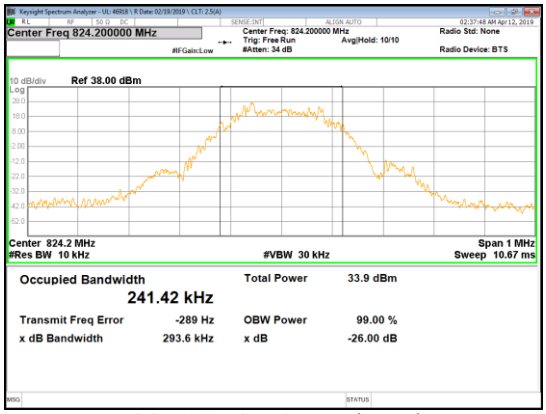
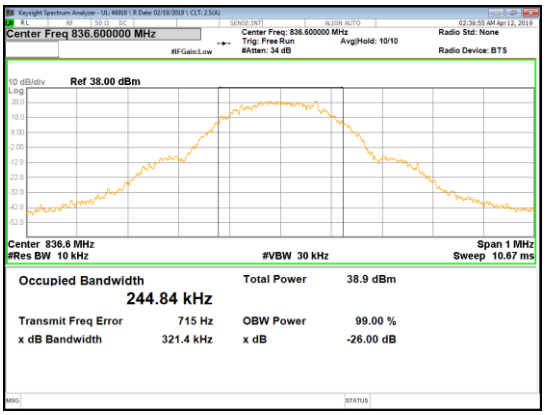
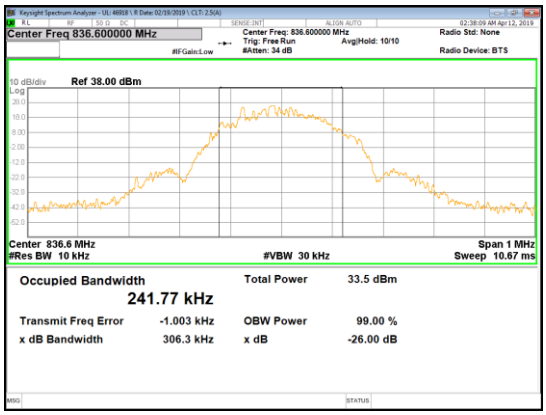
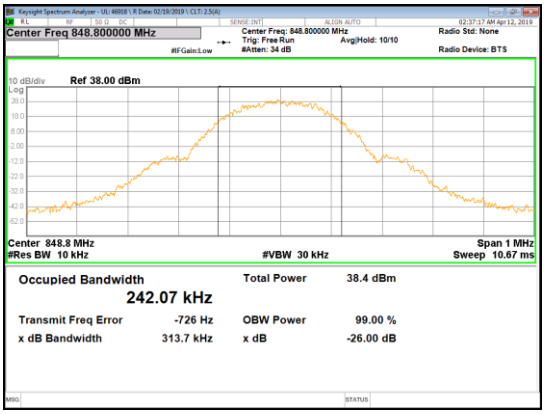
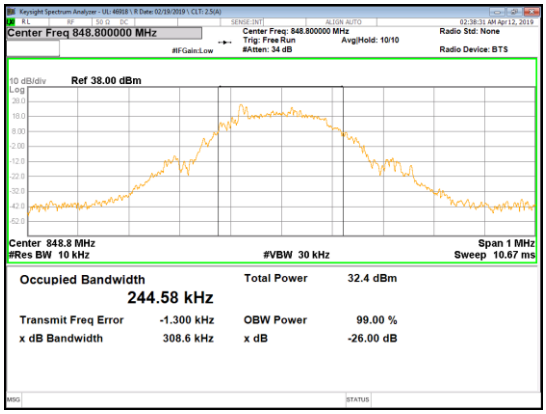
RESULTS

See the following pages.

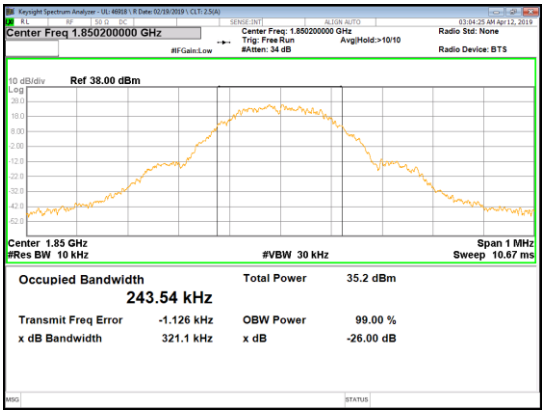
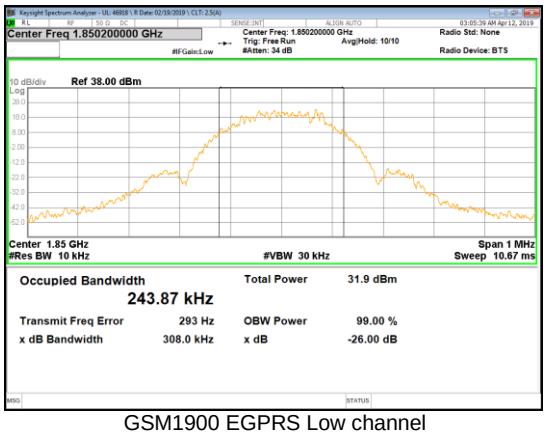
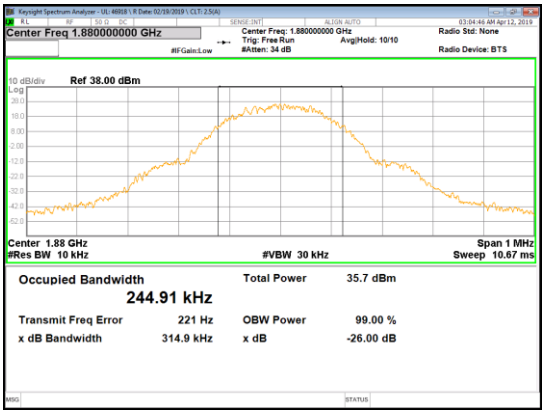
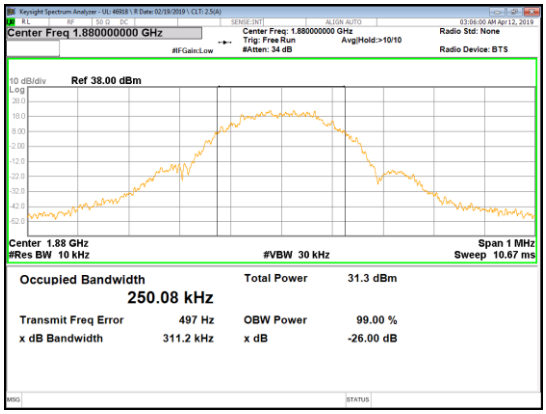
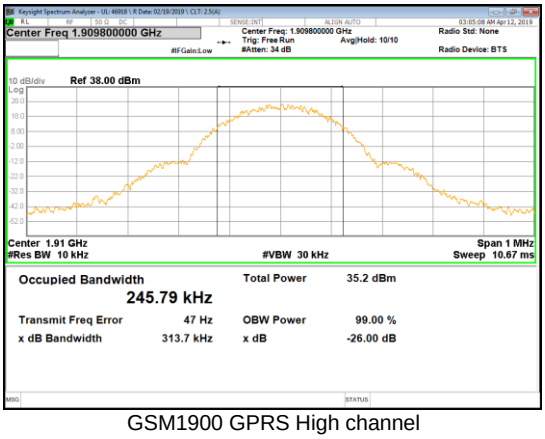
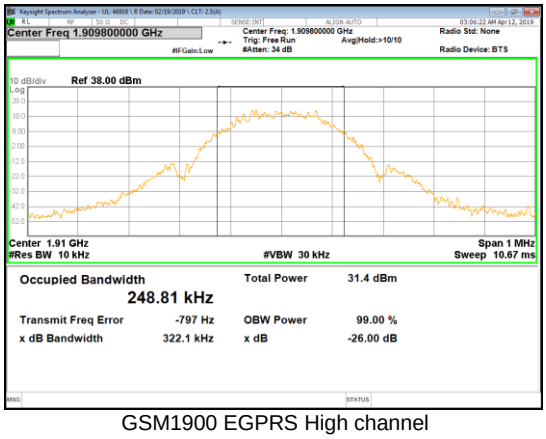
UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_22/24/27
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

10.1.1. OCCUPIED BANDWIDTH RESULTS

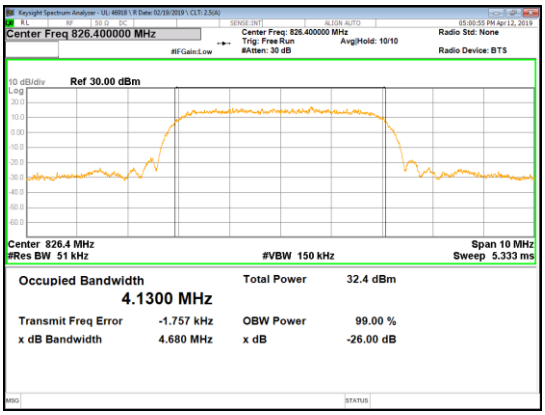
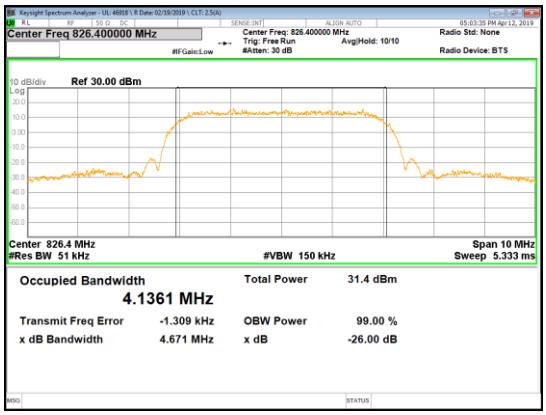
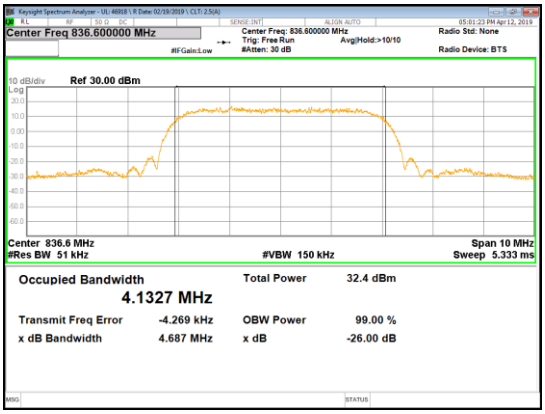
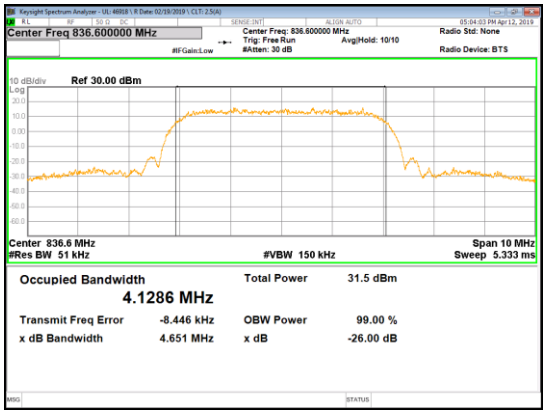
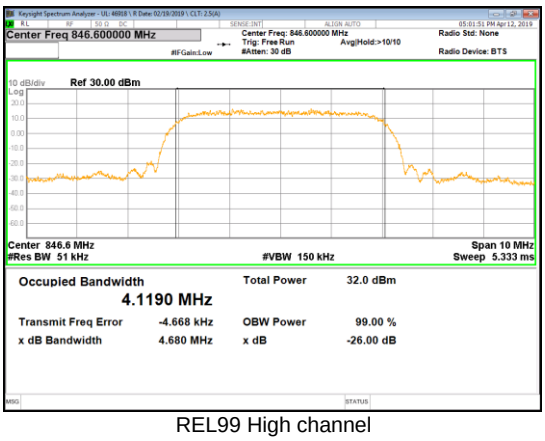
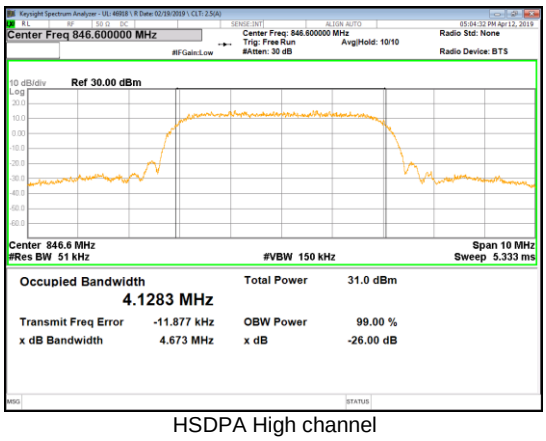
GSM 850

GSM 850	 GSM850 GPRS Low channel	 GSM850 EGPRS Low channel
	 GSM850 GPRS Mid channel	 GSM850 EGPRS Mid channel
	 GSM850 GPRS High channel	 GSM850 EGPRS High channel

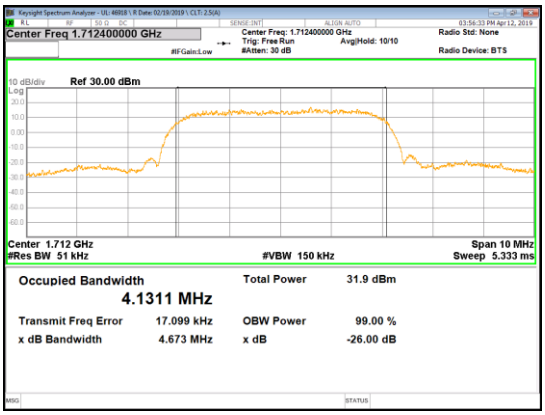
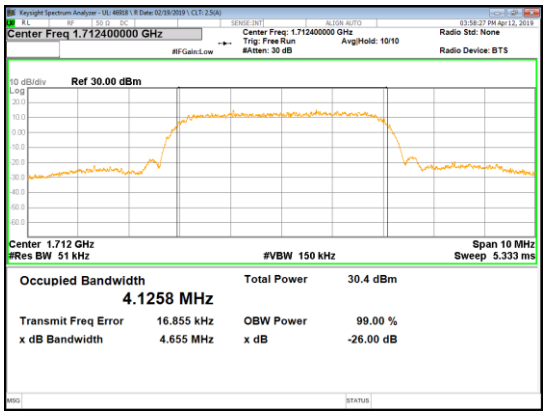
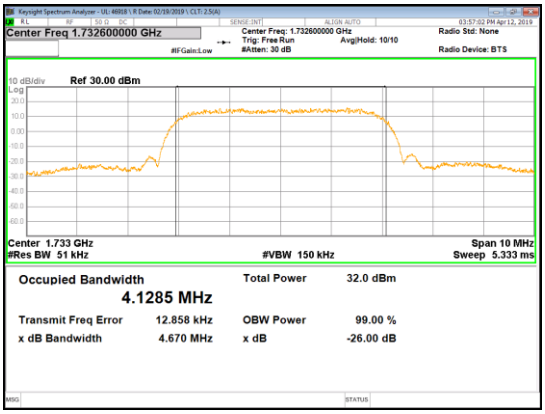
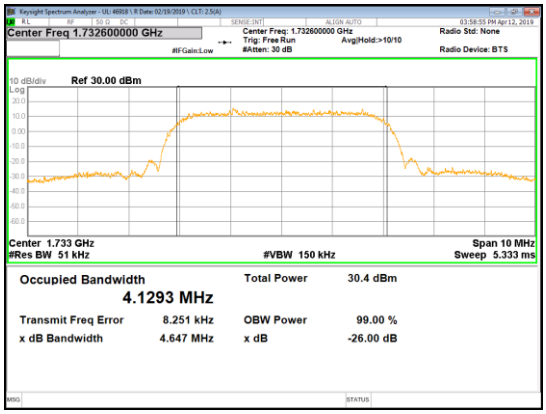
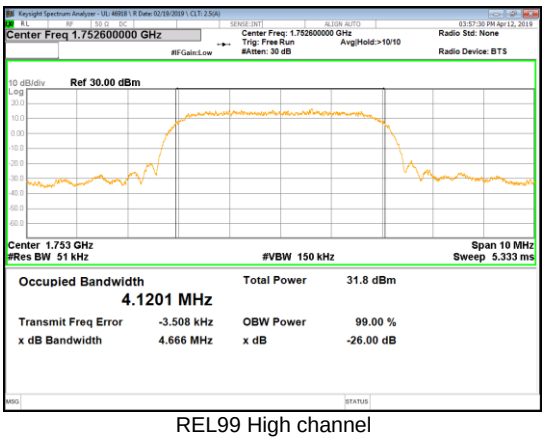
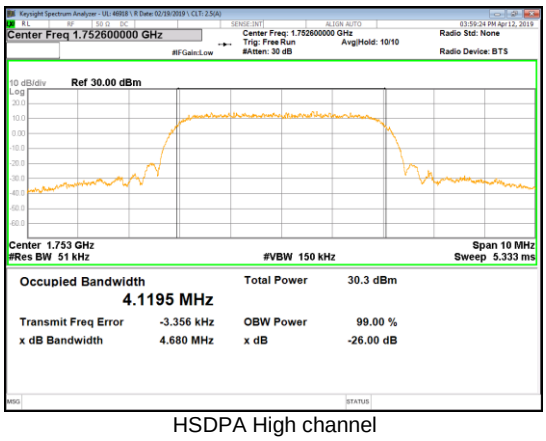
GSM 1900

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

WCDMA Band 5

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

WCDMA Band 4

Band 4	 REL99 Low channel	 HSDPA Low channel
	 REL99 Mid channel	 HSDPA Mid channel
	 REL99 High channel	 HSDPA High channel