

 MOTOROLA SOLUTIONS	 MS ISO/IEC 17025 TESTING SAMM No. 0825																						
MOTOROLA PENANG ADV. COMM. LABORATORY Motorola Solutions Malaysia Sdn Bhd, Innoplex Plot 2A, Medan Bayan Lepas, Mukim 12 S.W.D, 11900 Bayan Lepas, Penang, Malaysia.	FCC / IC TEST REPORT Report Revision : Rev.B																						
<table><tr><td>Date/s Tested</td><td>: 17-Nov-2017 - 20-Mar-2018</td></tr><tr><td>Manufacturer/Location</td><td>: Motorola Solutions – Penang</td></tr><tr><td>Requestor</td><td>: RONI KOZIEL</td></tr><tr><td>Product Type</td><td>: LEX L11 Mission Critical LTE Device</td></tr><tr><td>Model Number</td><td>: LEX L11n</td></tr><tr><td>Frequency Band</td><td>: Refer to section 1.4</td></tr><tr><td>Applicant Name</td><td>: Motorola Solutions, Inc</td></tr><tr><td>Applicant Address</td><td>: 8000 West Sunrise Boulevard, Fort Lauderdale, Florida 33322</td></tr><tr><td>FCC Registrations</td><td>: 461337</td></tr><tr><td>IC Registrations</td><td>: 109AK</td></tr></table> The equipment was tested accordance to the requirement listed below: <table><tr><td>(LTE Band 2) FCC 47 CFR Part 2 / 24 ISED RSS GEN Issue 4, November 2014 ISED RSS 133 Issue 6, January 2018</td><td>PASS</td></tr></table>		Date/s Tested	: 17-Nov-2017 - 20-Mar-2018	Manufacturer/Location	: Motorola Solutions – Penang	Requestor	: RONI KOZIEL	Product Type	: LEX L11 Mission Critical LTE Device	Model Number	: LEX L11n	Frequency Band	: Refer to section 1.4	Applicant Name	: Motorola Solutions, Inc	Applicant Address	: 8000 West Sunrise Boulevard, Fort Lauderdale, Florida 33322	FCC Registrations	: 461337	IC Registrations	: 109AK	(LTE Band 2) FCC 47 CFR Part 2 / 24 ISED RSS GEN Issue 4, November 2014 ISED RSS 133 Issue 6, January 2018	PASS
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Prepared By:  Maheshvaran Rajagopal Technician	Approved By:  Goh Aik Hong Responsible Engineer																						

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REVISION HISTORY

Revision History	Description	Date	Originator
Rev A.	Initial Report	20-March-2018	Maheshvaran Rajagopal
Rev B.	i. Applicant name and address has been added. ii. The battery model number has been revised. iii. AC adapter accessories devices information has been added.	30-May-2018	Maheshvaran Rajagopal

	iv. The Test report number of page format is corrected.		
	v. RSSs version standard have been added to the cover page.		
	vi. Justification statement of accessory devices is included at section 1.5.		

1.0. Summary of Test Results

FCC Clause	ISED Clause	Test Item	Results	Remarks
2.1046 24.232(e)	RSS-Gen 6.12 RSS-133 4.1	Conducted RF Output Power	Pass	Meet the requirement of limit
24.232(d)	RSS-133 6.4	Peak-to-Average Power Ratio	Pass	Meet the requirement of limit
2.1049 24.238(b)	RSS-Gen 6.6 RSS-133 2.3	Occupied Bandwidth (26dBc,20dBc, 99%)	Pass	Meet the requirement of limit
2.1055 24.235	RSS-Gen 6.11 RSS-133 6.3	Frequency Stability	Pass	Meet the requirement of limit
2.1051 24.238(a)(b)	RSS-Gen 6.13 RSS-133 6.5	Band Edge Conducted Spurious Emission	Pass	Meet the requirement of limit
2.1051 24.238(a)(b)	RSS-Gen 6.13 RSS-133 6.5	Conducted Spurious Emissions	Pass	Meet the requirement of limit
2.1053 24.236, 24.238	RSS-133 6.5	Radiated Spurious Emission	Pass	Meet the requirement of limit
24.232 (c)	RSS-133 6.4	Equivalent Isotropically Radiated Power (EIRP)	Pass	Meet the requirement of limit

1.1. Measurement Uncertainty

Measurement	Frequency	Expended Uncertainty (k=1.96) (±)
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	5.01
	200MHz ~ 1000MHz	5.01
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.01
	18GHz ~ 25GHz	5.01

1.2. Equipment List

Description	Model	Serial Number	Calibration Date	Calibration Due Date
Broadband ATE 1				
Wideband Radio Communication Tester	CMW500	154550	14-Feb-17	14-Feb-19
Signal Analyzer	FSV40	101431	13-Jul-17	12-Jul-19
Chamber	SH-641	92002651	6-Mar-17	6-Mar-18
Power Supply	6621A	US37370810	5-Jun-17	5-Jun-18
Radiated Emission				
Drg Horn Freq.	SAS-571	719	18-Jul-17	18-Jul-19
Drg Horn Freq.	SAS-571	720	2-Mar-17	2-Mar-19
Power Supply	6032A	2615A01178	6-Jun-17	6-Jun-18
Microwave Signal Generator	SMP04	100127	19-Jul-17	18-Jul-18
Emi Test Receiver	ESIB26	100336	13-Jul-17	12-Jul-18

Signal Analyzer	FSV40	101103	18-Jul-17	17-Jul-18
5m Semi-Anechoic Chamber	S800-HX	J2308	Not Required	Not Required
Bilog Antenna	CBL6112B	2950	23-Feb-16	23-Feb-18
BILOG ANTENNA	CBL6112B	2964	3-Feb-17	3-Feb-18
BROAD-BAND HORN ANTENNA	BBHA9170	BBHA9170143	20-Mar-17	10-Apr-18
DATA LOGGER	SDL500	A.016776	18-Mar-17	18-Mar-18
LOOP ANTENNA	6502	208416	27-Jul-17	27-Jul-18
SYSTEM CONTROLLER	SC104V	050806-1	Not Required	Not Required
TURNTABLE FLUSH MOUNT 2M	FM2011	NA	Not Required	Not Required
ANTENNA POSITIONING TOWER	TLT2	NA	Not Required	Not Required
18 - 40GHz PREAMPLIFIER	BBV9721	9721-007	Not Required	Not Required
PREAMPLIFIER	PAM-0118P	361	Not Required	Not Required
Wideband Radio Communication Tester	CMW500	153174	9-Jan-2017	9-Jan-2019

1.3. General Information

General Description of EUT

Product	LEX L11 Mission Critical LTE Device		
Brand	Motorola Solutions		
Test Model	LEX L11n		
Power Supply Rating	3.7Vdc (Battery), 5Vdc (Adapter)		
Mode of operation	LTE Band 2		
Modulation Type	QPSK, 16QAM		
Operating Frequency	LTE Band 2	Channel Bandwidth 1.4MHz	1850.7MHz~1909.3MHz
		Channel Bandwidth 3MHz	1851.5MHz~1908.5MHz
		Channel Bandwidth 5MHz	1852.5MHz~1907.5MHz
		Channel Bandwidth 10MHz	1855.0MHz~1905.0MHz
		Channel Bandwidth 15MHz	1857.5MHz~1902.5MHz
		Channel Bandwidth 20MHz	1860.0MHz~1900.0MHz
Max. EIRP Power	LTE Band 2 QPSK	Channel Bandwidth 1.4MHz	25.181dBm (0.329W)
		Channel Bandwidth 3MHz	25.158dBm (0.328W)
		Channel Bandwidth 5MHz	25.316dBm (0.340W)
		Channel Bandwidth 10MHz	25.138dBm (0.326W)
		Channel Bandwidth 15MHz	25.131dBm (0.326W)
		Channel Bandwidth 20MHz	25.250dBm (0.335W)
	LTE Band 2 16QAM	Channel Bandwidth 1.4MHz	24.302dBm (0.269W)
		Channel Bandwidth 3MHz	24.519dBm (0.283W)
		Channel Bandwidth 5MHz	24.462dBm (0.279W)
		Channel Bandwidth 10MHz	24.490dBm (0.281W)
		Channel Bandwidth 15MHz	24.512dBm (0.283W)
		Channel Bandwidth 20MHz	24.414dBm (0.279W)
Antenna Type	LTE Band 2	Monopole with 1.59dBi gain	
SW Version	L11 D01.00.28		

HW Version	P3a
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Note:

1. The EUT contains following accessory devices and data cable.

Item	Brand	Model or P/N	Specification
Rechargeable Lithium ion battery	Motorola Solutions	PMNN4545A	2500mAH 3.7V LI-ION STD
Rechargeable Lithium ion battery	Motorola Solutions	PMNN4546A	5000mAH 3.7V LI-ION HICAP
Charger Vehicular Adapter VPA	Motorola Solutions	PMLN7779A	18W
Power Supply Adaptor, Power supply Wall cube, AC, DC (USB type A-C)	Motorola Solutions	PS000150A31 - US/JPN plug	7.5W, 100V-240V
Power Supply Adaptor (USB type C-C)	Motorola Solutions	PS000278A01 - US/JPN plug	27W
Detachable Power/Data Cable USB-A to USB-C	Motorola Solutions	CB000756A01	-
Detachable Power/Data Cable USB-C to USB-C	Motorola Solutions	CB000754A01	-

Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units.

The following support units or accessories were used to form a representative test configuration during the tests.

NO.	Product	Brand	Model No.	Serial No.	FCC ID
1	Wideband Radio Communication Tester	R&S	CMW500	154550	NA
NO.	Signal Cable Description of The above Support Units				
1	NA				

Note:

1. All power cords of the above support units are non-shielded.
2. Item 1 acted as a communication partner to transfer data.

EUT Operating Conditions

The EUT makes a call to the communication simulator. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency.

General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 24

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI C63.26-2015

NOTE: All test items have been performed and recorded as per the above standards.

- 1.4. Channel number and frequency info

Test Channel Number	Test Channel Frequency (MHz)
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Band	Bandwidth supported	Available Channel Number	Low Channel	Mid Channel	High Channel	Low Channel	Mid Channel	High Channel
LTE Band 2	1.4 MHz	18607 ~ 19193	18607	18900	19193	1850.7	1880.0	1909.3
	3 MHz	18615 ~ 19185	18615	18900	19185	1851.5	1880.0	1908.5
	5 MHz	18625 ~ 19175	18625	18900	19175	1852.5	1880.0	1907.5
	10 MHz	18650 ~ 19150	18650	18900	19150	1855.0	1880.0	1905.0
	15 MHz	18675 ~ 19125	18675	18900	19125	1857.5	1880.0	1902.5
	20 MHz	18700 ~ 19100	18700	18900	19100	1860.0	1880.0	1900.0

1.5. Test Mode Applicability and Tested Channel Detail

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The Radiated Emission worst case was found when positioned on Y-Plane for LTE Band 2.

Pre-scan also have been conducted with the accessory devices listed in section table 1.3, only the worst case radiated emission results of the combination test configuration is reported in this report.

The following channel(s) was (were) selected for the final test as listed below:

LTE Band 2

Test Item	Available Channel	Tested Channel	Channel Bandwidth	Uplink Modulation	Mode
Conducted RF Output Power/ Equivalent Isotropically Radiated Power (EIRP)	18607 ~ 19193	18607, 18900, 19193	1.4 MHz	QPSK, 16QAM	As per table 1.6.2 & 1.6.4
	18615 ~ 19185	18615, 18900, 19185	3 MHz		
	18625 ~ 19175	18625, 18900, 19175	5 MHz		
	18650 ~ 19150	18650, 18900, 19150	10 MHz		
	18675 ~ 19125	18675, 18900, 19125	15 MHz		
	18700 ~ 19100	18700, 18900, 19100	20 MHz		
Peak to Average Power Ratio	18607 ~ 19193	18607, 18900, 19193	1.4 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
	18615 ~ 19185	18615, 18900, 19185	3 MHz		15 RB / 0 RB Offset
	18625 ~ 19175	18625, 18900, 19175	5 MHz		25 RB / 0 RB Offset
	18650 ~ 19150	18650, 18900, 19150	10 MHz		50 RB / 0 RB Offset
	18675 ~ 19125	18675, 18900, 19125	15 MHz		75 RB / 0 RB Offset
	18700 ~ 19100	18700, 18900, 19100	20 MHz		100 RB / 0 RB Offset
Occupied Bandwidth	18607 ~ 19193	18607, 18900, 19193	1.4 MHz	QPSK, 16QAM	6 RB / 0 RB Offset
	18615 ~ 19185	18615, 18900, 19185	3 MHz		15 RB / 0 RB Offset
	18625 ~ 19175	18625, 18900, 19175	5 MHz		25 RB / 0 RB Offset
	18650 ~ 19150	18650, 18900, 19150	10 MHz		50 RB / 0 RB Offset
	18675 ~ 19125	18675, 18900, 19125	15 MHz		75 RB / 0 RB Offset
	18700 ~ 19100	18700, 18900, 19100	20 MHz		100 RB / 0 RB Offset
Frequency Stability	18607 ~ 19193	18900	1.4 MHz	QPSK	6 RB / 0 RB Offset
	18615 ~ 19185	18900	3 MHz		15 RB / 0 RB Offset
	18625 ~ 19175	18900	5 MHz		25 RB / 0 RB Offset
	18650 ~ 19150	18900	10 MHz		50 RB / 0 RB Offset
	18675 ~ 19125	18900	15 MHz		75 RB / 0 RB Offset
	18700 ~ 19100	18900	20 MHz		100 RB / 0 RB Offset
Band Edge Conducted Spurious Emission	18607 ~ 19193	18607, 19193	1.4 MHz	QPSK, 16QAM	1 RB / 0 RB Offset 1 RB / 5 RB Offset 6 RB / 0 RB Offset
	18615 ~ 19185	18615, 19185	3 MHz		1 RB / 0 RB Offset 1 RB / 14 RB Offset

					15 RB / 0 RB Offset
	18625 ~ 19175	18625, 19175	5 MHz		1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
	18650 ~ 19150	18650, 19150	10 MHz		1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
	18675 ~ 19125	18675, 19125	15 MHz		1 RB / 0 RB Offset 1 RB / 74 RB Offset 75 RB / 0 RB Offset
	18700 ~ 19100	18700, 19100	20 MHz		1 RB / 0 RB Offset 1 RB / 99 RB Offset 100 RB / 0 RB Offset
Conducted Spurious Emission	18607 ~ 19193	18607, 18900, 19193	1.4 MHz	QPSK	1 RB / 3 RB Offset
	18615 ~ 19185	18615, 18900, 19185	3 MHz		1 RB / 7 RB Offset
	18625 ~ 19175	18625, 18900, 19175	5 MHz		1 RB / 24 RB Offset
	18650 ~ 19150	18650, 18900, 19150	10 MHz		1 RB / 49 RB Offset
	18675 ~ 19125	18675, 18900, 19125	15 MHz		1 RB / 74 RB Offset
	18700 ~ 19100	18700, 18900, 19100	20 MHz		1 RB / 49 RB Offset
Radiated Spurious Emission	18607 ~ 19193	18607, 18900, 19193	1.4 MHz	QPSK	1 RB / 3 RB Offset
	18615 ~ 19185	18615, 18900, 19185	3 MHz		1 RB / 7 RB Offset
	18625 ~ 19175	18625, 18900, 19175	5 MHz		1 RB / 24 RB Offset
	18650 ~ 19150	18650, 18900, 19150	10 MHz		1 RB / 49 RB Offset
	18675 ~ 19125	18675, 18900, 19125	15 MHz		1 RB / 74 RB Offset
	18700 ~ 19100	18700, 18900, 19100	20 MHz		1 RB / 49 RB Offset

NOTE:

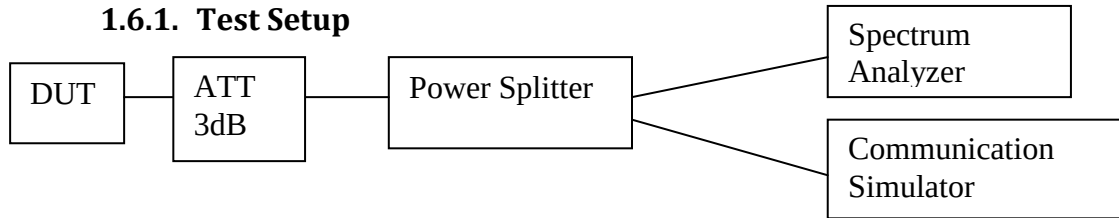
1. The Conducted RF Output Power for QPSK and 16QAM, measured value of QPSK mode is higher than 16QAM mode. Therefore, only Conducted Spurious Emission and Radiated Emission had been tested under QPSK modes.
2. Band Edge was performed with 1 and full Resource Block at the lowest and highest operating frequency band.
3. The Equivalent Isotropically Radiated Power (EIRP) was calculated from Conducted RF Output Power results in QPSK and 16QAM modulation.
4. Peak to Average and Occupied Bandwidth were performed with full Resource Block which is the worst case.
5. Frequency stability was performed with full Resource Block in QPSK modulation.

Test Condition:

Test Item	Environmental Conditions	Input Power	Tested By
Conducted RF Output Power/ Equivalent Isotropically Radiated Power (EIRP)	25°C, 50% RH	3.7V DC	Maheshvaran
Peak-to-Average Power Ratio	25°C, 50% RH	3.7V DC	Maheshvaran
Occupied Bandwidth	25°C, 50% RH	3.7V DC	Maheshvaran
Frequency Stability	25°C, 50% RH	3.7V DC	Maheshvaran
Band Edge Conducted Spurious Emission	25°C, 50% RH	3.7V DC	Maheshvaran
Conducted Spurious Emission	25°C, 50% RH	3.7V DC	Maheshvaran
Radiated Spurious Emission	25°C, 63.7% RH	3.7V DC	Nazrin&Qawiman

1.6. Conducted RF Output Power

1.6.1. Test Setup



1. The DUT transmitter output port was connected to communication simulator with above setup.
2. Path loss for the measurement included.
3. Set DUT to transmit maximum power through communication simulator
4. All the measurement was done at low, mid, high channel for each band and different modulation.
5. Record the average power into the test report.

1.6.2. Limits

FCC: Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

ISED: Mobile stations and hand-held portables are limited to 2 watts maximum e.i.r.p. The equipment shall employ means to limit the power to the minimum necessary for successful communication.

1.6.3. Conducted RF Output Power – LTE Band 2(1850-1910MHz)

Conducted Output Power (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			18607	18900	19193	18607	18900	19193
			1850.7 MHz	1880.0 MHz	1909.3 MHz	1850.7 MHz	1880.0 MHz	1909.3 MHz
Band 2 / 1.4 MHz	1	0	23.255	23.537	22.575	22.255	22.481	21.73
	1	3	23.297	23.591	22.388	22.316	22.537	21.526
	1	5	23.232	23.514	22.124	22.243	22.477	21.266
	3	0	23.234	23.496	22.409	22.179	22.671	21.691
	3	2	23.256	23.542	22.252	22.214	22.712	21.552
	3	3	23.198	23.511	22.131	22.179	22.65	21.462
	6	0	22.223	22.488	21.458	21.23	21.547	20.627

Conducted Output Power (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			18615	18900	19185	18615	18900	19185
			1851.5 MHz	1880.0 MHz	1908.5 MHz	1851.5 MHz	1880.0 MHz	1908.5 MHz
Band 2 / 3MHz	1	0	23.35	23.447	23.344	22.281	22.804	22.491
	1	7	23.418	23.568	22.825	22.323	22.929	21.956
	1	14	23.316	23.451	22.052	22.213	22.807	21.201
	8	0	22.305	22.554	22.241	21.295	21.711	21.341
	8	4	22.309	22.587	21.876	21.316	21.719	21.016

	8	7	22.261	22.544	21.607	21.284	21.717	20.726
	15	0	22.276	22.546	21.966	21.288	21.613	21.095

Conducted Output Power (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			18625	18900	19175	18625	18900	19175
			1852.5MHz	1880.0MHz	1907.5MHz	1852.5MHz	1880.0MHz	1907.5MHz
Band 2 / 5MHz	1	0	23.326	23.616	23.531	22.401	22.829	22.443
	1	13	23.329	23.642	23.165	22.384	22.864	22.212
	1	24	23.245	23.726	22.041	22.357	22.872	21.145
	12	0	22.325	22.584	22.596	21.232	21.554	21.597
	12	6	22.305	22.582	22.496	21.229	21.576	21.604
	12	13	22.304	22.549	21.916	21.193	21.548	21.034
	25	0	22.292	22.598	22.475	21.293	21.573	21.497

Conducted Output Power (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			18650	18900	19150	18650	18900	19150
			1855.0MHz	1880.0MHz	1905.0MHz	1855.0MHz	1880.0MHz	1905.0MHz
Band 2 / 10MHz	1	0	23.376	23.542	23.347	22.305	22.9	22.439
	1	25	23.308	23.464	23.491	22.213	22.83	22.503
	1	49	23.266	23.548	22.171	22.177	22.873	21.373
	25	0	22.309	22.587	22.592	21.35	21.631	21.686
	25	13	22.328	22.607	22.555	21.368	21.636	21.608
	25	25	22.178	22.656	22.452	21.234	21.694	21.657
	50	0	22.314	22.57	22.41	21.339	21.609	21.551

Conducted Output Power (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			18675	18900	19125	18675	18900	19125
			1857.5MHz	1880.0MHz	1902.5MHz	1857.5MHz	1880.0MHz	1902.5MHz
Band 2 / 15MHz	1	0	23.452	23.51	22.693	22.367	22.887	21.662
	1	38	23.233	23.541	23.551	22.182	22.833	22.579
	1	74	22.97	22.74	22.311	21.931	22.922	21.428
	36	0	22.333	22.697	22.13	21.35	21.705	21.288
	36	19	22.271	22.61	22.528	21.245	21.617	21.623
	36	39	22.235	22.636	22.547	21.277	21.664	21.666
	75	0	22.236	22.579	22.27	21.277	21.597	21.605

Conducted Output Power (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			18700	18900	19100	18700	18900	19100
			1860.0MHz	1880.0MHz	1900.0MHz	1860.0MHz	1880.0MHz	1900.0MHz
Band 2 / 20MHz	1	0	23.322	23.32	22.915	22.738	22.306	22.32
	1	49	23.135	23.660	23.162	22.567	22.467	22.824
	1	99	22.982	23.266	22.421	22.46	22.279	21.926
	50	0	22.375	22.726	21.821	21.379	21.7	20.85
	50	25	22.306	22.628	22.426	21.359	21.587	21.45
	50	50	21.97	22.619	22.467	21.096	21.63	21.476
	100	0	22.348	22.578	22.523	21.378	21.62	21.58

1.6.4. Equivalent Isotropically Radiated Power (EIRP) – LTE Band 2(1850-1910MHz)

EIRP (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			18607	18900	19193	18607	18900	19193
			1850.7 MHz	1880.0 MHz	1909.3 MHz	1850.7 MHz	1880.0 MHz	1909.3 MHz
Band 2 / 1.4 MHz	1	0	24.845	25.127	24.165	23.845	24.071	23.32
	1	3	24.887	25.181	23.978	23.906	24.127	23.116
	1	5	24.822	25.104	23.714	23.833	24.067	22.856
	3	0	24.824	25.086	23.999	23.769	24.261	23.281
	3	2	24.846	25.132	23.842	23.804	24.302	23.142
	3	3	24.788	25.101	23.721	23.769	24.24	23.052
	6	0	23.813	24.078	23.048	22.82	23.137	22.217

EIRP (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			18607	18900	19193	18607	18900	19193
			1850.7 MHz	1880.0 MHz	1909.3 MHz	1850.7 MHz	1880.0 MHz	1909.3 MHz
Band 2 / 3MHz	1	0	24.94	25.037	24.934	23.871	24.394	24.081
	1	7	25.008	25.158	24.415	23.913	24.519	23.546
	1	14	24.906	25.041	23.642	23.803	24.397	22.791

	8	0	23.895	24.144	23.831	22.885	23.301	22.931
	8	4	23.899	24.177	23.466	22.906	23.309	22.606
	8	7	23.851	24.134	23.197	22.874	23.307	22.316
	15	0	23.866	24.136	23.556	22.878	23.203	22.685

EIRP (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			18607	18900	19193	18607	18900	19193
			1850.7 MHz	1880.0 MHz	1909.3 MHz	1850.7 MHz	1880.0 MHz	1909.3 MHz
Band 2 / 5MHz	1	0	24.916	25.206	25.121	23.991	24.419	24.033
	1	13	24.919	25.232	24.755	23.974	24.454	23.802
	1	24	24.835	25.316	23.631	23.947	24.462	22.735
	12	0	23.915	24.174	24.186	22.822	23.144	23.187
	12	6	23.895	24.172	24.086	22.819	23.166	23.194
	12	13	23.894	24.139	23.506	22.783	23.138	22.624
	25	0	23.882	24.188	24.065	22.883	23.163	23.087

EIRP (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			18607	18900	19193	18607	18900	19193
			1850.7 MHz	1880.0 MHz	1909.3 MHz	1850.7 MHz	1880.0 MHz	1909.3 MHz
Band 2 / 10MHz	1	0	24.966	25.132	24.937	23.895	24.49	24.029
	1	25	24.898	25.054	25.081	23.803	24.42	24.093
	1	49	24.856	25.138	23.761	23.767	24.463	22.963
	25	0	23.899	24.177	24.182	22.94	23.221	23.276
	25	13	23.918	24.197	24.145	22.958	23.226	23.198
	25	25	23.768	24.246	24.042	22.824	23.284	23.247
	50	0	23.904	24.16	24.000	22.929	23.199	23.141

EIRP (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			18607	18900	19193	18607	18900	19193
			1850.7 MHz	1880.0 MHz	1909.3 MHz	1850.7 MHz	1880.0 MHz	1909.3 MHz
Band 2 / 15MHz	1	0	25.042	25.1	24.283	23.957	24.477	23.252
	1	38	24.823	25.131	25.141	23.772	24.423	24.169
	1	74	24.56	24.33	23.901	23.521	24.512	23.018
	36	0	23.923	24.287	23.72	22.94	23.295	22.878
	36	19	23.861	24.2	24.118	22.835	23.207	23.213
	36	39	23.825	24.226	24.137	22.867	23.254	23.256
	75	0	23.826	24.169	23.86	22.867	23.187	23.195

EIRP (dBm)								
LTE Band/BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH	Mid CH	High CH	Low CH	Mid CH	High CH
			18607	18900	19193	18607	18900	19193
			1850.7 MHz	1880.0 MHz	1909.3 MHz	1850.7 MHz	1880.0 MHz	1909.3 MHz
Band 2 / 20MHz	1	0	24.912	24.91	24.505	24.328	23.896	23.91
	1	49	24.725	25.25	24.752	24.157	24.057	24.414
	1	99	24.572	24.856	24.011	24.05	23.869	23.516
	50	0	23.965	24.316	23.411	22.969	23.29	22.44
	50	25	23.896	24.218	24.016	22.949	23.177	23.04
	50	50	23.56	24.209	24.057	22.686	23.22	23.066
	100	0	23.938	24.168	24.113	22.968	23.21	23.17

The maximum ERP/EIRP from the measured RF output power is given in Equation as follows:

$$\mathbf{EIRP} = \mathbf{P_{Meas}} + \mathbf{G_T}$$

$$\mathbf{ERP} = \mathbf{EIRP} - 2.15$$

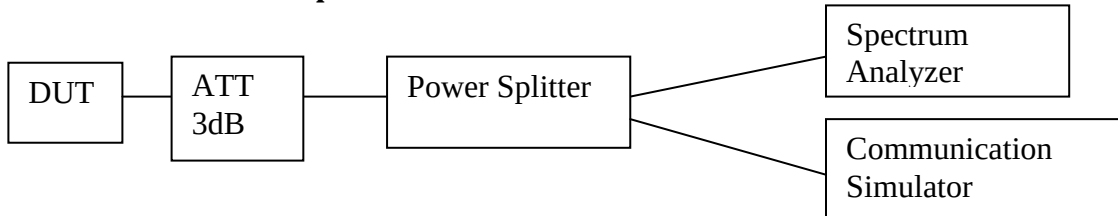
Where, ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively
 (Expressed in the same units as P_{Meas}, e.g., dBm)

P_{Meas} measured transmitter output power, in dBm

G_T gain of the transmitting antenna, in dBi (EIRP)

1.7. Peak-to-Average Power Ratio

1.7.1. Test Setup



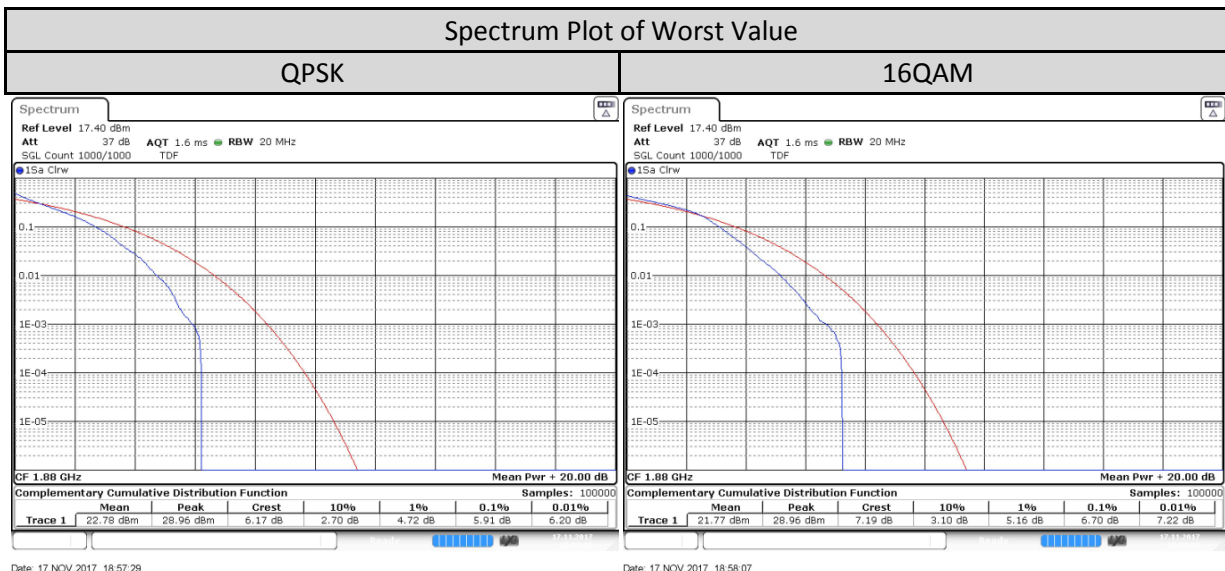
1. The DUT transmitter output port was connected to communication simulator with above setup.
2. Path loss for the measurement included.
3. Set DUT to transmit maximum power through communication simulator
4. Set the CCDF (Complementary Cumulative Distribution Function) option in the spectrum analyzer.
5. Spectrum Analyzer setting, RBW = 20MHz.
6. Recorded the maximum PAR level associated with a probability of 0.1% as Peak to Average Ratio.
7. All the measurement was done at low, mid, high channel for each band and different modulation.

1.7.2. Test Limit

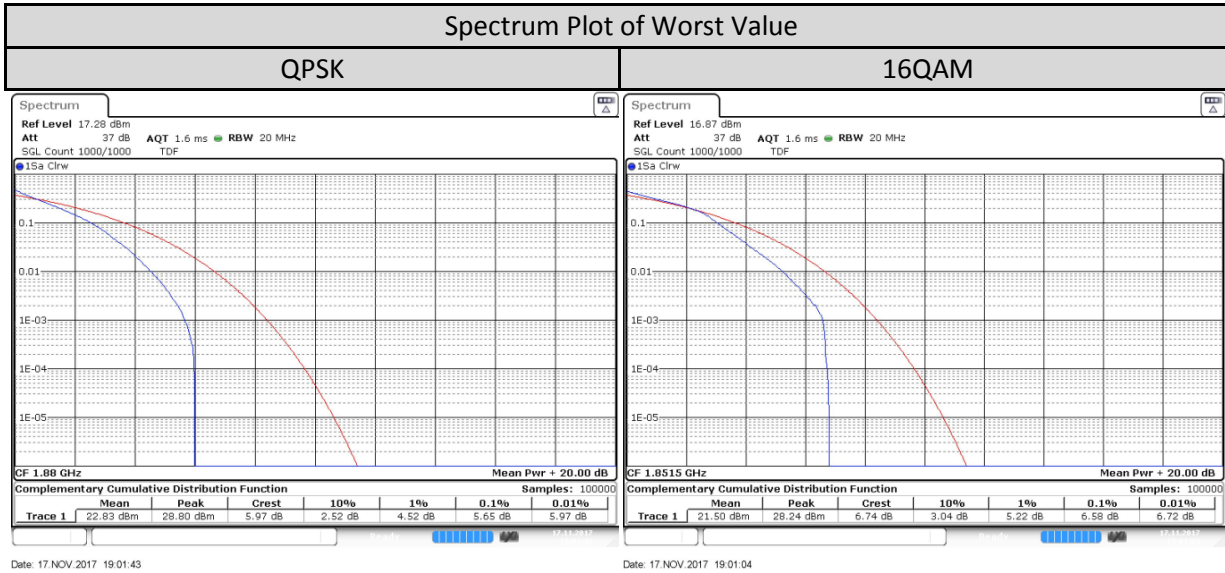
In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

1.7.3. Peak-to-Average Power Ratio - LTE Band 2(1850-1910MHz)

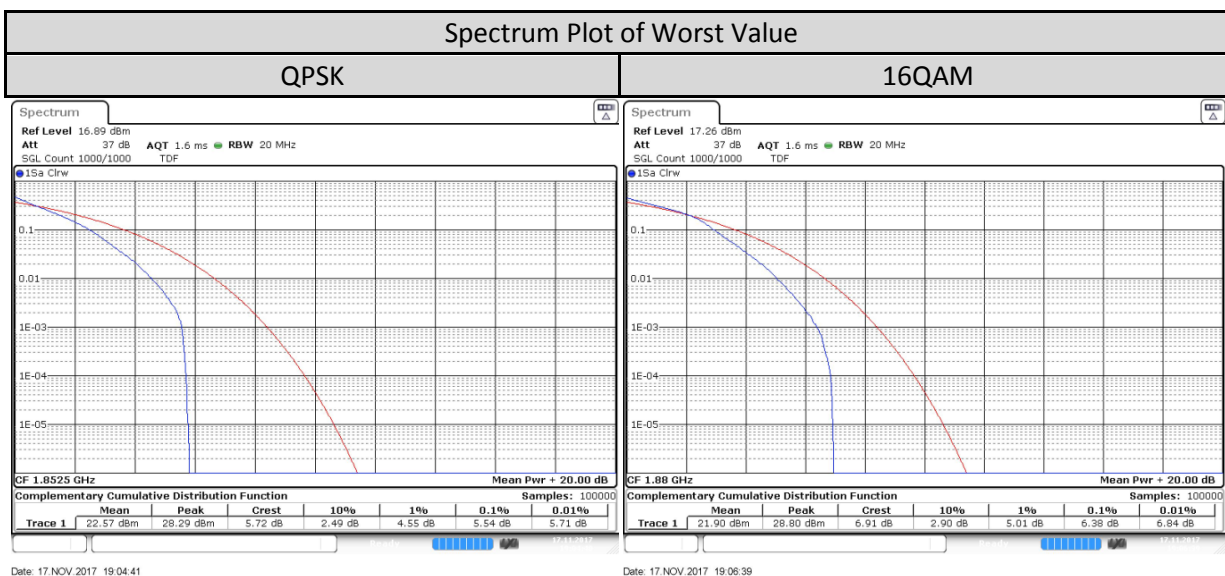
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	Peak To Average (dB)	
			QPSK Modulation	16QAM Modulation
Band 2/1.4MHz/6/0	Low CH 18607	1850.7 MHz	5.594	6.522
	Mid CH 18900	1880 MHz	5.913	6.696
	High CH 19193	1909.3 MHz	4.551	5.478



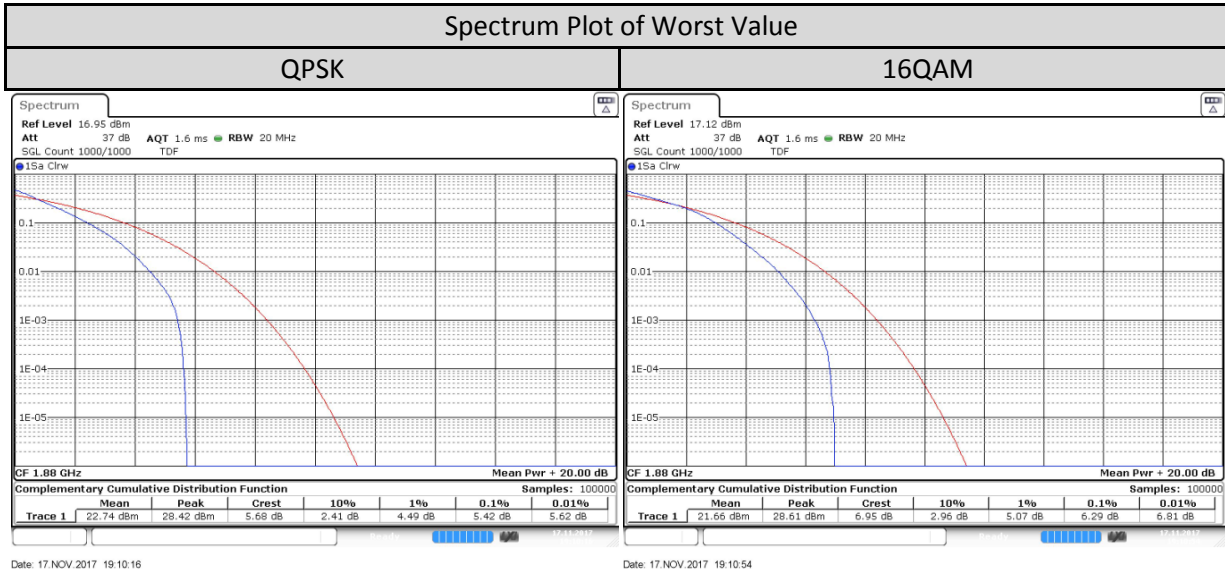
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	Peak To Average (dB)	
			QPSK Modulation	16QAM Modulation
Band 2/3MHz/15/0	Low CH 18615	1851.5 MHz	5.565	6.58
	Mid CH 18900	1880 MHz	5.652	6.464
	High CH 19185	1908.5 MHz	4.464	5.42



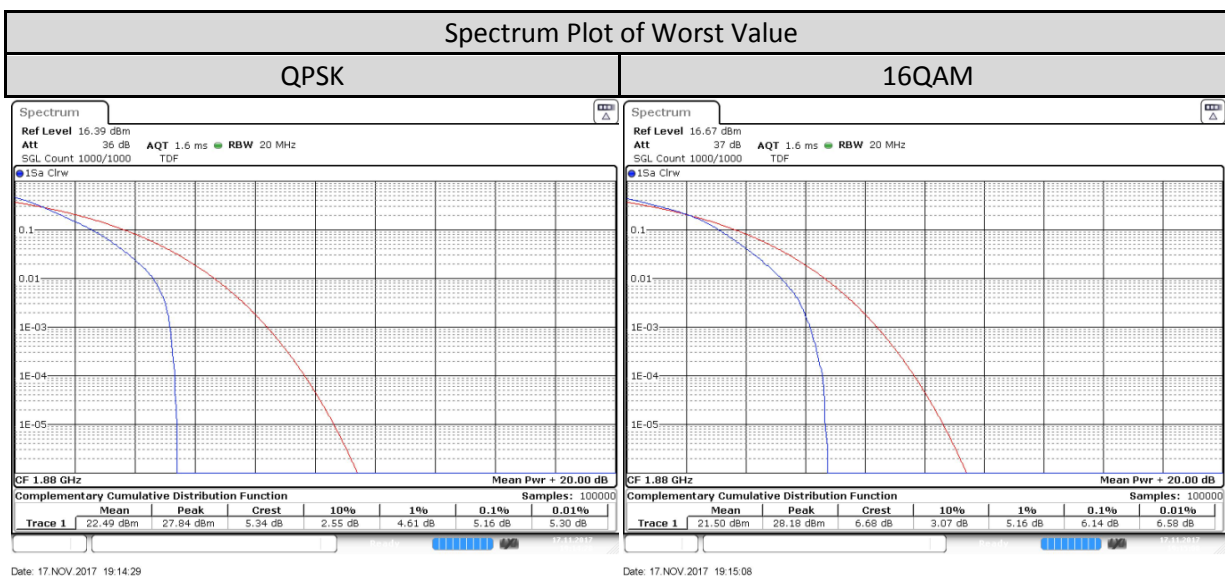
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	Peak To Average (dB)	
			QPSK Modulation	16QAM Modulation
Band 2/5MHz/25/0	Low CH 18625	1852.5 MHz	5.536	6.348
	Mid CH 18900	1880 MHz	5.536	6.377
	High CH 19175	1907.5 MHz	4.435	5.478



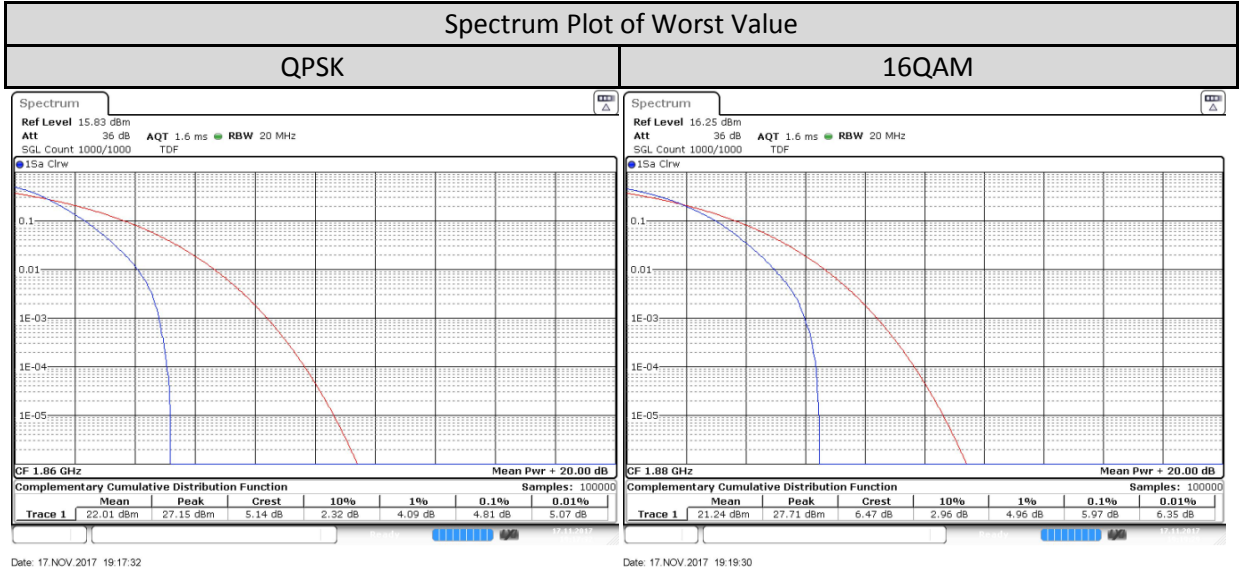
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	Peak To Average (dB)	
			QPSK Modulation	16QAM Modulation
Band 2/10MHz/50/0	Low CH 18650	1855 MHz	5.188	6.203
	Mid CH 18900	1880 MHz	5.42	6.29
	High CH 19150	1905 MHz	4.609	5.681



LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	Peak To Average (dB)	
			QPSK Modulation	16QAM Modulation
Band 2/15MHz/75/0	Low CH 18675	1857.5 MHz	5.043	5.971
	Mid CH 18900	1880 MHz	5.159	6.145
	High CH 19125	1902.5 MHz	4.696	5.652

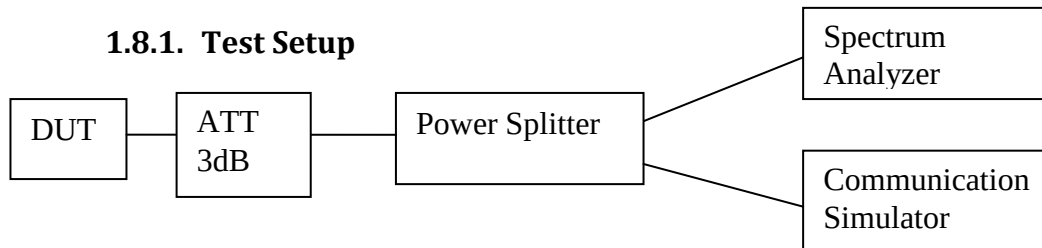


LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	Peak To Average (dB)	
			QPSK Modulation	16QAM Modulation
Band 2/ 20MHz/100/0	Low CH 18700	1860 MHz	4.812	5.826
	Mid CH 18900	1880 MHz	4.638	5.971
	High CH 19100	1900 MHz	4.754	5.681



1.8. Occupied Bandwidth

1.8.1. Test Setup



- 1) The DUT transmitter output port was connected to communication simulator with above setup.
- 2) Path loss for the measurement included.
- 3) For LTE measurement, set DUT to transmit maximum power & full RB size through communication simulator.
- 4) For LTE measurement, set DUT to transmit maximum power through communication simulator.
- 5) Spectrum Analyzer setting, RBW is 1% of OBW and VBW is 3 times of RBW.
- 6) Measure & record -26dBc and 99% occupied bandwidth (BW).
- 7) All the measurement was done at low, mid, high channel for each band and different modulation.

1.8.2. Test Limit

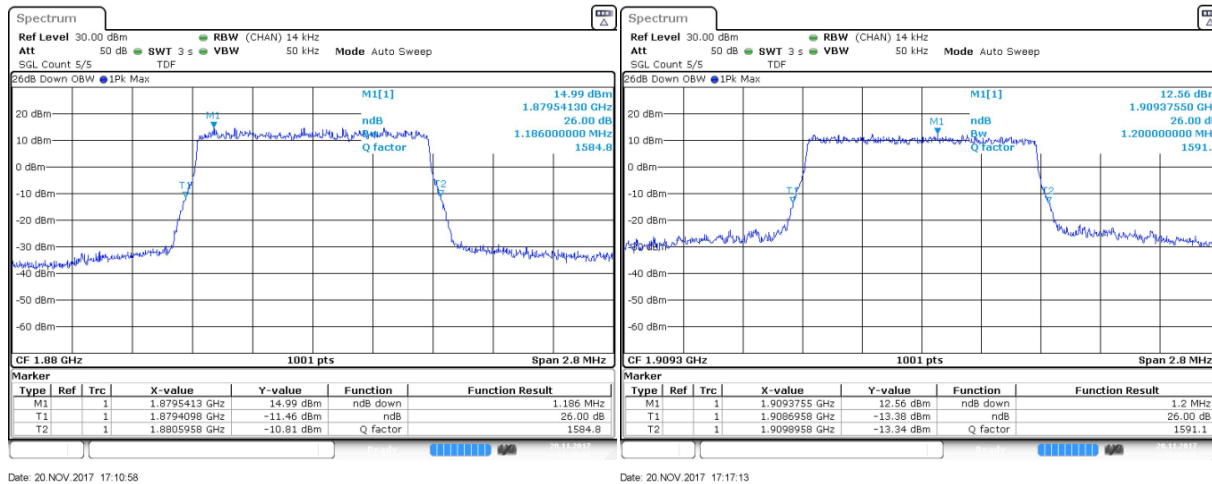
FCC: The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

ISED: Emission bandwidth is, for the purpose of this document, defined as the width of the signal between two points, one below the carrier frequency and one above the carrier frequency, outside of which all emissions are attenuated at least 20 dB below the transmitter power (i.e. -20 dBc), when measured with a resolution bandwidth of approximately 1% of the occupied bandwidth. In lieu of the -20 dBc bandwidth, the occupied bandwidth may be used.

1.8.3. Occupied Bandwidth – LTE Band 2 (1850 -1910 MHz)

LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-26 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 2/1.4MHz/6/0	Low CH 18607	1850.7 MHz	1.18	1.178
	Mid CH 18900	1880 MHz	1.186	1.186
	High CH 19193	1909.3 MHz	1.183	1.2

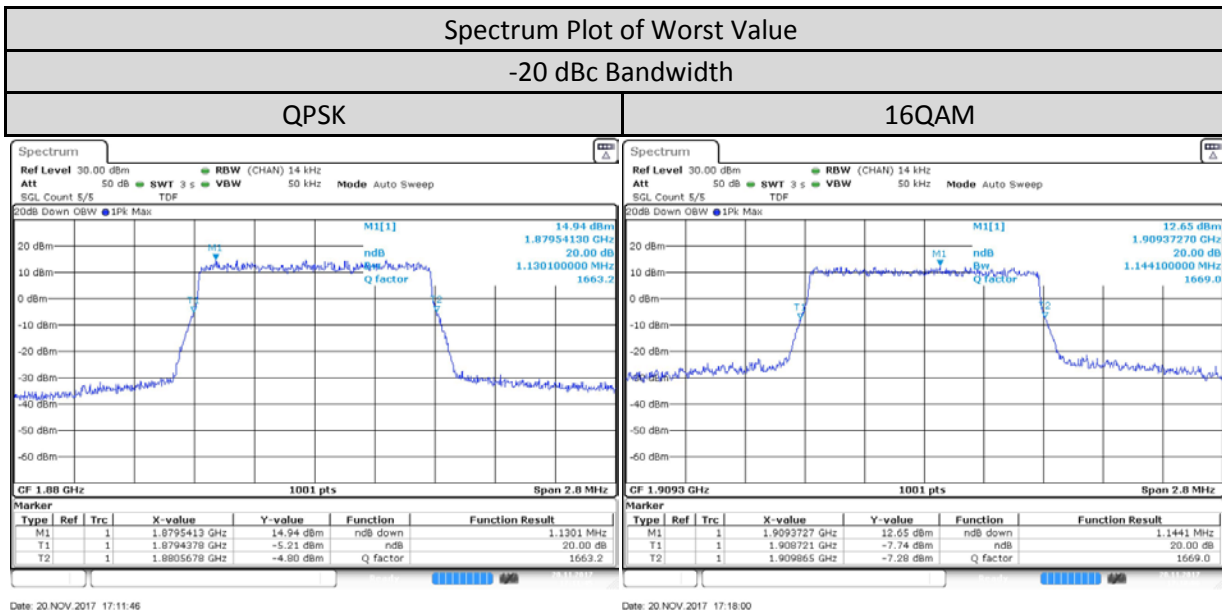
Spectrum Plot of Worst Value	
-26 dBc Bandwidth	
QPSK	16QAM



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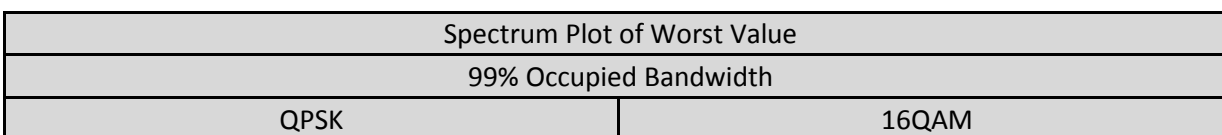
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-20 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 2/1.4MHz/6/0	Low CH 18607	1850.7 MHz	1.127	1.122
	Mid CH 18900	1880 MHz	1.13	1.127
	High CH 19193	1909.3 MHz	1.127	1.144

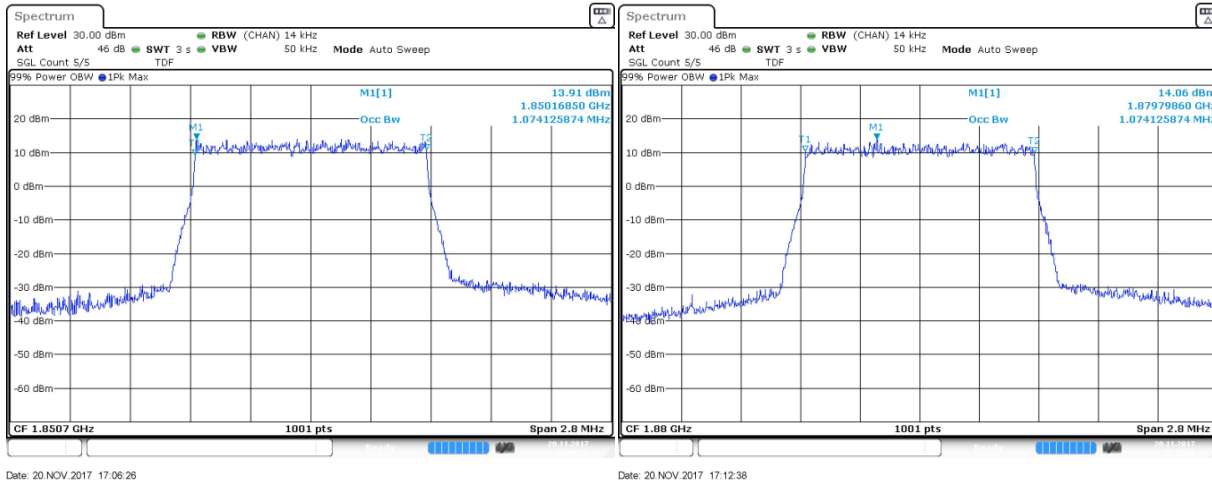


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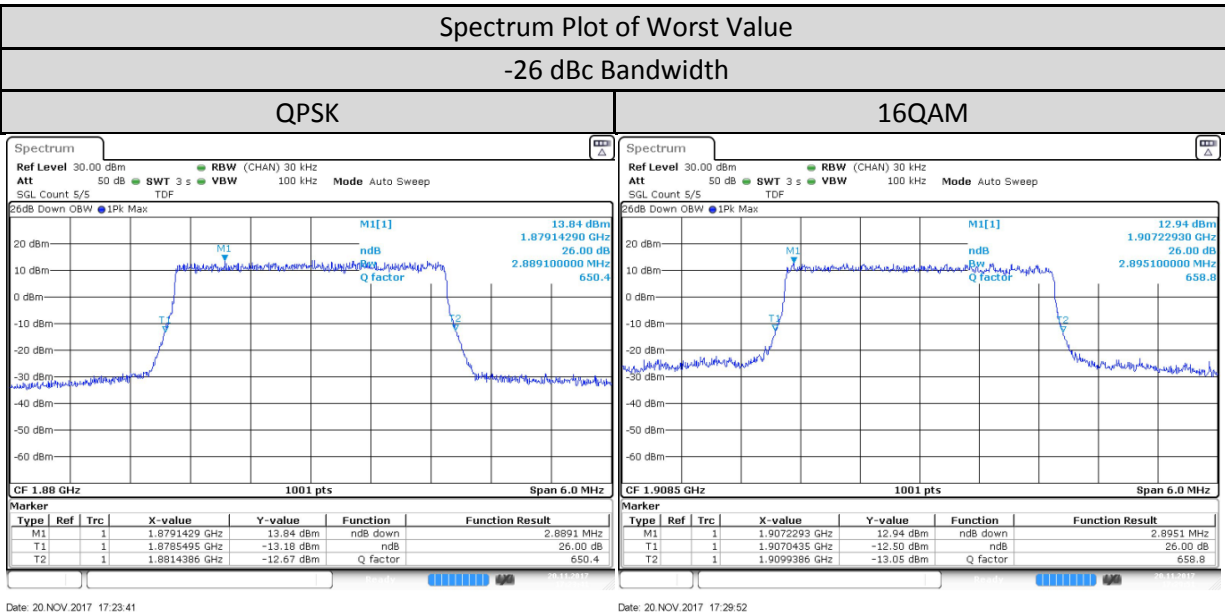
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LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	99% Occupied Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 2/1.4MHz/6/0	Low CH 18607	1850.7 MHz	1.074	1.069
	Mid CH 18900	1880 MHz	1.069	1.074
	High CH 19193	1909.3 MHz	1.074	1.074

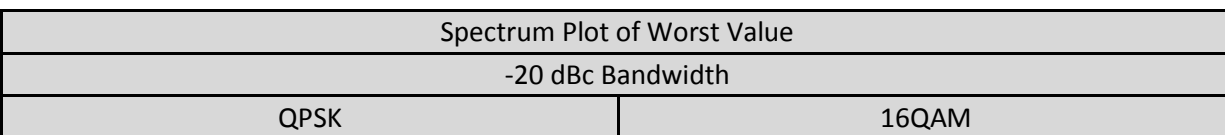


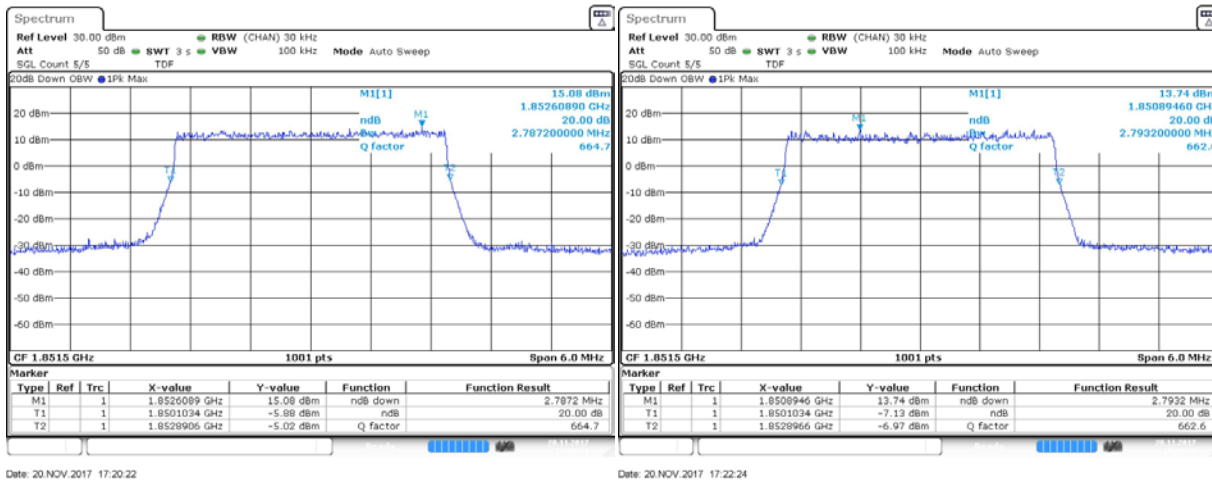


LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-26 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 2/3MHz/15/0	Low CH 18615	1851.5 MHz	2.883	2.889
	Mid CH 18900	1880 MHz	2.889	2.877
	High CH 19185	1908.5 MHz	2.889	2.895



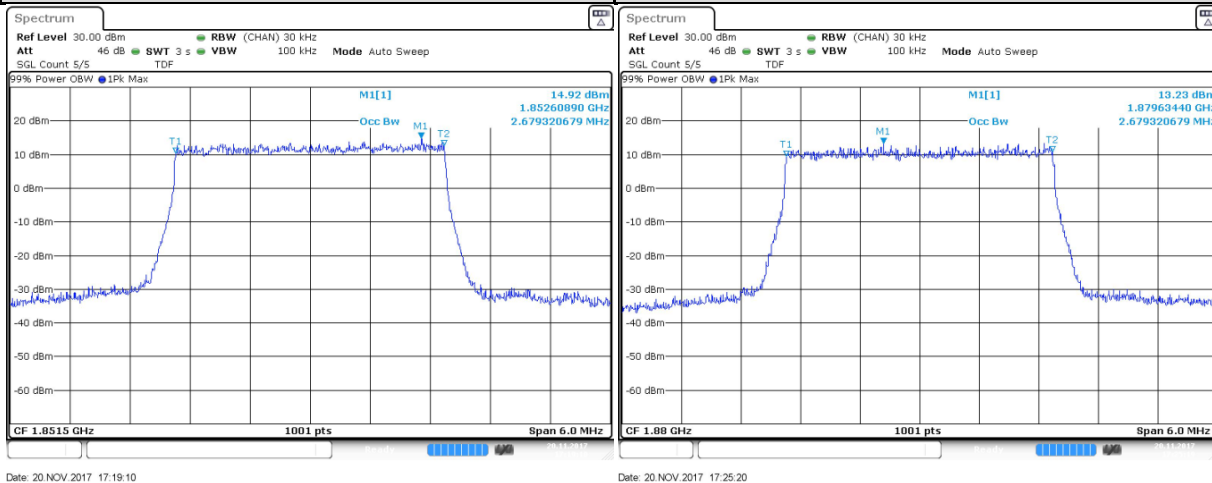
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-20 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 2/3MHz/15/0	Low CH 18615	1851.5 MHz	2.787	2.793
	Mid CH 18900	1880 MHz	2.787	2.793
	High CH 19185	1908.5 MHz	2.781	2.793





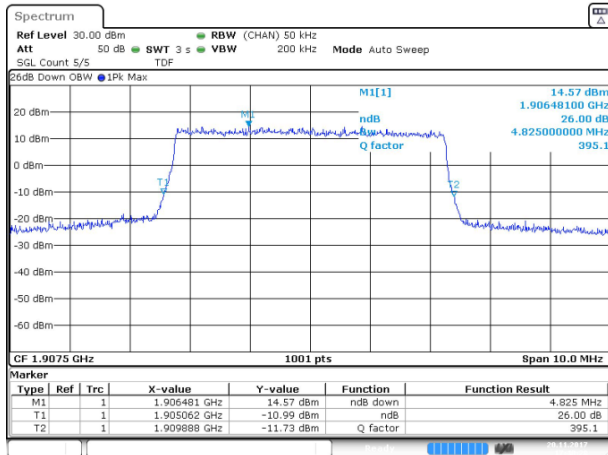
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	99% Occupied Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 2/3MHz/15/0	Low CH 18615	1851.5 MHz	2.679	2.673
	Mid CH 18900	1880 MHz	2.679	2.679
	High CH 19185	1908.5 MHz	2.673	2.673

Spectrum Plot of Worst Value	
99% Occupied Bandwidth	
QPSK	16QAM

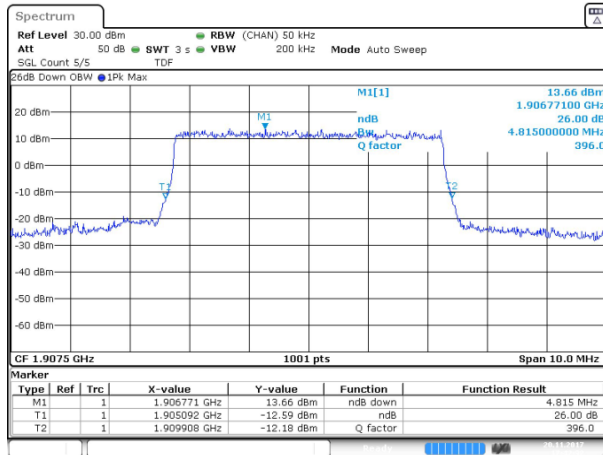


LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-26 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 2/5MHz/25/0	Low CH 18625	1852.5 MHz	4.805	4.805
	Mid CH 18900	1880 MHz	4.785	4.765
	High CH 19175	1907.5 MHz	4.825	4.815

Spectrum Plot of Worst Value	
-26 dBc Bandwidth	
QPSK	16QAM

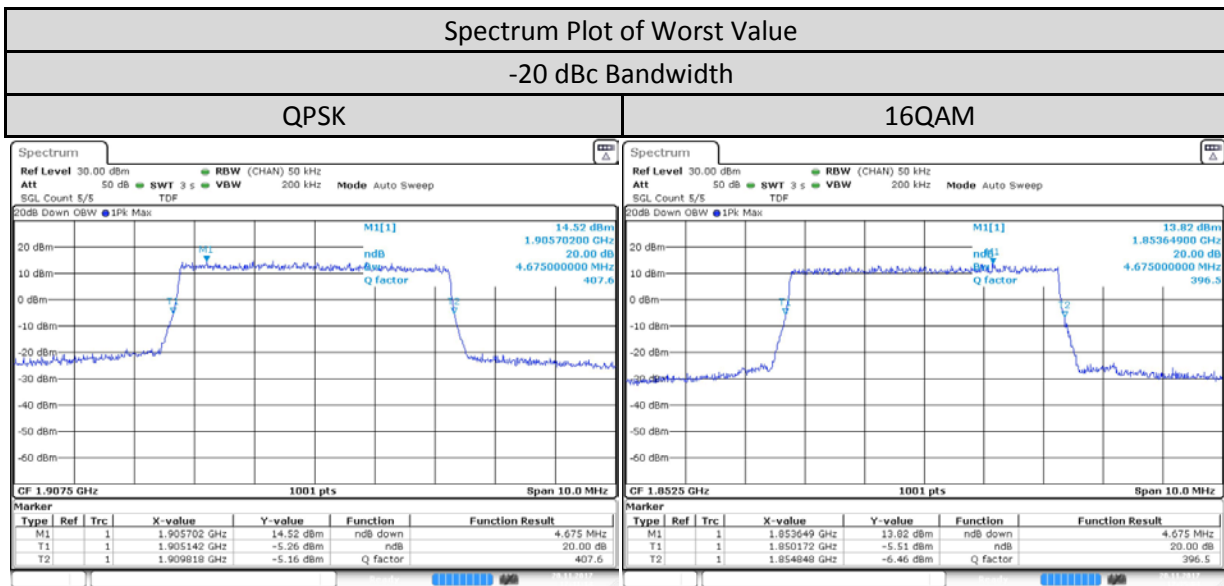


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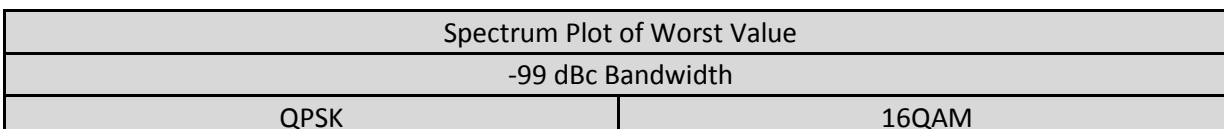
LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-20 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 2/5MHz/25/0	Low CH 18625	1852.5 MHz	4.665	4.675
	Mid CH 18900	1880 MHz	4.645	4.615
	High CH 19175	1907.5 MHz	4.675	4.645

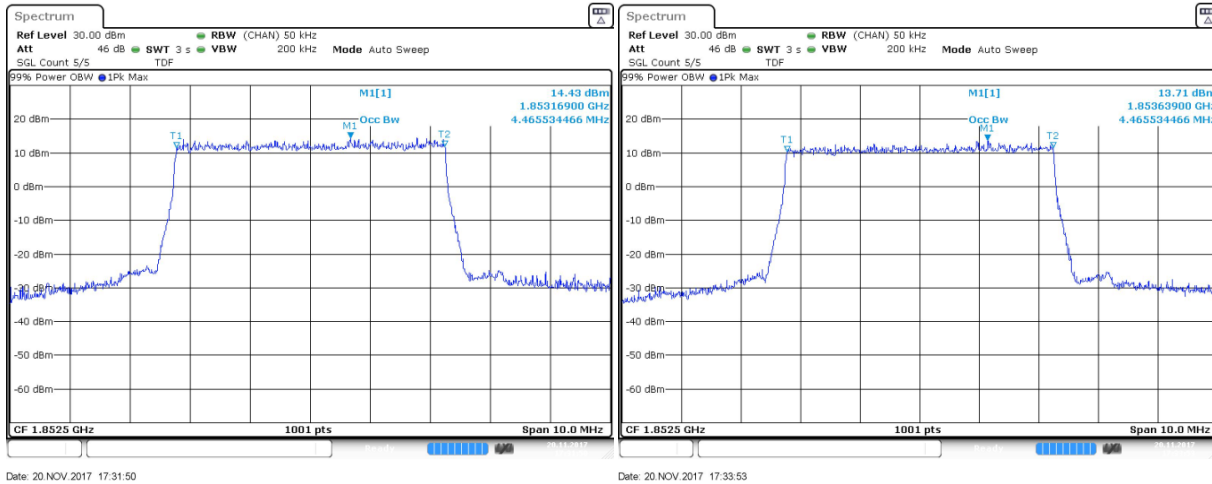


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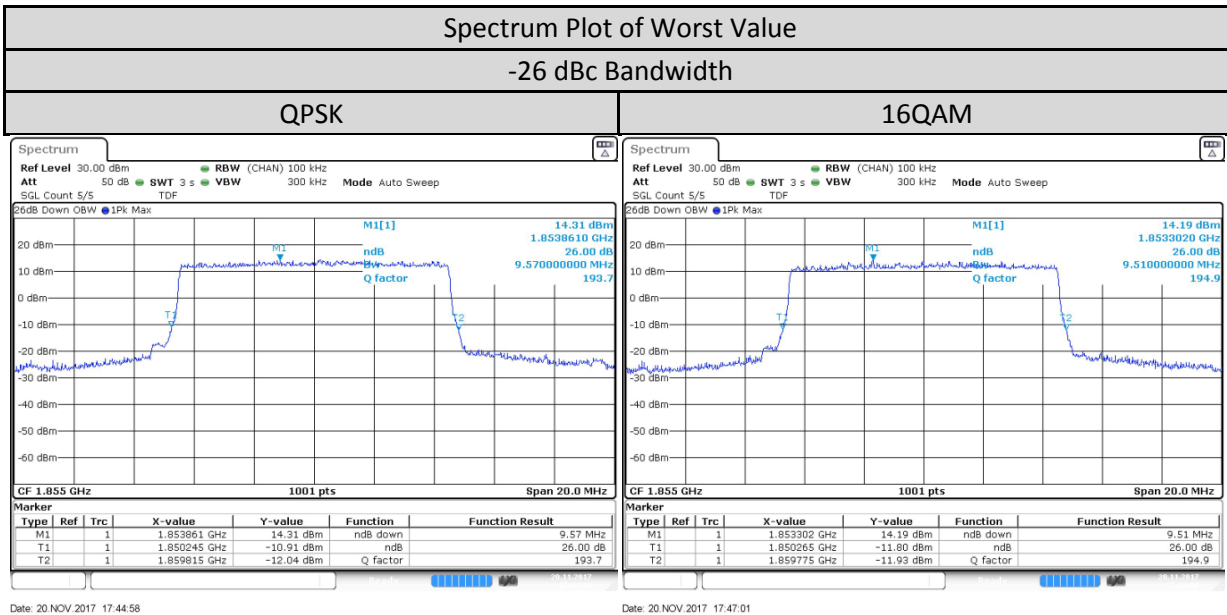
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LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	99% Occupied Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 2/5MHz/25/0	Low CH 18625	1852.5 MHz	4.466	4.466
	Mid CH 18900	1880 MHz	4.456	4.466
	High CH 19175	1907.5 MHz	4.466	4.456

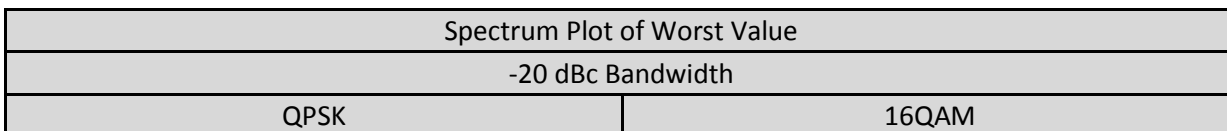


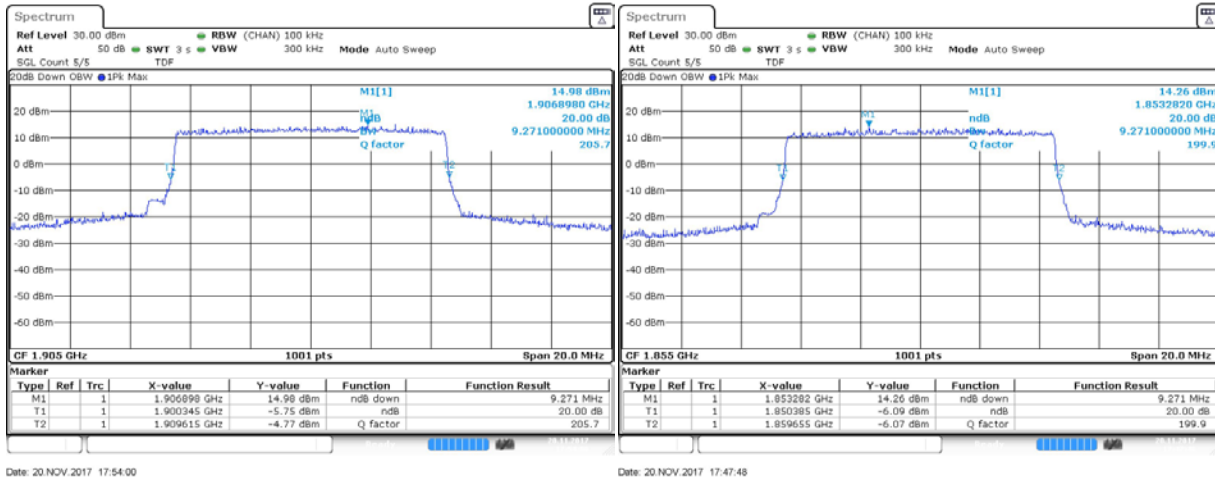


LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-26 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 2/10MHz/50/0	Low CH 18650	1855 MHz	9.57	9.51
	Mid CH 18900	1880 MHz	9.51	9.51
	High CH 19150	1905 MHz	9.55	9.431

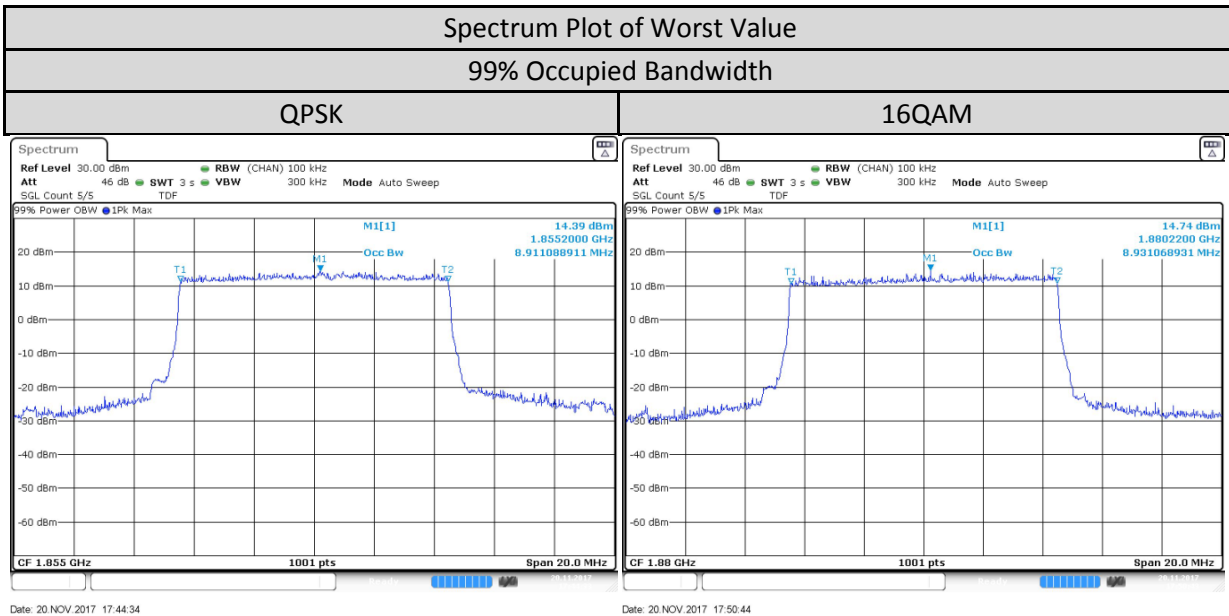


LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-20 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 2/10MHz/50/0	Low CH 18650	1855 MHz	9.251	9.271
	Mid CH 18900	1880 MHz	9.251	9.251
	High CH 19150	1905 MHz	9.271	9.191

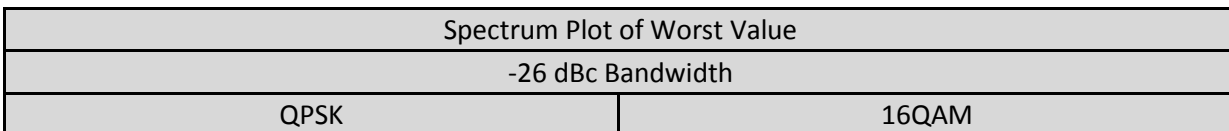


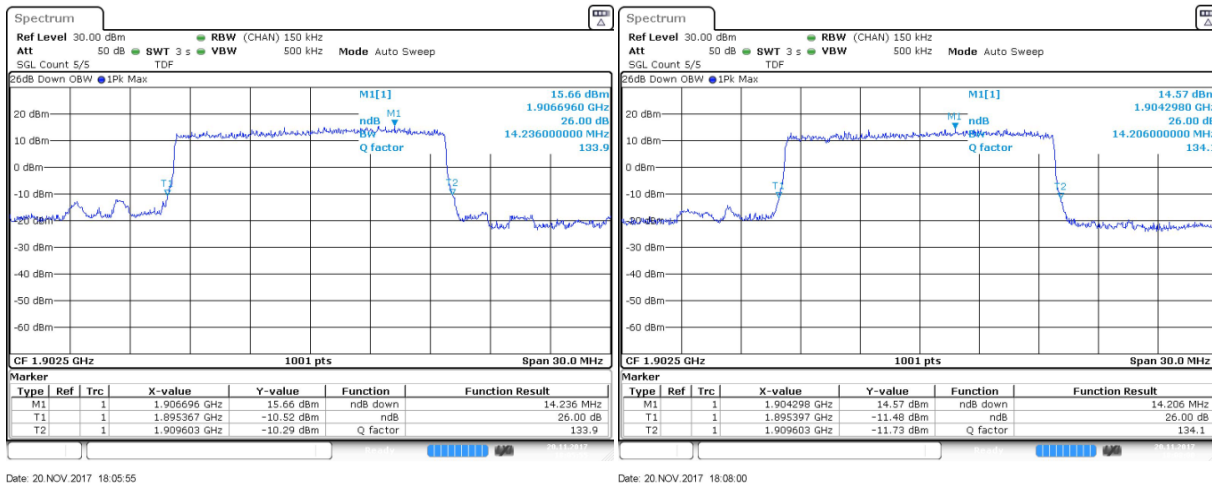


LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	99% Occupied Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 2/10MHz/50/0	Low CH 18650	1855 MHz	8.911	8.911
	Mid CH 18900	1880 MHz	8.911	8.931
	High CH 19150	1905 MHz	8.911	8.911

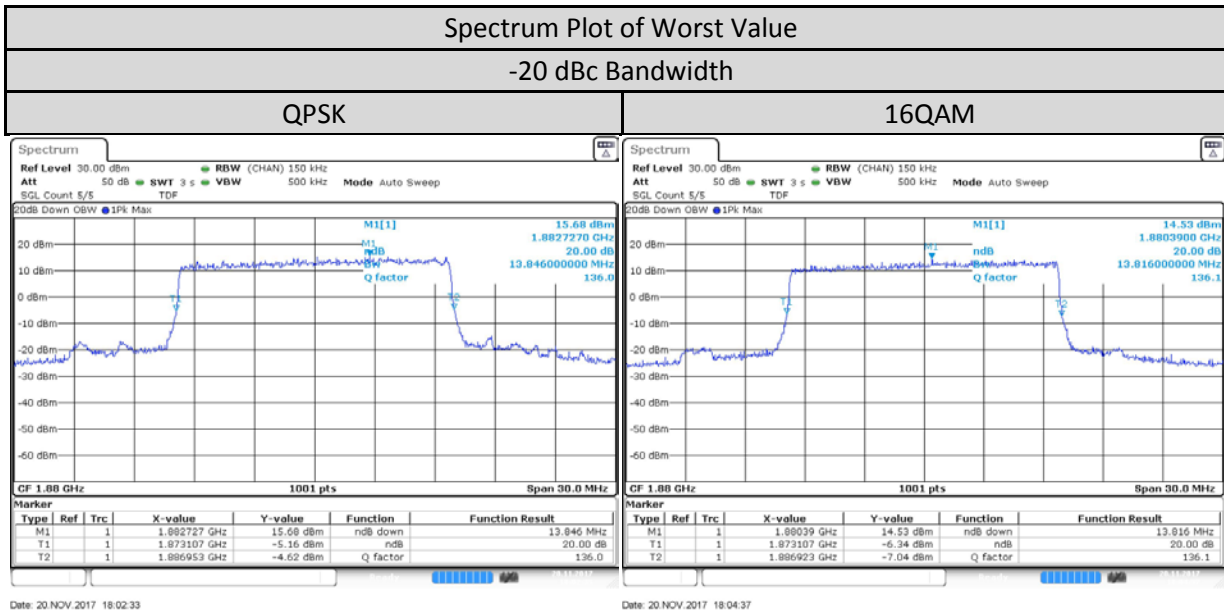


LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-26 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 2/15MHz/75/0	Low CH 18675	1857.5 MHz	14.146	14.116
	Mid CH 18900	1880 MHz	14.176	14.146
	High CH 19125	1902.5 MHz	14.236	14.206

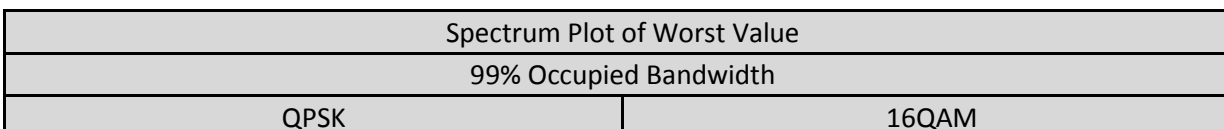


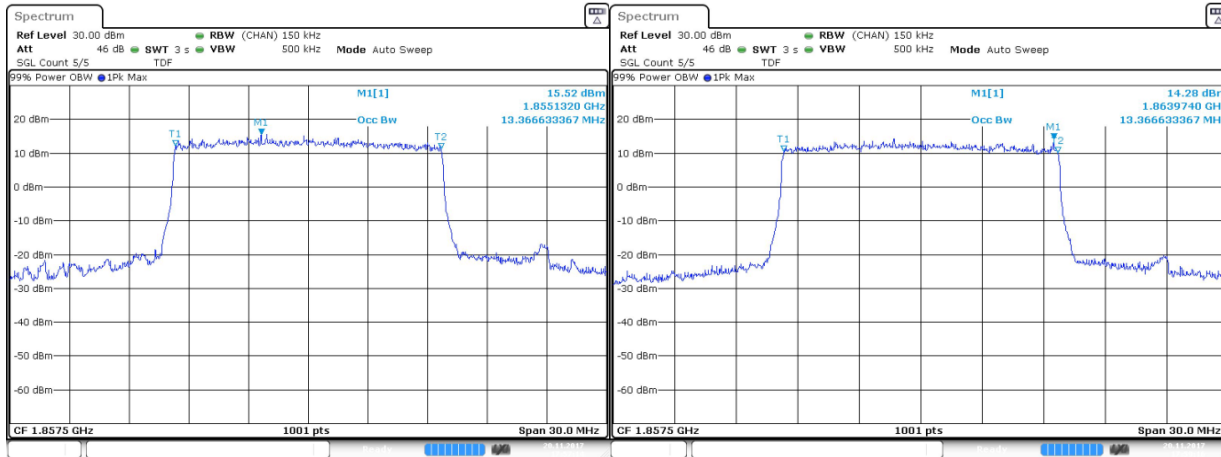


LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-20 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 2/15MHz/75/0	Low CH 18675	1857.5 MHz	13.816	13.756
	Mid CH 18900	1880 MHz	13.846	13.816
	High CH 19125	1902.5 MHz	13.786	13.786



LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	99% Occupied Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 2/15MHz/75/0	Low CH 18675	1857.5 MHz	13.367	13.367
	Mid CH 18900	1880 MHz	13.367	13.337
	High CH 19125	1902.5 MHz	13.367	13.367



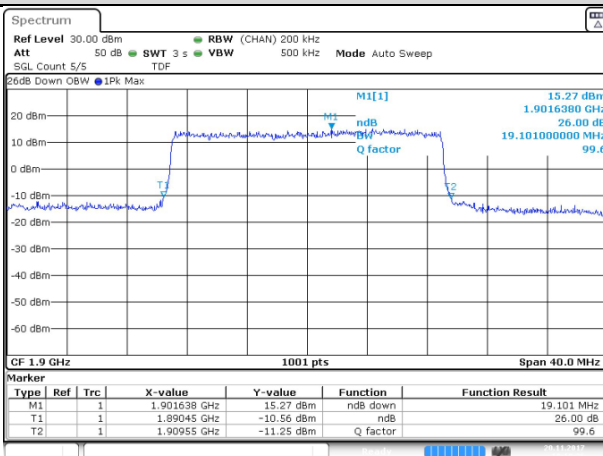


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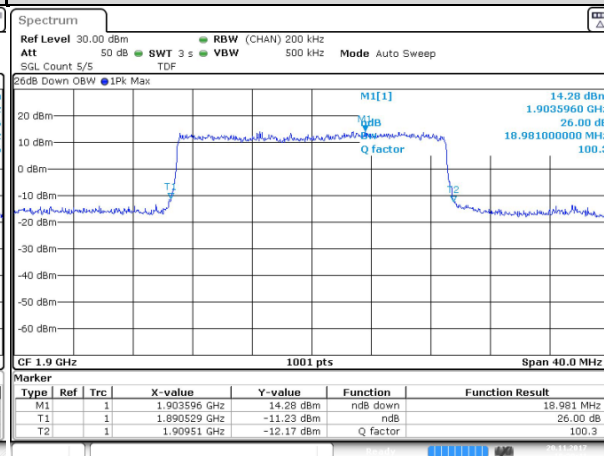
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Size/RB Offset	Channel Number	Frequency	QPSK Modulation	16QAM Modulation
Band 2/20MHz/100/0	Low CH 18700	1860 MHz	18.941	18.781
	Mid CH 18900	1880 MHz	18.901	18.901
	High CH 19100	1900 MHz	19.101	18.981

Spectrum Plot of Worst Value	
-26 dBc Bandwidth	
QPSK	16QAM



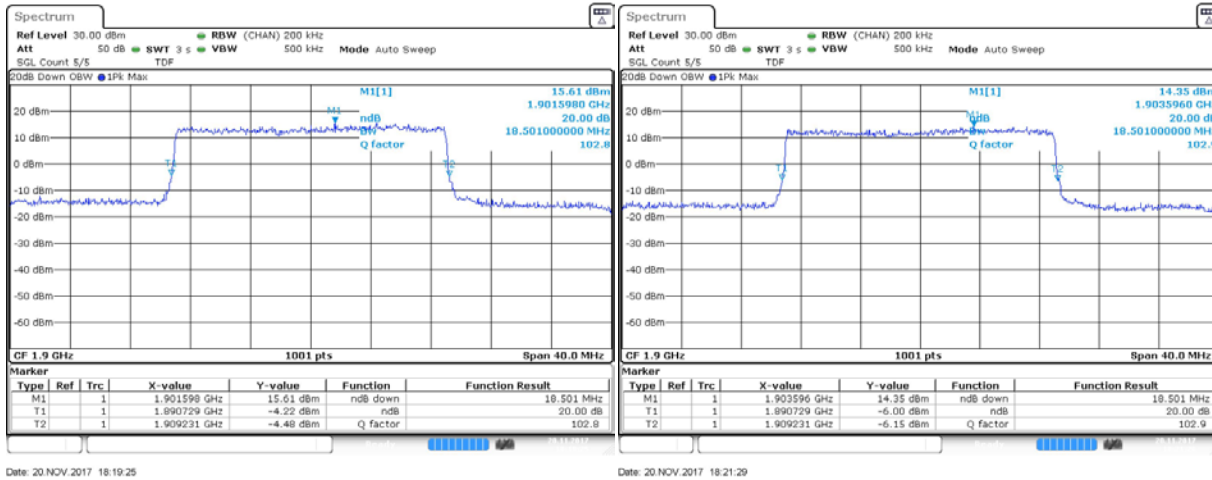
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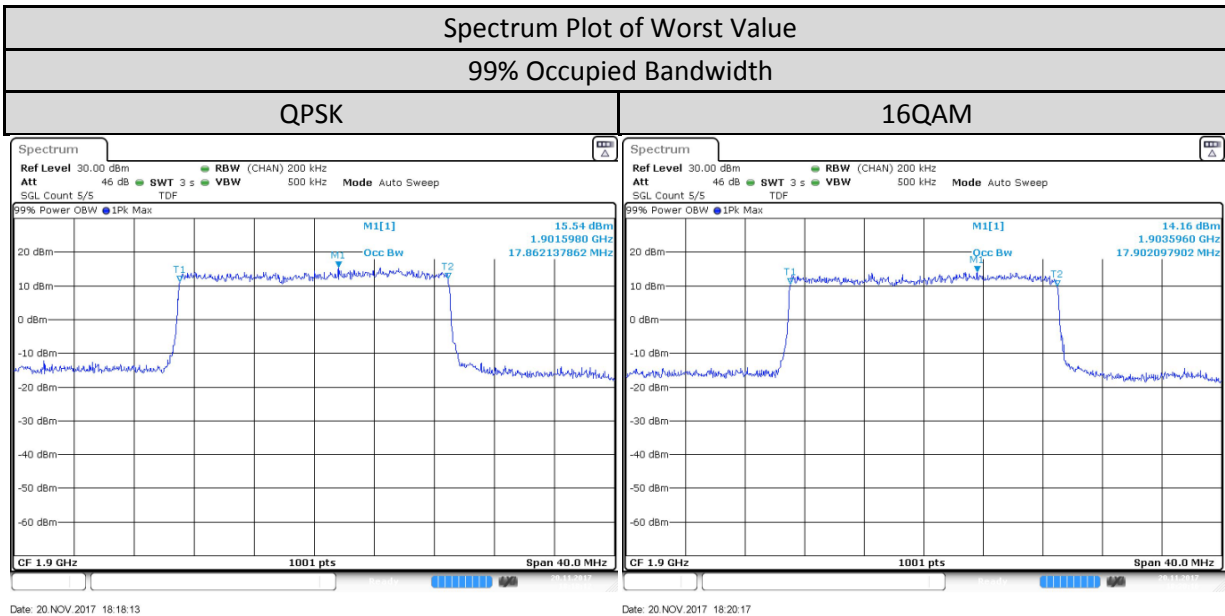
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LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	-20 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 2/20MHz/100/0	Low CH 18700	1860 MHz	18.422	18.382
	Mid CH 18900	1880 MHz	18.462	18.382
	High CH 19100	1900 MHz	18.501	18.501

Spectrum Plot of Worst Value	
-20 dBc Bandwidth	
QPSK	16QAM

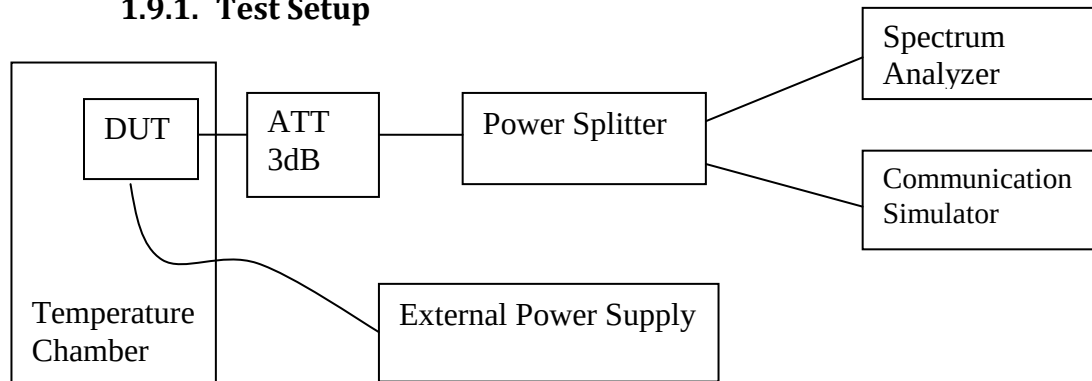


LTE Band/BW/RB Size/RB Offset	Channel Number	Tx Frequency	99% Occupied Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 2/20MHz/100/0	Low CH 18700	1860 MHz	17.782	17.822
	Mid CH 18900	1880 MHz	17.782	17.822
	High CH 19100	1900 MHz	17.862	17.902



1.9. Frequency Stability

1.9.1. Test Setup



- 1) The DUT is placed in the temperature chamber and DUT is power up by external power supply to control the DC input voltage.
- 2) The temperature chamber could control the temperature and humidity and external power supply could control the test voltage range from minimum to maximum operating voltage.
- 3) Measured frequency error from the communication simulator by vary below step :
 - i. Vary temperature of the temperature chamber from -30 ~ 50 deg C (10 deg C / Step) and set external supply voltage constant at nominal voltage.
 - ii. Vary external supply voltage from minimum to maximum operation voltage support by DUT and set temperature chamber constant at room temp.
- 4) All the measurement was done at mid channel for each band.

1.9.2. Test Limit

FCC: The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

ISED: The carrier frequency shall not depart from the reference frequency, in excess of ± 2.5 ppm for mobile stations and ± 1.0 ppm for base stations.

1.9.3. Frequency Stability – LTE Band 2 (1850 -1910 MHz)

Band	Temp (Deg C)	Frequency Error VS Temperature			
		Channel Bandwidth: 1.4 MHz			
		Low Channel		High Channel	
		1850.7MHz		1909.3MHz	
LTE Band 2		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
	50	1850.700009	0.004916	1909.300018	0.009575
	40	1850.700022	0.011996	1909.299969	-0.016198
	30	1850.699965	-0.019022	1909.29998	-0.010707
	20	1850.70002	0.010852	1909.300016	0.008159
	10	1850.699987	-0.006794	1909.299984	-0.008331
	0	1850.699992	-0.004406	1909.299972	-0.014887
	-10	1850.700022	0.01178	1909.300022	0.011583
	-20	1850.700022	0.011795	1909.300019	0.01004
	-30	1850.699975	-0.013504	1909.299984	-0.008264

Band	Voltage (V)	Frequency Error VS Voltage			
		Channel Bandwidth: 1.4 MHz			
		Low Channel		High Channel	
		1850.7MHz		1909.3MHz	
LTE Band 2		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
	4.35	1850.700018	0.009739	1909.299984	-0.008549
	3.7	1850.699985	-0.007923	1909.299981	-0.010145
	3.2	1850.700019	0.010381	1909.300013	0.006975

Band	Temp (Deg C)	Frequency Error VS Temperature			
		Channel Bandwidth: 3 MHz			
		Low Channel		High Channel	
		1851.5MHz		1908.5MHz	
LTE Band 2		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
	50	1851.50002	0.010886	1908.500019	0.009932
	40	1851.500019	0.010492	1908.500022	0.011663
	30	1851.500019	0.01006	1908.500019	0.009797
	20	1851.500021	0.011226	1908.500021	0.011078
	10	1851.50002	0.010809	1908.500023	0.011925
	0	1851.50002	0.010685	1908.500021	0.011041
	-10	1851.500022	0.011721	1908.500018	0.009219
	-20	1851.500023	0.012601	1908.500021	0.010951
	-30	1851.500024	0.012764	1908.500023	0.011918

Band	Voltage (V)	Frequency Error VS Voltage			
		Channel Bandwidth: 3 MHz			
		Low Channel		High Channel	
		1851.5MHz		1908.5MHz	
LTE Band 2		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
	4.35	1851.50002	0.010971	1908.500021	0.011251
	3.7	1851.500021	0.011288	1908.500013	0.006708
	3.2	1851.500022	0.011752	1908.50002	0.010569

Band	Temp (Deg C)	Frequency Error VS Temperature			
		Channel Bandwidth: 5 MHz			
		Low Channel		High Channel	
		1852.5MHz		1907.5MHz	
LTE Band 2		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
	50	1852.499982	-0.009514	1907.500013	0.006929
	40	1852.499981	-0.010008	1907.500014	0.007259
	30	1852.499982	-0.009521	1907.500014	0.007492
	20	1852.499982	-0.009599	1907.500014	0.007304
	10	1852.499983	-0.009367	1907.500016	0.008309
	0	1852.499983	-0.009375	1907.500014	0.007102
	-10	1852.49999	-0.005336	1907.500016	0.008474
	-20	1852.499982	-0.009745	1907.500013	0.006667
	-30	1852.499979	-0.011143	1907.500015	0.008062

Band	Voltage (V)	Frequency Error VS Voltage			
		Channel Bandwidth: 5 MHz			
		Low Channel		High Channel	
		1852.5MHz		1907.5MHz	
LTE Band 2		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
	4.35	1852.499983	-0.009328	1907.500015	0.007859
	3.7	1852.499986	-0.007382	1907.500015	0.007912
	3.2	1852.499984	-0.008888	1907.500015	0.008092

Band	Temp (Deg C)	Frequency Error VS Temperature			
		Channel Bandwidth: 10 MHz			
		Low Channel		High Channel	
		1855MHz		1905MHz	
LTE Band 2		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
	50	1854.999984	-0.008606	1904.999981	-0.009724
	40	1854.999987	-0.007272	1904.999984	-0.00832
	30	1855.000014	0.007573	1904.999982	-0.009319
	20	1855.000014	0.007712	1904.999984	-0.008425
	10	1855.000012	0.006632	1904.999984	-0.00814
	0	1855.000013	0.006863	1904.999983	-0.008793
	-10	1855.000015	0.008221	1904.99998	-0.010746
	-20	1855.000017	0.009285	1904.999983	-0.009064
	-30	1855.000013	0.00694	1904.999979	-0.010768

Band	Voltage (V)	Frequency Error VS Voltage			
		Channel Bandwidth: 10 MHz			
		Low Channel		High Channel	
		1855MHz		1905MHz	
LTE Band 2		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
	4.35	1855.000012	0.00627	1904.999982	-0.009402
	3.7	1855.000014	0.007812	1904.99998	-0.010475
	3.2	1855.000014	0.007388	1904.999984	-0.008561

Band	Temp (Deg C)	Frequency Error VS Temperature			
		Channel Bandwidth: 15 MHz			
		Low Channel		High Channel	
		1857.5MHz		1902.5MHz	
LTE Band 2		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
	50	1857.500018	0.009896	1902.500019	0.010166
	40	1857.50002	0.010836	1902.500018	0.009406
	30	1857.50002	0.010558	1902.500018	0.009376
	20	1857.500019	0.010466	1902.500019	0.010038
	10	1857.500019	0.010466	1902.500021	0.010782
	0	1857.500018	0.009534	1902.500022	0.011384
	-10	1857.50002	0.010836	1902.500018	0.009564
	-20	1857.500023	0.012168	1902.50002	0.010609
	-30	1857.50002	0.010712	1902.500022	0.011564

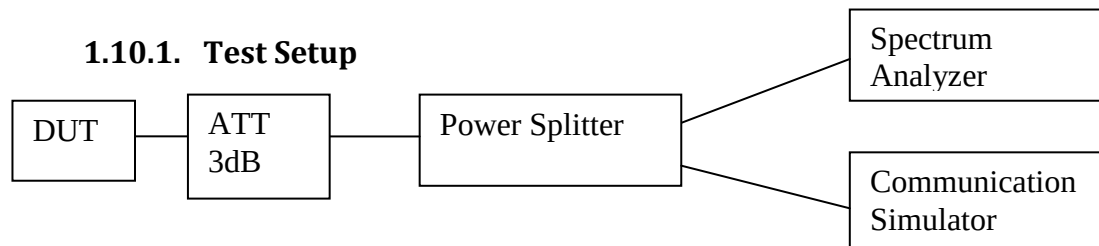
Band	Voltage (V)	Frequency Error VS Voltage			
		Channel Bandwidth: 15 MHz			
		Low Channel		High Channel	
		1857.5MHz		1902.5MHz	
LTE Band 2		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
	4.35	1857.50002	0.010959	1902.500017	0.009196
	3.7	1857.500019	0.010143	1902.500019	0.009835
	3.2	1857.500026	0.013831	1902.50002	0.010361

Band	Temp (Deg C)	Frequency Error VS Temperature			
		Channel Bandwidth: 20 MHz			
		Low Channel		High Channel	
		1860MHz		1900MHz	
LTE Band 2		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
	50	1859.99998	-0.010575	1900.000013	0.007077
	40	1859.999979	-0.011167	1900.000013	0.006994
	30	1859.999984	-0.008706	1900.000014	0.007296
	20	1859.999983	-0.009321	1900.000013	0.006791
	10	1859.999982	-0.009783	1900.000015	0.007988
	0	1859.999982	-0.009737	1900.000016	0.008267
	-10	1859.999983	-0.009337	1900.000014	0.007288
	-20	1859.99998	-0.010798	1899.999985	-0.007725
	-30	1859.99998	-0.010936	1899.999985	-0.007905

Band	Voltage (V)	Frequency Error VS Voltage			
		Channel Bandwidth: 20 MHz			
		Low Channel		High Channel	
		1860MHz		1900MHz	
LTE Band 2		Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
	4.35	1859.999981	-0.00996	1900.000015	0.007883
	3.7	1859.999982	-0.009937	1900.000016	0.008207
	3.2	1859.999982	-0.009814	1899.999988	-0.006392

1.10. Band Edge Conducted Spurious Emission

1.10.1. Test Setup



- 1) The DUT transmitter output port was connected to communication simulator with above setup.
- 2) Path loss for the measurement included.
- 3) Set DUT to transmit maximum power through communication simulator.
- 4) The band edges of lowest and highest channels with the highest RF powers were measured.
- 5) The center frequency of spectrum is the band edge frequency, span is 3MHz, RBW is 1~3% of EBW and VBW is at least 3 times of RBW.
- 6) Record the maximum trace plot into the test report.

1.10.2. Test Limit

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB. In the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

1.10.3. Band Edge Conducted Spurious Emission – LTE Band 2 (1850 -1910 MHz)

