

FCC Test Report - LTE Band 7

Report ID : 03360-RF-00021

FCC ID : AZ489FT7078

Tested Model : LEX L10i

Test Date : Dec 10, 2015 ~ Feb 23, 2016

Issued Date : 2 Mar, 2016

Applicant : Motorola Solution Malaysia Sdn Bhd

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1.0. Summary of Test Results

FCC Clause	Test Item	Results	Remark
2.1046 27.50(h)(2)	Conducted RF Output Power	PASS	Meet the requirement of limit
2.1046 27.50(d)(5)	Peak-to-Average Power Ratio	PASS	Meet the requirement of limit
2.1049 27.53(m)(6)	Occupied Bandwidth (26dBc, 99%)	PASS	Meet the requirement of limit
2.1055 27.54	Frequency Stability	PASS	Meet the requirement of limit
2.1051 27.53(m)(4)(6)	Band Edge / Emission Mask Conducted Spurious Measurement	PASS	Meet the requirement of limit
2.1051 27.53(m)(4)(6)	Conducted Spurious Emissions	PASS	Meet the requirement of limit
2.1053 27.53(m)(4)(6)	Radiated Spurious Emission	PASS	Meet the requirement of limit
2.1049 27.50(h)(2)	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
POWER SUPPLY	6623A	2916A01428	3-Apr-15	3-Apr-16
Wideband Radio Communication Tester	CMW500	154550	23-Jun-15	23-Jun-16
SIGNAL ANALYZER	FSV40	101431	29-Apr-15	29-Apr-16
CHAMBER	SH-641	92002651	15-Mar-15	15-Mar-16
DRG HORN FREQ.	SAS-571	566	2-Aug-15	2-Aug-16
PREAMPLIFIER	PAM-0118P	361	NA	NA
BILOG ANTENNA	CBL6112B	2964	23-Apr-14	23-Apr-16
POWER SUPPLY	6031A	3121A02341	12-Jun-14	12-Jun-16
EMI TEST RECEIVER	ESIB26	100336	17-Jun-15	17-Jun-16
MICROWAVE SIGNAL GENERATOR	SMP04	100131	25-Jun-15	25-Jun-16
SYSTEM CONTROLLER	SC104V	050806-1	NA	NA
TURNTABLE FLUSH MOUNT 2M	FM2011	NA	NA	NA
ANTENNA POSITIONING TOWER	TLT2	NA	NA	NA
TEST RECEIVER	ESIB26	827769/009	16-Jun-15	16-Jun-16
SIGNAL ANALYZER	FSV40	101103	25-Jun-15	25-Jun-16
5m Semi-anechoic Chamber	S800-HX	J2308	29-Apr-15	29-Apr-16
BILOG ANTENNA	CBL6112B	2863	24-Jul-15	24-Jul-16
DATA LOGGER	TM320	12249289	12-Apr-15	12-Apr-16
BILOG ANTENNA	CBL6112D	25516	23-Apr-15	23-Apr-16
BROAD-BAND HORN ANTENNA	BBHA9170	BBHA9170143	24-Nov-15	24-Nov-16

1.3. General Information

General Description of EUT

Product	Smart phone		
Brand	Motorola Solutions		
Test Model	LEX L10i		
Power Supply Rating	3.7Vdc (Battery), 5Vdc (Adapter)		
Mode of operation	LTE Band 7		
Modulation Type	QPSK, 16QAM		
Operating Frequency	LTE Band 7	Channel Bandwidth 5MHz	2502.5MHz~2567.5MHz
		Channel Bandwidth 10MHz	2505.0MHz~2565.0MHz
		Channel Bandwidth 15MHz	2507.5MHz~2562.5MHz
		Channel Bandwidth 20MHz	2510.0MHz~2560.0MHz
Max. EIRP Power	LTE Band 7 QPSK	Channel Bandwidth 5MHz	16.49dBm
		Channel Bandwidth 10MHz	18.74dBm
		Channel Bandwidth 15MHz	19.64dBm
		Channel Bandwidth 20MHz	18.47dBm
	LTE Band 7 16QAM	Channel Bandwidth 5MHz	17.90dBm
		Channel Bandwidth 10MHz	18.49dBm
		Channel Bandwidth 15MHz	18.40dbm
		Channel Bandwidth 20MHz	17.17dBm
Antenna Type	LTE Band 7	Inverted-L Monopole with 0.8 to -0.6dBi gain	
SW Version	LEXL10-INT-D17		
HW Version	Rev A		

Note:

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

Item	Brand	Model or P/N	Specification
Rechargeable Lithium ion battery	MOTOROLA	PMNN4472A	3.7Vdc, 2340mAh, 8.7Wh
Rechargeable Lithium ion battery	MOTOROLA	PMNN4475A	3.7Vdc, 4560mAh, 16.9Wh
ITE Power Supply	MOTOROLA	HKTN4009A	I/P: 100-240Vac, 50-60Hz, 0.2A O/P: 5Vdc, 1.2A
USB cable (CABLE: LEX USB SYNC AND CHARGE)	N/A	CB000262A01	-
Holster	N/A	HKLN4618A	-

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 27

KDB 971168 D01 Power Meas License Digital Systems v02r02

KDB 971168 D02 Misc OOB License Digital Systems v01

ANSI/TIA/-603-D

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

1.4. Channel number and frequency info

Band	Bandwidth supported	Available Channel Number	Test Channel Number			Test Channel Frequency (MHz)		
			Low Channel	Mid Channel	High Channel	Low Channel	Mid Channel	High Channel
LTE Band 7	5 MHz	20775~ 21425	20775	21100	21425	2502.5	2535	2567.5
	10 MHz	20800~ 21400	20800	21100	21400	2505	2535	2565
	15 MHz	20825~ 21375	20825	21100	21375	2507.5	2535	2562.5
	20 MHz	20850~ 21350	20850	21100	21350	2510	2535	2560

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 and Equivalent Isotropically Radiated Power (EIRP) worst case was found when positioned on Z-Plane for LTE band 4.

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

LTE Band 7

Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
Conducted RF Output Power	20775~ 21425	20775, 21100, 21425	5 MHz	QPSK, 16QAM	As per table 1.6.2
	20800~ 21400	20800, 21100, 21400	10 MHz		
	20825~ 21375	20825, 21100, 21375	15 MHz		
	20850~ 21350	20850, 21100, 21350	20 MHz		
Peak to Average Power Ratio	20775~ 21425	20775, 21100, 21425	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
	20800~ 21400	20800, 21100, 21400	10 MHz		50 RB / 0 RB Offset
	20825~ 21375	20825, 21100, 21375	15 MHz		75 RB / 0 RB Offset
	20850~ 21350	20850, 21100, 21350	20 MHz		100 RB / 0 RB Offset
Occupied Bandwidth	20775~ 21425	20775, 21100, 21425	5 MHz	QPSK, 16QAM	25 RB / 0 RB Offset
	20800~ 21400	20800, 21100, 21400	10 MHz		50 RB / 0 RB Offset
	20825~ 21375	20825, 21100, 21375	15 MHz		75 RB / 0 RB Offset

	20850~ 21350	20850, 21100, 21350	20 MHz		100 RB / 0 RB Offset
Frequency Stability	20775~ 21425	21100	5 MHz	QPSK	25 RB / 0 RB Offset
	20800~ 21400	21100	10 MHz		50 RB / 0 RB Offset
	20825~ 21375	21100	15 MHz		75 RB / 0 RB Offset
	20850~ 21350	21100	20 MHz		100 RB / 0 RB Offset
Band Edge Conducted Spurious Emission	20775~ 21425	20775, 21425	5 MHz	QPSK, 16QAM	1 RB / 0 RB Offset 1 RB / 24 RB Offset 25 RB / 0 RB Offset
	20800~ 21400	20800, 21400	10 MHz		1 RB / 0 RB Offset 1 RB / 49 RB Offset 50 RB / 0 RB Offset
	20825~ 21375	20825, 21375	15 MHz		1 RB / 0 RB Offset 1 RB / 74 RB Offset 75 RB / 0 RB Offset
	20850~ 21350	20850, 21350	20 MHz		1 RB / 0 RB Offset 1 RB / 99 RB Offset 100 RB / 0 RB Offset
Conducted Spurious Emission	20775~ 21425	20775, 21100, 21425	5 MHz	QPSK	1 RB / 13 RB Offset
	20800~ 21400	20800, 21100, 21400	10 MHz		1 RB / 49 RB Offset
	20825~ 21375	20825, 21100, 21375	15 MHz		1 RB / 38 RB Offset
	20850~ 21350	20850, 21100, 21350	20 MHz		1 RB / 49 RB Offset
Radiated Emission	20775~ 21425	20775, 21100, 21425	5 MHz	QPSK	1 RB / 13 RB Offset
	20800~ 21400	20800, 21100, 21400	10 MHz		1 RB / 49 RB Offset
	20825~ 21375	20825, 21100, 21375	15 MHz		1 RB / 38 RB Offset
	20850~ 21350	20850, 21100, 21350	20 MHz		1 RB / 49 RB Offset
Equivalent Isotropically Radiated Power (EIRP)	20775~ 21425	20775, 21100, 21425	5 MHz	QPSK, 16QAM	1 RB / 13 RB Offset
	20800~ 21400	20800, 21100, 21400	10 MHz		1 RB / 49 RB Offset
	20825~ 21375	20825, 21100, 21375	15 MHz		1 RB / 38 RB Offset
	20850~ 21350	20850, 21100, 21350	20 MHz		1 RB / 49 RB Offset

NOTE:

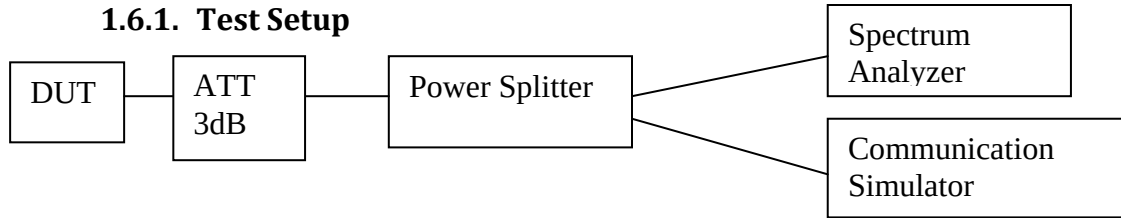
1. The Conducted RF Output Power for QPSK and 16QAM, measured value of QPSK is higher than 16QAM mode. Therefore, only Conducted Spurious Emission and Radiated Emission had been tested under QPSK modes.
2. Band Edge was performed with 1 and full Resource Block at the lowest and highest operating frequency band.
3. The Equivalent Isotropically Radiated Power (EIRP) was performed based on worst case mode from Conducted RF Output Power 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	25°C, 50% RH	3.7V DC	ckchan
Peak-to-Average Power Ratio	25°C, 50% RH	3.7V DC	ckchan
Occupied Bandwidth	25°C, 50% RH	3.7V DC	ckchan
Frequency Stability	25°C, 50% RH	3.7V DC	ckchan
Band Edge Conducted Spurious Emission	25°C, 50% RH	3.7V DC	ckchan
Conducted Spurious Emission	25°C, 50% RH	3.7V DC	ckchan
Radiated Spurious Emission	25°C, 63.7% RH	3.7V DC	Nazrin/Qawiman
Equivalent Isotropically Radiated Power (EIRP)	25°C, 63.7% RH	3.7V DC	Nazrin/Qawiman

1.6. Conducted Output Power Measurement

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.

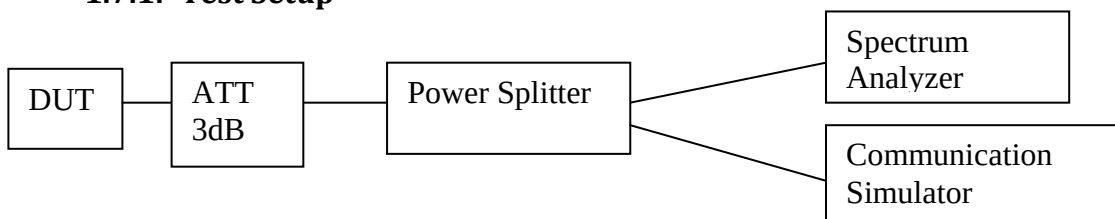
1.6.2. Conducted Output Power - LTE Band 7 (2500 - 2570MHz)

LTE Band/ BW	RB Size	RB Offset	Conducted Output Power (dBm)					
			QPSK Modulation			16QAM Modulation		
			Low CH 20775	Mid CH 21100	High CH 21425	Low CH 20775	Mid CH 21100	High CH 21425
			2502.5MHz	2535MHz	2567.5 MHz	2502.5 MHz	2535MHz	2567.5 MHz
Band 7 / 5MHz	1	0	21.996	22.662	22.628	21.151	21.843	21.873
	1	13	22.188	22.681	22.650	21.392	21.863	21.899
	1	24	22.321	22.639	22.528	21.508	20.830	21.804
	12	0	21.169	21.810	21.756	20.252	20.893	20.912
	12	6	21.249	21.803	21.762	20.346	20.873	20.920
	12	13	21.313	21.776	21.716	20.479	20.845	20.880
	25	0	21.213	21.789	21.725	20.232	20.865	20.834
LTE Band/ BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH 20800	Mid CH 21100	High CH 21400	Low CH 20800	Mid CH 21100	High CH 21400
			2505MHz	2535MHz	2565 MHz	2505MHz	2535MHz	2565 MHz
Band 7 / 10MHz	1	0	22.048	22.737	22.706	21.187	21.937	21.703
	1	25	22.253	22.734	22.625	21.375	21.926	21.602
	1	49	22.421	22.741	22.638	21.567	21.923	21.623
	25	0	21.327	21.855	21.819	20.508	20.895	20.935
	25	13	21.392	21.810	21.781	20.563	20.841	20.853
	25	25	21.450	21.721	21.763	20.615	20.789	20.873
	50	0	21.380	21.809	21.819	20.491	20.803	20.848
LTE Band/ BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH 20825	Mid CH 21100	High CH 21375	Low CH 20825	Mid CH 21100	High CH 21375
			2507.5MHz	2535MHz	2562.5 MHz	2507.5 MHz	2535MHz	2562.5 MHz
Band 7 / 15MHz	1	0	21.996	22.669	22.690	21.365	21.897	21.665
	1	38	22.315	22.702	22.587	21.661	21.939	21.572

	1	74	22.685	22.567	22.483	22.064	21.934	21.454
	36	0	21.322	21.783	21.711	20.374	20.833	20.824
	36	19	21.426	21.782	21.729	20.476	20.829	20.832
	36	39	21.592	21.730	21.693	20.680	20.780	20.756
	75	0	21.405	21.782	21.674	20.488	20.813	20.789
LTE Band/ BW	RB Size	RB Offset	QPSK Modulation			16QAM Modulation		
			Low CH 20850	Mid CH 21100	High CH 21350	Low CH 20850	Mid CH 21100	High CH 21350
			2510 MHz	2535MHz	2560 MHz	2510 MHz	2535MHz	2560 MHz
Band 7 / 20MHz	1	0	21.632	22.542	22.425	21.119	21.839	21.955
	1	49	22.354	22.764	22.589	21.844	21.838	22.194
	1	99	22.561	21.960	22.190	22.058	21.460	21.846
	50	0	21.270	21.776	21.725	20.303	20.828	20.858
	50	25	21.543	21.860	21.727	20.592	20.847	20.836
	50	50	21.703	21.599	21.598	20.742	20.688	20.663
	100	0	21.438	21.667	21.625	20.513	20.706	20.750

1.7. Peak-to-Average Power Ratio

1.7.1. Test Setup



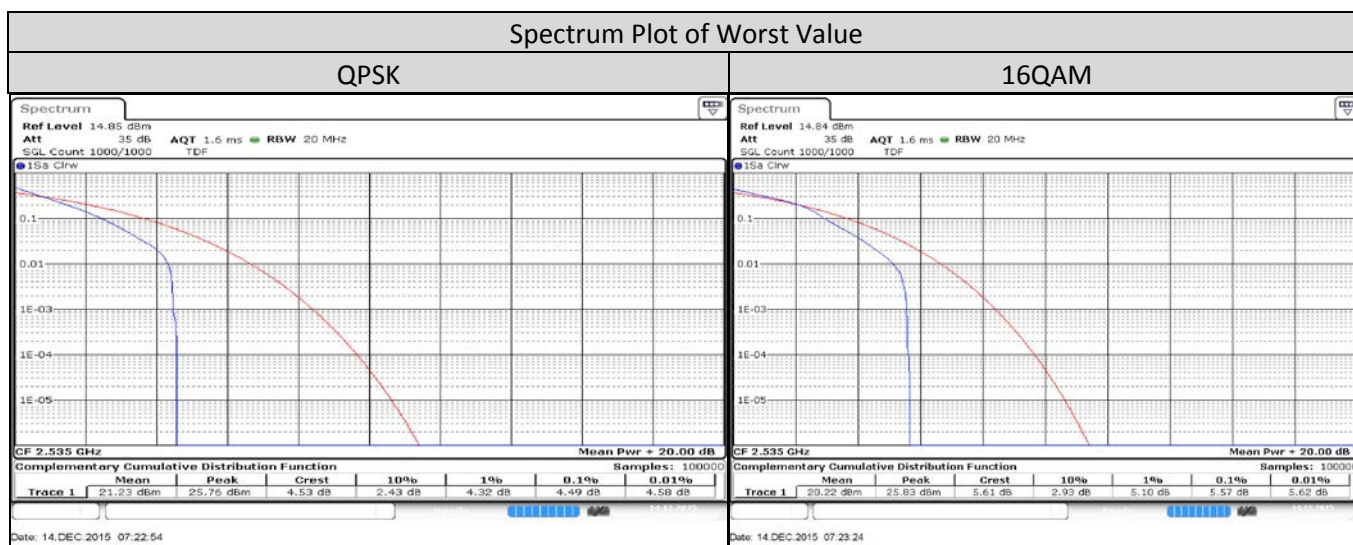
1. The DUT transmitter output port was connected to communication simulator with above setup.
2. Path loss for the measurement included.
3. Set DUT to transmit maximum power through communication simulator
4. Set the CCDF (Complementary Cumulative Distribution Function) option in the spectrum analyzer.
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

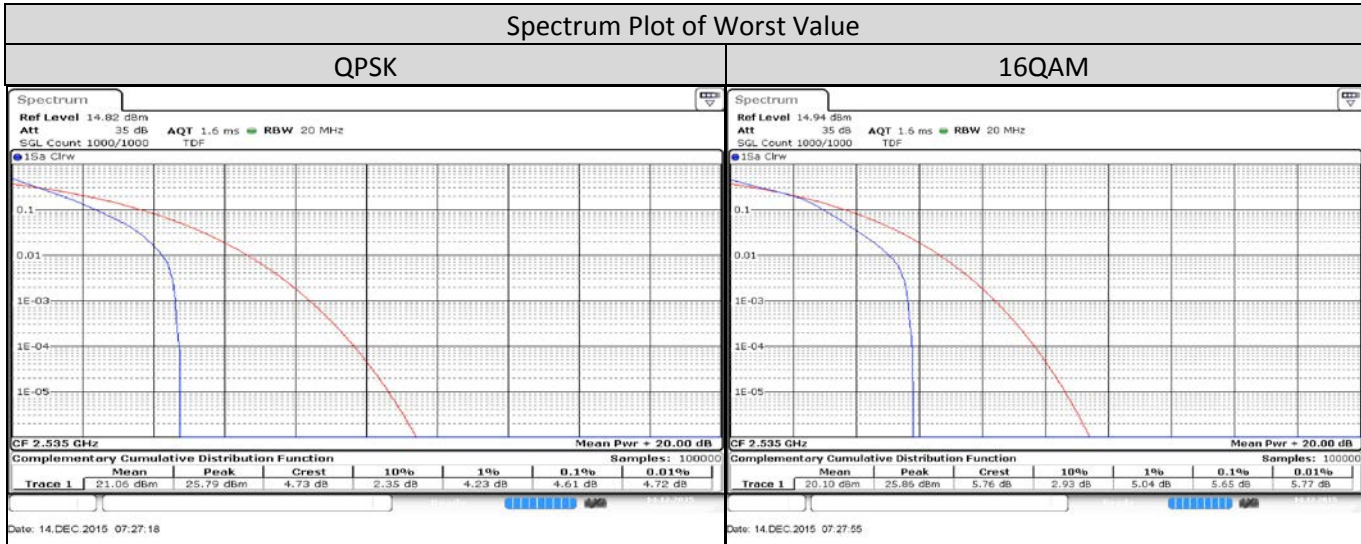
In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

1.7.3. Peak-to-Average Power Ratio - LTE Band 7 (2500 - 2570MHz)

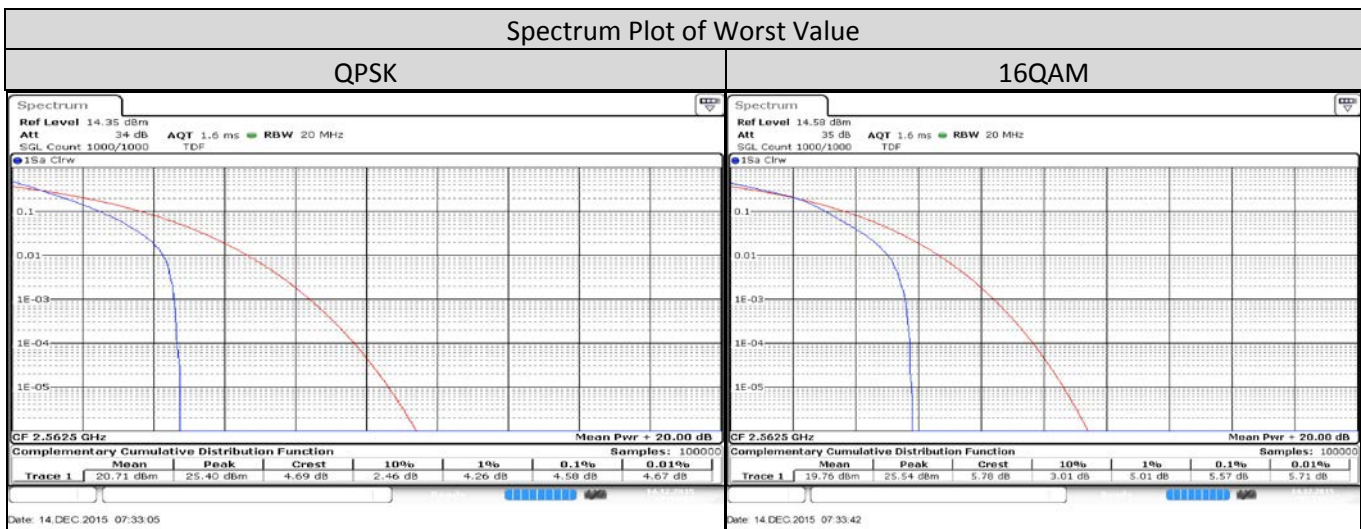
LTE Band/ BW/ RB Size/ RB Offset	Channel Number	Tx Frequency (MHz)	Peak To Average (dB)	
			QPSK Modulation	16QAM Modulation
Band 7 / 5MHz/25/0	Low CH 20775	2502.5 MHz	4.43	5.39
	Mid CH 21100	2535.0 MHz	4.49	5.57
	High CH 21425	2567.5 MHz	4.46	5.42



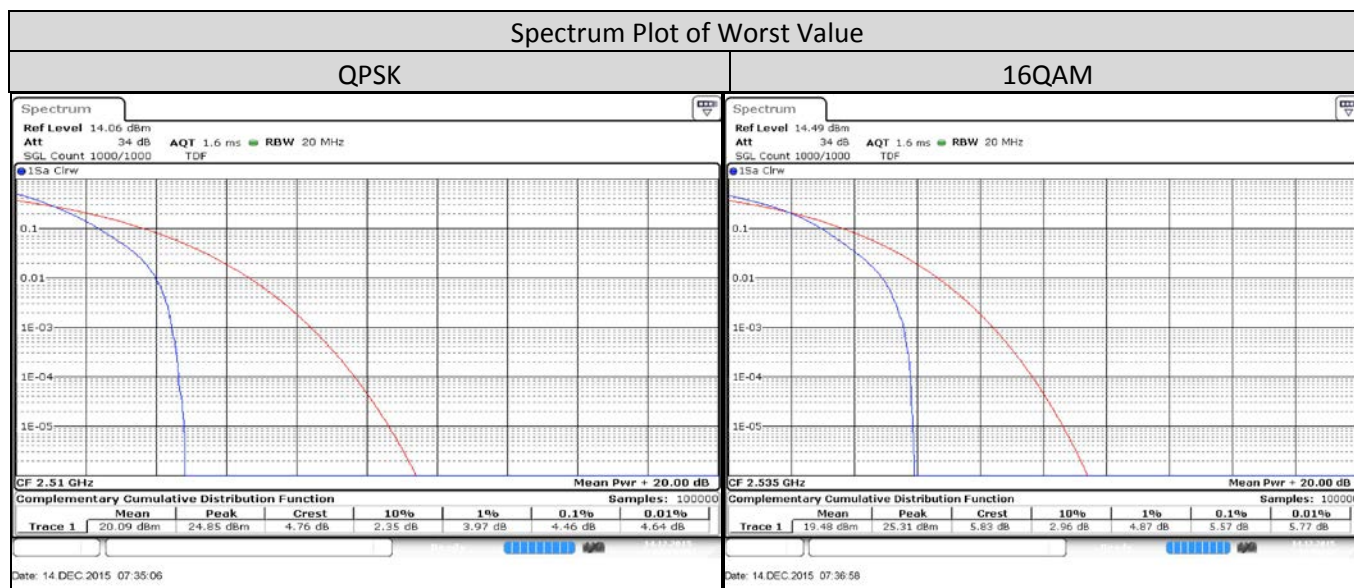
LTE Band/ BW/ RB Size/ RB Offset	Channel Number	Tx Frequency (MHz)	Peak To Average (dB)	
			QPSK Modulation	16QAM Modulation
Band 7 / 10MHz/50/0	Low CH 20800	2505.0 MHz	4.46	5.45
	Mid CH 21100	2535.0 MHz	4.61	5.65
	High CH 21400	2565.0 MHz	4.52	5.48



LTE Band/ BW/ RB Size/ RB Offset	Channel Number	Tx Frequency (MHz)	Peak To Average (dB)	
			QPSK Modulation	16QAM Modulation
Band 7 / 15MHz/75/0	Low CH 20825	2507.5 MHz	4.55	5.51
	Mid CH 21100	2535.0 MHz	4.55	5.57
	High CH 21375	2562.5 MHz	4.58	5.57

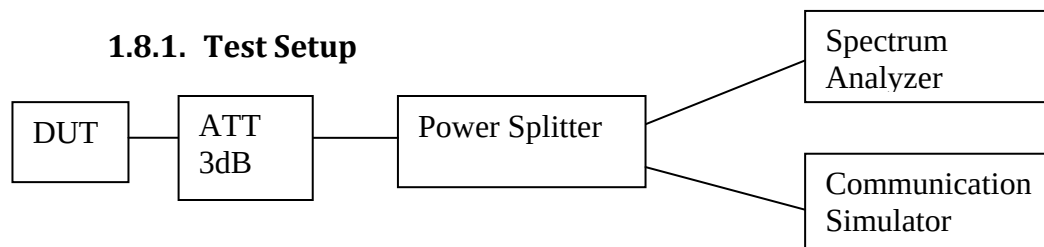


LTE Band/ BW/ RB Size/ RB Offset	Channel Number	Tx Frequency (MHz)	Peak To Average (dB)	
			QPSK Modulation	16QAM Modulation
Band 7 / 20MHz/100/0	Low CH 20850	2510.0 MHz	4.46	5.51
	Mid CH 21100	2535.0 MHz	4.41	5.57
	High CH 21350	2560.0 MHz	4.38	5.48



1.8. Occupied Bandwidth

1.8.1. Test Setup



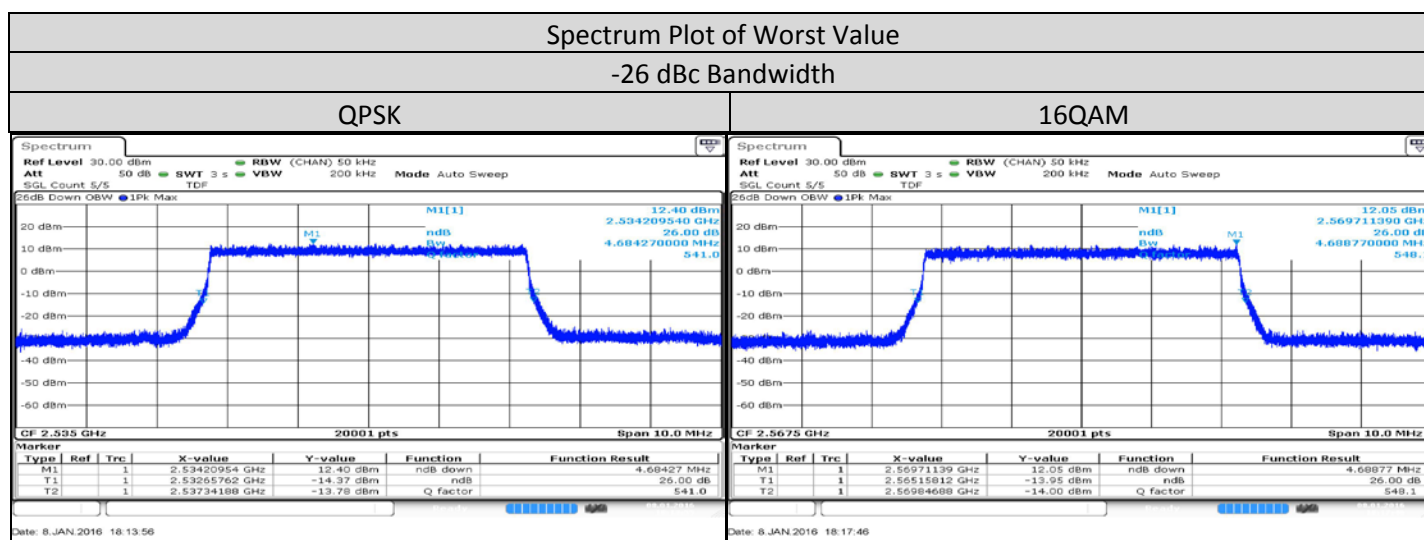
- 1) The DUT transmitter output port was connected to communication simulator with above setup.
- 2) Path loss for the measurement included.
- 3) For LTE measurement, set DUT to transmit maximum power & full RB size through communication simulator.
- 4) For LTE measurement, set DUT to transmit maximum 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

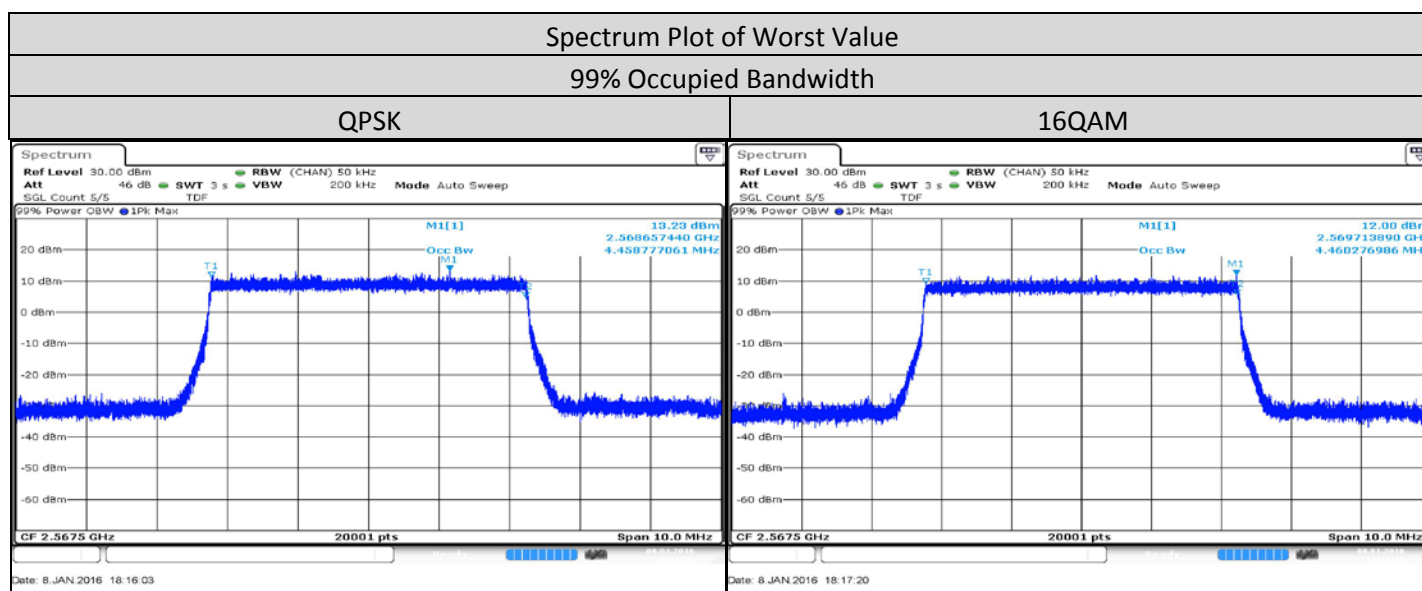
The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

1.8.3. Occupied Bandwidth - LTE Band 7 (2500 - 2570MHz)

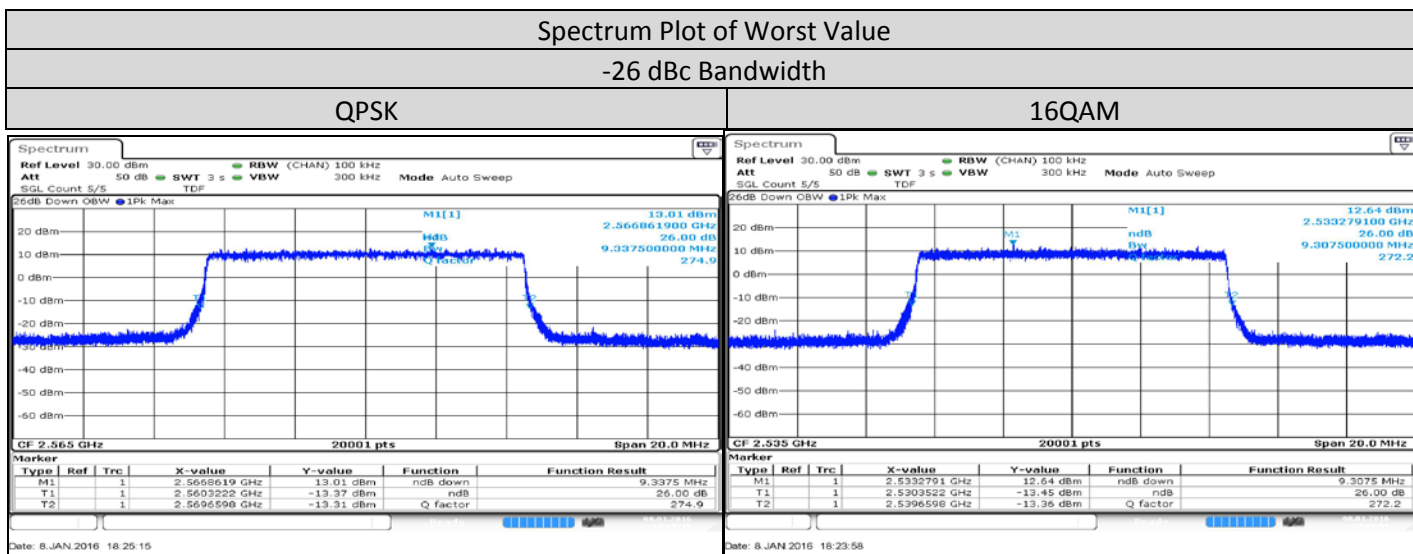
LTE Band/ BW/ RB Size/ RB Offset	Channel Number	Tx Frequency (MHz)	-26 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 7 / 5MHz/25/0	Low CH 20775	2502.5 MHz	4.6793	4.6618
	Mid CH 21100	2535 MHz	4.6843	4.6793
	High CH 21425	2567.5 MHz	4.6798	4.6888



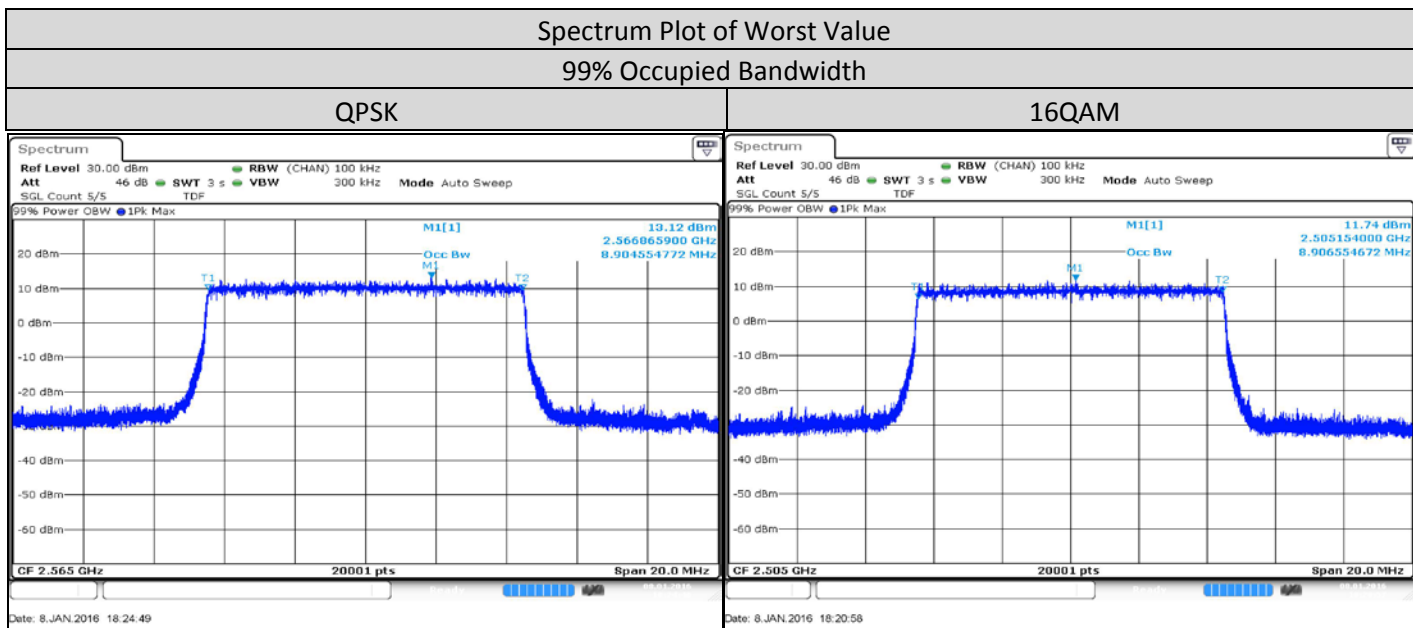
LTE Band/ BW/ RB Size/ RB Offset	Channel Number	Tx Frequency (MHz)	99% Occupied Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 7 / 5MHz/25/0	Low CH 20775	2502.5 MHz	4.4523	4.4538
	Mid CH 21100	2535 MHz	4.4573	4.4568
	High CH 21425	2567.5 MHz	4.4588	4.4603



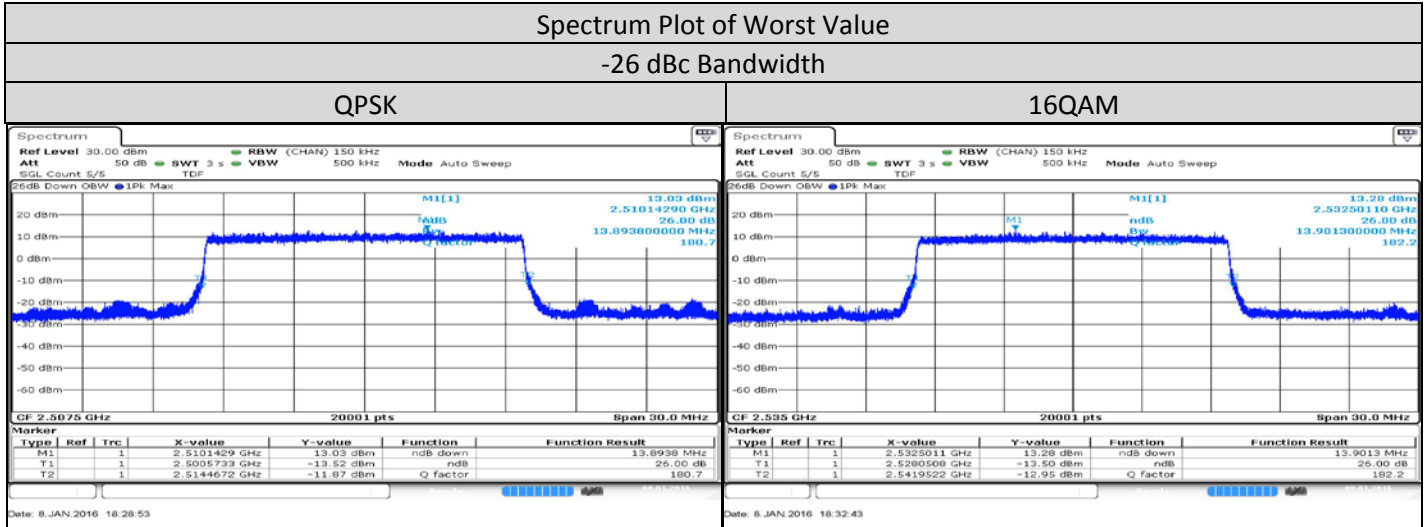
LTE Band/ BW/ RB Size/ RB Offset	Channel Number	Tx Frequency (MHz)	-26 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 7 / 10MHz/50/0	Low CH 20800	2505 MHz	9.2515	9.2555
	Mid CH 21100	2535 MHz	9.2685	9.3075
	High CH 21400	2565 MHz	9.3375	9.2515



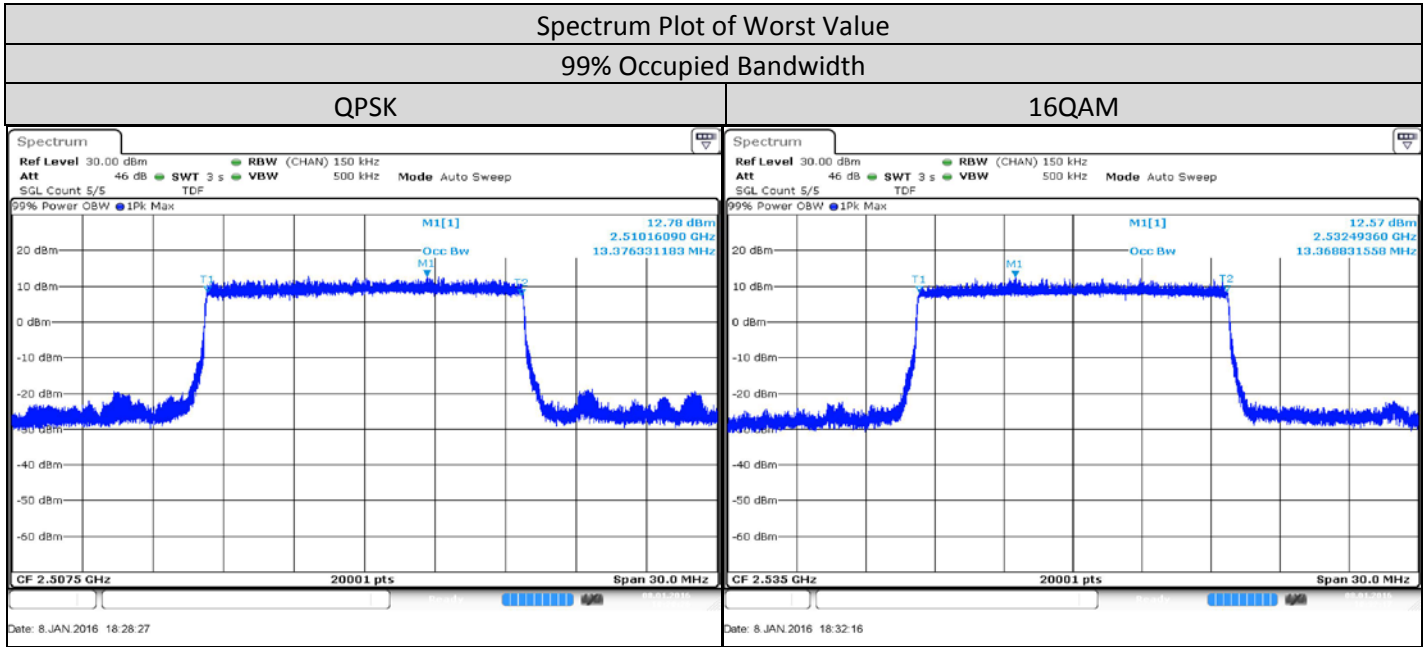
LTE Band/ BW/ RB Size/ RB Offset	Channel Number	Tx Frequency (MHz)	99 % Occupied Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 7 / 10MHz/50/0	Low CH 20800	2505 MHz	8.9006	8.9066
	Mid CH 21100	2535 MHz	8.8996	8.8956
	High CH 21400	2565 MHz	8.9046	8.8996



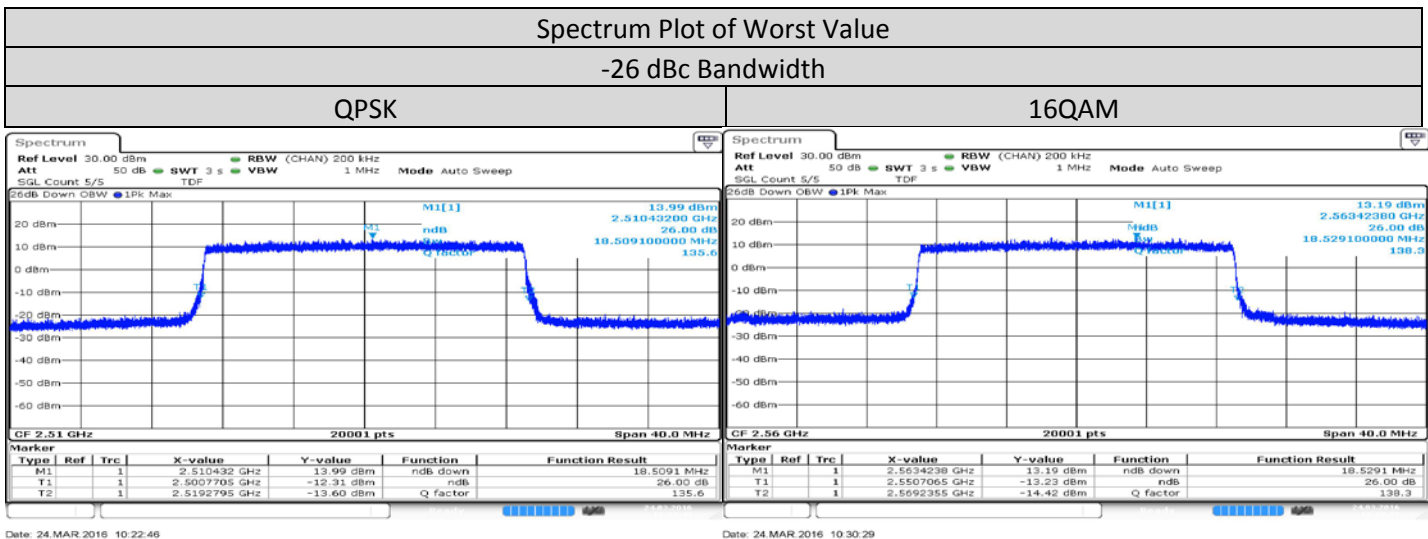
LTE Band/ BW/ RB Size/ RB Offset	Channel Number	Tx Frequency (MHz)	-26 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 7 / 15MHz/75/0	Low CH 20825	2507.5 MHz	13.8938	13.8923
	Mid CH 21100	2535 MHz	13.8908	13.9013
	High CH 21375	2562.5 MHz	13.8923	13.7798



LTE Band/ BW/ RB Size/ RB Offset	Channel Number	Tx Frequency (MHz)	99% Occupied Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 7 / 15MHz/75/0	Low CH 20825	2507.5 MHz	13.3763	13.3673
	Mid CH 21100	2535 MHz	13.3748	13.3688
	High CH 21375	2562.5 MHz	13.3703	13.3673

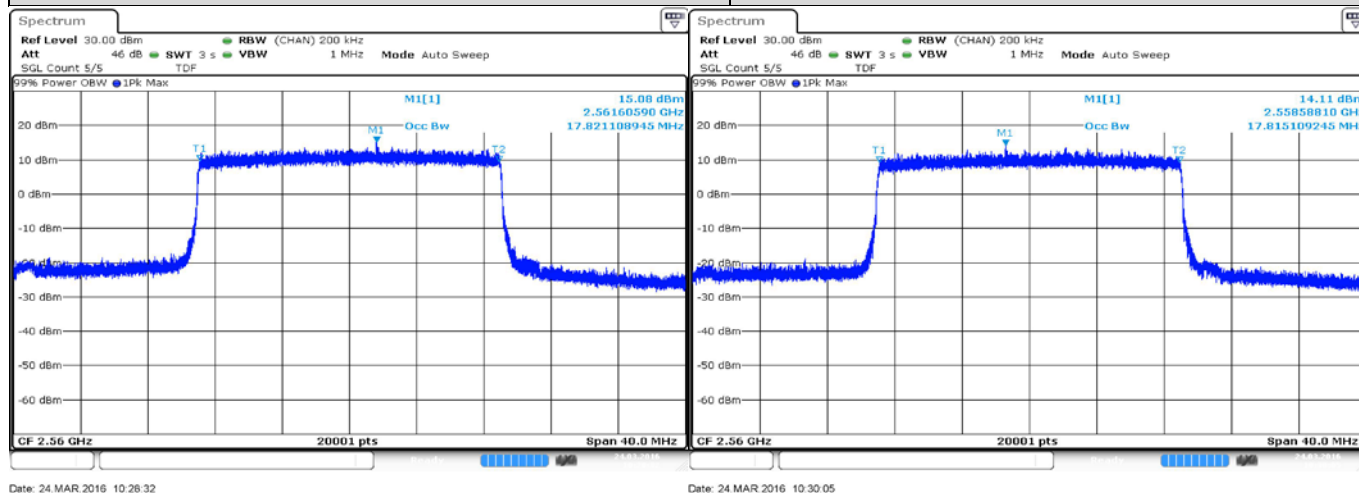


LTE Band/ BW/ RB Size/ RB Offset	Channel Number	Tx Frequency (MHz)	-26 dBc Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 7 / 20MHz/100/0	Low CH 20850	2510 MHz	18.5091	18.4731
	Mid CH 21100	2535 MHz	18.5051	18.4271
	High CH 21350	2560 MHz	18.5071	18.5291



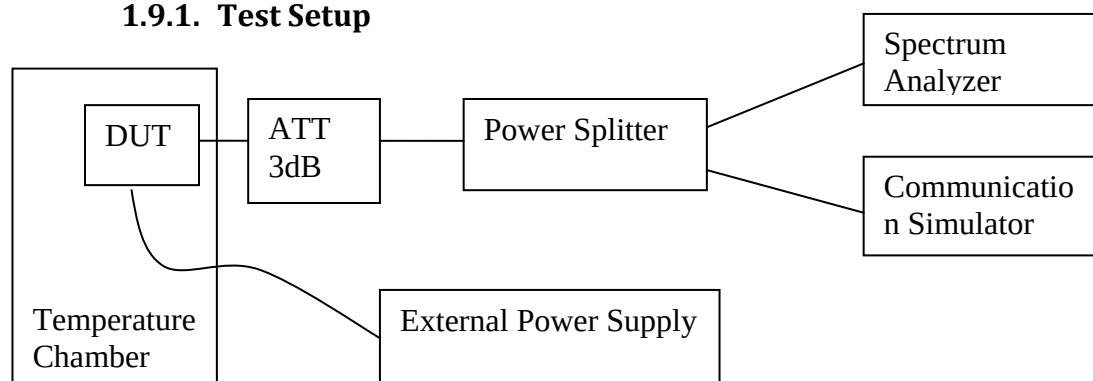
LTE Band/ BW/ RB Size/ RB Offset	Channel Number	Tx Frequency (MHz)	99% Occupied Bandwidth (MHz)	
			QPSK Modulation	16QAM Modulation
Band 7 / 20MHz/100/0	Low CH 20850	2510 MHz	17.8191	17.8111
	Mid CH 21100	2535 MHz	17.8051	17.8051
	High CH 21350	2560 MHz	17.8211	17.8151

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



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 -10 ~ 60 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

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

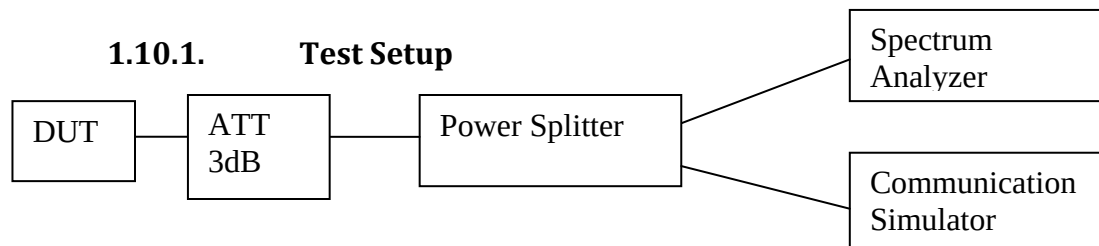
1.9.3. Frequency Stability – LTE Band 7 (2500 - 2570MHz)

LTE Band/ Modulation/ RB Size/ RB Offset	Frequency Error VS Temperature						
	Temp (Deg C)	Frequency Error (ppm)					
		1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz
Band 7 QPSK RB Size= 100% RB Offset = 0	60			0.0036	0.0047	0.0068	0.0060
	50			0.0054	0.0063	0.0057	0.0063
	40			-0.0061	0.0053	0.0062	0.0063
	30			0.0054	0.0067	0.0057	0.0063
	20			0.0068	0.0089	0.0069	0.0066
	10			-0.0051	0.0055	0.0060	0.0081
	0			0.0045	0.0061	0.0052	0.0067
	-10			0.0059	0.0055	0.0060	0.0052
	-20			0.0068	0.0066	0.0055	0.0063
	-30			0.0058	0.0070	0.0061	-0.0051

LTE Band/ Modulation/ RB Size/ RB Offset	Frequency Error VS Voltage						
	Voltage (V)	Frequency Error (ppm)					
		1.4MHz	3MHz	5MHz	10MHz	15MHz	20MHz
Band 7 QPSK RB Size= 100% RB Offset = 0	4.1			0.0069	0.0063	0.0055	0.0063
	3.7			0.0062	0.0063	0.0065	-0.0061
	3.5			0.0068	0.0058	0.0067	0.0061

1.10. Band Edge / Emission Mask Conducted Spurious Emission

1.10.1. Test Setup

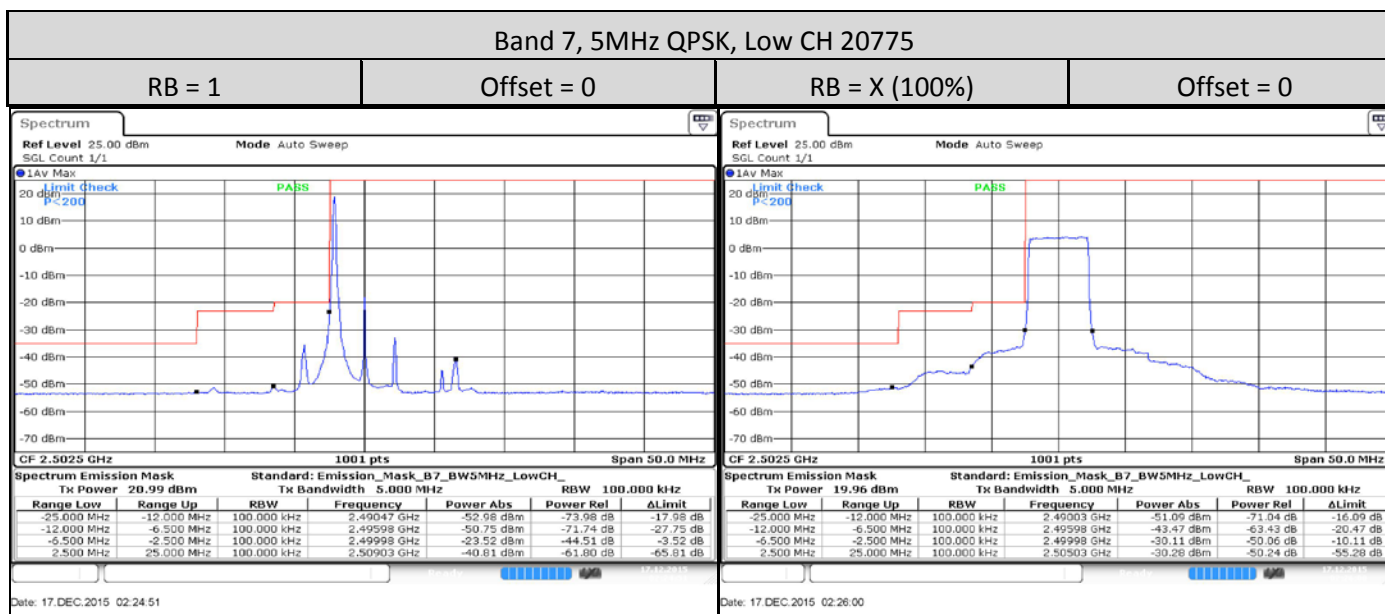


- 1) The DUT transmitter output port was connected to communication simulator with above setup.
- 2) Path loss for the measurement included.
- 3) Set DUT to transmit maximum power through communication simulator.
- 4) The band edges of lowest and highest channels with the highest RF powers were measured.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

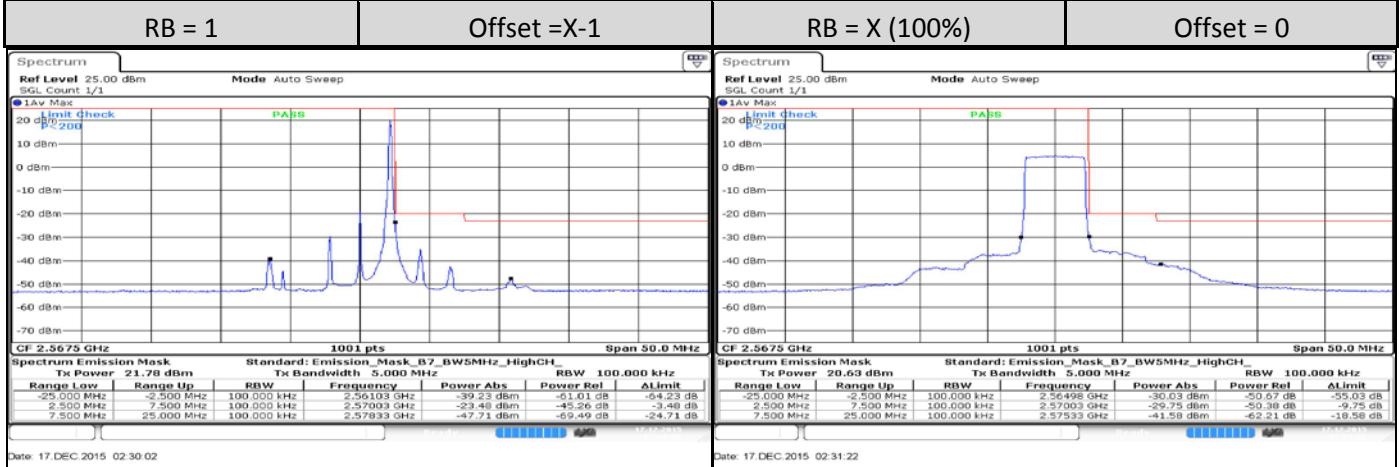
1.10.2. Test Limit

For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz.

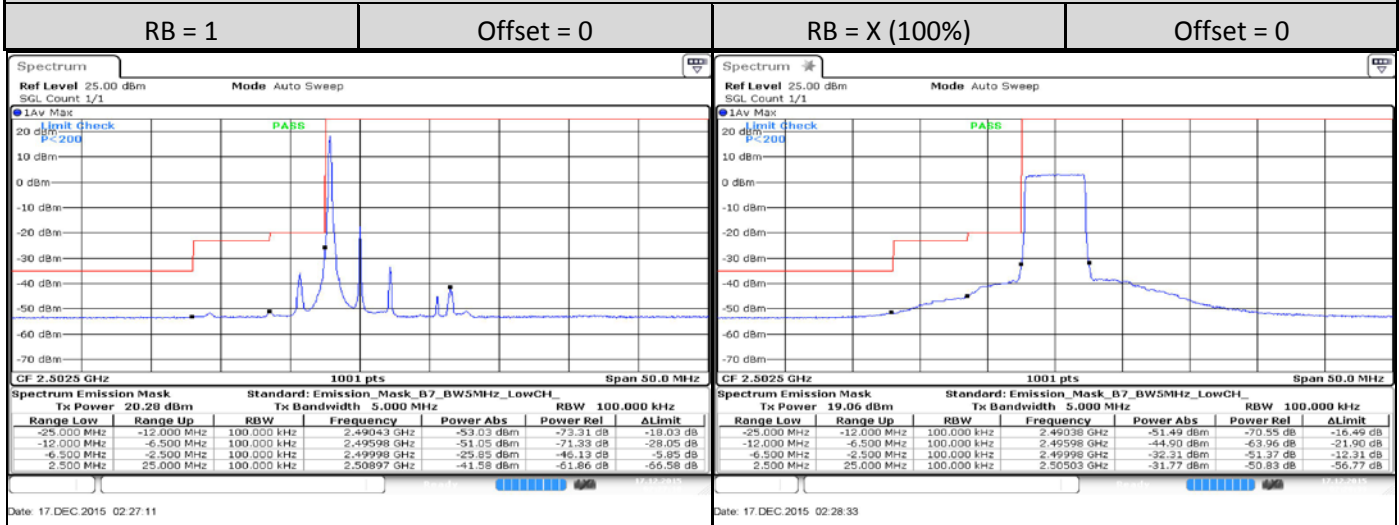
1.10.3. Band Edge/Emission Mask Conducted Spurious Emission – LTE Band 7(2500 - 2570MHz)



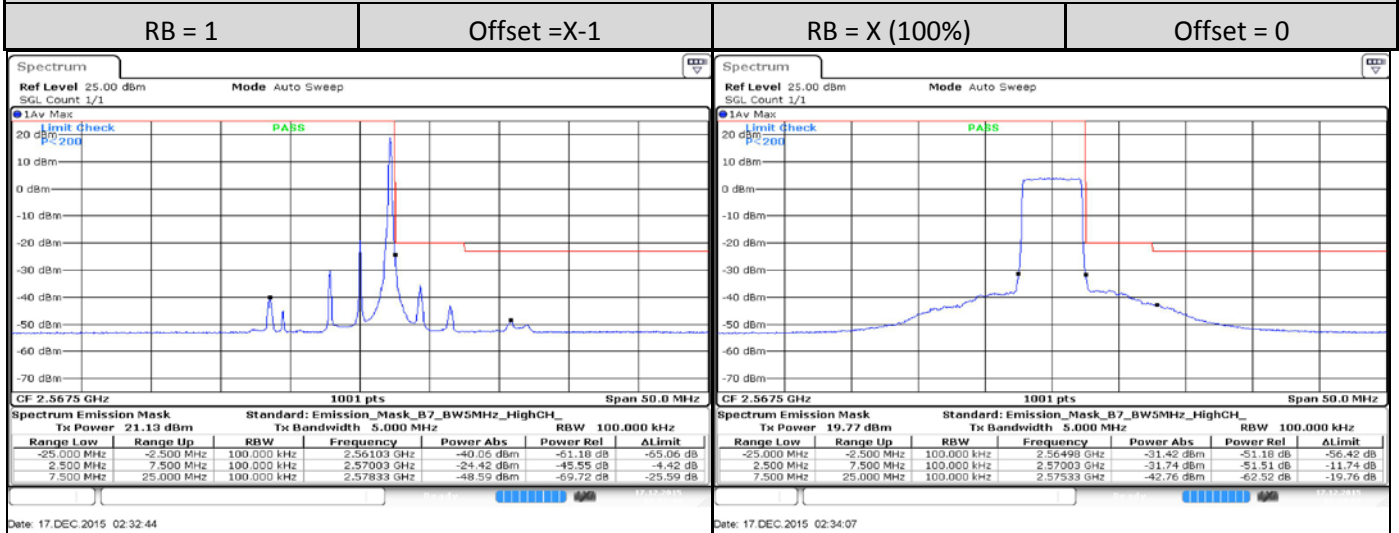
Band 7, 5MHz QPSK, High CH 21425



Band 7, 5MHz 16-QAM, Low CH 20775



Band 7, 5MHz 16-QAM, High CH 21425



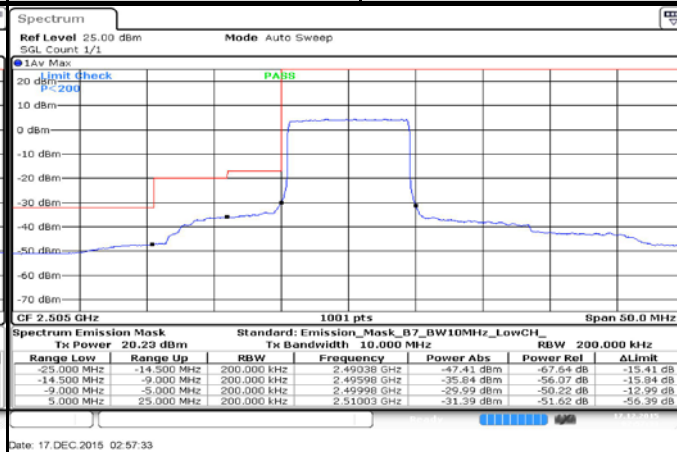
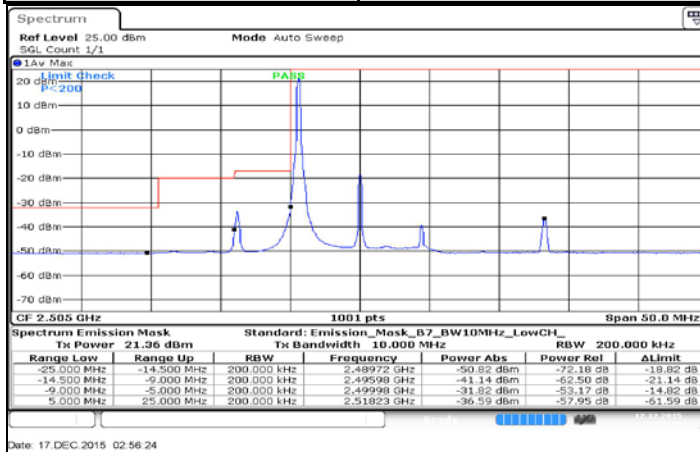
Band 7, 10MHz QPSK, Low CH 20800

RB = 1

Offset = 0

RB = X (100%)

Offset = 0



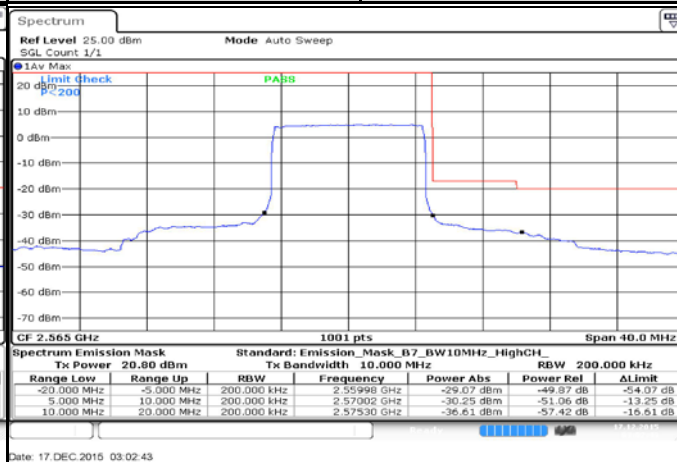
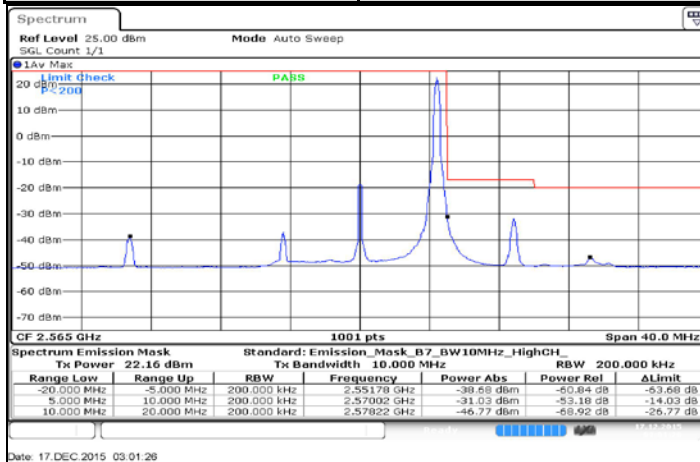
Band 7, 10MHz QPSK, High CH 21400

RB = 1

Offset = X-1

RB = X (100%)

Offset = 0



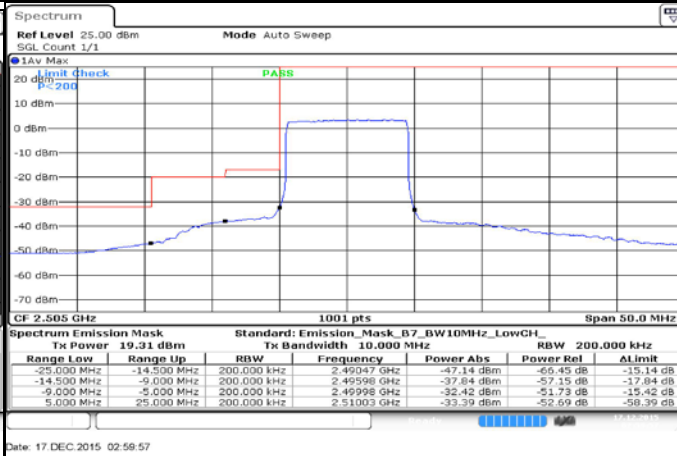
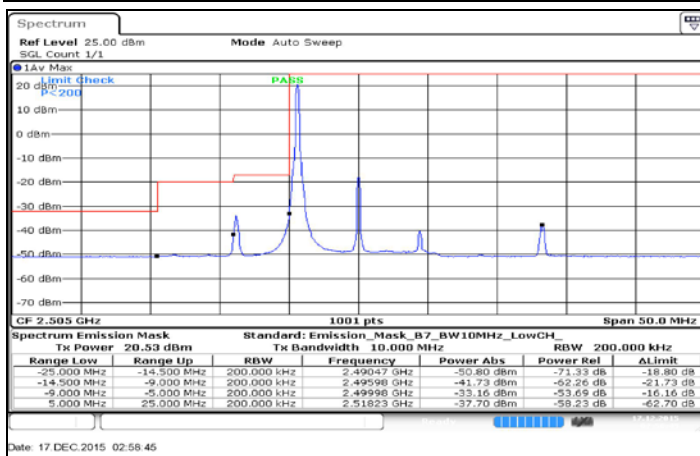
Band 7, 10MHz 16-QAM, Low CH 20800

RB = 1

Offset = 0

RB = X (100%)

Offset = 0



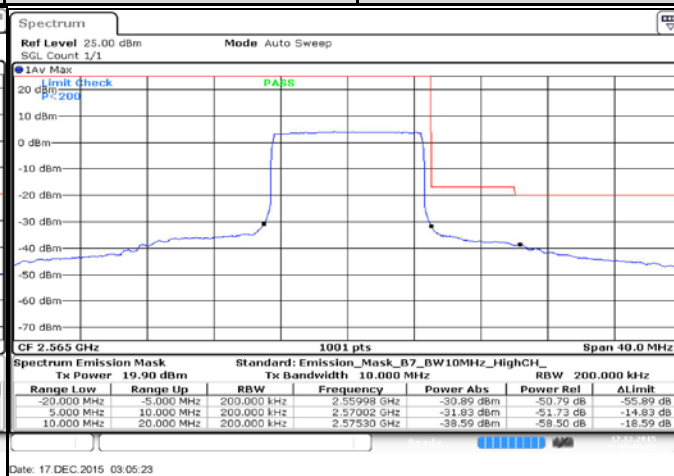
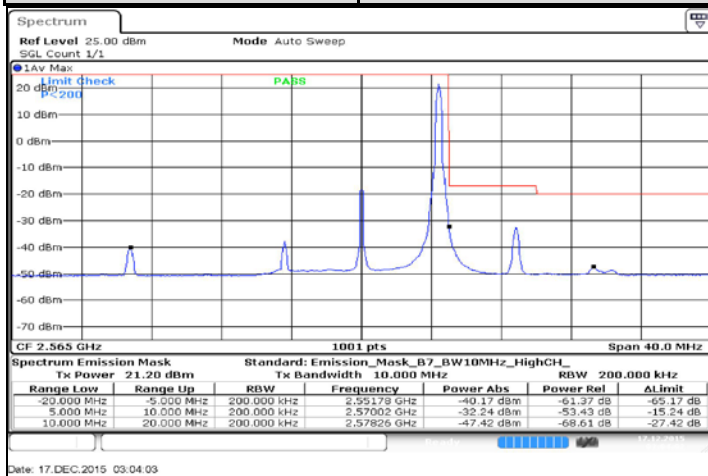
Band 7, 10MHz 16-QAM, High CH 21400

RB = 1

Offset = X-1

RB = X (100%)

Offset = 0



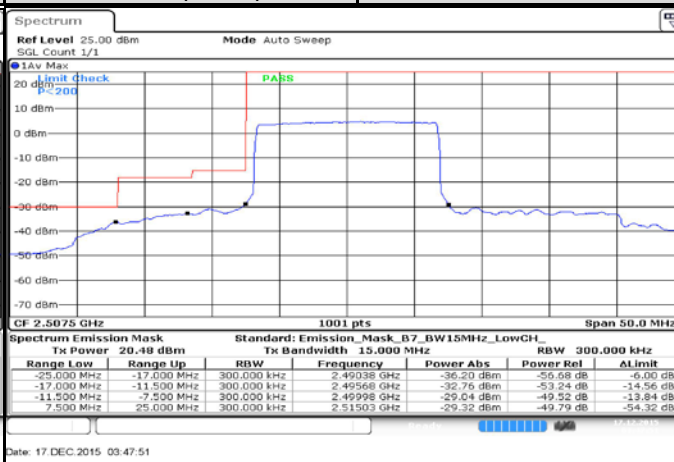
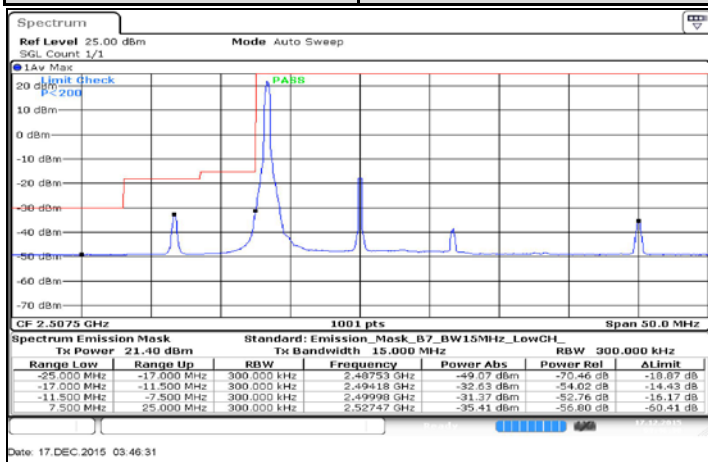
Band 7, 15MHz QPSK, Low CH 20825

RB = 1

Offset = 0

RB = X (100%)

Offset = 0



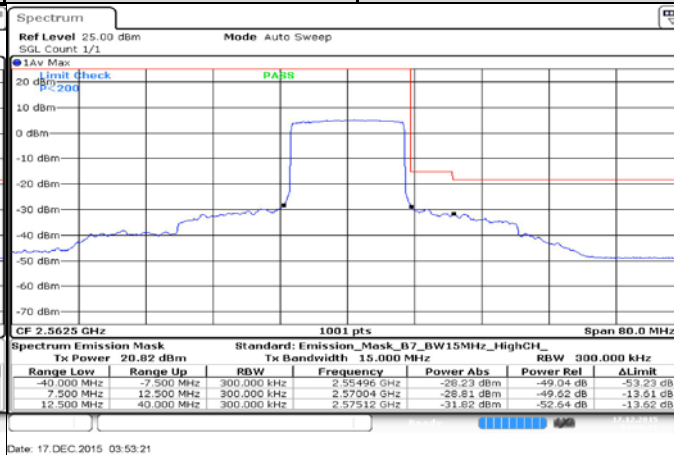
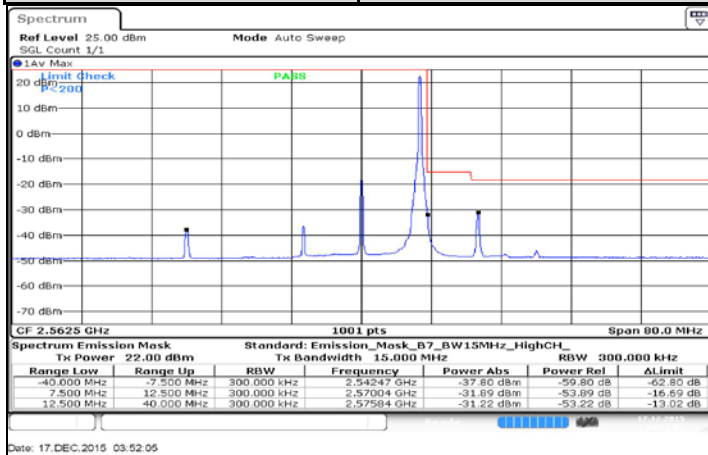
Band 7, 15MHz QPSK, High CH 21375

RB = 1

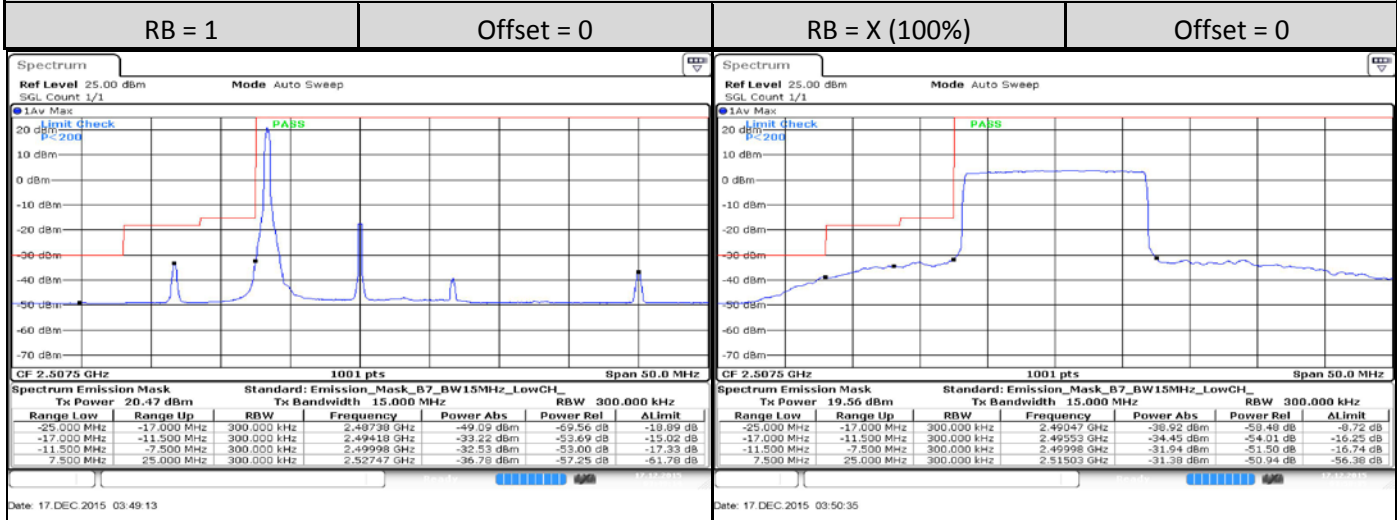
Offset = X-1

RB = X (100%)

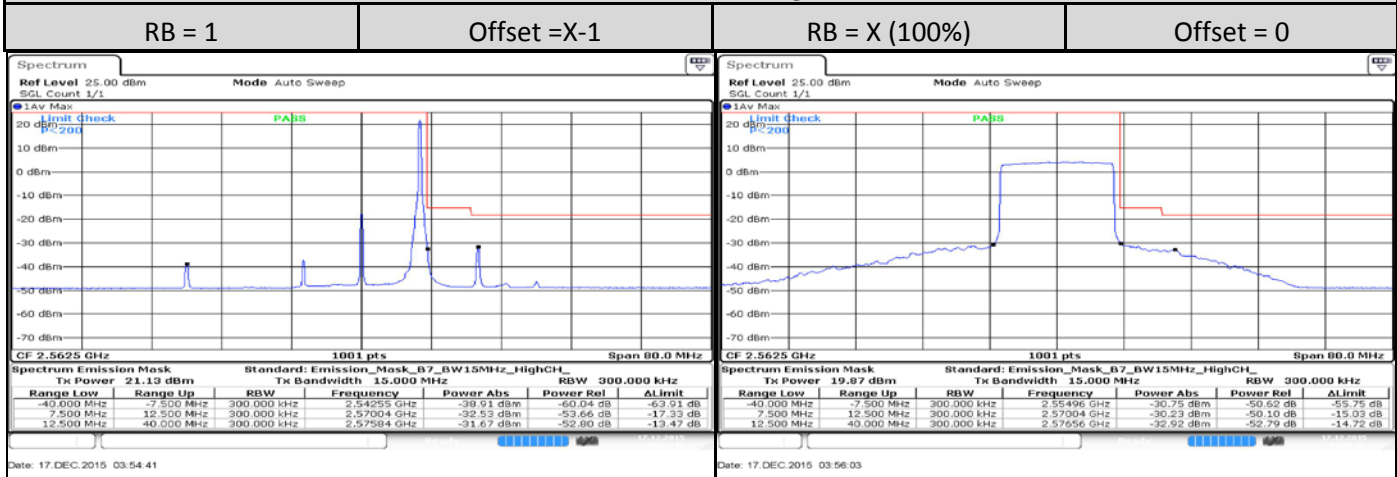
Offset = 0



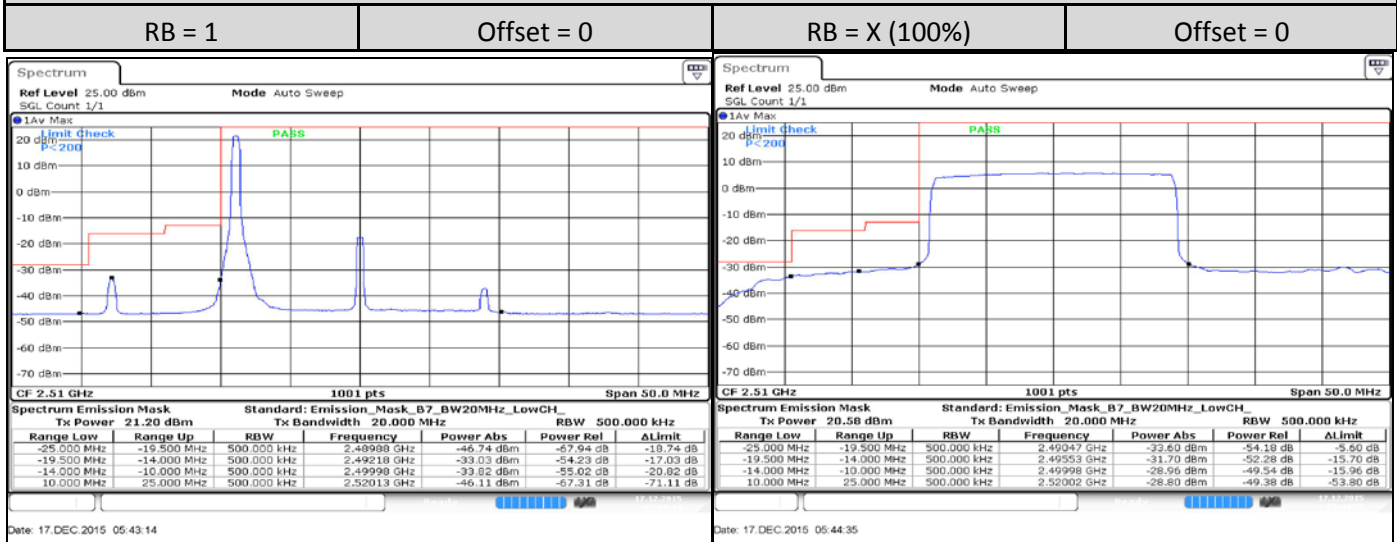
Band 7, 15MHz 16-QAM, Low CH 20825



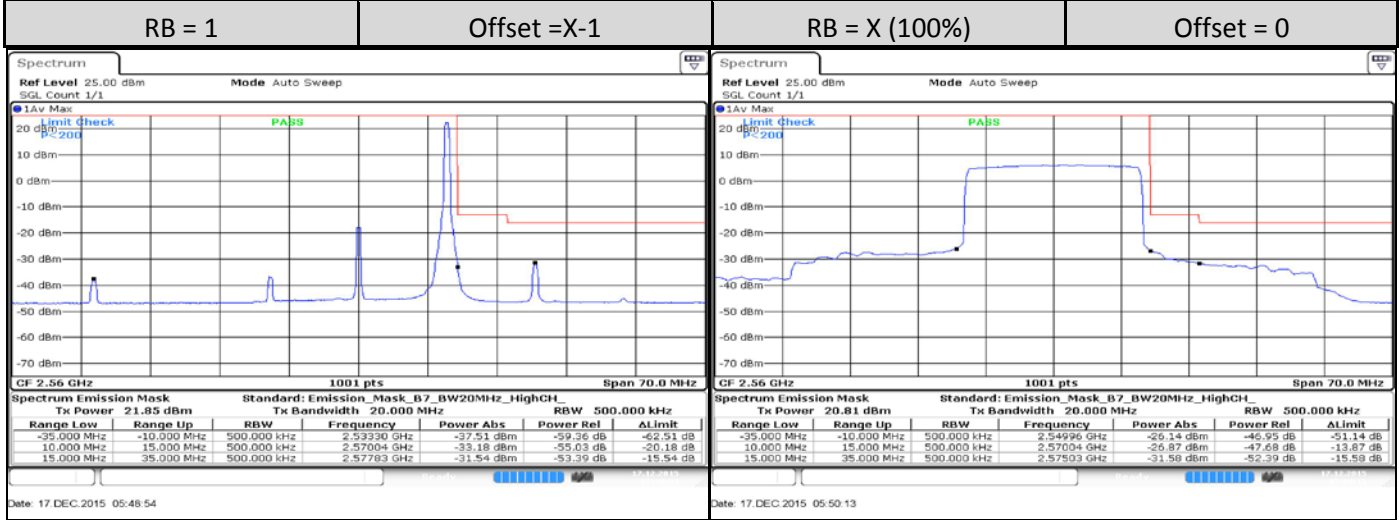
Band 7, 15MHz 16-QAM, High CH 21375



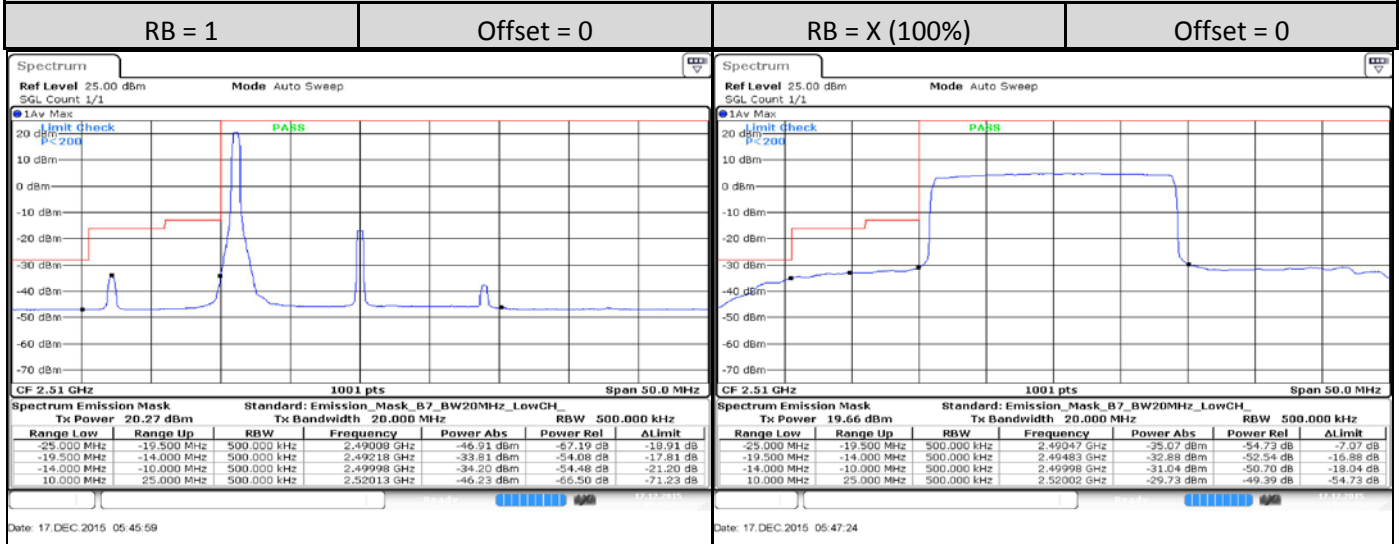
Band 7, 20MHz QPSK, Low CH 20850



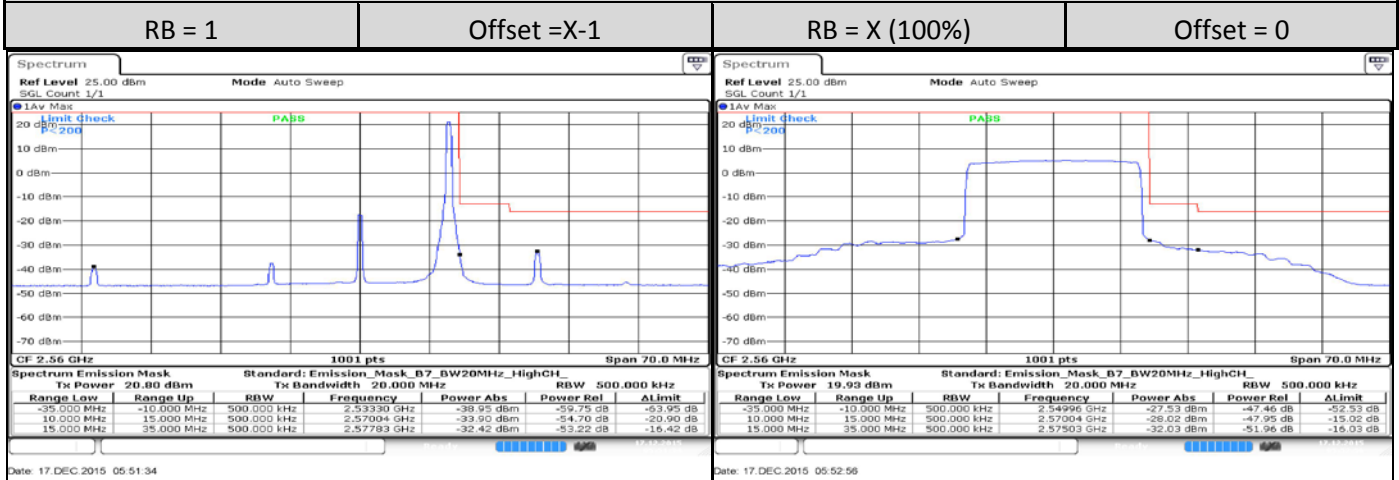
Band 7, 20MHz QPSK, High CH 21350



Band 7, 20MHz 16-QAM, Low CH 20850

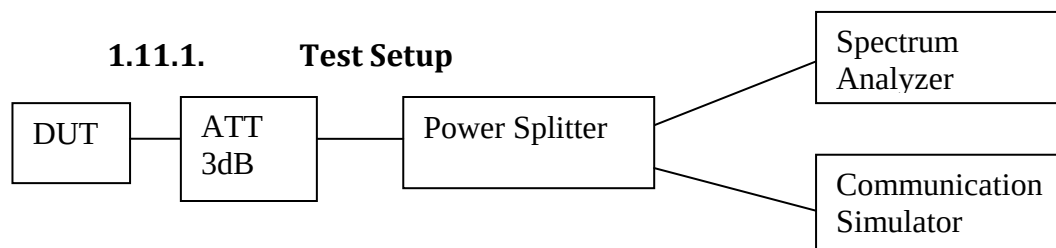


Band 7, 20MHz 16-QAM, High CH 21350



1.11. Conducted Spurious Emission

1.11.1. Test Setup



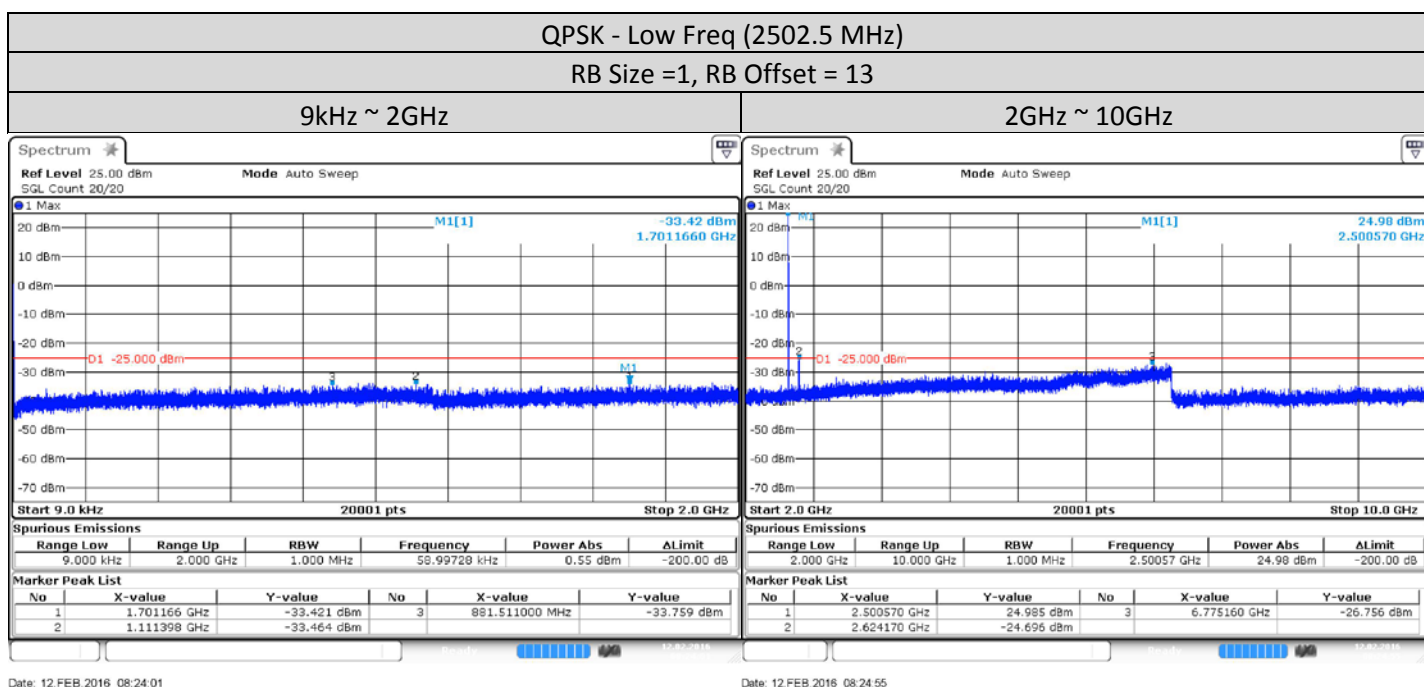
- 1) The DUT transmitter output port was connected to communication simulator with above setup.
- 2) Path loss for the measurement included.
- 3) Set DUT to transmit maximum power through communication simulator.
- 4) Spectrum Analyzer setting, RBW = 1 MHz, VBW = 3 MHz
- 5) The spurious emission of lowest, middle and highest channels with the highest RF powers were measured.
- 6) Record the maximum trace plot into the test report.

1.11.2. Test Limit

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $55 + 10\log_{10}(P)$ dB. The limit of emission is equal to -25 dBm.

1.11.3. Conducted Spurious Emissions – LTE Band 7 (2500 - 2570MHz)

5MHz



Date: 12.FEB.2016 08:24:01

Date: 12.FEB.2016 08:24:55

