



FCC RADIO TEST REPORT

FCC ID : S9GQ410US01
Equipment : Q410 LTE Access Point
Brand Name : Ruckus
Model Name : Q410-US01
Applicant : Ruckus Wireless, Inc.
350 West Java Drive Sunnyvale California 94089 USA
Manufacturer : Ruckus Wireless, Inc.
350 West Java Drive Sunnyvale California 94089 USA
Standard : 47 CFR FCC Part2, 96

The product was received on Nov. 14, 2018, and testing was started from Dec. 08, 2018 and completed on Dec. 12, 2018. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI / TIA-603-E-2016, ANSI C63.26-2015 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Jordan Hsiao

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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TEL : 886-3-327-3456
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Report Template No.: HE1-V1 Ver1.0



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.1	2.1046	Conducted Output Power	PASS	-
3.2	96.41(b)	Maximum Effective Isotropic Radiated Power (EIRP)	PASS	-
3.3	96.41(b)	Maximum Power Spectral Density (PSD)	PASS	
3.4	96.41(f)	Reception limits	PASS	
3.5	96.41(g)	Peak-to-average power ratio	PASS	-
3.6	2.1049	99% OBW and 26dB Bandwidth	PASS	-
3.7	2.1051 96.41(e)	3.5 GHz Emissions and Interference Limits	PASS	
3.8	2.1053	Field Strength of Spurious Radiation	PASS	-
3.9	2.1055	Frequency Stability for Temperature & Voltage	PASS	-

Declaration of Conformity:

The judgment of conformity in the report is based on the measurement results excluding the measurement uncertainty.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Jordan Hsiao

Report Producer: Viola Huang



1 General Description

1.1 Product Feature of Equipment Under Test

Items	Description
Power Type	From power adapter or PoE
EUT supports Radios application	LTE

1.2 Product Specification subjective to this standard

Items	Description
Base Station Classes	☐ Wide Area Base Station (Macro Cell) ☐ Medium Range Base Station (Micro Cell) ☒ Local Area Base Station (Pico Cell) ☐ Home Base Station (Femto Cell)
Category of CBSD	☒ Category A ☐ Category B
Professional Installation	☒ Yes ☐ No
RF Test Tool Software of CBSD	SmallCell DVT Test Client (1.0.306.003)
TX Frequency	10MHz: 3555 MHz ~ 3695 MHz 20MHz: 3560 MHz ~ 3690 MHz
RX Frequency	10MHz: 3555 MHz ~ 3695 MHz 20MHz: 3560 MHz ~ 3690 MHz
Bandwidth (MHz)	10/20
Maximum Output Power to Antenna	10MHz: 24.91 dBm 20MHz: 25.75 dBm
Maximum 99% Occupied Bandwidth	10MHz: 8.939 MHz 20MHz: 17.831 MHz
Type of Modulation	☒ QPSK ☒ 16QAM ☒ 64QAM ☐ 256QAM

Note: The above information was declared by manufacturer.



1.3 Antenna Information

Ant.	Brand	P/N	Antenna Type	Connector	Antenna Gain (dBi)	Cable Loss (dB)	True Gain (dBi)	Remark
1	WNC	95XKAB15.G23	PIFA Antenna	I-PEX	2.97	0.35	2.62	LTE Ant.
2	WNC	95XKAB15.G24	PIFA Antenna	I-PEX	2.97	0.7	2.27	LTE Ant.
3	WNC	95XKAB15.G25	PIFA Antenna	I-PEX	3.06	-	3.06	GPS Ant.

Note1: The above information was declared by manufacturer.

Note2: Both Ant. 1 and Ant. 2 could transmit/receive simultaneously.

1.4 Maximum EIRP Power, Frequency Tolerance, and Emission Designator

FCC Rule	System	Bandwidth	Type of Modulation	Maximum EIRP (dBm/10MHz)	EIRP (W)	Maximum EIRP (dBm/20MHz)	EIRP (W)	Frequency Stability	Emission Designator
Part 96	LTE Band 48	10MHz	QPSK	27.37	0.546	-	-	With in the authorized bands of operation	8M93G7D
			16QAM	27.41	0.551	-	-		8M94W7D
			64QAM	27.53	0.566	-	-		8M92W7D
		20MHz	QPSK	-	-	28.35	0.684		17M8G7D
			16QAM	-	-	28.36	0.685		17M8W7D
			64QAM	-	-	28.37	0.687		17M8W7D

1.5 Accessories

Accessories
RJ-45 cable*1, non- Shielded, 0.16m
Bracket*1
Pedestal*3



1.6 Support Equipment

For TH01-HY

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A

For 03CH03-HY

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
A	Notebook	DELL	E4300	N/A
B	Spectrum	Agilent	N9010A	N/A

1.7 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part2, 96
- ANSI / TIA-603-E-2016
- ANSI C63.26-2015
- FCC KDB 971168 D01 v03r01
- FCC KDB 940660 D01 v01
- FCC KDB 412172 D01 v01r01
- FCC KDB 662911 D01 v02r01

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

1.8 Testing Location

Testing Location				
☒	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL : 886-3-327-3456 FAX : 886-3-327-0973		
☐	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085		
Test Condition		Test Site No.	Test Engineer	Test Environment
RF Conducted		TH01-HY	Roki Liu	23°C / 60%
Radiated Emission		03CH03-HY	Roki Liu	22°C / 54%
				Test Date
				Dec. 08, 2018–Dec. 12, 2018
				Dec. 10, 2018

Test site Designation No. TW1190 with FCC.

Test site registered number IC 4086B-1 with Industry Canada.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

Test Item	Bandwidth (MHz)	Tested Frequency (MHz)	Mode
Conducted Output Power	10, 20	B,M,T	QPSK,16-QAM,64-QAM
Maximum Effective Isotropic Radiated Power (EIRP)	10, 20	B,M,T	QPSK,16-QAM,64-QAM
Maximum Power Spectral Density (PSD)	10, 20	B,M,T	QPSK,16-QAM,64-QAM
Reception limits	10, 20	M	-
Peak-to-average power ratio	10, 20	B,M,T	QPSK,16-QAM,64-QAM
99% OBW and 26dB Bandwidth	10, 20	B,M,T	QPSK,16-QAM,64-QAM
3.5 GHz Emissions and Interference Limits	10, 20	B,M,T	QPSK,16-QAM,64-QAM
Field Strength of Spurious Radiation	20	B,M,T	64-QAM
Frequency Stability for Temperature & Voltage	10, 20	B, T	QPSK,16-QAM,64-QAM

Note 1:

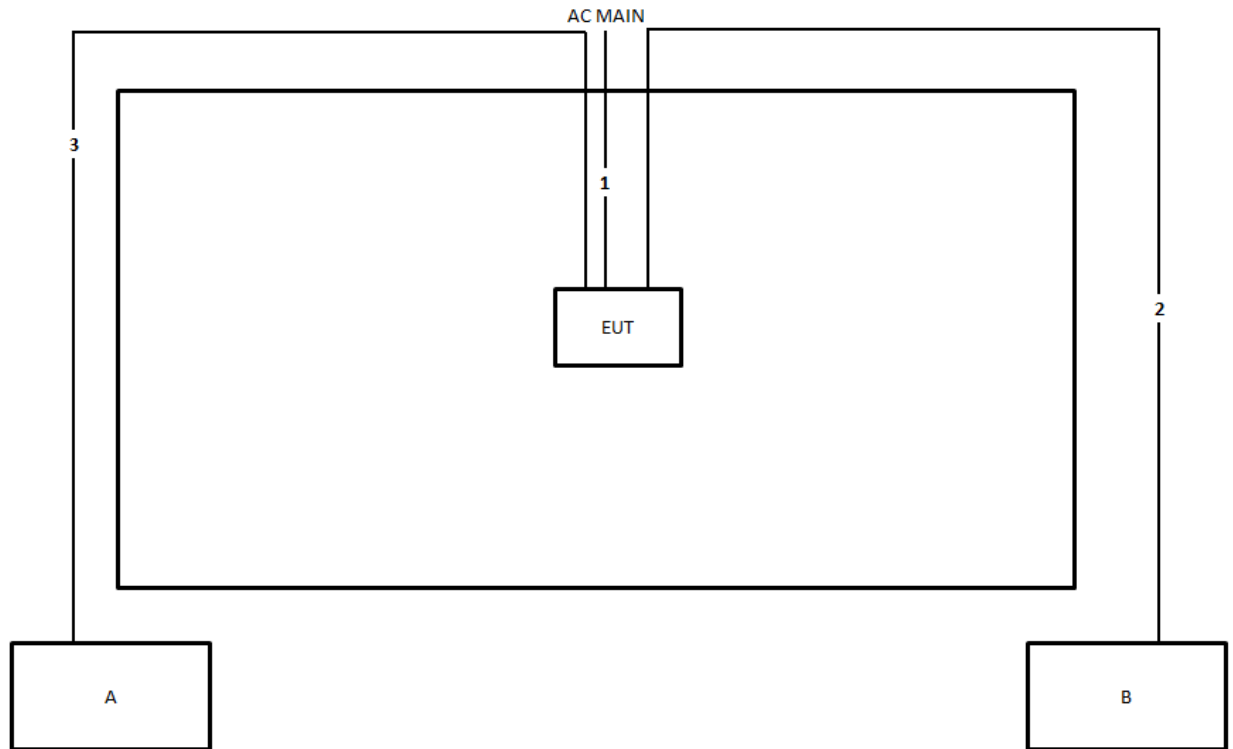
B: Bottom

M: Middle

T: Top

Note 2: It were performed at its Z-axis and Y-axis the worst-case was found at Z-axis for Field Strength of Spurious Radiation. So the measurement will follow this same test configuration.

2.2 Test Setup Diagram



Item	Connection	Shielded	Length
1	Power cable	No	1.5m
2	RF cable	No	10m
3	RJ-45 cable	No	10m



2.3 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

The following shows an offset computation example with RF cable loss 1 dB and a 20dB attenuator.

Example:

$$\begin{aligned}\text{Offset (dB)} &= \text{RF cable loss (dB)} + \text{attenuator factor (dB)} \\ &= 1 + 20 = 21 \text{ (dB)}\end{aligned}$$

For transmission duty cycle < 98% and setting sweep trigger to free run:

When the EUT cannot be configured to transmit at full-power on a continuous basis (i.e., duty cycle < 98%) and the instrumentation cannot be configured to measure only during active full-power transmissions, then set sweep trigger to free run and add $10 \log (1/\text{duty cycle})$ to the measured power level if the EUT duty cycle is constant (i.e., duty cycle variations are less than or equal to $\pm 2\%$).

Example:

Add $[10 \log (1/0.25)] = 6 \text{ dB}$ if the duty cycle is a constant 25%.



3 Test Result

3.1 Conducted Output Power

3.1.1 Description of the Conducted Output Power measurement

The EUT shall be set at maximum power through commands provided by manufacturer. The measured power in the radio frequency at the transmitter output terminals shall be reported.

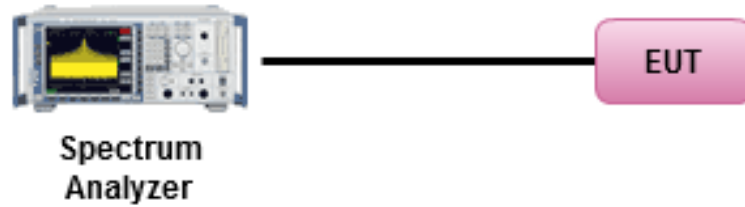
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

1. Connect the transmitter output port of EUT to the spectrum analyzer.
2. Set EUT to transmit at maximum output power.
3. Select lowest, middle, and highest channels for each modulation.
4. Measure the maximum power at RF output terminals .

3.1.4 Test Setup



3.1.5 Test Result of Conducted Output Power

Refer as Appendix A

3.2 Maximum Effective Isotropic Radiated Power (EIRP)

3.2.1 Description of the Maximum Effective Isotropic Radiated Power measurement

The EUT shall be set at maximum power through commands provided by manufacturer, and the the EIRP limit shall apply to any 10 MHz portion of the bandwidth. The EIRP of category A CBSD shall be limited to 30dBm/10MHz, and the EIRP of category B CBSD shall be limited to 47dBm/10MHz. According to FCC KDB 940660 D01 v01

Power Approach, the EIRP can be determined from conducted output power.

$EIRP = P_T + G_T - L_C$, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

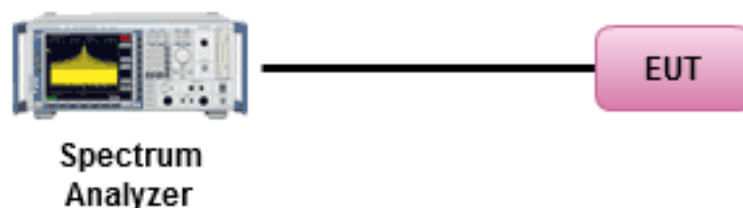
3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.2.3 Test Procedures

1. The testing follows Section 5.2 of ANSI C63.26-2015.
2. Connect the transmitter output port of EUT to the spectrum analyzer.
3. Set EUT to transmit at maximum output power.
4. Select lowest, middle, and highest channels for each modulation.
5. Measure the maximum power in any 10 MHz portion of the bandwidth at RF output terminals.
6. Determining EIRP by conducted RF output power plus transmitting antenna gain.

3.2.4 Test Setup



3.2.5 Test Result of Maximum Effective Isotropic Radiated Power

Refer as Appendix B

3.3 Maximum Power Spectral Density (PSD)

3.3.1 Description of the Maximum Power Spectral Density Measurement

The maximum power spectral density measurements, where the intent is to measure the maximum value of the time average of the power spectral density measured during a period of continuous transmission. To perform this measurement, the EUT must be configured to transmit continuously at maximum power. The PSD of category A CBSD shall be limited to 20dBm/MHz, and the EIRP of category B CBSD shall be limited to 37dBm/MHz.

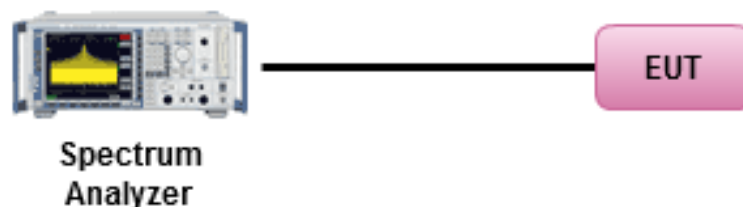
3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

1. The testing follows Section 5.2 of ANSI C63.26-2015.
2. Connect the transmitter output port of EUT to the spectrum analyzer.
3. Set EUT to transmit at maximum output power.
4. Select lowest, middle, and highest channels for each modulation.
5. Measure the maximum PSD at RF output terminals .

3.3.4 Test Setup



3.3.5 Test Result of Maximum Power spectral density

Refer as Appendix C

3.4 Reception limits

3.4.1 Description of the Reception limits Measurement

Priority Access Licensees must accept adjacent channel and in-band blocking interference (3550 and 3700 MHz) up to a power spectral density level not to exceed -40 dBm at receive antenna ports with greater than 99% probability when integrated over a 10 megahertz reference bandwidth.

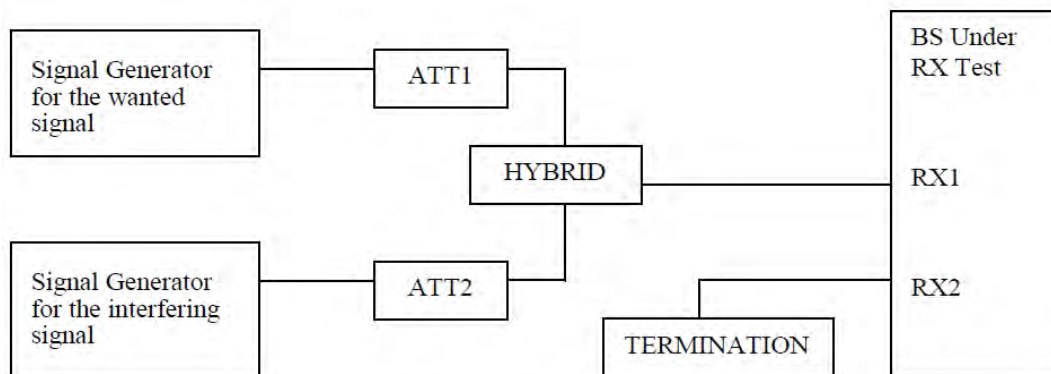
3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

1. Refer to the figure in 3.4.4 for connecting EUT and signal generator.
2. Generate the wanted signal and adjust the input level to specified (ex. -86.5dBm) power level.
3. Select lowest, middle, and highest channels for each modulation.
4. For adjacent channel interference, Set-up the interfering signals at the adjacent channel frequency and adjust the interfering signal level to -40dBm at receiver antenna ports.
5. For in-band blocking interference, Set-up the interfering signal in the range from 3550MHz to 3700MHz and adjust the interfering signal level to -40dBm at receiver antenna ports.
6. Measure and check the throughput of EUT greater than 99% probability.

3.4.4 Test Setup



3.4.5 Test Result of Reception limits

Refer as Appendix D

3.5 Peak-to-Average Power Ratio (PAPR)

3.5.1 Description of the Peak-to-Average Power Ratio Measurement

The peak-to-average power ratio of the transmission may not exceed 13 dB.

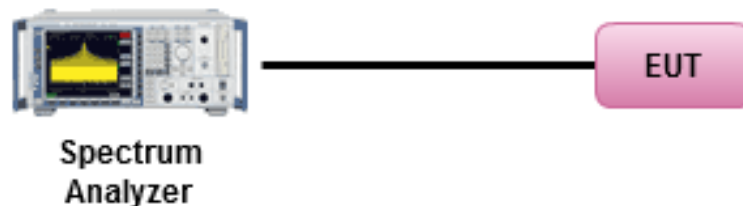
3.5.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

1. The testing follows Section 5.2.6 of ANSI C63.26-2015.
2. Connect the transmitter output port of EUT to the spectrum analyzer.
3. Set EUT to transmit at maximum output power.
4. Select lowest, middle, and highest channels for each modulation.
5. Set the CCDF (Complementary Cumulative Distribution Function) option of the spectrum analyzer. Record the maximum PAPR level associated with a probability of 0.1%.

3.5.4 Test Setup



3.5.5 Test Result of Peak-to-Average Ratio

Refer as Appendix E

3.6 99% Occupied Bandwidth (OBW) and 26dB Bandwidth

3.6.1 Description of the 99% Occupied Bandwidth and 26dB Bandwidth Measurement

The 99% occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.

The emission bandwidth is defined as the width of the signal between two points, located at the 2 sides of the carrier frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

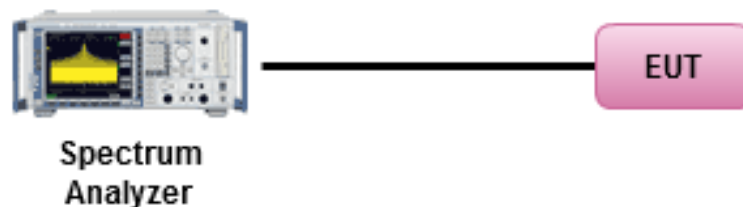
3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

1. Connect the transmitter output port of EUT to the spectrum analyzer.
2. Set EUT to transmit at maximum output power.
3. Select lowest, middle, and highest channels for each modulation.
4. The setting of spectrum analyzer follows the FCC KDB 971168 D01 v03r01 Section 4.2 and 4.3.
5. Record the result of 99% occupied bandwidth and the 26dB bandwidth.

3.6.4 Test Setup



3.6.5 Test Result of Occupied Bandwidth and 26dB Bandwidth

Refer as Appendix F

3.7 3.5 GHz Emissions and Interference Limits

3.7.1 Description of the 3.5 GHz Emissions and Interference Limits Measurement

Confirm that the device satisfies the emission limits specified in Section 96.41(e) for all declared channel sizes, at the lowest and highest edges of the band, and in the middle of the band. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic. The limits for emission outside the fundamental are as follows.

- Within 0 MHz to 10 MHz above and below the assigned channel ≤ -13 dBm/MHz
- Greater than 10 MHz above and below the assigned channel ≤ -25 dBm/MHz
- Any emission below 3530 MHz and above 3720 MHz ≤ -40 dBm/MHz

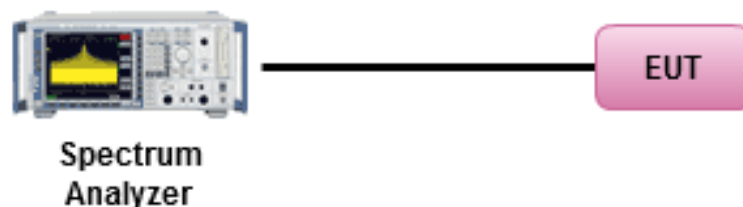
3.7.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.7.3 Test Procedures

1. Connect the transmitter output port of EUT to the spectrum analyzer.
2. Set EUT to transmit at maximum output power.
3. Select lowest, middle, and highest channels for each modulation.
4. The setting of spectrum analyzer follows FCC KDB 940660 D01 v01 Section 6.0.
5. Note that unwanted emissions for CBSDs are relative to the authorized channel

3.7.4 Test Setup



3.7.5 Test Result (Plots) of Conducted Band Edge

Refer as Appendix G



3.8 Field Strength of Spurious Radiation

3.8.1 Description of the Field Strength of Spurious Radiated Measurement

Confirm that the radiated emission satisfies the limits specified in Section 96.41(e) for all declared channel sizes, at the lowest and highest edges of the band, and in the middle of the band. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic. The limits for emission outside the fundamental are as follows.

- Within 0 MHz to 10 MHz above and below the assigned channel ≤ -13 dBm/MHz (55.2 dBuV/m at 3m)
- Greater than 10 MHz above and below the assigned channel ≤ -25 dBm/MHz (82.2 dBuV/m at 3m)
- Any emission below 3530 MHz and above 3720 MHz ≤ -40 dBm/MHz (55.2 dBuV/m at 3m)

3.8.2 Measuring Instruments

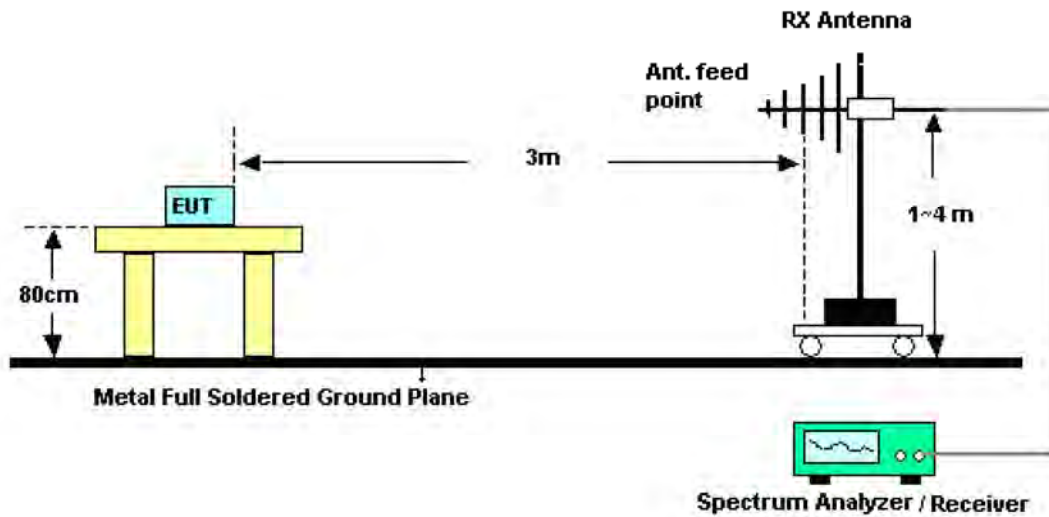
The measuring equipment is listed in the section 4 of this test report.

3.8.3 Test Procedures

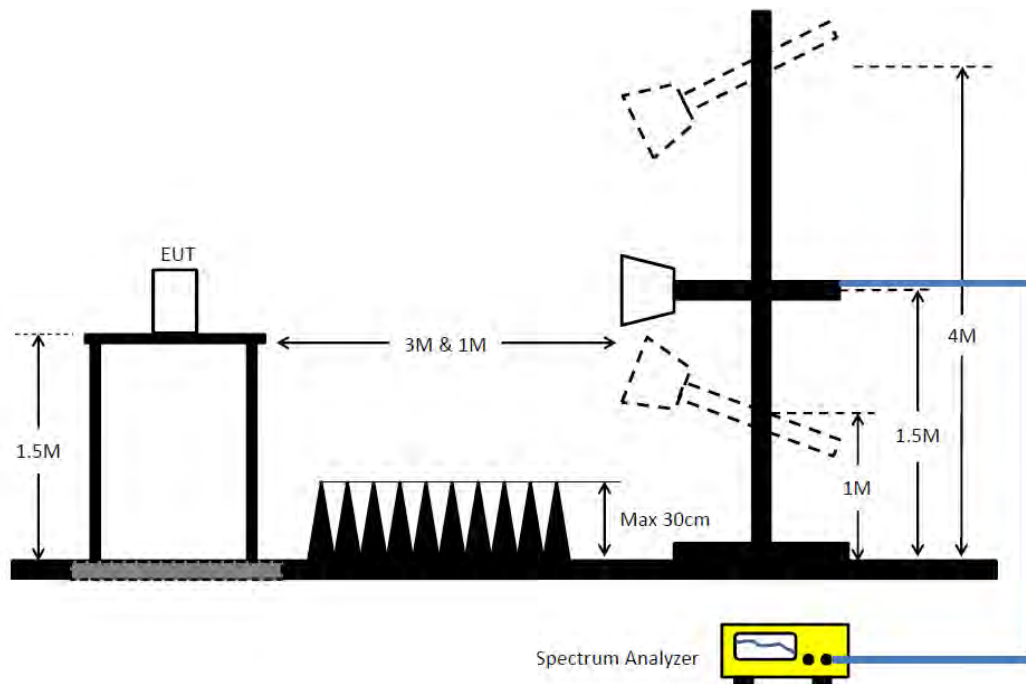
1. The testing follows Section 5.7 of ANSI C63.26-2015.
2. The EUT was placed on a rotatable wooden table 0.8 meters above the ground.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between one meter and four meters to search for the maximum spurious emission for both horizontal and vertical polarizations.
6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking record of maximum spurious emission.
7. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
8. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
9. Taking the record of output power at antenna port.
10. Repeat step 7 to step 8 for another polarization.
11. $\text{EIRP (dBm)} = \text{S.G. Power} - \text{Tx Cable Loss} + \text{Tx Antenna Gain}$
12. $\text{ERP (dBm)} = \text{EIRP} - 2.15$
13. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.8.4 Test Setup

For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.8.5 Test Result of Field Strength of Spurious Radiated

Refer as Appendix H

3.9 Frequency Stability for Temperature & Voltage

3.9.1 Description of the Frequency Stability for Temperature & Voltage Measurement

The frequency stability of the transmitter shall be measured while varying the ambient temperatures and supply voltages over the ranges specified in Section 2.1055. And ensure that the fundamental emission stays within the authorized frequency block.

3.9.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

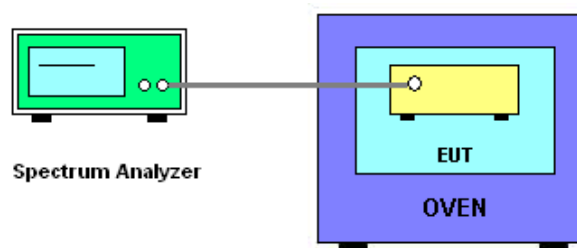
3.9.3 Test Procedures for Temperature Variation

1. The testing follows FCC KDB 971168 D01 v03r01 Section 9.0
2. The EUT was set up in the thermal chamber and connected to the spectrum analyzer.
3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute.
4. With power OFF, the temperature was raised in -30°C steps up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.
5. Frequency measurements shall be made at intervals of not more than 10° centigrade through the range.

3.9.4 Test Procedures for Voltage Variation

1. The testing follows FCC KDB 971168 D01 v03r01 Section 9.0.
2. The EUT was placed in a temperature chamber at 25±5° C and connected to the spectrum analyzer.
3. The power supply voltage to the EUT was varied from 85 to 115% of the nominal value measured at the input to the EUT.
4. The variation in frequency was measured for the worst case.

3.9.5 Test Setup



3.9.6 Test Result of Temperature and Voltage Variation

Refer as Appendix I



4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Signal analyzer	Agilent	N9010A	MY52220519	10kHz~44GHz	Mar. 20, 2018	Mar. 19, 2019	Radiation (03CH03-HY)
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30MHz ~ 1GHz 3m	Oct. 30, 2018	Oct. 29, 2019	Radiation (03CH03-HY)
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz ~ 18GHz 3m	Oct. 30, 2018	Oct. 29, 2019	Radiation (03CH03-HY)
Amplifier	HP	8447D	2944A08033	10kHz ~ 1.3GHz	Apr. 23, 2018	Apr. 19, 2019	Radiation (03CH03-HY)
Microwave System Preamplifier	KEYSIGHT	83017A	MY53270196	1GHz ~ 26.5GHz	Sep. 05, 2018	Sep. 04, 2019	Radiation (03CH03-HY)
Preamplifier	MITEQ	TTA1840-35-H G	1864481	18GHz ~ 40GHz	Aug. 24, 2018	Aug. 23, 2019	Radiation (03CH03-HY)
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170154	18GHz ~ 40GHz	Feb. 06, 2018	Feb. 05, 2019	Radiation (03CH03-HY)
Signal analyzer	Agilent	N9010A	MY52220519	10kHz~44GHz	Mar. 20, 2018	Mar. 19, 2019	Conducted (TH01-HY)
Temp. and Humidity Chamber	GIANT FORCE	GTH-225-40-CP-AR	MAA1311-008	-40~100℃ 10~98%RH	May 30, 2018	May 29, 2019	Conducted (TH01-HY)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz ~26.5 GHz	Oct. 03, 2018	Oct. 02, 2019	Conducted (TH01-HY)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz ~26.5 GHz	Oct. 03, 2018	Oct. 02, 2019	Conducted (TH01-HY)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz ~26.5 GHz	Oct. 03, 2018	Oct. 02, 2019	Conducted (TH01-HY)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz ~26.5 GHz	Oct. 03, 2018	Oct. 02, 2019	Conducted (TH01-HY)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz ~26.5 GHz	Oct. 03, 2018	Oct. 02, 2019	Conducted (TH01-HY)
Power Sensor	Agilent	U2021XA	MY54320013	50MHz~18GHz	Aug. 13, 2018	Aug. 12, 2019	Conducted (TH01-HY)
MW Analog Signal Generator	Keysight	N5183A	MY50142965	100kHz~20GHz	Nov. 19, 2018	Nov. 18, 2019	Conducted (TH01-HY)
Vector Signal Generator	Keysight	N5182B	MY53052408	9kHz~6GHz	Jan. 02, 2018	Jan. 01, 2019	Conducted (TH01-HY)

Note: Calibration Interval of instruments listed above is one year.



5 Measurement Uncertainty

Test Items	Uncertainty	Remark
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.3 dB	Confidence levels of 95%

Summary

Mode	Power (dBm)	Power (W)
Band 48	-	-
Band 48_LTE_10MHz_(QPSK)_2TX	24.75	0.299
Band 48_LTE_10MHz_(16QAM)_2TX	24.79	0.301
Band 48_LTE_10MHz_(64QAM)_2TX	24.91	0.310
Band 48_LTE_20MHz_(QPSK)_2TX	25.73	0.374
Band 48_LTE_20MHz_(16QAM)_2TX	25.74	0.375
Band 48_LTE_20MHz_(64QAM)_2TX	25.75	0.376

Result

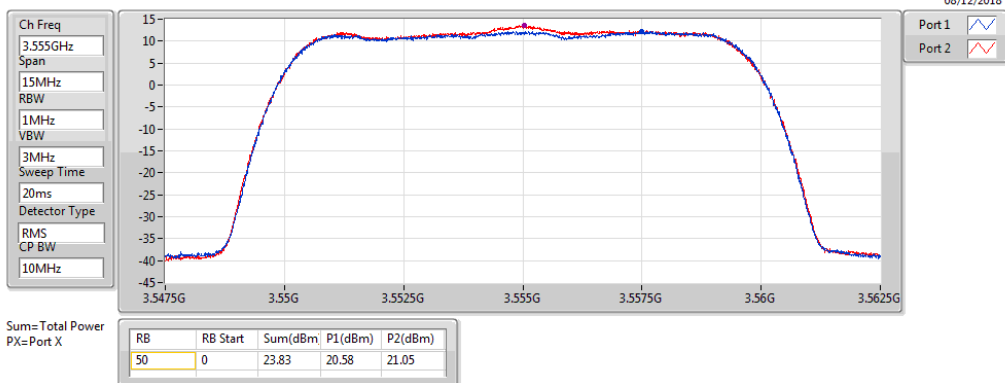
Mode	Setting	Result	RB	RB Start	DG (dBi)	P1 (dBm)	P2 (dBm)	Power (dBm)	Power (W)
LTE_10MHz_(QPSK)_2TX		-	-	-	-	-	-	-	-
3555MHz	22	Pass	50	0	2.62	20.58	21.05	23.83	0.242
3625MHz	22	Pass	50	0	2.62	20.95	21.81	24.41	0.276
3695MHz	22	Pass	50	0	2.62	21.76	21.71	24.75	0.299
LTE_10MHz_(16QAM)_2TX		-	-	-	-	-	-	-	-
3555MHz	22	Pass	50	0	2.62	20.52	21.06	23.81	0.240
3625MHz	22	Pass	50	0	2.62	21.30	21.84	24.59	0.288
3695MHz	22	Pass	50	0	2.62	21.81	21.75	24.79	0.301
LTE_10MHz_(64QAM)_2TX		-	-	-	-	-	-	-	-
3555MHz	22	Pass	50	0	2.62	20.71	21.16	23.95	0.248
3625MHz	22	Pass	50	0	2.62	21.12	21.70	24.43	0.277
3695MHz	22	Pass	50	0	2.62	21.77	22.03	24.91	0.310
LTE_20MHz_(QPSK)_2TX		-	-	-	-	-	-	-	-
3560MHz	23.5	Pass	100	0	2.62	21.76	22.07	24.93	0.311
3625MHz	23.5	Pass	100	0	2.62	22.67	22.51	25.60	0.363
3690MHz	23.5	Pass	100	0	2.62	22.78	22.65	25.73	0.374
LTE_20MHz_(16QAM)_2TX		-	-	-	-	-	-	-	-
3560MHz	23.5	Pass	100	0	2.62	21.68	22.00	24.85	0.305
3625MHz	23.5	Pass	100	0	2.62	22.48	22.57	25.54	0.358
3690MHz	23.5	Pass	100	0	2.62	22.62	22.84	25.74	0.375
LTE_20MHz_(64QAM)_2TX		-	-	-	-	-	-	-	-
3560MHz	23.5	Pass	100	0	2.62	21.73	22.11	24.93	0.311
3625MHz	23.5	Pass	100	0	2.62	22.38	22.65	25.53	0.357
3690MHz	23.5	Pass	100	0	2.62	22.69	22.78	25.75	0.376

DG = Directional Gain; **Port X** = Port X output power
dBm/10MHz for 10MHz BW, dBm/20MHz for 20MHz BW

Band 48_LTE_10MHz_Nss1,(QPSK)_2TX

AV Power

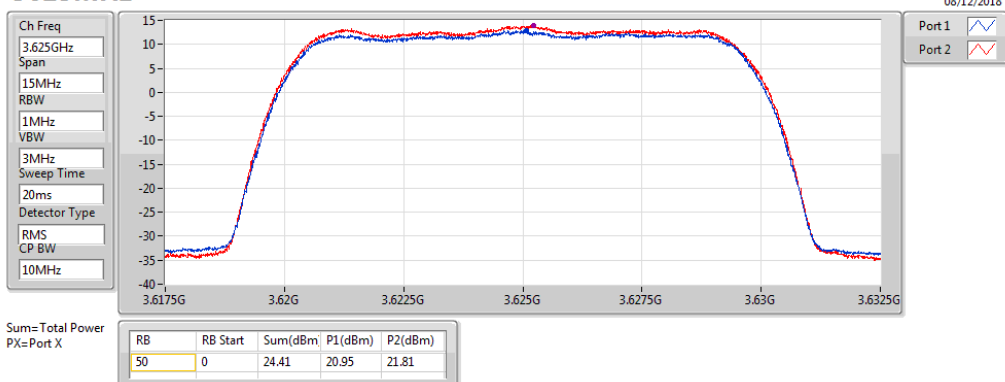
3555MHz



Band 48_LTE_10MHz_Nss1,(QPSK)_2TX

AV Power

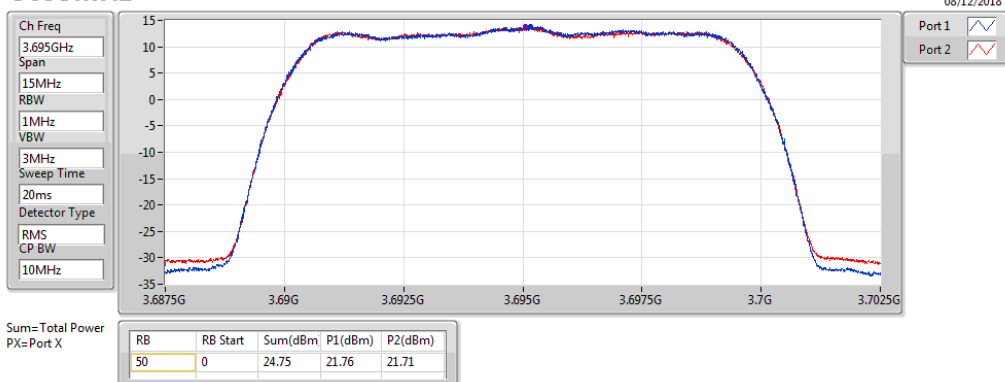
3625MHz



Band 48_LTE_10MHz_Nss1,(QPSK)_2TX

AV Power

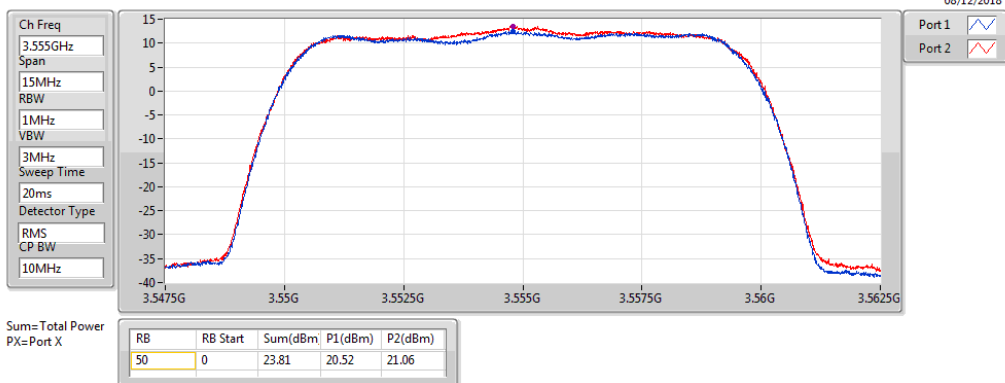
3695MHz



Band 48_LTE_10MHz_Nss1,(16QAM)_2TX

AV Power

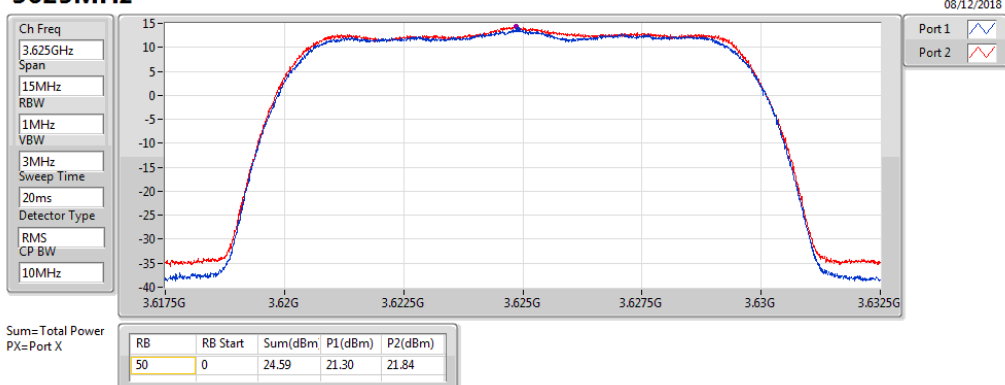
3555MHz



Band 48_LTE_10MHz_Nss1,(16QAM)_2TX

AV Power

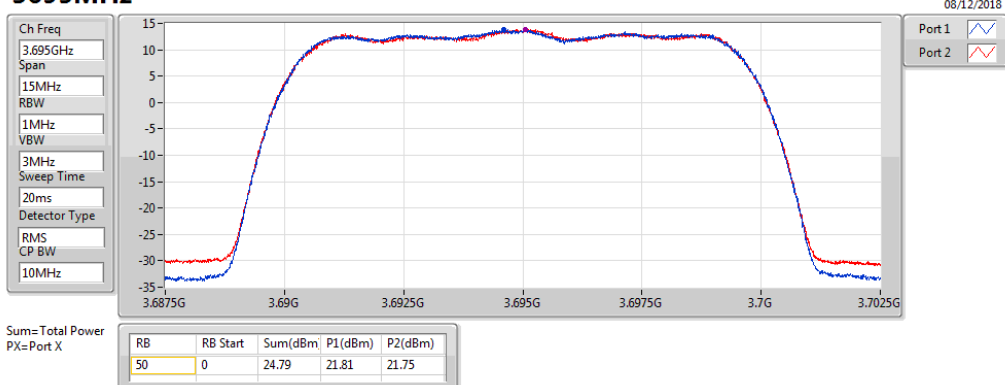
3625MHz



Band 48_LTE_10MHz_Nss1,(16QAM)_2TX

AV Power

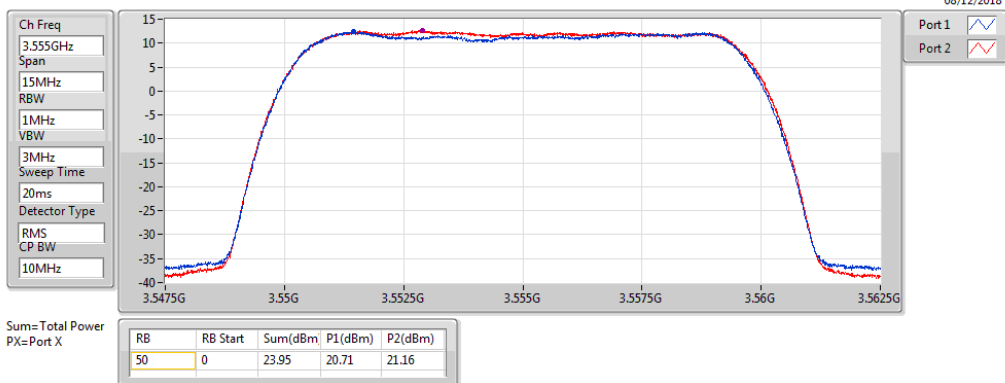
3695MHz



Band 48_LTE_10MHz_Nss1,(64QAM)_2TX

AV Power

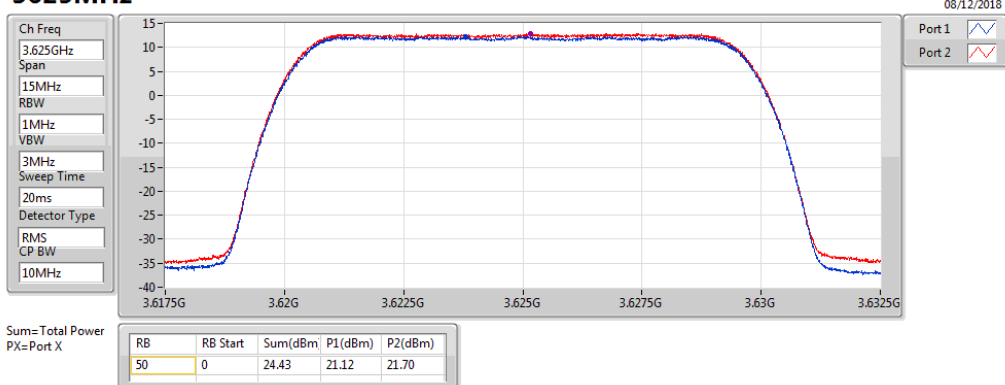
3555MHz



Band 48_LTE_10MHz_Nss1,(64QAM)_2TX

AV Power

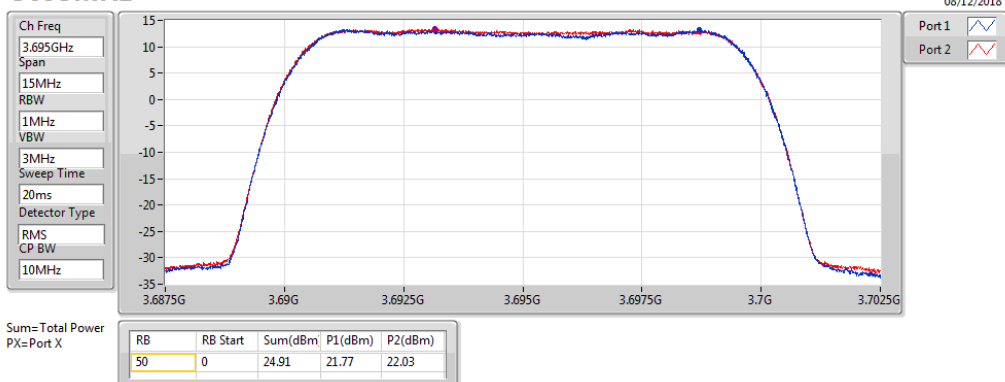
3625MHz



Band 48_LTE_10MHz_Nss1,(64QAM)_2TX

AV Power

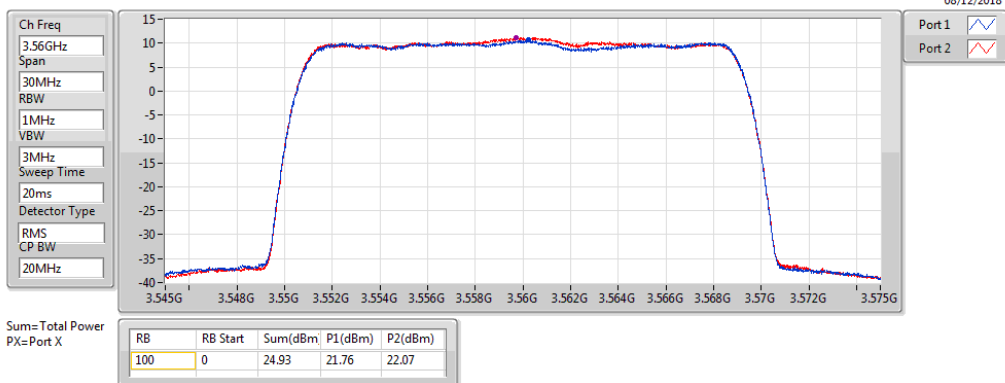
3695MHz



Band 48_LTE_20MHz_Nss1,(QPSK)_2TX

AV Power

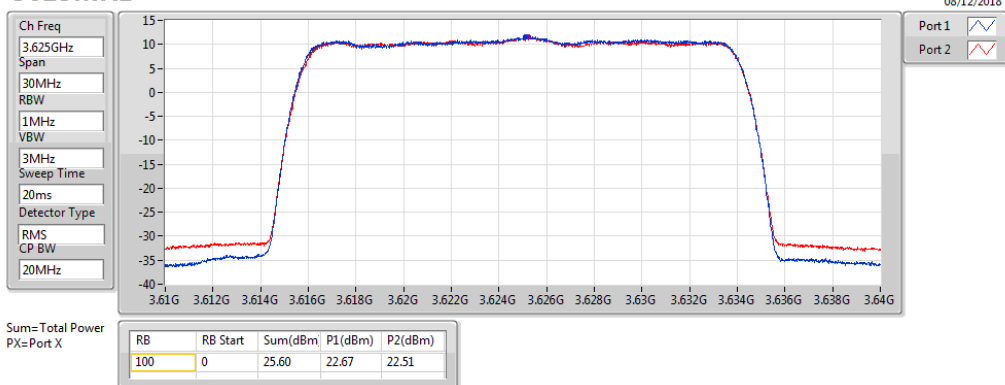
3560MHz



Band 48_LTE_20MHz_Nss1,(QPSK)_2TX

AV Power

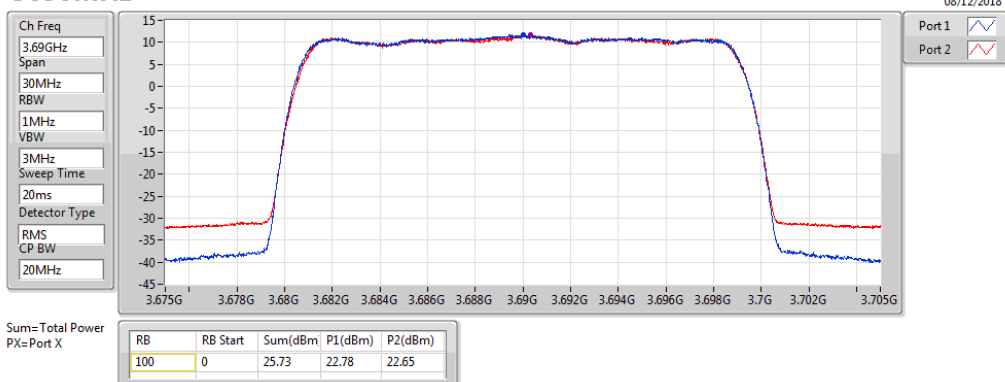
3625MHz



Band 48_LTE_20MHz_Nss1,(QPSK)_2TX

AV Power

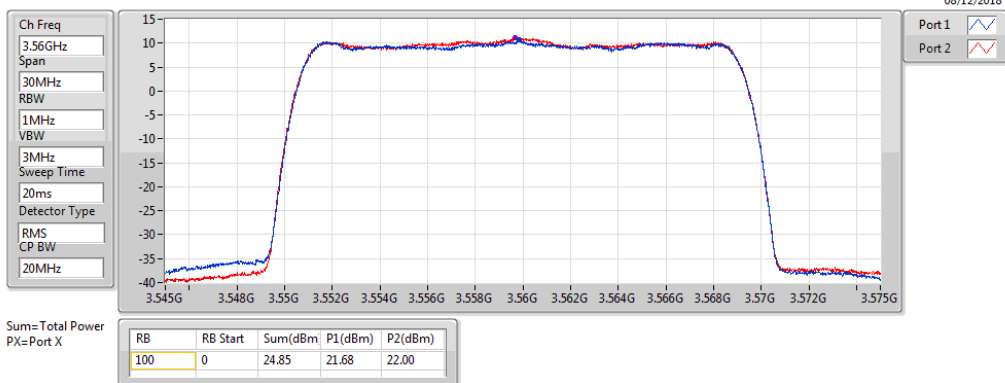
3690MHz



Band 48_LTE_20MHz_Nss1,(16QAM)_2TX

AV Power

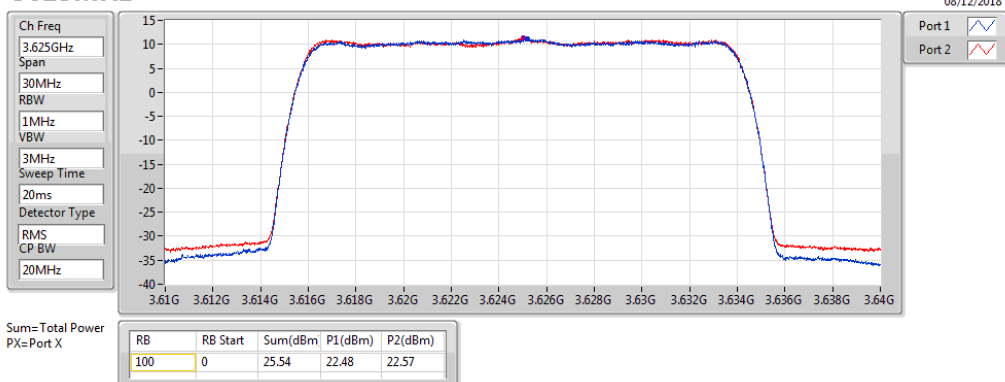
3560MHz



Band 48_LTE_20MHz_Nss1,(16QAM)_2TX

AV Power

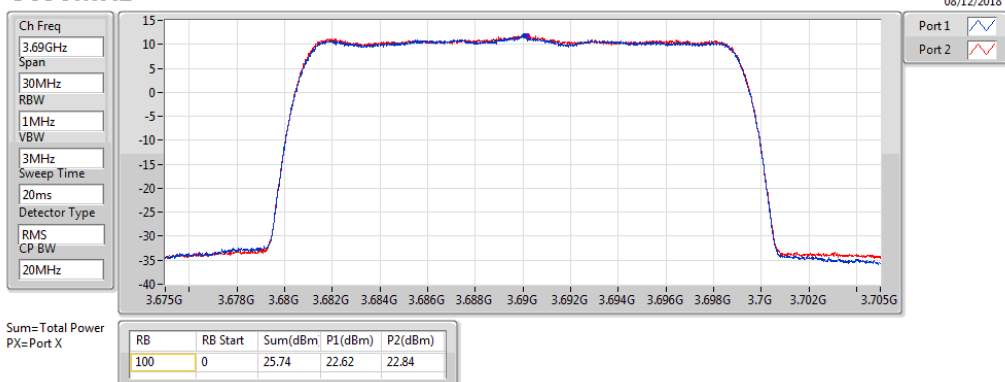
3625MHz



Band 48_LTE_20MHz_Nss1,(16QAM)_2TX

AV Power

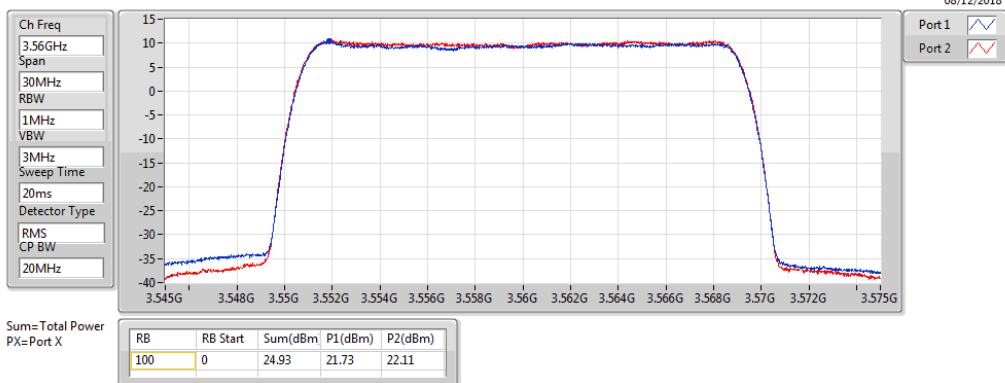
3690MHz



Band 48_LTE_20MHz_Nss1,(64QAM)_2TX

AV Power

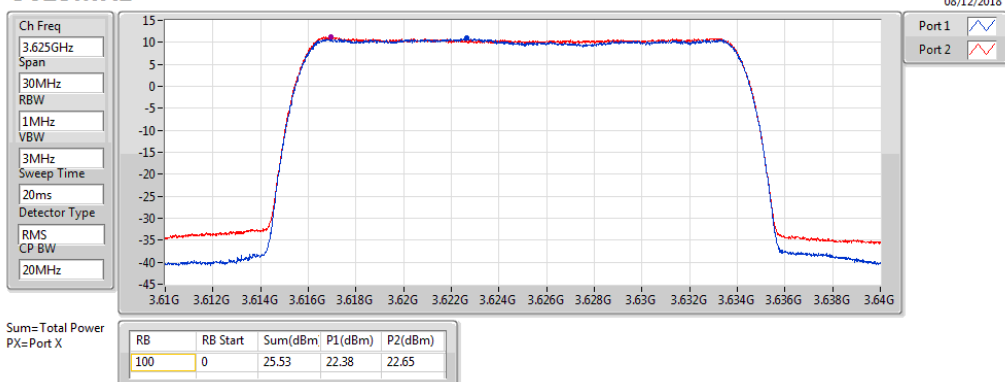
3560MHz



Band 48_LTE_20MHz_Nss1,(64QAM)_2TX

AV Power

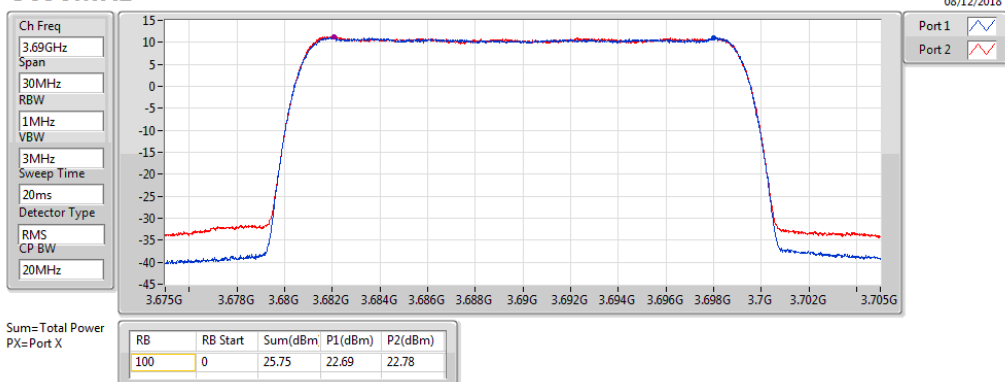
3625MHz



Band 48_LTE_20MHz_Nss1,(64QAM)_2TX

AV Power

3690MHz



Summary

Mode	Power (dBm)	Power (W)	EIRP (dBm)	EIRP (W)
Band 48	-	-	-	-
Band 48_LTE_10MHz_(QPSK)_2TX	24.75	0.299	27.37	0.546
Band 48_LTE_10MHz_(16QAM)_2TX	24.79	0.301	27.41	0.551
Band 48_LTE_10MHz_(64QAM)_2TX	24.91	0.310	27.53	0.566
Band 48_LTE_20MHz_(QPSK)_2TX	25.73	0.374	28.35	0.684
Band 48_LTE_20MHz_(16QAM)_2TX	25.74	0.375	28.36	0.685
Band 48_LTE_20MHz_(64QAM)_2TX	25.75	0.376	28.37	0.687

Result

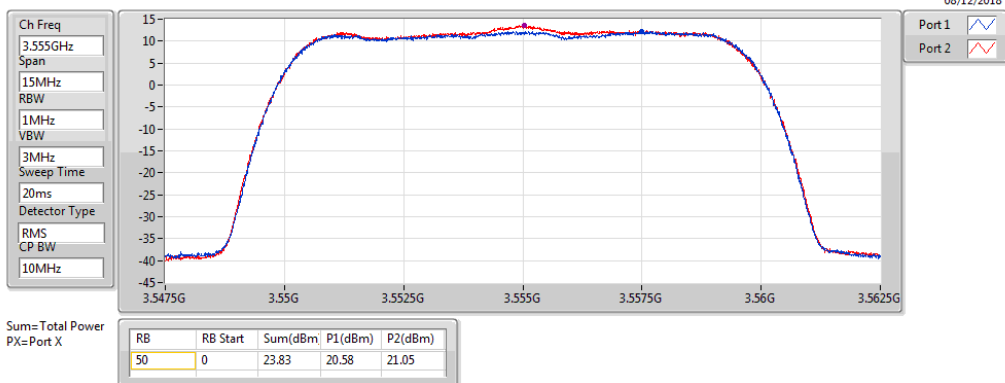
Mode	Setting	Result	RB	RB Start	DG (dBi)	P1 (dBm)	P2 (dBm)	Power (dBm)	Power (W)	EIRP (dBm)	EIRP (W)	EIRP Lim. (W)
LTE_10MHz_(QPSK)_2TX		-	-	-	-	-	-	-	-	-	-	-
3555MHz	22	Pass	50	0	2.62	20.58	21.05	23.83	0.242	26.45	0.442	1
3625MHz	22	Pass	50	0	2.62	20.95	21.81	24.41	0.276	27.03	0.505	1
3695MHz	22	Pass	50	0	2.62	21.76	21.71	24.75	0.299	27.37	0.546	1
LTE_10MHz_(16QAM)_2TX		-	-	-	-	-	-	-	-	-	-	-
3555MHz	22	Pass	50	0	2.62	20.52	21.06	23.81	0.240	26.43	0.440	1
3625MHz	22	Pass	50	0	2.62	21.30	21.84	24.59	0.288	27.21	0.526	1
3695MHz	22	Pass	50	0	2.62	21.81	21.75	24.79	0.301	27.41	0.551	1
LTE_10MHz_(64QAM)_2TX		-	-	-	-	-	-	-	-	-	-	-
3555MHz	22	Pass	50	0	2.62	20.71	21.16	23.95	0.248	26.57	0.454	1
3625MHz	22	Pass	50	0	2.62	21.12	21.70	24.43	0.277	27.05	0.507	1
3695MHz	22	Pass	50	0	2.62	21.77	22.03	24.91	0.310	27.53	0.566	1
LTE_20MHz_(QPSK)_2TX		-	-	-	-	-	-	-	-	-	-	-
3560MHz	23.5	Pass	100	0	2.62	21.76	22.07	24.93	0.311	27.55	0.569	Inf
3625MHz	23.5	Pass	100	0	2.62	22.67	22.51	25.60	0.363	28.22	0.664	Inf
3690MHz	23.5	Pass	100	0	2.62	22.78	22.65	25.73	0.374	28.35	0.684	Inf
LTE_20MHz_(16QAM)_2TX		-	-	-	-	-	-	-	-	-	-	-
3560MHz	23.5	Pass	100	0	2.62	21.68	22.00	24.85	0.305	27.47	0.558	Inf
3625MHz	23.5	Pass	100	0	2.62	22.48	22.57	25.54	0.358	28.16	0.655	Inf
3690MHz	23.5	Pass	100	0	2.62	22.62	22.84	25.74	0.375	28.36	0.685	Inf
LTE_20MHz_(64QAM)_2TX		-	-	-	-	-	-	-	-	-	-	-
3560MHz	23.5	Pass	100	0	2.62	21.73	22.11	24.93	0.311	27.55	0.569	Inf
3625MHz	23.5	Pass	100	0	2.62	22.38	22.65	25.53	0.357	28.15	0.653	Inf
3690MHz	23.5	Pass	100	0	2.62	22.69	22.78	25.75	0.376	28.37	0.687	Inf

DG = Directional Gain; **Port X** = Port X output power

Band 48_LTE_10MHz_Nss1,(QPSK)_2TX

AV Power

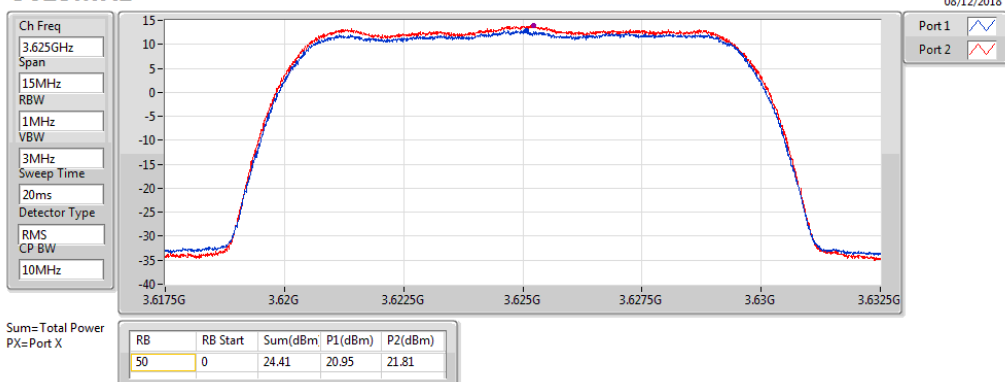
3555MHz



Band 48_LTE_10MHz_Nss1,(QPSK)_2TX

AV Power

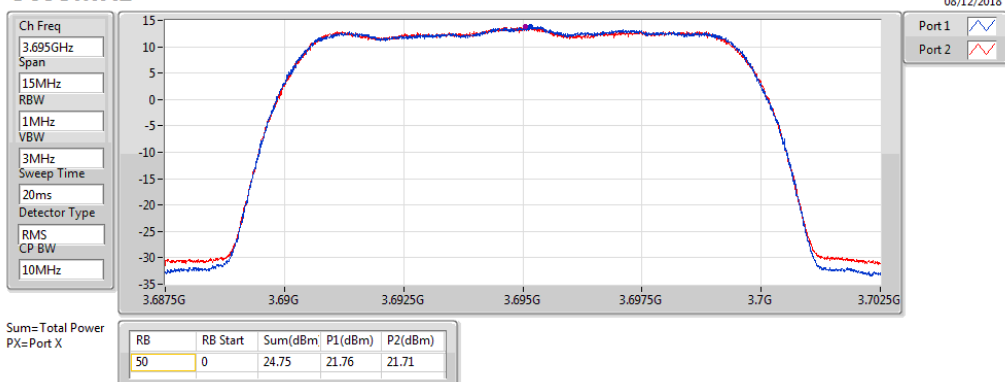
3625MHz



Band 48_LTE_10MHz_Nss1,(QPSK)_2TX

AV Power

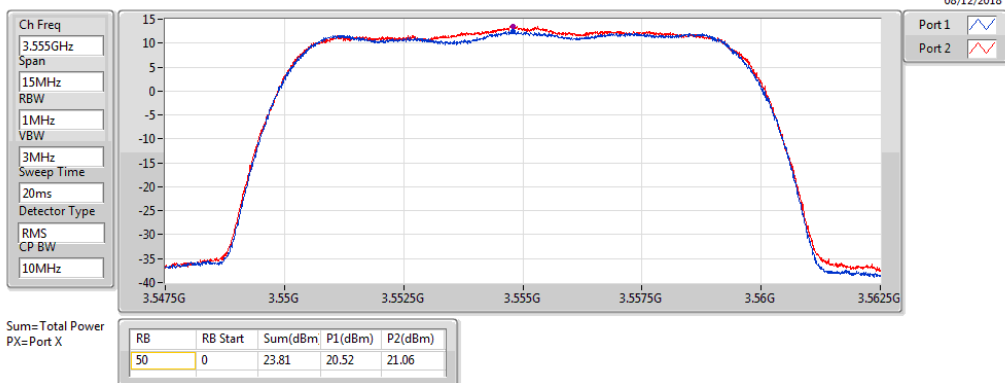
3695MHz



Band 48_LTE_10MHz_Nss1,(16QAM)_2TX

AV Power

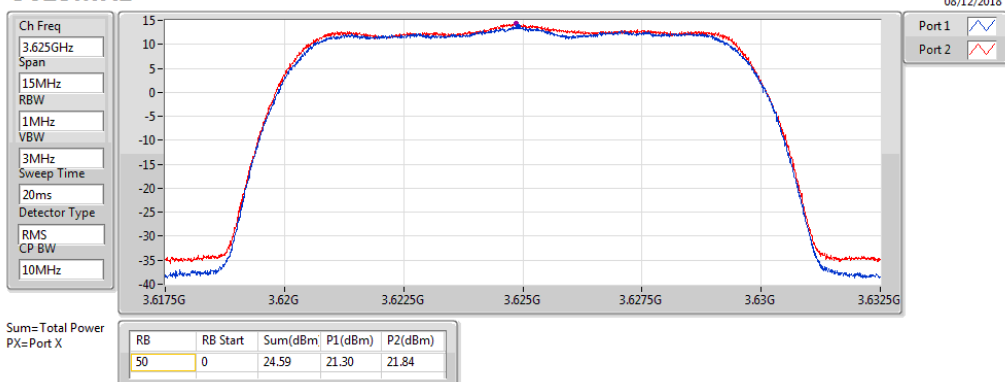
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Band 48_LTE_10MHz_Nss1,(16QAM)_2TX

AV Power

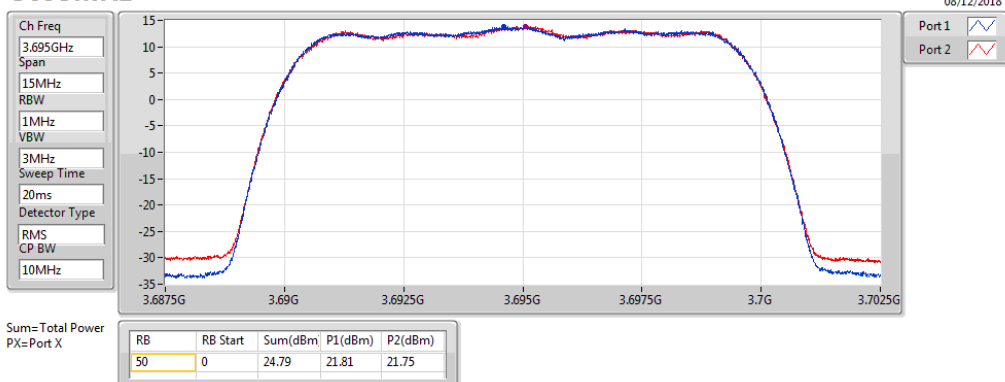
3625MHz



Band 48_LTE_10MHz_Nss1,(16QAM)_2TX

AV Power

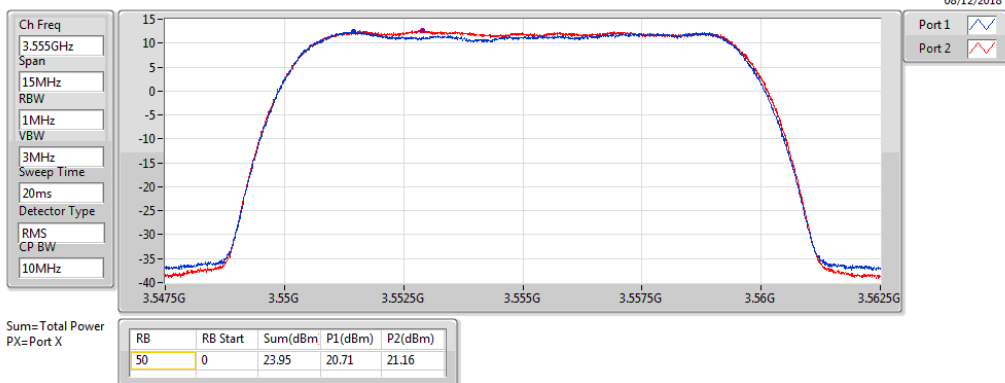
3695MHz



Band 48_LTE_10MHz_Nss1,(64QAM)_2TX

AV Power

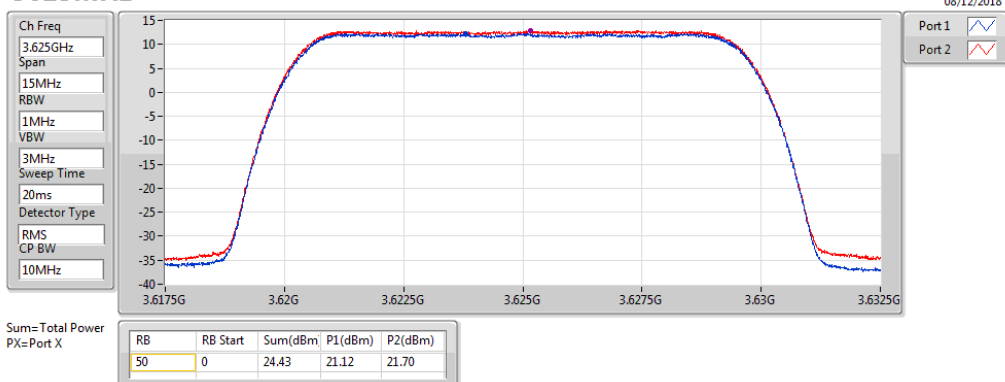
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Band 48_LTE_10MHz_Nss1,(64QAM)_2TX

AV Power

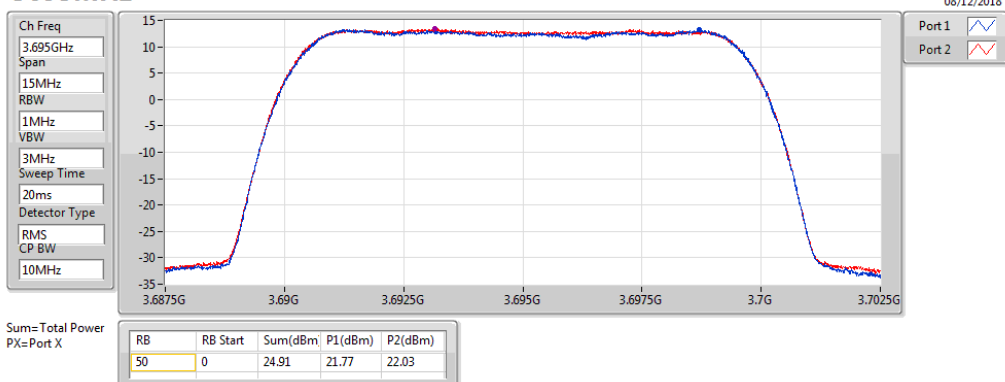
3625MHz



Band 48_LTE_10MHz_Nss1,(64QAM)_2TX

AV Power

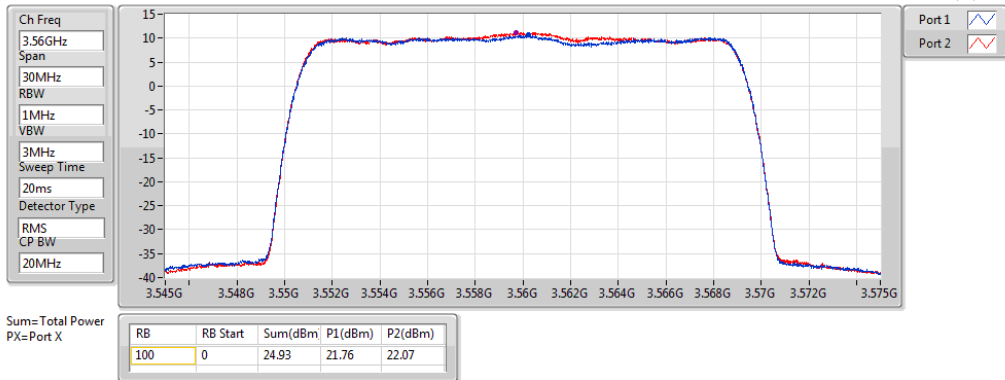
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Band 48_LTE_20MHz_Nss1,(QPSK)_2TX

AV Power

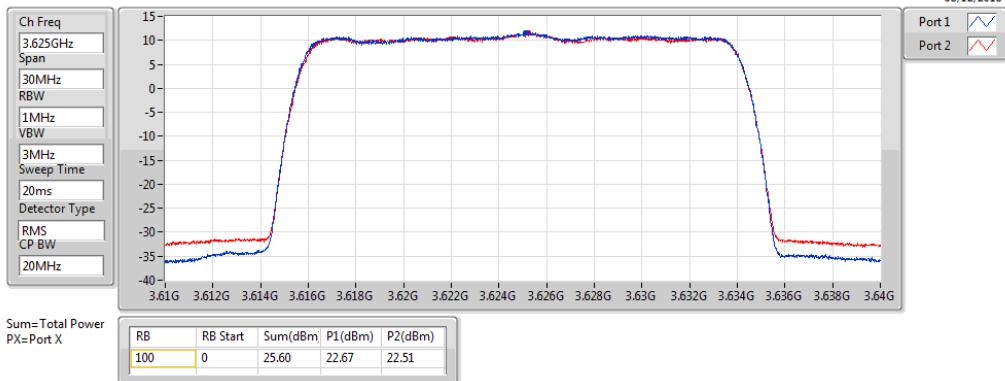
3560MHz



Band 48_LTE_20MHz_Nss1,(QPSK)_2TX

AV Power

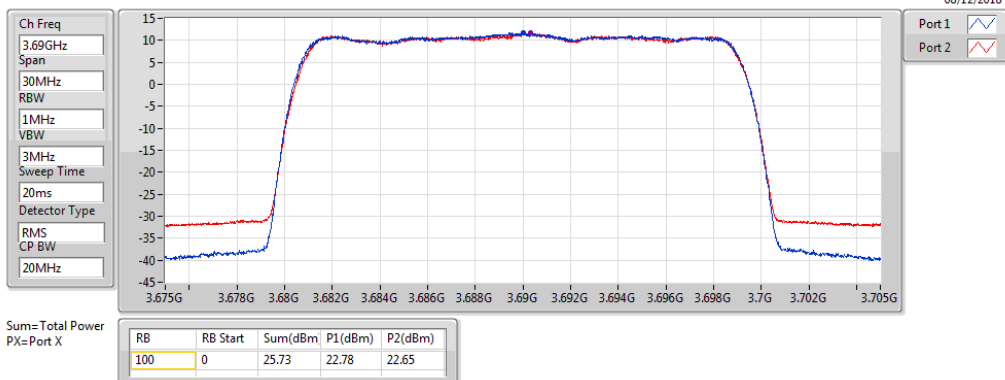
3625MHz



Band 48_LTE_20MHz_Nss1,(QPSK)_2TX

AV Power

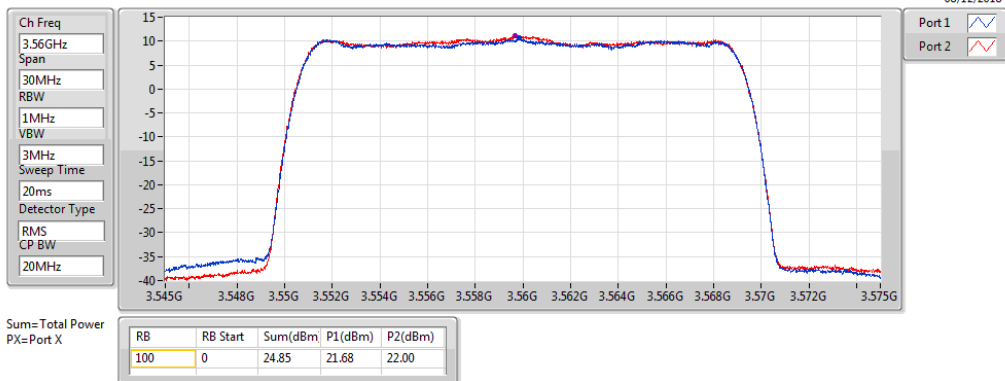
3690MHz



Band 48_LTE_20MHz_Nss1,(16QAM)_2TX

AV Power

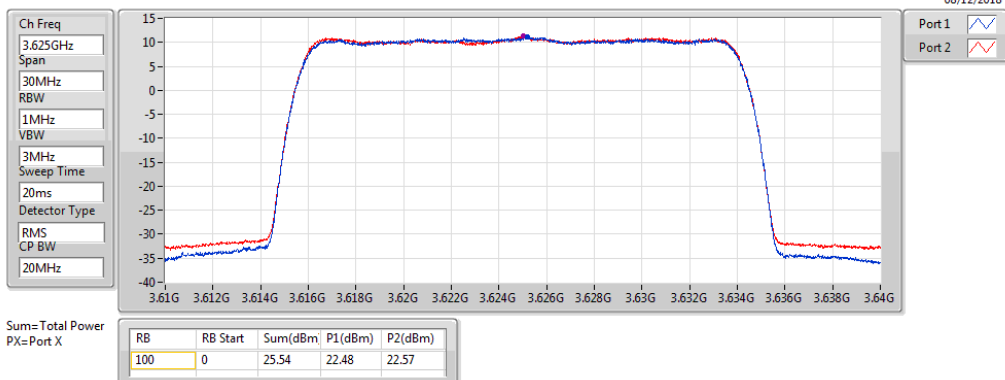
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Band 48_LTE_20MHz_Nss1,(16QAM)_2TX

AV Power

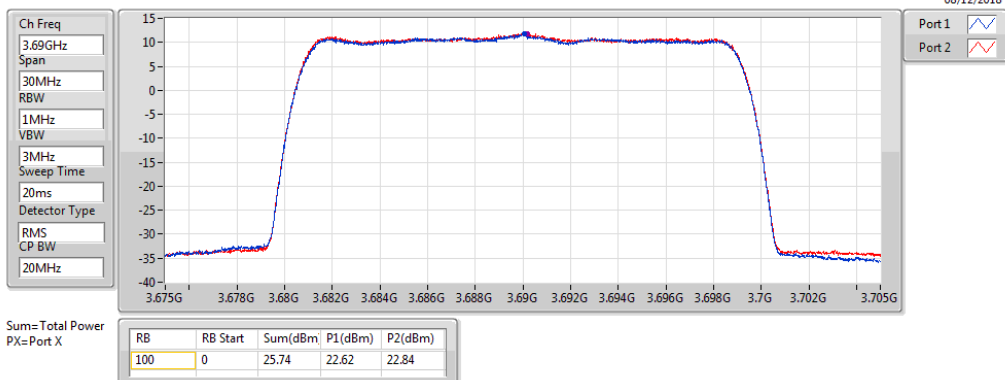
3625MHz



Band 48_LTE_20MHz_Nss1,(16QAM)_2TX

AV Power

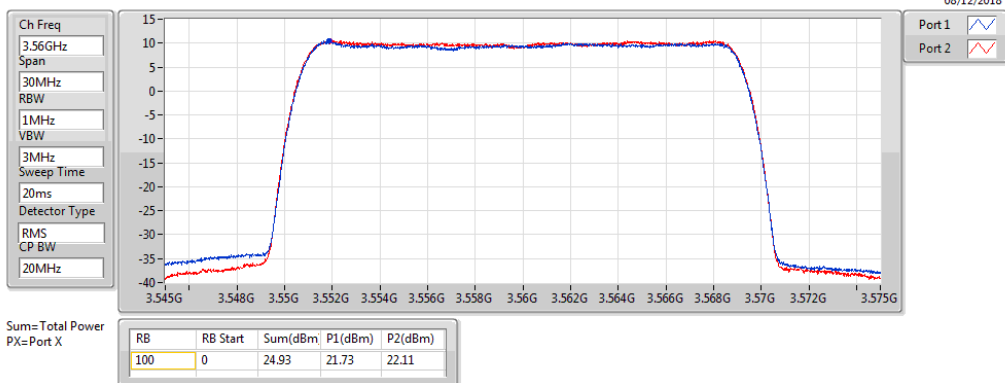
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Band 48_LTE_20MHz_Nss1,(64QAM)_2TX

AV Power

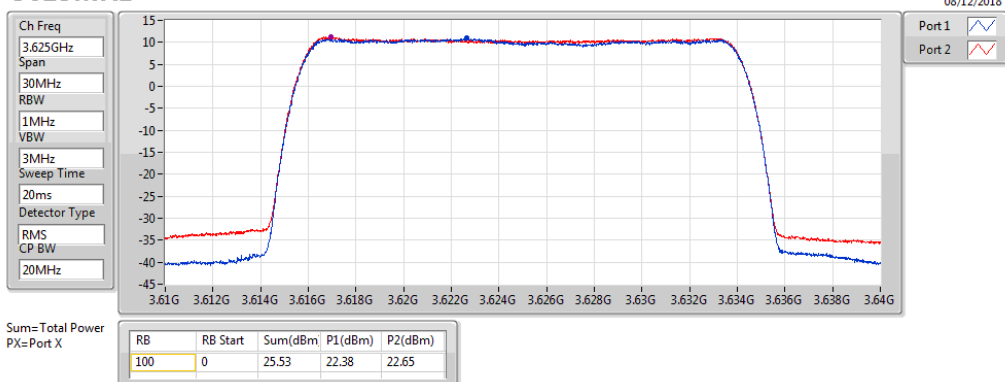
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Band 48_LTE_20MHz_Nss1,(64QAM)_2TX

AV Power

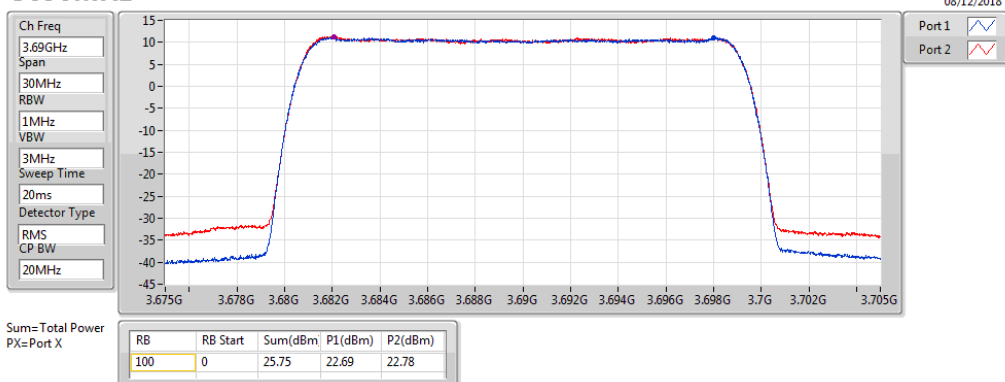
3625MHz



Band 48_LTE_20MHz_Nss1,(64QAM)_2TX

AV Power

3690MHz



Summary

Mode	Power (dBm/10Mhz)	Power (W)	EIRP (dBm/10Mhz)	EIRP (W)
Band 48	-	-	-	-
Band 48_LTE_20MHz_(QPSK)_2TX	23.57	0.228	26.19	0.416
Band 48_LTE_20MHz_(16QAM)_2TX	23.45	0.221	26.07	0.405
Band 48_LTE_20MHz_(64QAM)_2TX	23.49	0.223	26.11	0.408

Result

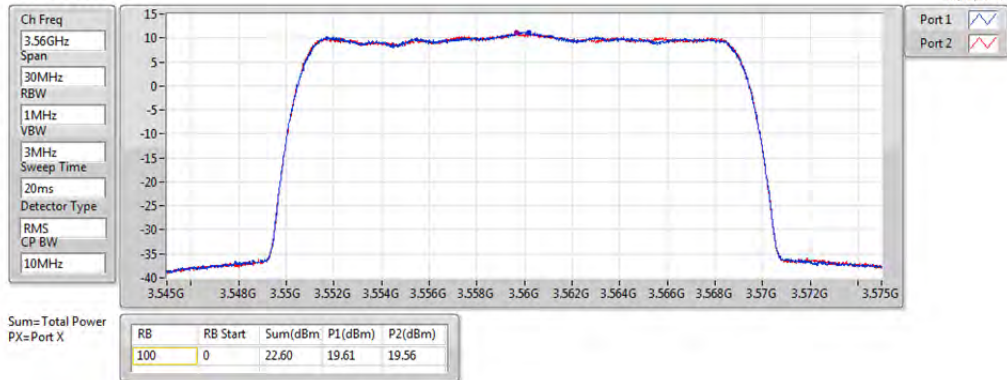
Mode	Setting	Result	RB	RB Start	DG (dBi)	P1 (dBm/10Mhz)	P2 (dBm/10Mhz)	Power (dBm/10Mhz)	Power (W)	EIRP (dBm/10Mhz)	EIRP (W)	EIRP Lim. (W)
LTE_20MHz_(QPSK)_2TX		-	-	-	-	-	-	-	-	-	-	-
3560MHz	23.5	Pass	100	0	2.62	19.61	19.56	22.60	0.182	25.22	0.333	1
3625MHz	23.5	Pass	100	0	2.62	20.78	20.24	23.53	0.225	26.15	0.412	1
3690MHz	23.5	Pass	100	0	2.62	20.68	20.44	23.57	0.228	26.19	0.416	1
LTE_20MHz_(16QAM)_2TX		-	-	-	-	-	-	-	-	-	-	-
3560MHz	23.5	Pass	100	0	2.62	19.71	19.31	22.52	0.179	25.14	0.327	1
3625MHz	23.5	Pass	100	0	2.62	20.28	20.12	23.21	0.209	25.83	0.383	1
3690MHz	23.5	Pass	100	0	2.62	20.49	20.39	23.45	0.221	26.07	0.405	1
LTE_20MHz_(64QAM)_2TX		-	-	-	-	-	-	-	-	-	-	-
3560MHz	23.5	Pass	100	0	2.62	19.34	19.04	22.20	0.166	24.82	0.303	1
3625MHz	23.5	Pass	100	0	2.62	20.59	20.02	23.32	0.215	25.94	0.393	1
3690MHz	23.5	Pass	100	0	2.62	20.75	20.19	23.49	0.223	26.11	0.408	1

DG = Directional Gain; **Port X** = Port X output power

Band 48_LTE_20MHz_(QPSK)_2TX

AV Power

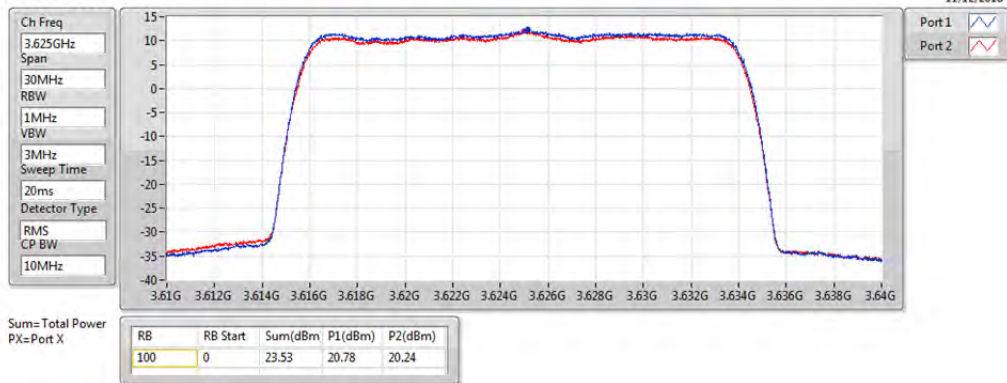
3560MHz



Band 48_LTE_20MHz_(QPSK)_2TX

AV Power

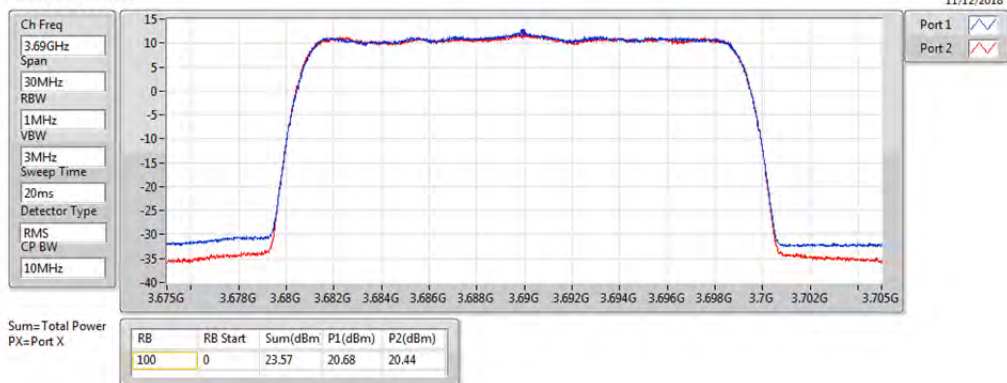
3625MHz



Band 48_LTE_20MHz_(QPSK)_2TX

AV Power

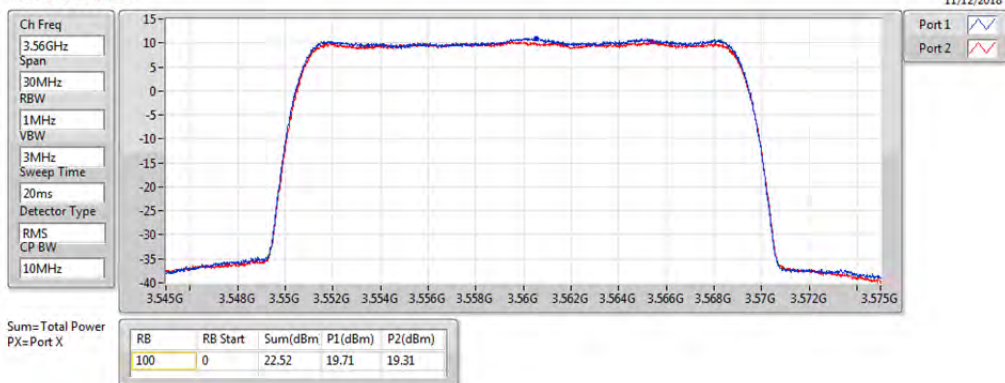
3690MHz



Band 48_LTE_20MHz_(16QAM)_2TX

AV Power

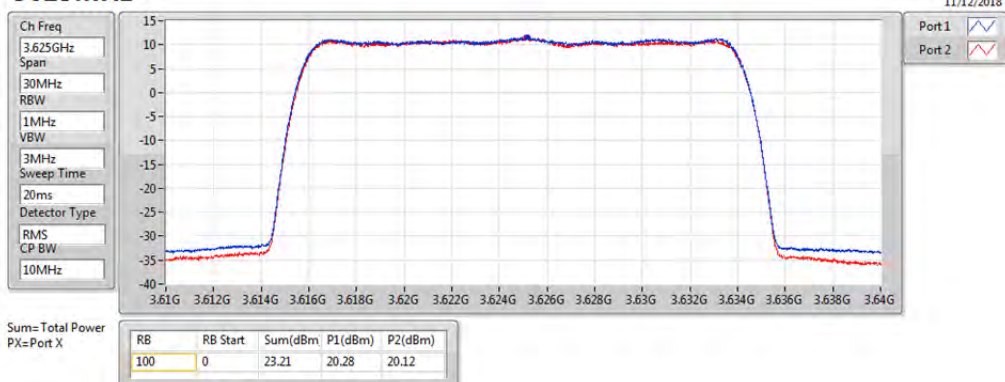
3560MHz



Band 48_LTE_20MHz_(16QAM)_2TX

AV Power

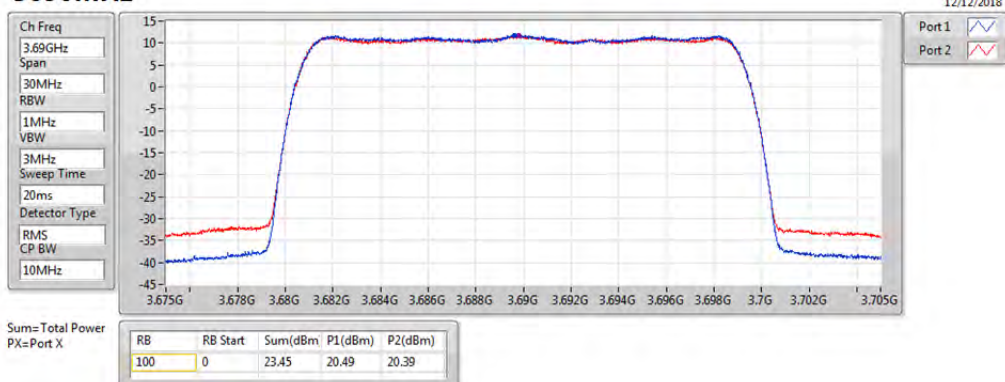
3625MHz



Band 48_LTE_20MHz_(16QAM)_2TX

AV Power

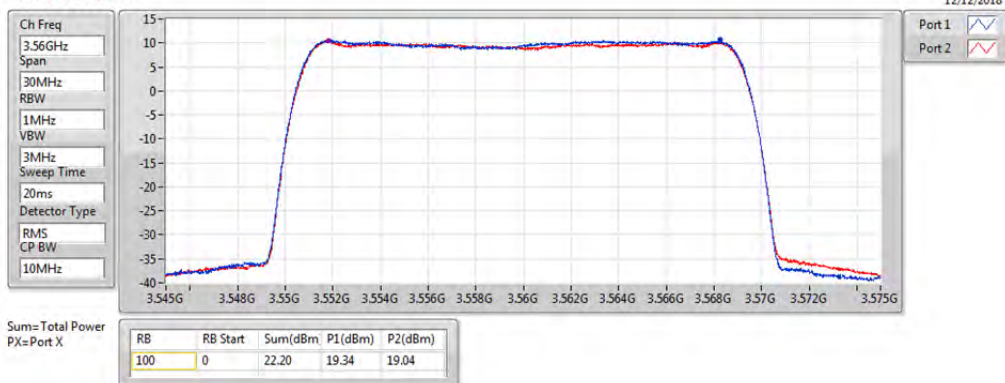
3690MHz



Band 48_LTE_20MHz_(64QAM)_2TX

AV Power

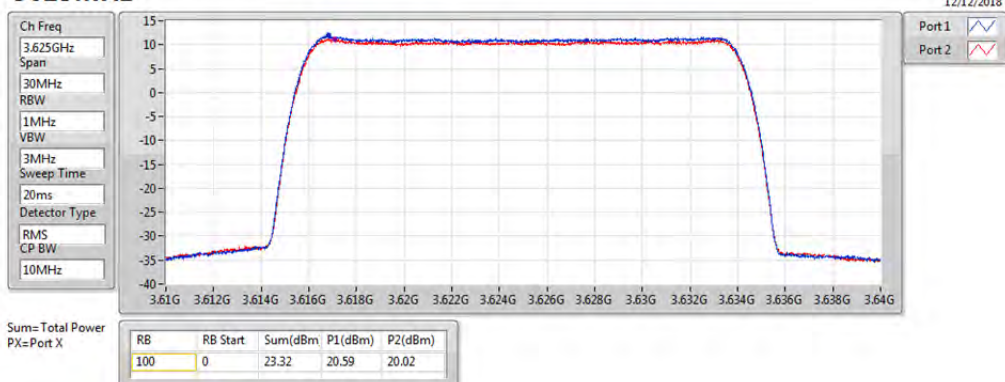
3560MHz



Band 48_LTE_20MHz_(64QAM)_2TX

AV Power

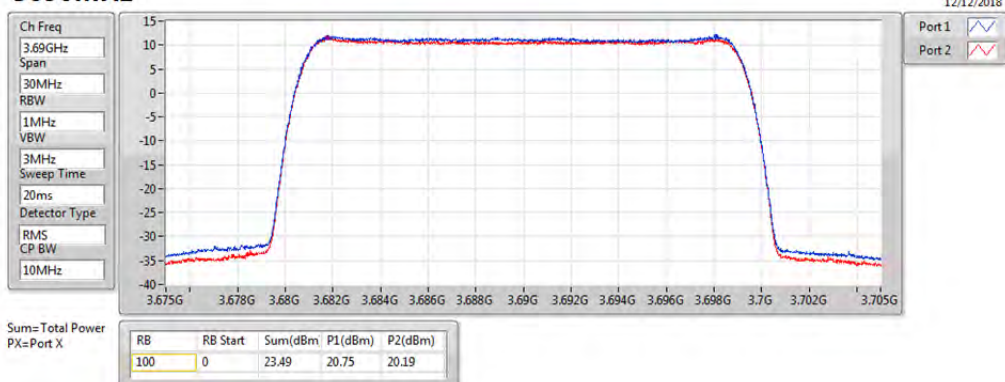
3625MHz



Band 48_LTE_20MHz_(64QAM)_2TX

AV Power

3690MHz



Summary

Mode	PD (dBm/MHz)	PD (mW/MHz)	EIRP PD (dBm/MHz)	EIRP PD (mW/MHz)
Band 48	-	-	-	-
Band 48_LTE_10MHz_(QPSK)_2TX	16.92	49.20	19.54	89.95
Band 48_LTE_10MHz_(16QAM)_2TX	17.22	52.72	19.84	96.38
Band 48_LTE_10MHz_(64QAM)_2TX	16.18	41.50	18.80	75.86
Band 48_LTE_20MHz_(QPSK)_2TX	14.92	31.05	17.54	56.75
Band 48_LTE_20MHz_(16QAM)_2TX	14.62	28.97	17.24	52.97
Band 48_LTE_20MHz_(64QAM)_2TX	14.27	26.73	16.89	48.87

Result

Mode	Setting	Result	RB	RB Start	Gain (dBi)	Port 1 (dBm/MHz)	Port 2 (dBm/MHz)	PD (dBm/MHz)	EIRP PD (dBm/MHz)	EIRP PD Limit (dBm/MHz)
LTE_10MHz_(QPSK)_2TX		-	-	-	-	-	-	-		-
3555MHz	22	Pass	50	0	2.62	13.27	13.44	16.37	18.99	20
3625MHz	22	Pass	50	0	2.62	13.71	13.83	16.78	19.40	20
3695MHz	22	Pass	50	0	2.62	13.76	14.05	16.92	19.54	20
LTE_10MHz_(16QAM)_2TX		-	-	-	-	-	-	-		-
3555MHz	22	Pass	50	0	2.62	13.28	13.27	16.29	18.91	20
3625MHz	22	Pass	50	0	2.62	13.90	14.00	16.96	19.58	20
3695MHz	22	Pass	50	0	2.62	14.05	14.36	17.22	19.84	20
LTE_10MHz_(64QAM)_2TX		-	-	-	-	-	-	-		-
3555MHz	22	Pass	50	0	2.62	11.83	12.36	15.11	17.73	20
3625MHz	22	Pass	50	0	2.62	12.80	13.25	16.04	18.66	20
3695MHz	22	Pass	50	0	2.62	12.95	13.38	16.18	18.80	20
LTE_20MHz_(QPSK)_2TX		-	-	-	-	-	-	-		-
3560MHz	23.5	Pass	100	0	2.62	11.11	11.14	14.14	16.76	20
3625MHz	23.5	Pass	100	0	2.62	11.62	11.93	14.79	17.41	20
3690MHz	23.5	Pass	100	0	2.62	12.08	11.74	14.92	17.54	20
LTE_20MHz_(16QAM)_2TX		-	-	-	-	-	-	-		-
3560MHz	23.5	Pass	100	0	2.62	10.71	10.87	13.80	16.42	20
3625MHz	23.5	Pass	100	0	2.62	11.64	11.58	14.62	17.24	20
3690MHz	23.5	Pass	100	0	2.62	11.24	11.57	14.42	17.04	20
LTE_20MHz_(64QAM)_2TX		-	-	-	-	-	-	-		-
3560MHz	23.5	Pass	100	0	2.62	10.54	10.65	13.61	16.23	20
3625MHz	23.5	Pass	100	0	2.62	11.10	11.42	14.27	16.89	20
3690MHz	23.5	Pass	100	0	2.62	11.30	11.13	14.23	16.85	20

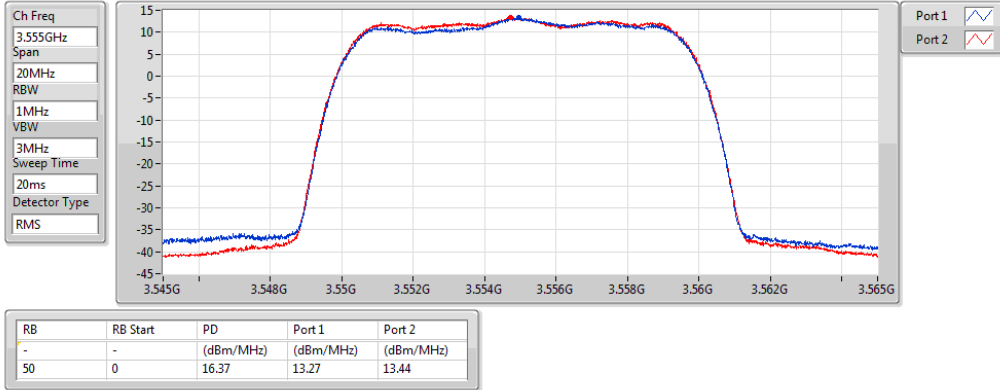
DG = Directional Gain;

PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port Xpower density;

Band 48_LTE_10MHz_Nss1,(QPSK)_2TX

PSD

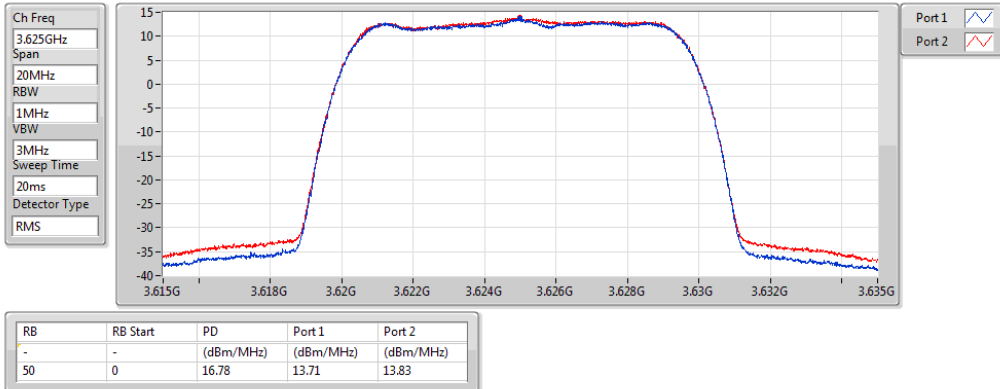
3555MHz



Band 48_LTE_10MHz_Nss1,(QPSK)_2TX

PSD

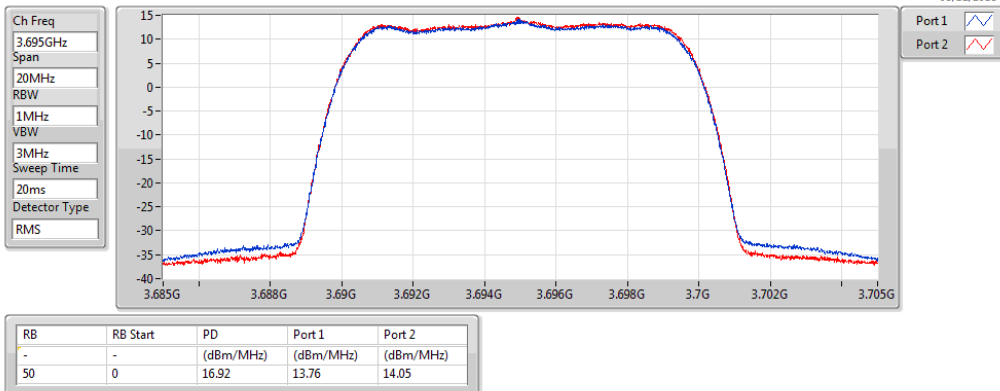
3625MHz



Band 48_LTE_10MHz_Nss1,(QPSK)_2TX

PSD

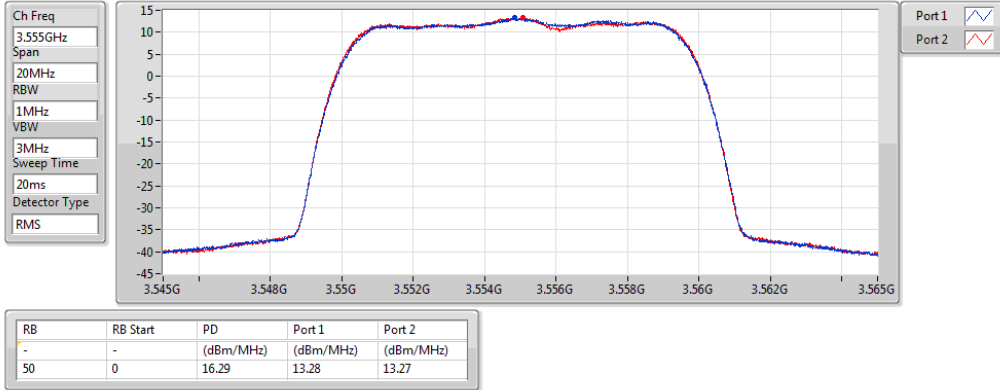
3695MHz



Band 48_LTE_10MHz_Nss1,(16QAM)_2TX

PSD

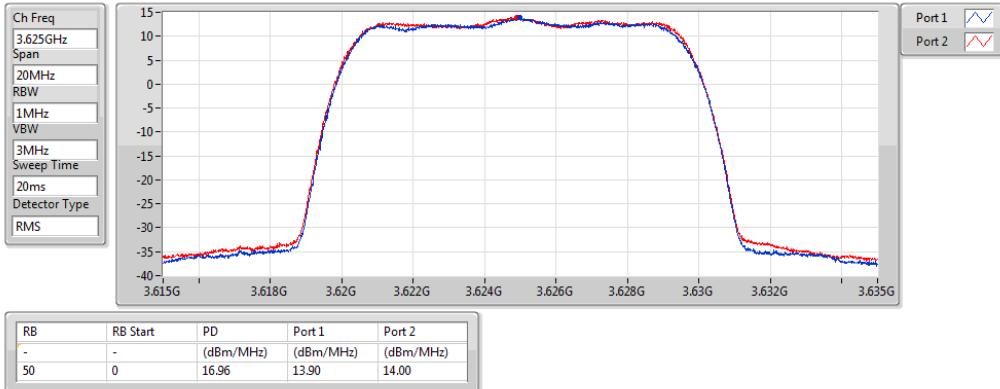
3555MHz



Band 48_LTE_10MHz_Nss1,(16QAM)_2TX

PSD

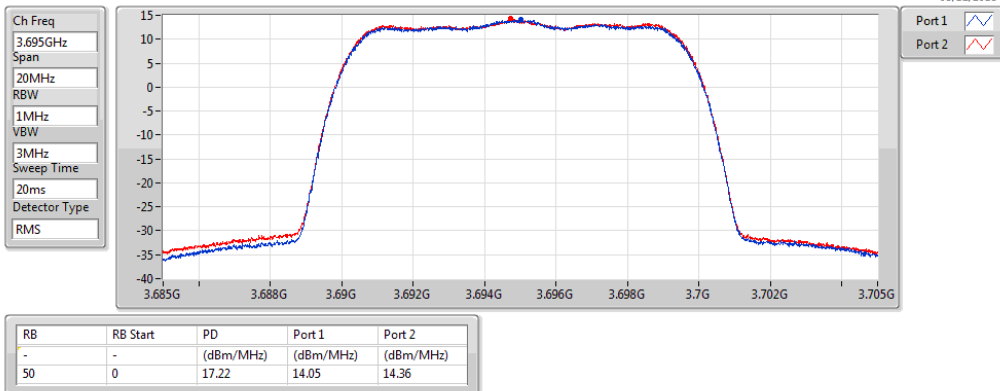
3625MHz



Band 48_LTE_10MHz_Nss1,(16QAM)_2TX

PSD

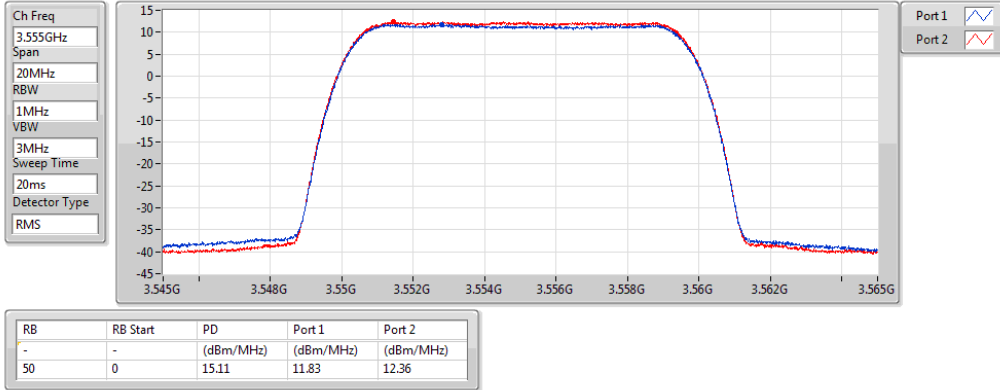
3695MHz



Band 48_LTE_10MHz_Nss1,(64QAM)_2TX

PSD

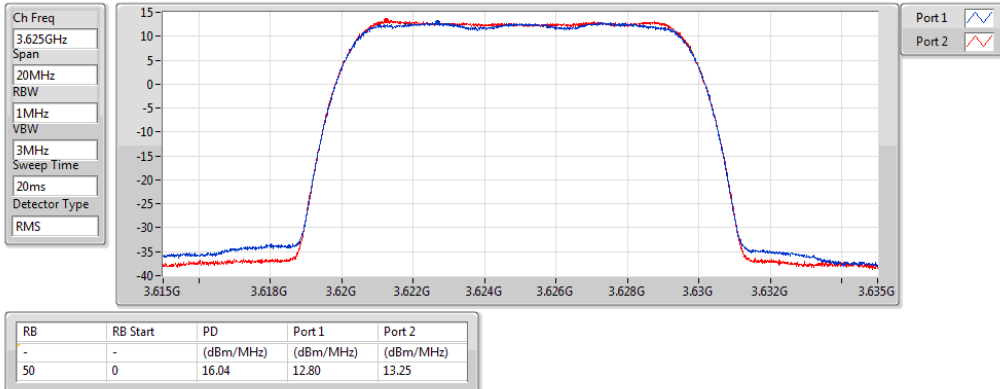
3555MHz



Band 48_LTE_10MHz_Nss1,(64QAM)_2TX

PSD

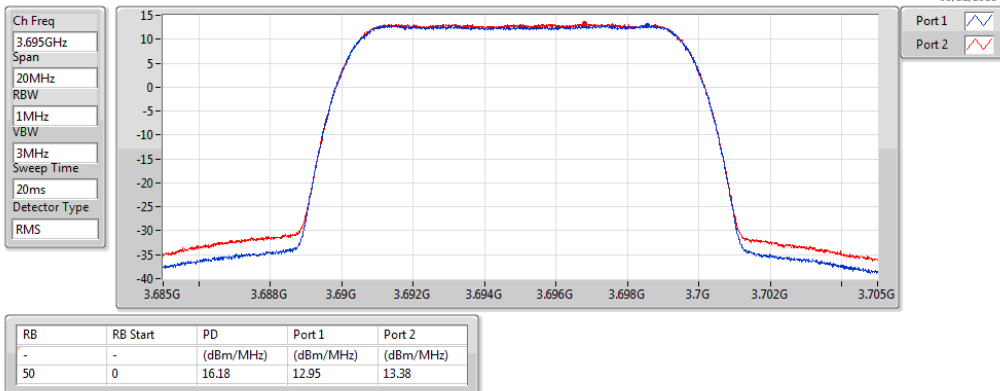
3625MHz



Band 48_LTE_10MHz_Nss1,(64QAM)_2TX

PSD

3695MHz



Band 48_LTE_20MHz_Nss1,(QPSK)_2TX

PSD

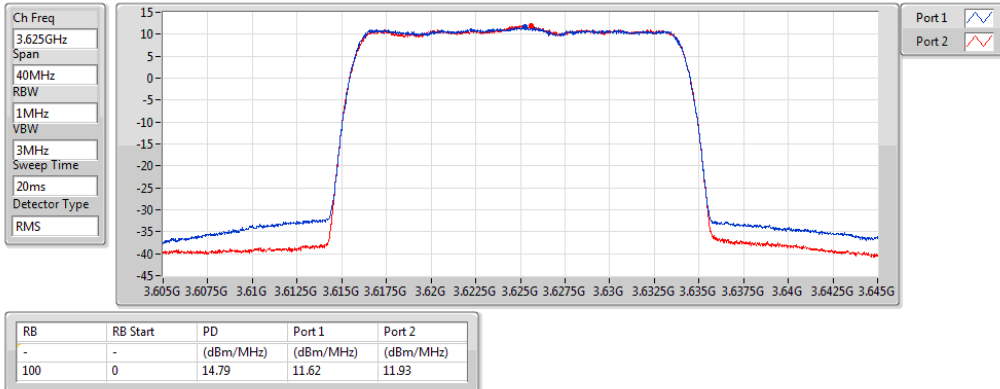
3560MHz



Band 48_LTE_20MHz_Nss1,(QPSK)_2TX

PSD

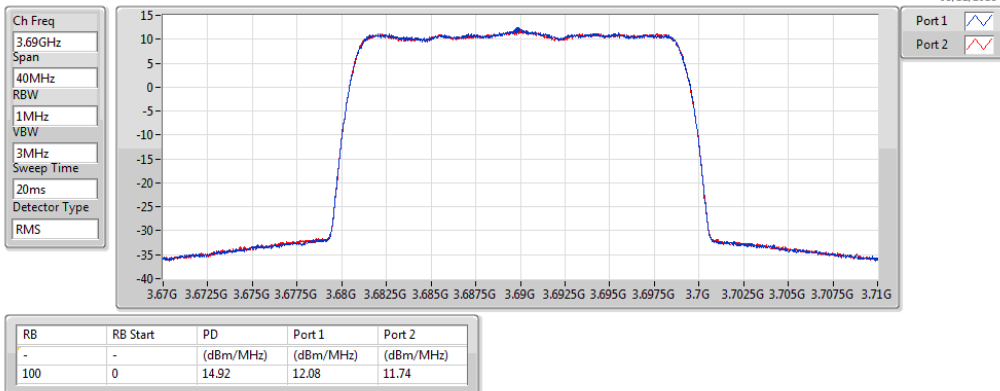
3625MHz



Band 48_LTE_20MHz_Nss1,(QPSK)_2TX

PSD

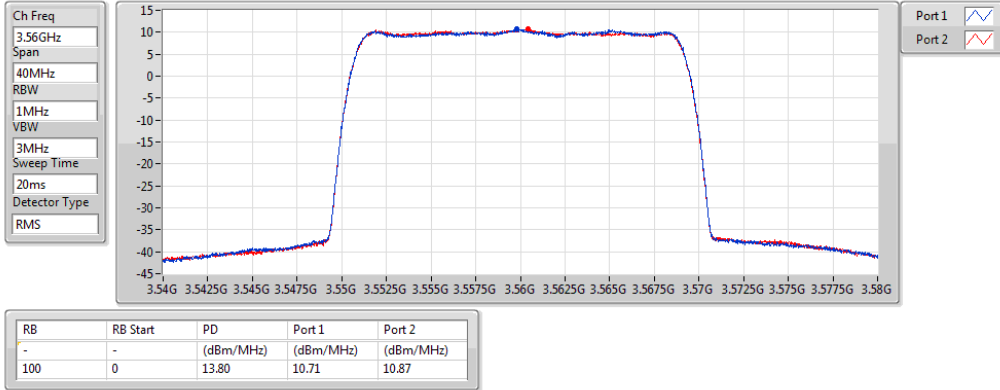
3690MHz



Band 48_LTE_20MHz_Nss1,(16QAM)_2TX

PSD

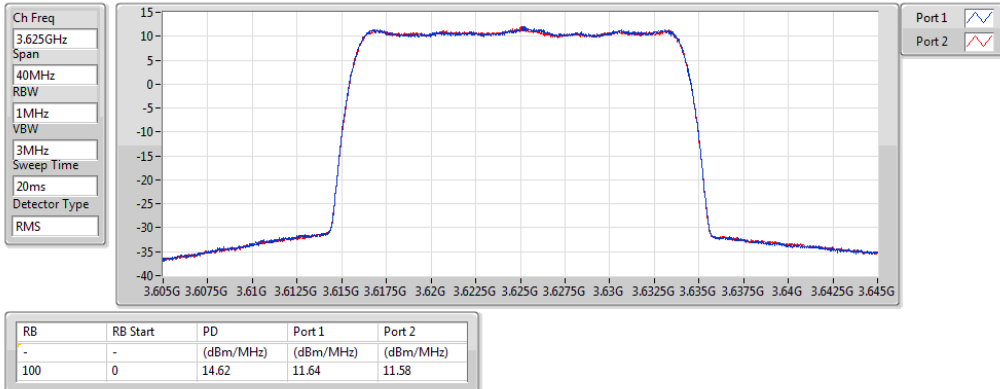
3560MHz



Band 48_LTE_20MHz_Nss1,(16QAM)_2TX

PSD

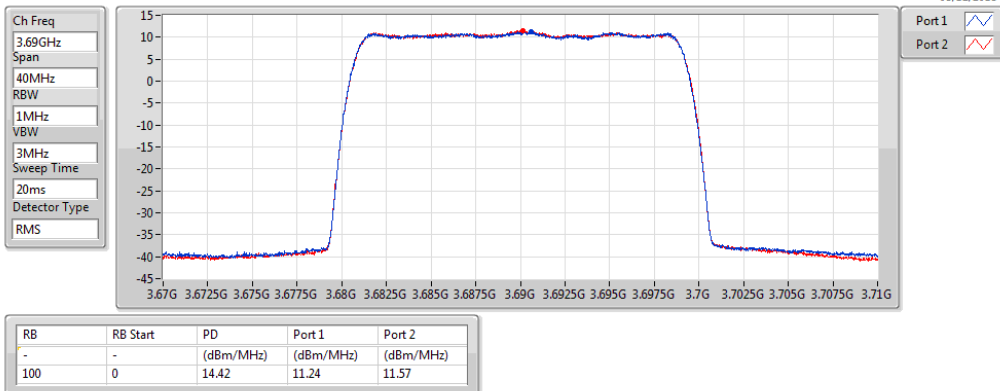
3625MHz



Band 48_LTE_20MHz_Nss1,(16QAM)_2TX

PSD

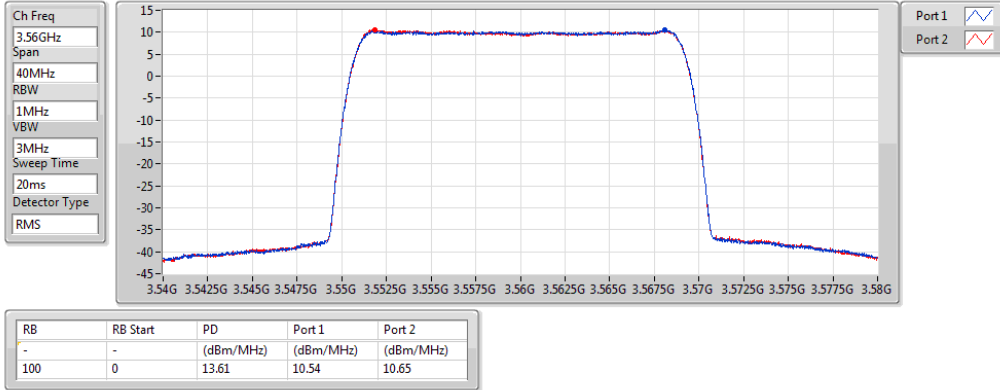
3690MHz



Band 48_LTE_20MHz_Nss1,(64QAM)_2TX

PSD

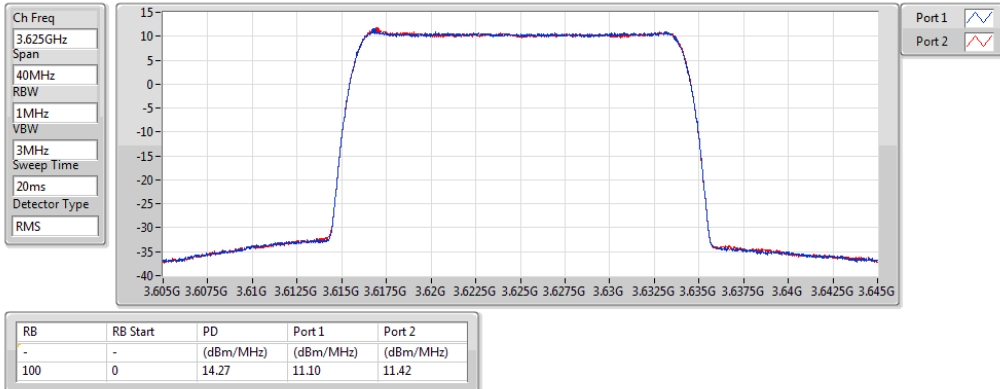
3560MHz



Band 48_LTE_20MHz_Nss1,(64QAM)_2TX

PSD

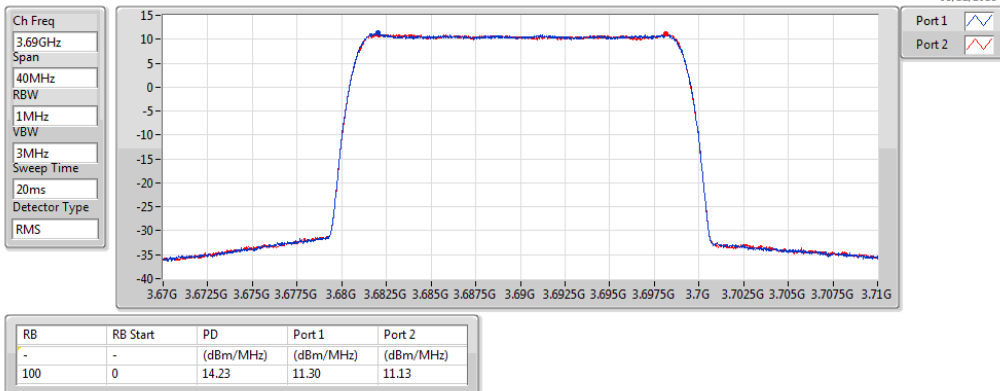
3625MHz



Band 48_LTE_20MHz_Nss1,(64QAM)_2TX

PSD

3690MHz



Result

Mode	P1 Wanted signal power level (dBm)	Adjacent Channel Selectivity Throughput (%)	In-band blocking Throughput (%)	P2 Wanted signal power level (dBm)	Adjacent Channel Selectivity Throughput (%)	In-band blocking Throughput (%)	Interference signal power level (dBm/10MHz)	Result
Band 48_LTE_10MHz_2TX	-	-	-	-	-	-		-
3625MHz, RB Offset = 0	-86.5	100	100	-86.5	100	100	-40	Pass
3625MHz, RB Offset = 25	-86.5	100	100	-86.5	100	100	-40	Pass
Band 48_LTE_20MHz_2TX								-
3625MHz, RB Offset = 0	-86.5	100	100	-86.5	100	100	-40	Pass
3625MHz, RB Offset = 25	-86.5	100	100	-86.5	100	100	-40	Pass
3625MHz, RB Offset = 50	-86.5	100	100	-86.5	100	100	-40	Pass
3625MHz, RB Offset = 75	-86.5	100	100	-86.5	100	100	-40	Pass

Note1: This requirement shall be met for each consecutive application of a single instance of FRC A1-3 mapped to disjoint frequency ranges with a width of 25 resource blocks each.

The parameters of the FRC A1-3 as below:

Allocated resource blocks	25
DFT-OFDM Symbols per subframe	12
Modulation	QPSK
Code rate	1/3
Payload size (bits)	2216
Transport block CRC (bits)	24
Code block CRC size (bits)	0
Number of code blocks - C	1
Coded block size including 12bits trellis termination (bits)	6732
Total number of bits per sub-frame	7200
Total symbols per sub-frame	3600

Note2 : The interference signal is 10MHz(50RB) LTE signal.



Summary

Mode	Result	RB	RB Start	Freq (Hz)	0.1%	Margin (dB)	Limit (dB)	Port
Band 48	-	-	-	-	-	-	-	-
Band 48_LTE_10MHz_(QPSK)_2TX	Pass	50	0	3.695G	9.53	-3.47	13.00	1
Band 48_LTE_10MHz_(16QAM)_2TX	Pass	50	0	3.625G	8.96	-4.04	13.00	1
Band 48_LTE_10MHz_(64QAM)_2TX	Pass	50	0	3.625G	9.91	-3.09	13.00	1
Band 48_LTE_20MHz_(QPSK)_2TX	Pass	100	0	3.625G	8.71	-4.29	13.00	1
Band 48_LTE_20MHz_(16QAM)_2TX	Pass	100	0	3.625G	9.73	-3.27	13.00	1
Band 48_LTE_20MHz_(64QAM)_2TX	Pass	100	0	3.69G	9.77	-3.23	13.00	1

Result

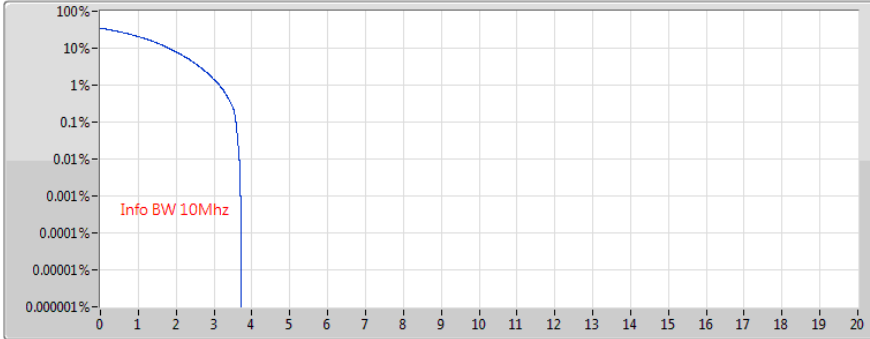
Mode	Result	RB	RB Start	Freq (Hz)	0.1%	Margin (dB)	Limit (dB)	Port
LTE_10MHz_(QPSK)_2TX	-	-	-	-	-	-	-	-
3555MHz	Pass	50	0	3.555G	8.94	-4.06	13.00	1
3625MHz	Pass	50	0	3.625G	9.38	-3.62	13.00	1
3695MHz	Pass	50	0	3.695G	9.53	-3.47	13.00	1
LTE_10MHz_(16QAM)_2TX	-	-	-	-	-	-	-	-
3555MHz	Pass	50	0	3.555G	8.84	-4.16	13.00	1
3625MHz	Pass	50	0	3.625G	8.96	-4.04	13.00	1
3695MHz	Pass	50	0	3.695G	8.87	-4.13	13.00	1
LTE_10MHz_(64QAM)_2TX	-	-	-	-	-	-	-	-
3555MHz	Pass	50	0	3.555G	8.81	-4.19	13.00	1
3625MHz	Pass	50	0	3.625G	9.91	-3.09	13.00	1
3695MHz	Pass	50	0	3.695G	8.20	-4.80	13.00	1
LTE_20MHz_(QPSK)_2TX	-	-	-	-	-	-	-	-
3560MHz	Pass	100	0	3.56G	8.59	-4.41	13.00	1
3625MHz	Pass	100	0	3.625G	8.71	-4.29	13.00	1
3690MHz	Pass	100	0	3.69G	8.25	-4.75	13.00	1
LTE_20MHz_(16QAM)_2TX	-	-	-	-	-	-	-	-
3560MHz	Pass	100	0	3.56G	9.64	-3.36	13.00	1
3625MHz	Pass	100	0	3.625G	9.73	-3.27	13.00	1
3690MHz	Pass	100	0	3.69G	7.75	-5.25	13.00	1
LTE_20MHz_(64QAM)_2TX	-	-	-	-	-	-	-	-
3560MHz	Pass	100	0	3.56G	9.71	-3.29	13.00	1
3625MHz	Pass	100	0	3.625G	8.86	-4.14	13.00	1
3690MHz	Pass	100	0	3.69G	9.77	-3.23	13.00	1

Band 48_LTE_10MHz_Nss1,(QPSK)_2TX

PAR

3555MHz

08/12/2018



1 RB



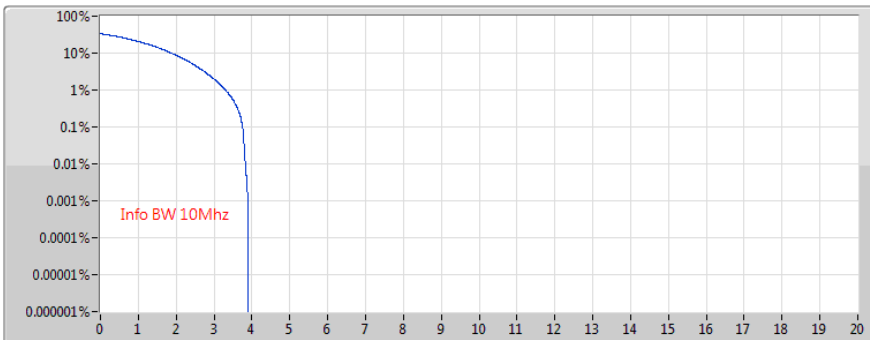
RB	0.1%	Margin(dB)	Limit(dB)	Port
50	8.94	-4.06	13.00	1

Band 48_LTE_10MHz_Nss1,(QPSK)_2TX

PAR

3625MHz

08/12/2018



1 RB



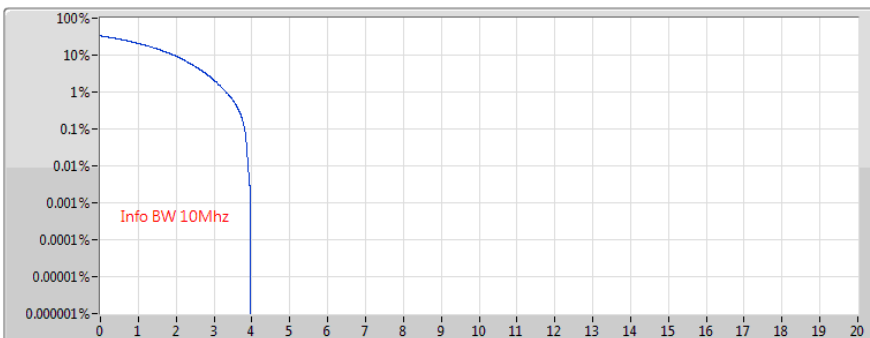
RB	0.1%	Margin(dB)	Limit(dB)	Port
50	9.38	-3.62	13.00	1

Band 48_LTE_10MHz_Nss1,(QPSK)_2TX

PAR

3695MHz

08/12/2018



1 RB



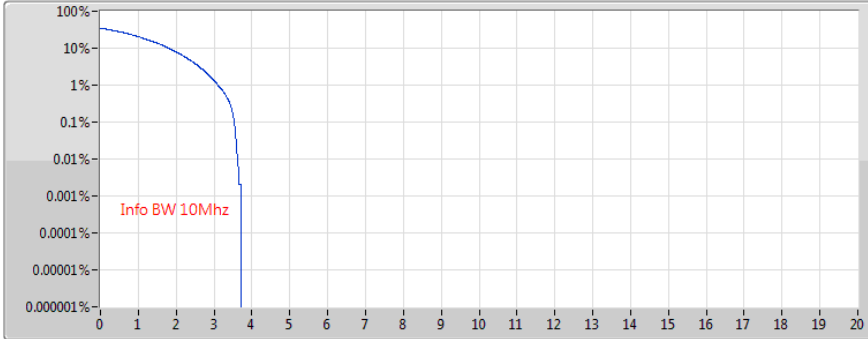
RB	0.1%	Margin(dB)	Limit(dB)	Port
50	9.53	-3.47	13.00	1

Band 48_LTE_10MHz_Nss1,(16QAM)_2TX

PAR

3555MHz

08/12/2018



1 RB



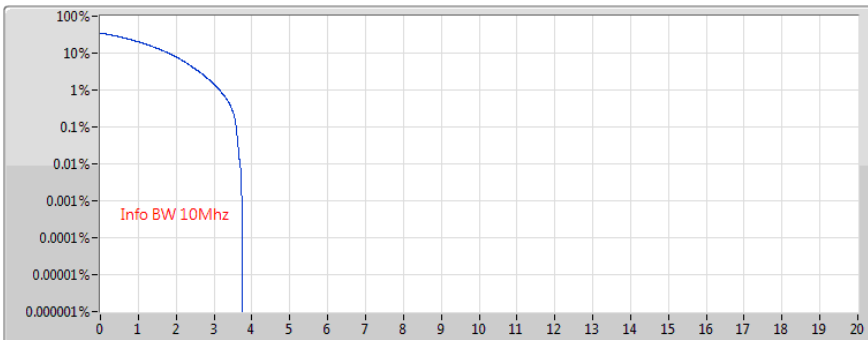
RB	0.1%	Margin(dB)	Limit(dB)	Port
50	8.84	-4.16	13.00	1

Band 48_LTE_10MHz_Nss1,(16QAM)_2TX

PAR

3625MHz

08/12/2018



1 RB



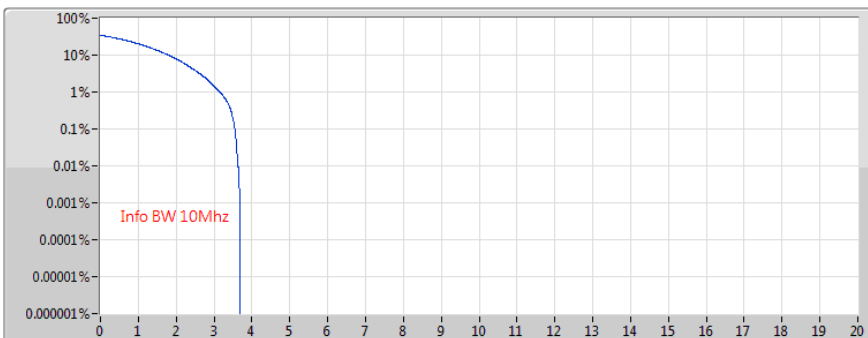
RB	0.1%	Margin(dB)	Limit(dB)	Port
50	8.96	-4.04	13.00	1

Band 48_LTE_10MHz_Nss1,(16QAM)_2TX

PAR

3695MHz

08/12/2018



1 RB



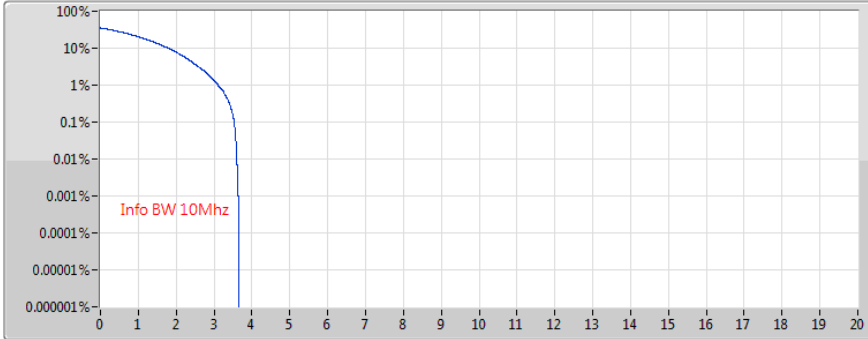
RB	0.1%	Margin(dB)	Limit(dB)	Port
50	8.87	-4.13	13.00	1

Band 48_LTE_10MHz_Nss1,(64QAM)_2TX

PAR

3555MHz

08/12/2018



1 RB



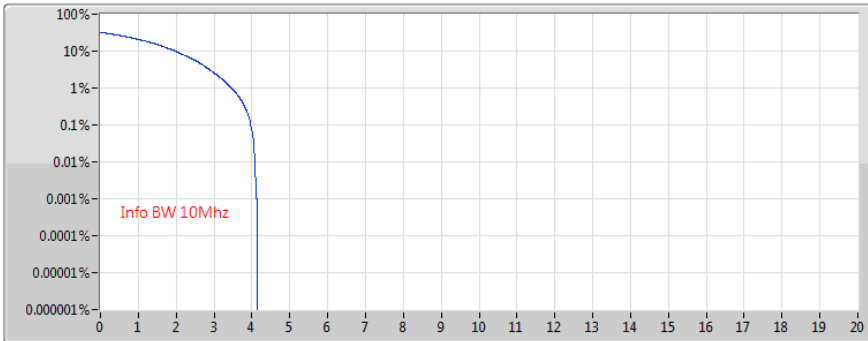
RB	0.1%	Margin(dB)	Limit(dB)	Port
50	8.81	-4.19	13.00	1

Band 48_LTE_10MHz_Nss1,(64QAM)_2TX

PAR

3625MHz

08/12/2018



1 RB



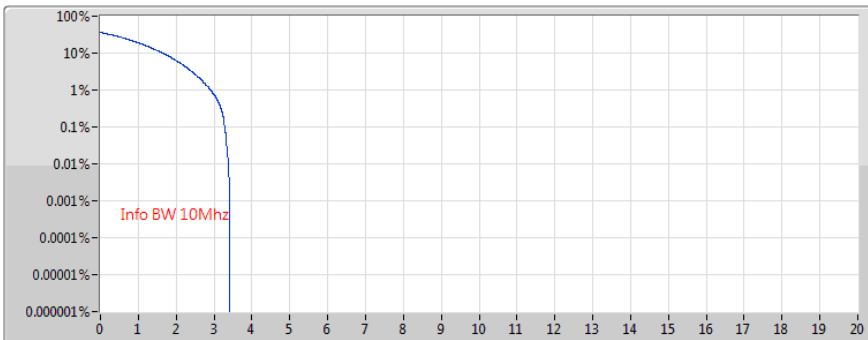
RB	0.1%	Margin(dB)	Limit(dB)	Port
50	9.91	-3.09	13.00	1

Band 48_LTE_10MHz_Nss1,(64QAM)_2TX

PAR

3695MHz

08/12/2018



1 RB



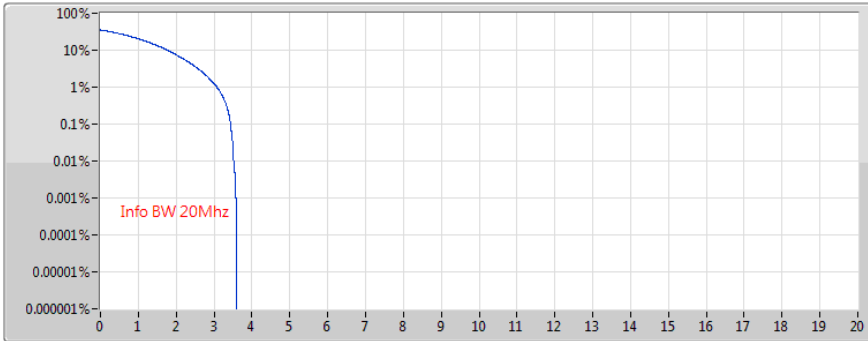
RB	0.1%	Margin(dB)	Limit(dB)	Port
50	8.20	-4.80	13.00	1

Band 48_LTE_20MHz_Nss1,(QPSK)_2TX

PAR

3560MHz

08/12/2018



1 RB



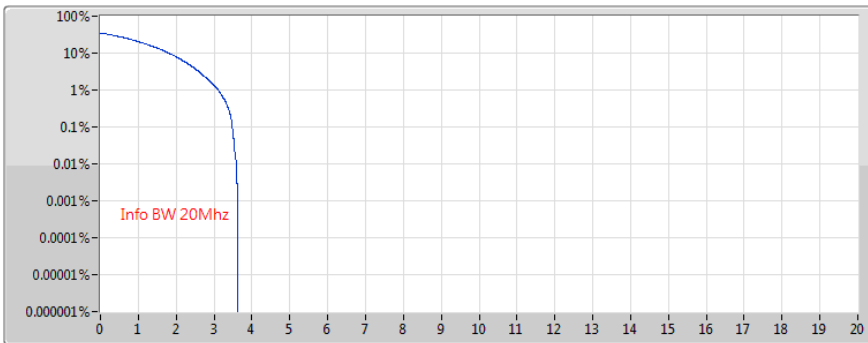
RB	0.1%	Margin(dB)	Limit(dB)	Port
100	8.59	-4.41	13.00	1

Band 48_LTE_20MHz_Nss1,(QPSK)_2TX

PAR

3625MHz

08/12/2018



1 RB



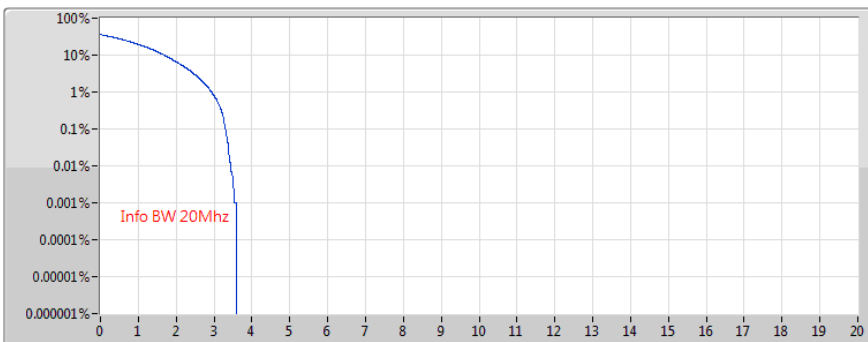
RB	0.1%	Margin(dB)	Limit(dB)	Port
100	8.71	-4.29	13.00	1

Band 48_LTE_20MHz_Nss1,(QPSK)_2TX

PAR

3690MHz

08/12/2018



1 RB



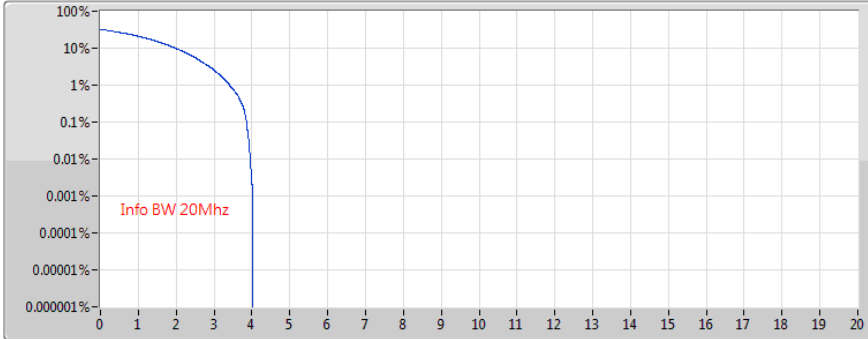
RB	0.1%	Margin(dB)	Limit(dB)	Port
100	8.25	-4.75	13.00	1

Band 48_LTE_20MHz_Nss1,(16QAM)_2TX

PAR

3560MHz

08/12/2018



1 RB

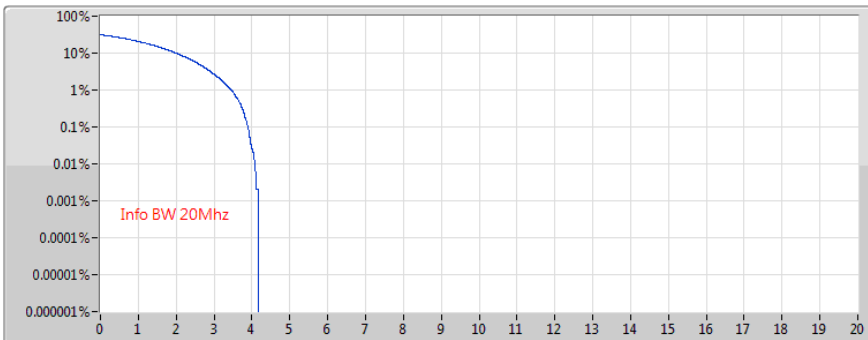
RB	0.1%	Margin(dB)	Limit(dB)	Port
100	9.64	-3.36	13.00	1

Band 48_LTE_20MHz_Nss1,(16QAM)_2TX

PAR

3625MHz

08/12/2018



1 RB

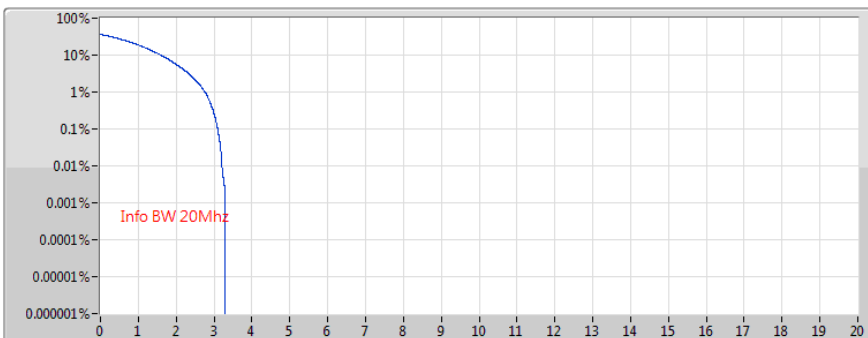
RB	0.1%	Margin(dB)	Limit(dB)	Port
100	9.73	-3.27	13.00	1

Band 48_LTE_20MHz_Nss1,(16QAM)_2TX

PAR

3690MHz

08/12/2018



1 RB

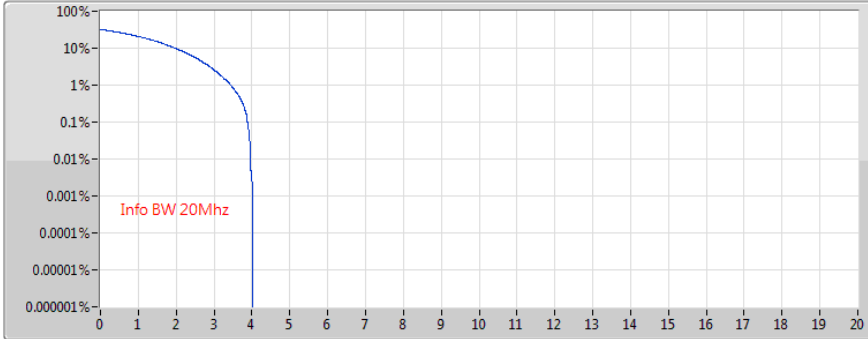
RB	0.1%	Margin(dB)	Limit(dB)	Port
100	7.75	-5.25	13.00	1

Band 48_LTE_20MHz_Nss1,(64QAM)_2TX

PAR

3560MHz

08/12/2018

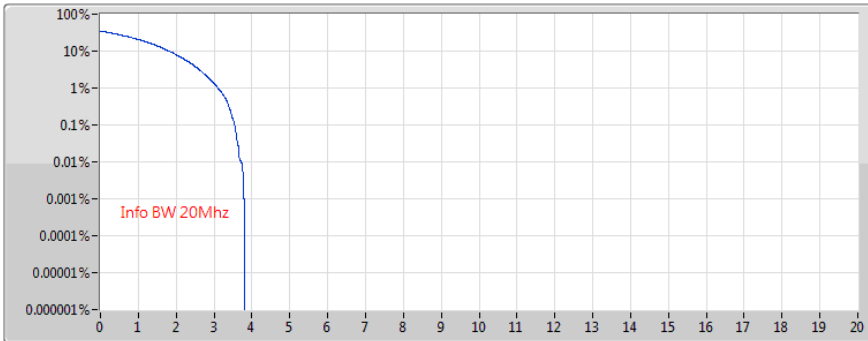


Band 48_LTE_20MHz_Nss1,(64QAM)_2TX

PAR

3625MHz

08/12/2018

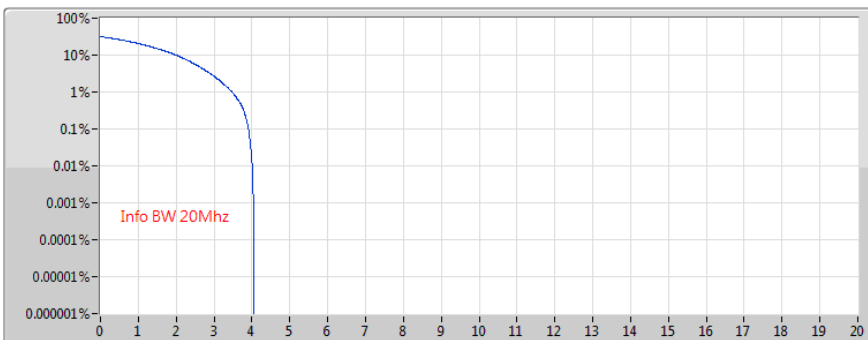


Band 48_LTE_20MHz_Nss1,(64QAM)_2TX

PAR

3690MHz

08/12/2018





Summary

Mode	Result	RB	RB Start	Freq (Hz)	Margin (dB)	0.1%	Limit (dB)	Port
Band 48	-	-	-	-	-	-	-	-
Band 48_LTE_20MHz_(16QAM)_2TX	Pass	100	0	3.625G	-3.20	9.80	13.00	2

Result

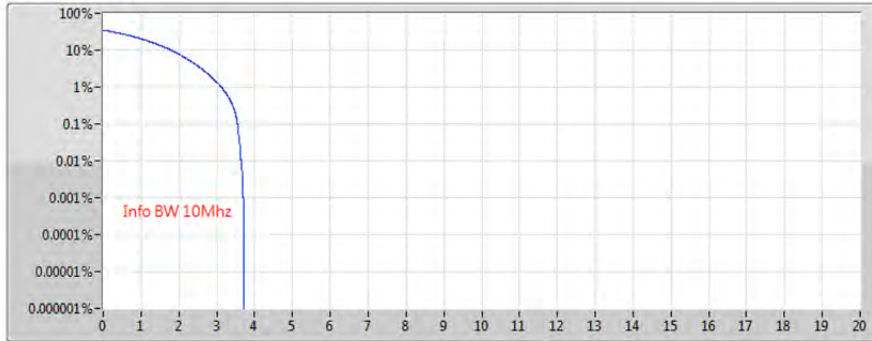
Mode	Result	RB	RB Start	Freq (Hz)	Margin (dB)	0.1%	Limit (dB)	Port
LTE_10MHz_(QPSK)_2TX	-	-	-	-	-	-	-	-
3555MHz	Pass	50	0	3.555G	-4.13	8.87	13.00	2
3625MHz	Pass	50	0	3.625G	-4.50	8.50	13.00	2
3695MHz	Pass	50	0	3.695G	-4.49	8.51	13.00	2
LTE_10MHz_(16QAM)_2TX	-	-	-	-	-	-	-	-
3555MHz	Pass	50	0	3.555G	-4.43	8.57	13.00	2
3625MHz	Pass	50	0	3.625G	-4.07	8.93	13.00	2
3695MHz	Pass	50	0	3.695G	-4.25	8.75	13.00	2
LTE_10MHz_(64QAM)_2TX	-	-	-	-	-	-	-	-
3555MHz	Pass	50	0	3.555G	-4.69	8.31	13.00	2
3625MHz	Pass	50	0	3.625G	-4.58	8.42	13.00	2
3695MHz	Pass	50	0	3.695G	-3.90	9.10	13.00	2
LTE_20MHz_(QPSK)_2TX	-	-	-	-	-	-	-	-
3560MHz	Pass	100	0	3.56G	-3.65	9.35	13.00	2
3625MHz	Pass	100	0	3.625G	-3.23	9.77	13.00	2
3690MHz	Pass	100	0	3.69G	-3.34	9.66	13.00	2
LTE_20MHz_(16QAM)_2TX	-	-	-	-	-	-	-	-
3560MHz	Pass	100	0	3.56G	-4.14	8.86	13.00	2
3625MHz	Pass	100	0	3.625G	-3.20	9.80	13.00	2
3690MHz	Pass	100	0	3.69G	-3.21	9.79	13.00	2
LTE_20MHz_(64QAM)_2TX	-	-	-	-	-	-	-	-
3560MHz	Pass	100	0	3.56G	-3.36	9.64	13.00	2
3625MHz	Pass	100	0	3.625G	-3.34	9.66	13.00	2
3690MHz	Pass	100	0	3.69G	-3.21	9.79	13.00	2

Band 48_LTE_10MHz_Nss1,(QPSK)_2TX

PAR

3555MHz

08/12/2018



1 RB

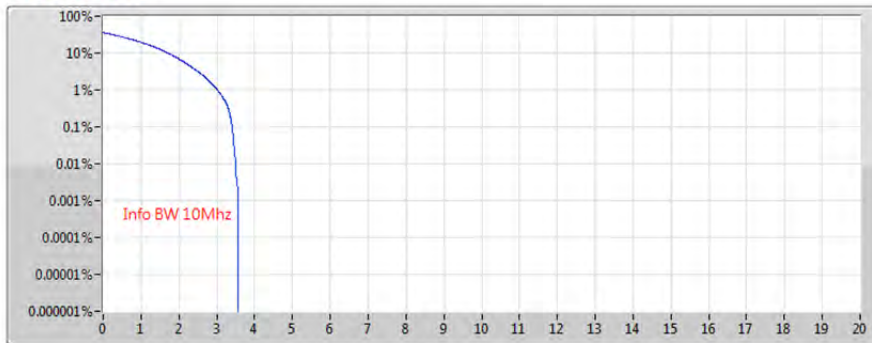
RB	0.1%	Margin(dB)	Limit(dB)	Port
50	8.87	-4.13	13.00	2

Band 48_LTE_10MHz_Nss1,(QPSK)_2TX

PAR

3625MHz

08/12/2018



1 RB

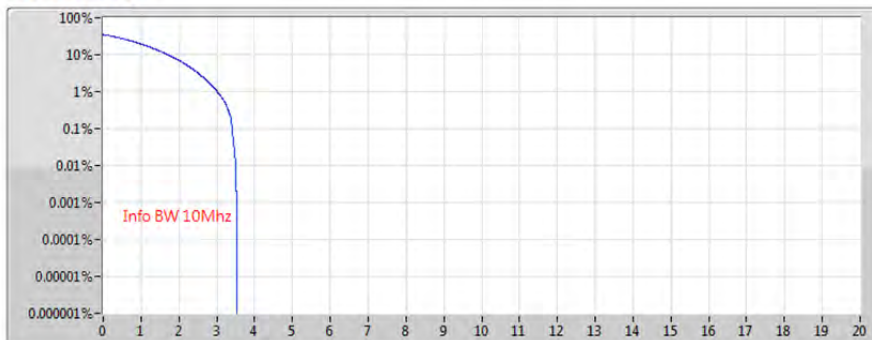
RB	0.1%	Margin(dB)	Limit(dB)	Port
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Band 48_LTE_10MHz_Nss1,(QPSK)_2TX

PAR

3695MHz

08/12/2018



1 RB

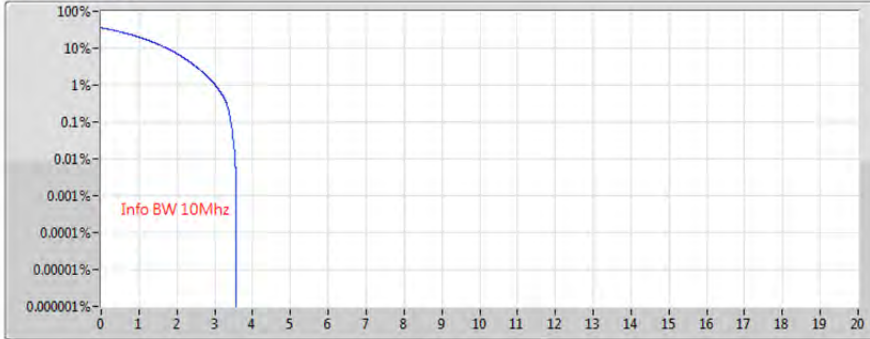
RB	0.1%	Margin(dB)	Limit(dB)	Port
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Band 48_LTE_10MHz_Nss1,(16QAM)_2TX

PAR

3555MHz

08/12/2018



1 RB

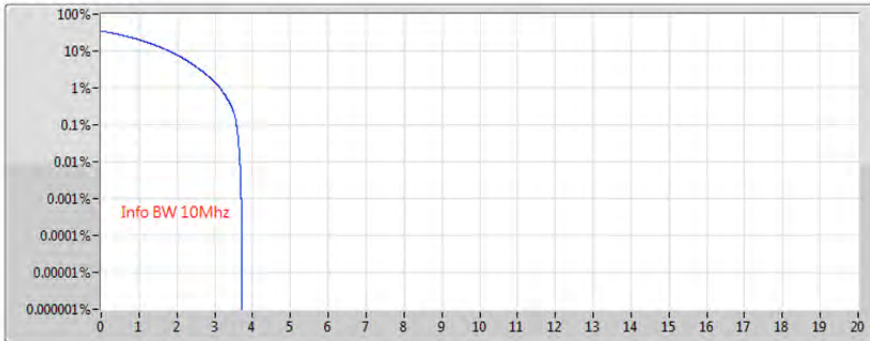
RB	0.1%	Margin(dB)	Limit(dB)	Port
50	8.57	-4.43	13.00	2

Band 48_LTE_10MHz_Nss1,(16QAM)_2TX

PAR

3625MHz

08/12/2018



1 RB

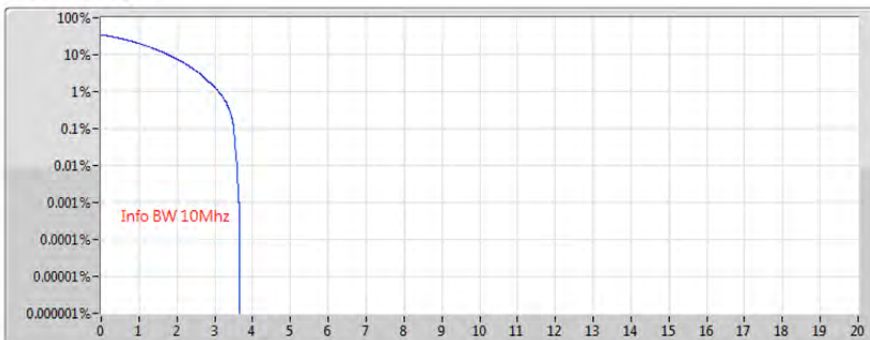
RB	0.1%	Margin(dB)	Limit(dB)	Port
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Band 48_LTE_10MHz_Nss1,(16QAM)_2TX

PAR

3695MHz

08/12/2018



1 RB

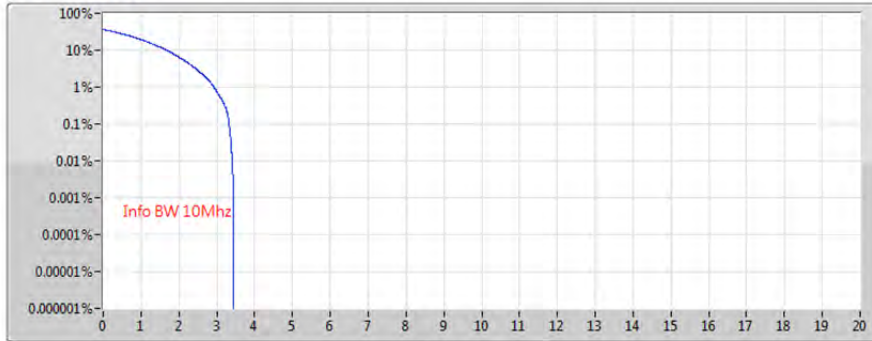
RB	0.1%	Margin(dB)	Limit(dB)	Port
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Band 48_LTE_10MHz_Nss1,(64QAM)_2TX

PAR

3555MHz

08/12/2018



1 RB

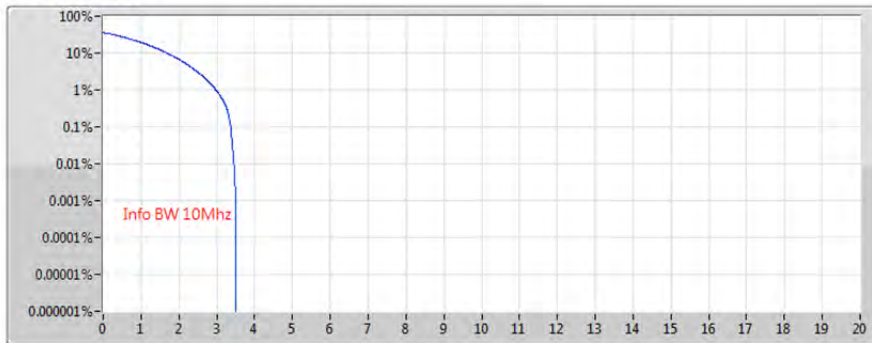
RB	0.1%	Margin(dB)	Limit(dB)	Port
50	8.31	-4.69	13.00	2

Band 48_LTE_10MHz_Nss1,(64QAM)_2TX

PAR

3625MHz

08/12/2018



1 RB

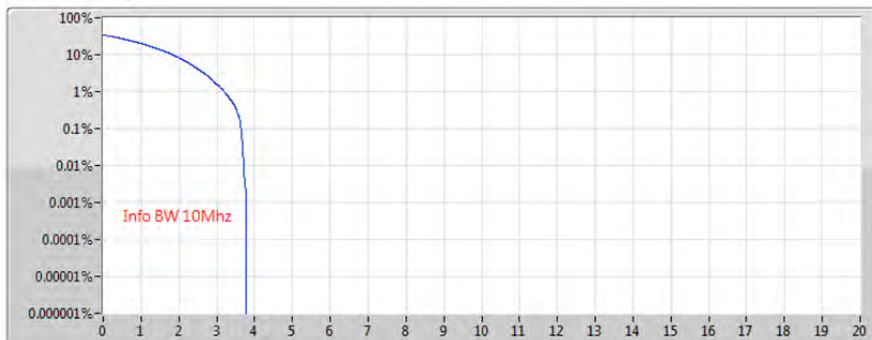
RB	0.1%	Margin(dB)	Limit(dB)	Port
50	8.42	-4.58	13.00	2

Band 48_LTE_10MHz_Nss1,(64QAM)_2TX

PAR

3695MHz

08/12/2018



1 RB

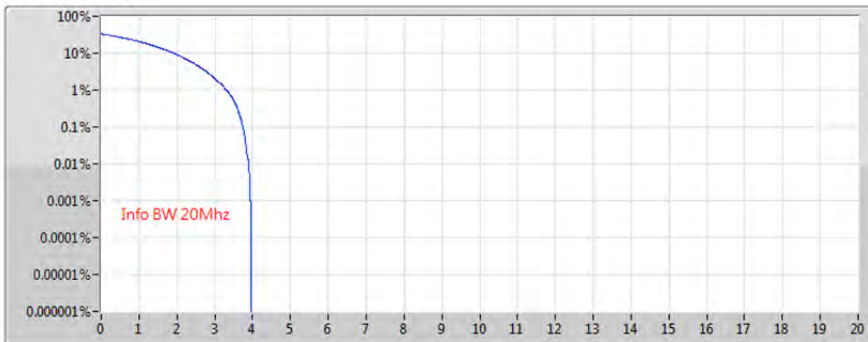
RB	0.1%	Margin(dB)	Limit(dB)	Port
50	9.10	-3.90	13.00	2

Band 48_LTE_20MHz_Nss1,(QPSK)_2TX

PAR

3560MHz

08/12/2018



1 RB

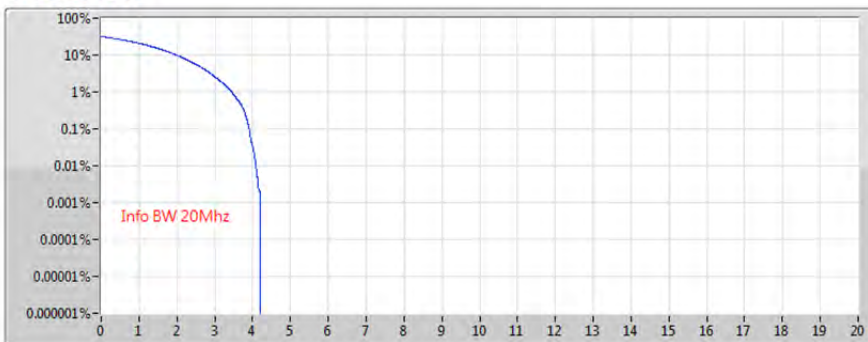
RB	0.1%	Margin(dB)	Limit(dB)	Port
100	9.35	-3.65	13.00	2

Band 48_LTE_20MHz_Nss1,(QPSK)_2TX

PAR

3625MHz

08/12/2018



1 RB

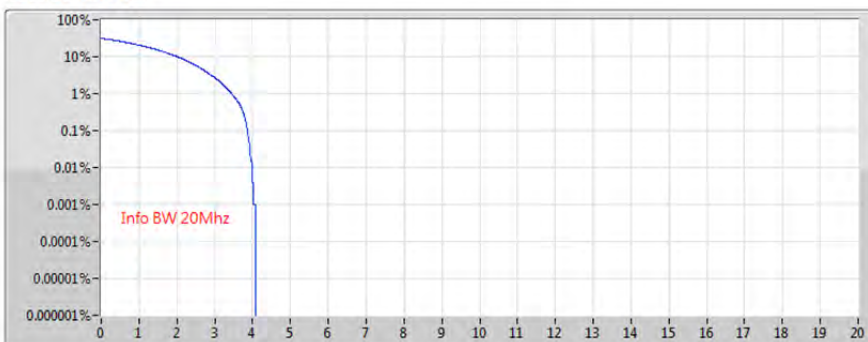
RB	0.1%	Margin(dB)	Limit(dB)	Port
100	9.77	-3.23	13.00	2

Band 48_LTE_20MHz_Nss1,(QPSK)_2TX

PAR

3690MHz

08/12/2018



1 RB

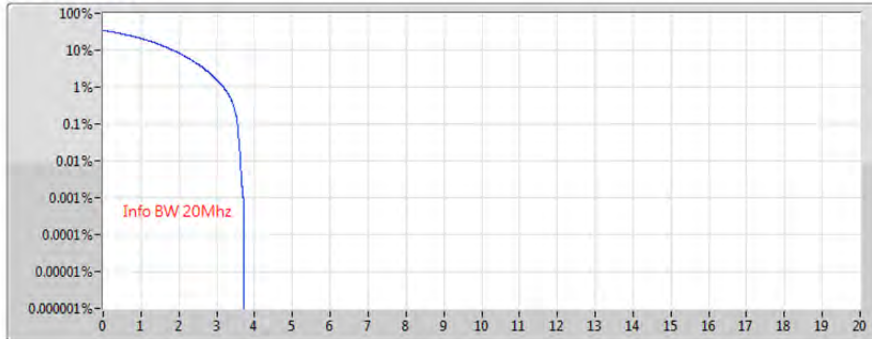
RB	0.1%	Margin(dB)	Limit(dB)	Port
100	9.66	-3.34	13.00	2

Band 48_LTE_20MHz_Nss1,(16QAM)_2TX

PAR

3560MHz

08/12/2018



1 RB

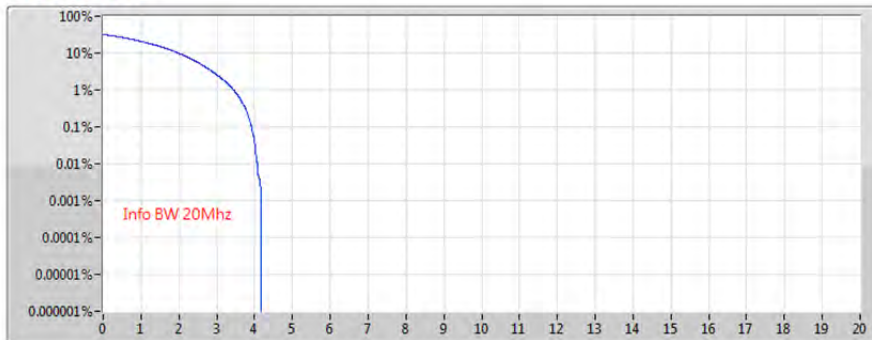
RB	0.1%	Margin(dB)	Limit(dB)	Port
100	8.86	-4.14	13.00	2

Band 48_LTE_20MHz_Nss1,(16QAM)_2TX

PAR

3625MHz

08/12/2018



1 RB

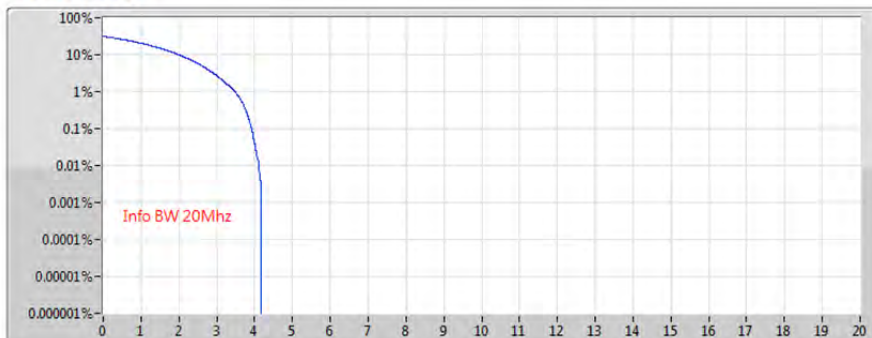
RB	0.1%	Margin(dB)	Limit(dB)	Port
100	9.80	-3.20	13.00	2

Band 48_LTE_20MHz_Nss1,(16QAM)_2TX

PAR

3690MHz

08/12/2018



1 RB

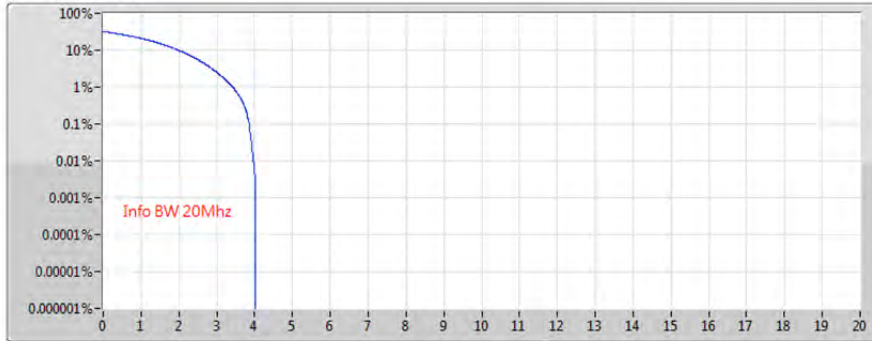
RB	0.1%	Margin(dB)	Limit(dB)	Port
100	9.79	-3.21	13.00	2

Band 48_LTE_20MHz_Nss1,(64QAM)_2TX

PAR

3560MHz

08/12/2018



1 RB

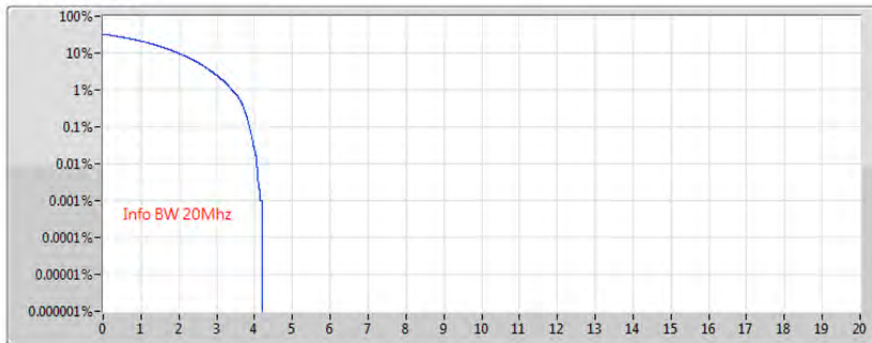
RB	0.1%	Margin(dB)	Limit(dB)	Port
100	9.64	-3.36	13.00	2

Band 48_LTE_20MHz_Nss1,(64QAM)_2TX

PAR

3625MHz

08/12/2018



1 RB

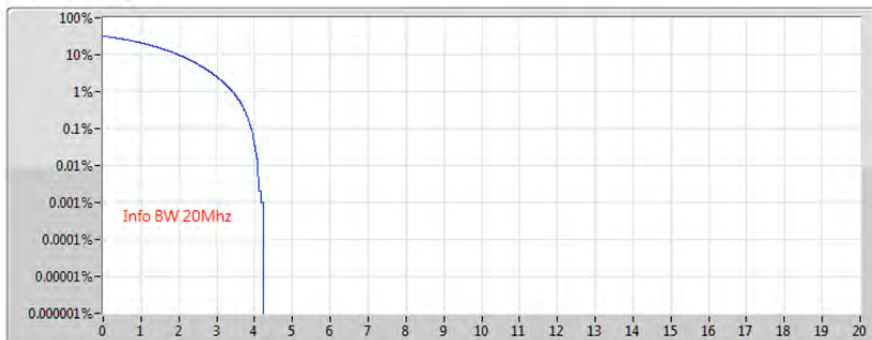
RB	0.1%	Margin(dB)	Limit(dB)	Port
100	9.66	-3.34	13.00	2

Band 48_LTE_20MHz_Nss1,(64QAM)_2TX

PAR

3690MHz

08/12/2018



1 RB

RB	0.1%	Margin(dB)	Limit(dB)	Port
100	9.79	-3.21	13.00	2

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
Band 48	-	-	-	-	-
Band 48_LTE_10MHz_(QPSK)_2TX	9.575M	8.928M	8M93G7D	9.5M	8.91M
Band 48_LTE_10MHz_(16QAM)_2TX	9.6M	8.939M	8M94W7D	9.538M	8.927M
Band 48_LTE_10MHz_(64QAM)_2TX	9.575M	8.921M	8M92W7D	9.488M	8.907M
Band 48_LTE_20MHz_(QPSK)_2TX	18.75M	17.831M	17M8G7D	18.6M	17.783M
Band 48_LTE_20MHz_(16QAM)_2TX	18.85M	17.818M	17M8W7D	18.7M	17.786M
Band 48_LTE_20MHz_(64QAM)_2TX	18.75M	17.824M	17M8W7D	18.675M	17.78M

Max-N dB = Maximum26dB downbandwidth;**Max-OBW** = Maximum99% occupied bandwidth;

Min-N dB = Minimum26dB downbandwidth;**Min-OBW** = Minimum99% occupied bandwidth;

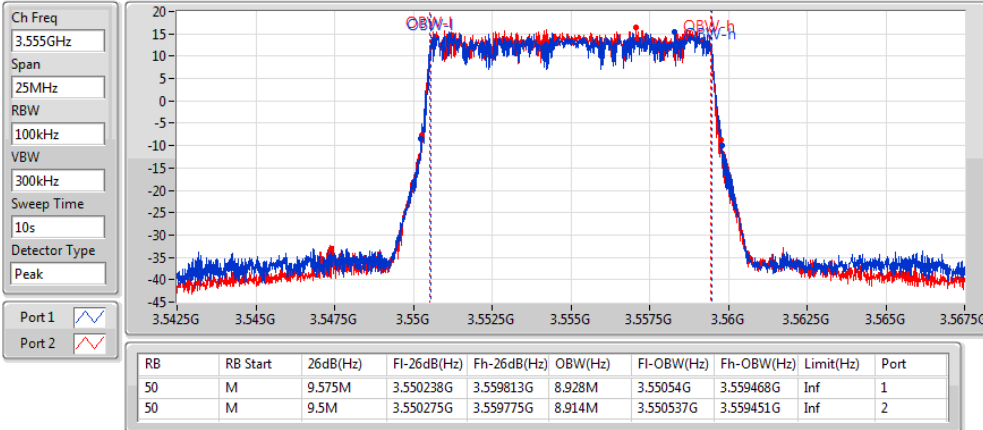
Result

Mode	Result	RB	RB Start	P1-N dB (Hz)	P1-OBW (Hz)	P2-N dB (Hz)	P2-OBW (Hz)
LTE_10MHz_(QPSK)_2TX	-	-	-	-	-	-	-
3555MHz	Pass	50	M	9.575M	8.928M	9.5M	8.914M
3625MHz	Pass	50	M	9.55M	8.92M	9.525M	8.918M
3695MHz	Pass	50	M	9.55M	8.923M	9.513M	8.91M
LTE_10MHz_(16QAM)_2TX	-	-	-	-	-	-	-
3555MHz	Pass	50	M	9.55M	8.927M	9.538M	8.931M
3625MHz	Pass	50	M	9.538M	8.93M	9.575M	8.93M
3695MHz	Pass	50	M	9.6M	8.939M	9.588M	8.937M
LTE_10MHz_(64QAM)_2TX	-	-	-	-	-	-	-
3555MHz	Pass	50	M	9.513M	8.908M	9.488M	8.916M
3625MHz	Pass	50	M	9.55M	8.921M	9.575M	8.911M
3695MHz	Pass	50	M	9.5M	8.919M	9.5M	8.907M
LTE_20MHz_(QPSK)_2TX	-	-	-	-	-	-	-
3560MHz	Pass	100	M	18.6M	17.831M	18.7M	17.816M
3625MHz	Pass	100	M	18.7M	17.826M	18.725M	17.783M
3690MHz	Pass	100	M	18.7M	17.8M	18.75M	17.814M
LTE_20MHz_(16QAM)_2TX	-	-	-	-	-	-	-
3560MHz	Pass	100	M	18.8M	17.806M	18.75M	17.802M
3625MHz	Pass	100	M	18.7M	17.818M	18.85M	17.809M
3690MHz	Pass	100	M	18.75M	17.79M	18.7M	17.786M
LTE_20MHz_(64QAM)_2TX	-	-	-	-	-	-	-
3560MHz	Pass	100	M	18.75M	17.824M	18.725M	17.811M
3625MHz	Pass	100	M	18.675M	17.796M	18.7M	17.801M
3690MHz	Pass	100	M	18.75M	17.78M	18.7M	17.807M

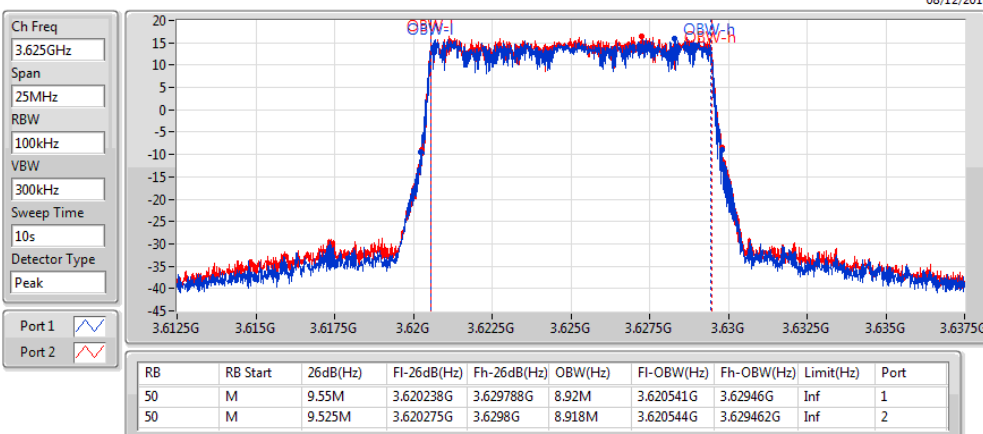
Port X-N dB = Port X26dB downbandwidth; **Port X-OBW** = Port X99% occupied bandwidth;

Band 48_LTE_10MHz_Nss1,(QPSK)_2TX
EBW
3555MHz

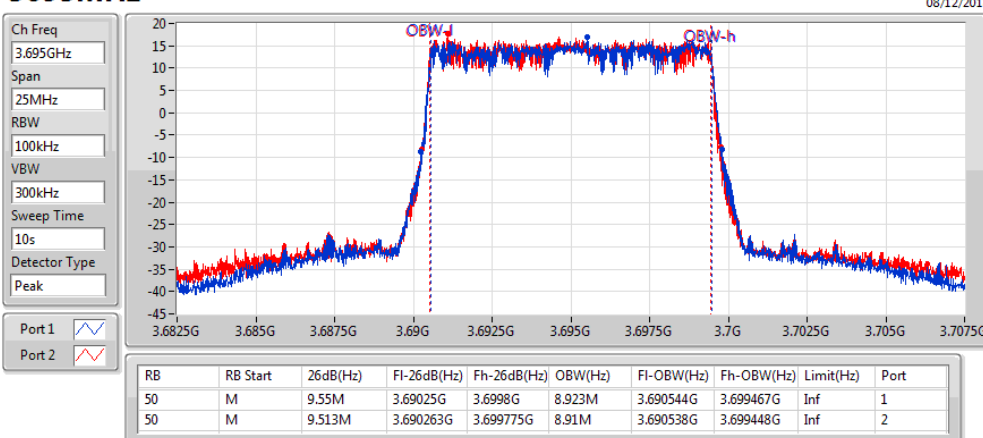
08/12/2018


Band 48_LTE_10MHz_Nss1,(QPSK)_2TX
EBW
3625MHz

08/12/2018

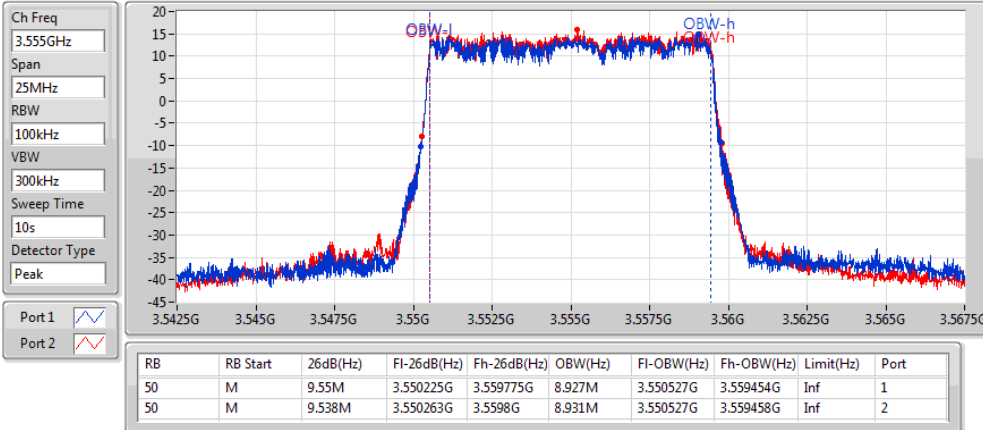

Band 48_LTE_10MHz_Nss1,(QPSK)_2TX
EBW
3695MHz

08/12/2018

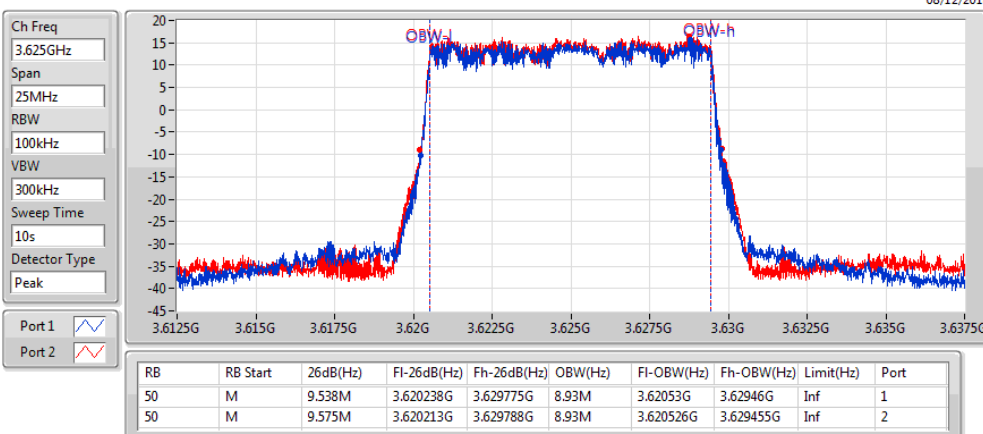


Band 48_LTE_10MHz_Nss1,(16QAM)_2TX
EBW
3555MHz

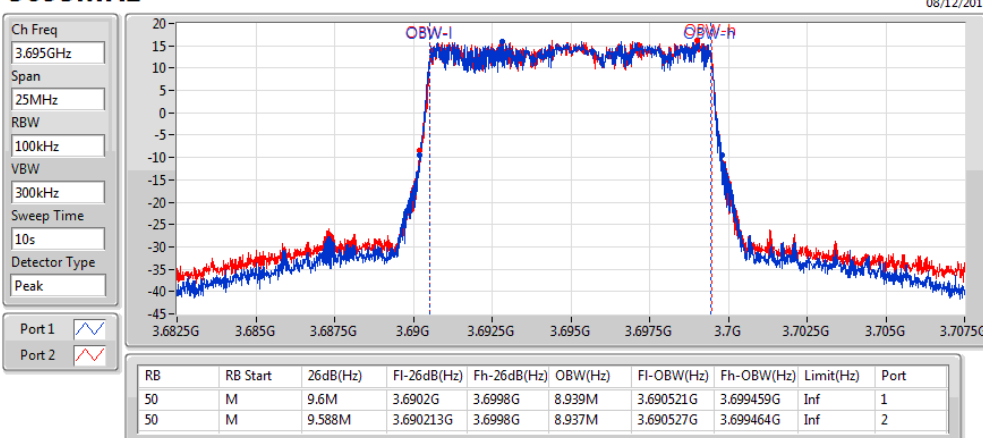
08/12/2018


Band 48_LTE_10MHz_Nss1,(16QAM)_2TX
EBW
3625MHz

08/12/2018

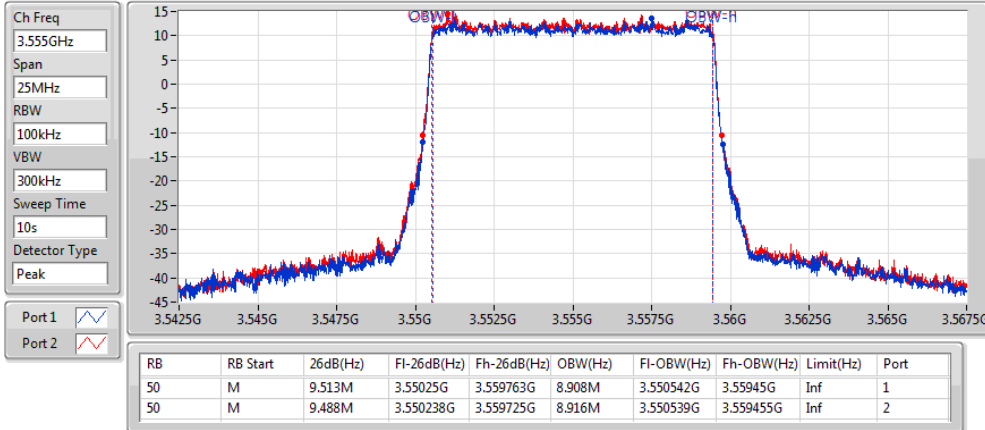

Band 48_LTE_10MHz_Nss1,(16QAM)_2TX
EBW
3695MHz

08/12/2018

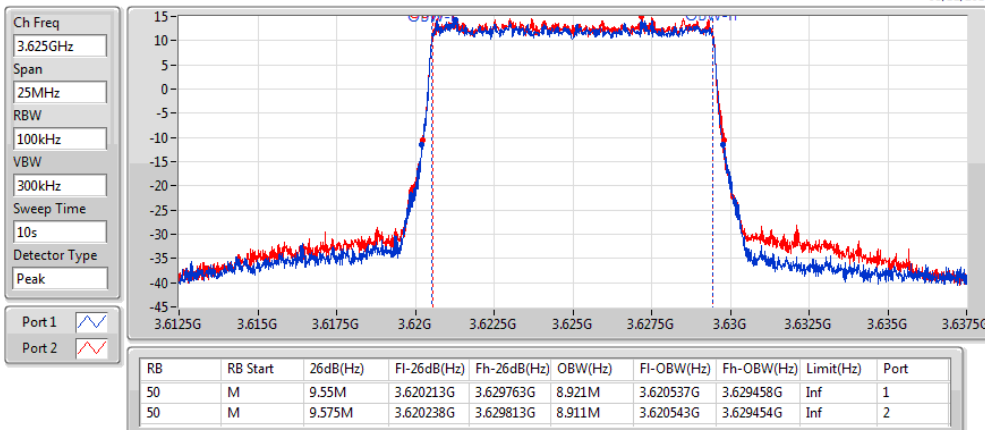


Band 48_LTE_10MHz_Nss1,(64QAM)_2TX
EBW
3555MHz

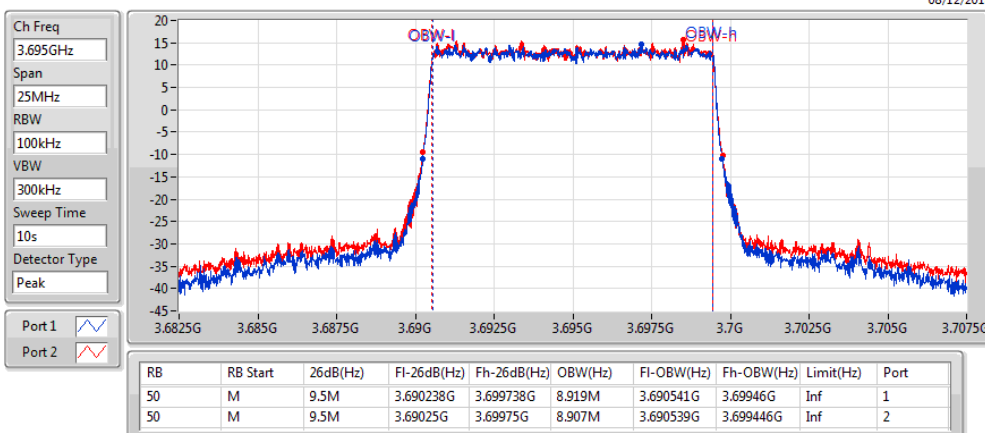
08/12/2018


Band 48_LTE_10MHz_Nss1,(64QAM)_2TX
EBW
3625MHz

08/12/2018

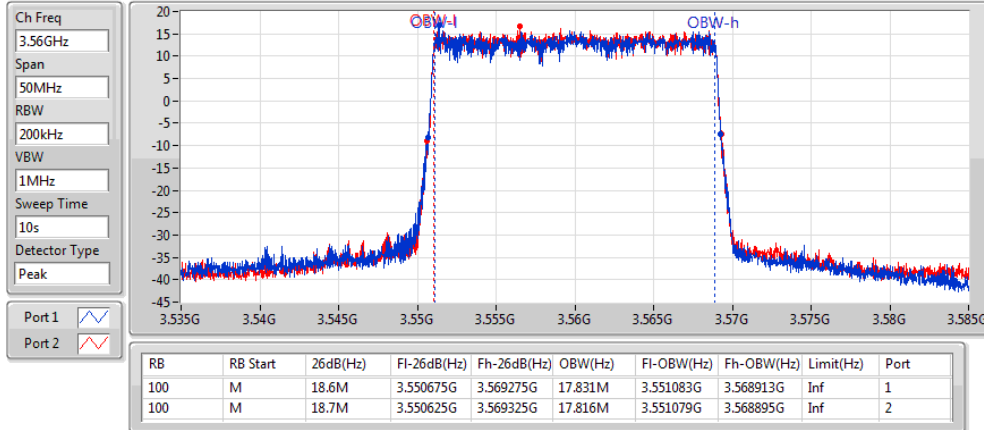

Band 48_LTE_10MHz_Nss1,(64QAM)_2TX
EBW
3695MHz

08/12/2018

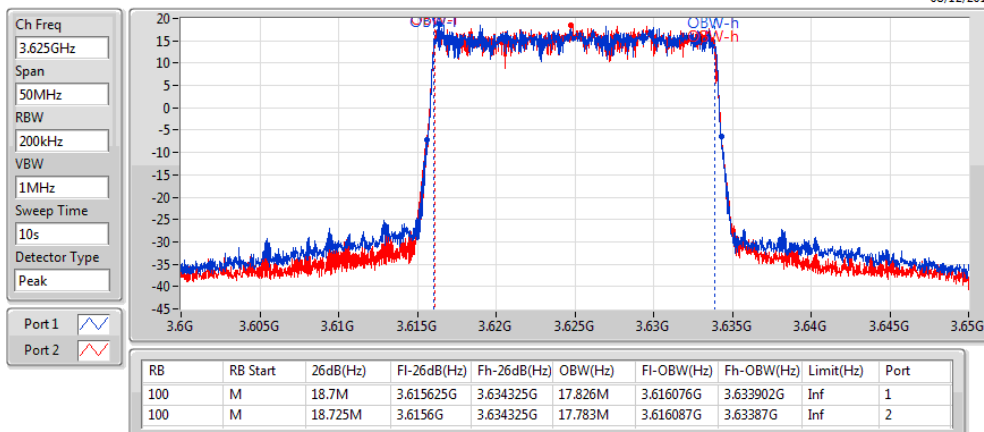


Band 48_LTE_20MHz_Nss1,(QPSK)_2TX
EBW
3560MHz

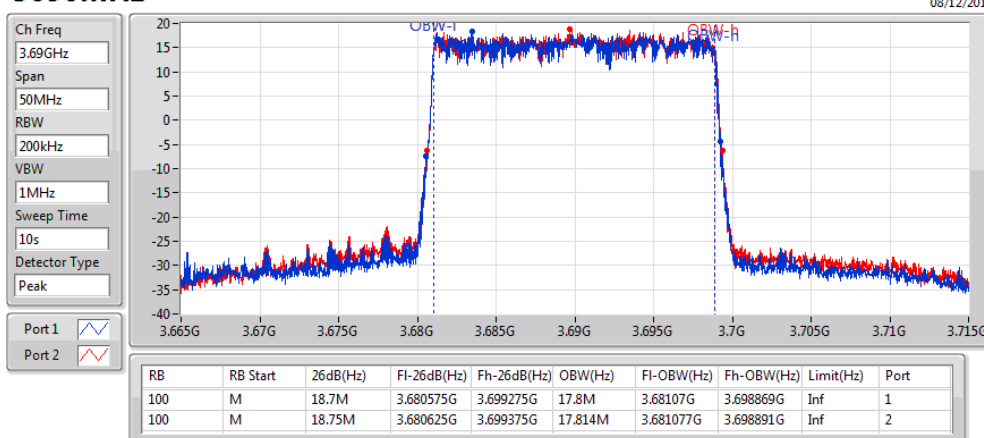
08/12/2018


Band 48_LTE_20MHz_Nss1,(QPSK)_2TX
EBW
3625MHz

08/12/2018

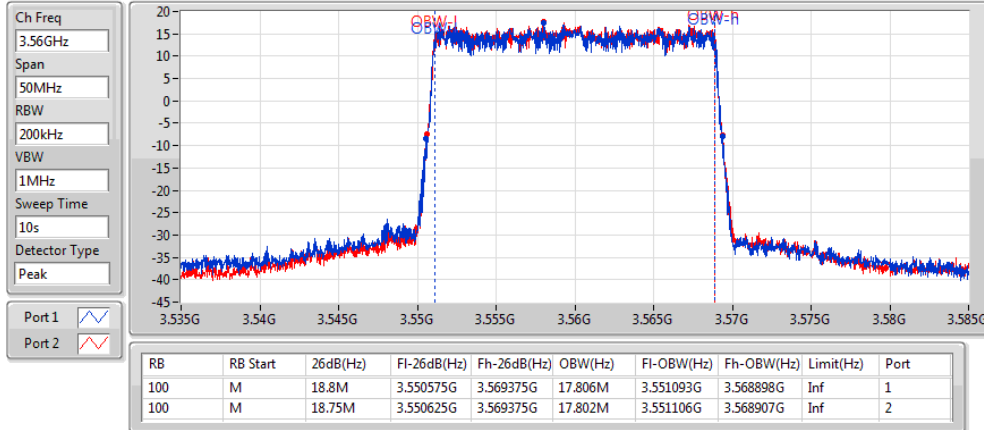

Band 48_LTE_20MHz_Nss1,(QPSK)_2TX
EBW
3690MHz

08/12/2018

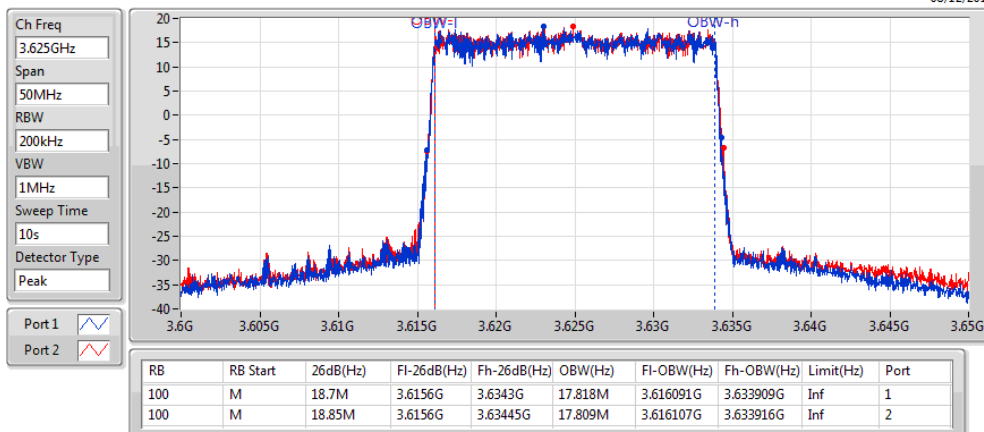


Band 48_LTE_20MHz_Nss1,(16QAM)_2TX
EBW
3560MHz

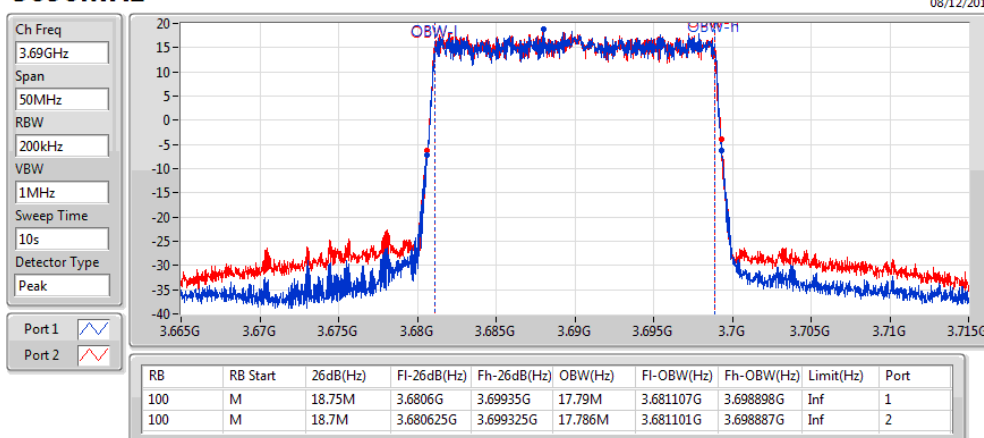
08/12/2018


Band 48_LTE_20MHz_Nss1,(16QAM)_2TX
EBW
3625MHz

08/12/2018

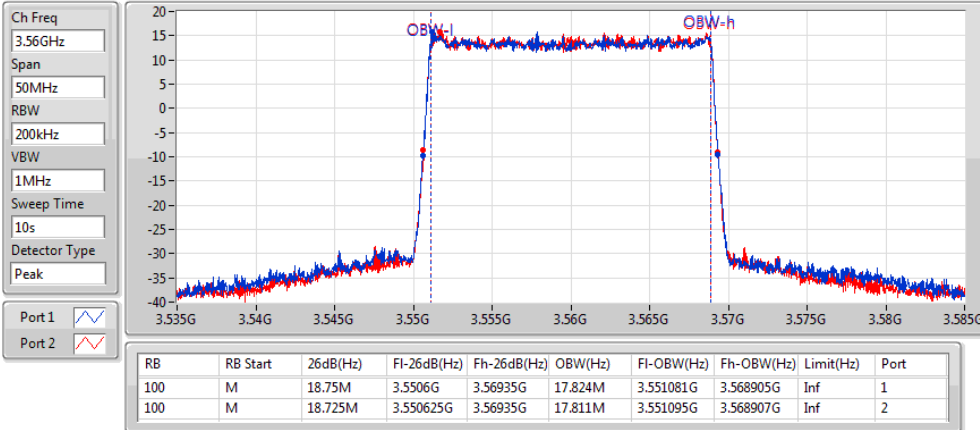

Band 48_LTE_20MHz_Nss1,(16QAM)_2TX
EBW
3690MHz

08/12/2018

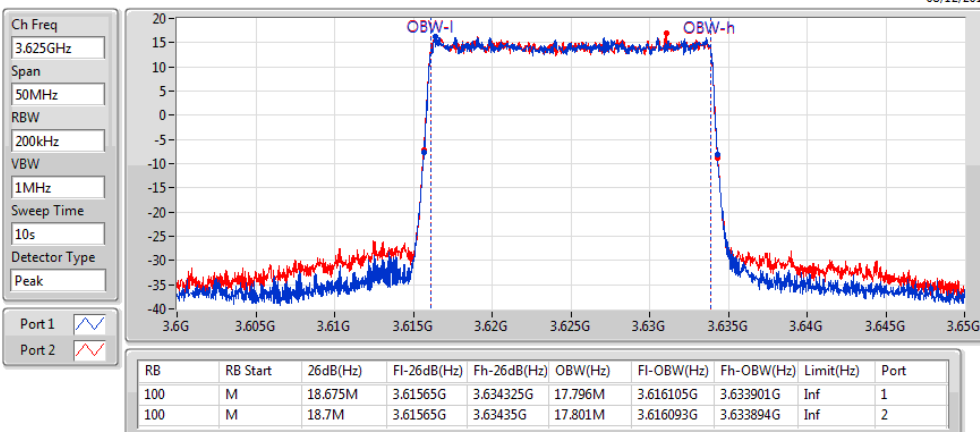


Band 48_LTE_20MHz_Nss1,(64QAM)_2TX
EBW
3560MHz

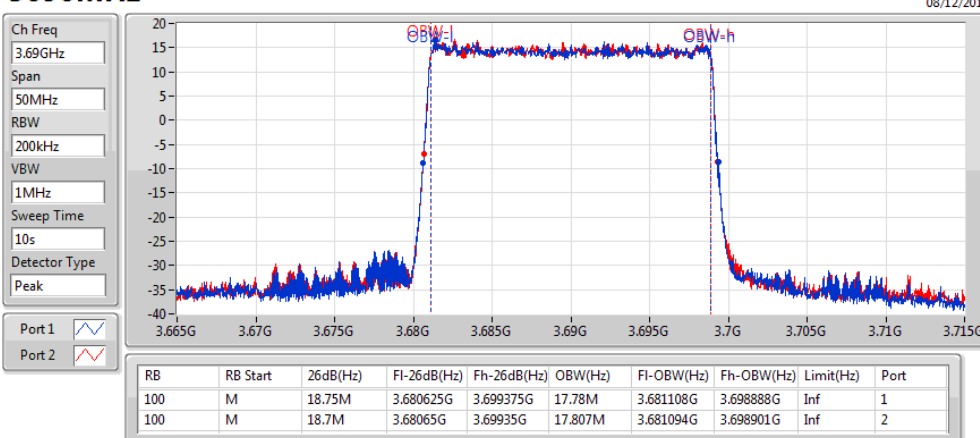
08/12/2018


Band 48_LTE_20MHz_Nss1,(64QAM)_2TX
EBW
3625MHz

08/12/2018


Band 48_LTE_20MHz_Nss1,(64QAM)_2TX
EBW
3690MHz

08/12/2018





3.5 GHz Emissions and Interference Limits Result

Appendix G

Summary

Mode	Result	RB	RB Start	F-Start (Hz)	F-Stop (Hz)	RBW (Hz)	Detector	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Port	Remark
LTE_20MHz_(QPSK)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
3560MHz	Pass	100	0	30M	3.53G	1M	RMS	3.53G	-44.22	-43.00	-1.22	1	-

DG = Directional Gain;

Band 48_LTE_10MHz_Nss1,(QPSK)_2TX

3555MHz

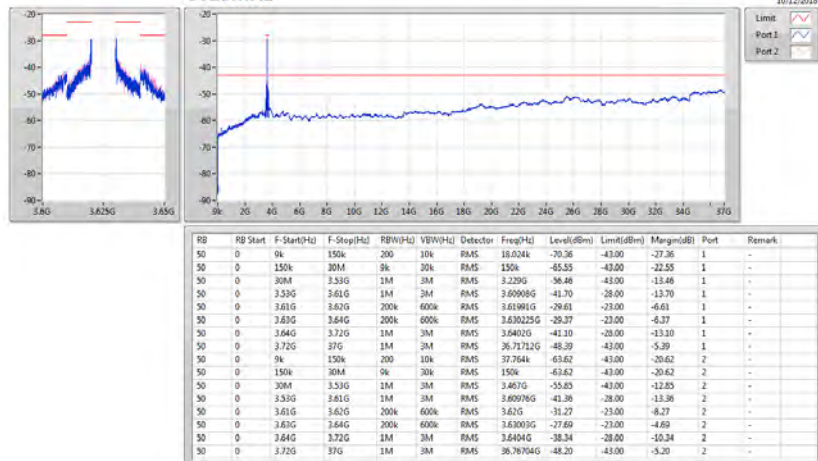
CSE-TX



Band 48_LTE_10MHz_Nss1,(QPSK)_2TX

3625MHz

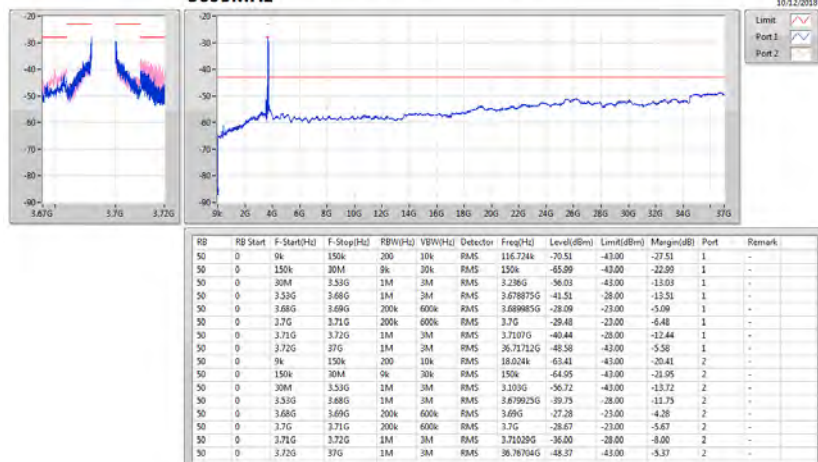
CSE-TX



Band 48_LTE_10MHz_Nss1,(QPSK)_2TX

3695MHz

CSE-TX



Band 48_LTE_10MHz_Nss1,(16QAM)_2TX

3555MHz

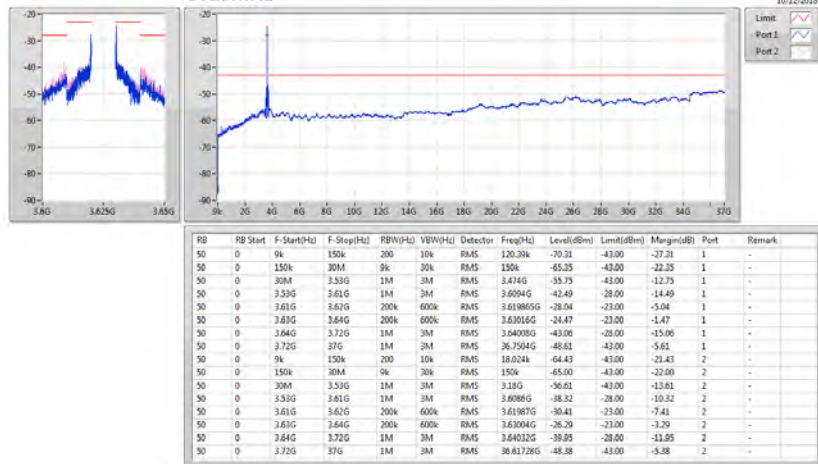
CSE-TX



Band 48_LTE_10MHz_Nss1,(16QAM)_2TX

3625MHz

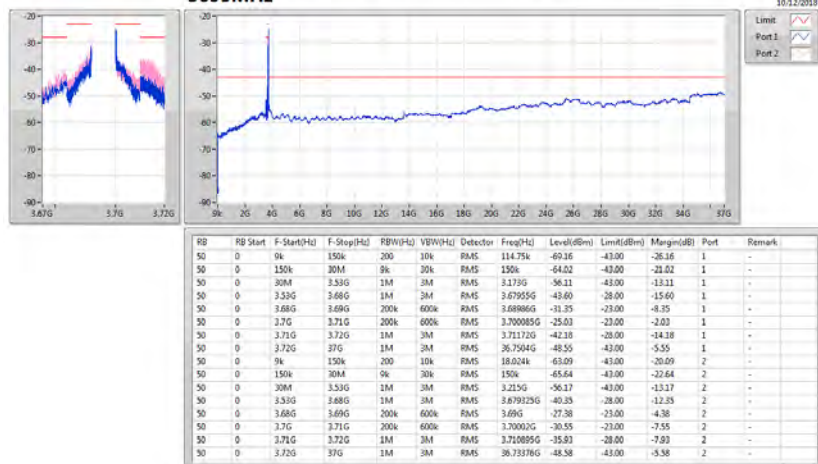
CSE-TX



Band 48_LTE_10MHz_Nss1,(16QAM)_2TX

3695MHz

CSE-TX



Band 48_LTE_10MHz_Nss1,(64QAM)_2TX

3555MHz

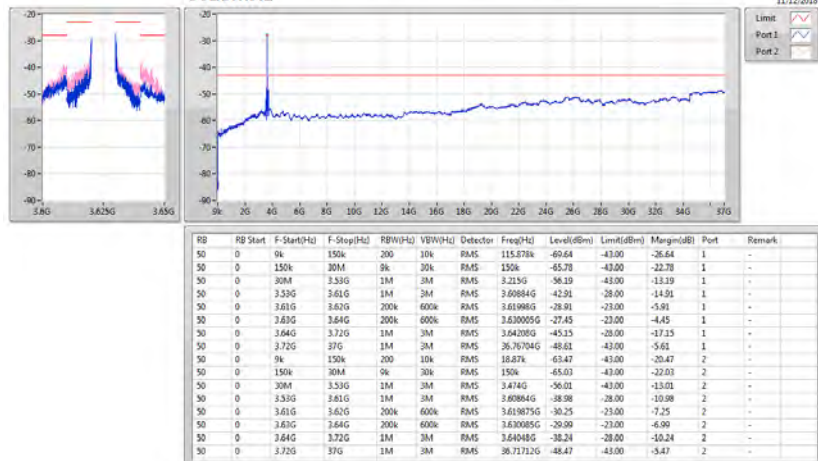
CSE-TX



Band 48_LTE_10MHz_Nss1,(64QAM)_2TX

3625MHz

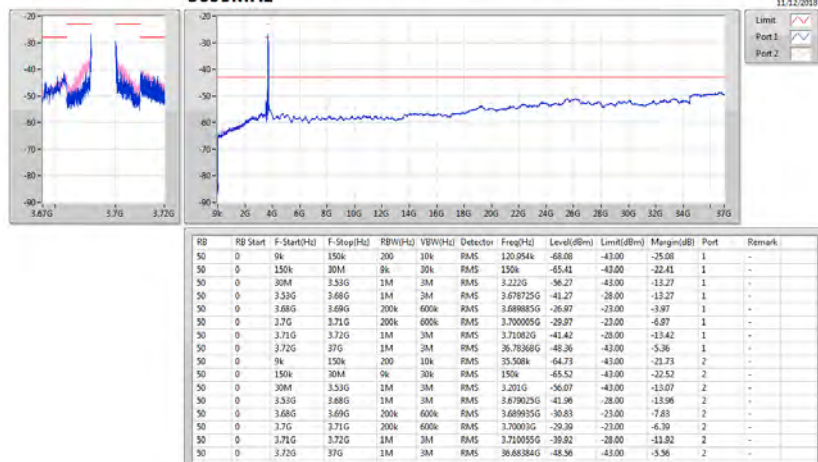
CSE-TX



Band 48_LTE_10MHz_Nss1,(64QAM)_2TX

3695MHz

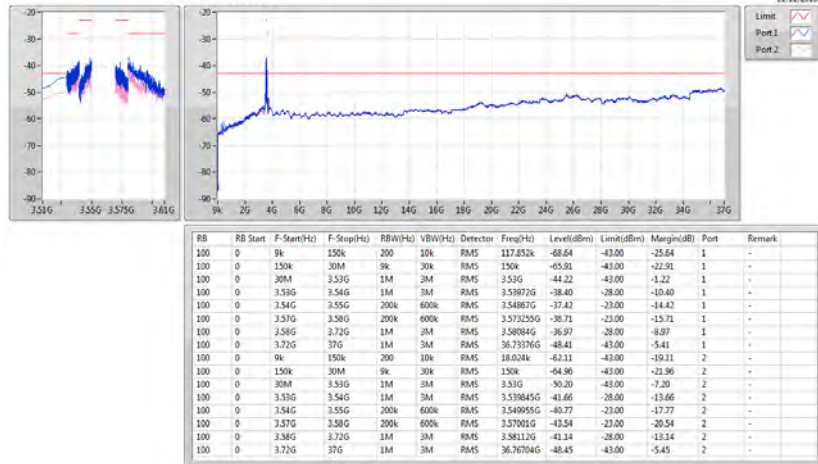
CSE-TX



Band 48_LTE_20MHz_Nss1,(QPSK)_2TX

3560MHz

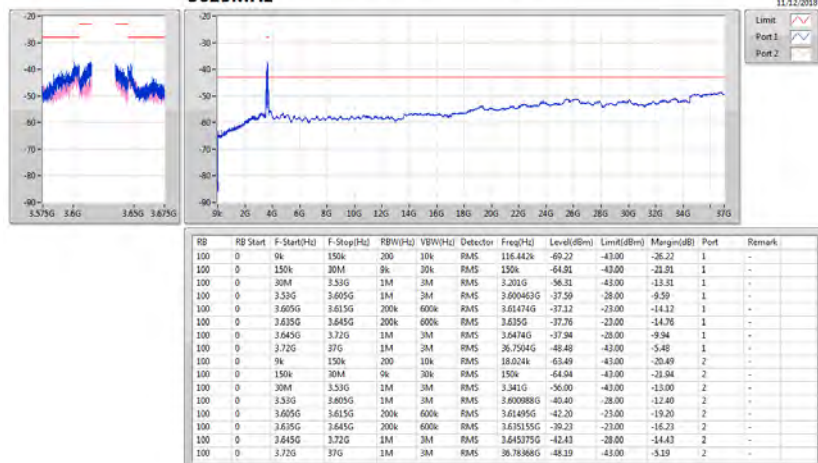
CSE-TX



Band 48_LTE_20MHz_Nss1,(QPSK)_2TX

3625MHz

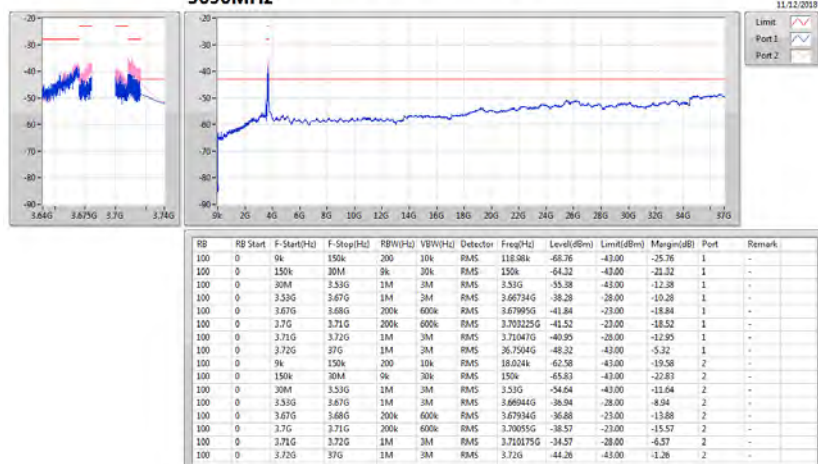
CSE-TX



Band 48_LTE_20MHz_Nss1,(QPSK)_2TX

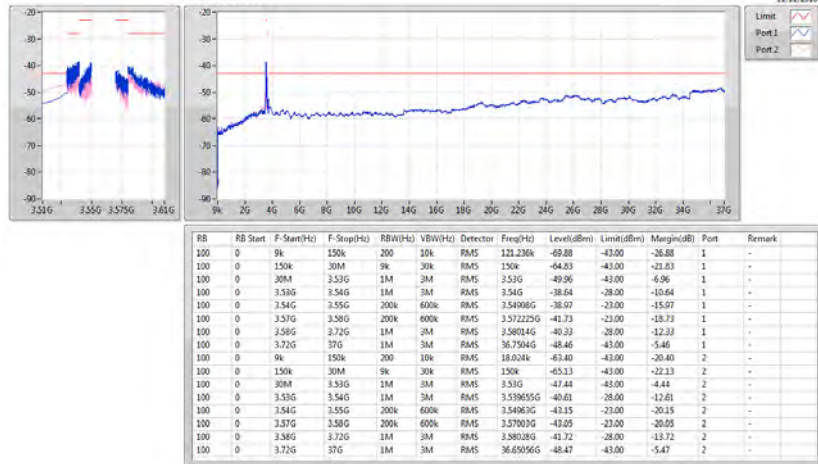
3690MHz

CSE-TX



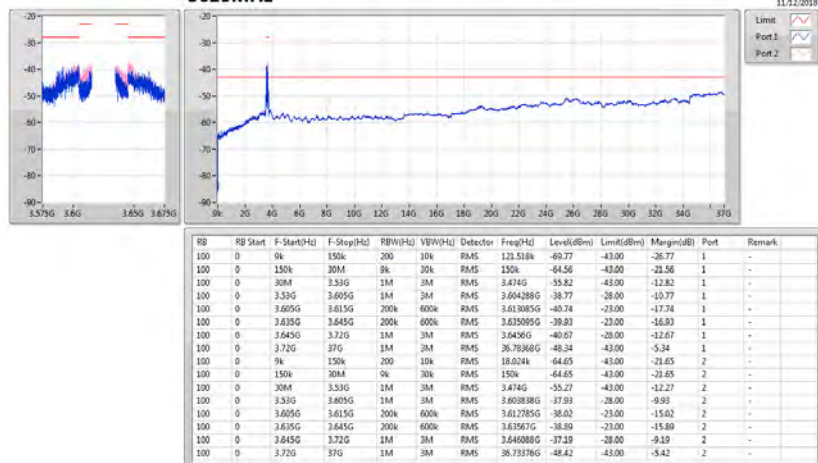
Band 48_LTE_20MHz_Nss1,(16QAM)_2TX 3560MHz

CSE-TX



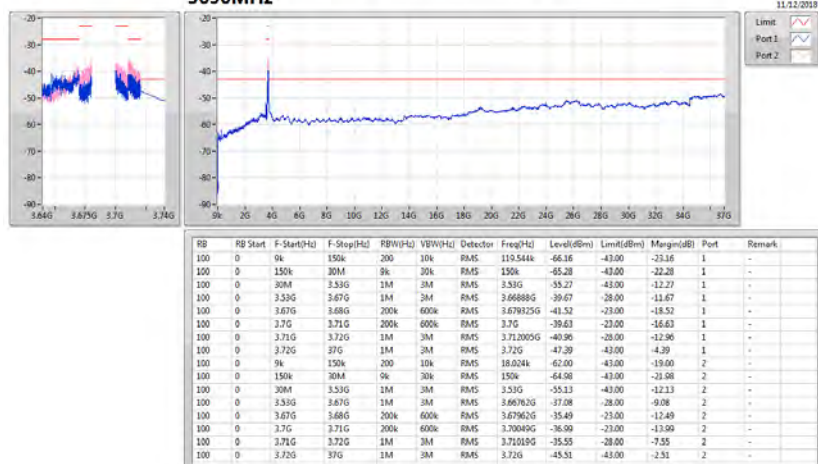
Band 48_LTE_20MHz_Nss1,(16QAM)_2TX 3625MHz

CSE-TX



Band 48_LTE_20MHz_Nss1,(16QAM)_2TX 3690MHz

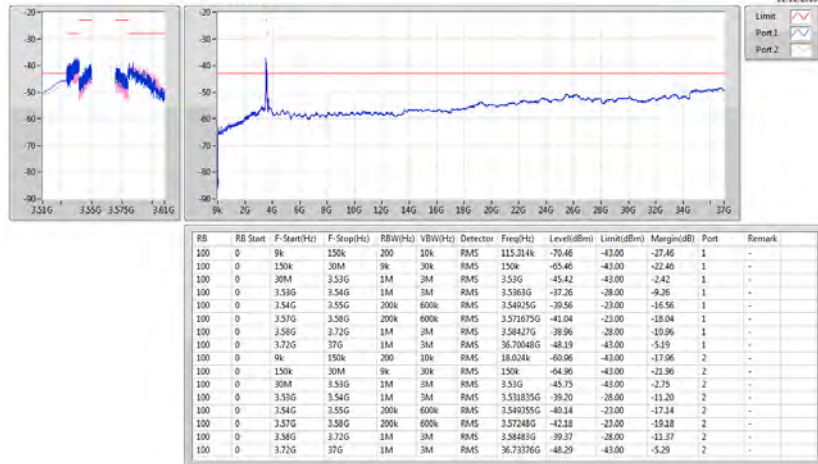
CSE-TX



Band 48_LTE_20MHz_Nss1,(64QAM)_2TX

3560MHz

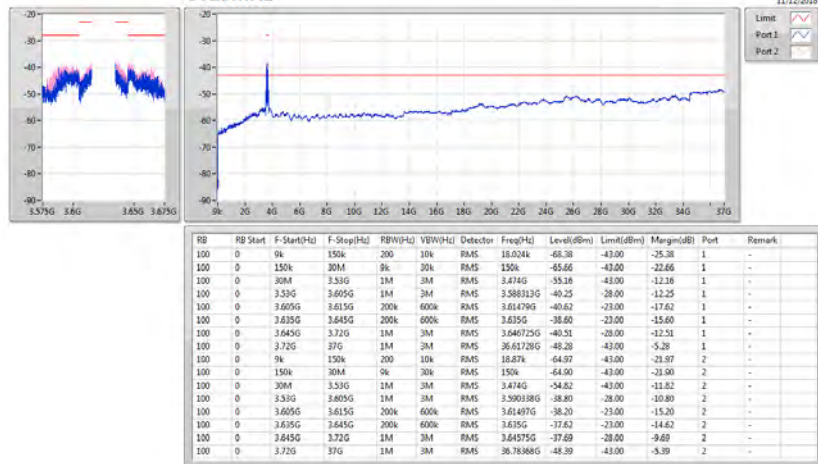
CSE-TX



Band 48_LTE_20MHz_Nss1,(64QAM)_2TX

3625MHz

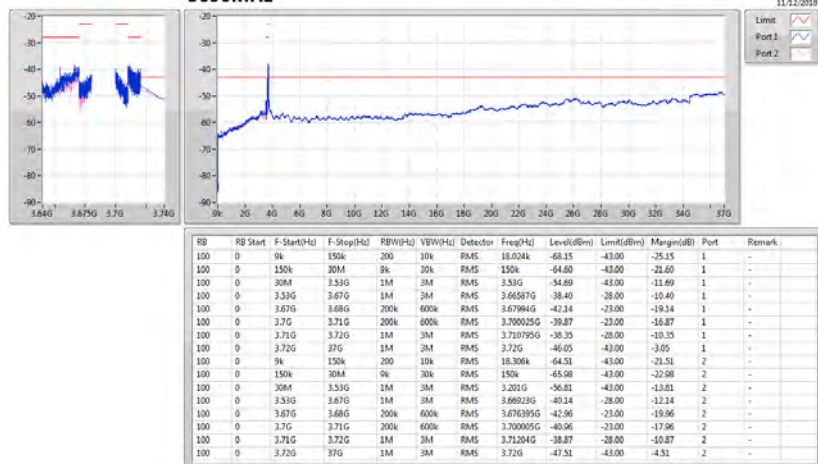
CSE-TX



Band 48_LTE_20MHz_Nss1,(64QAM)_2TX

3690MHz

CSE-TX





Field Strength of Spurious Radiation (30MHz ~ 1GHz)

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.



Field Strength of Spurious Radiation (Above 1GHz) - Harmonic

Configurations	20MHz / 64QAM / 3560 MHz
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Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	7120.70	-64.68	-24.68	-40.00	-77.64	12.96	HORIZONTAL

Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	7120.00	-59.25	-19.25	-40.00	-73.98	14.73	VERTICAL

Configurations	20MHz / 64QAM / 3625 MHz
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Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	7250.20	-63.69	-23.69	-40.00	-76.71	13.02	HORIZONTAL

Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	7250.10	-58.15	-18.15	-40.00	-72.99	14.84	VERTICAL



Configurations	20MHz / 64QAM / 3690 MHz
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Horizontal

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	7381.80	-64.59	-24.59	-40.00	-77.68	13.09	HORIZONTAL

Vertical

	Freq	Level	Over Limit	Limit Line	Read Level	Factor	Pol/Phase
	MHz	dBm	dB	dBm	dBm	dB	
1	7381.10	-57.49	-17.49	-40.00	-72.46	14.97	VERTICAL



Frequency Stability Result

Appendix I

Summary

Mode	Result	Voltage (V)	Temp (°C)	Ch (Hz)	Fl (Hz)	Fh (Hz)	Fl Limit (Hz)	Fh Limit (Hz)	ppm	Port	Remark
Band 48	-			-	-	-	-	-		-	-
LTE_20MHz_(QPSK)_2TX 3560MHz	Pass	110	-20	3.56G	3.551078G	3.568886G	3.55G	3.7G	-5.06	1	-



Result

Mode	Result	Voltage (V)	Temp (°C)	Ch (Hz)	FI (Hz)	Fh (Hz)	FI Limit (Hz)	Fh Limit (Hz)	ppm	Port	Remark
LTE_10MHz_(QPSK)_2TX	-			-	-	-	-	-	-	-	-
3555MHz	Pass	110	-30	3.555G	3.550528G	3.559458G	3.55G	3.7G	-2.08	1	-
3555MHz	Pass	110	-20	3.555G	3.550526G	3.559468G	3.55G	3.7G	-0.845	1	-
3555MHz	Pass	110	-10	3.555G	3.550527G	3.559471G	3.55G	3.7G	-0.297	1	-
3555MHz	Pass	110	0	3.555G	3.550528G	3.559471G	3.55G	3.7G	-0.15	1	-
3555MHz	Pass	110	10	3.555G	3.550536G	3.559458G	3.55G	3.7G	-0.924	1	-
3555MHz	Pass	93.5	20	3.555G	3.550522G	3.559461G	3.55G	3.7G	-2.359	1	-
3555MHz	Pass	110	20	3.555G	3.550528G	3.559454G	3.55G	3.7G	-2.568	1	-
3555MHz	Pass	126.5	20	3.555G	3.55053G	3.559463G	3.55G	3.7G	-0.956	1	-
3555MHz	Pass	110	30	3.555G	3.550526G	3.559459G	3.55G	3.7G	-2.137	1	-
3555MHz	Pass	110	40	3.555G	3.550531G	3.559449G	3.55G	3.7G	-2.827	1	-
3555MHz	Pass	110	50	3.555G	3.550529G	3.55946G	3.55G	3.7G	-1.633	1	-
3695MHz	Pass	110	-30	3.695G	3.690534G	3.699451G	3.55G	3.7G	-2.068	1	-
3695MHz	Pass	110	-20	3.695G	3.690532G	3.699456G	3.55G	3.7G	-1.626	1	-
3695MHz	Pass	110	-10	3.695G	3.69053G	3.699471G	3.55G	3.7G	0.086	1	-
3695MHz	Pass	110	0	3.695G	3.690534G	3.699454G	3.55G	3.7G	-1.586	1	-
3695MHz	Pass	110	10	3.695G	3.690528G	3.699455G	3.55G	3.7G	-2.321	1	-
3695MHz	Pass	93.5	20	3.695G	3.69053G	3.699451G	3.55G	3.7G	-2.56	1	-
3695MHz	Pass	110	20	3.695G	3.69053G	3.699458G	3.55G	3.7G	-1.651	1	-
3695MHz	Pass	126.5	20	3.695G	3.69053G	3.699457G	3.55G	3.7G	-1.72	1	-
3695MHz	Pass	110	30	3.695G	3.690531G	3.699452G	3.55G	3.7G	-2.299	1	-
3695MHz	Pass	110	40	3.695G	3.69053G	3.699459G	3.55G	3.7G	-1.565	1	-
3695MHz	Pass	110	50	3.695G	3.690525G	3.69946G	3.55G	3.7G	-1.957	1	-
LTE_10MHz_(16QAM)_2TX	-			-	-	-	-	-	-	-	-
3555MHz	Pass	110	-30	3.555G	3.550524G	3.559449G	3.55G	3.7G	-3.766	1	-
3555MHz	Pass	110	-20	3.555G	3.550528G	3.559449G	3.55G	3.7G	-3.177	1	-
3555MHz	Pass	110	-10	3.555G	3.550525G	3.559448G	3.55G	3.7G	-3.883	1	-
3555MHz	Pass	110	0	3.555G	3.550531G	3.559447G	3.55G	3.7G	-3.115	1	-
3555MHz	Pass	110	10	3.555G	3.550525G	3.559449G	3.55G	3.7G	-3.672	1	-
3555MHz	Pass	93.5	20	3.555G	3.550524G	3.559461G	3.55G	3.7G	-2.164	1	-
3555MHz	Pass	110	20	3.555G	3.550525G	3.559454G	3.55G	3.7G	-3.064	1	-
3555MHz	Pass	126.5	20	3.555G	3.550525G	3.559457G	3.55G	3.7G	-2.632	1	-
3555MHz	Pass	110	30	3.555G	3.550521G	3.559445G	3.55G	3.7G	-4.774	1	-
3555MHz	Pass	110	40	3.555G	3.550523G	3.559455G	3.55G	3.7G	-3.019	1	-
3555MHz	Pass	110	50	3.555G	3.550521G	3.559452G	3.55G	3.7G	-3.749	1	-
3695MHz	Pass	110	-30	3.695G	3.690522G	3.699441G	3.55G	3.7G	-5.038	1	-
3695MHz	Pass	110	-20	3.695G	3.690525G	3.699454G	3.55G	3.7G	-2.929	1	-
3695MHz	Pass	110	-10	3.695G	3.690524G	3.699447G	3.55G	3.7G	-4.025	1	-
3695MHz	Pass	110	0	3.695G	3.69053G	3.699455G	3.55G	3.7G	-2.138	1	-
3695MHz	Pass	110	10	3.695G	3.690527G	3.69945G	3.55G	3.7G	-3.192	1	-
3695MHz	Pass	93.5	20	3.695G	3.690531G	3.69945G	3.55G	3.7G	-2.592	1	-
3695MHz	Pass	110	20	3.695G	3.690534G	3.699451G	3.55G	3.7G	-2.111	1	-
3695MHz	Pass	126.5	20	3.695G	3.690531G	3.699452G	3.55G	3.7G	-2.406	1	-
3695MHz	Pass	110	30	3.695G	3.690533G	3.699455G	3.55G	3.7G	-1.631	1	-



Frequency Stability Result

Appendix I

Mode	Result	Voltage (V)	Temp (°C)	Ch (Hz)	Fl (Hz)	Fh (Hz)	Fl Limit (Hz)	Fh Limit (Hz)	ppm	Port	Remark
3695MHz	Pass	110	40	3.695G	3.690525G	3.699452G	3.55G	3.7G	-3.141	1	-
3695MHz	Pass	110	50	3.695G	3.69053G	3.699445G	3.55G	3.7G	-3.347	1	-
LTE_10MHz_(64QAM)_2TX	-			-	-	-	-	-	-	-	-
3555MHz	Pass	110	-30	3.555G	3.550531G	3.559458G	3.55G	3.7G	-1.578	1	-
3555MHz	Pass	110	-20	3.555G	3.550534G	3.559458G	3.55G	3.7G	-1.013	1	-
3555MHz	Pass	110	-10	3.555G	3.550536G	3.559454G	3.55G	3.7G	-1.323	1	-
3555MHz	Pass	110	0	3.555G	3.550539G	3.559458G	3.55G	3.7G	-0.335	1	-
3555MHz	Pass	110	10	3.555G	3.550537G	3.559464G	3.55G	3.7G	0.133	1	-
3555MHz	Pass	93.5	20	3.555G	3.550531G	3.559459G	3.55G	3.7G	-1.419	1	-
3555MHz	Pass	110	20	3.555G	3.550537G	3.559455G	3.55G	3.7G	-1.069	1	-
3555MHz	Pass	126.5	20	3.555G	3.550534G	3.559461G	3.55G	3.7G	-0.701	1	-
3555MHz	Pass	110	30	3.555G	3.550533G	3.559461G	3.55G	3.7G	-0.857	1	-
3555MHz	Pass	110	40	3.555G	3.550531G	3.559461G	3.55G	3.7G	-1.114	1	-
3555MHz	Pass	110	50	3.555G	3.550533G	3.559459G	3.55G	3.7G	-1.054	1	-
3695MHz	Pass	110	-30	3.695G	3.690532G	3.699462G	3.55G	3.7G	-0.896	1	-
3695MHz	Pass	110	-20	3.695G	3.690526G	3.699464G	3.55G	3.7G	-1.433	1	-
3695MHz	Pass	110	-10	3.695G	3.690535G	3.699461G	3.55G	3.7G	-0.515	1	-
3695MHz	Pass	110	0	3.695G	3.690542G	3.699458G	3.55G	3.7G	-0.11	1	-
3695MHz	Pass	110	10	3.695G	3.690544G	3.699461G	3.55G	3.7G	0.638	1	-
3695MHz	Pass	93.5	20	3.695G	3.690539G	3.699459G	3.55G	3.7G	-0.217	1	-
3695MHz	Pass	110	20	3.695G	3.690539G	3.699463G	3.55G	3.7G	0.254	1	-
3695MHz	Pass	126.5	20	3.695G	3.690534G	3.699459G	3.55G	3.7G	-1.039	1	-
3695MHz	Pass	110	30	3.695G	3.690541G	3.699464G	3.55G	3.7G	0.718	1	-
3695MHz	Pass	110	40	3.695G	3.690538G	3.699458G	3.55G	3.7G	-0.524	1	-
3695MHz	Pass	110	50	3.695G	3.690536G	3.699461G	3.55G	3.7G	-0.384	1	-
LTE_20MHz_(QPSK)_2TX	-			-	-	-	-	-	-	-	-
3560MHz	Pass	110	-30	3.56G	3.551112G	3.56889G	3.55G	3.7G	0.282	1	-
3560MHz	Pass	110	-20	3.56G	3.551078G	3.568886G	3.55G	3.7G	-5.06	1	-
3560MHz	Pass	110	-10	3.56G	3.551088G	3.568891G	3.55G	3.7G	-2.893	1	-
3560MHz	Pass	110	0	3.56G	3.55111G	3.568887G	3.55G	3.7G	-1.757	1	-
3560MHz	Pass	110	10	3.56G	3.551092G	3.568891G	3.55G	3.7G	-2.481	1	-
3560MHz	Pass	93.5	20	3.56G	3.551087G	3.568887G	3.55G	3.7G	-3.606	1	-
3560MHz	Pass	110	20	3.56G	3.551089G	3.568879G	3.55G	3.7G	-4.547	1	-
3560MHz	Pass	126.5	20	3.56G	3.551092G	3.568899G	3.55G	3.7G	-1.295	1	-
3560MHz	Pass	110	30	3.56G	3.551092G	3.568872G	3.55G	3.7G	-5.009	1	-
3560MHz	Pass	110	40	3.56G	3.551097G	3.568902G	3.55G	3.7G	-0.126	1	-
3560MHz	Pass	110	50	3.56G	3.551105G	3.56889G	3.55G	3.7G	-0.789	1	-
3690MHz	Pass	110	-30	3.69G	3.68109G	3.698887G	3.55G	3.7G	-3.149	1	-
3690MHz	Pass	110	-20	3.69G	3.681092G	3.698888G	3.55G	3.7G	-2.689	1	-
3690MHz	Pass	110	-10	3.69G	3.681106G	3.698898G	3.55G	3.7G	0.496	1	-
3690MHz	Pass	110	0	3.69G	3.681116G	3.698873G	3.55G	3.7G	-1.422	1	-
3690MHz	Pass	110	10	3.69G	3.681094G	3.69888G	3.55G	3.7G	-3.572	1	-
3690MHz	Pass	93.5	20	3.69G	3.681113G	3.698881G	3.55G	3.7G	-0.73	1	-
3690MHz	Pass	110	20	3.69G	3.681107G	3.698889G	3.55G	3.7G	-0.535	1	-
3690MHz	Pass	126.5	20	3.69G	3.68111G	3.698884G	3.55G	3.7G	-2.127	1	-



Frequency Stability Result

Appendix I

Mode	Result	Voltage (V)	Temp (°C)	Ch (Hz)	Fl (Hz)	Fh (Hz)	Fl Limit (Hz)	Fh Limit (Hz)	ppm	Port	Remark
3690MHz	Pass	110	30	3.69G	3.681102G	3.698898G	3.55G	3.7G	-0.042	1	-
3690MHz	Pass	110	40	3.69G	3.681101G	3.698899G	3.55G	3.7G	0.066	1	-
3690MHz	Pass	110	50	3.69G	3.681102G	3.698901G	3.55G	3.7G	0.394	1	-
LTE_20MHz_(16QAM)_2TX	-			-	-	-	-	-	-	-	-
3560MHz	Pass	110	-30	3.56G	3.551093G	3.568884G	3.55G	3.7G	-3.16	1	-
3560MHz	Pass	110	-20	3.56G	3.551091G	3.56888G	3.55G	3.7G	-4.1	1	-
3560MHz	Pass	110	-10	3.56G	3.551098G	3.568899G	3.55G	3.7G	-0.409	1	-
3560MHz	Pass	110	0	3.56G	3.551101G	3.568893G	3.55G	3.7G	-0.915	1	-
3560MHz	Pass	110	10	3.56G	3.551082G	3.568891G	3.55G	3.7G	-3.771	1	-
3560MHz	Pass	93.5	20	3.56G	3.551085G	3.568906G	3.55G	3.7G	-1.274	1	-
3560MHz	Pass	110	20	3.56G	3.551086G	3.568902G	3.55G	3.7G	-1.757	1	-
3560MHz	Pass	126.5	20	3.56G	3.55108G	3.568894G	3.55G	3.7G	-3.72	1	-
3560MHz	Pass	110	30	3.56G	3.551086G	3.568886G	3.55G	3.7G	-3.938	1	-
3560MHz	Pass	110	40	3.56G	3.551084G	3.568901G	3.55G	3.7G	-2.084	1	-
3560MHz	Pass	110	50	3.56G	3.551088G	3.568896G	3.55G	3.7G	-2.114	1	-
3690MHz	Pass	110	-30	3.69G	3.681096G	3.698887G	3.55G	3.7G	-2.407	1	-
3690MHz	Pass	110	-20	3.69G	3.681107G	3.69889G	3.55G	3.7G	-0.409	1	-
3690MHz	Pass	110	-10	3.69G	3.681105G	3.698892G	3.55G	3.7G	-0.442	1	-
3690MHz	Pass	110	0	3.69G	3.681094G	3.698898G	3.55G	3.7G	-1.038	1	-
3690MHz	Pass	110	10	3.69G	3.681092G	3.69888G	3.55G	3.7G	-3.79	1	-
3690MHz	Pass	93.5	20	3.69G	3.681102G	3.698874G	3.55G	3.7G	-3.162	1	-
3690MHz	Pass	110	20	3.69G	3.681106G	3.698879G	3.55G	3.7G	-1.986	1	-
3690MHz	Pass	126.5	20	3.69G	3.681097G	3.698894G	3.55G	3.7G	-1.169	1	-
3690MHz	Pass	110	30	3.69G	3.681096G	3.69889G	3.55G	3.7G	-1.976	1	-
3690MHz	Pass	110	40	3.69G	3.681108G	3.698894G	3.55G	3.7G	0.274	1	-
3690MHz	Pass	110	50	3.69G	3.681102G	3.698896G	3.55G	3.7G	-0.158	1	-
LTE_20MHz_(64QAM)_2TX	-			-	-	-	-	-	-	-	-
3560MHz	Pass	110	-30	3.56G	3.551084G	3.568911G	3.55G	3.7G	-0.696	1	-
3560MHz	Pass	110	-20	3.56G	3.551098G	3.568902G	3.55G	3.7G	-0.02	1	-
3560MHz	Pass	110	-10	3.56G	3.551087G	3.5689G	3.55G	3.7G	-1.856	1	-
3560MHz	Pass	110	0	3.56G	3.5511G	3.568898G	3.55G	3.7G	-0.338	1	-
3560MHz	Pass	110	10	3.56G	3.551093G	3.5689G	3.55G	3.7G	-0.981	1	-
3560MHz	Pass	93.5	20	3.56G	3.551085G	3.568898G	3.55G	3.7G	-2.438	1	-
3560MHz	Pass	110	20	3.56G	3.551086G	3.5689G	3.55G	3.7G	-1.967	1	-
3560MHz	Pass	126.5	20	3.56G	3.551081G	3.568894G	3.55G	3.7G	-3.605	1	-
3560MHz	Pass	110	30	3.56G	3.55109G	3.568891G	3.55G	3.7G	-2.545	1	-
3560MHz	Pass	110	40	3.56G	3.551098G	3.568898G	3.55G	3.7G	-0.597	1	-
3560MHz	Pass	110	50	3.56G	3.551102G	3.568905G	3.55G	3.7G	0.965	1	-
3690MHz	Pass	110	-30	3.69G	3.681094G	3.698902G	3.55G	3.7G	-0.562	1	-
3690MHz	Pass	110	-20	3.69G	3.681103G	3.698899G	3.55G	3.7G	0.325	1	-
3690MHz	Pass	110	-10	3.69G	3.68109G	3.698892G	3.55G	3.7G	-2.502	1	-
3690MHz	Pass	110	0	3.69G	3.681094G	3.698904G	3.55G	3.7G	-0.227	1	-
3690MHz	Pass	110	10	3.69G	3.681093G	3.698898G	3.55G	3.7G	-1.134	1	-
3690MHz	Pass	93.5	20	3.69G	3.681094G	3.698901G	3.55G	3.7G	-0.712	1	-
3690MHz	Pass	110	20	3.69G	3.681084G	3.698898G	3.55G	3.7G	-2.429	1	-



Frequency Stability Result

Appendix I

Mode	Result	Voltage (V)	Temp (°C)	Ch (Hz)	Fl (Hz)	Fh (Hz)	Fl Limit (Hz)	Fh Limit (Hz)	ppm	Port	Remark
3690MHz	Pass	126.5	20	3.69G	3.681079G	3.698898G	3.55G	3.7G	-3.115	1	-
3690MHz	Pass	110	30	3.69G	3.681086G	3.69891G	3.55G	3.7G	-0.57	1	-
3690MHz	Pass	110	40	3.69G	3.681086G	3.698902G	3.55G	3.7G	-1.664	1	-
3690MHz	Pass	110	50	3.69G	3.681089G	3.698897G	3.55G	3.7G	-1.964	1	-