



FCC RADIO TEST REPORT

FCC ID : S9GQ710US00

Equipment : Q710 LTE Access Point

Brand Name : Ruckus

Model Name : Q710-US00

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 May 10, 2018, and testing was started from May 14, 2018 and completed on Sep. 26, 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.)



Table of Contents

History of this test report.....	3
Summary of Test Result.....	4
1 General Description	5
1.1 Product Feature of Equipment Under Test	5
1.2 Product Specification subjective to this standard.....	5
1.3 Antenna Information	5
1.4 Maximum EIRP Power, Frequency Tolerance, and Emission Designator.....	6
1.5 Accessories	6
1.6 Support Equipment.....	6
1.7 Applicable Standards	6
1.8 Testing Location	7
2 Test Configuration of Equipment Under Test	8
2.1 Test Mode.....	8
2.2 Test Setup Diagram	9
2.3 Measurement Results Explanation Example	10
3 Test Result	11
3.1 Conducted Output Power	11
3.2 Maximum Effective Isotropic Radiated Power (EIRP).....	13
3.3 Maximum Power Spectral Density (PSD)	14
3.4 Reception limits	15
3.5 Peak-to-Average Power Ratio (PAPR)	16
3.6 99% Occupied Bandwidth (OBW) and 26dB Bandwidth.....	17
3.7 3.5 GHz Emissions and Interference Limits	18
3.8 Field Strength of Spurious Radiation	19
3.9 Frequency Stability for Temperature & Voltage	21
4 Test Equipment and Calibration Data	22
5 Measurement Uncertainty	23
Appendix A. Test Result of the Conducted Output Power	
Appendix B. Test Result of the Maximum Effective Isotropic Radiated Power (EIRP)	
Appendix C. Test Result of the Maximum Power Spectral Density (PSD)	
Appendix D. Test Result of the Reception limits	
Appendix E. Test Result of the Peak-to-Average Power Ratio (PAPR)	
Appendix F. Test Result of the 99% Occupied Bandwidth (OBW) and 26dB Bandwidth	
Appendix G. Test Result of the 3.5 GHz Emissions and Interference Limits	
Appendix H. Test Result of the Field Strength of Spurious Radiation	
Appendix I. Test Result of the Frequency Stability for Temperature & Voltage	
Appendix J. Test Photos	
Photographs of EUT v01	



History of this test report

Report No.	Version	Description	Issued Date
FG850948AB	01	Initial issue of report	Jul. 16, 2018
FG850948AB	02	Add the the Frequency Error into Appendix I	Jul. 20, 2018
FG850948AB	03	Update the information of chapter 1.4	Aug. 30, 2018
FG850948AB	04	Add the test result for 20MHz to Appendix B.	Sep. 03, 2018
FG850948AB	05	Update the test result of Appendix A, B and C.	Oct. 04, 2018



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	-

Reviewed by: Jordan Hsiao

Report Producer: Sharon Jiang



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 Stations (Micro Cell) ☒ Local area Base Station (Picocell) ☐ Home Base Station (Femtocell)
Category of CBSD	☒ Category A ☐ Category B
Professional Installation	☒ Yes ☐ No
RF Test Tool Software of CBSD	Qualcomm SmallCell UUT Demo Client V1.0.306.003
TX Frequency	10MHz: 3555 MHz ~ 3695 MHz 20MHz: 3560 MHz ~ 3690 MHz
RX Frequency	10MHz: 3555 MHz ~ 3695 MHz 20MHz: 3560 MHz ~ 3690 MHz
Maximum Output Power to Antenna	27.77 dBm
Maximum 99% Occupied Bandwidth	17.81 MHz
Type of Modulation	☒ QPSK ☒ 16QAM ☒ 64QAM ☐ 256QAM

1.3 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Ruckus	Q710-US00	Internal BeamFlex	I-PEX	3
2	Ruckus	Q710-US00	Internal BeamFlex	I-PEX	3

Note: 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)	EIRP (W)	Frequency Stability	Emission Designator
Part 96	LTE Band 48	10MHz	QPSK	27.17	0.521	With in the authorized bands of operation	8M92G7D
			16QAM	26.98	0.499		8M94W7D
			64QAM	26.99	0.500		8M92D9W
		20MHz	QPSK	29.63	0.918		17M8G7D
			16QAM	29.68	0.929		17M8W7D
			64QAM	29.63	0.918		17M8D9W

1.5 Accessories

Accessories				
No.	Equipment Name	Brand Name	Model Name	Rating
1	Power Adapter	LEI	MU24-Y120200-A1	INPUT: 100-240Vac ~ 50/60Hz , 0.7A OUTPUT: 12Vdc, 2A
Other				
2	Wall-mounted rack*2 (Material: Metal*1, Plastics*1)			

1.6 Support Equipment

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	Notebook	DELL	E4300	N/A
2	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
- FCC KDB 971168 D01 v03r01
- FCC KDB 940660 D01 v01
- FCC KDB 412172 D01 v01r01
- ANSI C63.26-2015

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	Test Date
RF Conducted	TH01-HY	Abner Tsai	23°C / 52%	May 14, 2018~Sep. 26, 2018
Radiated Emission	03CH03-HY	Abner Tsai	22°C / 54%	May 22, 2018~Jun. 28, 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	B,M,T	-
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	10, 20	B,M,T	QPSK,16-QAM,64-QAM
Frequency Stability for Temperature & Voltage	10, 20	B, T	QPSK,16-QAM,64-QAM

Note 1:

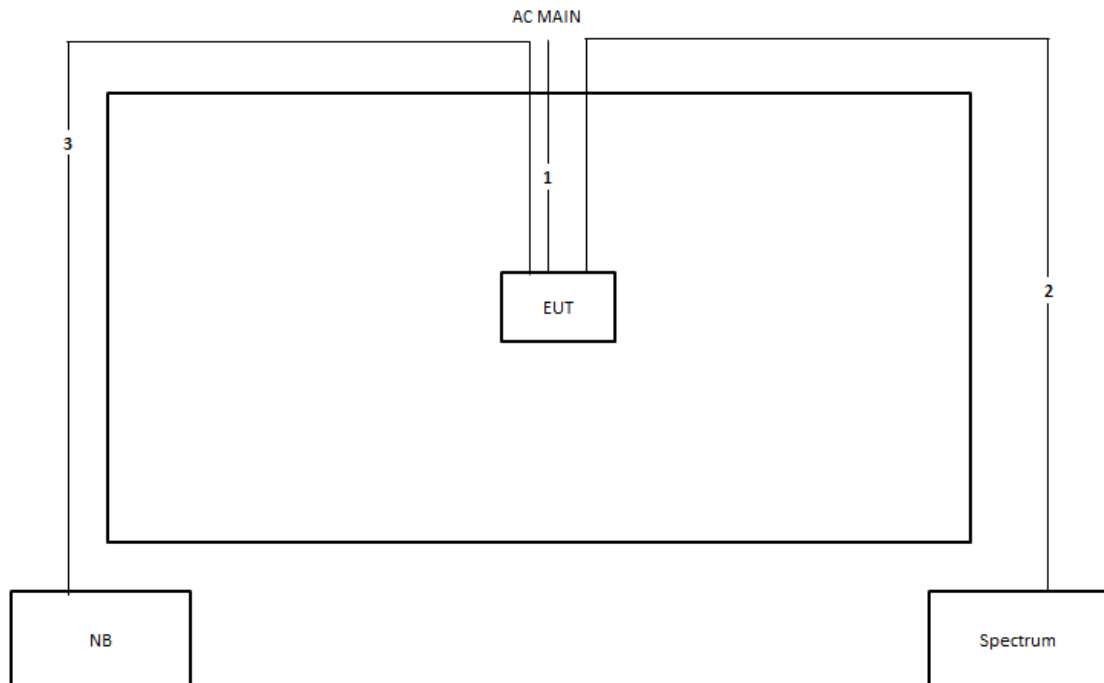
B: Bottom

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.

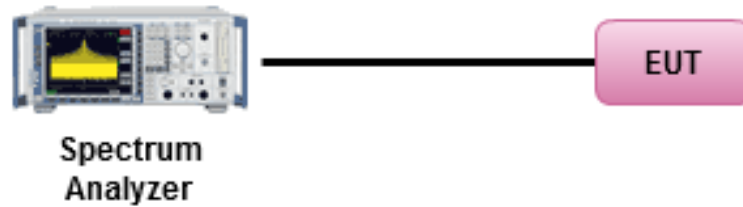
3.1.2 Measuring Instruments

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

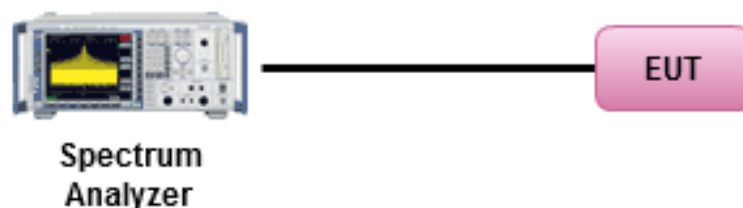
3.2.2 Measuring Instruments

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 Powe 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.

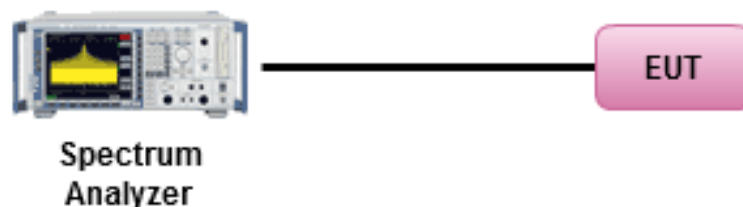
3.3.2 Measuring Instruments

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.

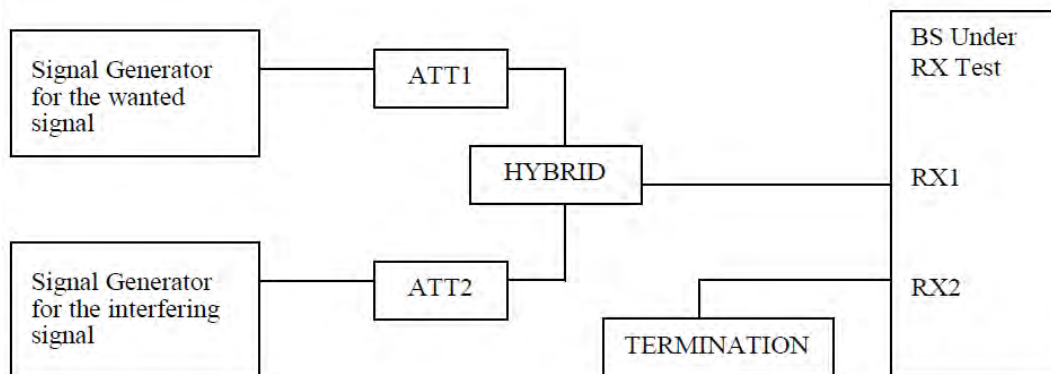
3.4.2 Measuring Instruments

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. -86.5 dBm) 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 -40 dBm at receiver antenna ports.
5. For in-band blocking interference, Set-up the interfering signal in the range from 3550 MHz to 3700 MHz and adjust the interfering signal level to -40 dBm 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.

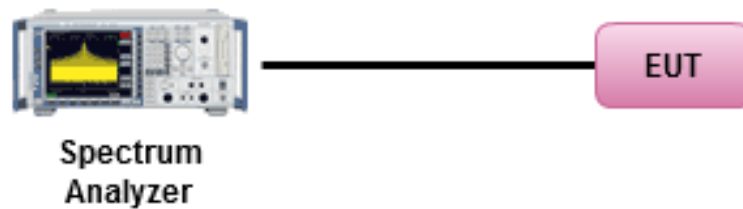
3.5.2 Measuring Instruments

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.

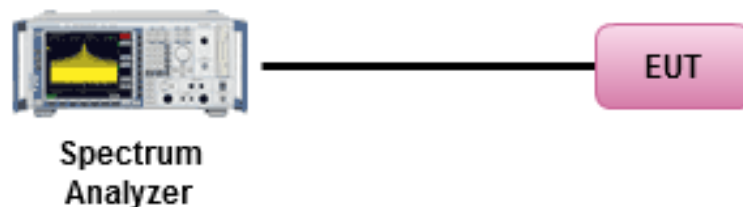
3.6.2 Measuring Instruments

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

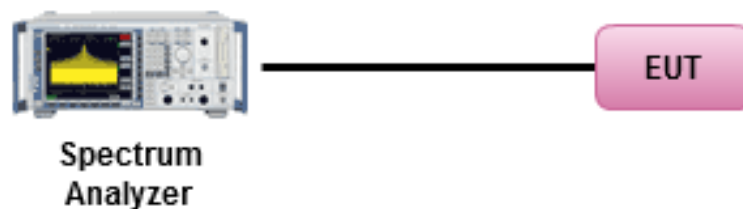
3.7.2 Measuring Instruments

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

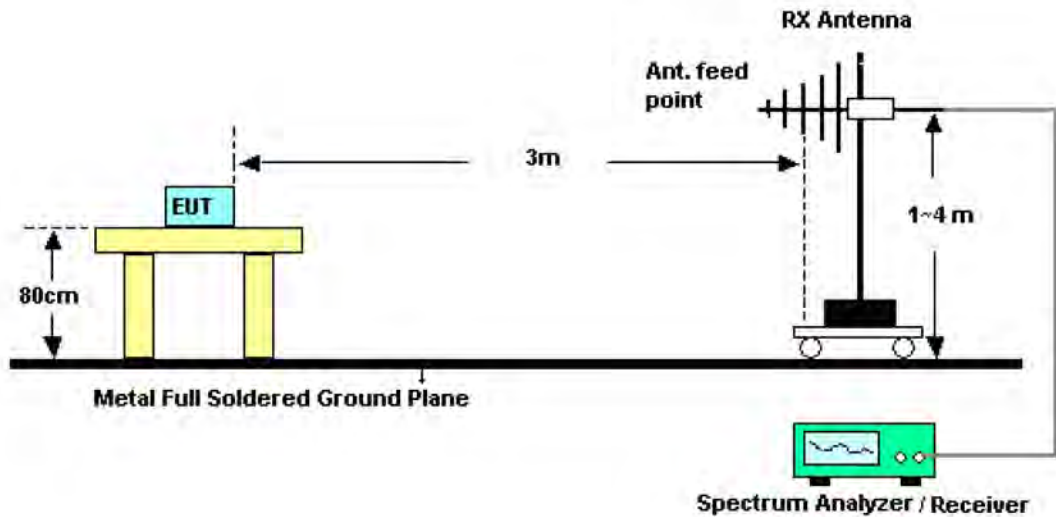
The measuring equipment is listed in the section 4 of this test report.

3.8.3 Test Procedures

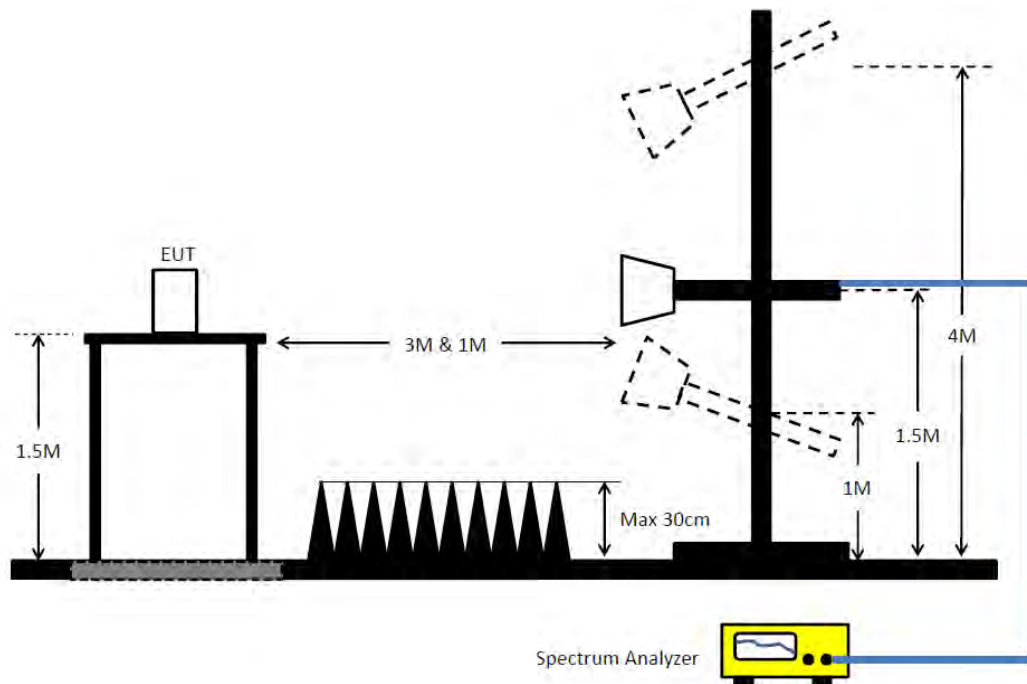
1. The testing follows Section 5.7 of ANSI C63.26-2015.
2. The EUT was placed on a rotatable wooden table 0.8 meters above the ground.
3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the 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. 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.

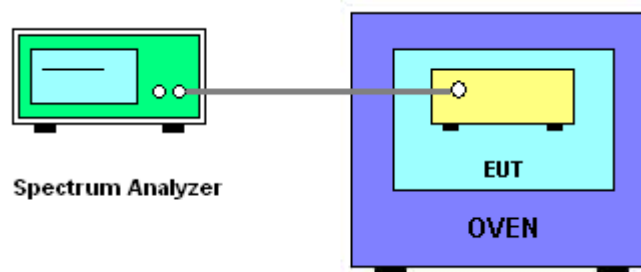
3.9.3 Test Procedures for Temperature Variation

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 -20°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 -20°C steps up to 55°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. 31, 2017	Oct. 30, 2018	Radiation (03CH03-HY)
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	1GHz ~ 18GHz 3m	Nov. 01, 2017	Oct. 31, 2018	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	Aug. 31, 2017	Aug. 30, 2018	Radiation (03CH03-HY)
Preamplifier	MITEQ	TTA1840-35-H G	1864481	18GHz ~ 40GHz	Aug. 31, 2017	Aug. 30, 2018	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	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 02, 2017	Jun. 01, 2018	Conducted (TH01-HY)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 01, 2018	May 31, 2019	Conducted (TH01-HY)
RF Cable-high	Woken	RG402	High Cable-06	1 GHz ~ 26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-HY)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz ~ 26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-HY)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz ~ 26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-HY)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz ~ 26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-HY)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz ~ 26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-HY)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 20, 2017	Nov. 19, 2018	Conducted (TH01-HY)
MW Analog Signal Generator	Keysight	N5183A	MY50142965	100kHz~20GHz	Nov. 24, 2017	Nov. 23, 2018	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	24.17	0.261
Band 48_LTE_10MHz_(16QAM)_2TX	23.98	0.250
Band 48_LTE_10MHz_(64QAM)_2TX	23.99	0.251
Band 48_LTE_20MHz_(QPSK)_2TX	26.63	0.460
Band 48_LTE_20MHz_(16QAM)_2TX	26.68	0.466
Band 48_LTE_20MHz_(64QAM)_2TX	26.63	0.460

Result

Mode	Setting	RB	DG (dBi)	P1 (dBm)	P2 (dBm)	Power (dBm)	Power (W)	Result
Band 48_LTE_10MHz_(QPSK)_2TX		-	-	-	-	-	-	-
3555MHz	20.5	50	3.00	20.58	20.60	23.60	0.229	Pass
3625MHz	20.5	50	3.00	21.08	21.08	24.09	0.256	Pass
3695MHz	20.5	50	3.00	21.26	21.06	24.17	0.261	Pass
Band 48_LTE_10MHz_(16QAM)_2TX		-	-	-	-	-	-	-
3555MHz	20.5	50	3.00	20.30	20.40	23.36	0.217	Pass
3625MHz	20.5	50	3.00	20.91	20.94	23.94	0.248	Pass
3695MHz	20.5	50	3.00	20.99	20.94	23.98	0.250	Pass
Band 48_LTE_10MHz_(64QAM)_2TX		-	-	-	-	-	-	-
3555MHz	20.5	50	3.00	20.22	20.36	23.30	0.214	Pass
3625MHz	20.5	50	3.00	20.78	20.89	23.85	0.243	Pass
3695MHz	20.5	50	3.00	21.00	20.95	23.99	0.251	Pass
Band 48_LTE_20MHz_(QPSK)_2TX		-	-	-	-	-	-	-
3560MHz	22.5	100	3.00	22.85	22.50	25.69	0.371	Pass
3625MHz	22.5	100	3.00	23.07	23.04	26.07	0.405	Pass
3690MHz	22.5	100	3.00	23.75	23.48	26.63	0.460	Pass
Band 48_LTE_20MHz_(16QAM)_2TX		-	-	-	-	-	-	-
3560MHz	22.5	100	3.00	23.07	22.79	25.94	0.393	Pass
3625MHz	22.5	100	3.00	23.50	23.68	26.60	0.457	Pass
3690MHz	22.5	100	3.00	23.81	23.52	26.68	0.466	Pass
Band 48_LTE_20MHz_(64QAM)_2TX		-	-	-	-	-	-	-
3560MHz	22.5	100	3.00	22.97	22.89	25.94	0.393	Pass
3625MHz	22.5	100	3.00	23.24	23.08	26.17	0.414	Pass
3690MHz	22.5	100	3.00	23.58	23.65	26.63	0.460	Pass

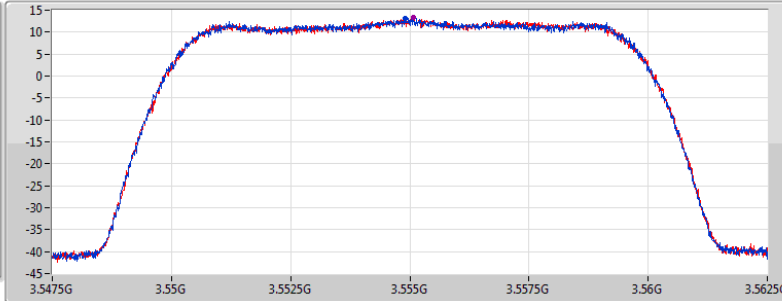
DG = Directional Gain; Port X = Port X output power

Band 48_LTE_10MHz_(QPSK)_2TX

AV Power

3555MHz

Ch Freq
3.555GHz
Span
15MHz
RBW
1MHz
VBW
3MHz
Sweep Time
2.01ms
Detector Type
RMS
CP BW
10MHz



26/09/2018

Port 1
Port 2

Sum=Total Power
PX=Port X

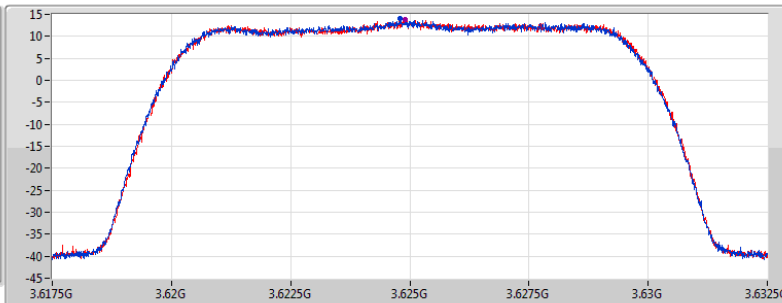
RB	RB Start	Sum(dBm)	P1(dBm)	P2(dBm)
50	0	23.60	20.58	20.60

Band 48_LTE_10MHz_(QPSK)_2TX

AV Power

3625MHz

Ch Freq
3.625GHz
Span
15MHz
RBW
1MHz
VBW
3MHz
Sweep Time
2.01ms
Detector Type
RMS
CP BW
10MHz



26/09/2018

Port 1
Port 2

Sum=Total Power
PX=Port X

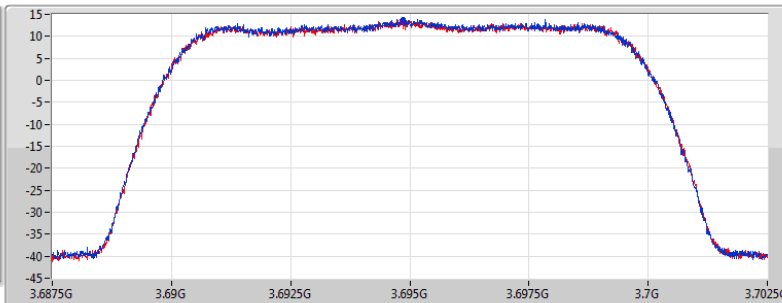
RB	RB Start	Sum(dBm)	P1(dBm)	P2(dBm)
50	0	24.09	21.08	21.08

Band 48_LTE_10MHz_(QPSK)_2TX

AV Power

3695MHz

Ch Freq
3.695GHz
Span
15MHz
RBW
1MHz
VBW
3MHz
Sweep Time
2.01ms
Detector Type
RMS
CP BW
10MHz



26/09/2018

Port 1
Port 2

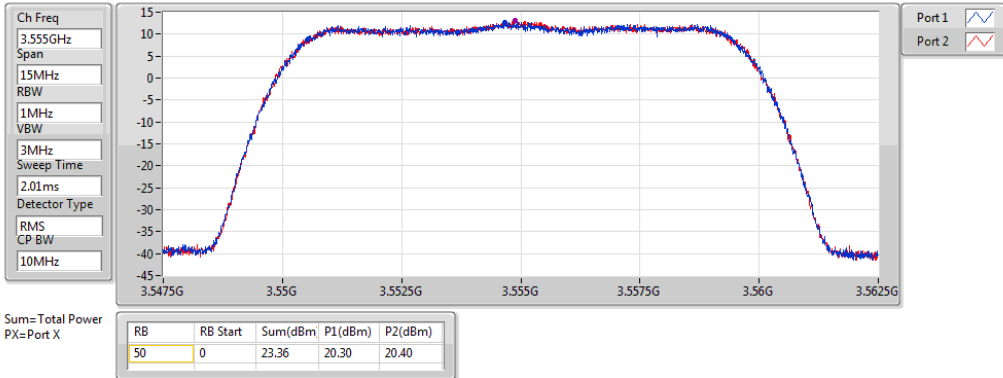
Sum=Total Power
PX=Port X

RB	RB Start	Sum(dBm)	P1(dBm)	P2(dBm)
50	0	24.17	21.26	21.06

Band 48_LTE_10MHz_(16QAM)_2TX

AV Power

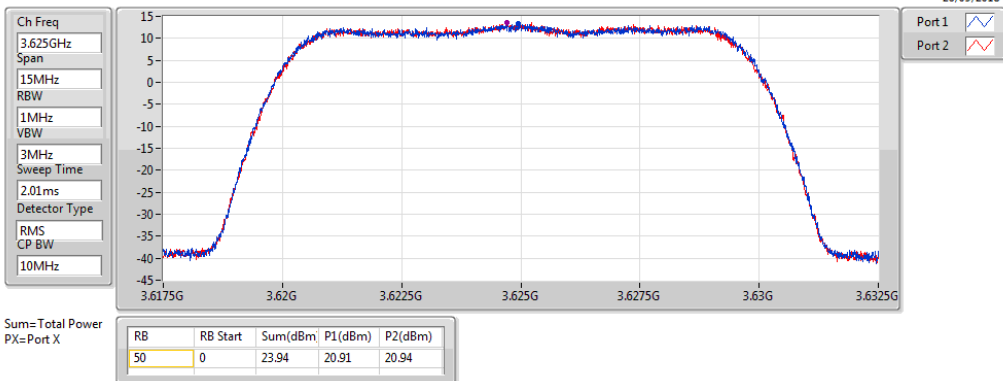
3555MHz



Band 48_LTE_10MHz_(16QAM)_2TX

AV Power

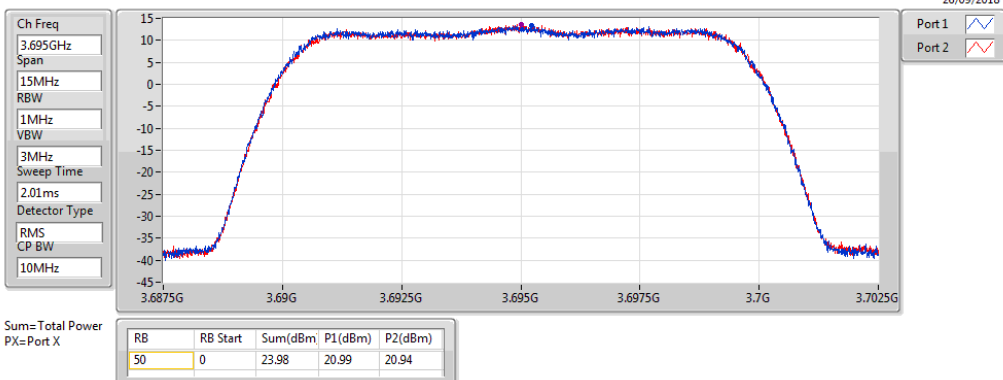
3625MHz



Band 48_LTE_10MHz_(16QAM)_2TX

AV Power

3695MHz



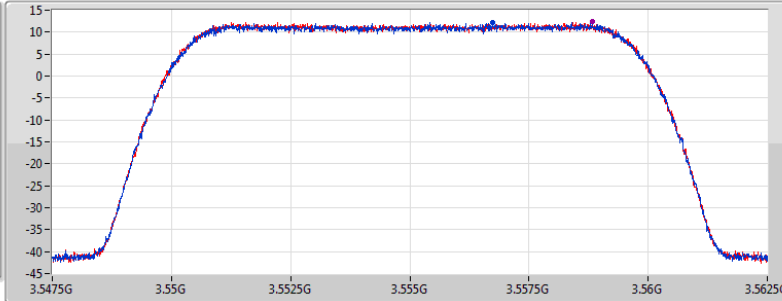
Band 48_LTE_10MHz_(64QAM)_2TX

AV Power

3555MHz

26/09/2018

Ch Freq
3.555GHz
Span
15MHz
RBW
1MHz
VBW
3MHz
Sweep Time
2.01ms
Detector Type
RMS
CP BW
10MHz



Port 1
Port 2

Sum=Total Power
PX=Port X

RB	RB Start	Sum(dBm)	P1(dBm)	P2(dBm)
50	0	23.30	20.22	20.36

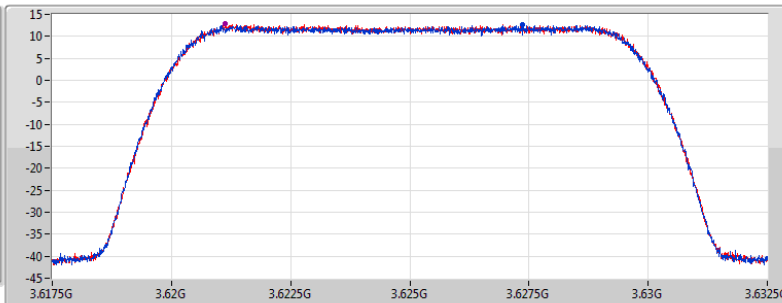
Band 48_LTE_10MHz_(64QAM)_2TX

AV Power

3625MHz

26/09/2018

Ch Freq
3.625GHz
Span
15MHz
RBW
1MHz
VBW
3MHz
Sweep Time
2.01ms
Detector Type
RMS
CP BW
10MHz



Port 1
Port 2

Sum=Total Power
PX=Port X

RB	RB Start	Sum(dBm)	P1(dBm)	P2(dBm)
50	0	23.85	20.78	20.89

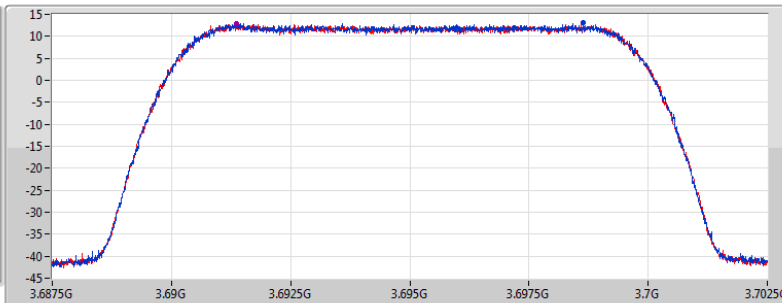
Band 48_LTE_10MHz_(64QAM)_2TX

AV Power

3695MHz

26/09/2018

Ch Freq
3.695GHz
Span
15MHz
RBW
1MHz
VBW
3MHz
Sweep Time
2.01ms
Detector Type
RMS
CP BW
10MHz



Port 1
Port 2

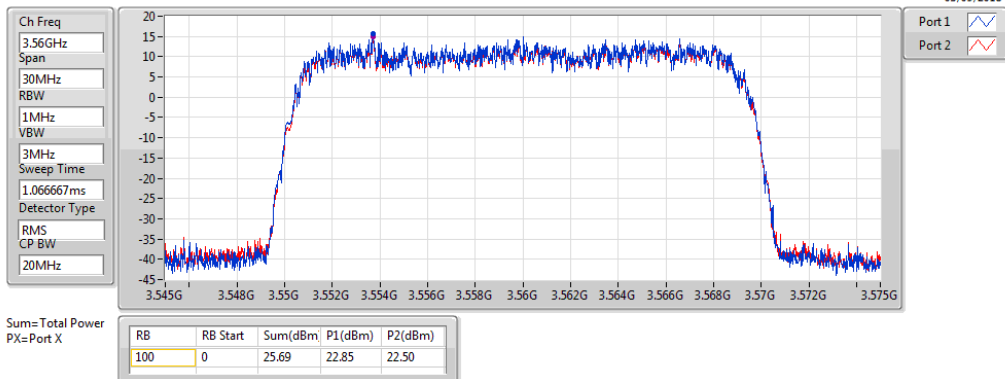
Sum=Total Power
PX=Port X

RB	RB Start	Sum(dBm)	P1(dBm)	P2(dBm)
50	0	23.99	21.00	20.95

Band 48_LTE_20MHz_(QPSK)_2TX

AV Power

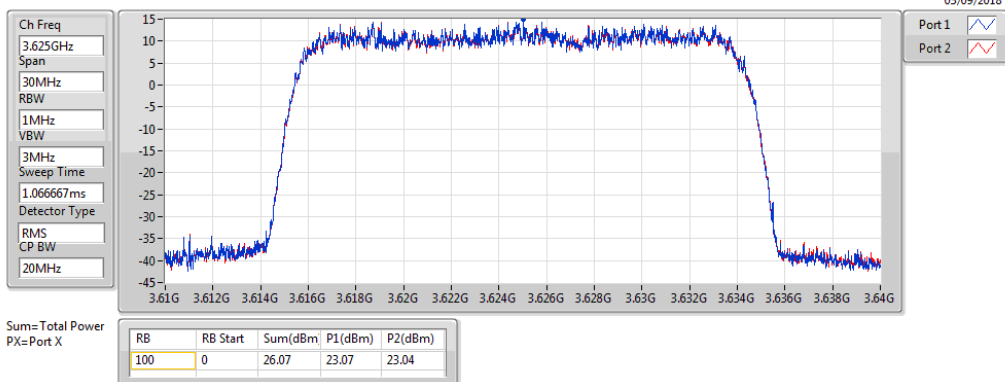
3560MHz



Band 48_LTE_20MHz_(QPSK)_2TX

AV Power

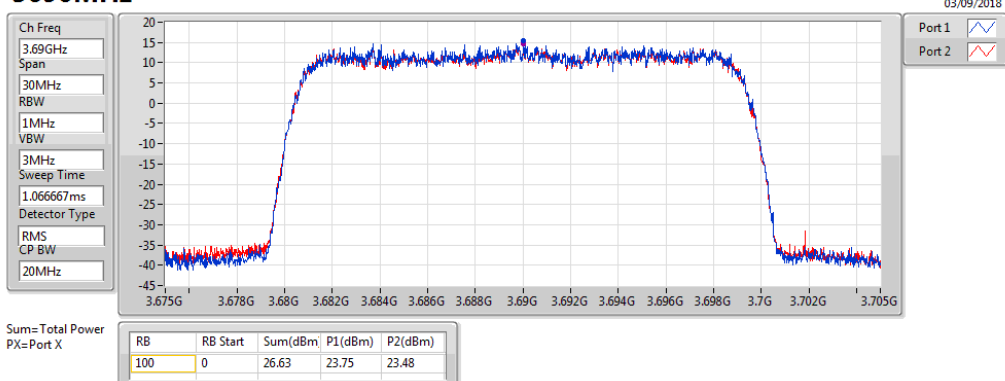
3625MHz



Band 48_LTE_20MHz_(QPSK)_2TX

AV Power

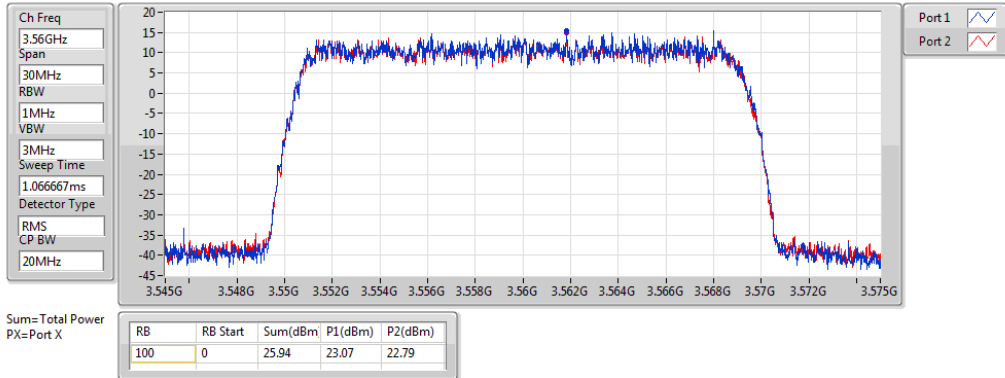
3690MHz



Band 48_LTE_20MHz_(16QAM)_2TX

AV Power

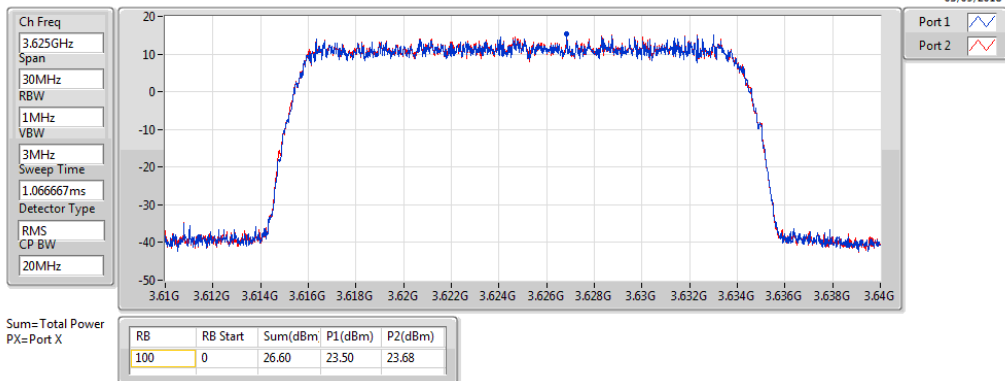
3560MHz



Band 48_LTE_20MHz_(16QAM)_2TX

AV Power

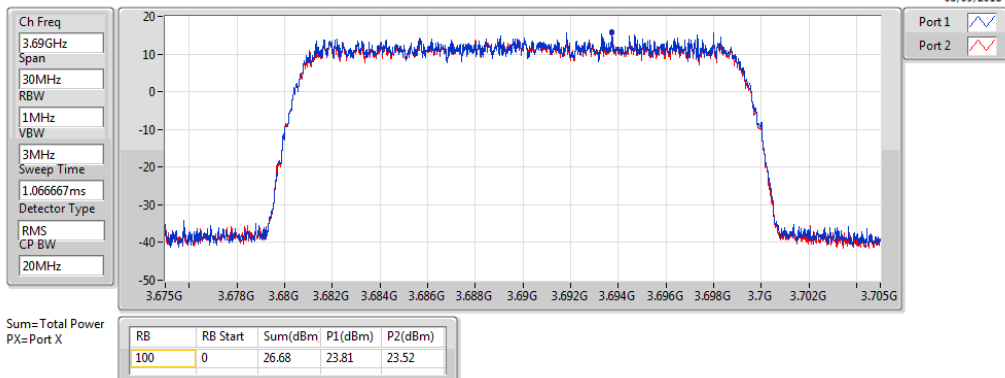
3625MHz



Band 48_LTE_20MHz_(16QAM)_2TX

AV Power

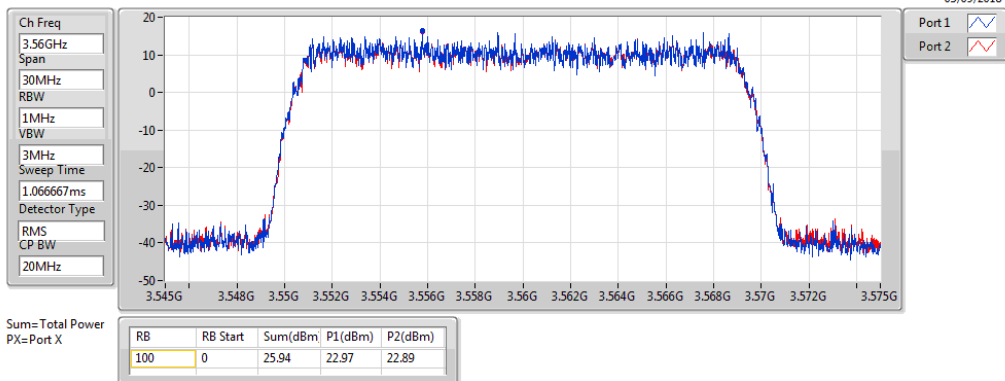
3690MHz



Band 48_LTE_20MHz_(64QAM)_2TX

AV Power

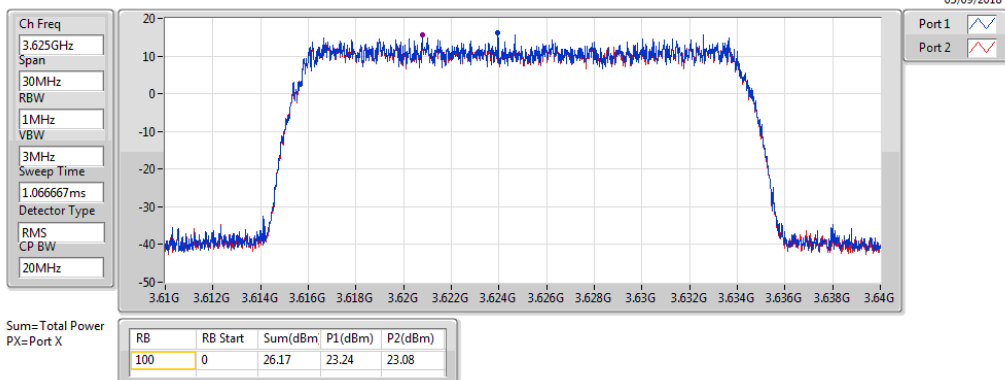
3560MHz



Band 48_LTE_20MHz_(64QAM)_2TX

AV Power

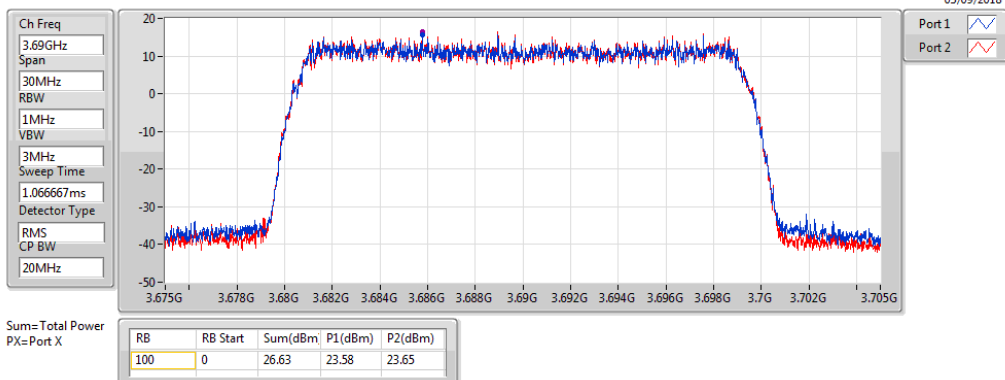
3625MHz



Band 48_LTE_20MHz_(64QAM)_2TX

AV Power

3690MHz



Summary

Mode	Power (dBm)	Power (W)	EIRP (dBm)	EIRP (W)
Band 48	-	-	-	-
Band 48_LTE_10MHz_(QPSK)_2TX	24.17	0.261	27.17	0.521
Band 48_LTE_10MHz_(16QAM)_2TX	23.98	0.250	26.98	0.499
Band 48_LTE_10MHz_(64QAM)_2TX	23.99	0.251	26.99	0.500
Band 48_LTE_20MHz_(QPSK)_2TX	26.63	0.460	29.63	0.918
Band 48_LTE_20MHz_(16QAM)_2TX	26.68	0.466	29.68	0.929
Band 48_LTE_20MHz_(64QAM)_2TX	26.63	0.460	29.63	0.918

Result

Mode	Setting	RB	DG (dBi)	P1 (dBm)	P2 (dBm)	Power (dBm)	Power (W)	EIRP (dBm)	EIRP (W)	EIRP Lim. (W)	Result
Band 48_LTE_10MHz_(QPSK)_2TX		-	-	-	-	-	-	-	-	-	-
3555MHz	20.5	50	3.00	20.58	20.60	23.60	0.229	26.60	0.457	1	Pass
3625MHz	20.5	50	3.00	21.08	21.08	24.09	0.256	27.09	0.512	1	Pass
3695MHz	20.5	50	3.00	21.26	21.06	24.17	0.261	27.17	0.521	1	Pass
Band 48_LTE_10MHz_(16QAM)_2TX		-	-	-	-	-	-	-	-	-	-
3555MHz	20.5	50	3.00	20.30	20.40	23.36	0.217	26.36	0.433	1	Pass
3625MHz	20.5	50	3.00	20.91	20.94	23.94	0.248	26.94	0.494	1	Pass
3695MHz	20.5	50	3.00	20.99	20.94	23.98	0.250	26.98	0.499	1	Pass
Band 48_LTE_10MHz_(64QAM)_2TX		-	-	-	-	-	-	-	-	-	-
3555MHz	20.5	50	3.00	20.22	20.36	23.30	0.214	26.30	0.427	1	Pass
3625MHz	20.5	50	3.00	20.78	20.89	23.85	0.243	26.85	0.484	1	Pass
3695MHz	20.5	50	3.00	21.00	20.95	23.99	0.251	26.99	0.500	1	Pass
Band 48_LTE_20MHz_(QPSK)_2TX		-	-	-	-	-	-	-	-	-	-
3560MHz	22.5	100	3.00	22.85	22.50	25.69	0.371	28.69	0.740	1	Pass
3625MHz	22.5	100	3.00	23.07	23.04	26.07	0.405	29.07	0.807	1	Pass
3690MHz	22.5	100	3.00	23.75	23.48	26.63	0.460	29.63	0.918	1	Pass
Band 48_LTE_20MHz_(16QAM)_2TX		-	-	-	-	-	-	-	-	-	-
3560MHz	22.5	100	3.00	23.07	22.79	25.94	0.393	28.94	0.783	1	Pass
3625MHz	22.5	100	3.00	23.50	23.68	26.60	0.457	29.60	0.912	1	Pass
3690MHz	22.5	100	3.00	23.81	23.52	26.68	0.466	29.68	0.929	1	Pass
Band 48_LTE_20MHz_(64QAM)_2TX		-	-	-	-	-	-	-	-	-	-
3560MHz	22.5	100	3.00	22.97	22.89	25.94	0.393	28.94	0.783	1	Pass
3625MHz	22.5	100	3.00	23.24	23.08	26.17	0.414	29.17	0.826	1	Pass
3690MHz	22.5	100	3.00	23.58	23.65	26.63	0.460	29.63	0.918	1	Pass

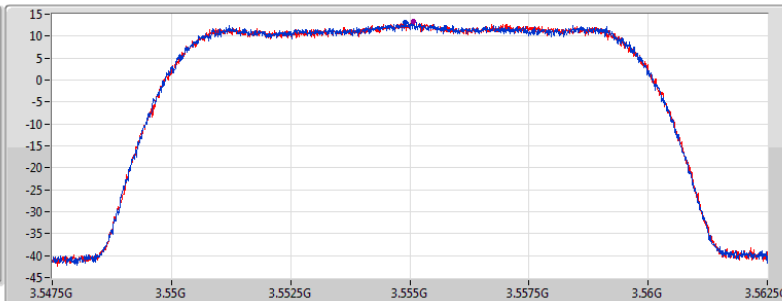
DG = Directional Gain; Port X = Port X output power

Band 48_LTE_10MHz_(QPSK)_2TX

AV Power

3555MHz

Ch Freq
3.555GHz
Span
15MHz
RBW
1MHz
VBW
3MHz
Sweep Time
2.01ms
Detector Type
RMS
CP BW
10MHz



26/09/2018

Port 1
Port 2

Sum=Total Power
PX=Port X

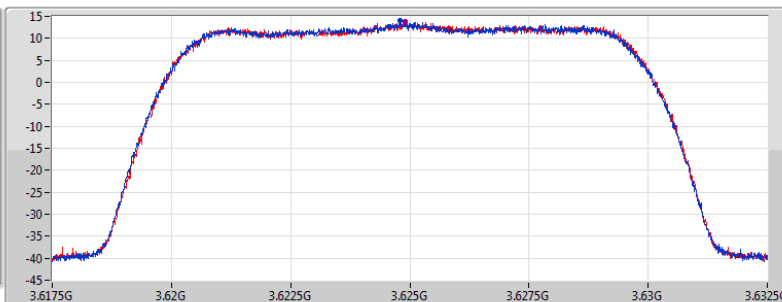
RB	RB Start	Sum(dBm)	P1(dBm)	P2(dBm)
50	0	23.60	20.58	20.60

Band 48_LTE_10MHz_(QPSK)_2TX

AV Power

3625MHz

Ch Freq
3.625GHz
Span
15MHz
RBW
1MHz
VBW
3MHz
Sweep Time
2.01ms
Detector Type
RMS
CP BW
10MHz



26/09/2018

Port 1
Port 2

Sum=Total Power
PX=Port X

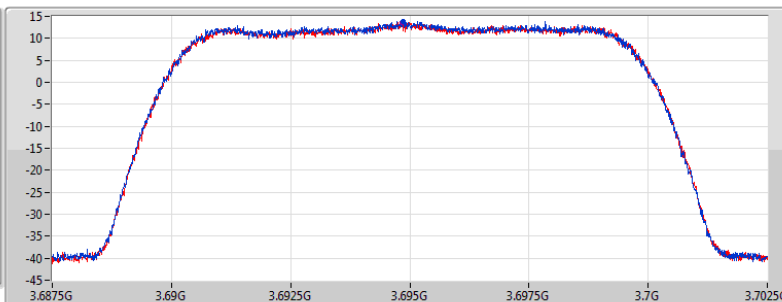
RB	RB Start	Sum(dBm)	P1(dBm)	P2(dBm)
50	0	24.09	21.08	21.08

Band 48_LTE_10MHz_(QPSK)_2TX

AV Power

3695MHz

Ch Freq
3.695GHz
Span
15MHz
RBW
1MHz
VBW
3MHz
Sweep Time
2.01ms
Detector Type
RMS
CP BW
10MHz



26/09/2018

Port 1
Port 2

Sum=Total Power
PX=Port X

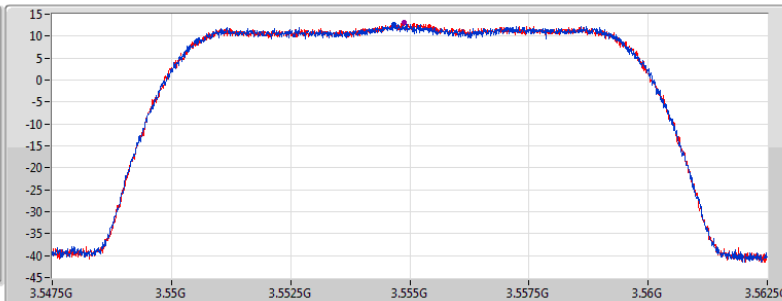
RB	RB Start	Sum(dBm)	P1(dBm)	P2(dBm)
50	0	24.17	21.26	21.06

Band 48_LTE_10MHz_(16QAM)_2TX

AV Power

3555MHz

Ch Freq
3.555GHz
Span
15MHz
RBW
1MHz
VBW
3MHz
Sweep Time
2.01ms
Detector Type
RMS
CP BW
10MHz



26/09/2018

Port 1
Port 2

Sum=Total Power
PX=Port X

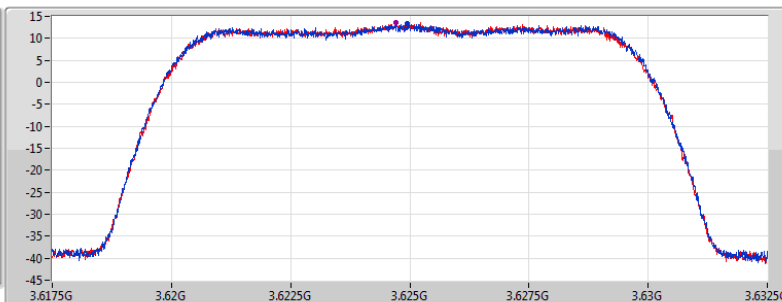
RB	RB Start	Sum(dBm)	P1(dBm)	P2(dBm)
50	0	23.36	20.30	20.40

Band 48_LTE_10MHz_(16QAM)_2TX

AV Power

3625MHz

Ch Freq
3.625GHz
Span
15MHz
RBW
1MHz
VBW
3MHz
Sweep Time
2.01ms
Detector Type
RMS
CP BW
10MHz



26/09/2018

Port 1
Port 2

Sum=Total Power
PX=Port X

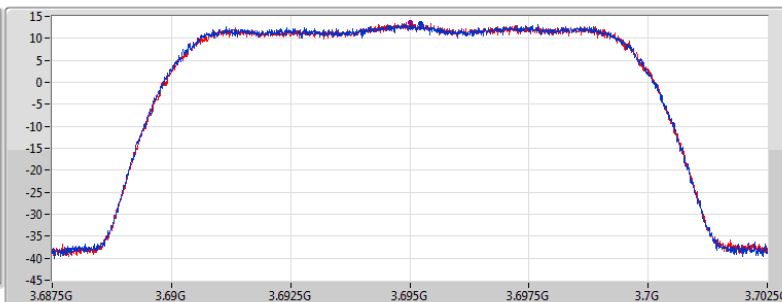
RB	RB Start	Sum(dBm)	P1(dBm)	P2(dBm)
50	0	23.94	20.91	20.94

Band 48_LTE_10MHz_(16QAM)_2TX

AV Power

3695MHz

Ch Freq
3.695GHz
Span
15MHz
RBW
1MHz
VBW
3MHz
Sweep Time
2.01ms
Detector Type
RMS
CP BW
10MHz



26/09/2018

Port 1
Port 2

Sum=Total Power
PX=Port X

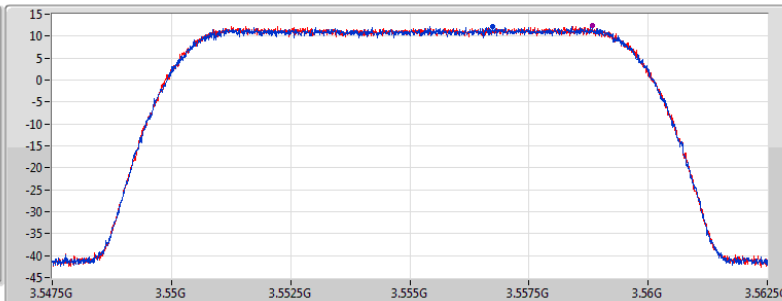
RB	RB Start	Sum(dBm)	P1(dBm)	P2(dBm)
50	0	23.98	20.99	20.94

Band 48_LTE_10MHz_(64QAM)_2TX

AV Power

3555MHz

Ch Freq
3.555GHz
Span
15MHz
RBW
1MHz
VBW
3MHz
Sweep Time
2.01ms
Detector Type
RMS
CP BW
10MHz



26/09/2018

Port 1
Port 2

Sum=Total Power
PX=Port X

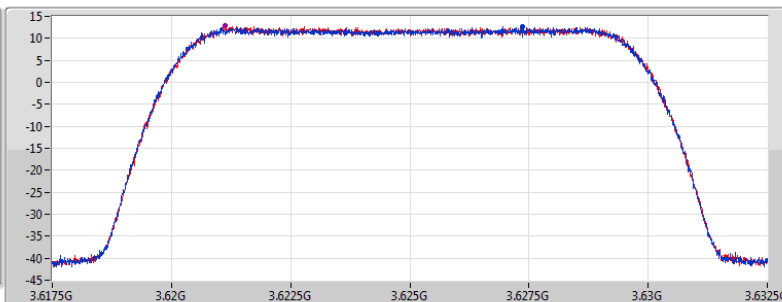
RB	RB Start	Sum(dBm)	P1(dBm)	P2(dBm)
50	0	23.30	20.22	20.36

Band 48_LTE_10MHz_(64QAM)_2TX

AV Power

3625MHz

Ch Freq
3.625GHz
Span
15MHz
RBW
1MHz
VBW
3MHz
Sweep Time
2.01ms
Detector Type
RMS
CP BW
10MHz



26/09/2018

Port 1
Port 2

Sum=Total Power
PX=Port X

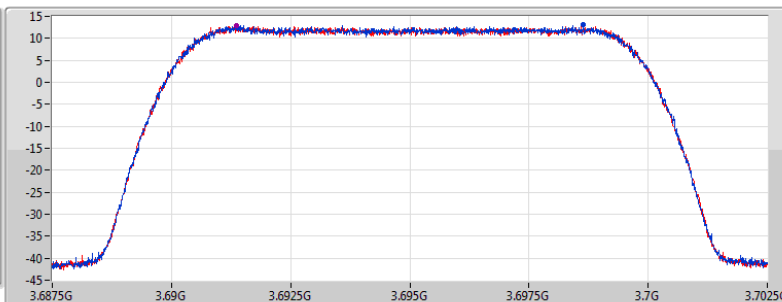
RB	RB Start	Sum(dBm)	P1(dBm)	P2(dBm)
50	0	23.85	20.78	20.89

Band 48_LTE_10MHz_(64QAM)_2TX

AV Power

3695MHz

Ch Freq
3.695GHz
Span
15MHz
RBW
1MHz
VBW
3MHz
Sweep Time
2.01ms
Detector Type
RMS
CP BW
10MHz



26/09/2018

Port 1
Port 2

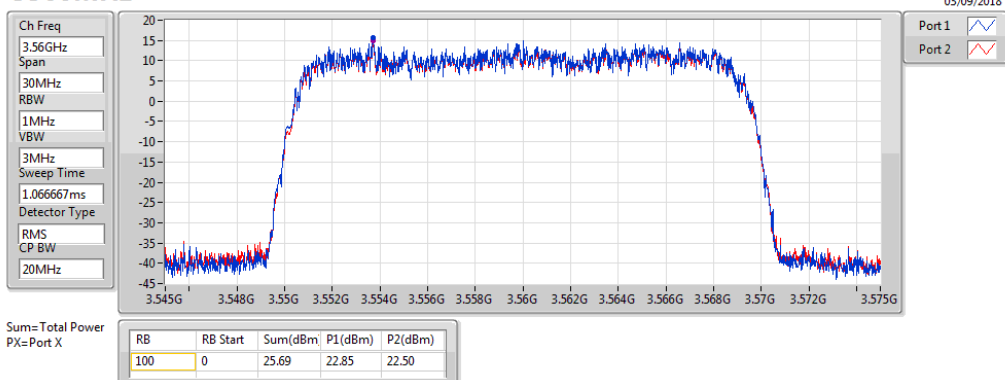
Sum=Total Power
PX=Port X

RB	RB Start	Sum(dBm)	P1(dBm)	P2(dBm)
50	0	23.99	21.00	20.95

Band 48_LTE_20MHz_(QPSK)_2TX

AV Power

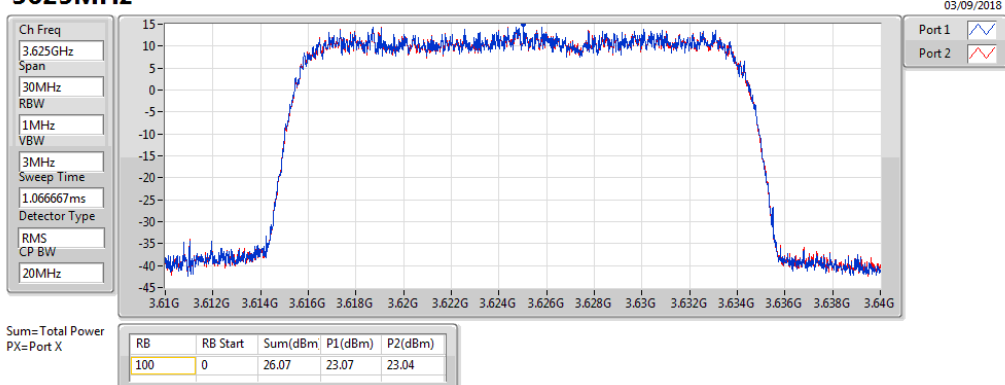
3560MHz



Band 48_LTE_20MHz_(QPSK)_2TX

AV Power

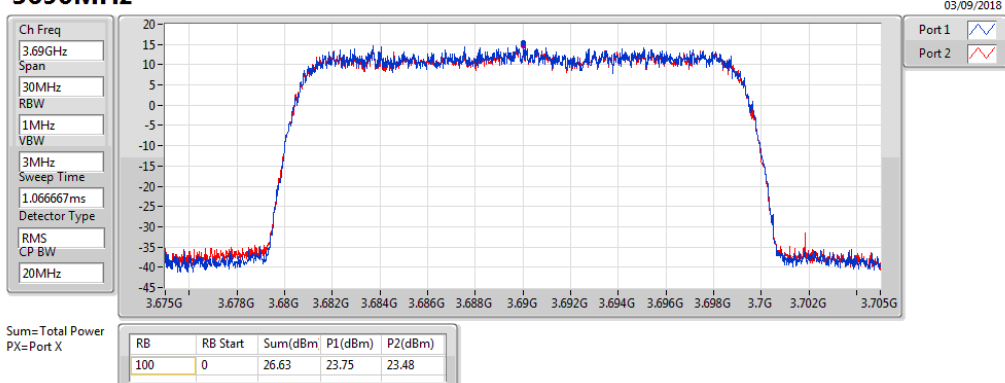
3625MHz



Band 48_LTE_20MHz_(QPSK)_2TX

AV Power

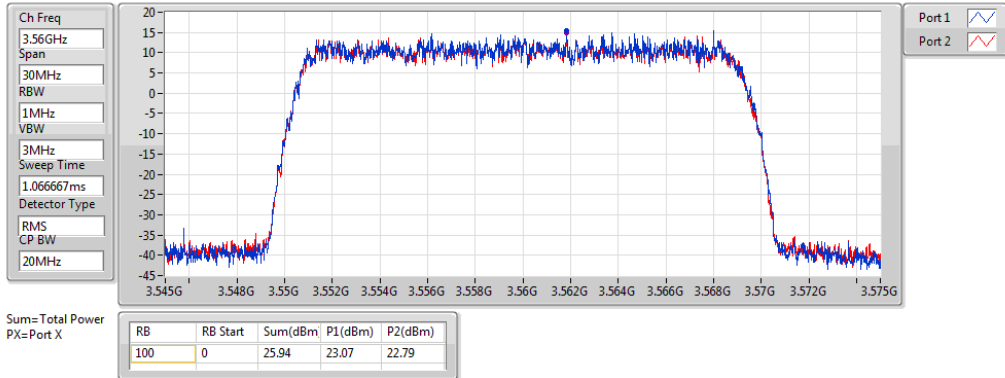
3690MHz



Band 48_LTE_20MHz_(16QAM)_2TX

AV Power

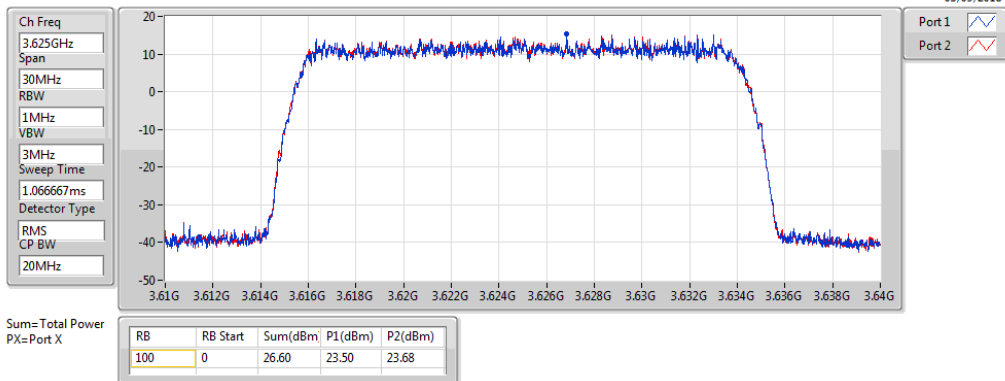
3560MHz



Band 48_LTE_20MHz_(16QAM)_2TX

AV Power

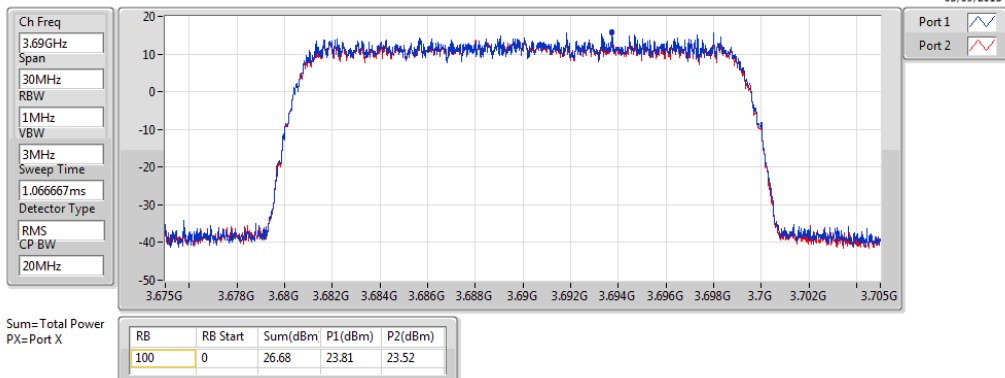
3625MHz



Band 48_LTE_20MHz_(16QAM)_2TX

AV Power

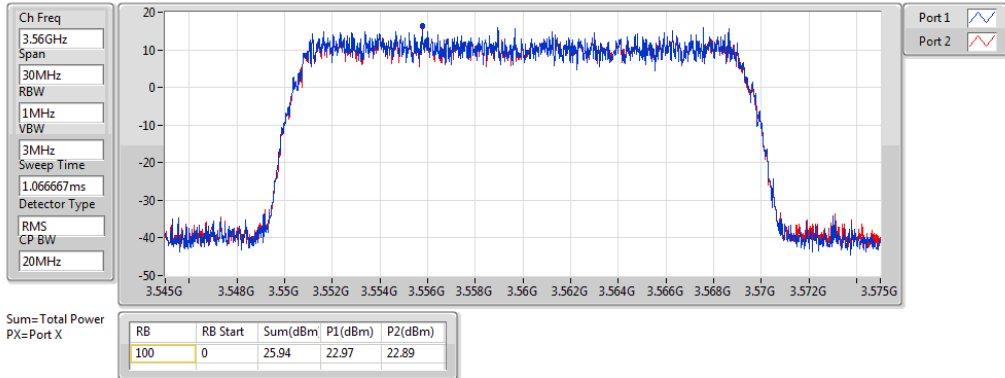
3690MHz



Band 48_LTE_20MHz_(64QAM)_2TX

AV Power

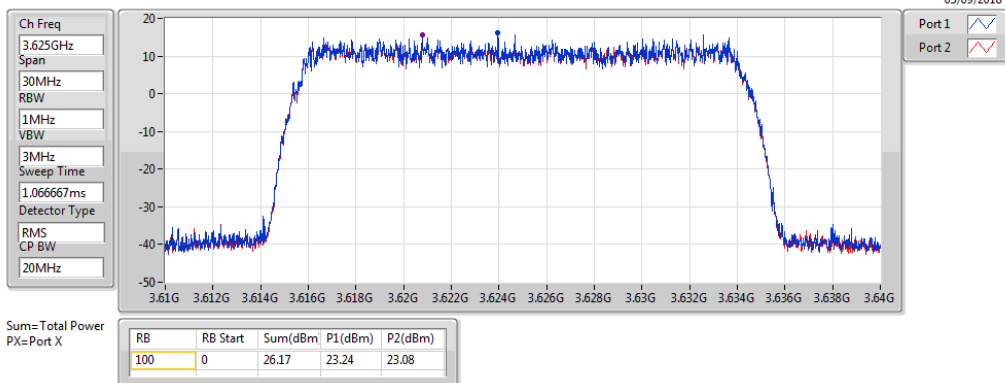
3560MHz



Band 48_LTE_20MHz_(64QAM)_2TX

AV Power

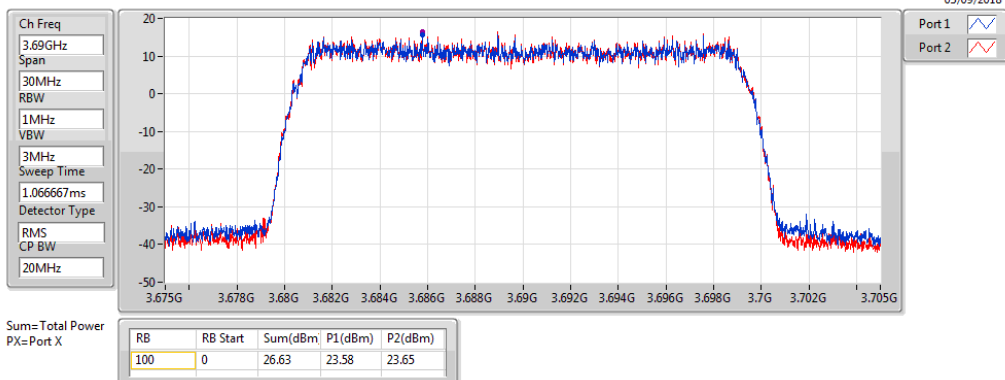
3625MHz



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	16.70	46.77	19.70	93.33
Band 48_LTE_10MHz_(16QAM)_2TX	16.66	46.34	19.66	92.47
Band 48_LTE_10MHz_(64QAM)_2TX	15.90	38.90	18.90	77.62
Band 48_LTE_20MHz_(QPSK)_2TX	16.05	40.27	19.05	80.35
Band 48_LTE_20MHz_(16QAM)_2TX	15.96	39.45	18.96	78.70
Band 48_LTE_20MHz_(64QAM)_2TX	15.95	39.36	18.95	78.52

Result

Mode	Setting	RB	Gain (dBi)	Port 1 (dBm/MHz)	Port 2 (dBm/MHz)	PD (dBm/MHz)	EIRP PD (dBm/MHz)	EIRP PD Limit (dBm/MHz)	Result
Band 48_LTE_10MHz_(QPSK)_2TX		-	-	-	-	-	-	-	-
3555MHz	20.5	50	3.00	13.04	12.77	15.92	18.92	20.00	Pass
3625MHz	20.5	50	3.00	13.56	13.63	16.61	19.61	20.00	Pass
3695MHz	20.5	50	3.00	13.63	13.74	16.70	19.70	20.00	Pass
Band 48_LTE_10MHz_(16QAM)_2TX		-	-	-	-	-	-	-	-
3555MHz	20.5	50	3.00	13.17	12.76	15.98	18.98	20.00	Pass
3625MHz	20.5	50	3.00	13.69	13.61	16.66	19.66	20.00	Pass
3695MHz	20.5	50	3.00	13.57	13.66	16.63	19.63	20.00	Pass
Band 48_LTE_10MHz_(64QAM)_2TX		-	-	-	-	-	-	-	-
3555MHz	20.5	50	3.00	12.16	12.02	15.10	18.10	20.00	Pass
3625MHz	20.5	50	3.00	12.70	12.87	15.80	18.80	20.00	Pass
3695MHz	20.5	50	3.00	13.01	12.76	15.90	18.90	20.00	Pass
Band 48_LTE_20MHz_(QPSK)_2TX		-	-	-	-	-	-	-	-
3560MHz	22.5	100	3.00	13.05	13.03	16.05	19.05	20.00	Pass
3625MHz	22.5	100	3.00	11.36	10.70	14.05	17.05	20.00	Pass
3690MHz	22.5	100	3.00	11.84	12.01	14.94	17.94	20.00	Pass
Band 48_LTE_20MHz_(16QAM)_2TX		-	-	-	-	-	-	-	-
3560MHz	22.5	100	3.00	12.94	12.95	15.96	18.96	20.00	Pass
3625MHz	22.5	100	3.00	11.28	11.57	14.44	17.44	20.00	Pass
3690MHz	22.5	100	3.00	11.98	12.31	15.16	18.16	20.00	Pass
Band 48_LTE_20MHz_(64QAM)_2TX		-	-	-	-	-	-	-	-
3560MHz	22.5	100	3.00	12.71	13.15	15.95	18.95	20.00	Pass
3625MHz	22.5	100	3.00	10.46	10.71	13.60	16.60	20.00	Pass
3690MHz	22.5	100	3.00	11.33	11.47	14.41	17.41	20.00	Pass

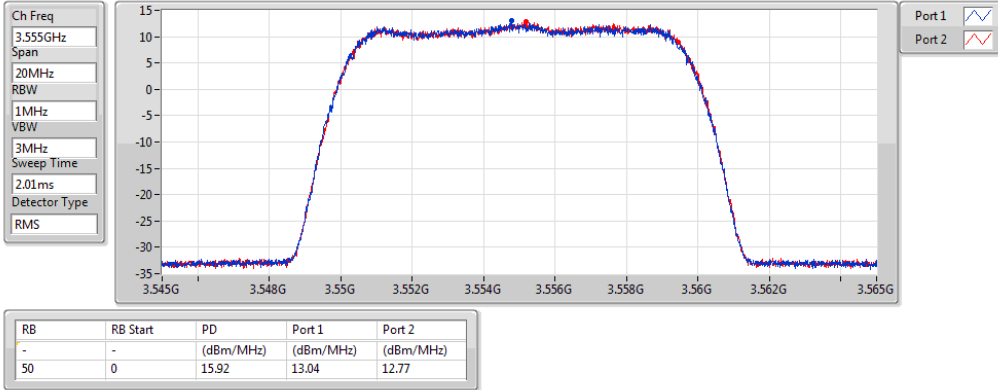
DG = Directional Gain;

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

Band 48_LTE_10MHz_(QPSK)_2TX

PSD

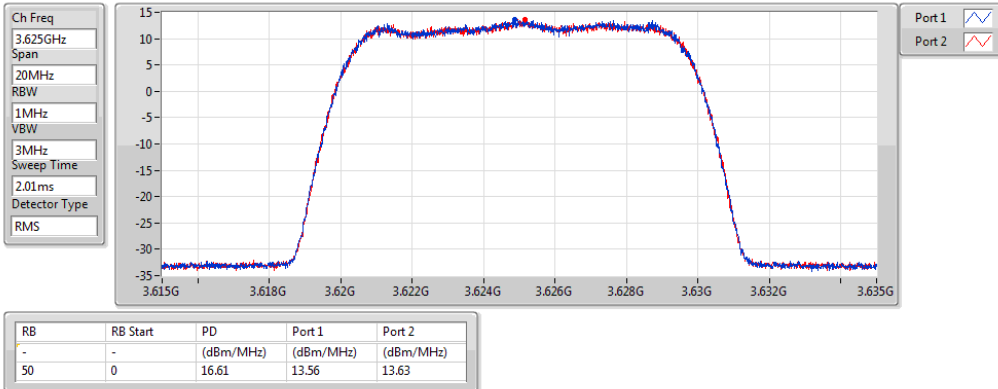
3555MHz



Band 48_LTE_10MHz_(QPSK)_2TX

PSD

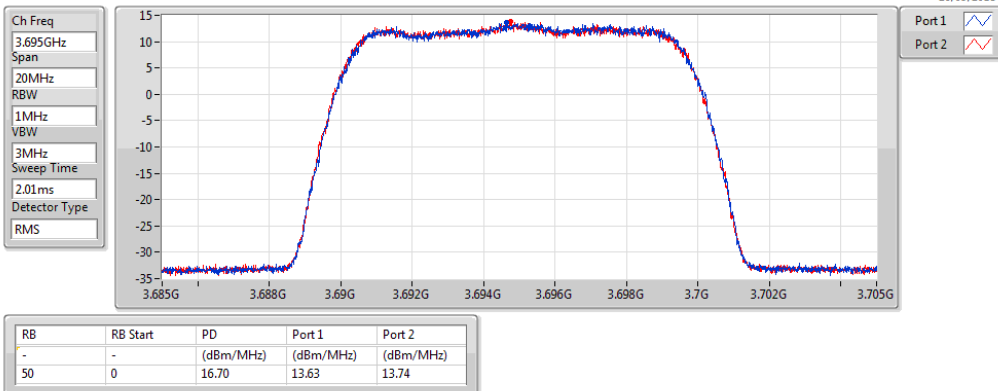
3625MHz



Band 48_LTE_10MHz_(QPSK)_2TX

PSD

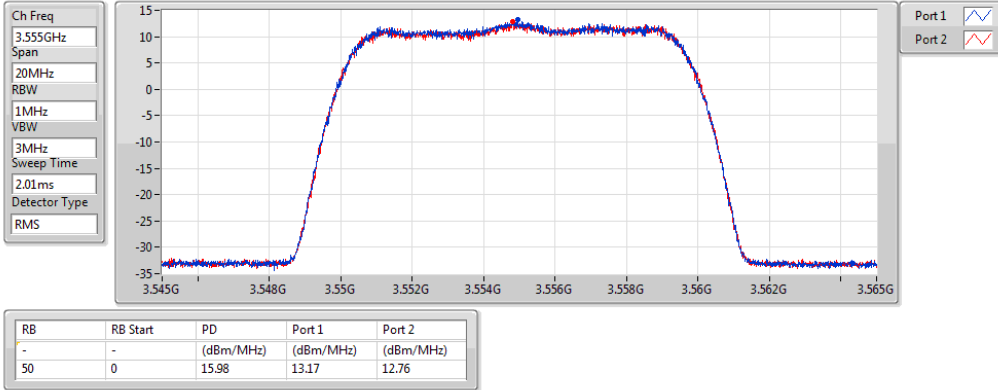
3695MHz



Band 48_LTE_10MHz_(16QAM)_2TX

PSD

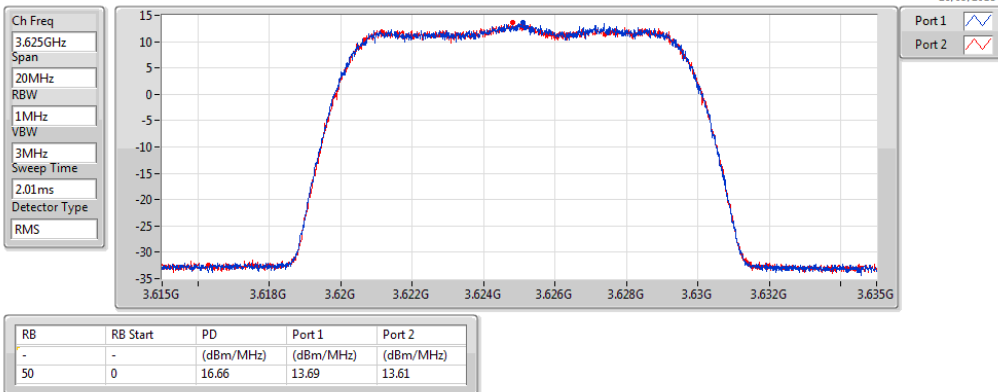
3555MHz



Band 48_LTE_10MHz_(16QAM)_2TX

PSD

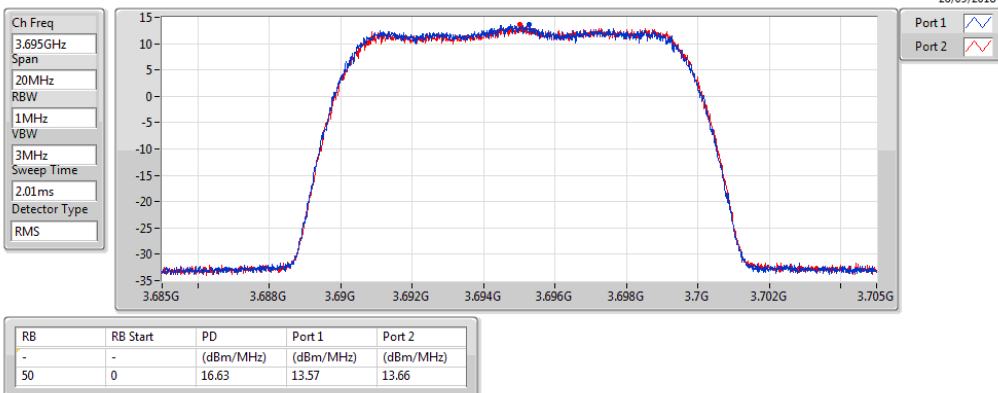
3625MHz



Band 48_LTE_10MHz_(16QAM)_2TX

PSD

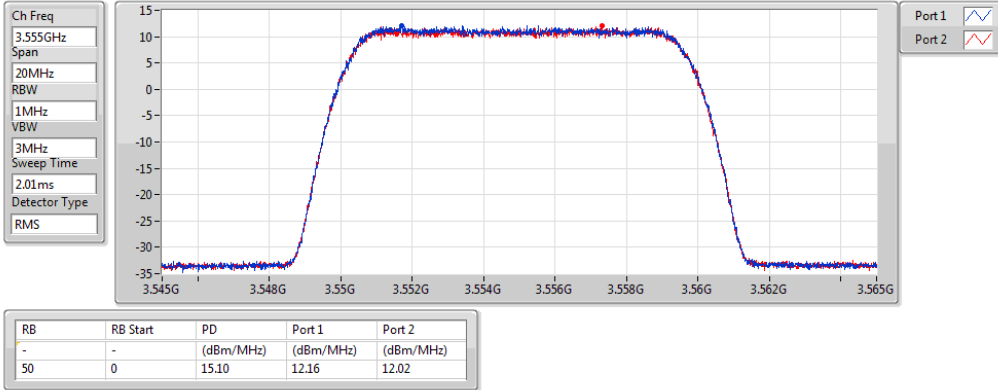
3695MHz



Band 48_LTE_10MHz_(64QAM)_2TX

PSD

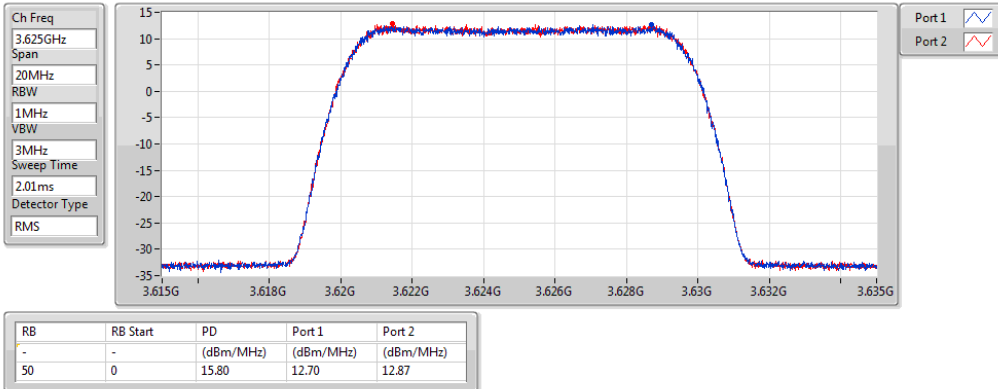
3555MHz



Band 48_LTE_10MHz_(64QAM)_2TX

PSD

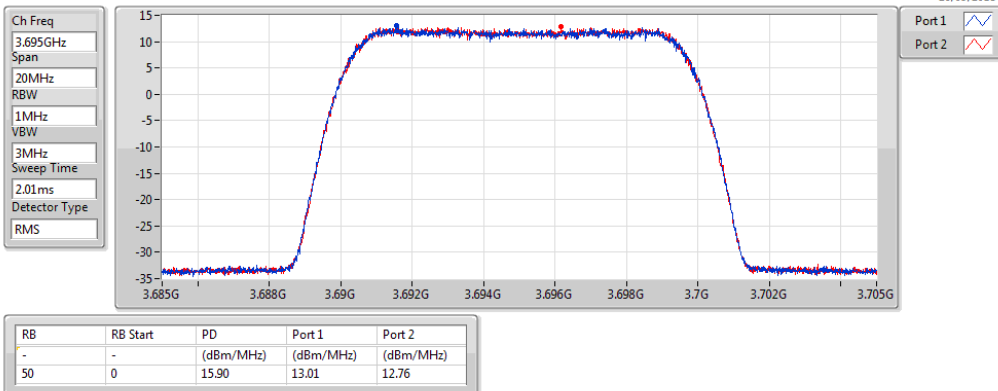
3625MHz



Band 48_LTE_10MHz_(64QAM)_2TX

PSD

3695MHz



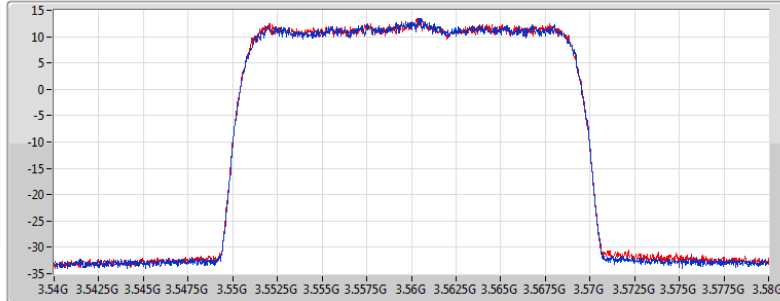
Band 48_LTE_20MHz_(QPSK)_2TX

PSD

3560MHz

24/05/2018

Ch Freq
3.56GHz
Span
40MHz
RBW
1MHz
VBW
3MHz
Sweep Time
1.066667ms
Detector Type
RMS



Port 1
Port 2

RB	RB Start	PD	Port 1	Port 2
-	-	(dBm/MHz)	(dBm/MHz)	(dBm/MHz)
100	0	16.05	13.05	13.03

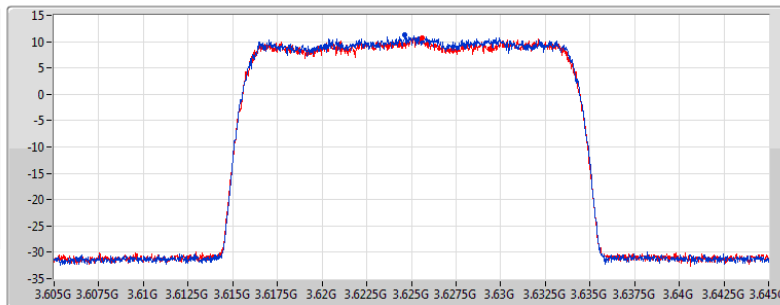
Band 48_LTE_20MHz_(QPSK)_2TX

PSD

3625MHz

24/05/2018

Ch Freq
3.625GHz
Span
40MHz
RBW
1MHz
VBW
3MHz
Sweep Time
1.066667ms
Detector Type
RMS



Port 1
Port 2

RB	RB Start	PD	Port 1	Port 2
-	-	(dBm/MHz)	(dBm/MHz)	(dBm/MHz)
100	0	14.05	11.36	10.70

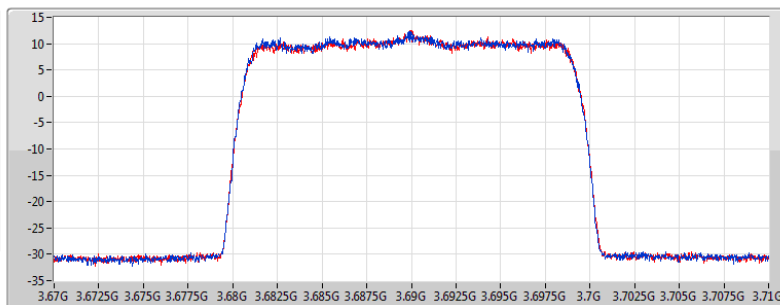
Band 48_LTE_20MHz_(QPSK)_2TX

PSD

3690MHz

24/05/2018

Ch Freq
3.69GHz
Span
40MHz
RBW
1MHz
VBW
3MHz
Sweep Time
1.066667ms
Detector Type
RMS



Port 1
Port 2

RB	RB Start	PD	Port 1	Port 2
-	-	(dBm/MHz)	(dBm/MHz)	(dBm/MHz)
100	0	14.94	11.84	12.01

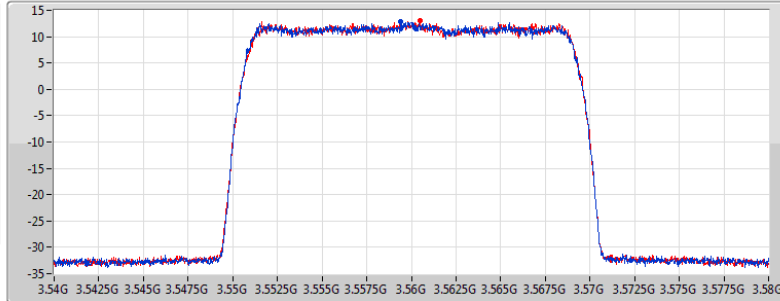
Band 48_LTE_20MHz_(16QAM)_2TX

PSD

3560MHz

24/05/2018

Ch Freq
3.56GHz
Span
40MHz
RBW
1MHz
VBW
3MHz
Sweep Time
1.066667ms
Detector Type
RMS



Port 1
Port 2

RB	RB Start	PD	Port 1	Port 2
-	-	(dBm/MHz)	(dBm/MHz)	(dBm/MHz)
100	0	15.96	12.94	12.95

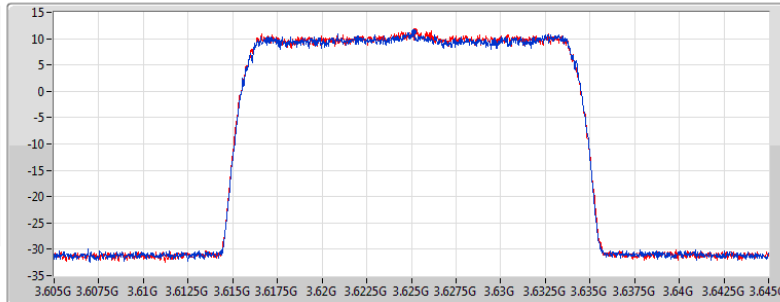
Band 48_LTE_20MHz_(16QAM)_2TX

PSD

3625MHz

24/05/2018

Ch Freq
3.625GHz
Span
40MHz
RBW
1MHz
VBW
3MHz
Sweep Time
1.066667ms
Detector Type
RMS



Port 1
Port 2

RB	RB Start	PD	Port 1	Port 2
-	-	(dBm/MHz)	(dBm/MHz)	(dBm/MHz)
100	0	14.44	11.28	11.57

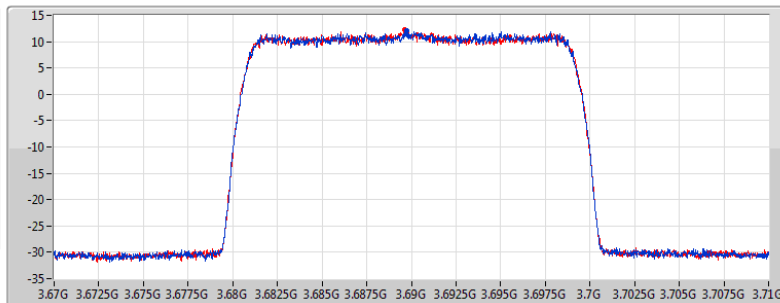
Band 48_LTE_20MHz_(16QAM)_2TX

PSD

3690MHz

24/05/2018

Ch Freq
3.69GHz
Span
40MHz
RBW
1MHz
VBW
3MHz
Sweep Time
1.066667ms
Detector Type
RMS



Port 1
Port 2

RB	RB Start	PD	Port 1	Port 2
-	-	(dBm/MHz)	(dBm/MHz)	(dBm/MHz)
100	0	15.16	11.98	12.31

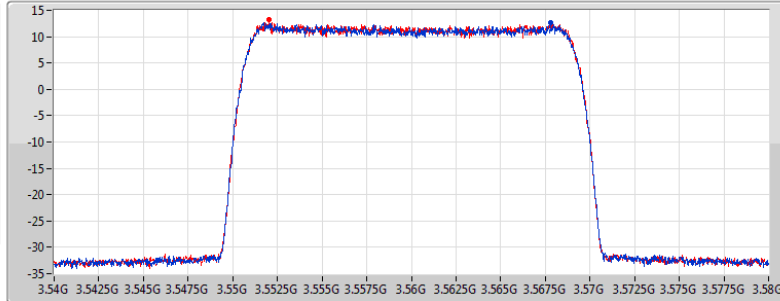
Band 48_LTE_20MHz_(64QAM)_2TX

PSD

3560MHz

24/05/2018

Ch Freq
3.56GHz
Span
40MHz
RBW
1MHz
VBW
3MHz
Sweep Time
1.066667ms
Detector Type
RMS



Port 1
Port 2

RB	RB Start	PD	Port 1	Port 2
-	-	(dBm/MHz)	(dBm/MHz)	(dBm/MHz)
100	0	15.95	12.71	13.15

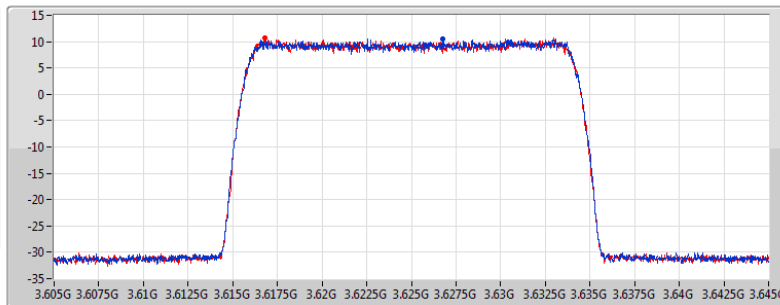
Band 48_LTE_20MHz_(64QAM)_2TX

PSD

3625MHz

24/05/2018

Ch Freq
3.625GHz
Span
40MHz
RBW
1MHz
VBW
3MHz
Sweep Time
1.066667ms
Detector Type
RMS



Port 1
Port 2

RB	RB Start	PD	Port 1	Port 2
-	-	(dBm/MHz)	(dBm/MHz)	(dBm/MHz)
100	0	13.60	10.46	10.71

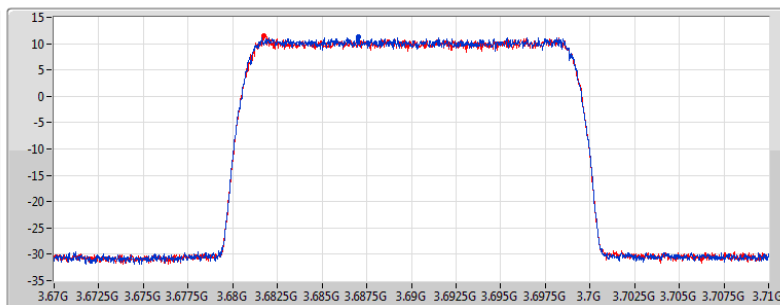
Band 48_LTE_20MHz_(64QAM)_2TX

PSD

3690MHz

24/05/2018

Ch Freq
3.69GHz
Span
40MHz
RBW
1MHz
VBW
3MHz
Sweep Time
1.066667ms
Detector Type
RMS



Port 1
Port 2

RB	RB Start	PD	Port 1	Port 2
-	-	(dBm/MHz)	(dBm/MHz)	(dBm/MHz)
100	0	14.41	11.33	11.47

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	-	-	-	-	-	-		-
3555MHz, RB Offset = 0	-86.5	100	100	-86.8	100	100	-40	Pass
3555MHz, RB Offset = 25	-86.5	100	100	-86.8	100	100	-40	Pass
3625MHz, RB Offset = 0	-86.5	100	100	-86.8	100	100	-40	Pass
3625MHz, RB Offset = 25	-86.5	100	100	-86.8	100	100	-40	Pass
3695MHz, RB Offset = 0	-86.5	100	100	-86.8	100	100	-40	Pass
3695MHz, RB Offset = 25	-86.5	100	100	-86.8	100	100	-40	Pass
Band 48_LTE_20MHz_2TX								-
3560MHz, RB Offset = 0	-86.5	100	100	-86.8	100	100	-40	Pass
3560MHz, RB Offset = 25	-86.5	100	100	-86.8	100	100	-40	Pass
3560MHz, RB Offset = 50	-86.5	100	100	-86.8	100	100	-40	Pass
3560MHz, RB Offset = 75	-86.5	100	100	-86.8	100	100	-40	Pass
3625MHz, RB Offset = 0	-86.5	100	100	-86.8	100	100	-40	Pass
3625MHz, RB Offset = 25	-86.5	100	100	-86.8	100	100	-40	Pass
3625MHz, RB Offset = 50	-86.5	100	100	-86.8	100	100	-40	Pass
3625MHz, RB Offset = 75	-86.5	100	100	-86.8	100	100	-40	Pass
3690MHz, RB Offset = 0	-86.5	100	100	-86.8	100	100	-40	Pass
3690MHz, RB Offset = 25	-86.5	100	100	-86.8	100	100	-40	Pass
3690MHz, RB Offset = 50	-86.5	100	100	-86.8	100	100	-40	Pass
3690MHz, RB Offset = 75	-86.5	100	100	-86.8	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.



Peak-to-Average Power Ratio Result

Appendix E.1

Summary

Mode	RB Start	Freq (Hz)	Mean (dBm)	Peak (dBm)	Crset (dB)	Margin (dB)	Limit (dB)	0.1%	Port	Result
Band 48	-	-	-	-	-	-	-	-	-	-
Band 48_LTE_10 MHz_(QPSK)_2TX	50	3.625G	23.24	30.86	7.62	-5.65	13.00	7.35	1	Pass
Band 48_LTE_10 MHz_(16QAM)_2TX	50	3.555G	23.34	30.92	7.58	-5.68	13.00	7.32	1	Pass
Band 48_LTE_10 MHz_(64QAM)_2TX	50	3.555G	23.39	31.00	7.61	-5.71	13.00	7.29	1	Pass
Band 48_LTE_20 MHz_(QPSK)_2TX	100	3.625G	24.21	31.48	7.27	-5.83	13.00	7.17	1	Pass
Band 48_LTE_20 MHz_(16QAM)_2TX	100	3.56G	24.30	31.76	7.46	-5.87	13.00	7.13	1	Pass
Band 48_LTE_20 MHz_(64QAM)_2TX	100	3.625G	24.24	31.66	7.42	-5.86	13.00	7.14	1	Pass

Result

Mode	RB Start	Freq (Hz)	Mean (dBm)	Peak (dBm)	Crset (dB)	Margin (dB)	Limit (dB)	0.1%	Port	Result
Band 48_LTE_10 MHz_(QPSK)_2TX	-	-	-	-	-	-	-	-	-	-
3555MHz	50	3.555G	23.36	30.89	7.53	-5.71	13.00	7.29	1	Pass
3625MHz	50	3.625G	23.24	30.86	7.62	-5.65	13.00	7.35	1	Pass
3695MHz	50	3.695G	23.62	31.28	7.66	-5.65	13.00	7.35	1	Pass
Band 48_LTE_10 MHz_(16QAM)_2TX	-	-	-	-	-	-	-	-	-	-
3555MHz	50	3.555G	23.34	30.92	7.58	-5.68	13.00	7.32	1	Pass
3625MHz	50	3.625G	23.32	30.84	7.52	-5.73	13.00	7.27	1	Pass
3695MHz	50	3.695G	24.07	31.70	7.63	-5.71	13.00	7.29	1	Pass
Band 48_LTE_10 MHz_(64QAM)_2TX	-	-	-	-	-	-	-	-	-	-
3555MHz	50	3.555G	23.39	31.00	7.61	-5.71	13.00	7.29	1	Pass
3625MHz	50	3.625G	23.33	30.83	7.50	-5.71	13.00	7.29	1	Pass
3695MHz	50	3.695G	24.07	31.48	7.41	-5.82	13.00	7.18	1	Pass
Band 48_LTE_20 MHz_(QPSK)	-	-	-	-	-	-	-	-	-	-



Peak-to-Average Power Ratio Result

Appendix E.1

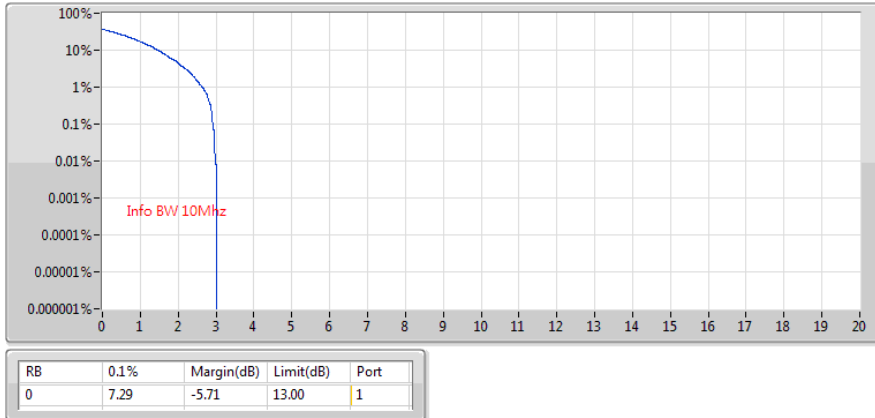
Mode	RB Start	Freq (Hz)	Mean (dBm)	Peak (dBm)	Crset (dB)	Margin (dB)	Limit (dB)	0.1%	Port	Result
)_2TX										
3560MHz	100	3.56G	24.33	31.69	7.36	-5.86	13.00	7.14	1	Pass
3625MHz	100	3.625G	24.21	31.48	7.27	-5.83	13.00	7.17	1	Pass
3690MHz	100	3.69G	24.95	32.31	7.36	-5.86	13.00	7.14	1	Pass
Band 48_LTE_20 MHz (16QAM)_2TX	-	-	-	-	-	-	-	-	-	-
3560MHz	100	3.56G	24.30	31.76	7.46	-5.87	13.00	7.13	1	Pass
3625MHz	100	3.625G	24.16	31.52	7.36	-5.88	13.00	7.12	1	Pass
3690MHz	100	3.69G	24.97	32.38	7.41	-5.90	13.00	7.10	1	Pass
Band 48_LTE_20 MHz (64QAM)_2TX	-	-	-	-	-	-	-	-	-	-
3560MHz	100	3.56G	24.32	31.76	7.44	-5.87	13.00	7.13	1	Pass
3625MHz	100	3.625G	24.24	31.66	7.42	-5.86	13.00	7.14	1	Pass
3690MHz	100	3.69G	25.00	32.33	7.33	-5.89	13.00	7.11	1	Pass

Band 48_LTE_10MHz_(QPSK)_2TX

PAR

3555MHz

16/05/2018

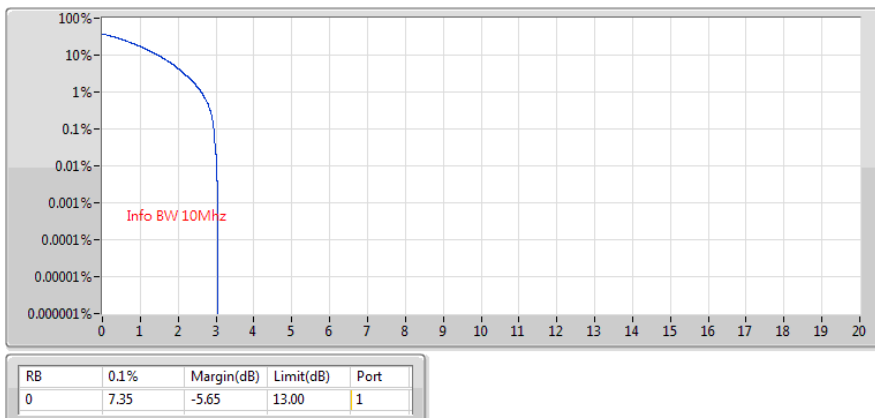


Band 48_LTE_10MHz_(QPSK)_2TX

PAR

3625MHz

16/05/2018

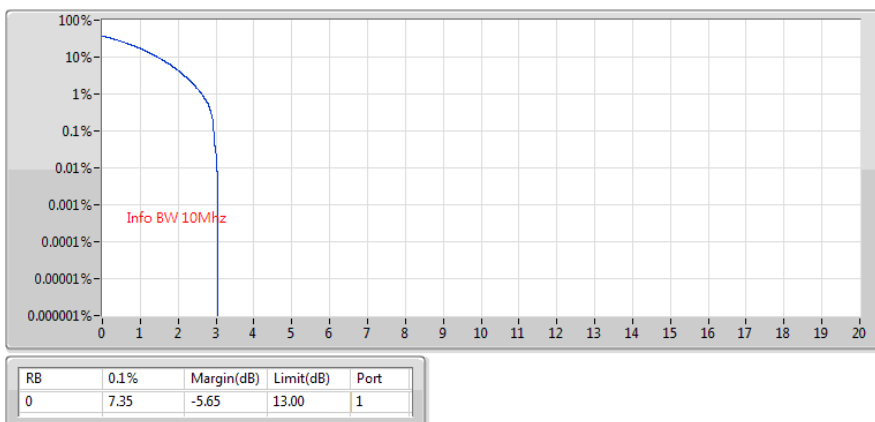


Band 48_LTE_10MHz_(QPSK)_2TX

PAR

3695MHz

16/05/2018

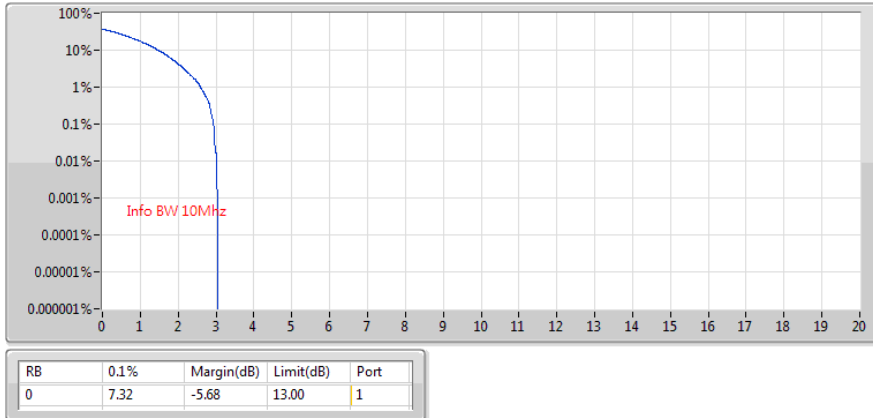


Band 48_LTE_10MHz_(16QAM)_2TX

PAR

3555MHz

16/05/2018

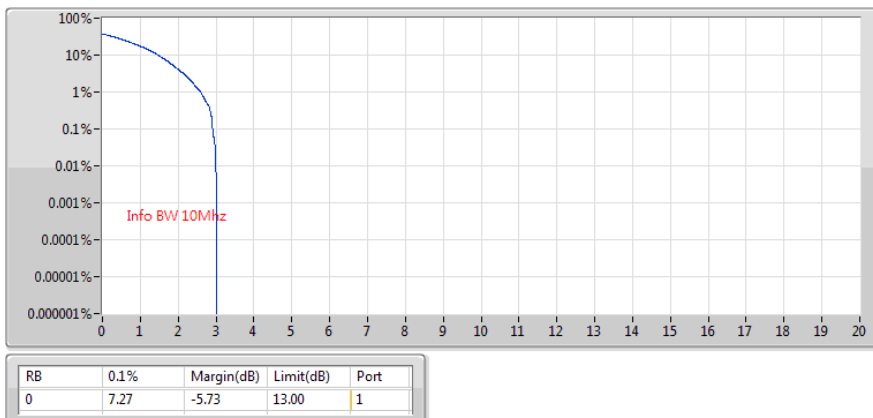


Band 48_LTE_10MHz_(16QAM)_2TX

PAR

3625MHz

16/05/2018

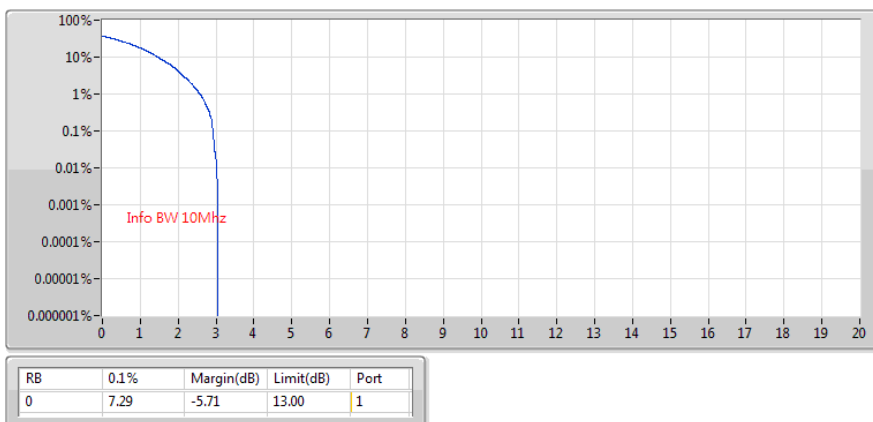


Band 48_LTE_10MHz_(16QAM)_2TX

PAR

3695MHz

16/05/2018

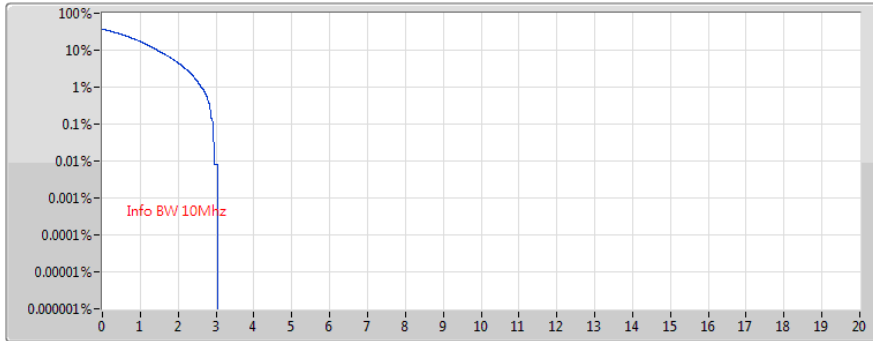


Band 48_LTE_10MHz_(64QAM)_2TX

PAR

3555MHz

16/05/2018



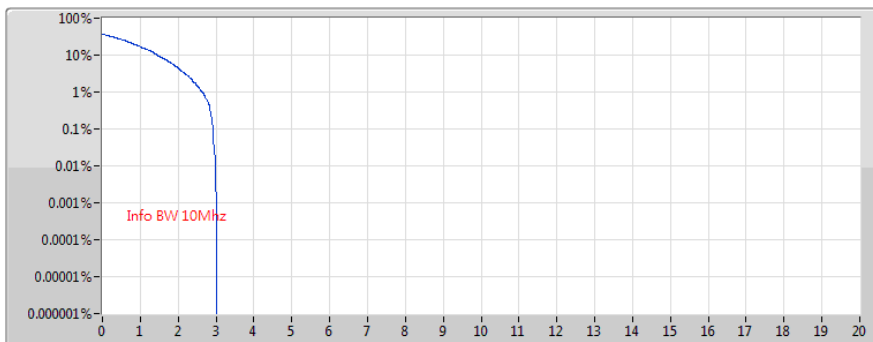
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.29	-5.71	13.00	1

Band 48_LTE_10MHz_(64QAM)_2TX

PAR

3625MHz

16/05/2018



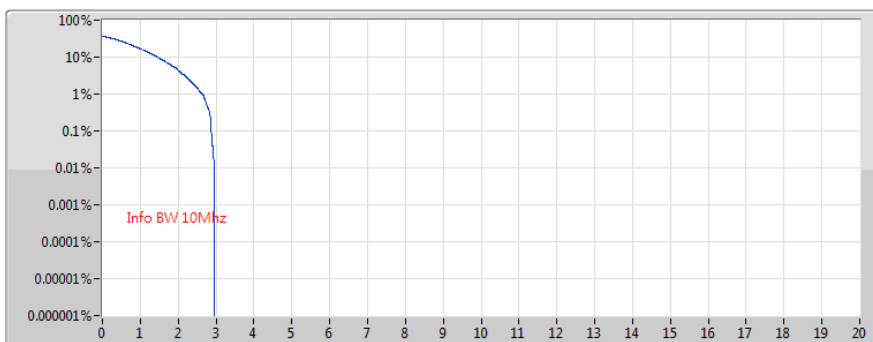
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.29	-5.71	13.00	1

Band 48_LTE_10MHz_(64QAM)_2TX

PAR

3695MHz

16/05/2018



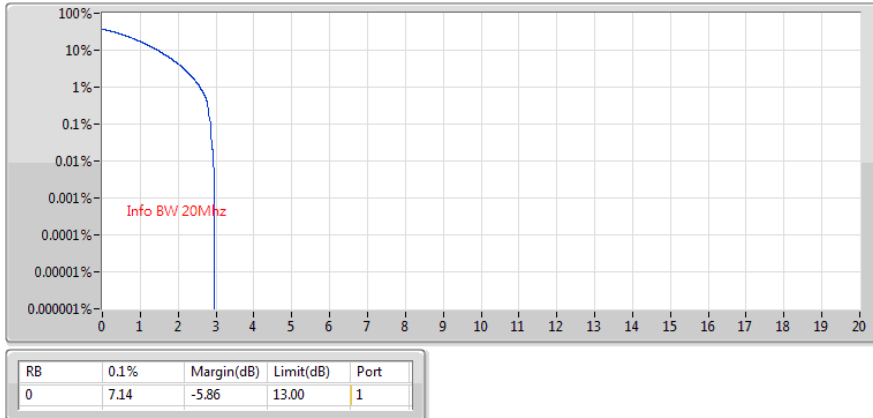
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.18	-5.82	13.00	1

Band 48_LTE_20MHz_(QPSK)_2TX

PAR

3560MHz

16/05/2018

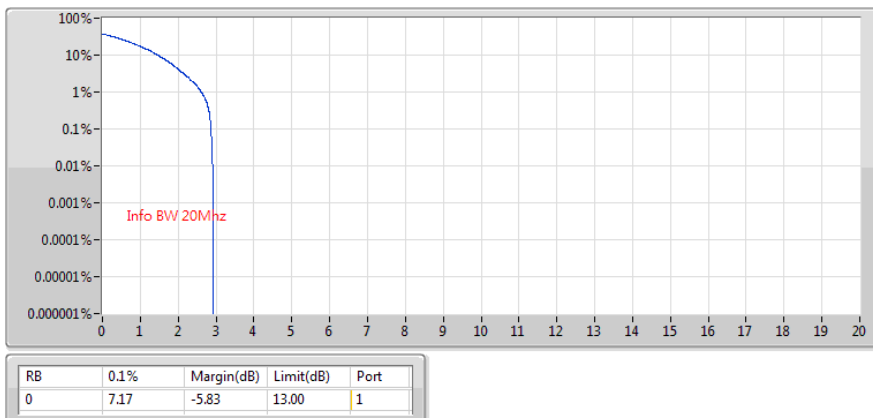


Band 48_LTE_20MHz_(QPSK)_2TX

PAR

3625MHz

16/05/2018

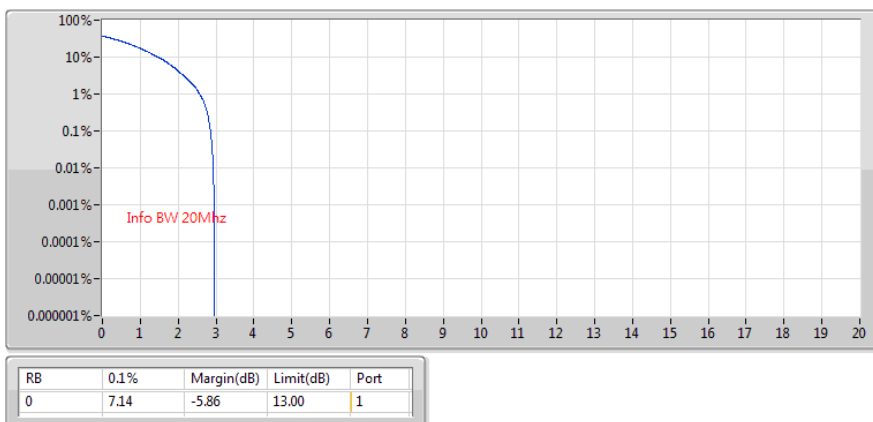


Band 48_LTE_20MHz_(QPSK)_2TX

PAR

3690MHz

16/05/2018

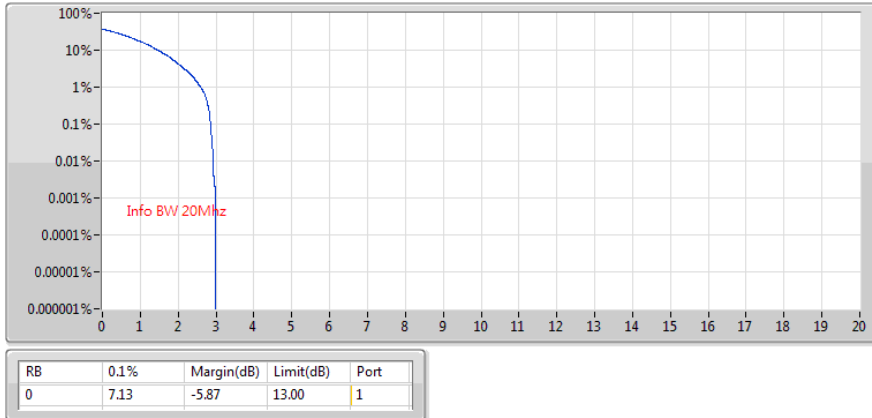


Band 48_LTE_20MHz_(16QAM)_2TX

PAR

3560MHz

16/05/2018

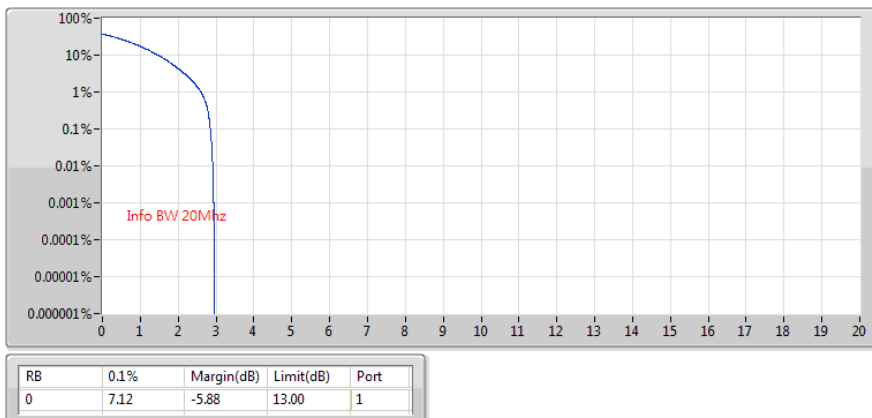


Band 48_LTE_20MHz_(16QAM)_2TX

PAR

3625MHz

16/05/2018

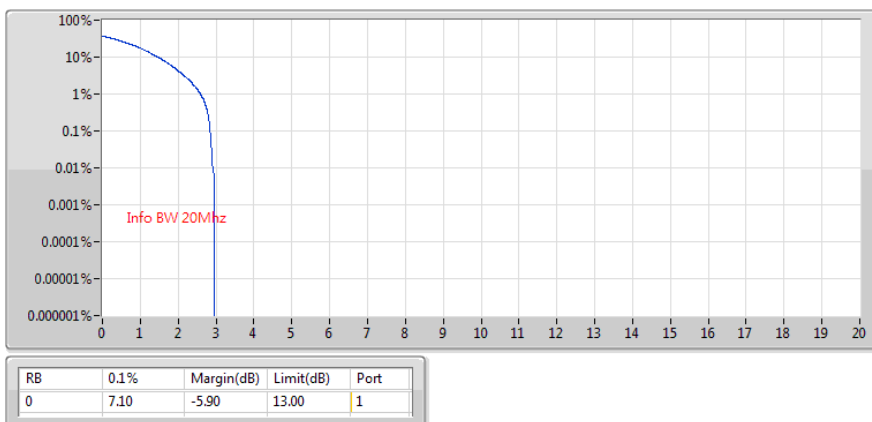


Band 48_LTE_20MHz_(16QAM)_2TX

PAR

3690MHz

16/05/2018

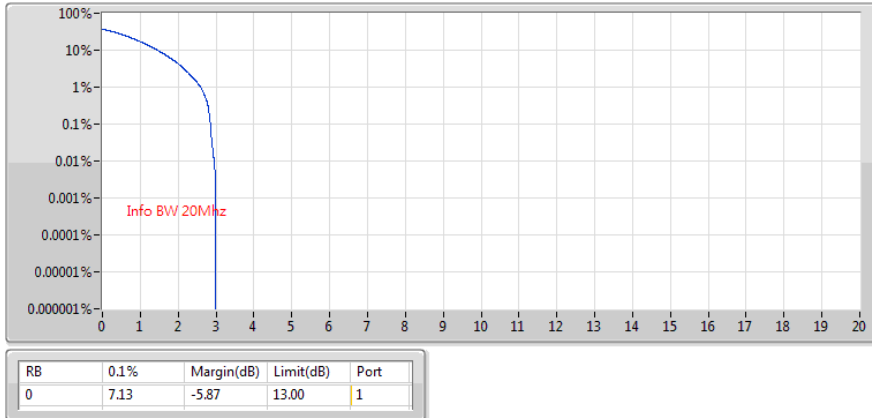


Band 48_LTE_20MHz_(64QAM)_2TX

PAR

3560MHz

16/05/2018

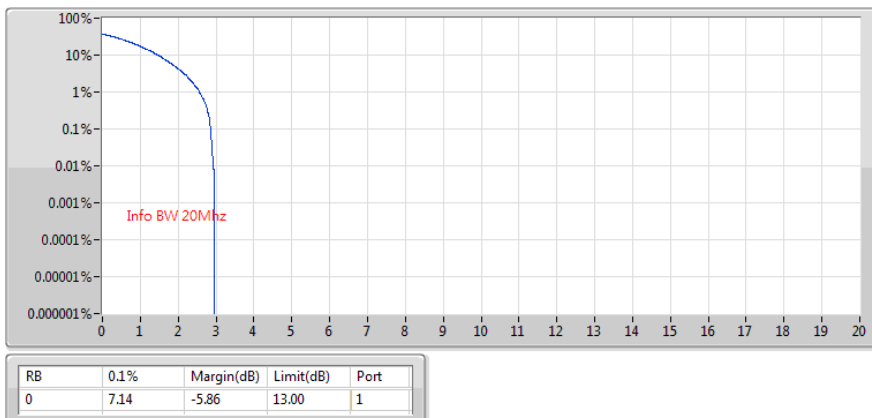


Band 48_LTE_20MHz_(64QAM)_2TX

PAR

3625MHz

16/05/2018

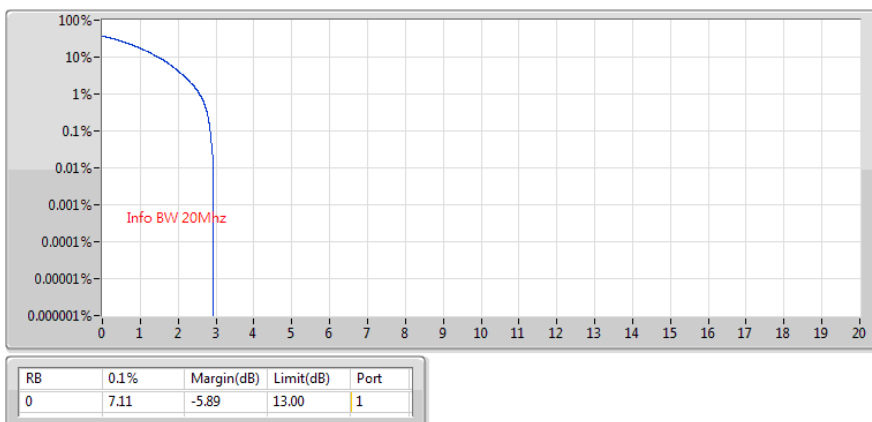


Band 48_LTE_20MHz_(64QAM)_2TX

PAR

3690MHz

16/05/2018





Peak-to-Average Power Ratio Result

Appendix E.2

Summary

Mode	RB Start	Freq (Hz)	Mean (dBm)	Peak (dBm)	Crset (dB)	Margin (dB)	Limit (dB)	0.1%	Port	Result
Band 48	-	-	-	-	-	-	-	-	-	-
Band 48_LTE_10 MHz_(QPSK)_2TX	50	3.625G	23.24	30.95	7.71	-5.61	13.00	7.39	2	Pass
Band 48_LTE_10 MHz_(16QAM)_2TX	50	3.625G	23.29	31.07	7.78	-5.66	13.00	7.34	2	Pass
Band 48_LTE_10 MHz_(64QAM)_2TX	50	3.555G	23.22	30.97	7.75	-5.76	13.00	7.24	2	Pass
Band 48_LTE_20 MHz_(QPSK)_2TX	100	3.625G	23.89	31.26	7.37	-5.87	13.00	7.13	2	Pass
Band 48_LTE_20 MHz_(16QAM)_2TX	100	3.56G	24.19	31.70	7.51	-5.77	13.00	7.23	2	Pass
Band 48_LTE_20 MHz_(64QAM)_2TX	100	3.56G	24.16	31.59	7.43	-5.82	13.00	7.18	2	Pass

Result

Mode	RB Start	Freq (Hz)	Mean (dBm)	Peak (dBm)	Crset (dB)	Margin (dB)	Limit (dB)	0.1%	Port	Result
Band 48_LTE_10 MHz_(QPSK)_2TX	-	-	-	-	-	-	-	-	-	-
3555MHz	50	3.555G	23.23	30.82	7.59	-5.69	13.00	7.31	2	Pass
3625MHz	50	3.625G	23.24	30.95	7.71	-5.61	13.00	7.39	2	Pass
3695MHz	50	3.695G	23.96	31.50	7.54	-5.66	13.00	7.34	2	Pass
Band 48_LTE_10 MHz_(16QAM)_2TX	-	-	-	-	-	-	-	-	-	-
3555MHz	50	3.555G	23.24	30.93	7.69	-5.74	13.00	7.26	2	Pass
3625MHz	50	3.625G	23.29	31.07	7.78	-5.66	13.00	7.34	2	Pass
3695MHz	50	3.695G	23.98	31.69	7.71	-5.70	13.00	7.30	2	Pass
Band 48_LTE_10 MHz_(64QAM)_2TX	-	-	-	-	-	-	-	-	-	-
3555MHz	50	3.555G	23.22	30.97	7.75	-5.76	13.00	7.24	2	Pass
3625MHz	50	3.625G	23.33	30.91	7.58	-5.76	13.00	7.24	2	Pass
3695MHz	50	3.695G	24.03	31.50	7.47	-5.78	13.00	7.22	2	Pass
Band 48_LTE_20 MHz_(QPSK)	-	-	-	-	-	-	-	-	-	-



Peak-to-Average Power Ratio Result

Appendix E.2

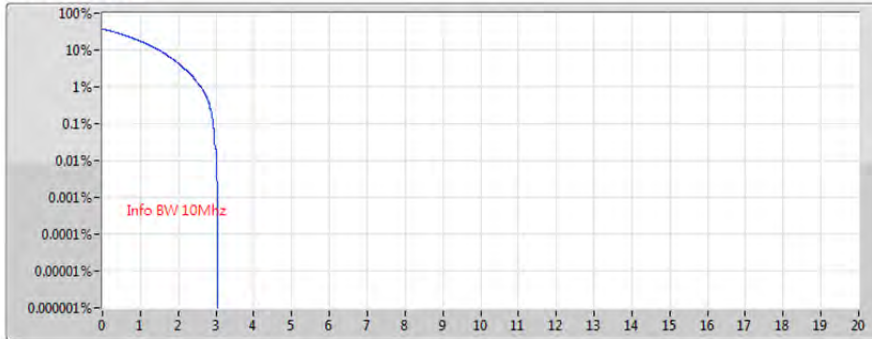
Mode	RB Start	Freq (Hz)	Mean (dBm)	Peak (dBm)	Crset (dB)	Margin (dB)	Limit (dB)	0.1%	Port	Result
)_2TX										
3560MHz	100	3.56G	24.13	31.60	7.47	-5.90	13.00	7.10	2	Pass
3625MHz	100	3.625G	23.89	31.26	7.37	-5.87	13.00	7.13	2	Pass
3690MHz	100	3.69G	24.85	32.17	7.32	-5.89	13.00	7.11	2	Pass
Band 48_LTE_20 MHz_(16QA M)_2TX	-	-	-	-	-	-	-	-	-	-
3560MHz	100	3.56G	24.19	31.70	7.51	-5.77	13.00	7.23	2	Pass
3625MHz	100	3.625G	23.87	31.27	7.40	-5.87	13.00	7.13	2	Pass
3690MHz	100	3.69G	24.85	32.38	7.53	-5.86	13.00	7.14	2	Pass
Band 48_LTE_20 MHz_(64QA M)_2TX	-	-	-	-	-	-	-	-	-	-
3560MHz	100	3.56G	24.16	31.59	7.43	-5.82	13.00	7.18	2	Pass
3625MHz	100	3.625G	24.20	31.64	7.44	-5.85	13.00	7.15	2	Pass
3690MHz	100	3.69G	24.88	32.24	7.36	-5.86	13.00	7.14	2	Pass

Band 48_LTE_10MHz_(QPSK)_2TX

PAR

3555MHz

16/05/2018



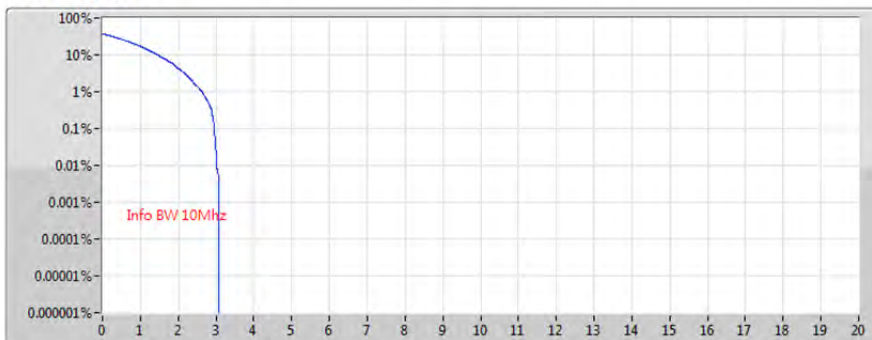
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.31	-5.69	13.00	2

Band 48_LTE_10MHz_(QPSK)_2TX

PAR

3625MHz

16/05/2018



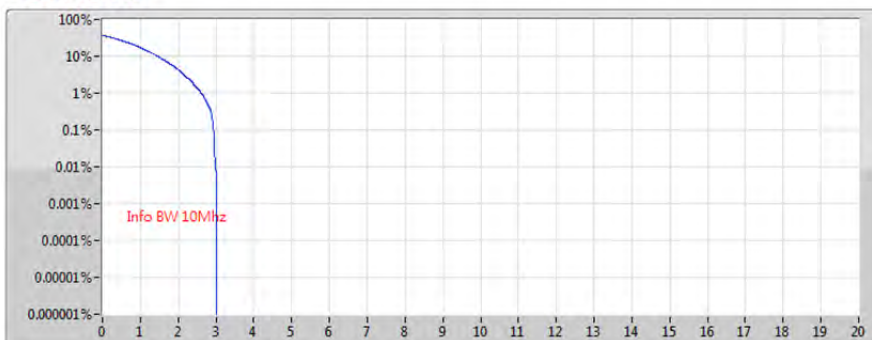
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.39	-5.61	13.00	2

Band 48_LTE_10MHz_(QPSK)_2TX

PAR

3695MHz

16/05/2018



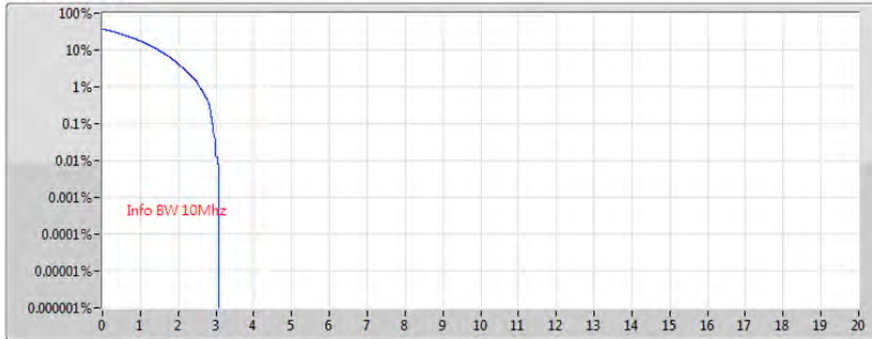
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.34	-5.66	13.00	2

Band 48_LTE_10MHz_(16QAM)_2TX

PAR

3555MHz

16/05/2018



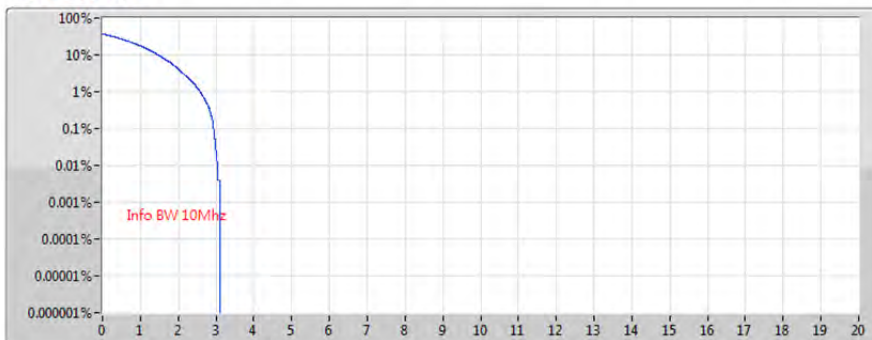
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.26	-5.74	13.00	2

Band 48_LTE_10MHz_(16QAM)_2TX

PAR

3625MHz

16/05/2018



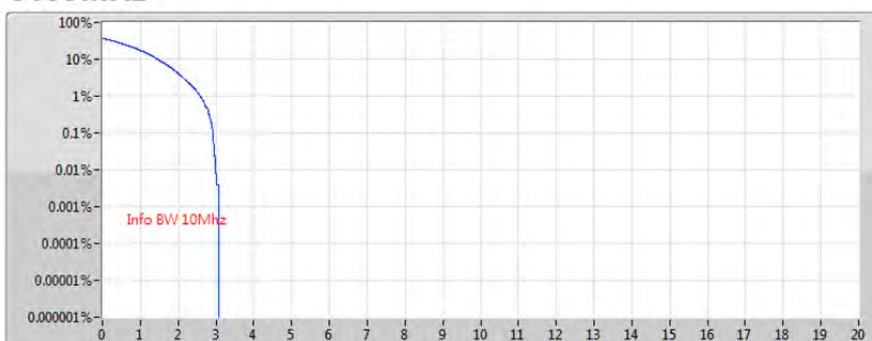
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.34	-5.66	13.00	2

Band 48_LTE_10MHz_(16QAM)_2TX

PAR

3695MHz

16/05/2018



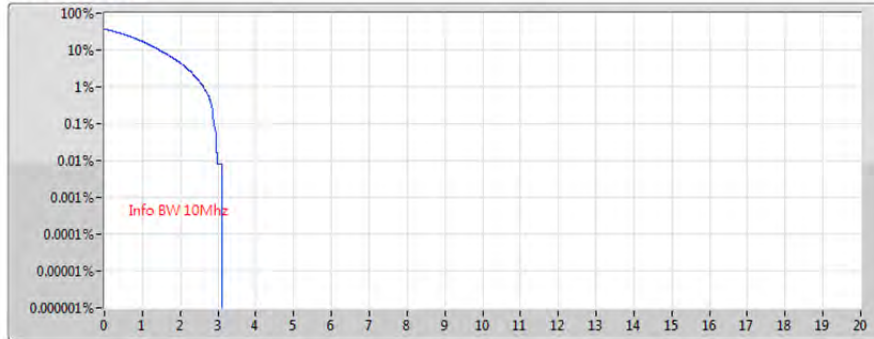
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.30	-5.70	13.00	2

Band 48_LTE_10MHz_(64QAM)_2TX

PAR

3555MHz

16/05/2018



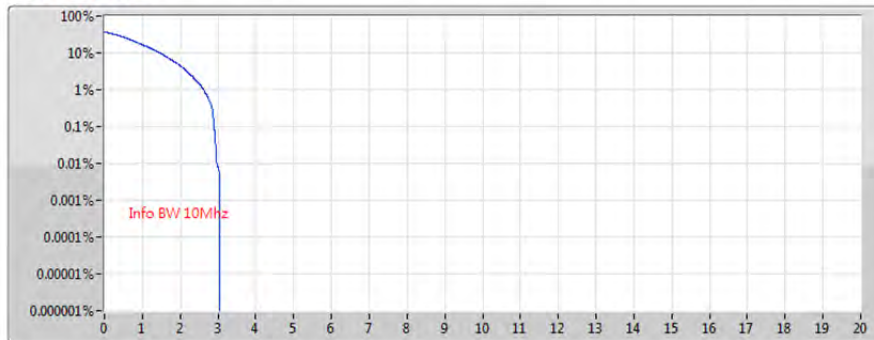
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.24	-5.76	13.00	2

Band 48_LTE_10MHz_(64QAM)_2TX

PAR

3625MHz

16/05/2018



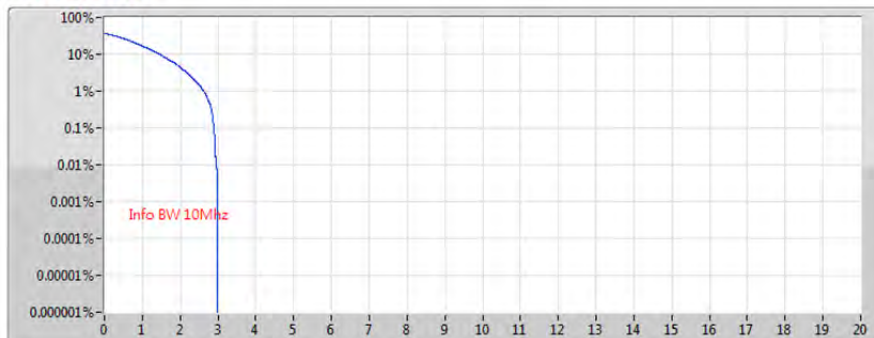
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.24	-5.76	13.00	2

Band 48_LTE_10MHz_(64QAM)_2TX

PAR

3695MHz

16/05/2018



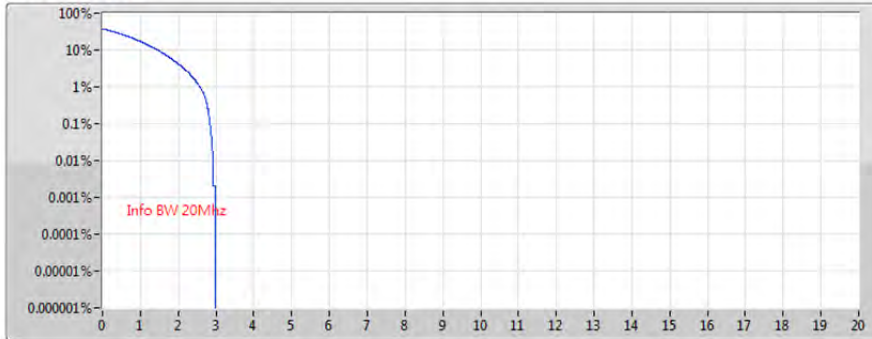
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.22	-5.78	13.00	2

Band 48_LTE_20MHz_(QPSK)_2TX

PAR

3560MHz

16/05/2018



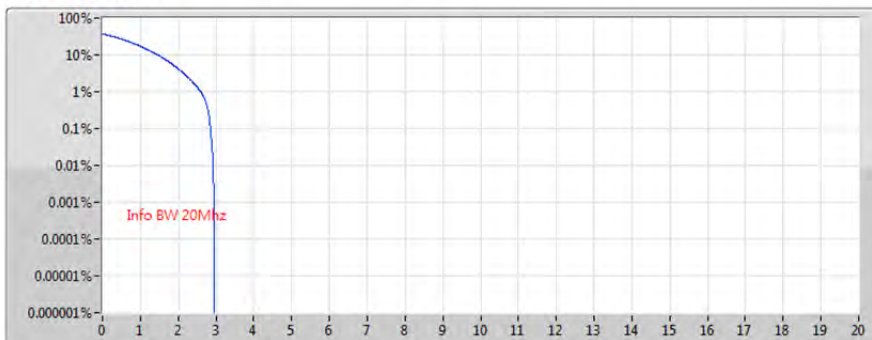
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.10	-5.90	13.00	2

Band 48_LTE_20MHz_(QPSK)_2TX

PAR

3625MHz

16/05/2018



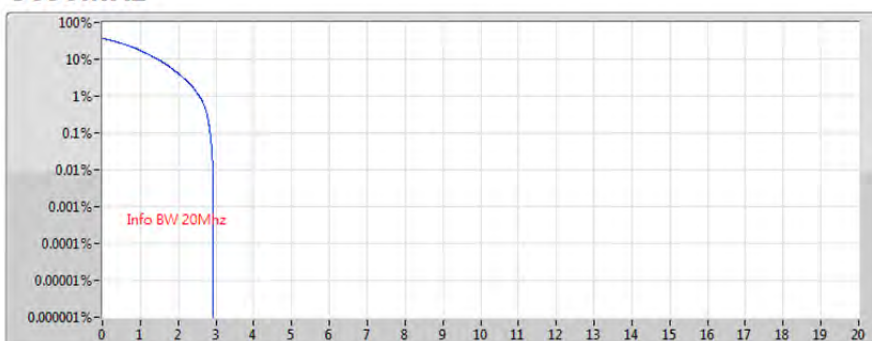
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.13	-5.87	13.00	2

Band 48_LTE_20MHz_(QPSK)_2TX

PAR

3690MHz

16/05/2018



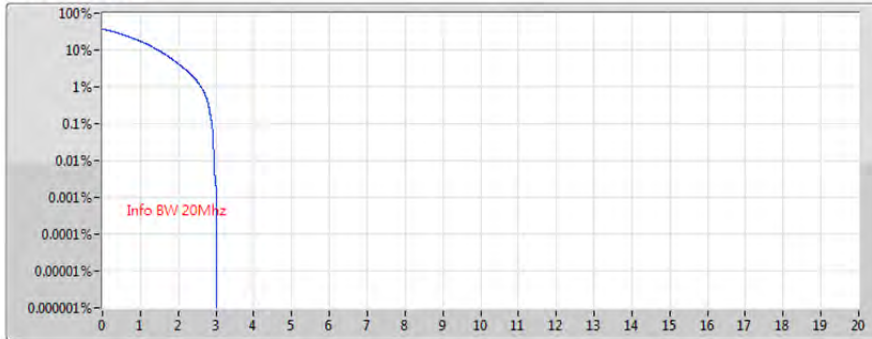
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.11	-5.89	13.00	2

Band 48_LTE_20MHz_(16QAM)_2TX

PAR

3560MHz

16/05/2018



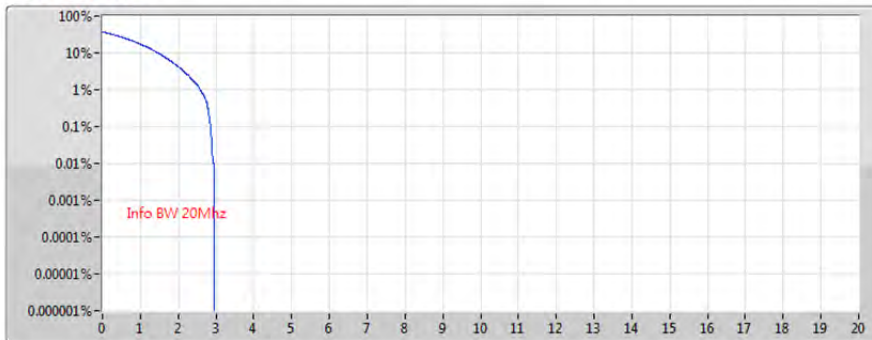
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.23	-5.77	13.00	2

Band 48_LTE_20MHz_(16QAM)_2TX

PAR

3625MHz

16/05/2018



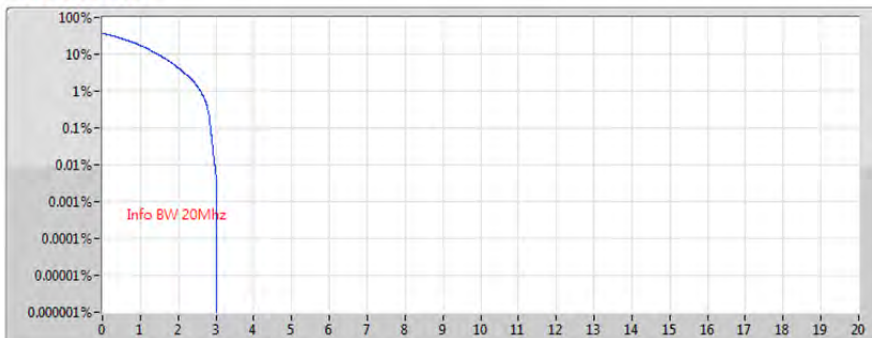
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.13	-5.87	13.00	2

Band 48_LTE_20MHz_(16QAM)_2TX

PAR

3690MHz

16/05/2018



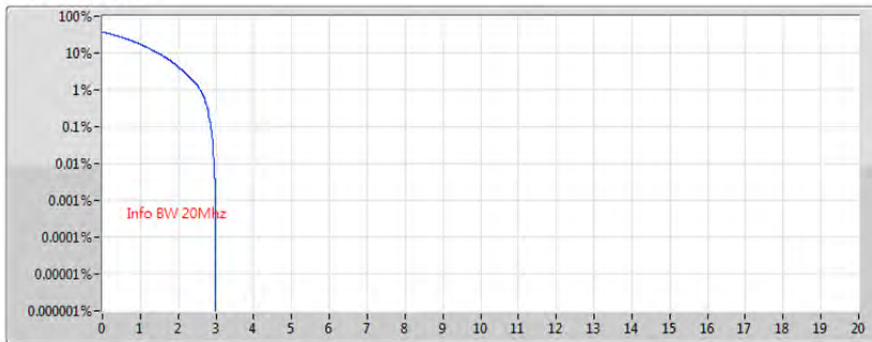
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.14	-5.86	13.00	2

Band 48_LTE_20MHz_(64QAM)_2TX

PAR

3560MHz

16/05/2018



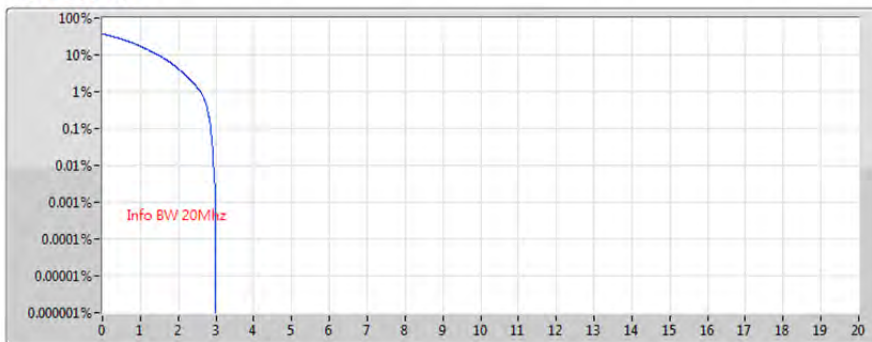
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.18	-5.82	13.00	2

Band 48_LTE_20MHz_(64QAM)_2TX

PAR

3625MHz

16/05/2018



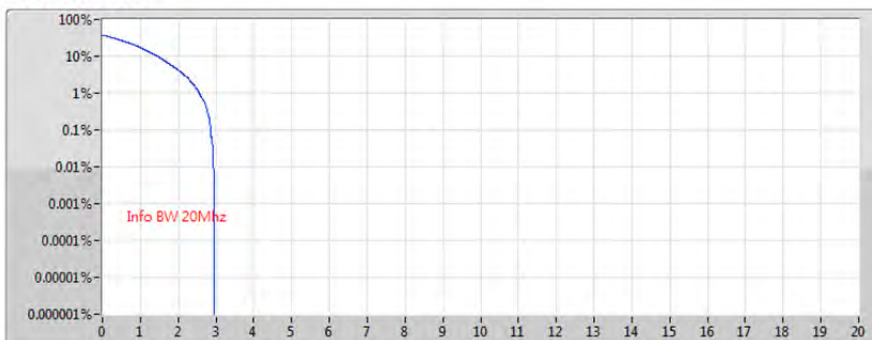
RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.15	-5.85	13.00	2

Band 48_LTE_20MHz_(64QAM)_2TX

PAR

3690MHz

16/05/2018



RB	0.1%	Margin(dB)	Limit(dB)	Port
0	7.14	-5.86	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	9.563M	8.921M	8M92G7D	9.513M	8.909M
Band 48_LTE_10MHz_(16QAM)_2TX	9.6M	8.94M	8M94W7D	9.575M	8.933M
Band 48_LTE_10MHz_(64QAM)_2TX	9.55M	8.917M	8M92D9W	9.538M	8.91M
Band 48_LTE_20MHz_(QPSK)_2TX	18.775M	17.805M	17M8G7D	18.7M	17.795M
Band 48_LTE_20MHz_(16QAM)_2TX	18.8M	17.801M	17M8W7D	18.75M	17.774M
Band 48_LTE_20MHz_(64QAM)_2TX	18.75M	17.807M	17M8D9W	18.65M	17.8M

Max-N dB = Maximum 26dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 26dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

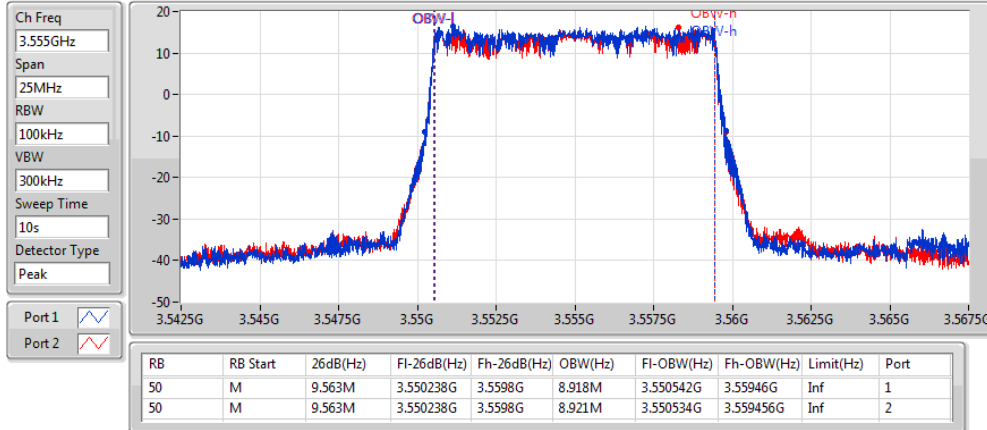
Result

Mode	RB	P1-N dB (Hz)	P1-OBW (Hz)	P2-N dB (Hz)	P2-OBW (Hz)
Band 48_LTE_10MHz_(QPSK)_2TX	-	-	-	-	-
3555MHz	50	9.563M	8.918M	9.563M	8.921M
3625MHz	50	9.538M	8.909M	9.563M	8.918M
3695MHz	50	9.563M	8.916M	9.513M	8.92M
Band 48_LTE_10MHz_(16QAM)_2TX	-	-	-	-	-
3555MHz	50	9.575M	8.936M	9.6M	8.933M
3625MHz	50	9.6M	8.938M	9.6M	8.937M
3695MHz	50	9.575M	8.933M	9.6M	8.94M
Band 48_LTE_10MHz_(64QAM)_2TX	-	-	-	-	-
3555MHz	50	9.538M	8.917M	9.538M	8.917M
3625MHz	50	9.55M	8.91M	9.55M	8.911M
3695MHz	50	9.538M	8.914M	9.55M	8.912M
Band 48_LTE_20MHz_(QPSK)_2TX	-	-	-	-	-
3560MHz	100	18.7M	17.801M	18.775M	17.805M
3625MHz	100	18.7M	17.801M	18.7M	17.795M
3690MHz	100	18.7M	17.801M	18.7M	17.8M
Band 48_LTE_20MHz_(16QAM)_2TX	-	-	-	-	-
3560MHz	100	18.75M	17.793M	18.75M	17.801M
3625MHz	100	18.8M	17.774M	18.75M	17.798M
3690MHz	100	18.75M	17.8M	18.8M	17.8M
Band 48_LTE_20MHz_(64QAM)_2TX	-	-	-	-	-
3560MHz	100	18.65M	17.8M	18.75M	17.807M
3625MHz	100	18.7M	17.801M	18.7M	17.803M
3690MHz	100	18.65M	17.806M	18.7M	17.807M

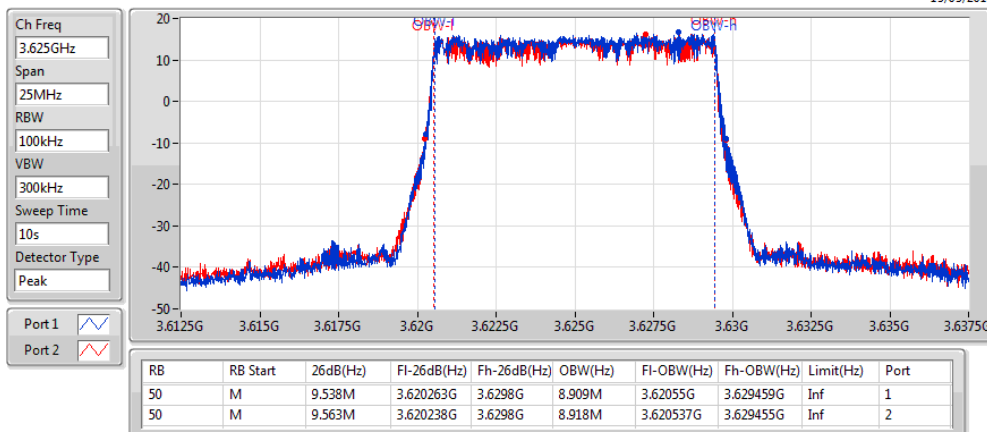
Port X-N dB = Port X 26dB down bandwidth; **Port X-OBW** = Port X 99% occupied bandwidth;

Band 48_LTE_10MHz_(QPSK)_2TX
EBW
3555MHz

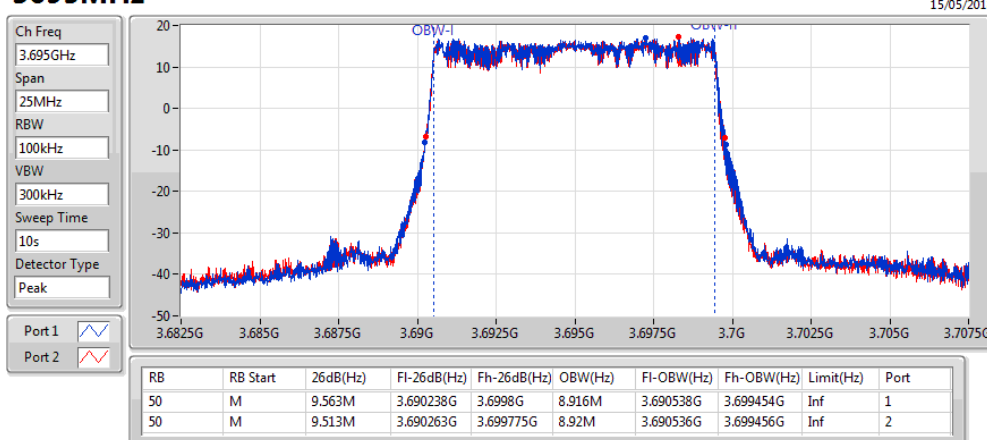
15/05/2018


Band 48_LTE_10MHz_(QPSK)_2TX
EBW
3625MHz

15/05/2018

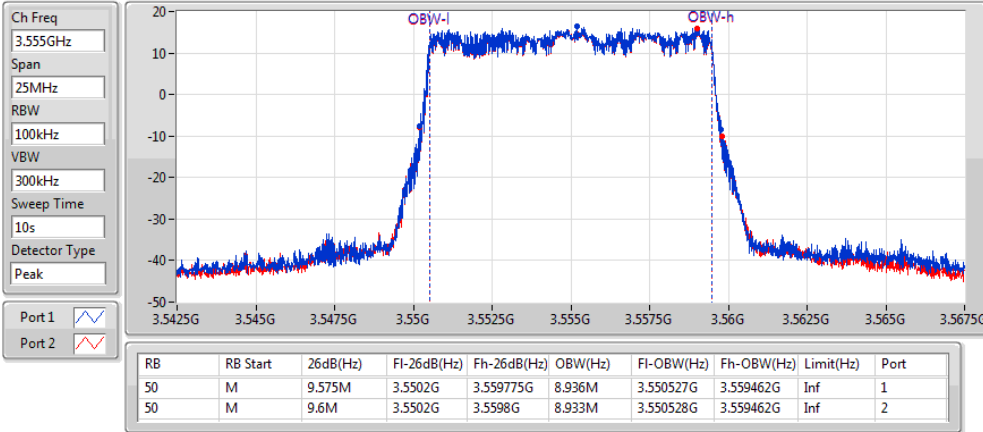

Band 48_LTE_10MHz_(QPSK)_2TX
EBW
3695MHz

15/05/2018

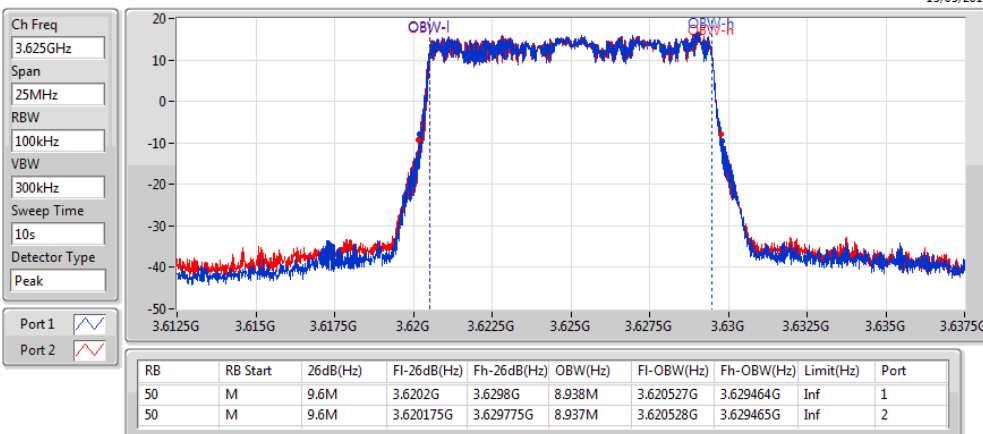


Band 48_LTE_10MHz_(16QAM)_2TX
EBW
3555MHz

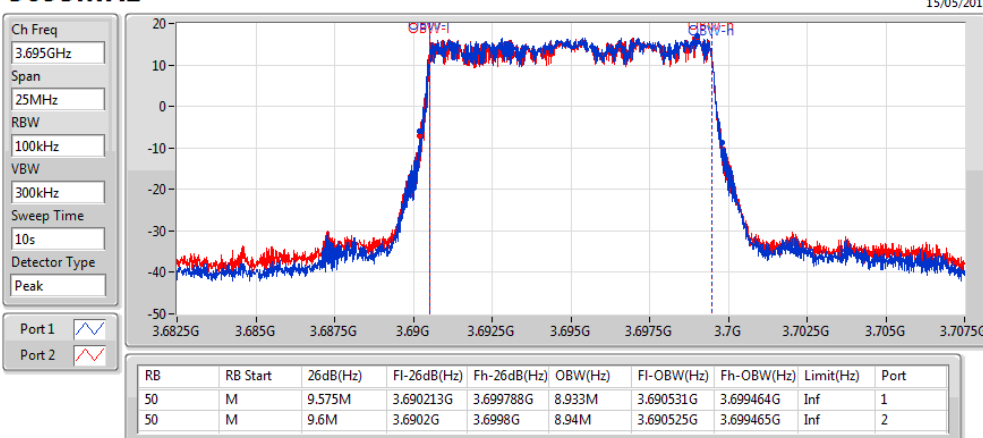
15/05/2018


Band 48_LTE_10MHz_(16QAM)_2TX
EBW
3625MHz

15/05/2018

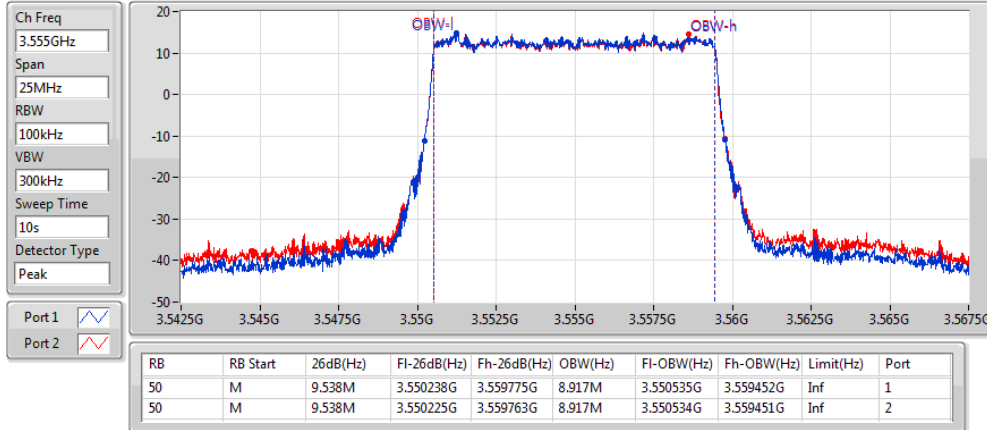

Band 48_LTE_10MHz_(16QAM)_2TX
EBW
3695MHz

15/05/2018

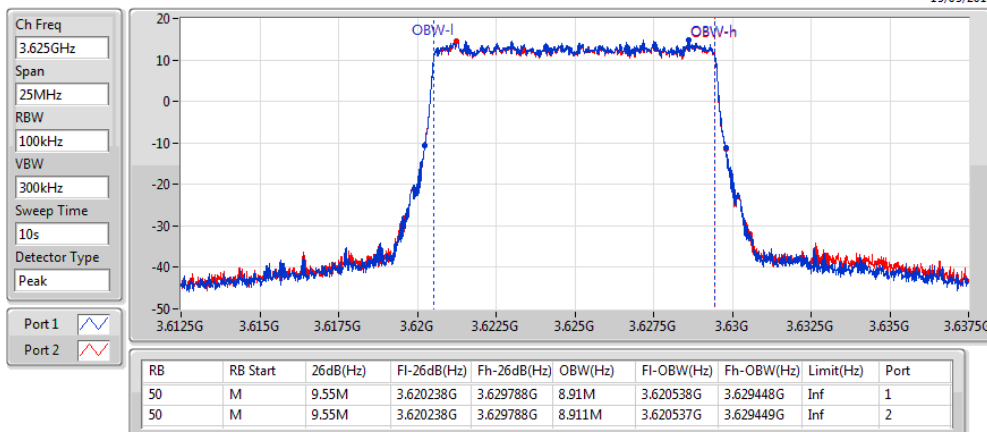


Band 48_LTE_10MHz_(64QAM)_2TX
EBW
3555MHz

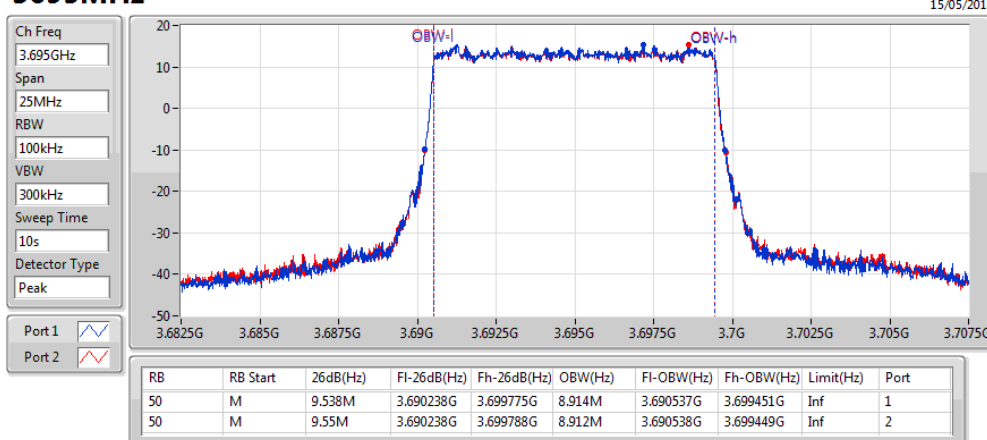
15/05/2018


Band 48_LTE_10MHz_(64QAM)_2TX
EBW
3625MHz

15/05/2018

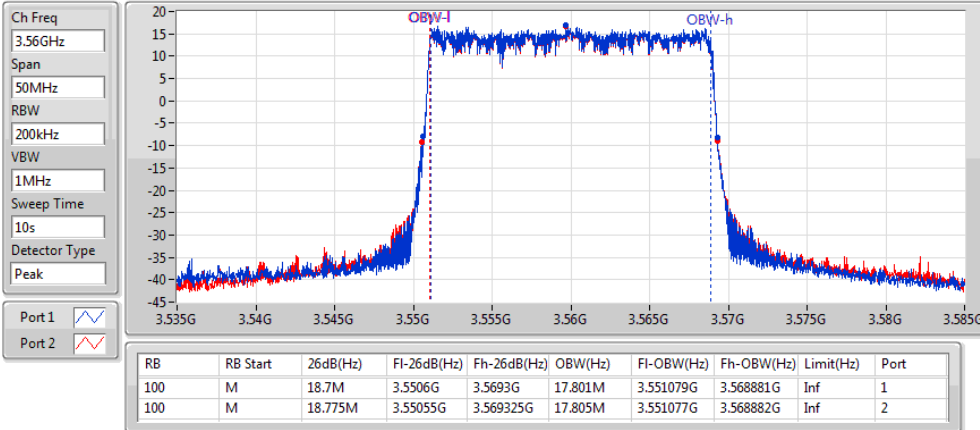

Band 48_LTE_10MHz_(64QAM)_2TX
EBW
3695MHz

15/05/2018

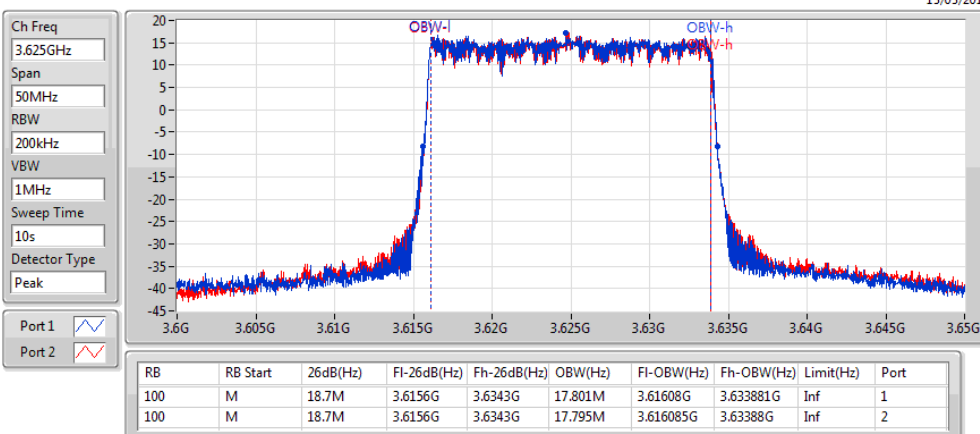


Band 48_LTE_20MHz_(QPSK)_2TX
EBW
3560MHz

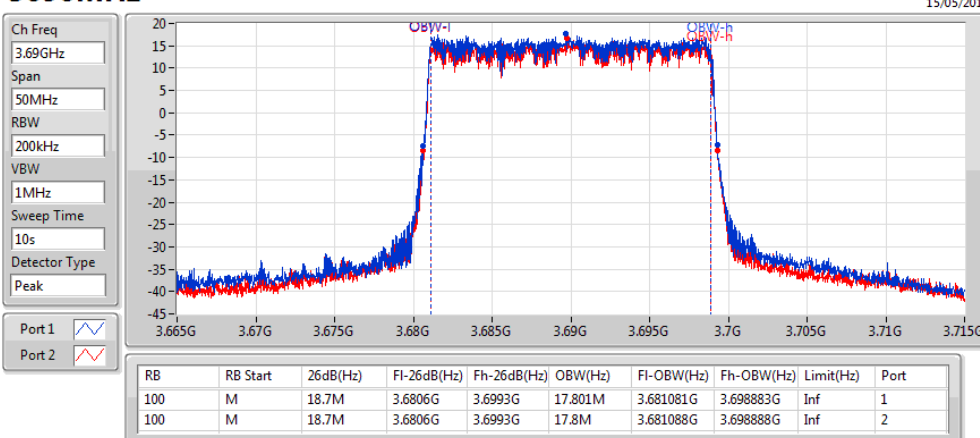
15/05/2018


Band 48_LTE_20MHz_(QPSK)_2TX
EBW
3625MHz

15/05/2018

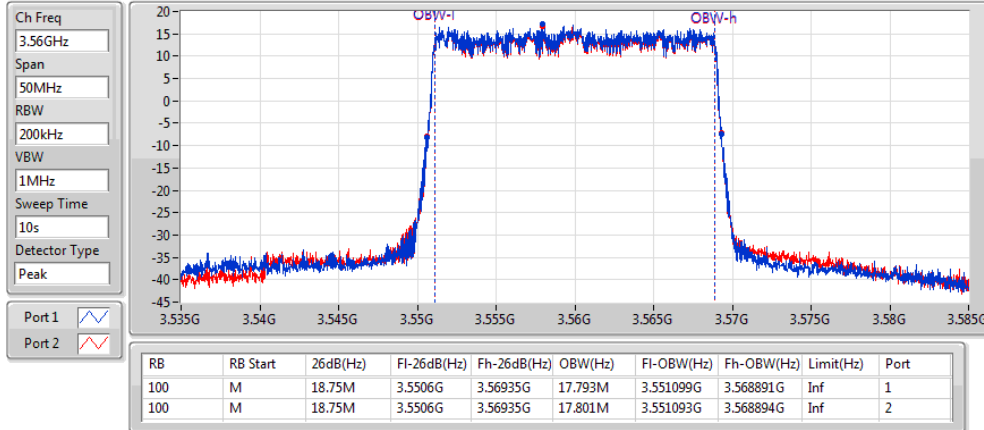

Band 48_LTE_20MHz_(QPSK)_2TX
EBW
3690MHz

15/05/2018

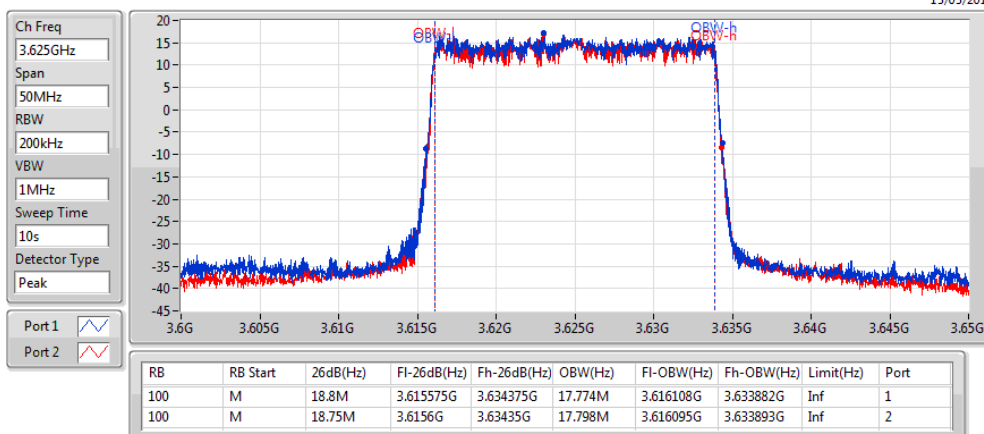


Band 48_LTE_20MHz_(16QAM)_2TX
EBW
3560MHz

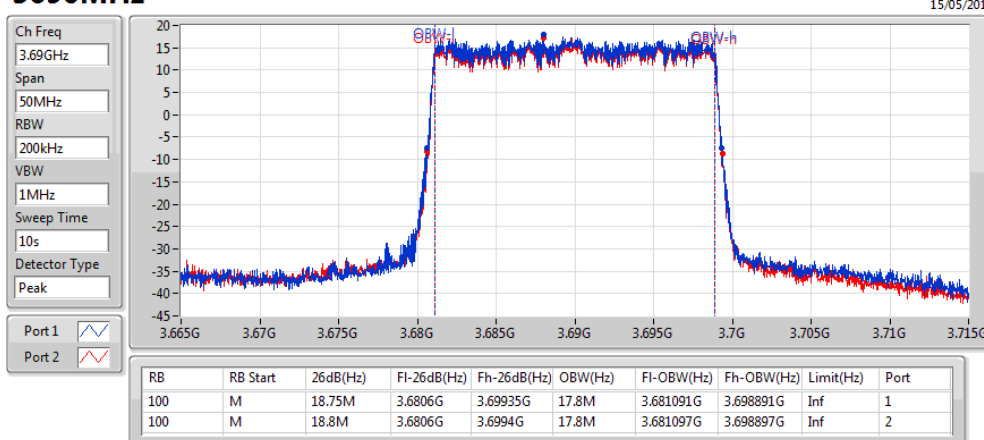
15/05/2018


Band 48_LTE_20MHz_(16QAM)_2TX
EBW
3625MHz

15/05/2018

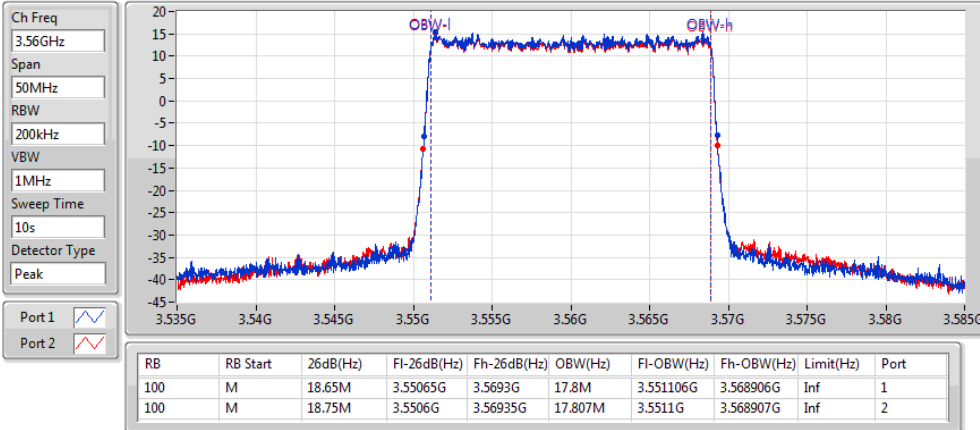

Band 48_LTE_20MHz_(16QAM)_2TX
EBW
3690MHz

15/05/2018

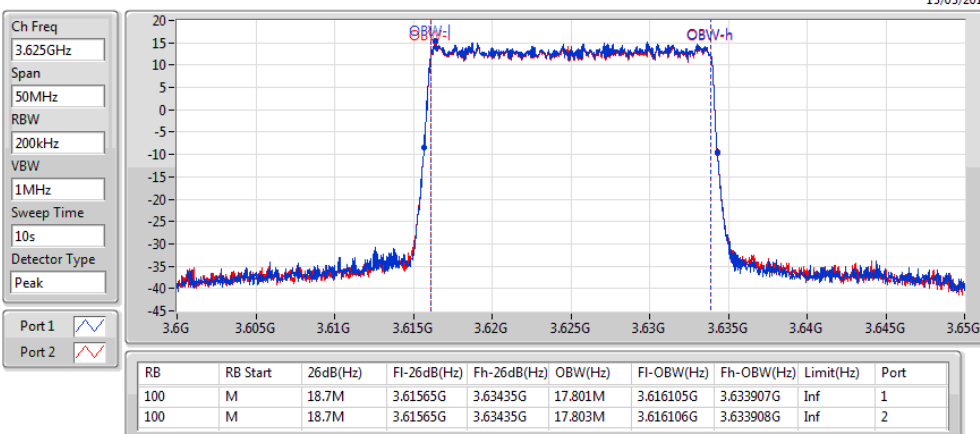


Band 48_LTE_20MHz_(64QAM)_2TX
EBW
3560MHz

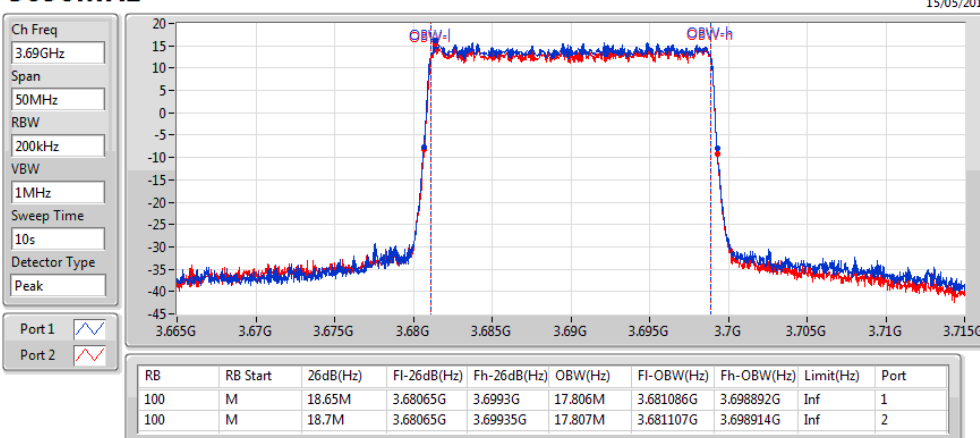
15/05/2018


Band 48_LTE_20MHz_(64QAM)_2TX
EBW
3625MHz

15/05/2018


Band 48_LTE_20MHz_(64QAM)_2TX
EBW
3690MHz

15/05/2018



**Summary**

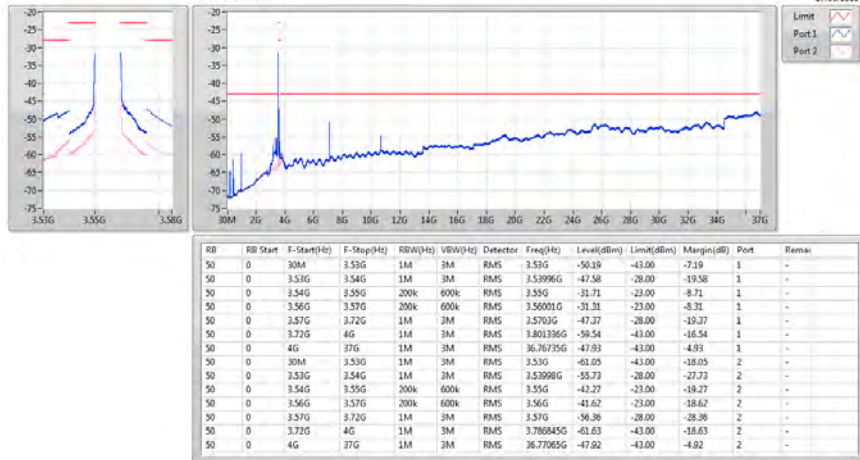
Mode	RB	F-Start (Hz)	F-Stop (Hz)	RBW (Hz)	Detector	Freq (Hz)	Level (dBm)	Limit (dBm)	Margin (dB)	Loss (dB)	Port	Remark	Result
Band 48_LTE_20MHz_(64QAM)_2TX	-	-	-	-	-	-	-	-	-	-	-	-	-
3690MHz	100	3.72G	4G	1M	RMS	3.727012G	-44.86	-43.00	-1.86	24.92	1	-	Pass

DG = Directional Gain;

Band 48_LTE_10MHz_(QPSK)_2TX

CSE-TX

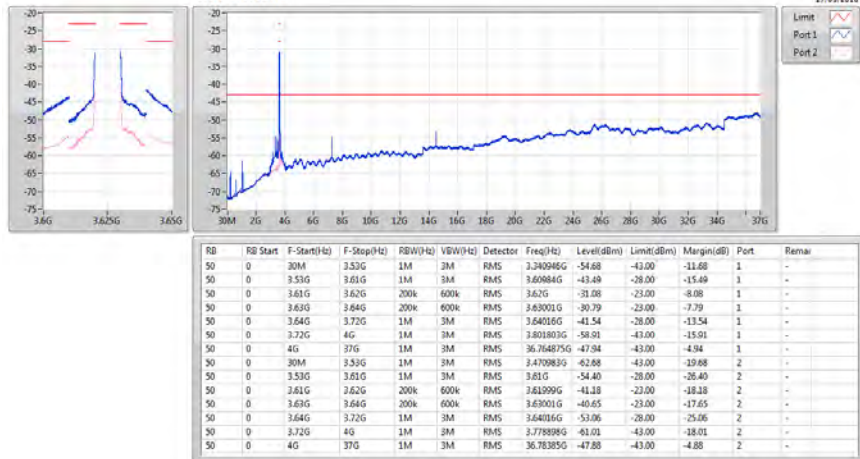
3555MHz



Band 48_LTE_10MHz_(QPSK)_2TX

CSE-TX

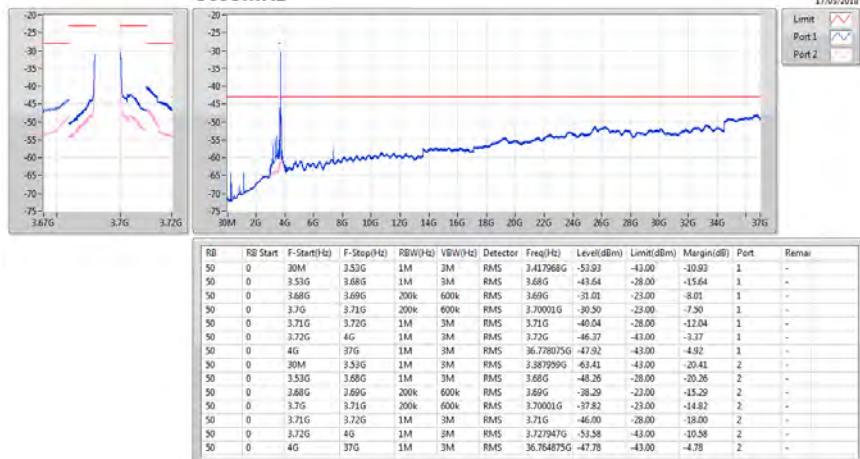
3625MHz



Band 48_LTE_10MHz_(QPSK)_2TX

CSE-TX

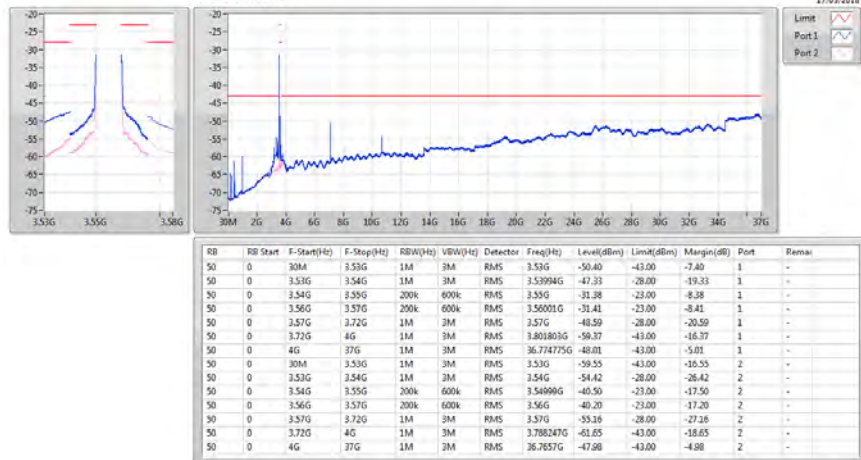
3695MHz



Band 48_LTE_10MHz_(16QAM)_2TX

CSE-TX

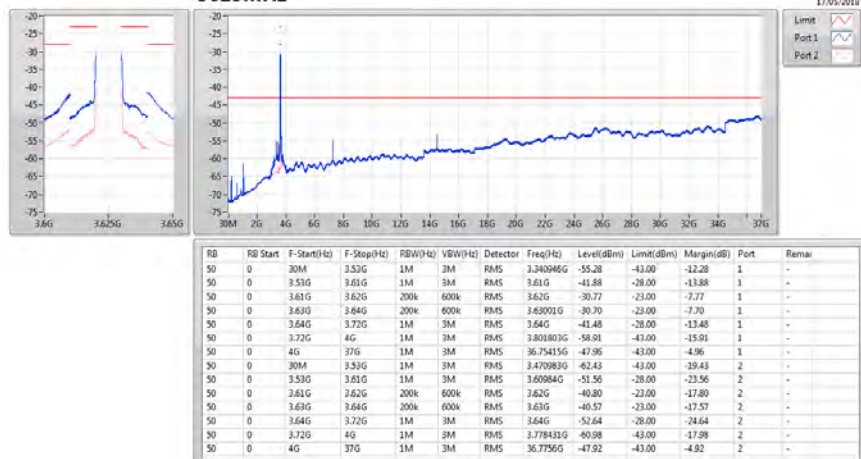
3555MHz



Band 48_LTE_10MHz_(16QAM)_2TX

CSE-TX

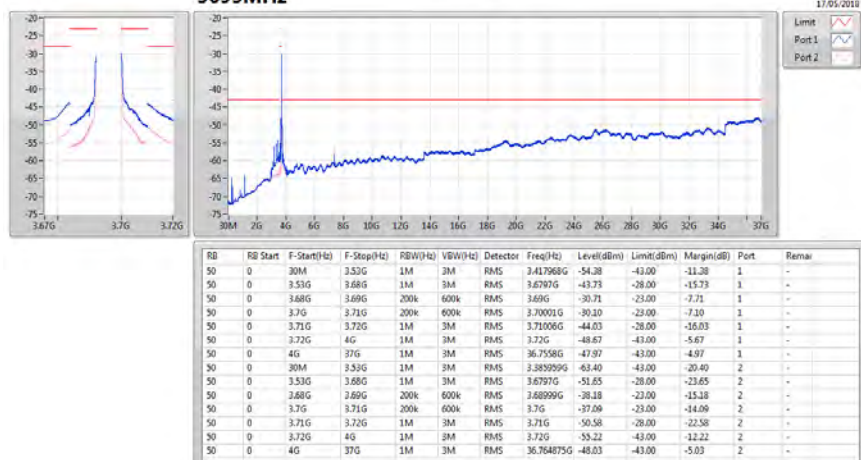
3625MHz



Band 48_LTE_10MHz_(16QAM)_2TX

CSE-TX

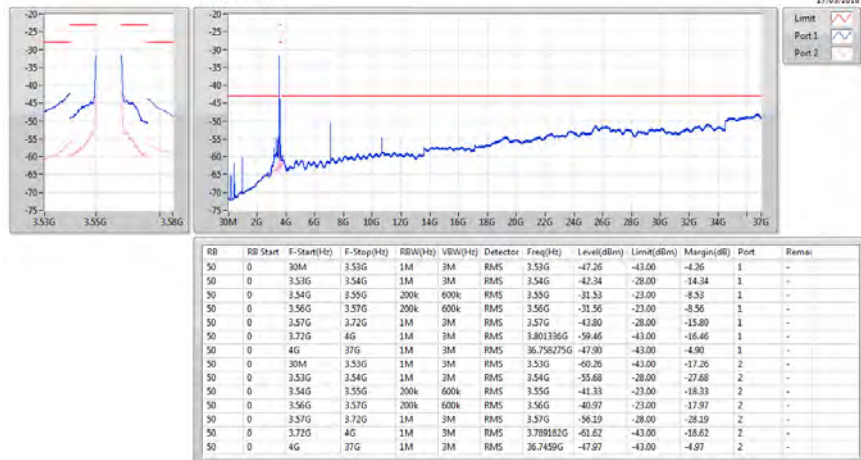
3695MHz



Band 48_LTE_10MHz_(64QAM)_2TX

CSE-TX

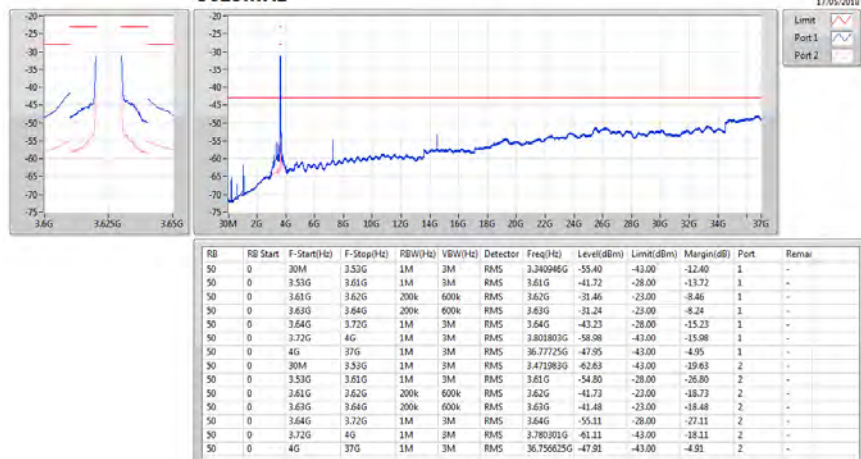
3555MHz



Band 48_LTE_10MHz_(64QAM)_2TX

CSE-TX

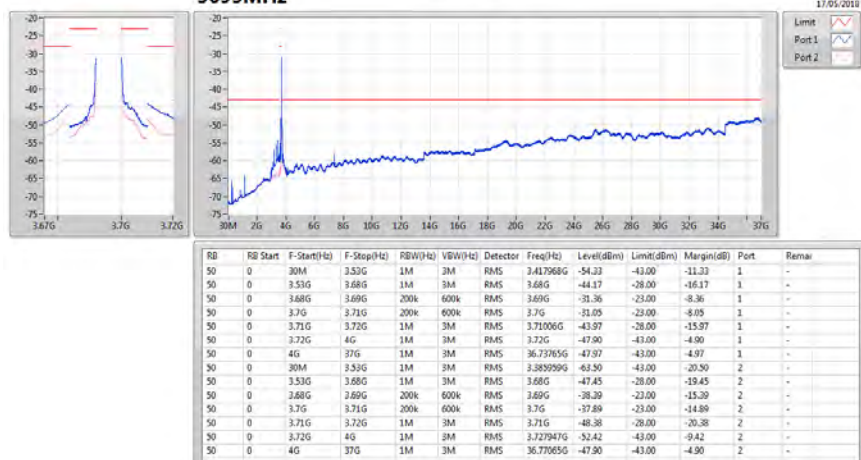
3625MHz



Band 48_LTE_10MHz_(64QAM)_2TX

CSE-TX

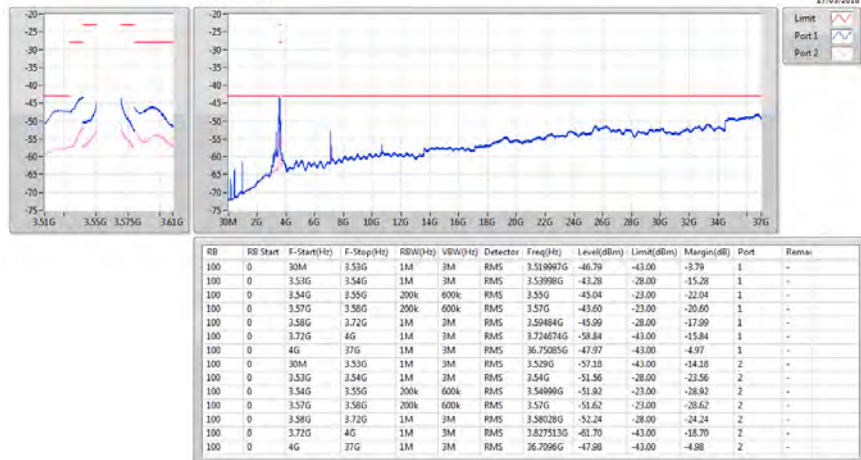
3695MHz



Band 48_LTE_20MHz_(QPSK)_2TX

CSE-TX

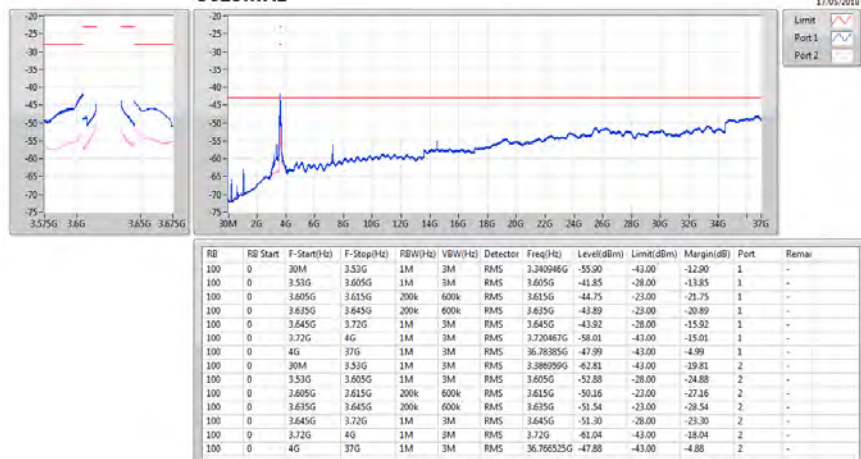
3560MHz



Band 48_LTE_20MHz_(QPSK)_2TX

CSE-TX

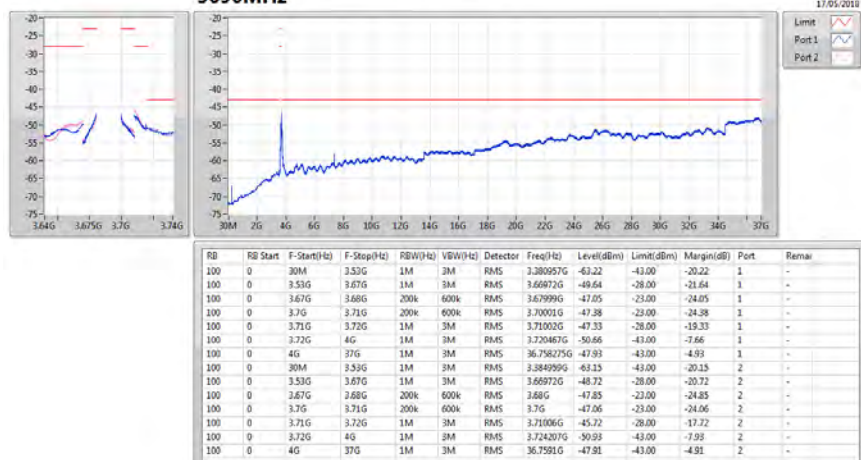
3625MHz



Band 48_LTE_20MHz_(QPSK)_2TX

CSE-TX

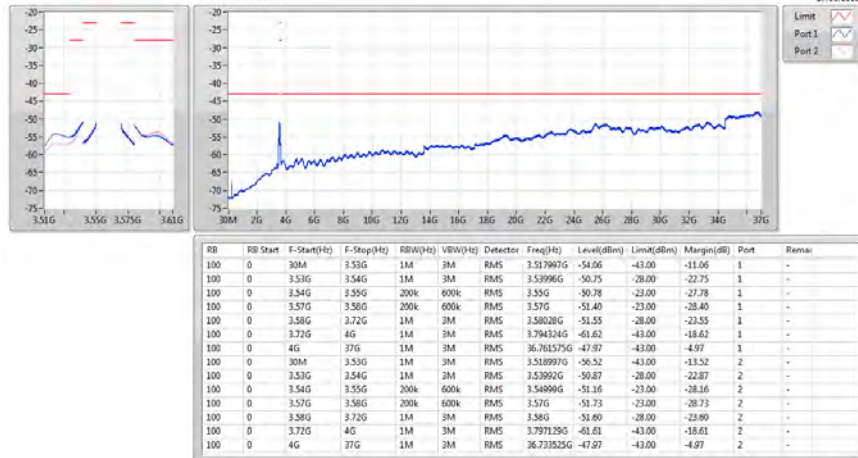
3690MHz



Band 48_LTE_20MHz_(16QAM)_2TX

CSE-TX

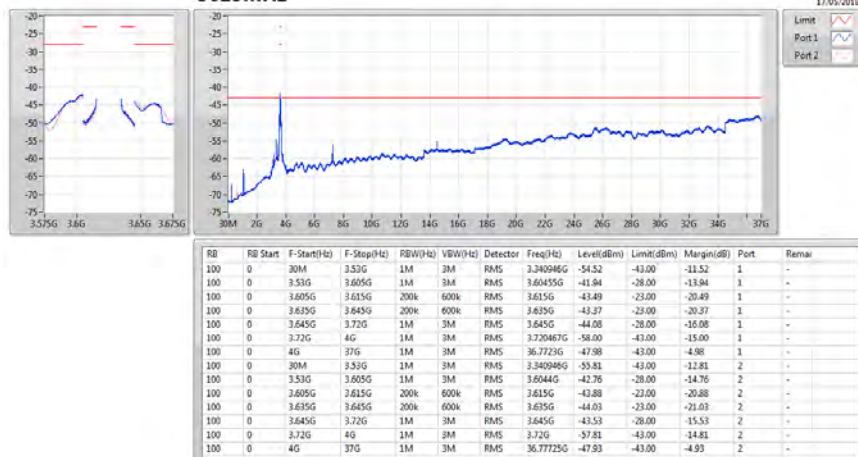
3560MHz



Band 48_LTE_20MHz_(16QAM)_2TX

CSE-TX

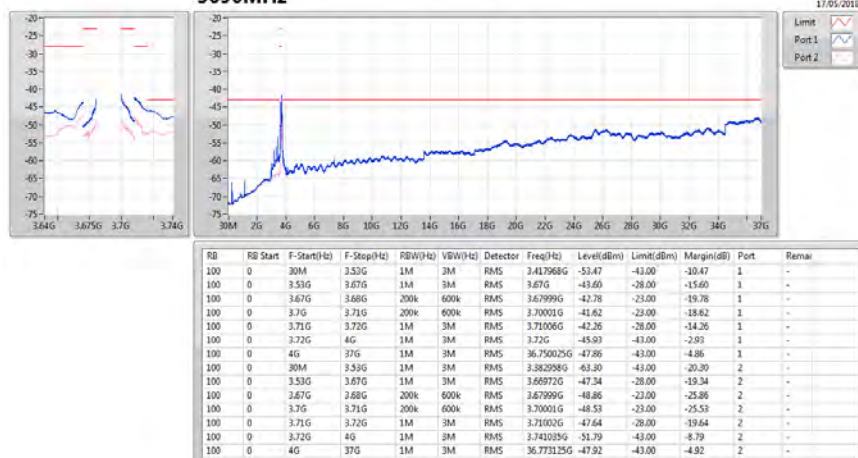
3625MHz



Band 48_LTE_20MHz_(16QAM)_2TX

CSE-TX

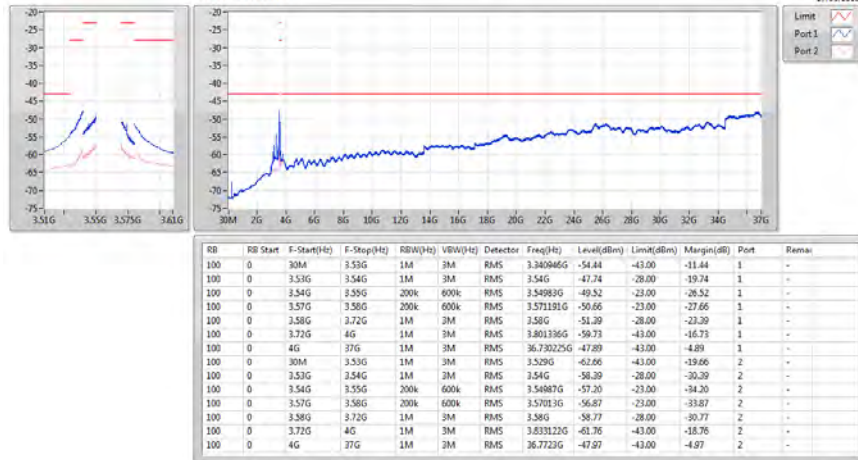
3690MHz



Band 48_LTE_20MHz_(64QAM)_2TX

CSE-TX

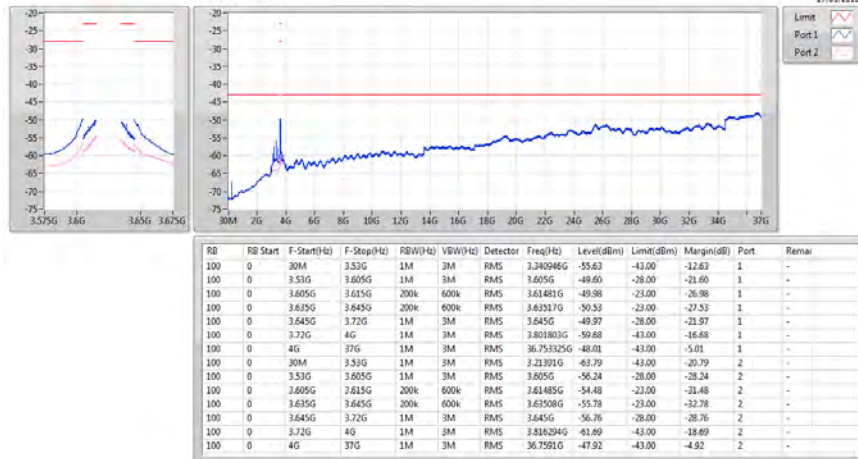
3560MHz



Band 48_LTE_20MHz_(64QAM)_2TX

CSE-TX

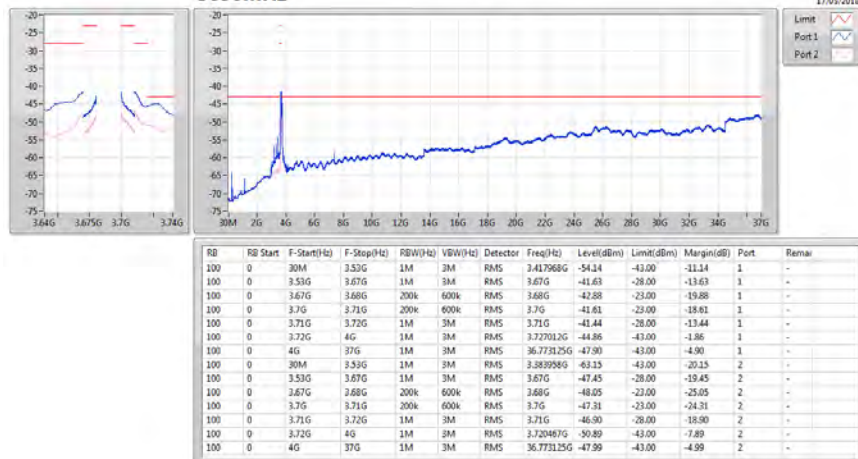
3625MHz



Band 48_LTE_20MHz_(64QAM)_2TX

CSE-TX

3690MHz





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) - Band-edge

Configurations	10MHz / QPSK / 3555 MHz
----------------	-------------------------

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3529.80	50.28	55.20	-4.92	49.77	6.78	30.39	36.66	103	154	Average	HORIZONTAL
2	3539.70	50.82	70.20	-19.38	50.27	6.79	30.42	36.66	103	154	Average	HORIZONTAL
3 •	3554.90	103.38			102.75	6.80	30.48	36.65	103	154	Average	HORIZONTAL
4	3570.10	51.25	70.20	-18.95	50.58	6.81	30.51	36.65	103	154	Average	HORIZONTAL

Item 3 is the fundamental frequency.

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3529.60	52.17	55.20	-3.03	51.66	6.78	30.39	36.66	235	141	Average	VERTICAL
2	3539.70	55.09	70.20	-15.11	54.54	6.79	30.42	36.66	235	141	Average	VERTICAL
3 •	3557.50	113.82			113.19	6.80	30.48	36.65	235	141	Average	VERTICAL
4	3570.50	55.72	70.20	-14.48	55.05	6.81	30.51	36.65	235	141	Average	VERTICAL

Item 3 is the fundamental frequency.

Configurations	10MHz / 16QAM / 3555 MHz
----------------	--------------------------

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3528.60	50.25	55.20	-4.95	49.74	6.78	30.39	36.66	113	46	Average	HORIZONTAL
2	3540.00	50.77	70.20	-19.43	50.22	6.79	30.42	36.66	113	46	Average	HORIZONTAL
3 •	3554.90	102.24			101.61	6.80	30.48	36.65	113	46	Average	HORIZONTAL
4	3570.50	51.07	70.20	-19.13	50.40	6.81	30.51	36.65	113	46	Average	HORIZONTAL

Item 3 is the fundamental frequency.

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3529.80	52.18	55.20	-3.02	51.67	6.78	30.39	36.66	232	170	Average	VERTICAL
2	3539.90	56.11	70.20	-14.09	55.56	6.79	30.42	36.66	232	170	Average	VERTICAL
3 •	3554.70	113.22			112.59	6.80	30.48	36.65	232	170	Average	VERTICAL
4	3570.20	55.09	70.20	-15.11	54.42	6.81	30.51	36.65	232	170	Average	VERTICAL

Item 3 is the fundamental frequency.

Configurations	10MHz / 64QAM / 3555 MHz
----------------	--------------------------

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3529.20	50.71	55.20	-4.49	50.20	6.78	30.39	36.66	100	48	Average	HORIZONTAL
2	3540.00	52.22	70.20	-17.98	51.67	6.79	30.42	36.66	100	48	Average	HORIZONTAL
3 •	3558.70	105.17	70.20	-18.23	104.54	6.80	30.48	36.65	100	48	Average	HORIZONTAL
4	3570.20	51.97	70.20	-18.23	51.30	6.81	30.51	36.65	100	48	Average	HORIZONTAL

Item 3 is the fundamental frequency.

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3529.80	52.49	55.20	-2.71	51.98	6.78	30.39	36.66	269	226	Average	VERTICAL
2	3539.90	56.40	70.20	-13.80	55.85	6.79	30.42	36.66	269	226	Average	VERTICAL
3 •	3558.90	112.89	70.20	-14.09	112.26	6.80	30.48	36.65	269	226	Average	VERTICAL
4	3570.10	56.11	70.20	-14.09	55.44	6.81	30.51	36.65	269	226	Average	VERTICAL

Item 3 is the fundamental frequency.

Configurations	10MHz / QPSK / 3625 MHz
----------------	-------------------------

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3608.80	51.65	70.20	-18.55	50.81	6.85	30.63	36.64	109	45	Average	HORIZONTAL
2 •	3624.80	104.78			103.85	6.87	30.69	36.63	109	45	Average	HORIZONTAL
3	3640.40	51.83	70.20	-18.37	50.86	6.88	30.72	36.63	109	45	Average	HORIZONTAL

Item 2 is the fundamental frequency.

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3609.80	57.02	70.20	-13.18	56.18	6.85	30.63	36.64	239	228	Average	VERTICAL
2 •	3624.80	113.24			112.31	6.87	30.69	36.63	239	228	Average	VERTICAL
3	3640.20	55.89	70.20	-14.31	54.92	6.88	30.72	36.63	239	228	Average	VERTICAL

Item 2 is the fundamental frequency.

Configurations	10MHz / 16QAM / 3625 MHz
----------------	--------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	3609.60	51.04	70.20	-19.16	50.20	6.85	30.63	36.64	111	48 Average	HORIZONTAL
2 •	3624.80	101.04			100.11	6.87	30.69	36.63	111	48 Average	HORIZONTAL
3	3641.60	50.80	70.20	-19.40	49.83	6.88	30.72	36.63	111	48 Average	HORIZONTAL

Item 2 is the fundamental frequency.

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	3609.60	56.08	70.20	-14.12	55.24	6.85	30.63	36.64	242	32 Average	VERTICAL
2 •	3624.80	113.28			112.35	6.87	30.69	36.63	242	32 Average	VERTICAL
3	3640.40	54.89	70.20	-15.31	53.92	6.88	30.72	36.63	242	32 Average	VERTICAL

Item 2 is the fundamental frequency.

Configurations	10MHz / 64QAM / 3625 MHz
----------------	--------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	3609.60	53.64	70.20	-16.56	52.80	6.85	30.63	36.64	107	46 Average	HORIZONTAL
2 •	3621.20	104.87			103.98	6.86	30.66	36.63	107	46 Average	HORIZONTAL
3	3640.20	53.43	70.20	-16.77	52.46	6.88	30.72	36.63	107	46 Average	HORIZONTAL

Item 2 is the fundamental frequency.

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	3609.60	57.19	70.20	-13.01	56.35	6.85	30.63	36.64	236	92 Average	VERTICAL
2 •	3621.20	113.16			112.27	6.86	30.66	36.63	236	92 Average	VERTICAL
3	3640.60	57.26	70.20	-12.94	56.29	6.88	30.72	36.63	236	92 Average	VERTICAL

Item 2 is the fundamental frequency.

Configurations	10MHz / QPSK / 3695 MHz
-----------------------	-------------------------

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3679.70	52.12	70.20	-18.08	50.98	6.92	30.84	36.62	107	46	Average	HORIZONTAL
2 •	3694.90	105.24			104.05	6.93	30.87	36.61	107	46	Average	HORIZONTAL
3	3710.30	51.89	70.20	-18.31	50.63	6.94	30.93	36.61	107	46	Average	HORIZONTAL
4	3720.40	51.15	55.20	-4.05	49.85	6.95	30.96	36.61	107	46	Average	HORIZONTAL

Item 2 is the fundamental frequency.

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3679.30	55.29	70.20	-14.91	54.15	6.92	30.84	36.62	239	56	Average	VERTICAL
2 •	3695.10	109.99			108.80	6.93	30.87	36.61	239	56	Average	VERTICAL
3	3710.10	54.65	70.20	-15.55	53.39	6.94	30.93	36.61	239	56	Average	VERTICAL
4	3720.40	52.19	55.20	-3.01	50.89	6.95	30.96	36.61	239	56	Average	VERTICAL

Item 2 is the fundamental frequency.

Configurations	10MHz / 16QAM / 3695 MHz
-----------------------	--------------------------

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3679.30	50.90	70.20	-19.30	49.76	6.92	30.84	36.62	101	43	Average	HORIZONTAL
2 •	3694.90	98.78			97.59	6.93	30.87	36.61	101	43	Average	HORIZONTAL
3	3710.30	51.02	70.20	-19.18	49.76	6.94	30.93	36.61	101	43	Average	HORIZONTAL
4	3720.60	51.07	55.20	-4.13	49.77	6.95	30.96	36.61	101	43	Average	HORIZONTAL

Item 2 is the fundamental frequency.

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3679.70	53.15	70.20	-17.05	52.01	6.92	30.84	36.62	238	33	Average	VERTICAL
2 •	3694.70	111.22			110.03	6.93	30.87	36.61	238	33	Average	VERTICAL
3	3710.20	52.83	70.20	-17.37	51.57	6.94	30.93	36.61	238	33	Average	VERTICAL
4	3720.80	52.05	55.20	-3.15	50.75	6.95	30.96	36.61	238	33	Average	VERTICAL

Item 2 is the fundamental frequency.

Configurations	10MHz / 64QAM / 3695 MHz
-----------------------	--------------------------

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3679.80	51.94	70.20	-18.26	50.80	6.92	30.84	36.62	119	44	Average	HORIZONTAL
2 •	3691.10	102.62			101.44	6.93	30.87	36.62	119	44	Average	HORIZONTAL
3	3710.10	52.09	70.20	-18.11	50.83	6.94	30.93	36.61	119	44	Average	HORIZONTAL
4	3724.80	51.31	55.20	-3.89	50.01	6.95	30.96	36.61	119	44	Average	HORIZONTAL

Item 2 is the fundamental frequency.

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3679.90	55.48	70.20	-14.72	54.34	6.92	30.84	36.62	243	60	Average	VERTICAL
2 •	3698.90	112.66			111.44	6.93	30.90	36.61	243	60	Average	VERTICAL
3	3710.10	54.70	70.20	-15.50	53.44	6.94	30.93	36.61	243	60	Average	VERTICAL
4	3724.80	52.16	55.20	-3.04	50.86	6.95	30.96	36.61	243	60	Average	VERTICAL

Item 2 is the fundamental frequency.

Configurations	20MHz / QPSK / 3560 MHz
----------------	-------------------------

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3529.80	50.36	55.20	-4.84	49.85	6.78	30.39	36.66	100	47	Average	HORIZONTAL
2	3539.90	52.58	70.20	-17.62	52.03	6.79	30.42	36.66	100	47	Average	HORIZONTAL
3 •	3565.30	103.38	70.20	-18.70	102.71	6.81	30.51	36.65	100	47	Average	HORIZONTAL
4	3580.30	51.50	70.20	-18.70	50.79	6.82	30.54	36.65	100	47	Average	HORIZONTAL

Item 3 is the fundamental frequency.

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3529.20	54.12	55.20	-1.08	50.74	6.78	30.39	33.79	261	226	Average	VERTICAL
2	3539.30	60.83	70.20	-9.37	57.40	6.79	30.42	33.78	261	226	Average	VERTICAL
3 •	3565.50	110.81	70.20	-9.05	107.26	6.81	30.51	33.77	261	226	Average	VERTICAL
4	3580.20	61.15	70.20	-9.05	57.55	6.82	30.54	33.76	261	226	Average	VERTICAL

Item 3 is the fundamental frequency.

Configurations	20MHz / 16QAM / 3560 MHz
----------------	--------------------------

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3529.40	50.62	55.20	-4.58	50.11	6.78	30.39	36.66	109	153	Average	HORIZONTAL
2	3539.90	51.86	70.20	-18.34	51.31	6.79	30.42	36.66	109	153	Average	HORIZONTAL
3 •	3560.30	98.11			97.48	6.80	30.48	36.65	109	153	Average	HORIZONTAL
4	3580.30	51.36	70.20	-18.84	50.65	6.82	30.54	36.65	109	153	Average	HORIZONTAL

Item 3 is the fundamental frequency.

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3529.90	53.29	55.20	-1.91	52.78	6.78	30.39	36.66	233	36	Average	VERTICAL
2	3540.00	57.75	70.20	-12.45	57.20	6.79	30.42	36.66	233	36	Average	VERTICAL
3 •	3560.30	109.24			108.61	6.80	30.48	36.65	233	36	Average	VERTICAL
4	3580.50	57.89	70.20	-12.31	57.18	6.82	30.54	36.65	233	36	Average	VERTICAL

Item 3 is the fundamental frequency.

Configurations	20MHz / 64QAM / 3560 MHz
----------------	--------------------------

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	3528.20	51.55	55.20	-3.65	51.04	6.78	30.39	36.66	100	47 Average	HORIZONTAL
2	3539.70	52.40	70.20	-17.80	51.85	6.79	30.42	36.66	100	47 Average	HORIZONTAL
3 •	3568.50	102.65			101.98	6.81	30.51	36.65	100	47 Average	HORIZONTAL
4	3580.30	52.38	70.20	-17.82	51.67	6.82	30.54	36.65	100	47 Average	HORIZONTAL

Item 3 is the fundamental frequency.

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	3529.90	53.47	55.20	-1.73	50.09	6.78	30.39	33.79	249	101 Average	VERTICAL
2	3540.00	59.57	70.20	-10.63	56.14	6.79	30.42	33.78	249	101 Average	VERTICAL
3 •	3551.70	110.20			106.73	6.80	30.45	33.78	249	101 Average	VERTICAL
4	3580.00	60.86	70.20	-9.34	57.26	6.82	30.54	33.76	249	101 Average	VERTICAL

Item 3 is the fundamental frequency.

Configurations	20MHz / QPSK / 3625 MHz
----------------	-------------------------

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3604.80	53.37	70.20	-16.83	52.53	6.85	30.63	36.64	100	46	Average	HORIZONTAL
2 •	3625.20	101.84			100.91	6.87	30.69	36.63	100	46	Average	HORIZONTAL
3	3645.20	53.03	70.20	-17.17	52.06	6.88	30.72	36.63	100	46	Average	HORIZONTAL

Item 2 is the fundamental frequency.

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3604.80	58.64	70.20	-11.56	57.80	6.85	30.63	36.64	232	92	Average	VERTICAL
2 •	3617.60	109.91			109.03	6.86	30.66	36.64	232	92	Average	VERTICAL
3	3645.20	58.42	70.20	-11.78	57.45	6.88	30.72	36.63	232	92	Average	VERTICAL

Item 2 is the fundamental frequency.

Configurations	20MHz / 16QAM / 3625 MHz
----------------	--------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	3604.40	52.64	70.20	-17.56	51.80	6.85	30.63	36.64	117	46 Average	HORIZONTAL
2 •	3625.20	102.32			101.39	6.87	30.69	36.63	117	46 Average	HORIZONTAL
3	3645.60	53.00	70.20	-17.20	51.99	6.89	30.75	36.63	117	46 Average	HORIZONTAL

Item 2 is the fundamental frequency.

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	3604.80	59.56	70.20	-10.64	58.72	6.85	30.63	36.64	268	94 Average	VERTICAL
2 •	3624.80	110.26			109.33	6.87	30.69	36.63	268	94 Average	VERTICAL
3	3645.40	58.81	70.20	-11.39	57.80	6.89	30.75	36.63	268	94 Average	VERTICAL

Item 2 is the fundamental frequency.

Configurations	20MHz / 64QAM / 3625 MHz
-----------------------	--------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	3604.60	53.06	70.20	-17.14	52.22	6.85	30.63	36.64	113	48 Average	HORIZONTAL
2 •	3616.80	102.68			101.80	6.86	30.66	36.64	113	48 Average	HORIZONTAL
3	3645.40	52.62	70.20	-17.58	51.61	6.89	30.75	36.63	113	48 Average	HORIZONTAL

Item 2 is the fundamental frequency.

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	3605.00	60.52	70.20	-9.68	59.68	6.85	30.63	36.64	230	94 Average	VERTICAL
2 •	3616.80	109.91			109.03	6.86	30.66	36.64	230	94 Average	VERTICAL
3	3645.00	59.63	70.20	-10.57	58.66	6.88	30.72	36.63	230	94 Average	VERTICAL

Item 2 is the fundamental frequency.

Configurations	20MHz / QPSK / 3690 MHz
----------------	-------------------------

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3669.90	52.37	70.20	-17.83	51.27	6.91	30.81	36.62	110	44	Average	HORIZONTAL
2 •	3695.10	100.14			98.95	6.93	30.87	36.61	110	44	Average	HORIZONTAL
3	3710.10	51.67	70.20	-18.53	50.41	6.94	30.93	36.61	110	44	Average	HORIZONTAL
4	3724.40	51.23	55.20	-3.97	49.93	6.95	30.96	36.61	110	44	Average	HORIZONTAL

Item 2 is the fundamental frequency.

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3669.90	58.26	70.20	-11.94	57.16	6.91	30.81	36.62	233	57	Average	VERTICAL
2 •	3682.70	109.91			108.77	6.92	30.84	36.62	233	57	Average	VERTICAL
3	3710.00	56.59	70.20	-13.61	55.33	6.94	30.93	36.61	233	57	Average	VERTICAL
4	3720.30	52.74	55.20	-2.46	51.44	6.95	30.96	36.61	233	57	Average	VERTICAL

Item 2 is the fundamental frequency.

Configurations	20MHz / 16QAM / 3690 MHz
----------------	--------------------------

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3669.70	53.06	70.20	-17.14	51.96	6.91	30.81	36.62	105	45	Average	HORIZONTAL
2 •	3690.10	101.57			100.39	6.93	30.87	36.62	105	45	Average	HORIZONTAL
3	3710.00	53.02	70.20	-17.18	51.76	6.94	30.93	36.61	105	45	Average	HORIZONTAL
4	3720.80	51.55	55.20	-3.65	50.25	6.95	30.96	36.61	105	45	Average	HORIZONTAL

Item 2 is the fundamental frequency.

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3669.70	57.38	70.20	-12.82	56.28	6.91	30.81	36.62	222	60	Average	VERTICAL
2 •	3682.50	109.04			107.90	6.92	30.84	36.62	222	60	Average	VERTICAL
3	3710.10	55.60	70.20	-14.60	54.34	6.94	30.93	36.61	222	60	Average	VERTICAL
4	3720.40	52.84	55.20	-2.36	51.54	6.95	30.96	36.61	222	60	Average	VERTICAL

Item 2 is the fundamental frequency.

Configurations	20MHz / 64QAM / 3690 MHz
----------------	--------------------------

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3669.90	53.90	70.20	-16.30	52.80	6.91	30.81	36.62	102	47	Average	HORIZONTAL
2 •	3681.70	103.29			102.15	6.92	30.84	36.62	102	47	Average	HORIZONTAL
3	3710.10	54.13	70.20	-16.07	52.87	6.94	30.93	36.61	102	47	Average	HORIZONTAL
4	3720.20	51.69	55.20	-3.51	50.39	6.95	30.96	36.61	102	47	Average	HORIZONTAL

Item 2 is the fundamental frequency.

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Antenna Factor	Preamplifier Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	3670.00	57.86	70.20	-12.34	56.76	6.91	30.81	36.62	241	58	Average	VERTICAL
2 •	3681.70	108.88			107.74	6.92	30.84	36.62	241	58	Average	VERTICAL
3	3710.00	57.14	70.20	-13.06	55.88	6.94	30.93	36.61	241	58	Average	VERTICAL
4	3720.00	53.22	55.20	-1.98	51.92	6.95	30.96	36.61	241	58	Average	VERTICAL

Item 2 is the fundamental frequency.



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

Configurations	10MHz / QPSK / 3555 MHz
-----------------------	-------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	7110.13	42.96	55.20	-12.24	33.35	8.18	36.80	35.37	112	47 Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	7109.96	42.97	55.20	-12.23	33.36	8.18	36.80	35.37	230	169 Average	VERTICAL

Configurations	10MHz / 16QAM / 3555 MHz
-----------------------	--------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	7109.97	42.94	55.20	-12.26	33.33	8.18	36.80	35.37	108	51 Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	7110.23	43.37	55.20	-11.83	33.76	8.18	36.80	35.37	234	147 Average	VERTICAL

Configurations	10MHz / 64QAM / 3555 MHz
----------------	--------------------------

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	7109.68	42.94	55.20	-12.26	33.33	8.18	36.80	35.37	106	45	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	7109.86	42.95	55.20	-12.25	33.34	8.18	36.80	35.37	238	167	Average	VERTICAL

Configurations	10MHz / QPSK / 3625 MHz
----------------	-------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor			
						dB	dB/m	dB	cm	deg	
1	7249.81	43.51	55.20	-11.69	33.60	8.24	37.00	35.33	110	56 Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor			
						dB	dB/m	dB	cm	deg	
1	7249.95	43.47	55.20	-11.73	33.56	8.24	37.00	35.33	227	171 Average	VERTICAL

Configurations	10MHz / 16QAM / 3625 MHz
-----------------------	--------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor			
						dB	dB/m	dB	cm	deg	
1	7250.08	43.50	55.20	-11.70	33.59	8.24	37.00	35.33	108	59 Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor			
						dB	dB/m	dB	cm	deg	
1	7249.54	43.49	55.20	-11.71	33.58	8.24	37.00	35.33	238	156 Average	VERTICAL



Field Strength of Spurious Radiation Result

Appendix H

Configurations	10MHz / 64QAM / 3625 MHz
-----------------------	--------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor				
						dB	dB/m	dB	cm	deg		
1	7249.91	43.46	55.20	-11.74	33.55	8.24	37.00	35.33	107	45	Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor				
						dB	dB/m	dB	cm	deg		
1	7250.48	43.49	55.20	-11.71	33.57	8.24	37.00	35.32	233	158	Average	VERTICAL

Configurations	10MHz / QPSK / 3695 MHz
-----------------------	-------------------------

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	7390.23	43.80	55.20	-11.40	33.77	8.08	37.23	35.28	110	41	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	7389.90	43.75	55.20	-11.45	33.72	8.08	37.23	35.28	231	165	Average	VERTICAL



Field Strength of Spurious Radiation Result

Appendix H

Configurations	10MHz / 16QAM / 3695 MHz
----------------	--------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg		
1	7390.32	43.77	55.20	-11.43	33.74	8.08	37.23	35.28	111	43	Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg		
1	7390.00	43.78	55.20	-11.42	33.75	8.08	37.23	35.28	241	172	Average	VERTICAL

Configurations	10MHz / 64QAM / 3695 MHz
-----------------------	--------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	7390.17	43.76	55.20	-11.44	33.73	8.08	37.23	35.28	100	42 Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	7390.18	43.77	55.20	-11.43	33.74	8.08	37.23	35.28	235	154 Average	VERTICAL



Field Strength of Spurious Radiation Result

Appendix H

Configurations	20MHz / QPSK / 3560 MHz
-----------------------	-------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	7119.70	42.89	55.20	-12.31	33.28	8.18	36.80	35.37	118	47 Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	7120.45	42.83	55.20	-12.37	33.22	8.18	36.80	35.37	223	159 Average	VERTICAL



Field Strength of Spurious Radiation Result

Appendix H

Configurations	20MHz / 16QAM / 3560 MHz
----------------	--------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg		
1	7120.42	42.87	55.20	-12.33	33.26	8.18	36.80	35.37	113	44	Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg		
1	7119.58	42.86	55.20	-12.34	33.25	8.18	36.80	35.37	236	164	Average	VERTICAL



Field Strength of Spurious Radiation Result

Appendix H

Configurations	20MHz / 64QAM / 3560 MHz
-----------------------	--------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	7119.65	42.87	55.20	-12.33	33.26	8.18	36.80	35.37	110	51 Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	7119.68	42.85	55.20	-12.35	33.24	8.18	36.80	35.37	235	169 Average	VERTICAL



Field Strength of Spurious Radiation Result

Appendix H

Configurations	20MHz / QPSK / 3625 MHz
----------------	-------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg		
1	7250.20	43.48	55.20	-11.72	33.57	8.24	37.00	35.33	110	49	Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg		
1	7250.37	43.51	55.20	-11.69	33.59	8.24	37.00	35.32	229	167	Average	VERTICAL



Field Strength of Spurious Radiation Result

Appendix H

Configurations	20MHz / 16QAM / 3625 MHz
----------------	--------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	7250.10	43.51	55.20	-11.69	33.60	8.24	37.00	35.33	115	42 Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg	
1	7249.52	43.52	55.20	-11.68	33.61	8.24	37.00	35.33	241	148 Average	VERTICAL

Configurations	20MHz / 64QAM / 3625 MHz
-----------------------	--------------------------

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	7250.04	43.55	55.20	-11.65	33.64	8.24	37.00	35.33	112	46 Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	CableAntenna Loss	Preamp Factor	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg	
1	7249.68	43.51	55.20	-11.69	33.60	8.24	37.00	35.33	237	172 Average	VERTICAL



Field Strength of Spurious Radiation Result

Appendix H

Configurations	20MHz / QPSK / 3690 MHz
----------------	-------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg		
1	7380.34	43.73	55.20	-11.47	33.70	8.08	37.23	35.28	112	51	Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg		
1	7380.49	43.74	55.20	-11.46	33.71	8.08	37.23	35.28	238	171	Average	VERTICAL

Configurations	20MHz / 16QAM / 3690 MHz
-----------------------	--------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor			
						dB	dB/m	dB	cm	deg	
1	7380.39	43.75	55.20	-11.45	33.72	8.08	37.23	35.28	113	45 Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor			
						dB	dB/m	dB	cm	deg	
1	7380.49	43.77	55.20	-11.43	33.74	8.08	37.23	35.28	239	136 Average	VERTICAL



Field Strength of Spurious Radiation Result

Appendix H

Configurations	20MHz / 64QAM / 3690 MHz
-----------------------	--------------------------

Horizontal

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg		
1	7380.26	43.75	55.20	-11.45	33.72	8.08	37.23	35.28	114	163	Average	HORIZONTAL

Vertical

	Freq	Level	Limit	Over	Read	CableAntenna	Preamp	A/Pos	T/Pos	Remark	Pol/Phase	
	MHz	dBuV/m	dBuV/m	dB	dBuV	Loss	Factor	Factor	cm	deg		
1	7380.42	43.78	55.20	-11.42	33.75	8.08	37.23	35.28	238	178	Average	VERTICAL



Summary

Mode	Voltage (V)	Temp (°C)	Ch (Hz)	Fl (Hz)	Fh (Hz)	Fl Limit (Hz)	Fh Limit (Hz)	Port	Result
Band 48			-	-	-	-	-	-	-
Band 48_LTE_10MHz_(QPSK)_2TX	110	-30	3.555G	3.550521G	3.559502G	3.55G	3.7G	1	Pass

Result

Mode	Voltage (V)	Temp (°C)	Ch (Hz)	Fl (Hz)	Fh (Hz)	Fl Limit (Hz)	Fh Limit (Hz)	Port	Result
Band 48_LTE_10MHz_Z_(QPSK)_2T_X			-	-	-	-	-	-	-
3555MHz	110	-30	3.555G	3.550521G	3.559502G	3.55G	3.7G	1	Pass
3555MHz	110	-20	3.555G	3.550519G	3.559502G	3.55G	3.7G	1	Pass
3555MHz	110	-10	3.555G	3.550522G	3.559501G	3.55G	3.7G	1	Pass
3555MHz	110	0	3.555G	3.550519G	3.559502G	3.55G	3.7G	1	Pass
3555MHz	110	10	3.555G	3.550525G	3.559497G	3.55G	3.7G	1	Pass
3555MHz	93.5	20	3.555G	3.550523G	3.559494G	3.55G	3.7G	1	Pass
3555MHz	110	20	3.555G	3.550518G	3.559502G	3.55G	3.7G	1	Pass
3555MHz	126.5	20	3.555G	3.550519G	3.559502G	3.55G	3.7G	1	Pass
3555MHz	110	30	3.555G	3.550518G	3.559502G	3.55G	3.7G	1	Pass
3555MHz	110	40	3.555G	3.550519G	3.559502G	3.55G	3.7G	1	Pass
3555MHz	110	50	3.555G	3.550519G	3.559501G	3.55G	3.7G	1	Pass
3695MHz	110	-30	3.695G	3.690516G	3.699496G	3.55G	3.7G	1	Pass
3695MHz	110	-20	3.695G	3.690515G	3.699495G	3.55G	3.7G	1	Pass
3695MHz	110	-10	3.695G	3.690515G	3.699496G	3.55G	3.7G	1	Pass
3695MHz	110	0	3.695G	3.690514G	3.699496G	3.55G	3.7G	1	Pass
3695MHz	110	10	3.695G	3.690514G	3.699495G	3.55G	3.7G	1	Pass
3695MHz	93.5	20	3.695G	3.690516G	3.699496G	3.55G	3.7G	1	Pass
3695MHz	110	20	3.695G	3.690515G	3.699495G	3.55G	3.7G	1	Pass
3695MHz	126.5	20	3.695G	3.690516G	3.699497G	3.55G	3.7G	1	Pass
3695MHz	110	30	3.695G	3.690515G	3.699496G	3.55G	3.7G	1	Pass
3695MHz	110	40	3.695G	3.690516G	3.699496G	3.55G	3.7G	1	Pass
3695MHz	110	50	3.695G	3.690517G	3.699496G	3.55G	3.7G	1	Pass
Band 48_LTE_10MHz_Z_(16QAM)_2T_X			-	-	-	-	-	-	-
3555MHz	110	-30	3.555G	3.550502G	3.559495G	3.55G	3.7G	1	Pass
3555MHz	110	-20	3.555G	3.550498G	3.55949G	3.55G	3.7G	1	Pass
3555MHz	110	-10	3.555G	3.550499G	3.559492G	3.55G	3.7G	1	Pass
3555MHz	110	0	3.555G	3.550505G	3.559495G	3.55G	3.7G	1	Pass
3555MHz	110	10	3.555G	3.550496G	3.55949G	3.55G	3.7G	1	Pass
3555MHz	93.5	20	3.555G	3.550493G	3.559489G	3.55G	3.7G	1	Pass
3555MHz	110	20	3.555G	3.550496G	3.55949G	3.55G	3.7G	1	Pass
3555MHz	126.5	20	3.555G	3.550491G	3.559491G	3.55G	3.7G	1	Pass
3555MHz	110	30	3.555G	3.550499G	3.559492G	3.55G	3.7G	1	Pass
3555MHz	110	40	3.555G	3.550499G	3.559493G	3.55G	3.7G	1	Pass
3555MHz	110	50	3.555G	3.550502G	3.559495G	3.55G	3.7G	1	Pass
3695MHz	110	-30	3.695G	3.690493G	3.699499G	3.55G	3.7G	1	Pass
3695MHz	110	-20	3.695G	3.690496G	3.699497G	3.55G	3.7G	1	Pass
3695MHz	110	-10	3.695G	3.690498G	3.699499G	3.55G	3.7G	1	Pass
3695MHz	110	0	3.695G	3.690492G	3.699498G	3.55G	3.7G	1	Pass
3695MHz	110	10	3.695G	3.690493G	3.699499G	3.55G	3.7G	1	Pass
3695MHz	93.5	20	3.695G	3.690496G	3.699497G	3.55G	3.7G	1	Pass



Frequency Stability Result

Appendix I

Mode	Voltage (V)	Temp (°C)	Ch (Hz)	Fl (Hz)	Fh (Hz)	Fl Limit (Hz)	Fh Limit (Hz)	Port	Result
3695MHz	110	20	3.695G	3.690496G	3.699497G	3.55G	3.7G	1	Pass
3695MHz	126.5	20	3.695G	3.690495G	3.699497G	3.55G	3.7G	1	Pass
3695MHz	110	30	3.695G	3.690493G	3.699499G	3.55G	3.7G	1	Pass
3695MHz	110	40	3.695G	3.690496G	3.699497G	3.55G	3.7G	1	Pass
3695MHz	110	50	3.695G	3.690496G	3.699498G	3.55G	3.7G	1	Pass
Band 48_LTE_10MHz_z_(64QAM)_2T_X			-	-	-	-	-	-	-
3555MHz	110	-30	3.555G	3.550527G	3.559468G	3.55G	3.7G	1	Pass
3555MHz	110	-20	3.555G	3.550527G	3.559468G	3.55G	3.7G	1	Pass
3555MHz	110	-10	3.555G	3.550528G	3.559468G	3.55G	3.7G	1	Pass
3555MHz	110	0	3.555G	3.550528G	3.559468G	3.55G	3.7G	1	Pass
3555MHz	110	10	3.555G	3.550527G	3.559468G	3.55G	3.7G	1	Pass
3555MHz	93.5	20	3.555G	3.550527G	3.559468G	3.55G	3.7G	1	Pass
3555MHz	110	20	3.555G	3.550527G	3.559468G	3.55G	3.7G	1	Pass
3555MHz	126.5	20	3.555G	3.550527G	3.559468G	3.55G	3.7G	1	Pass
3555MHz	110	30	3.555G	3.550528G	3.559468G	3.55G	3.7G	1	Pass
3555MHz	110	40	3.555G	3.550528G	3.559468G	3.55G	3.7G	1	Pass
3555MHz	110	50	3.555G	3.550528G	3.559468G	3.55G	3.7G	1	Pass
3695MHz	110	-30	3.695G	3.690523G	3.699472G	3.55G	3.7G	1	Pass
3695MHz	110	-20	3.695G	3.690523G	3.699472G	3.55G	3.7G	1	Pass
3695MHz	110	-10	3.695G	3.690523G	3.699472G	3.55G	3.7G	1	Pass
3695MHz	110	0	3.695G	3.690523G	3.699472G	3.55G	3.7G	1	Pass
3695MHz	110	10	3.695G	3.690522G	3.699473G	3.55G	3.7G	1	Pass
3695MHz	93.5	20	3.695G	3.690522G	3.699473G	3.55G	3.7G	1	Pass
3695MHz	110	20	3.695G	3.690523G	3.699472G	3.55G	3.7G	1	Pass
3695MHz	126.5	20	3.695G	3.690523G	3.699472G	3.55G	3.7G	1	Pass
3695MHz	110	30	3.695G	3.690523G	3.699472G	3.55G	3.7G	1	Pass
3695MHz	110	40	3.695G	3.690523G	3.699472G	3.55G	3.7G	1	Pass
3695MHz	110	50	3.695G	3.690522G	3.699472G	3.55G	3.7G	1	Pass
Band 48_LTE_20MHz_z_(QPSK)_2T_X			-	-	-	-	-	-	-
3560MHz	110	-30	3.56G	3.551087G	3.568901G	3.55G	3.7G	1	Pass
3560MHz	110	-20	3.56G	3.551085G	3.568892G	3.55G	3.7G	1	Pass
3560MHz	110	-10	3.56G	3.551081G	3.568903G	3.55G	3.7G	1	Pass
3560MHz	110	0	3.56G	3.551081G	3.568902G	3.55G	3.7G	1	Pass
3560MHz	110	10	3.56G	3.551081G	3.568903G	3.55G	3.7G	1	Pass
3560MHz	93.5	20	3.56G	3.551081G	3.568897G	3.55G	3.7G	1	Pass
3560MHz	110	20	3.56G	3.551086G	3.568888G	3.55G	3.7G	1	Pass
3560MHz	126.5	20	3.56G	3.551082G	3.568905G	3.55G	3.7G	1	Pass
3560MHz	110	30	3.56G	3.55108G	3.568897G	3.55G	3.7G	1	Pass
3560MHz	110	40	3.56G	3.551088G	3.568903G	3.55G	3.7G	1	Pass
3560MHz	110	50	3.56G	3.551088G	3.568903G	3.55G	3.7G	1	Pass
3690MHz	110	-30	3.69G	3.681082G	3.698897G	3.55G	3.7G	1	Pass
3690MHz	110	-20	3.69G	3.681078G	3.698897G	3.55G	3.7G	1	Pass



Frequency Stability Result

Appendix I

Mode	Voltage (V)	Temp (°C)	Ch (Hz)	Fl (Hz)	Fh (Hz)	Fl Limit (Hz)	Fh Limit (Hz)	Port	Result
3690MHz	110	-10	3.69G	3.681082G	3.698899G	3.55G	3.7G	1	Pass
3690MHz	110	0	3.69G	3.681078G	3.698897G	3.55G	3.7G	1	Pass
3690MHz	110	10	3.69G	3.68108G	3.698892G	3.55G	3.7G	1	Pass
3690MHz	93.5	20	3.69G	3.681086G	3.698888G	3.55G	3.7G	1	Pass
3690MHz	110	20	3.69G	3.681087G	3.698897G	3.55G	3.7G	1	Pass
3690MHz	126.5	20	3.69G	3.681081G	3.698899G	3.55G	3.7G	1	Pass
3690MHz	110	30	3.69G	3.681086G	3.698883G	3.55G	3.7G	1	Pass
3690MHz	110	40	3.69G	3.681085G	3.698895G	3.55G	3.7G	1	Pass
3690MHz	110	50	3.69G	3.681084G	3.698895G	3.55G	3.7G	1	Pass
Band 48_LTE_20MHz_z_(16QAM)_2T_X			-	-	-	-	-	-	-
3560MHz	110	-30	3.56G	3.551089G	3.568898G	3.55G	3.7G	1	Pass
3560MHz	110	-20	3.56G	3.551099G	3.568903G	3.55G	3.7G	1	Pass
3560MHz	110	-10	3.56G	3.55109G	3.568896G	3.55G	3.7G	1	Pass
3560MHz	110	0	3.56G	3.551099G	3.568903G	3.55G	3.7G	1	Pass
3560MHz	110	10	3.56G	3.55109G	3.568897G	3.55G	3.7G	1	Pass
3560MHz	93.5	20	3.56G	3.551092G	3.568893G	3.55G	3.7G	1	Pass
3560MHz	110	20	3.56G	3.551099G	3.568898G	3.55G	3.7G	1	Pass
3560MHz	126.5	20	3.56G	3.551094G	3.568884G	3.55G	3.7G	1	Pass
3560MHz	110	30	3.56G	3.551098G	3.568898G	3.55G	3.7G	1	Pass
3560MHz	110	40	3.56G	3.551105G	3.568909G	3.55G	3.7G	1	Pass
3560MHz	110	50	3.56G	3.551091G	3.568894G	3.55G	3.7G	1	Pass
3690MHz	110	-30	3.69G	3.681097G	3.698888G	3.55G	3.7G	1	Pass
3690MHz	110	-20	3.69G	3.681108G	3.698884G	3.55G	3.7G	1	Pass
3690MHz	110	-10	3.69G	3.681104G	3.698869G	3.55G	3.7G	1	Pass
3690MHz	110	0	3.69G	3.681097G	3.698891G	3.55G	3.7G	1	Pass
3690MHz	110	10	3.69G	3.681095G	3.698889G	3.55G	3.7G	1	Pass
3690MHz	93.5	20	3.69G	3.681102G	3.698883G	3.55G	3.7G	1	Pass
3690MHz	110	20	3.69G	3.681096G	3.698887G	3.55G	3.7G	1	Pass
3690MHz	126.5	20	3.69G	3.681105G	3.698883G	3.55G	3.7G	1	Pass
3690MHz	110	30	3.69G	3.681099G	3.698893G	3.55G	3.7G	1	Pass
3690MHz	110	40	3.69G	3.681094G	3.698889G	3.55G	3.7G	1	Pass
3690MHz	110	50	3.69G	3.681099G	3.698894G	3.55G	3.7G	1	Pass
Band 48_LTE_20MHz_z_(64QAM)_2T_X			-	-	-	-	-	-	-
3560MHz	110	-30	3.56G	3.551074G	3.568892G	3.55G	3.7G	1	Pass
3560MHz	110	-20	3.56G	3.55111G	3.568905G	3.55G	3.7G	1	Pass
3560MHz	110	-10	3.56G	3.551102G	3.568905G	3.55G	3.7G	1	Pass
3560MHz	110	0	3.56G	3.551075G	3.568896G	3.55G	3.7G	1	Pass
3560MHz	110	10	3.56G	3.55108G	3.568903G	3.55G	3.7G	1	Pass
3560MHz	93.5	20	3.56G	3.55108G	3.568903G	3.55G	3.7G	1	Pass
3560MHz	110	20	3.56G	3.55108G	3.568903G	3.55G	3.7G	1	Pass
3560MHz	126.5	20	3.56G	3.551075G	3.568896G	3.55G	3.7G	1	Pass
3560MHz	110	30	3.56G	3.551069G	3.568893G	3.55G	3.7G	1	Pass

Mode	Voltage (V)	Temp (°C)	Ch (Hz)	Fl (Hz)	Fh (Hz)	Fl Limit (Hz)	Fh Limit (Hz)	Port	Result
3560MHz	110	40	3.56G	3.551073G	3.568895G	3.55G	3.7G	1	Pass
3560MHz	110	50	3.56G	3.551069G	3.568894G	3.55G	3.7G	1	Pass
3690MHz	110	-30	3.69G	3.681092G	3.698896G	3.55G	3.7G	1	Pass
3690MHz	110	-20	3.69G	3.681092G	3.698897G	3.55G	3.7G	1	Pass
3690MHz	110	-10	3.69G	3.681097G	3.698902G	3.55G	3.7G	1	Pass
3690MHz	110	0	3.69G	3.681106G	3.698902G	3.55G	3.7G	1	Pass
3690MHz	110	10	3.69G	3.681097G	3.698902G	3.55G	3.7G	1	Pass
3690MHz	93.5	20	3.69G	3.681093G	3.698899G	3.55G	3.7G	1	Pass
3690MHz	110	20	3.69G	3.681085G	3.698887G	3.55G	3.7G	1	Pass
3690MHz	126.5	20	3.69G	3.681097G	3.698902G	3.55G	3.7G	1	Pass
3690MHz	110	30	3.69G	3.681097G	3.698902G	3.55G	3.7G	1	Pass
3690MHz	110	40	3.69G	3.681088G	3.698891G	3.55G	3.7G	1	Pass
3690MHz	110	50	3.69G	3.681096G	3.698902G	3.55G	3.7G	1	Pass

Bandwidth (MHz)	Test Channel	Frequency error (Hz)		
		E-TM 3.1 (QPSK)	E-TM 3.2 (16QAM)	E-TM 3.3 (64QAM)
10MHz	Bottom	2.55	-14.33	19.13
	Middle	-19.2	1.39	-3.31
	Top	2.83	-2.99	12.49

Bandwidth (MHz)	Test Channel	Frequency error (Hz)		
		E-TM 3.1 (QPSK)	E-TM 3.2 (16QAM)	E-TM 3.3 (64QAM)
20MHz	Bottom	-4.39	-2.08	5.82
	Middle	-9.18	67.9	-2.64
	Top	15.35	3.51	-7.31