FCC Test Report

Equipment	:	ePMP Force 190
Brand Name	:	Cambium Networks
Model No.	:	ePMP Force 190
FCC ID	:	Z8H89FT0031
Standard	:	47 CFR FCC Part 15.407
Operating Band	:	5150 MHz – 5250 MHz 5725 MHz – 5850 MHz
Applicant	:	Cambium Networks Inc. 3800 Golf Road, Suite 360 Rolling Meadows, IL 60008, USA
Manufacturer	:	Cambium Networks Inc. 3800 Golf Road, Suite 360 Rolling Meadows, IL 60008, USA
Function	:	☐ Outdoor; ☐ Indoor; ☒ Fixed P2P ☐ Client

The product sample received on Mar. 30, 2017 and completely tested on Aug. 17, 2017. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

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

Testing Laboratory
1190

Cliff Chang
SPORTON INTERNATIONAL INC.

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PHOTOGRAPHS OF EUT V01

Summary of Test Result

Conformance Test Specifications			
Report Clause	**Ref. Std. Clause**	**Description**	**Result**
1.1.2	15.203	Antenna Requirement	Complied
3.1	15.207	AC Power-line Conducted Emissions	Complied
3.2	15.407(a)	Emission Bandwidth	Complied
3.3	15.407(a)	Maximum Conducted Output Power	Complied
3.4	15.407(a)	Peak Power Spectral Density	Complied
3.5	15.407(b)	Unwanted Emissions	Complied
3.6	15.407(g)	Frequency Stability	Complied

Revision History

Report No.	Version	Description	Issued Date
FR733173-02	Rev. 01	Initial issue of report	Aug. 21, 2017
FR733173-02	Rev. 02	Adding Appendix C.2 (Power Table for Antenna 2)	Aug. 21, 2017

1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	Mode	Ch. Frequency (MHz)	Channel Number
5150-5250	QPSK, 5M	5155	19
		5160	
		5165	
		5170	
		5175	
		5180	
		5185	
		5190	
		5195	
		5200	
		5205	
		5210	
		5215	
		5220	
		5225	
		5230	
		5235	
		5240	
		5245	
5725-5850		5730	24
		5735	
		5740	
		5745	
		5750	
		5755	
		5760	
		5765	
		5770	
		5775	
		5780	
		5785	

		5790	
		5795	
		5800	
		5805	
		5810	
		5815	
		5820	
		5825	
		5830	
		5835	
		5840	
		5845	
5150-5250	QPSK, 40M	5190	2
		5230	
5725-5850		5755	2
		5795	

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	QPSK,5M	5	2TX
5.15-5.25GHz	QPSK,40M	40	2TX
5.725-5.85GHz	QPSK,5M	5	2TX
5.725-5.85GHz	QPSK,40M	40	2TX

Note:
- 5M and 40M use QPSK modulation.
- BWch is the nominal channel bandwidth.
- Nss-Min is the minimum number of spatial streams.
- Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.

1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	-	-	Printed	N/A	22
	2	-	-	Printed	N/A	22
2	1	-	-	Printed	N/A	2
	2	-	-	Printed	N/A	2

Note: Port 1 and Port 2 can be used as transmitting/receiving antenna.
Port 1 and Port 2 could transmit/receive simultaneously.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
QPSK,5M	0.923	0.348	5.089m	300
QPSK,40M	0.908	0.419	622.5u	3k

1.1.4 EUT Operational Condition

EUT Power Type	From PoE

1.2 Testing Applied Standards

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

- 47 CFR FCC Part 15
- ANSI C63.10-2013
- FCC KDB 789033 D02 v01r04
- FCC KDB 412172 D01 v01r01

1.3 Testing Location Information

Testing Location							
☐	HWA YA	ADD	:	No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.			
		TEL	:	886-3-327-3456	FAX	:	886-3-318-0055
☒	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-CB	Lucke Hsieh	22°C / 54%	Apr. 07, 2017~Aug. 17, 2017
Radiated Below 1 GHz (Test Mode: Mode 1)	03CH01-CB	Lucke Hsieh / Paul Chen	22°C / 54%	May 02, 2017
Radiated Below 1 GHz (Test Mode: Mode 2)	03CH01-CB	Lucke Hsieh / Paul Chen	22°C / 54%	Jul. 27, 2017
Radiated Above 1 GHz	03CH01-CB	Lucke Hsieh / Paul Chen	22°C / 54%	Mar. 30, 2017~Aug. 17, 2017
AC Conduction (Test Mode: Mode 1)	CO01-CB	Kane Liu	24°C / 55%	May 03, 2017
AC Conduction (Test Mode: Mode 2)	CO01-CB	Howard	22°C / 54%	Aug. 01, 2017

Test site Designation No. TW0006 with FCC
Test site registered number IC 4086D with Industry Canada.

1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%
Output Power Measurement	1.33 dB	Confidence levels of 95%
Power Density Measurement	1.27 dB	Confidence levels of 95%
Bandwidth Measurement	9.74×10^{-8}	Confidence levels of 95%
Frequency Stability	6.06×10^{-8}	Confidence levels of 95%

2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
QPSK,5M_Nss1_2TX	-
5155MHz	1
5200MHz	8
5245MHz	13
QPSK,40M_Nss1_2TX	-
5190MHz	8
5230MHz	10
QPSK,5M_Nss1_2TX	-
5730MHz	18
5785MHz	25
5845MHz	18
QPSK,40M_Nss1_2TX	-
5755MHz	18.5
5795MHz	19

2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	Normal Link
1	EUT with Ant. 1
2	EUT with Ant. 2
For operating mode 2 is the worst case and it was record in this test report.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emission Bandwidth Maximum Conducted Output Power Peak Power Spectral Density Frequency Stability Unwanted Emissions
Test Condition	Conducted measurement at transmit chains
Test Mode	EUT with Ant. 1
Because Ant.1 & Ant.2 are the same type antennas, only the higher gain antenna “Ant.1” was tested.	

The Worst Case Mode for Following Conformance Tests	
Tests Item	Unwanted Emissions
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	Normal Link
1	EUT with Ant. 1
2	EUT with Ant. 2
For operating mode 1 is the worst case and it was record in this test report.	
Operating Mode > 1GHz	CTX
Test Mode	EUT with Ant.1
Because Ant.1 & Ant.2 are the same type antennas, only the higher gain antenna “Ant.1” was tested.	

Note: 1. The EUT can only be used at Z axis position.
2. PoE information as below:
The EUT was powered by PoE, and the PoE was for measurement only, would not be marketed.

Support Unit	Brand	Model
PoE	Cambium	G1021-300-0265

2.3 EUT Operation during Test

For CTX Mode:

The EUT was programmed to be in continuously transmitting mode.

For Normal Link:

During the test, the EUT operation to normal function.

2.4 Support Equipment

For Test Site No: CO01-CB

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB*2	DELL	E6430	DoC
2	PoE	Cambium	G1021-300-0265	DoC

For Test Site No: 03CH01-CB (Below 1 GHz)

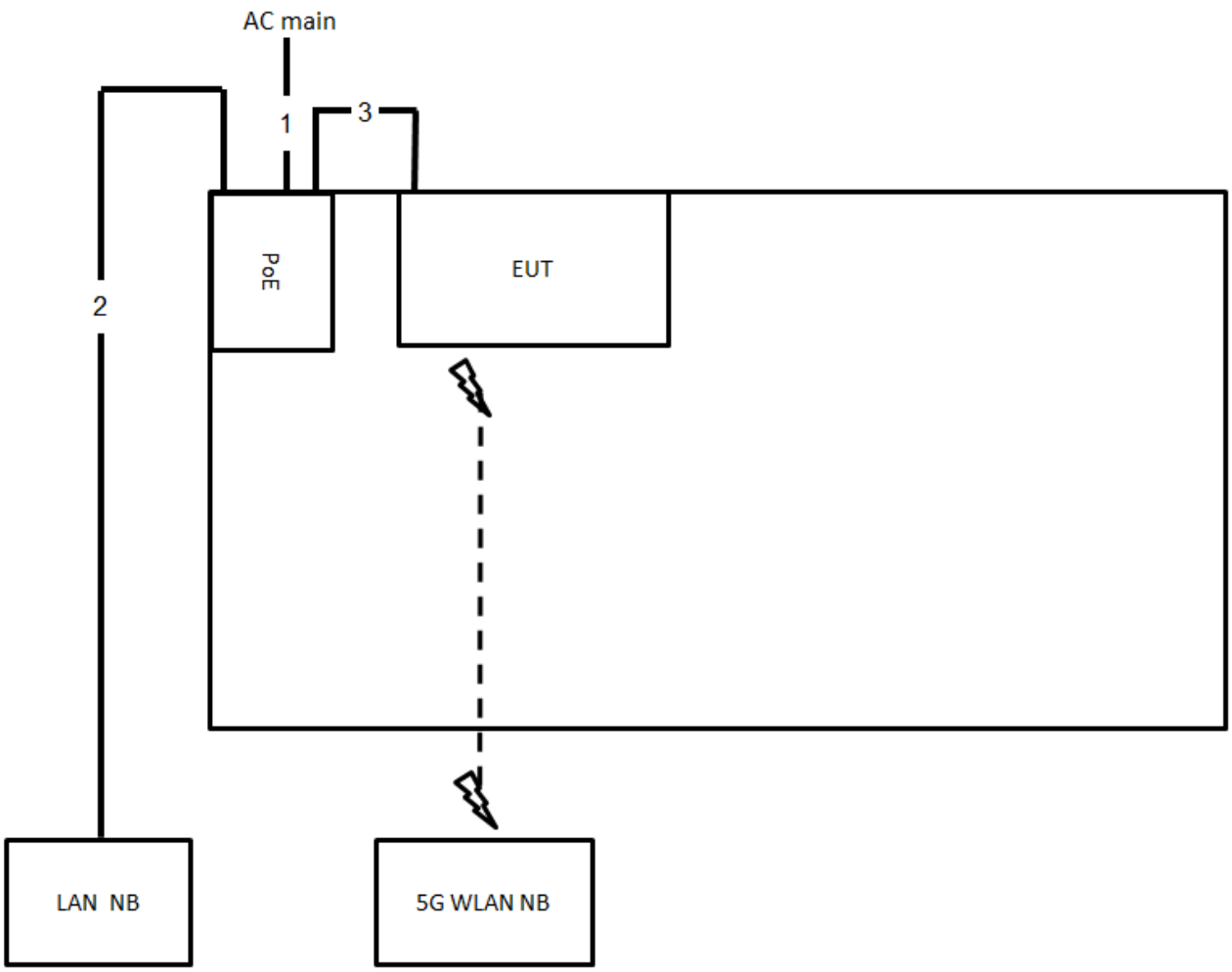
Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB*2	DELL	E4300	DoC
2	PoE	Cambium	G1021-300-0265	DoC

For Test Site No: 03CH01-CB (Above 1 GHz) / TH01-CB

Support Equipment				
No.	**Equipment**	**Brand Name**	**Model Name**	**FCC ID**
1	NB	DELL	E4300	DoC
2	PoE	Cambium	G1021-300-0265	DoC

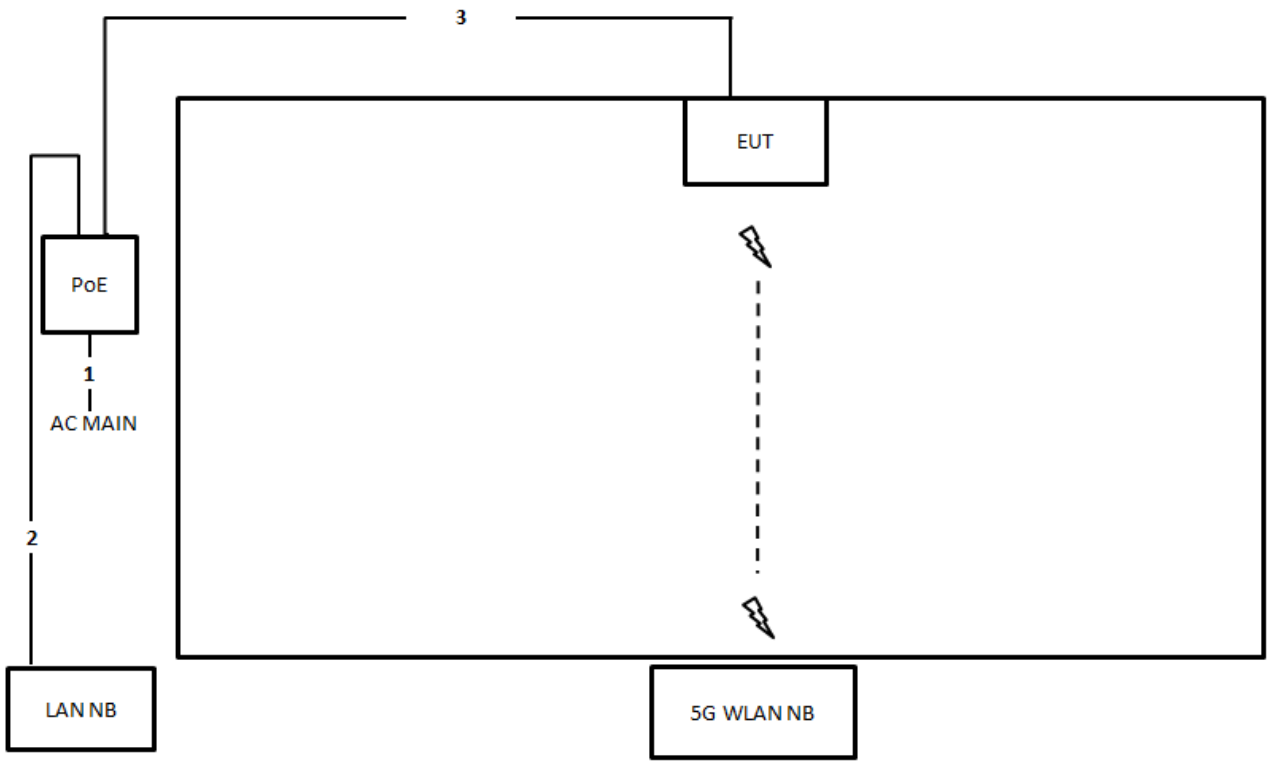
2.5 Test Setup Diagram

Test Setup Diagram – AC Line Conducted Emission Test



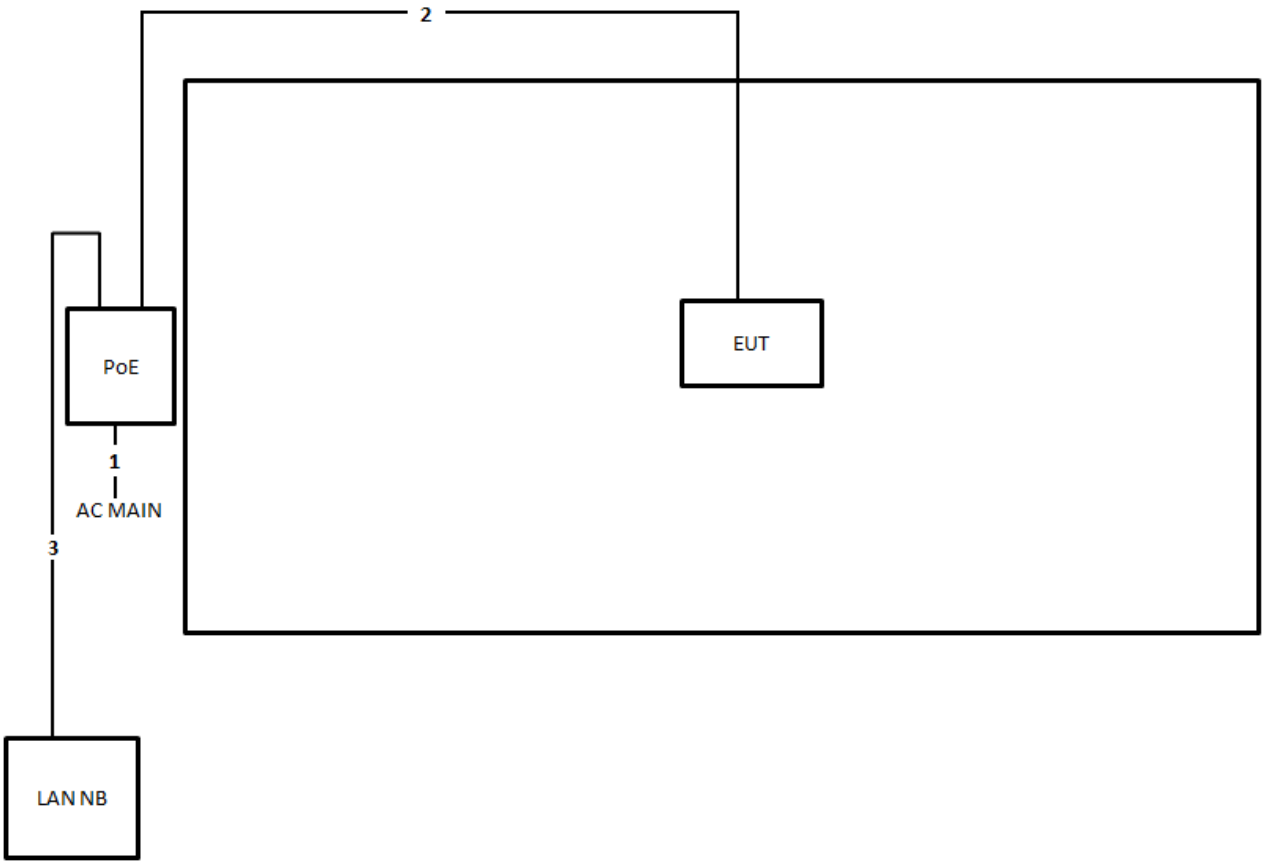
Item	Connection	Shielded	Length
1	Power cable	No	1m
2	RJ-45 cable	No	10m
3	RJ-45 cable	No	1m

Test Setup Diagram - Radiated Test < 1GHz



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

Test Setup Diagram - Radiated Test > 1GHz



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

3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Measuring Instruments

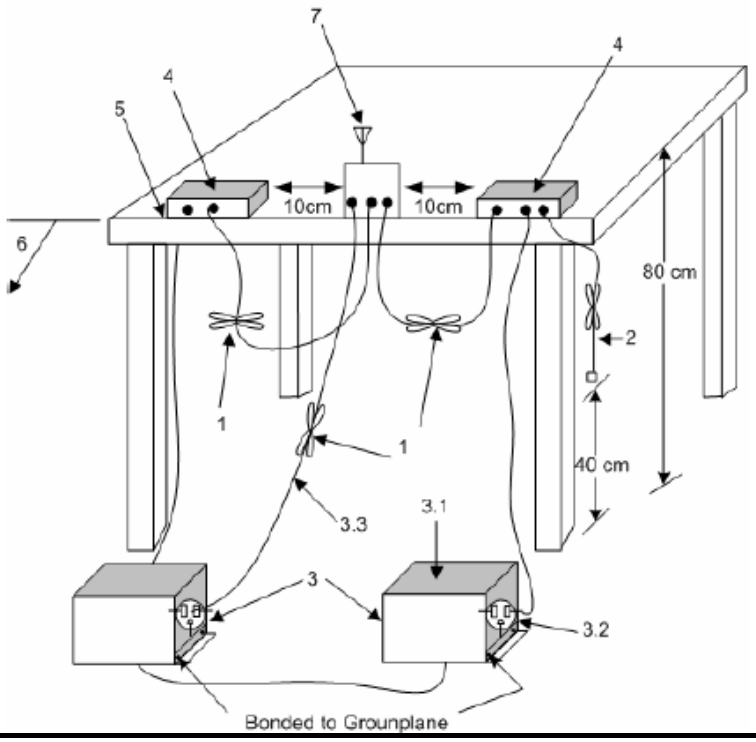
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
☒ Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup

AC Power-line Conducted Emissions



3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

Emission Bandwidth Limit	
UNII Devices	
☒	For the 5.15-5.25 GHz band, N/A
☐	For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
☐	For the 5.47-5.725 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
☒	For the 5.725-5.85 GHz band, 6 dB emission bandwidth ≥ 500kHz.
LE-LAN Devices	
☐	For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
☐	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.725-5.85 GHz band, 6 dB emission bandwidth ≥ 500kHz.

3.2.2 Measuring Instruments

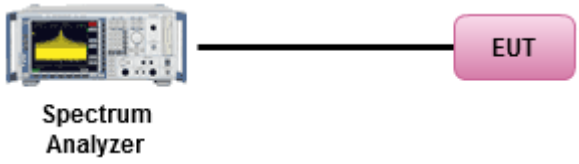
Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

Test Method		
▪	For the emission bandwidth shall be measured using one of the options below:	
	☒	Refer as FCC KDB 789033, clause C for EBW and clause D for OBW measurement.
	☐	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.
	☒	Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.

3.2.4 Test Setup

Emission Bandwidth



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
UNII Devices	
☒	For the 5.15-5.25 GHz band:
	▪ Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6). e.i.r.p. at any elevation angle above 30 degrees ≤ 125mW [21dBm]
	▪ Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6)
	▪ Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W If G_{TX} > 23 dBi, then P_{Out} = 30 – (G_{TX} – 23).
	▪ Mobile or Portable Client: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW. If G_{TX} > 6 dBi, then P_{Out} = 24 – (G_{TX} – 6).
☐	For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If G_{TX} > 6 dBi, then P_{Out} = 24 – (G_{TX} – 6).
☐	For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If G_{TX} > 6 dBi, then P_{Out} = 24 – (G_{TX} – 6).
☒	For the 5.725-5.85 GHz band:
	▪ Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6).
	▪ Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
LE-LAN Devices	
☐	For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
☐	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
☐	For the 5.725-5.85 GHz band:
	▪ Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If G_{TX} > 6 dBi, then P_{Out} = 30 – (G_{TX} – 6).
	▪ Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
P_{Out} = maximum conducted output power in dBm, **G_{TX}** = the maximum transmitting antenna directional gain in dBi.	

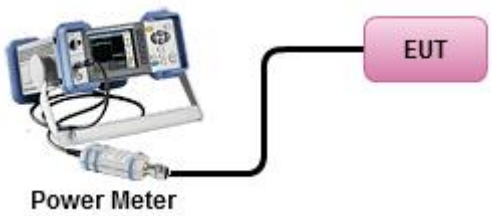
3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.3.3 Test Procedures

Test Method	
▪ Maximum Conducted Output Power	
	Average over on/off periods with duty factor
	☐ Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).
	☐ Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)
	Wideband RF power meter and average over on/off periods with duty factor
	☒ Refer as FCC KDB 789033, clause E Method PM-G (using an RF average power meter).
▪ For conducted measurement.	
	▪ If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
	▪ If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \ldots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup

RF Output Power (Power Meter)


3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C

3.4 Peak Power Spectral Density

3.4.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit	
UNII Devices	
☒	For the 5.15-5.25 GHz band:
	▪ Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If G_{TX} > 6 dBi, then P_{Out} = 17 – (G_{TX} – 6).
	▪ Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If G_{TX} > 6 dBi, then P_{Out} = 17 – (G_{TX} – 6).
	▪ Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If G_{TX} > 23 dBi, then P_{Out} = 17 – (G_{TX} – 23).
	▪ Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G_{TX} > 6 dBi, then PPSD= 11 – (G_{TX} – 6)..
☐	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G_{TX} > 6 dBi, then PPSD= 11 – (G_{TX} – 6).
☐	For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If G_{TX} > 6 dBi, then PPSD= 11 – (G_{TX} – 6).
☒	For the 5.725-5.85 GHz band:
	▪ Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If G_{TX} > 6 dBi, then PPSD= 30 – (G_{TX} – 6).
	▪ Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
LE-LAN Devices	
☐	For the 5.15-5.25 GHz band, the peak power spectral density (PPSD) ≤ 4 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 10 dBm/MHz.
☐	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 17 dBm/MHz.
	▪ e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where θ is the angle above the local horizontal plane (of the Earth) as shown below: -13 dBW/MHz for 0° ≤ θ < 8° ; -13 − 0.716 (θ-8) dBW/MHz for 8° ≤ θ < 40° -35.9 − 1.22 (θ-40) dBW/MHz for 40° ≤ θ ≤ 45° ; -42 dBW/MHz for θ > 45°
☐	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 17 dBm/MHz.
☐	For the 5.725-5.85 GHz band:
	▪ Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If G_{TX} > 6 dBi, then PPSD= 30 – (G_{TX} – 6).
	▪ Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
PPSD = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz **G_{TX}** = the maximum transmitting antenna directional gain in dBi.	

3.4.2 Measuring Instruments

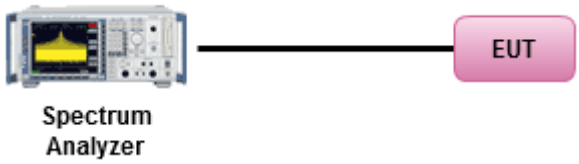
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method			
▪ Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall be measured using below options:			
	☐ Refer as FCC KDB 789033, F)5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth		
	[duty cycle ≥ 98% or external video / power trigger]		
	☒ Refer as FCC KDB 789033, clause E Method SA-1 (spectral trace averaging).		
	☐ Refer as FCC KDB 789033, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)		
	duty cycle < 98% and average over on/off periods with duty factor		
	☒ Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).		
	☐ Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)		
▪ For conducted measurement.			
	▪ If the EUT supports multiple transmit chains using options given below:		
		☒ Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.	
		☐ Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,	
		☐ Option 3: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.	
	▪	If multiple transmit chains, EIRP PPSD calculation could be following as methods: $PPSD_{total} = PPSD_1 + PPSD_2 + \ldots + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = PPSD_{total} + DG$	

3.4.4 Test Setup

Power Spectral Density



3.4.5 Test Result of Peak Power Spectral Density

Refer as Appendix D

3.5 Unwanted Emissions

3.5.1 Transmitter Radiated Unwanted Emissions Limit

Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit			
Frequency Range (MHz)	**Field Strength (uV/m)**	**Field Strength (dBuV/m)**	**Measure Distance (m)**
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Un-restricted band emissions above 1GHz Limit	
Operating Band	**Limit**
5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.25 - 5.35 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.47 - 5.725 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.725 - 5.85 GHz	all emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

Note 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method: Radiated

Test Method		
▪ Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 m for frequencies above 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).		
▪ The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].		
▪ For the transmitter unwanted emissions shall be measured using following options below:		
	▪ Refer as FCC KDB 789033, clause H)2) for unwanted emissions into non-restricted bands.	
	▪ Refer as FCC KDB 789033, clause H)1) for unwanted emissions into restricted bands.	
		☐ Refer as FCC KDB 789033, H)6) Method AD (Trace Averaging).
		☒ Refer as FCC KDB 789033, H)6) Method VB (Reduced VBW).
		☐ Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.
		☐ Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
		☒ Refer as FCC KDB 789033, clause H)5) measurement procedure peak limit.
		☐ Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit.
▪ For radiated measurement.		
	▪ Refer as ANSI C63.10, clause 6.4 for radiated emissions below 30 MHz and test distance is 3m.	
	▪ Refer as ANSI C63.10, clause 6.5 for radiated emissions 30 MHz to 1 GHz and test distance is 3m.	
	▪ Refer as ANSI C63.10, clause 6.6 for radiated emissions above 1GHz.	
▪ The any unwanted emissions level shall not exceed the fundamental emission level.		
▪ All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.		

Test Method: Conducted

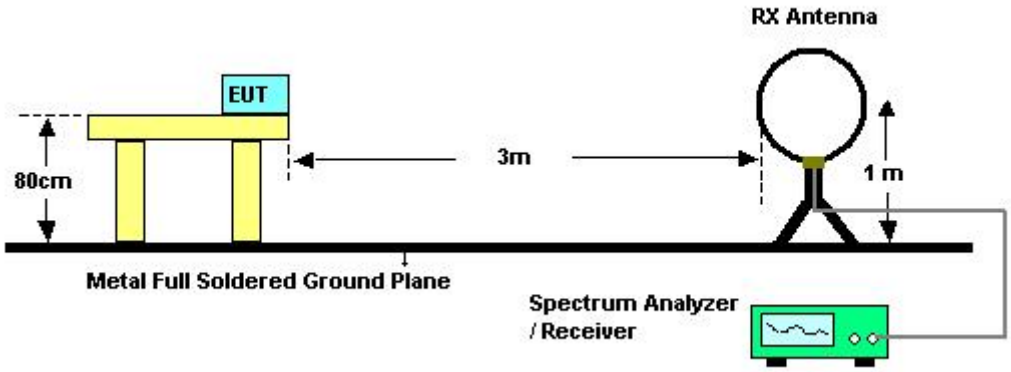
Test Method	
▪ For conducted and cabinet radiation measurement, refer as FCC KDB 789033, clause H)3).	
	▪ For conducted unwanted emissions into non-restricted bands (relative emission limits). Devices with multiple transmit chains: Refer as FCC KDB 662911, when testing out-of-band and spurious emissions against relative emission limits, tests may be performed on each output individually without summing or adding 10 log(N) if the measurements are made relative to the in-band emissions on the individual outputs.
	▪ For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB
	▪ For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred.

3.5.4 Test Setup

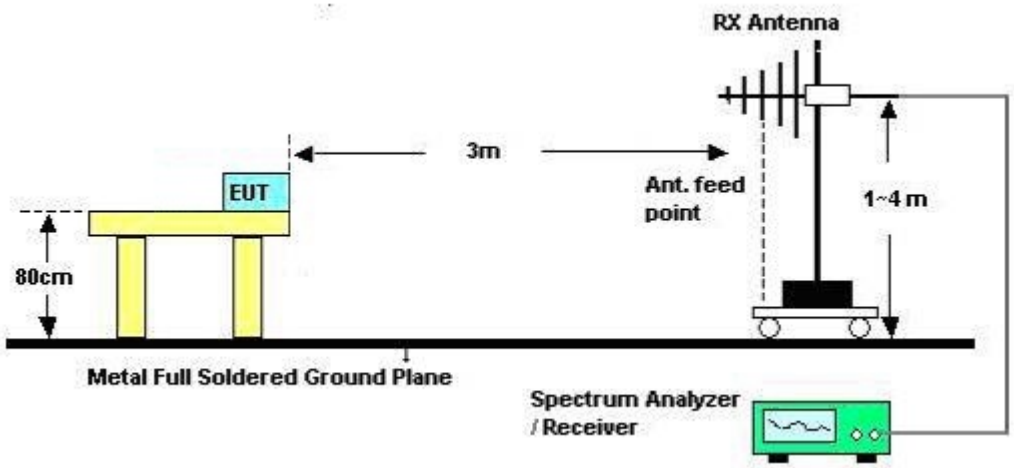
Test Method: Radiated

Transmitter Radiated Unwanted Emissions

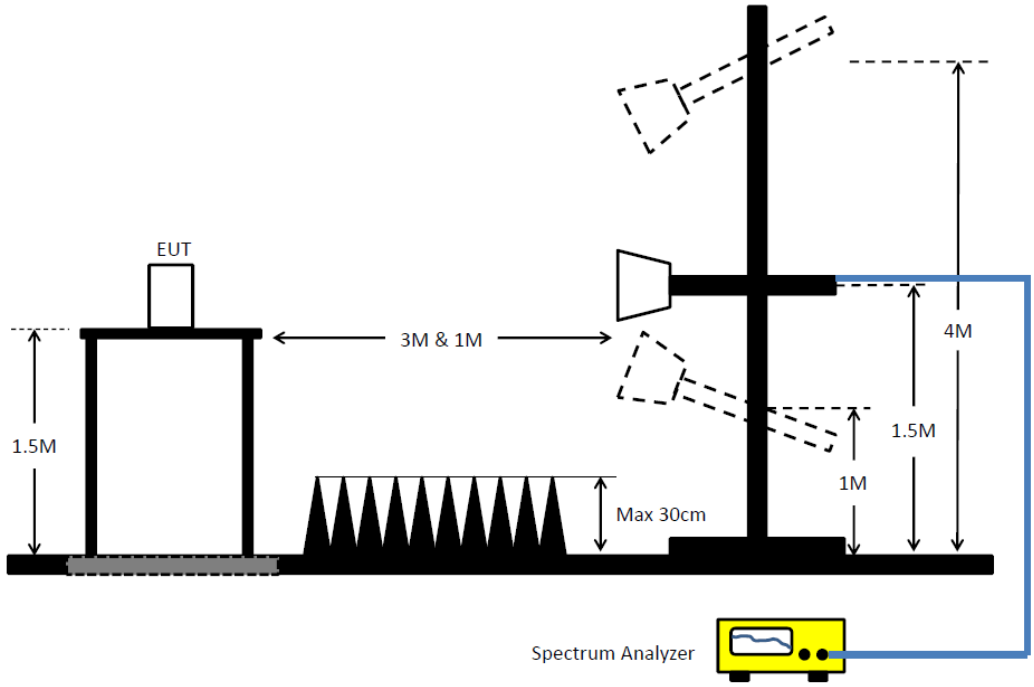
9kHz ~30MHz



30MHz~1GHz

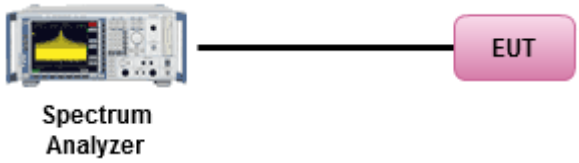


Above 1GHz



Test Method: Conducted test

Transmitter Conducted Unwanted Emissions



3.5.5 Transmitter Unwanted Emissions (Below 30MHz)

All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

3.5.6 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E

3.6 Frequency Stability

3.6.1 Frequency Stability Limit

Frequency Stability Limit
UNII Devices
▪ In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.
LE-LAN Devices
▪ N/A
IEEE Std. 802.11
▪ The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band and ± 25 ppm maximum for the 2.4 GHz band.

3.6.2 Measuring Instruments

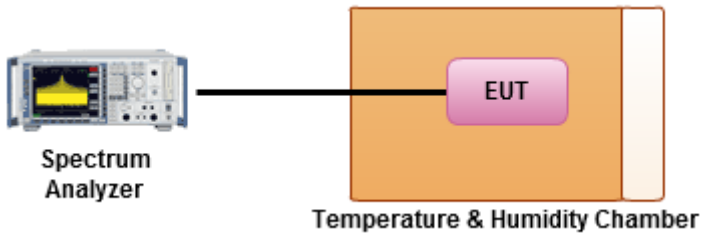
Refer a test equipment and calibration data table in this test report.

3.6.3 Test Procedures

Test Method	
▪ Refer as ANSI C63.10, clause 6.8 for frequency stability tests	
	▪ Frequency stability with respect to ambient temperature
	▪ Frequency stability when varying supply voltage
	▪ Extreme temperature is -40°C~70°C.

3.6.4 Test Setup

Frequency Stability



3.6.5 Test Result of Frequency Stability

Refer as Appendix F

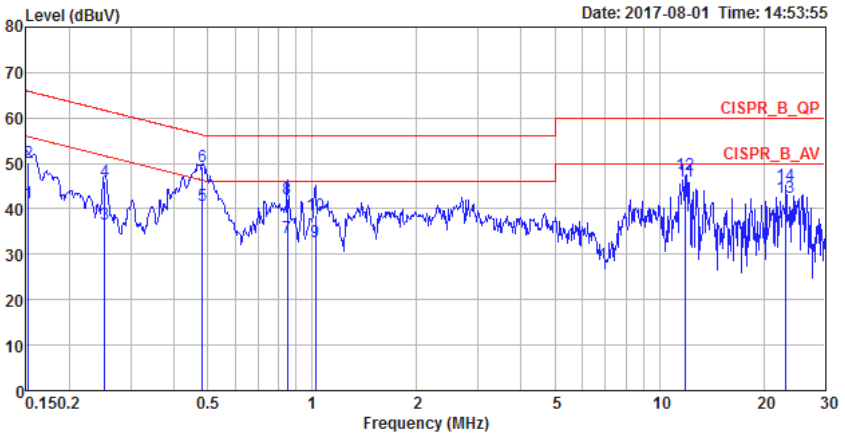
4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 23, 2017	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Dec. 14, 2016	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 21, 2016	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	May 24, 2016	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	May 23, 2017	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2016*	Radiation (03CH01-CB)
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 30, 2016	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 10, 2016	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 25, 2016	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 05, 2017	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Mar. 13, 2017	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 16, 2017	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jun. 28, 2016	Radiation (03CH01-CB)
Amplifier	-	-	TF-130N-R1	26GHz ~ 40GHz	Jun. 20, 2017	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 22, 2016	Radiation (03CH01-CB)
EMI Test	R&S	ESCS	100355	9kHz ~ 2.75GHz	May 06, 2017	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 26, 2016	Conducted (TH01-CB)
Temp. and Humidity Chamber	Gaint Force	GTH-408-40-CP-AR	MAA1410-011	-40~100 degree	Sep. 20, 2016	Conducted (TH03-CB)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 24, 2016	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 22, 2016	Conducted (TH01-CB)

Note: Calibration Interval of instruments listed above is one year.
"*" Calibration Interval of instruments listed above is two years.
N.C.R. means Non-Calibration required.

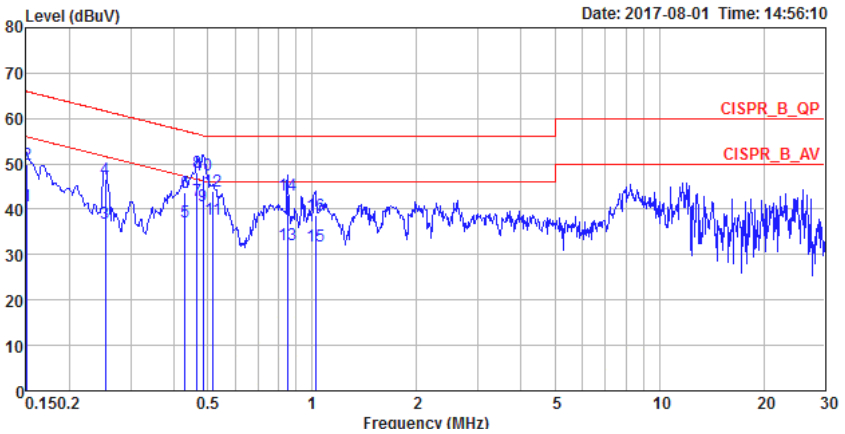
AC Power-line Conducted Emissions Result			
Operating Mode	2	**Power Phase**	Neutral
Operating Function	Normal Link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1525	41.33	-14.53	55.86	31.07	10.10	0.16	Average	NEUTRAL
2	0.1525	50.24	-15.62	65.86	39.98	10.10	0.16	QP	NEUTRAL
3	0.2528	36.54	-15.13	51.67	26.37	10.08	0.09	Average	NEUTRAL
4	0.2528	46.15	-15.52	61.67	35.98	10.08	0.09	QP	NEUTRAL
5	0.4836	40.88	-5.40	46.28	30.60	10.23	0.05	Average	NEUTRAL
6	0.4836	49.30	-6.98	56.28	39.02	10.23	0.05	QP	NEUTRAL
7	0.8483	33.58	-12.42	46.00	23.32	10.10	0.16	Average	NEUTRAL
8	0.8483	42.24	-13.76	56.00	31.98	10.10	0.16	QP	NEUTRAL
9	1.0211	32.80	-13.20	46.00	22.56	10.05	0.19	Average	NEUTRAL
10	1.0211	38.62	-17.38	56.00	28.38	10.05	0.19	QP	NEUTRAL
11	11.8930	45.91	-4.09	50.00	35.51	10.23	0.17	Average	NEUTRAL
12	11.8930	47.46	-12.54	60.00	37.06	10.23	0.17	QP	NEUTRAL
13	23.1291	42.60	-7.40	50.00	31.96	10.41	0.23	Average	NEUTRAL
14	23.1291	45.30	-14.70	60.00	34.66	10.41	0.23	QP	NEUTRAL

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

AC Power-line Conducted Emissions Result			
Operating Mode	2	**Power Phase**	Line
Operating Function	Normal Link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark	Pol/Phase
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.1508	40.76	-15.20	55.96	30.60	10.00	0.16	Average	LINE
2	0.1508	49.89	-16.07	65.96	39.73	10.00	0.16	QP	LINE
3	0.2535	36.91	-14.73	51.64	26.90	9.92	0.09	Average	LINE
4	0.2535	46.74	-14.90	61.64	36.73	9.92	0.09	QP	LINE
5	0.4302	37.29	-9.96	47.25	27.32	9.95	0.02	Average	LINE
6	0.4302	43.81	-13.44	57.25	33.84	9.95	0.02	QP	LINE
7	0.4664	41.84	-4.74	46.58	31.85	9.95	0.04	Average	LINE
8	0.4664	48.14	-8.44	56.58	38.15	9.95	0.04	QP	LINE
9	0.4838	40.84	-5.43	46.27	30.84	9.95	0.05	Average	LINE
10	0.4838	47.50	-8.77	56.27	37.50	9.95	0.05	QP	LINE
11	0.5180	37.65	-8.35	46.00	27.64	9.95	0.06	Average	LINE
12	0.5180	43.98	-12.02	56.00	33.97	9.95	0.06	QP	LINE
13	0.8475	32.27	-13.73	46.00	22.15	9.96	0.16	Average	LINE
14	0.8475	43.24	-12.76	56.00	33.12	9.96	0.16	QP	LINE
15	1.0211	31.92	-14.08	46.00	21.77	9.96	0.19	Average	LINE
16	1.0211	38.71	-17.29	56.00	28.56	9.96	0.19	QP	LINE

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

Summary

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
QPSK,5M_Nss1_2TX	-	-	-	-	-
5.15-5.25GHz	6.188M	4.435M	4M44D1D	5.406M	4.423M
QPSK,40M_Nss1_2TX	-	-	-	-	-
5.15-5.25GHz	47.2M	36.282M	36M3D1D	45.45M	36.132M
QPSK,5M_Nss1_2TX	-	-	-	-	-
5.725-5.85GHz	4.444M	7.684M	7M68D1D	4.413M	4.429M
QPSK,40M_Nss1_2TX	-	-	-	-	-
5.725-5.85GHz	36.05M	46.127M	46M1D1D	34.4M	36.332M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
Max-OBW = Maximum 99% occupied bandwidth;
Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;
Min-OBW = Minimum 99% occupied bandwidth;

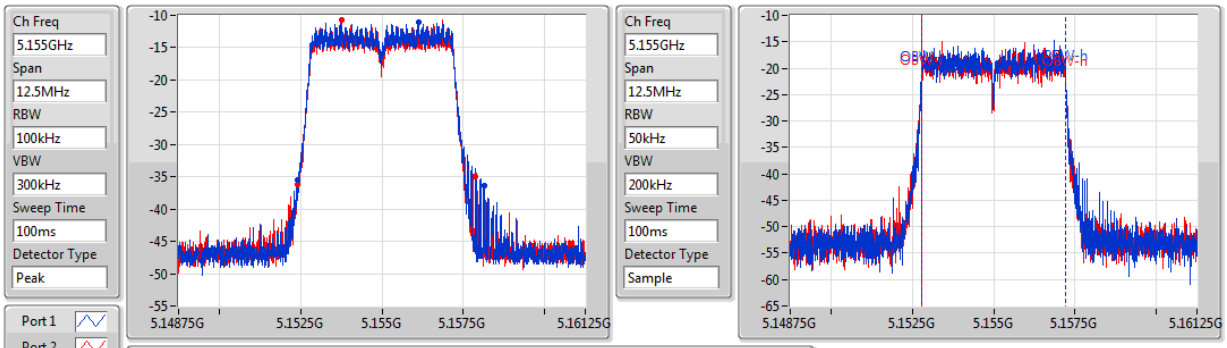
Result

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
QPSK,5M_Nss1_2TX	-	-	-	-	-	-
5155MHz	Pass	Inf	5.75M	4.429M	5.494M	4.435M
5200MHz	Pass	Inf	5.95M	4.435M	6.006M	4.423M
5245MHz	Pass	Inf	6.188M	4.429M	5.406M	4.429M
QPSK,40M_Nss1_2TX	-	-	-	-	-	-
5190MHz	Pass	Inf	47.15M	36.282M	46.2M	36.282M
5230MHz	Pass	Inf	47.2M	36.282M	45.45M	36.132M
QPSK,5M_Nss1_2TX	-	-	-	-	-	-
5730MHz	Pass	500k	4.431M	4.429M	4.425M	4.429M
5785MHz	Pass	500k	4.444M	7.684M	4.425M	7.459M
5845MHz	Pass	500k	4.413M	4.435M	4.431M	4.429M
QPSK,40M_Nss1_2TX	-	-	-	-	-	-
5755MHz	Pass	500k	36.05M	36.332M	35.8M	36.432M
5795MHz	Pass	500k	35.3M	37.081M	34.4M	46.127M

Port X-N dB = Port **X** 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band
Port X-OBW = Port **X** 99% occupied bandwidth;

QPSK,5M_Nss1_2TX — EBW

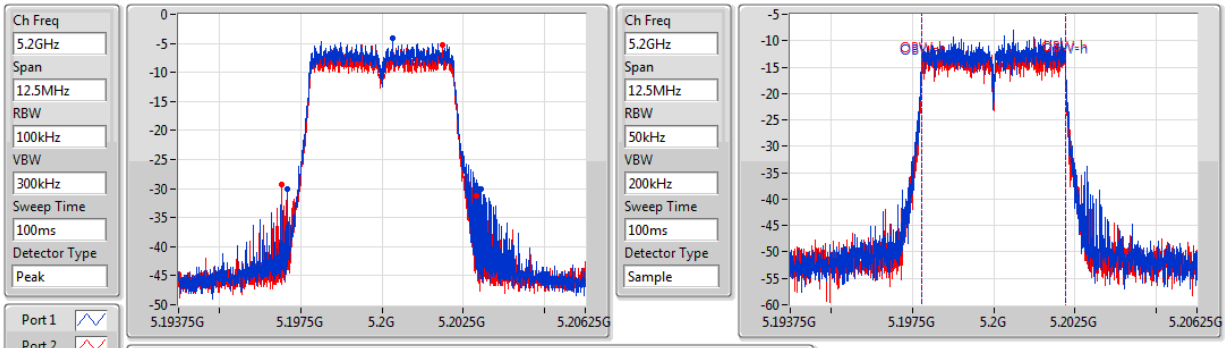
5155MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
5.75M	5.152394G	5.158144G	4.429M	5.152782G	5.157211G	Inf	1
5.494M	5.152394G	5.157888G	4.435M	5.152776G	5.157211G	Inf	2

QPSK,5M_Nss1_2TX — EBW

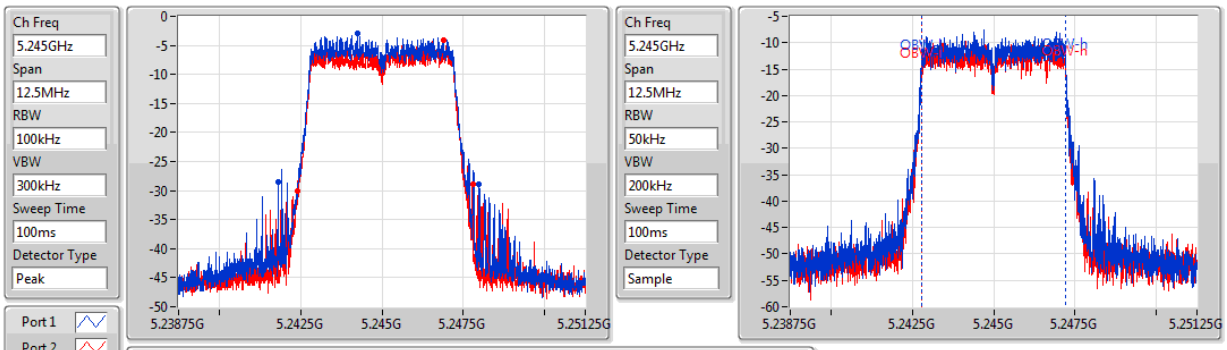
5200MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
5.95M	5.197081G	5.203031G	4.435M	5.197776G	5.202211G	Inf	1
6.006M	5.196913G	5.202919G	4.423M	5.197782G	5.202205G	Inf	2

QPSK,5M_Nss1_2TX — EBW

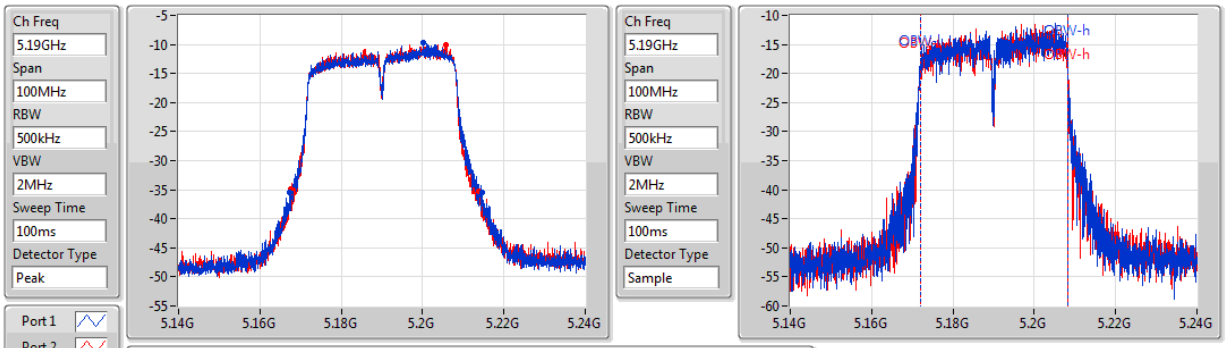
5245MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
6.188M	5.2418G	5.247988G	4.429M	5.242782G	5.247211G	Inf	1
5.406M	5.2424G	5.247806G	4.429M	5.242782G	5.247211G	Inf	2

QPSK,40M_Nss1_2TX — EBW

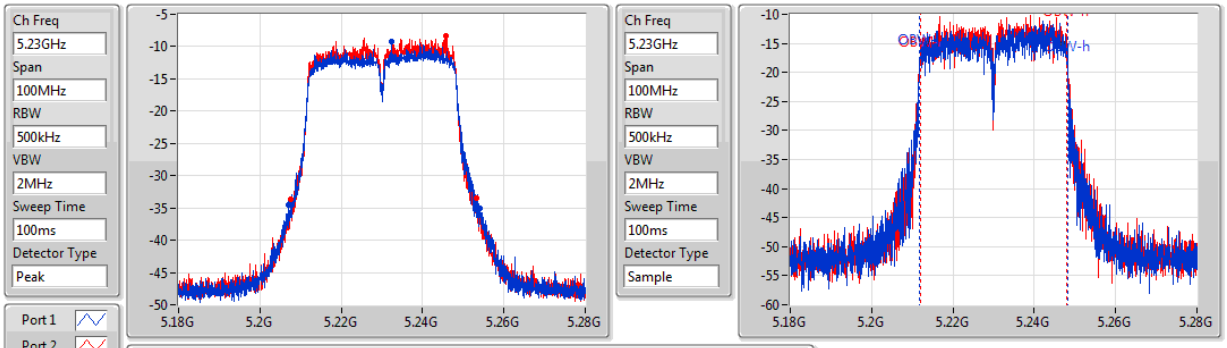
5190MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
47.15M	5.1674G	5.21455G	36.282M	5.171909G	5.208191G	Inf	1
46.2M	5.16755G	5.21375G	36.282M	5.171909G	5.208191G	Inf	2

QPSK,40M_Nss1_2TX — EBW

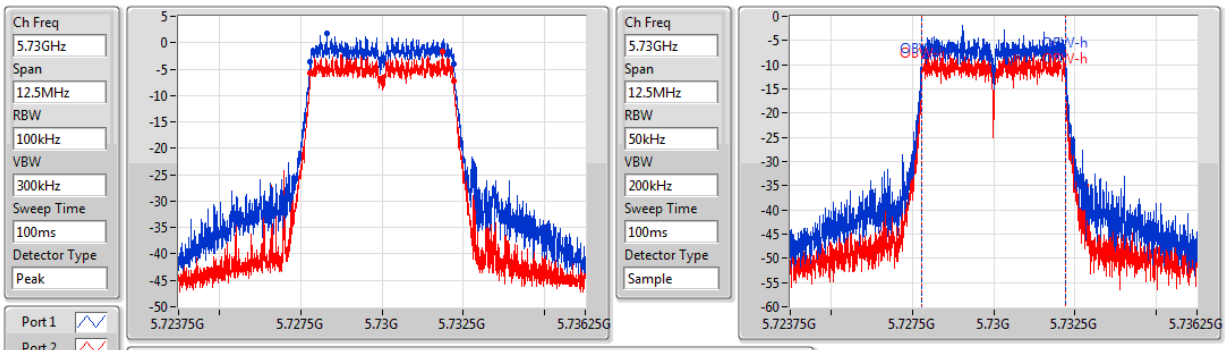
5230MHz



26dB(Hz)	Fl-26dB(Hz)	Fh-26dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
47.2M	5.20695G	5.25415G	36.282M	5.211859G	5.248141G	Inf	1
45.45M	5.2077G	5.25315G	36.132M	5.211959G	5.248091G	Inf	2

QPSK,5M_Nss1_2TX — EBW

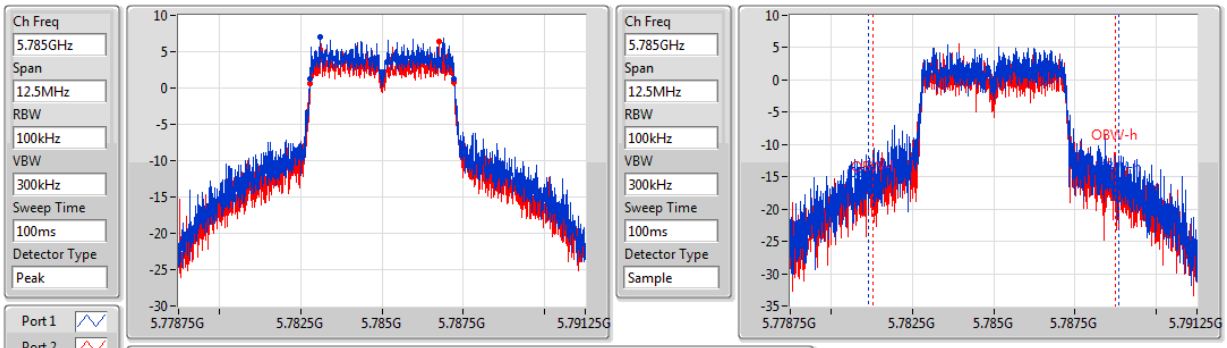
5730MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
4.431M	5.727788G	5.732219G	4.429M	5.727782G	5.732211G	500k	1
4.425M	5.727794G	5.732219G	4.429M	5.727782G	5.732211G	500k	2

QPSK,5M_Nss1_2TX — EBW

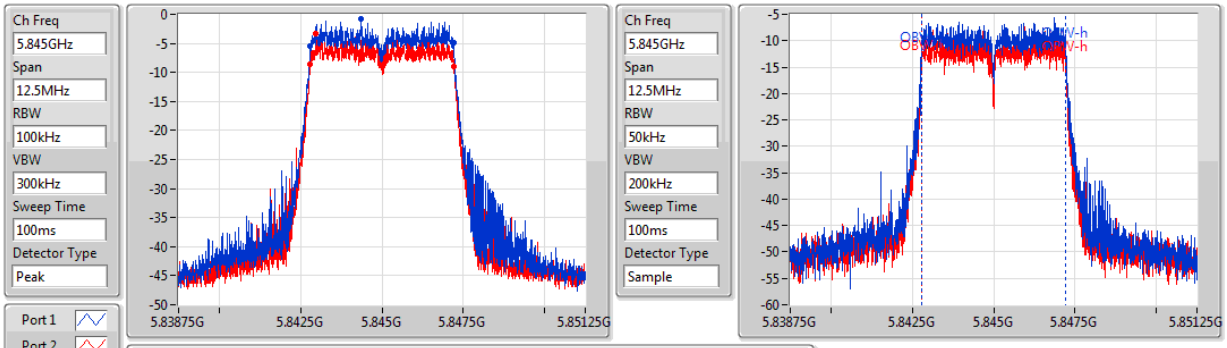
5785MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
4.444M	5.782781G	5.787225G	7.684M	5.781164G	5.788848G	500k	1
4.425M	5.7828G	5.787225G	7.459M	5.781277G	5.788736G	500k	2

QPSK,5M_Nss1_2TX — EBW

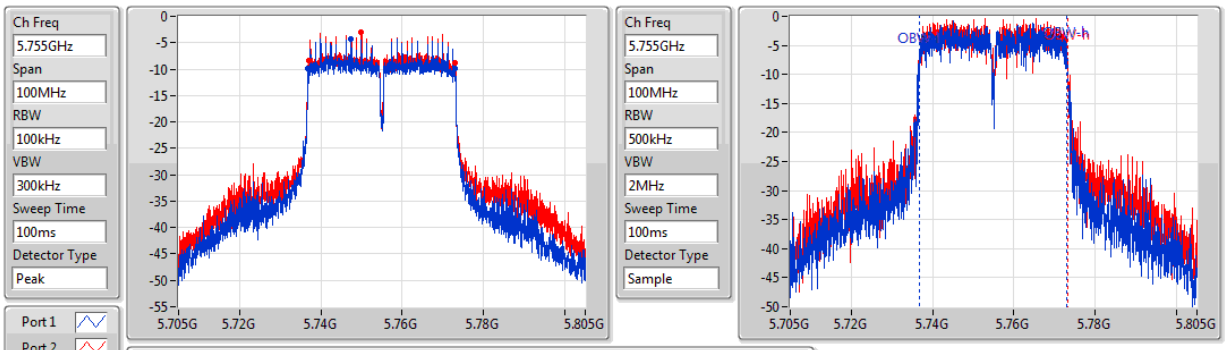
5845MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
4.413M	5.8428G	5.847213G	4.435M	5.842782G	5.847218G	500k	1
4.431M	5.842788G	5.847219G	4.429M	5.842789G	5.847218G	500k	2

QPSK,40M_Nss1_2TX — EBW

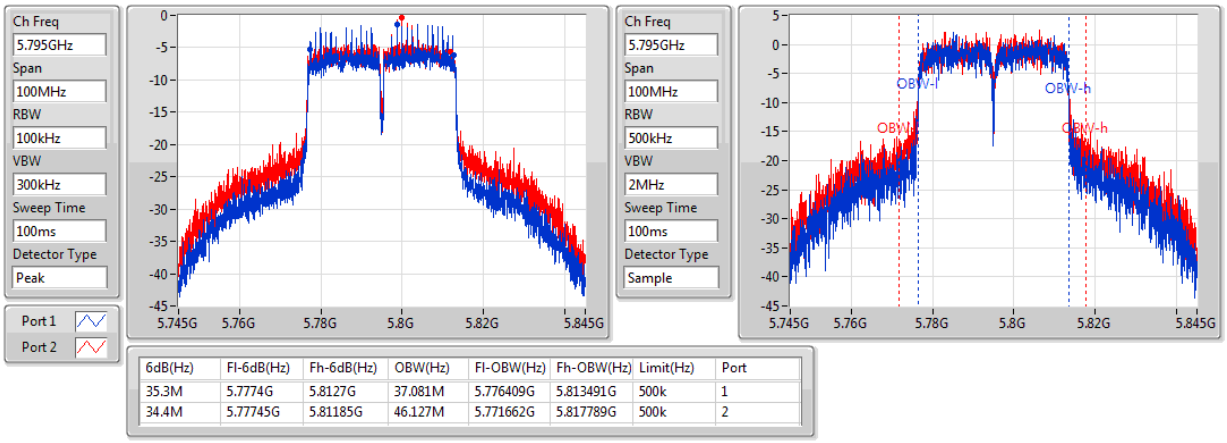
5755MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
36.05M	5.7368G	5.77285G	36.332M	5.736759G	5.773091G	500k	1
35.8M	5.73705G	5.77285G	36.432M	5.736709G	5.773141G	500k	2

QPSK,40M_Nss1_2TX **EBW**

5795MHz



6dB(Hz)	Fl-6dB(Hz)	Fh-6dB(Hz)	OBW(Hz)	Fl-OBW(Hz)	Fh-OBW(Hz)	Limit(Hz)	Port
35.3M	5.7774G	5.8127G	37.081M	5.776409G	5.813491G	500k	1
34.4M	5.77745G	5.81185G	46.127M	5.771662G	5.817789G	500k	2

Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
QPSK,5M_Nss1_2TX	-	-	-	-
5.15-5.25GHz	6.01	0.00399	28.01	0.63241
QPSK,40M_Nss1_2TX	-	-	-	-
5.15-5.25GHz	2.91	0.00195	24.91	0.30974
QPSK,5M_Nss1_2TX	-	-	-	-
5.725-5.85GHz	14.50	0.02818	36.50	4.46684
QPSK,40M_Nss1_2TX	-	-	-	-
5.725-5.85GHz	11.27	0.01340	33.27	2.12324

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
QPSK,5M_Nss1_2TX	-	-	-	-	-	-
5155MHz	Pass	22.00	-11.25	-11.51	-8.37	30.00
5200MHz	Pass	22.00	-2.66	-3.82	-0.19	30.00
5245MHz	Pass	22.00	3.79	2.03	6.01	30.00
QPSK,40M_Nss1_2TX	-	-	-	-	-	-
5190MHz	Pass	22.00	-1.23	-1.16	1.82	30.00
5230MHz	Pass	22.00	-0.49	0.26	2.91	30.00
QPSK,5M_Nss1_2TX	-	-	-	-	-	-
5730MHz	Pass	22.00	8.08	4.98	9.81	30.00
5785MHz	Pass	22.00	11.65	11.32	14.50	30.00
5845MHz	Pass	22.00	6.11	3.77	8.11	30.00
QPSK,40M_Nss1_2TX	-	-	-	-	-	-
5755MHz	Pass	22.00	7.13	8.04	10.61	30.00
5795MHz	Pass	22.00	7.66	8.79	11.27	30.00

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

Power Result-For 2dBi

Frequency (MHz)	Modulation	Channel	Data Rate	Conducted Pass Setting	Test equipment		Anritsu Power Meter Loss Offset (dB) Total dBm	BF/Non BF Power Limit dBm
					ANT1	ANT2		
Ant. 1(Port 1): 2dBi / Ant. 2(Port 2): 2dBi								
5155	HT5	Ch31	QPSK	11	9.67	10.06	12.88	30.00
5200	HT5	Ch40	QPSK	20	19.25	19.79	22.54	30.00
5245	HT5	Ch49	QPSK	21.5	20.26	20.89	23.60	30.00
5730	HT5	Ch146	QPSK	31.5	24.52	24.78	27.66	30.00
5785	HT5	Ch157	QPSK	31.5	24.57	24.72	27.66	30.00
5845	HT5	Ch169	QPSK	31.5	24.42	24.65	27.55	30.00
5190	HT40	Ch38	QPSK	14.5	15.71	15.79	18.76	30.00
5230	HT40	Ch46	QPSK	20.5	20.49	20.96	23.74	30.00
5755	HT40	Ch151	QPSK	25.5	22.53	23.31	25.95	30.00
5795	HT40	Ch159	QPSK	31.5	24.88	25.31	28.11	30.00

Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
QPSK,5M_Nss1_2TX	-	-
5.15-5.25GHz	-0.34	21.66
QPSK,40M_Nss1_2TX	-	-
5.15-5.25GHz	-12.30	9.70
QPSK,5M_Nss1_2TX	-	-
5.725-5.85GHz	7.73	29.73
QPSK,40M_Nss1_2TX	-	-
5.725-5.85GHz	-1.41	20.59

RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

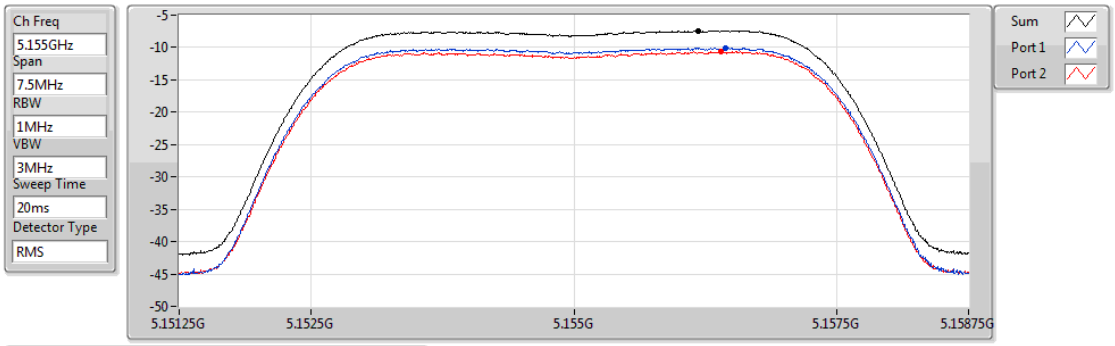
Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
QPSK,5M_Nss1_2TX	-	-	-	-	-	-
5155MHz	Pass	22.00	-10.04	-10.62	-7.40	17.00
5200MHz	Pass	22.00	-4.02	-5.11	-1.59	17.00
5245MHz	Pass	22.00	-2.6	-4.08	-0.34	17.00
QPSK,40M_Nss1_2TX	-	-	-	-	-	-
5190MHz	Pass	22.00	-16.41	-16.39	-13.43	17.00
5230MHz	Pass	22.00	-15.65	-14.90	-12.30	17.00
QPSK,5M_Nss1_2TX	-	-	-	-	-	-
5730MHz	Pass	22.00	0.12	-3.37	1.70	30.00
5785MHz	Pass	22.00	5.26	4.3	7.73	30.00
5845MHz	Pass	22.00	-2.53	-5	-0.64	30.00
QPSK,40M_Nss1_2TX	-	-	-	-	-	-
5755MHz	Pass	22.00	-7.24	-6.60	-3.91	30.00
5795MHz	Pass	22.00	-4.59	-4.23	-1.41	30.00

DG = Directional Gain; **RBW** = 500kHz for 5.725-5.85GHz band / 1MHz for other band;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; **Port X** = Port X power density;

QPSK,5M_Nss1_2TX PSD

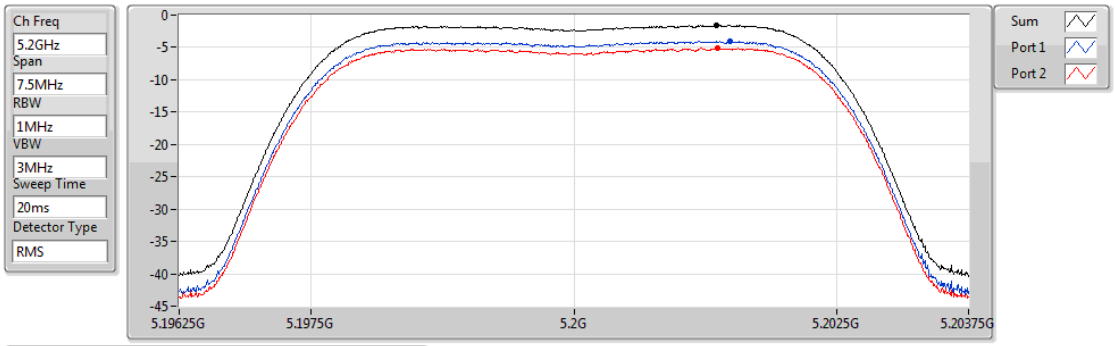
5155MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-7.40	-7.40	-10.04	-10.62

QPSK,5M_Nss1_2TX PSD

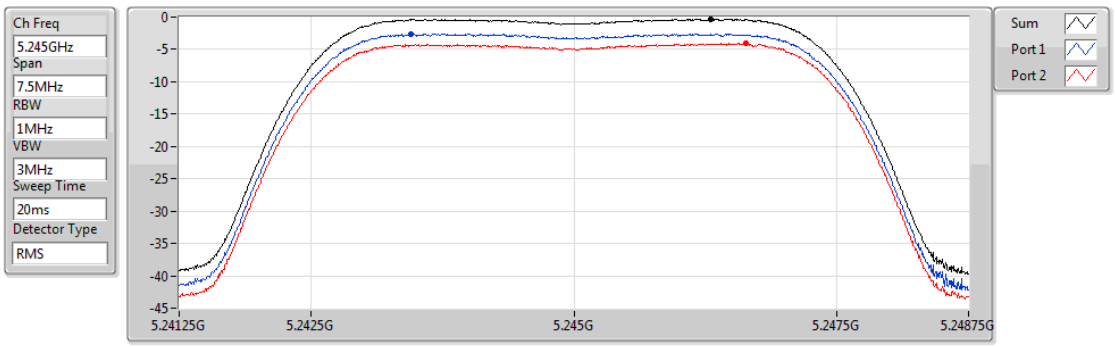
5200MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.59	-1.59	-4.02	-5.11

QPSK,5M_Nss1_2TX PSD

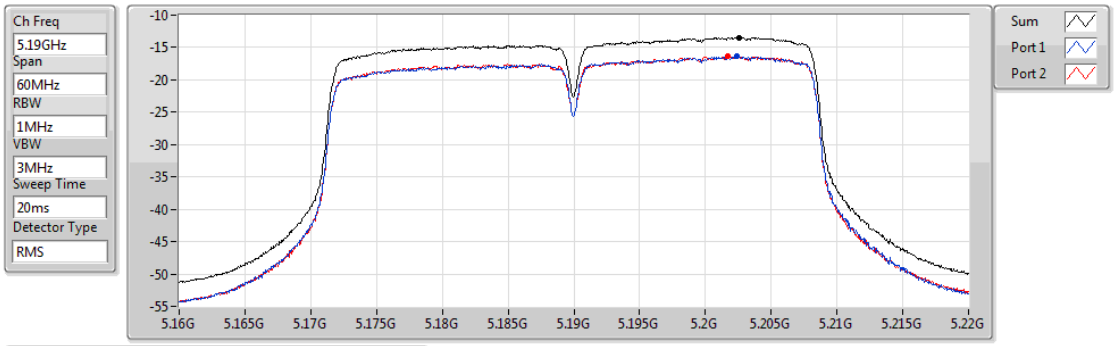
5245MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-0.34	-0.34	-2.60	-4.08

QPSK,40M_Nss1_2TX PSD

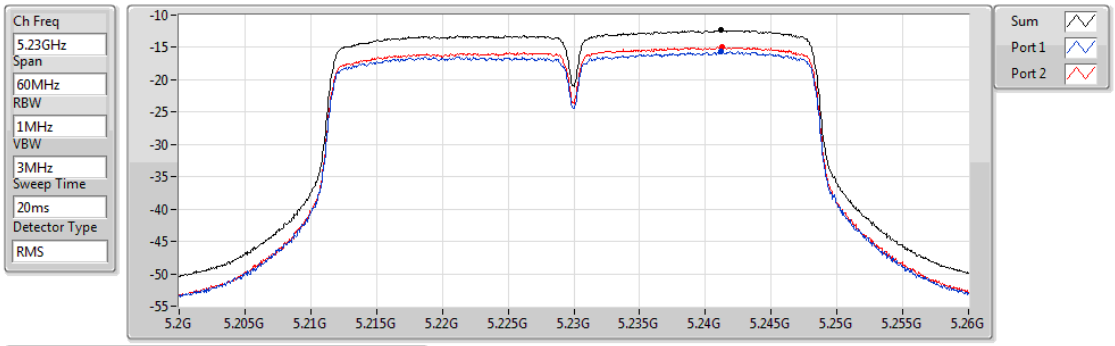
5190MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-13.43	-13.43	-16.41	-16.39

QPSK,40M_Nss1_2TX PSD

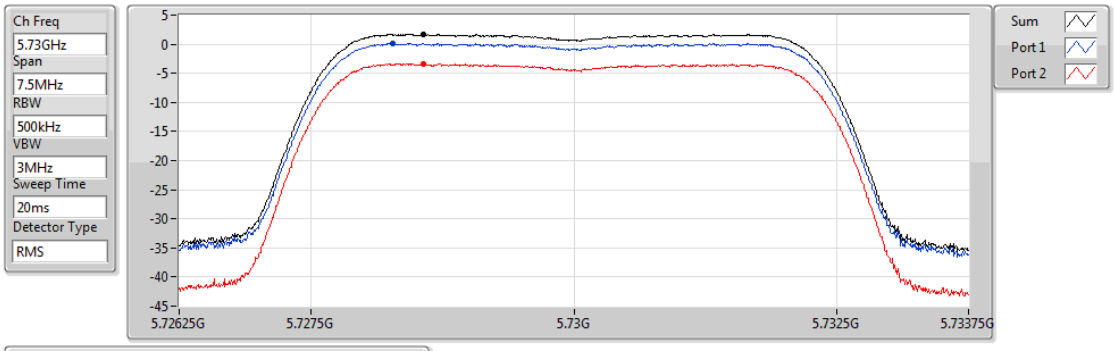
5230MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-12.30	-12.30	-15.65	-14.90

QPSK,5M_Nss1_2TX PSD

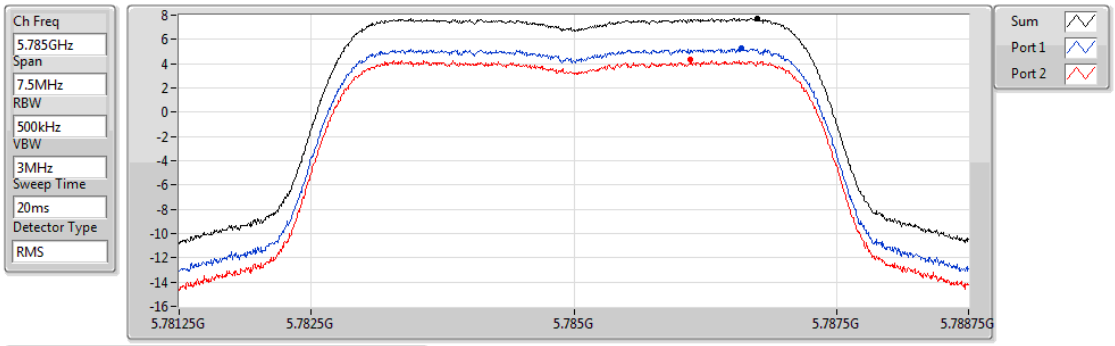
5730MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
1.70	1.70	0.12	-3.37

QPSK,5M_Nss1_2TX PSD

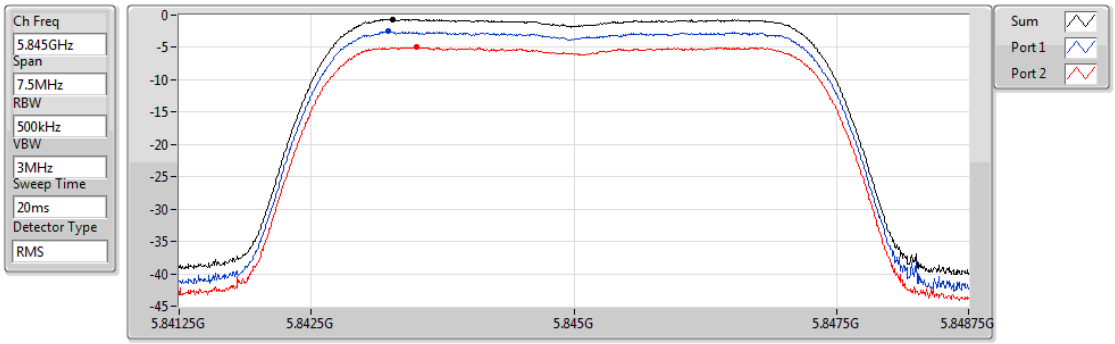
5785MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
7.73	7.73	5.26	4.30

QPSK,5M_Nss1_2TX PSD

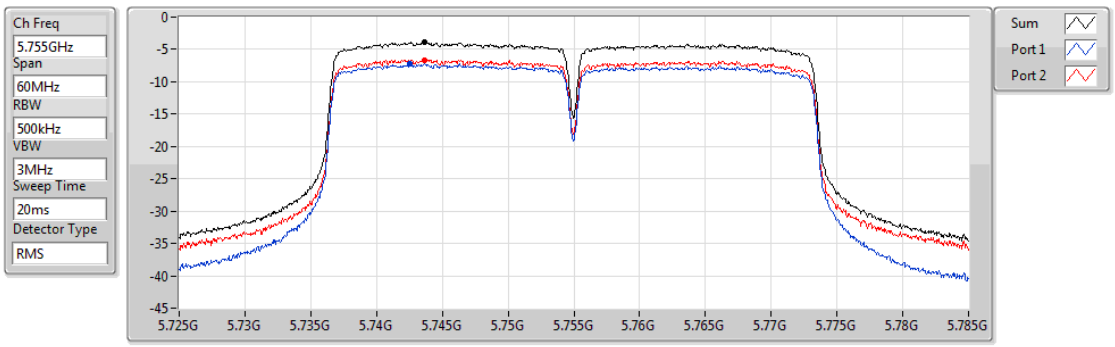
5845MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-0.64	-0.64	-2.53	-5.00

QPSK,40M_Nss1_2TX PSD

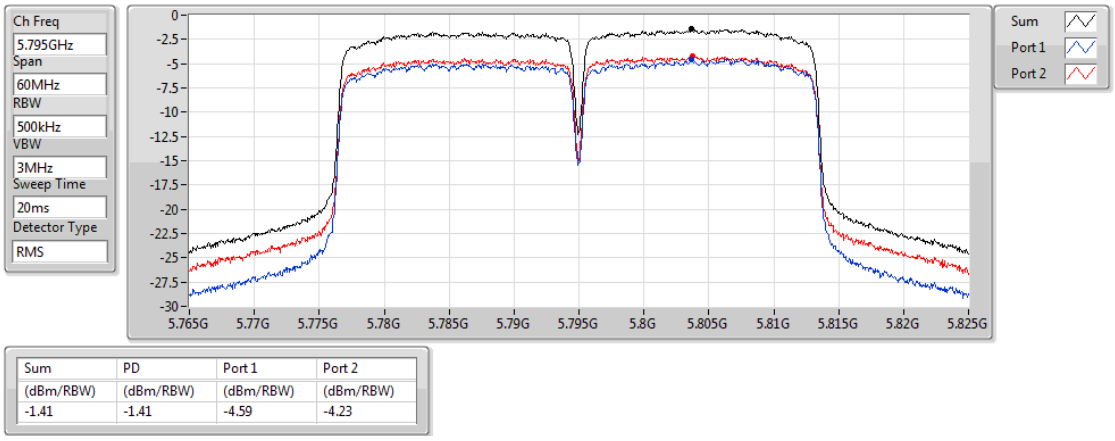
5755MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-3.91	-3.91	-7.24	-6.60

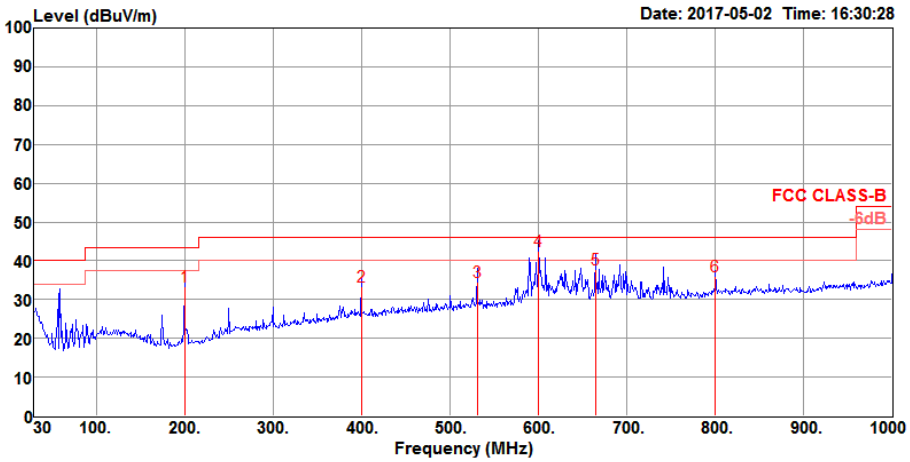
QPSK,40M_Nss1_2TX **PSD**

5795MHz



Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
-1.41	-1.41	-4.59	-4.23

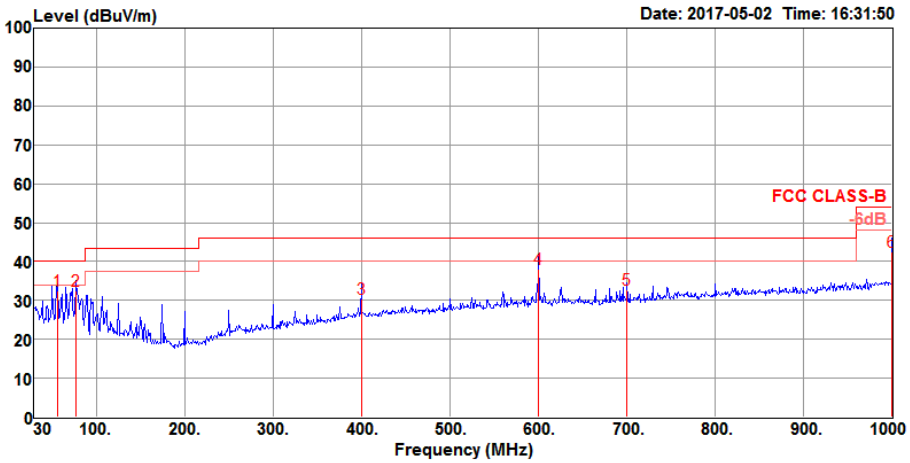
RSE below 1GHz Result			
Operating Mode	1	**Polarization**	Horizontal
Operating Function	Normal Link		



	Freq	Level	Limit Line	Over Limit	Read Level	Cable 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	199.75	33.28	43.50	-10.22	47.93	1.36	16.30	32.31	150	122	QP	HORIZONTAL
2	399.57	33.28	46.00	-12.72	41.25	1.95	22.37	32.29	200	202	QP	HORIZONTAL
3	530.52	34.58	46.00	-11.42	40.46	2.24	24.23	32.35	300	138	QP	HORIZONTAL
4	600.36	42.63	46.00	-3.37	47.68	2.44	24.90	32.39	125	295	QP	HORIZONTAL
5	664.38	37.74	46.00	-8.26	42.20	2.47	25.43	32.36	150	284	QP	HORIZONTAL
6	800.18	35.89	46.00	-10.11	38.39	3.02	26.60	32.12	100	333	QP	HORIZONTAL

Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

RSE below 1GHz Result			
Operating Mode	1	**Polarization**	Vertical
Operating Function	Normal Link		



	Freq	Level	Limit Line	Over Limit	Read Level	Cable 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	56.19	32.56	40.00	-7.44	50.77	0.73	13.47	32.41	100	346	QP	VERTICAL
2	76.56	32.49	40.00	-7.51	50.93	0.83	13.13	32.40	125	144	QP	VERTICAL
3	399.57	30.44	46.00	-15.56	38.41	1.95	22.37	32.29	125	124	QP	VERTICAL
4	600.36	38.03	46.00	-7.97	43.08	2.44	24.90	32.39	200	247	QP	VERTICAL
5	700.27	32.72	46.00	-13.28	37.02	2.55	25.50	32.35	125	1	QP	VERTICAL
6	1000.00	42.56	54.00	-11.44	41.87	3.18	28.20	30.69	125	11	QP	VERTICAL

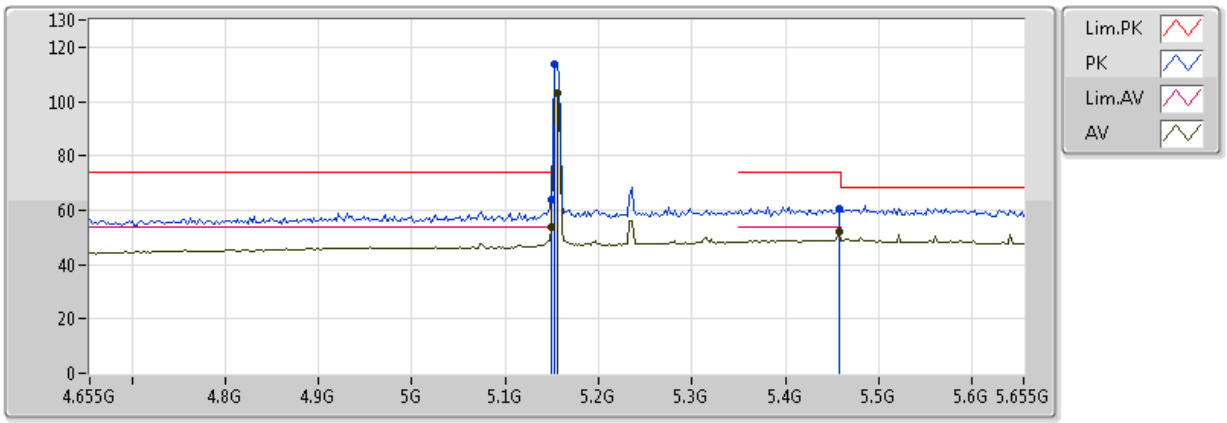
Note 1: “>20dB” means emission levels that exceed the level of 20 dB below the applicable limit.
Note 2: “N/F” means Nothing Found emissions (No emissions were detected.)

Test Method: Radiated
Summary

Mode	Result	Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Pol. (H/V)	Azimuth (°)	Height (m)	Comments
QPSK,5M_Nss1_2TX	-	-	-	-	-	-	-	-	-	-	-	-
5.15-5.25GHz	Pass	AV	5.12G	53.89	54.00	-0.11	8.85	3	H	88	1.62	-

QPSK,5M_Nss1_2TX

5155MHz_TX

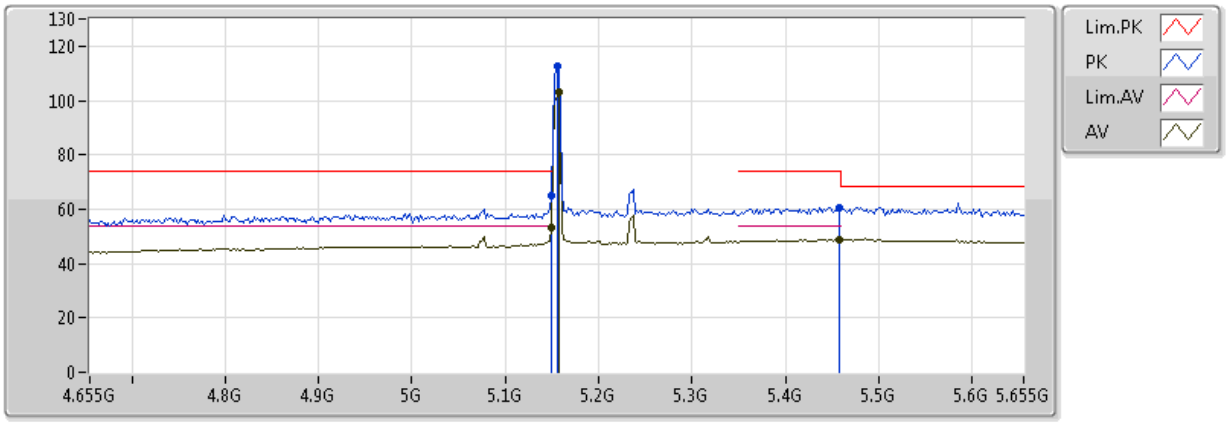


20170330
EUT Z 2TX Non-TXBF
setting 9
02-L-2-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.149995G	53.59	54.00	-0.41	8.93	3	V	85	1.60	-
AV	5.155G	103.12	Inf	-Inf	8.94	3	V	85	1.60	-
AV	5.457G	52.30	54.00	-1.70	9.58	3	V	85	1.60	-
PK	5.149995G	63.87	74.00	-10.13	8.93	3	V	85	1.60	-
PK	5.153G	114.01	Inf	-Inf	8.94	3	V	85	1.60	-
PK	5.457G	60.74	74.00	-13.26	9.58	3	V	85	1.60	-

QPSK,5M_Nss1_2TX

5155MHz_TX

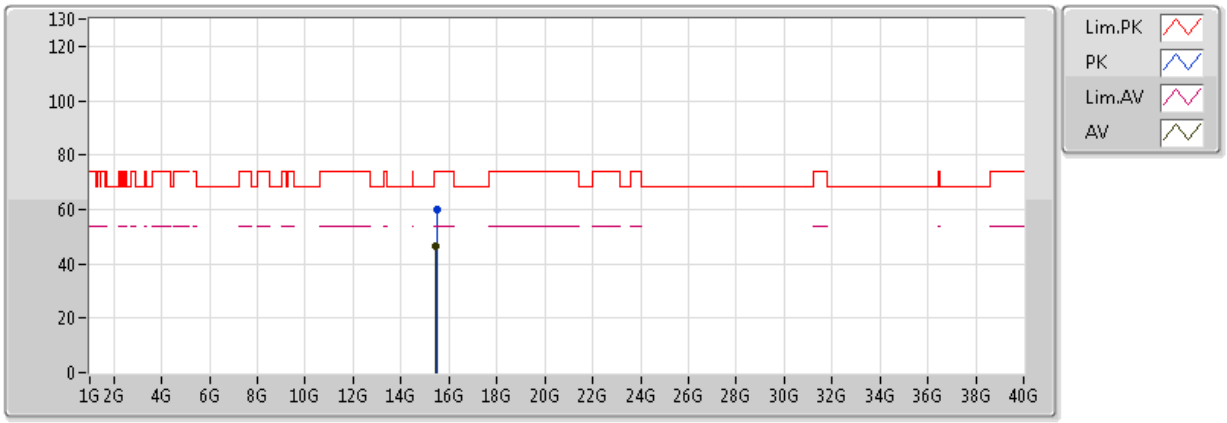


20170330
EUT Z 2TX Non-TXBF
setting 9
02-L-2-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.149995G	53.02	54.00	-0.98	8.93	3	H	87	1.62	-
AV	5.157G	102.98	Inf	-Inf	8.95	3	H	87	1.62	-
AV	5.457G	48.96	54.00	-5.04	9.58	3	H	87	1.62	-
PK	5.149995G	65.19	74.00	-8.81	8.93	3	H	87	1.62	-
PK	5.155G	112.59	Inf	-Inf	8.94	3	H	87	1.62	-
PK	5.457G	60.62	74.00	-13.38	9.58	3	H	87	1.62	-

QPSK,5M_Nss1_2TX

5155MHz_TX

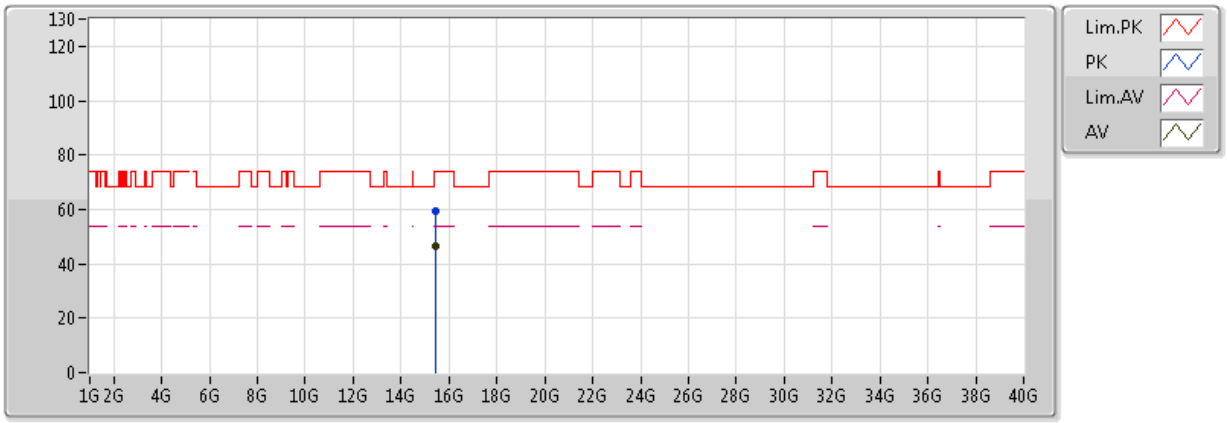


20170330
EUT Z 2TX Non-TXBF
setting 9
02-L-2

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.47004G	46.26	54.00	-7.74	18.29	3	V	47	2.28	-
PK	15.47428G	59.92	74.00	-14.08	18.28	3	V	47	2.28	-

QPSK,5M_Nss1_2TX

5155MHz_TX

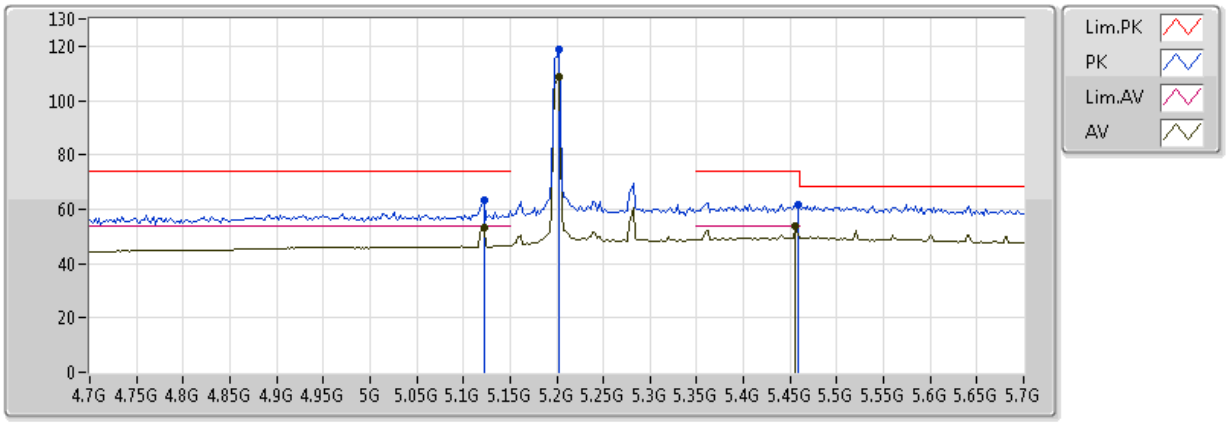


20170330
EUT Z 2TX Non-TXBF
setting 9
02-L-2

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.46452G	46.30	54.00	-7.70	18.31	3	H	345	1.89	-
PK	15.45608G	59.34	74.00	-14.66	18.33	3	H	345	1.89	-

QPSK,5M_Nss1_2TX

5200MHz_TX

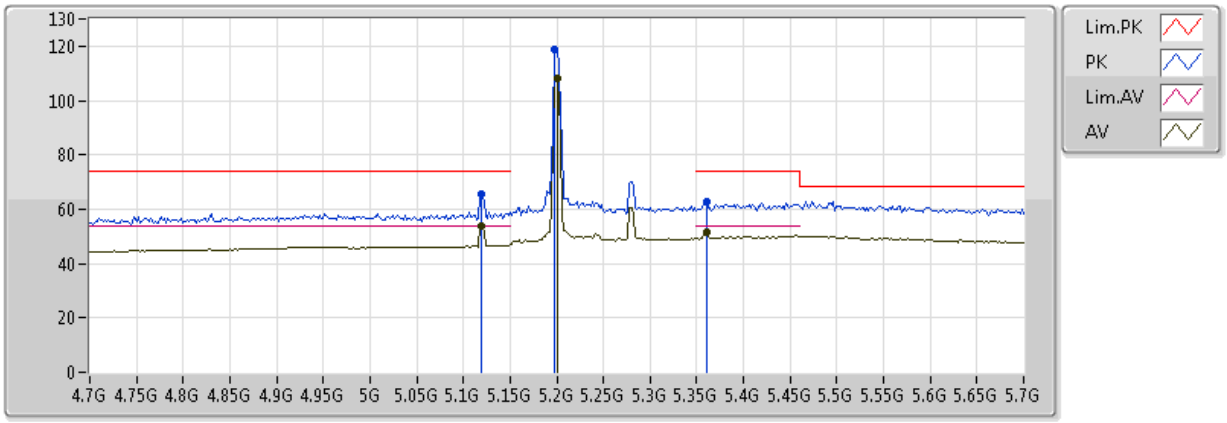


20170330
EUT Z 2TX Non-TXBF
setting 13
02-L-2-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.122G	53.10	54.00	-0.90	8.86	3	V	86	1.63	-
AV	5.202G	108.81	Inf	-Inf	9.06	3	V	86	1.63	-
AV	5.456G	53.63	54.00	-0.37	9.58	3	V	86	1.63	-
PK	5.122G	63.16	74.00	-10.84	8.86	3	V	86	1.63	-
PK	5.202G	118.54	Inf	-Inf	9.06	3	V	86	1.63	-
PK	5.458G	61.79	74.00	-12.21	9.58	3	V	86	1.63	-

QPSK,5M_Nss1_2TX

5200MHz_TX

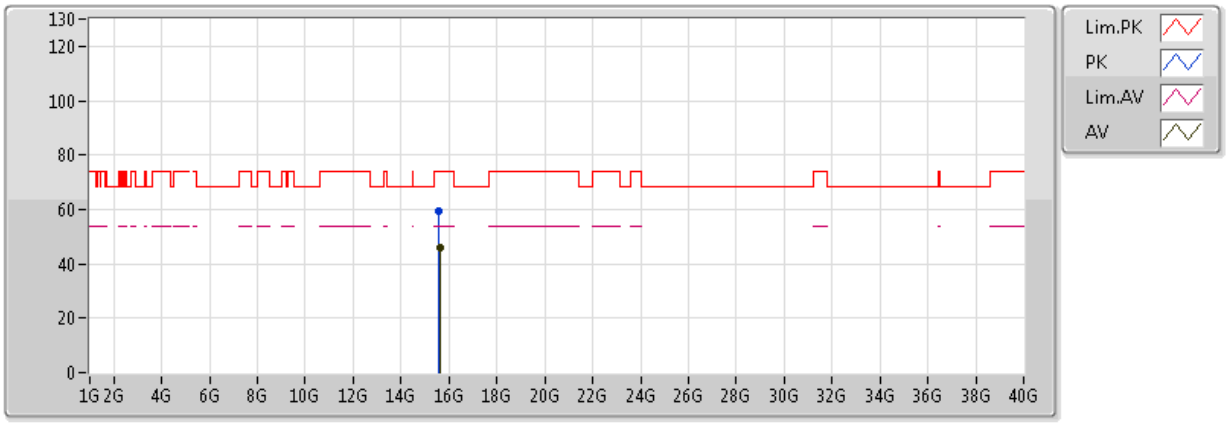


20170330
EUT Z 2TX Non-TXBF
setting 13
02-L-2-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.12G	53.89	54.00	-0.11	8.85	3	H	88	1.62	-
AV	5.2G	108.17	Inf	-Inf	9.06	3	H	88	1.62	-
AV	5.36G	51.39	54.00	-2.61	9.36	3	H	88	1.62	-
PK	5.12G	65.63	74.00	-8.37	8.85	3	H	88	1.62	-
PK	5.198G	118.72	Inf	-Inf	9.05	3	H	88	1.62	-
PK	5.36G	62.72	74.00	-11.28	9.36	3	H	88	1.62	-

QPSK,5M_Nss1_2TX

5200MHz_TX

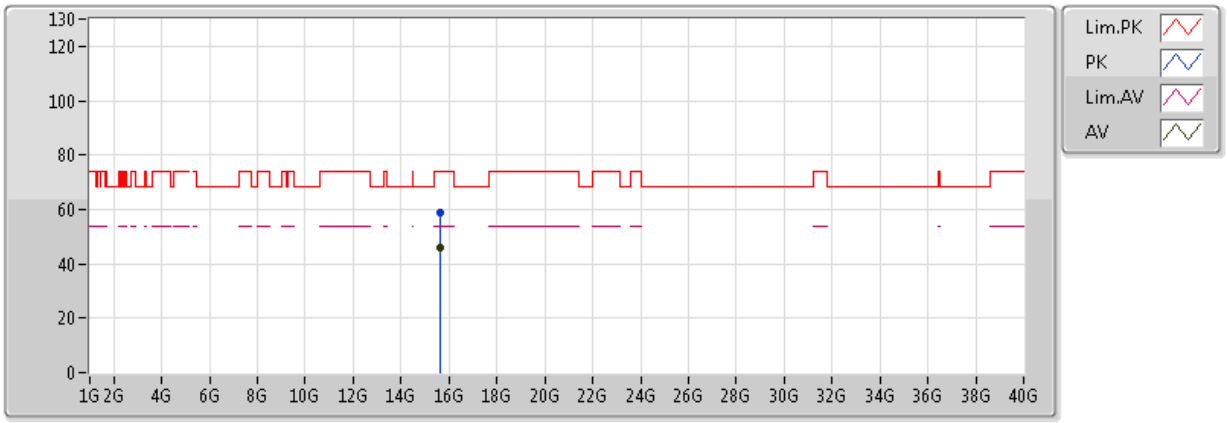


20170330
EUT Z 2TX Non-TXBF
setting 13
02-L-2

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.60868G	45.78	54.00	-8.22	17.94	3	V	253	1.23	-
PK	15.59992G	59.16	74.00	-14.84	17.96	3	V	253	1.23	-

QPSK,5M_Nss1_2TX

5200MHz_TX

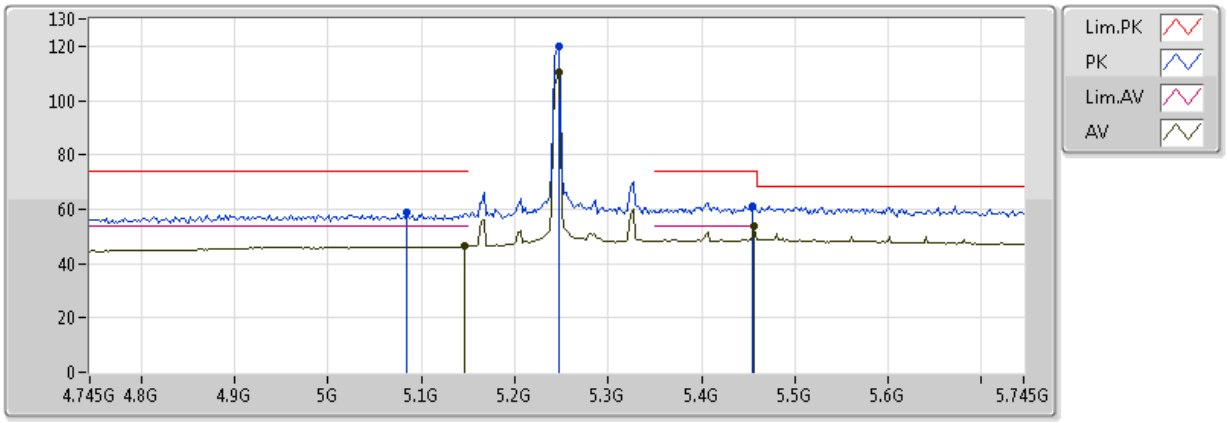


20170330
EUT Z 2TX Non-TXBF
setting 13
02-L-2

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.60804G	45.70	54.00	-8.30	17.94	3	H	291	2.32	-
PK	15.60468G	59.04	74.00	-14.96	17.95	3	H	291	2.32	-

QPSK,5M_Nss1_2TX

5245MHz_TX

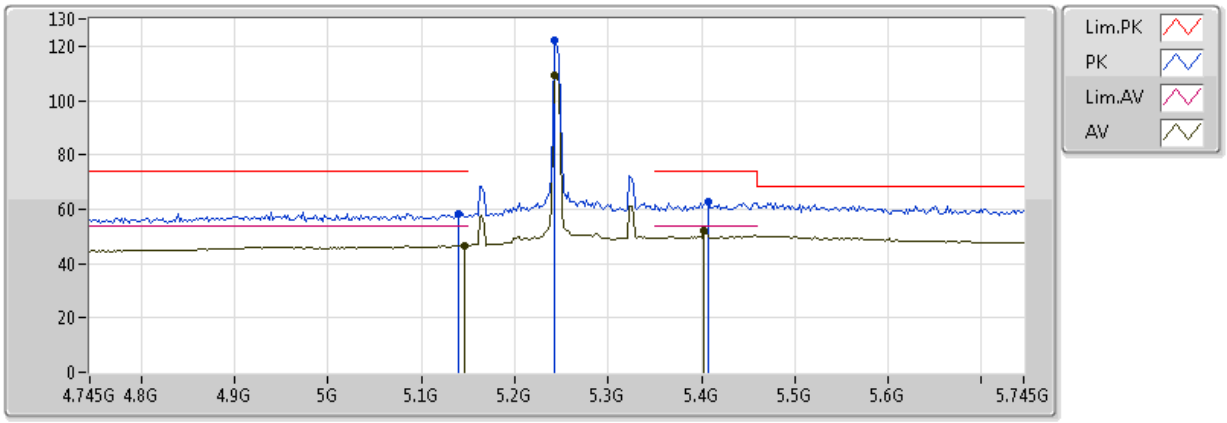


20170330
EUT Z 2TX Non-TXBF
setting 14.5
02-L-2-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.147G	46.27	54.00	-7.73	8.92	3	V	84	1.58	-
AV	5.247G	110.13	Inf	-Inf	9.15	3	V	84	1.58	-
AV	5.457G	53.60	54.00	-0.40	9.58	3	V	84	1.58	-
PK	5.085G	58.81	74.00	-15.19	8.76	3	V	84	1.58	-
PK	5.247G	120.06	Inf	-Inf	9.15	3	V	84	1.58	-
PK	5.455G	60.98	74.00	-13.02	9.57	3	V	84	1.58	-

QPSK,5M_Nss1_2TX

5245MHz_TX

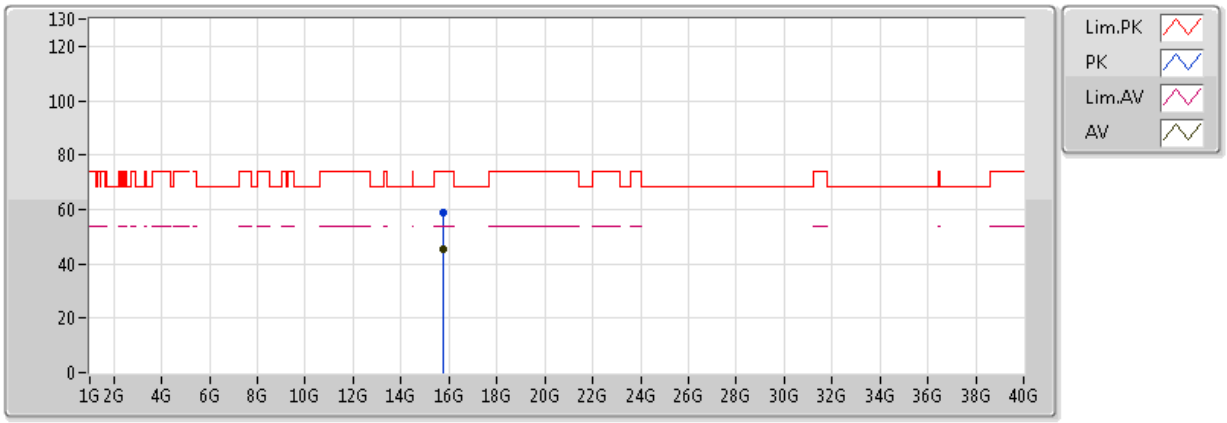


20170330
EUT Z 2TX Non-TXBF
setting 14.5
02-L-2-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.147G	46.49	54.00	-7.51	8.92	3	H	86	1.65	-
AV	5.243G	109.24	Inf	-Inf	9.14	3	H	86	1.65	-
AV	5.403G	51.93	54.00	-2.07	9.44	3	H	86	1.65	-
PK	5.139G	58.26	74.00	-15.74	8.90	3	H	86	1.65	-
PK	5.243G	122.05	Inf	-Inf	9.14	3	H	86	1.65	-
PK	5.407G	62.83	74.00	-11.17	9.45	3	H	86	1.65	-

QPSK,5M_Nss1_2TX

5245MHz_TX

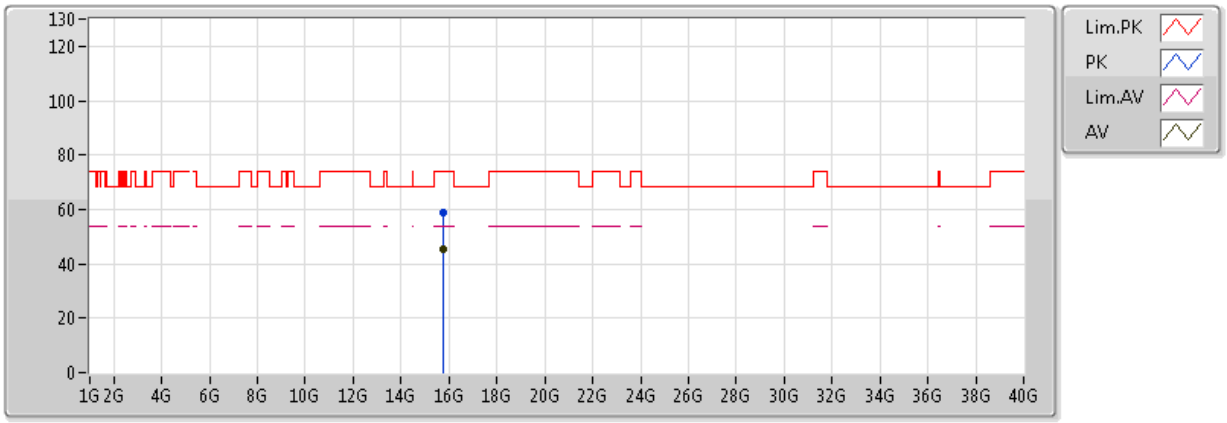


20170330
EUT Z 2TX Non-TXBF
setting 14.5
02-L-2

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.73436G	45.42	54.00	-8.58	17.61	3	V	291	1.07	-
PK	15.73468G	58.85	74.00	-15.15	17.61	3	V	291	1.07	-

QPSK,5M_Nss1_2TX

5245MHz_TX

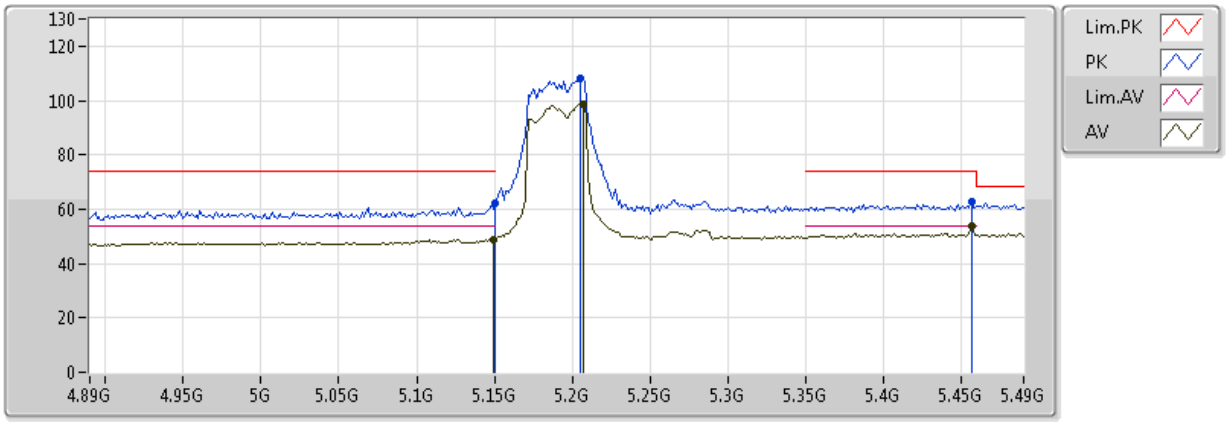


20170330
EUT Z 2TX Non-TXBF
setting 14.5
02-L-2

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.74056G	45.46	54.00	-8.54	17.60	3	H	96	1.80	-
PK	15.74044G	58.63	74.00	-15.37	17.60	3	H	96	1.80	-

QPSK,40M_Nss1_2TX

5190MHz_TX

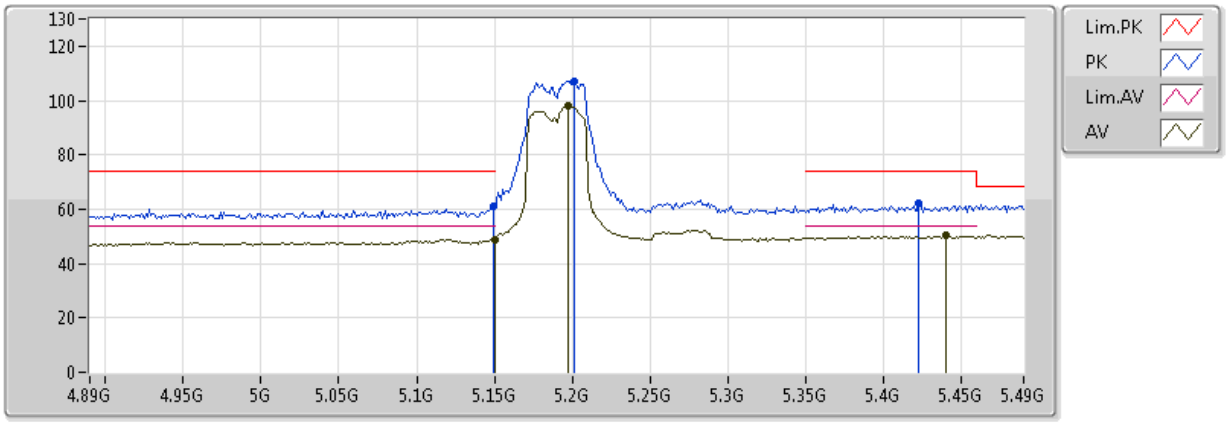


20170329
EUT Z 2TX Non-TXBF
Setting 8
02-L-02-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.1492G	49.00	54.00	-5.00	8.93	3	V	89	1.61	-
AV	5.2068G	98.79	Inf	-Inf	9.07	3	V	89	1.61	-
AV	5.4564G	53.86	54.00	-0.14	9.58	3	V	89	1.61	-
PK	5.149995G	62.30	74.00	-11.70	8.93	3	V	89	1.61	-
PK	5.2056G	108.31	Inf	-Inf	9.07	3	V	89	1.61	-
PK	5.4564G	62.73	74.00	-11.27	9.58	3	V	89	1.61	-

QPSK,40M_Nss1_2TX

5190MHz_TX

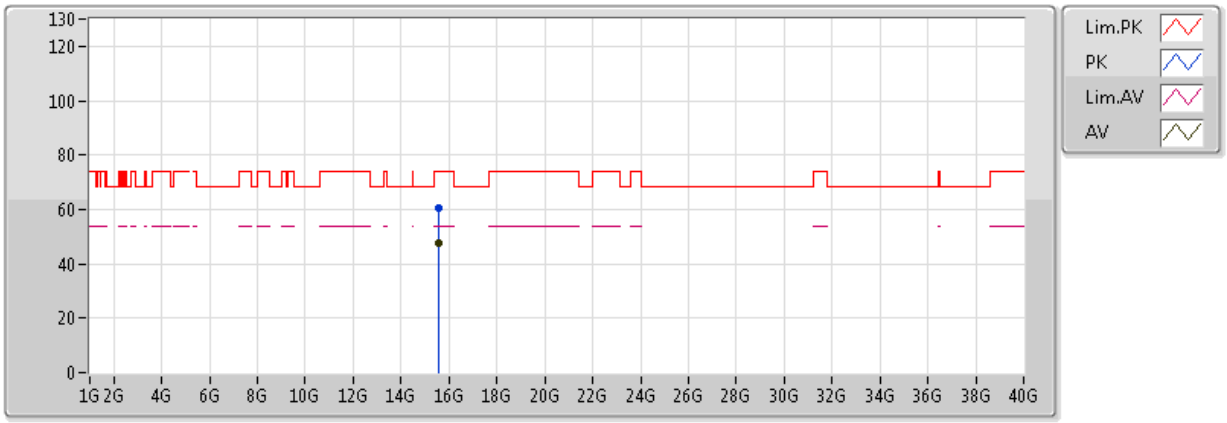


20170329
EUT Z 2TX Non-TXBF
Setting 8
02-L-02-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.149995G	48.91	54.00	-5.09	8.93	3	H	91	1.66	-
AV	5.1972G	98.04	Inf	-Inf	9.05	3	H	91	1.66	-
AV	5.4396G	50.18	54.00	-3.82	9.53	3	H	91	1.66	-
PK	5.1492G	61.01	74.00	-12.99	8.93	3	H	91	1.66	-
PK	5.2008G	107.23	Inf	-Inf	9.06	3	H	91	1.66	-
PK	5.4228G	62.12	74.00	-11.88	9.49	3	H	91	1.66	-

QPSK,40M_Nss1_2TX

5190MHz_TX

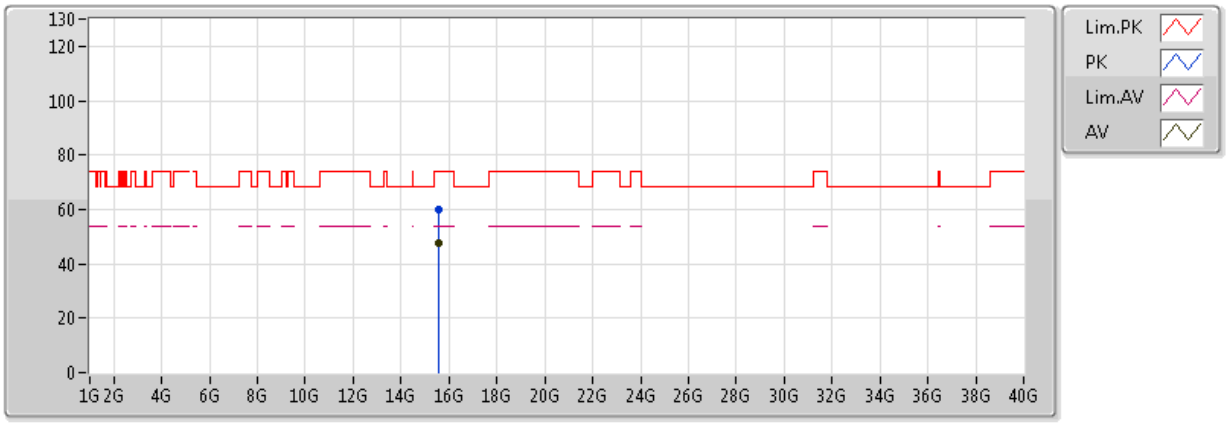


20170329
EUT Z 2TX Non-TXBF
Setting 8
02-L-02

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.57054G	47.66	54.00	-6.34	18.03	3	V	98	2.34	-
PK	15.5704G	60.24	74.00	-13.76	18.03	3	V	98	2.34	-

QPSK,40M_Nss1_2TX

5190MHz_TX

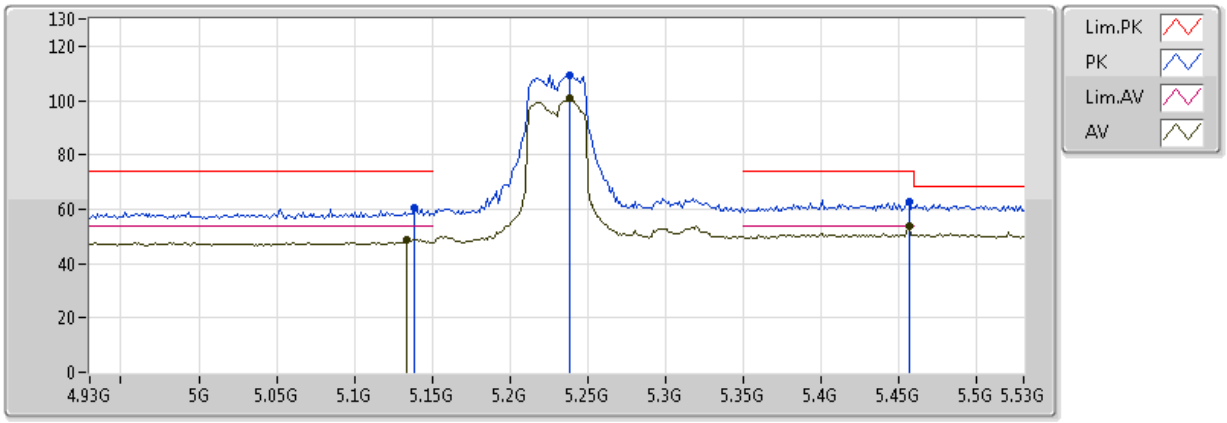


20170329
EUT Z 2TX Non-TXBF
Setting 8
02-L-02

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.56873G	47.67	54.00	-6.33	18.04	3	H	354	1.52	-
PK	15.57133G	59.93	74.00	-14.07	18.03	3	H	354	1.52	-

QPSK,40M_Nss1_2TX

5230MHz_TX

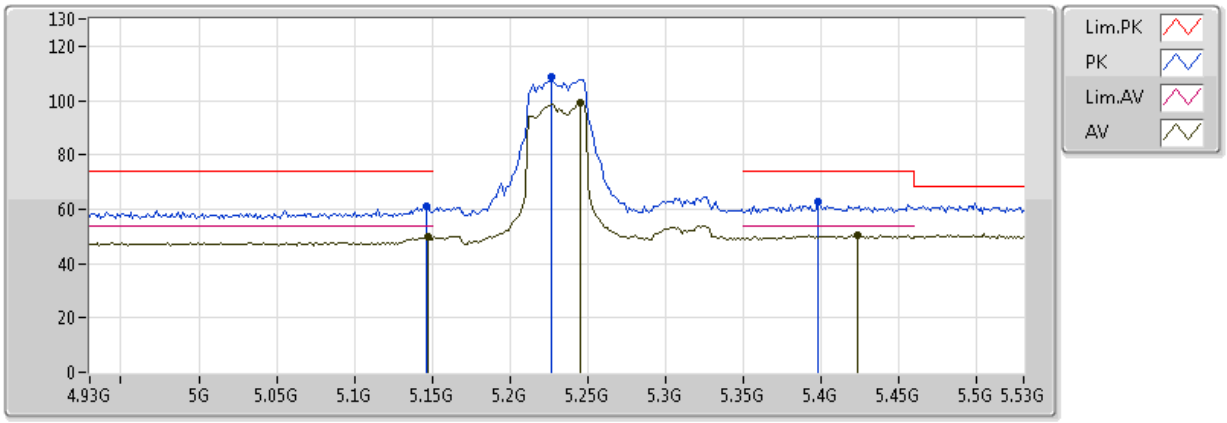


20170329
EUT Z 2TX Non-TXBF
Setting 10
02-L-02-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.134G	48.57	54.00	-5.43	8.89	3	V	89	1.67	-
AV	5.2384G	100.66	Inf	-Inf	9.13	3	V	89	1.67	-
AV	5.4568G	53.87	54.00	-0.13	9.58	3	V	89	1.67	-
PK	5.1388G	60.38	74.00	-13.62	8.90	3	V	89	1.67	-
PK	5.2384G	109.24	Inf	-Inf	9.13	3	V	89	1.67	-
PK	5.4568G	62.55	74.00	-11.45	9.58	3	V	89	1.67	-

QPSK,40M_Nss1_2TX

5230MHz_TX

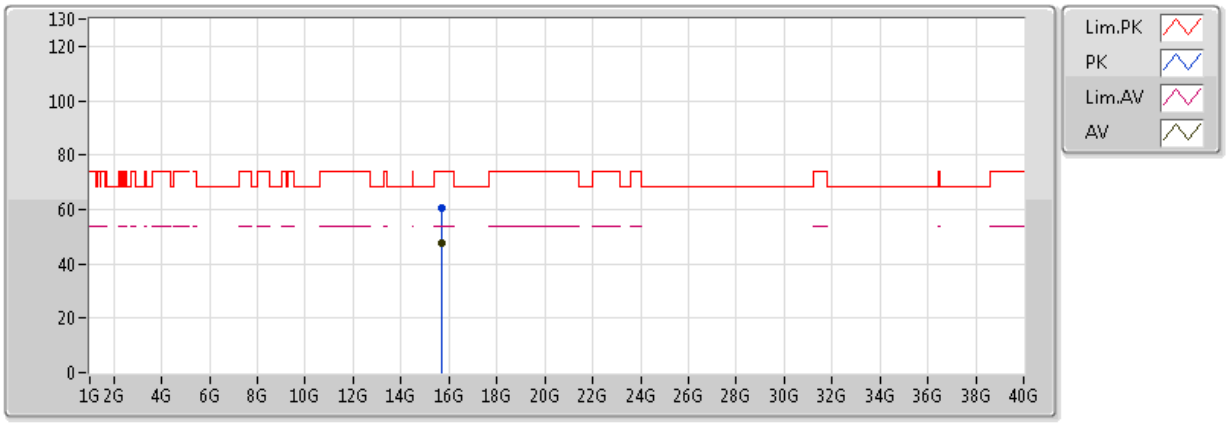


20170329
EUT Z 2TX Non-TXBF
Setting 10
02-L-02-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.1472G	49.75	54.00	-4.25	8.92	3	H	90	1.69	-
AV	5.2456G	98.95	Inf	-Inf	9.15	3	H	90	1.69	-
AV	5.4232G	50.48	54.00	-3.52	9.49	3	H	90	1.69	-
PK	5.146G	60.87	74.00	-13.13	8.92	3	H	90	1.69	-
PK	5.2264G	108.68	Inf	-Inf	9.11	3	H	90	1.69	-
PK	5.398G	62.74	74.00	-11.26	9.43	3	H	90	1.69	-

QPSK,40M_Nss1_2TX

5230MHz_TX

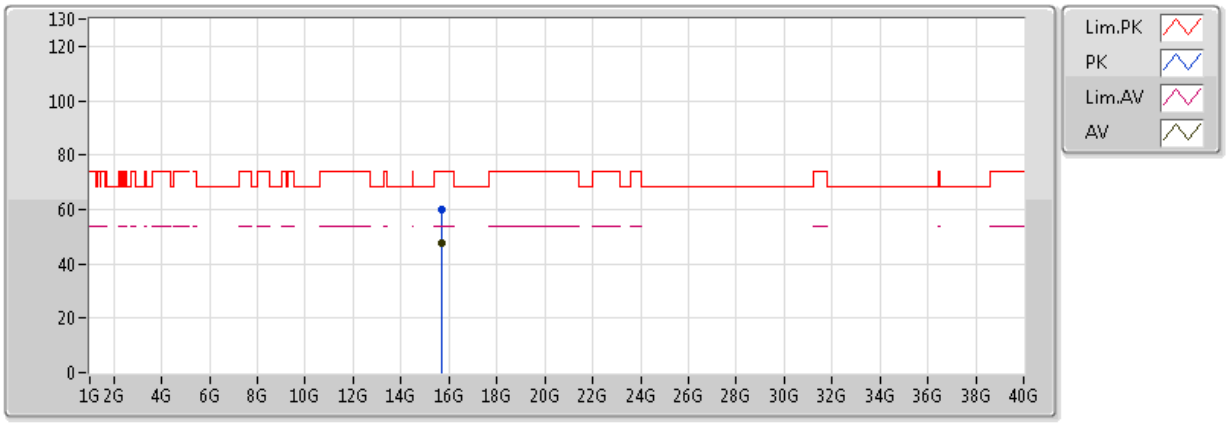


20170329
EUT Z 2TX Non-TXBF
Setting 10
02-L-02

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.69129G	47.53	54.00	-6.47	17.72	3	V	249	1.12	-
PK	15.69015G	60.42	74.00	-13.58	17.73	3	V	249	1.12	-

QPSK,40M_Nss1_2TX

5230MHz_TX

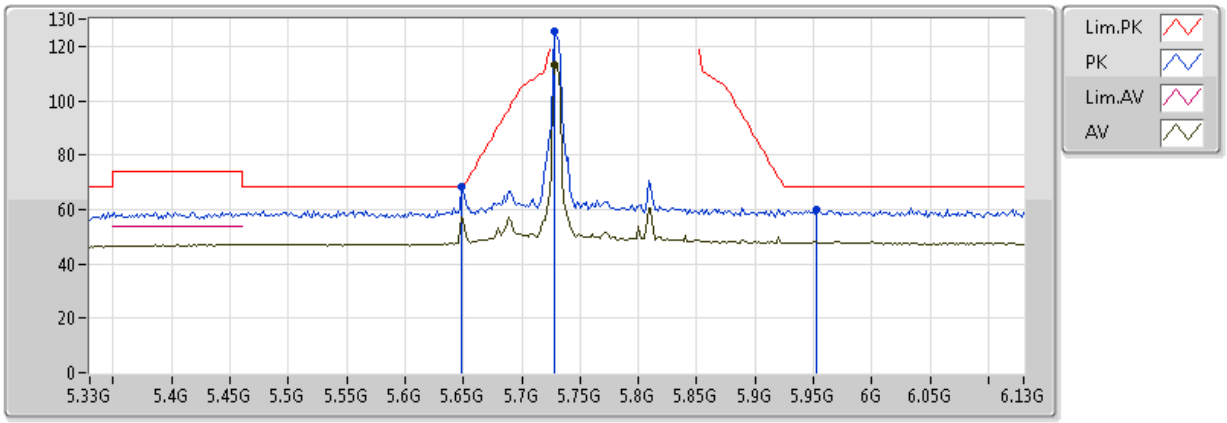


20170329
EUT Z 2TX Non-TXBF
Setting 10
02-L-02

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	15.68758G	47.49	54.00	-6.51	17.73	3	H	296	2.21	-
PK	15.68834G	60.03	74.00	-13.97	17.73	3	H	296	2.21	-

QPSK,5M_Nss1_2TX

5730MHz_TX

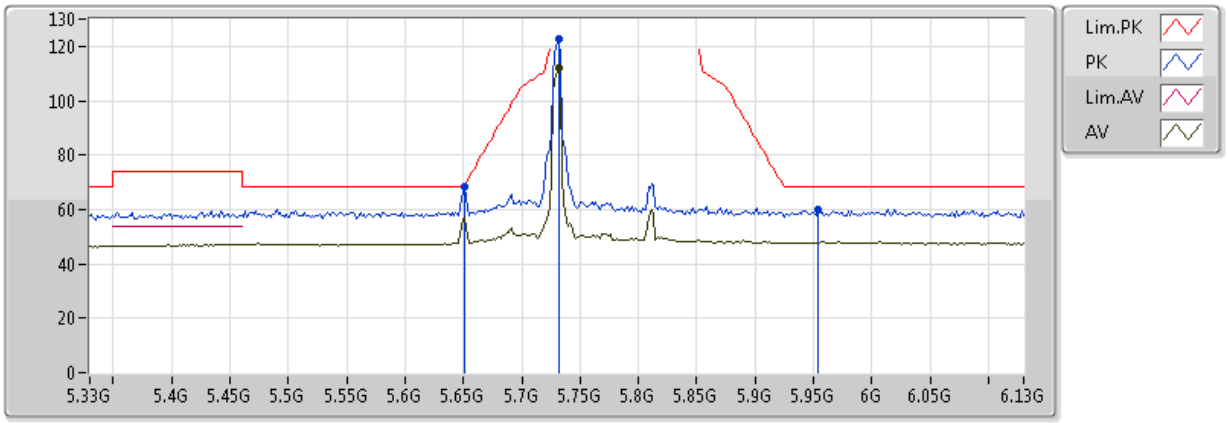


20170330
EUT Z 2TX Non-TXBF
setting 18
02-L-2-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.7284G	113.14	Inf	-Inf	9.81	3	V	85	1.58	-
PK	5.6484G	68.09	68.20	-0.11	9.79	3	V	85	1.58	-
PK	5.7284G	125.29	Inf	-Inf	9.81	3	V	85	1.58	-
PK	5.9524G	60.02	68.20	-8.18	10.03	3	V	85	1.58	-

QPSK,5M_Nss1_2TX

5730MHz_TX

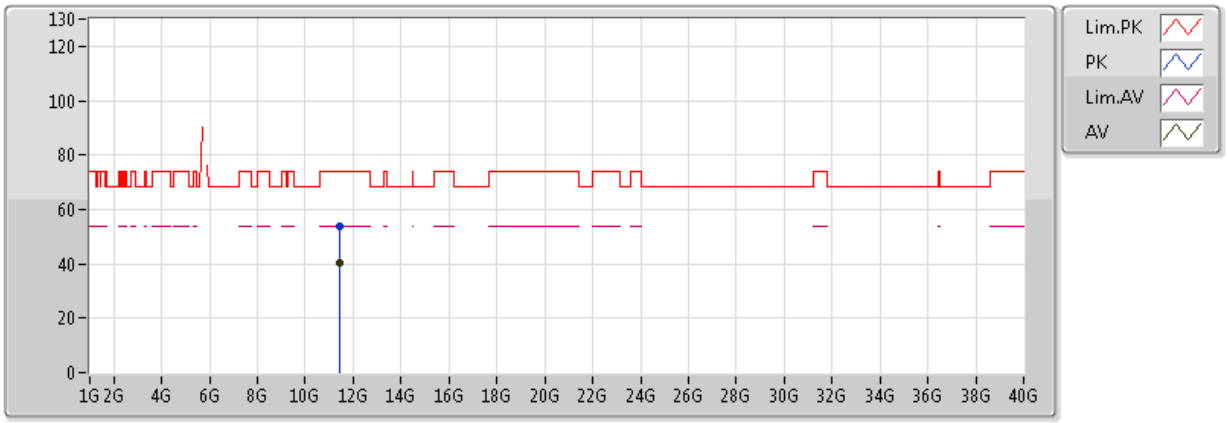


20170330
EUT Z 2TX Non-TXBF
setting 18
02-L-2-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.7316G	111.88	Inf	-Inf	9.81	3	H	86	1.64	-
PK	5.6516G	68.32	69.38	-1.06	9.79	3	H	86	1.64	-
PK	5.7316G	122.44	Inf	-Inf	9.81	3	H	86	1.64	-
PK	5.954G	59.76	68.20	-8.44	10.04	3	H	86	1.64	-

QPSK,5M_Nss1_2TX

5730MHz_TX

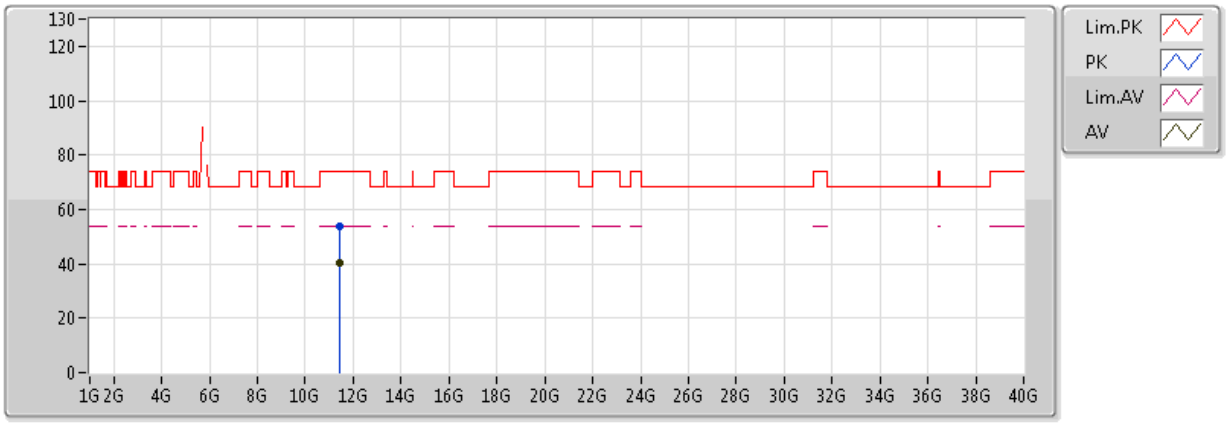


20170330
EUT Z 2TX Non-TXBF
setting 18
02-L-2

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.45388G	40.45	54.00	-13.55	16.28	3	V	59	2.09	-
PK	11.45004G	53.57	74.00	-20.43	16.28	3	V	59	2.09	-

QPSK,5M_Nss1_2TX

5730MHz_TX

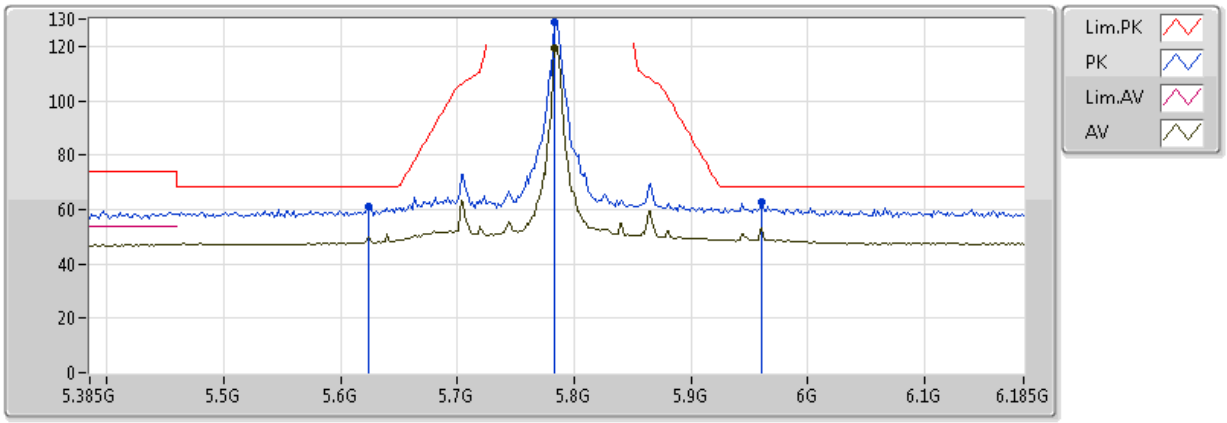


20170330
EUT Z 2TX Non-TXBF
setting 18
02-L-2

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.45164G	40.55	54.00	-13.45	16.28	3	H	10	1.88	-
PK	11.45316G	53.60	74.00	-20.40	16.28	3	H	10	1.88	-

QPSK,5M_Nss1_2TX

5785MHz_TX

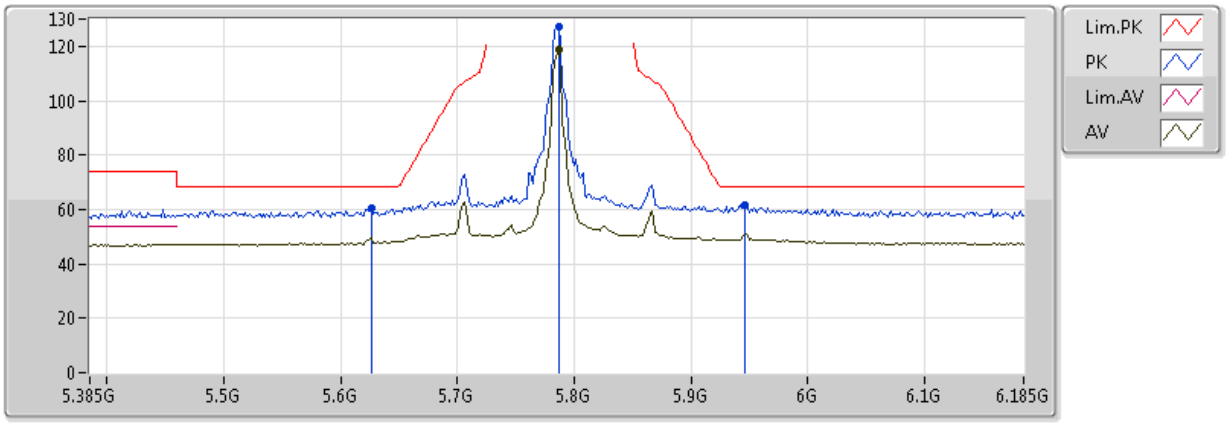


20170330
EUT Z 2TX Non-TXBF
setting 31.5
02-L-2-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.7834G	119.55	Inf	-Inf	9.82	3	V	85	1.63	-
PK	5.6234G	61.02	68.20	-7.18	9.78	3	V	85	1.63	-
PK	5.7834G	128.66	Inf	-Inf	9.82	3	V	85	1.63	-
PK	5.961G	62.93	68.20	-5.27	10.05	3	V	85	1.63	-

QPSK,5M_Nss1_2TX

5785MHz_TX

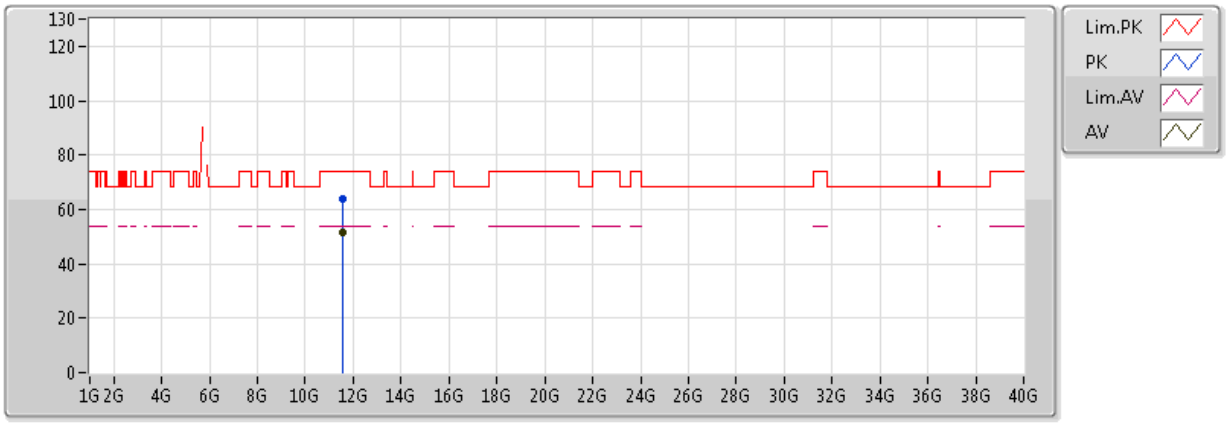


20170330
EUT Z 2TX Non-TXBF
setting 31.5
02-L-2-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.7866G	118.61	Inf	-Inf	9.82	3	H	85	1.61	-
PK	5.6266G	60.42	68.20	-7.78	9.79	3	H	85	1.61	-
PK	5.7866G	127.25	Inf	-Inf	9.82	3	H	85	1.61	-
PK	5.9466G	61.57	68.20	-6.63	10.03	3	H	85	1.61	-

QPSK,5M_Nss1_2TX

5785MHz_TX

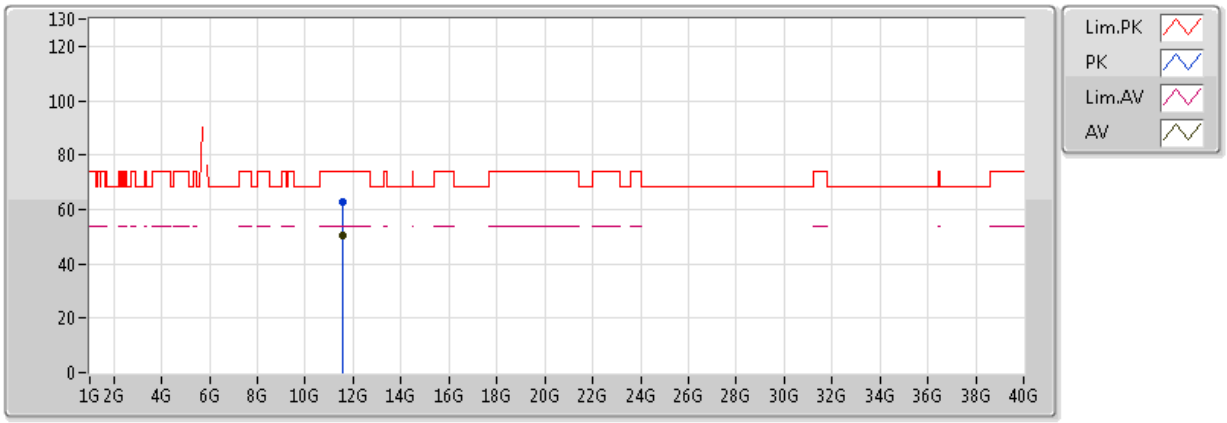


20170330
EUT Z 2TX Non-TXBF
setting 31.5
02-L-2

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.5696G	51.83	54.00	-2.17	16.39	3	V	85	1.52	-
PK	11.56924G	63.82	74.00	-10.18	16.39	3	V	85	1.52	-

QPSK,5M_Nss1_2TX

5785MHz_TX

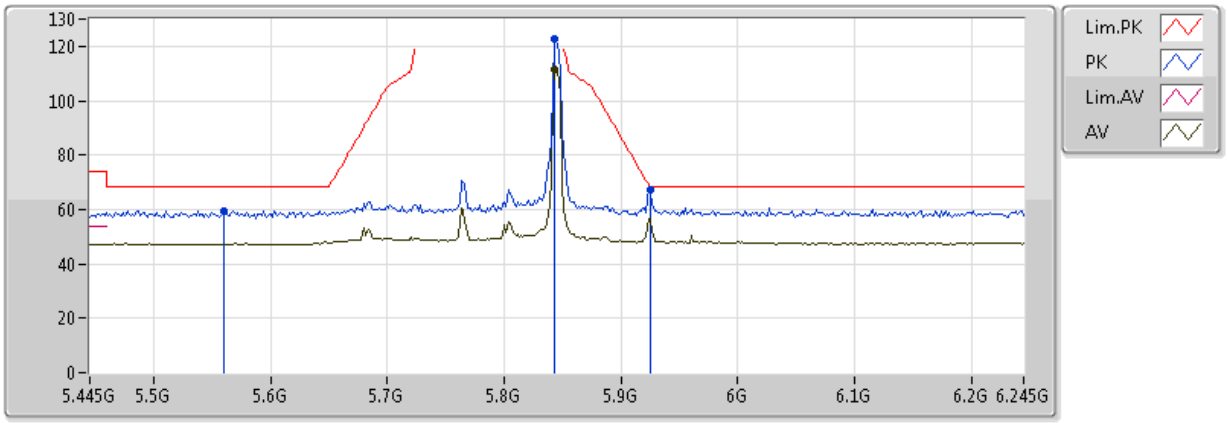


20170330
EUT Z 2TX Non-TXBF
setting 31.5
02-L-2

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.5706G	50.45	54.00	-3.55	16.39	3	H	87	1.54	-
PK	11.5712G	62.88	74.00	-11.12	16.40	3	H	87	1.54	-

QPSK,5M_Nss1_2TX

5845MHz_TX

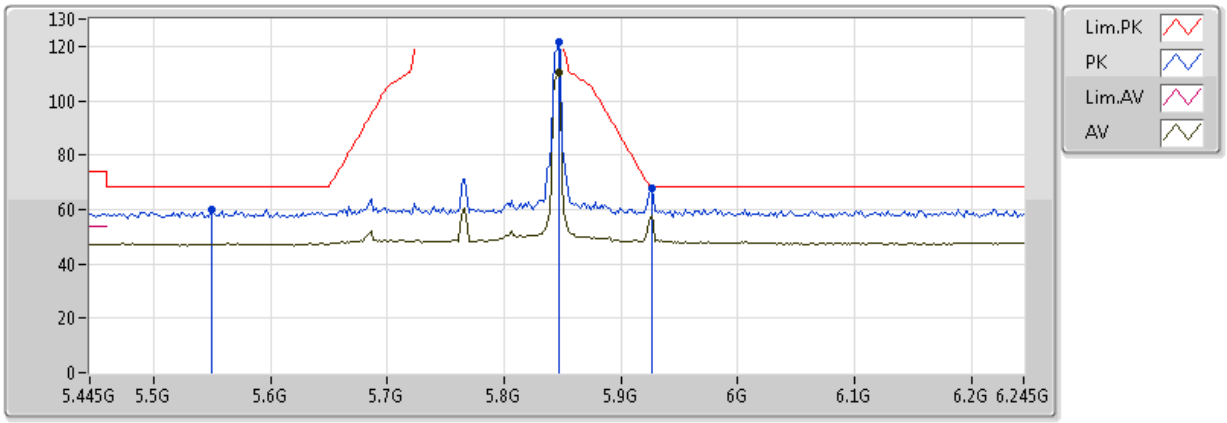


20170330
EUT Z 2TX Non-TXBF
setting 18
02-L-2-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.8434G	111.68	Inf	-Inf	9.88	3	V	85	1.63	-
PK	5.5602G	59.65	68.20	-8.55	9.74	3	V	85	1.63	-
PK	5.8434G	122.48	Inf	-Inf	9.88	3	V	85	1.63	-
PK	5.925G	67.51	68.20	-0.69	10.00	3	V	85	1.63	-

QPSK,5M_Nss1_2TX

5845MHz_TX

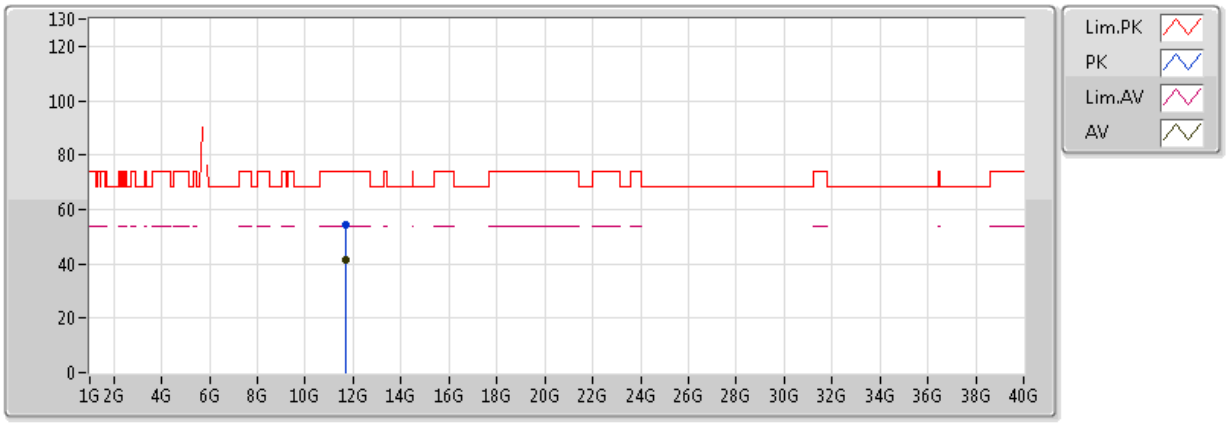


20170330
EUT Z 2TX Non-TXBF
setting 18
02-L-2-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.8466G	110.54	Inf	-Inf	9.89	3	H	85	1.65	-
PK	5.549G	60.18	68.20	-8.02	9.73	3	H	85	1.65	-
PK	5.8466G	121.36	Inf	-Inf	9.89	3	H	85	1.65	-
PK	5.9266G	67.97	68.20	-0.23	10.00	3	H	85	1.65	-

QPSK,5M_Nss1_2TX

5845MHz_TX

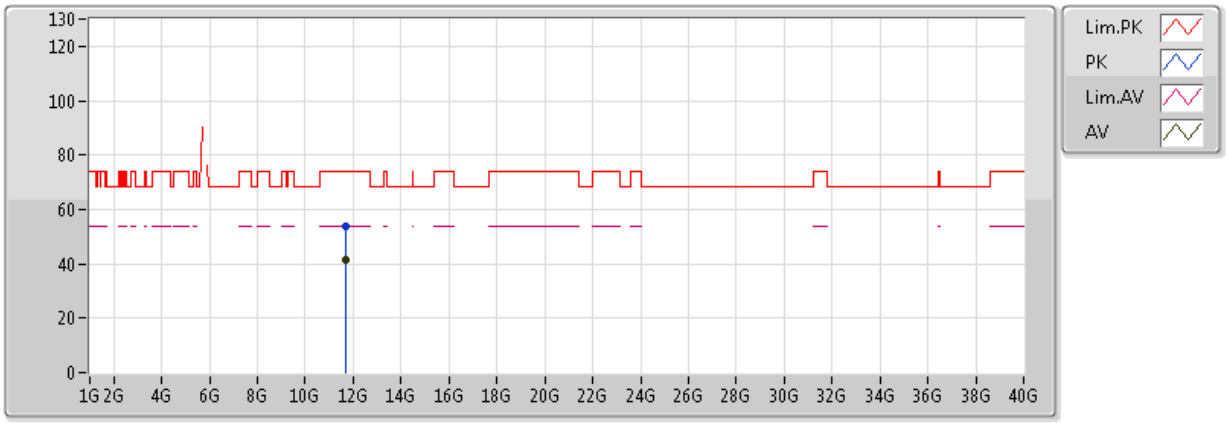


20170330
EUT Z 2TX Non-TXBF
setting 18
02-L-2

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.69744G	41.24	54.00	-12.76	16.52	3	V	22	2.27	-
PK	11.69152G	54.13	74.00	-19.87	16.51	3	V	22	2.27	-

QPSK,5M_Nss1_2TX

5845MHz_TX

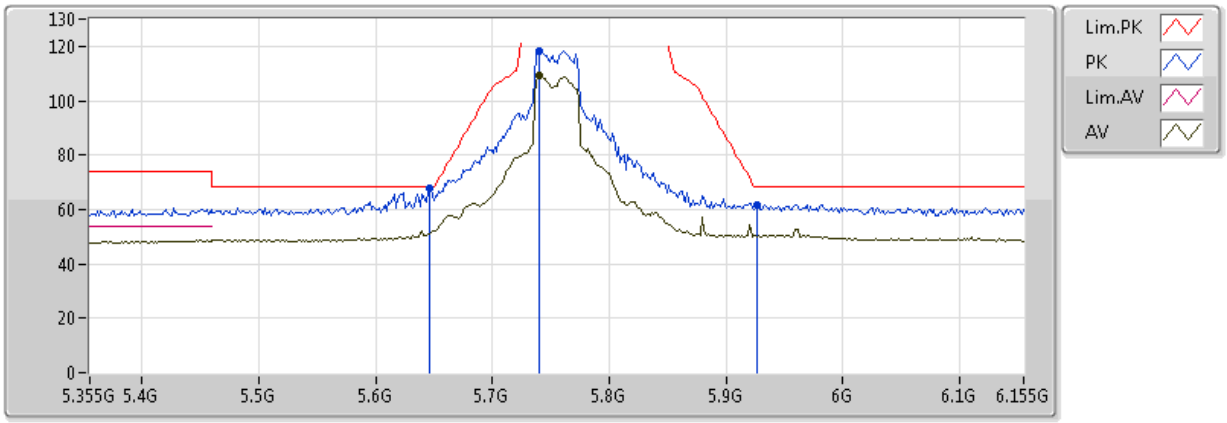


20170330
EUT Z 2TX Non-TXBF
setting 18
02-L-2

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.683G	41.44	54.00	-12.56	16.51	3	H	13	1.81	-
PK	11.683G	54.02	74.00	-19.98	16.51	3	H	13	1.81	-

QPSK,40M_Nss1_2TX

5755MHz_TX

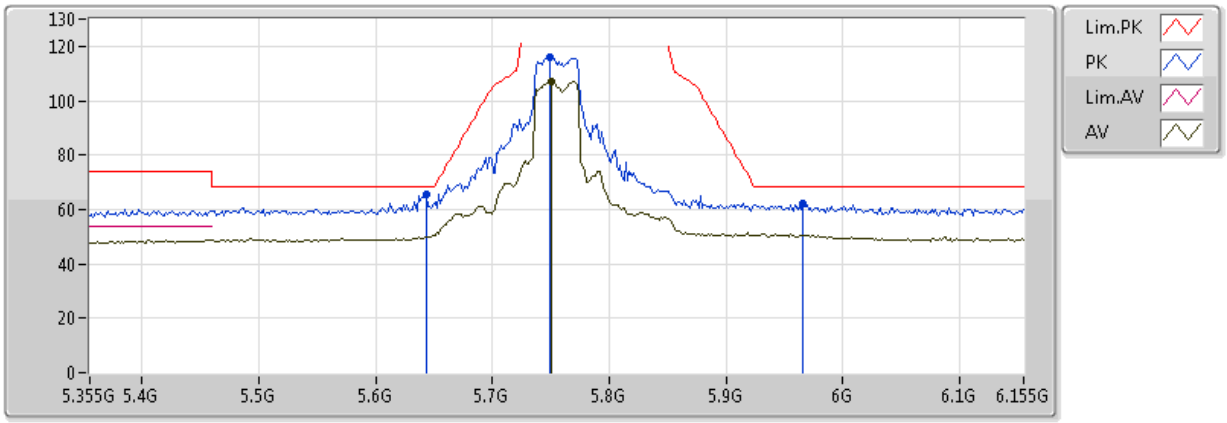


20170329
EUT Z 2TX Non-TXBF
Setting 22
02-L-02-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.7406G	109.02	Inf	-Inf	9.81	3	V	89	1.69	-
PK	5.6462G	67.86	68.20	-0.34	9.79	3	V	89	1.69	-
PK	5.7406G	118.13	Inf	-Inf	9.81	3	V	89	1.69	-
PK	5.9262G	61.89	68.20	-6.31	10.00	3	V	89	1.69	-

QPSK,40M_Nss1_2TX

5755MHz_TX

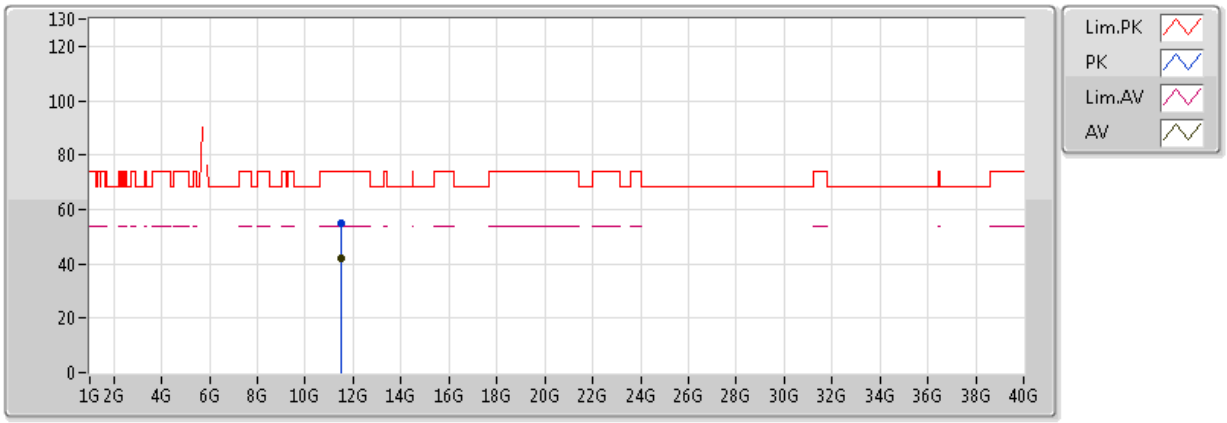


20170329
EUT Z 2TX Non-TXBF
Setting 22
02-L-02-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.7502G	107.23	Inf	-Inf	9.81	3	H	89	1.64	-
PK	5.643G	65.60	68.20	-2.60	9.79	3	H	89	1.64	-
PK	5.7486G	116.20	Inf	-Inf	9.81	3	H	89	1.64	-
PK	5.9662G	62.26	68.20	-5.94	10.05	3	H	89	1.64	-

QPSK,40M_Nss1_2TX

5755MHz_TX

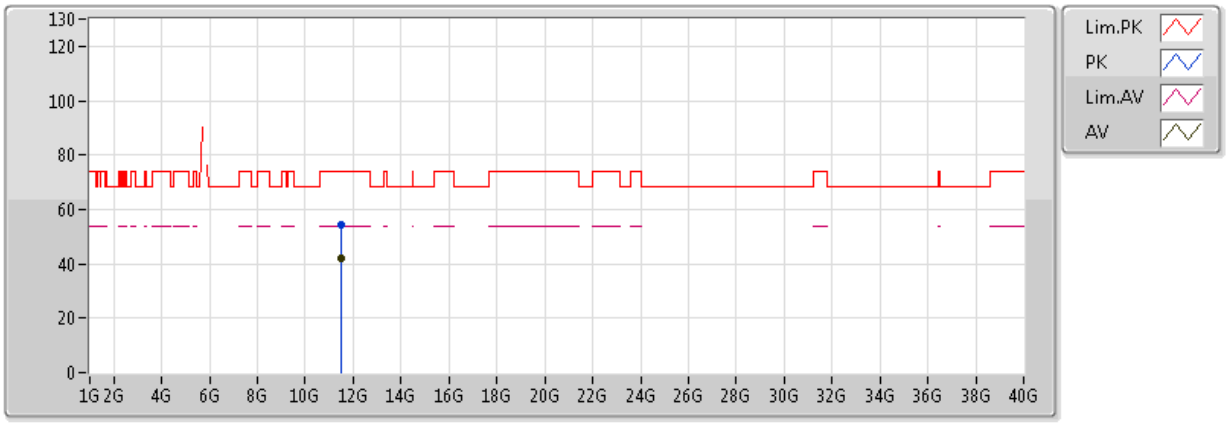


20170329
EUT Z 2TX Non-TXBF
Setting 22
02-L-02

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.51111G	42.24	54.00	-11.76	16.34	3	V	240	1.30	-
PK	11.50911G	55.00	74.00	-19.00	16.33	3	V	240	1.30	-

QPSK,40M_Nss1_2TX

5755MHz_TX

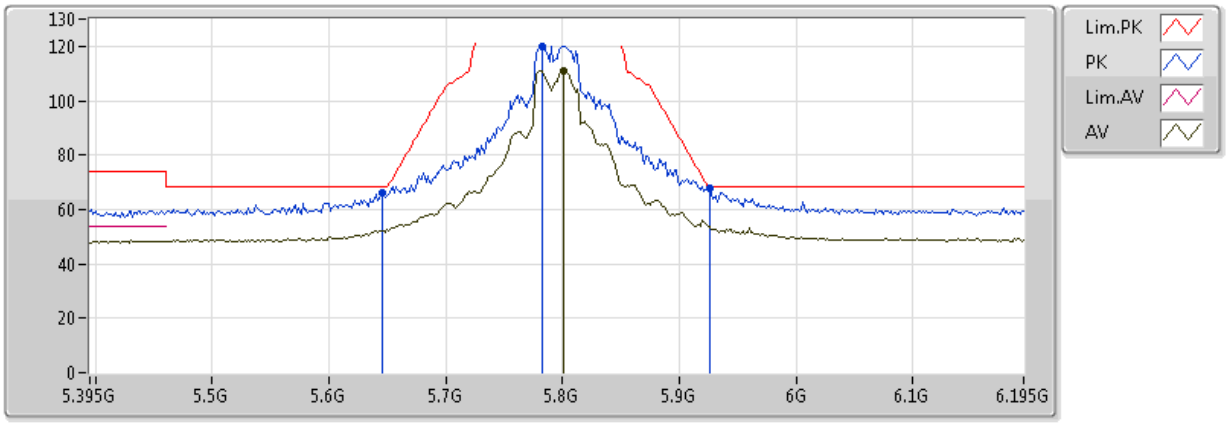


20170329
EUT Z 2TX Non-TXBF
Setting 22
02-L-02

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.51244G	41.94	54.00	-12.06	16.34	3	H	263	1.94	-
PK	11.50916G	54.47	74.00	-19.53	16.33	3	H	263	1.94	-

QPSK,40M_Nss1_2TX

5795MHz_TX

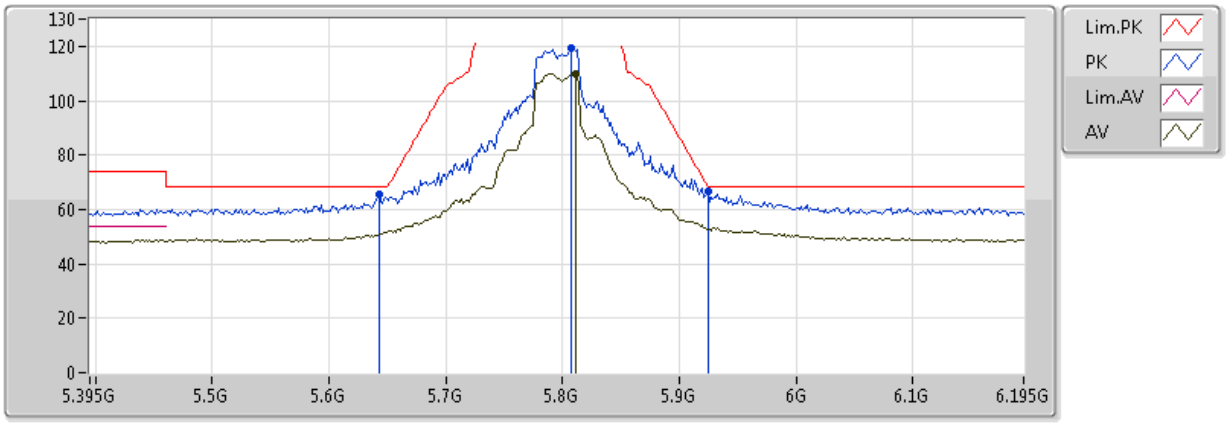


20170329
EUT Z 2TX Non-TXBF
Setting 26.5
02-L-02-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.8014G	110.94	Inf	-Inf	9.82	3	V	88	1.59	-
PK	5.6462G	66.27	68.20	-1.93	9.79	3	V	88	1.59	-
PK	5.7822G	119.97	Inf	-Inf	9.82	3	V	88	1.59	-
PK	5.9262G	67.84	68.20	-0.36	10.00	3	V	88	1.59	-

QPSK,40M_Nss1_2TX

5795MHz_TX

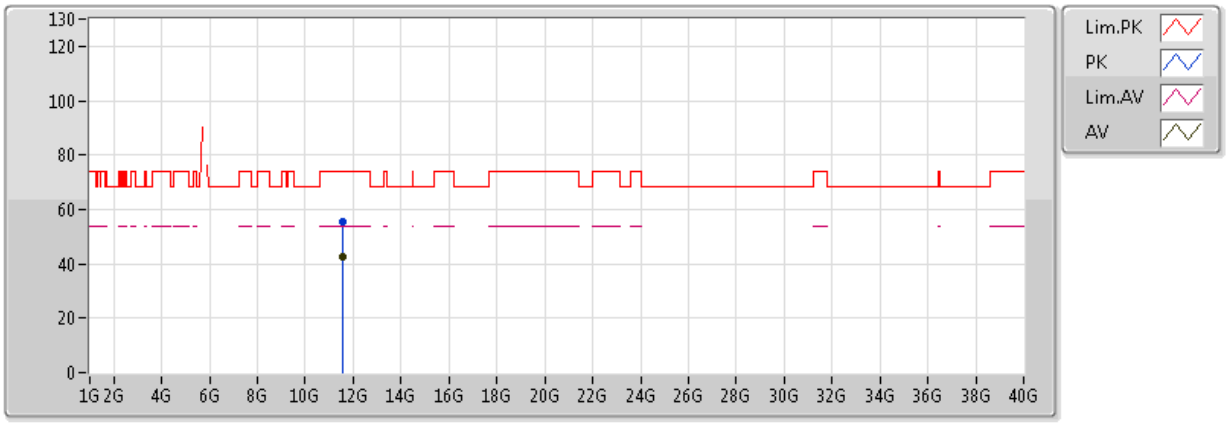


20170329
EUT Z 2TX Non-TXBF
Setting 26.5
02-L-02-10

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	5.811G	110.07	Inf	-Inf	9.84	3	H	88	1.68	-
PK	5.643G	65.37	68.20	-2.83	9.79	3	H	88	1.68	-
PK	5.8078G	119.19	Inf	-Inf	9.83	3	H	88	1.68	-
PK	5.9246G	66.56	68.50	-1.94	9.99	3	H	88	1.68	-

QPSK,40M_Nss1_2TX

5795MHz_TX

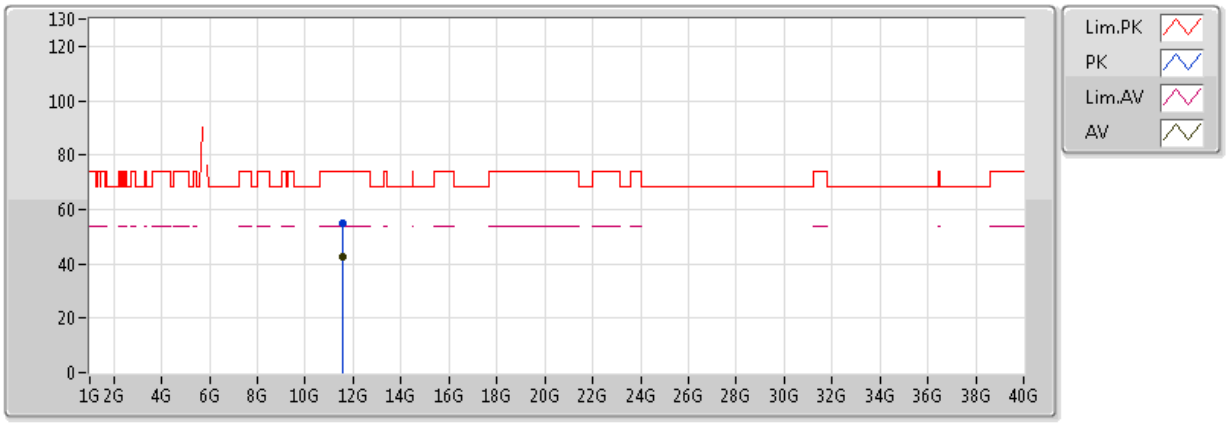


20170329
EUT Z 2TX Non-TXBF
Setting 26.5
02-L-02

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.58998G	42.51	54.00	-11.49	16.41	3	V	181	1.62	-
PK	11.59221G	55.51	74.00	-18.49	16.42	3	V	181	1.62	-

QPSK,40M_Nss1_2TX

5795MHz_TX



20170329
EUT Z 2TX Non-TXBF
Setting 26.5
02-L-02

Type	Freq(Hz)	Level(dBuV/m)	Limit(dBuV/m)	Margin(dB)	Factor(dB)	Dist(m)	Pol.(H/V)	Azimuth(°)	Height(m)	Comments
AV	11.58899G	42.49	54.00	-11.51	16.41	3	H	347	2.35	-
PK	11.58959G	54.99	74.00	-19.01	16.41	3	H	347	2.35	-

Test Method: Conducted

For Conducted Spurious Emission test:

Configurations	QPSK, 5M / Average / Port 1 + Port 2

Frequency(MHz)	Port 1 (TX1) Spurious Level (dBm)	Port 2 (TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit(dBm)	Margin(dB)
5155	-82.51	-82.30	-57.39	-41.25	16.14
5200	-83.11	-83.08	-58.08	-41.25	16.83
5245	-83.47	-83.29	-58.37	-41.25	17.12
5730	-83.07	-83.02	-58.03	-41.25	16.78
5785	-83.77	-83.65	-58.70	-41.25	17.45
5845	-83.16	-82.98	-58.06	-41.25	16.81

Configurations	QPSK, 5M / Peak / Port 1 + Port 2

Frequency(MHz)	Port 1 (TX1) Spurious Level (dBm)	Port 2 (TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit(dBm)	Margin(dB)
5155	-68.70	-68.70	-43.69	-21.25	22.44
5200	-70.95	-69.36	-45.07	-21.25	23.82
5245	-69.55	-68.88	-44.19	-21.25	22.94
5730	-69.35	-69.25	-41.29	-21.25	20.04
5785	-71.28	-70.66	-42.95	-21.25	21.70
5845	-68.97	-68.97	-40.96	-21.25	19.71

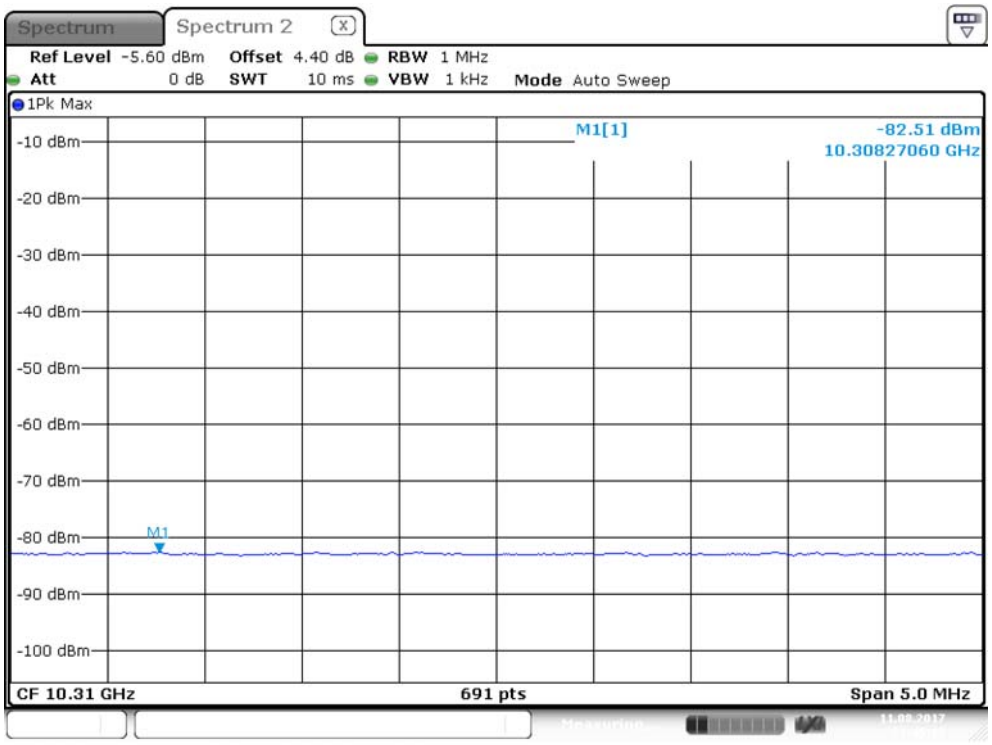
Configurations	QPSK, 40M / Average / Port 1 + Port 2

Frequency(MHz)	Port 1 (TX1) Spurious Level (dBm)	Port 2 (TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit(dBm)	Margin(dB)
5190	-83.22	-83.22	-58.21	-41.25	16.96
5230	-83.20	-83.20	-58.19	-41.25	16.94
5755	-83.31	-83.19	-58.24	-41.25	16.99
5795	-83.25	-83.11	-58.17	-41.25	16.92

Configurations	QPSK, 40M / Peak / Port 1 + Port 2

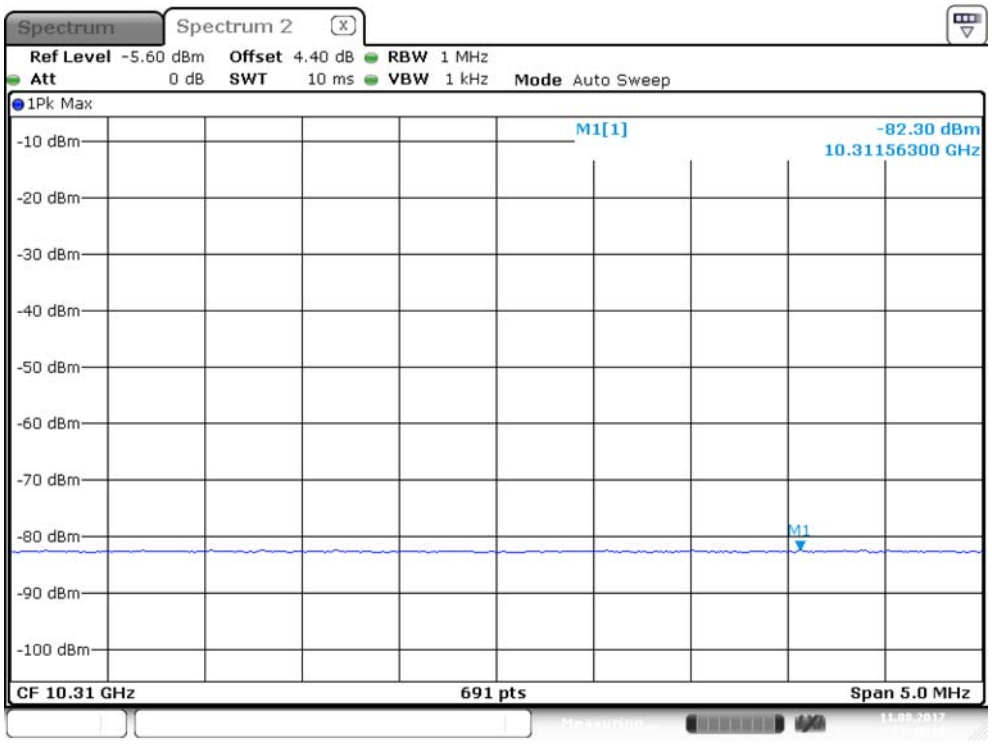
Frequency(MHz)	Port 1 (TX1) Spurious Level (dBm)	Port 2 (TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit(dBm)	Margin(dB)
5190	-70.31	-68.99	-44.59	-21.25	23.34
5230	-69.72	-69.72	-44.71	-21.25	23.46
5755	-70.40	-68.47	-41.32	-21.25	20.07
5795	-68.18	-69.51	-40.78	-21.25	19.53

Plot on Configuration QPSK, 5M / 5155MHz / Average / Port 1 (TX1)



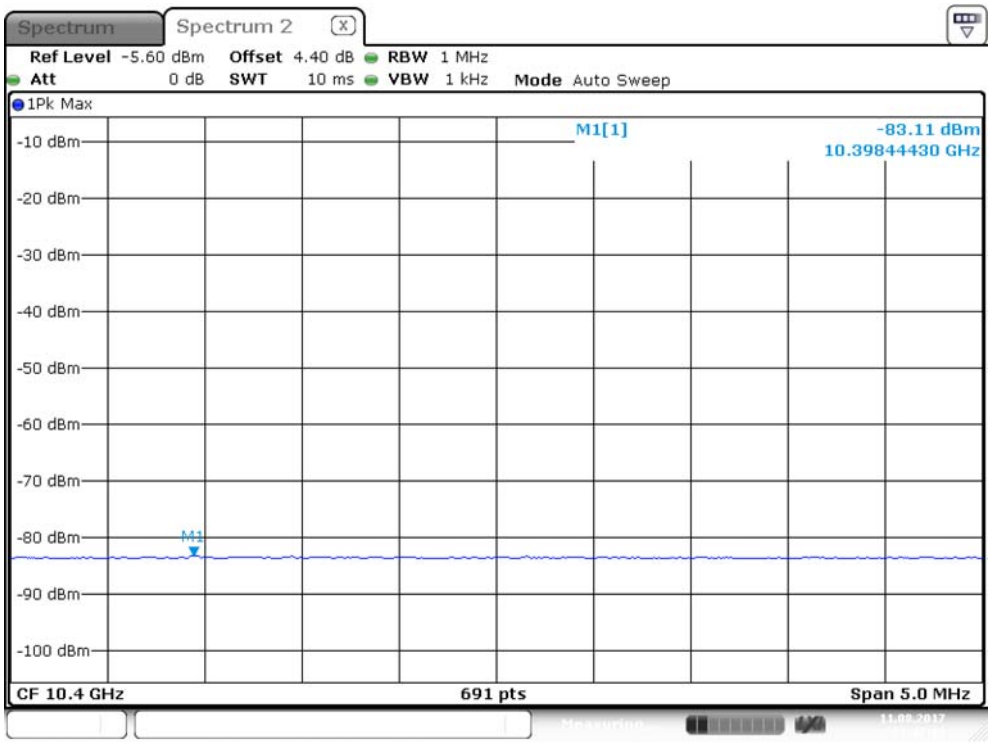
Date: 11.AUG.2017 21:45:15

Plot on Configuration QPSK, 5M / 5155MHz / Average / Port 2 (TX2)



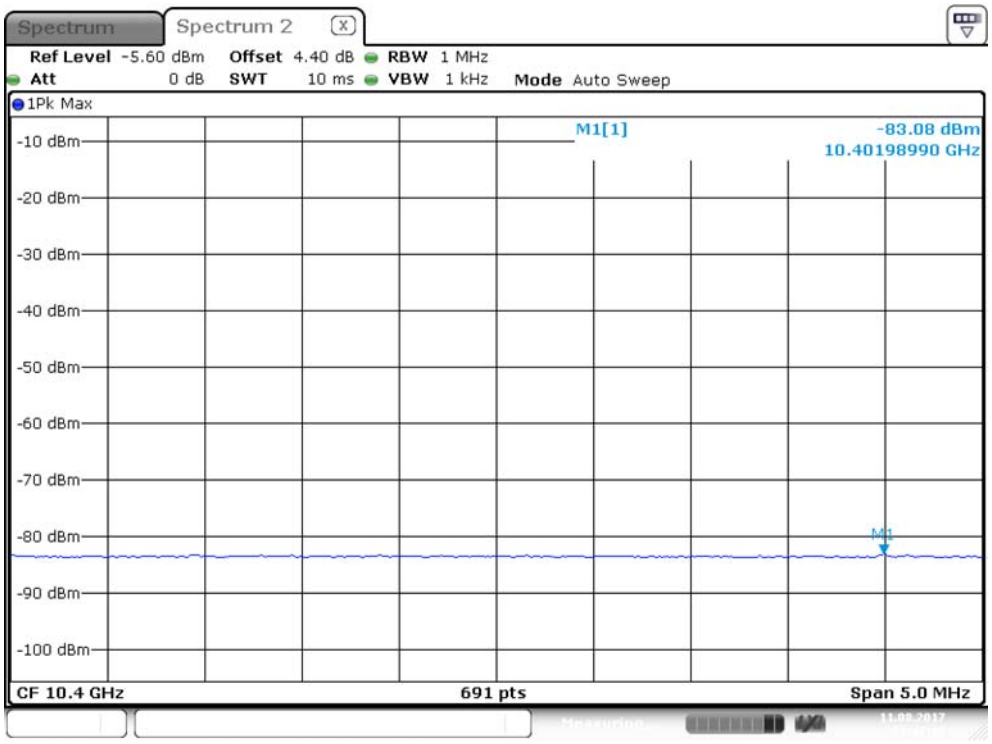
Date: 11.AUG.2017 21:45:19

Plot on Configuration QPSK, 5M / 5200MHz / Average / Port 1 (TX1)



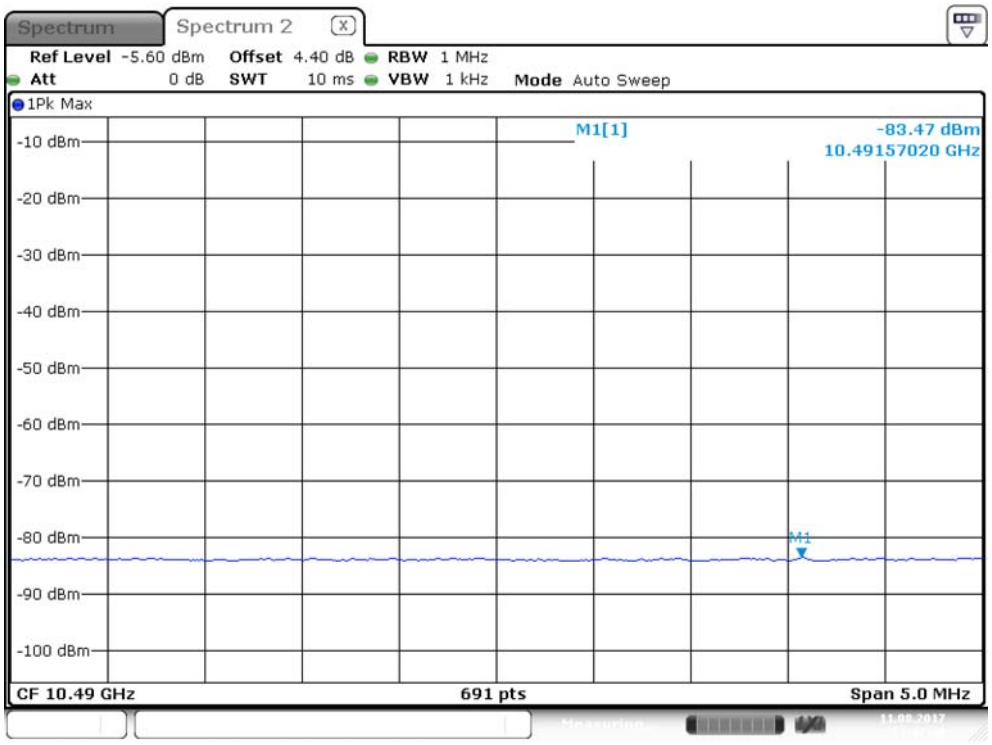
Date: 11.AUG.2017 21:47:11

Plot on Configuration QPSK, 5M / 5200MHz / Average / Port 2 (TX2)



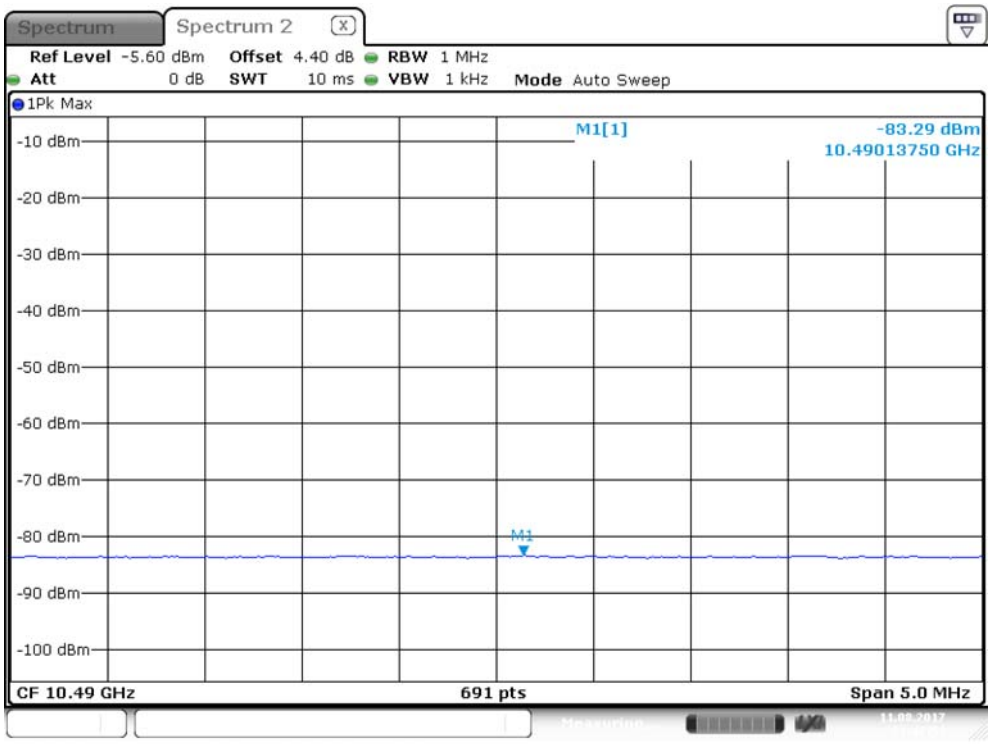
Date: 11.AUG.2017 21:47:14

Plot on Configuration QPSK, 5M / 5245MHz / Average / Port 1 (TX1)



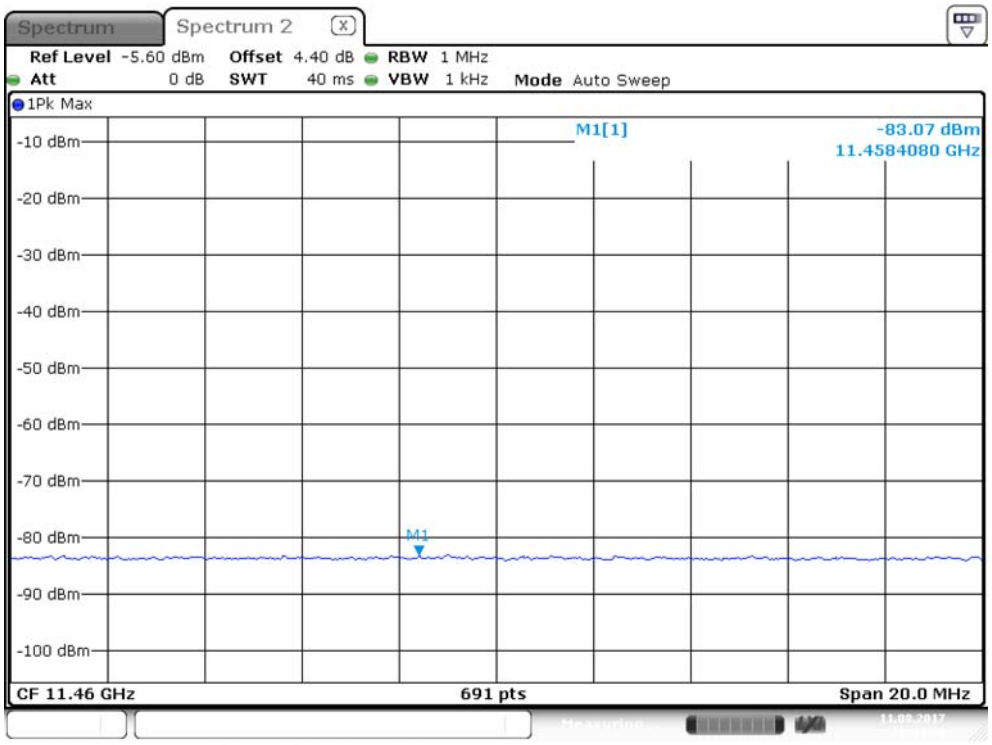
Date: 11.AUG.2017 21:47:49

Plot on Configuration QPSK, 5M / 5245MHz / Average / Port 2 (TX2)



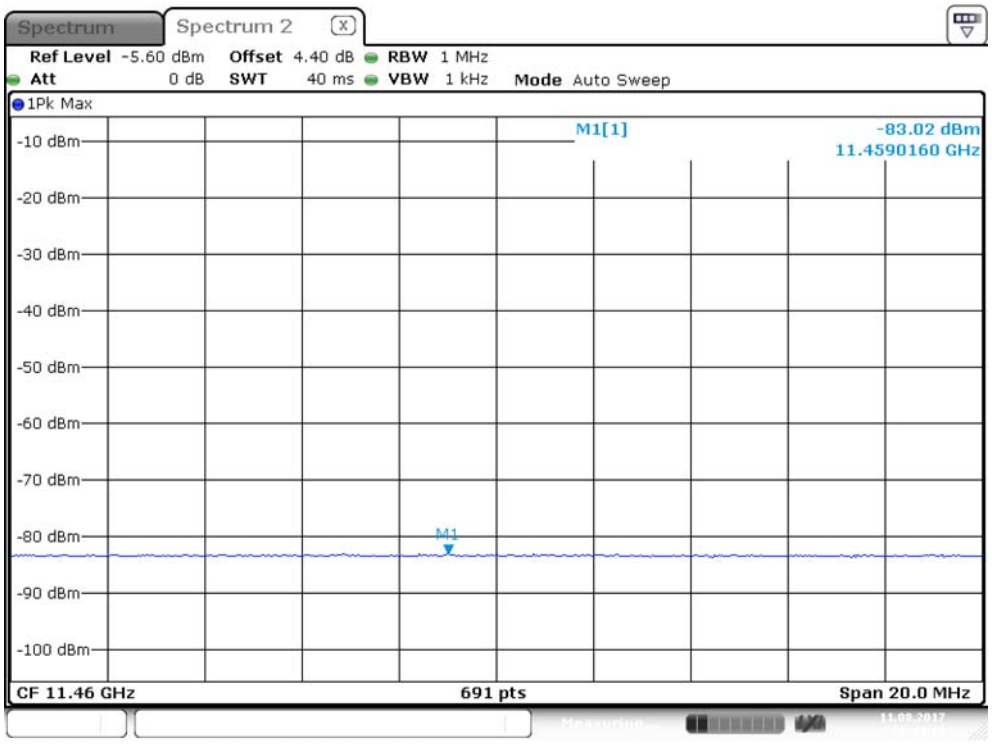
Date: 11.AUG.2017 21:47:52

Plot on Configuration QPSK, 5M / 5730MHz / Average / Port 1 (TX1)



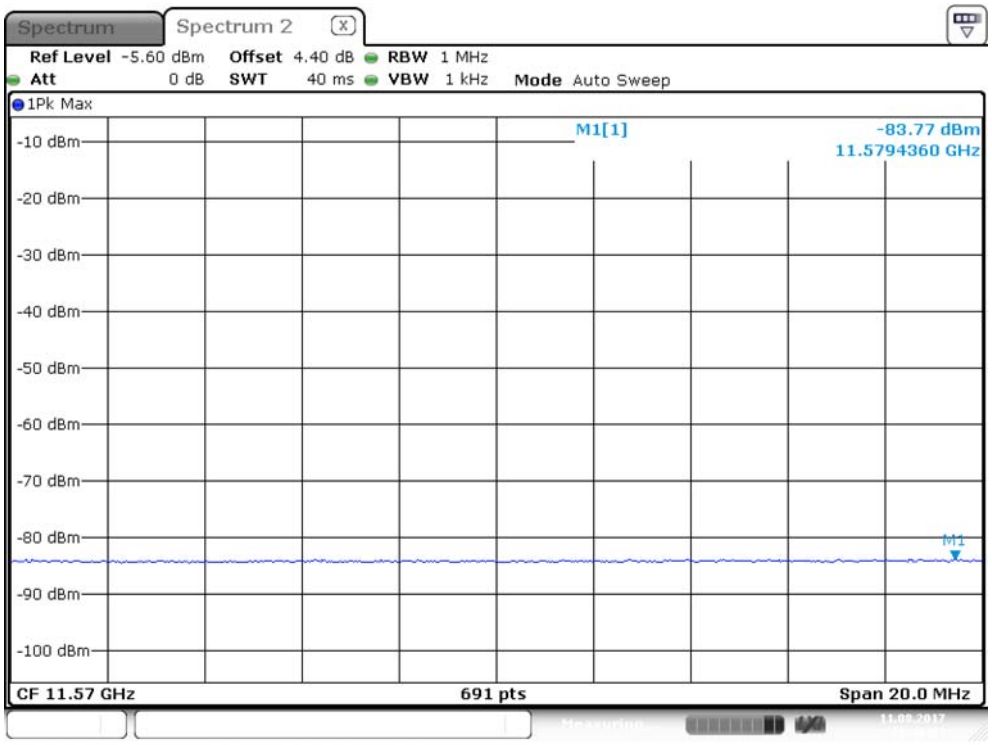
Date: 11.AUG.2017 20:44:07

Plot on Configuration QPSK, 5M / 5730MHz / Average / Port 2 (TX2)



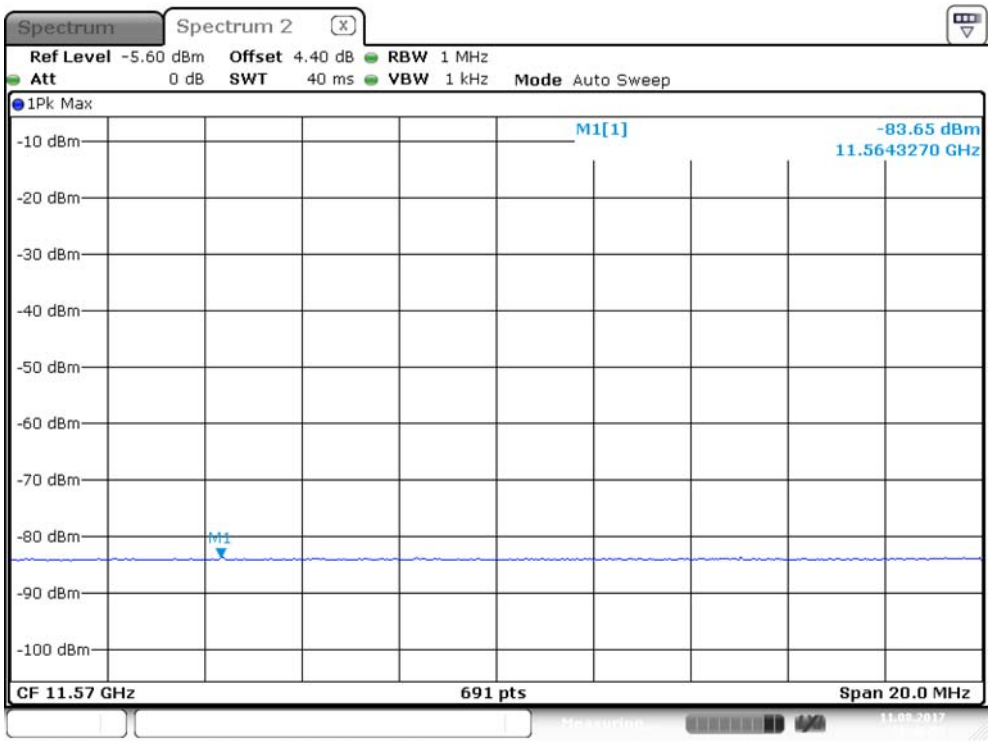
Date: 11.AUG.2017 20:44:10

Plot on Configuration QPSK, 5M / 5785MHz / Average / Port 1 (TX1)



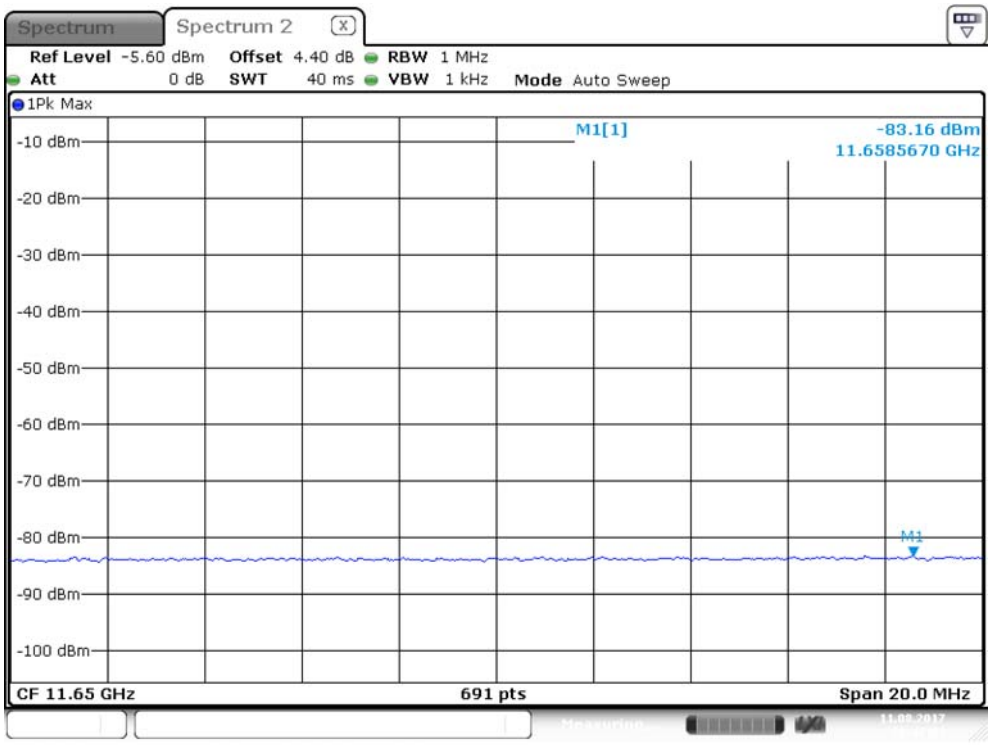
Date: 11.AUG.2017 20:46:24

Plot on Configuration QPSK, 5M / 5785MHz / Average / Port 2 (TX2)



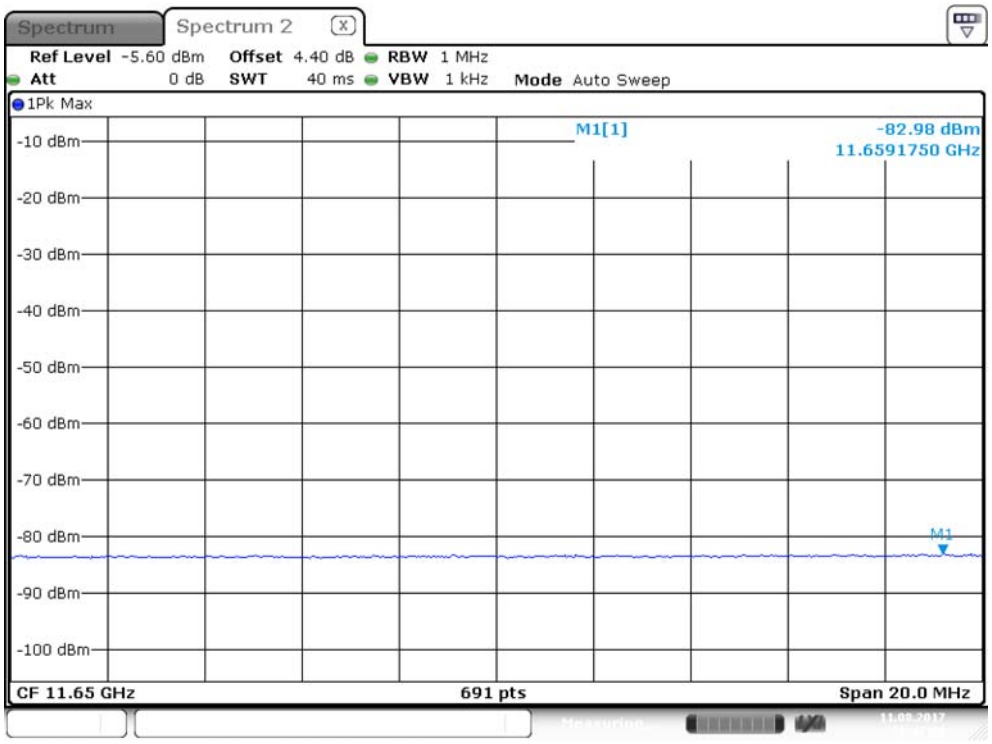
Date: 11.AUG.2017 20:46:55

Plot on Configuration QPSK, 5M / 5845MHz / Average / Port 1 (TX1)



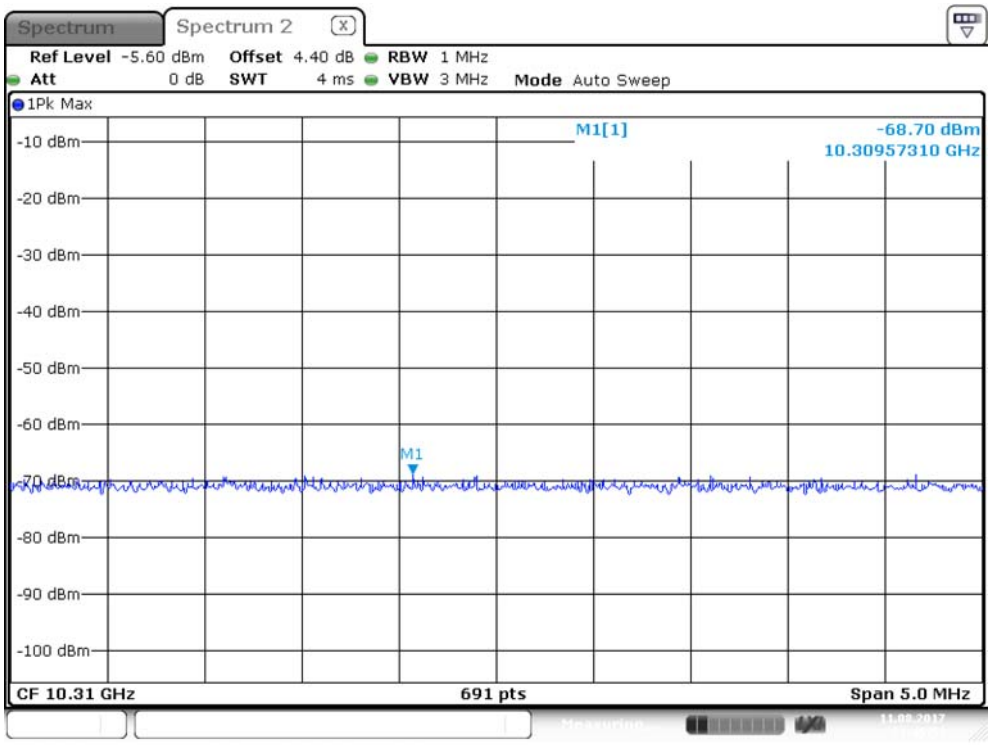
Date: 11.AUG.2017 20:47:23

Plot on Configuration QPSK, 5M / 5845MHz / Average / Port 2 (TX2)



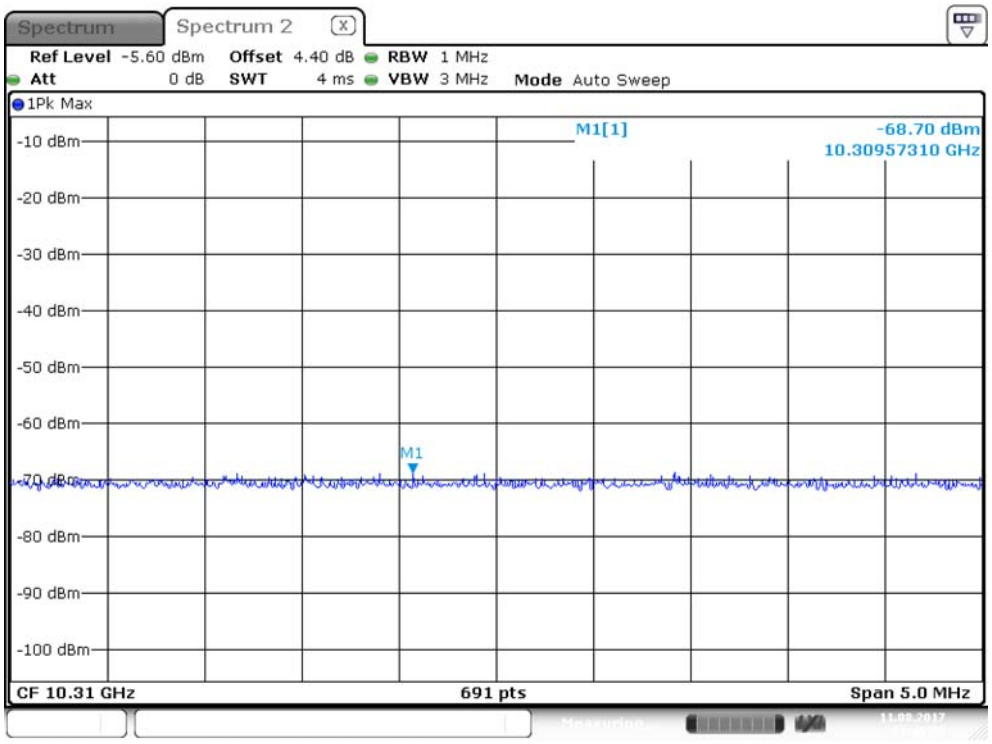
Date: 11.AUG.2017 20:47:26

Plot on Configuration QPSK, 5M / 5155MHz / Peak / Port 1 (TX1)



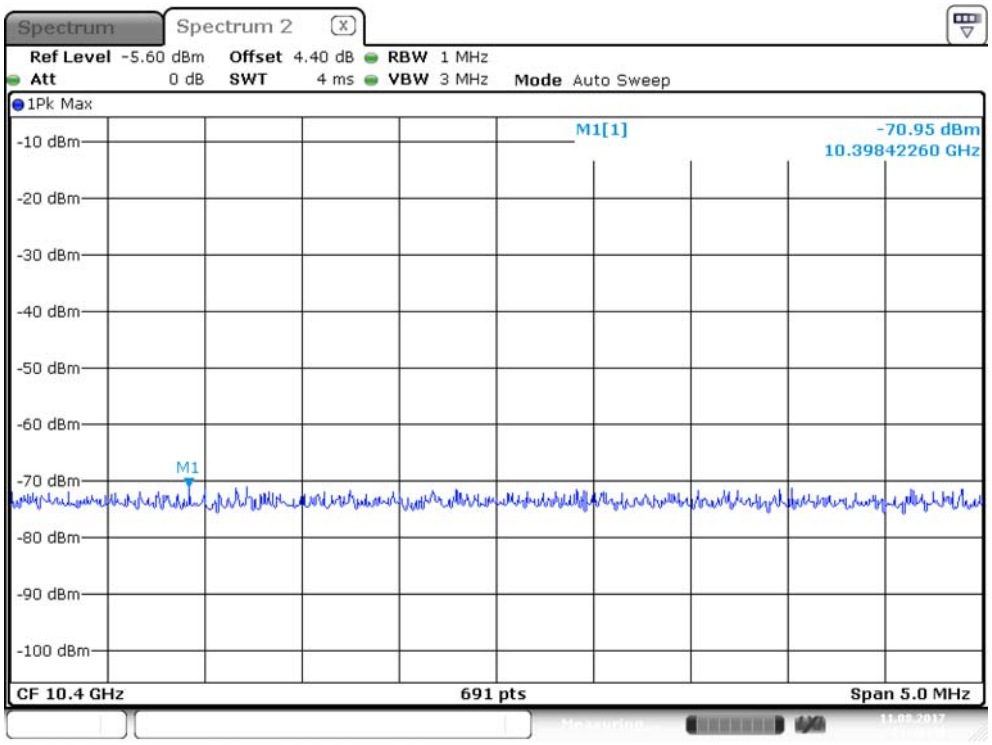
Date: 11.AUG.2017 21:45:54

Plot on Configuration QPSK, 5M / 5155MHz / Peak / Port 2 (TX2)



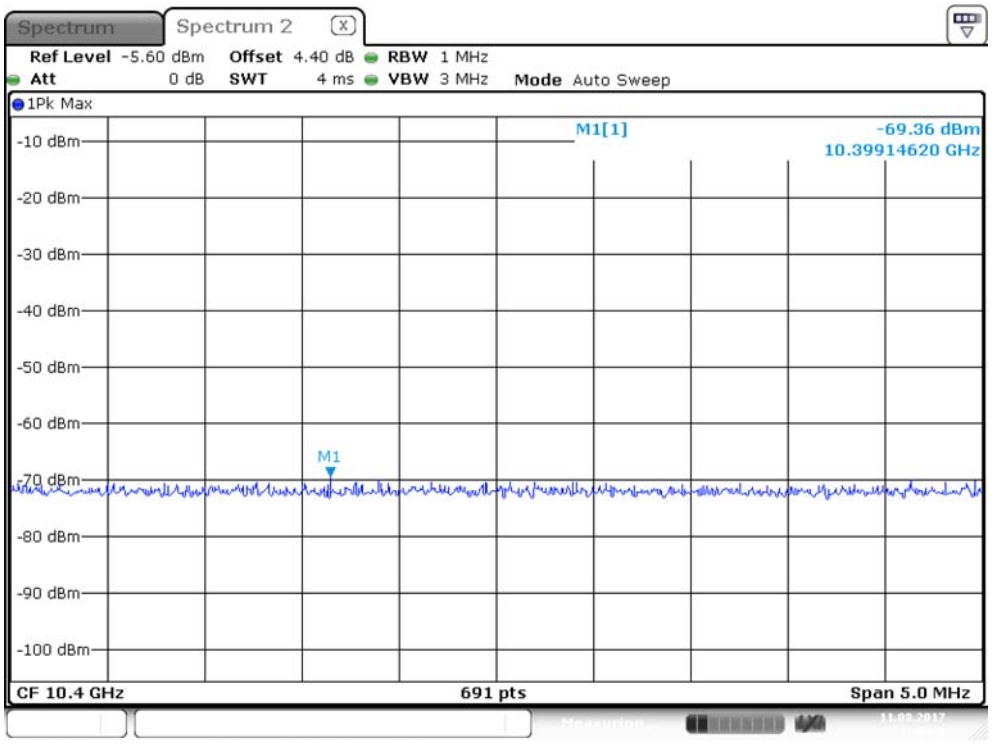
Date: 11.AUG.2017 21:45:56

Plot on Configuration QPSK, 5M / 5200MHz / Peak / Port 1 (TX1)



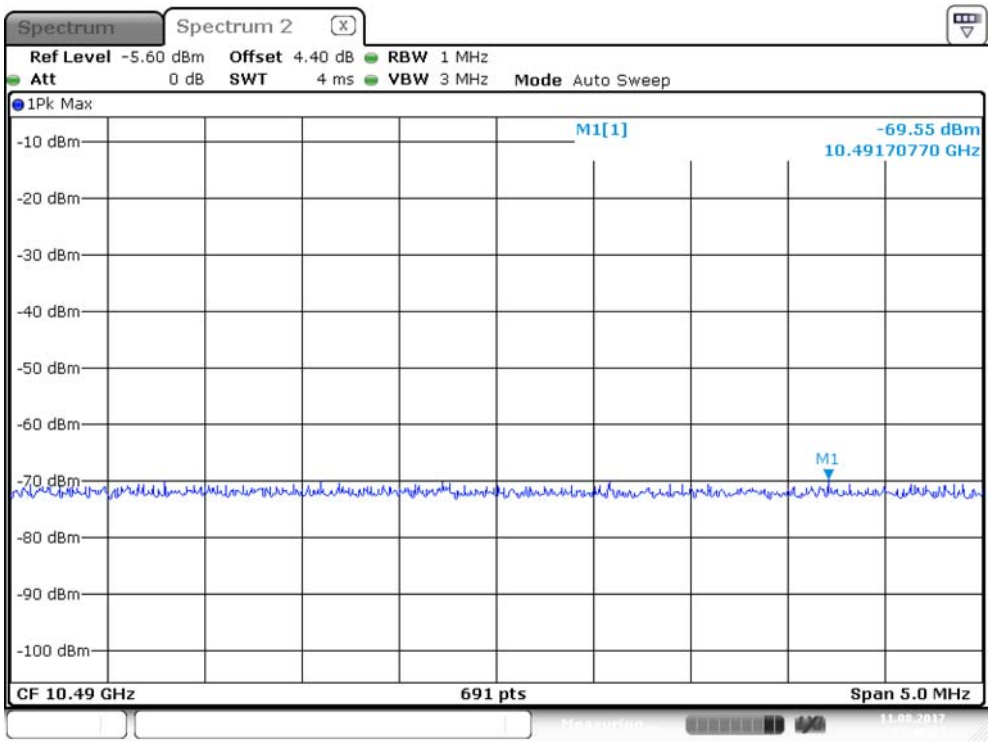
Date: 11.AUG.2017 21:46:38

Plot on Configuration QPSK, 5M / 5200MHz / Peak / Port 2 (TX2)



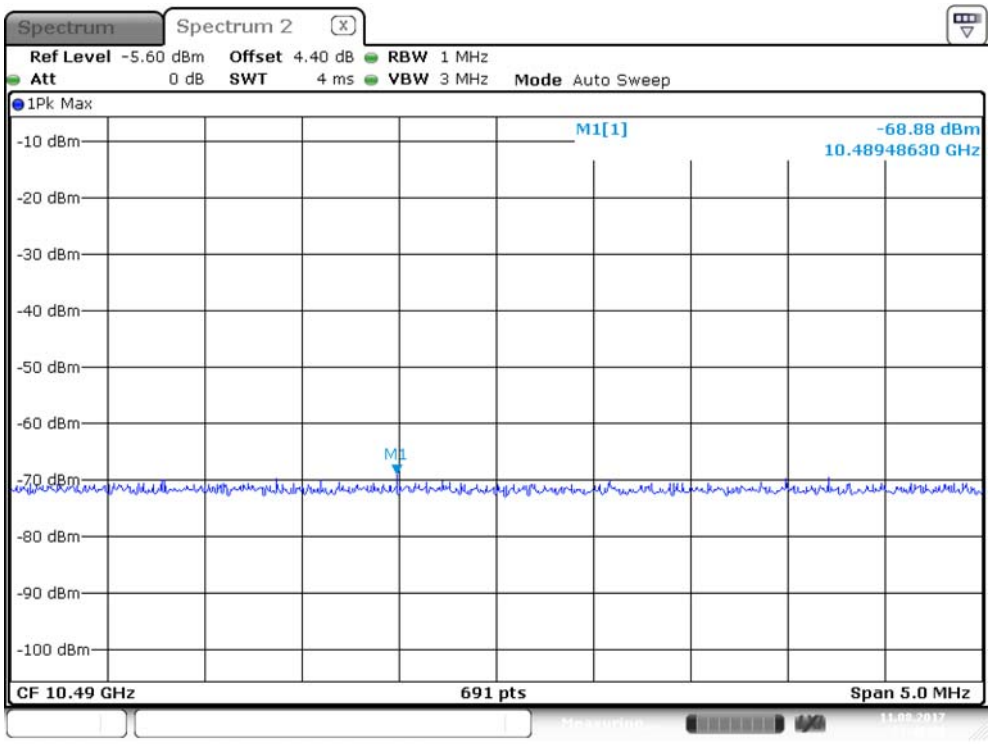
Date: 11.AUG.2017 21:46:41

Plot on Configuration QPSK, 5M / 5245MHz / Peak / Port 1 (TX1)



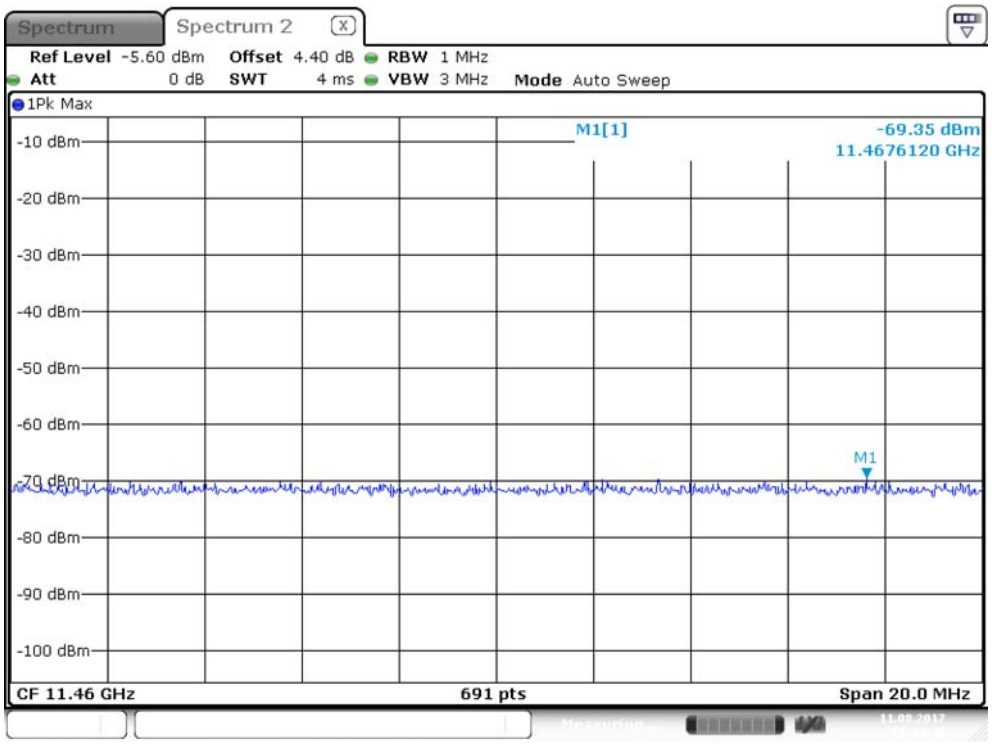
Date: 11.AUG.2017 21:48:27

Plot on Configuration QPSK, 5M / 5245MHz / Peak / Port 2 (TX2)



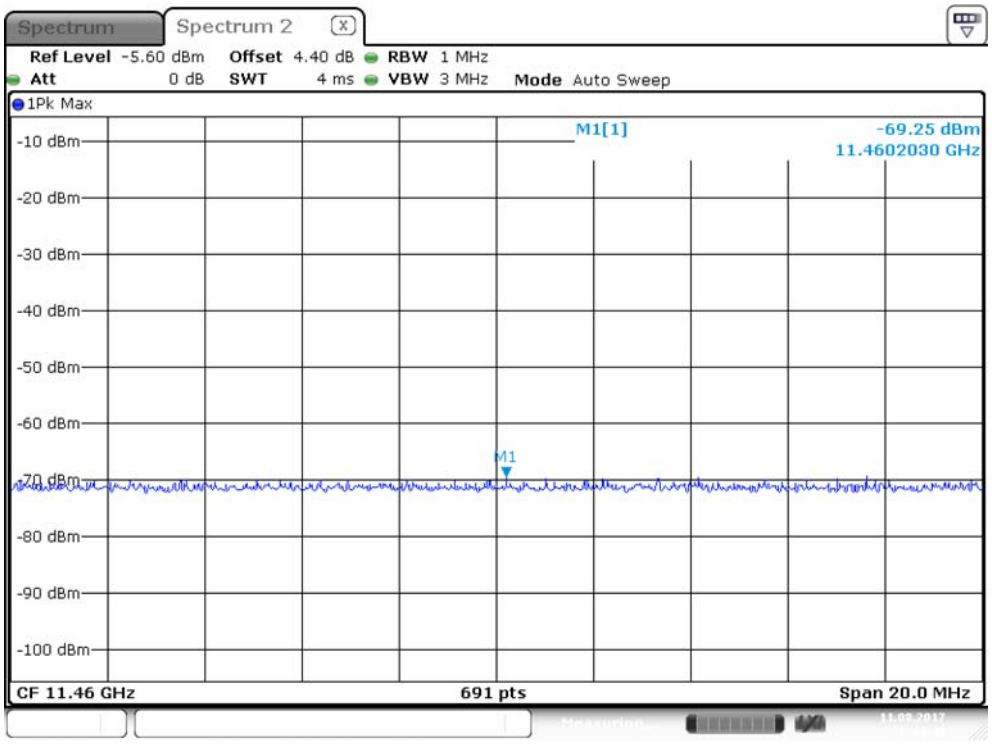
Date: 11.AUG.2017 21:48:29

Plot on Configuration QPSK, 5M / 5730MHz / Peak / Port 1 (TX1)



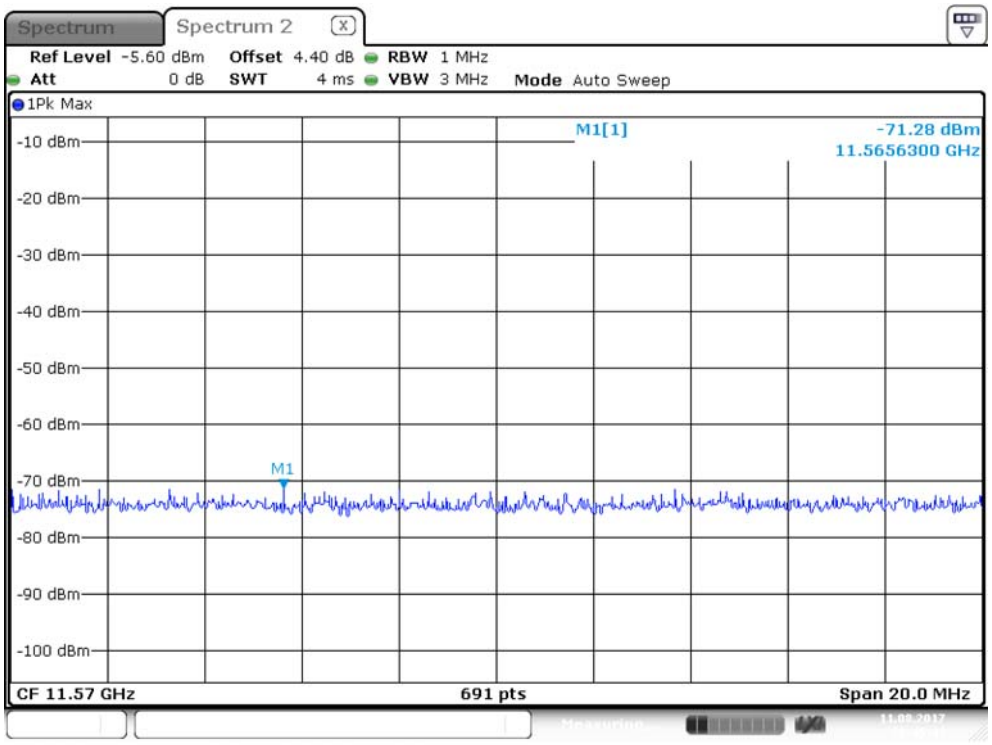
Date: 11.AUG.2017 20:44:46

Plot on Configuration QPSK, 5M / 5730MHz / Peak / Port 2 (TX2)



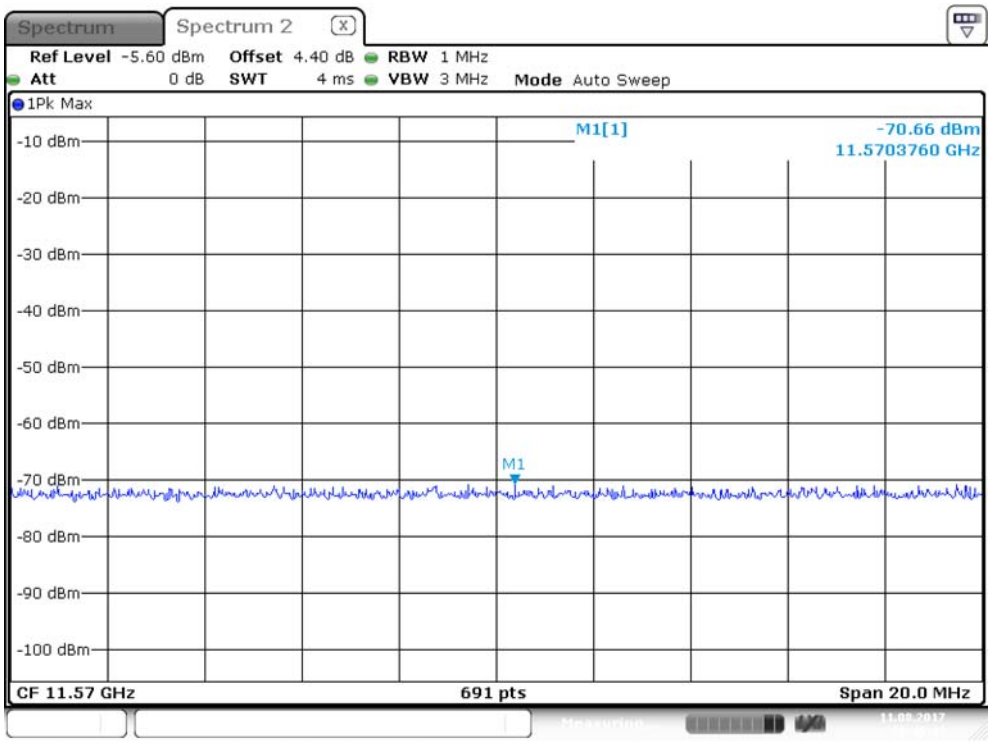
Date: 11.AUG.2017 20:44:49

Plot on Configuration QPSK, 5M / 5785MHz / Peak / Port 1 (TX1)



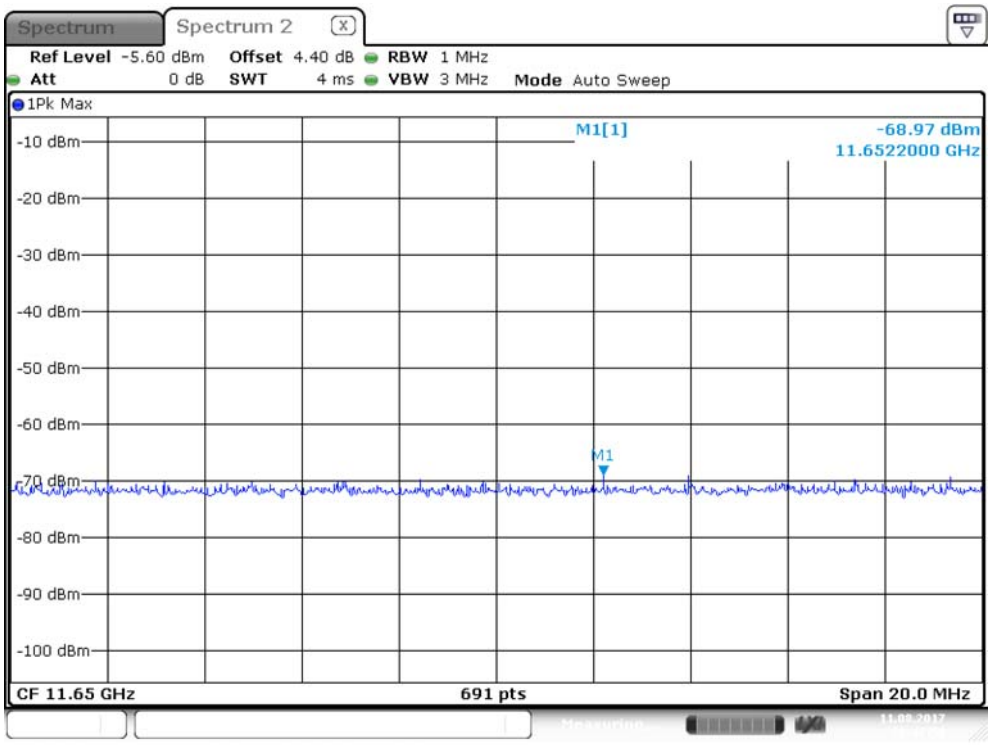
Date: 11.AUG.2017 20:45:41

Plot on Configuration QPSK, 5M / 5785MHz / Peak / Port 2 (TX2)



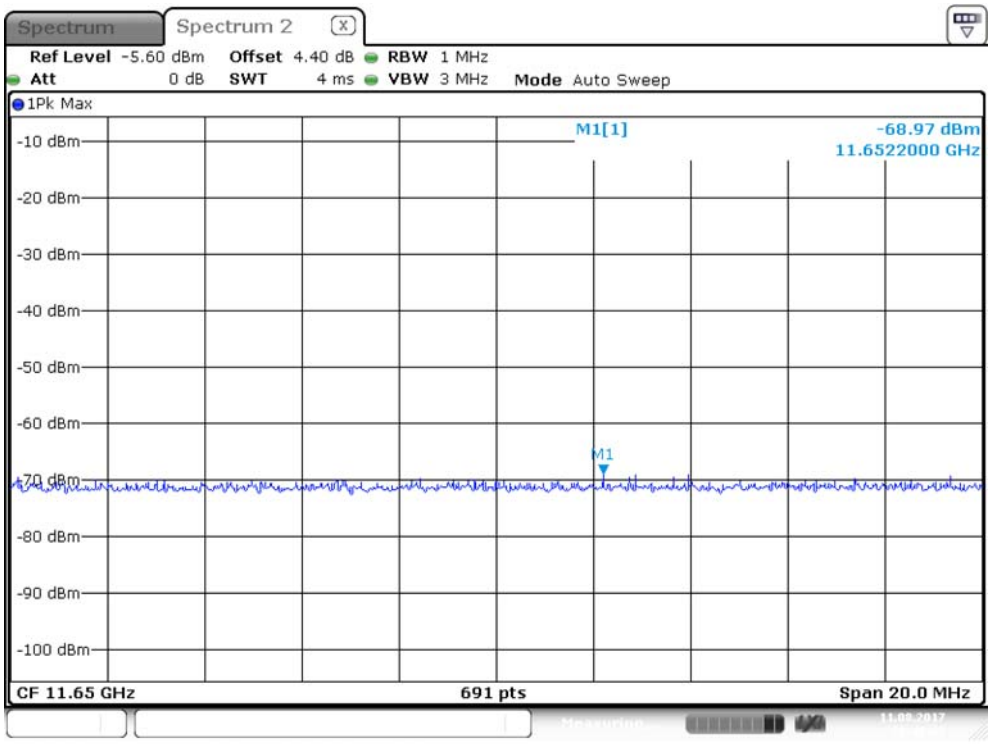
Date: 11.AUG.2017 20:45:43

Plot on Configuration QPSK, 5M / 5845MHz / Peak / Port 1 (TX1)



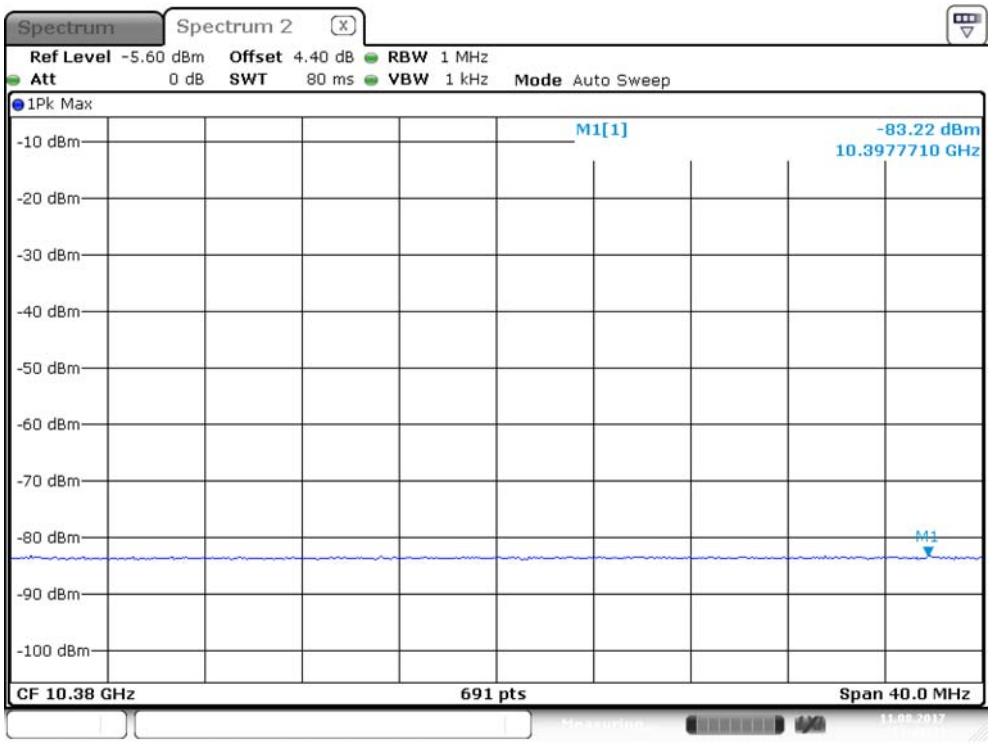
Date: 11.AUG.2017 20:48:00

Plot on Configuration QPSK, 5M / 5845MHz / Peak / Port 2 (TX2)



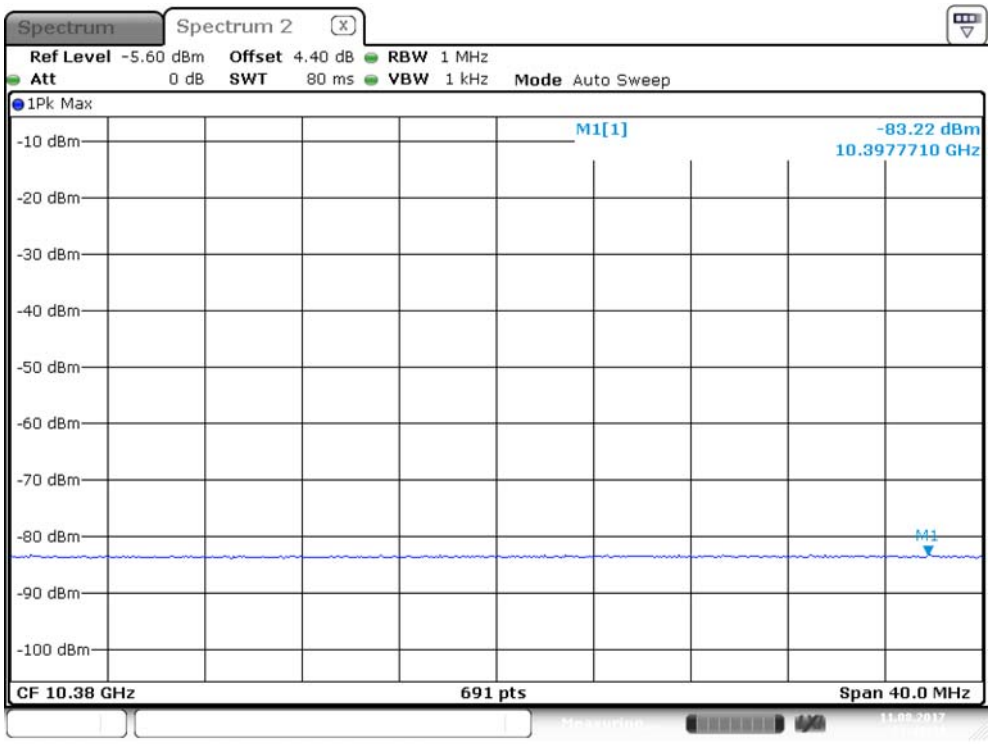
Date: 11.AUG.2017 20:48:05

Plot on Configuration QPSK, 40M / 5190MHz / Average / Port 1 (TX1)



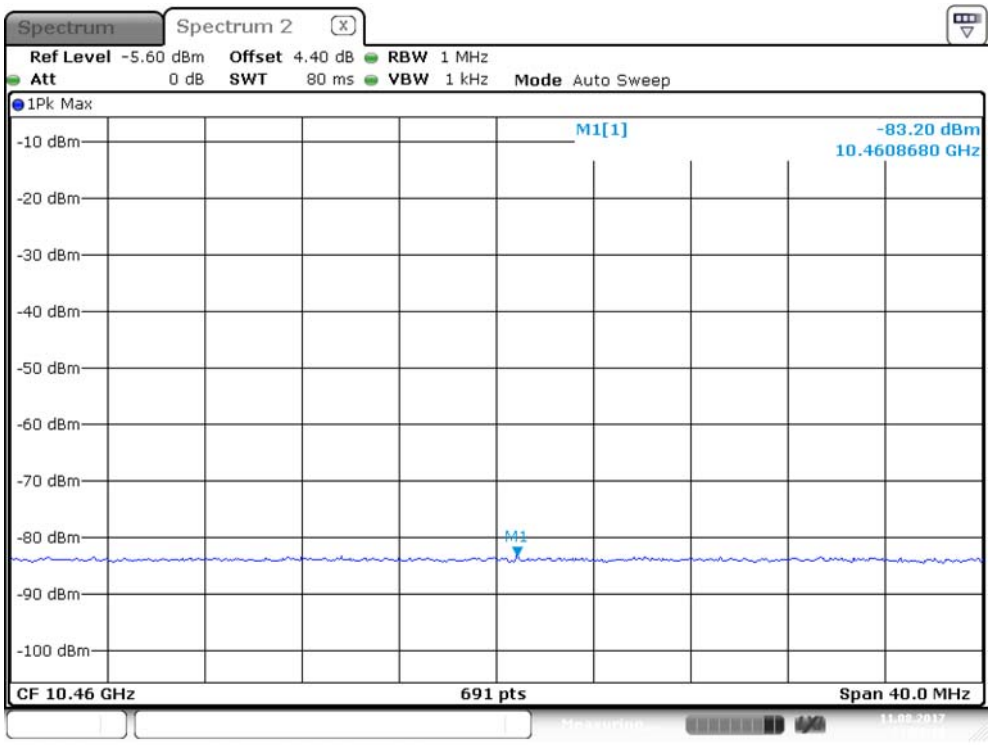
Date: 11.AUG.2017 21:49:32

Plot on Configuration QPSK, 40M / 5190MHz / Average / Port 2 (TX2)



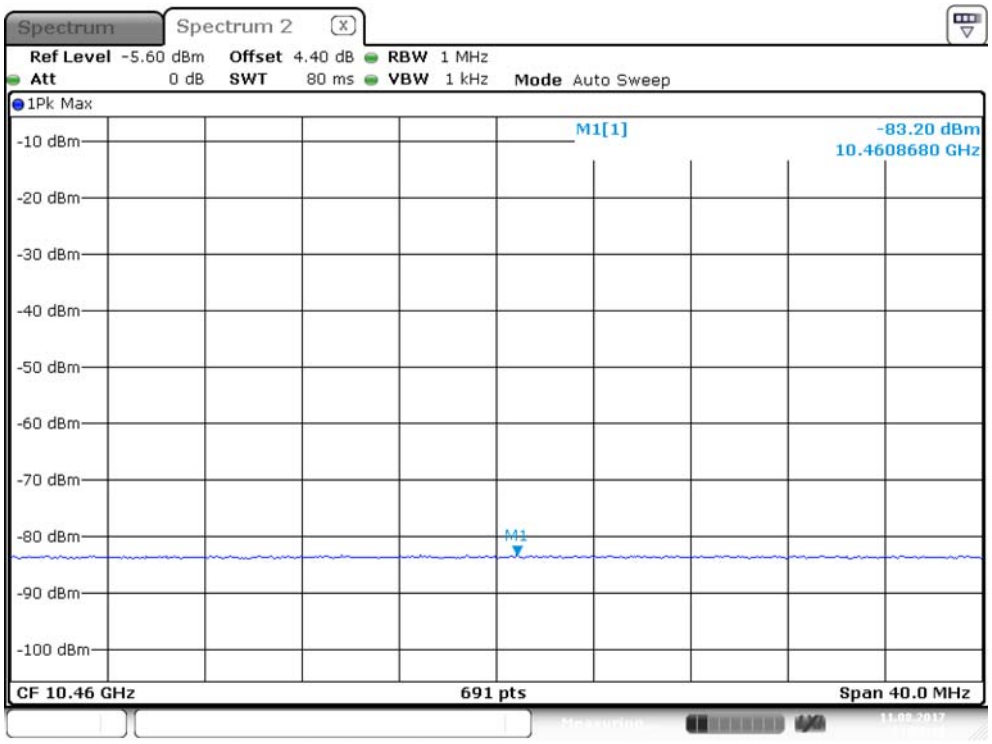
Date: 11.AUG.2017 21:49:34

Plot on Configuration QPSK, 40M / 5230MHz / Average / Port 1 (TX1)



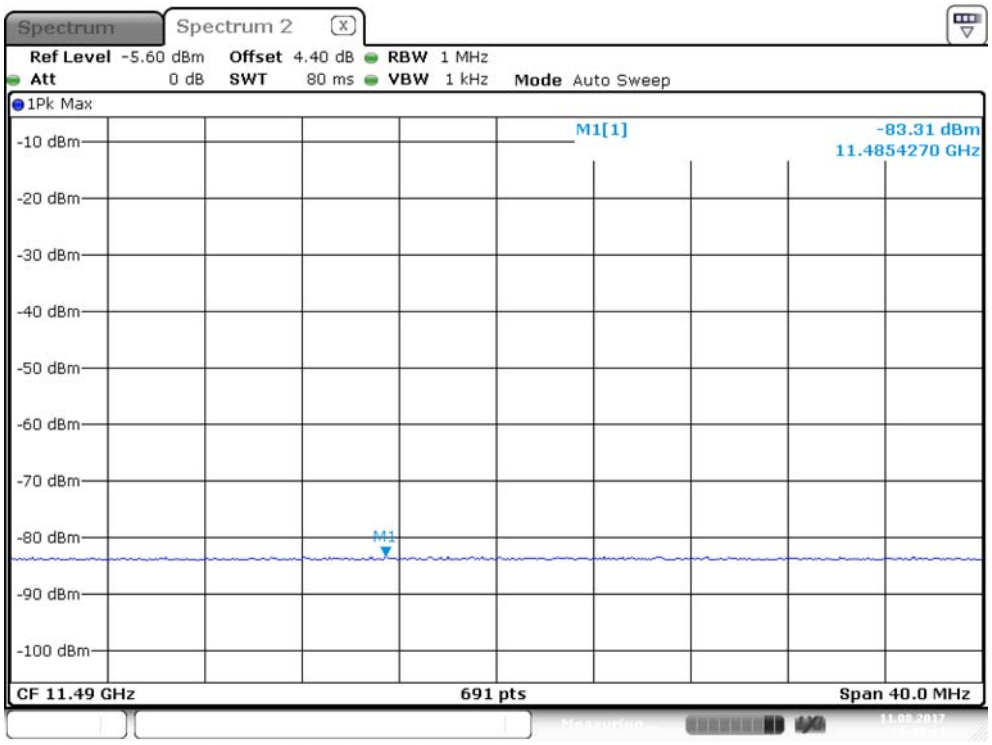
Date: 11.AUG.2017 21:50:16

Plot on Configuration QPSK, 40M / 5230MHz / Average / Port 2 (TX2)



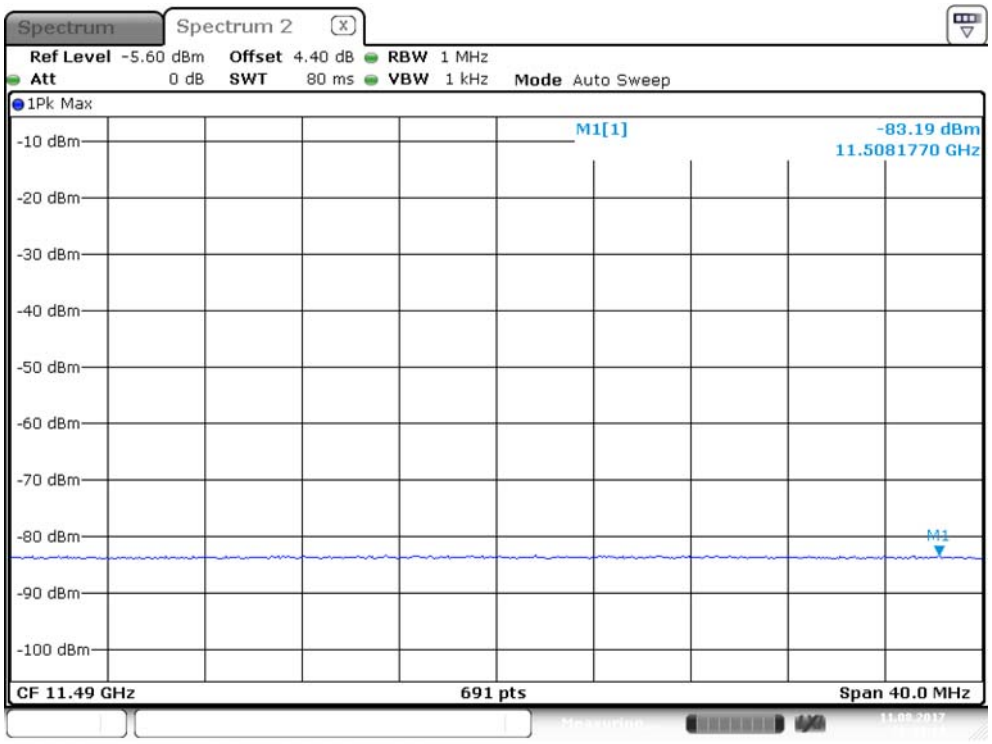
Date: 11.AUG.2017 21:50:19

Plot on Configuration QPSK, 40M / 5755MHz / Average / Port 1 (TX1)



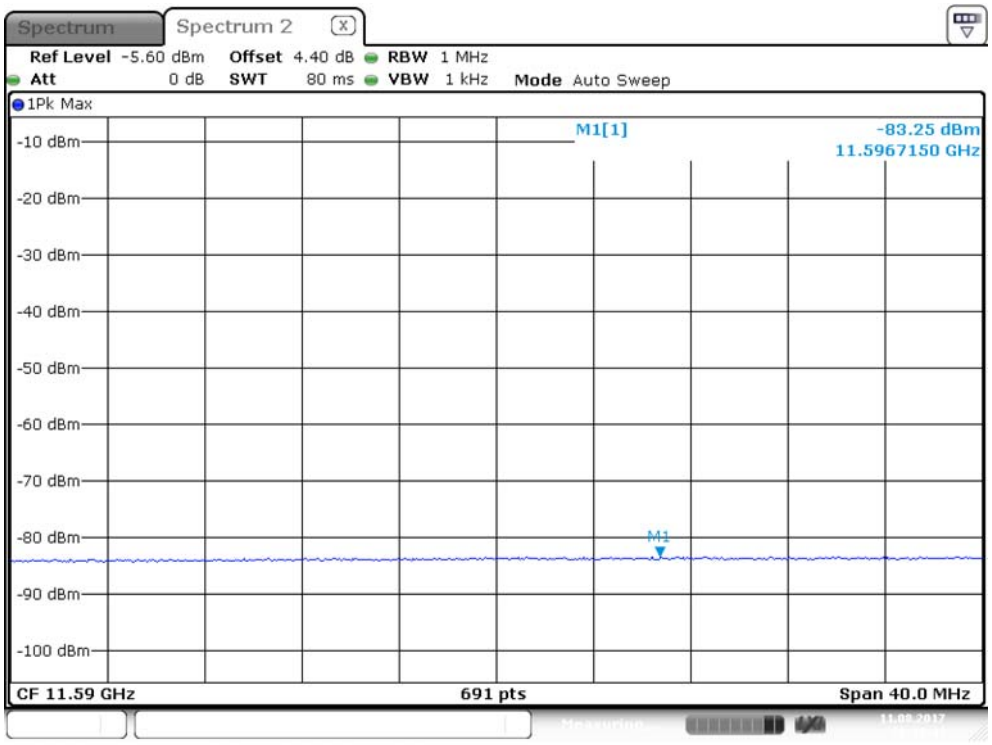
Date: 11.AUG.2017 20:34:11

Plot on Configuration QPSK, 40M / 5755MHz / Average / Port 2 (TX2)



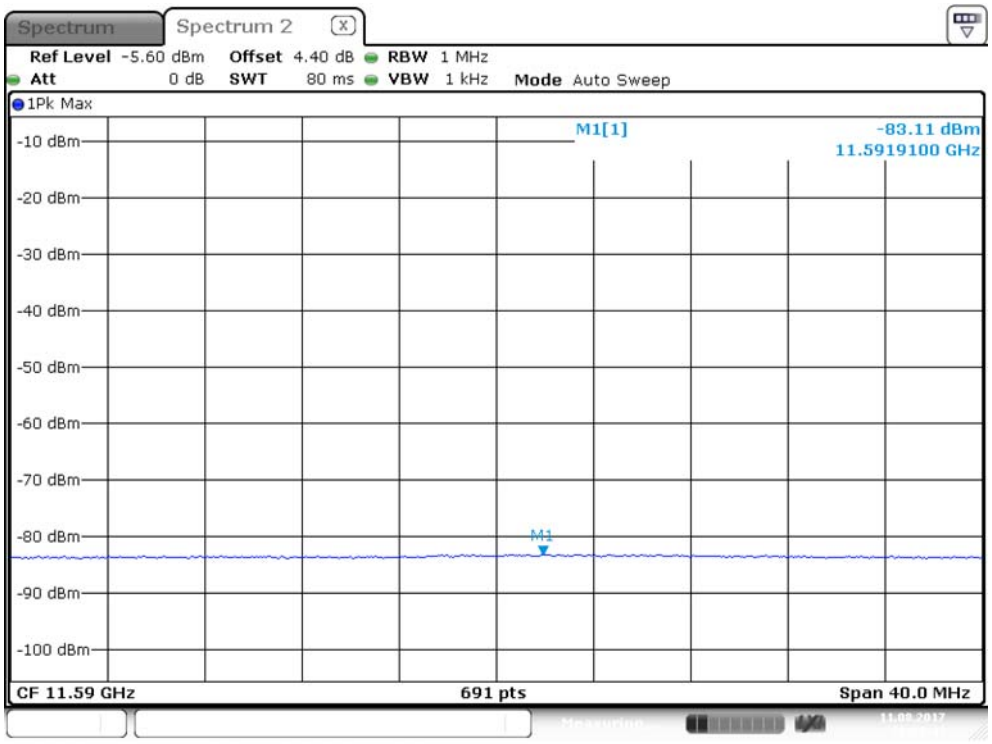
Date: 11.AUG.2017 20:34:14

Plot on Configuration QPSK, 40M / 5795MHz / Average / Port 1 (TX1)



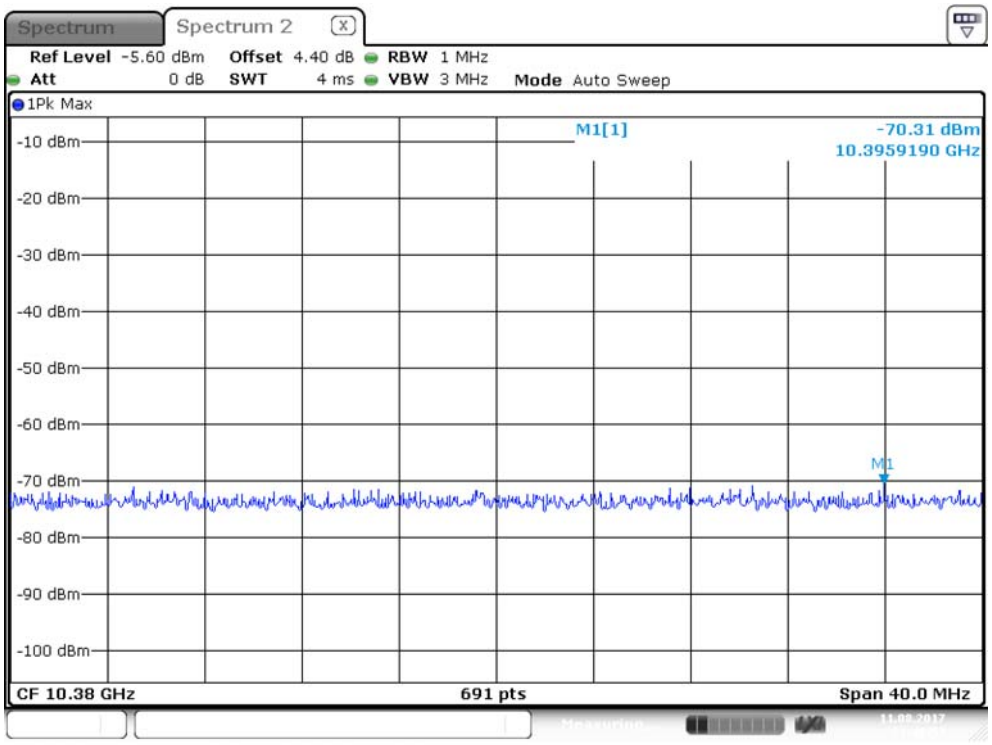
Date: 11.AUG.2017 20:30:42

Plot on Configuration QPSK, 40M / 5795MHz / Average / Port 2 (TX2)



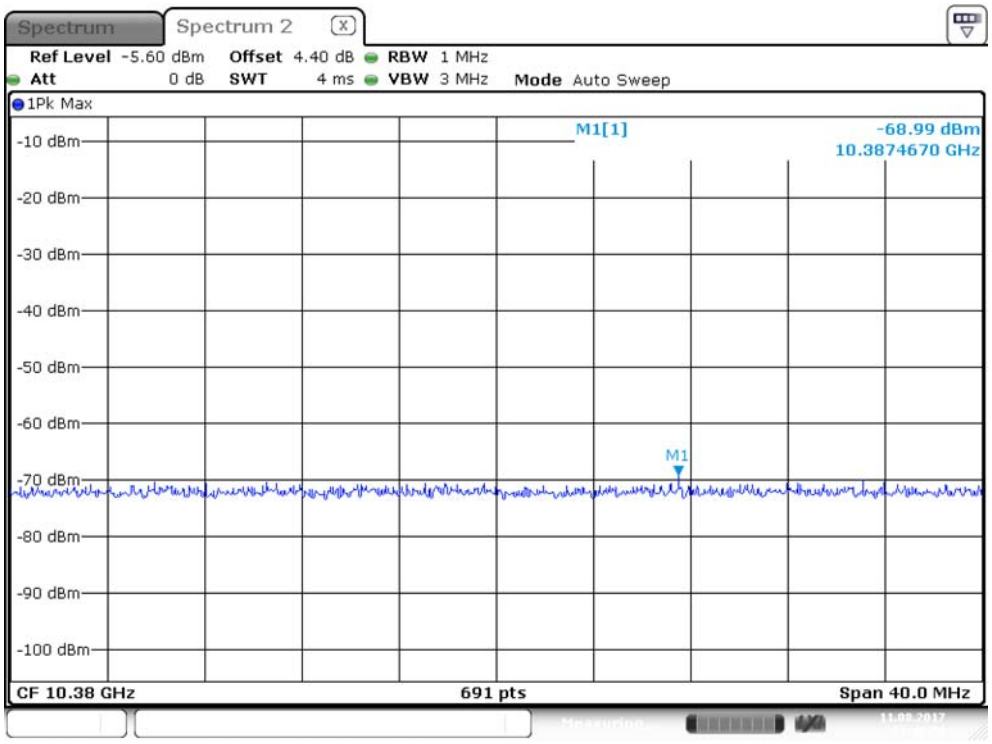
Date: 11.AUG.2017 20:29:43

Plot on Configuration QPSK, 40M / 5190MHz / Peak / Port 1 (TX1)



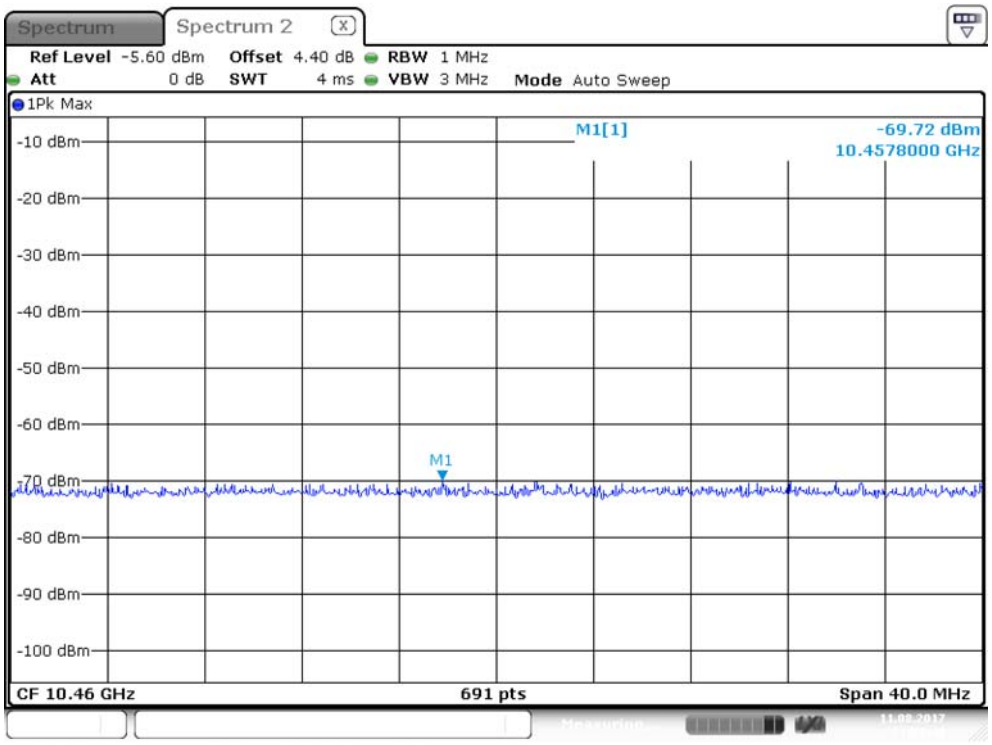
Date: 11.AUG.2017 21:48:57

Plot on Configuration QPSK, 40M / 5190MHz / Peak / Port 2 (TX2)



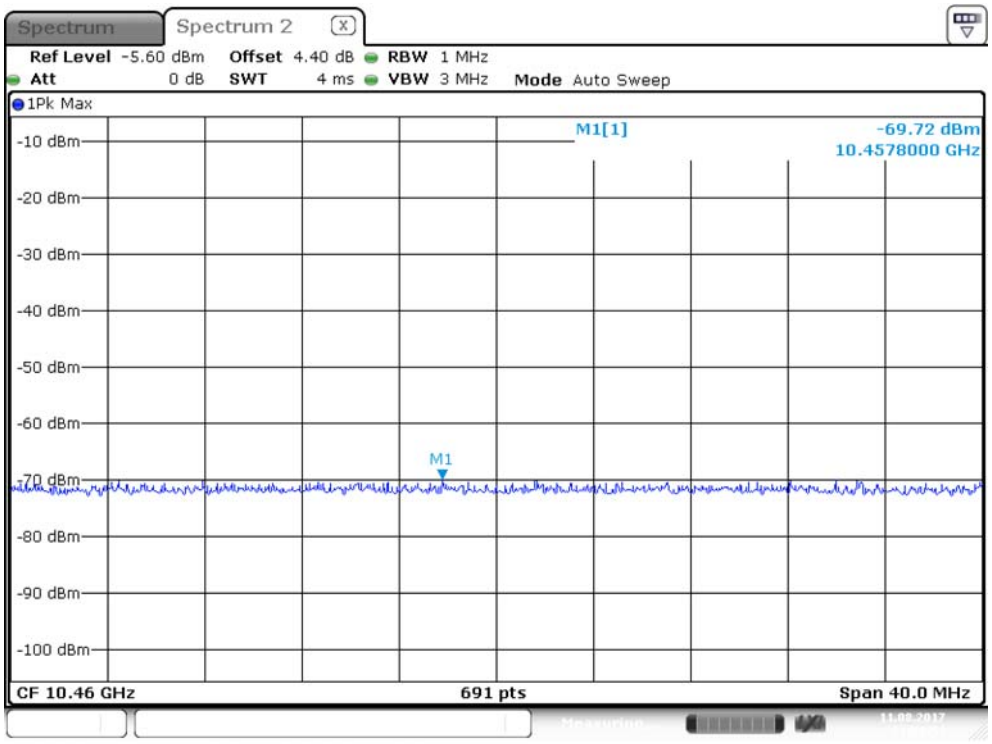
Date: 11.AUG.2017 21:48:59

Plot on Configuration QPSK, 40M / 5230MHz / Peak / Port 1 (TX1)



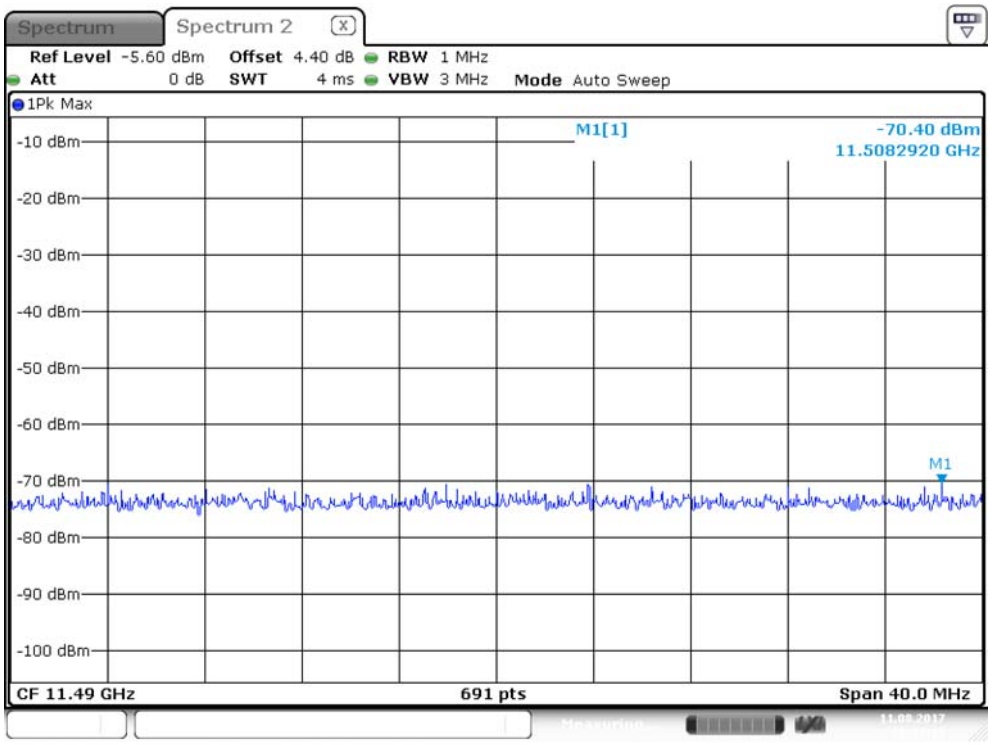
Date: 11.AUG.2017 21:50:49

Plot on Configuration QPSK, 40M / 5230MHz / Peak / Port 2 (TX2)



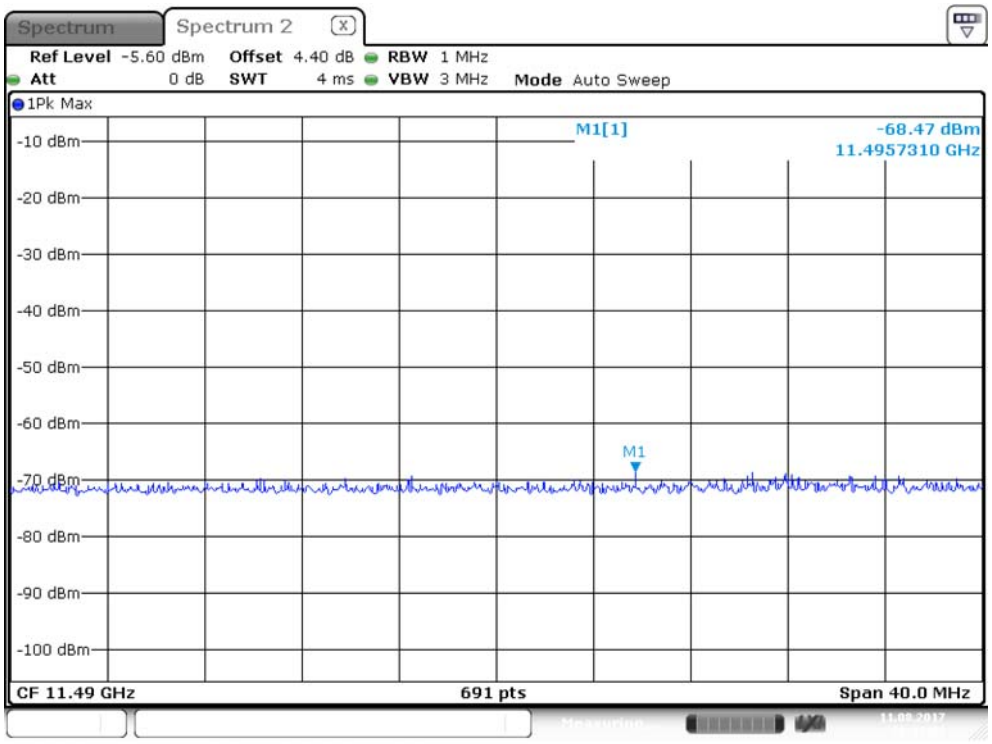
Date: 11.AUG.2017 21:50:51

Plot on Configuration QPSK, 40M / 5755MHz / Peak / Port 1 (TX1)



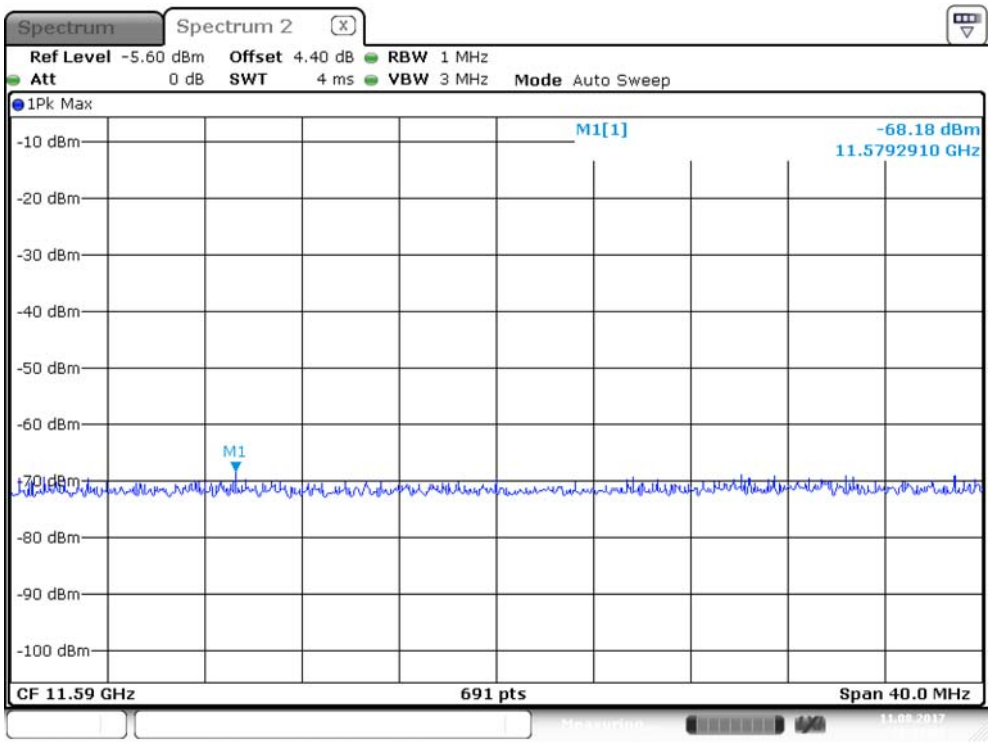
Date: 11.AUG.2017 20:33:15

Plot on Configuration QPSK, 40M / 5755MHz / Peak / Port 2 (TX2)



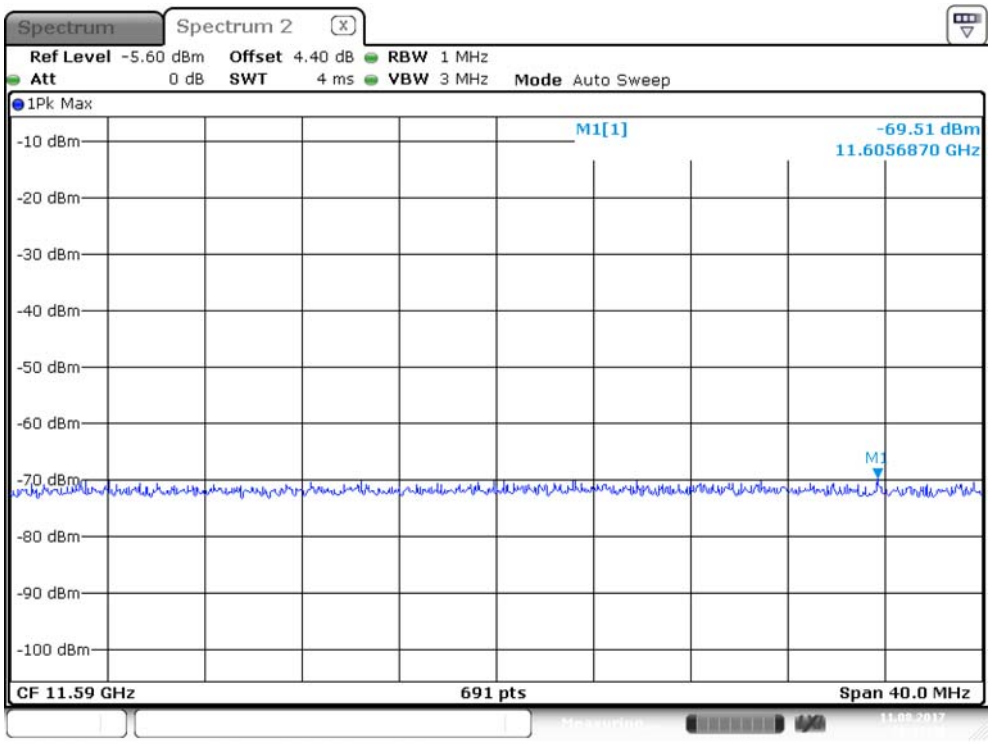
Date: 11.AUG.2017 20:33:22

Plot on Configuration QPSK, 40M / 5795MHz / Peak / Port 1 (TX1)



Date: 11.AUG.2017 20:31:25

Plot on Configuration QPSK, 40M / 5795MHz / Peak / Port 2 (TX2)



Date: 11.AUG.2017 20:31:39

For Conducted Bandedge test:

Configurations	QPSK, 5M / Average / Port 1 + Port 2

Frequency(MHz)	Port 1 (TX1) Spurious Level (dBm)	Port 2 (TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit(dBm)	Margin(dB)
5155	-68.16	-66.57	-42.28	-41.25	1.03
5200	-65.75	-68.19	-41.79	-41.25	0.54
5245	-69.05	-67.94	-43.45	-41.25	2.20

Configurations	QPSK, 5M / Peak / Port 1 + Port 2

Frequency(MHz)	Port 1 (TX1) Spurious Level (dBm)	Port 2 (TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit(dBm)	Margin(dB)
5155	-51.18	-46.50	-23.23	-21.25	1.98
5200	-54.71	-56.70	-30.58	-21.25	9.33
5245	-50.66	-56.78	-27.71	-21.25	6.46
5730	-53.52	-53.10	-28.29	-27.00	1.29
5785	-51.95	-52.11	-27.02	-27.00	0.02
5845	-52.78	-54.92	-28.71	-27.00	1.71

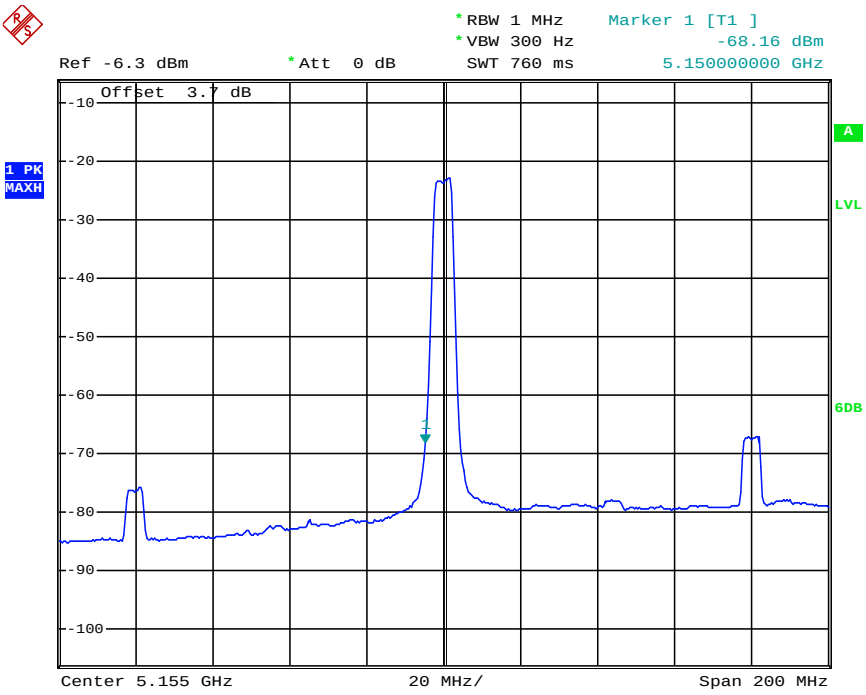
Configurations	QPSK, 40M / Average / Port 1 + Port 2

Frequency(MHz)	Port 1 (TX1) Spurious Level (dBm)	Port 2 (TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit(dBm)	Margin(dB)
5190	-67.68	-66.17	-41.85	-41.25	0.60
5230	-68.12	-66.73	-42.36	-41.25	1.11

Configurations	QPSK, 40M / Peak / Port 1 + Port 2

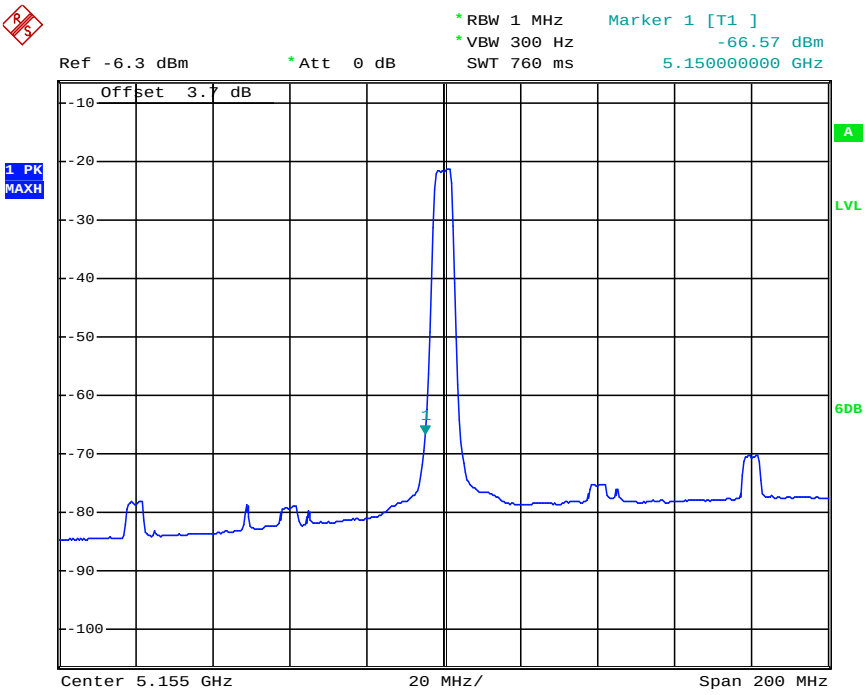
Frequency(MHz)	Port 1 (TX1) Spurious Level (dBm)	Port 2 (TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit(dBm)	Margin(dB)
5190	-51.89	-47.14	-23.89	-21.25	2.64
5230	-57.69	-55.98	-31.74	-21.25	10.49
5755	-55.67	-51.52	-28.11	-27.00	1.11
5795	-56.88	-52.48	-29.13	-27.00	2.13

Plot on Configuration QPSK, 5M / 5155MHz / Average / Port 1 (TX1)



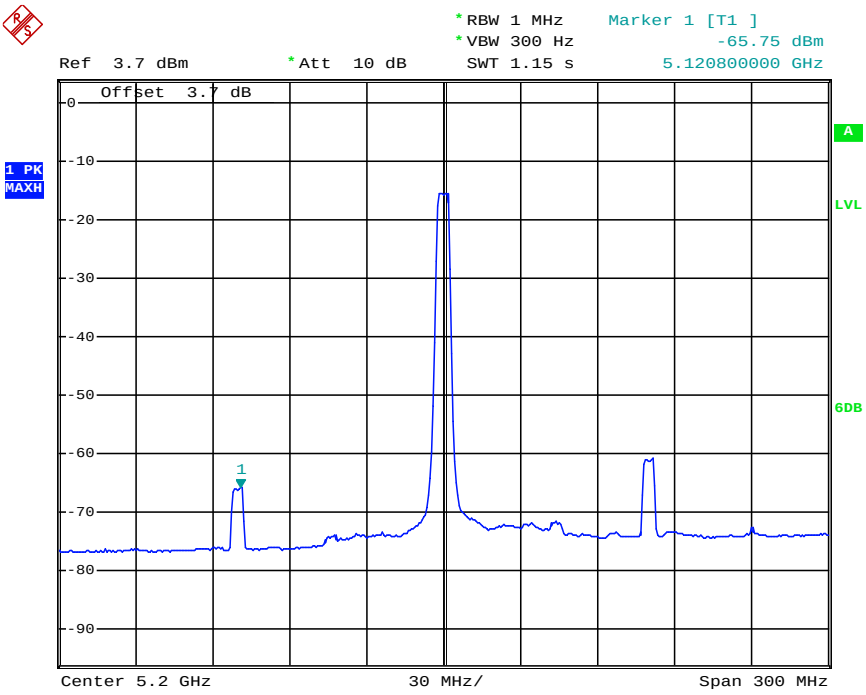
Date: 10.AUG.2017 22:22:19

Plot on Configuration QPSK, 5M / 5155MHz / Average / Port 2 (TX2)



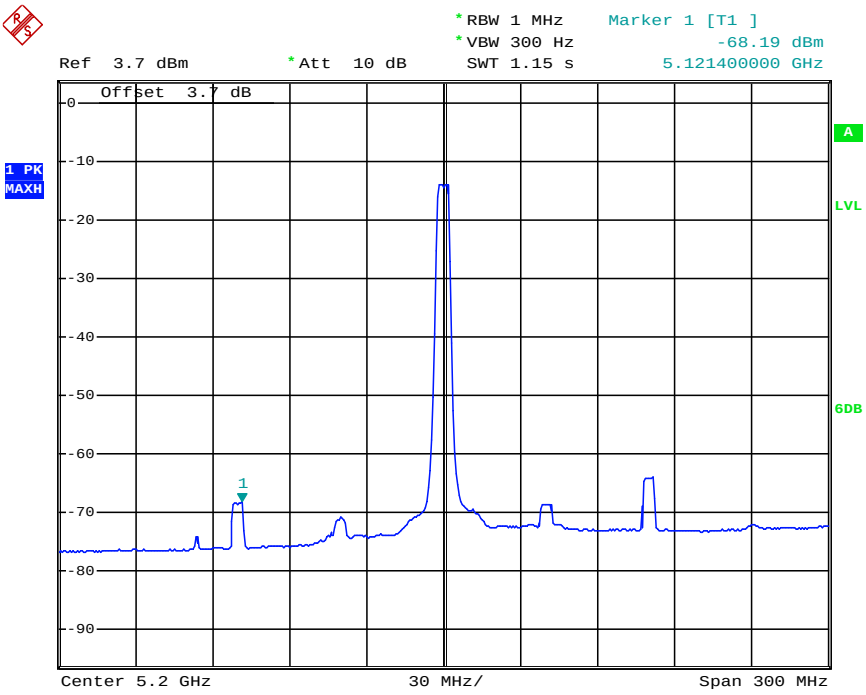
Date: 10.AUG.2017 22:21:44

Plot on Configuration QPSK, 5M / 5200MHz / Average / Port 1 (TX1)



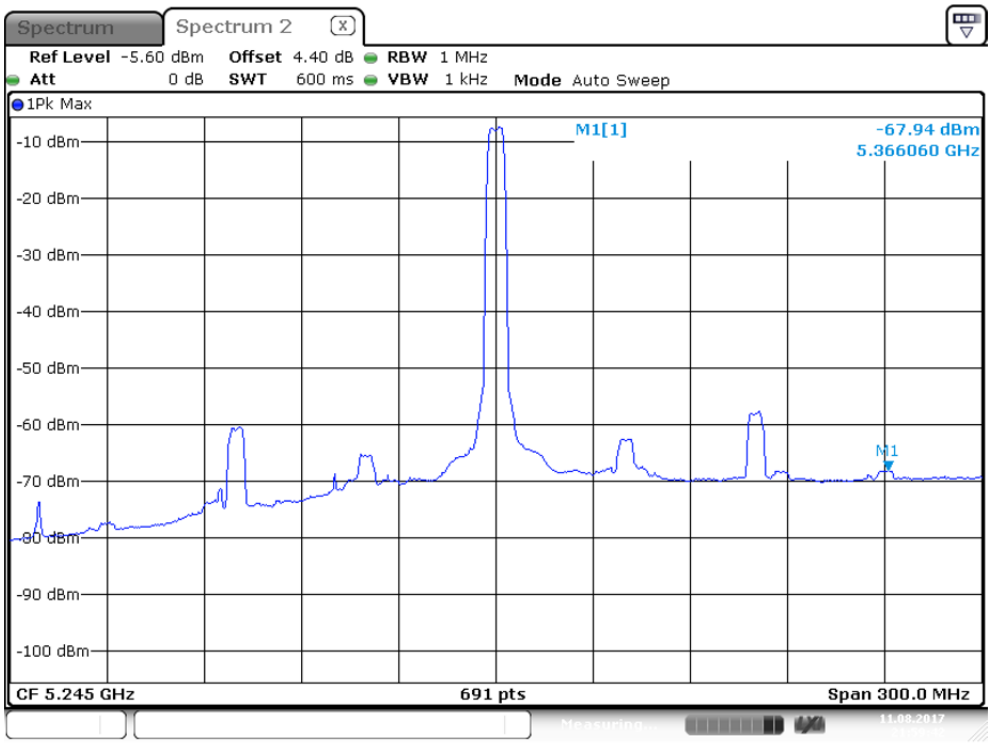
Date: 10.AUG.2017 23:14:37

Plot on Configuration QPSK, 5M / 5200MHz / Average / Port 2 (TX2)



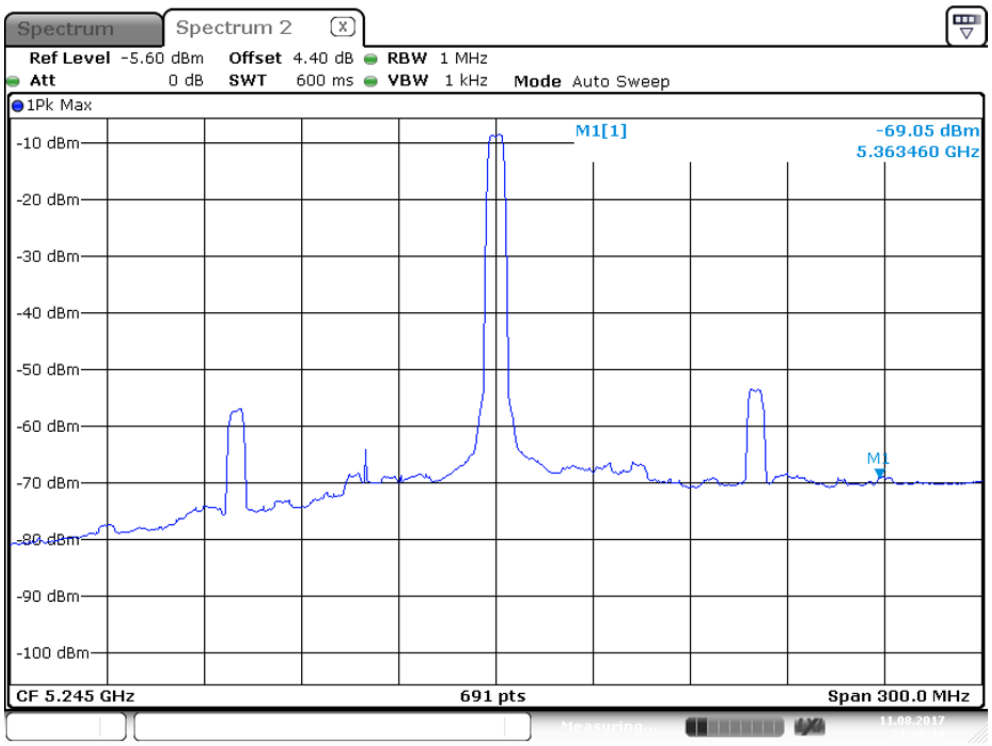
Date: 10.AUG.2017 23:14:55

Plot on Configuration QPSK, 5M / 5245MHz / Average / Port 1 (TX1)



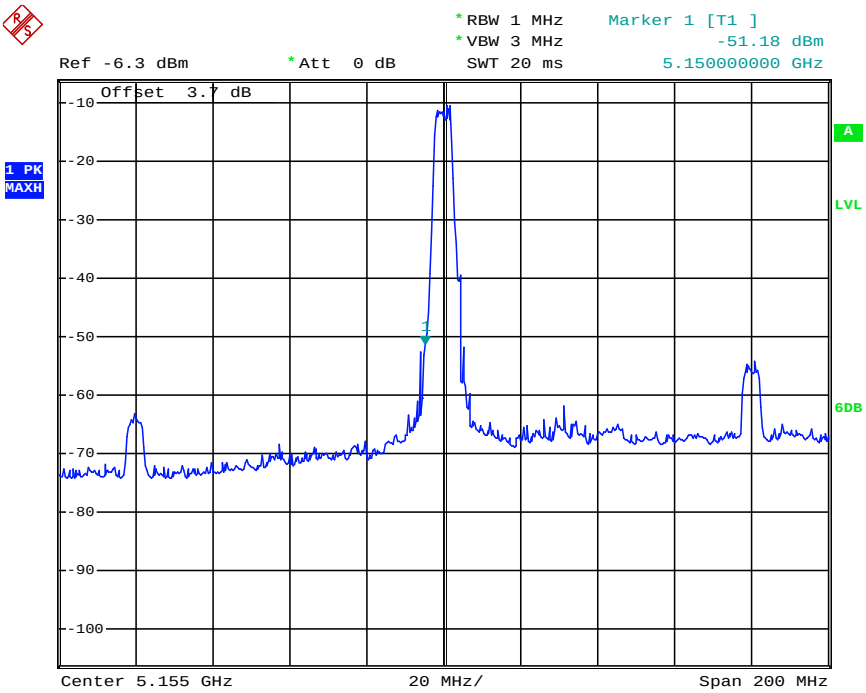
Date: 11.AUG.2017 21:59:42

Plot on Configuration QPSK, 5M / 5245MHz / Average / Port 2 (TX2)



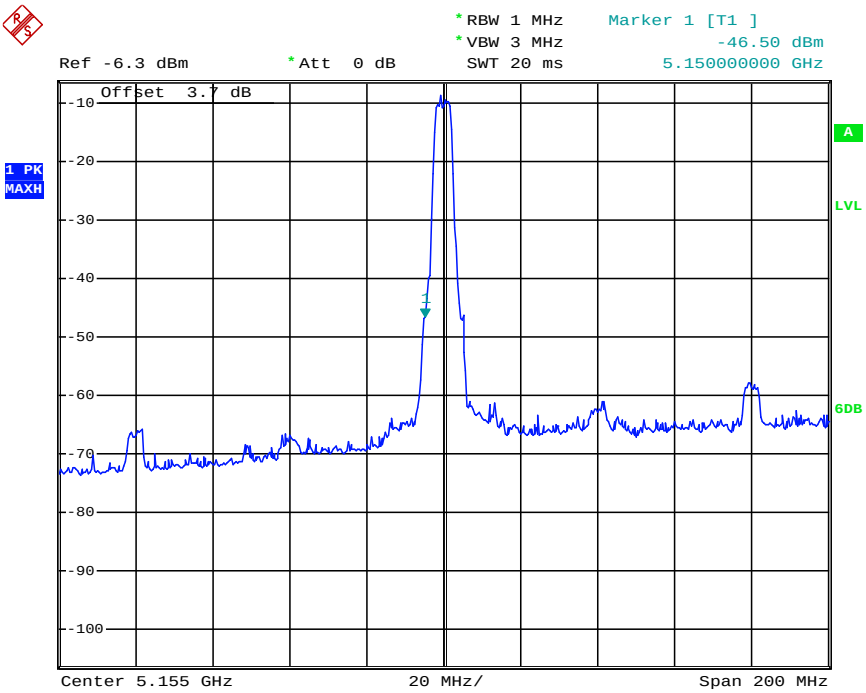
Date: 11.AUG.2017 22:00:10

Plot on Configuration QPSK, 5M / 5155MHz / Peak / Port 1 (TX1)



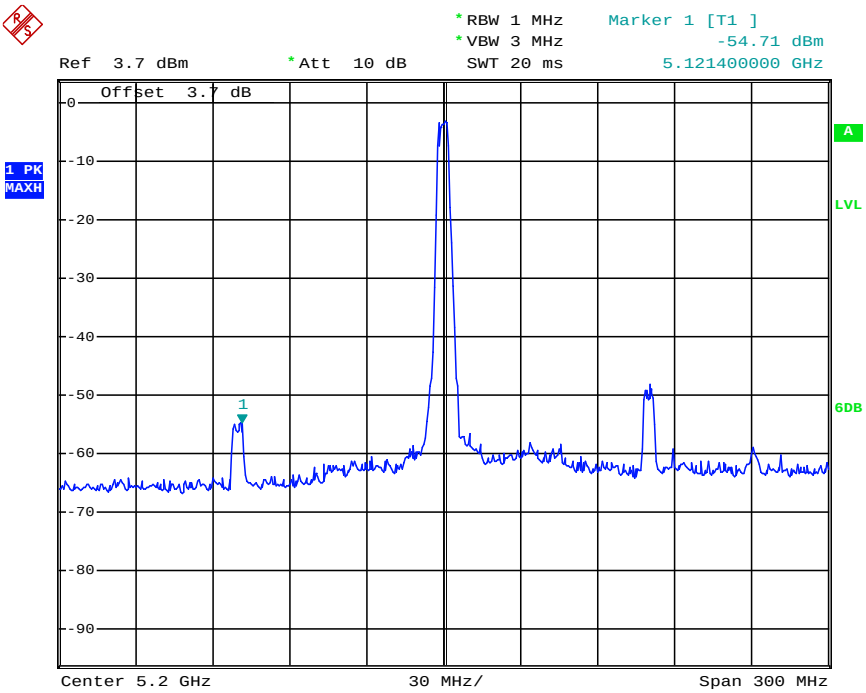
Date: 10.AUG.2017 22:24:03

Plot on Configuration QPSK, 5M / 5155MHz / Peak / Port 2 (TX2)



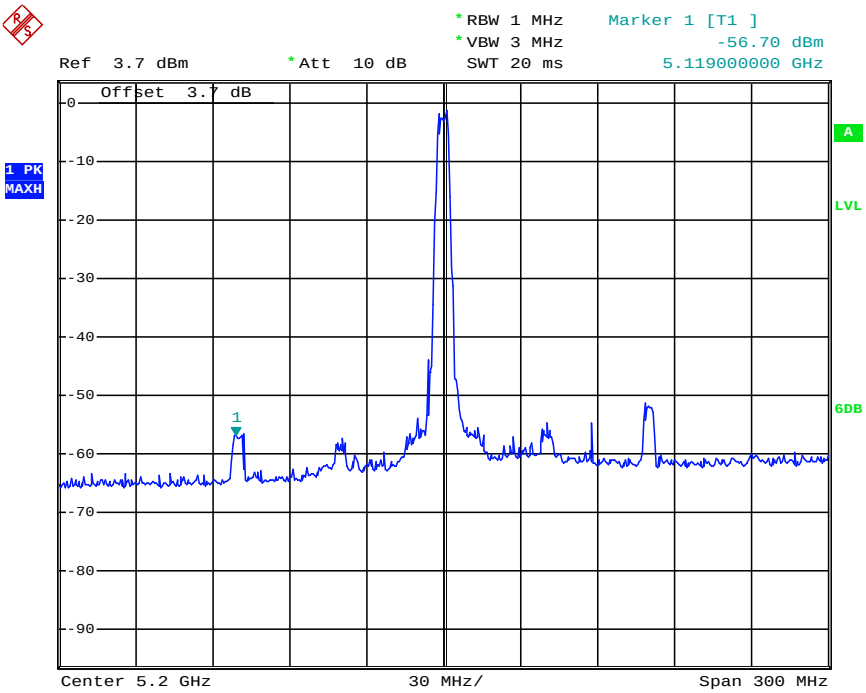
Date: 10.AUG.2017 22:24:51

Plot on Configuration QPSK, 5M / 5200MHz / Peak / Port 1 (TX1)



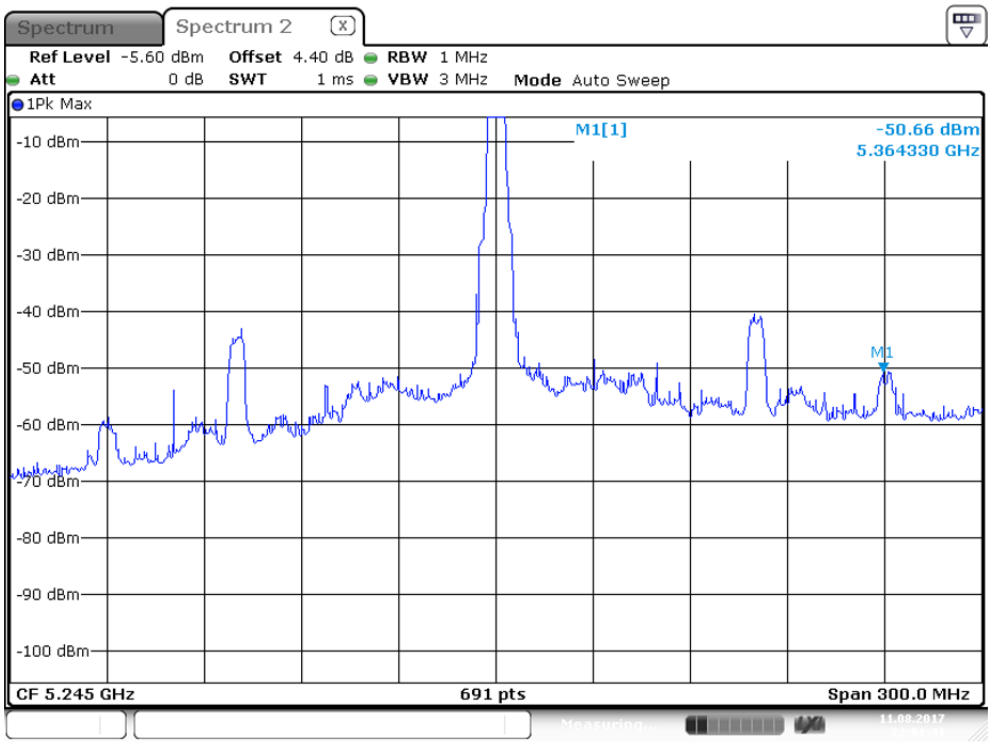
Date: 10.AUG.2017 23:14:16

Plot on Configuration QPSK, 5M / 5200MHz / Peak / Port 2 (TX2)



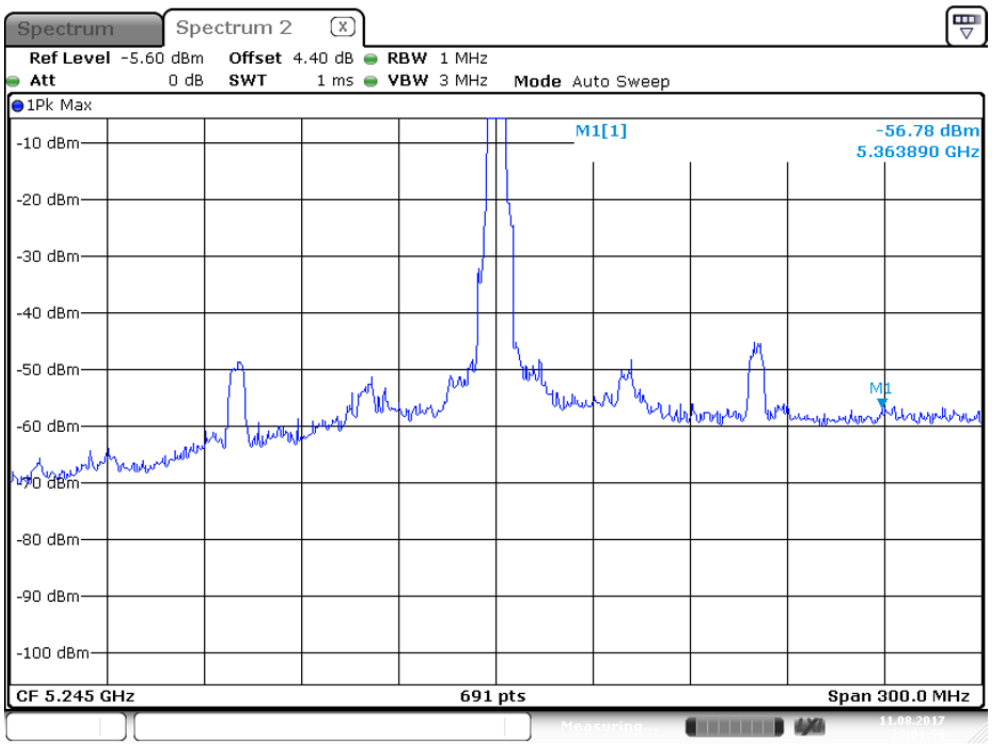
Date: 10.AUG.2017 23:13:24

Plot on Configuration QPSK, 5M / 5245MHz / Peak / Port 1 (TX1)



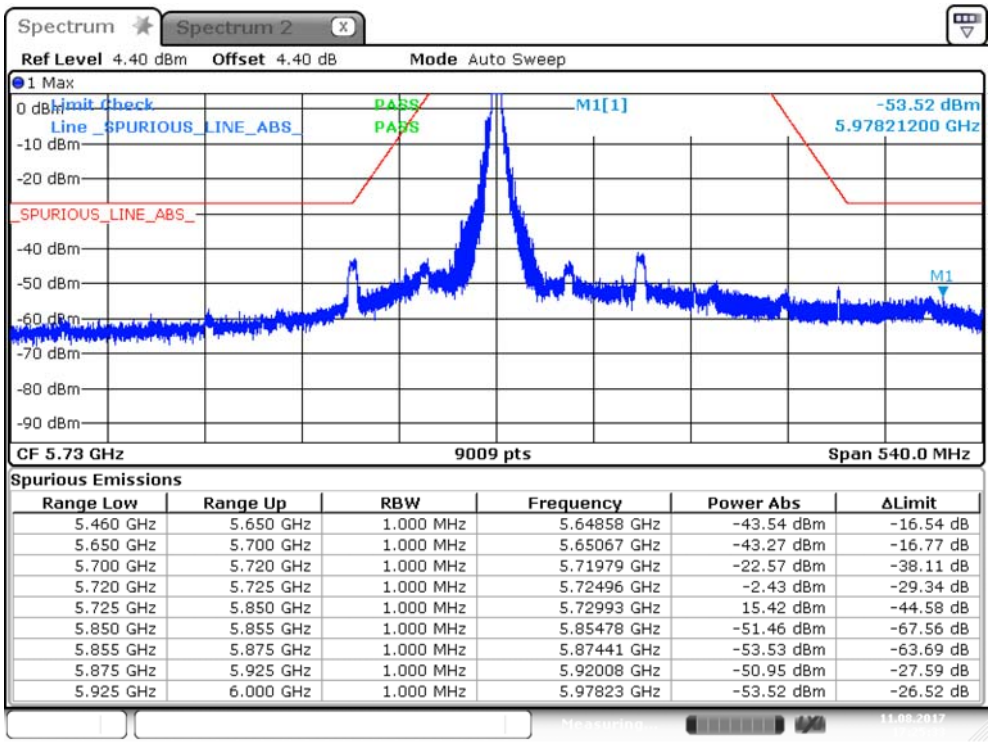
Date: 11.AUG.2017 22:01:41

Plot on Configuration QPSK, 5M / 5245MHz / Peak / Port 2 (TX2)



Date: 11.AUG.2017 22:01:56

Plot on Configuration QPSK, 5M / 5730MHz / Peak / Port 1 (TX1)

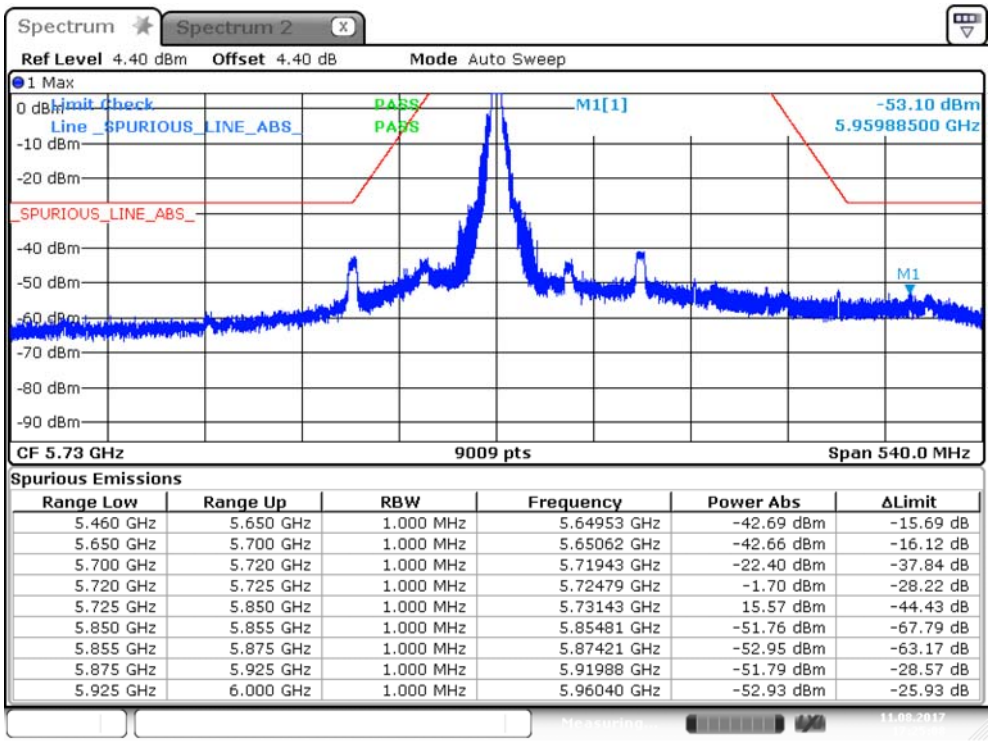


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
5.460 GHz	5.650 GHz	1.000 MHz	5.64858 GHz	-43.54 dBm	-16.54 dB
5.650 GHz	5.700 GHz	1.000 MHz	5.65067 GHz	-43.27 dBm	-16.77 dB
5.700 GHz	5.720 GHz	1.000 MHz	5.71979 GHz	-22.57 dBm	-38.11 dB
5.720 GHz	5.725 GHz	1.000 MHz	5.72496 GHz	-2.43 dBm	-29.34 dB
5.725 GHz	5.850 GHz	1.000 MHz	5.72993 GHz	15.42 dBm	-44.58 dB
5.850 GHz	5.855 GHz	1.000 MHz	5.85478 GHz	-51.46 dBm	-67.56 dB
5.855 GHz	5.875 GHz	1.000 MHz	5.87441 GHz	-53.53 dBm	-63.69 dB
5.875 GHz	5.925 GHz	1.000 MHz	5.92008 GHz	-50.95 dBm	-27.59 dB
5.925 GHz	6.000 GHz	1.000 MHz	5.97823 GHz	-53.52 dBm	-26.52 dB

Date: 11.AUG.2017 17:25:33

Plot on Configuration QPSK, 5M / 5730MHz / Peak / Port 2 (TX2)

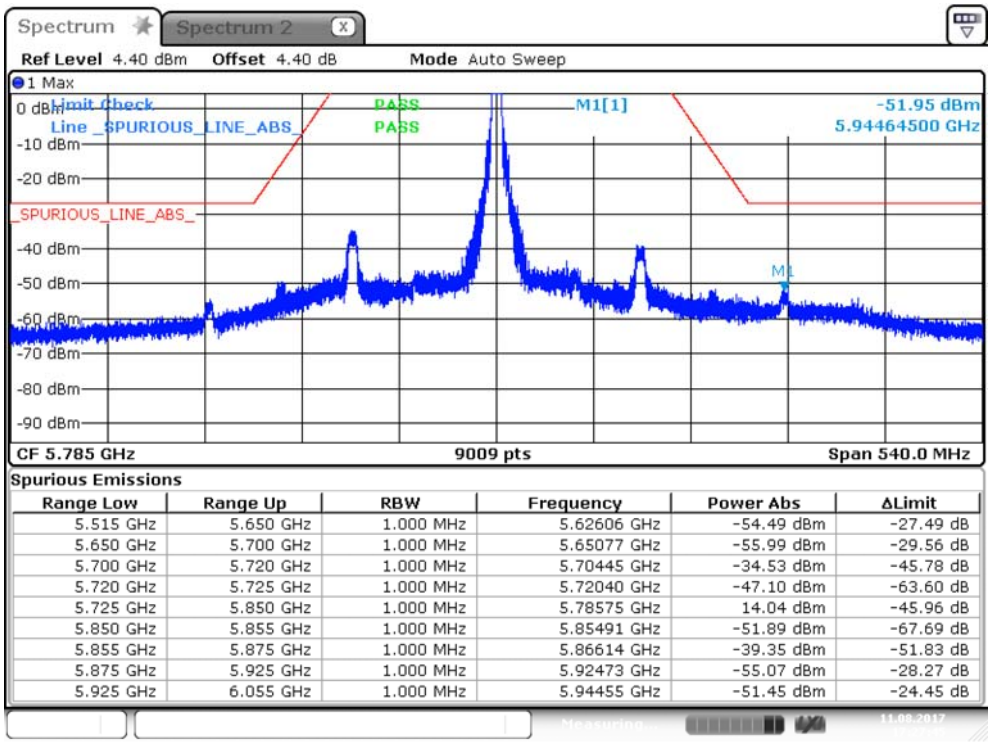


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
5.460 GHz	5.650 GHz	1.000 MHz	5.64953 GHz	-42.69 dBm	-15.69 dB
5.650 GHz	5.700 GHz	1.000 MHz	5.65062 GHz	-42.66 dBm	-16.12 dB
5.700 GHz	5.720 GHz	1.000 MHz	5.71943 GHz	-22.40 dBm	-37.84 dB
5.720 GHz	5.725 GHz	1.000 MHz	5.72479 GHz	-1.70 dBm	-28.22 dB
5.725 GHz	5.850 GHz	1.000 MHz	5.73143 GHz	15.57 dBm	-44.43 dB
5.850 GHz	5.855 GHz	1.000 MHz	5.85481 GHz	-51.76 dBm	-67.79 dB
5.855 GHz	5.875 GHz	1.000 MHz	5.87421 GHz	-52.95 dBm	-63.17 dB
5.875 GHz	5.925 GHz	1.000 MHz	5.91988 GHz	-51.79 dBm	-28.57 dB
5.925 GHz	6.000 GHz	1.000 MHz	5.96040 GHz	-52.93 dBm	-25.93 dB

Date: 11.AUG.2017 17:25:07

Plot on Configuration QPSK, 5M / 5785MHz / Peak / Port 1 (TX1)

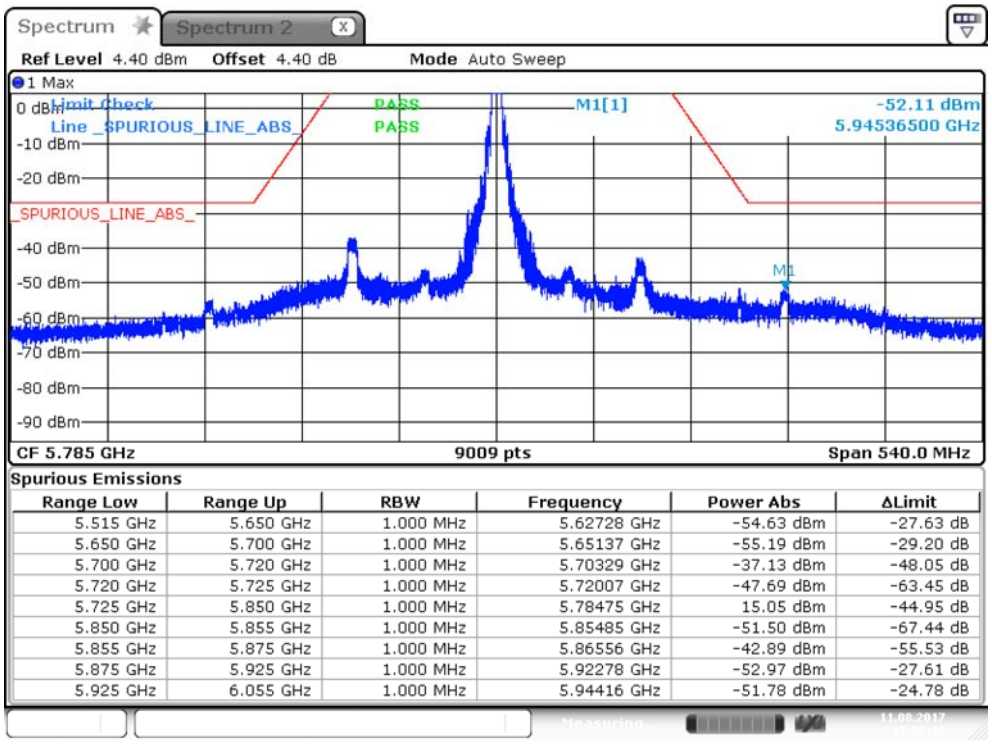


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
5.515 GHz	5.650 GHz	1.000 MHz	5.62606 GHz	-54.49 dBm	-27.49 dB
5.650 GHz	5.700 GHz	1.000 MHz	5.65077 GHz	-55.99 dBm	-29.56 dB
5.700 GHz	5.720 GHz	1.000 MHz	5.70445 GHz	-34.53 dBm	-45.78 dB
5.720 GHz	5.725 GHz	1.000 MHz	5.72040 GHz	-47.10 dBm	-63.60 dB
5.725 GHz	5.850 GHz	1.000 MHz	5.78575 GHz	14.04 dBm	-45.96 dB
5.850 GHz	5.855 GHz	1.000 MHz	5.85491 GHz	-51.89 dBm	-67.69 dB
5.855 GHz	5.875 GHz	1.000 MHz	5.86614 GHz	-39.35 dBm	-51.83 dB
5.875 GHz	5.925 GHz	1.000 MHz	5.92473 GHz	-55.07 dBm	-28.27 dB
5.925 GHz	6.055 GHz	1.000 MHz	5.94455 GHz	-51.45 dBm	-24.45 dB

Date: 11.AUG.2017 17:27:45

Plot on Configuration QPSK, 5M / 5785MHz / Peak / Port 2 (TX2)

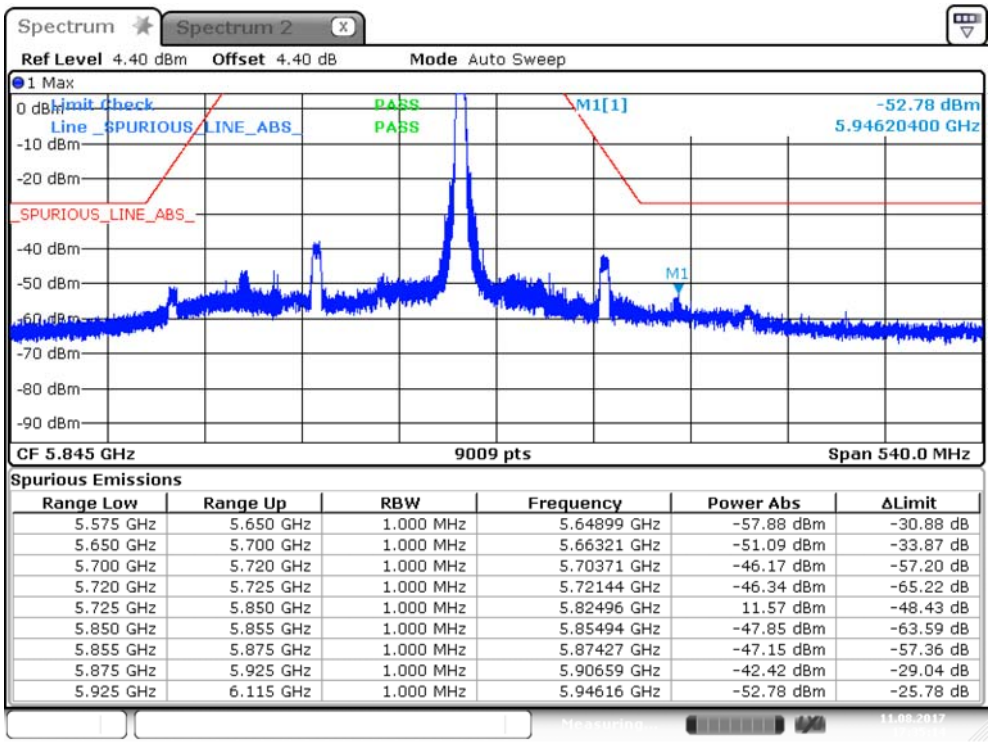


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
5.515 GHz	5.650 GHz	1.000 MHz	5.62728 GHz	-54.63 dBm	-27.63 dB
5.650 GHz	5.700 GHz	1.000 MHz	5.65137 GHz	-55.19 dBm	-29.20 dB
5.700 GHz	5.720 GHz	1.000 MHz	5.70329 GHz	-37.13 dBm	-48.05 dB
5.720 GHz	5.725 GHz	1.000 MHz	5.72007 GHz	-47.69 dBm	-63.45 dB
5.725 GHz	5.850 GHz	1.000 MHz	5.78475 GHz	15.05 dBm	-44.95 dB
5.850 GHz	5.855 GHz	1.000 MHz	5.85485 GHz	-51.50 dBm	-67.44 dB
5.855 GHz	5.875 GHz	1.000 MHz	5.86556 GHz	-42.89 dBm	-55.53 dB
5.875 GHz	5.925 GHz	1.000 MHz	5.92278 GHz	-52.97 dBm	-27.61 dB
5.925 GHz	6.055 GHz	1.000 MHz	5.94416 GHz	-51.78 dBm	-24.78 dB

Date: 11.AUG.2017 17:27:17

Plot on Configuration QPSK, 5M / 5845MHz / Peak / Port 1 (TX1)

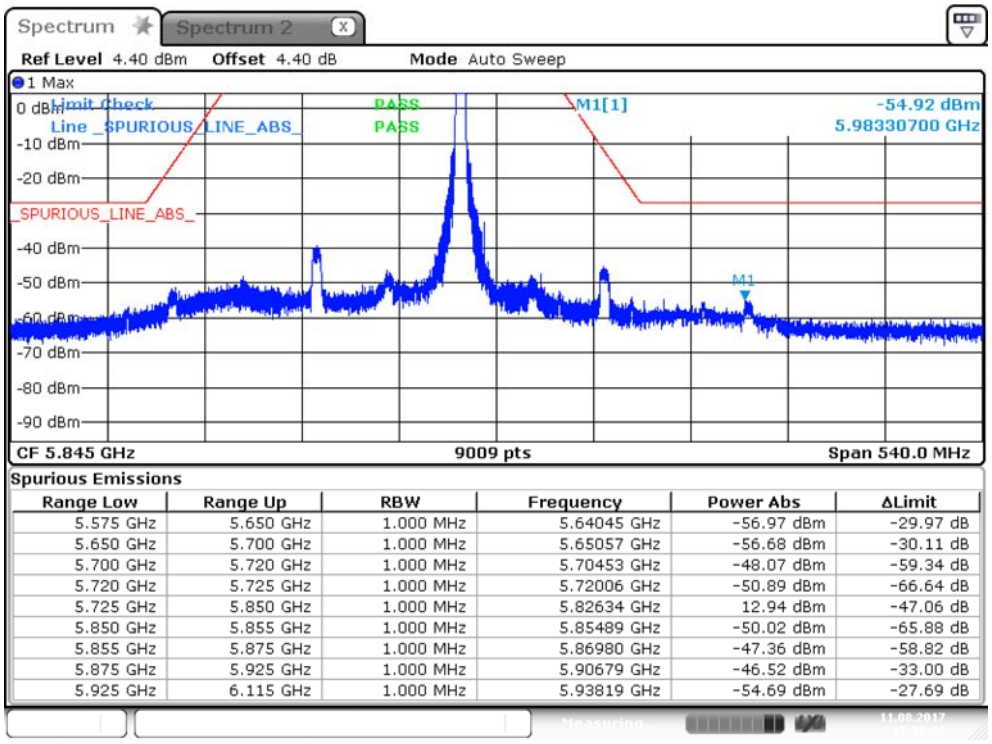


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
5.575 GHz	5.650 GHz	1.000 MHz	5.64899 GHz	-57.88 dBm	-30.88 dB
5.650 GHz	5.700 GHz	1.000 MHz	5.66321 GHz	-51.09 dBm	-33.87 dB
5.700 GHz	5.720 GHz	1.000 MHz	5.70371 GHz	-46.17 dBm	-57.20 dB
5.720 GHz	5.725 GHz	1.000 MHz	5.72144 GHz	-46.34 dBm	-65.22 dB
5.725 GHz	5.850 GHz	1.000 MHz	5.82496 GHz	11.57 dBm	-48.43 dB
5.850 GHz	5.855 GHz	1.000 MHz	5.85494 GHz	-47.85 dBm	-63.59 dB
5.855 GHz	5.875 GHz	1.000 MHz	5.87427 GHz	-47.15 dBm	-57.36 dB
5.875 GHz	5.925 GHz	1.000 MHz	5.90659 GHz	-42.42 dBm	-29.04 dB
5.925 GHz	6.115 GHz	1.000 MHz	5.94616 GHz	-52.78 dBm	-25.78 dB

Date: 11.AUG.2017 17:35:14

Plot on Configuration QPSK, 5M / 5845MHz / Peak / Port 2 (TX2)

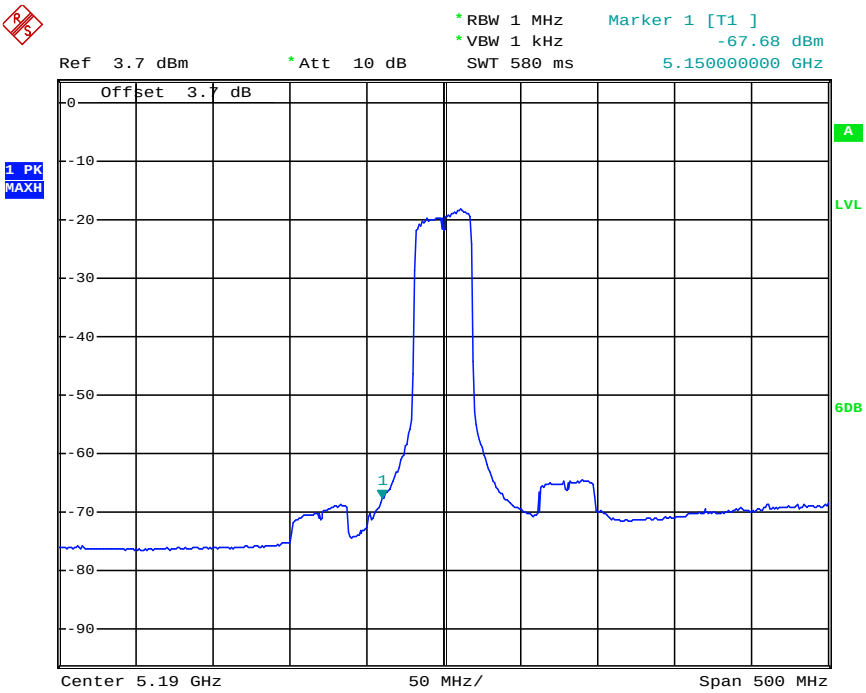


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
5.575 GHz	5.650 GHz	1.000 MHz	5.64045 GHz	-56.97 dBm	-29.97 dB
5.650 GHz	5.700 GHz	1.000 MHz	5.65057 GHz	-56.68 dBm	-30.11 dB
5.700 GHz	5.720 GHz	1.000 MHz	5.70453 GHz	-48.07 dBm	-59.34 dB
5.720 GHz	5.725 GHz	1.000 MHz	5.72006 GHz	-50.89 dBm	-66.64 dB
5.725 GHz	5.850 GHz	1.000 MHz	5.82634 GHz	12.94 dBm	-47.06 dB
5.850 GHz	5.855 GHz	1.000 MHz	5.85489 GHz	-50.02 dBm	-65.88 dB
5.855 GHz	5.875 GHz	1.000 MHz	5.86980 GHz	-47.36 dBm	-58.82 dB
5.875 GHz	5.925 GHz	1.000 MHz	5.90679 GHz	-46.52 dBm	-33.00 dB
5.925 GHz	6.115 GHz	1.000 MHz	5.93819 GHz	-54.69 dBm	-27.69 dB

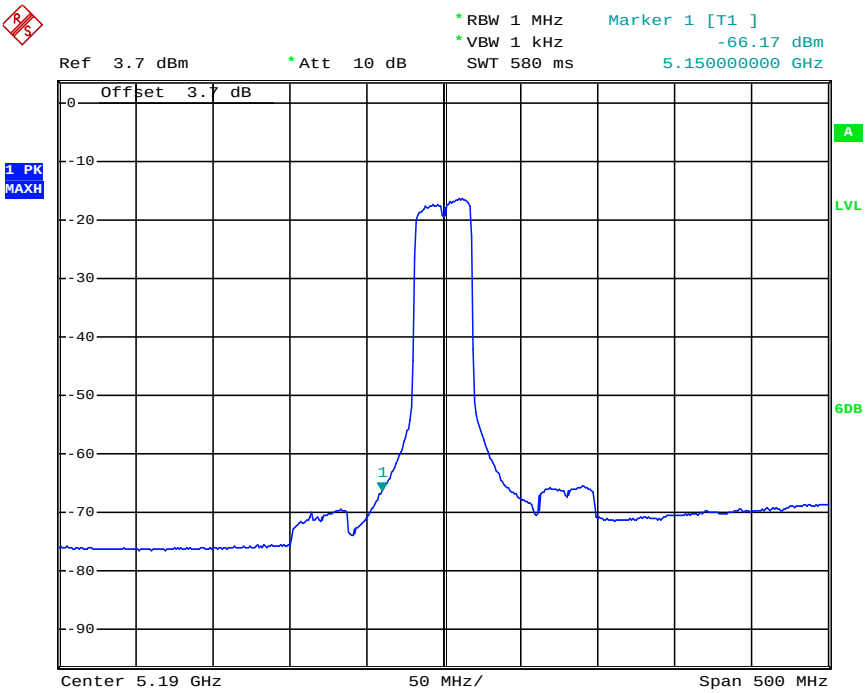
Date: 11.AUG.2017 17:35:57

Plot on Configuration QPSK, 40M / 5190MHz / Average / Port 1 (TX1)



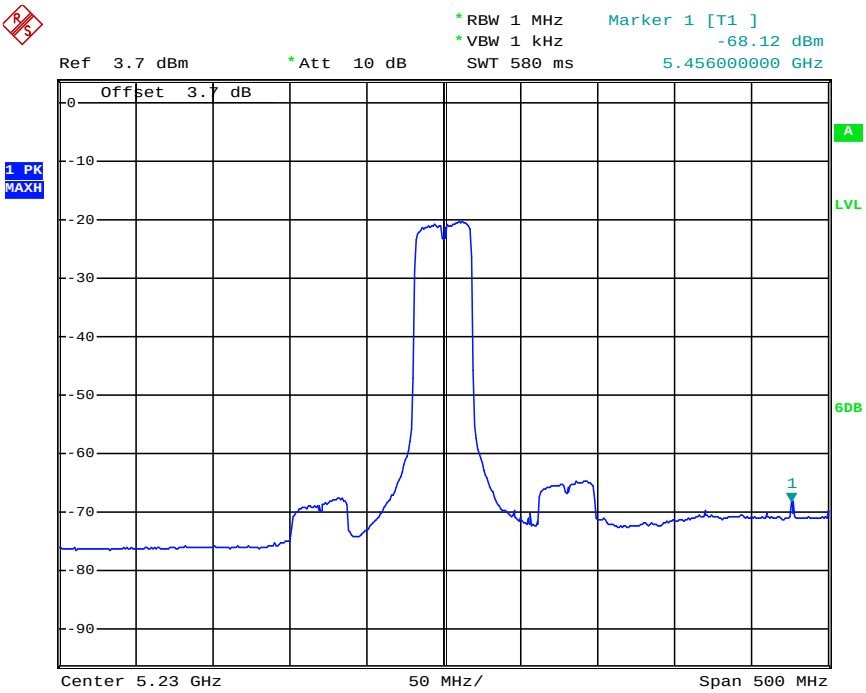
Date: 11.AUG.2017 01:40:40

Plot on Configuration QPSK, 40M / 5190MHz / Average / Port 2 (TX2)



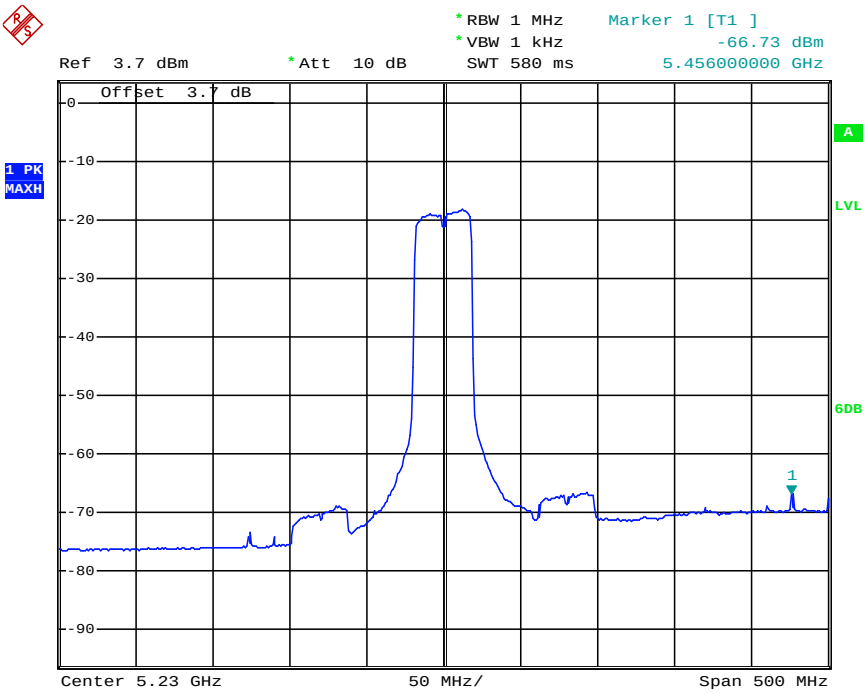
Date: 11.AUG.2017 01:39:50

Plot on Configuration QPSK, 40M / 5230MHz / Average / Port 1 (TX1)



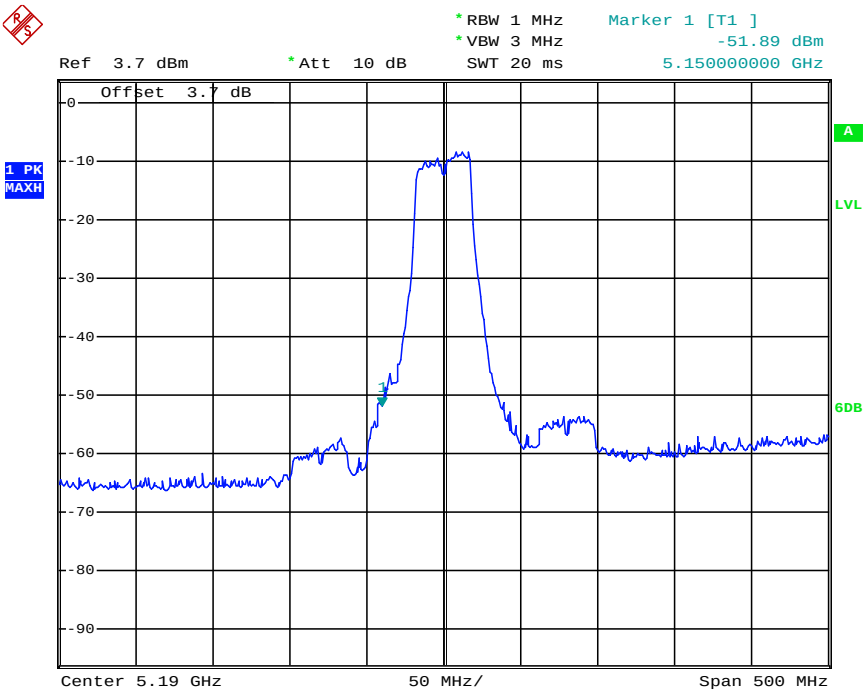
Date: 11.AUG.2017 01:34:57

Plot on Configuration QPSK, 40M / 5230MHz / Average / Port 2 (TX2)



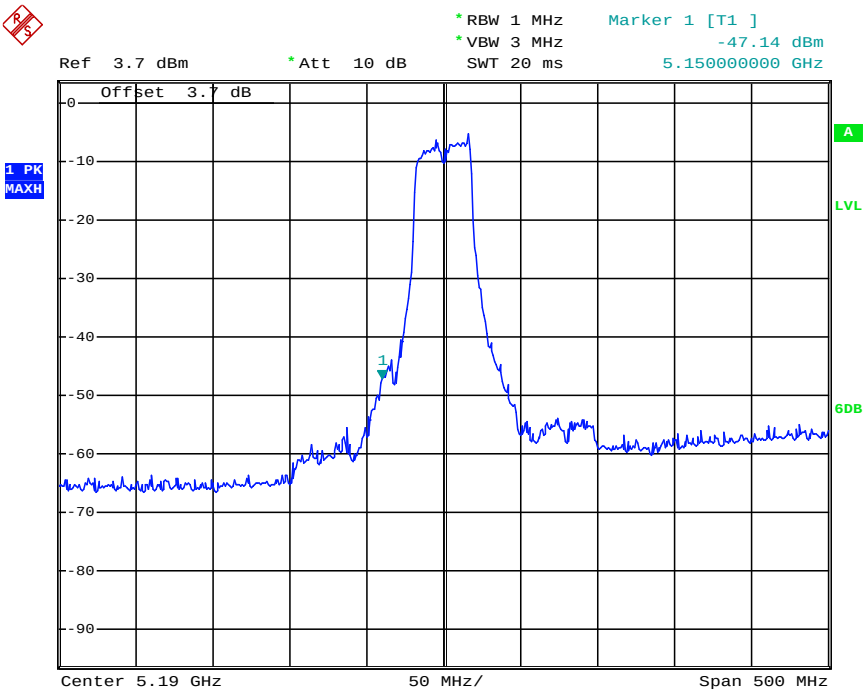
Date: 11.AUG.2017 01:37:20

Plot on Configuration QPSK, 40M / 5190MHz / Peak / Port 1 (TX1)



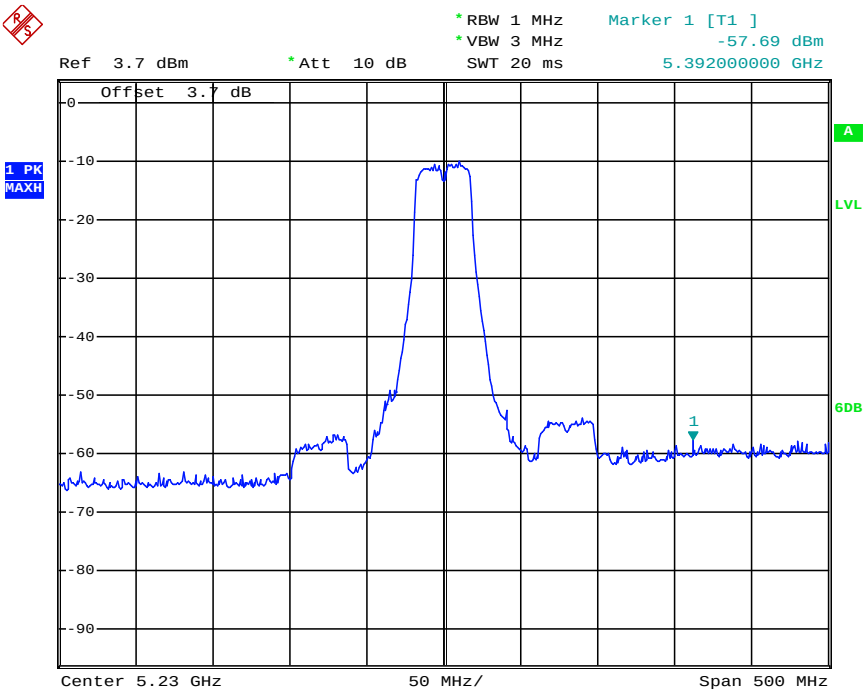
Date: 11.AUG.2017 01:40:59

Plot on Configuration QPSK, 40M / 5190MHz / Peak / Port 2 (TX2)



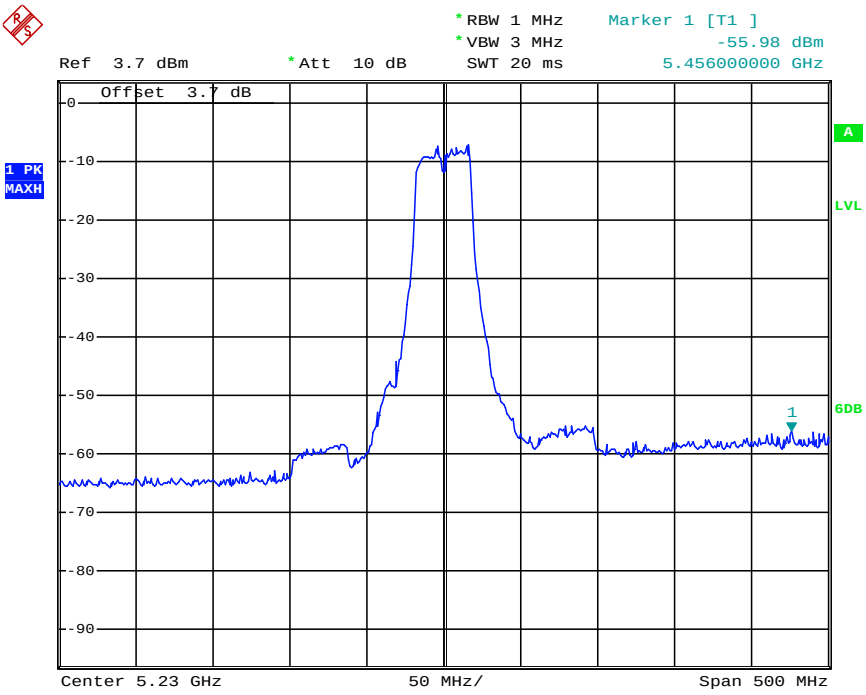
Date: 11.AUG.2017 01:41:23

Plot on Configuration QPSK, 40M / 5230MHz / Peak / Port 1 (TX1)



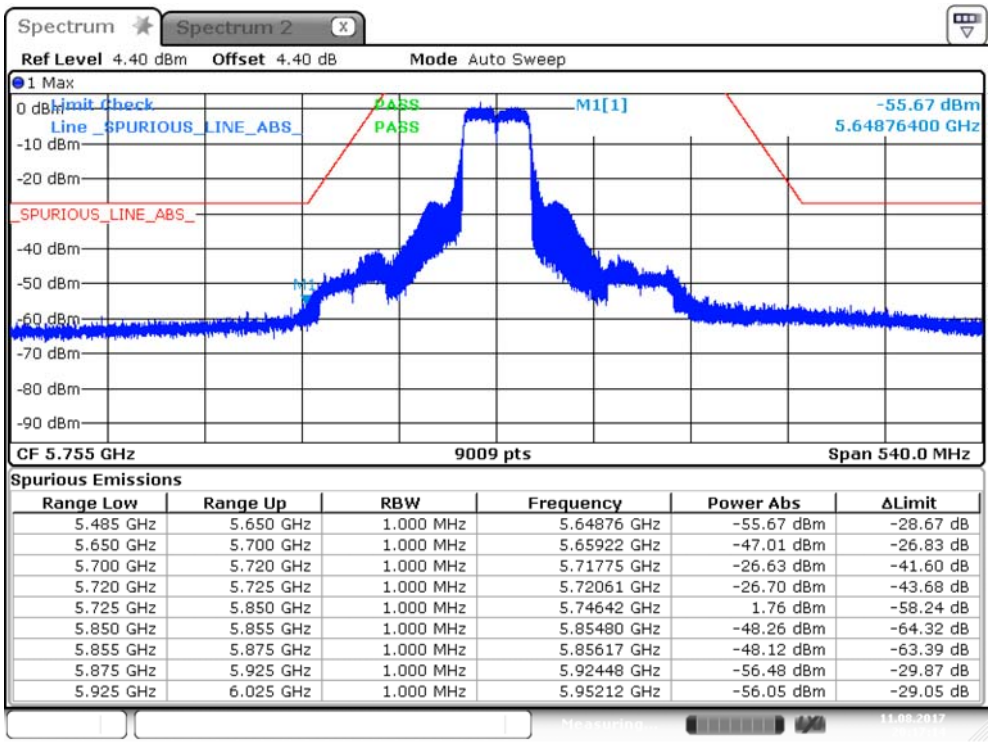
Date: 11.AUG.2017 01:36:11

Plot on Configuration QPSK, 40M / 5230MHz / Peak / Port 2 (TX2)



Date: 11.AUG.2017 01:37:02

Plot on Configuration QPSK, 40M / 5755MHz / Peak / Port 1 (TX1)

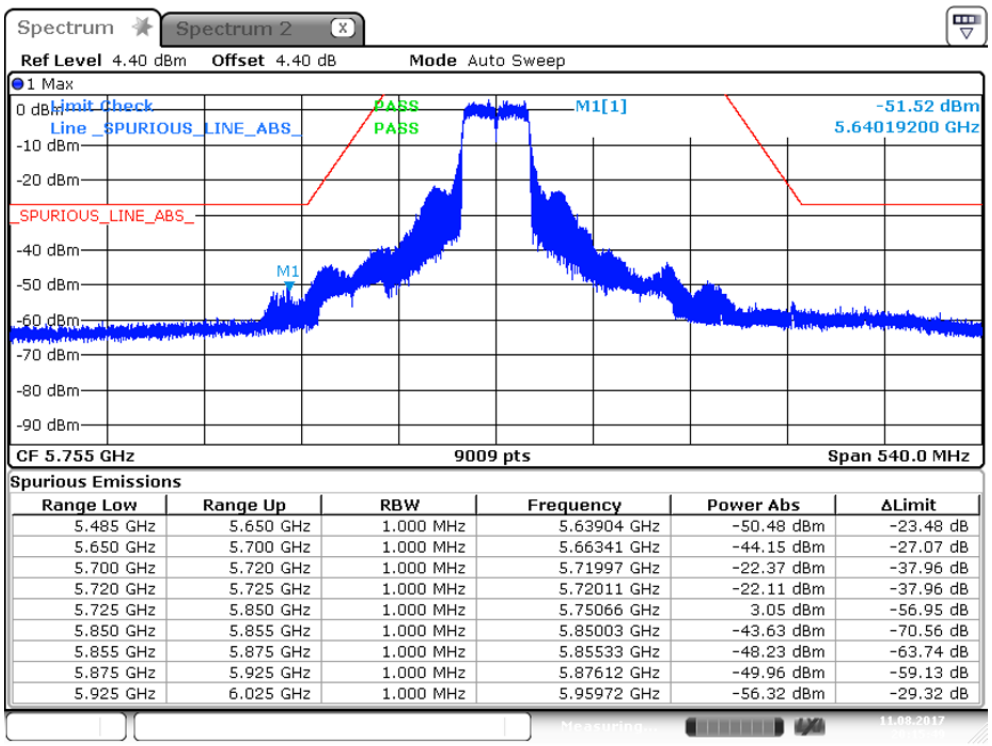


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
5.485 GHz	5.650 GHz	1.000 MHz	5.64876 GHz	-55.67 dBm	-28.67 dB
5.650 GHz	5.700 GHz	1.000 MHz	5.65922 GHz	-47.01 dBm	-26.83 dB
5.700 GHz	5.720 GHz	1.000 MHz	5.71775 GHz	-26.63 dBm	-41.60 dB
5.720 GHz	5.725 GHz	1.000 MHz	5.72061 GHz	-26.70 dBm	-43.68 dB
5.725 GHz	5.850 GHz	1.000 MHz	5.74642 GHz	1.76 dBm	-58.24 dB
5.850 GHz	5.855 GHz	1.000 MHz	5.85480 GHz	-48.26 dBm	-64.32 dB
5.855 GHz	5.875 GHz	1.000 MHz	5.85617 GHz	-48.12 dBm	-63.39 dB
5.875 GHz	5.925 GHz	1.000 MHz	5.92448 GHz	-56.48 dBm	-29.87 dB
5.925 GHz	6.025 GHz	1.000 MHz	5.95212 GHz	-56.05 dBm	-29.05 dB

Date: 11.AUG.2017 20:17:14

Plot on Configuration QPSK, 40M / 5755MHz / Peak / Port 2 (TX2)

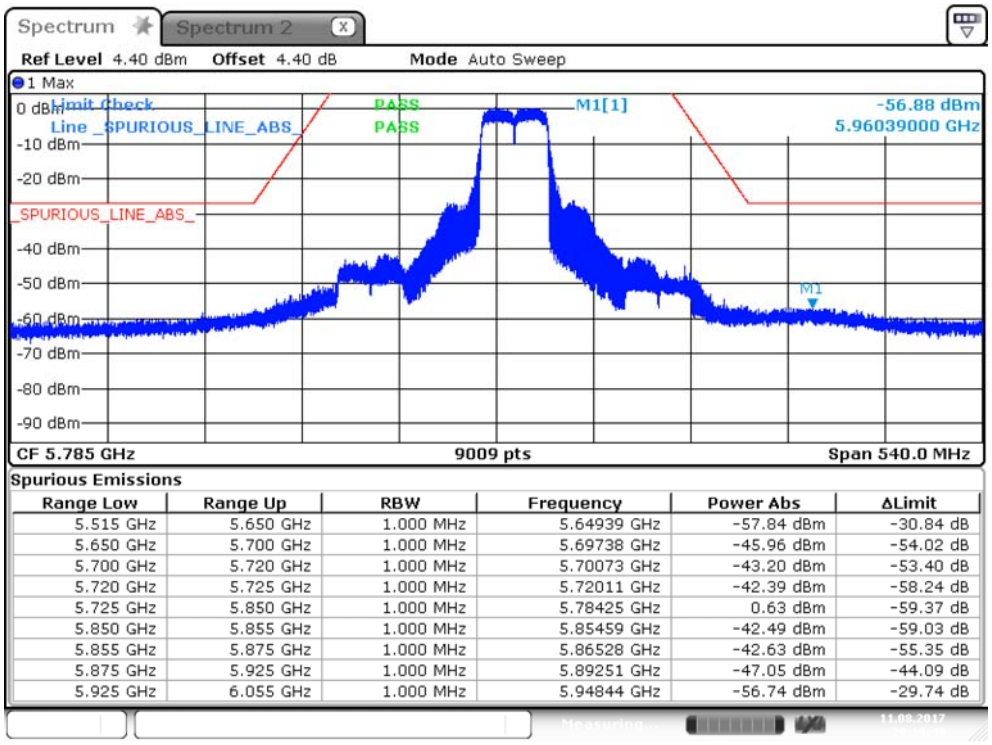


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
5.485 GHz	5.650 GHz	1.000 MHz	5.63904 GHz	-50.48 dBm	-23.48 dB
5.650 GHz	5.700 GHz	1.000 MHz	5.66341 GHz	-44.15 dBm	-27.07 dB
5.700 GHz	5.720 GHz	1.000 MHz	5.71997 GHz	-22.37 dBm	-37.96 dB
5.720 GHz	5.725 GHz	1.000 MHz	5.72011 GHz	-22.11 dBm	-37.96 dB
5.725 GHz	5.850 GHz	1.000 MHz	5.75066 GHz	3.05 dBm	-56.95 dB
5.850 GHz	5.855 GHz	1.000 MHz	5.85003 GHz	-43.63 dBm	-70.56 dB
5.855 GHz	5.875 GHz	1.000 MHz	5.85533 GHz	-48.23 dBm	-63.74 dB
5.875 GHz	5.925 GHz	1.000 MHz	5.87612 GHz	-49.96 dBm	-59.13 dB
5.925 GHz	6.025 GHz	1.000 MHz	5.95972 GHz	-56.32 dBm	-29.32 dB

Date: 11.AUG.2017 20:15:48

Plot on Configuration QPSK, 40M / 5795MHz / Peak / Port 1 (TX1)

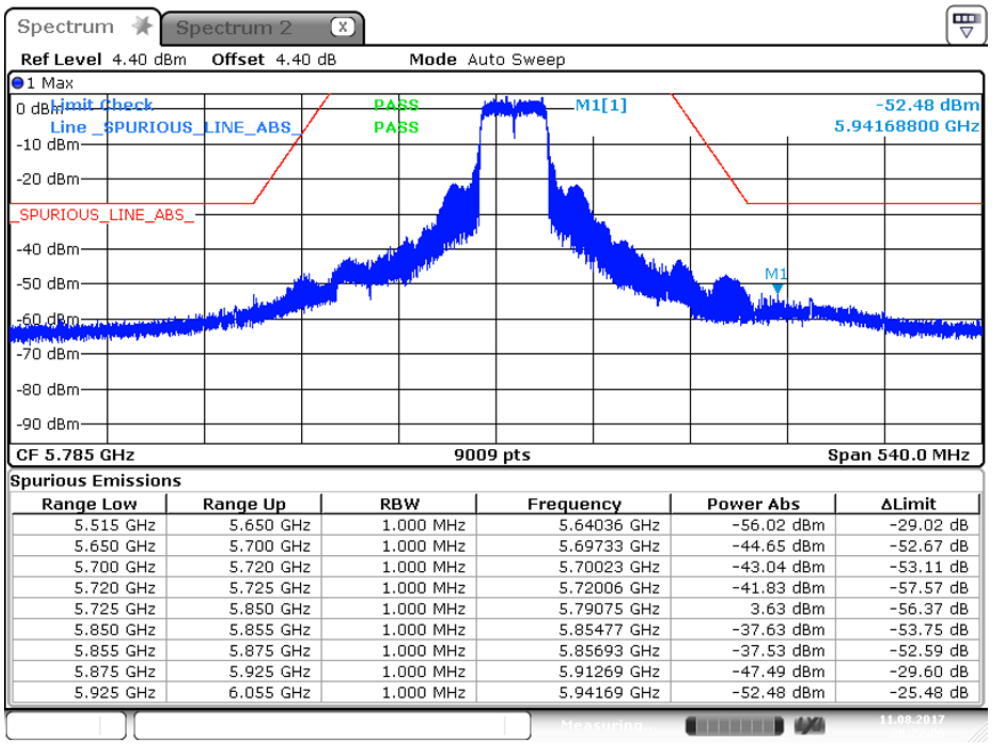


Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
5.515 GHz	5.650 GHz	1.000 MHz	5.64939 GHz	-57.84 dBm	-30.84 dB
5.650 GHz	5.700 GHz	1.000 MHz	5.69738 GHz	-45.96 dBm	-54.02 dB
5.700 GHz	5.720 GHz	1.000 MHz	5.70073 GHz	-43.20 dBm	-53.40 dB
5.720 GHz	5.725 GHz	1.000 MHz	5.72011 GHz	-42.39 dBm	-58.24 dB
5.725 GHz	5.850 GHz	1.000 MHz	5.78425 GHz	0.63 dBm	-59.37 dB
5.850 GHz	5.855 GHz	1.000 MHz	5.85459 GHz	-42.49 dBm	-59.03 dB
5.855 GHz	5.875 GHz	1.000 MHz	5.86528 GHz	-42.63 dBm	-55.35 dB
5.875 GHz	5.925 GHz	1.000 MHz	5.89251 GHz	-47.05 dBm	-44.09 dB
5.925 GHz	6.055 GHz	1.000 MHz	5.94844 GHz	-56.74 dBm	-29.74 dB

Date: 11.AUG.2017 20:19:49

Plot on Configuration QPSK, 40M / 5795MHz / Peak / Port 2 (TX2)



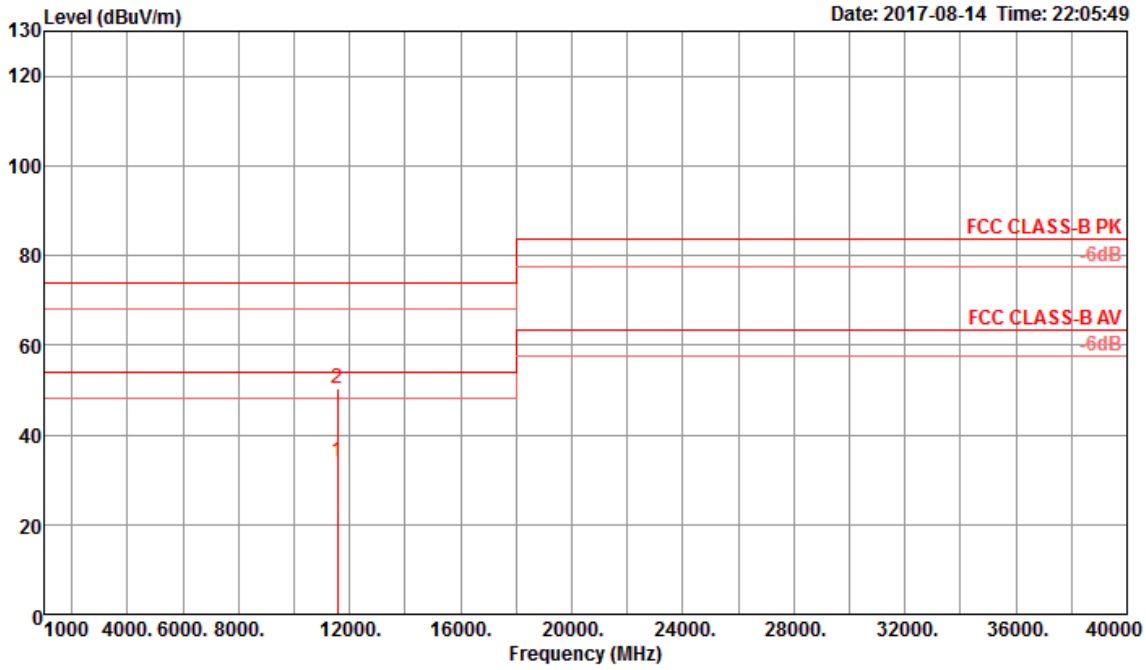
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
5.515 GHz	5.650 GHz	1.000 MHz	5.64036 GHz	-56.02 dBm	-29.02 dB
5.650 GHz	5.700 GHz	1.000 MHz	5.69733 GHz	-44.65 dBm	-52.67 dB
5.700 GHz	5.720 GHz	1.000 MHz	5.70023 GHz	-43.04 dBm	-53.11 dB
5.720 GHz	5.725 GHz	1.000 MHz	5.72006 GHz	-41.83 dBm	-57.57 dB
5.725 GHz	5.850 GHz	1.000 MHz	5.79075 GHz	3.63 dBm	-56.37 dB
5.850 GHz	5.855 GHz	1.000 MHz	5.85477 GHz	-37.63 dBm	-53.75 dB
5.855 GHz	5.875 GHz	1.000 MHz	5.85693 GHz	-37.53 dBm	-52.59 dB
5.875 GHz	5.925 GHz	1.000 MHz	5.91269 GHz	-47.49 dBm	-29.60 dB
5.925 GHz	6.055 GHz	1.000 MHz	5.94169 GHz	-52.48 dBm	-25.48 dB

Date: 11.AUG.2017 20:22:06

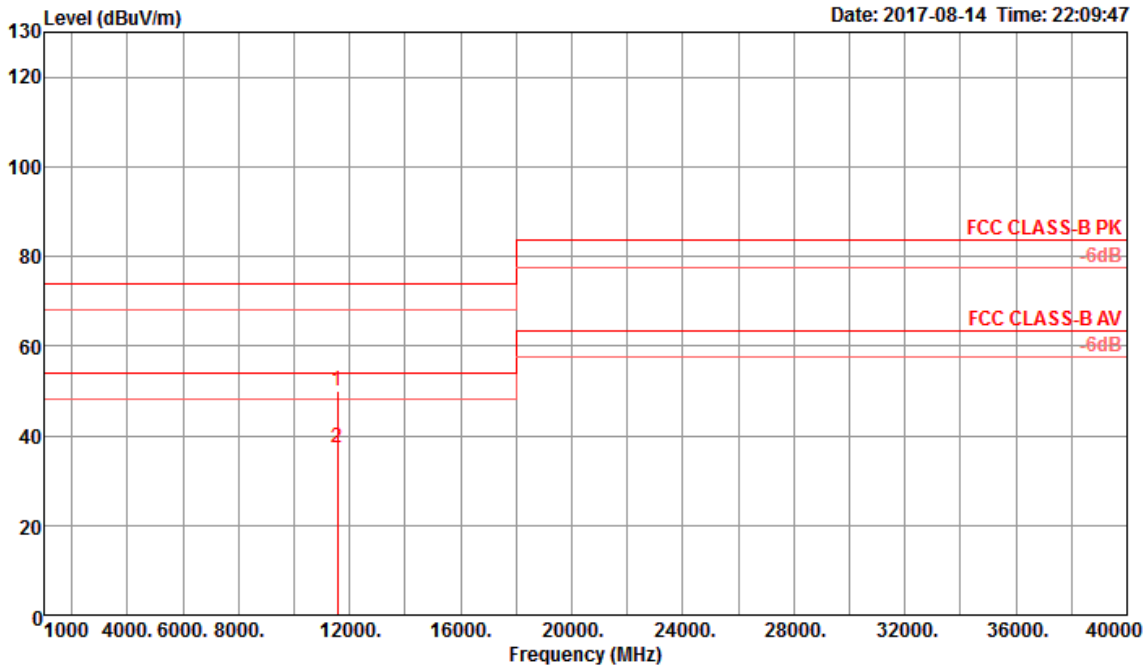
For Cabinet test:

Polarization	Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable 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	11570.06	34.21	54.00	-19.79	21.95	8.29	38.61	34.64	150	239	Average	VERTICAL
2	11570.09	50.25	74.00	-23.75	37.99	8.29	38.61	34.64	150	239	Peak	VERTICAL

Polarization	Horizential



	Freq	Level	Limit Line	Over Limit	Read Level	Cable 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	11569.95	50.00	74.00	-24.00	37.74	8.29	38.61	34.64	150	73	Peak	HORIZONTAL
2	11570.61	37.23	54.00	-16.77	24.97	8.29	38.61	34.64	150	73	Average	HORIZONTAL

Mode: QPSK, 5M / Ant 1

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5199.9937	5199.9936	5199.9935	5199.9928
110.00	5199.9934	5199.9925	5199.9918	5199.9909
93.50	5199.9928	5199.9919	5199.9911	5199.9904
Max. Deviation (MHz)	0.0072	0.0081	0.0089	0.0096
Max. Deviation (ppm)	1.38	1.56	1.71	1.85
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-40	5199.9979	5199.9978	5199.9976	5199.9966
-30	5199.9970	5199.9967	5199.9958	5199.9957
-20	5199.9968	5199.9963	5199.9961	5199.9959
-10	5199.9960	5199.9951	5199.9945	5199.9936
0	5199.9950	5199.9944	5199.9941	5199.9934
10	5199.9948	5199.9943	5199.9942	5199.9933
20	5199.9934	5199.9933	5199.9931	5199.9924
30	5199.9891	5199.9889	5199.9884	5199.9880
40	5199.9885	5199.9876	5199.9874	5199.9873
50	5199.9871	5199.9866	5199.9864	5199.9860
60	5199.9880	5199.9871	5199.9867	5199.9859
70	5199.9875	5199.9871	5199.9867	5199.9864
Max. Deviation (MHz)	0.0125	0.0129	0.0133	0.0136
Max. Deviation (ppm)	2.40	2.48	2.56	2.62
Result	Pass			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5784.9941	5784.9940	5784.9936	5784.9928
110.00	5784.9934	5784.9930	5784.9920	5784.9911
93.50	5784.9931	5784.9928	5784.9925	5784.9917
Max. Deviation (MHz)	0.0069	0.0072	0.0080	0.0089
Max. Deviation (ppm)	1.19	1.24	1.38	1.54
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-40	5785.0031	5785.0021	5785.0018	5785.0010
-30	5785.0012	5785.0008	5785.0002	5785.0000
-20	5784.9996	5784.9995	5784.9991	5784.9983
-10	5784.9980	5784.9973	5784.9969	5784.9964
0	5784.9971	5784.9961	5784.9956	5784.9955
10	5784.9952	5784.9948	5784.9947	5784.9938
20	5784.9934	5784.9931	5784.9927	5784.9922
30	5784.9891	5784.9884	5784.9874	5784.9868
40	5784.9872	5784.9866	5784.9861	5784.9856
50	5784.9856	5784.9849	5784.9846	5784.9836
60	5784.9838	5784.9837	5784.9830	5784.9823
70	5784.9835	5784.9826	5784.9817	5784.9809
Max. Deviation (MHz)	0.070000	0.070000	0.070000	0.070000
Max. Deviation (ppm)	13.46	13.46	13.2075	13.2075
Result	Pass			

Mode: QPSK, 40M / Ant 1

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5190 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5189.9939	5189.9934	5189.9931	5189.9926
110.00	5189.9934	5189.9926	5189.9924	5189.9914
93.50	5189.9933	5189.9923	5189.9920	5189.9914
Max. Deviation (MHz)	0.0067	0.0077	0.0080	0.0086
Max. Deviation (ppm)	1.29	1.48	1.54	1.66
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5190 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-40	5189.9987	5189.9983	5189.9976	5189.9971
-30	5189.9970	5189.9968	5189.9966	5189.9959
-20	5189.9964	5189.9955	5189.9950	5189.9940
-10	5189.9958	5189.9956	5189.9955	5189.9953
0	5189.9956	5189.9949	5189.9939	5189.9929
10	5189.9946	5189.9936	5189.9934	5189.9933
20	5189.9934	5189.9929	5189.9926	5189.9925
30	5189.9891	5189.9888	5189.9887	5189.9883
40	5189.9878	5189.9873	5189.9872	5189.9870
50	5189.9870	5189.9869	5189.9861	5189.9858
60	5189.9864	5189.9862	5189.9854	5189.9851
70	5189.9852	5189.9848	5189.9845	5189.9838
Max. Deviation (MHz)	0.0148	0.0152	0.0155	0.0162
Max. Deviation (ppm)	2.85	2.93	2.99	3.12
Result	Pass			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5755 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5754.9942	5754.9933	5754.9928	5754.9918
110.00	5754.9934	5754.9924	5754.9921	5754.9917
93.50	5754.9933	5754.9925	5754.9922	5754.9921
Max. Deviation (MHz)	0.0067	0.0076	0.0079	0.0083
Max. Deviation (ppm)	1.16	1.32	1.37	1.44
Result	Pass			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(℃)	5755 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-40	5755.0000	5754.9990	5754.9989	5754.9979
-30	5754.9982	5754.9981	5754.9974	5754.9964
-20	5754.9976	5754.9971	5754.9968	5754.9965
-10	5754.9958	5754.9949	5754.9943	5754.9937
0	5754.9956	5754.9953	5754.9948	5754.9941
10	5754.9937	5754.9933	5754.9927	5754.9919
20	5754.9934	5754.9925	5754.9922	5754.9918
30	5754.9891	5754.9889	5754.9884	5754.9883
40	5754.9888	5754.9882	5754.9880	5754.9874
50	5754.9883	5754.9881	5754.9878	5754.9874
60	5754.9876	5754.9875	5754.9873	5754.9869
70	5754.9874	5754.9872	5754.9863	5754.9853
Max. Deviation (MHz)	0.0126	0.0128	0.0137	0.0147
Max. Deviation (ppm)	2.19	2.22	2.38	2.55
Result	Pass			

TEL : 886-3-327-3456
FAX : 886-3-327-0973

1. Photographs of Conducted Emissions Test Configuration

Test Mode: Mode 2

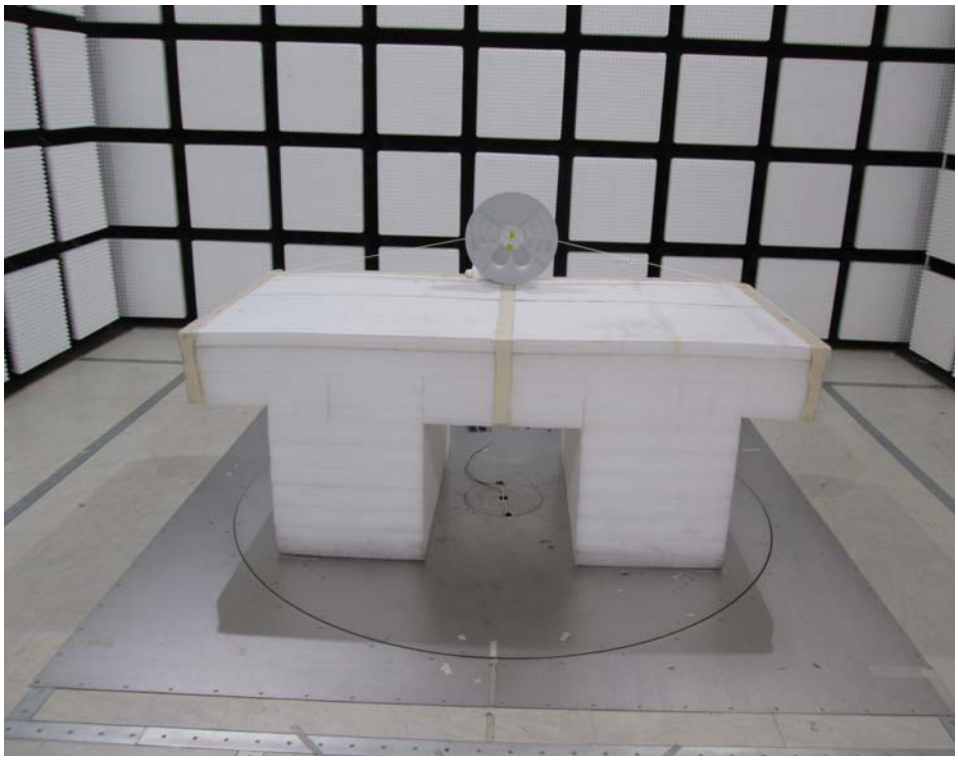
FRONT VIEW

REAR VIEW

2. Photographs of Radiated Emissions Test Configuration

Test Configuration: 30MHz~1GHz / Test Mode: Mode 1

FRONT VIEW

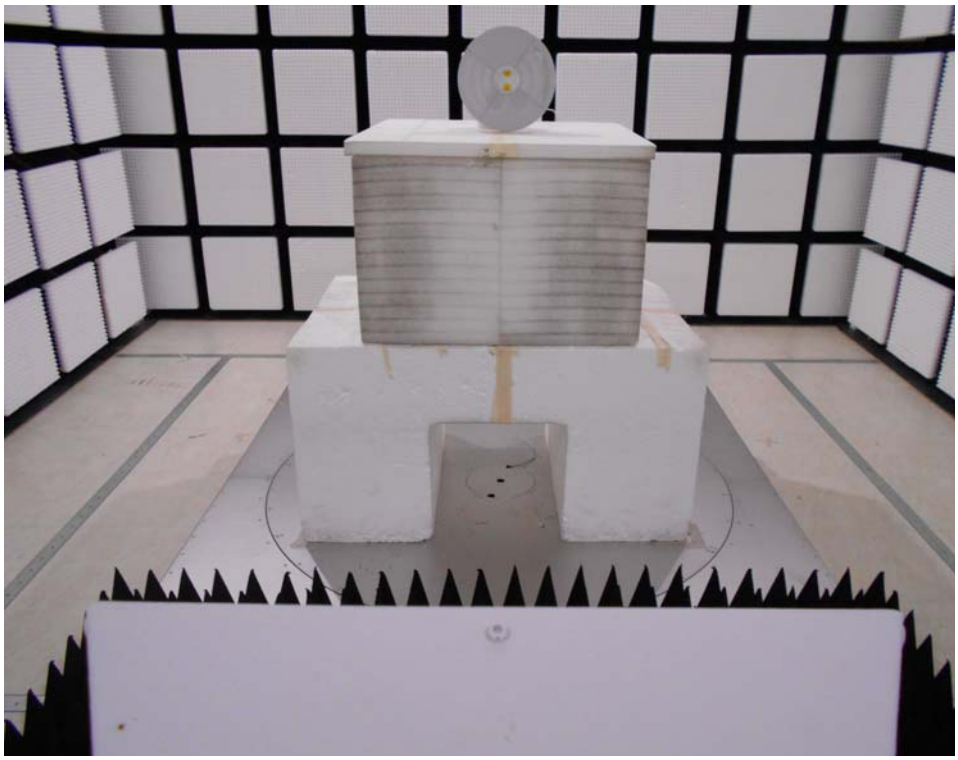


REAR VIEW

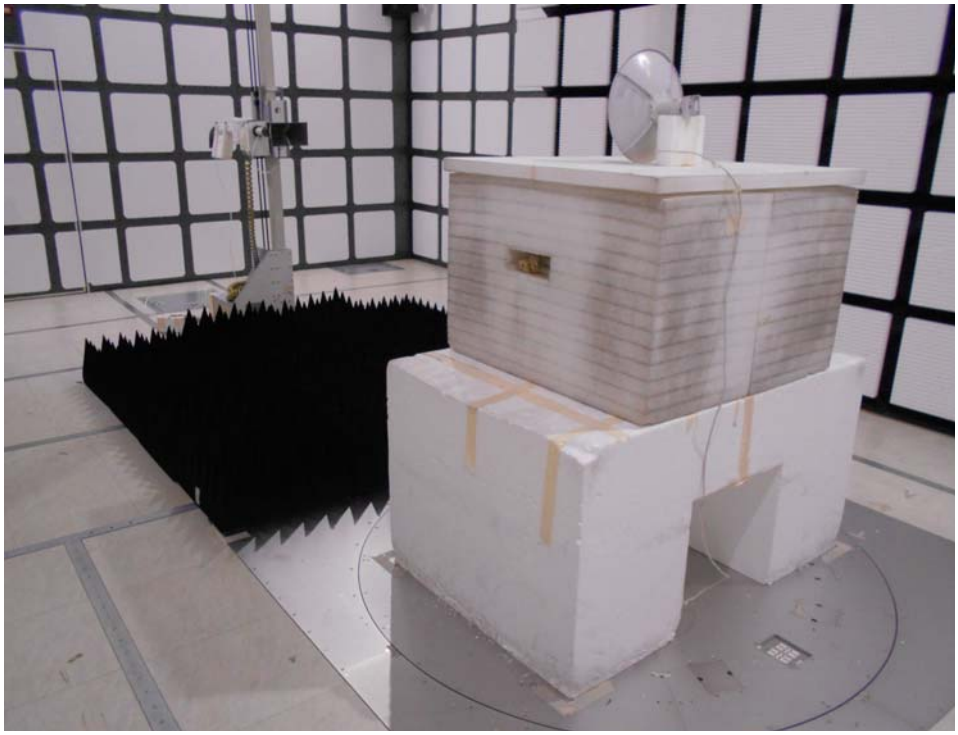
Test Method: Radiated

Test Configuration: Above 1GHz

FRONT VIEW

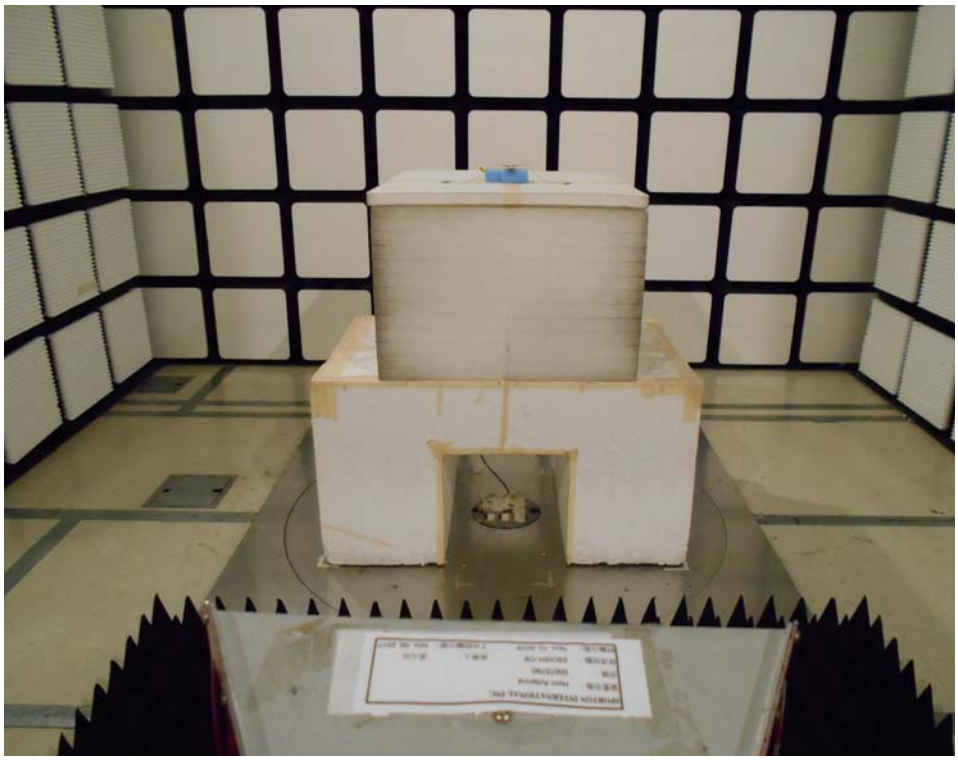


REAR VIEW



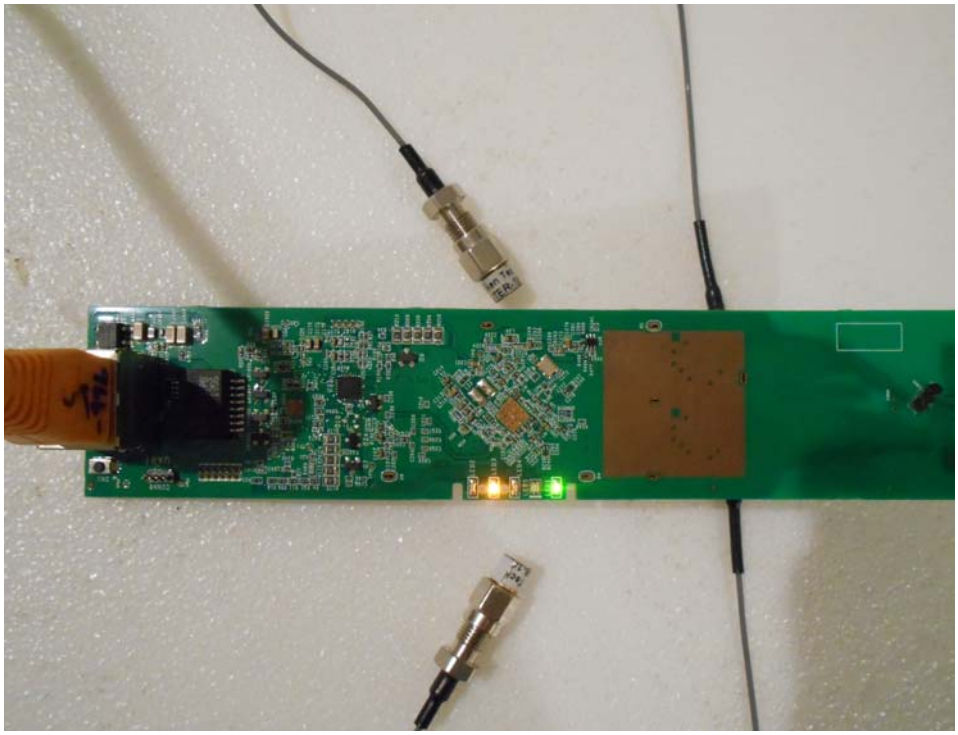
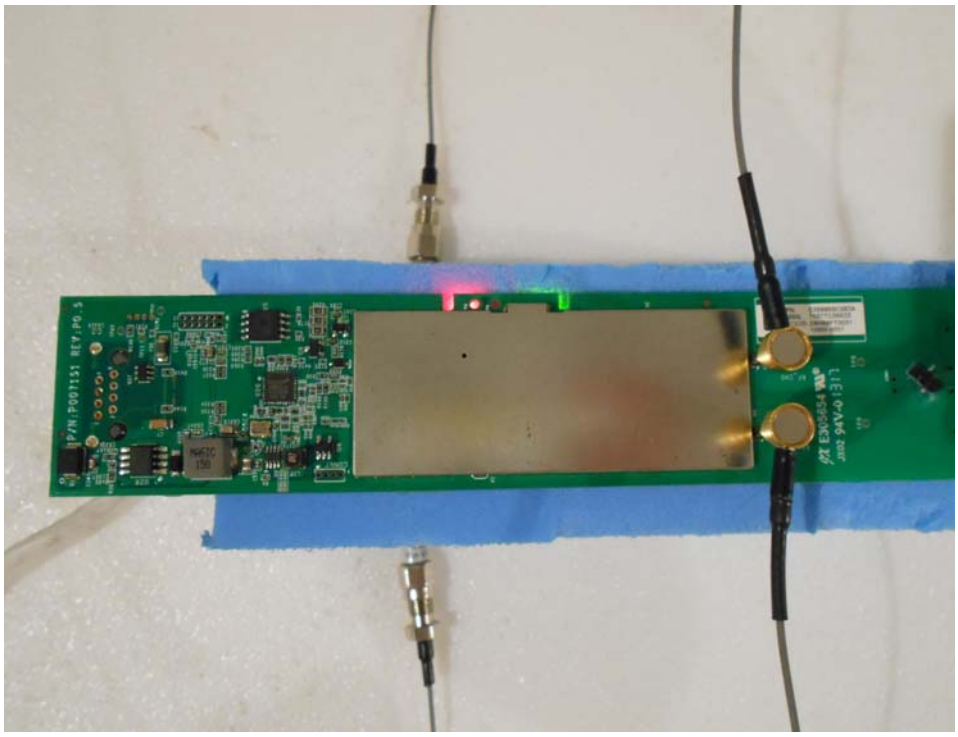
For Cabinet test:

FRONT VIEW



REAR VIEW

CLOSE-UP VIEW



CLOSE-UP VIEW