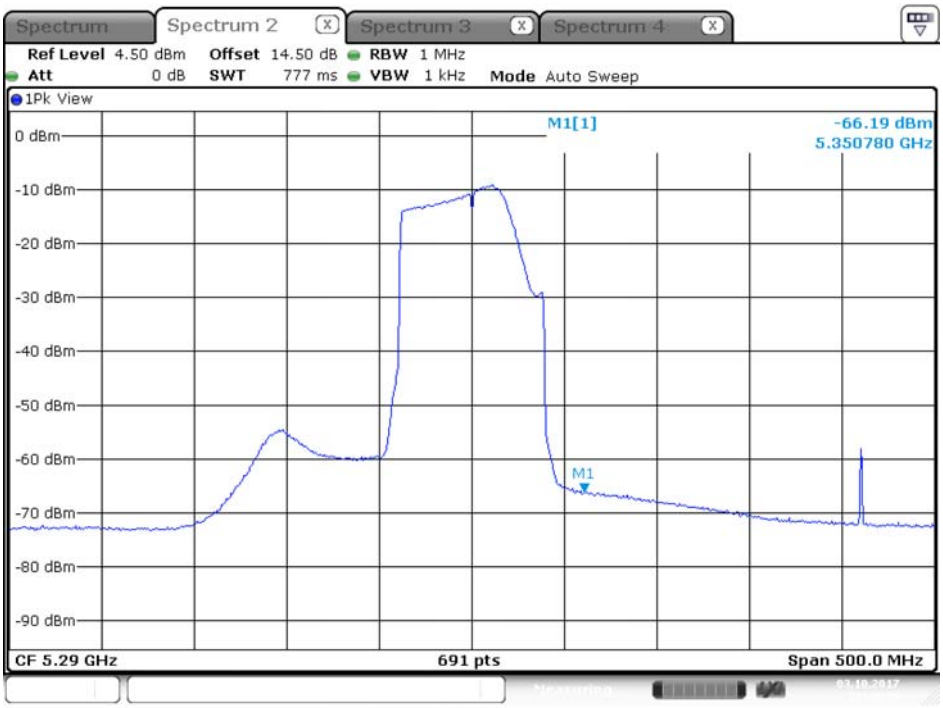
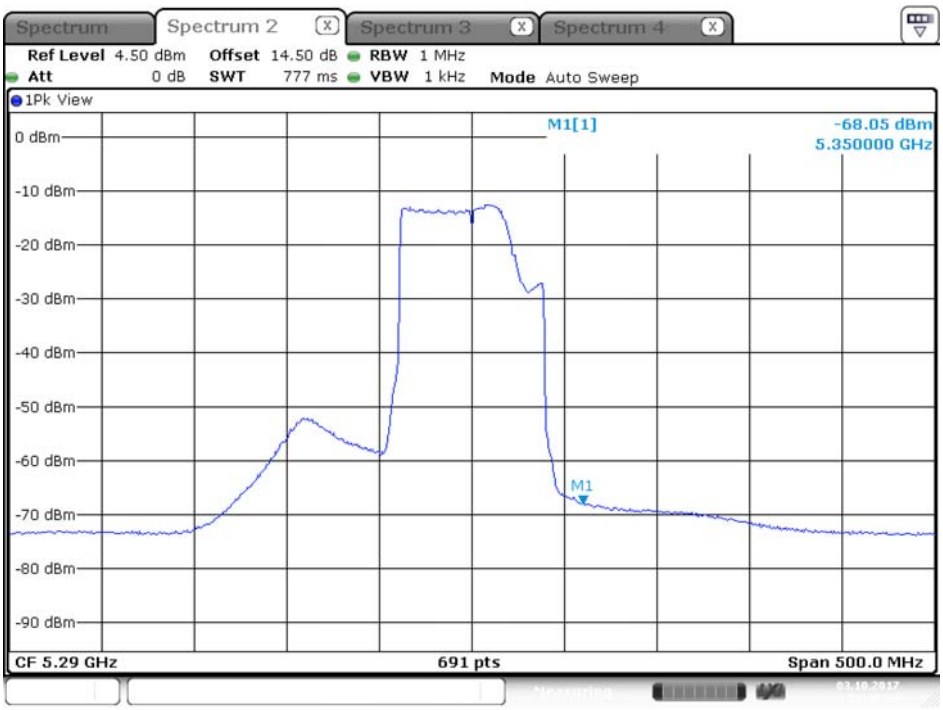
Plot on Configuration QPSK, 80M / 5290 MHz / Average / Port 1 (TX1)



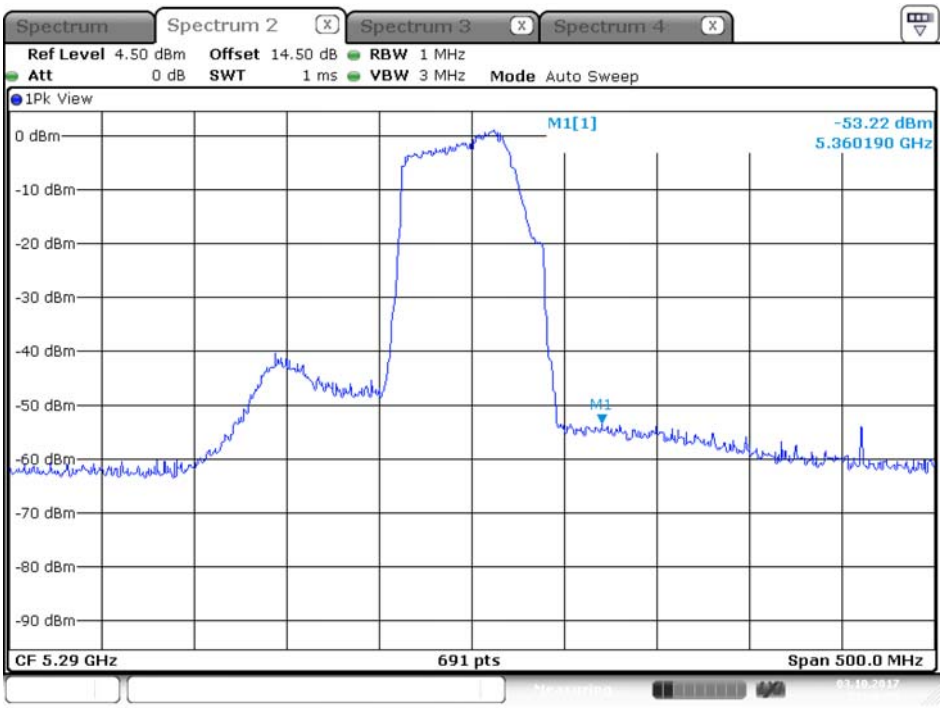
Date: 3.OCT.2017 23:45:54

Plot on Configuration QPSK, 80M / 5290 MHz / Average / Port 2 (TX2)



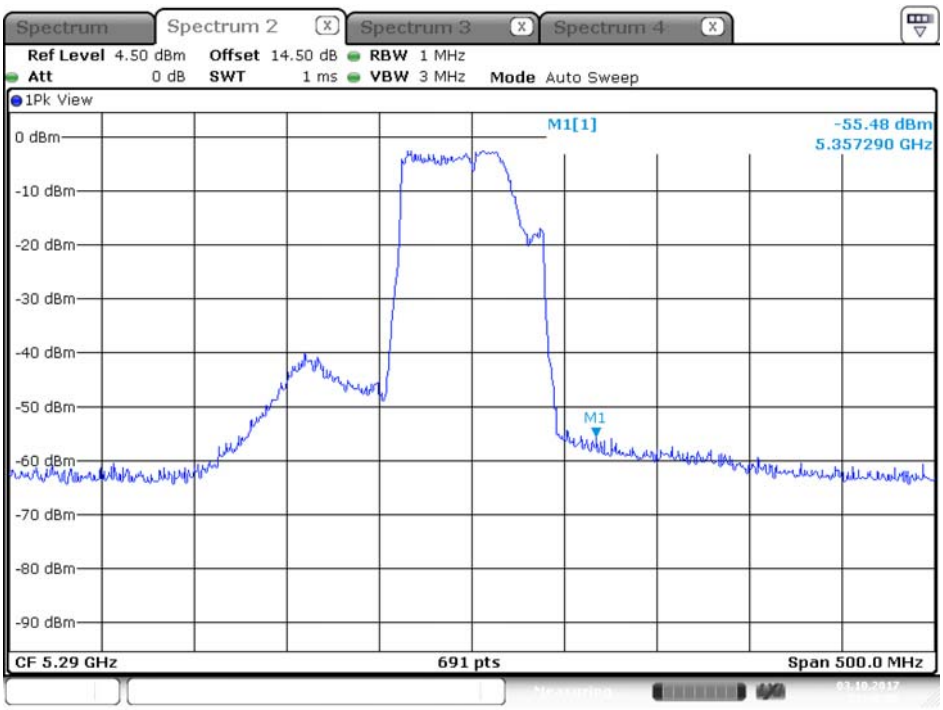
Date: 3.OCT.2017 23:47:34

Plot on Configuration QPSK, 80M / 5290 MHz / Peak / Port 1 (TX1)



Date: 3.OCT.2017 23:46:25

Plot on Configuration QPSK, 80M / 5290 MHz / Peak / Port 2 (TX2)

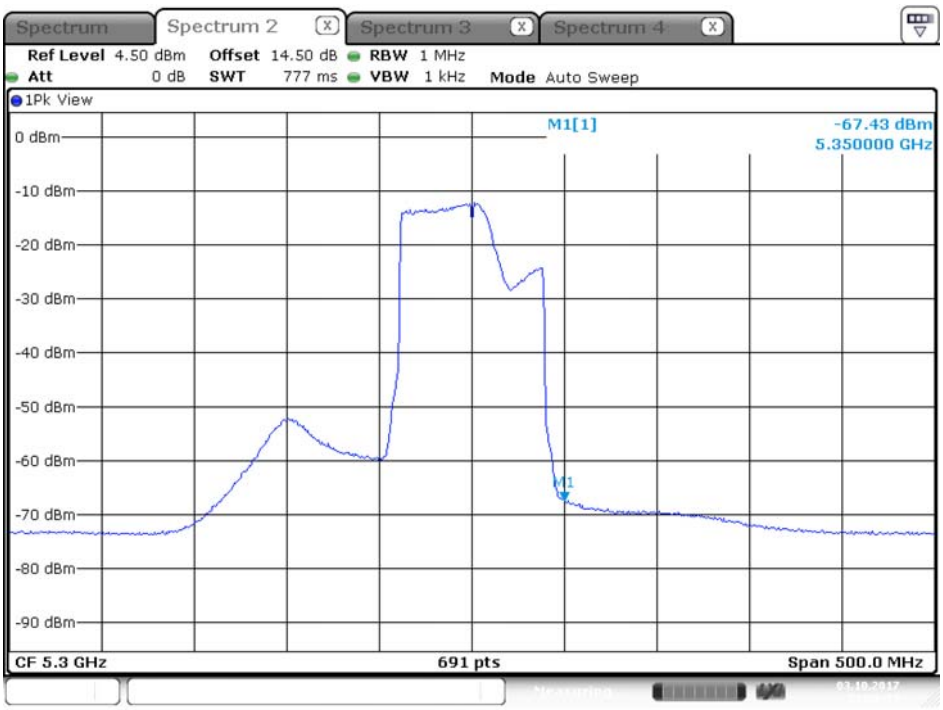


Date: 3.OCT.2017 23:48:06

Plot on Configuration QPSK, 80M / 5300 MHz / Average / Port 1 (TX1)

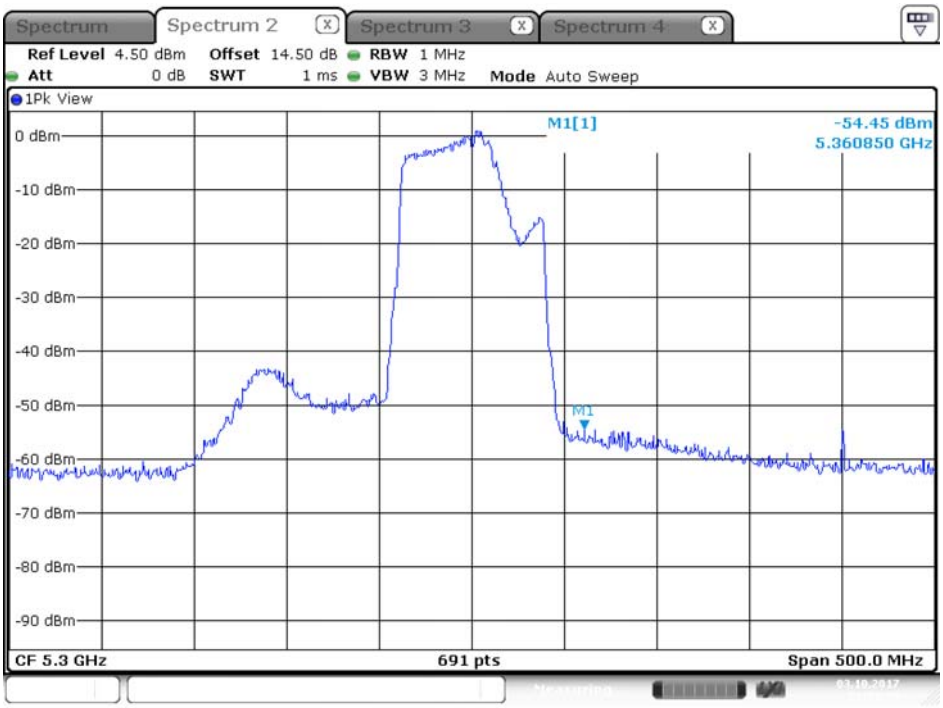
Date: 3.OCT.2017 23:52:55

Plot on Configuration QPSK, 80M / 5300 MHz / Average / Port 2 (TX2)



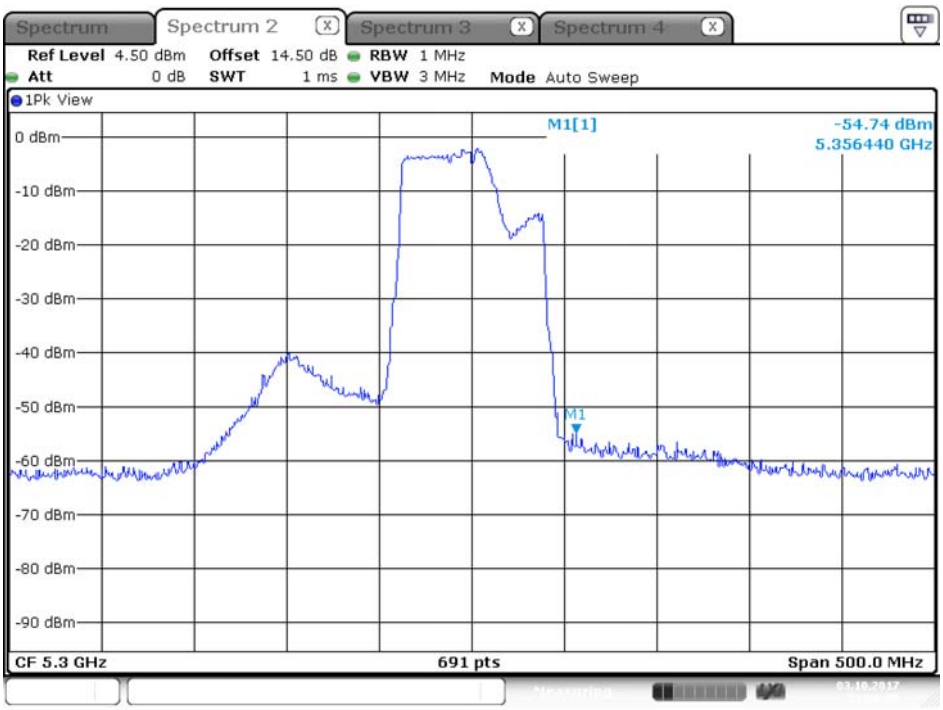
Date: 3.OCT.2017 23:56:13

Plot on Configuration QPSK, 80M / 5300 MHz / Peak / Port 1 (TX1)



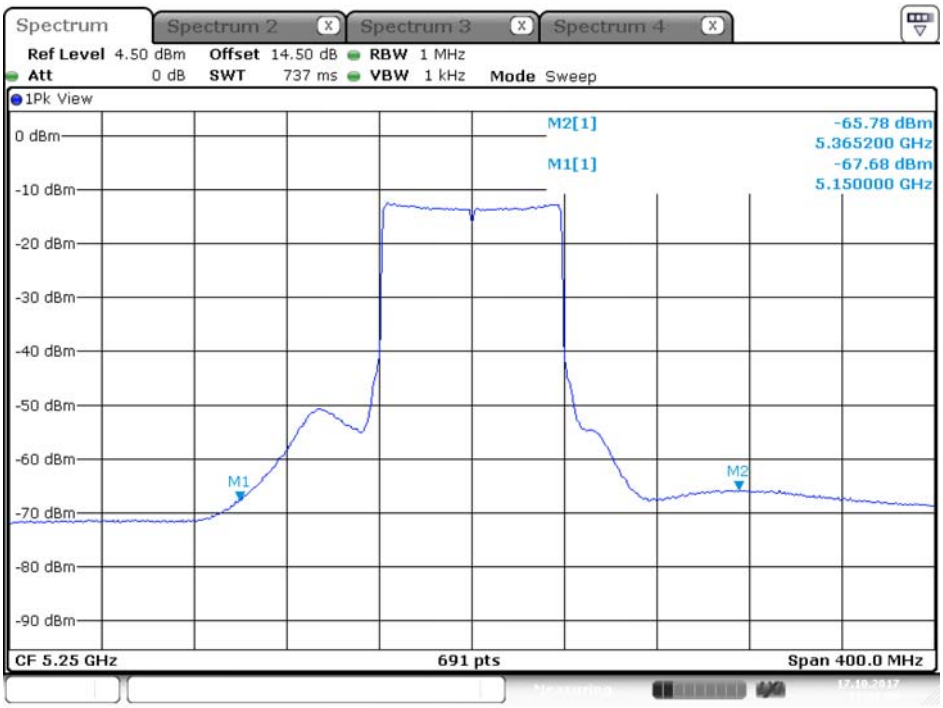
Date: 3.OCT.2017 23:53:53

Plot on Configuration QPSK, 80M / 5300 MHz / Peak / Port 2 (TX2)



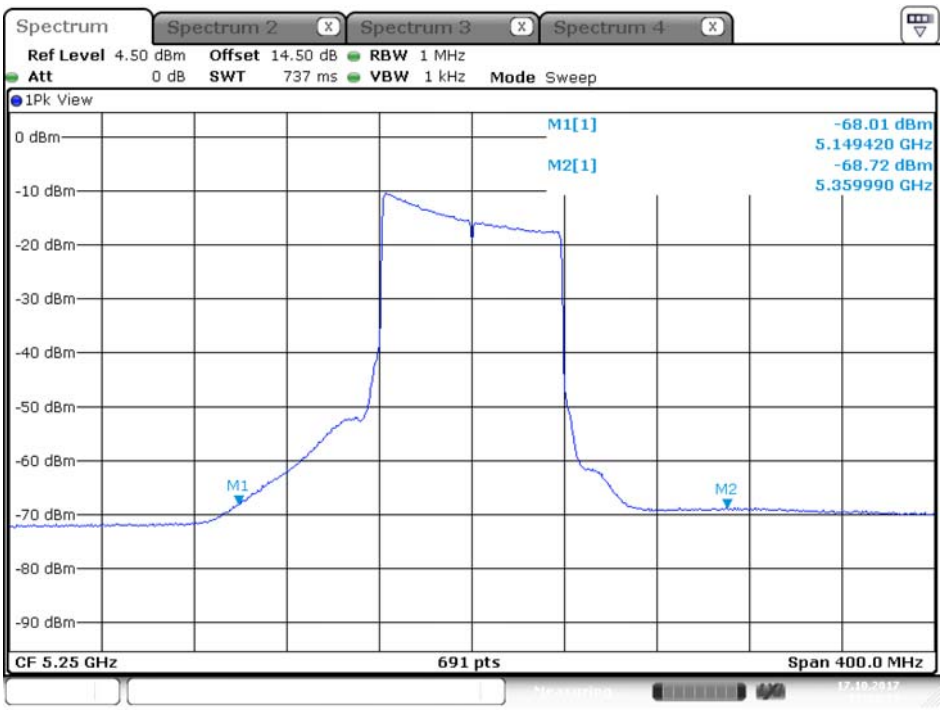
Date: 3.OCT.2017 23:56:55

Plot on Configuration QPSK, 80M / 5250 MHz / Average / Port 1 (TX1)



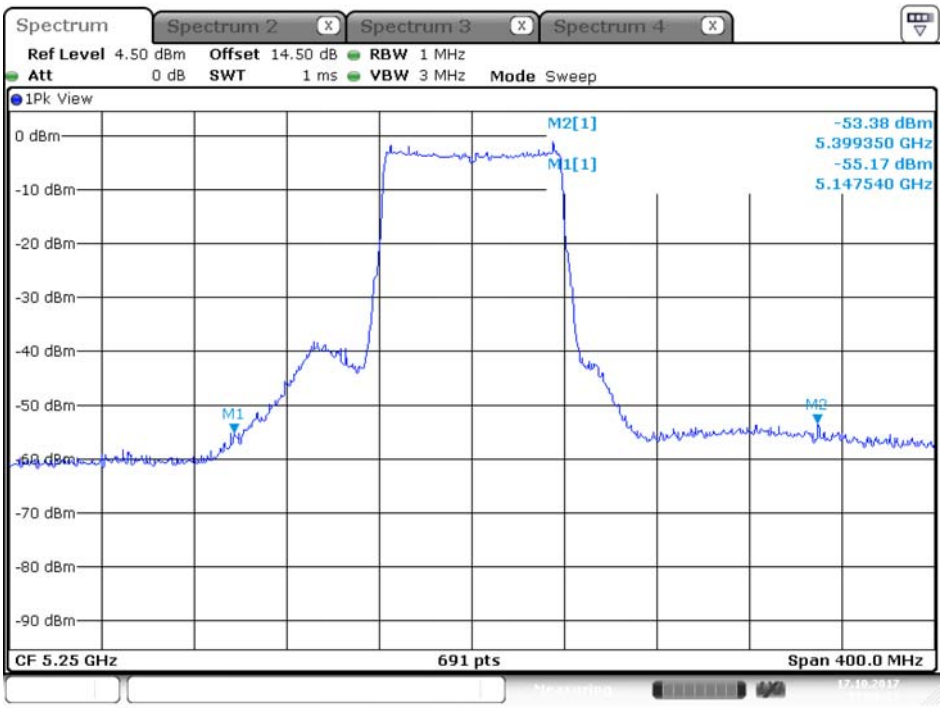
Date: 17.OCT.2017 17:32:08

Plot on Configuration QPSK, 80M / 5250 MHz / Average / Port 2 (TX2)



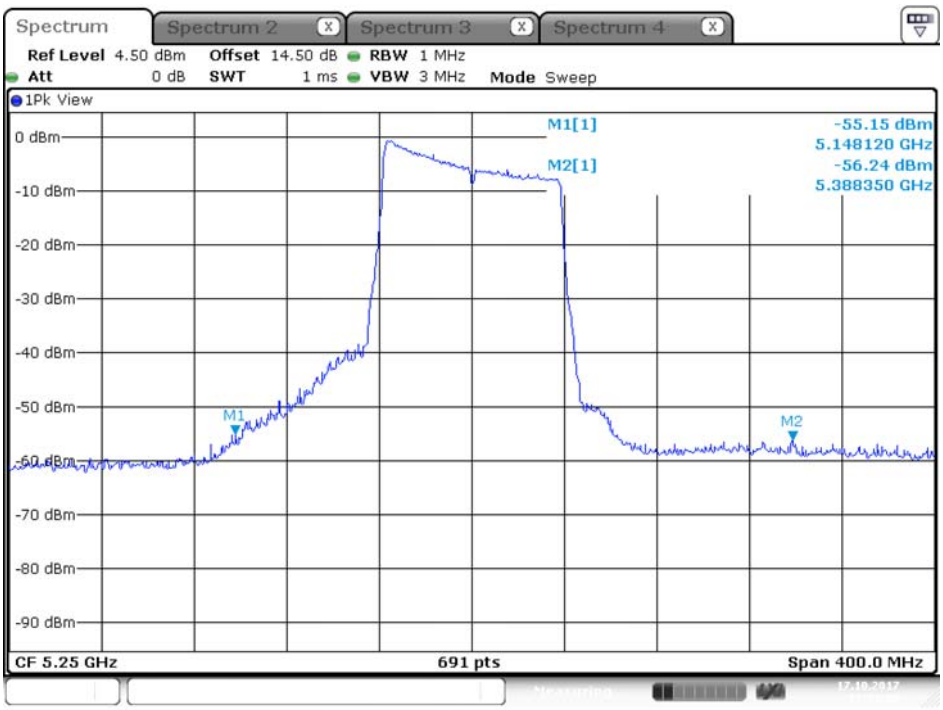
Date: 17.OCT.2017 17:33:40

Plot on Configuration QPSK, 80M / 5250 MHz / Peak / Port 1 (TX1)



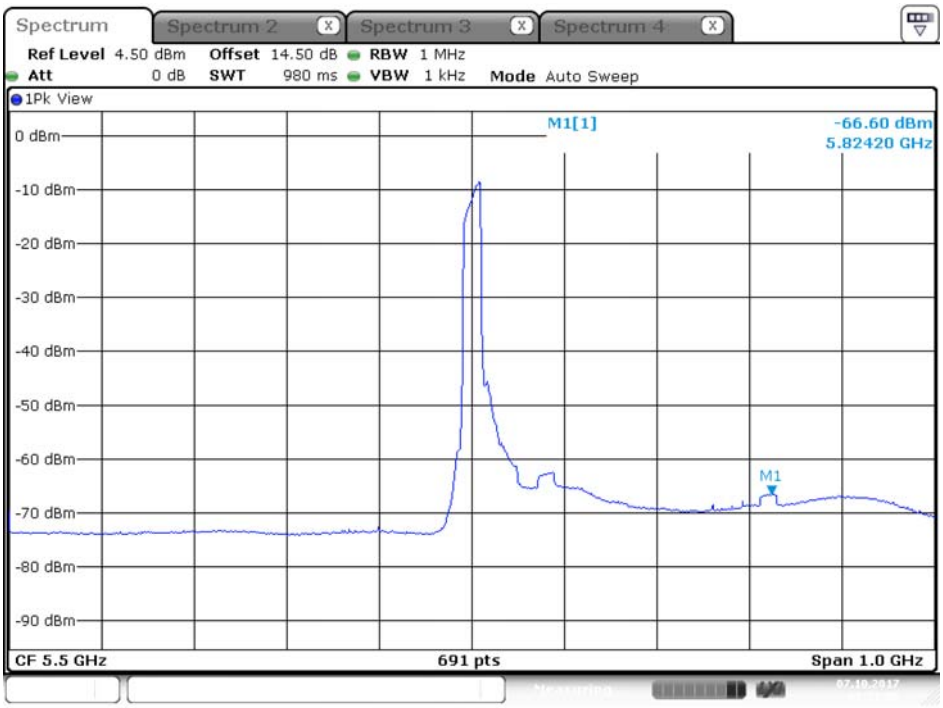
Date: 17.OCT.2017 17:36:33

Plot on Configuration QPSK, 80M / 5250 MHz / Peak / Port 2 (TX2)



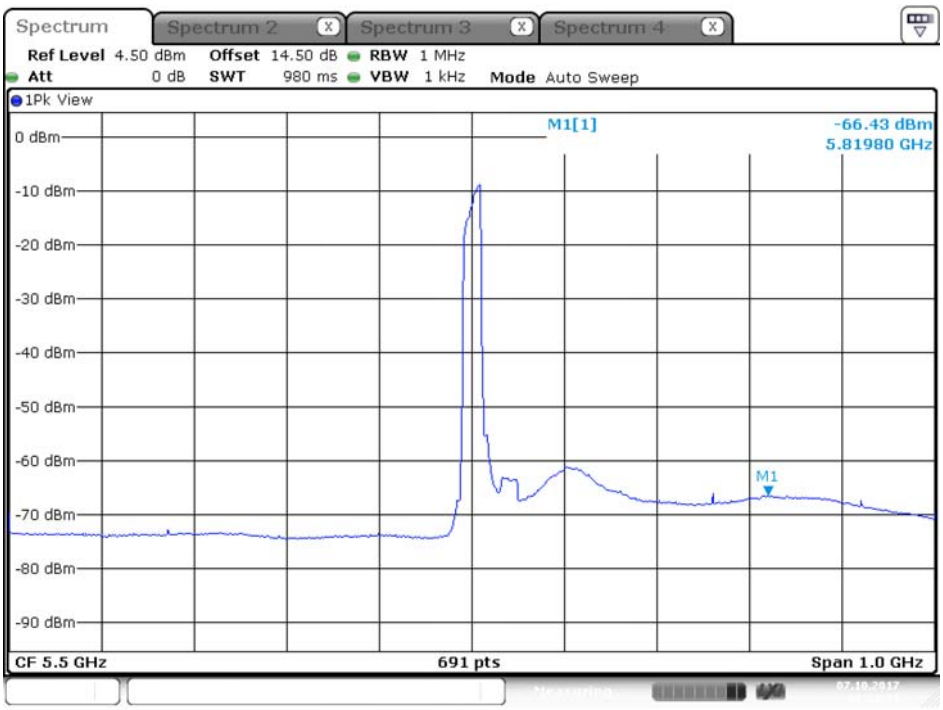
Date: 17.OCT.2017 17:35:21

Plot on Configuration QPSK, 20M / 5500 MHz / Average / Port 1 (TX1)



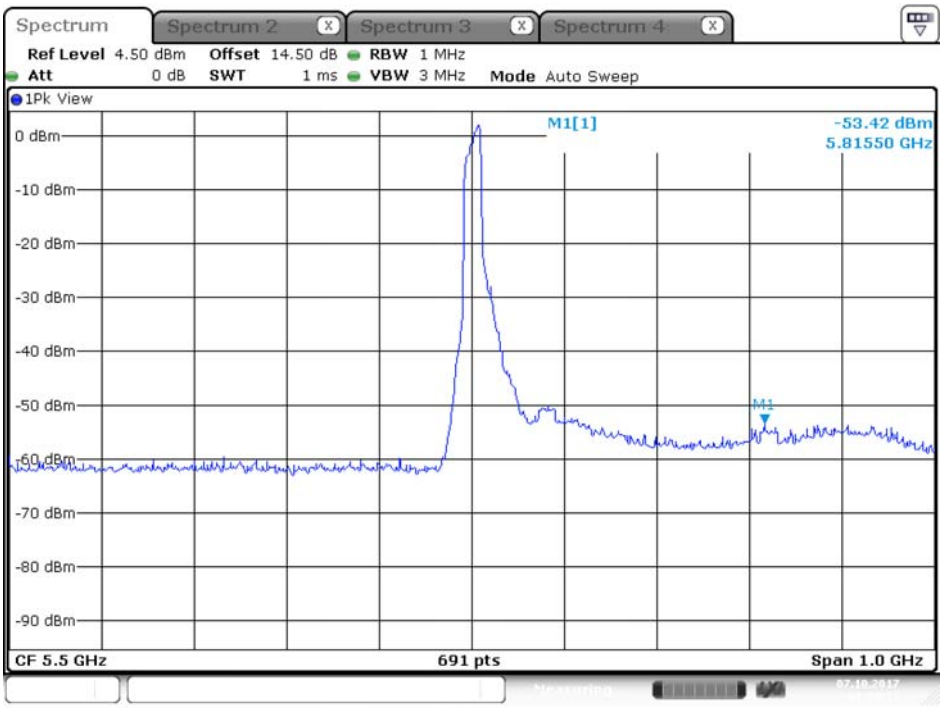
Date: 7.OCT.2017 08:21:06

Plot on Configuration QPSK, 20M / 5500 MHz / Average / Port 2 (TX2)



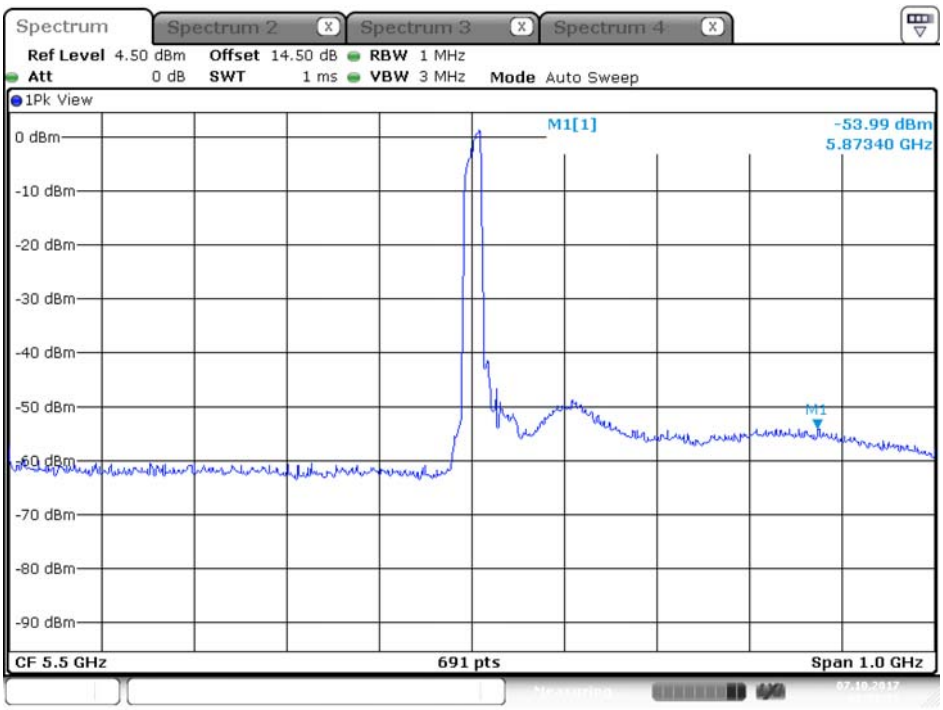
Date: 7.OCT.2017 08:22:15

Plot on Configuration QPSK, 20M / 5500 MHz / Peak / Port 1 (TX1)



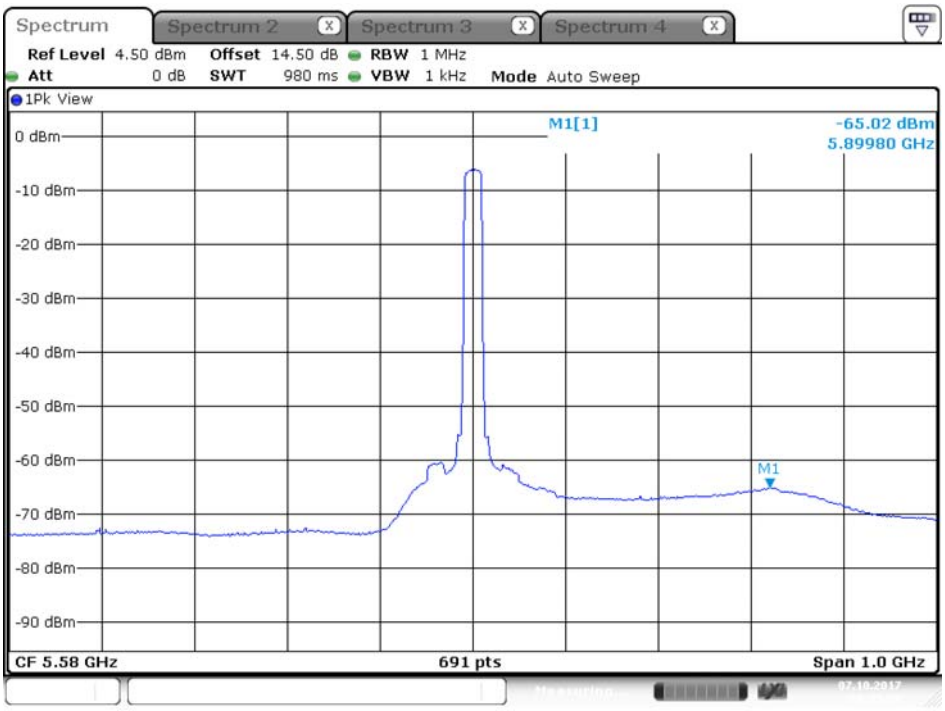
Date: 7.OCT.2017 08:33:22

Plot on Configuration QPSK, 20M / 5500 MHz / Peak / Port 2 (TX2)



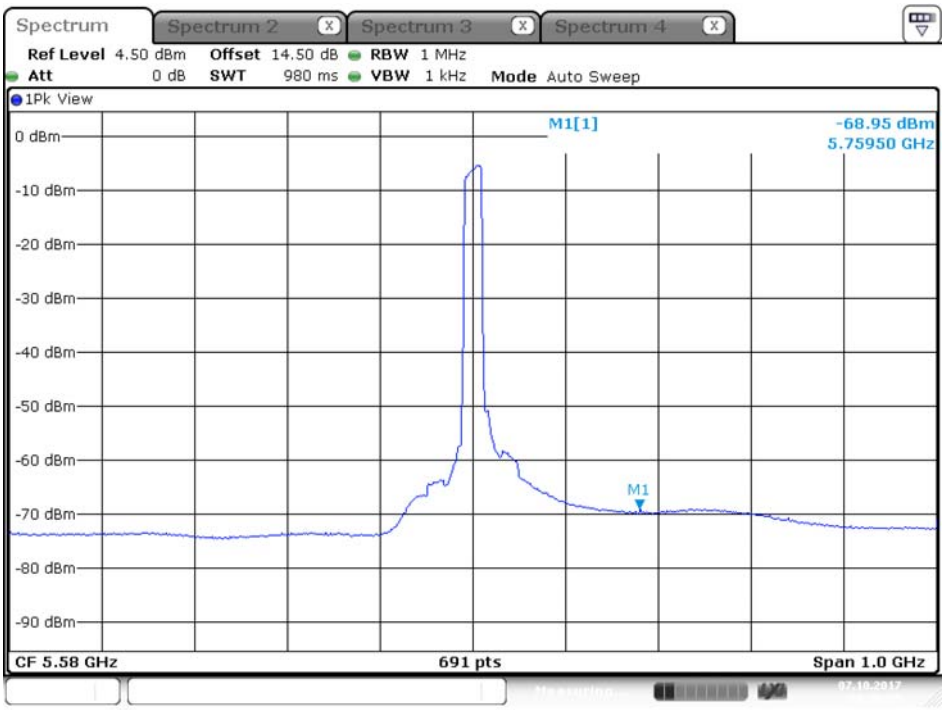
Date: 7.OCT.2017 08:31:51

Plot on Configuration QPSK, 20M / 5580 MHz / Average/ Port 1 (TX1)



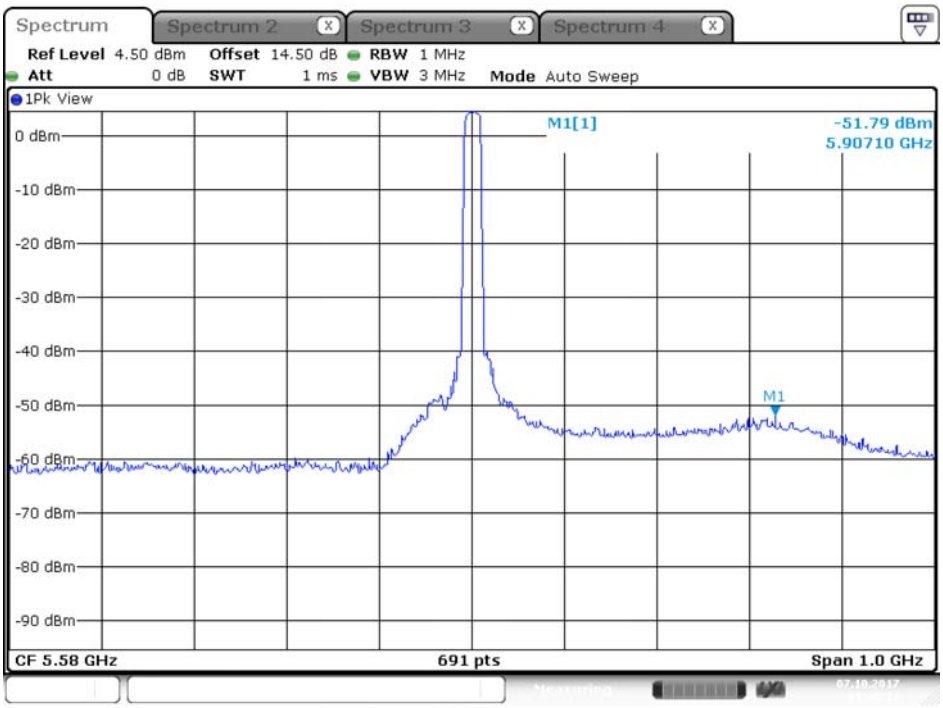
Date: 7.OCT.2017 08:35:39

Plot on Configuration QPSK, 20M / 5580 MHz / Average / Port 2 (TX2)



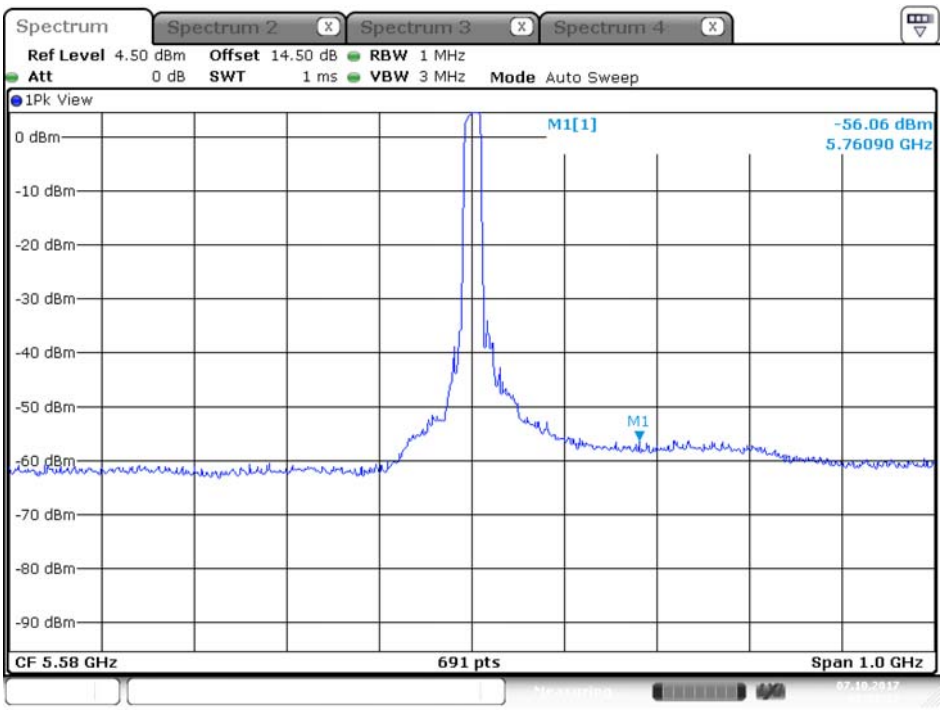
Date: 7.OCT.2017 08:36:35

Plot on Configuration QPSK, 20M / 5580 MHz / Peak / Port 1 (TX1)



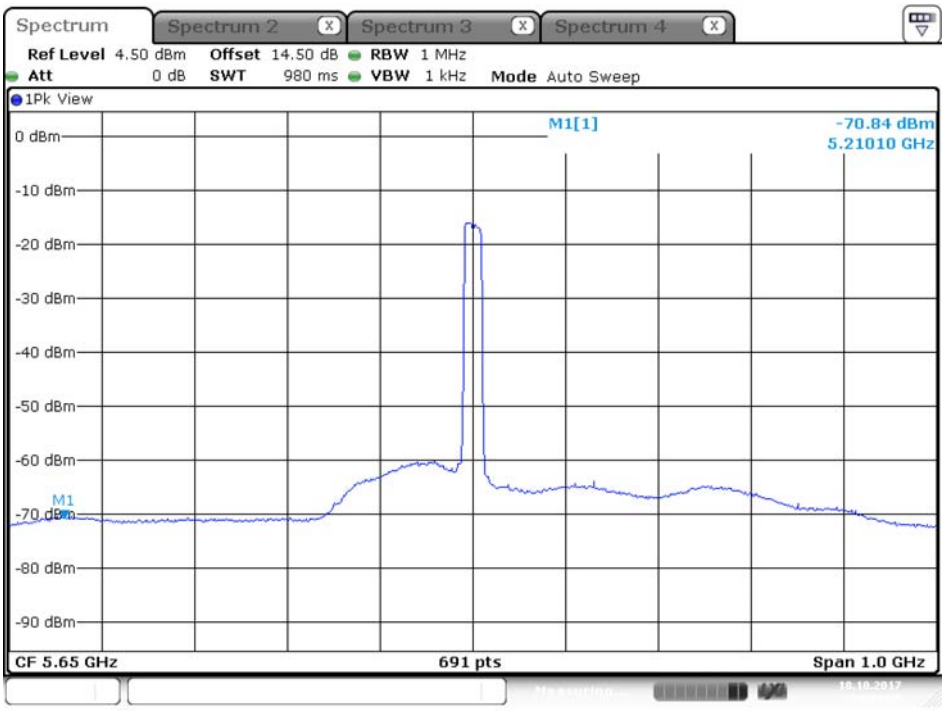
Date: 7.OCT.2017 08:40:12

Plot on Configuration QPSK, 20M / 5580 MHz / Peak / Port 2 (TX2)



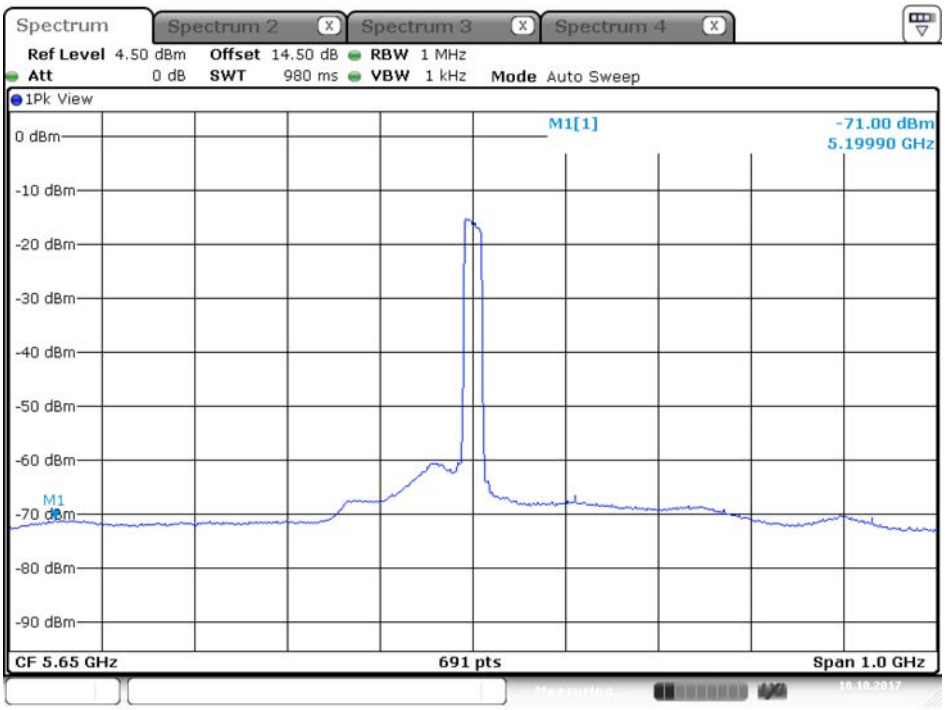
Date: 7.OCT.2017 08:38:17

Plot on Configuration QPSK, 20M / 5650 MHz / Average/ Port 1 (TX1)



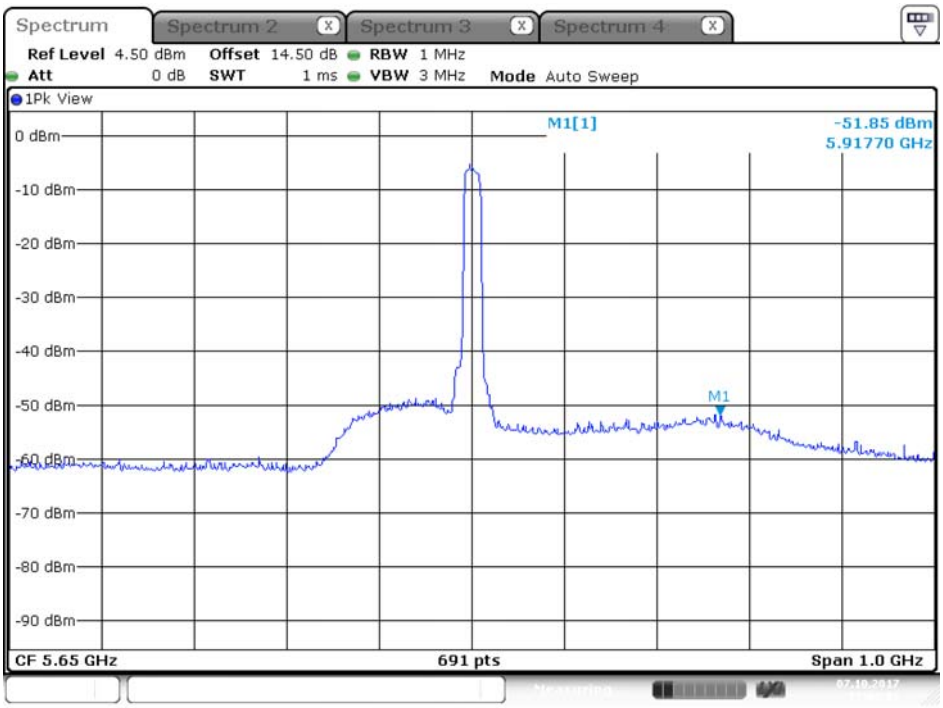
Date: 18.OCT.2017 14:04:35

Plot on Configuration QPSK, 80M / 5650 MHz / Average / Port 2 (TX2)



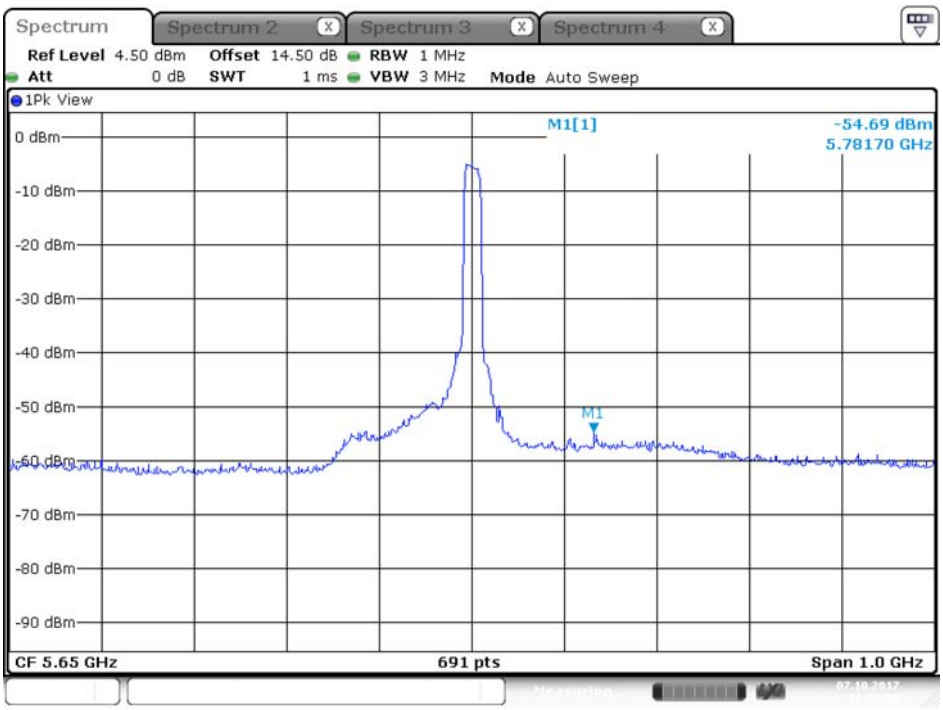
Date: 18.OCT.2017 14:07:13

Plot on Configuration QPSK, 20M / 5650 MHz / Peak / Port 1 (TX1)



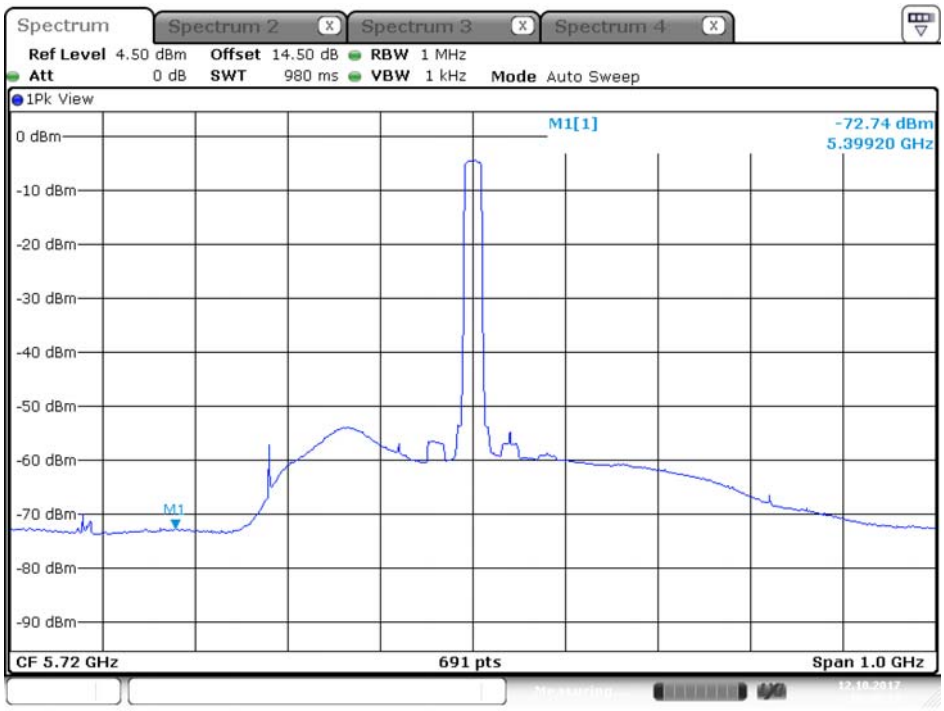
Date: 7.OCT.2017 17:00:01

Plot on Configuration QPSK, 20M / 5650 MHz / Peak / Port 2 (TX2)



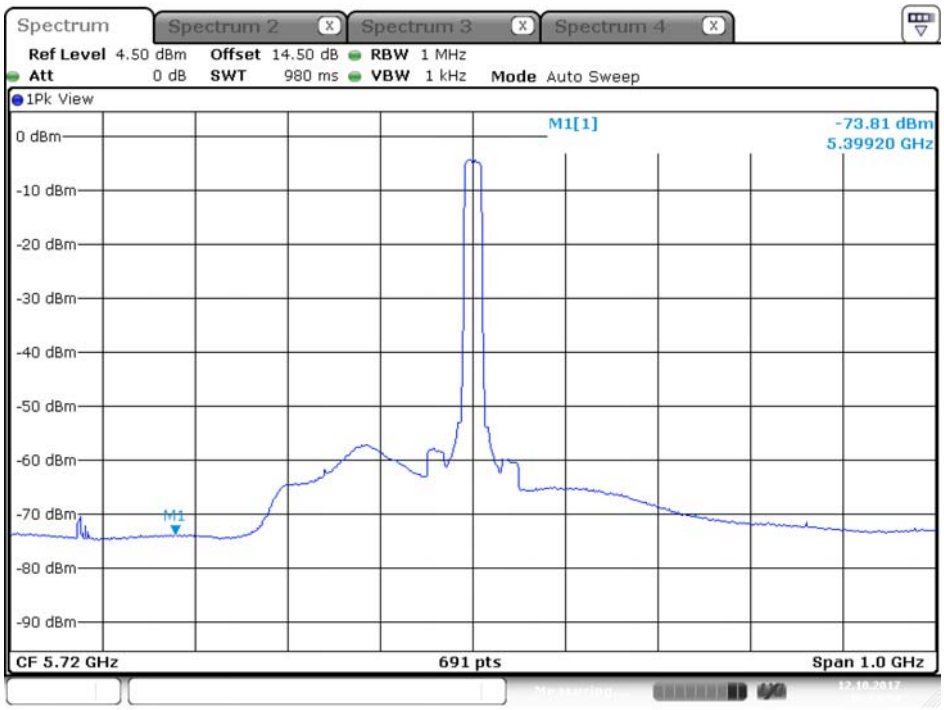
Date: 7.OCT.2017 16:57:59

Plot on Configuration QPSK, 20M / 5720 MHz / Average / Port 1 (TX1)



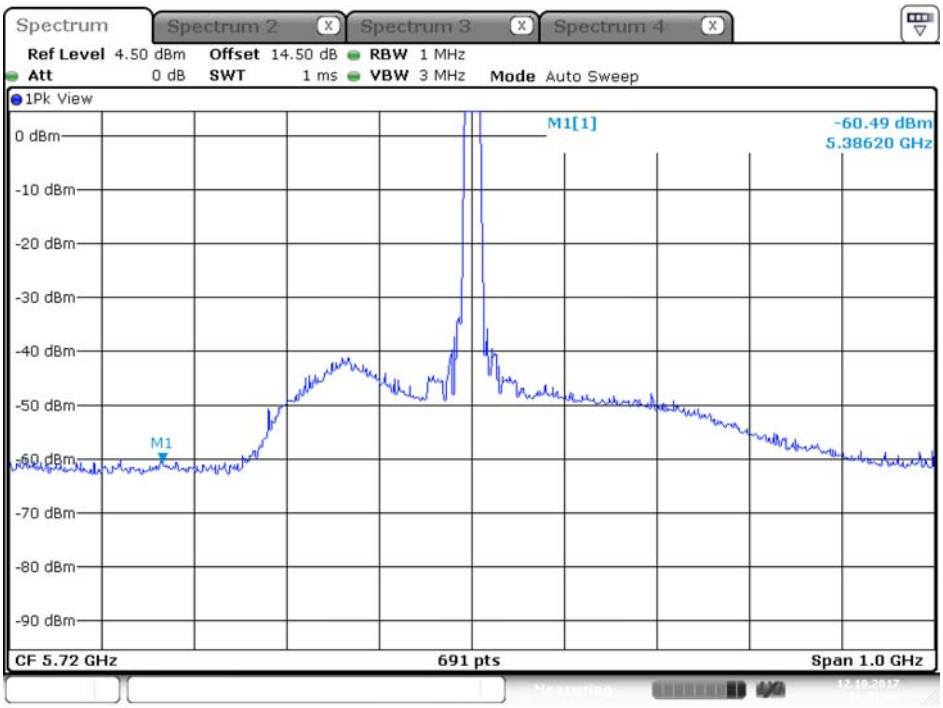
Date: 12.OCT.2017 16:30:32

Plot on Configuration QPSK, 20M / 5720 MHz / Average / Port 2 (TX2)



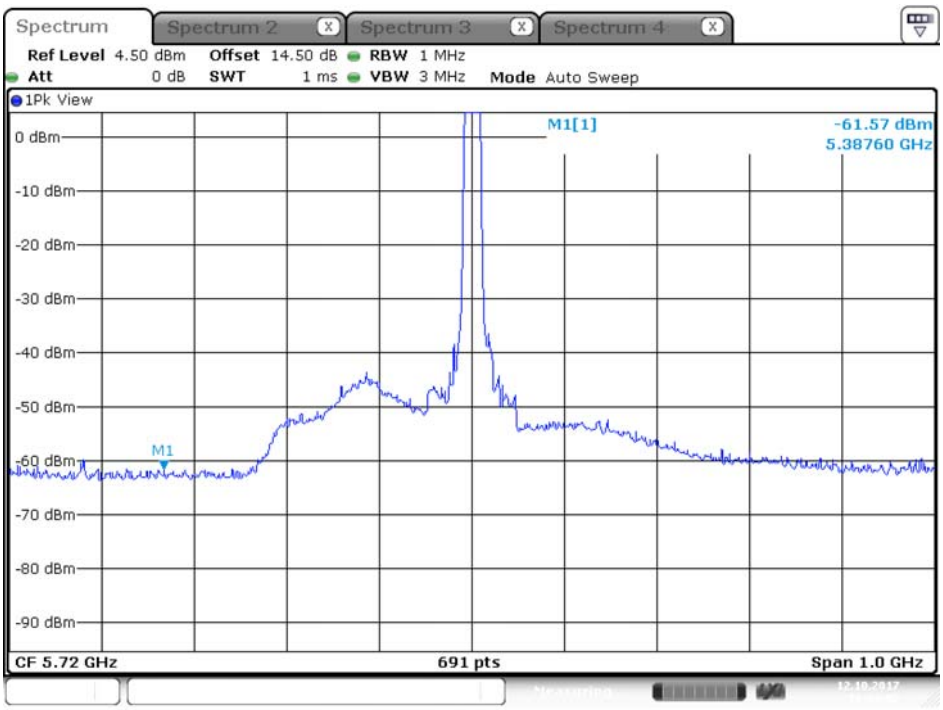
Date: 12.OCT.2017 16:34:54

Plot on Configuration QPSK, 20M / 5720 MHz / Peak / Port 1 (TX1)



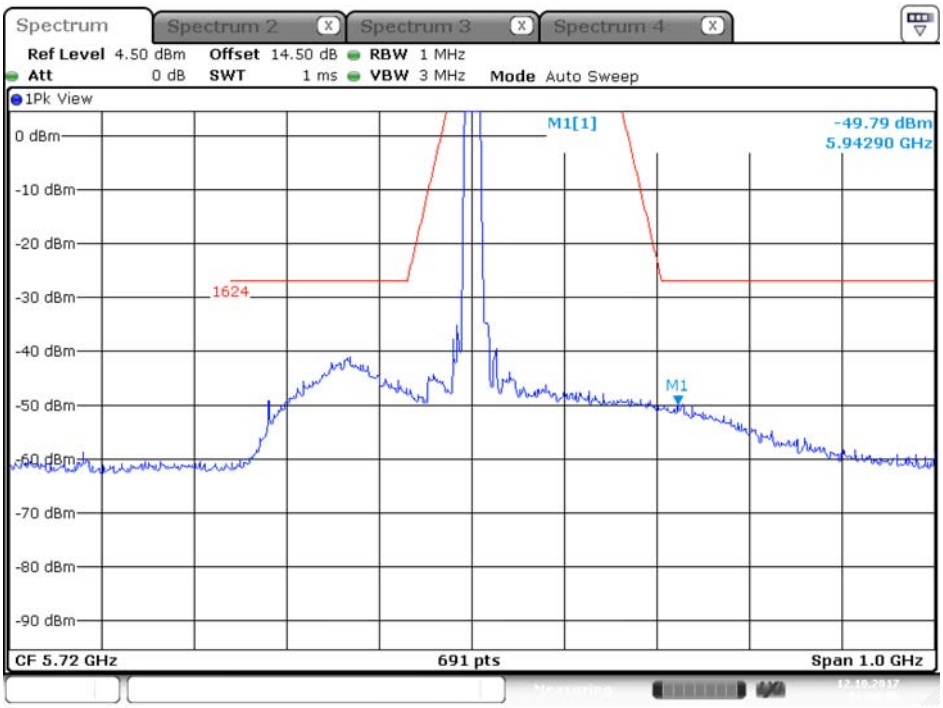
Date: 12.OCT.2017 16:31:47

Plot on Configuration QPSK, 20M / 5720 MHz / Peak / Port 2 (TX2)



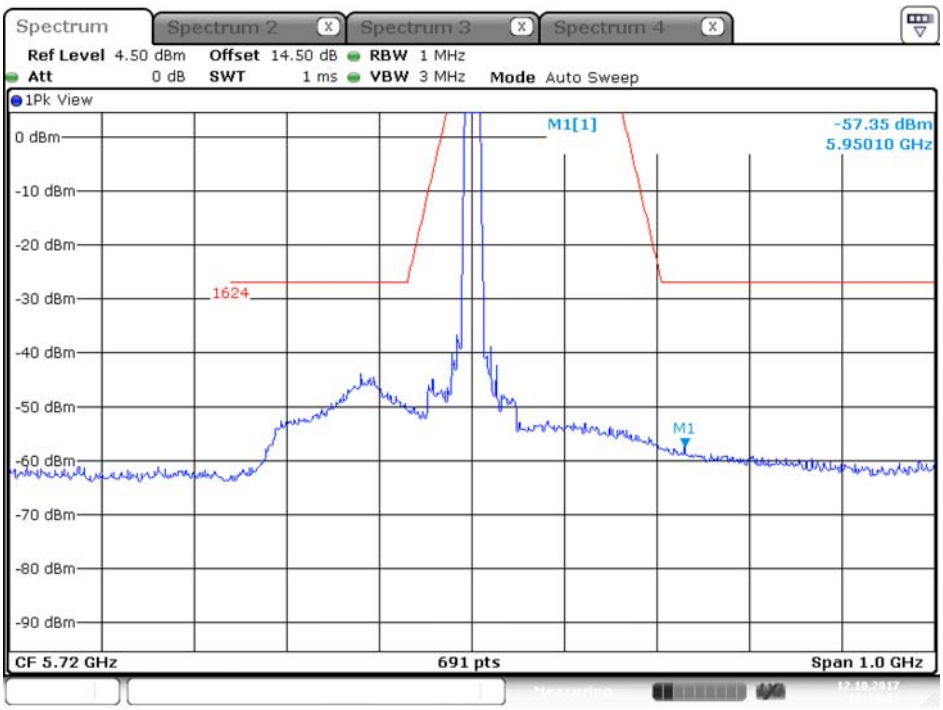
Date: 12.OCT.2017 16:34:02

Plot on Configuration QPSK, 20M / 5720 MHz / Peak / Port 1 (TX1)



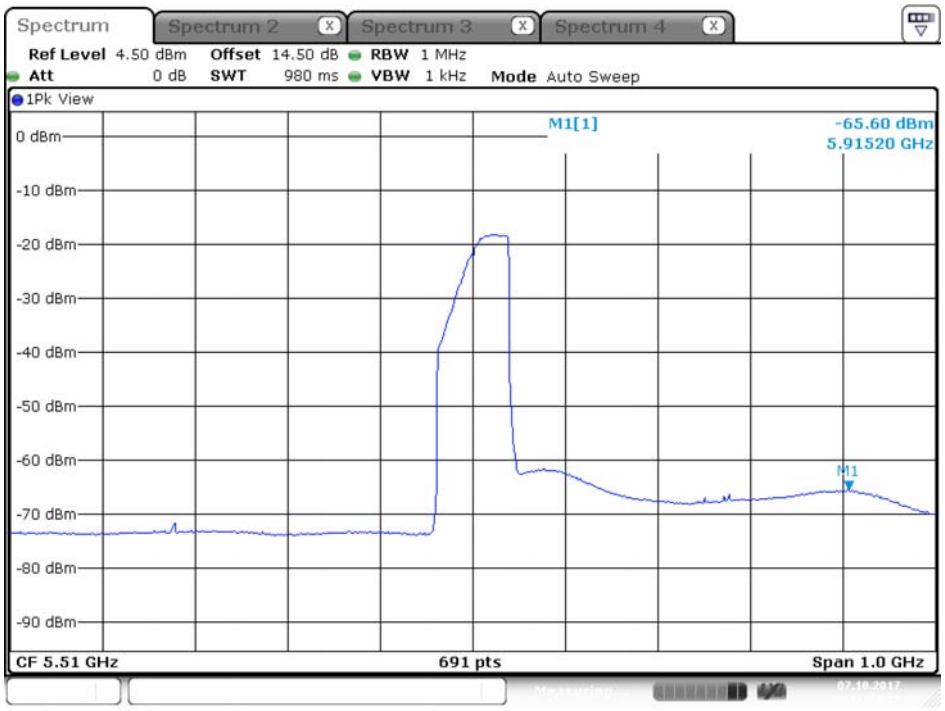
Date: 12.OCT.2017 16:20:56

Plot on Configuration QPSK, 20M / 5720 MHz / Peak / Port 2 (TX2)



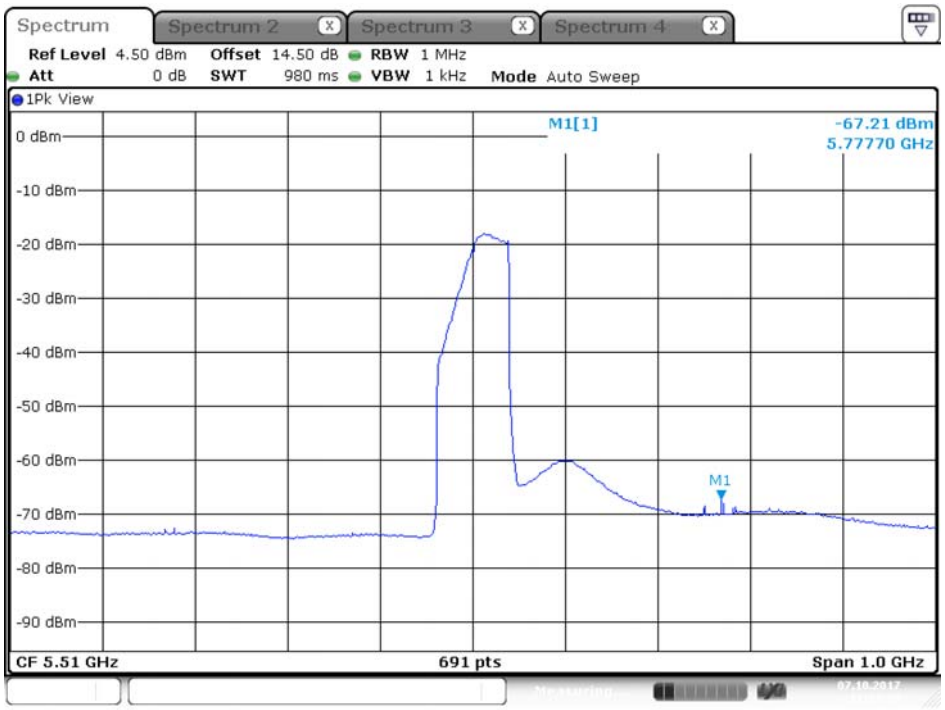
Date: 12.OCT.2017 16:14:37

Plot on Configuration QPSK, 80M / 5510 MHz / Average / Port 1 (TX1)



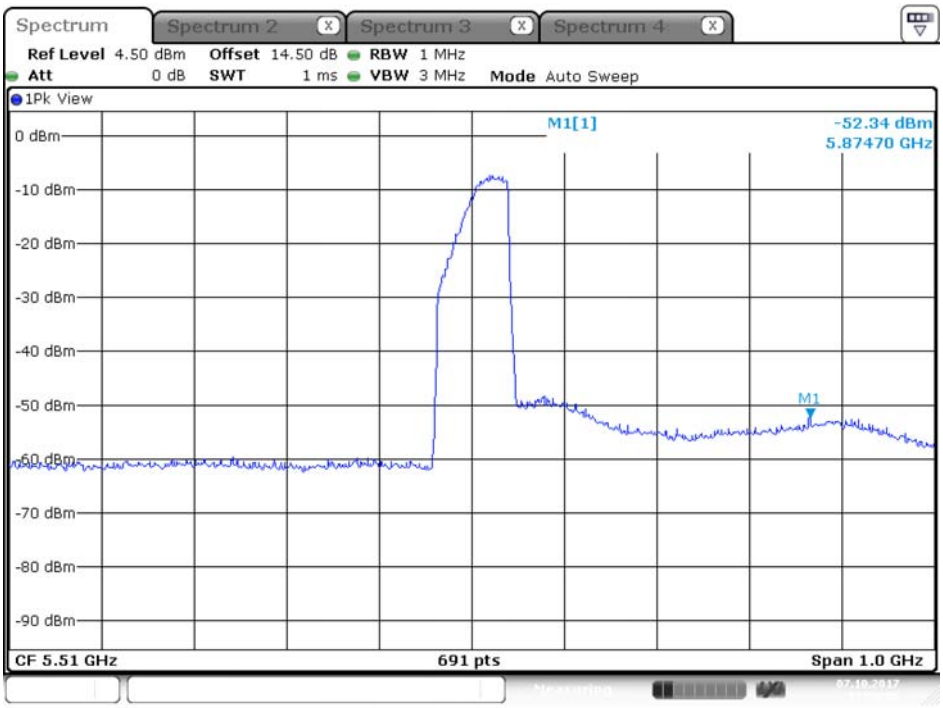
Date: 7.OCT.2017 17:54:15

Plot on Configuration QPSK, 80M / 5510 MHz / Average / Port 2 (TX2)



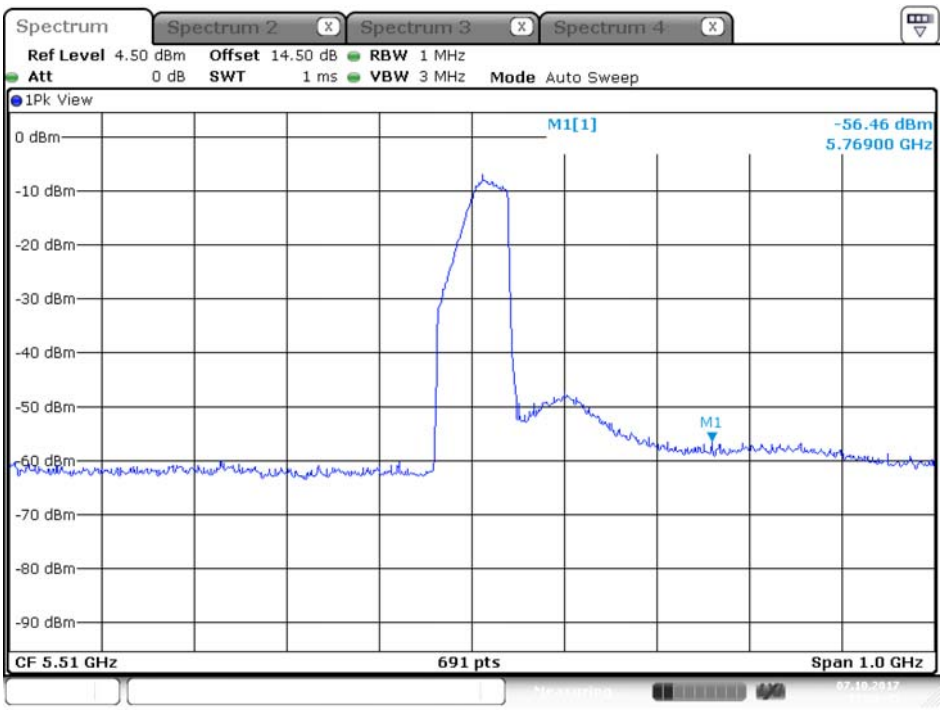
Date: 7.OCT.2017 17:57:23

Plot on Configuration QPSK, 80M / 5510 MHz / Peak / Port 1 (TX1)



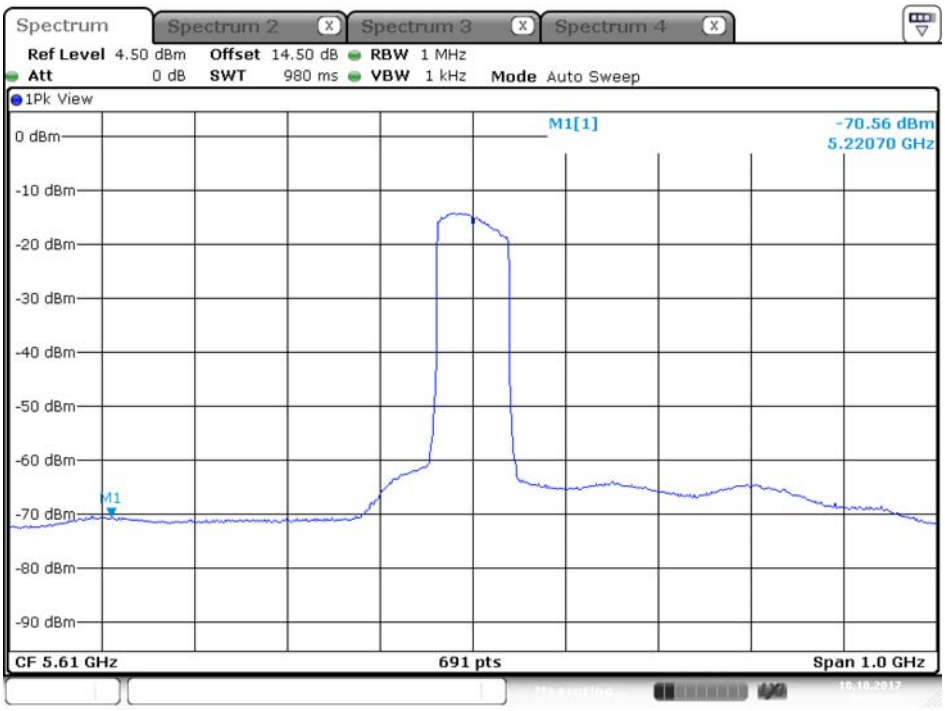
Date: 7.OCT.2017 17:55:26

Plot on Configuration QPSK, 80M / 5510 MHz / Peak / Port 2 (TX2)



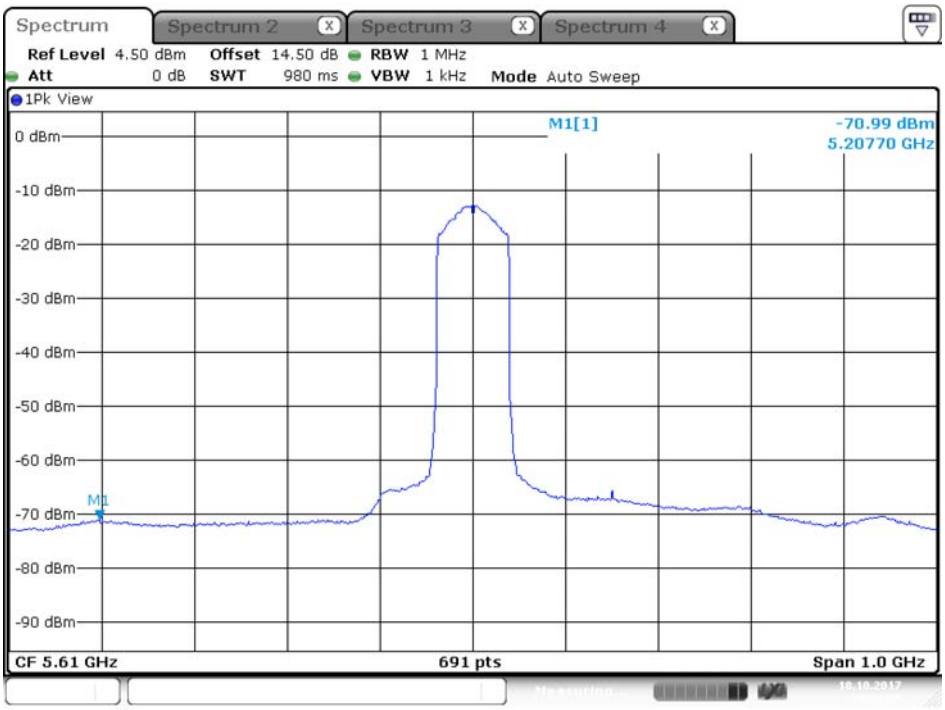
Date: 7.OCT.2017 17:56:46

Plot on Configuration QPSK, 80M / 5610 MHz / Average / Port 1 (TX1)



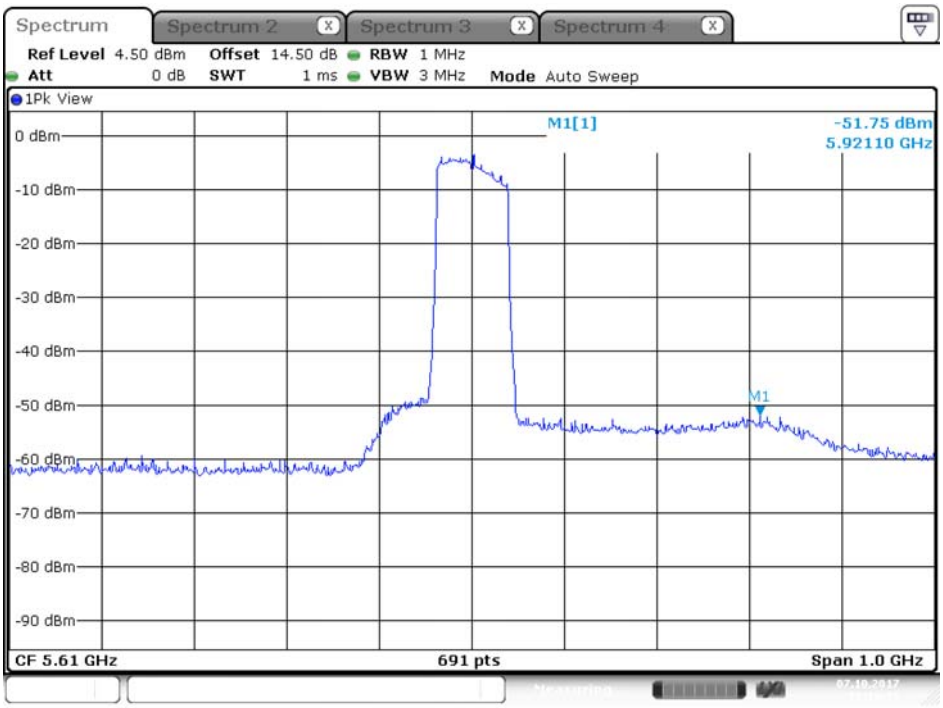
Date: 18.OCT.2017 14:14:42

Plot on Configuration QPSK, 80M / 5610 MHz / Average / Port 2 (TX2)



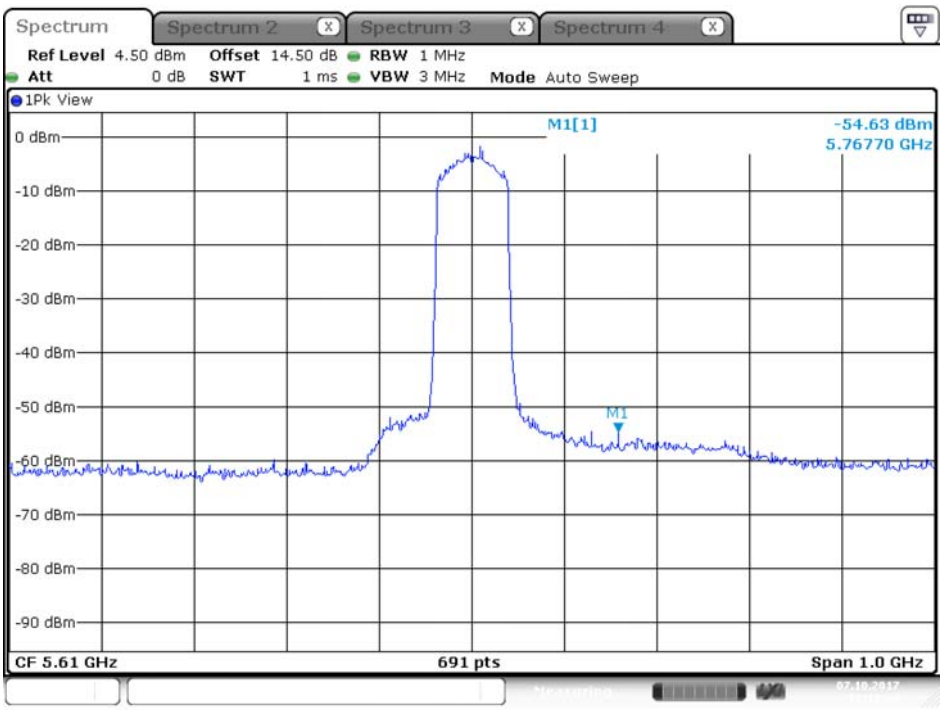
Date: 18.OCT.2017 14:12:55

Plot on Configuration QPSK, 80M / 5610 MHz / Peak / Port 1 (TX1)



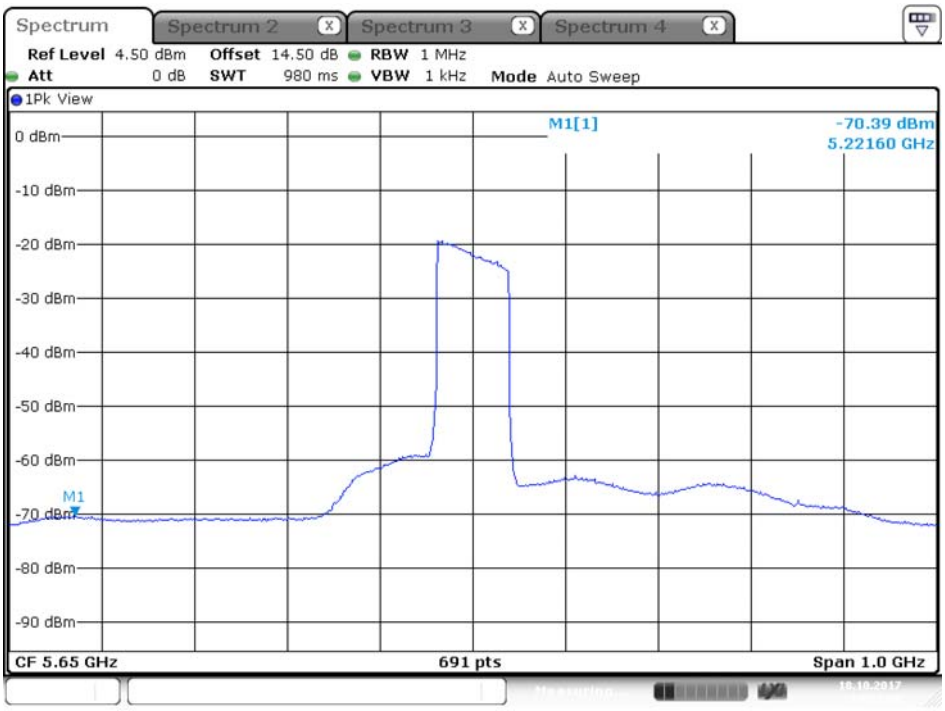
Date: 7.OCT.2017 18:19:51

Plot on Configuration QPSK, 80M / 5610 MHz / Peak / Port 2 (TX2)



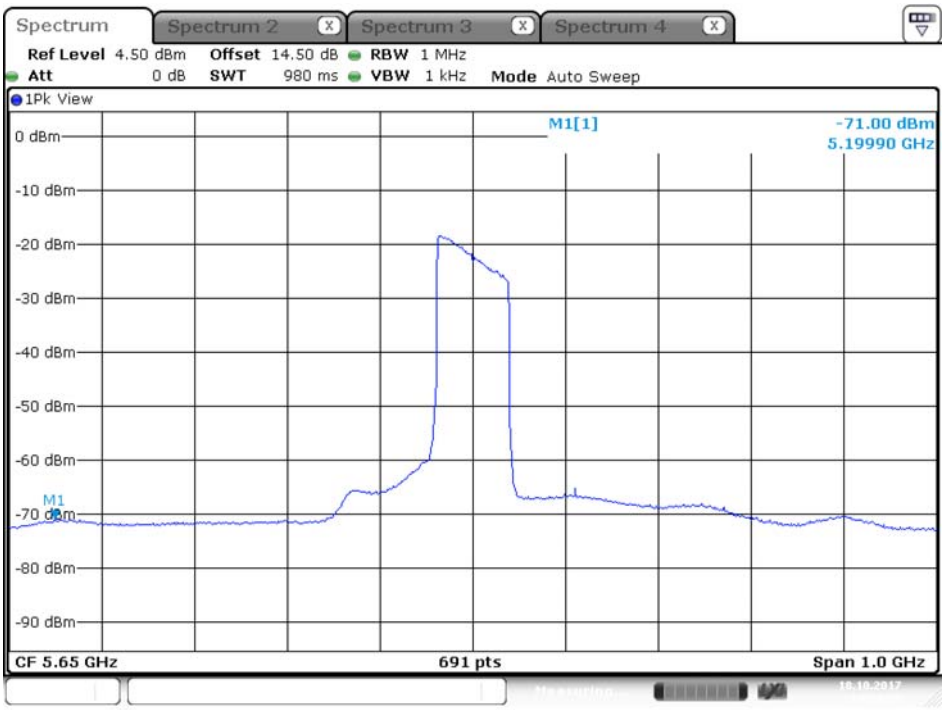
Date: 7.OCT.2017 18:18:34

Plot on Configuration QPSK, 80M / 5650 MHz / Average / Port 1 (TX1)



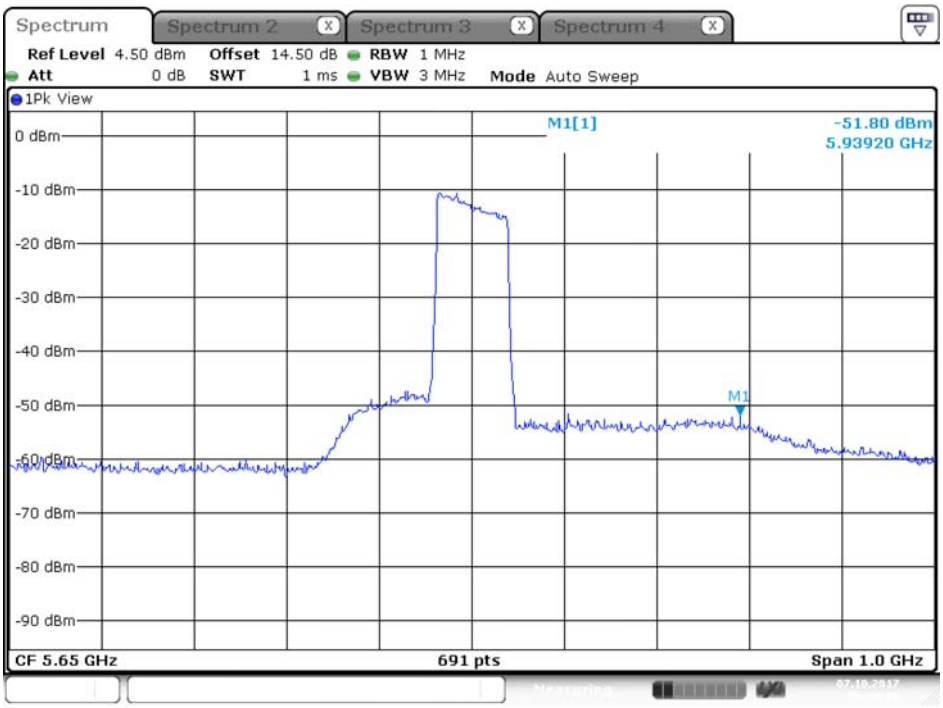
Date: 18.OCT.2017 14:17:48

Plot on Configuration QPSK, 80M / 5650 MHz / Average / Port 2 (TX2)



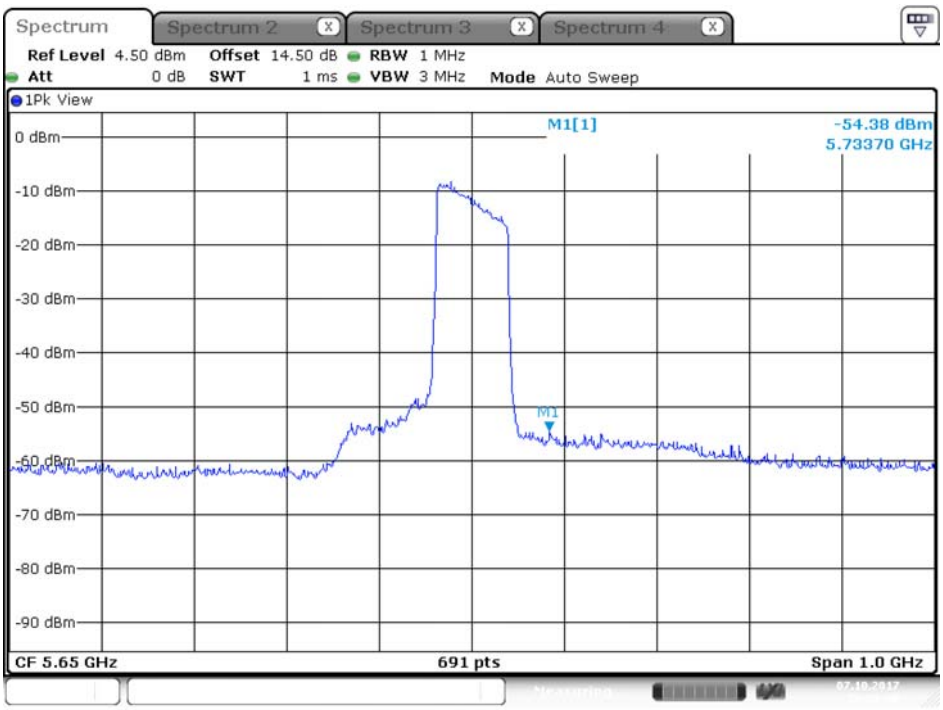
Date: 18.OCT.2017 14:19:22

Plot on Configuration QPSK, 80M / 5650 MHz / Peak / Port 1 (TX1)



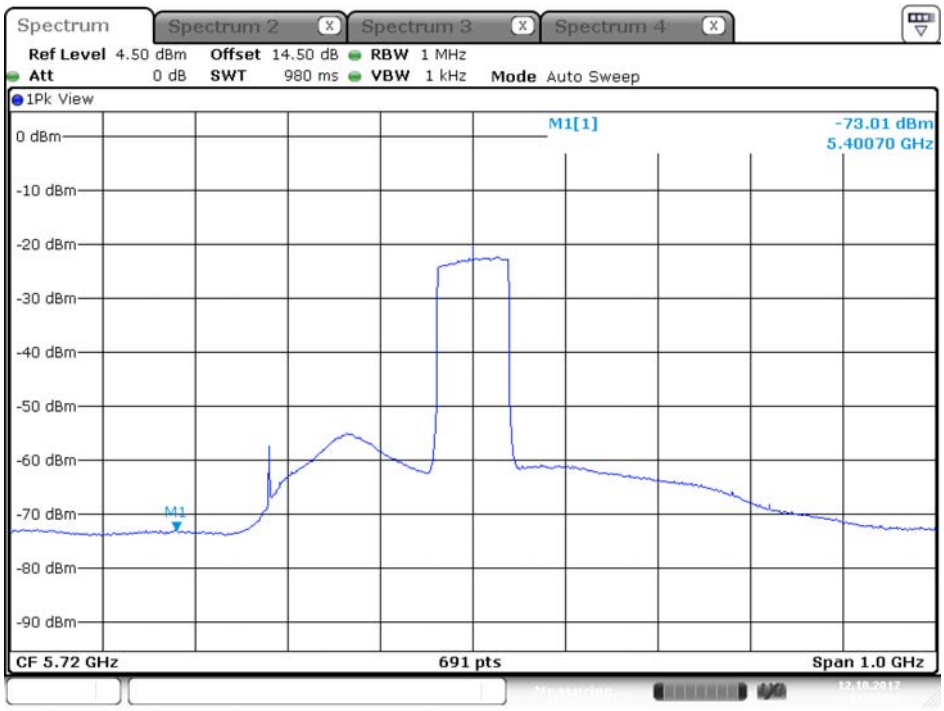
Date: 7.OCT.2017 20:50:16

Plot on Configuration QPSK, 80M / 5650 MHz / Peak / Port 2 (TX2)



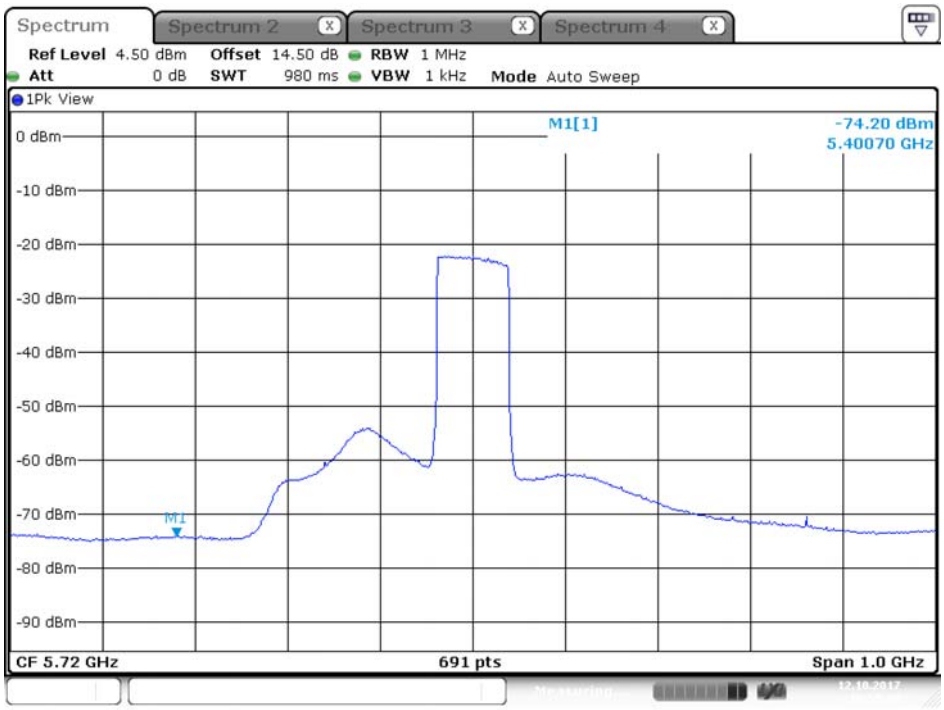
Date: 7.OCT.2017 20:56:48

Plot on Configuration QPSK, 80M / 5720 MHz / Average / Port 1 (TX1)



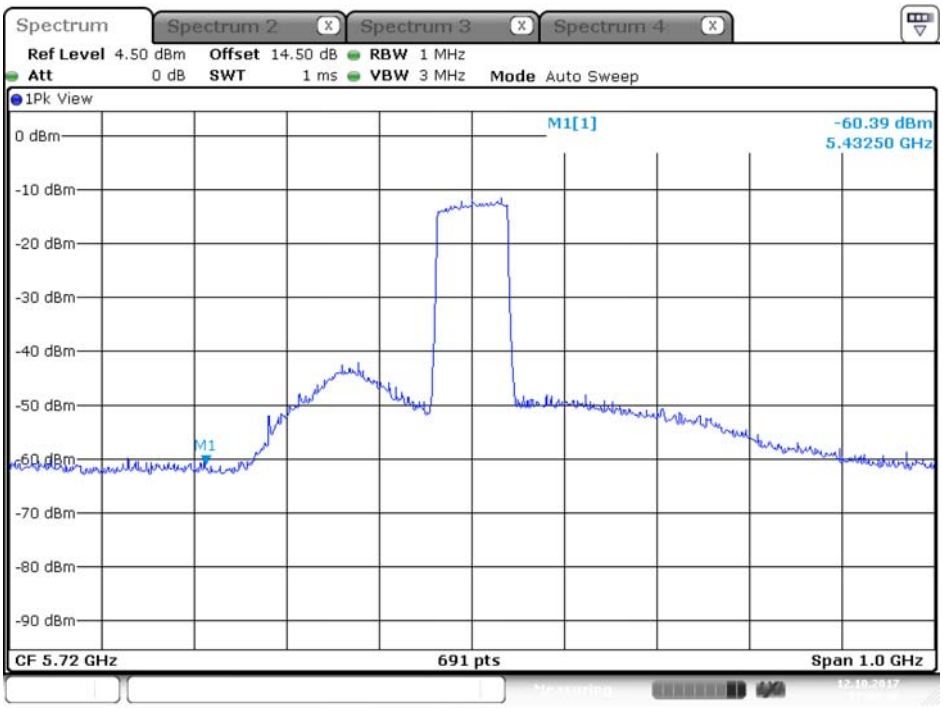
Date: 12.OCT.2017 17:02:04

Plot on Configuration QPSK, 80M / 5720 MHz / Average / Port 2 (TX2)



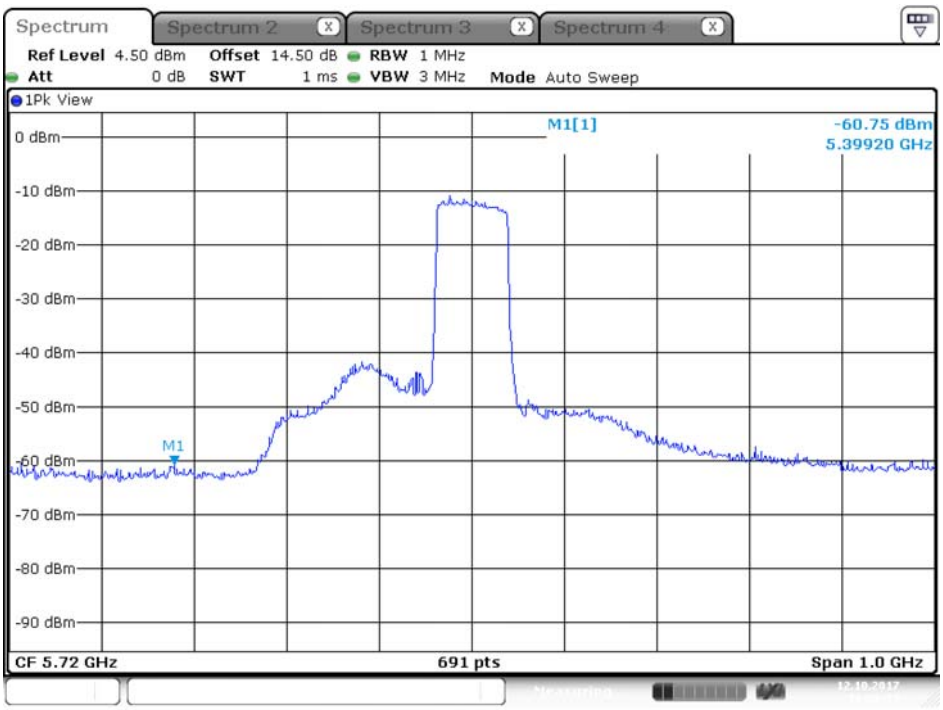
Date: 12.OCT.2017 16:55:41

Plot on Configuration QPSK, 80M / 5720 MHz / Peak / Port 1 (TX1)



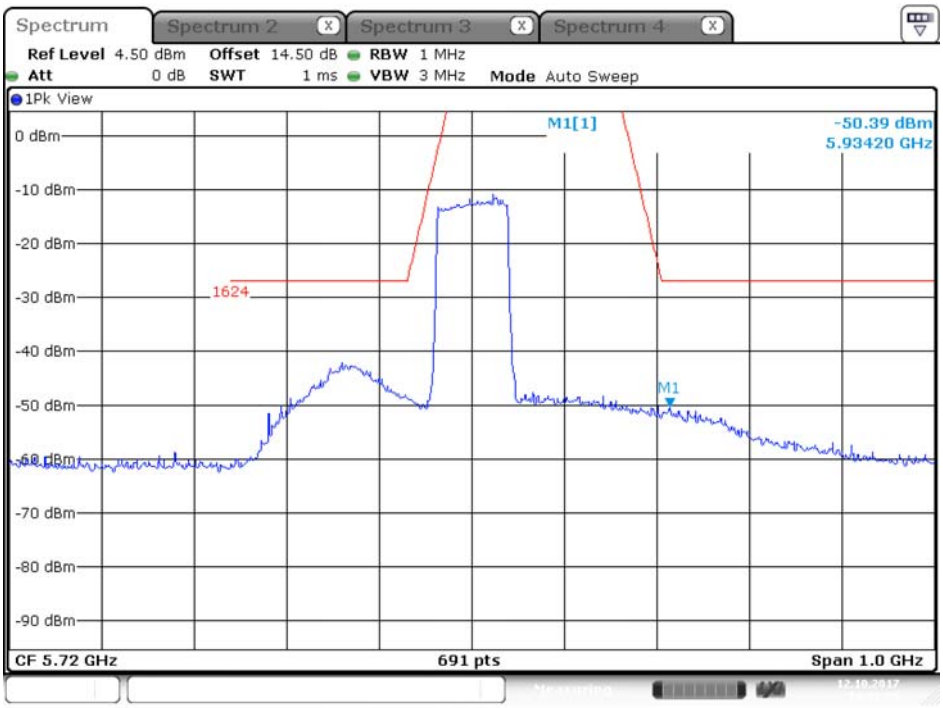
Date: 12.OCT.2017 17:00:47

Plot on Configuration QPSK, 80M / 5720 MHz / Peak / Port 2 (TX2)



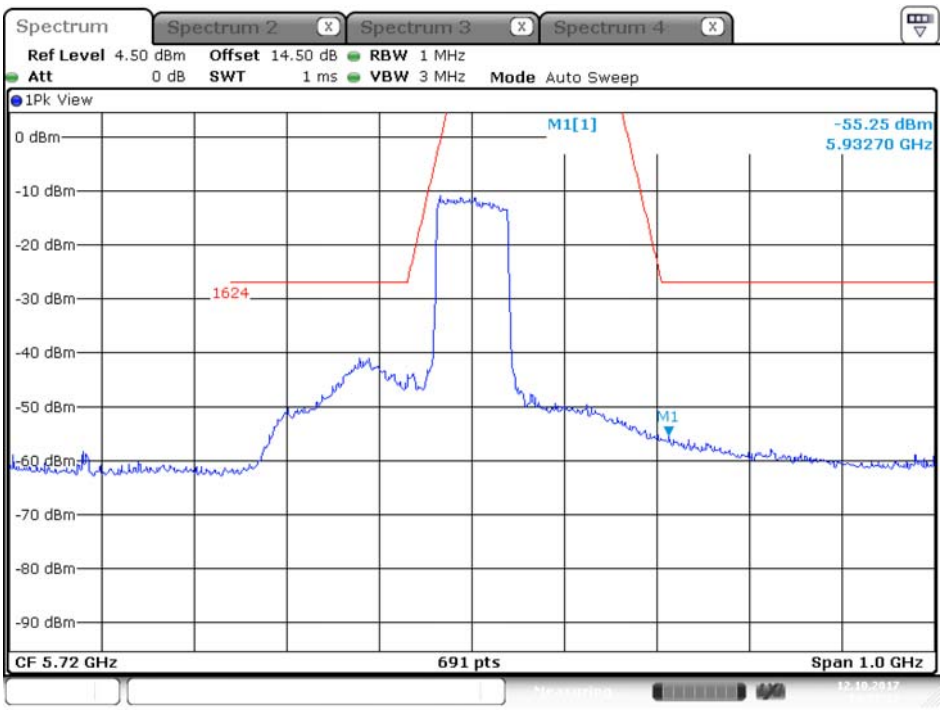
Date: 12.OCT.2017 16:56:39

Plot on Configuration QPSK, 80M / 5720 MHz / Peak / Port 1 (TX1)



Date: 12.OCT.2017 14:38:35

Plot on Configuration QPSK, 80M / 5720 MHz / Peak / Port 2 (TX2)



Date: 12.OCT.2017 14:37:31

4.7. Frequency Stability Measurement

4.7.1. Limit

In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band (IEEE 802.11n specification).

4.7.2. Measuring Instruments and Setting

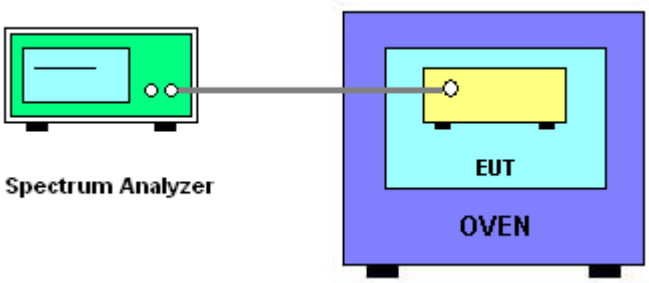
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Entire absence of modulation emissions bandwidth
RBW	10 kHz
VBW	10 kHz
Sweep Time	Auto

4.7.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 10^6 ppm and the limit is less than ±20ppm (IEEE 802.11nspecification).
6. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
7. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
8. Extreme temperature is -40°C~70°C.

4.7.4. Test Setup Layout



4.7.5. Test Deviation

There is no deviation with the original standard.

4.7.6. EUT Operation during Test

The EUT was programmed to be in continuously un-modulation transmitting mode.

4.7.7. Test Result of Frequency Stability

Temperature	27.1°C	Humidity	79%
Test Engineer	Ron Huang	Test Date	Sep. 27, 2017 ~ Oct. 16, 2017

Mode: 20 MHz / Port 2

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5300 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5300.0091	5300.0087	5300.0084	5300.0082
110.00	5300.0087	5300.0084	5300.0083	5300.0079
93.50	5300.0082	5300.0074	5300.0064	5300.0060
Max. Deviation (MHz)	**0.0091**	**0.0087**	**0.0084**	**0.0082**
Max. Deviation (ppm)	**1.71**	**1.64**	**1.58**	**1.54**
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5300 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-40	5300.0765	5300.0761	5300.0760	5300.0756
-30	5300.0669	5300.0667	5300.0664	5300.0661
-20	5300.0583	5300.0582	5300.0577	5300.0567
-10	5300.0586	5300.0580	5300.0570	5300.0569
0	5300.0590	5300.0585	5300.0576	5300.0570
10	5300.0591	5300.0584	5300.0577	5300.0567
20	5300.0087	5300.0085	5300.0084	5300.0075
30	5300.0086	5300.0077	5300.0069	5300.0067
40	5300.0085	5300.0083	5300.0082	5300.0074
50	5300.0071	5300.0061	5300.0052	5300.0049
60	5300.0083	5300.0074	5300.0073	5300.0064
70	5300.0068	5300.0058	5300.0056	5300.0048
Max. Deviation (MHz)	**0.0765**	**0.0761**	**0.0760**	**0.0756**
Max. Deviation (ppm)	**14.43**	**14.36**	**14.34**	**14.26**
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5580 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5580.0095	5580.0094	5580.0089	5580.0082
110.00	5580.0087	5580.0078	5580.0068	5580.0060
93.50	5580.0083	5580.0079	5580.0070	5580.0067
Max. Deviation (MHz)	**0.0095**	**0.0094**	**0.0089**	**0.0082**
Max. Deviation (ppm)	**1.70**	**1.68**	**1.59**	**1.47**
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5580 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-40	5580.0732	5580.0731	5580.0725	5580.0717
-30	5580.0633	5580.0623	5580.0615	5580.0610
-20	5580.0553	5580.0550	5580.0542	5580.0537
-10	5580.0558	5580.0548	5580.0544	5580.0541
0	5580.0572	5580.0569	5580.0562	5580.0554
10	5580.0591	5580.0586	5580.0578	5580.0576
20	5580.0087	5580.0084	5580.0082	5580.0077
30	5580.0086	5580.0083	5580.0073	5580.0069
40	5580.0067	5580.0065	5580.0062	5580.0054
50	5580.0077	5580.0068	5580.0066	5580.0065
60	5580.0067	5580.0058	5580.0055	5580.0045
70	5580.0051	5580.0046	5580.0036	5580.0030
Max. Deviation (MHz)	**0.0732**	**0.0731**	**0.0725**	**0.0717**
Max. Deviation (ppm)	**13.12**	**13.10**	**12.99**	**12.85**
Result	Complies			

Mode: 80 MHz / Port 2

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5290 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5290.0092	5290.0086	5290.0085	5290.0075
110.00	5290.0087	5290.0082	5290.0074	5290.0067
93.50	5290.0086	5290.0080	5290.0079	5290.0076
Max. Deviation (MHz)	**0.0092**	**0.0086**	**0.0085**	**0.0076**
Max. Deviation (ppm)	**1.74**	**1.62**	**1.60**	**1.43**
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5290 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-40	5290.0737	5290.0728	5290.0723	5290.0719
-30	5290.0642	5290.0641	5290.0634	5290.0624
-20	5290.0558	5290.0556	5290.0550	5290.0540
-10	5290.0566	5290.0556	5290.0549	5290.0540
0	5290.0586	5290.0584	5290.0583	5290.0575
10	5290.0591	5290.0587	5290.0586	5290.0584
20	5290.0087	5290.0080	5290.0071	5290.0064
30	5290.0086	5290.0080	5290.0076	5290.0068
40	5290.0069	5290.0066	5290.0062	5290.0053
50	5290.0068	5290.0064	5290.0061	5290.0060
60	5290.0067	5290.0064	5290.0063	5290.0055
70	5290.0056	5290.0051	5290.0048	5290.0042
Max. Deviation (MHz)	**0.0737**	**0.0728**	**0.0723**	**0.0719**
Max. Deviation (ppm)	**13.93**	**13.76**	**13.67**	**13.59**
Result	Complies			

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)			
(V)	5610 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5610.0093	5610.0091	5610.0081	5610.0071
110.00	5610.0087	5610.0083	5610.0079	5610.0073
93.50	5610.0081	5610.0077	5610.0076	5610.0071
Max. Deviation (MHz)	**0.0093**	**0.0091**	**0.0081**	**0.0073**
Max. Deviation (ppm)	**1.65**	**1.62**	**1.44**	**1.30**
Result	Complies			

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)			
(°C)	5610 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-40	5610.0741	5610.0731	5610.0721	5610.0714
-30	5610.0656	5610.0653	5610.0644	5610.0640
-20	5610.0562	5610.0557	5610.0549	5610.0548
-10	5610.0571	5610.0565	5610.0558	5610.0553
0	5610.0572	5610.0568	5610.0565	5610.0560
10	5610.0591	5610.0581	5610.0573	5610.0565
20	5610.0087	5610.0086	5610.0079	5610.0069
30	5610.0086	5610.0079	5610.0072	5610.0065
40	5610.0078	5610.0071	5610.0063	5610.0061
50	5610.0076	5610.0074	5610.0072	5610.0069
60	5610.0070	5610.0069	5610.0059	5610.0050
70	5610.0063	5610.0061	5610.0054	5610.0047
Max. Deviation (MHz)	**0.0741**	**0.0731**	**0.0721**	**0.0714**
Max. Deviation (ppm)	**13.21**	**13.03**	**12.85**	**12.73**
Result	Complies			

4.8. Antenna Requirements

4.8.1. Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

4.8.2. Antenna Connector Construction

Please refer to section 3.3 in this test report; antenna connector complied with the requirements.

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 10, 2016	Nov. 09, 2017	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 05, 2017	Jul. 04, 2018	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Jan. 16, 2017	Jan. 15, 2018	Radiation (03CH01-CB)
Pre-Amplifier	MITEQ	TTA1840-35-HG	1864479	18GHz ~ 40GHz	Jul. 10, 2017	Jul. 09, 2018	Radiation (03CH01-CB)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 22, 2016	Nov. 21, 2017	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Oct. 23, 2017	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 24, 2016	Oct. 23, 2017	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Oct. 23, 2017	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Oct. 24, 2016	Oct. 23, 2017	Radiation (03CH01-CB)
Test Software	Audix	E3	6.2009-l0-7	N/A	N/A	N/A	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 26, 2016	Dec. 25, 2017	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 02, 2017	Jun. 01, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-6	1 GHz – 26.5 GHz	Oct. 24, 2016	Oct. 23, 2017	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-7	1 GHz –26.5 GHz	Oct. 24, 2016	Oct. 23, 2017	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-8	1 GHz –26.5 GHz	Oct. 24, 2016	Oct. 23, 2017	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-9	1 GHz –26.5 GHz	Oct. 24, 2016	Oct. 23, 2017	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 24, 2016	Oct. 23, 2017	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 22, 2016	Nov. 21, 2017	Conducted (TH01-CB)

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

6. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty	Remark
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%