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FCC RADIO TEST REPORT

Applicant's company	**Extreme Networks, Inc.**
Applicant Address	6480 Via Del Oro San Jose CA 95119 United States Of America
FCC ID	**QXO-AP3917K**
Manufacturer's company	**Senao Networks, Inc.**
Manufacturer Address	3F, No. 529, Chung Cheng Rd. Hsintien Taipei Taiwan

Product Name	Wireless 802.11 a/ac+b/g/n PCBA module
Brand Name	Extreme Networks
Model Name	AP3917k/AP7662k
Test Rule Part(s)	47 CFR FCC Part 90 Subpart Y
Test Freq. Range	4940 ~ 4990MHz
Received Date	Sep. 21, 2017
Final Test Date	Jan. 11, 2018
Submission Type	Original Equipment

Statement

The test result in this report refers exclusively to the presented test model / sample.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI/TIA-603-D-2010, 47 CFR FCC Part 90 Subpart Y, ANSI C63.26-2015 and KDB971168 D01 Power Meas License Digital Systems v03.**

The test equipment used to perform the test is calibrated and traceable to NML/ROC.

Table of Contents

History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FL780809	Rev. 01	Initial issue of report	Nov. 08, 2017
FL780809	Rev. 02	Re-test all test items except Frequency Stability and revise test result limit of Transmitter Radiated Unwanted Emissions above 1GHz.	Jan. 12, 2018

1. VERIFICATION OF COMPLIANCE

Product Name	:	Wireless 802.11 a/ac+b/g/n PCBA module
Brand Name	:	Extreme Networks
Model Name	:	AP3917k/AP7662k
Applicant	:	Extreme Networks, Inc.
Test Rule Part(s)	:	47 CFR FCC Part 90 Subpart Y

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Sep. 21, 2017 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Cliff Chang
SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: , 47 CFR FCC Part 90 Subpart Y			
Part	**Rule Section**	**Description of Test**	**Result**
4.1	2.1046/90.1215(a)	Maximum Conducted Output Power / Peak Power Spectral Density	Complies
4.2	90.1215	Peak Excursion	Complies
4.3	2.1049/90.210(m)	Occupied Bandwidth / Emission Mask	Complies
4.4	2.1051/90.210(m)	Transmitter Conducted Unwanted Emissions	Complies
4.5	2.1053/90.210(m)	Transmitter Radiated Unwanted Emissions	Complies
4.6	2.1055/90.213(a)	Frequency Stability	Complies

3. GENERAL INFORMATION

3.1. Product Details

Items	Description		
Power Type	From host system		
Equipment Category	Fixed Point-to-Multipoint		
Product Type	High Power Device		
Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)		
Channel Bandwidth	5MHz / 10MHz / 20MHz		
Occupied Bandwidth	5MHz: 4.6MHz 10MHz: 9.03MHz 20MHz: 17.71MHz		
Maximum Conducted Output Power	5MHz: 21.30dBm 10MHz: 22.64dBm 20MHz: 22.10dBm		
Antenna 2 4.9GHz	Antenna Gain (dBi)	Cable loss (dB)	True Gain (dBi)
	8.25	0.5	7.75

Note: Port 1 and Port 2 connect to Ant.2.

3.2. Table for Carrier Frequencies

Channel Bandwidth	Carrier Frequency (MHz)
5 MHz	4942.5
	4947.5
	4952.5
	4957.5
	4962.5
	4967.5
	4972.5
	4977.5
	4982.5
	4987.5
10 MHz	4945
	4950
	4955
	4960
	4965
	4970
	4975
	4980
	4985
20 MHz	4950
	4955
	4960
	4965
	4970
	4975
	4980

3.3. Table for Test Modes

Investigation has been done on all the possible configurations for searching the worst cases (All modulation modes and different data rates would be evaluated). The following table is a list of the test modes shown in this test report.

Test Items	Channel Bandwidth	Modulation Mode
Maximum Conducted Output Power	5MHz / 10MHz/ 20MHz	QPSK-6Mbps / QPSK-6Mbps
Peak Power Spectral Density	5MHz / 10MHz/ 20MHz	QPSK-6Mbps / QPSK-6Mbps
Peak Excursion	5MHz / 10MHz/ 20MHz	QPSK-6Mbps / QPSK-6Mbps
Occupied Bandwidth	5MHz / 10MHz/ 20MHz	QPSK-6Mbps / QPSK-6Mbps
Emission Mask	5MHz / 10MHz/ 20MHz	QPSK-6Mbps / QPSK-6Mbps
Transmitter Conducted Unwanted Emissions	5MHz / 10MHz/ 20MHz	QPSK-6Mbps / QPSK-6Mbps
Transmitter Radiated Unwanted Emissions	5MHz / 10MHz/ 20MHz	QPSK-6Mbps / QPSK-6Mbps
Frequency Stability	5MHz / 10MHz/ 20MHz	QPSK-6Mbps / QPSK-6Mbps

The following test modes were performed for all tests:

The EUT was performed at X axis, Y axis and Z axis position for Radiated emission test, and the worst case was found at Z axis. So the measurement will follow this same test configuration.

For Radiated Emission test:

Mode 1. EUT in Z axis

3.4. Table for Testing Locations

Test Site Location				
Address:	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 Site No.	**Site Category**	**Location**	**FCC Designation No.**	**IC File No.**
03CH01-CB	SAC	Hsin Chu	TW0006	IC 4086D
TH01-CB	OVEN Room	Hsin Chu	-	-

Open Area Test Site (OATS); Semi Anechoic Chamber (SAC).

3.5. Table for Multiple Listing

The EUT has two model names, which are identical to each other in all aspects except for the following table:

Model Name	Description
AP3917k	All the models are identical, the difference model name for difference brand served as marketing strategy.
AP7662k	

From the above models, model: AP3917k was selected as representative model for the test and its data was recorded in this report.

3.6. Table for Supporting Units

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E4300	DoC
PoE	EnGenius	EPA5006GP	N/A

3.7. Table for Parameters of Test Software Setting

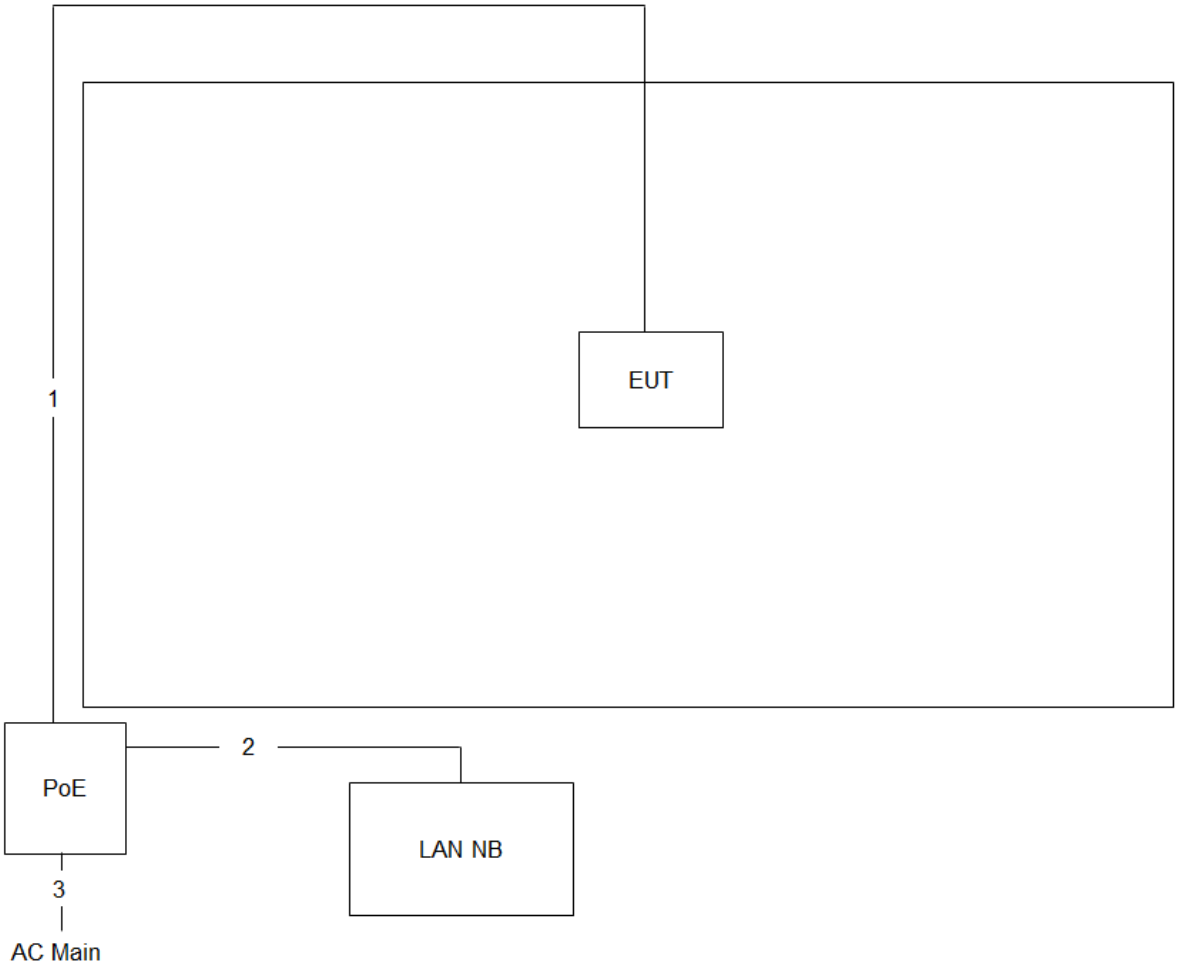
During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Test Software Version:	Telnet			
Frequency	4942.5MHz	4962.5MHz	4987.5MHz	Data Rate
5MHz	35	35	35	6Mbps
Frequency	4945MHz	4965 MHz	4985MHz	Data Rate
10MHz	35	35	38	6Mbps
Frequency	4950MHz	4965MHz	4980MHz	Data Rate
20MHz	36	37	37	6Mbps

3.8. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.9. Test Configurations



Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	RJ-45 cable	No	1.5m
3	Power cable	No	0.7m

4. TEST RESULT

4.1. Maximum Conducted Output Power and Peak Power Spectral Density Measurement

4.1.1. Limit

Maximum Conducted Output Power*:*

The transmitting power of stations operating in the 4940-4990 MHz band must not exceed the maximum limits in this table.

Channel Bandwidth (MHz)	Low Power Device Peak Transmitter Power (dBm)	High Power Device Peak Transmitter Power (dBm)
1	7.0	20.0
5	14.0	27.0
10	17.0	30.0
15	18.8	31.8
20	20.0	33.0

Peak Power Spectral Density:

(2) High power devices are also limited to a peak power spectral density of 21 dBm per one MHz. High power devices using channel bandwidths other than those listed above are permitted; however, they are limited to peak power spectral density of 21 dBm/MHz. If transmitting antennas of directional gain greater than 9 dBi are used, both the maximum onducted output power and the peak power spectral density should be reduced by the amount in decibels that the directional gain of the antenna exceeds 9 dBi. However, high power point-to-point and point-to-multipoint operations (both fixed and temporary-fixed rapid deployment) may employ transmitting antennas with directional gain up to 26 dBi without any corresponding reduction in the maximum conducted output power or spectral density.

Maximum Conducted Output Power Definition:

The maximum conducted output power is measured as a conducted emission over any interval of continuous transmission using instrumentation calibrated in terms of an RMS-equivalent voltage. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, etc., so as to obtain a true maximum conducted output power measurement conforming to the definitions in this paragraph for the emission in question.

4.1.2. Measuring Instruments and Setting

Power Meter Parameter	Setting
Bandwidth	50MHz bandwidth is greater than the EUT emission bandwidth
Detector	Average

Spectrum Parameters	Setting
Detector	Peak
Center Frequency	Low / middle / high channels
RBW / VBW	1MHz / 3MHz

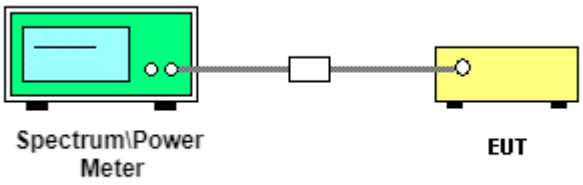
4.1.3. Test Procedures for Maximum Conducted Output Power

Using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since this measurement is made only during the ON time of the transmitter, no duty cycle correction is required.

4.1.4. Test Procedures for Peak Power Density

1. The EUT transmitter output was connected through an appropriate 50 ohm attenuator to a spectrum analyzer. Resolution bandwidth was set to 1MHz and video bandwidth was set to a value greater than the resolution bandwidth. Instrument limited resolution bandwidth less than channel emission bandwidth; so as to obtain a true peak measurement shall be calculated by total channel power within channel bandwidth.
2. Peak search was used to find peak power spectral density within channel bandwidth and the spectrum analyzer integrated measurement plot was taken.

4.1.5. Test Setup Layout



4.1.6. Test Deviation

There is no deviation with the original standard.

4.1.7. Test Result of Maximum Conducted Output Power

Temperature	23℃	Humidity	60%
Test Engineer	Gino Huang, Serway Li, Lucke Hsieh	Test Date	Jan. 02, 2018 ~ Jan. 11, 2018

5MHz Channel Bandwidth Mode

Frequency	Conducted Output Power (dBm)	Conducted Output Power (dBm)	Total Output Power (dBm)	Max. Limit (dBm)	Result
	Port 1	Port 2			
4942.5MHz	17.35	18.42	21.00	27.00	Complies
4962.5MHz	17.29	18.50	21.02	27.00	Complies
4987.5MHz	17.62	18.75	21.30	27.00	Complies

10MHz Channel Bandwidth Mode

Frequency	Conducted Output Power (dBm)	Conducted Output Power (dBm)	Total Output Power (dBm)	Max. Limit (dBm)	Result
	Port 1	Port 2			
4945MHz	17.96	18.07	21.09	30.00	Complies
4965 MHz	18.02	18.03	21.10	30.00	Complies
4985MHz	19.64	19.53	22.64	30.00	Complies

20MHz Channel Bandwidth Mode

Frequency	Conducted Output Power (dBm)	Conducted Output Power (dBm)	Total Conducted Peak Power (dBm)	Max. Limit (dBm)	Result
	Port 1	Port 2			
4950MHz	18.35	18.38	21.44	33.00	Complies
4965MHz	18.97	18.94	22.02	33.00	Complies
4980MHz	18.80	19.25	22.10	33.00	Complies

4.1.8. Test Result of Peak Power Spectral Density (PSD)

Temperature	23℃	Humidity	60%
Test Engineer	Gino Huang, Serway Li, Lucke Hsieh	Test Date	Jan. 02, 2018 ~ Jan. 10, 2018

5MHz Channel Bandwidth Mode

Frequency	Power Density (dBm/MHz)	Power Density (dBm/MHz)	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
	Port 1	Port 2			
4942.5MHz	10.33	11.32	14.23	21.00	Complies
4962.5MHz	10.45	11.70	14.47	21.00	Complies
4987.5MHz	10.19	11.57	14.30	21.00	Complies

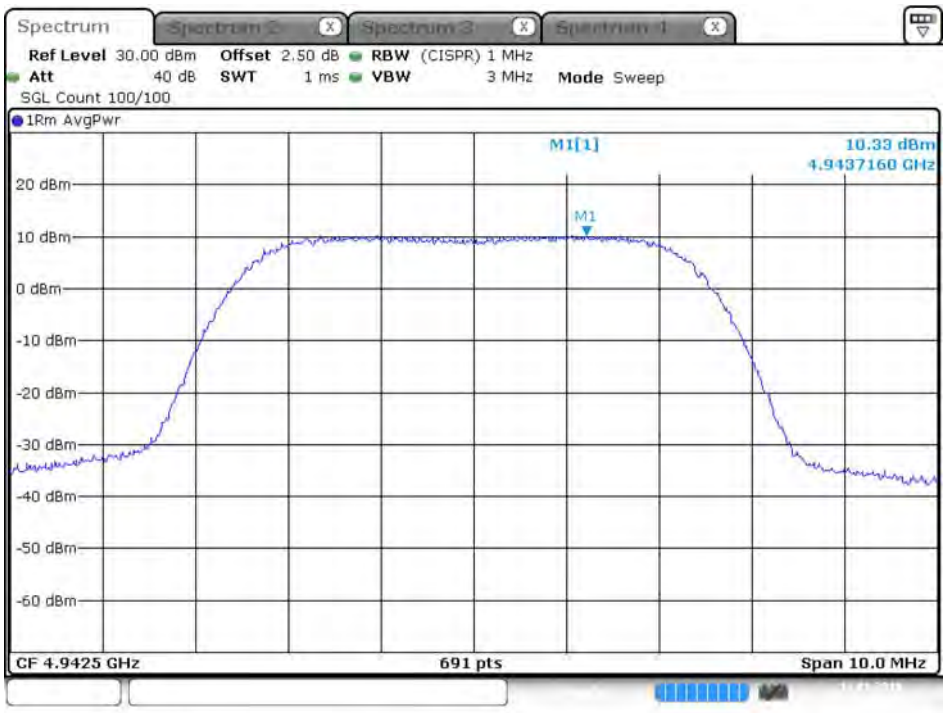
10MHz Channel Bandwidth Mode

Frequency	Power Density (dBm/MHz)	Power Density (dBm/MHz)	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
	Port 1	Port 2			
4945MHz	8.15	8.24	11.87	21.00	Complies
4965 MHz	8.12	8.22	11.85	21.00	Complies
4985MHz	9.63	9.60	13.13	21.00	Complies

20MHz Channel Bandwidth Mode

Frequency	Power Density (dBm/MHz)	Power Density (dBm/MHz)	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
	Port 1	Port 2			
4950MHz	5.82	5.92	9.97	21.00	Complies
4965MHz	6.52	6.47	10.47	21.00	Complies
4980MHz	6.41	6.09	10.27	21.00	Complies

Peak Power Spectral Density (5MHz BW Mode) – 4942.5MHz / Port 1



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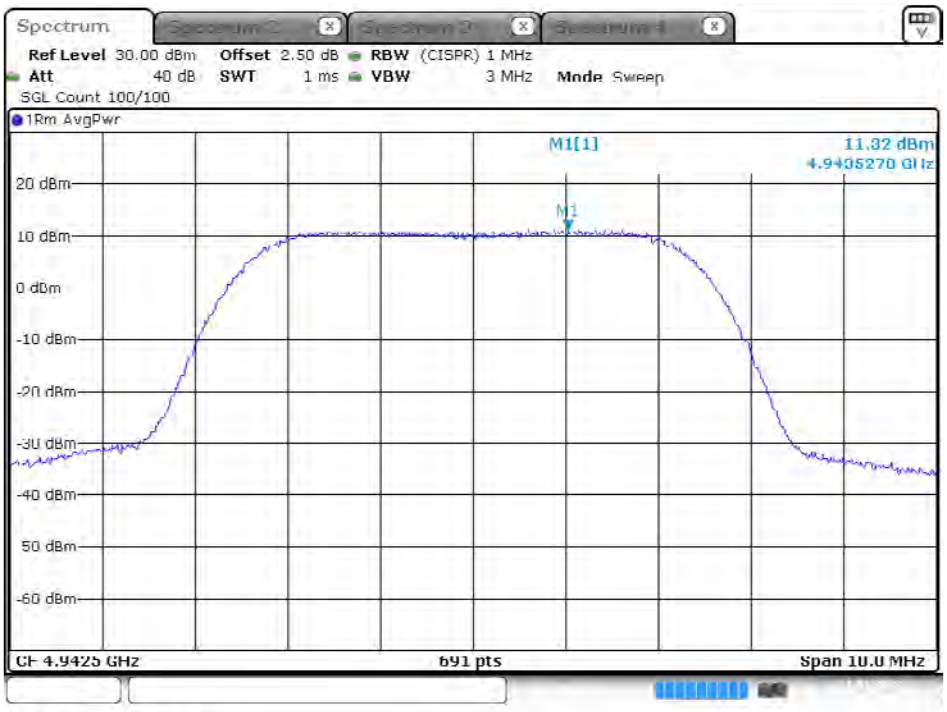
Peak Power Spectral Density (5MHz BW Mode) – 4942.5MHz / Port 2



Date: 11.JAN.2018 16:19:48

Peak Power Spectral Density (5MHz BW Mode) –4962.5MHz / Port 1

Peak Power Spectral Density (5MHz BW Mode) –4962.5MHz/ Port 2

Peak Power Spectral Density (5MHz BW Mode) – 4987.5MHz / Port 1

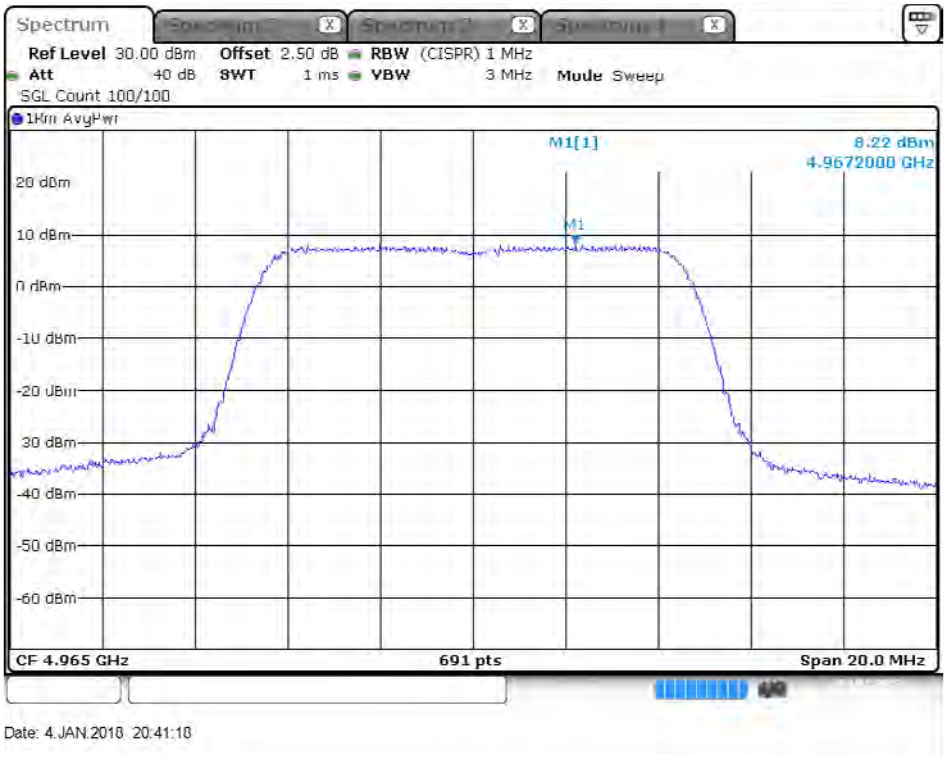
Peak Power Spectral Density (5MHz BW Mode) – 4987.5MHz / Port 2

Peak Power Spectral Density (10MHz BW Mode) – 4945MHz / Port 1

Peak Power Spectral Density (10MHz BW Mode) – 4945MHz / Port 2

Peak Power Spectral Density (10MHz BW Mode) – 4965MHz / Port 1

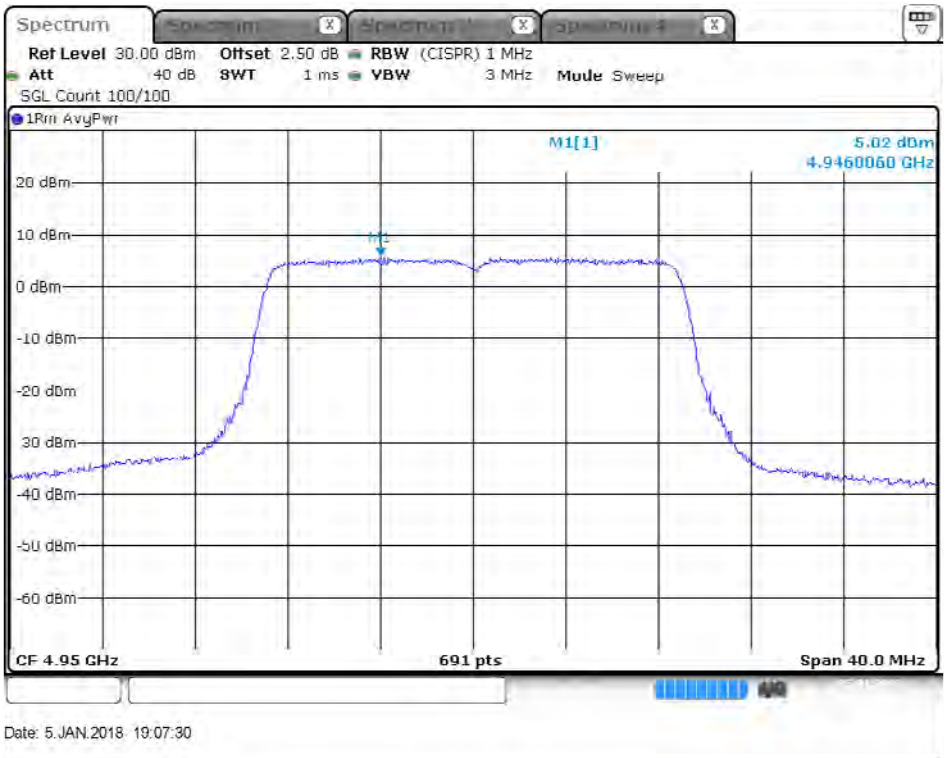
Peak Power Spectral Density (10MHz BW Mode) – 4965MHz / Port 2



Peak Power Spectral Density (10MHz BW Mode) – 4985MHz / Port 1

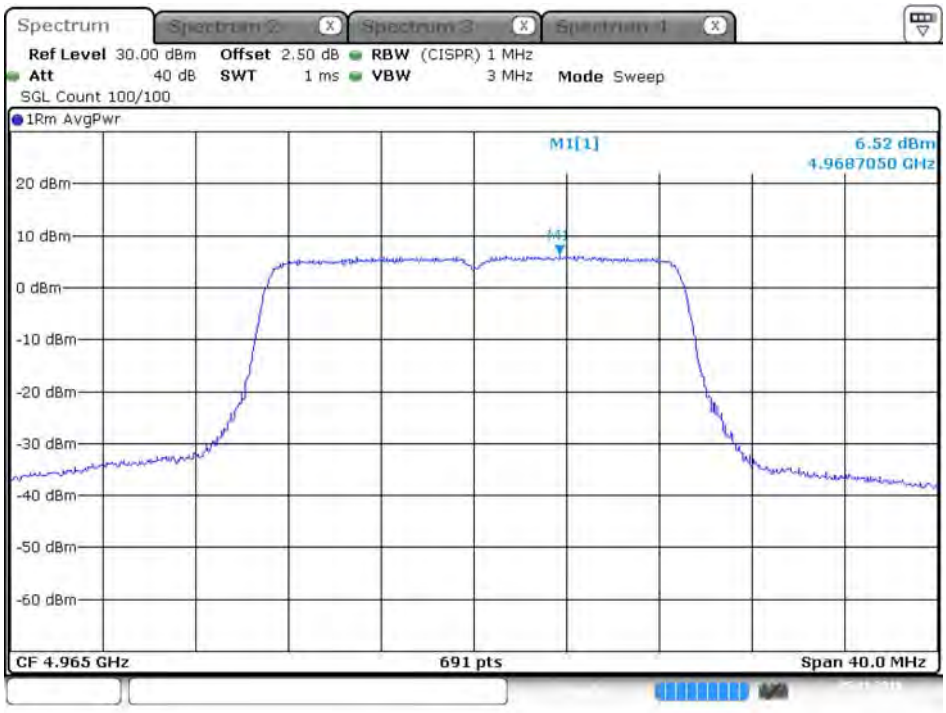
Peak Power Spectral Density (10MHz BW Mode) – 4985MHz / Port 2

Peak Power Spectral Density (20MHz BW Mode) – 4950MHz / Port 1



Peak Power Spectral Density (20MHz BW Mode) – 4950MHz / Port 2

Peak Power Spectral Density (20MHz BW Mode) – 4965MHz / Port 1



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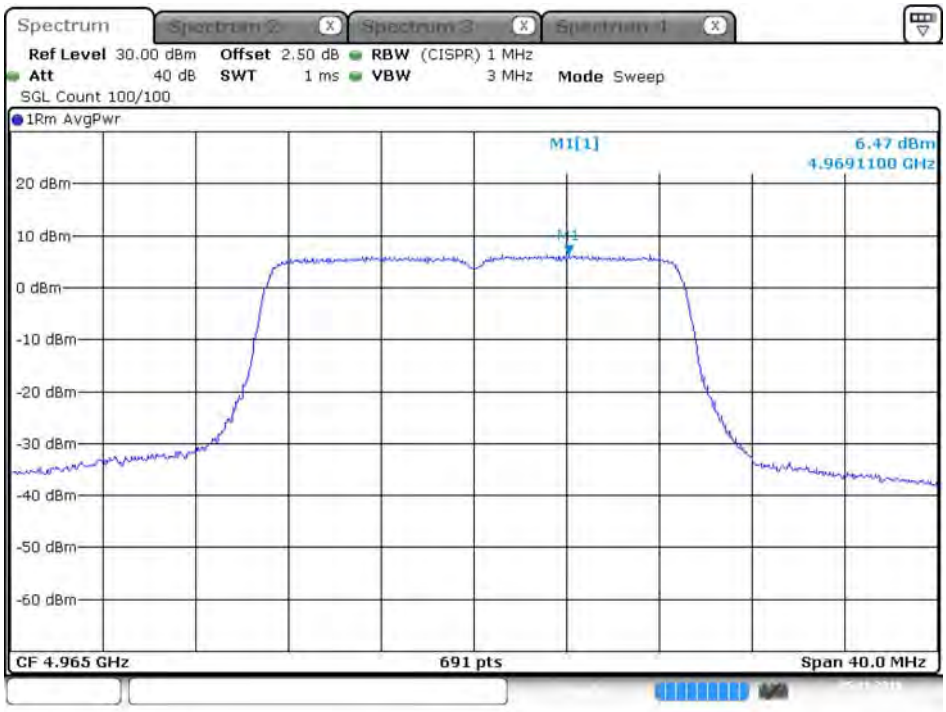
Peak Power Spectral Density (20MHz BW Mode) – 4965MHz / Port 2

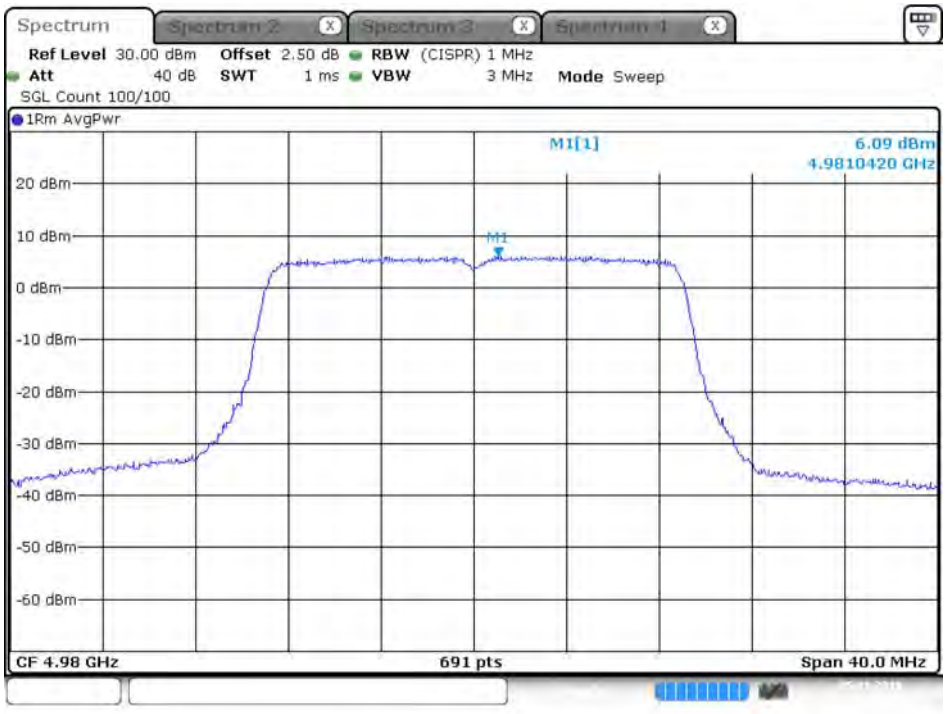


Date: 5.JAN.2018 19:50:46

Peak Power Spectral Density (20MHz BW Mode) – 4980MHz / Port 1

Date: 5.JAN.2018 19:09:16

Peak Power Spectral Density (20MHz BW Mode) – 4980MHz / Port 2



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4.2. Peak Excursion Measurement

4.2.1. Limit

13 dB

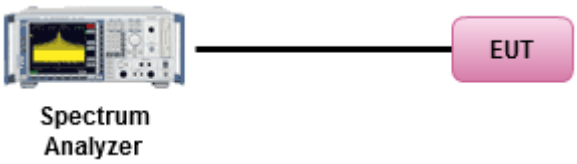
4.2.2. Measuring Instruments

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

4.2.3. Test Procedures

Testing a single output port is sufficient to demonstrate compliance with the peak excursion.

4.2.4. Test Setup Layout



4.2.5. Test Deviation

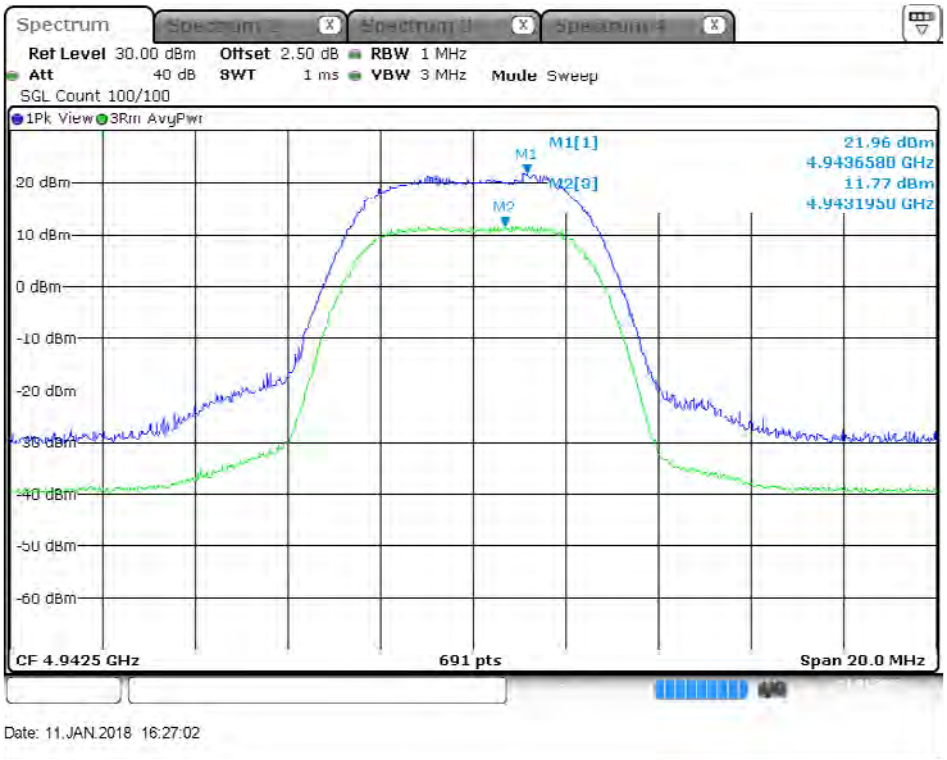
There is no deviation with the original standard.

4.2.6. Test Result of Peak Excursion

Temperature	23℃	Humidity	60%
Test Engineer	Gino Huang, Serway Li, Lucke Hsieh	Test Date	Jan. 02, 2018 ~ Jan. 11, 2018

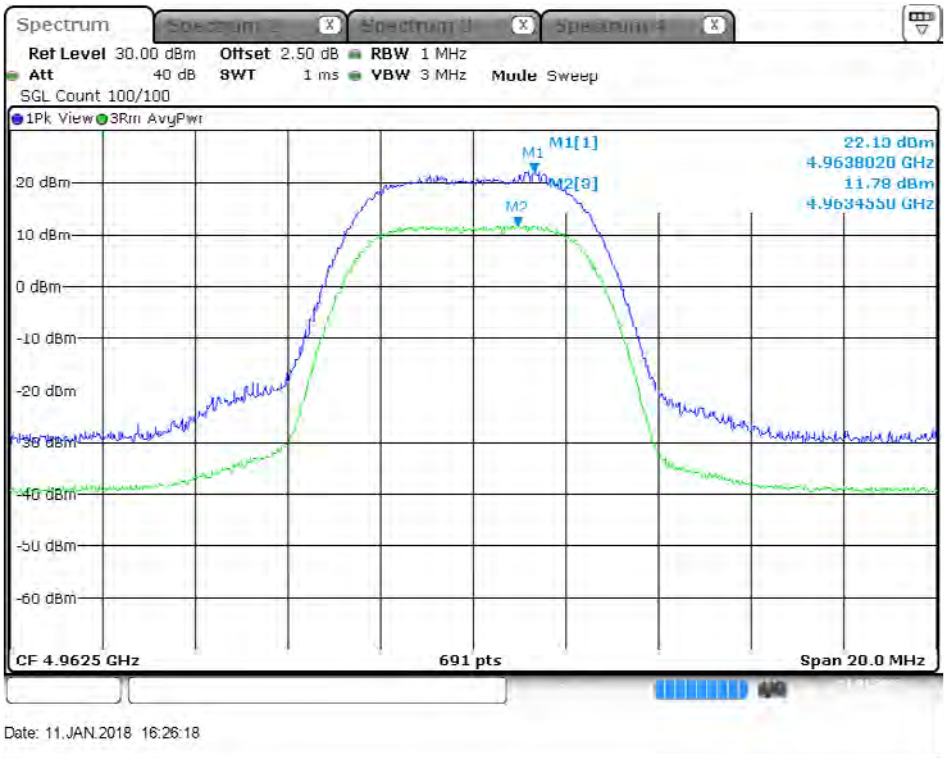
Mode	Frequency	Port 1	Port 2	Max. Limit	Result
	(MHz)	(dB)	(dB)	(dB)	
5MHz	4942.5MHz	10.19	10.42	13	Complies
	4962.5MHz	10.35	9.97	13	Complies
	4987.5MHz	10.36	10.41	13	Complies
10MHz	4945MHz	9.53	9.8	13	Complies
	4965 MHz	9.63	9.84	13	Complies
	4985MHz	9.92	9.89	13	Complies
20MHz	4950MHz	9.35	9.58	13	Complies
	4965MHz	9.56	9.63	13	Complies
	4980MHz	9.47	9.7	13	Complies

Peak Excursion (5MHz BW Mode) – 4942.5MHz / Port 1



Peak Excursion (5MHz BW Mode) – 4942.5MHz / Port 2

Peak Excursion (5MHz BW Mode) –4962.5MHz/ Port 1



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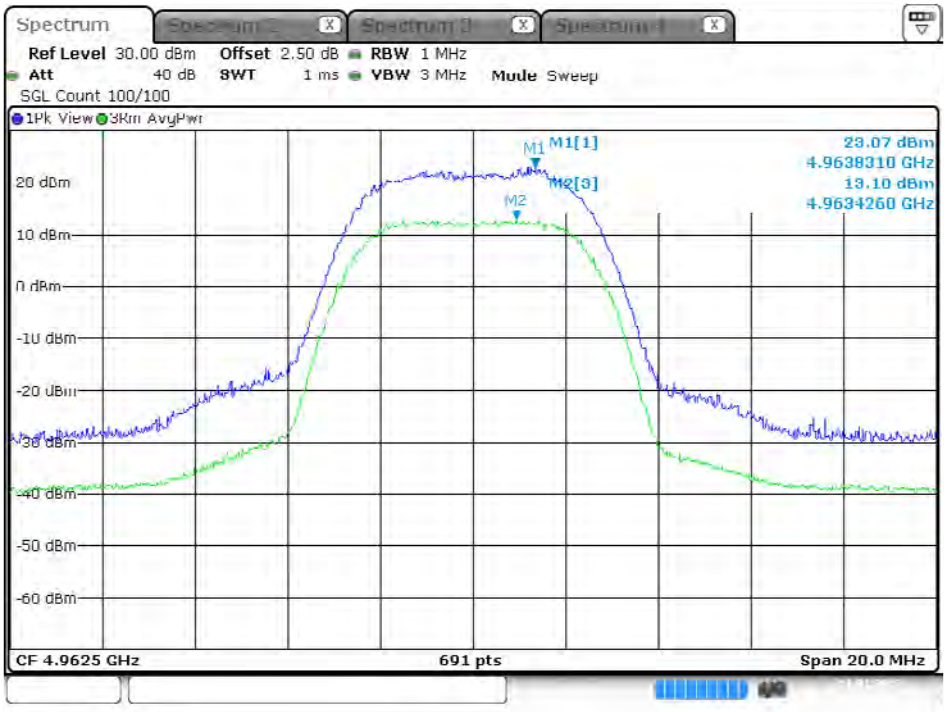
Peak Excursion (5MHz BW Mode) –4962.5MHz/ Port 2



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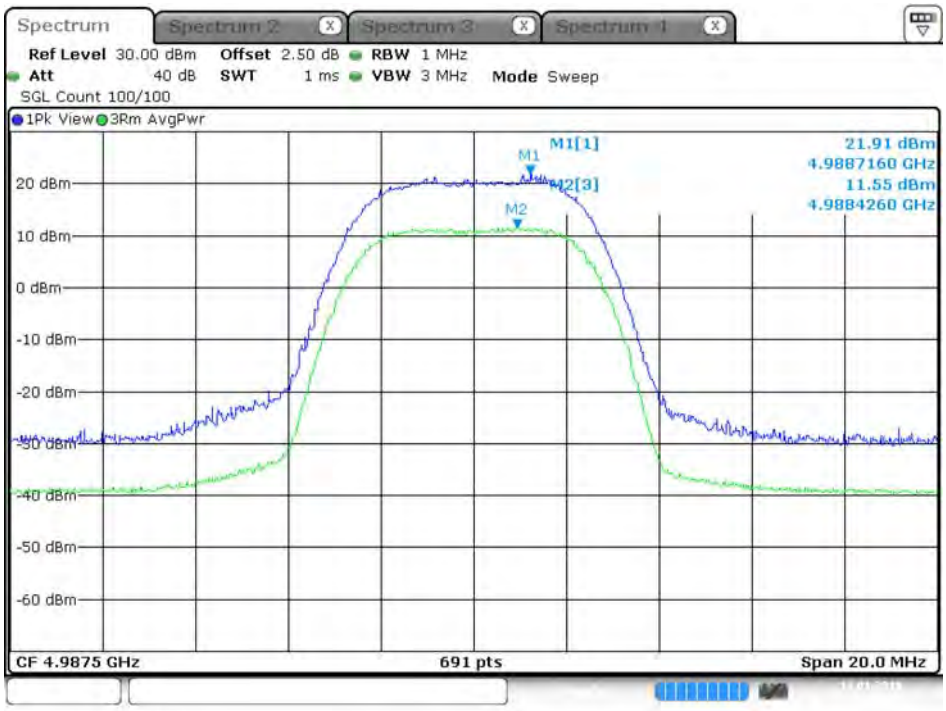
Peak Excursion (5MHz BW Mode) – 4987.5MHz / Port 1



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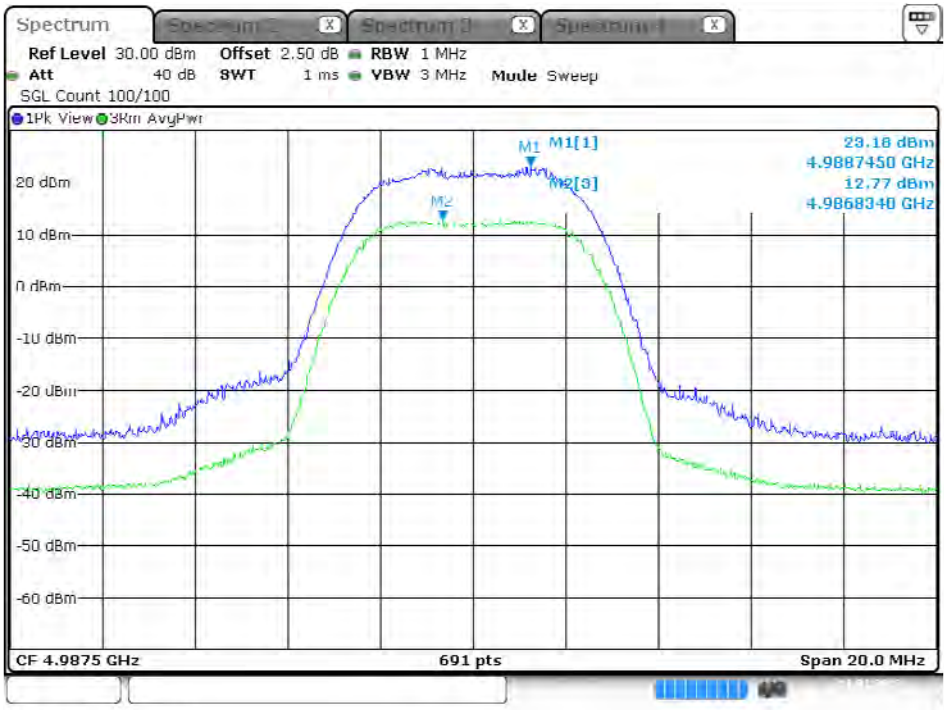
Peak Excursion (5MHz BW Mode) – 4987.5MHz / Port 2



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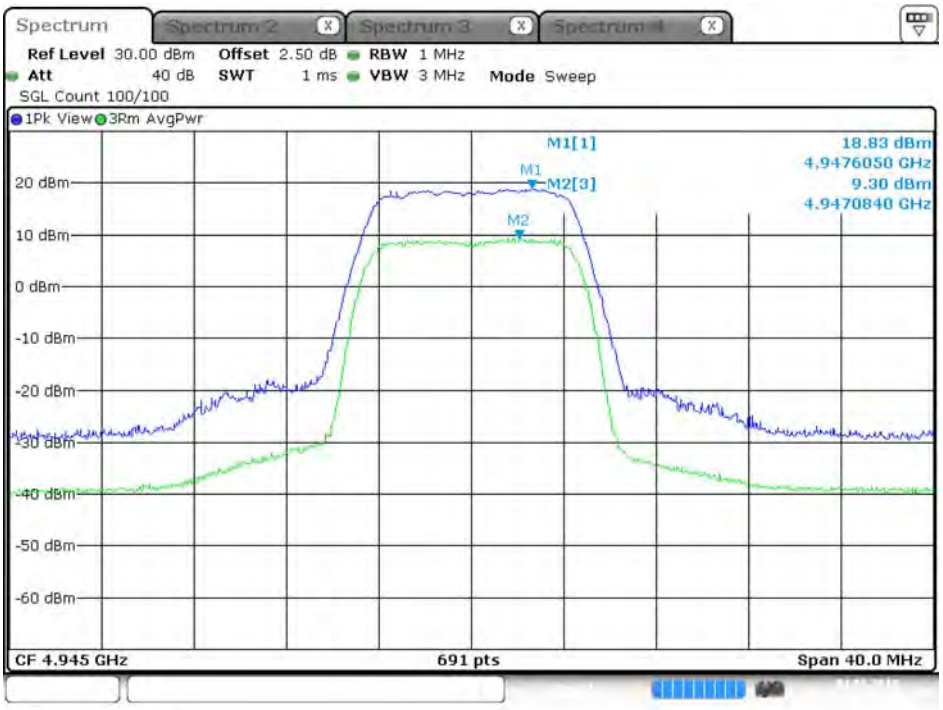
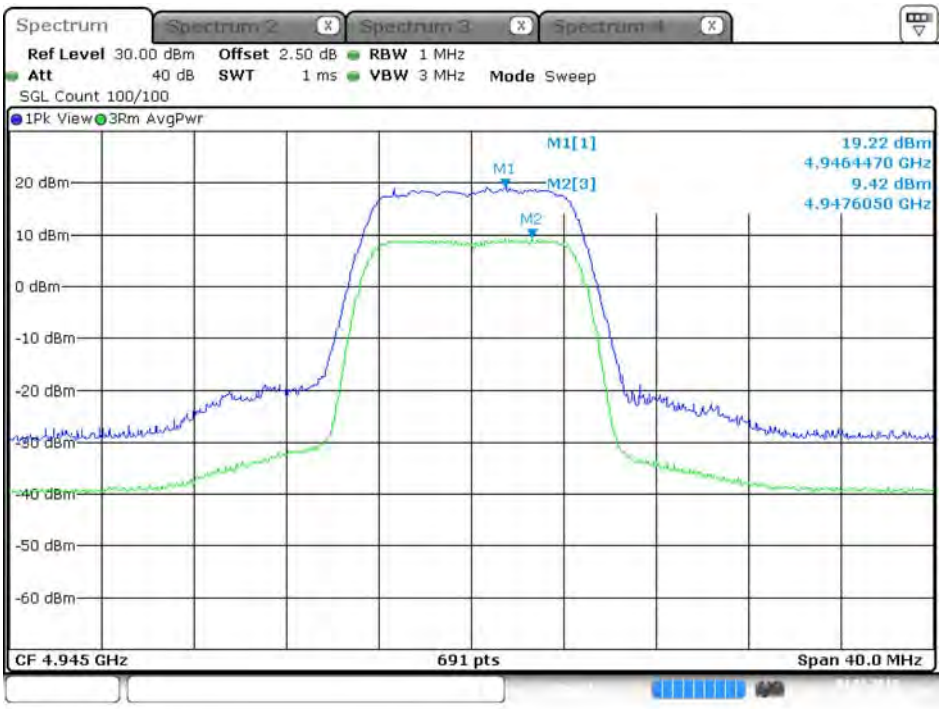
Peak Excursion (10MHz BW Mode) – 4945MHz / Port 1



Date: 4.JAN.2018 22:51:09

Peak Excursion (10MHz BW Mode) – 4945MHz / Port 2



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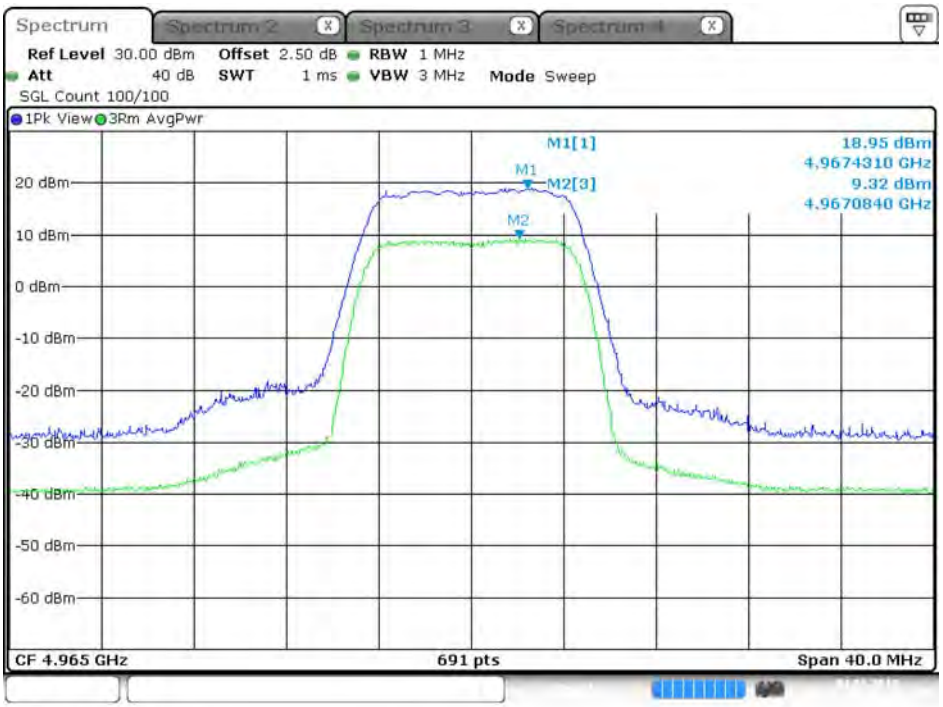
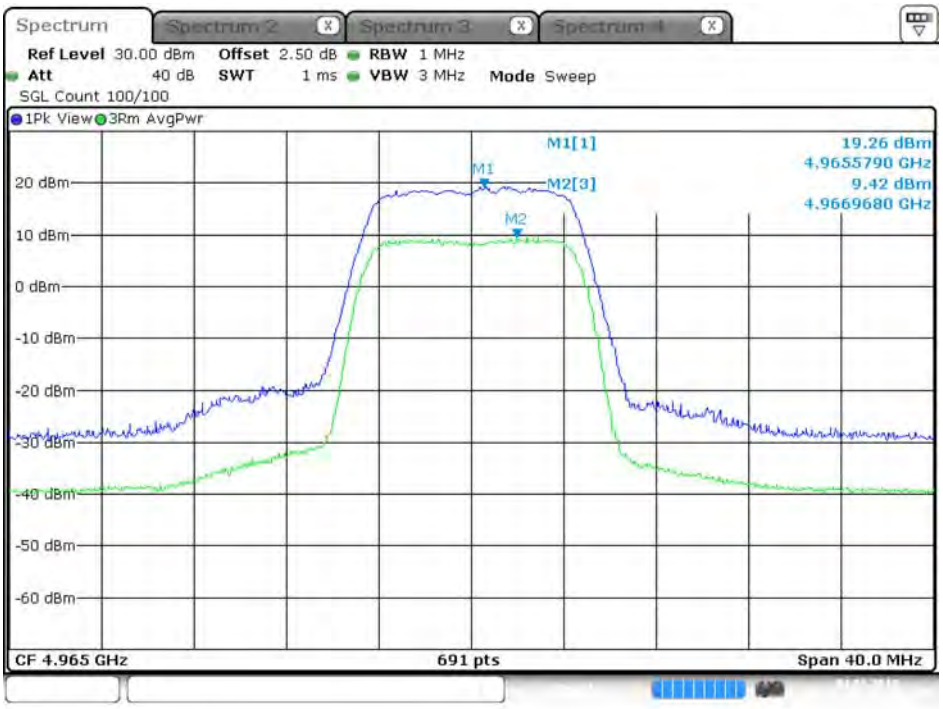


Date: 4.JAN.2018 22:50:17

Peak Excursion (10MHz BW Mode) – 4965MHz / Port 2



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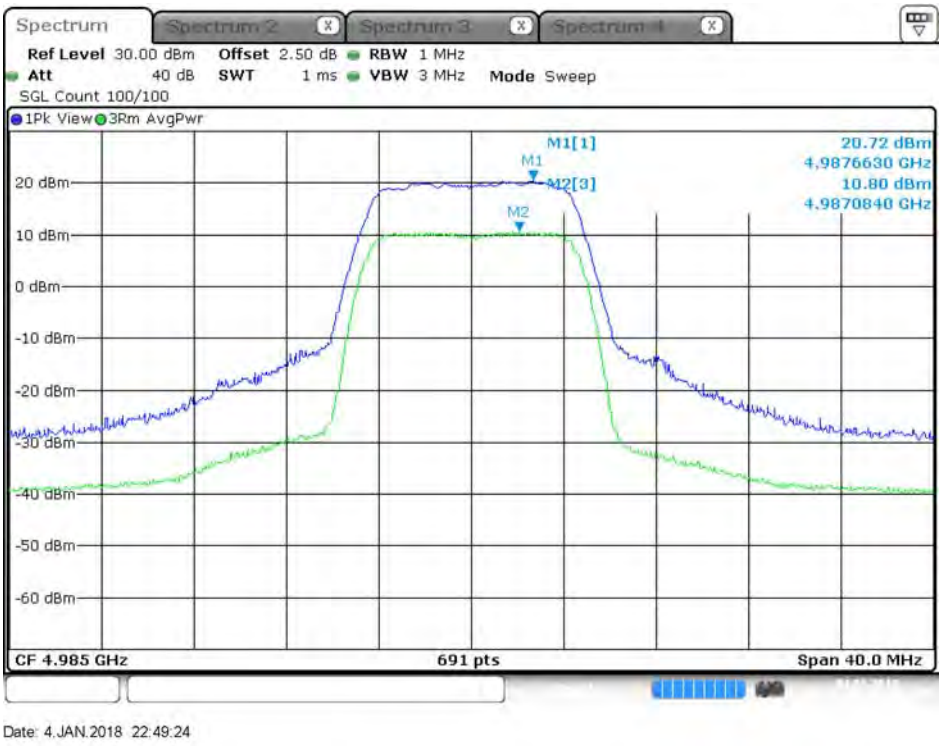
Peak Excursion (10MHz BW Mode) – 4985MHz / Port 1



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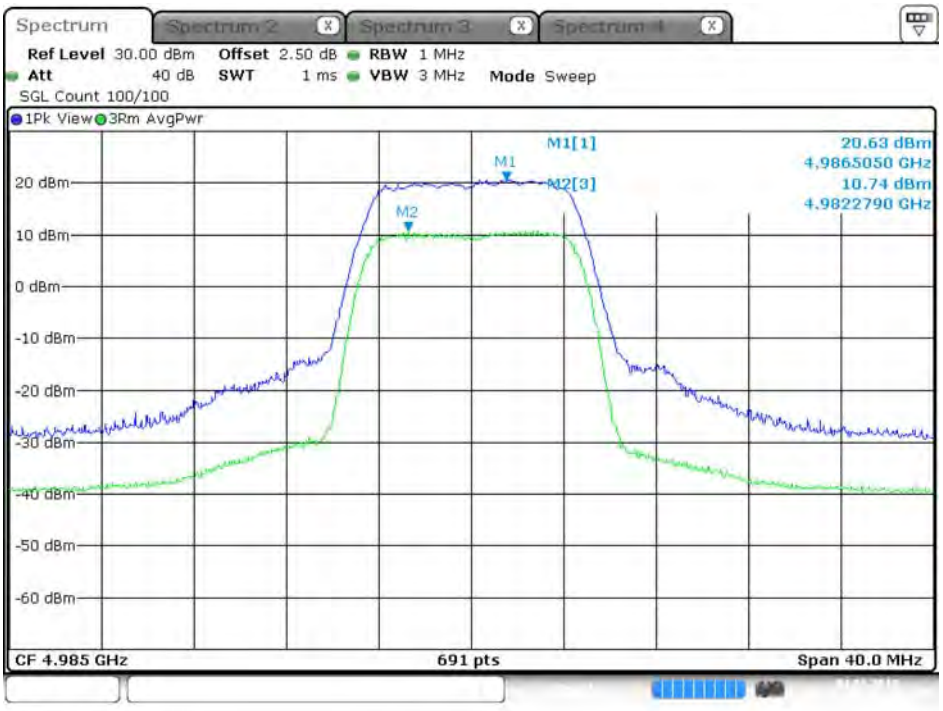
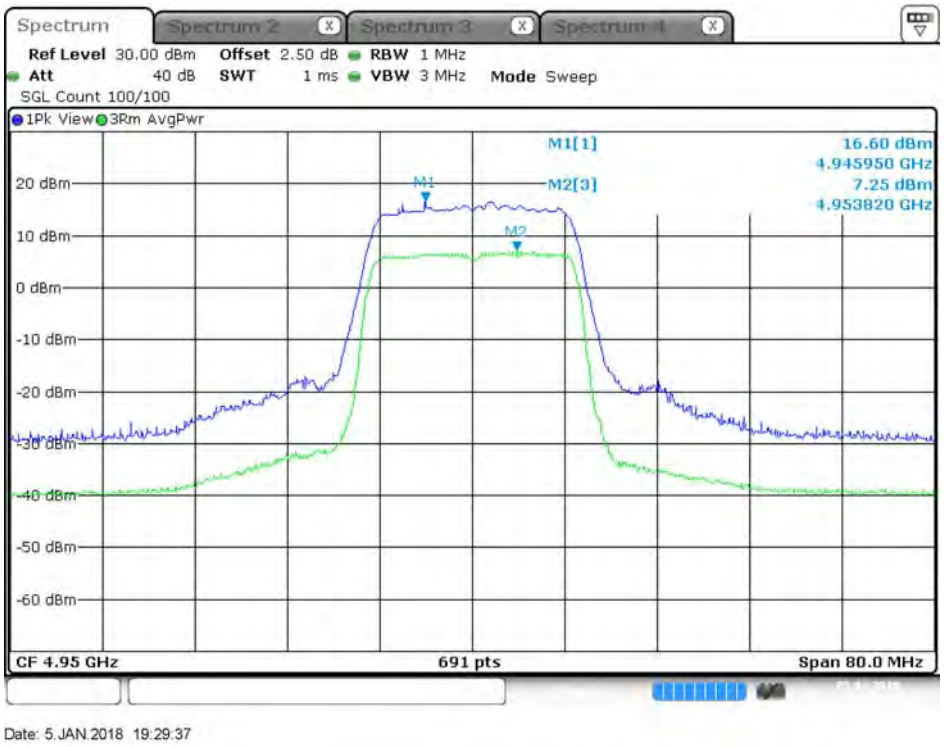
Peak Excursion (10MHz BW Mode) – 4985MHz / Port 2

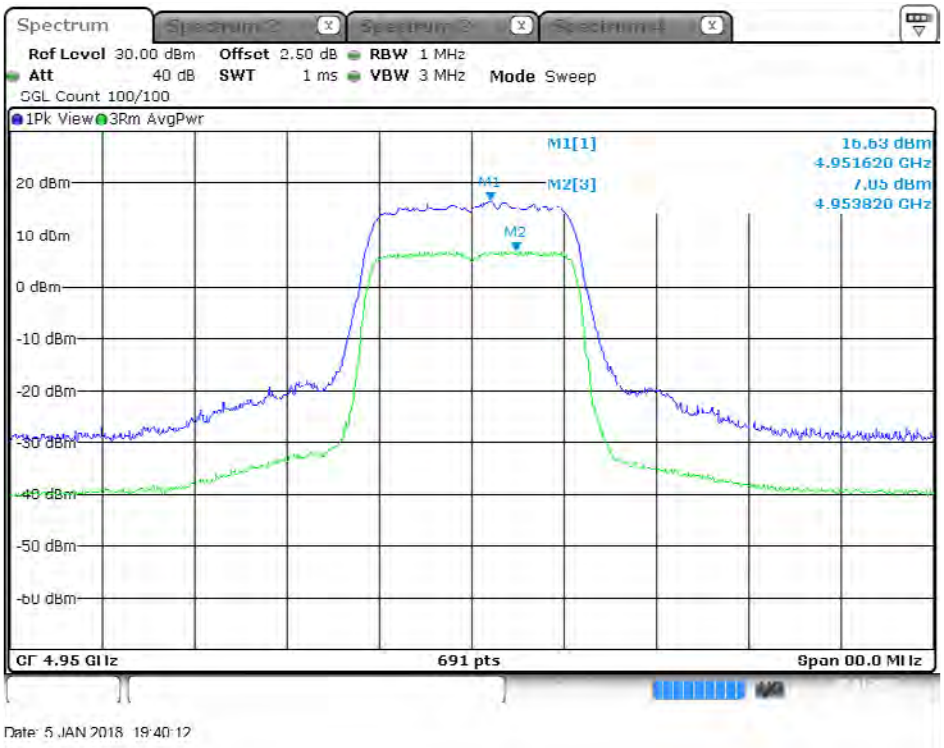


Date: 4.JAN.2018 22:48:19

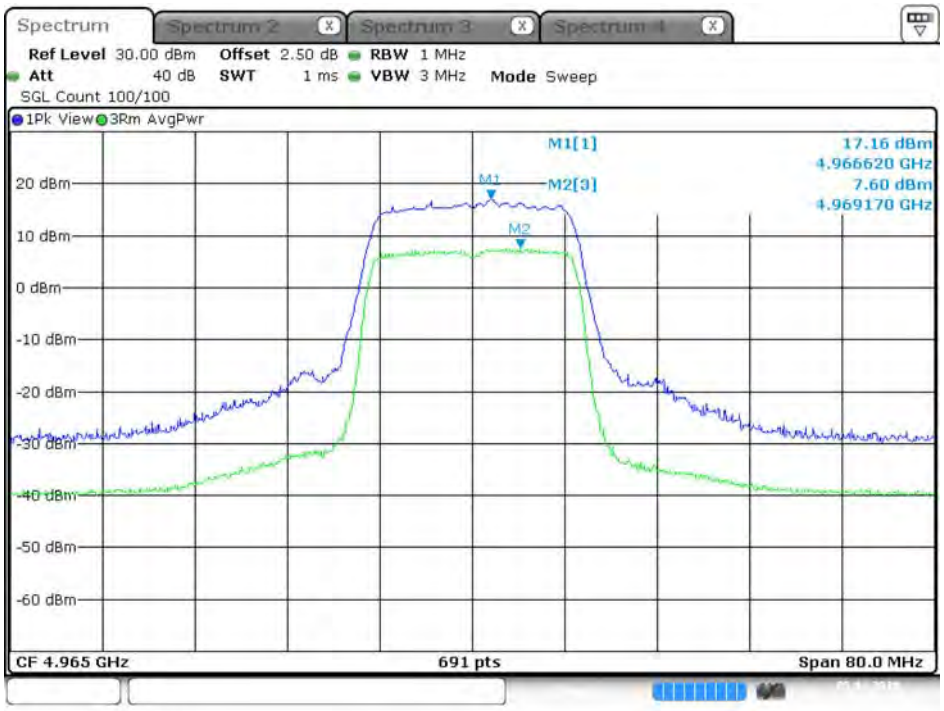
Peak Excursion (20MHz BW Mode) – 4950MHz / Port 1



Peak Excursion (20MHz BW Mode) – 4950MHz / Port 2

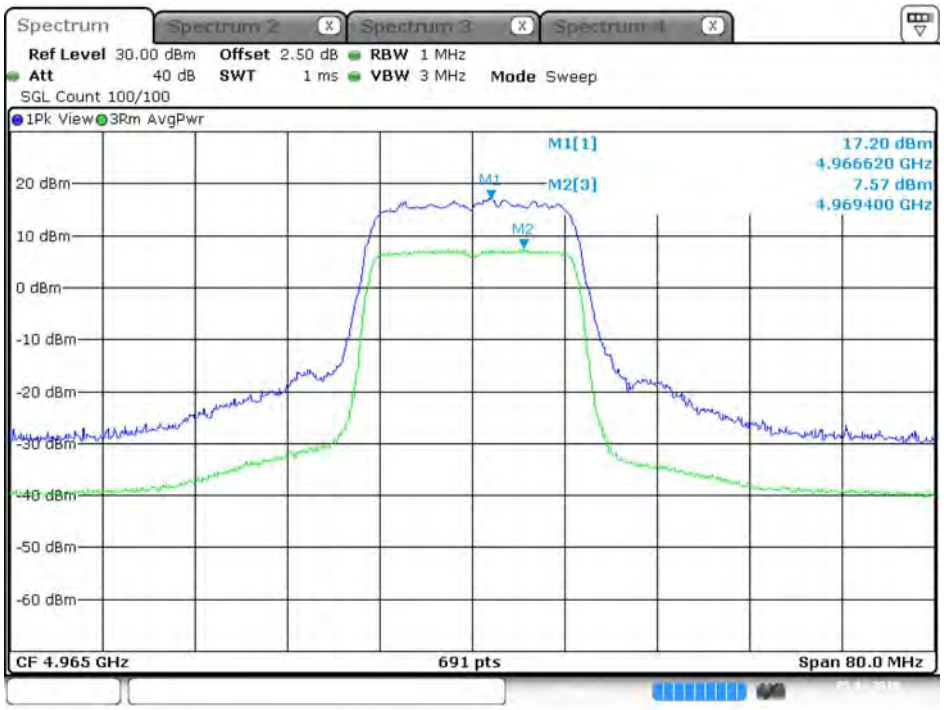


Peak Excursion (20MHz BW Mode) – 4965MHz / Port 1



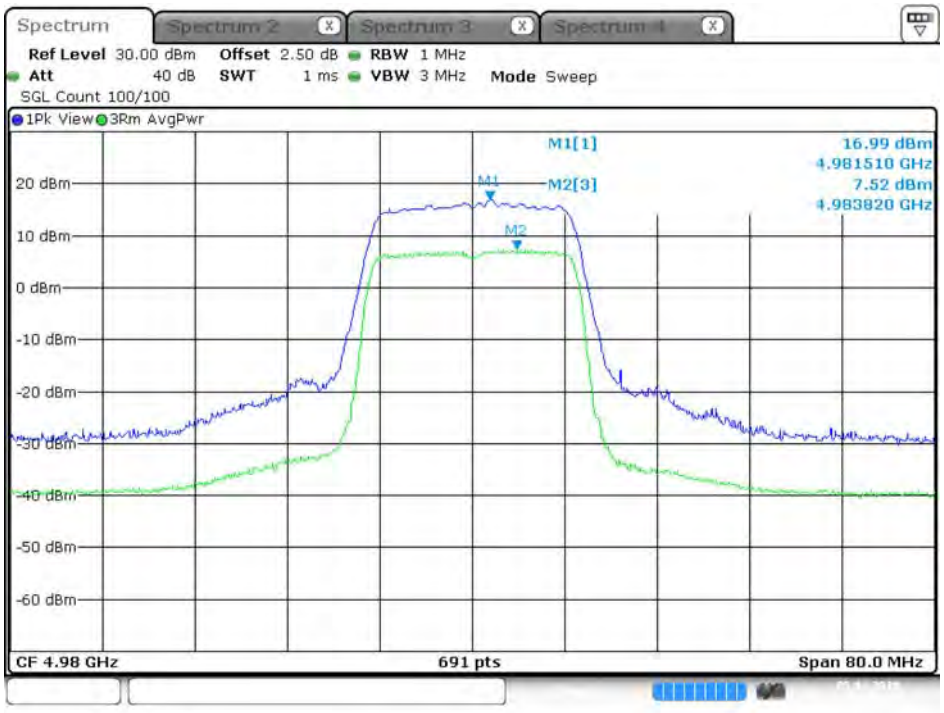
Date: 5.JAN.2018 19:47:28

Peak Excursion (20MHz BW Mode) – 4965MHz / Port 2



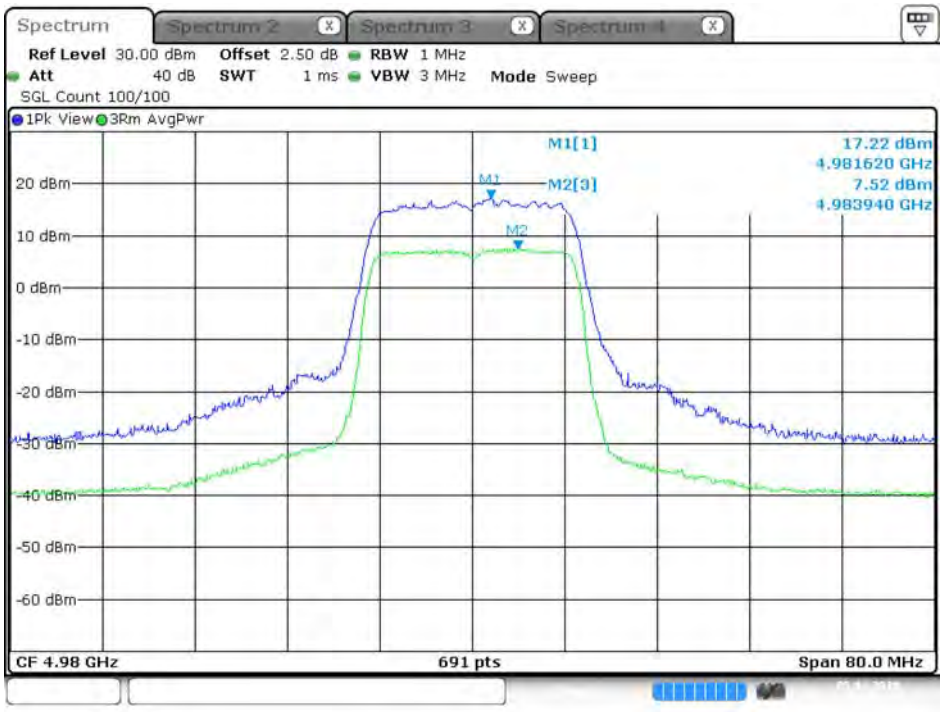
Date: 5.JAN.2018 19:45:45

Peak Excursion (20MHz BW Mode) – 4980MHz / Port 1



Date: 5.JAN.2018 19:33:37

Peak Excursion (20MHz BW Mode) – 4980MHz / Port 2



Date: 5.JAN.2018 19:35:26

4.3. Occupied Bandwidth and Emission Mask Measurement

4.3.1. Limit

Emission Mask M: For high power transmitters (greater than 20 dBm) operating in the 4940-4990 MHz frequency band, the power spectral density of the emissions must be attenuated below the output power of the transmitter as follows:

(1) On any frequency removed from the assigned frequency between 0–45% of the authorized bandwidth (BW): 0 dB

(2) On any frequency removed from the assigned frequency between 45–50% of the authorized bandwidth: 568 log (% of (BW)/45) dB.

(3) On any frequency removed from the assigned frequency between 50–55% of the authorized bandwidth: 26 + 145 log (% of (BW)/50) dB.

(4) On any frequency removed from the assigned frequency between 55–100% of the authorized bandwidth: 32 + 31 log (% of (BW)/55) dB attenuation.

(5) On any frequency removed from the assigned frequency between 100–150% of the authorized bandwidth: 40 + 57 log (% of (BW)/100) dB attenuation.

(6) On any frequency removed from the assigned frequency above 150% of the authorized bandwidth: 50 or 55+ 10 log (P) dB, whichever is the lesser attenuation. (P in watts)

The zero dB reference is measured relative to the highest average power of the fundamental emission measured across the designated channel bandwidth using a resolution bandwidth of at least 1% of the occupied bandwidth of the fundamental emission and a video bandwidth of 30 kHz. The power spectral density is the power measured within the resolution bandwidth of the measurement device divided by the resolution bandwidth of the measurement device. Emission levels are also based on the use of measurement instrumentation employing a resolution bandwidth of at least one percent of the occupied bandwidth.

4.3.2. Measuring Instruments and Setting

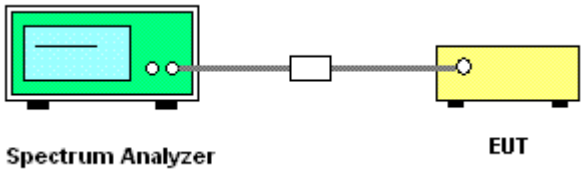
Please refer to section 5 in this report. The following table is the setting of the spectrum.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth of the signal
RBW	at least 1% of the occupied bandwidth
VBW	BW=3 x RBW, Mask=30kHz
Detector	Peak
Trace	Max Hold

4.3.3. Test Procedures

1. The EUT transmitter was connected to a spectrum analyzer through an appropriate 50 ohm attenuator. Used measurement function of spectrum to measure the 99% occupied bandwidth.
2. The reference level for the mask was set using the highest average power of the fundamental emission measured across the channel bandwidth using a RBW of at least 1% of the occupied bandwidth of the fundamental emission and a VBW of 30 kHz.

4.3.4. Test Setup Layout



4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. Test Result of 99% Occupied Bandwidth (OBW)

Temperature	23℃	Humidity	60%
Test Engineer	Gino Huang, Serway Li, Lucke Hsieh	Test Date	Jan. 02, 2018 ~ Jan. 11, 2018

5MHz Channel Bandwidth Mode

Frequency	Antenna	26dB Bandwidth (MHz)	99% Occupied BW (MHz)	Result
4942.5MHz	Port 1	5.51	4.60	Complies
	Port 2	5.45	4.60	Complies
4962.5MHz	Port 1	5.48	4.60	Complies
	Port 2	5.48	4.60	Complies
4987.5MHz	Port 1	5.48	4.60	Complies
	Port 2	5.45	4.60	Complies

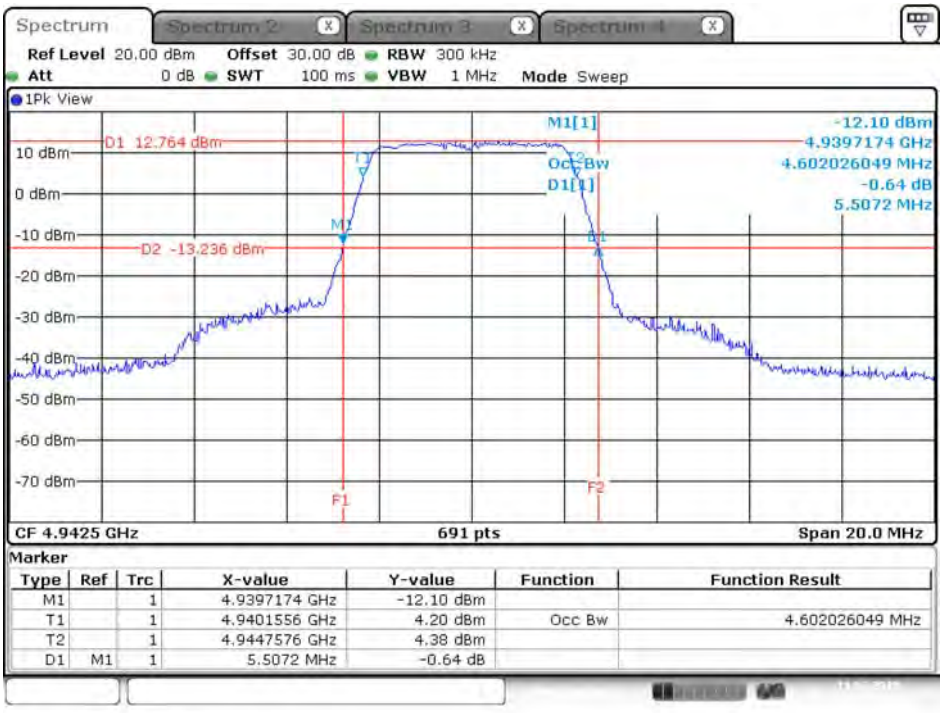
10MHz Channel Bandwidth Mode

Frequency	Antenna	26dB Bandwidth (MHz)	99% Occupied BW (MHz)	Result
4945MHz	Port 1	10.49	8.97	Complies
	Port 2	10.49	8.97	Complies
4965 MHz	Port 1	10.55	9.03	Complies
	Port 2	10.49	9.03	Complies
4985 MHz	Port 1	10.61	9.03	Complies
	Port 2	10.44	8.97	Complies

20MHz Channel Bandwidth Mode

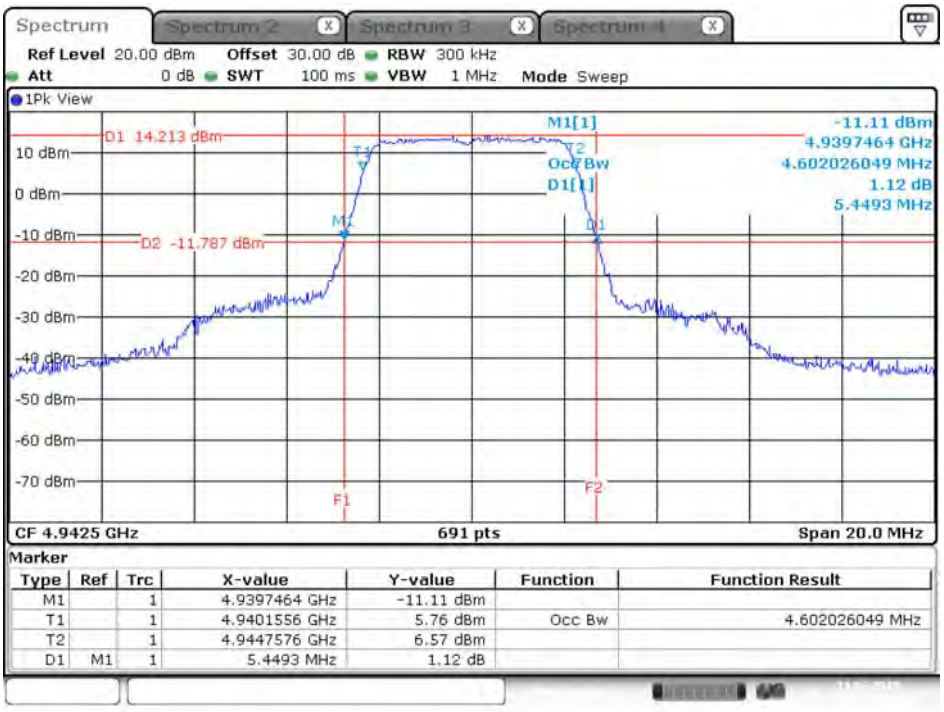
Frequency	Antenna	26dB Bandwidth (MHz)	99% Occupied BW (MHz)	Result
4950MHz	Port 1	20.44	17.63	Complies
	Port 2	20.52	17.71	Complies
4965MHz	Port 1	20.44	17.63	Complies
	Port 2	20.44	17.71	Complies
4980MHz	Port 1	20.26	17.63	Complies
	Port 2	20.44	17.63	Complies

99% Occupied Bandwidth (5MHz BW Mode) – 4942.5MHz / Port 1



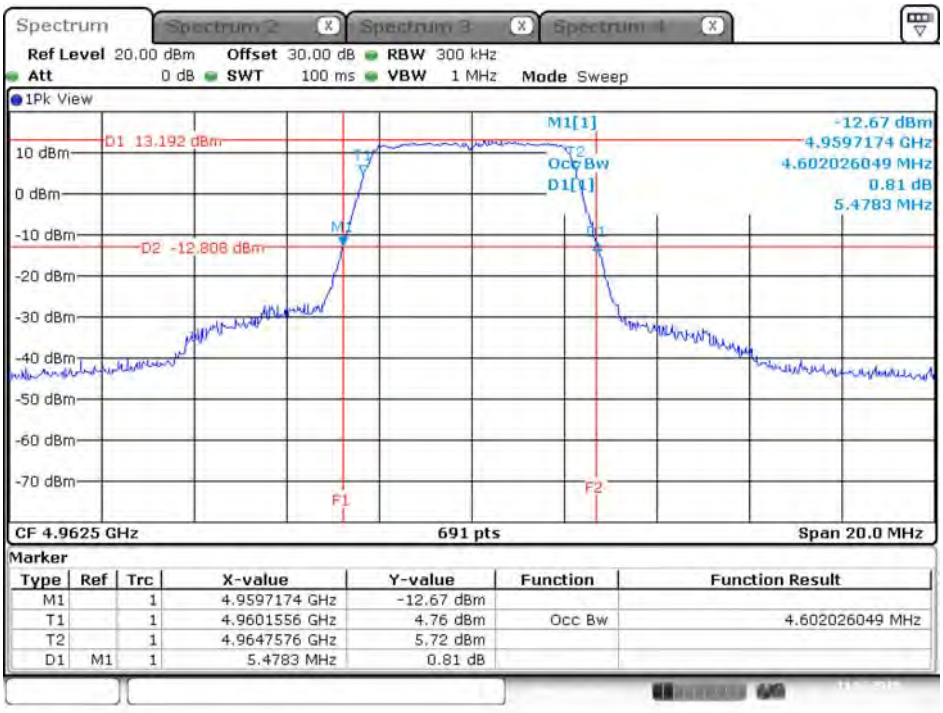
Date: 11.JAN.2018 16:34:12

99% Occupied Bandwidth (5MHz BW Mode) – 4942.5MHz / Port 2



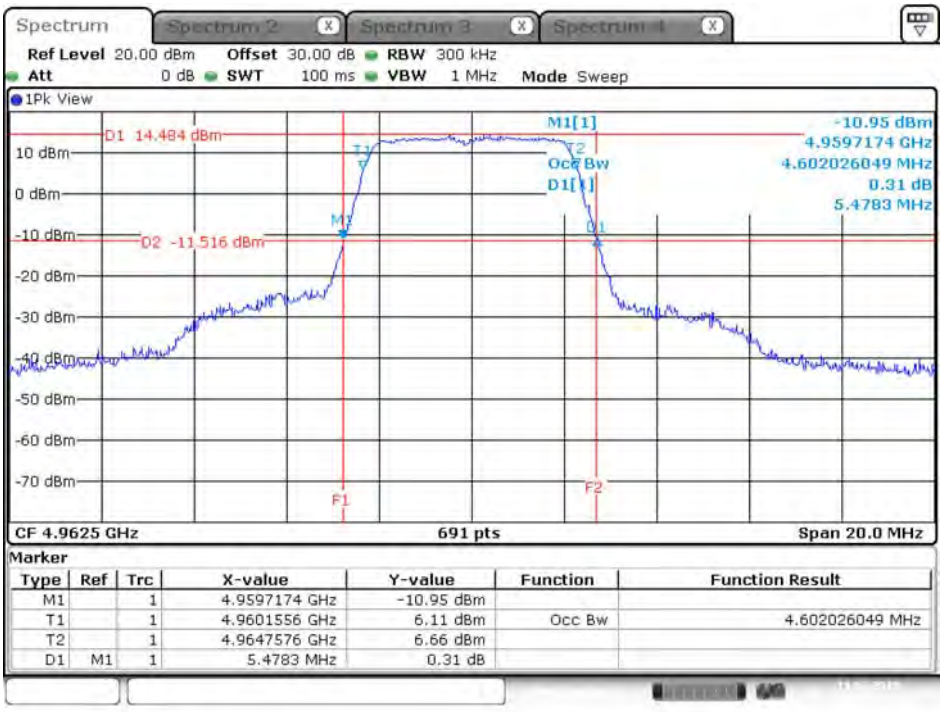
Date: 11.JAN.2018 16:38:06

99% Occupied Bandwidth (5MHz BW Mode) – 4962.5MHz / Port 1



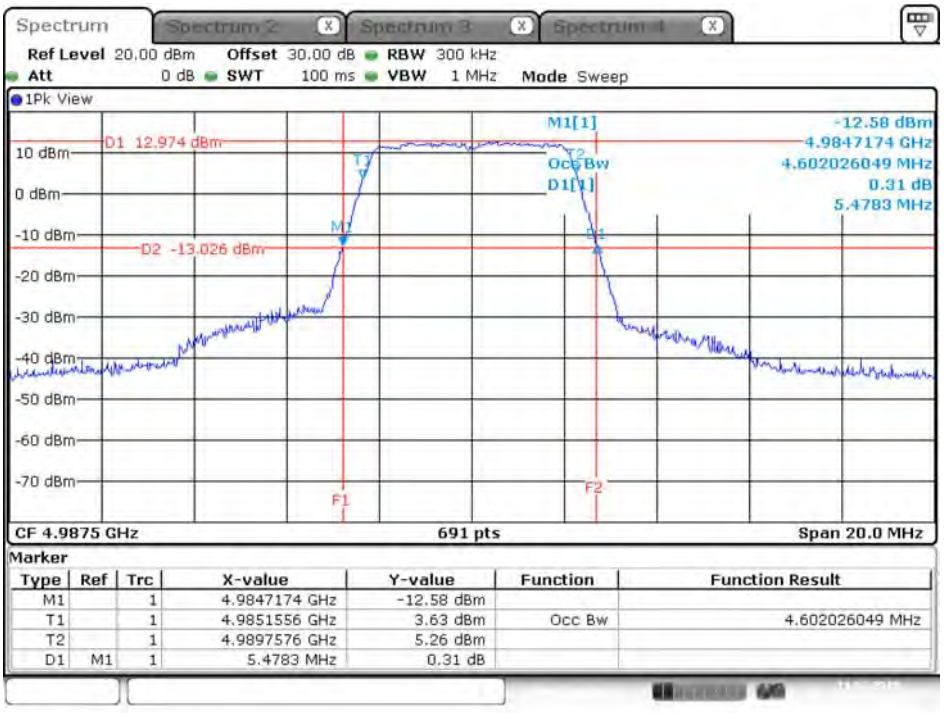
Date: 11.JAN.2018 16:35:15

99% Occupied Bandwidth (5MHz BW Mode) – 4962.5MHz / Port 2



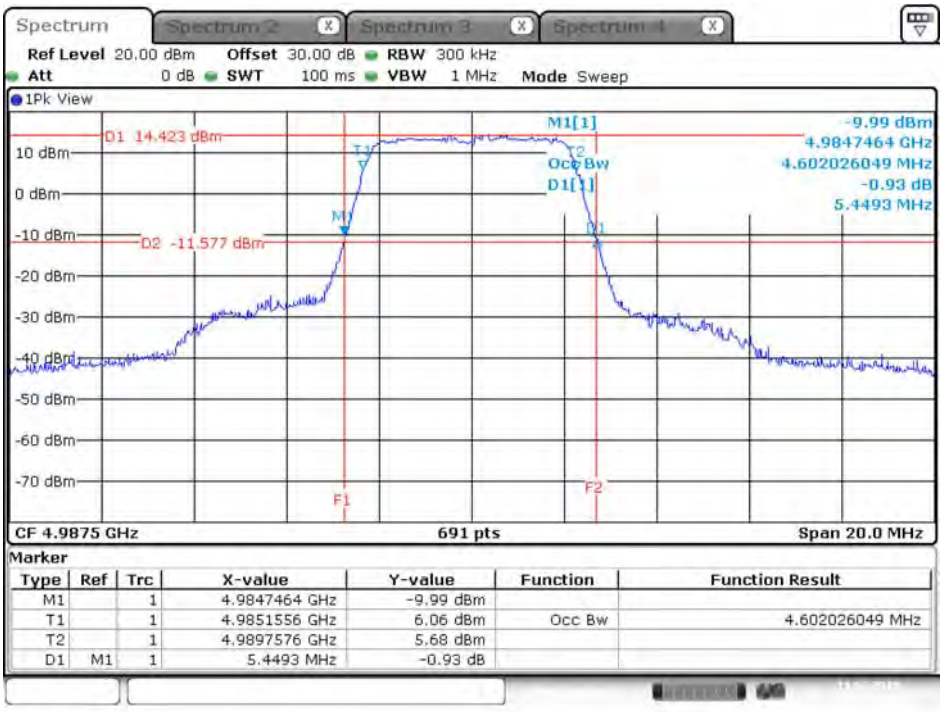
Date: 11.JAN.2018 16:37:41

99% Occupied Bandwidth (5MHz BW Mode) – 4987.5MHz / Port 1



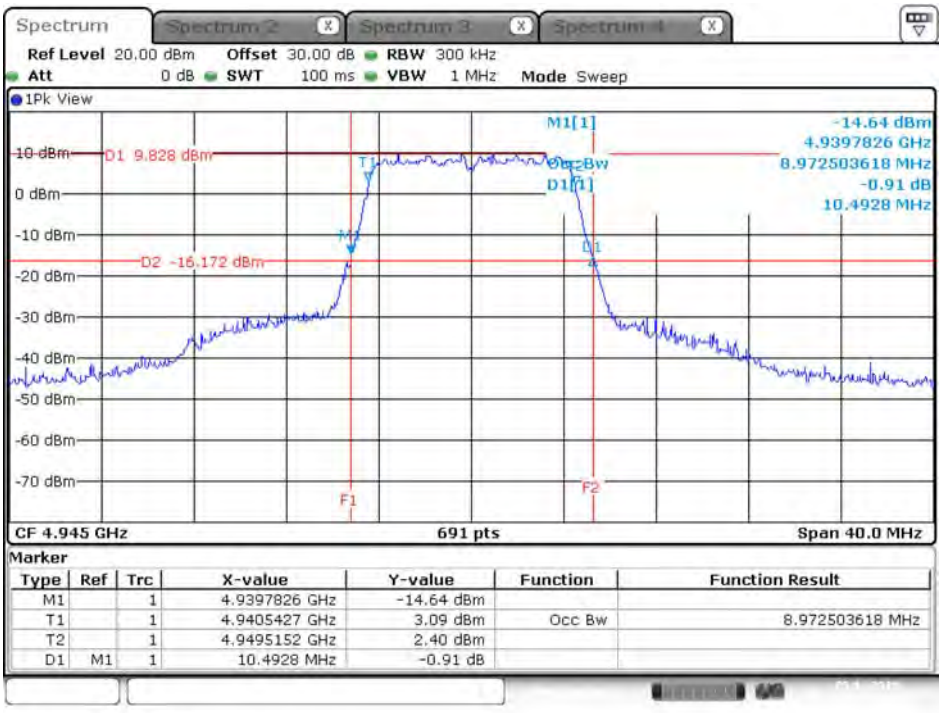
Date: 11.JAN.2018 16:35:58

99% Occupied Bandwidth (5MHz BW Mode) – 4987.5MHz / Port 2



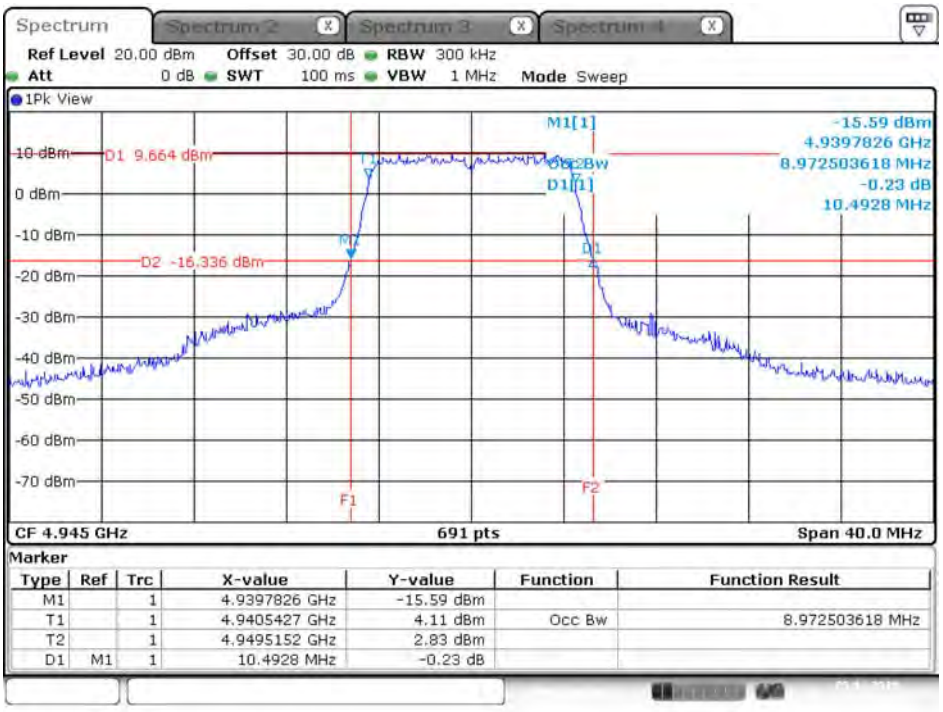
Date: 11.JAN.2018 16:37:14

99% Occupied Bandwidth (10MHz BW Mode) – 4945MHz / Port 1



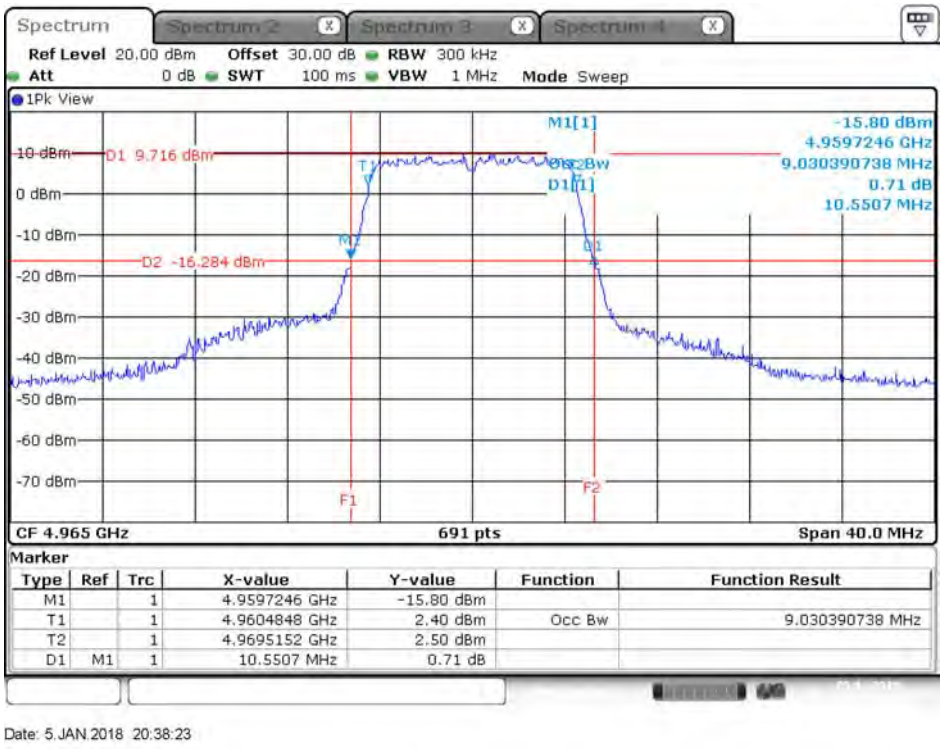
Date: 5.JAN.2018 20:39:00

99% Occupied Bandwidth (10MHz BW Mode) – 4945MHz / Port 2



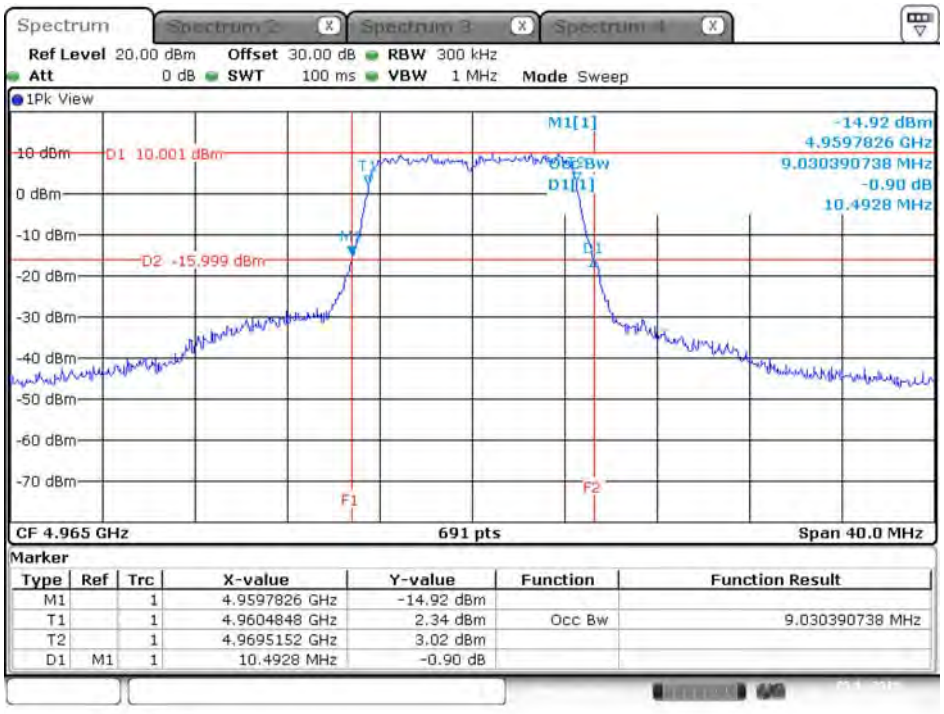
Date: 5.JAN.2018 20:35:39

99% Occupied Bandwidth (10MHz BW Mode) – 4965MHz / Port 1



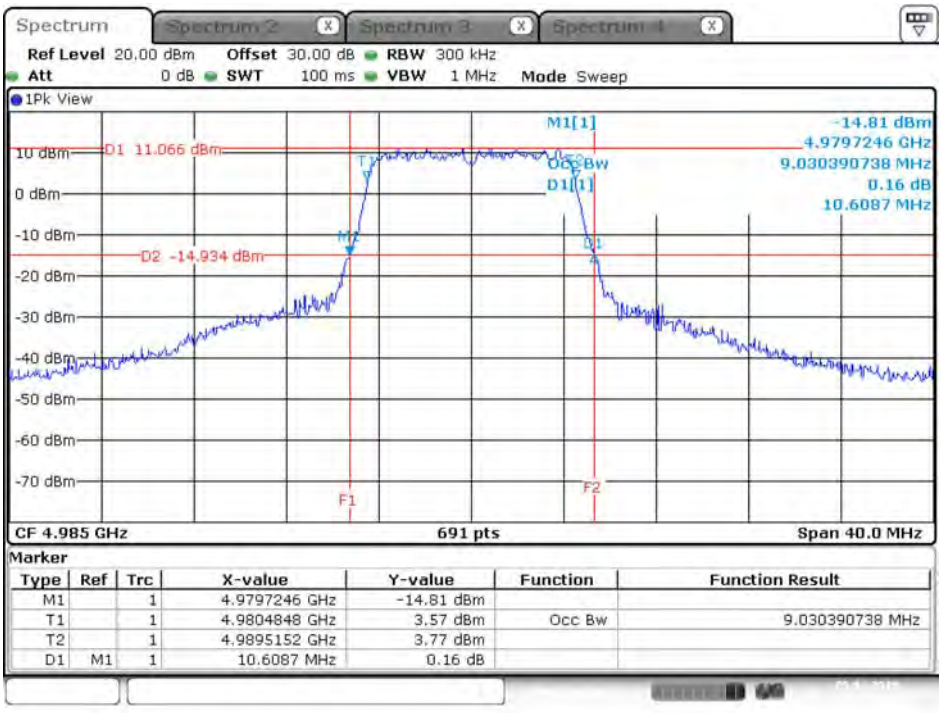
Date: 5.JAN.2018 20:38:23

99% Occupied Bandwidth (10MHz BW Mode) – 4965MHz / Port 2



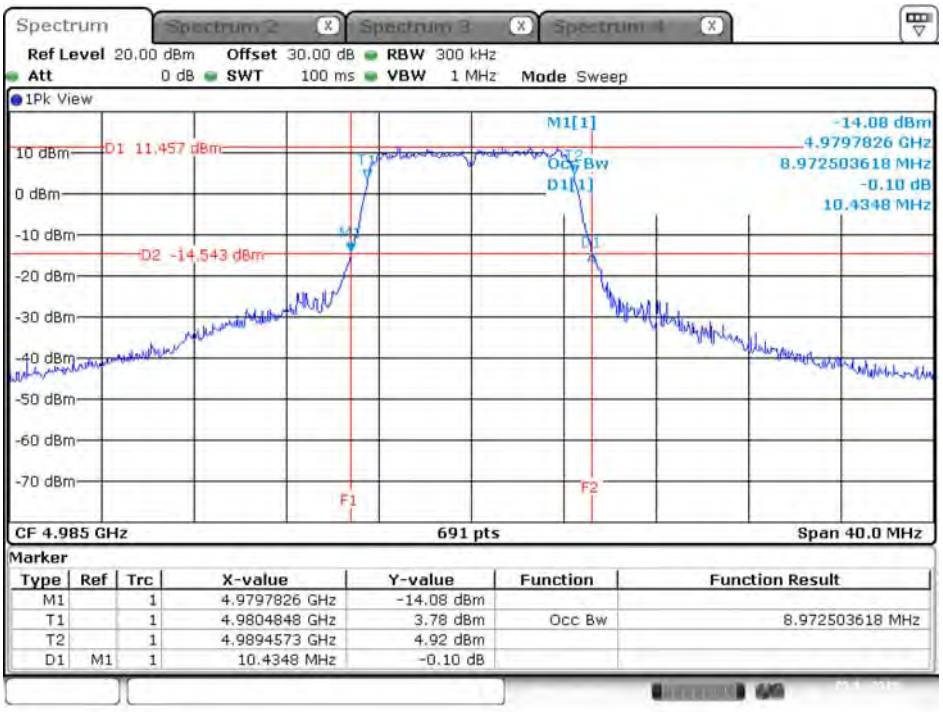
Date: 5.JAN.2018 20:36:07

99% Occupied Bandwidth (10MHz BW Mode) – 4985MHz / Port 1



Date: 5.JAN.2018 20:37:58

99% Occupied Bandwidth (10MHz BW Mode) – 4985MHz / Port 2



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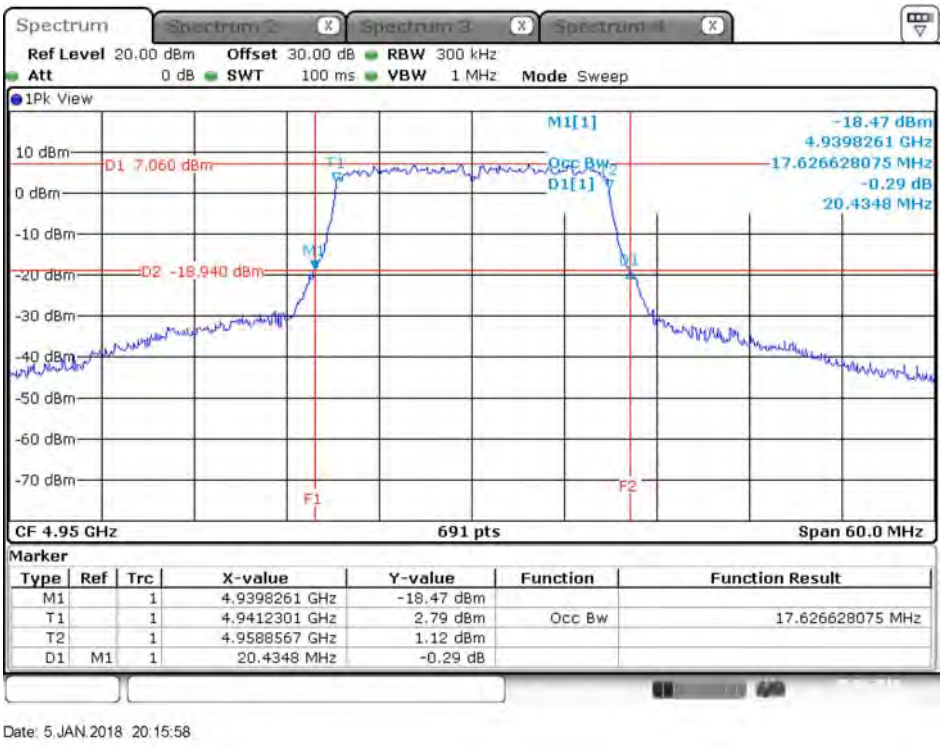
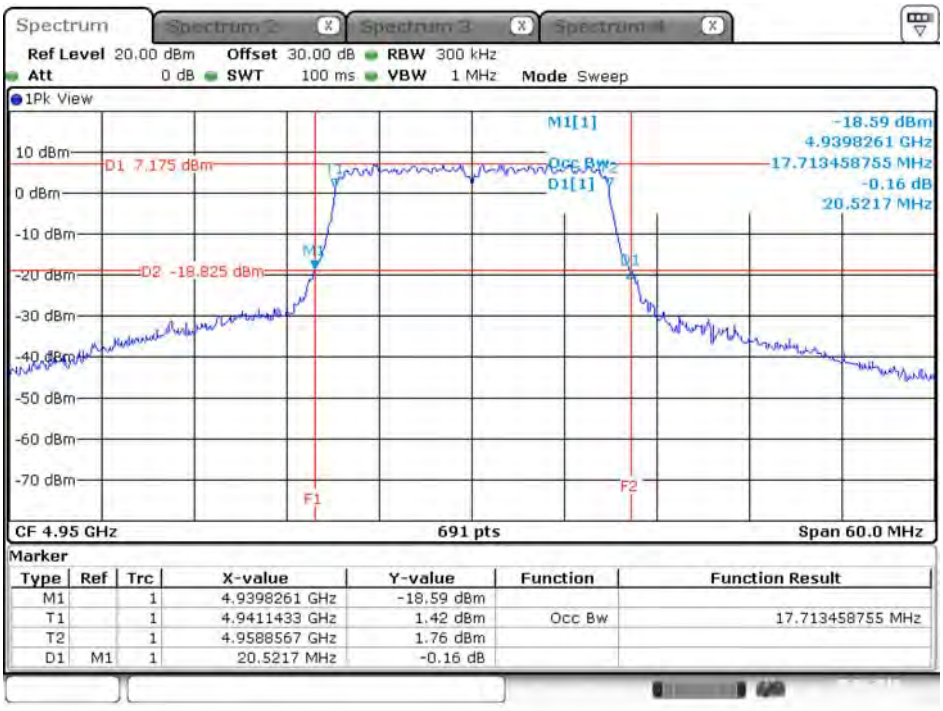
99% Occupied Bandwidth (20MHz BW Mode) – 4950MHz / Port 1



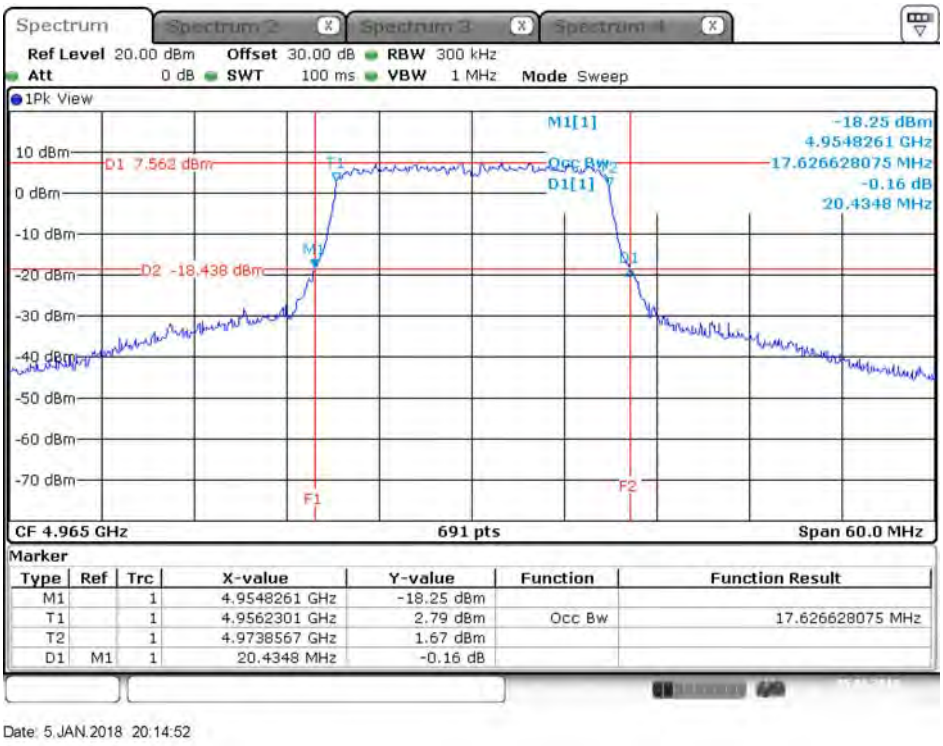
Date: 5.JAN.2018 20:15:58

99% Occupied Bandwidth (20MHz BW Mode) – 4950MHz / Port 2



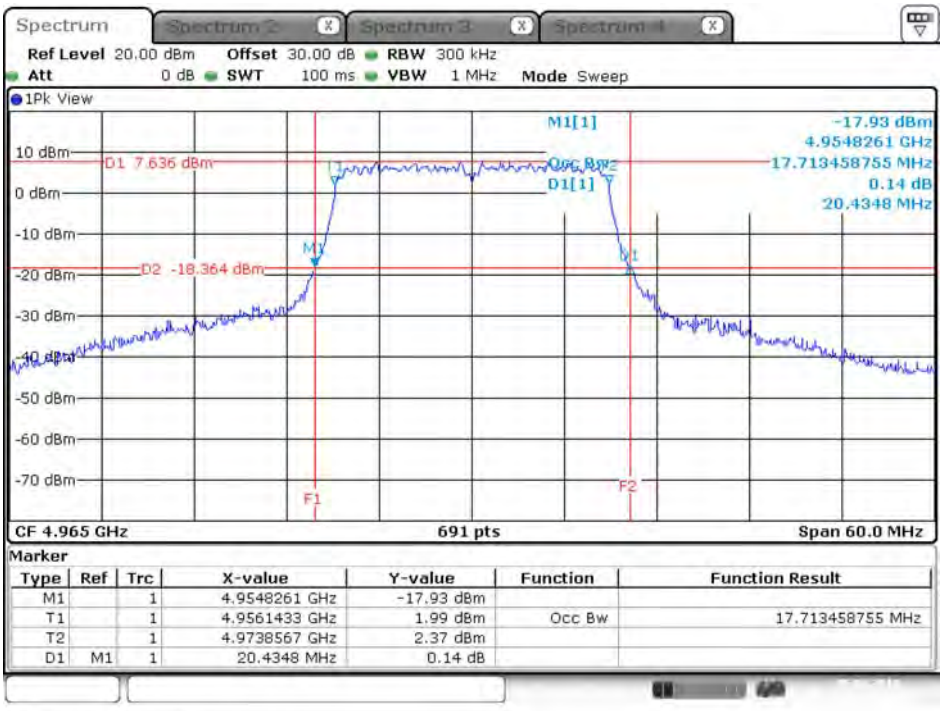
Date: 5.JAN.2018 20:12:08

99% Occupied Bandwidth (20MHz BW Mode) – 4965MHz / Port 1



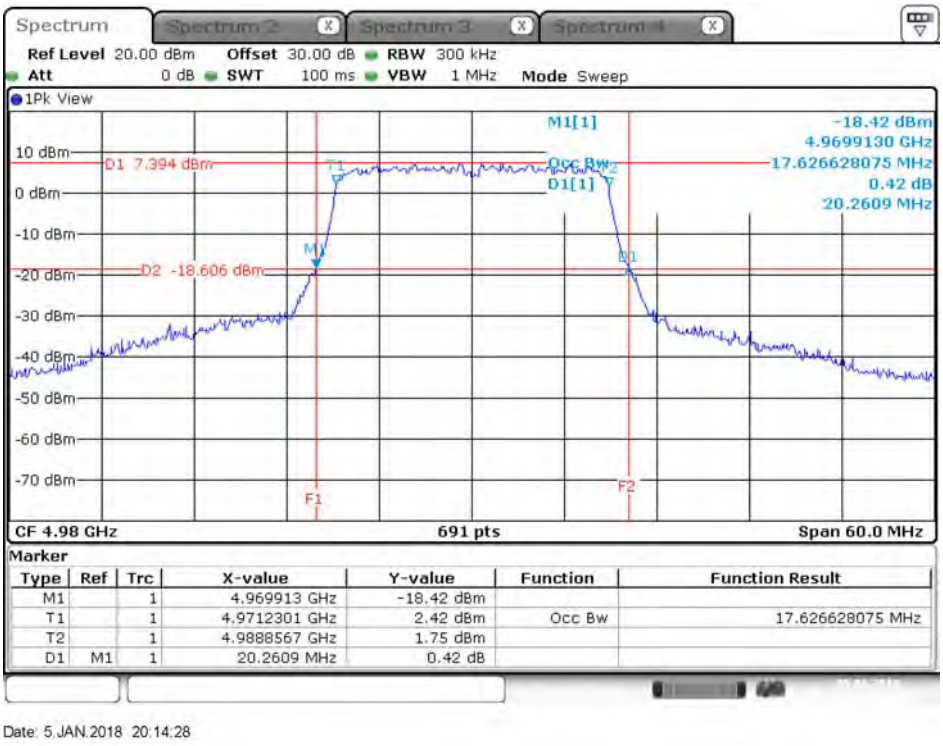
Date: 5.JAN.2018 20:14:52

99% Occupied Bandwidth (20MHz BW Mode) – 4965MHz / Port 2



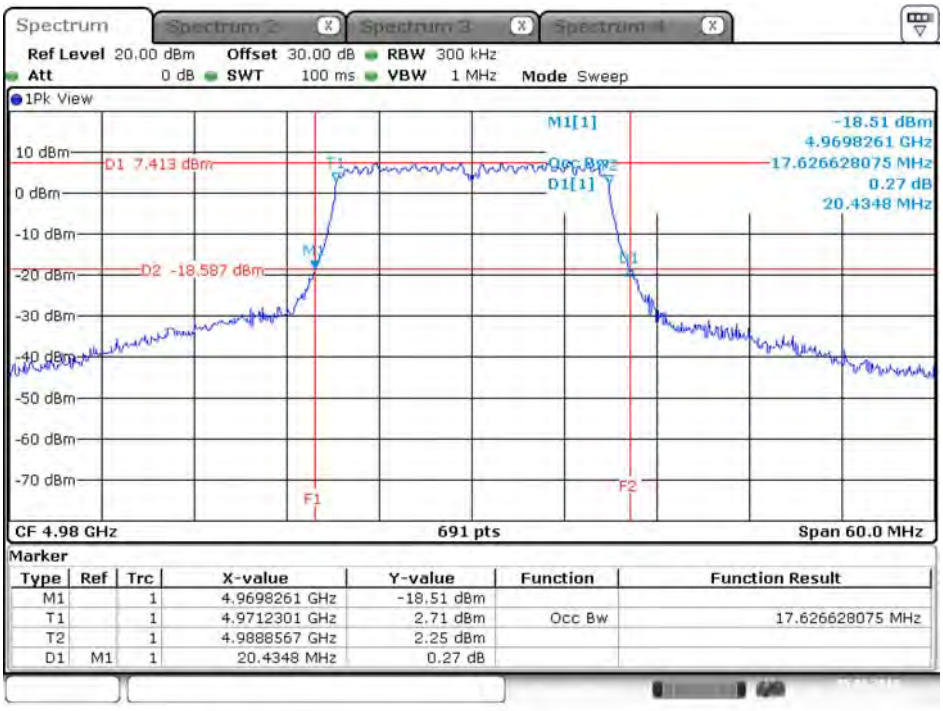
Date: 5.JAN.2018 20:11:36

99% Occupied Bandwidth (20MHz BW Mode) – 4980MHz / Port 1



Date: 5.JAN.2018 20:14:28

99% Occupied Bandwidth (20MHz BW Mode) – 4980MHz / Port 2



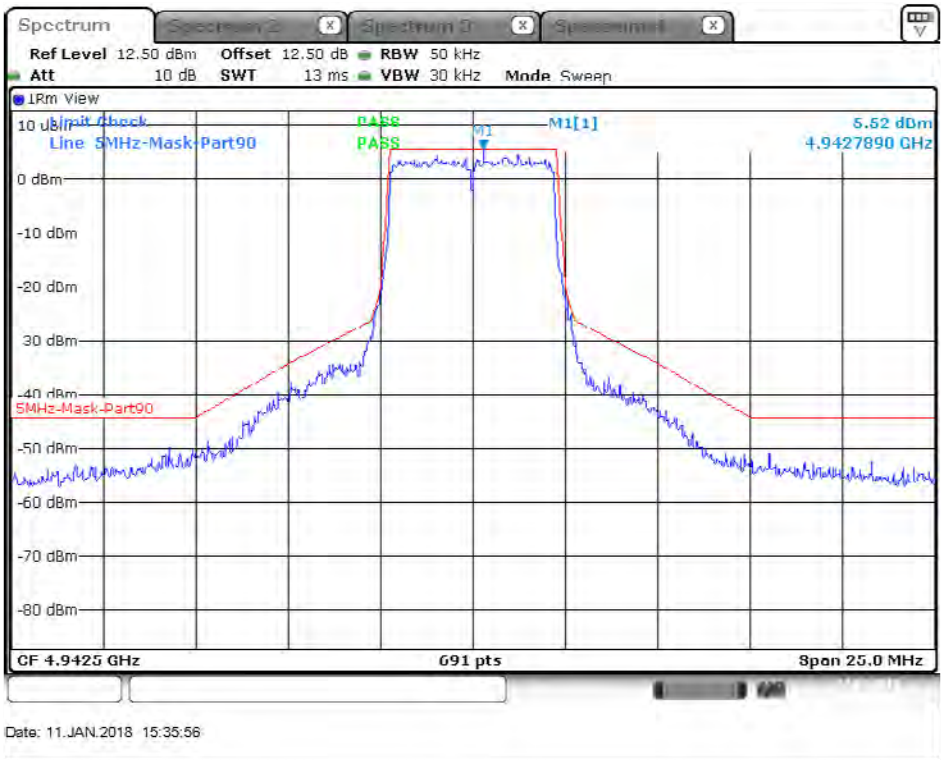
Date: 5.JAN.2018 20:12:42

4.3.7. Emission Mask Measurements

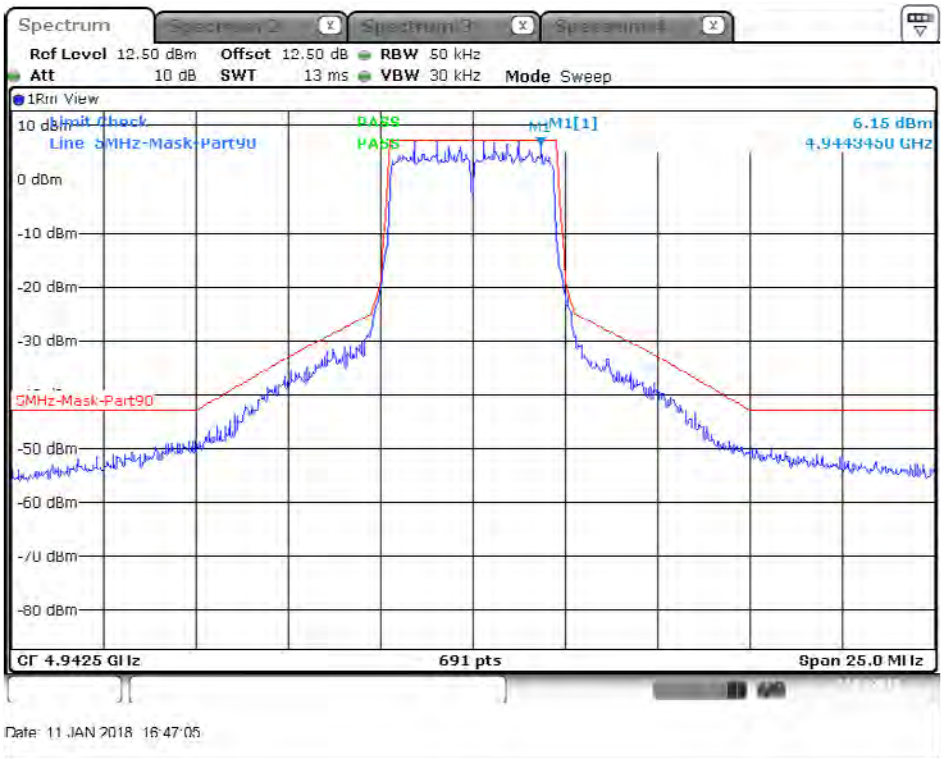
Temperature	23℃	Humidity	60%
Test Engineer	Gino Huang, Serway Li, Lucke Hsieh	Test Date	Jan. 02, 2018 ~ Jan. 11, 2018

Mode	Frequency (MHz)	Port 1 (dB)	Port 2 (dB)	Result
5MHz	4942.5MHz	5.52	6.15	Complies
	4962.5MHz	6.15	7.06	Complies
	4987.5MHz	5.71	7.70	Complies
10MHz	4945MHz	5.15	5.35	Complies
	4965 MHz	4.95	4.76	Complies
	4985MHz	6.27	6.94	Complies
20MHz	4950MHz	4.02	4.29	Complies
	4965MHz	4.42	4.48	Complies
	4980MHz	4.52	4.86	Complies

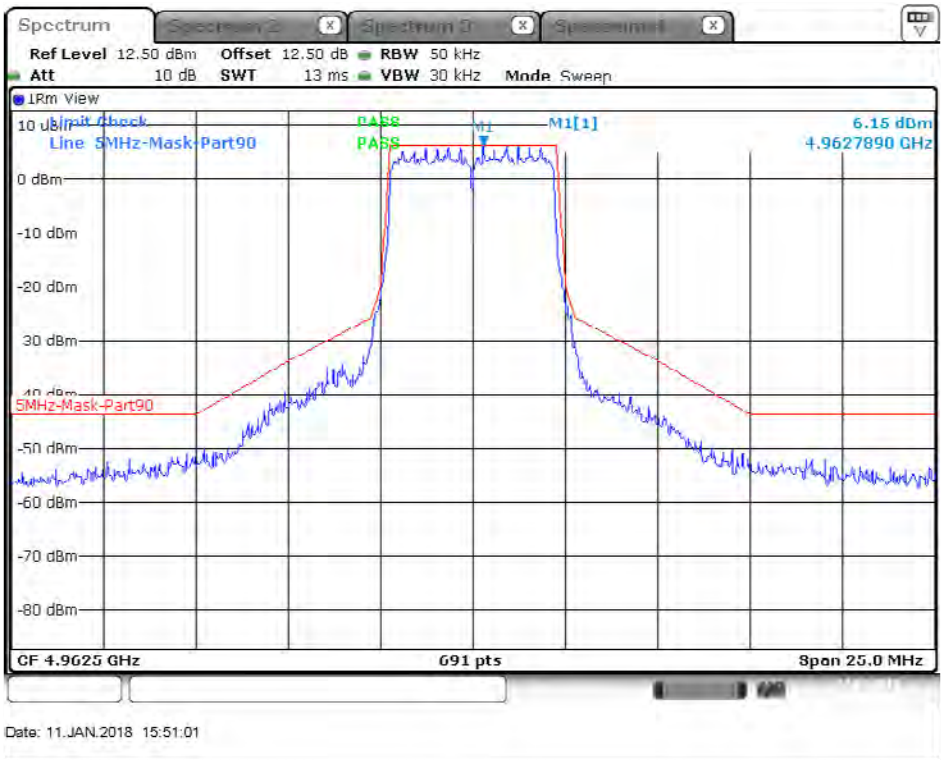
Emission Mask (5MHz BW Mode) – 4942.5MHz / Port 1



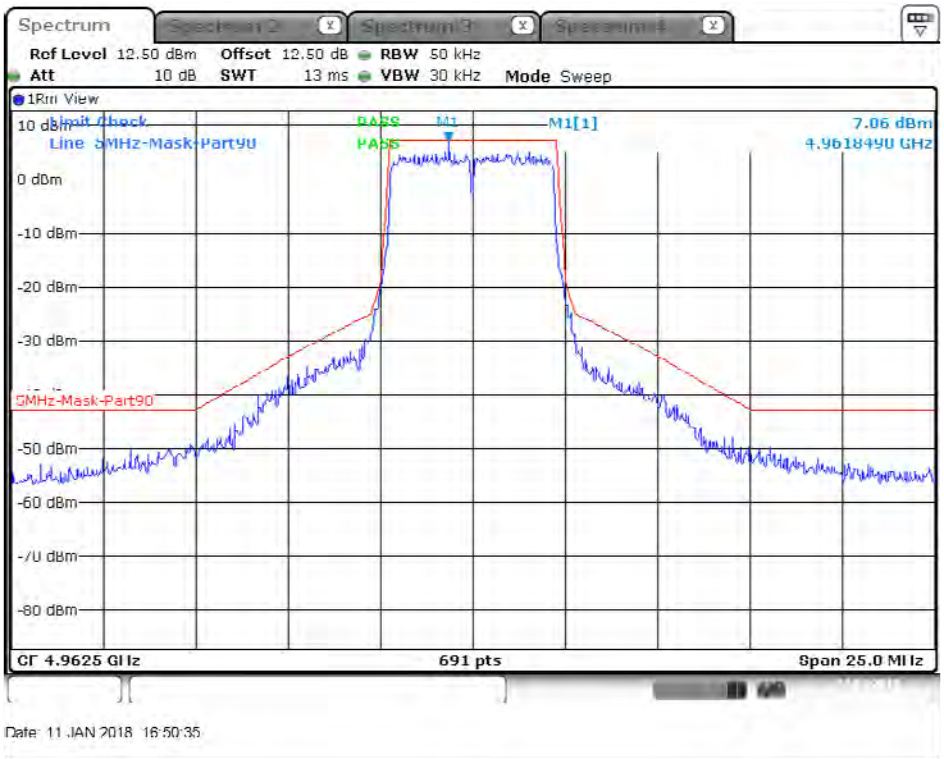
Emission Mask (5MHz BW Mode) – 4942.5MHz / Port 2



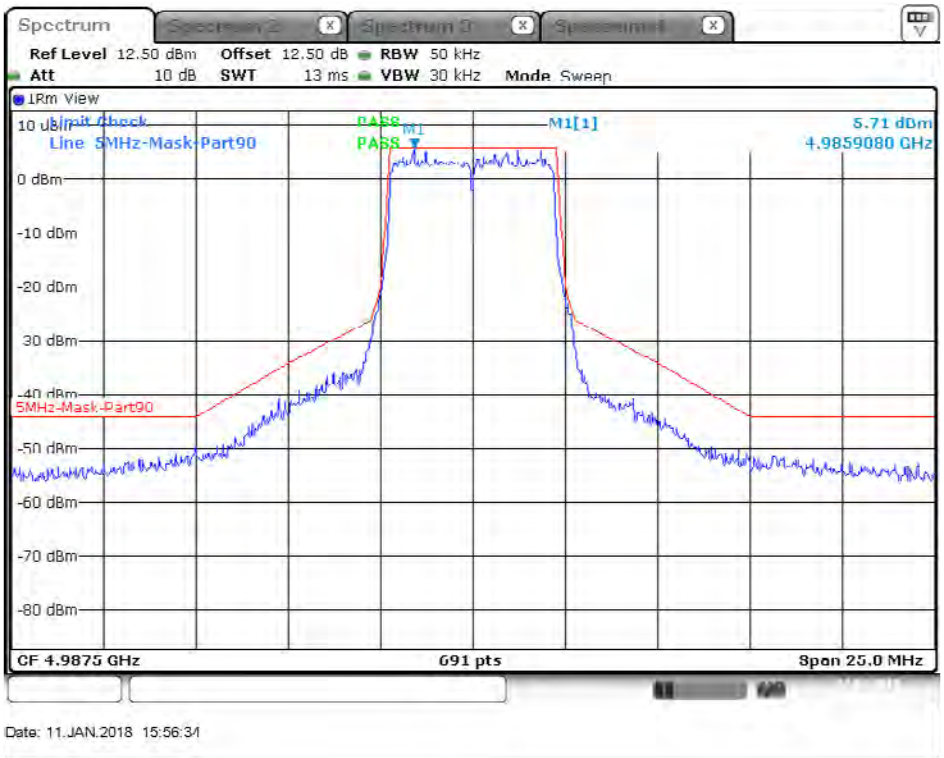
Emission Mask (5MHz BW Mode) – 4962.5MHz / Port 1



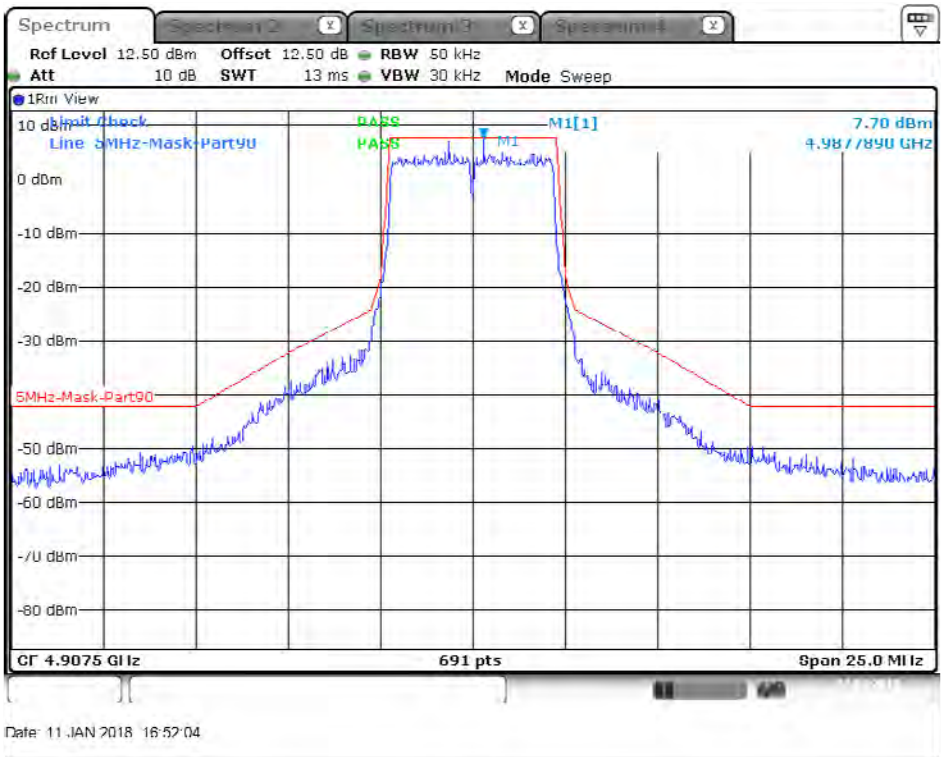
Emission Mask (5MHz BW Mode) – 4962.5MHz / Port 2



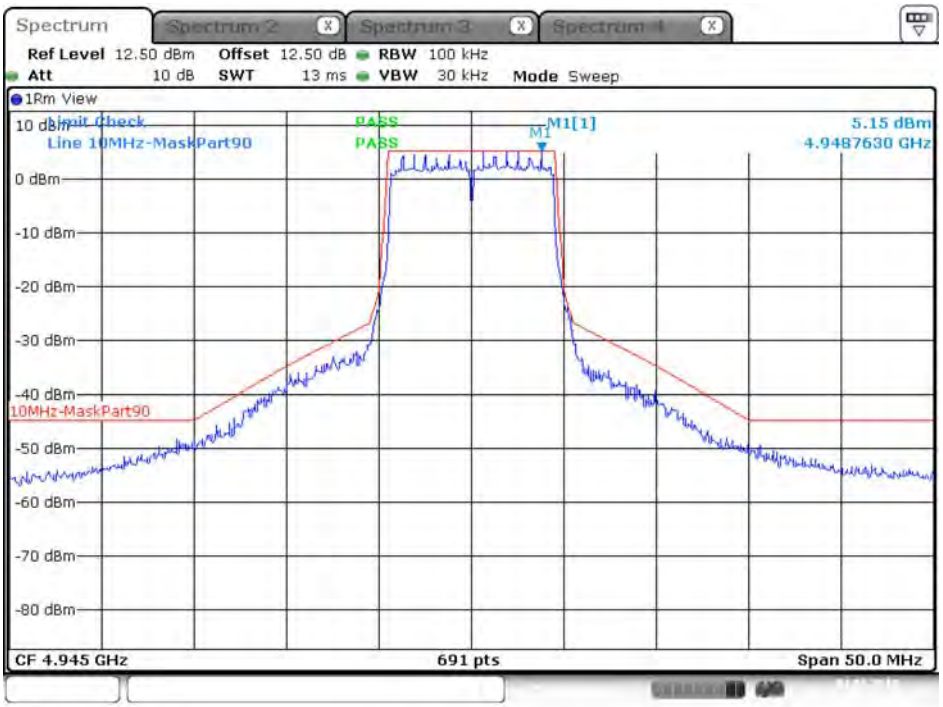
Emission Mask (5MHz BW Mode) – 4987.5MHz / Port 1



Emission Mask (5MHz BW Mode) – 4987.5MHz / Port 2

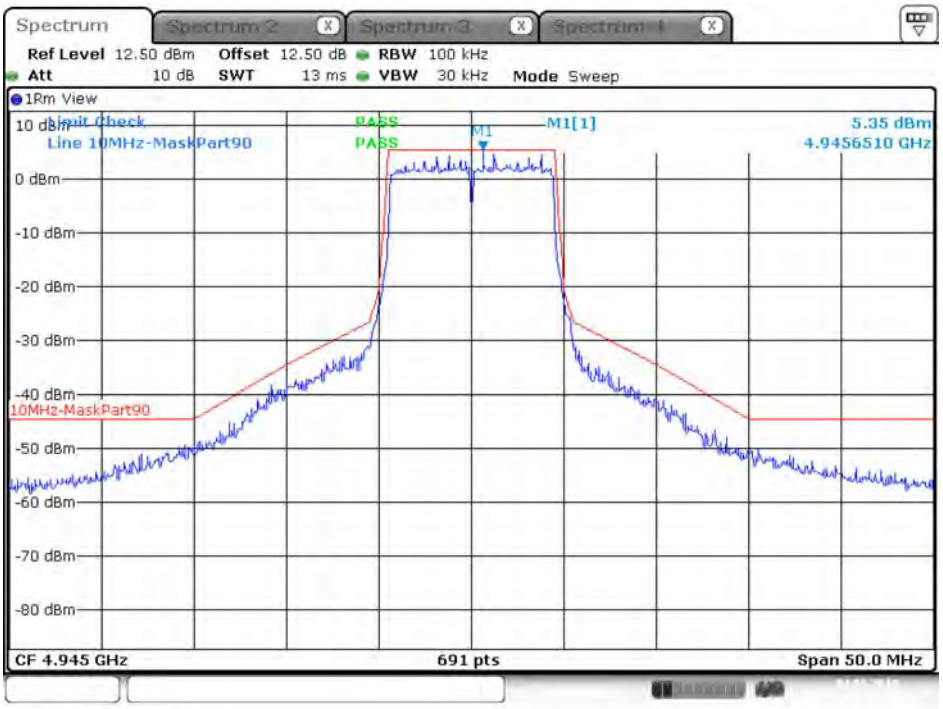


Emission Mask (10MHz BW Mode) – 4945MHz / Port 1



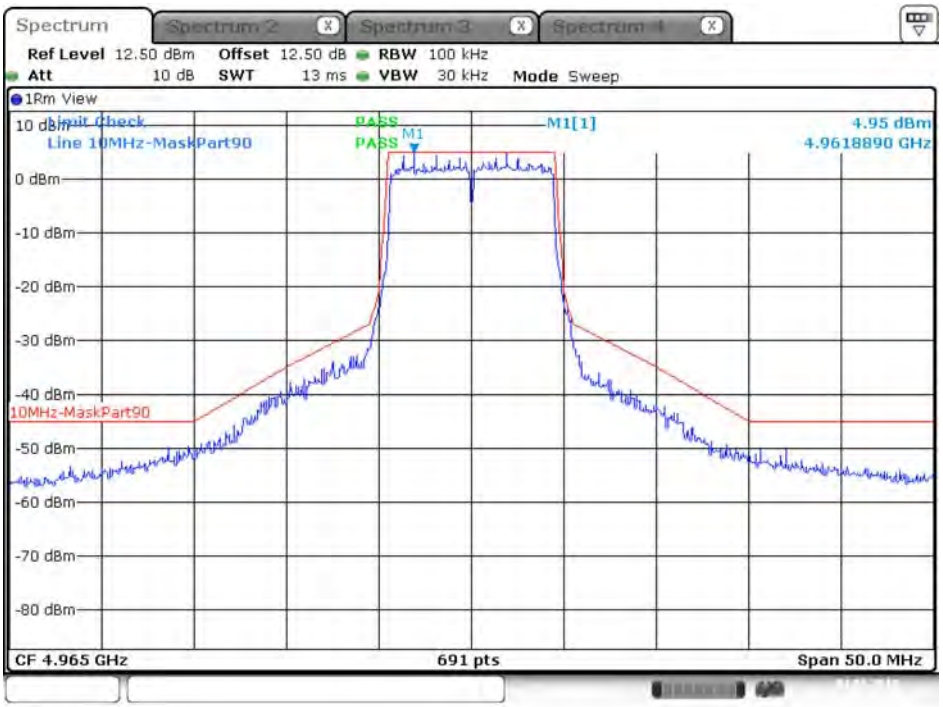
Date: 4.JAN.2018 16:43:42

Emission Mask (10MHz BW Mode) – 4945MHz / Port 2



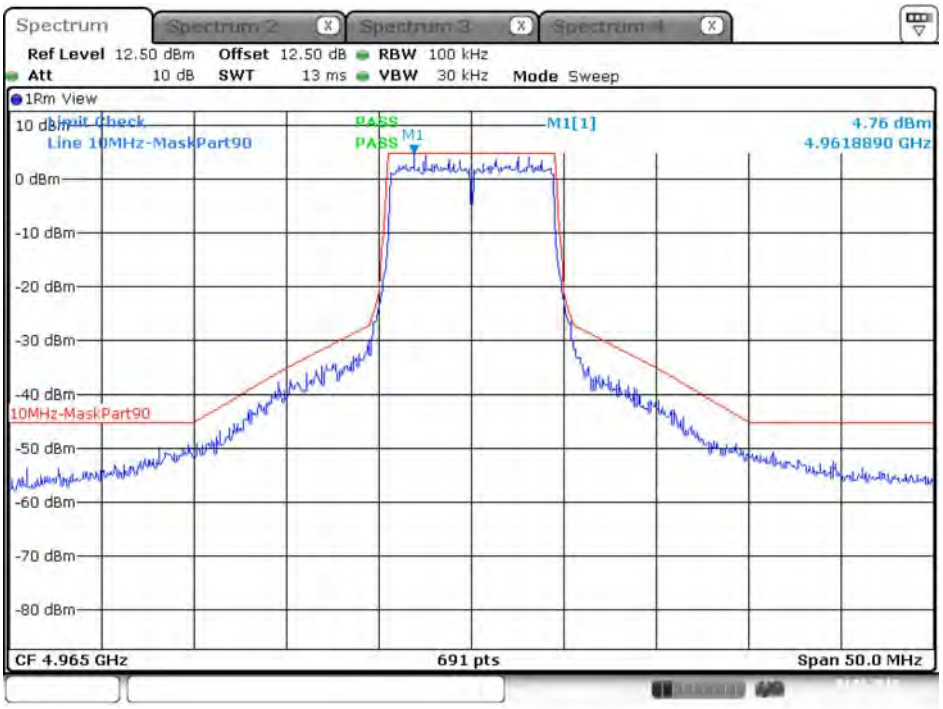
Date: 4.JAN.2018 16:52:21

Emission Mask (10MHz BW Mode) – 4965MHz / Port 1



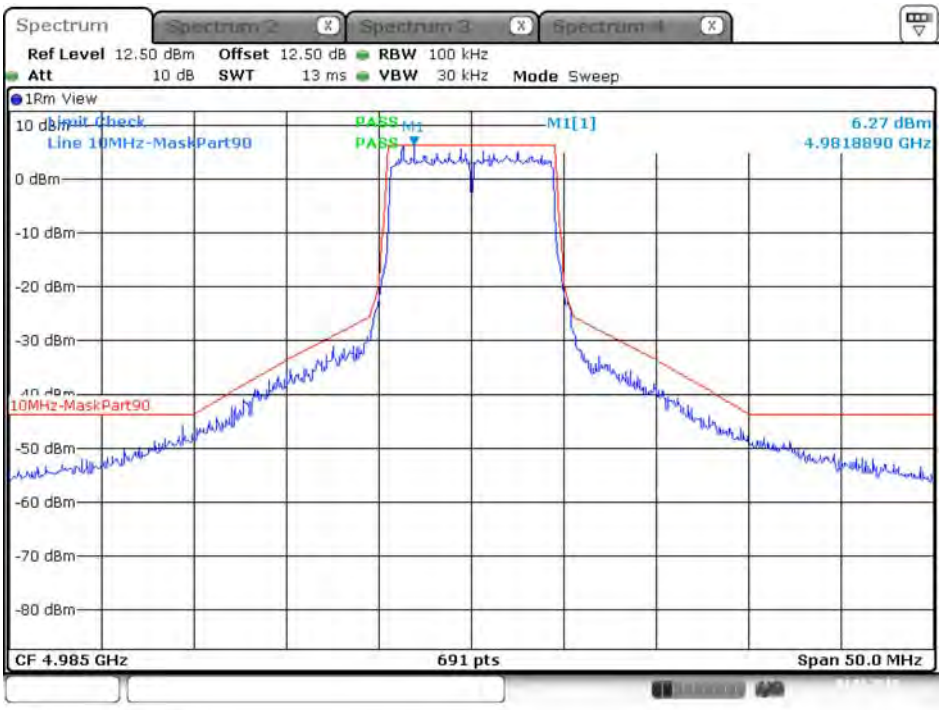
Date: 4.JAN.2018 16:57:58

Emission Mask (10MHz BW Mode) – 4965MHz / Port 2



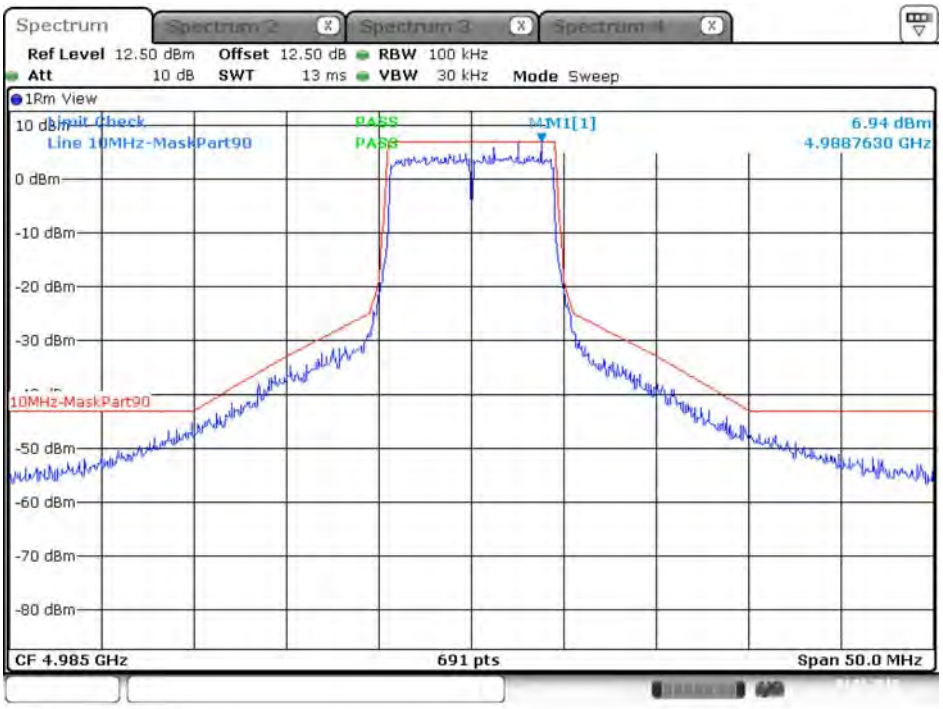
Date: 4.JAN.2018 16:55:36

Emission Mask (10MHz BW Mode) – 4985MHz / Port 1



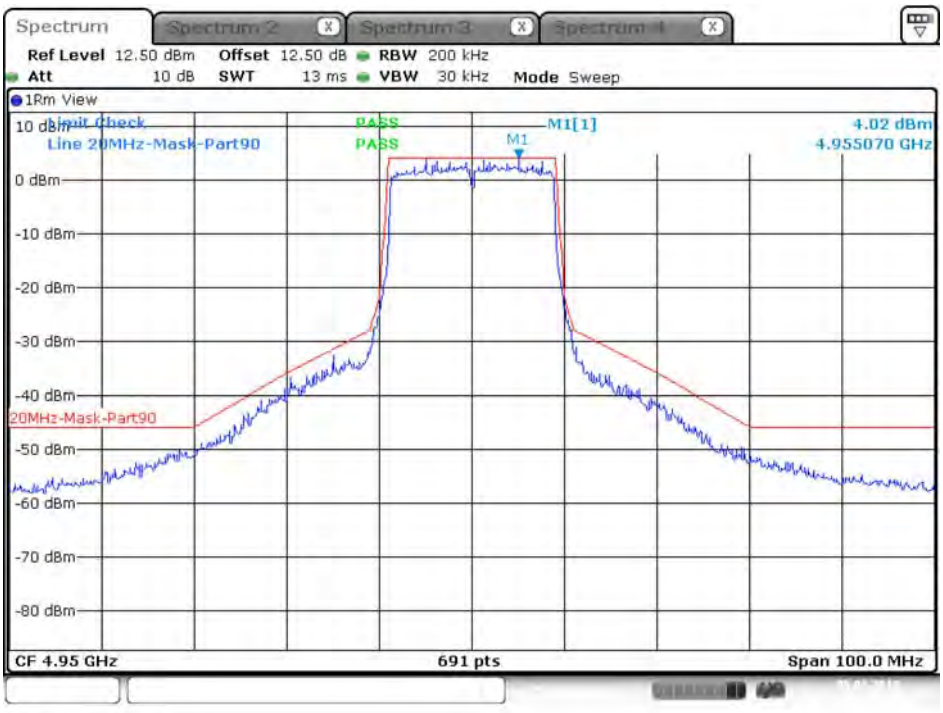
Date: 4.JAN.2018 17:04:19

Emission Mask (10MHz BW Mode) – 4985MHz / Port 2



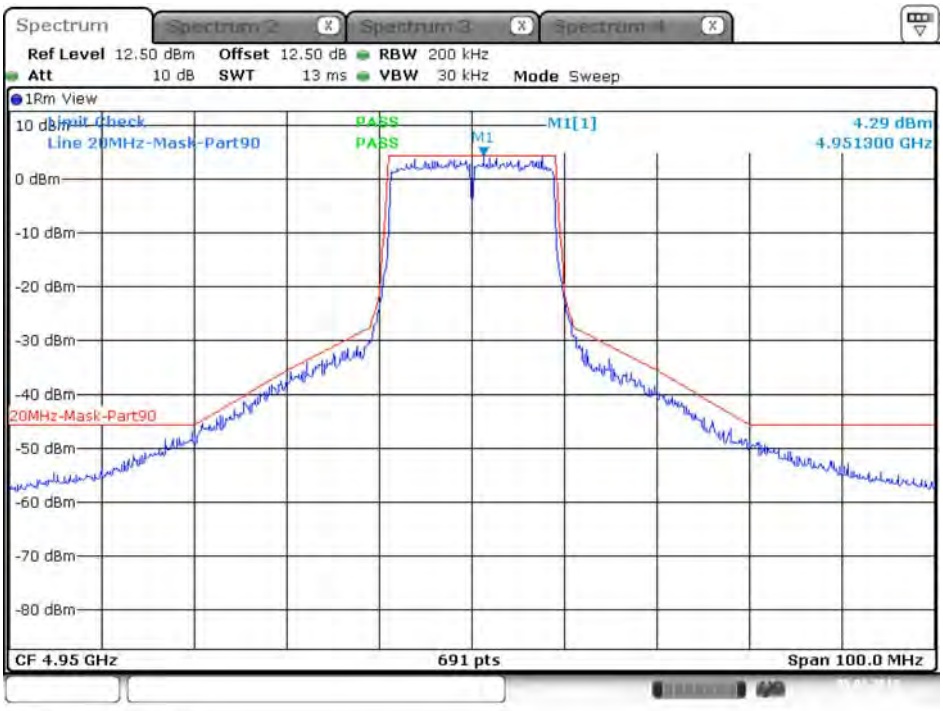
Date: 4.JAN.2018 17:06:21

Emission Mask (20MHz BW Mode) – 4950MHz / Port 1



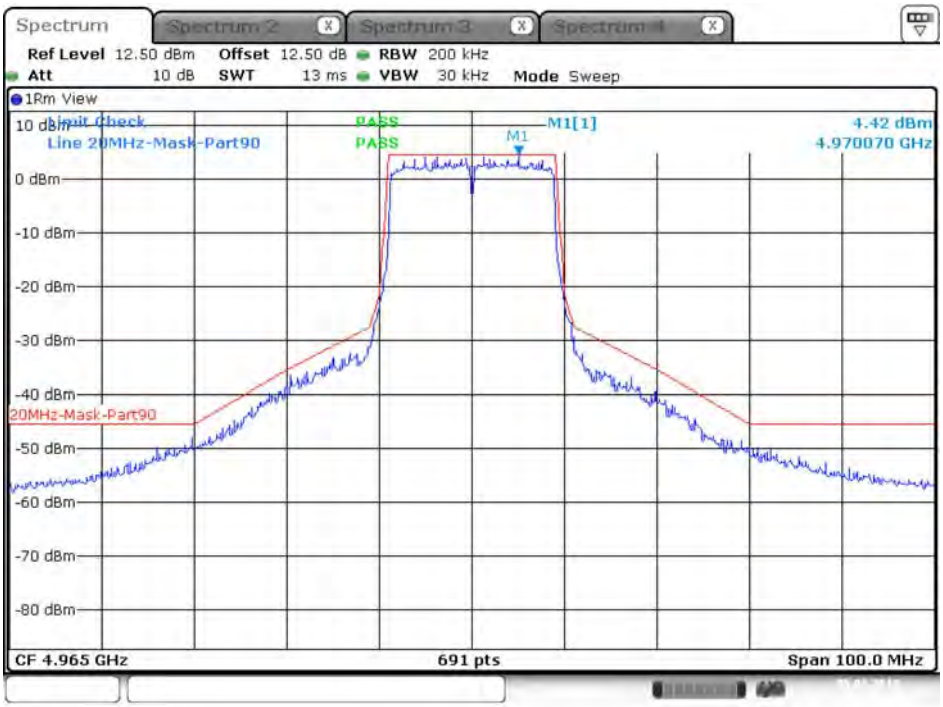
Date: 5.JAN.2018 18:20:59

Emission Mask (20MHz BW Mode) – 4950MHz / Port 2



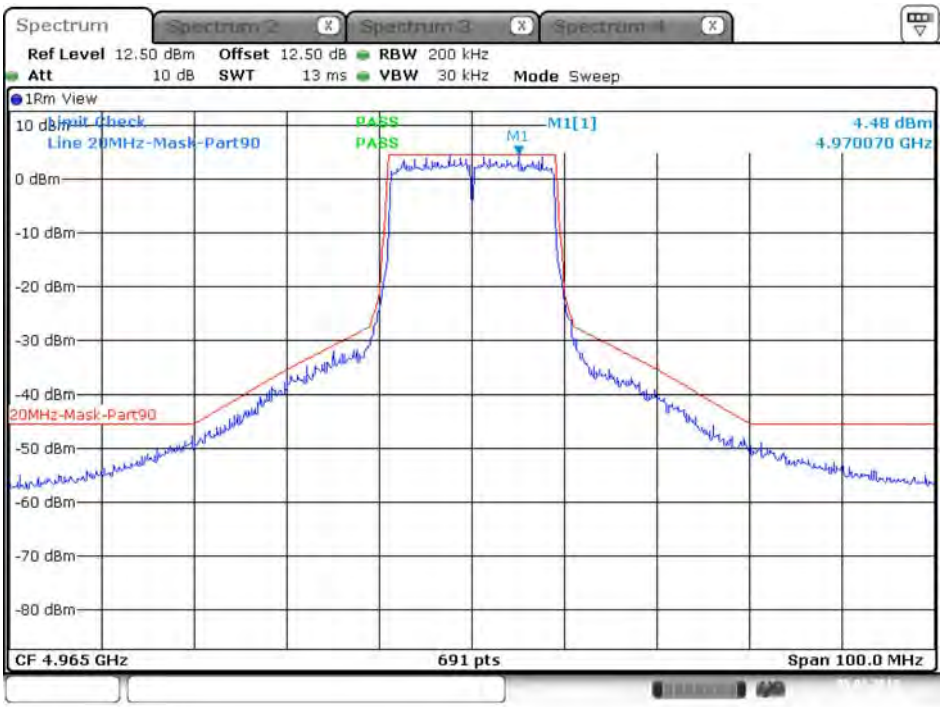
Date: 5.JAN.2018 18:59:10

Emission Mask (20MHz BW Mode) – 4965MHz / Port 1



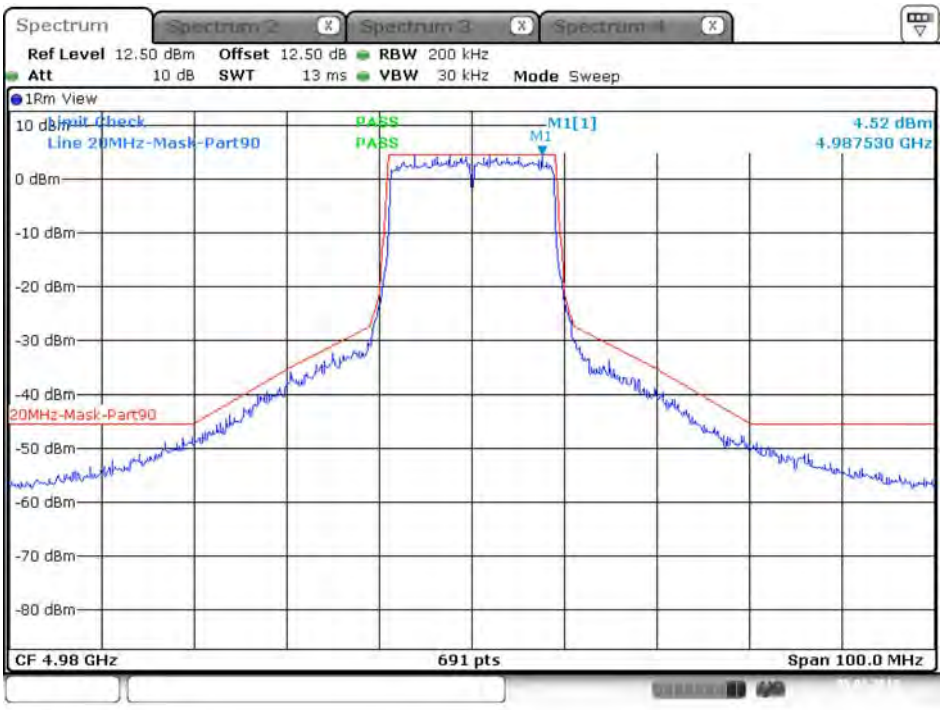
Date: 5.JAN.2018 18:43:09

Emission Mask (20MHz BW Mode) – 4965MHz / Port 2



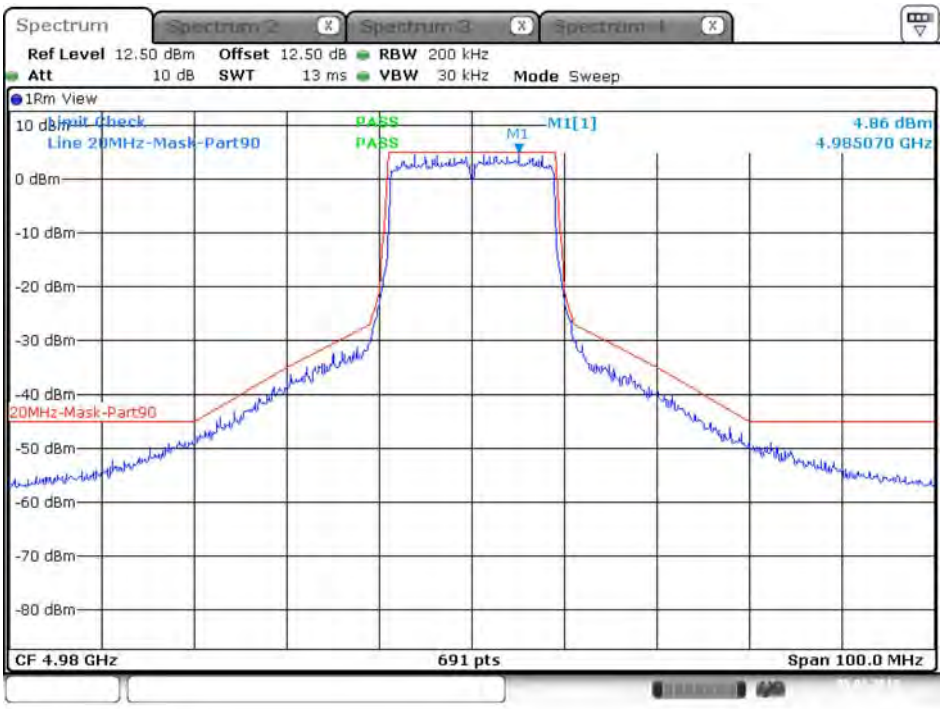
Date: 5.JAN.2018 18:39:58

Emission Mask (20MHz BW Mode) – 4980MHz / Port 1



Date: 5.JAN.2018 18:48:04

Emission Mask (20MHz BW Mode) – 4980MHz / Port 2



Date: 5.JAN.2018 18:56:23

4.4. Transmitter Conducted Unwanted Emissions Measurement

4.4.1. Limit

On any frequency removed from the assigned frequency above 150% of the authorized bandwidth: 50 or 55+ 10 log (P) dB, whichever is the lesser attenuation. (P=Average transmit power in watt)

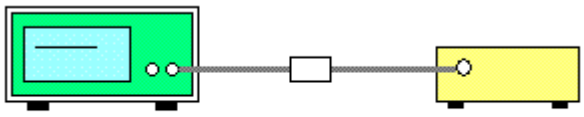
4.4.2. Measuring Instruments and Setting

Spectrum Parameter	Setting
Detector	RMS (Average)
Frequency Range	9kHz – 40GHz

4.4.3. Test Procedures

1. The EUT transmitter was connected to a spectrum analyzer through an appropriate 50 ohm attenuator. The spectrum analyzer resolution bandwidth was set to 1 MHz, and the video bandwidth was set to 1 MHz.
2. Find spurious emissions under 50 or 55+ 10 log (P) dB limit, whichever is the lesser attenuation and the spectrum analyzer integrated measurement plot was taken.

4.4.4. Test Setup Layout



4.4.5. Test Deviation

There is no deviation with the original standard.

4.4.6. Test Result of Transmitter Conducted Unwanted Emissions

Temperature	23℃	Humidity	60%
Test Engineer	Gino Huang, Serway Li, Lucke Hsieh	Test Date	Jan. 02, 2018 ~ Jan. 11, 2018

5MHz Channel Bandwidth Mode

30MHz ~ 1GHz					
Frequency	Conducted Emission (dBm/MHz) Port 1	Conducted Emission (dBm/MHz) Port 2	Total Conducted Emission (dBm/MHz)	Max. Limit (dBm/MHz)	Result
4942.5MHz	-53.84	-48.98	-47.75	-29.00	Complies
4962.5MHz	-53.51	-49.30	-47.90	-28.98	Complies
4987.5MHz	-54.19	-47.87	-46.96	-28.70	Complies

1GHz ~ 40GHz					
Frequency	Conducted Emission (dBm/MHz) Port 1	Conducted Emission (dBm/MHz) Port 2	Total Conducted Emission (dBm/MHz)	Max. Limit (dBm/MHz)	Result
4942.5MHz	-38.04	-38.78	-35.38	-29.00	Complies
4962.5MHz	-38.22	-38.42	-35.31	-28.98	Complies
4987.5MHz	-38.44	-38.10	-35.26	-28.70	Complies

10MHz Channel Bandwidth Mode

30MHz ~ 1GHz					
Frequency	Conducted Emission (dBm/MHz)	Conducted Emission (dBm/MHz)	Total Conducted Emission (dBm/MHz)	Max. Limit (dBm/MHz)	Result
	Port 1	Port 2			
4945MHz	-50.81	-52.73	-48.65	-28.91	Complies
4965 MHz	-51.04	-51.97	-48.47	-28.90	Complies
4985MHz	-49.34	-49.56	-46.44	-27.36	Complies

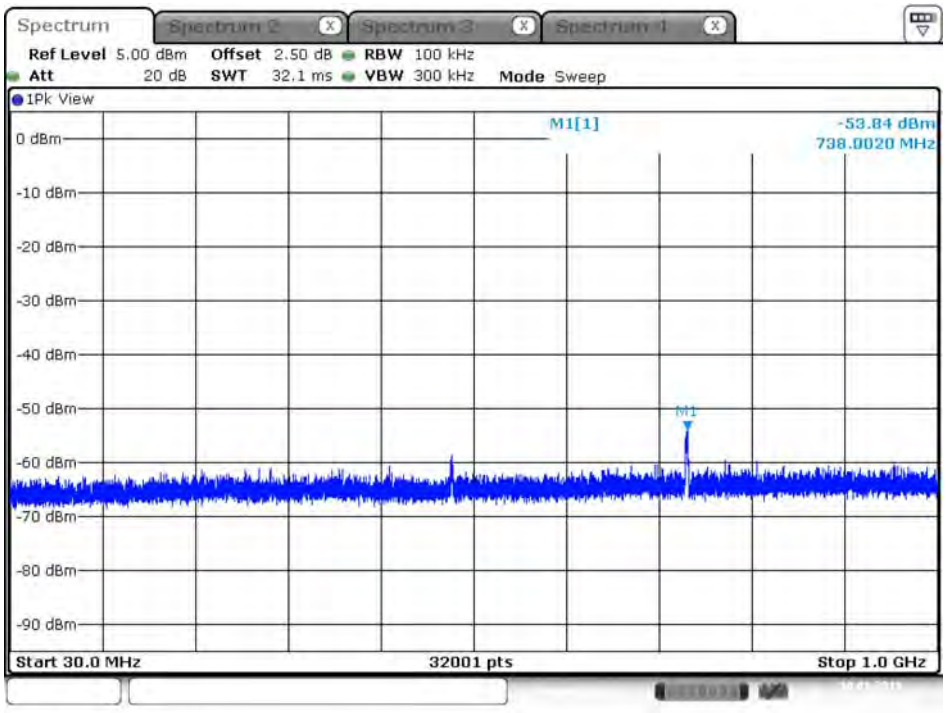
1GHz ~ 40GHz					
Frequency	Conducted Emission (dBm/MHz)	Conducted Emission (dBm/MHz)	Total Conducted Emission (dBm/MHz)	Max. Limit (dBm/MHz)	Result
	Port 1	Port 2			
4945MHz	-37.56	-38.16	-34.84	-28.91	Complies
4965 MHz	-38.40	-38.01	-35.19	-28.90	Complies
4985MHz	-38.07	-38.12	-35.08	-27.36	Complies

20MHz Channel Bandwidth Mode

30MHz ~ 1GHz					
Frequency	Conducted Emission (dBm/MHz)	Conducted Emission (dBm/MHz)	Total Conducted Emission (dBm/MHz)	Max. Limit (dBm/MHz)	Result
	Port 1	Port 2			
4950MHz	-50.97	-51.10	-48.02	-28.56	Complies
4965MHz	-49.88	-50.74	-47.28	-27.98	Complies
4980MHz	-50.96	-50.07	-47.48	-27.90	Complies

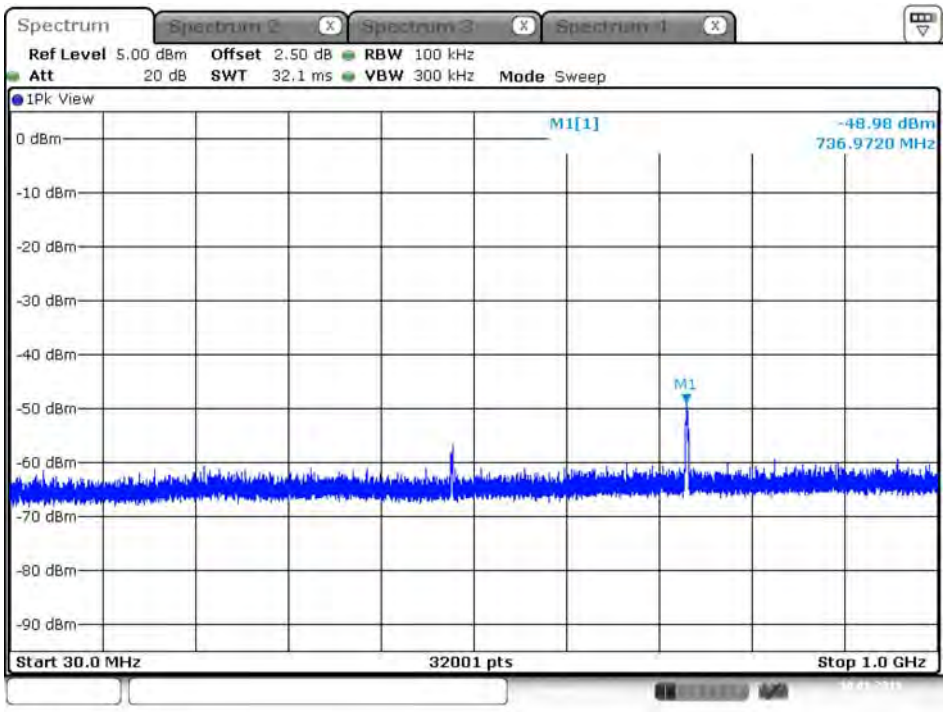
1GHz ~ 40GHz					
Frequency	Conducted Emission (dBm/MHz)	Conducted Emission (dBm/MHz)	Total Conducted Emission (dBm/MHz)	Max. Limit (dBm/MHz)	Result
	Port 1	Port 2			
4950MHz	-37.71	-37.84	-34.76	-28.56	Complies
4965MHz	-37.37	-38.03	-34.68	-27.98	Complies
4980MHz	-38.02	-38.09	-35.04	-27.90	Complies

Conducted Unwanted Emissions (5MHz BW Mode) – 4942.5MHz (30MHz ~ 1GHz) / Port 1



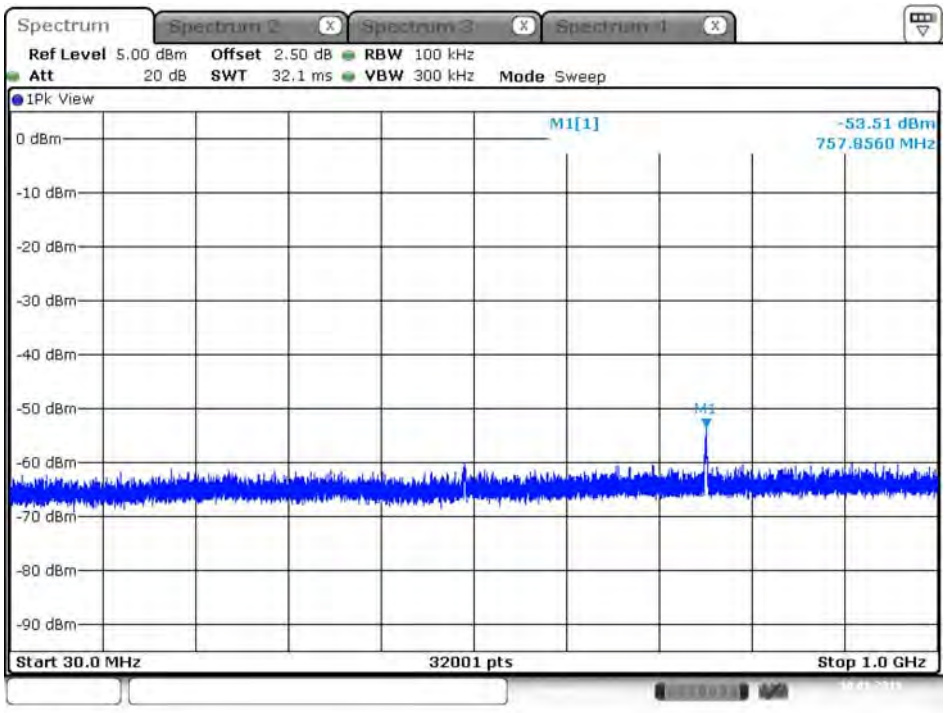
Date: 10.JAN.2018 15:26:01

Conducted Unwanted Emissions (5MHz BW Mode) – 4942.5MHz (30MHz ~ 1GHz) / Port 2



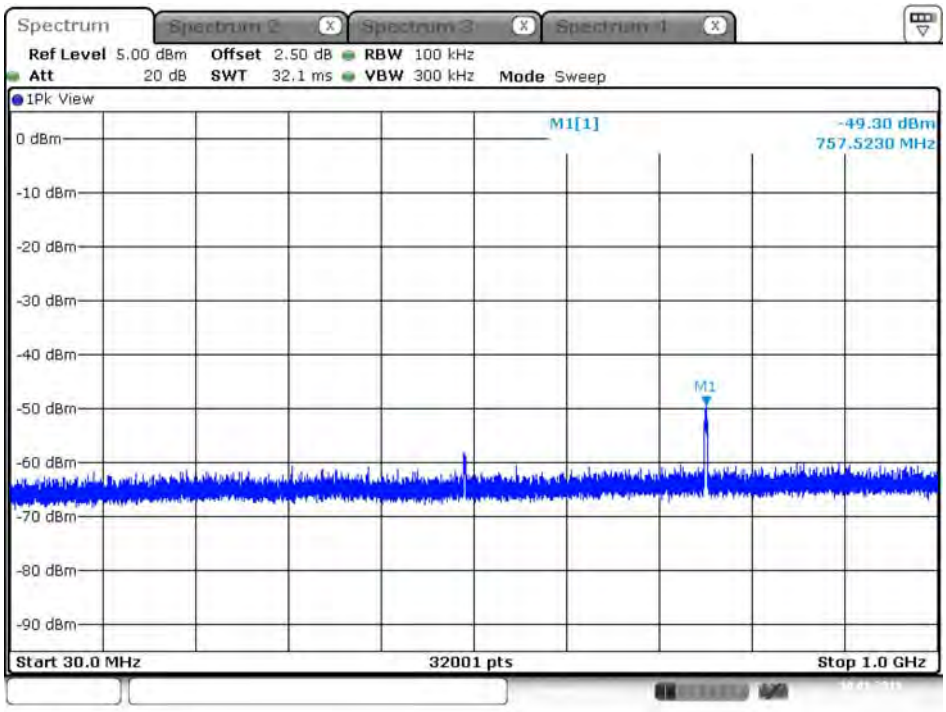
Date: 10.JAN.2018 15:26:34

Conducted Unwanted Emissions (5MHz BW Mode) – 4962.5MHz (30MHz ~ 1GHz) / Port 1



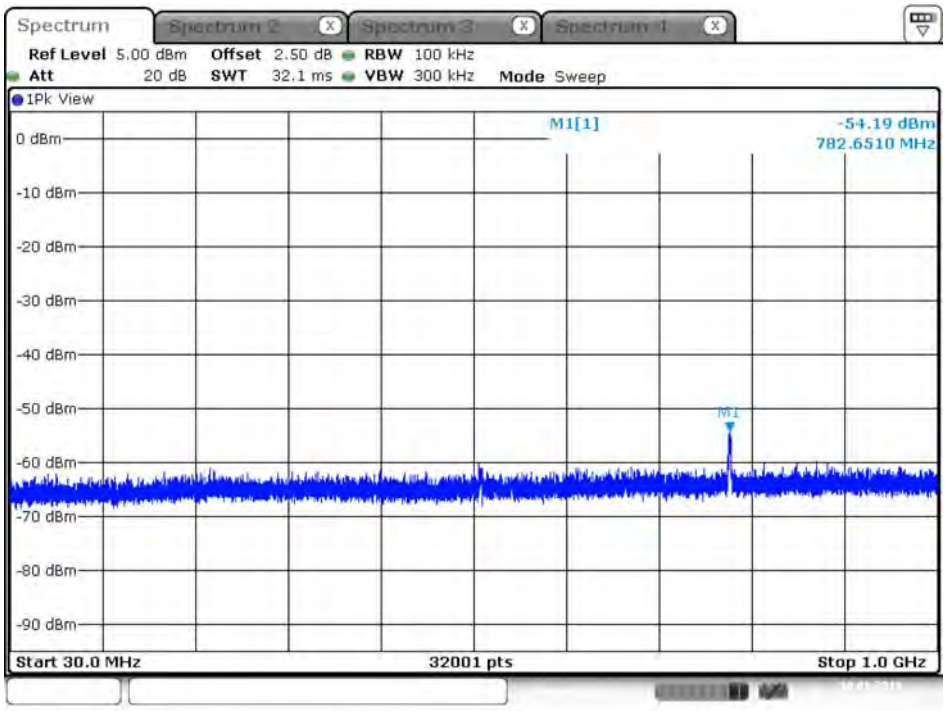
Date: 10.JAN.2018 15:27:44

Conducted Unwanted Emissions (5MHz BW Mode) – 4962.5MHz (30MHz ~ 1GHz) / Port 2



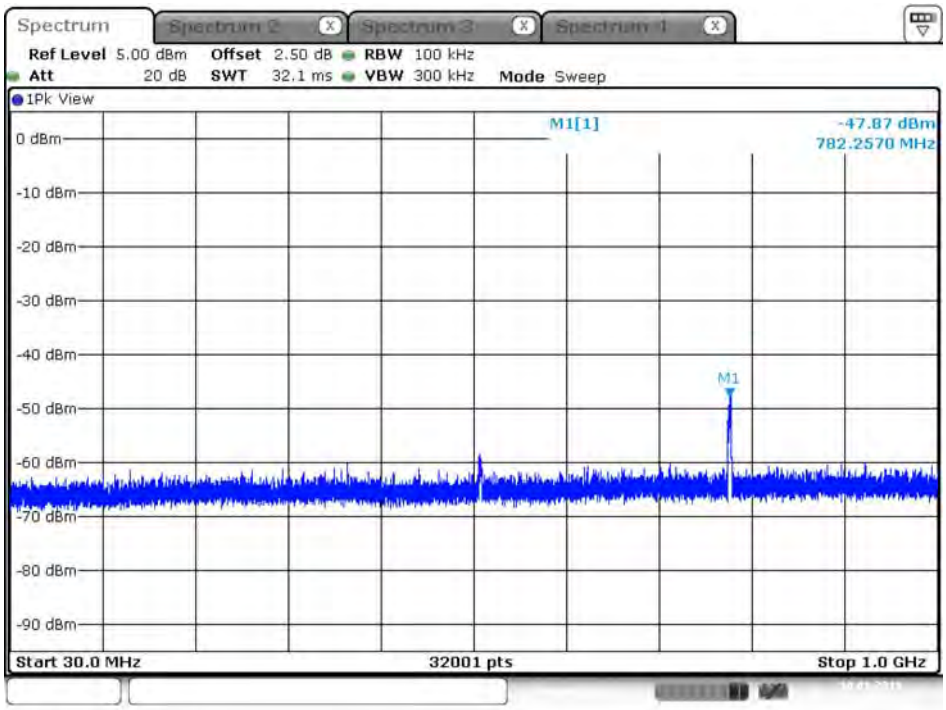
Date: 10.JAN.2018 15:27:08

Conducted Unwanted Emissions (5MHz BW Mode) – 4987.5MHz (30MHz ~ 1GHz) / Port 1



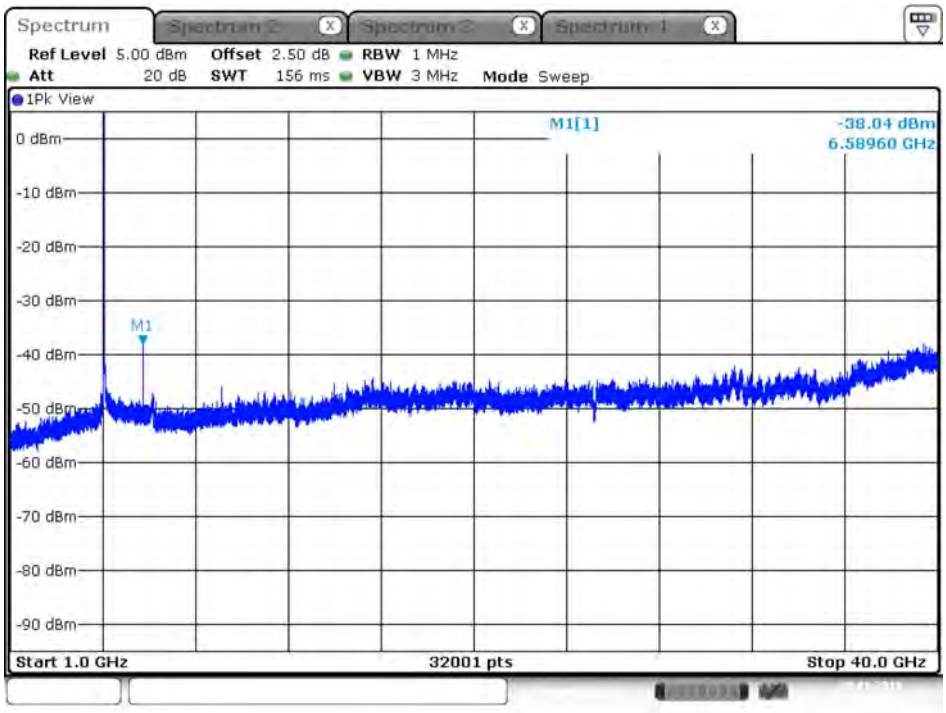
Date: 10.JAN.2018 15:28:10

Conducted Unwanted Emissions (5MHz BW Mode) – 4987.5MHz (30MHz ~ 1GHz) / Port 2



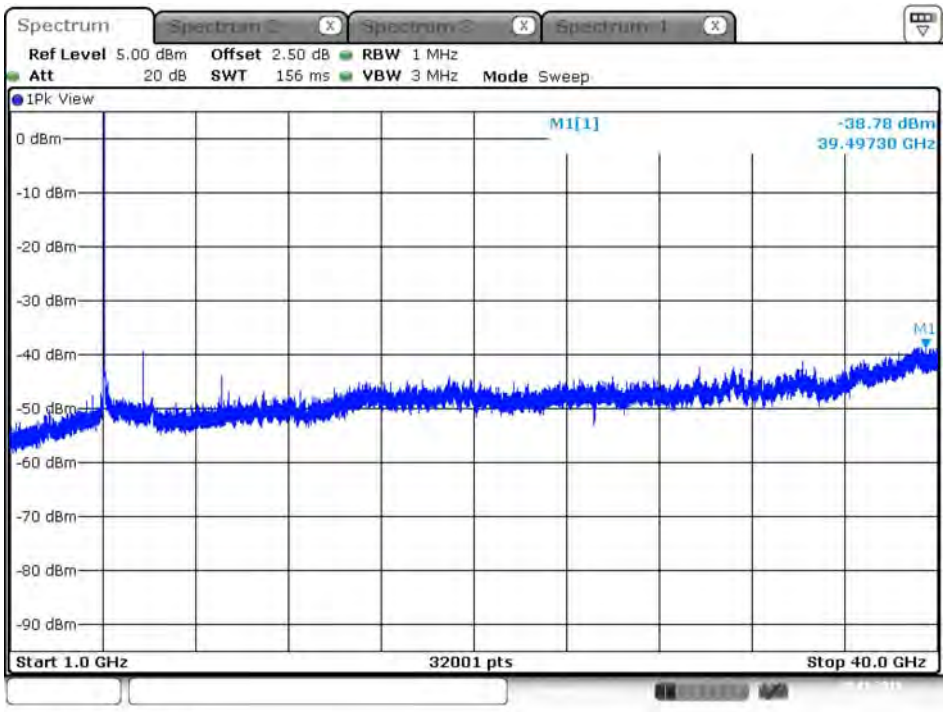
Date: 10.JAN.2018 15:28:44

Conducted Unwanted Emissions (5MHz BW Mode) – 4942.5MHz (1GHz ~ 40GHz) / Port 1



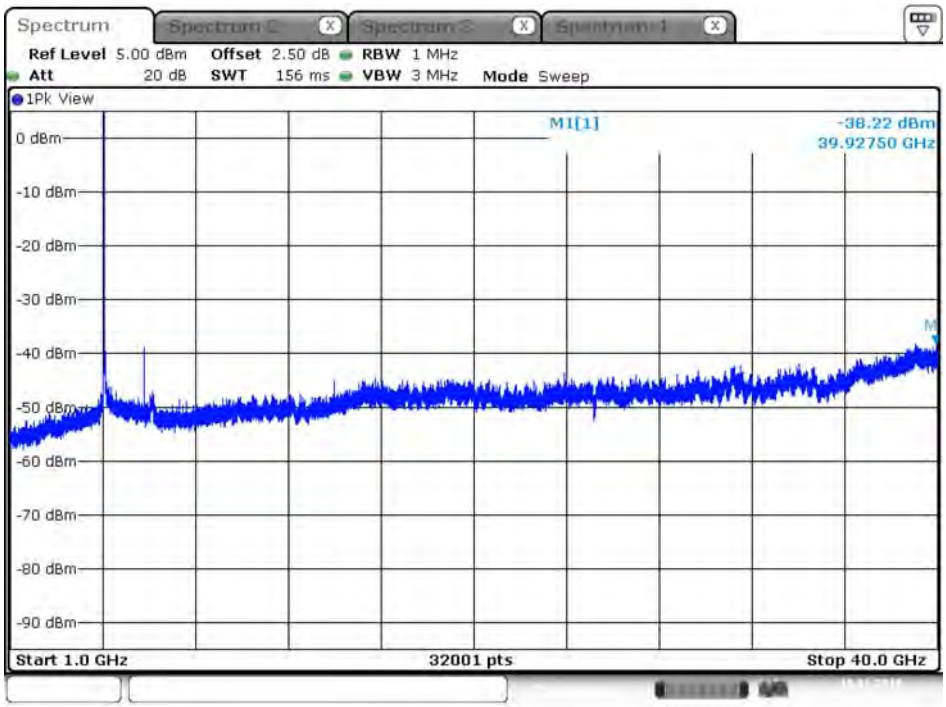
Date: 10.JAN.2018 15:35:04

Conducted Unwanted Emissions (5MHz BW Mode) – 4942.5MHz (1GHz ~ 40GHz) / Port 2



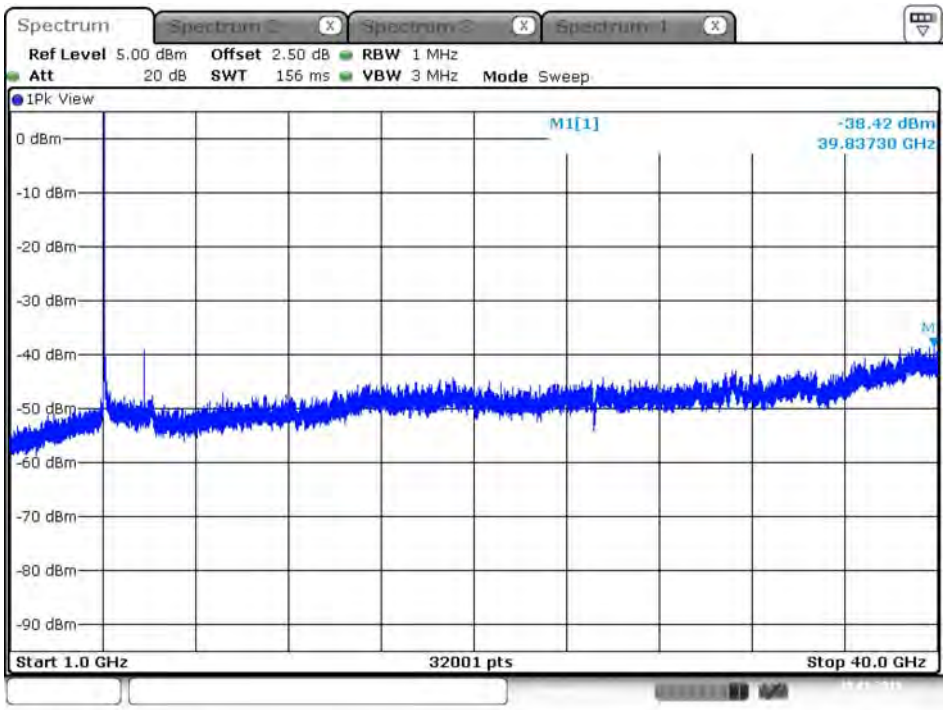
Date: 10.JAN.2018 15:34:04

Conducted Unwanted Emissions (5MHz BW Mode) – 4962.5MHz (1GHz ~ 40GHz) / Port 1



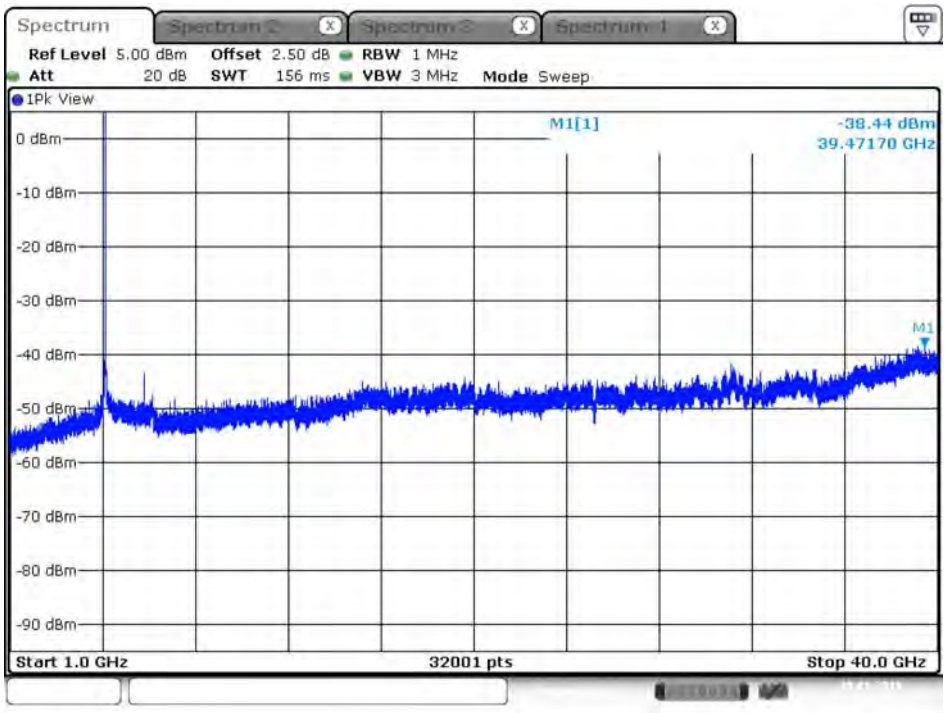
Date: 10.JAN.2018 15:32:02

Conducted Unwanted Emissions (5MHz BW Mode) – 4962.5MHz (1GHz ~ 40GHz) / Port 2



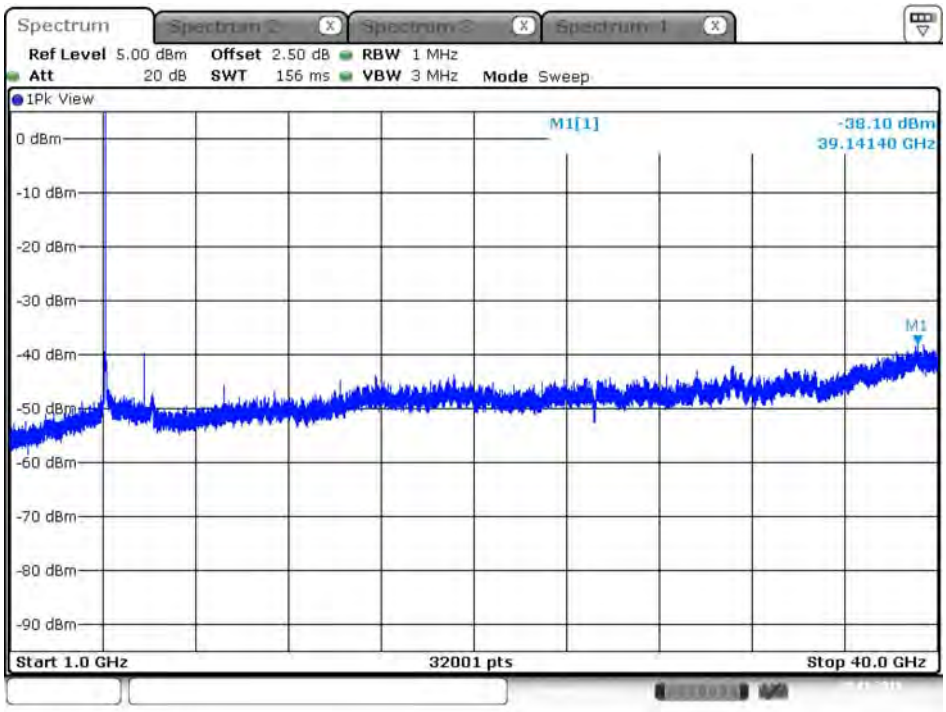
Date: 10.JAN.2018 15:32:57

Conducted Unwanted Emissions (5MHz BW Mode) – 4987.5MHz (1GHz ~ 40GHz) / Port 1



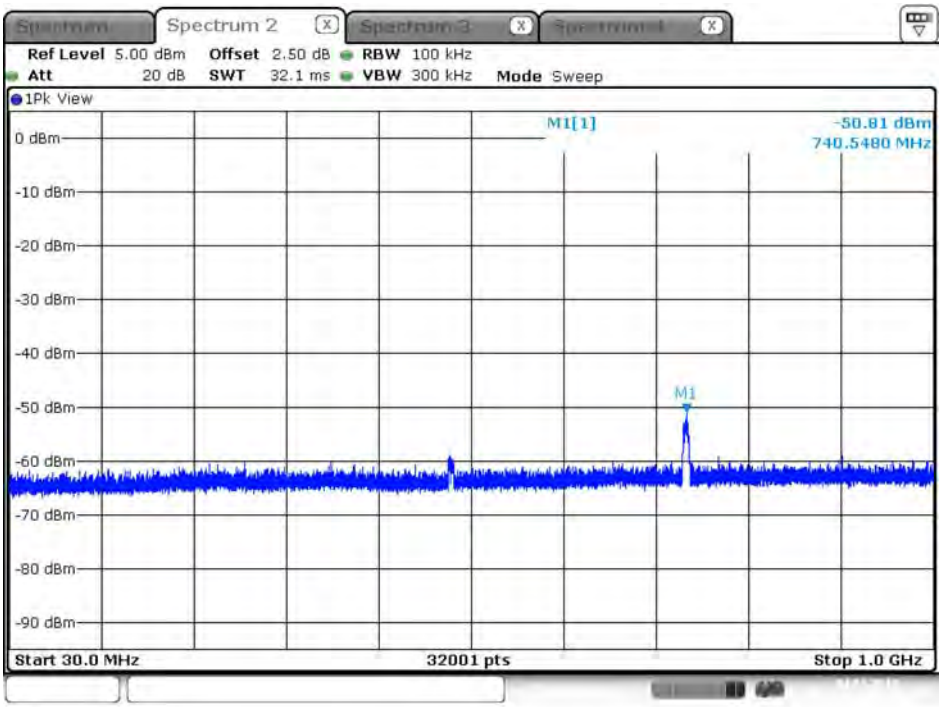
Date: 10.JAN.2018 15:31:14

Conducted Unwanted Emissions (5MHz BW Mode) – 4987.5MHz (1GHz ~ 40GHz) / Port 2



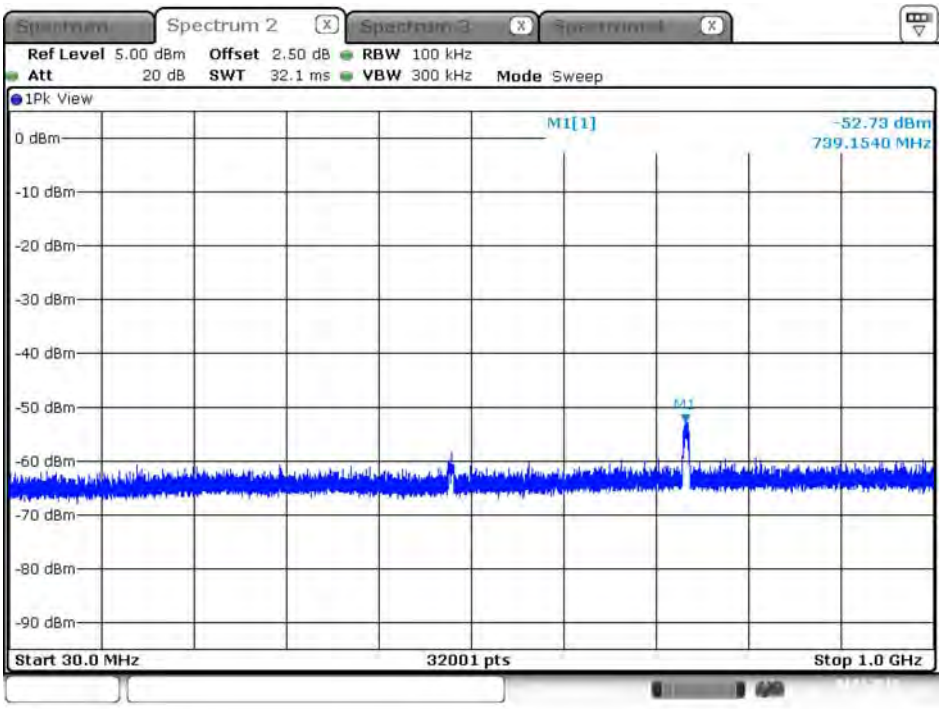
Date: 10.JAN.2018 15:30:39

Conducted Unwanted Emissions (10MHz BW Mode) – 4945MHz (30MHz ~ 1GHz) / Port 1



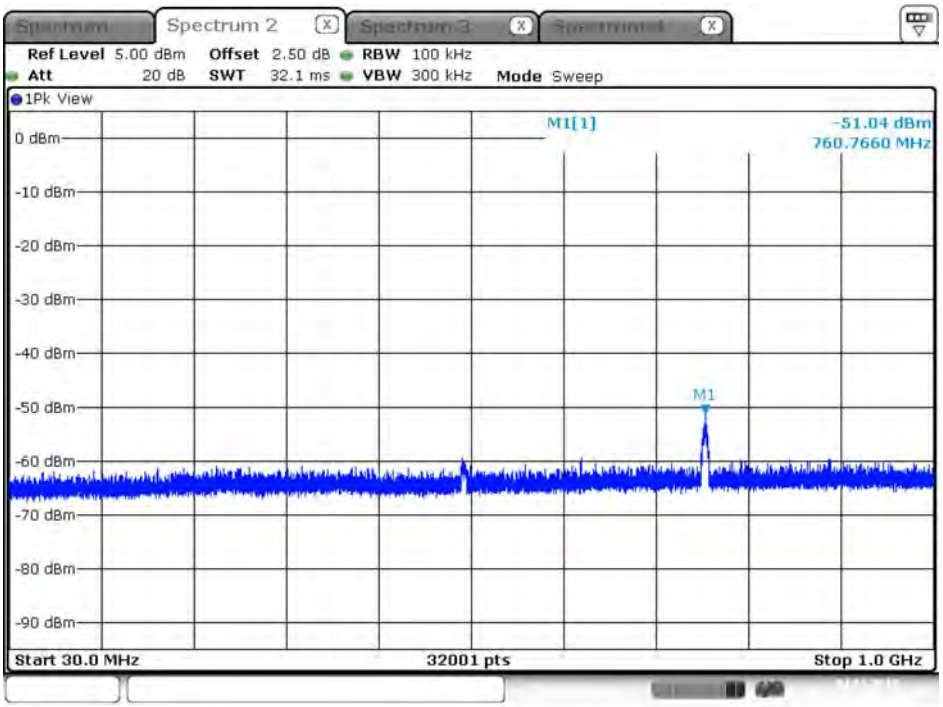
Date: 4.JAN.2018 23:15:04

Conducted Unwanted Emissions (10MHz BW Mode) – 4945MHz (30MHz ~ 1GHz) / Port 2



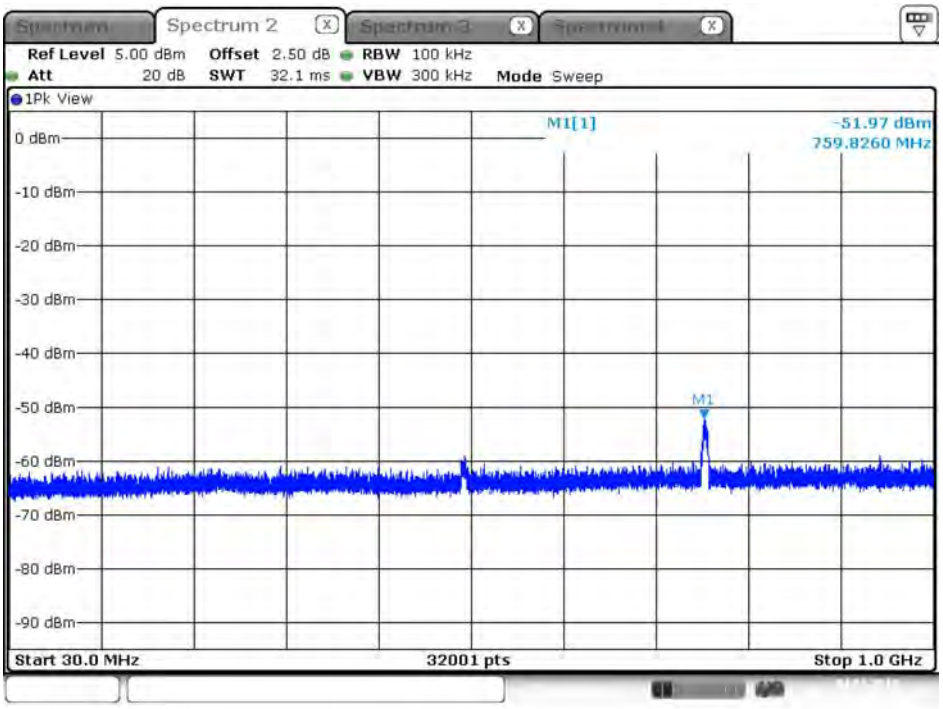
Date: 4.JAN.2018 23:57:07

Conducted Unwanted Emissions (10MHz BW Mode) – 4965MHz (30MHz ~ 1GHz) / Port 1



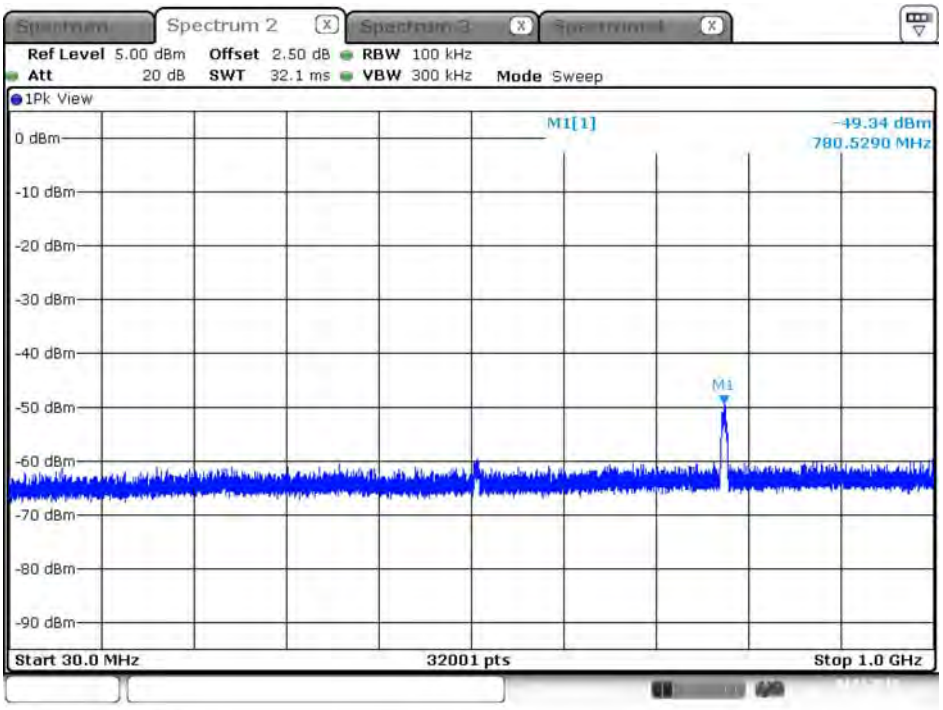
Date: 4.JAN.2018 23:50:44

Conducted Unwanted Emissions (10MHz BW Mode) – 4965MHz (30MHz ~ 1GHz) / Port 2



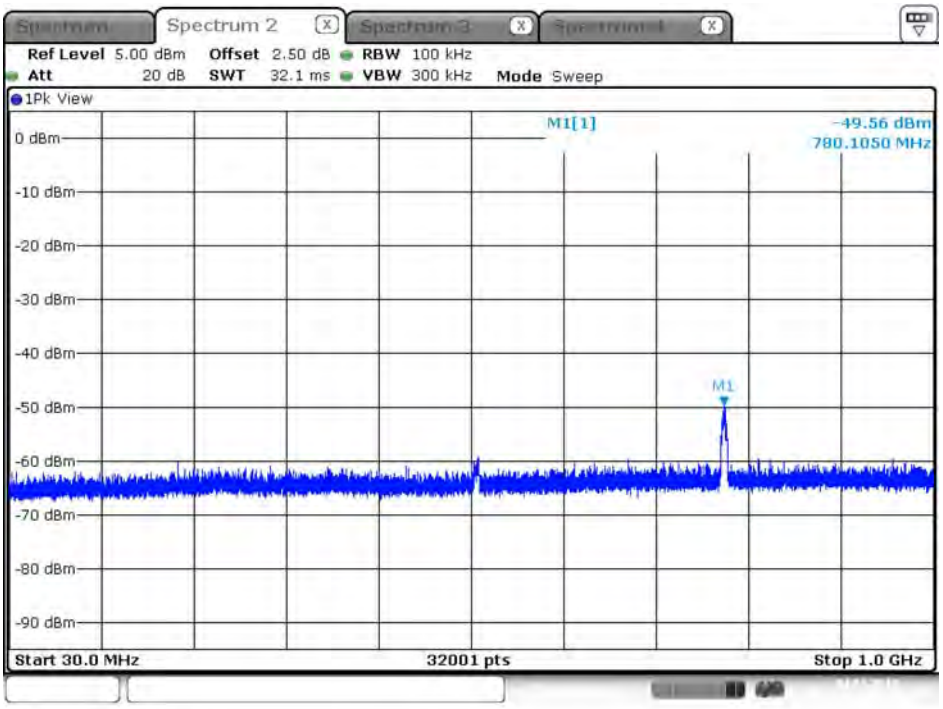
Date: 4.JAN.2018 23:55:30

Conducted Unwanted Emissions (10MHz BW Mode) – 4985MHz (30MHz ~ 1GHz) / Port 1



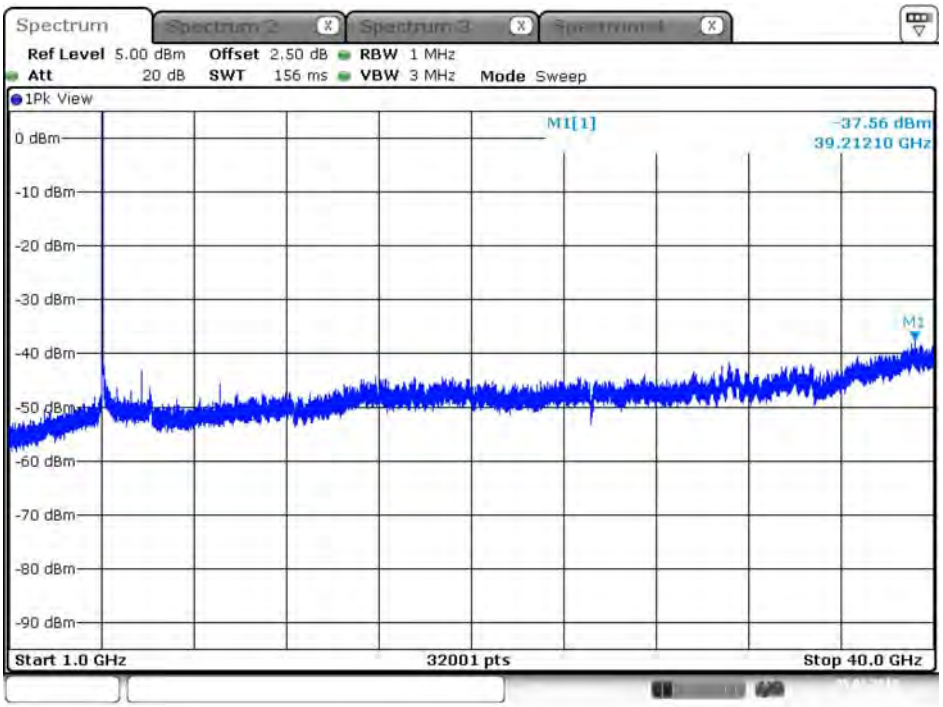
Date: 4.JAN.2018 23:52:18

Conducted Unwanted Emissions (10MHz BW Mode) – 4985MHz (30MHz ~ 1GHz) / Port 2



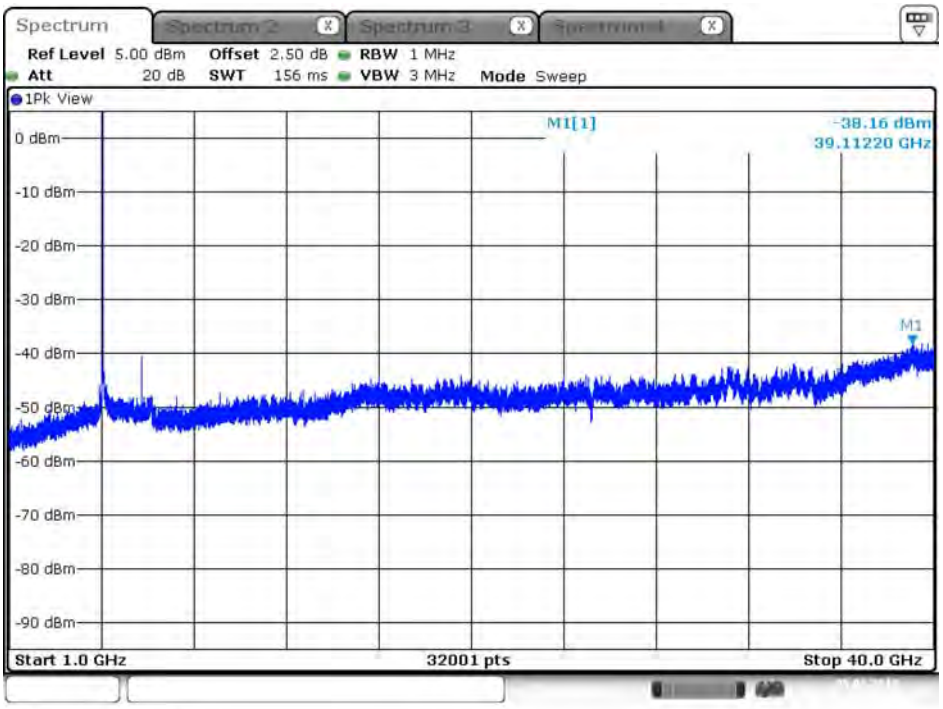
Date: 4.JAN.2018 23:54:52

Conducted Unwanted Emissions (10MHz BW Mode) – 4945MHz (1GHz ~ 40GHz) / Port 1



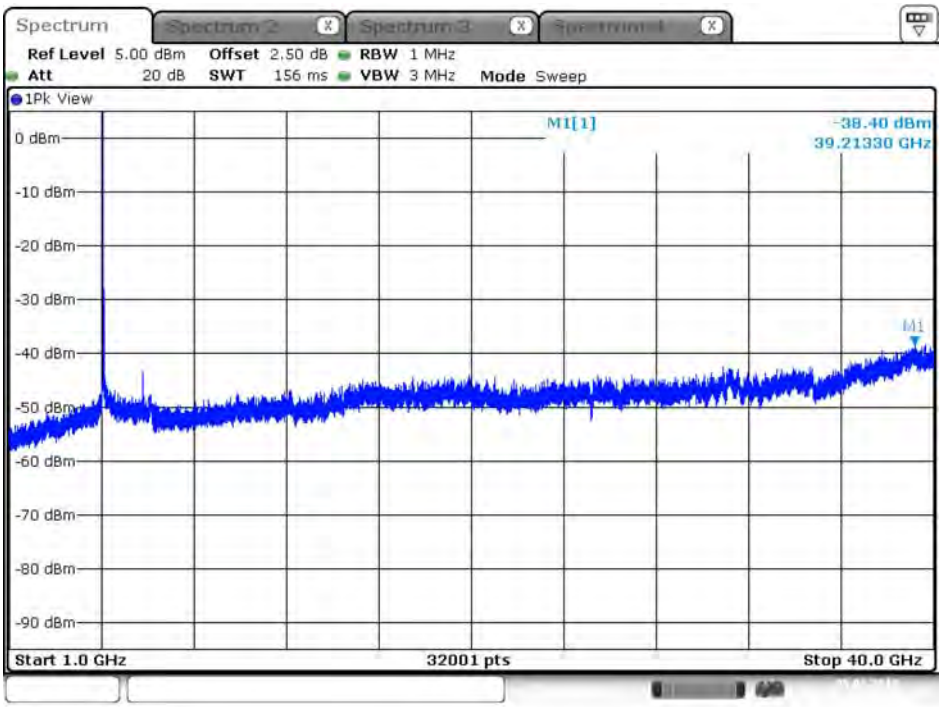
Date: 5.JAN.2018 21:35:51

Conducted Unwanted Emissions (10MHz BW Mode) – 4945MHz (1GHz ~ 40GHz) / Port 2



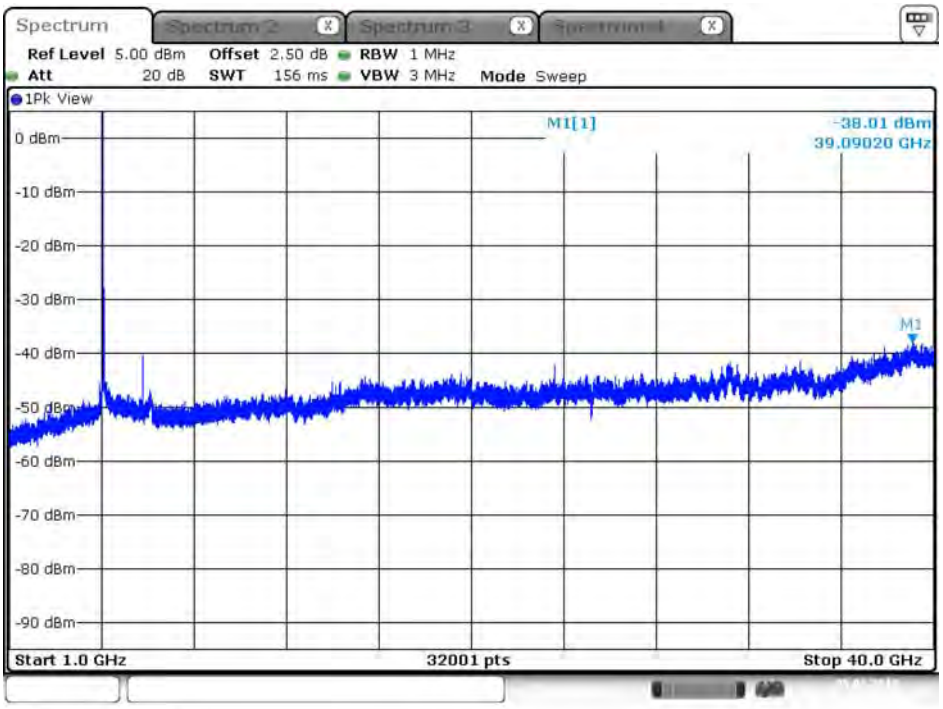
Date: 5.JAN.2018 21:39:56

Conducted Unwanted Emissions (10MHz BW Mode) – 4965MHz (1GHz ~ 40GHz) / Port 1



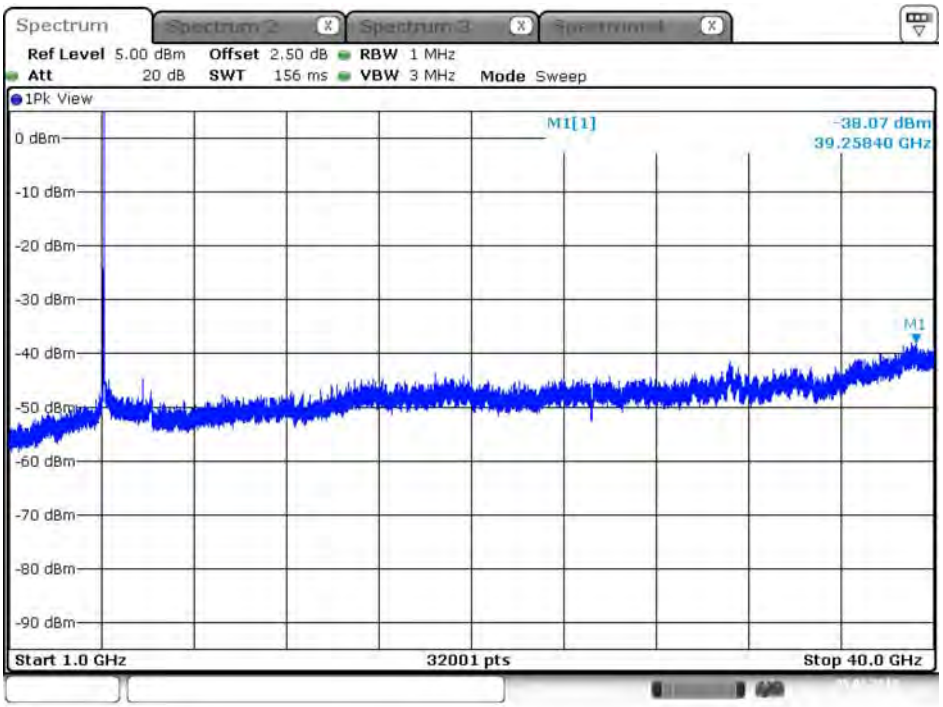
Date: 5.JAN.2018 21:36:23

Conducted Unwanted Emissions (10MHz BW Mode) – 4965MHz (1GHz ~ 40GHz) / Port 2



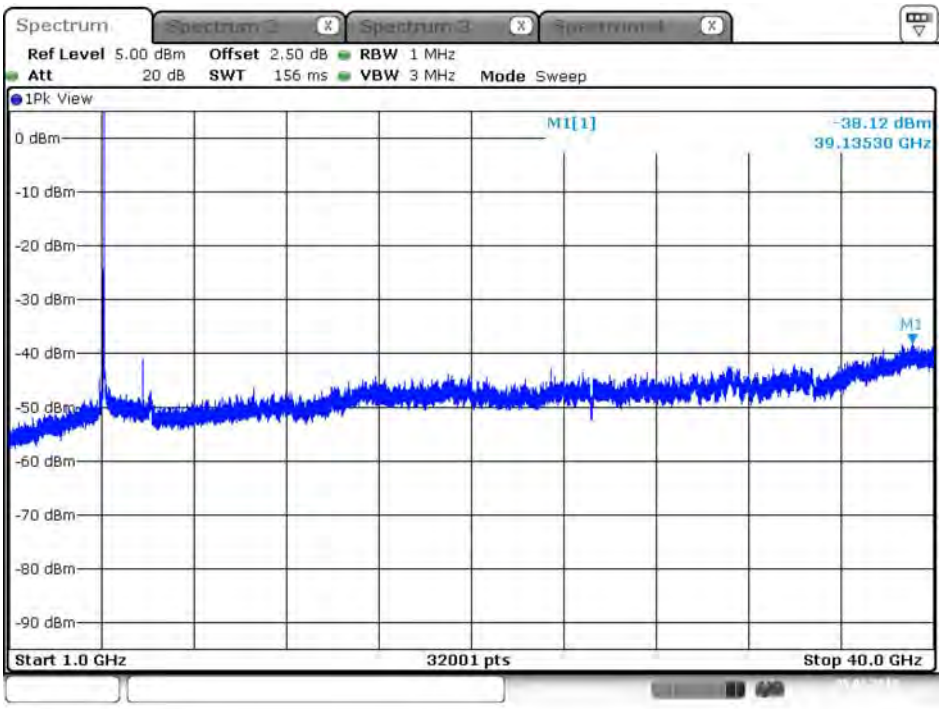
Date: 5.JAN.2018 21:39:09

Conducted Unwanted Emissions (10MHz BW Mode) – 4985MHz (1GHz ~ 40GHz) / Port 1



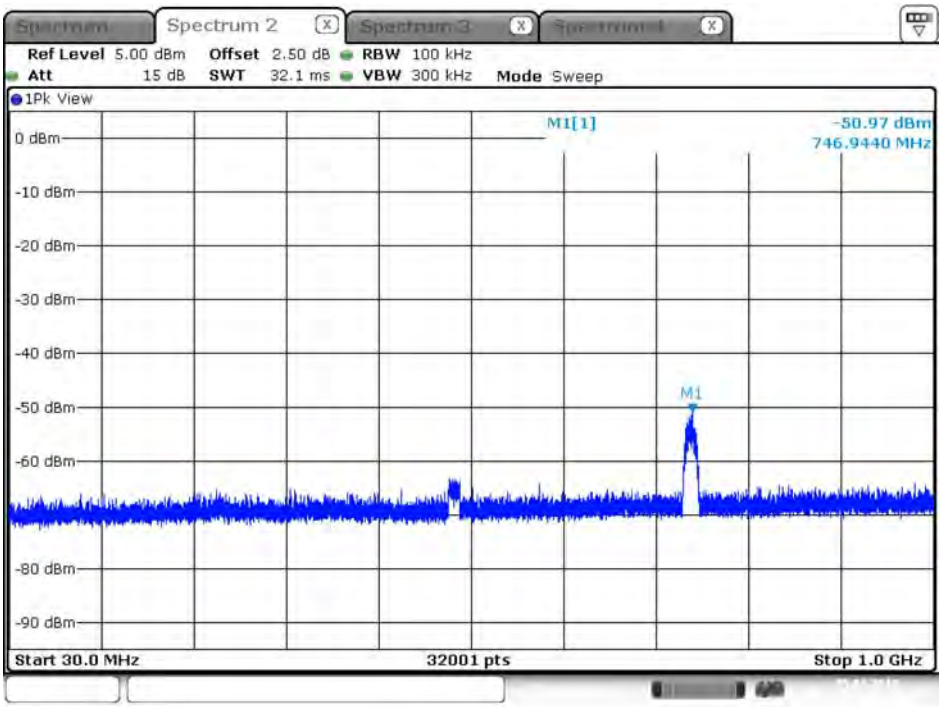
Date: 5.JAN.2018 21:37:07

Conducted Unwanted Emissions (10MHz BW Mode) – 4985MHz (1GHz ~ 40GHz) / Port 2



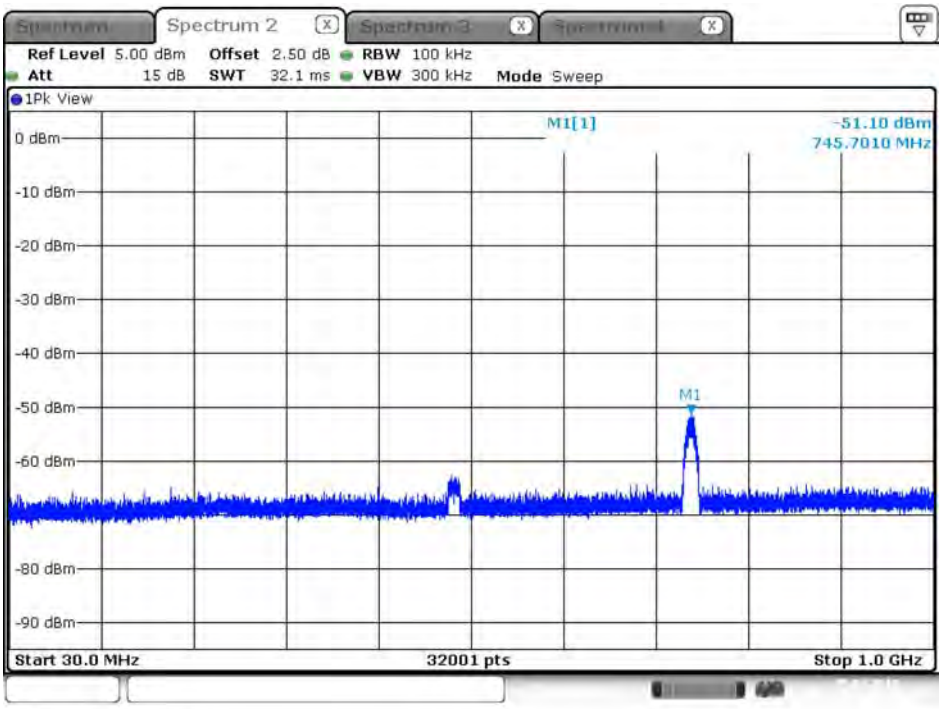
Date: 5.JAN.2018 21:38:19

Conducted Unwanted Emissions (20MHz BW Mode) – 4950MHz (30MHz ~ 1GHz) / Port 1



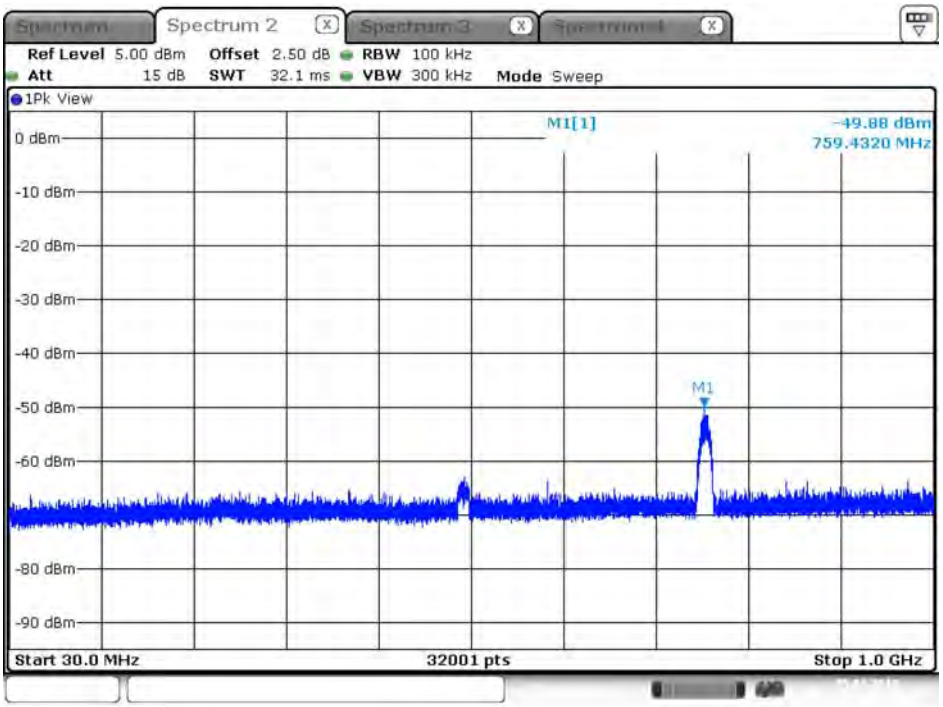
Date: 5.JAN.2018 21:51:54

Conducted Unwanted Emissions (20MHz BW Mode) – 4950MHz (30MHz ~ 1GHz) / Port 2



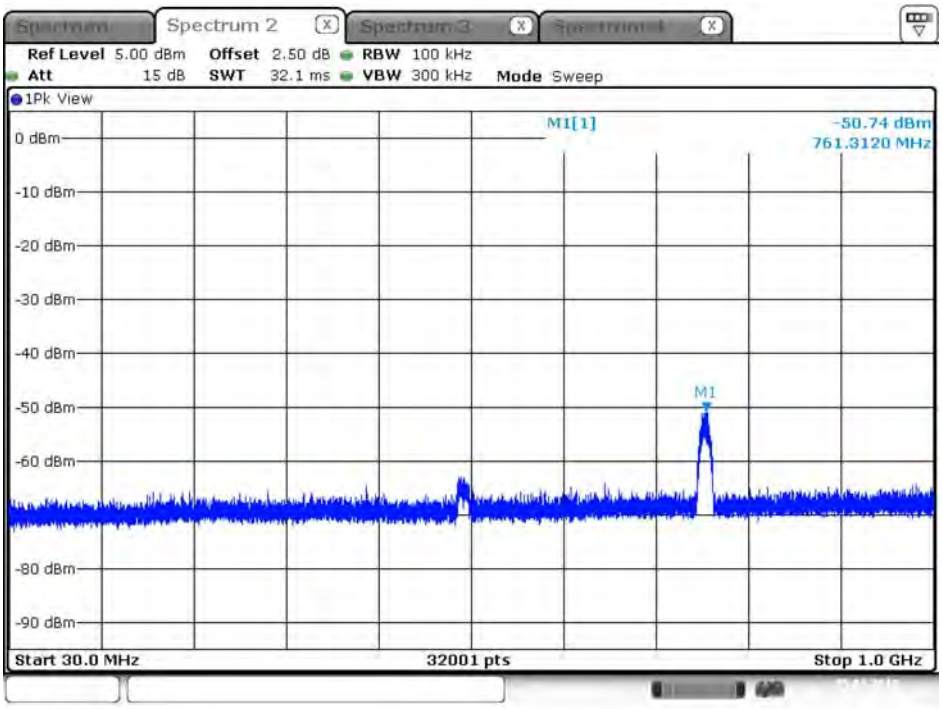
Date: 5.JAN.2018 21:44:50

Conducted Unwanted Emissions (20MHz BW Mode) – 4965MHz (30MHz ~ 1GHz) / Port 1



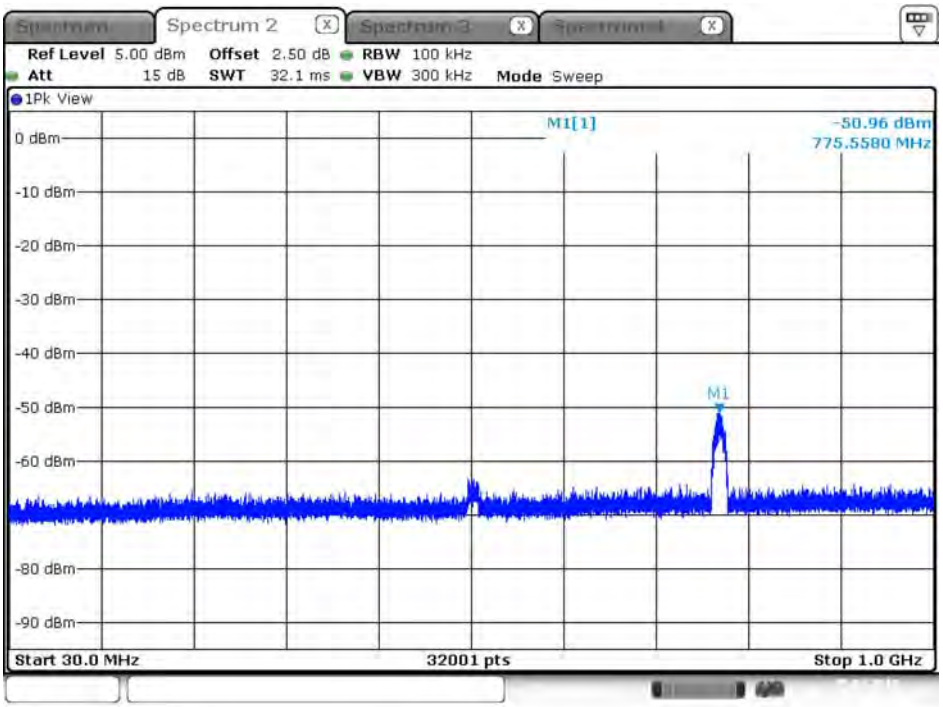
Date: 5.JAN.2018 21:49:57

Conducted Unwanted Emissions (20MHz BW Mode) – 4965MHz (30MHz ~ 1GHz) / Port 2



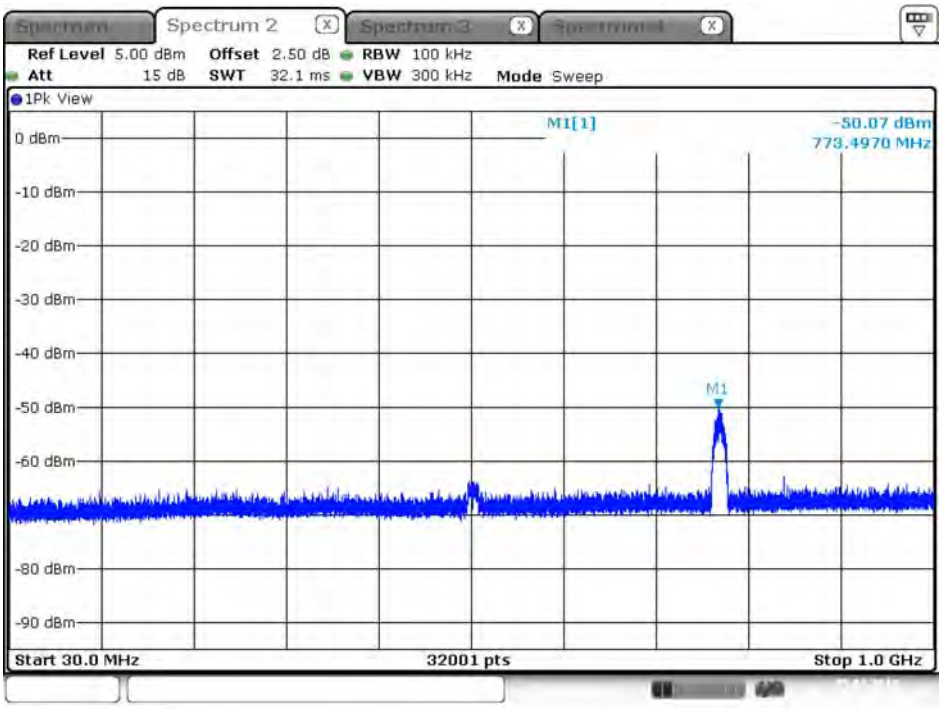
Date: 5.JAN.2018 21:46:33

Conducted Unwanted Emissions (20MHz BW Mode) – 4980MHz (30MHz ~ 1GHz) / Port 1



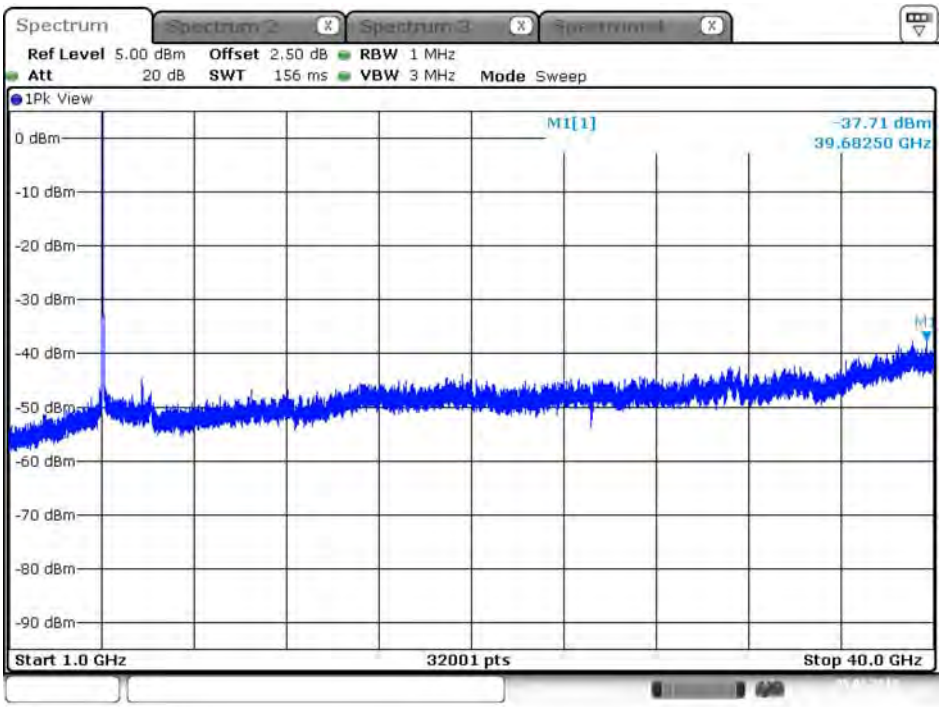
Date: 5.JAN.2018 21:49:24

Conducted Unwanted Emissions (20MHz BW Mode) – 4980MHz (30MHz ~ 1GHz) / Port 2



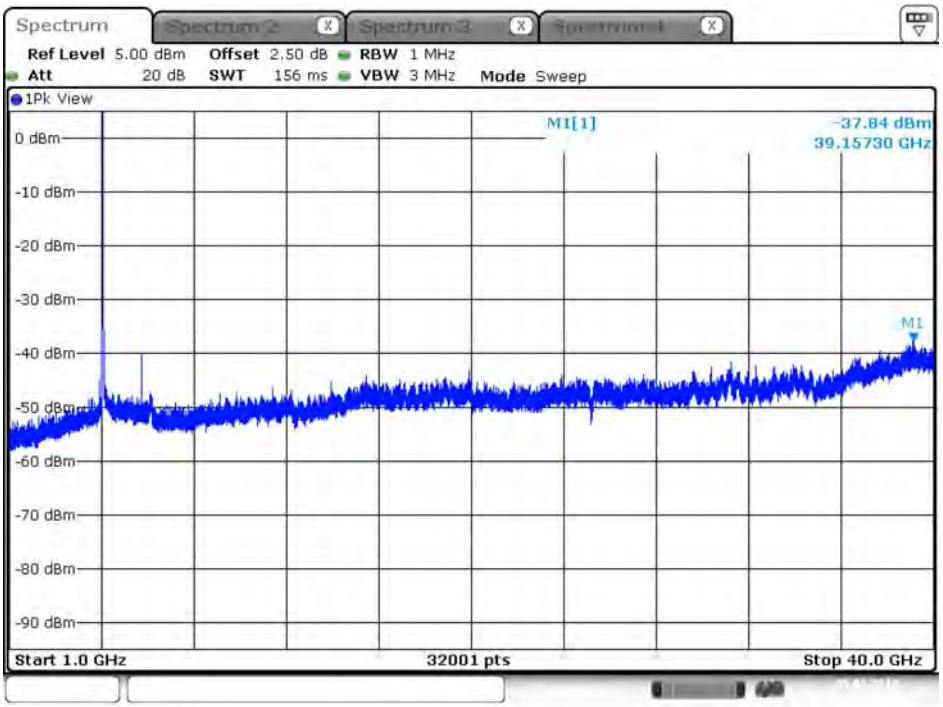
Date: 5.JAN.2018 21:47:21

Conducted Unwanted Emissions (20MHz BW Mode) – 4950MHz (1GHz ~ 40GHz) / Port 1



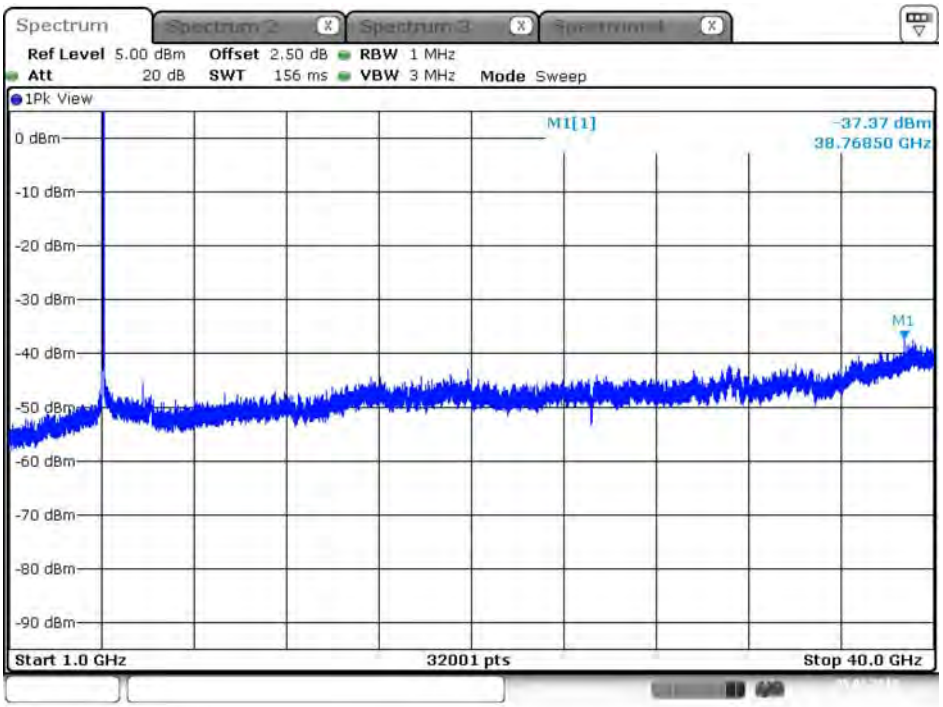
Date: 5.JAN.2018 21:51:20

Conducted Unwanted Emissions (20MHz BW Mode) – 4950MHz (1GHz ~ 40GHz) / Port 2



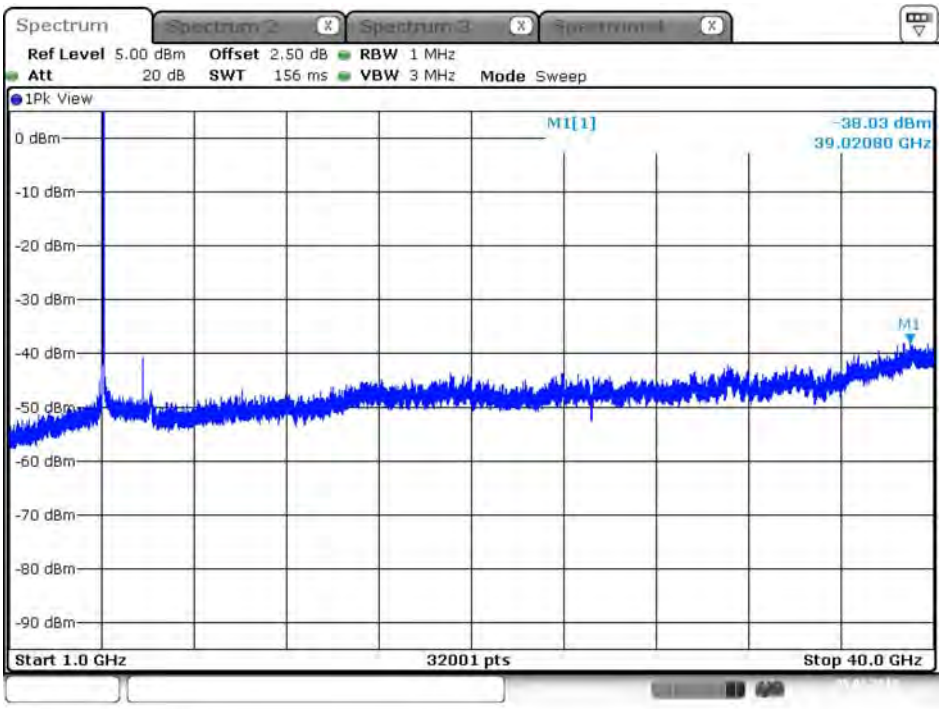
Date: 5.JAN.2018 21:45:26

Conducted Unwanted Emissions (20MHz BW Mode) – 4965MHz (1GHz ~ 40GHz) / Port 1



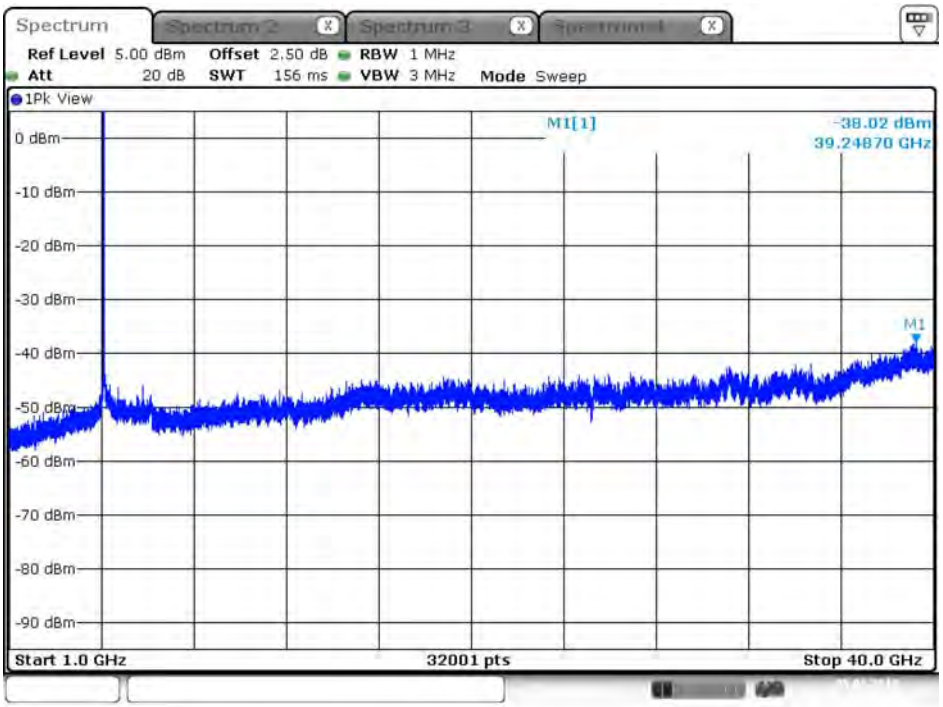
Date: 5.JAN.2018 21:50:21

Conducted Unwanted Emissions (20MHz BW Mode) – 4965MHz (1GHz ~ 40GHz) / Port 2



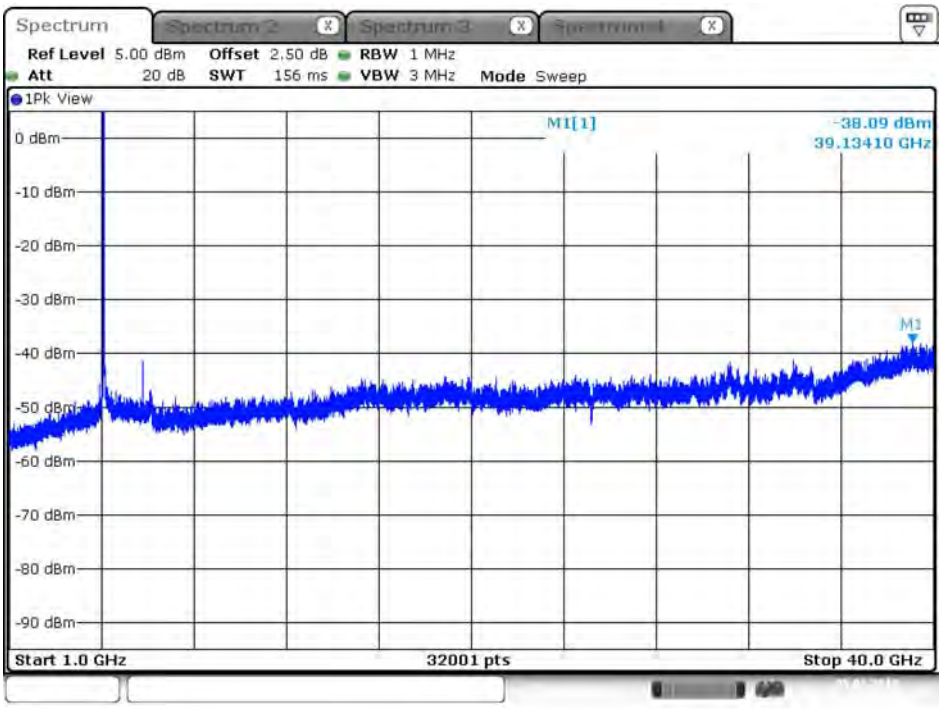
Date: 5.JAN.2018 21:46:15

Conducted Unwanted Emissions (20MHz BW Mode) – 4980MHz (1GHz ~ 40GHz) / Port 1



Date: 5.JAN.2018 21:48:54

Conducted Unwanted Emissions (20MHz BW Mode) – 4980MHz (1GHz ~ 40GHz) / Port 2



Date: 5.JAN.2018 21:47:49

4.5. Transmitter Radiated Unwanted Emissions Measurement

4.5.1. Limit

On any frequency removed from the assigned frequency above 150% of the authorized bandwidth: 50 or 55+ 10 log (P) dB, whichever is the lesser attenuation. (P=Average transmit power in watt)

4.5.2. Measuring Instruments and Setting

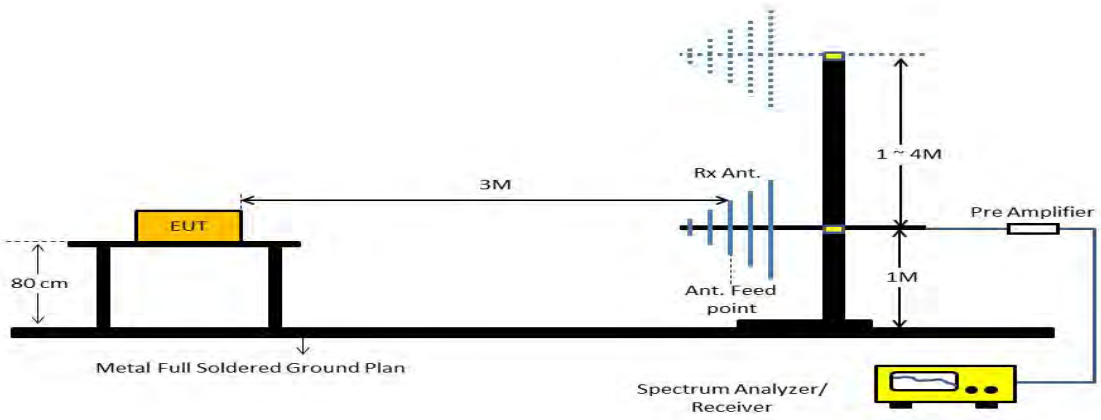
Please refer to section 5 in this report. The following table is the setting of the Spectrum Analyzer.

Spectrum Parameter	Setting
Detector	RMS (Average)
Frequency Range	30MHz – 40GHz
RBW / VBW	1 MHz / 3MHz

4.5.3. Test Procedures

1. The EUT was placed on the top of the turntable in anechoic chamber.
2. A spectrum analyzer was used RBW of 1 MHz and VBW of 3 MHz for the final measurements utilizing an RMS detector at the frequencies with spurious emissions amplitudes.
3. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find *spurious emissions reading*.
4. *Spurious emissions field strength level* equal to *spurious emissions reading on spectrum analyzer*+ *Corrected Reading* (Antenna Factor + Cable Loss - Preamp Factor).
5. Final *radiated spurious emissions* may be converted from *spurious emissions field strength level* - 95.2 dB

4.5.4. Test Setup Layout



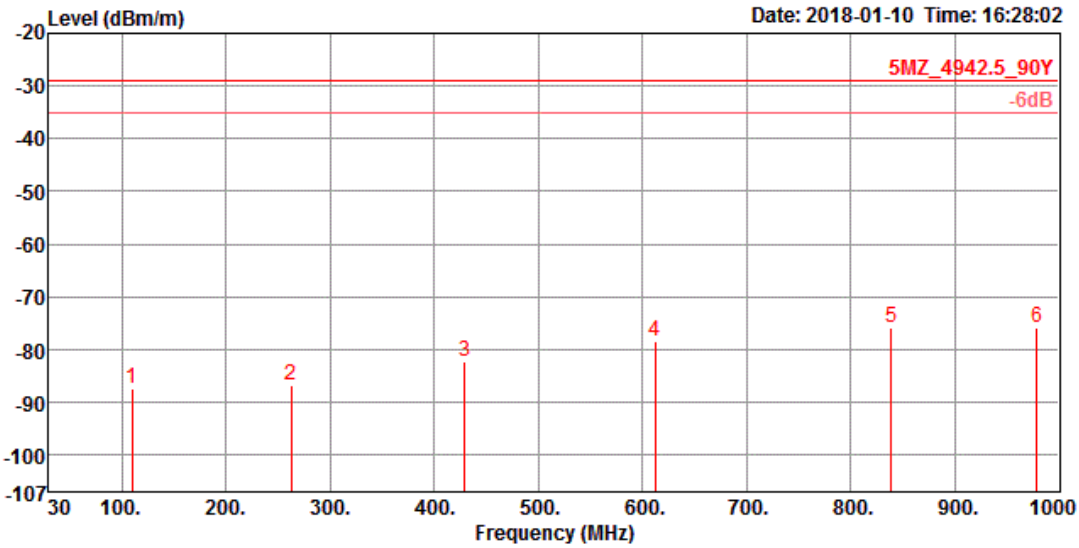
4.5.5. Test Deviation

There is no deviation with the original standard.

4.5.6. Results of Transmitter Radiated Unwanted Emissions (30MHz~1GHz)

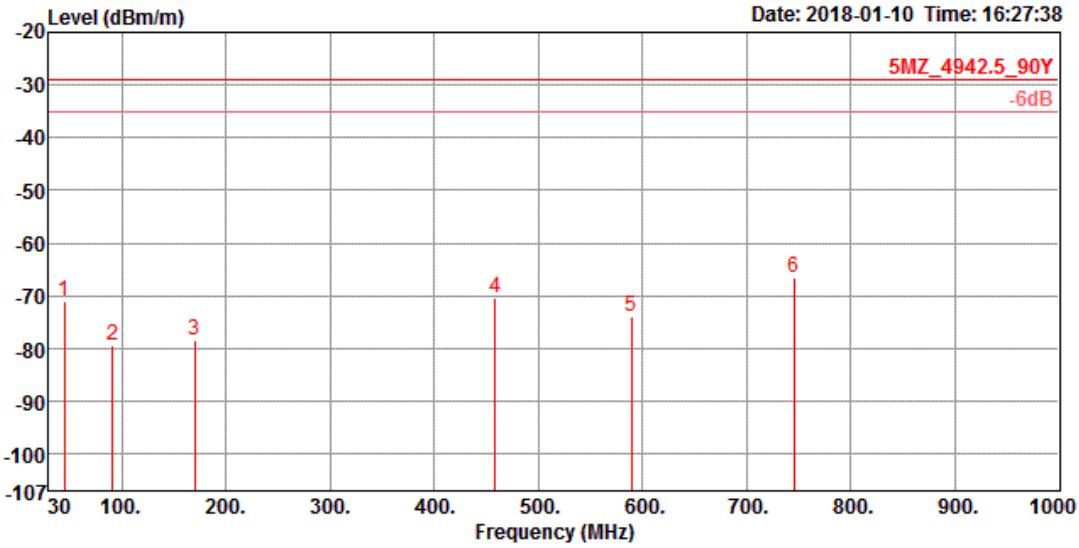
Temperature	22°C	Humidity	54%
Test Engineer	Cola Fan	Mode	5MHz / 4942.5MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	cm	deg		
1	109.54	-87.51	-29.00	-58.51	-74.47	112	234	Peak	HORIZONTAL
2	262.80	-86.64	-29.00	-57.64	-75.82	198	54	Peak	HORIZONTAL
3	429.64	-82.16	-29.00	-53.16	-75.02	107	89	Peak	HORIZONTAL
4	612.00	-78.52	-29.00	-49.52	-74.05	152	305	Peak	HORIZONTAL
5	838.98	-75.93	-29.00	-46.93	-74.47	118	49	Peak	HORIZONTAL
6	978.66	-75.97	-29.00	-46.97	-76.87	127	312	Peak	HORIZONTAL

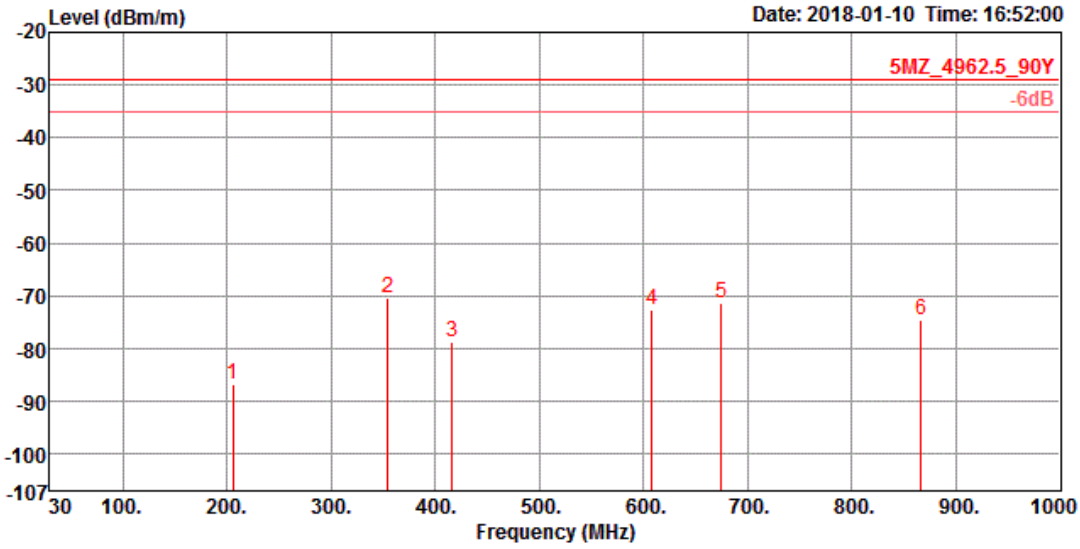
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	cm	deg		
1	45.25	-70.95	-29.00	-41.95	-56.23	157	61	Peak	VERTICAL
2	91.23	-79.24	-29.00	-50.24	-63.41	203	343	Peak	VERTICAL
3	170.22	-78.28	-29.00	-49.28	-63.46	163	147	Peak	VERTICAL
4	458.20	-70.25	-29.00	-41.25	-63.55	105	227	Peak	VERTICAL
5	589.00	-73.88	-29.00	-44.88	-69.14	108	324	Peak	VERTICAL
6	745.13	-66.58	-29.00	-37.58	-63.55	151	33	Peak	VERTICAL

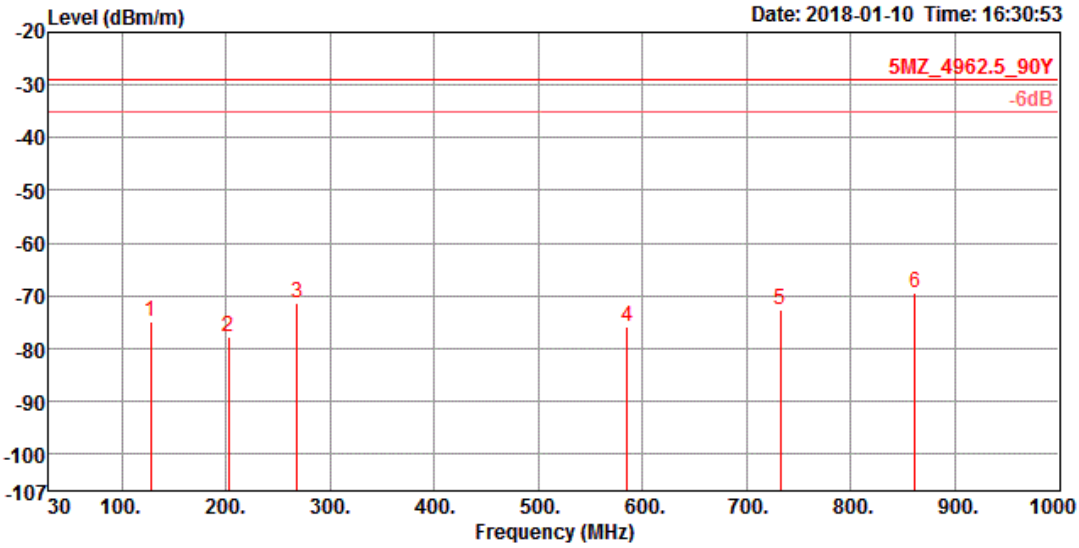
Temperature	22°C	Humidity	54%
Test Engineer	Cola Fan	Mode	5MHz / 4962.5MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	cm	deg		
1	205.66	-86.69	-28.98	-57.71	-72.22	121	156	Peak	HORIZONTAL
2	354.12	-70.27	-28.98	-41.29	-61.21	123	26	Peak	HORIZONTAL
3	416.06	-78.59	-28.98	-49.61	-71.09	157	239	Peak	HORIZONTAL
4	608.22	-72.49	-28.98	-43.51	-67.79	127	131	Peak	HORIZONTAL
5	675.00	-71.28	-28.98	-42.30	-67.22	171	36	Peak	HORIZONTAL
6	866.10	-74.50	-28.98	-45.52	-73.22	106	114	Peak	HORIZONTAL

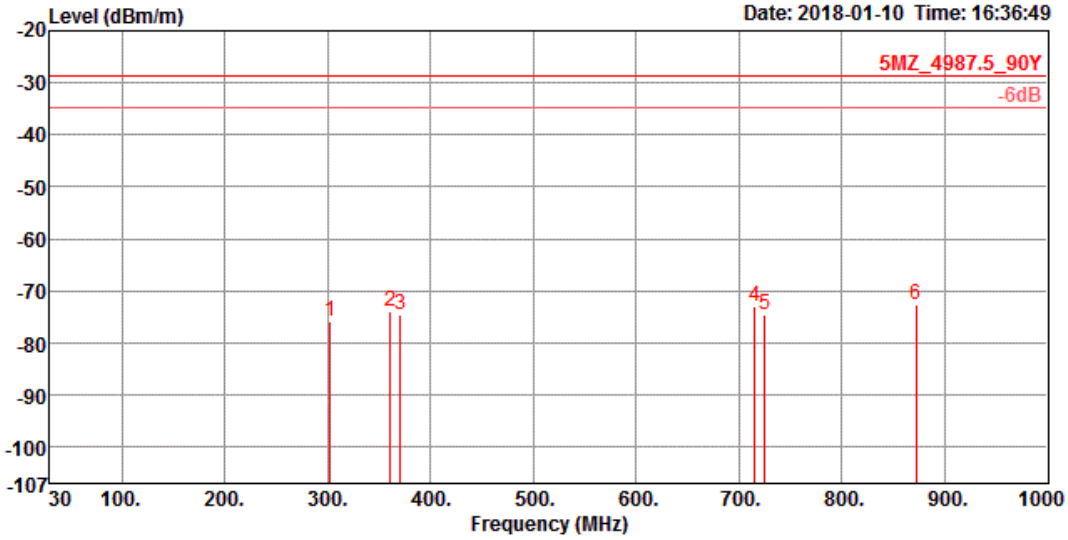
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	cm	deg		
1	127.55	-74.97	-28.98	-45.99	-62.45	105	27	Peak	VERTICAL
2	202.55	-77.79	-28.98	-48.81	-63.46	150	135	Peak	VERTICAL
3	268.55	-71.23	-28.98	-42.25	-60.21	118	326	Peak	VERTICAL
4	585.00	-76.01	-28.98	-47.03	-71.22	121	78	Peak	VERTICAL
5	732.22	-72.79	-28.98	-43.81	-69.55	130	69	Peak	VERTICAL
6	861.22	-69.34	-28.98	-40.36	-68.22	136	54	Peak	VERTICAL

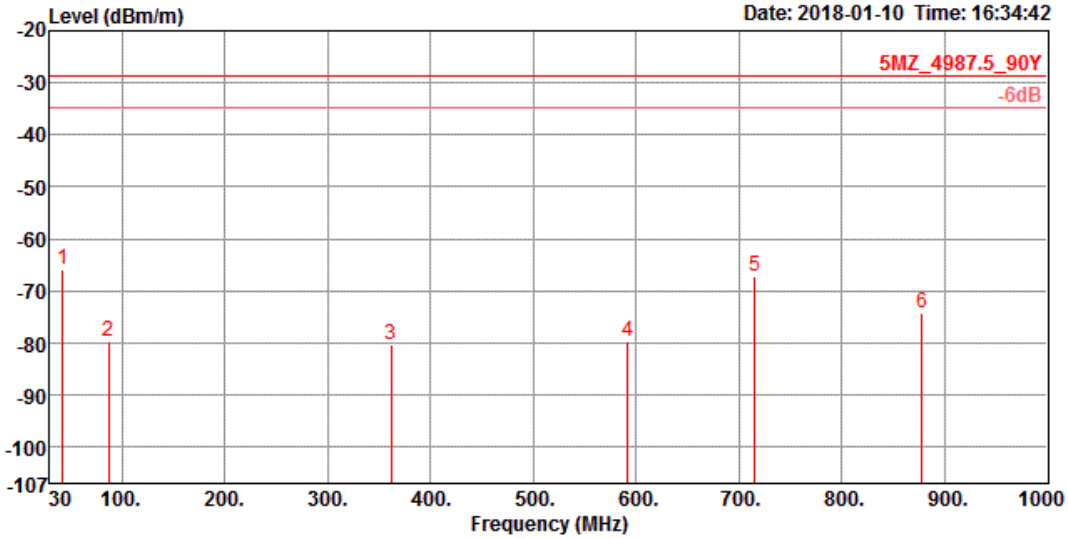
Temperature	22°C	Humidity	54%
Test Engineer	Cola Fan	Mode	5MHz / 4987.5MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	cm	deg		
1	302.55	-75.92	-28.70	-47.22	-65.42	196	136	Peak	HORIZONTAL
2	361.22	-74.00	-28.70	-45.30	-65.34	174	229	Peak	HORIZONTAL
3	371.00	-74.62	-28.70	-45.92	-66.22	125	239	Peak	HORIZONTAL
4	715.22	-73.04	-28.70	-44.34	-69.52	125	147	Peak	HORIZONTAL
5	725.11	-74.58	-28.70	-45.88	-71.22	128	178	Peak	HORIZONTAL
6	872.00	-72.52	-28.70	-43.82	-71.54	134	251	Peak	HORIZONTAL

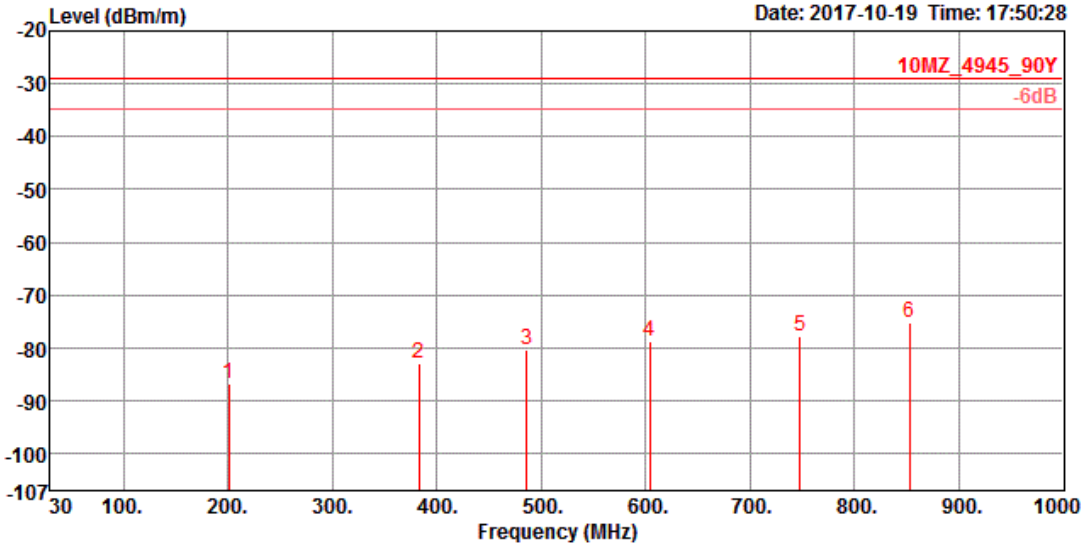
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	cm	deg		
1	42.55	-66.02	-28.70	-37.32	-52.67	121	28	Peak	VERTICAL
2	87.22	-79.72	-28.70	-51.02	-63.12	147	205	Peak	VERTICAL
3	362.11	-80.22	-28.70	-51.52	-71.56	128	179	Peak	VERTICAL
4	592.11	-79.71	-28.70	-51.01	-75.01	186	170	Peak	VERTICAL
5	715.22	-67.07	-28.70	-38.37	-63.55	126	221	Peak	VERTICAL
6	878.22	-74.10	-28.70	-45.40	-73.23	125	159	Peak	VERTICAL

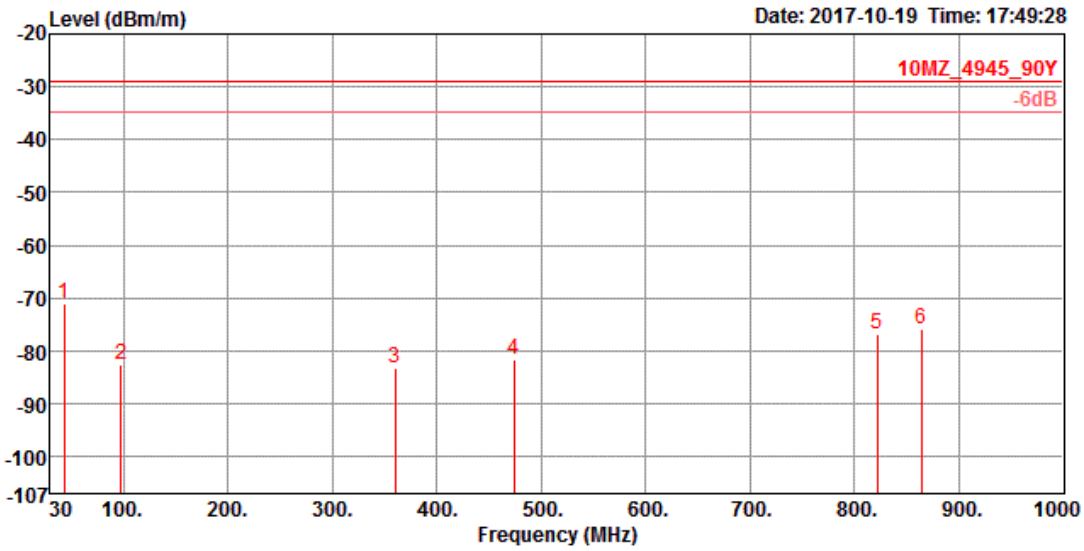
Temperature	22°C	Humidity	54%
Test Engineer	Cola Fan	Mode	10MHz / 4945MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	200.72	-86.83	-28.91	-57.92	-72.47	125	21	Peak	HORIZONTAL
2	383.08	-82.91	-28.91	-54.00	-74.84	100	111	Peak	HORIZONTAL
3	485.90	-80.28	-28.91	-51.37	-74.10	150	89	Peak	HORIZONTAL
4	604.24	-78.89	-28.91	-49.98	-74.30	100	333	Peak	HORIZONTAL
5	747.80	-77.77	-28.91	-48.86	-74.78	200	254	Peak	HORIZONTAL
6	852.56	-75.25	-28.91	-46.34	-74.04	100	223	Peak	HORIZONTAL

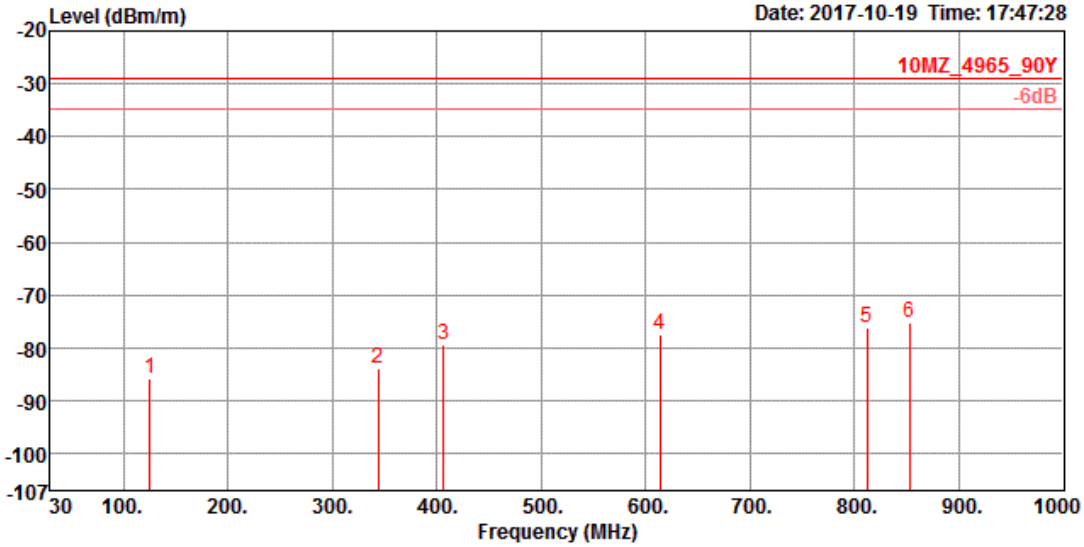
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	43.58	-71.10	-28.91	-42.19	-57.25	100	125	Peak	VERTICAL
2	97.90	-82.67	-28.91	-53.76	-68.16	200	144	Peak	VERTICAL
3	359.80	-83.17	-28.91	-54.26	-74.43	100	227	Peak	VERTICAL
4	474.26	-81.58	-28.91	-52.67	-75.19	150	301	Peak	VERTICAL
5	821.52	-76.69	-28.91	-47.78	-74.92	125	145	Peak	VERTICAL
6	864.20	-75.85	-28.91	-46.94	-74.76	100	10	Peak	VERTICAL

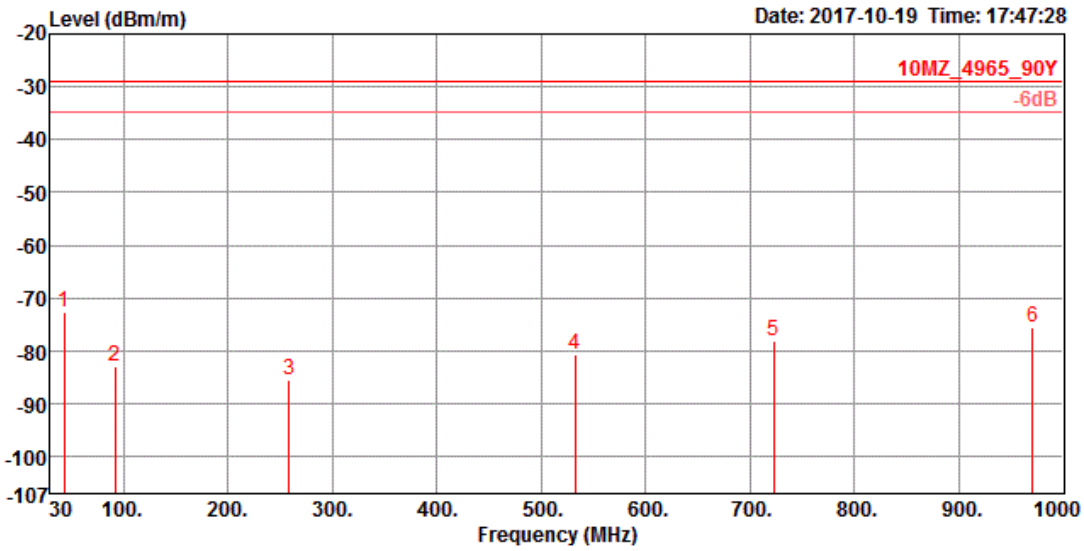
Temperature	22°C	Humidity	54%
Test Engineer	Cola Fan	Mode	10MHz / 4965MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	125.06	-85.73	-28.90	-56.83	-73.26	125	28	Peak	HORIZONTAL
2	344.28	-83.82	-28.90	-54.92	-74.64	100	115	Peak	HORIZONTAL
3	406.36	-79.45	-28.90	-50.55	-71.96	150	223	Peak	HORIZONTAL
4	613.94	-77.31	-28.90	-48.41	-72.86	100	45	Peak	HORIZONTAL
5	811.82	-76.18	-28.90	-47.28	-74.22	200	114	Peak	HORIZONTAL
6	852.56	-75.25	-28.90	-46.35	-74.04	100	282	Peak	HORIZONTAL

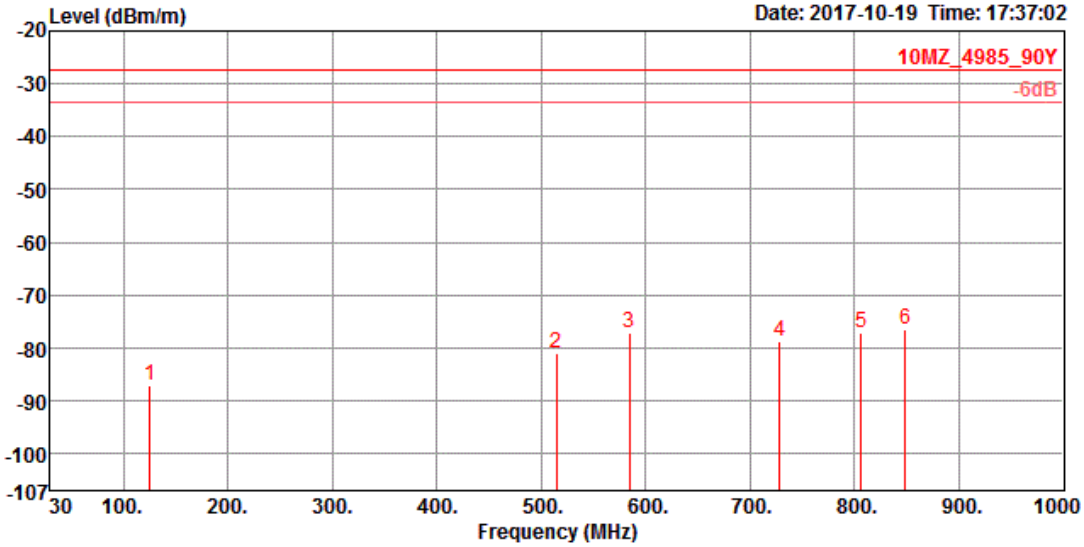
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	43.58	-72.56	-28.90	-43.66	-58.71	125	39	Peak	VERTICAL
2	92.08	-82.93	-28.90	-54.03	-67.30	100	100	Peak	VERTICAL
3	258.92	-85.48	-28.90	-56.58	-74.68	200	201	Peak	VERTICAL
4	532.46	-80.68	-28.90	-51.78	-75.25	150	222	Peak	VERTICAL
5	722.58	-77.97	-28.90	-49.07	-74.57	200	123	Peak	VERTICAL
6	970.90	-75.51	-28.90	-46.61	-76.28	100	307	Peak	VERTICAL

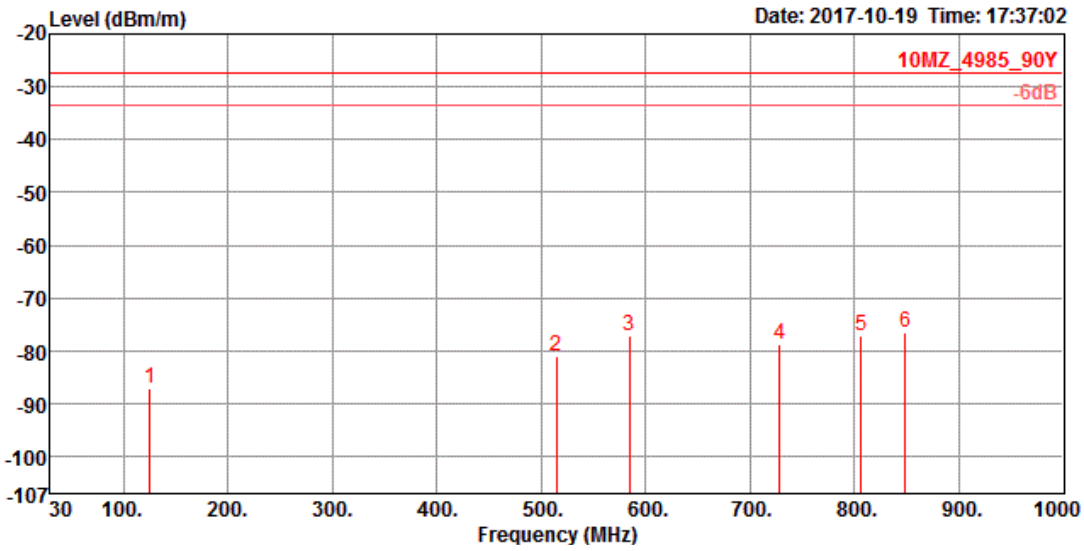
Temperature	22°C	Humidity	54%
Test Engineer	Cola Fan	Mode	10MHz / 4985MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	125.06	-87.15	-27.36	-59.79	-74.68	100	35	Peak	HORIZONTAL
2	515.00	-80.96	-27.36	-53.60	-75.28	125	65	Peak	HORIZONTAL
3	584.84	-77.17	-27.36	-49.81	-72.38	100	353	Peak	HORIZONTAL
4	728.40	-78.75	-27.36	-51.39	-75.48	150	111	Peak	HORIZONTAL
5	806.00	-77.19	-27.36	-49.83	-75.11	100	254	Peak	HORIZONTAL
6	848.68	-76.57	-27.36	-49.21	-75.26	200	25	Peak	HORIZONTAL

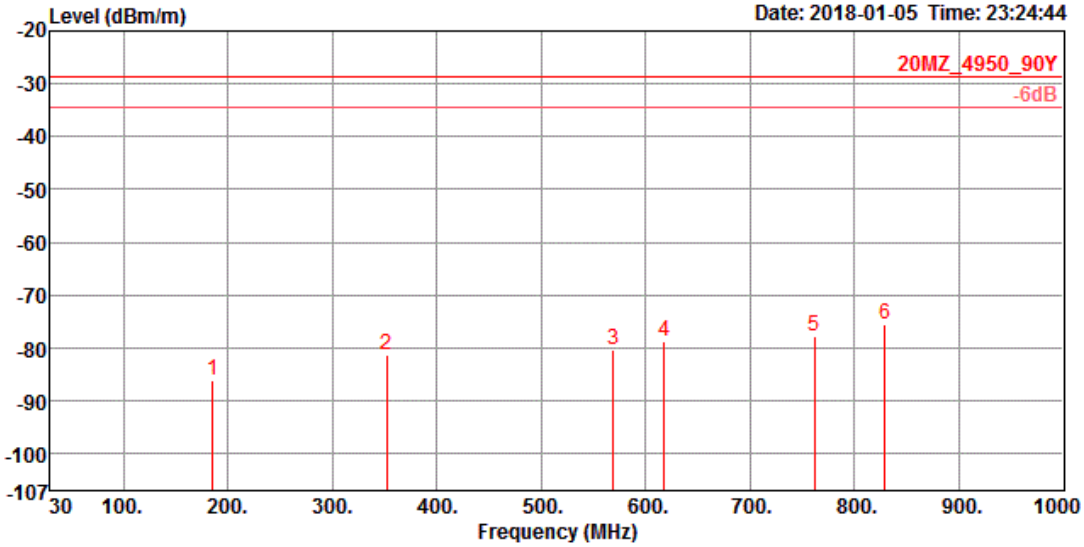
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	125.06	-87.15	-27.36	-59.79	-74.68	100	35	Peak	HORIZONTAL
2	515.00	-80.96	-27.36	-53.60	-75.28	125	65	Peak	HORIZONTAL
3	584.84	-77.17	-27.36	-49.81	-72.38	100	353	Peak	HORIZONTAL
4	728.40	-78.75	-27.36	-51.39	-75.48	150	111	Peak	HORIZONTAL
5	806.00	-77.19	-27.36	-49.83	-75.11	100	254	Peak	HORIZONTAL
6	848.68	-76.57	-27.36	-49.21	-75.26	200	25	Peak	HORIZONTAL

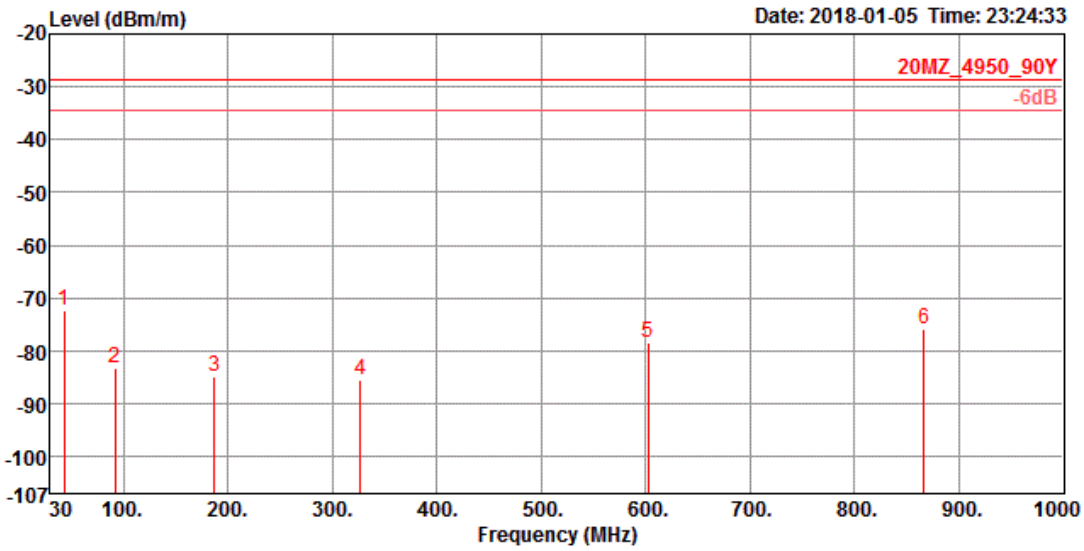
Temperature	22°C	Humidity	54%
Test Engineer	Cola Fan	Mode	20MHz / 4950MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	185.20	-86.27	-28.56	-57.71	-71.13	125	274	Peak	HORIZONTAL
2	352.04	-81.19	-28.56	-52.63	-72.22	100	27	Peak	HORIZONTAL
3	569.32	-80.25	-28.56	-51.69	-75.29	200	214	Peak	HORIZONTAL
4	617.82	-78.86	-28.56	-50.30	-74.47	100	222	Peak	HORIZONTAL
5	761.38	-77.69	-28.56	-49.13	-74.91	150	124	Peak	HORIZONTAL
6	829.28	-75.62	-28.56	-47.06	-74.01	125	4	Peak	HORIZONTAL

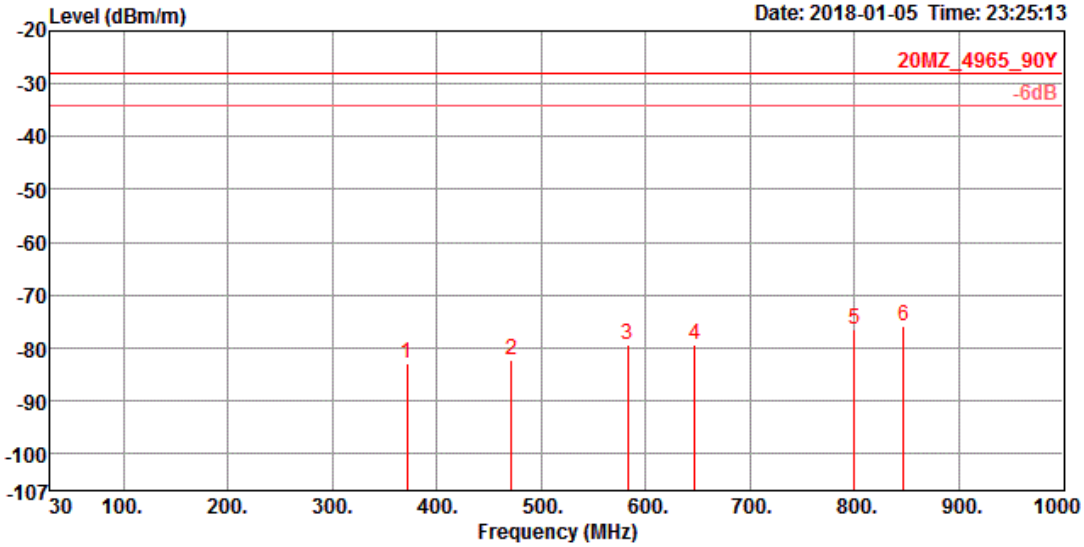
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	43.58	-72.28	-28.56	-43.72	-58.34	125	74	Peak	VERTICAL
2	92.08	-83.09	-28.56	-54.53	-67.29	200	58	Peak	VERTICAL
3	187.14	-84.76	-28.56	-56.20	-69.45	100	111	Peak	VERTICAL
4	326.82	-85.52	-28.56	-56.96	-75.64	100	223	Peak	VERTICAL
5	602.30	-78.52	-28.56	-49.96	-73.72	125	54	Peak	VERTICAL
6	866.14	-75.74	-28.56	-47.18	-74.46	100	360	Peak	VERTICAL

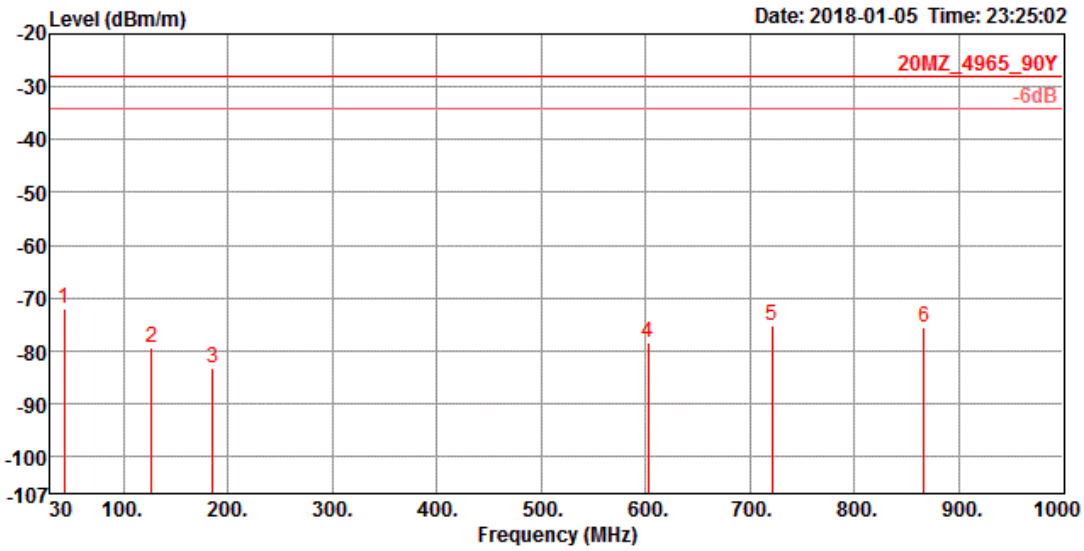
Temperature	22°C	Humidity	54%
Test Engineer	Cola Fan	Mode	20MHz / 4965MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	371.44	-82.85	-27.98	-54.87	-74.49	100	255	Peak	HORIZONTAL
2	471.35	-82.32	-27.98	-54.34	-75.89	125	144	Peak	HORIZONTAL
3	582.90	-79.34	-27.98	-51.36	-74.53	200	210	Peak	HORIZONTAL
4	646.92	-79.33	-27.98	-51.35	-75.29	100	135	Peak	HORIZONTAL
5	800.18	-76.39	-27.98	-48.41	-74.20	150	245	Peak	HORIZONTAL
6	846.74	-75.84	-27.98	-47.86	-74.53	100	69	Peak	HORIZONTAL

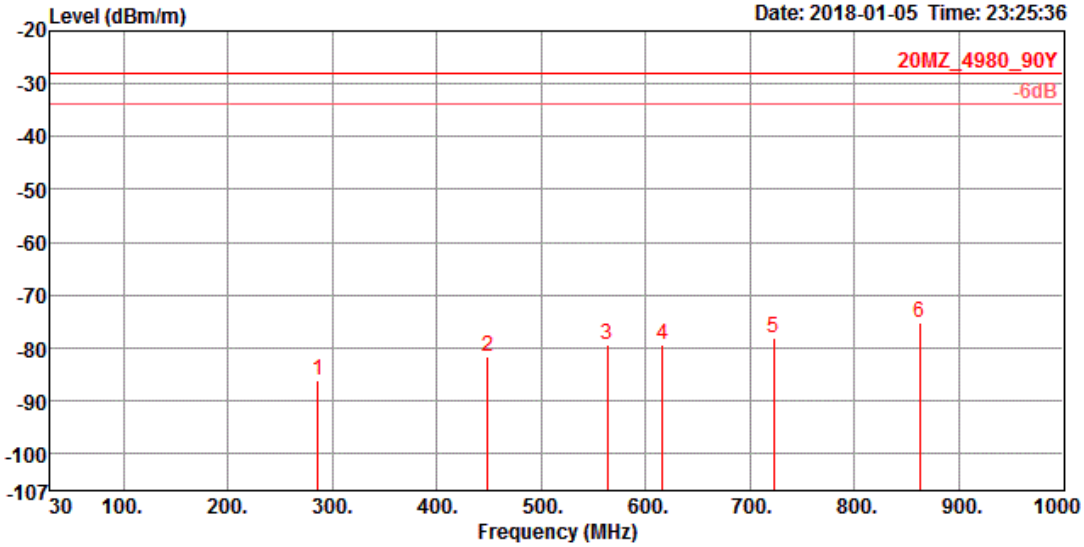
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	43.58	-71.85	-27.98	-43.87	-58.00	100	360	Peak	VERTICAL
2	127.00	-79.33	-27.98	-51.35	-66.82	125	268	Peak	VERTICAL
3	185.20	-83.22	-27.98	-55.24	-68.08	200	14	Peak	VERTICAL
4	602.30	-78.34	-27.98	-50.36	-73.72	150	12	Peak	VERTICAL
5	720.64	-75.09	-27.98	-47.11	-71.68	100	36	Peak	VERTICAL
6	866.14	-75.50	-27.98	-47.52	-74.43	100	254	Peak	VERTICAL

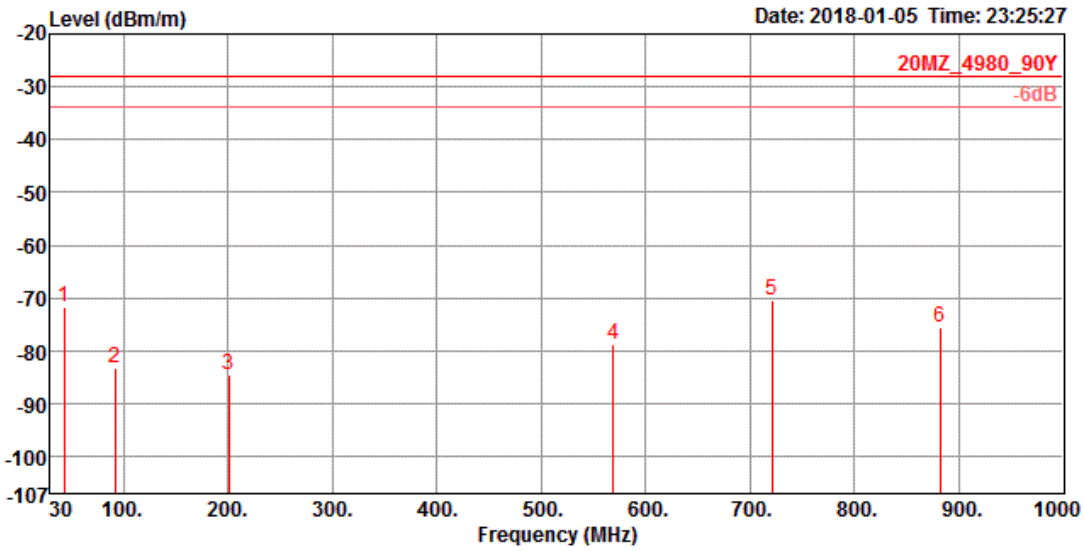
Temperature	22℃	Humidity	54%
Test Engineer	Cola Fan	Mode	20MHz / 4980MHz

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	286.08	-86.19	-27.90	-58.29	-75.29	100	18	Peak	HORIZONTAL
2	449.04	-81.77	-27.90	-53.87	-74.91	125	210	Peak	HORIZONTAL
3	563.50	-79.35	-27.90	-51.45	-74.32	100	100	Peak	HORIZONTAL
4	615.88	-79.54	-27.90	-51.64	-75.11	100	154	Peak	HORIZONTAL
5	722.58	-78.13	-27.90	-50.23	-74.73	200	152	Peak	HORIZONTAL
6	862.26	-75.35	-27.90	-47.45	-74.26	100	222	Peak	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	43.58	-71.67	-27.90	-43.77	-57.82	100	102	Peak	VERTICAL
2	92.08	-83.19	-27.90	-55.29	-67.56	125	238	Peak	VERTICAL
3	200.72	-84.66	-27.90	-56.76	-70.30	100	99	Peak	VERTICAL
4	569.32	-78.63	-27.90	-50.73	-73.67	150	285	Peak	VERTICAL
5	720.64	-70.37	-27.90	-42.47	-66.96	100	166	Peak	VERTICAL
6	881.66	-75.40	-27.90	-47.50	-74.56	200	152	Peak	VERTICAL

Note1:

The amplitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be reported.

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

Note2:

EIRP = Pr - Gr + 20 log (4 * Pi * D / λ) - Cr - PAr – Pr

Where

Pr = Receiver Power

Gr = Gain of receiving antenna

D = Distance in km

Cr = Loss of receiving path

PAr = Gain of receiving amplifier

4.5.7. Results of Transmitter Radiated Unwanted Emissions (1GHz~40GHz)

Temperature	22℃	Humidity	54%
Test Engineer	Cola Fan	Mode	5MHz / 4942.5MHz
Test Date	Oct. 19, 2017 ~ Jan. 10, 2018		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	cm	deg		
1	1552.60	-61.68	-29.00	-32.68	-57.12	116	317	Peak	HORIZONTAL
2	2047.88	-60.43	-29.00	-31.43	-57.88	137	353	Peak	HORIZONTAL
3	2518.32	-58.37	-29.00	-29.37	-57.94	142	184	Peak	HORIZONTAL
4	3787.56	-56.44	-29.00	-27.44	-59.80	141	187	Peak	HORIZONTAL
5	7652.21	-36.21	-29.00	-7.21	-49.88	125	327	Peak	HORIZONTAL
6	13245.11	-37.96	-29.00	-8.96	-57.00	116	297	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	cm	deg		
1	1558.63	-61.79	-29.00	-32.79	-57.56	109	318	Peak	VERTICAL
2	2048.00	-60.14	-29.00	-31.14	-57.88	125	312	Peak	VERTICAL
3	2512.96	-58.71	-29.00	-29.71	-58.66	113	158	Peak	VERTICAL
4	3768.12	-56.13	-29.00	-27.13	-60.63	141	201	Peak	VERTICAL
5	7651.23	-40.79	-29.00	-11.79	-55.33	126	298	Peak	VERTICAL
6	13325.20	-39.95	-29.00	-10.95	-62.18	116	349	Peak	VERTICAL

Temperature	22℃	Humidity	54%
Test Engineer	Cola Fan	Mode	5MHz / 4962.5MHz
Test Date	Oct. 19, 2017 ~ Jan. 10, 2018		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	cm	deg		
1	1552.33	-61.76	-28.98	-32.78	-57.20	151	36	Peak	HORIZONTAL
2	2041.22	-60.92	-28.98	-31.94	-58.34	114	307	Peak	HORIZONTAL
3	2518.20	-55.76	-28.98	-26.78	-55.33	125	328	Peak	HORIZONTAL
4	3771.52	-55.62	-28.98	-26.64	-58.92	129	117	Peak	HORIZONTAL
5	7641.00	-39.02	-28.98	-10.04	-52.69	118	149	Peak	HORIZONTAL
6	13237.00	-39.21	-28.98	-10.23	-58.25	129	274	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	cm	deg		
1	1565.46	-59.62	-28.98	-30.64	-55.12	124	308	Peak	VERTICAL
2	2051.00	-58.98	-28.98	-30.00	-56.45	124	318	Peak	VERTICAL
3	2512.11	-51.92	-28.98	-22.94	-51.45	152	344	Peak	VERTICAL
4	3754.20	-53.86	-28.98	-24.88	-57.13	128	126	Peak	VERTICAL
5	7624.00	-44.69	-28.98	-15.71	-58.34	146	185	Peak	VERTICAL
6	13225.86	-37.95	-28.98	-8.97	-56.88	127	296	Peak	VERTICAL

Temperature	22℃	Humidity	54%
Test Engineer	Cola Fan	Mode	5MHz / 4987.5MHz
Test Date	Oct. 19, 2017 ~ Jan. 10, 2018		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	cm	deg		
1	1556.68	-61.71	-28.70	-33.01	-57.18	127	65	Peak	HORIZONTAL
2	2046.28	-60.07	-28.70	-31.37	-57.52	118	176	Peak	HORIZONTAL
3	2511.94	-58.47	-28.70	-29.77	-58.00	141	242	Peak	HORIZONTAL
4	3785.44	-56.01	-28.70	-27.31	-59.37	145	275	Peak	HORIZONTAL
5	7638.44	-45.07	-28.70	-16.37	-58.72	128	147	Peak	HORIZONTAL
6	13251.96	-39.10	-28.70	-10.40	-58.15	158	197	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm/m	dBm/m	dB	dBm	cm	deg		
1	1554.20	-59.88	-28.70	-31.18	-55.35	184	124	Peak	VERTICAL
2	2402.56	-59.30	-28.70	-30.60	-58.36	119	167	Peak	VERTICAL
3	2514.22	-57.49	-28.70	-28.79	-57.02	129	265	Peak	VERTICAL
4	3762.20	-52.07	-28.70	-23.37	-55.34	124	318	Peak	VERTICAL
5	7644.20	-46.03	-28.70	-17.33	-59.70	147	181	Peak	VERTICAL
6	13225.14	-38.39	-28.70	-9.69	-57.32	128	189	Peak	VERTICAL

Temperature	22℃	Humidity	54%
Test Engineer	Cola Fan	Mode	10MHz / 4945MHz
Test Date	Oct. 19, 2017 ~ Jan. 06, 2018		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	1551.72	-61.41	-28.91	-32.50	-56.85	114	283	Peak	HORIZONTAL
2	2047.28	-59.96	-28.91	-31.05	-57.41	110	306	Peak	HORIZONTAL
3	2511.34	-58.03	-28.91	-29.12	-57.56	107	253	Peak	HORIZONTAL
4	3787.22	-55.84	-28.91	-26.93	-59.20	109	358	Peak	HORIZONTAL
5	9890.40	-42.12	-28.91	-13.21	-59.41	110	351	Peak	HORIZONTAL
6	13245.08	-38.39	-28.91	-9.48	-57.43	105	312	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	1551.58	-61.28	-28.91	-32.37	-56.72	114	276	Peak	VERTICAL
2	2047.74	-60.12	-28.91	-31.21	-57.57	108	290	Peak	VERTICAL
3	2511.34	-58.03	-28.91	-29.12	-57.56	110	279	Peak	VERTICAL
4	3786.72	-55.90	-28.91	-26.99	-59.26	103	335	Peak	VERTICAL
5	9887.28	-32.87	-28.91	-3.96	-50.16	109	57	Peak	VERTICAL
6	13248.76	-38.33	-28.91	-9.42	-57.37	113	325	Peak	VERTICAL

Temperature	22℃	Humidity	54%
Test Engineer	Cola Fan	Mode	10MHz / 4965MHz
Test Date	Oct. 19, 2017 ~ Jan. 06, 2018		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	1559.80	-61.41	-28.90	-32.51	-56.90	108	302	Peak	HORIZONTAL
2	2042.38	-59.70	-28.90	-30.80	-57.12	110	293	Peak	HORIZONTAL
3	2512.64	-58.21	-28.90	-29.31	-57.74	111	348	Peak	HORIZONTAL
4	3786.10	-55.75	-28.90	-26.85	-59.11	108	276	Peak	HORIZONTAL
5	9932.32	-41.24	-28.90	-12.34	-58.57	109	343	Peak	HORIZONTAL
6	13244.14	-38.11	-28.90	-9.21	-57.15	122	156	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	1554.74	-61.25	-28.90	-32.35	-56.72	106	337	Peak	VERTICAL
2	2040.42	-59.99	-28.90	-31.09	-57.41	113	284	Peak	VERTICAL
3	2511.44	-58.21	-28.90	-29.31	-57.74	106	314	Peak	VERTICAL
4	3786.84	-55.89	-28.90	-26.99	-59.25	110	285	Peak	VERTICAL
5	9928.36	-33.13	-28.90	-4.23	-50.45	108	56	Peak	VERTICAL
6	13242.16	-38.12	-28.90	-9.22	-57.16	124	121	Peak	VERTICAL

Temperature	22℃	Humidity	54%
Test Engineer	Cola Fan	Mode	10MHz / 4985MHz
Test Date	Oct. 19, 2017 ~ Jan. 06, 2018		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	1559.48	-61.30	-27.36	-33.94	-56.79	119	328	Peak	HORIZONTAL
2	2044.86	-59.66	-27.36	-32.30	-57.08	111	100	Peak	HORIZONTAL
3	2507.77	-58.17	-27.36	-30.81	-57.67	107	163	Peak	HORIZONTAL
4	3785.05	-55.65	-27.36	-28.29	-59.01	112	301	Peak	HORIZONTAL
5	9970.40	-41.14	-27.36	-13.78	-58.53	108	301	Peak	HORIZONTAL
6	13244.89	-38.15	-27.36	-10.79	-57.19	106	351	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	1558.70	-61.37	-27.36	-34.01	-56.85	110	336	Peak	VERTICAL
2	2042.38	-60.02	-27.36	-32.66	-57.44	109	58	Peak	VERTICAL
3	2509.37	-58.24	-27.36	-30.88	-57.74	109	175	Peak	VERTICAL
4	3783.18	-55.71	-27.36	-28.35	-59.04	106	259	Peak	VERTICAL
5	9974.28	-32.09	-27.36	-4.73	-49.48	107	121	Peak	VERTICAL
6	13249.19	-38.27	-27.36	-10.91	-57.31	106	327	Peak	VERTICAL

Temperature	22℃	Humidity	54%
Test Engineer	Cola Fan	Mode	20MHz / 4950MHz
Test Date	Oct. 19, 2017 ~ Jan. 06, 2018		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	1556.63	-61.40	-28.56	-32.84	-56.87	109	190	Peak	HORIZONTAL
2	2042.34	-59.93	-28.56	-31.37	-57.35	113	360	Peak	HORIZONTAL
3	2512.40	-58.24	-28.56	-29.68	-57.77	105	308	Peak	HORIZONTAL
4	3785.15	-55.83	-28.56	-27.27	-59.19	106	336	Peak	HORIZONTAL
5	9892.13	-41.80	-28.56	-13.24	-59.09	110	80	Peak	HORIZONTAL
6	13244.72	-38.40	-28.56	-9.84	-57.44	110	289	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	1556.96	-61.24	-28.56	-32.68	-56.71	108	282	Peak	VERTICAL
2	2043.82	-60.01	-28.56	-31.45	-57.43	113	327	Peak	VERTICAL
3	2509.97	-58.23	-28.56	-29.67	-57.73	105	277	Peak	VERTICAL
4	3784.06	-55.83	-28.56	-27.27	-59.16	107	333	Peak	VERTICAL
5	9892.90	-35.62	-28.56	-7.06	-52.91	108	57	Peak	VERTICAL
6	13244.60	-38.29	-28.56	-9.73	-57.33	104	311	Peak	VERTICAL

Temperature	22℃	Humidity	54%
Test Engineer	Cola Fan	Mode	20MHz / 4965MHz
Test Date	Oct. 19, 2017 ~ Jan. 06, 2018		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	1554.86	-61.38	-27.98	-33.40	-56.85	110	65	Peak	HORIZONTAL
2	2042.62	-60.02	-27.98	-32.04	-57.44	110	158	Peak	HORIZONTAL
3	2510.32	-58.28	-27.98	-30.30	-57.78	109	232	Peak	HORIZONTAL
4	3783.74	-55.90	-27.98	-27.92	-59.23	108	322	Peak	HORIZONTAL
5	9933.08	-41.40	-27.98	-13.42	-58.73	104	93	Peak	HORIZONTAL
6	13246.91	-38.28	-27.98	-10.30	-57.32	112	345	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	1555.45	-61.36	-27.98	-33.38	-56.83	108	94	Peak	VERTICAL
2	2043.88	-60.02	-27.98	-32.04	-57.44	113	137	Peak	VERTICAL
3	2509.22	-58.04	-27.98	-30.06	-57.54	111	273	Peak	VERTICAL
4	3782.58	-55.79	-27.98	-27.81	-59.12	108	299	Peak	VERTICAL
5	9934.70	-35.76	-27.98	-7.78	-53.09	102	123	Peak	VERTICAL
6	13246.44	-38.36	-27.98	-10.38	-57.40	110	358	Peak	VERTICAL

Temperature	22℃	Humidity	54%
Test Engineer	Cola Fan	Mode	20MHz / 4980MHz
Test Date	Oct. 19, 2017 ~ Jan. 06, 2018		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	1556.88	-61.25	-27.90	-33.35	-56.72	110	68	Peak	HORIZONTAL
2	2043.57	-59.80	-27.90	-31.90	-57.22	107	126	Peak	HORIZONTAL
3	2512.01	-58.31	-27.90	-30.41	-57.84	118	45	Peak	HORIZONTAL
4	3785.34	-55.89	-27.90	-27.99	-59.25	107	115	Peak	HORIZONTAL
5	9978.40	-41.33	-27.90	-13.43	-58.72	106	145	Peak	HORIZONTAL
6	13244.56	-38.26	-27.90	-10.36	-57.30	104	152	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	A/Pos	T/Pos	Remark	Pol/Phase
	MHz	dBm	dBm	dB	dBm	cm	deg		
1	1554.48	-61.48	-27.90	-33.58	-56.95	113	114	Peak	VERTICAL
2	2042.68	-59.93	-27.90	-32.03	-57.35	107	110	Peak	VERTICAL
3	2510.15	-58.36	-27.90	-30.46	-57.86	110	65	Peak	VERTICAL
4	3783.82	-55.88	-27.90	-27.98	-59.21	107	170	Peak	VERTICAL
5	9968.70	-34.52	-27.90	-6.62	-51.91	106	121	Peak	VERTICAL
6	13249.34	-38.43	-27.90	-10.53	-57.47	126	130	Peak	VERTICAL

Note1:

The amplitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be reported.

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

Note2:

EIRP = Pr - Gr + 20 log (4 * Pi * D / λ) - Cr - PAr – Pr

Where

Pr = Receiver Power

Gr = Gain of receiving antenna

D = Distance in km

Cr = Loss of receiving path

PAr = Gain of receiving amplifier

4.6. Frequency Stability Measurement

4.6.1. Limit

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized frequency band. For equipment authorization purposes, this is a reporting requirement only.

4.6.2. Measuring Instruments and Setting

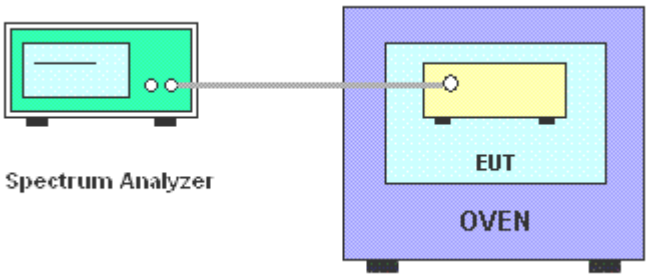
Please refer to section 5 in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Detector	Peak
RBW / VBW	10 kHz / 30kHz

4.6.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channel.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with frequency counter function.
5. fc is declaring of carrier channel frequency. Then the frequency error formula is (fc-f)/fc × 10^6 ppm.
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value and extreme temperature rule is -40°C~70°C.

4.6.4. Test Setup Layout



4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. Test Result of Frequency Stability

Temperature	23℃	Humidity	60%
Test Engineer	Gino Huang, Serway Li, Lucke Hsieh	Test Date	Oct. 17, 2017 ~ Oct. 24, 2017

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)
(V)	4965
126.5	4964.9855
110	4964.9851
93.5	4964.9845
Max. Deviation (MHz)	0.015500
Max. Deviation (ppm)	3.12

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)
(℃)	4965
-40	4965.0382
-30	4965.0295
-20	4965.0231
-10	4965.0199
0	4965.0089
10	4964.9835
20	4964.9851
30	4964.9943
40	4965.0115
50	4965.0379
60	4965.0506
70	4965.0787
Max. Deviation (MHz)	0.078700
Max. Deviation (ppm)	15.85

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
BILOG ANTENNA with 6dB Attenuator	TESEQ & EMCI	CBL6112D & N-6-06	37880 & AT-N0609	20MHz ~ 2GHz	Aug. 30, 2017	Aug. 29, 2018	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 10, 2016	Nov. 09, 2017	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz ~ 18GHz	Nov. 20, 2017	Nov. 19, 2018	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Jul. 05, 2017	Jul. 04, 2018	Radiation (03CH01-CB)
Pre-Amplifier	EMCI	EMC330N	980332	20MHz ~ 3GHz	May 02, 2017	May 01, 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)
Spectrum Analyzer	R&S	FSP40	100056	9kHz ~ 40GHz	Nov. 23, 2017	Nov. 22, 2018	Radiation (03CH01-CB)
EMI Test	R&S	ESCS	100355	9kHz ~ 2.75GHz	May 06, 2017	May 05, 2018	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-16+17	N/A	30 MHz ~ 1 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16	N/A	1 GHz ~ 18 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-16+17	N/A	1 GHz ~ 18 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#1	N/A	18GHz ~ 40 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-40G#2	N/A	18GHz ~ 40 GHz	Oct. 11, 2017	Oct. 10, 2018	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 26, 2016	Dec. 25, 2017	Conducted (TH01-CB)
Spectrum analyzer	R&S	FSV40	100979	9kHz~40GHz	Dec. 21, 2017	Dec. 20, 2018	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)
Temp. and Humidity Chamber	Ten Billion	TTH-C2SP	TBN-1010206	-20~150 degree	Mar. 08. 2017	Mar. 07. 2018	Conducted (TH01-CB))
RF Cable-high	Woken	RG402	High Cable-06	1 GHz – 26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-07	1 GHz –26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-08	1 GHz –26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-09	1 GHz –26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
RF Cable-high	Woken	RG402	High Cable-10	1 GHz –26.5 GHz	Oct. 11, 2017	Oct. 10, 2018	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 22, 2016	Nov. 21, 2017	Conducted (TH01-CB)
Power Sensor	Agilent	U2021XA	MY53410001	50MHz~18GHz	Nov. 20, 2017	Nov. 19, 2018	Conducted (TH01-CB)

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

6. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty	Remark
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%