



FCC Test Report

Equipment : E700
Brand Name : Cambium Networks
Model No. : cnPilot e700 Outdoor
FCC ID : Z8H89FT0027
Standard : 47 CFR FCC Part 15.407
Operating Band : 5150 MHz – 5250 MHz
5725 MHz – 5850 MHz
Applicant : Cambium Networks Inc.
3800 Golf Road, Suite 360 Rolling Meadows, IL 60008,
USA
Manufacturer : Cambium Networks Inc.
3800 Golf Road, Suite 360 Rolling Meadows, IL 60008,
USA
Function : Outdoor; Indoor; Fixed P2P
 Client

The product sample received on Feb. 13, 2018 and completely tested on May 07, 2018. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

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

Cliff Chang
SPORTON INTERNATIONAL INC.





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APPENDIX A. TEST RESULTS OF AC POWER-LINE CONDUCTED EMISSIONS**APPENDIX B. TEST RESULTS OF EMISSION BANDWIDTH****APPENDIX C. TEST RESULTS OF MAXIMUM CONDUCTED OUTPUT POWER****APPENDIX D. TEST RESULTS OF PEAK POWER SPECTRAL DENSITY****APPENDIX E. TEST RESULTS OF UNWANTED EMISSIONS****APPENDIX F. TEST RESULTS OF FREQUENCY STABILITY****TEST PHOTOS****PHOTOGRAPHS OF EUT V01**



Summary of Test Result

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



Revision History



1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
5150-5250	n (HT20), ac (VHT20)	5180-5240	36-48 [4]
5725-5850		5745-5825	149-165 [5]
5150-5250	ac (VHT80)	5210	42 [1]
5725-5850		5775	155 [1]

Band	Mode	BWch (MHz)	Nant
5.15-5.25GHz	802.11n HT20	20	2TX
5.15-5.25GHz	802.11ac VHT20	20	2TX
5.15-5.25GHz	802.11ac VHT80	80	2TX
5.725-5.85GHz	802.11n HT20	20	2TX
5.725-5.85GHz	802.11ac VHT20	20	2TX
5.725-5.85GHz	802.11ac VHT80	80	2TX

Note:

- HT20 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- VHT20 and VHT80 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- BWch is the nominal channel bandwidth.
- Nss-Min is the minimum number of spatial streams.
- Nant is the number of outputs. e.g., 2(2,3) means have 2 outputs for port 2 and port 3. 2 means have 2 outputs for port 1 and port 2.



1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	
						2.4GHz	5GHz
1	1	Cambium Networks	P005954	Printed Antenna	I-PEX	8	-
2	2	Cambium Networks	P005954	Printed Antenna	I-PEX	8	-
3	1	Cambium Networks	P005957	Printed Antenna	I-PEX	-	8
4	2	Cambium Networks	P005989	Printed Antenna	I-PEX	-	8

Note: The EUT has four antennas. Array gain: 0dBi

For 2.4GHz function:

For IEEE 802.11n/ac mode (2TX/2RX)

Ant 1 (Port 1) and Ant. 2 (Port 2) can be used as transmitting/receiving antenna.

Ant 1 (Port 1) and Ant. 2 (Port 2) could transmit/receive simultaneously.

For 5GHz function:

For IEEE 802.11n/ac mode (2TX/2RX)

Ant 3 (Port 1) and Ant. 4 (Port 2) can be used as transmitting/receiving antenna.

Ant 3 (Port 1) and Ant. 4 (Port 2) could transmit/receive simultaneously.

1.1.3 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11ac VHT20	0.99	0.044	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11ac VHT80	0.95	0.223	1.137m	1k

1.1.4 EUT Operational Condition

EUT Power Type	From PoE		
Beamforming Function	<input type="checkbox"/> With beamforming <input checked="" type="checkbox"/> Without beamforming		
Test Software Version	QCARCT Version: 3.0.265.0		



1.2 Testing Applied Standards

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

- ◆ 47 CFR FCC Part 15
- ◆ ANSI C63.10-2013
- ◆ FCC KDB 789033 D02 v02r01
- ◆ FCC KDB 662911 D01 v02r01

1.3 Testing Location Information

Testing Location				
<input type="checkbox"/>	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456	FAX : 886-3-318-0055	
<input checked="" type="checkbox"/>	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065	FAX : 886-3-656-9085	

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-CB	Serway Li / Eddie Weng	22°C / 54%	Feb. 13, 2018~May 07, 2018
Radiated	03CH01-CB	Caster Chang / Lance Wu / Cola Fan	22°C / 54%	Mar. 01, 2018~Mar. 06, 2018
AC Conduction	CO01-CB	Wei Li	23°C / 60%	Mar. 06, 2018

Test site Designation No. TW0006 with FCC

Test site registered number IC 4086D with Industry Canada.

1.4 Measurement Uncertainty

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

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.2 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.7 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.7 dB	Confidence levels of 95%
Output Power Measurement	1.33 dB	Confidence levels of 95%
Power Density Measurement	1.27 dB	Confidence levels of 95%
Bandwidth Measurement	9.74 x10 ⁻⁸	Confidence levels of 95%
Frequency Stability	6.06 x10 ⁻⁸	Confidence levels of 95%



2 Test Configuration of EUT

2.1 Test Channel Mode

Mode	Power Setting
802.11ac VHT20_Nss1,(MCS0)_2TX	-
5180MHz	20
5200MHz	22
5240MHz	21.5
802.11ac VHT80_Nss1,(MCS0)_2TX	-
5210MHz	15
802.11ac VHT20_Nss1,(MCS0)_2TX	-
5745MHz	24
5785MHz	24
5825MHz	24
802.11ac VHT80_Nss1,(MCS0)_2TX	-
5775MHz	18

Note:

- VHT20 covers HT20, due to same modulation. The power setting for 802.11n HT20 are the same or lower than 802.11ac VHT20.



2.2 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests	
Tests Item	AC power-line conducted emissions
Condition	AC power-line conducted measurement for line and neutral
Operating Mode	CTX
1	CTX-2.4GHz
2	CTX-5GHz

For operating mode 2 is the worst case and it was record in this test report.

The Worst Case Mode for Following Conformance Tests	
Tests Item	Emission Bandwidth Maximum Conducted Output Power Peak Power Spectral Density Frequency Stability Unwanted Emissions
Test Condition	Conducted measurement at transmit chains

The Worst Case Mode for Following Conformance Tests	
Tests Item	Unwanted Emissions
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.
Operating Mode < 1GHz	CTX
1	CTX-2.4GHz
2	CTX-5GHz

For operating mode 2 is the worst case and it was record in this test report.

Operating Mode > 1GHz	CTX
---------------------------------	-----

The Worst Case Mode for Following Conformance Tests	
Tests Item	Simultaneous Transmission Analysis - Co-location RF Exposure Evaluation
Operating Mode	
1	WLAN 2.4GHz+WLAN 5GHz

Refer to Sporton Test Report No.: FA830844 for Co-location RF Exposure Evaluation.

Note 1: The EUT can only be used in Y axis position.

Note 2: PoE information as below:

The EUT was powered by PoE, and the PoE was for measurement only, would not be marked.

Support Unit	Brand Name	Model Name
PoE	LEI	NU60A5550111-I3



2.3 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

2.4 Accessories

Accessories
Wall-mounted rack*2

2.5 Support Equipment

For Test Site No: CO01-CB

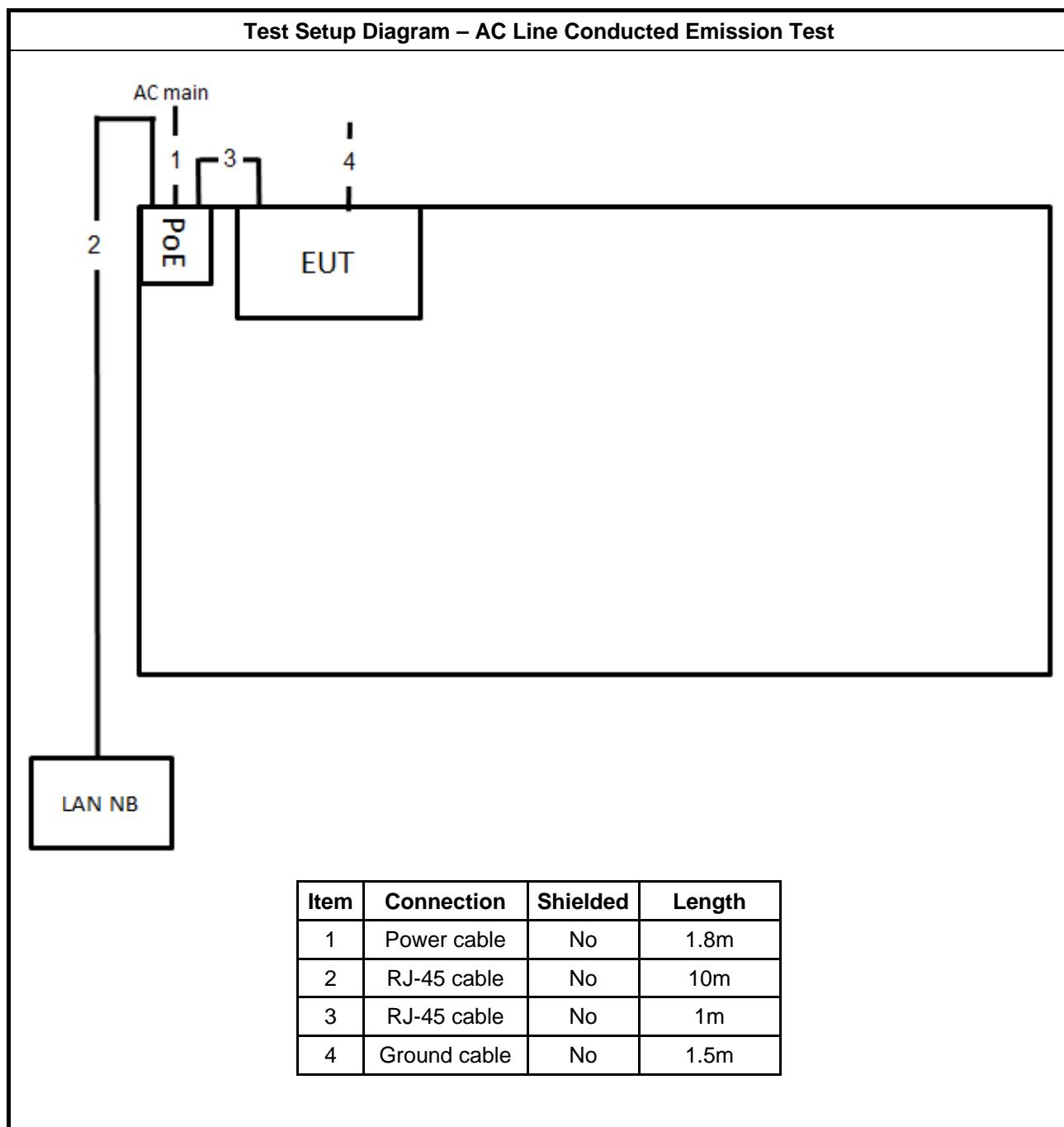
Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB	DELL	E6430	DoC
2	PoE	LEI	NU60A5550111-I3	DoC

For Test Site No: 03CH01-CB / TH01-CB

Support Equipment				
No.	Equipment	Brand Name	Model Name	FCC ID
1	NB	DELL	E4300	DoC
2	PoE	LEI	NU60A5550111-I3	DoC

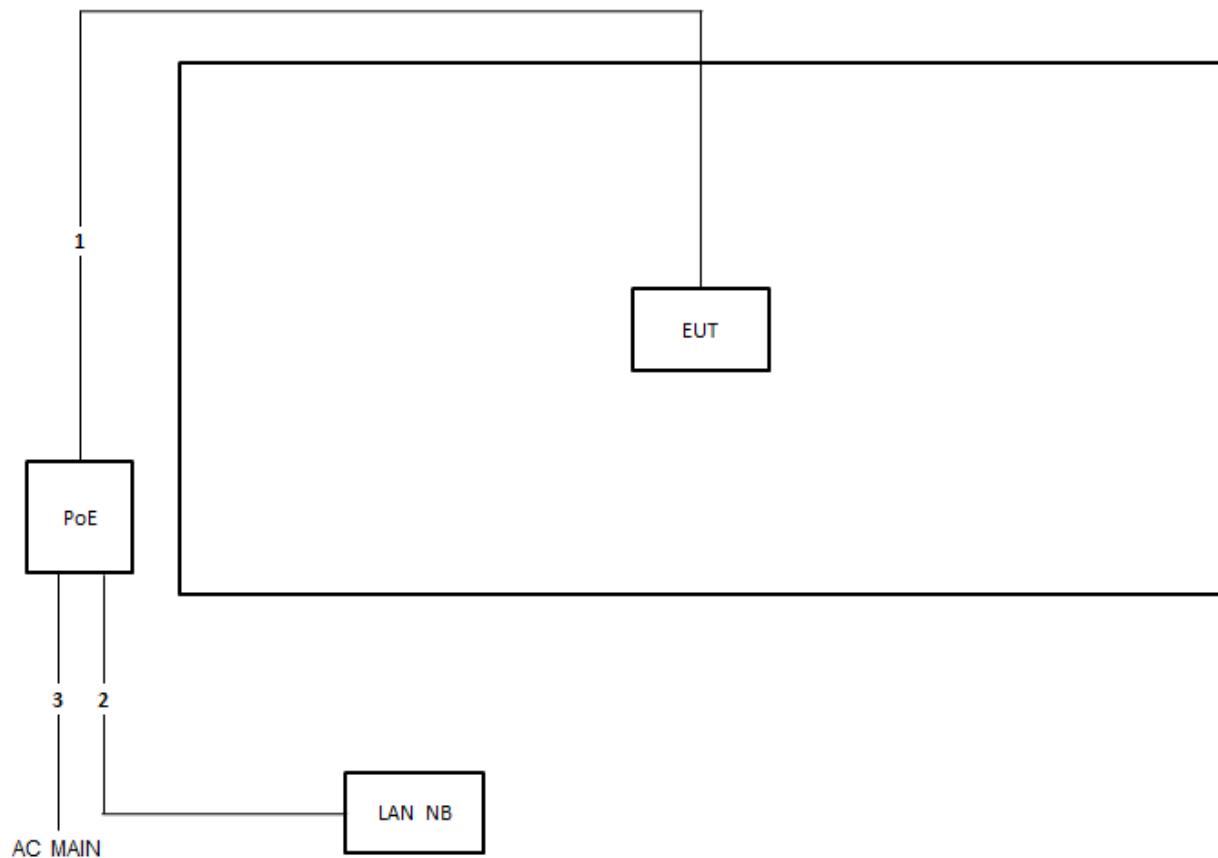


2.6 Test Setup Diagram





Test Setup Diagram - Radiated Test



Item	Connection	Shielded	Length
1	RJ-45 cable	No	10m
2	RJ-45 cable	No	1.5m
3	Power cable	No	0.5m



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: * Decreases with the logarithm of the frequency.

3.1.2 Measuring Instruments

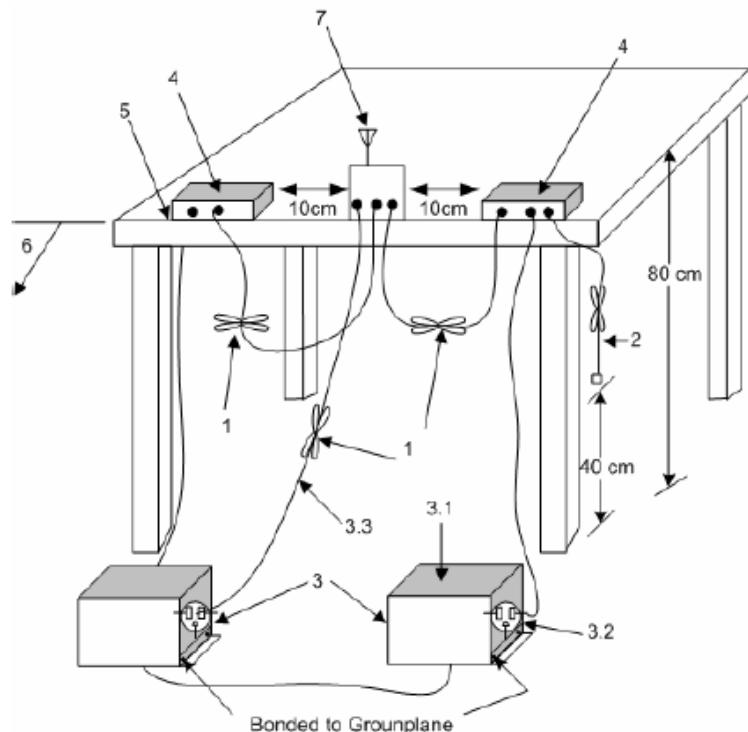
Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Test Method
<input checked="" type="checkbox"/> Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup

AC Power-line Conducted Emissions



1—Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long.

2—The I/O cables that are not connected to an accessory shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

3—EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50Ω loads. LISN may be placed on top of, or immediately beneath, reference ground plane.

3.1—All other equipment powered from additional LISN(s).

3.2—A multiple-outlet strip may be used for multiple power cords of non-EUT equipment.

3.3—LISN at least 80 cm from nearest part of EUT chassis.

4—Non-EUT components of EUT system being tested.

5—Rear of EUT, including peripherals, shall all be aligned and flush with edge of tabletop.

6—Edge of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

7—Antenna can be integral or detachable. If detachable, then the antenna shall be attached for this test.

3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A



3.2 Emission Bandwidth

3.2.1 Emission Bandwidth Limit

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

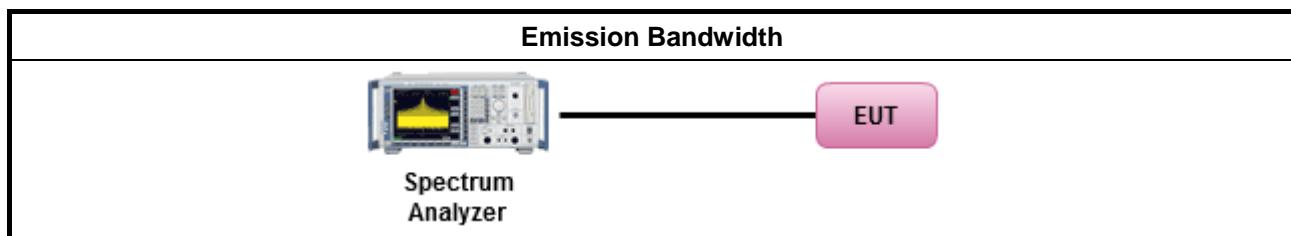
3.2.2 Measuring Instruments

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

3.2.3 Test Procedures

Test Method	
▪	For the emission bandwidth shall be measured using one of the options below:
<input checked="" type="checkbox"/>	Refer as FCC KDB 789033, clause C for EBW and clause D for OBW measurement.
<input type="checkbox"/>	Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.
<input type="checkbox"/>	Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.

3.2.4 Test Setup



3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B



3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Maximum Conducted Output Power Limit	
UNII Devices	
<input checked="" type="checkbox"/> For the 5.15-5.25 GHz band:	<ul style="list-style-type: none">▪ Outdoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 30 - (G_{TX} - 6)$. e.i.r.p. at any elevation angle above 30 degrees $\leq 125\text{mW}$ [21dBm]▪ Indoor AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 30 - (G_{TX} - 6)$▪ Point-to-point AP: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 23 \text{ dBi}$, then $P_{Out} = 30 - (G_{TX} - 23)$.▪ Mobile or Portable Client: the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW. If $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 24 - (G_{TX} - 6)$.
<input type="checkbox"/> For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 24 - (G_{TX} - 6)$.	
<input type="checkbox"/> For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 24 - (G_{TX} - 6)$.	
<input checked="" type="checkbox"/> For the 5.725-5.85 GHz band:	<ul style="list-style-type: none">▪ Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 30 - (G_{TX} - 6)$.▪ Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
LE-LAN Devices	
<input type="checkbox"/> For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.	
<input type="checkbox"/> For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz	
<input type="checkbox"/> For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz	
<input type="checkbox"/> For the 5.725-5.85 GHz band:	<ul style="list-style-type: none">▪ Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W. If $G_{TX} > 6 \text{ dBi}$, then $P_{Out} = 30 - (G_{TX} - 6)$.▪ Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W.
P_{Out} = maximum conducted output power in dBm, G_{TX} = the maximum transmitting antenna directional gain in dBi.	

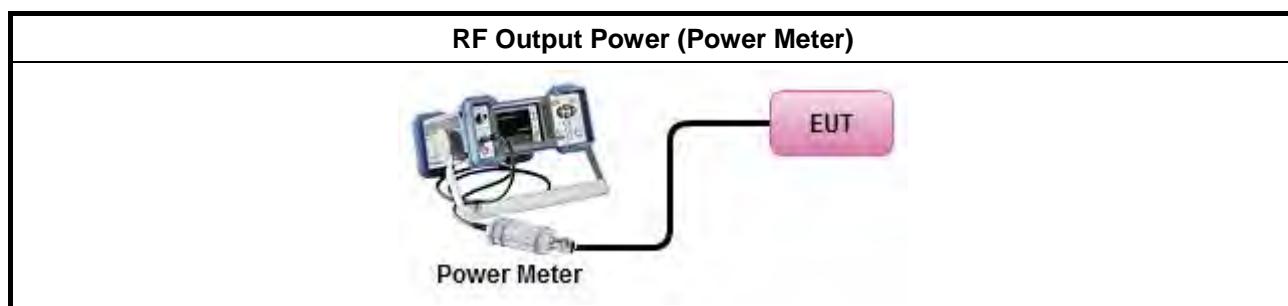
3.3.2 Measuring Instruments

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

3.3.3 Test Procedures

Test Method	
▪ Maximum Conducted Output Power	
Average over on/off periods with duty factor	
<input type="checkbox"/> Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).	
<input type="checkbox"/> Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)	
Wideband RF power meter and average over on/off periods with duty factor	
<input checked="" type="checkbox"/> Refer as FCC KDB 789033, clause E Method PM-G (using an RF average power meter).	
▪ For conducted measurement.	
	<ul style="list-style-type: none">▪ If the EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.▪ If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \dots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

Refer as Appendix C



3.4 Peak Power Spectral Density

3.4.1 Peak Power Spectral Density Limit

Peak Power Spectral Density Limit	
UNII Devices	
<input checked="" type="checkbox"/> For the 5.15-5.25 GHz band:	<ul style="list-style-type: none">▪ Outdoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{out} = 17 - (G_{TX} - 6)$.▪ Indoor AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 6$ dBi, then $P_{out} = 17 - (G_{TX} - 6)$.▪ Point-to-point AP: the peak power spectral density (PPSD) shall not exceed the lesser of 17dBm/MHz. If $G_{TX} > 23$ dBi, then $P_{out} = 17 - (G_{TX} - 23)$.▪ Mobile or Portable Client: the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then PPSD= $11 - (G_{TX} - 6)$.
<input type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then PPSD= $11 - (G_{TX} - 6)$.	
<input type="checkbox"/> For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz. If $G_{TX} > 6$ dBi, then PPSD= $11 - (G_{TX} - 6)$.	
<input checked="" type="checkbox"/> For the 5.725-5.85 GHz band:	<ul style="list-style-type: none">▪ Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then PPSD= $30 - (G_{TX} - 6)$.▪ Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
LE-LAN Devices	
<input type="checkbox"/> For the 5.15-5.25 GHz band, the peak power spectral density (PPSD) ≤ 4 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 10 dBm/MHz.	
<input type="checkbox"/> For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 17 dBm/MHz.	
<input type="checkbox"/> e.i.r.p. greater than 200 mW shall comply with the following e.i.r.p. at different elevations, where θ is the angle above the local horizontal plane (of the Earth) as shown below: -13 dBW/MHz for $0^\circ \leq \theta < 8^\circ$; -13 – 0.716 (θ -8) dBW/MHz for $8^\circ \leq \theta < 40^\circ$ -35.9 – 1.22 (θ -40) dBW/MHz for $40^\circ \leq \theta \leq 45^\circ$; -42 dBW/MHz for $\theta > 45^\circ$	
<input type="checkbox"/> For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) ≤ 11 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) ≤ 17 dBm/MHz.	
<input type="checkbox"/> For the 5.725-5.85 GHz band:	<ul style="list-style-type: none">▪ Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz. If $G_{TX} > 6$ dBi, then PPSD= $30 - (G_{TX} - 6)$.▪ Point-to-point systems (P2P): the peak power spectral density (PPSD) ≤ 30 dBm/500kHz.
PPSD = peak power spectral density that he same method as used to determine the conducted output power shall be used to determine the power spectral density. And power spectral density in dBm/MHz G_{TX} = the maximum transmitting antenna directional gain in dBi.	

3.4.2 Measuring Instruments

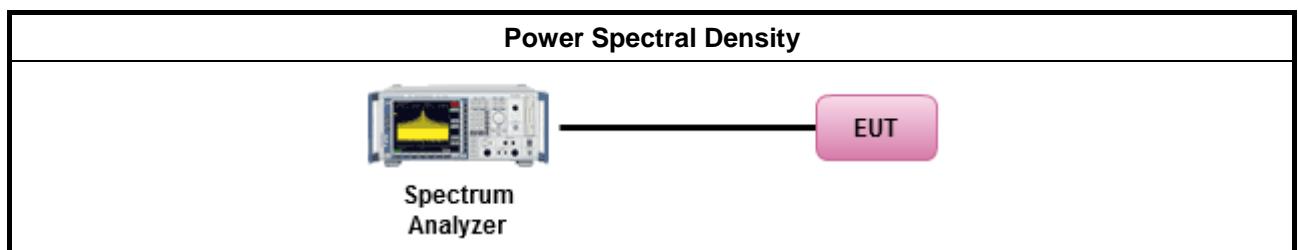
Refer a test equipment and calibration data table in this test report.



3.4.3 Test Procedures

Test Method	
<ul style="list-style-type: none">▪ Peak power spectral density procedures that the same method as used to determine the conducted output power shall be used to determine the peak power spectral density and use the peak search function on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density shall be measured using below options:	
<p><input type="checkbox"/> Refer as FCC KDB 789033, F(5) power spectral density can be measured using resolution bandwidths < 1 MHz provided that the results are integrated over 1 MHz bandwidth [duty cycle \geq 98% or external video / power trigger]</p>	
<p><input checked="" type="checkbox"/> Refer as FCC KDB 789033, clause E Method SA-1 (spectral trace averaging).</p>	
<p><input type="checkbox"/> Refer as FCC KDB 789033, clause E Method SA-1 Alt. (RMS detection with slow sweep speed) duty cycle < 98% and average over on/off periods with duty factor</p>	
<p><input checked="" type="checkbox"/> Refer as FCC KDB 789033, clause E Method SA-2 (spectral trace averaging).</p>	
<p><input type="checkbox"/> Refer as FCC KDB 789033, clause E Method SA-2 Alt. (RMS detection with slow sweep speed)</p>	
<ul style="list-style-type: none">▪ For conducted measurement.	
<ul style="list-style-type: none">▪ If the EUT supports multiple transmit chains using options given below:	<p><input checked="" type="checkbox"/> Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.</p>
	<p><input type="checkbox"/> Option 2: Measure and sum spectral maxima across the outputs. With this technique, spectra are measured at each output of the device at the required resolution bandwidth. The maximum value (peak) of each spectrum is determined. These maximum values are then summed mathematically in linear power units across the outputs. These operations shall be performed separately over frequency spans that have different out-of-band or spurious emission limits,</p>
<ul style="list-style-type: none">▪ Option 3: Measure and add $10 \log(N)$ dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with $10 \log(N)$. Or each transmit chains shall be add $10 \log(N)$ to compared with the limit.	<p><input type="checkbox"/> If multiple transmit chains, EIRP PPSD calculation could be following as methods: $PPSD_{total} = PPSD_1 + PPSD_2 + \dots + PPSD_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = PPSD_{total} + DG$</p>

3.4.4 Test Setup





3.4.5 Test Result of Peak Power Spectral Density

Refer as Appendix D



3.5 Unwanted Emissions

3.5.1 Transmitter Radiated Unwanted Emissions Limit

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

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

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

Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

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

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



3.5.2 Measuring Instruments

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

3.5.3 Test Procedures

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

**Test Method**

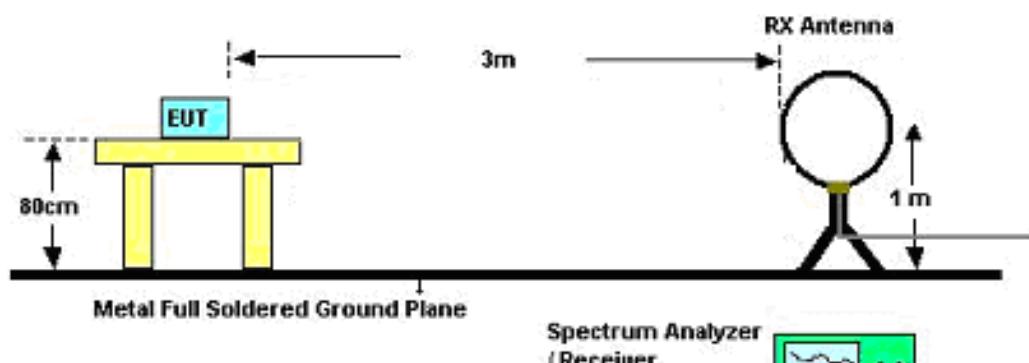
- For conducted and cabinet radiation measurement, refer as FCC KDB 789033, clause H)3).

- | | |
|--|---|
| | <ul style="list-style-type: none">▪ For conducted unwanted emissions into non-restricted bands (relative emission limits). Devices with multiple transmit chains:
Refer as FCC KDB 662911, when testing out-of-band and spurious emissions against relative emission limits, tests may be performed on each output individually without summing or adding $10 \log(N)$ if the measurements are made relative to the in-band emissions on the individual outputs.▪ For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below:
(1) Measure and sum the spectra across the outputs or
(2) Measure and add $10 \log(N)$ dB▪ For FCC KDB 662911 The methodology described here may overestimate array gain, thereby resulting in apparent failures to satisfy the out-of-band limits even if the device is actually compliant. In such cases, compliance may be demonstrated by performing radiated tests around the frequencies at which the apparent failures occurred. |
|--|---|

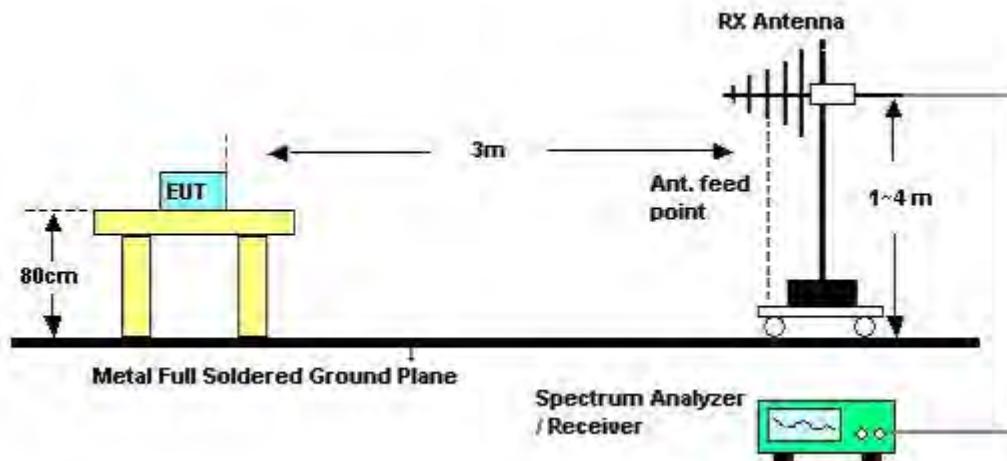
3.5.4 Test Setup

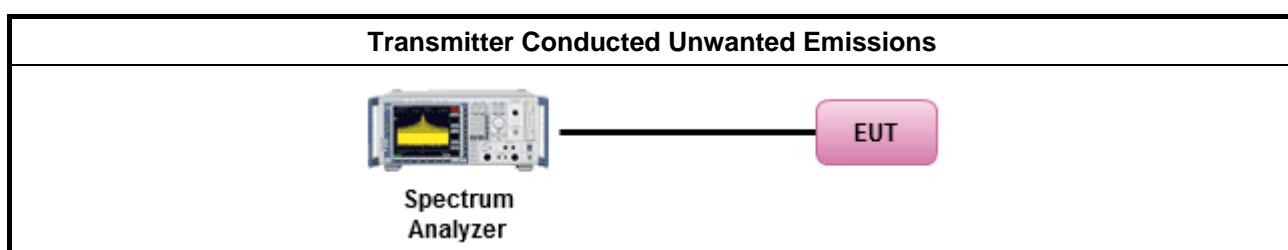
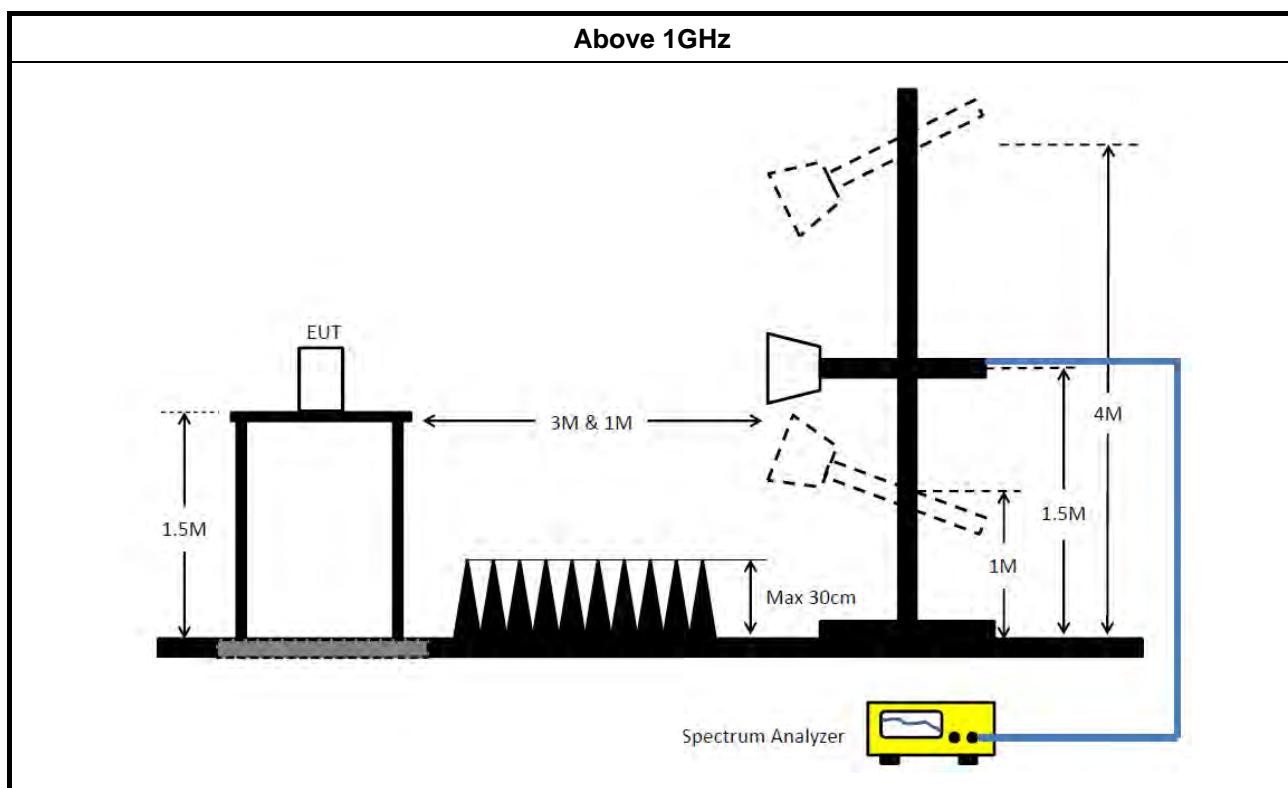
Transmitter Radiated Unwanted Emissions

9kHz ~30MHz



30MHz~1GHz





3.5.5 Transmitter Unwanted Emissions (Below 30MHz)

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

3.5.6 Test Result of Transmitter Unwanted Emissions

Refer as Appendix E



3.6 Frequency Stability

3.6.1 Frequency Stability Limit

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

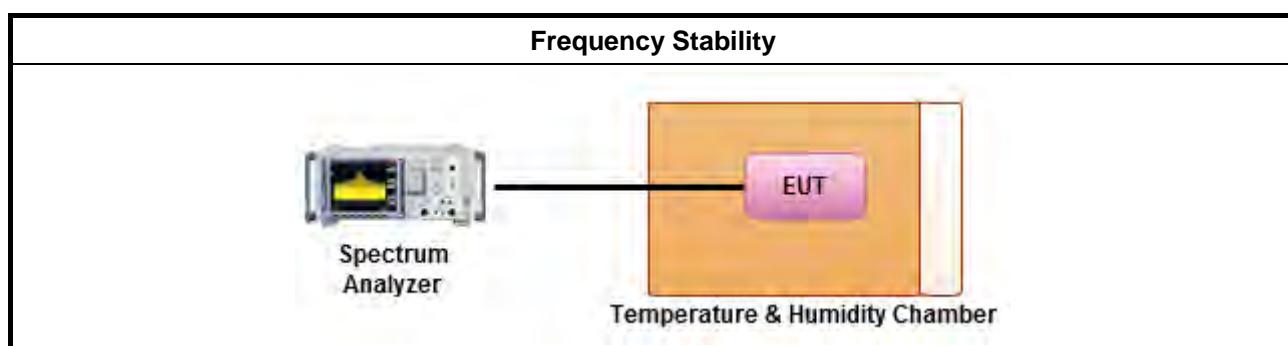
3.6.2 Measuring Instruments

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

3.6.3 Test Procedures

Test Method	
▪ Refer as ANSI C63.10, clause 6.8 for frequency stability tests	
	▪ Frequency stability with respect to ambient temperature
	▪ Frequency stability when varying supply voltage
	▪ Extreme temperature is -30°C~50°C.

3.6.4 Test Setup



3.6.5 Test Result of Frequency Stability

Refer as Appendix F



4 Test Equipment and Calibration Data

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
EMI Receiver	Agilent	N9038A	My52260123	9kHz ~ 8.45GHz	Jan. 31, 2018	Jan. 30, 2019	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-5 0-16-2	04083	150kHz ~ 100MHz	Dec. 20, 2017	Dec. 19, 2018	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127647	9kHz ~ 30MHz	Dec. 29, 2017	Dec. 28, 2018	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150kHz ~ 30MHz	May 23, 2017	May 22, 2018	Conduction (CO01-CB)
Software	Audix	E3	6.120210n	-	N.C.R.	N.C.R.	Conduction (CO01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9kHz - 30 MHz	Mar. 16, 2016*	Mar. 15, 2018*	Radiation (03CH01-CB))
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. 20, 2017	Nov. 19, 2018	Radiation (03CH01-CB)
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA91702 52	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. 09, 2018	Jan. 08, 2019	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. 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. 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)

**FCC Test Report****Report No. : FR830844AB**

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
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. 20, 2017	Nov. 19, 2018	Conducted (TH01-CB)

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

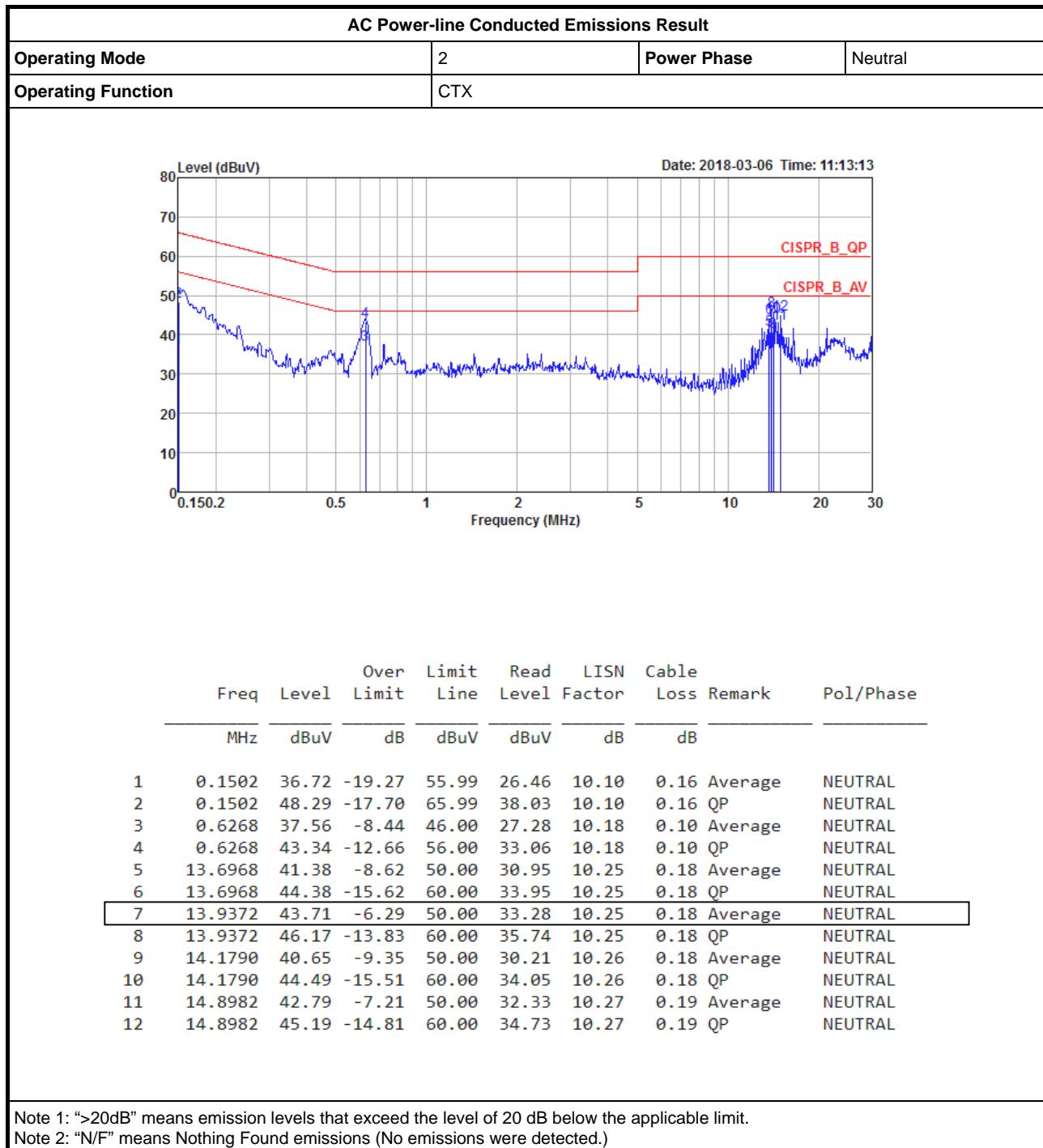
** Calibration Interval of instruments listed above is two years.

N.C.R. means Non-Calibration required.



AC Power-line Conducted Emissions Result

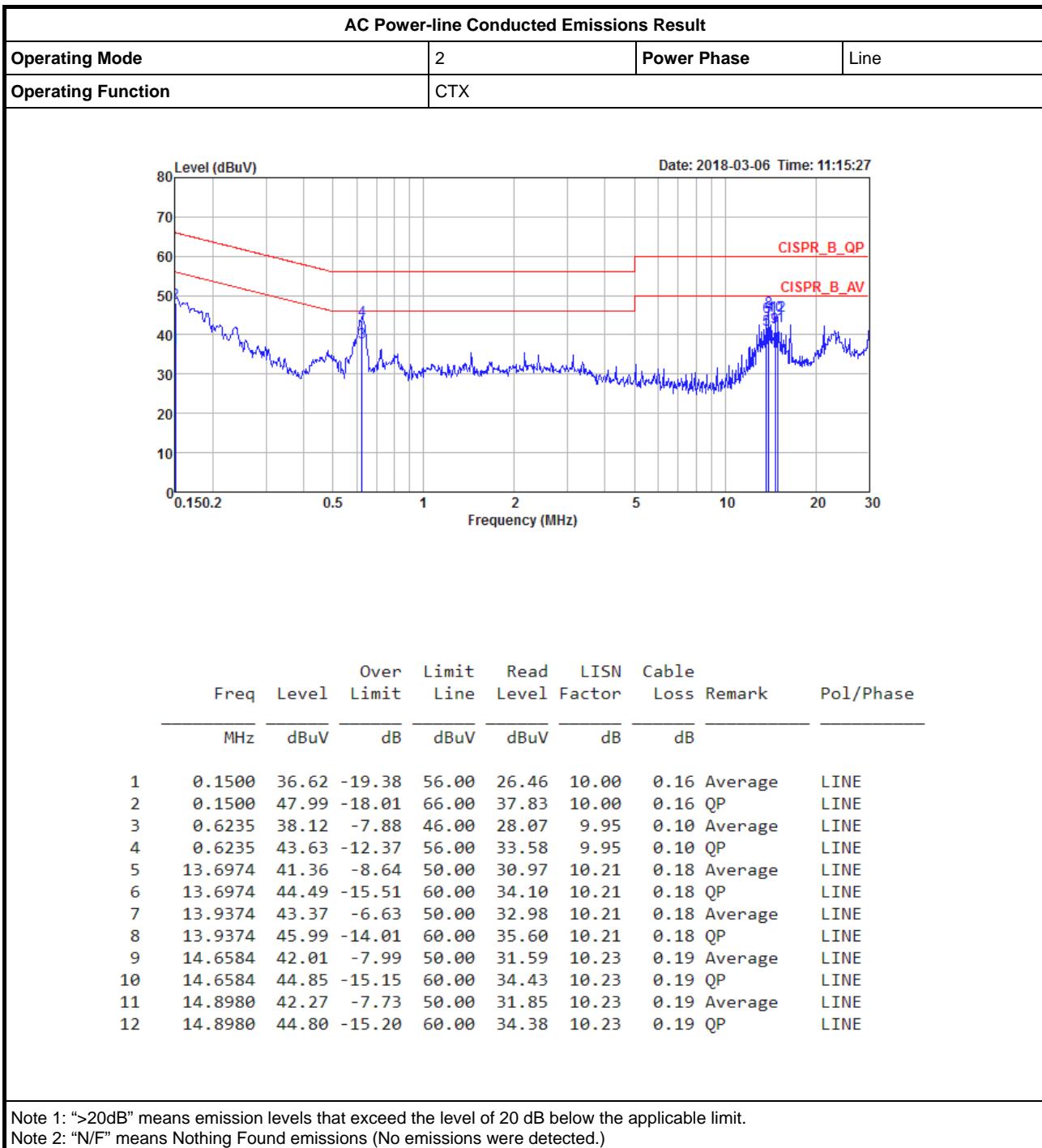
Appendix A





AC Power-line Conducted Emissions Result

Appendix A



**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.15-5.25GHz	-	-	-	-	-
802.11ac VHT20_Nss1,(MCS0)_2TX	21.125M	17.641M	17M6D1D	20.525M	17.616M
802.11ac VHT80_Nss1,(MCS0)_2TX	83.4M	75.962M	76M0D1D	83.3M	75.662M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Max-OBW = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Min-OBW = Minimum 99% occupied bandwidth;

**Result**

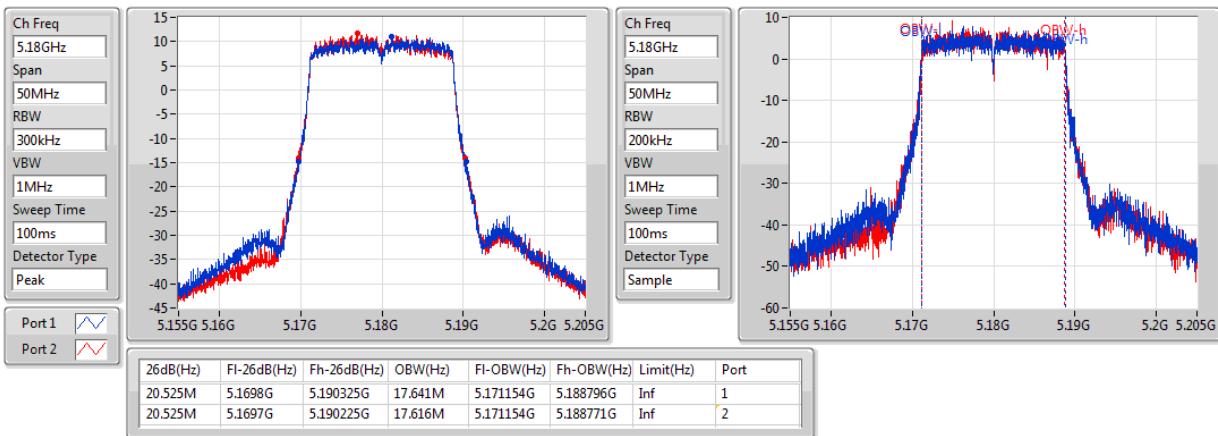
Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	Inf	20.525M	17.641M	20.525M	17.616M
5200MHz	Pass	Inf	20.975M	17.641M	21.125M	17.616M
5240MHz	Pass	Inf	21M	17.616M	20.7M	17.616M
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	Inf	83.4M	75.662M	83.3M	75.962M

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

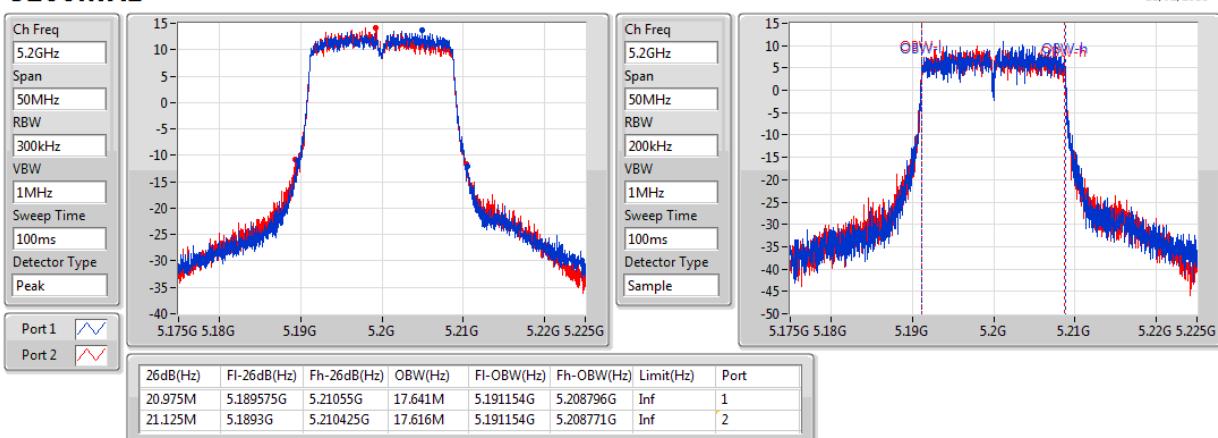
Port X-OBW = Port X 99% occupied bandwidth;

**802.11ac VHT20_Nss1,(MCS0)_2TX****EBW****5180MHz**

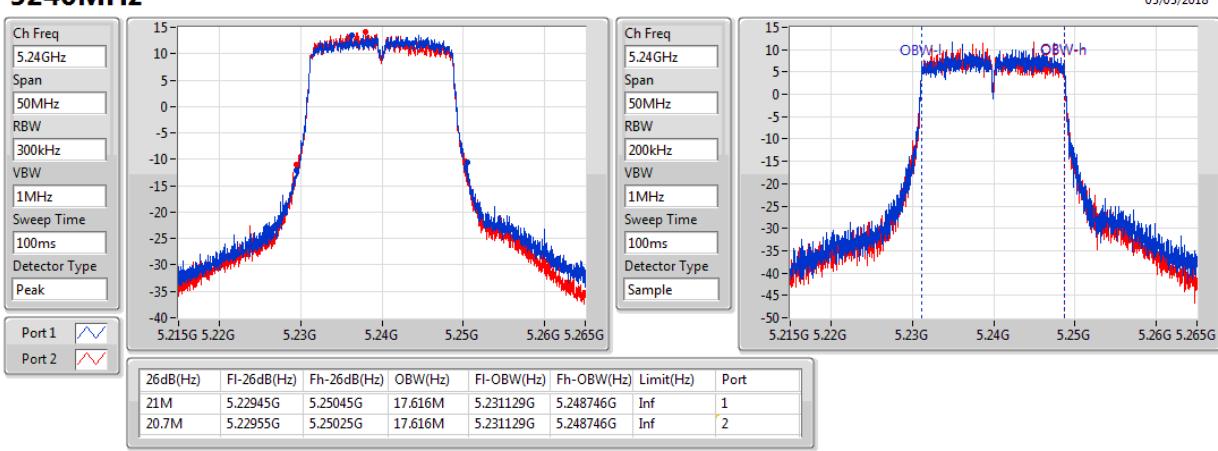
22/02/2018

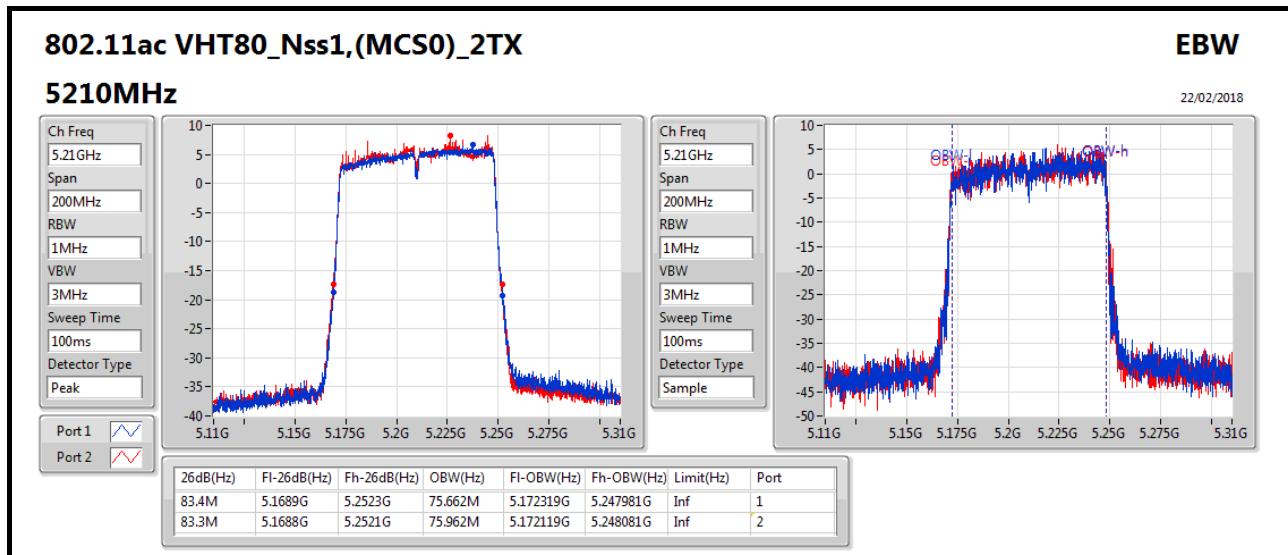
**802.11ac VHT20_Nss1,(MCS0)_2TX****EBW****5200MHz**

22/02/2018

**802.11ac VHT20_Nss1,(MCS0)_2TX****EBW****5240MHz**

05/05/2018





**Summary**

Mode	Max-N dB (Hz)	Max-OBW (Hz)	ITU-Code	Min-N dB (Hz)	Min-OBW (Hz)
5.725-5.85GHz	-	-	-	-	-
802.11ac VHT20_Nss1,(MCS0)_2TX	17.575M	23.638M	23M6D1D	14.925M	17.666M
802.11ac VHT80_Nss1,(MCS0)_2TX	76M	75.862M	75M9D1D	75.7M	75.562M

Max-N dB = Maximum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Max-OBW = Maximum 99% occupied bandwidth;

Min-N dB = Minimum 6dB down bandwidth for 5.725-5.85GHz band / Maximum 26dB down bandwidth for other band;

Min-OBW = Minimum 99% occupied bandwidth;

**Result**

Mode	Result	Limit (Hz)	Port 1-N dB (Hz)	Port 1-OBW (Hz)	Port 2-N dB (Hz)	Port 2-OBW (Hz)
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5745MHz	Pass	500k	17.15M	19.09M	16.9M	17.666M
5785MHz	Pass	500k	17.575M	23.038M	17.575M	17.841M
5825MHz	Pass	500k	17.575M	23.638M	14.925M	18.166M
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5775MHz	Pass	500k	76M	75.862M	75.7M	75.562M

Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

Port X-OBW = Port X 99% occupied bandwidth;



EBW Result

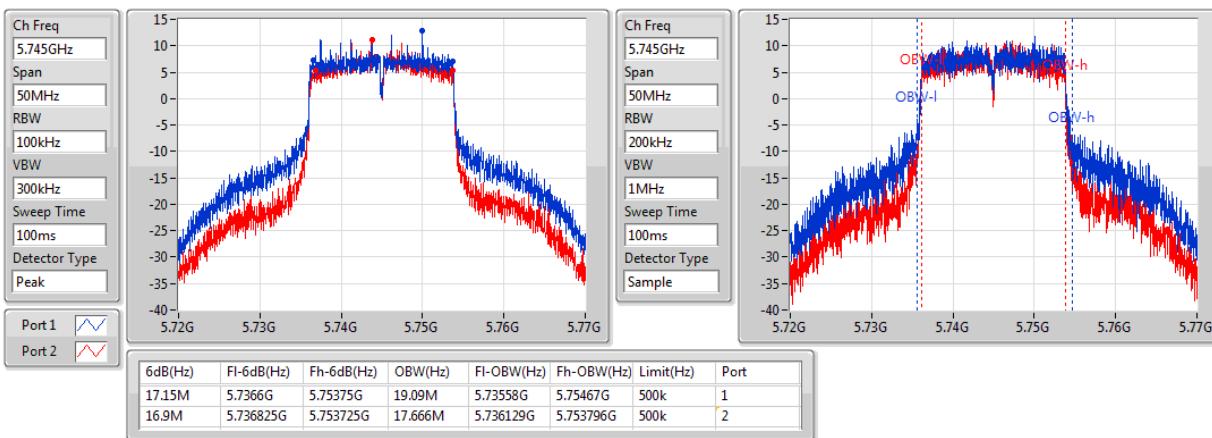
Appendix B.2

802.11ac VHT20_Nss1,(MCS0)_2TX

EBW

5745MHz

14/02/2018

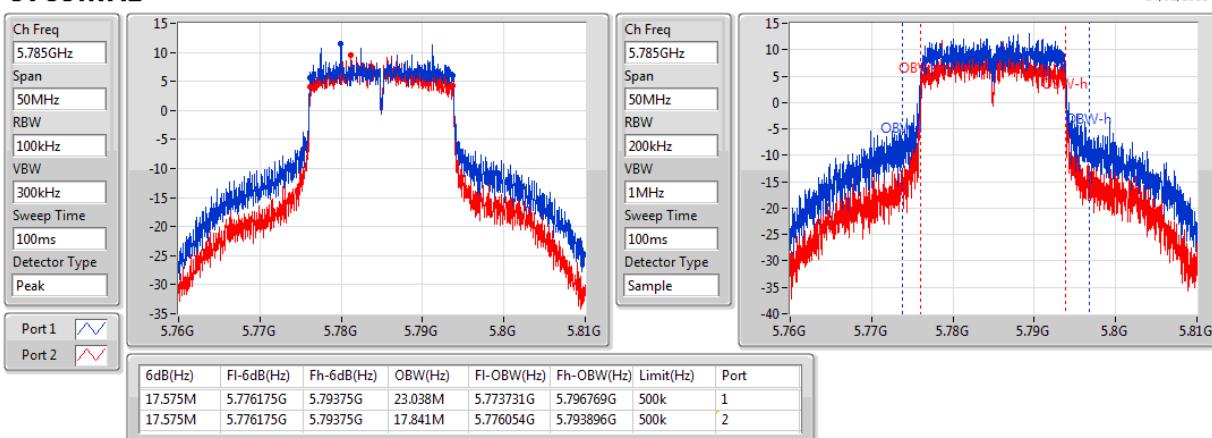


802.11ac VHT20_Nss1,(MCS0)_2TX

EBW

5785MHz

14/02/2018

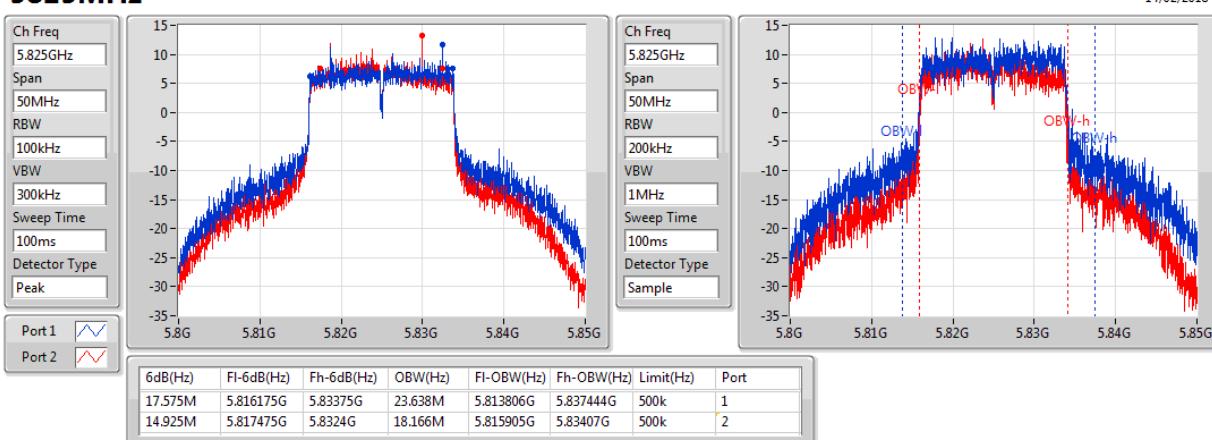


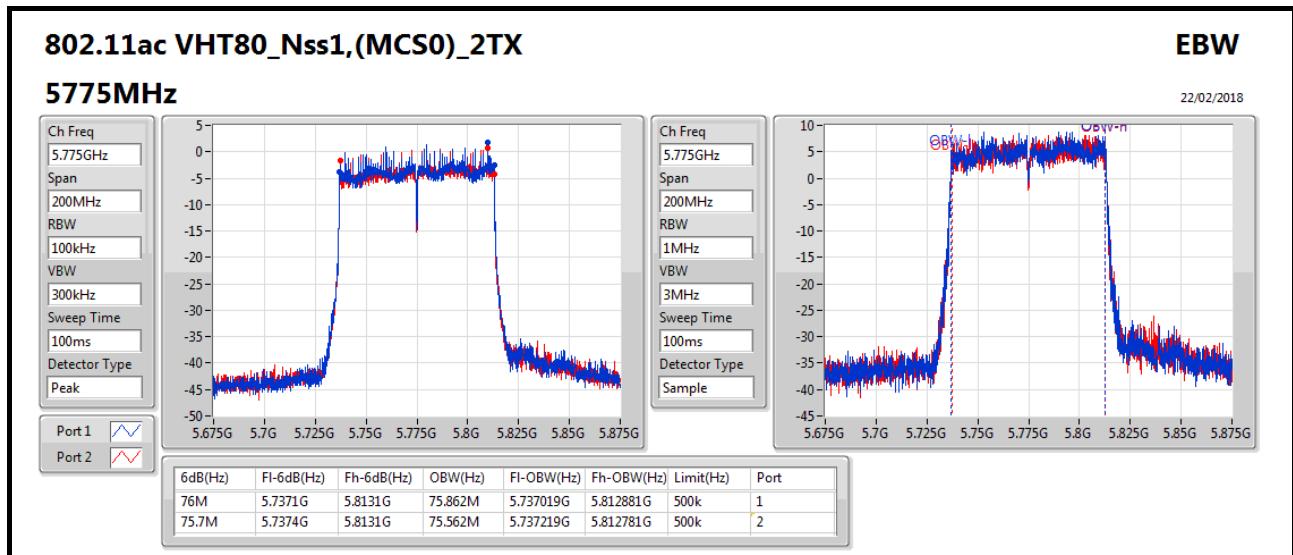
802.11ac VHT20_Nss1,(MCS0)_2TX

EBW

5825MHz

14/02/2018





**Summary**

Mode	Total Power (dBm)	Total Power (W)	EIRP /EIRP- Elevation 30° (dBm)	EIRP /EIRP- Elevation 30° (W)
5.15-5.25GHz	-	-	-	-
802.11ac VHT20_Nss1,(MCS0)_2TX	24.85	0.30549	32.85/20.95	1.92752/0.12445
802.11ac VHT80_Nss1,(MCS0)_2TX	18.15	0.06531	26.15/14.25	0.41210/0.02660

**Result**

Mode	Result	Directional Gain (Output Power) / Gain-Elevation 30° (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP /EIRP-Elevation 30° (dBm)	EIRP Limit / EIRP Limit-Elevation 30° (dBm)
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5180MHz	Pass	8.00	19.66	19.37	22.53	28.00	30.53/18.63	36.00/21.00
5200MHz	Pass	8.00	21.79	21.88	24.85	28.00	32.85/20.95	36.00/21.00
5240MHz	Pass	8.00	21.75	21.71	24.74	28.00	32.74/20.84	36.00/21.00
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-	-	-
5210MHz	Pass	8.00	15.29	14.99	18.15	28.00	26.15/14.25	36.00/21.00

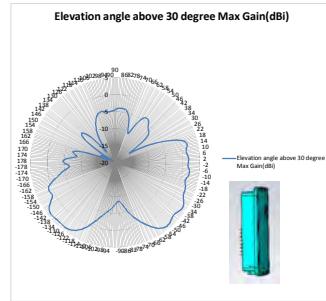
DG = Directional Gain; **Port X** = Port X output power



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Ph: 886-3-656-5065 / FAX: 886-3-656-9053 / www.sporton.com.tw

H-Plan angle(Degree)	Freq.(MHz)	Elevation angle above 30 degree Max Gain(dB)	Gain(dBm)
90	5100	-3.5	-4.4
89			-4.3
88			-4.2
87			-4
86			-3.9
85			-3.9
84			-4
83			-3.9
82			-3.9
81			-4
80			-4
79			-4
78			-4.2
77			-4.5
76			-4.8
75			-5.1
74			-5.7
73			-6.2
72			-6.9
71			-7.1
70			-7.5
69			-8.3
68			-10.3
67			-10.5
66			-10.6
65			-10.3
64			-9.5
63			-8.7
62			-7.7
61			-6.5
60			-6
59			-5.3
58			-4.3
57			-4
56			-4
55			-3.9
54			-4
53			-4.1
52			-4.3
51			-4.3
50			-4.6
49			-5
48			-5.4
47			-5.7
46			-6
45			-6.2
44			-6.3
43			-6.4
42			-6.6
41			-7.1
40			-7.2
39			-7.8
38			-8.5
37			-9.7
36			-11.1
35			-12.7
34			-14.2
33			-14.6
32			-14.4
31			-13.1
30			-11.7
29			-10.5
28			-9.5
27			-8.5
26			-7.5
25			-6.4
24			-5.3
23			-4
22			-2.8
21			-1.7
20			0.7
19			0.1
18			0.8
17			1.1
16			1.6
15			1.8
14			1.9
13			1.9
12			1.8
11			1.4
10			1.3
9			1.2
8			1.2
7			1.3
6			1.4
5			1.5
4			1.6
3			1.7
2			1.7
1			1.6
0			1.5
-1			1.5
-2			1.5
-3			1.5
-4			1.7
-5			1.8
-6			2
-7			2.1
-8			2.1
-9			2.1
-10			2
-11			1.8
-12			1.6
-13			1.5
-14			1.5
-15			1.5
-16			1.4
-17			1.6
-18			1.7
-19			1.9
-20			2
-21			2.1
-22			2.1
-23			2.2
-24			2.2
-25			2.2
-26			2.3
-27			2.5
-28			2.7
-29			3
-30			3.3
-31			3.5
-32			3.7
-33			3.9
-34			3.9
-35			3.9
-36			3.9
-37			3.7
-38			3.5
-39			3.4
-40			3.3
-41			3.2
-42			3.2
-43			3.2
-44			3.3
-45			3.3
-46			3.6
-47			3.8
-48			4
-49			4.1
-50			4.1
-51			4.2
-52			4.1
-53			4
-54			3.9
-55			3.7
-56			3.6
-57			3.2
-58			2.9
-59			2.8
-60			2.1
-61			1.7
-62			1.5
-63			0.9
-64			0.4
-65			0
-66			-0.5
-67			-0.9
-68			-1.4
-69			-1.8
-70			-2.3
-71			-2.7
-72			-3.2
-73			-3.7
-74			-4.1
-75			-4.6
-76			-5.1
-77			-5.6
-78			-6.2
-79			-6.5
-80			-7.1
-81			-7.5
-82			-7.9
-83			-8.4
-84			-8.4
-85			-8.5
-86			-8.5
-87			-8.4
-88			-8.2
-89			-8
-90			-7.7
-91			-7.5
-92			-7.2
-93			-6.9
-94			-6.6
-95			-6.4
-96			-6.1



-97	-5.9
-98	-5.8
-99	-5.4
-100	-5.2
-101	-4.9
-102	-4.8
-103	-4.5
-104	-4
-105	-3.5
-106	-3.2
-107	-2.8
-108	-2.3
-109	-1.8
-110	-1.4
-111	-0.9
-112	-0.4
-113	0.1
-114	0.6
-115	1.1
-116	1.5
-117	1.9
-118	2.3
-119	2.8
-120	2.9
-121	3.2
-122	3.4
-123	3.8
-124	3.8
-125	3.9
-126	4
-127	4.1
-128	4.1
-129	4.1
-130	4.1
-131	4.1
-132	4
-133	4
-134	4
-135	4
-136	4
-137	4.1
-138	4.2
-139	4.2
-140	4.2
-141	4.3
-142	4.3
-143	4.2
-144	4.1
-145	3.9
-146	3.6
-147	3.3
-148	2.9
-149	2.4
-150	1.9
-151	1.5
-152	1.1
-153	0.9
-154	0.8
-155	0.9
-156	1
-157	1.1
-158	1.2
-159	1.1
-160	1
-161	0.7
-162	0.3
-163	-0.2
-164	-0.7
-165	-1.3
-166	-2
-167	-2.5
-168	-3
-169	-3.5
-170	-3.9
-171	-4.3
-172	-4.8
-173	-5.4
-174	-5.5
-175	-4.3
-176	-4.5
-177	-4.1
-178	-5.1
-179	-5.6
-180	-5.1
-173	-4.8
-177	-4.7
-175	-5
-175	-5.5
-174	-6.2
-173	-7
-172	-7.8
-171	-8.4
-170	-8.8
-169	-9.4
-168	-9
-167	-7.6
-166	-7.3
-165	-7.2
-164	-7.5
-163	-8
-162	-8.8
-161	-10
-160	-11.6
-159	-13.5
-158	-15.7
-157	-17.3
-156	-17.7
-155	-15.9
-154	-16
-153	-15.4
-152	-15.4
-151	-15.8
150	-16.8
149	-18.2
148	-19.1
147	-18.3
146	-16.1
145	-13.7
144	-11.7
143	-10.1
142	-9.9
141	-9
140	-7.3
139	-7
138	-6.8
137	-7
136	-7.3
135	-7.8
134	-8.6
133	-9.8
132	-10.3
131	-12.3
130	-13.9
129	-15.2
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127	-15.7
126	-14.8
125	-14.7
124	-12.6
123	-11.7
122	-10.9
121	-10.1
120	-9.5
119	-8.9
118	-8.1
117	-7.9
116	-7.4
115	-6.8
114	-6.5
113	-6.1
112	-5.7
111	-5.1
110	-5.1
109	-4.9
108	-4.6
107	-4.6
106	-4.5
105	-4.4
104	-4.4
103	-4.5
102	-4.5
101	-4.5
100	-4.7
99	-4.8
98	-4.8
97	-4.8
96	-4.9
95	-4.9
94	-4.5
93	-4.6
92	-4.7
91	-4.6
90	-4.6

Above 30 degree

**Summary**

Mode	Total Power (dBm)	Total Power (W)
5.725-5.85GHz	-	-
802.11ac VHT20_Nss1,(MCS0)_2TX	27.96	0.62517
802.11ac VHT80_Nss1,(MCS0)_2TX	21.62	0.14521

**Result**

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Total Power (dBm)	Power Limit (dBm)
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5745MHz	Pass	8.00	25.03	24.78	27.92	28.00
5785MHz	Pass	8.00	25.09	24.81	27.96	28.00
5825MHz	Pass	8.00	25.04	24.74	27.90	28.00
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5775MHz	Pass	8.00	18.68	18.54	21.62	28.00

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

**Summary**

Mode	PD (dBm/RBW)
5.15-5.25GHz	-
802.11ac VHT20_Nss1,(MCS0)_2TX	11.81
802.11ac VHT80_Nss1,(MCS0)_2TX	-0.50

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



Result

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5180MHz	Pass	8.00	6.37	6.81	9.51	15.00
5200MHz	Pass	8.00	8.74	9.05	11.81	15.00
5240MHz	Pass	8.00	8.55	8.74	11.61	15.00
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5210MHz	Pass	8.00	-3.71	-3.21	-0.50	15.00

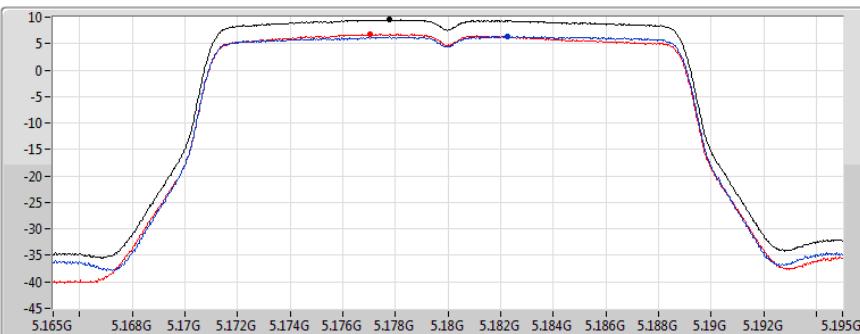
DG = Directional Gain; **RBW** = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

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

**802.11ac VHT20_Nss1,(MCS0)_2TX****5180MHz****PSD**

22/02/2018

Ch Freq
5.18GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
20ms
Detector Type
RMS

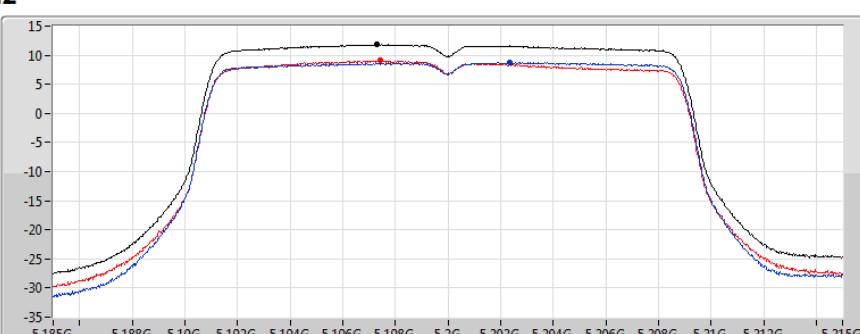


Sum
Port 1
Port 2

802.11ac VHT20_Nss1,(MCS0)_2TX**5200MHz****PSD**

22/02/2018

Ch Freq
5.2GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
20ms
Detector Type
RMS

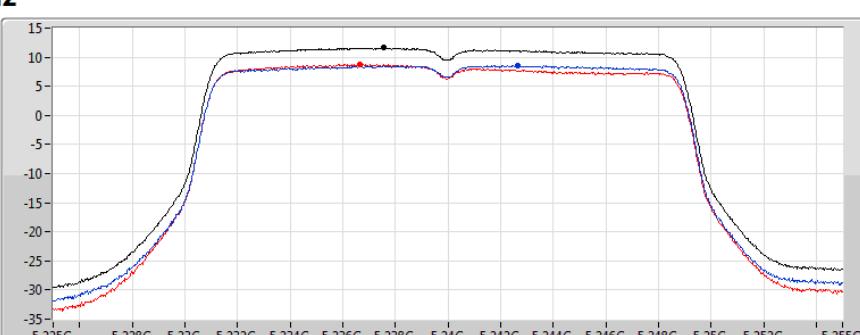


Sum
Port 1
Port 2

802.11ac VHT20_Nss1,(MCS0)_2TX**5240MHz****PSD**

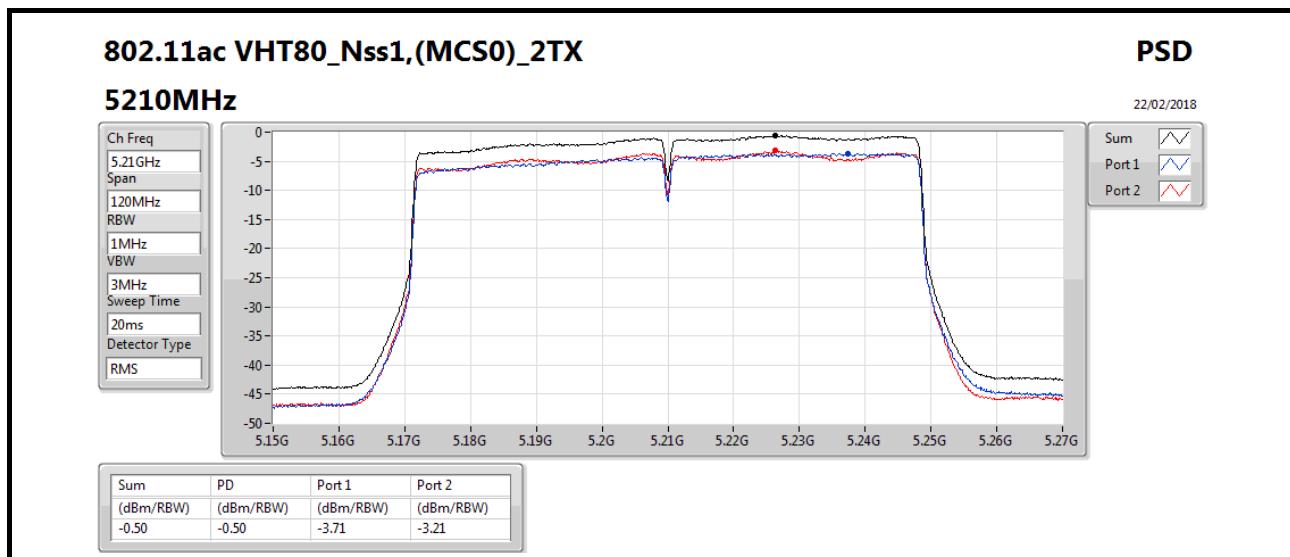
05/05/2018

Ch Freq
5.24GHz
Span
30MHz
RBW
1MHz
VBW
3MHz
Sweep Time
20ms
Detector Type
RMS



Sum
Port 1
Port 2

Sum	PD	Port 1	Port 2
(dBm/RBW)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
9.51	9.51	6.37	6.81



**Summary**

Mode	PD (dBm/RBW)
5.725-5.85GHz	-
802.11ac VHT20_Nss1,(MCS0)_2TX	11.08
802.11ac VHT80_Nss1,(MCS0)_2TX	0.85

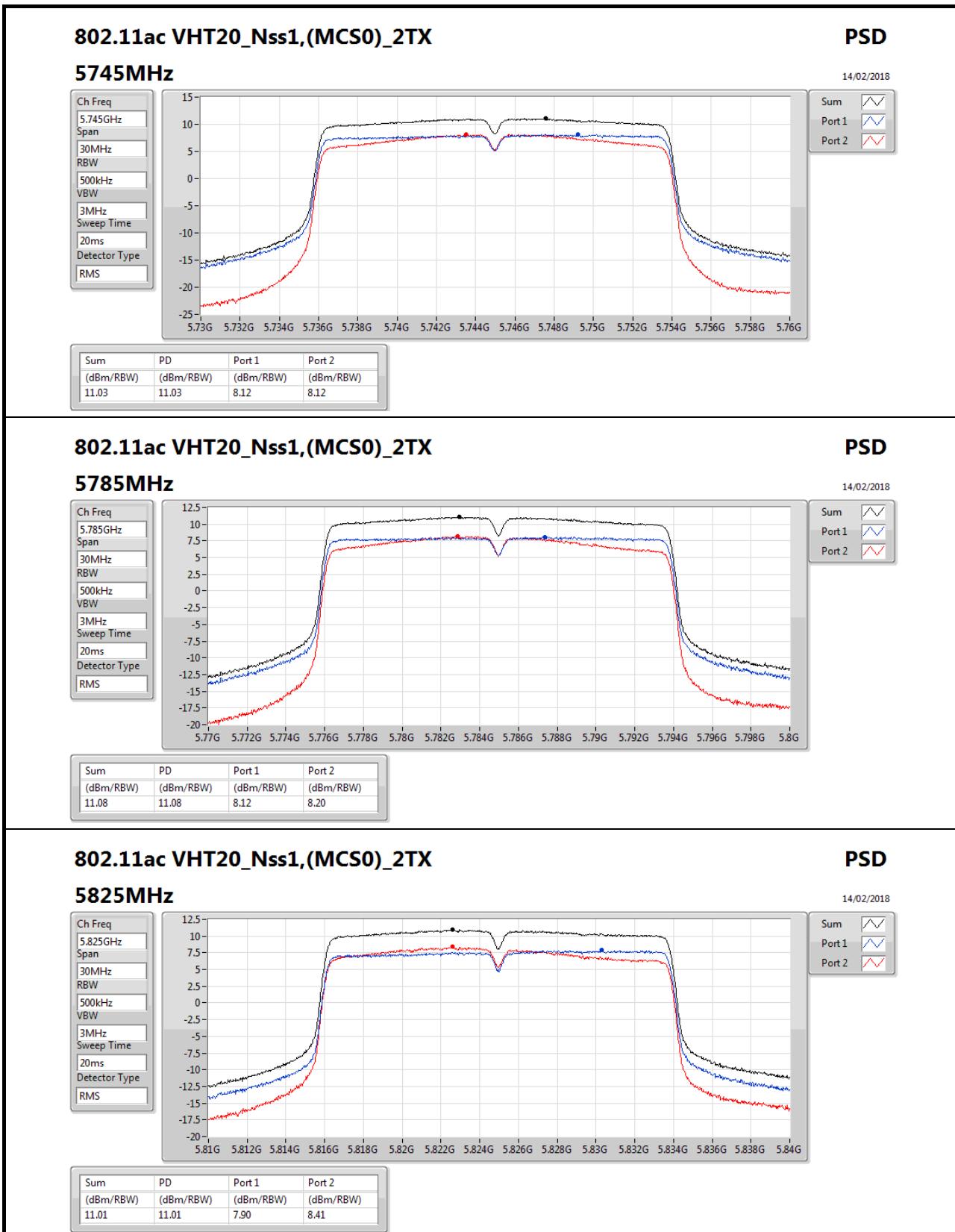
RBW = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

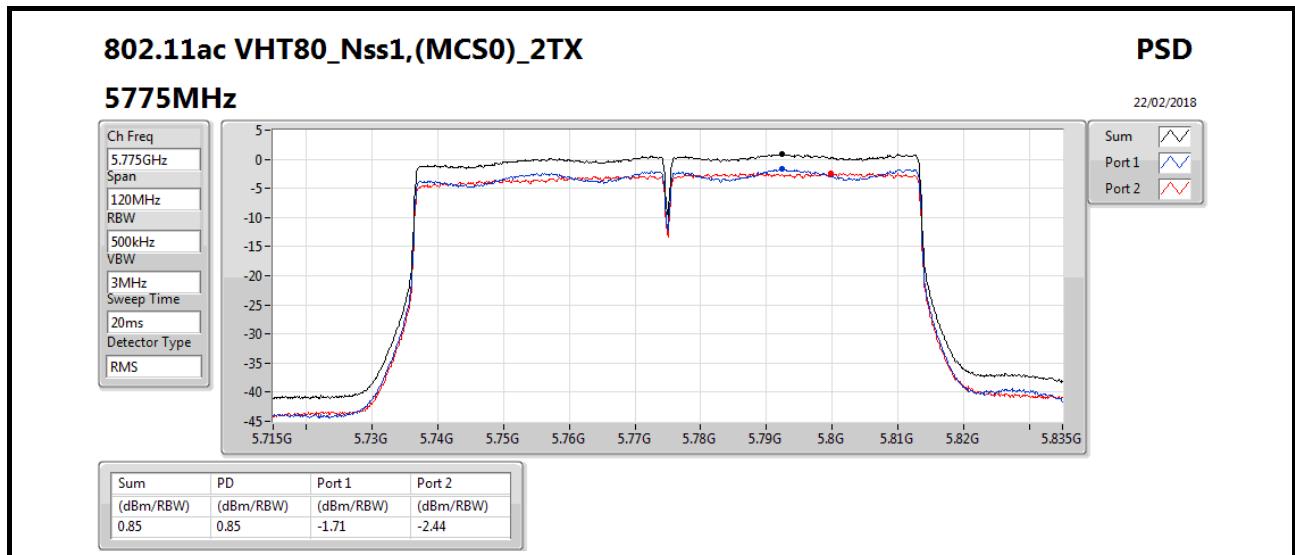
**Result**

Mode	Result	DG (dBi)	Port 1 (dBm/RBW)	Port 2 (dBm/RBW)	PD (dBm/RBW)	PD Limit (dBm/RBW)
802.11ac VHT20_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5745MHz	Pass	8.00	8.12	8.12	11.03	28.00
5785MHz	Pass	8.00	8.12	8.20	11.08	28.00
5825MHz	Pass	8.00	7.90	8.41	11.01	28.00
802.11ac VHT80_Nss1,(MCS0)_2TX	-	-	-	-	-	-
5775MHz	Pass	8.00	-1.71	-2.44	0.85	28.00

DG = Directional Gain; **RBW** = 500kHz for 5.725-5.85GHz band / 1MHz for other band;

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

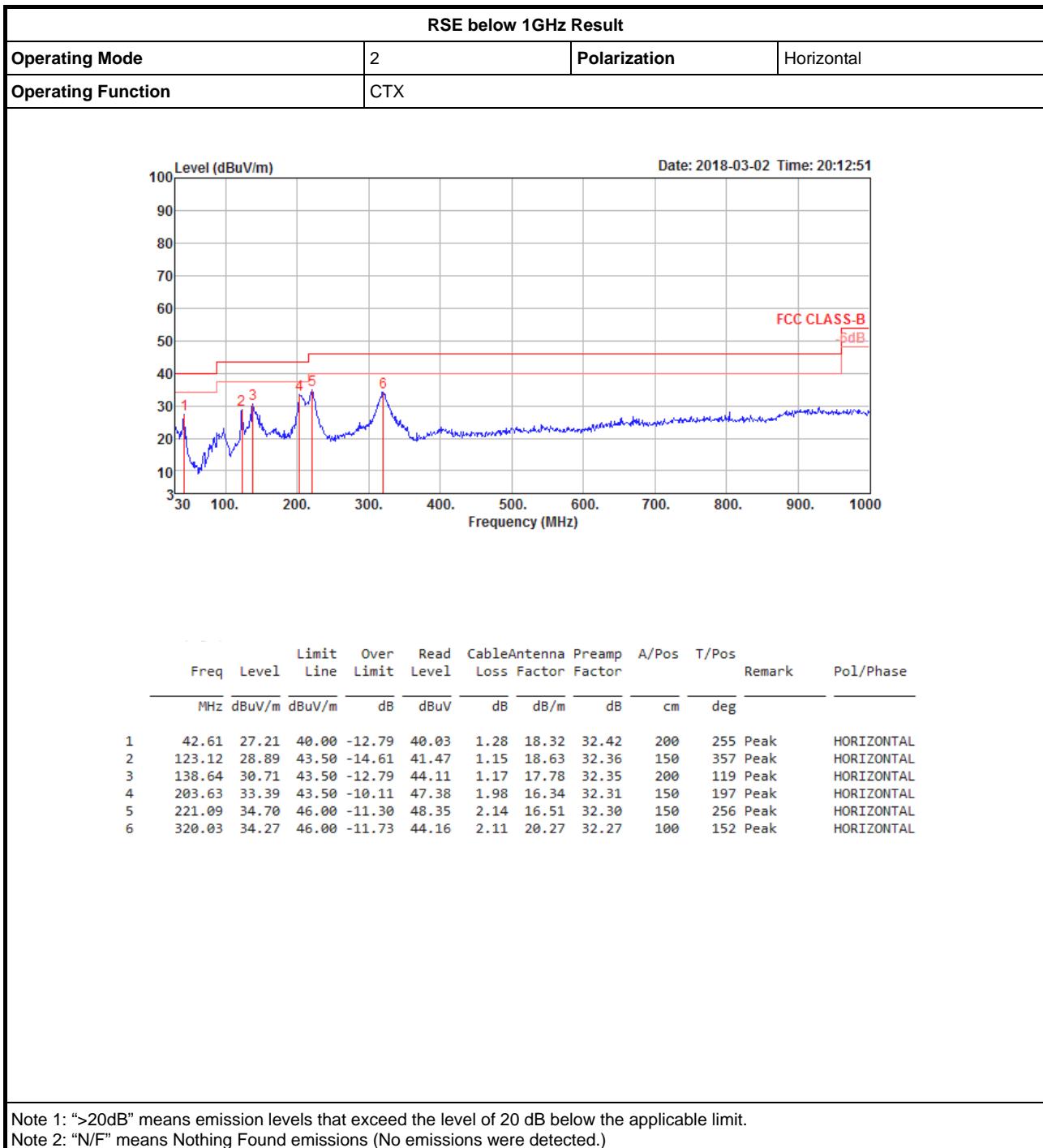






RSE below 1GHz Result

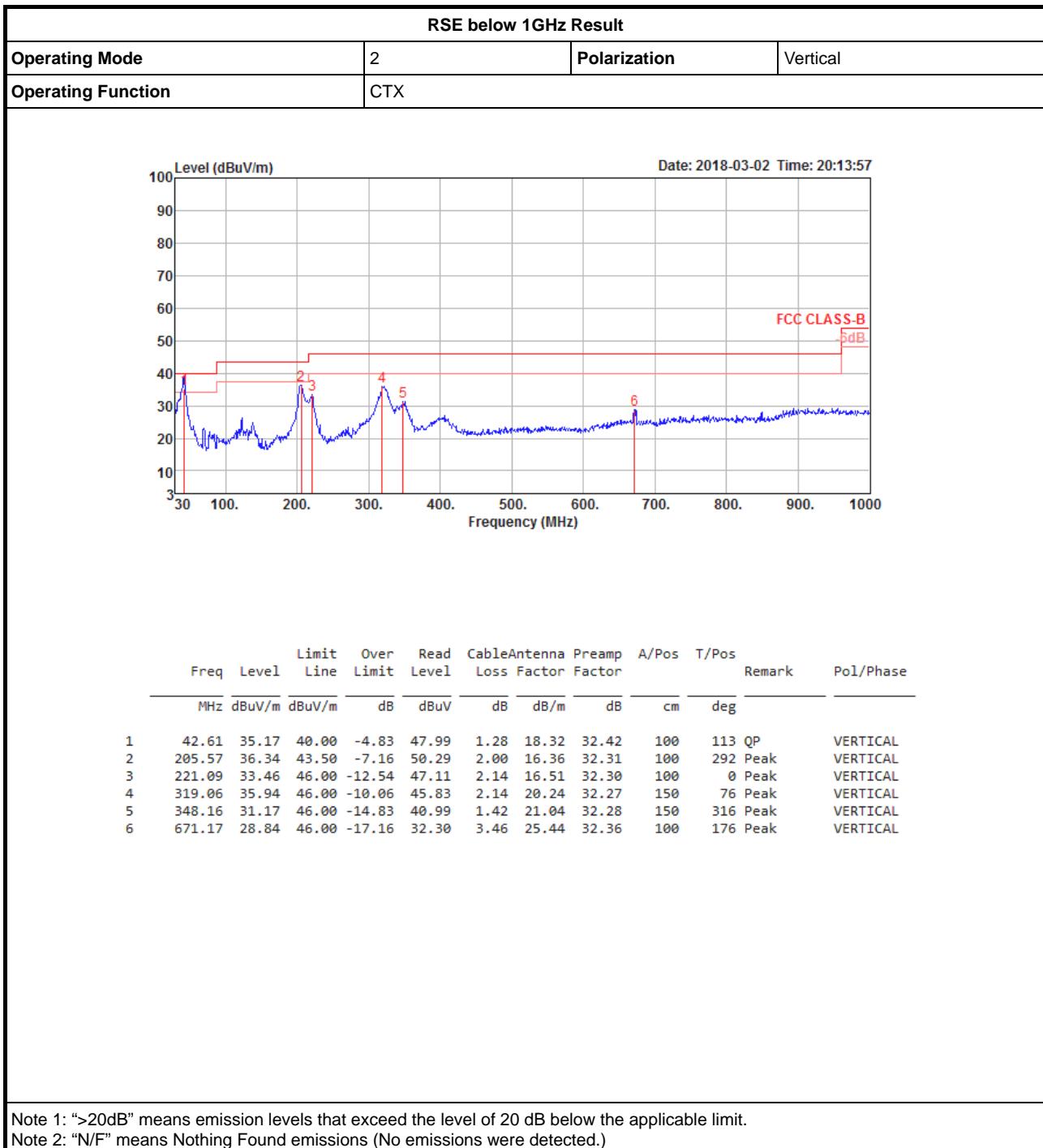
Appendix E.1





RSE below 1GHz Result

Appendix E.1





TX Above 1GHz Result

Appendix E.2

For Conducted Spurious Emission

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT20 / Average / Port 1 + Port 2 / 1GHz~3GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5180	-87.29	-87.54	-76.40	-41.25	35.15
5200	-84.85	-84.87	-73.85	-41.25	32.60
5240	-70.35	-78.79	-61.77	-41.25	20.52
5745	-86.67	-86.65	-75.65	-41.25	34.40
5785	-86.49	-86.60	-75.53	-41.25	34.28
5825	-86.50	-86.72	-75.60	-41.25	34.35

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT20 / Peak / Port 1 + Port 2 / 1GHz~3GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5180	-75.95	-75.34	-64.62	-21.25	43.37
5200	-72.55	-72.10	-61.31	-21.25	40.06
5240	-53.54	-62.60	-45.03	-21.25	23.78
5745	-73.49	-73.96	-62.71	-21.25	41.46
5785	-74.10	-73.48	-62.77	-21.25	41.52
5825	-73.32	-73.88	-62.58	-21.25	41.33



TX Above 1GHz Result

Appendix E.2

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT80 / Average / Port 1 + Port 2 / 1GHz~3GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5210	-84.83	-84.76	-73.78	-41.25	32.53
5775	-86.56	-86.70	-75.62	-41.25	34.37

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT80 / Peak / Port 1 + Port 2 / 1GHz~3GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5210	-70.23	-72.63	-60.26	-21.25	39.01
5775	-73.95	-73.64	-62.78	-21.25	41.53



TX Above 1GHz Result

Appendix E.2

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT20 / Average / Port 1 + Port 2 / 3GHz~6GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5180	-54.40	-57.82	-44.77	-41.25	3.52
5200	-57.06	-59.78	-47.20	-41.25	5.95
5240	-56.06	-58.43	-46.07	-41.25	4.82
5745	-55.73	-56.25	-44.97	-41.25	3.72
5785	-58.69	-58.64	-47.65	-41.25	6.40
5825	-50.61	-56.48	-41.61	-41.25	0.36

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT20 / Peak / Port 1 + Port 2 / 3GHz~6GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5180	-47.73	-47.83	-36.77	-21.25	15.52
5200	-48.65	-48.61	-37.62	-21.25	16.37
5240	-45.94	-46.88	-35.37	-21.25	14.12
5745	-42.00	-44.31	-31.99	-21.25	10.74
5785	-46.39	-45.90	-35.13	-21.25	13.88
5825	-36.19	-44.93	-27.65	-21.25	6.40



TX Above 1GHz Result

Appendix E.2

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT80 / Average / Port 1 + Port 2 / 3GHz~6GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5210	-56.55	-55.63	-45.06	-41.25	3.81
5775	-53.37	-54.97	-43.09	-41.25	1.84

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT80 / Peak / Port 1 + Port 2 / 3GHz~6GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5210	-41.85	-42.80	-31.29	-21.25	10.04
5775	-41.47	-42.04	-30.74	-21.25	9.49



TX Above 1GHz Result

Appendix E.2

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT20 / Average / Port 1 + Port 2 / 6GHz~9GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5180	-83.49	-83.51	-72.49	-41.25	31.24
5200	-51.69	-54.81	-41.97	-41.25	0.72
5240	-56.13	-58.30	-46.07	-41.25	4.82
5745	-61.14	-62.04	-50.56	-41.25	9.31
5785	-61.94	-59.97	-49.83	-41.25	8.58
5825	-59.19	-58.10	-47.60	-41.25	6.35

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT20 / Peak / Port 1 + Port 2 / 6GHz~9GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5180	-46.82	-49.54	-36.96	-21.25	15.71
5200	-50.60	-53.90	-40.93	-21.25	19.68
5240	-53.57	-55.93	-43.58	-21.25	22.33
5745	-48.38	-50.09	-38.14	-21.25	16.89
5785	-49.76	-48.26	-37.94	-21.25	16.69
5825	-47.25	-46.18	-35.67	-21.25	14.42



TX Above 1GHz Result

Appendix E.2

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT80 / Average / Port 1 + Port 2 / 6GHz~9GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5210	-53.25	-54.56	-42.85	-41.25	1.60
5775	-59.88	-60.33	-49.09	-41.25	7.84

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT80 / Peak / Port 1 + Port 2 / 6GHz~9GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5210	-52.27	-52.81	-41.52	-21.25	20.27
5775	-48.16	-48.22	-37.18	-21.25	15.93



TX Above 1GHz Result

Appendix E.2

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT20 / Average / Port 1 + Port 2 / 9GHz~18GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5180	-77.58	-77.43	-66.49	-41.25	25.24
5200	-77.45	-77.34	-66.38	-41.25	25.13
5240	-77.35	-77.32	-66.32	-41.25	25.07
5745	-78.96	-78.82	-67.88	-41.25	26.63
5785	-78.74	-78.80	-67.76	-41.25	26.51
5825	-78.84	-78.88	-67.85	-41.25	26.60

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT20 / Peak / Port 1 + Port 2 / 9GHz~18GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5180	-65.31	-65.61	-54.45	-21.25	33.20
5200	-64.87	-65.38	-54.11	-21.25	32.86
5240	-64.67	-65.56	-54.08	-21.25	32.83
5745	-66.98	-67.34	-56.15	-21.25	34.90
5785	-66.46	-66.79	-55.61	-21.25	34.36
5825	-66.84	-66.68	-55.75	-21.25	34.50



TX Above 1GHz Result

Appendix E.2

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT80 / Average / Port 1 + Port 2 / 9GHz~18GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5210	-77.39	-76.90	-66.13	-41.25	24.88
5775	-78.92	-78.86	-67.88	-41.25	26.63

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT80 / Peak / Port 1 + Port 2 / 9GHz~18GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5210	-65.04	-65.85	-54.42	-21.25	33.17
5775	-66.18	-64.42	-54.20	-21.25	32.95



TX Above 1GHz Result

Appendix E.2

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT20 / Average / Port 1 + Port 2 / 18GHz~40GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5180	-73.27	-73.37	-62.31	-41.25	21.06
5200	-73.14	-73.36	-62.24	-41.25	20.99
5240	-73.31	-73.23	-62.26	-41.25	21.01
5745	-73.79	-73.81	-62.79	-41.25	21.54
5785	-73.65	-73.78	-62.70	-41.25	21.45
5825	-73.72	-73.79	-62.74	-41.25	21.49

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT20 / Peak / Port 1 + Port 2 / 18GHz~40GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5180	-61.77	-61.34	-50.54	-21.25	29.29
5200	-61.06	-61.51	-50.27	-21.25	29.02
5240	-61.41	-61.35	-50.37	-21.25	29.12
5745	-61.97	-62.12	-51.03	-21.25	29.78
5785	-61.14	-62.26	-50.65	-21.25	29.40
5825	-61.87	-59.67	-49.62	-21.25	28.37



TX Above 1GHz Result

Appendix E.2

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT80 / Average / Port 1 + Port 2 / 18GHz~40GHz

Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5210	-73.24	-73.39	-62.30	-41.25	21.05
5775	-73.73	-73.69	-62.70	-41.25	21.45

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT80 / Peak / Port 1 + Port 2 / 18GHz~40GHz

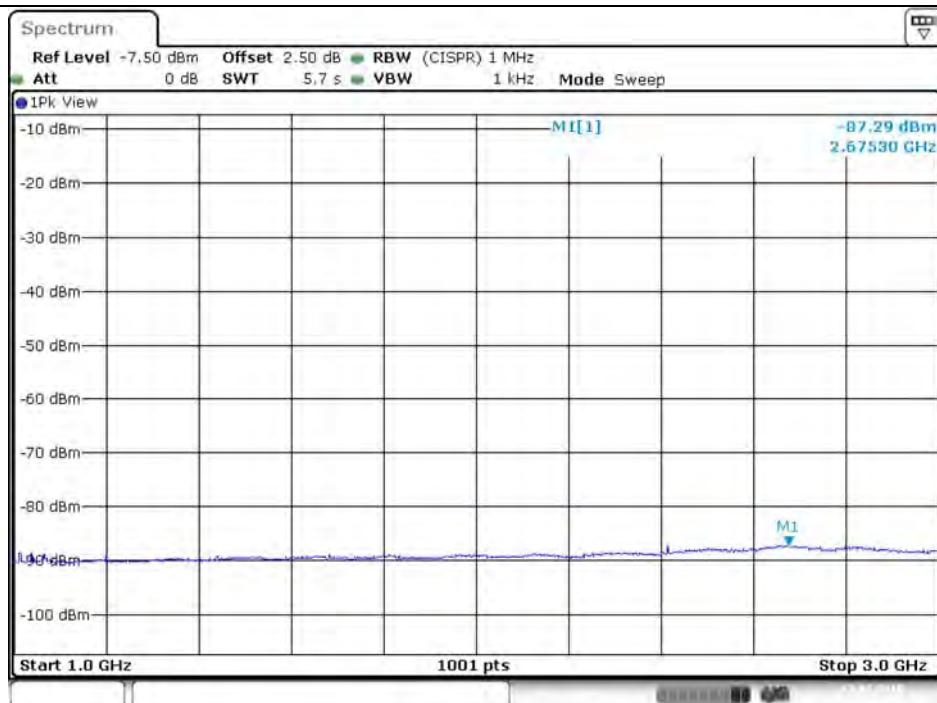
Frequency (MHz)	Port(TX1) Spurious Level (dBm)	Port(TX2) Spurious Level (dBm)	Total Spurious Level (dBm)	Limit (dBm)	Margin (dBm)
5210	-62.09	-61.24	-50.63	-21.25	29.38
5775	-61.26	-61.85	-50.53	-21.25	29.28



TX Above 1GHz Result

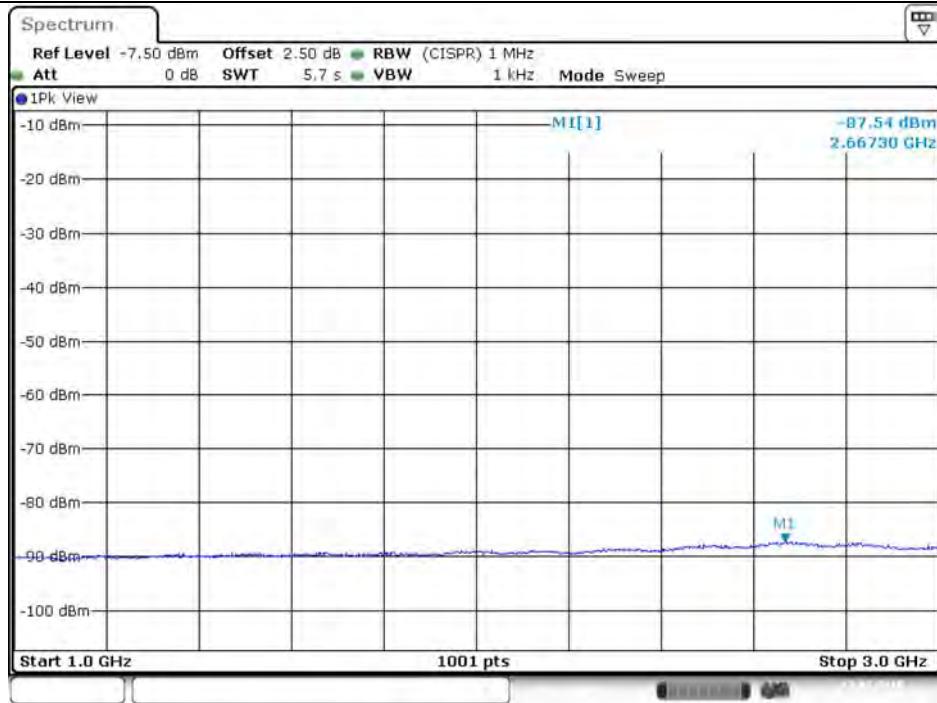
Appendix E.2

Plot on Configuration VHT20 / 5180 MHz / Average / Port 1 / 1GHz~3GHz

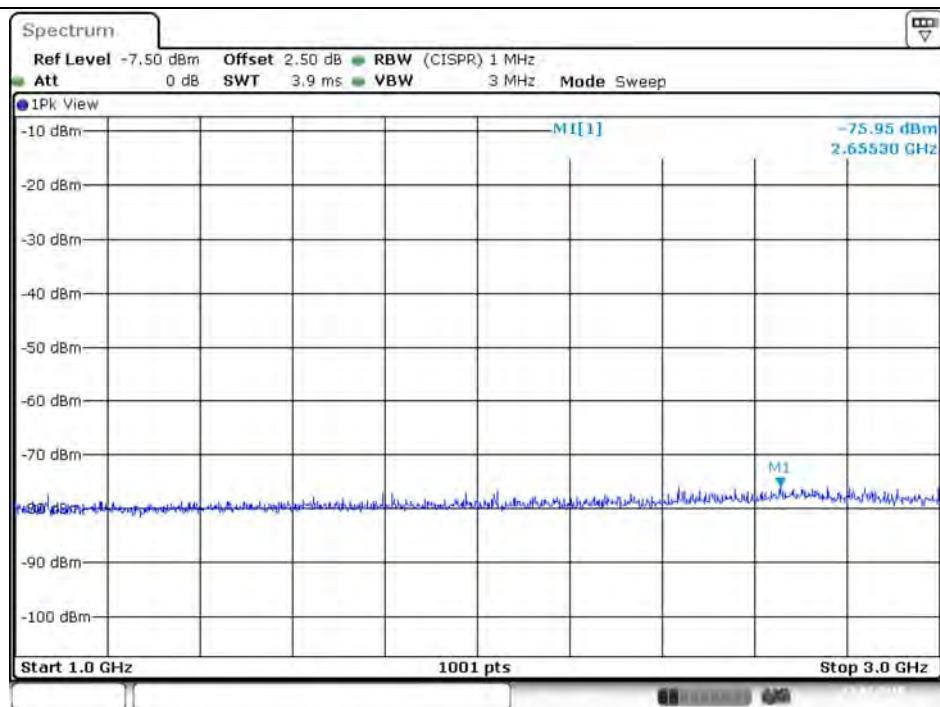


Date: 22.FEB.2018 21:40:23

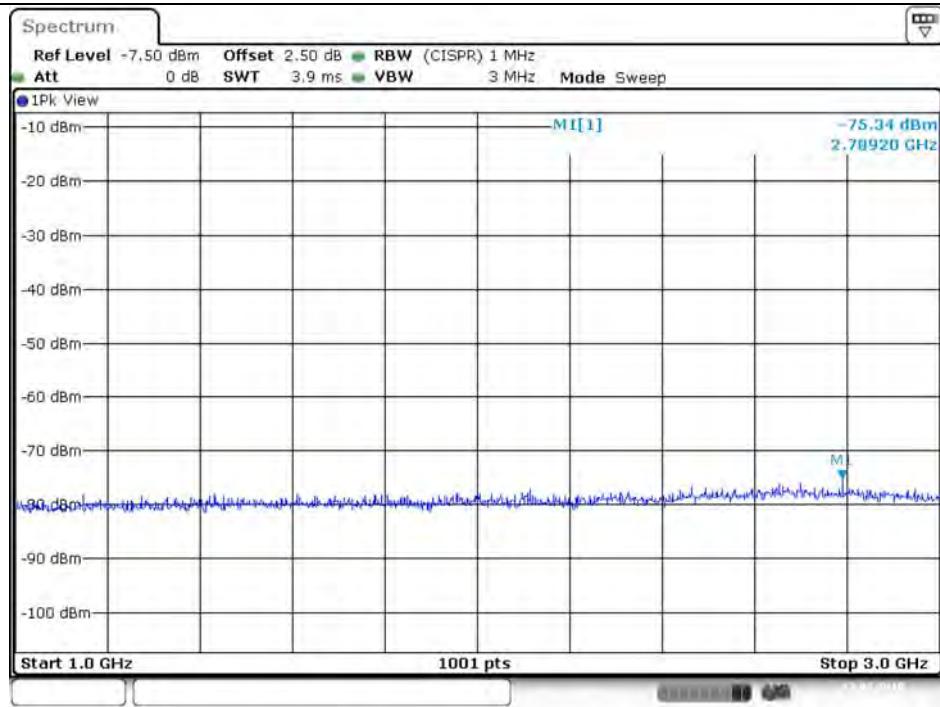
Plot on Configuration VHT20 / 5180 MHz / Average / Port 2 / 1GHz~3GHz



Date: 22.FEB.2018 21:41:13

Plot on Configuration VHT20 / 5180 MHz / Peak / Port 1 / 1GHz~3GHz


Date: 22.FEB.2018 21:40:01

Plot on Configuration VHT20 / 5180 MHz / Peak / Port 2 / 1GHz~3GHz


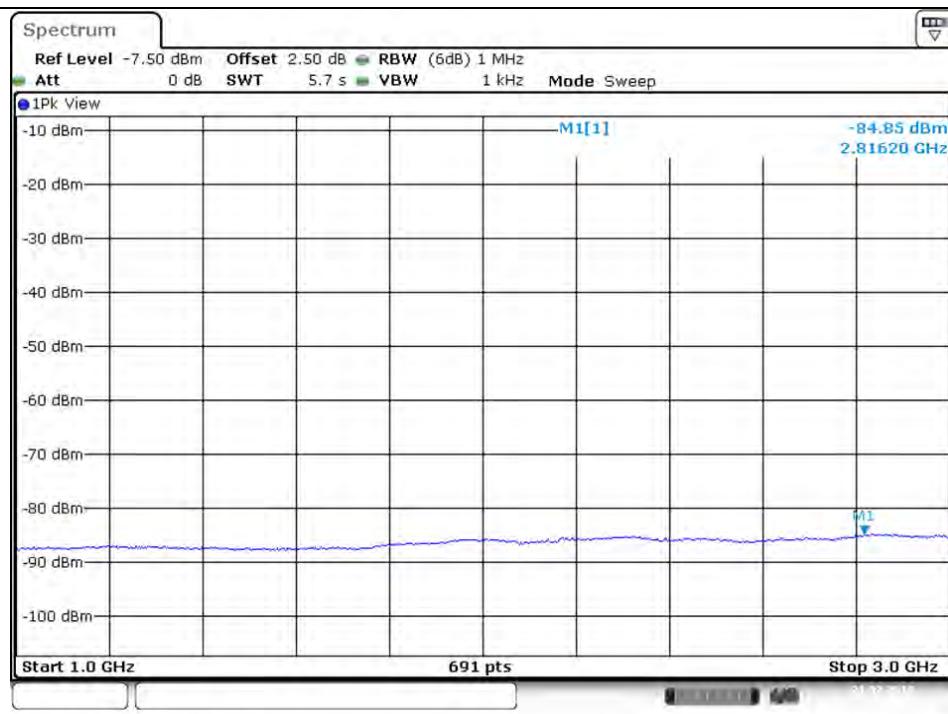
Date: 22.FEB.2018 21:41:24



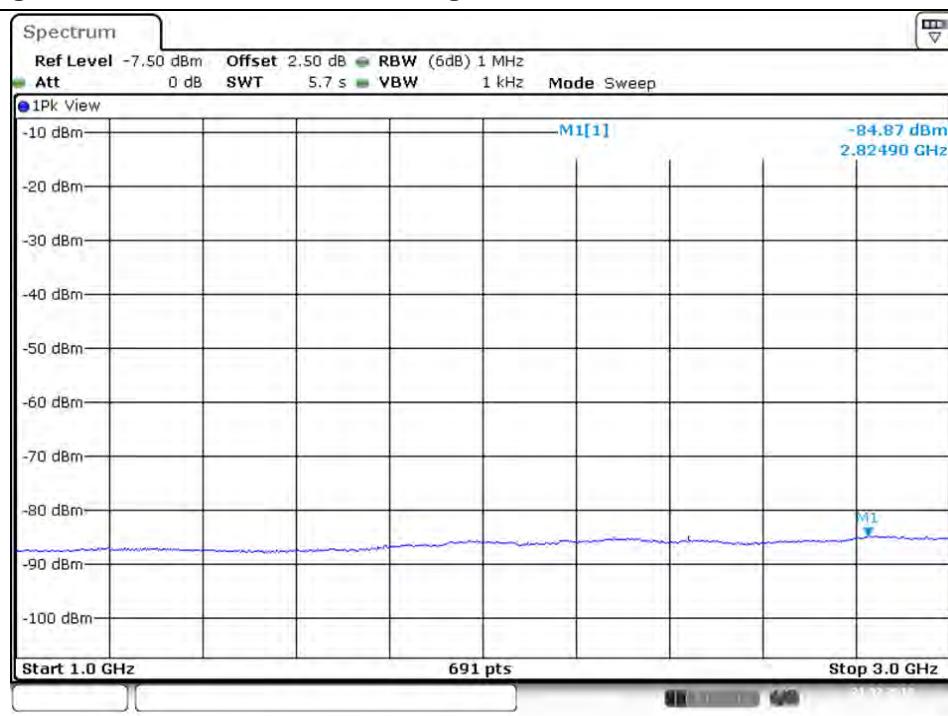
TX Above 1GHz Result

Appendix E.2

Plot on Configuration VHT20 / 5200 MHz / Average / Port 1 / 1GHz~3GHz



Plot on Configuration VHT20 / 5200 MHz / Average / Port 2 / 1GHz~3GHz

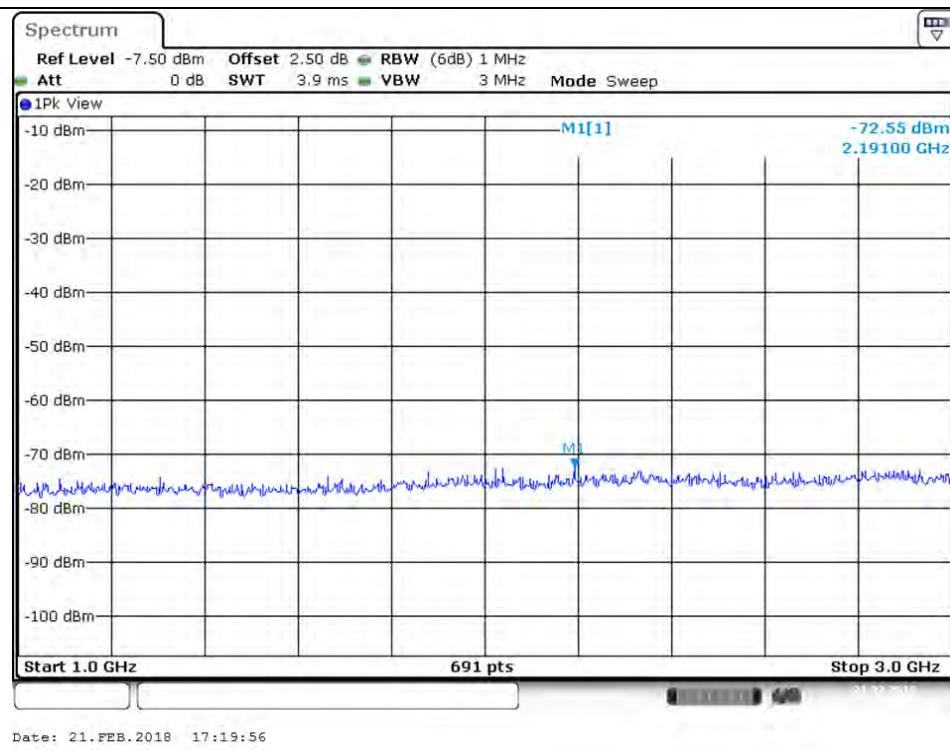




TX Above 1GHz Result

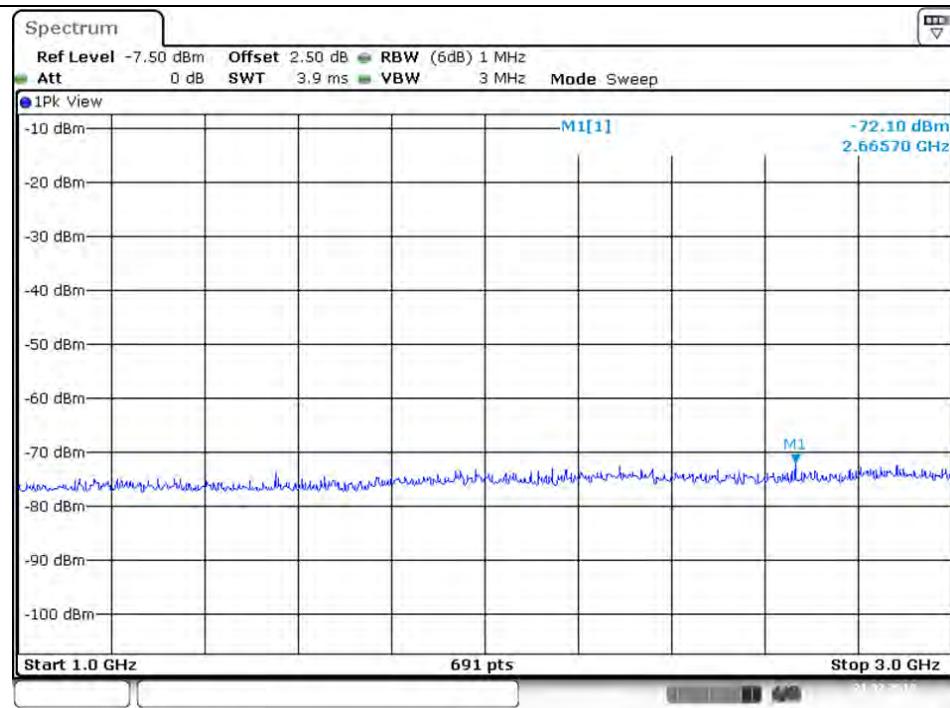
Appendix E.2

Plot on Configuration VHT20 / 5200 MHz / Peak / Port 1 / 1GHz~3GHz

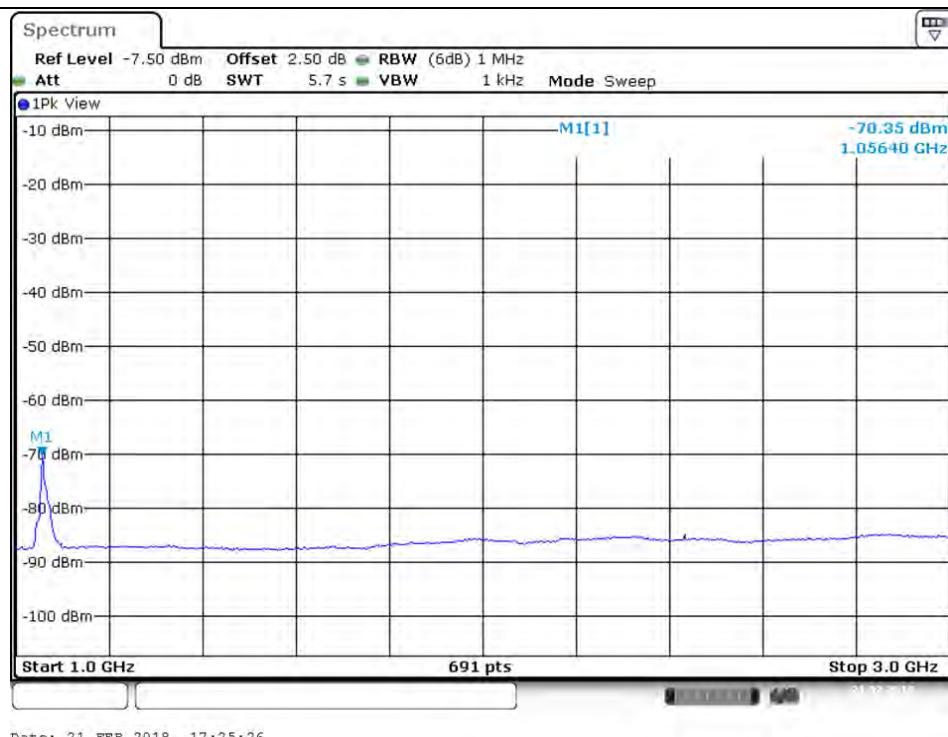
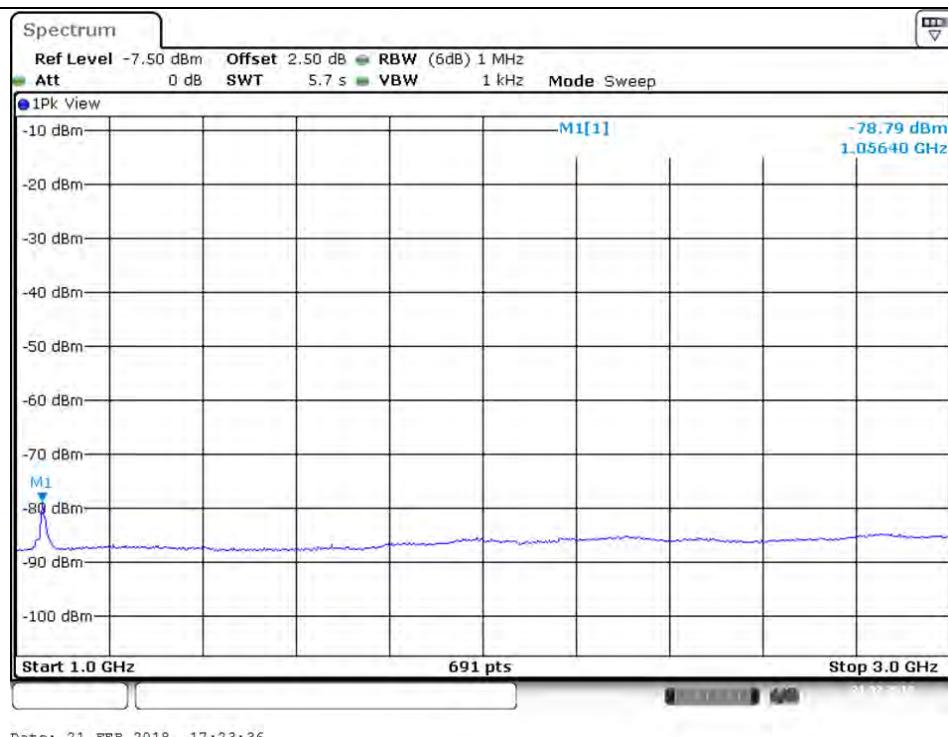


Date: 21.FEB.2018 17:19:56

Plot on Configuration VHT20 / 5200 MHz / Peak / Port 2 / 1GHz~3GHz



Date: 21.FEB.2018 17:20:45

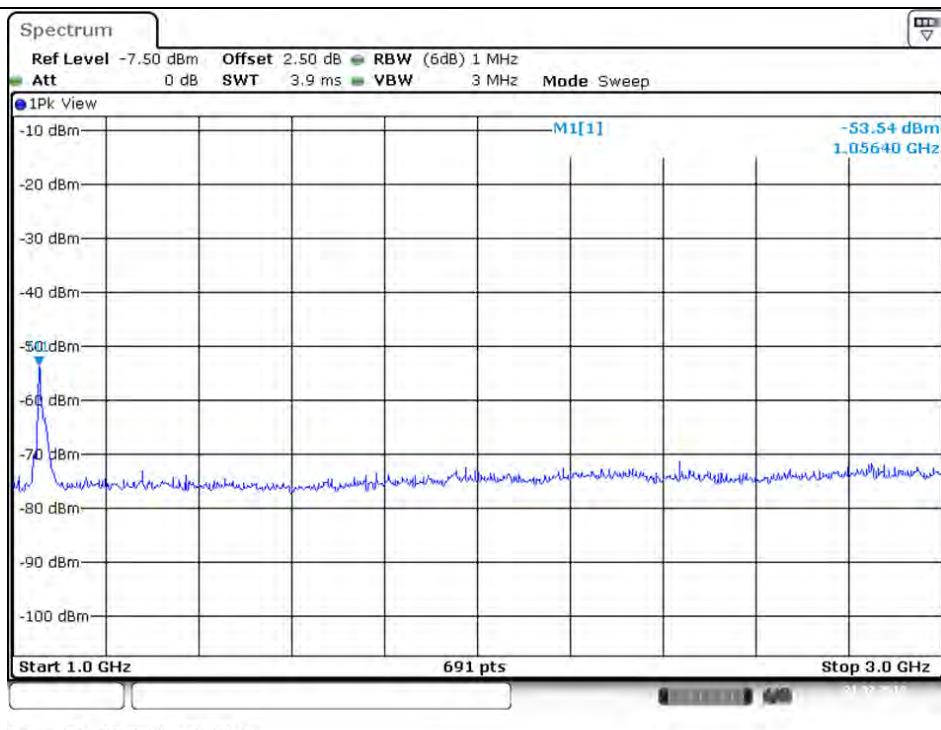
Plot on Configuration VHT20 / 5240 MHz / Average / Port 1 / 1GHz~3GHz

Plot on Configuration VHT20 / 5240 MHz / Average / Port 2 / 1GHz~3GHz




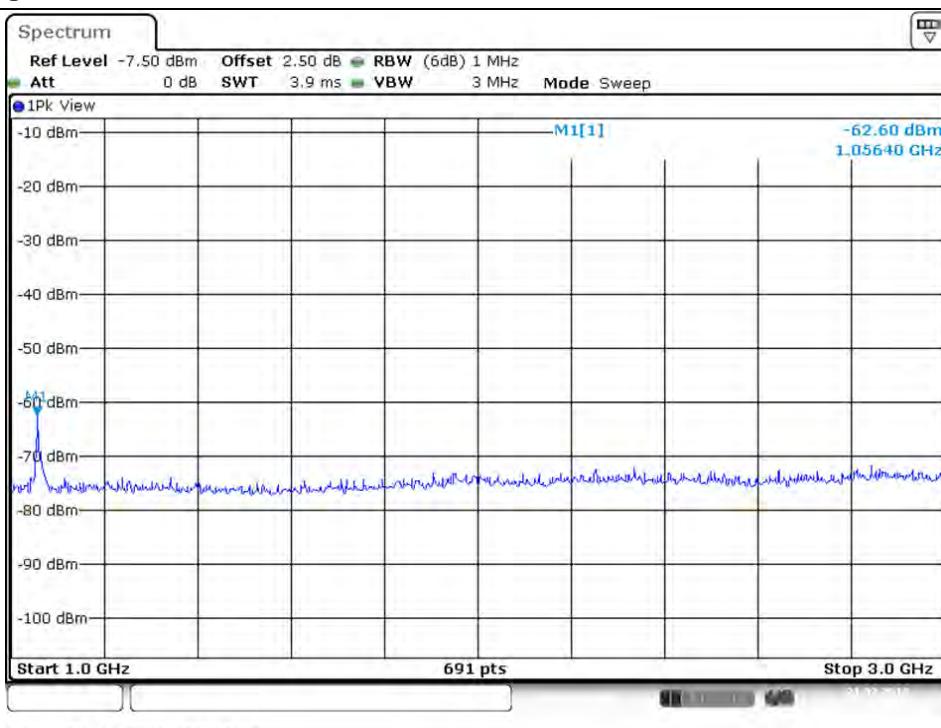
TX Above 1GHz Result

Appendix E.2

Plot on Configuration VHT20 / 5240 MHz / Peak / Port 1 / 1GHz~3GHz



Plot on Configuration VHT20 / 5240 MHz / Peak / Port 2 / 1GHz~3GHz

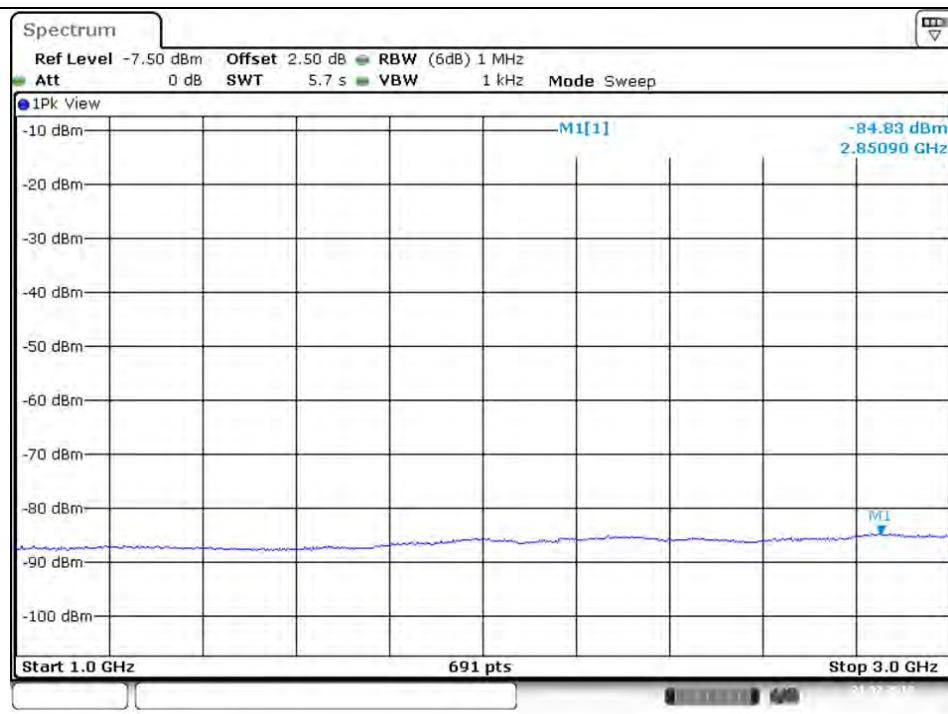




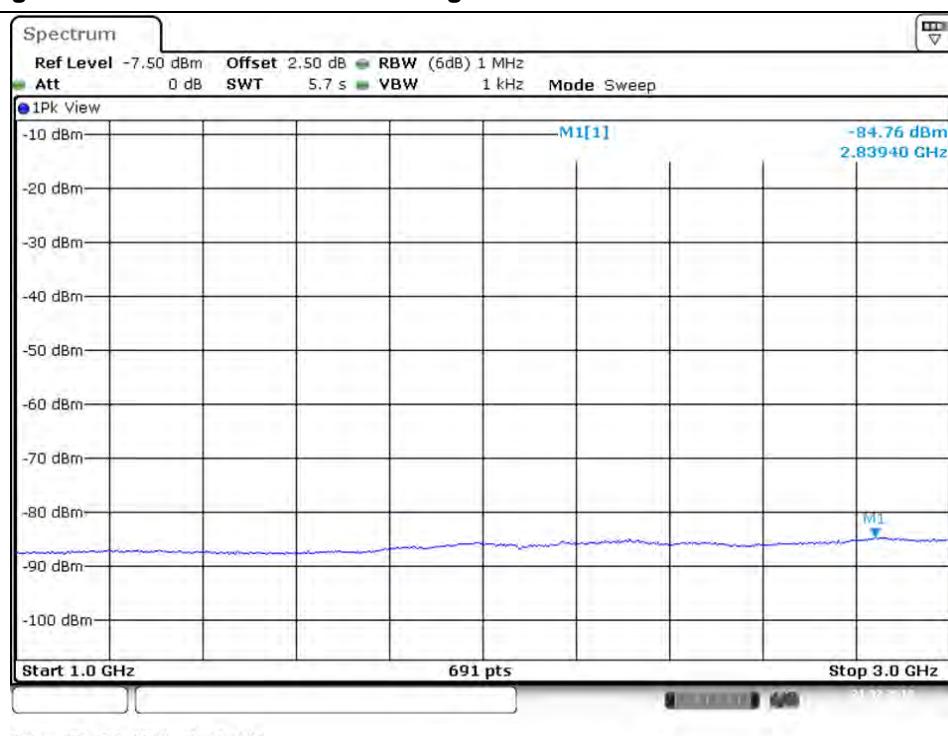
TX Above 1GHz Result

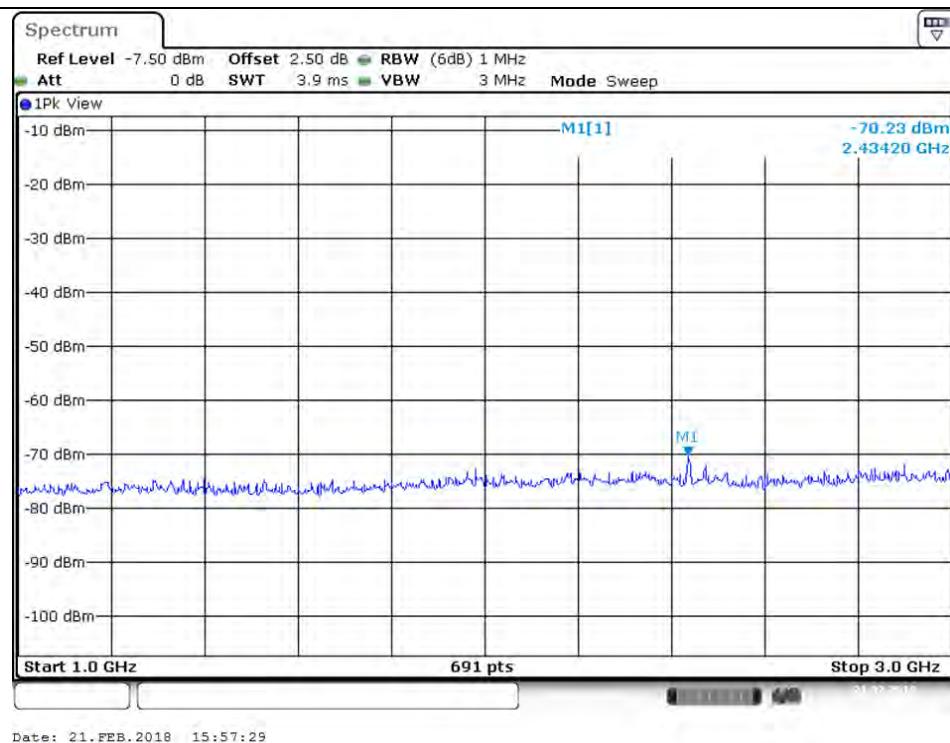
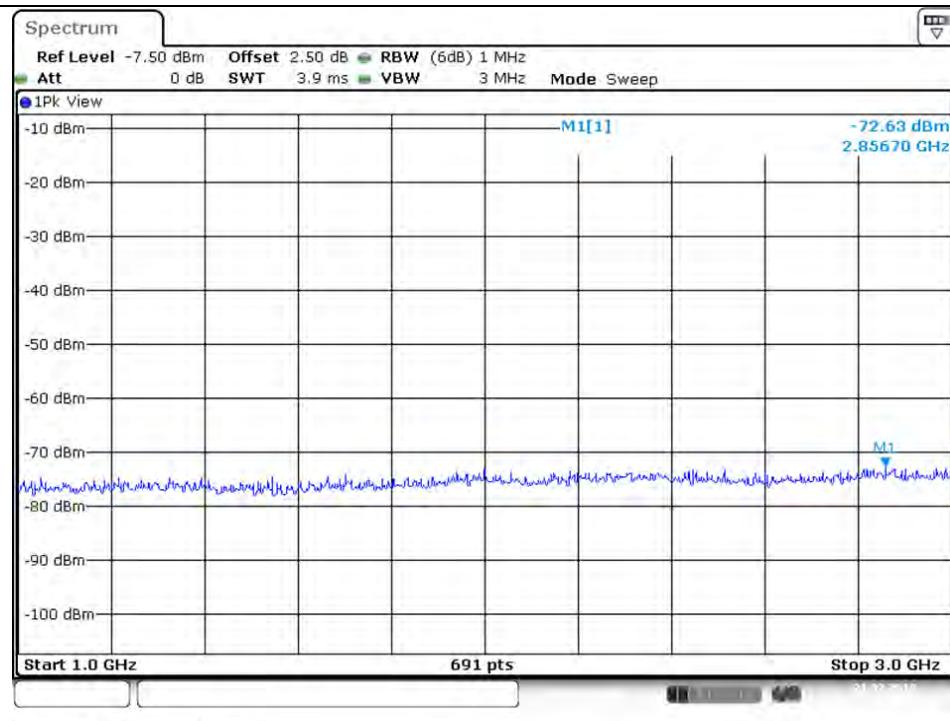
Appendix E.2

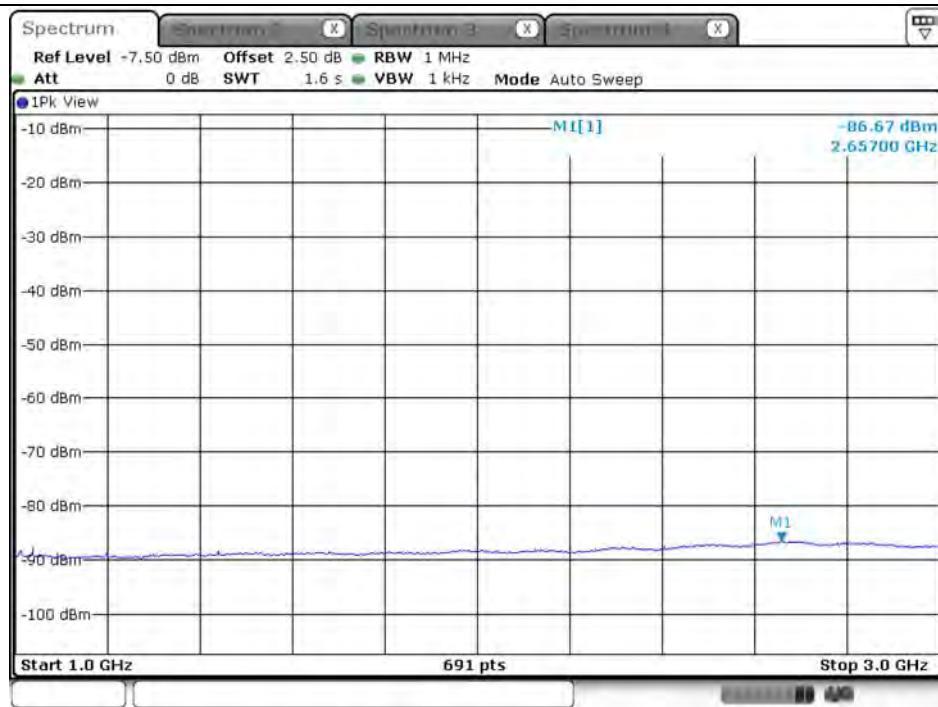
Plot on Configuration VHT80 / 5210 MHz / Average / Port 1 / 1GHz~3GHz



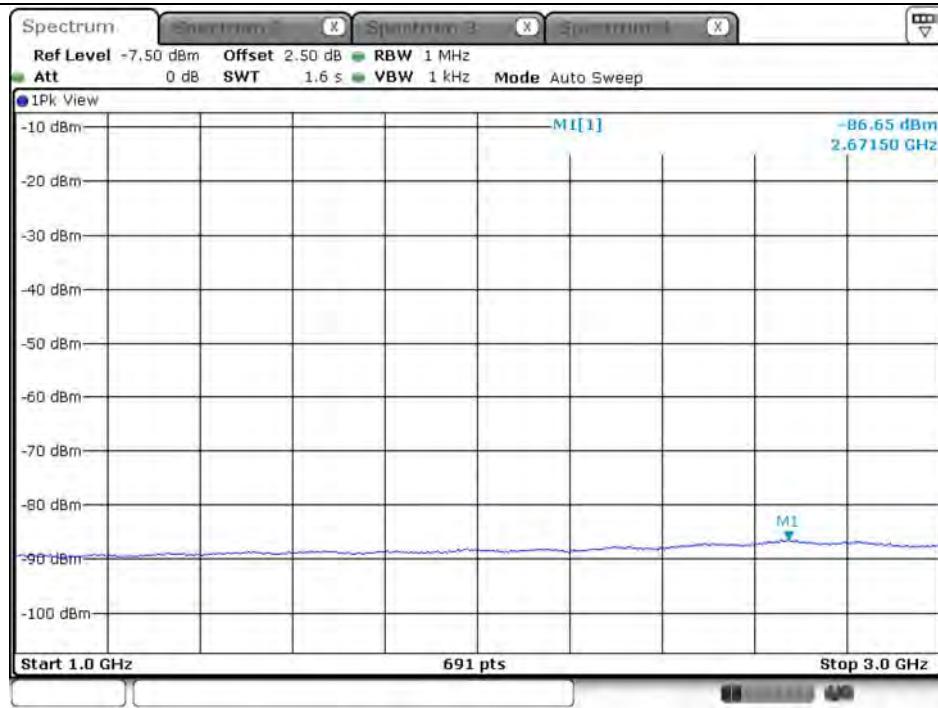
Plot on Configuration VHT80 / 5210 MHz / Average / Port 2 / 1GHz~3GHz



Plot on Configuration VHT80 / 5210 MHz / Peak / Port 1 / 1GHz~3GHz

Plot on Configuration VHT80 / 5210 MHz / Peak / Port 2 / 1GHz~3GHz


Plot on Configuration VHT20 / 5745 MHz / Average / Port 1 / 1GHz~3GHz


Date: 13.FEB.2018 19:57:45

Plot on Configuration VHT20 / 5745 MHz / Average / Port 2 / 1GHz~3GHz


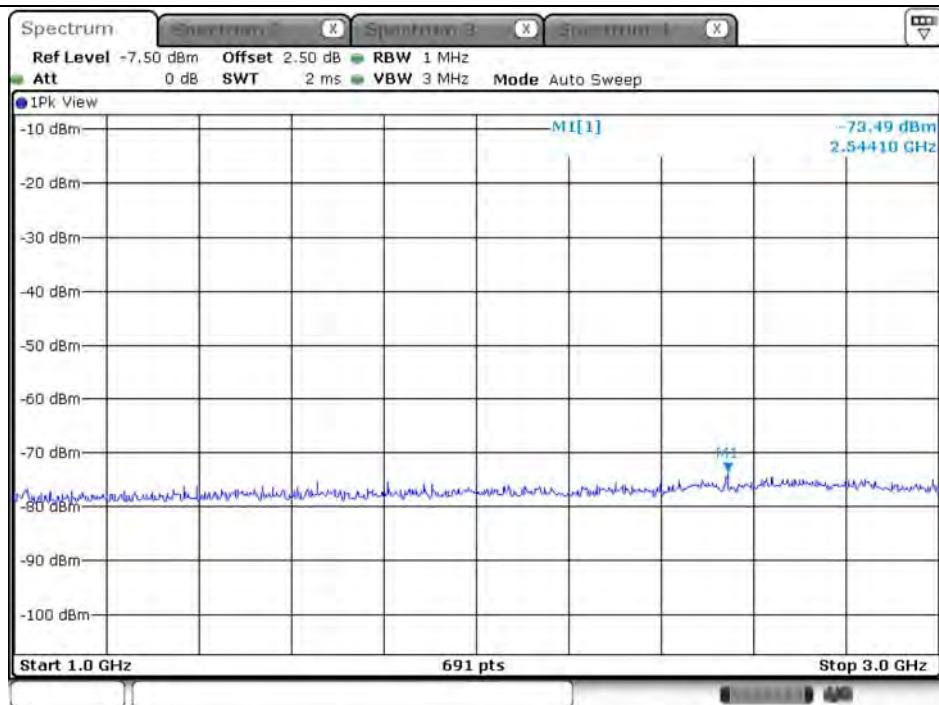
Date: 13.FEB.2018 20:07:58



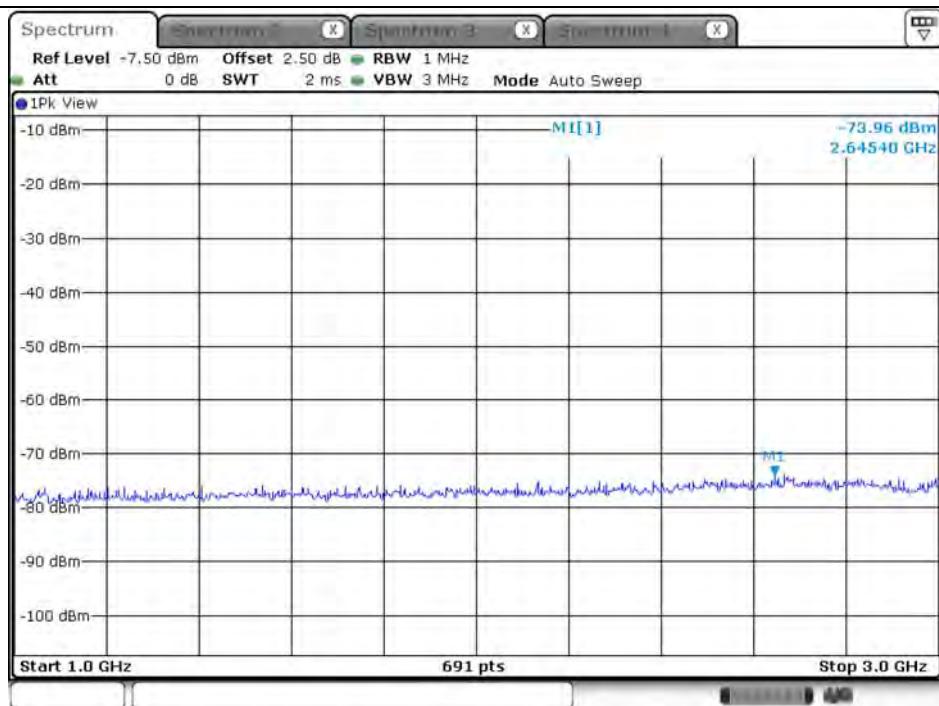
TX Above 1GHz Result

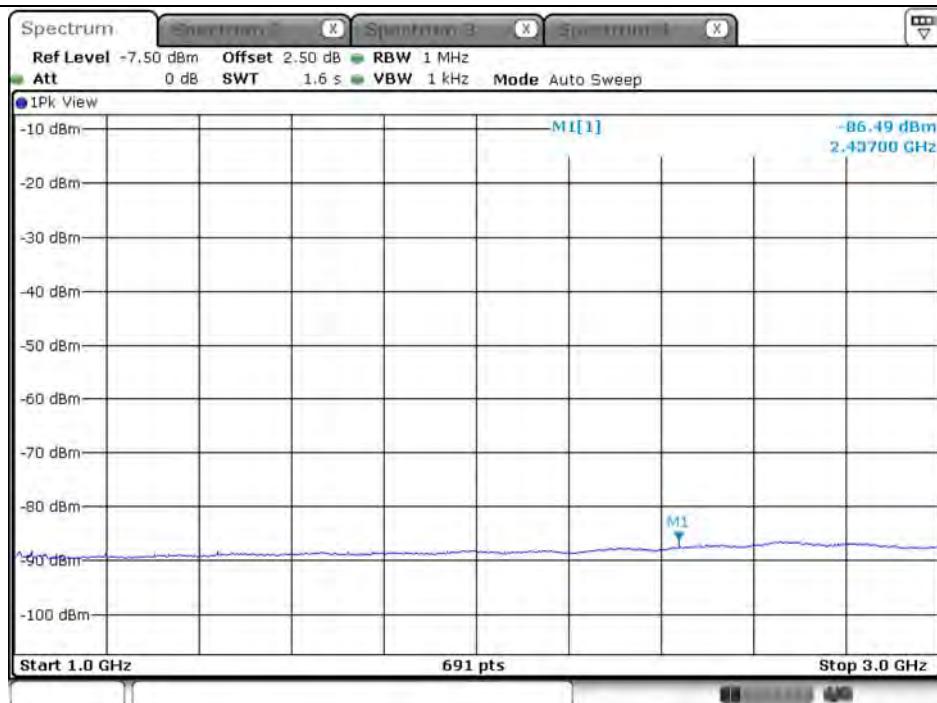
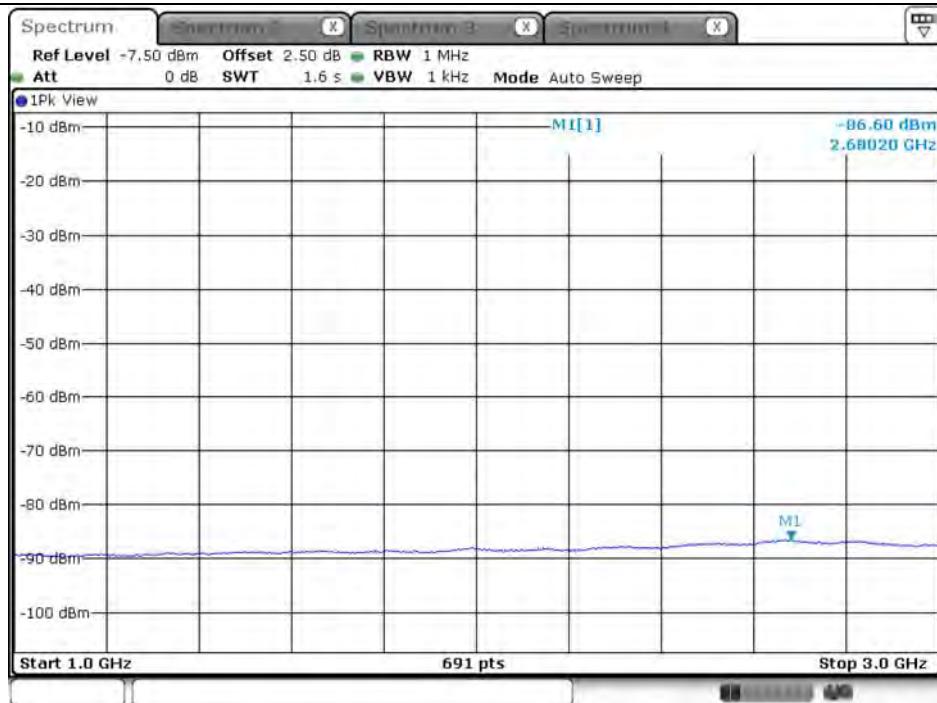
Appendix E.2

Plot on Configuration VHT20 / 5745 MHz / Peak / Port 1 / 1GHz~3GHz



Plot on Configuration VHT20 / 5745 MHz / Peak / Port 2 / 1GHz~3GHz



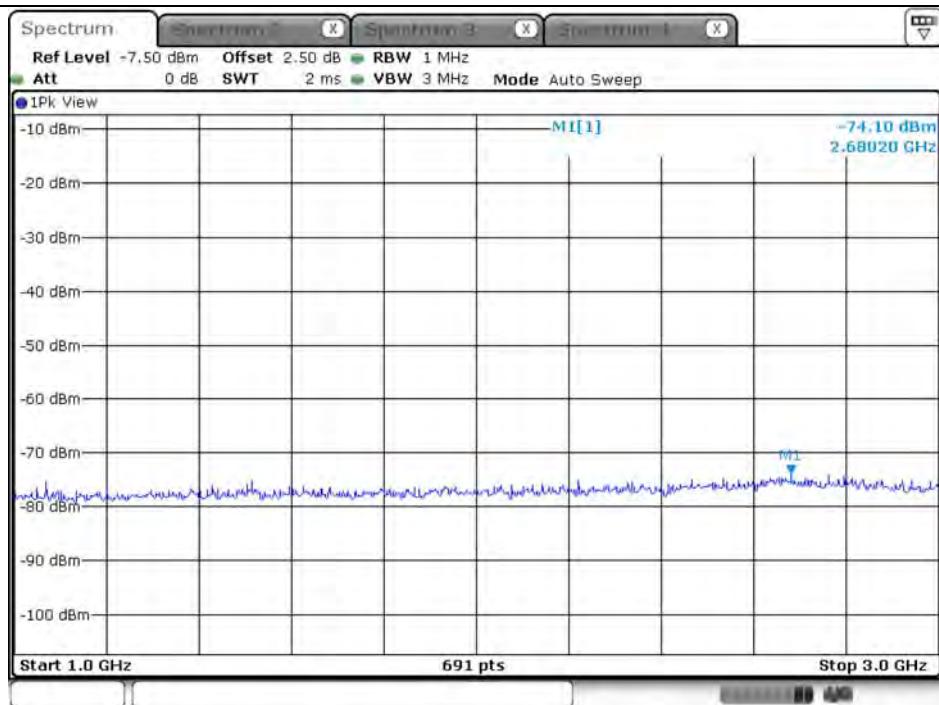
Plot on Configuration VHT20 / 5785 MHz / Average / Port 1 / 1GHz~3GHz

Plot on Configuration VHT20 / 5785 MHz / Average / Port 2 / 1GHz~3GHz




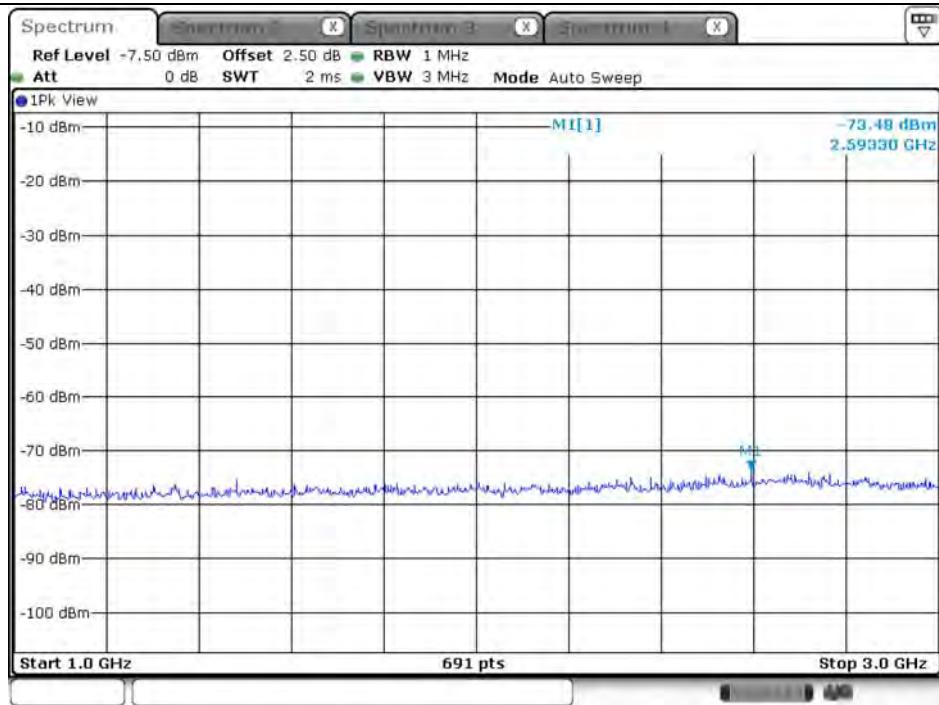
TX Above 1GHz Result

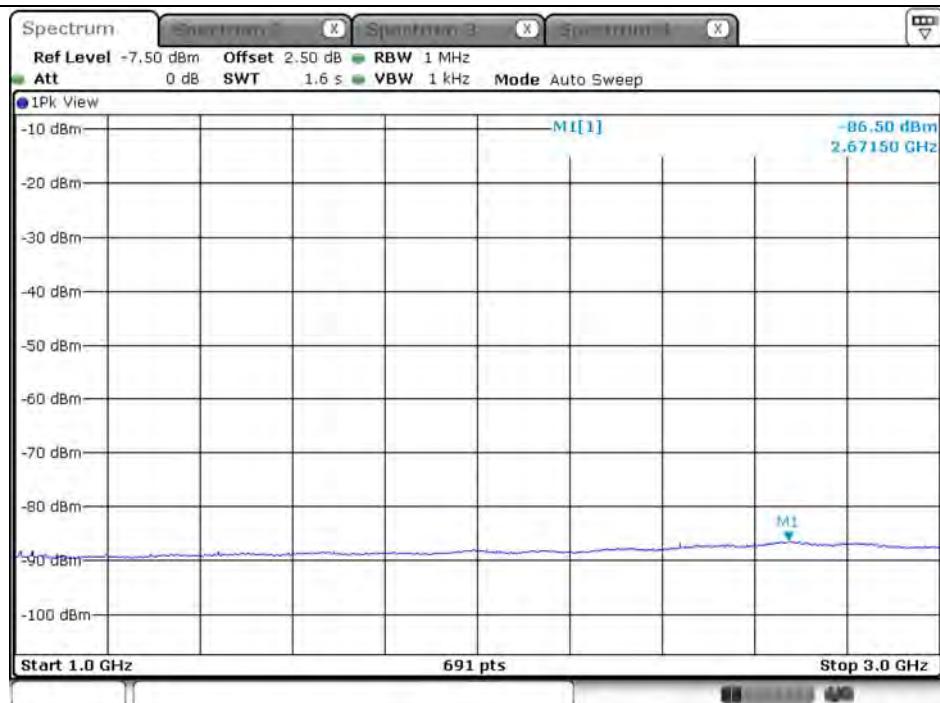
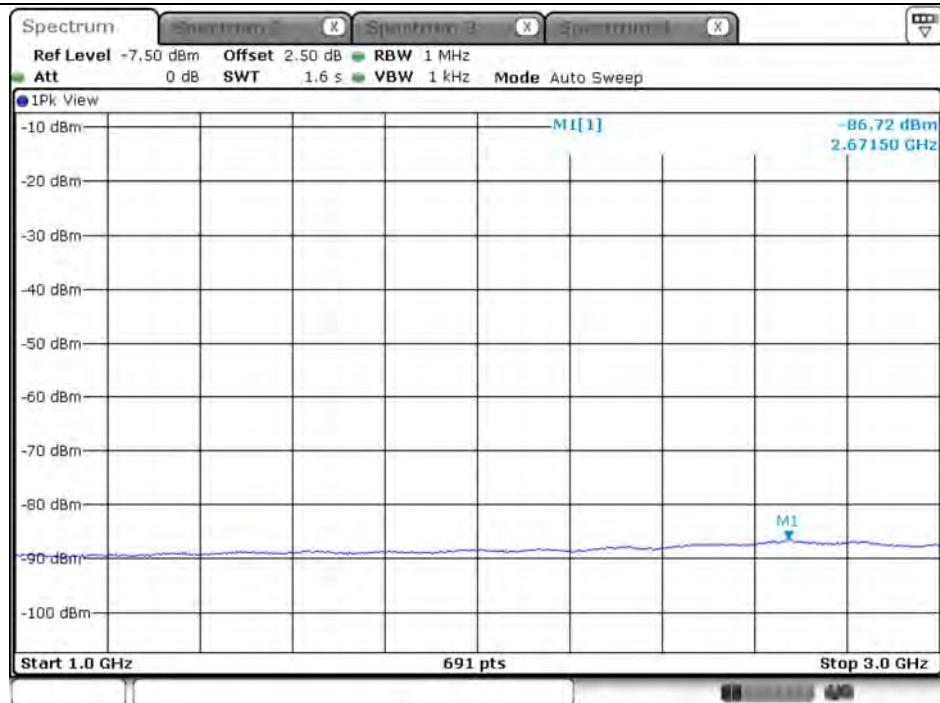
Appendix E.2

Plot on Configuration VHT20 / 5785 MHz / Peak / Port 1 / 1GHz~3GHz



Plot on Configuration VHT20 / 5785 MHz / Peak / Port 2 / 1GHz~3GHz



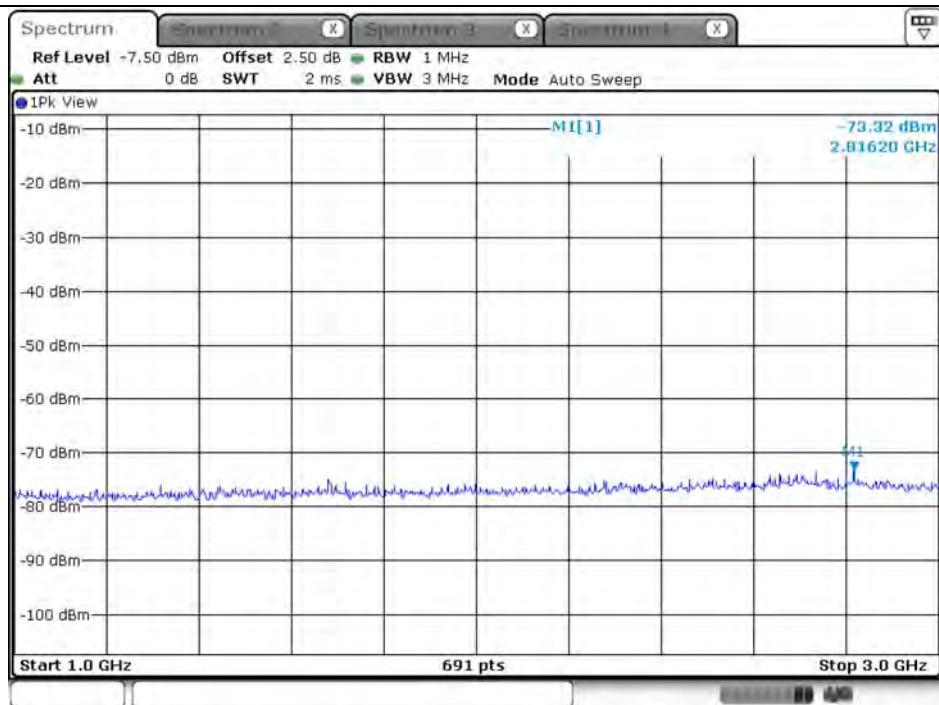
Plot on Configuration VHT20 / 5825 MHz / Average / Port 1 / 1GHz~3GHz

Plot on Configuration VHT20 / 5825 MHz / Average / Port 2 / 1GHz~3GHz




TX Above 1GHz Result

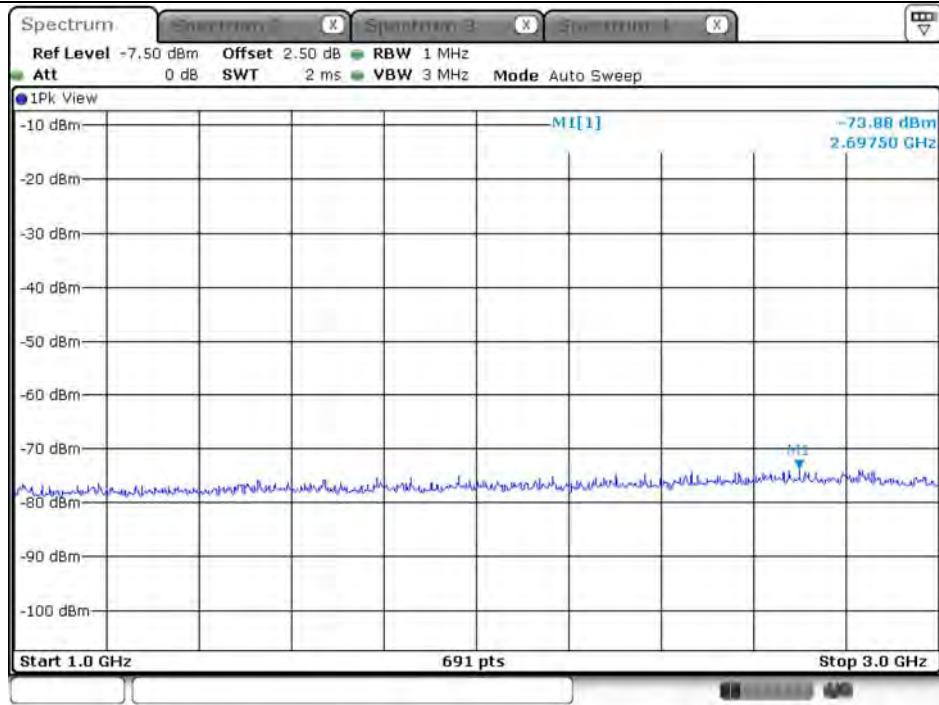
Appendix E.2

Plot on Configuration VHT20 / 5825 MHz / Peak / Port 1 / 1GHz~3GHz

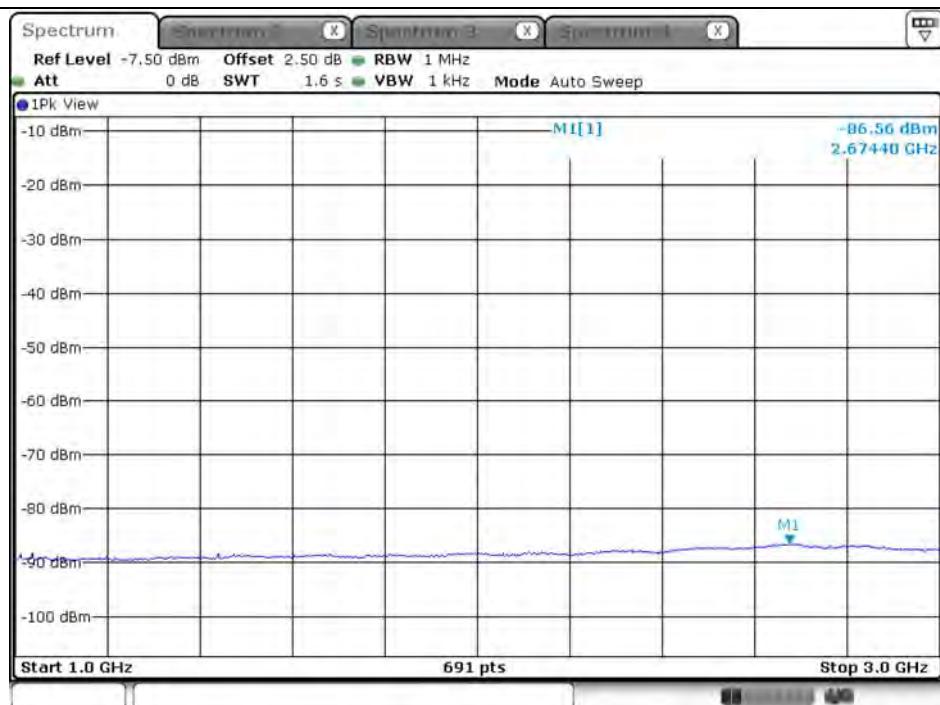
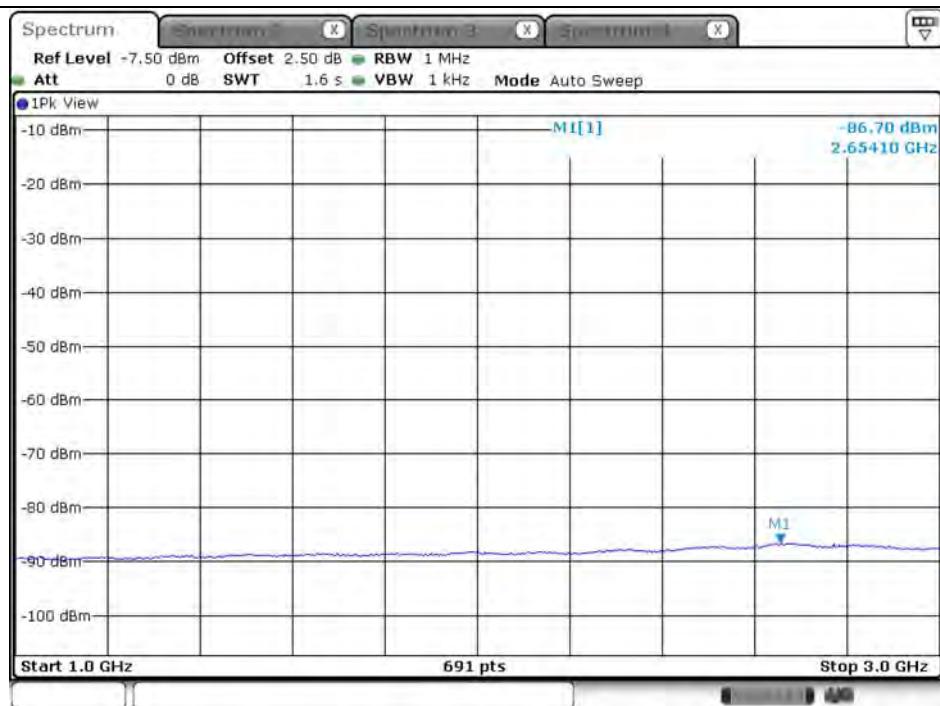


Date: 13.FEB.2018 20:31:35

Plot on Configuration VHT20 / 5825 MHz / Peak / Port 2 / 1GHz~3GHz



Date: 13.FEB.2018 20:51:42

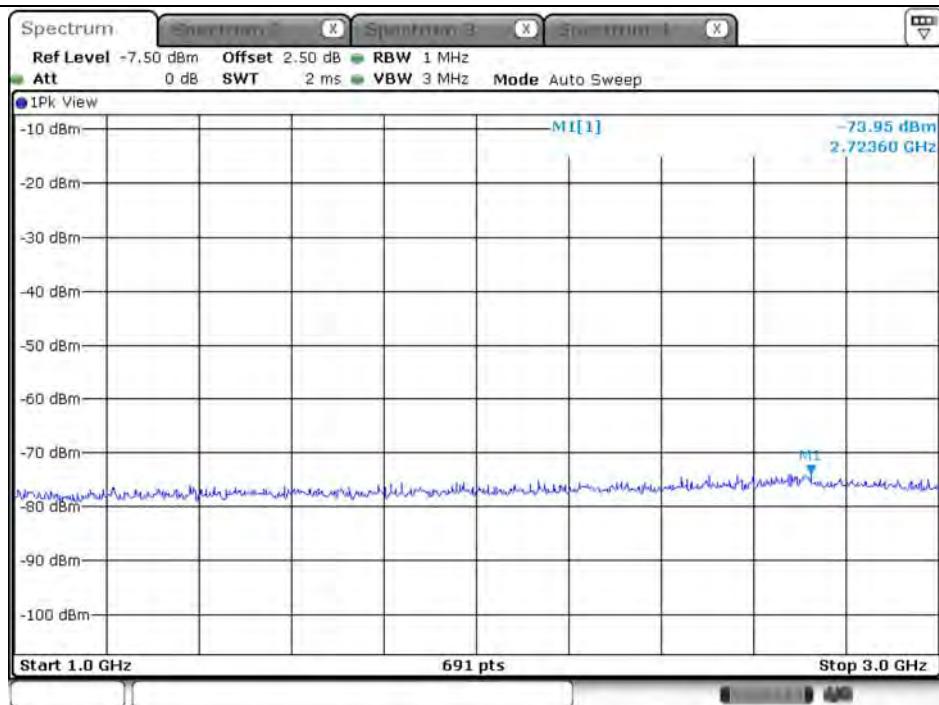
Plot on Configuration VHT80 / 5775 MHz / Average / Port 1 / 1GHz~3GHz

Plot on Configuration VHT80 / 5775 MHz / Average / Port 2 / 1GHz~3GHz




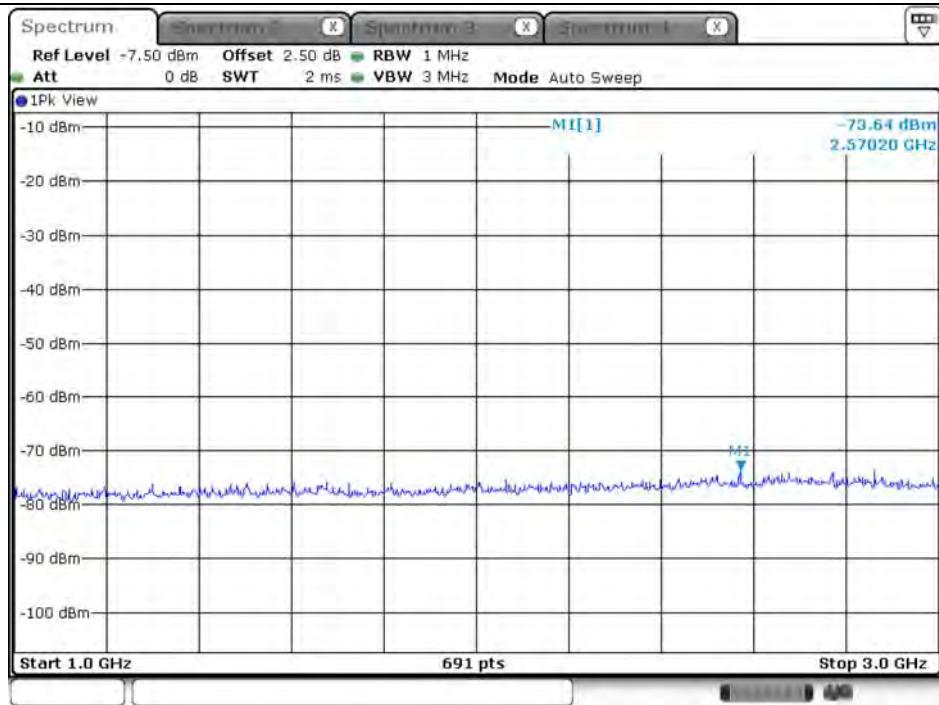
TX Above 1GHz Result

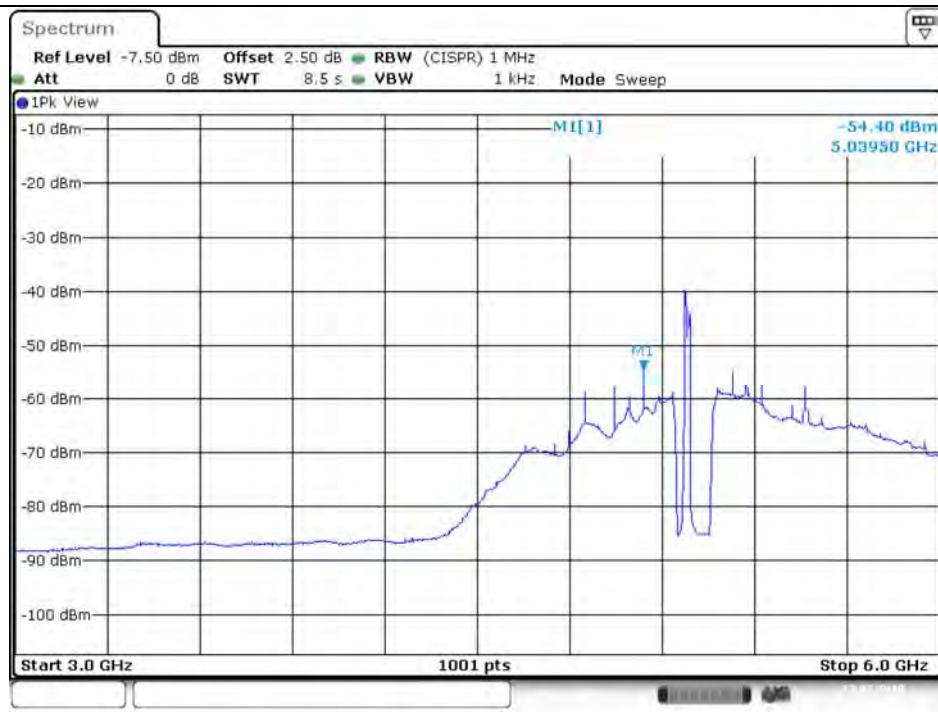
Appendix E.2

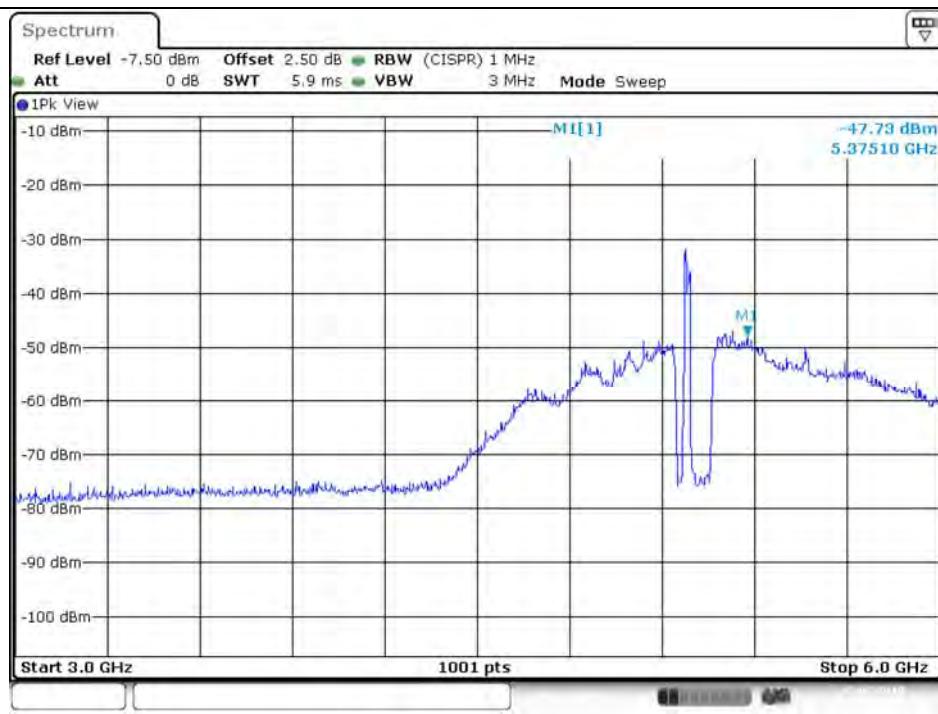
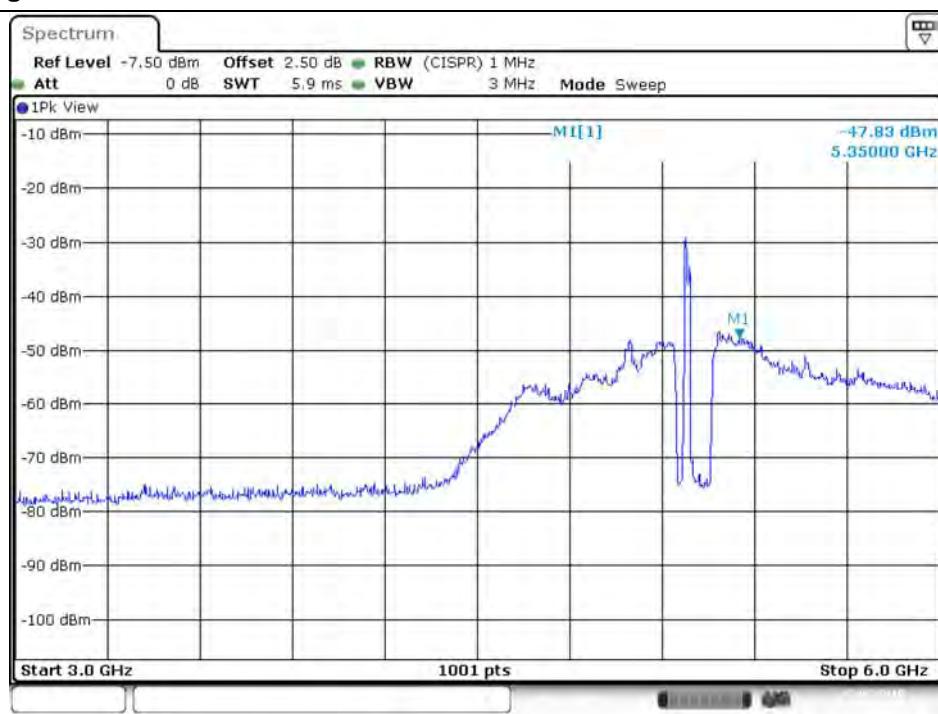
Plot on Configuration VHT80 / 5775 MHz / Peak / Port 1 / 1GHz~3GHz



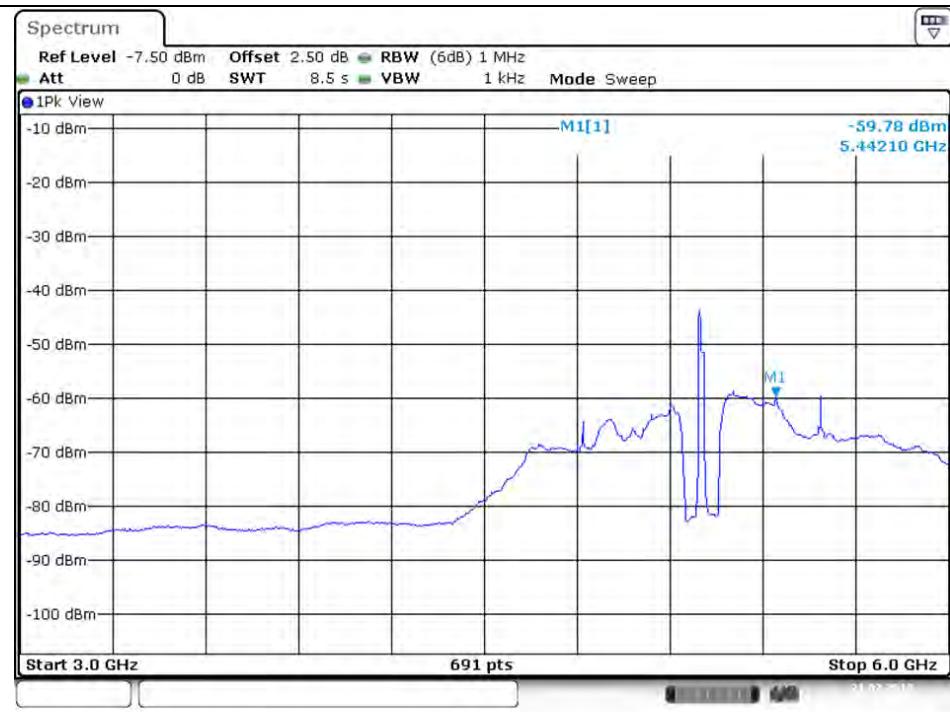
Plot on Configuration VHT80 / 5775 MHz / Peak / Port 2 / 1GHz~3GHz

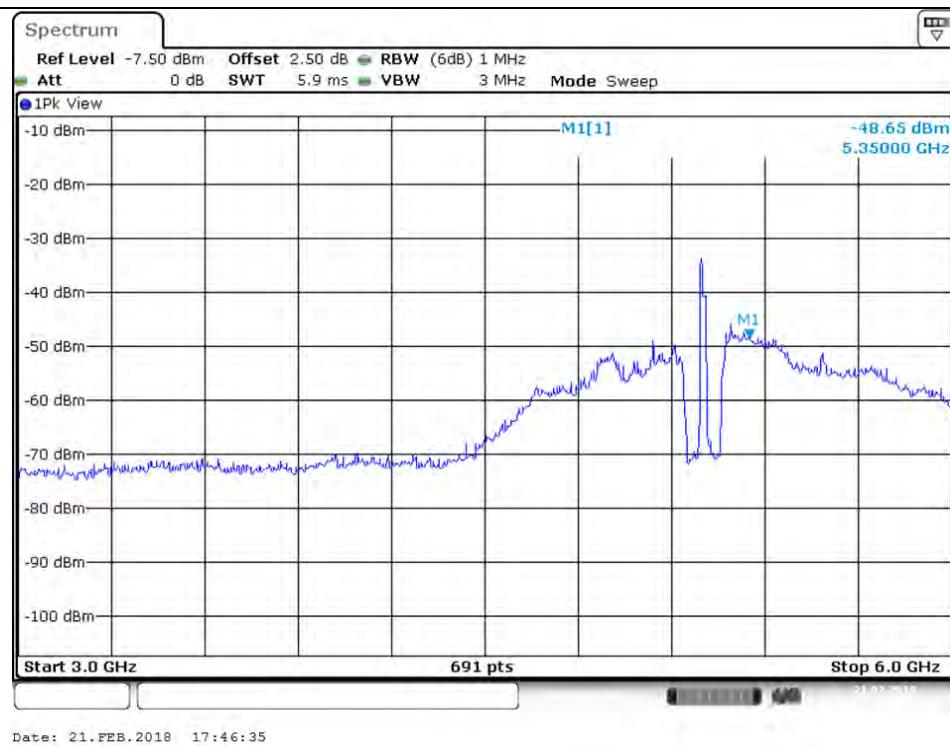
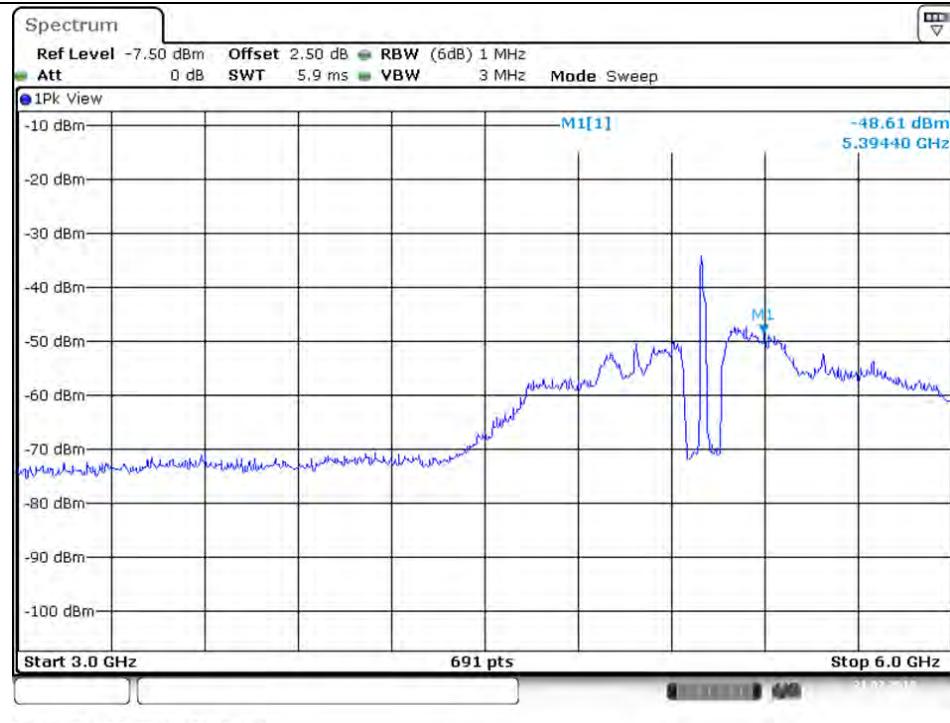


Plot on Configuration VHT20 / 5180 MHz / Average / Port 1 / 3GHz~6GHz

Plot on Configuration VHT20 / 5180 MHz / Average / Port 2 / 3GHz~6GHz


Plot on Configuration VHT20 / 5180 MHz / Peak / Port 1 / 3GHz~6GHz

Plot on Configuration VHT20 / 5180 MHz / Peak / Port 2 / 3GHz~6GHz


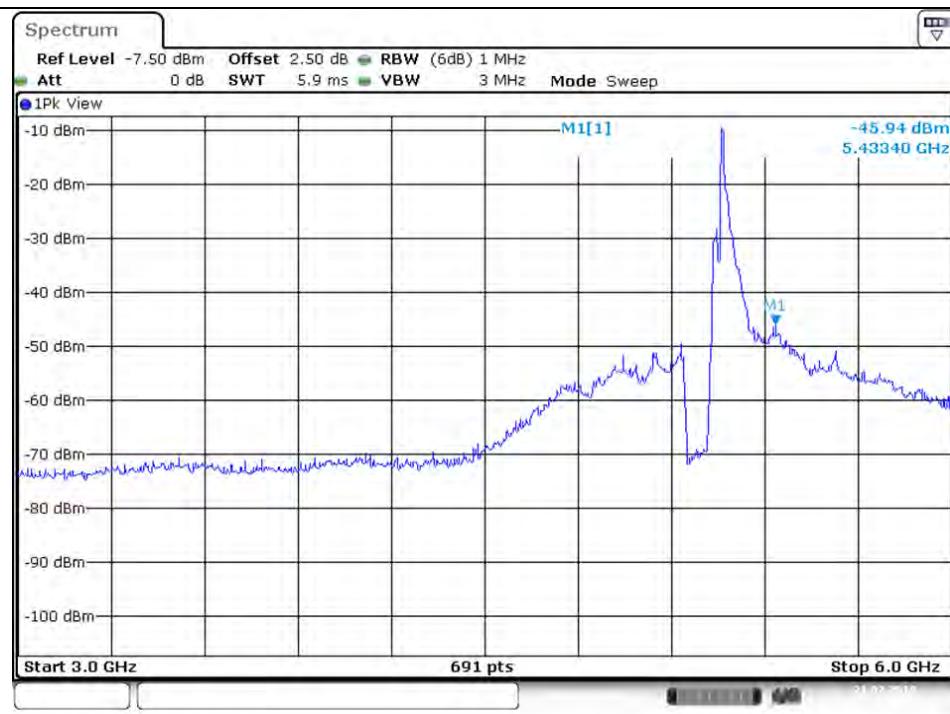
Plot on Configuration VHT20 / 5200 MHz / Average / Port 1 / 3GHz~6GHz

Plot on Configuration VHT20 / 5200 MHz / Average / Port 2 / 3GHz~6GHz


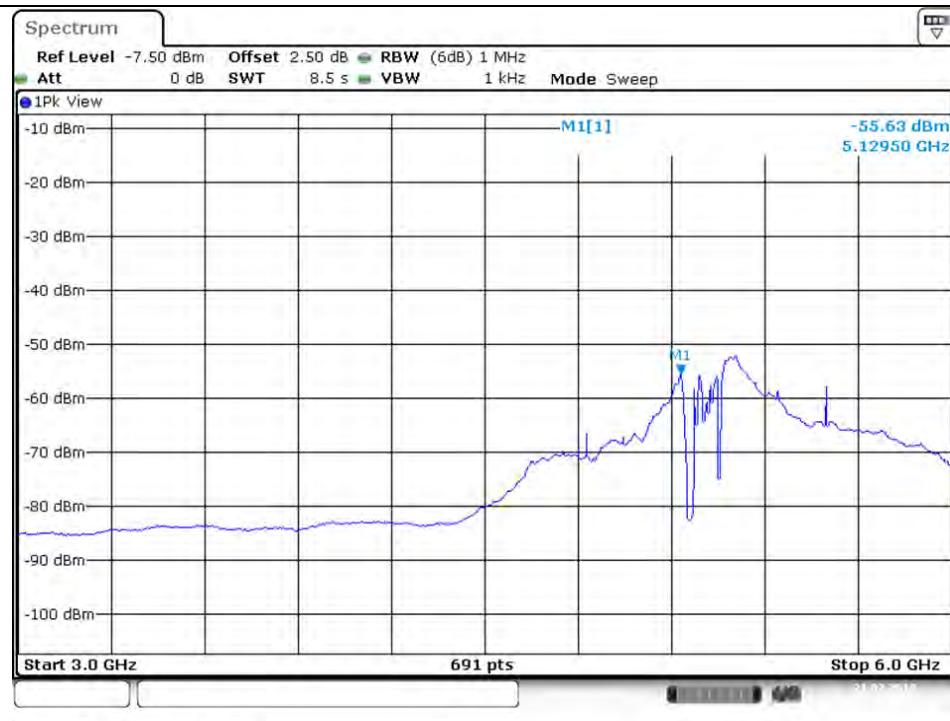
Plot on Configuration VHT20 / 5200 MHz / Peak / Port 1 / 3GHz~6GHz

Plot on Configuration VHT20 / 5200 MHz / Peak / Port 2 / 3GHz~6GHz


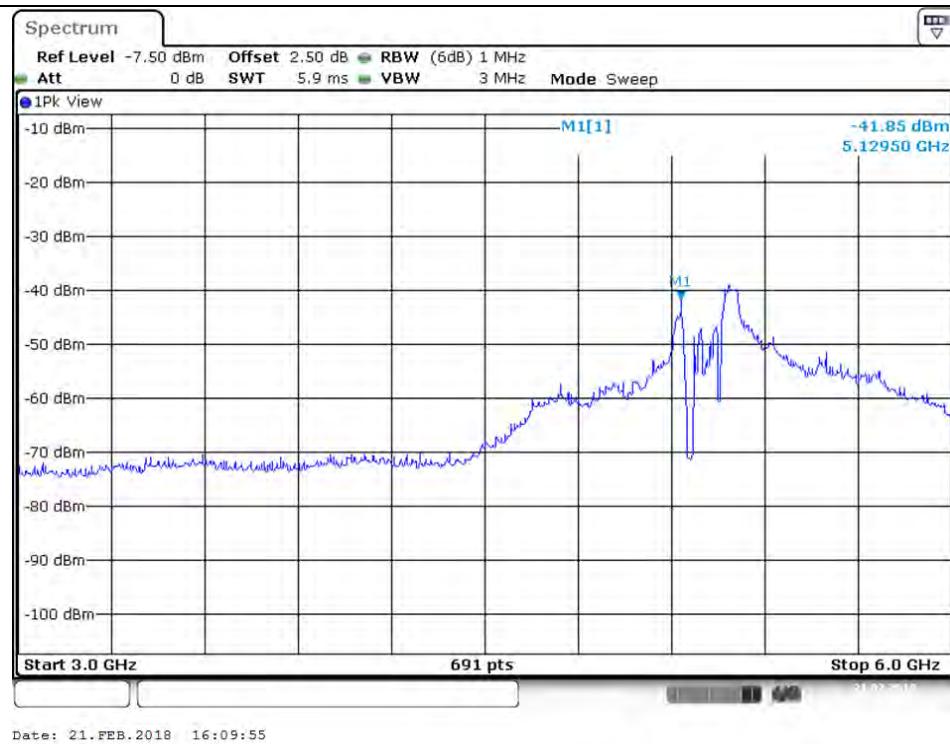
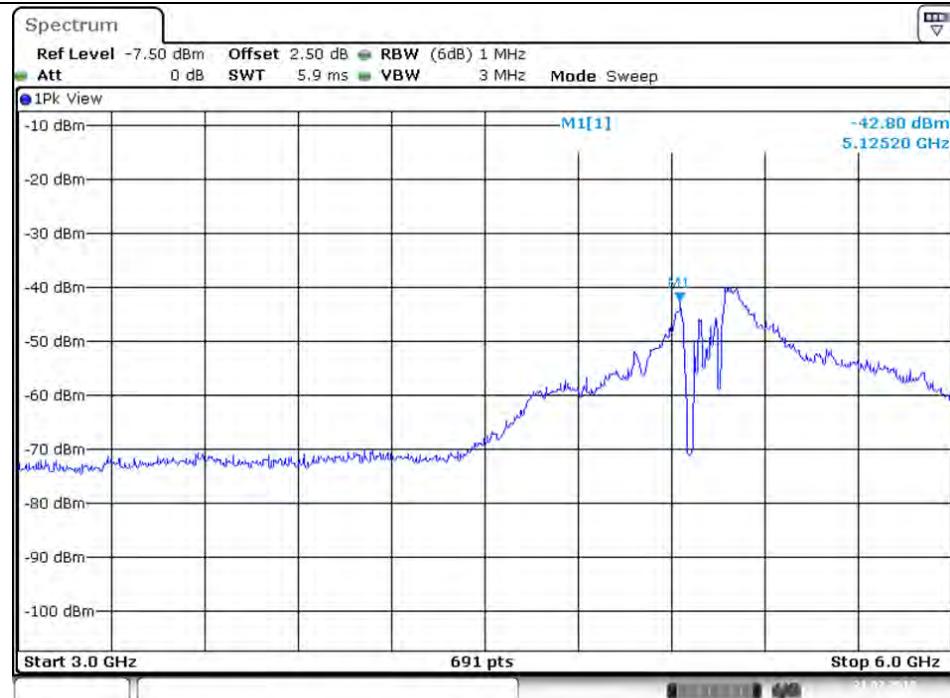
Plot on Configuration VHT20 / 5240 MHz / Average / Port 1 / 3GHz~6GHz

Plot on Configuration VHT20 / 5240 MHz / Average / Port 2 / 3GHz~6GHz


Plot on Configuration VHT20 / 5240 MHz / Peak / Port 1 / 3GHz~6GHz

Plot on Configuration VHT20 / 5240 MHz / Peak / Port 2 / 3GHz~6GHz


Plot on Configuration VHT80 / 5210 MHz / Average / Port 1 / 3GHz~6GHz

Plot on Configuration VHT80 / 5210 MHz / Average / Port 2 / 3GHz~6GHz


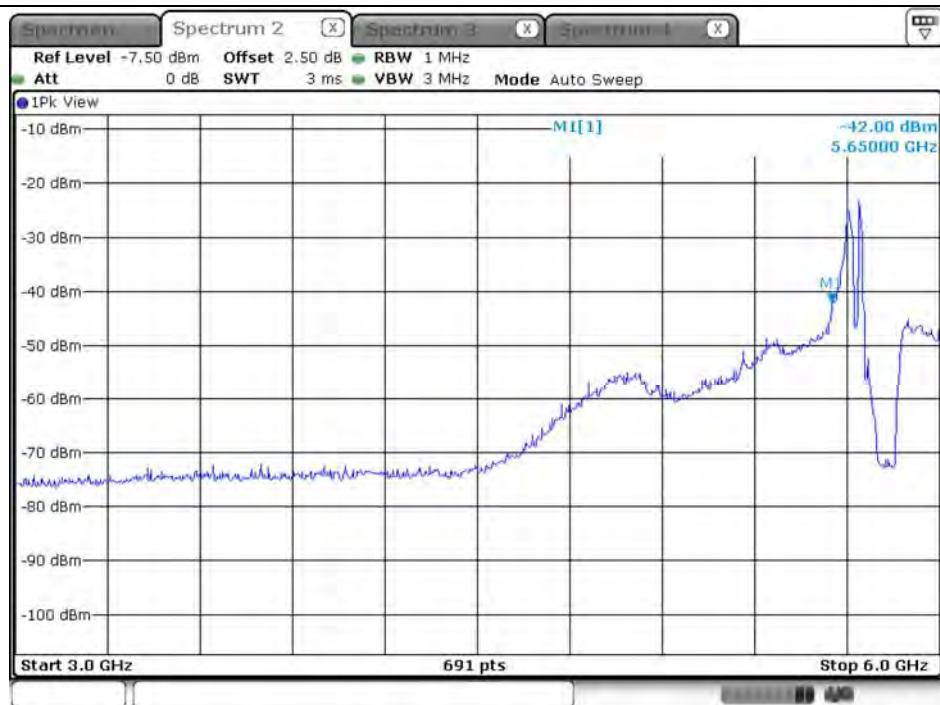
Plot on Configuration VHT80 / 5210 MHz / Peak / Port 1 / 3GHz~6GHz

Plot on Configuration VHT80 / 5210 MHz / Peak / Port 2 / 3GHz~6GHz


Plot on Configuration VHT20 / 5745 MHz / Average / Port 1 / 3GHz~6GHz


Date: 13.FEB.2018 19:54:38

Plot on Configuration VHT20 / 5745 MHz / Average / Port 2 / 3GHz~6GHz


Date: 13.FEB.2018 20:05:11

Plot on Configuration VHT20 / 5745 MHz / Peak / Port 1 / 3GHz~6GHz


Date: 13.FEB.2018 19:56:35

Plot on Configuration VHT20 / 5745 MHz / Peak / Port 2 / 3GHz~6GHz


Date: 13.FEB.2018 20:06:58

Plot on Configuration VHT20 / 5785 MHz / Average / Port 1 / 3GHz~6GHz


Date: 13.FEB.2018 20:15:06

Plot on Configuration VHT20 / 5785 MHz / Average / Port 2 / 3GHz~6GHz

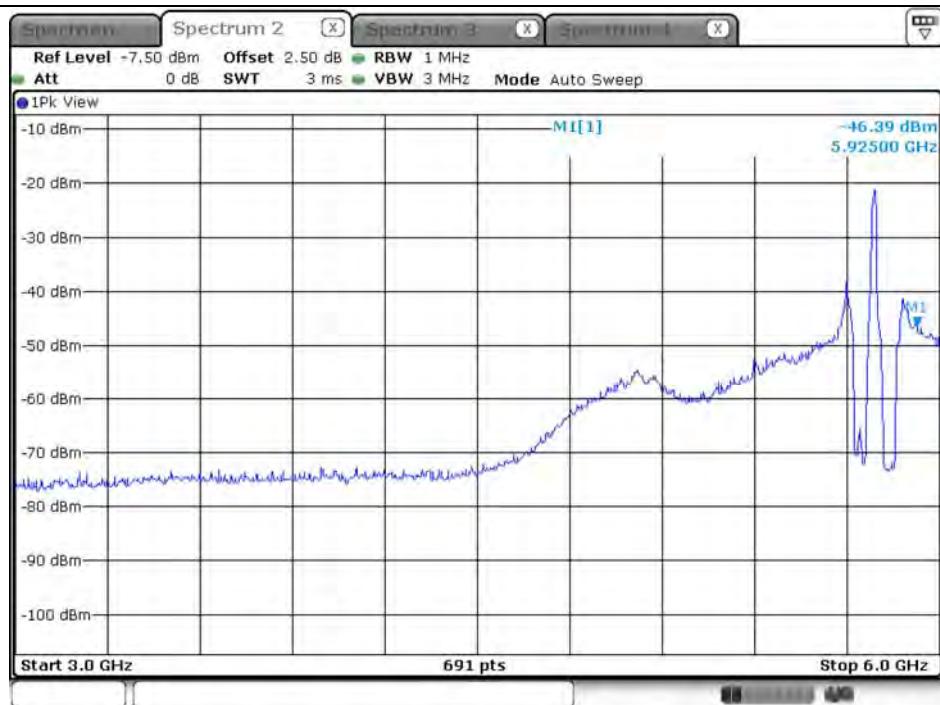

Date: 13.FEB.2018 20:23:39



TX Above 1GHz Result

Appendix E.2

Plot on Configuration VHT20 / 5785 MHz / Peak / Port 1 / 3GHz~6GHz



Date: 13.FEB.2018 20:16:34

Plot on Configuration VHT20 / 5785 MHz / Peak / Port 2 / 3GHz~6GHz



Date: 13.FEB.2018 20:25:24

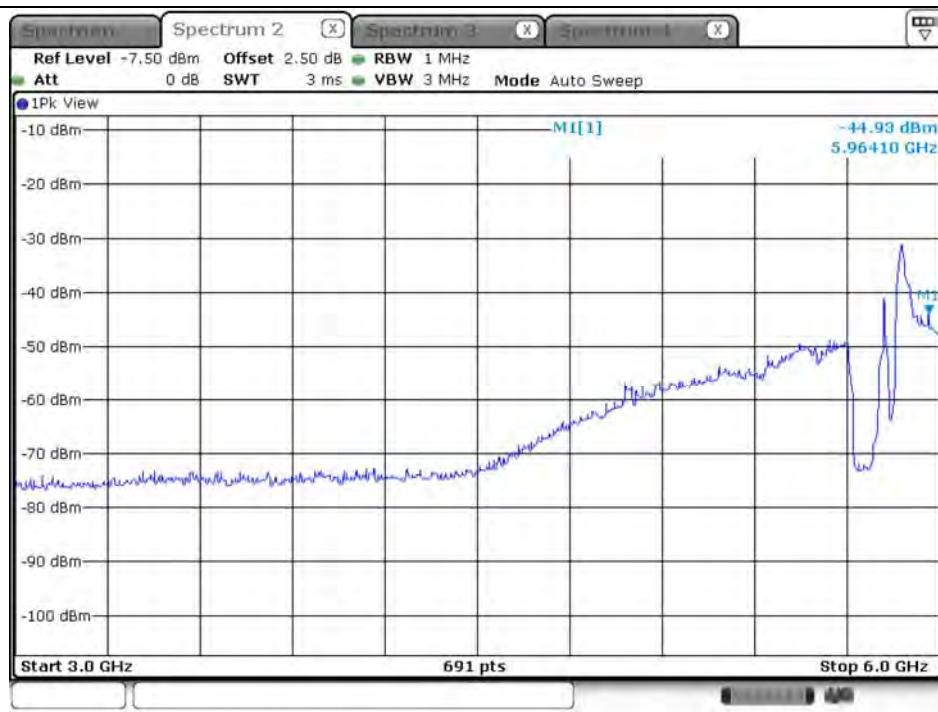
Plot on Configuration VHT20 / 5825 MHz / Average / Port 1 / 3GHz~6GHz


Date: 13.FEB.2018 20:54:15

Plot on Configuration VHT20 / 5825 MHz / Average / Port 2 / 3GHz~6GHz


Date: 13.FEB.2018 20:47:08

Plot on Configuration VHT20 / 5825 MHz / Peak / Port 1 / 3GHz~6GHz

Plot on Configuration VHT20 / 5825 MHz / Peak / Port 2 / 3GHz~6GHz




TX Above 1GHz Result

Appendix E.2

Plot on Configuration VHT80 / 5775 MHz / Average / Port 1 / 3GHz~6GHz



Date: 13.FEB.2018 21:08:20

Plot on Configuration VHT80 / 5775 MHz / Average / Port 2 / 3GHz~6GHz



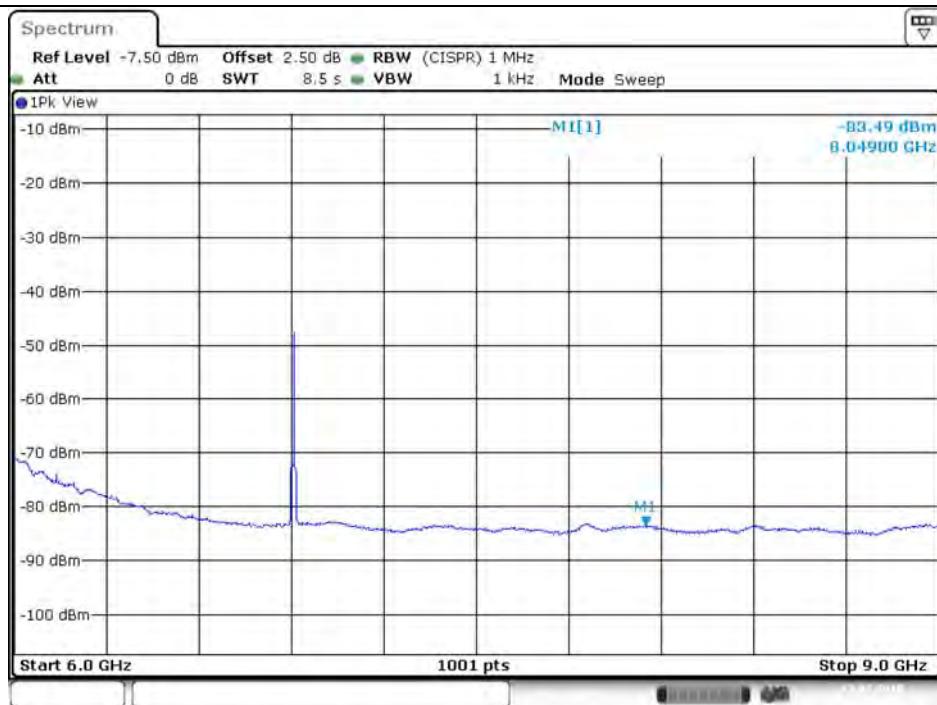
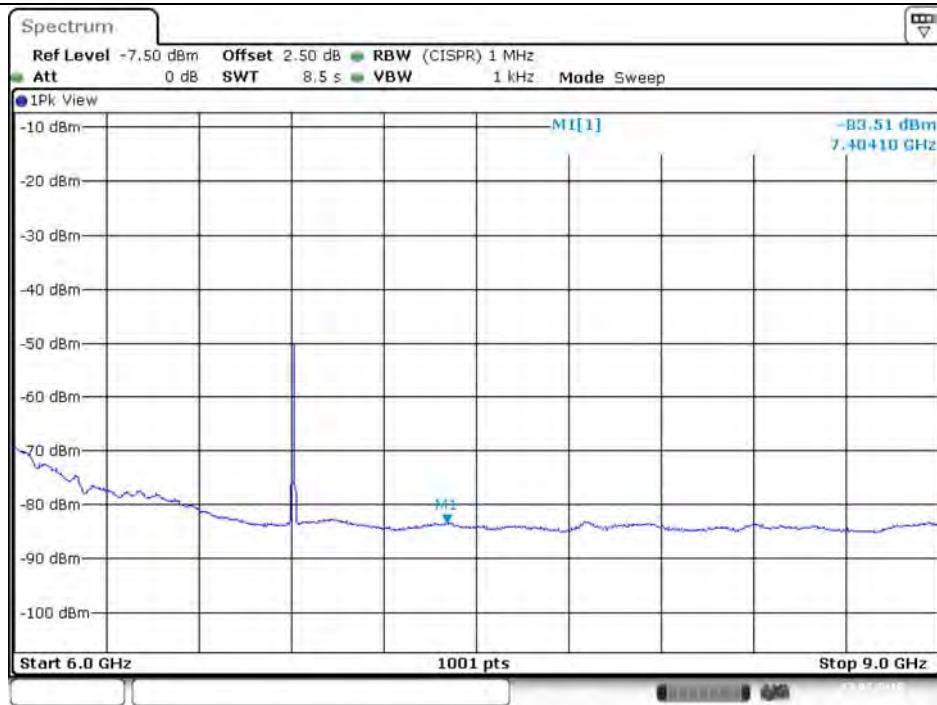
Date: 13.FEB.2018 21:15:20

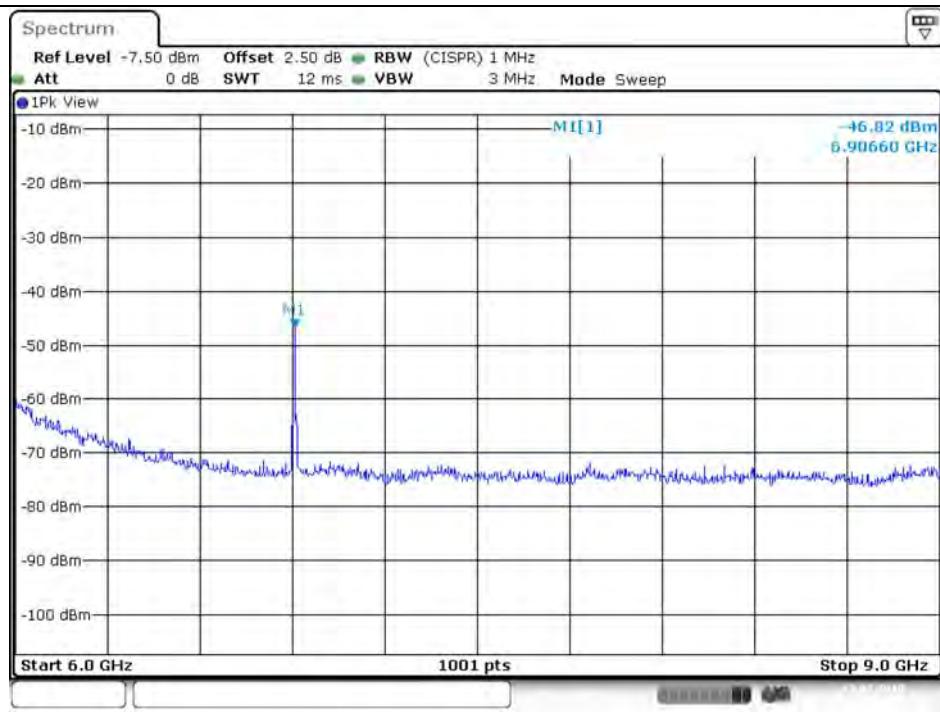
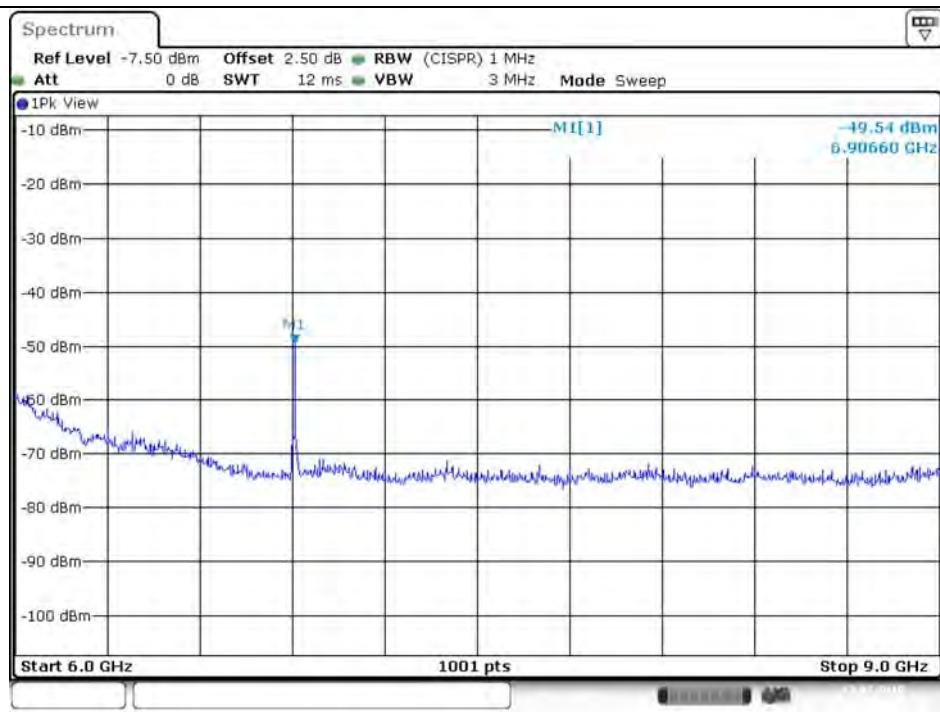
Plot on Configuration VHT80 / 5775 MHz / Peak / Port 1 / 3GHz~6GHz

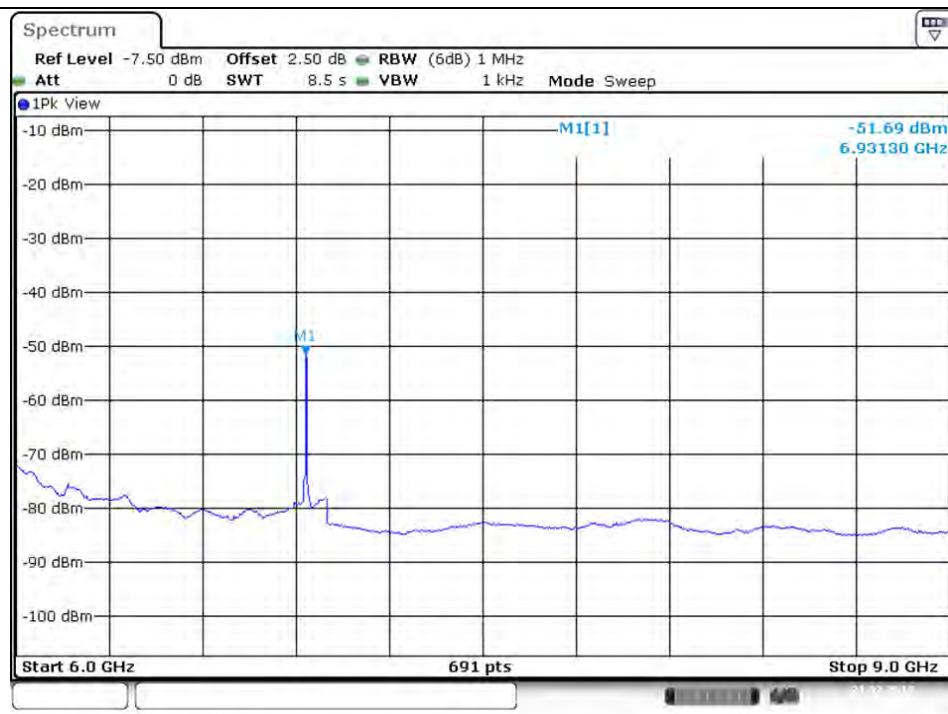
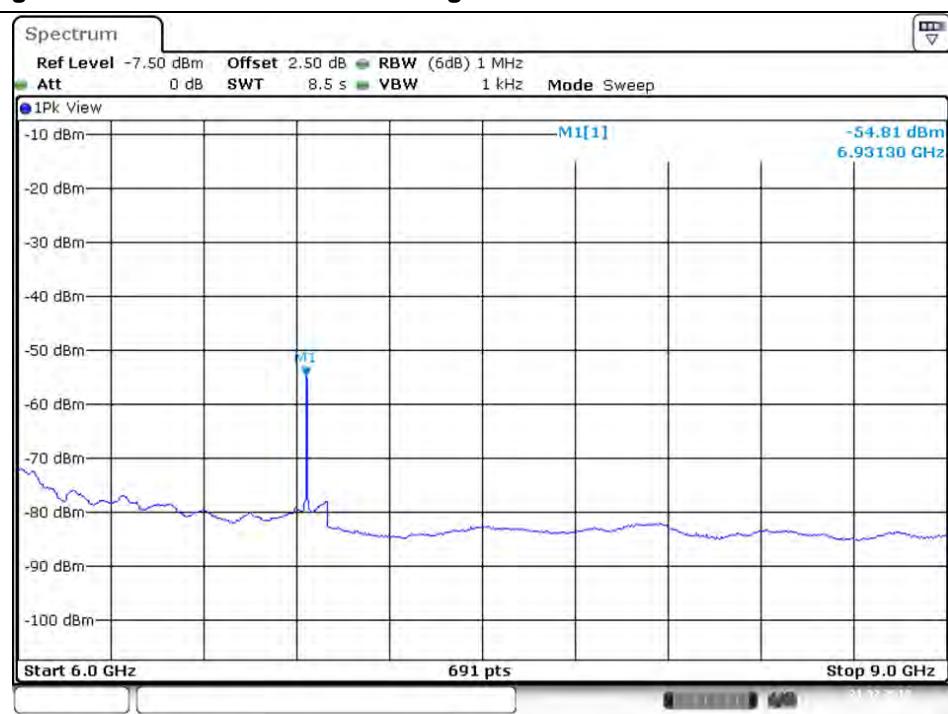

Date: 13.FEB.2018 21:09:39

Plot on Configuration VHT80 / 5775 MHz / Peak / Port 2 / 3GHz~6GHz


Date: 13.FEB.2018 21:16:41

Plot on Configuration VHT20 / 5180 MHz / Average / Port 1 / 6GHz~9GHz

Plot on Configuration VHT20 / 5180 MHz / Average / Port 2 / 6GHz~9GHz


Plot on Configuration VHT20 / 5180 MHz / Peak / Port 1 / 6GHz~9GHz

Plot on Configuration VHT20 / 5180 MHz / Peak / Port 2 / 6GHz~9GHz


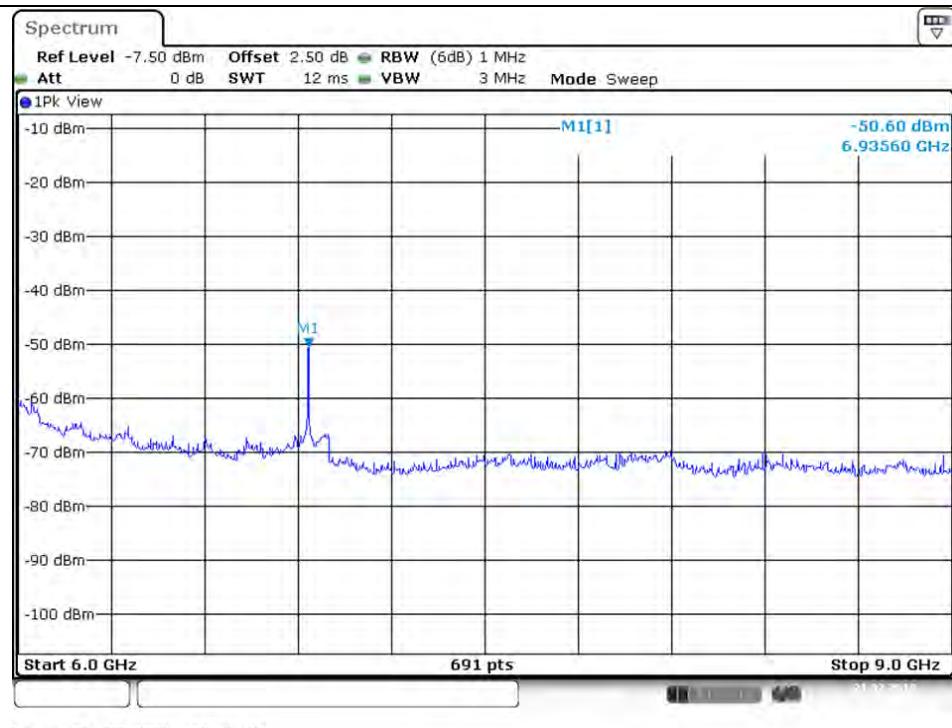
Plot on Configuration VHT20 / 5200 MHz / Average / Port 1 / 6GHz~9GHz

Plot on Configuration VHT20 / 5200 MHz / Average / Port 2 / 6GHz~9GHz




TX Above 1GHz Result

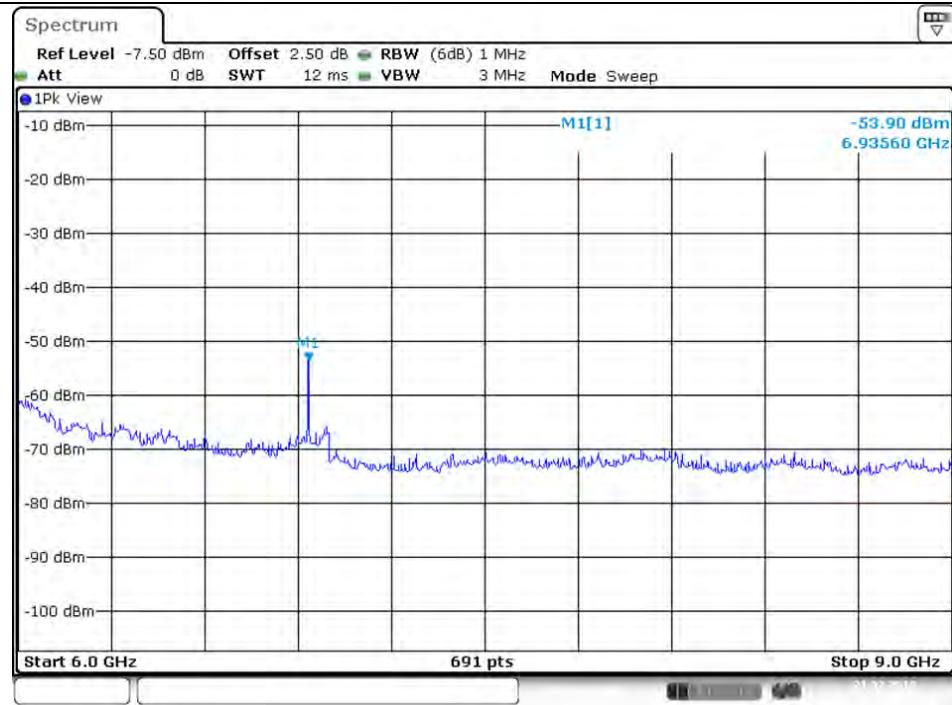
Appendix E.2

Plot on Configuration VHT20 / 5200 MHz / Peak / Port 1 / 6GHz~9GHz



Date: 21.FEB.2018 17:07:24

Plot on Configuration VHT20 / 5200 MHz / Peak / Port 2 / 6GHz~9GHz



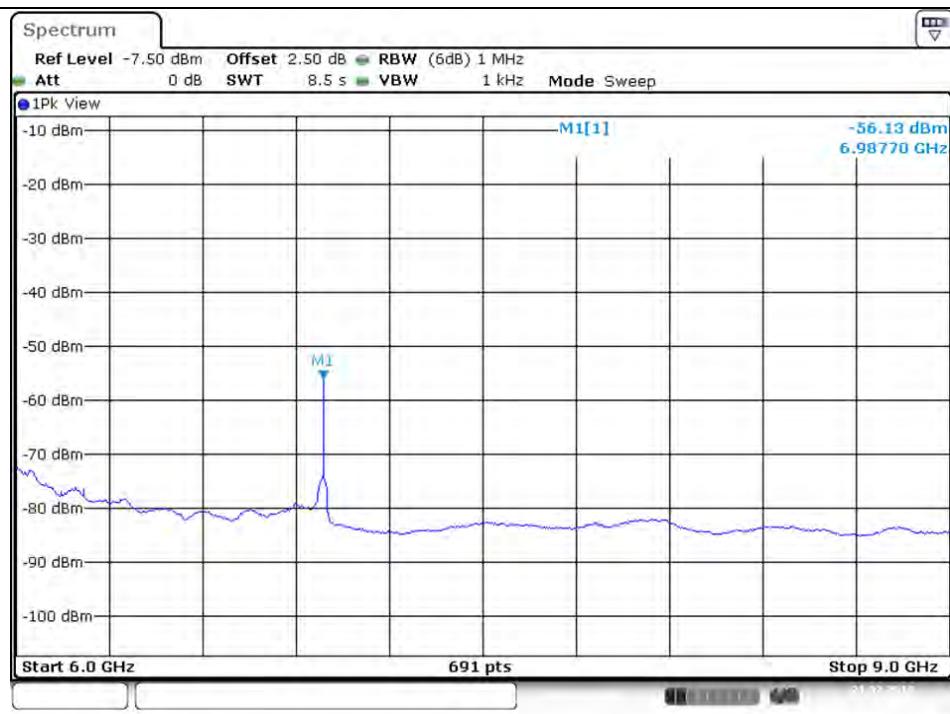
Date: 21.FEB.2018 17:08:30



TX Above 1GHz Result

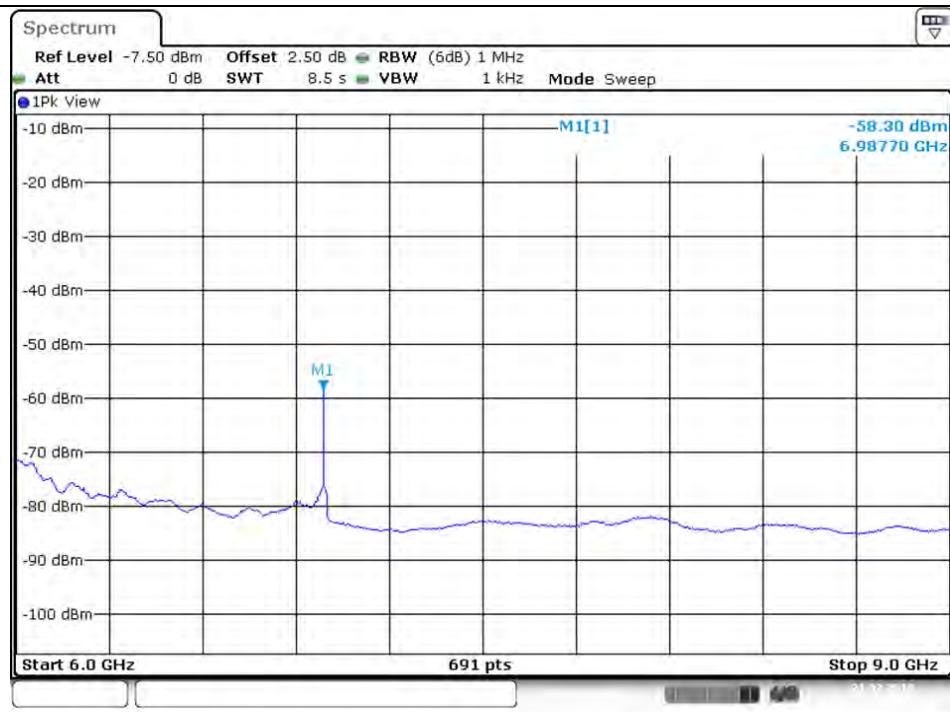
Appendix E.2

Plot on Configuration VHT20 / 5240 MHz / Average / Port 1 / 6GHz~9GHz

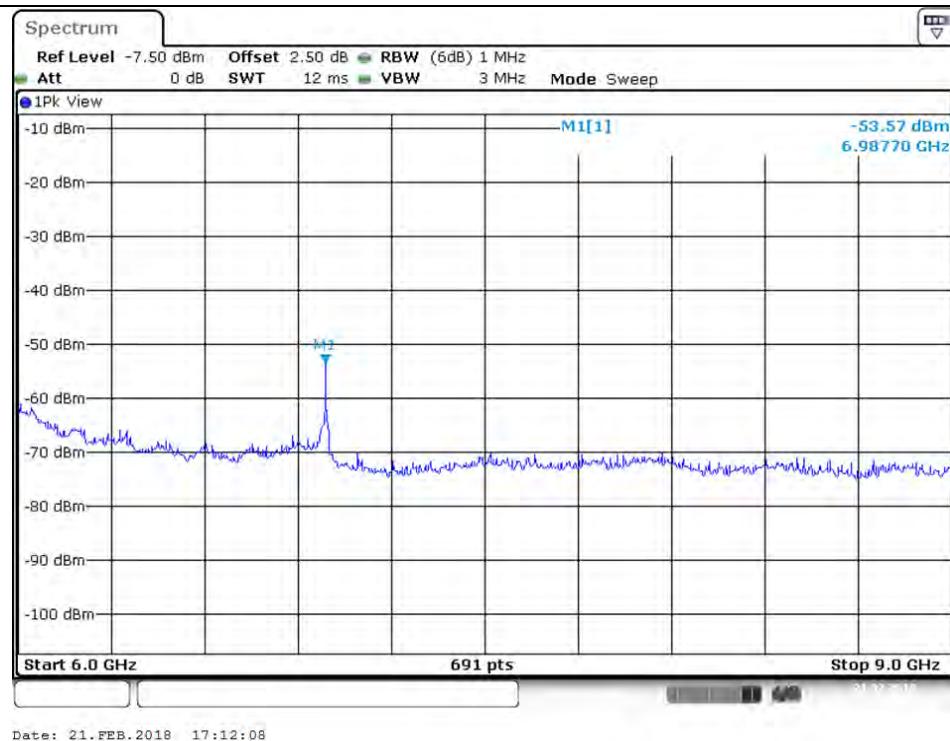
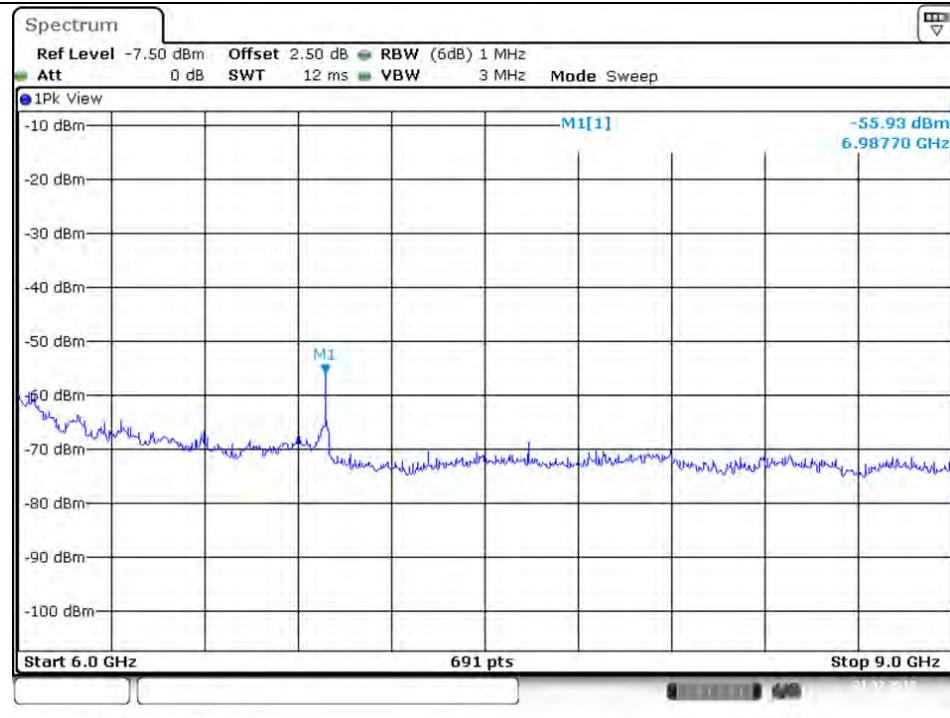


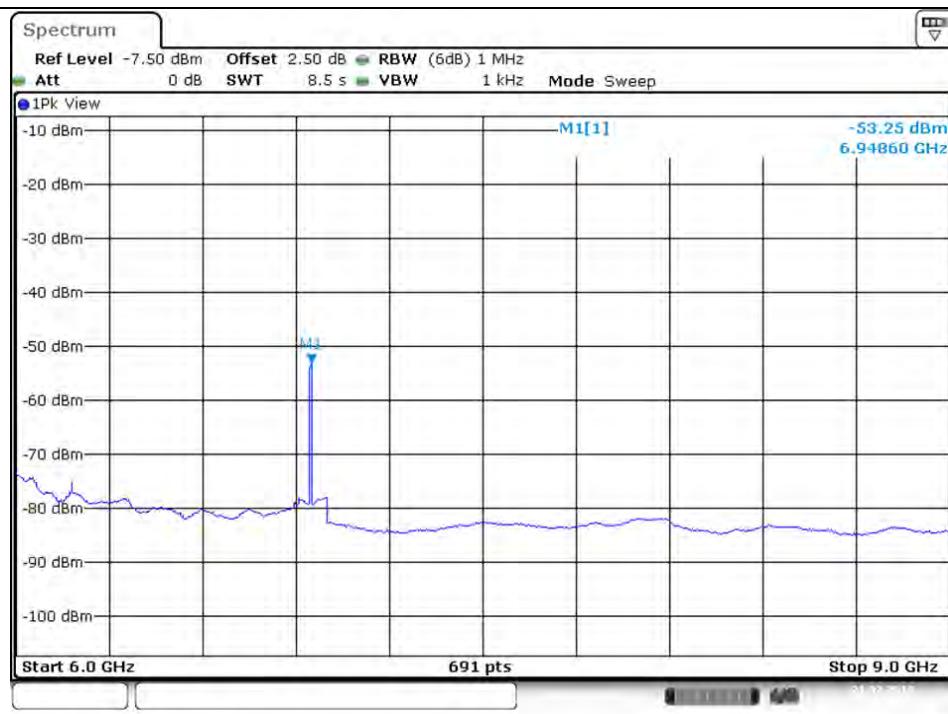
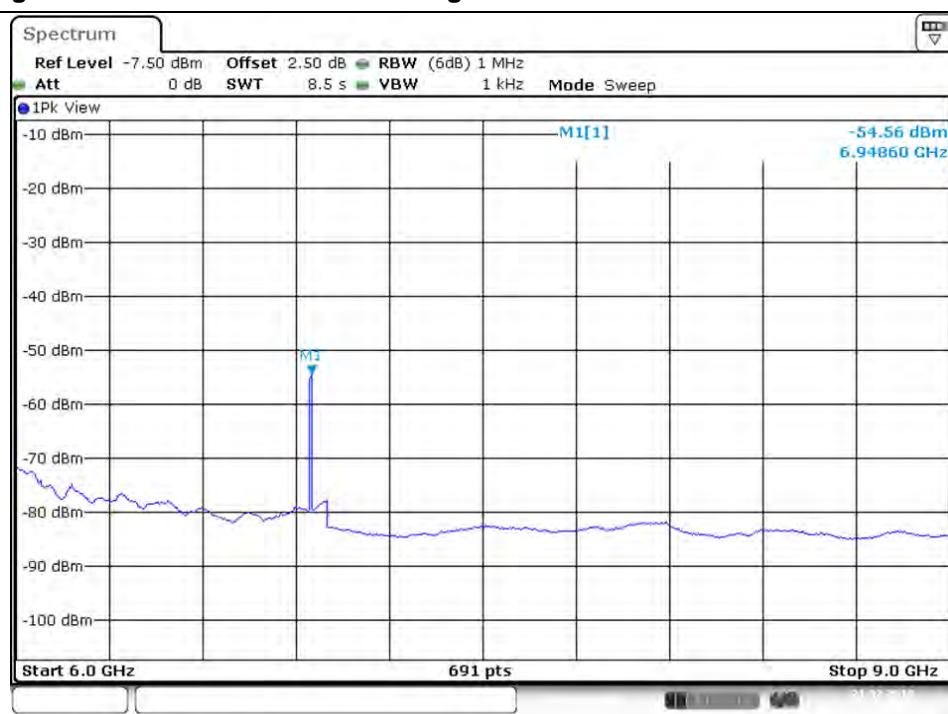
Date: 21.FEB.2018 17:11:53

Plot on Configuration VHT20 / 5240 MHz / Average / Port 2 / 6GHz~9GHz



Date: 21.FEB.2018 17:13:37

Plot on Configuration VHT20 / 5240 MHz / Peak / Port 1 / 6GHz~9GHz

Plot on Configuration VHT20 / 5240 MHz / Peak / Port 2 / 6GHz~9GHz


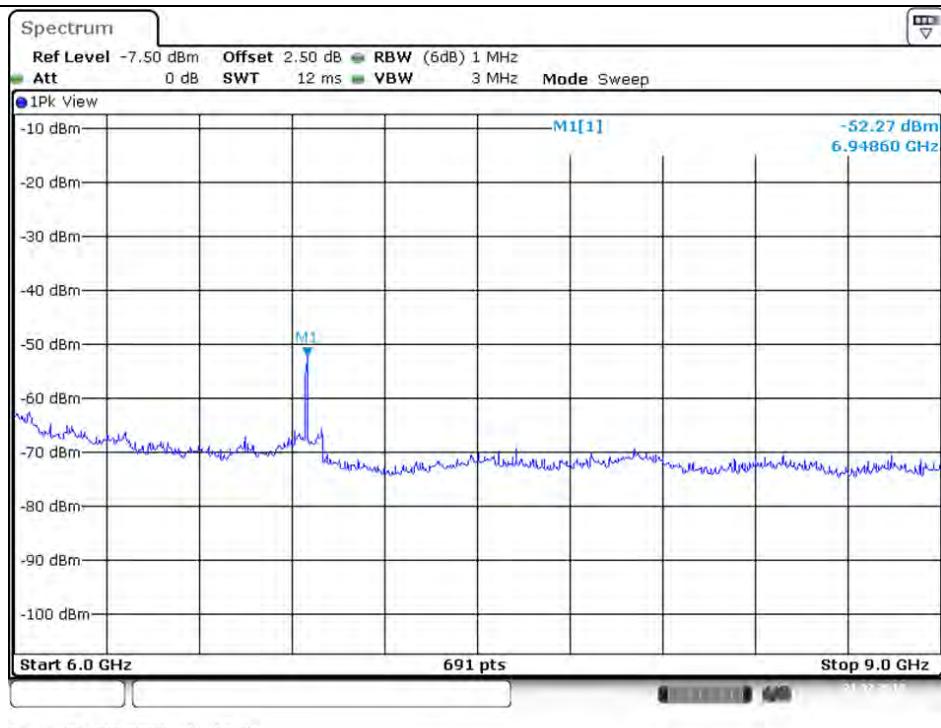
Plot on Configuration VHT80 / 5210 MHz / Average / Port 1 / 6GHz~9GHz

Plot on Configuration VHT80 / 5210 MHz / Average / Port 2 / 6GHz~9GHz




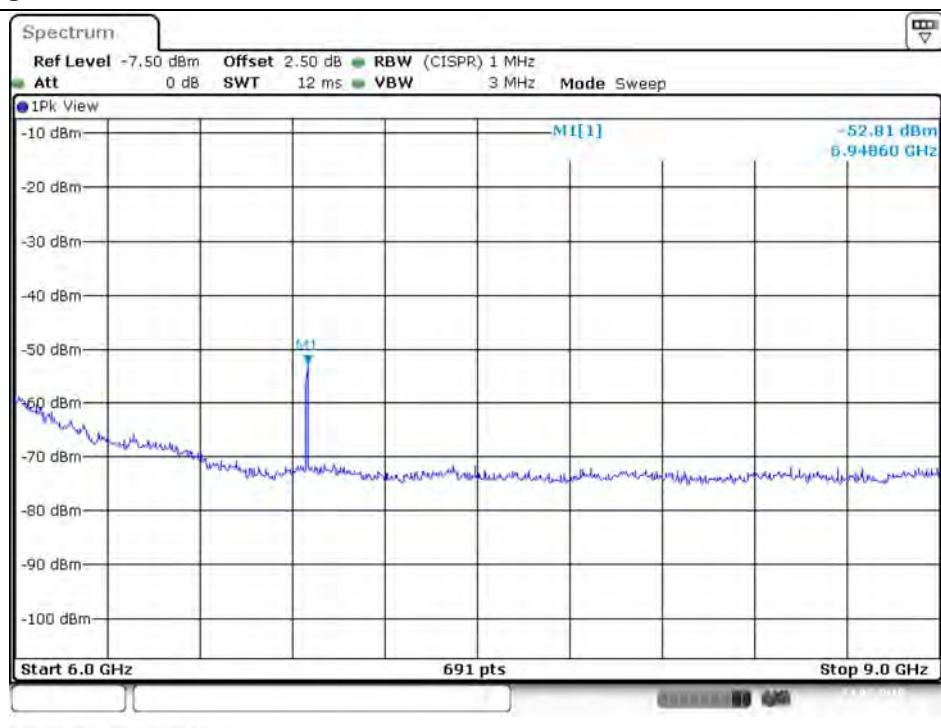
TX Above 1GHz Result

Appendix E.2

Plot on Configuration VHT80 / 5210 MHz / Peak / Port 1 / 6GHz~9GHz



Plot on Configuration VHT80 / 5210 MHz / Peak / Port 2 / 6GHz~9GHz





TX Above 1GHz Result

Appendix E.2

Plot on Configuration VHT20 / 5745 MHz / Average / Port 1 / 6GHz~9GHz



Plot on Configuration VHT20 / 5745 MHz / Average / Port 2 / 6GHz~9GHz

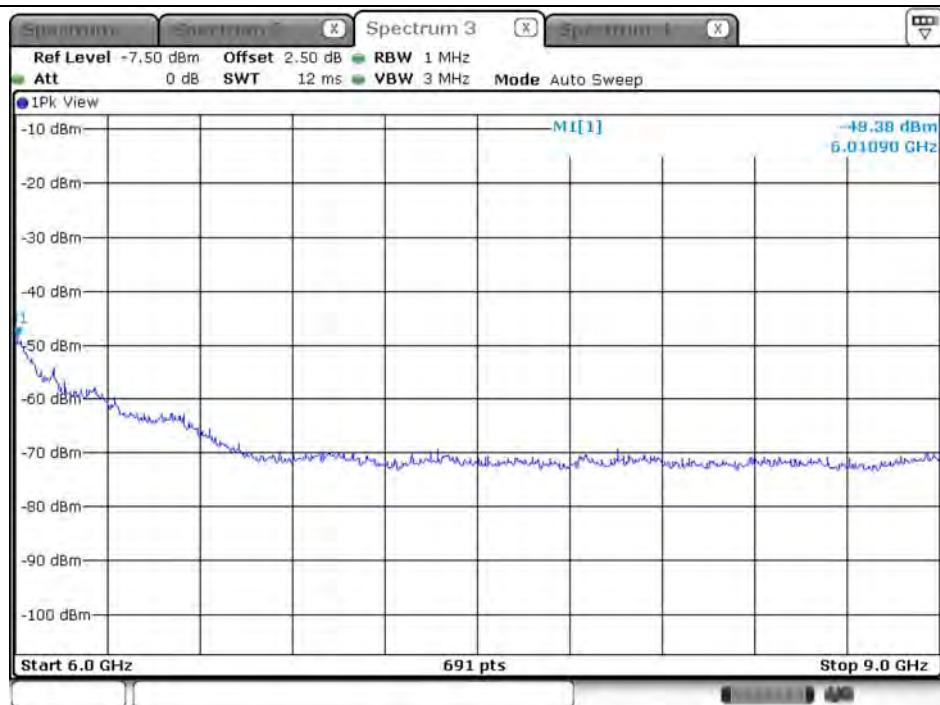




TX Above 1GHz Result

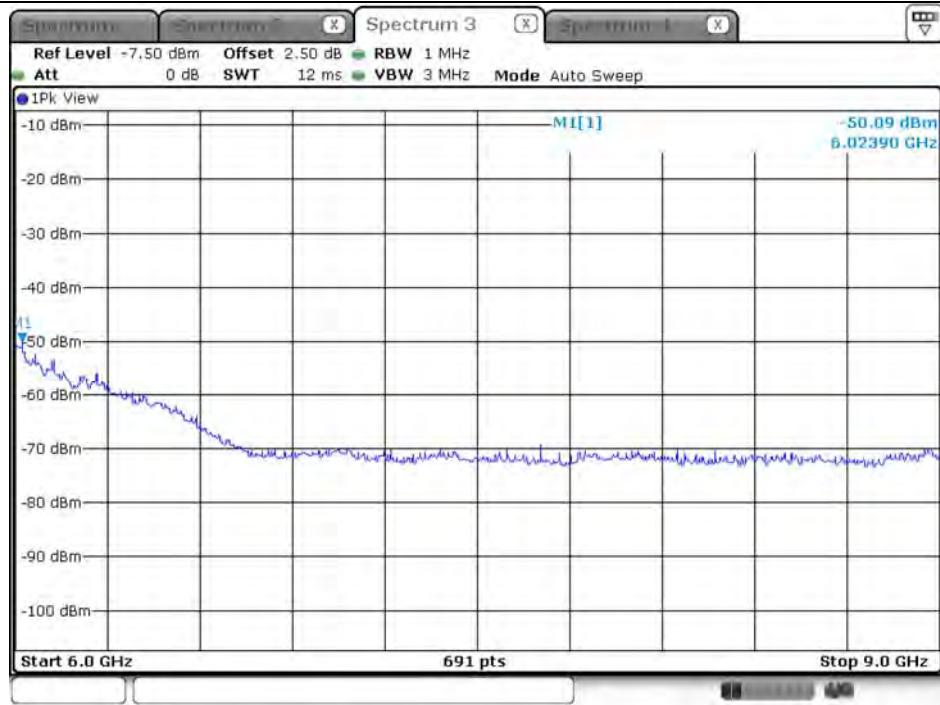
Appendix E.2

Plot on Configuration VHT20 / 5745 MHz / Peak / Port 1 / 6GHz~9GHz



Date: 13.FEB.2018 20:00:44

Plot on Configuration VHT20 / 5745 MHz / Peak / Port 2 / 6GHz~9GHz



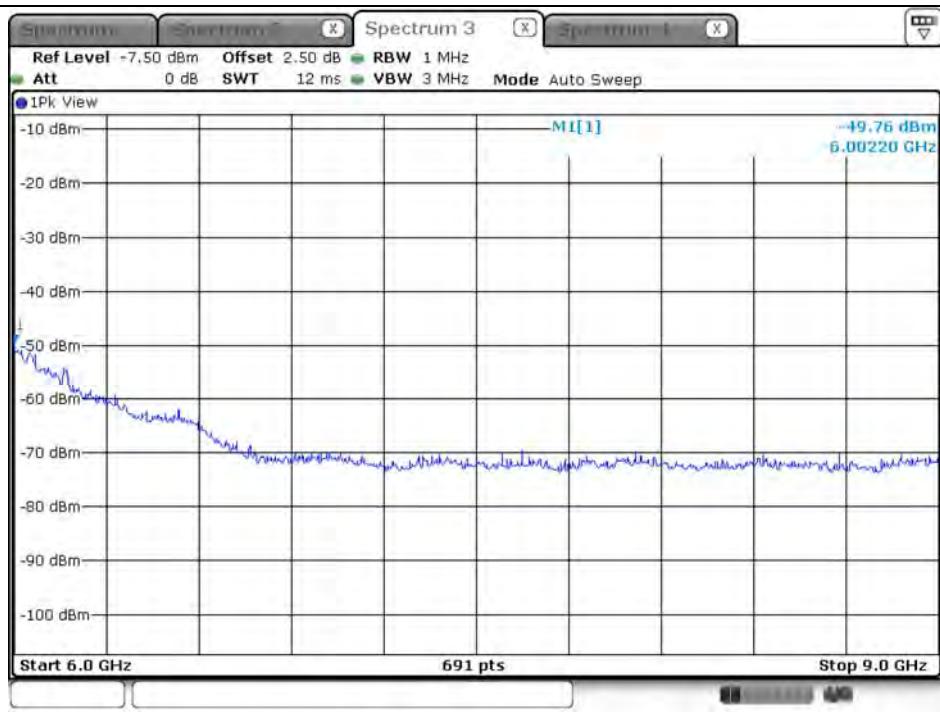
Date: 13.FEB.2018 20:03:21

Plot on Configuration VHT20 / 5785 MHz / Average / Port 1 / 6GHz~9GHz

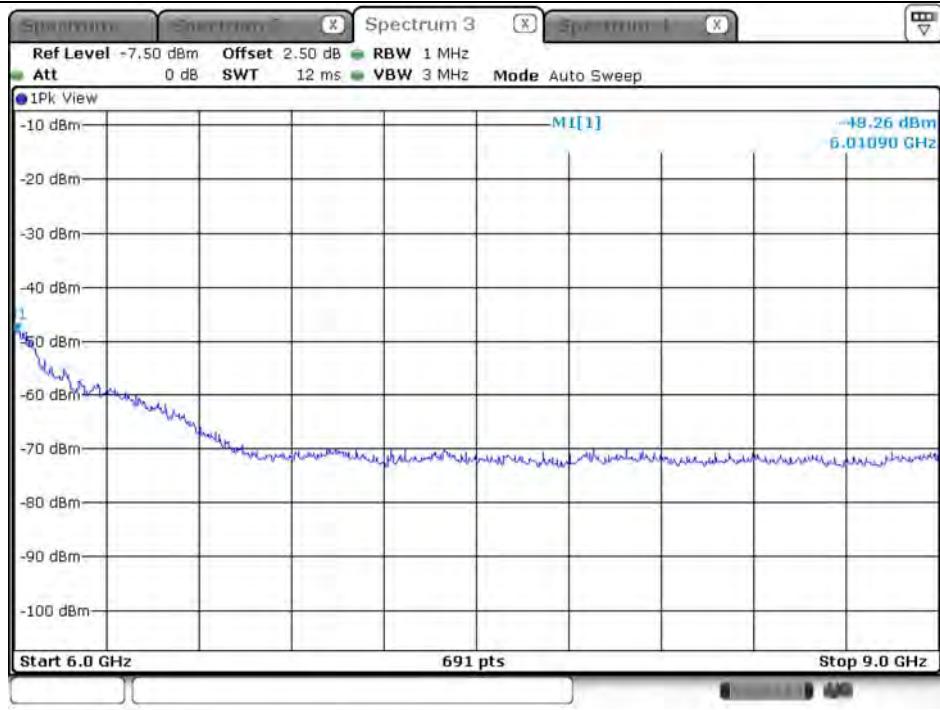

Date: 13.FEB.2018 20:18:25

Plot on Configuration VHT20 / 5785 MHz / Average / Port 2 / 6GHz~9GHz


Date: 13.FEB.2018 20:20:46

Plot on Configuration VHT20 / 5785 MHz / Peak / Port 1 / 6GHz~9GHz


Date: 13.FEB.2018 20:19:18

Plot on Configuration VHT20 / 5785 MHz / Peak / Port 2 / 6GHz~9GHz


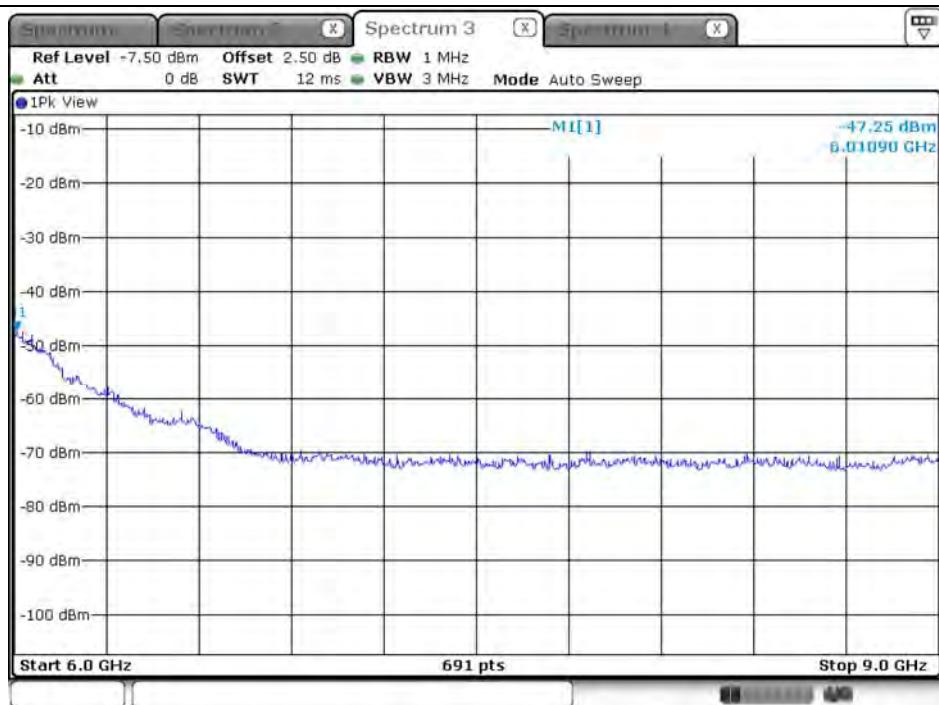
Date: 13.FEB.2018 20:21:40

Plot on Configuration VHT20 / 5825 MHz / Average / Port 1 / 6GHz~9GHz

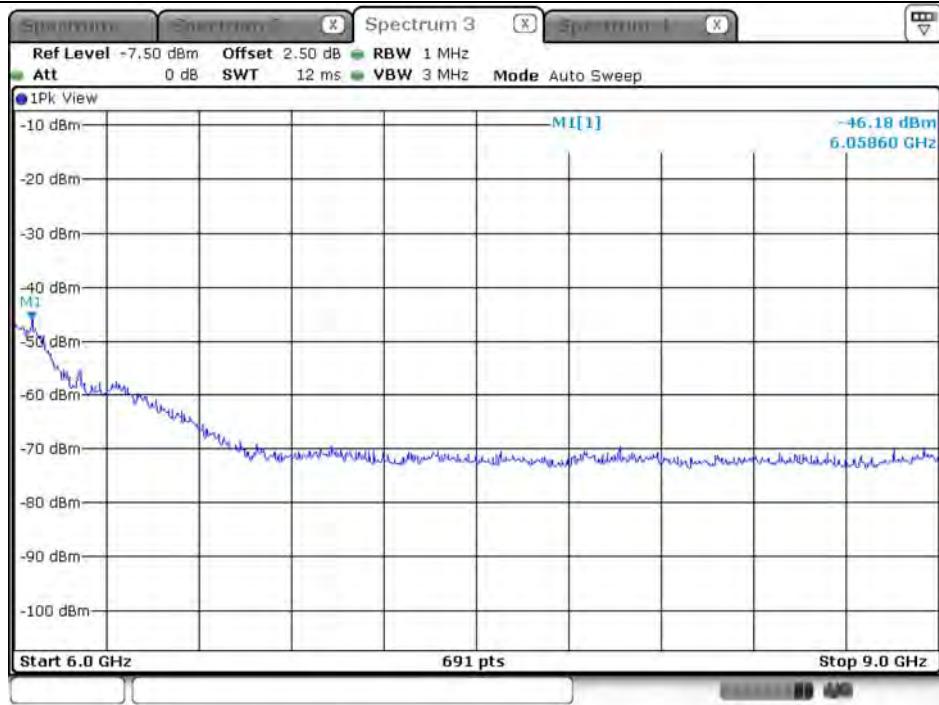

Date: 13.FEB.2018 20:38:29

Plot on Configuration VHT20 / 5825 MHz / Average / Port 2 / 6GHz~9GHz


Date: 13.FEB.2018 20:41:23

Plot on Configuration VHT20 / 5825 MHz / Peak / Port 1 / 6GHz~9GHz


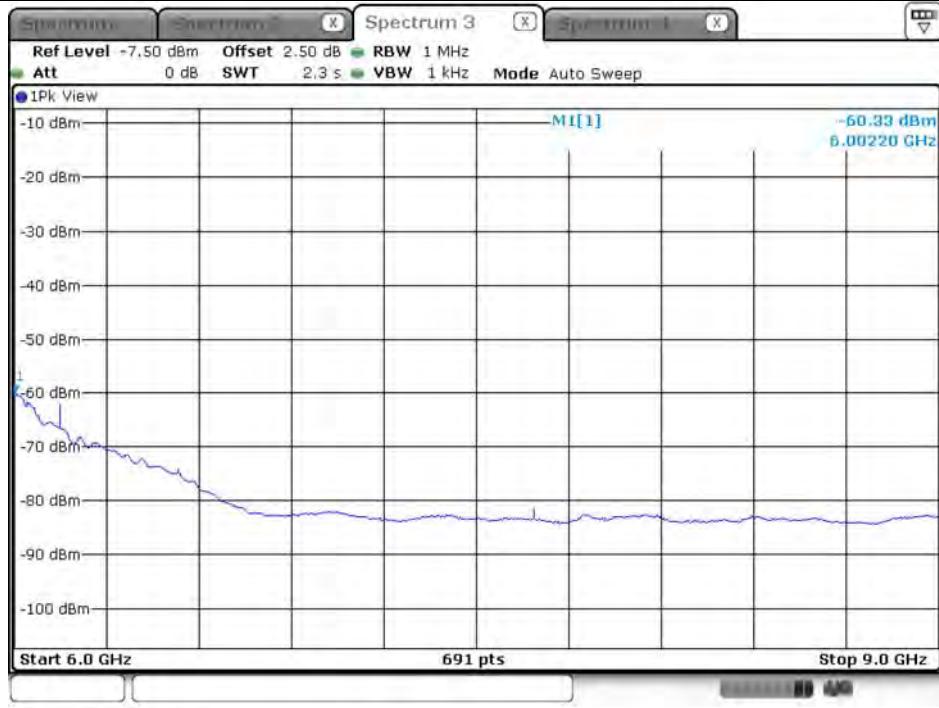
Date: 13.FEB.2018 20:39:24

Plot on Configuration VHT20 / 5825 MHz / Peak / Port 2 / 6GHz~9GHz


Date: 13.FEB.2018 20:42:06

Plot on Configuration VHT80 / 5775 MHz / Average / Port 1 / 6GHz~9GHz


Date: 13.FEB.2018 21:10:40

Plot on Configuration VHT80 / 5775 MHz / Average / Port 2 / 6GHz~9GHz


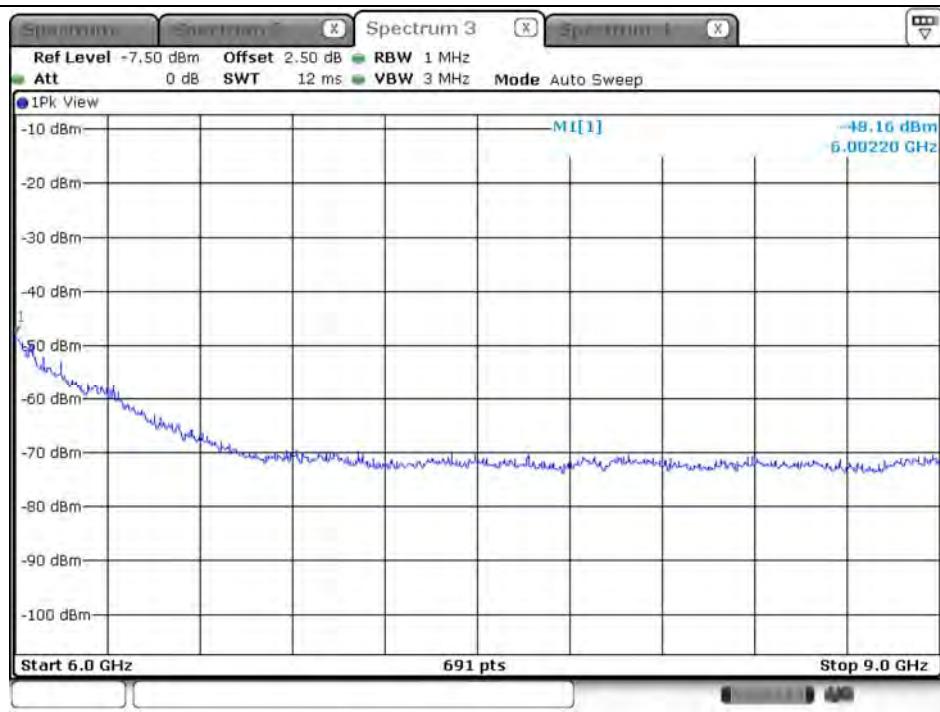
Date: 13.FEB.2018 21:13:14



TX Above 1GHz Result

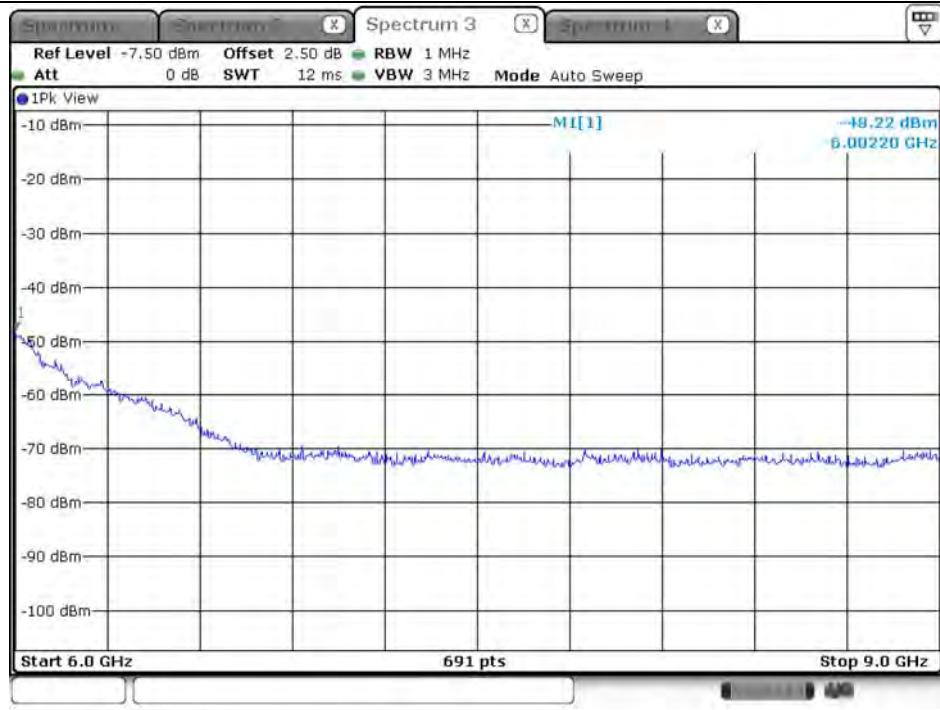
Appendix E.2

Plot on Configuration VHT80 / 5775 MHz / Peak / Port 1 / 6GHz~9GHz



Date: 13.FEB.2018 21:11:44

Plot on Configuration VHT80 / 5775 MHz / Peak / Port 2 / 6GHz~9GHz



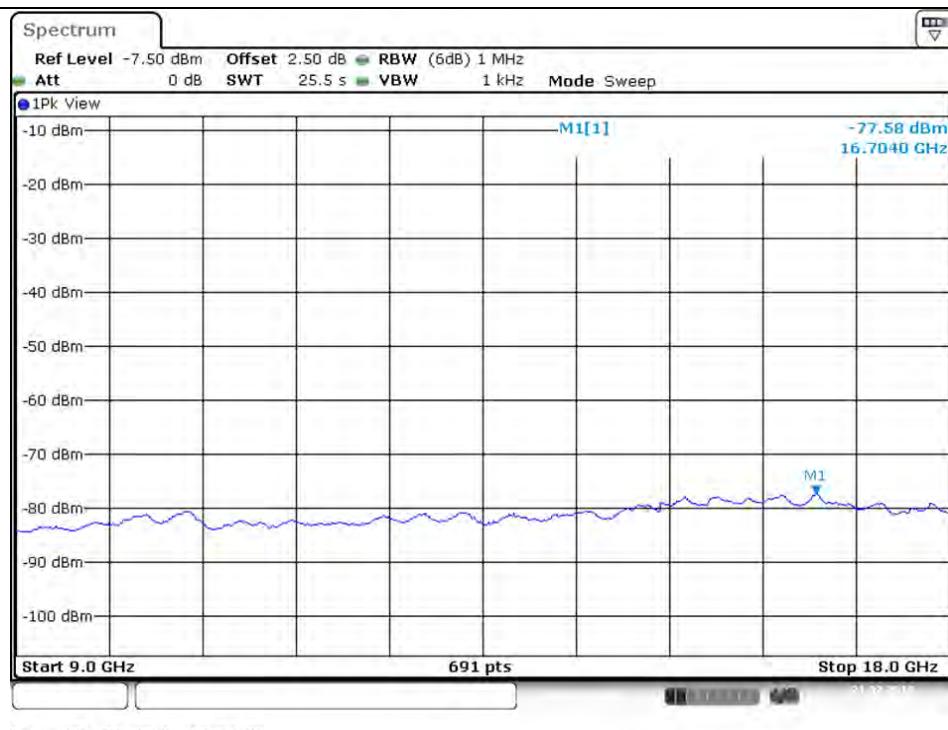
Date: 13.FEB.2018 21:14:06



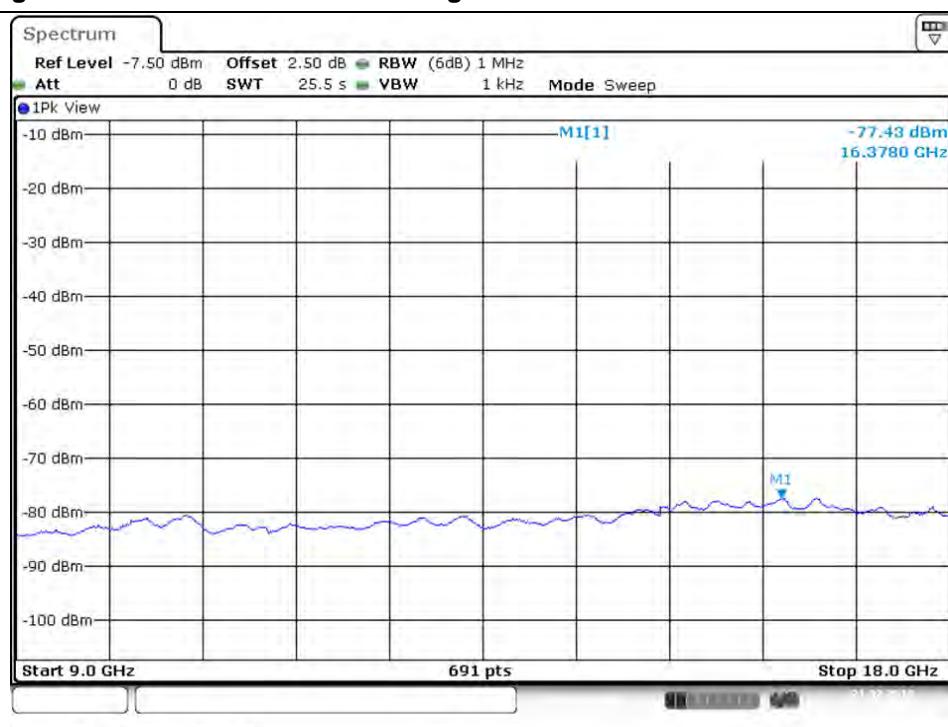
TX Above 1GHz Result

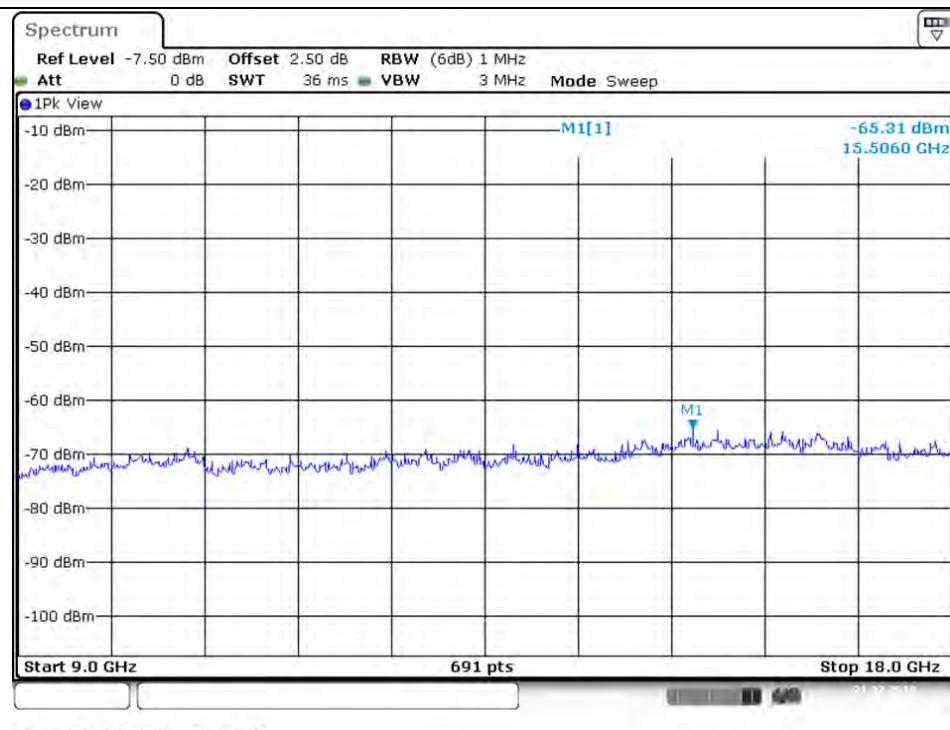
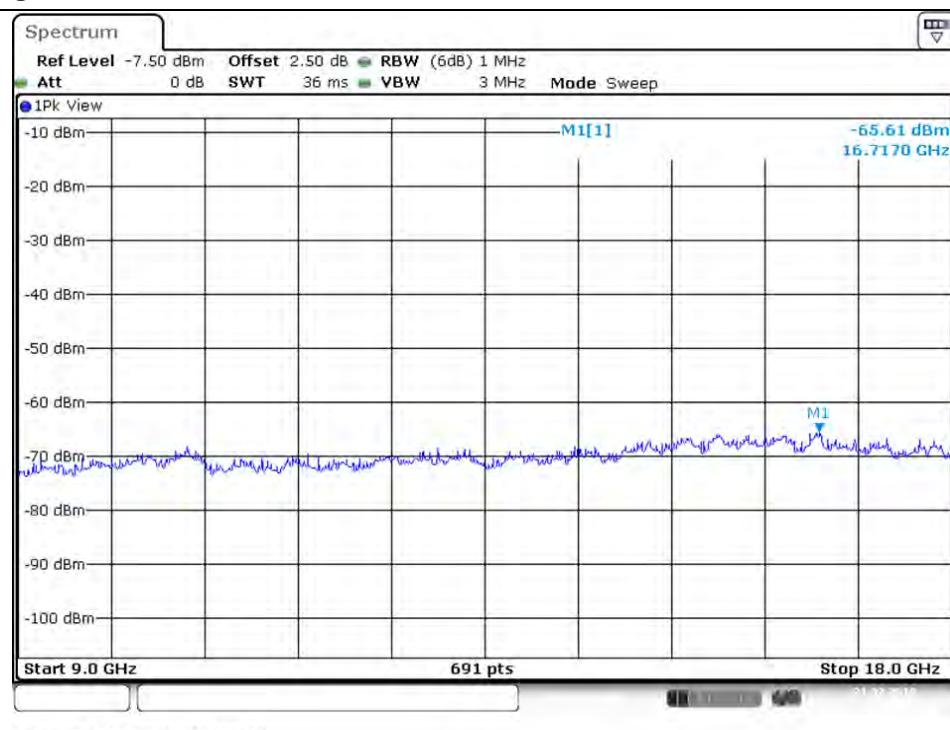
Appendix E.2

Plot on Configuration VHT20 / 5180 MHz / Average / Port 1 / 9GHz~18GHz

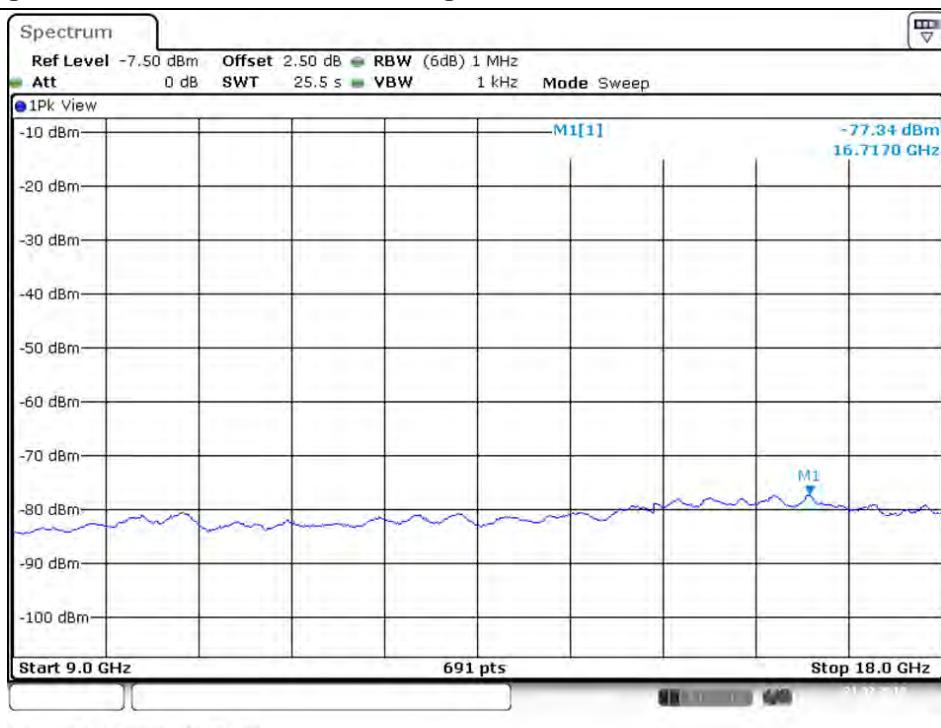


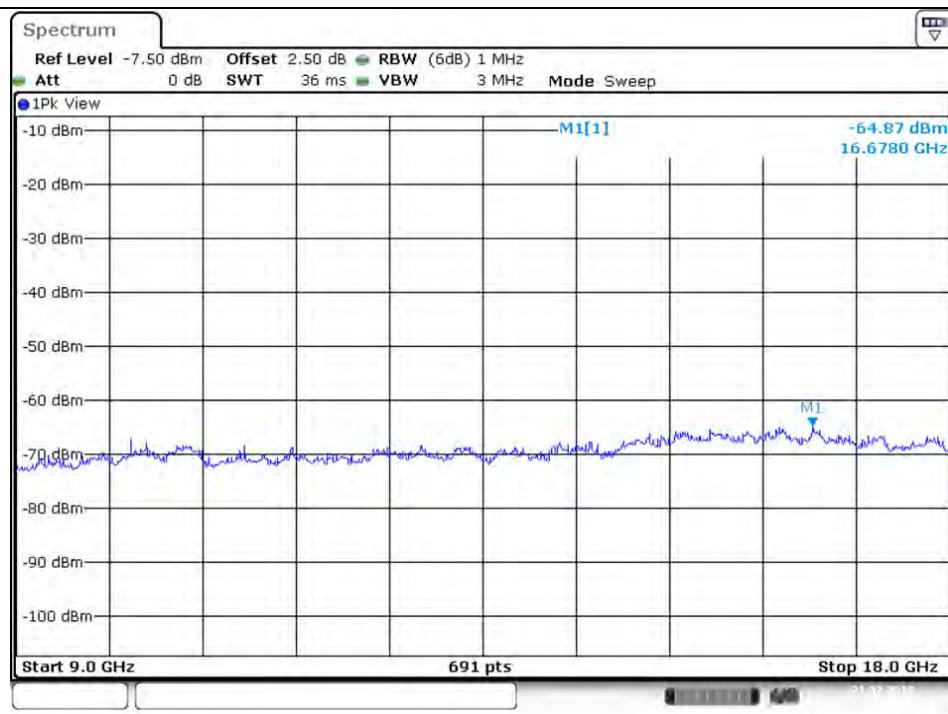
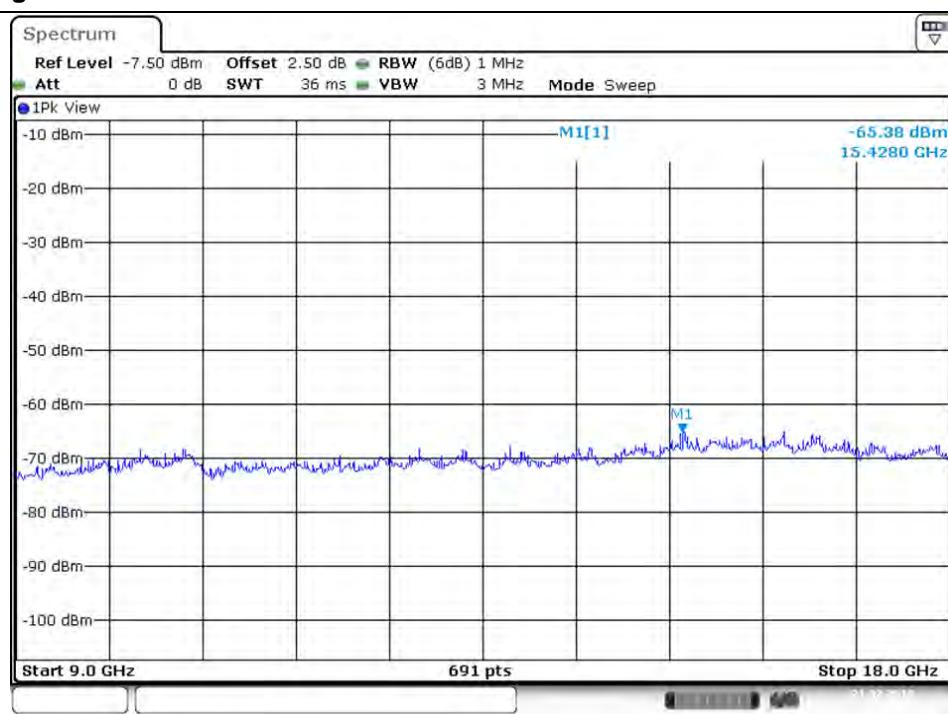
Plot on Configuration VHT20 / 5180 MHz / Average / Port 2 / 9GHz~18GHz



Plot on Configuration VHT20 / 5180 MHz / Peak / Port 1 / 9GHz~18GHz

Plot on Configuration VHT20 / 5180 MHz / Peak / Port 2 / 9GHz~18GHz


Plot on Configuration VHT20 / 5200 MHz / Average / Port 1 / 9GHz~18GHz

Plot on Configuration VHT20 / 5200 MHz / Average / Port 2 / 9GHz~18GHz


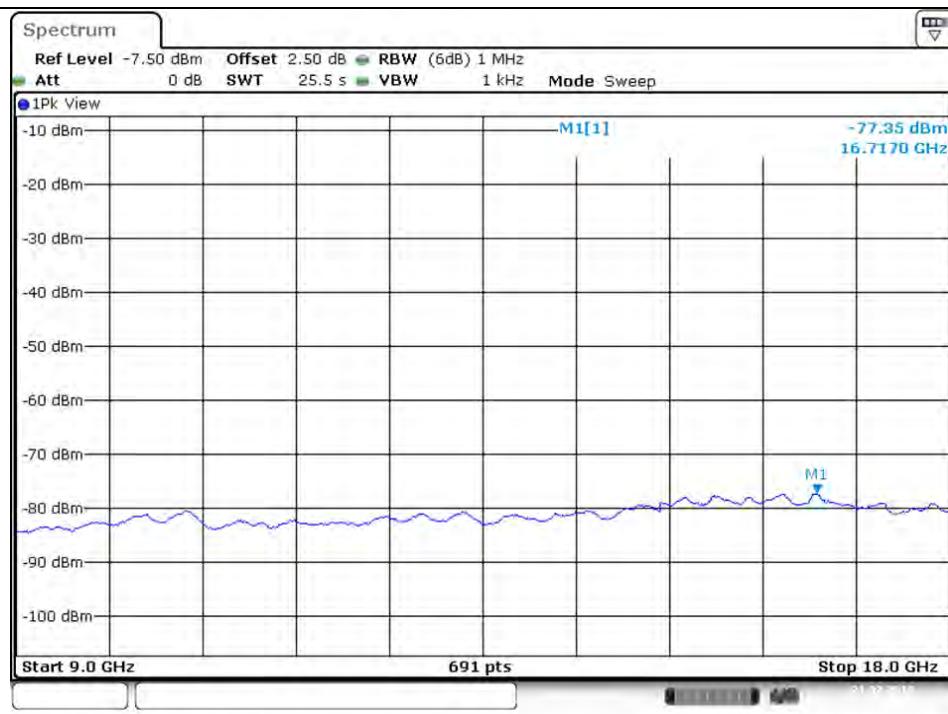
Plot on Configuration VHT20 / 5200 MHz / Peak / Port 1 / 9GHz~18GHz

Plot on Configuration VHT20 / 5200 MHz / Peak / Port 2 / 9GHz~18GHz




TX Above 1GHz Result

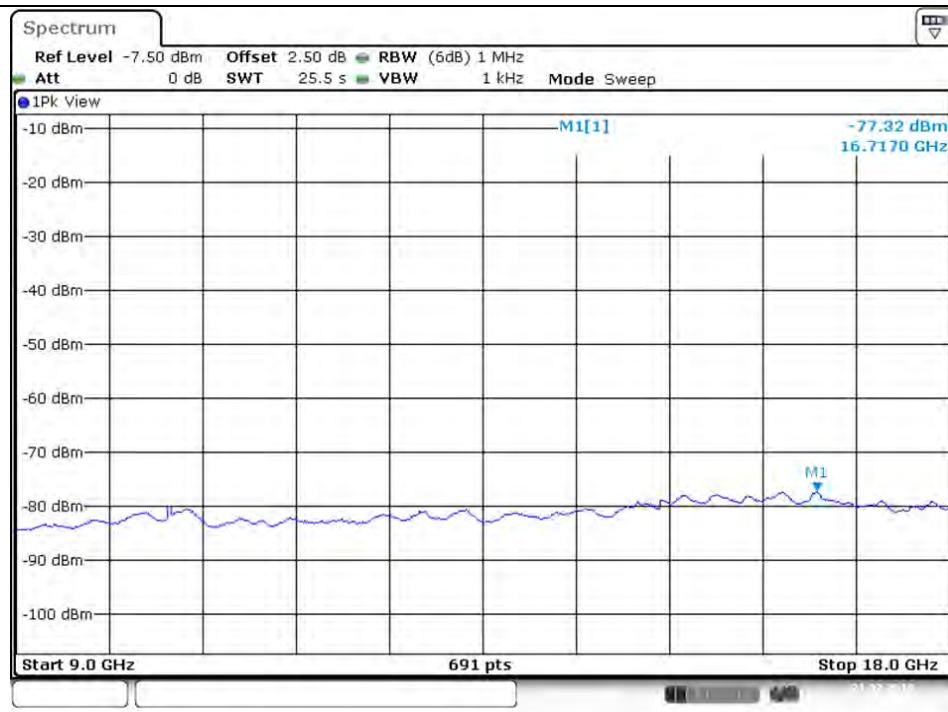
Appendix E.2

Plot on Configuration VHT20 / 5240 MHz / Average / Port 1 / 9GHz~18GHz

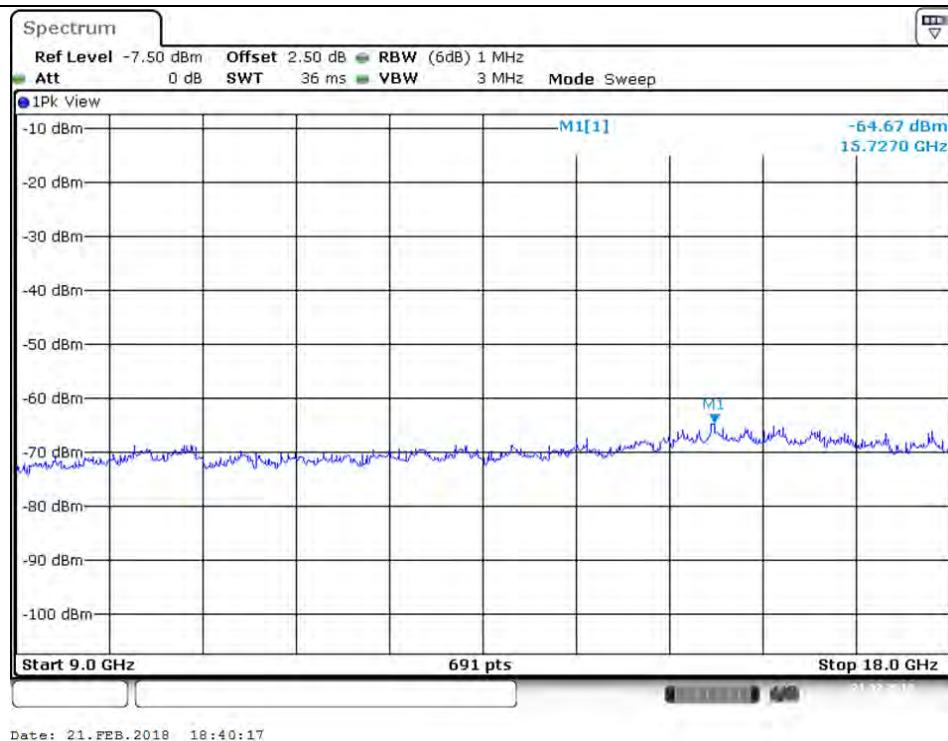
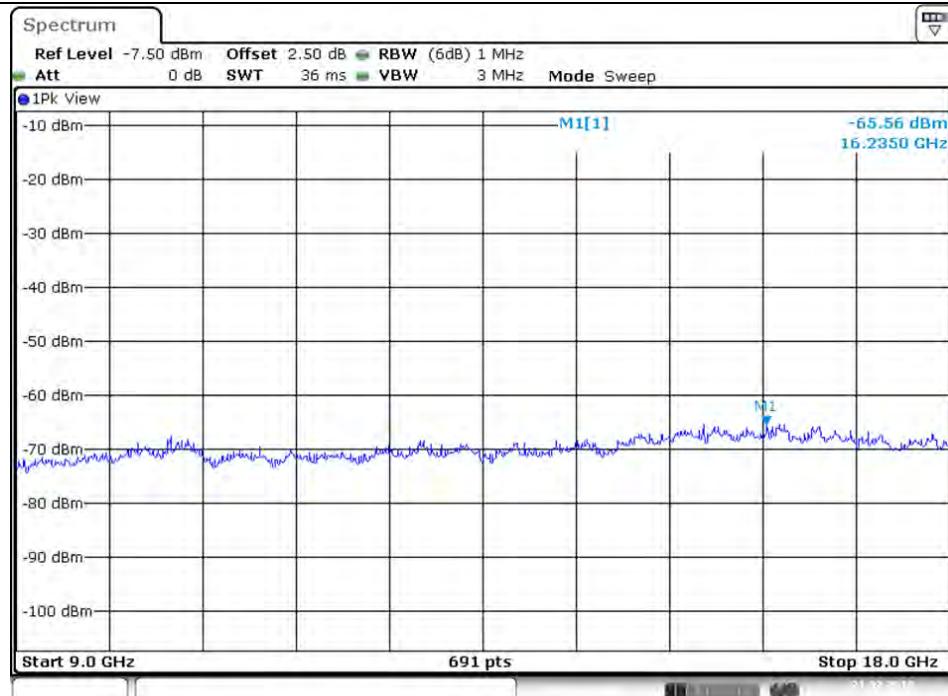


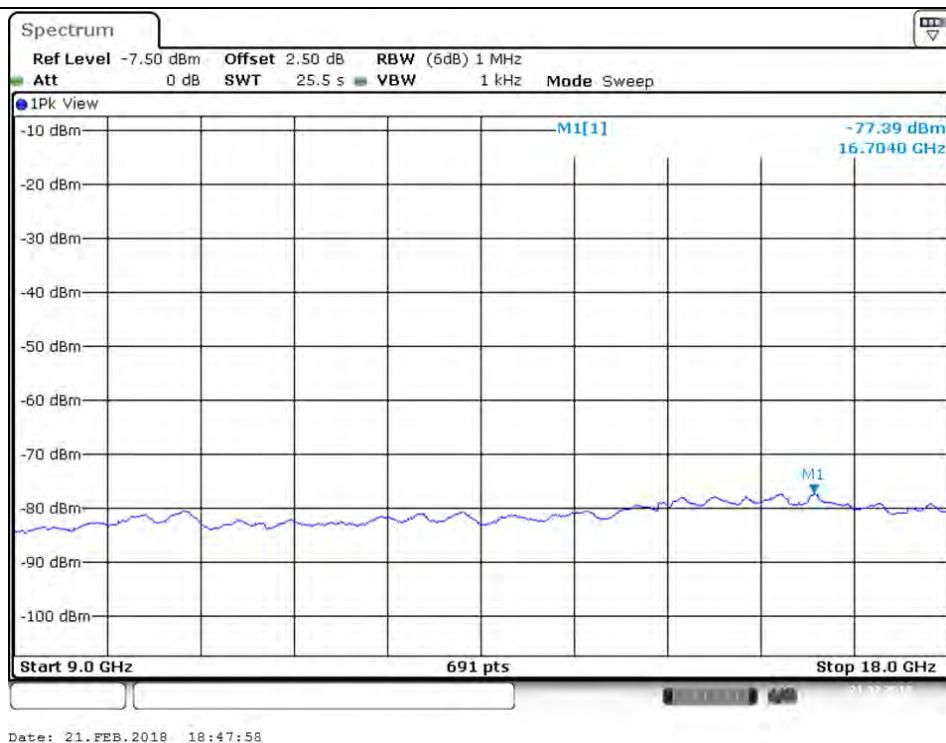
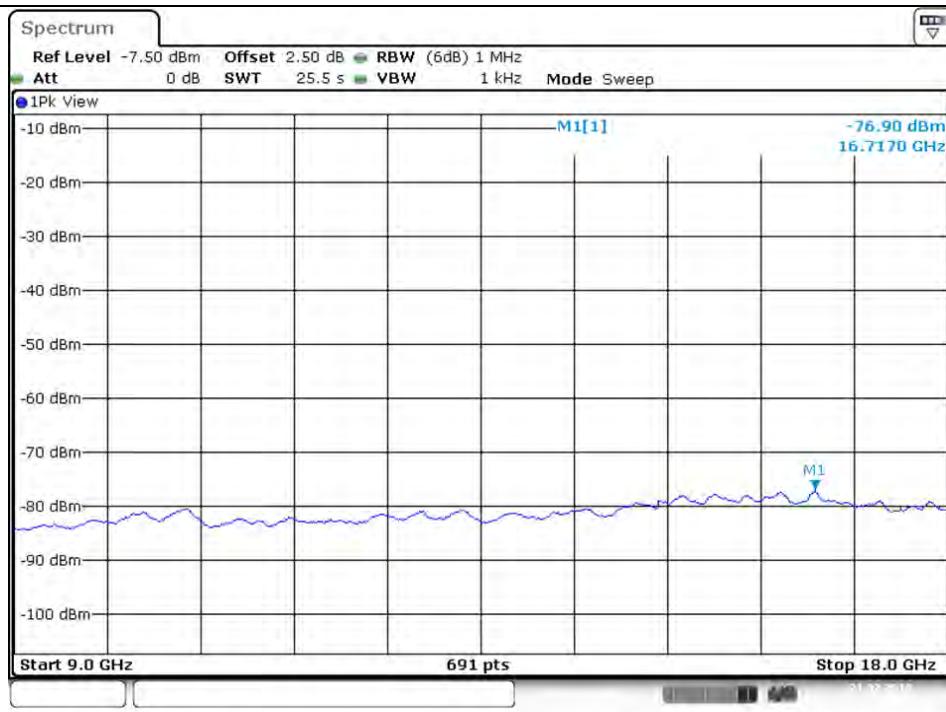
Date: 21.FEB.2018 18:39:53

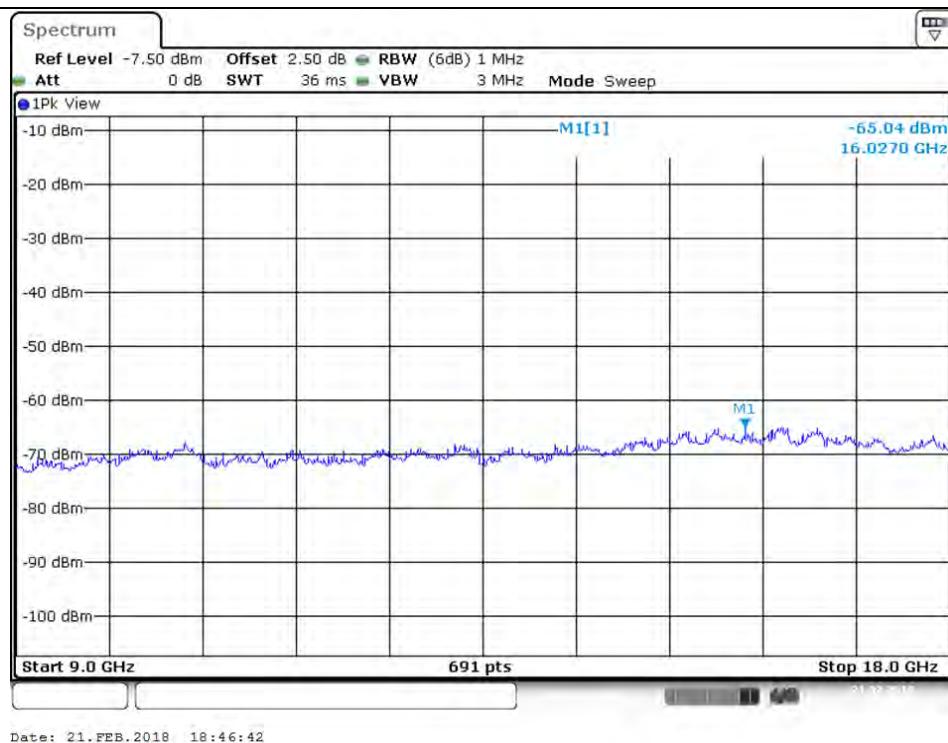
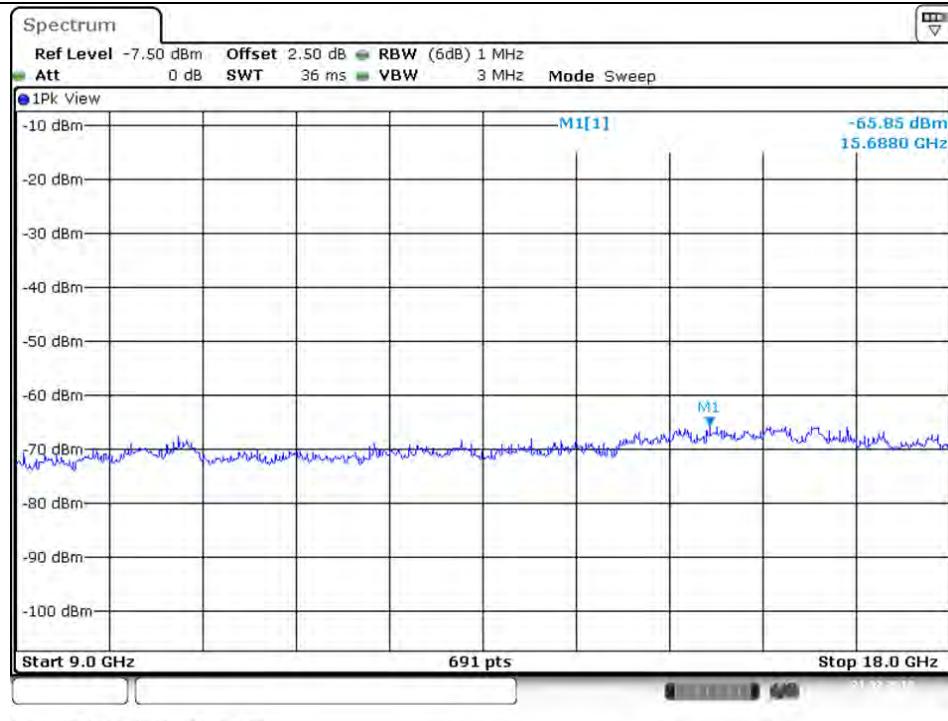
Plot on Configuration VHT20 / 5240 MHz / Average / Port 2 / 9GHz~18GHz

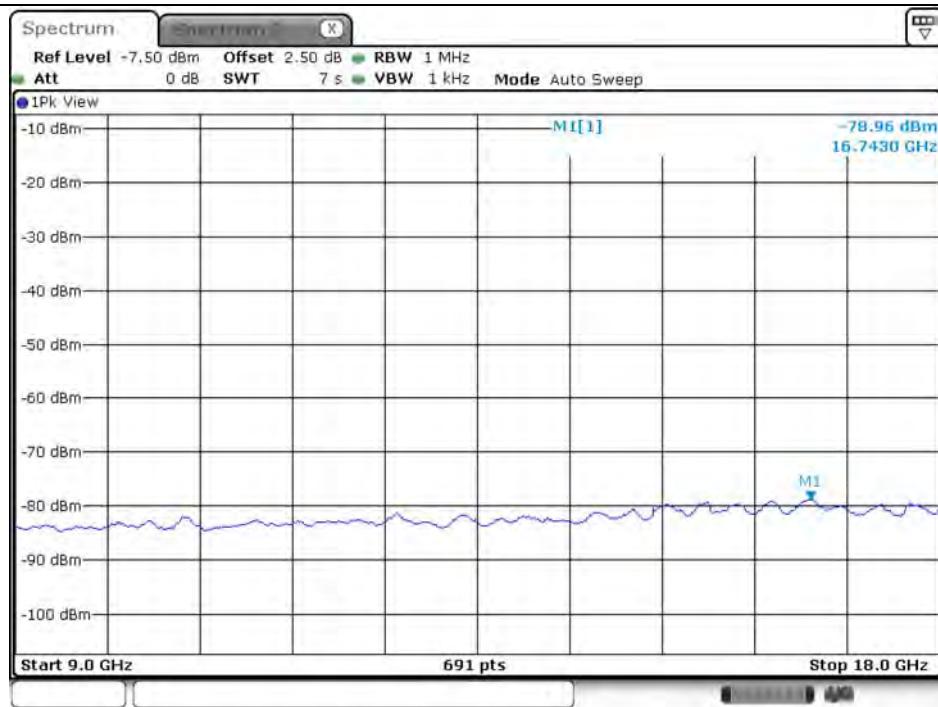


Date: 21.FEB.2018 18:42:31

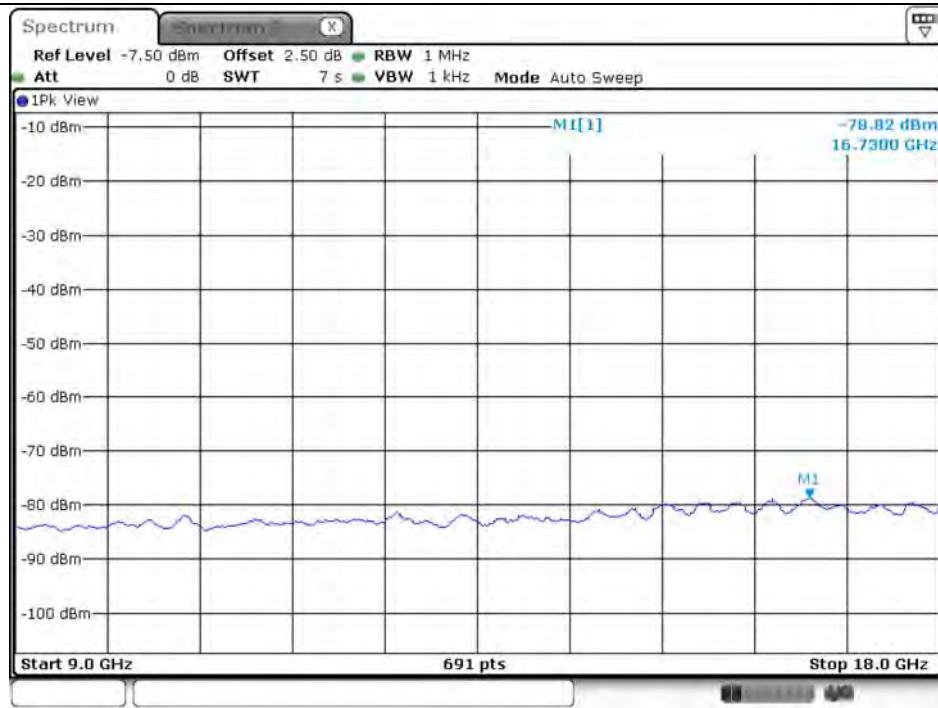
Plot on Configuration VHT20 / 5240 MHz / Peak / Port 1 / 9GHz~18GHz

Plot on Configuration VHT20 / 5240 MHz / Peak / Port 2 / 9GHz~18GHz


Plot on Configuration VHT80 / 5210 MHz / Average / Port 1 / 9GHz~18GHz

Plot on Configuration VHT80 / 5210 MHz / Average / Port 2 / 9GHz~18GHz


Plot on Configuration VHT80 / 5210 MHz / Peak / Port 1 / 9GHz~18GHz

Plot on Configuration VHT80 / 5210 MHz / Peak / Port 2 / 9GHz~18GHz


Plot on Configuration VHT20 / 5745 MHz / Average / Port 1 / 9GHz~18GHz


Date: 14.FEB.2018 10:56:39

Plot on Configuration VHT20 / 5745 MHz / Average / Port 2 / 9GHz~18GHz


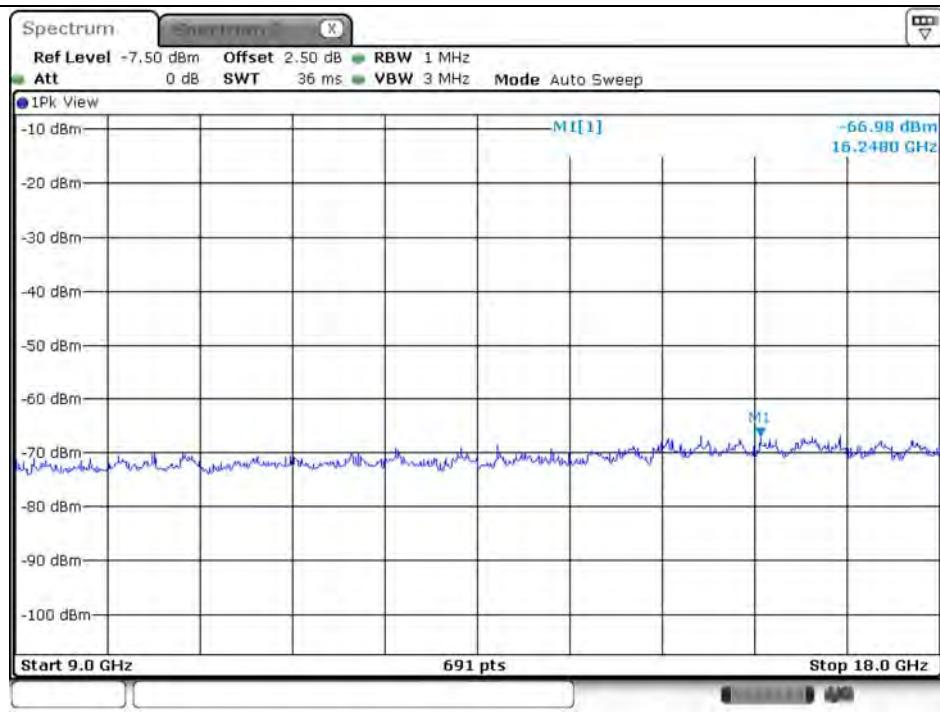
Date: 14.FEB.2018 11:02:50



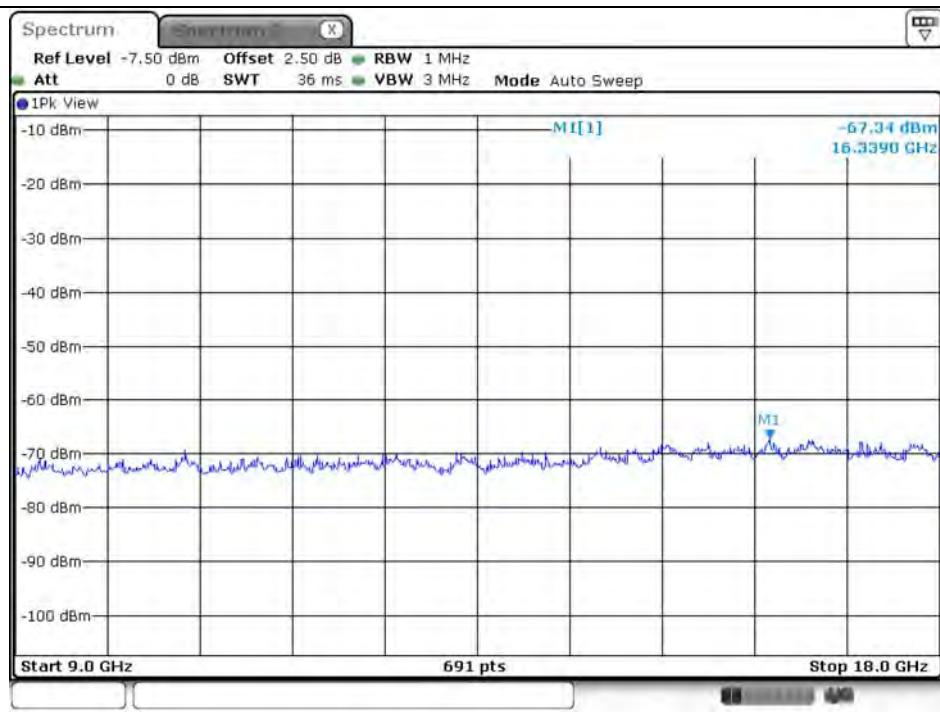
TX Above 1GHz Result

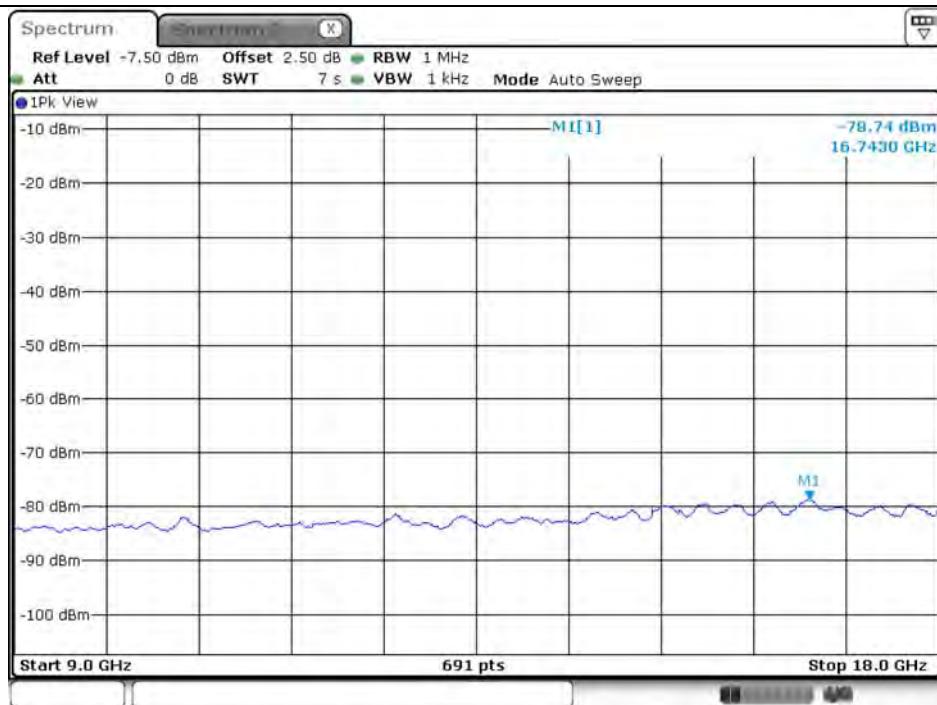
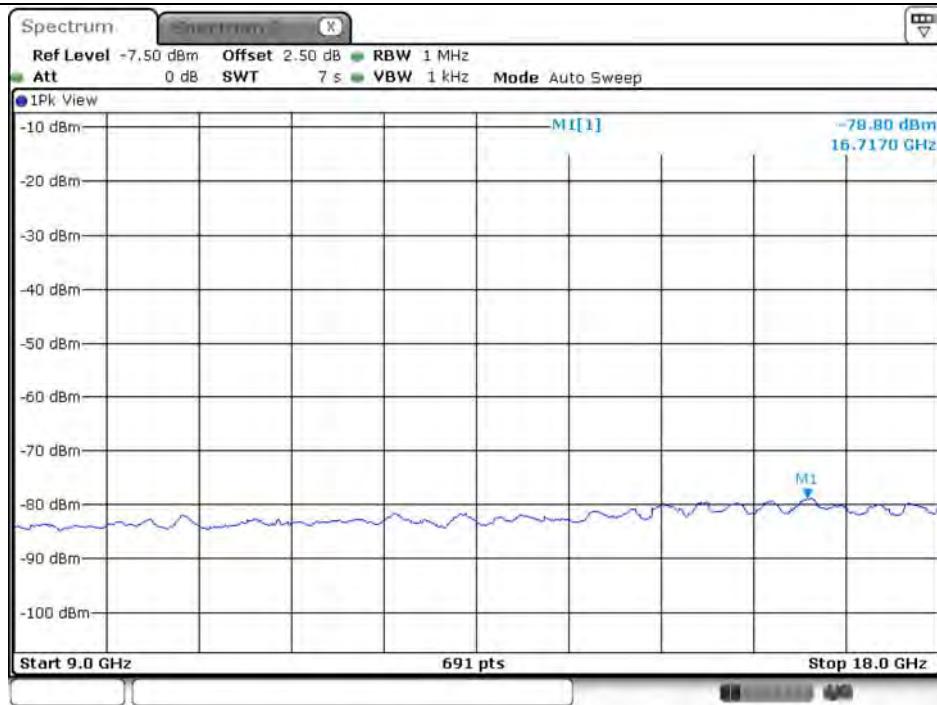
Appendix E.2

Plot on Configuration VHT20 / 5745 MHz / Peak / Port 1 / 9GHz~18GHz



Plot on Configuration VHT20 / 5745 MHz / Peak / Port 2 / 9GHz~18GHz



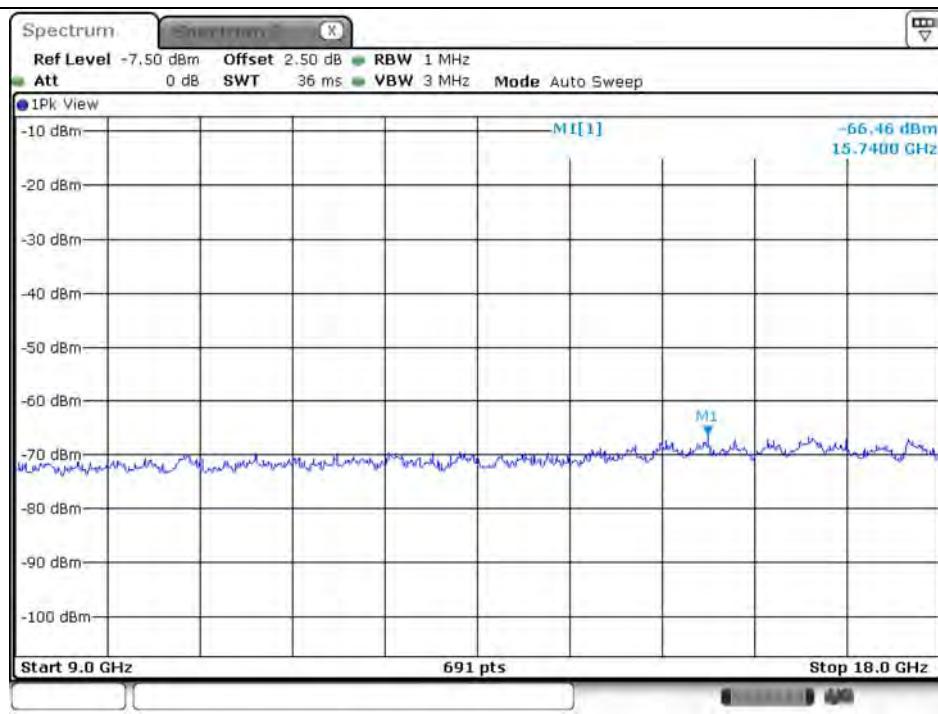
Plot on Configuration VHT20 / 5785 MHz / Average / Port 1 / 9GHz~18GHz

Plot on Configuration VHT20 / 5785 MHz / Average / Port 2 / 9GHz~18GHz




TX Above 1GHz Result

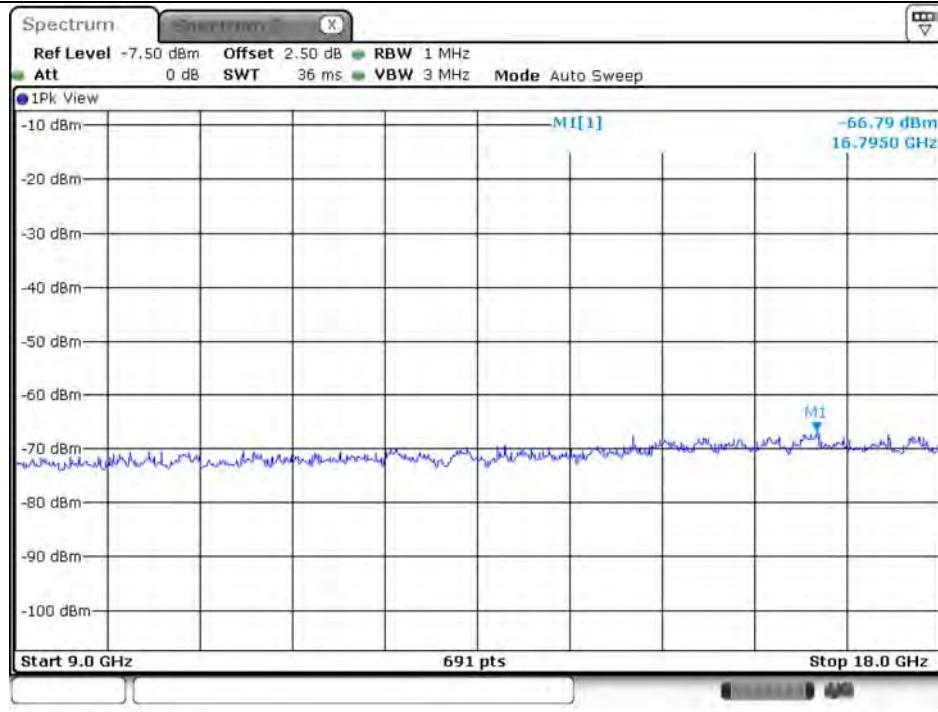
Appendix E.2

Plot on Configuration VHT20 / 5785 MHz / Peak / Port 1 / 9GHz~18GHz

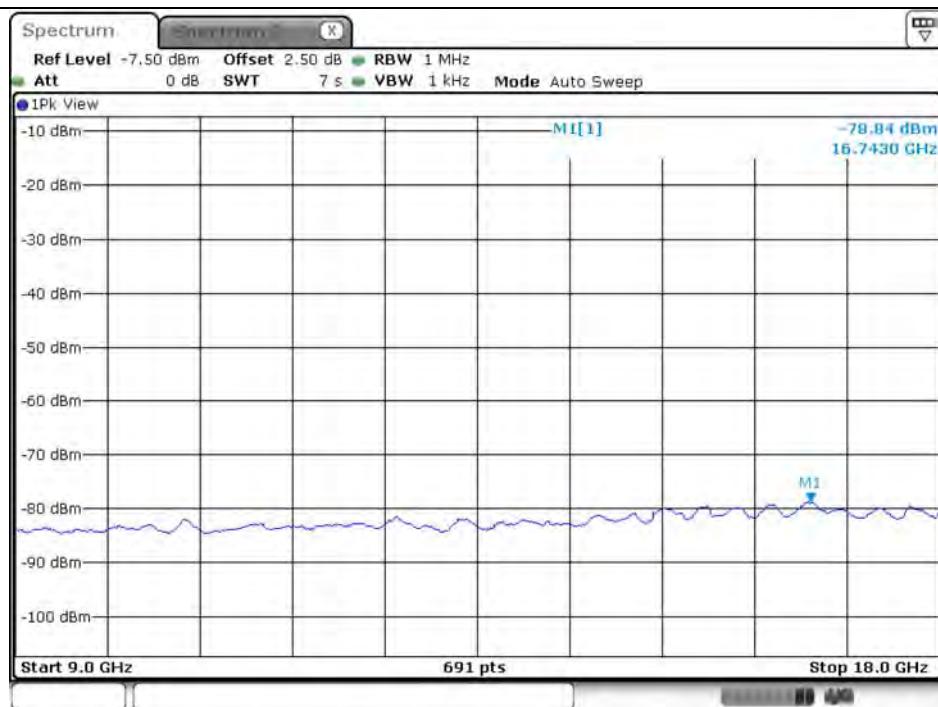
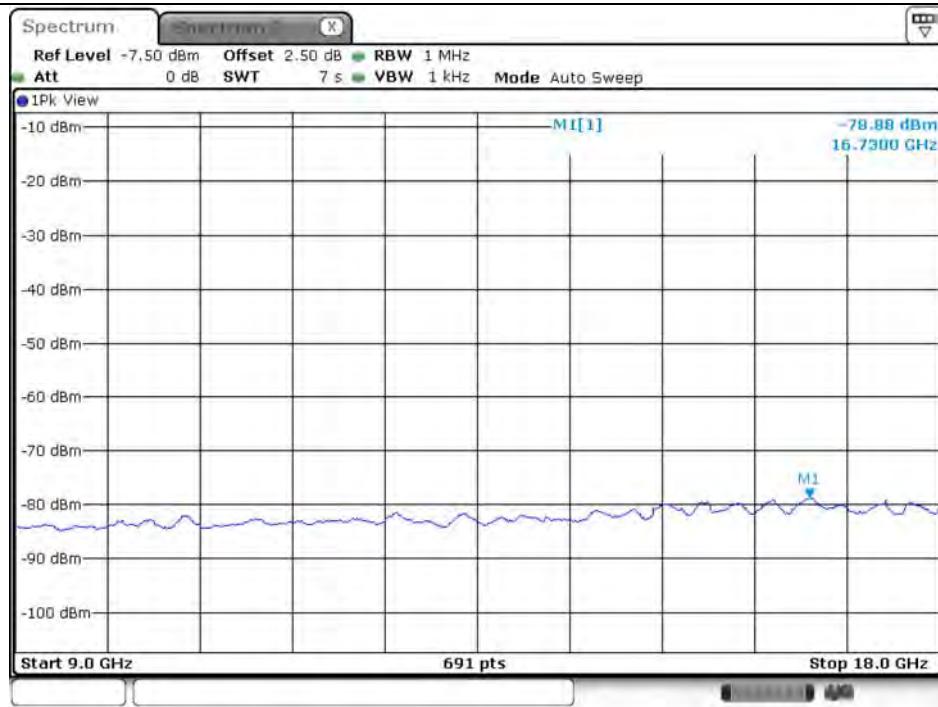


Date: 14.FEB.2018 11:06:47

Plot on Configuration VHT20 / 5785 MHz / Peak / Port 2 / 9GHz~18GHz



Date: 14.FEB.2018 11:11:42

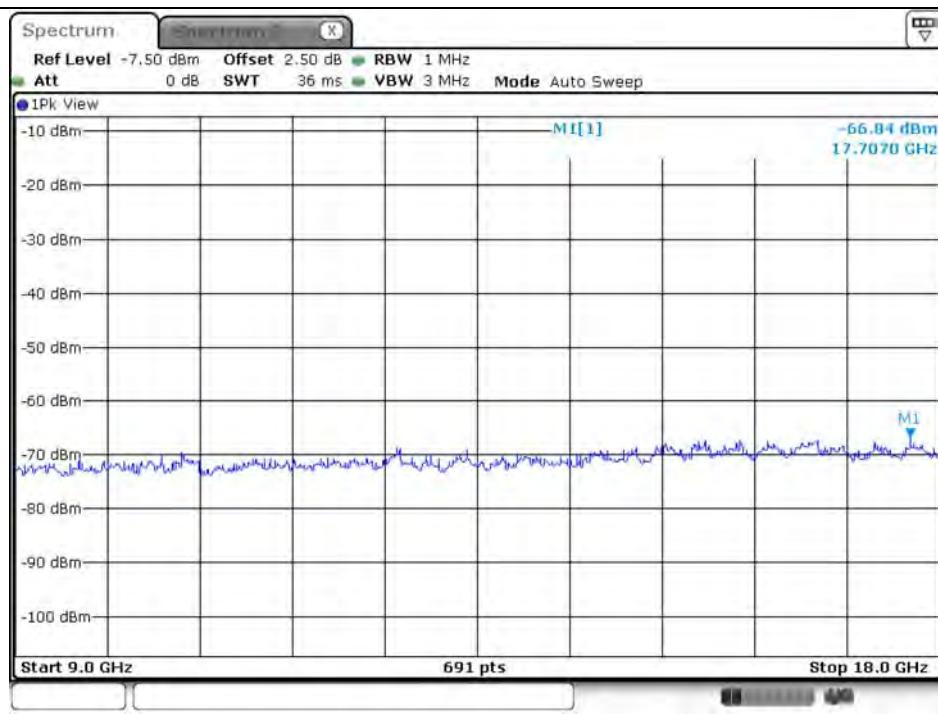
Plot on Configuration VHT20 / 5825 MHz / Average / Port 1 / 9GHz~18GHz

Plot on Configuration VHT20 / 5825 MHz / Average / Port 2 / 9GHz~18GHz




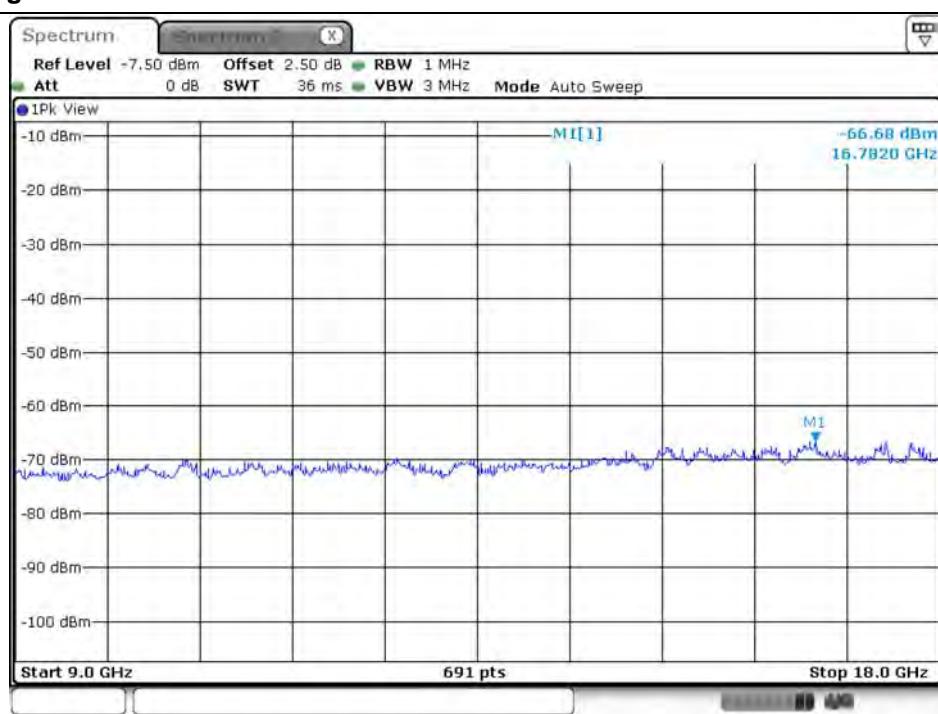
TX Above 1GHz Result

Appendix E.2

Plot on Configuration VHT20 / 5825 MHz / Peak / Port 1 / 9GHz~18GHz



Plot on Configuration VHT20 / 5825 MHz / Peak / Port 2 / 9GHz~18GHz

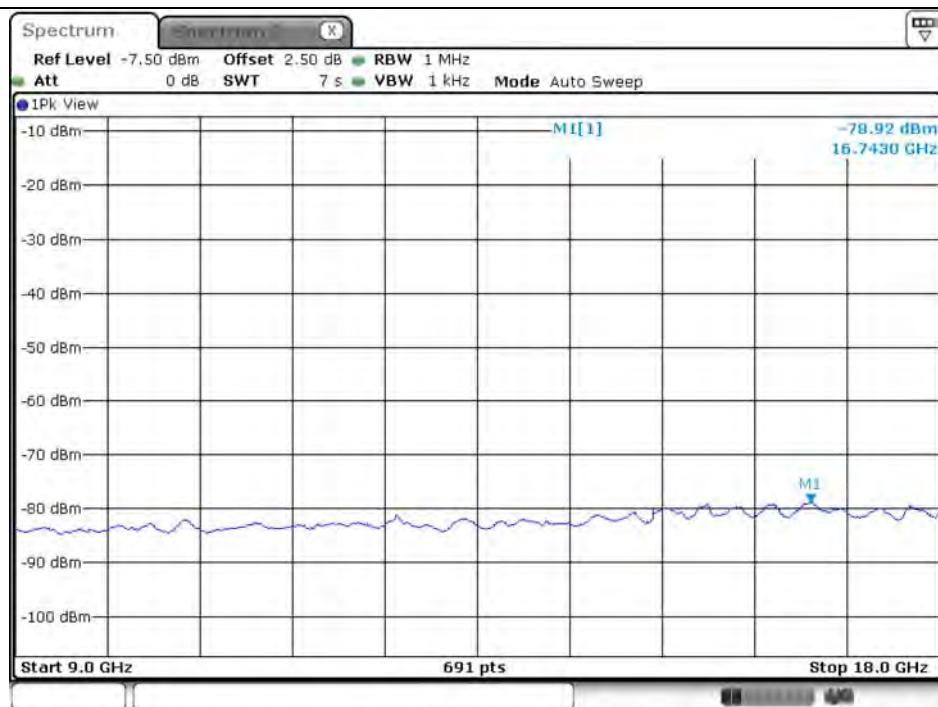




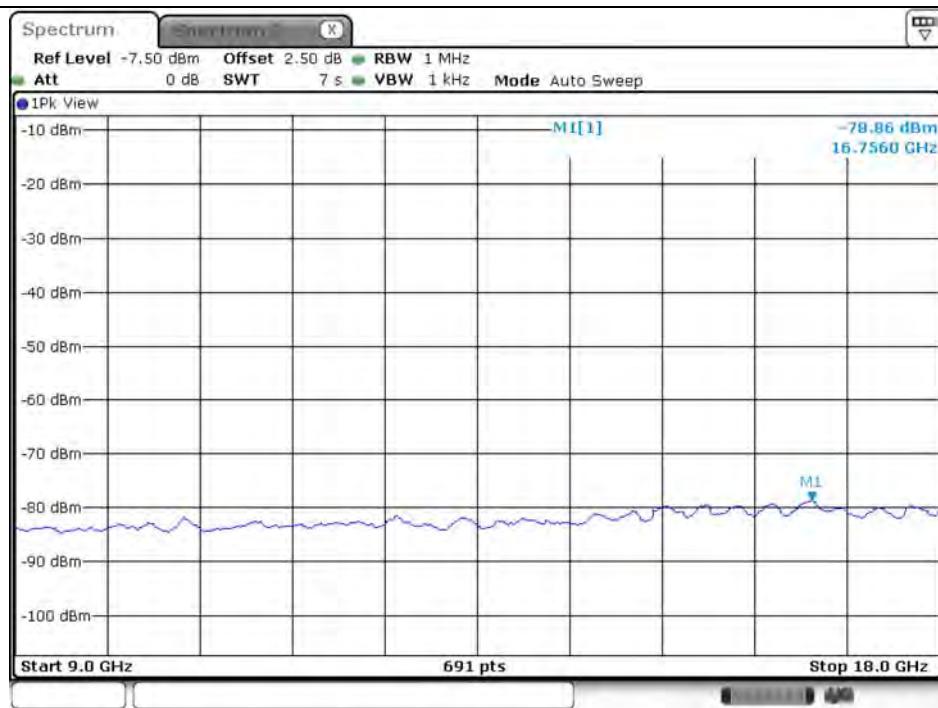
TX Above 1GHz Result

Appendix E.2

Plot on Configuration VHT80 / 5775 MHz / Average / Port 1 / 9GHz~18GHz



Plot on Configuration VHT80 / 5775 MHz / Average / Port 2 / 9GHz~18GHz

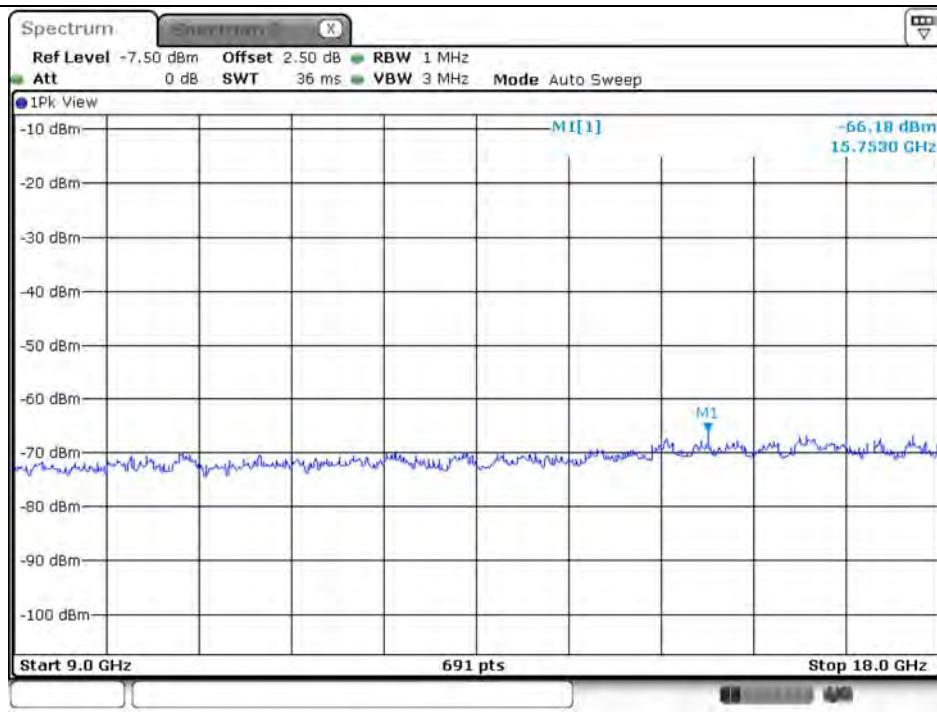




TX Above 1GHz Result

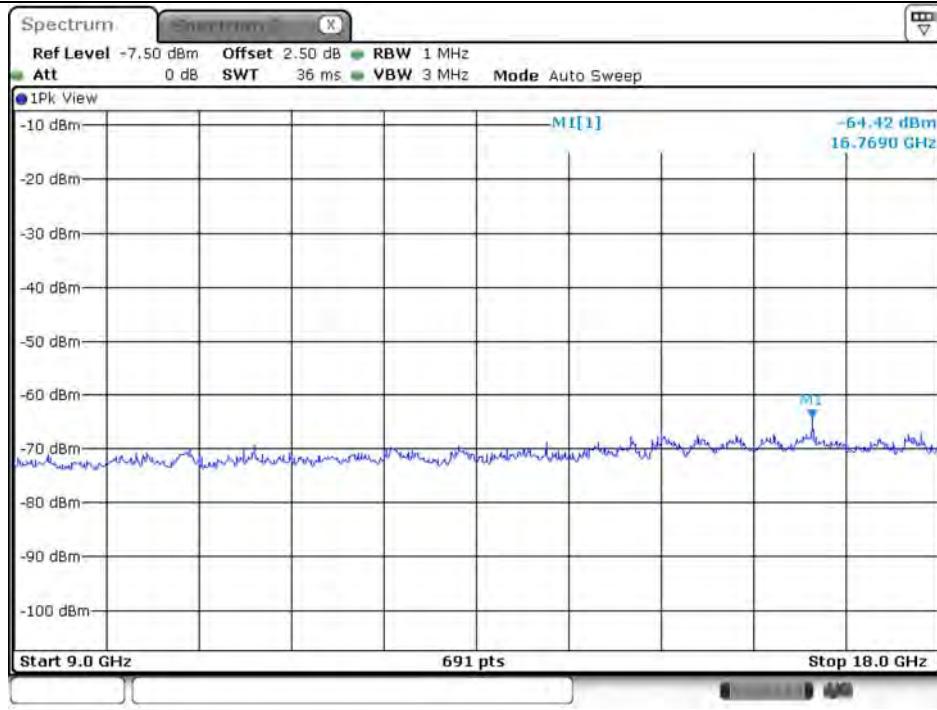
Appendix E.2

Plot on Configuration VHT80 / 5775 MHz / Peak / Port 1 / 9GHz~18GHz



Date: 14.FEB.2018 11:22:19

Plot on Configuration VHT80 / 5775 MHz / Peak / Port 2 / 9GHz~18GHz



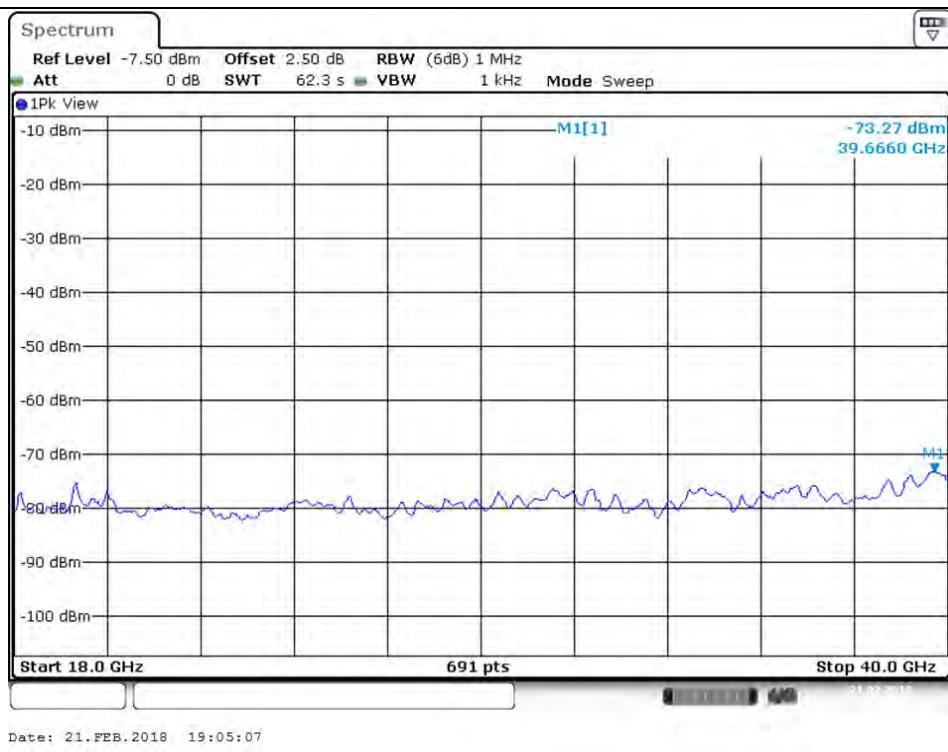
Date: 14.FEB.2018 11:28:19



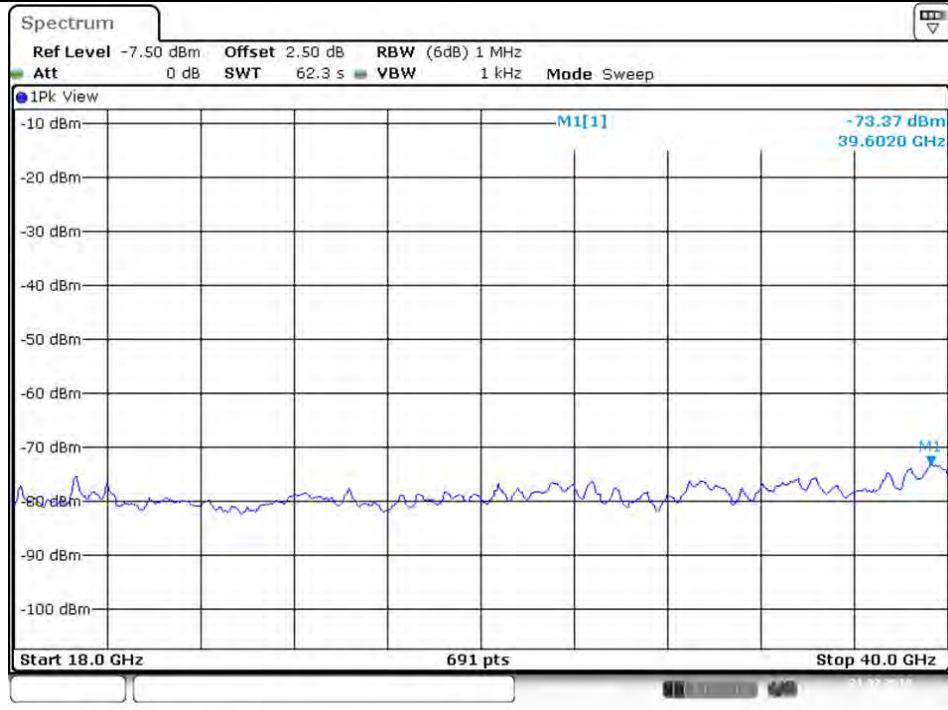
TX Above 1GHz Result

Appendix E.2

Plot on Configuration VHT20 / 5180 MHz / Average / Port 1 / 18GHz~40GHz



Plot on Configuration VHT20 / 5180 MHz / Average / Port 2 / 18GHz~40GHz

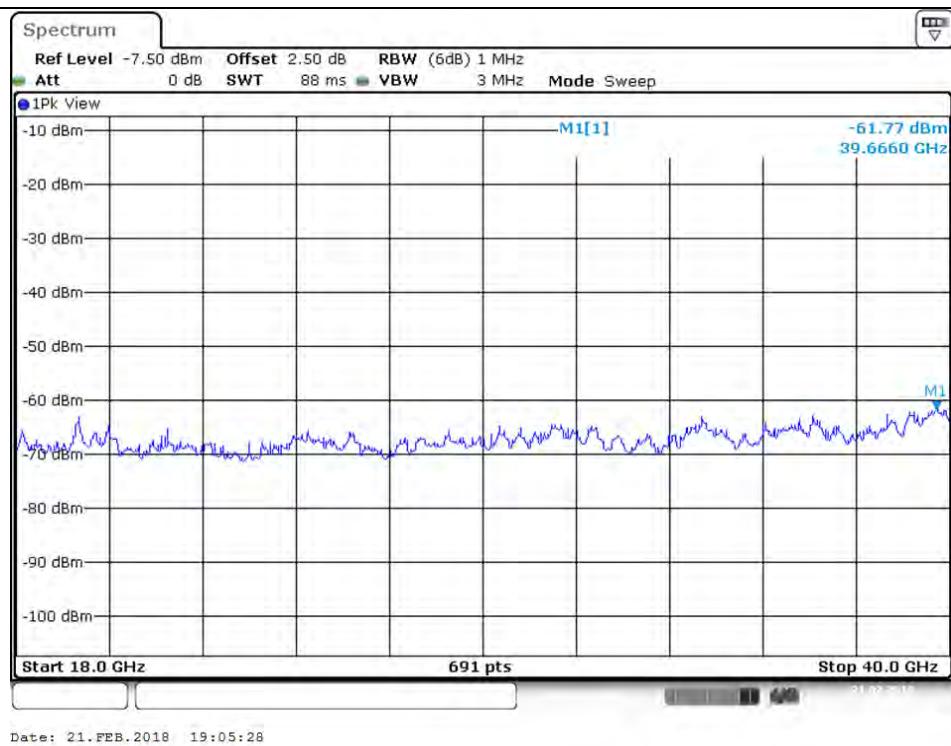




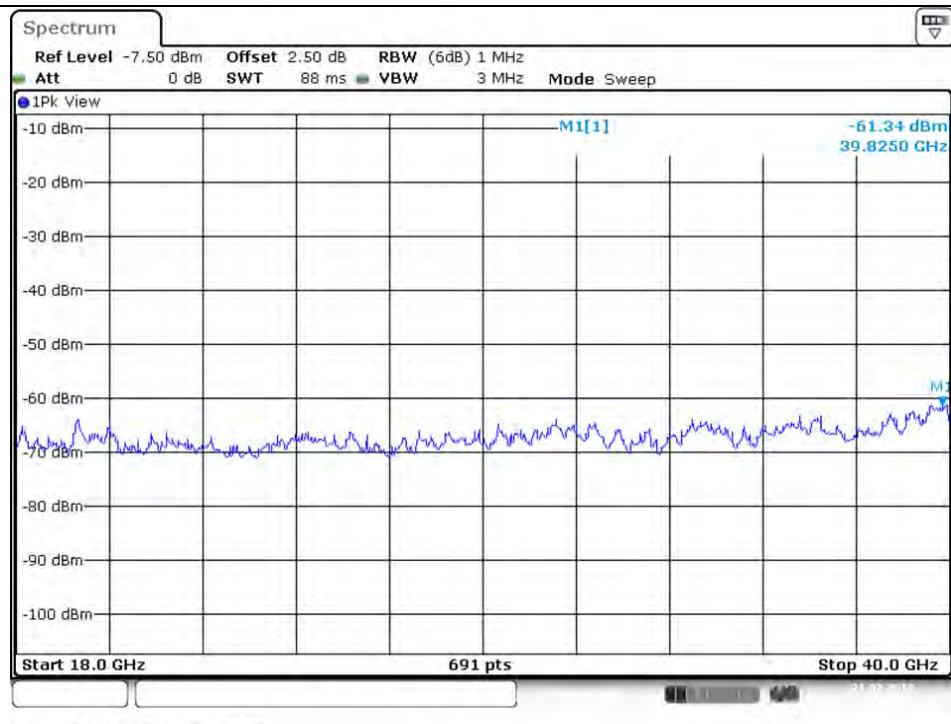
TX Above 1GHz Result

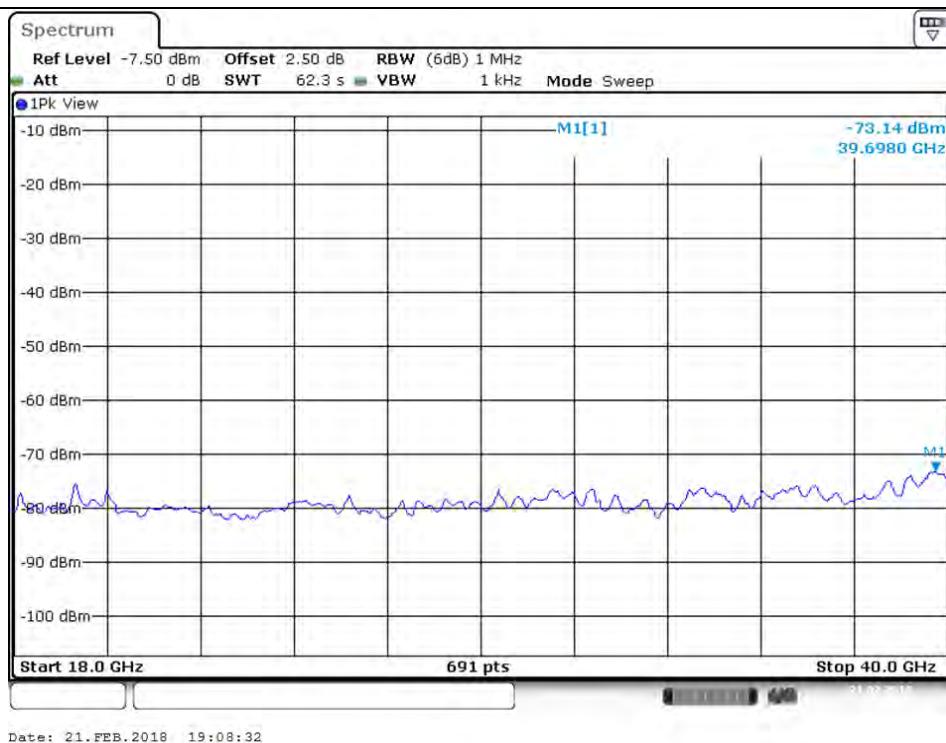
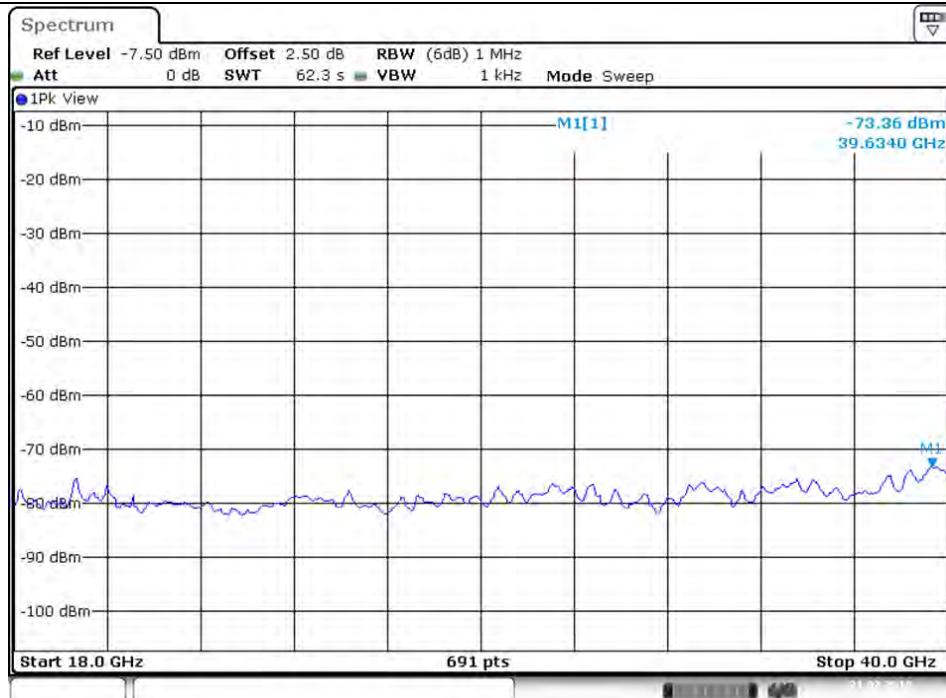
Appendix E.2

Plot on Configuration VHT20 / 5180 MHz / Peak / Port 1 / 18GHz~40GHz



Plot on Configuration VHT20 / 5180 MHz / Peak / Port 2 / 18GHz~40GHz



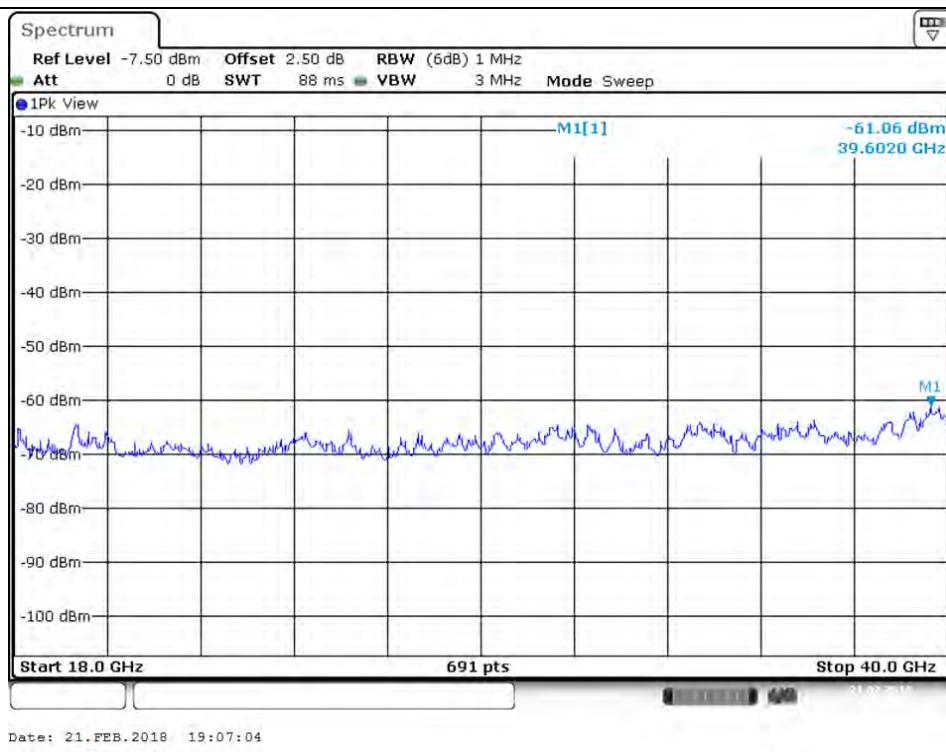
Plot on Configuration VHT20 / 5200 MHz / Average / Port 1 / 18GHz~40GHz

Plot on Configuration VHT20 / 5200 MHz / Average / Port 2 / 18GHz~40GHz




TX Above 1GHz Result

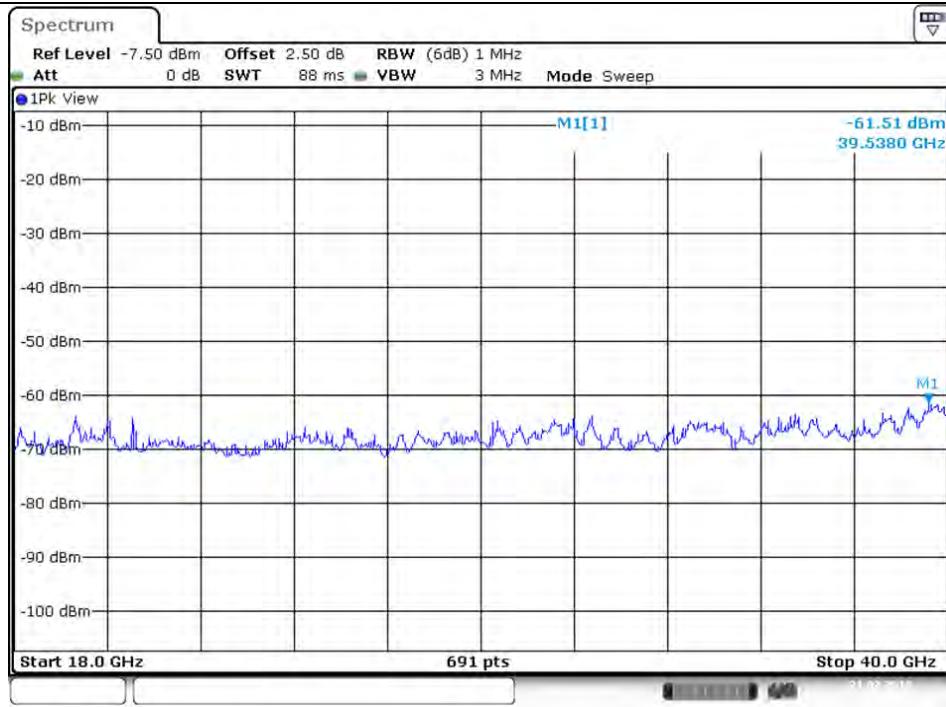
Appendix E.2

Plot on Configuration VHT20 / 5200 MHz / Peak / Port 1 / 18GHz~40GHz

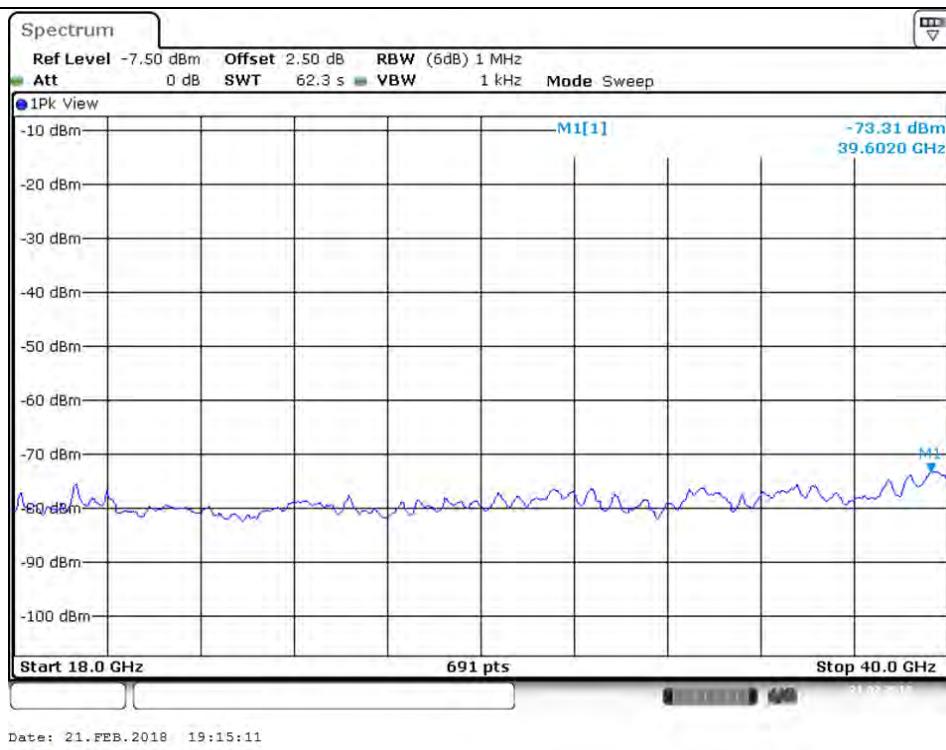
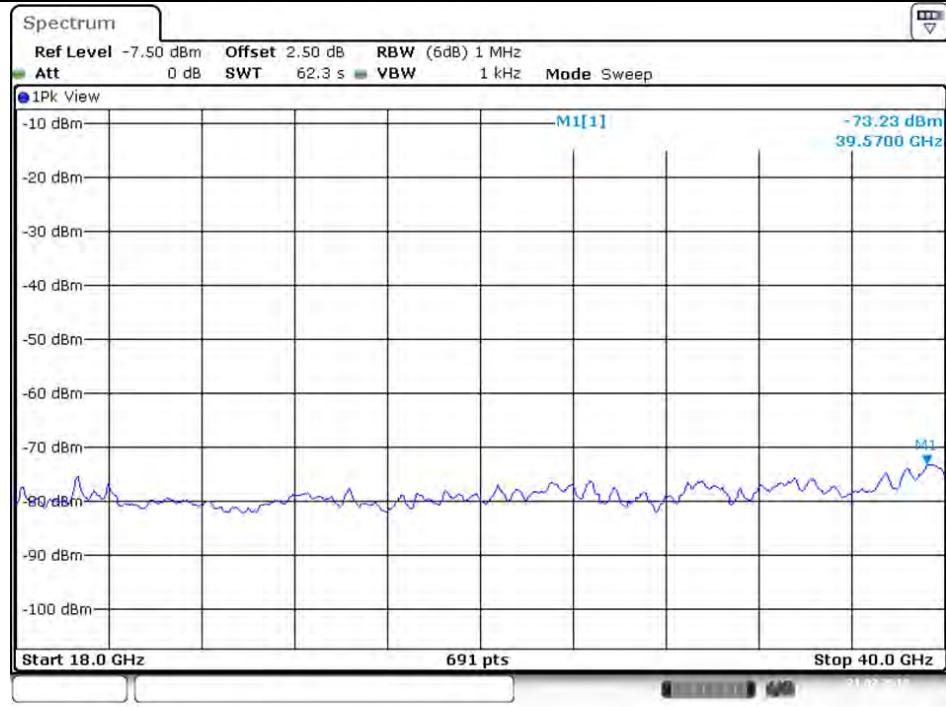


Date: 21.FEB.2018 19:07:04

Plot on Configuration VHT20 / 5200 MHz / Peak / Port 2 / 18GHz~40GHz



Date: 21.FEB.2018 19:10:39

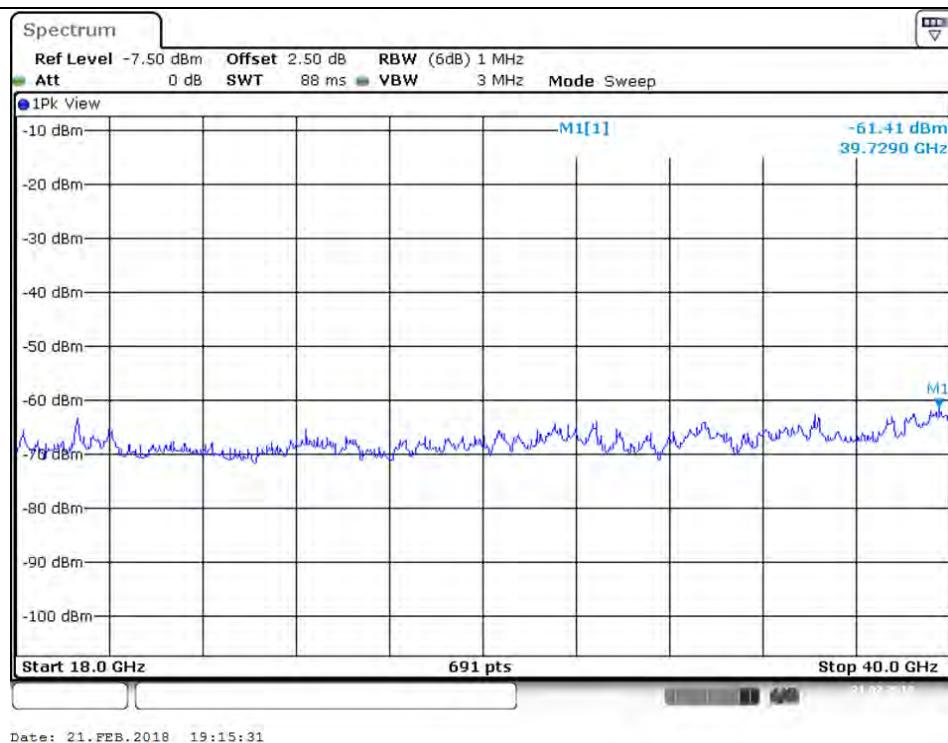
Plot on Configuration VHT20 / 5240 MHz / Average / Port 1 / 18GHz~40GHz

Plot on Configuration VHT20 / 5240 MHz / Average / Port 2 / 18GHz~40GHz




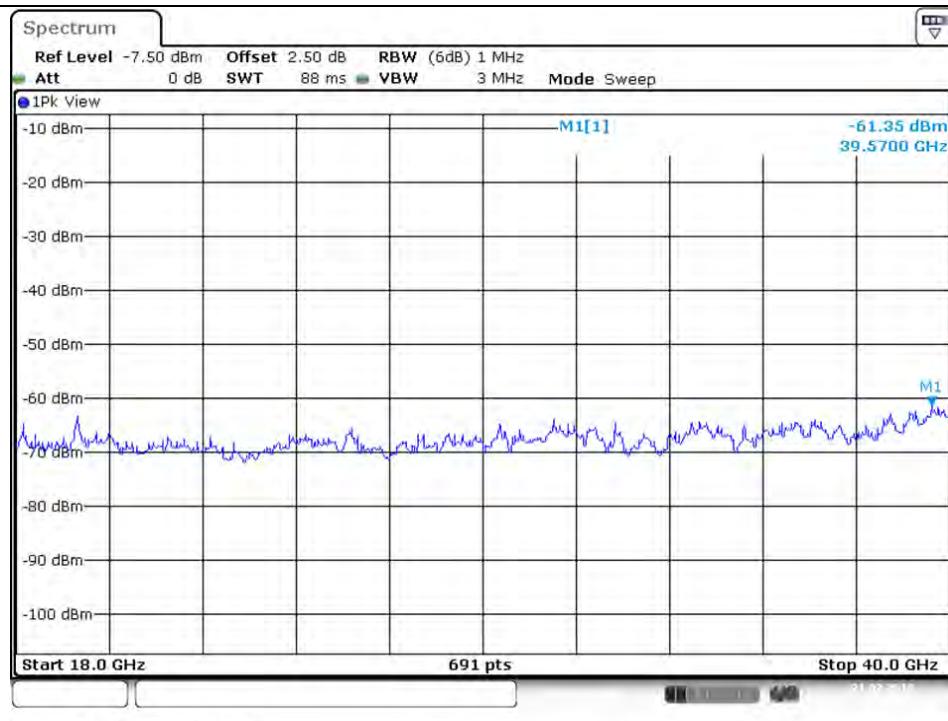
TX Above 1GHz Result

Appendix E.2

Plot on Configuration VHT20 / 5240 MHz / Peak / Port 1 / 18GHz~40GHz



Plot on Configuration VHT20 / 5240 MHz / Peak / Port 2 / 18GHz~40GHz

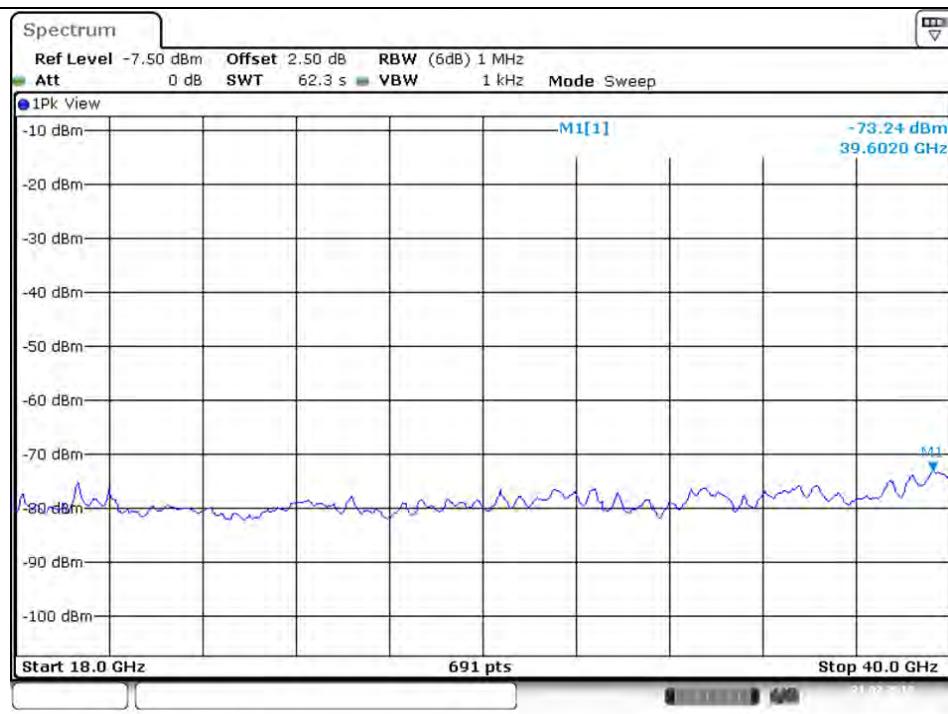




TX Above 1GHz Result

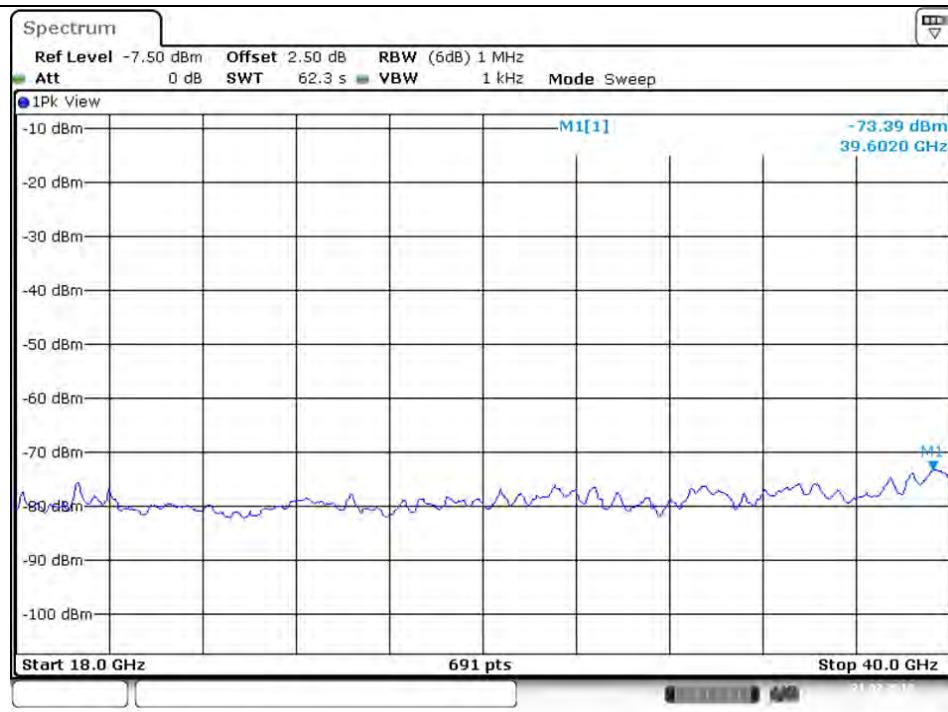
Appendix E.2

Plot on Configuration VHT80 / 5210 MHz / Average / Port 1 / 18GHz~40GHz

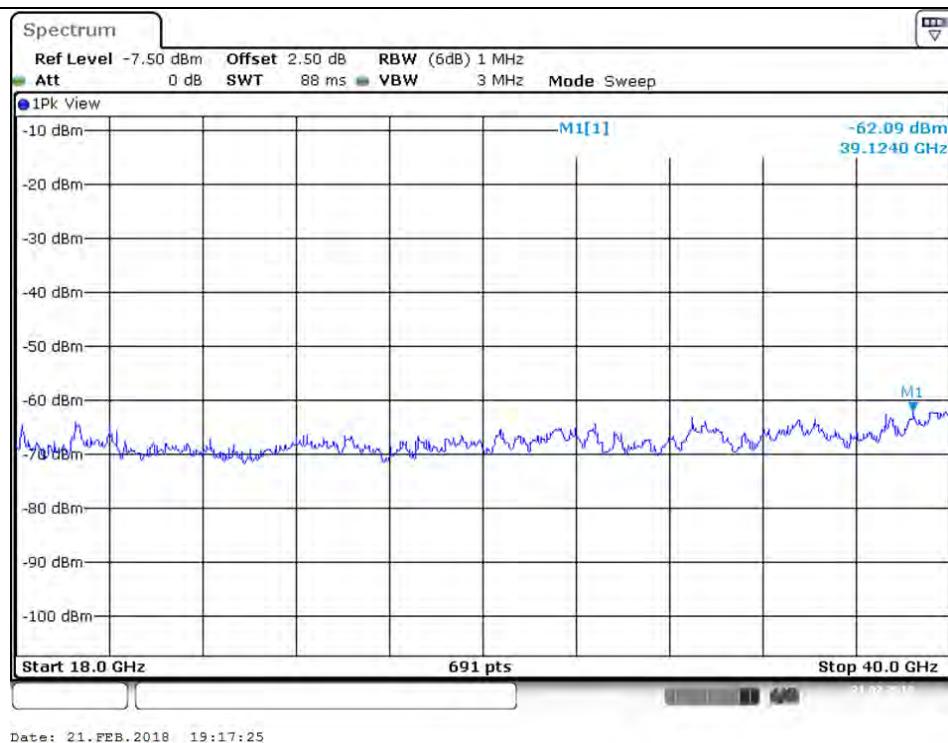
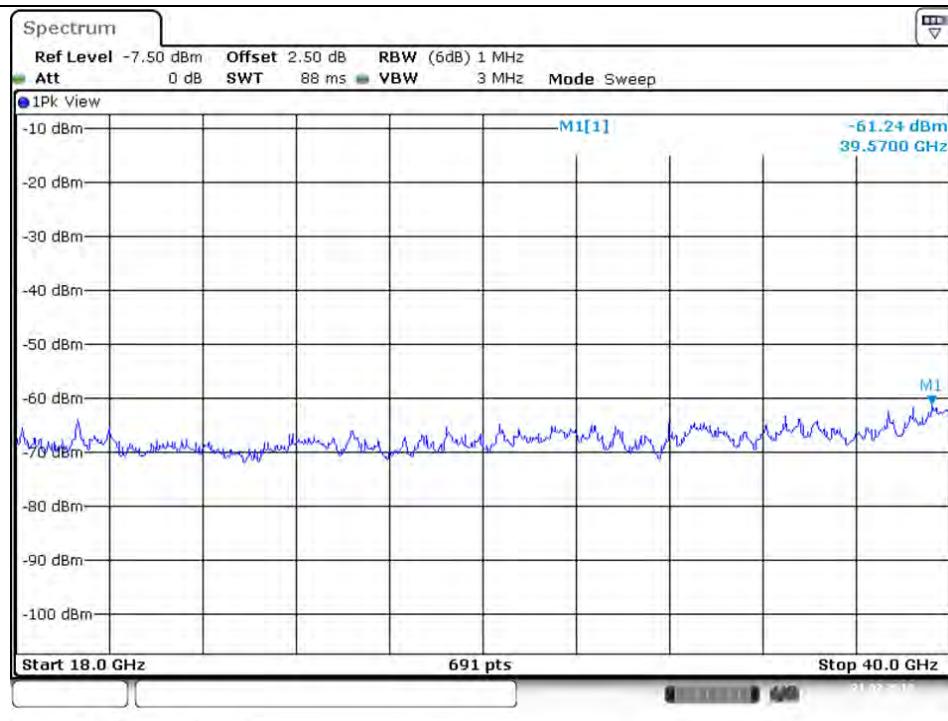


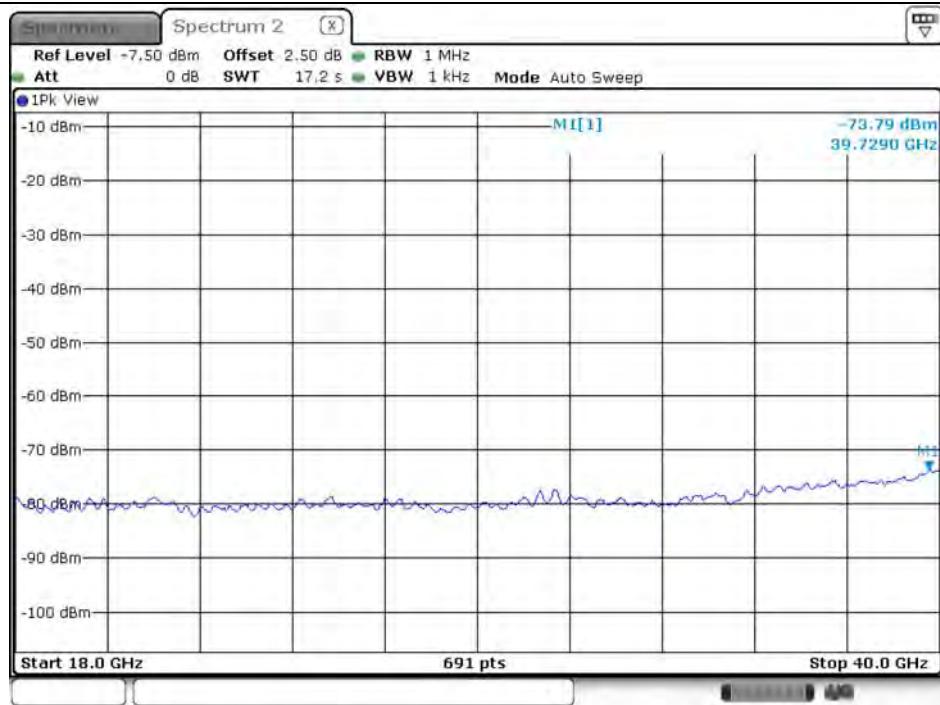
Date: 21.FEB.2018 19:17:06

Plot on Configuration VHT80 / 5210 MHz / Average / Port 2 / 18GHz~40GHz

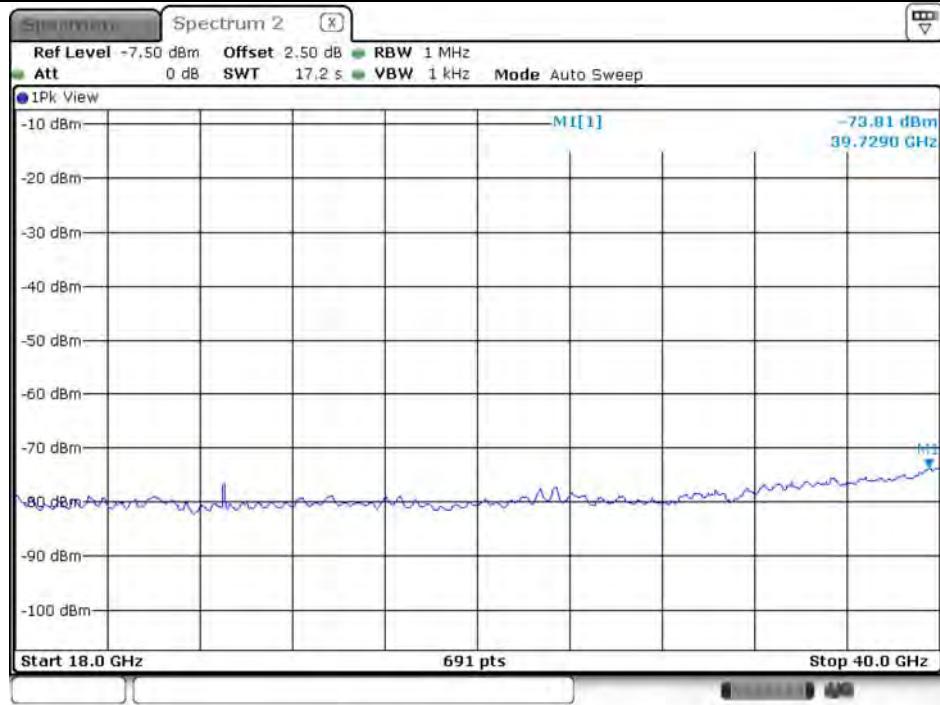


Date: 21.FEB.2018 19:19:47

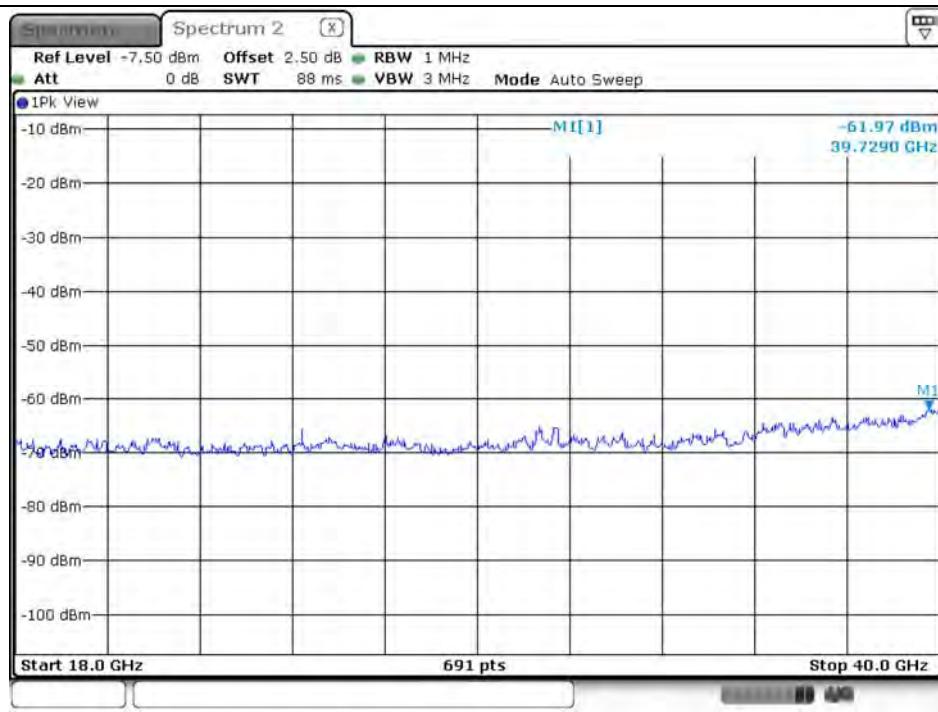
Plot on Configuration VHT80 / 5210 MHz / Peak / Port 1 / 18GHz~40GHz

Plot on Configuration VHT80 / 5210 MHz / Peak / Port 2 / 18GHz~40GHz


Plot on Configuration VHT20 / 5745 MHz / Average / Port 1 / 18GHz~40GHz


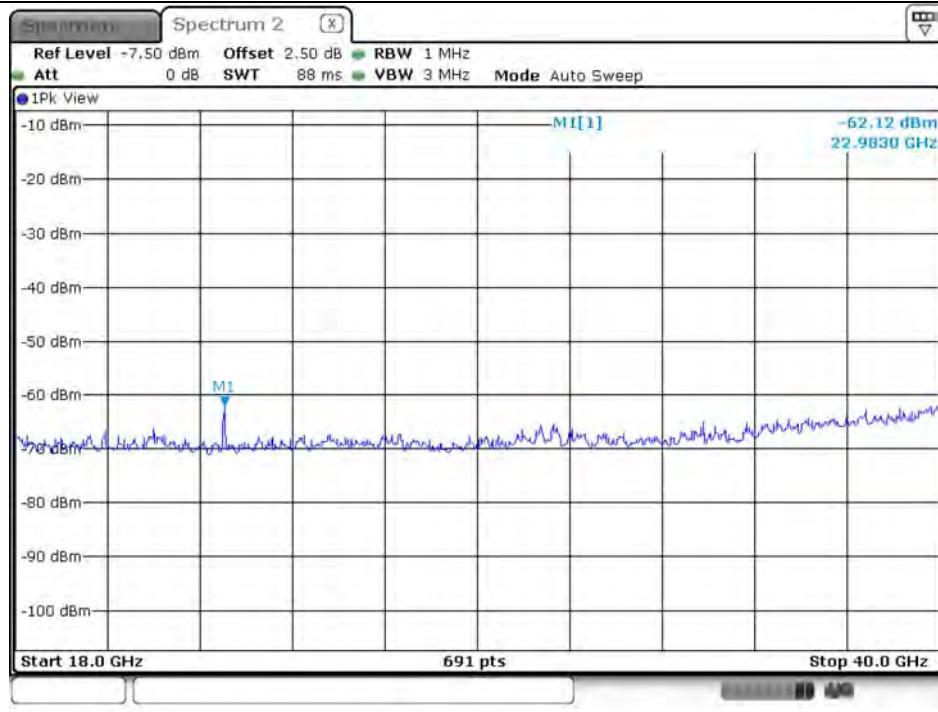
Date: 14.FEB.2018 10:58:48

Plot on Configuration VHT20 / 5745 MHz / Average / Port 2 / 18GHz~40GHz


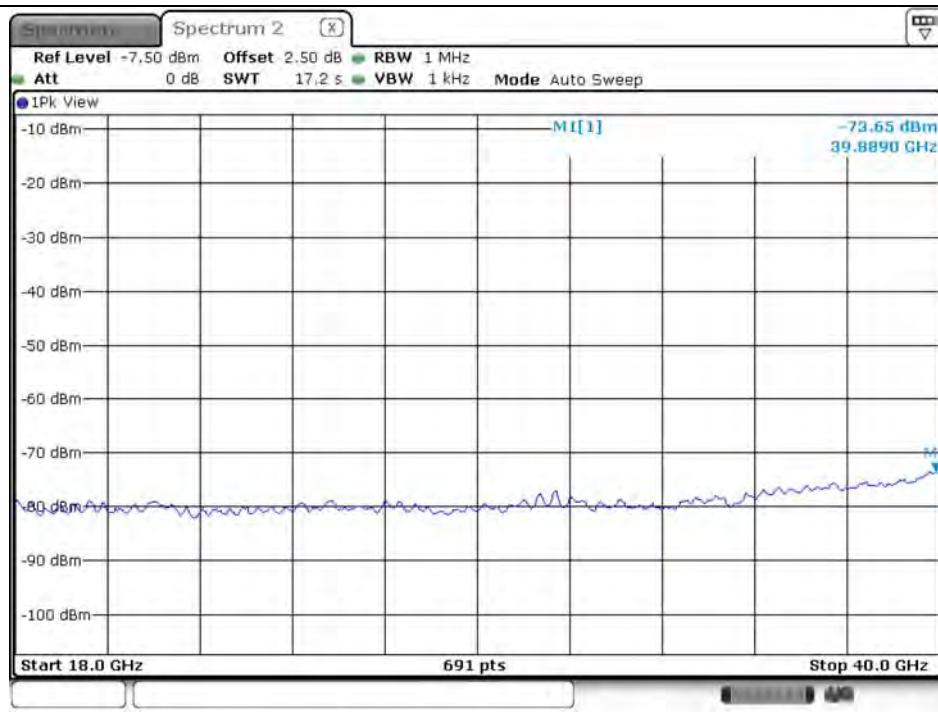
Date: 14.FEB.2018 11:00:59

Plot on Configuration VHT20 / 5745 MHz / Peak / Port 1 / 18GHz~40GHz


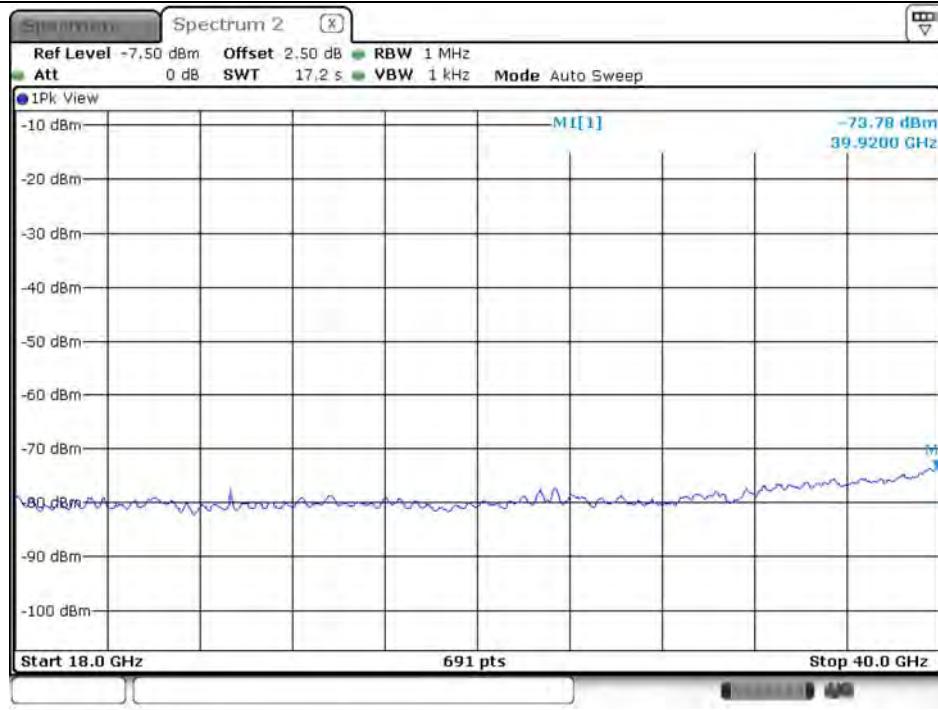
Date: 14.FEB.2018 10:59:32

Plot on Configuration VHT20 / 5745 MHz / Peak / Port 2 / 18GHz~40GHz


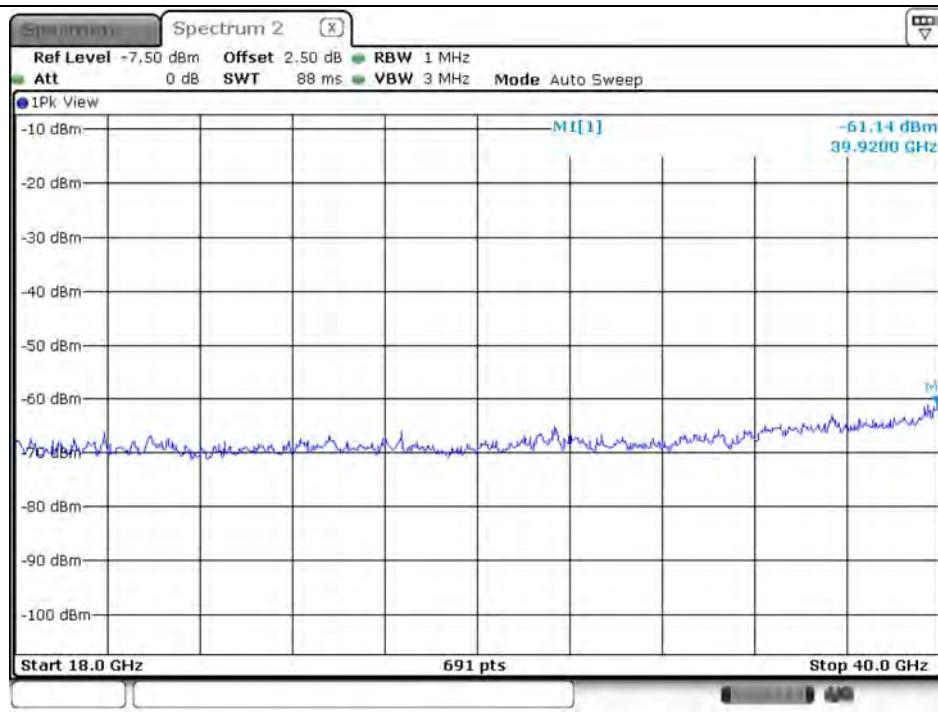
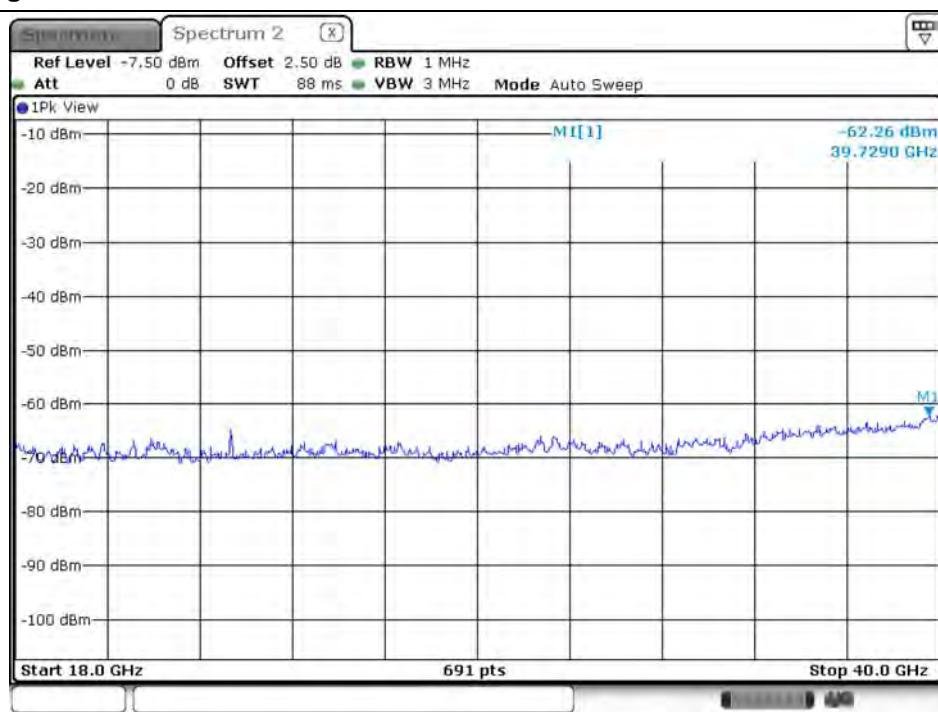
Date: 14.FEB.2018 11:01:31

Plot on Configuration VHT20 / 5785 MHz / Average / Port 1 / 18GHz~40GHz


Date: 14.FEB.2018 11:07:39

Plot on Configuration VHT20 / 5785 MHz / Average / Port 2 / 18GHz~40GHz


Date: 14.FEB.2018 11:09:45

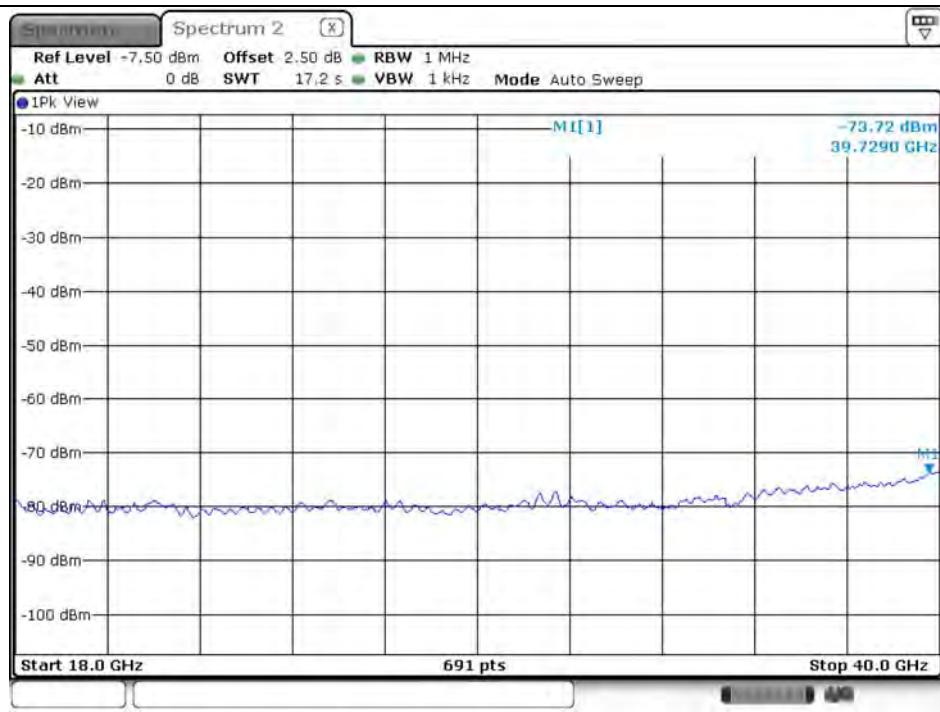
Plot on Configuration VHT20 / 5785 MHz / Peak / Port 1 / 18GHz~40GHz

Plot on Configuration VHT20 / 5785 MHz / Peak / Port 2 / 18GHz~40GHz




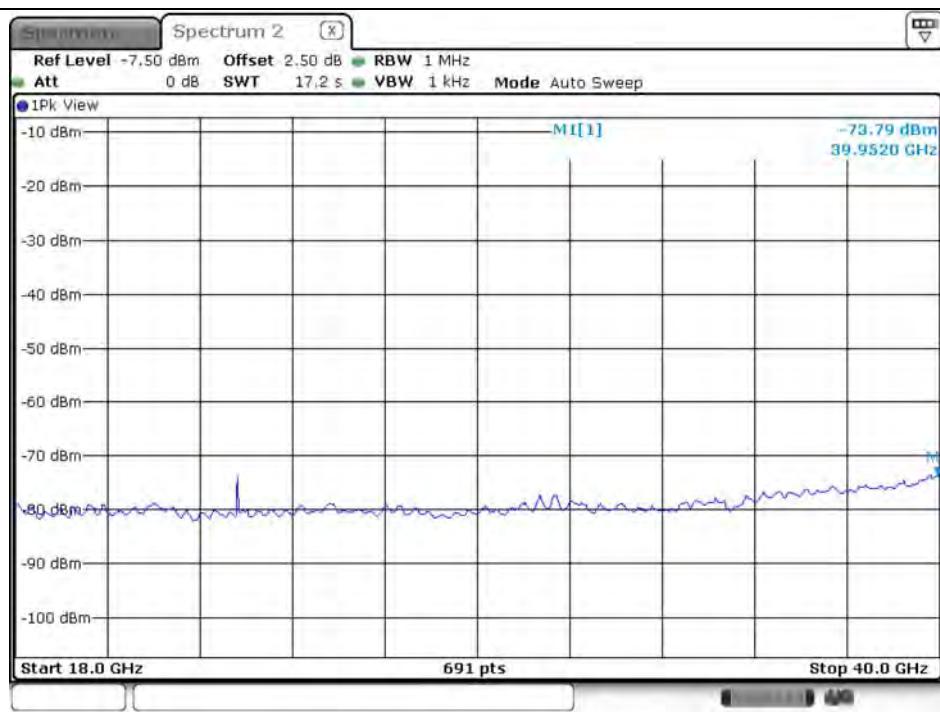
TX Above 1GHz Result

Appendix E.2

Plot on Configuration VHT20 / 5825 MHz / Average / Port 1 / 18GHz~40GHz



Plot on Configuration VHT20 / 5825 MHz / Average / Port 2 / 18GHz~40GHz

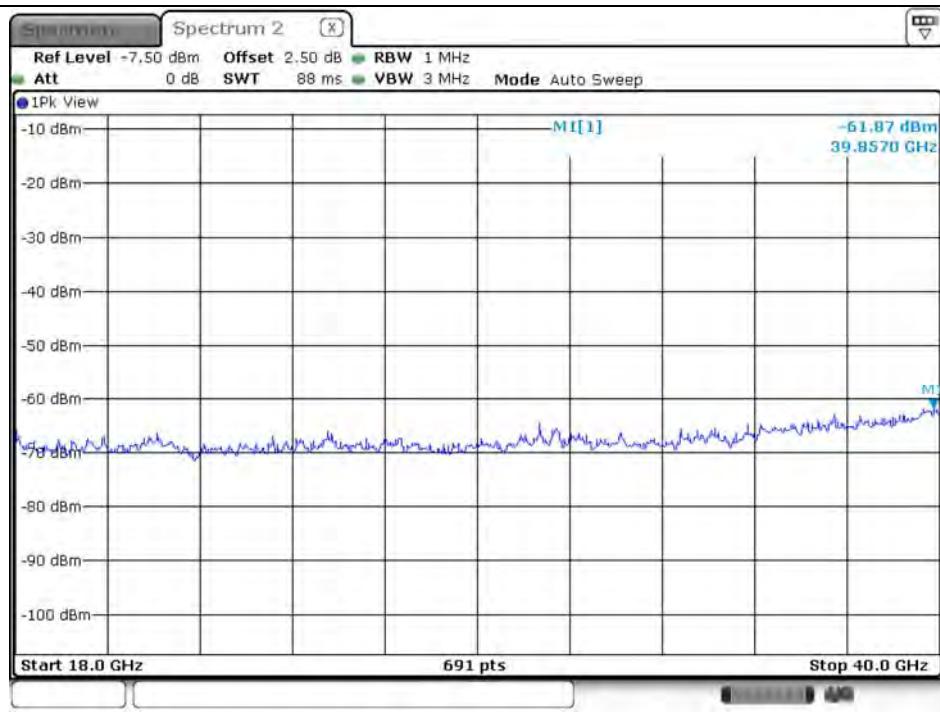




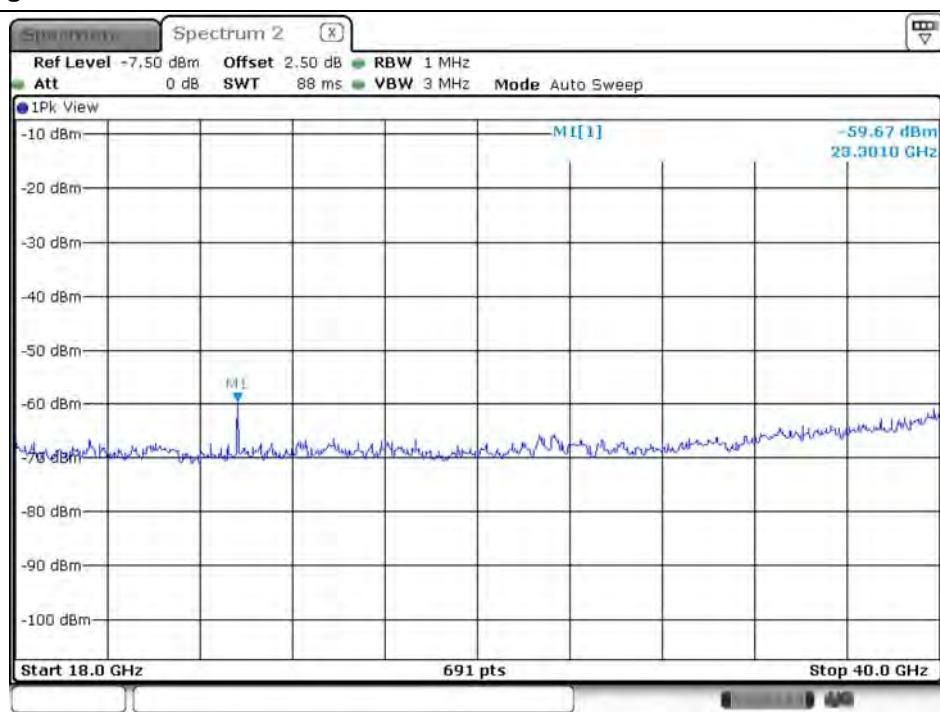
TX Above 1GHz Result

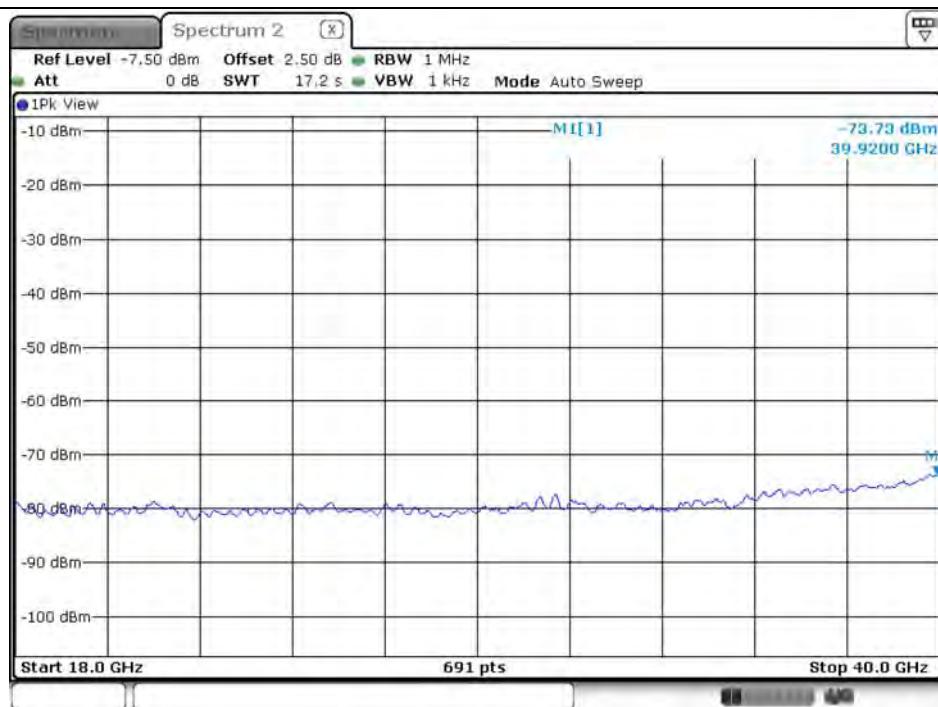
Appendix E.2

Plot on Configuration VHT20 / 5825 MHz / Peak / Port 1 / 18GHz~40GHz

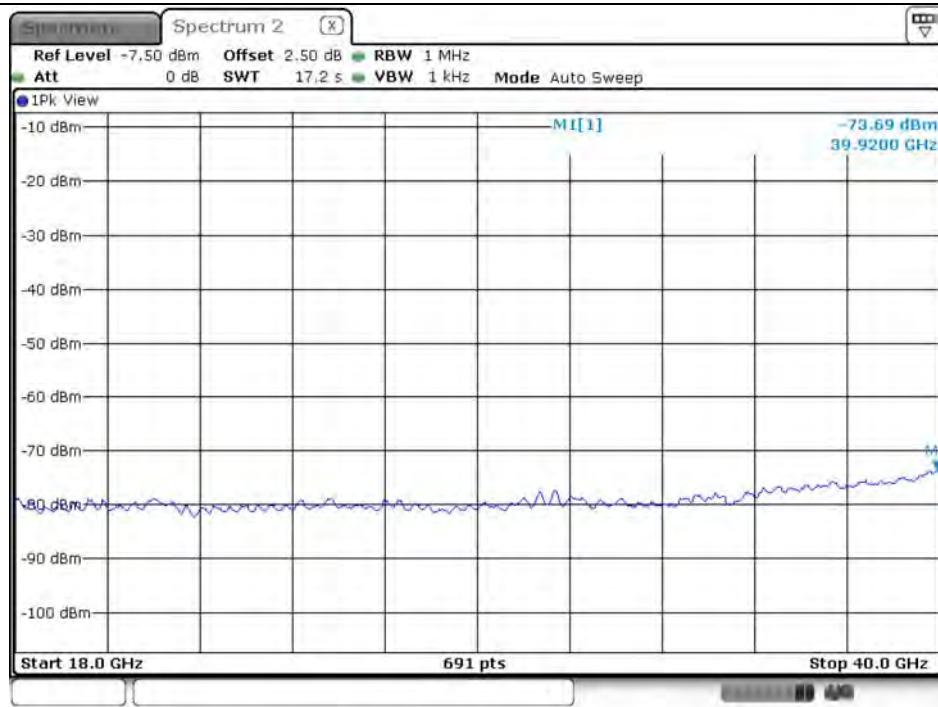


Plot on Configuration VHT20 / 5825 MHz / Peak / Port 2 / 18GHz~40GHz



Plot on Configuration VHT80 / 5775 MHz / Average / Port 1 / 18GHz~40GHz


Date: 14.FEB.2018 11:23:39

Plot on Configuration VHT80 / 5775 MHz / Average / Port 2 / 18GHz~40GHz


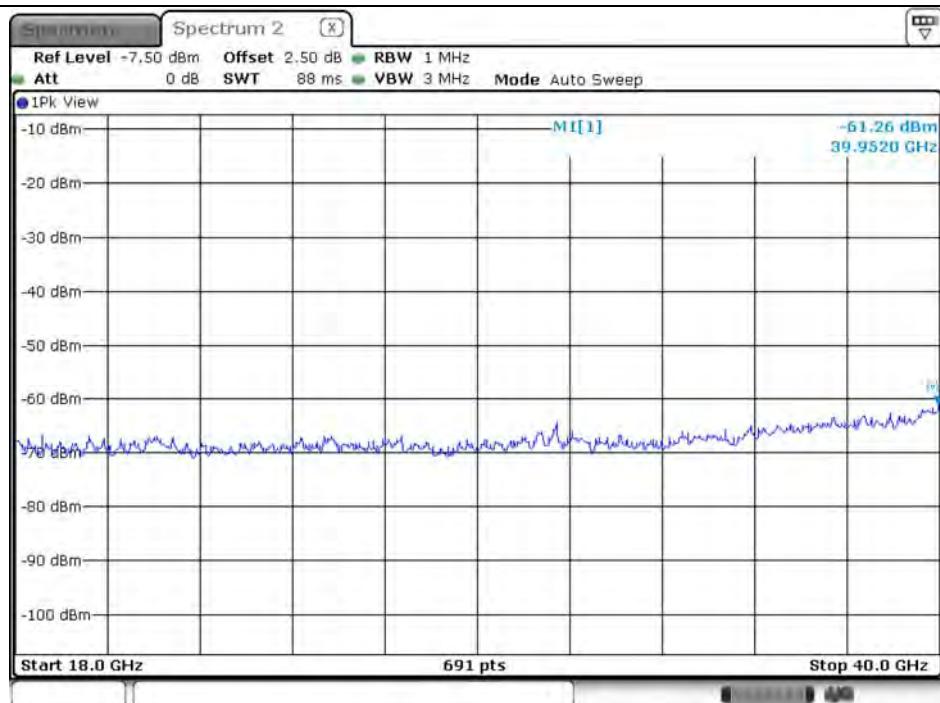
Date: 14.FEB.2018 11:26:16



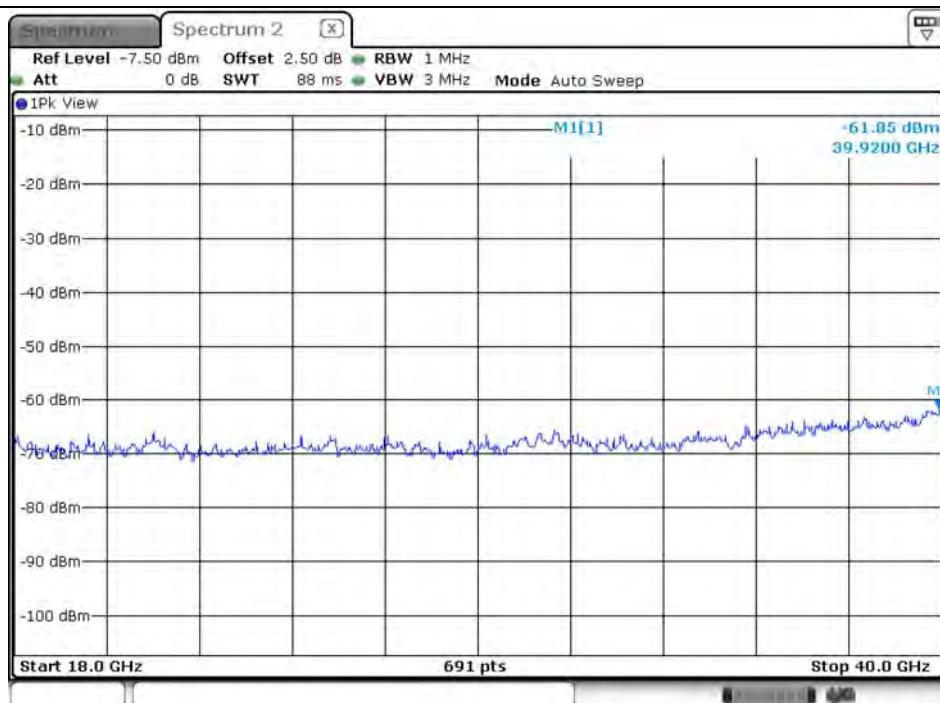
TX Above 1GHz Result

Appendix E.2

Plot on Configuration VHT80 / 5775 MHz / Peak / Port 1 / 18GHz~40GHz

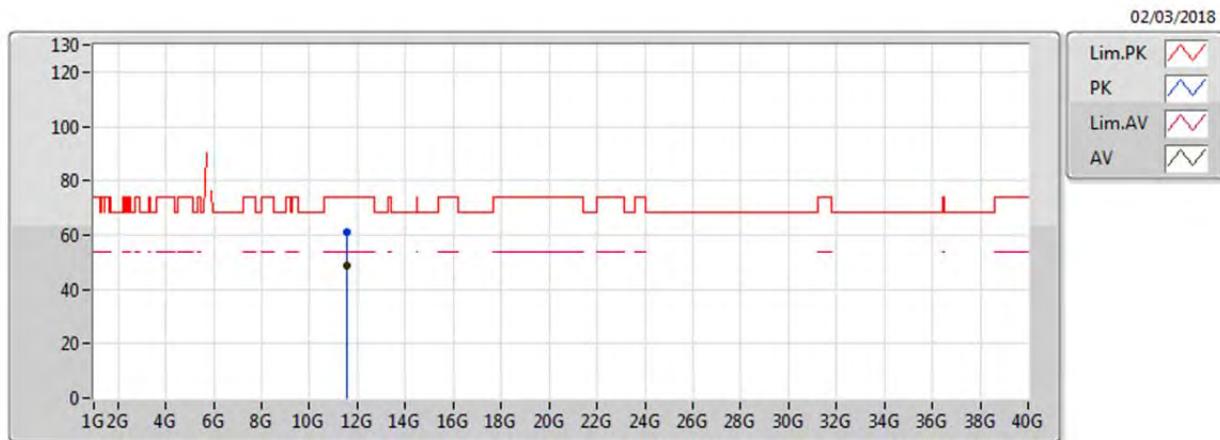


Plot on Configuration VHT80 / 5775 MHz / Peak / Port 2 / 18GHz~40GHz



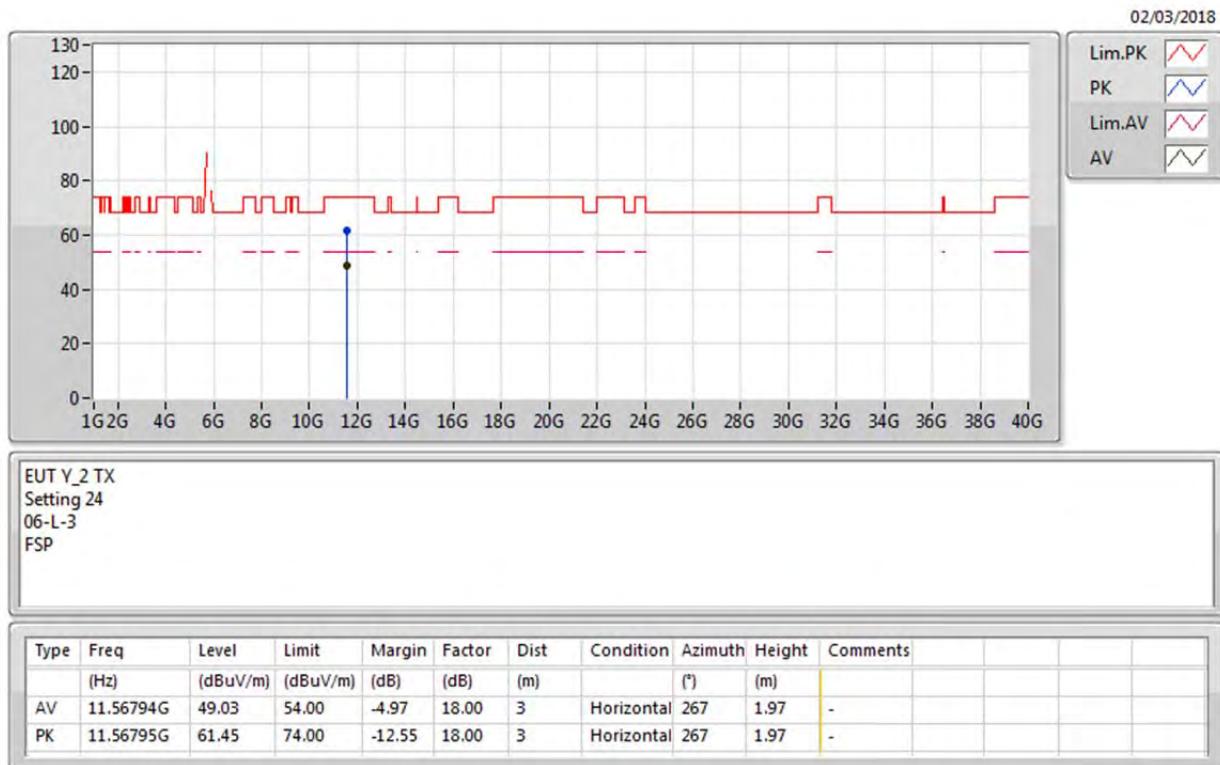


For Cabinet:

Cabinet CTX

Type	Freq (Hz)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Factor (dB)	Dist (m)	Condition	Azimuth (°)	Height (m)	Comments			
AV	11.5675G	49.03	54.00	-4.97	18.00	3	Vertical	0	1.50	-			
PK	11.56816G	61.15	74.00	-12.85	18.00	3	Vertical	0	1.50	-			

Cabinet CTX





For Conducted Bandedge:

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT20 / Average / Port 1 + Port 2

Frequency(MHz)	Port 1 (TX1) Bandedge Level (dBm)	Port 2 (TX2) Bandedge Level (dBm)	Total Bandedge Level (dBm)	Limit (dBm)	Margin (dB)
5180	-52.46	-53.16	-41.79	-41.25	0.54
5200	-52.67	-52.75	-41.70	-41.25	0.45
5240	-54.31	-53.04	-42.62	-41.25	1.37

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT20 / Peak / Port 1 + Port 2

Frequency(MHz)	Port 1 (TX1) Bandedge Level (dBm)	Port 2 (TX2) Bandedge Level (dBm)	Total Bandedge Level (dBm)	Limit (dBm)	Margin (dB)
5180	-42.14	-41.87	-30.99	-21.25	9.74
5200	-41.15	-39.17	-29.04	-21.25	7.79
5240	-41.72	-39.22	-29.28	-21.25	8.03
5745	-40.53	-42.59	-30.43	-27.00	3.43
5785	-42.83	-42.57	-31.69	-27.00	4.69
5825	-38.78	-40.96	-28.72	-27.00	1.72



TX Above 1GHz Result

Appendix E.2

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT80 / Average / Port 1 + Port 2

Frequency(MHz)	Port 1 (TX1) Bandedge Level (dBm)	Port 2 (TX2) Bandedge Level (dBm)	Total Bandedge Level (dBm)	Limit (dBm)	Margin (dB)
5210	-53.81	-52.37	-42.02	-41.25	0.77

Temperature	22 °C	Humidity	54%
Test Engineer	Serway Li / Eddie Weng	Configurations	VHT20 / Peak / Port 1 + Port 2

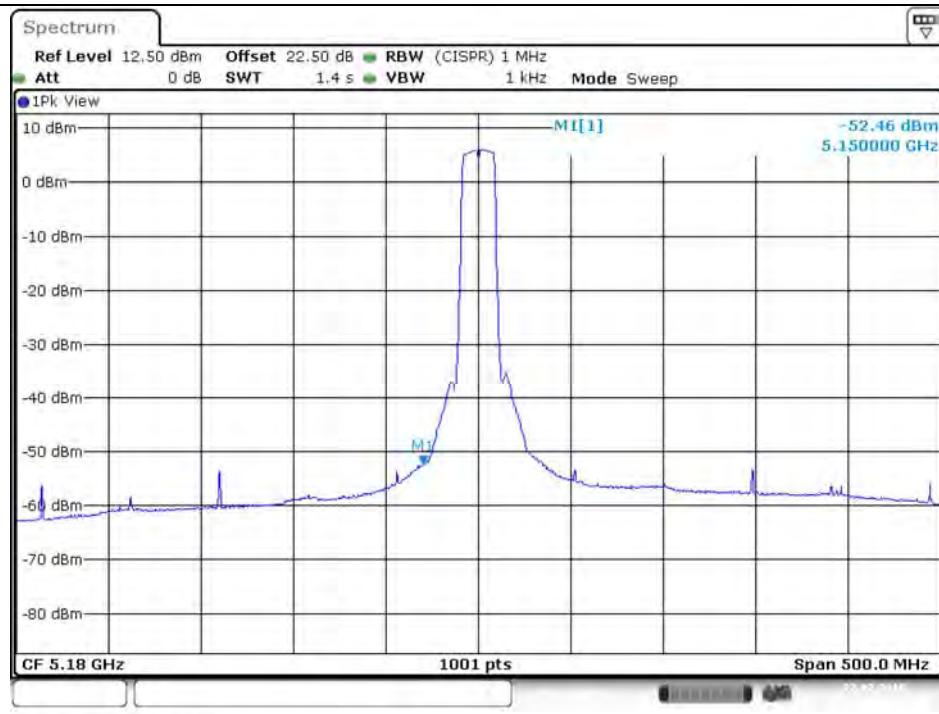
Frequency(MHz)	Port 1 (TX1) Bandedge Level (dBm)	Port 2 (TX2) Bandedge Level (dBm)	Total Bandedge Level (dBm)	Limit (dBm)	Margin (dB)
5210	-40.33	-40.72	-29.51	-21.25	8.26
5775	-38.88	-38.27	-27.55	-27.00	0.55



TX Above 1GHz Result

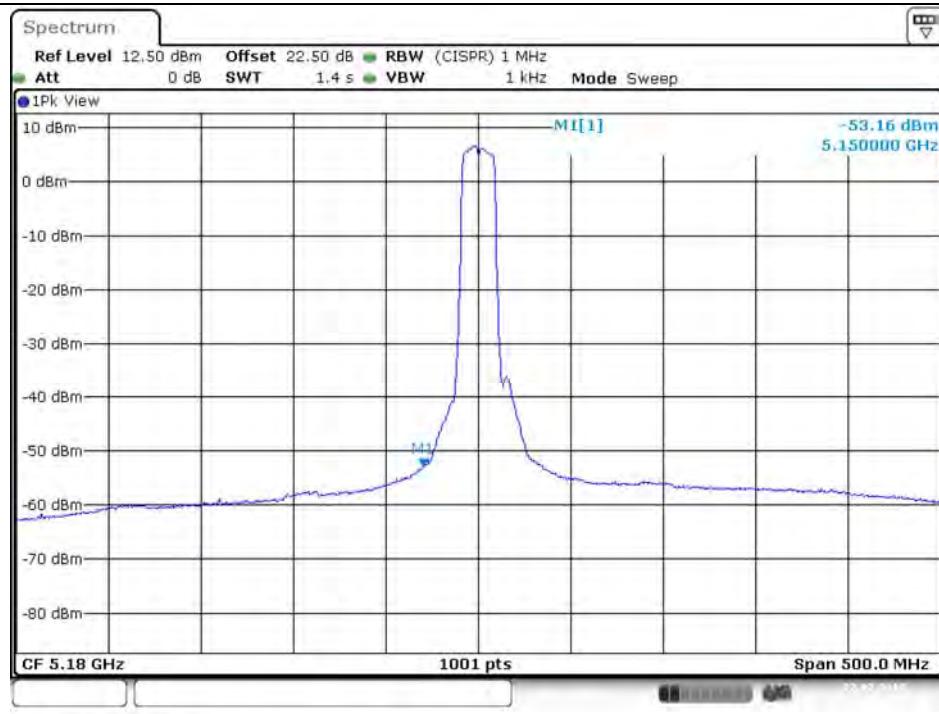
Appendix E.2

Plot on Configuration VHT20 / 5180 MHz / Average / Port 1 (TX1)



Date: 22.FEB.2018 21:26:44

Plot on Configuration VHT20 / 5180 MHz / Average / Port 2 (TX2)



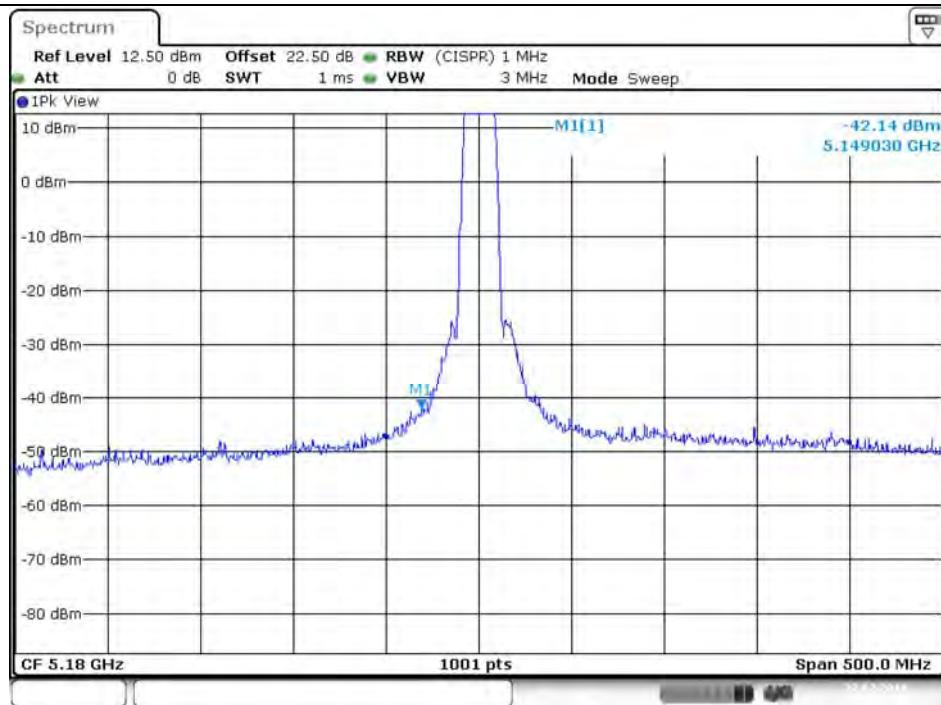
Date: 22.FEB.2018 21:24:28



TX Above 1GHz Result

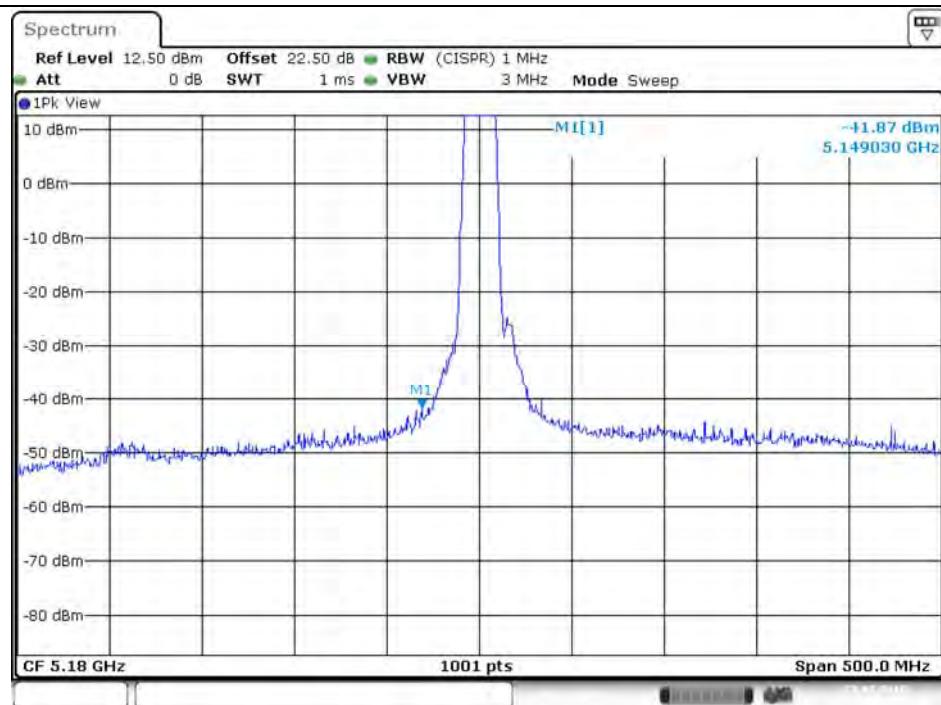
Appendix E.2

Plot on Configuration VHT20 / 5180 MHz / Peak / Port 1 (TX1)

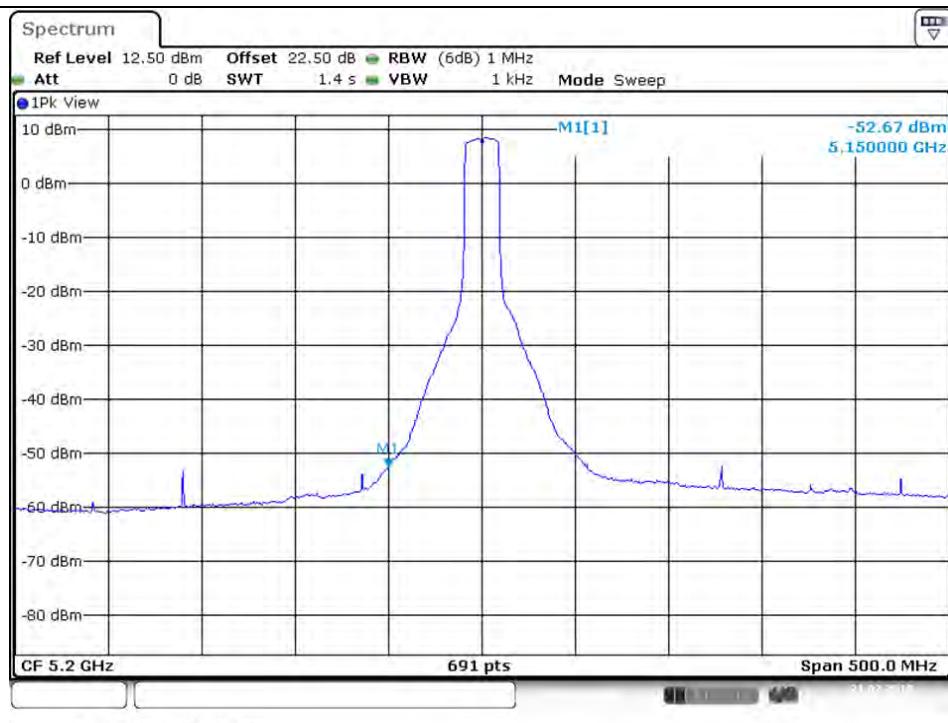
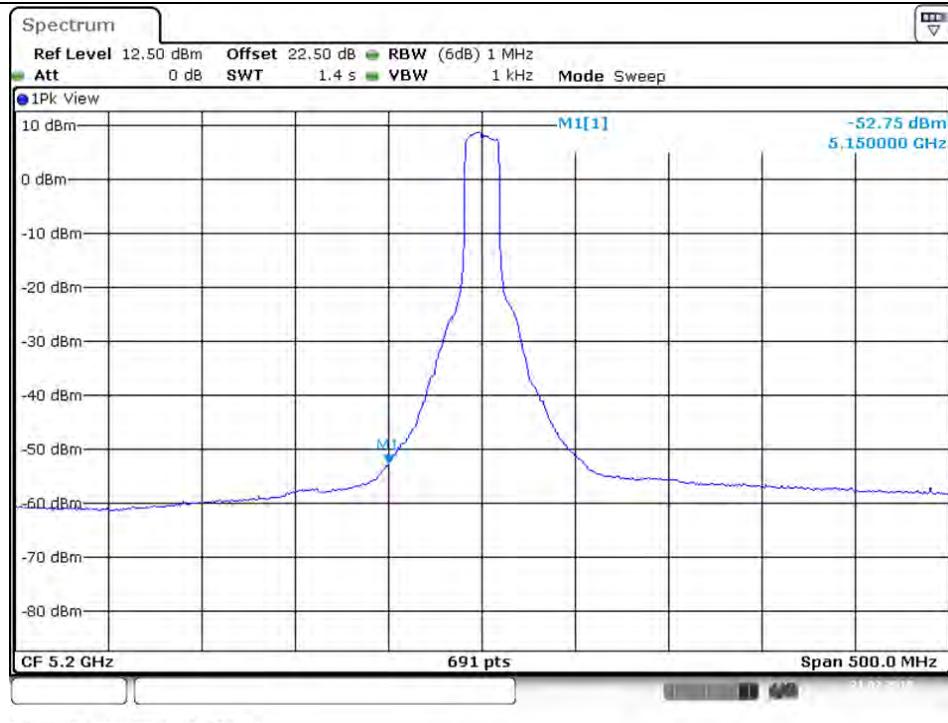


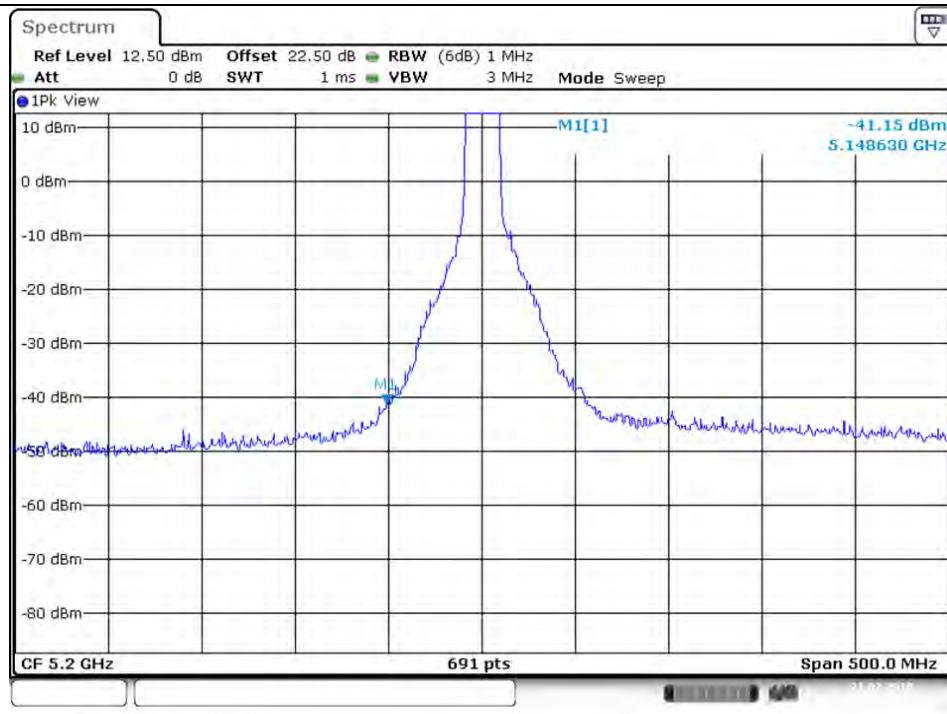
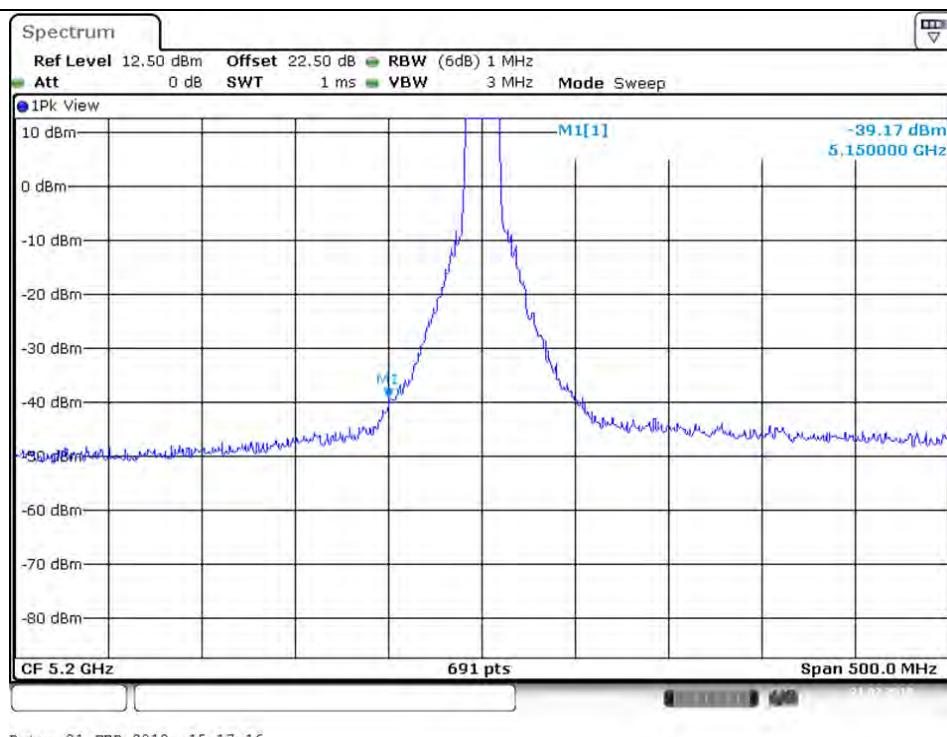
Date: 22 FEB. 2018 21:36:11

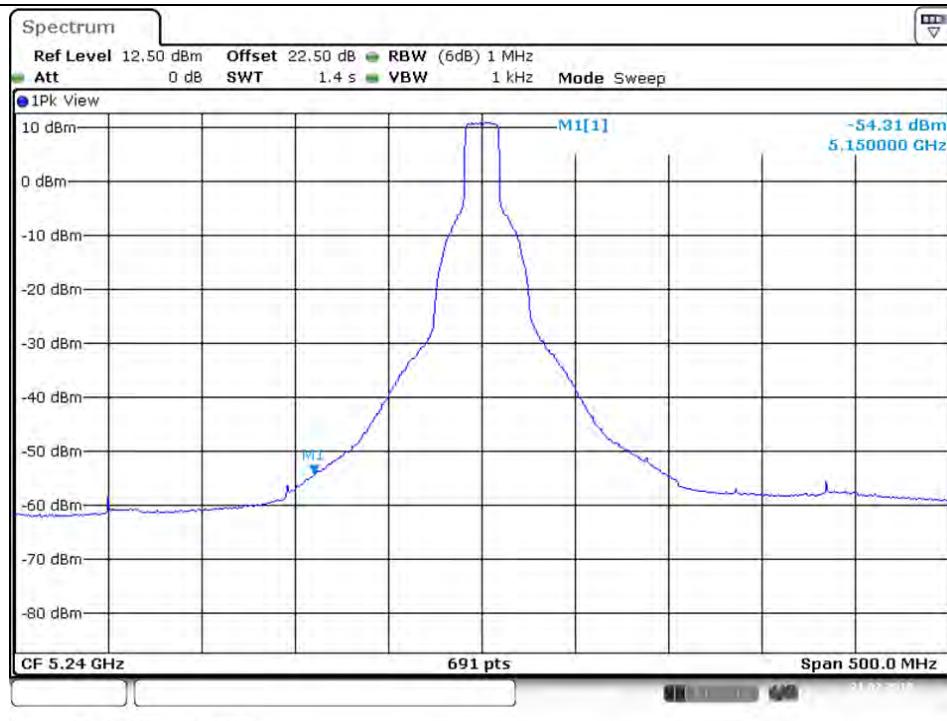
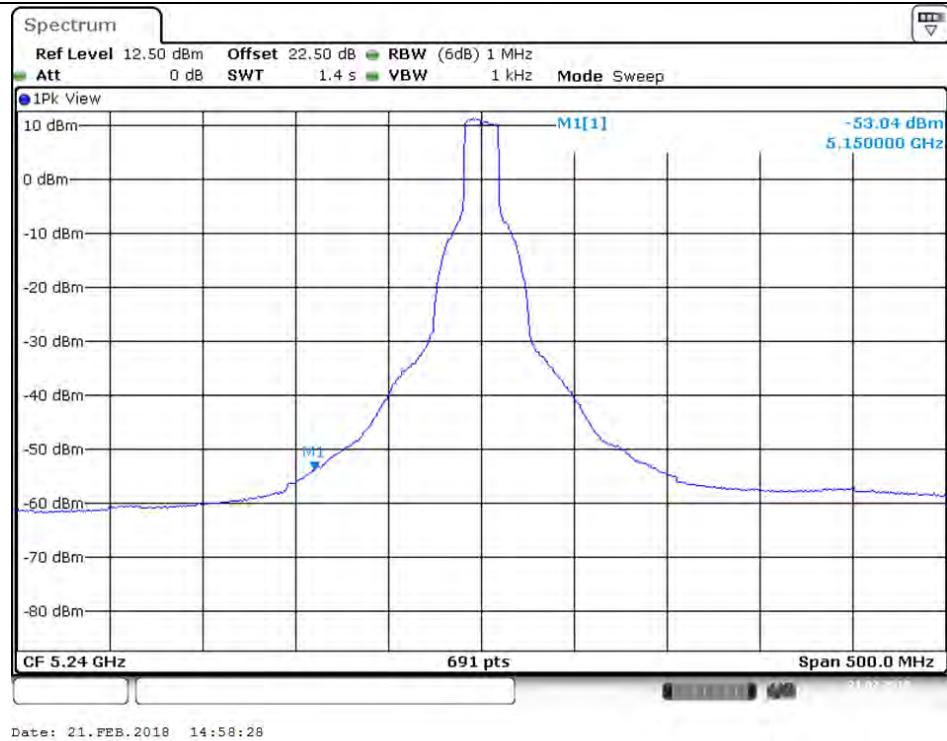
Plot on Configuration VHT20 / 5180 MHz / Peak / Port 2 (TX2)

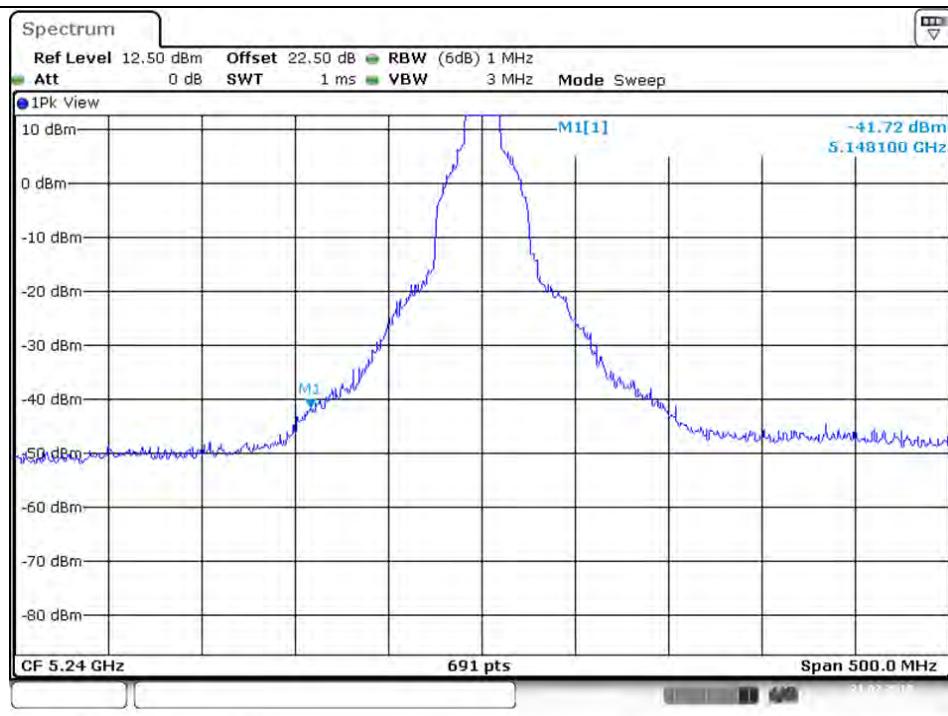
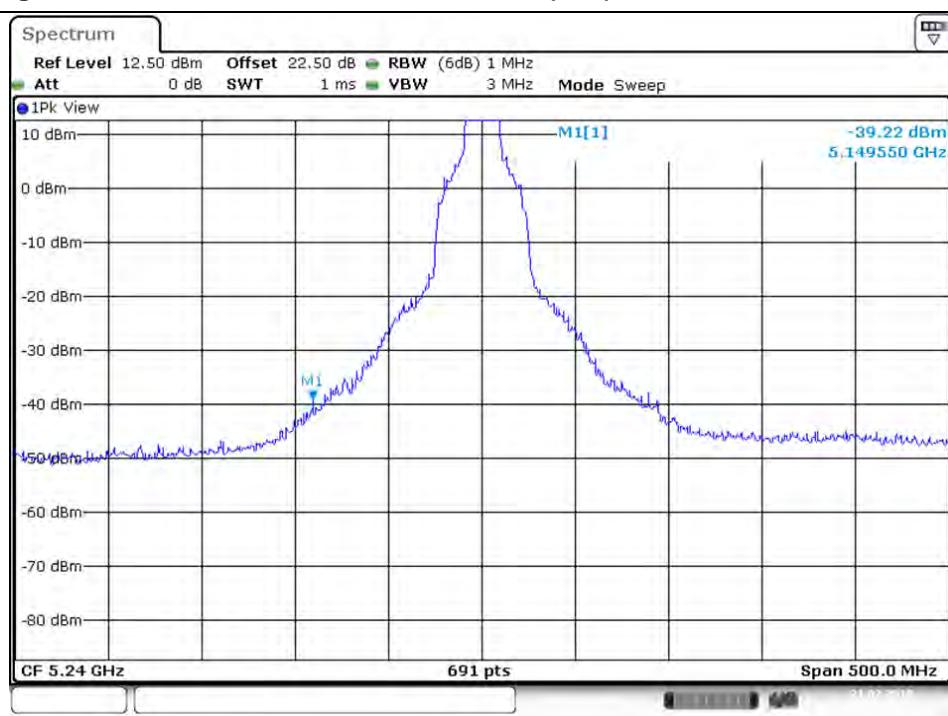


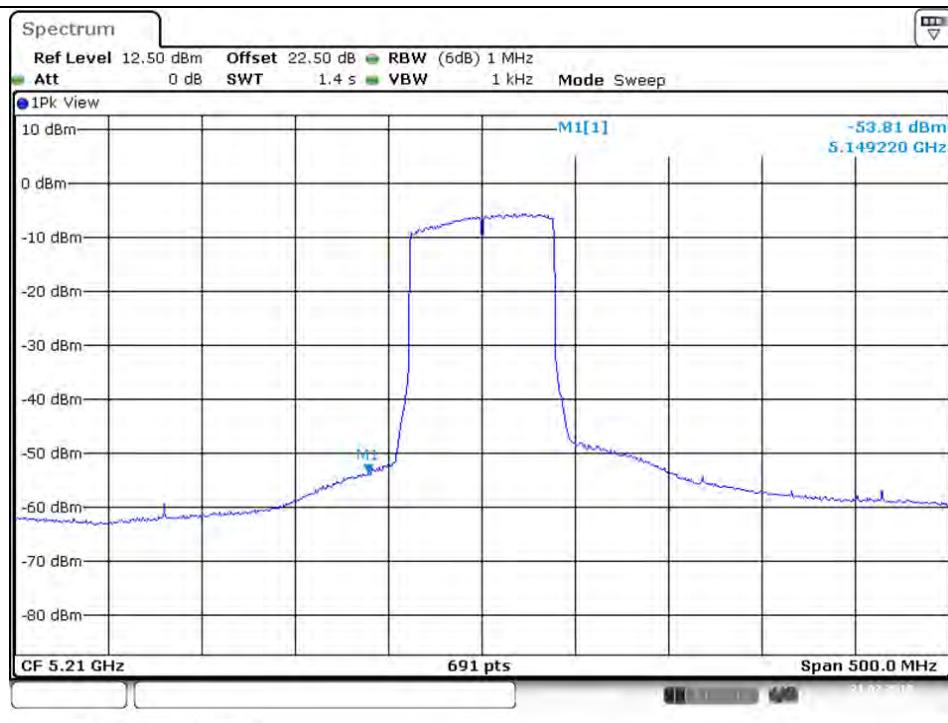
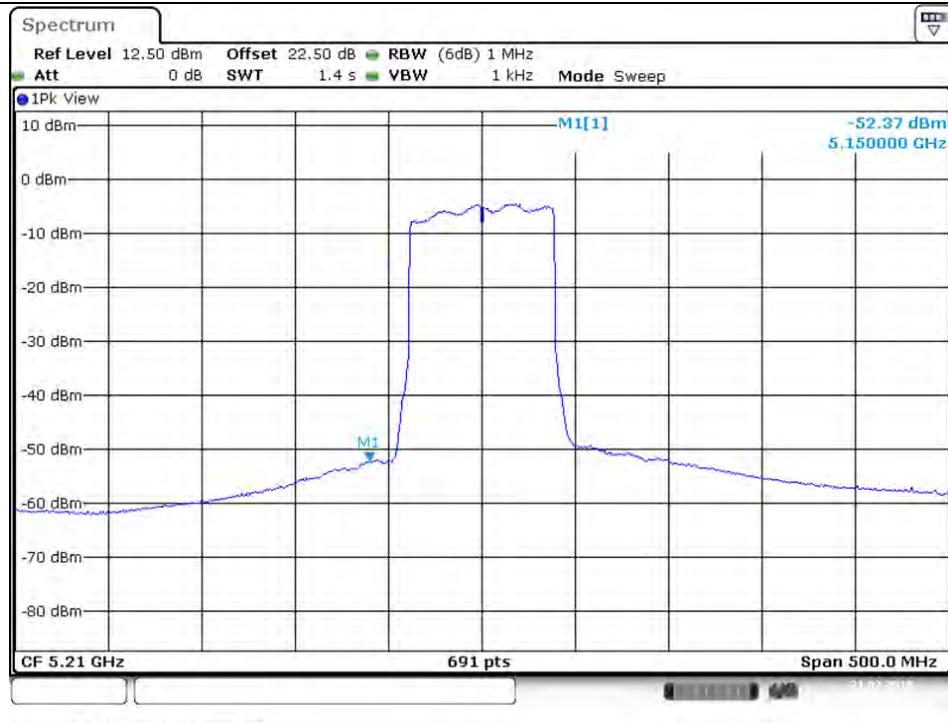
Date: 22.FEB. 2018 21:35:04

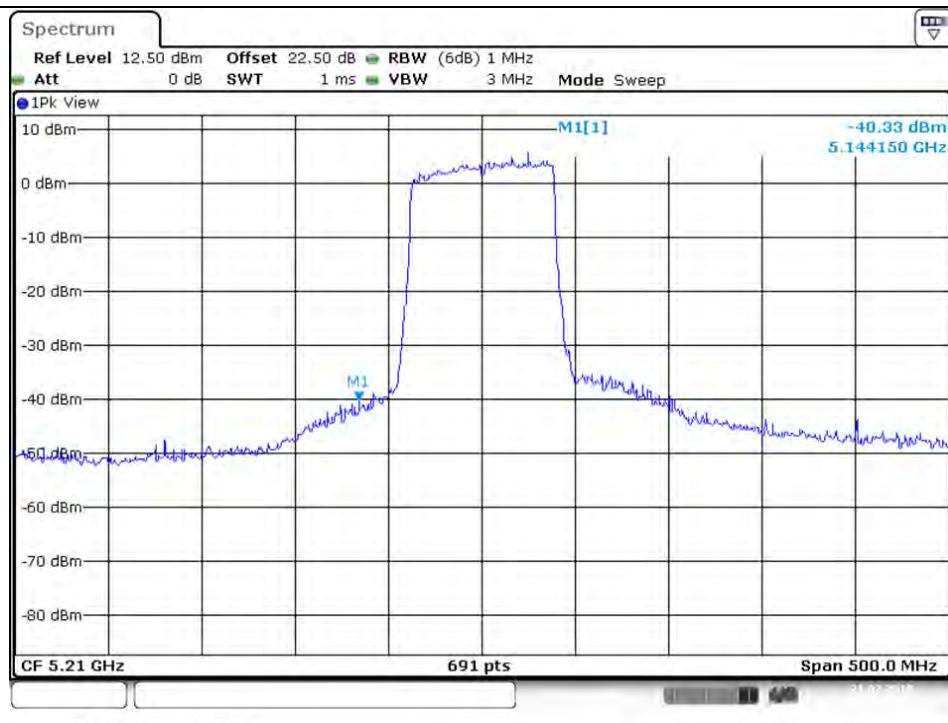
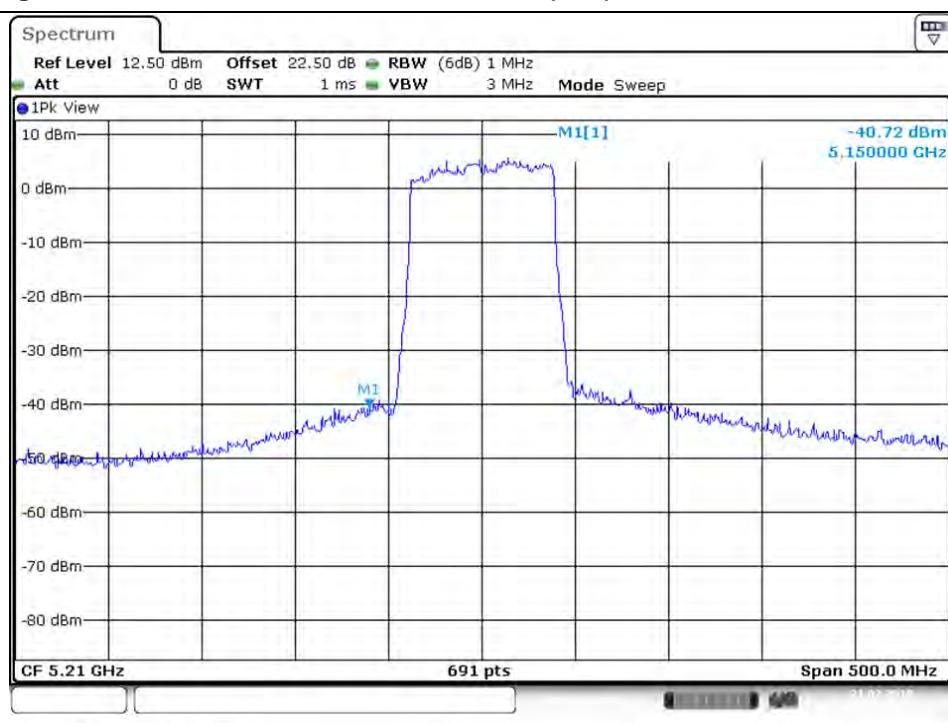
Plot on Configuration VHT20 / 5200 MHz / Average / Port 1 (TX1)

Plot on Configuration VHT20 / 5200 MHz / Average / Port 2 (TX2)


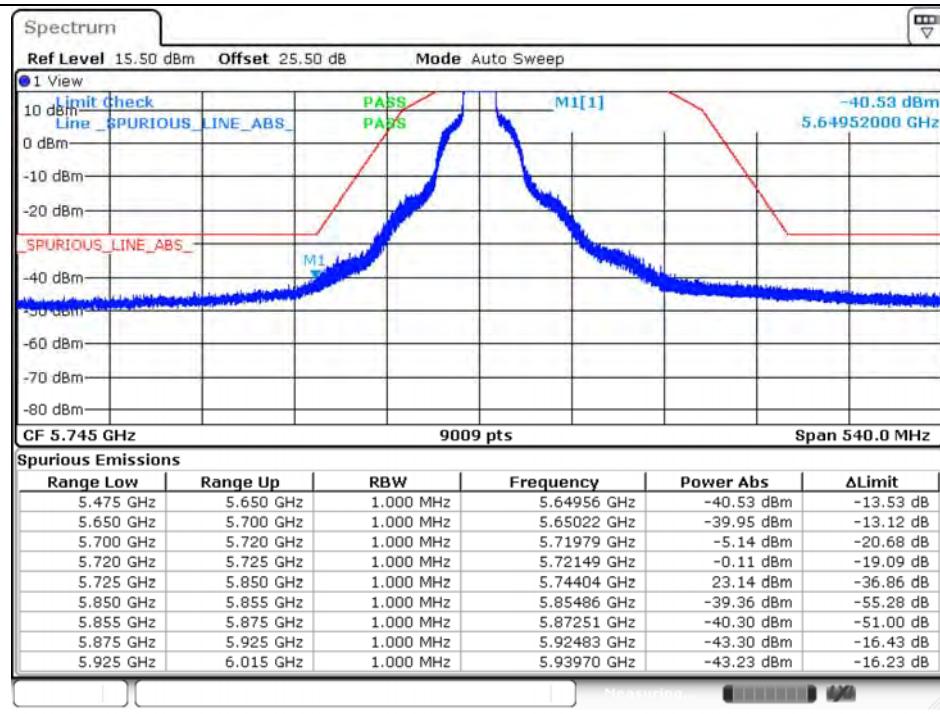
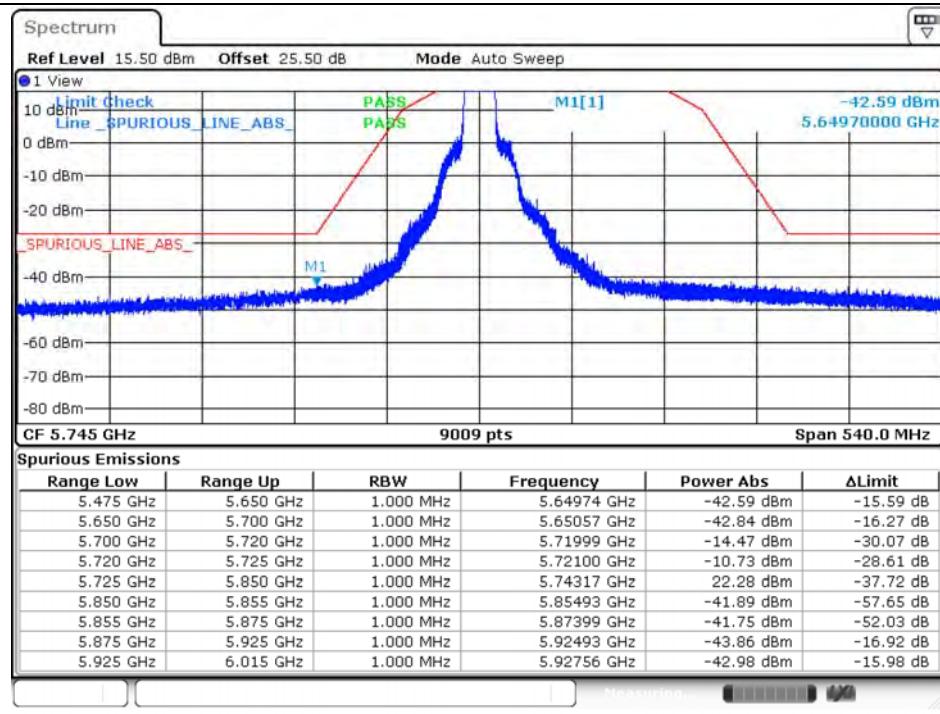
Plot on Configuration VHT20 / 5200 MHz / Peak / Port 1 (TX1)

Plot on Configuration VHT20 / 5200 MHz / Peak / Port 2 (TX2)


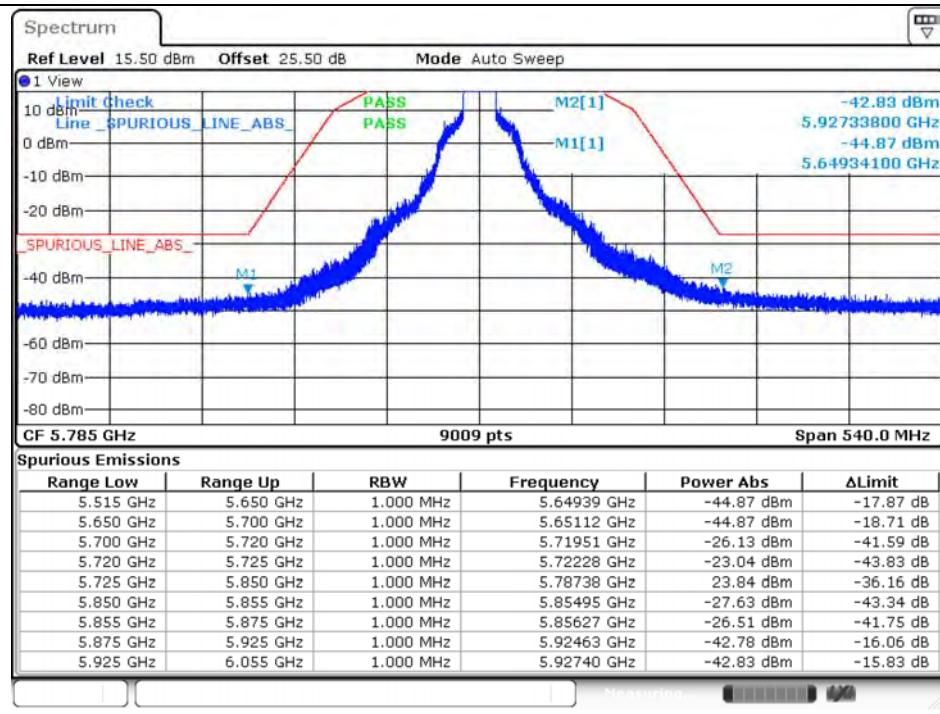
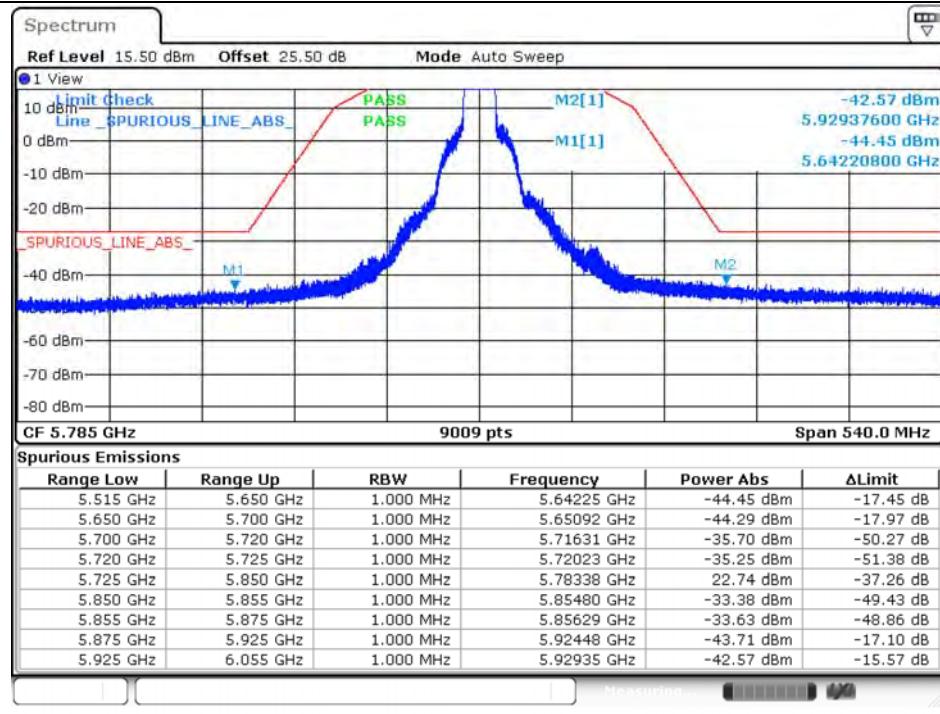
Plot on Configuration VHT20 / 5240 MHz / Average / Port 1 (TX1)

Plot on Configuration VHT20 / 5240 MHz / Average / Port 2 (TX2)


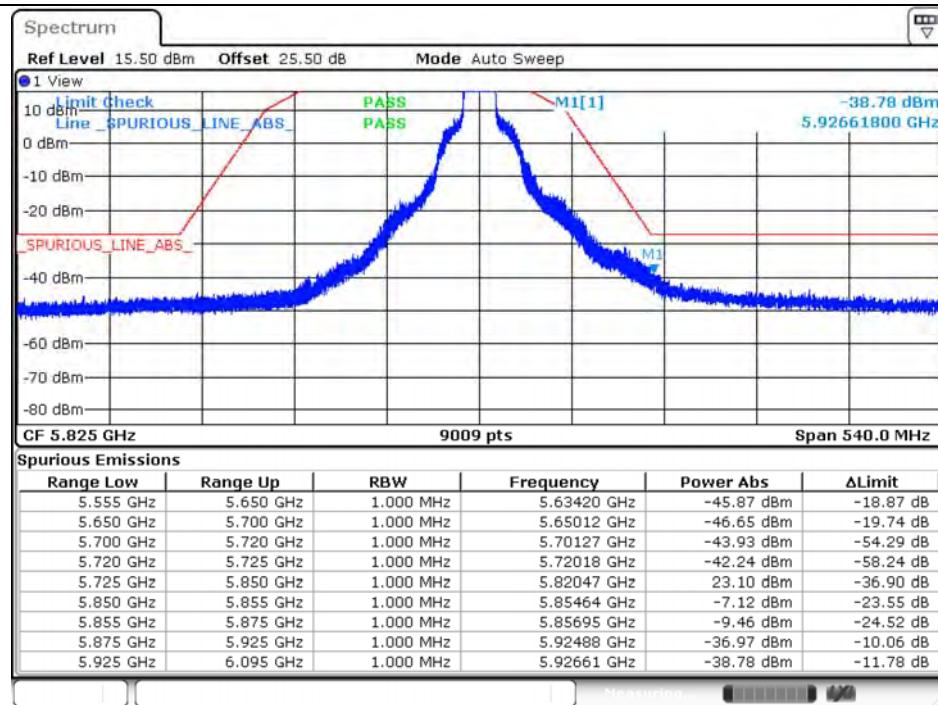
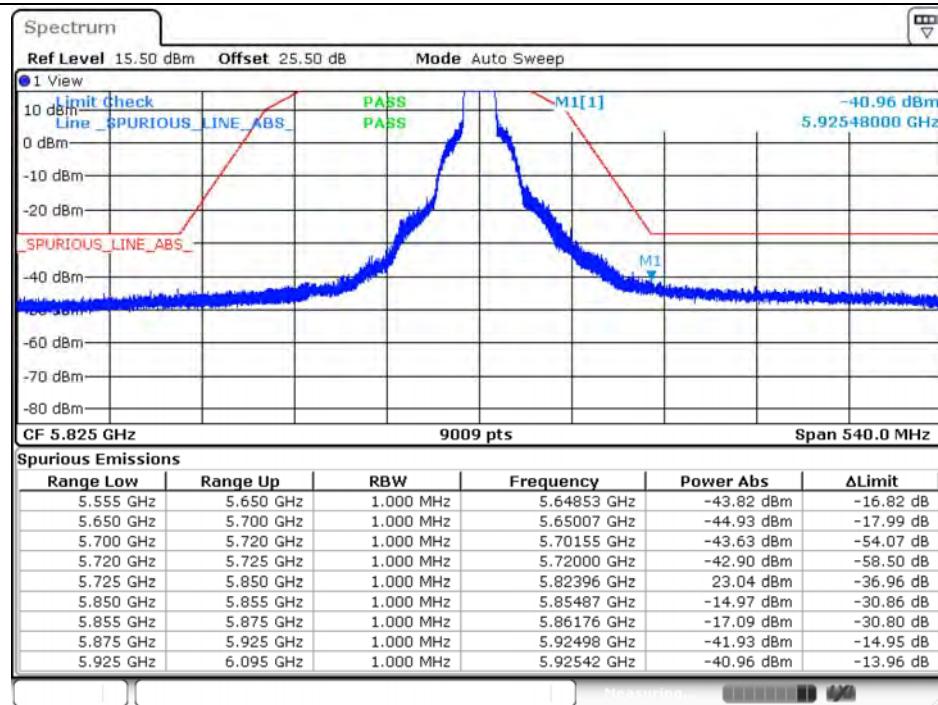
Plot on Configuration VHT20 / 5240 MHz / Peak / Port 1 (TX1)

Plot on Configuration VHT20 / 5240 MHz / Peak / Port 2 (TX2)


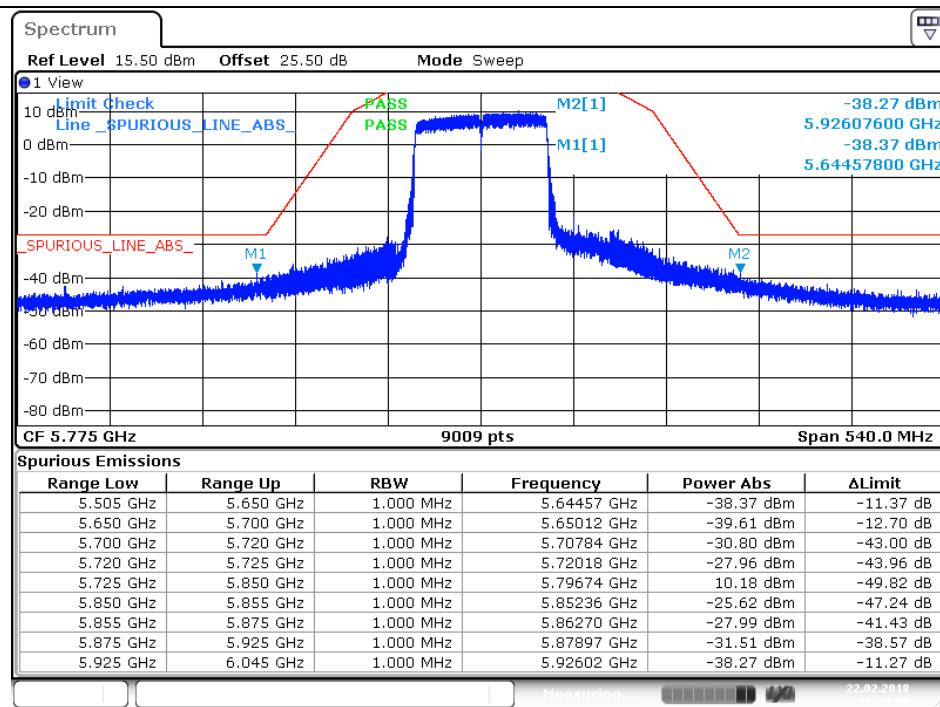
Plot on Configuration VHT80 / 5210 MHz / Average / Port 1 (TX1)

Plot on Configuration VHT80 / 5210 MHz / Average / Port 2 (TX2)


Plot on Configuration VHT80 / 5210 MHz / Peak / Port 1 (TX1)

Plot on Configuration VHT80 / 5210 MHz / Peak / Port 2 (TX2)


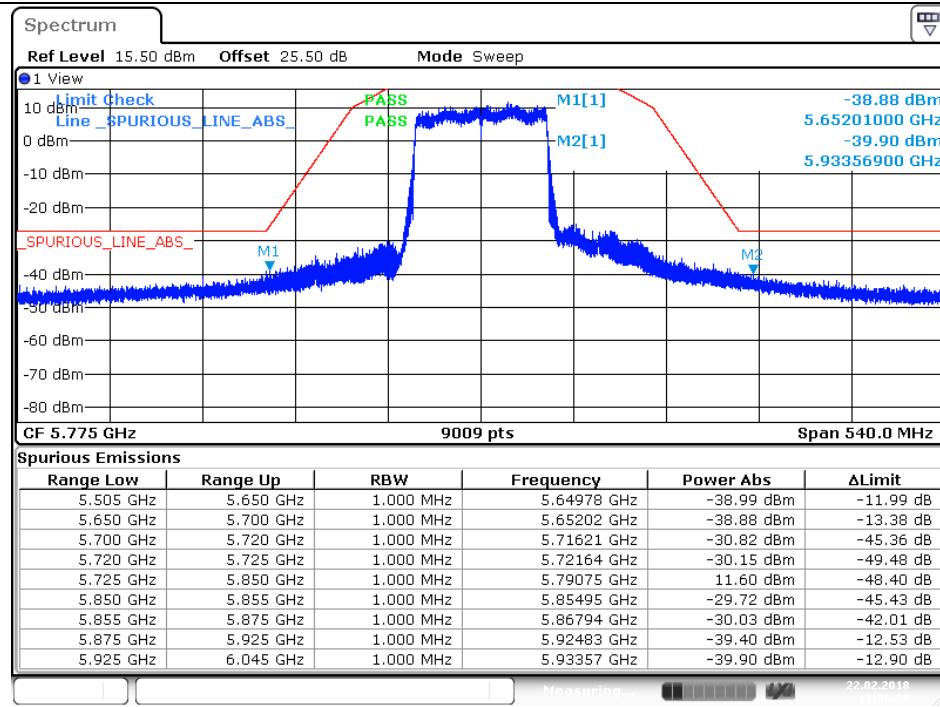
Plot on Configuration VHT20 / 5745 MHz / Peak / Port 1 (TX1)

Plot on Configuration VHT20 / 5745 MHz / Peak / Port 2 (TX2)


Plot on Configuration VHT20 / 5785 MHz / Peak / Port 1 (TX1)

Plot on Configuration VHT20 / 5785 MHz / Peak / Port 2 (TX2)


Plot on Configuration VHT20 / 5825 MHz / Peak / Port 1 (TX1)

Plot on Configuration VHT20 / 5825 MHz / Peak / Port 2 (TX2)


Plot on Configuration VHT80 / 5775 MHz / Peak / Port 1 (TX1)


Date: 22.FEB.2018 11:34:50

Plot on Configuration VHT80 / 5775 MHz / Peak / Port 2 (TX2)


Date: 22.FEB.2018 11:36:39



FS Result

Appendix F

Mode: 20 MHz / Port 2

Voltage vs. Frequency Stability

Voltage (V)	Measurement Frequency (MHz)			
	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5199.9691	5199.9690	5199.9687	5199.9679
110.00	5199.9687	5199.9686	5199.9680	5199.9671
93.50	5199.9684	5199.9676	5199.9674	5199.9664
Max. Deviation (MHz)	0.0316	0.0324	0.0326	0.0336
Max. Deviation (ppm)	6.08	6.23	6.27	6.46
Result	Pass			

Temperature vs. Frequency Stability

Temperature (°C)	Measurement Frequency (MHz)			
	5200 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5199.9732	5199.9724	5199.9715	5199.9711
-20	5199.9718	5199.9716	5199.9711	5199.9706
-10	5199.9707	5199.9698	5199.9692	5199.9687
0	5199.9706	5199.9696	5199.9689	5199.9684
10	5199.9695	5199.9686	5199.9684	5199.9674
20	5199.9687	5199.9684	5199.9679	5199.9674
30	5199.9673	5199.9668	5199.9665	5199.9656
40	5199.9656	5199.9653	5199.9643	5199.9634
50	5199.9645	5199.9643	5199.9634	5199.9624
Max. Deviation (MHz)	0.0355	0.0357	0.0366	0.0376
Max. Deviation (ppm)	6.83	6.87	7.04	7.23
Result	Pass			

Voltage vs. Frequency Stability

Voltage (V)	Measurement Frequency (MHz)			
	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5784.9695	5784.9687	5784.9680	5784.9674
110.00	5784.9687	5784.9679	5784.9671	5784.9666
93.50	5784.9680	5784.9675	5784.9667	5784.9666
Max. Deviation (MHz)	0.0320	0.0325	0.0333	0.0334
Max. Deviation (ppm)	5.53	5.62	5.76	5.77
Result	Pass			

Temperature vs. Frequency Stability

Temperature (°C)	Measurement Frequency (MHz)			
	5785 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5784.9753	5784.9748	5784.9739	5784.9731
-20	5784.9738	5784.9732	5784.9727	5784.9721
-10	5784.9721	5784.9716	5784.9714	5784.9704
0	5784.9710	5784.9706	5784.9705	5784.9704
10	5784.9707	5784.9701	5784.9692	5784.9690
20	5784.9687	5784.9683	5784.9674	5784.9664
30	5784.9673	5784.9663	5784.9657	5784.9649
40	5784.9661	5784.9652	5784.9642	5784.9641
50	5784.9651	5784.9644	5784.9642	5784.9638
Max. Deviation (MHz)	0.0349	0.0356	0.0358	0.0362
Max. Deviation (ppm)	6.03	6.15	6.19	6.26
Result	Pass			



Mode: 80 MHz / Port 2

Voltage vs. Frequency Stability

Voltage (V)	Measurement Frequency (MHz)			
	5210 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5209.9692	5209.9686	5209.9682	5209.9677
110.00	5209.9687	5209.9685	5209.9678	5209.9674
93.50	5209.9677	5209.9675	5209.9667	5209.9660
Max. Deviation (MHz)	0.0323	0.0325	0.0333	0.0340
Max. Deviation (ppm)	6.20	6.24	6.39	6.53
Result	Pass			

Temperature vs. Frequency Stability

Temperature (°C)	Measurement Frequency (MHz)			
	5210 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5209.9739	5209.9730	5209.9726	5209.9718
-20	5209.9720	5209.9718	5209.9714	5209.9705
-10	5209.9708	5209.9701	5209.9700	5209.9693
0	5209.9697	5209.9690	5209.9688	5209.9685
10	5209.9690	5209.9686	5209.9685	5209.9676
20	5209.9687	5209.9683	5209.9680	5209.9675
30	5209.9673	5209.9668	5209.9660	5209.9651
40	5209.9654	5209.9648	5209.9647	5209.9642
50	5209.9649	5209.9645	5209.9640	5209.9630
Max. Deviation (MHz)	0.0351	0.0355	0.0360	0.0370
Max. Deviation (ppm)	6.74	6.81	6.91	7.10
Result	Pass			

Voltage vs. Frequency Stability

Voltage (V)	Measurement Frequency (MHz)			
	5775 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
126.50	5774.9688	5774.9678	5774.9669	5774.9663
110.00	5774.9687	5774.9685	5774.9680	5774.9674
93.50	5774.9677	5774.9676	5774.9667	5774.9665
Max. Deviation (MHz)	0.0323	0.0324	0.0333	0.0337
Max. Deviation (ppm)	5.59	5.61	5.77	5.84
Result	Pass			

Temperature vs. Frequency Stability

Temperature (°C)	Measurement Frequency (MHz)			
	5775 MHz			
	0 Minute	2 Minute	5 Minute	10 Minute
-30	5774.9747	5774.9740	5774.9738	5774.9732
-20	5774.9732	5774.9727	5774.9718	5774.9714
-10	5774.9716	5774.9706	5774.9699	5774.9696
0	5774.9698	5774.9690	5774.9681	5774.9676
10	5774.9696	5774.9693	5774.9687	5774.9677
20	5774.9687	5774.9684	5774.9679	5774.9669
30	5774.9673	5774.9665	5774.9664	5774.9654
40	5774.9665	5774.9661	5774.9654	5774.9650
50	5774.9662	5774.9655	5774.9649	5774.9643
Max. Deviation (MHz)	0.0338	0.0345	0.0351	0.0357
Max. Deviation (ppm)	5.85	5.97	6.08	6.18
Result	Pass			