RF Test Report

For

Applicant Name:	**Shenzhen DOOGEE Hengtong Technology CO.,LTD**
Address:	B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No. 22, Longhua New District, Shenzhen, China
EUT Name:	Tablet
Brand Name:	DOOGEE
Model Number:	R10, R10Pro, R10S, R10E
Series Model Number:	Refer to section 2

Issued By

Company Name:	**BTF Testing Lab (Shenzhen) Co., Ltd.**
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Report Number:	BTF230607R00204
Test Standards:	47 CFR Part 15E
Test Conclusion:	Pass
FCC ID:	2AX4YR10
Test Date:	2023-04-22 to 2023-05-08
Date of Issue:	2023-06-07

Prepared By: Elma.Yang

elma.yang/ Project Engineer

Date: 2023-06-07

Approved By:

Ryan.CJ/ EMC Manager

Date: 2023-06-07

Note: All the test results in this report only related to the testing samples. Which can be duplicated completely for the legal use with approval of applicant; it shall not be reproduced except in full without the written approval of BTF Testing Lab (Shenzhen) Co., Ltd., All the objections should be raised within thirty days from the date of issue. To validate the report, you can contact us.

Revision History		
Version	Issue Date	Revisions Content
R_V0	2023-06-07	Original
Note: Once the revision has been made, then previous versions reports are invalid.		

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Table of Contents

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

1 Introduction

1.1 Identification of Testing Laboratory

Company Name:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Phone Number:	+86-0755-23146130
Fax Number:	+86-0755-23146130

1.2 Identification of the Responsible Testing Location

Company Name:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Phone Number:	+86-0755-23146130
Fax Number:	+86-0755-23146130
FCC Registration Number:	518915
Designation Number:	CN1330

1.3 Announcement

(1) The test report reference to the report template version v0.
(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.
(3) The test report is invalid if there is any evidence and/or falsification.
(4) This document may not be altered or revised in any way unless done so by BTF and all revisions are duly noted in the revisions section.
(5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
(6) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2 Product Information

2.1 Application Information

Company Name:	Shenzhen DOOGEE Hengtong Technology CO.,LTD
Address:	B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No. 22, Longhua New District, Shenzhen, China

2.2 Manufacturer Information

Company Name:	Shenzhen DOOGEE Hengtong Technology CO.,LTD
Address:	B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No. 22, Longhua New District, Shenzhen, China

2.3 Factory Information

Company Name:	Shenzhen DOOGEE Hengtong Technology CO.,LTD
Address:	B, 2/F, Building A4, Silicon Valley Power Digital Industrial Park, No. 22, Longhua New District, Shenzhen, China

2.4 General Description of Equipment under Test (EUT)

EUT Name:	Tablet
Test Model Number:	R10
Series Model Number:	R10, R10Pro, R10S, R10E
Diff:	There is no difference except the name of the model. All tests are made with the R10 model

2.5 Technical Information

Power Supply:	DC 3.8V from battery or DC 9V from adapter
Power Adaptor:	Input: 100~240V 50/60Hz 0.6A Output: 5V⎓3A, 9V⎓2.22A, 12V⎓1.67A
Operation Frequency:	802.11a/ 802.11ac20/ 802.11n(HT20)/ 802.11ax20: 5180-5240MHz, 5745-5825MHz 802.11ac40/ 802.11n(HT40)/ 802.11ax40: 5190-5230MHz, 5755-5795MHz 802.11ac80/802.11ax80: 5210MHz, 5775MHz
Number of Channels:	802.11a/ac/ax/n(HT20): U-NII Band 1: 4; U-NII Band 3: 5; 802.11ax40,ac40,n(HT40): U-NII Band 1: 2; U-NII Band 3: 2; 802.11ac80,ax80: . U-NII Band 1: 1 U-NII Band 3: 1
Modulation Type:	IIEEE 802.11n: OFDM (64QAM,16QAM,QPSK,BPSK) IEEE 802.11a: OFDM (64QAM,16QAM,QPSK,BPSK) IEEE 802.11ac: OFDM (64QAM,16QAM, 256QAM,QPSK,BPSK) IEEE 802.11ax: OFDMA (64QAM,16QAM,QPSK,BPSK,256QAM,1024QAM)
Antenna Type:	PIFA antenna
Antenna Gain#:	1.45dBi

Note:

#: The antenna gain provided by the applicant, and the laboratory will not be responsible for the accumulated calculation results which covers the information provided by the applicant.

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

3 Summary of Test Results

3.1 Test Standards

The tests were performed according to following standards:
47 CFR Part 15E: Unlicensed National Information Infrastructure Devices

3.2 Uncertainty of Test

Item	Measurement Uncertainty
Conducted Emission (150 kHz-30 MHz)	±2.64dB
The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3.3 Summary of Test Result

Item	Standard	Requirement	Result
Antenna requirement	47 CFR Part 15E	Part 15.203	Pass
Conducted Emission at AC power line	47 CFR Part 15E	47 CFR Part 15.207(a)	Pass
Maximum conducted output power	47 CFR Part 15E	47 CFR Part 15.407(a)(1)(i) 47 CFR Part 15.407(a)(1)(ii) 47 CFR Part 15.407(a)(1)(iii) 47 CFR Part 15.407(a)(1)(iv) 47 CFR Part 15.407(a)(2) 47 CFR Part 15.407(a)(3)(i)	Pass
Power spectral density	47 CFR Part 15E	47 CFR Part 15.407(a)(1)(i) 47 CFR Part 15.407(a)(1)(ii) 47 CFR Part 15.407(a)(1)(iii) 47 CFR Part 15.407(a)(1)(iv) 47 CFR Part 15.407(a)(2) 47 CFR Part 15.407(a)(3)(i)	Pass
Emission bandwidth and occupied bandwidth	47 CFR Part 15E	U-NII 1, U-NII 3,: No limits, only for report use. 47 CFR Part 15.407(e)	Pass
Band edge emissions (Radiated)	47 CFR Part 15E	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(2) 47 CFR Part 15.407(b)(4) 47 CFR Part 15.407(b)(10)	Pass
Frequency Stability	47 CFR Part 15E	15.407(f), RSS-GEN(6.11)	Pass
Undesirable emission limits (below 1GHz)	47 CFR Part 15E	47 CFR Part 47 CFR Part 15.407(b)(9)	Pass
Undesirable emission limits (above 1GHz)	47 CFR Part 15E	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(2) 47 CFR Part 15.407(b)(4) 47 CFR Part 15.407(b)(10)	Pass

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

4 Test Configuration

4.1 Test Equipment List

Conducted Emission at AC power line					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Pulse Limiter	SCHWARZBECK	VTSD 9561-F	00953	2022-11-24	2023-11-23
Coaxial Switcher	SCHWARZBECK	CX210	CX210	2022-11-24	2023-11-23
V-LISN	SCHWARZBECK	NSLK 8127	01073	2022-11-24	2023-11-23
LISN	AFJ	LS16/110VAC	16010020076	2023-02-23	2024-02-22
EMI Receiver	ROHDE&SCHWARZ	ESCI3	101422	2022-11-24	2023-11-23

Duty Cycle					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
RFTest software	/	V1.00	/	/	/
RF Control Unit	Techy	TR1029-1	/	2022-11-24	2023-11-23
RF Sensor Unit	Techy	TR1029-2	/	2022-11-24	2023-11-23
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022-11-24	2023-11-23
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2022-11-24	2023-11-23
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23

Maximum conducted output power					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
RFTest software	/	V1.00	/	/	/
RF Control Unit	Techy	TR1029-1	/	2022-11-24	2023-11-23
RF Sensor Unit	Techy	TR1029-2	/	2022-11-24	2023-11-23
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022-11-24	2023-11-23
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2022-11-24	2023-11-23
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23

Power spectral density					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

RFTest software	/	V1.00	/	/	/
RF Control Unit	Techy	TR1029-1	/	2022-11-24	2023-11-23
RF Sensor Unit	Techy	TR1029-2	/	2022-11-24	2023-11-23
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022-11-24	2023-11-23
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2022-11-24	2023-11-23
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23

Emission bandwidth and occupied bandwidth					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
RFTest software	/	V1.00	/	/	/
RF Control Unit	Techy	TR1029-1	/	2022-11-24	2023-11-23
RF Sensor Unit	Techy	TR1029-2	/	2022-11-24	2023-11-23
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022-11-24	2023-11-23
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2022-11-24	2023-11-23
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23

Channel Availability Check Time					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
RFTest software	/	V1.00	/	/	/
RF Control Unit	Techy	TR1029-1	/	2022-11-24	2023-11-23
RF Sensor Unit	Techy	TR1029-2	/	2022-11-24	2023-11-23
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022-11-24	2023-11-23
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2022-11-24	2023-11-23
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

U-NII Detection Bandwidth					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
RFTest software	/	V1.00	/	/	/
RF Control Unit	Techy	TR1029-1	/	2022-11-24	2023-11-23
RF Sensor Unit	Techy	TR1029-2	/	2022-11-24	2023-11-23
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022-11-24	2023-11-23
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2022-11-24	2023-11-23
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23

Statistical Performance Check					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
RFTest software	/	V1.00	/	/	/
RF Control Unit	Techy	TR1029-1	/	2022-11-24	2023-11-23
RF Sensor Unit	Techy	TR1029-2	/	2022-11-24	2023-11-23
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022-11-24	2023-11-23
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2022-11-24	2023-11-23
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23

Channel Move Time, Channel Closing Transmission Time					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
RFTest software	/	V1.00	/	/	/
RF Control Unit	Techy	TR1029-1	/	2022-11-24	2023-11-23
RF Sensor Unit	Techy	TR1029-2	/	2022-11-24	2023-11-23
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022-11-24	2023-11-23
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2022-11-24	2023-11-23
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23

Non-Occupancy Period Test					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
RFTest software	/	V1.00	/	/	/
RF Control Unit	Techy	TR1029-1	/	2022-11-24	2023-11-23
RF Sensor Unit	Techy	TR1029-2	/	2022-11-24	2023-11-23
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022-11-24	2023-11-23
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2022-11-24	2023-11-23
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23

DFS Detection Thresholds					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
RFTest software	/	V1.00	/	/	/
RF Control Unit	Techy	TR1029-1	/	2022-11-24	2023-11-23
RF Sensor Unit	Techy	TR1029-2	/	2022-11-24	2023-11-23
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022-11-24	2023-11-23
Adjustable Direct Current Regulated Power Supply	Dongguan Tongmen Electronic Technology Co., LTD	etm-6050c	20211026123	2022-11-24	2023-11-23
WIDEBAND RADIO COMMNUNICATION TESTER	Rohde & Schwarz	CMW500	161997	2022-11-24	2023-11-23
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022-11-24	2023-11-23

Band edge emissions (Radiated)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2023-03-24	2024-03-23
Preamplifier	SCHWARZBECK	BBV9744	00246	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-10m	21101566	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-1m	21101568	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2022-11-24	2023-11-23
POSITIONAL	SKET	PCI-GPIB	/	/	/

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

CONTROLLER					
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2021-11-28	2023-11-27
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI7	101032	2022-11-24	2023-11-23
SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ40	100010	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Broadband Preamplilifier	SCHWARZBECK	BBV9718D	00008	2023-03-24	2024-03-23
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ_EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2021-11-28	2023-11-27

Undesirable emission limits (below 1GHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2023-03-24	2024-03-23
Preamplifier	SCHWARZBECK	BBV9744	00246	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-10m	21101566	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-1m	21101568	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2021-11-28	2023-11-27
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI7	101032	2022-11-24	2023-11-23
SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ40	100010	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Broadband Preamplilifier	SCHWARZBECK	BBV9718D	00008	2023-03-24	2024-03-23
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ_EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2021-11-28	2023-11-27

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Undesirable emission limits (above 1GHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2023-03-24	2024-03-23
Preamplifier	SCHWARZBECK	BBV9744	00246	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-10m	21101566	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-1m	21101568	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2021-11-28	2023-11-27
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI7	101032	2022-11-24	2023-11-23
SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ40	100010	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Broadband Preamplilifier	SCHWARZBECK	BBV9718D	00008	2023-03-24	2024-03-23
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ_EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2021-11-28	2023-11-27

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

4.2 Test Auxiliary Equipment

The EUT was tested as an independent device.

4.3 Channel list

Channel list:					
For 802.11a/ 802.11ac20/ 802.11n(HT20)/ 802.11ax20					
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
CH36	5180	CH40	5200	CH44	5220
CH48	5240				
CH149	5745	CH153	5765	CH157	5785
CH161	5805	CH165	5825		
802.11ac40/ 802.11n(HT40)/ 802.11ax40					
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
CH38	5190	CH46	5230		
CH151	5755	CH159	25795		
Channel list:					
802.11ac80/802.11ax80					
Channel	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**	**Channel**	**Frequency (MHz)**
CH42	5210	CH155	5775		

According to section 15.31(m), regards to the operating frequency range over 10 MHz, must select three channels which were tested. The Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, please see the below .

Band	Test Channel	20MHz		40MHz		80MHz	
		Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
U-NII-1	CH_L	36	5180	38	5190	-	-
	CH_M	40	5200	-	-	42	5210
	CH_H	48	5240	46	5230	-	-
U-NII-3	CH_L	149	5745	151	5755	-	-
	CH_M	157	5785	-	-	155	5775
	CH_H	165	5825	159	5795	-	-

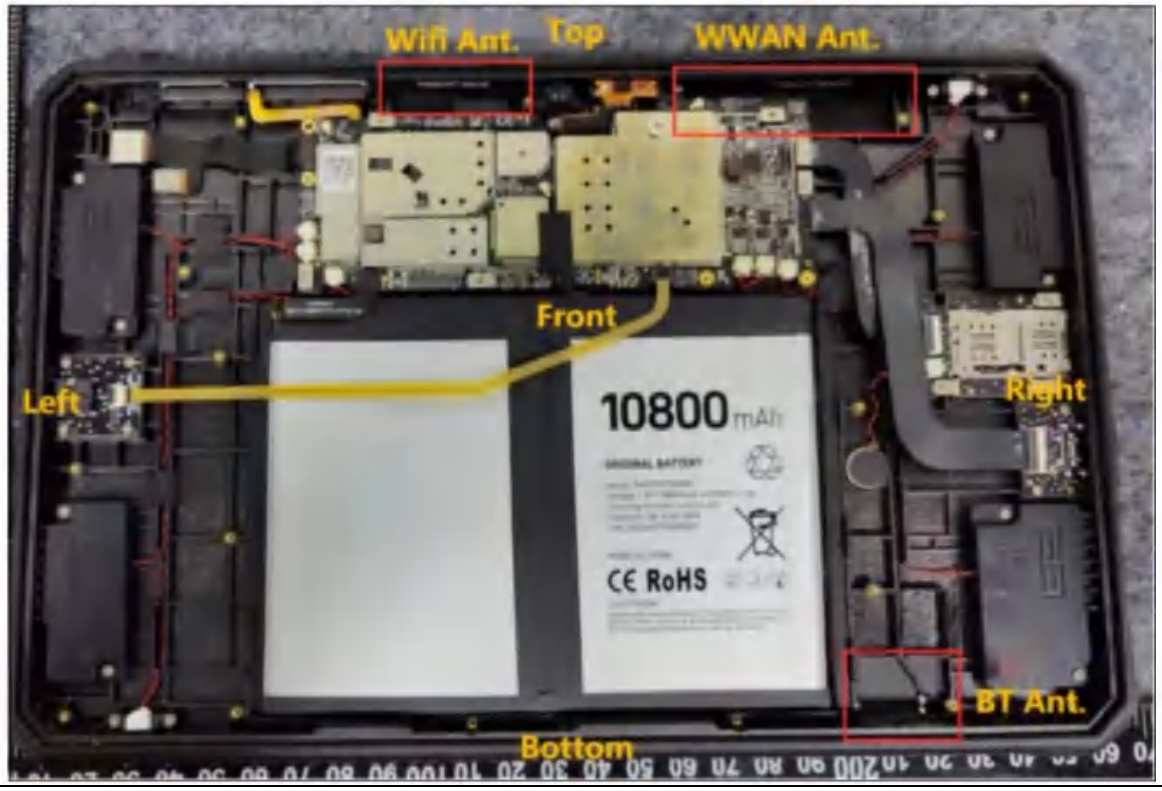
BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

5 Evaluation Results (Evaluation)

5.1 Antenna requirement

Test Requirement:	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

5.1.1 Conclusion:Pass



6 Radio Spectrum Matter Test Results (RF)

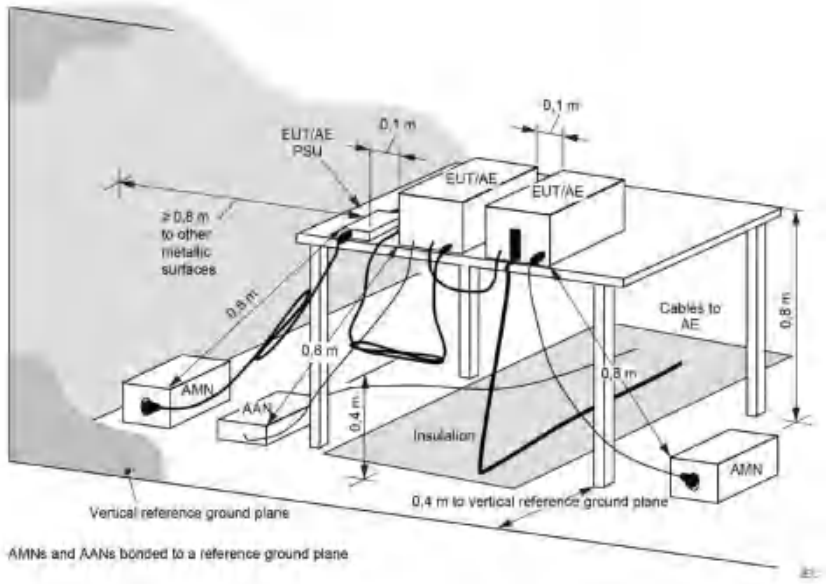
6.1 Conducted Emission at AC power line

Test Requirement:	47 CFR Part 15.207(a)
Test Method:	Refer to ANSI C63.10-2013 section 6.2, standard test method for ac power-line conducted emissions from unlicensed wireless devices
Test Limit:	Frequency of emission (MHz) / Conducted limit (dBμV): Quasi-peak / Average 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 *Decreases with the logarithm of the frequency.

6.1.1 E.U.T. Operation:

Operating Environment:	
Temperature:	25.5 °C
Humidity:	50.6 %
Atmospheric Pressure:	1010 mbar

6.1.2 Test Setup Diagram:

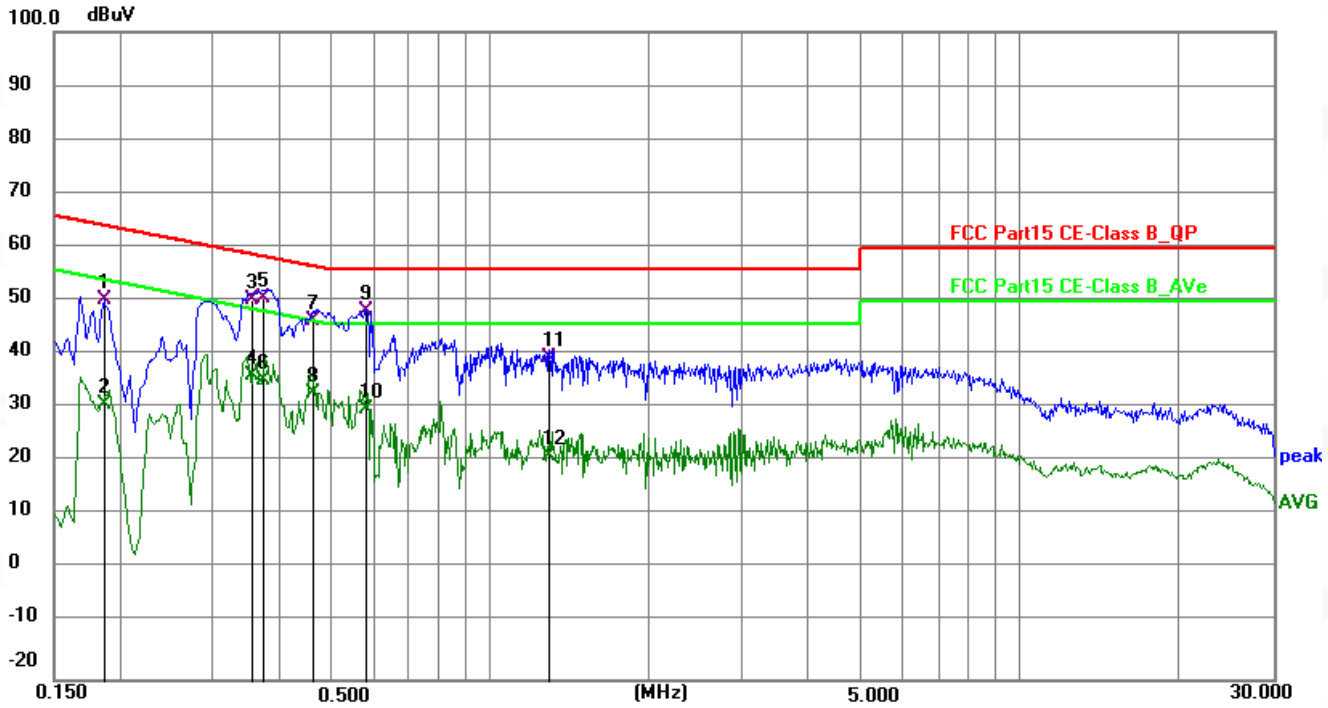


6.1.3 Test Data:

An initial pre-scan was performed on the line and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

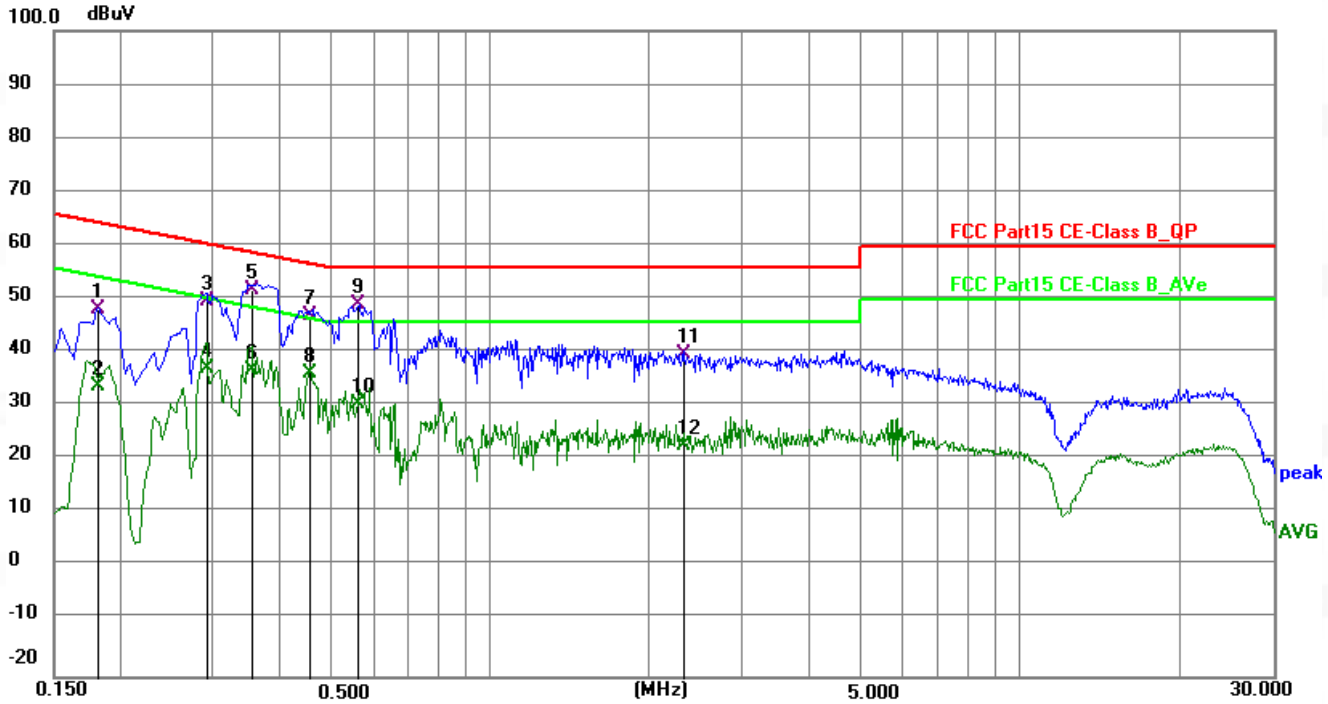
Line:



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1860	40.86	9.63	50.49	64.21	-13.72	QP
2	0.1860	21.39	9.63	31.02	54.21	-23.19	AVG
3	0.3553	40.93	9.62	50.55	58.84	-8.29	QP
4	0.3553	26.69	9.62	36.31	48.84	-12.53	AVG
5	0.3747	40.98	9.62	50.60	58.40	-7.80	QP
6	0.3747	25.89	9.62	35.51	48.40	-12.89	AVG
7	0.4649	37.05	9.62	46.67	56.60	-9.93	QP
8	0.4649	23.62	9.62	33.24	46.60	-13.36	AVG
9	0.5820	38.63	9.62	48.25	56.00	-7.75	QP
10	0.5820	20.66	9.62	30.28	46.00	-15.72	AVG
11	1.2930	29.94	9.64	39.58	56.00	-16.42	QP
12	1.2930	11.94	9.64	21.58	46.00	-24.42	AVG

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Neutral:



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1814	38.62	9.63	48.25	64.42	-16.17	QP
2	0.1814	24.51	9.63	34.14	54.42	-20.28	AVG
3	0.2900	40.25	9.63	49.88	60.52	-10.64	QP
4	0.2900	27.75	9.63	37.38	50.52	-13.14	AVG
5	0.3530	42.16	9.63	51.79	58.89	-7.10	QP
6	0.3530	27.46	9.63	37.09	48.89	-11.80	AVG
7	0.4575	37.52	9.62	47.14	56.74	-9.60	QP
8	0.4575	26.68	9.62	36.30	46.74	-10.44	AVG
9	0.5639	39.69	9.62	49.31	56.00	-6.69	QP
10	0.5639	21.25	9.62	30.87	46.00	-15.13	AVG
11	2.3144	30.49	9.65	40.14	56.00	-15.86	QP
12	2.3144	13.33	9.65	22.98	46.00	-23.02	AVG

Note: All modes and channels have been tested and only the A 5180MHz mode with the worst data is listed.

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

6.2 Maximum conducted output power

Test Requirement:	47 CFR Part 15.407(a)(1)(i) 47 CFR Part 15.407(a)(1)(ii) 47 CFR Part 15.407(a)(1)(iii) 47 CFR Part 15.407(a)(1)(iv) 47 CFR Part 15.407(a)(2) 47 CFR Part 15.407(a)(3)(i)
Test Method:	ANSI C63.10-2013, section 12.3
Test Limit:	For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm). For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations. For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

	For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
Procedure:	Method SA-1 a) Set span to encompass the entire 26 dB EBW or 99% OBW of the signal. b) Set RBW = 1 MHz. c) Set VBW >= 3 MHz. d) Number of points in sweep >= [2 × span / RBW]. (This gives bin-to-bin spacing <= RBW / 2, so that narrowband signals are not lost between frequency bins.) e) Sweep time = auto. f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode. g) If transmit duty cycle < 98%, use a video trigger with the trigger level set to enable triggering only on full power pulses. The transmitter shall operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no OFF intervals) or at duty cycle >= 98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run.” h) Trace average at least 100 traces in power averaging (rms) mode. i) Compute power by integrating the spectrum across the 26 dB EBW or 99% OBW of the signal using the instrument’s band power measurement function, with band limits set equal to the EBW or OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at 1 MHz intervals extending across the 26 dB EBW or 99% OBW of the spectrum.

6.2.1 E.U.T. Operation:

Operating Environment:	
Temperature:	25.5 °C
Humidity:	50.6 %
Atmospheric Pressure:	1010 mbar

6.2.2 Test Data:

Band 1 (5150-5250 MHz)

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dBm)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	18.32	---	18.32	24	Pass
NVNT	a	5200	Ant1	18.94	---	18.94	24	Pass
NVNT	a	5240	Ant1	18.76	---	18.76	24	Pass
NVNT	ac20	5180	Ant1	18.46	0.09	18.55	24	Pass
NVNT	ac20	5200	Ant1	17.94	0.09	18.03	24	Pass
NVNT	ac20	5240	Ant1	18.12	0.09	18.21	24	Pass
NVNT	ac40	5190	Ant1	17.89	0.18	18.07	24	Pass
NVNT	ac40	5230	Ant1	18.38	0.18	18.56	24	Pass
NVNT	ac80	5210	Ant1	17.7	0.37	18.07	24	Pass
NVNT	ax20	5180	Ant1	18.62	0.09	18.71	24	Pass
NVNT	ax20	5200	Ant1	18.57	0.09	18.66	24	Pass
NVNT	ax20	5240	Ant1	18.32	0.09	18.41	24	Pass
NVNT	ax40	5190	Ant1	18.23	0.18	18.41	24	Pass
NVNT	ax40	5230	Ant1	17.83	0.18	18.01	24	Pass
NVNT	ax80	5210	Ant1	18.26	0.37	18.63	24	Pass
NVNT	n20	5180	Ant1	17.93	0.09	18.02	24	Pass
NVNT	n20	5200	Ant1	18.88	0.09	**18.97**	24	Pass
NVNT	n20	5240	Ant1	18.17	0.09	18.26	24	Pass
NVNT	n40	5190	Ant1	18.39	0.14	18.53	24	Pass
NVNT	n40	5230	Ant1	17.93	0.18	18.11	24	Pass

Band 4 (5725 – 5850 MHz)

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Duty Factor (dBm)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	18.02	---	18.02	30	Pass
NVNT	a	5785	Ant1	18.57	---	18.57	30	Pass
NVNT	a	5825	Ant1	18.95	---	18.95	30	Pass
NVNT	ac20	5745	Ant1	18.86	0.09	**18.95**	30	Pass
NVNT	ac20	5785	Ant1	18.38	0.11	18.49	30	Pass
NVNT	ac20	5825	Ant1	17.96	0.09	18.05	30	Pass
NVNT	ac40	5755	Ant1	18.3	0.18	18.48	30	Pass
NVNT	ac40	5795	Ant1	17.99	0.18	18.17	30	Pass
NVNT	ac80	5775	Ant1	18.49	0.37	18.86	30	Pass
NVNT	ax20	5745	Ant1	17.93	0.18	18.11	30	Pass
NVNT	ax20	5785	Ant1	17.87	0.18	18.05	30	Pass
NVNT	ax20	5825	Ant1	18.35	0.18	18.53	30	Pass
NVNT	ax40	5755	Ant1	18.62	0.18	18.80	30	Pass
NVNT	ax40	5795	Ant1	18.05	0.18	18.23	30	Pass
NVNT	ax80	5775	Ant1	18.53	0.37	18.90	30	Pass
NVNT	n20	5745	Ant1	18.62	---	18.62	30	Pass
NVNT	n20	5785	Ant1	18.08	---	18.08	30	Pass
NVNT	n20	5825	Ant1	18.26	---	18.26	30	Pass
NVNT	n40	5755	Ant1	18.15	0.18	18.33	30	Pass
NVNT	n40	5795	Ant1	17.96	0.18	18.14	30	Pass

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

6.3 Power spectral density

Test Requirement:	47 CFR Part 15.407(a)(1)(i) 47 CFR Part 15.407(a)(1)(ii) 47 CFR Part 15.407(a)(1)(iii) 47 CFR Part 15.407(a)(1)(iv) 47 CFR Part 15.407(a)(2) 47 CFR Part 15.407(a)(3)(i)
Test Method:	ANSI C63.10-2013, section 12.5
Test Limit:	For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations. For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. For the band 5.725-5.850 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

	conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
Procedure:	a) Create an average power spectrum for the EUT operating mode being tested by following the instructions in 12.3.2 for measuring maximum conducted output power using a spectrum analyzer or EMI receiver; that is, select the appropriate test method (SA-1, SA-2, SA-3, or their respective alternatives) and apply it up to, but not including, the step labeled, “Compute power….” (This procedure is required even if the maximum conducted output power measurement was performed using the power meter method PM.) b) Use the peak search function on the instrument to find the peak of the spectrum. c) Make the following adjustments to the peak value of the spectrum, if applicable: 1) If method SA-2 or SA-2A was used, then add [10 log (1 / D)], where D is the duty cycle, to the peak of the spectrum. 2) If method SA-3A was used and the linear mode was used in step h) of 12.3.2.7, add 1 dB to the final result to compensate for the difference between linear averaging and power averaging. d) The result is the PPSD. e) The procedure in item a) through item c) requires the use of 1 MHz resolution bandwidth to satisfy the 1 MHz measurement bandwidth specified by some regulatory authorities.This requirement also permits use of resolution bandwidths less than 1 MHz “provided that the measured power is integrated to show the total power over the measurement bandwidth” (i.e., 1 MHz). If measurements are performed using a reduced resolution bandwidth and integrated over 1 MHz bandwidth, the following adjustments to the procedures apply: 1) Set RBW >= 1 / T, where T is defined in 12.2 a). 2) Set VBW >= [3 × RBW]. 3) Care shall be taken such that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

6.3.1 E.U.T. Operation:

Operating Environment:	
Temperature:	25.5 °C
Humidity:	50.6 %
Atmospheric Pressure:	1010 mbar

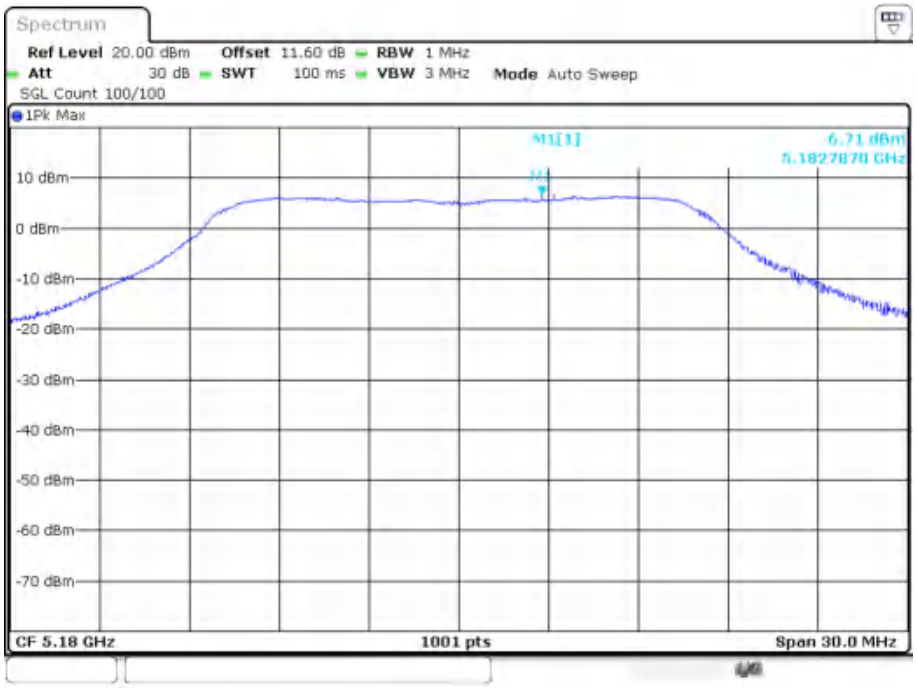
6.3.2 Test Data:

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Band 1 (5150-5250 MHz)

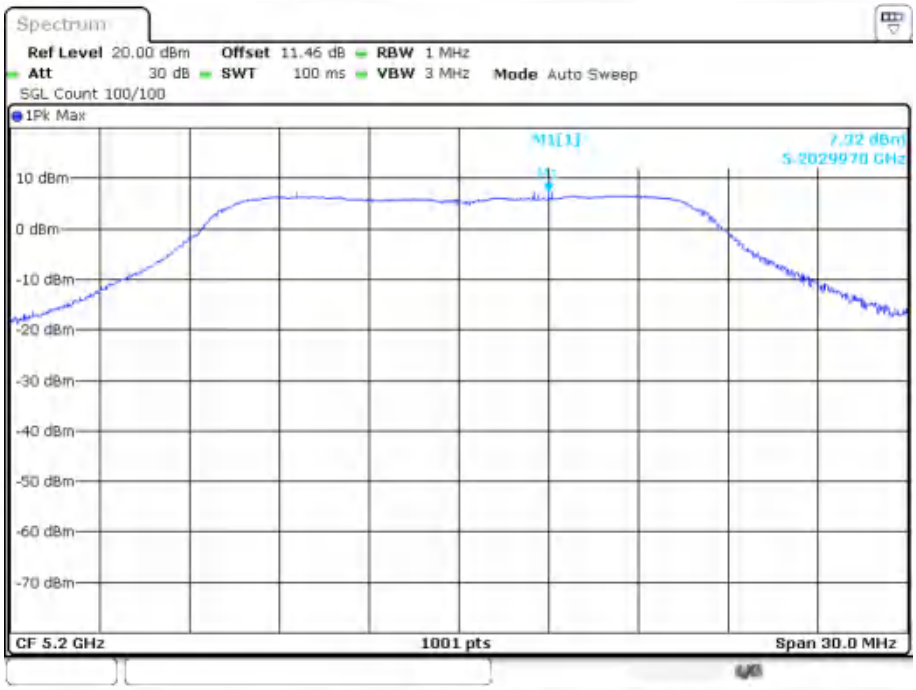
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	Ant1	6.714	11	Pass
NVNT	a	5200	Ant1	7.323	11	Pass
NVNT	a	5240	Ant1	6.72	11	Pass
NVNT	ac20	5180	Ant1	6.917	11	Pass
NVNT	ac20	5200	Ant1	7.09	11	Pass
NVNT	ac20	5240	Ant1	7.262	11	Pass
NVNT	ac40	5190	Ant1	4.107	11	Pass
NVNT	ac40	5230	Ant1	4.131	11	Pass
NVNT	ac80	5210	Ant1	1.066	11	Pass
NVNT	ax20	5180	Ant1	8.626	11	Pass
NVNT	ax20	5200	Ant1	9.966	11	Pass
NVNT	ax20	5240	Ant1	10.187	11	Pass
NVNT	ax40	5190	Ant1	6.489	11	Pass
NVNT	ax40	5230	Ant1	6.239	11	Pass
NVNT	ax80	5210	Ant1	0.139	11	Pass
NVNT	n20	5180	Ant1	6.818	11	Pass
NVNT	n20	5200	Ant1	6.661	11	Pass
NVNT	n20	5240	Ant1	7.283	11	Pass
NVNT	n40	5190	Ant1	3.943	11	Pass
NVNT	n40	5230	Ant1	4.506	11	Pass

PSD NVNT a 5180MHz Ant1

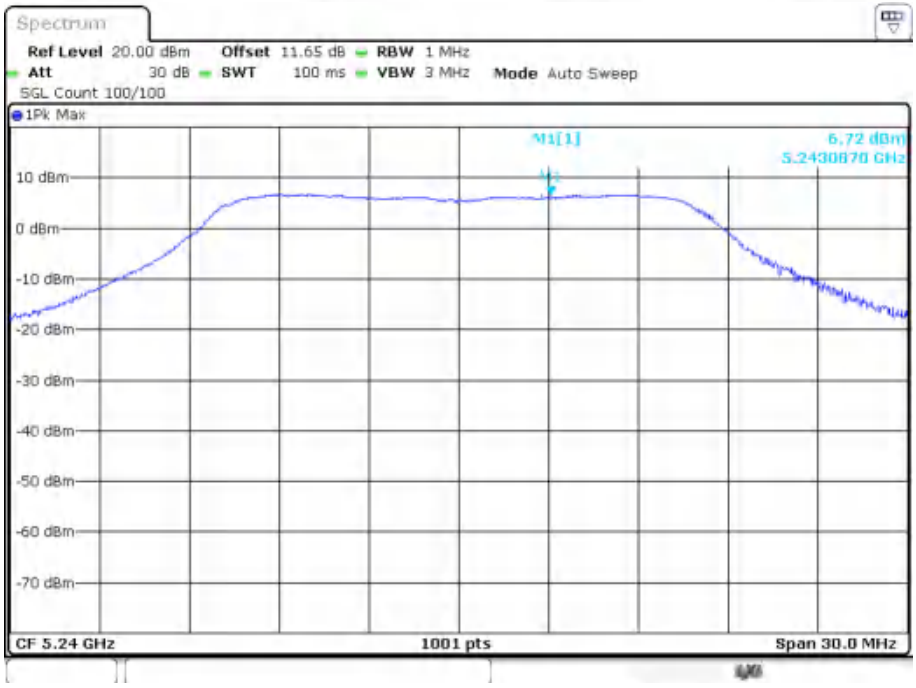


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT a 5200MHz Ant1

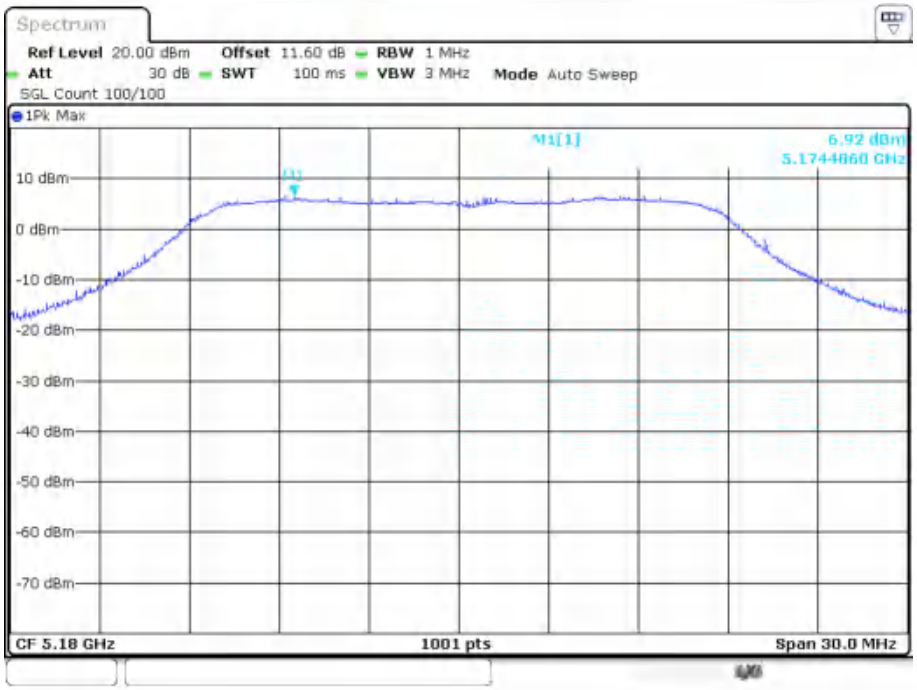


PSD NVNT a 5240MHz Ant1

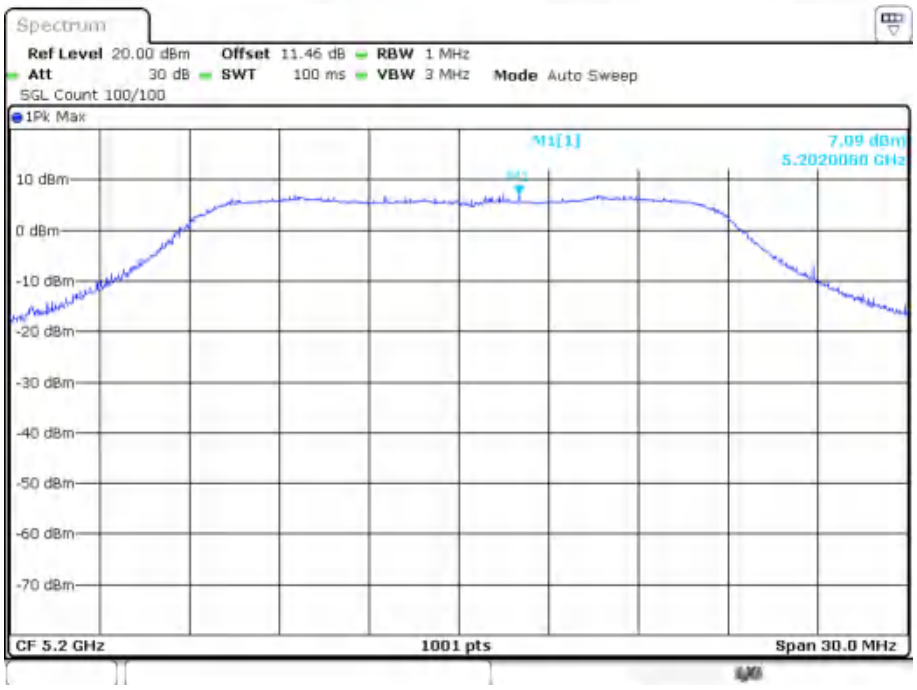


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT ac20 5180MHz Ant1

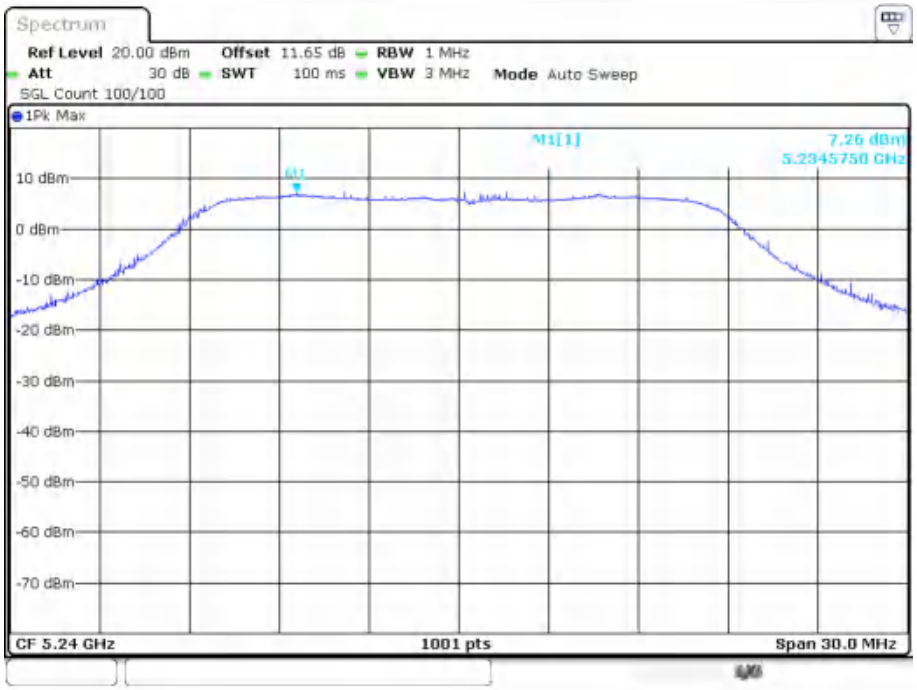


PSD NVNT ac20 5200MHz Ant1

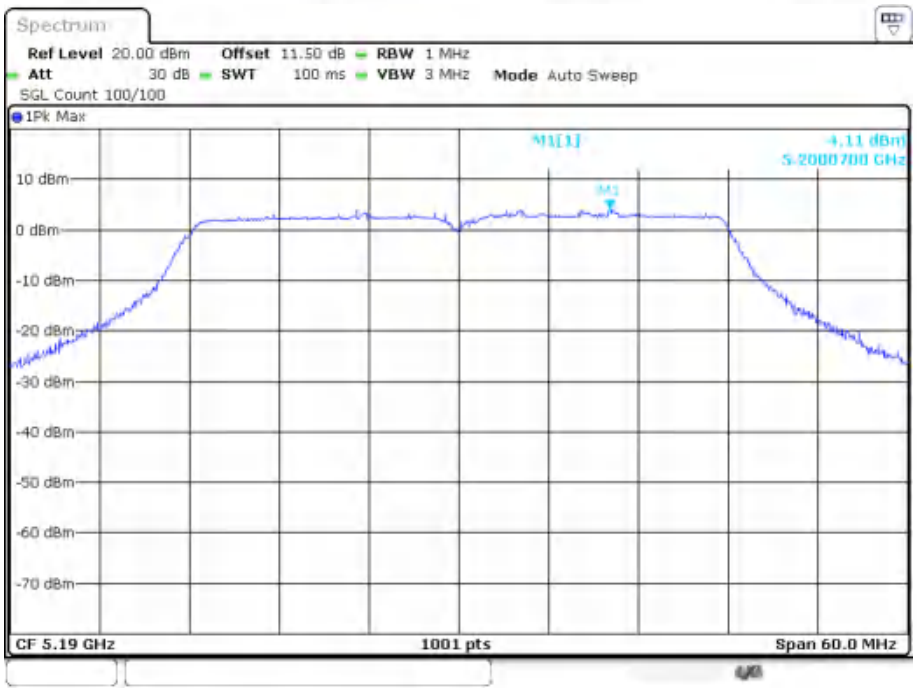


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT ac20 5240MHz Ant1

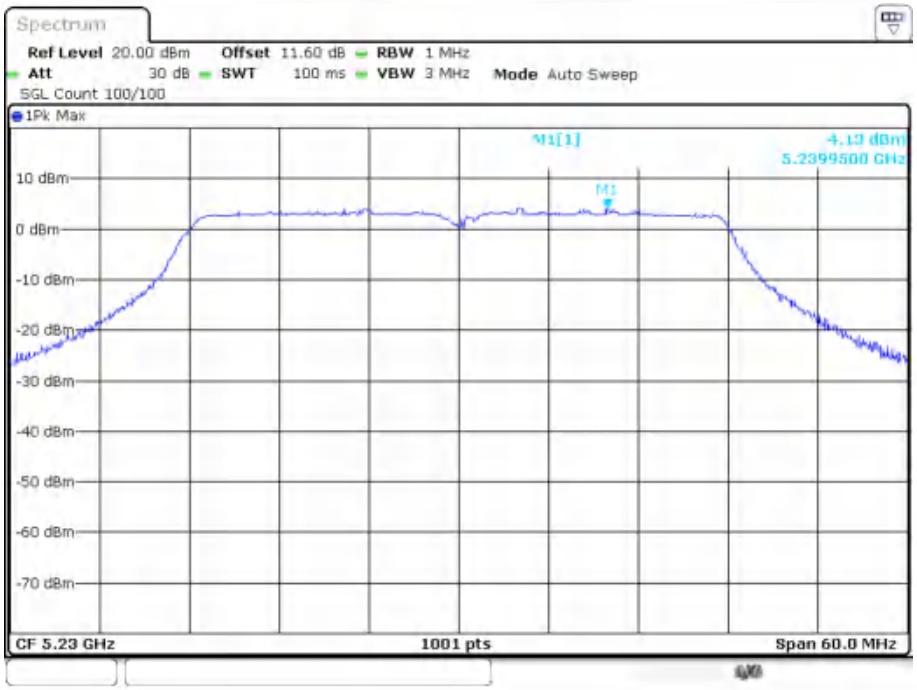


PSD NVNT ac40 5190MHz Ant1

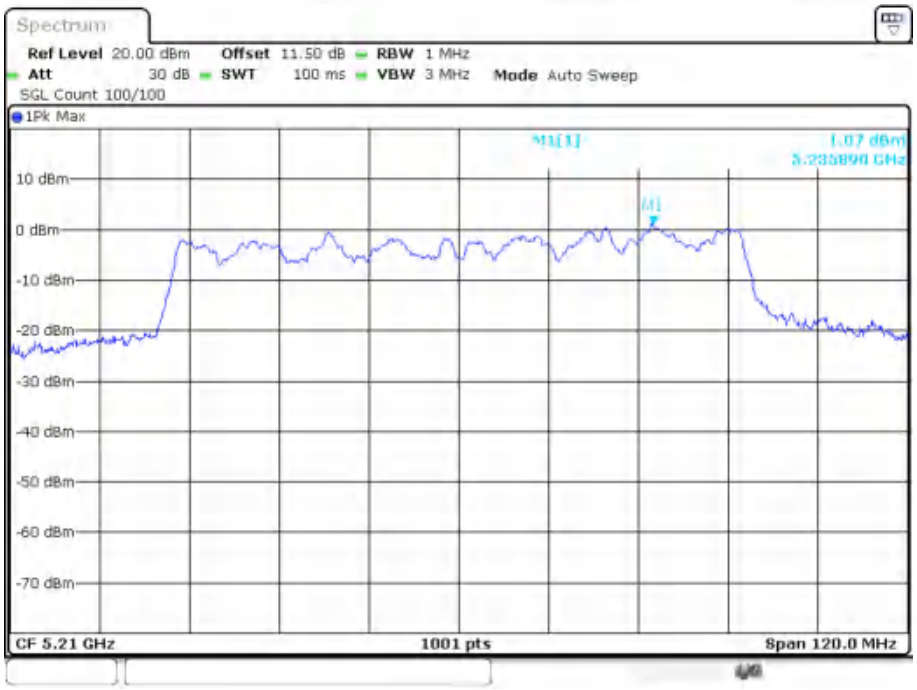


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT ac40 5230MHz Ant1

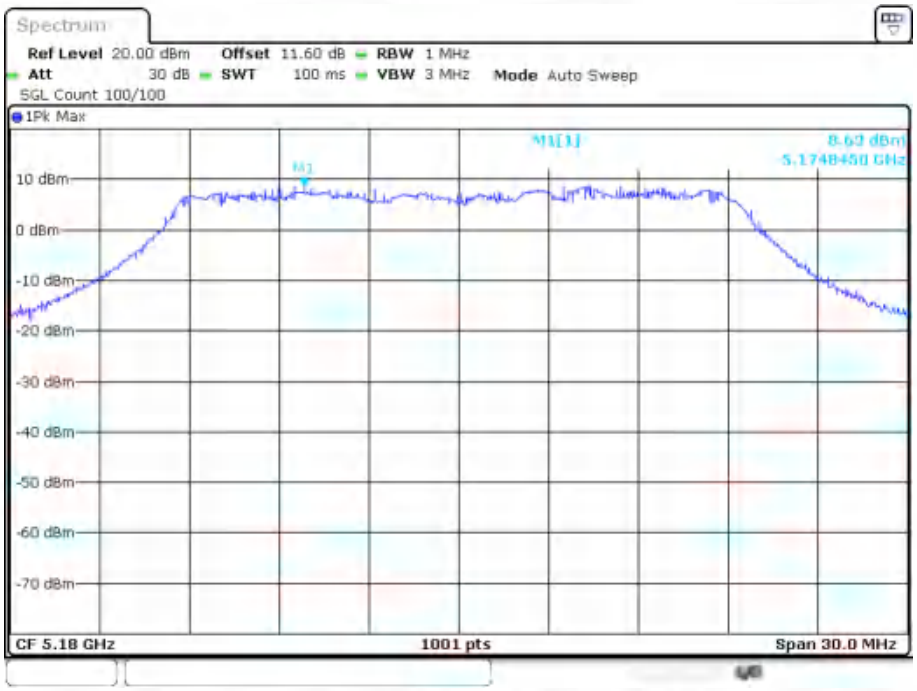


PSD NVNT ac80 5210MHz Ant1

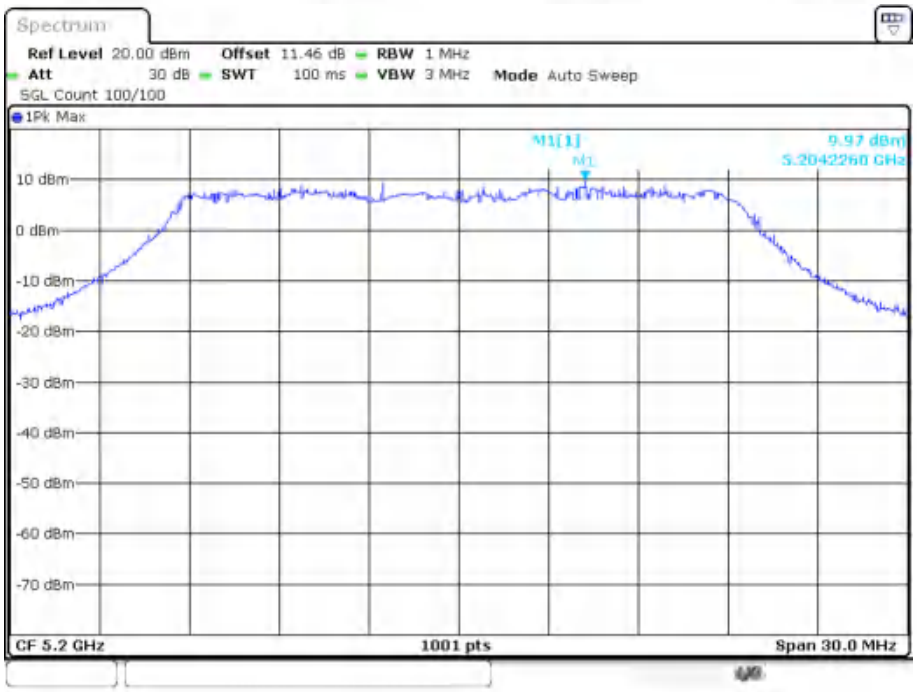


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT ax20 5180MHz Ant1

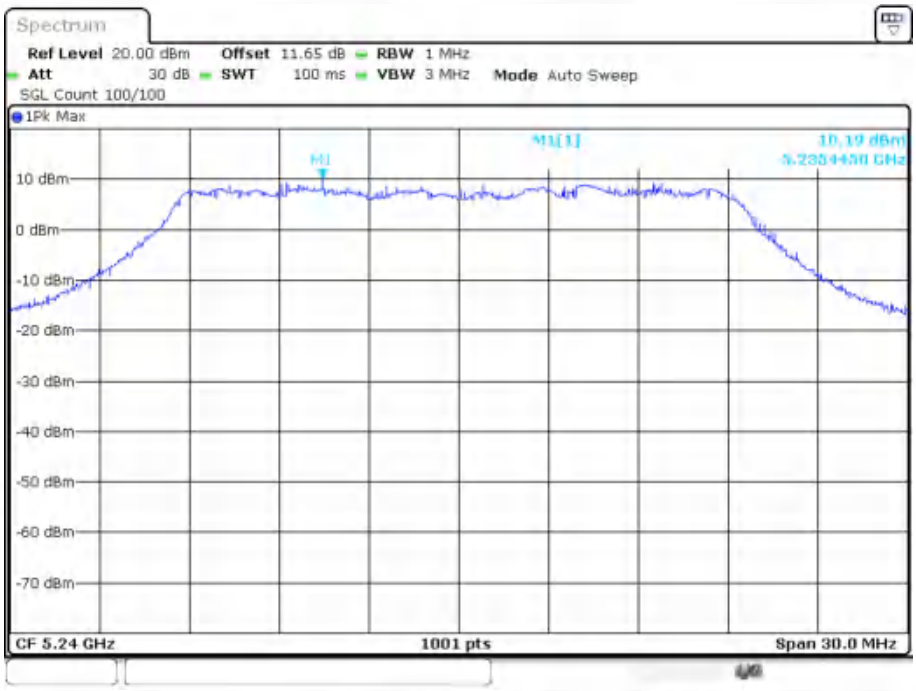


PSD NVNT ax20 5200MHz Ant1

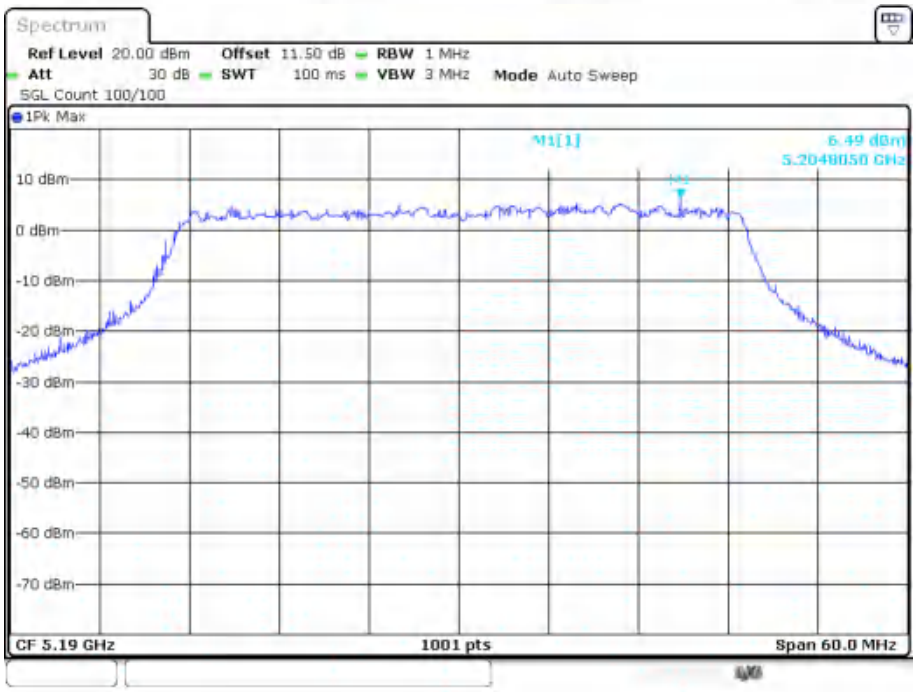


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT ax20 5240MHz Ant1

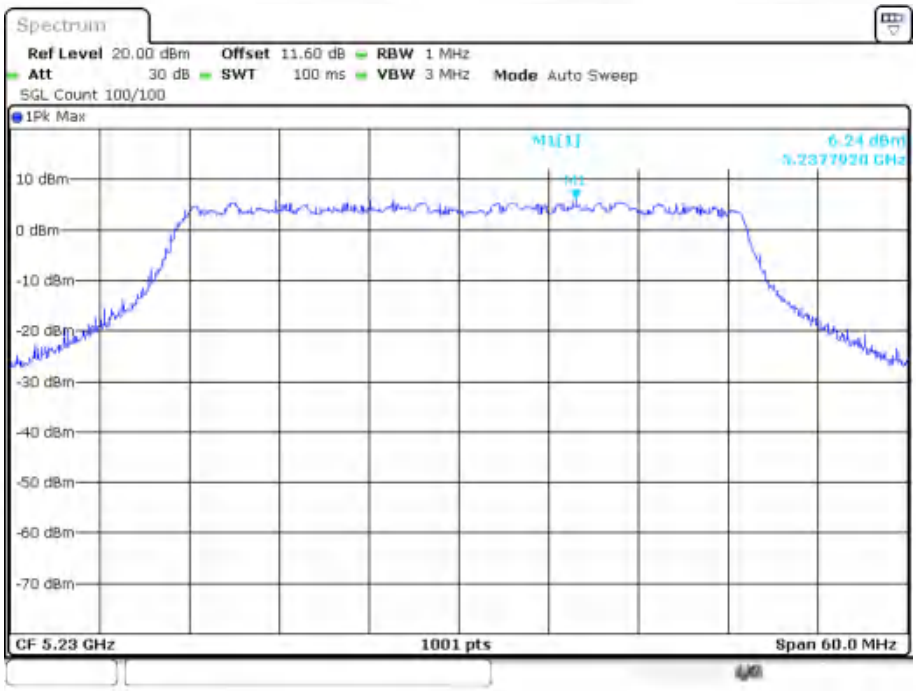


PSD NVNT ax40 5190MHz Ant1

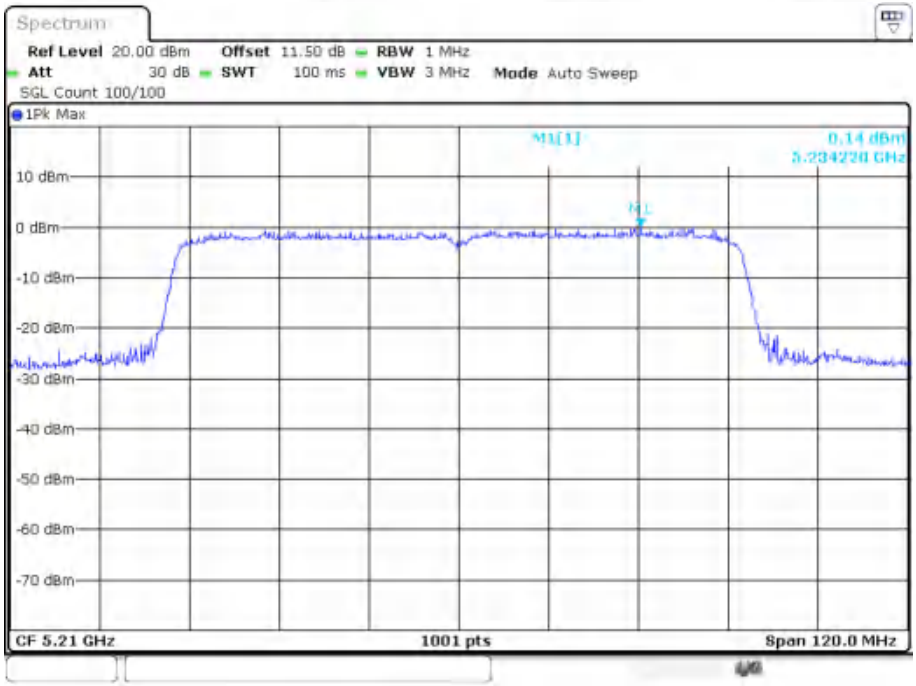


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT ax40 5230MHz Ant1

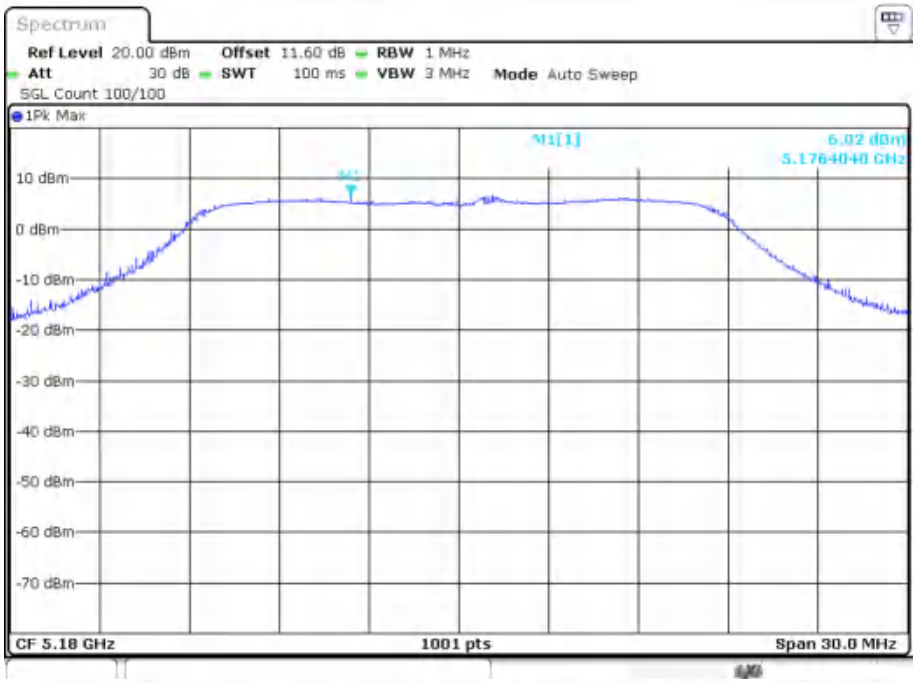


PSD NVNT ax80 5210MHz Ant1

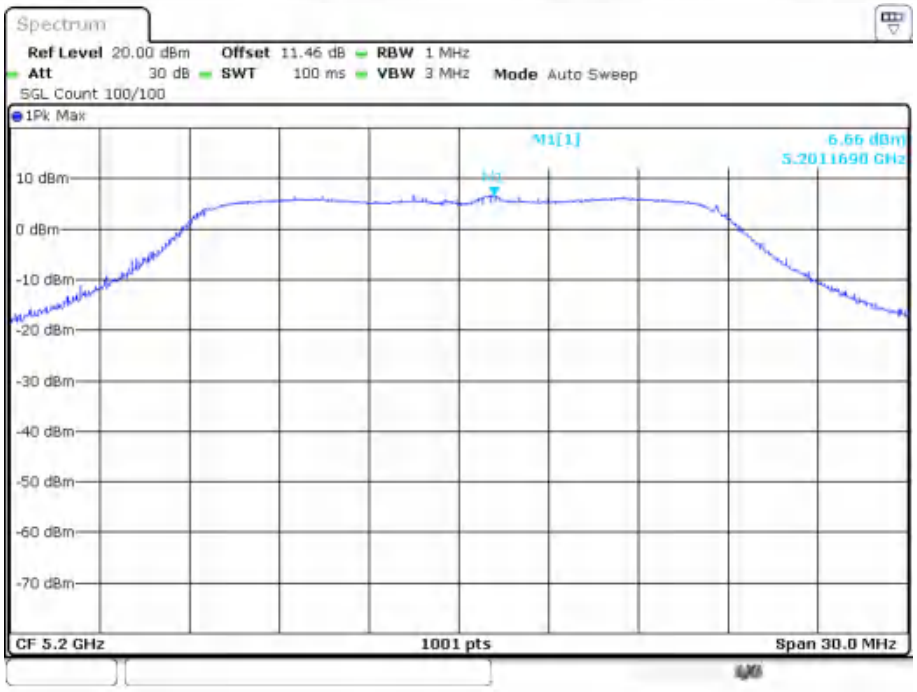


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT n20 5180MHz Ant1

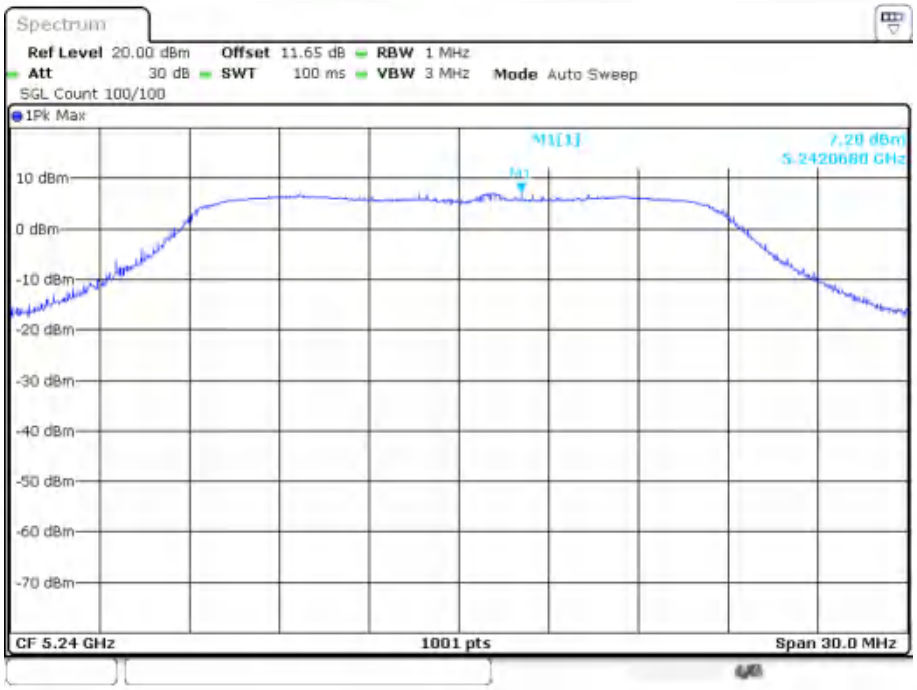


PSD NVNT n20 5200MHz Ant1

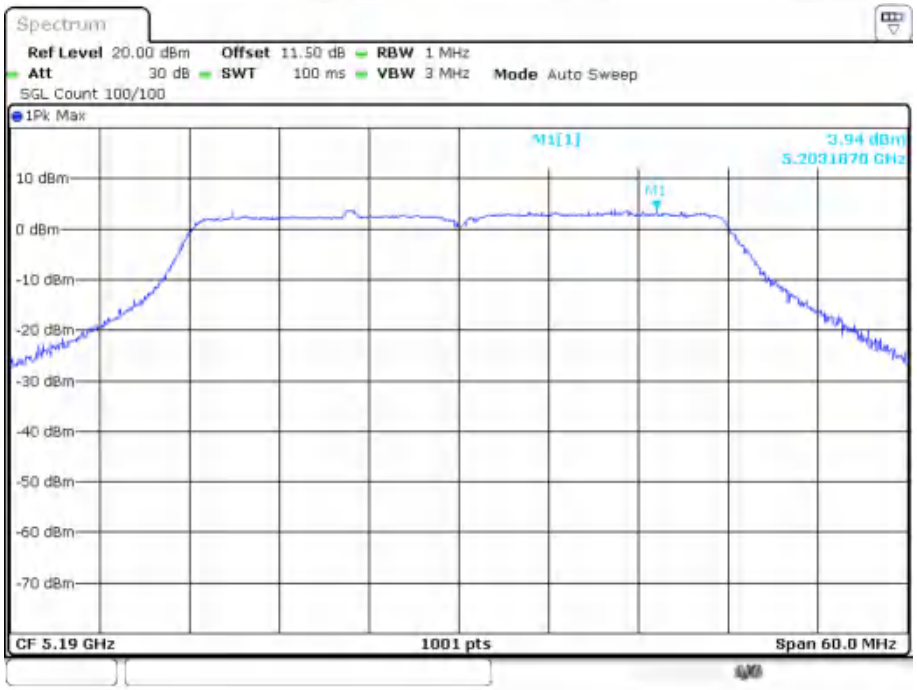


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT n20 5240MHz Ant1

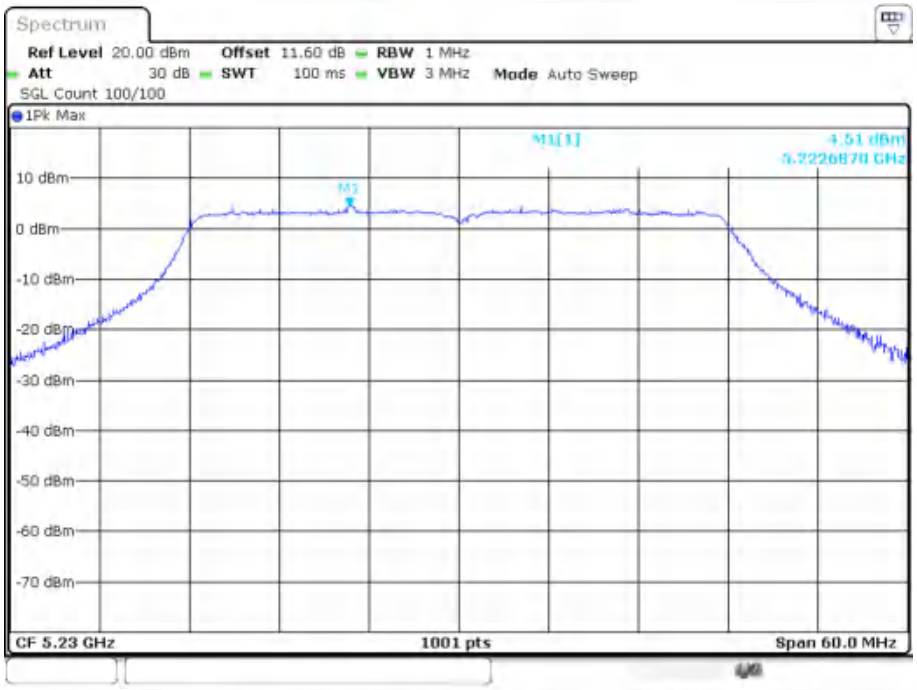


PSD NVNT n40 5190MHz Ant1



BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT n40 5230MHz Ant1

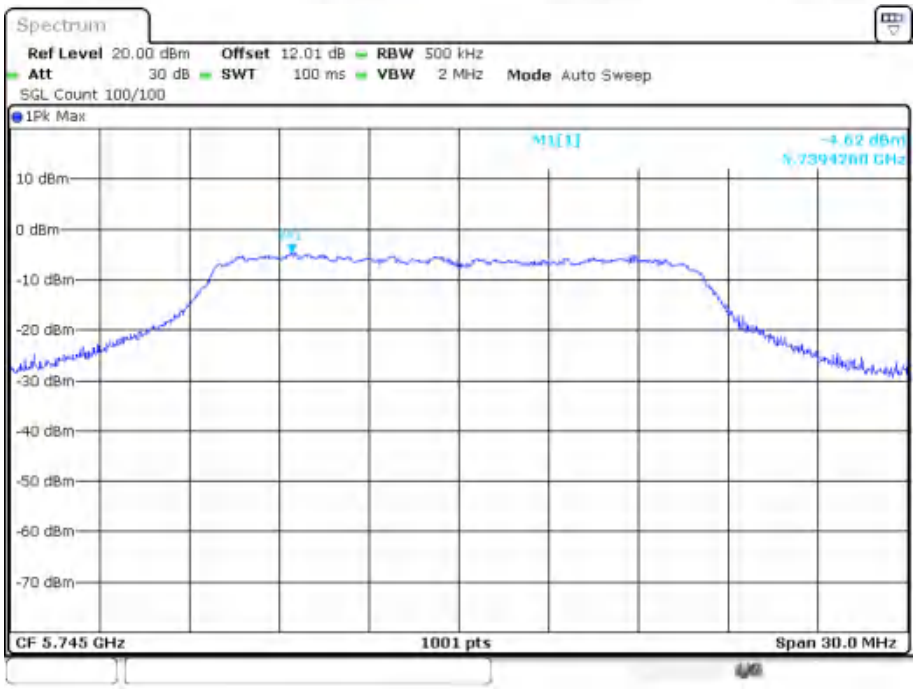


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Band 4 (5725 – 5850 MHz)

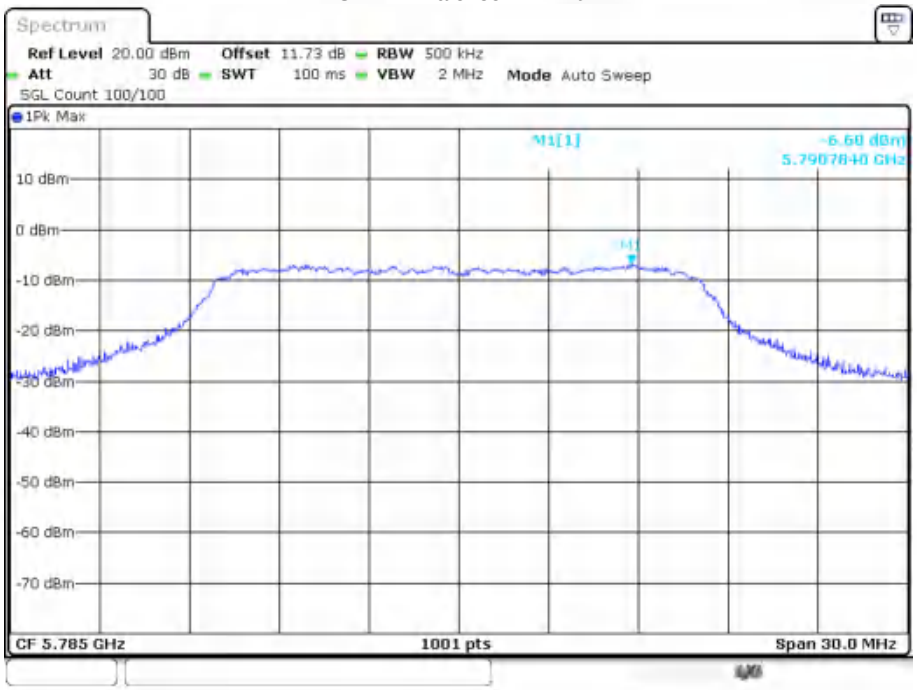
Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	Ant1	-4.624	30	Pass
NVNT	a	5785	Ant1	-6.684	30	Pass
NVNT	a	5825	Ant1	-7.709	30	Pass
NVNT	ac20	5745	Ant1	-4.778	30	Pass
NVNT	ac20	5785	Ant1	-6.173	30	Pass
NVNT	ac20	5825	Ant1	-6.628	30	Pass
NVNT	ac40	5755	Ant1	-9.058	30	Pass
NVNT	ac40	5795	Ant1	-9.949	30	Pass
NVNT	ac80	5775	Ant1	-2.519	30	Pass
NVNT	ax20	5745	Ant1	0.374	30	Pass
NVNT	ax20	5785	Ant1	-1.406	30	Pass
NVNT	ax20	5825	Ant1	-2.381	30	Pass
NVNT	ax40	5755	Ant1	-2.725	30	Pass
NVNT	ax40	5795	Ant1	-3.706	30	Pass
NVNT	ax80	5775	Ant1	-4.873	30	Pass
NVNT	n20	5745	Ant1	-4.309	30	Pass
NVNT	n20	5785	Ant1	-5.435	30	Pass
NVNT	n20	5825	Ant1	-7.485	30	Pass
NVNT	n40	5755	Ant1	-8.123	30	Pass
NVNT	n40	5795	Ant1	-9.378	30	Pass

PSD NVNT a 5745MHz Ant1

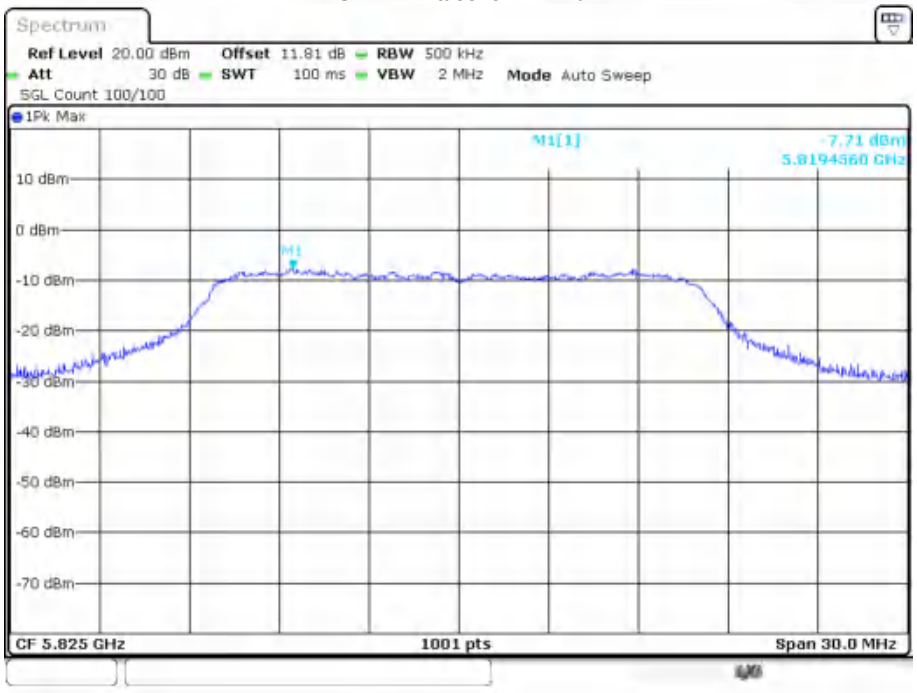


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT a 5785MHz Ant1

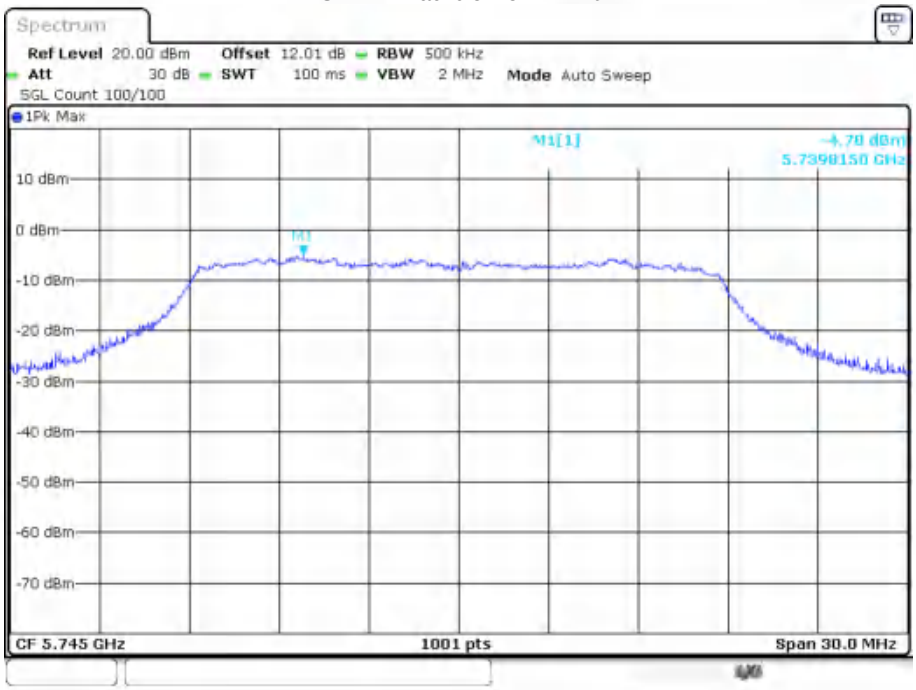


PSD NVNT a 5825MHz Ant1

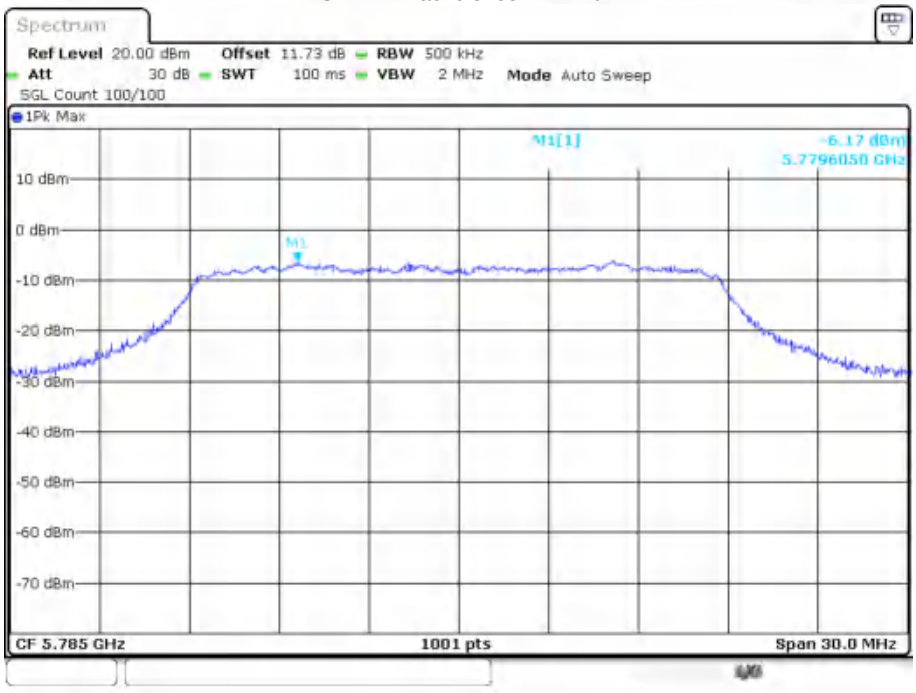


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT ac20 5745MHz Ant1

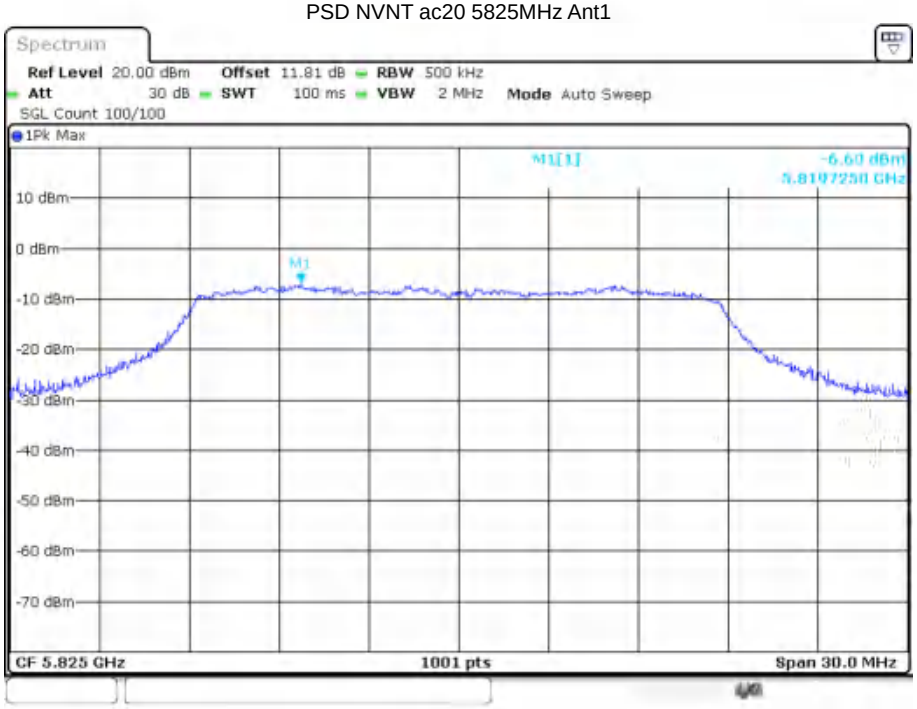


PSD NVNT ac20 5785MHz Ant1

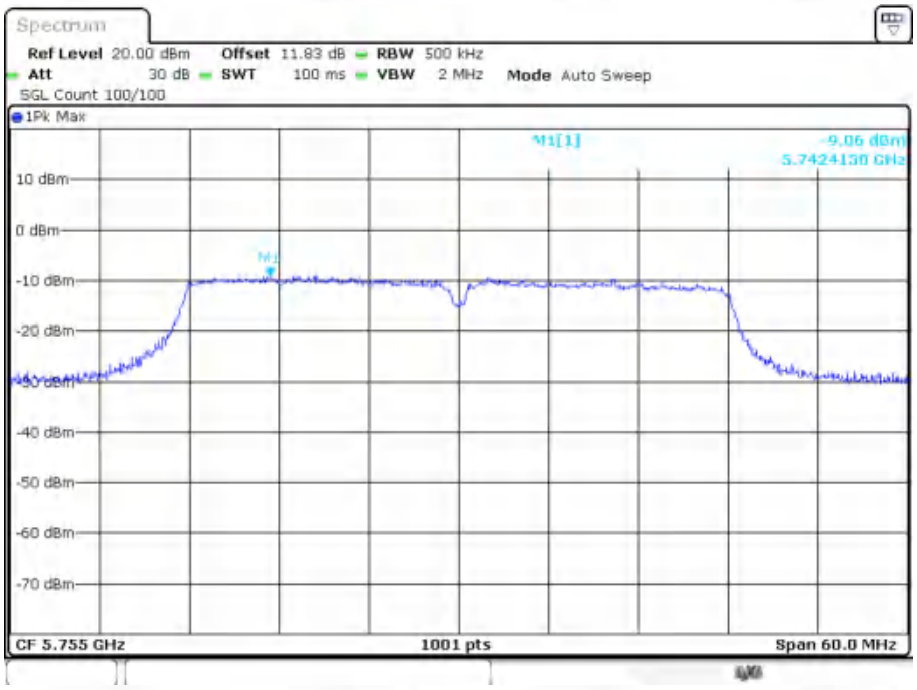


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT ac20 5825MHz Ant1

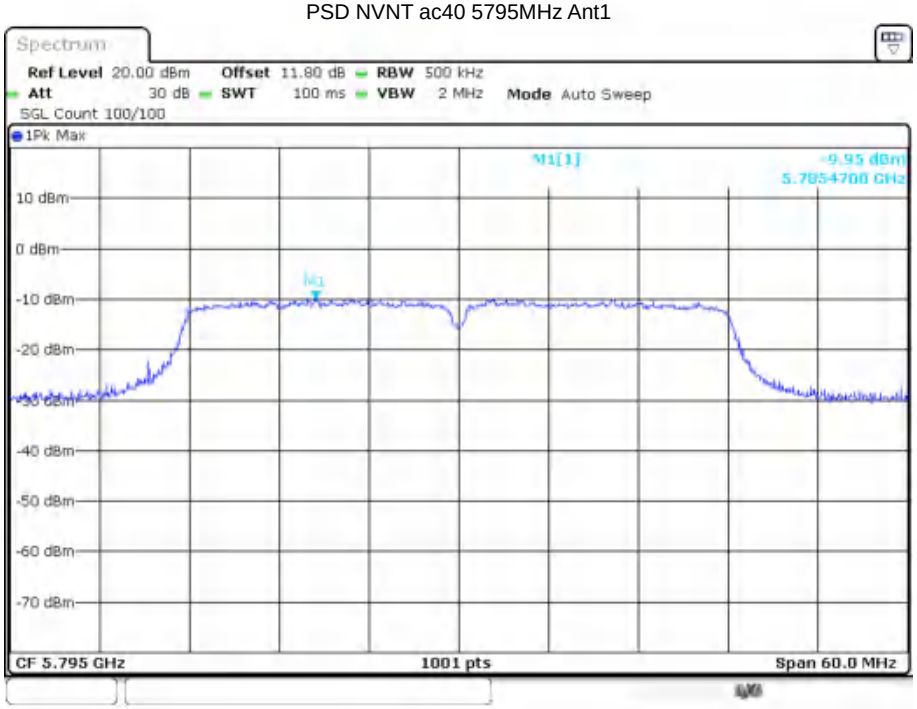


PSD NVNT ac40 5755MHz Ant1

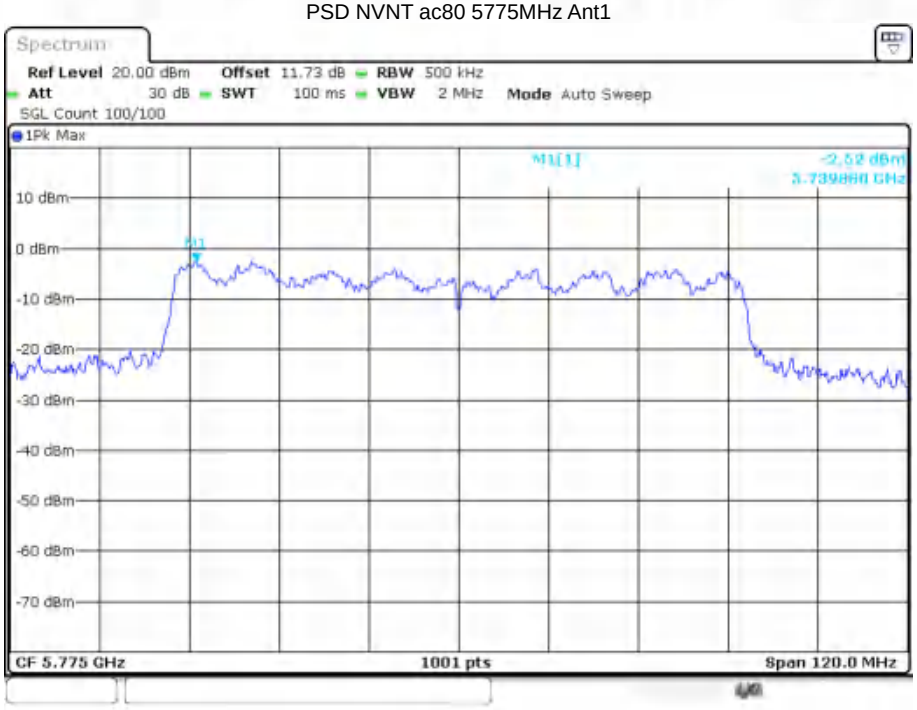


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT ac40 5795MHz Ant1

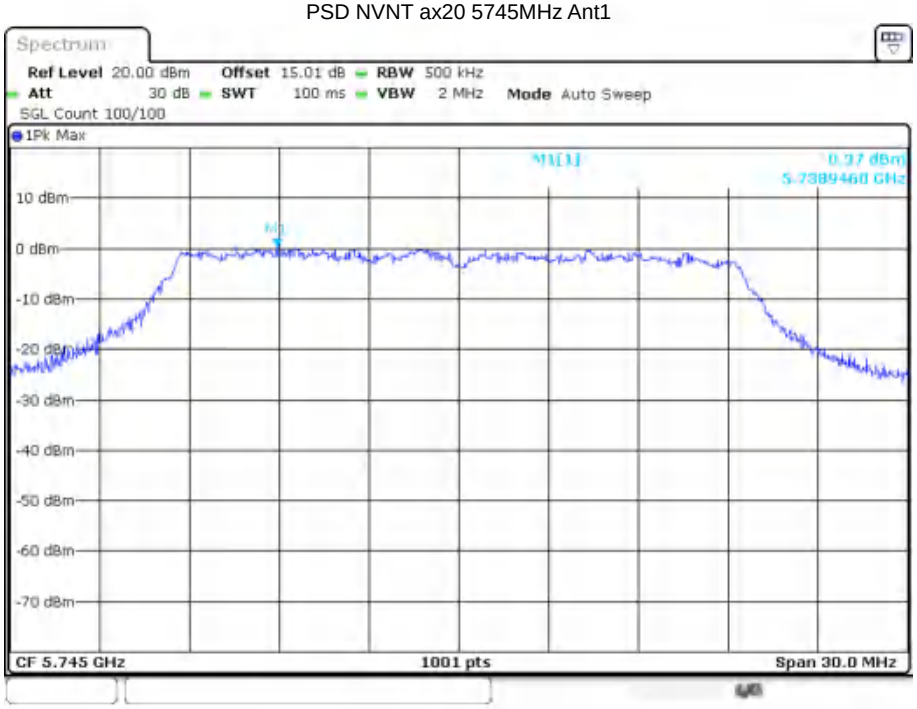


PSD NVNT ac80 5775MHz Ant1

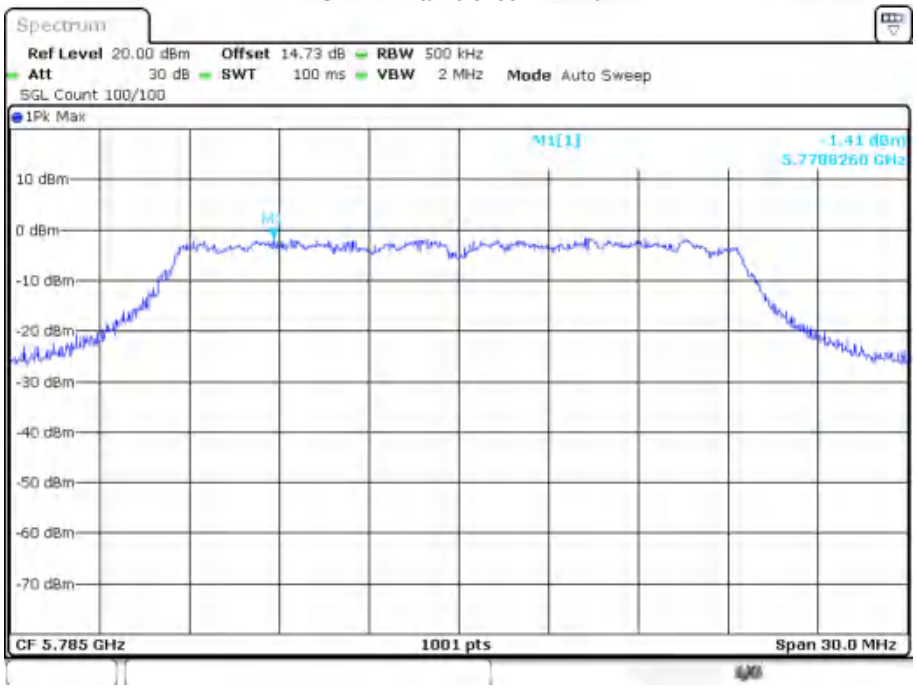


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT ax20 5745MHz Ant1

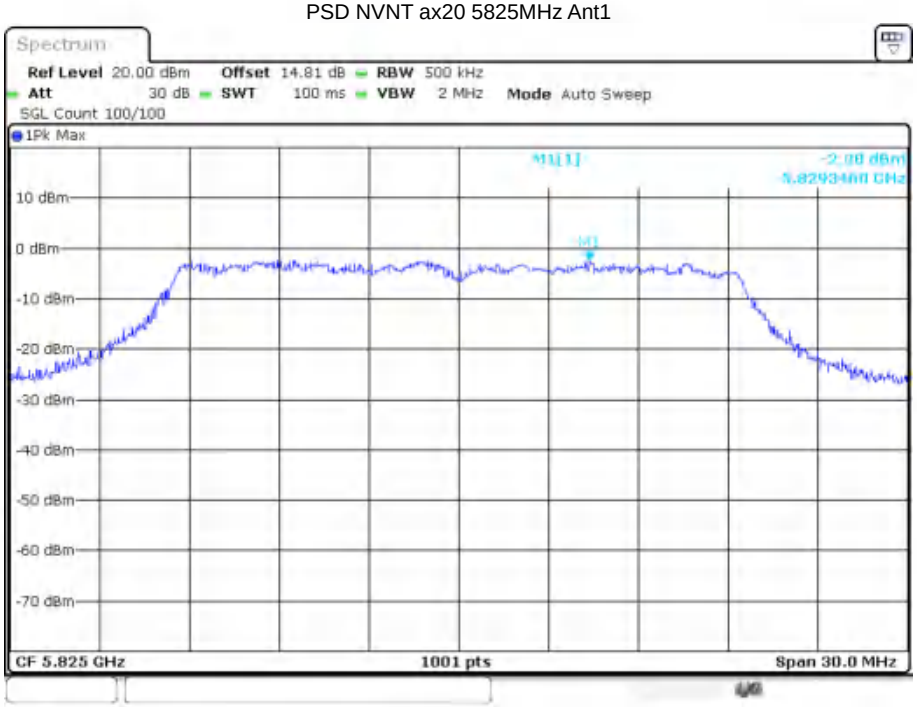


PSD NVNT ax20 5785MHz Ant1

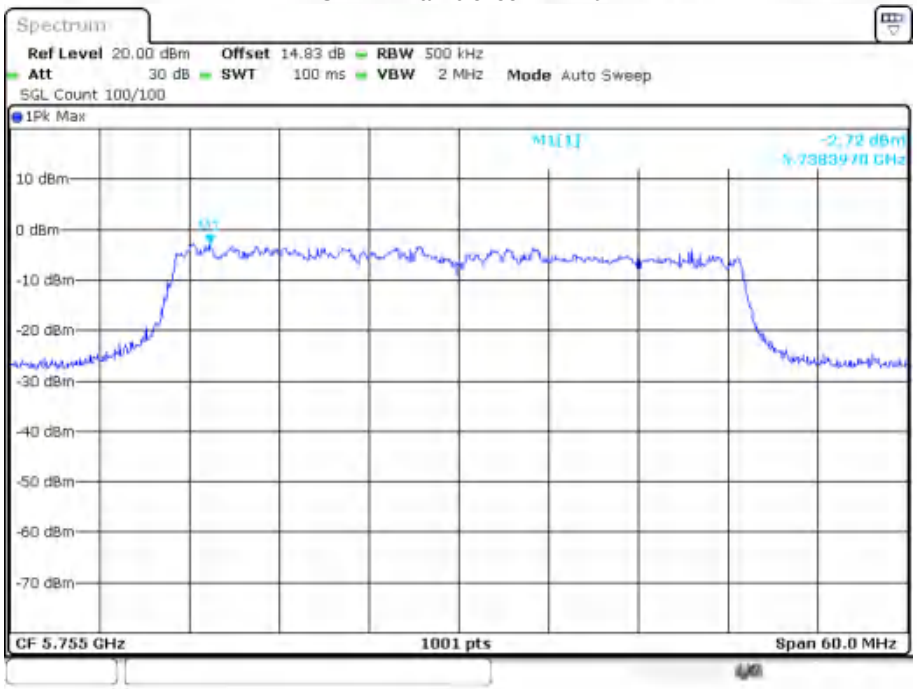


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT ax20 5825MHz Ant1

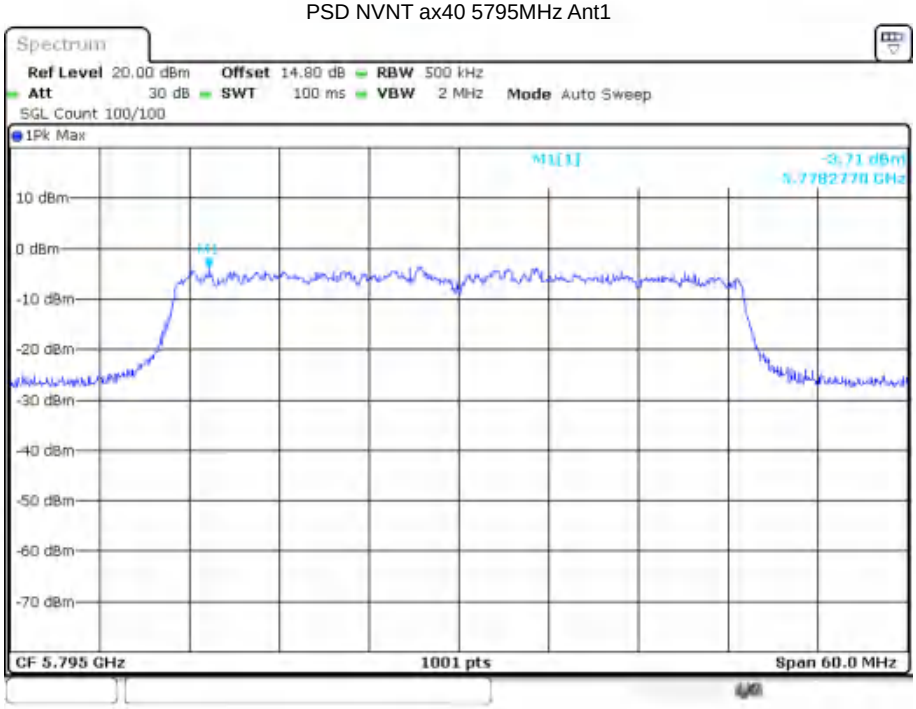


PSD NVNT ax40 5755MHz Ant1

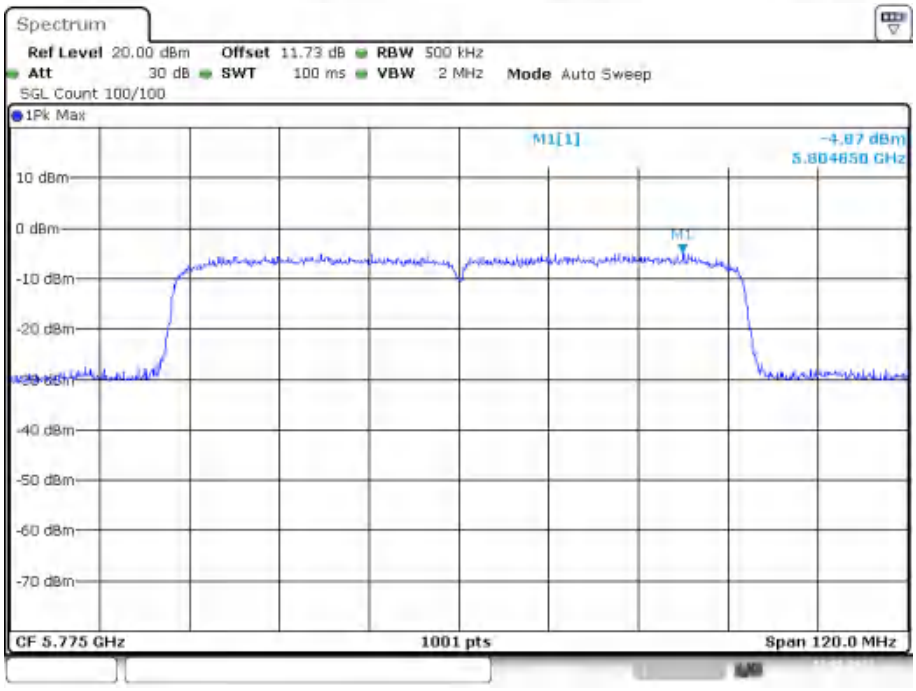


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT ax40 5795MHz Ant1

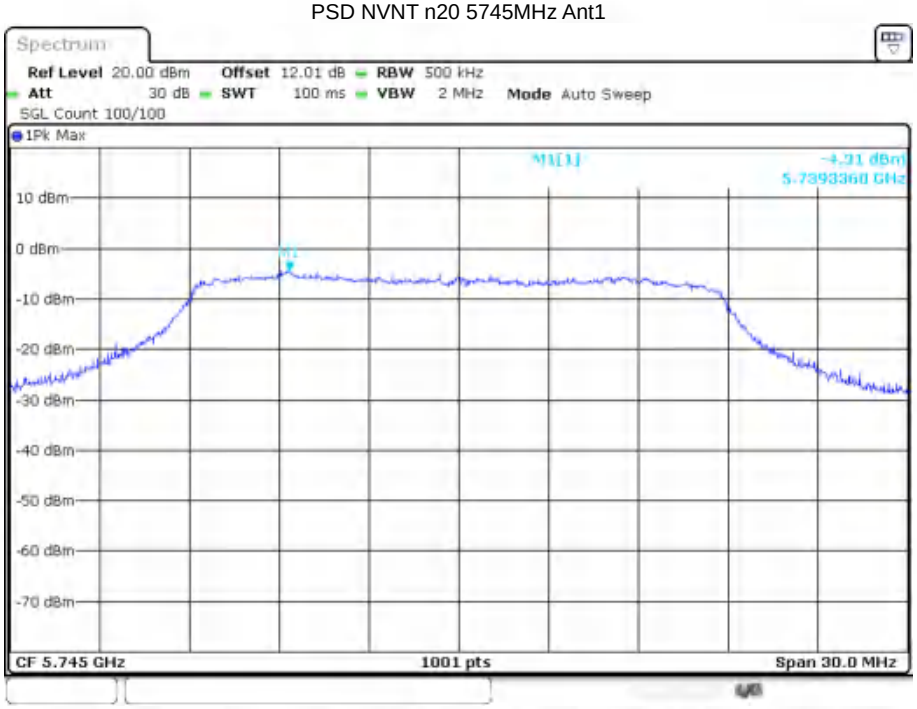


PSD NVNT ax80 5775MHz Ant1

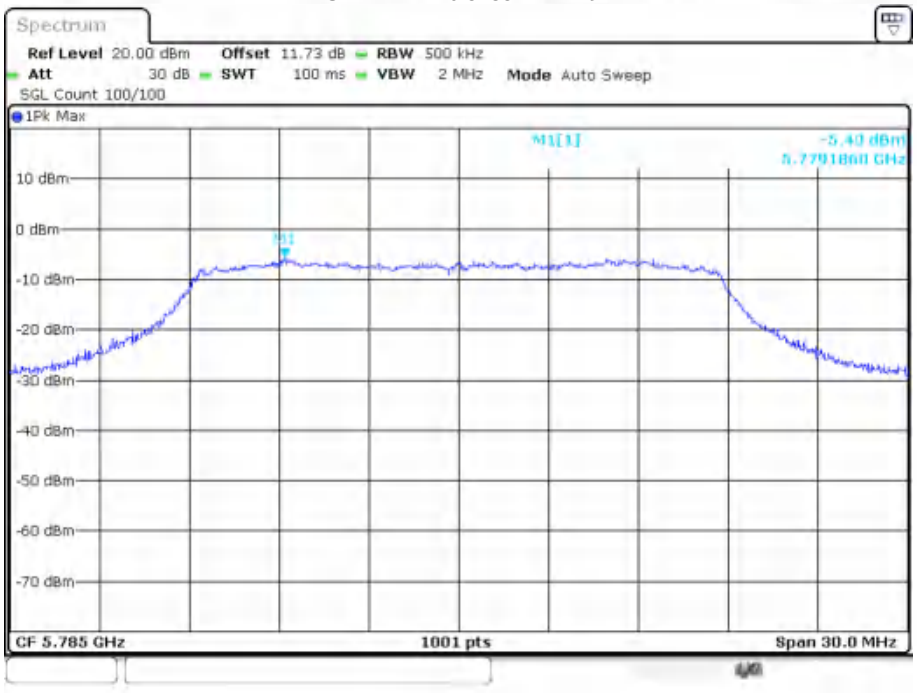


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT n20 5745MHz Ant1

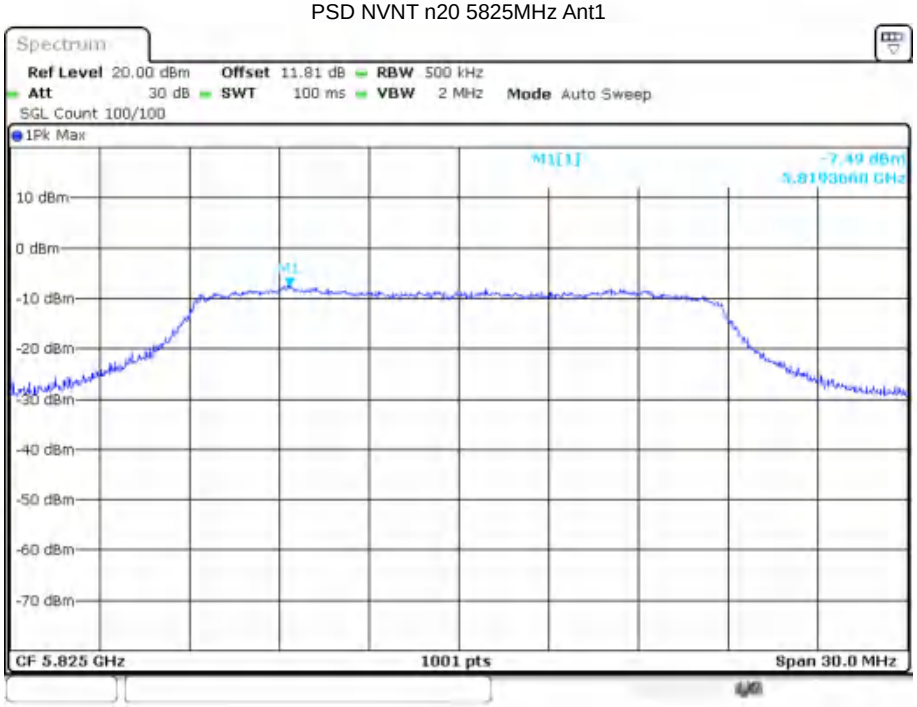


PSD NVNT n20 5785MHz Ant1

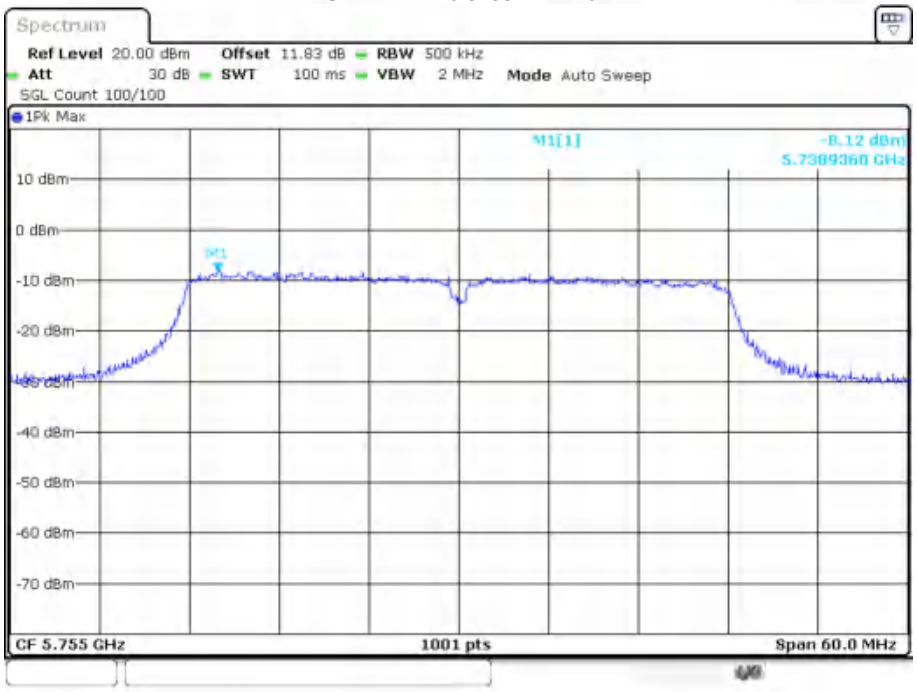


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT n20 5825MHz Ant1

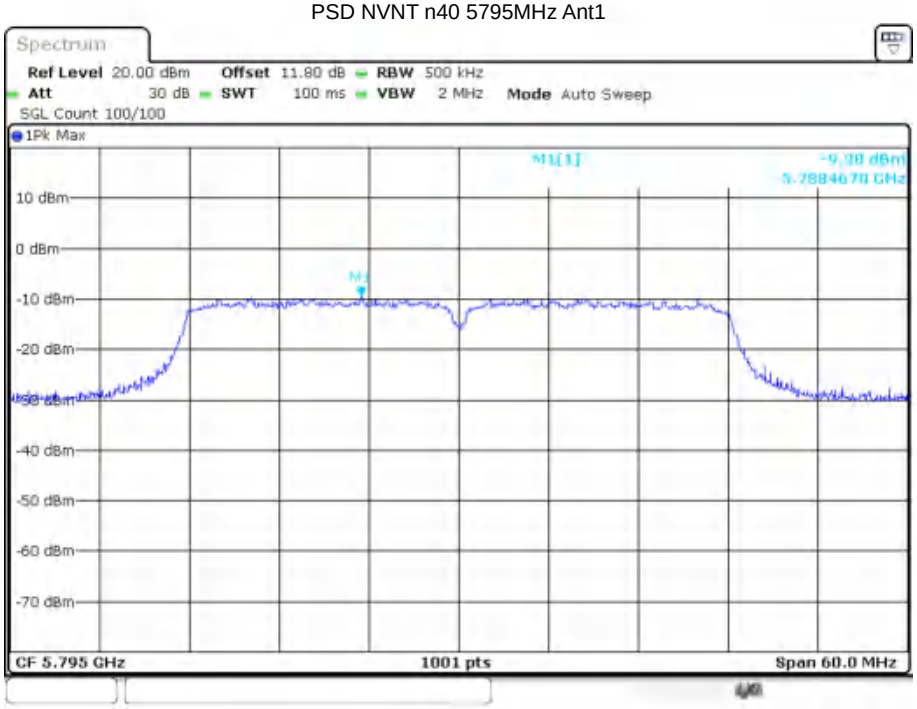


PSD NVNT n40 5755MHz Ant1



BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

PSD NVNT n40 5795MHz Ant1



BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

6.4 Emission bandwidth and occupied bandwidth

Test Requirement:	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use. U-NII 3, U-NII 4: 47 CFR Part 15.407(e)
Test Method:	ANSI C63.10-2013, section 6.9.3 & 12.4 KDB 789033 D02, Clause C.2
Test Limit:	U-NII 1, U-NII 2A, U-NII 2C: No limits, only for report use. U-NII 3, U-NII 4: Within the 5.725-5.850 GHz and 5.850-5.895 GHz bands, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.
Procedure:	Emission bandwidth: a) Set RBW = approximately 1% of the emission bandwidth. b) Set the VBW > RBW. c) Detector = peak. d) Trace mode = max hold. e) Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the instrument. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%. Occupied bandwidth: a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW. b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be approximately three times the RBW, unless otherwise specified by the applicable requirement. c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.5.2. d) Step a) through step c) might require iteration to adjust within the specified range. e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used. f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth. g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

	99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies. h) The occupied bandwidth shall be reported by providing plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s). 6 dB emission bandwidth: a) Set RBW = 100 kHz. b) Set the video bandwidth (VBW) ≥ 3 >= RBW. c) Detector = Peak. d) Trace mode = max hold. e) Sweep = auto couple. f) Allow the trace to stabilize. g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

6.4.1 E.U.T. Operation:

Operating Environment:	
Temperature:	25.5 °C
Humidity:	50.6 %
Atmospheric Pressure:	1010 mbar

6.4.2 Test Data:

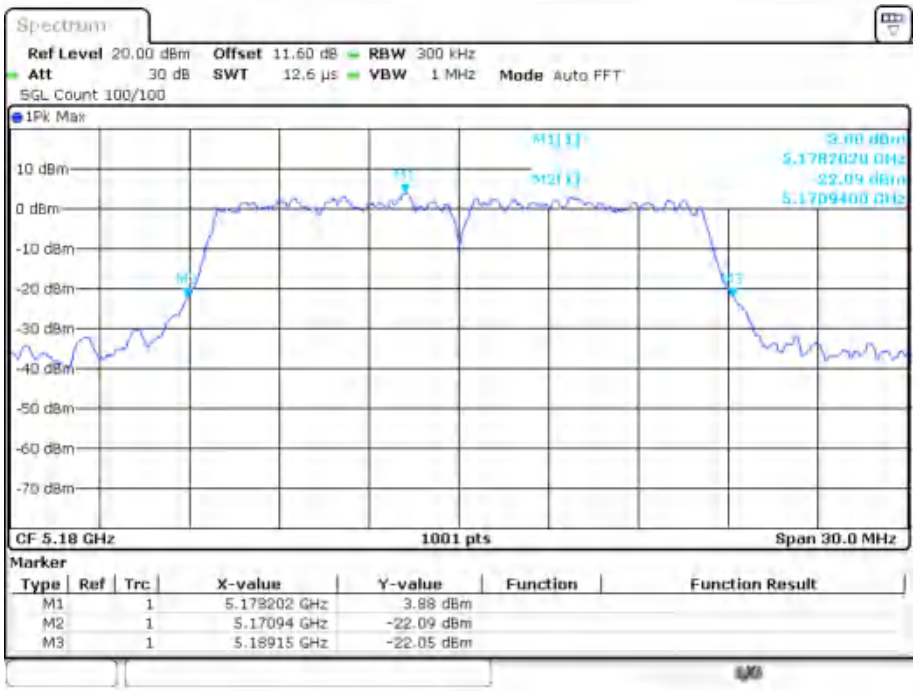
BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Band 1
-26dB Bandwidth

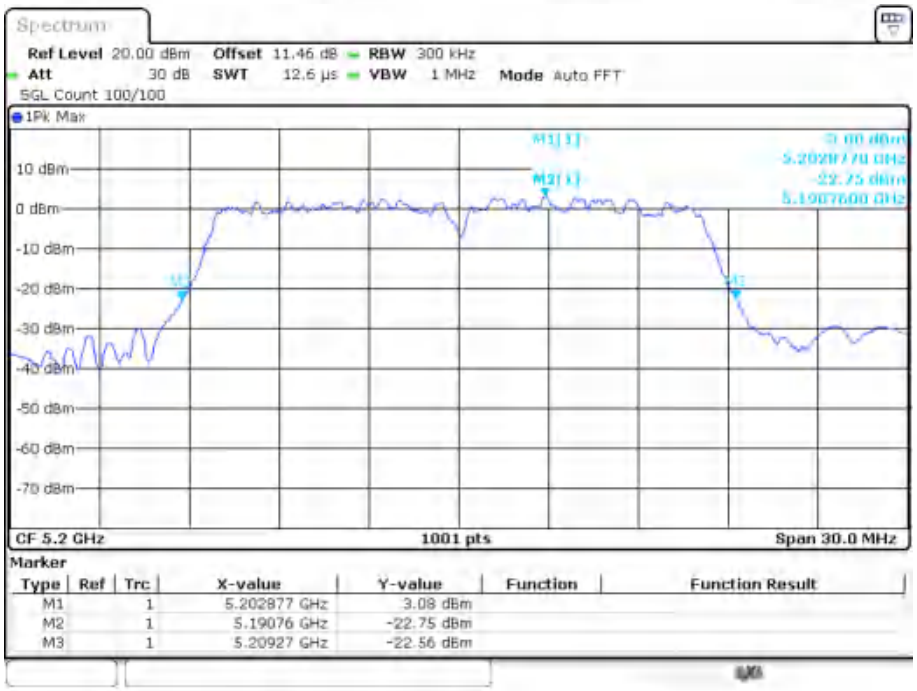
Condition	Mode	Frequency (MHz)	Antenna	-26 dB Bandwidth (MHz)	Limit -26 dB Bandwidth (MHz)	Verdict
NVNT	a	5180	Ant1	18.21	0.5	Pass
NVNT	a	5200	Ant1	18.51	0.5	Pass
NVNT	a	5240	Ant1	18.03	0.5	Pass
NVNT	ac20	5180	Ant1	19.2	0.5	Pass
NVNT	ac20	5200	Ant1	19.23	0.5	Pass
NVNT	ac20	5240	Ant1	19.11	0.5	Pass
NVNT	ac40	5190	Ant1	39.78	0.5	Pass
NVNT	ac40	5230	Ant1	41.04	0.5	Pass
NVNT	ac80	5210	Ant1	79.32	0.5	Pass
NVNT	ax20	5180	Ant1	19.77	0.5	Pass
NVNT	ax20	5200	Ant1	20.01	0.5	Pass
NVNT	ax20	5240	Ant1	20.1	0.5	Pass
NVNT	ax40	5190	Ant1	40.38	0.5	Pass
NVNT	ax40	5230	Ant1	40.14	0.5	Pass
NVNT	ax80	5210	Ant1	78.96	0.5	Pass
NVNT	n20	5180	Ant1	19.35	0.5	Pass
NVNT	n20	5200	Ant1	19.29	0.5	Pass
NVNT	n20	5240	Ant1	19.56	0.5	Pass
NVNT	n40	5190	Ant1	39.84	0.5	Pass
NVNT	n40	5230	Ant1	39.72	0.5	Pass

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-26dB Bandwidth NVNT a 5180MHz Ant1



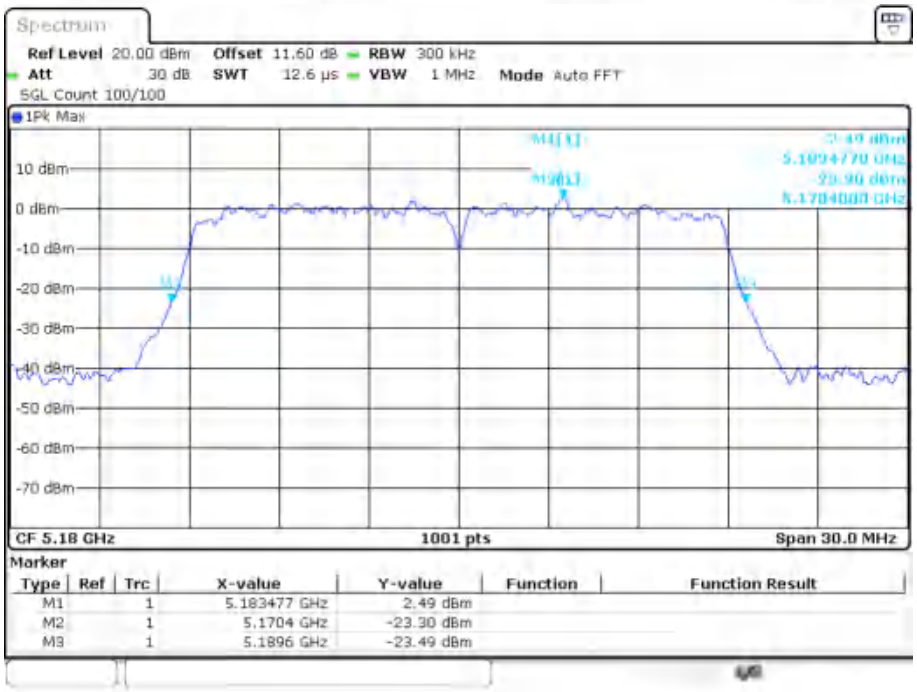
-26dB Bandwidth NVNT a 5200MHz Ant1



BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

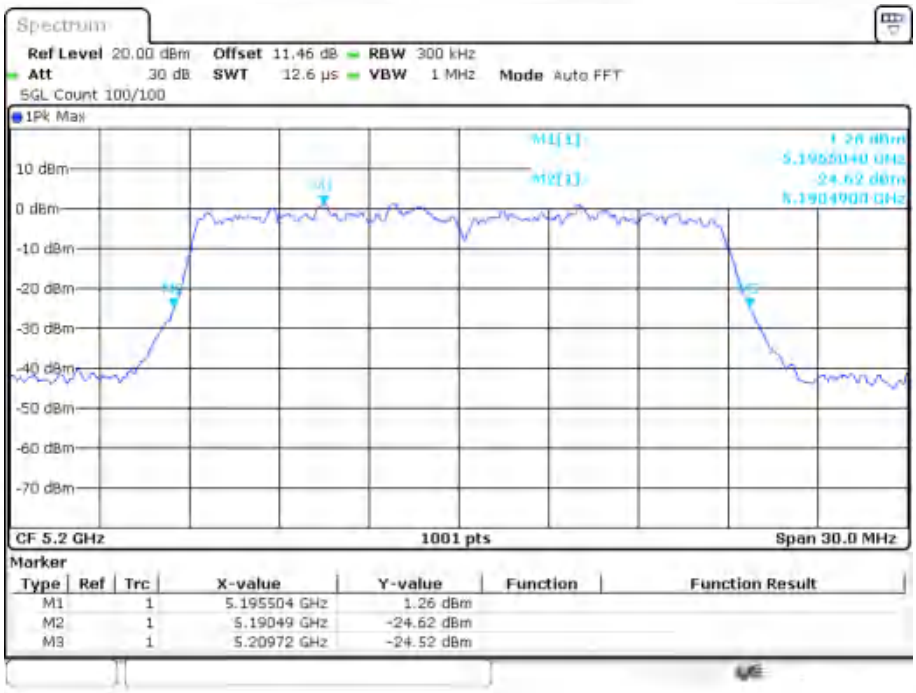
-26dB Bandwidth NVNT a 5240MHz Ant1

-26dB Bandwidth NVNT ac20 5180MHz Ant1

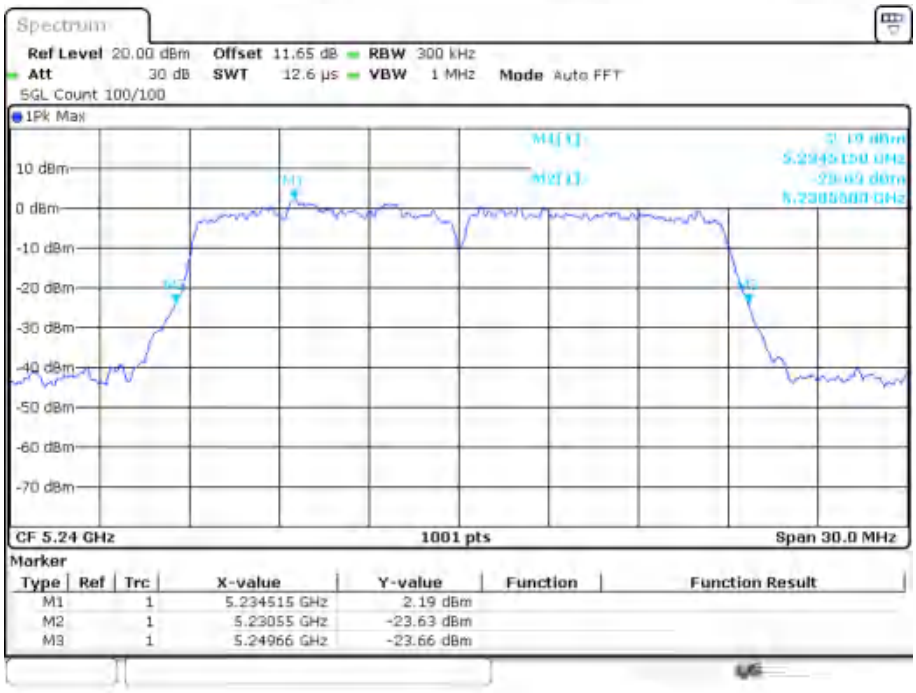


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-26dB Bandwidth NVNT ac20 5200MHz Ant1

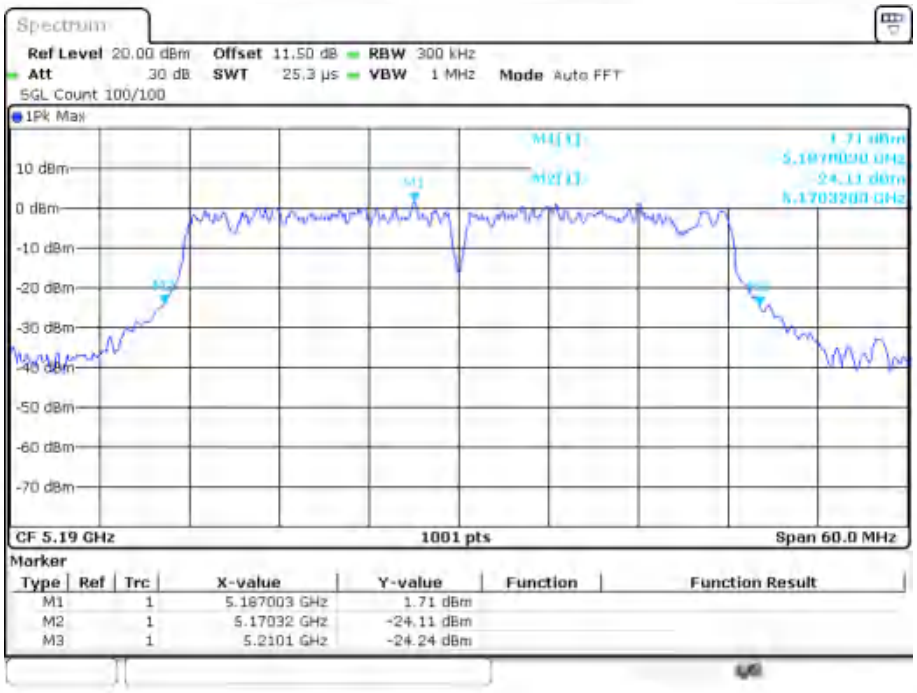


-26dB Bandwidth NVNT ac20 5240MHz Ant1

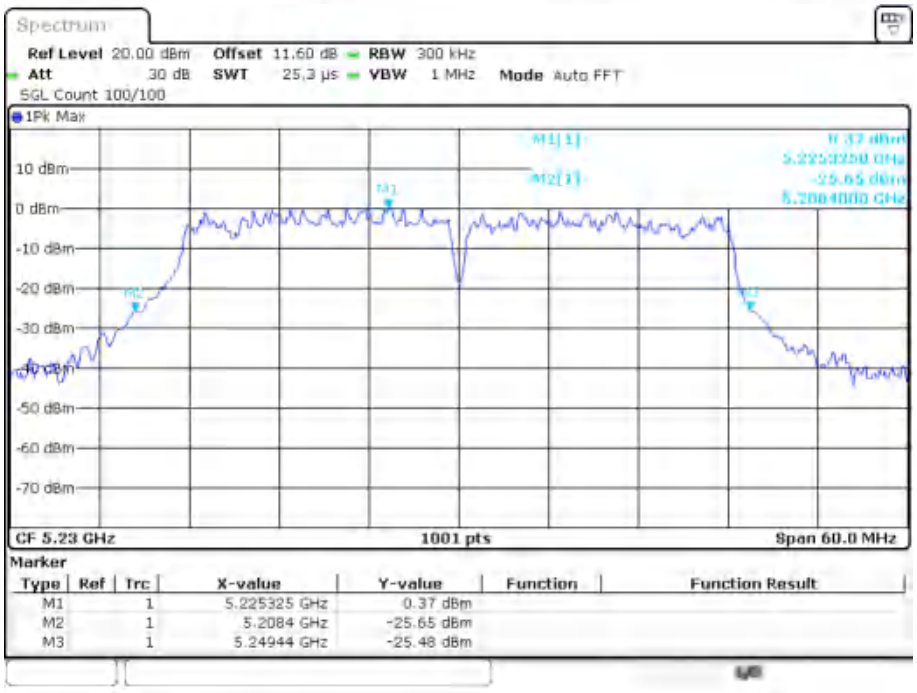


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-26dB Bandwidth NVNT ac40 5190MHz Ant1

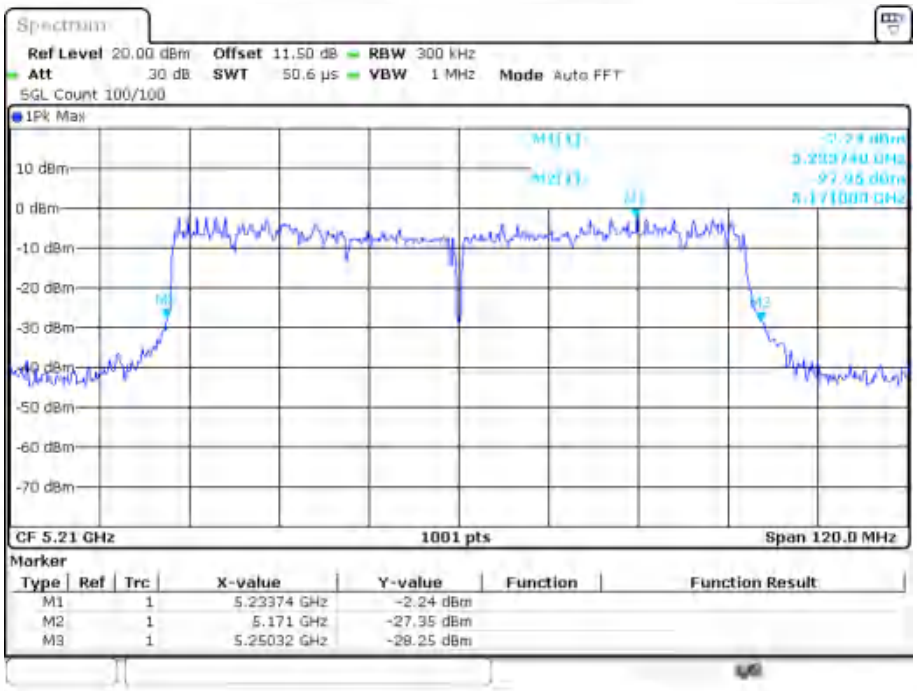


-26dB Bandwidth NVNT ac40 5230MHz Ant1

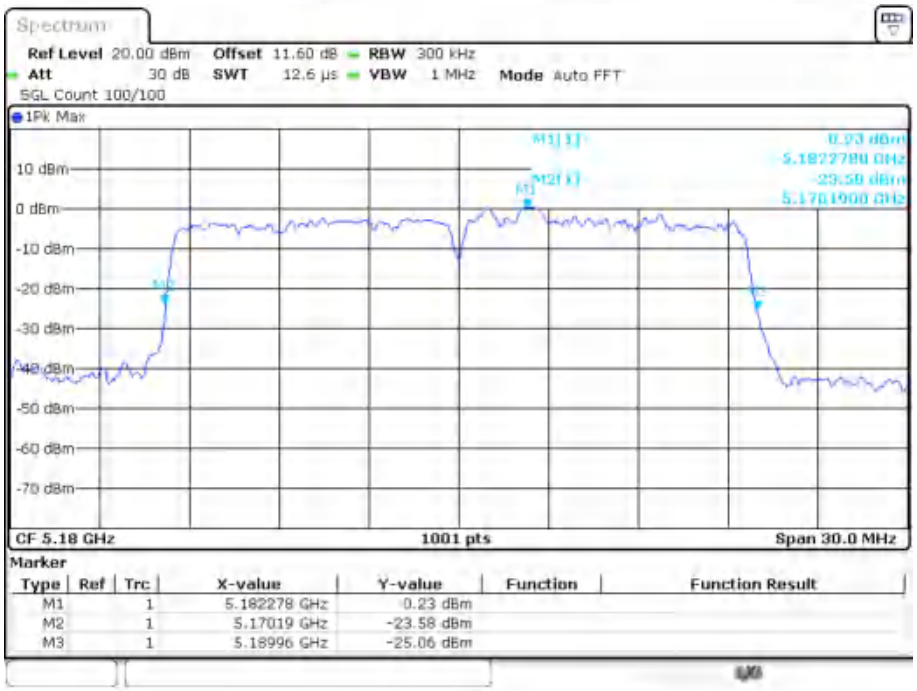


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-26dB Bandwidth NVNT ac80 5210MHz Ant1

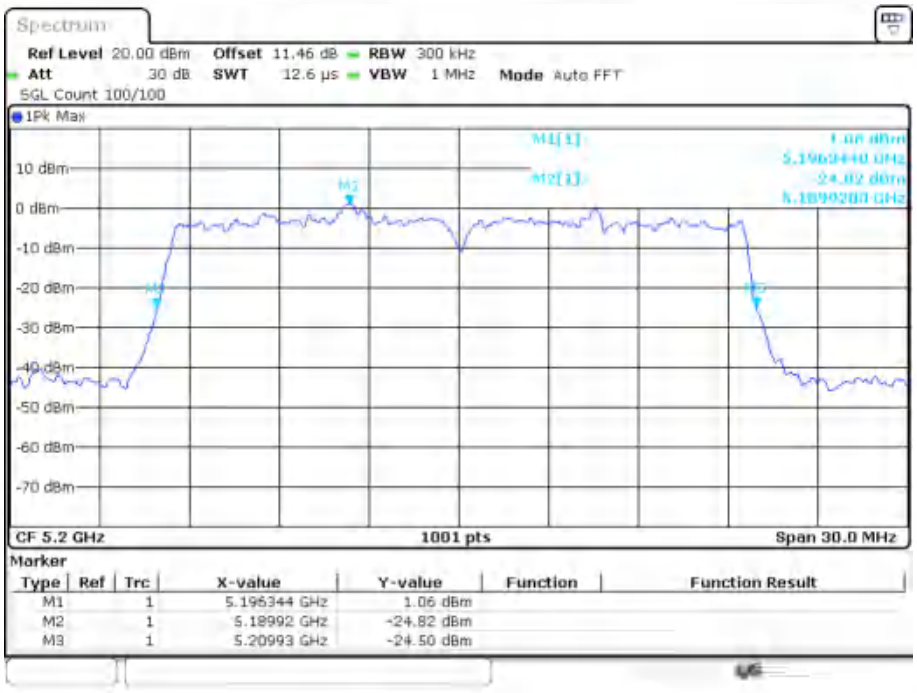


-26dB Bandwidth NVNT ax20 5180MHz Ant1

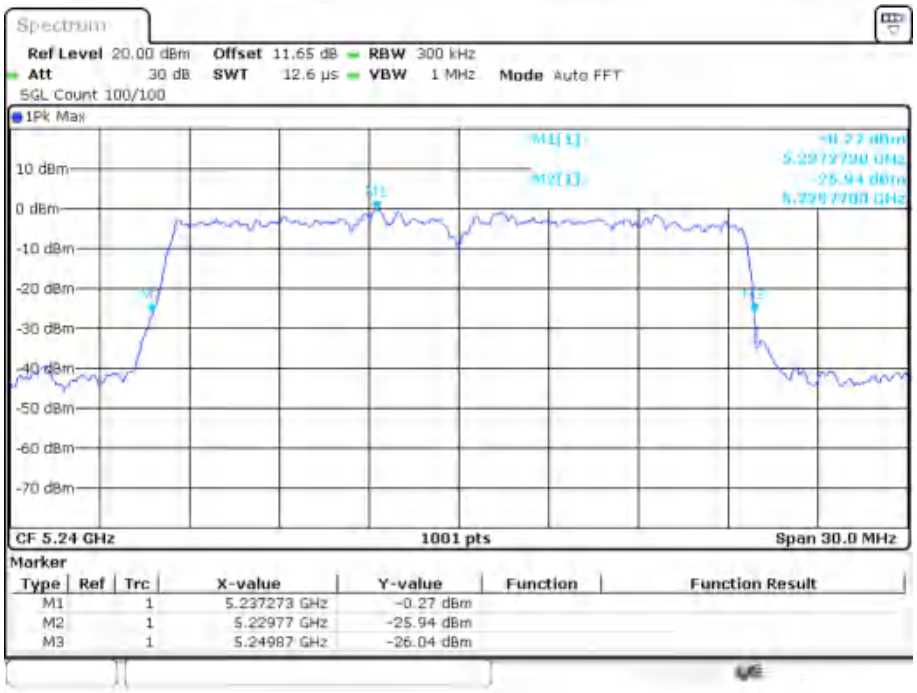


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-26dB Bandwidth NVNT ax20 5200MHz Ant1

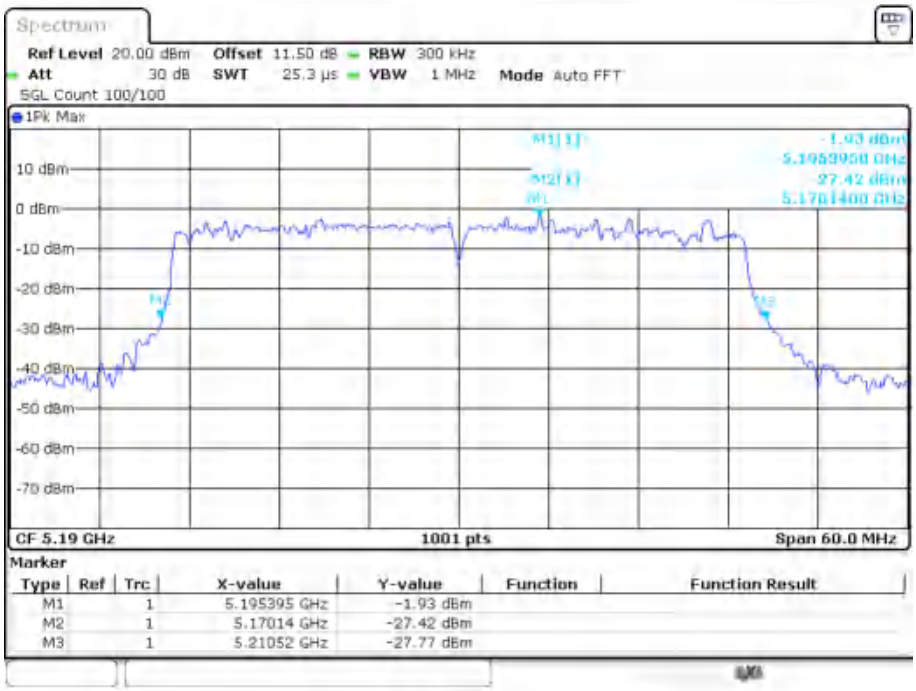


-26dB Bandwidth NVNT ax20 5240MHz Ant1

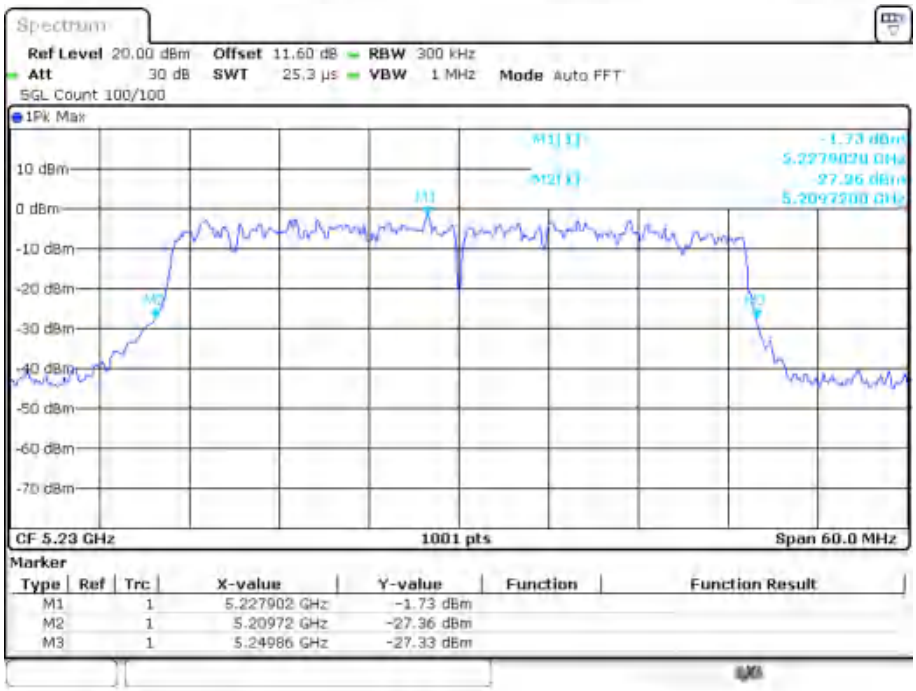


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-26dB Bandwidth NVNT ax40 5190MHz Ant1

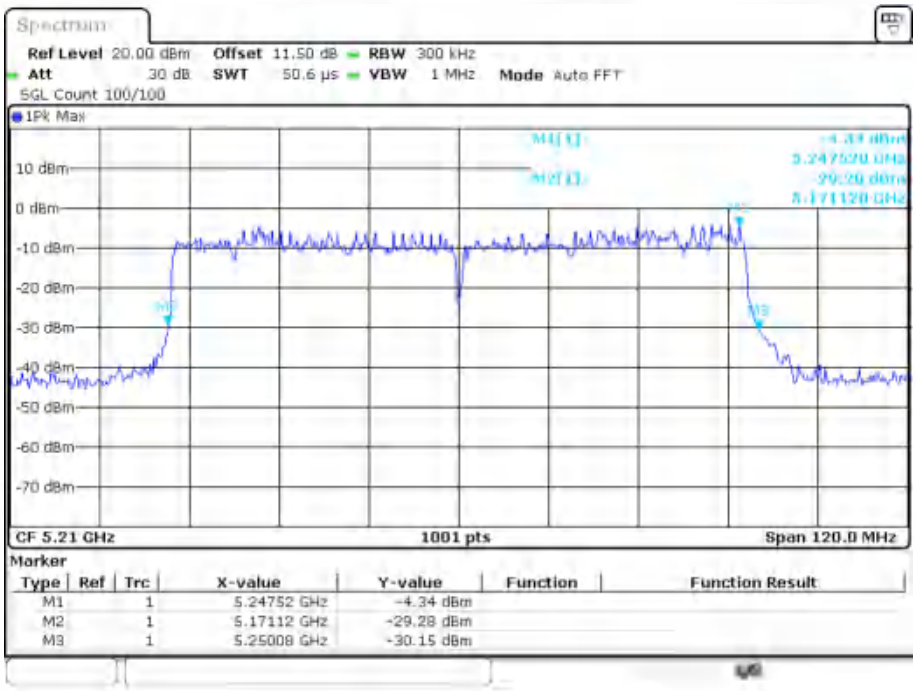


-26dB Bandwidth NVNT ax40 5230MHz Ant1

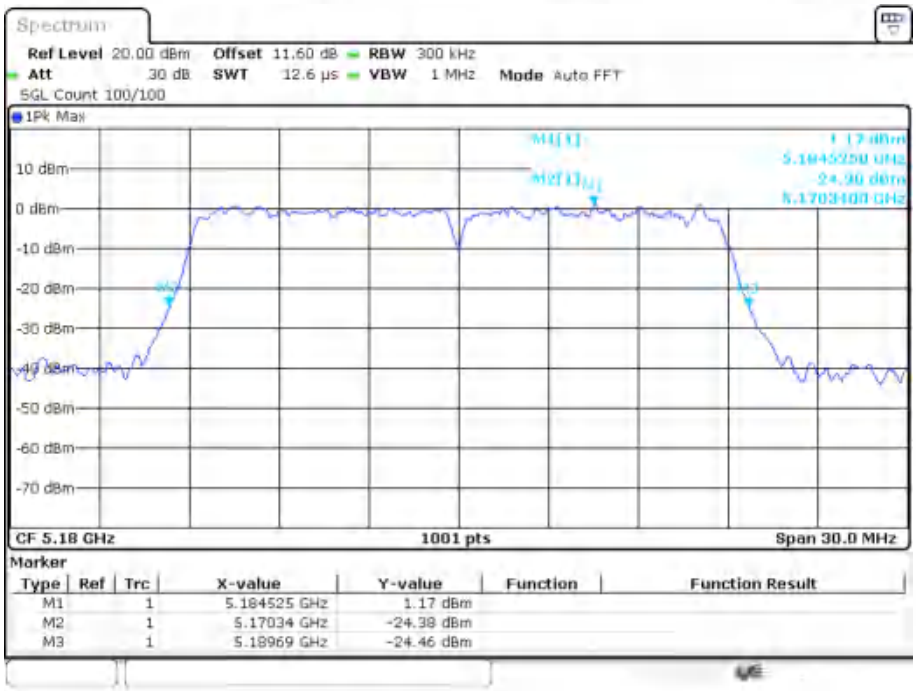


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-26dB Bandwidth NVNT ax80 5210MHz Ant1

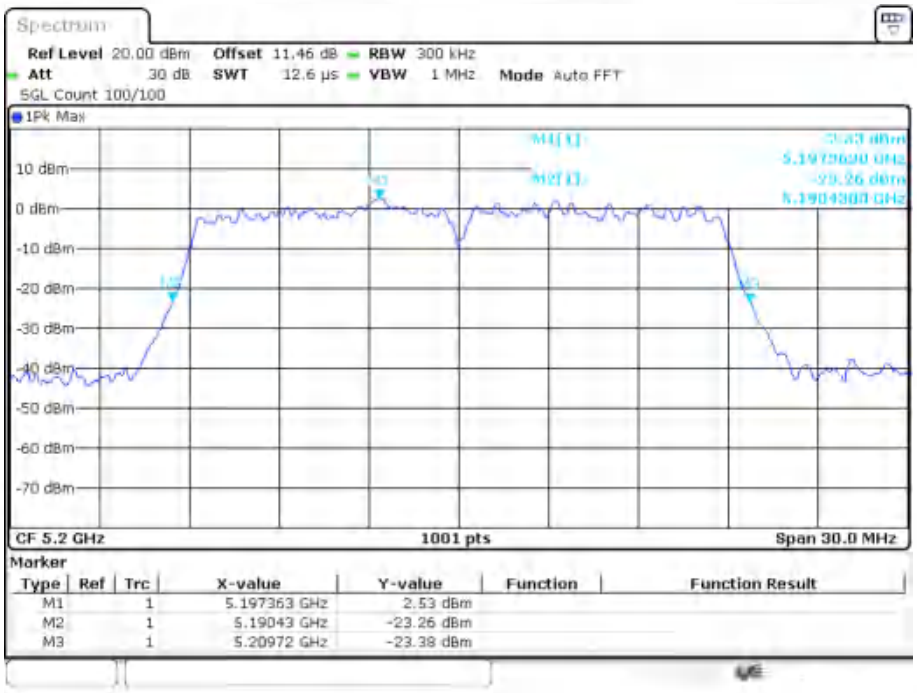


-26dB Bandwidth NVNT n20 5180MHz Ant1

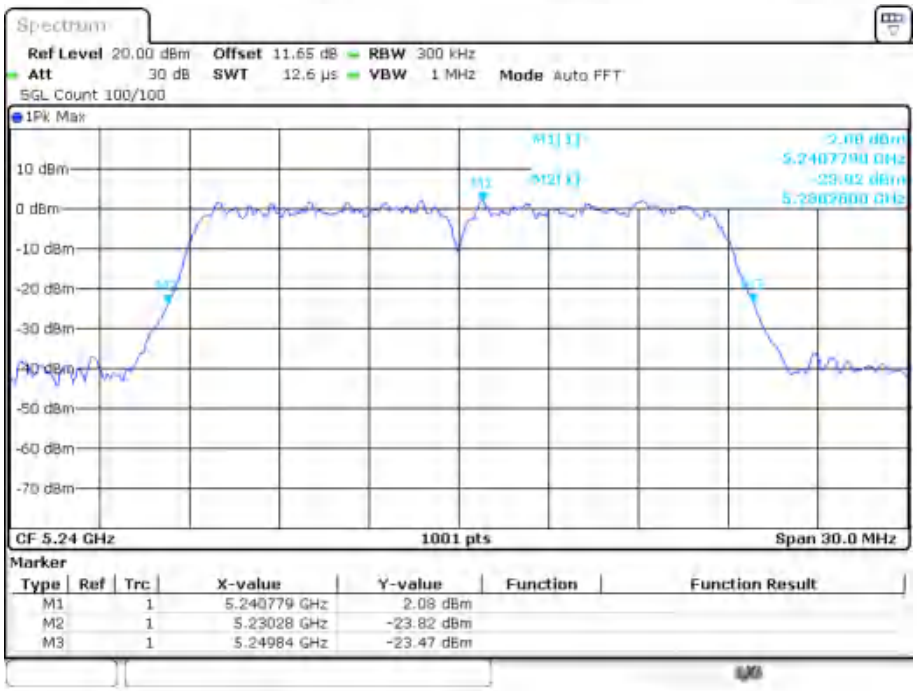


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-26dB Bandwidth NVNT n20 5200MHz Ant1

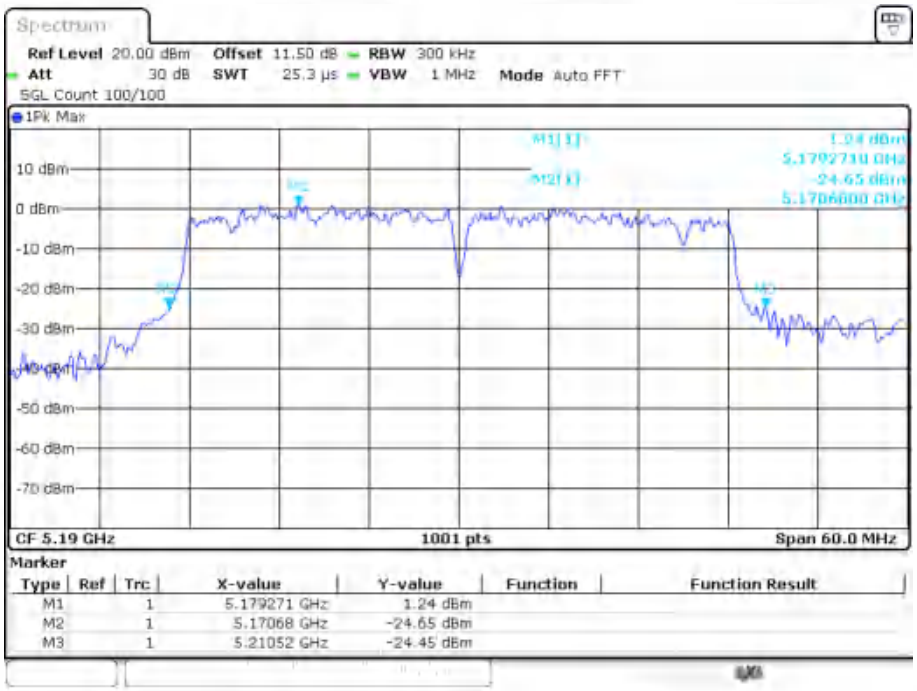


-26dB Bandwidth NVNT n20 5240MHz Ant1

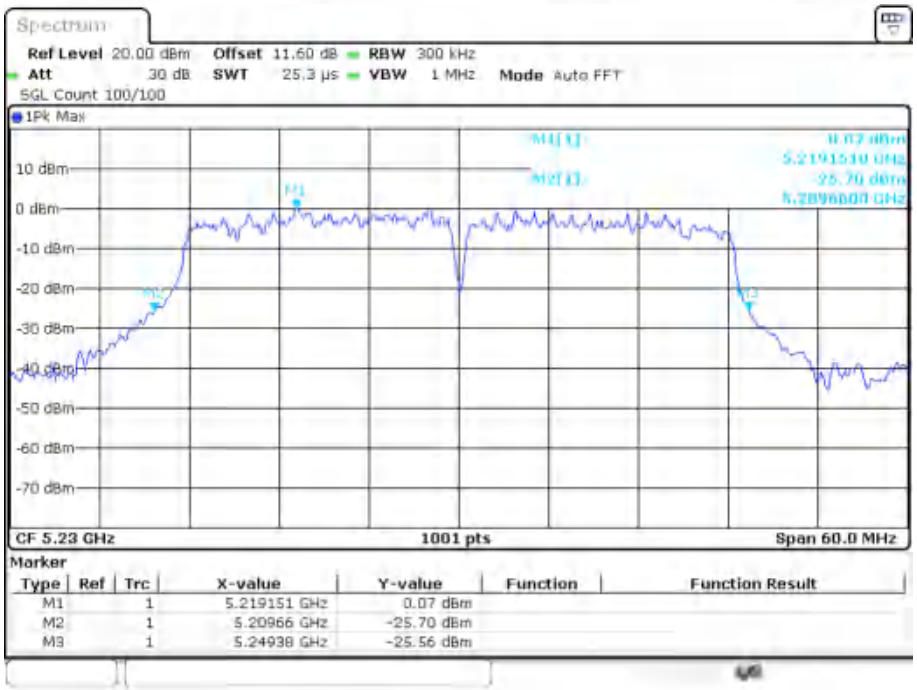


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-26dB Bandwidth NVNT n40 5190MHz Ant1



-26dB Bandwidth NVNT n40 5230MHz Ant1



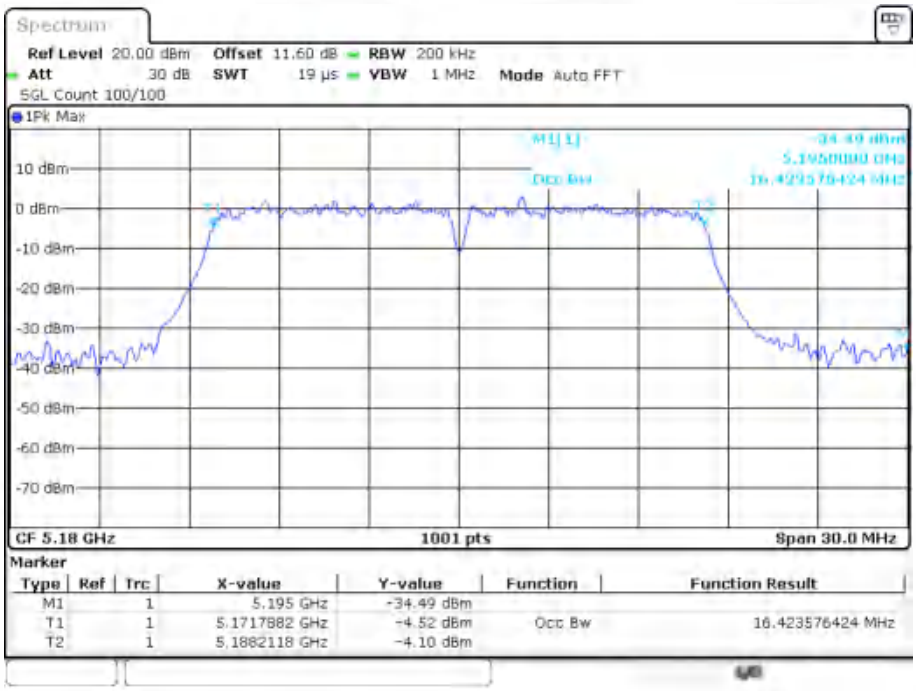
BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Occupied Channel Bandwidth

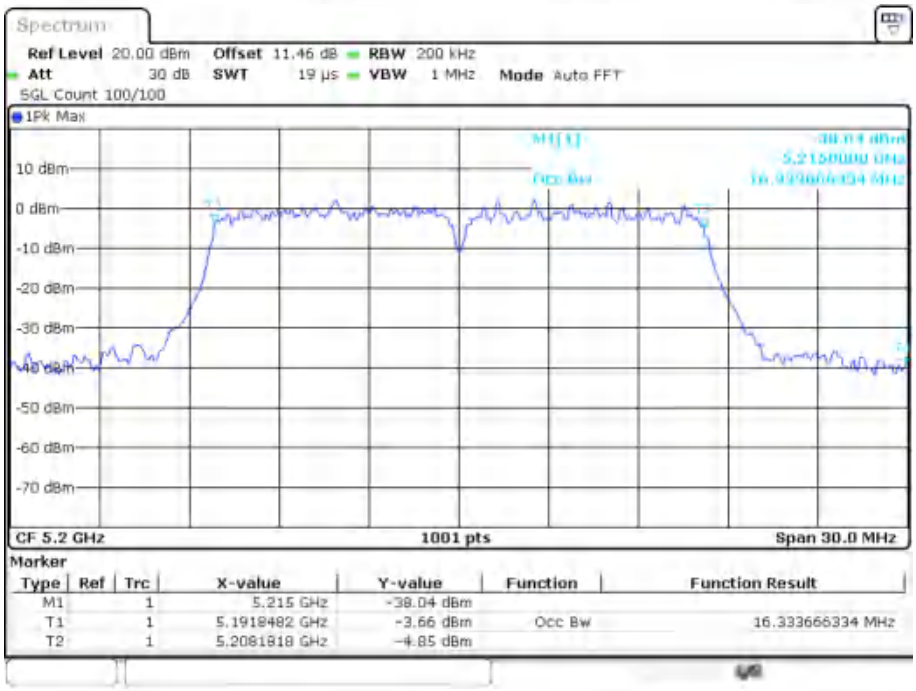
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	a	5180	Ant1	16.424
NVNT	a	5200	Ant1	16.334
NVNT	a	5240	Ant1	16.364
NVNT	ac20	5180	Ant1	17.532
NVNT	ac20	5200	Ant1	17.532
NVNT	ac20	5240	Ant1	17.473
NVNT	ac40	5190	Ant1	36.384
NVNT	ac40	5230	Ant1	36.503
NVNT	ac80	5210	Ant1	76.244
NVNT	ax20	5180	Ant1	18.881
NVNT	ax20	5200	Ant1	18.941
NVNT	ax20	5240	Ant1	18.911
NVNT	ax40	5190	Ant1	37.942
NVNT	ax40	5230	Ant1	37.642
NVNT	ax80	5210	Ant1	76.244
NVNT	n20	5180	Ant1	17.562
NVNT	n20	5200	Ant1	17.502
NVNT	n20	5240	Ant1	17.562
NVNT	n40	5190	Ant1	36.264
NVNT	n40	5230	Ant1	35.964

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT a 5180MHz Ant1

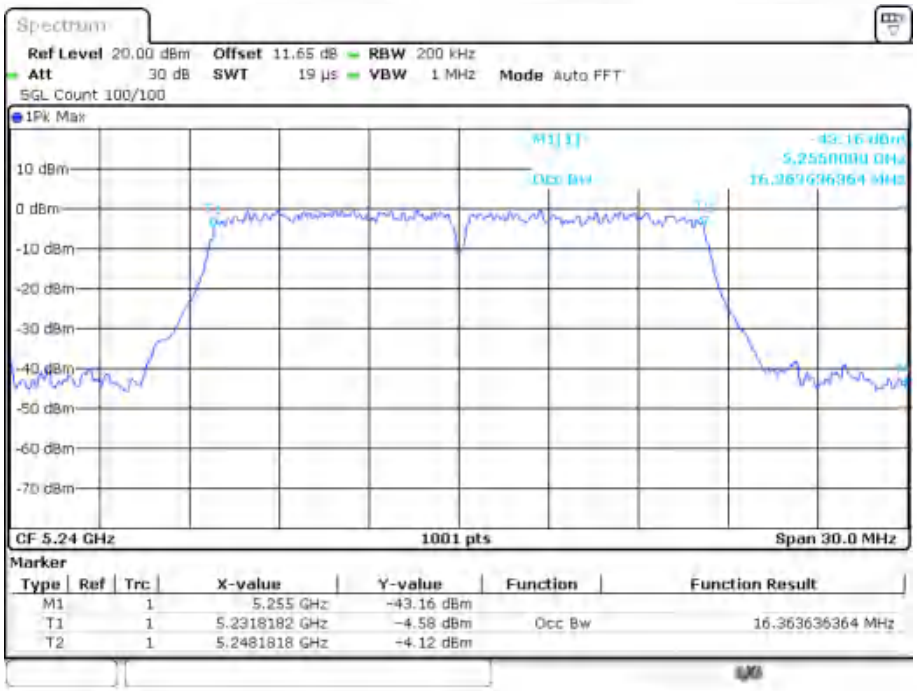


OBW NVNT a 5200MHz Ant1

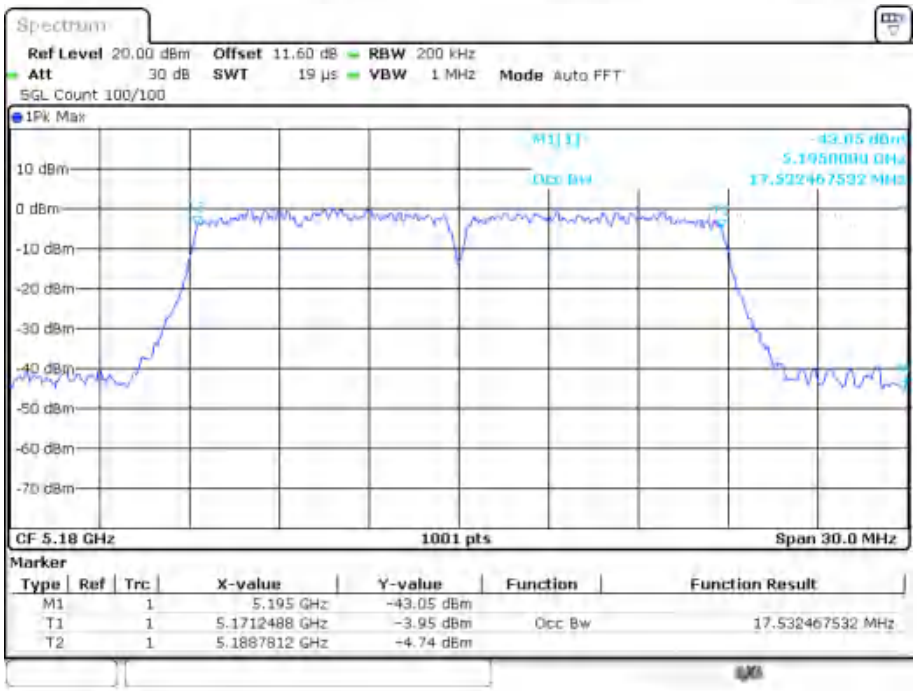


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT a 5240MHz Ant1

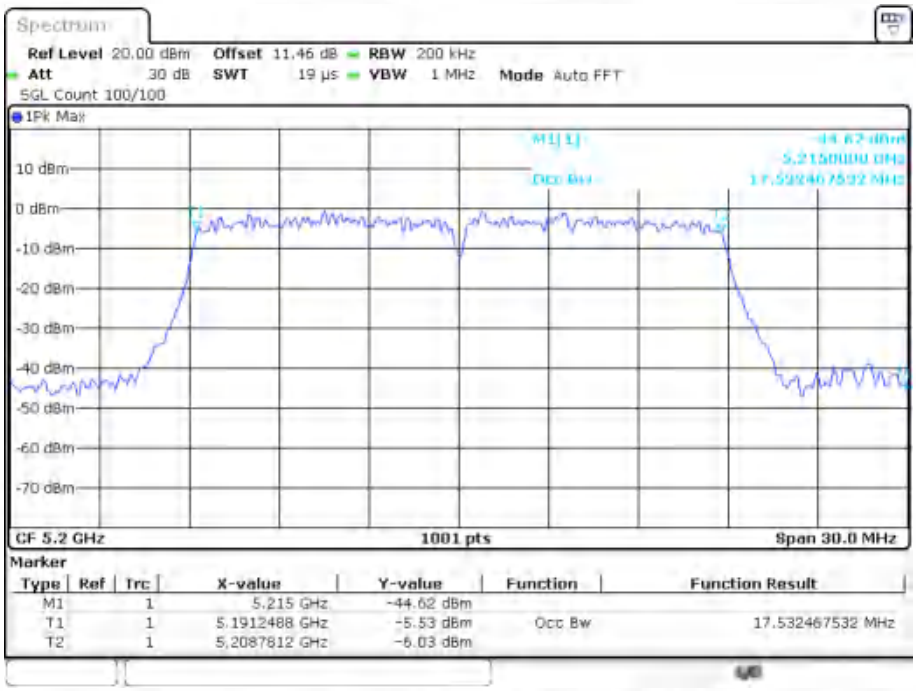


OBW NVNT ac20 5180MHz Ant1

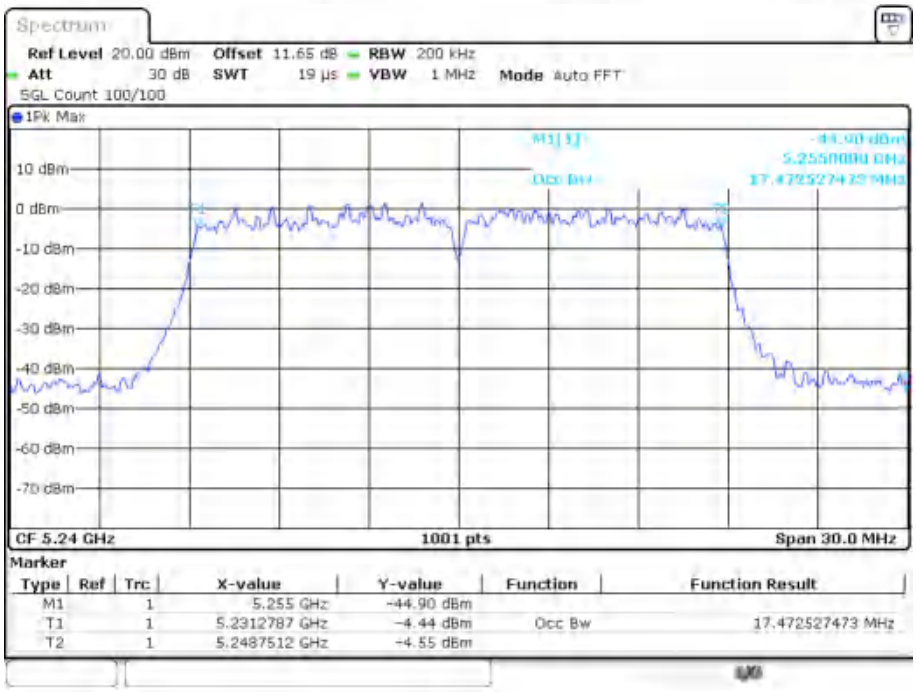


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT ac20 5200MHz Ant1

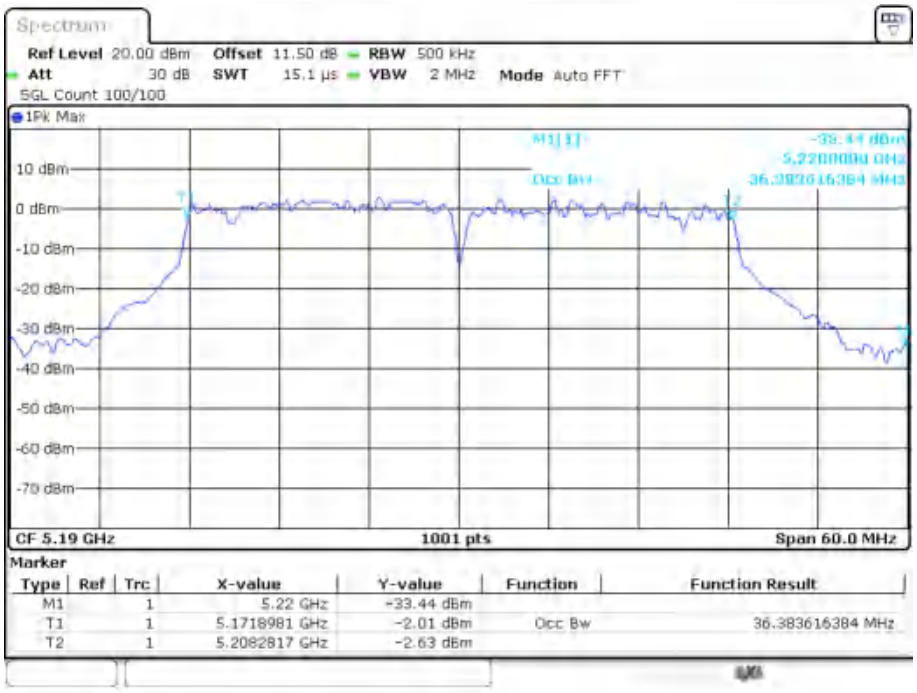


OBW NVNT ac20 5240MHz Ant1

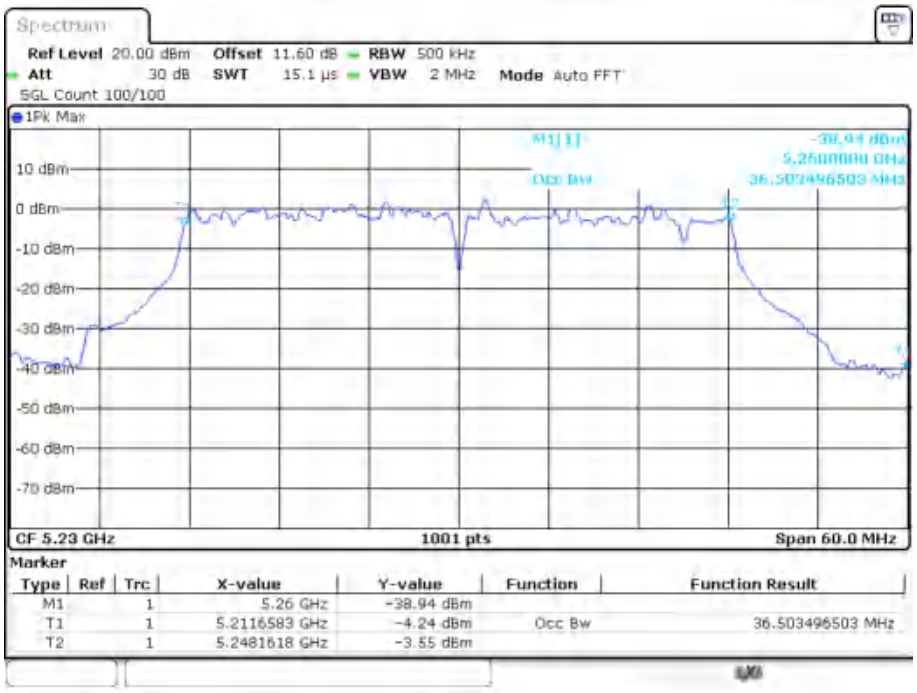


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT ac40 5190MHz Ant1

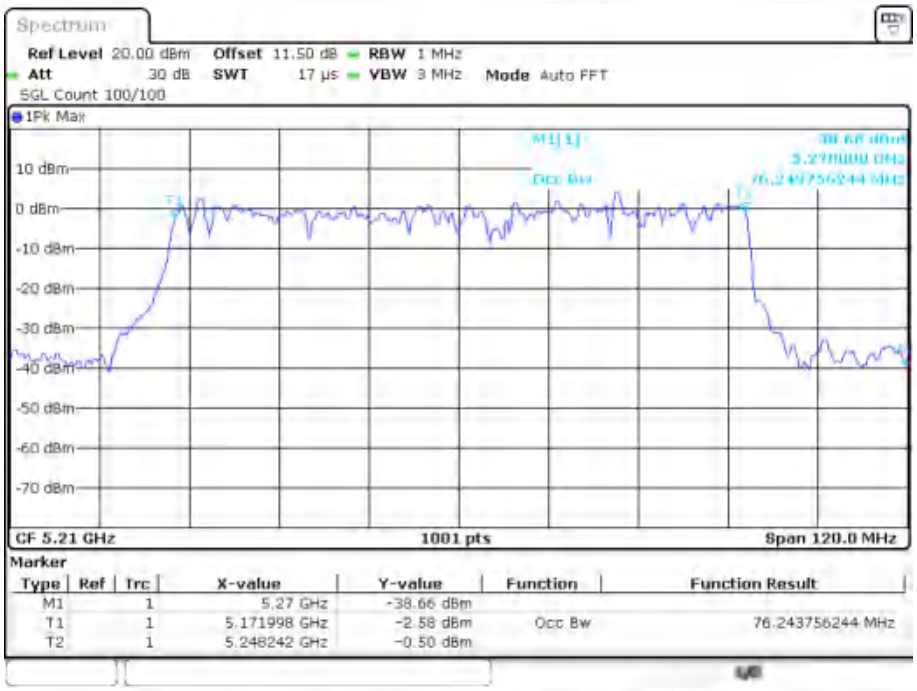


OBW NVNT ac40 5230MHz Ant1

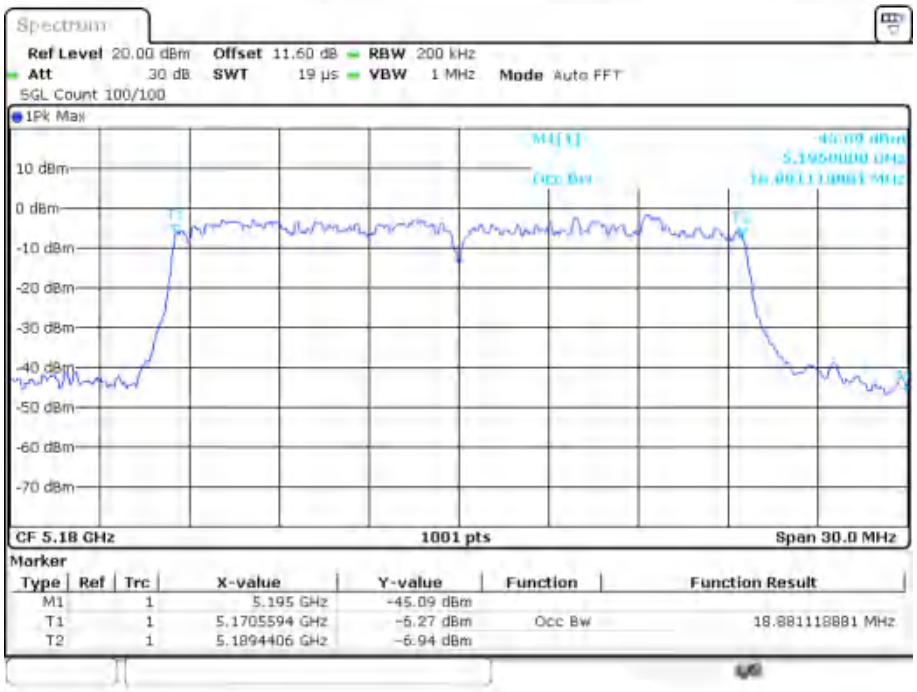


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT ac80 5210MHz Ant1

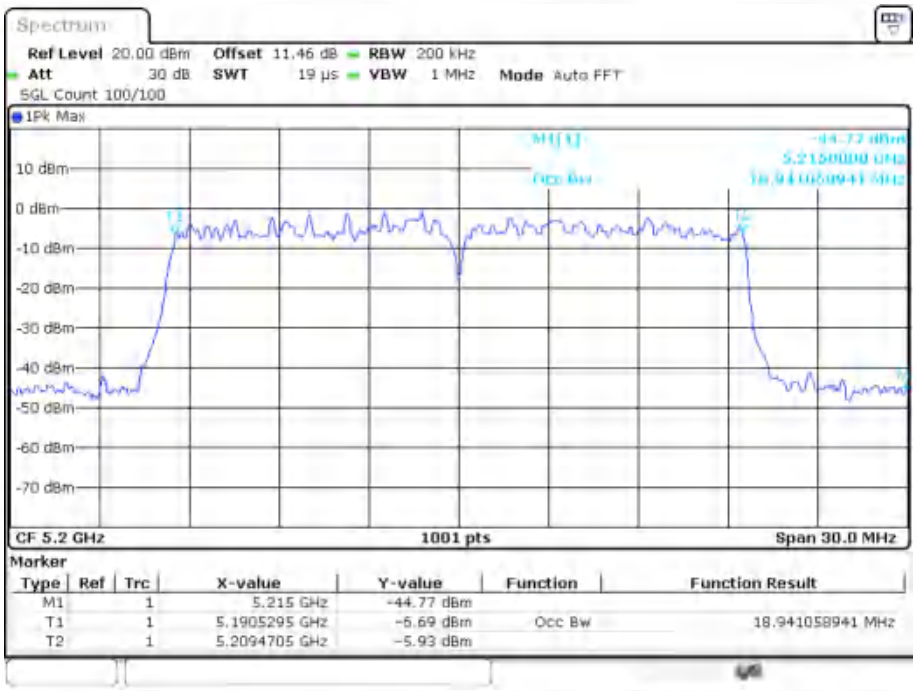


OBW NVNT ax20 5180MHz Ant1

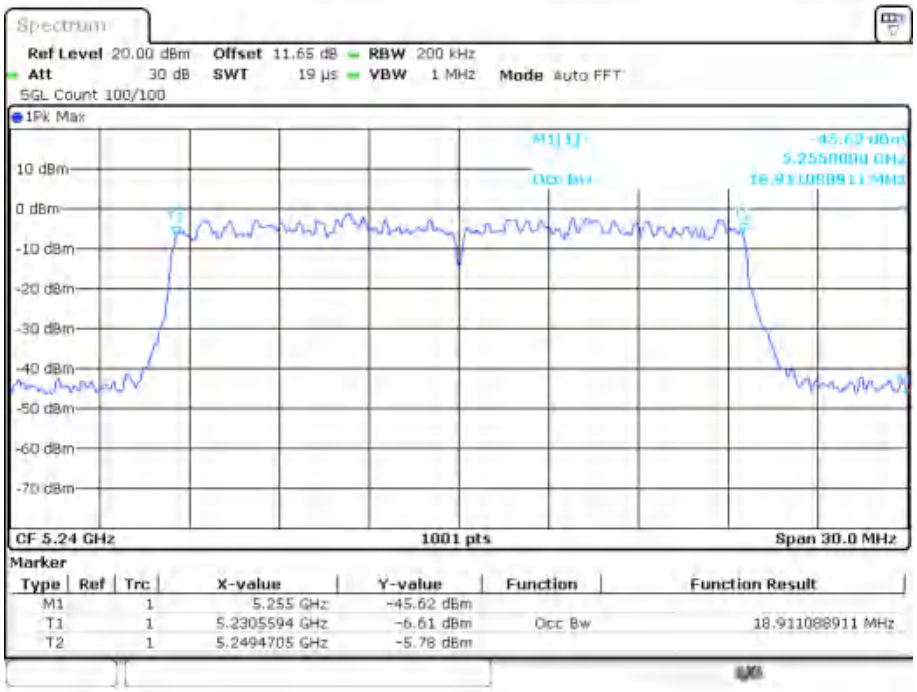


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT ax20 5200MHz Ant1

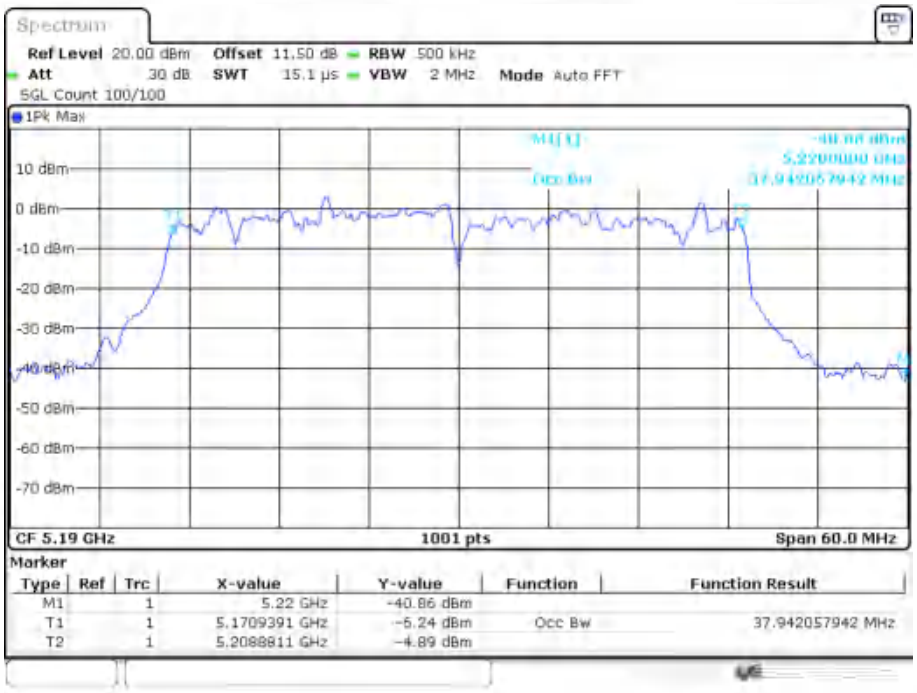


OBW NVNT ax20 5240MHz Ant1

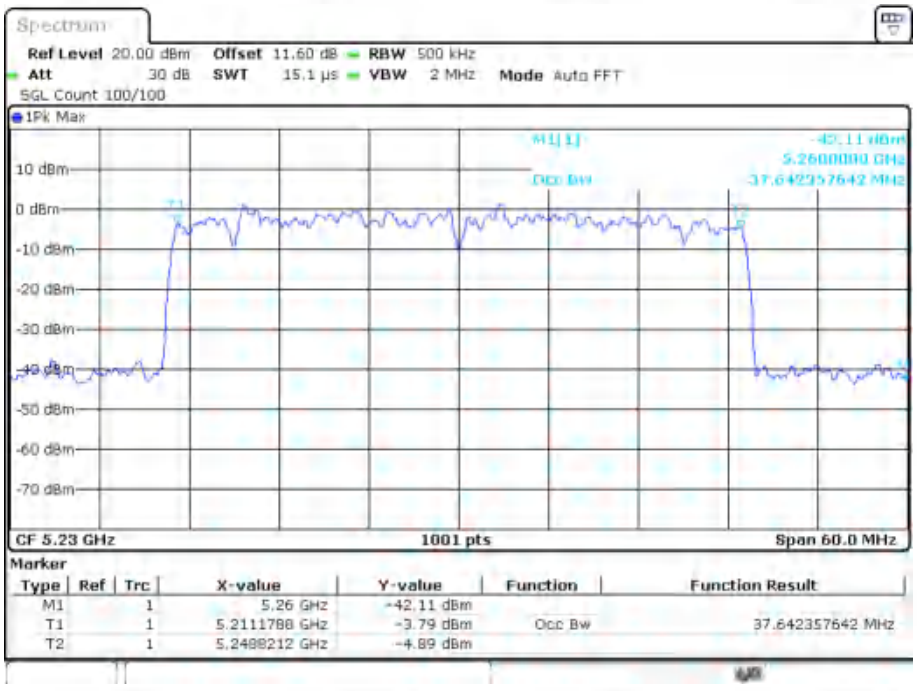


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT ax40 5190MHz Ant1

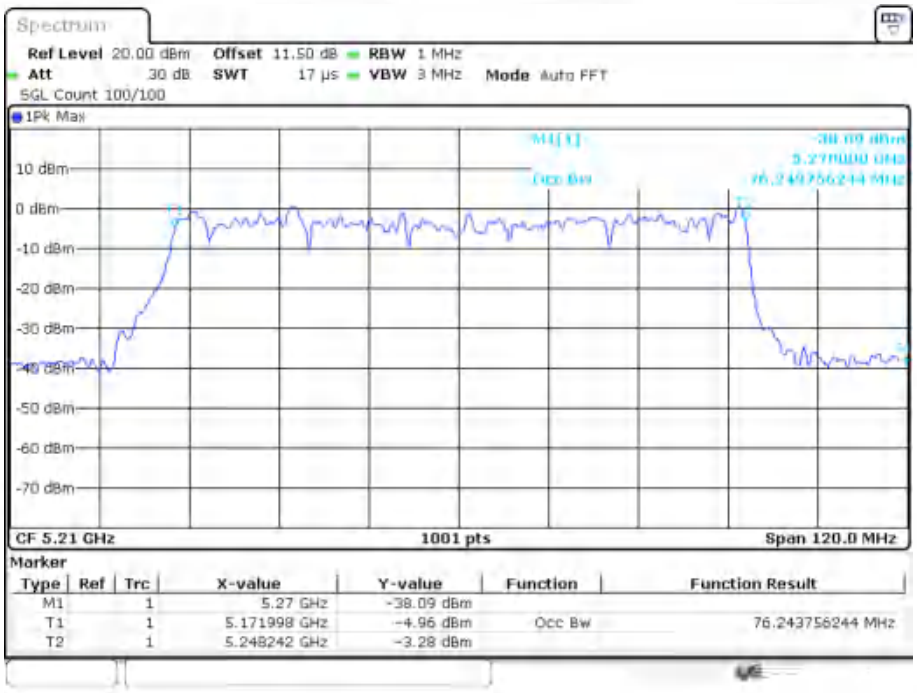


OBW NVNT ax40 5230MHz Ant1

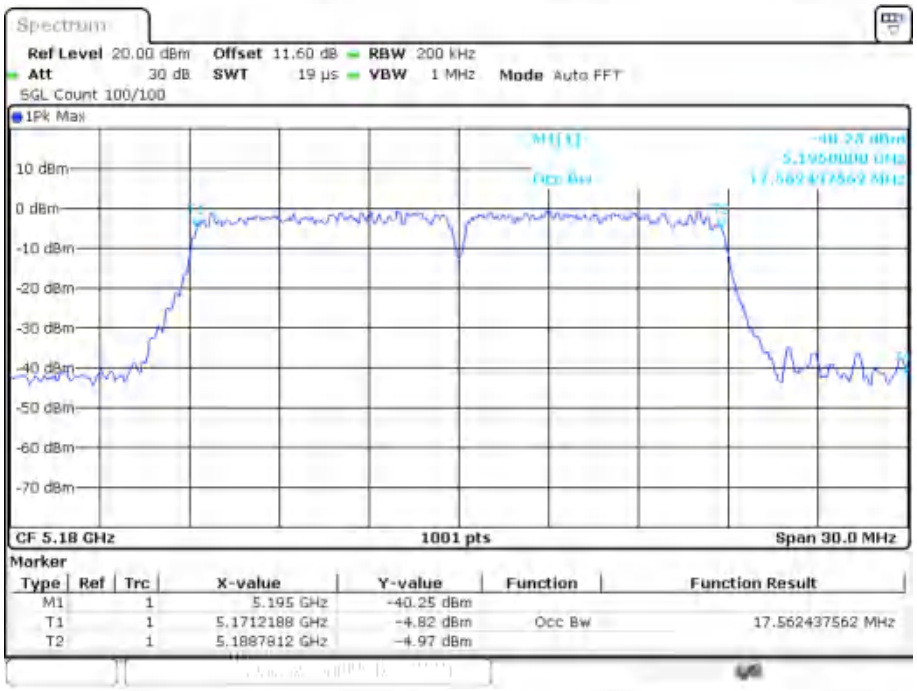


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT ax80 5210MHz Ant1

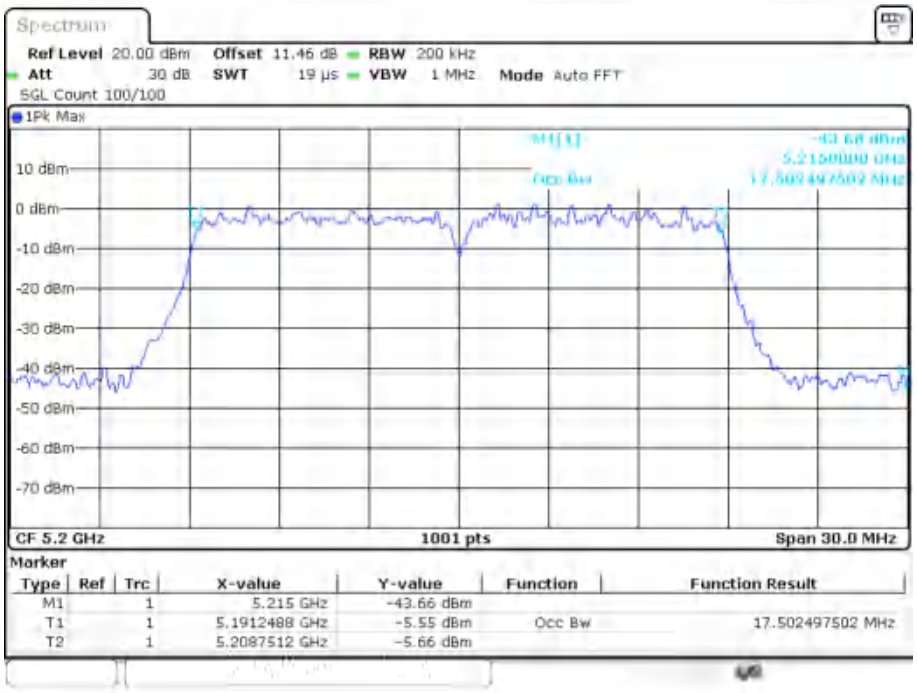


OBW NVNT n20 5180MHz Ant1

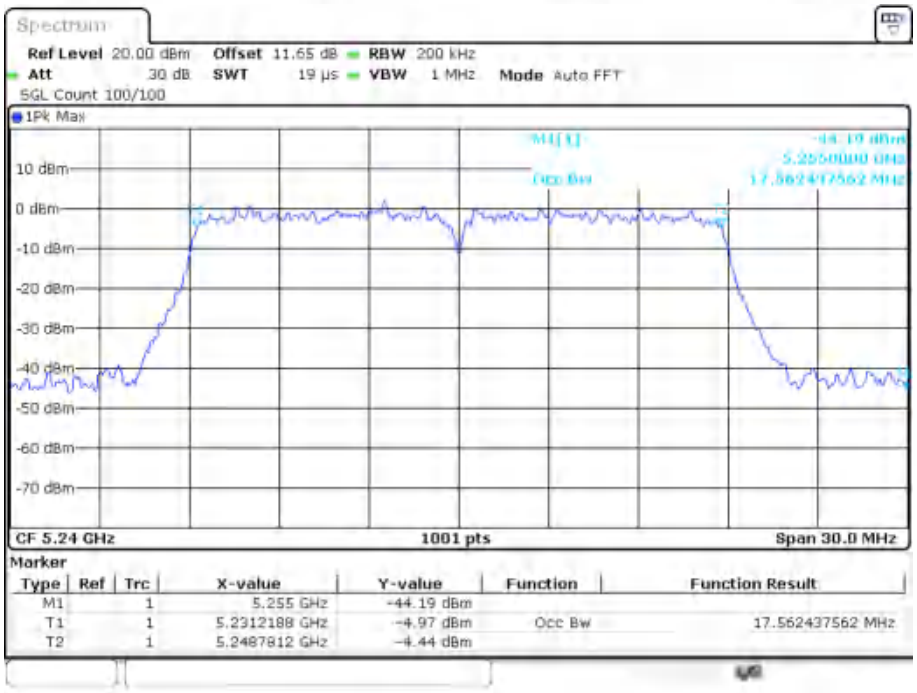


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT n20 5200MHz Ant1

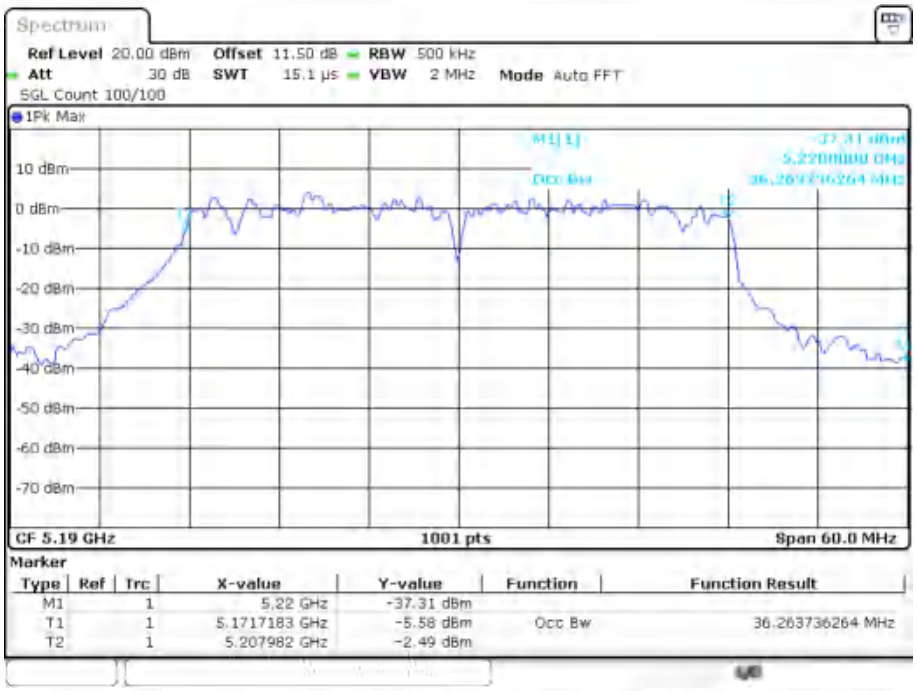


OBW NVNT n20 5240MHz Ant1

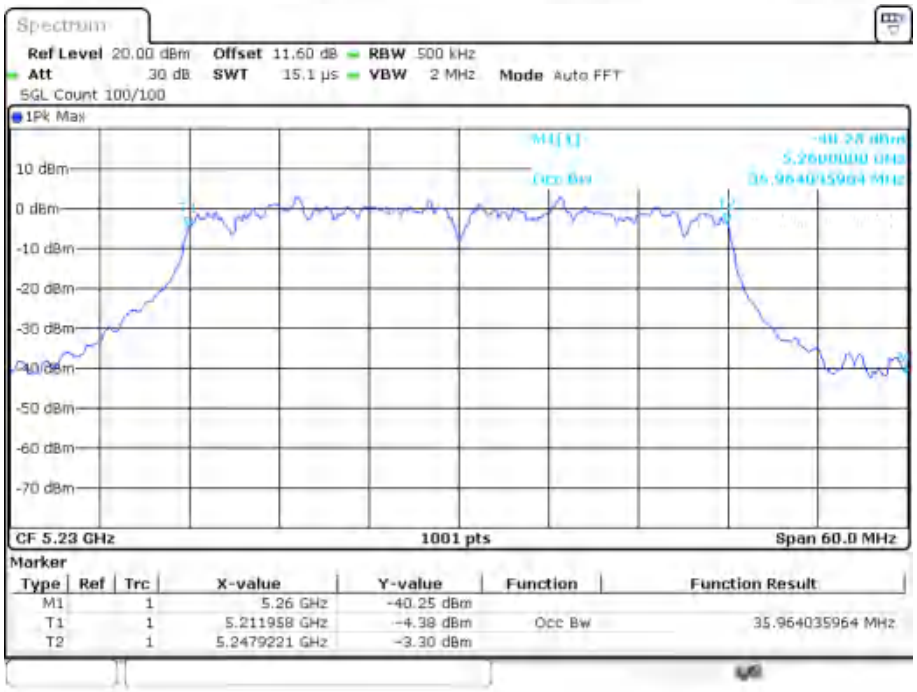


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT n40 5190MHz Ant1



OBW NVNT n40 5230MHz Ant1



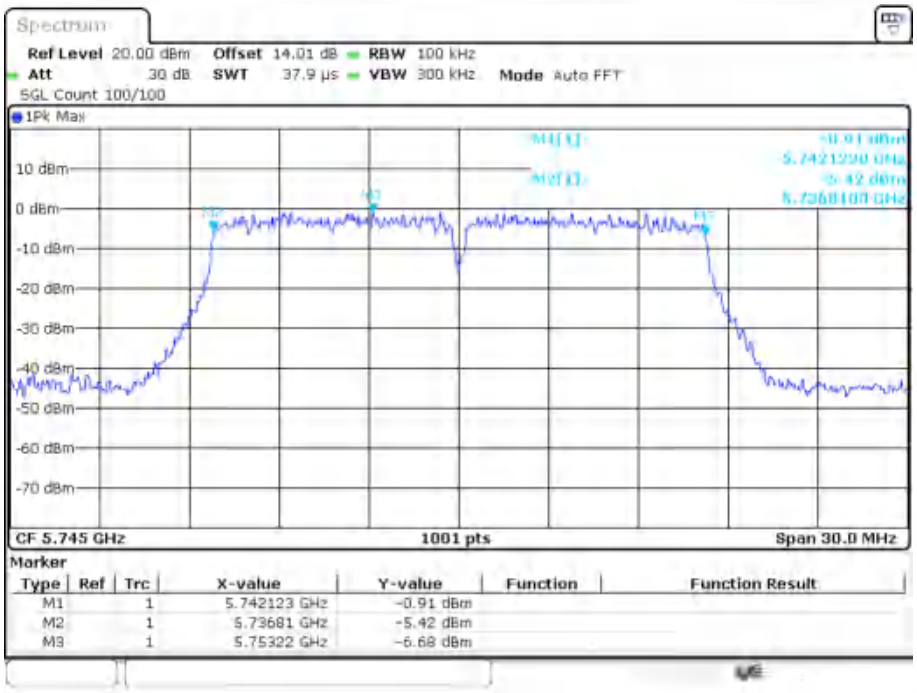
BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Band 4
-6dB Bandwidth

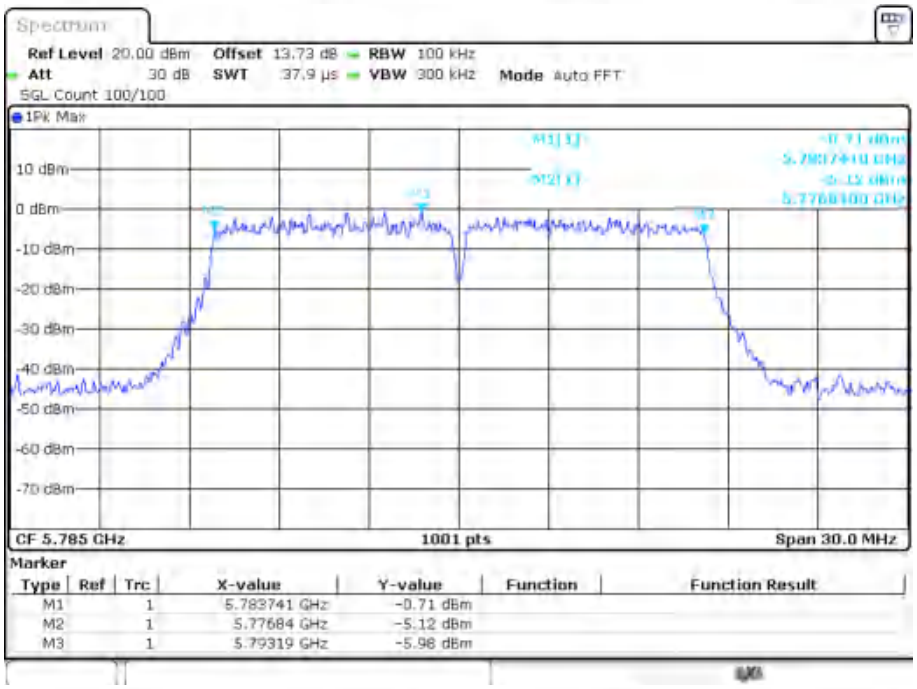
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	a	5745	Ant1	16.41	0.5	Pass
NVNT	a	5785	Ant1	16.35	0.5	Pass
NVNT	a	5825	Ant1	16.41	0.5	Pass
NVNT	ac20	5745	Ant1	16.74	0.5	Pass
NVNT	ac20	5785	Ant1	17.61	0.5	Pass
NVNT	ac20	5825	Ant1	17.7	0.5	Pass
NVNT	ac40	5755	Ant1	36.24	0.5	Pass
NVNT	ac40	5795	Ant1	36.06	0.5	Pass
NVNT	ac80	5775	Ant1	76.56	0.5	Pass
NVNT	ax20	5745	Ant1	18.42	0.5	Pass
NVNT	ax20	5785	Ant1	18.99	0.5	Pass
NVNT	ax20	5825	Ant1	18.99	0.5	Pass
NVNT	ax40	5755	Ant1	38.1	0.5	Pass
NVNT	ax40	5795	Ant1	36.06	0.5	Pass
NVNT	ax80	5775	Ant1	77.28	0.5	Pass
NVNT	n20	5745	Ant1	17.1	0.5	Pass
NVNT	n20	5785	Ant1	17.01	0.5	Pass
NVNT	n20	5825	Ant1	17.01	0.5	Pass
NVNT	n40	5755	Ant1	36.18	0.5	Pass
NVNT	n40	5795	Ant1	36.48	0.5	Pass

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-6dB Bandwidth NVNT a 5745MHz Ant1

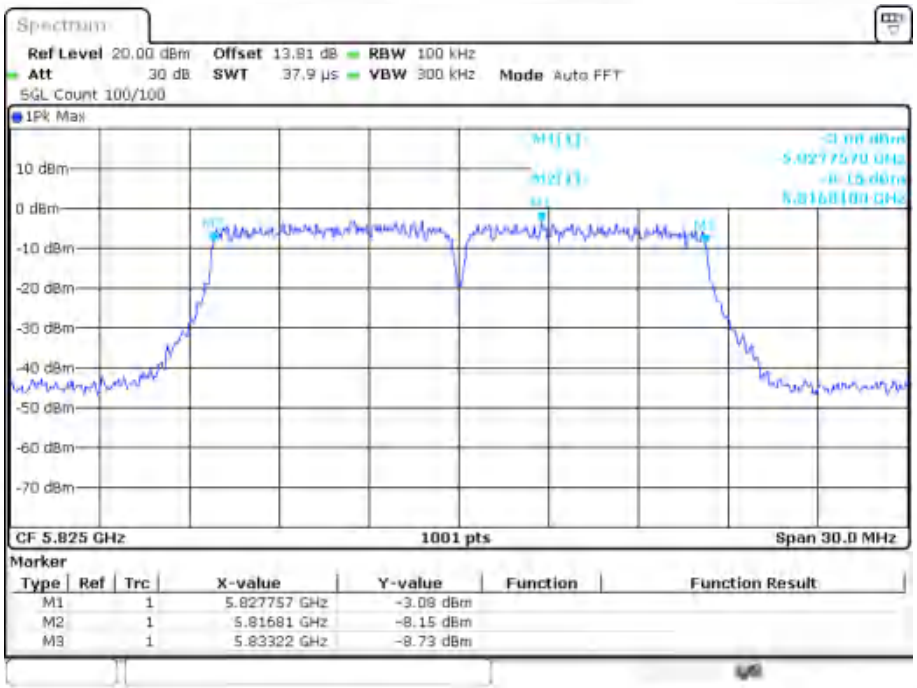


-6dB Bandwidth NVNT a 5785MHz Ant1

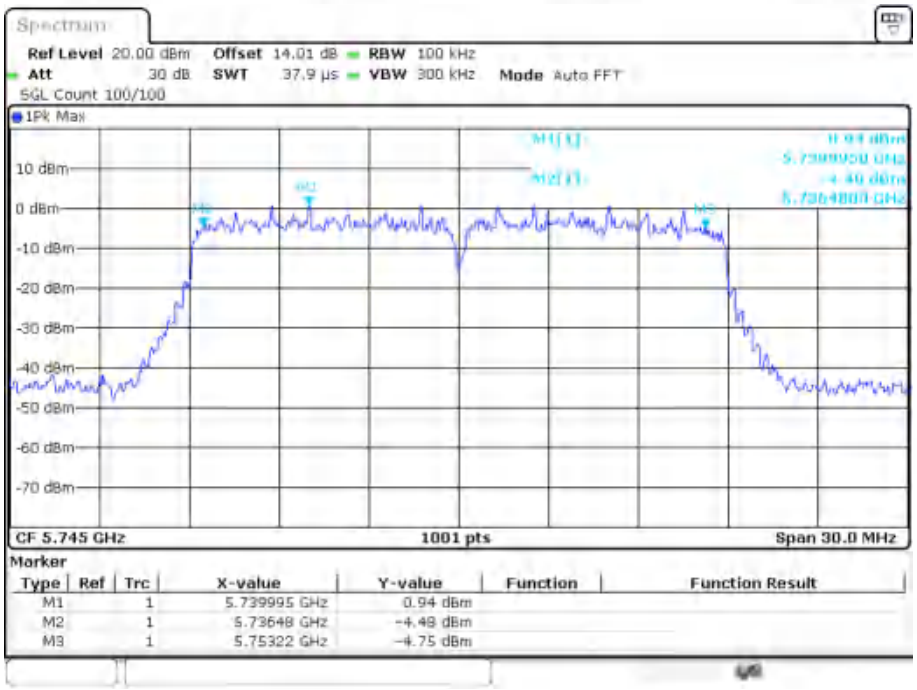


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-6dB Bandwidth NVNT a 5825MHz Ant1

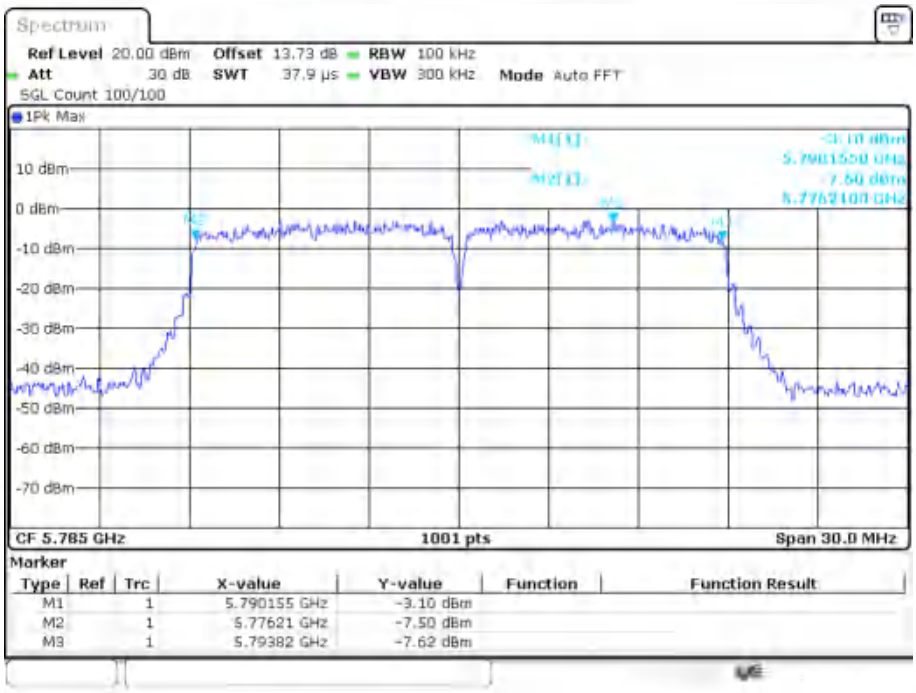


-6dB Bandwidth NVNT ac20 5745MHz Ant1

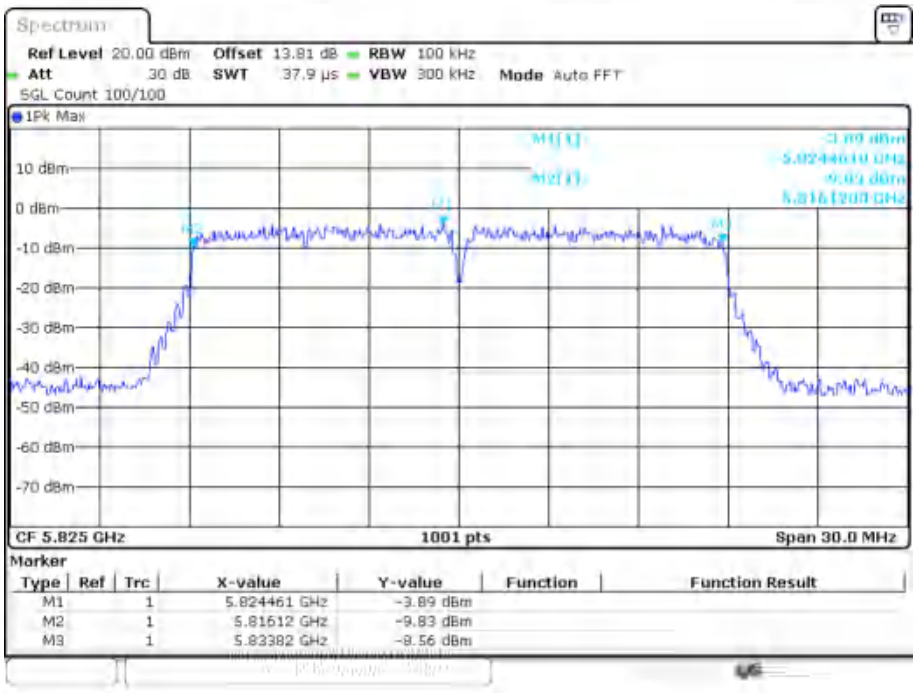


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-6dB Bandwidth NVNT ac20 5785MHz Ant1

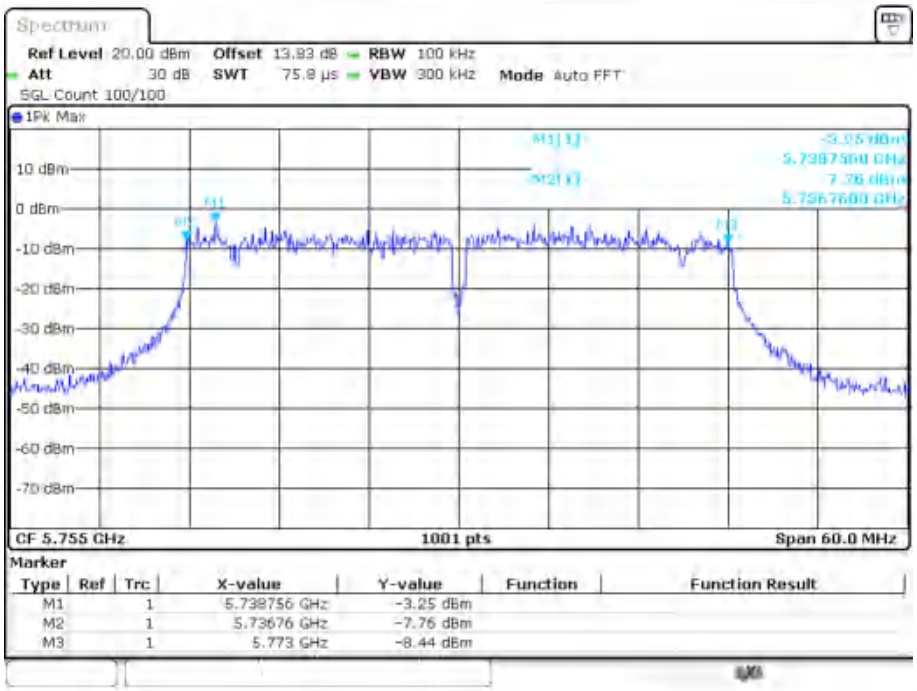


-6dB Bandwidth NVNT ac20 5825MHz Ant1

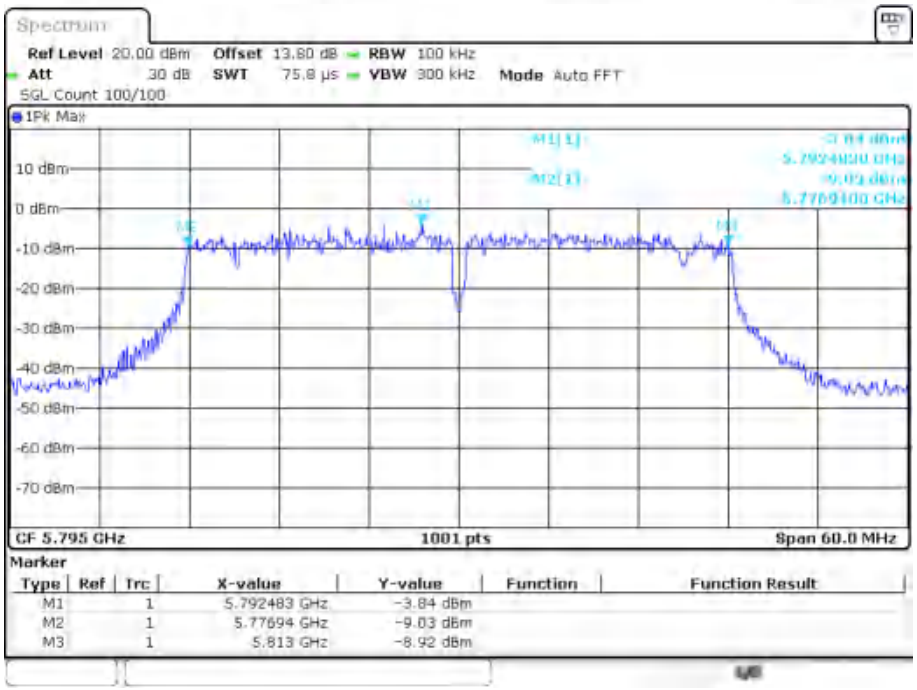


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-6dB Bandwidth NVNT ac40 5755MHz Ant1

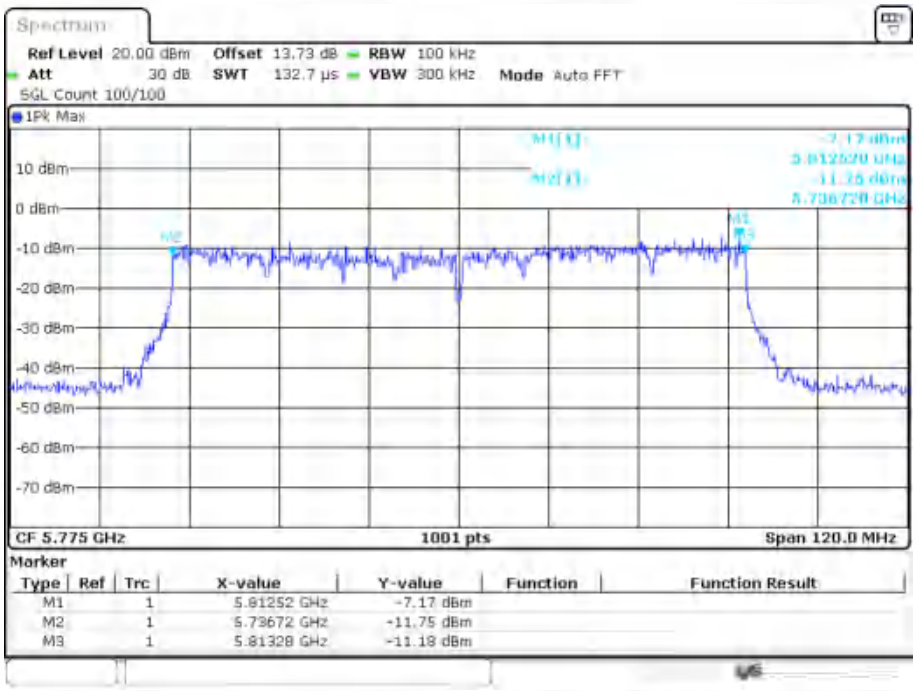


-6dB Bandwidth NVNT ac40 5795MHz Ant1

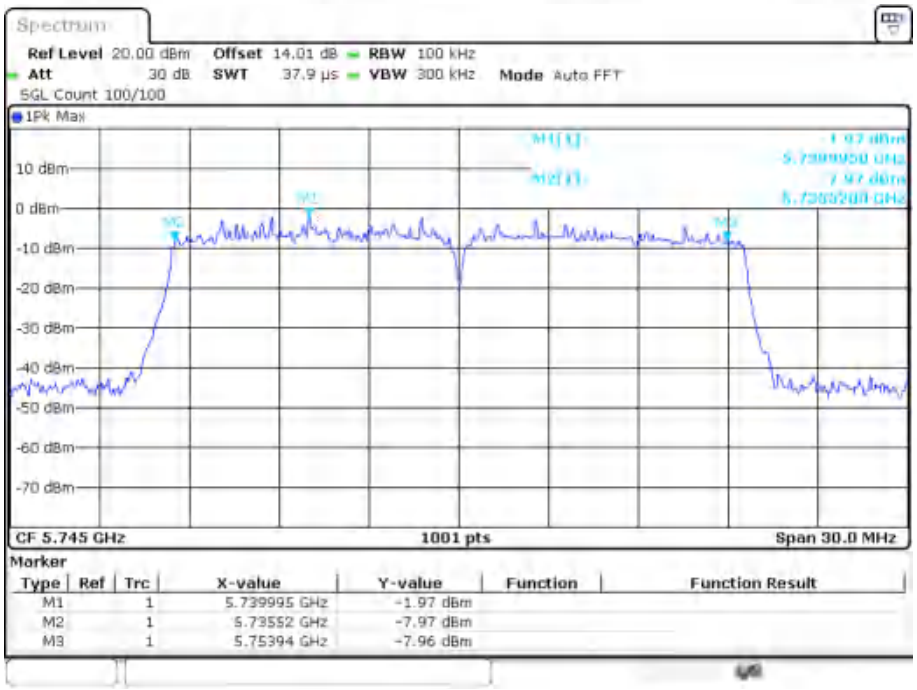


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-6dB Bandwidth NVNT ac80 5775MHz Ant1

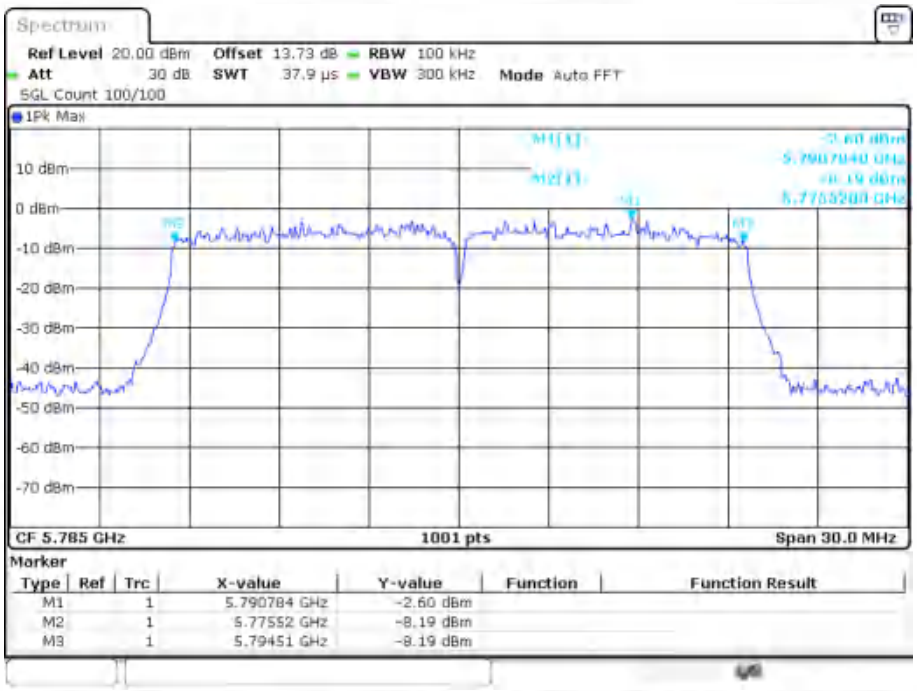


-6dB Bandwidth NVNT ax20 5745MHz Ant1

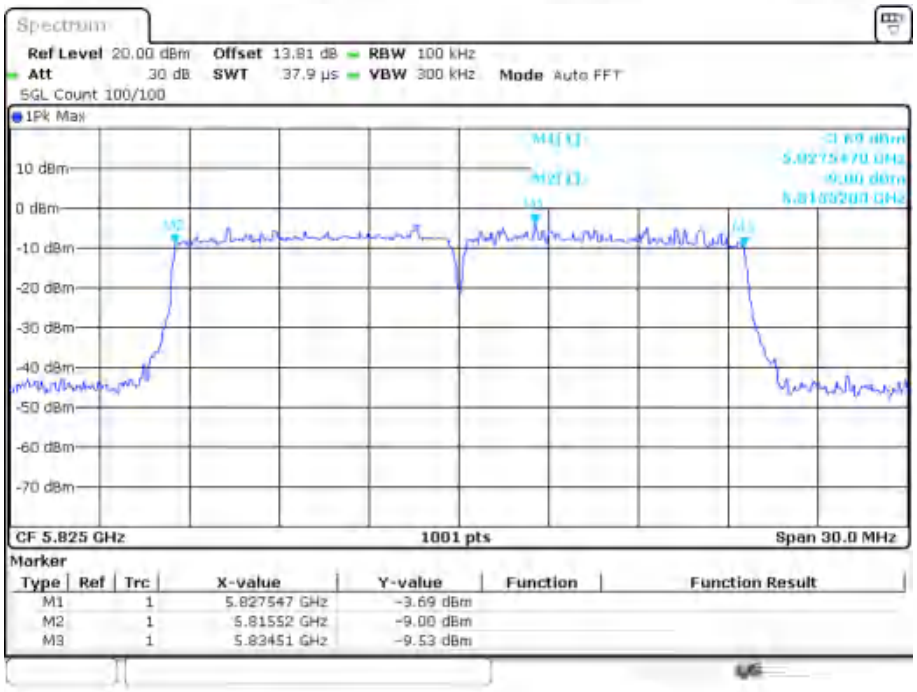


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-6dB Bandwidth NVNT ax20 5785MHz Ant1

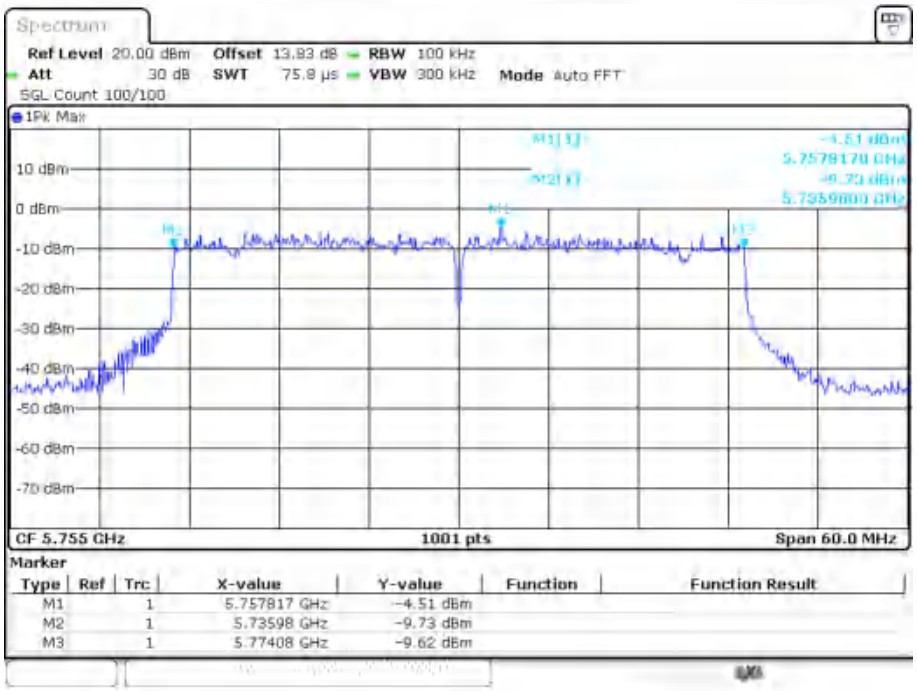


-6dB Bandwidth NVNT ax20 5825MHz Ant1

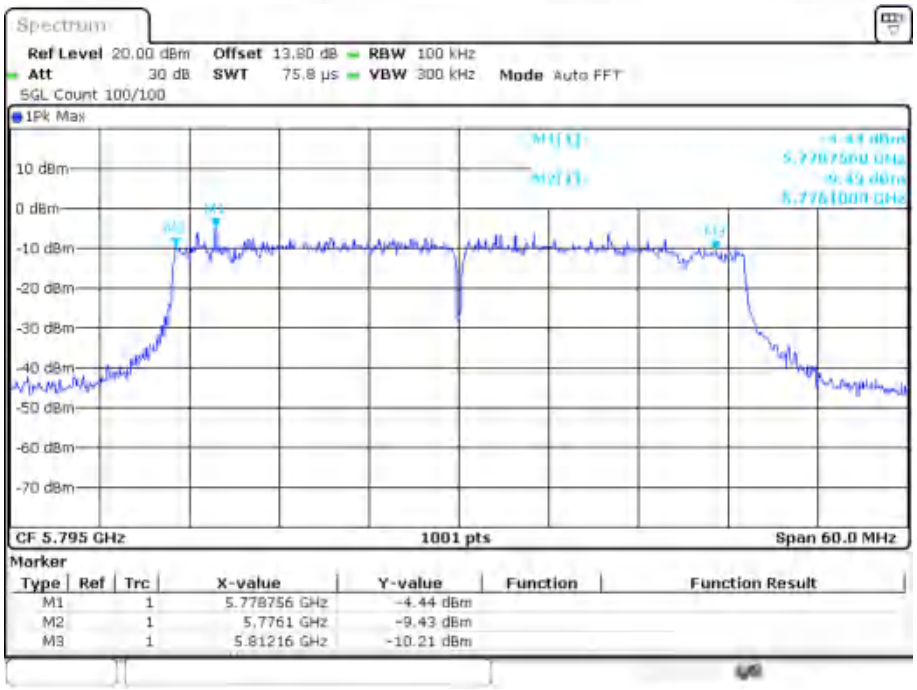


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-6dB Bandwidth NVNT ax40 5755MHz Ant1

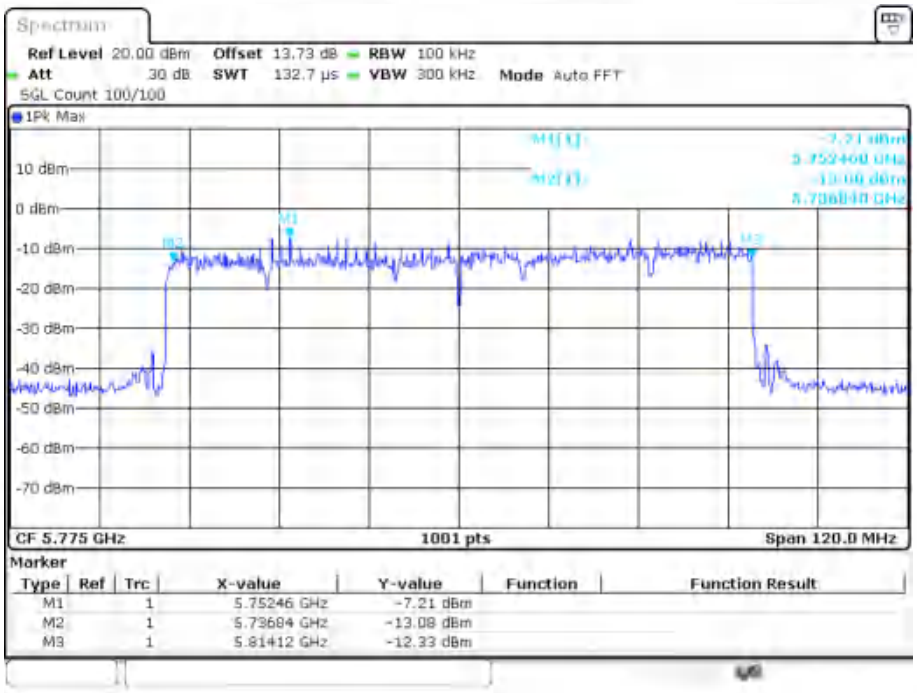


-6dB Bandwidth NVNT ax40 5795MHz Ant1

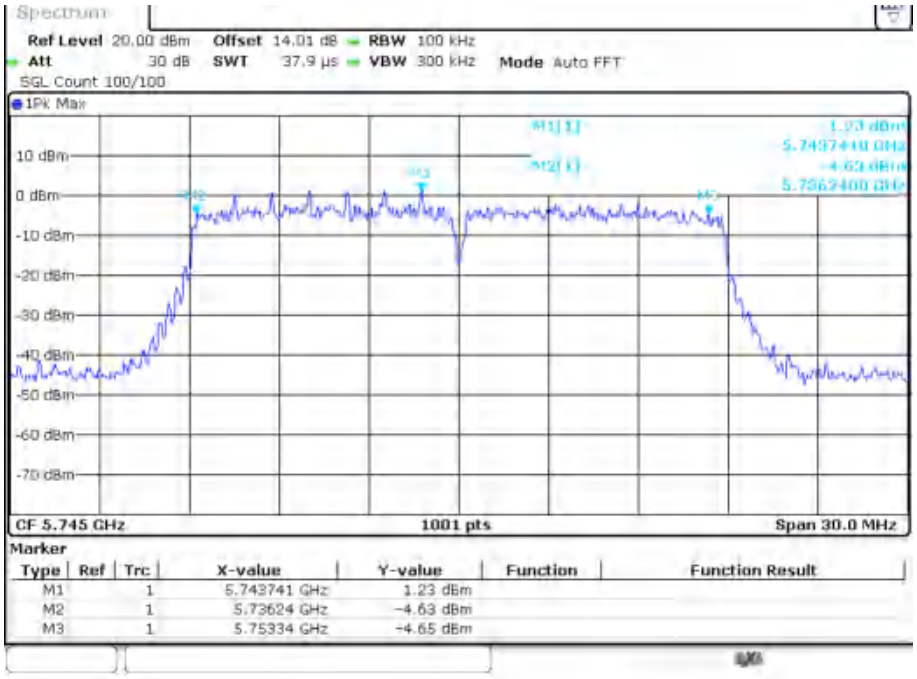


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-6dB Bandwidth NVNT ax80 5775MHz Ant1

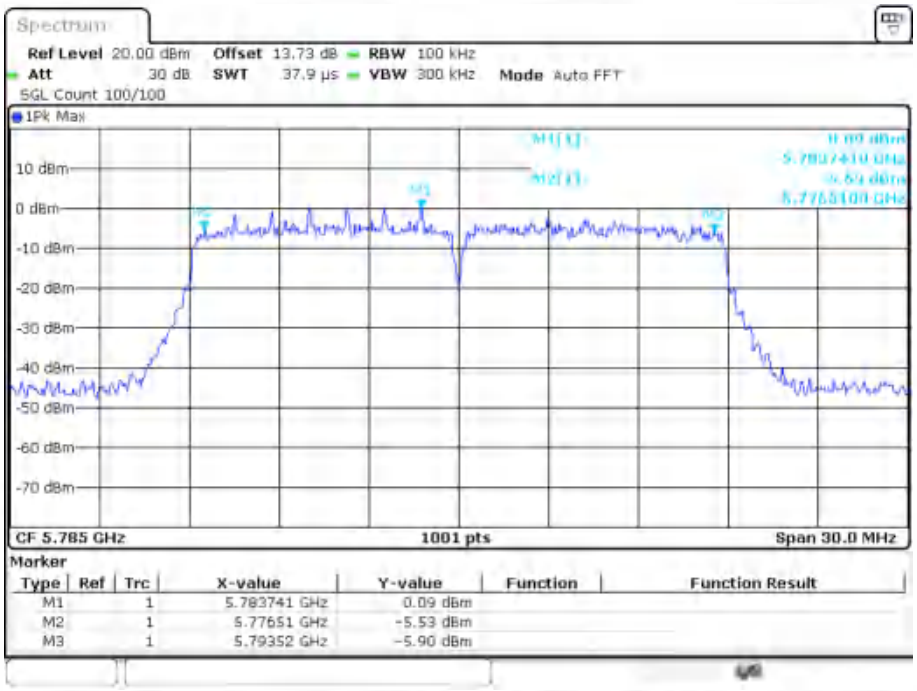


-6dB Bandwidth NVNT n20 5745MHz Ant1

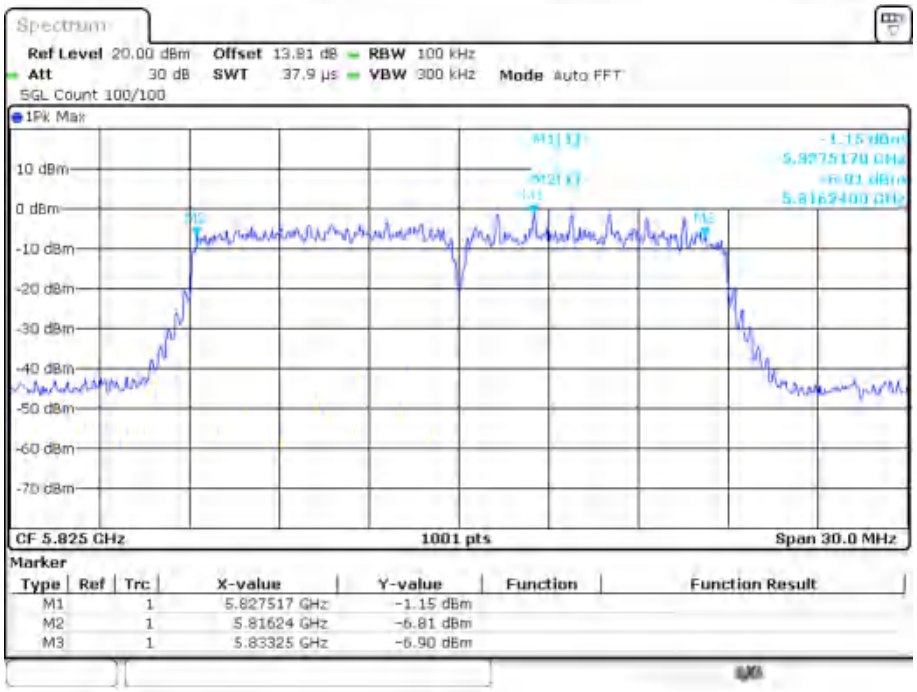


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-6dB Bandwidth NVNT n20 5785MHz Ant1

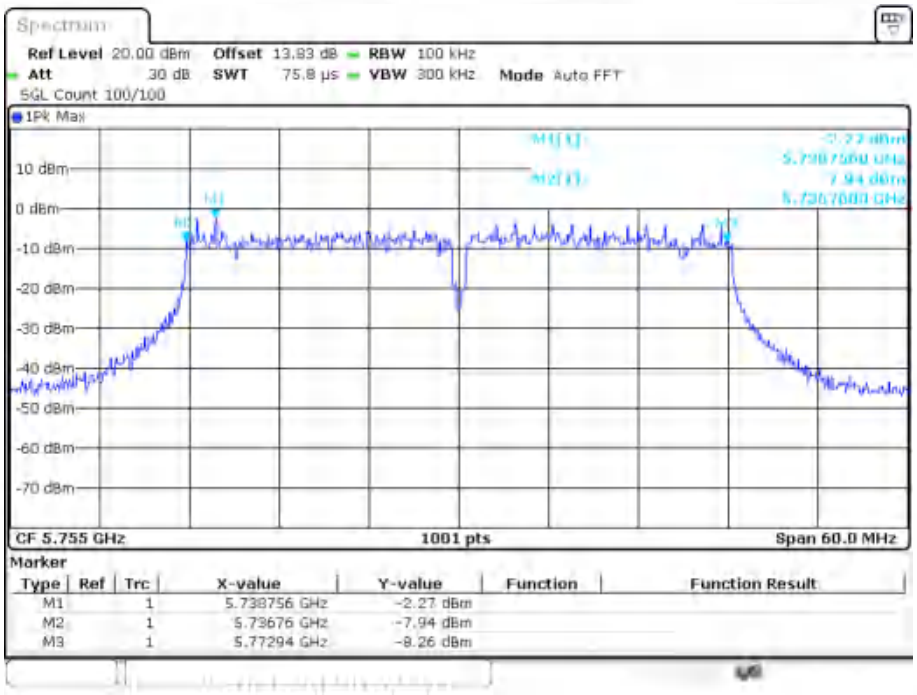


-6dB Bandwidth NVNT n20 5825MHz Ant1

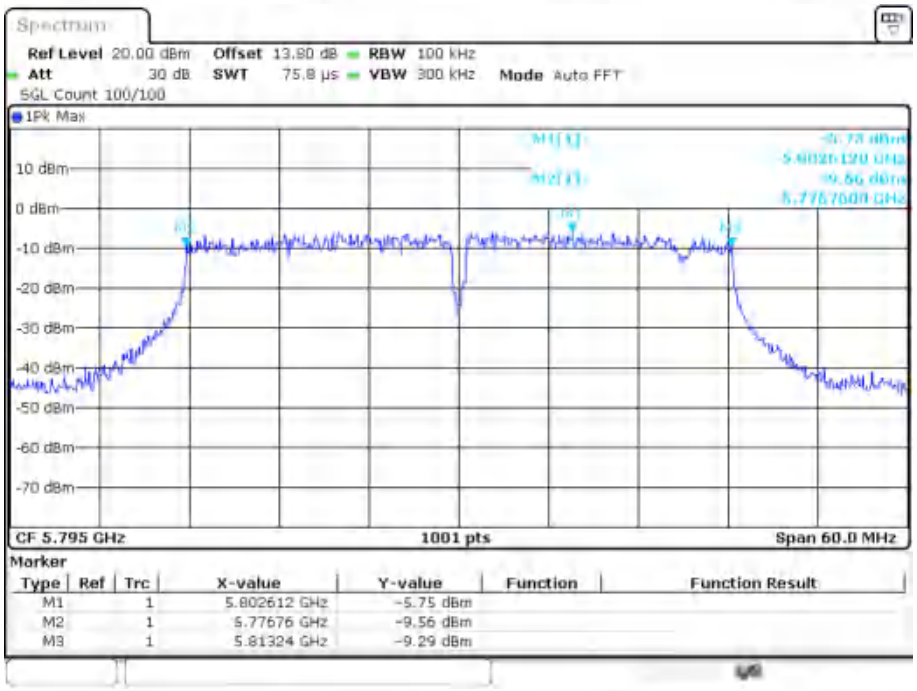


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

-6dB Bandwidth NVNT n40 5755MHz Ant1



-6dB Bandwidth NVNT n40 5795MHz Ant1



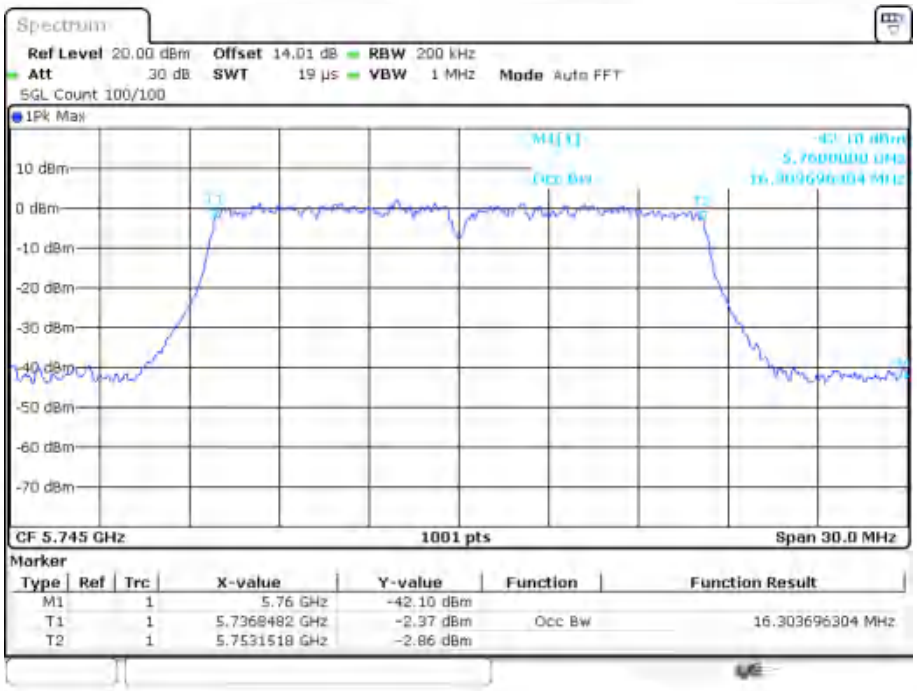
BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Occupied Channel Bandwidth

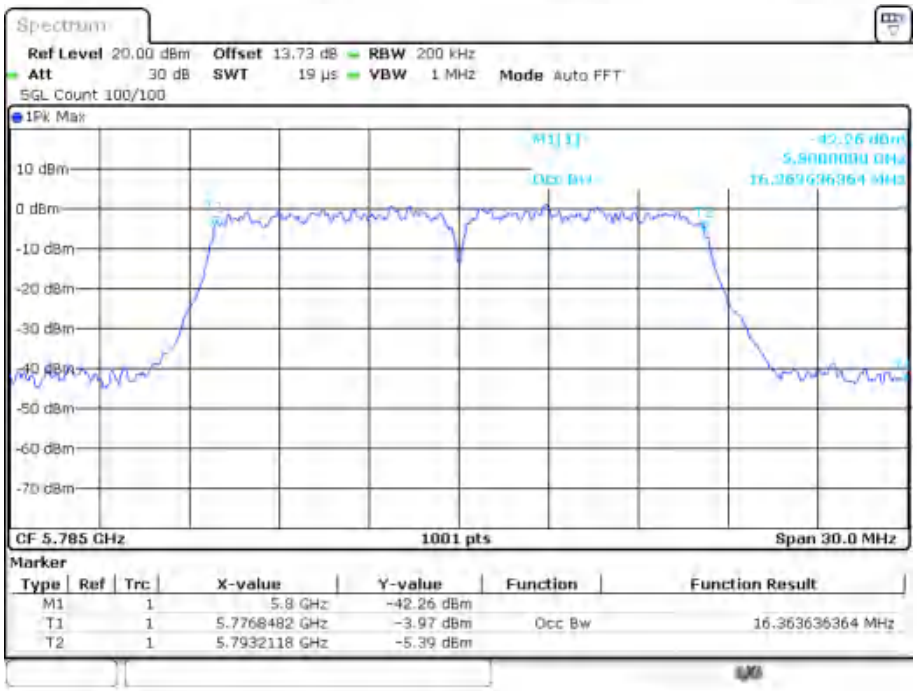
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	a	5745	Ant1	16.304
NVNT	a	5785	Ant1	16.364
NVNT	a	5825	Ant1	16.304
NVNT	ac20	5745	Ant1	17.592
NVNT	ac20	5785	Ant1	17.532
NVNT	ac20	5825	Ant1	17.562
NVNT	ac40	5755	Ant1	36.683
NVNT	ac40	5795	Ant1	36.503
NVNT	ac80	5775	Ant1	76.004
NVNT	ax20	5745	Ant1	18.851
NVNT	ax20	5785	Ant1	18.911
NVNT	ax20	5825	Ant1	18.851
NVNT	ax40	5755	Ant1	37.642
NVNT	ax40	5795	Ant1	37.702
NVNT	ax80	5775	Ant1	77.323
NVNT	n20	5745	Ant1	17.502
NVNT	n20	5785	Ant1	17.562
NVNT	n20	5825	Ant1	17.532
NVNT	n40	5755	Ant1	36.324
NVNT	n40	5795	Ant1	36.324

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT a 5745MHz Ant1

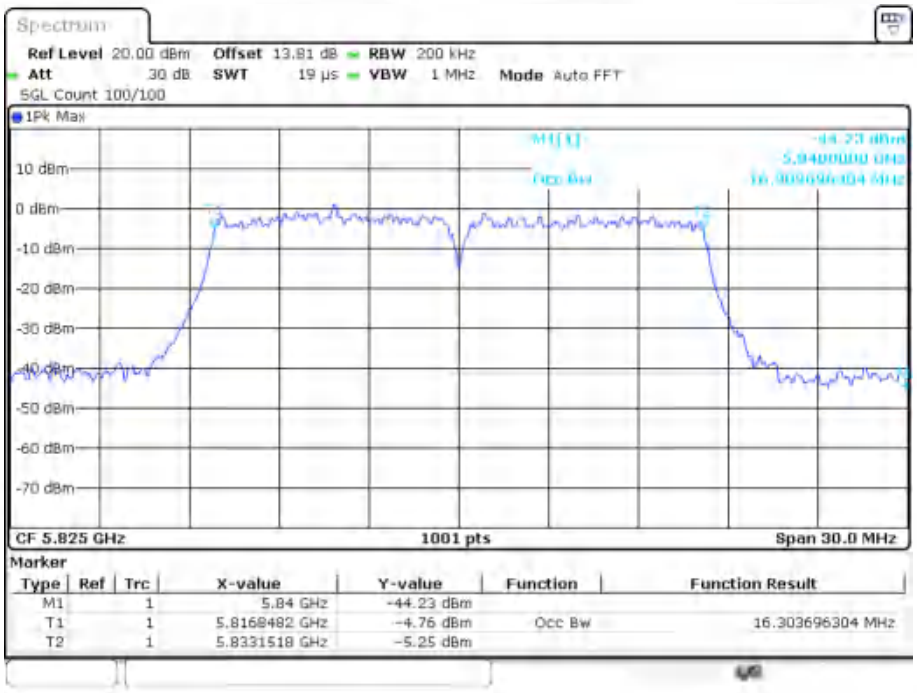


OBW NVNT a 5785MHz Ant1

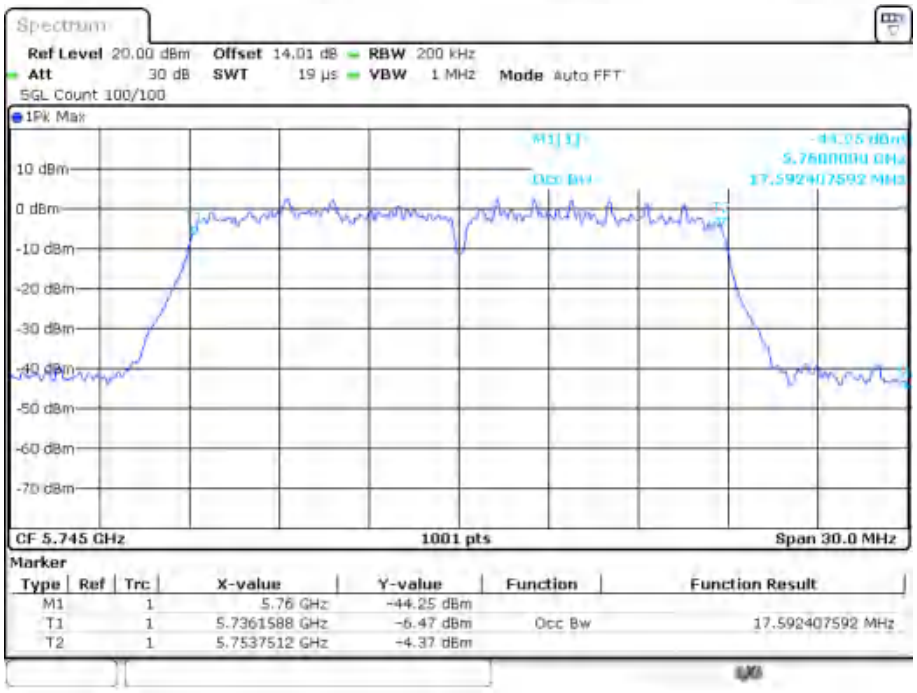


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT a 5825MHz Ant1

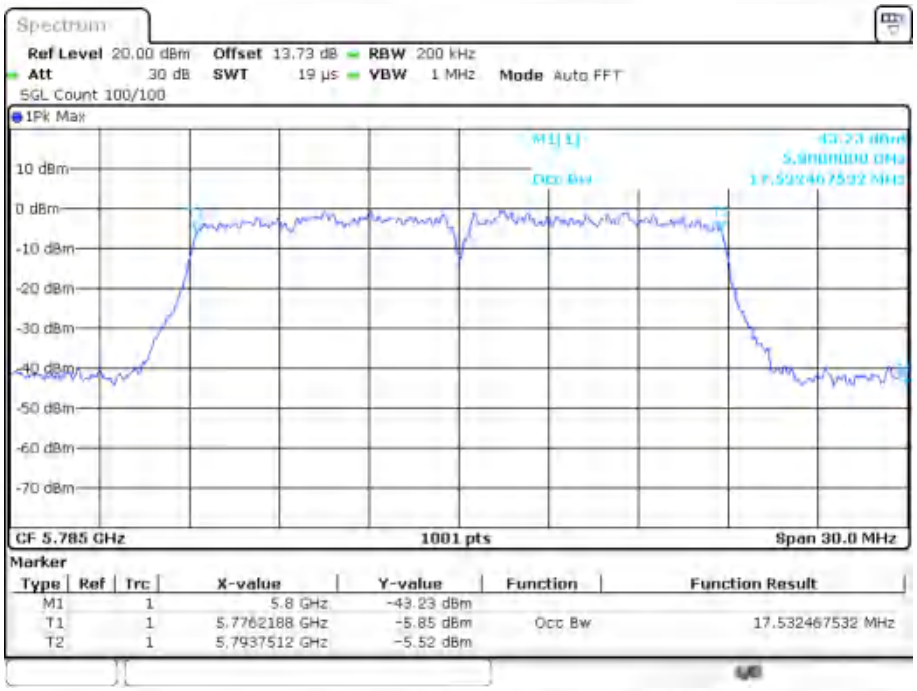


OBW NVNT ac20 5745MHz Ant1

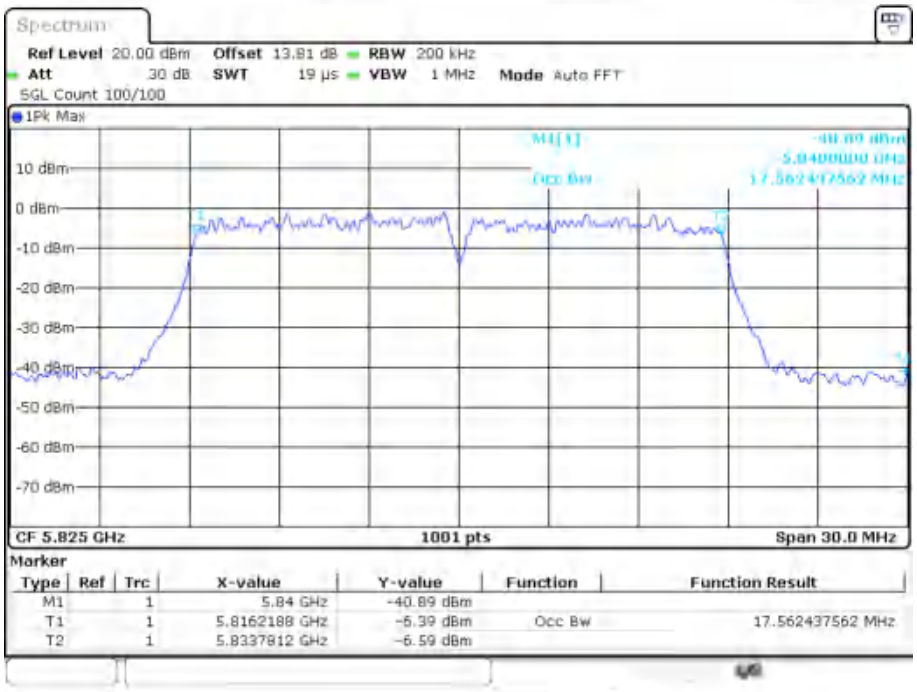


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT ac20 5785MHz Ant1

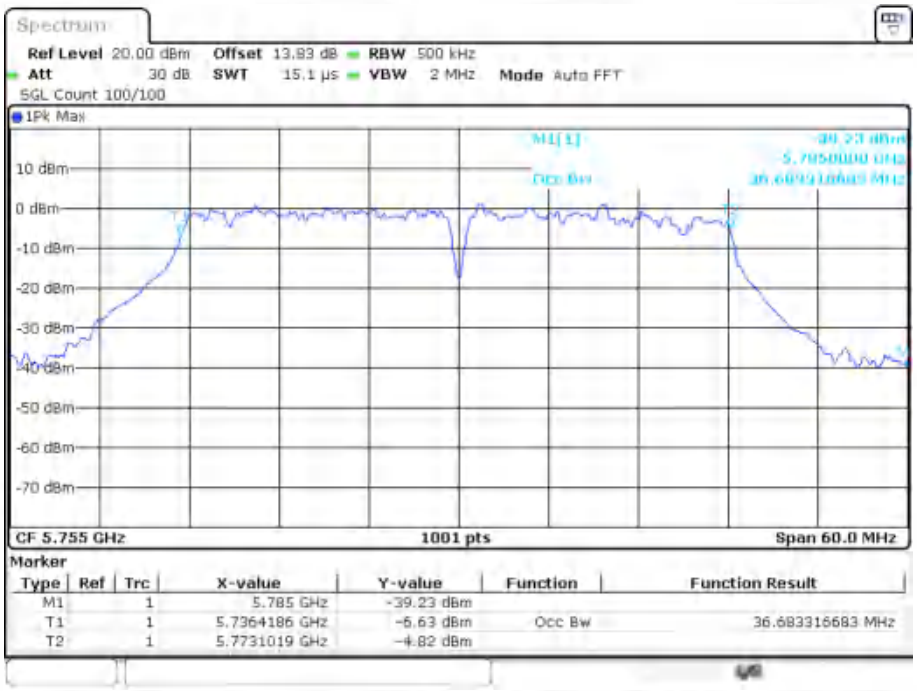


OBW NVNT ac20 5825MHz Ant1

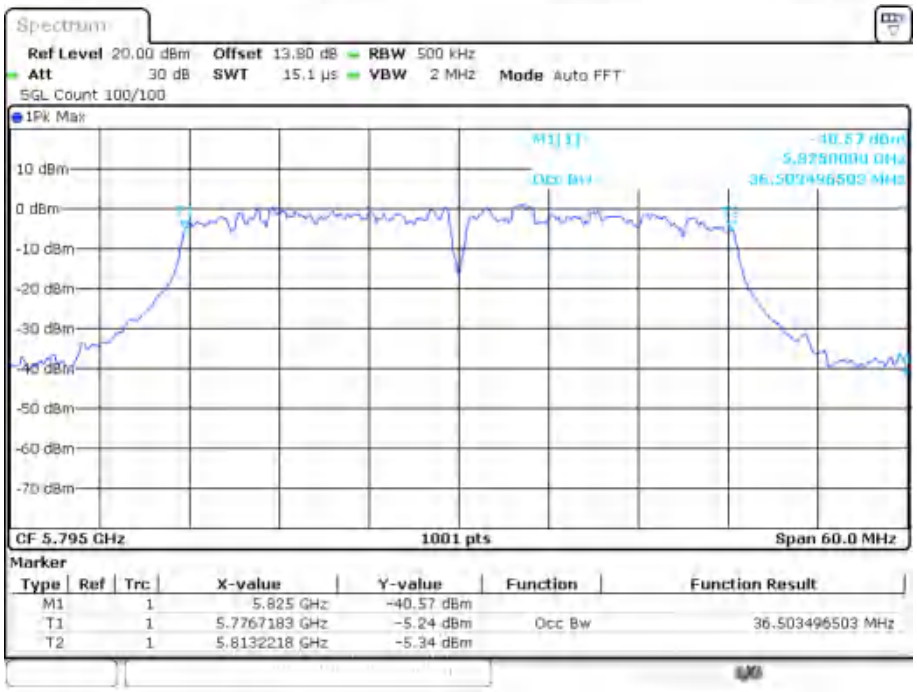


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT ac40 5755MHz Ant1

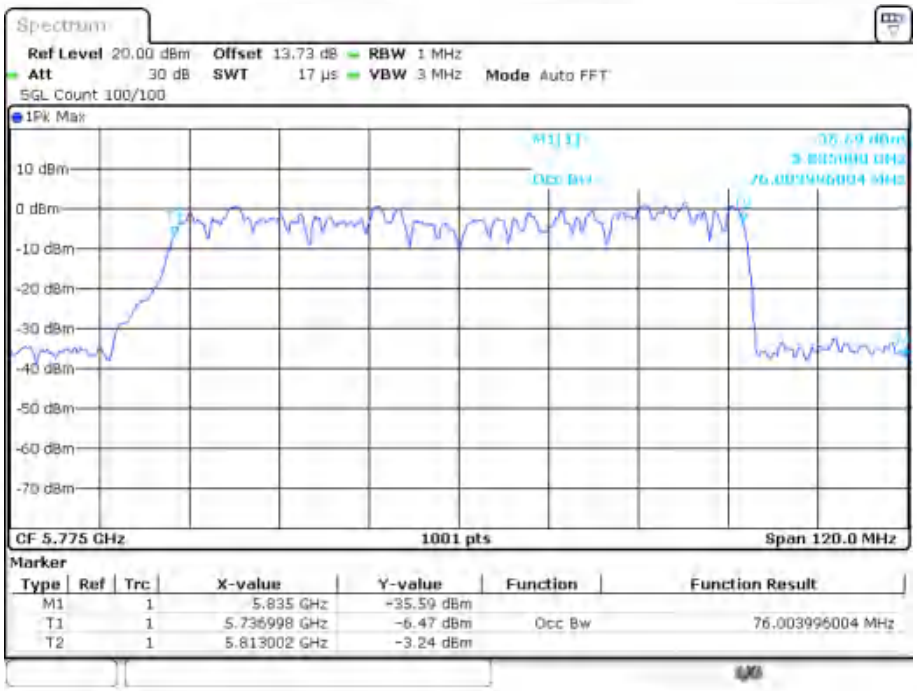


OBW NVNT ac40 5795MHz Ant1

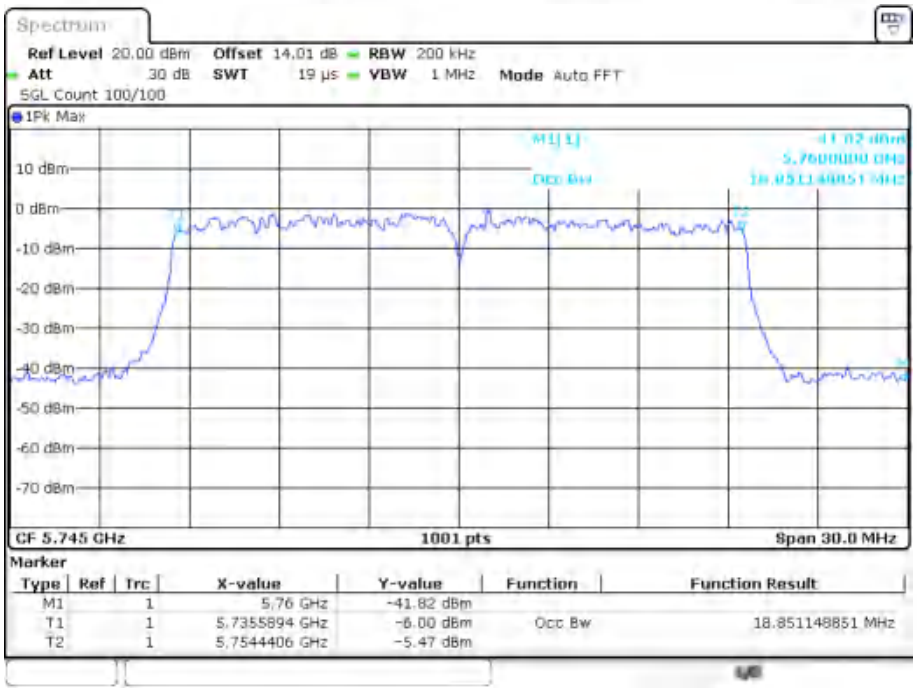


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT ac80 5775MHz Ant1

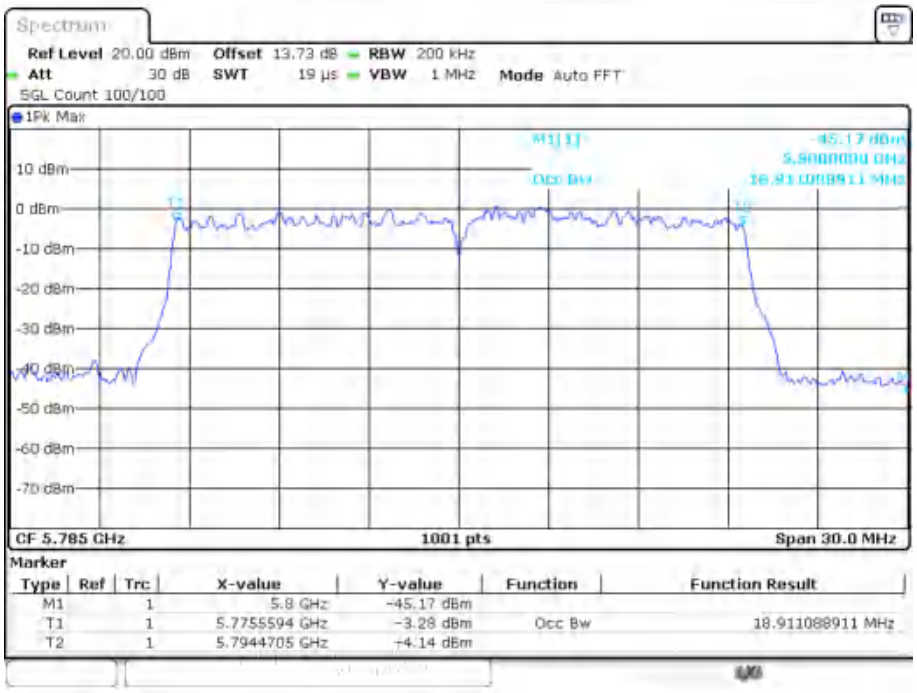


OBW NVNT ax20 5745MHz Ant1

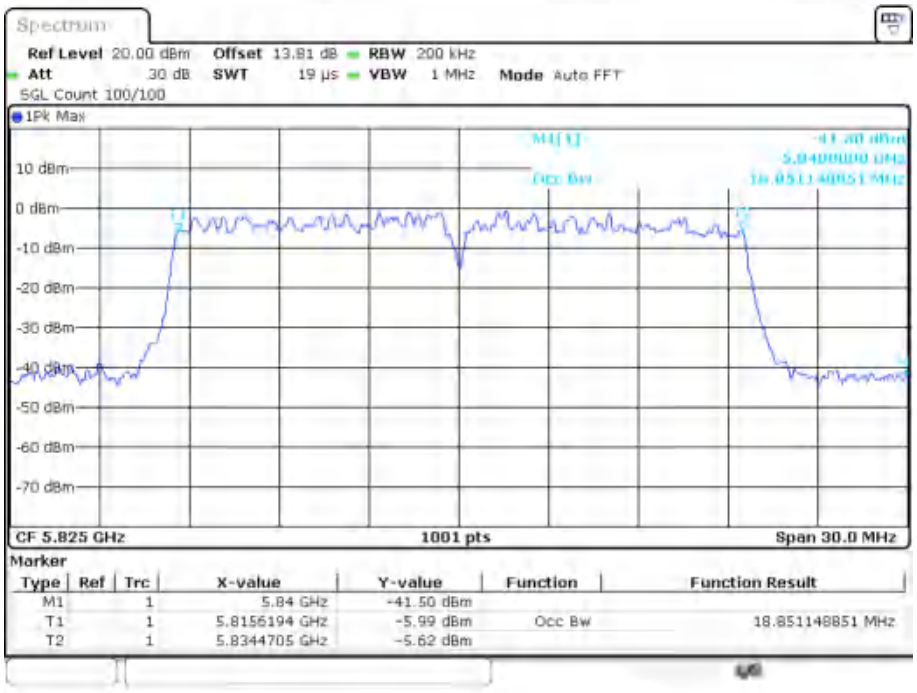


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT ax20 5785MHz Ant1

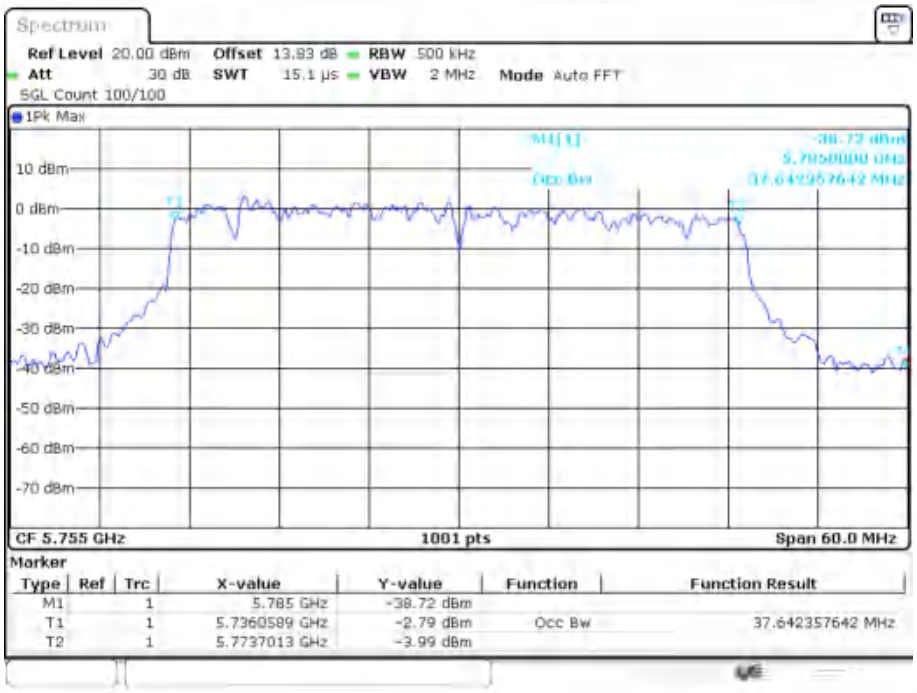


OBW NVNT ax20 5825MHz Ant1

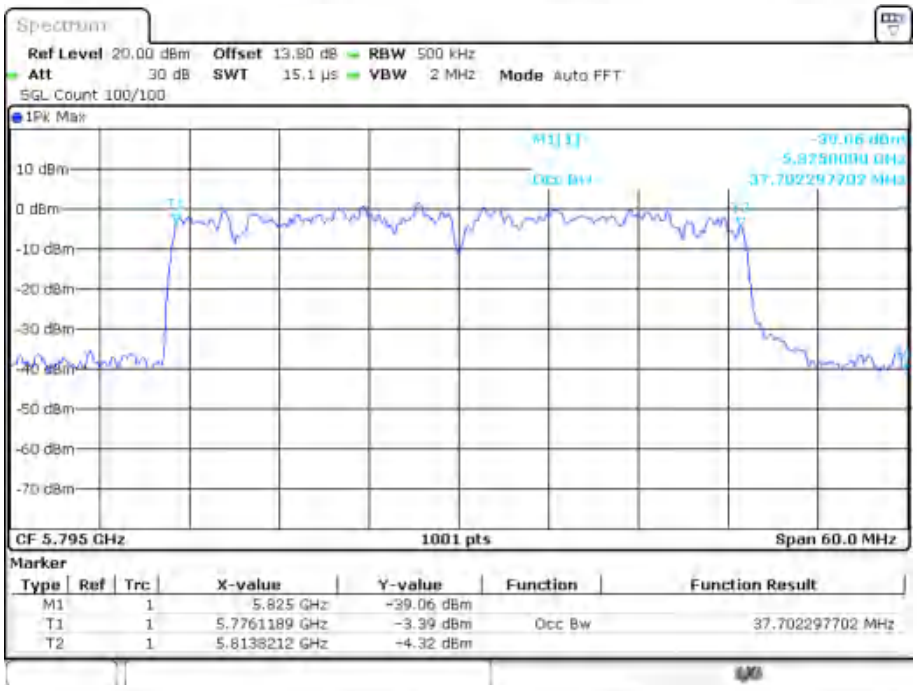


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT ax40 5755MHz Ant1

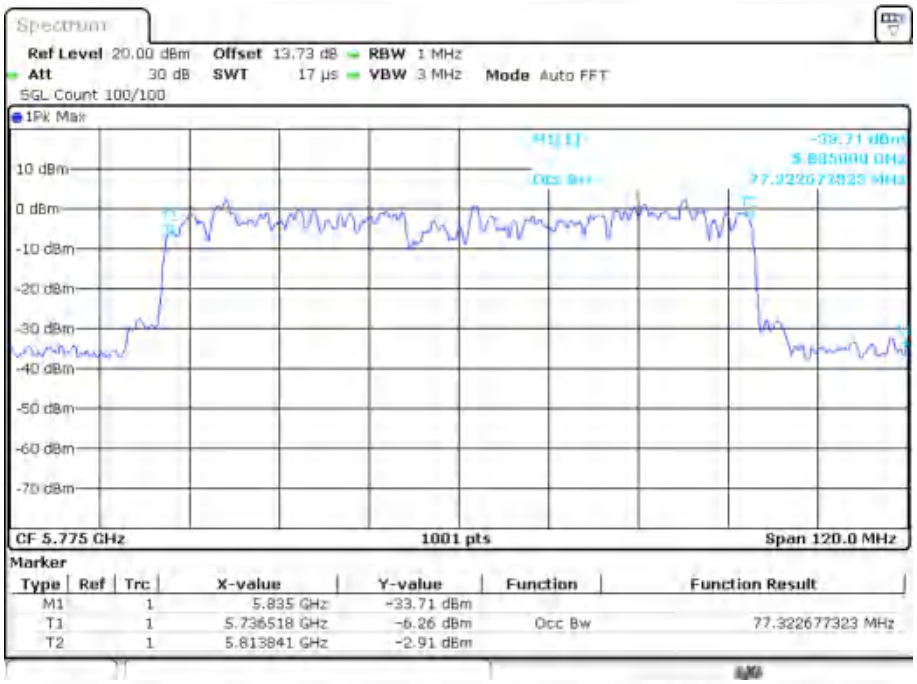


OBW NVNT ax40 5795MHz Ant1

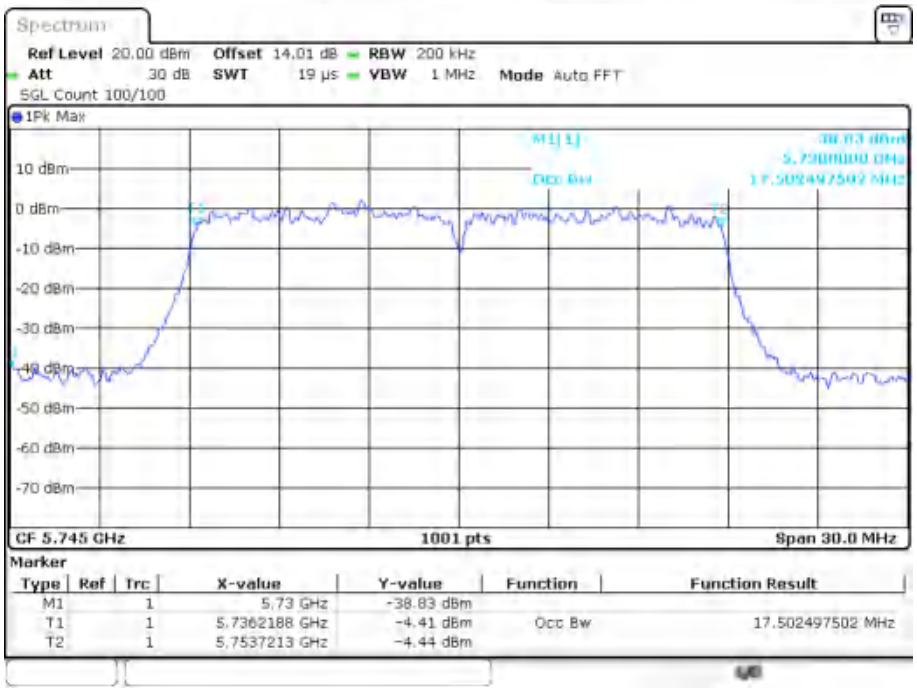


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT ax80 5775MHz Ant1

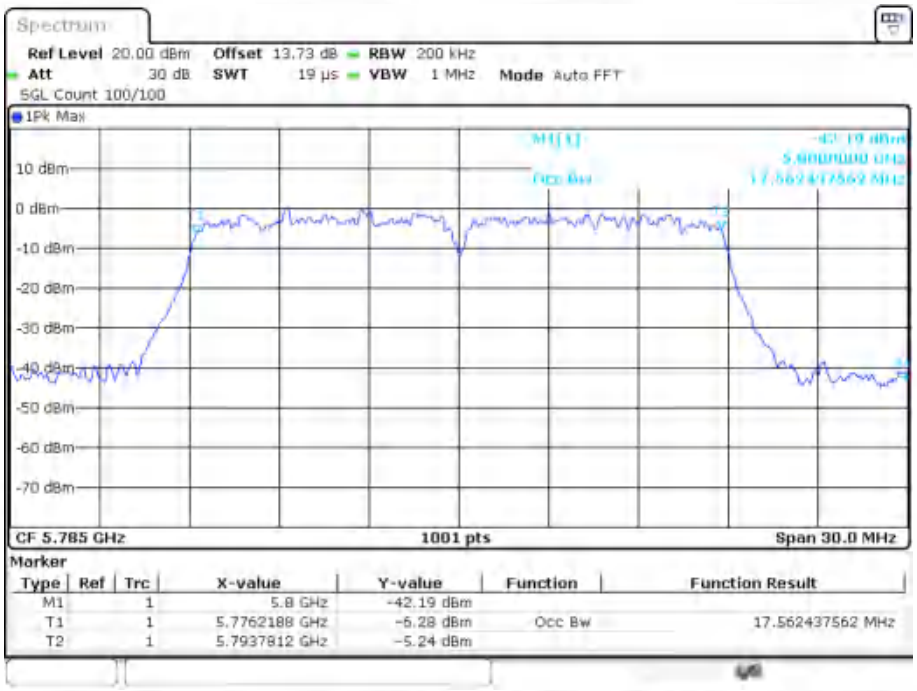


OBW NVNT n20 5745MHz Ant1

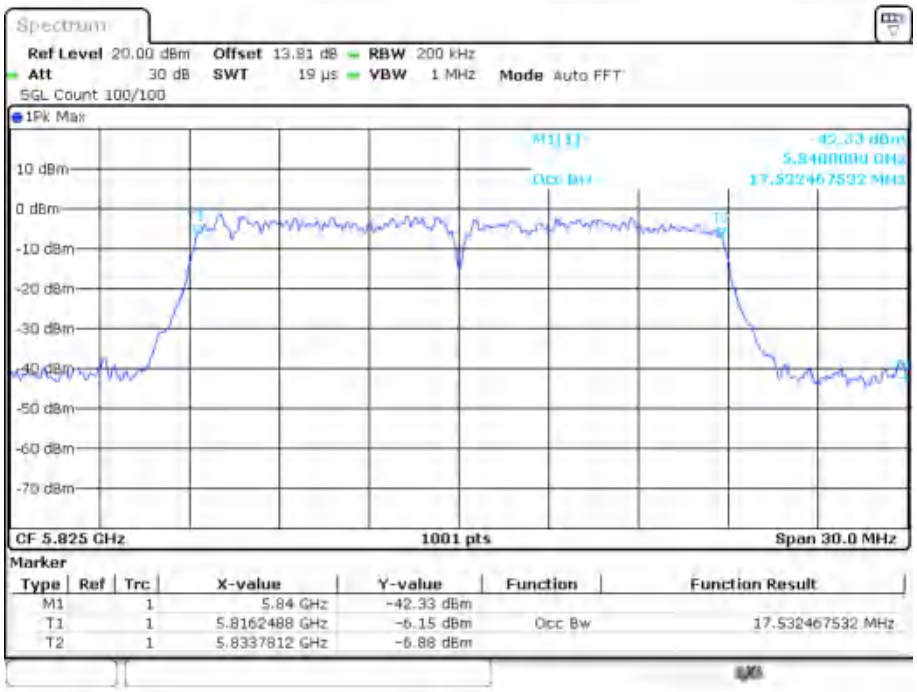


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT n20 5785MHz Ant1

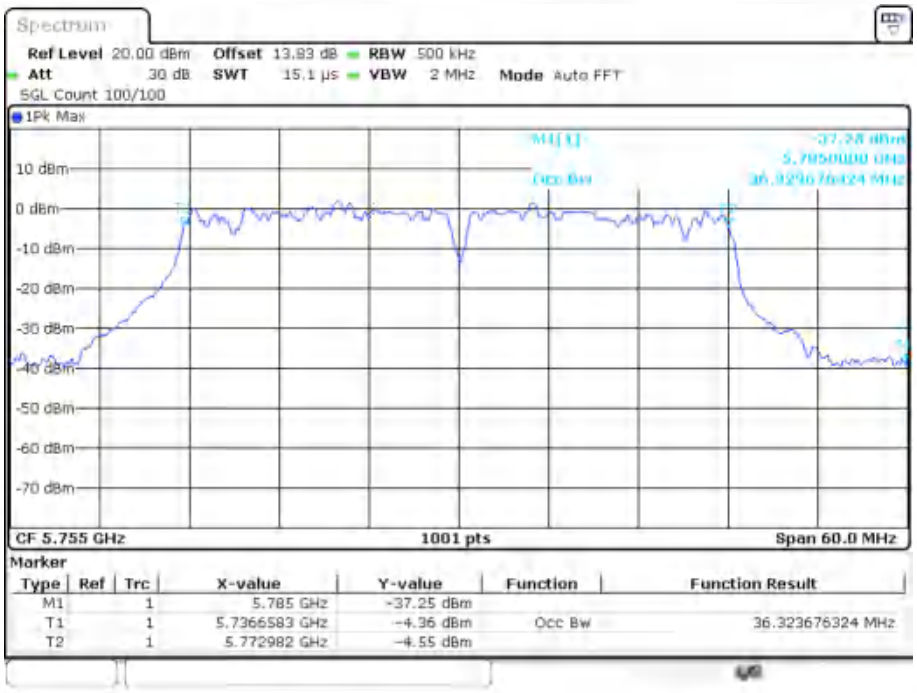


OBW NVNT n20 5825MHz Ant1

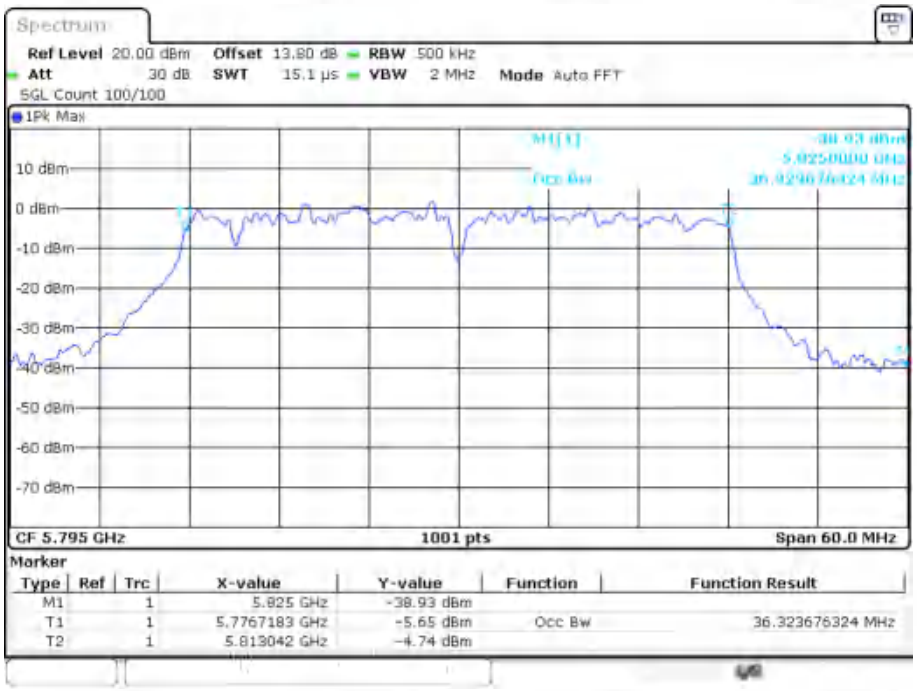


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

OBW NVNT n40 5755MHz Ant1



OBW NVNT n40 5795MHz Ant1



BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

6.5 Band edge emissions (Radiated)

Test Requirement:	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(2) 47 CFR Part 15.407(b)(4) 47 CFR Part 15.407(b)(10)
Test Method:	ANSI C63.10-2013, section 12.7.4, 12.7.5, 12.7.6
Test Limit:	For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz. For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz. For transmitters operating solely in the 5.725-5.850 GHz band: 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.

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2]Above 38.6

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in § 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in § 15.209shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35apply to these measurements.

Except as provided elsewhere in this subpart, the emissions from an intentional

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

	radiator shall not exceed the field strength levels specified in the following table: Frequency (MHz) / Field strength (microvolts/meter) / Measurement distance (meters) 0.009-0.490 / 2400/F(kHz) / 300 0.490-1.705 / 24000/F(kHz) / 30 1.705-30.0 / 30 / 30 30-88 / 100 ** / 3 88-216 / 150 ** / 3 216-960 / 200 ** / 3 Above 960 / 500 / 3
Procedure:	Above 1GHz: a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. i. Repeat above procedures until all frequencies measured was complete. Remark: 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor 2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. 3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report. 4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

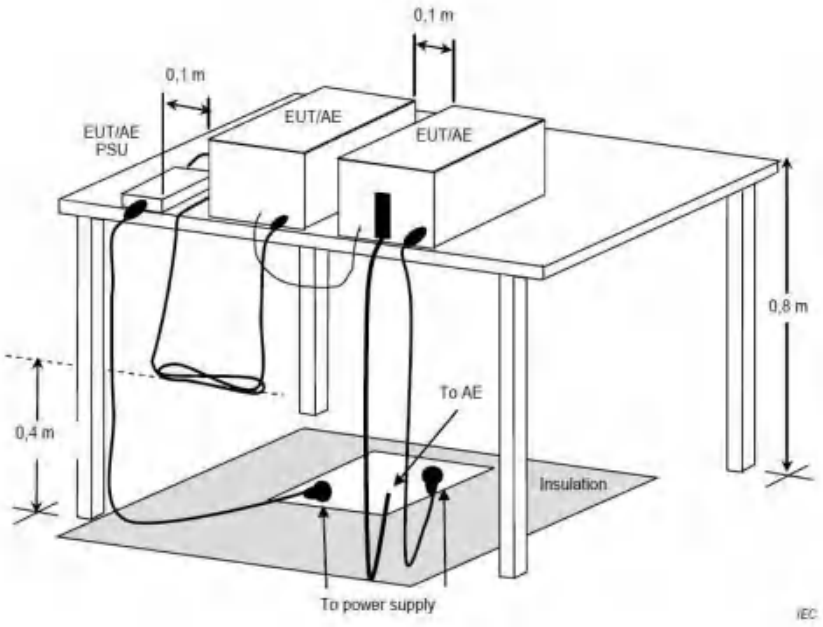
6.5.1 E.U.T. Operation:

Operating Environment:	
Temperature:	25.5 °C
Humidity:	50.6 %

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Atmospheric Pressure:	1010 mbar

6.5.2 Test Setup Diagram:



6.5.3 Test Data:

Band1

Mode:		802.11a		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	36.82	11.34	48.16	68.2	-20.04	PK
V	5150.00	34.19	11.34	45.53	68.2	-22.67	PK

Mode:		802.11a		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	24.40	11.34	35.74	54.00	-18.26	AV
V	5150.00	24.44	11.34	35.78	54.00	-18.22	AV

Mode:		802.11a		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	36.48	11.64	48.12	68.20	-20.08	PK
V	5350.00	36.82	11.64	48.46	68.20	-19.74	PK

Mode:		802.11a		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	25.05	11.64	36.69	54.00	-17.31	AV
V	5350.00	25.35	11.64	36.99	54.00	-17.01	AV

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Mode:		802.11n(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	34.51	11.34	45.85	68.20	-22.35	PK
V	5150.00	36.44	11.34	47.78	68.20	-20.42	PK

Mode:		802.11n(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	27.14	11.34	38.48	54.00	-15.52	AV
V	5150.00	24.67	11.34	36.01	54.00	-17.99	AV

Mode:		802.11n(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	36.03	11.64	47.67	68.20	-20.53	PK
V	5350.00	36.85	11.64	48.49	68.20	-19.71	PK

Mode:		802.11n(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	25.80	11.64	37.44	54.00	-16.56	AV
V	5350.00	24.52	11.64	36.16	54.00	-17.84	AV

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Mode:		802.11ac(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	37.02	11.34	48.36	68.20	-19.84	PK
V	5150.00	33.13	11.34	44.47	68.20	-23.73	PK

Mode:		802.11ac(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	27.07	11.34	38.41	54.00	-15.59	AV
V	5150.00	26.95	11.34	38.29	54.00	-15.71	AV

Mode:		802.11ac(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	34.16	11.64	45.8	68.20	-22.4	PK
V	5350.00	36.68	11.64	48.32	68.20	-19.88	PK

Mode:		802.11ac(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	27.06	11.64	38.7	54.00	-15.3	AV
V	5350.00	25.02	11.64	36.66	54.00	-17.34	AV

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Mode:		802.11ax(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	34.88	11.34	46.22	68.20	-21.98	PK
V	5150.00	34.76	11.34	46.1	68.20	-22.1	PK

Mode:		802.11ax(HT20)		Frequency:		5180MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	25.71	11.34	37.05	54.00	-16.95	AV
V	5150.00	24.57	11.34	35.91	54.00	-18.09	AV

Mode:		802.11ax(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	35.03	11.64	46.67	68.20	-21.53	PK
V	5350.00	35.26	11.64	46.9	68.20	-21.3	PK

Mode:		802.11ax(HT20)		Frequency:		5240MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	25.95	11.64	37.59	54.00	-16.41	AV
V	5350.00	27.09	11.64	38.73	54.00	-15.27	AV

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Mode:		802.11n(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	33.80	11.34	45.14	68.20	-23.06	PK
V	5150.00	33.22	11.34	44.56	68.20	-23.64	PK

Mode:		802.11n(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	27.93	11.34	39.27	54.00	-14.73	AV
V	5150.00	27.05	11.34	38.39	54.00	-15.61	AV

Mode:		802.11n(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	36.80	11.64	48.44	68.20	-19.76	PK
V	5350.00	34.98	11.64	46.62	68.20	-21.58	PK

Mode:		802.11n(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	25.42	11.64	37.06	54.00	-16.94	AV
V	5350.00	26.58	11.64	38.22	54.00	-15.78	AV

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Mode:		802.11ac(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	35.17	11.34	46.51	68.20	-21.69	PK
V	5150.00	35.80	11.34	47.14	68.20	-21.06	PK

Mode:		802.11ac(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	25.26	11.34	36.6	54.00	-17.4	AV
V	5150.00	25.45	11.34	36.79	54.00	-17.21	AV

Mode:		802.11ac(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	36.83	11.64	48.47	68.20	-19.73	PK
V	5350.00	34.30	11.64	45.94	68.20	-22.26	PK

Mode:		802.11ac(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	27.46	11.64	39.1	54.00	-14.9	AV
V	5350.00	25.67	11.64	37.31	54.00	-16.69	AV

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Mode:		802.11ax(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	34.13	11.34	45.47	68.20	-22.73	PK
V	5150.00	32.89	11.34	44.23	68.20	-23.97	PK

Mode:		802.11ax(HT40)		Frequency:		5190MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	27.54	11.34	38.88	54.00	-15.12	AV
V	5150.00	26.71	11.34	38.05	54.00	-15.95	AV

Mode:		802.11ax(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	35.44	11.64	47.08	68.20	-21.12	PK
V	5350.00	33.75	11.64	45.39	68.20	-22.81	PK

Mode:		802.11ax(HT40)		Frequency:		5230MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	27.07	11.64	38.71	54.00	-15.29	AV
V	5350.00	25.51	11.64	37.15	54.00	-16.85	AV

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	34.28	11.34	45.62	68.20	-22.58	PK
V	5150.00	36.73	11.34	48.07	68.20	-20.13	PK

Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	26.99	11.34	38.33	54.00	-15.67	AV
V	5150.00	27.14	11.34	38.48	54.00	-15.52	AV

Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	34.91	11.64	46.55	68.20	-21.65	PK
V	5350.00	36.11	11.64	47.75	68.20	-20.45	PK

Mode:		802.11ac(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	24.52	11.64	36.16	54.00	-17.84	AV
V	5350.00	24.19	11.64	35.83	54.00	-18.17	AV

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Mode:		802.11ax(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	36.00	11.34	47.34	68.20	-20.86	PK
V	5150.00	36.21	11.34	47.55	68.20	-20.65	PK

Mode:		802.11ax(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5150.00	25.98	11.34	37.32	54.00	-16.68	AV
V	5150.00	26.41	11.34	37.75	54.00	-16.25	AV

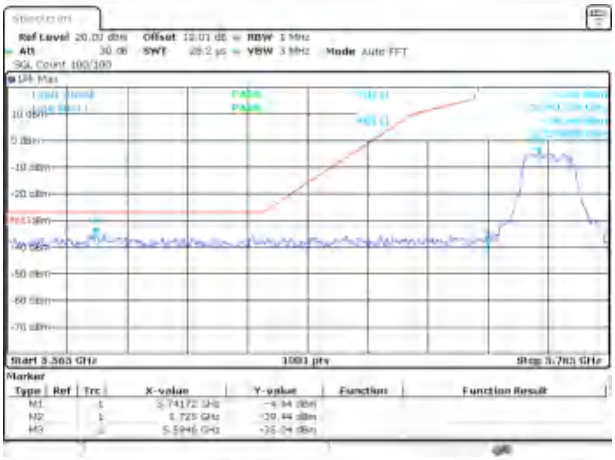
Mode:		802.11ax(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	36.02	11.64	47.66	68.20	-20.54	PK
V	5350.00	35.96	11.64	47.6	68.20	-20.6	PK

Mode:		802.11ax(HT80)		Frequency:		5210MHz	
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV)	Factor (dB/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
H	5350.00	24.68	11.64	36.32	54.00	-17.68	AV
V	5350.00	23.55	11.64	35.19	54.00	-18.81	AV

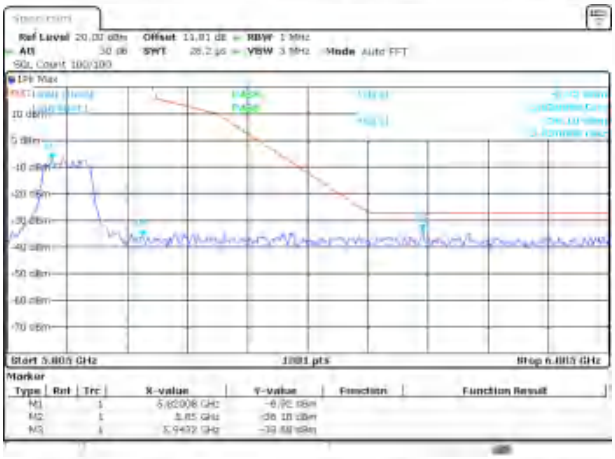
BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Band4

802.11a

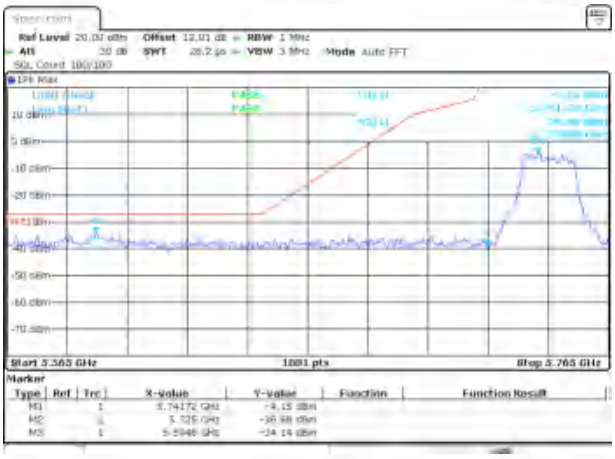


Low: 5745MHz

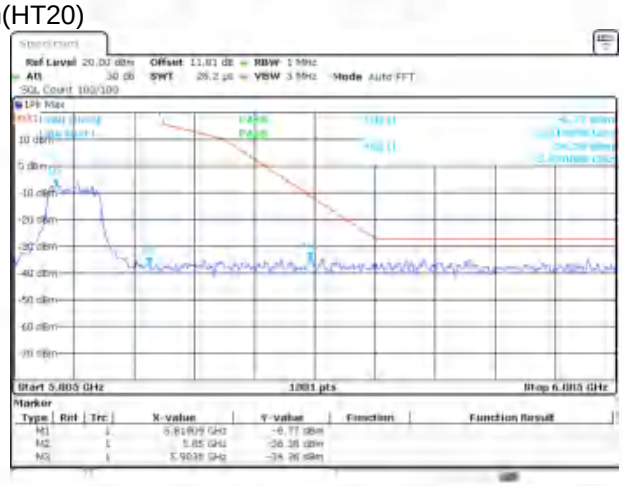


High: 5825MHz

802.11n(HT20)

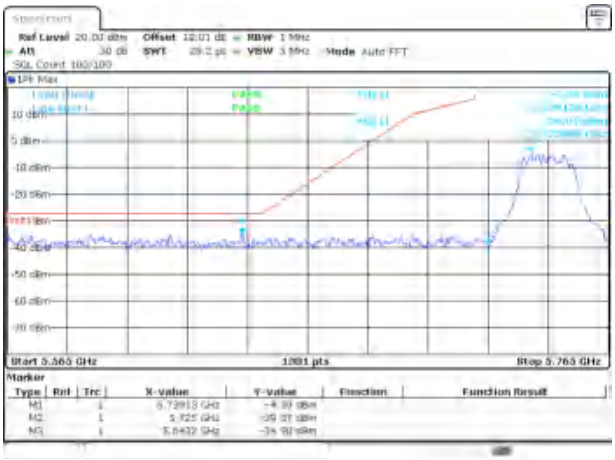


Low: 5745MHz

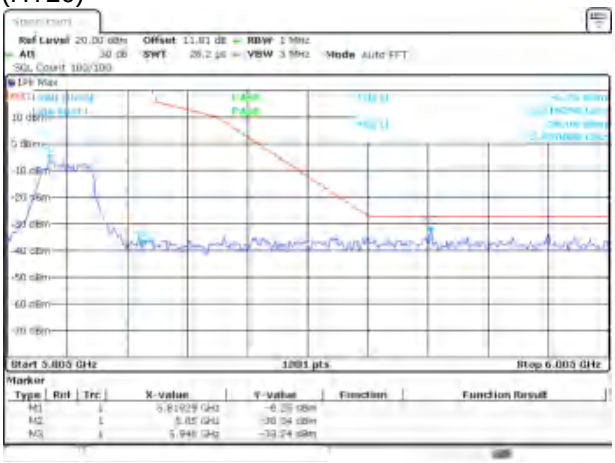


High: 5825MHz

802.11ac(HT20)



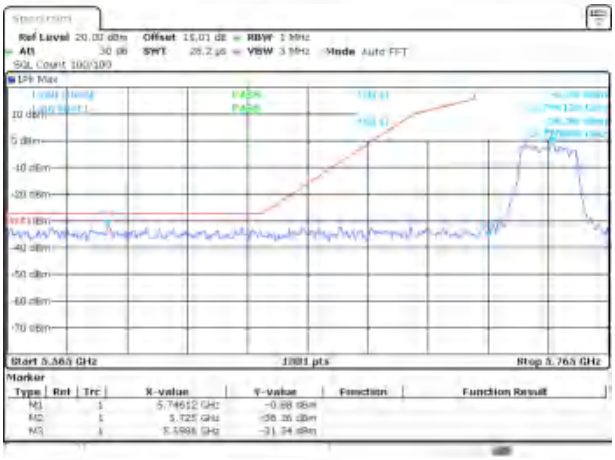
Low: 5745MHz



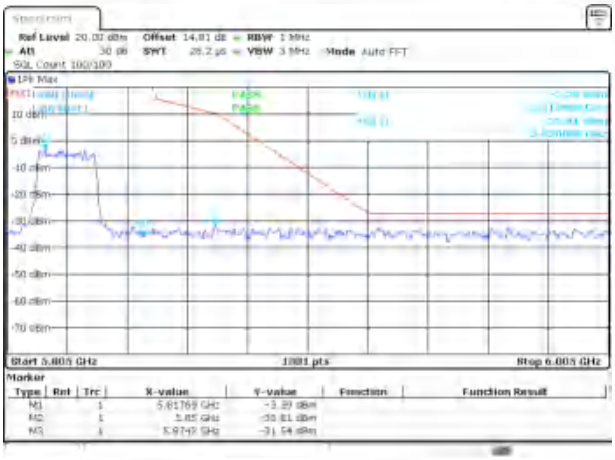
High: 5825MHz

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

802.11ax20

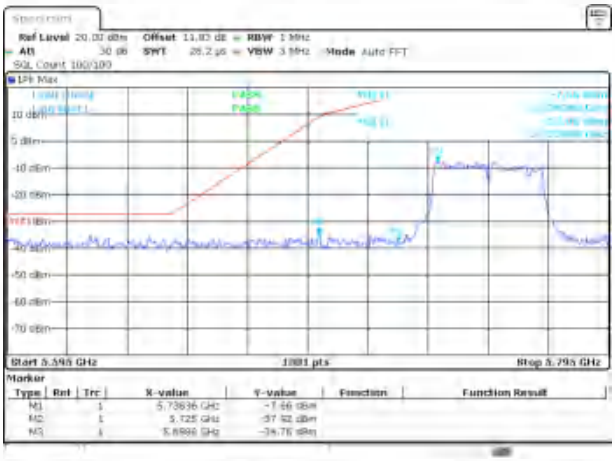


Low: 5745MHz

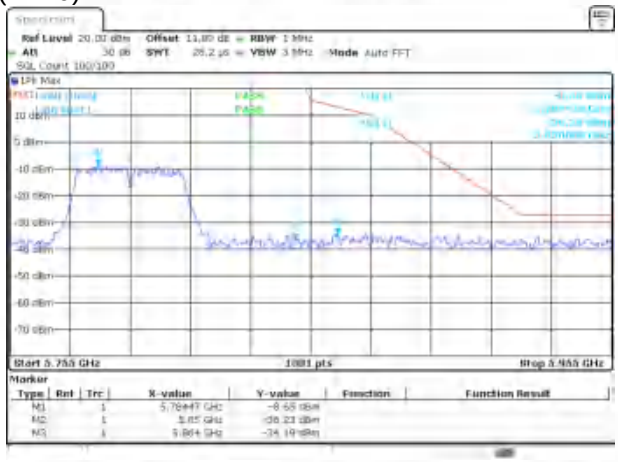


High: 5825MHz

802.11n(HT40)

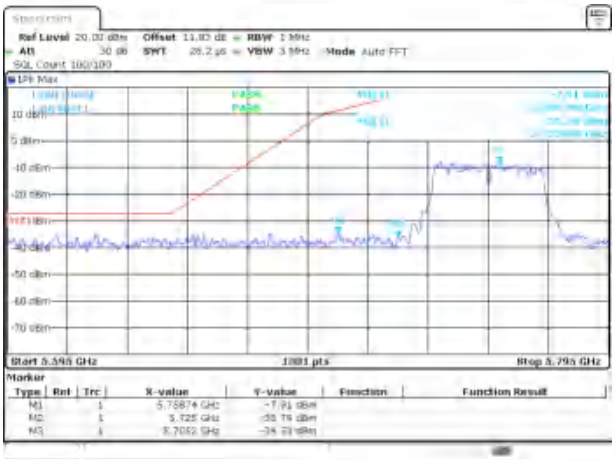


Low: 5755MHz

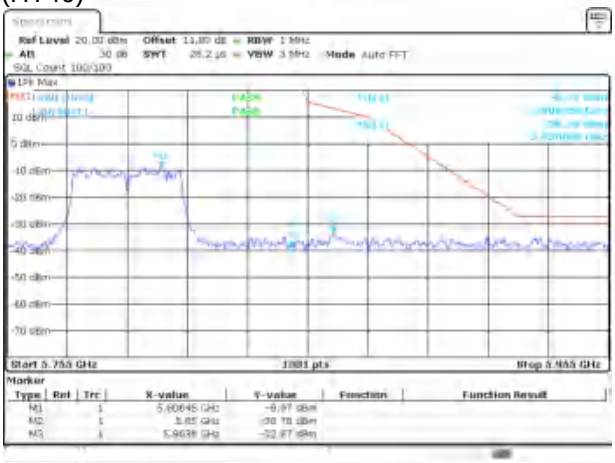


High: 5795MHz

802.11ac(HT40)



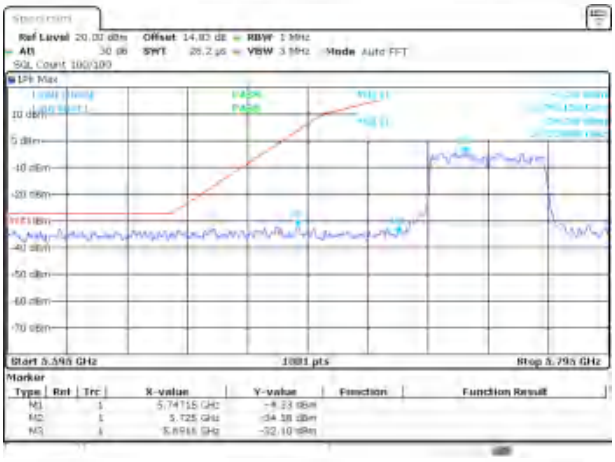
Low: 5755MHz



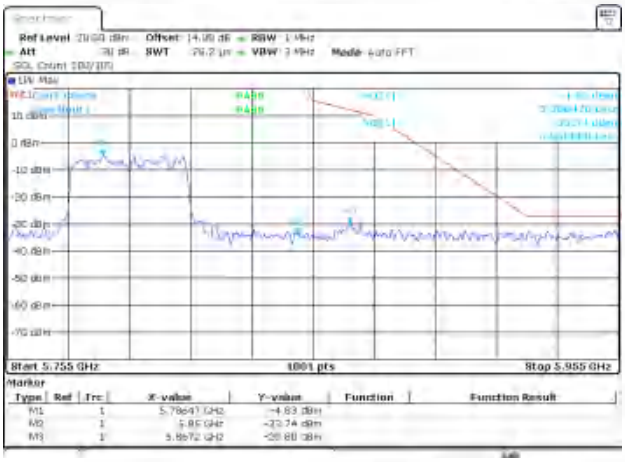
High: 5795MHz

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

802.11ax40

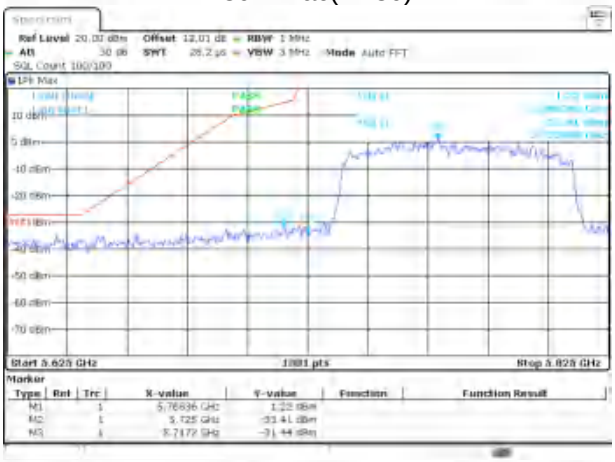


Low: 5755MHz

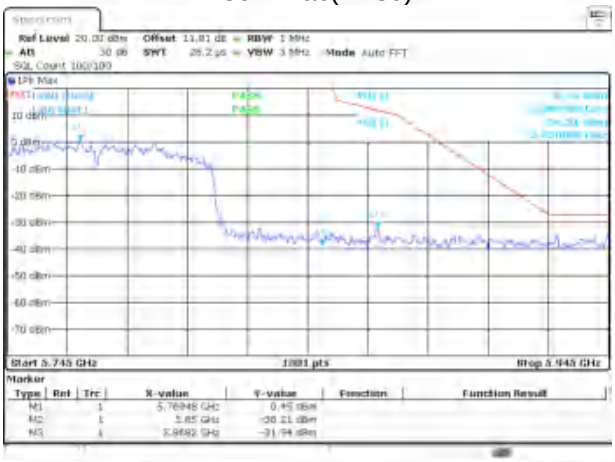


High: 5795MHz

802.11ac(HT80)

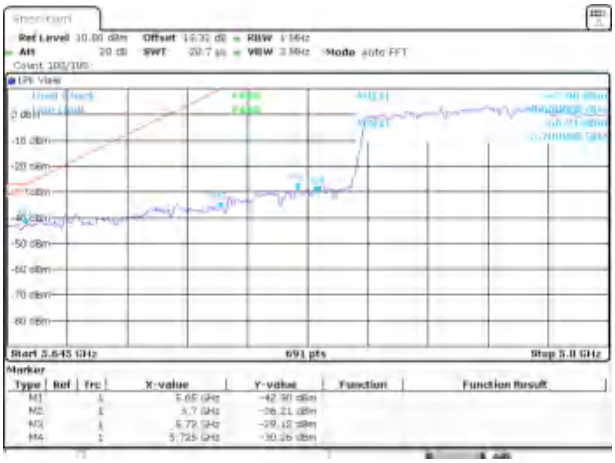


5775MHz



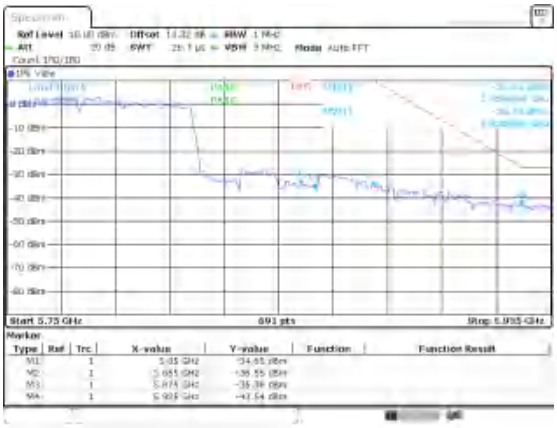
5775MHz

802.11ax80



5775MHz

802.11ax80



5775MHz

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

6.6 Undesirable emission limits (below 1GHz)

Test Requirement:	47 CFR Part 15.407(b)(9)
Test Method:	ANSI C63.10-2013, section 12.7.4, 12.7.5, 12.7.6
Test Limit:	Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209. Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table: Frequency (MHz) / Field strength (microvolts/meter) / Measurement distance (meters) 0.009-0.490 / 2400/F(kHz) / 300 0.490-1.705 / 24000/F(kHz) / 30 1.705-30.0 / 30 / 30 30-88 / 100 ** / 3 88-216 / 150 ** / 3 216-960 / 200 ** / 3 Above 960 / 500 / 3
Procedure:	Below 1GHz: a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. i. Repeat above procedures until all frequencies measured was complete. Remark: 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor 2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. 3. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. Above 1GHz:

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

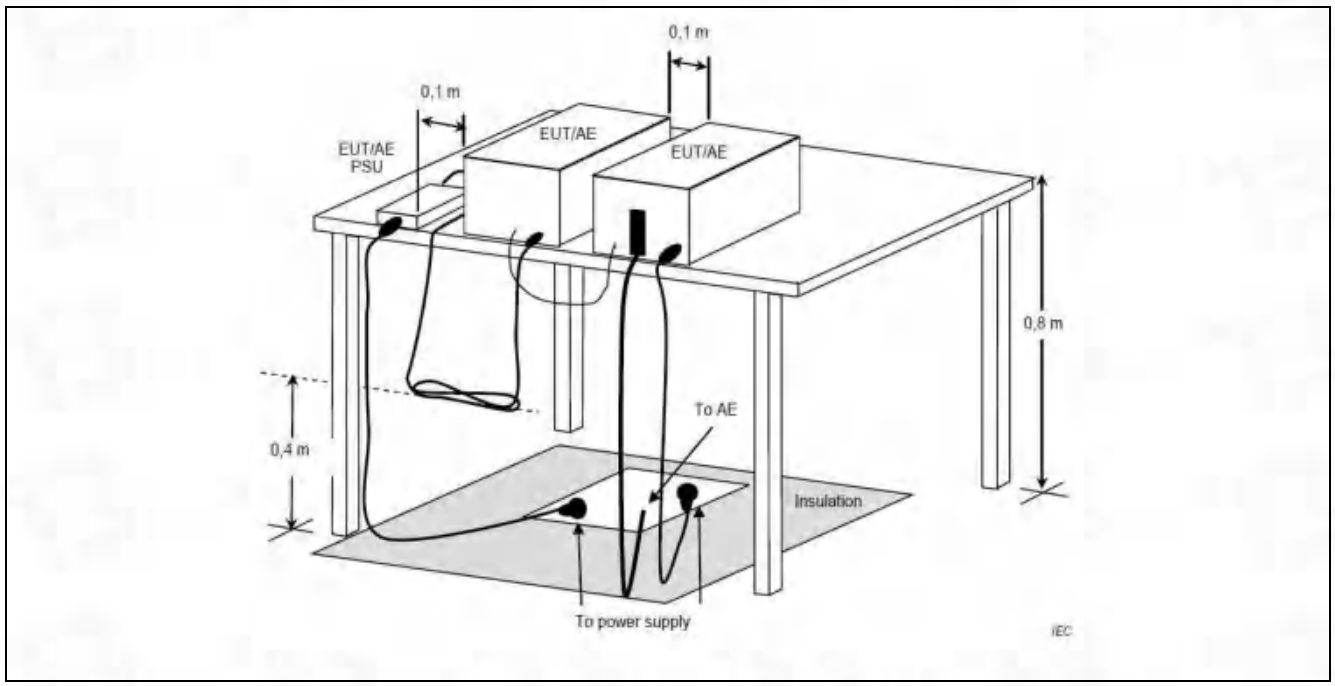
	a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. i. Repeat above procedures until all frequencies measured was complete. Remark: 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor 2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. 3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report. 4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.

6.6.1 E.U.T. Operation:

Operating Environment:	
Temperature:	25.5 °C
Humidity:	50.6 %
Atmospheric Pressure:	1010 mbar

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

6.6.2 Test Setup Diagram:



6.6.3 Test Data:

Note: All the mode have been tested, and only the worst case mode are in the report

Below 1GHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
33.87	47.72	11.25	0.59	30.08	29.48	40	-10.52	Vertical
54.59	41.67	11.93	0.81	29.96	24.45	40	-15.55	Vertical
120.76	46.56	9.4	1.36	29.57	27.75	43.5	-15.75	Vertical
172.01	43.20	8.5	1.7	29.31	24.09	43.5	-19.41	Vertical
440.86	37.22	16.29	3.05	29.41	27.15	46	-18.85	Vertical
860.15	33.58	21.83	4.69	29.14	30.96	46	-15.04	Vertical
64.70	36.48	8.73	0.9	29.89	16.22	40	-23.78	Horizontal
100.41	33.52	11.73	1.19	29.7	16.74	43.5	-26.76	Horizontal
270.38	45.23	12.53	2.22	29.79	30.19	46	-15.81	Horizontal
350.56	36.62	14.5	2.62	29.73	24.01	46	-21.99	Horizontal
627.93	36.39	19.43	3.83	29.27	30.38	46	-15.62	Horizontal
955.44	41.39	22.54	5.06	29.1	39.89	46	-6.11	Horizontal

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

6.7 Undesirable emission limits (above 1GHz)

Test Requirement:	47 CFR Part 15.407(b)(1) 47 CFR Part 15.407(b)(2) 47 CFR Part 15.407(b)(4) 47 CFR Part 15.407(b)(10)
Test Method:	ANSI C63.10-2013, section 12.7.4, 12.7.5, 12.7.6
Test Limit:	For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz. For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz. For transmitters operating solely in the 5.725-5.850 GHz band: 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.

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2]Above 38.6

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in § 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in § 15.209shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in § 15.209shall be demonstrated based on the average value of the measured emissions. The provisions in § 15.35apply to these measurements.

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field strength	Measurement

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

		(microvolts/meter)	distance (meters)
	0.009-0.490	2400/F(kHz)	300
	0.490-1.705	24000/F(kHz)	30
	1.705-30.0	30	30
	30-88	100 **	3
	88-216	150 **	3
	216-960	200 **	3
	Above 960	500	3
Procedure:	Above 1GHz: a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet. g. Test the EUT in the lowest channel, the middle channel, the Highest channel. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. i. Repeat above procedures until all frequencies measured was complete. Remark: 1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor 2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported. 3. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report. 4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.		

6.7.1 E.U.T. Operation:

Operating Environment:	
Temperature:	25.5 °C
Humidity:	50.6 %
Atmospheric Pressure:	1010 mbar

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

6.7.2 Test Data:

802.11a 5180MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.81	28.65	11.25	14.62	32.65	21.87	74	-52.13	Vertical
15540.22	30.89	11.93	17.66	34.46	26.02	74	-47.98	Vertical
10360.70	32.86	11.25	14.62	32.65	26.08	74	-47.92	Horizontal
15540.07	32.12	11.93	17.66	34.46	27.25	74	-46.75	Horizontal

802.11a 5200MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.43	28.72	11.25	14.62	32.65	21.94	74	-52.06	Vertical
15540.39	30.32	11.93	17.66	34.46	25.45	74	-48.55	Vertical
10360.85	32.31	11.25	14.62	32.65	25.53	74	-48.47	Horizontal
15540.99	32.43	11.93	17.66	34.46	27.56	74	-46.44	Horizontal

802.11a 5240MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.19	28.54	11.25	14.62	32.65	21.76	74	-52.24	Vertical
15540.09	30.61	11.93	17.66	34.46	25.74	74	-48.26	Vertical
10360.30	32.51	11.25	14.62	32.65	25.73	74	-48.27	Horizontal
15540.39	25	11.93	17.66	34.46	20.13	74	-53.87	Horizontal

802.11n(HT20) 5180MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.10	28.21	11.25	14.62	32.65	21.43	74	-52.57	Vertical
15540.27	31.03	11.93	17.66	34.46	26.16	74	-47.84	Vertical
10360.13	32.41	11.25	14.62	32.65	25.63	74	-48.37	Horizontal
15540.84	31.74	11.93	17.66	34.46	26.87	74	-47.13	Horizontal

802.11n(HT20) 5200MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.10	28.20	11.25	14.62	32.65	21.42	74	-52.58	Vertical
15540.30	30.97	11.93	17.66	34.46	26.1	74	-47.9	Vertical
10360.93	33.04	11.25	14.62	32.65	26.26	74	-47.74	Horizontal
15540.98	32.18	11.93	17.66	34.46	27.31	74	-46.69	Horizontal

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

802.11n(HT20) 5240MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.05	28.64	11.25	14.62	32.65	21.86	74	-52.14	Vertical
15540.98	30.29	11.93	17.66	34.46	25.42	74	-48.58	Vertical
10360.12	32.34	11.25	14.62	32.65	25.56	74	-48.44	Horizontal
15540.71	32.41	11.93	17.66	34.46	27.54	74	-46.46	Horizontal

802.11ac(HT20) 5180MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.93	28.70	11.25	14.62	32.65	21.92	74	-52.08	Vertical
15540.32	30.59	11.93	17.66	34.46	25.72	74	-48.28	Vertical
10360.81	32.62	11.25	14.62	32.65	25.84	74	-48.16	Horizontal
15540.08	31.59	11.93	17.66	34.46	26.72	74	-47.28	Horizontal

802.11ac(HT20) 5200MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.28	28.33	11.25	14.62	32.65	21.55	74	-52.45	Vertical
15540.96	31.17	11.93	17.66	34.46	26.3	74	-47.7	Vertical
10360.75	32.60	11.25	14.62	32.65	25.82	74	-48.18	Horizontal
15540.50	31.97	11.93	17.66	34.46	27.1	74	-46.9	Horizontal

802.11ac(HT20) 5240MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.69	28.53	11.25	14.62	32.65	21.75	74	-52.25	Vertical
15540.44	30.97	11.93	17.66	34.46	26.1	74	-47.9	Vertical
10360.27	32.13	11.25	14.62	32.65	25.35	74	-48.65	Horizontal
15540.53	32.02	11.93	17.66	34.46	27.15	74	-46.85	Horizontal

802.11n(HT40) 5190MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.68	29.08	11.25	14.62	32.65	22.3	74	-51.7	Vertical
15540.87	30.19	11.93	17.66	34.46	25.32	74	-48.68	Vertical
10360.08	32.49	11.25	14.62	32.65	25.71	74	-48.29	Horizontal
15540.87	31.84	11.93	17.66	34.46	26.97	74	-47.03	Horizontal

802.11n(HT40) 5230MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.75	28.29	11.25	14.62	32.65	21.51	74	-52.49	Vertical
15540.40	30.33	11.93	17.66	34.46	25.46	74	-48.54	Vertical
10360.93	32.92	11.25	14.62	32.65	26.14	74	-47.86	Horizontal
15540.36	31.99	11.93	17.66	34.46	27.12	74	-46.88	Horizontal

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

802.11ac(HT40) 5190MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.48	28.95	11.25	14.62	32.65	22.17	74	-51.83	Vertical
15540.64	31.05	11.93	17.66	34.46	26.18	74	-47.82	Vertical
10360.29	32.11	11.25	14.62	32.65	25.33	74	-48.67	Horizontal
15540.51	32.30	11.93	17.66	34.46	27.43	74	-46.57	Horizontal

802.11ac(HT40) 5230MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.47	28.73	11.25	14.62	32.65	21.95	74	-52.05	Vertical
15540.58	30.46	11.93	17.66	34.46	25.59	74	-48.41	Vertical
10360.51	32.28	11.25	14.62	32.65	25.5	74	-48.5	Horizontal
15540.94	31.68	11.93	17.66	34.46	26.81	74	-47.19	Horizontal

802.11ax20 5180MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.24	28.90	11.25	14.62	32.65	22.12	74	-51.88	Vertical
15540.51	30.51	11.93	17.66	34.46	25.64	74	-48.36	Vertical
10360.90	32.26	11.25	14.62	32.65	25.48	74	-48.52	Horizontal
15540.15	31.89	11.93	17.66	34.46	27.02	74	-46.98	Horizontal

802.11ax20 5200MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.47	28.69	11.25	14.62	32.65	21.91	74	-52.09	Vertical
15540.05	31.16	11.93	17.66	34.46	26.29	74	-47.71	Vertical
10360.96	32.48	11.25	14.62	32.65	25.7	74	-48.3	Horizontal
15540.97	31.82	11.93	17.66	34.46	26.95	74	-47.05	Horizontal

802.11ax20 5240MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.27	28.30	11.25	14.62	32.65	21.52	74	-52.48	Vertical
15540.08	30.89	11.93	17.66	34.46	26.02	74	-47.98	Vertical
10360.26	32.56	11.25	14.62	32.65	25.78	74	-48.22	Horizontal
15540.79	32.12	11.93	17.66	34.46	27.25	74	-46.75	Horizontal

802.11ax40 5190MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.06	28.69	11.25	14.62	32.65	21.91	74	-52.09	Vertical
15540.75	30.65	11.93	17.66	34.46	25.78	74	-48.22	Vertical
10360.97	32.54	11.25	14.62	32.65	25.76	74	-48.24	Horizontal
15540.89	32.24	11.93	17.66	34.46	27.37	74	-46.63	Horizontal

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

802.11ax40 5230MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.38	28.83	11.25	14.62	32.65	22.05	74	-51.95	Vertical
15540.39	30.92	11.93	17.66	34.46	26.05	74	-47.95	Vertical
10360.14	32.58	11.25	14.62	32.65	25.8	74	-48.2	Horizontal
15540.34	32.23	11.93	17.66	34.46	27.36	74	-46.64	Horizontal

802.11ac(HT80) 5210MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.41	28.99	11.25	14.62	32.65	22.21	74	-51.79	Vertical
15540.92	31.09	11.93	17.66	34.46	26.22	74	-47.78	Vertical
10360.84	32.42	11.25	14.62	32.65	25.64	74	-48.36	Horizontal
15540.89	32.31	11.93	17.66	34.46	27.44	74	-46.56	Horizontal

802.11ax(HT80) 5210MHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
10360.72	28.20	11.25	14.62	32.65	21.42	74	-52.58	Vertical
15540.94	30.21	11.93	17.66	34.46	25.34	74	-48.66	Vertical
10360.40	32.61	11.25	14.62	32.65	25.83	74	-48.17	Horizontal
15540.90	31.65	11.93	17.66	34.46	26.78	74	-47.22	Horizontal

Note:

1. Level = Read Level + Antenna Factor+ Cable loss- Preamp Factor.
2. The test trace is same as the ambient noise (the test frequency range: 18GHz~40GHz), therefore no data appear in the report.
3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
4. This Report only show the test plots of the worst case (U-NII-1).

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

6.8 Frequency stability

Test limit	Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.
Test results:	Pass

Measurement Data:

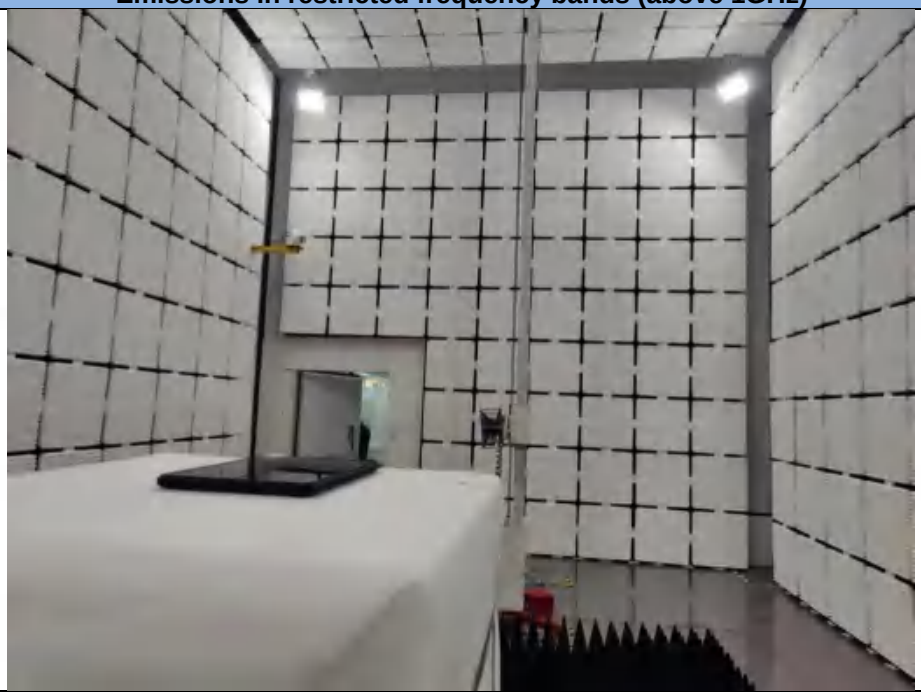
Mode	Voltage (V)	FHL (5180MHz)	Deviation (KHz)	FHH (5240MHz)	Deviation (KHz)
Band 1 (5150-5250 MHz)	DC 3.61V	5179.996	4	5239.998	2
	DC 3.80V	5179.992	8	5239.995	5
	DC 4.18V	5179.993	7	5239.995	5
Mode	Voltage (V)	FHL (5745MHz)	Deviation (KHz)	FHH (5825MHz)	Deviation (KHz)
Band 4 (5725-5850 MHz)	DC 3.61V	5744.993	7	5824.995	5
	DC 3.80V	5744.994	6	5824.994	6
	DC 4.18V	5744.996	4	5824.992	8

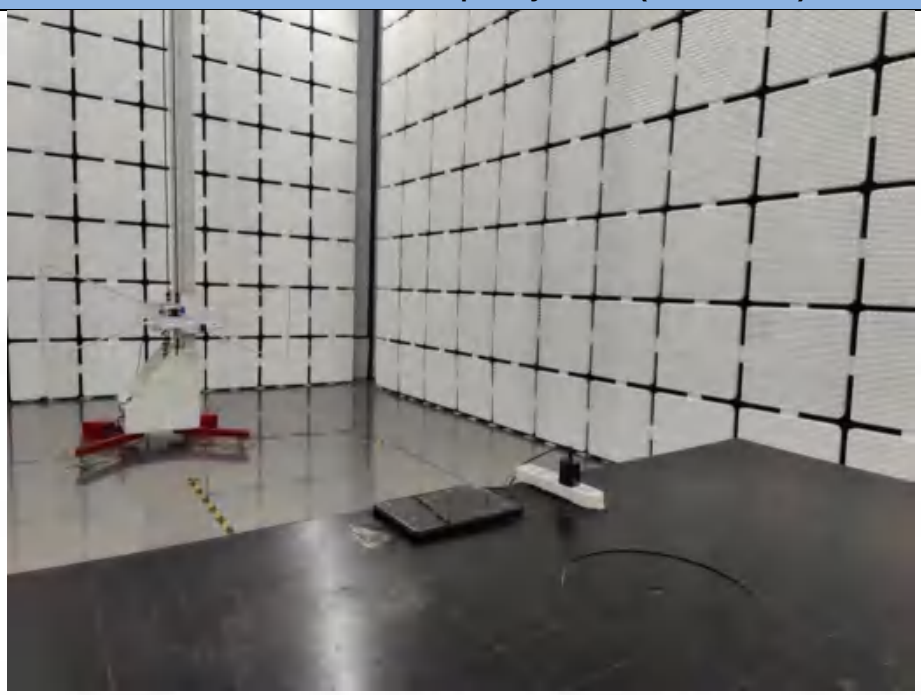
Mode	Temperature (℃)	FHL (5180MHz)	Deviation (KHz)	FHH (5240MHz)	Deviation (KHz)
Band 1 (5150-5250 MHz)	-20℃	5179.993	7	5239.993	7
	-10℃	5179.995	5	5239.997	3
	-5℃	5179.994	6	5239.996	4
	0℃	5179.996	4	5239.995	5
	+10℃	5179.995	5	5239.998	2
	+20℃	5179.994	6	5239.997	3
	+30℃	5179.998	2	5239.998	2
	+40℃	5179.994	6	5239.996	4
	+50℃	5179.996	4	5239.997	3
Mode	Temperature (℃)	FHL (5745MHz)	Deviation (KHz)	FHH (5825MHz)	Deviation (KHz)
Band 4 (5725-5850 MHz)	-20℃	5744.993	7	5824.997	3
	-10℃	5744.995	5	5824.994	6
	-5℃	5744.993	7	5824.993	7
	0℃	5744.992	8	5824.995	5
	+10℃	5744.996	4	5824.994	6
	+20℃	5744.992	8	5824.995	5
	+30℃	5744.996	4	5824.993	7
	+40℃	5744.996	4	5824.997	3
	+50℃	5744.996	4	5824.996	4

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

7 Test Setup Photos

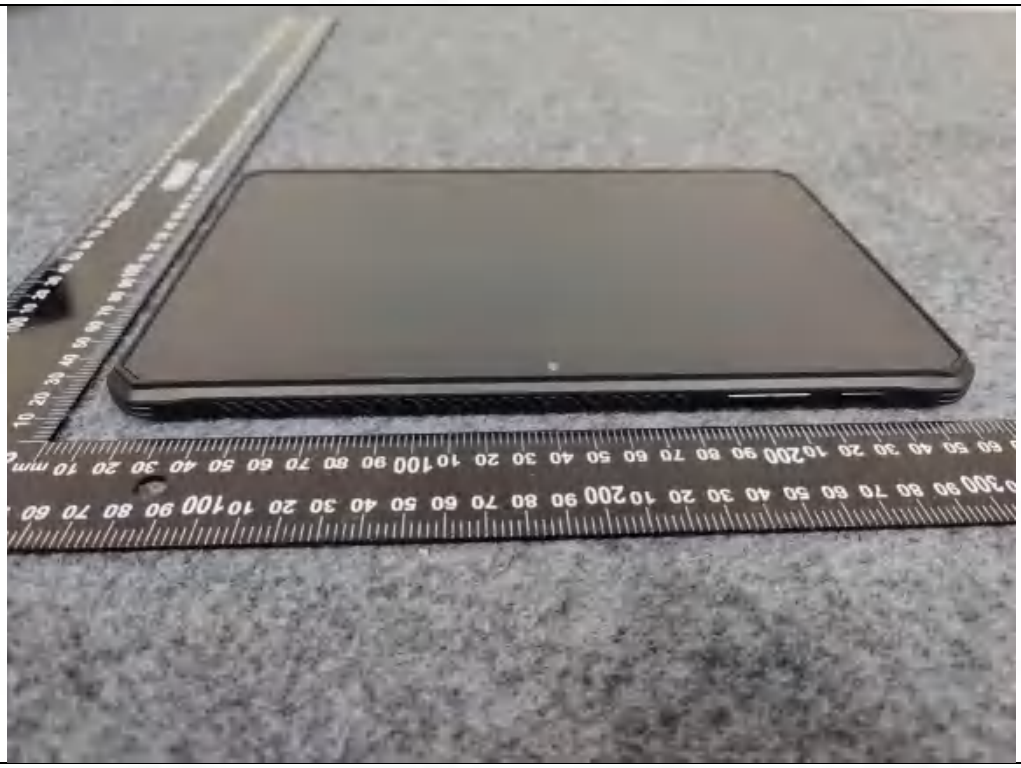
Conducted Emission at AC power line


Band edge emissions (Radiated) Emissions in restricted frequency bands (above 1GHz)


Emissions in restricted frequency bands (below 1GHz)


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

8 EUT Constructional Details (EUT Photos)



BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

Internal


10800 mAh
CE RoHS

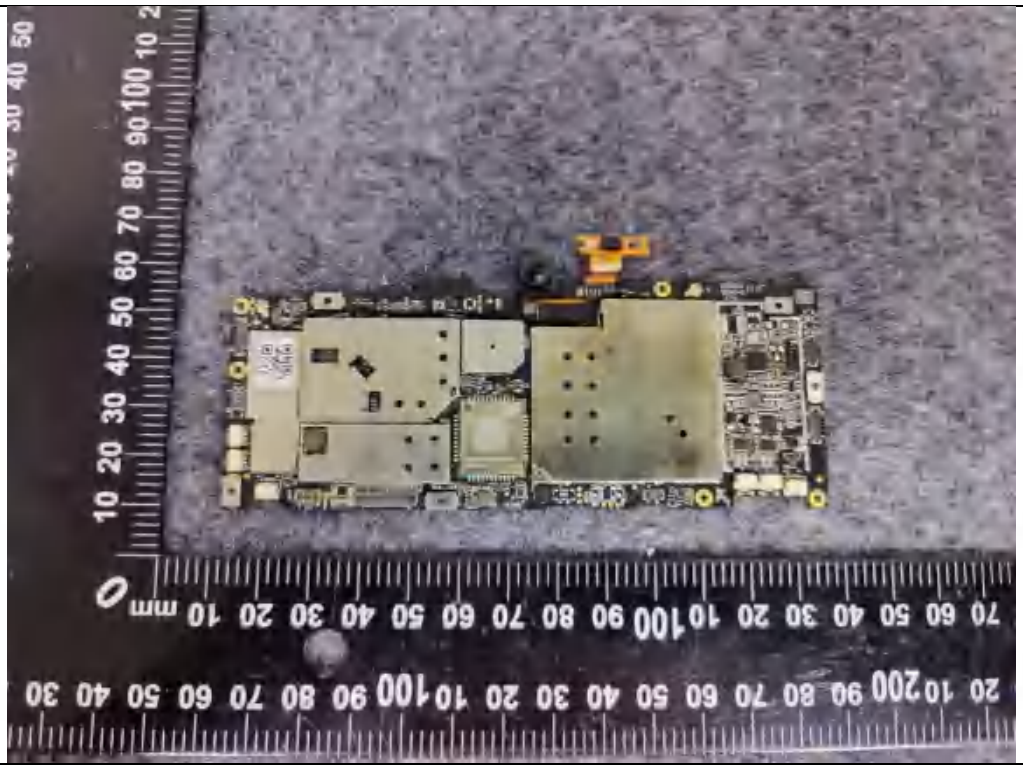

10800 mAh

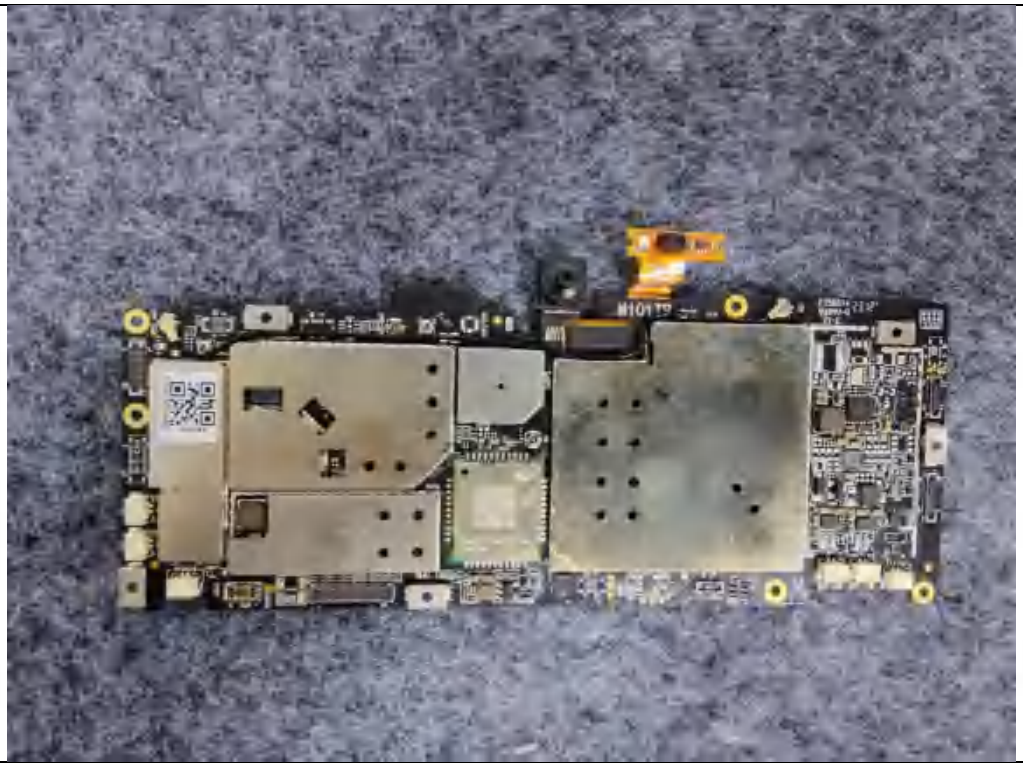

PF0092-PT1-BT-A0
CE RoHS
MADE IN CHINA
ORIGINAL BATTERY
10800 mAh

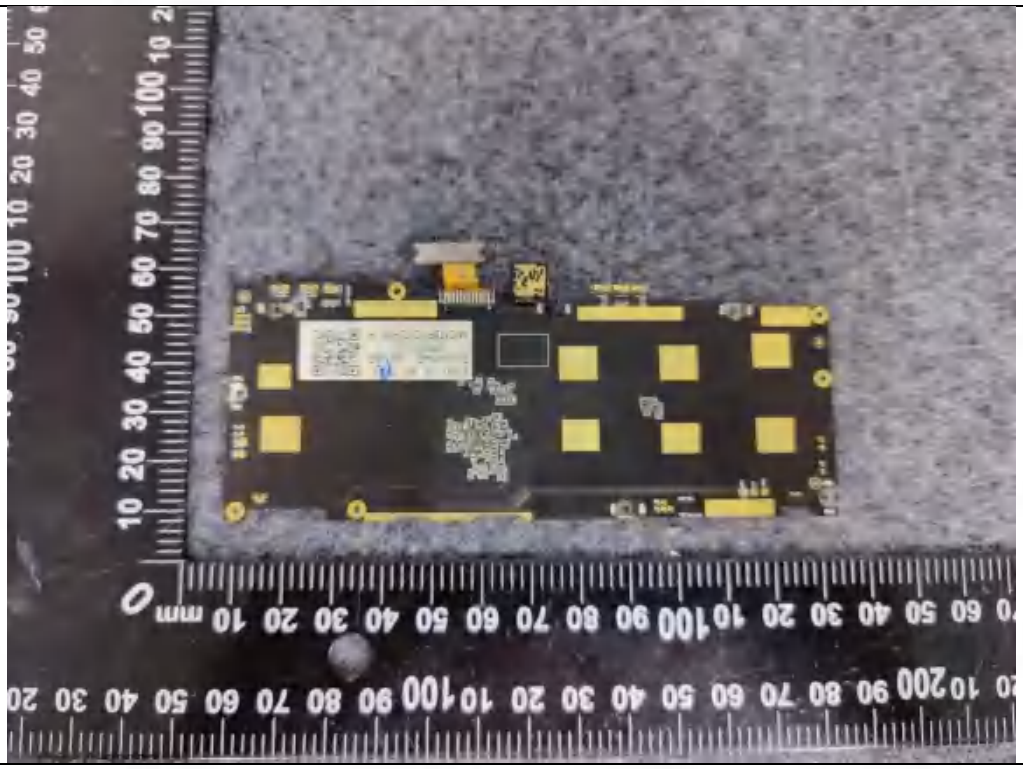

CE RoHS
10800 mAh

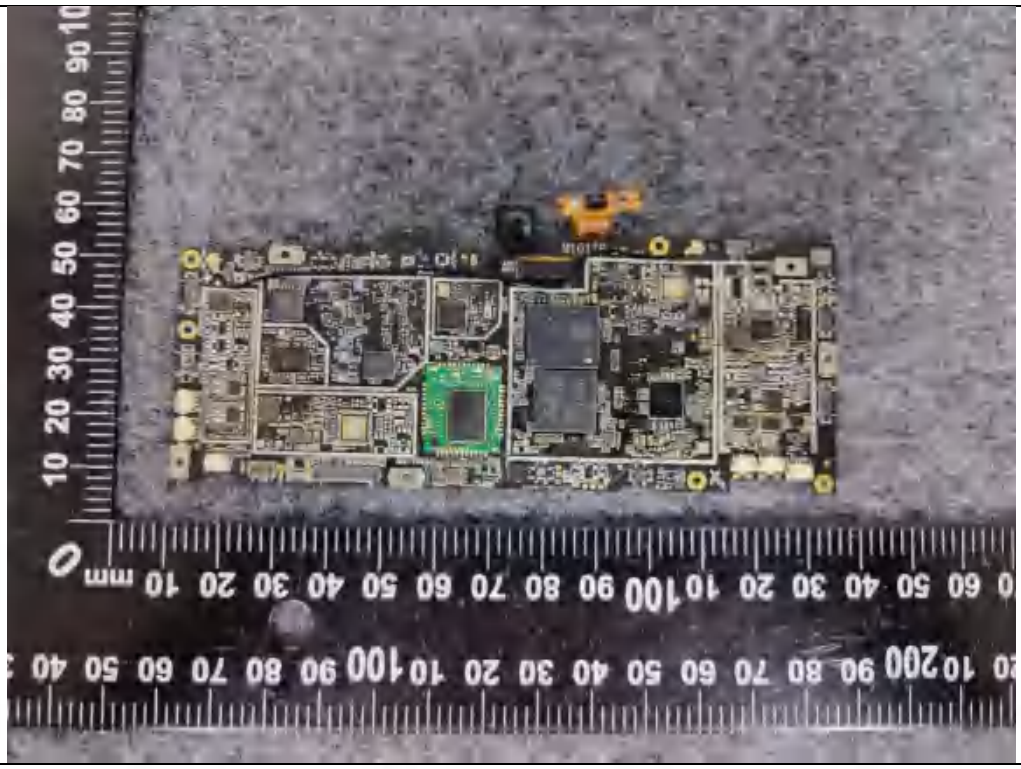

PF0092-PT1-BT-A0
ORIGINAL BATTERY
10800 mAh


10800 mAh
ORIGINAL BATTERY









BTF Testing Lab (Shenzhen) Co., Ltd.

F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

www.btf-lab.com

-- END OF REPORT --

BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China