RF Test Report

For

Applicant Name:	**Shenzhen Gotron Electronic CO.,LTD.**
Address:	7B01, Building A, Block 1, Anhongji Tianyao Plaza, Longhua District, Shenzhen City, Guangdong Province China
EUT Name:	Mobile Phone
Brand Name:	ulefone
Model Number:	GQ3060
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:	BTF230317R03401
Test Standards:	47 CFR Part 90
FCC ID:	2AOWK-3060
Test Conclusion:	Pass
Test Date:	2023-03-18 to 2022-03-23
Date of Issue:	2022-03-24
Prepared By:	Chris Liu / Project Engineer
Date:	2022-03-24
Approved By:	Ryan.CJ / EMC Manager
Date:	2022-03-24

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	2022-03-24	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

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

Test Location:	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
Description:	All measurement facilities used to collect the measurement data are located at F101,201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
FCC Registration Number:	518915
Designation Number:	CN1330

1.3 Laboratory Condition

Ambient Temperature:	15 °C to 35 °C
Ambient Relative Humidity:	20 % to 75 %
Ambient Pressure:	98 kPa to 102 kPa

1.4 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 Gotron Electronic CO.,LTD.
Address:	7B01, Building A, Block 1, Anhongji Tianyao Plaza, Longhua District, Shenzhen City, Guangdong Province China

2.2 Manufacturer Information

Company Name:	Shenzhen Gotron Electronic CO.,LTD.
Address:	7B01, Building A, Block 1, Anhongji Tianyao Plaza, Longhua District, Shenzhen City, Guangdong Province China

2.3 Factory Information

Company Name:	Shenzhen Gotron Electronic CO.,LTD.
Address:	7B01, Building A, Block 1, Anhongji Tianyao Plaza, Longhua District, Shenzhen City, Guangdong Province China

2.4 General Description of Equipment under Test (EUT)

EUT Name	Mobile Phone
Under Test Model Name	GQ3060
Series Model Name	Armor 20WT, Armor 20W, Armor 20W Pro, Armor 20 Pro ,Armor 20W Lite, Armor 20 Lite
Description of Model name differentiation	The only difference is the model name and the exterior color.
Hardware Version	E7_V03
Software and Firmware Version	Armor 20WT_TF3_EEA_V10

2.5 Technical Information

Network and Wireless connectivity	Primary mobile radio

The requirement for the following technical information of the EUT was tested in this report:

Operation Frequency Range	400 MHz – 480 MHz	
Permitted Frequency Range	400MHz~406MHz, 406.1MHz~480MHz	
Rated Output Power	☒High Power 2W (33dBm)	☒Low Power 0.5W (27dBm)
Modulation Type	Analog:	FM
	Digital :	4FSK
Channel Separation	Analog:	12.5 kHz
	Digital :	12.5 kHz

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

Antenna Type	External

3. Summary of Test Results

The EUT has been tested according to the following specifications

Section	Identity	Document Title
1	47 CFR Part 2	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 90	PRIVATE LAND MOBILE RADIO SERVICES.
3	ANSI C63.26:2015	IEEE/ANSI Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

Test items and the results are as follows:

Test item	Modulation	Test mode
Conducted Output Power	unmodulated	TX-ANH, TX-ANL, TX-DNH, TX-DNL
99% Occupied Bandwidth & 26dB bandwidth	1000Hz, 60% deviation	TX-ANH, TX-ANL, TX-DNH, TX-DNL
Emission Mask	2500Hz, 50% deviation	TX-ANH, TX-ANL, TX-DNH, TX-DNL
Modulation Limit	1000Hz, 60% deviation	TX-ANH
Audio Frequency Response	1000Hz, 20% deviation	TX-ANH
Frequency Stability VS Temperature	unmodulated	TX-ANH, TX-AWH
Frequency Stability VS Voltage	unmodulated	RX-AN, RX-AW
Transient Frequency Behavior	unmodulated	RX-AN, RX-AW
Transmit Conducted Spurious Emission	2500Hz, 50% deviation	RX-AN, RX-AW
Transmit Radiated Spurious Emission	2500Hz, 50% deviation	RX-AN, RX-AW

Frequency range (MHz)	Test channel	Test Frequency (MHz)	
		TX	RX
400~406 406.1~480	CH_L	400.1	400.1
	CH_M	435	435
	CH_H	479.9	479.9

Test mode	Transmitting	Analog	Digital	Power level	
		12.5kHz	12.5kHz	High	Low
TX-ANH	■	■		■	
TX-ANL	■	■			■
TX-DNH	■		■	■	
TX-DNL	■		■		■

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. Uncertainty of Test

The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in TR 100 028-1, and TR 100 028-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Value
Frequency error	0.4 KHz
RF output power, conducted	0.87 dB
Unwanted Emissions, conducted	0.94 dB
All emissions, radiated(<1GHz)	4.12 dB
All emissions, radiated(>1GHz)	4.16 dB
Temperature	0.82 °C
Humidity	4.1 %

5. Test Configuration

5.1 Environment Condition

During the measurement, the normal environment conditions were within the listed ranges

Relative Humidity (%)	20% to 75%	
Atmospheric Pressure (kPa)	98 kPa to 106 kPa	
Temperature	NT (Normal Temperature)	+15℃ to +35℃
Working Voltage of the EUT	NV (Normal Voltage)	DC 3.85V
	LV (Low Voltage)	DC 3.27V
	HV (High Voltage)	DC 4.43V

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

5.2 Test Equipment List

Conducted Method Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
MXA Signal Analyzer	KEYSIGHT	N9020A	MY50410020	2022.11.24	2023.11.23	☒
RF Communication Test Set	HP	8920A	3813A10206	2022.8.25	2023.8.24	☒
Digital intercom communication tester	Aeroflex	3920B	1001682041	2022.8.25	2023.8.24	☒
Programmable constant temperature and humidity box	ZZCKONG	ZZ-K02A	20210928007	2022.11.24	2023.11.23	☒
RF Test software	/	V1.0	/	/	/	☒

Radiated Method Test						
Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due	Use
SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ40	100010	2022.11.24	2023.11.23	☒
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI7	101032	2022.11.24	2023.11.23	☒
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2021.11.28	2023.11.27	☒
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2021.11.28	2023.11.27	☒
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/	☒
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2022.11.24	2023.11.23	☒
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	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-10m	21101570	2022.11.24	2023.11.23	☒
Preamplifier	SCHWARZBECK	BBV9744	00246	2022.11.24	2023.11.23	☒
Horn Antenna	Schwarzbeck	BBHA9120D	2597	2022.5.25	2024.5.21	☒
Low Noise Pre-amplifier	Sket	LNPA_1840G-50	SK2022032902	2022.3.26	2023.3.25	☒
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2022.3.26	2023.3.25	☒
Broadband Preamplilifier	Schwarzbeck	BBV9718D	00008	2022.3.26	2023.3.25	☒

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. Transmitter requirement

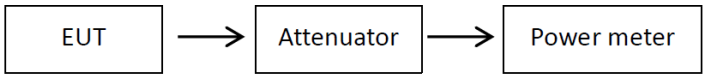
6.1 Conducted Output Power

6.1.1 Limit

FCC Part 90.205， FCC Part 2.1046

Applicants for licenses must request and use no more power than the actual power necessary for satisfactory operation.

6.1.2 Test Setup



6.1.3 Test Procedures

(1) Connect the equipment as illustrated

(2) Correct for all losses in the RF path

(3) Measure the transmitter output power

(4) If the power output is adjustable, measurements shall be made for the highest and lowest power levels.

6.1.4 Test Result

Please refer to ANNEX A.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

6.2 99% Occupied Bandwidth & 26dB Bandwidth

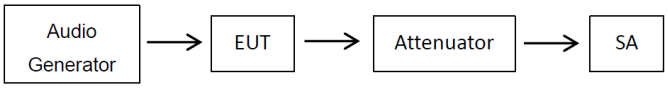
6.2.1 Limit

FCC Part 90.209, FCC Part 2.1049

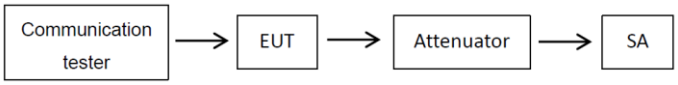
Frequency band (MHz)	Channel spacing (kHz)	Authorized bandwidth (kHz)
Below 25[2]		
25-50	20	20
72-76	20	20
150-174	[1]7.5	[1 3]20/11.25/6
216-220[5]	6.25	20/11.25/6
220-222	5	4
406-512[2]	[1]6.25	[136]20/11.25/6
806-809/851-854	12.5	20
809-824/854-869	25	[6]20
896-901/935-940	12.5	13.6
902-928[4]		
929-930	25	20
1427-1432[5]	12.5	12.5
[3]2450-2483.5[2]		
Above 2500[2]		

6.2.2 Test Setup

Test setup for Analog:



Test setup for Digital:



6.2.3 Test Procedures

(1) Connect the equipment as illustrated

(2) Spectrum set as follow:

Centre frequency = the nominal EUT channel center frequency,

The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (typically a span of 1.5 × OBW is sufficient)

RBW = 1% to 5% of the anticipated OBW, VBW ≥ 3 × RBW, Sweep = auto,

Detector function = peak, Trace = max hold

(3) Set 99% Occupied Bandwidth and 26dB Bandwidth

(4) Measure and record the results in the test report.

6.2.4 Test Result

Please refer to ANNEX A.2.

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 Emission Mask

6.3.1 Limit

FCC Part 90.210，FCC Part 2.1049

Frequency band (MHz)	Mask for equipment with audio low pass filter	Mask for equipment without audio low pass filter
Below 25[1]	A or B	A or C
25-50	B	C
72-76	B	C
150-174[2]	B, D, or E	C, D or E
150 paging only	B	C
220-222	F	F
421-512[2 5]	B, D, or E	C, D, or E
450 paging only	B	G
806-809/851-854[6]	B	H
809-824/854-869[3 5]	B	G
896-901/935-940	I	J
902-928	K	K
929-930	B	G
4940-4990 MHz	L or M	L or M
5850-5925[4]		
All other bands	B	C

12.5 kHz channel bandwidth equipment

For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

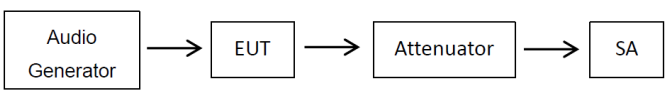
(1) On any frequency from the centre of the authorized bandwidth f0 to 5.625 kHz removed from f0: 0dB

(2) On any frequency removed from the centre of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 5.625 kHz but no more than 12.5 kHz: At least 7.27(fd−2.88 kHz) dB.

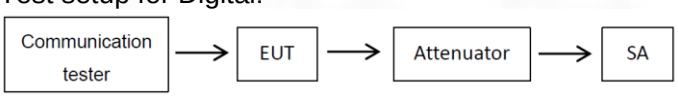
(3) On any frequency removed from the centre of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 12.5 kHz: At least 50 + 10 log (P) dB or 70 dB, whichever is the lesser attenuation.

6.3.2 Test Setup

Test setup for Analog:



Test setup for Digital:



6.3.3 Test Procedures

(1) Connect the equipment as illustrated.

(2) Spectrum set as follow:

Centre frequency = fundamental frequency, span=120kHz for 12.5kHz channel spacing,

RBW=100Hz, VBW=1000Hz, Sweep = auto,

Detector function = peak, Trace = max hold

(3) Key the transmitter, and set the level of the unmodulated carrier to a full scale reference line. This is the 0dB reference for the measurement.

(4) Apply Input Modulation Signal to EUT according to Section 4.2

(5) Measure and record the results in the test report.

6.3.4 Test Result

Please refer to ANNEX A.3.

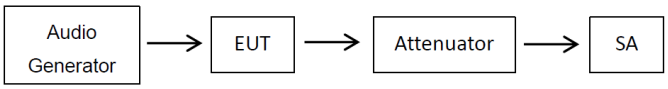
BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

6.4 Modulation Limit

6.4.1 Limit

FCC Part 2.1047(b)
2.5kHz for 12.5 KHz Channel Spacing System

6.4.2 Test Setup



6.4.3 Test Procedures

(1) Connect the equipment as illustrated
(2) Adjust the transmitter per the manufacturer's procedure for full rated system deviation.
(3) Set the test receiver to measure peak positive deviation. Set the audio bandwidth for ≤0.25 Hz to ≥15,000 Hz. Turn the de-emphasis function off.
(4) Apply a 1000 Hz modulating signal to the transmitter from the audio frequency generator, and adjust the level to obtain 60% of full rated system deviation.
(5) Increase the level from the audio frequency generator by 20 dB in one step (rise time between the 10% and 90% points shall be 0.1 second maximum).
(6) Measure both the instantaneous and steady-state deviation at and after the time of increasing the audio input level
(7) With the level from the audio frequency generator held constant at the level obtained in step 4), slowly vary the audio frequency from 300 Hz to 3000 Hz and observe the steady-state deviation. Record the maximum deviation.

6.4.4 Test Result

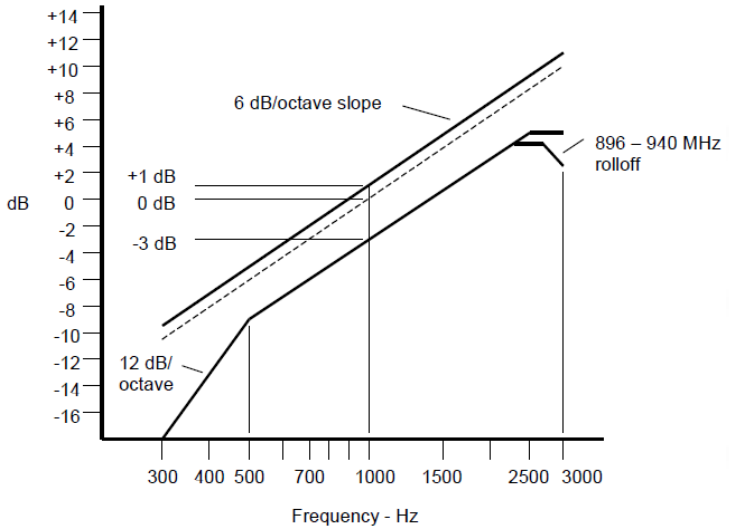
Please refer to ANNEX A.4.

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

6.5 Audio Frequency Response

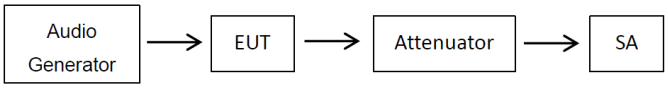
6.5.1 Limit

2.1047(a): Voice modulated communication equipment. A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz shall be submitted. For equipment required to have an audio low-pass filter, a curve showing the frequency response of the filter or of all circuitry installed between the modulation limiter and the modulated stage shall be submitted.



An additional 6 dB per octave attenuation is allowed from 2500 Hz to 3000 Hz in equipment operating in the 25 MHz to 869 MHz range.

6.5.2 Test Setup



6.5.3 Test Procedures

(1) Connect the equipment as illustrated.
(2) Set the test receiver to measure peak positive deviation. Set the audio bandwidth for 50 Hz to 15,000 Hz. Turn the de-emphasis function off.
(3) Set the DMM to measure rms voltage.
(4) Adjust the transmitter per the manufacturer's procedure for full rated system deviation.
(5) Apply a 1000 Hz tone and adjust the audio frequency generator to produce 20% of the rated system deviation.
(6) Set the test receiver to measure rms deviation and record the deviation reading.
(7) Record the DMM reading as V_{REF}
(8) Set the audio frequency generator to the desired test frequency between 300 Hz and 3000 Hz.
(9) Vary the audio frequency generator output level until the deviation reading that was recorded in step 6) is obtained.
(10) Record the DMM reading as V_{FREQ}
(11) Calculate the audio frequency response at the present frequency as:
audio frequency response=$20\log_{10}$ (V_{FREQ}/V_{REF}).
(12) Repeat steps 8) through 11) for all the desired test frequencies

6.5.4 Test Result

Please refer to ANNEX A.5.

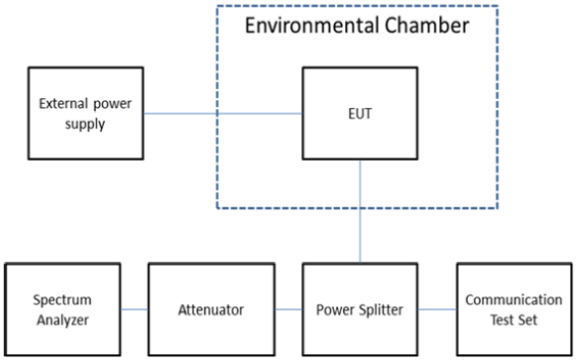
6.6 Frequency stability VS Temperature

6.6.1 Limit

FCC Part 90.213， FCC Part 2.1055

Frequency range (MHz)	Fixed and base stations	Mobile stations	
		Over 2 watts output power	2 watts or less output power
Below 25	[1][2][3]100	100	200
25-50	20	20	50
72-76	5		50
150-174	[5][11]5	[6]5	[4][6]50
216-220	1.0		1.0
220-222[12]	0.1	1.5	1.5
421-512	[7][11][14]2.5	[8]5	[8]5
806-809	[14]1.0	1.5	1.5
809-824	[14]1.5	2.5	2.5
851-854	1.0	1.5	1.5
854-869	1.5	2.5	2.5
896-901	[14]0.1	1.5	1.5
902-928	2.5	2.5	2.5
902-928[13]	2.5	2.5	2.5
929-930	1.5		
935-940	0.1	1.5	1.5
1427-1435	[9]300	300	300
Above 2450[10]			

6.6.2 Test Setup



6.6.3 Test Procedures

(1) The EUT output port was connected to communication tester.

(2) The EUT was placed inside the temperature chamber.

(3) Turn EUT off and set the chamber temperature to –30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency as MCF_{MHz}.

(4) Calculate the ppm frequency error by the following:
ppm error=$(MCF_{MHZ}/ACF_{MHZ}-1)*10^6$
where
MCF_{MHz} is the Measured Carrier Frequency in MHz
ACF_{MHz} is the Assigned Carrier Frequency in MHz

(5) Repeat step 3 measure with 10°C increased per stage until the highest temperature of +50°C reached.

6.6.4 Test Result

Please refer to ANNEX A.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

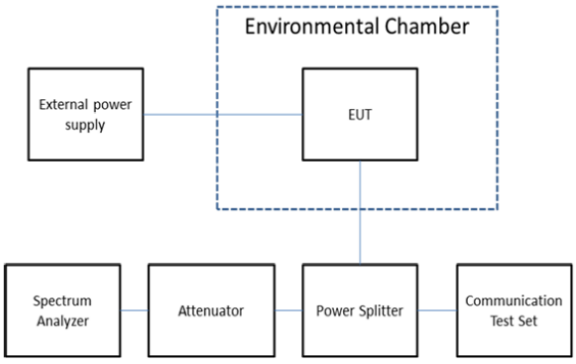
6.7 Frequency stability VS Voltage

6.7.1 Limit

FCC Part 90.213， FCC Part 2.1055

Frequency range (MHz)	Fixed and base stations	Mobile stations	
		Over 2 watts output power	2 watts or less output power
Below 25	[1 2 3]100	100	200
25-50	20	20	50
72-76	5		50
150-174	[5 11]5	[6]5	[4 6]50
216-220	1.0		1.0
220-222[12]	0.1	1.5	1.5
421-512	[7 11 14]2.5	[8]5	[8]5
806-809	[14]1.0	1.5	1.5
809-824	[14]1.5	2.5	2.5
851-854	1.0	1.5	1.5
854-869	1.5	2.5	2.5
896-901	[14]0.1	1.5	1.5
902-928	2.5	2.5	2.5
902-928[13]	2.5	2.5	2.5
929-930	1.5		
935-940	0.1	1.5	1.5
1427-1435	[9]300	300	300
Above 2450[10]			

6.7.2 Test Setup



6.7.3 Test Procedures

(1) The EUT output port was connected to communication tester.

(2) The EUT was placed inside the temperature chamber at 25°C

(3) Record the carrier frequency of the transmitter as MCF_{MHZ}

(4) Calculate the ppm frequency error by the following:
ppm error=$(MCF_{MHZ}/ACF_{MHZ}-1)*10^6$
where
MCF_{MHz} is the Measured Carrier Frequency in MHz
ACF_{MHz} is the Assigned Carrier Frequency in MHz

(5) Repeat step 3 measure with varied ±15% of the nominal value measured at the input to the EUT

6.7.4 Test Result

Please refer to ANNEX A.7.

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 Transmitter Frequency Behavior

6.8.1 Limit

FCC part 90.214

Transmitters designed to operate in the 150-174 MHz and 421-512 MHz frequency bands must maintain transient frequencies within the maximum frequency difference limits during the time intervals indicated:

Time intervals[1 2]	Maximum frequency difference[3]	All equipment	
		150 to 174 MHz	421 to 512 MHz
Transient Frequency Behavior for Equipment Designed to Operate on 25 kHz Channels			
t_1[4]	±25.0 kHz	5.0 ms	10.0 ms
t_2	±12.5 kHz	20.0 ms	25.0 ms
t_3[4]	±25.0 kHz	5.0 ms	10.0 ms
Transient Frequency Behavior for Equipment Designed to Operate on 12.5 kHz Channels			
t_1[4]	±12.5 kHz	5.0 ms	10.0 ms
t_2	±6.25 kHz	20.0 ms	25.0 ms
t_3[4]	±12.5 kHz	5.0 ms	10.0 ms
Transient Frequency Behavior for Equipment Designed to Operate on 6.25 kHz Channels			
t_1[4]	±6.25 kHz	5.0 ms	10.0 ms
t_2	±3.125 kHz	20.0 ms	25.0 ms
t_3[4]	±6.25 kHz	5.0 ms	10.0 ms

Note:

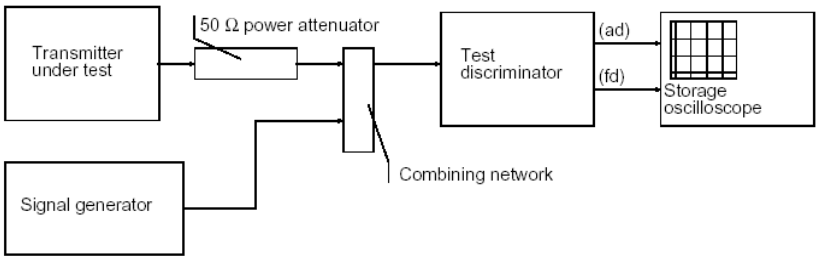
(1) On is the instant when a 1 kHz test signal is completely suppressed, including any capture time due to phasing.
   1) t_1 is the time period immediately following ton.
   2) t_2 is the time period immediately following t_1.
   3) t_3 is the time period from the instant when the transmitter is turned off until toff.
   4) t_{off} is the instant when the 1 kHz test signal starts to rise.

(2) During the time from the end of t_2 to the beginning of t_3, the frequency difference must not exceed the limits specified in §90.213.

(3) Difference between the actual transmitter frequency and the assigned transmitter frequency.

(4) If the transmitter carrier output power rating is 6 watts or less, the frequency difference during this time period may exceed the maximum frequency difference for this time period.

6.8.2 Test Setup



6.8.3 Test Procedures

(1) Connect DUT into Test discriminator and Storage Oscilloscope and keep DUT stats ON;
(2) Input 1kHz signal into DUT;
(3) Set the modulation domain analyzer to trigger on the rising edge of the waveform in order to capture a single-shot turn-on of the transmitter signals;
(4) Keep DUT in OFF state and Key the PTT;
(5) Observe the stored oscilloscope of modulation domain analyzer. The signal trace shall be maintained within the allowable limits during the periods t_1 and t_2, and shall also remain within limits following t_2;
(6) Adjust the modulation domain analyzer to trigger on the falling edge of the transmitter waveform in order to capture a single-shot turn-off transmitter of the transmitter signal.
(7) Keep the digital portable radio in ON state and unkey the PTT;
(8) Observe the stored oscilloscope of modulation domain analyzer, the signal trace shall be maintained within the allowable limits during the period t_3.
(9) Set the signal generator to the assigned transmitter frequency and modulate it with a 1 kHz tone at ±12.5 kHz deviation and set its output level to -100dBm.
(10) Turn on the transmitter.
(11) Supply sufficient attenuation via the RF attenuator to provide an input level to the stored oscilloscope that is 40 dB below the maximum allowed input power when the transmitter is operating at its rated power level. Note this power level on the stored oscilloscope as P_0.
(12) Turn off the transmitter.
(13) Adjust the RF level of the signal generator to provide RF power equal to P_0. This signal generator RF level shall be maintained throughout the rest of the measurement.
(14) Remove the attenuation, so the input power to the stored oscilloscope is increased by 30 dB when the transmitter is turned on.
(15) Adjust the vertical amplitude control of the stored oscilloscope to display the 1000 Hz at ±4 divisions vertically centered on the display. Set trigger mode of the Spectrum Analyzer to “Video”, and tune the “trigger level” on suitable level. Then set the “tiger offset” to -10ms for turn on and -15ms for turn off.
(16) Turn on the transmitter and the transient wave will be captured on the screen of Spectrum Analyzer. Observe the stored display. The instant when the 1 kHz test signal is completely suppressed is considered to be ton. The trace should be maintained within the allowed divisions during the period t_1 and t_2.
(17) Then turn off the transmitter, and another transient wave will be captured on the screen of Spectrum
(18) Analyzer. The trace should be maintained within the allowed divisions during the period t_3.

6.8.4 Test Result

Please refer to ANNEX A.8.

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

6.9 Transmit Conducted Spurious Emission

6.9.1 Limit

FCC Part 90.210, FCC Part 2.1051

For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

(3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 12.5 kHz: *At least 50 + 10 log (P) dB or 70 dB, whichever is the lesser attenuation.*

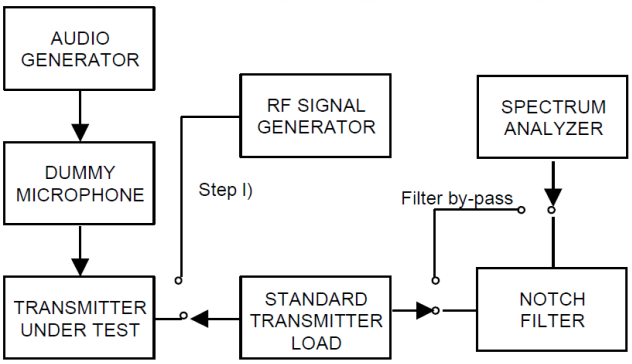
In general, the worse case attenuation requirement shown above was applied.

Calculation: Limit (dBm) =EL-50-10log (P)

EL is the emission level of the Output Power expressed in dBm,

Limit (dBm) = P(dBm)-50-10 log (Pwatts) = -20dBm

6.9.2 Test Setup



6.9.3 Test Procedures

(1) Connect the equipment as illustrated, with the notch filter by-passed.
(2) Apply Input Modulation Signal to EUT according to Section 4.2
(3) Adjust the spectrum analyzer for the following settings:
Below 1GHz: RBW=100kHz, VBW=300kHz
Above 1GHz: RBW=1MHz, VBW=3MHz
Detector=Peak, Sweep time=Auto, Trace=Max hold
(4) Scan frequency range up to 10th harmonic.
(5) Record the frequencies and levels of spurious emissions

6.9.4 Test Result

Please refer to ANNEX A.9.

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

6.10 Transmitter Radiated Spurious Emission

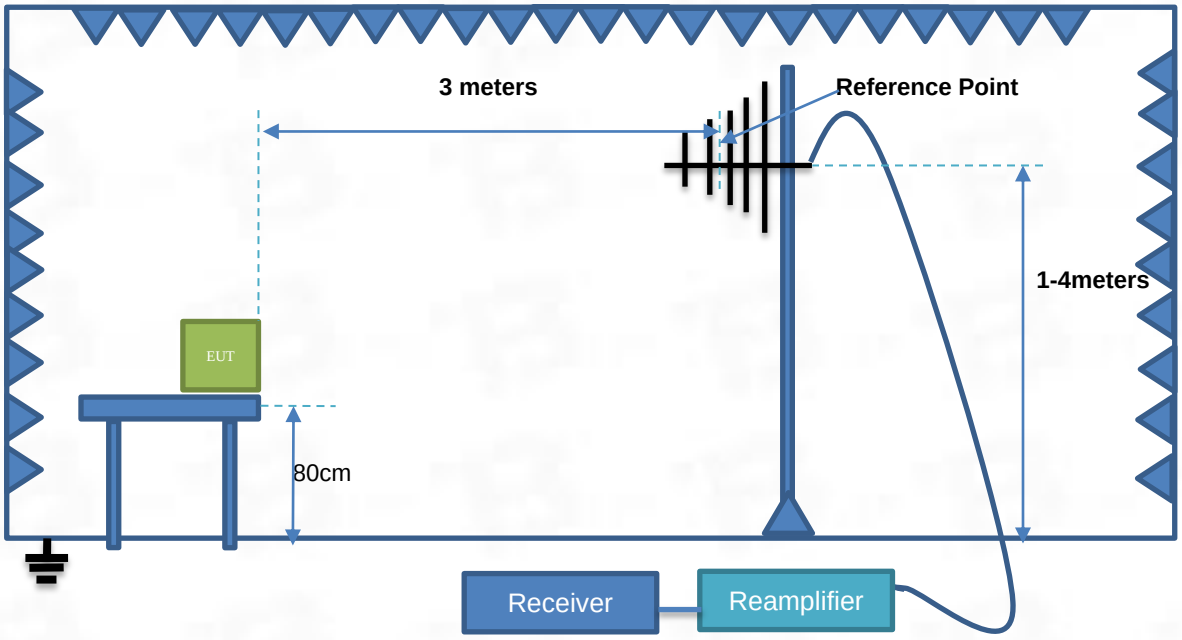
6.10.1 Limit

FCC Part 90.210, FCC Part 2.1051
For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

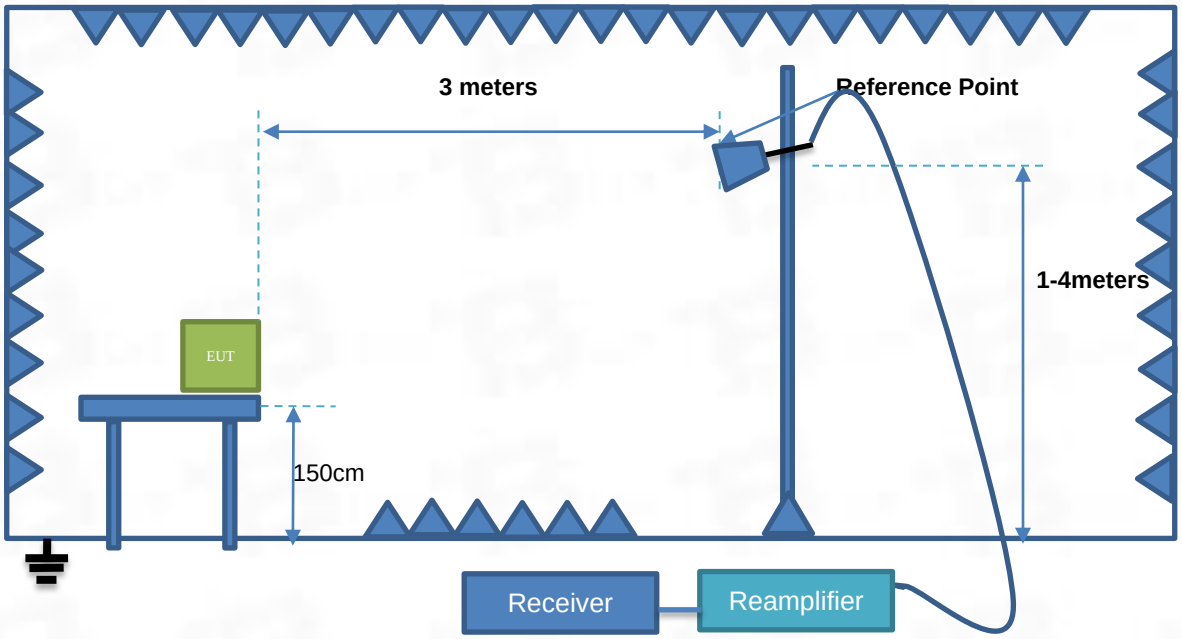
On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 12.5 kHz: At least 50 + 10 log (P) dB or 70 dB, whichever is the lesser attenuation.

In general, the worse case attenuation requirement shown above was applied.
Calculation: Limit (dBm) =EL-50-10log (P)
EL is the emission level of the Output Power expressed in dBm,
Limit (dBm) = P(dBm)-50-10 log (Pwatts) = -20dBm

6.10.2 Test Setup



Radiation Test (30MHz – 1GHz)



Radiation Test (Above 1GHz)

6.10.3 Test Procedures

(1) Place the EUT in the center of the turntable. The EUT shall be configured to transmit into the standard non-radiating load (for measuring radiated spurious emissions), connected with cables of minimal length unless specified otherwise. If the EUT uses an adjustable antenna, the antenna shall be positioned to the length that produces the worst case emission at the fundamental operating frequency.
(2) Each emission under consideration shall be evaluated:
1) Raise and lower the measurement antenna in accordance 5.5.2, as necessary to enable detection of the maximum emission amplitude relative to measurement antenna height.
2) Rotate the EUT through 360° to determine the maximum emission level relative to the axial position.
3) Return the turntable to the azimuth where the highest emission amplitude level was observed.
4) Vary the measurement antenna height again through 1 m to 4 m again to find the height associated with the maximum emission amplitude.
5) Record the measured emission amplitude level and frequency using the appropriate RBW.
(3) Repeat step 2) for each emission frequency with the measurement antenna oriented in both the horizontal and vertical polarizations to determine the orientation that gives the maximum emissions amplitude.
(4) Set-up the substitution measurement with the reference point of the substitution antenna located as near as possible to where the center of the EUT radiating element was located during the initial EUT measurement.
(5) Maintain the previous measurement instrument settings and test set-up, with the exception that the EUT is removed and replaced by the substitution antenna.
(6) Connect a signal generator to the substitution antenna; locate the signal generator so as to minimize any potential influences on the measurement results. Set the signal generator to the frequency where emissions are detected, and set an output power level such that the radiated signal can be detected by the measurement instrument, with sufficient dynamic range relative to the noise floor.
(7) For each emission that was detected and measured in the initial test [i.e., in step 2) and step 3)]:
1) Vary the measurement antenna height between 1 m to 4 m to maximize the received (measured) signal amplitude.

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

2) Adjust the signal generator output power level until the amplitude detected by the measurement instrument equals the amplitude level of the emission previously measured directly in step 2) and step 3).
3) Record the output power level of the signal generator when equivalence is achieved in step 2).

(8) Repeat step 5) through step 7) with the measurement antenna oriented in the opposite polarization.
(9) Calculate the emission power in dBm referenced to a half-wave dipole using the following equation:
Pe = Ps(dBm) − cable loss (dB) + antenna gain (dBd)

Where
Pe = equivalent emission power in dBm
Ps = source (signal generator) power in dBm
NOTE - dBd refers to the measured antenna gain in decibels relative to a half-wave dipole.

(10) Correct the antenna gain of the substitution antenna if necessary to reference the emission power to a half-wave dipole. When using measurement antennas with the gain specified in dBi, the equivalent dipole-referenced gain can be determined from: gain (dBd) = gain (dBi) − 2.15 dB. If necessary, the antenna gain can be calculated from calibrated antenna factor information
(11) Provide the complete measurement results as a part of the test report.
(12) Spectrum set as follow:
Below 1GHz, RBW=100kHz, VBW=300kHz, Detector=Peak, Sweep time=Auto
Above 1GHz, RBW=1MHz, VBW=3MHz, Detector=Peck, Sweep time=Auto

6.10.4 Test Result

Please refer to ANNEX A.10.

ANNEX A Test Results

A.1 Conducted Output Power

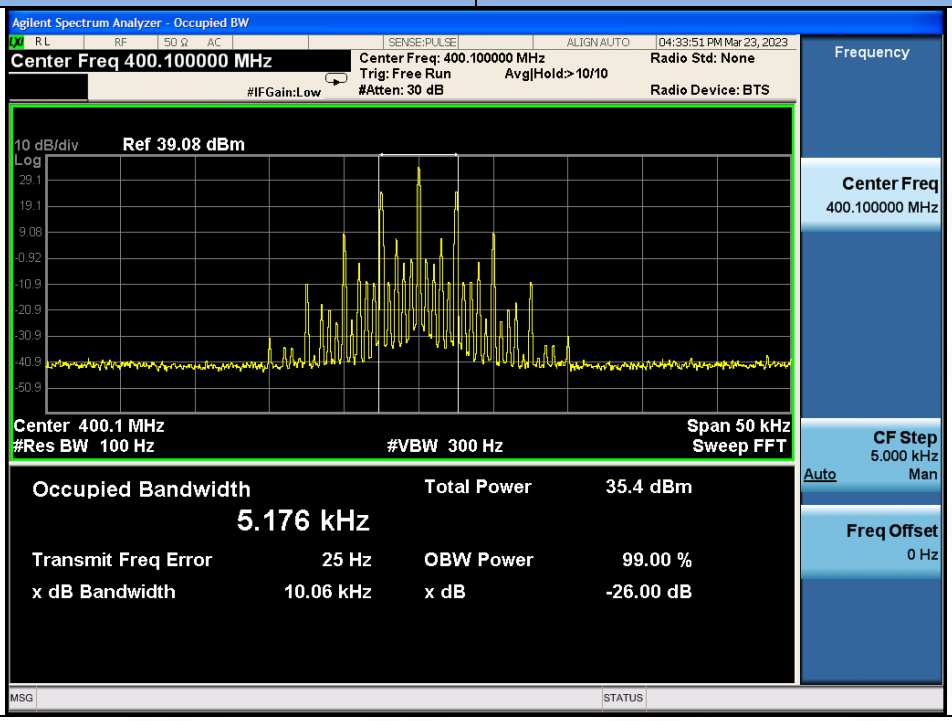
Operation Mode	Modulation Type	Test Channel	Measured Power(dBm)	Measured Power(W)	Rated Power(W)	Percentage(%)	Limit (%)	Result
TX-DNH	4FSK	CH_L	32.2	1.66	2.00	-17.0	±20	PASS
TX-DNH	4FSK	CH_M	32.4	1.74	2.00	-13.0	±20	PASS
TX-DNH	4FSK	CH_H	32.5	1.78	2.00	-11.0	±20	PASS
TX-DNL	4FSK	CH_L	26.3	0.43	0.50	-14.0	±20	PASS
TX-DNL	4FSK	CH_M	26.5	0.45	0.50	-10.0	±20	PASS
TX-DNL	4FSK	CH_H	26.2	0.42	0.50	-16.0	±20	PASS
TX-ANH	FM	CH_L	32.4	1.74	2.00	-13.0	±20	PASS
TX-ANH	FM	CH_M	32.2	1.66	2.00	-17.0	±20	PASS
TX-ANH	FM	CH_H	32.1	1.62	2.00	-19.0	±20	PASS
TX-ANL	FM	CH_L	26.5	0.45	0.50	-10.0	±20	PASS
TX-ANL	FM	CH_M	26.1	0.41	0.50	-18.0	±20	PASS
TX-ANL	FM	CH_H	26.2	0.42	0.50	-16.0	±20	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

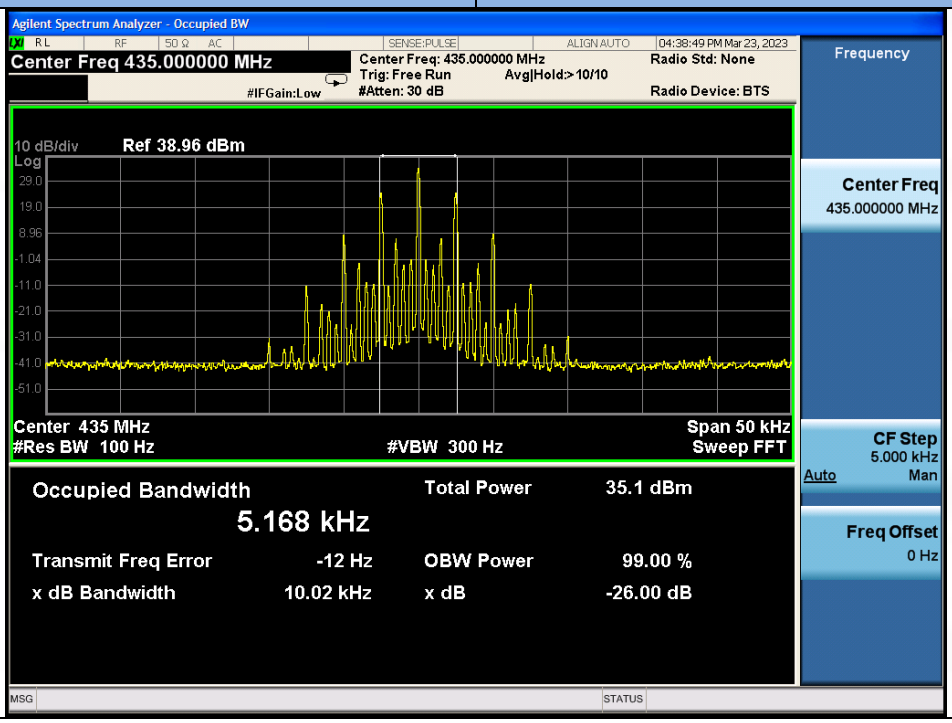
A.2 99% Occupied Bandwidth & 26dB bandwidth

Operation Mode	Modulation Type	Test Channel	Occupied Bandwidth		99% Limit(kHz)	Result
			99%(kHz)	26dB(kHz)		
TX-DNH	4FSK	CH_L	7.552	9.675	⩽11.25	PASS
TX-DNH	4FSK	CH_M	7.774	9.847	⩽11.25	PASS
TX-DNH	4FSK	CH_H	7.578	9.529	⩽11.25	PASS
TX-DNL	4FSK	CH_L	7.747	9.808	⩽11.25	PASS
TX-DNL	4FSK	CH_M	7.482	9.575	⩽11.25	PASS
TX-DNL	4FSK	CH_H	7.860	9.970	⩽11.25	PASS
TX-ANH	FM	CH_L	5.176	10.060	⩽11.25	PASS
TX-ANH	FM	CH_M	5.168	10.020	⩽11.25	PASS
TX-ANH	FM	CH_H	5.148	5.258	⩽11.25	PASS
TX-ANL	FM	CH_L	5.167	10.030	⩽11.25	PASS
TX-ANL	FM	CH_M	5.174	10.030	⩽11.25	PASS
TX-ANL	FM	CH_H	5.166	5.241	⩽11.25	PASS

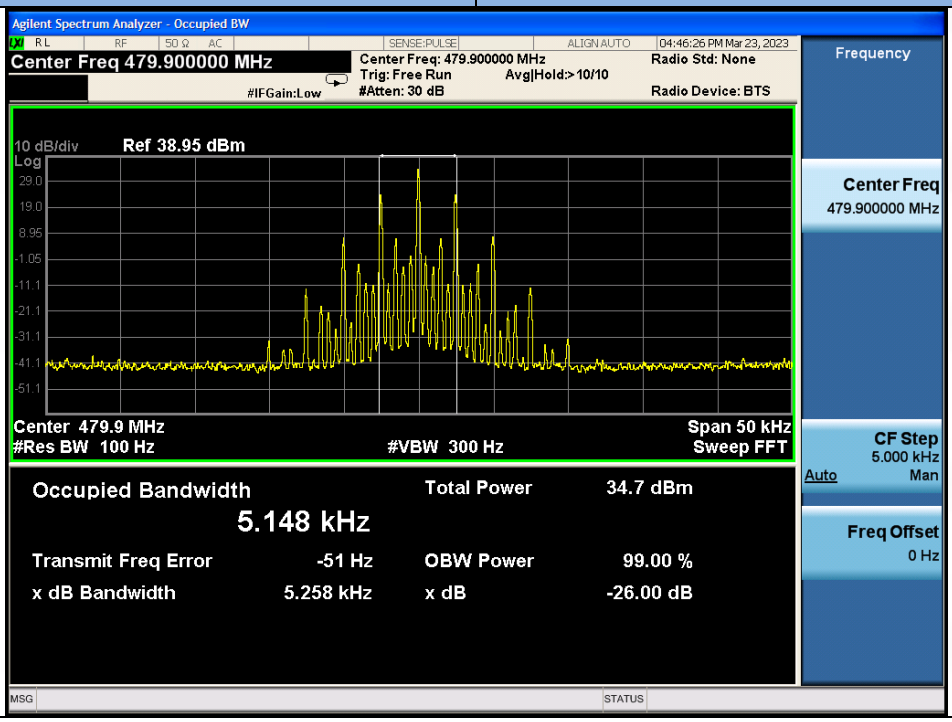
TX-ANH	CH_L



TX-ANH	CH_M

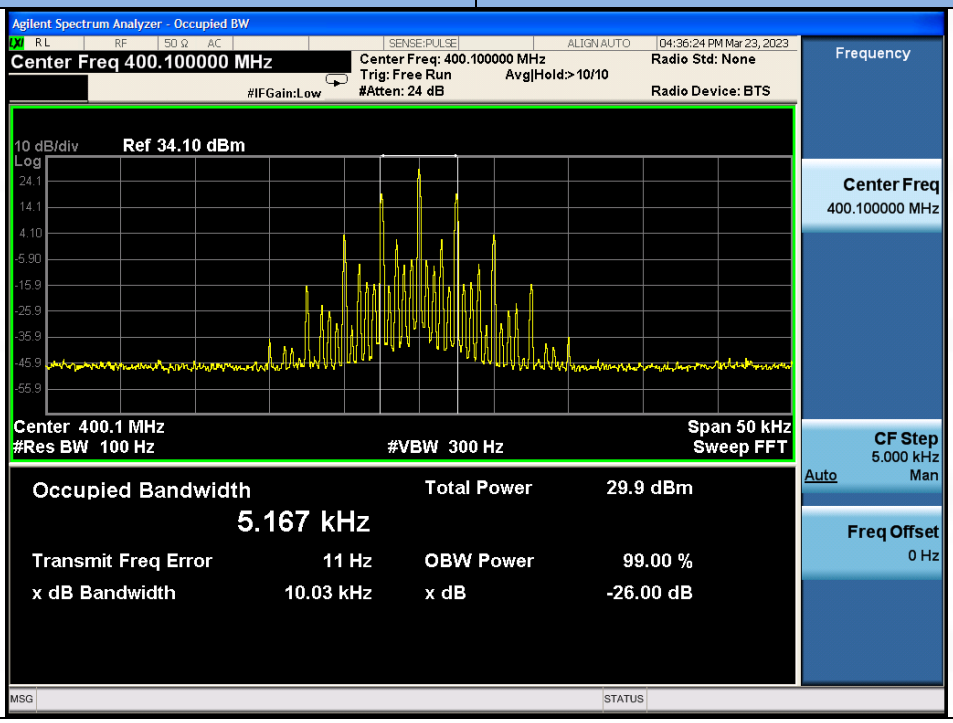


TX-ANH	CH_H

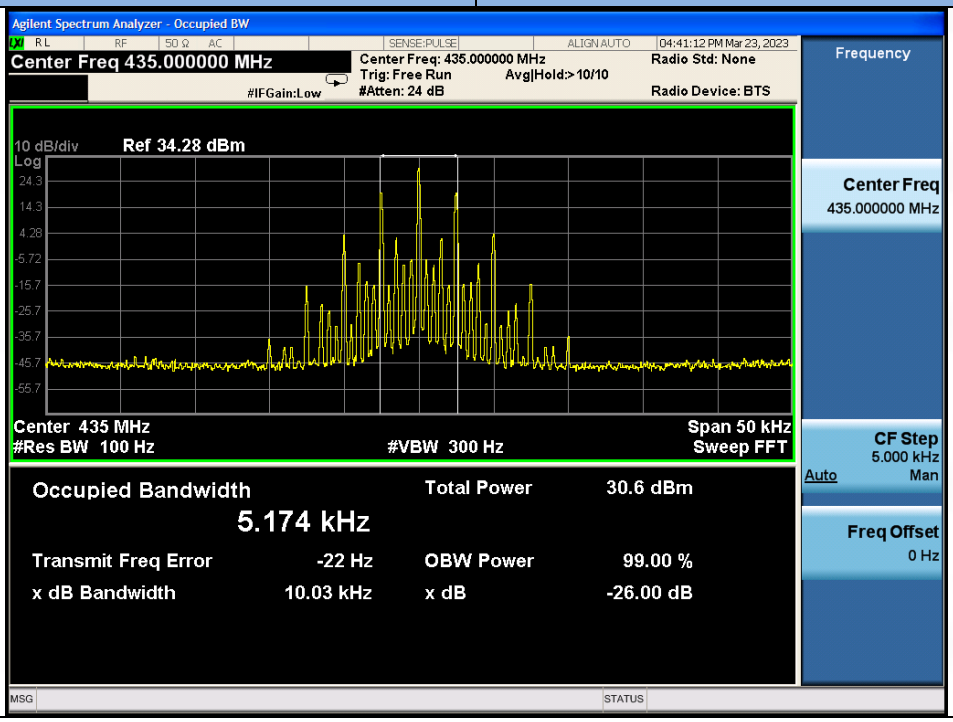


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

TX-ANL	CH_L

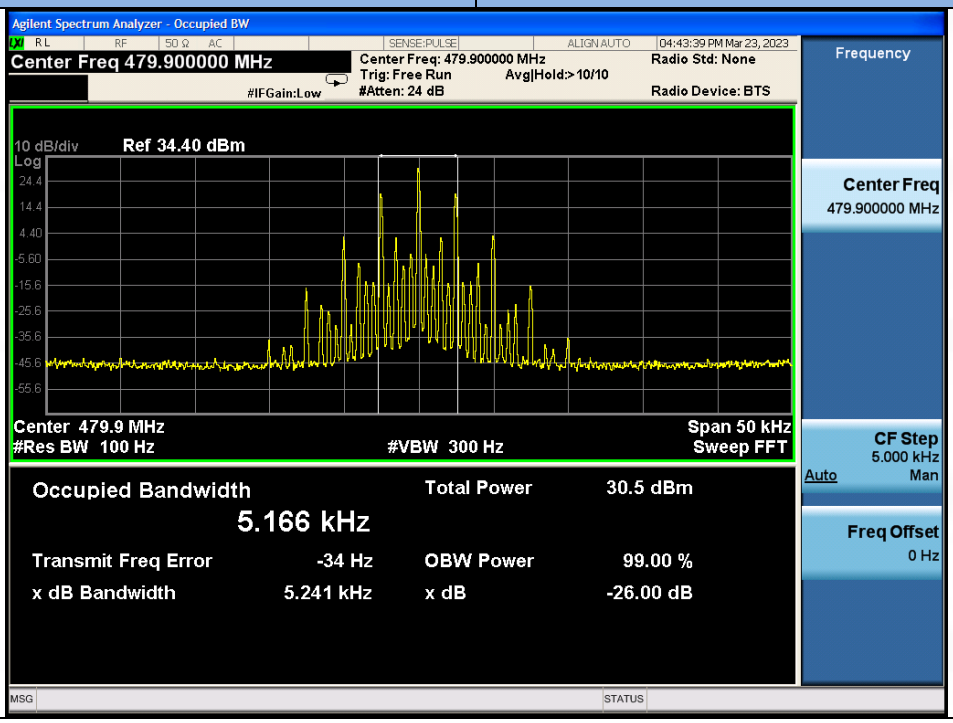


TX-ANL	CH_M

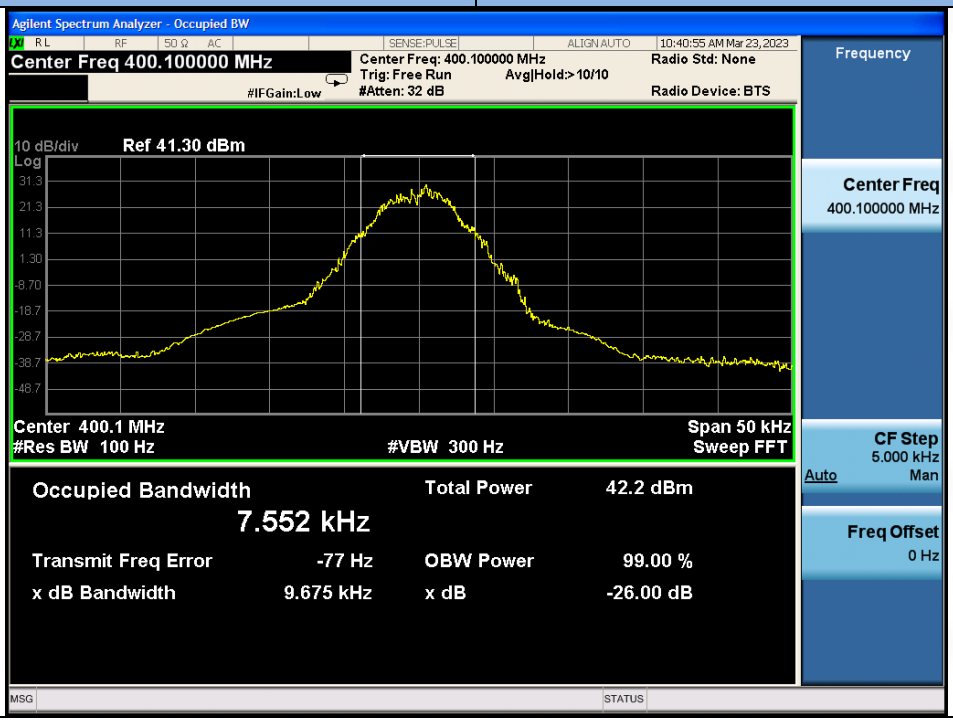


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

TX-ANL	CH_H

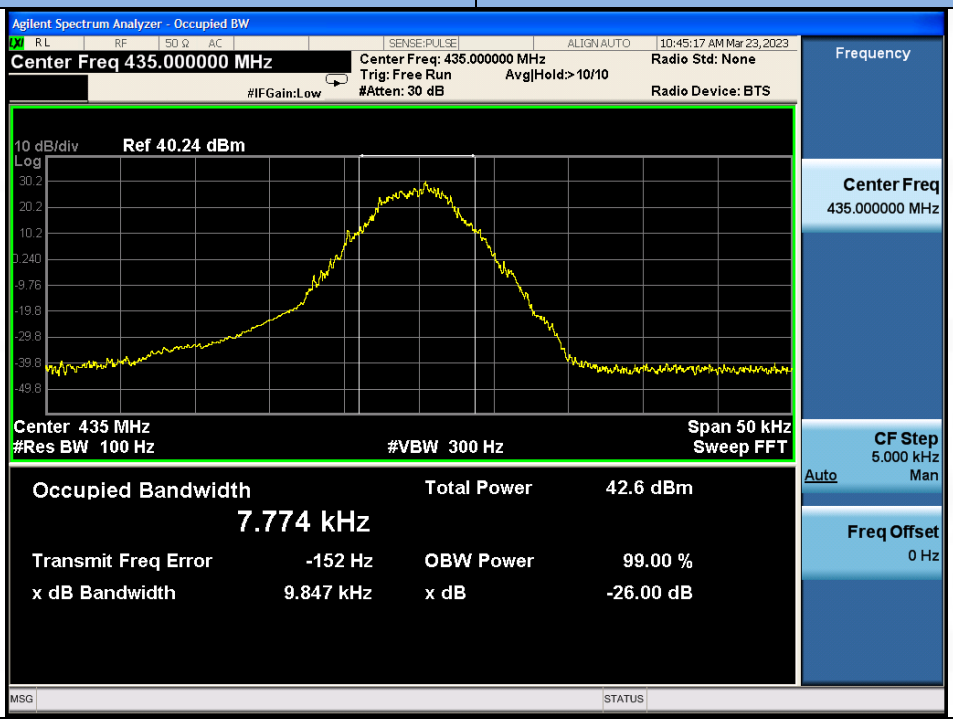


TX-DNH	CH_L

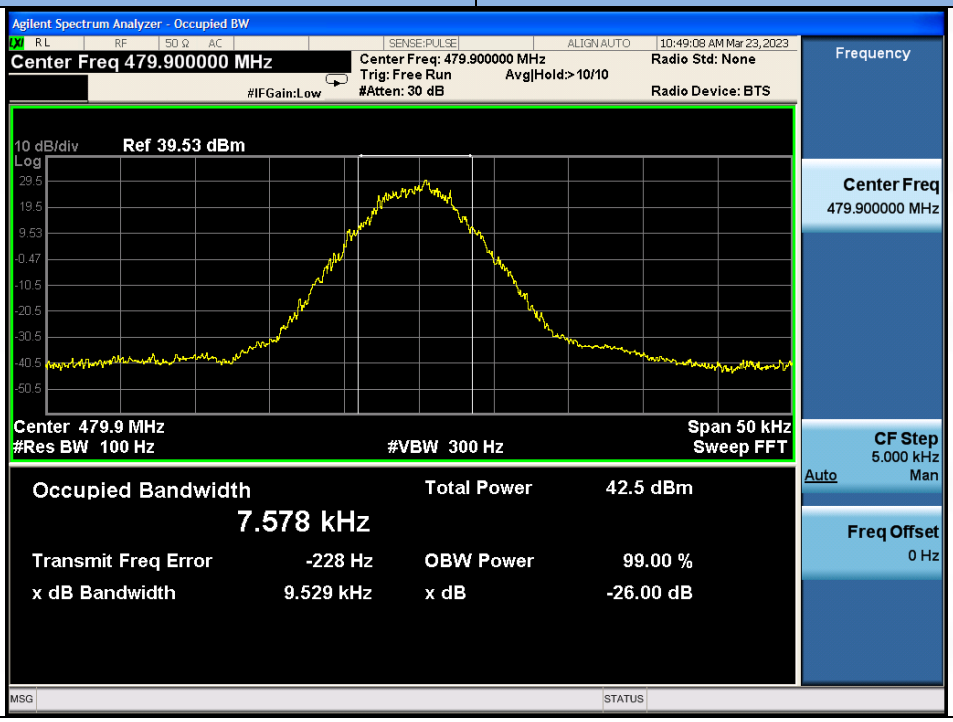


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

TX-DNH	CH_M

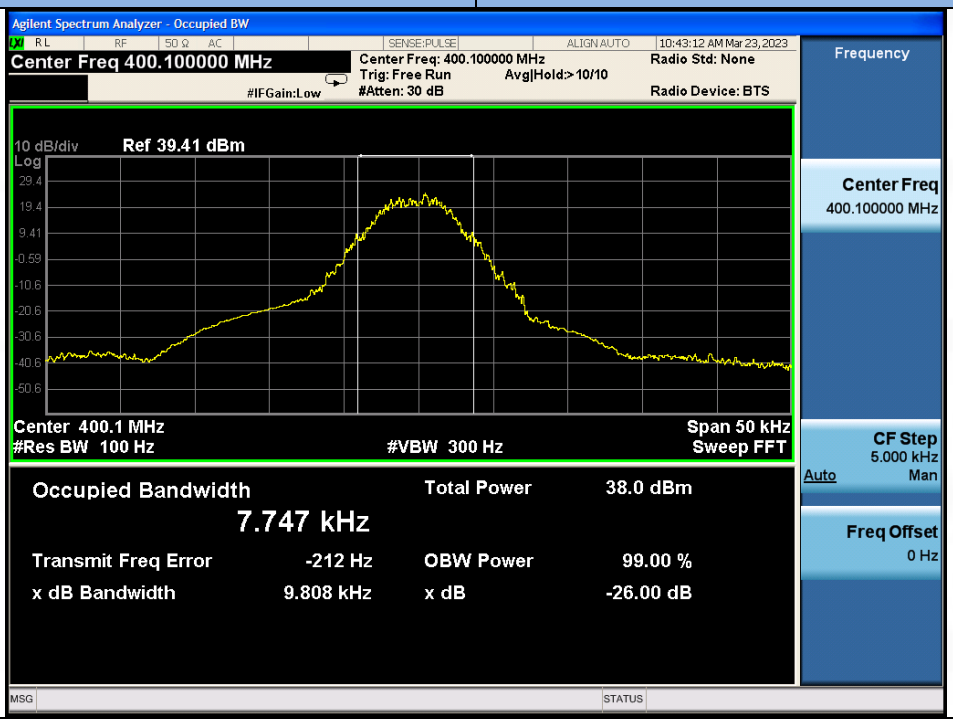


TX-DNH	CH_H

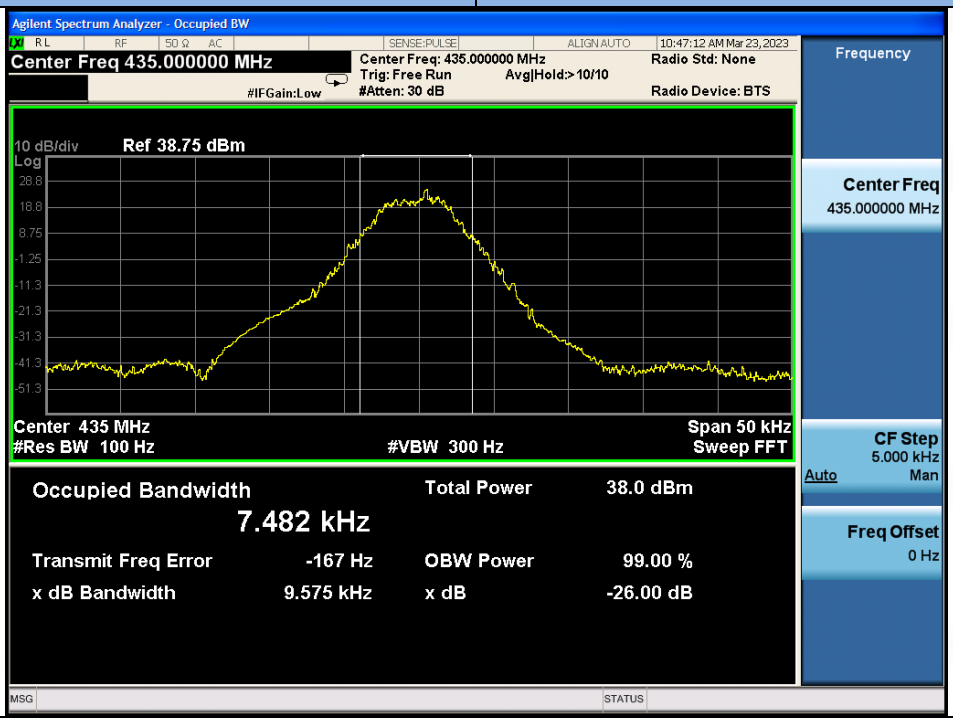


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

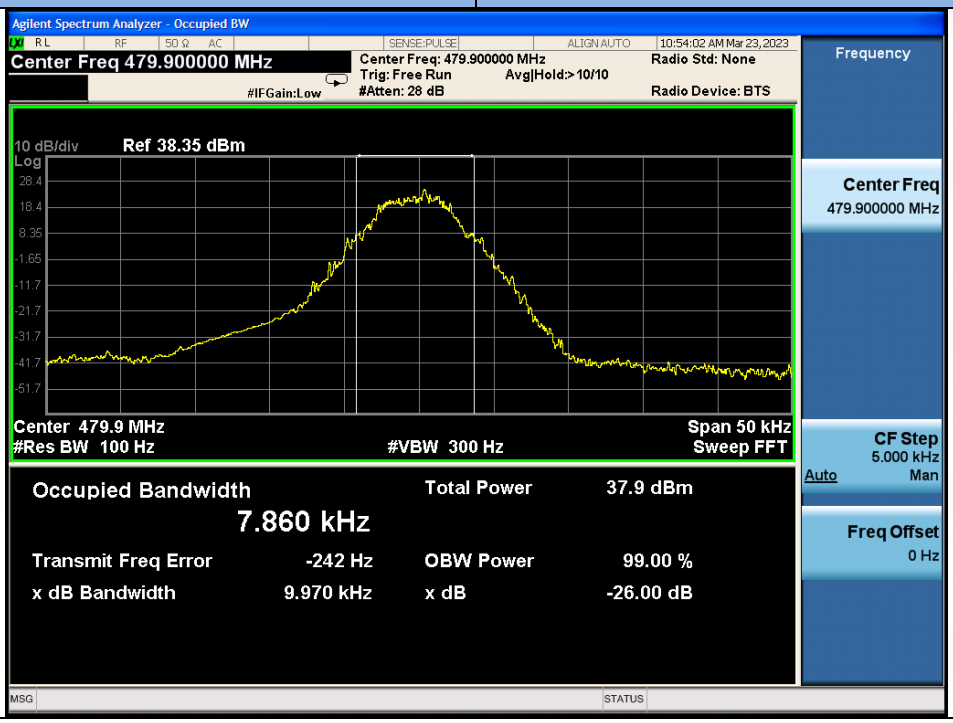
TX-DNL	CH_L



TX-DNL	CH_M

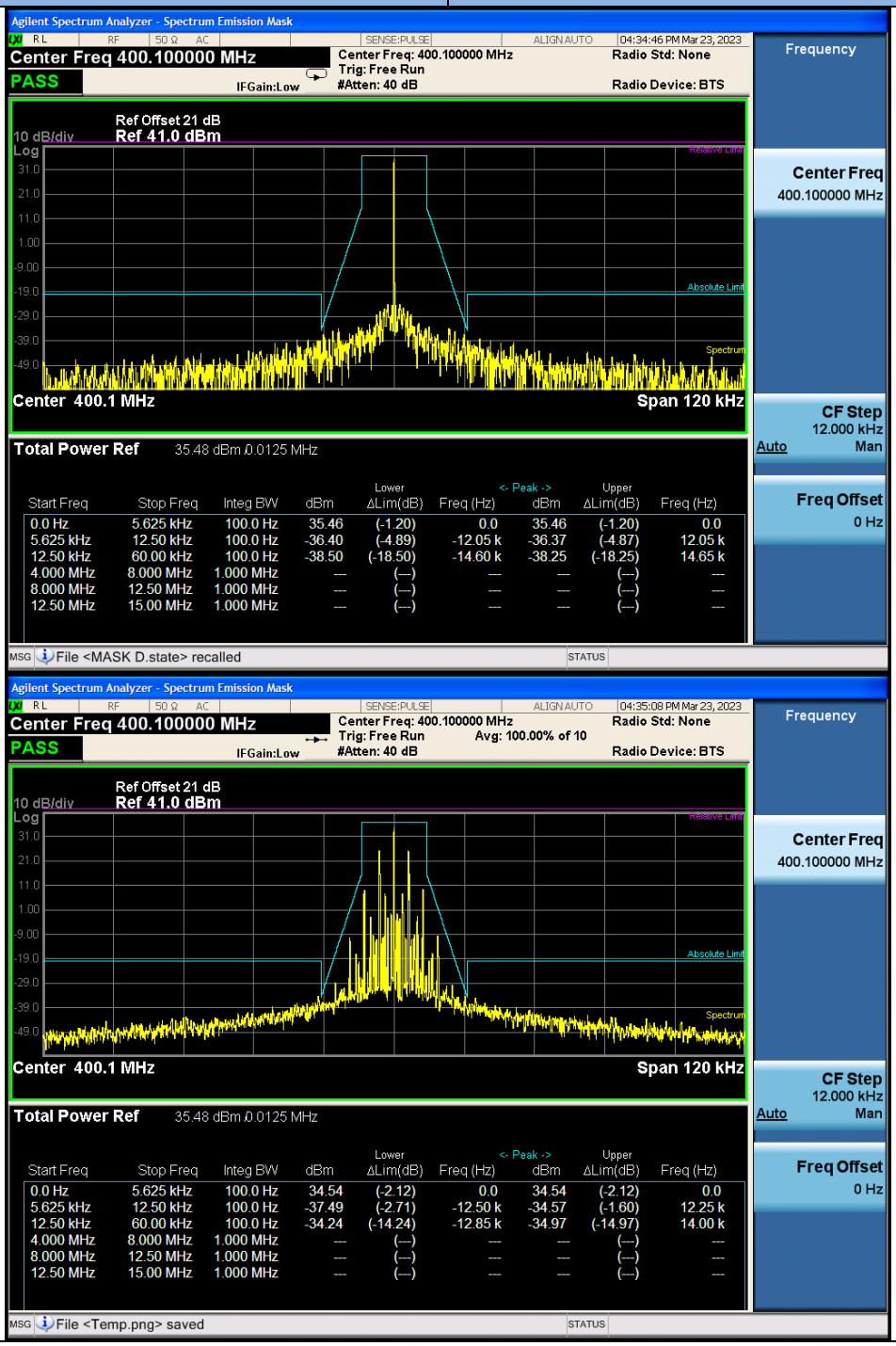


TX-DNL	CH_H

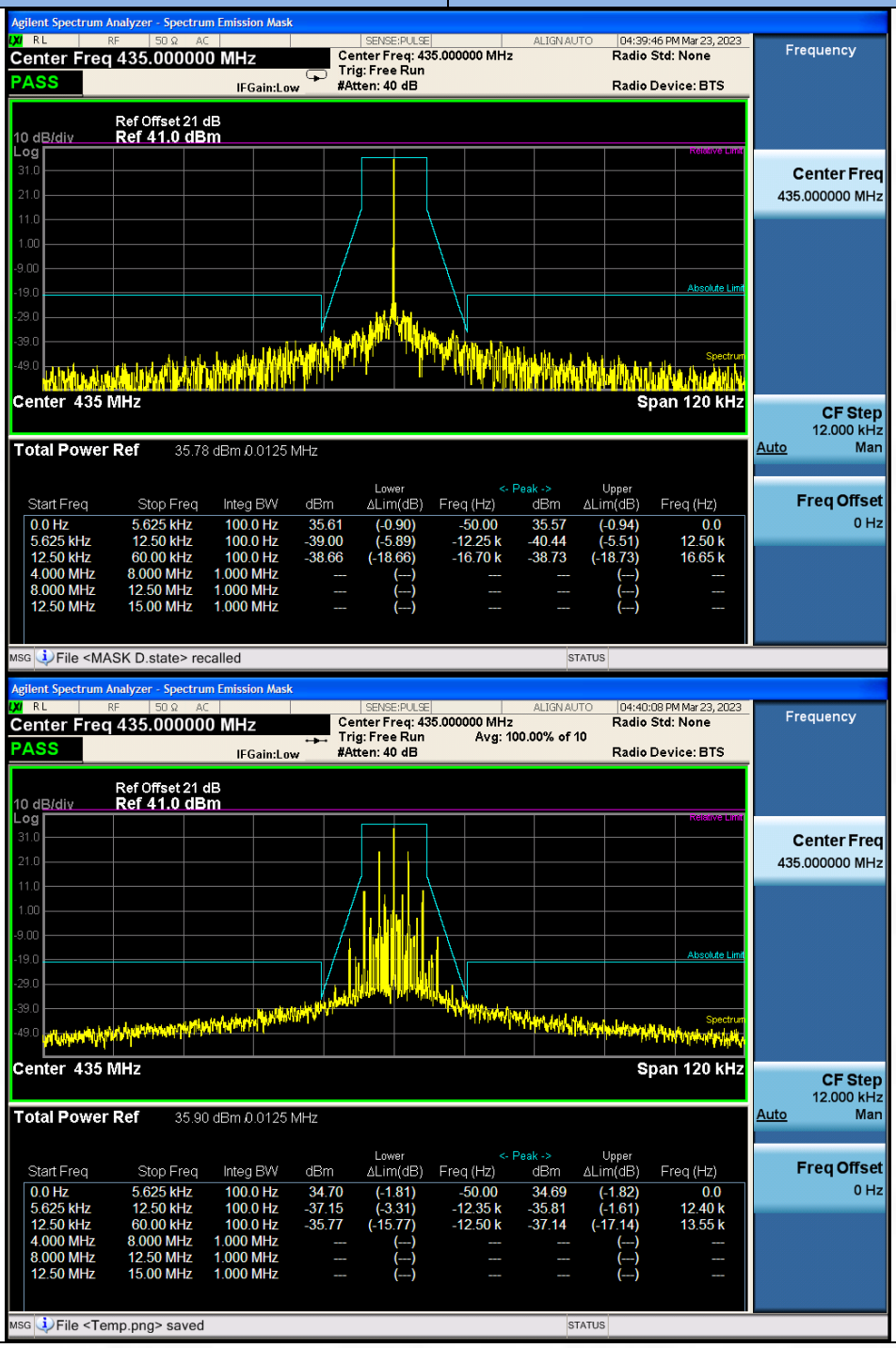

Agilent Spectrum Analyzer - Occupied BW
RL
RF
50 Ω AC
SENSE:PULSE
ALIGN AUTO
10:54:02 AM Mar 23, 2023
Center Freq 479.900000 MHz
Center Freq: 479.900000 MHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 28 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 38.35 dBm
28.4
18.4
8.35
-1.65
-11.7
-21.7
-31.7
-41.7
-51.7
Center Freq
479.900000 MHz
Center 479.9 MHz
#Res BW 100 Hz
#VBW 300 Hz
Span 50 kHz
Sweep FFT
CF Step
5.000 kHz
Auto
Man
Occupied Bandwidth
7.860 kHz
Total Power
37.9 dBm
Transmit Freq Error
-242 Hz
OBW Power
99.00 %
x dB Bandwidth
9.970 kHz
x dB
-26.00 dB
Freq Offset
0 Hz
MSG
STATUS

A.3 Emission Mask

TX-ANH	CH_L

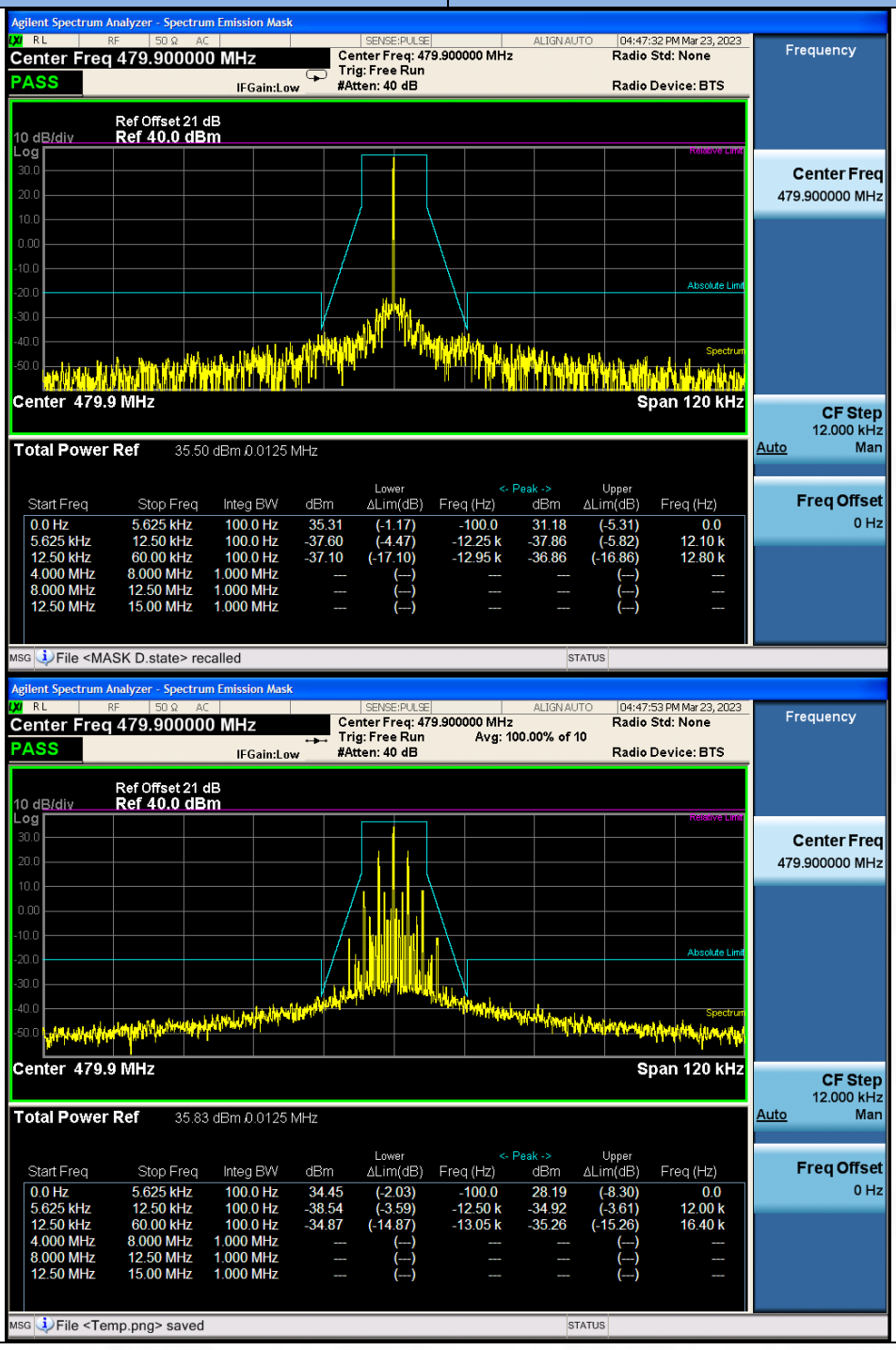


TX-ANH	CH_M



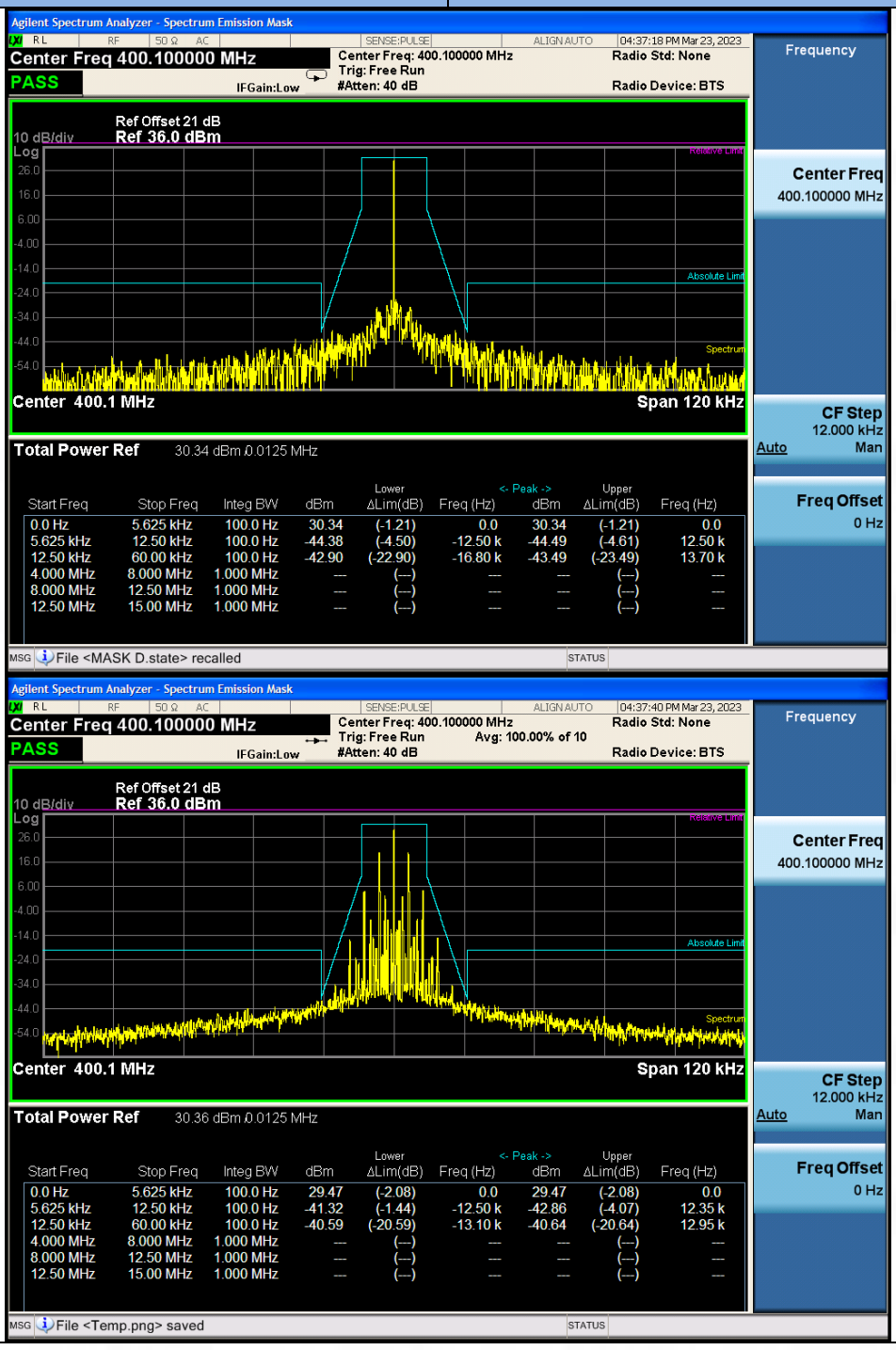
BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

TX-ANH	CH_H



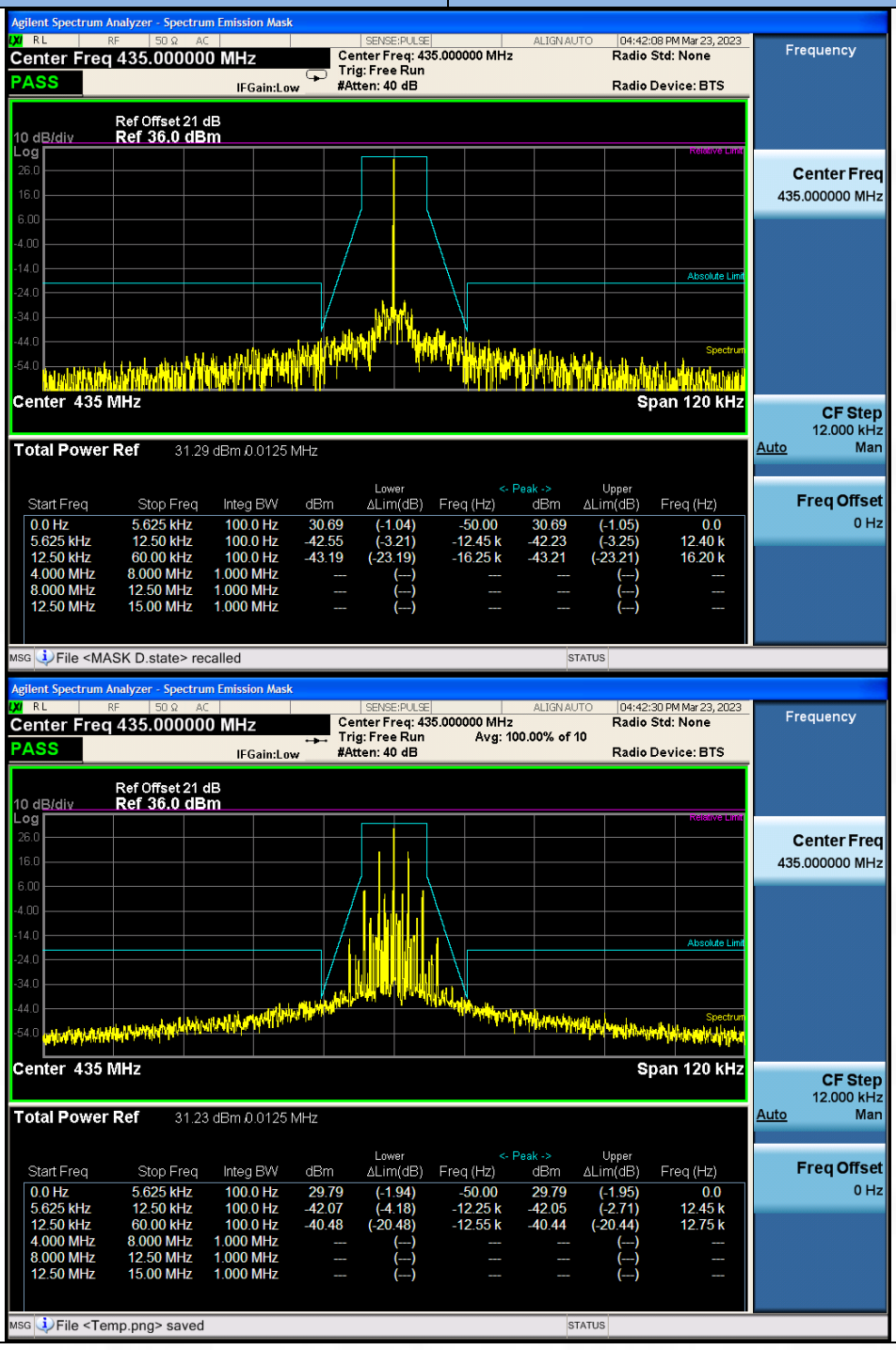
BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

TX-ANL	CH_L



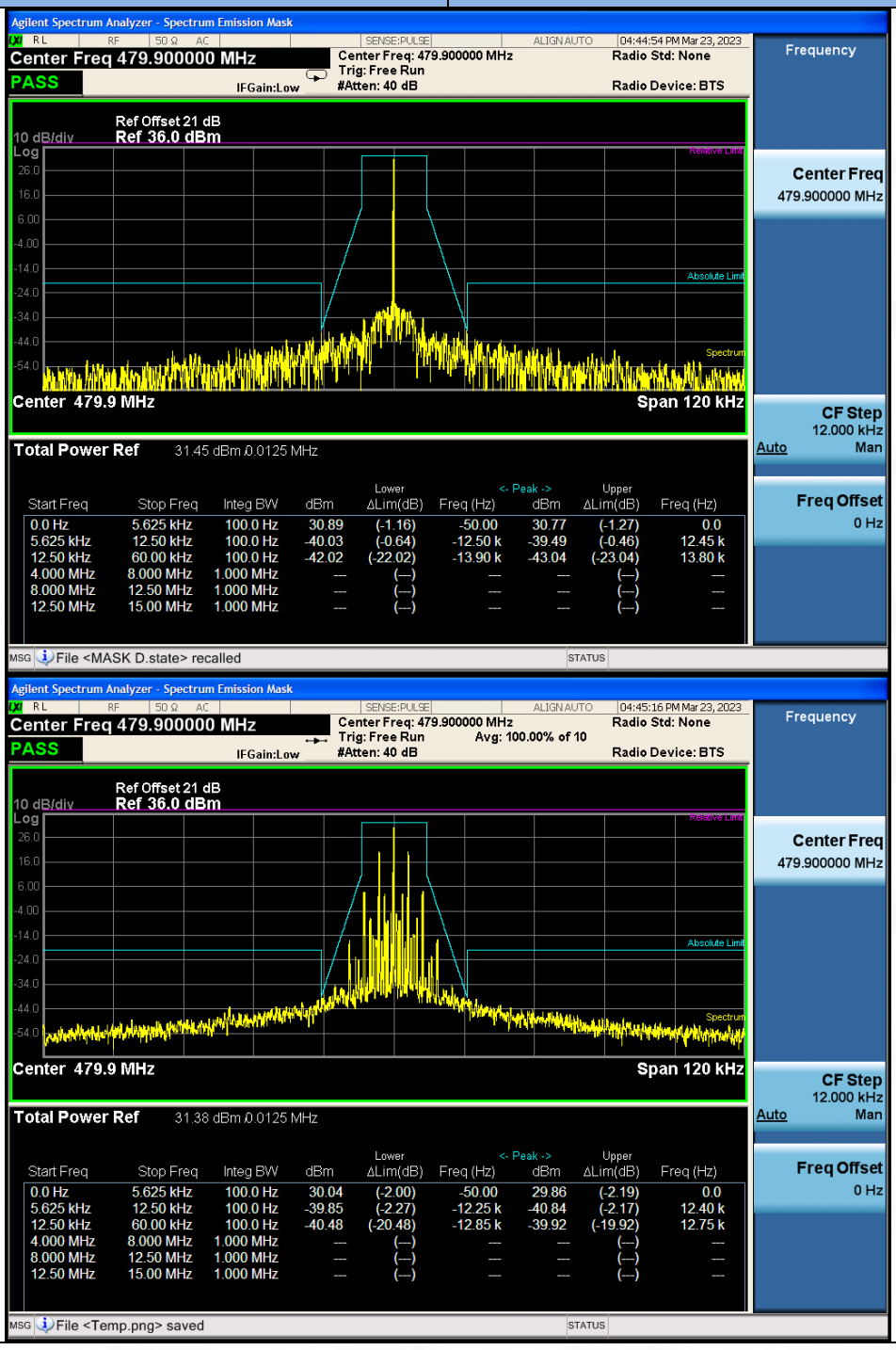
BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

TX-ANL	CH_M



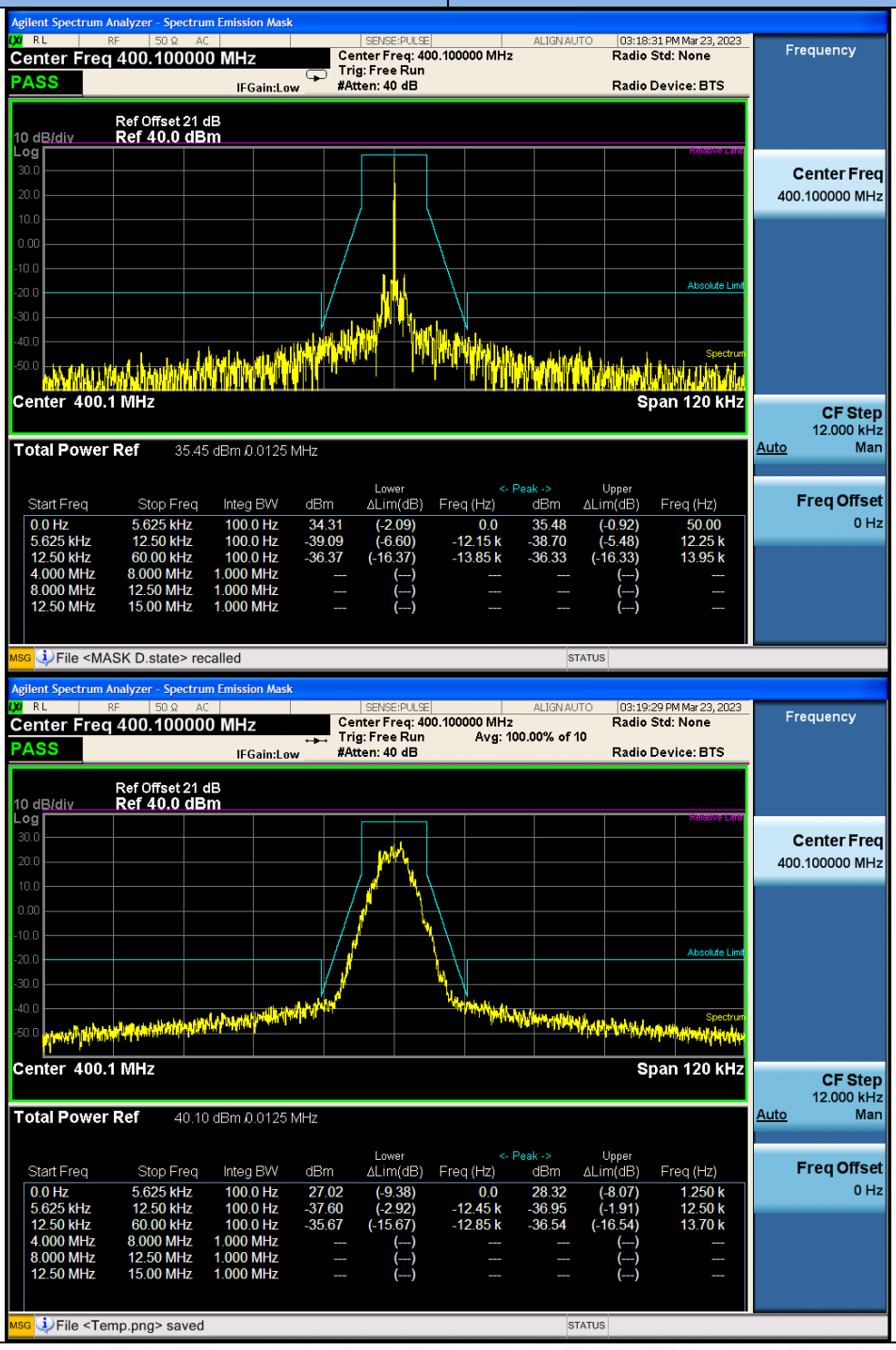
BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

TX-ANL	CH_H



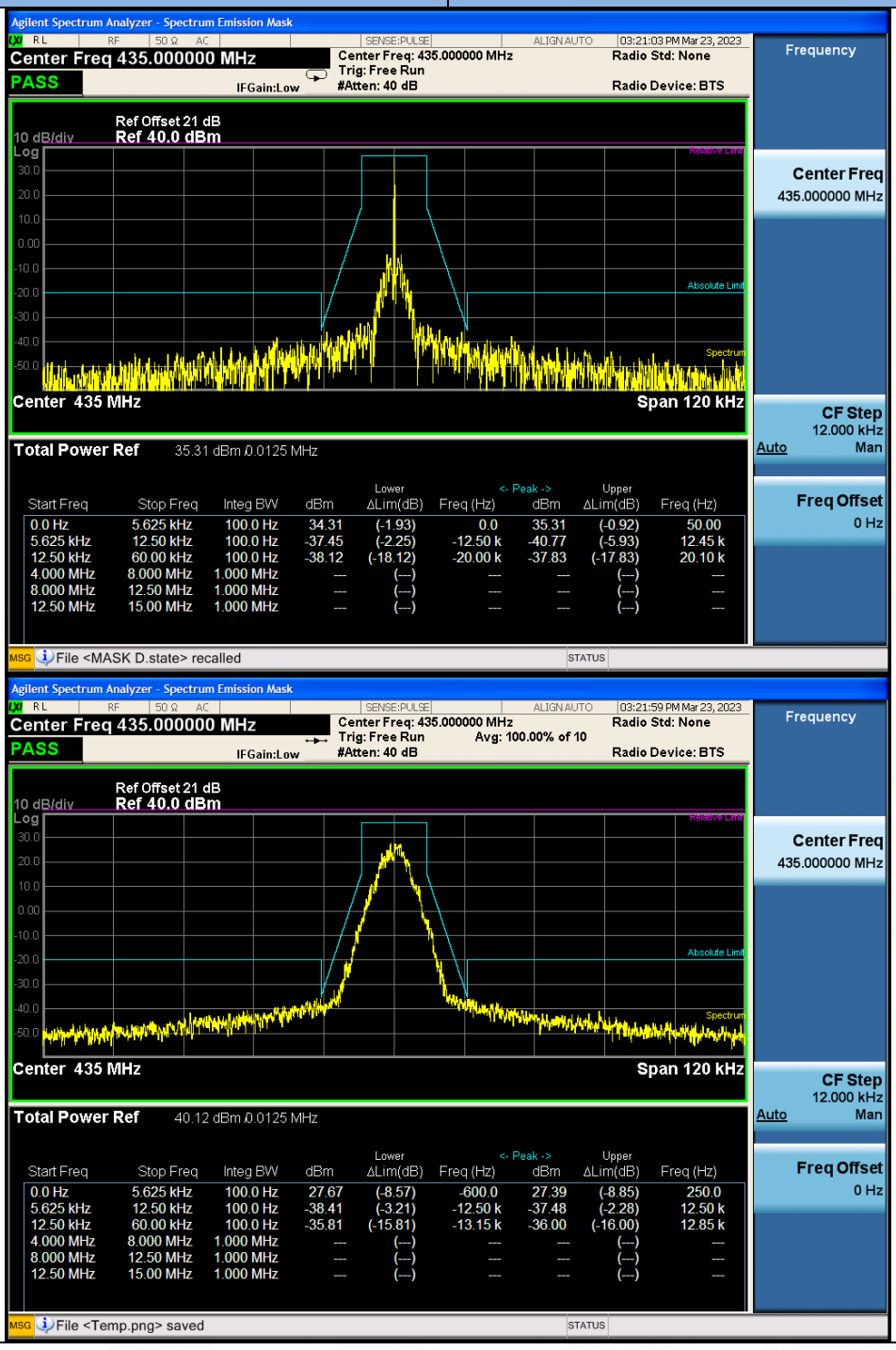
BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

TX-DNH	CH_L



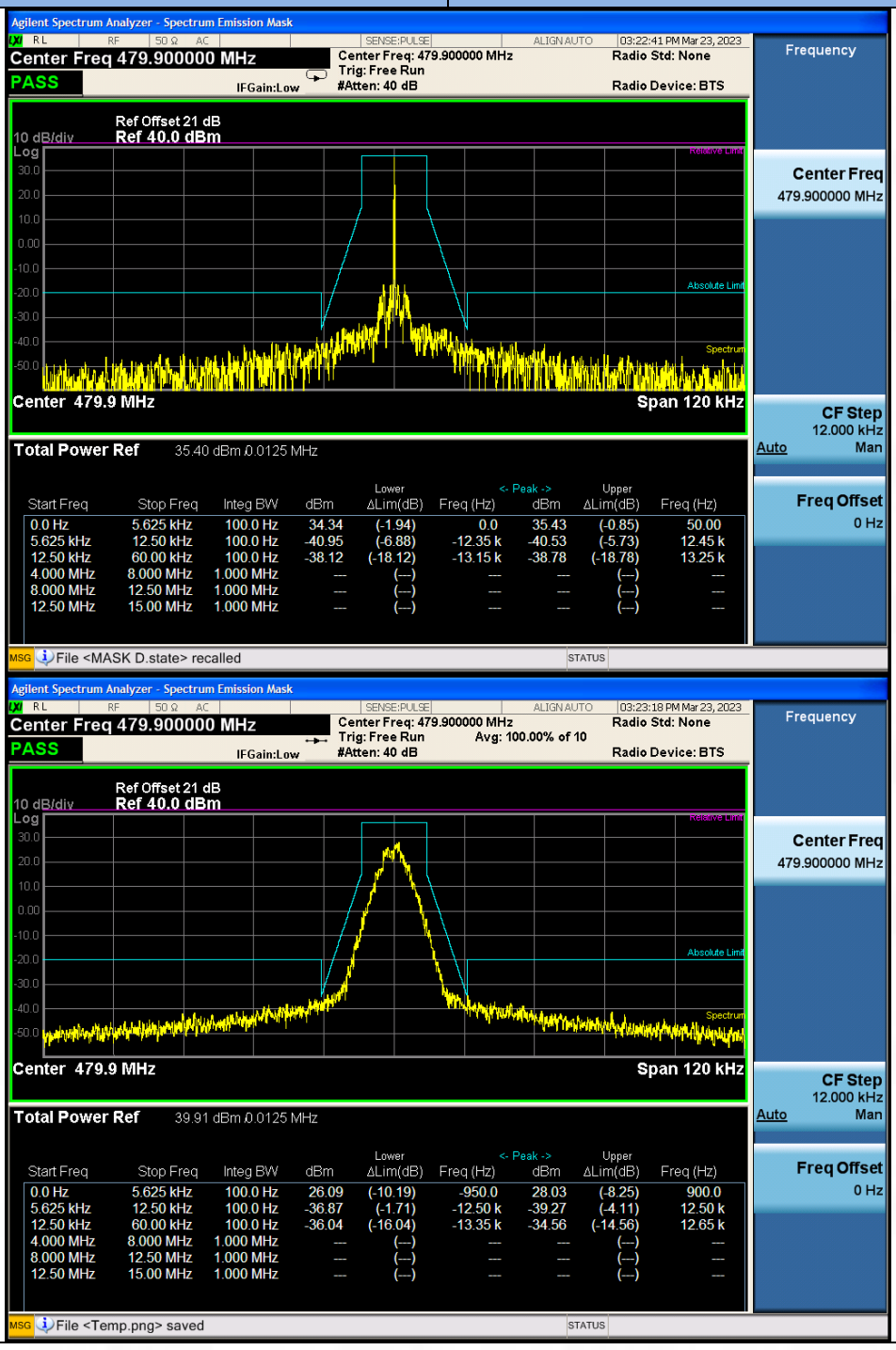
BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

TX-DNH	CH_M



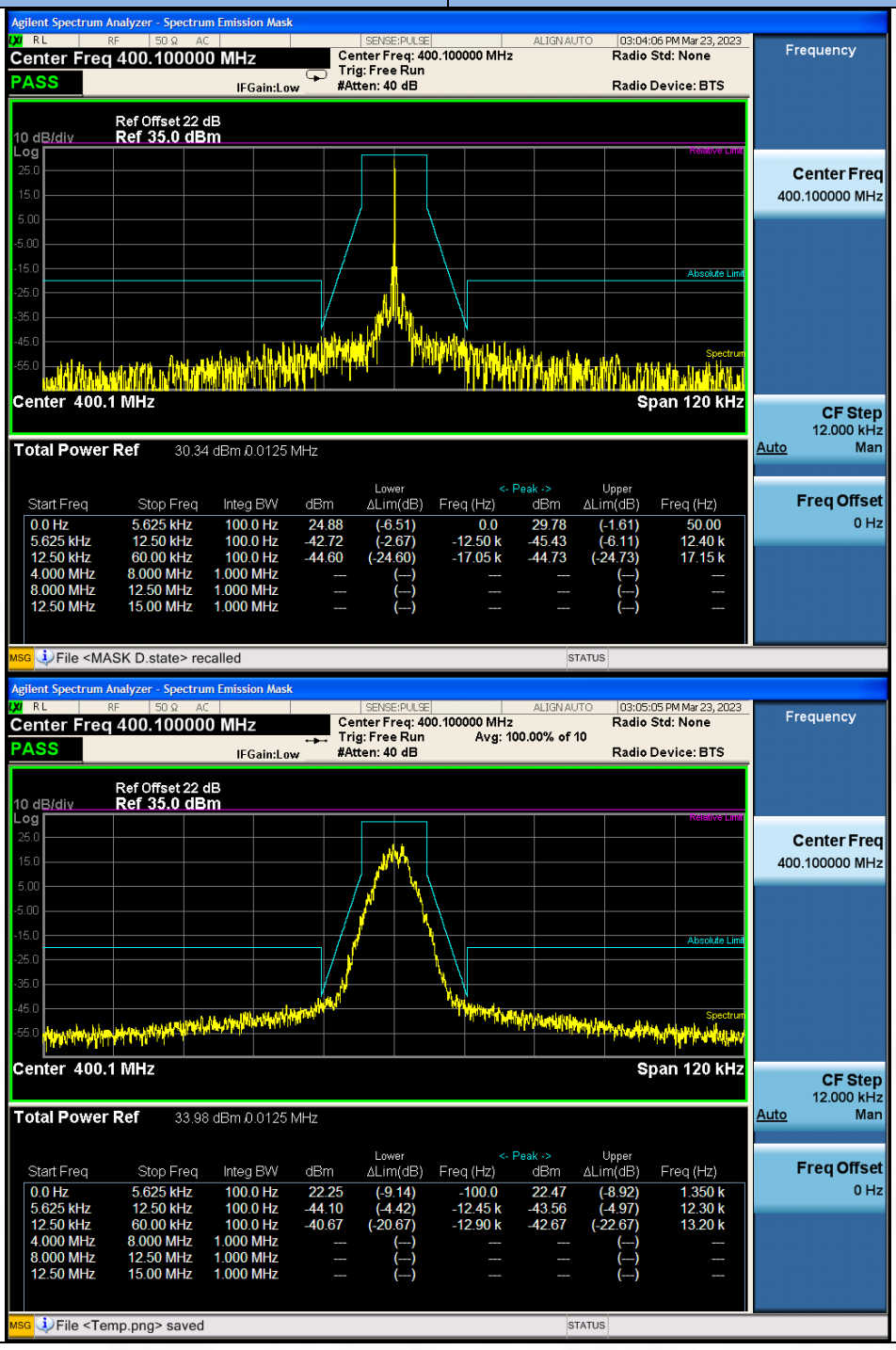
BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

TX-DNH	CH_H



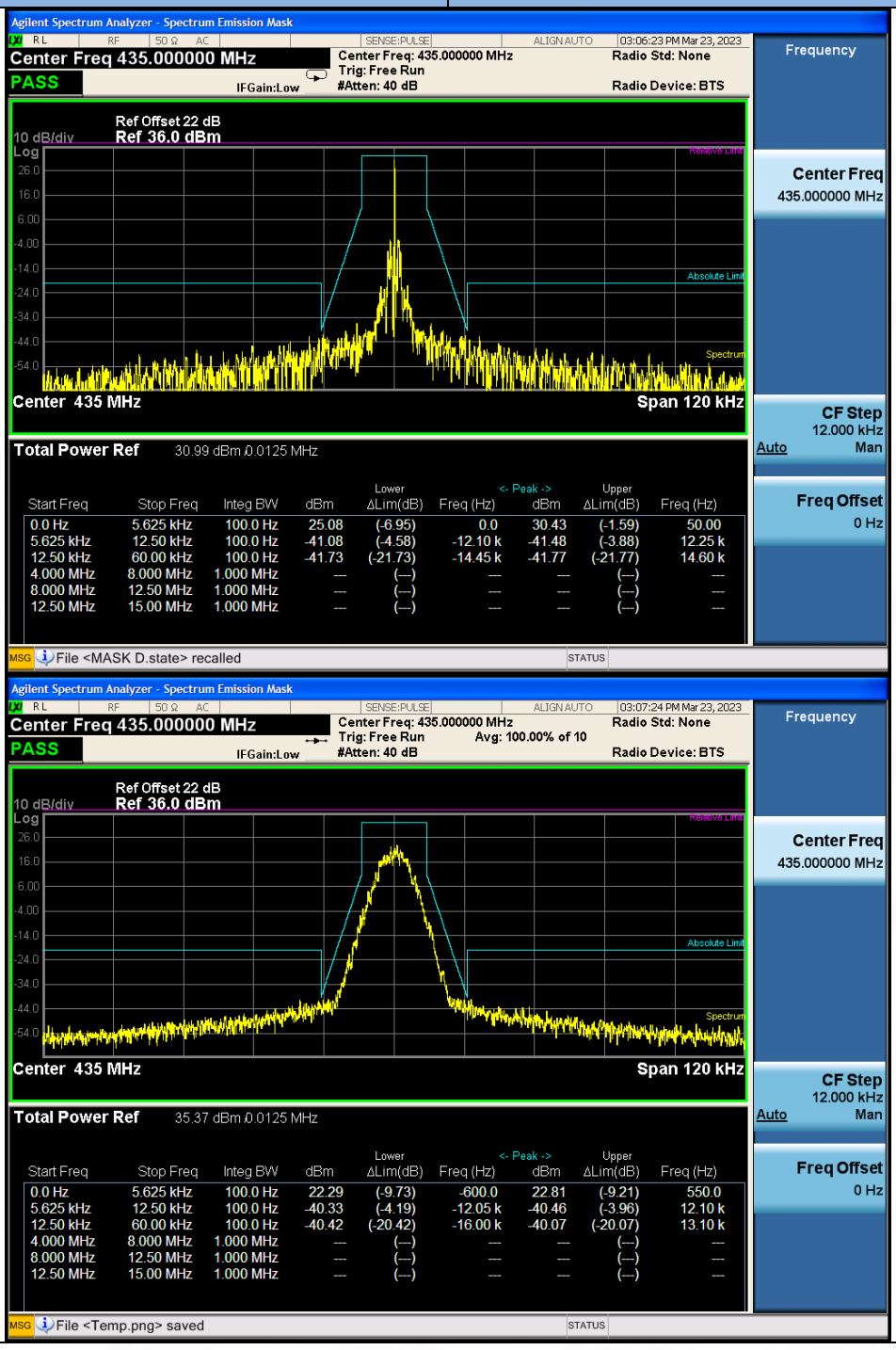
BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

TX-DNL	CH_L



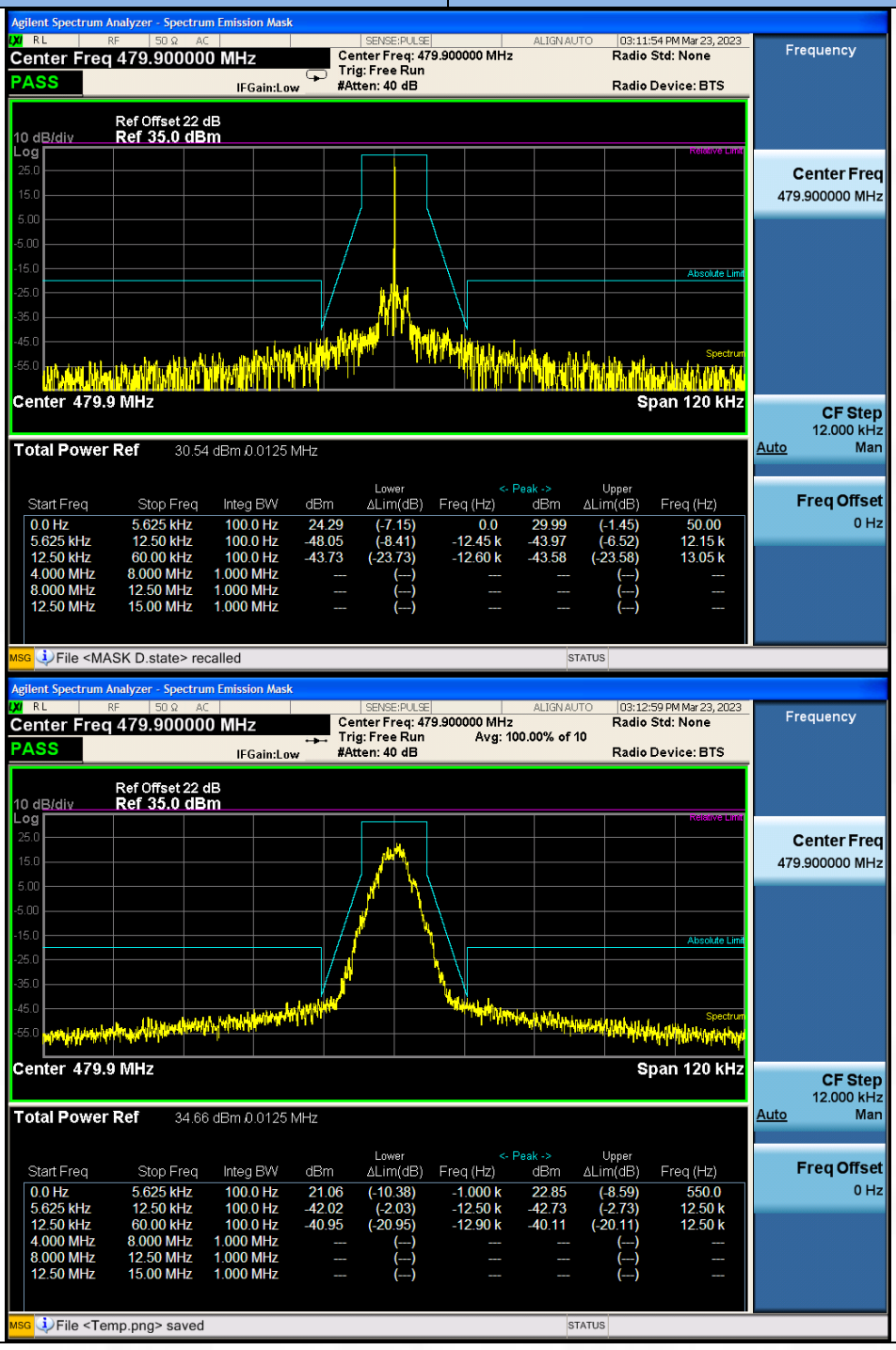
BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

TX-DNL	CH_M



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

TX-DNL	CH_H



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.4 Modulation Limit

Operation Mode	Modulation Type	Test Channel	Modulation Level (dB)	Peak frequency deviation (kHz)				Limit (kHz)	Result
				300Hz	1004Hz	1500Hz	2500 Hz		
TX-ANH	FM	CH_M	-20	0.091	0.208	0.293	0.415	2.5	PASS
TX-ANH	FM	CH_M	-15	0.125	0.340	0.485	0.709	2.5	PASS
TX-ANH	FM	CH_M	-10	0.192	0.578	0.839	1.243	2.5	PASS
TX-ANH	FM	CH_M	-5	0.313	1.007	1.433	1.534	2.5	PASS
TX-ANH	FM	CH_M	0	0.527	1.551	1.614	1.596	2.5	PASS
TX-ANH	FM	CH_M	5	0.842	1.817	1.677	1.683	2.5	PASS
TX-ANH	FM	CH_M	10	1.437	1.932	1.694	1.707	2.5	PASS
TX-ANH	FM	CH_M	15	1.673	1.965	1.707	1.720	2.5	PASS
TX-ANH	FM	CH_M	20	1.707	1.974	1.711	1.746	2.5	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

A.5 Audio Frequency Response

Operation Mode	Modulation Type	Test Channel	Frequency (Hz)	Audio Frequency Response (dB)	Lower Limit	Upper Limit	Result
TX-ANH	FM	CH_M	100	-33.20	/	/	PASS
TX-ANH	FM	CH_M	200	-32.48	/	/	PASS
TX-ANH	FM	CH_M	300	-10.95	-17.84	-9.42	PASS
TX-ANH	FM	CH_M	400	-8.60	-12.86	-6.93	PASS
TX-ANH	FM	CH_M	500	-6.38	-9.00	-5.00	PASS
TX-ANH	FM	CH_M	600	-4.50	-7.42	-3.42	PASS
TX-ANH	FM	CH_M	700	-3.16	-6.09	-2.09	PASS
TX-ANH	FM	CH_M	800	-1.96	-4.93	-0.93	PASS
TX-ANH	FM	CH_M	900	-0.96	-3.91	0.09	PASS
TX-ANH	FM	CH_M	1000	-0.03	-3.00	1.00	PASS
TX-ANH	FM	CH_M	1200	1.56	-1.42	2.58	PASS
TX-ANH	FM	CH_M	1400	2.88	-0.09	3.91	PASS
TX-ANH	FM	CH_M	1600	3.96	1.07	5.07	PASS
TX-ANH	FM	CH_M	1800	4.77	2.09	6.09	PASS
TX-ANH	FM	CH_M	2000	5.25	3.00	7.00	PASS
TX-ANH	FM	CH_M	2100	5.32	3.42	7.42	PASS
TX-ANH	FM	CH_M	2200	5.42	3.83	7.83	PASS
TX-ANH	FM	CH_M	2300	5.52	4.21	8.21	PASS
TX-ANH	FM	CH_M	2400	5.79	4.58	8.58	PASS
TX-ANH	FM	CH_M	2500	5.81	4.93	8.93	PASS
TX-ANH	FM	CH_M	2600	6.04	4.59	9.27	PASS
TX-ANH	FM	CH_M	2700	6.25	4.27	9.60	PASS
TX-ANH	FM	CH_M	2800	6.39	3.95	9.91	PASS
TX-ANH	FM	CH_M	2900	6.32	3.65	10.22	PASS
TX-ANH	FM	CH_M	3000	5.65	3.35	10.51	PASS
TX-ANH	FM	CH_M	3500	-22.36	/	/	PASS
TX-ANH	FM	CH_M	4000	-32.53	/	/	PASS
TX-ANH	FM	CH_M	4500	-32.39	/	/	PASS
TX-ANH	FM	CH_M	5000	-32.63	/	/	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

A.6 Frequency Stability VS Temperature

Operation Mode	Modulation Type	Test Conditions		Frequency error (ppm)			Limit (ppm)	Result
		Voltage	Temperature	CH_L	CH_M	CH_H		
TX-DNH	4FSK	V_N	-30	-0.606	-0.646	-0.665	±5.0	PASS
TX-DNH	4FSK	V_N	-20	-0.641	-0.639	-0.666	±5.0	PASS
TX-DNH	4FSK	V_N	-10	-0.615	-0.628	-0.701	±5.0	PASS
TX-DNH	4FSK	V_N	0	-0.631	-0.627	-0.697	±5.0	PASS
TX-DNH	4FSK	V_N	10	-0.593	-0.647	-0.667	±5.0	PASS
TX-DNH	4FSK	V_N	20	-0.591	-0.606	-0.652	±5.0	PASS
TX-DNH	4FSK	V_N	30	-0.616	-0.614	-0.700	±5.0	PASS
TX-DNH	4FSK	V_N	40	-0.605	-0.654	-0.657	±5.0	PASS
TX-DNH	4FSK	V_N	50	-0.641	-0.659	-0.656	±5.0	PASS
TX-DNL	4FSK	V_N	-30	-0.626	-0.640	-0.669	±5.0	PASS
TX-DNL	4FSK	V_N	-20	-0.616	-0.656	-0.655	±5.0	PASS
TX-DNL	4FSK	V_N	-10	-0.587	-0.643	-0.648	±5.0	PASS
TX-DNL	4FSK	V_N	0	-0.627	-0.667	-0.693	±5.0	PASS
TX-DNL	4FSK	V_N	10	-0.591	-0.660	-0.706	±5.0	PASS
TX-DNL	4FSK	V_N	20	-0.583	-0.611	-0.643	±5.0	PASS
TX-DNL	4FSK	V_N	30	-0.600	-0.654	-0.703	±5.0	PASS
TX-DNL	4FSK	V_N	40	-0.591	-0.658	-0.704	±5.0	PASS
TX-DNL	4FSK	V_N	50	-0.599	-0.665	-0.704	±5.0	PASS
TX-ANH	FM	V_N	-30	0.076	-0.002	-0.033	±5.0	PASS
TX-ANH	FM	V_N	-20	0.082	-0.002	-0.034	±5.0	PASS
TX-ANH	FM	V_N	-10	0.079	-0.002	-0.033	±5.0	PASS
TX-ANH	FM	V_N	0	0.076	-0.002	-0.033	±5.0	PASS
TX-ANH	FM	V_N	10	0.082	-0.002	-0.033	±5.0	PASS
TX-ANH	FM	V_N	20	0.075	-0.002	-0.032	±5.0	PASS
TX-ANH	FM	V_N	30	0.081	-0.002	-0.032	±5.0	PASS
TX-ANH	FM	V_N	40	0.077	-0.002	-0.033	±5.0	PASS
TX-ANH	FM	V_N	50	0.080	-0.002	-0.034	±5.0	PASS
TX-ANL	FM	V_N	-30	0.043	-0.017	-0.115	±5.0	PASS
TX-ANL	FM	V_N	-20	0.044	-0.018	-0.111	±5.0	PASS
TX-ANL	FM	V_N	-10	0.043	-0.017	-0.113	±5.0	PASS
TX-ANL	FM	V_N	0	0.040	-0.018	-0.112	±5.0	PASS
TX-ANL	FM	V_N	10	0.042	-0.017	-0.120	±5.0	PASS
TX-ANL	FM	V_N	20	0.040	-0.017	-0.111	±5.0	PASS
TX-ANL	FM	V_N	30	0.041	-0.018	-0.116	±5.0	PASS
TX-ANL	FM	V_N	40	0.040	-0.017	-0.113	±5.0	PASS
TX-ANL	FM	V_N	50	0.041	-0.018	-0.116	±5.0	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

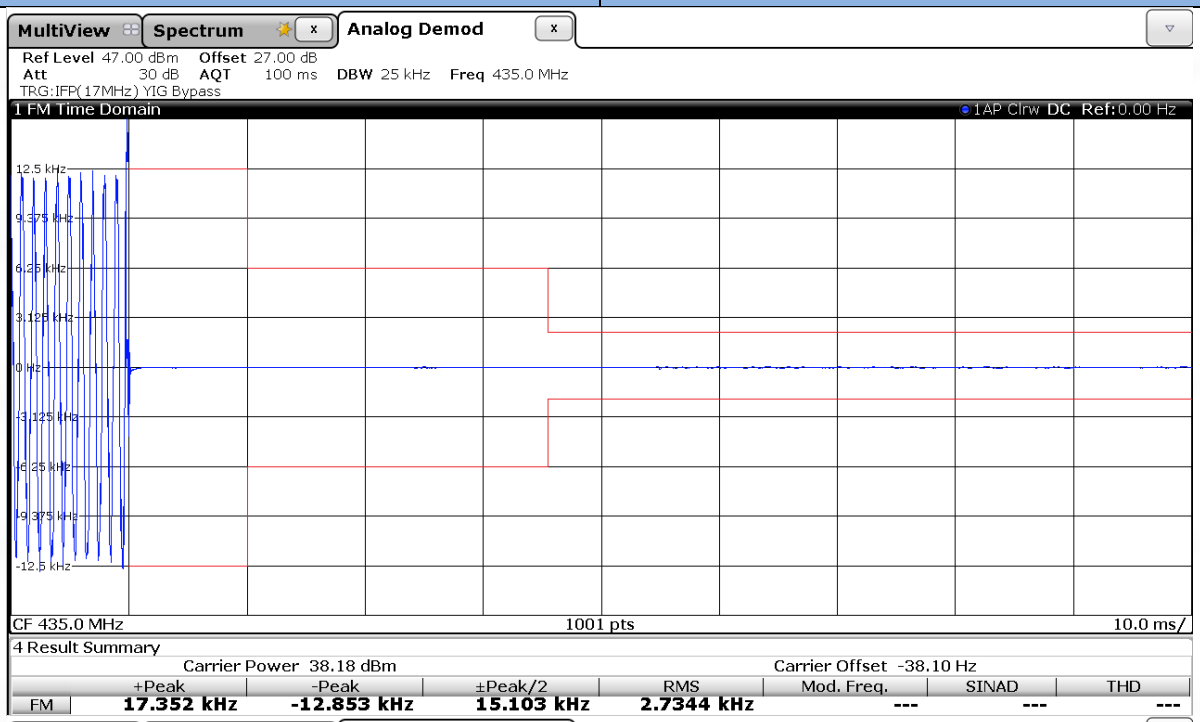
A.7 Frequency Stability VS Voltage

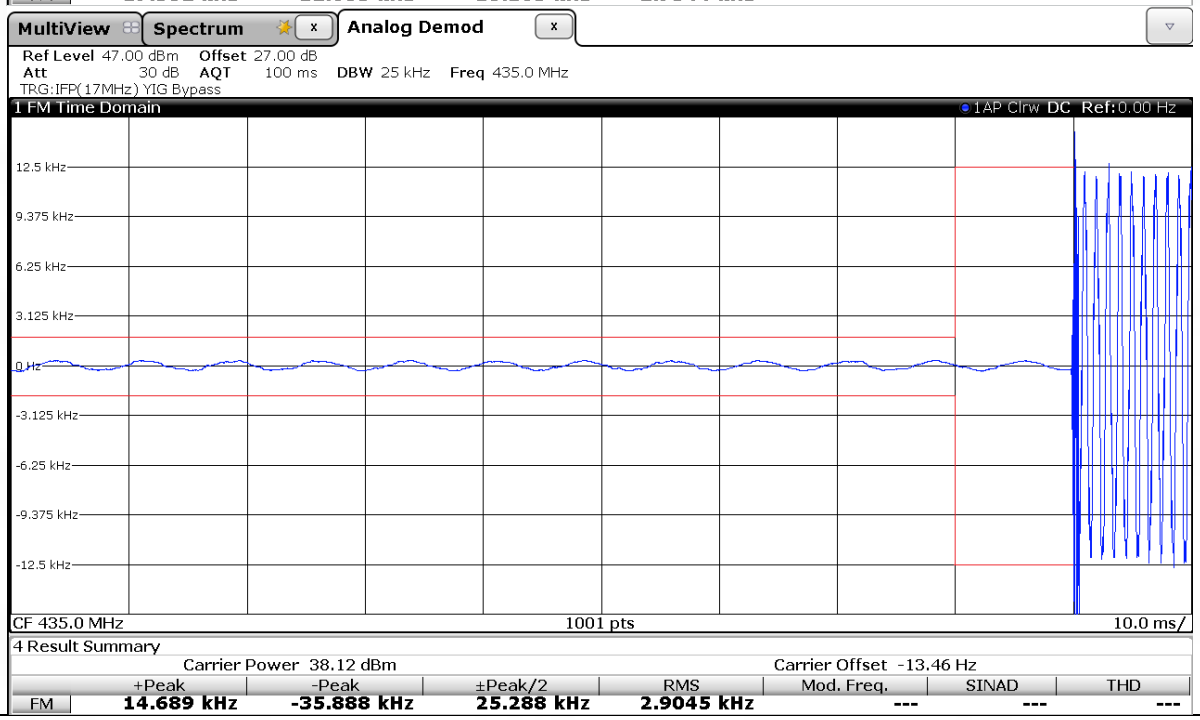
Operation Mode	Modulation Type	Test Conditions		Frequency error (ppm)			Limit (ppm)	Result
		Voltage	Temperature	CH_L	CH_M	CH_H		
TX-DNH	4FSK	V_N	T_N	-0.591	-0.606	-0.652	±5.0	PASS
TX-DNH	4FSK	V_L	T_N	-0.597	-0.607	-0.663	±5.0	PASS
TX-DNH	4FSK	V_H	T_N	-0.625	-0.611	-0.673	±5.0	PASS
TX-DNL	4FSK	V_N	T_N	-0.583	-0.611	-0.643	±5.0	PASS
TX-DNL	4FSK	V_L	T_N	-0.591	-0.613	-0.652	±5.0	PASS
TX-DNL	4FSK	V_H	T_N	-0.591	-0.635	-0.663	±5.0	PASS
TX-ANH	FM	V_N	T_N	0.075	-0.002	-0.032	±5.0	PASS
TX-ANH	FM	V_L	T_N	0.076	-0.002	-0.033	±5.0	PASS
TX-ANH	FM	V_H	T_N	0.075	-0.002	-0.033	±5.0	PASS
TX-ANL	FM	V_N	T_N	0.040	-0.017	-0.111	±5.0	PASS
TX-ANL	FM	V_L	T_N	0.040	-0.017	-0.111	±5.0	PASS
TX-ANL	FM	V_H	T_N	0.042	-0.018	-0.117	±5.0	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

A.8 Transient Frequency Behavior

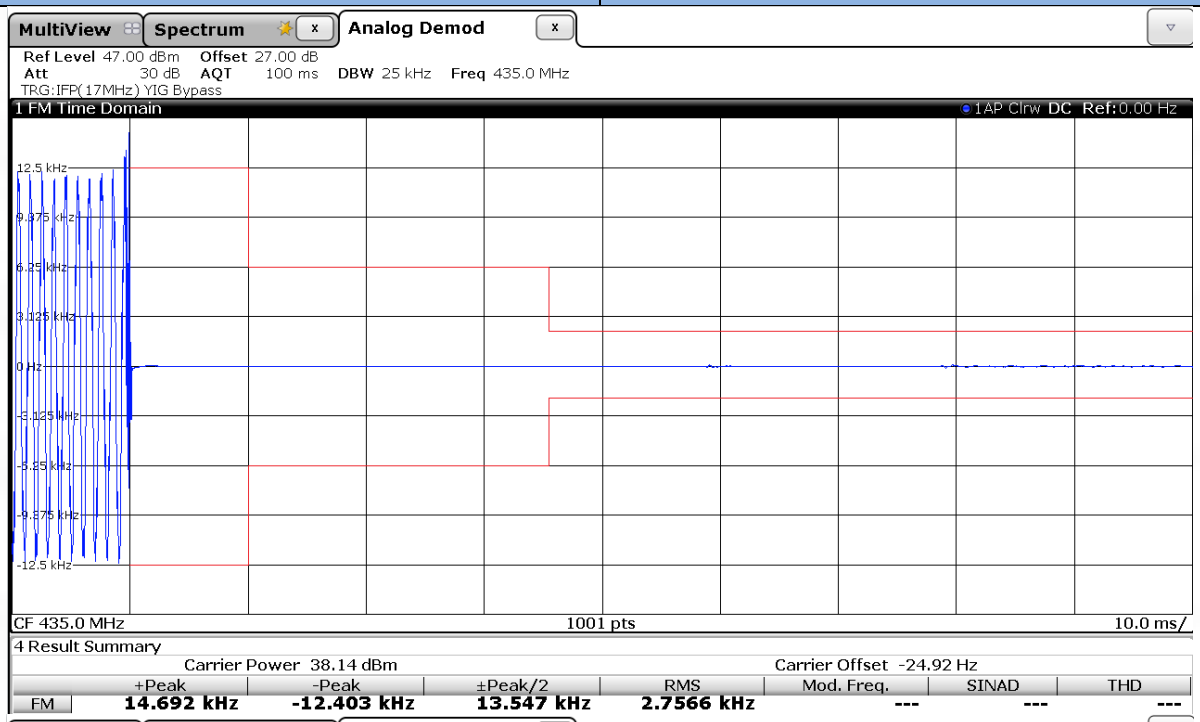
TX-ANH	CH_M

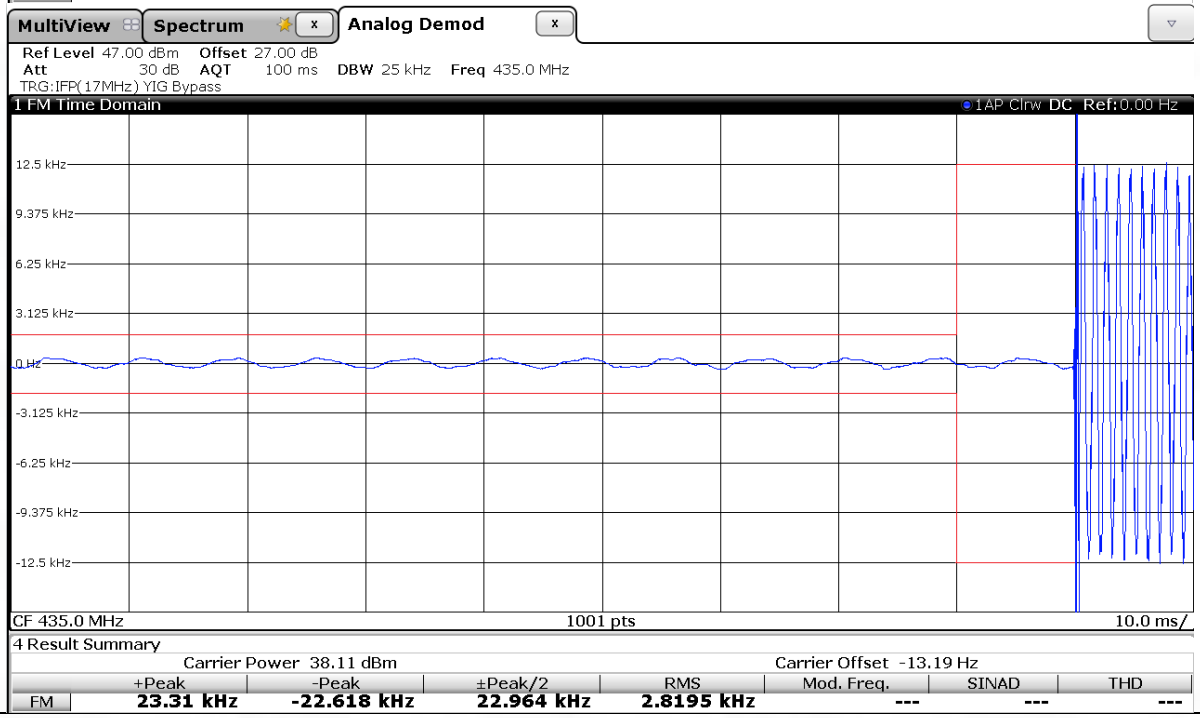




BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

TX-DNH	CH_M

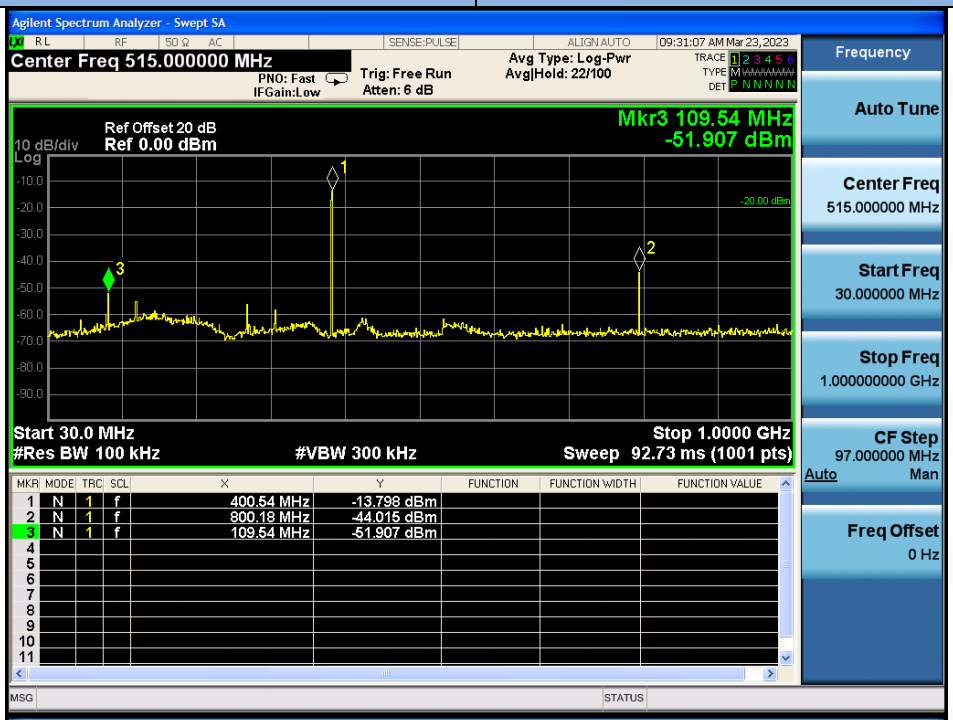


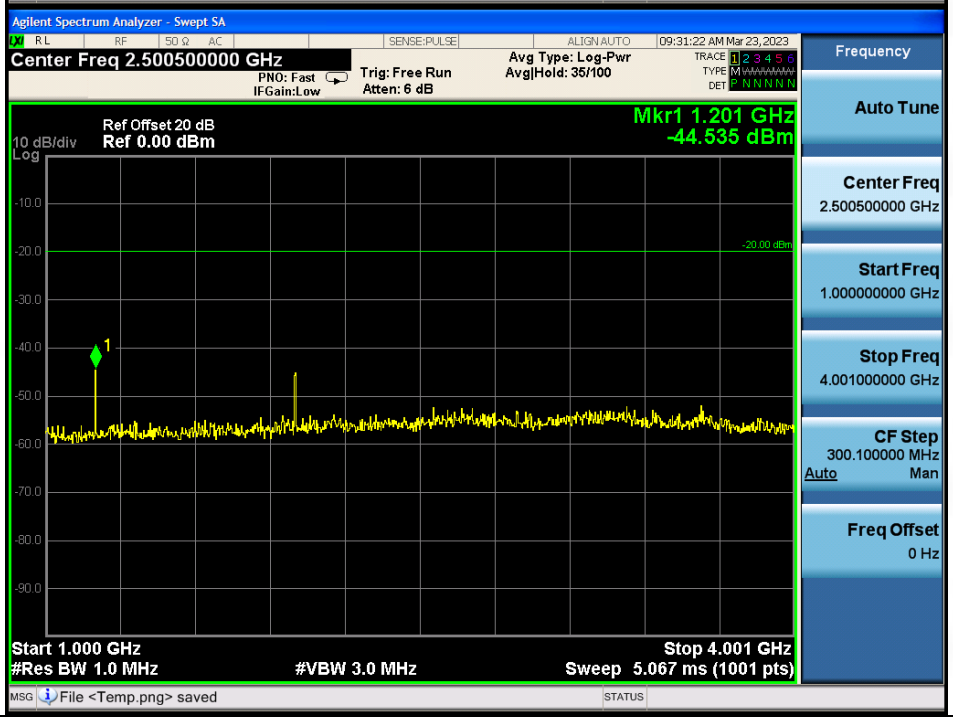


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

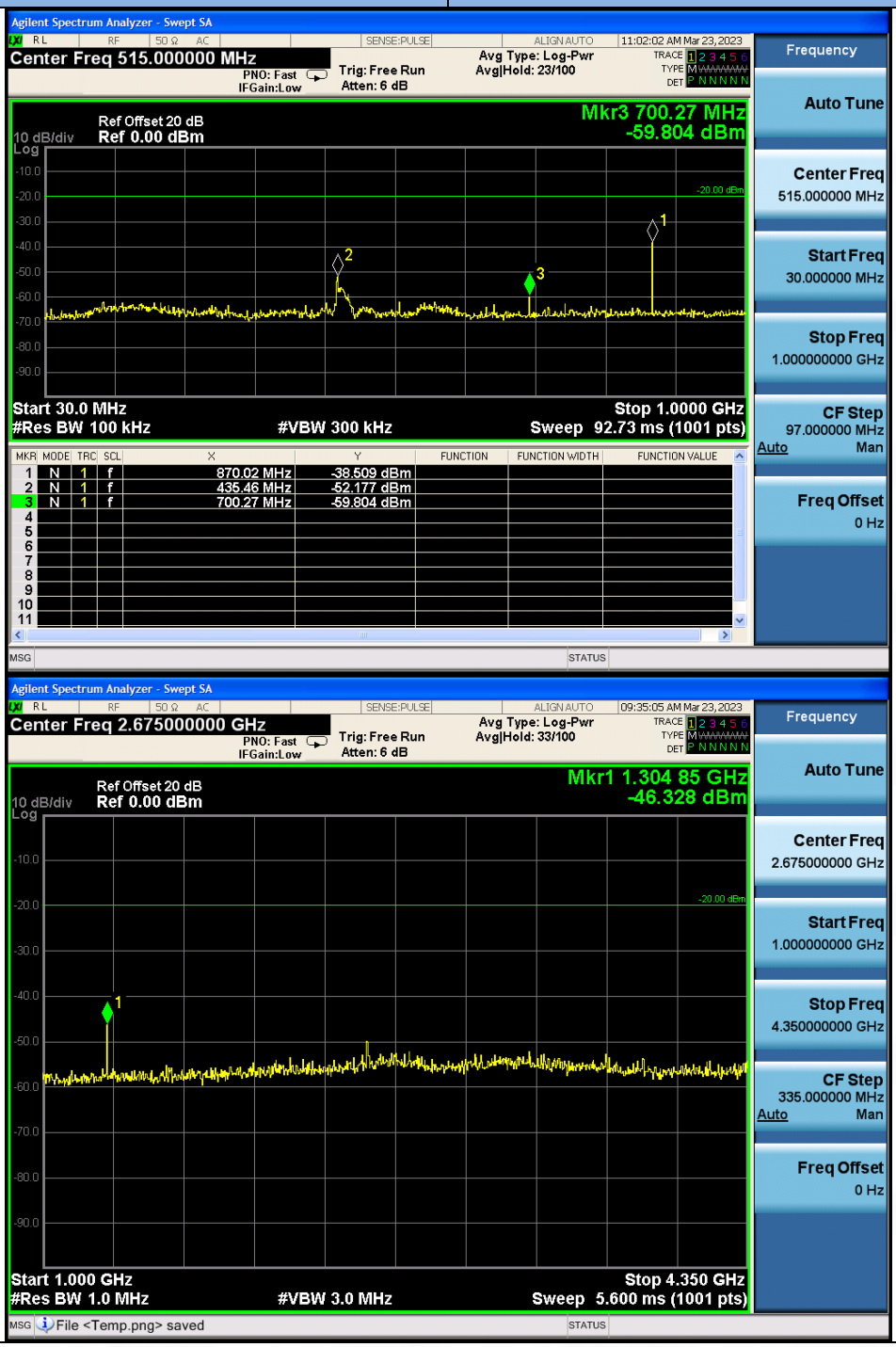
A.9 Transmit Conducted Spurious Emission

TX-ANH	CH_L



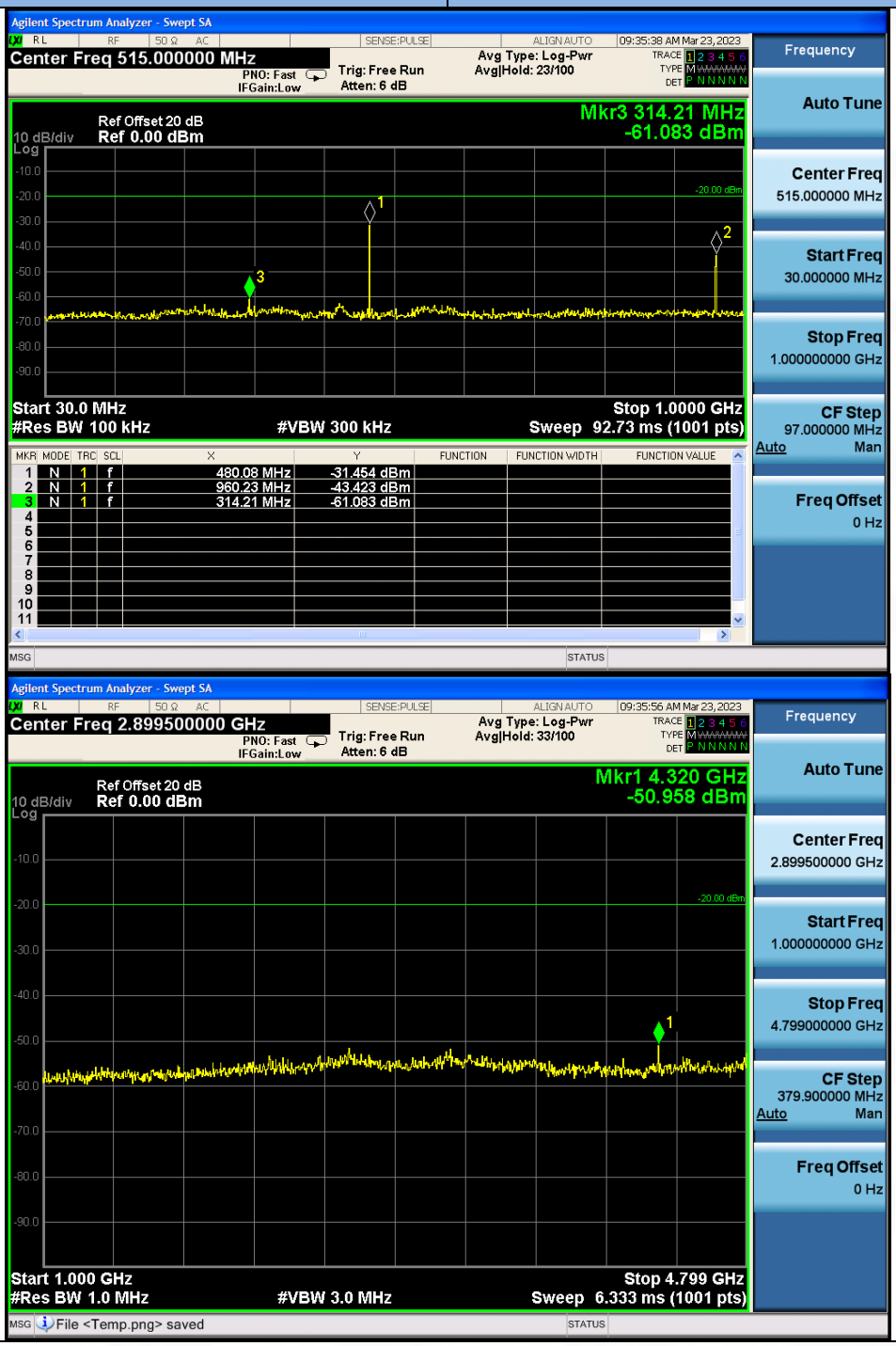


TX-ANH	CH_M



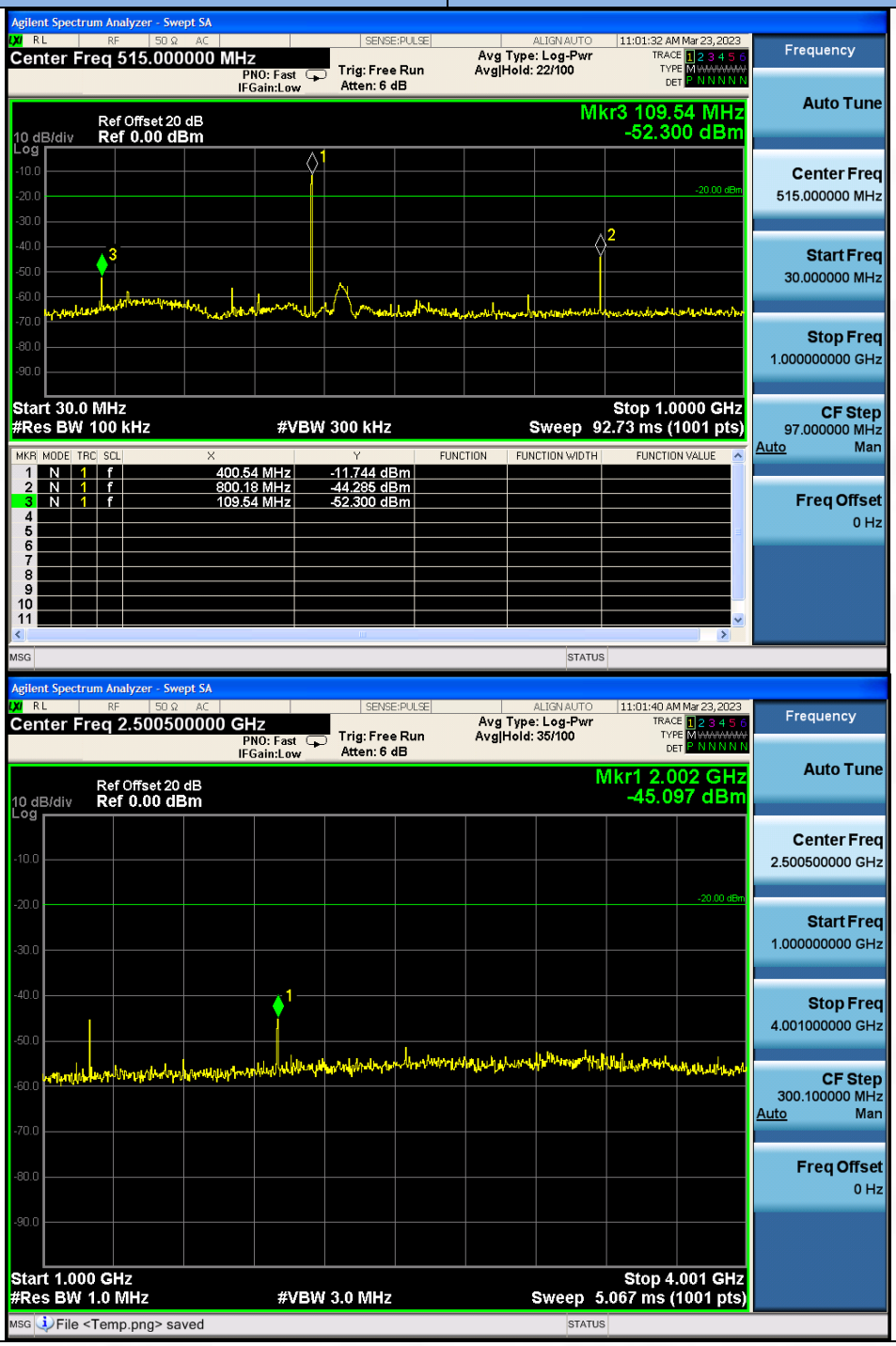
BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

TX-ANH	CH_H

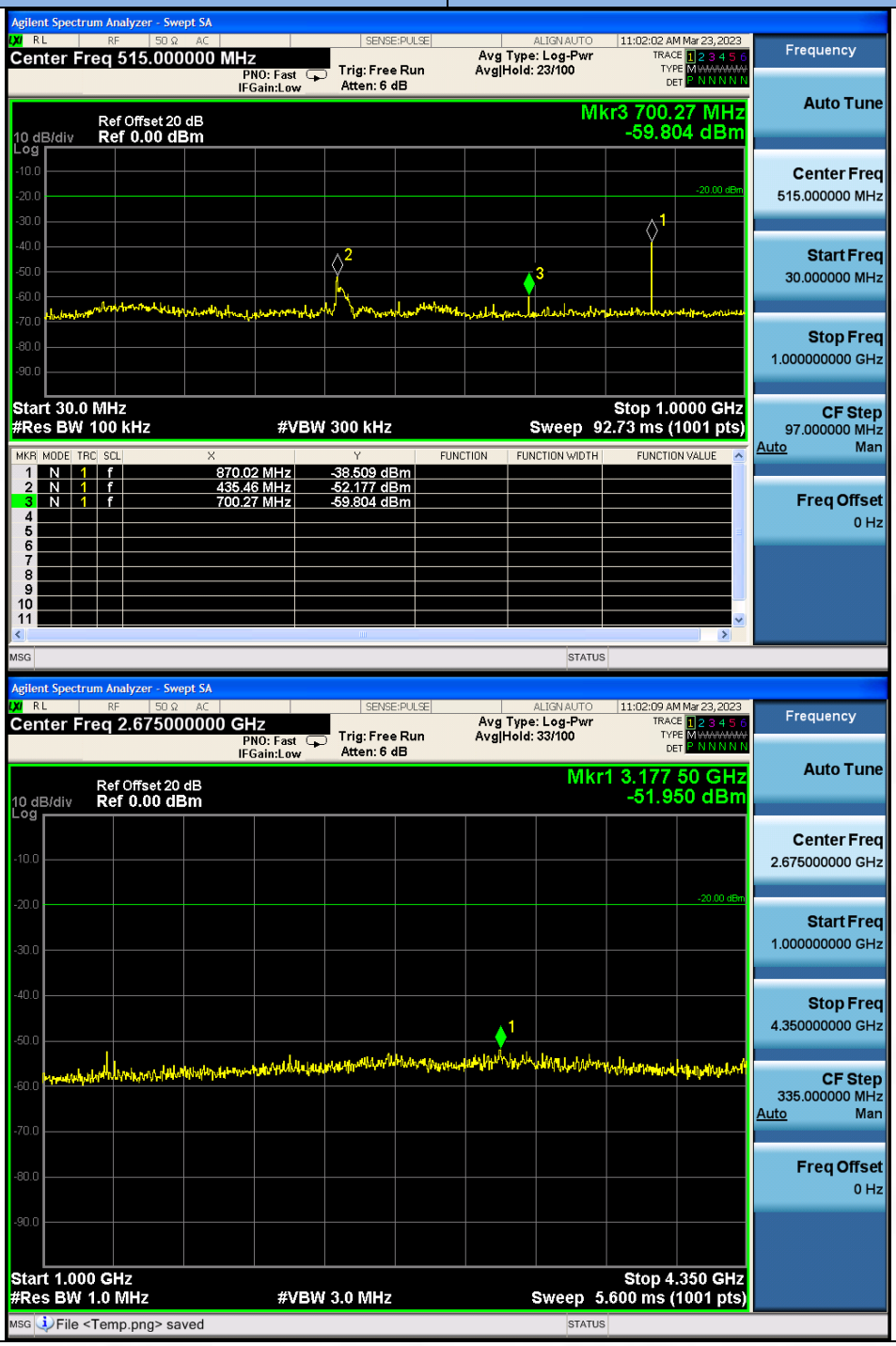


BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

TX-DNH	CH_L

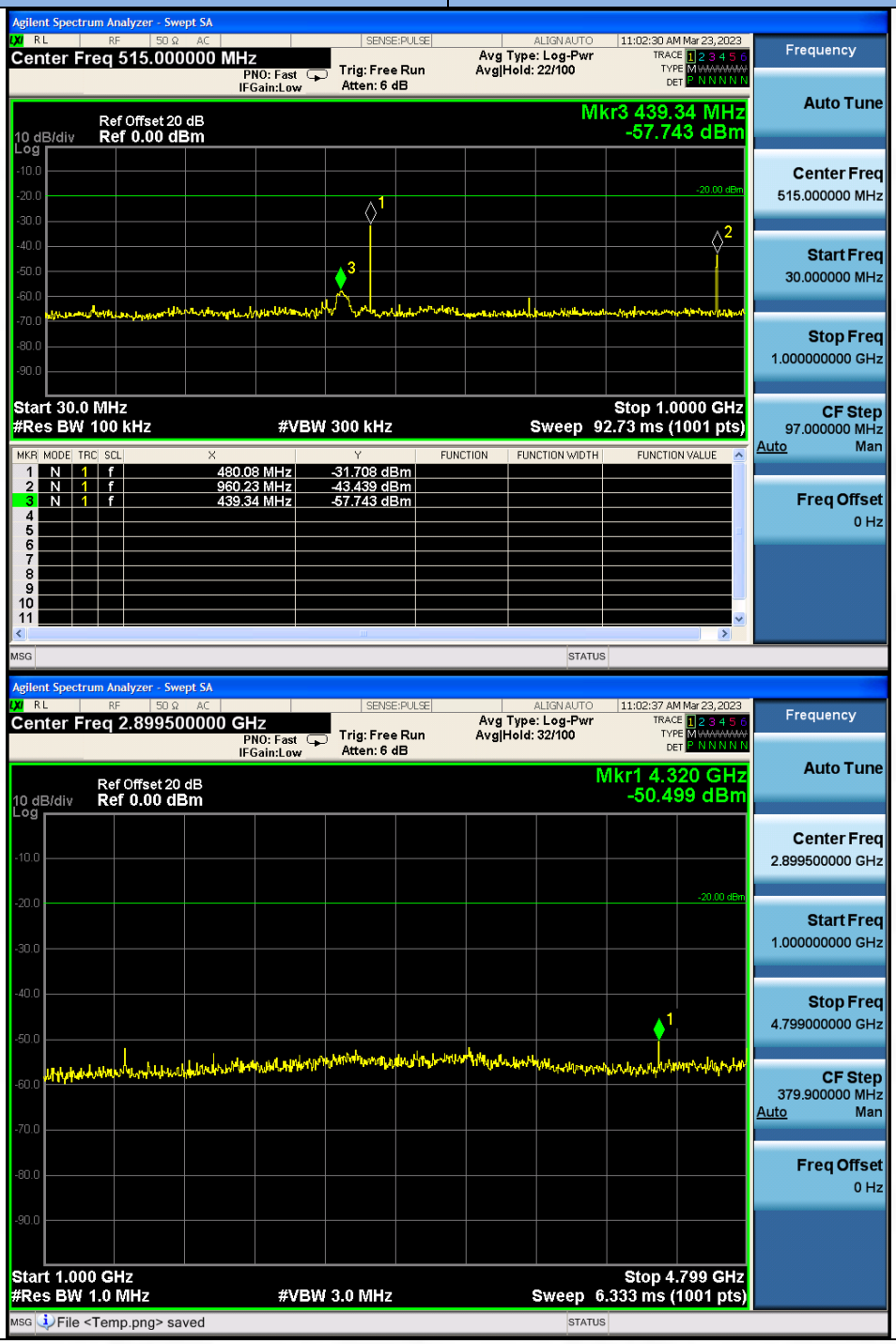

Agilent Spectrum Analyzer - Swept SA
Center Freq 515.000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 22/100
11:01:32 AM Mar 23, 2023
Ref Offset 20 dB
10 dB/div
Ref 0.00 dBm
Mkr3 109.54 MHz
-52.300 dBm
-20.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.73 ms (1001 pts)
1 N 1 f 400.54 MHz -11.744 dBm
2 N 1 f 800.18 MHz -44.285 dBm
3 N 1 f 109.54 MHz -52.300 dBm
Frequency
Auto Tune
Center Freq
515.000000 MHz
Start Freq
30.000000 MHz
Stop Freq
1.000000000 GHz
CF Step
97.000000 MHz
Auto
Man
Freq Offset
0 Hz
Agilent Spectrum Analyzer - Swept SA
Center Freq 2.500500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 35/100
11:01:40 AM Mar 23, 2023
Ref Offset 20 dB
10 dB/div
Ref 0.00 dBm
Mkr1 2.002 GHz
-45.097 dBm
-20.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 4.001 GHz
Sweep 5.067 ms (1001 pts)
Frequency
Auto Tune
Center Freq
2.500500000 GHz
Start Freq
1.000000000 GHz
Stop Freq
4.001000000 GHz
CF Step
300.100000 MHz
Auto
Man
Freq Offset
0 Hz
File <Temp.png> saved

TX-DNH	CH_M


Agilent Spectrum Analyzer - Swept SA
Center Freq 515.000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 23/100
11:02:02 AM Mar 23, 2023
Ref Offset 20 dB
10 dB/div
Ref 0.00 dBm
Mkr3 700.27 MHz
-59.804 dBm
-20.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 1.0000 GHz
Sweep 92.73 ms (1001 pts)
1 N 1 f 870.02 MHz -38.509 dBm
2 N 1 f 435.46 MHz -52.177 dBm
3 N 1 f 700.27 MHz -59.804 dBm
Frequency
Auto Tune
Center Freq
515.000000 MHz
Start Freq
30.000000 MHz
Stop Freq
1.000000000 GHz
CF Step
97.000000 MHz
Auto
Man
Freq Offset
0 Hz
Agilent Spectrum Analyzer - Swept SA
Center Freq 2.675000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 33/100
11:02:09 AM Mar 23, 2023
Ref Offset 20 dB
10 dB/div
Ref 0.00 dBm
Mkr1 3.177 50 GHz
-51.950 dBm
-20.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 4.350 GHz
Sweep 5.600 ms (1001 pts)
Frequency
Auto Tune
Center Freq
2.675000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
4.350000000 GHz
CF Step
335.000000 MHz
Auto
Man
Freq Offset
0 Hz
File <Temp.png> saved

.

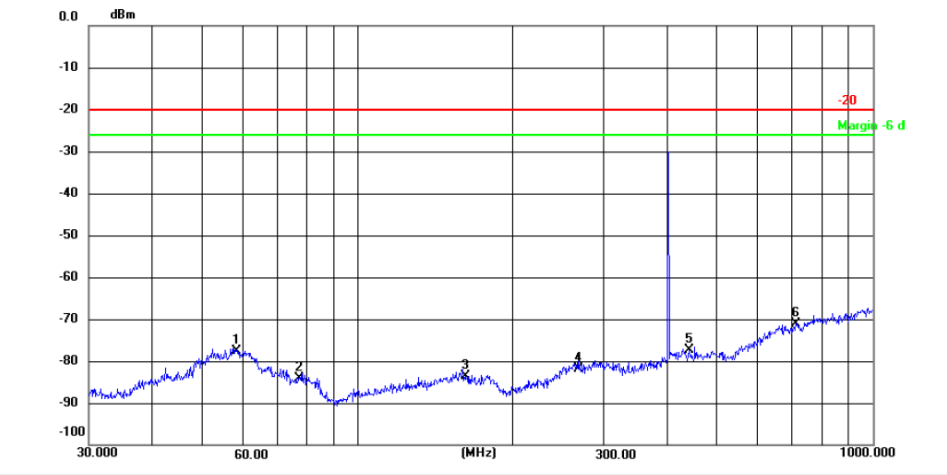
TX-DNH	CH_H



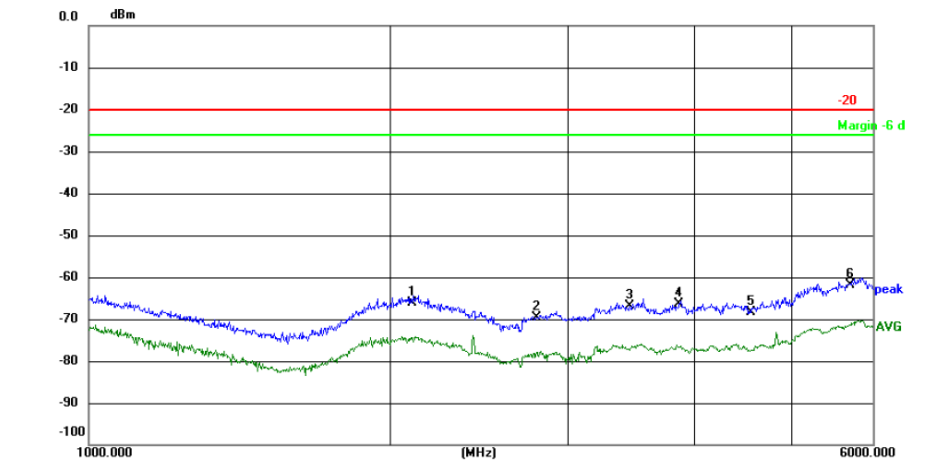
BTF Testing Lab (Shenzhen) Co., Ltd.
F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China

A.10 Transmit Radiated Spurious Emission

TX-ANH	CH_L	Horizontal



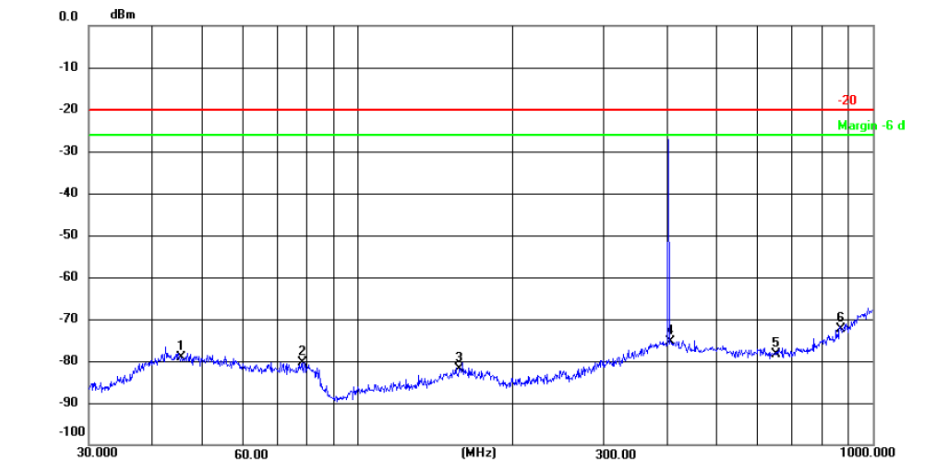
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	58.2030	-49.38	-28.24	-77.62	-20.00	-57.62	peak	P
2	77.1856	-56.15	-27.96	-84.11	-20.00	-64.11	peak	P
3	162.3257	-56.42	-27.19	-83.61	-20.00	-63.61	peak	P
4	268.0150	-55.34	-26.45	-81.79	-20.00	-61.79	peak	P
5	441.7426	-52.39	-25.04	-77.43	-20.00	-57.43	peak	P
6 *	710.4268	-47.27	-23.77	-71.04	-20.00	-51.04	peak	P



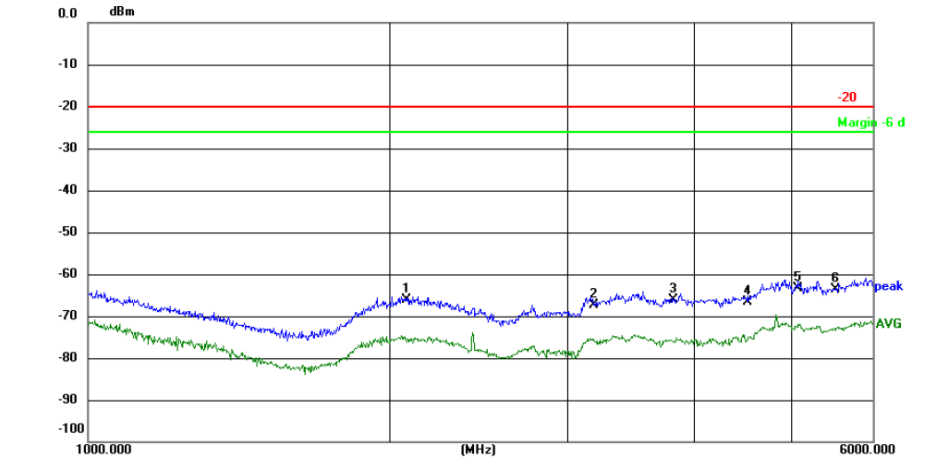
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	2094.802	-35.38	-30.82	-66.20	-20.00	-46.20	peak	P
2	2789.776	-39.68	-29.87	-69.55	-20.00	-49.55	peak	P
3	3446.603	-37.82	-29.10	-66.92	-20.00	-46.92	peak	P
4	3864.002	-37.24	-29.02	-66.26	-20.00	-46.26	peak	P
5	4555.640	-39.67	-28.63	-68.30	-20.00	-48.30	peak	P
6 *	5716.644	-35.71	-26.25	-61.96	-20.00	-41.96	peak	P

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

TX-ANH	CH_L	Vertical



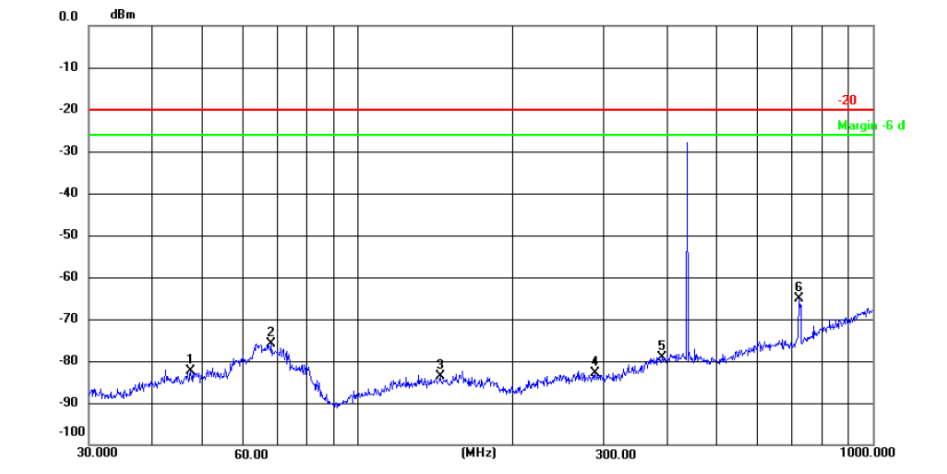
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	45.4551	-50.64	-28.45	-79.09	-20.00	-59.09	peak	P
2	78.2760	-52.50	-27.95	-80.45	-20.00	-60.45	peak	P
3	157.0074	-54.54	-27.23	-81.77	-20.00	-61.77	peak	P
4	406.0880	-50.01	-25.29	-75.30	-20.00	-55.30	peak	P
5	648.5216	-54.27	-23.98	-78.25	-20.00	-58.25	peak	P
6 *	869.1302	-49.82	-22.54	-72.36	-20.00	-52.36	peak	P



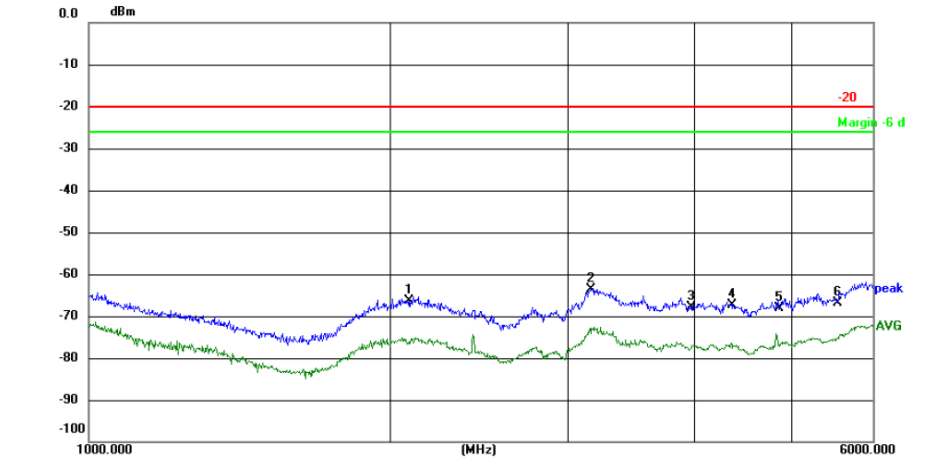
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	2073.517	-35.33	-30.85	-66.18	-20.00	-46.18	peak	P
2	3176.198	-38.05	-29.34	-67.39	-20.00	-47.39	peak	P
3	3817.892	-37.01	-29.02	-66.03	-20.00	-46.03	peak	P
4	4511.775	-37.76	-28.75	-66.51	-20.00	-46.51	peak	P
5 *	5062.704	-36.05	-27.32	-63.37	-20.00	-43.37	peak	P
6	5516.403	-36.69	-26.90	-63.59	-20.00	-43.59	peak	P

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

TX-ANH	CH_M	Horizontal



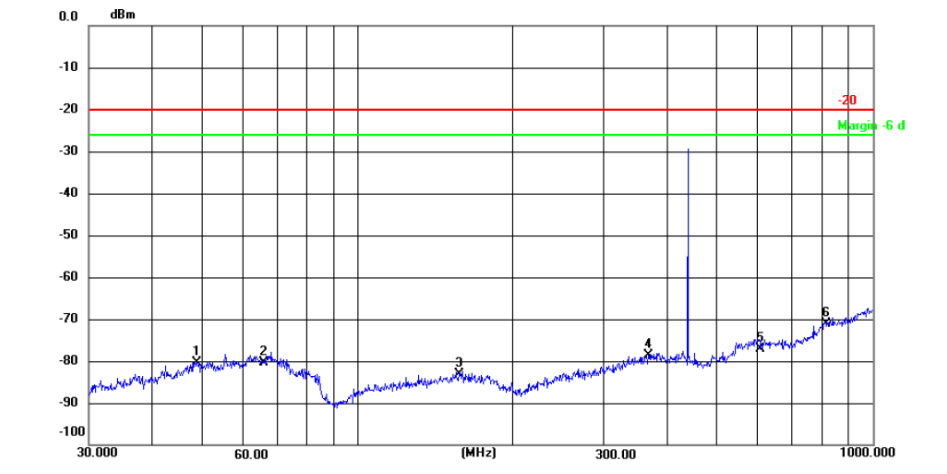
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	47.4918	-53.95	-28.41	-82.36	-20.00	-62.36	peak	P
2	68.1514	-47.72	-28.10	-75.82	-20.00	-55.82	peak	P
3	144.5880	-56.34	-27.32	-83.66	-20.00	-63.66	peak	P
4	289.5092	-56.54	-26.30	-82.84	-20.00	-62.84	peak	P
5	389.3549	-53.62	-25.42	-79.04	-20.00	-59.04	peak	P
6 *	720.4616	-41.38	-23.78	-65.16	-20.00	-45.16	peak	P



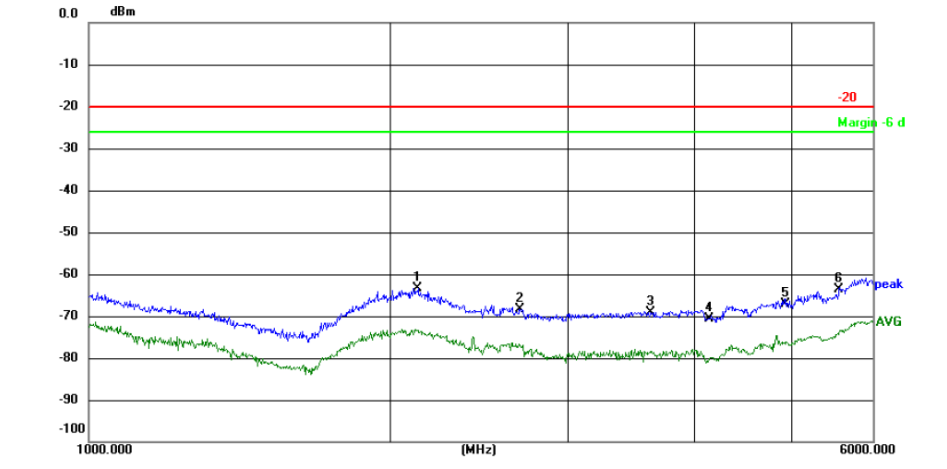
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	2083.572	-35.48	-30.84	-66.32	-20.00	-46.32	peak	P
2 *	3161.436	-34.29	-29.37	-63.66	-20.00	-43.66	peak	P
3	3971.394	-38.94	-29.00	-67.94	-20.00	-47.94	peak	P
4	4372.499	-38.51	-28.84	-67.35	-20.00	-47.35	peak	P
5	4859.178	-40.33	-27.77	-68.10	-20.00	-48.10	peak	P
6	5544.148	-40.03	-26.81	-66.84	-20.00	-46.84	peak	P

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

TX-ANH	CH_M	Vertical



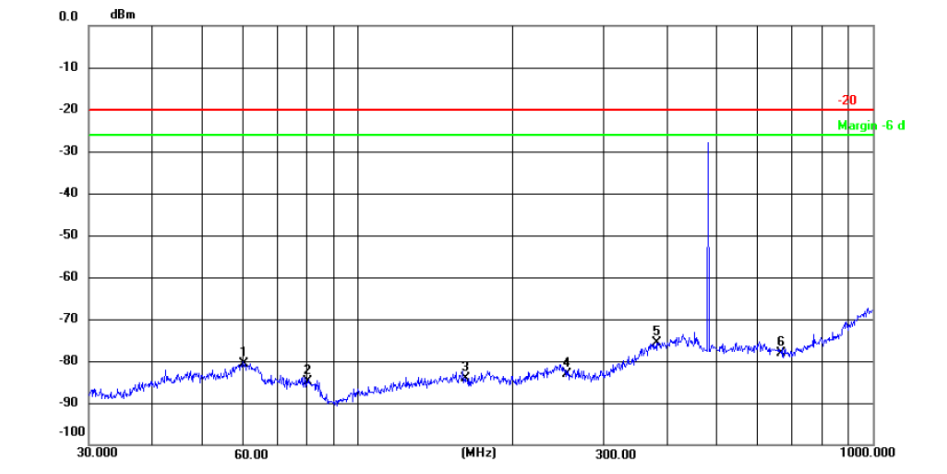
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	48.7573	-51.90	-28.38	-80.28	-20.00	-60.28	peak	P
2	65.6878	-52.19	-28.13	-80.32	-20.00	-60.32	peak	P
3	157.5588	-55.80	-27.23	-83.03	-20.00	-63.03	peak	P
4	367.4668	-53.05	-25.62	-78.67	-20.00	-58.67	peak	P
5	606.7221	-52.89	-24.17	-77.06	-20.00	-57.06	peak	P
6 *	811.6872	-48.00	-23.02	-71.02	-20.00	-51.02	peak	P



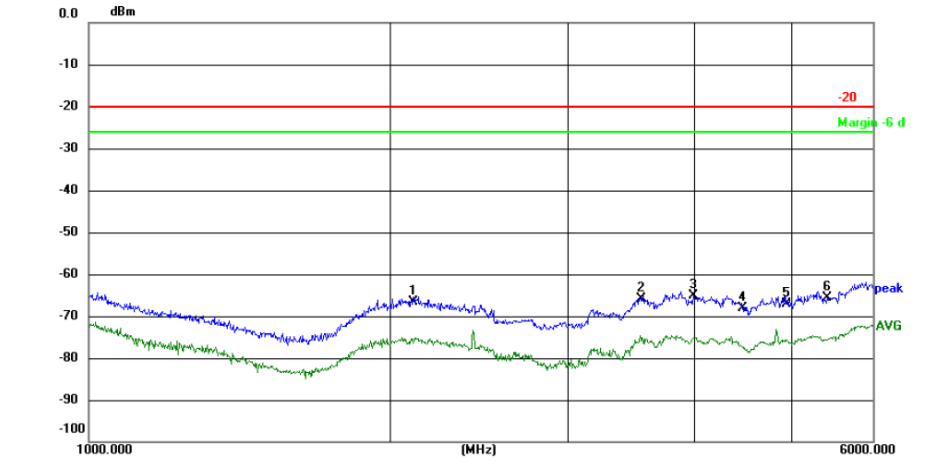
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1 *	2125.045	-32.68	-30.79	-63.47	-20.00	-43.47	peak	P
2	2684.350	-38.35	-30.06	-68.41	-20.00	-48.41	peak	P
3	3621.980	-40.20	-29.04	-69.24	-20.00	-49.24	peak	P
4	4129.588	-41.76	-28.95	-70.71	-20.00	-50.71	peak	P
5	4919.626	-39.51	-27.60	-67.11	-20.00	-47.11	peak	P
6	5566.045	-36.98	-26.74	-63.72	-20.00	-43.72	peak	P

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

TX-ANH	CH_H	Horizontal



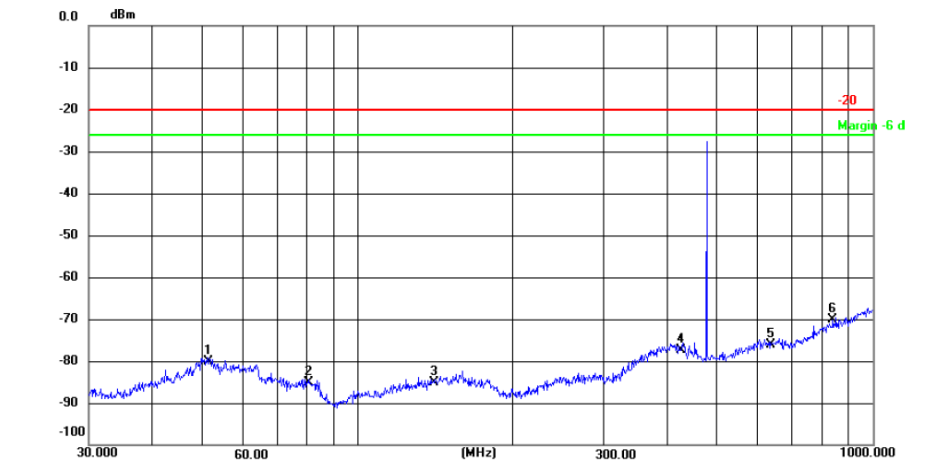
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	60.3859	-52.51	-28.21	-80.72	-20.00	-60.72	peak	P
2	80.0806	-56.89	-27.92	-84.81	-20.00	-64.81	peak	P
3	162.3257	-56.92	-27.19	-84.11	-20.00	-64.11	peak	P
4	254.7284	-56.61	-26.55	-83.16	-20.00	-63.16	peak	P
5 *	382.5879	-50.21	-25.48	-75.69	-20.00	-55.69	peak	P
6	665.8035	-54.30	-23.90	-78.20	-20.00	-58.20	peak	P



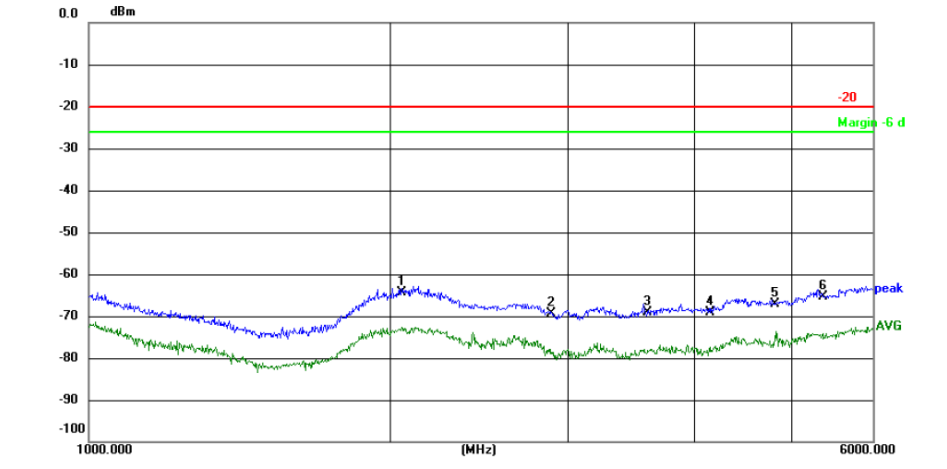
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	2106.847	-35.74	-30.81	-66.55	-20.00	-46.55	peak	P
2	3546.840	-36.83	-29.05	-65.88	-20.00	-45.88	peak	P
3 *	3989.224	-36.13	-29.00	-65.13	-20.00	-45.13	peak	P
4	4464.330	-39.25	-28.80	-68.05	-20.00	-48.05	peak	P
5	4931.099	-39.60	-27.56	-67.16	-20.00	-47.16	peak	P
6	5409.712	-38.61	-27.03	-65.64	-20.00	-45.64	peak	P

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

TX-ANH	CH_H	Vertical



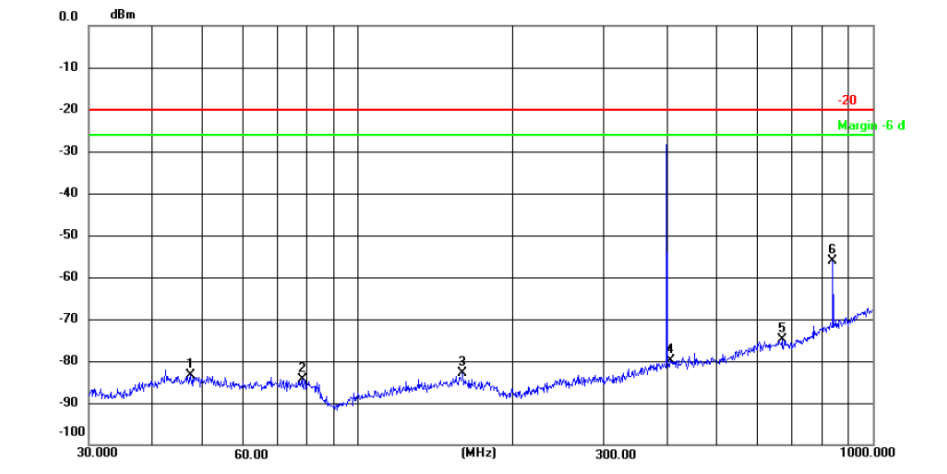
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	51.3905	-51.81	-28.34	-80.15	-20.00	-60.15	peak	P
2	80.3619	-57.29	-27.92	-85.21	-20.00	-65.21	peak	P
3	140.8351	-57.85	-27.34	-85.19	-20.00	-65.19	peak	P
4	424.2835	-52.15	-25.16	-77.31	-20.00	-57.31	peak	P
5	633.9073	-52.05	-24.04	-76.09	-20.00	-56.09	peak	P
6 *	837.7118	-47.27	-22.80	-70.07	-20.00	-50.07	peak	P



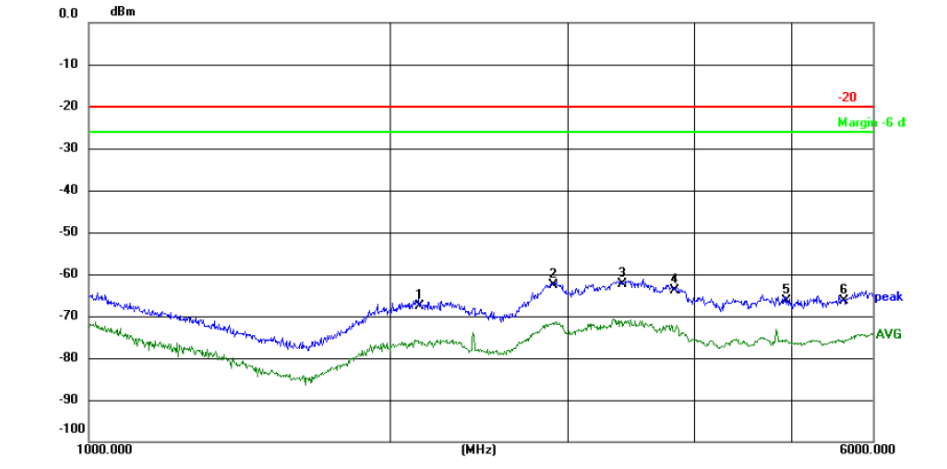
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1 *	2050.242	-33.42	-30.87	-64.29	-20.00	-44.29	peak	P
2	2891.043	-39.67	-29.70	-69.37	-20.00	-49.37	peak	P
3	3594.181	-39.99	-29.05	-69.04	-20.00	-49.04	peak	P
4	4137.735	-40.10	-28.94	-69.04	-20.00	-49.04	peak	P
5	4812.390	-39.19	-27.90	-67.09	-20.00	-47.09	peak	P
6	5363.385	-38.26	-27.07	-65.33	-20.00	-45.33	peak	P

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

TX-DNH	CH_L	Horizontal



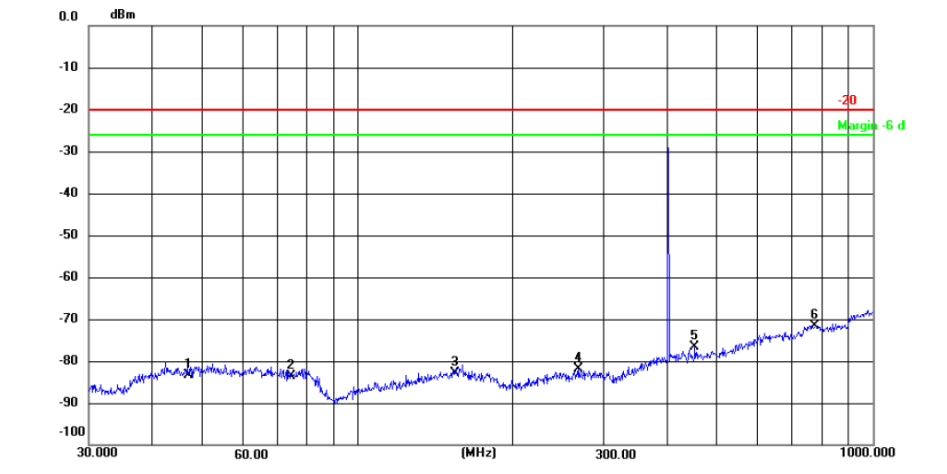
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	47.4918	-54.95	-28.41	-83.36	-20.00	-63.36	peak	P
2	78.2760	-56.50	-27.95	-84.45	-20.00	-64.45	peak	P
3	160.0648	-55.73	-27.21	-82.94	-20.00	-62.94	peak	P
4	406.0880	-54.51	-25.29	-79.80	-20.00	-59.80	peak	P
5	666.9719	-50.95	-23.90	-74.85	-20.00	-54.85	peak	P
6 *	837.7118	-33.27	-22.80	-56.07	-20.00	-36.07	peak	P



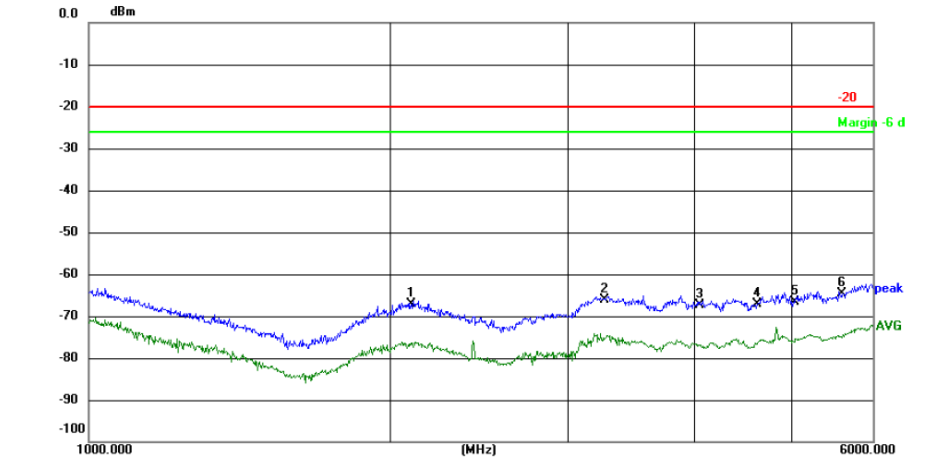
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	2135.351	-36.72	-30.78	-67.50	-20.00	-47.50	peak	P
2	2897.785	-32.98	-29.68	-62.66	-20.00	-42.66	peak	P
3 *	3393.293	-33.13	-29.15	-62.28	-20.00	-42.28	peak	P
4	3828.167	-34.82	-29.02	-63.84	-20.00	-43.84	peak	P
5	4941.712	-38.73	-27.54	-66.27	-20.00	-46.27	peak	P
6	5625.198	-39.71	-26.54	-66.25	-20.00	-46.25	peak	P

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

TX-DNH	CH_L	Vertical



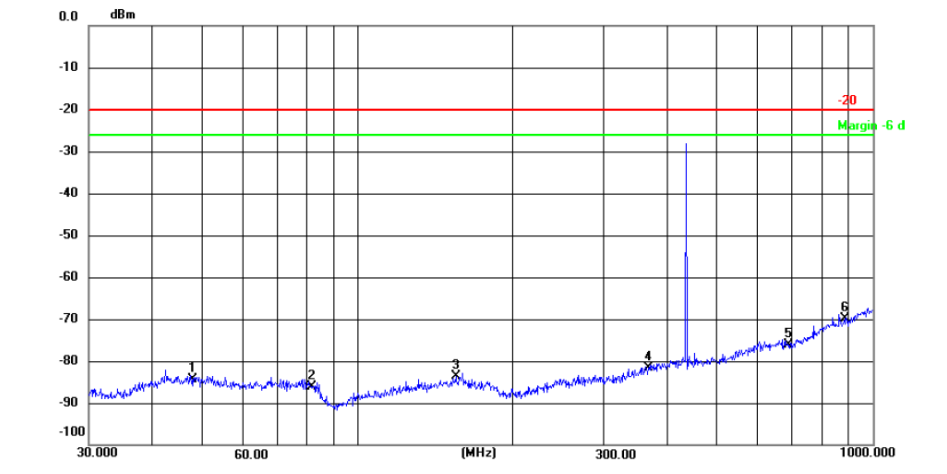
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	46.9125	-54.85	-28.42	-83.27	-20.00	-63.27	peak	P
2	74.1351	-55.67	-28.01	-83.68	-20.00	-63.68	peak	P
3	154.2786	-55.55	-27.25	-82.80	-20.00	-62.80	peak	P
4	268.9564	-55.49	-26.45	-81.94	-20.00	-61.94	peak	P
5	452.7197	-51.53	-24.97	-76.50	-20.00	-56.50	peak	P
6 *	775.5169	-48.08	-23.46	-71.54	-20.00	-51.54	peak	P



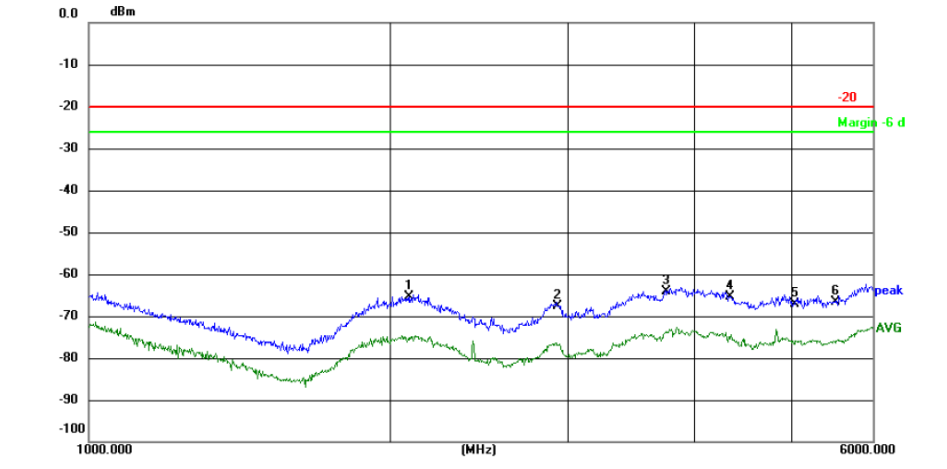
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	2094.052	-36.30	-30.82	-67.12	-20.00	-47.12	peak	P
2	3265.644	-36.78	-29.27	-66.05	-20.00	-46.05	peak	P
3	4051.170	-38.46	-28.98	-67.44	-20.00	-47.44	peak	P
4	4615.619	-38.73	-28.46	-67.19	-20.00	-47.19	peak	P
5	5031.054	-39.29	-27.34	-66.63	-20.00	-46.63	peak	P
6 *	5623.182	-38.19	-26.55	-64.74	-20.00	-44.74	peak	P

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

TX-DNH	CH_M	Horizontal



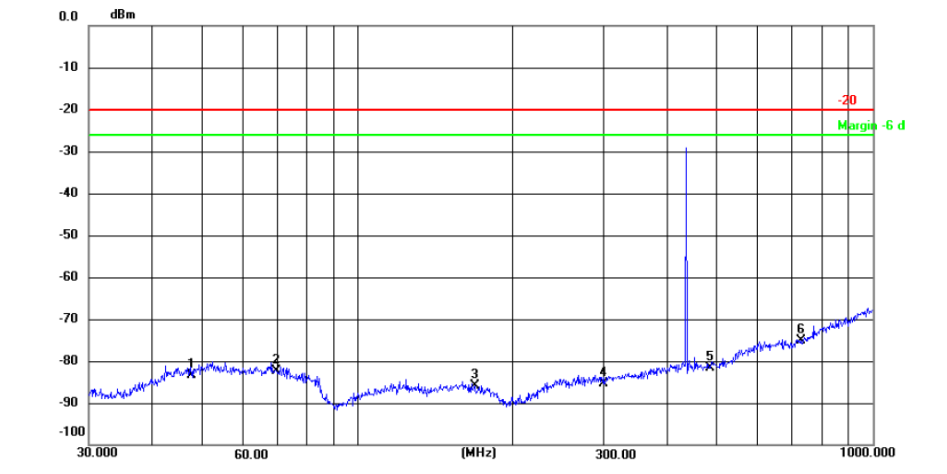
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	47.6584	-55.98	-28.40	-84.38	-20.00	-64.38	peak	P
2	81.6400	-58.10	-27.90	-86.00	-20.00	-66.00	peak	P
3	155.3642	-56.34	-27.24	-83.58	-20.00	-63.58	peak	P
4	367.4667	-56.05	-25.62	-81.67	-20.00	-61.67	peak	P
5	687.1506	-52.33	-23.81	-76.14	-20.00	-56.14	peak	P
6 *	882.9533	-47.55	-22.43	-69.98	-20.00	-49.98	peak	P



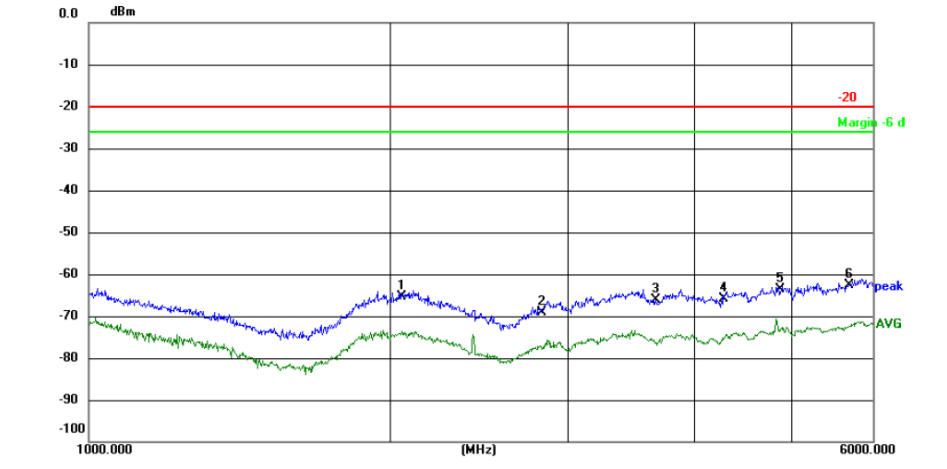
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	2083.572	-34.48	-30.84	-65.32	-20.00	-45.32	peak	P
2	2924.387	-37.96	-29.64	-67.60	-20.00	-47.60	peak	P
3 *	3748.079	-35.19	-29.03	-64.22	-20.00	-44.22	peak	P
4	4337.386	-36.48	-28.86	-65.34	-20.00	-45.34	peak	P
5	5023.848	-39.74	-27.35	-67.09	-20.00	-47.09	peak	P
6	5516.403	-39.69	-26.90	-66.59	-20.00	-46.59	peak	P

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

TX-DNH	CH_M	Vertical



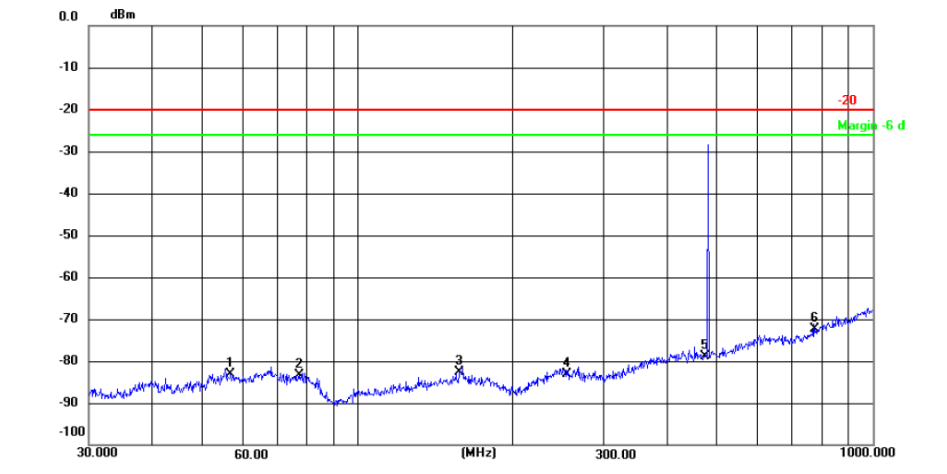
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	47.5751	-54.97	-28.41	-83.38	-20.00	-63.38	peak	P
2	69.4785	-54.17	-28.08	-82.25	-20.00	-62.25	peak	P
3	168.7093	-58.83	-27.15	-85.98	-20.00	-65.98	peak	P
4	299.3158	-59.09	-26.23	-85.32	-20.00	-65.32	peak	P
5	483.9094	-56.93	-24.75	-81.68	-20.00	-61.68	peak	P
6 *	724.2611	-51.27	-23.78	-75.05	-20.00	-55.05	peak	P



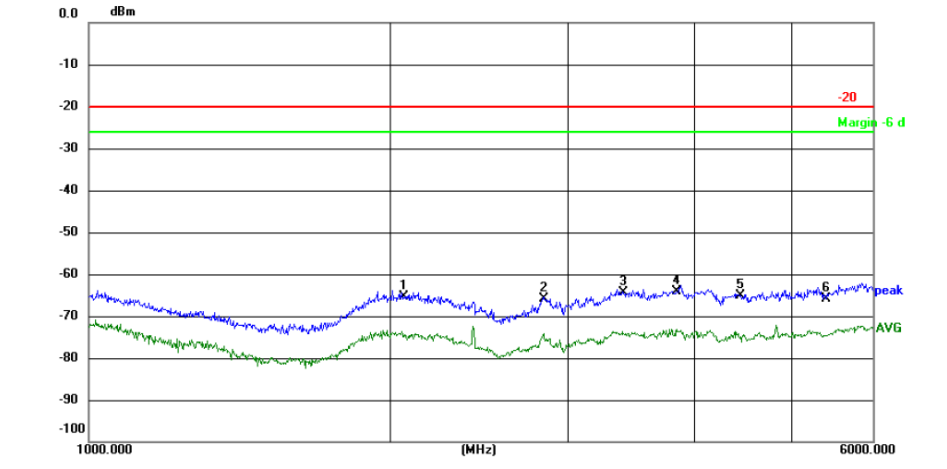
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	2050.242	-34.42	-30.87	-65.29	-20.00	-45.29	peak	P
2	2822.963	-39.19	-29.82	-69.01	-20.00	-49.01	peak	P
3	3657.195	-37.13	-29.03	-66.16	-20.00	-46.16	peak	P
4	4275.657	-36.87	-28.89	-65.76	-20.00	-45.76	peak	P
5	4870.510	-35.78	-27.73	-63.51	-20.00	-43.51	peak	P
6 *	5697.216	-36.39	-26.31	-62.70	-20.00	-42.70	peak	P

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

TX-DNH	CH_H	Horizontal



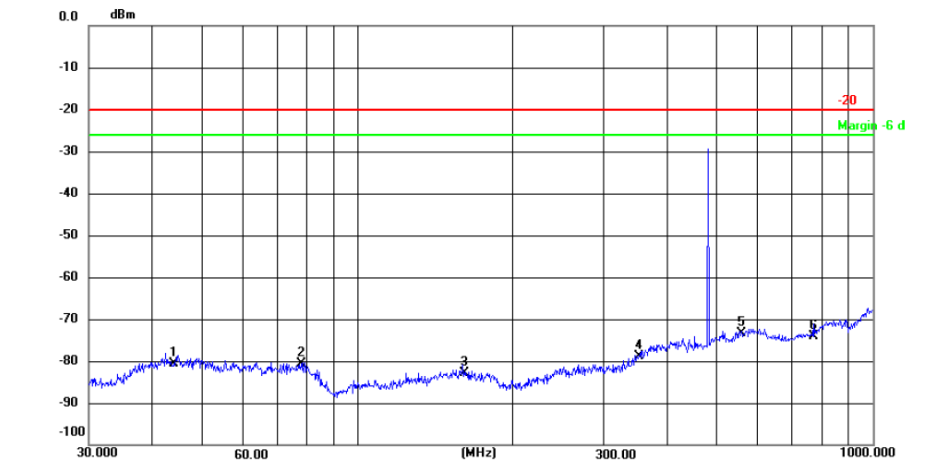
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	56.6923	-54.85	-28.26	-83.11	-20.00	-63.11	peak	P
2	76.7808	-55.37	-27.97	-83.34	-20.00	-63.34	peak	P
3	157.5588	-55.30	-27.23	-82.53	-20.00	-62.53	peak	P
4	254.7284	-56.61	-26.55	-83.16	-20.00	-63.16	peak	P
5	473.0046	-53.94	-24.83	-78.77	-20.00	-58.77	peak	P
6 *	771.4486	-48.82	-23.52	-72.34	-20.00	-52.34	peak	P



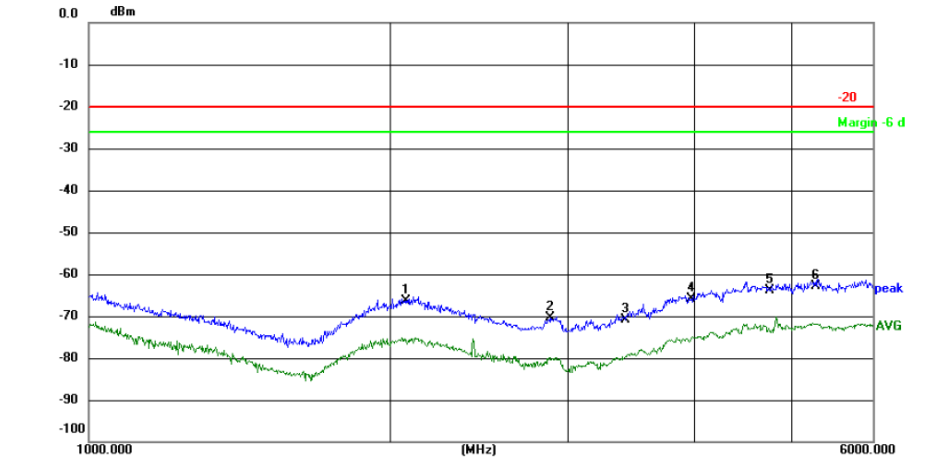
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	2063.140	-34.42	-30.85	-65.27	-20.00	-45.27	peak	P
2	2836.653	-36.02	-29.79	-65.81	-20.00	-45.81	peak	P
3	3402.425	-35.18	-29.14	-64.32	-20.00	-44.32	peak	P
4 *	3840.534	-35.13	-29.01	-64.14	-20.00	-44.14	peak	P
5	4445.970	-36.28	-28.81	-65.09	-20.00	-45.09	peak	P
6	5408.742	-38.77	-27.03	-65.80	-20.00	-45.80	peak	P

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

TX-DNH	CH_H	Vertical



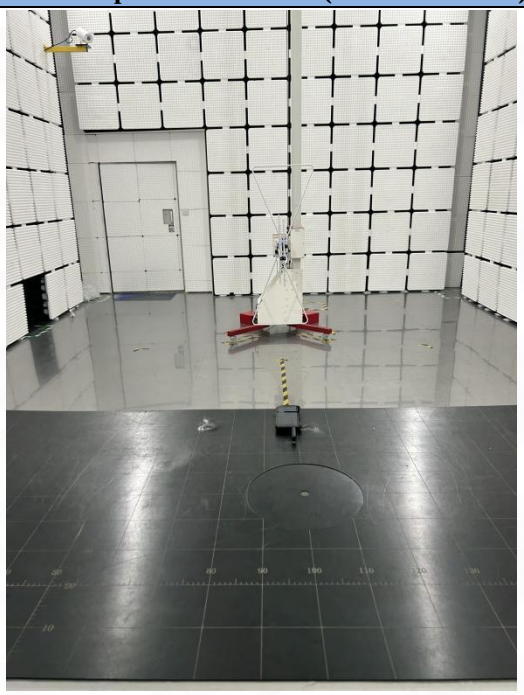
No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	43.9658	-52.04	-28.47	-80.51	-20.00	-60.51	peak	P
2	77.5928	-52.66	-27.96	-80.62	-20.00	-60.62	peak	P
3	161.4742	-55.68	-27.20	-82.88	-20.00	-62.88	peak	P
4	352.3251	-53.05	-25.76	-78.81	-20.00	-58.81	peak	P
5 *	555.7990	-49.06	-24.39	-73.45	-20.00	-53.45	peak	P
6	770.0972	-50.67	-23.53	-74.20	-20.00	-54.20	peak	P



No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector	P/F
1	2067.210	-35.51	-30.85	-66.36	-20.00	-46.36	peak	P
2	2871.426	-40.68	-29.73	-70.41	-20.00	-50.41	peak	P
3	3415.251	-41.82	-29.14	-70.96	-20.00	-50.96	peak	P
4	3971.394	-36.94	-29.00	-65.94	-20.00	-45.94	peak	P
5	4743.051	-35.72	-28.10	-63.82	-20.00	-43.82	peak	P
6 *	5280.427	-35.77	-27.13	-62.90	-20.00	-42.90	peak	P

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

ANNEX B TEST SETUP PHOTOS

Transmitter unwanted emissions in the spurious domain (30MHz to 1GHz) Receiver spurious emissions (30MHz to 1GHz)


Transmitter unwanted emissions in the spurious domain (above 1GHz) Receiver spurious emissions (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

ANNEX C EUT EXTERNAL PHOTOS

Please refer to EUT PHOTO

ANNEX D EUT INTERNAL PHOTOS

Please refer to EUT PHOTO

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