

# **FCC Test Report**

Report No.: AGC00688201218FE03

FCC ID	3) <b>-</b>	2AU6EDNS-T002
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Bluetooth USB Adapter
BRAND NAME	:	Techkey
MODEL NAME	:	BT-06B, BT-06A
APPLICANT	5:	Shenzhen Denos Trade Co., Ltd.
DATE OF ISSUE	:	Dec. 24, 2020
STANDARD(S)	:	FCC Part 15.247
REPORT VERSION	:	V1.0

# Attestation of Global Compliance (Shenzhen) Co., Ltd



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## **REPORT REVISE RECORD**

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	. /	Dec. 24, 2020	Valid	Initial Release

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## TABLE OF CONTENTS

	1. VERIFICATION OF CONFORMITY	5
	2. GENERAL INFORMATION	6
	2.1. PRODUCT DESCRIPTION	6
	2.2. TABLE OF CARRIER FREQUENCYS	
	2.3. RECEIVER INPUT BANDWIDTH	7
	2.4. EXAMPLE OF A HOPPING SEQUENCY IN DATA MODE	7
	2.5. EQUALLY AVERAGE USE OF FREQUENCIES AND BEHAVIOUR	7
	2.6. RELATED SUBMITTAL(S) / GRANT (S)	8
	2.7. TEST METHODOLOGY	8
	2.8. SPECIAL ACCESSORIES	8
	2.9. EQUIPMENT MODIFICATIONS	
	2.10. ANTENNA REQUIREMENT	
	3. MEASUREMENT UNCERTAINTY	9
	4. DESCRIPTION OF TEST MODES	
	5. SYSTEM TEST CONFIGURATION	11
	5.1. CONFIGURATION OF EUT SYSTEM	11
	5.2. EQUIPMENT USED IN TESTED SYSTEM	11
	5.3. SUMMARY OF TEST RESULTS	11
	6. TEST FACILITY	
	7. PEAK OUTPUT POWER	
	7.1. MEASUREMENT PROCEDURE	
	7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	
	7.3. LIMITS AND MEASUREMENT RESULT	
	8. 20DB BANDWIDTH	
	8.1. MEASUREMENT PROCEDURE	
	8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	
	8.3. LIMITS AND MEASUREMENT RESULTS	
	9. CONDUCTED SPURIOUS EMISSION	
St pr	9.1. MEASUREMENT PROCEDURE Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the "bedicated Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issue Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.	AGC. The test results



9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)	
9.3. MEASUREMENT EQUIPMENT USED	
9.4. LIMITS AND MEASUREMENT RESULT	
10. RADIATED EMISSION	
10.1. MEASUREMENT PROCEDURE	
10.2. TEST SETUP	
10.3. LIMITS AND MEASUREMENT RESULT	
10.4. TEST RESULT	
11. NUMBER OF HOPPING FREQUENCY	
11.1. MEASUREMENT PROCEDURE	
11.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)	
11.3. MEASUREMENT EQUIPMENT USED	
11.4. LIMITS AND MEASUREMENT RESULT	
12. TIME OF OCCUPANCY (DWELL TIME)	
12.1. MEASUREMENT PROCEDURE	
12.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)	
12.3. MEASUREMENT EQUIPMENT USED	
12.4. LIMITS AND MEASUREMENT RESULT	
13. FREQUENCY SEPARATION	
13.1. MEASUREMENT PROCEDURE	
13.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)	
13.3. MEASUREMENT EQUIPMENT USED	
13.4. LIMITS AND MEASUREMENT RESULT	
14. FCC LINE CONDUCTED EMISSION TEST	
14.1. LIMITS OF LINE CONDUCTED EMISSION TEST	
14.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST	
14.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST	
14.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST	
14.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST	61
APPENDIX A: PHOTOGRAPHS OF TEST SETUP	
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APPENDIX B: PHOTOGRAPHS OF EUT	

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## **1. VERIFICATION OF CONFORMITY**

Applicant	Shenzhen Denos Trade Co., Ltd.		
Address	Room 610, Shibida Building, No. 55 ZhenHua Rd, Futian District, Shen Zhen, GuangDong, China		
Manufacturer	SHEN ZHEN SHI XIN HUA TIAN TECHNOLOGY CO., LTD		
Address	3Foor, B Buliding, DaHong Industrial Park, GuangMin District, Shenzhen City, China		
Factory	SHEN ZHEN SHI XIN HUA TIAN TECHNOLOGY CO., LTD		
Address	3Foor, B Buliding, DaHong Industrial Park, GuangMin District, Shenzhen City, China		
Product Designation	Bluetooth USB Adapter		
Brand Name	Techkey		
Test Model	BT-06B		
Series Model	BT-06A		
Difference Description	All the same except for the model name.		
Date of test	Dec. 18, 2020 to Dec. 24, 2020		
Deviation	No any deviation from the test method		
Condition of Test Sample	Normal		
Test Result	Pass		
Report Template	AGCRT-US-BR/RF		

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC PART 15.247.

Prepared By

Eddy · Liu

Eddy Liu (Project Engineer)

Dec. 24, 2020

Max Zhans

Reviewed By

Max Zhang (Reviewer)

Dec. 24, 2020

Approved By

Lowa

Forrest Lei (Authorized Officer)

Dec. 24, 2020

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## 2. GENERAL INFORMATION

## 2.1. PRODUCT DESCRIPTION

The EUT is designed as "Bluetooth USB Adapter". It is designed by way of utilizing the GFSK, Pi/4 DQPSK and 8DPSK technology to achieve the system operation.

A major technical description of EUT is described as following

Operation Frequency	2.402 GHz to 2.480 GHz
RF Output Power	4.279dBm (Max)
Bluetooth Version	V4.0
Modulation	BR ⊠GFSK, EDR ⊠π /4-DQPSK, ⊠8DPSK BLE □GFSK 1Mbps □GFSK 2Mbps
Number of channels	79
Hardware Version	V5.0
Software Version	V5.0
Antenna Designation	PCB Antenna (Comply with requirements of the FCC part 15.203)
Antenna Gain	2dBi
Power Supply	DC 5V by USB

## **2.2. TABLE OF CARRIER FREQUENCYS**

Frequency Band	Channel Number	Frequency
	0	2402 MHz
		2403 MHz
	38	2440 MHz
2402~2480MHz	39	2441 MHz
	40	2442 MHz
· Poo Poo	77	2479 MHz
	78	2480 MHz

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## 2.3. RECEIVER INPUT BANDWIDTH

The input bandwidth of the receiver is 1.3MHz, in every connection one Bluetooth device is the master and the other one is slave. The master determines the hopping sequence. The slave follows this sequence. Both devices shift between RX and TX time slot according to the clock of the master. Additionally, the type of connection (e.g. single of multi slot packet) is set up at the beginning of the connection. The master adapts its hopping frequency and its TX/RX timing according to the packet type of the connection. Also, the slave of the connection will use these settings. Repeating of a packet has no influence on the hopping sequence. The hopping sequence generated by the master of the connection will be followed in any case. That means, a repeated packet will not be send on the same frequency, it is send on the next frequency of the hopping sequence.

#### 2.4. EXAMPLE OF A HOPPING SEQUENCY IN DATA MODE

Example of a hopping sequence in data mode: 40, 21, 44, 23, 04, 15, 66, 56, 19, 78, 07, 28, 69, 55, 36, 45, 05, 13, 43, 74, 57, 35, 67, 76, 02, 34, 54, 63, 42, 11, 30, 06, 64, 25, 75, 48, 17, 33, 58, 01, 29, 14, 51, 72, 03, 31, 50, 61, 77, 18, 10, 47, 12, 68, 08, 49, 20, 79, 73, 09, 16, 60, 71, 41, 24, 53, 38, 26, 46, 37, 65, 32, 70, 52, 27, 59, 22, 62, 39

## 2.5. EQUALLY AVERAGE USE OF FREQUENCIES AND BEHAVIOUR

The generation of the hopping sequence in connection mode depends essentially on two input values:

1. LAP/UAP of the master of the connection.

2. Internal master clock.

The LAP (lower address part) are the 24 LSB's of the 48 BD\_ADDRESS. The BD\_ADDRESS is an unambiguous number of every Bluetooth unit. The UAP (upper address part) are the 24MSB's of the 48BD\_ADDRESS

The internal clock of a Bluetooth unit is derived from a free running clock which is never adjusted and is never turned off. For behavior action with other units only offset is used. It has no relation to the time of the day. Its resolution is at least half the RX/TX slot length of 312.5us. The clock has a cycle of about one day(23h30). In most case it is implemented as 28 bits counter. For the deriving of the hopping sequence the entire. LAP (24 bits),4LSB's(4bits) (Input 1) and the 27MSB's of the clock (Input 2) are used. With this input values different mathematical procedures (permutations, additions, XOR-operations) are performed to generate the Sequence. This will be done at the beginning of every new transmission.

Regarding short transmissions the Bluetooth system has the following behavior:

The first connection between the two devices is established, a hopping sequence was generated. For Transmitting the wanted data the complete hopping sequence was not used. The connection ended.

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The second connection will be established. A new hopping sequence is generated. Due to the fact the Bluetooth clock has a different value, because the period between the two transmission is longer (and it Cannot be shorter) than the minimum resolution of the clock(312.5us). The hopping sequence will always differ from the first one.

## 2.6. RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2AU6EDNS-T002** filing to comply with the FCC PART 15.247 requirements.

## 2.7. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013). Radiated testing was performed at an antenna to EUT distance 3 meters.

## 2.8. SPECIAL ACCESSORIES

Refer to section 5.2.

## 2.9. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

## 2.10. ANTENNA REQUIREMENT

This intentional radiator is designed with a permanently attached antenna of an antenna to ensure that no antenna other than that furnished by the responsible party shall be used with the device. For more information of the antenna, please refer to the APPENDIX B: PHOTOGRAPHS OF EUT.

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## **3. MEASUREMENT UNCERTAINTY**

The reported uncertainty of measurement y ±U, where expended uncertainty U is based on a standard

uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

- Uncertainty of Conducted Emission, Uc = ±3.1 dB
- Uncertainty of Radiated Emission below 1GHz, Uc = ±4.0 dB
- Uncertainty of Radiated Emission above 1GHz, Uc = ±4.8 dB
- Uncertainty of total RF power, conducted,  $Uc = \pm 0.8$ dB
- Uncertainty of spurious emissions, conducted, Uc = ±2.7dB
- Uncertainty of Occupied Channel Bandwidth: Uc = ±2 %
- Uncertainty of Dwell Time:  $Uc = \pm 2\%$
- Uncertainty of Frequency:  $Uc = \pm 2 \%$

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## **4. DESCRIPTION OF TEST MODES**

NO.	TEST MODE DESCRIPTION
	Low channel GFSK
2	Middle channel GFSK
3	High channel GFSK
4	Low channel π/4-DQPSK
5	Middle channel π/4-DQPSK
6	High channel π/4-DQPSK
7	Low channel 8DPSK
8	Middle channel 8DPSK
9	High channel 8DPSK
10	Hopping mode GFSK
11	Hopping mode π/4-DQPSK
12	Hopping mode 8DPSK

Note:

1. Only the result of the worst case was recorded in the report, if no other cases.

2. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

3. For Conducted Test method, a temporary antenna connector is provided by the manufacture.

#### Software Setting

🗹 BlueTest3		-	□ ×
Test Commands FAUSE RADIO STATUS RADIO STATUS FULL TXSTART TXDATA1 TXDATA2 TXDATA3 TXDATA3 TXDATA4 *		2480 255 30	Close Help Execute Cold Reset Warm Reset
Test Results Save to file Browse C:\Users\DELL\AppData\Loca	Dispia		C BER
Radio Test TXDATAI successfu Radio Test CFG FKT successfu Radio Test TXDATAI successfu Radio Test TXDATAI successfu Radio Test TXDATAI successfu Radio Test CFG FKT successfu Radio Test CFG FKT successfu Radio Test TXDATAI successfu Radio Test TXDATAI successfu Radio Test CFG FKT successfu			^
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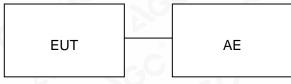
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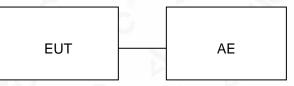
## **5. SYSTEM TEST CONFIGURATION**

**5.1. CONFIGURATION OF EUT SYSTEM** 

Radiated Emission Configure:



Conducted Emission Configure:



## 5.2. EQUIPMENT USED IN TESTED SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	Bluetooth USB Adapter	BT-06B	2AU6EDNS-T002	EUT
2	Control Box	N/A	USB-TTL	AE
3	PC	Huawei	Boh-WAQ9RP AE	
4	PC Adapter	Huawei	N/A	AE

## 5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
15.247 (b)(1)	Peak Output Power	Compliant
15.247 (a)(1)	20 dB Bandwidth	Compliant
15.247 (d)	Conducted Spurious Emission	Compliant
15.209	Radiated Emission	Compliant
15.247 (a)(1)(iii)	Number of Hopping Frequency	Compliant
15.247 (a)(1)(iii)	Time of Occupancy	Compliant
15.247 (a)(1)	Frequency Separation	Compliant
15.207	Conducted Emission	Compliant

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## 6. TEST FACILITY

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd	
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China	
Designation Number	CN1259	
FCC Test Firm Registration Number	975832	
A2LA Cert. No.	5054.02	
Description	Attestation of Global Compliance (Shenzhen) Co., Ltd is accredited by A2LA	

## TEST EQUIPMENT OF CONDUCTED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESPI	101206	May 15, 2020	May 14, 2021
LISN	R&S	ESH2-Z5	100086	Jul. 03, 2020	Jul. 02, 2021
Test software	R&S	ES-K1(Ver.V1.71)	N/A	N/A	N/A

## TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	May 15, 2020	May 14, 2021
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Dec. 07, 2020	Dec. 06, 2021
2.4GHz Filter	EM Electronics	2400-2500MHz	N/A	Mar. 23, 2020	Mar. 22, 2022
Attenuator	ZHINAN	E-002	N/A	Sep. 03, 2020	Sep. 02, 2022
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep. 21, 2019	Sep. 20, 2021
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	May 22, 2020	May 21, 2022
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	May 17, 2019	May 16, 2021
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Sep. 03, 2020	Sep. 02, 2022
ANTENNA	SCHWARZBECK	VULB9168	494	Jan. 09, 2019	Jan. 08, 2021
Test software	Tonscend	JS32-RE (Ver.2.5)	N/A	N/A	N/A

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## 7. PEAK OUTPUT POWER

## 7.1. MEASUREMENT PROCEDURE

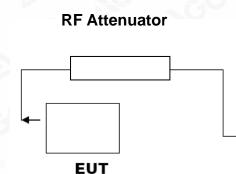
For peak power test:

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Span: Approximately five times the 20 dB bandwidth, centered on a hopping channel.
- 3. RBW > 20 dB bandwidth of the emission being measured.
- 4. VBW  $\geq$ RBW.
- 5. Sweep: Auto.
- 6. Detector function: Peak.
- 7. Trace: Max hold.

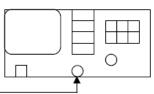
Allow trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power, after any corrections for external attenuators and cables.

## 7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

## PEAK POWER TEST SETUP



## **Spectrum Analyzer**



RF Cable

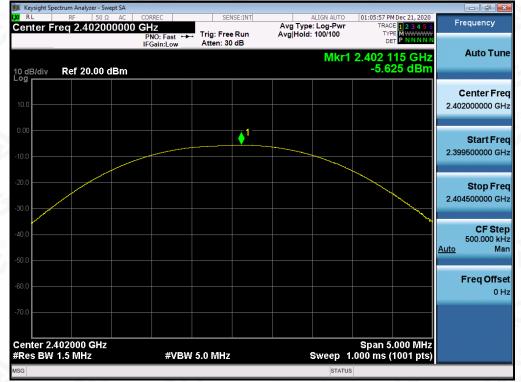
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#### 7.3. LIMITS AND MEASUREMENT RESULT

PEAK OUTPUT POWER MEASUREMENT RESULT						
FOR GFSK MOUDULATION						
Frequency (GHz)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail			
2.402	-5.625	21	Pass			
2.441	2.747	21	Pass			
2.480	4.279	21	Pass			





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#### Report No.: AGC00688201218FE03 Page 15 of 69



CH39



CH78

J Keysight Spectrum Analyzer - Swept SA	CORREC	SENSE:INT		ALIGN AUTO	01:07:04 0	4 Dec 21, 2020	
Center Freq 2.48000000	GHz	Trig: Free Run		: Log-Pwr	TRAC	E 1 2 3 4 5 6 E MWWWW	Frequency
	PNO: Fast +++ IFGain:Low	Atten: 30 dB	Avginoid		DE	T P NNNNN	
10 dB/div Ref 20.00 dBm				Mkr1	2.479 7 4.2	'85 GHz 79 dBm	Auto Tune
10.0		1					Center Freq 2.480000000 GHz
.10.0							<b>Start Freq</b> 2.477500000 GHz
-20.0							<b>Stop Freq</b> 2.482500000 GHz
-40.0							CF Step 500.000 kHz <u>Auto</u> Mar
-60.0							<b>Freq Offset</b> 0 Hz
-70.0 Center 2.480000 GHz					Span 5	.000 MHz	
#Res BW 1.5 MHz	#VBW	5.0 MHz			.000 ms (	1001 pts)	
MSG				STATUS	8		

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PEAK OUTPUT POWER MEASUREMENT RESULT FOR Π/4-DQPSK MODULATION					
Frequency (GHz)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail		
2.402	-3.995	21	Pass		
2.441	-0.443	21	Pass		
2.480	1.327	21	Pass		

38 PM Dec 21, 202 Frequency Avg Type: Log-Pwi Avg|Hold: 100/100 Cen 02000000 GHz Trig: Free Run Atten: 30 dB PNO: Fast IFGain:Low Auto Tune Mkr1 2.402 100 -3.995 dBm Ref 20.00 dBm 10 dB/div **Center Freq** 2.402000000 GHz Start Freq 2.399500000 GHz Stop Freq 2.404500000 GH CF Step 500.000 kHz Man <u>Auto</u> **Freq Offset** 0 Hz

#VBW 5.0 MHz

Span 5.000 MHz Sweep 1.000 ms (1001 pts)

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Center 2.402000 GHz #Res BW 1.5 MHz

#### CH0

#### Report No.: AGC00688201218FE03 Page 17 of 69



CH39



CH78

	rum Analyzer - Swept SA							
Center Fre	RF 50 Ω AC	GHz	SENSE:INT	Avg Type:		TRAC	4Dec 21, 2020 E 1 2 3 4 5 6	Frequency
	•	PNO: Fast 🔸	<ul> <li>Trig: Free Run Atten: 30 dB</li> </ul>	Avg Hold:	100/100	TYF		
10 dB/div	Ref 20.00 dBm				Mkr1	2.479 8 1.3	60 GHz 27 dBm	Auto Tune
10.0			▲1					Center Freq 2.480000000 GHz
-10.0								<b>Start Freq</b> 2.477500000 GHz
-20.0								<b>Stop Freq</b> 2.482500000 GHz
-40.0								<b>CF Step</b> 500.000 kHz <u>Auto</u> Man
-60.0								<b>Freq Offset</b> 0 Hz
-70.0 Center 2.48						Span 5	.000 MHz	
#Res BW 1	.5 MHz	#VBW	5.0 MHz	8	Sweep 1		1001 pts)	
Mog					STATUS			

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PEAK OUTPUT POWER MEASUREMENT RESULT FOR 8-DPSK MODULATION					
Frequency (GHz)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail		
2.402	-3.500	21	Pass		
2.441	0.100	21	Pass		
2.480	1.913	21	Pass		



CH0

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#### Report No.: AGC00688201218FE03 Page 19 of 69



**CH39** NSE:INT Avg Type: Log-Pwr Avg|Hold: 100/100 Frequency Center Freq 2.441000000 GHz Trig: Free Run Atten: 30 dB PNO: Fast IFGain:Low Auto Tune Mkr1 2.441 035 GHz 0.100 dBm Ref 20.00 dBm 10 dB/div **Center Freq** 2.441000000 GHz <u>1</u> Start Freq 2.438500000 GHz Stop Freq 2.443500000 GHz CF Step 500.000 kHz <u>Auto</u> Ма **Freq Offset** 0 Hz Center 2.441000 GHz #Res BW 1.5 MHz Span 5.000 MHz Sweep 1.000 ms (1001 pts) #VBW 5.0 MHz STATUS

CH78

📕 Keysight Spectrum Analyzer - Swep 🖬 RL RF 50 Ω		ashes the			
₩ RL RF 50 Ω Center Freq 2.480000	0000 GHz	SENSE:INT	ALIGN AUTO	01:11:14 PM Dec 21, 2020 TRACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency
10 dB/div <b>Ref 20.00 d</b> E	PNO: Fast ↔ IFGain:Low	→ Trig: Free Run Atten: 30 dB	Avg Hold: 100/100	2.479 960 GHz 1.913 dBm	Auto Tun
		<b>1</b>			Center Fre 2.48000000 G⊦
-10.0					<b>Start Fre</b> 2.477500000 GH
-20.0					<b>Stop Fre</b> 2.482500000 GF
40.0					<b>CF St</b> e 500.000 ki <u>Auto</u> M
60.0					Freq Offs 01
-70.0 Center 2.480000 GHz #Res BW 1.5 MHz	#VBW	√ 5.0 MHz	Sween 1	Span 5.000 MHz .000 ms (1001 pts)	
		4 979 IVIIII2	SWEEP		

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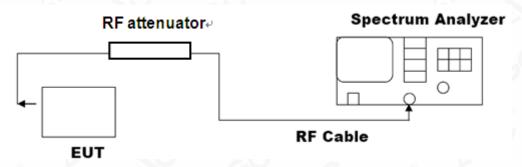


## 8. 20DB BANDWIDTH

#### **8.1. MEASUREMENT PROCEDURE**

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
- 3. Set Span = approximately 2 to 5 times the 20 dB bandwidth, centered on a hoping channel The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW and video bandwidth (VBW) shall be approximately three times RBW; Sweep = auto; Detector function = peak
- 4. Set SPA Trace 1 Max hold, then View.

## 8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



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#### **8.3. LIMITS AND MEASUREMENT RESULTS**

MEASUREMENT RESULT FOR GFSK MOUDULATION					
Applicable Limite	Measurement Result				
Applicable Limits	Test Data	a (MHz)	Criteria		
	Low Channel	0.959	PASS		
N/A	Middle Channel	1.019	PASS		
	High Channel	1.021	PASS		

#### 01:05:51 PM Dec 21, 2020 SENSE:INT Center Freq: 2.402000000 GHz Trig: Free Run Avg|Hol #Atten: 30 dB Frequency 102000000 GHz Radio Std: None Avg|Hold:>100/100 #IFGain:Low Radio Device: BTS Ref 20.00 dBm **Center Freq** 2.402000000 GHz Center 2.402 GHz #Res BW 30 kHz Span 3 MHz Sweep 3.2 ms CF Step 300.000 kHz #VBW 100 kHz <u>Auto</u> 1.60 dBm **Occupied Bandwidth Total Power** 874.36 kHz Freq Offset 0 Hz -5.295 kHz **Transmit Freq Error OBW Power** 99.00 % 958.9 kHz x dB Bandwidth x dB -20.00 dB

#### TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

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#### TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

#### TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



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MEASUREMENT RESULT FOR II /4-DQPSK MODULATION					
Annlinghle Limite		Measurement Result			
Applicable Limits	Test Data	(MHz)	Criteria		
N/A	Low Channel	1.279	PASS		
	Middle Channel	1.277	PASS		
	High Channel	1.275	PASS		

#### TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

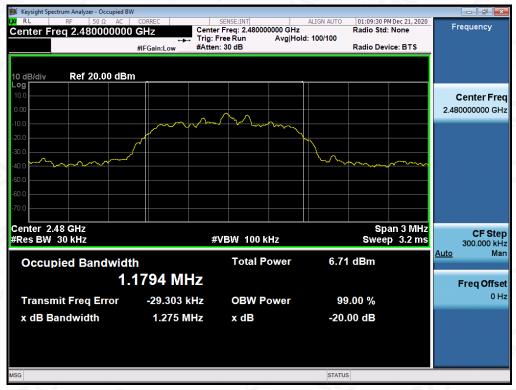


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#### TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

#### TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



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MEASUREMENT RESULT FOR 8-DPSK MODULATION					
Applicable Limits Measurement Result					
Applicable Limits	Test Dat	ta (MHz)	Criteria		
	Low Channel	1.276	PASS		
N/A	Middle Channel	1.273	PASS		
C C	High Channel	1.276	PASS		

#### TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



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#### TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

#### TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



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## 9. CONDUCTED SPURIOUS EMISSION

## 9.1. MEASUREMENT PROCEDURE

- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Set the EUT Work on the top, the Middle and the bottom operation frequency individually.
- Set the Span = wide enough to capture the peak level of the in-band emission and all spurious emissions from the lowest frequency generated in the EUT up through the 10th harmonic.
   RBW = 100 kHz; VBW= 300 kHz; Sweep = auto; Detector function = peak.
- 4. Set SPA Trace 1 Max hold, then View.

## 9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 8.2

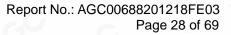
## 9.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6

#### 9.4. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT						
Annlinghta Limita	Measurement Result					
Applicable Limits	Test Data	Criteria				
In any 100 kHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency	At least -20dBc than the limit Specified on the BOTTOM Channel	PASS				
power that is produce by the intentional radiator shall be at least 20 dB below that in 100KHz bandwidth within the band that contains the highest level of the desired power. In addition, radiation emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in§15.209(a))	At least -20dBc than the limit Specified on the TOP Channel	PASS				

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## TEST RESULT FOR ENTIRE FREQUENCY RANGE TEST PLOT OF OUT OF BAND EMISSIONS WITH THE WORST CASE OF GFSK MODULATION IN LOW CHANNEL



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#### Report No.: AGC00688201218FE03 Page 29 of 69



														_	
		ectrum /	Analyzer -	Swept SA											
LXI RL		RF		Ω AC	CORREC		SEI	NSE:INT			SN AUTO		M Dec 21, 2020		Frequency
Cen	ter F	req	13.74	17500	)0 GHz			_		Type: Lo			CE 123456		Frequency
					PNO: Fas		Trig: Free Atten: 30		Avg	Hold: 10	/10				
					IFGain:Lo	w	Atten: 30								Auto Turre
											Mk	r1 7.20	5 4 GHz		Auto Tune
40.15		De		o al Dana								-34 1	42 dBm		
10 dE Log j	3/017	Re	20.01	0 dBm				1					42 GDIII		
10.0															
10.0															Center Freq
0.00														1	13.741750000 GHz
-10.0															
-10.0															
-20.0													-25.85 dBm		Start Freq
-30.0				<mark>_</mark> 1−									-23.63 übm		
															2.483500000 GHz
-40.0															
-50.0															
				.				a ha analata	and the second second		All the last of th	a di se			Stop Freq
-60.0	Tari Car	the second						and the second sec	a de la calegaria de la calega	alife a line state	and the second		<u> </u>		25.000000000 GHz
-70.0														4	5.00000000 GHZ
Star	t 2.48	CH	,							^		Stop 2	5.00 GHz		CF Step
	s BW				-#1	(DM 3	00 kHz			C.	voon	0160 c /2	0000 pts)		2.251650000 GHz
#RC	5 DVV	100	NFIZ		#					31	reeh .	2.152 5 (5	0000 pts)		<u>uto</u> Man
MKR N		RC SCL		Х			Y	FUN	CTION	FUNCTION	ON WIDTH	FUNCTI	ON VALUE		uto Mari
1	N 1	f		7	.205 4 GHz		34.142 di	3m		ĺ.					
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 Attestation of Global Compliance(Shenzhen)Co., Ltd

 Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

 Tel: +86-755 2523 4088
 E-mail: agc@agc-cert.com





## TEST PLOT OF OUT OF BAND EMISSIONS OF GFSK MODULATION IN MIDDLE CHANNEL

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#### Report No.: AGC00688201218FE03 Page 31 of 69



🊺 Key	sight Spe	ctrum.	Analyzer	- Swept	SA		_									
IXI RL		RF			AC	CORREC		SE	NSE:INT			ALIGN AUTO		M Dec 21, 2020		Frequency
Cent	ter Fi	req	13.74	175	0000	) GHz PNO: Fa		. Trig: Fre Atten: 30			Type  Hold:	: Log-Pwr 10/10	TY	CE 1 2 3 4 5 6 PE MWWWWW ET P NNNNN		requeitey
10 dE	3/div	Re	f 20.0	00 dB	m	in Game						Mk		3 2 GHz 45 dBm		Auto Tune
Log 10.0 0.00 -10.0															13.	<b>Center Freq</b> 741750000 GHz
-20.0 -30.0 -40.0					1									-17.65 dBm	2.	Start Freq 483500000 GHz
-50.0 -60.0 -70.0	i ni taf							n i na se di se di secondo di seco							25.0	Stop Freq 000000000 GHz
#Res	t 2.48 5 BW	100	kHz		X	#	¢VB₩	300 kHz Y		UNCTION		Sweep 2	2.152 s (3	5.00 GHz 0000 pts)	2.: <u>Auto</u>	<b>CF Step</b> 251650000 GHz 2 Man
1 2 3 4 5 6	N 1	f			7.3	23 2 GH	z	-22.945 dl	Bm							<b>Freq Offset</b> 0 Hz
7 8 9 10 11																
MSG		_										STATUS	6	•		

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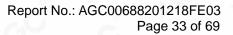
 Tel: +86-755 2523 4088
 E-mail: agc@agc-cert.com



Keysight Spectrum Analyzer		CENCEANT		01-16-01 04 0 01 0000	
Center Freq 2.480		SENSE:INT	Avg Type: Log-Pwr	01:16:21 PM Dec 21, 2020 TRACE 1 2 3 4 5 6	Frequency
	PNO: Wide IFGain:Low	Trig: Free Run Atten: 30 dB	Avg Hold: 10/10		
			Mkr1 2.	480 139 7 GHz	Auto Tu
10 dB/div Ref 20.0	i0 dBm			3.878 dBm	
_ <b>og</b>			1		Center F
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-10.0					
-20.0					Stort F
-30.0					Start F 2.478500000 (
-40.0			\		
-50.0					Stop E
60.0					2.481500000 0
-70.0					2.401000000
Center 2.480000 GI	Hz			Span 3.000 MHz	CF St
Res BW 100 kHz		BW 300 kHz	Sweep 2.0	00 ms (30000 pts)	300.000
MKR MODE TRC SCL	X	Y	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> N
1 N 1 f	2.480 139 7 GHz	3.878 dBm			
3 4					Freq Off
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8 9					
10					
11					
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11 <b>11</b>		m	STATUS	4	
11 SG Keysight Spectrum Analyzer				01:16:30 PM Dec 21, 2020	-
SG SG Keysight Spectrum Analyzer	0 Ω AC CORREC	SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	01:16:30 PM Dec 21, 2020 TRACE 0 23 4 5 6 TYPE M MANAGE	_
11 SG Keysight Spectrum Analyzer RL RF S	i0 Ω AC CORREC	SENSE:INT	ALIGN AUTO	01:16:30 PM Dec 21, 2020 TRACE 12 23 4 5 6 TYPE MWWWW DET PNNNNN	Frequency
11 SG Keysight Spectrum Analyzer RL RF S	0 Ω AC CORREC 0000000 GHz PNO: Fast	SENSE:INT	Auto Avg Type: Log-Pwr Avg Hold: 10/10	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNN 1 2.323 92 GHz	Frequency
11 SG Keysight Spectrum Analyzer RL RF S Center Freq 1.215	ο Ω AC CORREC 0000000 GHz PNO: Fast IFGain:Low	SENSE:INT	Auto Avg Type: Log-Pwr Avg Hold: 10/10	TRACE 123456 TYPE MWWWW DET PNNNN	Frequency
11 SG Keysight Spectrum Analyzer RL RF S Center Freq 1.215	ο Ω AC CORREC 0000000 GHz PNO: Fast IFGain:Low	SENSE:INT	Auto Avg Type: Log-Pwr Avg Hold: 10/10	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNN 1 2.323 92 GHz	Frequency Auto Tu
11 Keysight Spectrum Analyzer R RL RF 5 Center Freq 1.215 0 dB/div Ref 20.0 °g	ο Ω AC CORREC 0000000 GHz PNO: Fast IFGain:Low	SENSE:INT	Auto Avg Type: Log-Pwr Avg Hold: 10/10	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNN 1 2.323 92 GHz	Frequency Auto Tu Center F
11 Keysight Spectrum Analyzer R RL RF 5 Center Freq 1.215 10 dB/div Ref 20.0 00	ο Ω AC CORREC 0000000 GHz PNO: Fast IFGain:Low	SENSE:INT	Auto Avg Type: Log-Pwr Avg Hold: 10/10	TRACE 12 23 4 5 6 TYPE MUMMAN DET P NNNNN 1 2.323 92 GHz -54.887 dBm	Frequency Auto Tu Center F
11         sG           Keysight Spectrum Analyzer         s           Q RL         RF         s           Center Freq 1.215         s           0 dB/div         Ref 20.0           00 dB/div         Ref 20.0           00 dB/div         Ref 20.0	ο Ω AC CORREC 0000000 GHz PNO: Fast IFGain:Low	SENSE:INT	Auto Avg Type: Log-Pwr Avg Hold: 10/10	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNN 1 2.323 92 GHz	Frequency Auto Tu Center F 1.215000000 0
11 Keysight Spectrum Analyzer R RL RF 5 Center Freq 1.215 10 dB/div Ref 20.0 0 0	ο Ω AC CORREC 0000000 GHz PNO: Fast IFGain:Low	SENSE:INT	Auto Avg Type: Log-Pwr Avg Hold: 10/10	TRACE 12 23 4 5 6 TYPE MUMMAN DET P NNNNN 1 2.323 92 GHz -54.887 dBm	Frequency Auto Tu Center F 1.215000000 0 Start Fr
11	ο Ω AC CORREC 0000000 GHz PNO: Fast IFGain:Low	SENSE:INT	Auto Avg Type: Log-Pwr Avg Hold: 10/10	TRACE 12 23 4 5 6 TYPE MUMMAN DET P NNNNN 1 2.323 92 GHz -54.887 dBm	Frequency Auto Tu Center F 1.215000000 0 Start Fr
11	ο Ω AC CORREC 0000000 GHz PNO: Fast IFGain:Low	SENSE:INT	Auto Avg Type: Log-Pwr Avg Hold: 10/10	TRACE 12 23 4 5 6 TYPE MUMMAN DET P NNNNN 1 2.323 92 GHz -54.887 dBm	Frequency Auto Tu Center F 1.215000000 0 Start F 30.000000 M
11	ο Ω AC CORREC 0000000 GHz PNO: Fast IFGain:Low	SENSE:INT	Auto Avg Type: Log-Pwr Avg Hold: 10/10	TRACE 12 23 4 5 6 TYPE MUMMAN DET P NNNNN 1 2.323 92 GHz -54.887 dBm	Frequency Auto Tu Center F 1.215000000 0 Start F 30.000000 N Stop F
11	ο Ω AC CORREC 0000000 GHz PNO: Fast IFGain:Low	SENSE:INT	Auto Avg Type: Log-Pwr Avg Hold: 10/10	TRACE 12 23 4 5 6 TYPE MUMMAN DET P NNNNN 1 2.323 92 GHz -54.887 dBm	Frequency Auto Tu Center F 1.215000000 0 Start F 30.000000 N Stop F
11         Image: Constraint of the second seco	0 Ω AC CORREC 1000000 GHZ PNO: Fast IFGain:Low 10 dBm	Trig: Free Run Atten: 30 dB		TRACE 1.2.3.4.5 G TYPE M. M. W.	Frequency Auto Tu Center F 1.215000000 0 Start Fi 30.000000 N Stop Fi 2.400000000 0
11	0 Ω AC CORREC 1000000 GHZ PNO: Fast IFGain:Low 10 dBm	SENSE:INT		TRACE 1.2.3.4.5 G TYPE MANNANA OFT MANNAN 1.2.323 92 GHz -54.887 dBm -16.12 dbn -16.12 dbn -16.12 dbn -11 -11 -12 dbn -11 -12 dbn -12 dbn	Frequency Auto Tu Center F 1.215000000 0 Start Fr 30.000000 N Stop F 2.400000000 0 CF S 237.000000 N
11	0 Ω AC CORREC 000000 GHZ PNO: Fast IFGain:Low 0 dBm 0 dBm	SENSE:INT Trig: Free Run Atten: 30 dB		TRACE 1.2.3.4.5 G TYPE M. M. W.	Frequency Auto Tu Center Fr 1.215000000 M Start Fr 30.00000 M 2.400000000 M CF St 237.00000 M Auto
11         Image: Constraint of the sector of the sect	0 Ω         AC         CORREC           1000000         GHZ         PNO: Fast           PNO: Fast         IFGain:Low	SENSE:INT ,  Trig: Free Run Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10 Mkr	TRACE 1.2.3.4.5 G TYPE MANNANA OCT P. NANNANA 1.2.323 92 GHz -54.887 dBm -18.12 dBn 1.18.12 dBn 1.18.1	Frequency           Auto Tu           Center F           1.215000000 f           Start Fi           30.000000 f           Stop Fi           2.400000000 f           CF St           237.000000 f           Auto
11         Image: Constraint of the section of th	0 Ω AC CORREC 000000 GHZ PNO: Fast IFGain:Low 0 dBm 0 dBm	SENSE:INT Trig: Free Run Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10 Mkr	TRACE 1.2.3.4.5 G TYPE MANNANA OCT P. NANNANA 1.2.323 92 GHz -54.887 dBm -18.12 dBn 1.18.12 dBn 1.18.1	Frequency           Auto Tu           Center F           1.215000000 0           Start Fri           30.000000 N           Stop Fri           2.400000000 0           CF St           237.000000 N           Auto N           Freq Off
11	0 Ω AC CORREC 000000 GHZ PNO: Fast IFGain:Low 0 dBm 0 dBm	SENSE:INT Trig: Free Run Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10 Mkr	TRACE 1.2.3.4.5 G TYPE MANNANA OCT P. NANNANA 1.2.323 92 GHz -54.887 dBm -18.12 dBn 1.18.12 dBn 1.18.1	Frequency           Auto Tu           Center F           1.215000000 0           Start Fri           30.000000 N           Stop Fri           2.400000000 0           CF St           237.000000 N           Auto N           Freq Off
11         Image: Constraint of the section of th	0 Ω AC CORREC 000000 GHZ PNO: Fast IFGain:Low 0 dBm 0 dBm	SENSE:INT Trig: Free Run Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10 Mkr	TRACE 1. 2. 4. 5 G TYPE MANNANA 1. 2. 3223 92 GHz -54.887 dBm -16.12 dBm 1 -16.12 d	Frequency           Auto Tu           Center F           1.215000000 0           Start Fri           30.000000 N           Stop Fri           2.400000000 0           CF St           237.000000 N           Auto N           Freq Off
11         Image: Constraint of the section of th	0 Ω AC CORREC 000000 GHZ PNO: Fast IFGain:Low 0 dBm 0 dBm	SENSE:INT Trig: Free Run Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10 Mkr	TRACE 1. 2. 4. 5 G TYPE MANNANA 1. 2. 3223 92 GHz -54.887 dBm -16.12 dBm 1 -16.12 d	Frequency           Auto Tu           Center F           1.215000000 0           Start Fri           30.000000 N           Stop Fri           2.400000000 0           CF St           237.000000 N           Auto N           Freq Off
11	0 Ω AC CORREC 000000 GHZ PNO: Fast IFGain:Low 0 dBm 0 dBm	SENSE:INT Trig: Free Run Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10 Mkr	TRACE 1. 2. 4. 5 G TYPE MANNANA 1. 2. 3223 92 GHz -54.887 dBm -16.12 dBm 1 -16.12 d	Frequency Auto Tu Center Fr 1.215000000 0 Start Fr 30.000000 N Stop Fr 2.400000000 0 CF St 237.000000 N

## TEST PLOT OF OUT OF BAND EMISSIONS OF GFSK MODULATION IN HIGH CHANNEL

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🎉 Keysight Spectrum Analyzer - Swept SA	
μ         RL         RF         50 Ω         AC         CORREC         SENSE:INT         ALIGN AUTO         01:16:56 PM Dec 21, 2020	
Center Freq 13.750000000 GHz PNO: Fast Trig: Free Run Avg[Hold: 10/10 DET PNNN	4
IFGainLow Atten. 30 db	
Mkr1 7.440 4 GH2	
10 dB/div Ref 20.00 dBm -24.706 dBm	
10.0	Center Freq
0.00	13.750000000 GHz
-10.0	
-20.0	
-30.0	Start Freq
-40.0	2.500000000 GHz
1-50.0	
	Stop Freq
	25.000000000 GHz
-70.0	
Start 2.50 GHz Stop 25.00 GHz	CF Step
#Res BW 100 kHz #VBW 300 kHz Sweep 2.152 s (30000 pts	
MKR MODE TRC SCL X Y FUNCTION VIDTH FUNCTION VALUE	<u>Auto</u> Man
1 N 1 f 7.440 4 GHz -24.706 dBm	
3	Freq Offset
	0 Hz
8	
9	J
MSG STATUS	

Note: The GFSK modulation is the worst case and only those data recorded in the report.

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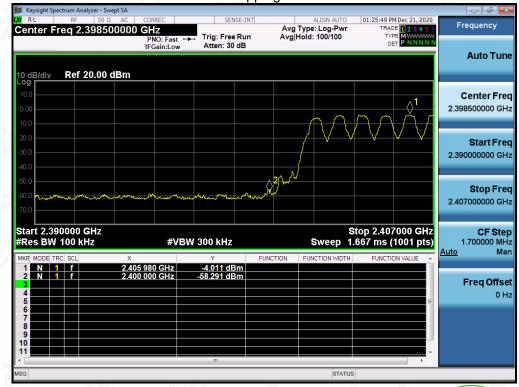
#### TEST RESULT FOR BAND EDGE

#### GFSK MODULATION IN LOW CHANNEL

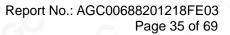
Hopping off



Hopping on



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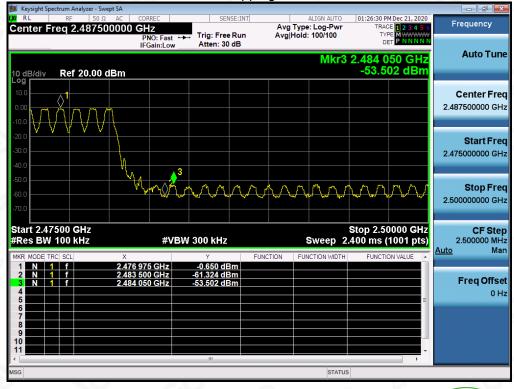




## GFSK MODULATION IN HIGH CHANNEL

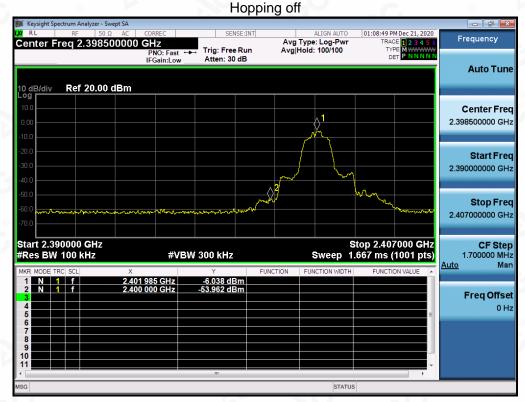
Hopping off

Hopping on



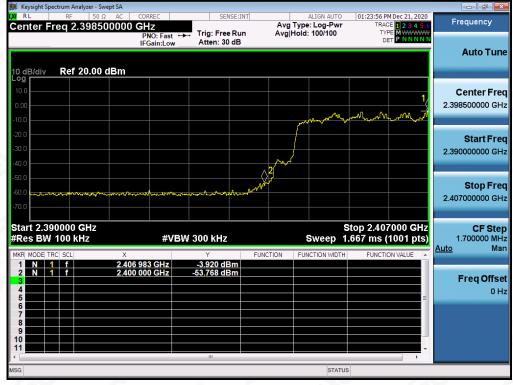
Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Presting/Inspection Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written authorization of AGE. The test results presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15days after the issuence of the test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc~cert.com.





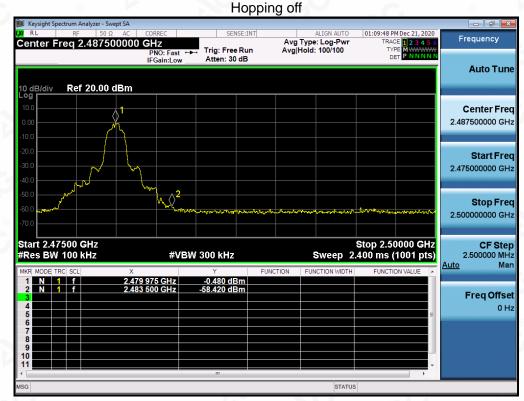
## $\pi$ /4-DQPSK MODULATION IN LOW CHANNEL

Hopping on



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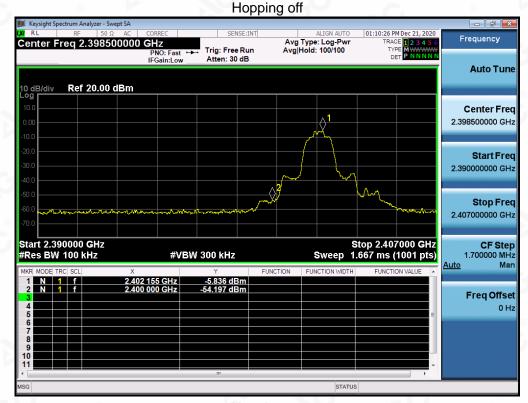
# $\pi$ /4-DQPSK MODULATION IN HIGH CHANNEL

Hopping on



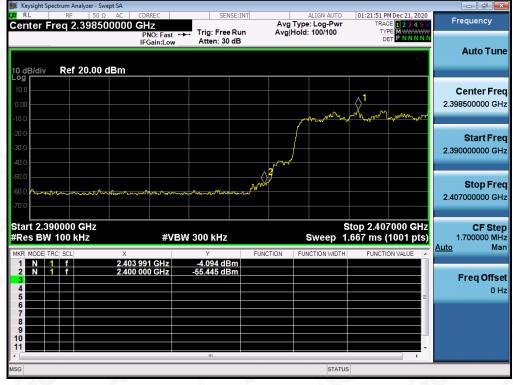
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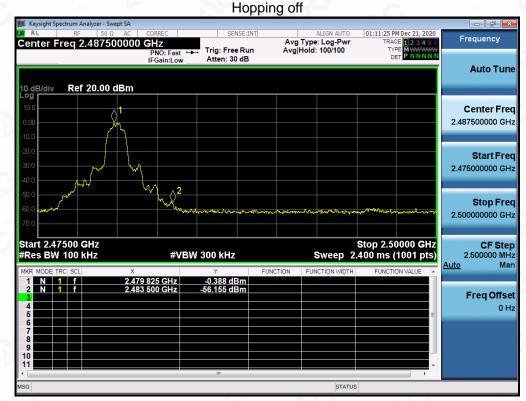
## 8-DPSK MODULATION IN LOW CHANNEL

Hopping on



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## 8-DPSK MODULATION IN HIGH CHANNEL

Hopping on



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## **10. RADIATED EMISSION**

#### **10.1. MEASUREMENT PROCEDURE**

- 1. The EUT was placed on the top of the turntable 0.8 or 1.5 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
- 2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- 3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
- 4. For each suspected emission, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
- 5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
- 6. For emissions above 1GHz, use 1MHz RBW and 3MHz VBW for peak reading. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
- 8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
- 9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
- 10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High Low scan is not required in this case.

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The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting		
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP		
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP		
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP		
Start ~Stop Frequency	1GHz~26.5GHz 1MHz/3MHz for Peak, 1MHz/3MHz for Average		

Receiver Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP

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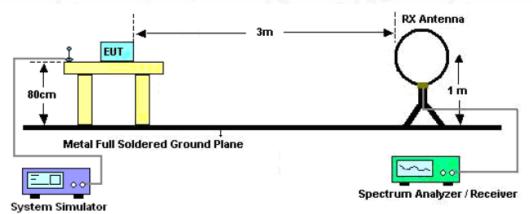
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 Tel: +86-755 2523 4088
 E-mail: agc@agc-cert.com
 Web: http://cn.agc-cert.com/

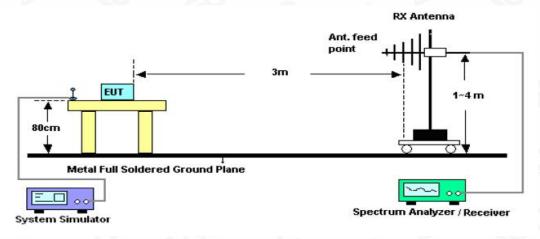


### 10.2. TEST SETUP

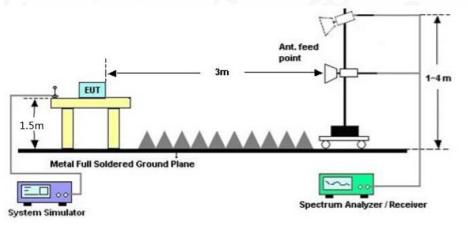
Radiated Emission Test-Setup Frequency Below 30MHz



## RADIATED EMISSION TEST SETUP 30MHz-1000MHz



## RADIATED EMISSION TEST SETUP ABOVE 1000MHz



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#### **10.3. LIMITS AND MEASUREMENT RESULT**

#### 15.209 Limit in the below table has to be followed

Frequencies (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

Note: All modes were tested for restricted band radiated emission, the test records reported below are the worst result compared to other modes.

#### **10.4. TEST RESULT**

### **RADIATED EMISSION BELOW 30MHz**

The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.

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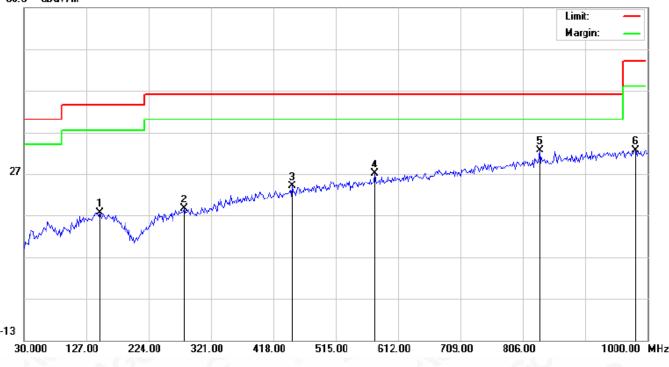


#### Report No.: AGC00688201218FE03 Page 44 of 69

#### **RADIATED EMISSION BELOW 1GHz**

EUT	Bluetooth USB Adapter	Model Name	BT-06B
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Horizontal

#### 66.9 dBuV/m



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		148.0167	-1.55	19.21	17.66	43.50	-25.84	peak
2		278.9667	-1.19	19.86	18.67	46.00	-27.33	peak
3		447.1000	0.06	23.93	23.99	46.00	-22.01	peak
4		574.8167	0.45	26.46	26.91	46.00	-19.09	peak
5	*	831.8667	1.84	30.82	32.66	46.00	-13.34	peak
6		980.6000	0.22	32.39	32.61	54.00	-21.39	peak

## **RESULT: PASS**

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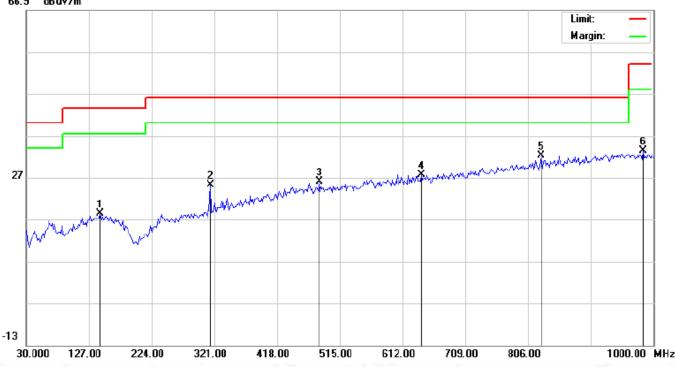
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#### Report No.: AGC00688201218FE03 Page 45 of 69

EUT	Bluetooth USB Adapter Model Name		BT-06B
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

66.9 dBu∀/m



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		144.7833	-0.88	19.22	18.34	43.50	-25.16	peak
2		314.5333	5.31	19.98	25.29	46.00	-20.71	peak
3		482.6667	1.28	24.64	25.92	46.00	-20.08	peak
4		641.1000	0.23	27.44	27.67	46.00	-18.33	peak
5	*	825.4000	1.53	30.74	32.27	46.00	-13.73	peak
6		983.8333	1.03	32.42	33.45	54.00	-20.55	peak

### **RESULT: PASS**

Note: 1. Factor=Antenna Factor + Cable loss, Margin=Measurement-Limit.

2. All test modes had been pre-tested. The mode 3 is the worst case and recorded in the report.

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## **RADIATED EMISSION ABOVE 1GHz**

EUT	Bluetooth USB Adapter	Model Name	BT-06B
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
4804.000	46.04	0.08	46.12	74	-27.88	peak 💿
4804.000	38.11	0.08	38.19	54	-15.81	AVG
7206.000	41.64	2.21	43.85	74	-30.15	peak
7206.000	33.25	2.21	35.46	54	-18.54	AVG
	20			0	20	
emark:			©			
actor = Anter	na Factor + Cable	Loss – Pre-	amplifier.	8		

EUT	Bluetooth USB Adapter	Model Name	BT-06B
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Vertical

(dBµV) 45.16 37.84	(dB) 0.08 0.08	(dBµV/m) 45.24	(dBµV/m) 74	(dB) -28.76	Value Type
	(2.)			-28.76	peak
37.84	0.08	27.02			
		37.92	54	-16.08	AVG
40.35	2.21	42.56	74	-31.44	peak
31.42	2.21	33.63	<sup>©</sup> 54	-20.37	AVG
0		0	G ,	C C	
60				-0	
	31.42	31.42 2.21		31.42 2.21 33.63 54	31.42 2.21 33.63 54 -20.37

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#### Report No.: AGC00688201218FE03 Page 47 of 69

Bluetooth USB Adapter	Model Name	BT-06B
25°C	Relative Humidity	55.4%
960hPa	Test Voltage	Normal Voltage
Mode 2	Antenna	Horizontal
	25°C 960hPa	25°C Relative Humidity 960hPa Test Voltage

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4882.000	45.75	0.14	45.89	74	-28.11	peak
4882.000	39.29	0.14	39.43	54	-14.57	AVG
7323.000	41.76	2.36	44.12	74	-29.88	peak
7323.000	35.17	2.36	37.53	54	-16.47	AVG
	0		9 . 69		©	
emark:						

EUT Model Name **BT-06B** Bluetooth USB Adapter Temperature 25°C **Relative Humidity** 55.4% Pressure 960hPa **Test Voltage** Normal Voltage **Test Mode** Mode 2 Vertical Antenna

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type	
4882.000	46.32	0.14	46.46	74	-27.54	peak	
4882.000	38.05	0.14	38.19	54	-15.81	AVG	
7323.000	41.97	2.36	44.33	74	-29.67	peak	
7323.000	32.46	2.36	34.82	54	-19.18	AVG	
	0						
	© _						

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

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#### Report No.: AGC00688201218FE03 Page 48 of 69

EUT	Bluetooth USB Adapter	Model Name	BT-06B	
Temperature	25°C	Relative Humidity	55.4%	
Pressure	960hPa	Test Voltage	Normal Voltage	
Test Mode	Mode 3	Antenna	Horizontal	

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4960.000	46.74	0.22	46.96	74	-27.04	peak
4960.000	39.49	0.22	39.71	54	-14.29	AVG
7440.000	42.35	2.64	44.99	74	-29.01	peak
7440.000	33.81	2.64	36.45	54	-17.55	AVG
	8		97,60		8	
emark:	- 61	C			- 6	®
actor = Anter	nna Factor + Cable	Loss – Pre-	amplifier.			- 6

EUT	Bluetooth USB Adapter	Model Name	BT-06B
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)		
4960.000	46.41	0.22	46.63	74	-27.37	peak	
4960.000	39.32	0.22	39.54	54	-14.46	AVG	
7440.000	42.85	2.64	45.49	74	-28.51	peak	
7440.000	34.07	2.64	36.71	54	-17.29	AVG	
		- Ci	®				
				8			

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

## **RESULT: PASS**

Note:

The amplitude of other spurious emissions from 1G to 25 GHz which are attenuated more than 20 dB below the permissible value need not be reported.

Factor = Antenna Factor + Cable loss - Amplifier gain, Over=Measure-Limit.

The "Factor" value can be calculated automatically by software of measurement system.

All test modes had been tested. The GFSK modulation is the worst case and recorded in the report.

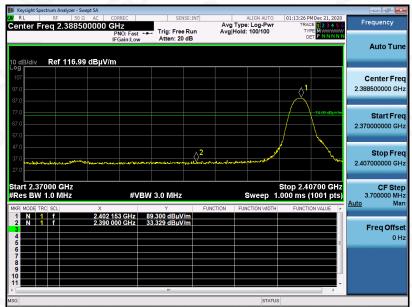
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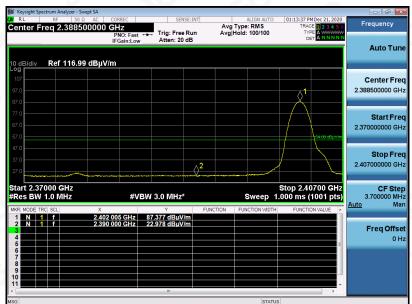
#### TEST RESULT FOR RESTRICTED BANDS REQUIREMENTS

EUT	JT Bluetooth USB Adapter Model Name		BT-06B
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal

ΡK



AV



## **RESULT: PASS**

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