

Page 1 of 68

# **FCC Test Report**

Report No.: AGC03285210402FE03

FCC ID	: 2AMWOFSC-BT825
APPLICATION PURPOSE	: Original Equipment
PRODUCT DESIGNATION	: Bluetooth module
BRAND NAME	: Feasycom
MODEL NAME	: FSC-BT825
APPLICANT	: Shenzhen Feasycom Technology Co., LTD
DATE OF ISSUE	: May 11, 2021
STANDARD(S)	: FCC Part 15.247
REPORT VERSION	: V1.0

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



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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



## **REPORT REVISE RECORD**

<b>Report Version</b>	Revise Time	Issued Date	Valid Version	Notes
V1.0	10	May 11, 2021	Valid	Initial Release

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#### **1. VERIFICATION OF CONFORMITY**

Applicant	Shenzhen Feasycom Technology Co., LTD	
Address	Room 2004A, 20th Floor, Huichao Technology Building, Jinhai Road, Xixiang, Baoan District, Shenzhen, China	
Manufacturer	Shenzhen Feasycom Technology Co., LTD	
Address	Room 2004A, 20th Floor, Huichao Technology Building, Jinhai Road, Xixiang, Baoan District, Shenzhen, China	
Factory	Shenzhen Feasycom Technology Co., LTD	
Address	Room 2004A, 20th Floor, Huichao Technology Building, Jinhai Road, Xixiang, Baoan District, Shenzhen, China	
Product Designation	Bluetooth module	
Brand Name	Feasycom	
Test Model	FSC-BT825	
Date of test	Apr. 15, 2021 to May 11, 2021	
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

John Zerry

John Zeng Project Engineer

May 11, 2021

**Reviewed By** 

Max Zhan

Max Zhang Reviewer

May 11, 2021

Approved By

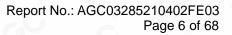
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Forrest Lei Authorized Officer

May 11, 2021

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## 2. GENERAL INFORMATION

## 2.1. PRODUCT DESCRIPTION

The EUT is designed as "Bluetooth module". 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	2.402GHz to 2.480GHz	
RF Output Power	4.645dBm (Max)	
Bluetooth Version	V4.2	
Modulation	BR ⊠GFSK, EDR ⊠π /4-DQPSK, ⊠8DPSK BLE ⊠GFSK 1Mbps □GFSK 2Mbps	
Number of channels	79 Channel	
Hardware Version	V2.0	
Software Version	V2.0.1	
Antenna Designation	PCB Antenna (Comply with requirements of the FCC part 15.203)	
Antenna Gain	2dBi	
Power Supply	DC 3.3V	

## 2.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency
	0	2402 MHz
No CO	-C 1	2403 MHz
0		
	38	2440 MHz
2402~2480MHz	39	2441 MHz
	40	2442 MHz
	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, 00, 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: 2AMWOFSC-BT825** 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
1	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

Bluetooth MP Tool		
COM UART V Port = 4 V Baudrate=1152	200 💌 Open Close 🔽 DL Patch	REALTEK
Non Link Mode Hopping RW Efuse LE Test LED	1	Hot Key
Channel       0       •         Packet Type       DH5       •         Payload Type       ALL'0       •         Tx Packet Count       0       •         Tx Gain Index       6       •         Tx Gain Value       0xCE       •         Parameter 1       Parameter 2       Parameter 3       Table       Cal	Pkt-Tx       Exec       Stop       Clear Report       Item       Value       Tx bits       1252944       Tx Pkt Count       462       TX Report	HCI Reset Test Mode Patch code GetChipInfo Get BT Stage 0
Message		Load Script
>>LMP_Version=0x6 >>Version=0d >>Is_After_PatchCode=1 >>BT Default Power Index = 6 >>Read Tx dac current value = 0xd!! >>Enable TRX Thread Mode!! >>ActionControlExcute(Pkt-Tx) Success!!		Read Thermal

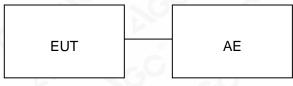
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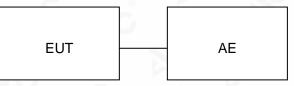
## 5. SYSTEM TEST CONFIGURATION

**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 module	FSC-BT825	2AMWOFSC-BT825	EUT
2	Control Box	N/A	USB-TTL	AE
3	PC	16301-01	N/A	AE
4	PC Adapter	ADC6501TM	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	FARA	EZ-EMC(Ver. AGC-CON03A1)	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. 08, 2021	Jan. 07, 2023
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

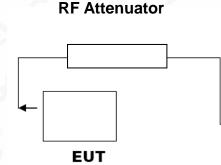
For peak power test:

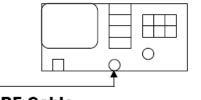
- 1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
- 2. Span: Approximately five times the 20 dB bandwidth, centered on a hopping channel.
- 3. RBW > 20 dB bandwidth of the emission being measured.
- 4. VBW  $\geq$ RBW.
- 5. Sweep: Auto.
- 6. Detector function: Peak.
- 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 MEA FOR GFSK MOUI		
Frequency (GHz)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.402	3.098	21	Pass
2.441	3.035	21	Pass
2.480	2.080	21	Pass

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	PEAK OUTPUT POWER MEASUR FOR Π/4-DQPSK MODU		
Frequency (GHz)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.402	4.320	21	Pass
2.441	4.033	21	Pass
2.480	3.161	21	Pass

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CH78

Agilent Spectrum Analyzer - Swept SA RL RF 50 Ω AC Center Freq 2.48000000		SENSE:PULSE	ALIGN AU Avg Type: Log-P	wr TRAC	4 Apr 25, 2021 E <b>1 2 3 4 5 6</b>	Frequency
	PNO: Fast +++ IFGain:Low	Trig: Free Run Atten: 30 dB	Avg Hold: 100/100	TYF		
10 dB/div Ref 20.00 dBm			MI	(r1 2.479 8 3.1	35 GHz 61 dBm	Auto Tur
10.0		1				Center Fre 2.480000000 GH
0.00						<b>Start Fre</b> 2.477500000 GF
30.0					v	<b>Stop Fr</b> 2.482500000 G
40.0						<b>CF St</b> 500.000 k <u>Auto</u> M
60.0						Freq Offs 0
70.0 Center 2.480000 GHz				Span 5	.000 MHz	
#Res BW 1.5 MHz	#VBW	5.0 MHz		o 1.000 ms ( atus	1001 pts)	

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#### Report No.: AGC03285210402FE03 Page 18 of 68

Frequency (GHz)	FOR 8-DPSK MODULA Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.402	4.645	21	Pass
2.441	4.323	21	Pass
2.480	3.444	21	Pass

CH0



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CH78

Agilent Spectrum Analyzer - Swept SA           LXU         RF         50 Ω         AC	CORREC	SENSE:PULSE	ALIGN AUTO	05:47:42 AM Apr 25, 2021	Frequency
Center Freq 2.48000000	) GHZ PNO: Fast ↔→ IFGain:Low	Trig: Free Run Atten: 30 dB	Avg Type: Log-Pwr Avg Hold: 100/100	TRACE 123456 TYPE MWWWWW DET P N N N N N	
10 dB/div Ref 20.00 dBm	IFGain:Low	Atten. oo da	Mkr1	2.480 055 GHz 3.444 dBm	Auto Tune
10.0		<b>↓</b> 1			Center Free 2.480000000 GH
-10.0					<b>Start Fre</b> 2.477500000 GH
-20.0					<b>Stop Fre</b> 2.482500000 GH
-40.0					CF Ste 500.000 kH <u>Auto</u> Ma
-60.0					Freq Offse 0 H
-70.0 Center 2.480000 GHz				Span 5.000 MHz	
#Res BW 1.5 MHz	#VBW	5.0 MHz	Sweep 1	.000 ms (1001 pts)	

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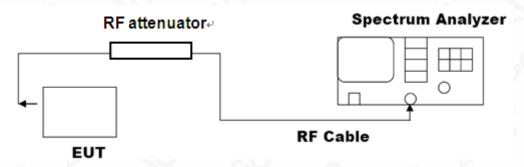


## 8. 20DB BANDWIDTH

#### **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

MEASURE	MENT RESULT FOR GF	SK MOUDULATION	
Appliachta Limita		Measurement Resul	lt
Applicable Limits	Test Data	a (MHz)	Criteria
	Low Channel	1.042	PASS
N/A	Middle Channel	1.030	PASS
	High Channel	0.990	PASS

#### 05:38:21 AM Apr 25, 2021 Radio Std: None Frequency Center Freq: 2.402000000 GHz Trig: Free Run Avg|Hold: 100/100 #Atten: 30 dB 402000000 GHz Cente Radio Device: BTS #IFGain:Low 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> Mar Total Power 8.16 dBm Occupied Bandwidth 920.51 kHz Freq Offset 0 Hz 1.564 kHz **Transmit Freq Error OBW Power** 99.00 % x dB Bandwidth 1.042 MHz 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

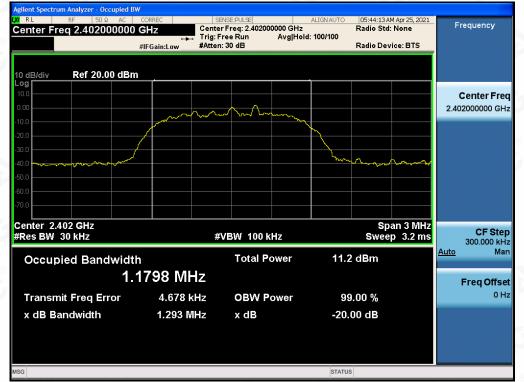


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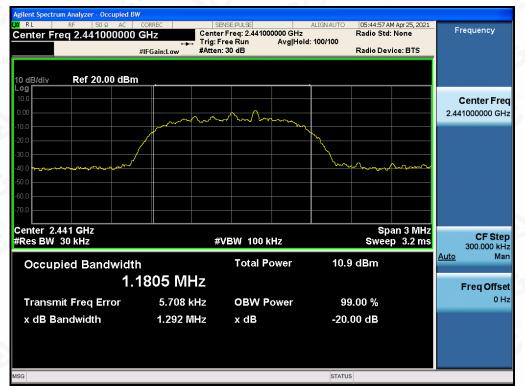


MEASURE	MENT RESULT FOR II /4-D	OQPSK MODULATIC	N
Angliaghta Limita		Measurement Resu	lt
Applicable Limits	Test Data	(MHz)	Criteria
	Low Channel	1.293	PASS
N/A	Middle Channel	1.292	PASS
	High Channel	1.295	PASS

#### TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

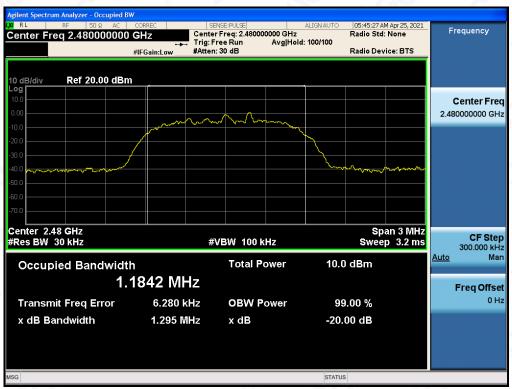


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#### TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

#### TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

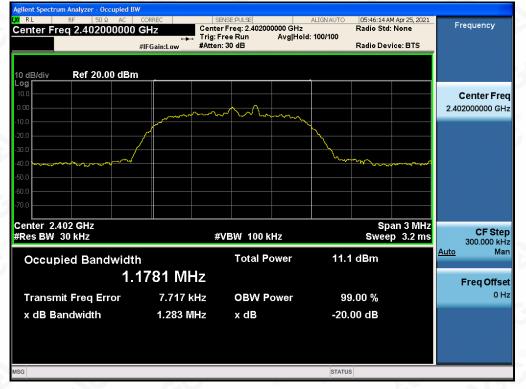


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MEASURI	EMENT RESULT FOR 8	B-DPSK MODULATION	
Applicable Limite		Measurement Resu	lt
Applicable Limits	Test Da	ata (MHz)	Criteria
	Low Channel	1.283	PASS
N/A	Middle Channel	1.290	PASS
	High Channel	1.287	PASS

#### 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

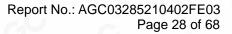
#### 9.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6

#### 9.4. LIMITS AND MEASUREMENT RESULT

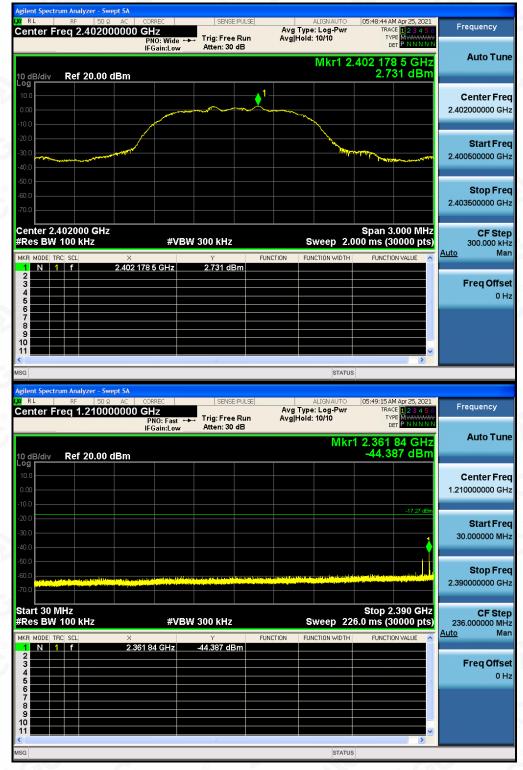
LIMITS AND MEAS	SUREMENT RESULT	
	Measurement Res	ult
Applicable Limits	Test Data	Criteria
In any 100 kHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency	At least -20dBc than the limit Specified on the BOTTOM Channel	PASS
power 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 8DPSK MODULATION IN LOW CHANNEL



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#### Report No.: AGC03285210402FE03 Page 29 of 68





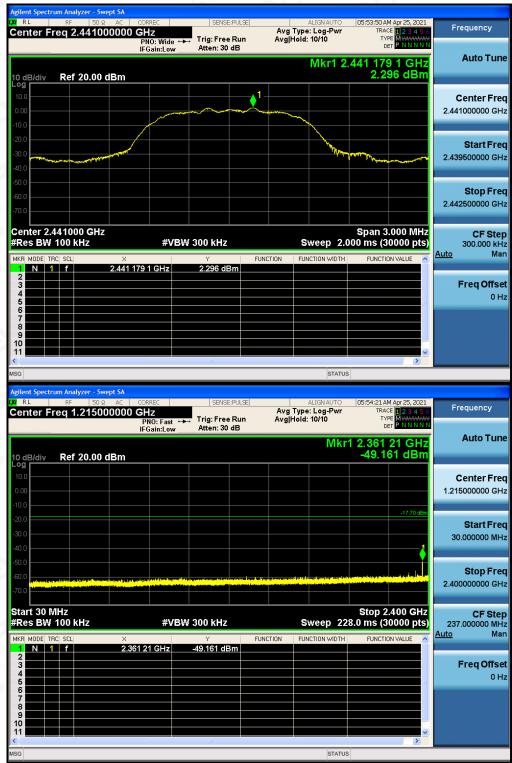
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 Tel: +86-755 2523 4088
 E-mail: agc@agc-cert.com



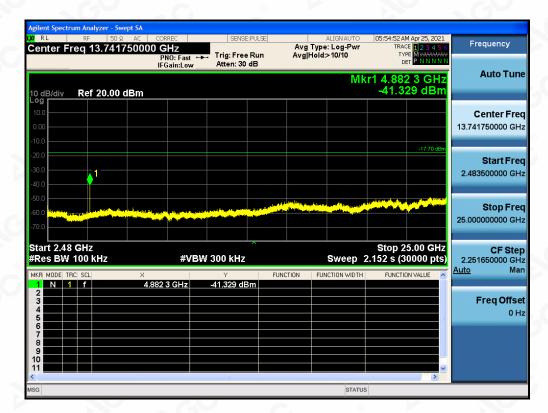


#### TEST PLOT OF OUT OF BAND EMISSIONS OF 8DPSK MODULATION IN MIDDLE CHANNEL

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#### Report No.: AGC03285210402FE03 Page 31 of 68





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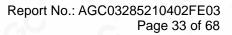
 Tel: +86-755 2523 4088
 E-mail: agc@agc-cert.com



gilent Spectrum Analyzer					
RL RF	50 Ω AC CORREC	SENSE:PULSE	ALIGN AUTO	05:56:14 AM Apr 25, 2021	Frequency
Center Freq 2.48	PNO: Wide +	Trig: Free Run	Avg Type: Log-Pwr Avg Hold: 10/10	TRACE 123456 TYPE MWWWW DET PNNNN	requercy
	IFGain:Low	Atten: 30 dB	BALL AND		Auto Tu
10 dB/div Ref 20.1	00 dBm		IVIKET 2	.480 180 2 GHz 1.578 dBm	
10 dB/div Ref 20.1					
10.0			1		Center Fr
0.00		- martine			2.48000000 G
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-40.0					
-60.0					Stop Fr
70.0					2.481500000 G
Center 2.480000 G		W 200 kH-	Swoon 3	Span 3.000 MHz	CF St
Res BW 100 kHz		W 300 kHz		000 ms (30000 pts)	300.000 k Auto M
MKR MODE TRC SCL	× 2.480 180 2 GHz	۲ F 1.578 dBm	UNCTION FUNCTION WIDTH	FUNCTION VALUE	
2 3					Freq Offs
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6					
7 8					
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ISG			STATU	<b>S</b>	
· .	- Swept SA		STATU		
isg Agilent Spectrum Analyzer Ø R L RF	50 Ω AC CORREC	SENSE:PULSE	ALIGNAUTO	05:56:45 AM Apr 25, 2021	Frequency
isg Agilent Spectrum Analyzer Ø R L RF	50 Ω AC CORREC 5000000 GHz PN0: Fast •	▶ Trig: Free Run		05:56:45 AM Apr 25, 2021 TRACE	Frequency
isg Agilent Spectrum Analyzer Ø R L RF	50 Ω AC CORREC 50000000 GHz		ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10	05:56:45 AM Apr 25, 2021 TRACE 1 2 3 4 5 6 TYPE MUMMMM DET P NNNN N	
sg glient Spectrum Analyzer CRL RF Center Freq 1.21	50 Ω AC CORREC 50000000 GHz PNO: Fast + IFGain:Low	▶ Trig: Free Run	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10	05:56:45 AM Apr 25, 2021 TRACE 1 2 3 4 5 6 TYPE MANYAAN DET P NIMIN N 1 2.399 84 GHz	
isg igitent Spectrum Analyzer G RL RF Center Freq 1.21: Conter Freq 20.	50 Ω AC CORREC 50000000 GHz PNO: Fast + IFGain:Low	▶ Trig: Free Run	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10	05:56:45 AM Apr 25, 2021 TRACE 1 2 3 4 5 6 TYPE MUMMMM DET P NNNN N	
kgilent Spectrum Analyzer R RL RF Center Freq 1.21: 10 dB/div Ref 20.	50 Ω AC CORREC 50000000 GHz PNO: Fast + IFGain:Low	▶ Trig: Free Run	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10	05:56:45 AM Apr 25, 2021 TRACE 1 2 3 4 5 6 TYPE MANYANA DET P NIMIN N 1 2.399 84 GHz	Auto Tu Center Fr
Image: second	50 Ω AC CORREC 50000000 GHz PNO: Fast + IFGain:Low	▶ Trig: Free Run	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10	05:56:45 AM Apr 25, 2021 TRACE 1 2 3 4 5 6 TYPE MANYANA DET P NIMIN N 1 2.399 84 GHz	Auto Tu Center Fr
Image: second condition         Rs         Ref	50 Ω AC CORREC 50000000 GHz PNO: Fast + IFGain:Low	▶ Trig: Free Run	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10	05:56:45 AM Apr 25, 2021 TRACE 1 2 3 4 5 6 TYPE MANYANA DET P NIMIN N 1 2.399 84 GHz	Auto Tu Center Fr
Isig         RL         RE         RE         Center Freq 1.21         RE         I <thi< th=""></thi<>	50 Ω AC CORREC 50000000 GHz PNO: Fast + IFGain:Low	▶ Trig: Free Run	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10	05:56:45AM Apr 25,2021 TRACE 12 3:45 6 TYPE MUMANAN DET P NININN 1 2.399 84 GHz -49.096 dBm	Auto Tu Center Fr 1.215000000 G Start Fr
Kilent Spectrum Analyzer     Kilent Spectrum Analyzer     RL	50 Ω AC CORREC 50000000 GHz PNO: Fast + IFGain:Low	▶ Trig: Free Run	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10	05:56:45AM Apr 25,2021 TRACE 12 3:45 6 TYPE MUMANAN DET P NININN 1 2.399 84 GHz -49.096 dBm	Auto Tu Center Fr 1.215000000 G Start Fr
Isig         RL         RE         RE         Center Freq 1.21         RE         I <thi< th=""></thi<>	50 Ω AC CORREC 50000000 GHz PNO: Fast + IFGain:Low	▶ Trig: Free Run	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10	05:56:45AM Apr 25,2021 TRACE 12 3:45 6 TYPE MUMANAN DET P NININN 1 2.399 84 GHz -49.096 dBm	Auto Tu Center Fr 1.21500000 G Start Fr
kgilent Spectrum Analyzer. kgilent Spectrum Analyzer. Center Freq 1.21: Center Freq 1.21: Center Greg 1.20: Conter Freq 1.21: Conter Freq 1	50 Ω AC CORREC 50000000 GHz PNO: Fast + IFGain:Low	▶ Trig: Free Run	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10	05:56:45AM Apr 25,2021 TRACE 12 3:45 6 TYPE MUMANAN DET P NININN 1 2.399 84 GHz -49.096 dBm	Auto Tu Center Fr 1.21500000 G Start Fr 30.000000 M Stop Fr
Image: second	50 Ω AC CORREC 50000000 GHz PNO: Fast + IFGain:Low	▶ Trig: Free Run	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10	05:56:45AM Apr 25,2021 TRACE 12 3:45 6 TYPE MUMANAN DET P NININN 1 2.399 84 GHz -49.096 dBm	Auto Tu Center Fr 1.21500000 G Start Fr 30.000000 M Stop Fr
Image: second	50 Ω AC CORREC 50000000 GHz PNO: Fast + IFGain:Low	▶ Trig: Free Run	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10	05:56:45 AM Apr 25, 2021 TRACE 1 2 3 4 5 6 TYPE MUNANNA DT P NUNIN 1 2.399 84 GHz -49.096 dBm -10.42 dBm -10.42 dBm	Auto Tu Center Fr 1.215000000 G Start Fr 30.000000 M Stop Fr 2.400000000 G
Isig         Ref         Ref <td>50 Q AC CORREC 5000000 GHz PRO: Fast IFGain:Low 00 dBm</td> <td>Trig: Free Run Atten: 30 dB</td> <td>ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 10/10 MKr</td> <td>05:56:45 AM Apr 25, 2021 TRACE 1 2 3 4 5 6 TYPE M MANANANA DET P NININ 1 2.399 84 GHz -49.096 dBm -49.096 dBm -18.42 dbm 1 -18.42 dbm 1 -18.42 dbm 1 -18.42 dbm</td> <td>Auto Tu Center Fr 1.215000000 G Start Fr 30.000000 M Stop Fr 2.400000000 G</td>	50 Q AC CORREC 5000000 GHz PRO: Fast IFGain:Low 00 dBm	Trig: Free Run Atten: 30 dB	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 10/10 MKr	05:56:45 AM Apr 25, 2021 TRACE 1 2 3 4 5 6 TYPE M MANANANA DET P NININ 1 2.399 84 GHz -49.096 dBm -49.096 dBm -18.42 dbm 1 -18.42 dbm 1 -18.42 dbm 1 -18.42 dbm	Auto Tu Center Fr 1.215000000 G Start Fr 30.000000 M Stop Fr 2.400000000 G
Image: second	50 Q AC   CORREC 5000000 GHZ PN0: Fast - IFGain:Low 00 dBm	Trig: Free Run Atten: 30 dB	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 10/10 Mkr	05:56:45 AM Apr 25, 2021 TRACE 1 2 3 4 5 6 TYPE MUNANNA DT P NUNIN 1 2.399 84 GHz -49.096 dBm -10.42 dBm	Auto Tu Center Fr 1.215000000 G Start Fr 30.000000 M Stop Fr 2.400000000 G
Isig         Ref         Ref <td>50 Q AC CORREC 5000000 GHz PRO: Fast IFGain:Low 00 dBm</td> <td>Trig: Free Run Atten: 30 dB</td> <td>ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 10/10 Mkr</td> <td>S 05:56:45 AM Apr 25, 2021 TRACE 1 2 3 4 5 6 TYPE MUNICAL DEF MUNICAL 1 2.399 84 GHz -49.096 dBm -19.42 dBm</td> <td>Auto Tu Center Fr 1.215000000 G Start Fr 30.000000 M Stop Fr 2.400000000 G</td>	50 Q AC CORREC 5000000 GHz PRO: Fast IFGain:Low 00 dBm	Trig: Free Run Atten: 30 dB	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 10/10 Mkr	S 05:56:45 AM Apr 25, 2021 TRACE 1 2 3 4 5 6 TYPE MUNICAL DEF MUNICAL 1 2.399 84 GHz -49.096 dBm -19.42 dBm	Auto Tu Center Fr 1.215000000 G Start Fr 30.000000 M Stop Fr 2.400000000 G
Image: second	SO Q AC CORREC 5000000 GHZ PRO: Fast IFGain:Low 00 dBm 00 dBm	Trig: Free Run Atten: 30 dB	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 10/10 Mkr	S 05:56:45 AM Apr 25, 2021 TRACE 1 2 3 4 5 6 TYPE MUNICAL DEF MUNICAL 1 2.399 84 GHz -49.096 dBm -19.42 dBm	Auto Tu Center Fr 1.215000000 G Start Fr 30.000000 M Stop Fr 2.400000000 G CF St 237.000000 M Auto M
Image: second	SO Q AC CORREC 5000000 GHZ PRO: Fast IFGain:Low 00 dBm 00	Trig: Free Run Atten: 30 dB	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 10/10 Mkr	S 05:56:45 AM Apr 25, 2021 TRACE 1 2 3 4 5 6 TYPE MUNICAL DEF MUNICAL 1 2.399 84 GHz -49.096 dBm -19.42 dBm	Auto Tu           Center Fr           1.215000000 G           Start Fr           30.00000 M           Stop Fr           2.400000000 G           CF St           237.000000 M           Auto           Auto Tu           Treq Offs
Image: second	SO Q AC CORREC 5000000 GHZ PRO: Fast IFGain:Low 00 dBm 00	Trig: Free Run Atten: 30 dB	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 10/10 Mkr	S 05:56:45 AM Apr 25, 2021 TRACE 1 2 3 4 5 6 TYPE MUNICAL DEF MUNICAL 1 2.399 84 GHz -49.096 dBm -19.42 dBm	Auto Tu           Center Fr           1.215000000 G           Start Fr           30.00000 M           Stop Fr           2.400000000 G           CF St           237.000000 M           Auto           Auto Tu           Treq Offs
Agilent Spectrum Analyzer           Agilent Spectrum Analyzer           Center Freq 1.21           Center Freq 1.21           Conter Freq 1.21	SO Q AC CORREC 5000000 GHZ PRO: Fast IFGain:Low 00 dBm 00	Trig: Free Run Atten: 30 dB	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 10/10 Mkr	S 05:56:45 AM Apr 25, 2021 TRACE 1 2 3 4 5 6 TYPE MUNICAL DEF MUNICAL 1 2.399 84 GHz -49.096 dBm -19.42 dBm	Auto Tu           Center Fr           1.215000000 G           Start Fr           30.00000 M           Stop Fr           2.400000000 G           CF St           237.000000 M           Auto           Auto Tu           Treq Offs
Image: second	SO Q AC CORREC 5000000 GHZ PRO: Fast IFGain:Low 00 dBm 00	Trig: Free Run Atten: 30 dB	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 10/10 Mkr	S 05:56:45 AM Apr 25, 2021 TRACE 1 2 3 4 5 6 TYPE MUNICAL DEF MUNICAL 1 2.399 84 GHz -49.096 dBm -19.42 dBm	Auto Tu           Center Fr           1.215000000 G           Start Fr           30.000000 M           Stop Fr           2.400000000 G           CF Str           237.000000 M           Auto           Auto Tu           Freq Offs
Image: second	SO Q AC CORREC 5000000 GHZ PRO: Fast IFGain:Low 00 dBm 00	Trig: Free Run Atten: 30 dB	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 10/10 Mkr	S 05:56:45 AM Apr 25, 2021 TRACE 1 2 3 4 5 6 TYPE MUNICAL DEF MUNICAL 1 2.399 84 GHz -49.096 dBm -19.42 dBm	Auto Tur Center Fr 1.215000000 G Start Fr 30.000000 M Stop Fr 2.400000000 G

#### TEST PLOT OF OUT OF BAND EMISSIONS OF 8DPSK MODULATION IN HIGH CHANNEL

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Note: The 8DPSK modulation is the worst case and only those data recorded in the report.

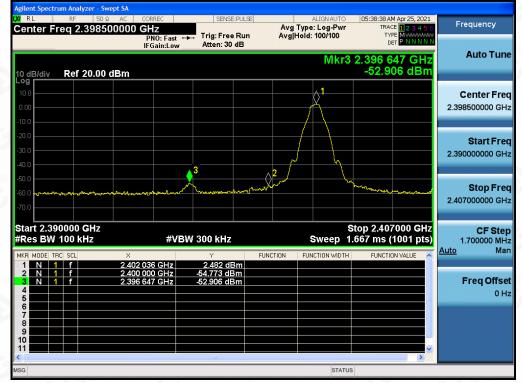
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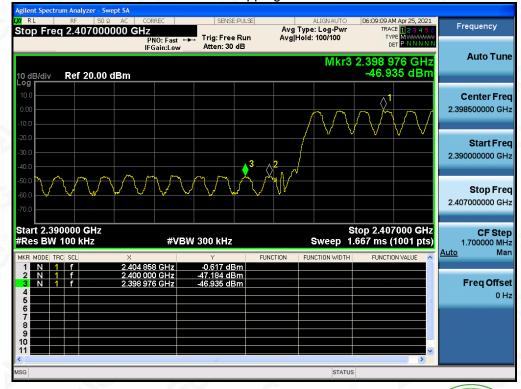
#### TEST RESULT FOR BAND EDGE

#### GFSK MODULATION IN LOW CHANNEL

Hopping off



Hopping on

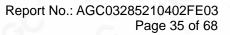


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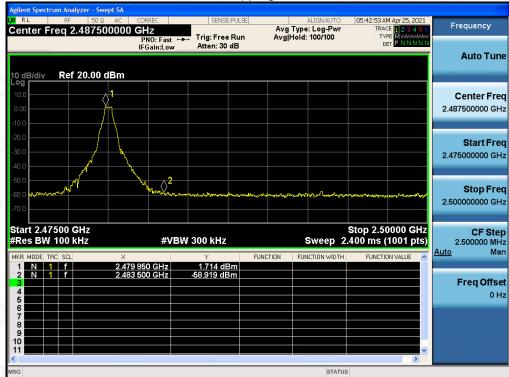
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 E-mail: agc@agc-cert.com



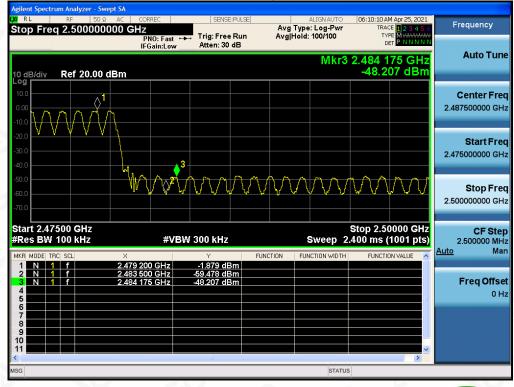




## GFSK MODULATION IN HIGH CHANNEL

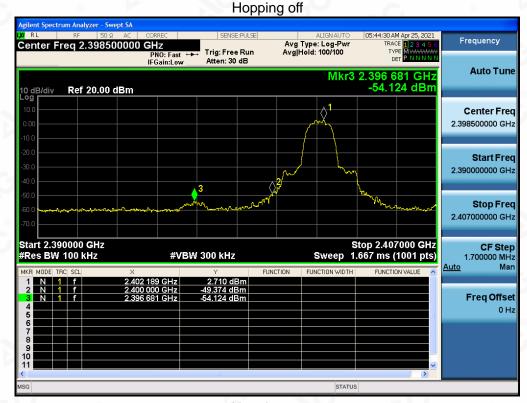
Hopping off

Hopping on



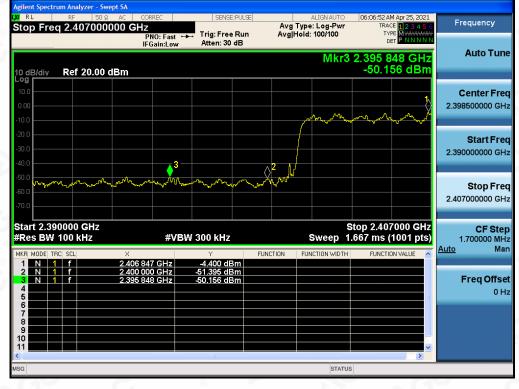
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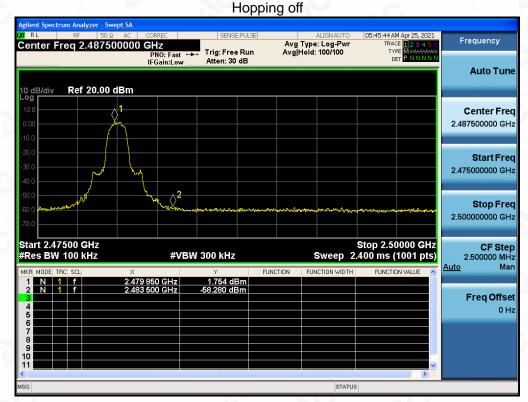
# $\pi$ /4-DQPSK MODULATION IN LOW CHANNEL

Hopping on



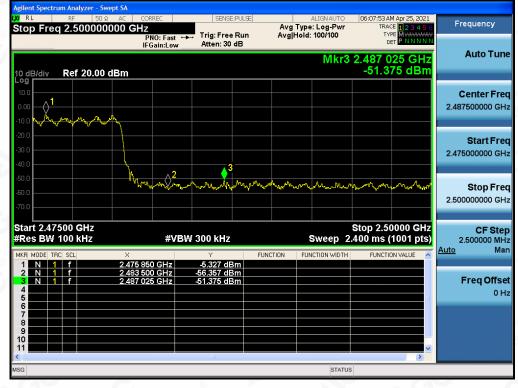
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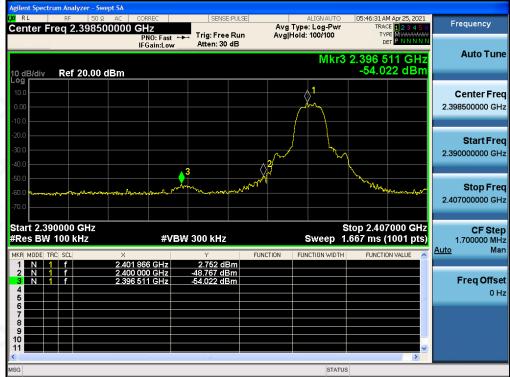
# $\pi$ /4-DQPSK MODULATION IN HIGH CHANNEL

Hopping on



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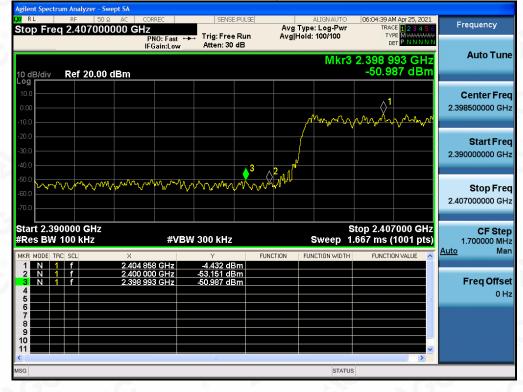




# 8-DPSK MODULATION IN LOW CHANNEL

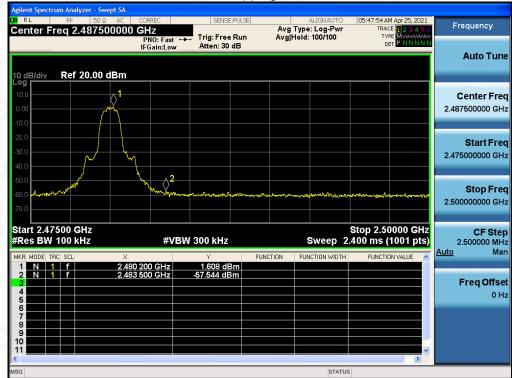
Hopping off

Hopping on



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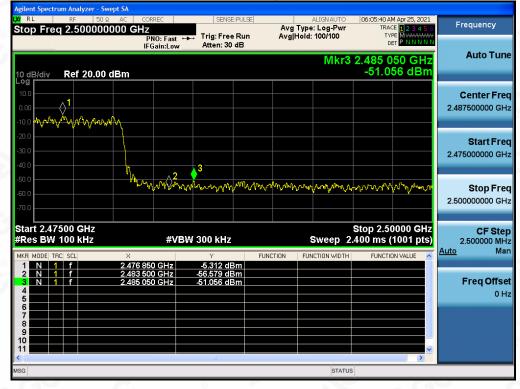




# 8-DPSK MODULATION IN HIGH CHANNEL

Hopping off

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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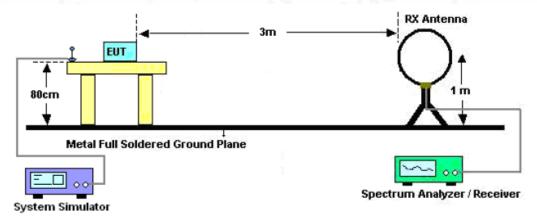
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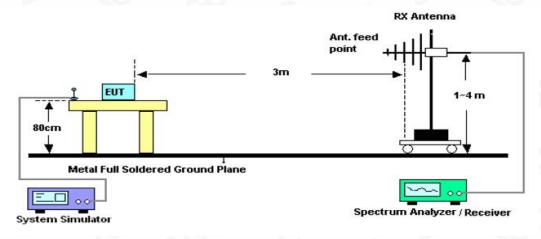


#### 10.2. TEST SETUP

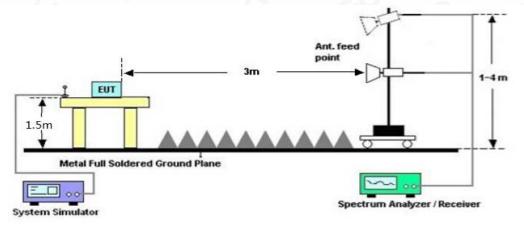
Radiated Emission Test-Setup Frequency Below 30MHz



## 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**

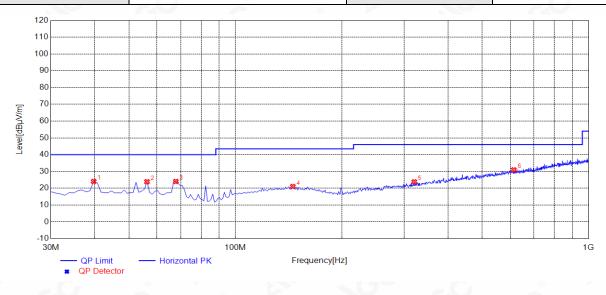
The amplitude of spurious emissions from 9kHz to 30MHz which are attenuated more than 20 dB below the permissible value need not be reported.

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

EUT	Bluetooth module	Model Name	FSC-BT825
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 7	Antenna	Horizontal



			(0.)				A	
NO.	Freq.	Level	Factor	Limit	Margin	Height	Angle	Polarity
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dB]	[cm]	[°]	Folanty
1	39.7000	24.07	11.86	40.00	15.93	100	190	Horizontal
2	56.1900	23.88	11.20	40.00	16.12	100	358	Horizontal
3	67.8300	24.04	9.59	40.00	15.96	100	17	Horizontal
4	145.4300	21.04	14.88	43.50	22.46	100	57	Horizontal
5	321.0000	23.82	16.73	46.00	22.18	100	96	Horizontal
6	613.9400	30.96	24.53	46.00	15.04	100	89	Horizontal

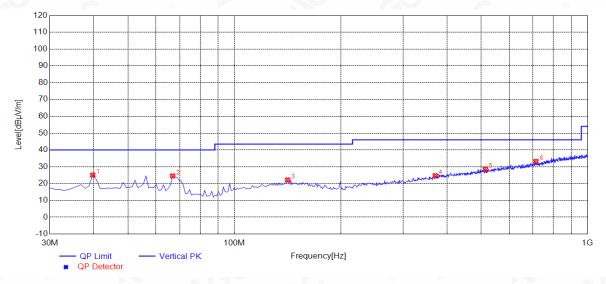
#### **RESULT: PASS**

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#### Report No.: AGC03285210402FE03 Page 45 of 68

EUT	Bluetooth module	Model Name	FSC-BT825
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 7	Antenna	Vertical



10.	Freq.	Level	Factor	Limit	Margin	Height	Angle	Polarity
VU.	[MHz]	[dBuV/m]	[dB]	[dBµV/m]	[dB]	[cm]	[°]	Polarity
1	39.7000	25.05	11.86	40.00	14.95	100	294	Vertical
2	66.8600	24.55	9.76	40.00	15.45	100	294	Vertical
3	141.5500	22.16	14.88	43.50	21.34	100	98	Vertical
4	370.4700	24.67	18.63	46.00	21.33	100	174	Vertical
5	514.0300	28.52	22.46	46.00	17.48	100	36	Vertical
6	713.8500	33.21	26.29	46.00	12.79	100	190	Vertical

#### **RESULT: PASS**

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

2. All test modes had been pre-tested. The mode 7 is the worst case and recorded in the report.

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# **RADIATED EMISSION ABOVE 1GHz**

EUT	Bluetooth module	Model Name	FSC-BT825
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 7	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Males Trees
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	- Value Type
4804.000	45.63	0.08	45.71	74	-28.29	peak 💿
4804.000	36.49	0.08	36.57	54	-17.43	AVG
7206.000	41.05	2.21	43.26	74	-30.74	peak
7206.000	33.72	2.21	35.93	54	-18.07	AVG
	20				60	
emark:			0			
actor = Anter	nna Factor + Cable	Loss – Pre-	amplifier.			

EUT	Bluetooth module	Model Name	FSC-BT825
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 7	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	- Value Type
4804.000	46.33	0.08	46.41	74	-27.59	peak
4804.000	36.83	0.08	36.91	54	-17.09	AVG
7206.000	42.47	2.21 💿	44.68	74	-29.32	peak
7206.000	32.71	2.21	34.92	54	-19.08	AVG
8		20	2.0			f

Factor = Antenna Factor + Cable Loss - Pre-amplifier

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#### Report No.: AGC03285210402FE03 Page 47 of 68

EUT	Bluetooth module	Model Name	FSC-BT825
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 8	Antenna	Horizontal

uV) (dB)	(dBµV/m)	(dBµV/m)	(dB)	- Value Type
91 0.14	46.05	74	-27.95	peak
79 0.14	36.93	54	-17.07	AVG
63 2.36	44.99	74	-29.01	peak
07 2.36	36.43	54	-17.57	AVG
		®		
			0	
	0.14         0.14           79         0.14           53         2.36	01         0.14         46.05           79         0.14         36.93           63         2.36         44.99	01         0.14         46.05         74           79         0.14         36.93         54           63         2.36         44.99         74	01         0.14         46.05         74         -27.95           79         0.14         36.93         54         -17.07           63         2.36         44.99         74         -29.01

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

EUT	Bluetooth module	Model Name	FSC-BT825
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 8	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Tara
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	- Value Type
4882.000	47.05	0.14	47.19	74	-26.81	peak
4882.000	37.16	0.14	37.3	54	-16.7	AVG
7323.000	44.58	2.36	46.94	74	-27.06	peak
7323.000	34.91	2.36	37.27	54	-16.73	AVG
		e.C	®			
				8		

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

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#### Report No.: AGC03285210402FE03 Page 48 of 68

EUT	Bluetooth module	Model Name	FSC-BT825
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 9	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	- Value Type
4960.000	46.22	0.22	46.44	74	-27.56	peak
4960.000	37.46	0.22	37.68	54	-16.32	AVG
7440.000	44.79	2.64	47.43	74	-26.57	peak
7440.000	34.58	2.64	37.22	54	-16.78	AVG
mark:			ar <sub>s</sub> oo		8	6

EUT	Bluetooth module	Model Name	FSC-BT825
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 9	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Tara
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	- Value Type
4960.000	48.46	0.22	48.68	74	-25.32	peak
4960.000	38.24	0.22	38.46	54	-15.54	AVG
7440.000	46.37	2.64	49.01	74	-24.99	peak
7440.000	35.68	2.64	38.32	54	-15.68	AVG
		C	0			
				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 8DPSK modulation is the worst case and recorded in the report.

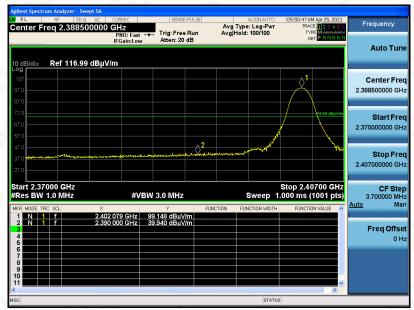
Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Stamp" is deemed to be invalid. Copying or excerpting portion of, or altering the content of the report is not permitted without the written of the report is not permitten of the report is not permitten of the report is not p Dedicated Inspection he test results apphorization of AG presented in the report apply only to the tested sample. Any objections to report issued by AGC should be submitted to AGC within 15da Bf he test report. Further enquiry of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com.



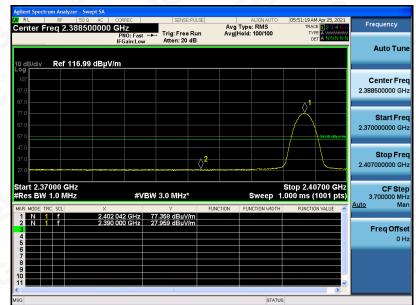
TEST RESOLUTION RESTRICTED BANDS REGOMENTERTS					
EUT	Bluetooth module	Model Name	FSC-BT825		
Temperature	25°C	Relative Humidity	55.4%		
Pressure	960hPa	Test Voltage	Normal Voltage		
Test Mode	Mode 7	Antenna	Horizontal		

#### TEST RESULT FOR RESTRICTED BANDS REQUIREMENTS

PK



AV



#### **RESULT: PASS**

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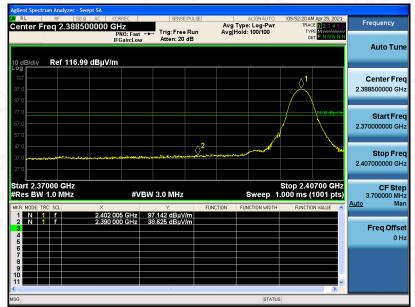
 Tel: +86-755 2523 4088
 E-mail: agc@agc-cert.com



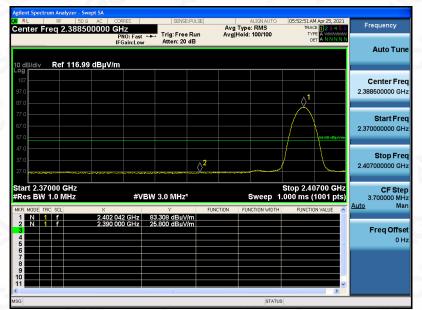
#### Report No.: AGC03285210402FE03 Page 50 of 68

EUT	Bluetooth module	Model Name	FSC-BT825
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 7	Antenna	Vertical

PK



AV



**RESULT: PASS** 

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