

FCC Test Report

Report No.: AGC05907200902FE03

APPLICATION PURPOSE:Original EquipmentPRODUCT DESIGNATION:SmartMike SilverBRAND NAME:SABINETEKMODEL NAME:S620APPLICANT:Sabine Technologies Co., ltdDATE OF ISSUE:Sep. 23,2020STANDARD(S):FCC Part 15.247	FCC ID	: 2AK54-SABINE-S620
BRAND NAME: SABINETEKMODEL NAME: S620APPLICANT: Sabine Technologies Co., ltdDATE OF ISSUE: Sep. 23,2020	APPLICATION PURPOSE	: Original Equipment
MODEL NAME: \$620APPLICANT: \$abine Technologies Co., ltdDATE OF ISSUE: \$cp. 23,2020	PRODUCT DESIGNATION	: SmartMike Silver
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	APPLICANT	: Sabine Technologies Co., ltd
STANDARD(S) : FCC Part 15.247	DATE OF ISSUE	: Sep. 23,2020
	STANDARD(S)	: FCC Part 15.247
REPORT VERSION : V1.0	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	. /	Sep. 23,2020	Valid	Initial Release

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1. VERIFICATION OF CONFORMITY

Applicant	Sabine Technologies Co., Itd	
Address	Keshi Building, Information Road, Haidian District, Beijing	
Manufacturer	Beijing Sabine Technology CO.,LTD.	
Address	Keshi Building, Information Road, Haidian District, Beijing	
Factory	New Hantat Technology Ltd.	
Address	Room102,Building 18 and 19, Cuigang Industrial Zone 2,Huaide Community, Fuyong Street, Bao'an District, Shenzhen, China.	
Product Designation	SmartMike Silver	
Brand Name	SABINETEK	
Test Model	S620	
Date of test	Sep. 09,2020 to Sep. 23,2020	
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

Then Hurry

Thea Huang Project Engineer

Sep. 23,2020

Max Zhank

Reviewed By

Max Zhang Reviewer

Sep. 23,2020

Approved By

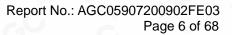
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Forrest Lei Authorized Officer

Sep. 23,2020

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2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

The EUT is designed as "SmartMike Silver". It is designed by way of utilizing the GFSK, π /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	5.149dBm (Max)
Bluetooth Version	V 4.0
Modulation	BR ⊠GFSK, EDR ⊠π /4-DQPSK, ⊠8DPSK BLE □GFSK 1Mbps □GFSK 2Mbps
Number of channels	79
Hardware Version	7.5
Software Version	0.4.33
Antenna Designation	Ceramic Antenna (Comply with requirements of the FCC part 15.203)
Antenna Gain	1.5dBi
Power Supply	DC 3.7V by battery or DC 5V by adapter

Note: 9. The EUT doesn't support BLE.

2.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency
	0	2402 MHz
	-C 1	2403 MHz
~ C _ C	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, 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. The second connection will be established. A new hopping sequence is generated. Due to the fact the

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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: 2AK54-SABINE-S620 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 = ±3.2 dB
- Uncertainty of Radiated Emission below 1GHz, Uc = ±3.9 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

BlueTest3		- 0
est Commands —	-Test Arguments	
PAUSE	LO Freq. (MOHz) [2402]	Clos
RADIO STATUS RADIO STATUS FULL		- Help
TESTART	Power (Ext, Int) 255 50	
TXDATAI		Execut
TXDATA2		
TXDATA3 TXDATA4		Cold Re:
·		Warm Res
C:\Users\DELL\AppData\Lo	for f Display : • Standard sal\QTI Ltd\BlueTest3\testapplog.txt	C BER
Radio Test CFG FHT success Radio Test TUDATA success Radio Test CFG FHT success Radio Test CFG FHT success Radio Test TUDATAC success Radio Test TUDATAC success Radio Test TUDATAC success Radio Test TUDATAC success Radio Test CFG FHT success		

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5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM

Radiated Emission Configure:

EUT

Conducted Emission Configure:

EUT	AE

5.2. EQUIPMENT USED IN TESTED SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	SmartMike Silver	S620	2AK54-SABINE-S620	EUT
2	Adapter	TY0500100E1MN	N/A	AE
3	Charger line	G258	N/A	AE
4	control board	EPS-35-3.3	DC 3.3V	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	Not applicable

Note: The EUT is powered by battery. The EUT can not use the BT function with charging

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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 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. 12, 2019	Dec. 11, 2020
2.4GHz Filter	EM Electronics	2400-2500MHz	N/A	Mar. 23, 2020	Mar. 22, 2022
Attenuator	ZHINAN	E-002	N/A	N/A	N/A
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep. 09, 2019	Sep. 08, 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	Oct. 15, 2019	Oct. 16, 2020
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

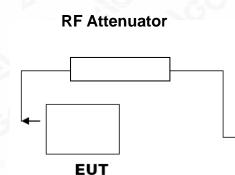
For peak power test:

- 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.

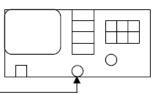
Allow trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power, after any corrections for external attenuators and cables.

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 MEA FOR GFSK MOUI		
Frequency (GHz)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.402	1.907	30	Pass
2.441	3.701	30	Pass
2.480	5.149	30	Pass

CH0



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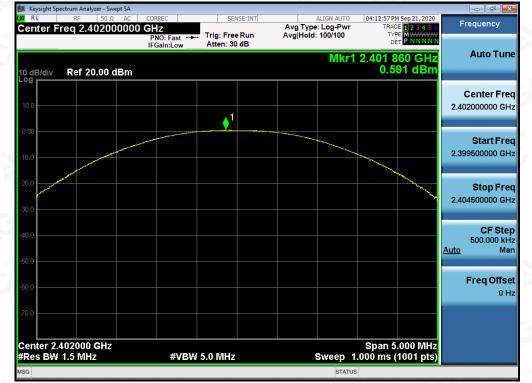
CH78

🎉 Keysight Spectrum Analyzer - Swept SA				
ເΣ RL RF 50 Ω AC Center Freq 2.480000000		ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 100/100	04:10:17 PM Sep 21, 2020 TRACE 1 2 3 4 5 6 TYPE MWWWW	Frequency
	PNO: Fast +++ Trig: Free Run IFGain:Low Atten: 30 dB		DET PNNNN	Auto Tune
10 dB/div Ref 20.00 dBm		Mkr1	2.479 795 GHz 5.149 dBm	Auto Tulle
10.0	↓ 1			Center Fred 2.480000000 GHz
-10.0				Start Fred 2.477500000 GH:
-20.0				Stop Fred 2.482500000 GH:
-40.0				CF Step 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		.000 ms (1001 pts)	
MSG		STATU	3	

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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	0.591	21	Pass			
2.441	3.018	21	Pass			
2.480	4.550	21	Pass			



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Frequency

Auto Tune

Center Freq 2.441000000 GHz

Ма

0 Hz



10 dB/div

CH39 Avg Type: Log-Pwr Avg|Hold: 100/100 Center Freq 2.441000000 GHz Trig: Free Run Atten: 30 dB PNO: Fast IFGain:Low Mkr1 2.440 880 GHz 3.018 dBm Ref 20.00 dBm •



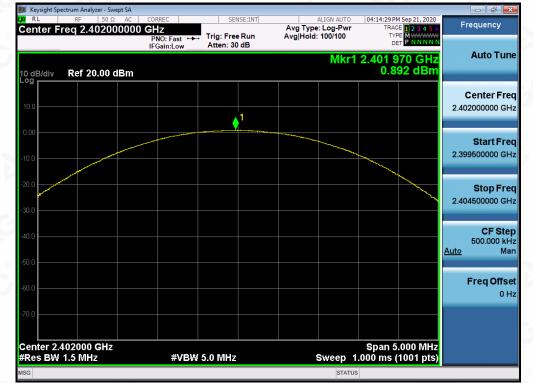
CH78

🚺 Keysight Spectrum Analyzer - Swept SA				
RL RF 50 Ω AC Center Freq 2.480000000	CORREC SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	04:13:46 PM Sep 21, 2020 TRACE 1 2 3 4 5 6	Frequency
	PNO: Fast +++ Trig: Free Run IFGain:Low Atten: 30 dB	Avg Hold: 100/100	DET P NNNN	
	in Guilleon	Mkr1	2.479 880 GHz	Auto Tune
10 dB/div Ref 20.00 dBm			4.550 dBm	
				Center Freq
10.0	1			2.480000000 GHz
0.00				Start Freq
-10.0				2.477500000 GHz
and the second sec			and the second second	
-20.0				Stop Freq
-30.0				2.482500000 GHz
-30.0				
-40.0				CF Step 500.000 kHz
				Auto Man
-50.0				
-60.0				Freq Offset
				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		

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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	0.892	21	Pass			
2.441	3.179	21	Pass			
2.480	4.685	21	Pass			



CH0

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Report No.: AGC05907200902FE03 Page 19 of 68

Frequency

Auto Tune

Center Freq



Ref 20.00 dBm

10 dB/div

CH39 NSE:INT Avg Type: Log-Pwr Avg|Hold: 100/100 Center Freq 2.441000000 GHz Trig: Free Run Atten: 30 dB PNO: Fast IFGain:Low Mkr1 2.440 920 GHz 3.179 dBm



CH78

🚺 Keysight Spe	ectrum Analyzer - Swept SA RF 50 Ω AC	CORREC	SENSE:INT	ALTCH AUT	04:15:21 PM Sep 21, 2020	
	req 2.480000000	GHz		ALIGN AUT Avg Type: Log-Pv	Vr TRACE 1 2 3 4 5 6	Frequency
		PNO: Fast ++ IFGain:Low	Trig: Free Run Atten: 30 dB	Avg Hold: 100/100		
				Mk	r1 2.480 020 GHz	Auto Tune
10 dB/div Log	Ref 20.00 dBm				4.685 dBm	
						Center Freq
10.0			1			2.480000000 GHz
0.00						
0.00						Start Freq
-10.0	Server and a server and a server a s				_	2.477500000 GHz
and the second s						
-20.0						Stop Freq
-30.0						2.482500000 GHz
						CF Step
-40.0						500.000 kHz
-50.0						<u>Auto</u> Mar
						Freq Offset
-60.0						0 Hz
-70.0						
Center 2	80000 GHz				Span 5.000 MHz	
#Res BW		#VBW	/ 5.0 MHz	Sweep	1.000 ms (1001 pts)	
MSG					TUS	

Compliances Any report having not been signed by authorized approver, or having been altered without authorization, or having not been stamped by the Bedicated Perton 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 AGC 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 issues of Value authorization of validity or verification of the test report should be addressed to AGC by agc@agc-cert.com. g/Inspection The test results Bf he test report.

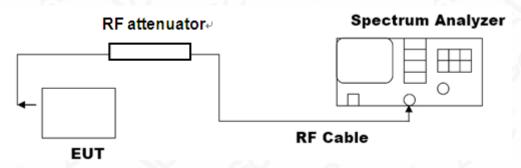


8. 20DB BANDWIDTH

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						
Appliachte Limite		Measurement Result				
Applicable Limits	Test Data	Criteria				
	Low Channel	0.943	PASS			
N/A	Middle Channel	0.939	PASS			
	High Channel	0.936	PASS			

04:08:40 PM Sep 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> 9.65 dBm **Occupied Bandwidth Total Power** 861.21 kHz Freq Offset 0 Hz 2.654 kHz **Transmit Freq Error OBW Power** 99.00 % 942.8 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					
Annliachta Limita		Measurement Resu	lt		
Applicable Limits	Test Data	Test Data (MHz)			
N/A	Low Channel	1.233	PASS		
	Middle Channel	1.233	PASS		
	High Channel	1.236	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

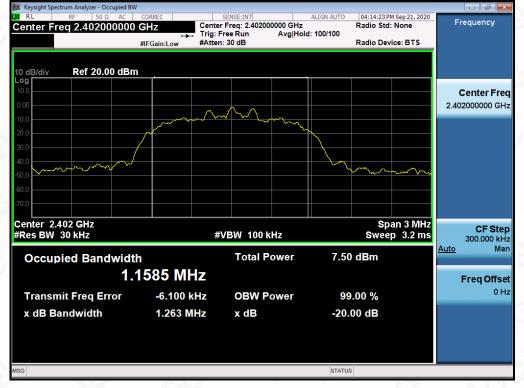


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MEASUREMENT RESULT FOR 8-DPSK MODULATION						
Measurement Result						
Applicable Limits	Test Da	Test Data (MHz)				
	Low Channel	1.263	PASS			
N/A	Middle Channel	1.265	PASS			
	High Channel	1.267	PASS			

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

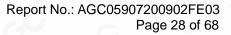
9.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6

9.4. LIMITS AND MEASUREMENT RESULT

LIMITS AND MEASUREMENT RESULT					
Annlinghig Limite	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.: AGC05907200902FE03 Page 29 of 68



🎉 Keysight Sp	ectrum Analy	zer - Swept SA								
LXI RL	RF	50 Ω AC			SENSE:INT	A T.	ALIGN AUTO		M Sep 21, 2020	Frequency
Center F	req 13.	741750	DUU GHZ PNO: Fa IFGain:L	St Prese	ree Run 30 dB		id: 10/10	TYI DI		Auto Tune
10 dB/div Log	Ref 2	0.00 dBn	n				Mk		78GHz 00dBm	
10.0 0.00										Center Freq 13.741750000 GHz
-20.0 -30.0 -40.0 1									-18.27 dBm	Start Freq 2.483500000 GHz
-50.0 -60.0										Stop Freq 25.000000000 GHz
Start 2.48 #Res BW	100 kH		x	VBW 300 kH	FU		Sweep 2	2.152 s (3	5.00 GHz 0000 pts) DN VALUE	CF Step 2.251650000 GHz <u>Auto</u> Man
1 N 2 3 4 5 6	1 f		2.557 8 GH	z -46.800	dBm					Freq Offset 0 Hz
7 8 9 10 11									-	
MSG				m			STATUS	3	•	

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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
 Web: http://cn.agc-cert.com/



Keysight Spectrum Analyzer - S RL RF 50	wept SA Ω AC CORREC	SENSE:INT	ALIGN AUTO	04:27:20 PM Sep 21, 2020	_ @ <u>×</u>
Center Freq 2.4410	000000 GHz PNO: Wide	Trig: Free Run	Avg Type: Log-Pwr Avg Hold: 10/10	TRACE 1 2 3 4 5 6 TYPE M DET P NNNN	Frequency
	IFGain:Low	Atten: 30 dB		DET	A
			Mkr1 2	.441 164 3 GHz	Auto Tune
10 dB/div Ref 20.00	dBm			3.683 dBm	
10.0		+	1		Center Free
0.00					2.441000000 GHz
-10.0					
-20.0					Start Fred
-30.0				and the second s	2.439500000 GHz
-40.0					
-50.0					Stop Free
-60.0					2.442500000 GHz
-70.0					
Center 2.441000 GH:				Span 3.000 MHz	CF Step
#Res BW 100 kHz		W 300 kHz	· · · · ·	000 ms (30000 pts)	300.000 kHz <u>Auto</u> Mar
MKR MODE TRC SCL	× 2.441 164 3 GHz	Y 3.683 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	
2 3					Freq Offset
4					0 Hz
6					
7 8					
9 10					
11					
MSG			STATU	S	
🎉 Keysight Spectrum Analyzer - S	wept SA				
Center Freq 1.2150		SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	04:27:29 PM Sep 21, 2020 TRACE 1 2 3 4 5 6	Frequency
	PNO: Fast IFGain:Low	Trig: Free Run Atten: 30 dB	Avg Hold: 10/10		
	ii Guint.Eow		Mkr	1 2.285 05 GHz	Auto Tune
10 dB/div Ref 20.00	dBm			-54.209 dBm	
Log 10.0					Conton From
0.00					Center Freq 1.215000000 GHz
-10.0					
-20.0				-16.32 dBm	Otert Free
-30.0					Start Freq 30.000000 MHz
-40.0					
-50.0					Stop Error
-60.0	Colormale could a sector of the defines monthly				Stop Fred 2.400000000 GHz
-70.0 100 -	Mala Million and an also as a second shall be a first shall be				
Start 30 MHz				Stop 2.400 GHz	CF Step
#Res BW 100 kHz	#VE	W 300 kHz	Sweep 22	28.0 ms (30000 pts)	237.000000 MHz
MKR MODE TRC SCL	× 2.285 05 GHz	Y	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Mar
2	2.285 05 GHZ	-54.209 dBm			Freq Offset
3 4					0 Hz
5				E	511
7					
9					
				•	
MSG			STATU	s	

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

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Report No.: AGC05907200902FE03 Page 31 of 68



🊺 Key	sight Spe	ectrum /	Analyzer - S	wept SA									
L <mark>XI</mark> RL		RF			CORREC		SE	NSE:INT	A	ALIGN AUTO		M Sep 21, 2020 CE 1 2 3 4 5 6	Frequency
Cen		req	13.741	7500	DO GHz PNO: I IFGain:	ast ↔	Trig: Fre Atten: 30			oid: 10/10	TY D		Auto Tune
10 dE Log	3/div	Re	f 20.00	dBm						M		6 8 GHz 23 dBm	
10.0 0.00 -10.0													Center Freq 13.741750000 GHz
-20.0 -30.0 -40.0	1_											-16.32 dBm	Start Freq 2.483500000 GHz
-50.0 -60.0 -70.0													Stop Freq 25.000000000 GHz
#Re:	t 2.48 5 BW	100	kHz	X		#VBW	/ 300 kHz Y			Sweep	2.152 s (3	5.00 GHz 0000 pts)	CF Step 2.251650000 GHz <u>Auto</u> Man
2 3 4 5	N 1	f		2	2.596 8 GI	Hz	-48.123 dl	Bm				E	Freq Offset 0 Hz
6 7 8 9 10													
							III					E F	
MSG										STATU	5		

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 Attestation of Global Compliance(Shenzhen)Co., Ltd

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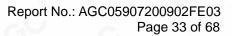
 Tel: +86-755 2523 4088
 E-mail: agc@agc-cert.com



RL RF 50	Ω AC CORREC	SENSE:INT	ALIGN AUTO	04:28:47 PM Sep 21, 2020	
enter Freq 2.4800		Trin Free Day	Avg Type: Log-Pwr Avg Hold: 10/10	TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P NNNNN	Frequency
dB/div Ref 20.00		Atten: 30 dB	Mkr1 2	480 164 0 GHz 5.200 dBm	Auto Tu
			1		Center Fr 2.480000000 G
					Start F 2.478500000 (
o o					Stop F 2.481500000
enter 2.480000 GH tes BW 100 kHz		300 kHz	Sweep 2.0	Span 3.000 MHz 100 ms (30000 pts)	CF S 300.000
MODE TRC SCL 1 N 1 f 2 3 4 4 5 5 5 5	× 2.480 164 0 GHz	Y 5.200 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	Auto M Freq Off
5 6 7 8 9 9				E	
				-	
			STATUS		
Keysight Spectrum Analyzer - S R L RF 50	Ω AC CORREC	SENSE:INT	ALIGN AUTO	04:28:57 PM Sep 21, 2020	
Keysight Spectrum Analyzer - S R L RF 50	Ω AC CORREC	Trin Free Day	Align Auto Avg Type: Log-Pwr Avg Hold: 10/10	04:28:57 PM Sep 21, 2020 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET PNNNN	Frequency
Keysight Spectrum Analyzer - S RL RF 50 enter Freq 1.2150	Ω AC CORREC 0000000 GHZ PNO: Fast IFGain:Low	→→ Trig: Free Run	Align Auto Avg Type: Log-Pwr Avg Hold: 10/10	04:28:57 PM Sep 21, 2020 TRACE 12 3 4 5 6	Frequency
Keysight Spectrum Analyzer - S RL RF 50 enter Freq 1.2150 dB/div Ref 20.00	Ω AC CORREC 0000000 GHZ PNO: Fast IFGain:Low	→→ Trig: Free Run	Align Auto Avg Type: Log-Pwr Avg Hold: 10/10	04:28:57 PM Sep 21, 2020 TRACE 12 3:45 6 TYPE MWWWW DET PNNNN 1 2.324 00 GHz -53.580 dBm	Frequency Auto Tu Center F
dB/div Ref 20.00	Ω AC CORREC 0000000 GHZ PNO: Fast IFGain:Low	→→ Trig: Free Run	Align Auto Avg Type: Log-Pwr Avg Hold: 10/10	04:28:57 PM Sep 21, 2020 TRACE 2 3 4 5 6 TYPE WWWWWW DET P NNNNN 1 2.324 00 GHz	Frequency Auto Tr Center F 1.215000000 Start F
Rkysight Spectrum Analyzer - S RL RF 500 Ball RF 500 Ball Ref 20.00 Ball <td>Ω AC CORREC 0000000 GHZ PNO: Fast IFGain:Low</td> <td>Trig: Free Run Atten: 30 dB</td> <td>Align Auto Avg Type: Log-Pwr Avg Hold: 10/10</td> <td>04:28:57 PM Sep 21, 2020 TRACE 12 3:45 6 TYPE MWWWW DET PNNNN 1 2.324 00 GHz -53.580 dBm</td> <td>Frequency Auto Tr Center F 1.215000000 Start F 30.000000</td>	Ω AC CORREC 0000000 GHZ PNO: Fast IFGain:Low	Trig: Free Run Atten: 30 dB	Align Auto Avg Type: Log-Pwr Avg Hold: 10/10	04:28:57 PM Sep 21, 2020 TRACE 12 3:45 6 TYPE MWWWW DET PNNNN 1 2.324 00 GHz -53.580 dBm	Frequency Auto Tr Center F 1.215000000 Start F 30.000000
Keysight Spectrum Analyzer - S RL RF 500 enter Freq 1.2150 Ref 20.00 Ref 20.00 Image: Spectrum Analyzer - S Ref 20.00	A AC CORREC OD0000 GHz PNO: Fas IFGain:Low D dBm D dBm	Trig: Free Run Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10 MIKr	04:28:57 PM Sep 21, 2020 TRACE 1, 23 4, 5 6 TYPE 0 PT NYNYN 0 PT NYNYN N 1, 2, 3224, 00 GHz -53,580 dBm -14,80	Frequency Auto T Center F 1.215000000 Start F 30.000000 Stop F 2.400000000
Reysight Spectrum Analyzer - S RL RF S0 enter Freq 1.2150 o dE/div Ref 20.00 Og Colspan="2">Colspan="2" Colspan="2">Colspan="2" Colspan="2">Colspan="2" Colspan="2" Colspan="2" <td>A AC CORREC OD0000 GHz PNO: Fas IFGain:Low D dBm D dBm</td> <td>Trig: Free Run Atten: 30 dB</td> <td>ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10 MKr</td> <td>04:28:57 PM Sep 21, 2020 TRACE 1 23 45 6 TYPE MINIMUM 0 ET PHININUM 1 2.3224 00 GHz -53.580 dBm -14.90 dBm 1 2.324 00 GHz -14.90 dBm 1 2.324 00 GHz</td> <td>Frequency Auto Tr Center F 1.215000000 Start F 30.0000000 Stop F 2.400000000 CF S 237.000000</td>	A AC CORREC OD0000 GHz PNO: Fas IFGain:Low D dBm D dBm	Trig: Free Run Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10 MKr	04:28:57 PM Sep 21, 2020 TRACE 1 23 45 6 TYPE MINIMUM 0 ET PHININUM 1 2.3224 00 GHz -53.580 dBm -14.90 dBm 1 2.324 00 GHz -14.90 dBm 1 2.324 00 GHz	Frequency Auto Tr Center F 1.215000000 Start F 30.0000000 Stop F 2.400000000 CF S 237.000000
enter Freq 1.2150	A AC CORREC OD00000 GHZ PNO: Fast IFGain:Low D dBm D dBm Hot of any age to the field of the of any age to the of a set to the field of the of a set to the of a set to	Trig: Free Run Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10 MIKr	04:28:57 PM Sep 21, 2020 TRACE 1, 23 4, 5 6 TYPE 0 PT NYNYN 0 PT NYNYN N 1, 2, 3224, 00 GHz -53,580 dBm -14,80	Frequency Auto Tr Center F 1.215000000 f Start F 30.000000 f Stop F 2.400000000 f CF S 237.000000 f Auto Freq Off
Reysight Spectrum Analyzer - S RL RF ISO Oenter Freq 1.2150 Od B/div Ref 20.00 Og Image: Spectrum Analyzer - S Od B/div Ref 20.00 Og Image: Spectrum Analyzer - S Od B/div Ref 20.00 Og Image: Spectrum Analyzer - S Op (Image: Spectrum Analyzer - S Image: Spectrum Analyzer - S Op (Image: Spectrum Analyzer - S Image: Spectrum Analyzer - S Op (Image: Spectrum Analyzer - S Image: Spectrum Analyzer - S Image: Spectrum Analyzer - S Image: Spectrum Analyzer - S Image: Spectrum Analyzer - S Image: Spectrum Analyzer - S Image: Spectrum Analyzer - S Image: Spectrum Analyzer - S Image: Spectrum Analyzer - S Image: Spectrum Analyzer - S Image: Spectrum Analyzer - S Image: Spectrum Analyzer - S Image: Spectrum Analyzer - S Image: Spectrum Analyzer - S Image: Spectrum Analyzer - S Image: Spectrum Analyzer - S	A AC CORREC OD00000 GHZ PNO: Fast IFGain:Low D dBm D dBm Hot of any age to the field of the of any age to the of a set to the field of the of a set to the of a set to	Trig: Free Run Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 10/10 MIKr	04:28:57 PM Sep 21, 2020 TRACE 1, 23 4, 5 6 TPEE 1, 23 4, 5 6 TPEE 1, 23 4, 5 6 TPEE 1, 24 5, 6 TPEE 1, 24 5, 6 TPEE 1, 24 5, 6 TPEE 1, 25 5, 25 6, 25 7, 25	Auto Tu Center Fi 1.215000000 0 Start Fi 30.000000 N Stop Fi 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 🛛 🕞 🐼															
(X) RL	or Er	RF)Ω Α(IC COR			SEN	NSE:INT	Ava		ALIGN AUTO		M Sep 21, 2020		Frequency
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		_		_	IFG	Gain:Low		Atten: 30	Jab							Auto Tune
												MKr		1 0 GHz 45 dBm		, lace 1 and
10 dB. Log r	/div	Re	f 20.00	0 dBr	m								-40.0	45 UBM		
10.0																Center Freq
0.00 -															13.7	750000000 GHz
-10.0 -																
-20.0														-14.80 dBm		
				٢												Start Freq
-30.0 -															2.5	500000000 GHz
-40.0 -														<u> </u>		
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Note: The GFSK modulation is the worst case and only those data recorded in the report.

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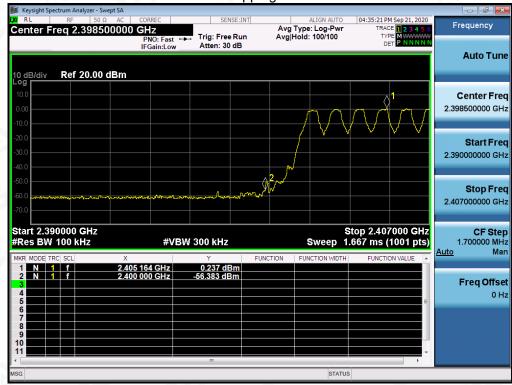


GFSK MODULATION IN LOW CHANNEL Hopping off

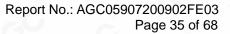
TEST RESULT FOR BAND EDGE



Hopping on



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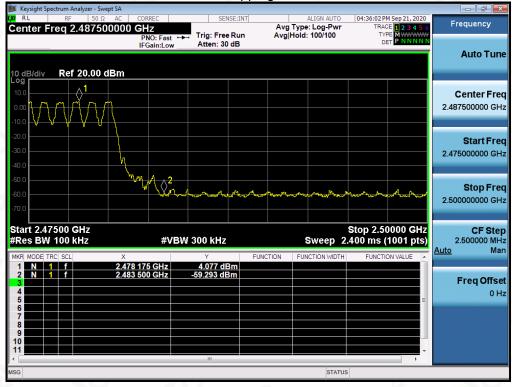




GFSK MODULATION IN HIGH CHANNEL

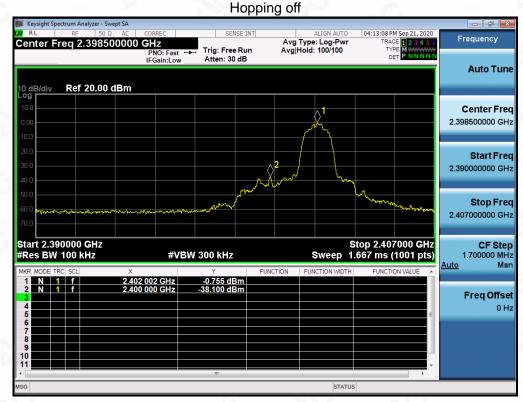
Hopping off

Hopping on



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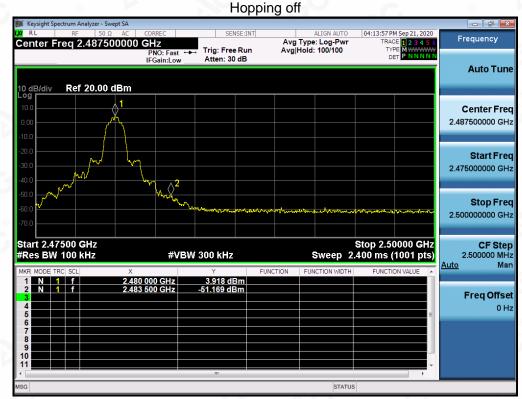
π /4-DQPSK MODULATION IN LOW CHANNEL

Hopping on



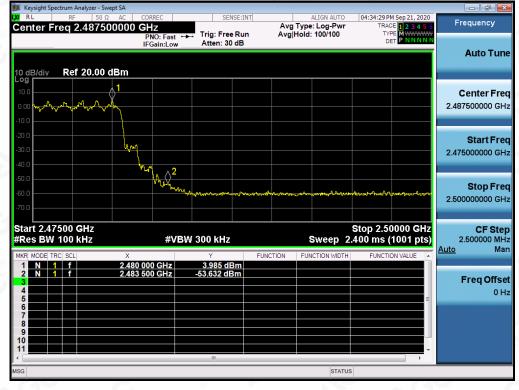
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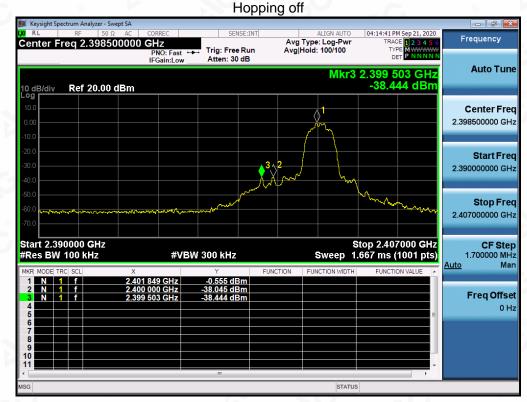
π /4-DQPSK MODULATION IN HIGH CHANNEL

Hopping on



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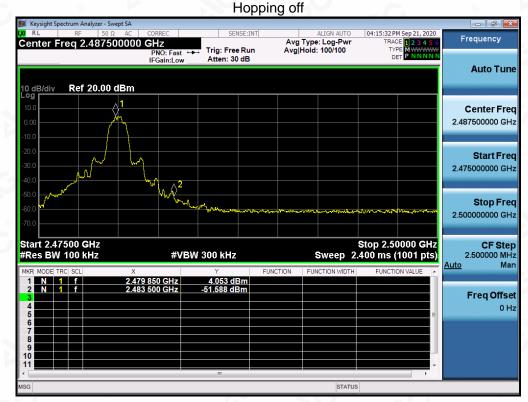
8-DPSK MODULATION IN LOW CHANNEL

Hopping on



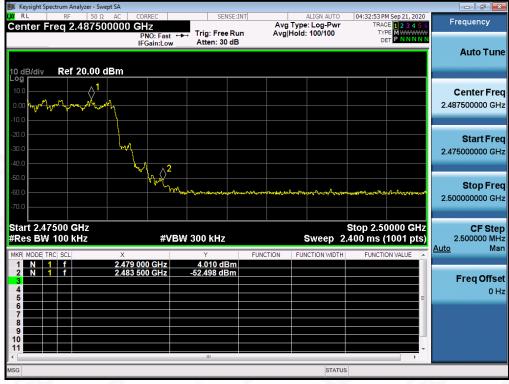
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8-DPSK MODULATION IN HIGH CHANNEL

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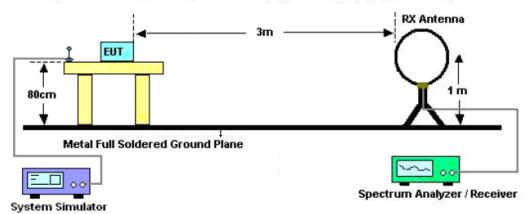
 Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

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

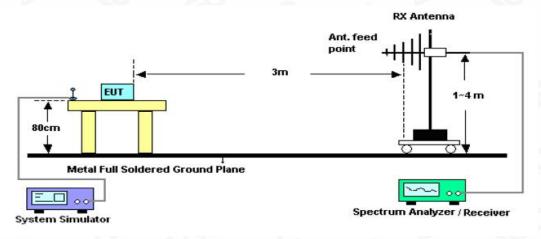


10.2. TEST SETUP

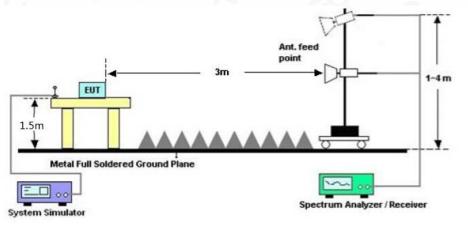
Radiated Emission Test-Setup Frequency Below 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



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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 Web: http://cn.agc-cert.com/

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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8	RADIATED EIVII33			
EUT	SmartMike Silver	Model Name	S620	
Temperature	25°C	Relative Humidity	55.4%	
Pressure	960hPa	Test Voltage	Normal Voltage	
Test Mode	Mode 3 Antenna		Horizontal	
66.9 dBuV/r	n		Limit: — Margin: —	
		*		
	2 3	5 X		

RADIATED EMISSION BELOW 1GHz

3	0.000	127.00	224.00	321.00 410	3.00 515.00	612.00 7	709.00 806	5.00	1000.00 MH
	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
			MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
	1		136.7000	10.94	14.85	25.79	43.50	-17.71	peak
	2		296.7500	14.56	21.22	35.78	46.00	-10.22	peak
	3		424.4667	14.50	21.96	36.46	46.00	-9.54	peak
	4	*	532.7833	17.19	25.63	42.82	46.00	-3.18	peak
	5		665.3500	8.56	27.73	36.29	46.00	-9.71	peak
	6		770.4333	9.14	29.74	38.88	46.00	-7.12	peak

RESULT: PASS

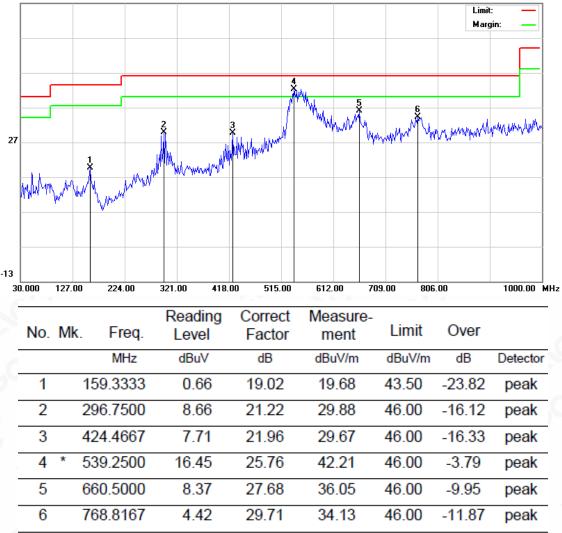
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Report No.: AGC05907200902FE03 Page 45 of 68

EUT	SmartMike Silver	Model Name	S620
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

66.9 dBuV/m



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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Report No.: AGC05907200902FE03 Page 46 of 68

RADIATED EMISSION ABOVE 1GHz

EUT	SmartMike Silver	Model Name	S620
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 1	Antenna	Horizontal

Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
45.75	0.08	45.83	74	-28.17	peak
37.48	0.08	37.56	54	-16.44	AVG
40.32	2.21	42.53	74	-31.47	peak
32.61	2.21	34.82	54	-19.18	AVG
2	5			200	60
-	(dBµV) 45.75 37.48 40.32	(dBµV) (dB) 45.75 0.08 37.48 0.08 40.32 2.21	(dBµV) (dB) (dBµV/m) 45.75 0.08 45.83 37.48 0.08 37.56 40.32 2.21 42.53	(dBµV) (dB) (dBµV/m) (dBµV/m) 45.75 0.08 45.83 74 37.48 0.08 37.56 54 40.32 2.21 42.53 74	(dBµV) (dB) (dBµV/m) (dBµV/m) (dB) 45.75 0.08 45.83 74 -28.17 37.48 0.08 37.56 54 -16.44 40.32 2.21 42.53 74 -31.47

EUT SmartMike Silver **Model Name** S620 25°C Temperature **Relative Humidity** 55.4% Pressure 960hPa **Test Voltage** Normal Voltage **Test Mode** Mode 1 Antenna Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Tree
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	- Value Type
4804.000	44.89	0.08	44.97	74	-29.03	peak
4804.000	36.63	0.08	36.71	54	-17.29	AVG
7206.000	39.45	2.21	41.66	74	-32.34	peak
7206.000	30.28	2.21	32.49	54	-21.51	AVG
6	0				8	
					.C	
emark:			(2)			
actor = Anter	na Factor + Cabl	e Loss – Pre-ar	mplifier	R		

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Report No.: AGC05907200902FE03 Page 47 of 68

EUT	SmartMike Silver	Model Name	S620
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Antenna	Horizontal

Frequency N	As to a Discouting of					
	leter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4882.000	45.64	0.14	45.78	74	-28.22	peak
4882.000	38.32	0.14	38.46	54	-15.54	AVG
7323.000	41.18	2.36	43.54	74	-30.46	peak
7323.000	34.29	2.36	36.65	54	-17.35	AVG
8				6		
- C	8			- C.	\odot	

EUT	SmartMike Silver	Model Name	S620
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 2	Antenna	Vertical

Meter Reading	Factor	Emission Level	Limits	Margin	
(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Value Type
45.64	0.14	45.78	74	-28.22	peak
37.24	0.14	37.38	54	-16.62	AVG
40.31	2.36	42.67	74	-31.33	peak
31.18	2.36	33.54	54	-20.46	AVG
	(dBµV) 45.64 37.24 40.31	(dBµV) (dB) 45.64 0.14 37.24 0.14 40.31 2.36	(dBµV) (dB) (dBµV/m) 45.64 0.14 45.78 37.24 0.14 37.38 40.31 2.36 42.67	(dBµV) (dB) (dBµV/m) (dBµV/m) 45.64 0.14 45.78 74 37.24 0.14 37.38 54 40.31 2.36 42.67 74	(dBµV) (dB) (dBµV/m) (dBµV/m) (dBµ 45.64 0.14 45.78 74 -28.22 37.24 0.14 37.38 54 -16.62 40.31 2.36 42.67 74 -31.33

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EUT	SmartMike Silver	Model Name	S620
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	46.87	0.22	47.09	74	-26.91	peak
4960.000	38.66	0.22	38.88	54	-15.12	AVG
7440.000	41.29	2.64	43.93	74	-30.07	peak
7440.000	32.45	2.64	35.09	54	-18.91	AVG
	e				®	
emark:	- 61	8			- 61	8
actor = Anter	nna Factor + Cable	Loss – Pre-	amplifier.			e.G

EUT	SmartMike Silver	Model Name	S620
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	Mode 3	Antenna	Vertical

Meter Reading	Factor	Emission Level	Limits	Margin	6
0	1 40101	EIIII33IOII ECVCI	LIIIIII	Margin	Value Type
(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
45.66	0.22	45.88	74	-28.12	peak
38.53	0.22	38.75	54	-15.25	AVG
41.34	2.64	43.98	74	-30.02	peak
33.47	2.64	36.11	54	-17.89	AVG
	- Ci	®			
		C	®		
	45.66 38.53 41.34	45.66 0.22 38.53 0.22 41.34 2.64	45.66 0.22 45.88 38.53 0.22 38.75 41.34 2.64 43.98	45.66 0.22 45.88 74 38.53 0.22 38.75 54 41.34 2.64 43.98 74	45.66 0.22 45.88 74 -28.12 38.53 0.22 38.75 54 -15.25 41.34 2.64 43.98 74 -30.02

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.

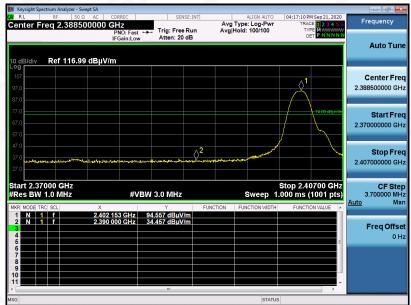
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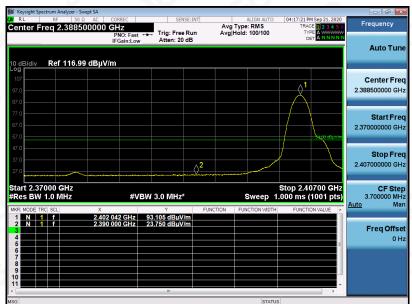
TEST RESULT FOR RESTRICTED BANDS REQUIREMENTS					
EUT	SmartMike Silver	Model Name S620			
Temperature	25°C	Relative Humidity	55.4%		
Pressure	960hPa	Test Voltage	Normal Voltage		
Test Mode	Mode 1	Antenna	Horizontal		

TEST RESULT FOR RESTRICTED BANDS REQUIREMENTS

PK



AV



RESULT: PASS

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