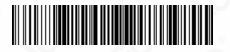


FCC Test Report

Report No.: AGC02169200903FE03

FCC ID	:	Q8WBT226L
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Portable Bluetooth Speaker
BRAND NAME	Ċ	Weiking
MODEL NAME	:	BT226L
APPLICANT	:	SHENZHEN WEIKING TECHNOLOGY CO.,LTD
DATE OF ISSUE	:	Oct. 19,2020
STANDARD(S)	:	FCC Part 15.247
REPORT VERSION	:	V1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd



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REPORT REVISE RECORD

	Report Version	Revise Time	Issued Date	Valid Version	Notes
Į.	V1.0	. /	Oct. 19,2020	Valid	Initial Release

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1. VERIFICATION OF CONFORMITY

Applicant	SHENZHEN WEIKING TECHNOLOGY CO., LTD		
Address	W-king Technology Park, NO.431, Huating Road, Dalang Street, Longhua Town, Baoan District, Shenzhen, China		
Manufacturer	SHENZHEN WEIKING TECHNOLOGY CO., LTD		
Address	W-king Technology Park, NO.431, Huating Road, Dalang Street, Longhua Town, Baoan District, Shenzhen, China		
Factory	SHENZHEN WEIKING TECHNOLOGY CO., LTD		
Address	W-king Technology Park, NO.431, Huating Road, Dalang Street, Longhua Town, Baoan District, Shenzhen, China		
Product Designation	Portable Bluetooth Speaker		
Brand Name	Weiking		
Test Model	BT226L		
Date of test	Sep. 11,2020 to Oct. 19,2020		
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

Reviewed By

Then Hunny

Thea Huang Project Engineer

Oct. 19,2020

Max Zhans

Max Zhang Reviewer

Oct. 19,2020

Approved By

Forrest Lei Authorized Officer

Oct. 19,2020

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2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

The EUT is designed as "Portable Bluetooth Speaker". 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 -2.618dBm (Max)		
Bluetooth Version	V4.2	
Modulation	BR ⊠GFSK, EDR ⊠π /4-DQPSK, ⊠8DPSK BLE □GFSK 1Mbps □GFSK 2Mbps	
Number of channels	79	
Hardware Version	1.2	
Software Version	5.0	
Antenna Designation	PCB Antenna (Comply with requirements of the FCC part 15.203)	
Antenna Gain	0dBi	
Power Supply	DC 7.2V by battery or DC 5V by adapter	

Note: The EUT doesn't support BLE.

2.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency
20 .00	0	2402 MHz
		2403 MHz
SC C		
	38	2440 MHz
2402~2480MHz	39	2441 MHz
aC a	40	2442 MHz
AN SU		
0	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 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: Q8WBT226L** 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.



3. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y \pm 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 = ± 2 %
- Uncertainty of Frequency: $Uc = \pm 2 \%$



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

RF Channel 78	Hopping Mode
Packet Type 3085	Payload Type FRBS9
TX Gain Index 1	RX Gain Index 0
Access Code Ox 868888888888888888888888888888888888	AGC Mode
Stop Single Tone	Packet IX Packet RK
結果ContinueIX测试, 持续1.0秒 开始ContinueIX测试(Chan.78 Packet: 结束ContinueIX测试, 持续75.2秒	3DH5 Payload: PRES9 TxGain: 1)
开始ContinueTX测试(Chan 78 Packet: 结束ContinueTX测试,持续4627,3秒	3DH5 Payload PRBS9 TxGain 1)
开始ContinueTX测试(Chan 78 Packet: 结束ContinueTX测试,持续176.8秒	3DH5 Payload: PRBS9 TxGain: 1)
开始ContinueTX测试(Chan: 78 Packet: 结束ContinueTX测试, 持续1.0秒	3DH5 Payload: PRBS9 TxGain 1)
开始ContinueTX测试(Chan 78 Packet)	3DH5 Payload PRBS9 TxGain 1)

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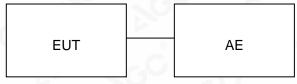
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5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM

Radiated Emission Configure:



Conducted Emission Configure:

EUT	AE

5.2. EQUIPMENT USED IN TESTED SYSTEM

ltem	Equipment	Model No.	ID or Specification	Remark
1	Portable Bluetooth Speaker	BT226L	Q8WBT226L	EUT
2	Adapter	TY0500100E1MN	N/A	AE
3	Charger line	G258	N/A	AE
4	Control Box	N/A	USB-TTL	AE
5	Load		2 Ω	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

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1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
CN1259
975832
5054.02
Attestation of Global Compliance (Shenzhen) Co., Ltd is accredited by A2LA

TEST EQUIPMENT OF CONDUCTED EMISSION TEST

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

TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	May 15, 2020	May 14, 2021
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Dec. 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	Sep. 03,2020	Sep. 02,2022
ANTENNA	SCHWARZBECK	VULB9168	494	Jan. 09, 2019	Jan. 08, 2021
Test software	Tonscend	JS32-RE (Ver.2.5)	N/A	N/A	N/A



7. PEAK OUTPUT POWER

7.1. MEASUREMENT PROCEDURE

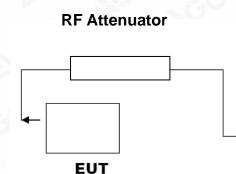
For peak power test:

- 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.

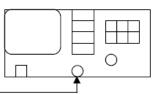
Allow trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. The indicated level is the peak output power, after any corrections for external attenuators and cables.

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 MOU		
Frequency (GHz)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.402	-6.396	30	Pass
2.441	-5.984	30	Pass
2.480	-5.291	30	Pass

CH0



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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	-4.095	21	Pass
2.441	-3.844	21	Pass
2.480	-3.238	21	Pass

CH0



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CH78

	ectrum Analyzer - Swept SA	1 1						
Center F	RF 50 Ω AC req 2.48000000	CORREC	SENSE:INT	Avg Type:		TRAC	HOct 13, 2020	Frequency
		PNO: Fast ++ IFGain:Low	 Trig: Free Run Atten: 30 dB 	Avg Hold:>	100/100	TYF		
10 dB/div Log	Ref 20.00 dBm				Mkr1	2.479 8 -3.2	40 GHz 38 dBm	Auto Tune
10.0								Center Freq 2.480000000 GHz
-10.00								Start Freq 2.477500000 GHz
-20.0								Stop Freq 2.482500000 GHz
-40.0								CF Step 500.000 kHz <u>Auto</u> Man
-60.0								Freq Offset 0 Hz
	180000 GHz					Span 5	.000 MHz	
#Res BW	1.5 MHz	#VBW	5.0 MHz	S	weep 1		1001 pts)	
MSG					STATUS			

PEAK OUTPUT POWER MEASUREMENT RESULT FOR 8-DPSK MODULATION					
Frequency (GHz)	Peak Power (dBm)	Applicable Limits (dBm)	Pass or Fail		
2.402	-3.616	<u> </u>	Pass		
2.441	-3.169	21	Pass		
2.480	-2.618	21	Pass		

CH0



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CH39



CH78

XIRL RF 50Ω AC		SENSE:INT		ALIGN AUTO		4 Oct 13, 2020	Frequency
Center Freq 2.4800000	PNO: Fast +++ IFGain:Low	Trig: Free Run Atten: 30 dB	Avg Hold:		TYP		
	IFGalli.Low	Allen. oo ub		Mkr1	2.479 9	20 GHz	Auto Tun
10 dB/div Ref 20.00 dBm					-2.6	18 dBm	
							Center Fre
10.0							2.480000000 GH
0.00		<mark>1</mark>					
							Start Fre 2.477500000 GH
10.0							2.477500000 GH
20.0						·~~	Stop Fre
proventing and a second s						- Market	2.482500000 GH
30.0							
40.0							CF Ste 500.000 kH
							<u>Auto</u> Ma
50.0							
60.0							Freq Offse
							0 H
70.0							
					0	000 8411-	
Center 2.480000 GHz #Res BW 1.5 MHz	#VBW :	5.0 MHz		Sweep 1	span ɔ .000 ms (.000 MHz 1001 pts)	
ISG				STATUS			

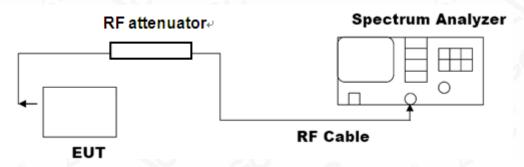


8. 20DB BANDWIDTH

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					
Angliaghta Limita		Measurement Result			
Applicable Limits	Test Data	Criteria			
	Low Channel	0.938	PASS		
N/A	Middle Channel	0.941	PASS		
	High Channel	0.941	PASS		

07:04:21 PM Oct 13, 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 Span 3 MHz Sweep 3.2 ms Center 2.402 GHz #Res BW 30 kHz CF Step 300.000 kHz #VBW 100 kHz <u>Auto</u> 1.12 dBm **Occupied Bandwidth Total Power** 862.06 kHz Freq Offset 0 Hz -34.578 kHz **Transmit Freq Error OBW Power** 99.00 % 938.1 kHz x dB Bandwidth x dB -20.00 dB

TEST PLOT OF BANDWIDTH FOR LOW CHANNEL





TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL





MEASUREMENT RESULT FOR II /4-DQPSK MODULATION					
Annlinghle Limite		Measurement Resu	lt		
Applicable Limits	Test Data	Test Data (MHz)			
N/A	Low Channel	1.282	PASS		
	Middle Channel	1.282	PASS		
	High Channel	1.284	PASS		

TEST PLOT OF BANDWIDTH FOR LOW CHANNEL

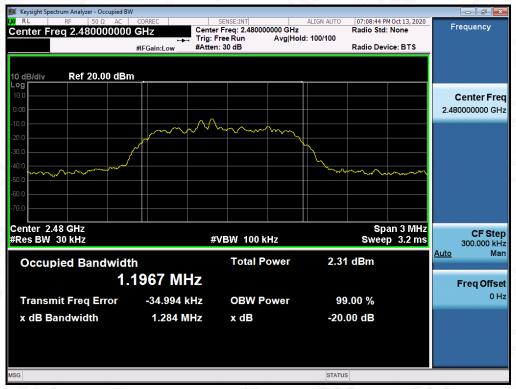


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TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL





MEASUREMENT RESULT FOR 8-DPSK MODULATION						
Appliechle Limite						
Applicable Limits	Test Da	Test Data (MHz)				
	Low Channel	1.294	PASS			
N/A	Middle Channel	1.294	PASS			
C C	High Channel	1.294	PASS			

TEST PLOT OF BANDWIDTH FOR LOW CHANNEL





TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL





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)

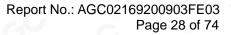
The same as described in section 8.2

9.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6

9.4. LIMITS AND MEASUREMENT RESULT

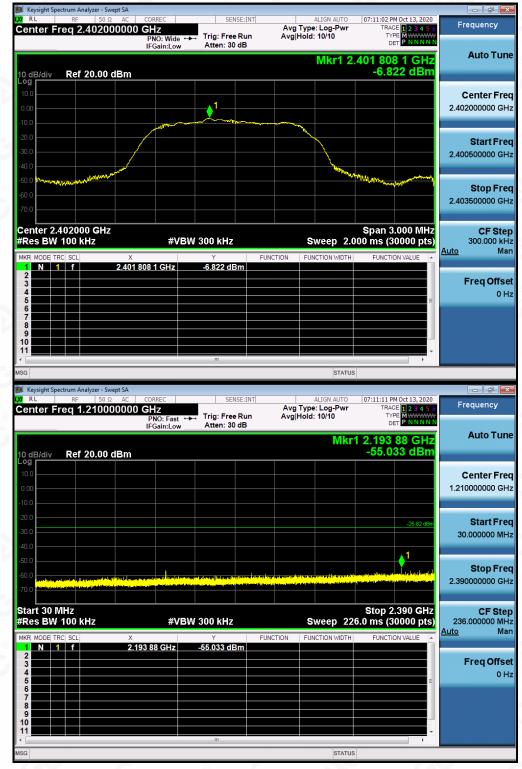
LIMITS AND MEAS	SUREMENT RESULT			
Annlinghta Limita	Measurement Result			
Applicable Limits	Test Data	Criteria		
In any 100 kHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency	At least -20dBc than the limit Specified on the BOTTOM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





TEST RESULT FOR ENTIRE FREQUENCY RANGE

TEST PLOT OF OUT OF BAND EMISSIONS WITH THE WORST CASE OF 8DPSK MODULATION IN LOW CHANNEL



Report No.: AGC02169200903FE03 Page 29 of 74



🗊 Keysight Spectrum Analyzer - Swept SA	
M RL RF 50 Ω AC CORREC SENSE:INT ALIGN AUTO 07:11:37 PM oct 13, 2020 Center Freq 13.741750000 GHz Avg Type: Log-Pwr TRACE 12.3.4.5 G TRACE 12.3.4.5 G	Frequency
PNO: Fast Trig: Free Run Avg Hold: 10/10 TYPE MUNITYPE Atten: 30 dB	
	Auto Tune
Mkr1 4.803 5 GHz 10 dB/div Ref 20.00 dBm -43.559 dBm	
10.0	Center Freq
	13.741750000 GHz
-10.0	
-20.0	Start Freq
-30.0	2.483500000 GHz
-40.0	2.40000000000000
-50.0	
	Stop Freq
	25.000000000 GHz
Start 2.48 GHz Stop 25.00 GHz	CF Step
	2.251650000 GHz uto Man
MKR MODE TRC SCL X Y FUNCTION VIDTH FUNCTION VALUE	
1 N 1 f 4.803 5 GHz -43.559 dBm	
	Freq Offset
5 =	0 Hz
9	
MSG STATUS	

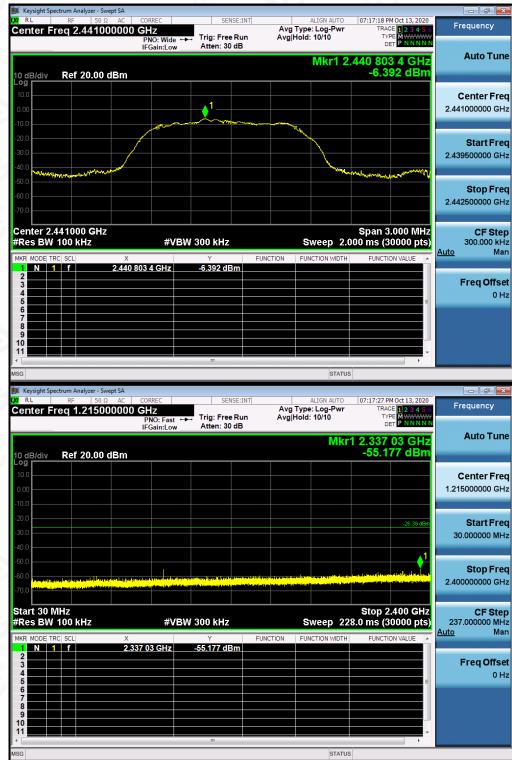
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 Attestation of Global Compliance(Shenzhen)Co., Ltd

 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/

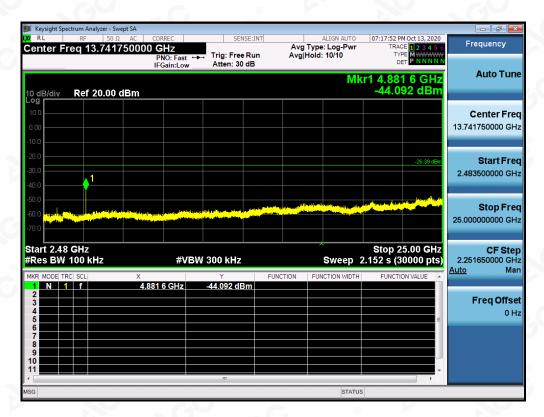




TEST PLOT OF OUT OF BAND EMISSIONS OF 8DPSK MODULATION IN MIDDLE CHANNEL

Report No.: AGC02169200903FE03 Page 31 of 74





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 Attestation of Global Compliance(Shenzhen)Co., Ltd

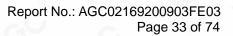
 Attestation of Global Compliance(Shenzhen)Std & Tech Co., Ltd

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



RL RF 50 Ω	2 AC CORREC	SENSE:INT	ALIGN AUTO	07:18:46 PM Oct 13, 2020	
nter Freq 2.4800		► Trig: Free Run	Avg Type: Log-Pwr Avg Hold: 10/10	TRACE 1 2 3 4 5 6 TYPE MWWWWW	Frequency
	PNO: Wide ↔ IFGain:Low	Atten: 30 dB	Anginera. Torre	DET PNNNN	
			Mkr1 2.	479 805 4 GHz	Auto Tun
B/div Ref 20.00	dBm			-5.780 dBm	
					Center Fre
		↓ _ ↓ ¹ _			2.480000000 GH
			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
					Start Fre
			<b>\</b>		2.478500000 GH
and the second	a way wat			man and a second se	
					Stop Fre 2.481500000 GH
					2.481500000 GH
r 2.480000 GHz				Spap 2 000 MHz	OF Otor
BW 100 kHz		W 300 kHz	Sweep 2.0	Span 3.000 MHz 00 ms (30000 pts)	CF Step 300.000 kH
DDE TRC SCL	X		UNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Mar
1 f	2.479 805 4 GHz	-5.780 dBm			
					Freq Offse
				=	0 H:
			STATUS		
ght Spectrum Analyzer - Sw	vept SA		·		
	AC CORREC	SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	07:18:55 PM Oct 13, 2020 TRACE 1 2 3 4 5 6	Frequency
r Freq 1.21500	PNO: Fast ↔	Trig: Free Run	Avg Hold: 10/10		
	IFGain:Low	Atten: 30 dB	Mire	1 2.271 62 GHz	Auto Tune
liv Ref 20.00	dBm		IVIKI	-54.677 dBm	
Ref 20.00					
					Center Free
					1.215000000 GH:
				-25.78 dBm	Start Free
					30.000000 MH:
				1	
					Stop Free
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han sering set to be a set of		an a Trendrig ang pangkangkang ang di Sarah Sarah (Pang Mang And Sarah yang pangkangkang ang di Sarah (Sarah Sarah)			-
30 MHz	offerenden under under einen kin bekennen kin bekennen kin bekennen kin bekennen kin bekennen kin bekennen kin			Stop 2.400 GHz	2.400000000 GH
30 MHz BW 100 kHz	#VB1	N 300 kHz	Sweep 22	8.0 ms (30000 pts)	2.40000000 GH: CF Step 237.000000 MH:
30 MHz BW 100 kHz	#VB1	Y F		Stop 2.400 GHz 8.0 ms (30000 pts)	2.400000000 GH
30 MHz BW 100 kHz	#VB1		Sweep 22	8.0 ms (30000 pts)	2.40000000 GH: CF Step 237.000000 MH: <u>Auto</u> Mar
30 MHz BW 100 kHz	#VB1	Y F	Sweep 22	8.0 ms (30000 pts)	2.40000000 GH: CF Step 237.000000 MH:
30 MHz BW 100 kHz ODE TRC SCL	#VB1	Y F	Sweep 22	8.0 ms (30000 pts)	2.40000000 GH: CF Step 237.00000 MH: <u>Auto</u> Mar Freq Offse
t 30 MHz S BW 100 kHz MODE TRC  SCL  N 1 f	#VB1	Y F	Sweep 22	8.0 ms (30000 pts)	2.40000000 GH: CF Step 237.00000 MH: <u>Auto</u> Mar Freq Offse
30 MHz BW 100 kHz	#VB1	Y F	Sweep 22	8.0 ms (30000 pts)	2.40000000 GH: CF Step 237.00000 MH: <u>Auto</u> Mar Freq Offse
30 MHz BW 100 kHz ODE TRC SCL	#VB1	Y F	Sweep 22	8.0 ms (30000 pts)	2.40000000 GH: CF Step 237.00000 MH: <u>Auto</u> Mar Freq Offse

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





L <mark>XI</mark> RL Consta		RF		AC C		SE	INSE:INT	Ava Tv	ALIGN AUTO		M Oct 13, 2020	Fre	quency
Cente		eq	13.7500		PNO: Fast				ld: 10/10	TYP			
	_				IFGain:Low	Atten: 3	0 dB						Auto Tune
10 dB/div Ref 20.00 dBm -41.946 dBm													
10 dB/c Log	div	кe	f 20.00 (	dBm						-41.5			
10.0 —												C	enter Freg
0.00 —													000000 GHz
-10.0 —													
-20.0 —													
-30.0											-25.78 dBm		Start Freq
			1									2.500	000000 GHz
-40.0													
-50.0 —								No. of Concession, Name	and and the patient states and the second states of the second states of the second states of the second states	al dan dalikasi			Stop Freq
-60.0									and a state of the second s				000000 GHz
-70.0													
Start :	2.50	CH-						^		Stop 2	5.00 GHz		CF Step
#Res					#V	BW 300 kHz			Sweep	2.152 s (3	0000 pts)	2.250	000000 GHz
MKR MO				X		Y		ICTION F	UNCTION WIDTH		DN VALUE	Auto	Man
1 N					59 3 GHz	-41.946 di		CHON	UNCTION WIDTH	FUNCTION	JN VALUE		
2												F	req Offset
4													0 Hz
5 6					زكك ا						E		
7													
8					<b>A</b>		و ا						
10	هد				بكك								
11						III							
MSG	_								STATUS	2			

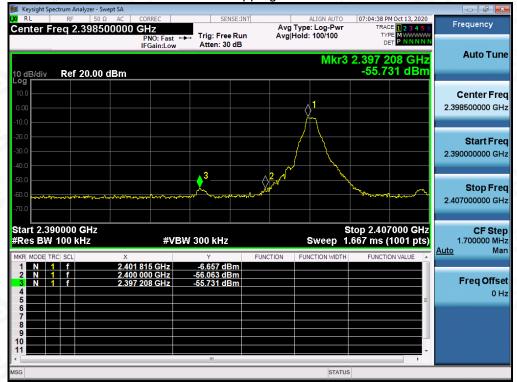
Note: The 8DPSK modulation is the worst case and only those data recorded in the report.



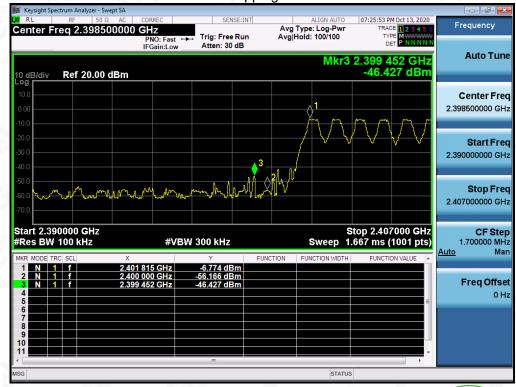
#### TEST RESULT FOR BAND EDGE

#### GFSK MODULATION IN LOW CHANNEL

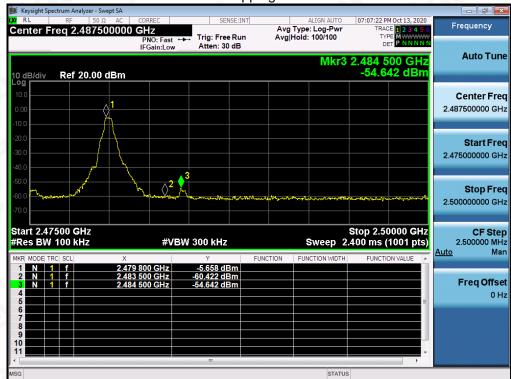
Hopping off



Hopping on



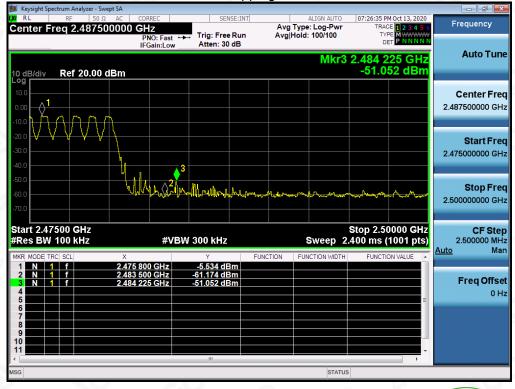




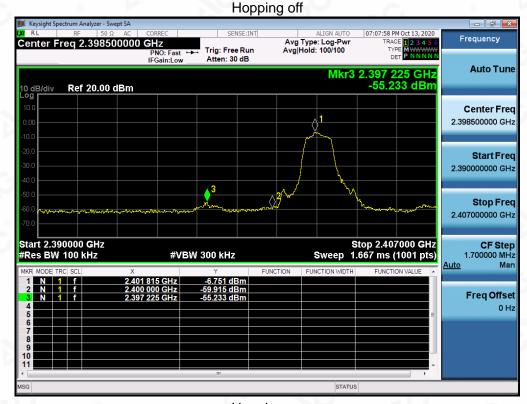
# GFSK MODULATION IN HIGH CHANNEL

Hopping off

Hopping on

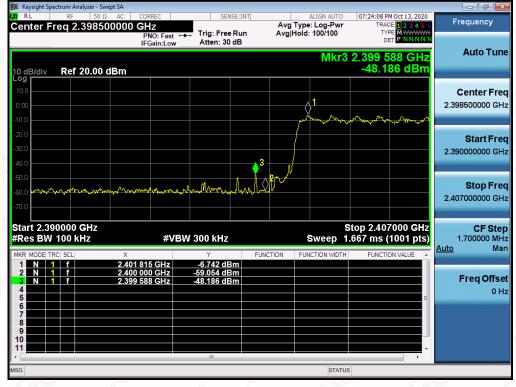




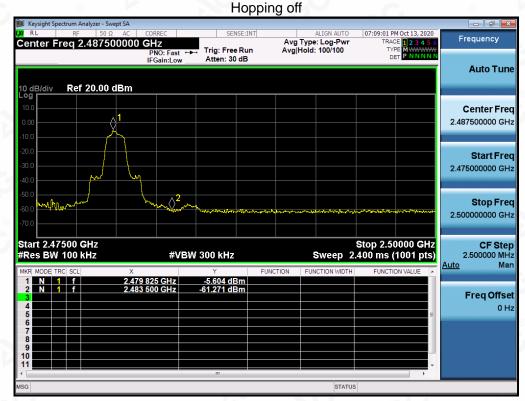


# $\pi$ /4-DQPSK MODULATION IN LOW CHANNEL

Hopping on

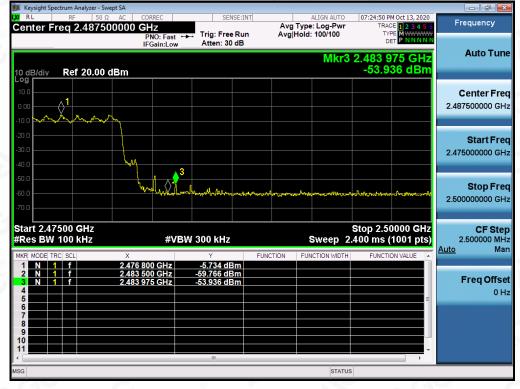




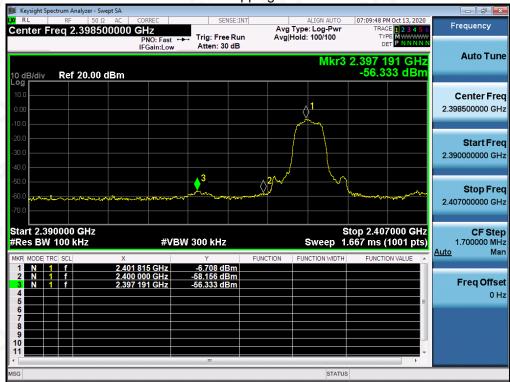


# $\pi$ /4-DQPSK MODULATION IN HIGH CHANNEL

Hopping on







# 8-DPSK MODULATION IN LOW CHANNEL

Hopping off

Hopping on

