GTS Global United Technology Services Co., Ltd.

Report No.: GTSL202108000103F01

TEST REPORT

Applicant:	Shenzhen Mingxing Electronic Commerce Co.,Ltd
Address of Applicant:	1701,Block C,Haixinhuifuyuan,No.266,Jihua Rd.,Jihua Sub- dist.,Longgang Dist.,Shenzhen,China
Manufacturer/Factory:	Shenzhen Mingxing Electronic Commerce Co.,Ltd
Address of Manufacturer/Factory:	1701,Block C,Haixinhuifuyuan,No.266,Jihua Rd.,Jihua Sub- dist.,Longgang Dist.,Shenzhen,China
Equipment Under Test (E	UT)
Product Name:	HIKER AUDIO T1
Model No.:	T1
Trade Mark:	HIKER AUDIO
FCC ID:	2A2PX-T1
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247
Date of sample receipt:	Aug.04, 2021
Date of Test:	Aug.05, 2021
Date of report issued:	Aug.07, 2021
Test Result :	PASS *

* In the configuration tested, the EUT complied with the standards specified above.



Robinson Luo Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.



2 Version

Version No.	Date	Description		
00	00 Aug.07, 2021 Or			
		6 6 6		
0 0 0 0 0	E E E E	2 8 8 8 8		
	2 8 2 8 8	1 2 6 6		
		0 0 0 0 0		

Prepared By:

hantly

Date:

Aug.06, 2021

Project Engineer

Check By:

opinson lus

Date:

Aug.06, 2021

Reviewer

Report No.: GTSL202108000103F01

3 Contents

		Page
1	COVER PAGE	1
2	VERSION	2
1		
3		
4	TEST SUMMARY	4
5	GENERAL INFORMATION	5
	5.1 GENERAL DESCRIPTION OF EUT	
	5.1 GENERAL DESCRIPTION OF EOT	100
	5.3 DESCRIPTION OF SUPPORT UNITS	
	5.4 DEVIATION FROM STANDARDS	
	5.5 ABNORMALITIES FROM STANDARD CONDITIONS	7
	5.6 TEST FACILITY	
	5.7 TEST LOCATION	7
6	TEST INSTRUMENTS LIST	8
7	TEST RESULTS AND MEASUREMENT DATA	10
	7.1 ANTENNA REQUIREMENT	10
	7.2 CONDUCTED EMISSIONS	-
	7.3 CONDUCTED PEAK OUTPUT POWER	14
	7.4 20DB EMISSION BANDWIDTH	-
	7.5 CARRIER FREQUENCIES SEPARATION	
	7.6 HOPPING CHANNEL NUMBER	
	7.7 DWELL TIME	-
	7.6 DAND EDGE	
	7.8.2 Radiated Emission Method	
	7.9 Spurious Emission	
	7.9.1 Conducted Emission Method	
	7.9.2 Radiated Emission Method	40
8	TEST SETUP PHOTO	48
9	EUT CONSTRUCTIONAL DETAILS	48



4 Test Summary

Test Item	Section in CFR 47	Result
Antenna Requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.247 (b)(1)	Pass
20dB Occupied Bandwidth	15.247 (a)(1)	Pass
Carrier Frequencies Separation	15.247 (a)(1)	Pass
Hopping Channel Number	15.247 (a)(1)(iii)	Pass
Dwell Time	15.247 (a)(1)(iii)	Pass
Radiated Emission	15.205/15.209	Pass
Band Edge	15.247(d)	Pass

Remarks:

1. Pass: The EUT complies with the essential requirements in the standard.

2. Test according to ANSI C63.10:2013

Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	30MHz-200MHz	3.8039dB	(1)
Radiated Emission	200MHz-1GHz	3.9679dB	(1)
Radiated Emission	1GHz-18GHz	4.29dB	(1)
Radiated Emission	18GHz-40GHz	3.30dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	3.44dB	(1)



5 General Information

5.1 General Description of EUT

Product Name:	HIKER AUDIO T1
Model No.:	T1 6 6 6 6
Test sample(s) ID:	GTSL202108000103-1
Sample(s) Status:	Engineer sample
Serial No.:	N/A
Hardware Version:	N/A
Software Version:	N/A
Operation Frequency:	2402MHz~2480MHz
Channel numbers:	79
Channel separation:	1MHz
Modulation type:	GFSK, π/4-DQPSK,8DPSK
Antenna Type:	Multilayer ceramic Antenna
Antenna gain:	2dBi(Declare by applicant)
Power supply:	DC 3.7V from battery



Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402MHz	21	2422MHz	41	2442MHz	61	2462MHz
2	2403MHz	22	2423MHz	42	2443MHz	62	2463MHz
3	2404MHz	23	2424MHz	43	2444MHz	63	2464MHz
4	2405MHz	24	2425MHz	44	2445MHz	64	2465MHz
5	2406MHz	25	2426MHz	45	2446MHz	65	2466MHz
6	2407MHz	26	2427MHz	46	2447MHz	66	2467MHz
7	2408MHz	27	2428MHz	47	2448MHz	67	2468MHz
8	2409MHz	28	2429MHz	48	2449MHz	68	2469MHz
9	2410MHz	29	2430MHz	49	2450MHz	69	2470MHz
10	2411MHz	30	2431MHz	50	2451MHz	70	2471MHz
11	2412MHz	31	2432MHz	51	2452MHz	71	2472MHz
12	2413MHz	32	2433MHz	52	2453MHz	72	2473MHz
13	2414MHz	33	2434MHz	53	2454MHz	73	2474MHz
14	2415MHz	34	2435MHz	54	2455MHz	74	2475MHz
15	2416MHz	35	2436MHz	55	2456MHz	75	2476MHz
16	2417MHz	36	2437MHz	56	2457MHz	76	2477MHz
17	2418MHz	37	2438MHz	57	2458MHz	77	2478MHz
18	2419MHz	38	2439MHz	58	2459MHz	78	2479MHz
19	2420MHz	39	2440MHz	59	2460MHz	79	2480MHz
20	2421MHz	40	2441MHz	60	2461MHz	6	6 6

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2402MHz
The middle channel	2441MHz
The Highest channel	2480MHz



5.2 Test mode

Transmitting mode Keep the EUT in continuously transmitting mode.

Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.

5.3 Description of Support Units

Adapter Model: HW-090200CH0

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• FCC—Registration No.: 381383

Designation Number: CN5029

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files.

• IC — Registration No.: 9079A

CAB identifier: CN0091

The 3m Semi-

anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing

• NVLAP (LAB CODE:600179-0)

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

5.7 Test Location

All tests were performed at:

6 Test Instruments list

Rad	iated Emission:	19 19	0 0 0	Ð	10 10	19 19
ltem	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Champer		9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 02 2020	July. 01 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 24 2021	June. 23 2022
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 24 2021	June. 23 2022
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 24 2021	June. 23 2022
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 24 2021	June. 23 2022
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 24 2021	June. 23 2022
9	Coaxial Cable	GTS	N/A	GTS211	June. 24 2021	June. 23 2022
10	Coaxial cable	GTS	N/A	GTS210	June. 24 2021	June. 23 2022
11	Coaxial Cable	GTS	N/A	GTS212	June. 24 2021	June. 23 2022
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 24 2021	June. 23 2022
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 24 2021	June. 23 2022
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 24 2021	June. 23 2022
15	Band filter	Amindeon	82346	GTS219	June. 24 2021	June. 23 2022
16	Power Meter	Anritsu	ML2495A	GTS540	June. 24 2021	June. 23 2022
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 24 2021	June. 23 2022
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 24 2021	June. 23 2022
19	Splitter	Agilent	11636B	GTS237	June. 24 2021	June. 23 2022
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 24 2021	June. 23 2022
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 18 2020	Oct. 17 2021
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 18 2020	Oct. 17 2021
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 18 2020	Oct. 17 2021
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 24 2021	June. 23 2022



Cond	Conducted Emission								
ltem	Test Equipment	Test Equipment Manufacturer Model No.		Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)			
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.15 2019	May.14 2022			
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 24 2021	June. 23 2022			
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 24 2021	June. 23 2022			
4	ENV216 2-L-V- NETZNACHB.DE	ROHDE&SCHWARZ	ENV216	GTS226	June. 24 2021	June. 23 2022			
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A			
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A			
7	Thermo meter	KTJ	TA328	GTS233	June. 24 2021	June. 23 2022			
8 Absorbing clamp		Elektronik- Feinmechanik	MDS21	GTS229	June. 24 2021	June. 23 2022			
9	ISN	SCHWARZBECK	NTFM 8158	GTS565	June. 24 2021	June. 23 2022			
10	High voltage probe	SCHWARZBECK	TK9420	GTS537	July. 09 2021	July. 08 2022			

RF C	RF Conducted Test:								
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)			
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 24 2021	June. 23 2022			
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 24 2021	June. 23 2022			
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 24 2021	June. 23 2022			
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 24 2021	June. 23 2022			
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 24 2021	June. 23 2022			
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 24 2021	June. 23 2022			
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 24 2021	June. 23 2022			
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 24 2021	June. 23 2022			

Gene	General used equipment:								
Item Test Equipment		Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)			
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 24 2021	June. 23 2022			
2	Barometer	ChangChun	DYM3	GTS255	June. 24 2021	June. 23 2022			



7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
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15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

E.U.T Antenna:

The antenna is Ceramic antenna, the best case gain of the is 1.0dBi, reference to the appendix II for details



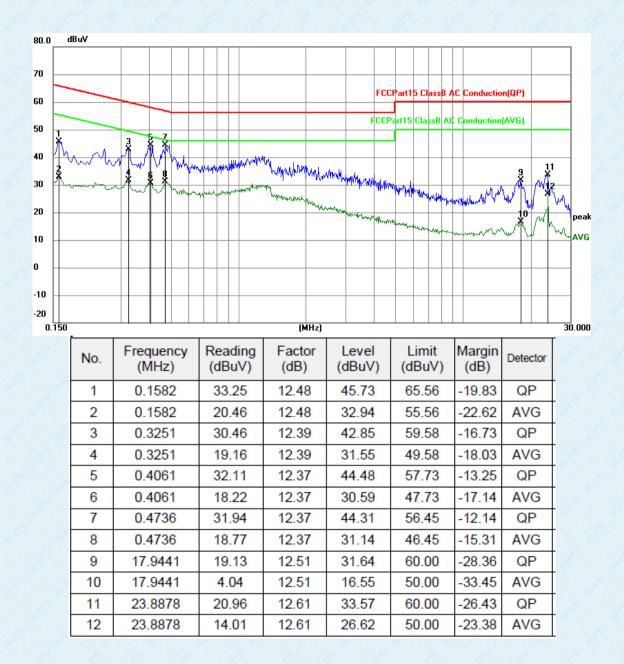
Test Requirement:	FCC Part15 C Section 15.207			
Test Method:	ANSI C63.10:2013			
Test Frequency Range:	150KHz to 30MHz			
Class / Severity:	Class B	8 - S	1 S 1 1 S 1 1 1	6ª
Receiver setup:	RBW=9KHz, VBW=30KHz, S	weep time=auto	2 8 8	
Limit:		Limi	t (dBuV)	Ŀ
	Frequency range (MHz)	Quasi-peak	Average	
	0.15-0.5	66 to 56*	56 to 46*	
	0.5-5	56	46	P
	5-30	60	50	
	* Decreases with the logarithr		6	
Test setup:	Reference Plane	•		
	Equipment E.U.T Test table/Insulation plane	I EMI Receiver		
Test procedure:	Test table/Insulation plane Remarkc E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m	Receiver	main power throug	gh a
Test procedure:	Test table/Insulation plane Remark: E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m 1. The E.U.T and simulators at line impedance stabilization 50ohm/50uH coupling impedance	Receiver are connected to the n network (L.I.S.N.). edance for the meas	This provides a uring equipment.	65
Test procedure:	Test table/Insulation plane Remark: E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m 1. The E.U.T and simulators a line impedance stabilization 50ohm/50uH coupling impo 2. The peripheral devices are LISN that provides a 50ohr termination. (Please refer to photographs).	Receiver are connected to the n network (L.I.S.N.). edance for the meas also connected to the n/50uH coupling imp o the block diagram	This provides a uring equipment. ne main power thro bedance with 50ohr of the test setup ar	ugh a
Test procedure:	Test table/Insulation plane Remark E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m 1. The E.U.T and simulators a line impedance stabilization 50ohm/50uH coupling impo 2. The peripheral devices are LISN that provides a 50ohr termination. (Please refer to	Receiver are connected to the n network (L.I.S.N.). edance for the meas also connected to the n/50uH coupling imp o the block diagram checked for maximud d the maximum emist all of the interface of	This provides a suring equipment. The main power thro bedance with 50ohr of the test setup ar an conducted ssion, the relative cables must be cha	ugh ส ท าd
Test procedure:	Remark E.U.T. Equipment Under Test LISN Line Impedence Stabilization Network Test table height=0.8m 1. The E.U.T and simulators a line impedance stabilization 500hm/50uH coupling impediation 2. The peripheral devices are LISN that provides a 500hm termination. (Please refer to photographs). 3. Both sides of A.C. line are interference. In order to fin positions of equipment and	Receiver are connected to the n network (L.I.S.N.). edance for the meas also connected to th m/50uH coupling imp o the block diagram checked for maximud d the maximum emist all of the interface of 2013 on conducted in	This provides a suring equipment. The main power thro bedance with 50ohr of the test setup ar an conducted ssion, the relative cables must be cha	ugh ส ท าd
	 Test table/Insulation plane Remark: E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m The E.U.T and simulators a line impedance stabilization 50ohm/50uH coupling importing The peripheral devices are LISN that provides a 50ohr termination. (Please refer to photographs). Both sides of A.C. line are interference. In order to fin positions of equipment and according to ANSI C63.10: 	Receiver are connected to the n network (L.I.S.N.). edance for the meas also connected to the n/50uH coupling imp o the block diagram checked for maximud d the maximum emis all of the interface of 2013 on conducted to s	This provides a suring equipment. The main power thro bedance with 50ohr of the test setup ar an conducted ssion, the relative cables must be cha	ugh a n nd
Test Instruments:	 Test table/Insulation plane Remark: E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m The E.U.T and simulators a line impedance stabilization 50ohm/50uH coupling imports The peripheral devices are LISN that provides a 50ohr termination. (Please refer to photographs). Both sides of A.C. line are interference. In order to fin positions of equipment and according to ANSI C63.10: Refer to section 6.0 for details Refer to section 5.2 for details 	Receiver are connected to the n network (L.I.S.N.). edance for the meas also connected to the n/50uH coupling imp o the block diagram checked for maximud d the maximum emis all of the interface of 2013 on conducted to s	This provides a buring equipment. The main power thro bedance with 50ohr of the test setup ar the conducted ssion, the relative cables must be cha measurement.	ugh a n nd
Test Instruments: Test mode:	 Test table/Insulation plane Remark: E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Network Test table height=0.8m The E.U.T and simulators a line impedance stabilization 50ohm/50uH coupling import The peripheral devices are LISN that provides a 50ohr termination. (Please refer to photographs). Both sides of A.C. line are interference. In order to fin positions of equipment and according to ANSI C63.10: Refer to section 6.0 for details Refer to section 5.2 for details 	Receiver are connected to the n network (L.I.S.N.). edance for the meas also connected to the m/50uH coupling imp o the block diagram checked for maximum d the maximum emist all of the interface of 2013 on conducted to s	This provides a buring equipment. The main power thro bedance with 50ohr of the test setup ar the conducted ssion, the relative cables must be cha measurement.	nged

Remark: Both high and low voltages have been tested to show only the worst low voltage test data.

Report No.: GTSL202108000103F01

Measurement data:

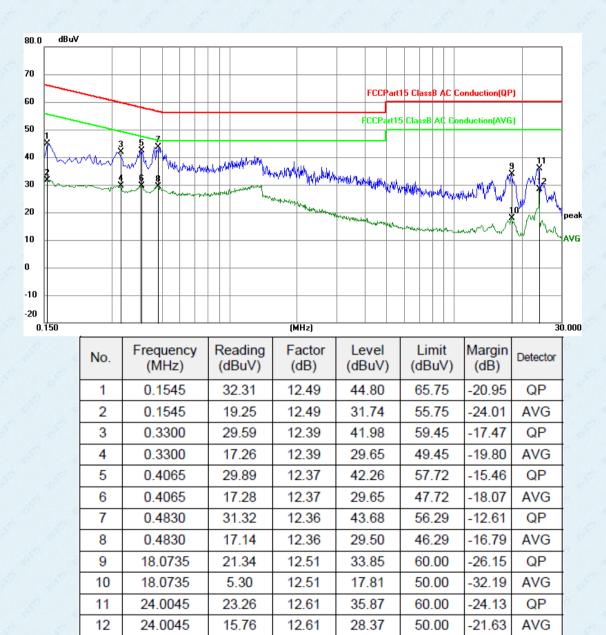
Line:





Neutral:

Report No.: GTSL202108000103F01



Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.

2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.

3. Final Level =Receiver Read level + LISN Factor + Cable Loss



Test Requirement:	FCC Part15 C Section 15.247 (a)(1)		
Test Method:	ANSI C63.10:2013		
Limit:	30dBm(for GFSK),20.97dBm(for EDR)		
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane		
Test Instruments:	Refer to section 6.0 for details		
Test mode:	Refer to section 5.2 for details		
Test results:	Pass		

7.3 Conducted Peak Output Power

Measurement Data

Mode	Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
0 0	Lowest	1.98	0 0	0 0
GFSK	Middle	1.53	30.00	Pass
	Highest	1.44	8 8 8	6
	Lowest	-1.12		6
π/4-DQPSK	Middle	-1.47	20.97	Pass
8 8	Highest	-1.76	8 2	8 8
8 8 8	Lowest	-0.87	8 8 3	8 8
8-DPSK	Middle	-1.32	20.97	Pass
	Highest	-1.43	0 0 0	



FCC Part15 C Section 15.247 (a)(1) Test Requirement: ANSI C63.10:2013 Test Method: Limit: N/A Test setup: Spectrum Analyzer E.U.T Non-Conducted Table **Ground Reference Plane Test Instruments:** Refer to section 6.0 for details Test mode: Refer to section 5.2 for details Test results: Pass

7.4 20dB Emission Bandwidth

Measurement Data

Mode	Test channel	20dB Emission Bandwidth (MHz)	Result
0 0 0	Lowest	0.947	0 0 0
GFSK	Middle	0.895	Pass
	Highest	0.875	
	Lowest	1.425	6 6
π/4-DQPSK	Middle	1.426	Pass
8 8 2	Highest	1.416	8 8 8
0 2 2	Lowest	1.447	8 8
8-DPSK	Middle	1.440	Pass
	Highest	1.438	



Test plot as follows:

Test mode:

GFSK mode

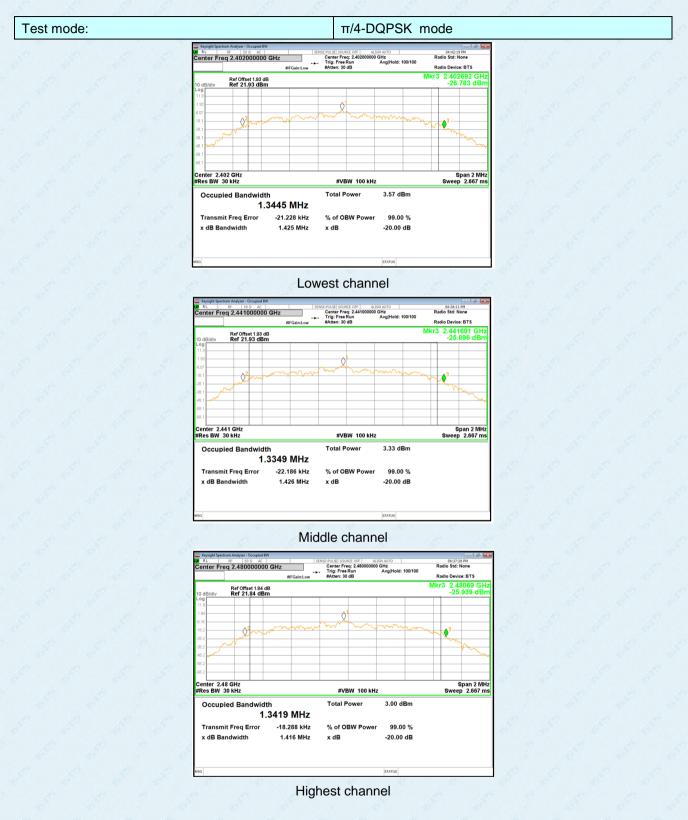


Middle channel

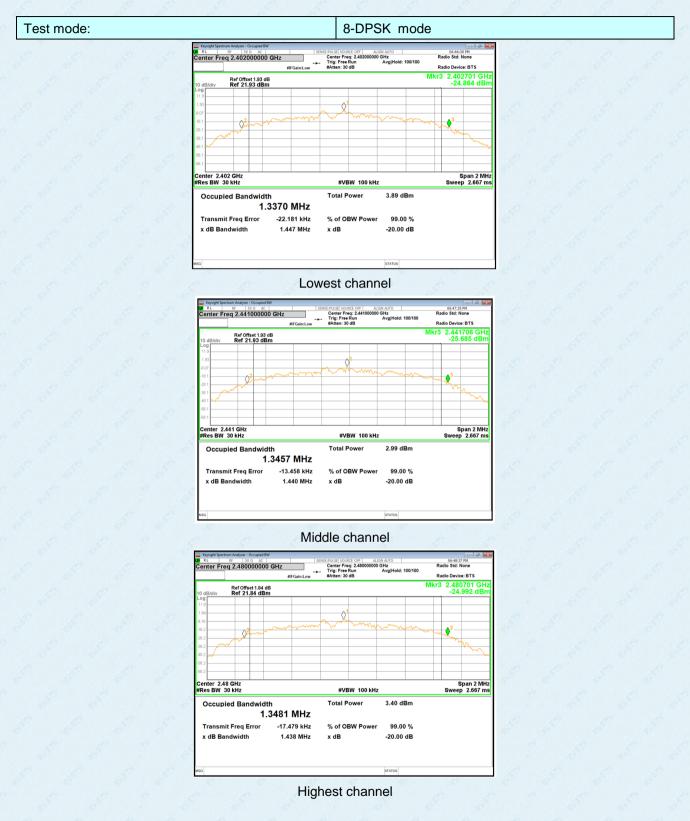


Highest channel











Test Requirement:	FCC Part15 C Section 15.247 (a)(1)		
Test Method:	ANSI C63.10:2013		
Receiver setup:	RBW=100KHz, VBW=300KHz, detector=Peak		
Limit:	0.025MHz or 2/3 of the 20dB bandwidth (whichever is greater)		
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane		
Test Instruments:	Refer to section 6.0 for details		
Test mode:	Refer to section 5.2 for details		
Test results:	Pass		

7.5 Carrier Frequencies Separation

Measurement Data

Mode Test channel		Carrier Frequencies Separation (MHz)	Limit (MHz)	Result	
	Lowest	1.007	0.947	Pass	
GFSK	Middle	0.983	0.895	Pass	
Hig	Highest	1.017	0.875	Pass	
π/4-DQPSK	Lowest	1.194	0.950	Pass	
	Middle	1.047	0.951	Pass	
	Highest	1.058	0.944	Pass	
0 0	Lowest	1.002	0.965	Pass	
8-DPSK	Middle	1.167	0.960	Pass	
	Highest	1.083	0.959	Pass	

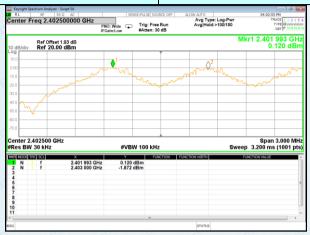
Note: According to section 7.4

Report No.: GTSL202108000103F01

Test plot as follows:

Modulation mode:

GFSK



Lowest channel



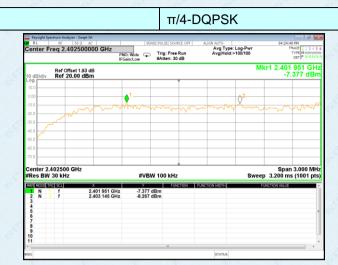
Middle channel



Highest channel

Test mode:

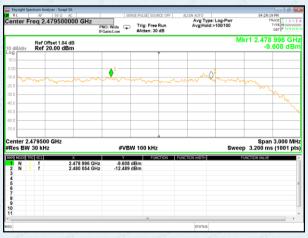
Report No.: GTSL202108000103F01



Lowest channel



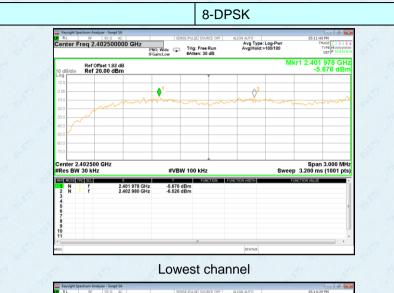
Middle channel



Highest channel

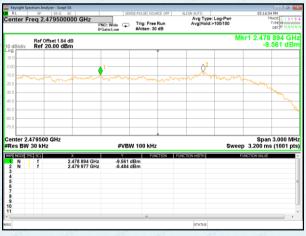
Test mode:

Report No.: GTSL202108000103F01





Middle channel



Highest channel



1.0 hopping channel Null			
Test Requirement:	FCC Part15 C Section 15.247 (a)(1)(iii)		
Test Method:	ANSI C63.10:2013		
Receiver setup:	RBW=100kHz, VBW=300kHz, Frequency range=2400MHz-2483.5MHz, Detector=Peak		
Limit:	15 channels		
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane		
Test Instruments:	Refer to section 6.0 for details		
Test mode:	Refer to section 5.2 for details		
Test results:	Pass		

7.6 Hopping Channel Number

Measurement Data:

Mode	Hopping channel numbers	Limit	Result
GFSK	79	15	Pass
π/4-DQPSK	79	15	Pass
8-DPSK	79	15	Pass

Test plot as follows:

Report No.: GTSL202108000103F01





7.7 Dwell Time

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)(iii)		
Test Method:	ANSI C63.10:2013		
Receiver setup:	RBW=1MHz, VBW=1MHz, Span=0Hz, Detector=Peak		
Limit:	0.4 Second		
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane		
Test Instruments:	Refer to section 6.0 for details		
Test mode:	Refer to section 5.2 for details		
Test results:	Pass		

Report No.: GTSL202108000103F01

Measurement Data

GFSK mode:

Frequency	Packet	Dwell time(ms)	Limit(ms)	Result
2441MHz	DH1	122.56	400	Pass
2441MHz	DH3	262.24	400	Pass
2441MHz	DH5	307.95	400	Pass

Remarks:

The test period: T= 0.4 Second/Channel x 79 Channel = 31.6 s

Test channel: 2441MHz as blow

DH1 time slot=0.383(ms)*(1600/ (2*79))*31.6=122.56ms

DH3 time slot=1.639(ms)*(1600/ (4*79))*31.6=262.24ms

DH5 time slot=2.887 (ms)*(1600/ (6*79))*31.6=307.95ms

π /4-DQPSK mode:

Frequency	Packet	Dwell time(ms)	Limit(ms)	Result
2441MHz	DH1	125.12	400	Pass
2441MHz	DH3	262.88	400	Pass
2441MHz	DH5	308.37	400	Pass

Remarks:

The test period: T= 0.4 Second/Channel x 79 Channel = 31.6 s

Test channel: 2441MHz as blow

DH1 time slot=0.391(ms)*(1600/ (2*79))*31.6=125.12ms

DH3 time slot=1.643(ms)*(1600/ (4*79))*31.6= 262.88ms

DH5 time slot=2.891(ms)*(1600/ (6*79))*31.6=308.37ms

8-DPSK mode:

Frequency	Packet	Dwell time(ms)	Limit(ms)	Result
2441MHz	DH1	131.20	400	Pass
2441MHz	DH3	258.56	400	Pass
2441MHz	DH5	310.40	400	Pass

Remarks:

The test period: T= 0.4 Second/Channel x 79 Channel = 31.6 s

Test channel: 2441MHz as blow

DH1 time slot=0.392(ms)*(1600/ (2*79))*31.6=125.44ms

DH3 time slot=1.642(ms)*(1600/ (4*79))*31.6=262.72ms

DH5 time slot=2.894(ms)*(1600/ (6*79))*31.6=308.69ms

Test plot as follows:

GFSK mode:

Test channel:

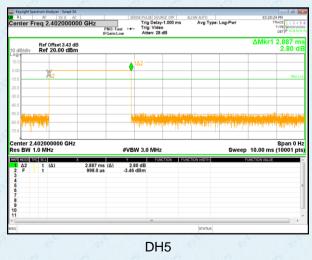
2441MHz



DH1

Reysight Spectrum Analyzer - Swept RL RF S0 Ω center Freq 2.402000	AC	SENSE PULSE SOURC Trig Delay-1 Trig: Video Atten: 28 d	1.000 ms Avg Ty	pe: Log-Pwr	03:29:4 T	4 PM RACE 1 2 3 4 5 TYPE WWWW DET P NNN
Ref Offset 3.43 0 dB/div Ref 20.00 dE					ΔMkr1	1.639 m 1.93 d
10.0	1Δ2					
2.00						TRIGU
10.0						
0.0						
0.0						
0.0 21410.000		and and so that of	terrest and the second states in the	atter store theme	while mind	Lulu
			(new policies (in providence)			
enter 2.402000000 GH tes BW 1.0 MHz		¥VBW 3.0 MHz		Sweep	10.00 ms	Span 0 H (10001 pt
$\frac{1}{1} \Delta 2 \frac{1}{1} t (\Delta)$	× 1.639 ms (Δ)	Y FUNC	TION FUNCTION WIDTH	F	UNCTION VALUE	
2 F 1 t		-2.03 dBm				
4 5						
6						
7 8 9						
9 10 11						

DH3



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Report No.: GTSL202108000103F01

π/4-DQPSK mode

Report No.: GTSL202108000103F01

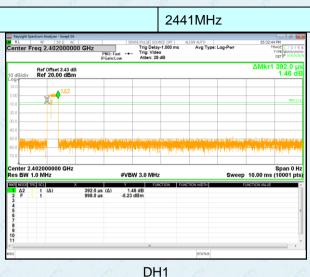


DH5

8-DPSK

Test channel:

Report No.: GTSL202108000103F01



DITT

enter F	Freq 2.402000	F	Gain:Low	SE PULSE SOURCE OF Trig Delay-1.000 Trig: Video Atten: 28 dB		e: Log-Pwr		RACE 1 2 3 4 5 TYPE WWWWW DET P NNN1
0 dB/div	Ref Offset 3.43 Ref 20.00 dE						ΔMkr1	1.642 m -2.05 d
10.0	*	14	2					
10.0	ML_							TRIOL
10.0								
0.0								
0.0								
	n nella s				al tradition of the second second			
0.0 70.0	de state	14	. In the second second	and to start in the	unide de proves	a and a de	diama	a parti a parti d
	.402000000 GH 1.0 MHz	łz	#VBV	V 3.0 MHz		Sweep	10.00 ms	
es BW	1.0 MHz	1z	Y		FUNCTION WIDTH		10.00 ms	
es BW	1.0 MHz	x	Y	FUNCTION 5 dB	FUNCTION WIDTH			
es BW 1 Δ2 2 F 3 4	1.0 MHz TRG SGL	× 1.642 ms	γ (Δ) -2.05	FUNCTION 5 dB	FUNCTION WIDTH			
es BW Δ2 F 3 4 5 6 7	1.0 MHz TRG SGL	× 1.642 ms	γ (Δ) -2.05	FUNCTION 5 dB	FUNCTION WIDTH			
es BW 1 Δ2 2 F 3 4 5 6 7 8 9	1.0 MHz TRG SGL	× 1.642 ms	γ (Δ) -2.05	FUNCTION 5 dB	FUNCTION WIDTH			
es BW Δ2 F 3 4 5 6 7	1.0 MHz TRG SGL	× 1.642 ms	γ (Δ) -2.05	FUNCTION 5 dB	FUNCTION WIDTH			Span 0 H (10001 pt

DH3



7.8 Band Edge

7.8.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)				
Test Method:	ANSI C63.10:2013				
Receiver setup:	RBW=100kHz, VBW=300kHz, Detector=Peak				
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.				
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane				
Test Instruments:	Refer to section 6.0 for details				
Test mode:	Refer to section 5.2 for details				
Test results:	Pass				



Test plot as follows:

GFSK Mode:



Test channel: **Highest channel** RL RF 58 2 AC Center Freq 2.526000000 GHz Avg Type: Log-Pwr Avg Hold: 100/100 RL RF 50 Ω AC Center Freq 2.526000000 GHz Avg Type: Log-Pwr AvgIHold: 2000/2000 PNO: Fast ---- Trig: Free Run #Atten: 30 dB PNO: Fast ---- Trig: Free Run #Atten: 30 dB Mkr1 2.480 2 GH 2.257 dBn lkr1 2.480 0 GH 2.230 dBr Ref Offset 1.84 dB Ref 20.00 dBm Ref Offset 1.84 dB Ref 20.00 dBm ۵ ۵ Ŷ Ô -0³ tart 2.47600 GH Res BW 100 kHz Stop 2.57600 GH Sweep 9.600 ms (1001 pts Stop 2.57600 GHz Sweep 9.600 ms (1001 pts start 2.47600 GHz Res BW 100 kHz #VBW 300 kHz #VBW 300 kHz 2.230 dBm -56.748 dBm -55.294 dBm -40.389 dBm 480 2 -56.619 dBm -59.153 dBm -40.611 dBm 2.480 0 2.483 5 2.500 0 2.485 0 NNN NNN

No-hopping mode

Hopping mode



π/4-DQPSK Mode: Test channel: Lowest channel Keysight Spectrum Analyzer - Swept SA RL RF S0 Ω AC Center Freq 2.356000000 GHz Keysight Spectrum Analyzer - Swepter RL RF S0 Ω AC Center Freq 2.356000000 GHz AUTO Avg Type: Log-Pwr Avg[Hold: 100/100 Avg Type: Log-Pwr Avg|Hold: 2000/2000 PNO: Fast ---- Trig: Free Run #Atten: 30 dB PNO: Fast ---- Trig: Free Run IEGain! ow #Atten: 30 dB .401 9 G 4.094 dl .405 8 G 3.505 dl Ref Offset 1.93 dB Ref 20.00 dBm Ref Offset 1.93 dB Ref 20.00 dBm ۵ $\langle \rangle^2$ \Diamond^4 \Diamond^3 0 Start 2.30600 GHz #Res BW 100 kHz Start 2.30600 GHz Stop 2.40600 GH Sweep 9.600 ms (1001 pt Stop 2.40600 GH Sweep 9.600 ms (1001 pts #VBW 300 kH; #VBW 300 kHz 2.401 9 GHz 2.400 0 GHz 2.390 0 GHz 2.356 0 GHz -4.094 dBm -51.148 dBm -58.634 dBm -55.619 dBm 2.405 8 GHz 2.400 0 GHz 2.390 0 GHz 2.379 4 GHz N N N -3.505 dBm -56.324 dBm -57.197 dBm -54.807 dBm N N N No-hopping mode Hopping mode

Stoppid Spectra Analysis - Swept SA Stop # X - Stop X	By add Spectrum Analyses - Swapt SA Sonce PALSE SOURCE OFF ALSIA AUTO 271:05 Million B AL NF 90 0 0 SSNCE PALSE SOURCE OFF ALSIA AUTO 271:05 Million Center Freq 2.5256000000 CHz FLOR Auto Trip: Free Run Avg Type Log-Pury Palse SMillion Fighted States FLOR Auto Trip: Free Run Avg Type Log-Pury Trap: Flore Run
Ref Offreet 184 dB Mkr1 2.479 8 GHz -3.873 dBm -3.873 dBm -3.873 dBm	Ref Offset 184 dB 4-3.822
art 2.47600 GHz Stop 2.57600 GHz art 2.47600 GHz #VBW 300 kHz Sweep 9.600 ms (1001 pts)	Start 2.47600 GHz Stop 2.576 #Res BW 100 kHz #VBW 300 kHz Sweep 9.600 ms (10
2 (1004) THE SCI. 2. Y FAULTION FAULTION FAULTION VALUE - N I F 2.483 5 GHz - 3.873 BBm N I F 2.483 5 GHz - 450.038 BBm N I F 2.000 0 GHz - 458.524 BBm N I F 2.485 0 GHz - 40.902 BBm S - 2.485 0 GHz - 40.902 BBm	IO02 IO024 X FUNCTION FUNCTION VALUE I N I C 2.479 0 GHz -3.822 dBm -3.822 dBm -3.822 dBm 2 N I I 2.433 GHz -6.626 dBm -5.220 dBm -3.822 dBm -3.822 dBm -3.822 dBm -3.823 dHz -6.623 dBm -6.220 dBm -6.270 dBm -7.200 dBm <
STATUS	MBG STATUS



8-DPSK Mode:

Report No.: GTSL202108000103F01

Test channel: Lowest channel RL RF 50 Q AC Center Freq 2.356000000 GHz RL RF 50 Ω AC Center Freq 2.356000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 Avg Type: Log-Pwr Avg Hold: 2000/2000 PNO: Fast ++ Trig: Free Rur #Atten: 30 dB PNO: Fast ---- Trig: Free Run IEGain: ow #Atten: 30 dB 2.401 8 G -3.091 dE .405 8 G 3.053 de Ref Offset 1.93 dB Ref 20.00 dBm Ref Offset 1.93 dB Ref 20.00 dBm 4 $\langle \rangle^2$ - ()⁴ 04 \Diamond^3 Ô Start 2.30600 GHz #Res BW 100 kHz Stop 2.40600 GH Sweep 9.600 ms (1001 pt tart 2.30600 GHz Res BW 100 kHz Stop 2.40600 GH 9.600 ms (1001 pt #VBW 300 kH; #VBW 300 kHz 2.401 8 GHz 2.400 0 GHz 2.390 0 GHz 2.360 5 GHz -3.091 dBm -49.150 dBm -59.132 dBm -55.959 dBm 2.405 8 GHz 2.400 0 GHz 2.390 0 GHz 2.371 9 GHz -3.053 dBm -57.519 dBm -56.579 dBm -54.607 dBm NNN NNN Hopping mode No-hopping mode Test channel: Highest channel RL RF 50 Ω AC Center Freq 2.526000000 GHz RL RF 50 Q AC C Center Freq 2.526000000 GHz Avg Type: Log-Pwr Avg|Hold: 2000/2000 Avg Type: Log-Pwr Avg Hold: 100/100 PNO: Fast ++ Trig: Free Run #Atten: 30 dB PNO: Fast ---- Trig: Free Rur #Atten: 30 dB kr1 2.480 0 GHz -3.654 dBm 2.477 8 GH Ref Offset 1.84 dB Ref 20.00 dBm Ref Offset 1.84 dB Ref 20.00 dBm 4

 All
 All</td

No-hopping mode

Hopping mode

Stop 2.57600 GH Sweep 9.600 ms (1001 pts



Test Requirement:	FCC Part15 C Section 15.209 and 15.205						
Test Method:	ANSI C63.10:2013						
Test Frequency Range:	All of the restrict bands were tested, only the worst band's (2310MHz t 2500MHz) data was showed.						
Test site:	Measurement Distance: 3m						
Receiver setup:	Frequency Detec		RBW	VBW	Remark		
	145 14	Peak	1MHz	3MHz	Peak Value		
	Above 1GHz	Peak	1MHz	10Hz	Average Value		
Limit:	Freque	ency	Limit (dBuV/	'm @3m)	Remark		
	Above 1	IGHz -	2 54.00		Average Value Peak Value		
	Tum Tables		Test Antenna- < lm 4m >				
Test Procedure:	L The EUT was	s placed on th		ating table 1	.5 meters above the		
Test Procedure:	 ground at a 3 determine the determine the 2. The EUT was antenna, whi tower. 3. The antenna ground to de horizontal an measuremer 4. For each sus and then the and the rota maximum reased the rota for the test-recer Bandwidth w 6. If the emission limit specified EUT would b margin would 	B meter cambe e position of the s set 3 meters ch was mount height is varie termine the m d vertical polant. spected emissing antenna was table was turn ading. eiver system w ith Maximum H on level of the d, then testing be reported. Of d be re-tested	e top of a rota er. The table whe highest race a away from the ed on the top ed from one maximum value rizations of the ton, the EUT with ton, the EUT with ton, the EUT with ton, the EUT with ton the EUT with the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton the ton t	ating table 1 vas rotated liation. he interferen of a variabl heter to four e of the field e antenna a was arrange hts from 1 n grees to 360 k Detect Fu mode was 1 oped and the missions th sing peak, o	360 degrees to nce-receiving le-height antenna r meters above the d strength. Both are set to make the ed to its worst case neter to 4 meters 0 degrees to find the unction and Specifie 10dB lower than the e peak values of the nat did not have 10d quasi-peak or		
Test Procedure:	 ground at a 3 determine the determine the 2. The EUT was antenna, whi tower. 3. The antenna ground to de horizontal an measuremer 4. For each sus and then the and the rota maximum reased the rota for the test-recer Bandwidth w 6. If the emission limit specified EUT would b margin would 	B meter cambe e position of the s set 3 meters ch was mount height is varie termine the m d vertical pola t. spected emissi antenna was table was turn ading. eiver system w ith Maximum H on level of the d, then testing be reported. Of d be re-tested hod as specific	e top of a rota er. The table whe highest race a away from the ed on the top ed from one maximum value rizations of the tion, the EUT whe tuned to heighed from 0 deg vas set to Pea Hold Mode. EUT in peak could be stop therwise the effective one by one used and then received	ating table 1 vas rotated liation. he interferen of a variabl heter to four e of the field e antenna a was arrange hts from 1 n grees to 360 k Detect Fu mode was 1 oped and the missions th sing peak, o	360 degrees to nce-receiving le-height antenna r meters above the d strength. Both are set to make the ed to its worst case neter to 4 meters 0 degrees to find the unction and Specifie 10dB lower than the e peak values of the nat did not have 10d quasi-peak or		
	 ground at a 3 determine the determine the 2. The EUT was antenna, whi tower. 3. The antenna ground to de horizontal an measuremer 4. For each sus and then the and the rota maximum resourement 5. The test-rece Bandwidth w 6. If the emission limit specified EUT would b margin would average met 	B meter cambe e position of the s set 3 meters ch was mount height is varie termine the m id vertical polant. spected emission antenna was table was turn ading. eiver system w ith Maximum H on level of the d, then testing he reported. Ot d be re-tested hod as specific 6.0 for details	e top of a rota er. The table whe highest race a away from the ed on the top ed from one maximum value rizations of the tion, the EUT whe tuned to heighed from 0 deg vas set to Pea Hold Mode. EUT in peak could be stop therwise the e one by one us ed and then res	ating table 1 vas rotated liation. he interferen of a variabl heter to four e of the field e antenna a was arrange hts from 1 n grees to 360 k Detect Fu mode was 1 oped and the missions th sing peak, o	360 degrees to nce-receiving le-height antenna r meters above the d strength. Both are set to make the ed to its worst case neter to 4 meters 0 degrees to find the unction and Specifie 10dB lower than the e peak values of the nat did not have 10d quasi-peak or		

7.8.2 Radiated Emission Method



Test mode:	GFSK			Lo	owest channe	el		
Peak value:		0 0	19	. 10 m	6	10 10	la l	0 0
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	48.13	27.59	5.38	30.18	50.92	74.00	-23.08	Horizontal
2400.00	59.43	27.58	5.40	30.18	62.23	74.00	-11.77	Horizontal
2310.00	47.69	27.59	5.38	30.18	50.48	74.00	-23.52	Vertical
2400.00	58.48	27.58	5.40	30.18	61.28	74.00	-12.72	Vertical
Average val	ue:	9	E.	8 8	S	8 8	L.	8 8
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	34.16	27.59	5.38	30.18	36.95	54.00	-17.05	Horizontal
2400.00	39.54	27.58	5.40	30.18	42.34	54.00	-11.66	Horizontal
2310.00	33.17	27.59	5.38	30.18	35.96	54.00	-18.04	Vertical
2400.00	39.83	27.58	5.40	30.18	42.63	54.00	-11.37	Vertical
Test channe		10	0 0		ighest chann		6	
Peak value:	1. 	9	S.		ignest chann		S.	8 8
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	46.82	27.53	5.47	29.93	49.89	74.00	-24.11	Horizontal
2500.00	45.79	27.55	5.49	29.93	48.90	74.00	-25.10	Horizontal
2483.50	49.62	27.53	5.47	29.93	52.69	74.00	-21.31	Vertical
2500.00	44.46	27.55	5.49	29.93	47.57	74.00	-26.43	Vertical
Average val	ue:		6 A				4 A	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	35.08	27.53	5.47	29.93	38.15	54.00	-15.85	Horizontal
2500.00	32.29	27.55	5.49	29.93	35.40	54.00	-18.60	Horizontal
2483.50	37.71	27.53	5.47	29.93	40.78	54.00	-13.22	Vertical
2500.00	34.68	27.55	5.49	29.93	37.79	54.00	-16.21	Vertical

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2. The emission levels of other frequencies are very lower than the limit and not show in test report.

3. The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.

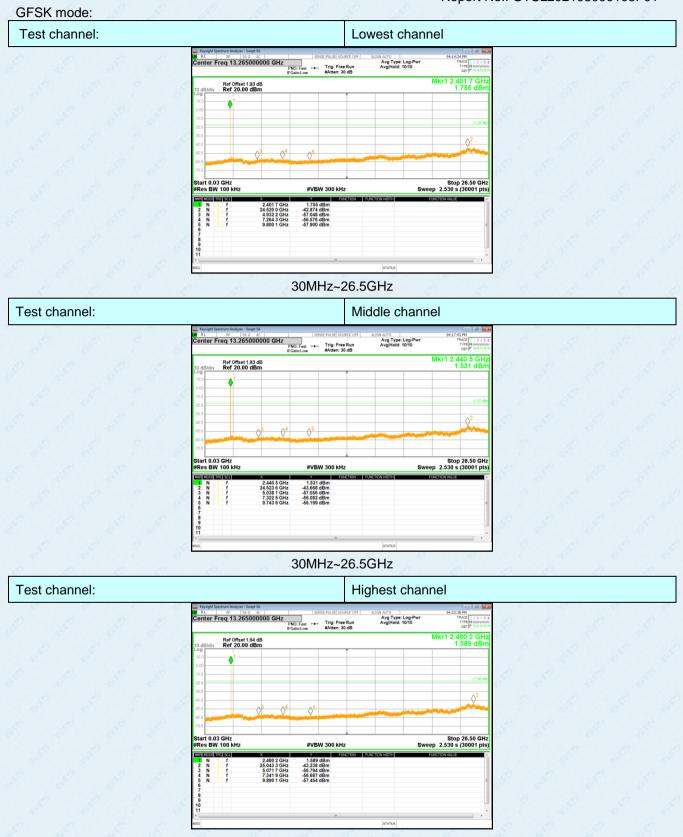
4. During the test, pre-scan the GFSK, π/4-DQPSK, 8-DPSK modulation, and found the GFSK modulation which it is worse case.

7.9 Spurious Emission

7.9.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)				
Test Method:	ANSI C63.10:2013				
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.				
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane				
Test Instruments:	Refer to section 6.0 for details				
Test mode:	Refer to section 5.2 for details				
Test results:	Pass				

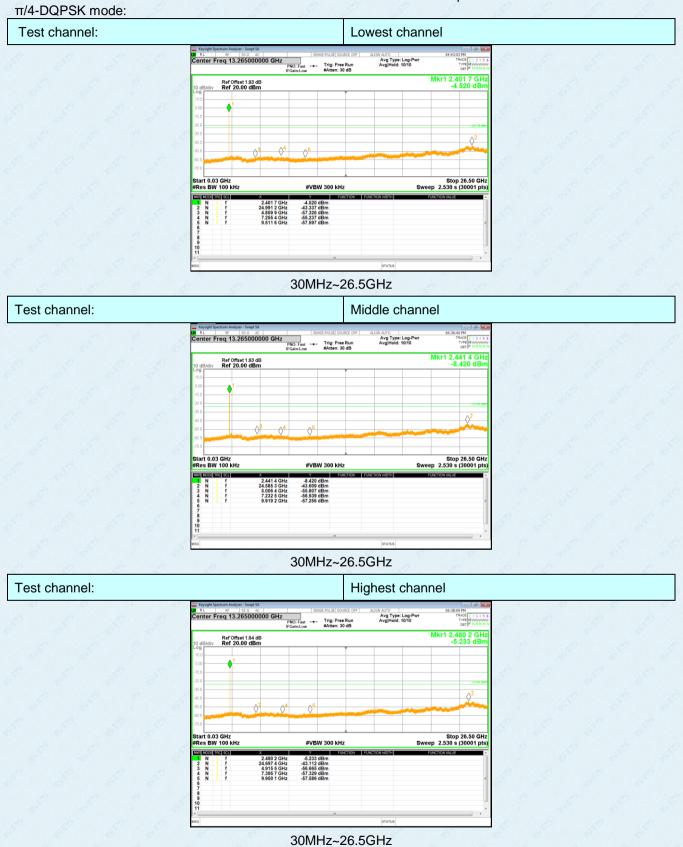
Report No.: GTSL202108000103F01



30MHz~26.5GHz

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Report No.: GTSL202108000103F01



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Report No.: GTSL202108000103F01



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Test Requirement:	FCC Part15 C Section	on 15	.209	12	é	2 10		2 0	
Test Method:	ANSI C63.10:2013		5 B		2				
Test Frequency Range:	9kHz to 25GHz	6		5		1	100	6	
Test site:	Measurement Distar	nce: 3	ßm	65	6			6 ⁵ 6 ⁵	
Receiver setup:	Frequency D		etector	RBV	V	VBW		Value	
	9KHz-150KHz	Qu	asi-peak	200Hz		600Hz		Quasi-peak	
	150KHz-30MHz	Qu	asi-peak	9KH	lz 30KHz		2	Quasi-peak	
	30MHz-1GHz	Qu	lasi-peak	120K	Hz	300KH	z	Quasi-peak	
	Above 1GHz		Peak	1M⊦	łz	3MHz		Peak	
	Above IGHZ	4	Peak	1M⊢	łz	10Hz	43	Average	
Limit:	Frequency	5	Limit (u\	//m)	V	2		easurement Distance	
	0.009MHz-0.490M	2400/F(KHz)		QP		\$¥	300m		
	0.490MHz-1.705M	1Hz	24000/F(KHz)		10	QP 30m		30m	
	1.705MHz-30MH	30			QP		30m		
	30MHz-88MHz	100		QP			3m		
	88MHz-216MHz	150		QP					
	216MHz-960MH	200		QP					
	960MHz-1GHz	500		QP					
	Above 1GHz	0	500	5	Av	Average			
	710010112	2	5000)	P	Peak		6	
Test setup:	For radiated emiss	sions	from 9kH	z to 30	MH:	z			
	< 80cm >	and the second	< 3m > Test Ar m Table+	ntenna Im Receiver-			ALLALA ALLALA ALLALA ALLA ALLA ALLA AL		

7.9.2 Radiated Emission Method

GTS	
	Report No.: GTSL202108000103F01
	For radiated emissions from 30MHz to1GHz
	For radiated emissions above 1GHz
Test Procedure:	 The EUT was placed on the top of a rotating table (0.8m for below 1G and 1.5m for above 1G) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
	 The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. For each suspected emission, the EUT was arranged to its worst case
	and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.
	5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
	6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Test Instruments:	Refer to section 6.0 for details
Test mode:	

Global United Technology Services Co., Ltd. No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone,

Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102 Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



15	1 A	8		er	Report No.: G	TSL2021080	00103F01
5	Test environment:	Temp.:	25.1 °C	Humid.:	54%	Press.:	1012mbar
	Test voltage:	DC 3.7V Fr	om battery	8 8	S	8	8 8
	Test results:	Pass	8 8	ß	R R	\$ b	9 8

Measurement data:

Remarks:

- 1. During the test, pre-scan the GFSK, π /4-DQPSK, 8-DPSK modulation, and found theGFSK modulation which it is worse case.
- 2. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

■ 9kHz~30MHz

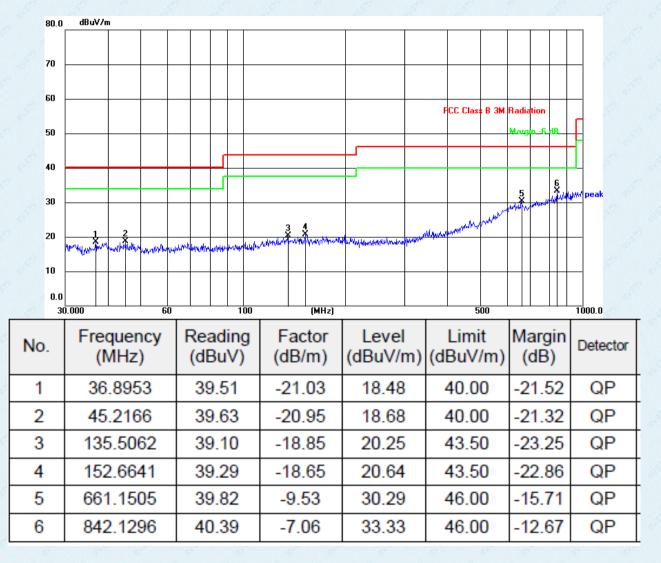
The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.



Below 1GHz

Pre-scan all test modes, found worst case at GFSK 2402MHz, and so only show the test result of GFSK 2402MHz

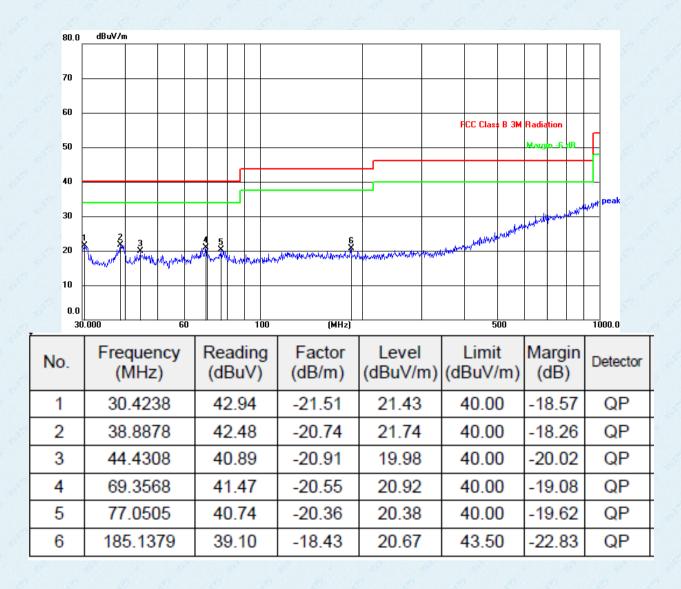
Horizontal:





Vertical:

Report No.: GTSL202108000103F01



Report No.: GTSL202108000103F01

Above 1GHz

Test channel	:			Lowe	st channel			
Peak value:	9 9	8 8	12	2	2 8	19 19	ß	5
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4804.00	48.87	31.78	8.60	32.09	57.16	74.00	-16.84	Vertical
7206.00	43.26	36.15	11.65	32.00	59.06	74.00	-14.94	Vertical
9608.00	39.05	37.95	14.14	31.62	59.52	74.00	-14.48	Vertical
12010.00	*	1	10 A		19 A	74.00		Vertical
14412.00	*	6	6	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	67	74.00		Vertical
4804.00	46.78	31.78	8.60	32.09	55.07	74.00	-18.93	Horizontal
7206.00	37.92	36.15	11.65	32.00	53.72	74.00	-20.28	Horizontal
9608.00	35.47	37.95	14.14	31.62	55.94	74.00	-18.06	Horizontal
12010.00	* 🤊	2 8	0	2	2 S	74.00	<i>L</i>	Horizontal
14412.00	*	0	.0	0 0	10	74.00	2	Horizontal
Average value	ue:	0	8				8	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4804.00	34.73	31.78	8.60	32.09	43.02	54.00	-10.98	Vertical
7206.00	30.17	36.15	11.65	32.00	45.97	54.00	-8.03	Vertical
9608.00	25.44	37.95	14.14	31.62	45.91	54.00	-8.09	Vertical
12010.00	*	S.	8	S S	8 6	54.00	14 14 14	Vertical
14412.00	*	8 8	8	2 6	le de la constanció de	54.00	8	Vertical
4804.00	34.14	31.78	8.60	32.09	42.43	54.00	-11.57	Horizontal
7206.00	27.42	36.15	11.65	32.00	43.22	54.00	-10.78	Horizontal
9608.00	24.66	37.95	14.14	31.62	45.13	54.00	-8.87	Horizontal
12010.00	*	e e	\$ ²	8	8	54.00	8	Horizontal
14412.00	*	8 8	ð	6	8	54.00	6	Horizontal



Test channel:				Midd	e channel			
Peak value:	0 1	2	Ð	0 0	12 1	9 9	12	9
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4882.00	45.42	31.85	8.67	32.12	53.82	74.00	-20.18	Vertical
7323.00	36.74	36.37	11.72	31.89	52.94	74.00	-21.06	Vertical
9764.00	33.15	38.35	14.25	31.62	54.13	74.00	-19.87	Vertical
12205.00	*	6	E.		6	74.00	6	Vertical
14646.00	*	S.	E.	E G	6	74.00	6	Vertical
4882.00	45.43	31.85	8.67	32.12	53.83	74.00	-20.17	Horizontal
7323.00	36.83	36.37	11.72	31.89	53.03	74.00	-20.97	Horizontal
9764.00	34.27	38.35	14.25	31.62	55.25	74.00	-18.75	Horizontal
12205.00	*	2	10	0 0	0	74.00	B	Horizontal
14646.00	*		e		S 5	74.00	9	Horizontal
Average valu	le:	6	4	4	6		6	6
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4882.00	33.62	31.85	8.67	32.12	42.02	54.00	-11.98	Vertical
7323.00	27.34	36.37	11.72	31.89	43.54	54.00	-10.46	Vertical
9764.00	24.58	38.35	14.25	31.62	45.56	54.00	-8.44	Vertical
12205.00	*	8 8	£	2 6	5	54.00	6	Vertical
14646.00	*	S.	R	2 8	12 1	54.00	2	Vertical
4882.00	34.86	31.85	8.67	32.12	43.26	54.00	-10.74	Horizontal
7323.00	26.75	36.37	11.72	31.89	42.95	54.00	-11.05	Horizontal
9764.00	23.24	38.35	14.25	31.62	44.22	54.00	-9.78	Horizontal
12205.00	*	10 - 5	6	6	- B	54.00	1.15	Horizontal
14646.00	*	and the second s	S.	8 8	8 4	54.00	Se de	Horizontal



Test channel	:			Highe	est channel			
Peak value:	0 1	2 2	Ø	0 0	12	9 9	le l	2 2
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4960.00	42.76	31.93	8.73	32.16	51.26	74.00	-22.74	Vertical
7440.00	38.69	36.59	11.79	31.78	55.29	74.00	-18.71	Vertical
9920.00	35.77	38.81	14.38	31.88	57.08	74.00	-16.92	Vertical
12400.00	*	8	6	6	6	74.00	6	Vertical
14880.00	*	6	6	5	6	74.00	6	Vertical
4960.00	43.62	31.93	8.73	32.16	52.12	74.00	-21.88	Horizontal
7440.00	36.53	36.59	11.79	31.78	53.13	74.00	-20.87	Horizontal
9920.00	33.84	38.81	14.38	31.88	55.15	74.00	-18.85	Horizontal
12400.00	*	2	19	6 6		74.00	Jel .	Horizontal
14880.00	*		8		8 8	74.00	0	Horizontal
Average val	ue:	6	e e	4	6		6	6
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4960.00	34.15	31.93	8.73	32.16	42.65	54.00	-11.35	Vertical
7440.00	29.03	36.59	11.79	31.78	45.63	54.00	-8.37	Vertical
9920.00	25.39	38.81	14.38	31.88	46.70	54.00	-7.30	Vertical
12400.00	*	8 8	all a	2	8	54.00	Å	Vertical
14880.00	*	8	S	8 8	8	54.00	8	Vertical
4960.00	35.15	31.93	8.73	32.16	43.65	54.00	-10.35	Horizontal
7440.00	27.47	36.59	11.79	31.78	44.07	54.00	-9.93	Horizontal
9920.00	23.69	38.81	14.38	31.88	45.00	54.00	-9.00	Horizontal
12400.00	*	8 - 8	¢.	1	- A	54.00	6	Horizontal

Remarks:

14880.00

1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

2. "*", means this data is the too weak instrument of signal is unable to test.

3. The emission levels of other frequencies are very lower than the limit and not show in test report.

4. The test data shows only the worst case GFSK mode

*

Horizontal

54.00

Report No.: GTSL202108000103F01

8 Test Setup Photo

Reference to the **appendix I** for details.

9 EUT Constructional Details

Reference to the **appendix II** for details.

-----End-----