

Report No.: File reference No.:	FCC 1901220 2019-03-01
Applicant:	FORM ELECTRONICS CO., LTD.
Product:	WIRELESS MIX TAPE SPEAKER
Model No.:	FM0191, SK SPEAKERTAPE1
Trademark:	SUCK UK
Test Standards:	FCC Part 15.247
Test result:	It is herewith confirmed and found to comply with the requirements set up by ANSI C63.10, FCC Part 15.247 for the evaluation of electromagnetic compatibility

Approved By

Jack Chung

Jack Chung

Manager

Dated:

March 01, 2019

Results appearing herein relate only to the sample tested The technical reports is issued errors and omissions exempt and is subject to withdrawal at

SHENZHEN TIMEWAY TESTING LABORATORIES

Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timeway-lab.com



Special Statement:

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meets with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

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

CNAS-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of testing Laboratories.

FCC-Registration No.: 744189

The 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 our files. Registration No.: 744189.

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1.0 **General Details**

1.1 Test Lab Details

Name :	SHENZHEN TIMEWAY TESTING LABORATORIES.
Address:	Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le
	Village, Nanshan District, Shenzhen, China
Telephone:	(755) 83448688
Fax:	(755) 83442996

1.2 Applicant Details

Applicant:	FORM ELECTRONICS CO., LTD.
Address:	4F Bldg E, JunFeng Industrial Park, Lezhujiao, Xixiang, Bao'an Dist, Shenzhen China
Telephone:	86-13902920187
Fax:	86-755-84193911

1.3 Description of EUT

Description of Lo I	
Product:	WIRELESS MIX TAPE SPEAKER
Manufacturer:	FORM ELECTRONICS CO., LTD.
Address:	4F Bldg E, JunFeng Industrial Park, Lezhujiao, Xixiang, Bao'an Dist, Shenzhen
	China
Brand Name:	SUCK UK
Model Number:	FM0191
Additional Model Numb	er: SK SPEAKERTAPE1
Type of Modulation	GFSK, 刀/4DQPSK, 8DPSK for Bluetooth
Frequency range	2402-2480MHz for Bluetooth
Channel Spacing	1MHz for Bluetooth
Frequency Selection	By software
Channel Number	79 channel for Bluetooth
Antenna:	PCB Antenna. The gain of the antennas is 1.7dBi.
Software Version:	2B1A5CDD(SK-TAPE)
Hardware Version:	FM0191 V1.1 2018-12-4

Submitted Sample: 2 Samples 1.4

1.5 Test Duration 2019-01-24 to 2019-03-01

1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB Radiated Emissions below 1GHz Uncertainty =4.7dB

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Radiated Emissions above 1GHz Uncertainty =6.0dB Conducted Power Uncertainty =6.0dB Occupied Channel Bandwidth Uncertainty =5%

1.7 Test Engineer

Terry Tang

The sample tested by

Print Name: Terry Tang

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2.0 Test Equipment					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	R&S	ESPI 3	100379	2018-06-22	2019-06-21
TWO Line-V-NETW	R&S	EZH3-Z5	100294	2018-06-22	2019-06-21
TWO Line-V-NETW	R&S	EZH3-Z5	100253	2018-06-22	2019-06-21
Ultra Broadband ANT	R&S	HL562	100157	2018-06-18	2019-06-17
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2018-06-22	2019-06-21
Loop Antenna	EMCO	6507	00078608	2018-06-25	2019-06-24
Spectrum	R&S	FSIQ26	100292	2018-06-22	2019-06-21
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2018-06-25	2019-06-24
Horn Antenna	R&S	BBHA 9120D	9120D-631	2018-08-24	2019-08-23
Power meter	Anritsu	ML2487A	6K00003613	2018-08-22	2019-08-21
Power sensor	Anritsu	MA2491A	32263	2018-08-22	2019-08-21
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2018-07-04	2019-07-03
9*6*6 Anechoic			N/A	2018-02-07	2021-02-06
EMI Test Receiver	RS	ESVB	826156/011	2018-06-22	2019-06-21
EMI Test Receiver	RS	ESH3	860904/006	2018-06-22	2019-06-21
Spectrum	HP/Agilent	ESA-L1500A	US37451154	2018-06-22	2019-06-21
Spectrum	HP/Agilent	E4407B	MY50441392	2018-03-27	2019-03-26
Spectrum	RS	FSP	1164.4391.38	2019-01-20	2020-01-19
RF Cable	Zhengdi	ZT26-NJ-NJ-8 M/FA		2018-05-24	2019-05-23
RF Cable	Zhengdi	7m		2018-03-17	2019-03-16
RF Switch	EM	EMSW18	060391	2018-06-22	2019-06-21
Pre-Amplifier	Schwarebeck	BBV9743	#218	2018-06-22	2019-06-21
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2018-08-05	2019-08-04
LISN	SCHAFFNER	NNB42	00012	2019-01-08	2020-01-07

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3.0 **Technical Details**

3.1 Summary of test results

Requirement	CFR 47 Section	Result	Notes
Antenna Requirement	15.203, 15.247(c)	PASS	Complies
Maximum Peak Out Power	15.247 (a1), (b1)	PASS	Complies
Carrier Frequency Separation	15.247(a)(1)	PASS	Complies
20dB Channel Bandwidth	15.247 (a)(1)	PASS	Complies
Number of Hopping Channels	15.247(a)(iii), 15.247(b)(1)	PASS	Complies
Time of Occupancy (Dwell Time)	15.247(a)(iii)	PASS	Complies
Spurious Emission, Band Edge, and Restricted bands	15.247(d),15.205(a) , 15.209 (a)	PASS	Complies
Conducted Emissions	15.207(a)	PASS	Complies

3.2 **Test Standards**

FCC Part 15 Subpart & Subpart C, Paragraph 15.247

4.0 **EUT Modification**

No modification by SHENZHEN TIMEWAY TESTING LABORATORIES.

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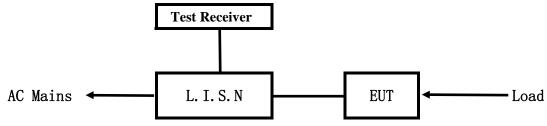
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adopt any other remedies which may be appropriate.



5. Power Line Conducted Emission Test

5.1 Schematics of the test

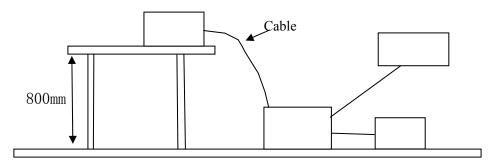


EUT: Equipment Under Test

5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.10-2013. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.10–2013. Test Voltage: 120V~60Hz

Block diagram of Test setup



5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.10-2013. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

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A. EUT

Device	Manufacturer	Model	FCC ID	
WIRELESS MIX TAPE	EODM ELECTRONICS CO. LTD	FM0191	2AAL7-FM0191	
SPEAKER	FORM ELECTRONICS CO., LTD.	FIM0191		

B. Internal Device

Device	Manufacturer	Model	Rating

C. Peripherals

Device	Manufacturer	Model	Rating	
Power Supply	BSY	BSY01J30500150V U1	Input:100-240V~, 50/60Hz, 0.2A,;	
			Output: DC5V, 1.5A	

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.10-2013.

- A Setup the EUT and simulators as shown on follow
- B Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.107,15.207

	Frequency	Class A Lim	its (dB µ V)	Class B Limits (dB µ V)		
(MHz)		Quasi-peak Level	Average Level	Quasi-peak Level	Average Level	
	$0.15~\sim~0.50$	79.0	66.0	66.0~56.0*	56.0~46.0*	
	$0.50~\sim~5.00$	73.0	60.0	56.0	46.0	
	$5.00 \sim 30.00$	73.0	60.0	60.0	50.0	

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The tighter limit shall apply at the transition frequencies

5.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

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Conducted Emission on Live Terminal (150kHz to 30MHz) A: **EUT Operating Environment** Temperature: 26°C Atmospheric Pressure: 101 KPa Humidity: 65%RH **EUT set Condition: Keep Bluetooth Transmitting Equipment Level: Class B Results: PASS** Please refer to following diagram for individual 80.0 dBuV Qp: AVG: 40 0.0 0.150 0.5 (MHz) 5 30.000

No. I	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBu∨	dB	dBu∨	dBu∨	dB	Detector	Comment
1 '	*	0.4850	40.70	9.77	50.47	56.25	-5.78	QP	
2		0.4850	16.40	9.77	26.17	46.25	-20.08	AVG	
3		0.9546	27.00	9.79	36.79	56.00	-19.21	QP	
4		0.9546	-7.90	9.79	1.89	46.00	-44.11	AVG	

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B: Conducted Emission on Neutral Terminal (150kHz to 30MHz) **EUT Operating Environment** Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 KPa **EUT set Condition: Keep Bluetooth Transmitting Equipment Level: Class B Results: Pass** Please refer to following diagram for individual 80.0 dBuV Qp: AVG: 40 0.0 0.150 0.5 (MHz) 5 30.000

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBu∨	dBu∨	dB	Detector	Comment
1	*	0.4864	32.60	9.77	42.37	56.23	-13.86	QP	
2		0.4864	10.10	9.77	19.87	46.23	-26.36	AVG	
3		0.9640	27.60	9.79	37.39	56.00	-18.61	QP	
4		0.9640	-2.20	9.79	7.59	46.00	-38.41	AVG	

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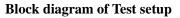
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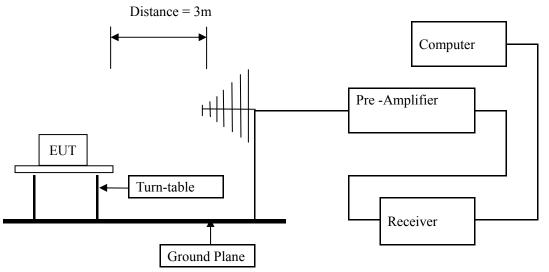


6 Radiated Emission Test

6.1 Test Method and test Procedure:

- The EUT was tested according to ANSI C63.10-2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.10-2013.
- (3) The frequency spectrum from 30 MHz to 25GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 kHz. For measurement above 1GHz, peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=10Hz and PK detector. Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "**QP**" in the data table.
- (6) The antenna polarization : Vertical polarization and Horizontal polarization.





- 6.2 Configuration of The EUT Same as section 5.3 of this report
- 6.3 EUT Operating Condition

Same as section 5.4 of this report.

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6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

Frequencies in restricted band ar	e complied to limit on Para	graph 15.209 and 15.109 and RSS-210

	<u>.</u>	01
Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

Note: 1. RF Voltage $(dBuV) = 20 \log RF$ Voltage (uV)

2. In the Above Table, the higher limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT

4. This is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.

5. 8DPSK was the worse case because it has highest output power

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Test result General Radiated Emission Data and Harmonics Radiated Emission Data

Radiated Emission In Horizontal/Vertical (30MHz----1000MHz)

EUT set Condition: Keep Bluetooth Transmitting

Results: Pass

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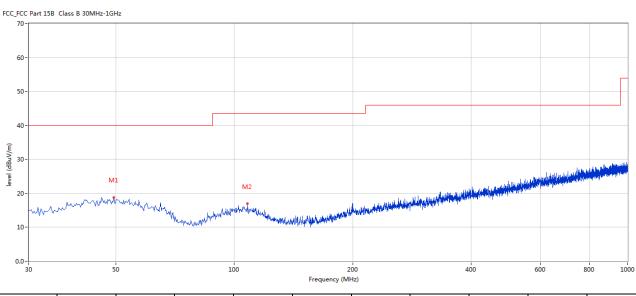
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Test Figure:



No.	Frequen	Results	Factor	Limit	Over	Detector	Table (o)	Height	ANT	Verdict
	cy (MHz)	(dBuV/m	(dB)	(dBuV/m	Limit			(cm)		
))	(dB)					
1	49.395	18.82	-11.28	40.0	-21.18	Peak	157.00	100	н	Pass
2	108.065	16.93	-13.42	43.5	-26.57	Peak	309.00	100	Н	Pass

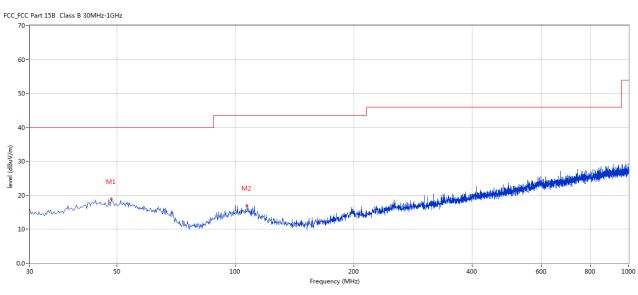
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V

Test Figure:



No.	Frequen	Results	Factor	Limit	Over	Detector	Table (o)	Height	ANT	Verdict
	cy (MHz)	(dBuV/m	(dB)	(dBuV/m	Limit			(cm)		
))	(dB)					
1	48.425	18.97	-11.22	40.0	-21.03	Peak	185.00	100	V	Pass
2	107.096	17.04	-13.39	43.5	-26.46	Peak	135.00	100	V	Pass

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1	9	. ,	
Frequency (MHz)	Level@3m (dBµV/m)	Antenna Polarity	Limit@3m (dB µ V/m)
4804		Н	74(Peak)/ 54(AV)
4804		V	74(Peak)/ 54(AV)
7206		H/V	74(Peak)/ 54(AV)
9608		H/V	74(Peak)/ 54(AV)
12010		H/V	74(Peak)/ 54(AV)
14412		H/V	74(Peak)/ 54(AV)
16814		H/V	74(Peak)/ 54(AV)
19216		H/V	74(Peak)/ 54(AV)
21618		H/V	74(Peak)/ 54(AV)
24020		H/V	74(Peak)/ 54(AV)

Operation Mode: Transmitting under Low Channel (2402MHz)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

Operation Mode: Transmitting under Middle Channel (2441MHz)

1	0	. ,	
Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB µ V/m)
4882		Н	74(Peak)/ 54(AV)
4882		V	74(Peak)/ 54(AV)
7323		H/V	74(Peak)/ 54(AV)
9764		H/V	74(Peak)/ 54(AV)
12205		H/V	74(Peak)/ 54(AV)
14646		H/V	74(Peak)/ 54(AV)
17087		H/V	74(Peak)/ 54(AV)
19528		H/V	74(Peak)/ 54(AV)
21969		H/V	74(Peak)/ 54(AV)
24410		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

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Operation Mode:	Transmitting under High C	nannei (2480MHZ)	
Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB µ V/m)
4960		Н	74(Peak)/ 54(AV)
4960		V	74(Peak)/ 54(AV)
7440		H/V	74(Peak)/ 54(AV)
9920		H/V	74(Peak)/ 54(AV)
12400		H/V	74(Peak)/ 54(AV)
14880		H/V	74(Peak)/ 54(AV)
17360		H/V	74(Peak)/ 54(AV)
19840		H/V	74(Peak)/ 54(AV)
22320		H/V	74(Peak)/ 54(AV)
24800		H/V	74(Peak)/ 54(AV)

Operation Mode: Transmitting under High Channel (2480MHz)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

The report refers only to the sample tested and does not apply to the bulk.

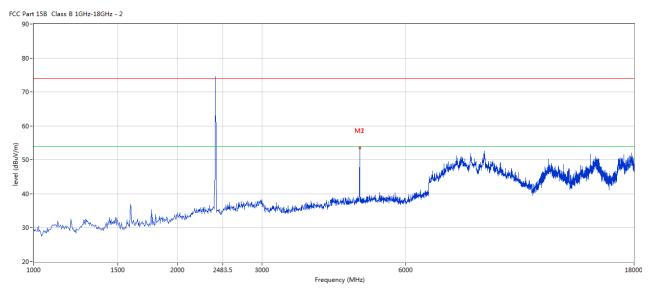
The report refers only to the sample tested and does not apply to the bulk. This report is issued in confidence to the client and it will be strictly treated as such by the SHENZHEN TIMEWAY TESTING LABORATORIES. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the SHENZHEN TIMEWAY TESTING LABORATORIES. to his customer. Supplier or others persons directly concerned. SHENZHEN TIMEWAY TESTING LABORATORIES. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report. In the event of the improper use of the report. The SHENZHEN TIMEWAY TESTING LABORATORIES. reserves the rights to withdraw it and to advert event of the improper use of the report. The SHENZHEN TIMEWAY TESTING LABORATORIES. reserves the rights to withdraw it and to

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Please refer to the following test plots for details:

Low Channel: Vertical



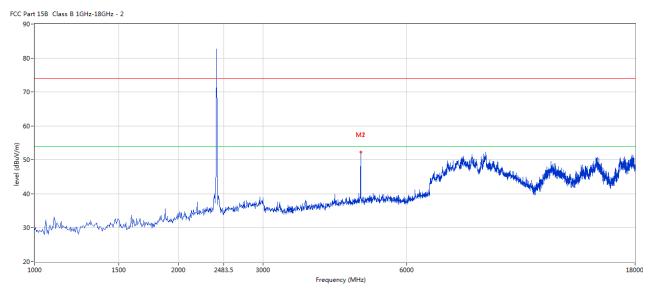
No.	Frequency	Results	Factor	Limit	Over	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m	(dB)	(dBuV/m	Limit			(cm)		
))	(dB)					
1	4803.799	53.56	3.12	74.0	-20.44	Peak	191.00	100	V	Pass
2	4803.799	41.62	3.12	54.0	-12.38	AV	191.00	100	V	Pass

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Low Channel : Horizontal



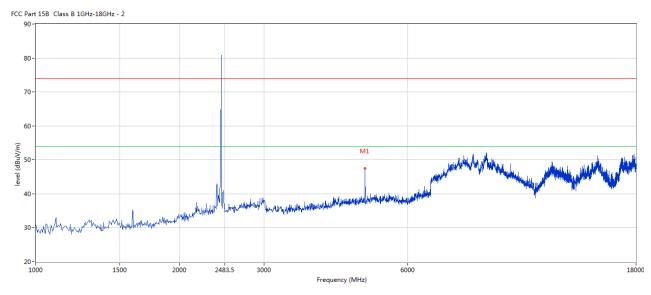
No.	Frequency	Results	Factor	Limit	Over	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m	(dB)	(dBuV/m	Limit			(cm)		
))	(dB)					
1	4803.799	52.35	3.12	74.0	-21.65	Peak	360.00	100	н	Pass
2	4803.799	40.16	3.12	54.0	-13.84	AV	360.00	100	н	Pass

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Middle Channel : Horizontal



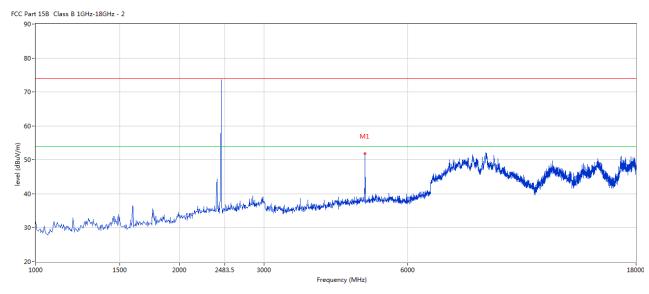
ſ	No.	Frequency	Results	Factor	Limit	Over	Detector	Table (o)	Height	ANT	Verdict
		(MHz)	(dBuV/m	(dB)	(dBuV/m	Limit			(cm)		
))	(dB)					
Γ	1	4882.529	47.56	3.20	74.0	-26.44	Peak	183.00	100	Н	Pass

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Middle Channel : Vertical



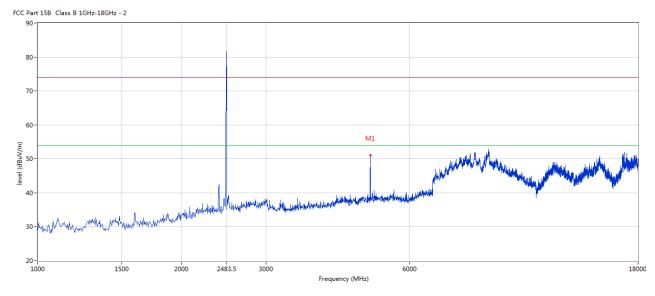
No.	Frequency	Results	Factor	Limit	Over	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m	(dB)	(dBuV/m	Limit			(cm)		
))	(dB)					
1	4882.529	51.88	3.20	74.0	-22.12	Peak	107.00	100	V	Pass

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High Channel : Horizontal

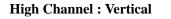


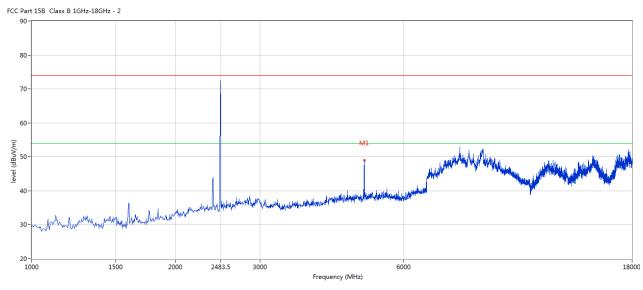
	No.	Frequency	Results	Factor	Limit	Over	Detector	Table (o)	Height	ANT	Verdict
		(MHz)	(dBuV/m	(dB)	(dBuV/m	Limit			(cm)		
))	(dB)					
ſ	1	4960.010	51.12	3.36	74.0	-22.88	Peak	26.00	100	н	Pass

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No.	Frequency	Results	Factor	Limit	Over	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m	(dB)	(dBuV/m	Limit			(cm)		
))	(dB)					
1	4960.010	49.04	3.36	74.0	-24.96	Peak	179.00	100	V	Pass

Note: for the radiated emissions above 18G, it is the floor noise.

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7.0 20dB Bandwidth Measurement

7.1 Regulation

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

7.2 Limits of 20dB Bandwidth Measurement

N/A

7.3 Test Procedure.

1. Check the calibration of the measuring instrument (spectrum analyzer) using either an internal calibrator or a known signal from an external generator.

2. Set the spectrum analyzer as follows: Span =3MHz, RBW =30 kHz, VBW=100 kHz, Sweep = auto Detector function = peak, Trace = max hold

3. Measure the highest amplitude appearing on spectral display and record the level to calculate results. 6. Repeat above procedures until all frequencies measured were complete.

7.4 Test Result

Type of Modulation: GFSK

Type of Modulation. GI 51X								
EUT	WIRELESS	S MIX TAPE SPEAKER	Model	FM0191				
Mode	Ke	ep Transmitting	Input Voltage	DC3.7V				
Temperat	ure	24 deg. C,	Humidity	56% RH				
Channel	Channel Frequency (MHz)	20 dB Bandwidth (kHz)	Minimum Limit (kHz)	Pass/ Fail				
Low	2402	902		Pass				
Middle	2441	902		Pass				
High	2480	902		Pass				

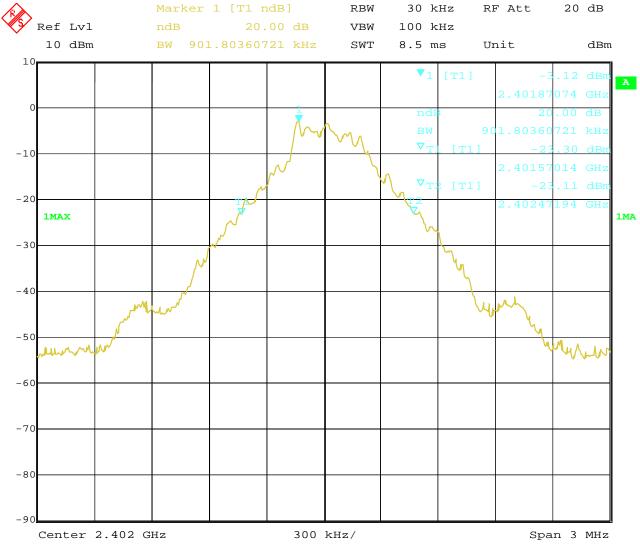
The report refers only to the sample tested and does not apply to the bulk.

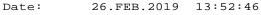
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Test Figure: 1. Condition: Low Channel





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2. Condition: Middle Channel



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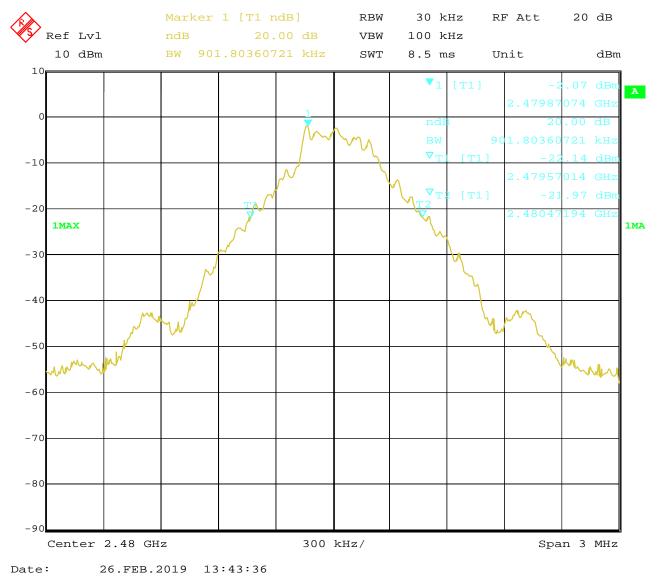
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3. High Channel



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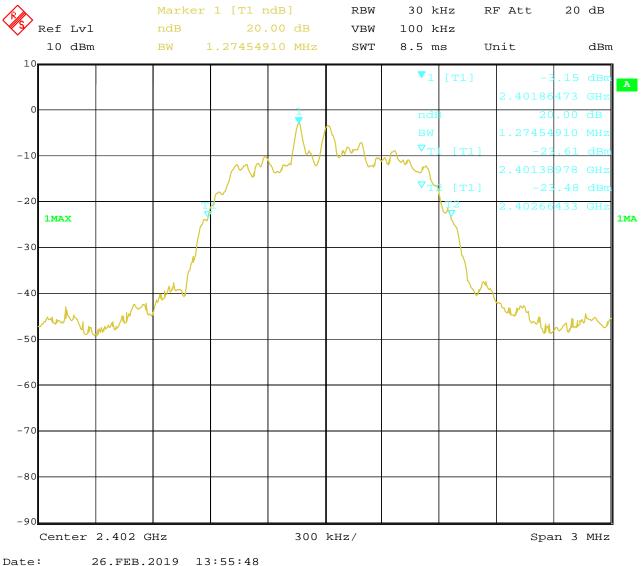
Test Result Type of Modulation: Л/4DQPSK

EUT	WIRELES	S MIX TAPE SPEAKER	Model	FM0191
Mode	K	eep Transmitting	Input Voltage	DC3.7V
Temperat	ure	24 deg. C,	Humidity	56% RH
Channel	Channel Frequency (MHz)	20 dB Bandwidth (kHz)	Maximum Limit (kHz)	Pass/ Fail
Low	2402	1275		Pass
Middle	2441	1269		Pass
High	2480	1275		Pass

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Test Figure: 1. Condition: Low Channel





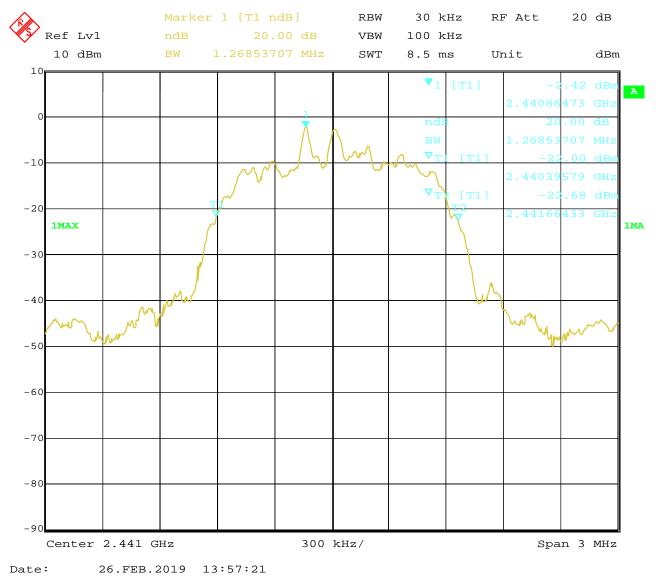
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Page 31 of 80

2. Condition: Middle Channel



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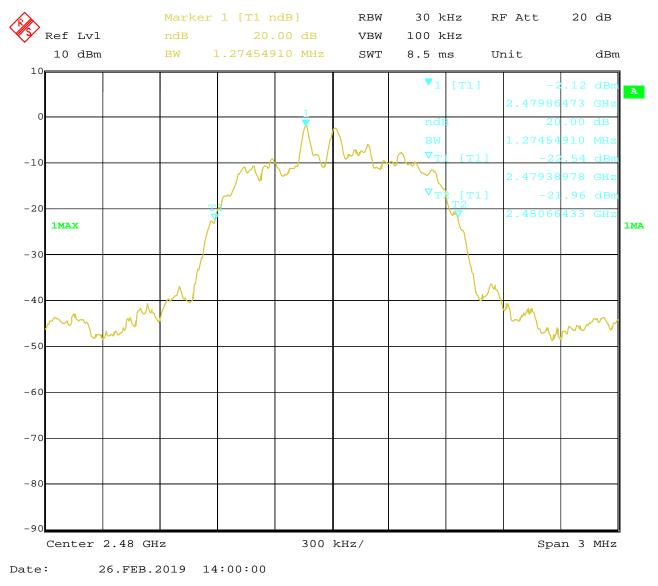
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3. High Channel



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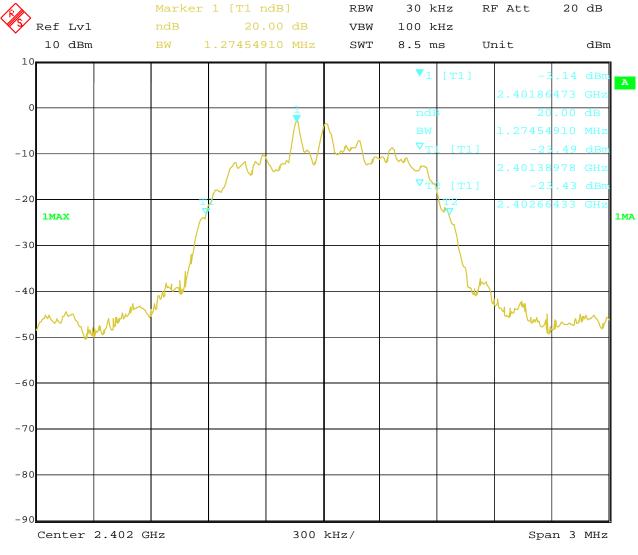
Test Result Type of Modulation: 8DPSK

EUT	WIRELES	S MIX TAPE SPEAKER	Model	FM0191
Mode	Ke	eep Transmitting	Input Voltage	DC3.7V
Temperat	ure	24 deg. C,	Humidity	56% RH
Channel	Channel Frequency (MHz)	20 dB Bandwidth (kHz)	Maximum Limit (kHz)	Pass/ Fail
Low	2402	1275		Pass
Middle	2441	1238		Pass
High	2480	1238		Pass

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Test Figure: 1. Condition: Low Channel



Date:

26.FEB.2019 14:04:19

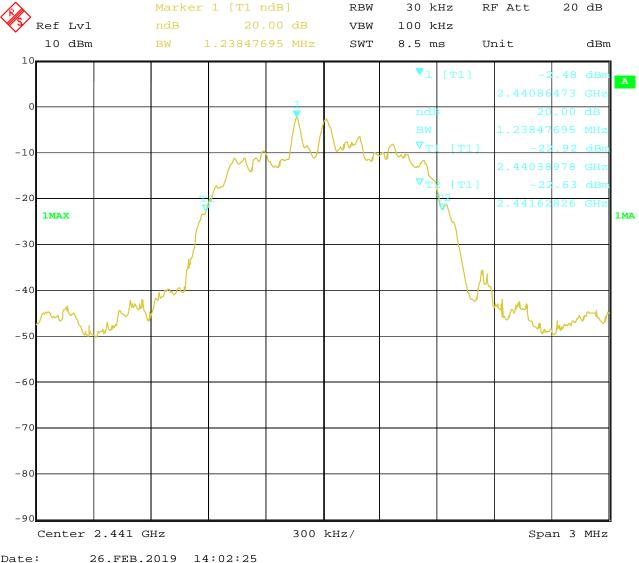
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2. Condition: Middle Channel



Date: 26.FEB.2019

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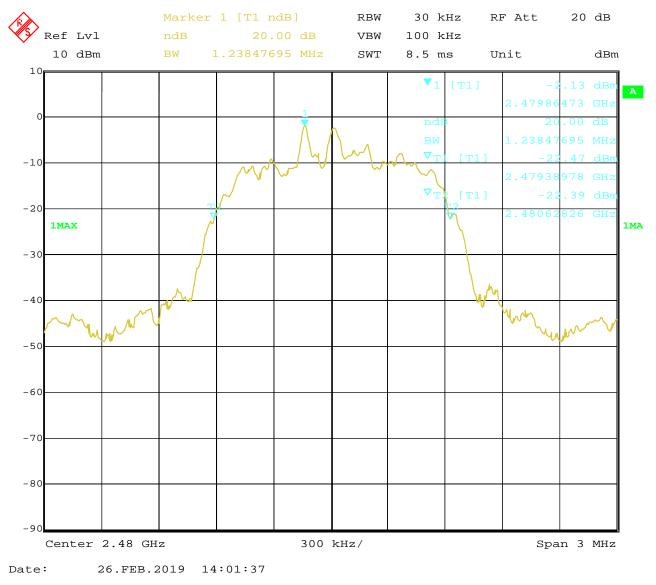
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3. High Channel



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8. Maximum Output Power 8.1 Regulation

According to §15.247(b)(1), for frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5MHz band:0.125 watts. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

8.2 Limits of Maximum Output Power

The Maximum Output Power Measurement is 30dBm.

8.3 Test Procedure

1. Check the calibration of the measuring instrument (spectrum analyzer) using either an internal calibrator or a known signal from an external generator.

2. Set the spectrum analyzer as follows: Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel; RBW > the 20 dB bandwidth of the emission being measured; VBW = RBW=3MHz;

Sweep = 60s; Detector function = PK; Trace = max hold

3. Measure the highest amplitude appearing on spectral display and record the level to calculate results.

4. Repeat above procedures until all frequencies measured were complete.

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8.4Test Results Type of Modulation: GFSK

EUT	WIRELESS MIX TAPE SPEAKER N		Mode	1	FM0191
Mode	Iode Keep Transmitting Inp		Input Voltage		DC3.7V
Temperature	e 24 deg. C, Humic		dity	56% RH	
Channel	Channel Frequend (MHz)	y Max. Power Output (dBm	1)	Peak Power Limit	Pass/ Fail
		Peak		(dBm)	
Low	2402	-1.15		30	Pass
Middle	2441	-0.48		30	Pass
High	2480	-0.21		30	Pass

Note: 1. the result basic equation calculation as follow:

Max. Power Output = Power Reading + Cable loss + Attenuator

- 2. The worse case was recorded
- 3. The Peak power was measured

Type of Modulation: Л/**4DQPSK**

EUT	EUT WIRELESS MIX TAPE SPEAKER		Model		FM0191			
Mode	Mode Keep Transmitting		Input Voltage		DC3.7V			
Temperature	tture 24 deg. C, Hum		Humidity		56% RH			
Channel	Channel Frequency (MHz)	Max. Power Output (dBm) Peak		Peak Power Limit (dBm)	Pass/ Fail			
Low	2402	0.05		30	Pass			
Middle	2441	0.71		30	Pass			
High	2480	0.99		30	Pass			

Note: 1. the result basic equation calculation as follow:

Max. Power Output = Power Reading + Cable loss + Attenuator

- 2. The worse case was recorded
- 3. The Peak power was measured

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Type of Modulation: 8DPSK

EUT	WIRELES	WIRELESS MIX TAPE SPEAKER		Model	FM0191
Mode	e Keep Transmitting		Input Voltage		DC3.7V
Temperature	erature 24 deg. C, Hur		umidity	56% RH	
Channel Channel Frequency		Max. Power Output (dBm	Max. Power Output (dBm)		Pass/ Fail
Chamier	(MHz)	Peak		Limit (dBm)	
Low	2402	0.05		30	Pass
Middle	2441	0.71		30	Pass
High	2480	1.12		30	Pass

Note: 1. the result basic equation calculation as follow:

Max. Power Output = Power Reading + Cable loss + Attenuator

- 2. The worse case was recorded
- 3. The Peak power was measured

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9. Carrier Frequency Separation

9.1 Regulation

According to §15.247(a)(1), frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

9.2 Limits of Carrier Frequency Separation

The Maximum Power Spectral Density Measurement is 25kHz or two-thirds of the 20dB bandwidth of the hopping Channel which is great.

9.3 Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.

2. Set the spectrum analyzer as follows: Span = wide enough to capture the peaks of two adjacent channels: Resolution (or IF) Bandwidth (RBW) $\geq 1\%$ of the span; Video (or Average) Bandwidth (VBW) $\geq RBW$; Sweep = auto; Detector function = peak; Trace = max hold

3. Measure the separation between the peaks of the adjacent channels using the marker-delta function.

4. Repeat above procedures until all frequencies measured were complete.

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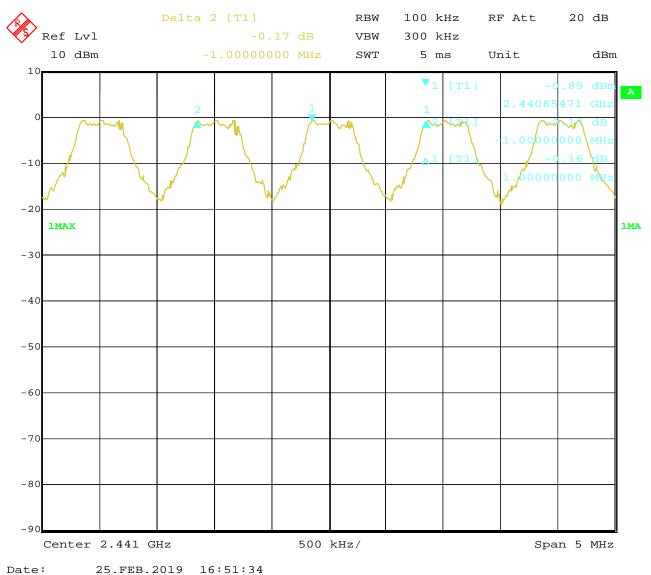


9.4Test Result

Type of Modulation: GFSK

EUT	WIRELESS MIX TAPI	Model		FM0191	
Mode	Hopping O	Input Voltage		DC3.7V	
Temperature	24 deg. C,		Humidity		56% RH
Carrier I	Frequency Separation		Limit		Pass/ Fail
	1.000MHz	\geq 25 kHz or 2/3	3 of the 20 dB ban	dwidth	Pass

Test Plots



The report refers only to the sample tested and does not apply to the bulk.

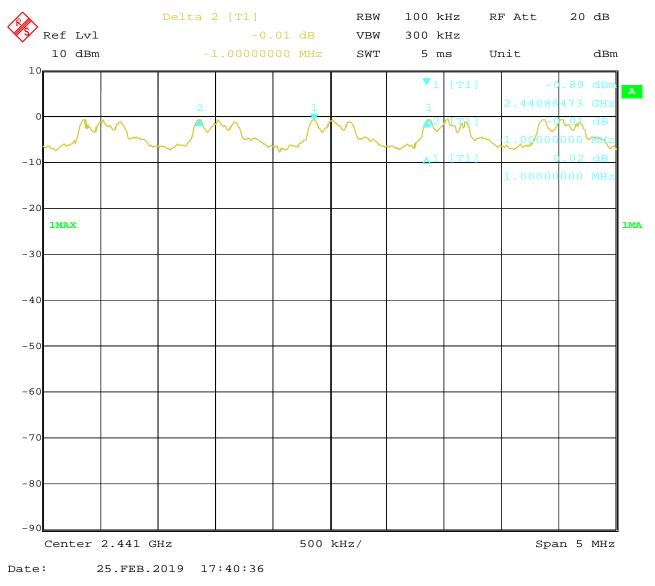
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Type of Modulation: Л/4DQPSK

EUT	WIRELESS MIX TAPI	Model		FM0191	
Mode	Hopping O	Input Voltage		DC3.7V	
Temperature	24 deg. C,	24 deg. C,			56% RH
Carrier I	Frequency Separation		Limit		Pass/ Fail
	1.000MHz	≥ 25 kHz or 2	2/3 of 20 dB bandy	width	Pass

Test Plots



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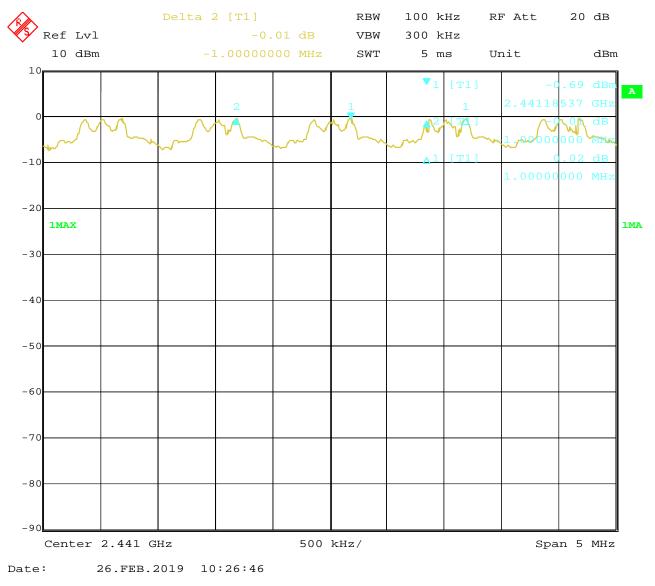
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Type of Modulation: 8DPSK

EUT	WIRELESS MIX TAPI	Model		FM0191	
Mode	Hopping O	Input Voltage		DC3.7V	
Temperature	24 deg. C,		Humidity		56% RH
Carrier I	Frequency Separation		Limit		Pass/ Fail
	1.000MHz	≥ 25 kHz or 2	2/3 of 20 dB bandy	width	Pass

Test Plots



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10. Number of Hopping Channels 10.1 Regulation

According to §15.247(a)(1)(iii), frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used. According to §15.247(b)(1), for frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

10.2 Limits of Number of Hopping Channels

The frequency hopping systems in the 2400-2483.5MHz band shall use at least 15 channels.

10.3 Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.

2. Set the spectrum analyzer as follows: Span = the frequency band of operation; RBW=100 kHz, VBW=300 kHz; Sweep = auto; Detector function = peak; Trace = max hold

3. Record the number of hopping channels.

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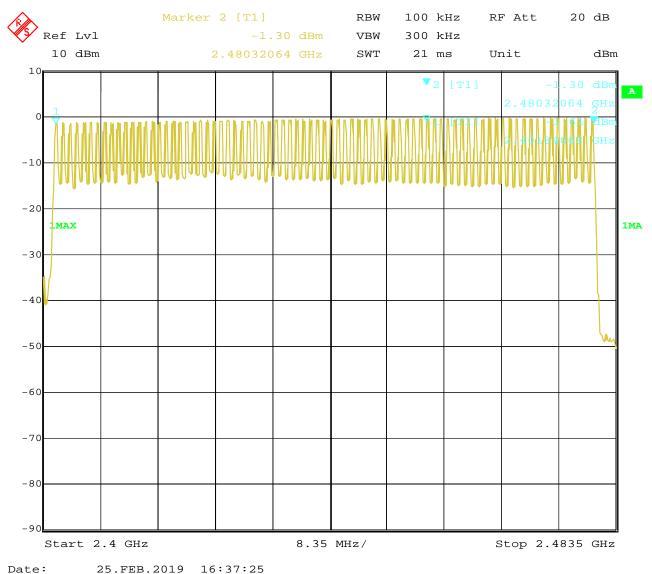


10.4Test Result

Type of Modulation: GFSK

EUT	WIRELESS MIX TAPE		Model	FM0191		
	SPEAKER					
Mode	Hopping On		Input Voltage	DC3.7V		
Temperature	2	24 deg. C,	Humidity		56% RH	
Operating Frequency Number		Number of hop	ping channels	Limit	Pass/ Fail	
2402-2480MH	Iz	79		≥15	Pass	

Test Plot



The report refers only to the sample tested and does not apply to the bulk.

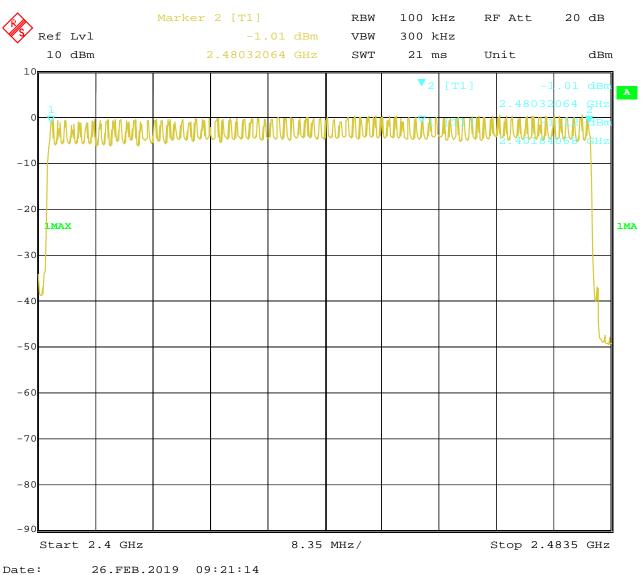
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Type of Modulation: Л/4DQPSK

EUT	WIRELESS MIX TAPE SPEAKER		Model		FM0191
Mode	Hopping On		Input Voltage	DC3.7V	
Temperature		24 deg. C,		56% RH	
Operating Frequency		Number of hopping channels	Lin	Limit Pass	
2402-2480MHz		79	≥ 1	5	Pass

Test Plot



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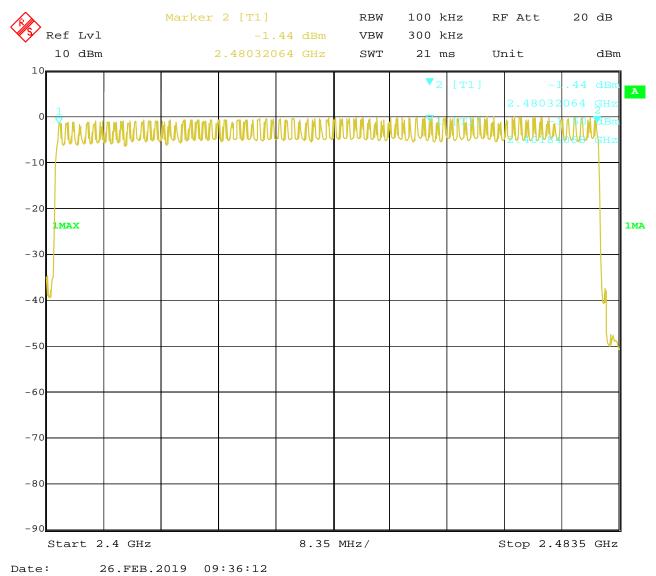
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Type of Modulation: 8DPSK

EUT	WIRELESS MIX TAPE SPEAKER		Mod	lel		FM0191	
Mode	Hopping On		Inpu Volt			DC3.7V	
Temperature	24 deg. C,		Hun	nidity		56% RH	
Operating Frequency		Number of hopping channels	Lim		nit	Pass/ Fail	
2402-2480MH	Ηz	79		2	15	Pass	

Test Plot



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11. Time of Occupancy (Dwell Time)

11.1 Regulation

According to §15.247(a)(1)(iii), frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

11.2 Limits of Carrier Frequency Separation

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed

11.3 Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.

2. Set the spectrum analyzer as follows: Span = zero span, centered on a hopping channel; RBW = 1 MHz; VBW

RBW; Sweep = as necessary to capture the entire dwell time per hopping channel; Detector function = peak; Trace = max hold

3. Measure the dwell time using the marker-delta function.

4. Repeat above procedures until all frequencies measured were complete.

5. Repeat this test for different modes of operation (e.g., data rate, modulation format, etc.), if applicable.

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11.4 Test Result

Type of Modulation: GFSK

EUT	WIRELESS MIX	WIRELESS MIX TAPE SPEAKER		I	FM0191			
Mode	Keep Tr	ansmitting	Input Voltage	DC3.7V				
Temperature	e 24 d	eg. C,	Humidity	5	56% RH			
Channel	Reading	Hoping	g Rate	Actual	Limit			
	DH5							
Middle	2.946ms	266.667 hop/s		0.314s	0.4s			

Actual = Reading × (Hopping rate / Number of channels) × Test period, Test period = 0.4 [seconds / channel] × 79 [channel] = 31.6 [seconds] NOTE: The EUT makes worst case 1600 hops per second or 1 time slot has a length of 625μ s with 79 channels.

A DH5 Packet needs 5 time slot for transmitting and 1 time slot for receiving. Then the EUT makes worst case 266.667 hops per second with 79 channels.

A DH3 Packet needs 3 time slot for transmitting and 1 time slot for receiving. Then the EUT makes worst case 400 hops per second with 79 channels.

A DH1 Packet needs 1 time slot for transmitting and 1 time slot for receiving. Then the EUT makes worst case 800 hops per second with 79 channels.

Note: DH5 was the worst case.

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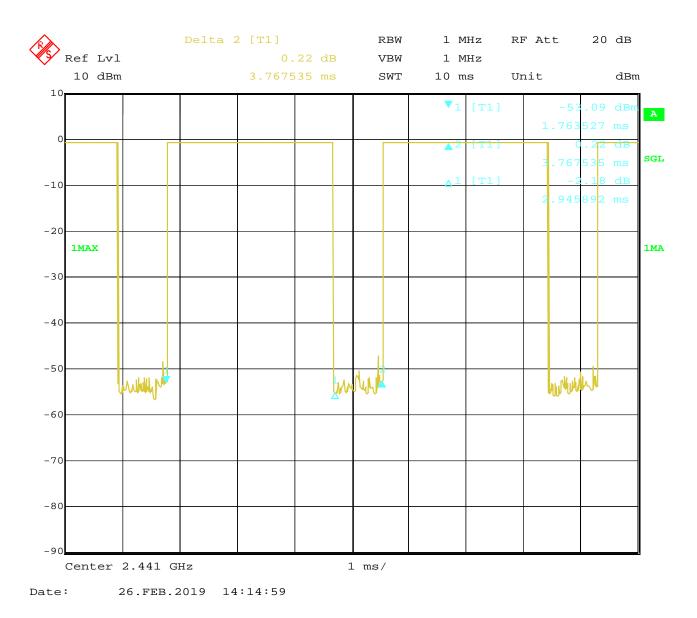
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Test Plots: DH5



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Test Result

Type of Modulation: $\pi/4DQPSK$

EUT	WIRELESS MIX TAPE SPEAKER		Model	F	FM0191				
Mode	Keep Tr	ransmitting Input Voltage		Keep Transmitting		I	DC3.7V		
Temperature	24 d	eg. C,	Humidity	5	6% RH				
Channel	Reading	Hoping	g Rate	Actual	Limit				
	DH5								
Middle	2.946ms	266.667 hop/s		0.314s	0.4s				

Actual = Reading × (Hopping rate / Number of channels) × Test period, Test period = 0.4 [seconds / channel] × 79 [channel] = 31.6 [seconds] NOTE: The EUT makes worst case 1600 hops per second or 1 time slot has a length of 625μ s with 79 channels.

A DH5 Packet needs 5 time slot for transmitting and 1 time slot for receiving. Then the EUT makes worst case 266.667 hops per second with 79 channels.

A DH3 Packet needs 3 time slot for transmitting and 1 time slot for receiving. Then the EUT makes worst case 400 hops per second with 79 channels.

A DH1 Packet needs 1 time slot for transmitting and 1 time slot for receiving. Then the EUT makes worst case 800 hops per second with 79 channels.

Note: 2DH5 was the worst case.

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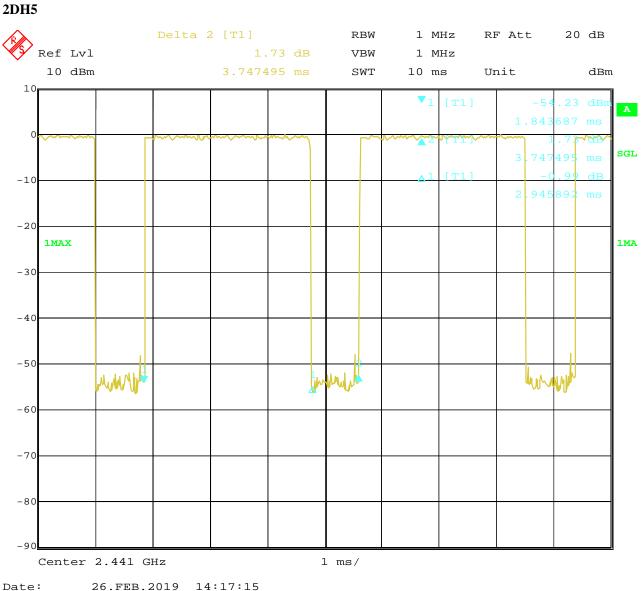
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Test Plots:



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26.FEB.2019 Date:

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Type of Modulation: 8DPSK

EUT	WIRELESS MIX	WIRELESS MIX TAPE SPEAKER		I	FM0191		
Mode	Keep Tra	ansmitting	Input Voltage	e DC3.7V			
Temperature	e 24 d	eg. C,	Humidity	5	56% RH		
Channel	Reading	Hoping	g Rate	Actual	Limit		
	DH5						
Middle	2.966ms	266.667 hop/s		0.316s	0.4s		

Actual = Reading \times (Hopping rate / Number of channels) \times Test period, Test period = 0.4 [seconds / channel] \times 79 [channel] = 31.6 [seconds] NOTE: The EUT makes worst case 1600 hops per second or 1 time slot has a length of 625µs with 79 channels.

A DH5 Packet needs 5 time slot for transmitting and 1 time slot for receiving. Then the EUT makes worst case 266.667 hops per second with 79 channels.

A DH3 Packet needs 3 time slot for transmitting and 1 time slot for receiving. Then the EUT makes worst case 400 hops per second with 79 channels.

A DH1 Packet needs 1 time slot for transmitting and 1 time slot for receiving. Then the EUT makes worst case 800 hops per second with 79 channels.

Note: 3DH5 was the worst case.

The report refers only to the sample tested and does not apply to the bulk.

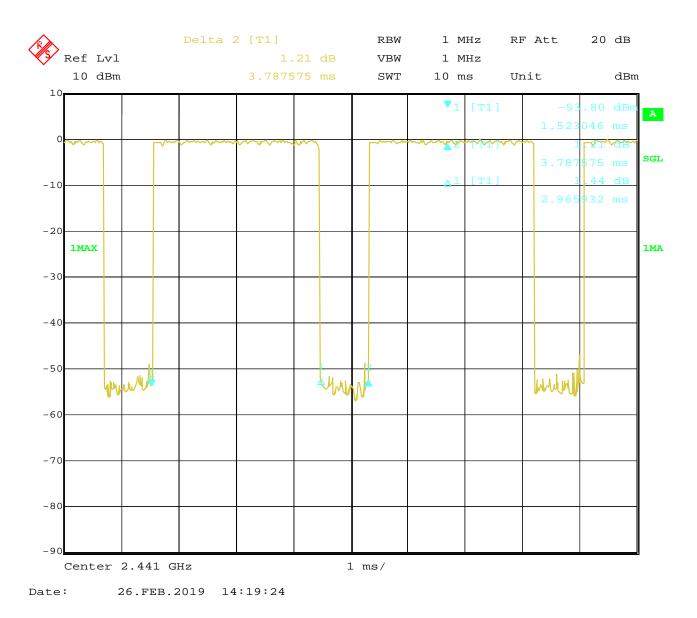
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adopt any other remedies which may be appropriate.



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Test Plots: 3DH5



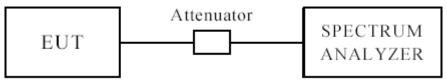
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12 Out of Band Measurement

12.1 Test Setup



The restricted band requirement based on radiated emission test; please see the clause 6 for the test setup

12.2 Limits of Out of Band Emissions Measurement

- 1. Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).
- 2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

12.3 Test Procedure

For signals in the restricted bands above and below the 2.4-2.483GHz allocated band a measurement was made of radiated emission test. Peak values with RBW=VBW=1MHz and PK detector. For bandage test, the spectrum set as follows: RBW=100kHz, VBW=300 kHz. A conducted measurement used

Note: 1. For band-edge measurement, the frequency from 30MHz-25GHz was tested. And It met the FCC rule.

2. This is a handhold device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand), After pre-test. It was found that the worse radiated emission was get at the lying position.

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Type of Modulation: GFSK

12.4 Band Edge Test Result

Product:	WIRELES	S MIX TAPE SP	EAKER		Test Mod	e:	Low Chann	nel
Mode	Kee	ping Transmittin	g		Input Vol	tage	DC3.7V	<i>r</i>
Temperature		24 deg. C			Humidity	r	56% RH	[
Fest Result:		Pass			Detector		РК	
Fest Figure:								
R .	Marker 1 [T1]	RBW	100 1	kHz RI	F Att	20 dB	
🛛 Ref Lvl		-1.54 dBm	VBW	300]				
10 dBm	2.40)194389 GHz	SWT	15 t	ns Ui	nit	dBm	
				v ₁	[T1]	-	-1.54 dBm	A
						2.4019		•
0				₹2	[T1]	13	37.86 dBm	
				⊽ 3		2.4000	0000 GHz	
-10				<u> </u>	[T1]		54.22 dBm	
						2.3900	00000 GHz	
-20								
1MAX							1	1 MZ
-30								
						2		
-40						$\overline{\mathbf{v}}$		
					M			
-50	man marker with	attender lung	horn	3	+ M	<u> </u>		
hundrenten	Man Marine	~		Mumz	NVW	U		
-60								
-70								
-80								
-90								
Start 2.35	GHz	6 MI	Hz/			Stop	2.41 GHz	

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Type of Modulation: GFSK

12.4 Band Edge Test Result

Product:	WIRELE	WIRELESS MIX TAPE SPEAKER				t Mode:		High Channel		
Mode	Ke	eping Tran	smitting		Inpu	t Voltage		DC3.7V		
Temperature		24 deg.	С,		Hu	midity		56% RH		
Test Result:		Pass			De	etector		РК		
est Figure:										
	Marke	r 1 [T1]	RB	W 10) kHz	RF Att	20 dB		
🛛 Ref Lvl		-	0.48 di	Bm VB	W 30) kHz				
10 dBm		2.4798	5972 G	Hz SW	т 7.	5 ms	Unit	dBn	n	
10						▼1 [T1]		-0.48 dBm	1	
		1				+ (++)		5972 GHz	2	
0		-				•2 [T1]	-4	9.17 dBm		
							2.4835	0000 GHz		
-10										
-20										
1MAX									11	
-30									-	
-40										
VV			2							
-50	will have	<u>/</u>	they have	Muny	Manua	munit	munt	Manufaral	-	
-60	-								-	
-70										
-80									1	
-90									Ĩ	
-90	17 GHz			3 MHz/			Stop	2.5 GHz]	

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Type of Modulation: GFSK

12.4 Band Edge Test Result

Product:	WIRELESS MIX	TAPE SPEA	Т	est Mode	e: I	Hopping mod		
Mode	Норрі	ing On		Inj	put Volta	ge	DC3.7V	
Temperature	24 de	eg. C,		1	Humidity	7	56% RH	
Test Result:	Pa	ass			Detector		РК	
Test Figure:				<u>.</u>				
k A	Marker 1 [T1]		RBW	100 k	Hz 1	RF Att	20 dB	
Ref Lvl	-1	.40 dBm	VBW	300 k	Hz			
10 dBm	2.40891	784 GHz	SWT	15 m	າຣ 1	Jnit	dBm	ı
10				v 1	[T1]	_	1.40 dBm	
						2.4089	1784 Gңz	A
0				₹2	[T1]	-3	5.29 d.m	
				_		2.4000	0000 GHz	
-10				∇ ₃	[T1]	4	<u>9.58 dBn</u>	
						2.3900	hhod letta	
-20						+	•	
1MAX								1M2
- 30								
						$\frac{2}{\nabla}$		
-40								
						1V W Y		
				3	, forall	V		
-50		uww	MMM	<u>Adpan</u>	W.			
VUVVVVVVV	100000000000000000000000000000000000000							
-60								
-70								
- 80		<u> </u>						
-90								ļ
Start 2.35 GH	Iz	6 MH	Iz/			Stop	2.41 GHz	

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Type of Modulation: GFSK

12.4 Band Edge Test Result

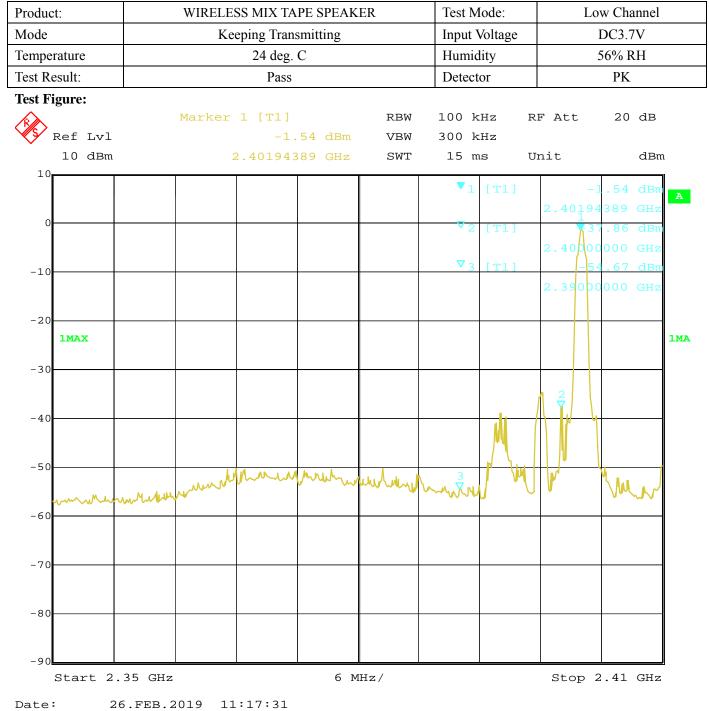
Product:	WIRELESS MIX TAPE SPEA	KER	Test Mode:	Hopping mod	
Mode	Hopping On		Input Voltage	DC3.7V	
Temperature	24 deg. C,		Humidity	56% RH	
Test Result:	Pass		Detector	РК	
est Figure:					
	Marker 1 [T1]		100 kHz RF A	tt 20 dB	
Ref Lvl	-0.53 dBm		300 kHz	-1.0	
10 dBm	2.47787575 GHz	SWT	7.5 ms Unit	dBm	
			▼1 [T1]	-0.53 dBm	
0	1		2.4	47787575 GHz	
1 <u> </u>			¥2 [T1]	-49.74 dBm	
			2.4	48350000 GHz	
-10					
-20					
1MAX				lm	
- 30					
-40					
- 5 0		- Marchart	A Alexander Alexander		
	-4 h 0 /0 m	V	and the man of the	w v v v v	
- 6 0					
-70					
- 8 0					
-90 Start 2.47 G		Hz/		Stop 2.5 GHz	

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Type of Modulation: $\pi/4DQPSK$

12.4 Out of Band Test Result



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Type of Modulation: Л/4DQPSK

12.4 Band Edge Test Result

Product:	WIRELE	SS MIX TAPE SPEA	KER	Test Mode:	High Channel
Mode	Ke	eping Transmitting		Input Voltage	DC3.7V
Temperature		24 deg. C,		Humidity	56% RH
Test Result:		Pass		Detector	РК
Fest Figure:					
k A	Marker	1 [T1]	RBW	100 kHz RF	Att 20 dB
🖋 Ref Lvl		-0.46 dBm	VBW	300 kHz	
10 dBm		2.47985972 GHz	SWT	7.5 ms Un:	it dBm
10				▼1 [T1]	-0.46 dBm
		1		2	A 47985972 GHz
0		Th I		▼2 [T1]	-48.18 dBm
				2	2.48350000 GHz
-10					
-20					
1MAX					110
-30					
-40	<u> </u>	<u></u>			
,MM					
-50		Mundel	hum	mulandur	and marine
-60					
-70					
-80			 		
-90					
Start 2.4	7 GHz	3 1	/Hz/		Stop 2.5 GHz

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Type of Modulation: Л/4DQPSK

12.4 Out of Band Test Result

Product:	WIRELESS MIX	TAPE SPEAKER		Test Mode:	H	lopping mode
Mode	Hoppi	ng On]	Input Voltag	je	DC3.7V
Temperature	24 de	g. C,		Humidity		56% RH
Test Result:	Pa	SS		Detector		РК
st Figure:					•	
	Marker 1 [T1]	R	BW 100	kHz R	F Att	20 dB
S Ref Lvl	-1	.41 dBm V	300 W	kHz		
10 dBm	2.40927	856 GHz S	VT 15	ms U	nit	dBm
10			•	1 [T1]	- :	1.41 dBm
					2.40927	7856 GHz
0				2 [T1]		
					2.4000	pold refit
-10				3 [T1]	-48	.79 dBm
					2.39000	000 GHz
-20						
1MAX						11
- 3 0						
					$\frac{2}{\nabla}$	
-40					MN	
-40						
			3 ▼	Jalla Anthal		
-50			malatet	n/n/		
	0 0 0 0 0					
-60						
-70		<u> </u>				
-80		 				
-90						
Start 2.35 (GHz	6 MHz/			Stop 2	2.41 GHz

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Type of Modulation: Л/4DQPSK

12.4 Out of Band Test Result

Product:	WIRELESS MIX TAPE SPEAKER	Test Mode:	Hopping mode
Mode	Hopping On	Input Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	РК

Test Figure:

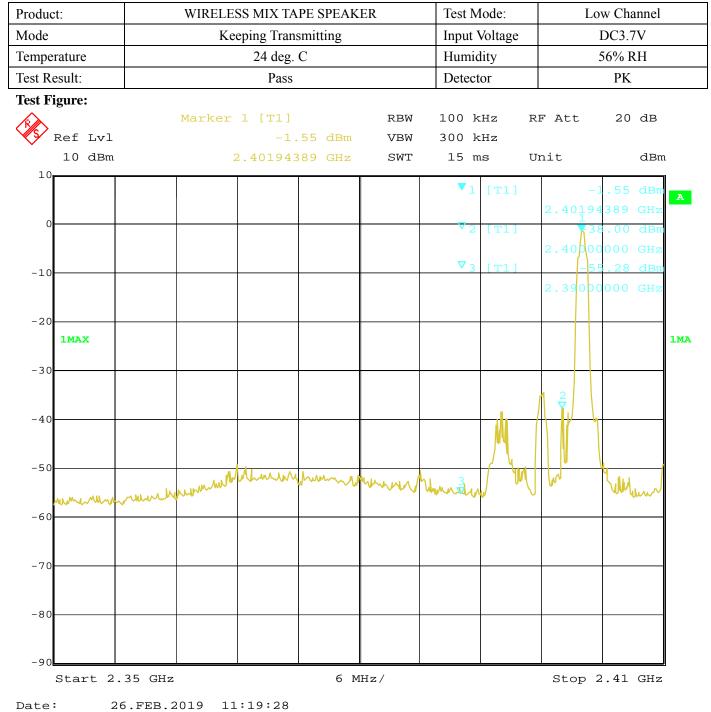
10	Ref Lvl 10 dBm				-0.	69 dBm 008 GHz		100 k 300 k 7.5 m	CHz	F Att nit	20	dB dBm
10				-				▼1	[T1]	-(0.69	A
0	MM	n di n. N	MNU					⊽2	[T1]	-47	.83	dBm
-10	$\vee \vee \vee$	V. V. V	$\vee \vee \vee$							2.48350	000	GHz
-20	1MAX											1MA
-30												
-40												
10						2						
-50							two-www	well when	theme we	Jour Martin	much	meters
-60												
-70												
-80												
-90												
	Start 2	.47 GHz				3 M	IHz/			Stop	2.5	GHz
Date	: 2	26.FEB.2	2019 11	:06:	54							

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Type of Modulation: 8DPSK

12.4 Band Edge Test Result



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Type of Modulation: 8DPSK

12.4 Band Edge Test Result

Product:	WI	RELESS N	/IX TAF	PE SPEAKEI	R	Test	Mode:	H	High Channel		
Mode		Keepin	g Transi	nitting		Input	Voltage		DC3.7V		
Temperature		2	4 deg. C	1 ′ >		Humidity			56% RH		
Test Result:			Pass			Det	ector		РК		
st Figure:					·						
		Marker	1 [T1]	RBW	100	kHz	RF Att	20 dB		
Ref Lvl			-	0.40 dBm	VBW	300	kHz				
10 dBm		2	2.4798	5972 GHz	SWT	7.5	ms	Unit	dBm	ı	
10							[[[]]]		10 15	1	
			7				[T1]	2.47985	.40 dBm 972 GHz	A	
0			<u></u>			▽	2 [T1]	-45	.81 dBm		
			Д					2.48350			
-10											
-20										1MA	
- 3 0											
		M 1.									
-40	/		V	1							
				2							
-50	Willy.	100 -		Martill			mm	umento	mm		
v	Ŵ	V			un	~~~~					
-60											
-70											
-80											
-90											
Start 2	.47 GHz	·			1Hz/			Stop	2.5 GHz		

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Type of Modulation: 8DPSK

12.4 Band Edge Test Result

Product:	WIRELESS MIX TAPE SPEA	AKER	Test Mode:	Hopping mode
Mode	Hopping On		Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	РК
est Figure:				
	Marker 1 [T1]	RBW	100 kHz RF A	tt 20 dB
🛿 Ref Lvl	-1.42 dBm	VBW	300 kHz	
10 dBm	2.40927856 GHz	SWT	15 ms Unit	dBm
10			▼1 [T1]	-1.42 dBm
				40927856 GHz
0			▼2 [T1]	-35.26.dBn
			2.4	4000000000
-10			▼ ₃ [T1]	-49.52 dBm
			2.3	39000000 GHz
-20				
1MAX				1M
- 30				
50				
			. MV	
-40				v
			<u>3</u>	
-50	, A RAAM WWWWWWW	buch	de traine la	
00.000.0000				
-60				
-70				
- 80				
-90 Start 2.35 G		IHz/		cop 2.41 GHz

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Type of Modulation: 8DPSK

12.4 Band Edge Test Result

Product:	WIRELESS MIX TAPE SPEAKER	Test Mode:	Hopping mode
Mode	Hopping On	Input Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	РК

Test Figure:

Ref Lvl 10 dBm	Marker 1 [T1] -0 2.47721	.47 dBm		100 kH: 300 kH: 7.5 ms	z	
	1			▼1 [T1] 2.477	-0.47 dBm 21443 GHz
	Mary			₹2[-	51.58 dBm 50000 GHz
-10						
1MAX						1 M A
-30						
-40						
-50		work	tututut	Mother	weinter the met	- Approximation
-60						
-70						
-80						
-90						
Start 2.47 GH Date: 26.FEB		3 M	IHz/		Sto	p 2.5 GHz

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EUT		WIRELESS MIX TAPE SPEAKER				Model		FM0191			
Mode		Keep Transmitting				Input Vol	ltage	DC3.7V			
Temperature Test Result:		24 deg. C,				Humidity		56% RH			
		Pass				Modulation Type		8DPSK			
	Class B 1GHz-18GHz - 2										
90-											
80-									\cap		
70-									$ \rightarrow $		
									$ \rangle$		
60-									\vdash		
50-							M1	N			
								New M			
40-	n the construction			n de la company de la comp	lin killerlin lineren er		MI	New M		Hadaal	
40-	levelikanserikerkatural kilika	atomyther halos valderrækt	en blev bereiten f	nt de de la de				New M		History	
40-	landika satisah katasat dikit	aisanyiku kateronidarraktu		nishisyonin juuni magyaha	Frequency (N	IHz)				2410	
40-	landika satisah kasami pikin	aisanyterkaisentleratta	and the stand of the		frequency (N	1Hz)		Ny N		2410	
40-		Results	Factor	Limit	Frequency (N	IHz)		Height	ANT	2410	
40- 30- 2350	Frequenc	Results				1		Height (cm)	ANT		
40- 30- 2350			Factor (dB)	Limit (dBuV/m	Over	1		Height (cm)	ANT		

12.4 **Restrict Band Measurement**

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12.4 Restrict Band Measuremen	t
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EUT		WIRELESS MIX TAPE SPEAKER			Model	_	FM0191					
Mode		Keep Transmitting				Input		DC3.7V				
						Voltage	e					
Tem	perature		24 de	eg. C,		Humidi	ty		56% RH			
Test Result:		Pass				Modulati	8DPSK					
Test	t Kesuit.					Туре						
Part 15B 90-r	Class B 1GHz-18GHz - 2											
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80-												
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30- 2350										2410		
					Frequency (M	Hz)						
	Frequency	Results	Factor	Limit	Over	Detector	Table (o)	Height	ANT	Verdict		
lo.			(dB)	(dBuV/m	Limit			(cm)				
lo.	(MHz)	(dBuV/m	()			1	1	1	1	1		
lo.	(MHz)	(dBuV/m)	())	(dB)							

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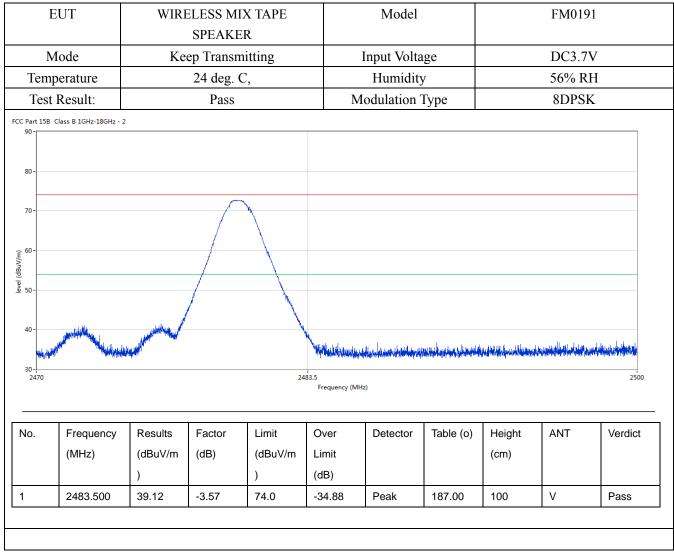


		1								
	EUT	WIRELESS MIX TAPE			Model			FM0191		
			SPEAKER							
	Mode	Ke	ep Transmit	ting	Inpu	ut Voltage			DC3.7	V
Temperature 24 deg. C,					Humidity			56% RH		
Tes	st Result:		Pass		Modu	lation Typ	e		8DPSK	
	iB Class B 1GHz-18GH	z - 2								
90-										
80-										
70-										
				$\langle \rangle$						
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50-		/	(<u>}</u>						
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A M				2483	5 Frequency (MHz)	and an	n ga jad mya da da da da da ga d			an patra and the start an patra and the start 250
30-	1	Results	Eactor (dP)		Frequency (MHz)	Detector	Table	Height		
30-	Frequency	Results (dBu)//m)	Factor (dB)	Limit	Frequency (MHz) Over Limit	Detector	Table	Height	ANT	250
40- 30- 2470	1	Results (dBuV/m) 47.29	Factor (dB)		Frequency (MHz)	Detector	Table (o) 165.00	Height (cm) 100	ANT	

12 / **Restrict Band Measurement**

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Note: For Restricted band test, only the worst case was reported.

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13.0 Antenna Requirement

13.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, 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. And according to FCC 47 CFR Section 15.247 (b), if transmitter antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the mount in dB that the directional gain of the antenna exceeds 6 dBi.

13.2 Antenna Connected constructionsPCB antenna. The gain of the antennas is 1.7dBi.

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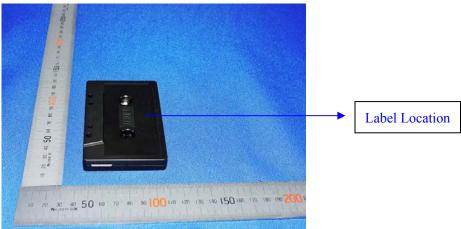
14.0 FCC ID Label

FCC ID: 2AAL7-FM0191

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Mark Location:



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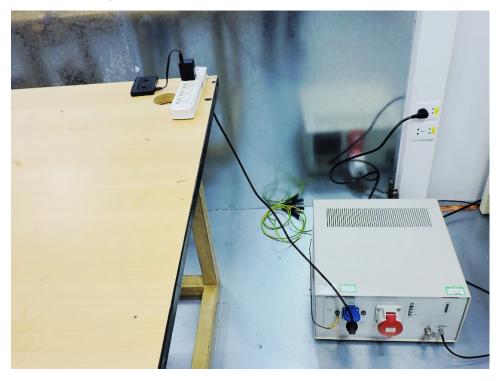
This report is issued in confidence to the client and it will be strictly treated as such by the SHENZHEN TIMEWAY TESTING LABORATORIES. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the SHENZHEN TIMEWAY TESTING LABORATORIES. to his customer. Supplier or others persons directly concerned. SHENZHEN TIMEWAY TESTING LABORATORIES. will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

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15.0 Photo of testing

Conducted Emission Test Setup:



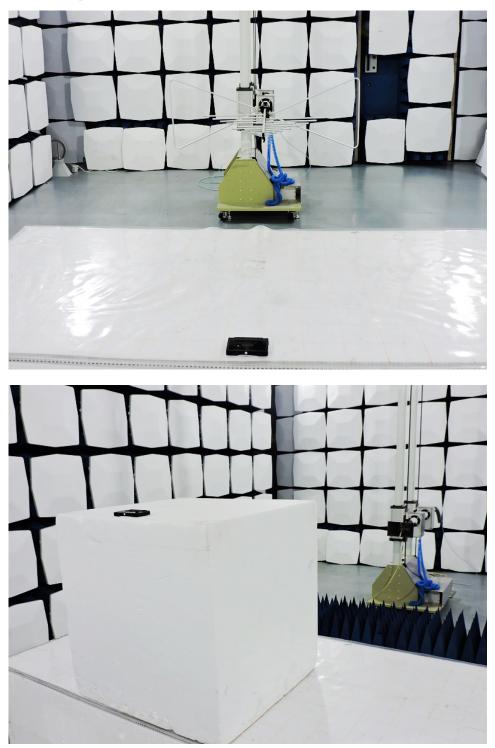
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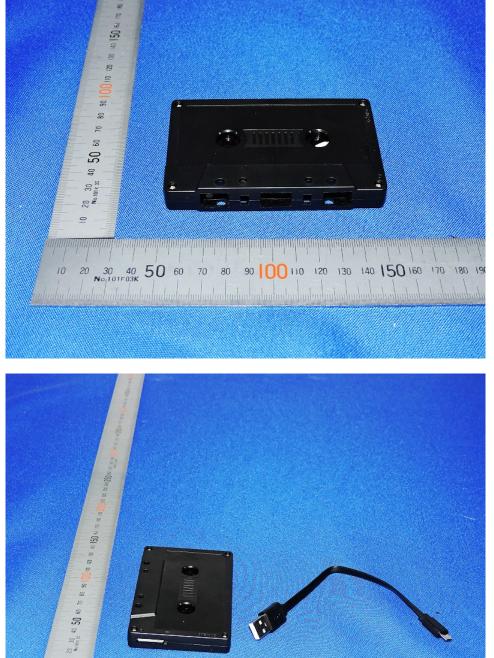
Radiated Emission Test Setup:



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Photographs – EUT



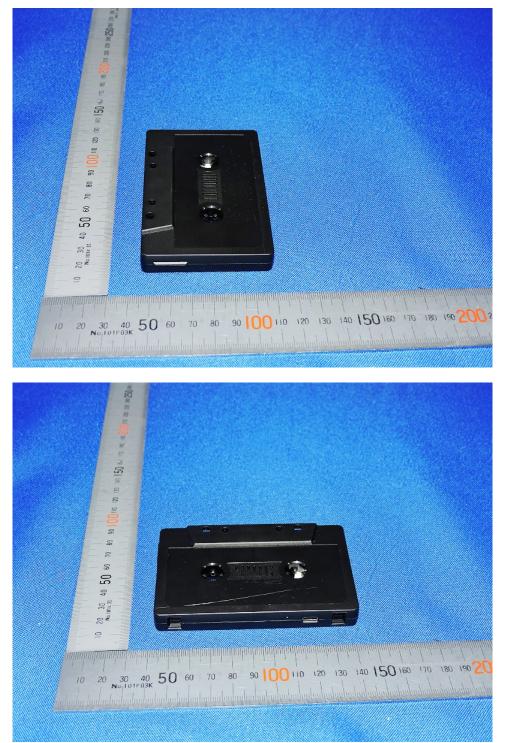
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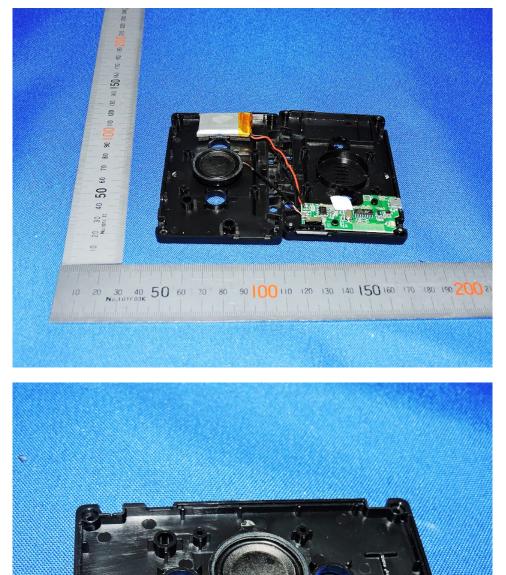


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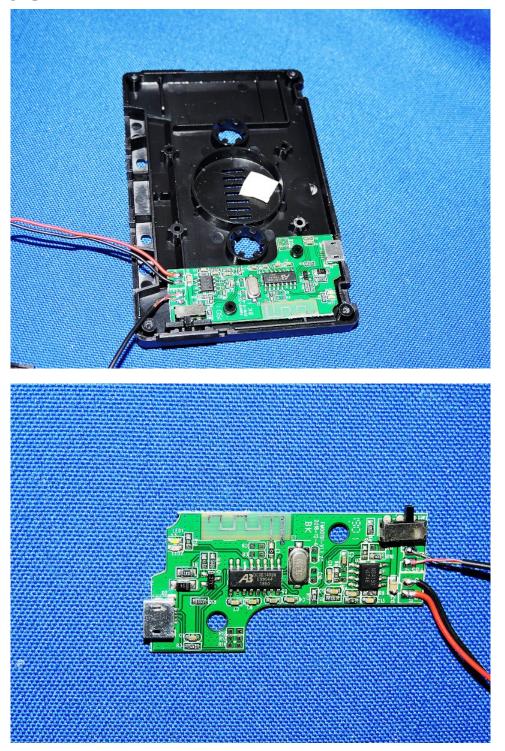
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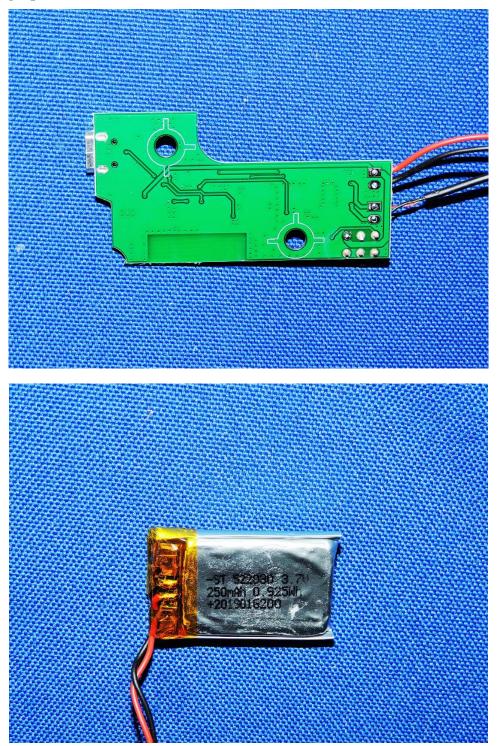
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End of the Report

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