



Report No.: TW2103124E File reference No.: 2021-04-02

Applicant: Shenzhen Neewer Technology Co., Ltd

Product: APP RING LIGHT

Model No.: RGB18-APP, RGB14-APP, RGB16-APP, RGB20-APP

Trademark: NEEWER

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



Dated: April 02, 2021

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

Report No.: TW2103124E Page 2 of 91

Date: 2021-04-02



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.

Industry Canada (IC) — Registration No.:5205A

The EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 5205A.

A2LA (Certification Number: 5013.01)

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (A2LA). Certification Number:5013.01

Page 3 of 91

Report No.: TW2103124E

Date: 2021-04-02



Test Report Conclusion

Content

1.0	General Details	4
1.1	Test Lab Details.	4
1.2	Applicant Details	4
1.3	Description of EUT	4
1.4	Submitted Sample	4
1.5	Test Duration.	5
1.6	Test Uncertainty.	5
1.7	Test By	5
2.0	List of Measurement Equipment.	6
3.0	Technical Details	7
3.1	Summary of Test Results.	7
3.2	Test Standards	7
4.0	EUT Modification.	7
5.0	Power Line Conducted Emission Test.	8
5.1	Schematics of the Test.	8
5.2	Test Method and Test Procedure.	8
5.3	Configuration of the EUT	8
5.4	EUT Operating Condition.	9
5.5	Conducted Emission Limit.	9
5.6	Test Result.	9
6.0	Radiated Emission test.	12
6.1	Test Method and Test Procedure.	12
6.2	Configuration of the EUT	13
6.3	EUT Operation Condition.	13
6.4	Radiated Emission Limit.	13
7.0	20dB Bandwidth	26
8.0	Maximum Output Power.	38
9.0	Carrier Frequency Separation.	41
10.0	Number of Hopping Channel.	45
11.0	Time of Occupancy (Dwell Time).	49
12.0	Out of Band Measurement.	62
13.0	Antenna Requirement.	79
14.0	FCC ID Label.	80
15.0	Photo of Test Setup and EUT View.	81

Report No.: TW2103124E Page 4 of 91

Date: 2021-04-02



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

Site Listed with Federal Communications commission (FCC)

Registration Number:744189 For 3m Anechoic Chamber

Site Listed with Industry Canada of Ottawa, Canada

Registration Number: IC: 5205A

For 3m Anechoic Chamber

1.2 Applicant Details

Applicant: Shenzhen Neewer Technology Co., Ltd

Address: ROOM 1901-1903, Block A, LU SHAN BUILDING NO.3023 CHUNFENGRD LUO HU

DISTRICT, SHENZHEN, GUANGDONG, 518001, CHINA

Telephone: -Fax: --

1.3 Description of EUT

Product: APP RING LIGHT

Manufacturer: Shenzhen Neewer Technology Co., Ltd

Address: ROOM 1901-1903, Block A, LU SHAN BUILDING NO.3023 CHUNFENGRD

LUO HU DISTRICT, SHENZHEN, GUANGDONG, 518001, CHINA

Brand Name: NEEWER
Model Number: RGB18-APP

Additional Model Number: RGB14-APP, RGB16-APP, RGB20-APP Type of Modulation GFSK, JT/4-DQPSK, 8DPSK for Bluetooth

Frequency range 2402-2480MHz for Bluetooth

Channel Spacing 1MHz for Bluetooth

Frequency Selection By software

Channel Number 79 channels for Bluetooth

Antenna: PCB antenna used. The gain of the antenna is 2.0dBi. (get from the antenna

specification provided the applicant)

Input Voltage: DC12V-15V, 42W

Power Supply: Model: NW-120500D2;

Input: 100-240V~50/60Hz ,1.6A Max; Output: 12V, 5A,60W

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

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Page 5 of 91 Report No.: TW2103124E

Date: 2021-04-02



Submitted Sample: 2 Samples

1.5 Test Duration

2021-03-11 to 2021-04-02

1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB

Radiated Emissions below 1GHz Uncertainty =4.7dB

Radiated Emissions above 1GHz Uncertainty =6.0dB

Conducted Power Uncertainty =6.0dB

Occupied Channel Bandwidth Uncertainty =5%

Note: The measurement uncertainty is icr coverage factor of k=2 and a level of confidence of 95%.

Test Engineer

The sample tested by

Page 6 of 91

Report No.: TW2103124E

Date: 2021-04-02



2.0 Test Equipment					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	R&S	ESPI 3	100379	2020-06-23	2021-06-22
TWO Line-V-NETW	R&S	EZH3-Z5	100294	2020-06-23	2021-06-22
TWO Line-V-NETW	R&S	EZH3-Z5	100253	2020-06-23	2021-06-22
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2020-06-23	2021-06-22
Loop Antenna	EMCO	6507	00078608	2020-06-23	2021-06-22
Spectrum	R&S	FSIQ26	100292	2020-06-23	2021-06-22
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2020-06-23	2021-06-22
Horn Antenna	R&S	BBHA 9120D	9120D-631	2018-07-09	2021-07-08
Power meter	Anritsu	ML2487A	6K00003613	2020-06-23	2021-06-22
Power sensor	Anritsu	MA2491A	32263	2020-06-23	2021-06-22
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2018-07-04	2021-07-03
9*6*6 Anechoic			N/A	2020-07-06	2021-07-05
EMI Test Receiver	RS	ESVB	826156/011	2020-06-23	2021-06-22
EMI Test Receiver	RS	ESH3	860904/006	2020-06-23	2021-06-22
Spectrum	HP/Agilent	ESA-L1500A	US37451154	2020-06-23	2021-06-22
Spectrum	HP/Agilent	E4407B	MY50441392	2020-06-23	2021-06-22
Spectrum	RS	FSP	1164.4391.38	2021-01-16	2022-01-15
RF Cable	Zhengdi	ZT26-NJ-NJ-8 M/FA		2020-06-23	2021-06-22
RF Cable	Zhengdi	7m		2020-06-23	2021-06-22
RF Switch	EM	EMSW18	060391	2020-06-23	2021-06-22
Pre-Amplifier	Schwarebeck	BBV9743	#218	2020-06-23	2021-06-22
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2020-06-23	2021-06-22
LISN	SCHAFFNER	NNB42	00012	2021-01-06	2022-01-05

2.2 Automation Test Software

For Conducted Emission Test

Name	Version		
EZ-EMC	Ver.EMC-CON 3A1.1		

For Radiated Emissions

Name	Version
EMI Test Software BL410-EV18.91	V18.905
EMI Test Software BL410-EV18.806 High Frequency	V18.06

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Page 7 of 91

Report No.: TW2103124E

Date: 2021-04-02



3.0 **Technical Details**

3.1 **Summary of test results**

The EUT has been tested according to the following specifications:

Requirement	CFR 47 Section	Result	Notes
Antenna Requirement	15.203, 15.247(b)(4)	PASS	Complies
Maximum Peak Out Power	15.247 (b)(1), (4)	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),15.109	PASS	Complies
Conducted Emissions	15.207(a), 15.107	PASS	Complies
RF Exposure	15.247(i), 1.1307(b)(1)	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.

Page 8 of 91

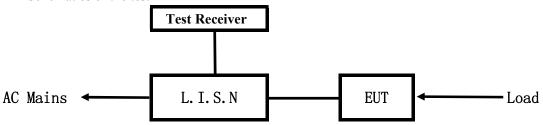
Report No.: TW2103124E

Date: 2021-04-02



5. Power Line Conducted Emission Test

5.1 Schematics of the test

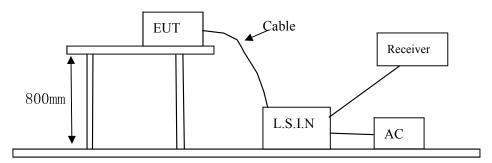


EUT: Equipment Under Test

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.

Page 9 of 91

Report No.: TW2103124E

Date: 2021-04-02



A. EUT

Device	Manufacturer	Model	FCC ID
APP RING LIGHT	Shenzhen Neewer	RGB18-APP, RGB14-APP,	2ANIW DCD19 ADD
APP KING LIGHT	Technology Co., Ltd	RGB16-APP, RGB20-APP	2ANIV-RGB18-APP

B. Internal Device

Device	Manufacturer	Model	Rating

C. Peripherals

Device	Manufacturer	Model	Rating

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 15.207

Frequency	Class B Limits (dB μ V)				
(MHz)	Quasi-peak Level	Average Level			
$0.15 \sim 0.50$	66.0~56.0*	56.0~46.0*			
$0.50 \sim 5.00$	56.0	46.0			
5.00 ~ 30.00	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.

Date: 2021-04-02



Conducted Emission on Live Terminal (150kHz to 30MHz) A:

EUT Operating Environment

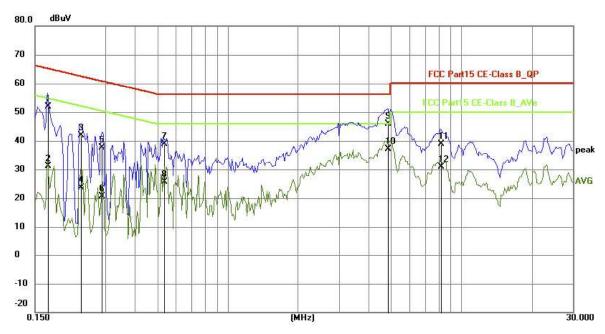
Temperature: 26℃ Humidity: 65%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Keep Bluetooth Transmitting

Equipment Level: Class B

Results: PASS

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1695	42.04	9.77	51.81	64.98	-13.17	QP	Р
2	0.1695	21.37	9.77	31.14	54.98	-23.84	AVG	Р
3	0.2358	32.12	9.75	41.87	62.24	-20.37	QP	Р
4	0.2358	13.98	9.75	23.73	52.24	-28.51	AVG	Р
5	0.2904	27.81	9.76	37.57	60.51	-22.94	QP	Р
6	0.2904	10.81	9.76	20.57	50.51	-29.94	AVG	Р
7	0.5322	29.06	9.77	38.83	56.00	-17.17	QP	Р
8	0.5322	15.78	9.77	25.55	46.00	-20.45	AVG	Р
9	4.8486	35.96	9.92	45.88	56.00	-10.12	QP	Р
10	4.8486	27.21	9.92	37.13	46.00	-8.87	AVG	Р
11	8.1597	28.76	10.07	38.83	60.00	-21.17	QP	Р
12	8.1597	20.84	10.07	30.91	50.00	-19.09	AVG	Р

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Date: 2021-04-02



B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

EUT Operating Environment

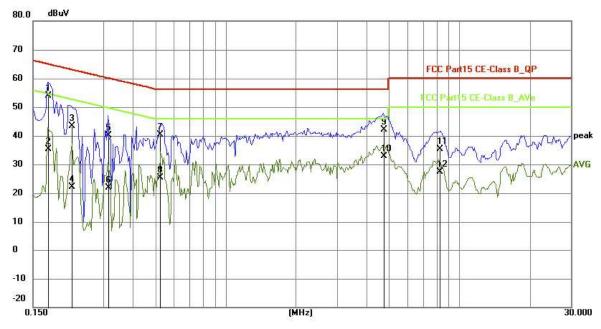
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Keep Bluetooth Transmitting

Equipment Level: Class B

Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1734	44.07	9.77	53.84	64.80	-10.96	QP	Р
2	0.1734	25.50	9.77	35.27	54.80	-19.53	AVG	Р
3	0.2202	33.72	9.75	43.47	62.81	-19.34	QP	Р
4	0.2202	12.34	9.75	22.09	52.81	-30.72	AVG	Р
5	0.3138	30.26	9.76	40.02	59.87	-19.85	QP	Р
6	0.3138	12.20	9.76	21.96	49.87	-27.91	AVG	Р
7	0.5243	30.70	9.77	40.47	56.00	-15.53	QP	Р
8	0.5243	15.72	9.77	25.49	46.00	-20.51	AVG	Р
9	4.7277	32.12	9.92	42.04	56.00	-13.96	QP	Р
10	4.7277	22.96	9.92	32.88	46.00	-13.12	AVG	Р
11	8.2728	25.37	10.07	35.44	60.00	-24.56	QP	Р
12	8.2728	17.27	10.07	27.34	50.00	-22.66	AVG	Р

Report No.: TW2103124E Page 12 of 91

Date: 2021-04-02

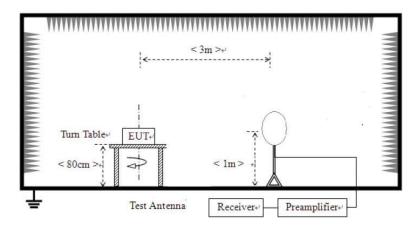


6 Radiated Emission Test

- 6.1 Test Method and test Procedure:
- (1) 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.

Block diagram of Test setup

For radiated emissions from 9kHz to 30MHz



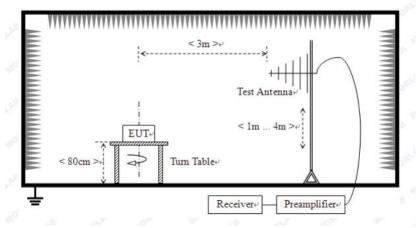
Page 13 of 91

Report No.: TW2103124E

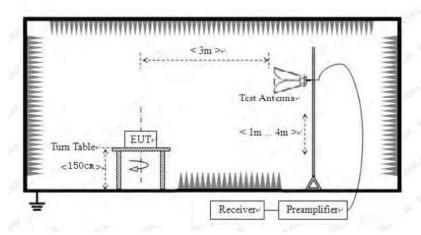
Date: 2021-04-02



For radiated emissions from 30MHz to1GHz



For radiated emissions above 1GHz



- 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.
- 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:

Report No.: TW2103124E Page 14 of 91

Date: 2021-04-02



Frequencies in restricted band are complied to limit on Paragraph 15.209

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 $(dBuV) = 20 \log RF \text{ Voltage } (uV)$
- 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. /4IDQPSK was the worst case and only worse case is reported

Report No.: TW2103124E

Date: 2021-04-02



Page 15 of 91

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

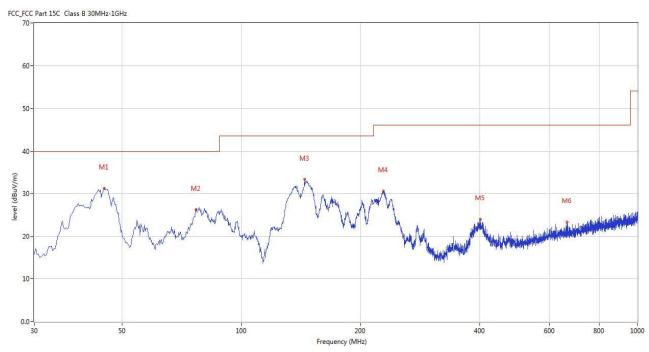
Page 16 of 91 Report No.: TW2103124E

Date: 2021-04-02



Test Figure:

H



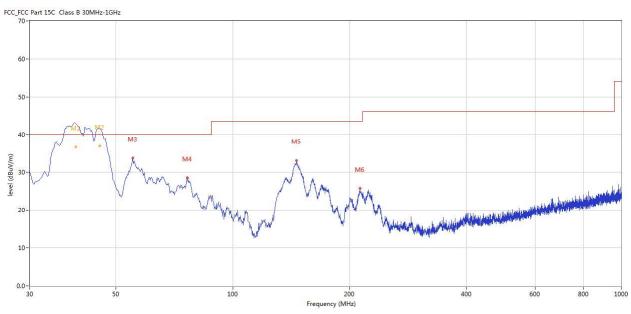
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	45.031	31.27	-11.41	40.0	-8.73	Peak	31.00	200	Horizontal	Pass
2	76.791	26.28	-17.62	40.0	-13.72	Peak	341.00	200	Horizontal	Pass
3	144.431	33.33	-17.14	43.5	-10.17	Peak	272.00	200	Horizontal	Pass
4	228.558	30.56	-12.74	46.0	-15.44	Peak	78.00	100	Horizontal	Pass
5	400.932	23.95	-8.59	46.0	-22.05	Peak	360.00	200	Horizontal	Pass
6	663.737	23.38	-4.42	46.0	-22.62	Peak	5.00	100	Horizontal	Pass

Page 17 of 91 Report No.: TW2103124E

Date: 2021-04-02



Test Figure:



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	39.442	42.66	-12.55	40.0	2.66	Peak	320.00	100	Vertical	N/A
1*	39.442	36.66	-12.55	40.0	-3.34	QP	320.00	100	Vertical	Pass
2	45.486	41.32	-11.40	40.0	1.32	Peak	346.00	100	Vertical	N/A
2*	45.486	36.87	-11.40	40.0	-3.13	QP	346.00	100	Vertical	Pass
3	55.214	33.77	-11.83	40.0	-6.23	Peak	233.00	100	Vertical	Pass
4	76.306	28.44	-17.58	40.0	-11.56	Peak	263.00	100	Vertical	Pass
5	145.886	33.07	-17.30	43.5	-10.43	Peak	8.00	100	Vertical	Pass
6	212.314	25.70	-13.67	43.5	-17.80	Peak	48.00	100	Vertical	Pass

Report No.: TW2103124E Page 18 of 91

Date: 2021-04-02



Operation Mode: Transmitting under Low Channel (2402MHz)

	8	,	
Frequency (MHz)	Level@3m (dBµV/m)	Antenna Polarity	Limit@3m (dB \(\mu \)V/m)
4804		Н	74(Peak)/ 54(AV)
4804		V	4(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)

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 g under Middle Channel (2441MHz)

Frequency (MHz)	Level@3m (dB \u03b4 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

Page 19 of 91 Report No.: TW2103124E

Date: 2021-04-02



Operation Mode: Transmitting under High Channel (2480MHz)

		-	
Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \(\mu \)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)

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

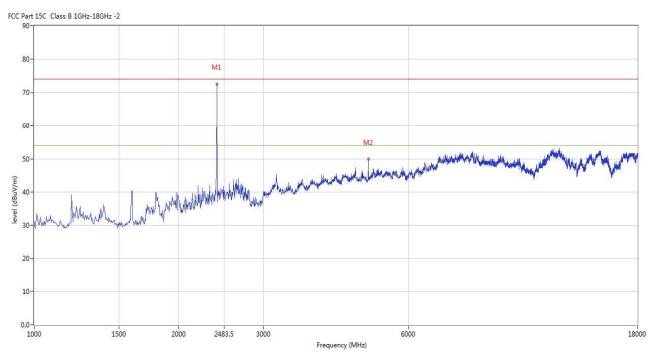
Report No.: TW2103124E Page 20 of 91

Date: 2021-04-02



Please refer to the following test plots for details:

Low Channel: Vertical



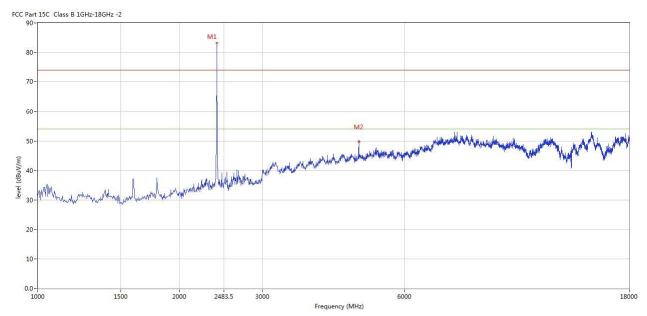
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
2	4803.750	49.97	3.13	74.0	-24.03	Peak	308.00	100	Vertical	Pass

Page 21 of 91 Report No.: TW2103124E

Date: 2021-04-02



Low Channel: Horizontal



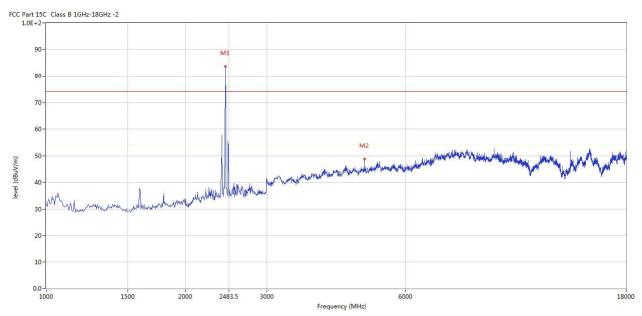
Ī	No.	Frequency	Results	Factor	Limit	Over	Detector	Table (o)	Height	ANT	Verdict
		(MHz)	(dBuV/m)	(dB)	(dBuV/m)	Limit (dB)			(cm)		
	2	4803.750	49.78	3.13	74.0	-24.22	Peak	141.00	100	Horizontal	Pass

Page 22 of 91 Report No.: TW2103124E

Date: 2021-04-02



Middle Channel: Horizontal



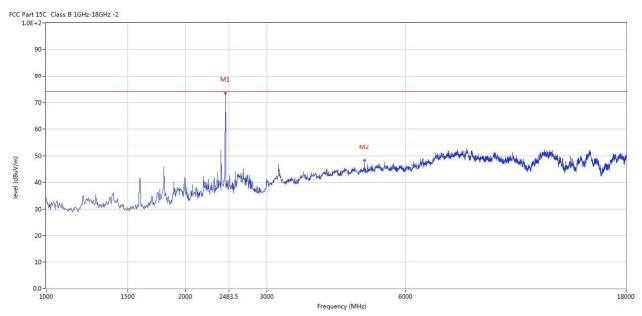
Ī	No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
		(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
	2	4884.500	48.86	3.20	74.0	-25.14	Peak	300.00	100	Horizontal	Pass

Page 23 of 91 Report No.: TW2103124E

Date: 2021-04-02



Middle Channel: Vertical



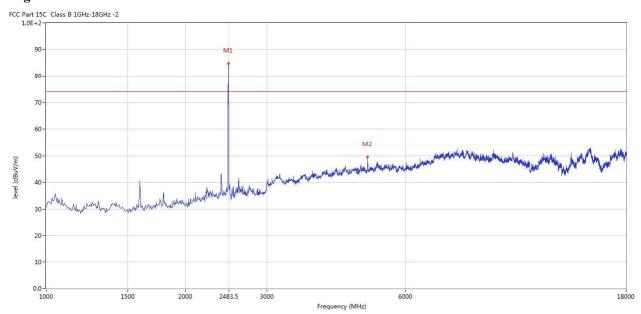
Ī	No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
		(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
	2	4884.500	48.22	3.20	74.0	-25.78	Peak	35.00	100	Vertical	Pass

Page 24 of 91 Report No.: TW2103124E

Date: 2021-04-02



High Channel: Horizontal



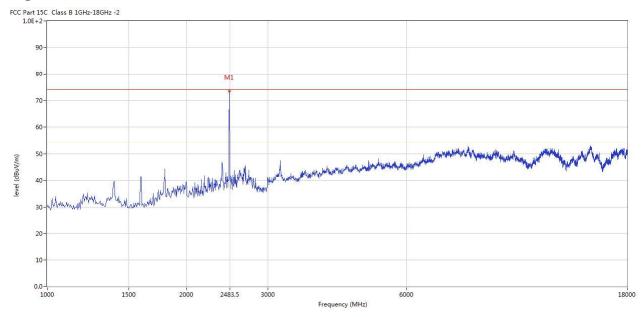
N	О	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
-		(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
2		4959.750	49.44	3.35	74.0	-24.56	Peak	323.00	100	Horizontal	Pass

Report No.: TW2103124E Page 25 of 91

Date: 2021-04-02



High Channel: Vertical



Note: 1. Result Level = Reading + Factor

- 2. Factor= AF + Cable Loss- Preamp
- 3. Margin = Result– Limit
- 4. For radiated Emissions from 18-25GHz, it is only the floor noise.
- 5. The peak value less than the AV limit, no necessary to take down the AV measurement result.

Report No.: TW2103124E

Date: 2021-04-02



Page 26 of 91

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

J 1	Type of Madulations of Size									
EUT	API	PRING LIGHTs	Model	RGB18-APP						
Mode	Ke	ep Transmitting	Test Voltage	DC12V						
Temperati	ure	24 deg. C,	Humidity	56% RH						
Channel	Channel Frequency (MHz)	20 dB Bandwidth (kHz)	Minimum Limit (kHz)	Pass/ Fail						
Low	2402	782		Pass						
Middle	2441	782		Pass						
High	2480	782		Pass						

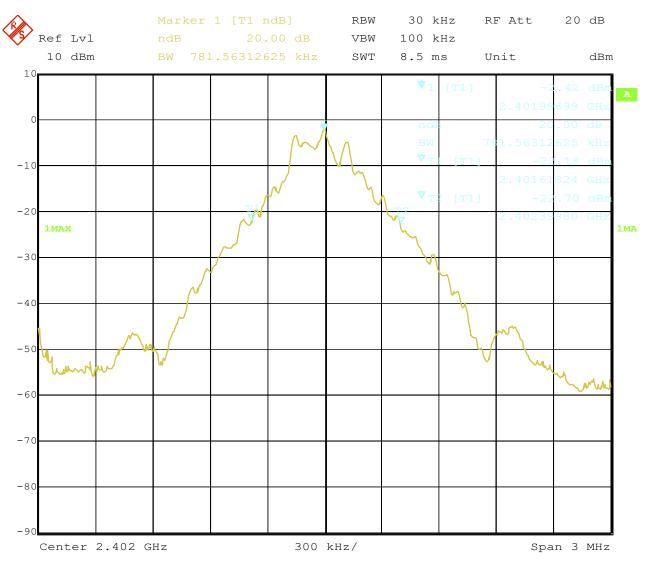
Report No.: TW2103124E Page 27 of 91

Date: 2021-04-02



Test Figure:

1. Condition: Low Channel

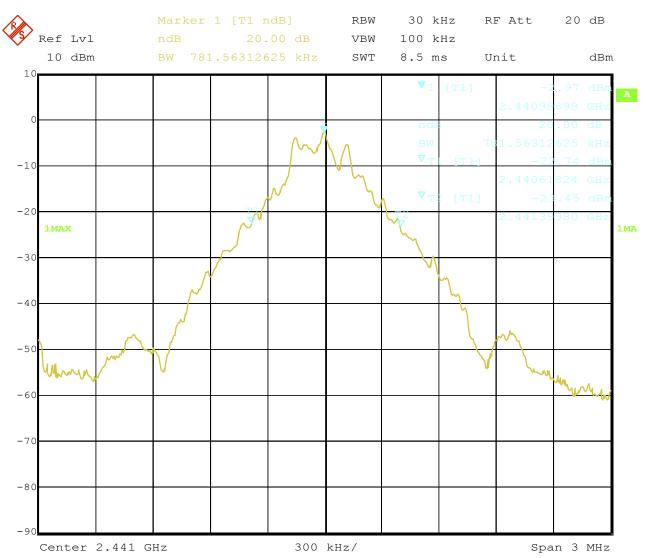


Date: 1.APR.2021 18:06:24 Report No.: TW2103124E Page 28 of 91

Date: 2021-04-02



2. Condition: Middle Channel

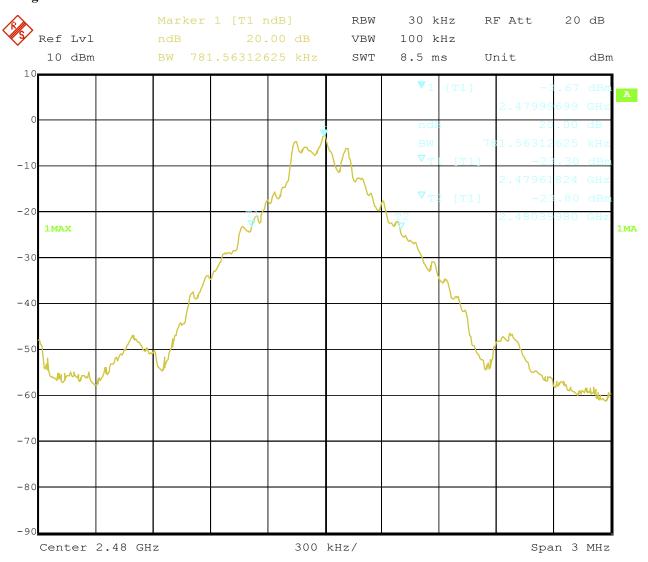


1.APR.2021 Date: 18:07:37 Report No.: TW2103124E Page 29 of 91

Date: 2021-04-02



3. High Channel



1.APR.2021 18:09:14 Date:

Page 30 of 91 Report No.: TW2103124E

Date: 2021-04-02



Test Result

Type of Modulation: JI/4-DQPSK

EUT	AP	PP RING LIGHTs	Model	RGB18-APP
Mode	Ko	eep Transmitting	Test Voltage	DC12V
Temperat	ure	24 deg. C,	Humidity	56% RH
Channel	Channel Frequency (MHz)	20 dB Bandwidth (kHz)	Maximum Limit (kHz)	Pass/ Fail
Low	2402	1214		Pass
Middle	2441	1214		Pass
High	2480	1214		Pass

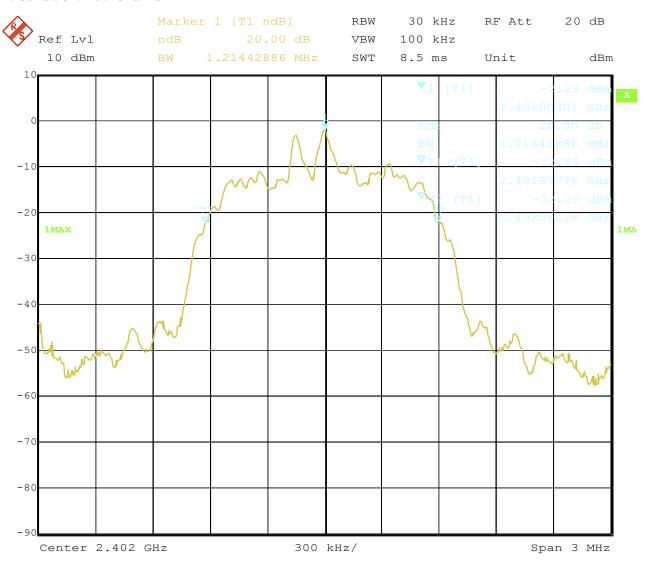
Report No.: TW2103124E Page 31 of 91



Test Figure:

1. Condition: Low Channel

Date: 2021-04-02



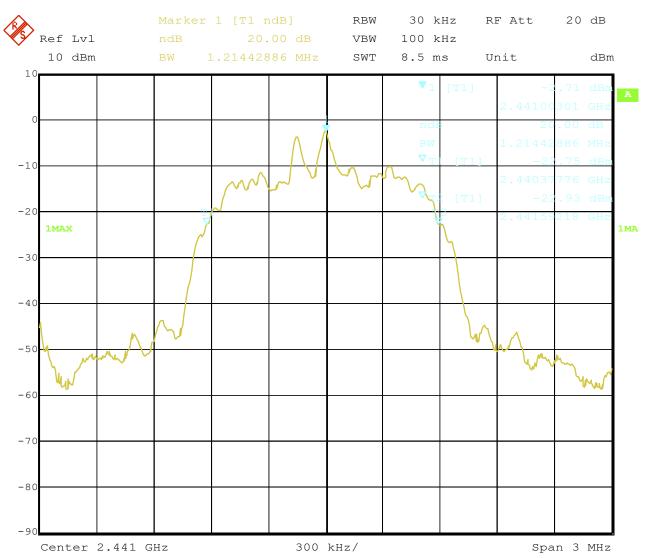
Date: 1.APR.2021 15:47:53

Page 32 of 91 Report No.: TW2103124E

Date: 2021-04-02



2. Condition: Middle Channel



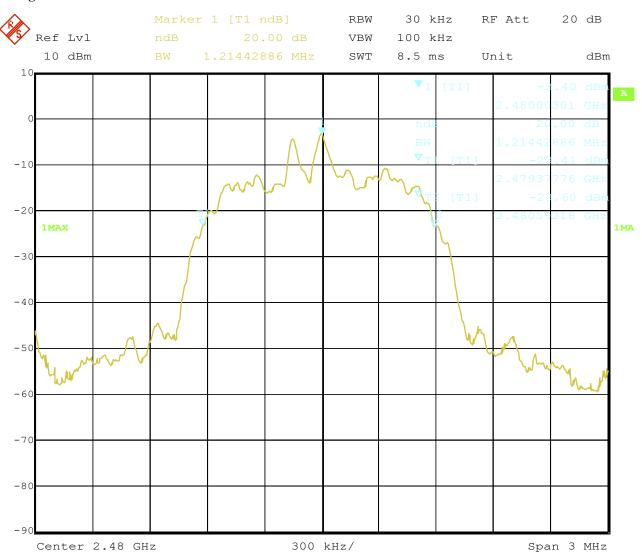
1.APR.2021 Date: 15:49:34

Page 33 of 91 Report No.: TW2103124E

Date: 2021-04-02



3. High Channel



1.APR.2021 15:50:22 Date:

Page 34 of 91 Report No.: TW2103124E

Date: 2021-04-02



Test Result

Type of Modulation: 8DPSK

EUT	AI	PP RING LIGHTs	Model	RGB18-APP
Mode	K	Keep Transmitting		DC12V
Temperati	ure	24 deg. C,		56% RH
Channel	Channel Frequency (MHz)	20 dB Bandwidth (kHz)	Maximum Limit (kHz)	Pass/ Fail
Low	2402	1214		Pass
Middle	2441	1202		Pass
High	2480	1214		Pass

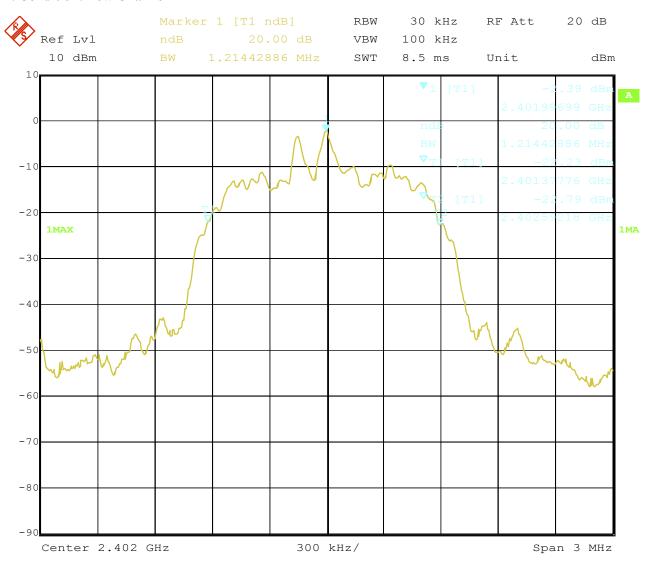
Report No.: TW2103124E Page 35 of 91

Date: 2021-04-02



Test Figure:

1. Condition: Low Channel

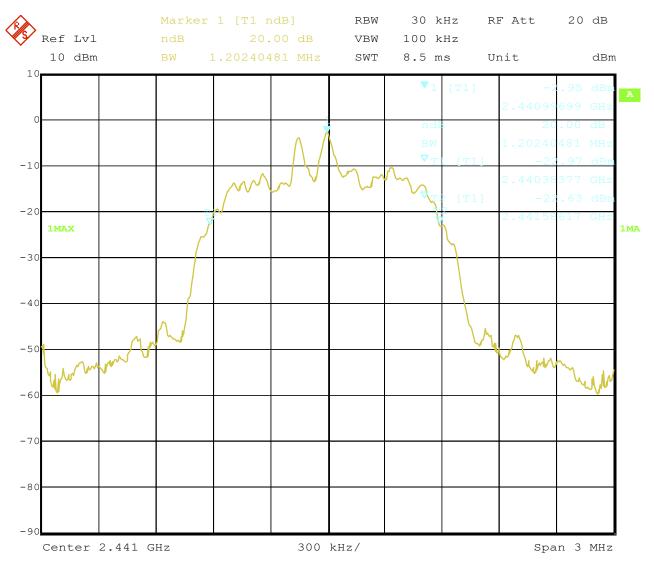


Date: 1.APR.2021 18:46:21 Report No.: TW2103124E Page 36 of 91

Date: 2021-04-02



2. Condition: Middle Channel



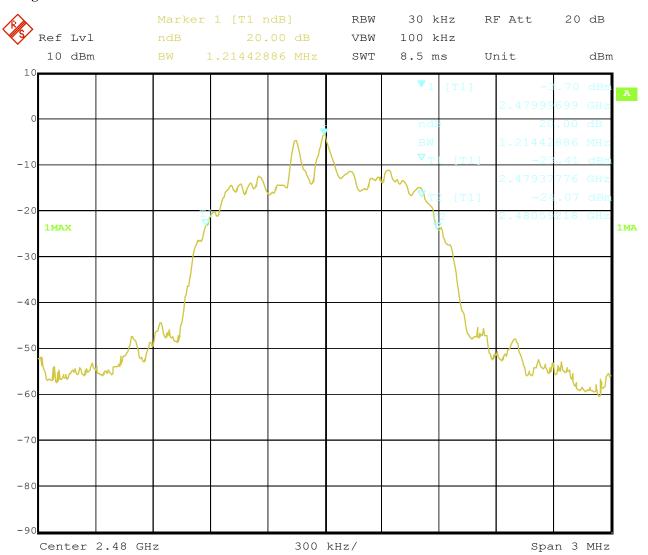
1.APR.2021 Date: 18:46:58

Page 37 of 91 Report No.: TW2103124E

Date: 2021-04-02



3. High Channel



1.APR.2021 18:47:27 Date:

Report No.: TW2103124E

Date: 2021-04-02



Page 38 of 91

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; RBW =3MHz, VBW=10MHz; Sweep = 5ms; 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.

Report No.: TW2103124E Page 39 of 91

Date: 2021-04-02



8.4Test Results

Type of Modulation: GFSK

EUT	AF	APP RING LIGHTs		Model	RGB18-APP
Mode	K	eep Transmitting	Test Voltage		DC12V
Temperature	ure 24 deg. C, Hum		Humidity		56% RH
Channel	Channel Frequency (MHz)	Max. Power Output (dBm)		Peak Power Limit	Pass/ Fail
Low	2402	-1.21		(dBm) 30	Pass
Middle	2441	-1.73		30	Pass
High	2480	-2.48		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

Type of Modulation: $\pi/4$ -DQPSK

EUT	AP	APP RING LIGHTs		Model	RGB18-APP
Mode	Ke	Keep Transmitting		Voltage	DC12V
Temperature	ature 24 deg. C, Hum		Humidity		56% RH
Channel	Channel Frequency (MHz)	Max. Power Output (dBm)	Peak Power Limit (dBm)	Pass/ Fail
Low	2402	-0.24		30	Pass
Middle	2441	-0.74		30	Pass
High	2480	-1.37		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

Page 40 of 91 Report No.: TW2103124E

Date: 2021-04-02



Type of Modulation: 8DPSK

EUT	AP	APP RING LIGHTs		APP RING LIGHTs Me		Model	RGB18-APP
Mode	Ke	Keep Transmitting		t Voltage	DC12V		
Temperature	e	24 deg. C,		umidity	56% RH		
Channel	Channel Frequency (MHz)	Max. Power Output (dBm) PK		Peak Power Limit (dBm)	Pass/ Fail		
Low	2402	-1.21		30	Pass		
Middle	2441	-1.85		30	Pass		
High	2480	-2.48		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

Report No.: TW2103124E

Date: 2021-04-02



Page 41 of 91

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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.

Page 42 of 91

Report No.: TW2103124E

Date: 2021-04-02

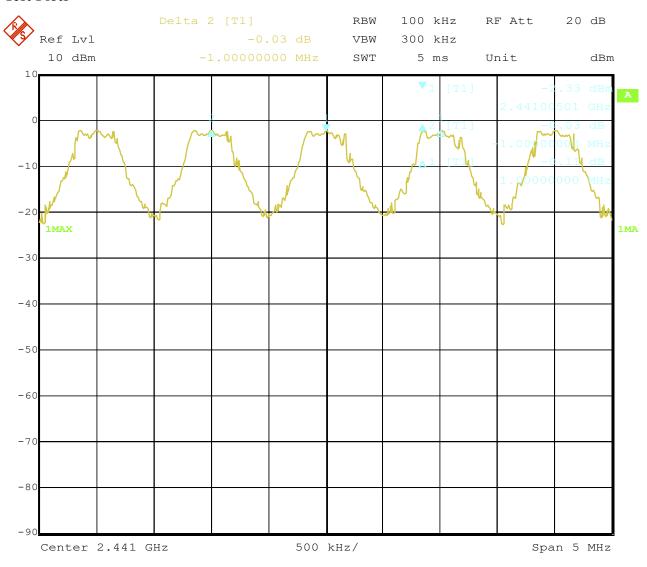


9.4Test Result

Type of Modulation: GFSK

EUT	APP RING LIC	Model	R	GB18-APP	
Mode	Hopping O	Test Voltage		DC12V	
Temperature	24 deg. C,		Humidity		56% RH
Carrier Frequency Separation			Limit		Pass/ Fail
	1.000MHz	≥ 25 kHz or 2/3	of the 20 dB ban	dwidth	Pass

Test Plots



1.APR.2021 17:03:10 Date:

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Report No.: TW2103124E Page 43 of 91

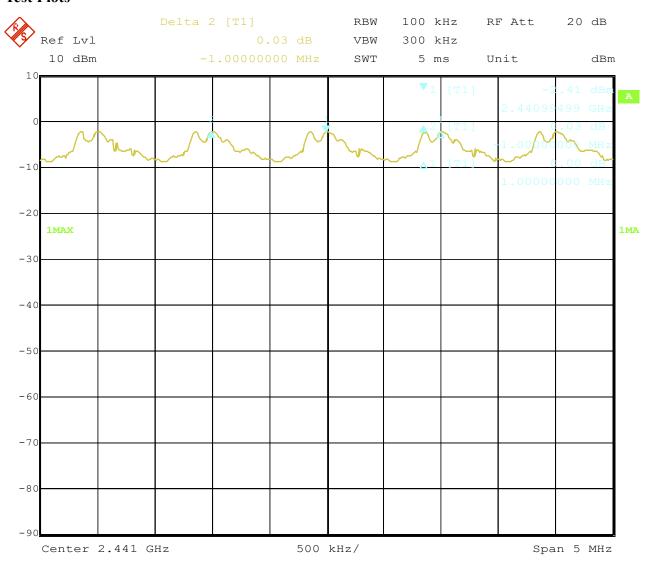
Date: 2021-04-02



Type of Modulation: $\pi/4$ -DQPSK

EUT	APP RING LIC	Model	R	GB18-APP	
Mode	Hopping O	Test Voltage		DC12V	
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



1.APR.2021 16:33:24 Report No.: TW2103124E Page 44 of 91

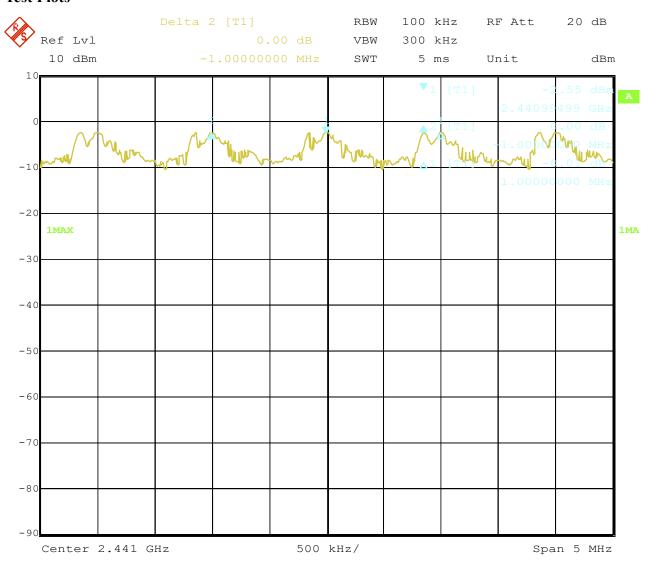
Date: 2021-04-02



Type of Modulation: 8DPSK

EUT	APP RING LIC	Model	R	GB18-APP	
Mode	Hopping O	Test Voltage		DC12V	
Temperature	24 deg. C,	Humidity			56% RH
Carrier Frequency Separation			Limit		Pass/ Fail
	1.000MHz	≥ 25 kHz or 2	/3 of 20 dB bands	vidth	Pass

Test Plots



1.APR.2021 19:06:18 Report No.: TW2103124E

Date: 2021-04-02



Page 45 of 91

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.

Page 46 of 91

Report No.: TW2103124E

Date: 2021-04-02

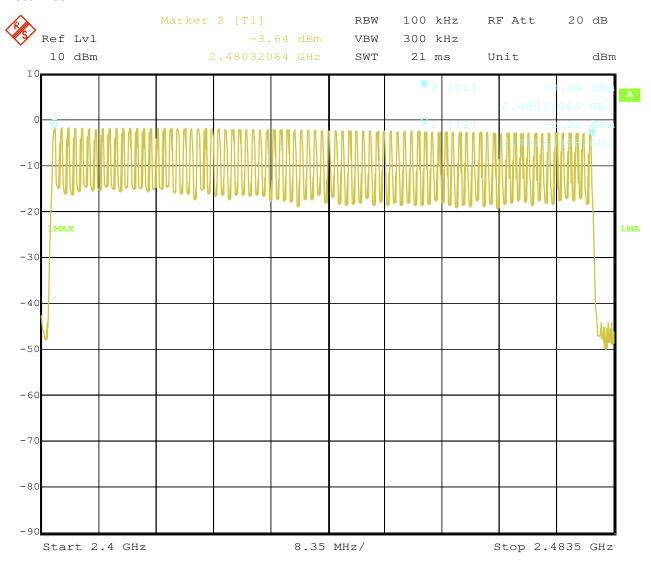


10.4Test Result

Type of Modulation: GFSK

EUT	APP RING LIGHTs		Model	R	GB18-APP	
Mode	Н	opping On	Test Voltage		DC12V	
Temperature	2	24 deg. C,	Humidity	56% RH		
Operating Frequency Nu		Number of hopp	Number of hopping channels		Pass/ Fail	
2402-2480MHz		79		≥ 15	Pass	

Test Plot



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Report No.: TW2103124E Page 47 of 91

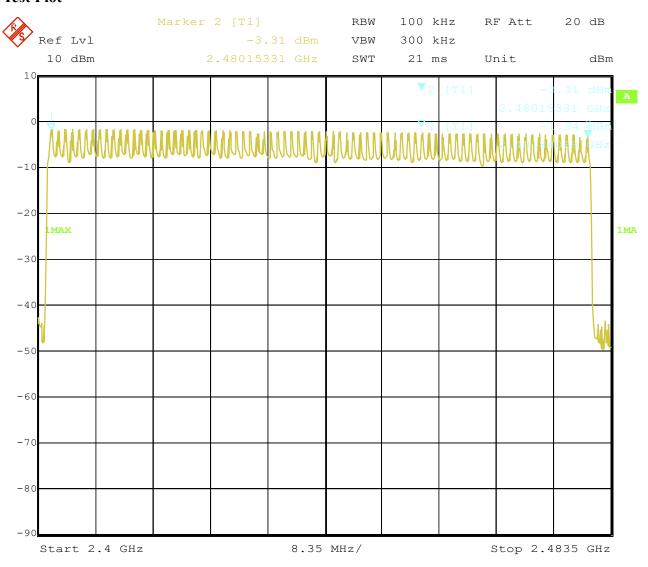
Date: 2021-04-02



Type of Modulation: $\pi/4$ -DQPSK

EUT	APP RING LIGHTs		M	lodel	F	RGB18-APP
Mode	Hopping On		Test '	Voltage	DC12V	
Temperature		24 deg. C,		Humidity		56% RH
Operating Frequency		Number of hopping channels		Liı	nit	Pass/ Fail
2402-2480MHz		79		≥	15	Pass

Test Plot



1.APR.2021 16:05:54

Page 48 of 91 Report No.: TW2103124E

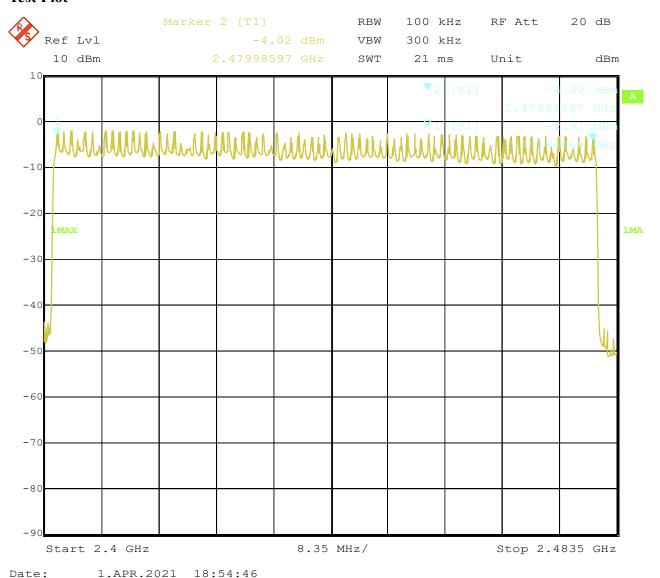
Date: 2021-04-02



Type of Modulation: 8DPSK

EUT	APP RING LIGHTs		Мо	odel		RGB18-APP	
Mode	Hopping On		Test Vo	ltage		DC12V	
Temperature	24 deg. C,		Humidi	ty		56% RH	
Operating Frequency		Number of hopp channels	oing	Liı	mit	Pass/ Fail	
2402-2480MHz		79		>	15	Pass	

Test Plot



Report No.: TW2103124E

Date: 2021-04-02



Page 49 of 91

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 \geq 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.

Report No.: TW2103124E

Date: 2021-04-02



Page 50 of 91

11.4 Test Result

Type of Modulation: GFSK

EUT	Bluetooth Rem	Bluetooth Remote Control Unit		D	SR-0828			
Mode	Keep Tra	Keep Transmitting		DC12V				
Temperatur	e 24 d	24 deg. C,		4	56% RH			
Channel	Reading	Hoping	Hoping Rate		Limit			
	DH5							
Middle	2.986ms	266.66	7 hop/s	0.319s	0.4s			
			DH3					
Middle	1.723ms	400 h	nop/s	0.276s	0.4s			
	DH1							
Middle	0.461ms	800 l	nop/s	0.148s	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 625 μ 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.

Page 51 of 91

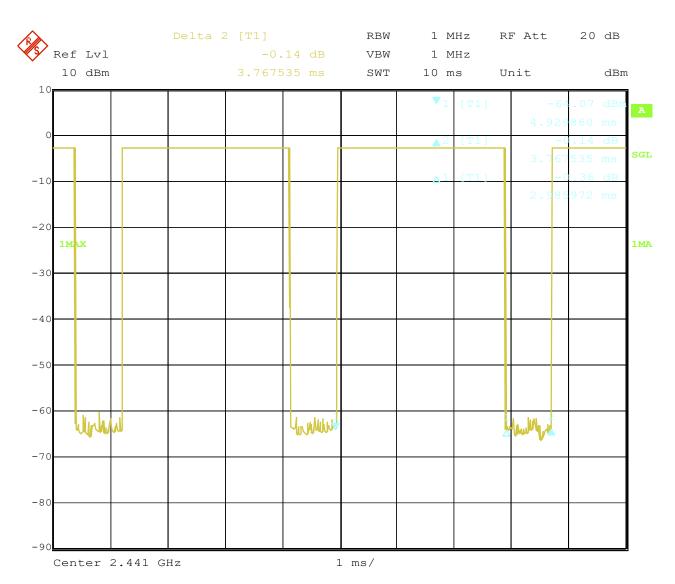
Report No.: TW2103124E

Date: 2021-04-02



Test Plots:

DH5



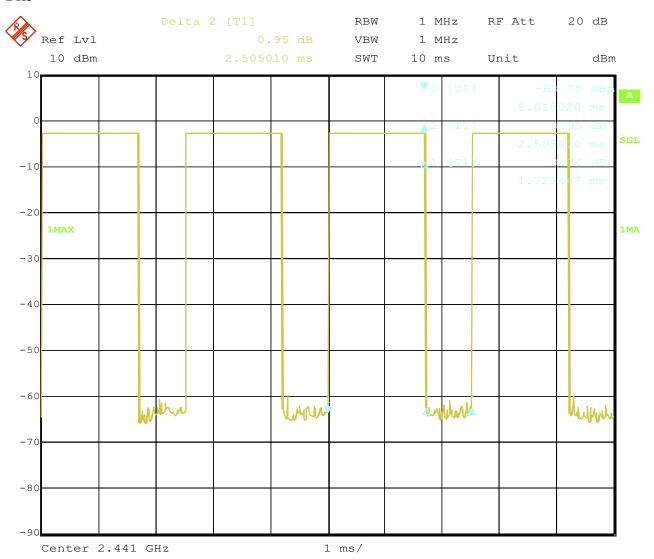
1.APR.2021 17:20:59 Date:

Page 52 of 91 Report No.: TW2103124E

Date: 2021-04-02



DH3



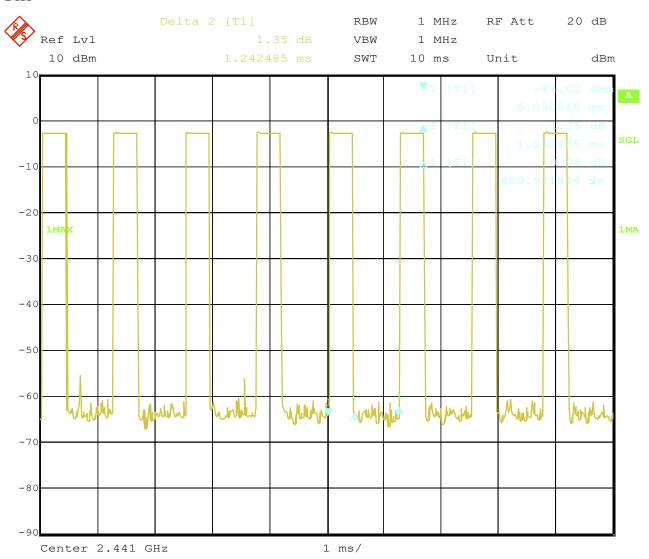
1.APR.2021 17:20:07 Date:

Report No.: TW2103124E Page 53 of 91

Date: 2021-04-02



DH1



1.APR.2021 17:19:01 Date:

Report No.: TW2103124E Page 54 of 91

Date: 2021-04-02



Test Result

Type of Modulation: Л/4DQPSK

EUT	Bluetooth Rem	Bluetooth Remote Control Unit		D	SR-0828		
Mode	Keep Tr	Keep Transmitting		DC12V			
Temperature	e 24 d	24 deg. C, Humidity		5	56% RH		
Channel	Reading	Hoping	Hoping Rate		Limit		
	2DH5						
Middle	2.986ms	266.667	7 hop/s	0.319s	0.4s		
			2DH3				
Middle	1.743ms	400 h	nop/s	0.279s	0.4s		
2DH1							
Middle	0.481ms	800 h	nop/s	0.154s	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 625 μ 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.

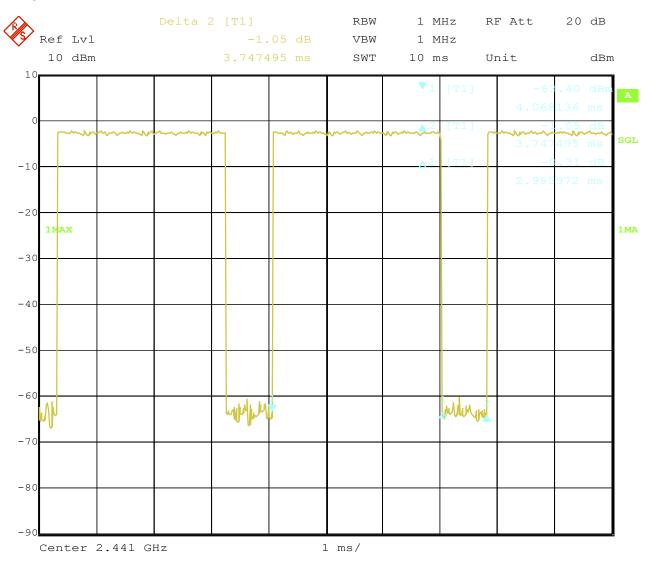
A DH1 Packet needs 1 time slot for transmitting and 1 time slot for receiving. Then the EUT makes worst case 800 hops per second with 79 channels.

Report No.: TW2103124E Page 55 of 91

Test Plots:

Date: 2021-04-02

2DH5

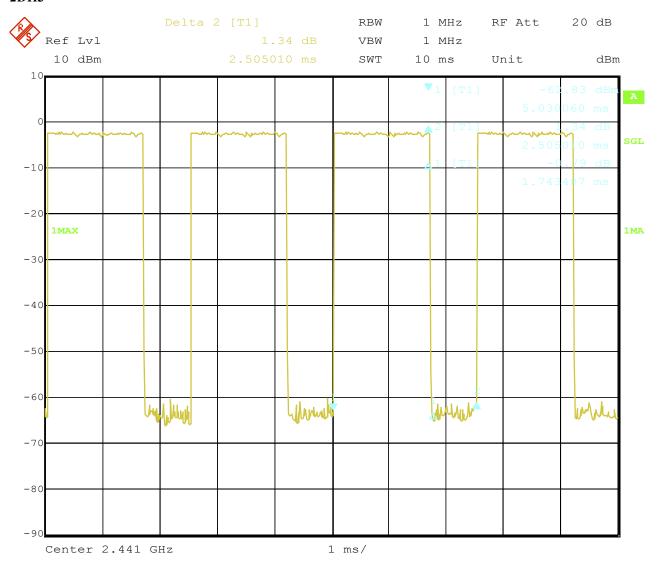


Report No.: TW2103124E Page 56 of 91

Date: 2021-04-02



2DH3



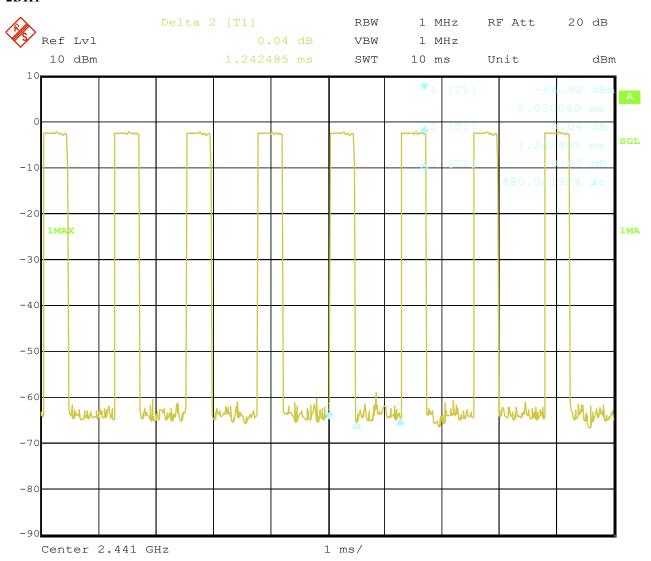
1.APR.2021 15:55:25 Date:

Report No.: TW2103124E Page 57 of 91

Date: 2021-04-02



2DH1



1.APR.2021 15:53:50 Date:

Report No.: TW2103124E Page 58 of 91

Date: 2021-04-02



Type of Modulation: 8DPSK

EUT	Bluetooth Remote Control Unit		Model	DS	DSR-0828		
Mode	Keep Tr	ansmitting	Insmitting Input Voltage I		C12V		
Temperature	24 0	leg. C, Humidity		24 deg. C,		56% RH	
Channel	Reading	Hopin	Hoping Rate		Limit		
			3DH5				
Middle	2.986ms	266.66	7 hop/s	0.319s	0.4s		
·			3DH3				
Middle	1.743ms	400 1	400 hop/s		0.4s		
	3DH1						
Middle	0.481ms	800 1	nop/s	0.154s	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 625 μ 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.

Page 59 of 91

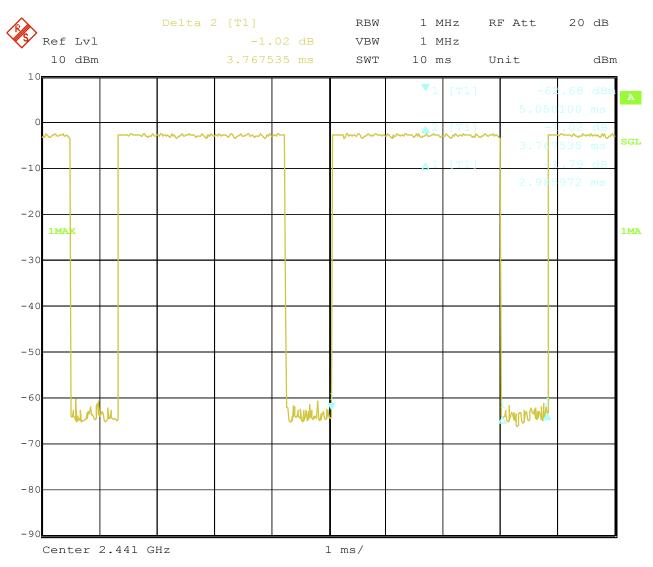
Report No.: TW2103124E

Date: 2021-04-02



Test Plots:

3DH5



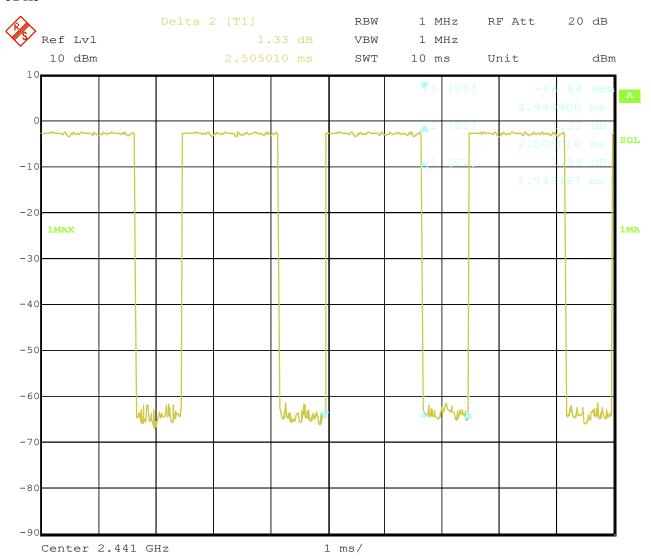
1.APR.2021 18:51:13 Date:

Report No.: TW2103124E Page 60 of 91

Date: 2021-04-02



3DH3



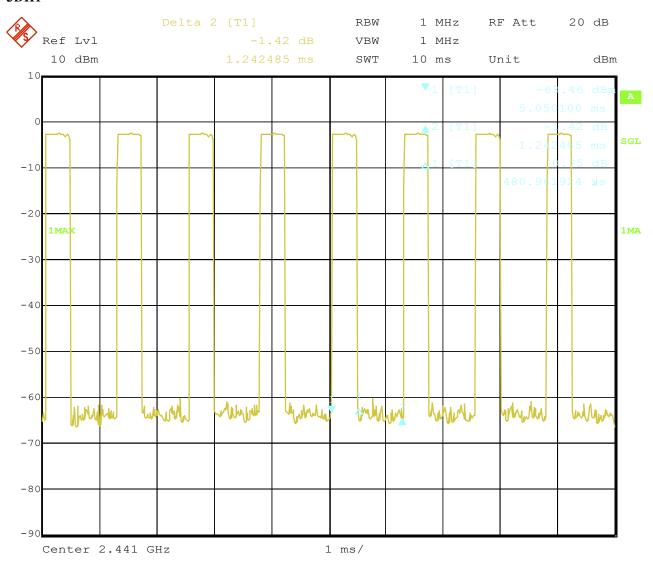
1.APR.2021 18:50:28 Date:

Report No.: TW2103124E Page 61 of 91

Date: 2021-04-02



3DH1



1.APR.2021 Date: 18:49:03 Report No.: TW2103124E

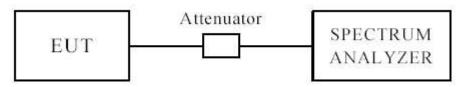
Date: 2021-04-02



Page 62 of 91

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.

Page 63 of 91 Report No.: TW2103124E

Date: 2021-04-02

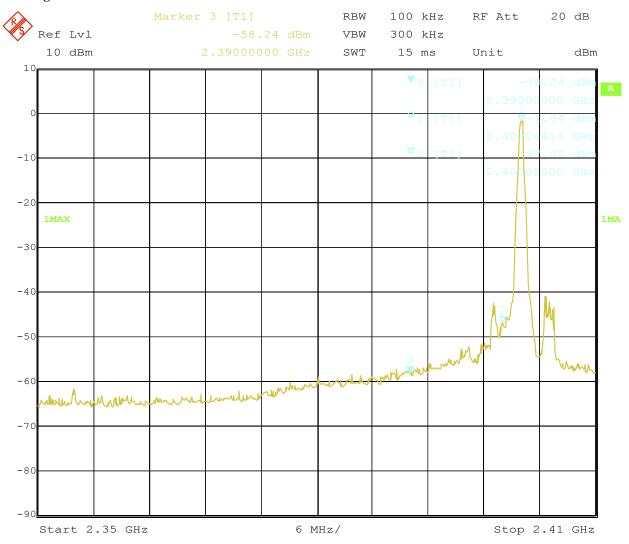


Type of Modulation: GFSK

Band Edge Test Result 12.4

Product:	APP RING LIGHT	Test Mode:	Low Channel
Mode	Keeping Transmitting	Test Voltage	DC12V
Temperature	24 deg. C	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 1.APR.2021 18:18:53

Page 64 of 91

Report No.: TW2103124E

Date: 2021-04-02

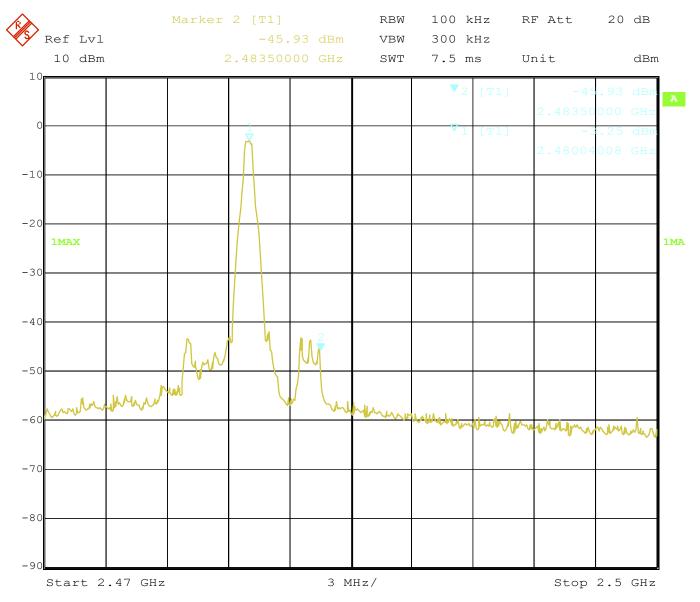


Type of Modulation: GFSK

Band Edge Test Result 12.4

Product:	APP RING LIGHT	Test Mode:	High Channel
Mode	Keeping Transmitting	Test Voltage	DC12V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



1.APR.2021 18:16:53 Date:

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Page 65 of 91 Report No.: TW2103124E

Date: 2021-04-02

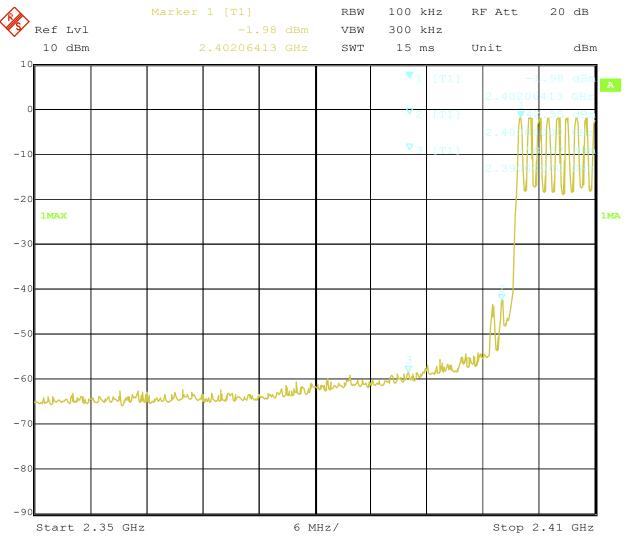


Type of Modulation: GFSK

Band Edge Test Result

Product:	APP RING LIGHT	Test Mode:	Hopping mode
Mode	Hopping On	Test Voltage	DC12V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 1.APR.2021 18:23:53

Page 66 of 91 Report No.: TW2103124E

Date: 2021-04-02

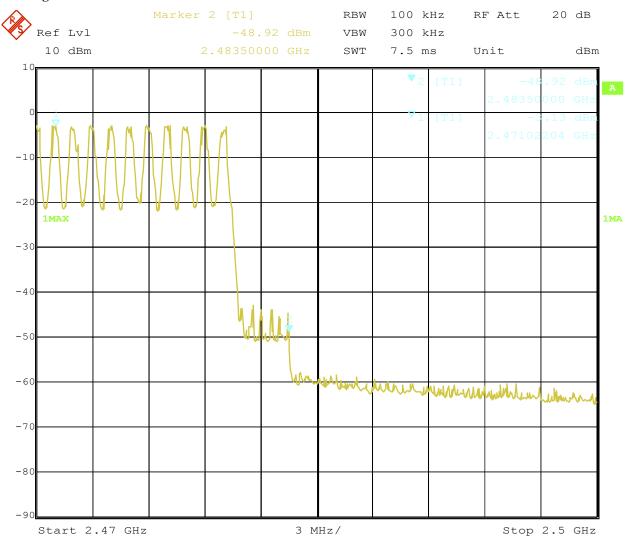


Type of Modulation: GFSK

Band Edge Test Result

Product:	APP RING LIGHT	Test Mode:	Hopping mode
Mode	Hopping On	Test Voltage	DC12V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 1.APR.2021 18:28:49

Page 67 of 91

Report No.: TW2103124E

Date: 2021-04-02

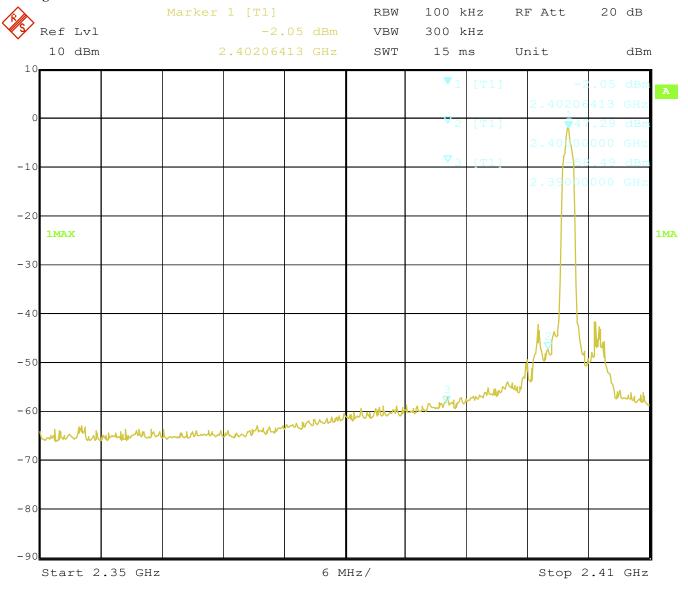


Type of Modulation: $\pi/4$ -DQPSK

12.4 Out of Band Test Result

Product:	APP RING LIGHT	Test Mode:	Low Channel
Mode	Keeping Transmitting	Test Voltage	DC12V
Temperature	24 deg. C	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 1.APR.2021 19:13:20

Page 68 of 91

Report No.: TW2103124E

Date: 2021-04-02

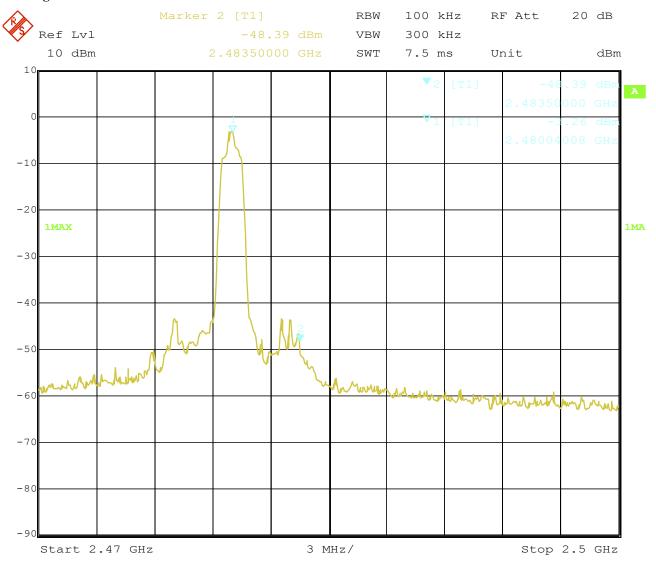


Type of Modulation: Л/4-DQPSK

12.4 Band Edge Test Result

Product:	APP RING LIGHT	Test Mode:	High Channel
Mode	Keeping Transmitting	Test Voltage	DC12V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 1.APR.2021 19:17:48

Report No.: TW2103124E Page 69 of 91

Date: 2021-04-02

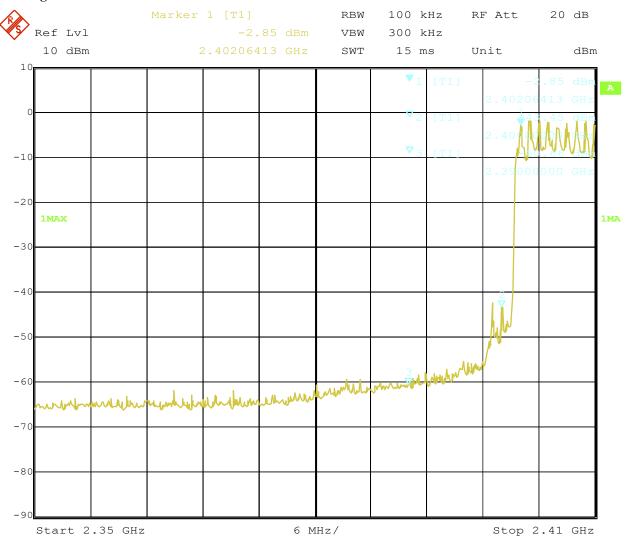


Type of Modulation: Л/4-DQPSK

Out of Band Test Result

Product:	APP RING LIGHT	Test Mode:	Hopping mode
Mode	Hopping On	Test Voltage	DC12V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 1.APR.2021 19:14:51 Report No.: TW2103124E Page 70 of 91

Date: 2021-04-02

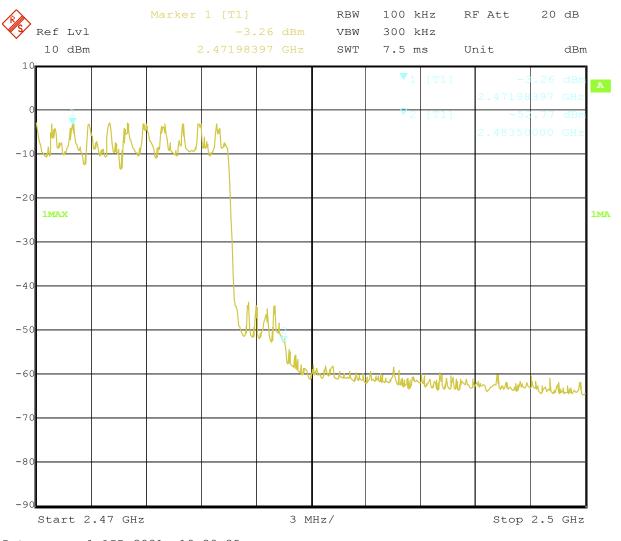


Type of Modulation: $\pi/4$ -DQPSK

Out of Band Test Result

Product:	APP RING LIGHT	Test Mode:	Hopping mode
Mode	Hopping On	Test Voltage	DC12V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



1.APR.2021 19:20:25 Date:

Page 71 of 91

Report No.: TW2103124E

Date: 2021-04-02

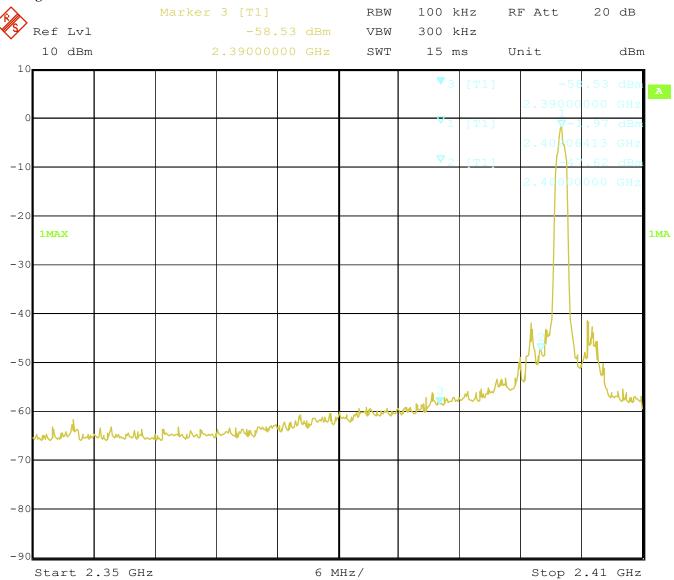


Type of Modulation: 8DPSK

12.4 Band Edge Test Result

Product:	APP RING LIGHT	Test Mode:	Low Channel
Mode	Keeping Transmitting	Test Voltage	DC12V
Temperature	24 deg. C	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 1.APR.2021 18:34:28

Page 72 of 91

Report No.: TW2103124E

Date: 2021-04-02

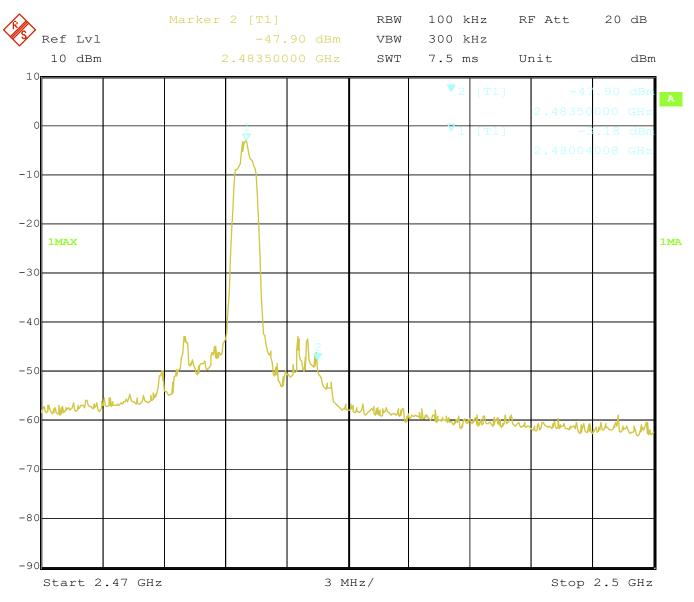


Type of Modulation: 8DPSK

12.4 Band Edge Test Result

Product:	APP RING LIGHT	Test Mode:	High Channel
Mode	Keeping Transmitting	Test Voltage	DC12V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



1.APR.2021 18:33:12 Date:

Page 73 of 91 Report No.: TW2103124E

Date: 2021-04-02

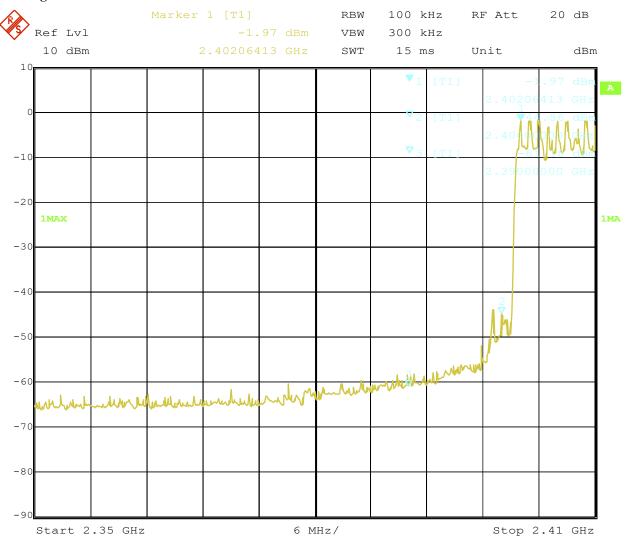


Type of Modulation: 8DPSK

Band Edge Test Result

Product:	APP RING LIGHT	Test Mode:	Hopping mode
Mode	Hopping On	Test Voltage	DC12V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 1.APR.2021 18:36:03

Page 74 of 91 Report No.: TW2103124E

Date: 2021-04-02

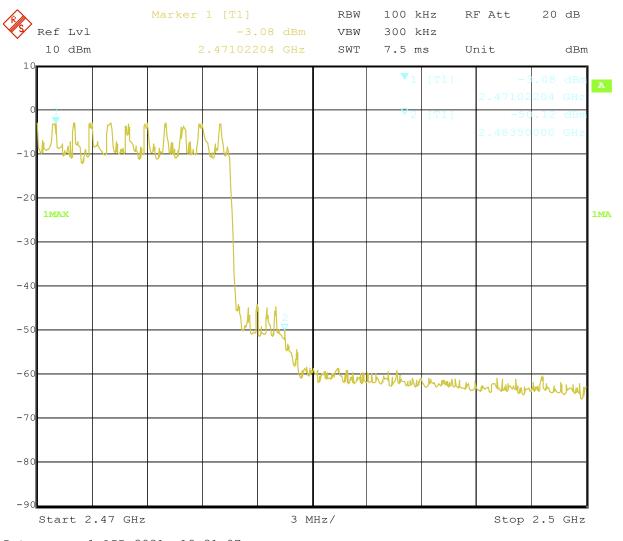


Type of Modulation: 8DPSK

Band Edge Test Result

Product:	APP RING LIGHT	Test Mode:	Hopping mode
Mode	Hopping On	Test Voltage	DC12V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



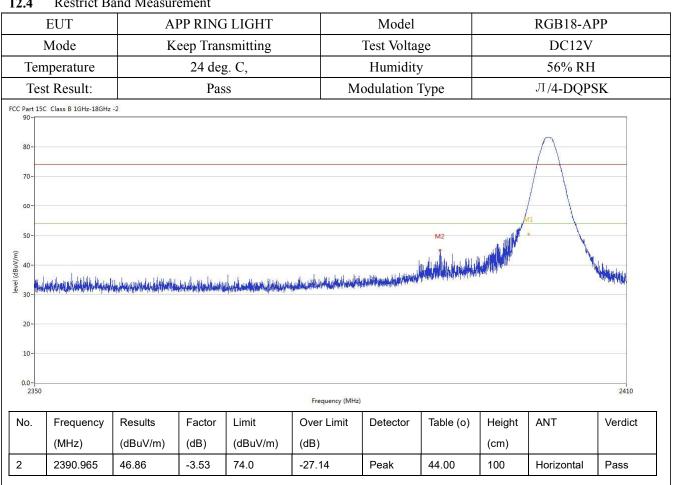
1.APR.2021 18:31:07 Date:

Page 75 of 91 Report No.: TW2103124E

Date: 2021-04-02



12.4 Restrict Band Measurement



Page 76 of 91 Report No.: TW2103124E

Date: 2021-04-02



12.4 Restrict Band Measurement

E	UT	Al	PP RING	LIGHT		Model		RO	GB18-APP)			
M	Iode	K	eep Tran	smitting	Te	Test Voltage		DC12V		DC12V			
Temp	perature	24 deg. C, Humidity		24 deg. C, Humi		24 deg. C, Humidity 56%		lumidity		56% RH		66% RH	
Test Result:			Pas	s	Mod	ulation Typ	ne e	Л/4-DQPSK					
Part 15C CI	Class B 1GHz-18GHz	-2								1			
80-													
70-									\wedge				
60-								M	1				
50-							M2	M	/				
		il i sees		الدرور المراجع			M2		J \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	nal athere			
50-	elabilipent levels and	had partition in the stand	dae langupal gad lan	alementaphilips afect to impl	a construction of the state of	Angel Market	M2			hot half his again			
40-	al actually properly all as being being a	had parint law appellation	had finish problem	alanak ing ballon shedd mad d		Anna parket de la	M2	MANAGANIA P		het effekkirsigen te			
50- 40- 30-	all no last to processor delay solitor participated for	had been had been had been been been been been been been bee	the first of the second state	ateniaking dalipun yelekha bigil		Anna park de provincia de la la la companya de la la companya de l	M2			or all the serve			
50- 40- 30- 20-	id na las his provincia de las plantas de la compansión d	had party library library of	had from the distribution of the	atonia trigothilit in efect for intelligi	A CONTRACTOR OF THE PARTY OF TH	America la productiva	M2			2410			
50- 40- 30-	all and the process of the published of	producert framework of the trave	had fireful and the	Araket ingelekke september keleke besept	Frequency (MHz)	Annual production of the second	M2.			2410			
30- 20- 10- 2350	Frequency	Results	Factor	Limit	Frequency (MHz) Over Limit	Detector	Table (o)	Height	ANT	2410 Verdict			
30- 20- 10- 2350	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	981 E	I							

Page 77 of 91 Report No.: TW2103124E

Date: 2021-04-02



12.4 Restrict Band Measurement

2. 4	Resulte D	and Mcasur	CITICIT							
	EUT	A	PP RINC	LIGHT		Model			RGB18-A	PP
	Mode	K	eep Tran	smitting		Test Volta	age		DC12V	7
Ten	nperature		24 deg	g. C,		Humidit	ty		56% RI	I
Tes	st Result:		Pas	SS	N	/Iodulation	Туре		Л/4-DQF	PSK
CC Part 15	C Class B 1GHz-18GHz	-2						•		
900 800 700 600 600 600 900 900 900 900 900 900 9	associate del de de de de de la conse				The state of the s	https://www.desphorests.che.phys.ch		ر برنامه المسلمانية.	. I depote the second assessment of	Manual Andrews Andrews
0.0 2	- 470				2483.5 Frequency (MF	łz)				2500
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
	(IVII IZ)	(abav/iii)	(45)	(() () () ()	(/	1		(5)		

Page 78 of 91 Report No.: TW2103124E

Date: 2021-04-02



12.4 Restrict Band Measurement

F	EUT	A)	PP RING	LIGHT		Model			RGB18-A	PP
N	Mode	K	eep Tran	smitting		Test Volta	ge		DC12V	
Tem	perature		24 deg	g. C,		Humidity	У		56% RH	I
Test	t Result:		Pas	s	M	odulation '	Гуре		Л/4-DQP	SK
90- 80- 70-	Class B 1GHz-18GHz	-2								
50- 50- 30- 20- 10- 247(hind deposits to the section of	harmite de de la constitución de		2483.5 Frequency (MH	tz)				2500
30 - 20 - 10 - 2476	0.000	Results	Factor	Limit		tz) Detector	Table (o)	Height	ANT	2500 Verdict
30 - 20 - 10 - 2470	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Frequency (MF	I	Table (o)	Height (cm)	ANT	,,,,,,,,,,,

Note: For Restricted band test, only the worst case was reported. And $\pi/4$ -DQPSK modulation was the worst case.

Report No.: TW2103124E

Date: 2021-04-02



2021-04-02

Page 79 of 91

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 constructions

PCB antenna used. The gain of the antennas is 2.0dBi. (get from the antenna specification provided the applicant)

Report No.: TW2103124E Page 80 of 91

Date: 2021-04-02



14.0 FCC ID Label

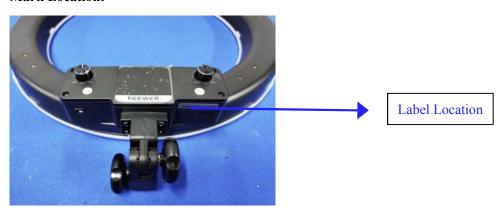
FCC ID: 2ANIV-RGB18-APP

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:



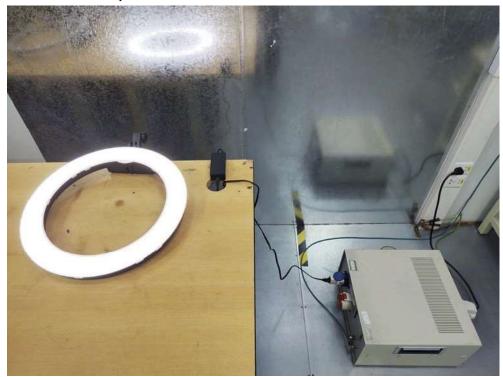
Report No.: TW2103124E Page 81 of 91

Date: 2021-04-02



15.0 **Photo of testing**

Conducted Emission Test Setup:



Page 82 of 91

Report No.: TW2103124E

Date: 2021-04-02



Radiated Emission Test Setup:



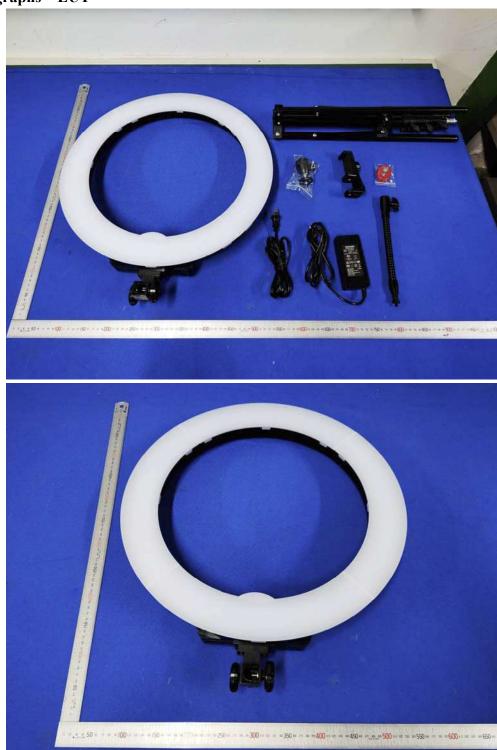
Page 83 of 91

Report No.: TW2103124E

Date: 2021-04-02



Photographs - EUT



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Page 84 of 91

Report No.: TW2103124E

Date: 2021-04-02







Page 85 of 91

Report No.: TW2103124E

Date: 2021-04-02







Page 86 of 91

Report No.: TW2103124E

Date: 2021-04-02



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Page 87 of 91

Report No.: TW2103124E

Date: 2021-04-02





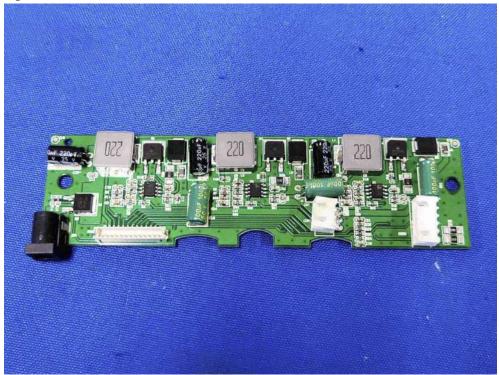


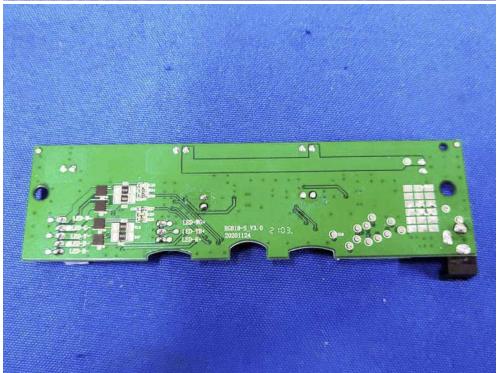
Page 88 of 91

Report No.: TW2103124E

Date: 2021-04-02





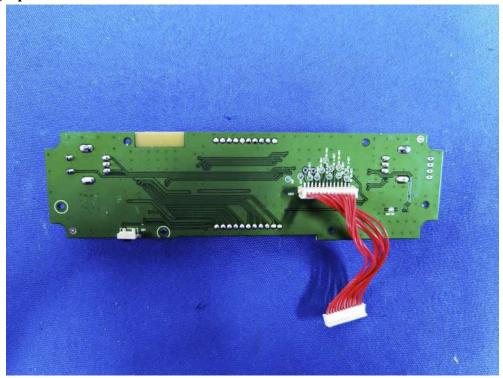


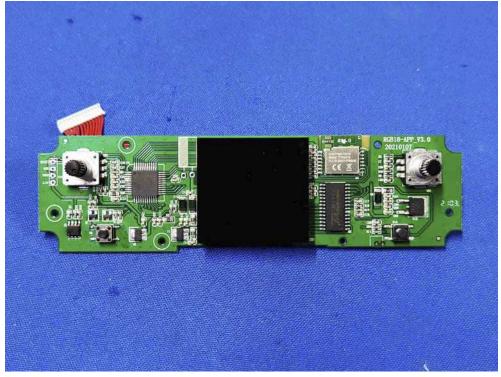
Page 89 of 91

Report No.: TW2103124E

Date: 2021-04-02







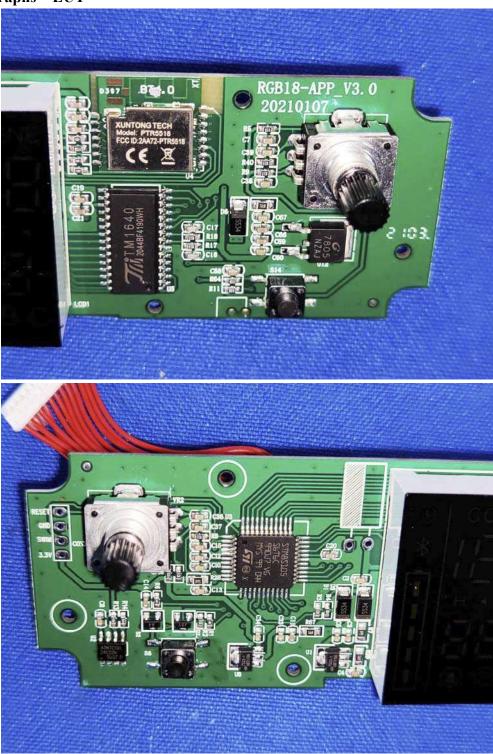
Page 90 of 91

Report No.: TW2103124E

Date: 2021-04-02



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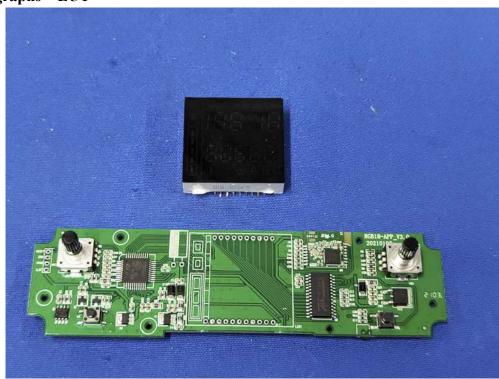
Page 91 of 91

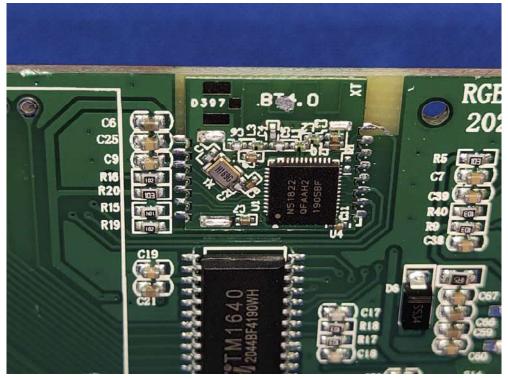
Report No.: TW2103124E

Date: 2021-04-02



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