

Report No.: TW2310101E

Applicant: Shenzhen Xinrui Weiye Electronics Co., Ltd.

Product: 2.4G Remote control

Model No.: XR24-02

Trademark: N/A

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

Terry Tang

Manager

Dated: October 17, 2023

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.: TW2310101E Page 2 of 46

Date: 2023-10-17



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 meet with ISO/IEC-17025 requirements, which is approved by CNAL. This approval result is accepted by MRA of APLAC.

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

CNAL-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAL/AC01:2002 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2017 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 46

Report No.: TW2310101E

Date: 2023-10-17



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	6dB Bandwidth Measurement Bandwidth	23
8.0	Maximum Peak Output Power	28
9.0	Power Spectral Density Measurement	30
10.0	Out of Band Measurement.	35
11.0	Antenna Requirement.	42
12.0	FCC ID Label.	43
13.0	Photo of Test Setup and EUT View.	44

Report No.: TW2310101E Page 4 of 46

Date: 2023-10-17



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: Shenzhen Xinrui Weiye Electronics Co., Ltd.

Address: 301, Building B, No. 163, Huawang Road, Langkou Community, Dalang Street, Longhua

District, Shenzhen

Telephone: 0755-21019656 Fax: 0755-21019656

1.3 Description of EUT

Product: 2.4G Remote control

Manufacturer: Shenzhen Xinrui Weiye Electronics Co., Ltd.

Address: 301, Building B, No. 163, Huawang Road, Langkou Community, Dalang Street,

Longhua District, Shenzhen

Trademark: N/A
Additional Trademark: N/A
Model Number: XR24-02
Additional Model Number: N/A
Hardware Version: 2.4G-V01
Software Version: TX_V01
Serial No.: 20230910001TX

Type of Modulation GFSK

Frequency range 2402-2480MHz (Bluetooth Low Energy)

Channel Separation: 2MHz Channel Number: 40MHz

Input Voltage: DC3.0V, 0.018A (1pc CR2032 button battery)

1.4 Submitted Sample: 4 Samples

1.5 Test Duration

2023-10-10 to 2023-10-17

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

In the event of the improper use of the report. The SHENZHEN TIMEWAY TESTING LABORATORIES. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

Report No.: TW2310101E Page 5 of 46

Date: 2023-10-17



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 for coverage factor of k=2 and a level of confidence of 95%.

1.7 Test Engineer

The sample tested by

Print Name: Andy Xing

Page 6 of 46

Report No.: TW2310101E

Date: 2023-10-17



2.0 Test Equipment					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	R&S	ESPI 3	100379	2023-07-14	2024-07-13
LISN	R&S	EZH3-Z5	100294	2023-07-14	2024-07-13
LISN	R&S	EZH3-Z5	100253	2023-07-14	2024-07-13
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2023-07-14	2024-07-13
Loop Antenna	EMCO	6507	00078608	2022-07-18	2025-07-17
Spectrum	R&S	FSIQ26	100292	2023-07-14	2024-07-13
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2022-07-18	2025-07-17
Horn Antenna	R&S	BBHA 9120D	9120D-631	2022-07-18	2024-07-17
Power meter	Anritsu	ML2487A	6K00003613	2023-07-14	2024-07-13
Power sensor	Anritsu	MA2491A	32263	2023-07-14	2024-07-13
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2022-07-18	2025-07-17
9*6*6 Anechoic			N/A	2022-07-26	2025-07-25
EMI Test Receiver	RS	ESVB	826156/011	2023-07-14	2024-07-13
EMI Test Receiver	RS	ESCS 30	834115/006	2023-07-14	2024-07-13
Spectrum	HP/Agilent	E4407B	MY50441392	2023-07-14	2024-07-13
Spectrum	RS	FSP	1164.4391.38	2023-07-14	2024-07-13
RF Cable	Zhengdi	ZT26-NJ-NJ-8M/FA		2023-07-14	2024-07-13
RF Cable	Zhengdi	7m		2023-07-14	2024-07-13
Pre-Amplifier	Schwarebeck	BBV9743	#218	2023-07-14	2024-07-13
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2023-07-14	2024-07-13
LISN	SCHAFFNER	NNB42	00012	2023-07-14	2024-07-13
ESPI Test Receiver	R&S	ESPI 3	100379	2023-07-14	2024-07-13
LISN	R&S	EZH3-Z5	100294	2023-07-14	2024-07-13

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

Report No.: TW2310101E

Date: 2023-10-17



3.0 **Technical Details**

3.1 **Summary of test results**

Standard	Test Type	Result	Notes
CC Part 15, Paragraph 15.207	Conducted Emission Test	N/A	Complies
FCC Part 15 Subpart C Paragraph 15.247(a)(2) Limit	Spectrum bandwidth of a Orthogonal Frequency Division Multiplex System Limit: 6dB bandwidth>500kHz	Pass	Complies
FCC Part 15, Paragraph 15.247(b)	Maximum peak output power Limit: max. 30dBm	Pass	Complies
CC Part 15, Paragraph 15.205 & 15.209	Transmitter Radiated Emission Limit: Table 15.209	Pass	Complies
FCC Part 15, Paragraph 15.247(e)	Power Spectral Density Limit: max. 8dBm	Pass	Complies
FCC Part 15, Paragraph 15.247(d)	Out of Band Emission and Restricted Band Radiation Limit: 20dB less than peak value of fundamental frequency Restricted band limit:	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.

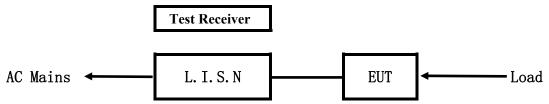
Report No.: TW2310101E

Date: 2023-10-17



5.0 Power Line Conducted Emission Test

5.1 Schematics of the test

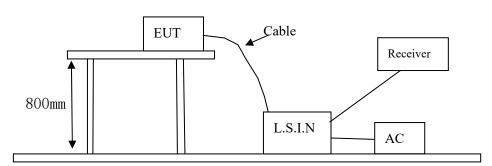


EUT: Equipment Under Test

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.

A. EUT

Device	Manufacturer	Model	FCC ID
2.4G Remote control	Shenzhen Xinrui Weiye Electronics Co., Ltd.	XR24-02	2BCTA-YKQ24

B. Internal Device

Device	Manufacturer	Model	Rating

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 adopt any other remedies which may be appropriate.

Report No.: TW2310101E Page 9 of 46

Date: 2023-10-17



C. Peripherals

Device	Manufacturer	Model	Rating
N/A			

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	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	4 .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 N/A

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

Note: EUT powered by button battery, this test item not applicable.

Report No.: TW2310101E Page 10 of 46

Date: 2023-10-17

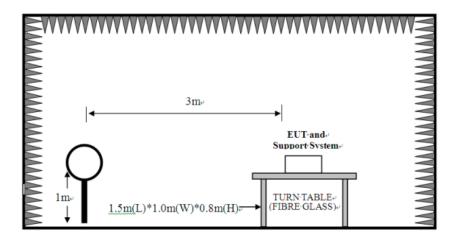


6 Radiated Emission Test

- 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 25 GHz 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=1MHz VBW=3MHz and PK detector. AV value with RBW=1MHz, VBW=3MHz and RMS 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



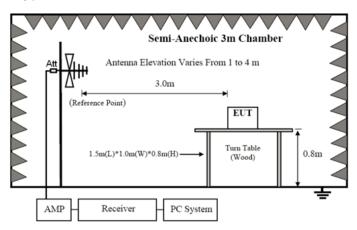
Page 11 of 46

Report No.: TW2310101E

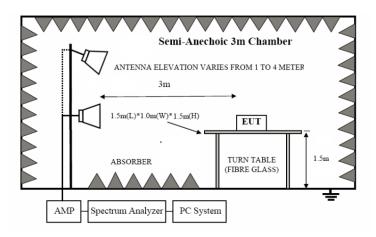
Date: 2023-10-17



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.: TW2310101E Page 12 of 46

Date: 2023-10-17



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. 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. New Battery was used during the test.

Page 13 of 46

Report No.: TW2310101E

Date: 2023-10-17



Test result

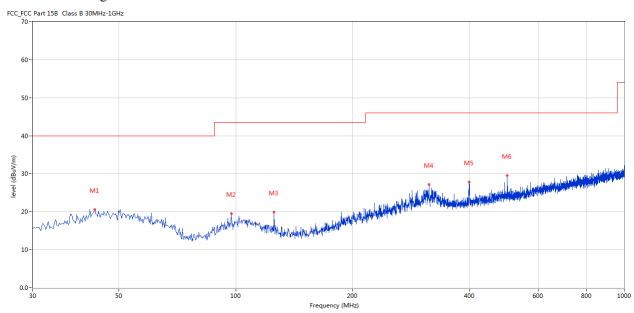
General Radiated Emission Data and Harmonics Radiated Emission Data

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

EUT set Condition: Keep Bluetooth Transmitting

Results: Pass

Test Figure:



No.	Frequency	Results	Factor	Limit	Over	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	Limit (dB)		(o)	(cm)		
1	43.334	20.53	-11.49	40.0	-19.47	Peak	142.00	100	Horizontal	Pass
2	97.398	19.55	-13.85	43.5	-23.95	Peak	50.00	100	Horizontal	Pass
3	125.521	19.94	-16.40	43.5	-23.56	Peak	233.00	100	Horizontal	Pass
4	314.381	27.13	-10.85	46.0	-18.87	Peak	257.00	100	Horizontal	Pass
5	398.993	27.88	-8.62	46.0	-18.12	Peak	166.00	100	Horizontal	Pass
6	499.848	29.52	-6.90	46.0	-16.48	Peak	299.00	100	Horizontal	Pass

Report No.: TW2310101E

Date: 2023-10-17



Test result

General Radiated Emission Data and Harmonics Radiated Emission Data

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

EUT set Condition: Keep Transmitting

Results: Pass

Test Figure:

No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	45.031	21.94	-11.41	40.0	-18.06	Peak	276.00	100	Vertical	Pass
2	108.065	19.73	-13.42	43.5	-23.77	Peak	46.00	100	Vertical	Pass
3	331.837	24.54	-10.12	46.0	-21.46	Peak	360.00	100	Vertical	Pass
4	480.695	27.94	-7.37	46.0	-18.06	Peak	340.00	100	Vertical	Pass
5	563.367	29.19	-6.08	46.0	-16.81	Peak	0.00	100	Vertical	Pass
6	864.961	31.50	-2.36	46.0	-14.50	Peak	190.00	100	Vertical	Pass

Report No.: TW2310101E Page 15 of 46

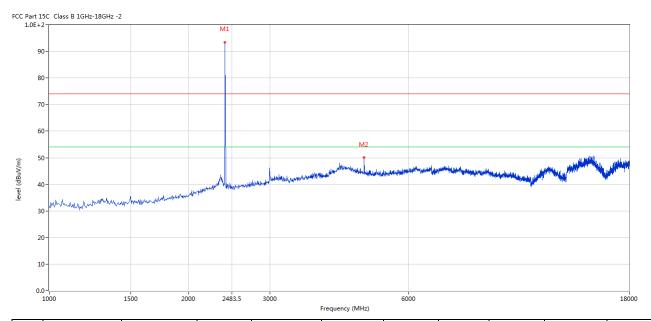
Date: 2023-10-17



Test Figures above 1GHz:

Please refer to the following test plots for details:

Low Channel: Horizontal



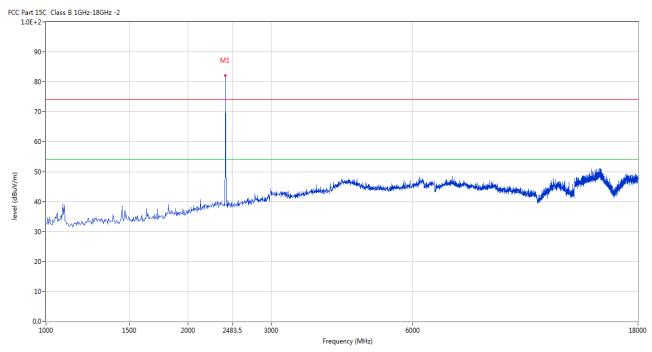
No.	Frequency	Results	Factor	Limit	Over	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	Limit (dB)		(o)	(cm)		
1	2402	93.49	-3.57	74.0	19.49	Peak	112.00	100	Horizontal	N/A
2	4802.799	50.01	3.12	74.0	-23.99	Peak	308.00	100	Horizontal	Pass

Page 16 of 46 Report No.: TW2310101E

Date: 2023-10-17



Low Channel: Vertical



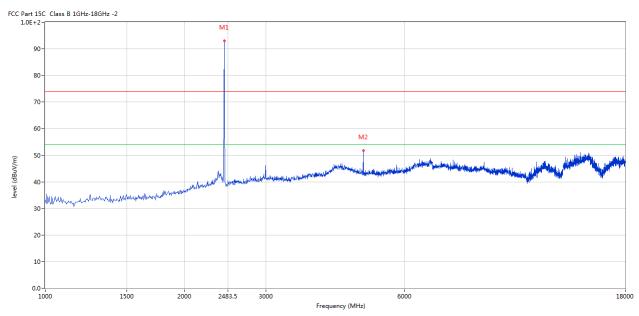
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2402	82.16	-3.57	74.0	8.16	Peak	34.00	100	Vertical	N/A

Page 17 of 46 Report No.: TW2310101E

Date: 2023-10-17



Middle Channel: Horizontal



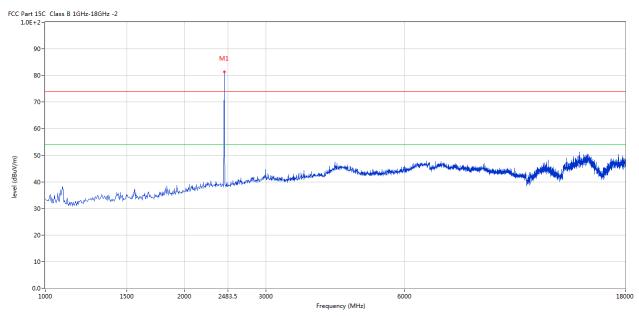
No.	Frequency	Results	Factor	Limit	Over	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	Limit (dB)		(0)	(cm)		
1	2440	93.09	-3.57	74.0	19.09	Peak	275.00	100	Horizontal	N/A
2	4879.280	51.88	3.20	74.0	-22.12	Peak	286.00	100	Horizontal	Pass

Page 18 of 46 Report No.: TW2310101E

Date: 2023-10-17



Middle Channel: Vertical



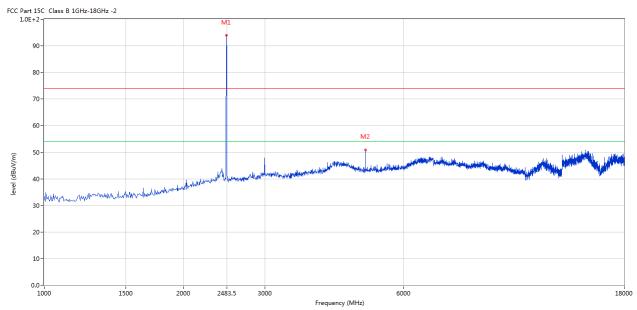
No	. Frequency	Results	Factor	Limit	Over	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	Limit (dB)		(0)	(cm)		
1	2440	81.38	-3.57	74.0	7.38	Peak	348.00	100	Vertical	N/A

Page 19 of 46 Report No.: TW2310101E

Date: 2023-10-17



High Channel: Horizontal



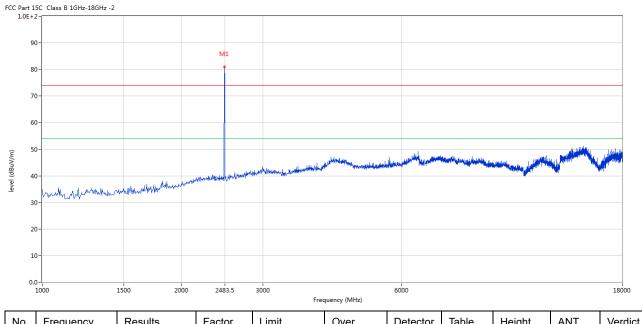
No.	Frequency	Results	Factor	Limit	Over	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	Limit (dB)		(o)	(cm)		
1	2480	93.91	-3.57	74.0	19.91	Peak	279.00	100	Horizontal	N/A
2	4960.010	50.85	3.36	74.0	-23.15	Peak	279.00	100	Horizontal	Pass

Report No.: TW2310101E Page 20 of 46

Date: 2023-10-17



High Channel: Vertical



N	0.	Frequency	Results	Factor	Limit	Over	Detector	Table	Height	ANT	Verdict
		(MHz)	(dBuV/m)	(dB)	(dBuV/m)	Limit (dB)		(o)	(cm)		
1		2480	80.96	-3.57	74.0	6.96	Peak	190.00	100	Vertical	N/A

Note: 1. Level = Reading + AF + Cable - Preamp

- 2. For the radiated emissions above 18G, it is the floor noise.
- 3. The measured PK value less than the AV limit, no necessary to take down the AV measurement result.

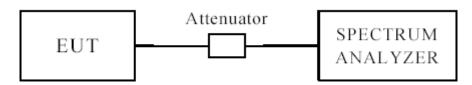
Report No.: TW2310101E Page 21 of 46

Date: 2023-10-17



7.0 6dB Bandwidth Measurement

7.1 Test Setup



7.2 Limits of 6dB Bandwidth Measurement

The minimum of 6dB Bandwidth Measurement is >500 kHz

7.3 Test Procedure

- 1. Set resolution bandwidth (RBW) = 100 kHz
- 2. Set the video bandwidth (VBW) \geq 3 x RBW.
- 3. Detector = Peak.
- 4. Trace mode = max hold.
- 5. Sweep = auto couple.
- 6. Allow the trace to stabilize.
- 7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

7.4 Test Result

Page 22 of 46 Report No.: TW2310101E

Date: 2023-10-17



EUT	2.4G F	Remote control	Model	XR24-02
Mode	Keep	Transmitting	Input Voltage	DC3.0V
Temperat	ure 2	4 deg. C,	Humidity	56% RH
Channel	Channel Frequency (MHz)	6 dB Bandwidth (kHz)	Minimum Limi	it Pass/ Fail
Low	2402	739.48	500	Pass
Middle	2440	739.48	500	Pass
High	2480	721.44	500	Pass

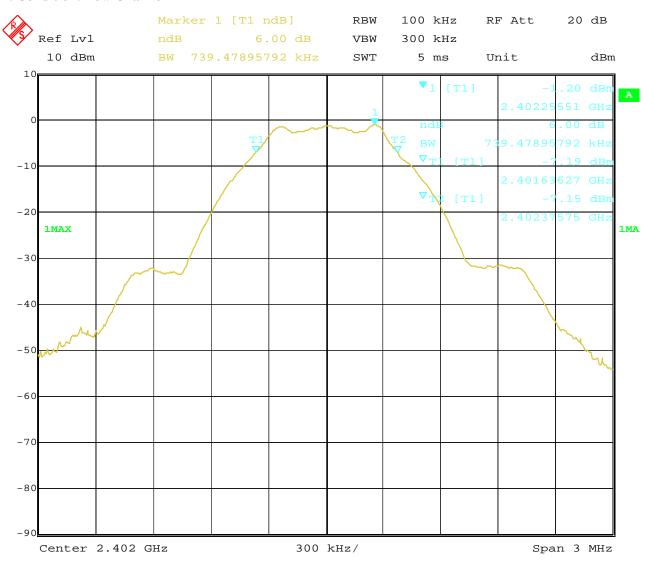
Report No.: TW2310101E Page 23 of 46

Date: 2023-10-17



Test Figure:

1. Condition: Low Channel

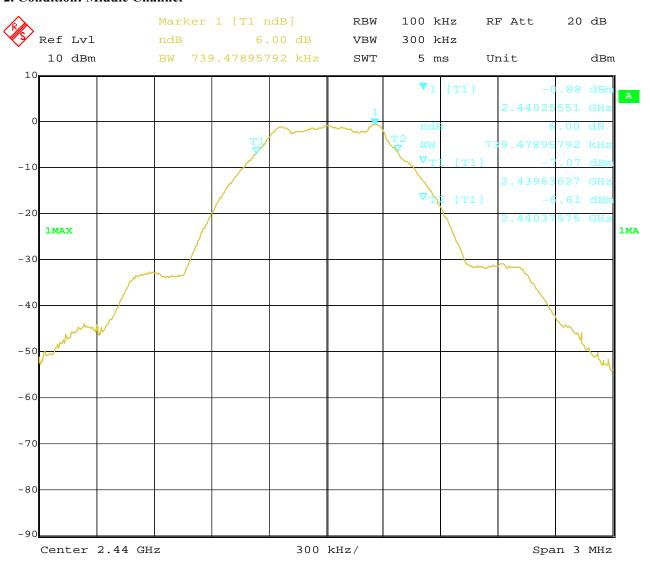


Report No.: TW2310101E Page 24 of 46

Date: 2023-10-17



2. Condition: Middle Channel

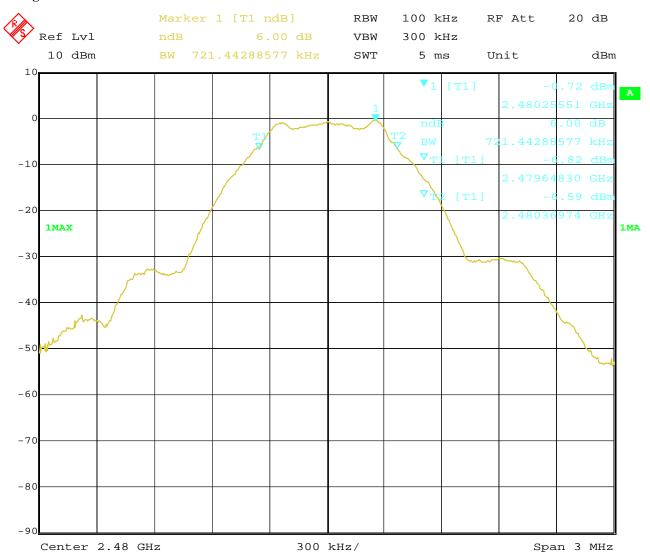


Report No.: TW2310101E Page 25 of 46

Date: 2023-10-17



3. High Channel



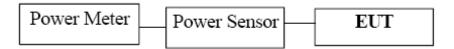
Report No.: TW2310101E Page 26 of 46

Date: 2023-10-17



8. Maximum Output Power

8.1 Test Setup



8.2 Limits of Maximum Output Power

The Maximum Output Power Measurement is 30dBm.

8.3 Test Procedure

The RF power output was measured with a Power meter connected to the RF Antenna connector (conducted measurement) while EUT was operating in transmit mode at the appropriate centre frequency.

Note: the Peak power were measured.

Page 27 of 46 Report No.: TW2310101E

Date: 2023-10-17



8.4Test Results

EUT		2.4G F	Remote control	Model			XR24-02
Mode		Keep	Transmitting	Input Volta	ge		DC3.0V
Temperatu	re	2	4 deg. C,	Humidity	7		56% RH
Channel	Cł	nannel Frequency	Max. Power Outpu	t (dBm)	Peak Po		Pass/ Fail
Chamer		(MHz)	Peak		(dBn		
Low		2402	0.23		30		Pass
Middle		2440	0.53		30		Pass
High		2480	0.72		30	·	Pass

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

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

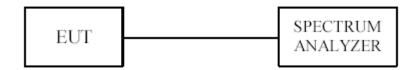
Report No.: TW2310101E Page 28 of 46

Date: 2023-10-17



9. Power Spectral Density Measurement

9.1 Test Setup



9.2 Limits of Power Spectral Density Measurement

The Maximum Power Spectral Density Measurement is 8dBm/3kHz.

9.3 Test Procedure

- 1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
- 2. Set the RBW = 10 kHz.
- 3. Set the VBW \geq 30 kHz.
- 4. Set the span to 1.5 times the DTS channel bandwidth.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level.
- 10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.
- 11. The resulting peak PSD level must be $\leq 8 \text{ dBm/3kHz}$.

Page 29 of 46 Report No.: TW2310101E

Date: 2023-10-17



9.4Test Result

EUT		2.4G Remote	control		Model	XR24-02
Mode		Keep Transi	mitting	In	put Voltage	DC3.0V
Temperatur	re	24 deg.	C,		Humidity	56% RH
	Peak Power	Cable	Final Power Spect	ral	Maximum	
Channel	Reading	Loss	Density		Limit	Pass/ Fail
	(dBm)	(dB)	(dBm/10kHz)		(dBm/3kHz))
Low	-10.36	0.2	-10.16		8	Pass
Middle	-10.04	0.2	-9.84		8	Pass
High	-9.73	0.2	-9.53		8	Pass

Note: The result basic equation calculation as follow:

Peak Power Output = Peak Power Reading + Cable loss

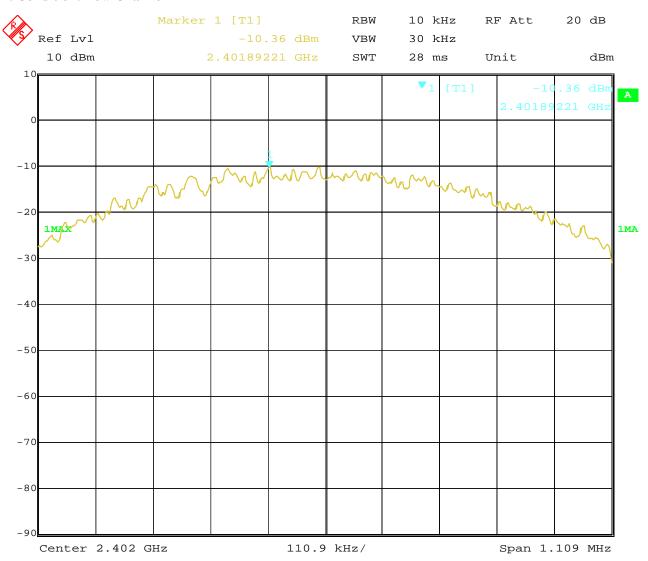
Report No.: TW2310101E Page 30 of 46

Date: 2023-10-17



Test Figure:

1. Condition: Low Channel

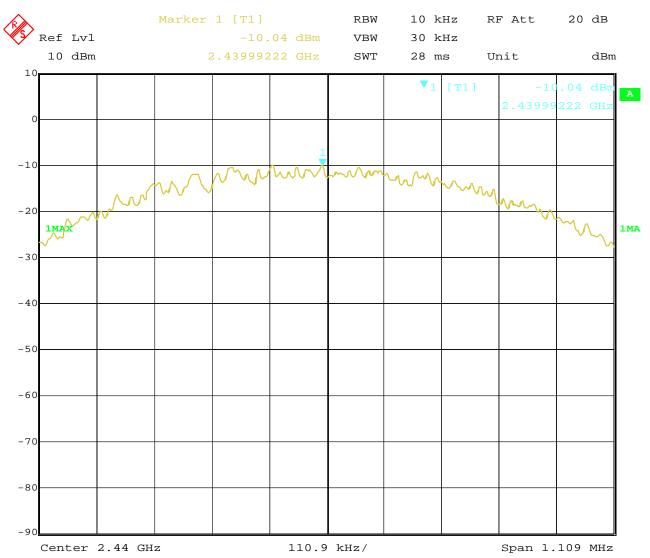


Report No.: TW2310101E Page 31 of 46

Date: 2023-10-17



2. Condition: Middle Channel

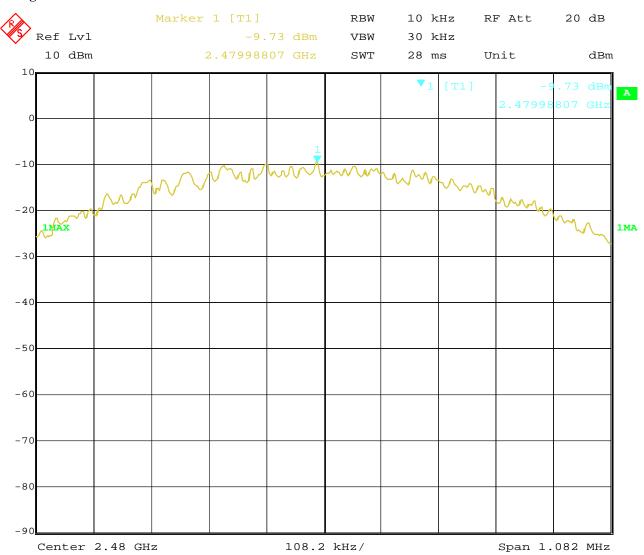


Report No.: TW2310101E Page 32 of 46

Date: 2023-10-17



3. High Channel



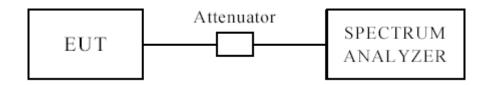
Report No.: TW2310101E Page 33 of 46

Date: 2023-10-17



10 Out of Band Measurement

10.1 Test Setup for band edge



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

10.2 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.

10.3 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=1MHz, VBW=3MHz and PK detector. AV value with RBW=1MHz, VBW=3MHz and RMS detector)

For bandage test, the spectrum set as follows: RBW=100 kHz, VBW=300 kHz. A conducted measurement used

10.4 Test Result

Please see next pages

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

Report No.: TW2310101E Page 34 of 46

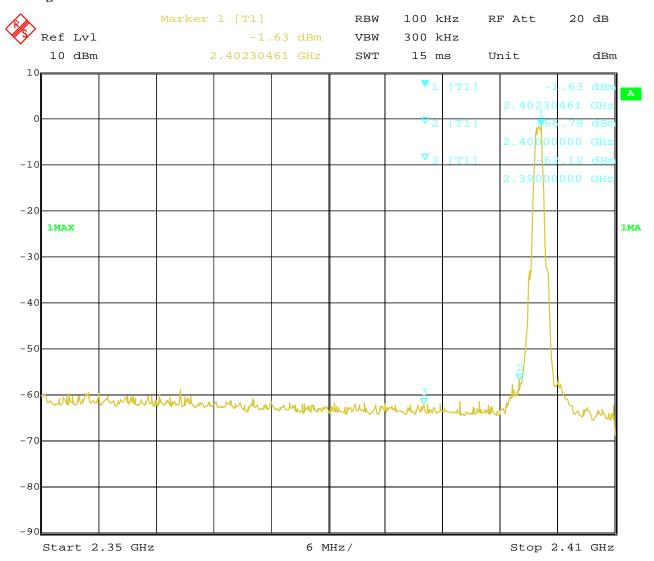
Date: 2023-10-17



10.4 Band-edge Measurement

EUT	2.4G Remote control	Model	XR24-02
Mode	Keep Transmitting	Input Voltage	DC3.0V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Report No.: TW2310101E Page 35 of 46

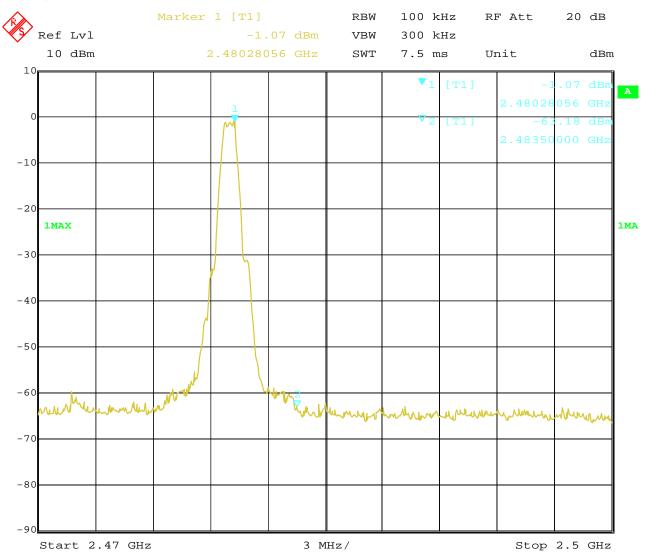
Date: 2023-10-17



10.4 Band-edge Measurement

EUT	2.4G Remote control	Model	XR24-02
Mode	Keeping Transmitting	Input Voltage	DC3.0V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Report No.: TW2310101E Page 36 of 46

Date: 2023-10-17



10.4 Restrict Band Measurement

	EUT		2.4G Rer	note control		N.	Iodel		XR24-02	
	Mode		Keep Tr	ansmitting		Input	Voltage		DC3.0V	
Te	mperature		24 0	deg. C,		Hu	midity		56% RH	
Te	est Result:		F	Pass						
Part 1	15C Class B 1GHz-18GHz	-2						N	41	
8	10-							M2		
								/ •	\	
3	10-	ie kralj krijoje de slavogov u na deniga elgung.	And the law of the Angeles	de la volga de qua de la caladrida de la calad	and a second trial and a place of the second a	M3	And the property of the second se	L.L.		Havhju
4 3 2 1	00-		de de la casa de la ca		requency (MHz)	M3	Andrew Standard Stand	h.h.pap	No.	2410
4 3 2 1 0.	0-	Results	Factor			M3	Table	Height	ANT	2410
4 3 2 1 0.	0			F	requency (MHz)	udhiri munakiyak turkini				2410
4 3 2 1 0.	00- 00- 00- 00- 00- 00- 00- 00- 00- 00-	Results	Factor	F Limit	requency (MHz) Over Limit	udhiri munakiyak turkini	Table	Height		2410
4 3 2 1	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	requency (MHz) Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	verdic
4 4 3 3 2 1 1 0.0 No.	Frequency (MHz) 2402.052	Results (dBuV/m) 93.53	Factor (dB)	Limit (dBuV/m) 74.0	over Limit (dB)	Detector Peak	Table (o) 110.00	Height (cm)	ANT Horizontal	verdic

Note: The measured PK value less than the AV limit, no necessary to take down the AV measurement result.

Report No.: TW2310101E Page 37 of 46

Date: 2023-10-17



10.4 Restrict Band Measurement

	EUT		2.70 Kciiic	ote control		Mo	aei		XR24-0	2
Mode		Keep Transmitting				Input Voltage		DC3.0V		
Temperature		24 deg. C,				Hum	idity	56% RH		
Te	est Result:		Pas	ss						
Part :	15C Class B 1GHz-18GHz	-2								
	90-									
2	90-							M1		
8	80-									
7	70-								\	
6	50-								$\overline{}$	
5	50-									
								M2	1	
	10-					M3		IVI2		
		indialiticate to the first of principles in the first of	المعدية المجانسينية الإمار سنامه	يغربه فالمرابع أواج والتاج المارية المرابع الم	بدراهل رساط والمراون والانتاء والمارس		ash dialonghad di capara ang alkindon	.	· ·	Wa
	40- photopolythereconfidentifical	irribilitiologicarios and the hards that were let received	iddin o <mark>faglidinoongai Araab</mark>	માફતનોકનો (પ ાઝને ક મોફકો કે ફરફ ો છે , તેમણે ત	بعرفاني وخرطأت الإمواني الاستطاع مطالب		ashanladhadadhadan	.	Minim	(h) qq
3		lari kalifornia, eranika artik karir bakinan, ini santra d	sidan ofaqildanovçaslayasl	त्यान नेता करों के क्षेत्र के के के किया के किया के किया के किया किया किया किया किया किया किया किया	ورافل معافرة		a i kurik median dadi mapun mengandi indus	.	Marie	direct
2	Hardelin Warren and Market and Ma	intelligibilities a problem 1994 harden delicence, international	adair, lagidatemipal d _e ard	લામની અને દિવસની જ્યારે કરો છે. તેના હોત	والمرافق والمرافق المرافق المر		a ja kan kan ja paga paga ja	.	Marie	dira.
2	30 -	terik killerinden eranik aus Philosophia kilotoon, ini sense ni	aran Janphanempa, Apad	વ્યાનની અને દિવસની જ્યારે હોઇ તે રહ્યાં તે હોઇ ત	ر در افغار در داخل در افغار افغار در ا		ashinda asserbera ya a a galabiaha	.	Marcon	
2	300-	imballitione, with unit to have about any language.	artar y fargi farenigo d'Alumb		udderlige (d. jejdich brudt n		asikadininkolologo ugadhida	.	March	2410
1 0	30 -	Results	Factor				Table	.	ANT	2410
1 0	20 - 10 - 2350			Frec	juency (MHz)	odomie do se pomisti arribum	719			2410
1 0 No.	20- 10- 2350 Frequency	Results	Factor	Free	over Limit	odomie do se pomisti arribum	Table	Height		2410
2	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	²⁴¹⁰ Verdic
1 0 No.	Frequency (MHz) 2402.112	Results (dBuV/m) 82.07	Factor (dB) -3.57	Limit (dBuV/m) 74.0	Over Limit (dB) 8.07	Detector Peak	Table (o) 138.00	Height (cm)	ANT Vertical	verdic

Note: The measured PK value less than the AV limit, no necessary to take down the AV measurement result.

Report No.: TW2310101E Page 38 of 46

Date: 2023-10-17



10 4 Pactrict Rand Massurament

EUT						Model			XR24-02	
	Mode	Keep Transmitting				Input Voltage			DC3.0V	
Te	mperature	24 deg. C,				Humidity		56% RH		
Te	est Result:	Pass								
2 Part 1	.5C Class B 1GHz-18GHz -	-2	MI							
9										
7	0-									
6	0-			$\overline{}$						
5	0-				A					
	0-	Lisea Harakan da		M2	The second second	dusatephed ingelijkung jeglin	op hande de desirabet de debit	halphadipsalahar wastermanadhas	lift to quick tilping, de large per tilballe, de lift, tilballe	elumujh
	O-market share the state of the	hispatini arkiterika arek		M2	The second secon	disa ayabedi ingahiji wasu i indela	in h. Andre de Lateral de la Alberta de Andre	halpetalpenhilmen on solven superlips,	tikka _{n sasa} ksijain, disen met el ksila is elektro	elanteaph
4	0-	hisporial and described and the second		M2	A CONTRACTOR OF THE PARTY OF TH	disa ayabedi sayabigi asini indila	ne kanada kanada kalenda di kanada kanad	halpeddynaddwr waeth ac nawddyn	الله المرساطية في المراجع المر	rlustrajt.
3	0-	A Marie de la Companya de la Company		M2	The second second	નાંક તન્નોની પ્રકારિક હતાં, જિલ્લો	ga, kan da	hipipalayan kangalay	hi h _{a san} kajaja da pendesiski in de ika	elasticals
4 3 2		hispation and an absorbed		M2	- CHANGON	नीक में कर में निवास के किया है। उस में	gerinde de designe de la d	hijailysiine makanalka	hik n _{ga sa} nkajak dap oprofesiok ki di kan	alway.
4 3 2	0-	hisported and blood house		2483.5	requency (MHz)	disa apak-dina akkisata ili shika	gan hand de	hild dignisian analysis and his	hit to generalists, dies op state who is of these	2500
4 3 2 1 0.		Results	Factor	2483.5		Detector	Table	Height	ANT	2500
4 3 2 1 0.	0-	Results (dBuV/m)	Factor (dB)	2483.5 Fr	equency (MHz)			The second secon		2500
4 3 2 1 0.	o			2483.5 Fr	equency (MHz) Over Limit		Table	Height		2500
4 3 2	Frequency (MHz)	(dBuV/m)	(dB)	2483.5 Fr Limit (dBuV/m)	over Limit	Detector	Table (o)	Height (cm)	ANT	2500 Verdic

Report No.: TW2310101E Page 39 of 46

Date: 2023-10-17



10.4 Restrict Band Measurement

EUT		2	4G Remote	e control		Mode	<u>-1</u>		XR24-02	!
Mode		Keep Transmitting				Input Voltage		DC3.0V		<u>'</u>
Temperature		24 deg. C,				Humidity		56% RH		
Test Result:						Humany			30 /0 K11	
Test Result: Part 15C Class B 1GHz-18GHz -2		Pass								
1.0E+2-	3HZ-18GHZ -2									
90-										
80-			M1							
70-										
60-		/	/							
50-				M2						
50-				M2		did cate	catacian basah	and the state of the state of		Talla .
40-	erte printe de la contrata de la co	water and the company		M2	المستعمد الم	وعادية والمراجعة والم	ruf Lorabeth Lorens and March	terior and an investment of the state of the	akistoriakistaskaskaskaskaskaskaskaskaskaskaskaskaska	day day
40- 	este, politik, aliki este kelethe	undaggine dati kirki kunungar		M2	المستعمد والمعادد والمستعمد والمستعم والمستعمد والمستعمد والمستعمد والمستعمد والمستعمد والمستعمد والمستعمد والمستعم	<u>يين داية في أو أن يوسط المراج با</u>	hody, Lorenteempt, and prije, wight	and any about the state of the state of	okazi produjenja i teoreta produstiva	de de de
40-	elle platfordis for the long height	wangsine anni siring isang na		M2	and the second of the second of the second	ويعتبر والمراجعة والم	hoff, Lettyder Mydrae der fan Afrik	nd for the first head of the second s	ની મોફ જ અનેફ રાજ્યું ના સિંજી હોય છે. મે મોફ જે દેશ	4 7 / 4 4
40 - weeks the should had been seen as a seen seen seen seen seen s	erita yakirkuda kecida tarapadaha	overlage date of the consequence		M2	March de Louis de la dischiede de Land	والمراجعة	trofil heropeisse den schwische Santisch	terior angles par dept. Agist sistem (file day ages	distantificação de la compansa de l	de total and
30 - 20 - 10 -	ente pertendis des entendos e	wangsine damili inin cumpra		M2	and an individual state of the second	galen angha ketenggal jenkest likhi say	hooff, have glacered, who far which	netse under plante stantiffe des andre	destrondated to the section of the first	dada,
30- 20-	nak piprovilsi nak pinak pinak	overlagspiere destribilité inscription		2483.5	equency (MHz)	ويطور مراجع المراجع والمراجع	hooff, here photosopher in which the	the light way have to have the light has also	destandades de llever de la constitución de la cons	2500
30 - 20 - 10 - 2470		Results	Factor	2483.5		Detector	Table	Height	ANT	2500
30 - 20 - 10 - 2470			Factor (dB)	2483.5 Fre	equency (MHz)					2500
30- 30- 10- 00- 2470	ency	Results		2483.5 Fre	equency (MHz) Over Limit		Table	Height		

Report No.: TW2310101E

Date: 2023-10-17



Page 40 of 46

11.0 Antenna Requirement

11.1 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.

11.2 Antenna Connected construction

PCB antenna used. The gain of the antennas is -0.62dBi (Get from the antenna specification provided the manufacturer)

Report No.: TW2310101E Page 41 of 46

Date: 2023-10-17

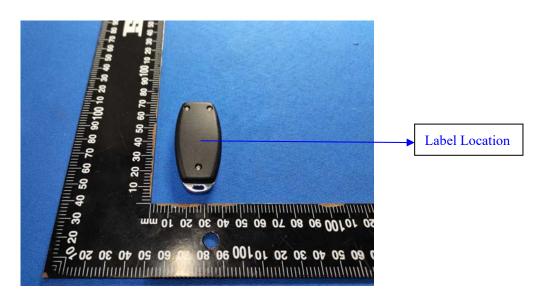


12.0 FCC ID Label

FCC ID: 2BCTA-YKQ24

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.: TW2310101E

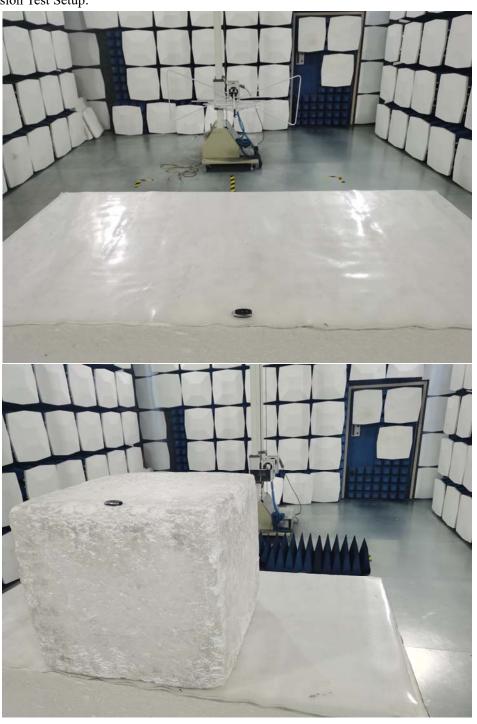
Date: 2023-10-17



13.0 **Photo of testing**

Conducted Emission Test Setup: N/A

Radiated Emission Test Setup:



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

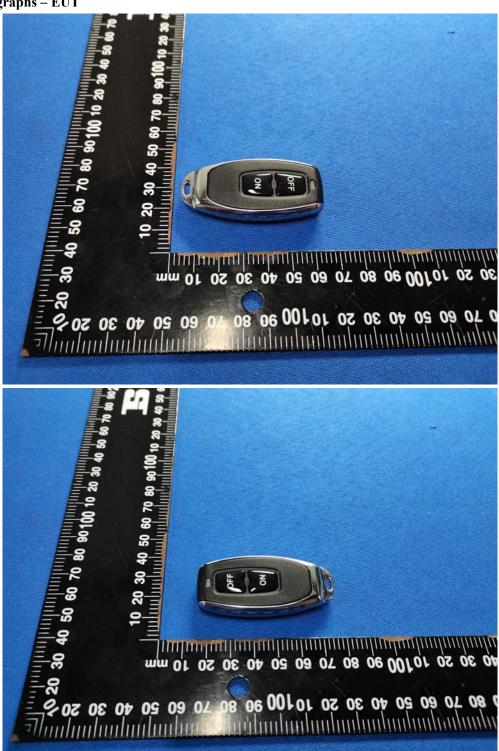
Page 43 of 46

Report No.: TW2310101E

Date: 2023-10-17



Photographs - EUT



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

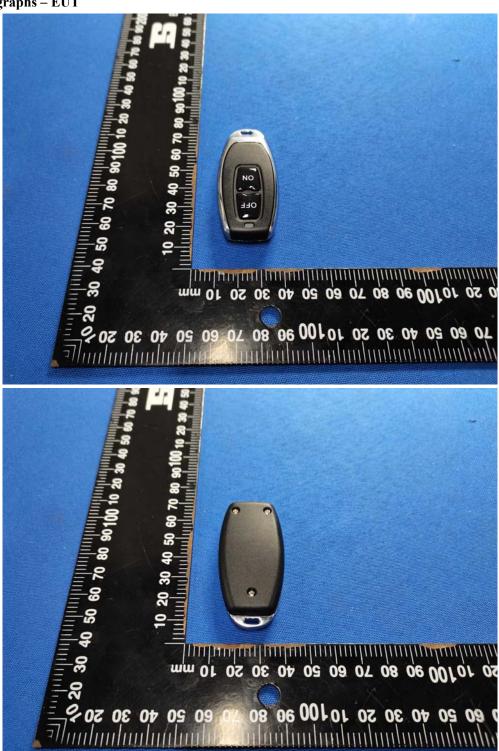
Page 44 of 46

Report No.: TW2310101E

Date: 2023-10-17



Photographs - EUT



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

Page 45 of 46

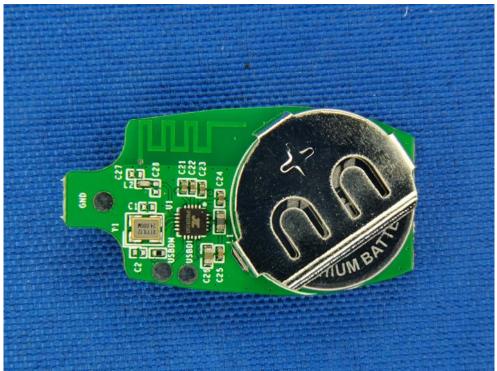
Report No.: TW2310101E

Date: 2023-10-17



Photographs - EUT





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.

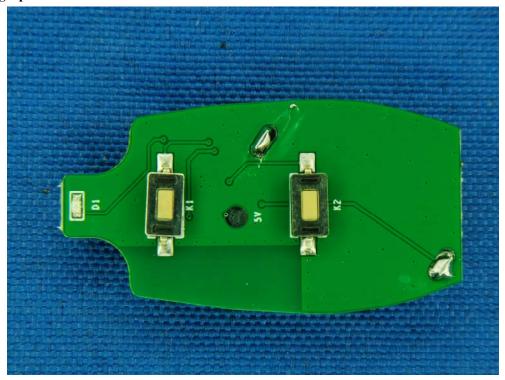
In the event of the improper use of the report. The SHENZHEN TIMEWAY TESTING LABORATORIES. reserves the rights to withdraw it and to

Report No.: TW2310101E Page 46 of 46

Date: 2023-10-17



Photographs - EUT



End of the report