

# Xin Hui A.A. Electronics Ltd

# **TEST REPORT**

**SCOPE OF WORK** EMC TESTING–Refer to page 4

**REPORT NUMBER** 200720111GZU-001

**ISSUE DATE** 

[REVISED DATE]

21-December-2020 [-----]

PAGES

23

**DOCUMENT CONTROL NUMBER** FCC part 15.231-d © 2017 INTERTEK





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Manufacturing Site	:	Same as applicant
Intertek Report No:		200720111GZU-001
FCC ID:		OGT-2020-AADD

## **Test standards**

## CFR 47, FCC PART 15 Subpart C: 2019 section 15.231

## Sample Description

Product	:	RF Remote controller		
Model No.	:	See page 4		
Electrical Rating :		AA series: 3VDC from 2 AAA battery DD series: 3VDC from 2 AA battery		
Serial No.		Not Labeled		
<b>Serial No.</b> Date Received	:	Not Labeled 20 July 2020		

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Guangdong, China

Version: 10 June 2019

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# **TEST REPORT**

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## **1.0 TEST RESULT SUMMARY**

Test Item	Test Requirement	Test Method	Result
Radiated Emission	FCC PART 15 section 15.231(b)	ANSI C 63.10: Clause 6.4, 6.5 and 6.6	PASS
Occupied Bandwidth	FCC PART 15	ANSI C 63.10:	PASS
	section 15.231(c)	Clause 6.9	
Dwell Time	FCC PART 15 section 15.231(a)	FCC PART 15: Section 15.231(a)	PASS

**Remark:** 

N/A: not applicable. Refer to the relative section for the details.

EUT: In this whole report EUT means Equipment Under Test.

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radio Frequency.

ANSI C63.10: the detail version is ANSI C63.10:2013 in the whole report

\*Model No.: AA1T4, AA2T4, AA3T4, AA4T4, AA5T4, DD1T4, DD2T4, DD3T4, DD4T4, DD5T4

According to the confirmation from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for model AA1T4, AA2T4, AA3T4, AA4T4, AA5T4. Difference only lies in the appearance. As for model DD1T4, DD2T4, DD3T4, DD4T4, DD5T4, their electrical design remains the same except the appearance. Models of AA series and DD series have same circuit diagram, components used, only PCB layout are different, select AA3T4 for all tests, DD3T4 was performed radiated emission.



## 2.0 General Description

## 2.1 Product Description

Operating Frequency	433.92 MHz
Type of Modulation:	ASK
Number of Channels	1 Channel
Channel Separation:	N/A
Antenna Type	Integrated
Antenna gain:	0 dBi
Power Supply:	DC 3V
Power cord:	N/A
Function:	Wireless remote controller with 433.92 MHz as carrier.
Both AA3T4 and DD3T4 have	ve the same radio frequency characteristic listed above.

## 2.2 Related Submittal(s) Grants

This is an application for certification of: DSC- Part 15 Security/Remote Control Transmitter

Remaining portions are subject to the following procedures:  $\ensuremath{\mathsf{N/A}}$ 

## 2.3 Test Methodology

Radiated emission measurements were performed according to the procedures in ANSI C63.10. Radiated emission measurement was performed in semi-anechoic chamber and conducted emission measurement was performed in shield room. For radiated emission measurement, preliminary scans and final tests were performed in the semi-anechoic chamber to determine the worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise.

## 2.4 Test Facility

All tests were performed at:

Intertek Testing Services Shenzhen Ltd. Guangzhou Branch Room102/104, No 203, KeZhu Road, Science City, GETDD Guangzhou, China Except Conducted Emissions was performed at: Room 02, & 101/E201/E301/E401/E501/E601/E701/E801 of Room 01 1-8/F., No. 7-2. Caipin Road, Science City, GETDD, Guangzhou, Guangdong, China



# **TEST REPORT**

## A2LA Certificate Number 0078.10

Intertek Testing Services Shenzhen Ltd. Guangzhou Branch is accredited by A2LA and Listed in FCC website. FCC accredited test labs may perform both Certification testing under Parts 15 and 18 and Declaration of Conformity testing.

## **3.0** System Test Configuration

## 3.1 Justification

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, it was powered by 3V DC supply.

When below 30MHz, the measurement antenna was positioned with its plane perpendicular to the ground at the specified distance. When perpendicular to the ground plane, the lowest height of the magnetic antenna was 1 m above the ground and was positioned at 3m distance from the EUT. During testing the loop antenna was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane. For each measurement antenna alignment, the EUT shall be rotated through 0° to 360° on a turntable.

When above 30MHz, the antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at three meters unless the signal level is too low for measurement at that distance. If necessary, a pre-amplifier is used and/or the test is conducted at a closer distance.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. The spurious emissions more than 20 dB below the permissible value are not reported.

For an intentional radiator, the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to at least the frequency shown in the following table:

Lowest frequency generated in the device	Upper frequency range of measurement		
9 kHz to below 10 GHz	10th harmonic of highest fundamental frequency or to 40 GHz, whichever is lower		
At or above 10 GHz to below 30 GHz	5th harmonic of highest fundamental frequency or to 100 GHz, whichever is lower		
At or above 30 GHz	5th harmonic of highest fundamental frequency or to 200 GHz, whichever is lower, unless otherwise specified		

Frequency range of radiated emission measurements



## Number of fundamental frequencies to be tested in EUT transmit band

Frequency range in which device	Number of	Location in frequency
operates	frequencies	range of operation
1 MHz or less	1	Middle
1 MHz to 10 MHz	2	1 near top and 1 near bottom
More than 10 MHz	3	1 near top, 1 near middle and 1 near bottom

## 3.2 EUT Exercising Software

No software used.

## **3.3** Special Accessories

No special accessories used.

## 3.4 Measurement Uncertainty

No.	Item	Measurement Uncertainty
	20 dB Bandwidth	
1	6dB Bandwidth	2.3%
	99% Bandwidth	
2	Carrier Frequencies Separated	2.3%
3	Dwell Time	1.2%
4	Maximum Peak Conducted Output Power	1.5dB
5	Peak Power Spectral Density	1.5dB
6	Out of Band Conducted Emissions	1.5dB
7	Band edges measurement	1.5dB
		4.7 dB (25 MHz-1 GHz)
8	Radiated Emissions	4.8 dB (1 GHz-18 GHz)
0		5.21dB (18GZH-26GHz)
9	Conducted Emissions at Mains Terminals	2.58dB
10	Temperature	0.5 °C
11	Humidity	0.4 %
12	Time	1.2%

The measurement uncertainty describes the overall uncertainty of the given measured value during the operation of the EUT.

Measurement uncertainty is calculated in accordance with ETSI TR 100 028-2001.



The measurement uncertainty is given with a confidence of 95%, k=2.

When determining of the test conclusion, the Measurement Uncertainty of test has been considered.

Uncertainty and Compliance – Unless the standard specifically states that measured values are to be extended by the measurement uncertainty in determining compliance, all compliance determinations are based on the actual measured value

## 3.5 Equipment Modification

Any modifications installed previous to testing by Xin Hui A.A. Electronics Ltd will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Guangzhou Branch.

#### 3.6 Support Equipment List and Description

N/A



# **TEST REPORT**

## 4.0 Measurement Results

#### 4.1 Antenna Requirement

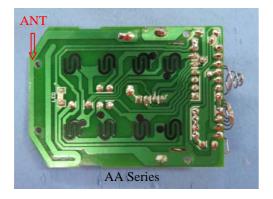
Standard requirement:

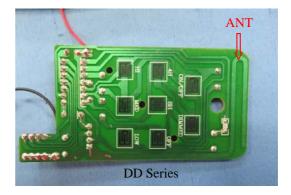
15.203 requirement:

For intentional device. According to 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.

EUT Antenna

The antenna is an integral antenna and no consideration of replacement.







## **TEST REPORT**

## 4.2 Radiated Emissions

Test Requirement:	FCC Part 15 C section 15.231(b)
Test Method:	ANSI C63.10: Clause 6.4, 6.5 and 6.6
Measurement Distance:	3 m (Semi-Anechoic Chamber)
Test Status:	Test the transmitter in continuous transmitting mode.
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)
Limit:	The field strength of emissions from intentional radiators operated under this Section shall not exceed the following:

Fundamental Frequency MHz	Field Strength of Fundamental (dBµV/m @ 3 m)	Field Strength of Harmonics and Spurious Emissions (dBμV/m @ 3 m)
40.66 to 40.70	67.04	47.04
70 to 130	61.94	41.94
130 to 174	61.94 to 71.48**	41.94 to 51.48**
174 to 260	71.48	51.48
260 to 470	71.48 to 81.94**	51.48 to 61.94**
Above 470	81.94	61.94

\*\* linear interpolations

[Where F is the frequency in MHz, the formulas for calculating the maximum permitted fundamental field strengths are as follows: for the band 130-174 MHz, uV/m at 3 meters = 56.81818(F) - 6136.3636; for the band 260-470 MHz, uV/m at 3 meters = 41.6667(F) - 7083.3333. The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level.]

The fundamental frequency of the EUT is 433.92 MHz

The limit for average or QP field strength dBuv/m for the fundamental emission= 80.8  $dB\mu V/m$ 

No fundamental is allowed in the restricted bands.

The limit for average field strength dBuv/m for the spurious emission=60.8 dBuV/m. Spurious Emissions do not fall in the restricted bands must be less than 60.8 dBuV/m or limits shown in Section 15.209, whichever limit permits a higher field strength.

Spurious Emissions appear within the restricted bands shall not exceed the limits shown in Section 15.209.

Field Strength Calculation: The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below:





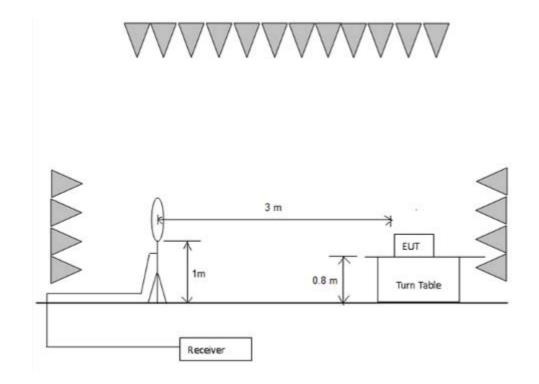
FS = RA + AF + CF - AG + PD + AV
FS = RA + Correct Factor + AV
FS = Field Strength in dBμV/m
RA = Receiver Amplitude (including preamplifier) in $dB\mu V$
AF = Antenna Factor in dB
CF = Cable Attenuation Factor in dB
AG = Amplifier Gain in dB
PD = Pulse Desensitization in dB
AV = Average Factor in –dB
Correct Factor = $AF + CF - AG + PD$
In the radiated emission table which follows, the reading
shown on the data table may reflect the preamplifier gain.
An example of the calculations, where the reading does not
reflect the preamplifier gain, follows:
FS = RA + AF + CF - AG + PD + AV
Assume a receiver reading of 62.0 dBμV is obtained. The
antenna factor of 7.4 dB and cable factor of 1.6 dB is added.
The amplifier gain of 29 dB is subtracted. The pulse
desensitization factor of the spectrum analyzer was 0 dB, and
the resultant average factor was -10 dB. The net field
strength for comparison to the appropriate emission limit is
32 dBμV/m.
RA = 62.0 dBμV
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
PD = 0 dB
AV = -10 dB
Correct Factor = $7.4 + 1.6 - 29.0 + 0 = -20 \text{ dB}$
FS = 62 + (-20) + (-10) = 32 dBμV/m



## **TEST REPORT**

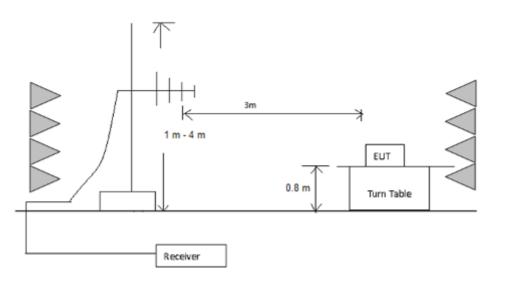
Test Configuration:

1) 9 kHz to 30 MHz emissions:



2) 30 MHz to 1 GHz emissions:

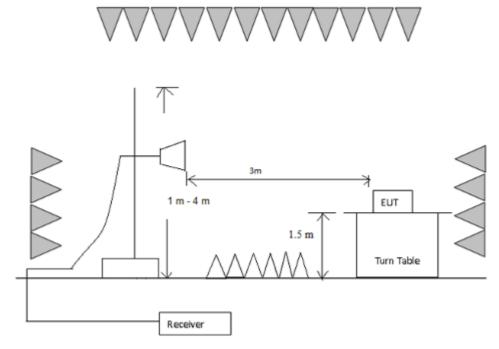






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3) 1 GHz to 40 GHz emissions:



#### **Test Procedure:**

1) 9 kHz to 30 MHz emissions:

For testing performed with the loop antenna. The centre of the loop was positioned 1 m above the ground and positioned with its plane vertical at the special distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane.

2) 30 MHz to 1 GHz emissions:

For testing performed with the bi-log type antenna. The measurement is performed with the EUT rotated 360<sup>o</sup>, the antenna height scanned between 1m and 4m, and the antenna rotated to repeat the measurement for both the horizontal and vertical antenna polarizations.

3) 1 GHz to 40 GHz emissions:

Test site with RF absorbing material covering the ground plane that met the site validation criterion called out in CISPR 16-1-4:2010 was used to perform radiated emission test above 1 GHz.

For testing performed with the horn antenna. The measurement is performed with the EUT rotated 360°, the antenna height scanned between 1m and 4m, and the antenna rotated to repeat the measurement for both the horizontal and vertical antenna polarizations.

Detector:

For Peak and Quasi-Peak value: RBW = 1 MHz for  $f \ge 1$  GHz, 200 Hz for 9 kHz to 150 kHz 9 kHz for 150 kHz to 30 MHz



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120 kHz for 30 MHz to 1GHz VBW  $\geq$  RBW Sweep = auto Detector function = peak for f  $\geq$  1 GHz, QP for f < 1 GHz Trace = max hold For AV value: Average = Peak value + 20log (Duty cycle)

The average correction factor is computed by analyzing the on time in 100ms over one complete pulse train. Analysis of the remote transmitter on time in one complete pulse train, therefore the average value of fundamental frequency is: Average = Peak value + 20log (Duty cycle), where the duty factor is calculated from following formula:

The duration of one cycle =41.45ms

Effective period of the cycle =(0.435x3+0.29x12+0.725x16+0.58x2) ms=17.545 ms DC =17.545/41.45=0.4233 or 42.33%

Therefore, the averaging factor is found by 20lg0.4233=-7.47

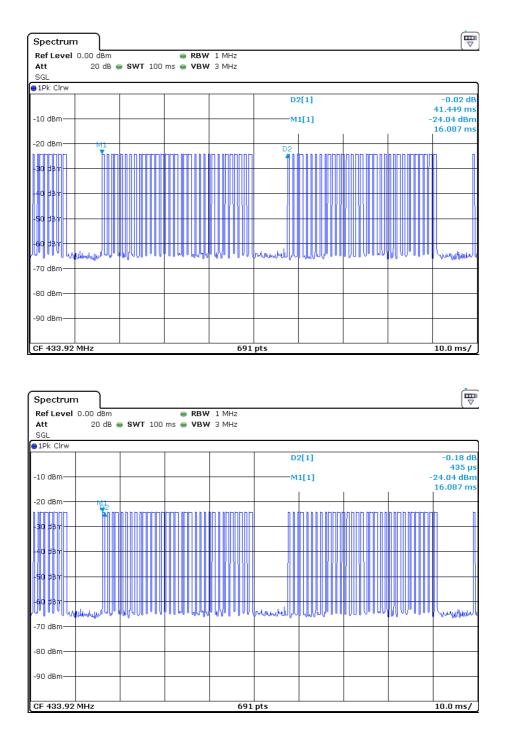
All buttons had been tested, the button 1 was the worst case as below:





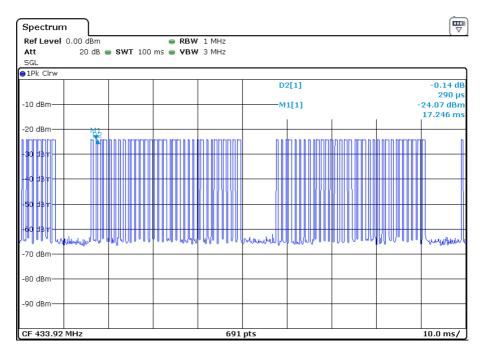
# **TEST REPORT**

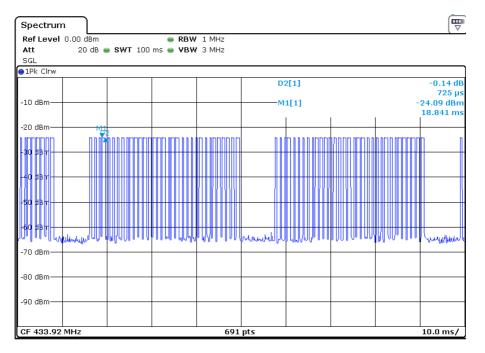
Please refer to below plots for more details.





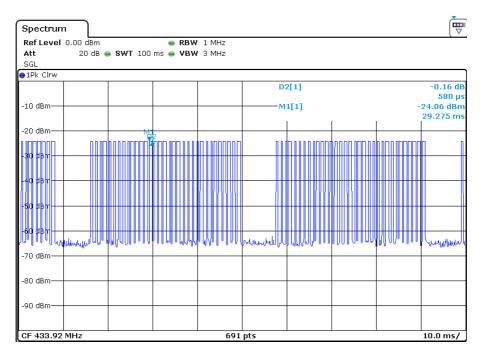
# **TEST REPORT**







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## Used Test Equipment List:

3m Semi-Anechoic Chamber, EMI Test Receiver (9 kHz~7 GHz), Signal and Spectrum Analyzer (10 Hz~40 GHz), Loop antenna (9 kHz-30 MHz). TRILOG Super Broadband test Antenna(30 MHz-3 GHz) (RX), Bouble-Ridged Waveguide Horn Antenna (800 MHz-18 GHz)(RX). Refer to Clause 5 Test Equipment List for details.

## **1)** Fundamental emission:

AA3T4:

Polarization	Frequency	PK Reading	Correction	PK value	PK limit	Margin
	(MHz)	(dBuV)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)
Horizontal	433.91	60.6	18.3	78.9	100.8	21.9
Vertical	433.91	47.3	18.3	65.6	100.8	35.2

Polarization	Frequency	PK value	Average	AV value	AV limit	Margin
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)
Horizontal	433.91	78.9	-7.5	71.4	80.8	9.4
Vertical	433.91	65.6	-7.5	58.1	80.8	22.7

DD3T4:

Polarization	Frequency	PK Reading	Correction	Correction PK value		Margin
	(MHz)	(dBuV)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)
Horizontal	433.91	60.8	18.3	79.1	100.8	21.7
Vertical	433.91	49.2	18.3	67.5	100.8	33.3

Polarization	Frequency	PK value	Average	AV value	AV limit	Margin
	(MHz)	(dBuV/m)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)
Horizontal	433.91	79.1	-7.5	71.6	80.8	9.2
Vertical	433.91	67.5	-7.5	60.0	80.8	20.8

Y: rotate EUT by 90° vertically.

X: rotate EUT by  $90^{\circ}$  clockwise.

- Z: EUT as Radiated Emission test setup photograph.
- 1. Corr. (dB) = Antenna Factor (dB) + Cable Loss (dB)
- 2. Level ( $dB\mu V/m$ ) = Corr. (dB) + Read Level ( $dB\mu V$ )
- 3. Margin (dB) = Limit (dB $\mu$ V/m) –Level (dB $\mu$ V/m)
- 4. Average value = Peak value + 20log (Duty cycle)



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## 2) other emissions:

The receiver was scanned from the lowest frequency generated within the EUT to 6 GHz.

The field strength is calculated by adding the Antenna Factor, Cable Factor & Peramplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading + Antenna Factor + Cable Factor –Peramplifier Factor.

The following test results were performed on the EUT in transmitting mode.

9 kHz~30 MHz Field Strength of Unwanted Emissions. Peak or Quasi-Peak measurement.

The measurements with active loop antenna were greater than 20dB below the limit, so the test data were not recorded in the test report.

30 MHz~6 GHz Field Strength of Unwanted Emissions. Peak or Quasi-Peak measurement:

## AA3T4:

Polarization	Frequency	PK Reading	Correction	PK value	PK limit	Margin
	(MHz)	(dBuV)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)
Horizontal	1301.88	48.9	-12.9	36.0	74.0	38.0
Horizontal	3906.25	47.2	-3.0	44.2	74.0	29.8

DD3T4:

Polarization	Frequency	PK Reading	Correction	PK value	PK limit	Margin
	(MHz)	(dBuV)	Factor(dB)	(dBuV/m)	(dBuV/m)	(dB)
Horizontal	2170.00	46.8	-9.0	37.8	80.8	43.0
Horizontal	3905.63	44.9	-3.0	41.9	74.0	32.1

Since all the peak emission level listed above is lower than the average limit (54.0 dBuV/m), the average emission level does not need to show.

#### Remark:

According to 15.35 (b) When average radiated emission measurements are specified in the regulations, including emission measurements below 1000 MHz, there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules, e.g., see Section 15.255.



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## 4.3 Occupied Bandwidth

Test Requirement: Test Method:	FCC Part 15 C section 15.231 (c) ANSI C63.10: Clause 6.9
Test Status:	Test in transmitting mode at lowest and highest channel.
Requirements:	15.231 (c) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.
Method of measurement:	The useful radiated emission from the EUT was detected by the spectrum analyzer with peak detector. Record the 20 dB bandwidth of the carrier.

## Used Test Equipment List:

Spectrum Analyzer. Refer to Clause 5 Test Equipment List for details.

Test result:

Test Channel	bandwidth	Limit
433.92 MHz	55.3 kHz	1.08 MHz

Remark:

The bandwidth limit is 433.84 x 0.0025 = 1.08 MHz

Spectrum						
Ref Level 0			RBW 10 kHz			
Att	20 dB	SWT 188.9 μs 👄 🕅	/BW 30 kHz Mc	de Auto FFT		
⊖1Pk Max						
				M1[1]		-23.93 dBi
-10 dBm						433.917670 MH
-10 UBIII				ndB		20.00 d
-20 dBm				Bw		55.280000000 kH
-20 aBm				Q factor		7849.
-30 dBm						
-30 dBm						
-40 dBm		т1		Т2		
-40 uBIII		يتحر		V		
-50 d8m						
-30 48111						
-60 dBm						
-00 ubiii						
-70 dBm						
-70 ubiii						
-80 dBm						
-00 UBIII						
-90 dBm						
-90 0011						
CF 433.916	8 MHz		691 pt	s		Span 200.0 kHz
Marker						
Type Ref		Stimulus	Response	Function	Fun	ction Result
M1	1	433.91767 MHz	-23.93 dBm	ndB down		55.28 kHz
T1	1	433.88844 MHz	-43.93 dBm	ndB		20.00 dB
T2	1	433.94372 MHz	-43.92 dBm	Q factor		7849.1

Test plot:



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## 4.4 Dwell Time

Test Requirement:	FCC Part 15 C section 15.231(a)
Test Method:	FCC Part 15 C section 15.231(a)
Test Status:	Test in transmitting mode.

**Requirements:** 

**1. Regulation 15.231 (a)** The provisions of this Section are restricted to periodic operation within the band 40.66 40.70 MHz and above 70 MHz. Except as shown in paragraph (e) of this Section, the intentional radiator is restricted to the transmission of a control signal such as those used with alarm systems, door openers, remote switches, etc. Radio control of toys is not permitted. Continuous transmissions, such as voice or video, and data transmissions are not permitted. The prohibition against data transmissions does not preclude the use of recognition codes. Those codes are used to identify the sensor that is activated or to identify the particular component as being part of the system.

#### **Result:**

The EUT is a remote switch without audio or video transmitted.

The EUT meets the requirements of this section.

**2. Regulation 15.231 (a1)** A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released.

## Result:

Carrier Frequency	Shutdown Time	Limit
433.92MHz	0.116s	≤5s

Spectrun	ı )								
	-5.00 dBm		<b>BBW</b> 1						
Att	15 dB	😑 SWT 4 s	● VBW 3	MHz					
SGL Controlled b	U EMC22 A.								
controlleu b	y EMC32 😈.				D	2[1]			0.06 dB
-10 dBm						2[1]			115.94 ms
00 d0 m					м	1[1]		-	24.98 dBm 1.28696 s
-20 dBm—			M1 D2						11200303
-30 dBm									
-40 dBm									
-50 dBm									
-60 dBm									
and the ward have	munumu	when when	no linen	ununput	ulutumente	مسسلام	portury at united by a	mundunder	memorialis
-70 dBm—									
-80 dBm									
-80 aBm									
-90 dBm									
-100 dBm—									
CF 433.92	MUS			691	ntc				00.0 ms/
UF 433.92	שחיי			091	prs			2	

#### Result plot as follows:



# **TEST REPORT**

**3. Regulation 15.231 (a2)** A transmitter activated automatically shall cease transmission within 5 seconds after activation.

#### **Result:**

The EUT does not have automatic transmission.

**4. Regulation15.231 (a3)** Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions to determine system integrity of transmitters used in security or safety applications are allowed if the periodic rate of transmission does not exceed one transmission of not more than one second duration per hour for each transmitter.

#### **Result:**

The EUT does not employ periodic transmission.

**5. Regulation 15.231 (a4)** Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm condition.

#### **Result:**

This section is not applicable to the EUT.

## 4.5 Conducted Emission Test

#### Test result: Not applicable.



# **TEST REPORT**

## 5.0 Test Equipment List

#### Radiated Emission/Radio↔

Equipment	Environmental	Model	Manufacturer#	Cal. Due date	Calibration
No.∉	Equipment	Model	Manufacturer	(YYYY-MM-DD)	Interval
EM030-04↩	3m Semi-Anechoic Chamber 🖓	9×6×6 m³↩	ETS-LINDGREN4	2021/4/10	1Y∉⊐
EM031-02∉⊐	EMI Test Receiver (9 kHz~7 GHz)식	R&S ESR7∉	R&S∉	2021/06/16	1Y∉⊐
EM031-03↩ <sup>□</sup>	Signal and Spectrum Analyzer ↓ (10 Hz~40 GHz)↩	R&S FSV40⇔	R&S∉	2021/7/6	1Y∉⊐
EM011-04	Loop antenna (9 kHz-30 MHz)∉	HFH2-Z2∉ <sup>□</sup>	R&S⇔	2021/6/18	1Y∉⊐
EM061-034	TRILOG Super Broadband test Antenna (30 MHz-1.5 GHz) (TX) <sup>라</sup>	VULB 9161∉	SCHWARZBECK↔	2021/6/1843	1Y₽
EM033-014	TRILOG Super Broadband test Antenna(30 MHz-3 GHz) (RX)+	VULB 916343	SCHWARZBECK∉	2021/6/18	1Y∉
EM033-024	Bouble-Ridged Waveguide Horn Antenna (800 MHz-18 GHz)(RX) <sup>c3</sup>	R&S HF907∉	R&S∉	2021/6/1843	1Y₽
EM033-034	High Frequency Antenna & preamplifier(18 GHz~26.5 GHz) (RX)+3	R&S SCU-26⊭	R&S∉	2021/4/2443	1Y∉
EM033-04∉⊐	High Frequency Antenna & preamplifier (26 GHz-40 GHz)↩	R&S SCU-40≓	R&S∉	2021/4/24	1Y≓
EM031-02-01	Coaxial cable(9 kHz-1 GHz)↩	N/A¢3	R&S↩	2021/4/12	1Y∉⊐
EM033-02-024	Coaxial cable(1 GHz-18 GHz)리	N/A¢3	R&S↩	2021/4/12	1Y∉⊐
EM033-04-02	Coaxial cable(18 GHz~40 GHz)신	N/A∉³	R&S∉⊐	2021/4/24	1Y≓
EM031-01↩ <sup>□</sup>	Signal Generator (9 kHz~6 GHz)↩	SMB100A⇔	R&S∉	2021/7/02	1Y∉⊐
EM040-01↩	Band Reject/Notch Filter₽	WRHFV₽	Wainwright	N/A⇔	1Y∉⊐
EM040-0243	Band Reject/Notch Filter⇔	WRCGV43	Wainwright₽	N/A∉⊐	1Y∉⊐
EM040-03↩	Band Reject/Notch Filter⇔	WRCGV↩	Wainwright₽	N/A∉⊐	1Y∉⊐
EM022-03∉ <sup>□</sup>	2.45 GHz Filter∉	BRM50702↩	Micro-Tronics∉	2021/5/10	1Y∉⊐
SA016-16₽	Programmable Temperature & Humidity Test Chamber⊄	MHU-800LJ4	TERCHY₽	2021/06/16	1Y≓
SA016-22∉⊐	Climatic Test Chamber⊧⊐	C7-1500∉ <sup>□</sup>	Vötsch ∉	2021/06/16	1Y∉⊐
SA012-74∉	Digital Multimeter 🖉	FLUKE175	FLUKE@	2021/06/16	1Y∉⊐
EM010-01@	Regulated DC Power supply 🖉	PAB-3003A	GUANHUA∉	N/A∉⊐	1Y∉⊐
SA040-22↩ <sup>□</sup>	Regulated DC Power supply 4	IT6721∉ <sup>□</sup>	ITECH↩	2021/7/643	1Y∉⊐
EM084-06↩3	Audio Analyzer⇔	8903B↩ <sup>□</sup>	HP↩コ	2021/4/15	1Y∉⊐
EM045-01-014	EMC32 software (RE/RS)∉	V10.01.0043	R&S≓	N/A∉⊐	N/A¢3
EM045-01-094	EMC32 software (328/893)년	V9.26.01↩	R&S≓	N/A∉	N/Ae <sup>II</sup>

Conducted emission at the mains terminals

Equipment No.∉	Equipment	Model	Manufacturer <sup>⊉</sup>	Cal. Due date	<b>Calibration</b>
				(YYYY-MM-DD)	Interval <sup>2</sup>
EM080-05↩	EMI receiver⇔	ESCI↩	R&S≓	2021/7/09	1Y∉⊐
EM006-05년	LISN₽	ENV216	R&S₽	2021/6/7	1Y@
EM006-06	LISN₽	ENV216	R&S₽	2021/7/643	1Y4
EM006-06-01	Coaxial cable <sup>,</sup>	/e <sup>2</sup>	R&S₽	2021/4/12	1Y∉
EM004-04	EMC shield Room⇔	8m×3m×3m∉	Zhongyu	2021/1/5	1Y@