



TEST REPORT

Report Reference No. : TRE1609001901 R/C.....: 62567
FCC ID..... : SVDJP-16201056
Applicant's name..... : J P Products Co., Ltd.
Address..... : Rm 504-5, Chinachem Golden Plaza, 77 Mody Road, Tsimshatsui, Kln., Hong Kong
Manufacturer..... : Dongguan Meili Electronic Ltd
Address..... : Shuiping Village, Dalang, Dongguan, China
Test item description : Walkie Talkie
Trade Mark : -
Model/Type reference..... : SVDJP-16201056
Listed Model(s) : -
Standard : FCC Part 95
Date of receipt of test sample..... : Sept 05, 2016
Date of testing..... : Sept 06, 2016 –Oct 09, 2016
Date of issue..... : Oct 09, 2016
Result..... : PASS

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Testing Laboratory Name : Shenzhen Huatongwei International Inspection Co., Ltd.

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1. TEST STANDARDS AND REPORT VERSION

1.1. Test Standards

The tests were performed according to following standards:

[FCC Rules Part 95: 2016](#) PERSONAL RADIO SERVICES

[TIA/EIA 603 D: June 2010](#) Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

[FCC Part 2: 2016](#) Frequency allocations and radio treaty matters, general rules and regulations.

1.2. Report version

Version No.	Date of issue	Description
00	Oct 09, 2016	Original
01	Oct 19, 2016	New

2. Test Description

Transmitter Requirement			
Test item	Standards requirement	Result	
		Pass	N/A
Maximum Transmitter Power	FCC Part 95.639(a)& (d)	☒	
Modulation Limit	FCC Part 95.637(a)	☒	
Audio Frequency Response	FCC Part 95.637(a)	☒	
Audio Low Pass Filter Response	FCC Part 95.637(b)		☒
Emission Bandwidth	FCC Part 95.633(a)&(c)	☒	
Emission Mask	FCC Part 95.635(b)(1)(3)(7)	☒	
Transmitter Radiated Spurious Emission	FCC Part 95.635(b) (7)	☒	
Spurious Emission On Antenna Port	FCC Part 95.635(b) (7)		☒
Frequency Stability	FCC Part 95.621(b)	☒	

Note:

The test measurements were made in accordance with the above-mentioned departmental standard(s), and the equipment identified in this application has been subject to all the applicable test conditions specified in the departmental standards and all of the requirements of the standards have been met.

3. SUMMARY

3.1. Client Information

Applicant:	J P Products Co., Ltd.
Address:	Rm 504-5, Chinachem Golden Plaza, 77 Mody Road, Tsimshatsui, Kln., Hong Kong
Manufacturer:	Dongguan Meili Electronic Ltd
Address:	Shuiping Village, Dalang, Dongguan, China

3.2. Product Description

Name of EUT:	Walkie Talkie	
Trade mark:	-	
Model/Type reference:	SVDJP-16201056	
Listed model(s):	-	
Power supply:	DC 4.5V	
Battery information:	-	
Charger information:	-	
Adapter information:	-	
Operation Frequency Range:	FRS:	462.5625MHz
Rated Output Power:	FRS:	1mW(0dBm)
Modulation Type:	FRS:	FM
Channel Separation:	FRS:	12.5kHz
Emission Designator:	FRS:	9K77F3E
Maximum Transmitter Power (ERP):	FRS:	0.85dBm
Antenna Type:	Integral	

Note:

1. The device only supports voice communication.
2. The device has no gain and vertically polarized antenna.

3.3. Test frequency list

Mode	Modulation	Operation Frequency Range (MHz)	Test Frequency (MHz)
FRS	FM	462.5625	462.5625

3.4. EUT operation mode

Test mode	Transmitting	Receiving	FRS
TX1	√		√

√: is operation mode.

3.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- - supplied by the manufacturer
- - supplied by the lab

○	Power Cable	Length (m) :	-
		Shield :	Unshielded
		Detachable :	Undetachable
○	Multimeter	Manufacturer :	-
		Model No. :	-

4. TEST ENVIRONMENT

4.1. Address of the test laboratory

Laboratory: Shenzhen Huatongwei International Inspection Co., Ltd.

Address: 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

Phone: 86-755-26748019 Fax: 86-755-26748089

4.2. Test Facility

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

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories, Date of Registration: February 28, 2015. Valid time is until February 27, 2018.

A2LA-Lab Cert. No. 3902.01

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is until December 31, 2016.

FCC-Registration No.: 317478

Shenzhen Huatongwei International Inspection Co., Ltd. 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 317478, Renewal date Jul. 18, 2014, valid time is until Jul. 18, 2017.

IC-Registration No.: 5377A&5377B

The 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377A on Dec. 31, 2013, valid time is until Dec. 31, 2016.

Two 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377B on Dec.03, 2014, valid time is until Dec.03, 2017.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

4.3. Environmental conditions

Normal Condition	
Relative humidity:	20 % to 75 %.
Air Pressure:	950~1050mba
Voltage:	DC 4.5V

4.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test Items	Measurement Uncertainty	Notes
Frequency stability	25 Hz	(1)
Transmitter power Radiated	2.20 dB	(1)
Radiated Emission 30~1000MHz	4.65 dB	(1)
Emission Bandwidth	-----	(1)
Emission Mask	-----	(1)
Modulation Characteristic	-----	(1)

- (1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=1.96$.

4.5. Equipments Used during the Test

Modulation Characteristic				
Name of Equipment	Manufacturer	Model	Serial Number	Last Cal.
RF COMMUNICATION TEST SET	HP	8920A	3813A10206	2015/11/2

Frequency Stability				
Name of Equipment	Manufacturer	Model	Serial Number	Last Cal.
RF COMMUNICATION TEST SET	HP	8920A	3813A10206	2015/11/2
Signal Generator	Rohde&Schwarz	SMT03	100059	2015/11/2
Climate Chamber	ESPEC	EL-10KA	05107008	2015/11/2

Maximum Transmitter Power & Transmitter Radiated Spurious Emission				
Name of Equipment	Manufacturer	Model	Serial Number	Last Cal.
Ultra-Broadband Antenna	Rohde&Schwarz	HL562	100015	2015/11/2
EMI Test Receiver	Rohde&Schwarz	ESI 26	100009	2015/11/2
RF Test Panel	Rohde&Schwarz	TS / RSP	335015/ 0017	N/A
HORN ANTENNA	Rohde&Schwarz	HF906	100039	2015/12/2
Turntable	ETS	2088	2149	N/A
Antenna Mast	ETS	2075	2346	N/A
EMI Test Software	Rohde&Schwarz	ES-K1 V1.71	N/A	N/A
RF COMMUNICATION TEST SET	HP	8920A	3813A10206	2015/11/2
Ultra-Broadband Antenna	ShwarzBeck	VULB9163	538	2015/11/2
Ultra-Broadband Antenna	ShwarzBeck	VULB9163	539	2015/11/2
HORN ANTENNA	ShwarzBeck	9120D	1012	2015/11/2
HORN ANTENNA	ShwarzBeck	9120D	1011	2015/11/2
TURNTABLE	MATURO	TT2.0	----	N/A
ANTENNA MAST	MATURO	TAM-4.0-P	----	N/A

Emission Bandwidth & Emission Mask				
Name of Equipment	Manufacturer	Model	Serial Number	Last Cal.
Receiver	Rohde&Schwarz	ESI 26	100009	2015/11/2
Attenuator	R&S	ESH3-22	100449	2015/11/2
RF COMMUNICATION TEST SET	HP	8920A	3813A10206	2015/11/2
Spectrum Analyzer	Rohde&Schwarz	FSP40	1164.4391.40	2015/11/2

The calibration interval was one year.

5. TEST CONDITIONS AND RESULTS

5.1. Maximum Transmitter Power (Effective Radiated Power)

Applicants for licenses must request and use no more power than the actual power necessary for satisfactory operation.

LIMIT

FCC Part 95.639(d):

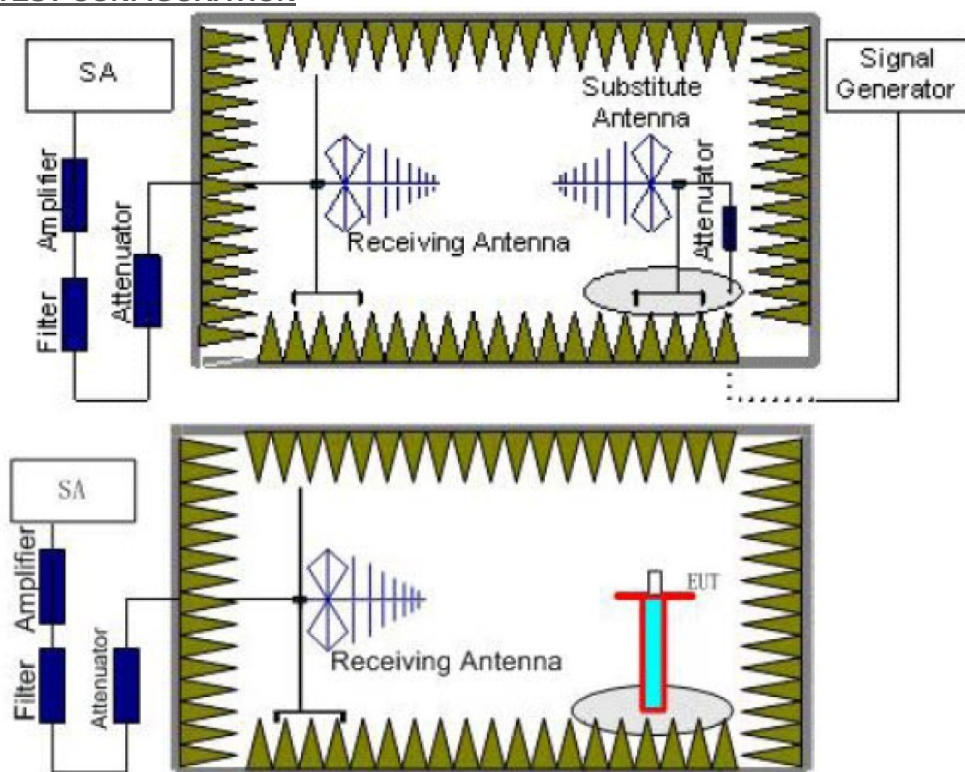
FRS: The maximum permissible transmitter output power under any operating conditions is 0.5 W effective radiated power (e.r.p.). The radio shall be equipped with an integral antenna.

TEST PROCEDURE

1. EUT was placed on a 1.5 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.0 m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in six channels were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=100kHz, VBW=300kHz for 30MHz to 1GHz, And the maximum value of the receiver should be recorded as (Pr).
4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
5. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (Pcl), the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
The measurement results are obtained as described below:

$$\text{Power(EIRP)} = \text{PMea} - \text{PAg} - \text{Pcl} - \text{Ga}$$
 We used SMF100A microwave signal generator which signal level can up to 33dBm, so we not used power Amplifier for substitution test; The measurement results are amend as described below:

$$\text{Power(EIRP)} = \text{PMea} - \text{Pcl} - \text{Ga}$$
6. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
7. ERP can be calculated from EIRP by subtracting the gain of the dipole, $\text{ERP} = \text{EIRP} - 2.15\text{dBi}$.

TEST CONFIGURATION**TEST MODE:**

Please reference to the section 3.4

TEST RESULTS
☒ **Passed**
☐ **Not Applicable**

Operation Mode	Test Frequency (MHz)	Measured ERP (dBm)	Limit (dBm)	Result
TX1	462.5625	0.85	27.00	Pass

5.2. Emission Bandwidth

The Emission bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits.

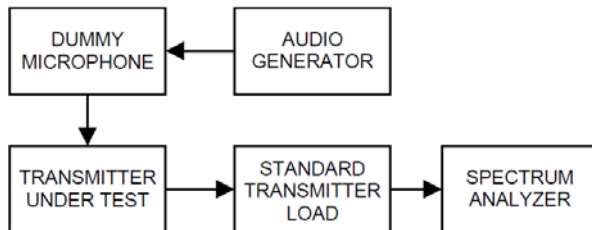
LIMIT

FCC Part 95.633(c):

FRS:

The authorized bandwidth for an FRS unit is 12.5 kHz.

TEST CONFIGURATION



TEST PROCEDURE

- 1 The EUT was modulated by 2.5kHz sine wave audio signal; the level of the audio signal employed is 16dB greater than that necessary to produce 50% of rated system deviation. Rated system deviation is 2.5 kHz for 12.5kHz channel spacing).
- 2 Spectrum set as follow:
Centre frequency = fundamental frequency, span=30kHz for 12.5kHz channel spacing,
RBW=300Hz, VBW=1000Hz, Sweep = auto,
Detector function = peak, Trace = max hold
- 3 Set 99% Occupied Bandwidth and 26dB Occupied Bandwidth
- 4 Measure and record the results in the test report.

TEST MODE:

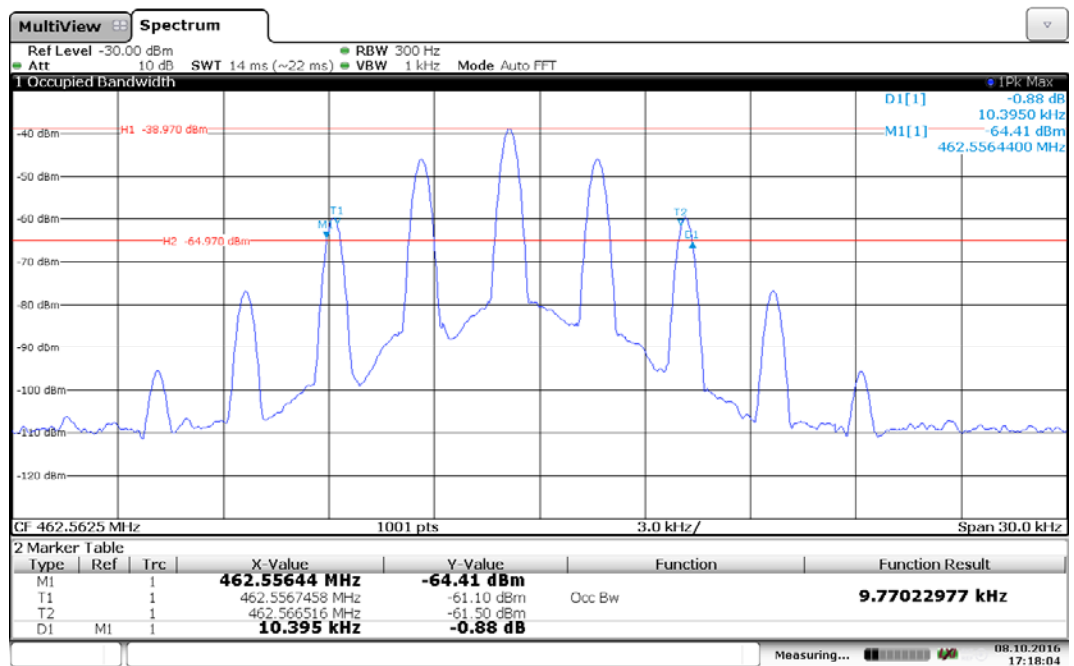
Please reference to the section 3.4

TEST RESULTS

☒ Passed ☐ Not Applicable

Operation Mode	Test Frequency (MHz)	26dB Occupied Bandwidth (kHz)	99% Occupied Bandwidth (kHz)	Limit (kHz)	Result
TX1	462.5625	10.40	9.77	≤12.5	Pass

Test plot as follows:



5.3. Emission Mask

Transmitters used in the radio services governed by this part must comply with the emission masks outlined in this section.

LIMIT

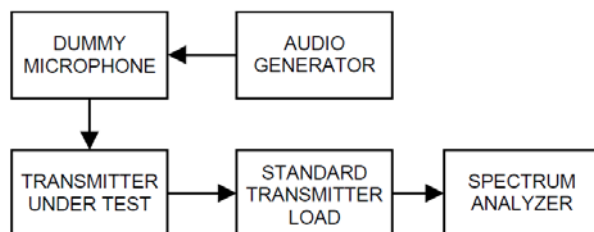
FCC Part 95.635 (b)(1)(3)(7):

FRS:

Unwanted emissions shall be attenuated below the unmodulated carrier power in accordance with the following:

- (1) At least 25 dB (decibels) on any frequency removed from the center of the authorized bandwidth by more than 50% up to and including 100% of the authorized bandwidth.
- (3) At least 35 dB on any frequency removed from the center of the authorized bandwidth by more than 100% up to and including 250% of the authorized bandwidth.
- (7) At least $43 + 10 \log_{10} (T)$ dB on any frequency removed from the center of the authorized bandwidth by more than 250%.

TEST CONFIGURATION



TEST PROCEDURE

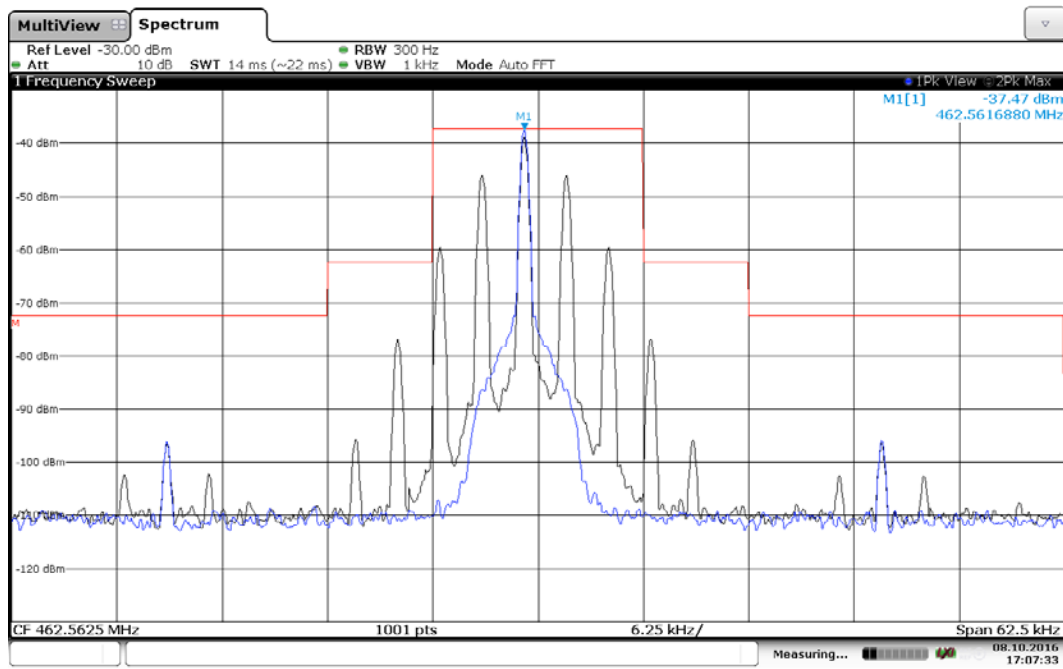
- 1 Connect the equipment as illustrated.
- 2 Spectrum set as follow:
Centre frequency = fundamental frequency, span=30kHz for 12.5kHz channel spacing,
RBW=300Hz, VBW=1000Hz, Sweep = auto,
Detector function = peak, Trace = max hold
- 3 Key the transmitter, and set the level of the unmodulated carrier to a full scale reference line. This is the 0dB reference for the measurement.
- 4 Modulate the transmitter with a 2500 Hz sine wave at an input level 16 dB greater than that necessary to produce 50% of rated system deviation(Rated system deviation is 2.5 kHz for 12.5kHz channel spacing). The input level shall be established at the frequency of maximum response of the audio modulating circuit. Transmitters employing digital modulation techniques that bypass the limiter and the audio low-pass filter shall be modulated as specified by the manufacturer
- 5 Measure and record the results in the test report.

TEST MODE:

Please reference to the section 3.4

TEST RESULTS

☒ Passed ☐ Not Applicable



5.4. Transmitter Radiated Spurious Emission

Radiated spurious emissions are emissions from the equipment when transmitting into a nonradiating load on a frequency or frequencies that are outside an occupied band sufficient to ensure transmission of information of required quality for the class of communications desired.

LIMIT

FCC Part 95.635(b) (7) (12.5 kHz Bandwidth only):

On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 12.5 kHz at least:

$$43 + 10 \log (P_{\text{watts}}) = 43 + 10 \log (10^{-3})$$

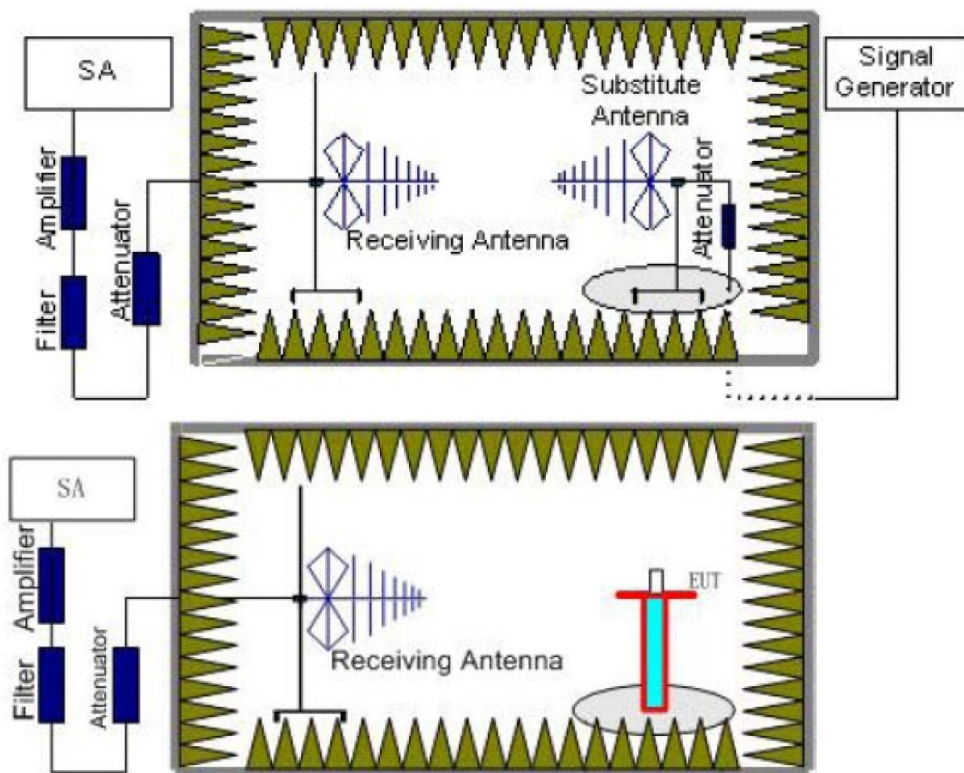
Note: In general, the worse case attenuation requirement shown above was applied.

Calculation: Limit (dBm) = EL-43-10log₁₀ (TP)

Notes: EL is the emission level of the Output Power expressed in dBm,
In this application, the EL is 0 dBm.

$$\text{Limit (dBm)} = 0-43-10\log_{10} (10^{-3}) = -13\text{dBm}$$

TEST CONFIGURATION



TEST PROCEDURE

1. EUT was placed on a 1.5 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.0 m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in six channels were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=1MHz, VBW=3MHz for above 1GHz and RBW=100kHz, VBW=300kHz for 30MHz to 1GHz, And the maximum value of the receiver should be recorded as (P_r).

4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (P_{Mea}) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
5. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (P_{cl}), the Substitution Antenna Gain (G_a) and the Amplifier Gain (P_{Ag}) should be recorded after test.
The measurement results are obtained as described below:
Power(EIRP)= $P_{Mea} - P_{Ag} - P_{cl} - G_a$
We used SMF100A microwave signal generator which signal level can up to 33dBm,so we not used power Amplifier for substitution test; The measurement results are amend as described below:
Power(EIRP)= $P_{Mea} - P_{cl} - G_a$
6. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
7. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

TEST MODE:

Please reference to the section 3.4

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note:

- In general, the worse case attenuation requirement shown above was applied.
- The measurement frequency range from 30 MHz to 5 GHz.
- Absolute Level=SG Level-Cable loss+Antenna Gain, Margin=Limit-Absolute Level

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G.Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
TX1:426.5625 MHz								
925.125	H	69.48	-30.39	0	2.73	-33.12	-13	20.12
925.125	V	71.43	-26.43	0	2.73	-29.16	-13	16.16
1387.6875	H	67.06	-34.26	8.42	4.68	-30.52	-13	17.52
1387.6875	V	73.06	-27.52	8.42	4.68	-23.78	-13	10.78
1850.25	H	56.08	-45.28	9.78	5.02	-40.52	-13	27.52
1850.25	V	61.45	-41.23	9.78	5.02	-36.47	-13	23.47

5.5. Spurious Emission on Antenna Port

Conducted spurious emissions are emissions at the antenna terminals on a frequency or frequencies that are outside a band sufficient to ensure transmission of information of required quality for the class of communication desired

LIMIT

FCC Part 95.635(b) (7) (12.5 kHz Bandwidth only):

On any frequency removed from the center of the authorized bandwidth by a displacement frequency (f_d in kHz) of more than 12.5 kHz at least:

$$43 + 10 \log (P_{\text{watts}}) = 43 + 10 \log (10^{-3})$$

Note: In general, the worse case attenuation requirement shown above was applied.

Calculation: Limit (dBm) = EL-43-10log₁₀ (TP)

Notes: EL is the emission level of the Output Power expressed in dBm,

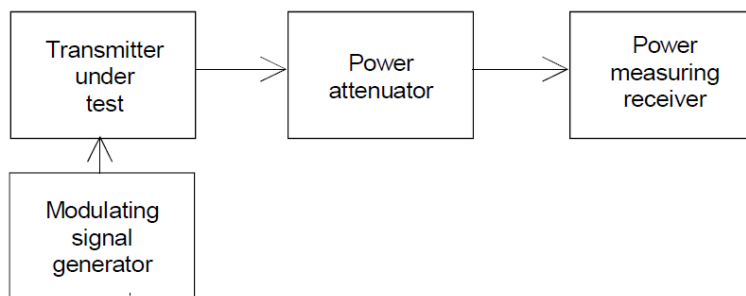
In this application, the EL is 0 dBm.

$$\text{Limit (dBm)} = 0 - 43 - 10 \log_{10} (10^{-3}) = -13 \text{ dBm}$$

TEST PROCEDURE

1. The RF output of the EUT was connected to a spectrum analyzer through appropriate attenuation.
2. The resolution bandwidth of the spectrum analyzer was set to 100 kHz. Sufficient scans were taken to show any out of band emission up to 10th. Harmonic for the lower and the highest frequency range. Set RBW 100 kHz, VBW 300 kHz in the frequency band 30MHz to 1GHz, while set RBW=1MHz. VBW=3MHz from the 1GHz to 10th Harmonic.
3. The audio input was set to 0 to get the unmodulated carrier, the resulting picture is print out for each channel separation.

TEST CONFIGURATION



TEST MODE:

Please reference to the section 3.4

TEST RESULTS

☐ Passed ☒ Not Applicable

This equipment is integral antenna.

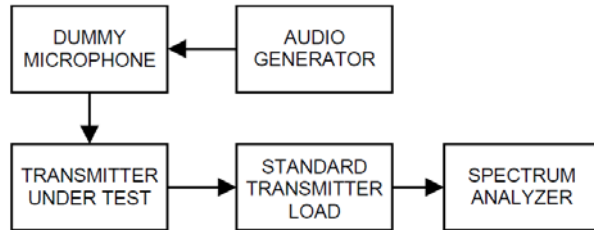
5.6. Modulation Limit

LIMIT

FCC Part 95.637(a), FCC Part 2.1047(b)

2.5 KHz for 12.5 KHz Channel Spacing System

TEST CONFIGURATION



TEST PROCEDURE

- 1) Connect the equipment as illustrated.
- 2) Adjust the transmitter per the manufacturer's procedure for full rated system deviation.
- 3) Set the test receiver to measure peak positive deviation. Set the audio bandwidth for ≤ 0.25 Hz to $\geq 15,000$ Hz. Turn the de-emphasis function off.
- 4) Apply a 1000 Hz modulating signal to the transmitter from the audio frequency generator, and adjust the level to obtain 60% of full rated system deviation, this level is as a reference (0dB) and vary the input level from -20 to +20dB.
- 5) Measure both the instantaneous and steady-state deviation at and after the time of increasing the audio input level
- 6) Repeat step 4-5 with input frequency changing to 300Hz, 1004Hz, 1500Hz and 2500Hz in sequence.

TEST MODE:

Please reference to the section 3.4

TEST RESULTS

☒ Passed ☐ Not Applicable

TX1: 462.5625MHz						
Modulation Level (dB)	Peak frequency deviation (kHz)				Limit (kHz)	Result
	300Hz	1004Hz	1500Hz	2500 Hz		
-20	0.16	0.19	0.19	0.21	2.5	Pass
-15	0.23	0.3	0.29	0.31		
-10	0.41	0.48	0.48	0.49		
-5	0.78	0.87	0.86	0.84		
0	1.33	1.49	1.48	1.45		
5	2.25	1.89	1.68	1.87		
10	2.16	2.05	1.98	1.99		
15	2.23	2.15	2.05	2.08		
20	2.24	2.25	2.18	2.17		

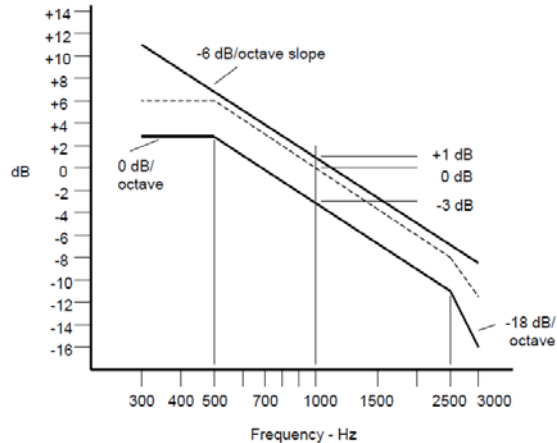
Test plot as follows:



5.7. Audio Frequency Response

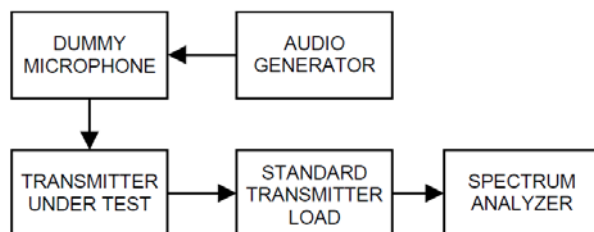
LIMIT

2.1047(a): Voice modulated communication equipment. A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz shall be submitted. For equipment required to have an audio low-pass filter, a curve showing the frequency response of the filter or of all circuitry installed between the modulation limiter and the modulated stage shall be submitted.



Receiver audio frequency response shall not vary more than +1, -3 dB from a standard 6 dB per octave deemphasis curve over the frequency range of 300 Hz to 3000 Hz, except for additional attenuation of 6 dB per octave below 500 Hz and 12dB per octave above 2500. The reference frequency shall be 1000 Hz.

TEST CONFIGURATION



TEST PROCEDURE

- 1) Configure the EUT as shown in figure .
- 2) Adjust the audio input for 20% of rated system deviation at 1kHz using this level as a reference.
- 3) Vary the Audio frequency from 300Hz to 3 kHz and record the frequency deviation.
- 4) Audio Frequency Response = $20\log_{10} (V_{\text{FREQ}}/V_{\text{REF}})$.

TEST MODE:

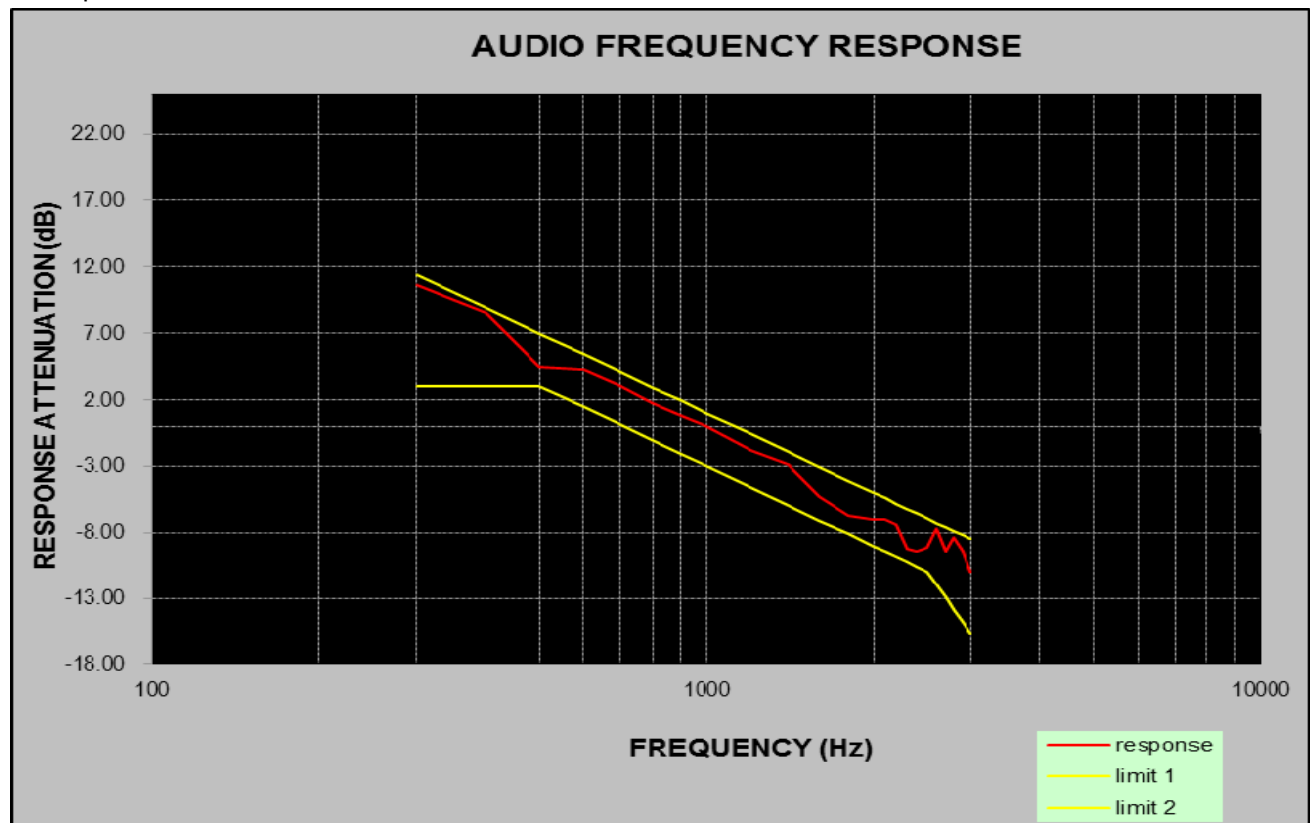
Please reference to the section 3.4

TEST RESULTS

☒ Passed ☐ Not Applicable

TX1: 462.5625MHz			
Frequency (Hz)	Audio Frequency Response (dB)	Frequency (Hz)	Audio Frequency Response (dB)
300	10.60	2000	-7.06
400	8.51	2100	-7.06
500	4.48	2200	-7.43
600	4.22	2300	-9.28
700	3.02	2400	-9.43
800	1.72	2500	-9.12
900	0.78	2600	-7.69
1000	0.00	2700	-9.43
1200	-1.80	2800	-8.38
1400	-2.87	2900	-9.43
1600	-5.29	3000	-11.02
1800	-6.70		

Test plot as follows:

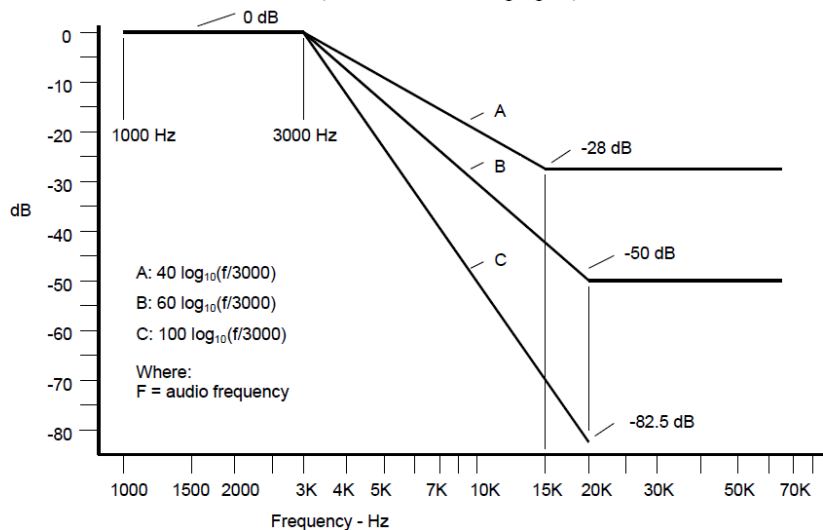


5.8. Audio Low Pass Filter Response

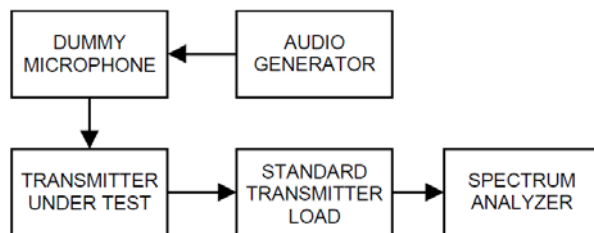
LIMIT

FCC Part 95.637(b):

The filter must be between the modulation limiter and the modulated stage of the transmitter. At any frequency (f in kHz) between 3 and 20 kHz, the filter must have an attenuation of at least $60 \log_{10}(f/3)$ dB greater than the attenuation at 1 kHz. Above 20 kHz, it must have an attenuation of at least 50 dB greater than the attenuation at 1 kHz.



TEST CONFIGURATION



TEST PROCEDURE

- 1) Configure the EUT as shown in figure .
- 2) Apply a 1000 Hz tone from the audio signal generator and adjust the level per manufacturer's specifications. Record the dB level of the 1000 Hz tone as LEV_{REF} .
- 3) Set the audio signal generator to the desired test frequency between 3000 Hz and the upper low pass filter limit. Record the dB level at the test frequency as LEV_{FREQ} .
- 4) Calculate the audio frequency response at the test frequency as:
 low pass filter response = $LEV_{FREQ} - LEV_{REF}$

TEST MODE:

Please reference to the section 3.4

TEST RESULTS

☐ Passed ☒ Not Applicable

Note:

This equipment does not support GMRS function.

5.9. Frequency Stability

The carrier frequency stability is the ability of the transmitter to maintain an assigned carrier frequency.

LIMIT

FCC Part 95.621(b):

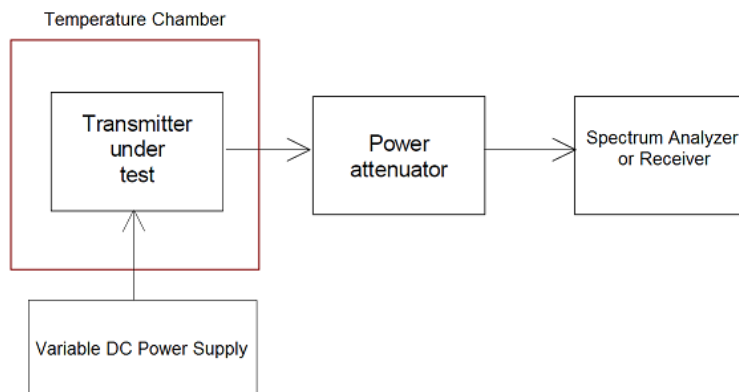
FRS:

The carrier frequency tolerance shall be better than ± 2.5 ppm.

TEST PROCEDURE

1. According to FCC Part 2 Section 2.1055 (a)(1), the frequency stability shall be measured with variation of ambient temperature from -30°C to $+50^{\circ}\text{C}$ centigrade.
2. According to FCC Part 2 Section 2.1055 (d) (2), for battery powered equipment, the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point, which is specified by the manufacture.
3. Vary primary supply voltage from 85 to 115 percent of the nominal value.
4. The EUT was set in the climate chamber and connected to an external DC power supply. The RF output was directly connected to Spectrum Analyzer. The coupling loss of the additional cables was recorded and taken in account for all the measurements. After temperature stabilization (approx. 20 min for each stage), the frequency for the lower, the middle and the highest frequency range was recorded. For Frequency stability Vs. Voltage the EUT was connected to a DC power supply and the voltage was adjusted in the required ranges. The result was recorded.

TEST CONFIGURATION



TEST MODE:

Please reference to the section 3.4

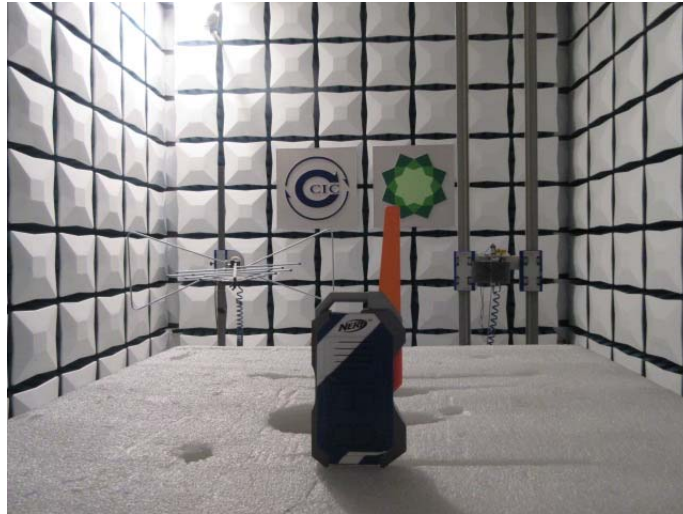
TEST RESULTS

☒ Passed ☐ Not Applicable

Please refer to the below test data:

Test conditions		Frequency error (ppm)	Limit (ppm)	Result
Voltage(V)	Temp(°C)	TX1:462.5625MHz		
4.5	-30	0.46	±2.5	Pass
	-20	0.52		
	-10	0.46		
	0	0.23		
	10	0.44		
	20	0.26		
	30	0.31		
	40	0.28		
	50	0.33		
3.825	20	0.41		
5.175	20	0.46		

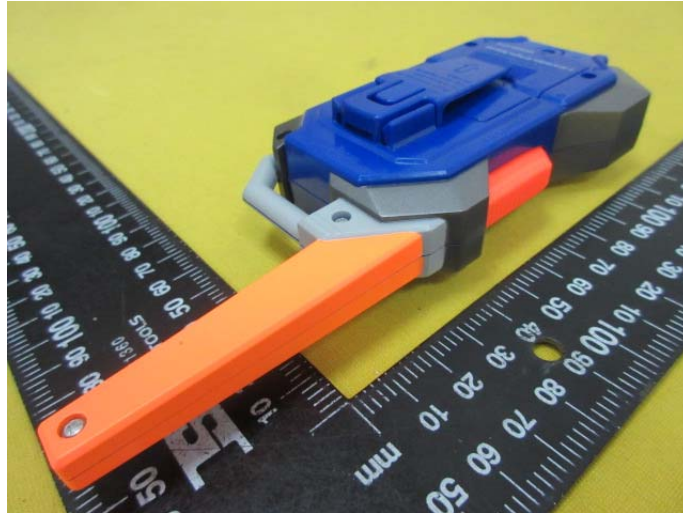
6. Test Setup Photos of the EUT

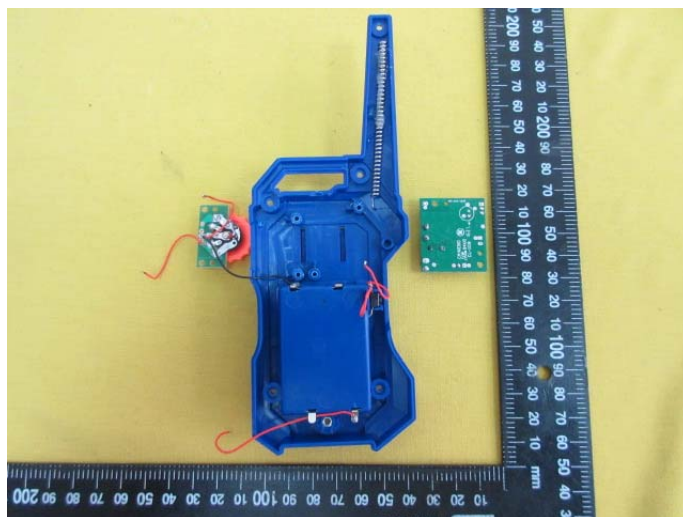


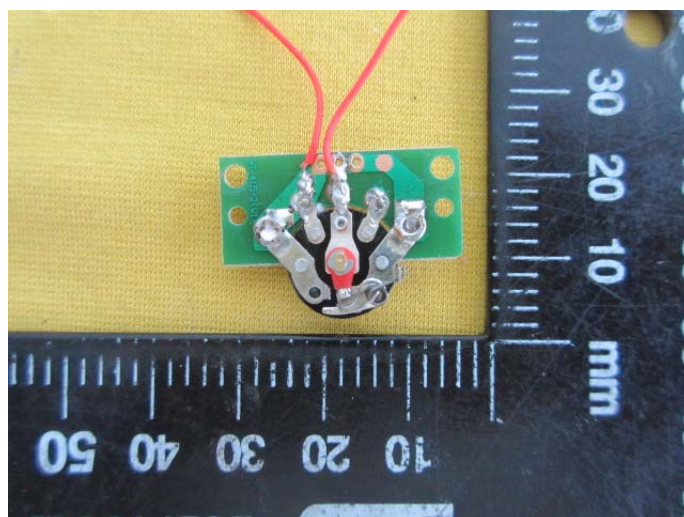
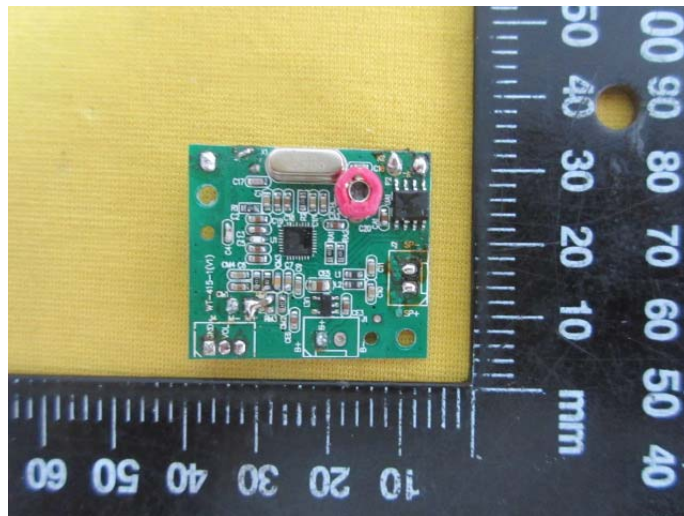
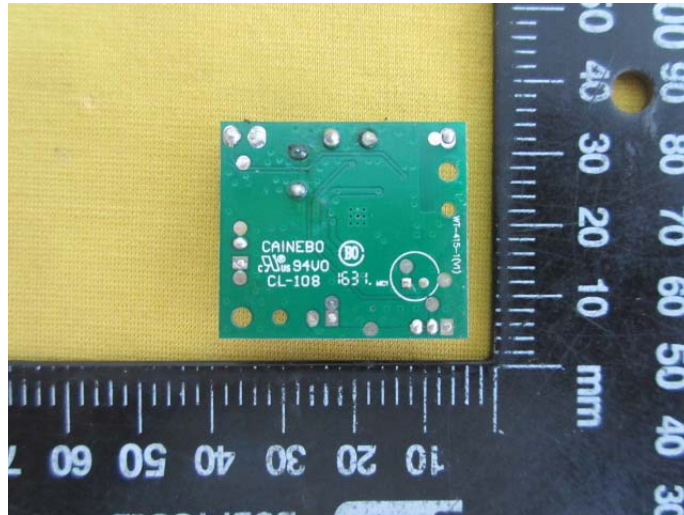
7. External and Internal Photos of the EUT

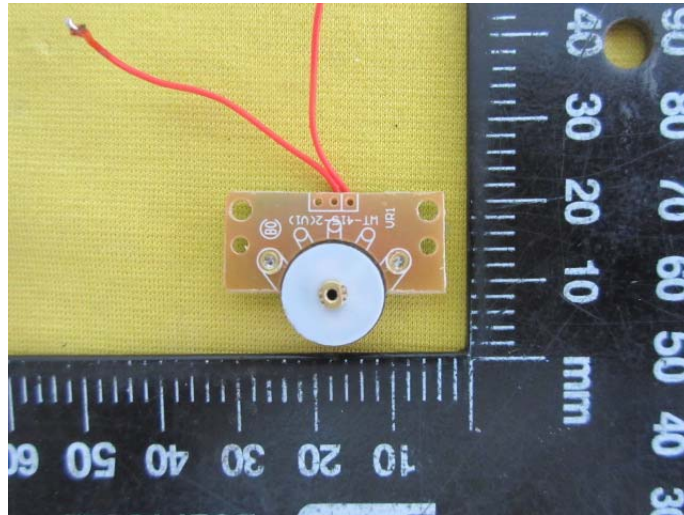
External photos of the EUT





Internal photos of the EUT





.....End of Report.....