TEST REPORT

Report No. ..... :	**CHTEW19110129** Report Verification:
Project No.....:	**SHT1909028408EW**
FCC ID ..... :	**2ASNSRT68**
Applicant's name ..... :	**Shenzhen Retevis Technology Co., Ltd.**
Address.....:	Room 700, 7/F, 13-C, Zhonghaixin Science&Technology Park, No.12 Ganli 6th Road, Jihua Street, Longgang District, Shenzhen,China
Manufacturer.....:	Shenzhen Retevis Technology Co., Ltd.
Address.....:	Room 700, 7/F, 13-C, Zhonghaixin Science&Technology Park, No.12 Ganli 6th Road, Jihua Street, Longgang District, Shenzhen,China
Test item description ..... :	**Two Way Radio**
Trade Mark .....:	RETEVIS
Model/Type reference.....:	RT68
Listed Model(s) .....:	-
Standard ..... :	**FCC CFR Title 47 Part 95 Subpart B**
Date of receipt of test sample.....:	Nov.18, 2019
Date of testing.....:	Nov.18, 2019- Nov.19, 2019
Date of issue.....:	Nov.20, 2019
Result.....:	**PASS**

Compiled by (Position+Printed name+Signature):	File administrator Echo Wei	Echo Wei
Supervised by (Position+Printed name+Signature):	Project Engineer Gaosheng Pan	Gaosheng. Pan
Approved by (Position+Printed name+Signature):	RF Manager Hans Hu	Hans HU

Testing Laboratory Name ..... :	**Shenzhen Huatongwei International Inspection Co., Ltd.**
Address.....:	1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

Contents

1. TEST STANDARDS AND REPORT VERSION

1.1. Test Standards

The tests were performed according to following standards:

– FCC Rules Part 95: PERSONAL RADIO SERVICES

– FCC Rules Part 2: Frequency allocations and radio treaty matters; General rules and regulations

– ANSI C63.26-2013: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

– ANSI C63.4-2014: American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

– FCC Part 15 Subpart B: Unintentional Radiators.

1.2. Report version

Revision No.	Date of issue	Description
N/A	2019-11-20	Original

2. TEST DESCRIPTION

Report clause	Test Items	Standard Requirement	Result
5.1	Carrier Output Power(ERP)	Part 95.567 Part 2.1046(a)	PASS
5.2	99% Occupied Bandwidth & 26dB bandwidth	Part 95.573 Part 2.1049	PASS
5.3	Emission Mask	Part 95.579(a)(1)(2)(3) Part 2.1049	PASS
5.4	Modulation Limit	Part 95.575 Part 2.1047(b)	PASS
5.5	Audio Frequency Response	Part 95.575 Part 2.1047(a)	PASS
5.6	Audio Low Pass Filter Response	Part 95.575 Part 2.1047(a)	PASS
5.7	Frequency Stability V.S. Temperature	Part 95.565 Part 2.1055	PASS
5.8	Frequency Stability V.S. Voltage	Part 95.565 Part 2.1055	PASS
5.9	Transmit Radiated Spurious Emission	Part 95.579(a)(3) Part 2.1053	PASS
5.10	AC Power Line Conducted Emission	Part 15.107	PASS
5.11	Radiated Emission	Part 15.109	PASS

Note:

– The measurement uncertainty is not included in the test result.

3. SUMMARY

3.1. Client Information

Applicant:	Shenzhen Retevis Technology Co., Ltd.
Address:	Room 700, 7/F, 13-C, Zhonghaixin Science&Technology Park, No.12 Ganli 6th Road, Jihua Street, Longgang District, Shenzhen,China
Manufacturer:	Shenzhen Retevis Technology Co., Ltd.
Address:	Room 700, 7/F, 13-C, Zhonghaixin Science&Technology Park, No.12 Ganli 6th Road, Jihua Street, Longgang District, Shenzhen,China

3.2. Product Description

Name of EUT:	Two Way Radio
Trade Mark:	RETEVIS
Model No.:	RT68
Listed Model(s):	-
Power supply:	DC 3.7 V
Battery information:	Model: BL68 Voltage: DC3.7V Capacity: 1200mAh (4.44Wh)
Charger information:	Model: DC68 Input: AC100~220V 50/60Hz Output: DC5.0Va.c.,300mA
Adapter information:	Model: DSA-5PF07-05 FUS 050100 Input: AC100~240V 50/60Hz 0.2A Output: 5.0Vd.c.,1 A
Hardware version:	KA2U-1901-V1.0
Software version:	kcm22804

3.3. Radio Specification Description

Support Frequency Range:	CH01~CH07:	462.5625MHz~ 462.7125MHz
	CH15~CH22:	462.5500MHz~ 462.7250MHz
Modulation Type:	FM	
Emission Designator: *[1]	11K0F3E	
Antenna Type:	Integral	
Antenna Gain:	1.2dBi	

Note:

(1) *1 According to FCC Part 2.202 requirements, the Necessary Bandwidth is calculated as follows:

- For FM Voice Modulation

  Channel Spacing = 12.5 KHz, D = 2.5 KHz max, K = 1, M = 3 KHz

  Bn = 2M + 2DK = 2*3 + 2*2.5*1 = **11 KHz**

  Emission designation: 11K0F3E

(2) The device only supports voice communication.

3.4. Testing Laboratory Information

Laboratory Name	Shenzhen Huatongwei International Inspection Co., Ltd.	
Laboratory Location	1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China	
Qualifications	Type	Accreditation Number
	CNAS	L1225
	A2LA	3902.01
	FCC	762235
	Canada	5377A

4. TEST CONFIGURATION

4.1. Test frequency list

According to ANSI C63.26 section 5.1.2.1:

Measurements of transmitters shall be performed and, if required, reported for each frequency band in which the EUT can be operated with the device transmitting at the number of frequencies in each band specified in Table 2.

Frequency range over which EUT operates	Number of frequencies	Location in frequency 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

Test Channel	Channel No.	Frequency (MHz)	Frequency band (MHz)
CH_{M1}	CH4	462.6375	462.5625~462.7125
CH_{M3}	CH19	462.6500	462.5500~462.7250

The Product channel frequency table:

Test Channel	Channel No.	Frequency (MHz)	Frequency band (MHz)
01	462.5625	12	467.6625
02	462.5875	13	467.6875
03	462.6125	14	467.7125
04	**462.6375**	15	462.5500
05	462.6625	16	462.5750
06	462.6875	17	462.6000
07	462.7125	18	462.6250
08	467.5625	**19**	**462.6500**
09	467.5875	20	462.6750
10	467.6125	21	462.7000
11	467.6375	22	462.7250

4.2. Test mode

Test mode	Transmitting	Receiving	Charging
TX-FRS	√		
RX-FRS		√	
Power off Charging			√

Note:

√: is operation mode.

Modulation Type	Description
UM	Un-modulation
AM2	Apply a 1000 Hz tone and adjust the audio frequency generator to produce 20% of the rated system deviation.
AM6	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, then increase the level from the audio generator by 20 dB
AM5	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.

Test item	Modulation Type	Test mode
Output Power(ERP)	UM	TX-FRS
99% Occupied Bandwidth & 26dB bandwidth	AM6	TX-FRS
Emission Mask	AM5	TX-FRS
Modulation Limit	AM6	TX-FRS
Audio Frequency Response	AM2	TX-FRS
Audio Low Pass Filter Response	AM2	TX-FRS
Frequency Stability VS Temperature	UM	TX-FRS
Frequency Stability VS Voltage	UM	TX-FRS
Transmit Radiated Spurious Emission	AM5	TX-FRS
AC Power Line Conducted Emission	-	Charging
Radiated Emission	-	Charging

4.3. Support unit used in test configuration and system

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

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

Whether support unit is used?					
✓ No					
Item	Equipement	Trade Name	Model No.	FCC ID	Power cord
1					
2					

4.4. Testing environmental condition

Type	Requirement	Actual
Temperature:	15~35°C	25°C
Relative Humidity:	25~75%	50%
Air Pressure:	860~1060mbar	1000mbar
Test voltage:	Normal voltage:	DC 3.70V
	Extreme lower voltage:	DC 3.15V
	Extreme upper voltage:	DC 4.26V

4.5. Measurement uncertainty

Test Item	Measurement Uncertainty
Frequency stability	25 Hz
Carrier output power (ERP)	2.20 dB
Occupied Bandwidth	35 Hz
Modulation Limiting	0.42 %
FM deviation	25 Hz
Audio level	0.62 dB
Radiated Spurious Emission 30~1000MHz	4.65 dB
Radiated Spurious Emission 1~18GHz	5.16 dB
AC power line Conducted Emission 9KHz-30MHz	3.39 dB

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

4.6. Equipment Used during the Test

● TS8613 Test system							
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Spectrum Analyzer	Agilent	HTWE0286	N9020A	MY50510187	2019/10/26	2020/10/25
●	Signal & Spectrum Analyzer	R&S	HTWE0262	FSW26	103440	2019/10/26	2020/10/25
●	RF Communication Test Set	HP	HTWE0038	8920A	3813A10206	2019/10/26	2020/10/25
●	Digital intercom communication tester	Aeroflex	HTWE0255	3920B	1001682041	2019/10/26	2020/10/25
●	Signal Generator	R&S	HTWE0191	SML02	100507	2019/10/26	2020/10/25
●	RF Control Unit	Tonscend	HTWE0294	JS0806-2	N/A	N/A	N/A
○	Filter-VHF	Microwave	HTWE0309	N26460M1	498702	N/A	N/A
●	Filter-UHF	Microwave	HTWE0311	N25155M2	498704	N/A	N/A
○	Power Divider	Microwave	HTWE0043	OPD1040-N-4	N/A	2019/05/24	2020/05/23
○	Attenuator	JFW	HTWE0292	50FH-030-100	N/A	2019/05/18	2020/05/17
○	Attenuator	JFW	HTWE0293	50-A-MFN-20	0322	2019/05/18	2020/05/17
●	Test software	HTW	N/A	Radio ATE	N/A	N/A	N/A

● Auxiliary Equipment							
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Climate chamber	ESPEC	HTWE0254	GPL-2	N/A	2019/10/23	2020/10/22
●	DC Power Supply	Gwinstek	HTWE0274	SPS-2415	GER835793	N/A	N/A

● Radiated Spurious Emission							
Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Semi-Anechoic Chamber	Albatross projects	HTWE0122	SAC-3m-01	N/A	2018/09/27	2021/09/26
●	Spectrum Analyzer	R&S	HTWE0098	FSP40	100597	2019/10/26	2020/10/25
●	Loop Antenna	R&S	HTWE0170	HFH2-Z2	100020	2018/04/02	2021/04/01
●	Broadband Horn Antenna	SCHWARZBECK	HTWE0103	BBHA9170	BBHA9170472	2018/10/11	2021/10/10
●	Ultra-Broadband Antenna	SCHWARZBECK	HTWE0123	VULB9163	538	2018/04/04	2021/04/03
●	Horn Antenna	SCHWARZBECK	HTWE0126	9120D	1011	2017/04/01	2020/03/31
●	Pre-amplifier	CD	HTWE0071	PAP-0102	12004	2019/11/14	2020/11/13
●	Broadband Preamplifier	SCHWARZBECK	HTWE0201	BBV 9718	9718-248	2019/05/23	2020/05/22
●	RF Connection Cable	HUBER+SUHNER	HTWE0120-01	6m 18GHz S Serisa	N/A	2019/05/10	2020/05/09
●	RF Connection Cable	HUBER+SUHNER	HTWE0120-02	6m 3GHz RG Serisa	N/A	2019/05/10	2020/05/09

●	RF Connection Cable	HUBER+SUHNER	HTWE0120-03	6m 3GHz RG Serisa	N/A	2019/05/10	2020/05/09
●	RF Connection Cable	HUBER+SUHNER	HTWE0120-04	6m 3GHz RG Serisa	N/A	2019/05/10	2020/05/09
●	RF Connection Cable	HUBER+SUHNER	HTWE0121-01	6m 18GHz S Serisa	N/A	2019/05/10	2020/05/09
●	EMI Test Software	Audix	N/A	E3	N/A	N/A	N/A

● Conducted Emission

Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Shielded Room	Albatross projects	HTWE0114	N/A	N/A	2018/09/28	2023/09/27
●	EMI Test Receiver	R&S	HTWE0111	ESCI	101247	2019/10/26	2020/10/25
●	Artificial Mains	SCHWARZBECK	HTWE0113	NNLK 8121	573	2019/10/23	2020/10/22
●	Pulse Limiter	R&S	HTWE0033	ESH3-Z2	100499	2019/10/23	2020/10/22
●	RF Connection Cable	HUBER+SUHNER	HTWE0113-02	ENVIROFLEX_142	EF-NM-BNCM-2M	2019/10/23	2020/10/22
●	Test Software	R&S	N/A	ES-K1	N/A	N/A	N/A

● Radiated Emission-6th test site

Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Semi-Anechoic Chamber	Albatross projects	HTWE0127	SAC-3m-02	C11121	2018/09/30	2021/09/29
●	EMI Test Receiver	R&S	HTWE0099	ESCI	100900	2019/10/26	2020/10/25
●	Ultra-Broadband Antenna	SCHWARZBECK	HTWE0119	VULB9163	546	2017/04/05	2020/04/04
●	Pre-Amplifer	SCHWARZBECK	HTWE0295	BBV 9742	N/A	2019/11/14	2020/11/13
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-01	N/A	N/A	2019/08/21	2020/08/20
●	RF Connection Cable	HUBER+SUHNER	HTWE0062-02	SUCOFLEX104	501184/4	2019/05/27	2020/05/26
●	Test Software	R&S	N/A	ES-K1	N/A	N/A	N/A

● Radiated emission-7th test site

Used	Test Equipment	Manufacturer	Equipment No.	Model No.	Serial No.	Last Cal. Date (YY-MM-DD)	Next Cal. Date (YY-MM-DD)
●	Semi-Anechoic Chamber	Albatross projects	HTWE0122	SAC-3m-01	N/A	2018/09/30	2021/09/29
●	Spectrum Analyzer	R&S	HTWE0098	FSP40	100597	2019/10/26	2020/10/25
●	Horn Antenna	SCHWARZBECK	HTWE0126	9120D	1011	2017/04/01	2020/03/31
●	Broadband Pre-amplifier	SCHWARZBECK	HTWE0201	BBV 9718	9718-248	2019/05/23	2020/05/22
●	RF Connection Cable	HUBER+SUHNER	HTWE0121-01	RE-7-FH	N/A	2019/05/10	2020/05/09
●	Test Software	Audix	N/A	E3	N/A	N/A	N/A

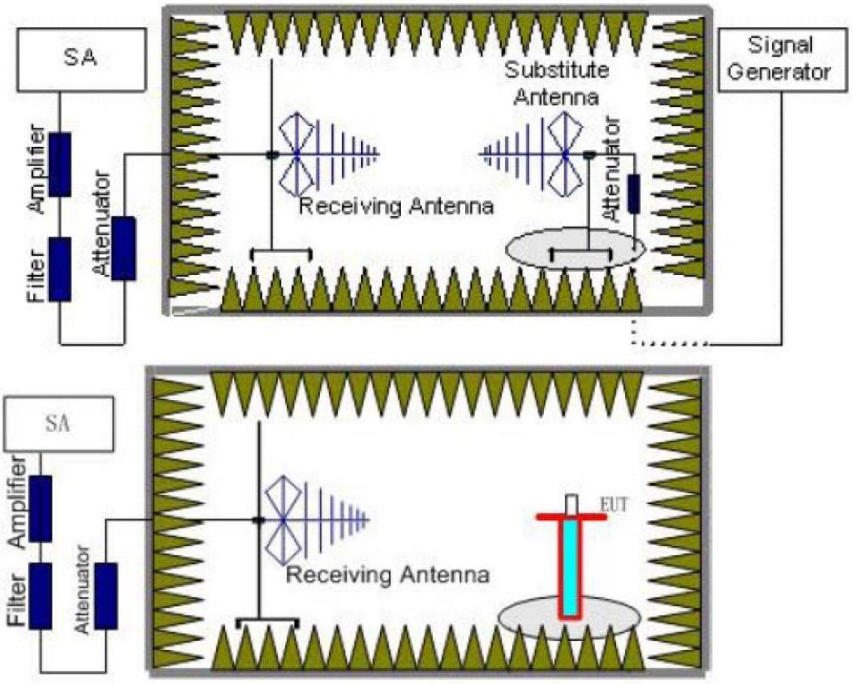
5. TEST CONDITIONS AND RESULTS

5.1. Carrier Output Power (ERP)

LIMIT

FCC Part FCC Part 95.567, FCC Part 2.1046
Each FRS transmitter type must be designed such that the effective radiated power (ERP) on channels 8 through 14 does **not exceed 0.5 Watts** and
the ERP on channels 1 through 7 and 15 through 22 does **not exceed 2.0 Watts**.

TEST CONFIGURATION



TEST PROCEDURE

1) The measuring distance of at 3m shall be used for measurements
2) The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation
3) The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4) The spectrum setting for Equivalent Isotropically Radiated Power (EIRP) is RBW = 100kHz, VBW = 300kHz. Detector Mode is Positive Peak
5) Record the field strength level of the EUT from the spectrum
6) The substitution antenna is substituted for EUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be moved height from 1m to 4m to find the highest radiation. Adjust the S.G. output level and repeat this step to get the same field strength level as the EUT
7) The EIRP level = S.G. output level(dBm)- TX cable(dB) + Substituted Antenna Gain(dBi)
8) The ERP level = EIRP-2.15

TEST MODE

Please reference to the section 4.2

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

TEST Data

Please refer to appendix A on the appendix report

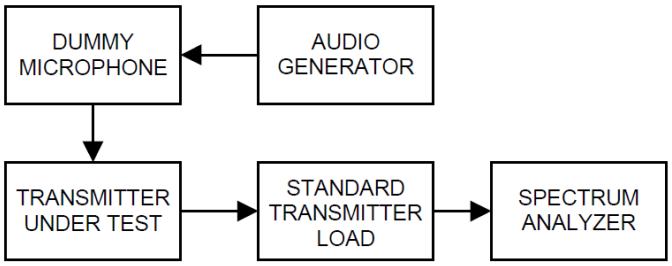
5.2. 99% Occupied Bandwidth & 26dB Bandwidth

LIMIT

FCC Part 95.573, FCC Part 2.1049

Each FRS transmitter type must be designed such that the occupied bandwidth **does not exceed 12.5 kHz.**

TEST CONFIGURATION



TEST PROCEDURE

1) Connect the equipment as illustrated
2) Spectrum set as follow:

   Centre frequency = the nominal EUT channel center frequency,

   The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (typically a span of 1.5 × OBW is sufficient)

   RBW = 1% to 5% of the anticipated OBW, VBW ≥ 3 × RBW, Sweep = auto,

   Detector function = peak, Trace = max hold
3) Set 99% Occupied Bandwidth and 26dB Bandwidth
4) Measure and record the results in the test report.

TEST MODE

Please reference to the section 4.2

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

TEST Data

Please refer to appendix B on the appendix report

5.3. Emission Mask

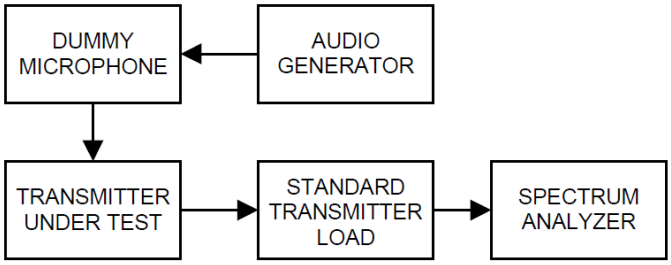
LIMIT

FCC Part 95.579(a)(1)(2)(3), FCC Part 2.1049

Each FRS transmitter type must be designed to satisfy the applicable unwanted emissions limits

a) Attenuation requirements. The power of unwanted emissions must be attenuated below the carrier power output in Watts (P) by at least:
   (1) 25dB in the frequency band 6.25 kHz to 12.5 kHz removed from the channel center frequency.
   (2) 35 dB in the frequency band 12.5 kHz to 31.25 kHz removed from the channel center frequency.
   (3) 43 +10 log (P) dB in any frequency band removed from the channel center frequency by more than 31.25 kHz.

TEST CONFIGURATION



TEST PROCEDURE

1) Connect the equipment as illustrated.
2) Spectrum set as follow:
   Centre frequency = fundamental frequency, 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) Apply Input Modulation Signal to EUT according to Section 4.2
5) Measure and record the results in the test report.

TEST MODE

Please reference to the section 4.2

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

TEST Data

Please refer to appendix C on the appendix report

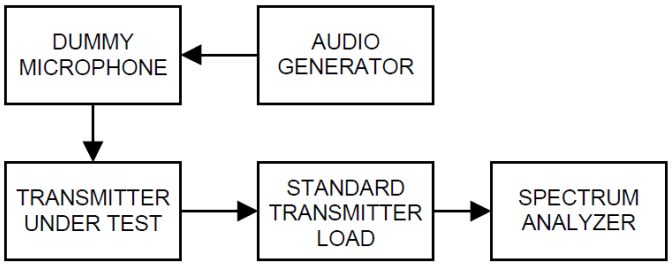
5.4. Modulation Limit

LIMIT

FCC Part 95.575, FCC Part 2.1047(b)

Each FRS transmitter type must be designed such that the peak frequency deviation does **not exceed 2.5kHz**, and the highest audio frequency contributing substantially to modulation must **not exceed 3.125kHz**.

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 ≤0.25Hz to ≥15,000Hz. Turn the de-emphasis function off.
4) Apply Input Modulation Signal to EUT according to Section 4.2 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 4.2

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

TEST Data

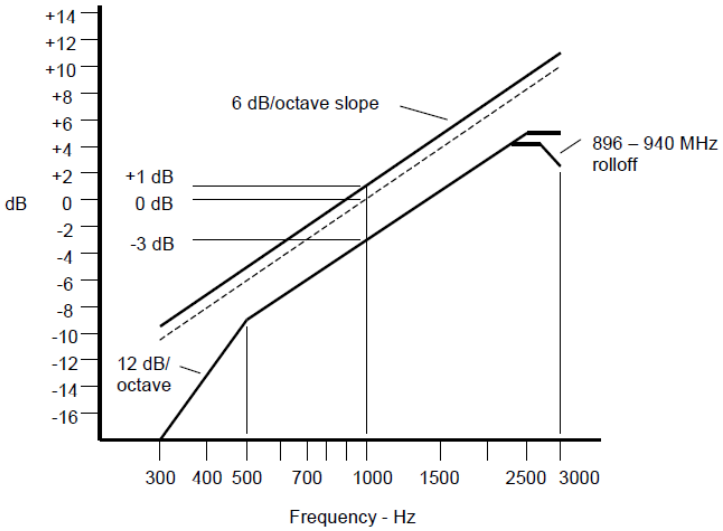
Please refer to appendix D on the appendix report

5.5. Audio Frequency Response

LIMIT

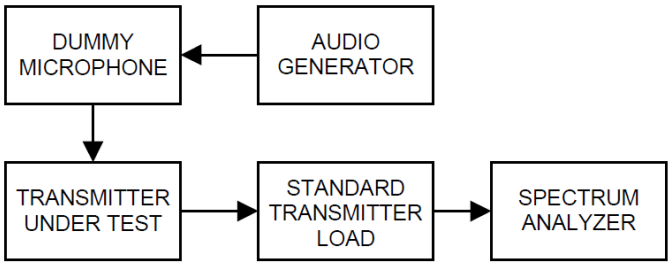
FCC Part 95.575, FCC Part 2.1047(a):
Each FRS transmitter type must be designed such that the peak frequency deviation does **not exceed 2.5kHz**, and the highest audio frequency contributing substantially to modulation must **not exceed 3.125kHz**.

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.



An additional 6 dB per octave attenuation is allowed from 2500 Hz to 3000 Hz in equipment operating in the 25 MHz to 869 MHz range.

TEST CONFIGURATION



TEST PROCEDURE

1) Connect the equipment as illustrated.
2) Set the test receiver to measure peak positive deviation. Set the audio bandwidth for 50 Hz to 15,000 Hz. Turn the de-emphasis function off.
3) Set the DMM to measure rms voltage.
4) Adjust the transmitter per the manufacturer's procedure for full rated system deviation.
5) Apply Input Modulation Signal to EUT according to Section 4.2
6) Set the test receiver to measure rms deviation and record the deviation reading.
7) Record the DMM reading as V_{REF} .
8) Set the audio frequency generator to the desired test frequency between 300 Hz and 3000 Hz.
9) Vary the audio frequency generator output level until the deviation reading that was recorded in step 6) is obtained.
10) Record the DMM reading as V_{FREQ}
11) Calculate the audio frequency response at the present frequency as:
audio frequency response=$20\log_{10}$ (V_{FREQ}/V_{REF}).
12) Repeat steps 8) through 11) for all the desired test frequencies

TEST MODE

Please reference to the section 4.2

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

TEST Data

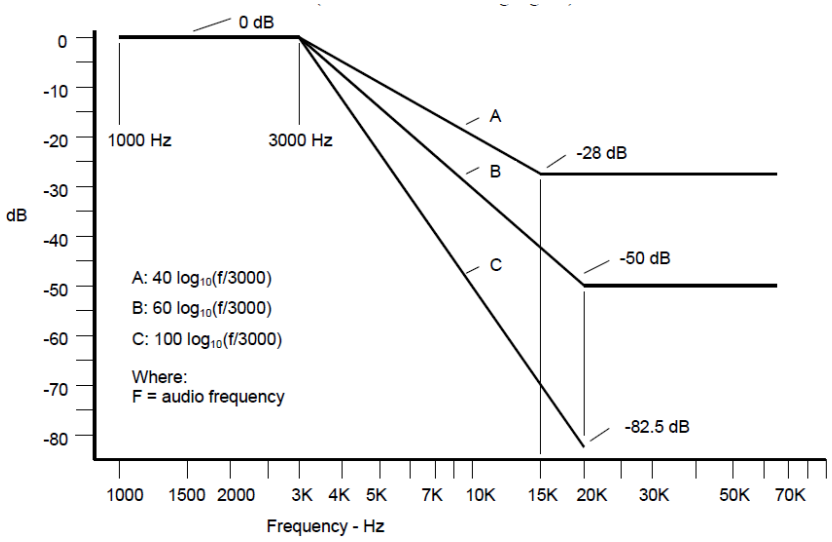
Please refer to appendix E on the appendix report

5.6. Audio Low Pass Filter Response

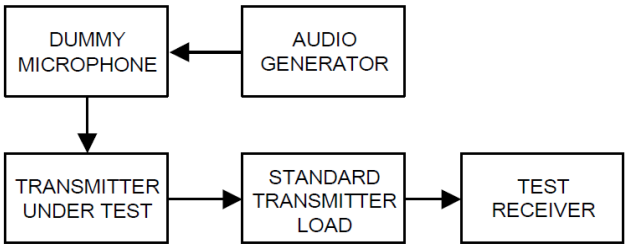
LIMIT

FCC Part 95.575),FCC Part 2.1047(a):

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 log10 (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**

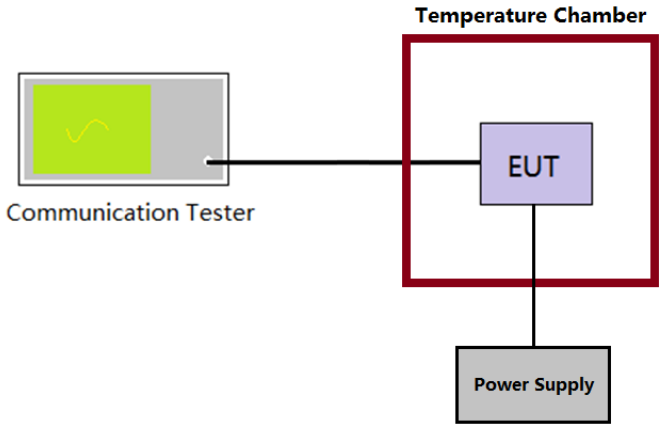
Please refer to appendix F on the section 8 appendix report

5.7. Frequency stability VS Temperature

LIMIT

FCC Part 95.565:
Each FRS transmitter type must be designed such that the carrier frequencies remain **within ±2.5 parts-per-million** of the channel center frequencies specified in §95.563 during normal operating conditions.

TEST CONFIGURATION



TEST PROCEDURE

1) The EUT output port was connected to communication tester.
2) The EUT was placed inside the temperature chamber.
3) Turn EUT off and set the chamber temperature to –30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency as MCF_{MHz}.
4) Calculate the ppm frequency error by the following:
   ppm error=$(MCF_{MHz}/ACF_{MHz}-1)*10^6$
   where
   MCF_{MHz} *is the Measured Carrier Frequency in MHz*
   ACF_{MHz} *is the Assigned Carrier Frequency in MHz*
5) Repeat step 3 measure with 10°C increased per stage until the highest temperature of +50°C reached.

TEST MODE

Please reference to the section 4.2

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

TEST Data

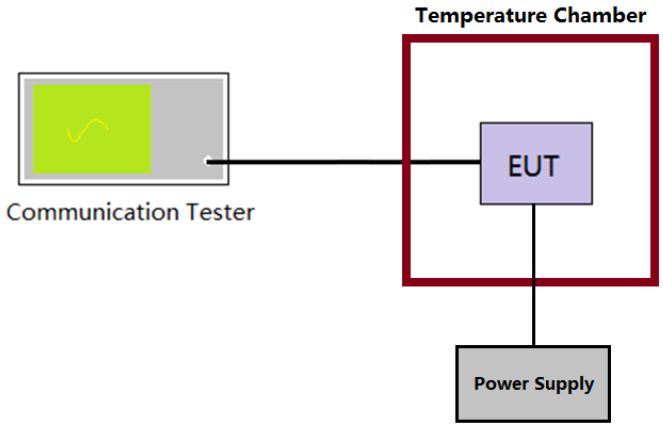
Please refer to appendix G on the appendix report

5.8. Frequency stability VS Voltage

LIMIT

FCC Part 95.565:
Each FRS transmitter type must be designed such that the carrier frequencies remain **within ±2.5 parts-per-million** of the channel center frequencies specified in §95.563 during normal operating conditions.

TEST CONFIGURATION



TEST PROCEDURE

1) The EUT output port was connected to communication tester.
2) The EUT was placed inside the temperature chamber at 25°C
3) Record the carrier frequency of the transmitter as MCF_{MHZ}
4) Calculate the ppm frequency error by the following:
   ppm error=$(MCF_{MHZ}/ACF_{MHZ}-1)*10^6$
   where
   MCF_{MHz} *is the Measured Carrier Frequency in MHz*
   ACF_{MHz} *is the Assigned Carrier Frequency in MHz*
5) Repeat step 3 measure with varied ±15% of the nominal value measured at the input to the EUT

TEST MODE

Please reference to the section 4.2

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

TEST Data

Please refer to appendix H on the appendix report

5.9. Transmit Radiated Spurious Emission

LIMIT

FCC Part 95.579(a)(3):

Each FRS transmitter type must be designed to satisfy the applicable unwanted emissions limits

a) Attenuation requirements. The power of unwanted emissions must be attenuated below the carrier power output in Watts (P) by at least:
   1) 25dB in the frequency band 6.25 kHz to 12.5 kHz removed from the channel center frequency.
   2) 35 dB in the frequency band 12.5 kHz to 31.25 kHz removed from the channel center frequency.
   3) 43 +10 log (P) dB in any frequency band removed from the channel center frequency by more than 31.25 kHz.

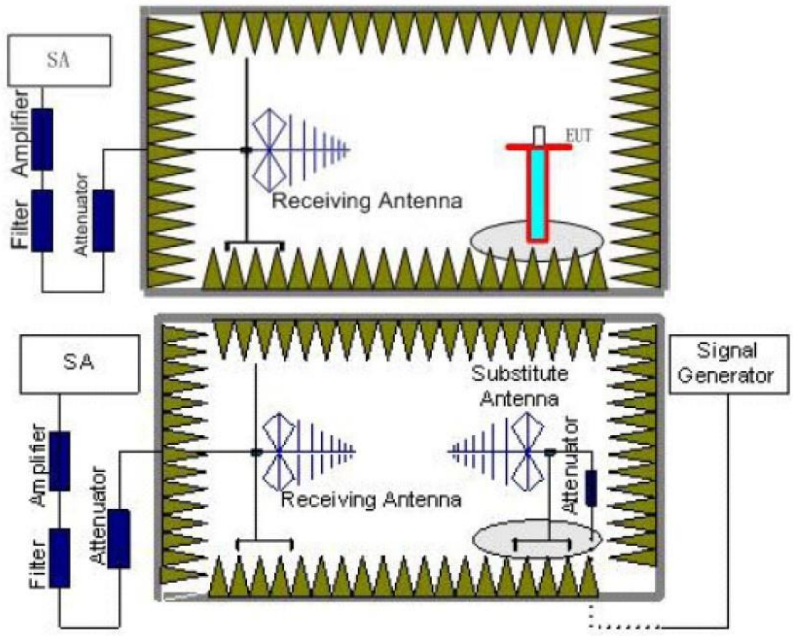
Note:

Limit (dBm)=EL-[43+10log(P)] =10log(P*1000)-[43+10log(P)] = 10log(P)+30-43-10log(P)**=-13dBm**

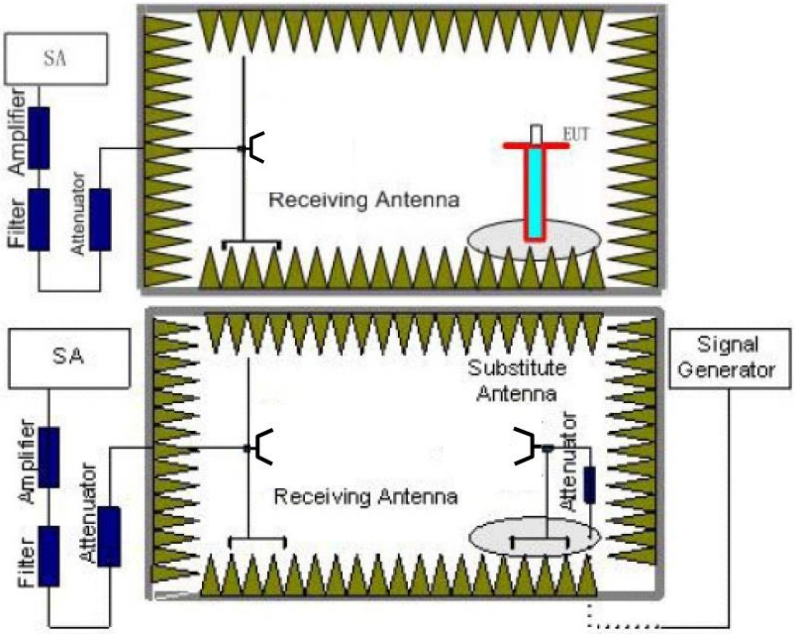
EL is the emission level of the Output Power expressed in dBm,

TEST CONFIGURATION

Below 1GHz:



Above 1GHz:



TEST PROCEDURE

1) The measuring distance of at 3m shall be used for measurements
2) The EUT is placed on a turn table which is 0.8 meter above ground for below 1 GHz, and 1.5 m for above 1 GHz. The table was rotated 360 degrees to determine the position of the highest radiation
3) The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4) The spectrum setting as follow

   Below 1 GHz: RBW=120kHz, VBW=300kHz, Sweep time=auto, Detector =peak, Trace=max hold;

   Above 1GHz: RBW=1MHz, VBW=3MHz Sweep time=auto, Detector=peak, Trace=max hold
5) Record the field strength level of the EUT from the spectrum
6) The substitution antenna is substituted for EUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be moved height from 1m to 4m to find the highest radiation. Adjust the S.G. output level and repeat this step to get the same field strength level as the EUT
7) The EIRP level = S.G. output level(dBm)- TX cable(dB) + Substituted Antenna Gain(dBi)
8) Record the ERP value for below 1GHz, ERP value = EIRP-2.15; Record the EIRP for above 1GHz.

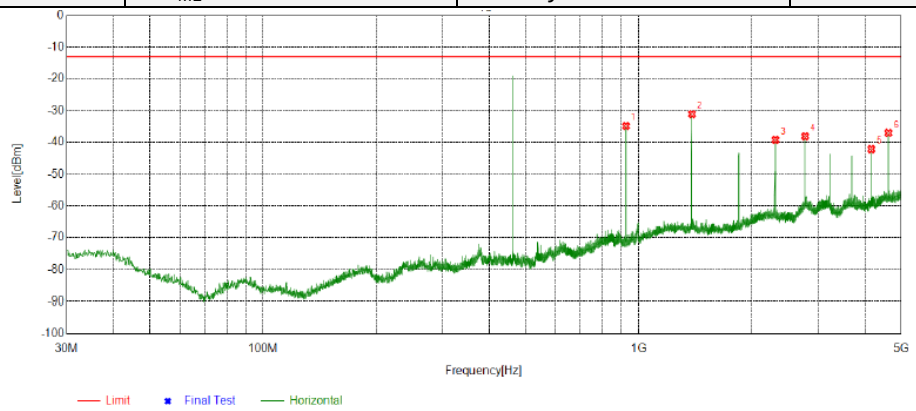
TEST MODE

Please reference to the section 4.2

TEST RESULTS

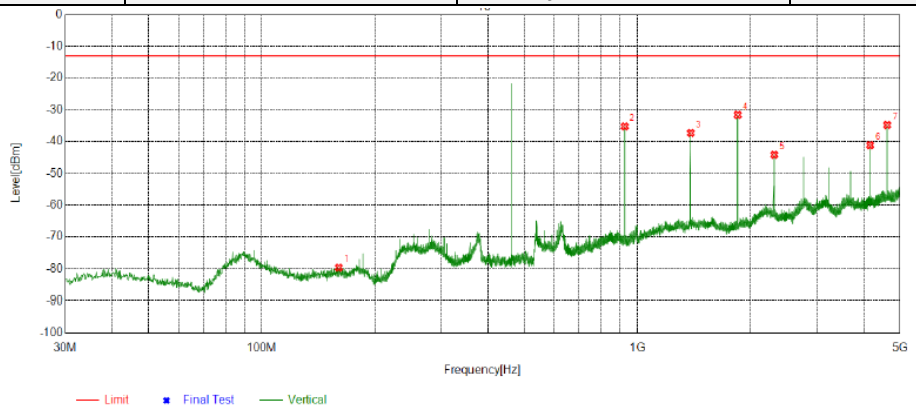
☒ **Passed** ☐ **Not Applicable**

Test Channel:	CH_{M1}	Polarity:	Horizontal



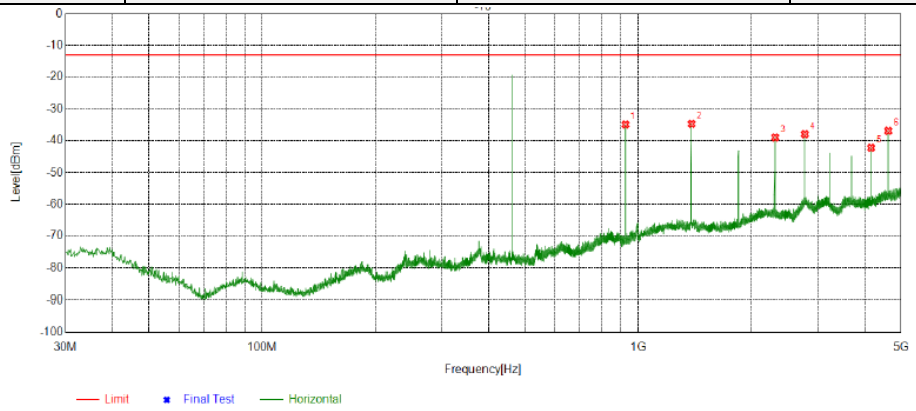
NO.	Freq. [MHz]	Reading [dBm]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity	Detector
1	925.3007	-44.26	9.38	-34.88	-13.00	21.88	Horizontal	PK
2	1388.000	-36.72	5.62	-31.10	-13.00	18.10	Horizontal	PK
3	2313.000	-49.17	9.93	-39.24	-13.00	26.24	Horizontal	PK
4	2776.000	-52.22	14.13	-38.09	-13.00	25.09	Horizontal	PK
5	4164.000	-57.89	15.74	-42.15	-13.00	29.15	Horizontal	PK
6	4626.500	-55.50	18.44	-37.06	-13.00	24.06	Horizontal	PK

Test Channel:	CH_{M1}	Polarity:	Vertical



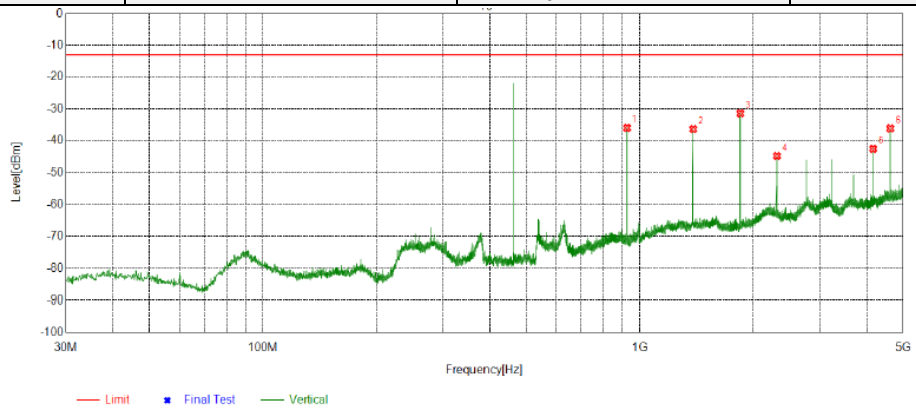
NO.	Freq. [MHz]	Reading [dBm]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity	Detector
1	160.3600	-78.08	-1.58	-79.66	-13.00	66.66	Vertical	PK
2	925.3007	-44.89	9.65	-35.24	-13.00	22.24	Vertical	PK
3	1388.000	-43.51	6.19	-37.32	-13.00	24.32	Vertical	PK
4	1850.500	-37.38	5.78	-31.60	-13.00	18.60	Vertical	PK
5	2313.500	-54.10	9.97	-44.13	-13.00	31.13	Vertical	PK
6	4164.000	-57.15	16.00	-41.15	-13.00	28.15	Vertical	PK
7	4626.500	-53.26	18.47	-34.79	-13.00	21.79	Vertical	PK

Test Channel:	CH_{M3}	Polarity:	Horizontal



NO.	Freq. [MHz]	Reading [dBm]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity	Detector
1	925.3007	-44.30	9.38	-34.92	-13.00	21.92	Horizontal	PK
2	1388.000	-40.34	5.62	-34.72	-13.00	21.72	Horizontal	PK
3	2313.500	-48.90	9.93	-38.97	-13.00	25.97	Horizontal	PK
4	2776.000	-52.09	14.13	-37.96	-13.00	24.96	Horizontal	PK
5	4164.000	-58.02	15.74	-42.28	-13.00	29.28	Horizontal	PK
6	4627.000	-55.37	18.44	-36.93	-13.00	23.93	Horizontal	PK

Test Channel:	CH_{M3}	Polarity:	Vertical



NO.	Freq. [MHz]	Reading [dBm]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Polarity	Detector
1	925.3007	-45.68	9.65	-36.03	-13.00	23.03	Vertical	PK
2	1388.000	-42.60	6.19	-36.41	-13.00	23.41	Vertical	PK
3	1850.500	-37.23	5.78	-31.45	-13.00	18.45	Vertical	PK
4	2313.000	-54.83	9.97	-44.86	-13.00	31.86	Vertical	PK
5	4164.000	-58.59	16.00	-42.59	-13.00	29.59	Vertical	PK
6	4626.500	-54.68	18.47	-36.21	-13.00	23.21	Vertical	PK

5.10. AC Power Line Conducted Emission

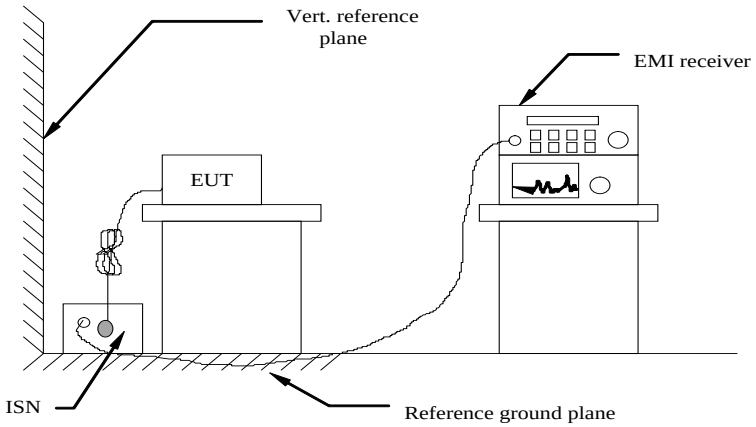
The frequency spectrum from 0.15 MHz to 30 MHz was investigated. The LISN used was 50 ohm / 50 u Henry as specified by section 5.1 of ANSI C63.4. Cables and peripherals were moved to find the maximum emission levels for each frequency.

Limit

FCC part 15.107(a)

Frequency of emission (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

TEST CONFIGURATION



TEST PROCEDURE

1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system; a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4
2) Support equipment, if needed, was placed as per ANSI C63.4
3) All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
4) If a EUT received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5) All support equipments received AC power from a second LISN, if any
6) The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7) Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8) During the above scans, the emissions were maximized by cable manipulation.

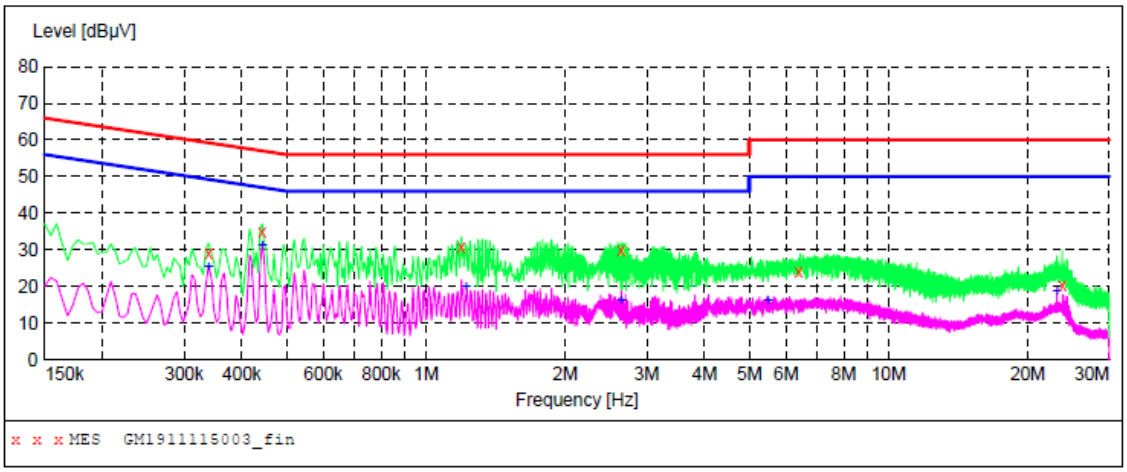
TEST MODE

Please reference to the section 4.2

TEST RESULTS

☐ **Passed** ☒ **Not Applicable**

Polarity:	L



MEASUREMENT RESULT: "GM1911115003_fin"

11/11/2019 9:33AM

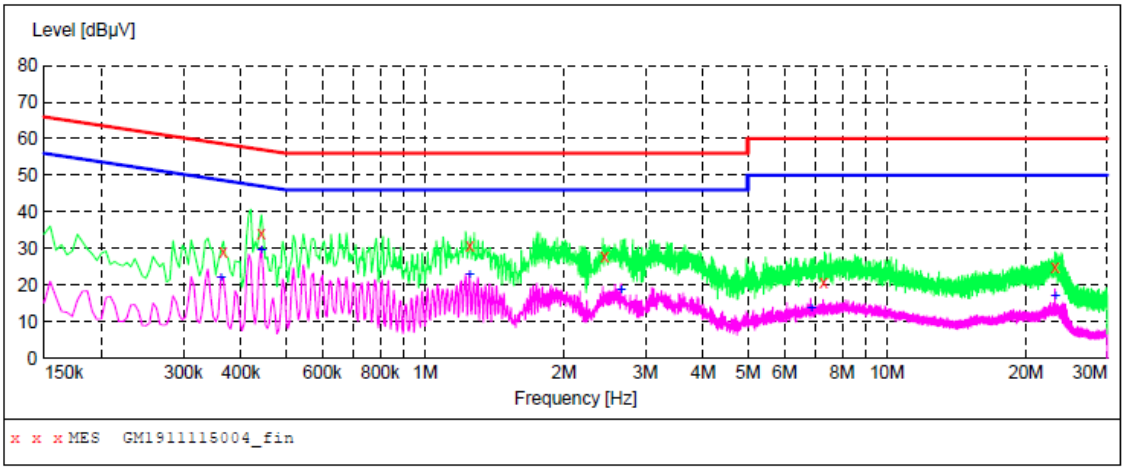
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.339000	28.90	10.1	59	30.3	QP	L1	GND
0.442500	35.00	10.1	57	22.0	QP	L1	GND
1.194000	30.70	10.1	56	25.3	QP	L1	GND
2.643000	29.80	10.1	56	26.2	QP	L1	GND
6.400500	24.00	10.2	60	36.0	QP	L1	GND
23.766000	20.10	10.2	60	39.9	QP	L1	GND

MEASUREMENT RESULT: "GM1911115003_fin2"

11/11/2019 9:33AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.339000	25.50	10.1	49	23.7	AV	L1	GND
0.442500	31.10	10.1	47	15.9	AV	L1	GND
1.221000	19.70	10.1	46	26.3	AV	L1	GND
2.643000	16.10	10.1	46	29.9	AV	L1	GND
5.491500	16.00	10.2	50	34.0	AV	L1	GND
23.127000	18.70	10.2	50	31.3	AV	L1	GND

Polarity:	N



MEASUREMENT RESULT: "GM1911115004_fin"

11/11/2019 9:38AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.366000	29.00	10.1	59	29.6	QP	N	GND
0.442500	34.10	10.1	57	22.9	QP	N	GND
1.252500	30.70	10.1	56	25.3	QP	N	GND
2.449500	28.00	10.1	56	28.0	QP	N	GND
7.309500	20.80	10.2	60	39.2	QP	N	GND
23.127000	25.00	10.2	60	35.0	QP	N	GND

MEASUREMENT RESULT: "GM1911115004_fin2"

11/11/2019 9:38AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.361500	21.80	10.1	49	26.9	AV	N	GND
0.442500	29.30	10.1	47	17.7	AV	N	GND
1.248000	22.80	10.1	46	23.2	AV	N	GND
2.656500	18.80	10.1	46	27.2	AV	N	GND
6.864000	13.50	10.2	50	36.5	AV	N	GND
23.127000	16.90	10.2	50	33.1	AV	N	GND

5.11. Radiated Emission

LIMIT

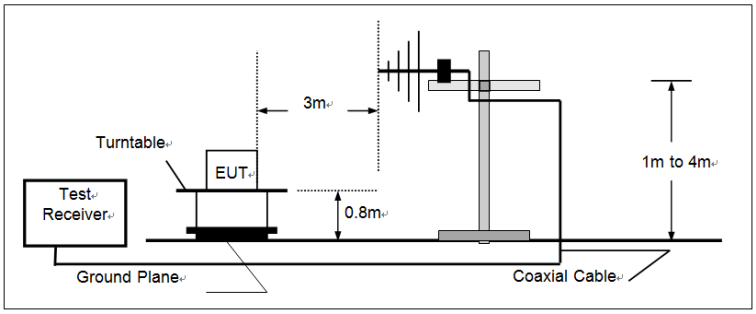
For unintentional device, according to § 15.109(a) except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values：

Frequency of emission (MHz)	Field strength (microvolts/meter)
30-88	100
88-216	150
216-960	200
Above 960	500

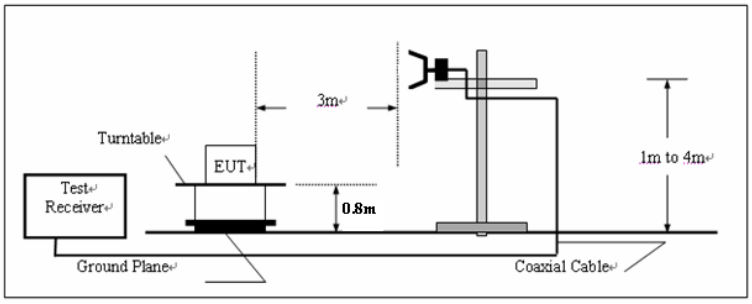
For intentional device, according to § 15.209(a), the general requirement of field strength of radiated emissions from intentional radiators at a distance of 3 meters shall not exceed the above table.

TEST CONFIGURATION

(A) Radiated Emission Test Set-Up, Frequency below 1000MHz



(B) Radiated Emission Test Set-Up, Frequency above 1000MHz



TEST PROCEDURE

1) The EUT was placed on a turn table which is 0.8m above ground plane.
2) Maximum procedure was performed by raising the receiving antenna from 1m to 4m and rotating the turn table from 0℃ to 360℃ to acquire the highest emissions from EUT
3) And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
4) Repeat above procedures until all frequency measurements have been completed.

TEST MODE

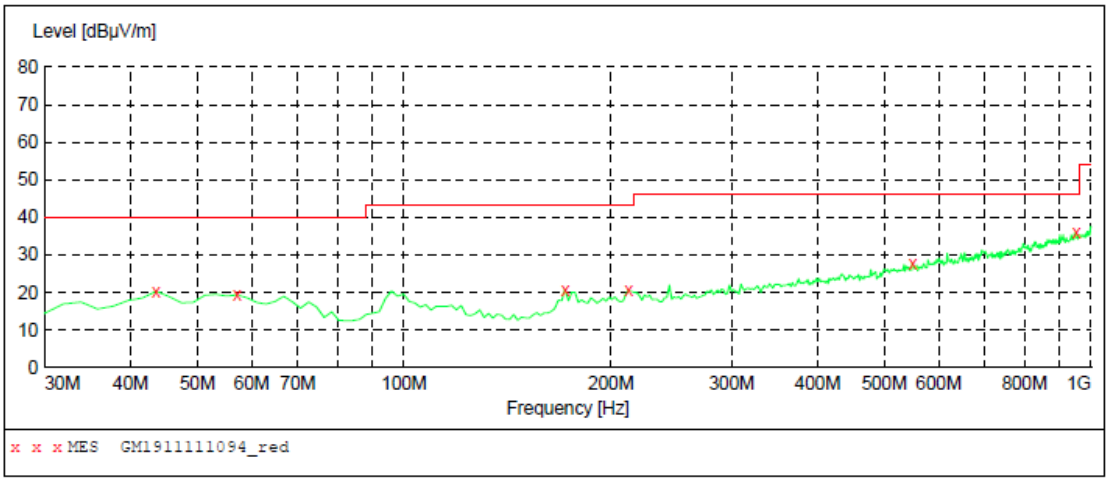
Please reference to the section 4.2

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note:
The EUT shall be scanned from 30 MHz to the 5th harmonic of the highest oscillator frequency in the digital devices or 1 GHz whichever is higher.

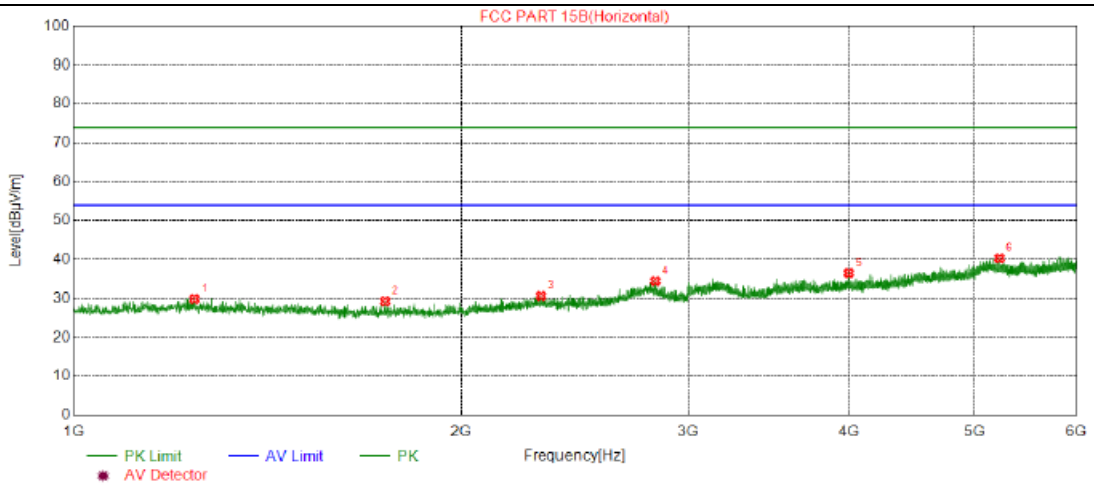
Polarity:	Horizontal



MEASUREMENT RESULT: "GM1911111094_red"

11/11/2019 7:20PM

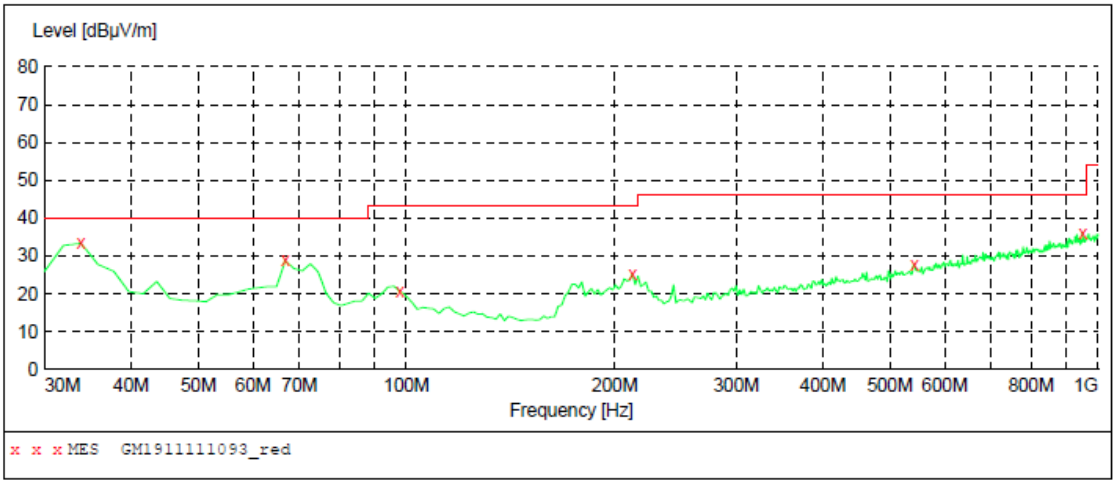
Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
43.580000	20.40	-8.7	40.0	19.6	QP	100.0	190.00	HORIZONTAL
57.160000	19.40	-8.7	40.0	20.6	QP	300.0	231.00	HORIZONTAL
171.620000	20.80	-12.5	43.5	22.7	QP	100.0	356.00	HORIZONTAL
212.360000	20.50	-9.8	43.5	23.0	QP	300.0	360.00	HORIZONTAL
549.920000	27.80	0.2	46.0	18.2	QP	100.0	224.00	HORIZONTAL
951.500000	35.80	8.2	46.0	10.2	QP	100.0	260.00	HORIZONTAL



Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector
1	1240.625	35.62	-5.72	29.90	74.00	44.10	Horizontal	PK
2	1745.000	35.23	-5.97	29.26	74.00	44.74	Horizontal	PK
3	2305.000	32.96	-2.33	30.63	74.00	43.37	Horizontal	PK
4	2827.500	32.87	1.64	34.51	74.00	39.49	Horizontal	PK
5	3996.250	33.56	3.01	36.57	74.00	37.43	Horizontal	PK
6	5231.250	31.57	8.81	40.38	74.00	33.62	Horizontal	PK

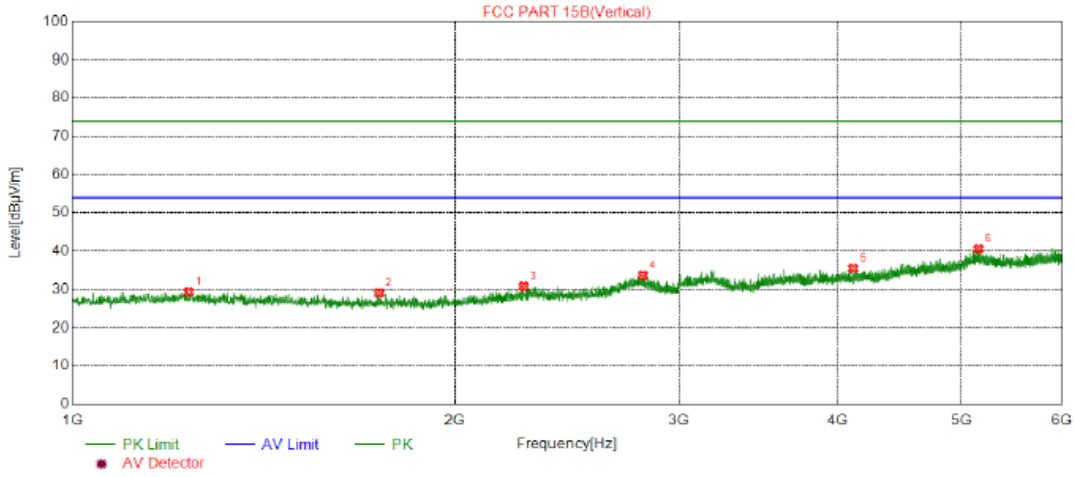
Polarity:	Vertical



MEASUREMENT RESULT: "GM1911111093_red"

11/11/2019 7:17PM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
33.880000	33.40	-12.1	40.0	6.6	QP	100.0	106.00	VERTICAL
66.860000	28.80	-11.7	40.0	11.2	QP	100.0	332.00	VERTICAL
97.900000	20.80	-10.4	43.5	22.7	QP	100.0	223.00	VERTICAL
212.360000	25.20	-9.8	43.5	18.3	QP	100.0	248.00	VERTICAL
542.160000	27.80	-0.1	46.0	18.2	QP	100.0	360.00	VERTICAL
949.560000	36.10	8.1	46.0	9.9	QP	100.0	79.00	VERTICAL

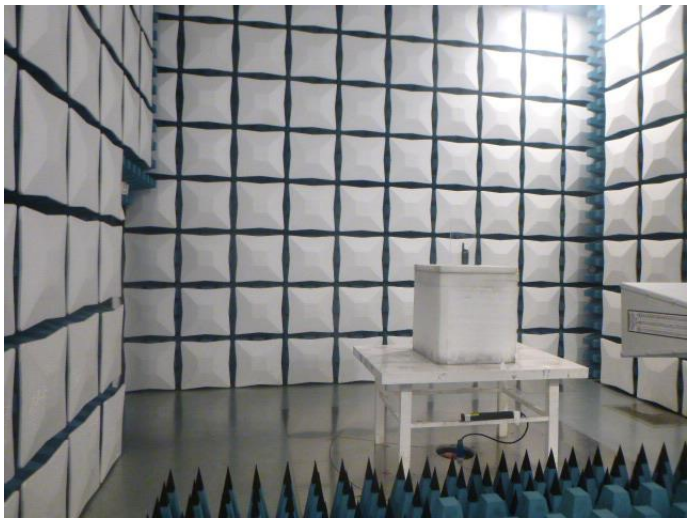


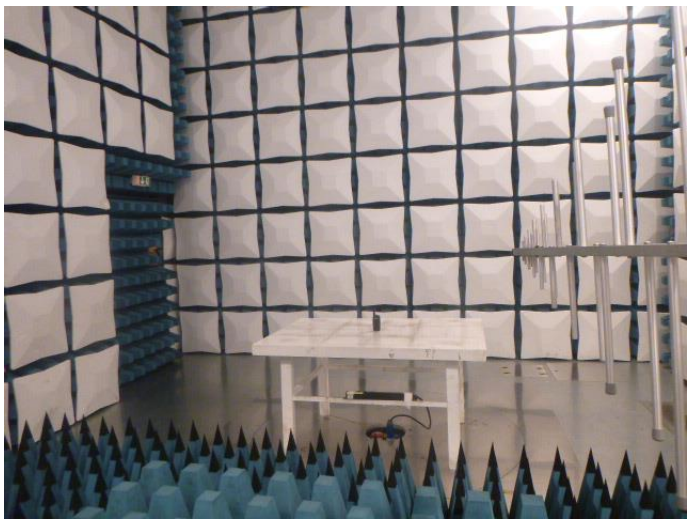
Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Polarity	Detector
1	1234.375	35.09	-5.74	29.35	74.00	44.65	Vertical	PK
2	1742.500	35.03	-5.97	29.06	74.00	44.94	Vertical	PK
3	2263.750	33.37	-2.56	30.81	74.00	43.19	Vertical	PK
4	2809.375	31.77	1.94	33.71	74.00	40.29	Vertical	PK
5	4111.250	32.20	3.31	35.51	74.00	38.49	Vertical	PK
6	5158.125	31.75	8.90	40.65	74.00	33.35	Vertical	PK

6. TEST SETUP PHOTOS

Transmitter Radiated Spurious Emission

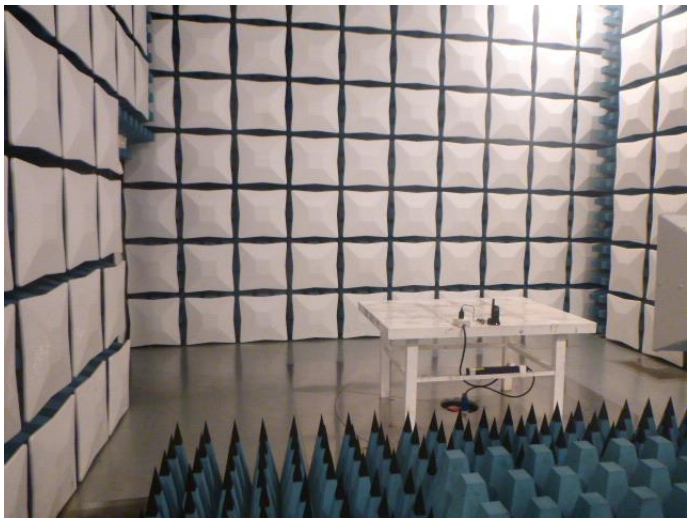




Frequency stability

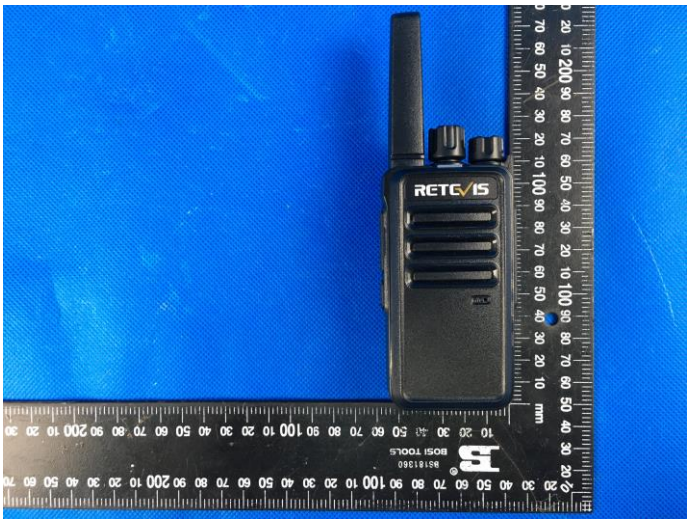
AC power line conducted emission

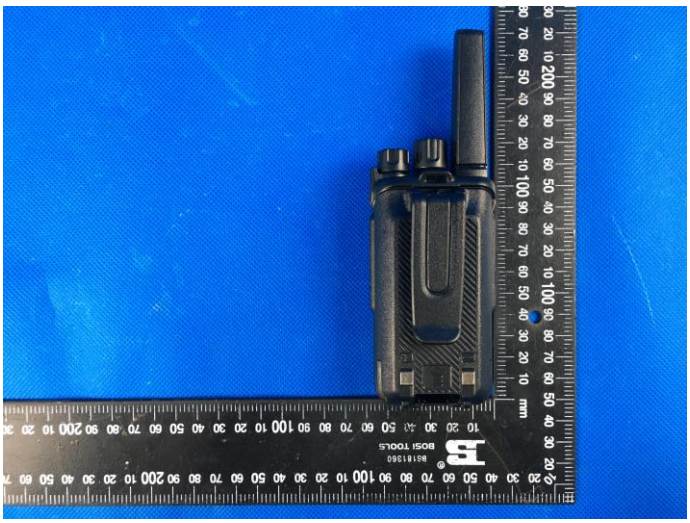
Radiated emission

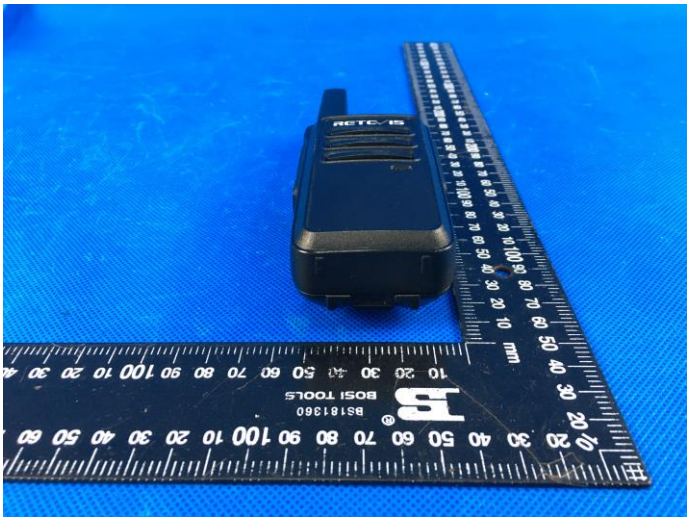


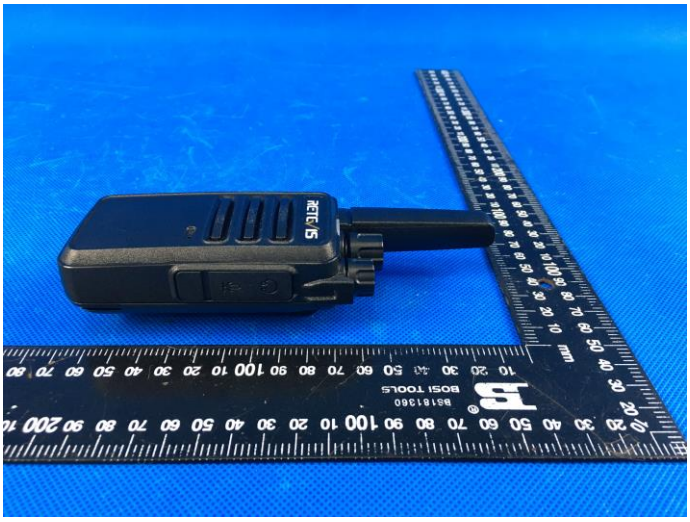
7. EXTERANAL AND INTERNAL PHOTOS

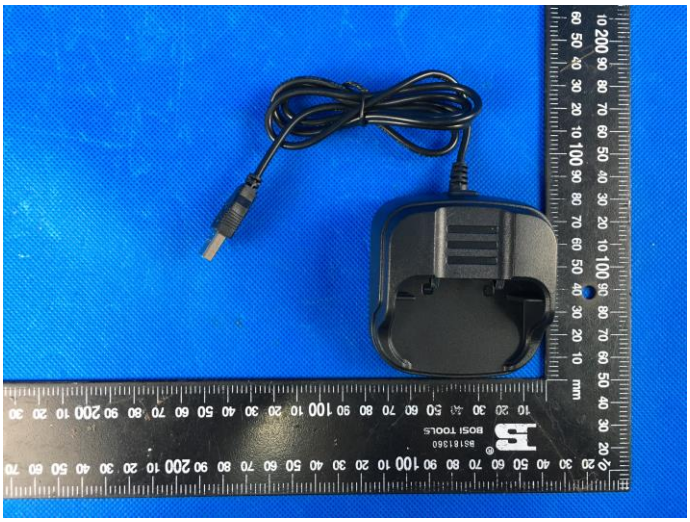
External Photos



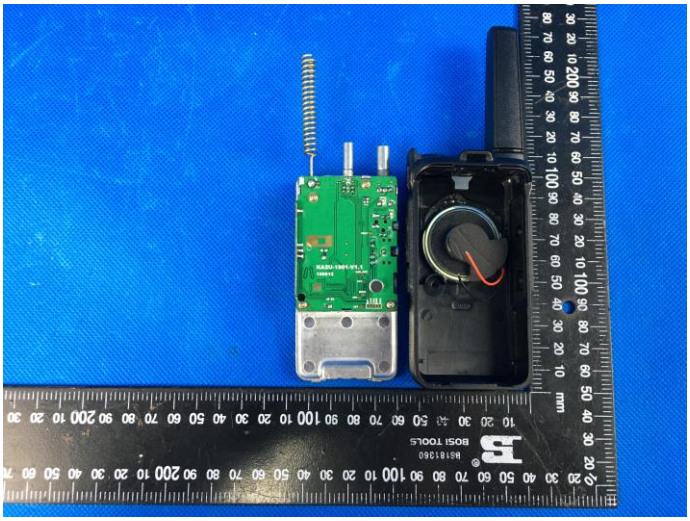


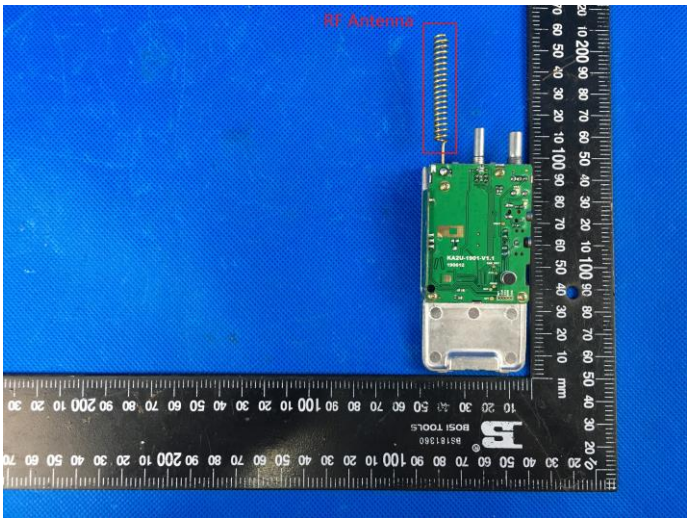


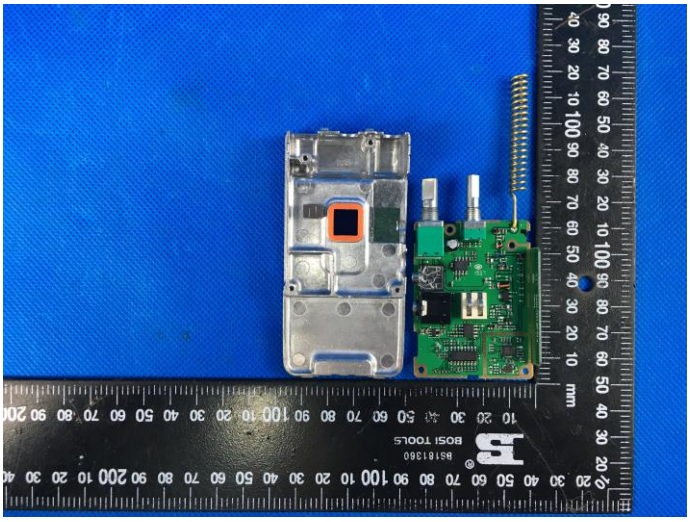


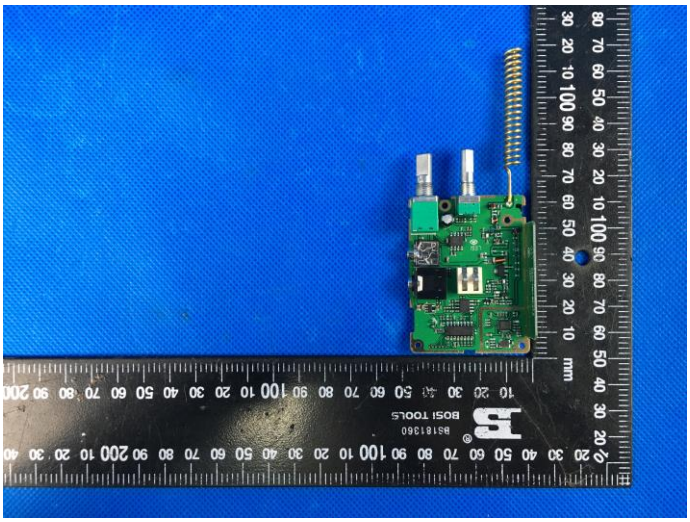


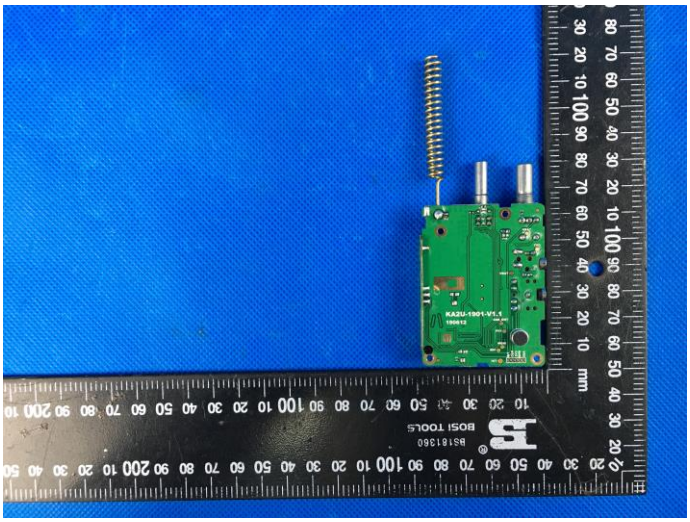
Internal Photos

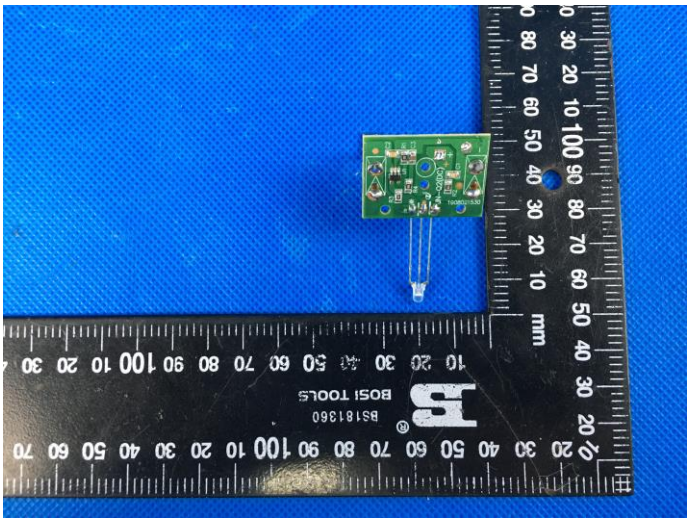


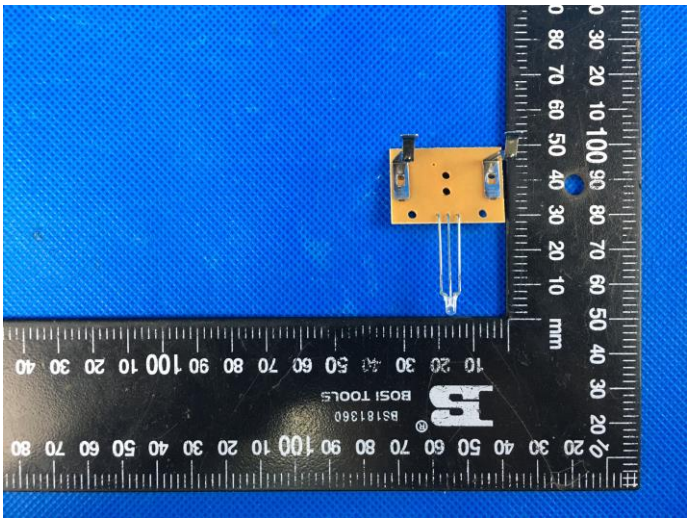












8. Appendix

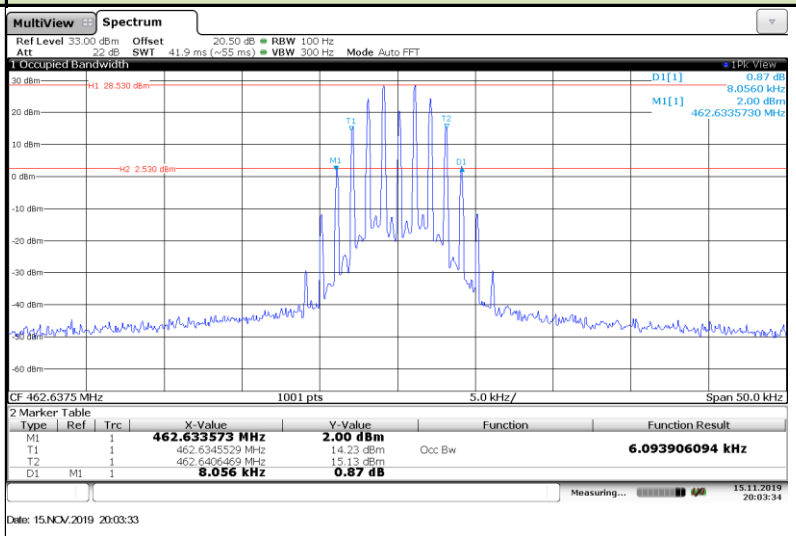
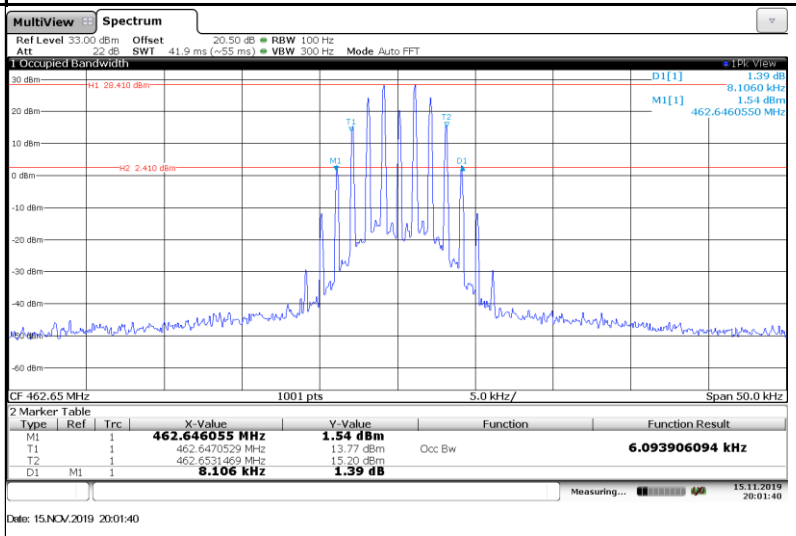
Appendix A: Carrier Output Power(ERP)

Test Mode	Modulation Type	Test Channel	Measured power (dBm)	Measured power (W)	Limit(W)	Result
TX-FRS	FM	CH_{M1}	32.45	1.76	≤2	PASS
TX-FRS	FM	CH_{M3}	32.49	1.77	≤2	PASS

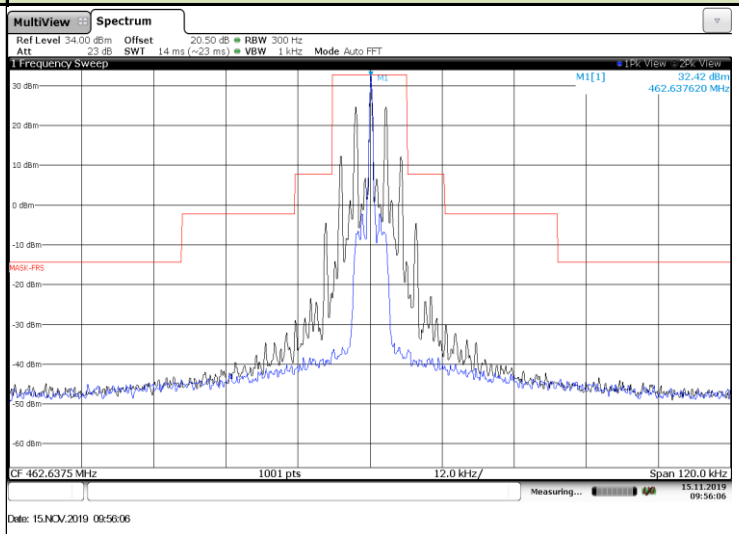
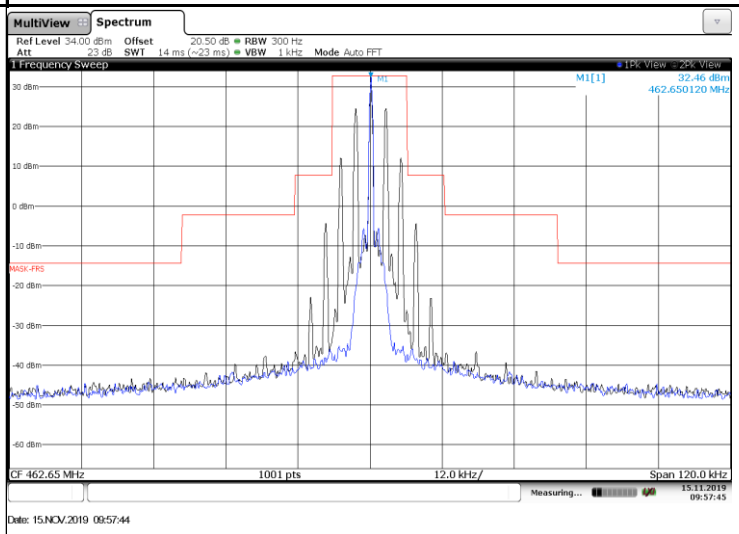
Appendix B: 99% Occupied Bandwidth & 26dB Bandwidth

Test Mode	Modulation Type	Test Channel	Occupied Bandwidth		99% Limit(kHz)	Result
			99%(kHz)	26dB(kHz)		
TX-FRS	FM	CH_{M1}	**6.094**	8.056	≤12.5	PASS
TX-FRS	FM	CH_{M3}	**6.094**	8.106	≤12.5	PASS

Appendix B: 99% Occupied Bandwidth & 26dB Bandwidth

Test Mode	Modulation Type	Test Channel	TEST PLOT RESULT
TX-FRS	FM	CH_{M1}	
TX-FRS	FM	CH_{M3}	

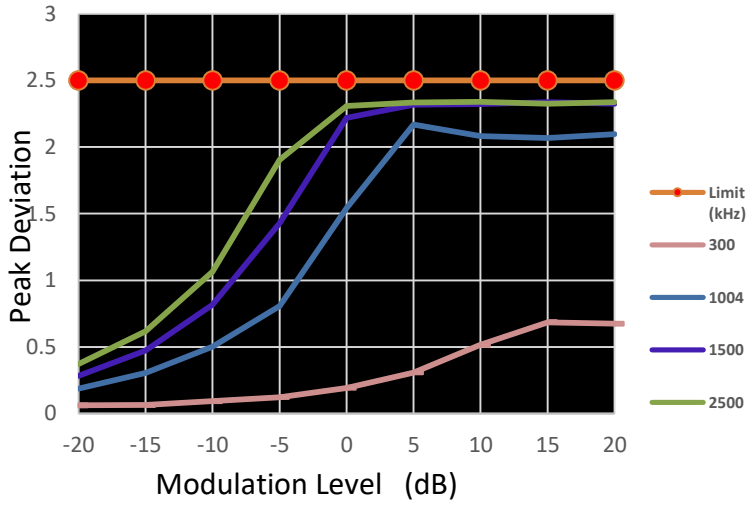
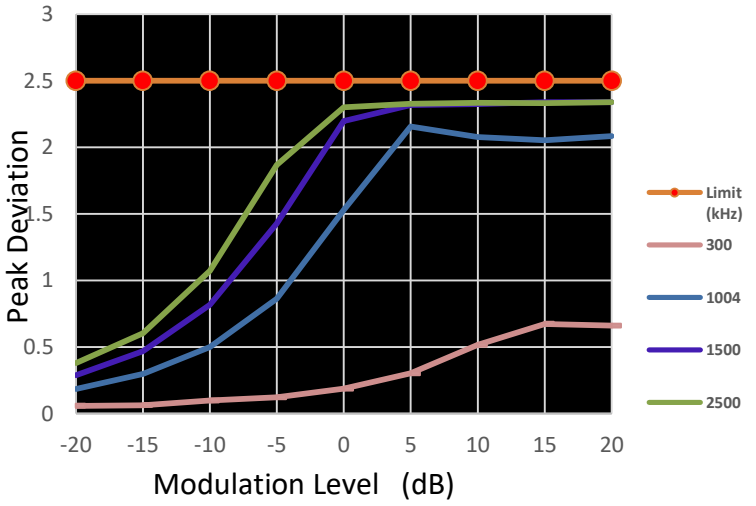
Appendix C:Emission Mask

Test Mode	Modulation Type	Test Channel	TEST PLOT RESULT
TX-FRS	FM	CH_{M1}	
TX-FRS	FM	CH_{M3}	

Appendix D:Modulation Limit

Test Mode	Modulation Type	Test Channel	Modulation Level (dB)	Peak Frequency Deviation (Hz)				Limit (kHz)	Result
				300	1004	1500	2500		
TX-FRS	FM	CH_{M1}	-20	0.061	0.186	0.284	0.372	2.5	PASS
TX-FRS	FM	CH_{M1}	-15	0.064	0.305	0.473	0.616	2.5	PASS
TX-FRS	FM	CH_{M1}	-10	0.093	0.501	0.816	1.065	2.5	PASS
TX-FRS	FM	CH_{M1}	-5	0.123	0.806	1.429	1.905	2.5	PASS
TX-FRS	FM	CH_{M1}	0	0.193	1.542	2.220	2.308	2.5	PASS
TX-FRS	FM	CH_{M1}	5	0.308	2.168	2.319	2.335	2.5	PASS
TX-FRS	FM	CH_{M1}	10	0.516	2.083	2.323	2.339	2.5	PASS
TX-FRS	FM	CH_{M1}	15	0.685	2.067	2.337	2.325	2.5	PASS
TX-FRS	FM	CH_{M1}	20	0.674	2.098	2.324	2.337	2.5	PASS
TX-FRS	FM	CH_{M3}	-20	0.058	0.186	0.288	0.381	2.5	PASS
TX-FRS	FM	CH_{M3}	-15	0.063	0.299	0.469	0.604	2.5	PASS
TX-FRS	FM	CH_{M3}	-10	0.098	0.501	0.817	1.073	2.5	PASS
TX-FRS	FM	CH_{M3}	-5	0.122	0.863	1.429	1.869	2.5	PASS
TX-FRS	FM	CH_{M3}	0	0.187	1.530	2.197	2.301	2.5	PASS
TX-FRS	FM	CH_{M3}	5	0.302	2.156	2.318	2.326	2.5	PASS
TX-FRS	FM	CH_{M3}	10	0.516	2.076	2.324	2.333	2.5	PASS
TX-FRS	FM	CH_{M3}	15	0.674	2.053	2.339	2.331	2.5	PASS
TX-FRS	FM	CH_{M3}	20	0.661	2.083	2.338	2.340	2.5	PASS

Appendix D:Modulation Limit

Test Mode	Modulation Type	Test Channel	TEST PLOT RESULT
TX-FRS	FM	CH_{M1}	
TX-FRS	FM	CH_{M3}	

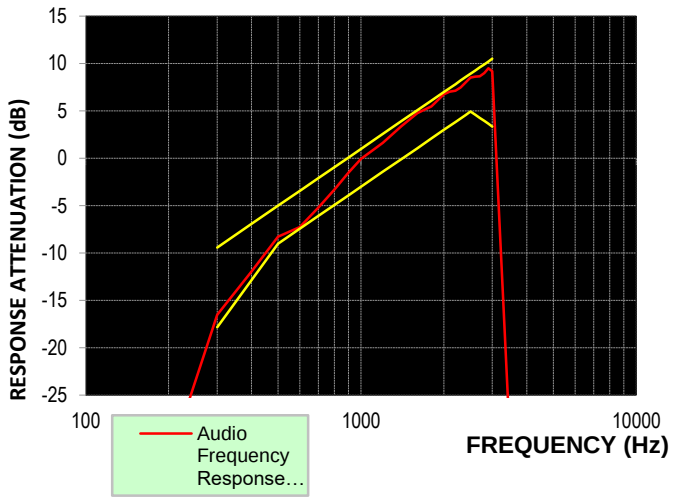
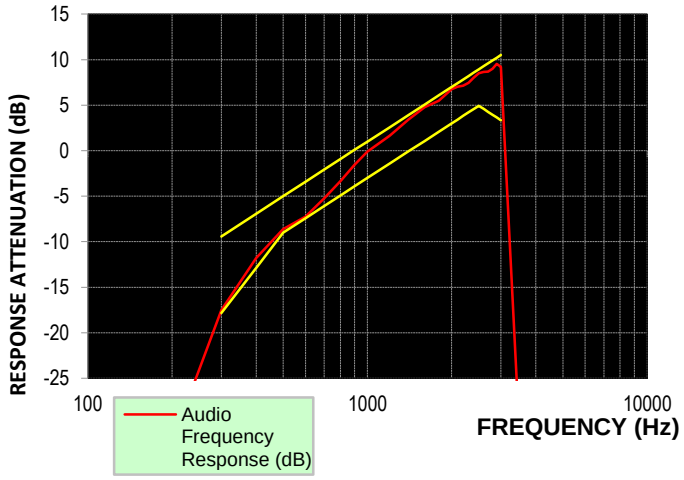
Appendix E:Aduio Frequency Response

Test Mode	Modulation Type	Test Channel	Frequency (Hz)	Audio Frequency Response (dB)	Lower Limit	Upper Limit	Result
TX-FRS	FM	CH_{M1}	100	-31.74			PASS
TX-FRS	FM	CH_{M1}	200	-32.14			PASS
TX-FRS	FM	CH_{M1}	300	-16.52	-17.84	-9.42	PASS
TX-FRS	FM	CH_{M1}	400	-11.97	-12.86	-6.93	PASS
TX-FRS	FM	CH_{M1}	500	-8.26	-9.00	-5.00	PASS
TX-FRS	FM	CH_{M1}	600	-7.27	-7.42	-3.42	PASS
TX-FRS	FM	CH_{M1}	700	-5.19	-6.09	-2.09	PASS
TX-FRS	FM	CH_{M1}	800	-3.30	-4.93	-0.93	PASS
TX-FRS	FM	CH_{M1}	900	-1.51	-3.91	0.09	PASS
TX-FRS	FM	CH_{M1}	1000	-0.06	-3.00	1.00	PASS
TX-FRS	FM	CH_{M1}	1200	1.62	-1.42	2.58	PASS
TX-FRS	FM	CH_{M1}	1400	3.40	-0.09	3.91	PASS
TX-FRS	FM	CH_{M1}	1600	4.77	1.07	5.07	PASS
TX-FRS	FM	CH_{M1}	1800	5.48	2.09	6.09	PASS
TX-FRS	FM	CH_{M1}	2000	6.77	3.00	7.00	PASS
TX-FRS	FM	CH_{M1}	2100	7.05	3.42	7.42	PASS
TX-FRS	FM	CH_{M1}	2200	7.15	3.83	7.83	PASS
TX-FRS	FM	CH_{M1}	2300	7.47	4.21	8.21	PASS
TX-FRS	FM	CH_{M1}	2400	8.02	4.58	8.58	PASS
TX-FRS	FM	CH_{M1}	2500	8.51	4.93	8.93	PASS
TX-FRS	FM	CH_{M1}	2600	8.64	4.59	9.27	PASS
TX-FRS	FM	CH_{M1}	2700	8.67	4.27	9.60	PASS
TX-FRS	FM	CH_{M1}	2800	8.99	3.95	9.91	PASS
TX-FRS	FM	CH_{M1}	2900	9.51	3.65	10.22	PASS
TX-FRS	FM	CH_{M1}	3000	9.21	3.35	10.51	PASS
TX-FRS	FM	CH_{M1}	3500	-31.77			PASS
TX-FRS	FM	CH_{M1}	4000	-31.91			PASS
TX-FRS	FM	CH_{M1}	4500	-31.92			PASS
TX-FRS	FM	CH_{M1}	5000	-32.04			PASS
TX-FRS	FM	CH_{M3}	100	-32.01			PASS
TX-FRS	FM	CH_{M3}	200	-32.06			PASS
TX-FRS	FM	CH_{M3}	300	-17.51	-17.84	-9.42	PASS
TX-FRS	FM	CH_{M3}	400	-11.78	-12.86	-6.93	PASS
TX-FRS	FM	CH_{M3}	500	-8.62	-9.00	-5.00	PASS
TX-FRS	FM	CH_{M3}	600	-7.25	-7.42	-3.42	PASS
TX-FRS	FM	CH_{M3}	700	-5.23	-6.09	-2.09	PASS
TX-FRS	FM	CH_{M3}	800	-3.33	-4.93	-0.93	PASS
TX-FRS	FM	CH_{M3}	900	-1.53	-3.91	0.09	PASS
TX-FRS	FM	CH_{M3}	1000	-0.12	-3.00	1.00	PASS
TX-FRS	FM	CH_{M3}	1200	1.64	-1.42	2.58	PASS
TX-FRS	FM	CH_{M3}	1400	3.40	-0.09	3.91	PASS

Appendix E:Aduio Frequency Response

Test Mode	Modulation Type	Test Channel	Frequency (Hz)	Audio Frequency Response (dB)	Lower Limit	Upper Limit	Result
TX-FRS	FM	CH_{M3}	1600	4.77	1.07	5.07	PASS
TX-FRS	FM	CH_{M3}	1800	5.48	2.09	6.09	PASS
TX-FRS	FM	CH_{M3}	2000	6.76	3.00	7.00	PASS
TX-FRS	FM	CH_{M3}	2100	7.05	3.42	7.42	PASS
TX-FRS	FM	CH_{M3}	2200	7.15	3.83	7.83	PASS
TX-FRS	FM	CH_{M3}	2300	7.47	4.21	8.21	PASS
TX-FRS	FM	CH_{M3}	2400	8.02	4.58	8.58	PASS
TX-FRS	FM	CH_{M3}	2500	8.52	4.93	8.93	PASS
TX-FRS	FM	CH_{M3}	2600	8.64	4.59	9.27	PASS
TX-FRS	FM	CH_{M3}	2700	8.68	4.27	9.60	PASS
TX-FRS	FM	CH_{M3}	2800	9.00	3.95	9.91	PASS
TX-FRS	FM	CH_{M3}	2900	9.52	3.65	10.22	PASS
TX-FRS	FM	CH_{M3}	3000	9.21	3.35	10.51	PASS
TX-FRS	FM	CH_{M3}	3500	-31.89			PASS
TX-FRS	FM	CH_{M3}	4000	-31.96			PASS
TX-FRS	FM	CH_{M3}	4500	-31.93			PASS
TX-FRS	FM	CH_{M3}	5000	-31.96			PASS

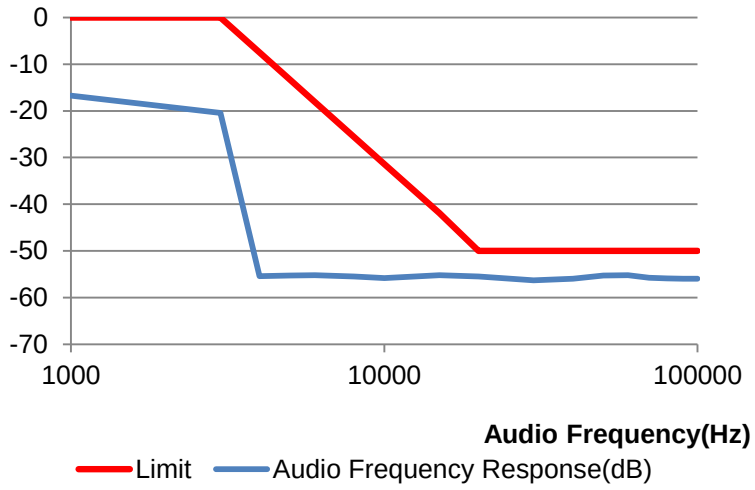
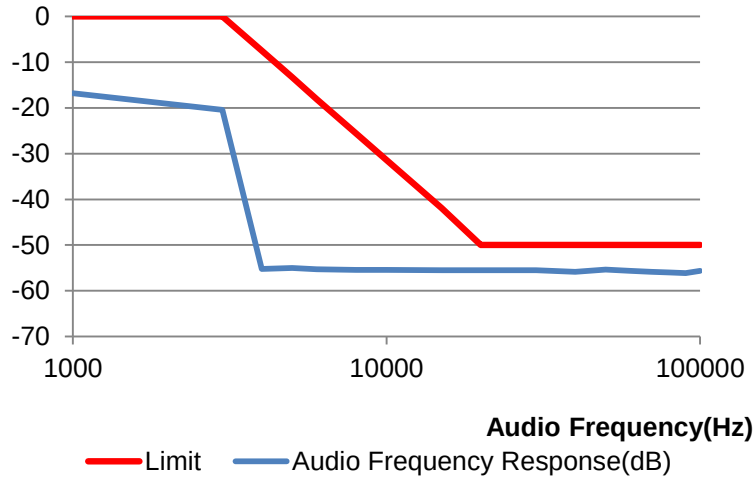
Appendix E:Aduio Frequency Response

Test Mode	Modulation Type	Test Channel	TEST PLOT RESULT
TX-FRS	FM	CH_{M1}	
TX-FRS	FM	CH_{M3}	

Appendix F:Audio Low Pass Filter Response

Test Mode	Modulation Type	Test Channel	Audio Frequency(Hz)	Audio Frequency Response(dB)	Limit	Result
TX-FRS	FM	CH_{M1}	1000	-16.76	0	PASS
TX-FRS	FM	CH_{M1}	3000	-20.43	0	PASS
TX-FRS	FM	CH_{M1}	4000	-55.43	-7.5	PASS
TX-FRS	FM	CH_{M1}	5000	-55.26	-13.3	PASS
TX-FRS	FM	CH_{M1}	6000	-55.23	-18.1	PASS
TX-FRS	FM	CH_{M1}	8000	-55.46	-25.6	PASS
TX-FRS	FM	CH_{M1}	10000	-55.84	-31.4	PASS
TX-FRS	FM	CH_{M1}	15000	-55.23	-41.9	PASS
TX-FRS	FM	CH_{M1}	20000	-55.51	-50	PASS
TX-FRS	FM	CH_{M1}	30000	-56.31	-50	PASS
TX-FRS	FM	CH_{M1}	40000	-55.98	-50	PASS
TX-FRS	FM	CH_{M1}	50000	-55.25	-50	PASS
TX-FRS	FM	CH_{M1}	60000	-55.22	-50	PASS
TX-FRS	FM	CH_{M1}	70000	-55.78	-50	PASS
TX-FRS	FM	CH_{M1}	80000	-55.86	-50	PASS
TX-FRS	FM	CH_{M1}	90000	-55.93	-50	PASS
TX-FRS	FM	CH_{M1}	100000	-55.99	-50	PASS
TX-FRS	FM	CH_{M3}	1000	-16.75	0	PASS
TX-FRS	FM	CH_{M3}	3000	-20.45	0	PASS
TX-FRS	FM	CH_{M3}	4000	-55.22	-7.5	PASS
TX-FRS	FM	CH_{M3}	5000	-54.98	-13.3	PASS
TX-FRS	FM	CH_{M3}	6000	-55.31	-18.1	PASS
TX-FRS	FM	CH_{M3}	8000	-55.42	-25.6	PASS
TX-FRS	FM	CH_{M3}	10000	-55.46	-31.4	PASS
TX-FRS	FM	CH_{M3}	15000	-55.49	-41.9	PASS
TX-FRS	FM	CH_{M3}	20000	-55.53	-50	PASS
TX-FRS	FM	CH_{M3}	30000	-55.47	-50	PASS
TX-FRS	FM	CH_{M3}	40000	-55.87	-50	PASS
TX-FRS	FM	CH_{M3}	50000	-55.36	-50	PASS
TX-FRS	FM	CH_{M3}	60000	-55.67	-50	PASS
TX-FRS	FM	CH_{M3}	70000	-55.84	-50	PASS
TX-FRS	FM	CH_{M3}	80000	-55.98	-50	PASS
TX-FRS	FM	CH_{M3}	90000	-56.11	-50	PASS
TX-FRS	FM	CH_{M3}	100000	-55.65	-50	PASS

Appendix F:Audio Low Pass Filter Response

Test Mode	Modulation Type	Test Channel	TEST PLOT RESULT
TX-FRS	FM	CH_{M1}	
TX-FRS	FM	CH_{M3}	

----End of Report----

Appendix G:Frequency Stability Test & Temperature

Test Mode	Modulation Type	Test Conditions		Frequency error (ppm)		Limit (ppm)	Result
		Voltage	Temperature	CH_{M1}	CH_{M3}		
TX-FRS	FM	V_N	-30	-0.290	-0.329	±2.5	PASS
TX-FRS	FM	V_N	-20	-0.277	-0.317	±2.5	PASS
TX-FRS	FM	V_N	-10	-0.264	-0.303	±2.5	PASS
TX-FRS	FM	V_N	0	**-0.251**	-0.289	±2.5	PASS
TX-FRS	FM	V_N	10	-0.264	-0.298	±2.5	PASS
TX-FRS	FM	V_N	20	-0.273	-0.312	±2.5	PASS
TX-FRS	FM	V_N	30	-0.284	-0.323	±2.5	PASS
TX-FRS	FM	V_N	40	-0.300	-0.337	±2.5	PASS
TX-FRS	FM	V_N	55	-0.311	-0.351	±2.5	PASS

Appendix H:Frequency Stability Test & Voltage

Test Mode	Modulation Type	Test Conditions		Frequency error (ppm)		Limit (ppm)	Result
		Voltage	Temperature	CH_{M1}	CH_{M3}		
TX-FRS	FM	V_N	T_N	**-0.251**	-0.289	±2.5	PASS
TX-FRS	FM	V_L	T_N	-0.287	-0.338	±2.5	PASS
TX-FRS	FM	V_H	T_N	**-0.269**	-0.312	±2.5	PASS

----End of Report----