
FCC Part 95 Rules Test Report

Report No.:AGC02931190802FE10A

FCC ID : PODGMRS-45
PRODUCT DESIGNATION : Analog Transceiver
BRAND NAME : TYT
MODEL NAME : GMR45
APPLICANT : TYT ELECTRONICS CO., LTD
DATE OF ISSUE : Jul. 06, 2020
STANDARD(S) : FCC Part 95 Rules
REPORT VERSION : V 1.0

Attestation of Global Compliance (Shenzhen) Co., Ltd

CAUTION:

This report shall not be reproduced except in full without the written permission of the test laboratory and shall not be quoted out of context.



Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Jul. 06, 2020	Valid	Class II Permissive Change

Note: The original test report Ref. No. (AGC02931190802FE10) (dated 2019-08-20), was modified on 2020-07-06 to include the following changes and additions for:

- Add an external connector.
- Updated Hardware version.

For the above described changes, transmitter power and transmitter Radiated Spurious Emission were tested differently.



VERIFICATION OF COMPLIANCE

Applicant	TYT ELECTRONICS CO., LTD
Address	Block 39-1, Optoelectronics-information industry base, Nan'an, Quanzhou, Fujian, China.
manufacturer	TYT ELECTRONICS CO., LTD
Address	Block 39-1, Optoelectronics-information industry base, Nan'an, Quanzhou, Fujian, China.
Factory	TYT ELECTRONICS CO., LTD
Address	Block 39-1, Optoelectronics-information industry base, Nan'an, Quanzhou, Fujian, China.
Product Designation:	Analog Transceiver
Brand Name:	TYT
Test Model	GMR45
Date of Test:	Jun. 22, 2020~Jul. 06, 2020

WE HEREBY CERTIFY THAT:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in TIA/EIA 603. The sample tested as described in this report is in compliance with the FCC Rules Part 95 requirements. The test results of this report relate only to the tested sample identified in this report.

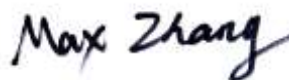
Prepared By



Calvin Liu
(Project Engineer)

Jul. 06, 2020

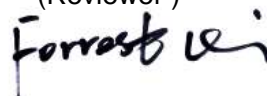
Reviewed By



Max Zhang
(Reviewer)

Jul. 06, 2020

Approved By



Forrest Lei
Authorized Officer

Jul. 06, 2020



TABLE OF CONTENTS

1. GENERAL INFORMATION.....	5
1.1 PRODUCT DESCRIPTION.....	5
1.2 RELATED SUBMITTAL(S) / GRANT (S).....	7
1.3 TEST METHODOLOGY.....	7
1.4 TEST FACILITY	7
1.5 SPECIAL ACCESSORIES	7
1.6 EQUIPMENT MODIFICATIONS	7
2. SYSTEM TEST CONFIGURATION	8
2.1 EUT CONFIGURATION.....	8
2.2 EUT EXERCISE	8
2.3 CONFIGURATION OF TESTED SYSTEM	9
3. SUMMARY OF TEST RESULTS	10
4. DESCRIPTION OF TEST MODES.....	12
5. UNWANTED RADIATION.....	13
5.1 PROVISIONS APPLICABLE.....	13
5.2 MEASUREMENT PROCEDURE	13
5.3 TEST SETUP BLOCK DIAGRAM.....	15
5.4 MEASUREMENT RESULTS:.....	17
6. MAXIMUM TRANSMITTER POWER	23
6.1 PROVISIONS APPLICABLE.....	23
6.2 TEST PROCEDURE.....	24
6.3 TEST CONFIGURATION.....	25
6.4 TEST RESULT.....	27
APPENDIX I: PHOTOGRAPHS OF SETUP	28
APPENDIX II: EXTERNAL VIEW OF EUT	29



1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

The EUT is a **Analog Transceiver** designed for voice communication. It is designed by way of utilizing the FM modulation achieves the system operating.

A major technical description of EUT is described as following:

Product Designation	Analog Transceiver
Test Model	GMR45
Hardware Version	TH-9000D-UHF-1.6.1
Software Version	V2.1
Modulation	FM
Channel Separation	12.5KHz
Emission Type	F3E
Maximum Transmitter Power	46.43dBm
Rated Output power	5W/45W (It was fixed by the manufacturer, any individual can't arbitrarily change it.)
Antenna Designation	Detachable
Antenna Type	External antenna
Antenna Gain	0dBi
Power Supply	DC 13.8V
Limiting Voltage	DC 11.73 V~ 15.87V
Operation Frequency Range and Channel	GMRS: 462.5625MHz -462.7125MHz(5W) 462.5500MHz -462.7250MHz(45W) 467.5500MHz -467.7250MHz(45W) Test Channel :4, 11 and 19 channel



Channel List:

CH. No	CH. Freq	Power	CH. No	CH. Freq	Power	
1	462.5625	5W	13	462.6750	45W	
2	462.5875		14	462.7000		
3	462.6125		15	462.7250		
4	462.6375		45W	16	467.5500	45W
5	462.6625			17	467.5750	
6	462.6875			18	467.6000	
7	462.7125			19	467.6250	
8	462.5500	20		467.6500		
9	462.5750	21		467.6750		
10	462.6000	22		467.7000		
11	462.6250	45W	23	467.7250		
12	462.6500					



1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for FCC ID:**PODGMRS-45**, filing to comply with the FCC Part 95 requirements.

1.3 TEST METHODOLOGY.

The radiated emission testing was performed according to the procedures of TIA/EIA 603.

1.4 TEST FACILITY

Test Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong,China
Designation Number	CN1259
FCC Test Firm Registration Number	975832
A2LA Cert. No.	5054.02
Description	Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by A2LA

1.5 SPECIAL ACCESSORIES

Not available for this EUT intended for grant.

1.6 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.



2. SYSTEM TEST CONFIGURATION

2.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT EXERCISE

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.



2.3 CONFIGURATION OF TESTED SYSTEM

Fig. 2-1 Configuration of Tested System



Table 2-1 Equipment Used in Tested System

Item	Equipment	Model No.	Identifier	Note
1	Analog Transceiver	GMR45	FCC ID: PODGMRS-45	EUT



3. SUMMARY OF TEST RESULTS

FCC 47 CFR Part 95 Test Cases			
Test Item	Test Requirement	Test Method	Result
Maximum Transmitter Power	FCC CFR Part 95.1767 FCC 47 CFR Part 2.1046(a)	ANSI/TIA-603-E-2016	PASS
Transmitter Radiated Spurious Emission	FCC CFR Part 95.1779	ANSI/TIA-603-E-2016	PASS
Note: 1) N/A: In this whole report not application. 2) The EUT is External antenna			



LIST OF EQUIPMENTS USED

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	Jun. 10, 2020	Jun. 09, 2021
EXA Signal Analyzer	Agilent	N9010A	MY53470504	Dec.12, 2019	Dec.11, 2020
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep.18, 2018	Sep.17, 2020
preamplifier	ChengYi	EMC184045SE	980508	Sep.20, 2018	Sep.19, 2020
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	May 17, 2019	May 16, 2021
Broadband Preamplifier	SCHWARZBECK	BBV 9718	9718-205	Jun. 09, 2020	Jun. 08, 2021
Double-Ridged Waveguide Horn	ETS	3117	00154520	Oct. 26, 2019	Oct. 25, 2021
SIGNAL GENERATOR	AGILENT	E4421B	122501288	Jun. 09, 2020	Jun. 08, 2021
SIGNAL GENERATOR	R&S	SMT03	A0304261	Jun. 09, 2020	Jun. 08, 2021
ANTENNA	SCHWARZBECK	VULB9168	VULB9168-494	Jan. 09, 2019	Jan. 08, 2021
ANTENNA	SCHWARZBECK	VULB9168	D69250	Sep.26, 2018	Sep.25, 2020
Modulation Domain Analyzer	HP	53310A	3121A02467	Oct. 30, 2019	Oct. 29, 2020
Small environmental tester	ESPEC	SH-242	--	Oct. 08, 2019	Oct. 07, 2020
RF Communication Test Set	HP	8920B	--	Jun. 09, 2020	Jun. 08, 2021
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	Jun. 11, 2020	Jun. 10, 2021
Attenuator	Weinachel Corp	58-30-33	ML030	Oct. 28, 2019	Oct. 27, 2020
Vector Analyzer	Agilent	E4440A	US40420298	July 02, 2019	July 01, 2020
RF Cable	R&S	1#	--	Each time	N/A
RF Cable	R&S	2#	--	Each time	N/A

Note: 8920B can generate audio modulation frequency.



4. DESCRIPTION OF TEST MODES

RF TEST MODES

The EUT (**Analog Transceiver**) has been tested under normal operating condition. (GMRS TX) are chosen for testing at each channel separation.

No.	TEST MODES	CHANNEL SEPARATION
1	GMRS TX	12.5 KHz

Note:1. Only the result of the worst case was recorded in the report.



5. UNWANTED RADIATION

5.1 PROVISIONS APPLICABLE

Standard Applicable [FCC Part 95.1779]

According to FCC section 95.1779, the unwanted emission should be attenuated below TP by at least $43+10 \log(\text{Transmit Power})$ dB.

5.2 MEASUREMENT PROCEDURE

Each GMRS transmitter type must be designed to comply with the applicable unwanted emissions limits in this section.

(a) Emission masks. Emission masks applicable to transmitting equipment in the GMRS are defined by the requirements in the following table. The numbers in the attenuation requirements column refer to rule paragraph numbers under paragraph (b) of this section.

Emission types filter	Attenuation requirements
A1D, A3E, F1D, G1D, F2D, F3E, G3E with audio filter	(1), (2), (7)
A1D, A3E, F1D, G1D, F3E, G3E without audio filter	(3), (4), (7)
H1D, J1D, R1D, H3E, J3E, R2E	(5), (6), (7)

(1) Filtering noted for GMRS transmitters refers to the requirement in §95.1775(e).

(2) Unwanted emission power may be measured as either mean power or peak envelope power, provided that the transmitter output power is measured the same way.

(b) Attenuation requirements. The power of unwanted emissions must be attenuated below the transmitter output power in Watts (P) by at least:

(1) 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.

(2) 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.

(3) $83 \log (fd \div 5)$ dB on any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 5 kHz up to and including 10 kHz.

(4) $116 \log (fd \div 6.1)$ dB or $50 + 10 \log (P)$ dB, whichever is the lesser attenuation, on any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz), of more than 10 kHz up to and including 250% of the authorized bandwidth.

(5) 25 dB on any frequency removed from the center of the authorized bandwidth by more than 50% up to and including 150% of the authorized bandwidth.

(6) 35 dB on any frequency removed from the center of the authorized bandwidth by more than 150% up to and including 250% of the authorized bandwidth.

(7) $43 + 10 \log (P)$ dB on any frequency removed from the center of the authorized bandwidth by more than 250%.



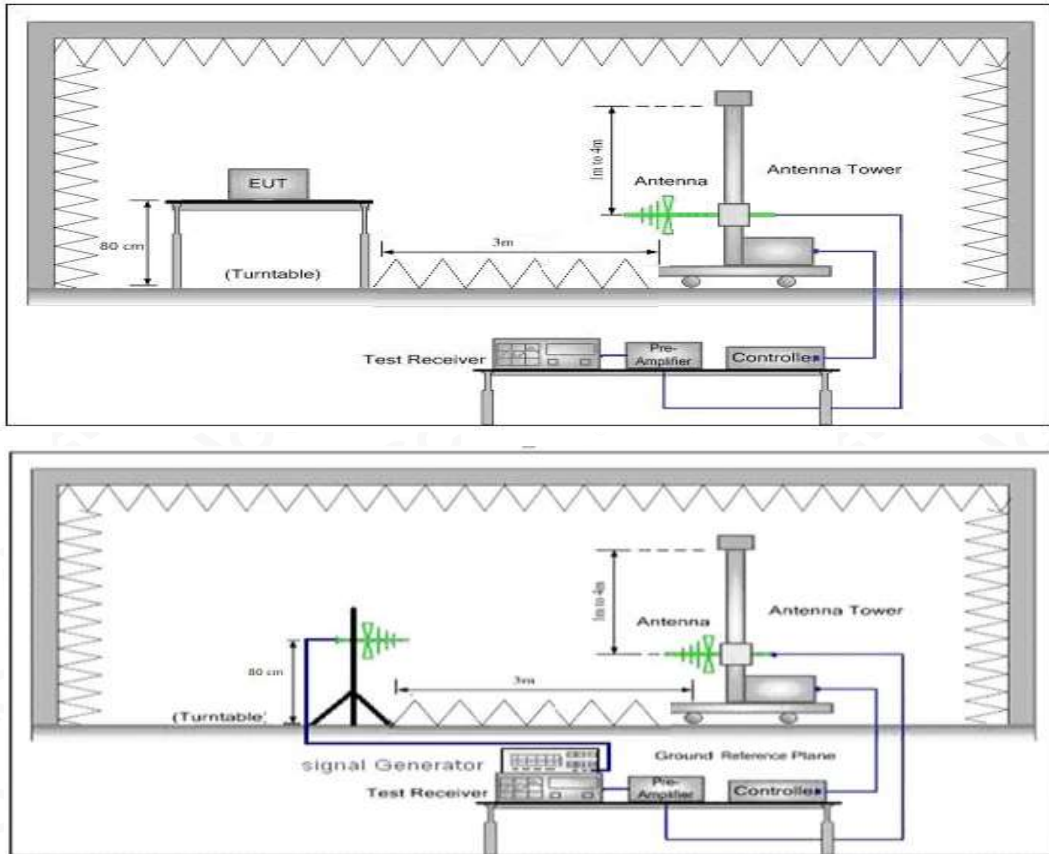
- (1) EUT was placed on a 0.8 or 1.5 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The disturbance of the transmitter was maximized on the test receiver display by raising and lowering from 1m to 4m the receive antenna and by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made. The radiated emission measurements of all transmit frequencies in all 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 (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) An 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.
- (6) The measurement results are obtained as described below: $\text{Power(EIRP)} = \text{PMea} - \text{PAg} - \text{Pcl} - \text{Ga}$ The measurement results are amend as described below:
 $\text{Power(EIRP)} = \text{PMea} - \text{Pcl} - \text{Ga}$
- (7) This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
ERP can be calculated from EIRP by subtracting the gain of the dipole, $\text{ERP} = \text{EIRP} - 2.15\text{dBi}$.
- (8) Test the EUT in the lowest channel, the middle channel the Highest channel



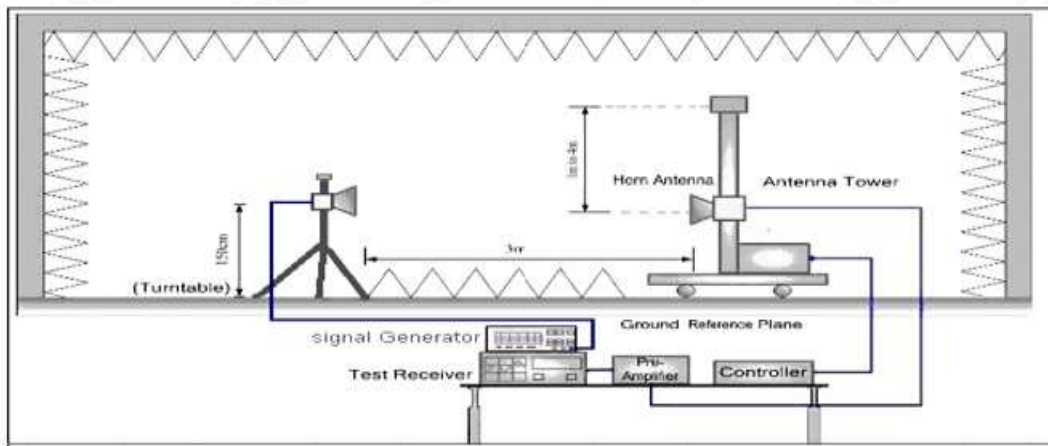
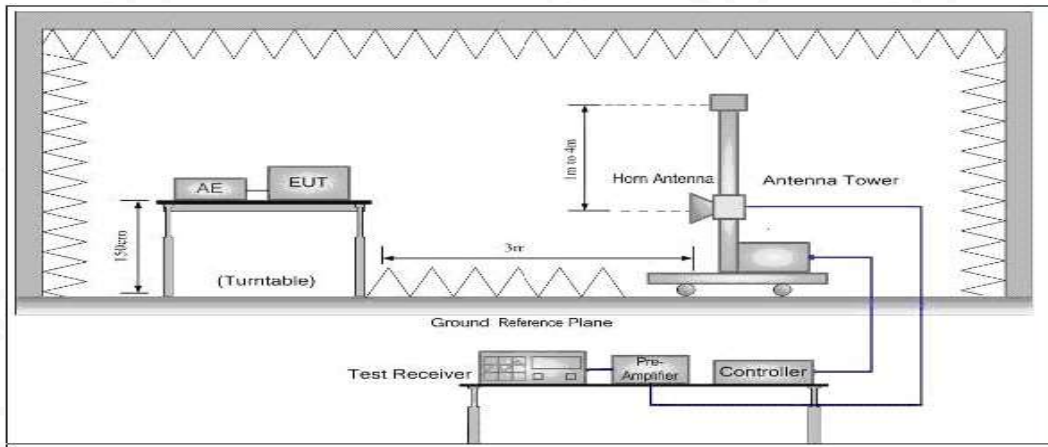
5.3 TEST SETUP BLOCK DIAGRAM

SUBSTITUTION METHOD: (Radiated Emissions)

Radiated Below 1GHz



Radiated Above 1 GHz



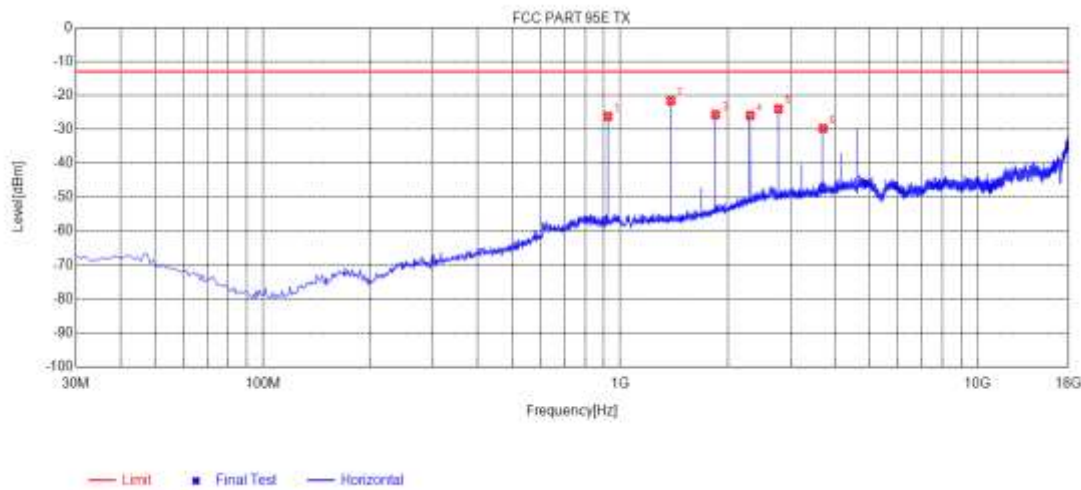
5.4 MEASUREMENT RESULTS:

the unwanted emission should be attenuated below TP by at least 43+10 log(Transmit Power) dB

Limit: At least $43+10 \log(P) = 43+10 \log(5) = 49.99$ (dBc) $36.99-49.99=-13$ dBm

At least $43+10 \log(P) = 43+10 \log(45) = 59.53$ (dBc) $46.53-59.53=-13$ dBm

Measurement Result for 12.5 KHz Channel Separation @ 462.6375MHz-5W-Horizontal



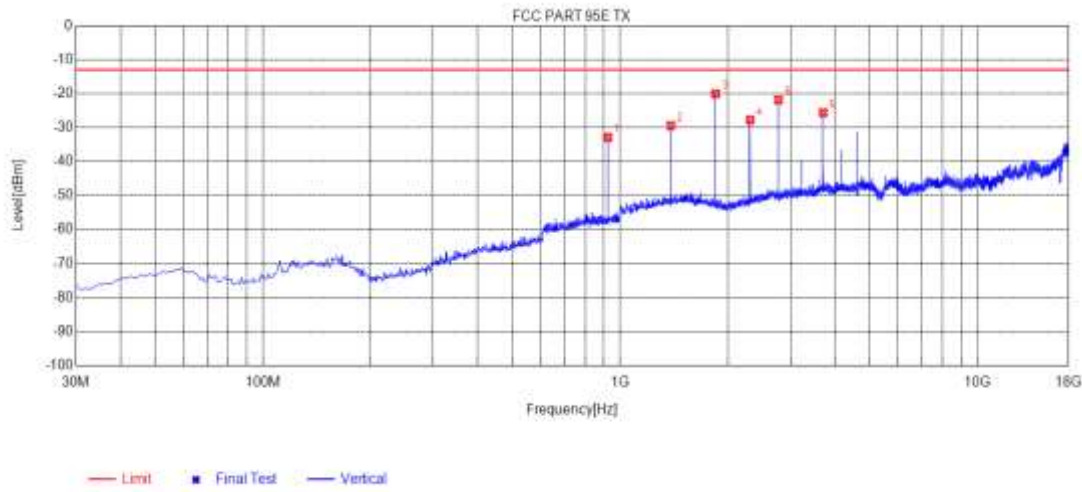
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	925.2352	-69.68	-26.19	-13.00	13.19	43.49	47	Horizontal
2	1387.6388	-18.13	-21.58	-13.00	8.58	-3.45	257	Horizontal
3	1850.0850	-25.09	-25.68	-13.00	12.68	-0.59	248	Horizontal
4	2314.2314	-28.90	-25.91	-13.00	12.91	2.99	286	Horizontal
5	2776.6777	-28.90	-23.99	-13.00	10.99	4.91	142	Horizontal
6	3701.5702	-36.55	-29.74	-13.00	16.74	6.81	219	Horizontal

Note:

1. Factor=Antenna Factor + Cable loss. (Below 1GHz)
2. Factor=Antenna Factor+ Cable loss-Pre-amplifier.(Above 1 GHz)
3. Margin=Limit- Level



Measurement Result for 12.5 KHz Channel Separation @ 462.6375MHz-5W-Vertical



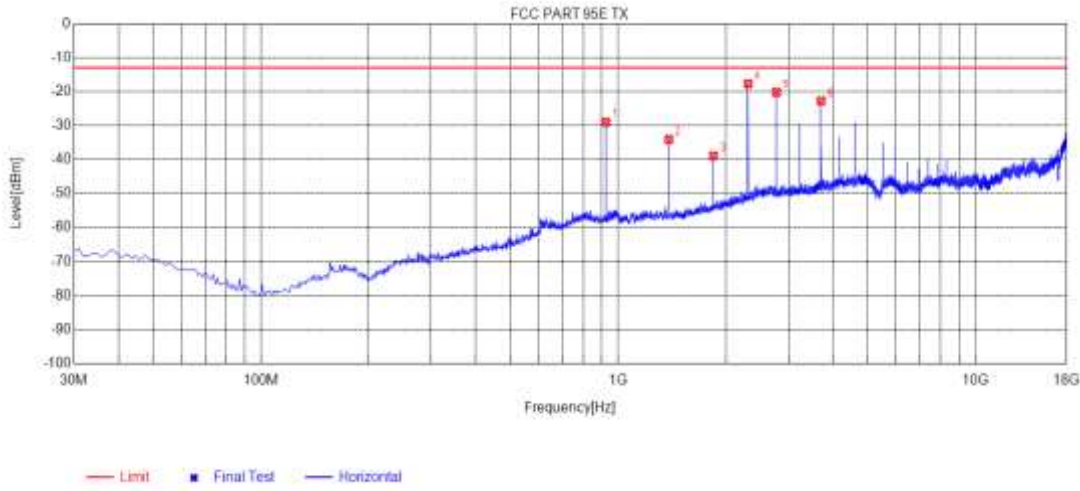
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	925.2352	-76.45	-32.88	-13.00	19.88	43.57	85	Vertical
2	1387.6388	-30.86	-29.45	-13.00	16.45	1.41	199	Vertical
3	1850.0850	-21.03	-20.10	-13.00	7.10	0.93	142	Vertical
4	2314.2314	-30.17	-27.77	-13.00	14.77	2.40	199	Vertical
5	2774.9775	-26.35	-21.88	-13.00	8.88	4.47	333	Vertical
6	3701.5702	-32.19	-25.63	-13.00	12.63	6.56	209	Vertical

Note:

1. Factor=Antenna Factor + Cable loss. (Below 1GHz)
2. Factor=Antenna Factor+ Cable loss-Pre-amplifier.(Above 1 GHz)
3. Margin=Limit- Level



Measurement Result for 12.5 KHz Channel Separation @ 462.6250MHz-45W-Horizontal



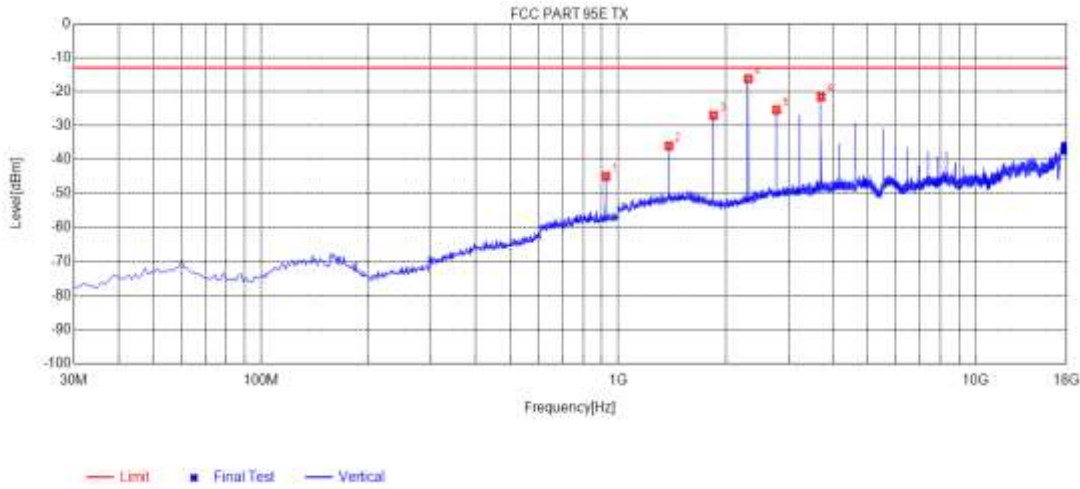
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	925.2352	-72.51	-29.02	-13.00	16.02	43.49	295	Horizontal
2	1387.6388	-30.64	-34.09	-13.00	21.09	-3.45	124	Horizontal
3	1850.0850	-38.33	-38.92	-13.00	25.92	-0.59	247	Horizontal
4	2312.5313	-20.70	-17.73	-13.00	4.73	2.97	190	Horizontal
5	2774.9775	-25.14	-20.23	-13.00	7.23	4.91	162	Horizontal
6	3701.5702	-29.58	-22.77	-13.00	9.77	6.81	209	Horizontal

Note:

1. Factor=Antenna Factor + Cable loss. (Below 1GHz)
2. Factor=Antenna Factor+ Cable loss-Pre-amplifier.(Above 1 GHz)
3. Margin=Limit- Level



Measurement Result for 12.5 KHz Channel Separation @ 462.6250MHz-45W-Vertical



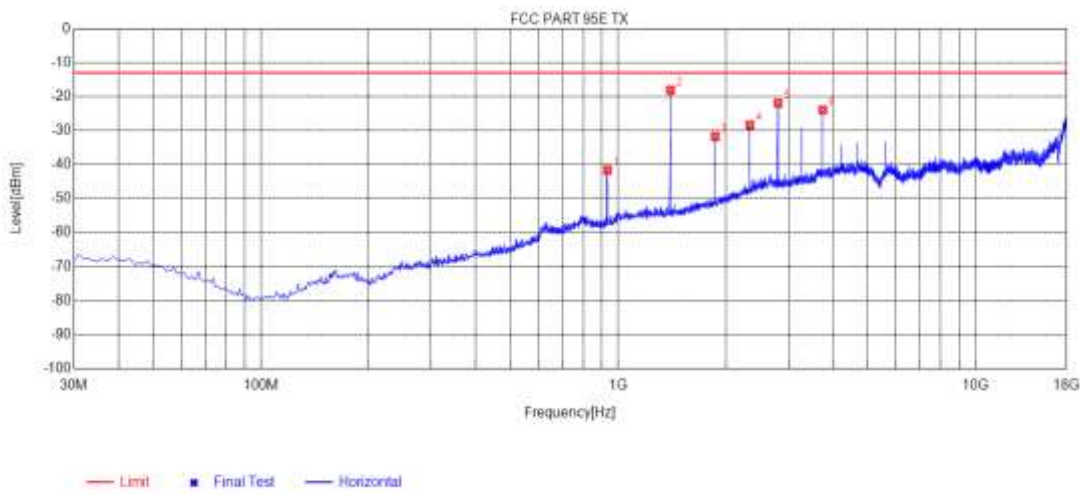
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	925.2352	-88.52	-44.95	-13.00	31.95	43.57	114	Vertical
2	1387.6388	-37.42	-36.01	-13.00	23.01	1.41	172	Vertical
3	1850.0850	-27.95	-27.02	-13.00	14.02	0.93	57	Vertical
4	2314.2314	-18.66	-16.26	-13.00	3.26	2.40	162	Vertical
5	2776.6777	-29.91	-25.43	-13.00	12.43	4.48	210	Vertical
6	3699.8700	-28.12	-21.57	-13.00	8.57	6.55	210	Vertical

Note:

1. Factor=Antenna Factor + Cable loss. (Below 1GHz)
2. Factor=Antenna Factor+ Cable loss-Pre-amplifier.(Above 1 GHz)
3. Margin=Limit- Level



Measurement Result for 12.5 KHz Channel Separation @ 467.6250MHz-45W-Horizontal



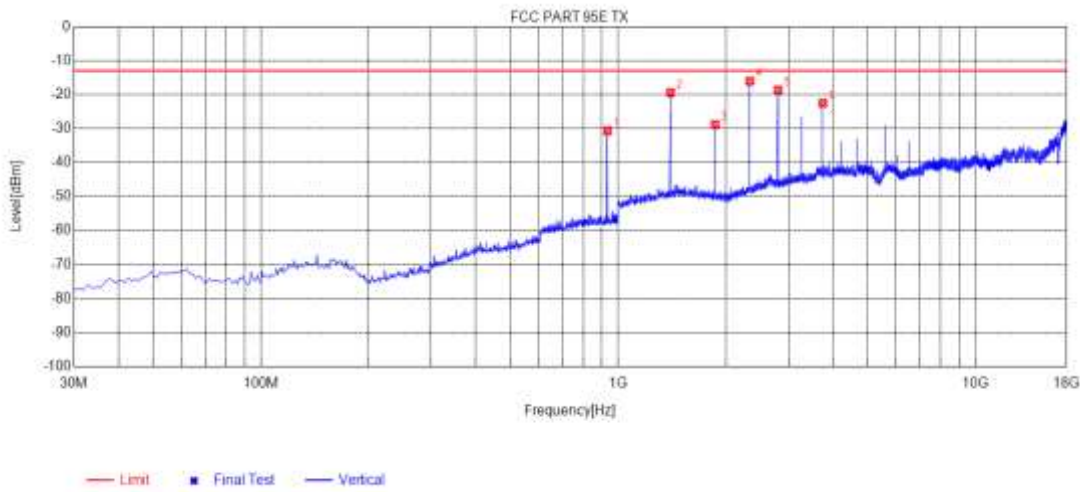
NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	934.9449	-85.34	-41.64	-13.00	28.64	43.70	84	Horizontal
2	1402.9403	-14.68	-18.09	-13.00	5.09	-3.41	180	Horizontal
3	1870.4870	-31.32	-31.76	-13.00	18.76	-0.44	246	Horizontal
4	2338.0338	-31.55	-28.38	-13.00	15.38	3.17	189	Horizontal
5	2805.5806	-26.91	-21.95	-13.00	8.95	4.96	199	Horizontal
6	3740.6741	-30.90	-23.96	-13.00	10.96	6.94	199	Horizontal

Note:

1. Factor=Antenna Factor + Cable loss. (Below 1GHz)
2. Factor=Antenna Factor+ Cable loss-Pre-amplifier.(Above 1 GHz)
3. Margin=Limit- Level



Measurement Result for 12.5 KHz Channel Separation @ 467.6250MHz-45W -Vertical



NO.	Freq. [MHz]	Reading [dBm]	Level [dBm]	Limit [dBm]	Margin [dB]	Factor [dB]	Angle [°]	Polarity
1	934.9449	-74.33	-30.66	-13.00	17.66	43.67	104	Vertical
2	1402.9403	-20.99	-19.47	-13.00	6.47	1.52	343	Vertical
3	1870.4870	-29.71	-28.85	-13.00	15.85	0.86	142	Vertical
4	2338.0338	-18.62	-16.07	-13.00	3.07	2.55	190	Vertical
5	2805.5806	-23.26	-18.69	-13.00	5.69	4.57	334	Vertical
6	3742.3742	-29.21	-22.55	-13.00	9.55	6.66	359	Vertical

Note:

1. Factor=Antenna Factor + Cable loss. (Below 1GHz)
2. Factor=Antenna Factor+ Cable loss-Pre-amplifier.(Above 1 GHz)
3. Margin=Limit- Level



6. MAXIMUM TRANSMITTER POWER

6.1 PROVISIONS APPLICABLE

FCC Part 95.1767 For GMRS, the maximum permissible transmitter output power effective radiated power (e.r.p.) as follows.

This section contains transmitting power limits for GMRS stations. The maximum transmitting power depends on which channels are being used and the type of station.

(a)462/467 MHz main channels. The limits in this paragraph apply to stations transmitting on any of the 462 MHz main channels or any of the 467 MHz main channels. Each GMRS transmitter type must be capable of operating within the allowable power range. GMRS licensees are responsible for ensuring that their GMRS stations operate in compliance with these limits.

(1)The transmitter output power of mobile, repeater and base stations must not exceed 50 Watts.

(2)The transmitter output power of fixed stations must not exceed 15 Watts.

(b)462 MHz interstitial channels. The effective radiated power (ERP) of mobile, hand-held portable and base stations transmitting on the 462 MHz interstitial channels must not exceed 5 Watts.

(c)467 MHz interstitial channels. The effective radiated power (ERP) of hand-held portable units transmitting on the 467 MHz interstitial channels must not exceed 0.5 Watt. Each GMRS transmitter type capable of transmitting on these channels must be designed such that the ERP does not exceed 0.5 Watt.



6.2 TEST PROCEDURE

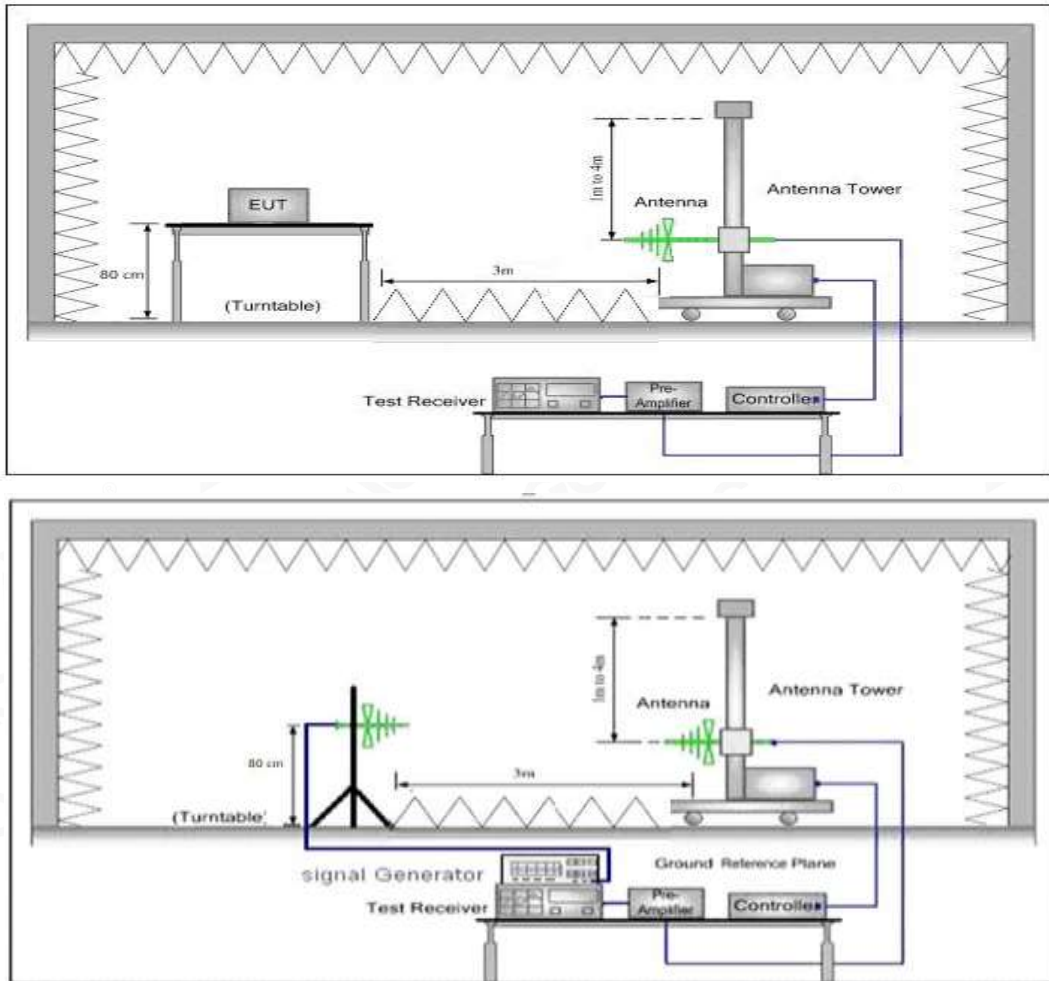
- (1) EUT was placed on a 0.8 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The disturbance of the transmitter was maximized on the test receiver display by raising and lowering from 1m to 4m the receive antenna and by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made. The radiated emission measurements of all transmit frequencies in all 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) An 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: $\text{Power(EIRP)} = \text{PMea} - \text{PAg} - \text{Pcl} - \text{Ga}$ 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, $\text{ERP} = \text{EIRP} - 2.15\text{dBi}$.
 - (8) Test the EUT in the lowest channel, the middle channel the Highest channel



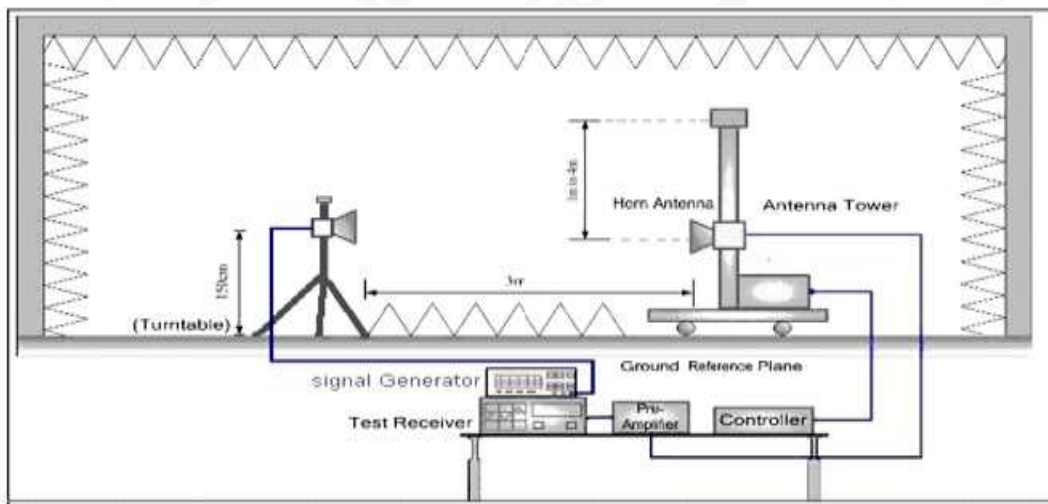
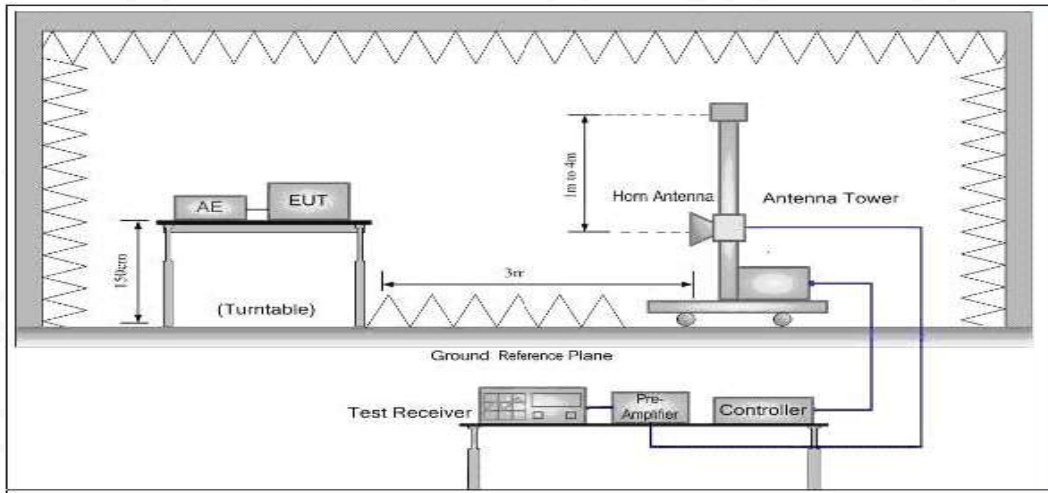
6.3 TEST CONFIGURATION

Effective Radiated Power

Radiated Below 1GHz



Radiated Above 1 GHz



6.4 TEST RESULT

The maximum Power (CP) for UHF is
Analog: 5W/45W for 12.5 KHz Channel Separation

Calculation Formula: $CP = R + A + L$

* Note:

CP: The final Conducted Power

R : The reading value from spectrum analyzer

A : The attenuation value of the used attenuator

L : The loss of all connection cables

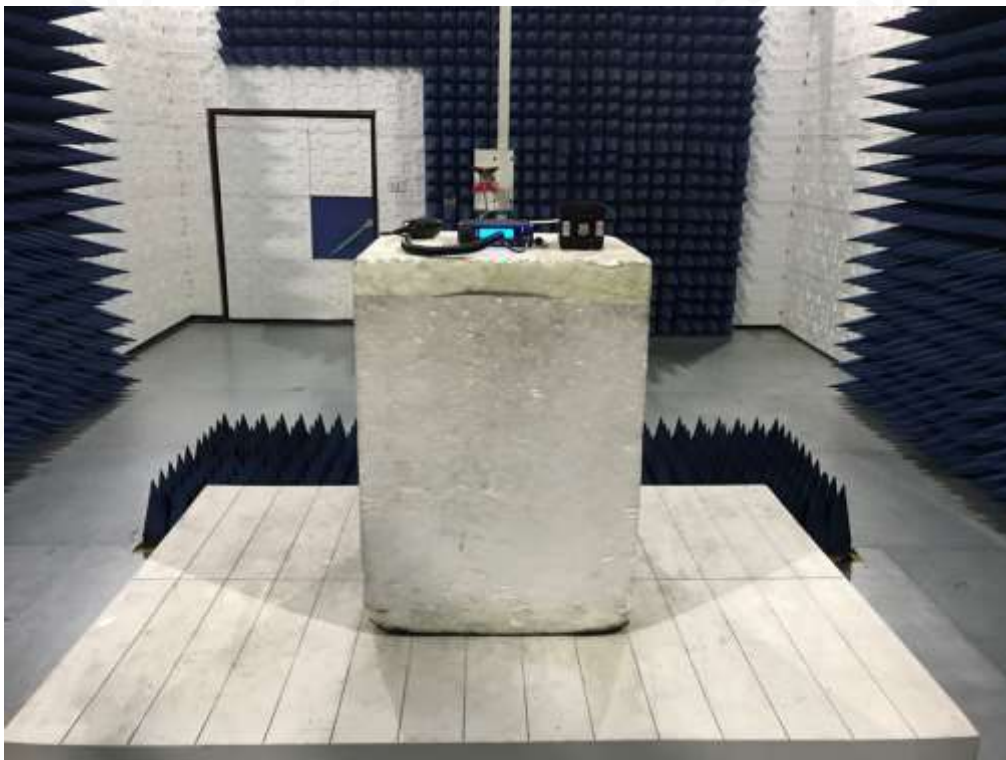
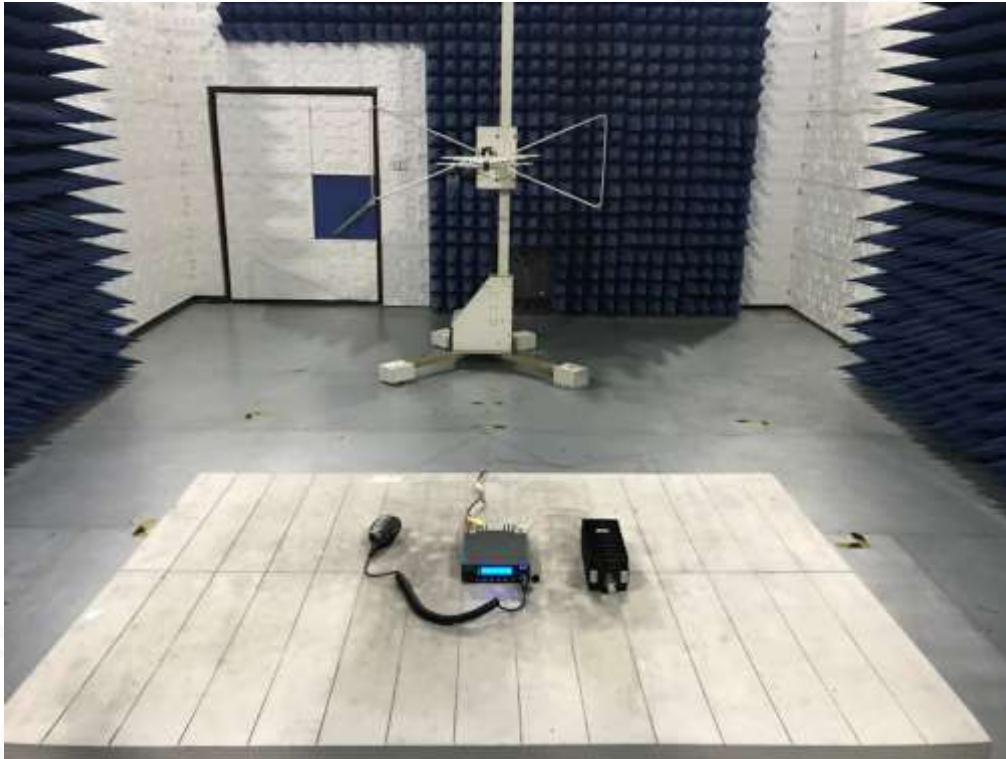
ERP RESULT:

Frequency	Reading Level	Antenna	S.G.	Cable Loss	Ant.Gain	Emission Level	Emission Level	Limit	Margin
(MHz)	(dBuv/m)	Polarization	(dBm)	(dB)	(dBi)	(dBm)	(W)	(W)	(W)
ChannelSeparation:12.5KHz									
462.6375	125.81	V	30.58	0.38	6.6	36.80	4.79	5	0.21
462.6375	125.75	H	30.52	0.38	6.6	36.74	4.72	5	0.28
462.6250	135.44	V	40.21	0.38	6.6	46.43	43.95	50	6.05
462.6250	135.31	H	40.08	0.38	6.6	46.30	42.66	50	7.34
467.6250	135.42	V	40.19	0.38	6.6	46.41	43.75	50	6.25
467.6250	135.31	H	40.08	0.38	6.6	46.30	42.66	50	7.34

Note: The antenna will not be sold with the device, we test the power with Alternative method, added a 50Ω car antenna (mode:C-002) max gain: 0dBi) in the test.



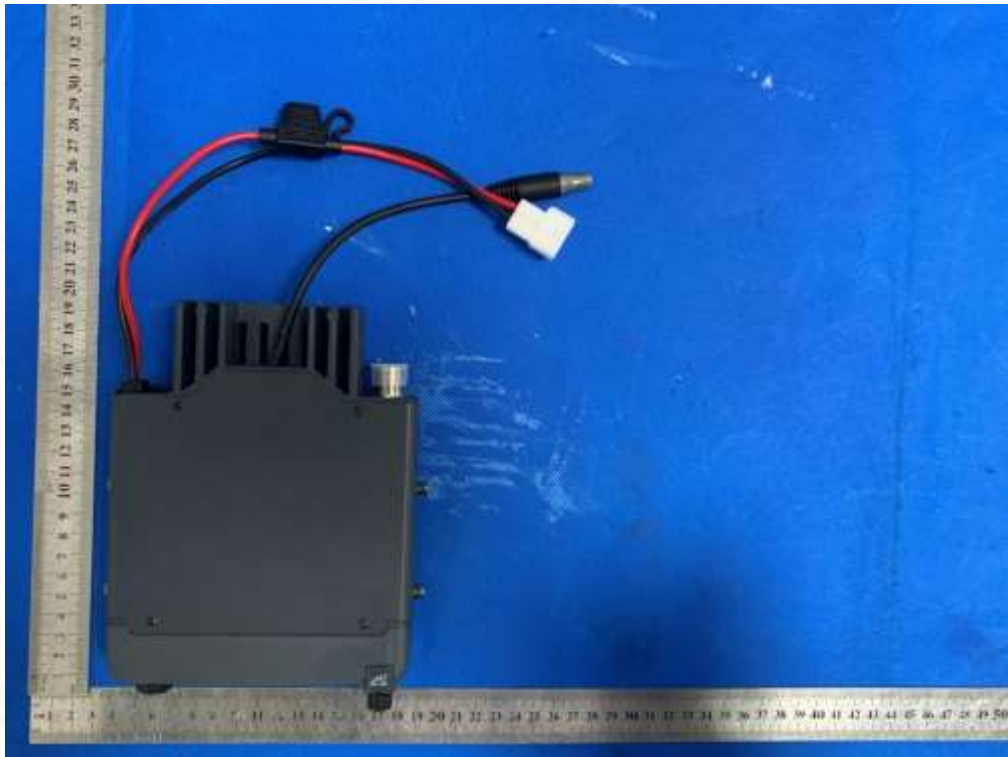
APPENDIX I: PHOTOGRAPHS OF SETUP
RADIATED EMISSION TEST SETUP



APPENDIX II: EXTERNAL VIEW OF EUT
TOTAL VIEW OF EUT



Part I
TOP VIEW OF EUT



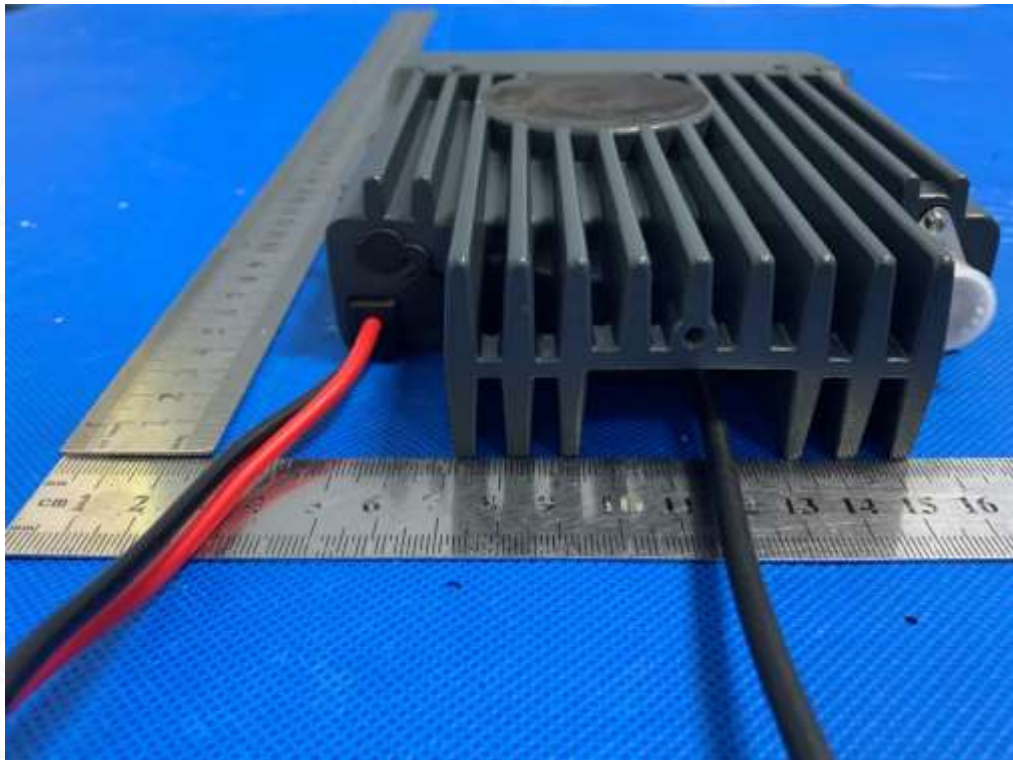
BOTTOM VIEW OF EUT



FRONT VIEW OF EUT



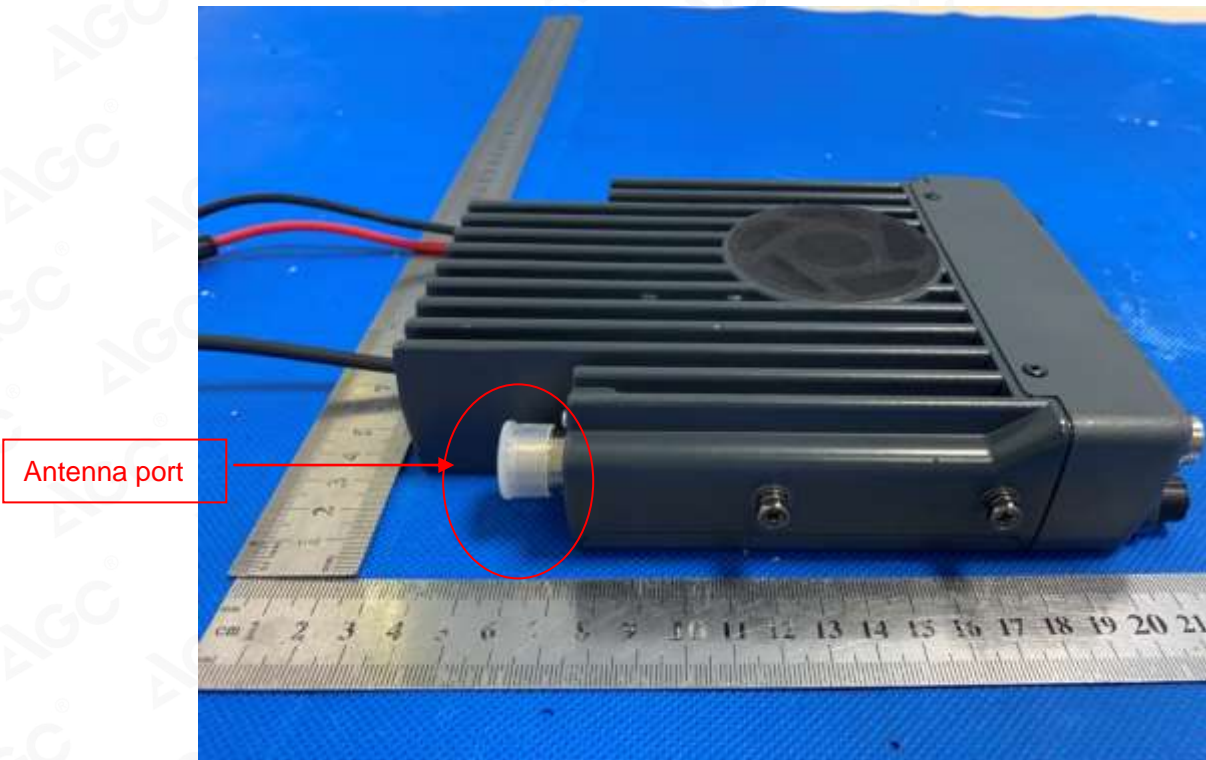
BACK VIEW OF EUT



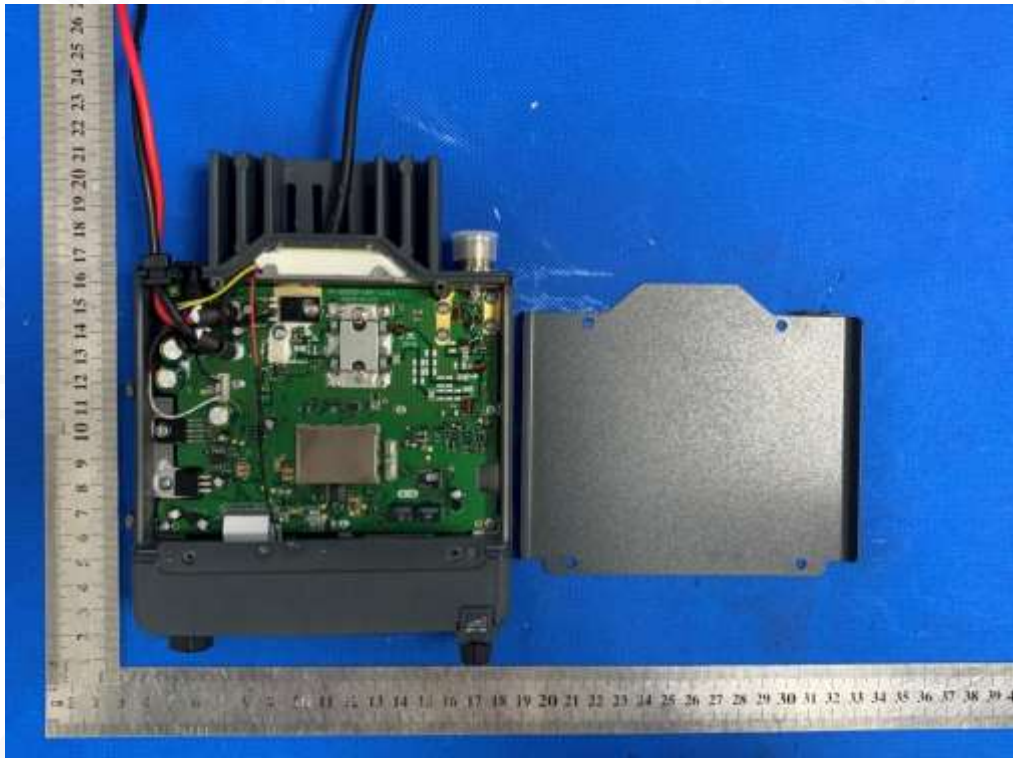
LEFT VIEW OF EUT



RIGHT VIEW OF EUT



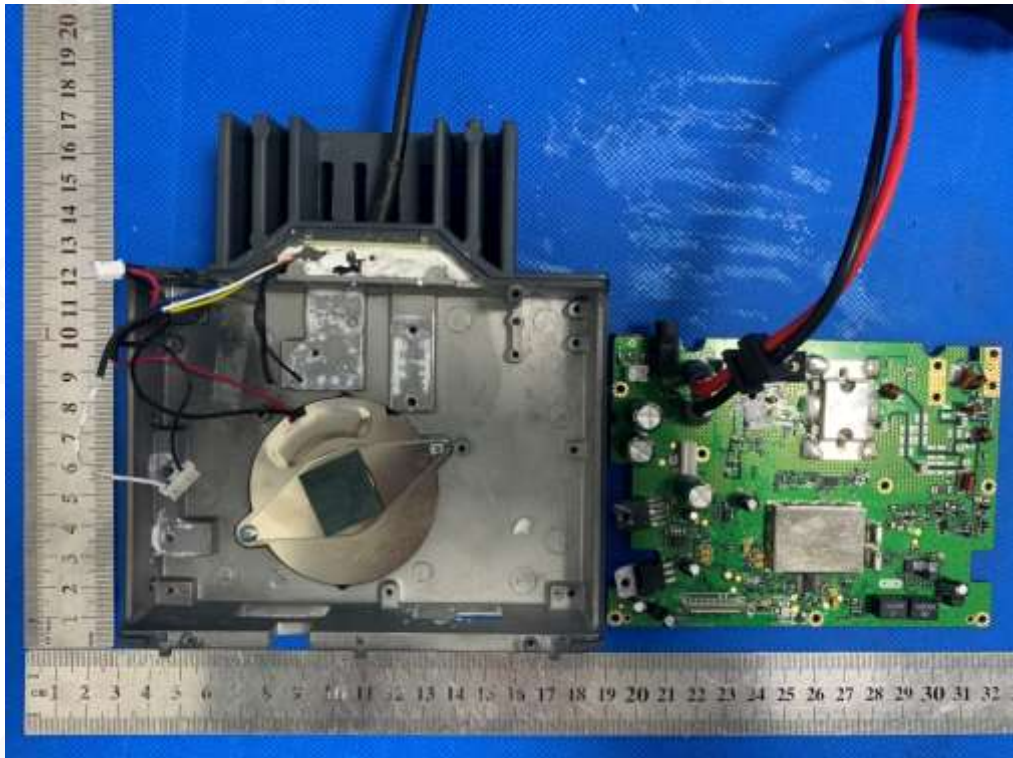
OPEN VIEW-1 OF EUT



OPEN VIEW-2 OF EUT



OPEN VIEW-3 OF EUT-1



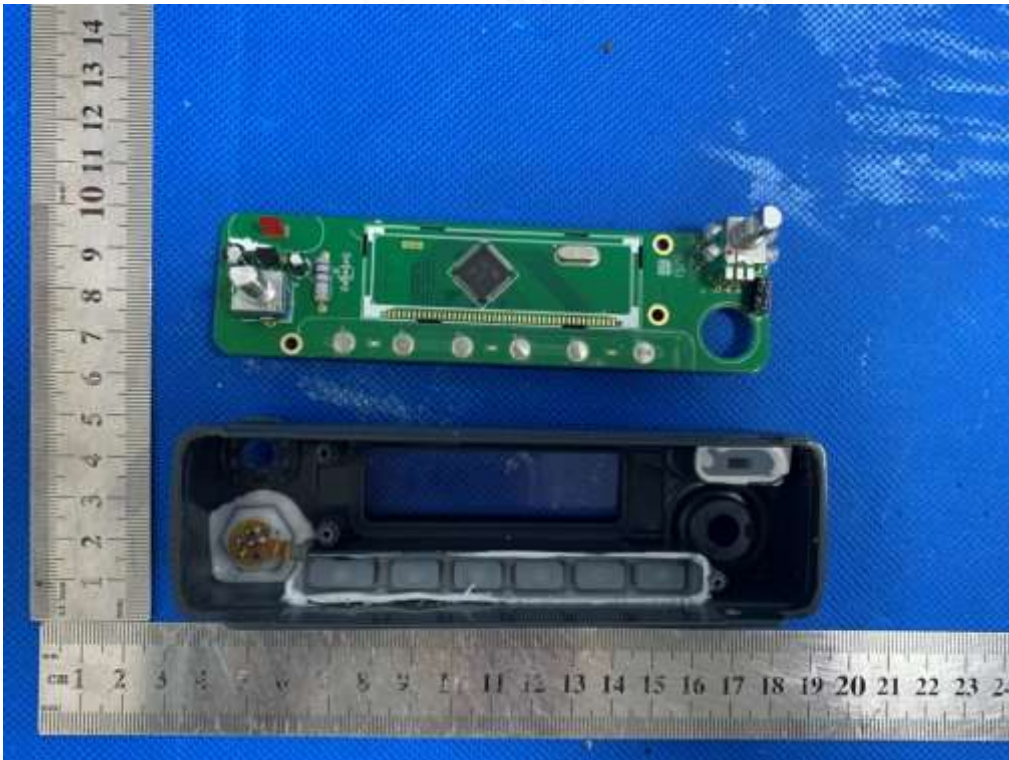
INTERNAL VIEW OF EUT(FIGURE 1)



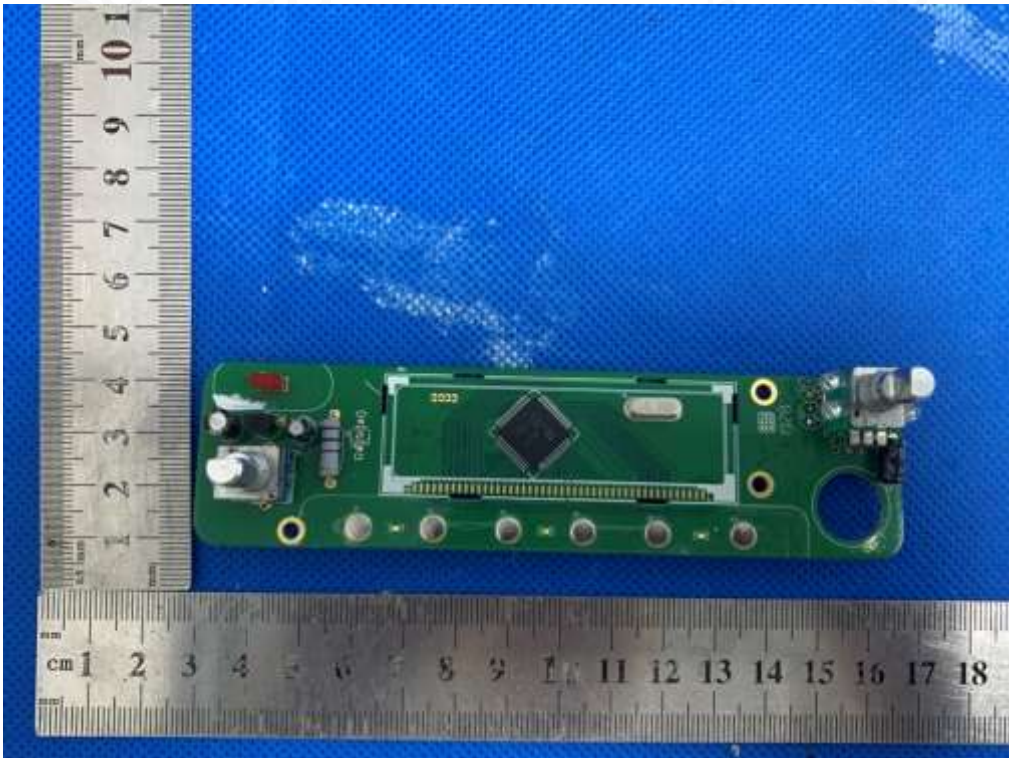
INTERNAL VIEW OF EUT(FIGURE 2)



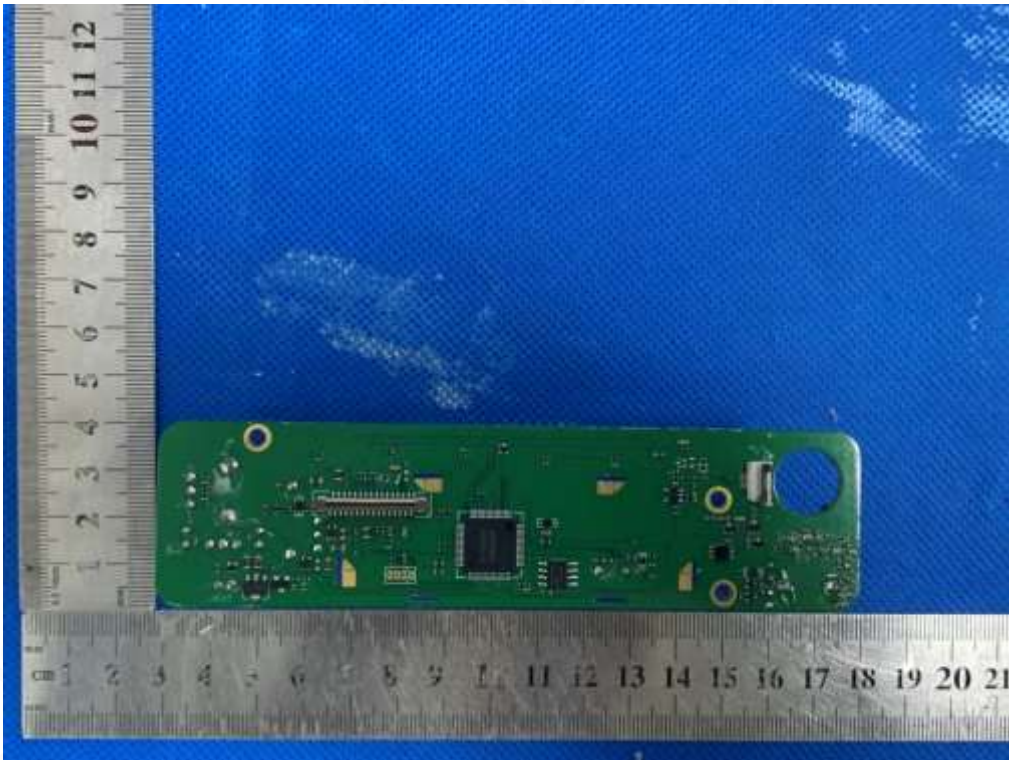
OPEN VIEW-4 OF EUT-1



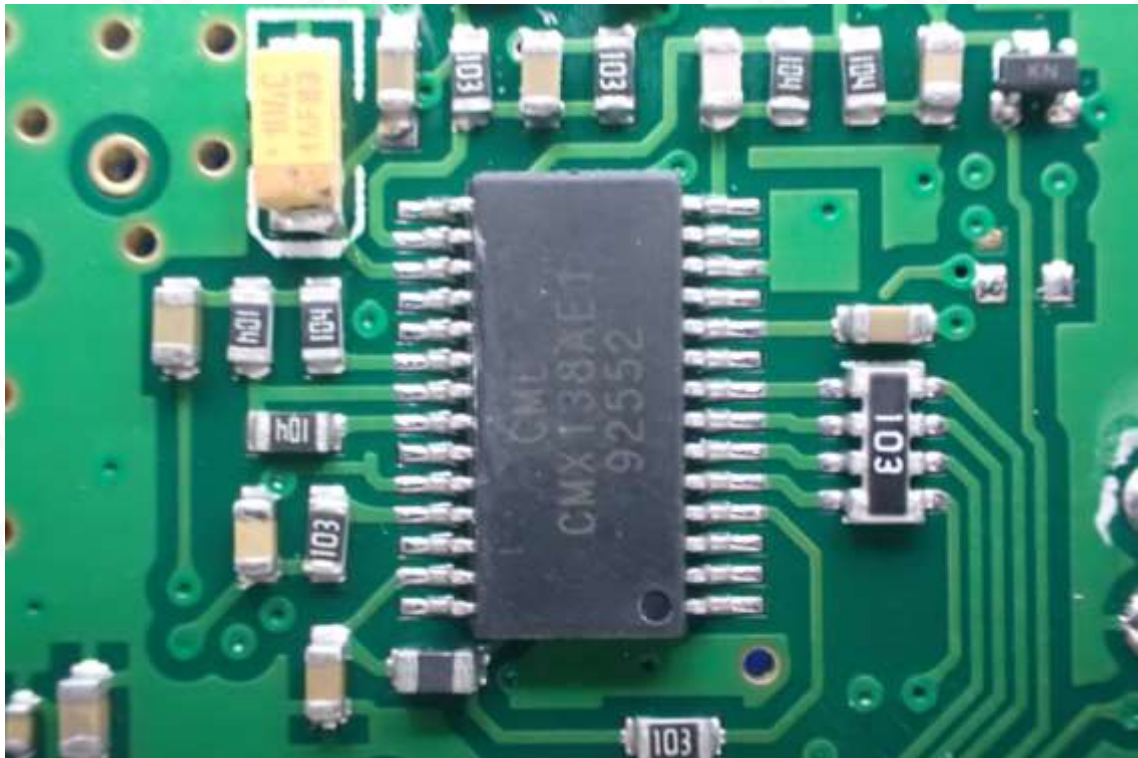
INTERNAL VIEW OF EUT(FIGURE 1)



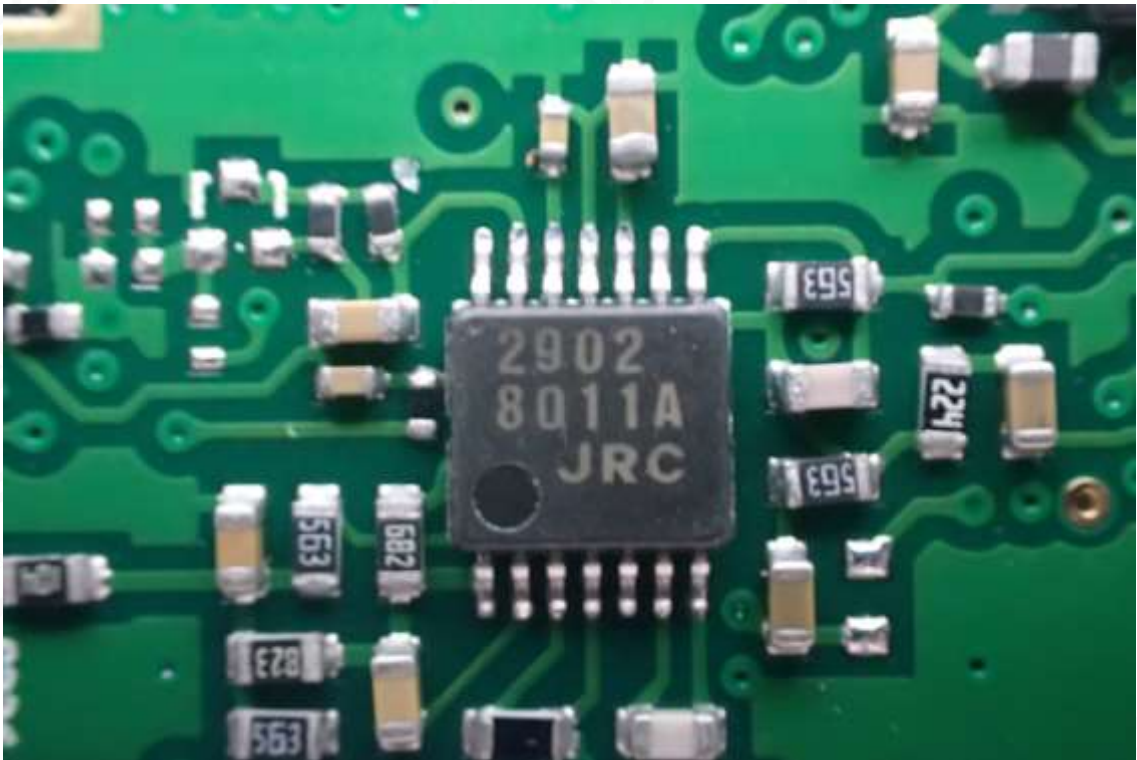
INTERNAL VIEW OF EUT(FIGURE 2)



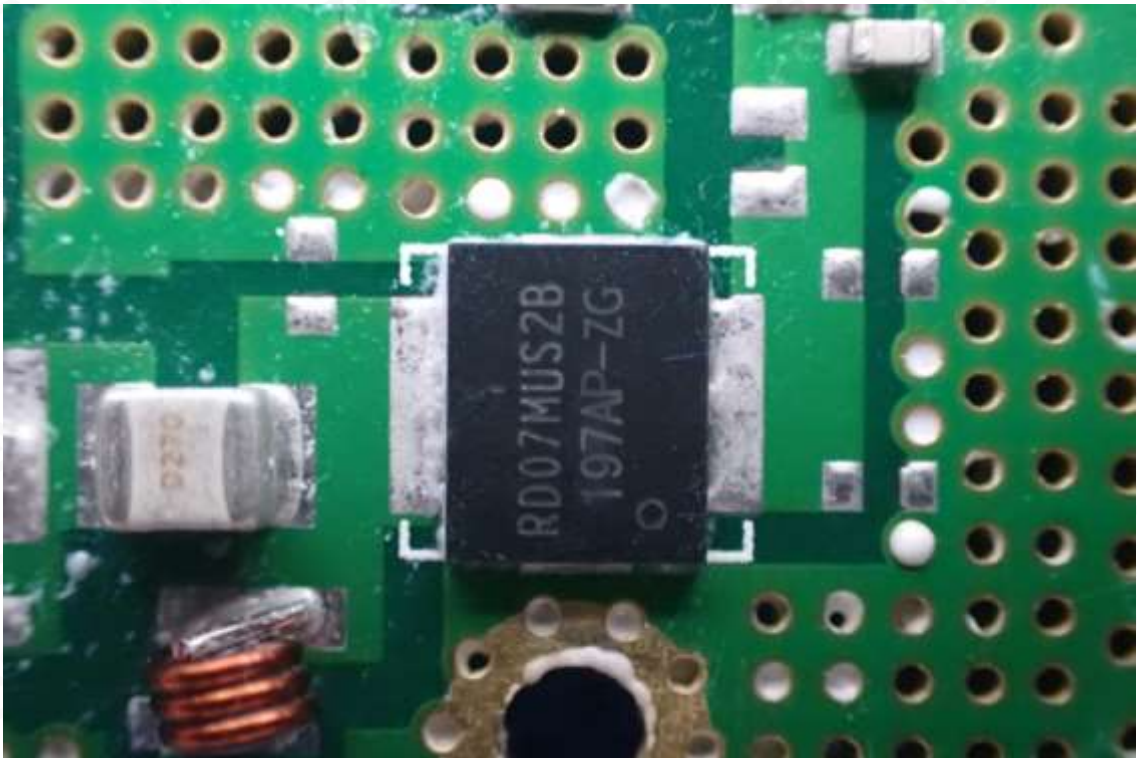
INTERNAL VIEW OF EUT(FIGURE 3)



INTERNAL VIEW OF EUT(FIGURE 4)



INTERNAL VIEW OF EUT(FIGURE 5)



INTERNAL VIEW OF EUT(FIGURE 6)



INTERNAL VIEW OF EUT(FIGURE 7)



INTERNAL VIEW OF EUT(FIGURE 8)



INTERNAL VIEW OF EUT(FIGURE 9)



Part 2
TOP VIEW OF EUT



BOTTOM VIEW OF EUT



FRONT VIEW OF EUT



BACK VIEW OF EUT



LEFT VIEW OF EUT



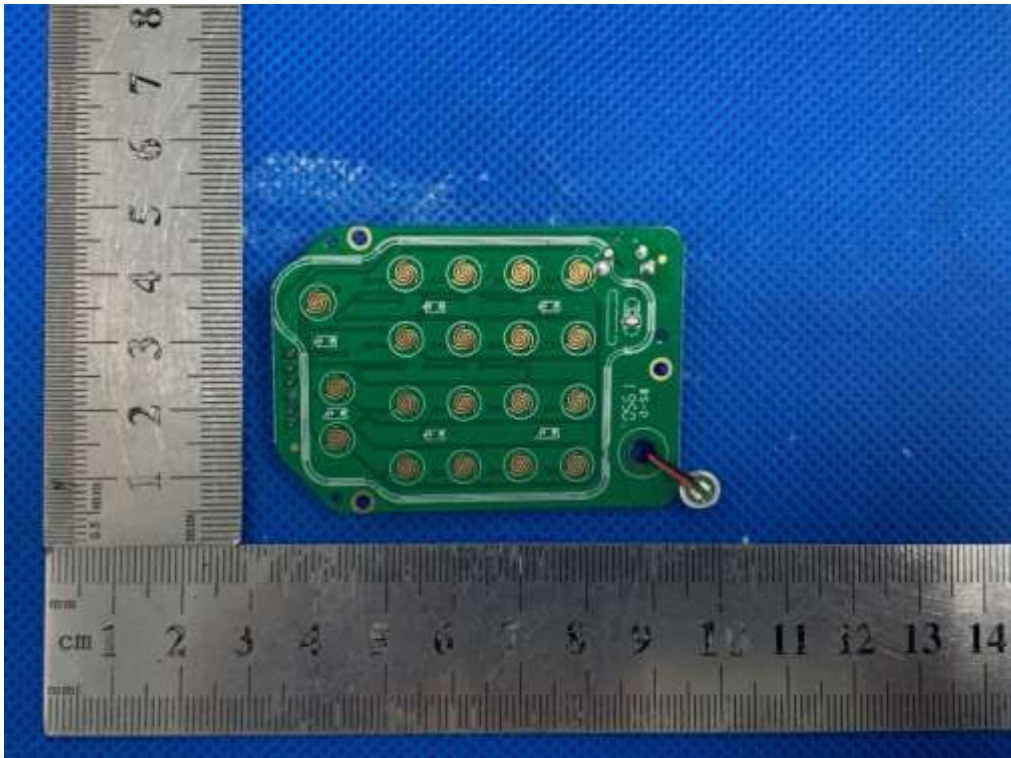
RIGHT VIEW OF EUT



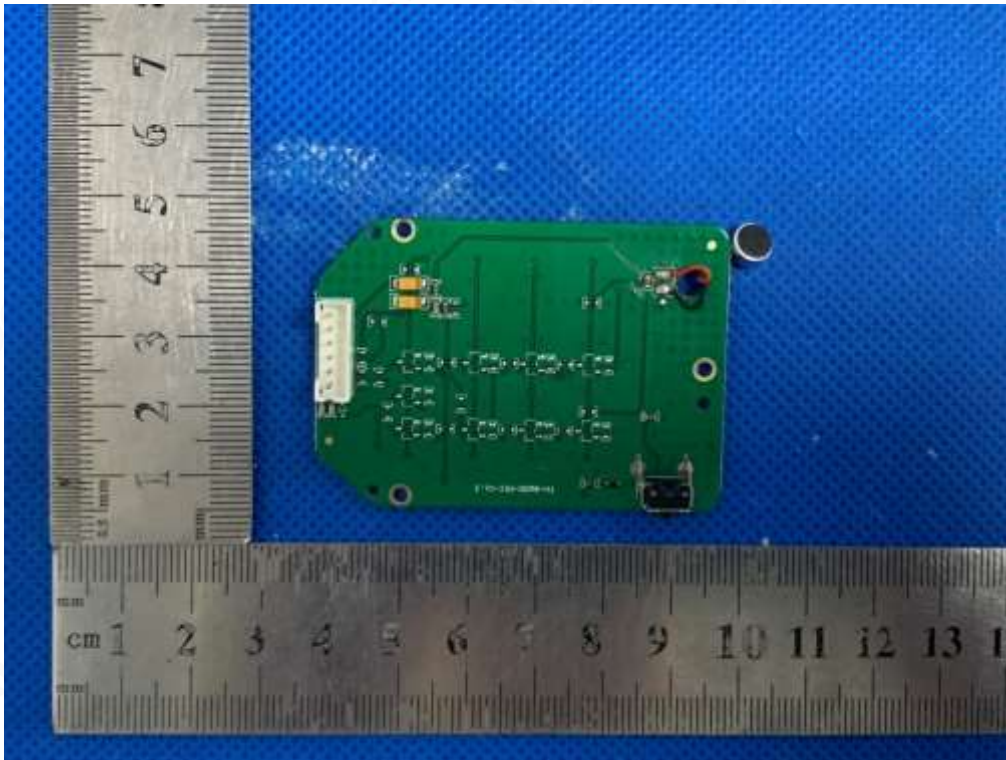
OPEN VIEW-1 OF EUT



INTERNAL VIEW-1 OF EUT



INTERNAL VIEW-2 OF EUT



----END OF REPORT----