

FCC Part 95 Rules Test Report

Report No.: AGC02408180901FE10

FCC ID : 2APRU-IP1
BRAND NAME : DT NO.I
MODEL NAME : IP1
CLIENT : SHENZHEN NUOJIAYUAN SCIENCE AND TECHNOLOGY CO.,LTD.
DATE OF ISSUE : Dec. 27, 2018
STANDARD(S) : FCC Part 95 Rules
REPORT VERSION : V 1.2

Attestation of Global Compliance (Shenzhen) Co., Ltd

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Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Oct. 24, 2018	Invalid	Initial Release
V1.1	1 st	Dec. 18, 2018	Invalid	Updated Comments
V1.2	2 nd	Dec. 27, 2018	Valid	Updated Comments

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VERIFICATION OF COMPLIANCE

Applicant	SHENZHEN NUOJIAYUAN SCIENCE AND TECHNOLOGY CO.,LTD.
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Manufacturer	SHENZHEN NUOJIAYUAN SCIENCE AND TECHNOLOGY CO.,LTD.
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Factory	SHENZHEN NUOJIAYUAN SCIENCE AND TECHNOLOGY CO.,LTD.
Address	Room 17i,Block A,HuaQiang Square,HuaQiang North Road,Futian District,Shenzhen,China
Product Designation:	Walkie Talkie Power Bank
Brand Name:	DT NO.I
Test Model	IP1
Date of Test:	Jun. 06, 2018 to Jun, 11,2018

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 ANSI/TIA- 603-E(2016). 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.

Tested By



Steven Zhou(Zhou Pengyun) Jun. 11, 2018

Reviewed By



Bart Xie(Xie Xiaobin) Dec. 27, 2018

Approved By



 Forrest Lei(Lei Yonggang)
 Authorized Officer Dec. 27, 2018

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1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

The EUT is a FRS Radio 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:

Hardware Version	V5.0
Software Version	2.0
Modulation	FM
Channel Separation	12.5KHz
Emission Type	11K0F3E
Emission Bandwidth	10.42KHz
Maximum Transmitter Power	26.62dBm
Rated Output power	0.5W (It was fixed by the manufacturer, any individual can't arbitrarily change it.)
Antenna Gain	0dBi
Antenna type	Non-detachable
Power Supply	DC 3.7V, 3500mAh (by battery)
Limiting Voltage	DC 3.14 V-4.26 V
Operation Frequency Range and Channel	FRS: 462.5625MHz -462.7125MHz 467.5625MHz -467.7125MHz Test Channel :4 and 11 channel
Frequency Tolerance	1.074ppm

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Channel List:

CH. No	CH. Freq	Power	CH. No	CH. Freq	Power
1	462.5625	0.5W	8	467.5625	0.5W
2	462.5875		9	467.5875	
3	462.6125		10	467.6125	
4	462.6375		11	467.6375	
5	462.6625		12	467.6625	
6	462.6875		13	467.6875	
7	462.7125		14	467.7125	

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1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for FCC ID: 2APRU-IP1, 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	1-2F., Bldg.2, No.1-4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Bao'an District B112-B113, Bldg.12, Baoan Bldg Materials Center, No.1 of Xixiang Inner Ring Road, Baoan District, Shenzhen 518012
NVLAP LAB CODE	600153-0
Designation Number	CN5028
FCC Test Firm Registration Number	682566
Description	Attestation of Global Compliance(Shenzhen) Co., Ltd is accredited by National Voluntary Laboratory Accreditation program, NVLAP Code 600153-0

1.5 SPECIAL ACCESSORIES

Not available for this EUT intended for grant.

1.6 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

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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.

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2.4 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	Walkie Talkie Power Bank	IP1	FCC ID: 2APRU-IP1	EUT

3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§ 95.567	Maximum Transmitter Power	Compliant
§ FCC part 2.1047 § 95.575	Modulation Characteristics	Compliant
§ FCC part 2.1049 § 95.573 § 95.579	Occupied Bandwidth and Emission Mask	Compliant
§ FCC Part 2.1055(d) § 95.565	Frequency Stability	Compliant
§ 95.579	Transmitter Radiated Spurious Emission	Compliant

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LIST OF EQUIPMENTS USED

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	Jun.20, 2017	Jun.19, 2018
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Dec.08, 2017	Dec.07, 2018
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Sep.20, 2017	Sep.19, 2018
preamplifier	ChengYi	EMC184045SE	980508	Sep.15, 2017	Sep.14, 2018
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	May 18, 2017	May 17, 2019
Broadband Preamplifier	SCHWARZBECK	BBV 9718	9718-205	Jun.20, 2017	Jun.19, 2018
HORN ANTENNA	EM	EM-AH-10180	/	Mar.01, 2018	Feb.29, 2020
ANTENNA	SCHWARZBECK	VULB9168	VULB9168-494	Mar.01, 2018	Feb.29, 2020
ANTENNA	SCHWARZBECK	VULB9168	D69250	Sep.28, 2017	Sep.27, 2018
Small environmental tester	ESPEC	SH-242	--	Mar.02, 2018	Mar. 01, 2019
RF Communication Test Set	HP	HP8920B	--	Jun. 20, 2017	Jun. 19, 2018
Loop Antenna	A.H.Systems,Inc	SAS-562B	--	Mar. 01, 2018	Feb. 28, 2019
Attenuator	Weinschei Corp	58-30-33	731781	June 12, 2018	June 11, 2019
Signal Generator	AGILENT	E8257D	MY45141029	Sep. 21, 2017	Sep. 20, 2018

Note: 8920B can generate audio modulation frequency.

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4. DESCRIPTION OF TEST MODES

RF TEST MODES

The EUT (Walkie Talkie Power Bank) has been tested under normal operating condition. (FRS TX) are chosen for testing at each channel separation.

No.	TEST MODES	CHANNEL SEPARATION
1	FRS TX	12.5 KHz

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

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5. FREQUENCY TOLERANCE

5.1 PROVISIONS APPLICABLE

Standard Applicable [Part 95.565] The carrier frequency stability is the ability of the transmitter to maintain an assigned carrier frequency.

FCC Part 95.565,

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

5.2 MEASUREMENT PROCEDURE

5.2.1 Frequency stability versus environmental temperature

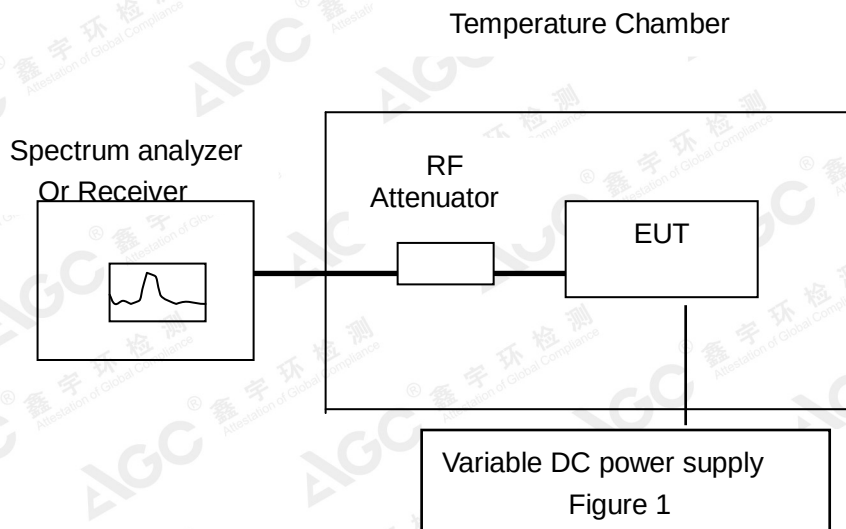
1. Setup the configuration per figure 1 for frequencies measurement inside an environment chamber, Install new battery in the EUT.
2. Turn on EUT and set SA center frequency to the EUT radiated frequency. Set SA Resolution Bandwidth to 1KHz and Video Resolution Bandwidth to 1KHz and Frequency Span to 50KHz. Record this frequency as reference frequency.
3. Set the temperature of chamber to 50°C. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. While maintaining a constant temperature inside the chamber, turn the EUT on and measure the EUT operating frequency.
4. Repeat step 2 with a 10°C decreased per stage until the lowest temperature -30°C is measured, record all measured frequencies on each temperature step.

5.2.2 Frequency stability versus input voltage

1. Setup the configuration per figure 1 for frequencies measured at temperature if it is within 15°C to 25°C. Otherwise, an environment chamber set for a temperature of 20°C shall be used. The EUT shall be powered by DC 3.7V.
2. Set SA center frequency to the EUT radiated frequency. Set SA Resolution Bandwidth to 1 KHz and Video Resolution Bandwidth to 1KHz. Record this frequency as reference frequency.
3. Supply the EUT primary voltage at the operating end point which is specified by manufacturer and record the frequency.

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5.3 TEST SETUP BLOCK DIAGRAM



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5.4 TEST RESULT

(1) Frequency stability versus input voltage (Supply nominal voltage is 3.70V)

Environment	Power	Reference Frequency		Limit:
Temperature(℃)	(V)	462.6375MHz	467.6375MHz	ppm
50	DC 3.70	0.726	0.659	±2.5for FRS
40	DC 3.70	0.842	0.775	
30	DC 3.70	0.585	0.825	
20	DC 3.70	0.649	0.518	
10	DC 3.70	0.951	0.942	
0	DC 3.70	0.662	0.761	
-10	DC 3.70	0.874	0.628	
-20	DC 3.70	0.615	0.552	
-30	DC 3.70	0.528	0.663	
Result	Pass			

(2) Frequency stability versus input voltage (Battery limiting voltage is 3.14V)

Environment Temperature(°C)	Power	Reference Frequency		Limit:
	(V)	462.6375MHz	467.6375MHz	ppm
50	DC 3.14	0.796	0.649	±2.5for FRS
40	DC 3.14	0.853	0.775	
30	DC 3.14	0.919	0.584	
20	DC 3.14	0.642	0.852	
10	DC 3.14	0.851	0.661	
0	DC 3.14	0.763	1.074	
-10	DC 3.14	0.742	0.975	
-20	DC 3.14	0.649	0.884	
-30	DC 3.14	0.575	0.549	
Result	Pass			

(3) Frequency stability versus input voltage (Battery Fully Charged voltage is 4.26V)

Environment Temperature(℃)	Power	Reference Frequency		Limit:
	(V)	462.6375MHz	467.6375MHz	ppm
50	DC 4.26	0.815	0.559	±2.5for FRS
40	DC 4.26	0.726	0.65	
30	DC 4.26	0.542	0.575	
20	DC 4.26	0.925	0.851	
10	DC 4.26	0.663	0.753	
0	DC 4.26	0.842	0.885	
-10	DC 4.26	0.751	0.719	
-20	DC 4.26	0.695	0.673	
-30	DC 4.26	0.852	0.861	
Result	Pass			

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(4) Frequency stability versus input voltage (Battery end point voltage is 3.0V)

Environment Temperature(℃)	Power	Reference Frequency		Limit:
	(V)	462.6375MHz	467.6375MHz	ppm
50	DC 3.0	0.745	0.756	±2.5for FRS
40	DC 3.0	0.876	0.885	
30	DC 3.0	0.998	0.675	
20	DC 3.0	0.857	0.549	
10	DC 3.0	0.786	0.875	
0	DC 3.0	0.575	0.484	
-10	DC 3.0	0.859	0.578	
-20	DC 3.0	0.664	0.762	
-30	DC 3.0	0.981	0.838	
Result	Pass			

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6. EMISSION BANDWIDTH

6.1 PROVISIONS APPLICABLE

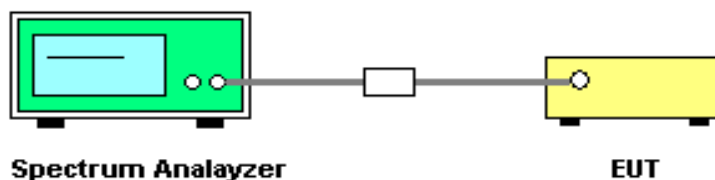
FCC Part 95.573: FRS: The authorized bandwidth for an FRS unit is 12.5 kHz.

Occupied Bandwidth (Section 2.1049, 95.573): The EUT was connected to the audio signal generator and the spectrum analyzer via the main RF connector, and through an appropriate attenuator. The EUT was controlled to transmit its maximum power. Then the bandwidth of 99% power can be measured by the spectrum analyzer.

6.2 MEASUREMENT PROCEDURE

- 1). The EUT was modulated by 2.5 KHz Sine wave audio signal, The level of the audio signal employed is 16 dB greater than that necessary to produce 50% of rated system deviation. Rated system deviation is 2.5 kHz (12.5 kHz channel spacing).
- 2). Set SPA Center Frequency = fundamental frequency, RBW=100Hz.VBW= 300 Hz, Span =50 KHz.
- 3). Set SPA Max hold. Mark peak, -26 dB.

6.3 TEST SETUP BLOCK DIAGRAM

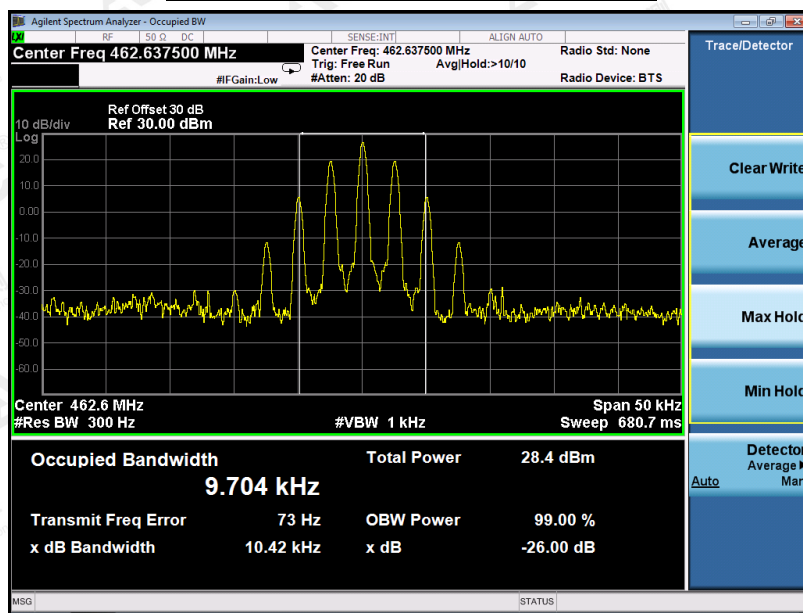


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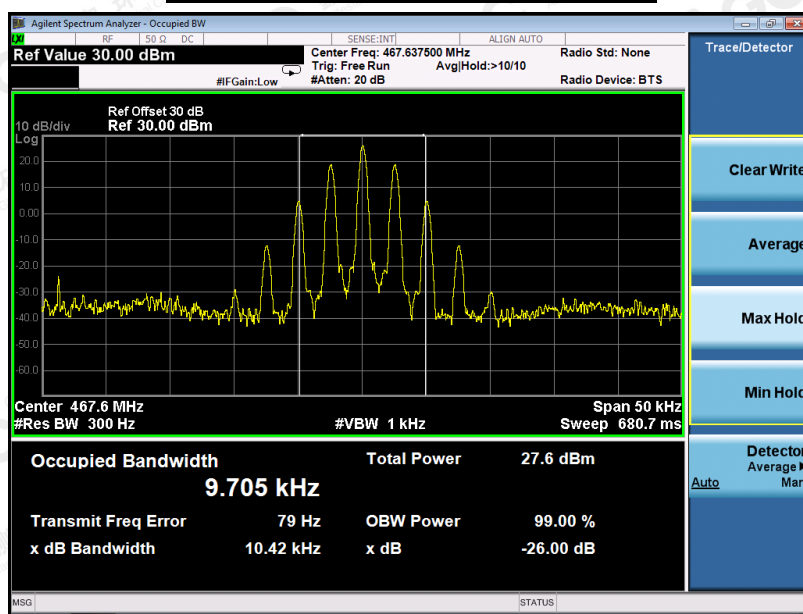
6.4 MEASUREMENT RESULT

26 dB Bandwidth Measurement Result			
Operating Frequency	12.5 KHz Channel Separation		
	Test Data	Limits	Result
462.6375MHz	10.42KHz	12.5 KHz	Pass
467.6375MHz	10.42KHz	12.5 KHz	Pass

Occupied bandwidth of 462.6375MHz



Occupied bandwidth of 467.6375MHz



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7. UNWANTED RADIATION

7.1 PROVISIONS APPLICABLE

Standard Applicable [FCC Part 95.579]

Each FRS transmitter type must be designed to satisfy the applicable unwanted emissions limits in this paragraph.

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

- (1) 25 dB (decibels) 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.

(b) Measurement bandwidths. The power of unwanted emissions in the frequency bands specified in paragraphs (a)(1) and (2) of this section is measured with a reference bandwidth of 300 Hz. The power of unwanted emissions in the frequency range specified in paragraph (a)(3) is measured with a reference bandwidth of at least 30 kHz.

(c) Measurement conditions. The requirements in this section apply to each FRS transmitter type both with and without the connection of permitted attachments, such as an external speaker, microphone and/or power cord.

7.2 MEASUREMENT PROCEDURE

- (1) On a test site, the EUT shall be placed on a turntable, and in the position closest to the normal use as declared by the user.
- (2) The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
- (3) The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
- (4) The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
- (5) The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
- (6) The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- (7) The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.
- (8) The maximum signal level detected by the measuring receiver shall be noted.
- (9) The measurement shall be repeated with the test antenna set to horizontal polarization.

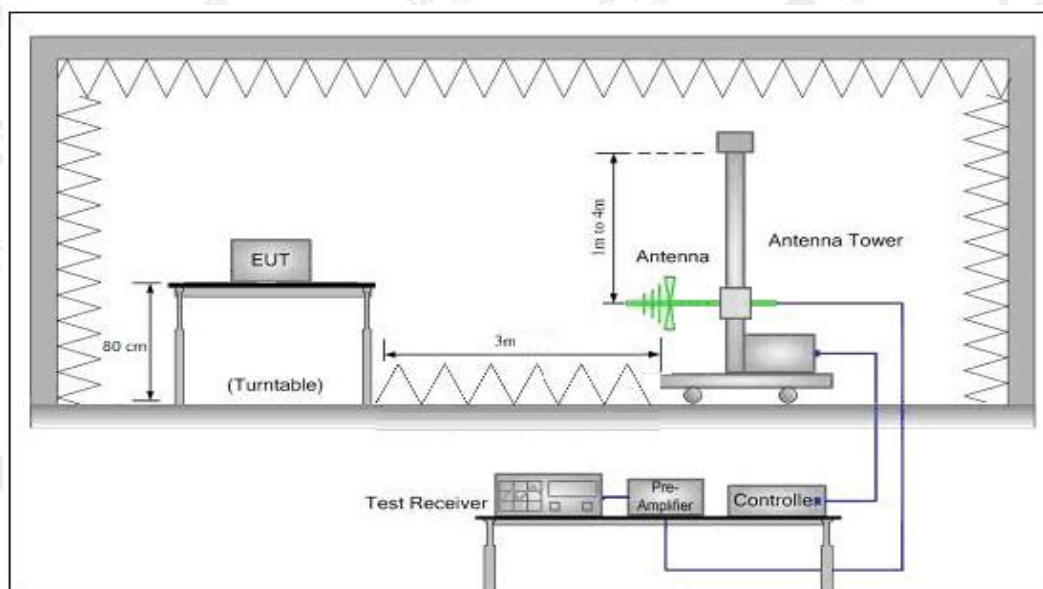
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- (10) Replace the antenna with a proper Antenna (substitution antenna).
- (11) The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
- (12) The substitution antenna shall be connected to a calibrated signal generator.
- (13) If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
- (14) The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
- (15) The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
- (16) The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
- (17) The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.

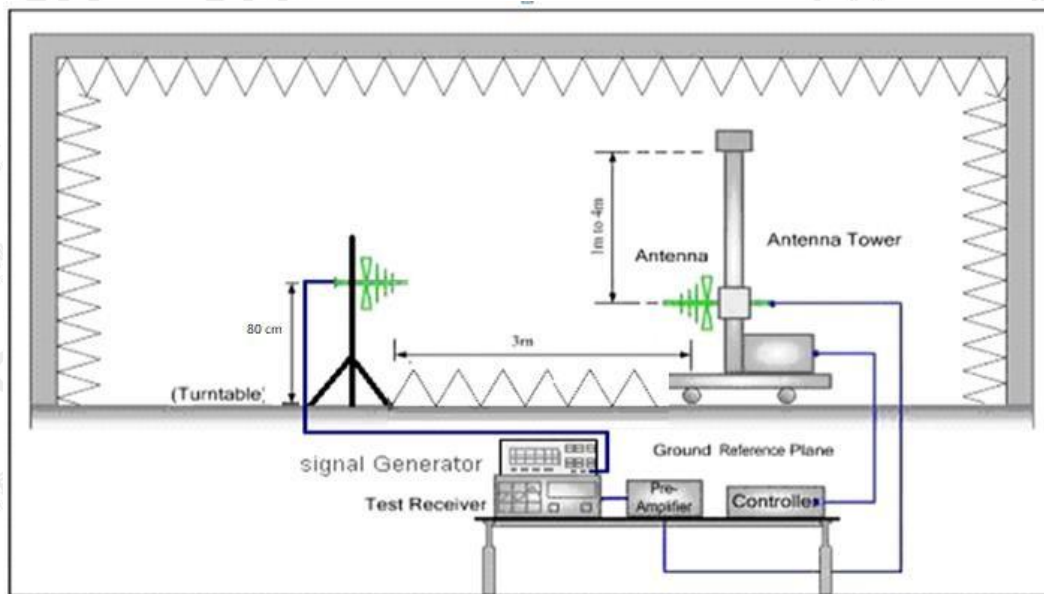
7.3 TEST SETUP BLOCK DIAGRAM

SUBSTITUTION METHOD: (Radiated Emissions)

Radiated Below 1GHz

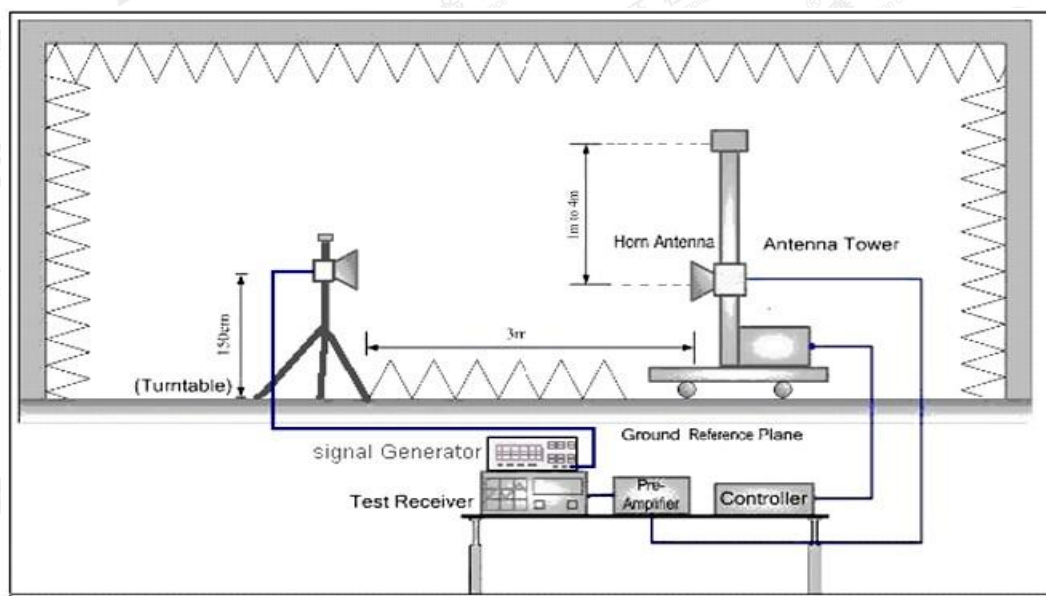
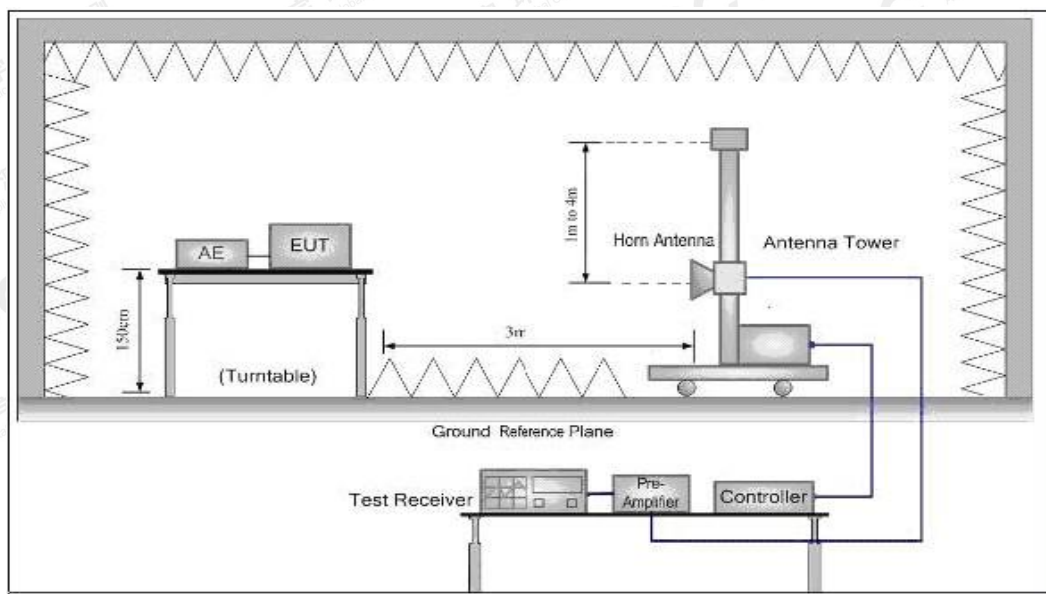


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Radiated Above 1 GHz



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7.4 MEASUREMENT RESULTS:

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

Limit: At least $43+10 \log(P) = 43+10 \log(0.5) = 40$ (dBc) $27-40 = -13$ dBm

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Measurement Result for 12.5 KHz Channel Separation @ 462.6375MHz

Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
462.638	H	0		pass
925.275	H	-47.8	-13	pass
1387.91	H	-42.5	-13	pass
1850.550	H	-40.7	-13	pass
2313.188	H	-39.2	-13	pass
2775.825	H	-49.6	-13	pass
3238.463	H	-52.8	-13	pass
3701.100	H	-44.1	-13	pass
4163.738	H	-46.9	-13	pass
4626.375	H	-49.3	-13	pass

Emission Frequency (MHz)	Ant. Polarity(H/H)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
462.638	V	0		pass
925.275	V	-51.1	-13	pass
1387.91	V	-47.9	-13	pass
1850.550	V	-43.2	-13	pass
2313.188	V	-40.6	-13	pass
2775.825	V	-49.4	-13	pass
3238.463	V	-44.9	-13	pass
3701.100	V	-50.3	-13	pass
4163.738	V	-45.7	-13	pass
4626.375	V	-51.8	-13	pass

Measurement Result for 12.5 KHz Channel Separation @ 467.6375MHz

Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
467.638	H	0		pass
935.275	H	-46.3	-13	pass
1402.913	H	-41.8	-13	pass
1870.550	H	-48.1	-13	pass
2338.188	H	-43.9	-13	pass
2805.825	H	-44.5	-13	pass
3273.463	H	-40.6	-13	pass
3741.100	H	-43.1	-13	pass
4208.738	H	-45.7	-13	pass
4676.375	H	-52.7	-13	pass

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Emission Frequency (MHz)	Ant. Polarity(H/V)	Measurement Result (dBm)	Limit (dBm)	Result(P/F)
467.638	V	0		pass
935.275	V	-51.5	-13	pass
1402.913	V	-43.2	-13	pass
1870.550	V	-45.3	-13	pass
2338.188	V	-53.5	-13	pass
2805.825	V	-50.8	-13	pass
3273.463	V	-44.1	-13	pass
3741.100	V	-48.5	-13	pass
4208.738	V	-42.6	-13	pass
4676.375	V	-40.7	-13	pass

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7.5 EMISSION MASK PLOT

Standard Applicable [FCC Part 95.579] FRS: Unwanted emissions shall be attenuated below the unmodulated carrier power in accordance with the following:

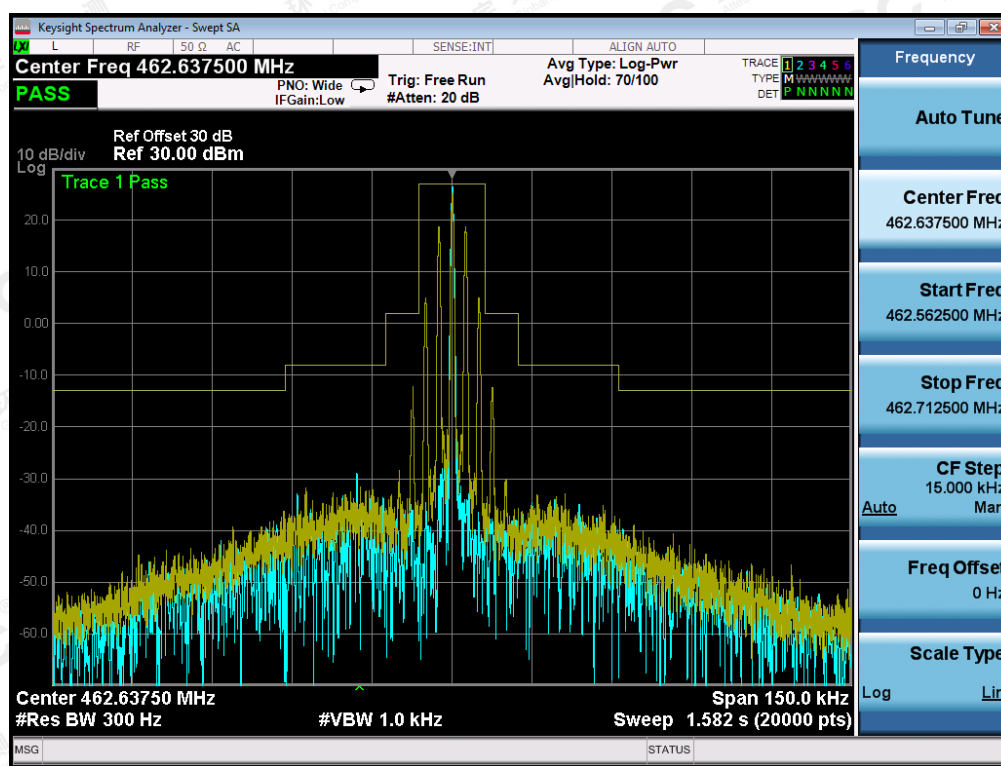
- (1) At least 25 dB (decibels) on any frequency removed from the center of the authorized bandwidth by more than 50 % up to and including 100% of the authorized bandwidth.
- (2) At least 35 dB on any frequency removed from the center of the authorized bandwidth by more than 100 % up to and including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

The detailed procedure employed for Emission Mask measurements are specified as following:

- The transmitter shall be modulated by a 2.5 kHz audio signal,
- The level of the audio signal employed is 16 dB greater than that necessary to produce 50% of rated system deviation. Rated system deviation is 2.5 kHz.

Channel 1:

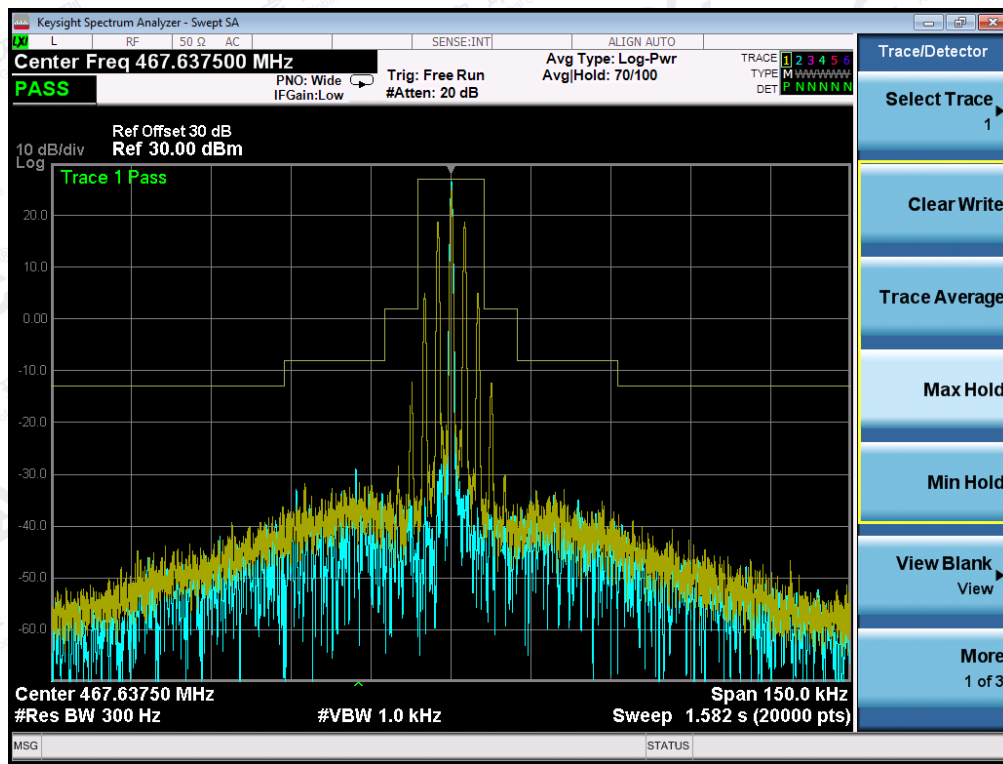
The Worst Emission Mask for channel 4



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CHANNEL 11:

The Worst Emission Mask for channel 11



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8. MAXIMUM TRANSMITTER POWER

8.1 PROVISIONS APPLICABLE

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.

8.2 TEST PROCEDURE

1) The spectrum setting for Equivalent Isotropically Radiated Power (EIRP) is RBW = 100 kHz, VBW = 300 kHz. Detector Mode is RMS.

2) In the semi-anechoic chamber, setup as illustrated above the EUT placed on the 0.8m height of Turn Table, rotated the table 45 degree each interval to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power for each degree interval. The "Read Value" is the spectrum reading of maximum power value.

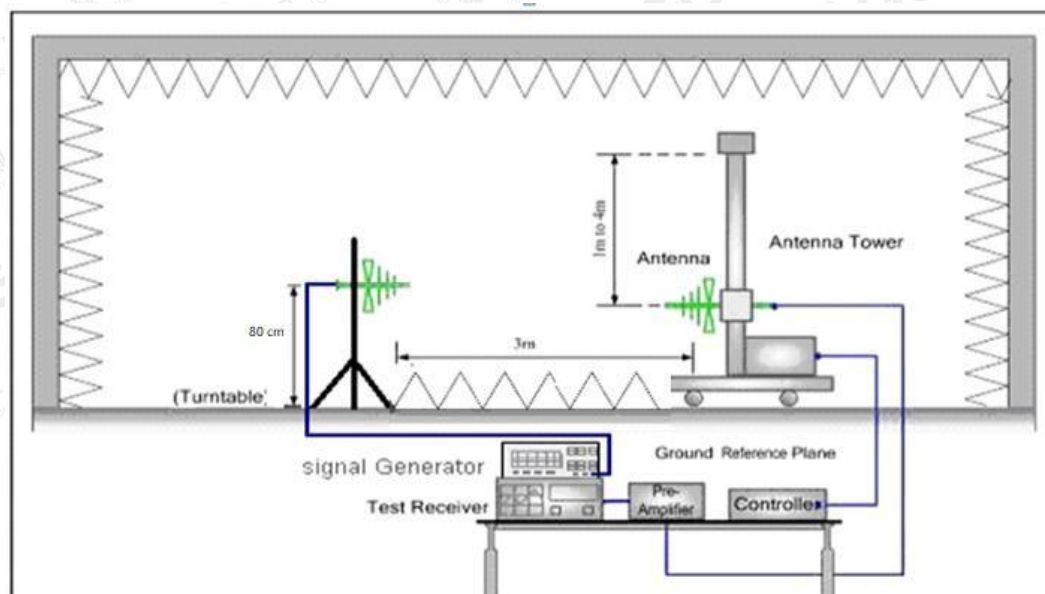
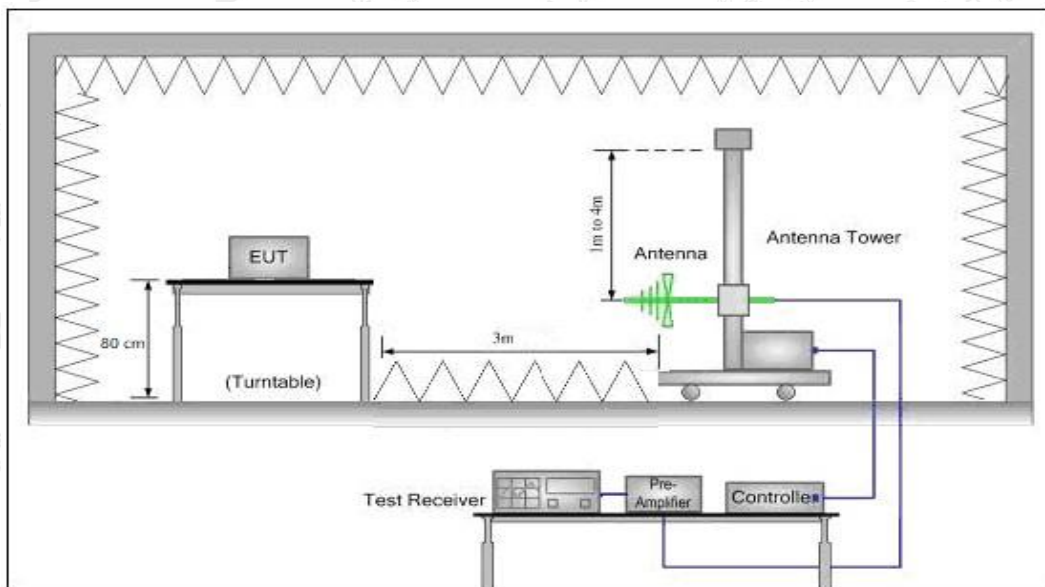
3) The substitution antenna is substituted for EUT at the same position and signals generator (S.G) export the CW signal to the substitution antenna via a TX cable. The receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum radiation power. Record the power level of maximum radiation power from spectrum. So, the Measured substitution value = Ref level of S.G + TX cables loss – Substituted Antenna Gain.

8.3 TEST CONFIGURATION

Effective Radiated Power

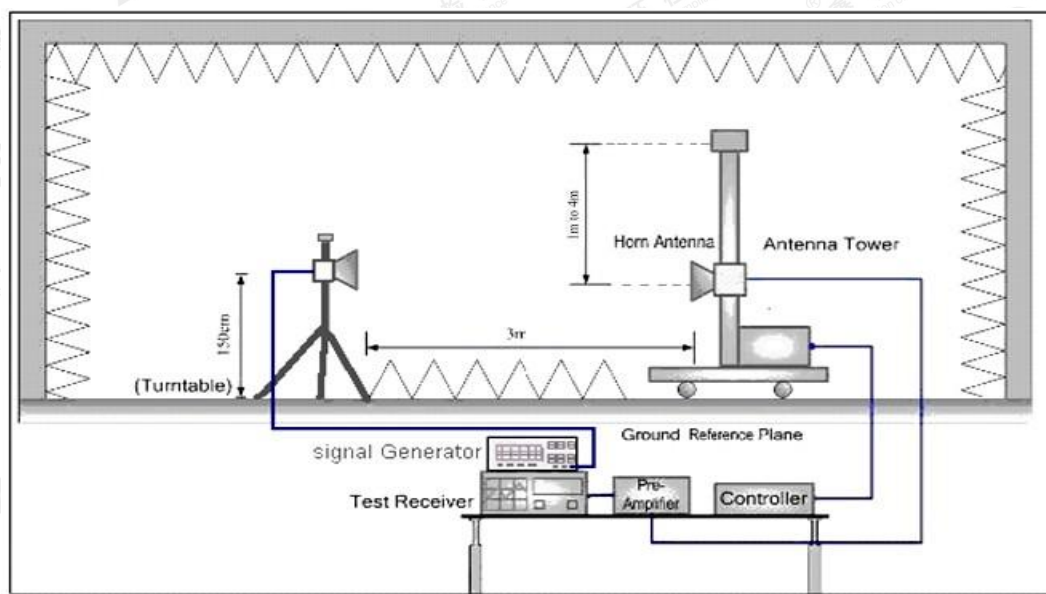
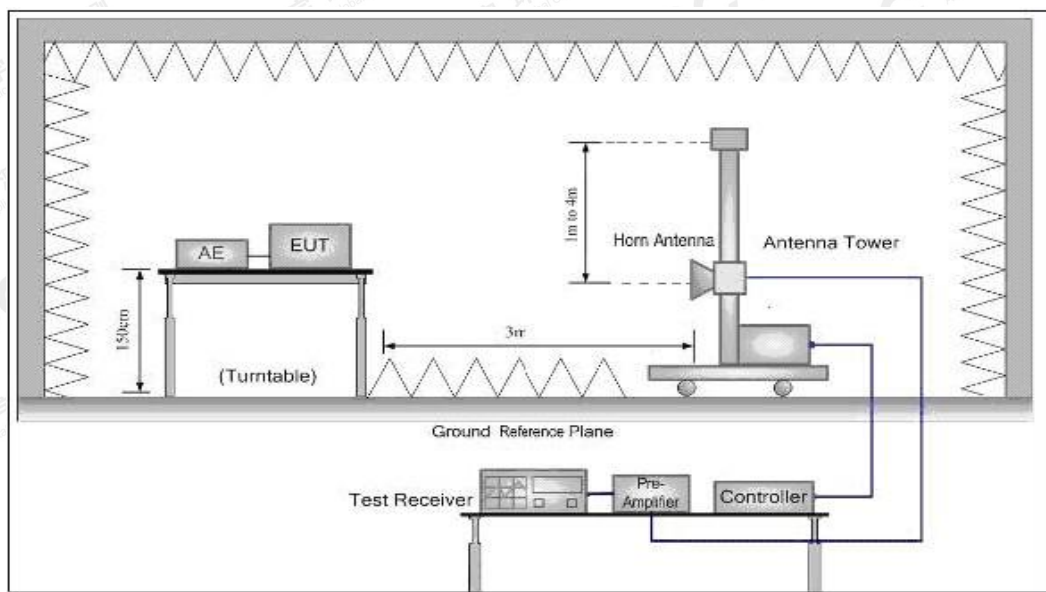
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Radiated Below 1GHz



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Radiated Above 1 GHz



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8.4 TEST RESULT

The maximum Power (CP) for UHF is

Analog: 0.5W for 12.5 KHz Channel Separation

Calculation Formula:

Emission Level(dBm) = S.G.(dBm)- Cable Loss(dB)+ Ant.Gain(dBi)

Margin(dB) = Limit(dBm)- Emission Level(dBm)

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ERP RESULT:

Frequency	Reading Level	Antenna	S.G.	Cable Loss	Ant.Gain	Emission Level	Limit	Margin
(MHz)	(dBuv/m)	Polarization	(dBm)	(dB)	(dBi)	(dBm)	(dBm)	(dB)
Frequency: 462.6375MHz								
462.6375	93.83	V	20.40	0.38	6.60	26.62	33	6.38
462.6375	92.56	H	19.27	0.38	6.60	25.49	33	7.51
Frequency: 467.6375MHz								
467.6375	93.61	V	20.26	0.38	6.60	26.48	27	0.52
467.6375	92.75	H	19.74	0.38	6.60	25.96	27	1.04

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9. MODULATION CHARACTERISTICS

9.1 PROVISIONS APPLICABLE

According to [FCC Part 95.575, Part 2.1047(a)], for Voice Modulation Communication Equipment, the frequency response of the audio modulation circuit over a range of 100 to 5000Hz shall be measured.

Part 95.575(a) A FRS unit that transmits emission type F3E must not exceed a peak frequency deviation of plus or minus 2.5 kHz, and the audio frequency response must not exceed 3.125 kHz.

Part 2.1047(a) A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 to 5000Hz 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.

9.2 MEASUREMENT METHOD

9.2.1 Modulation Limit

- (1). Configure the EUT as shown in figure 1, adjust the audio input for 60% of rated system deviation at 1KHz using this level as a reference (0dB) and vary the input level from -20 to +20dB. Record the frequency deviation obtained as a function of the input level.
- (2). Repeat step 1 with input frequency changing to 300, 1000, 1500 and 3000Hz in sequence.

9.2.2 Audio Frequency Response

- (1). Configure the EUT as shown in figure 1.
- (2). Adjust the audio input for 20% of rated system deviation at 1 KHz using this level as a reference (0 dB).
- (3). Vary the Audio frequency from 100 Hz to 10 KHz and record the frequency deviation.
- (4). Audio Frequency Response = $20\log_{10}(\text{Deviation of test frequency}/\text{Deviation of 1 KHz reference})$.

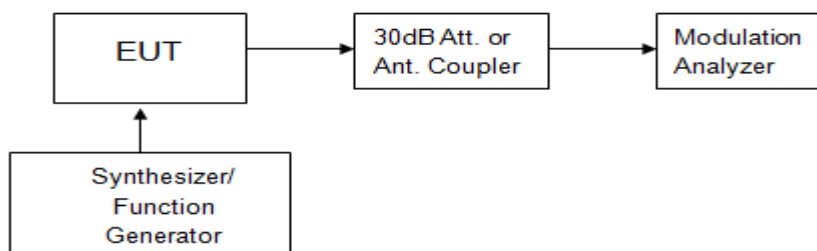


Figure 1: Modulation characteristic measurement configuration

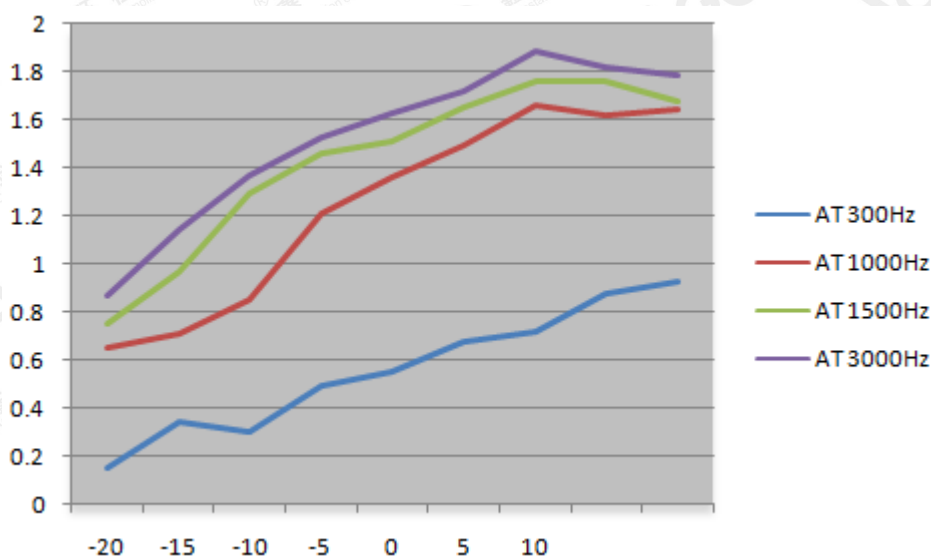
9.3 MEASUREMENT RESULT

TEST CHANNEL: 4

(A). MODULATION LIMIT:

462.6375MHz @ 12.5 KHz Channel Separations

Modulation Level (dB)	Peak Freq. Deviation At 300 Hz	Peak Freq. Deviation At 1000 Hz	Peak Freq. Deviation At 1500 Hz	Peak Freq. Deviation At 3000 Hz
-20	0.15	0.65	0.75	0.87
-15	0.34	0.71	0.97	1.15
-10	0.3	0.85	1.29	1.37
-5	0.49	1.21	1.46	1.53
0	0.55	1.36	1.51	1.63
+5	0.68	1.49	1.65	1.72
+10	0.72	1.66	1.76	1.89
+15	0.88	1.62	1.76	1.82
+20	0.93	1.64	1.68	1.79



Note: All the modes had been tested, but only the worst data recorded in the report.

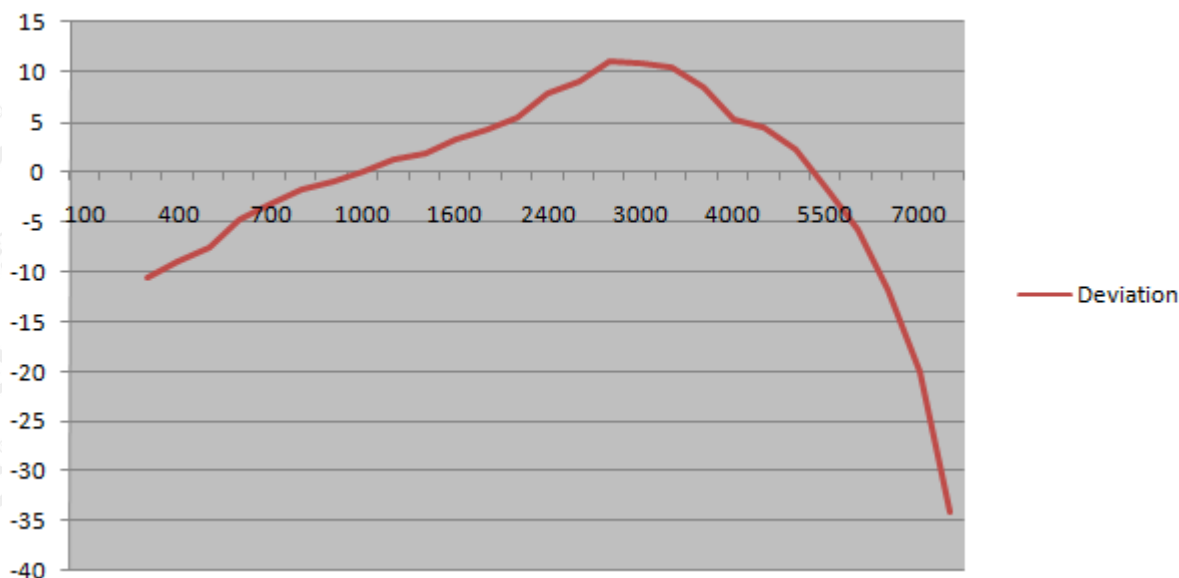
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(B). AUDIO FREQUENCY RESPONSE:
462.6375MHz @ 12.5 KHz Channel Separations

Frequency (Hz)	Deviation (KHz)	Audio Frequency Response(dB)
100	--	--
200	--	--
300	0.15	-10.46
400	0.18	-8.87
500	0.21	-7.54
600	0.29	-4.73
700	0.35	-3.10
800	0.41	-1.72
900	0.45	-0.92
1000	0.51	0.17
1200	0.58	1.29
1400	0.63	2.01
1600	0.74	3.41
1800	0.82	4.30
2000	0.94	5.48
2400	1.26	8.03
2500	1.45	9.25
2800	1.81	11.17
3000	1.76	10.93
3200	1.68	10.53
3600	1.34	8.56
4000	0.92	5.30
4500	0.85	4.61
5000	0.65	2.28
5500	0.42	-1.51
6000	0.26	-5.68
6500	0.13	-11.70
7000	0.05	-20.00
7500	0.01	-33.98
9000	--	--
10000	--	--
14000	--	--
18000	--	--
20000	--	--
30000	--	--

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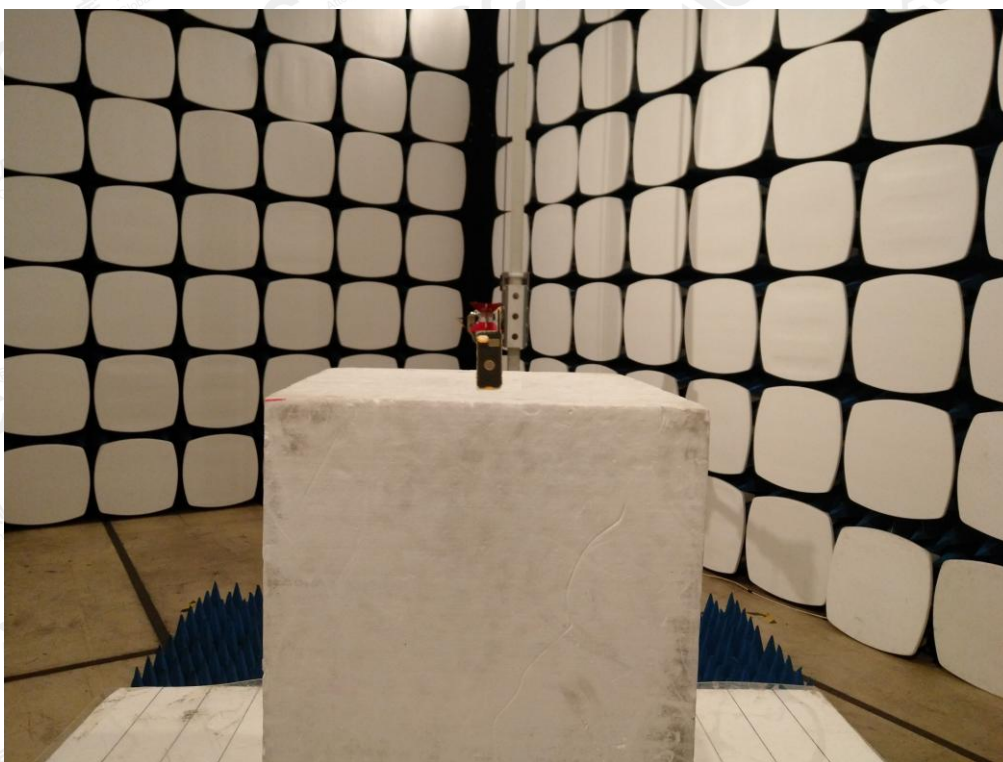
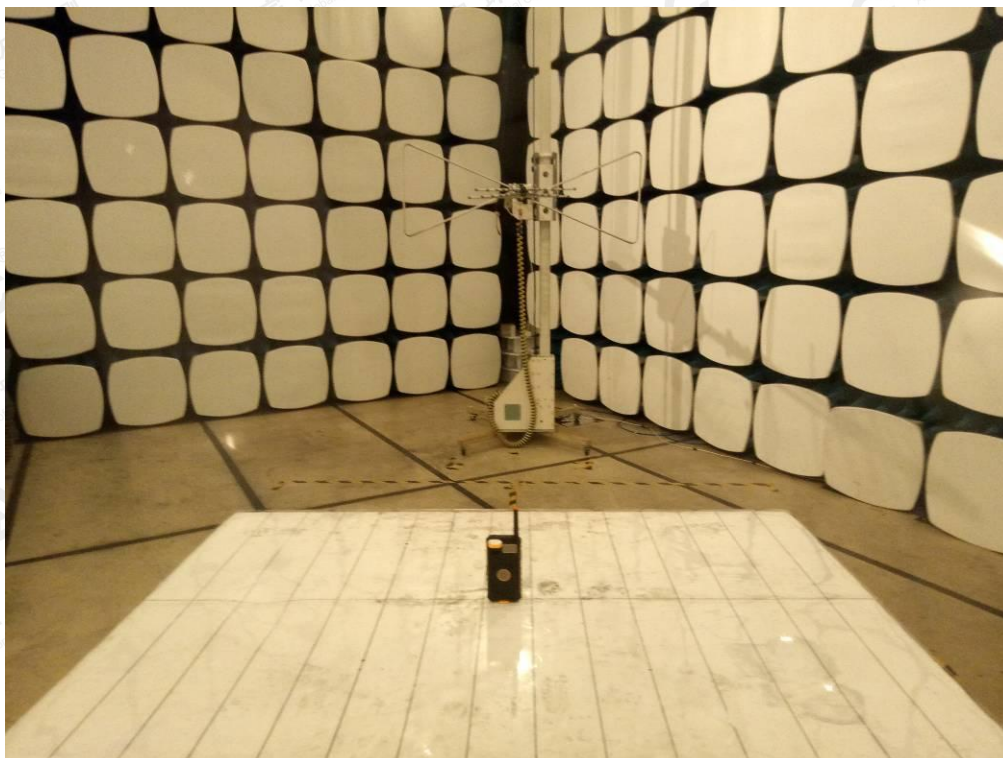
Frequency Response Result



Note: All the modes had been tested, but only the worst data recorded in the report.

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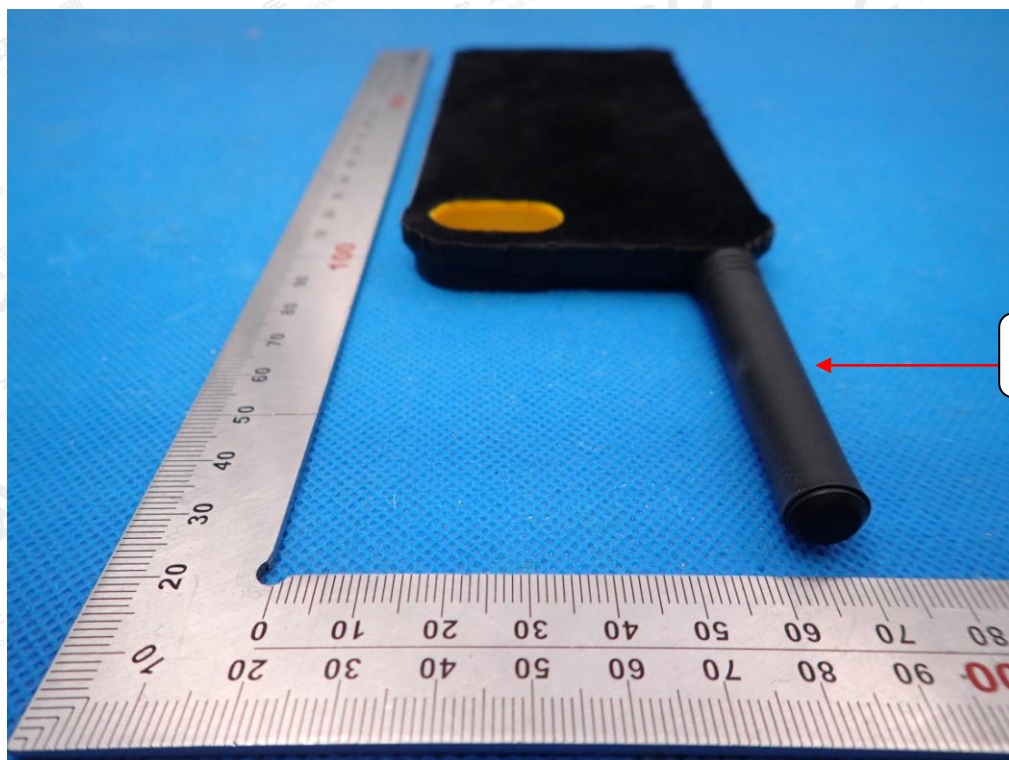
APPENDIX I: PHOTOGRAPHS OF SETUP
RADIATED EMISSION TEST SETUP



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APPENDIX II: EXTERNAL VIEW OF EUT

TOP VIEW OF EUT



Antenna

BOTTOM VIEW OF EUT



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FRONT VIEW OF EUT



BACK VIEW OF EUT



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LEFT VIEW OF EUT



RIGHT VIEW OF EUT



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OPEN VIEW OF EUT(FIGURE 1)

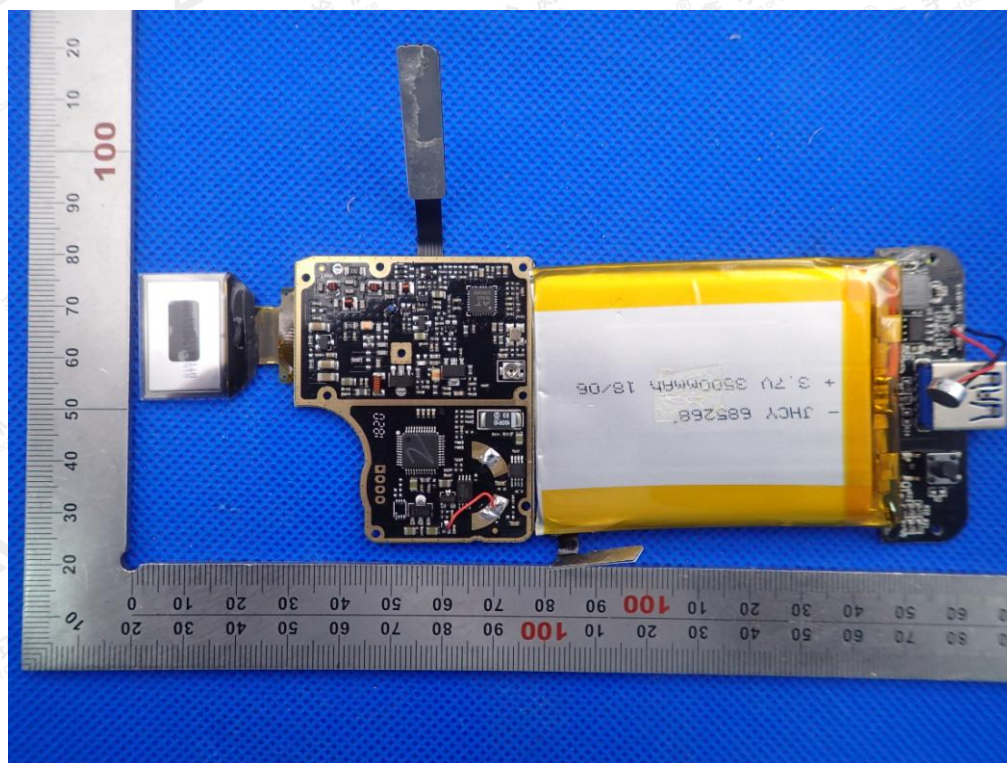


OPEN VIEW OF EUT(FIGURE 2)

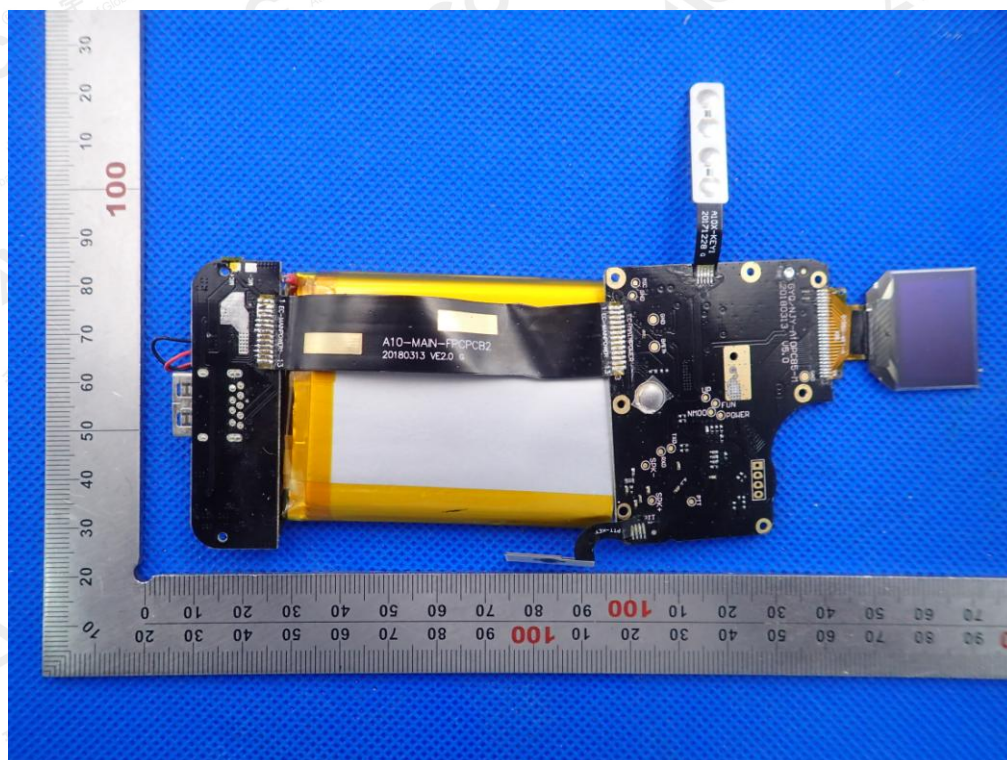


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INTERNAL VIEW-1 OF EUT

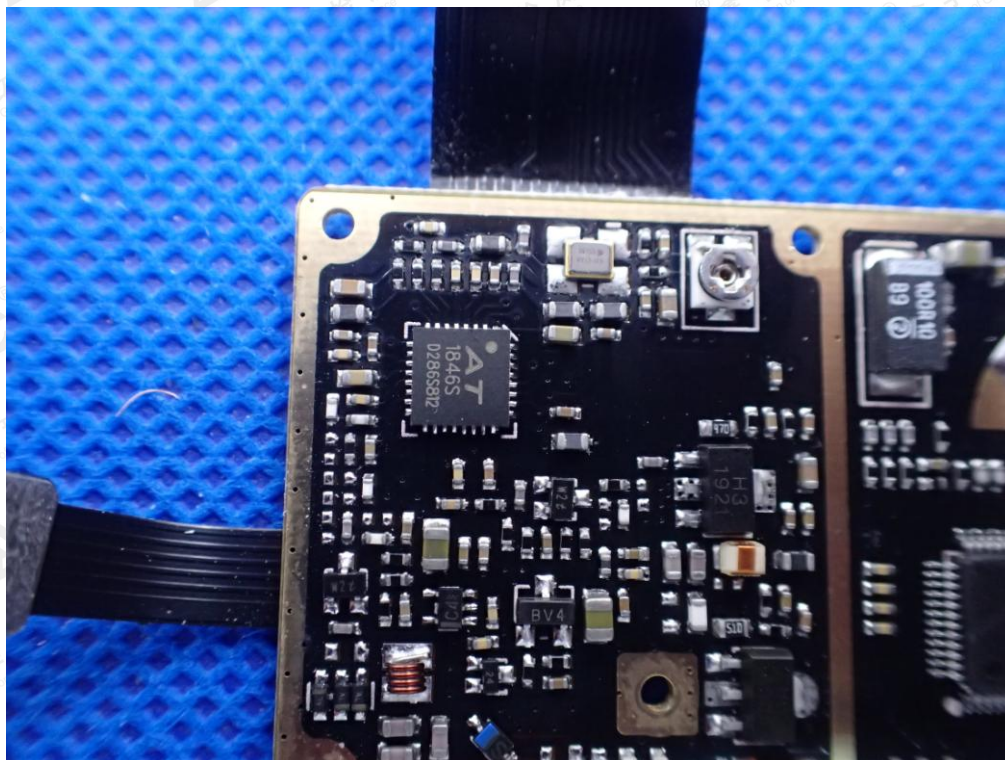


INTERNAL VIEW-2 OF EUT

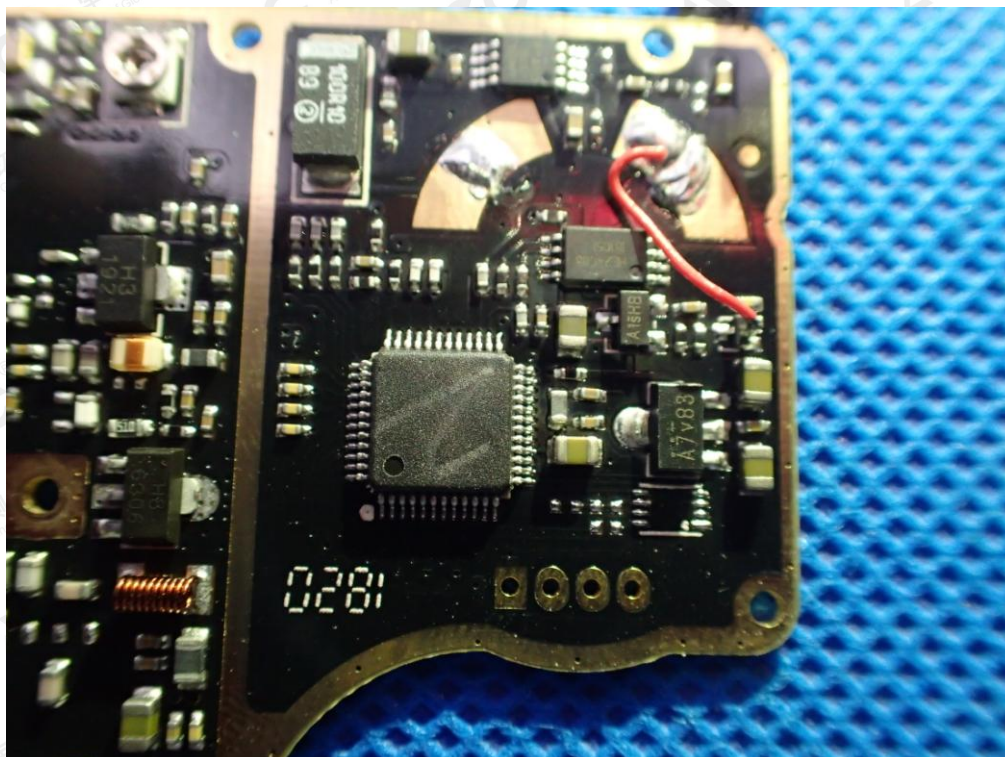


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INTERNAL VIEW-3 OF EUT

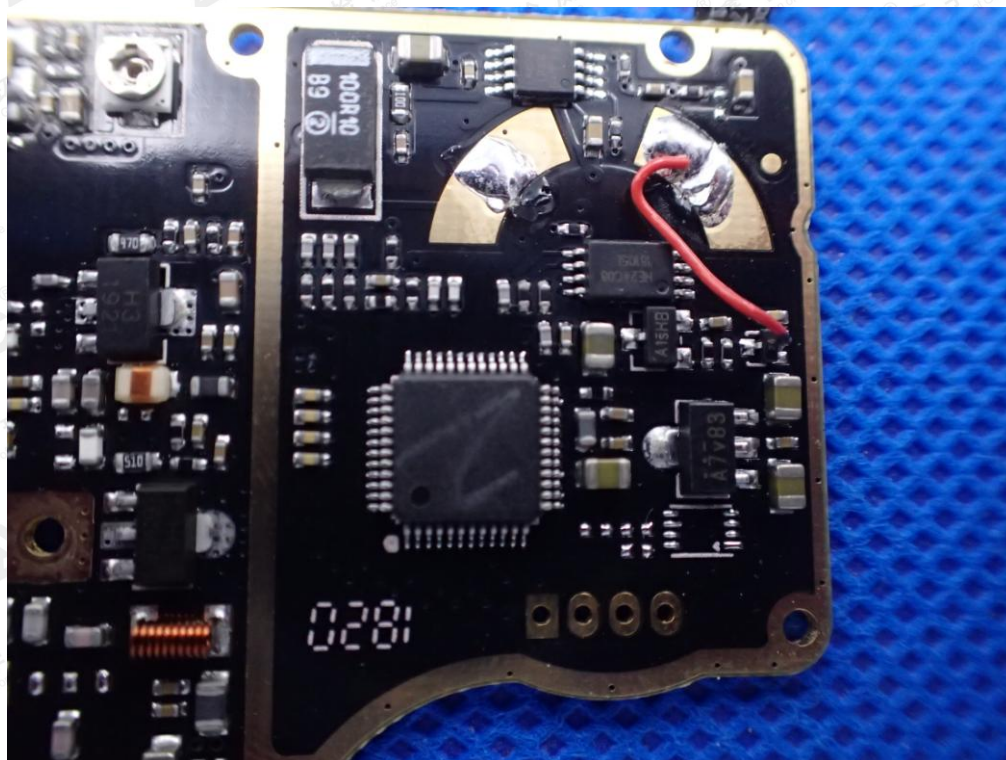


INTERNAL VIEW-4 OF EUT

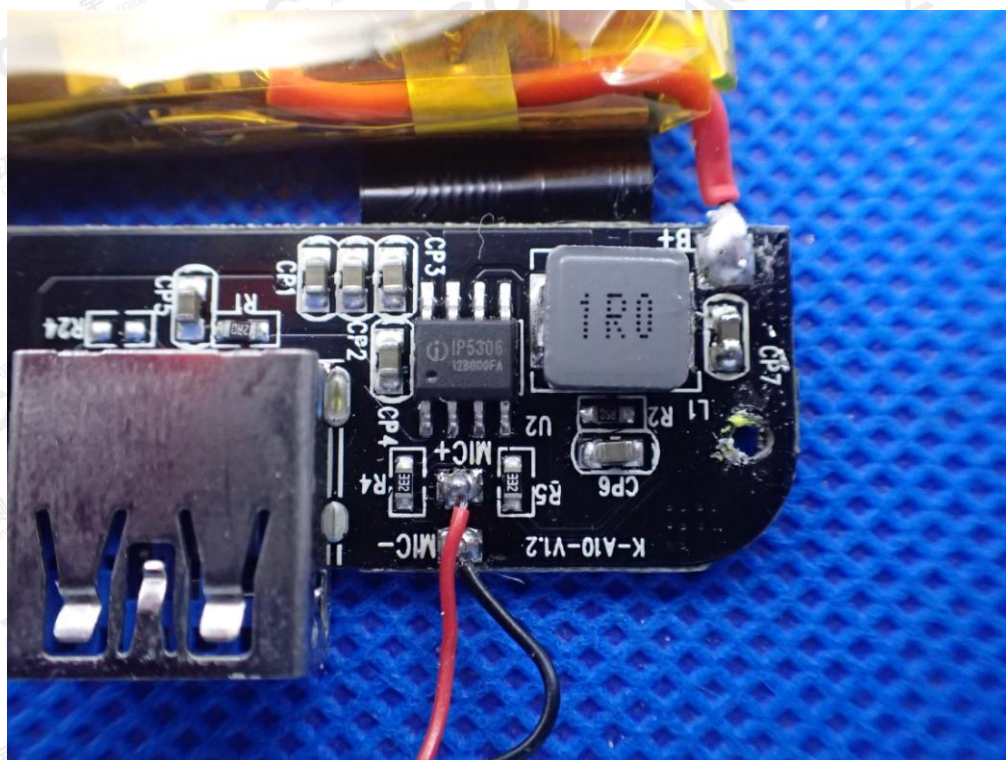


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INTERNAL VIEW-5 OF EUT

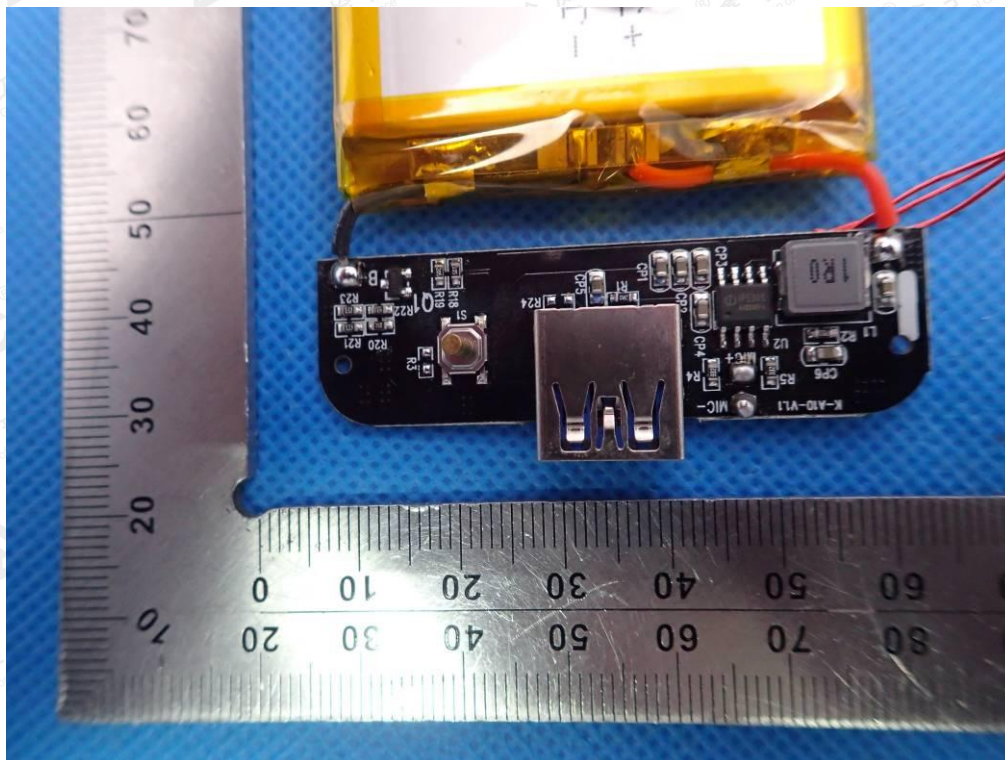


INTERNAL VIEW-6 OF EUT

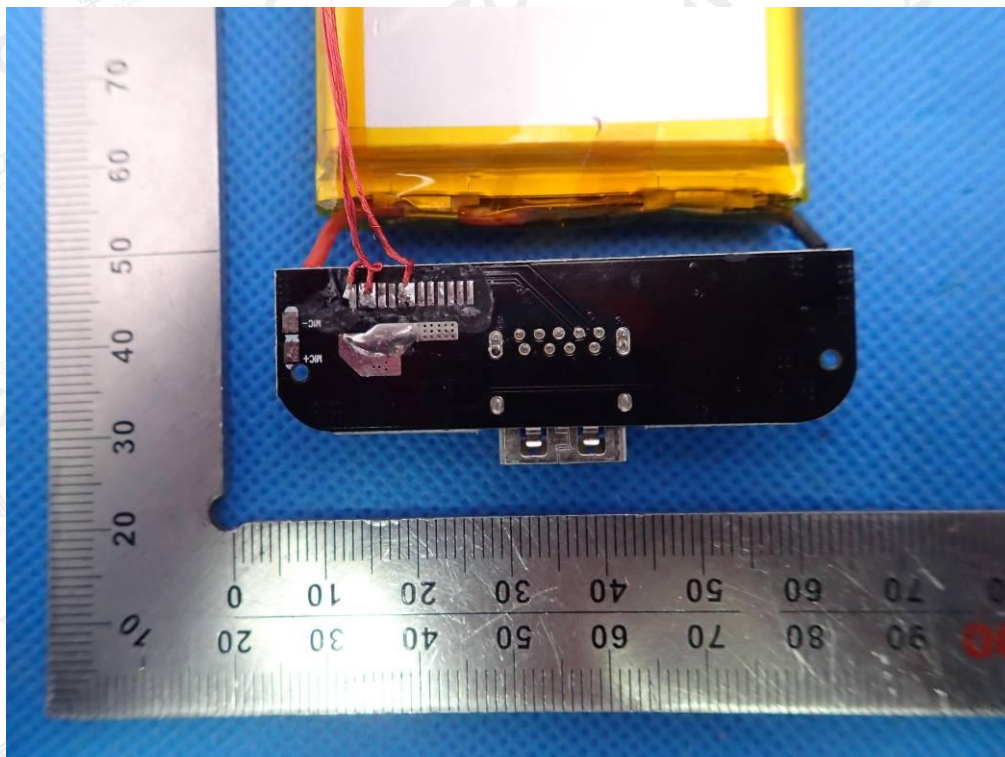


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INTERNAL VIEW-7 OF EUT



INTERNAL VIEW-8 OF EUT



-----END OF REPORT-----

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