

FCC PART 15B, CLASS B TEST REPORT

For

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FCC ID: 2ASV6-T5A

Report Type: Original Report	Product Type: Walkie talkie		
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Report Number:	RSZ201104002-00A		
Report Date:	2020-11-10		
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Walkie talkie
Tested Model	T5
Voltage Range	DC 6V from battery
Highest operating frequency	467.7125MHz
Date of Test	2020-11-09 to 2020-11-10
Sample serial number	RSZ201104002-EM-S1 (Assigned by BACL, Shenzhen)
Received date	2020-11-04
Sample/EUT Status	Good condition

Objective

This test report is in accordance with Part 2-Subpart J, Part 15-Subparts A, B of the Federal Communication Commissions rules.

The objective of the manufacturer is to determine the compliance of the EUT with FCC Part 15 B.

Test Methodology

All measurements contained in this report were conducted with 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.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-2:2011, the expanded combined standard uncertainty of test at Bay Area Compliance Laboratories Corp. (Shenzhen) is shown as below. And the uncertainty will be taken into consideration for the test data recorded in the report

Parameter		uncertainty
Conducted Emissions		$\pm 1.95\text{dB}$
Radiated Emissions	Below 1GHz	$\pm 4.75\text{dB}$
	Above 1GHz	$\pm 4.88\text{dB}$

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 342867, the FCC Designation No.: CN1221.

The test site has been registered with ISED Canada under ISED Canada Registration Number 3062B.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a manufacturer testing fashion.

EUT Exercise Software

No exercise software was made to the EUT tested.

Special Accessories

No special accessory.

Equipment Modifications

No modification was made to the EUT tested.

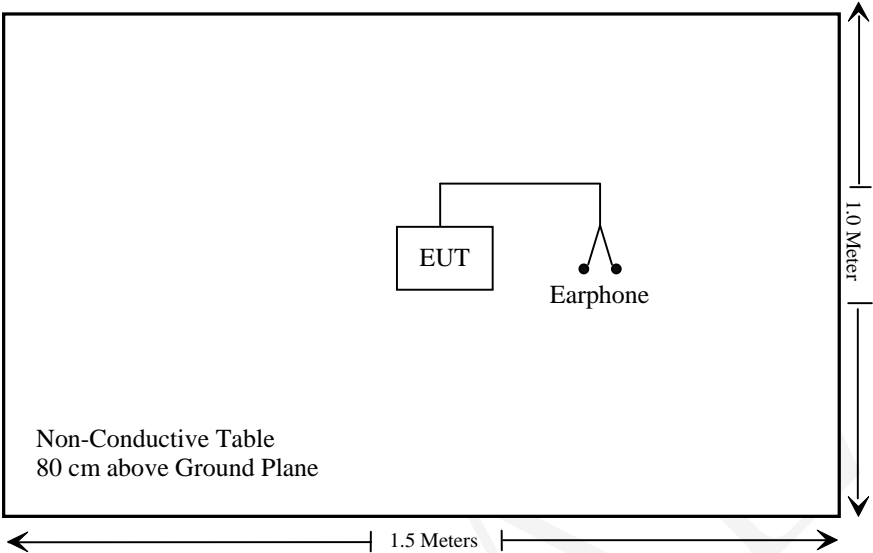
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
/	Earphone	/	/

External I/O Cable

Cable Description	Length (m)	From/Port	To
Unshielded un-detachable earphone cable	1.2	Earphone	EUT

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Results
§15.107	AC Line Conducted Emissions	Not Applicable
§15.109	Radiated Spurious Emissions	Compliance

Not Applicable: The EUT is powered by battery.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
R&S	EMI Test Receiver	ESR3	102455	2020/08/04	2021/08/03
Sonoma instrument	Pre-amplifier	310 N	186238	2020/08/04	2021/08/03
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2017/12/22	2020/12/21
Unknown	Cable 2	RF Cable 2	F-03-EM197	2019/11/29	2020/11/28
Unknown	Cable	Chamber Cable 4	EC-007	2019/11/29	2020/11/28
Rohde & Schwarz	Auto test software	EMC 32	V9.10	NCR	NCR
Yijia	Temperature & Humidity Meter	TA218B	E0938	2020/10/14	2021/10/13
Rohde & Schwarz	Spectrum Analyzer	FSV40-N	102259	2020/08/04	2021/08/03
Sunol Sciences	Horn Antenna	DRH-118	A052604	2017/12/22	2020/12/21
COM-POWER	Pre-amplifier	PA-122	181919	2019/11/29	2020/11/28
Yijia	Temperature & Humidity Meter	TA218B	E0938	2020/10/14	2021/10/13
Insulated Wire Inc.	RF Cable	SPS-2503-3150	02222010	2019/11/29	2020/11/28
Unknown	RF Cable	W1101-EQ1 OUT	F-19-EM005	2019/11/29	2020/11/28
Unknown	Signal Cable	RG-214	2	2019/11/29	2020/11/28
Agilent	Signal Generator	N5183A	MY51040755	2019/12/04	2020/12/04

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

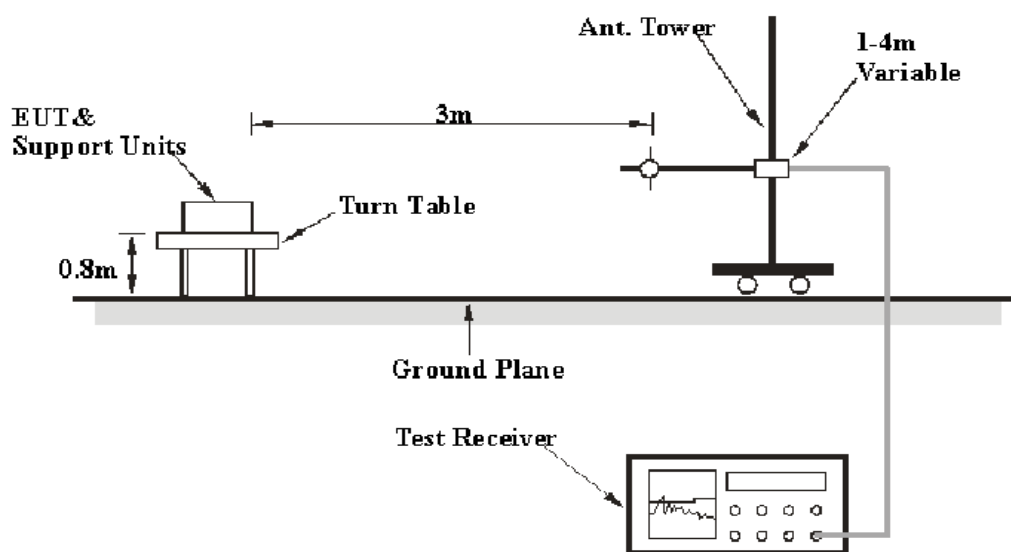
FCC §15.109 - RADIATED SPURIOUS EMISSIONS

Applicable Standard

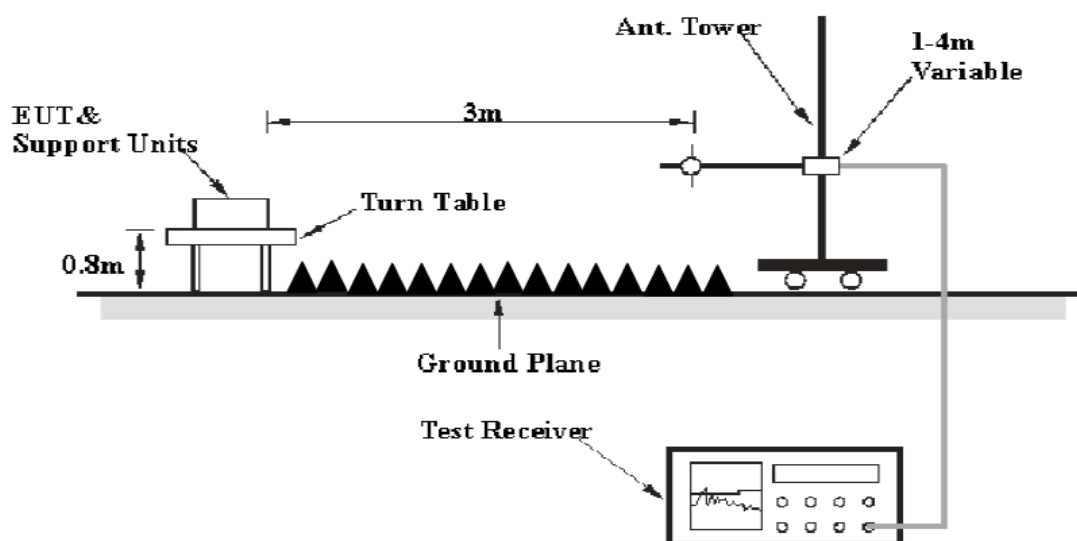
FCC §15.109

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2014. The specification used was the FCC Part 15.109 Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 2 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	Ave.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the Quasi-peak detector mode from 30 MHz to 1 GHz and PK and average detector modes for frequencies above 1 GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Data

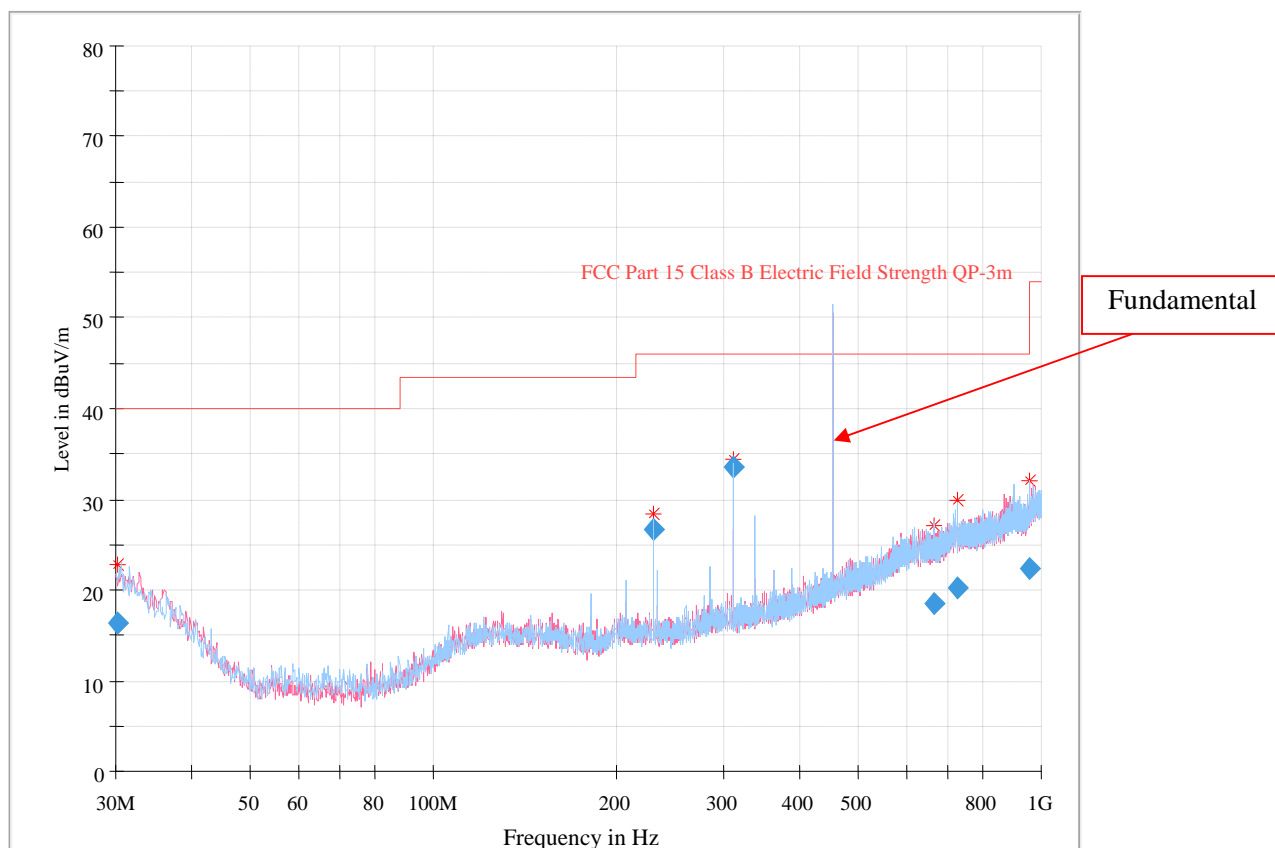
Environmental Conditions

Temperature:	27~32.4 °C
Relative Humidity:	52~55 %
ATM Pressure:	101.0~101.3 kPa

The testing was performed by Holland Yang and Harris He on 2020-11-09 and 2020-11-10 for below 1GHz and Alan He on 2020-11-09 for above 1GHz.

Test Mode: Receiving (Channel 13: 467.6875MHz)

30 MHz – 1 GHz:



Final Result

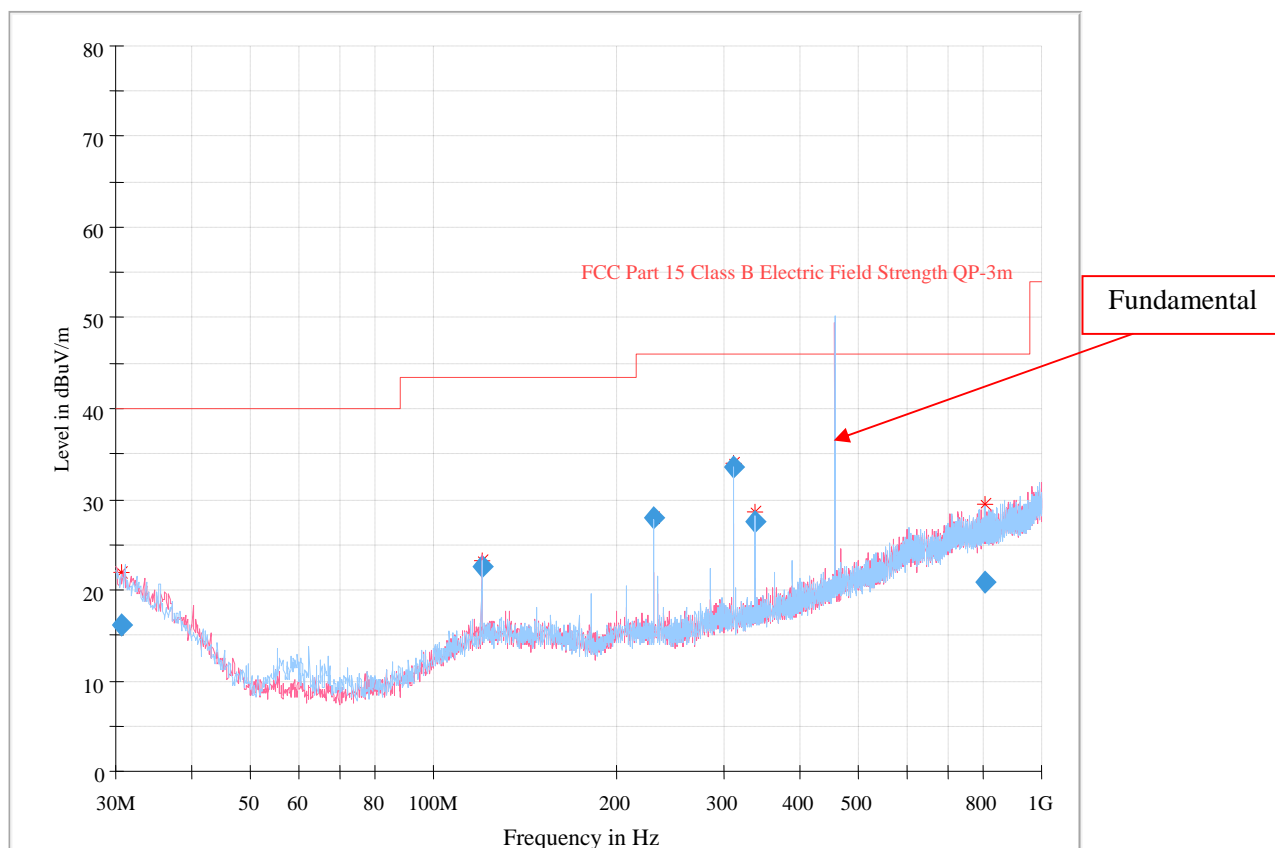
Frequency (MHz)	QuasiPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.118500	16.30	40.00	23.70	120.0	H	292.0	-4.5
230.684875	26.63	46.00	19.37	110.0	H	133.0	-10.8
311.987250	33.49	46.00	12.51	102.0	H	165.0	-9.0
664.801250	18.57	46.00	27.43	388.0	H	164.0	-1.9
728.479375	20.24	46.00	25.76	184.0	H	354.0	-0.6
959.825000	22.37	46.00	23.63	166.0	H	297.0	2.4

1 GHz – 2 GHz:

Frequency (MHz)	Measurement		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15B	
	Reading (dB μ V)	PK/QP/Ave.		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
1205.42	43.86	PK	128	1.6	H	-4.78	39.08	74	34.92
1205.42	28.85	Ave.	128	1.6	H	-4.78	24.07	54	29.93
1205.42	43.94	PK	29	2.2	V	-4.78	39.16	74	34.84
1205.42	28.89	Ave.	29	2.2	V	-4.78	24.11	54	29.89
1653.56	44.04	PK	174	1.8	H	-2.21	41.83	74	32.17
1653.56	29.06	Ave.	174	1.8	H	-2.21	26.85	54	27.15
1653.56	44.13	PK	68	1.7	V	-2.21	41.92	74	32.08
1653.56	29.09	Ave.	68	1.7	V	-2.21	26.88	54	27.12

Test Mode: Receiving (Channel 16: 462.5750MHz)

30 MHz – 1 GHz:



Final Result

Frequency (MHz)	QuasiPeak (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.644000	16.03	40.00	23.97	344.0	H	269.0	-4.8
120.001500	22.61	43.50	20.89	151.0	V	0.0	-10.8
230.712375	28.05	46.00	17.95	103.0	H	127.0	-10.8
311.989750	33.56	46.00	12.44	102.0	H	165.0	-9.0
337.997375	27.58	46.00	18.42	110.0	H	132.0	-8.6
805.087625	20.84	46.00	25.16	400.0	H	170.0	-0.2

1 GHz – 2 GHz:

Frequency (MHz)	Measurement		Turntable Degree	Rx Antenna		Corrected Factor (dB/m)	Corrected Amplitude (dB μ V/m)	FCC Part 15B	
	Reading (dB μ V)	PK/QP/Ave.		Height (m)	Polar (H / V)			Limit (dB μ V/m)	Margin (dB)
1232.61	43.92	PK	67	1.5	H	-4.68	39.24	74	34.76
1232.61	28.95	Ave.	67	1.5	H	-4.68	24.27	54	29.73
1232.61	43.99	PK	14	2.0	V	-4.68	39.31	74	34.69
1232.61	29.02	Ave.	14	2.0	V	-4.68	24.34	54	29.66
1659.52	44.08	PK	75	1.9	H	-2.21	41.87	74	32.13
1659.52	29.08	Ave.	75	1.9	H	-2.21	26.87	54	27.13
1659.52	44.11	PK	212	1.6	V	-2.21	41.90	74	32.10
1659.52	29.07	Ave.	212	1.6	V	-2.21	26.86	54	27.14

Note:

- 1) Correction Factor=Antenna factor (RX) + cable loss – amplifier factor
- 2) Corrected Amplitude = Correction Factor + Reading
- 3) Margin = Limit - Corrected Amplitude

***** END OF REPORT *****