



TEST REPORT

Applicant: Quanzhou Chierda Electronic Telecom Co., Ltd.

Address: No.8, Zi'an Road, Jiangnan High-tech Industrial Zone, Licheng District,

Quanzhou, Fujian, China

FCC ID: OA8-TC18

Product Name: walkie talkie

Standard(s): 47 CFR Part 15 Subpart B

ANSI C63.4-2014

The above device has been tested and found compliant with the requirement of the relative standards by China Certification ICT Co., Ltd (Dongguan)

Report Number: CR231063010-00A

Date Of Issue: 2023/12/18

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Title: RF Engineer

Approved By: Sun Zhong

Title: Manager

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Test Facility

The Test site used by China Certification ICT Co., Ltd (Dongguan) to collect test data is located on the No. 113, Pingkang Road, Dalang Town, Dongguan, Guangdong, China.

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The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 442868, the FCC Designation No. : CN1314.

Declarations

China Certification ICT Co., Ltd (Dongguan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol "\(^{\text{a}}\)". Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	CR231063010-00A	Original Report	2023/12/18

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

EUT Name:	walkie talkie
EUT Model:	TC18
Highest Operation Frequency:	467.7125 MHz
Rated Input Voltage:	DC3.7V from battery or DC 4.2V from charger
Serial Number:	2CTF-1
EUT Received Date:	2023/10/27
EUT Received Status:	Good

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Accessory Information:

Accessory Description	Manufacturer	Model
Charger	Quanzhou Chierda Electronic Telecom Co., Ltd	Unknown

1.2 Description of Test Configuration

1.2.1 EUT Operation Condition

EUT Operation Mode:	The system was configured for testing in Typical Use Mode, which was provided by the manufacturer. Test Mode: Mode 1: Charging from USB & Receiving(462.6375MHz,467.6375MHz) Mode 2: Charging from charger & Receiving(462.6375MHz,467.6375MHz)
Equipment Modifications:	No
Equipment Mounteutions:	110
EUT Exercise Software:	No

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1.2.2 Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
SZTY	Adapter	TPA-23A050200UU01	AD220930003
PO FUNG	Earphone	/	Earphone09
Agilent	MXG Vector Signal Generator	N5182B	MY51350142

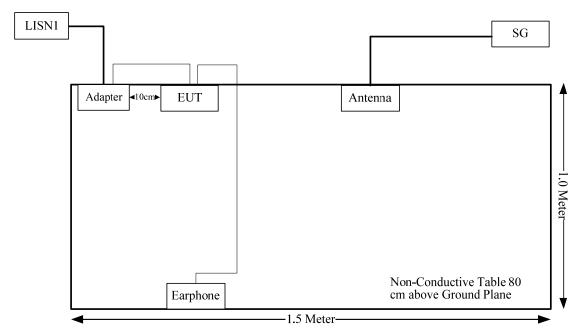
1.2.3 Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	То
USB Cable	No	No	1	Adapter	EUT
Earphone Cable	No	No	1	Earphone	EUT
Coaxial Cable	No	No	1.5	antenna	N5182B

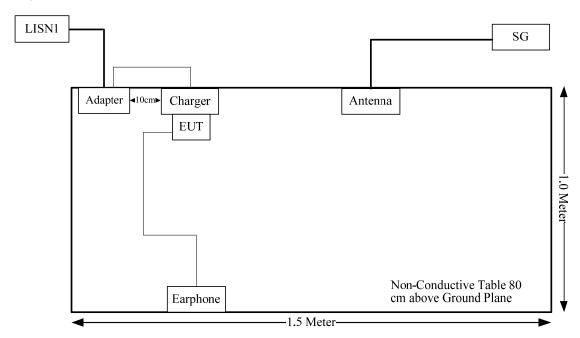
1.2.4 Block Diagram of Test Setup

AC line conducted emissions:

M1

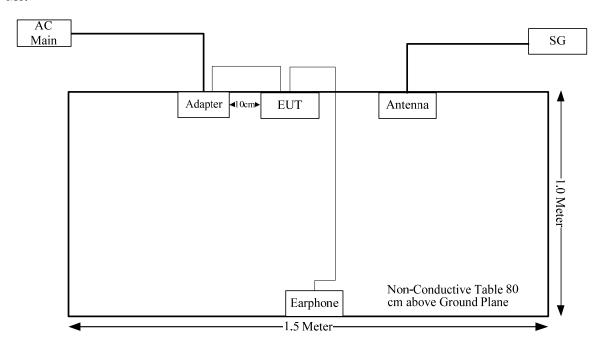




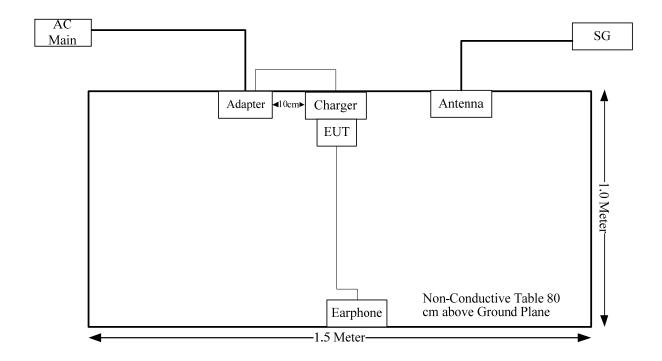


Radiated emissions:

M1:



M2



1.3 Measurement Uncertainty

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

Parameter	Measurement Uncertainty
Unwanted Emissions, radiated	30M~200MHz: 4.15 dB,200M~1GHz: 5.61 dB,1G~6GHz: 5.14 dB,
Oliwanted Ellissions, radiated	6G~18GHz: 5.93 dB,18G~26.5G:5.47 dB,26.5G~40G:5.63 dB
Temperature	±1℃
Humidity	±5%
AC Power Lines Conducted Emission	2.8 dB (150 kHz to 30 MHz)

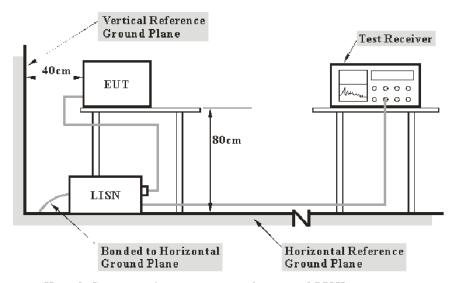
2. SUMMARY OF TEST RESULTS

Standard(s) Section	Description of Test	Result
§15.107	Conducted emissions	Compliant
§15.109	Radiated emissions	Compliant

3. REQUIREMENTS AND TEST PROCEDURES

3.1 AC Line Conducted Emissions

3.1.1 EUT Setup



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15 B 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 adapter or EUT was connected to the main LISN with a 120 V/60 Hz AC power source.

3.1.2 EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

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

Frequency Range	IF B/W	
150 kHz – 30 MHz	9 kHz	

3.1.3 Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the first LISN and the other support equipments were connected to the outlet of the second LISN.

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Maximizing procedure was performed on the six (6) highest emissions of the EUT, the report shall list the six emissions with the smallest margin relative to the limit, unless the margin is greater than 20 dB.

All data was recorded in the Quasi-peak and average detection mode.

The report shall list the six emissions with the smallest margin relative to the limit, unless the margin is greater than 20 dB.

3.1.4 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor

Factor = attenuation caused by cable loss + voltage division factor of AMN

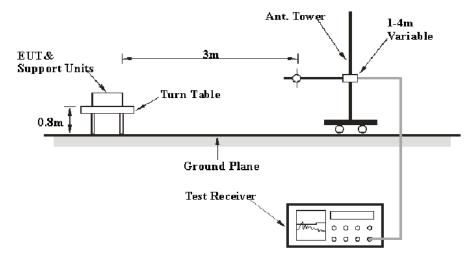
The "Margin" column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit - Result

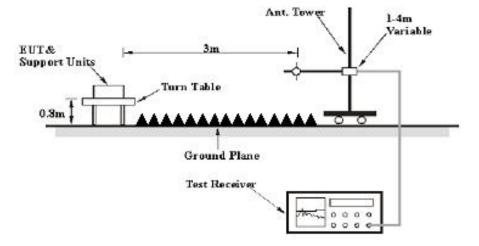
3.2 Radiation Emissions

3.2.1 EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emissions were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2014. The specification used was with the FCC Part 15 B Class B limits.

3.2.2 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	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
	1 MHz	3 MHz	/	Peak
Above 1 GHz	1 MHz	Reduced video bandwidth	/	AVG

If the maximized peak measured value complies with under the limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

3.2.3 Test Procedure

During the radiated emissions, the adapter was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

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

The data was recorded in the Quasi-peak detection mode for below 1 GHz.

All emissions under the average limit and under the noise floor have not recorded in the report.

3.2.4 Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Reading + Factor Factor = Antenna Factor + Cable Loss- Amplifier Gain

The "Margin" column of the following data tables indicates the degree of compliance within the applicable limit. The equation for margin calculation is as follows:

Margin = Limit - Result

4. TEST DATA AND RESULTS

4.1 AC Line Conducted Emissions

Serial Number:	2CTF-1	Test Date:	2023/11/20
Test Site:	CE	Test Mode:	M1, M2
Tester:	David Huang	Test Result:	Pass

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Environmental Conditions:

Temperature: (°C) 25	25.1	Relative Humidity: (%)	42	ATM Pressure: (kPa)	101.8
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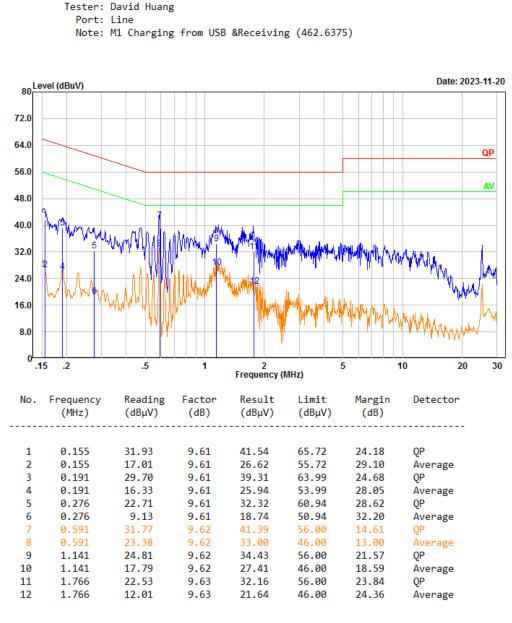
Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	LISN	ENV216	101134	2023/03/31	2024/03/30
R&S	EMI Test Receiver	ESR3	102726	2023/03/31	2024/03/30
MICRO-COAX	Coaxial Cable	UTIFLEX	C-0200-01	2023/08/06	2024/08/05
Audix	Test Software	E3	190306 (V9)	N/A	N/A

^{*} Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Charging from USB & Receiving 462.6375MHz:

Project No.: CR231063010-RF Tester: David Huang



Charging from charger & Receiving 467.6375MHz: Project No.: CR231063010-RF Tester: David Huang Port: Line Note: M2 Charging from charging base & Receiving (467.6375) Date: 2023-11-20 80 Level (dBuV) 72.0 64.0 QP 56.0 ΑV 48.0 40.0 32.0 24.0 16.0 8.0 .15 .2 5 10 30 20 2 Frequency (MHz) Reading Factor Result Limit Detector No. Frequency Margin (MHz) (dBµV) (dB) $(dB\mu V)$ $(dB\mu V)$ (dB) 65.95 29.90 0.151 26.44 9.61 36.05 QР 1 2 0.151 8.98 9.61 18.59 55.95 37.36 Average 3 0.179 32.04 9.61 41.65 64.54 22.89 QΡ 54.54 4 0.179 17.72 9.61 27.33 27.21 Average 0.224 28.57 9.61 38.18 62.68 24.50 5 QΡ 6 0.224 15.53 9.61 25.14 52.68 27.54 Average 0.637 32.73 9.62 42.35 56.00 13.65 8 0.637 20.75 9.62 30.37 46.00 15.63 Average 1.107 26.27 9.62 35.89 56.00 20.11 10 1.107 16.97 9.62 26.59 46.00 19.41 Average 11 1.731 25.18 9.63 34.81 56.00 21.19 14.27 46.00 12 1.731 9.63 23.90 22.10 Average

4.2 Radiation Emissions

Serial Number:	2CTF-1	Test Date:	2023/11/18~ 2023/12/07
Test Site:	966-1/966-2	Test Mode:	M1-M2
Tester:	Carl Xue, Mack Huang	Test Result:	Pass

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Environmental Conditions:								
Tamparatura		Relative		ATM				
Temperature:	25.2~25.4	Humidity:	53~57	Pressure:	101.4~101.8			
(C)		(%)		(kPa)				

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Antenna	JB6	A082520-6	2023/09/18	2026/09/17
R&S	EMI Test Receiver	ESR3	102724	2023/03/31	2024/03/30
TIMES MICROWAVE	Coaxial Cable	LMR-600- UltraFlex	C-0470-02	2023/07/16	2024/07/15
TIMES MICROWAVE	Coaxial Cable	LMR-600- UltraFlex	C-0780-01	2023/07/16	2024/07/15
Sonoma	Sonoma Amplifier		186165	2023/07/16	2024/07/15
Audix	Test Software	E3	201021 (V9)	N/A	N/A
АН	Double Ridge Guide Horn Antenna	SAS-571	1394	2023/02/22	2026/02/21
R&S	Spectrum Analyzer	FSV40	101591	2023/03/31	2024/03/30
MICRO-COAX	MICRO-COAX Coaxial Cable		217423-008	2023/08/06	2024/08/05
MICRO-COAX	Coaxial Cable	UFA210A-1-2362- 300300	235780-001	2023/08/06	2024/08/05
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2023/11/08	2024/11/07
Audix	Test Software	E3	201021 (V9)	N/A	N/A

^{*} Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

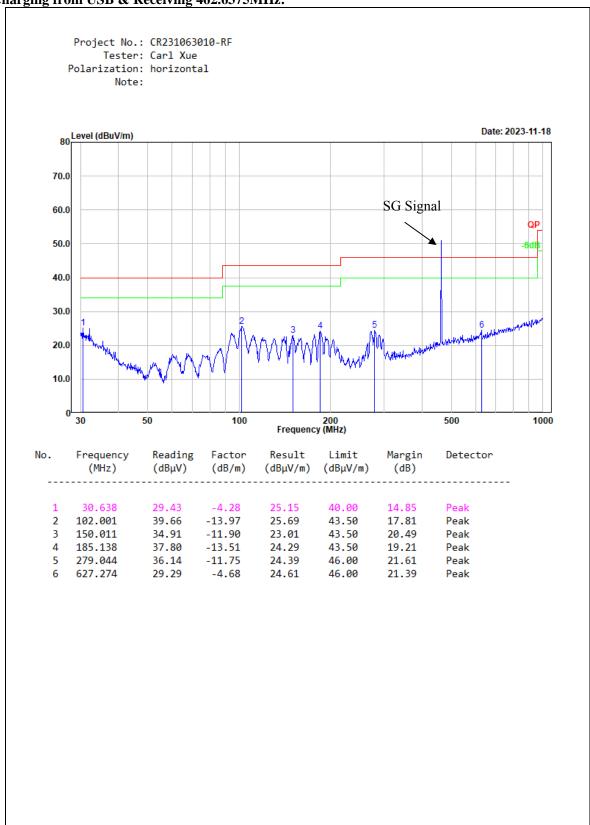
Test Data:

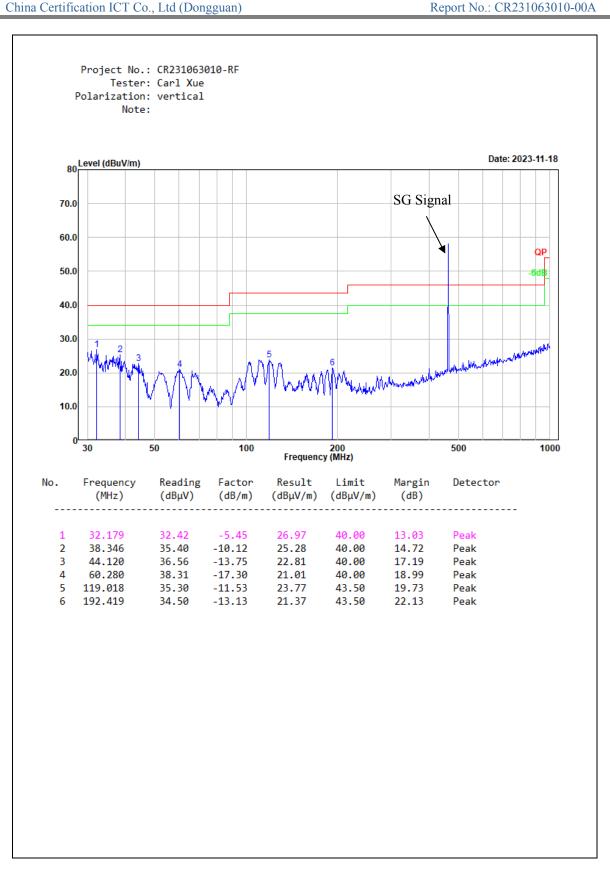
Please refer to the below table and plots.

After pre-scan in the X, Y and Z axes of orientation, the worst case is below:

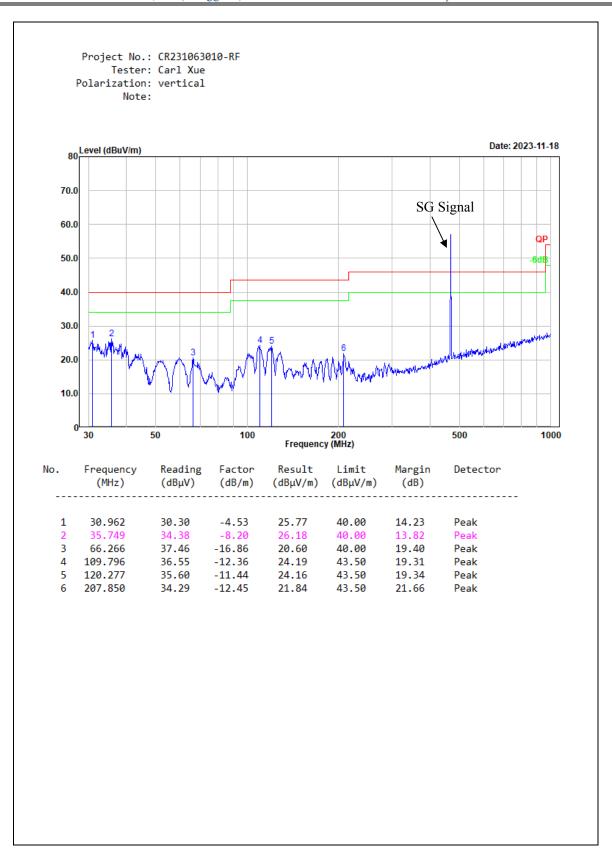
1) 30MHz-1GHz:

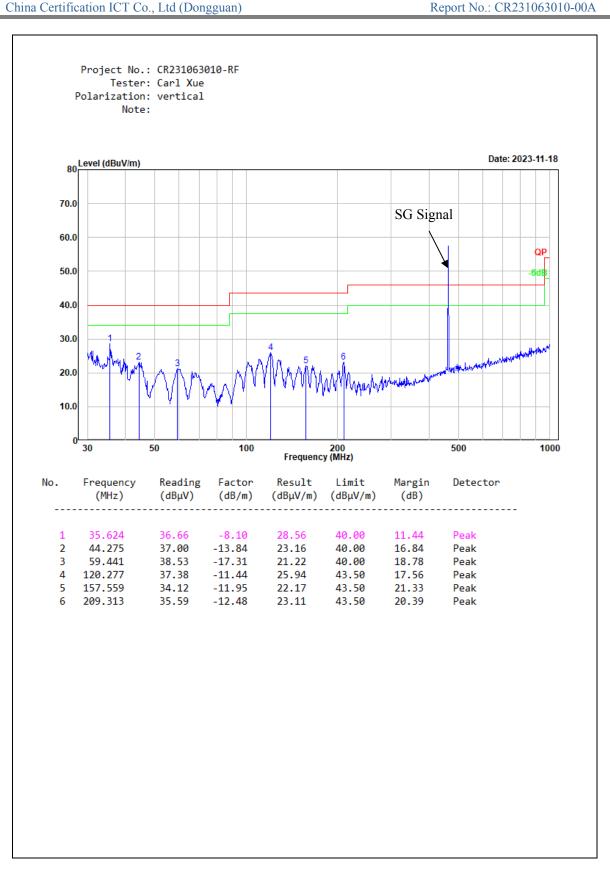
Charging from USB & Receiving 462.6375MHz:



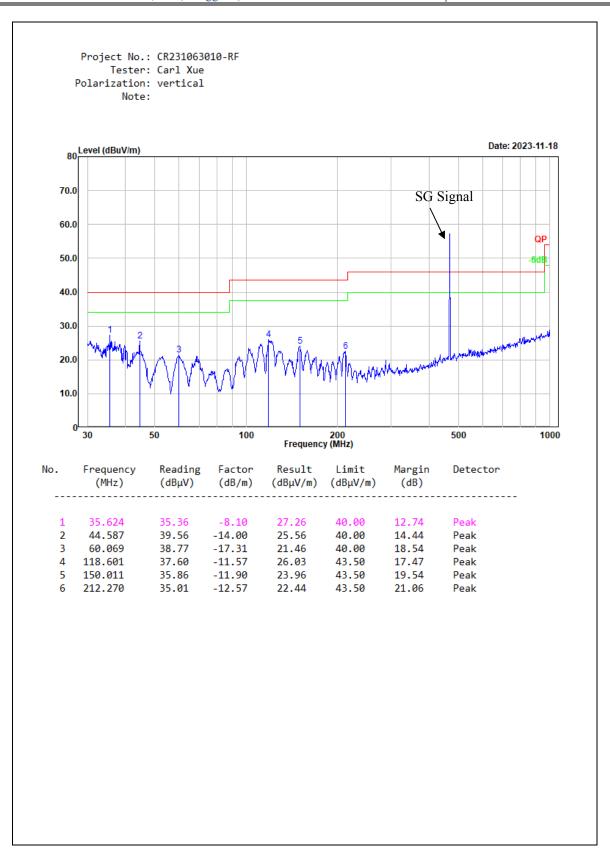


Charging from USB & Receiving 467.6375MHz: Project No.: CR231063010-RF Tester: Carl Xue Polarization: horizontal Note: 80 Level (dBuV/m) Date: 2023-11-18 70.0 SG Signal 60.0 50.0 40.0 30.0 20.0 10.0 200 Frequency (MHz) 1000 No. Frequency Reading Result Limit Detector Factor Margin (MHz) (dBµV) (dB/m) $(dB\mu V/m)$ $(dB\mu V/m)$ (dB) 30.745 -4.36 24.26 15.74 28.62 40.00 Peak 2 100.934 40.37 -14.10 26.27 43.50 17.23 Peak 3 165.487 35.46 -12.41 23.05 43.50 20.45 Peak 183.201 37.46 -13.53 23.93 43.50 19.57 Peak 46.00 275.157 24.72 Peak 36.66 -11.94 21.28 818.834 29.00 -1.76 27.24 46.00 18.76 Peak



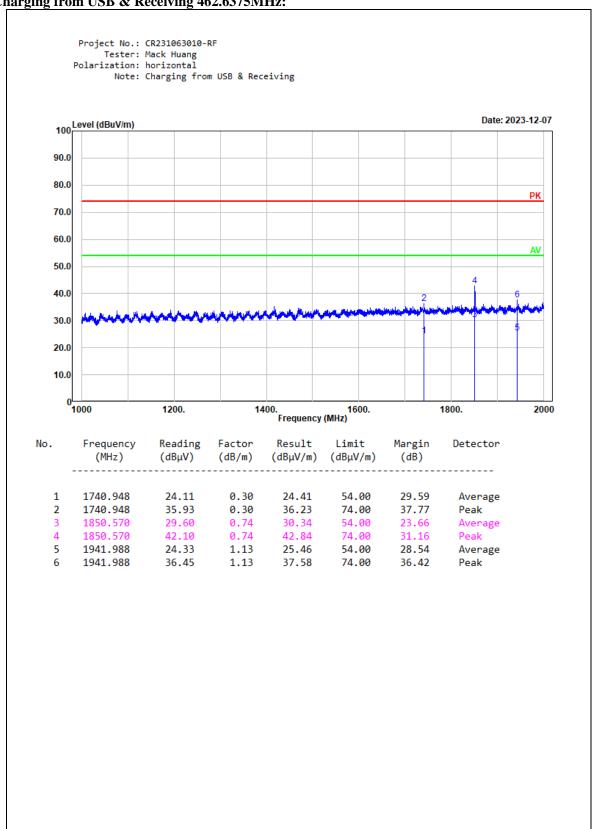


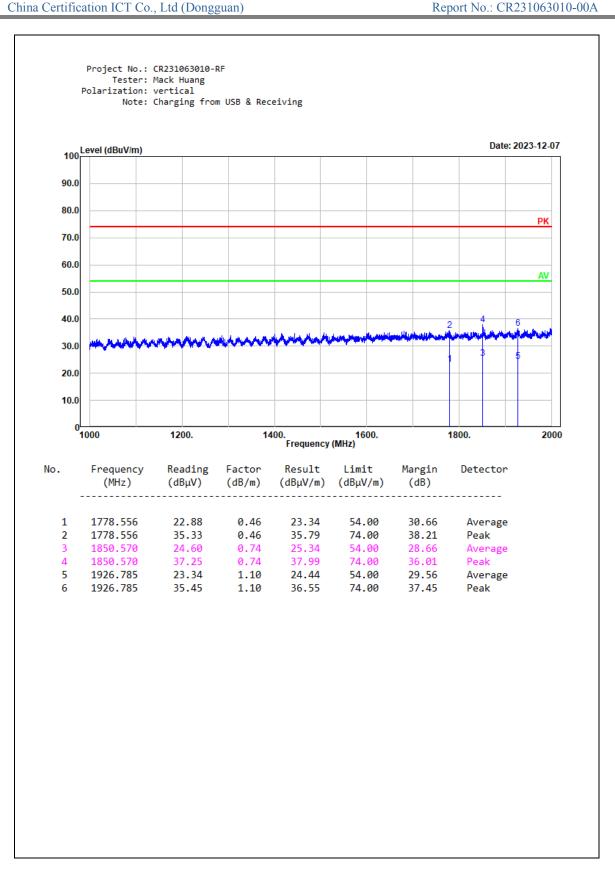
Charging from charger & Receiving 467.6375MHz: Project No.: CR231063010-RF Tester: Carl Xue Polarization: horizontal Note: Date: 2023-11-18 80 Level (dBuV/m) 70.0 SG Signal 60.0 50.0 40.0 30.0 20.0 10.0 200 Frequency (MHz) 500 1000 No. Frequency Reading Factor Result Limit Detector Margin (MHz) (dBµV) (dB/m) $(dB\mu V/m)$ $(dB\mu V/m)$ (dB) 30.000 27.45 -3.80 40.00 16.35 23.65 Peak 2 93.768 41.66 -15.98 25.68 43.50 17.82 Peak 3 103.442 39.07 -13.64 25.43 43.50 18.07 Peak 4 149.486 38.48 -11.90 26.58 43.50 16.92 Peak 43.50 Peak 203.523 38.02 -12.33 25.69 17.81 263.819 36.77 -12.38 24.39 46.00 21.61 Peak



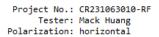
2) Above 1GHz:

Charging from USB & Receiving 462.6375MHz:

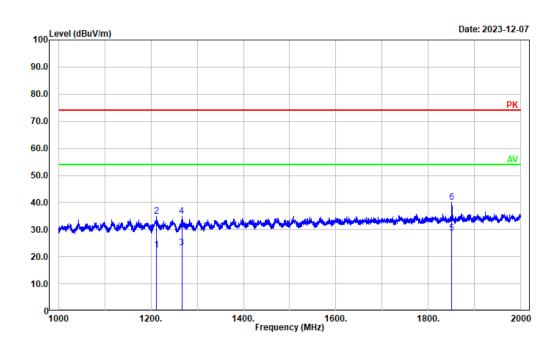




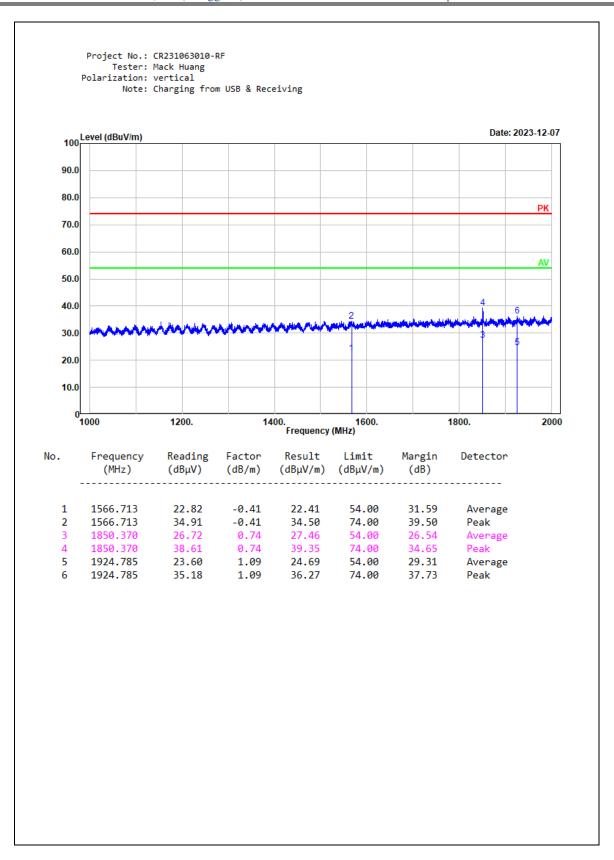
Charging from USB & Receiving 467.6375MHz:



Note: Charging from USB & Receiving



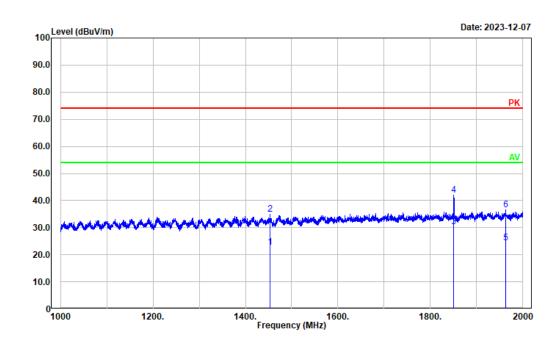
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1211.442	23.67	-1.26	22.41	54.00	31.59	Average
2	1211.442	36.18	-1.26	34.92	74.00	39.08	Peak
3	1266.653	24.74	-1.40	23.34	54.00	30.66	Average
4	1266.653	36.49	-1.40	35.09	74.00	38.91	Peak
5	1850.770	27.92	0.74	28.66	54.00	25.34	Average
6	1850.770	39.36	0.74	40.10	74.00	33.90	Peak



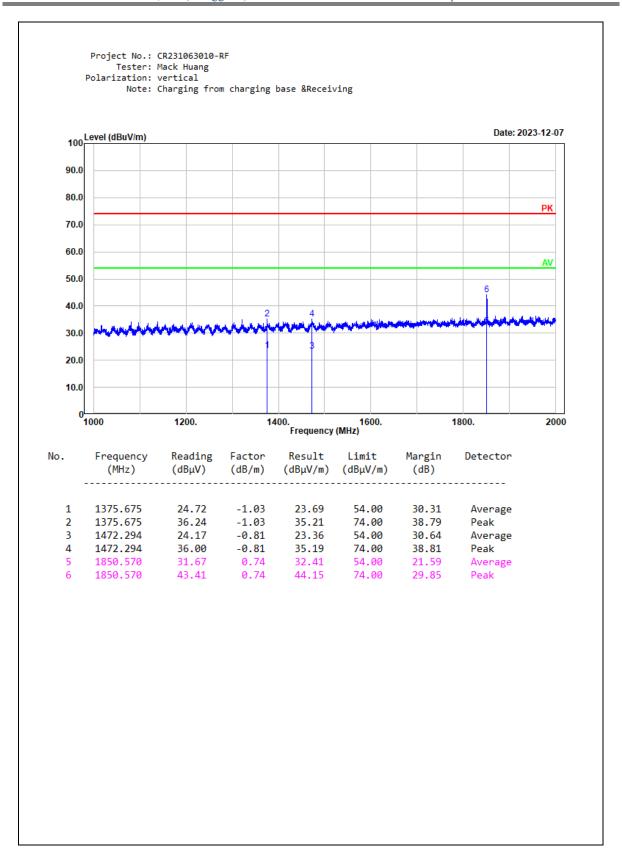
Report No.: CR231063010-00A Charging from charger & Receiving 462.6375MHz:

Project No.: CR231063010-RF Tester: Mack Huang Polarization: horizontal

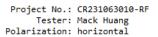
Note: Charging from charging base & Receiving



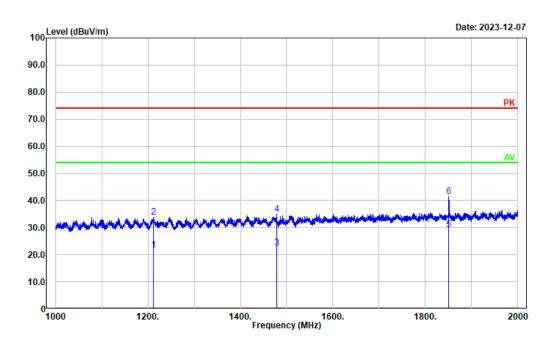
No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1452.691	23.71	-0.86	22.85	54.00	31.15	Average
2	1452.691	35.80	-0.86	34.94	74.00	39.06	Peak
3	1850.370	29.58	0.74	30.32	54.00	23.68	Average
4	1850.370	41.28	0.74	42.02	74.00	31.98	Peak
5	1962.993	23.21	1.20	24.41	54.00	29.59	Average
6	1962.993	35.26	1.20	36.46	74.00	37.54	Peak



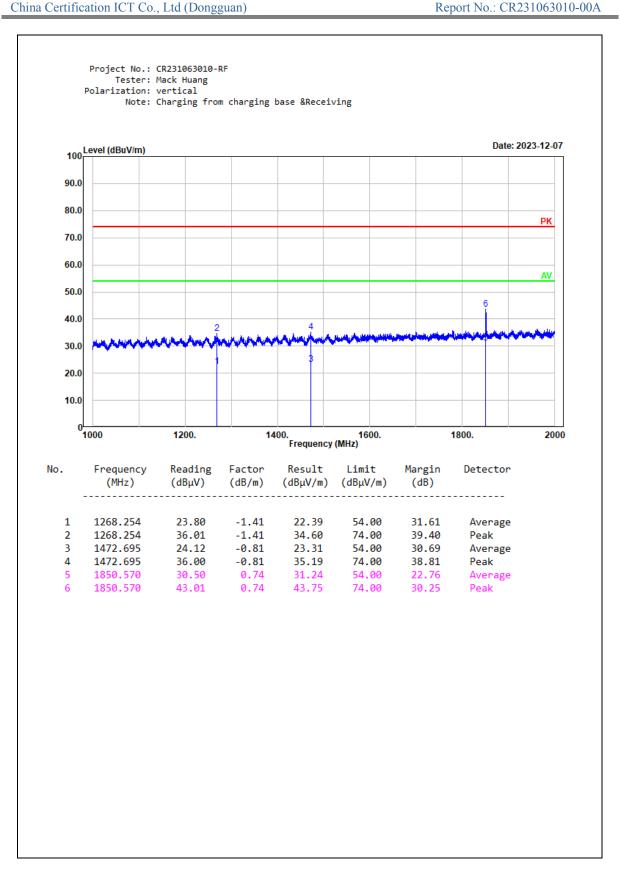
Charging from charger & Receiving 467.6375MHz:



Note: Charging from charging base &Receiving



No.	Frequency (MHz)	Reading (dBμV)	Factor (dB/m)	Result (dBµV/m)	Limit (dBμV/m)	Margin (dB)	Detector
1	1211.242	22.92	-1.26	21.66	54.00	32.34	Average
2	1211.242	35.08	-1.26	33.82	74.00	40.18	Peak
3	1477.896	23.32	-0.81	22.51	54.00	31.49	Average
4	1477.896	35.68	-0.81	34.87	74.00	39.13	Peak
5	1850.570	28.60	0.74	29.34	54.00	24.66	Average
6	1850.570	40.78	0.74	41.52	74.00	32.48	Peak



5. EUT PHOTOGRAPHS

Please refer to the attachment CR231063010-EXP EUT EXTERNAL PHOTOGRAPHS and CR231063010-INP EUT INTERNAL PHOTOGRAPHS

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6. TEST SETUP PHOTOGRAPHS

Please refer to the attachment CR231063010-00A-TSP TEST SETUP PHOTOGRAPHS.

==== END OF REPORT ====

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