RF EXPOSURE EVALUATION

1.TEST RESULT CERTIFICATION

Applicant	Qixiang Electron Science & Technology Co., Ltd.
Address	Qixiang Building,Tangxi Industrial Zone,Luojiang District,Quanzhou,Fujian,China
manufacturer	Qixiang Electron Science & Technology Co., Ltd.
Address	Qixiang Building,Tangxi Industrial Zone,Luojiang District,Quanzhou,Fujian,China
Factory	Qixiang Electron Science & Technology Co., Ltd.
Address	Qixiang Building,Tangxi Industrial Zone,Luojiang District,Quanzhou,Fujian,China
Product Designation:	Dual Band Mobile Radio
Brand Name:	AnyTone
Test Model:	588UVB PLUS
Series Model	588UVE PLUS, DB-750X, 5888UV, 588UVPLUS
Difference Description	All the same except the model name.
FCC ID:	T4K-588UVBPLUS
Date of Test:	Mar. 22, 2021~May 13, 2021

2.TECHNICAL INFORMATION

A major technical description of EUT is described as following:

Operation Frequency	BT 2.402 GHz to 2.480 GHz VHF:144MHz to 148MHz, From 222MHz to 225MHz; UHF: 420MHz to 450MHz
Modulation(BT)	BR ☒GFSK, EDR ☒π /4-DQPSK, ☒8DPSK BLE ☒GFSK 1Mbps
Modulation(PMR)	FM
Antenna Designation	BT: Integrated Antenna PMR: Detachable Antenna
Antenna type	BT: PCB Antenna PMR: External Antenna
Output power	BT: 1.988dBm PMR:VHF: 46.88dBm, UHF:45.54dBm, 222MHz to 225MHz: 36.62dBm
Antenna gain	BT:2.5dBi PMR:0dBi (Typical), 3dBi (Max)
Power Supply	DC 13.8V

3.RF EXPOSURE MEASUREMENT

3.1 INTRODUCTION

Human exposure to RF emissions from mobile devices (47 CFR §2.1091) may be evaluated based on the MPE limits adopted by the FCC for electric and magnetic field strength and/or power density, as appropriate, since exposures are assumed to occur at distances of 20 cm or more from persons.

The 1992 ANSI/IEEE standard (See Listed limit table) specifies a minimum separation distance of 20 cm for performing reliable field measurements to determine adherence to MPE limits.
If the minimum separation distance between a transmitter and nearby persons is more than 20 cm under normal operating conditions, compliance with MPE limits may be determined at such distance from the transmitter. When applicable, operation instructions and prominent warning labels may be used to alert the exposed persons to maintain a specified distance from the transmitter or to limit their exposure durations and usage conditions to ensure compliance.

3.2 FCC LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE

Frequency Range (MHz)	E-field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (Minutes)
0.3 -- 1.34	614	1.63	(100)*	30
1.34 -- 30	824/f	2.19/f	$(180/f^2)$*	30
30 -- 300	27.5	0.073	0.2	30
300 -- 1500	--	--	f/1500	30
1500 -- 100,000	--	--	1.0	30

*Note:

1. f= Frequency in MHz * Plane-wave Equivalent Power Density
2. The averaging time for General Population/Uncontrolled exposure to fixed transmitters is not applicable for mobile and portable transmitters. See 47 CFR §§2.1091 and 2.1093 on source-based time-averaging requirement for mobile and portable transmitters.

3.3 CLASSIFICATION OF THE ASSESSMENT METHODS

According to user manual, The antenna of the product, under normal use condition is at least 139.3cm away from the body of the user. Warning statement to the user for keeping at least 139.3cm separation distance and the prohibition of operating to a person has been printed on the user's manual. So, this product under normal use is located on electromagnetic far field between the human body.

$S=PG/4\pi R^2$

Where:

S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator R=distance to the center of radiation of the antenna

3.4 EUT OPERATION CONDITION

Make the EUT to transmit at Bottom channel, Middle channel and Top channel individually.

3.5 TEST RESULTS

Note: report the worst result in this part

Antenna Gain=2.5dBi (Numeric 1.78), π=3.141

Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Power Density (mW/cm^2)	Power Density Limit (mW/cm^2)	Result (Pass/Fail)
2440	1.988	1.58	1.15358E-05	1.0	Pass

Note:

1.The output power is refer to **AGC01284210302FE02.**

Antenna Gain=3.0dBi (Numeric 2.0), π=3.141, Duty cycle=50%

Frequency (MHz)	Output Power (dBm)	Output Power (mW)	Correct Power (mW)	Power Density ($mW/cm^{2)}$	Power Density Limit ($mW/cm^{2)}$	Result (Pass/Fail)
146.025	46.88	48752.85	24376.42	0.199972262	0.2	Pass

Note:

1.The output power is refer to **AGC01284210302FE10.**

2.Correct Power=Output Power*Duty cycle.

3.According to the user manual, the minimum separate distance which used for MPE calculate is 139.3cm.

4.The BT and PMR can transmit simultaneously: 1.15358E-05/1.0+0.199972262/0.2=0.999872846<1