

# RF EXPOSURE EVALUATION

## 1. TEST RESULT CERTIFICATION

<b>Applicant:</b>	QUANZHOU TEAMUP ELECTRONIC CO.,LTD
	6th Floor,Second Building, No.26, Zishan Road, Jiangnan High-Tech Park, Licheng District,Quanzhou City,China
<b>Manufacturer:</b>	QUANZHOU TEAMUP ELECTRONIC CO.,LTD
	6th Floor,Second Building, No.26, Zishan Road, Jiangnan High-Tech Park, Licheng District,Quanzhou City,China
<b>Product Designation:</b>	CB Radio
<b>Brand Name:</b>	Radioddity , TEAMUP ,Uniden
<b>Test Model:</b>	TM27
<b>Series model:</b>	C27,CB-27
<b>Series model difference description:</b>	All the same except for brand name and model name, the corresponding relationship are as follow: TEAMUP is corresponding TM27,Radioddity is corresponding C27,Uniden is corresponding CB-27
<b>FCC ID:</b>	2ARTJ-CB27
<b>Date of Test:</b>	Dec. 06, 2018

## 2. TECHNICAL INFORMATION

A major technical description of EUT is described as following:

<b>Operation Frequency</b>	26.965MHz~27.405MHz
<b>Modulation</b>	AM
<b>Antenna Designation</b>	Detachable Antenna
<b>Output power</b>	4W
<b>Antenna type</b>	External antenna
<b>Antenna gain</b>	0dBi
<b>Power Supply</b>	DC13.8V

### Channel List:

Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
1	26.965	11	27.085	21	27.215	31	27.315
2	26.975	12	27.105	22	27.225	32	27.325
3	26.985	13	27.115	23	27.255	33	27.335
4	27.005	14	27.125	24	27.235	34	27.345
5	27.015	15	27.135	25	27.245	35	27.355
6	27.025	16	27.155	26	27.265	36	27.365
7	27.035	17	27.165	27	27.275	37	27.375
8	27.055	18	27.175	28	27.285	38	27.385
9	27.065	19	27.185	29	27.295	39	27.395
10	27.075	20	27.205	30	27.305	40	27.405

## 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 <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (Minutes)
0.3 -- 1.34	614	1.63	(100)*	30
1.34 -- 30	824/f	2.19/f	(180/f <sup>2</sup> )*	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.

**4. CLASSIFICATION OF THE ASSESSMENT METHODS**

According to user manual, The antenna of the product, under normal use condition is at least 25.76 cm away from the body of the user. Warning statement to the user for keeping at least 25.76 cm 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.

$$S = \frac{PG}{4\pi R^2}$$

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

**5. EUT OPERATION CONDITION**

Make the EUT to transmit at channel 1 , channel 19 and channel 40 individually.

## 6. TEST RESULTS

Note: report the worst result in this part

Antenna Gain=0dBi (Numeric 1.0),  $\pi=3.141$ , Duty cycle=50%

Frequency	Output Power	Output Power	Correct Power	Power Density	Power Density Limit	Result
MHz	dBm	mW	mW	mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	Pass/Fail
27.405	36.02	4000	2000	0.237	0.24	Pass

Note:

- 1.The output power is refer to **HK1812061816E**.
- 2.Correct Power=Output Power\*Duty cycle.
- 3.According to the user manual, the minimum separate distance which used for MPE calculate is 25.76cm.