



# RF Exposure Evaluation Report

**Applicant:** Shenzhen VANCH Intelligent Technology Co., Ltd  
**Address of Applicant:** Floor 4, Building B west side, QingHu FuAnNa industrial zone, QingNing road 1, LongHua district, Shenzhen, Guangdong, China 518109  
**Equipment Under Test (EUT)**  
**Product Name:** UHF RFID Industrial Reader  
**Model No.:** VF-747P  
**FCC ID:** 2A3H9VF-747P  
**Applicable standards:** FCC CFR Title 47 Part 2 (§2.1091)  
**Date of sample receipt:** 22 Jun., 2022  
**Date of Test:** 23 Jun., 2022 to 06 Feb., 2023  
**Date of report issue:** 07 Feb., 2023  
**Test Result:** PASS

**Tested by:** Mike.OU **Date:** 07 Feb., 2023  
**Reviewed by:** Winner Zhang **Date:** 07 Feb., 2023  
**Approved by:** Winner Zhang **Date:** 07 Feb., 2023

*(Note: A red circular stamp is overlaid on the signatures, containing the text: TESTING GROUP SHENZHEN, 捷研集团深圳, WINNER ZHANG, Project Engineer, 检验检测专用章)*

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in above the application standard version. Test results reported herein relate only to the item(s) tested.

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## 1 Version

Version No.	Date	Description
00	07 Feb., 2023	Original

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### 3 General Information

#### 3.1 Client Information

Applicant:	Shenzhen VANCH Intelligent Technology Co., Ltd
Address:	Floor 4, Building B west side, QingHu FuAnNa industrial zone, QingNing road 1, LongHua district, Shenzhen, Guangdong, China 518109
Manufacturer/Factory:	Shenzhen VANCH Intelligent Technology Co., Ltd
Address:	Floor 4, Building B west side, QingHu FuAnNa industrial zone, QingNing road 1, LongHua district, Shenzhen, Guangdong, China 518109

#### 3.2 General Description of E.U.T.

Product Name:	UHF RFID Industrial Reader
Model No.:	VF-747P
Operation Frequency:	902 MHz – 928 MHz
Modulation technology:	Frequency modulation
Antenna Type:	External Antenna
Antenna gain:	9.0 dBi
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

#### 3.3 Operating Modes

Operating mode	Detail description
Transmitting mode	Keep the EUT in continuously transmitting in transmitting mode

#### 3.4 Additions to, deviations, or exclusions from the method

No
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### 3.5 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

● **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

● **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **CNAS - Registration No.: CNAS L15527**

JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.

● **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

### 3.6 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.

Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info-JYTee@lets.com, Website: <http://jyt.lets.com>

## 4 Technical Requirements Specification

### 4.1 Limits

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
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

### 4.2 Test Procedure

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

Where:

S = power density

P = power input to the antenna

G = numeric gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the centre of radiation of the antenna

### 4.3 Result

Frequency (MHz)	Maximum Output power (dBm)	Maximum Output power (mW)	Antenna Gain (dBi)	Antenna Gain (numeric)	Distance (cm)	Result (mW/cm <sup>2</sup> )	Limits for General Population/ Uncontrolled Exposure (mW/cm <sup>2</sup> )
902.5	26.017	399.669	9	7.943	30	0.281	0.602

Note: Just the worst case mode was shown in report.

### 4.4 Conclusion

The device is exempt from the SAR test and satisfies RF exposure evaluation.

-----End of report-----