



Maximum Permissible Exposure

FCC ID: WIYV3CT324001

APPLICANT: CASTLES TECHNOLOGY CO., LTD.

Application Type: Certification

Product: POS Terminal

Model No.: V3CT3(2.4)

Series Model No.: V3CT3, VEGA3000XV3CT3X2.4X, VEGA3000XXXXXXXXXXXXX
(X=A-Z,a-z,0-9, "(", ")", ".", or Blank)

Brand Name: 

FCC Rule Part(s): Part 2.1091 (Mobile)

Tested By : *Kaunaz Lee*
(Kaunaz Lee)

Reviewed By : *Paddy Chen*
(Paddy Chen)

Approved By : *Chenz Ker*
(Chenz Ker)



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Taiwan) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date
2310TW8704-U4	1.0	Original Report	2023-11-15

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	POS Terminal
Model No.	V3CT3(2.4)
Series Model No.	V3CT3, VEGA3000XV3CT3X2.4X, VEGA3000XXXXXXXXXXXXX (X=A-Z,a-z,0-9, "(", ")", ":", or Blank)
Brand Name	
Supports Radios Spec.	WiFi 2.4G: 802.11b/g/n (1TX/1RX)
Operating Frequency	WiFi 2.4GHz: 2412 ~ 2462MHz
Type of Modulation	802.11b: DSSS, DBPSK, DQPSK, CCK 802.11g/n-20M: OFDM, BPSK, QPSK, 16QAM, 64QAM
Accessory	
Power Adapter	 Brand Name: Model: PW04-945A Input: AC 100-240V~1A max, 50/60Hz Output: DC 9.0V-4.5A 40.5W DC Cable Out Non-Shielding, 1.5m

Note:

1. Model Difference: The difference of models only for marketing different, the other hardware was the same. (declared by the manufacturer)
2. The test was performed base on V3CT3(2.4).

1.2. Antenna Description

WiFi 2.4GHz	
Antenna Type	Dipole
Antenna M/N	RFA-25-JP322-70-110
Antenna Gain	2.67dBi

2. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

2.1. FCC Limits

According to FCC 1.1310: 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)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f ²	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 Exposures				
0.3-1.4	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 , (2) * = Plane-wave equivalent power density

Calculation Formula:

$$Pd = (Pout \cdot G) / (4 \cdot \pi \cdot r^2)$$

Where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

r = distance between observation point and center of the radiator in cm

2.2. FCC Limits (NFC)

The 1 mW Blanket Exemption of § 1.1307(b)(3)(i)(A) applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power of no more than 1 mW, regardless of separation distance.

The 1 mW blanket exemption applies at separation distances less than 0.5 cm, including where there is no separation. This exemption shall not be used in conjunction with other exemption criteria other than those for multiple RF sources in paragraph § 1.1307(b)(3)(ii)(A).

The 1 mW exemption is independent of service type and covers the full range of 100 kHz to 100 GHz, but it shall not be used in conjunction with other exemption criteria or in devices with higher-power transmitters operating in the same time-averaging period. Exposure from such higher-power transmitters would invalidate the underlying assumption that exposure from the lower-power transmitter is the only contributor to SAR in the relevant volume of tissue.

2.3. . Test Result

Mode	Frequency (MHz)	Output Power to Antenna (dBm)	Output Power to Antenna (mW)	Antenna Gain (dBi)	Distance (cm)	Power Density (mW/cm ²)	Limit (mW/cm ²)
Wi-Fi 2.4GHz	2412~2462	24.47	279.90	2.67	20	0.1030	1

Mode	Frequency Band (MHz)	E-Field Output Power (dBuV/m)	EIRP Output Power (dBm)	EIRP Output Power (mW)	SAR Test Exclusion Limit (mW)
NFC	13.56	71.39	-23.84	0.0041	1

Output power reference the following report: NFC report number is 2310TW8704-U3

Note:

Under normal use condition, is at least 20cm away from the body of the user , this device is classified as **POS Terminal** which can comply with FCC radiation exposure requirement specified in the FCC Rule 2.1091.

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