Maximum Permissible Exposure

FCC ID:	WIYV3CT335001
APPLICANT:	CASTLES TECHNOLOGY CO., LTD.
Application Type:	Certification
Product:	POS Terminal
Model No.:	V3CT3
Trademark:	CASTLES TECHNOLOGY
FCC Rule Part(s):	Part 2.1091 (Mobile)
Test Date:	December 19, 2022

Tested By : Fran Chen
(Fran Chen)

Reviewed By : Paddy Chen
(Paddy Chen)

Approved By : Chenz Ker
(Chenz Ker)

Testing Laboratory
3261

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.
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Revision History

Report No.	Version	Description	Issue Date
2211TW8702-U4	1.0	Original Report	2022-12-21

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name	POS Terminal
Model No.	V3CT3
Brand Name	CASTLES TECHNOLOGY
Supports Radios Spec.	WiFi 2.4G: 802.11b/g/n (1TX/1RX)
Operating Frequency	WiFi 2.4GHz: 2412 ~ 2462MHz
Modulation	802.11b: DSSS, DBPSK, DQPSK, CCK 802.11g/n-20: OFDM (BPSK, QPSK, 16QAM, 64QAM)

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. 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: $Pd = (Pout*G)/(4*pi*r^2)$

Where

Pd = power density in mW/cm^2

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

Under normal use condition, is at least 20cm away from the body of the user .

So, this device is classified as **Mobile Device**.

2.2. 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	23.68	233.35	2.67	20	0.0858	1

So, device can comply with FCC radiation exposure requirement specified in the FCC Rule 2.1091.

The End