

RF EXPOSURE REPORT

OF

Applicant: CastleNet Technology Inc.
No. 14, Ln. 141, Sec. 3, Beishen Rd., Shenkeng Dist.,
New Taipei City 22244, Taiwan (R.O.C.)

Product Name: Wireless Cable Gateway

Brand Name: Castlenet

Model No.: CBV384Z4

Model Difference: N/A

Report Number: E2/2021/30063

FCC ID: RK9-CBV384Z4

FCC Rule Part Part 2.1091

Issue Date: Apr. 07, 2021

We hereby certify that:

The above equipment was verified by SGS Taiwan Ltd. The evaluation in this report is in compliance with the above rule(s).
The results of this report relate only to the sample identified in this report.

John Teh

Approved By: _____

John Yeh / Asst. Manager



Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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Revision History

Report Number	Revision	Description	Issue Date	Remark
E2/2021/30063	Rev.00	Original.	Apr. 07, 2021	Revised By: Yuri Tsai

Note:

1、Disclaimer

Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.

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Table of Contents

1	DESCRIPTION OF EQUIPMENT UNDER TEST (EUT).....	4
2	FCC MAXIMUM PERMISSIBLE EXPOSURE (MPE).....	6

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1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

1.1 General:

Product Name:	Wireless Cable Gateway
Brand Name:	Castlenet
Model No.:	CBV384Z4
Model Difference:	N/A
Hardware Version:	N/A
Software Version:	N/A
Power Supply:	12Vdc from AC/DC Adapter

1.2 Antenna Information:

1.2.1 WLAN 5GHz

Ant. Type	Ch0/Ch1/Ch2/Ch3	Supplier	Part No.	Freq.(MHz)	Peak Gain (dBi)	Worst Antenna Gain
PCB	Ch0	AnJie	CBV384Z4-AC2800	5250~5350	2.86	
				5470~5725	2.73	
PCB	Ch1	AnJie	CBV384Z4-AC2800	5250~5350	2.86	
				5470~5725	2.82	
PCB	Ch2	AnJie	CBV384Z4-AC2800	5250~5350	2.95	
				5470~5725	2.73	
PCB	Ch3	AnJie	CBV384Z4-AC2800	5250~5350	2.97	V
				5470~5725	2.96	V

Note: Investigation has been done to determine the worst case scenario for the above antennas demonstrated with measurements in this report.

For MIMO mode, higher antenna gains are chosen to ensure higher directional gain is evaluated as below.

Ant. Type	Supplier	Part No.	Freq.(MHz)	Peak Gain (dBi)
PCB	AnJie	CBV384Z4-AC2800	5250~5350	8.93
			5470~5725	8.83

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1.3 Rated Power

1.3.1 WLAN 5GHz

802.11	Freq. Range (MHz)	Modulation Technology	Max. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Worst Case
a	5250~5350	OFDM	21.94	2.97	24.91	
	5470~5725		21.98	2.96	24.94	
n HT20 ac VHT20	5250~5350		20.29	8.93	29.22	
	5470~5725		20.34	8.83	29.17	
n HT40 ac VHT40	5250~5350		20.39	8.93	29.32	
	5470~5725		20.55	8.83	29.38	V
ac VHT80	5250~5350		20.37	8.93	29.30	
	5470~5725		20.41	8.83	29.24	

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2 FCC MAXIMUM PERMISSIBLE EXPOSURE (MPE)

2.1 FCC Standard Applicable

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a Mobile device, the MPE is required.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for Maximum Permissive Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
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 ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-15000	/	/	1.0	30

f = frequency in MHz

* = Plane-wave equipment power density

Prediction of MPE limit at a given distance

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

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

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2.2 Power Density Calculation (Worst Case)

FCC Standalone MPE

Operation Mode	Evaluation Frequency (MHz)	Operation Distance (cm)	Max. output Power (dBm)	Antenna Gain (dBi)	Max. output Power EIRP (mW)	Power Density (PD) (mW/cm ²)	Limit (mW/cm ²)	Pass / Fail	Power Density / Limit
WLAN 5G	5510.00	20	20.55	8.83	866.96	0.173	1.000	Pass	0.173

~ End of Report ~

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