RADIO EXPOSURE TEST REPORT

FCC ID	:	O2U-8679
Equipment	:	Wireless Access Point
Brand Name	:	cbn
Model Name	:	CH8679
Applicant	:	COMPAL BROADBAND NETWORKS,INC. 13F-1, No.1, Taiyuan 1st St., Zhubei City, Hsinchu County 30288, Taiwan, R.O.C.
Manufacturer	:	COMPAL BROADBAND NETWORKS,INC. 13F-1, No.1, Taiyuan 1st St., Zhubei City, Hsinchu County 30288, Taiwan, R.O.C.
Standard	:	47 CFR Part 2.1091

The product was received on Feb. 03, 2021, and testing was started from Feb. 20, 2021 and completed on Jul. 24, 20211. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR Part 2.1091 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory
No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)

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Photographs of EUT v01

History of this test report

Report No.	Version	Description	Issued Date
FA112814-03	01	Initial issue of report	Aug. 18, 2021

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2	-	Exposure evaluation	PASS	-
Note: Reference to Sporton Project No.: 112814.				

Declaration of Conformity:
The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.
Comments and Explanations:
The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Sam Chen

Report Producer: Wendy Pan

1 General Description

1.1 EUT General Information

RF General Information			
Evaluation Mode	**Frequency Range (MHz)**	**Operating Frequency (MHz)**	**Modulation Type**
2.4GHz WLAN	2400-2483.5	2412-2462	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) VHT: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
5GHz WLAN	5150-5250 5725-5850	5180-5240 5745-5825	802.11a/n: OFDM (BPSK, QPSK, 16QAM, 64QAM) 802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM) 802.11ax: OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)
Serial Number	52028102890006920112030 1		

1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	
						2.4GHz	5GHz
1	1	CBN	CH8679	PCB Dipole	I-Pex	4.0	-
2	2	CBN	CH8679	PCB Dipole	I-Pex	4.0	-
3	3	CBN	CH8679	PCB PIFA	I-Pex	3.2	-
4	4	CBN	CH8679	PCB PIFA	I-Pex	3.1	-
5	1	CBN	CH8679	PCB Dipole	I-Pex	-	3.5
6	2	CBN	CH8679	PCB Dipole	I-Pex	-	3.5
7	3	CBN	CH8679	PCB Dipole	I-Pex	-	4.9
8	4	CBN	CH8679	PCB Dipole	I-Pex	-	5.3

Note: The above information was declared by manufacturer.

For 2.4GHz function:

For IEEE 802.11b (1TX/1RX):

Only Port 1 can be used as transmitting/receiving.

For IEEE 802.11g/n/VHT/ax (4TX/4RX):

Port 1, Port 2, Pot 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Pot 3 and Port 4 could transmit/receive simultaneously.

For 5GHz function:

For IEEE 802.11a/n/ac/ax (4TX/4RX):

Port 1, Port 2, Pot 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, Port 2, Pot 3 and Port 4 could transmit/receive simultaneously.

1.3 Accessories

Accessories			
Equipment Name	**Brand Name**	**Model Name**	**Rating**
Adapter	Frecom	F42L1-120350SPAU	Input: 100-240V~50/60Hz, 1.4A Output: 12V, 3.5A
Other			
RJ-45 cable*1, Non-shielded, 1.5m			
Cradle*1			

1.4 Testing Location

Testing Location Information	
Test Lab.：Sporton International Inc. Hsinchu Laboratory	
Hsinchu	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)
(TAF: 3787)	TEL: 886-3-656-9065 FAX: 886-3-656-9085
	Test site Designation No. TW3787 with FCC.
	Conformity Assessment Body Identifier (CABID) TW3787 with ISED.

2 Maximum Permissible Exposure

2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
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 Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
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
1500-100,000	-	-	1.0	<30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

2.2 MPE Calculation Method

The MPE was calculated at 23 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

E (V/m) = $\frac{\sqrt{30 \times P \times G}}{d}$ Power Density: *Pd* (W/m²) = $\frac{E^2}{377}$

E = Electric field (V/m)

P = RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

Pd = $\frac{30 \times P \times G}{377 \times d^2}$

2.3 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm^2)	S Limit (mW/cm^2)
2.4G;D1D	4.00	29.98	33.98	0.50	34.48	2.80543	23	0.42202	1.00000
5.2G;D1D	5.30	28.54	33.84	0.50	34.34	2.71644	23	0.40862	1.00000
5.8G;D1D	5.30	29.97	35.27	0.50	35.77	3.77572	23	0.56798	1.00000

Simultaneous Transmission Analysis Mode: WLAN 2.4GHz+WLAN 5GHz

Mode	DG (dBi)	Power (dBm)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm^2)	S Limit (mW/cm^2)	Ratio (S/Limit)
2.4G;D1D	4.00	29.98	33.98	0.50	34.48	2.80543	23	0.42202	1.00000	0.42202
5.8G;D1D	5.30	29.97	35.27	0.50	35.77	3.77572	23	0.56798	1.00000	0.56798
									Sum Ratio	0.99000
									Ratio Limit	1

Note: The above antenna gain was declared by manufacturer.

———THE END———