Testing Laboratory 3787

RADIO EXPOSURE TEST REPORT

FCC ID	:	Z8H89FT0083
Equipment	:	6092HH
Brand Name	:	Cambium Networks
Model Name	:	6092HH
Applicant	:	Cambium Networks Inc. 3800 Golf Road, Suite 360 Rolling Meadows, IL 60008, USA
Manufacturer	:	Cambium Networks, Ltd. Ashburton, TQ13 7UP, UK
Standard	:	47 CFR Part 2.1091

The product was received on Jul. 09, 2024, and testing was started from Jul. 29, 2024 and completed on May 16, 2025. 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 variant 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
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History of this test report

Report No.	Version	Description	Issued Date
FA470407-03	01	Initial issue of report	Jun. 26, 2025

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2	-	Exposure evaluation	PASS	-

Conformity Assessment Condition:
1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account. 2. The measurement uncertainty please refer to each test result in the chapter "Measurement Uncertainty".
Disclaimer:
The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.

Reviewed by: Sam Chen

Report Producer: Sophia Shiung

1 General Description

1.1 EUT General Information

RF General Information			
Frequency Range (MHz)	**Ch. Bandwidth (MHz)**	**Operating Frequency (MHz)**	**Modulation Type**
5150-5250 / 5725-5850	5	5166.5-5247.5 / 5727.5-5847.5	QPSK
	10	5169-5245 / 5730-5845	
	15	5171.5-5242.5 / 5732.5-5842.5	
	20	5174-5240 / 5735-5840	
	30	5179-5235 / 5740-5835	
	40	5184-5230 / 5745-5830	
5925-6425 / 6525-6875	5	5927.5-6297.5 / 6527.5-6872.5	
	10	5930-6295 / 6530-6870	
	15	5932.5-6292.5 / 6532.5-6867.5	
	20	5935-6290 / 6535-6865	
	30	5940-6285 / 6540-6560	
	40	5945-6280 / 6545-6855	

1.2 Table for Frequency Combination Mode

For 5GHz UNII 1:

Type	Mode	Frequency (MHz)
1	QPSK40+40_80MHz	5187+5227
2	QPSK40+40_80MHz	5184+5230

For 5GHz UNII 3:

Type	Mode	Frequency (MHz)
1	QPSK40+40_80MHz	5755+5795
2	QPSK40+40_40MHz	5744.5+5829.5

For 6GHz UNII 5 and UNII 7:

Type	Mode	Frequency (MHz)
1	QPSK40+40_80MHz	5945+5985
2	QPSK40+40_80MHz	6092+6132
3	QPSK40+40_80MHz	6240+6280
4	QPSK40+40_80MHz	6545+6585
5	QPSK40+40_80MHz	6680+6720
6	QPSK40+40_80MHz	6815+6855

Note: The above information was declared by manufacturer.

1.3 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1 2	Cambium	Canopy 2x2 SM Extender Dish	Dish	N/A	26

Note 1: The above information was declared by manufacturer.
Note 2: Directional gain information

Type	Maximum Output Power	Power Spectral Density
Non-BF	Directional gain = Max.gain + array gain. For power measurements on IEEE 802.11 devices Array Gain = 0 dB (i.e., no array gain) for N ANT ≤ 4	$DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$
BF	$DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$	$DirectionalGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$

Ex.

Directional Gain (NSS1) formula : $Directiona\ lGain = 10 \cdot \log\left[\frac{\sum_{j=1}^{N_{SS}}\left\{\sum_{k=1}^{N_{ANT}} g_{j,k}\right\}^2}{N_{ANT}}\right]$

NSS1(g1,1) = $10^{G1/20}$; NSS1(g1,2)= $10^{G2/20}$; NSS1(g1,2)= $10^{G3/20}$; NSS1(g1,2)= $10^{G4/20}$

gj,k =(Nss1(g1,1) + Nss1(g1,2) + Nss1(g1,3) + Nss1(g1,4))^2

DG = 10 log[(Nss1(g1,1) + Nss1(g1,2) + Nss1(g1,3) + Nss1(g1,4))^2 / N_{ANT}/Nss] => 10 log[($10^{G1/20}$ + $10^{G2/20}$ + $10^{G3/20}$ + $10^{G4/20}$)^2 / N_{ANT}]

Where;

Cross-Polarized Antenna
5G UNII-1 G1 = 26.00 dBi; G2 = 26.00 dBi;
5G UNII-3 G1 = 26.00 dBi; G2 = 26.00 dBi;
6G UNII-5 G1 = 26.00 dBi; G2 = 26.00 dBi;
6G UNII-7 G1 = 26.00 dBi; G2 = 26.00 dBi;

5G UNII-1 DG = 26.00 dBi
5G UNII-3 DG = 26.00 dBi
6G UNII-5 DG = 26.00 dBi
6G UNII-7 DG = 26.00 dBi

Note 3: **For 5GHz function (2TX/2RX):**
Port 1~2 can be used as transmitting/receiving antenna.
Port 1~2 could transmit/receive simultaneously.
For 6GHz function (2TX/2RX):
Port 1~2 can be used as transmitting/receiving antenna.
Port 1~2 could transmit/receive simultaneously.

1.4 Table for EUT Supports Function

Function	P to P/MP	6GHz Type	Support Band
AP	P to P	-	5GHz UNII 1 and UNII 3
		6SD	6GHz UNII 5 and UNII 7
Client without radar detection	P to P	6FC	6GHz UNII 5 and UNII 7
	P to P/MP	6FX	

Note: The above information was declared by manufacturer.

1.5 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FA470407-01.

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. Add Standard Client (6FX) mode supports both P to P and P to MP in UNII 5 & UNII 7 through SW change.	RF exposure for Standard Client (6FX) mode.
2. Add Standard Power AP (6SD) mode supports P to P in UNII 5 & UNII 7 through SW change. 3. Revise the channel space for 6GHz to “0.5MHz” from “1MHz.”	After evaluation, it does not need to re-test.

Note: Other test results were based on the original report.

1.6 Accessories

N/A

1.7 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR Part 2.1091
- KDB 447498 D04 Interim General RF Exposure Guidance v01

The following reference test guidance is not within the scope of accreditation of TAF.

- 47 CFR Part 1.1307
- 47 CFR Part 1.1310

1.8 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.	

Note 1: The tested sample for 5GHz UNII 1 and 6GHz Fixed Client mode was received on Jul. 29, 2024.

Note 2: The tested sample for 6GHz Standard Client mode was received on Jul. 31, 2024.

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/f²)	<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/f²)	<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 281 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 MPE Exemption

Option (A): 1.1307(b)(3)(i)(A): Available maximum time-averaged power is < 1 mW

Option (B): 1.1307(b)(3)(i)(B): Device operates between 300 MHz and 6 GHz and the maximum time-averaged power or effective radiated power (ERP), whichever is greater, <= Pth.

$$P_{th}\ (\text{mW}) = \begin{cases} ERP_{20\ cm}(d/20\ \text{cm})^{x} & d \le 20\ \text{cm} \\ ERP_{20\ cm} & 20\ \text{cm} < d \le 40\ \text{cm} \end{cases}$$

Where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\ cm}\sqrt{f}}\right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20\ cm}\ (\text{mW}) = \begin{cases} 2040f & 0.3\ \text{GHz} \le f < 1.5\ \text{GHz} \\ 3060 & 1.5\ \text{GHz} \le f \le 6\ \text{GHz} \end{cases}$$

d = the separation distance (cm);

Option (C): 1.1307(b)(3)(i)(C): ERP is below a threshold calculated based on the distance R between the person and the antenna / radiating structure, where R > λ / 2 π.

Single RF Sources Subject to Routine Environmental Evaluation	
RF Source frequency (MHz)	**Threshold ERP (watts)**
0.3-1.34	1,920 R^2.
1.34-30	3,450 R^2/f^2.
30-300	3.83 R^2.
300-1,500	0.0128 R^2f.
1,500-100,000	19.2R^2.
Note: R is in meters, f is in MHz.	

2.4 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

Mode	DG (dBi)	Power (dBm)	ERP (dBm)	Tolerance (dB)	Tune-up ERP (mW)	Distance (cm)	Option	TL ERP (mW)
5.2G;G7D	26.00	24.22	48.07	0.50	71944.898	281	C	151606.6
5.8G;G7D	26.00	26.95	50.80	1.00	151356.125	281	C	151606.6
6.2G;G7D (6FC&6SD)	26.00	-	33.78	0.06	2421.029	281	C	151606.6
6.7G;G7D (6FC&6SD)	26.00	-	33.83	0.01	2421.029	281	C	151606.6
6.2G;D1D (6FX)	26.00	-	27.65	0.19	608.135	281	C	151605.12
6.7G;D1D (6FX)	26.00	-	27.68	0.16	608.135	281	C	151605.12

————THE END————