FCC RADIO EXPOSURE TEST REPORT

FCC ID	:	Z8H89FT0053
Equipment	:	PMP450B
Brand Name	:	Cambium Networks
Model Name	:	PMP450B
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 Aug. 01, 2019, and testing was started from Aug. 22, 2019 and completed on Aug. 22, 2019. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR Part 2.1091, KDB447498 D01 General RF Exposure Guidance v06 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
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History of this test report

Report No.	Version	Description	Issued Date
FA980817AA	01	Initial issue of report	Oct. 18, 2019

Summary of Test Result

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

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: Cindy Peng

1 General Description

1.1 EUT General Information

RF General Information			
Evaluation Mode	**TX Frequency (MHz)**	**RX Frequency (MHz)**	**Modulation Type**
LTE Band 48	10MHz: 3555~3695 20MHz: 3570~3680	10MHz: 3555~3695 20MHz: 3570~3680	QPSK, 16QAM, 64QAM, 256QAM

1.2 Testing Location

Testing Location			
☐	HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-327-0973	
☒	JHUBEI	ADD : No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085	

Test Site No.	Test Engineer	Test Environment	Test Date
03CH04-CB	Justin Lin	25.9~26.1°C / 60~65%	Aug. 22, 2019

Test site Designation No. TW0006 with FCC.

Test site registered number IC 4086B with Industry Canada.

2 Maximum Permissible Exposure

2.1 Limit of Maximum Permissible Exposure

(A) Limits for Occupational / Controlled Exposure

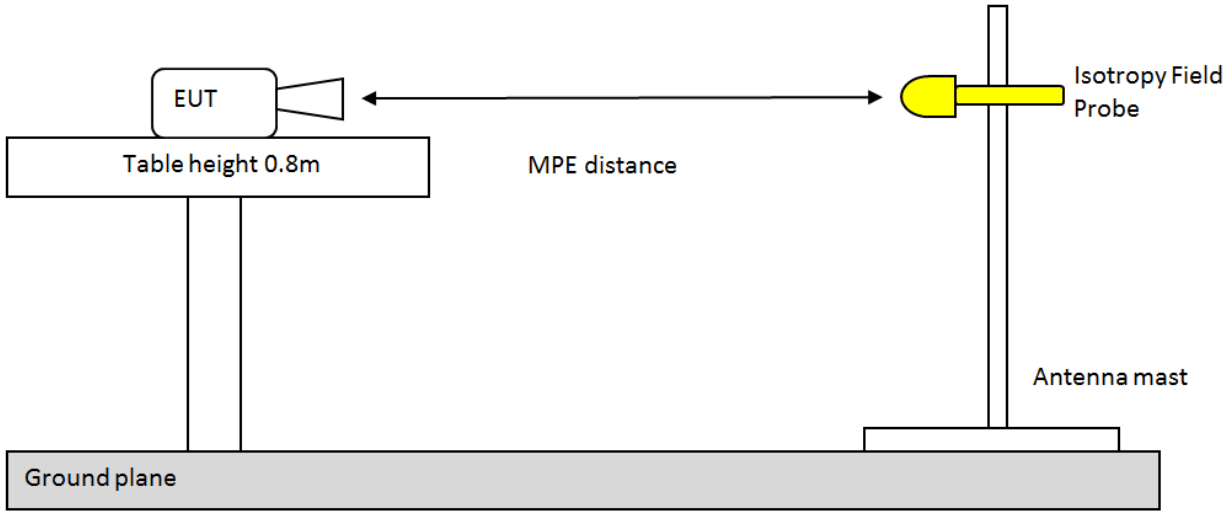
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm²)	Averaging Time |E|²,|H|² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(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)*	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 Measurement Method



Horizontal Plane

1. Align Probe with antenna axis. Probe should same height as Antenna axis.
   And take power density measurement with Probe.
2. Rotate table 45 degree (30 degree if MPE distance is more 60cm).
   Take power density measurement again.
3. Repeat step 2, until complete 360 degree.
   Each measured power density should be less than MPE limit.

Vertical Plane

1. Align Probe with antenna axis. Move probe to height of 10cm above ground plane.
   Take power density measurement.
   Then repeat measure with 10cm increment of probe height until 180 cm.
2. Rotate table 45 degree (30 degree if MPE distance is more 60cm).
   Repeat the power density measure from 10cm to 180cm
3. Repeat step 2, until complete 360 degree.

Spatial Average of same vertical plane should be less then MPE limit.

For Probe or measurement equipment requirement, please see FCC OET Bulletin 65 97-01

Note:

Either peak or spatially averaged results may be applied to determine compliance; and with respect to plane-wave equivalent power density limits when ≥ 300 MHz, and electric and magnetic field strength limits when < 300 MHz.

2.3 Measurement Result and Limit

Test Mode	Band 48_LTE_10M Hz_64QAM	Test Frequency (MHz)	3625	MPE Distance (cm)	64	Power Setting	20	
EUT Plane	Horizontal							
Probe height (cm) \ Deg	0~45°	45~90°	90~135°	135~180°	180~225°	225~270°	270~315°	315~360°
	Max PSD (mW/cm²)	Max PSD (mW/cm²)	Max PSD (mW/cm²)	Max PSD (mW/cm²)	Max PSD (mW/cm²)	Max PSD (mW/cm²)	Max PSD (mW/cm²)	Max PSD (mW/cm²)
184	0.00048	0.00269	0.00587	0.62021	0.60781	0.00595	0.00071	0.1129
Max PSD (mW/cm²)	0.62021							
MPE Limit (mW/cm²)	1							
EUT Plane	Vertical							
Probe height (cm) \ Deg	0~45°	45~90°	90~135°	135~180°	180~225°	225~270°	270~315°	315~360°
	Max PSD (mW/cm²)	Max PSD (mW/cm²)	Max PSD (mW/cm²)	Max PSD (mW/cm²)	Max PSD (mW/cm²)	Max PSD (mW/cm²)	Max PSD (mW/cm²)	Max PSD (mW/cm²)
10	0.00049	0.00038	0.00035	0.00027	0.00014	0.00014	0.00044	0.00028
20	0.00050	0.00034	0.00047	0.00045	0.00024	0.00042	0.00025	0.00023
30	0.00037	0.00044	0.00035	0.00048	0.00033	0.00029	0.00020	0.00035
40	0.00015	0.00029	0.00021	0.00019	0.00015	0.00038	0.00032	0.00022
50	0.00049	0.00029	0.00040	0.00031	0.00023	0.00026	0.00047	0.00025
60	0.00027	0.00043	0.00349	0.00181	0.00679	0.00062	0.00030	0.00015
70	0.00034	0.00015	0.08544	0.07568	0.04958	0.07191	0.00029	0.00032
80	0.00044	0.00028	0.00639	0.00105	0.00357	0.00102	0.00011	0.00039
90	0.00017	0.00032	0.02350	0.44125	0.46622	0.03400	0.00018	0.00034
100	0.00040	0.00019	0.00413	0.00274	0.00386	0.00828	0.00021	0.00033
110	0.00028	0.00020	0.00614	0.00529	0.00208	0.00799	0.00030	0.00046
120	0.00046	0.00020	0.00618	0.00272	0.00169	0.00566	0.00026	0.00016
130	0.00020	0.00023	0.00217	0.00878	0.00474	0.00338	0.00021	0.00032
140	0.00018	0.00012	0.00088	0.00021	0.00042	0.00014	0.00039	0.00013
150	0.00027	0.00022	0.00048	0.00013	0.00036	0.00044	0.00016	0.00045
160	0.00021	0.00044	0.00040	0.00034	0.00030	0.00032	0.00047	0.00013
170	0.00013	0.00029	0.00023	0.00037	0.00045	0.00024	0.00049	0.00023
180	0.00033	0.00026	0.00011	0.00022	0.00037	0.00011	0.00028	0.00045
Spatial Average (mW/cm²)	0.00032	0.00028	0.00785	0.03013	0.03008	0.00753	0.00030	0.00029
Max Spatial Average (mW/cm²)	0.03013							
MPE Limit (mW/cm²)	1							

2.4 List of Measuring Equipments

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Calibration Due Date	Remark
Isotropic Probe	ETS-LINDGREN	HI-6105	00130664	100kHz-6GHz	Oct. 31, 2018	Oct. 30, 2019	03CH04-CB

Note: Calibration Interval of instrument listed above is one year.

————THE END————