



FCC RADIO EXPOSURE TEST REPORT

FCC ID : HED-ML60MDSB
Equipment : Metrolinq 60GHz Module
Brand Name : IgniteNet
Model Name : RDO-60-FB-USBB-8
Applicant : Accton Technology Corporation
No. 1, Creation Rd. III, Science-based Industrial
Park Hsin Chu 30077, Taiwan R.O.C.
Manufacturer : Accton Technology Corporation
No. 1, Creation Rd. III, Science-based Industrial
Park Hsin Chu 30077, Taiwan R.O.C.
Standard : 47 CFR Part 2.1091

The product was received on Mar. 31, 2018, and testing was started from Mar. 31, 2018 and completed on Jul. 04, 2018. 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 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 variant 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: Cliff Chang

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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Summary of Test Result

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

Reviewed by: Sam Chen

Report Producer: Wendy Pan



1 General Description

1.1 EUT General Information

The Channel Plan(s)			
Evaluation Mode	Frequency Range	Operating Frequency (GHz)	Modulation Type
60 GHz	57-71 GHz	Channel 1: 58.32 GHz Channel 2: 60.48 GHz Channel 3: 62.64 GHz Channel 4: 64.80 GHz	$\pi/2 - BPSK, \pi/2 - QPSK, \pi/2 - 16QAM$

1.2 Table for Class II Change

This product is an extension of original one reported under Sporton project number: FA5N2614-02

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

Modifications	Performance Checking
1. Changing the module approval to full modular approval from limited modular approval. 2. Remove the console port (Location: J1) 3. Remove the component C29,C30,C31,C32, R42,R43,R44,R45,R46,R47,R48,R49. 4. Change the location for component C29,C30,C31,C32 to U8 from U3. 5. Add the component C87,C88,C89. 6. Add the component U18,U19 for LED function. 7. Add two antennas with the same type and same gain. 8. Updating the equipment name to Metrolinq 60GHz Module from Metrolinq 60 GHz Module. 9. Updating the manufacturer name and address to "Accton Technology Corporation" and "No. 1, Creation Rd. III, Science-based Industrial Park Hsin Chu 30077, Taiwan R.O.C."	After evaluating, it is not necessary to re-test MPE.
10. Adding the operating frequency 64.8GHz.	MPE

Note: The MPE results of Channel 1 ~ Channel 3 were based on original report.



1.3 Testing Location

Testing Location		
☐	HWA YA	ADD : No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, 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

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/ cm ²)	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/ cm ²)	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 Calculation Method

The MPE was calculated at 56 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

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

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						
Separation Distance (cm)			56						
Maximum EIPR Power of Test Frequency (GHz)			Ant. Gain (dBi)	Average EIRP Power (dBm)	Tolerance (dB)	Tune-up Average EIRP Power (dBm)	Tune-up Average EIRP Power (mW)	Power Density (S) (mW/cm ²)	Limit of Power Density (S) (mW/cm ²)
Channel 1	58.32	GHz	42	45.44	0.14	45.58	36150.80	0.918	1.00
Channel 2	60.48	GHz	42	45.81	0.14	45.95	39328.41	0.998	1.00
Channel 3	62.64	GHz	42	44.78	0.14	44.92	31058.92	0.789	1.00
Channel 4	64.80	GHz	42	37.78	0.14	37.92	6189.18	0.157	1.00

————THE END————