

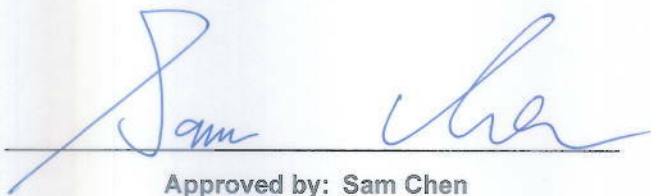


RADIO EXPOSURE TEST REPORT

FCC ID : 2AWBQ-EWMD
Equipment : 5GHz Wireless Module
Brand Name : Everestek
Model Name : EW41SED, EW20SHD, EW10SHD
Applicant : Everestek Inc.
2F.-1, No. 5, Tai-Yuen 1st St., Zhubei City, Hsinchu
County, 30288 Taiwan
Manufacturer : Rayson Technology Co., Ltd.
No. 9, Yanfa 2nd Road, East District, Hsinchu City,
Taiwan 30076
Standard : 47 CFR Part 2.1091

The product was received on Apr. 13, 2022, and testing was started from Apr. 15, 2022 and completed on Apr. 20, 2022. 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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History of this test report

TEL : 886-3-656-9065
FAX : 886-3-656-9085
Report Template No.: CB-A1_1 Ver1.1

Page Number : 3 of 13
Issued Date : May 06, 2022
Report Version : 01



Summary of Test Result

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

Declaration of Conformity:

1. The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers. It's means measurement values may risk exceeding the limit of regulation standards, if measurement uncertainty is include in test results.
2. The measurement uncertainty please refer to report "Measurement Uncertainty".

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		
Frequency Range (MHz)	Operating Frequency (MHz)	Modulation Type
5150-5250 5725-5850	5167-5248 5726-5848	FSK

1.2 Table for Channel List

Frequency Range (MHz)		
5150-5250		
Channel Number	Port 1	Port 2
ch1	5167	5175
ch2	5169	5177
ch3	5171	5179
ch4	5173	5181
ch5	5175	5183
ch6	5177	5185
ch7	5179	5187
ch8	5181	5189
ch9	5183	5191
ch10	5185	5193
ch11	5187	5195
ch12	5189	5197
ch13	5191	5199
ch14	5193	5201
ch15	5195	5203
ch16	5197	5205
ch17	5199	5207
ch18	5201	5209
ch19	5203	5211
ch20	5205	5213
ch21	5207	5215
ch22	5209	5217



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ch23	5211	5219
ch24	5213	5221
ch25	5215	5223
ch26	5217	5225
ch27	5219	5227
ch28	5221	5229
ch29	5223	5231
ch30	5225	5233
ch31	5227	5235
ch32	5229	5237
ch33	5231	5239
ch34	5233	5241
ch35	5235	5243
ch36	5237	5245
ch37	5239	5247
ch38	5241	5233
ch39	5243	5235
ch40	5245	5237
ch41	5248	5240



Frequency Range (MHz)		
5725-5850 (MHz)		
Channel	Port 1	Port 2
ch42	5726	5734
ch43	5728	5736
ch44	5730	5738
ch45	5732	5740
ch46	5734	5742
ch47	5736	5744
ch48	5738	5746
ch49	5740	5748
ch50	5742	5750
ch51	5744	5752
ch52	5746	5754
ch53	5748	5756
ch54	5750	5758
ch55	5752	5760
ch56	5754	5762
ch57	5756	5764
ch58	5758	5766
ch59	5760	5768
ch60	5762	5770
ch61	5764	5772
ch62	5766	5774
ch63	5768	5776
ch64	5770	5778
ch65	5772	5780
ch66	5774	5782
ch67	5776	5784
ch68	5778	5786
ch69	5780	5788
ch70	5782	5790
ch71	5784	5792
ch72	5786	5794



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ch73	5788	5796
ch74	5790	5798
ch75	5792	5800
ch76	5794	5802
ch77	5796	5804
ch78	5798	5806
ch79	5800	5808
ch80	5802	5810
ch81	5804	5812
ch82	5806	5814
ch83	5808	5816
ch84	5810	5818
ch85	5812	5820
ch86	5814	5822
ch87	5816	5824
ch88	5818	5826
ch89	5820	5828
ch90	5822	5830
ch91	5824	5832
ch92	5826	5834
ch93	5828	5836
ch94	5830	5838
ch95	5832	5840
ch96	5834	5842
ch97	5836	5844
ch98	5838	5846
ch99	5840	5848
ch100	5842	5834
ch101	5844	5836
ch102	5846	5838
ch103	5848	5840



1.3 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	N/A	N/A	PCB Antenna	N/A	2
2	N/A	N/A	PCB Antenna	N/A	2

Note: The above information was declared by manufacturer.



1.4 Table for Multiple Listing

Brand Name	Model Name	Description
Everestek	EW41SED	All the models are identical, the different model names served as a marketing strategy.
	EW20SHD	
	EW10SHD	

Note 1: From the above models, model: EW41SED was selected as representative model for the test and its data was recorded in this report.

Note 2: The above information was declared by manufacturer.

1.5 Accessories

N/A

1.6 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

1.7 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/ 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 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/ 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 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 20 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 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, $\leq P_{th}$.

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

Where

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

and

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

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 $R > \lambda / 2 \pi$.

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	$0.0128 R^2 f$.
1,500-100,000	$19.2 R^2$.
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)	EIRP (dBm)	Tolerance (dB)	Tune-up EIRP (dBm)	Tune-up EIRP (W)	Distance (cm)	S (mW/cm ²)	S Limit (mW/cm ²)
5.2G;F1D	2.00	8.64	10.64	0.50	11.14	0.01300	20	0.00259	1.00000
5.8G;F1D	2.00	11.63	13.63	0.50	14.13	0.02588	20	0.00515	1.00000

MPE Exemption Option B						
Frequency (MHz)	R (m)	Tune-up EIRP (dBm)	Tune-up ERP (dBm)	Tune-up ERP (W)	ERP Threshold (W)	MPE Exemption
5240	0.2	11.14	8.99	0.008	3.060	Complies
5796	0.2	14.13	11.98	0.016	3.060	Complies

Note: The above antenna gain was declared by manufacturer.

————THE END————