

TEST REPORT

of

FCC CFR 47 part 1, 1.1307(b), 1.1310

FCC ID: O97-CSWH85N

Equipment Under Test : ezTCP
Model Name : CSW-H85N
Variant Model Name : P4H-140
Applicant : SOLLAE SYSTEMS CO., LTD.
Manufacturer : SOLLAE SYSTEMS CO., LTD.
Date of Receipt : 2018.01.11
Date of Test(s) : 2018.02.01 ~ 2018.07.17
Date of Issue : 2018.07.18

In the configuration tested, the EUT complied with the standards specified above.

Tested By:



Nancy Park

Date:

2018.07.18

Technical
Manager:



Jungmin Yang

Date:

2018.07.18

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1. General Information

1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)

- Wireless Div. 2FL, 10-2, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- Designation number: KR0150

All SGS services are rendered in accordance with the applicable SGS conditions of service available on request and accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>.

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1.2. Details of Applicant

Applicant : SOLLAE SYSTEMS CO., LTD.

Address : 607 Incheon IT-Tower, 592-5, Dohwa1-dong, Nam-gu, 22134, South Korea

Contact Person : Lee, Myeong-hyeon

Phone No. : +82 32 245 2323

1.3. Details of manufacturer

Company : Same as applicant

Address : Same as applicant

1.4. Description of EUT

Kind of Product	ezTCP
Model Name	CSW-H85N
Variant Model Name	P4H-140
Power Supply	DC 5 V
Frequency Range	2 412 MHz ~ 2 462 MHz (11b/g)
Modulation Technique	DSSS, OFDM
Number of Channels	11 channels (11b/g)
Antenna Type	Tilt Base type Omni Antenna
Antenna Gain	1.27 dB i

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A4(210 mm x 297 mm)

1.5. Test report revision

Revision	Report number	Date of Issue	Description
0	F690501/RF-RTL012891	2018.07.18	Initial

1.6. Information of Variant Model

Model Name		Description
Basic model	CSW-H85N	-Basic Model
Variant model	P4H-140	-Same to basic model, but it will be used for marketing purpose.

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2. RF Exposure Evaluation

2.1. Environmental evaluation and exposure limit according to FCC CFR 47 part 1, 1.1307(b), 1.1310

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time
(A) Limits for Occupational/Controlled Exposure				
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
300-1 500	-	-	f/300	6
1 500-100 000	-	-	5	6
(B) Limits for General Population/Uncontrolled Exposure				
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
300-1 500	-	-	f/1500	30
1 500-100 000	-	-	1.0	30

2.1.1. Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where P_d = power density in mW/cm^2

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

$\pi = 3.1416$

R = distance between observation point and center of the radiator in cm

P_d the limit of MPE, 1 mW/cm^2 . If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

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2.1.2. Test Result of RF Exposure Evaluation

Test Item : RF Exposure Evaluation Data

Test Mode : Normal Operation

2.1.3. Output Power into Antenna & RF Exposure Evaluation Distance

WLAN (2.4G)

- Maximum tune up tolerance

Operating Frequency (MHz)	Output Average Power to Antenna (dB m)	Antenna Gain (dB i)	Power Density at 20 cm (mW/cm ²)	Limits (mW/cm ²)
2 412 ~ 2 462	15	1.27	0.008 428	1

Note;

- The power density Pd (5th column) at a distance of 20 cm calculated from the friis transmission formula is far below the limit of 1 mW/cm².
- This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
- This equipment should be installed and operated with minimum 20 cm between the radiator and your body.
- The antenna gain of this transmitter is less than 6 dB i and must not be collocated or operating in conjunction with any other antenna or transmitter unless authorized to do so by the FCC.

- End of the Test Report -

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