

Sensen Group Co., Ltd.

MPE ASSESSMENT REPORT

Report Type:

FCC Part §2.1091, §2.1093 and §1.1307(b) assessment report

Model:

CPW-20000, CPW-30000, CPW-50000, CPW-75000

REPORT NUMBER:

180100164SHA-002

ISSUE DATE:

August 7, 2018

DOCUMENT CONTROL NUMBER:

TTRFFCCMPE-01 V1 © 2018 Intertek





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Report no.: 180100164SHA-002

Applicant: Sensen Group Co., Ltd.

No. 61-79, Baima Road, Maao, Dinghai District, Zhoushan, Zhejiang, China

Manufacturer: Sensen Group Co., Ltd.

No. 61-79, Baima Road, Maao, Dinghai District, Zhoushan, Zhejiang, China

Manufacturing site: Sensen Group Co., Ltd.

No. 61-79, Baima Road, Maao, Dinghai District, Zhoushan, Zhejiang, China

FCC ID: 2AP95-CPW

SUMMARY:

The equipment complies with the requirements according to the following standard(s) or Specification:

KDB447498 D01 General RF Exposure Guidance v06 FCC Part2.1091, FCC Part2.1093 FCC Part1.1307(b)

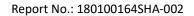
PREPARED BY: REVIEWED BY:

Project Engineer

Nemo Li Daniel Zhao

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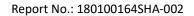
Reviewer





Revision History

| Report No. | Version | Description | Issued Date | |
|------------------|---------|-------------------------|----------------|--|
| 180100164SHA-002 | Rev. 01 | Initial issue of report | August 7, 2018 | |
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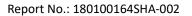
1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

| Product name: | Water filter | | |
|-----------------------|---|--|--|
| Type/Model: | CPW-20000, CPW-30000, CPW-50000, CPW-75000 | | |
| | EUT is a product with WiFi function. EUT has four models, they have the | | |
| Description of EUT: | same WiFi module. | | |
| Rating: | 120V~, 60Hz | | |
| EUT type: | ☐ Table top ☑ Floor standing | | |
| Software Version: | / | | |
| Hardware Version: | / | | |
| Sample received date: | June 1, 2018 | | |
| Date of test: | June 1, 2018 ~ July 16, 2018 | | |

1.2 Technical Specification

| Frequency Range: | 2400MHz ~ 2483.5MHz | | |
|---------------------|--|--|--|
| Support Standards: | 802.11b, 802.11g, 802.11n(HT20) | | |
| | 802.11b: DSSS (CCK, DQPSK, DBPSK) | | |
| | 802.11g: OFDM (64QAM, 16QAM, QPSK, BPSK) | | |
| Type of Modulation: | 802.11n(HT20): OFDM (64QAM, 16QAM, QPSK, BPSK) | | |
| Channel Number: | 11 Channels for 802.11b, 802.11g and 802.11n(HT20) | | |
| | 802.11b: Up to 11Mbps | | |
| | 802.11g: Up to 54Mbps | | |
| Data Rate: | 802.11n(HT20): Up to MCS7 | | |
| Channel Separation: | 5 MHz | | |

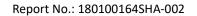




1.3 Description of Test Facility

| Name: | Intertek Testing Services Shanghai | | |
|------------|--|--|--|
| Address: | Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China | | |
| Telephone: | 86 21 61278200 | | |
| Telefax: | 86 21 54262353 | | |

| The test facility is | CNAS Accreditation Lab | | | |
|--|--|--|--|--|
| recognized, | Registration No. CNAS L0139 | | | |
| certified, or accredited by these organizations: | FCC Accredited Lab Designation Number: CN1175 | | | |
| organizations. | IC Registration Lab Registration code No.: 2042B-1 | | | |
| | VCCI Registration Lab Registration No.: R-4243, G-845, C-4723, T-2252 | | | |
| | NVLAP Accreditation Lab NVLAP LAB CODE: 200849-0 | | | |
| | A2LA Accreditation Lab Certificate Number: 3309.02 | | | |





2 MPE Assessment

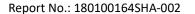
Test result: Pass

2.1 MPE Assessment Limit

Mobile device exposure for standalone operations:

| Widdle device exposure for standardite operations. | | | | | | | |
|--|------------------------|-------------------------|-------------------------|-------------------------------------|--|--|--|
| Frequency range | E-field strength | H-field strength | B-field | Equivalent plane wave | | | |
| | (V/m) | (A/m) | (uT) | power density | | | |
| | | | | S _{eq} (W/m ²) | | | |
| 0-1 Hz | - | $3,2 \times 10^4$ | 4×10^{4} | - | | | |
| 1-8 Hz | 10 000 | $3.2 \times 10^4/f^2$ | $4 \times 10^4/f^2$ | - | | | |
| 8-25 Hz | 10 000 | 4 000/f | 5 000/f | - | | | |
| 0,025-0,8 kHz | 250/f | 4/f | 5/f | - | | | |
| 0,8-3 kHz | 250/f | 5 | 6,25 | - | | | |
| 3-150 kHz | 87 | 5 | 6,25 | - | | | |
| 0,15-1 MHz | 87 | 0,73/f | 0,92/f | - | | | |
| 1-10 MHz | 87/f ^{1/2} | 0,73/f | 0,92/f | - | | | |
| 10-400 MHz | 28 | 0,073 | 0,092 | 2 | | | |
| 400-2 000 MHz | 1,375 f ^{1/2} | 0,0037 f ^{1/2} | 0,0046 f ^{1/2} | f/200 | | | |
| 2-300 GHz | 61 | 0,16 | 0,20 | 10 | | | |

Mobile device exposure for simultaneous transmission operations: the sum of the MPE ratios for all simultaneously transmitting antennas incorporated in a host device is \leq 1.0





TEST REPORT

2.2 Assessment Results

Power density (S) is calculated according to the formula:

 $S = PG / (4\pi R^2)$

Where $S = power density in mW/cm^2$

P = Radiated transmit power in mW

G = numeric gain of transmit antenna

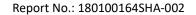
R = distance (cm)

As we can see from the test report 180100164SHA-001:

The maximum conducted power = 12.01dBm, antenna gain = -0.8dBi, PG = 11.21dBm = 13.21mW

Here R is chosen to be 20cm,

 $S = PG / (4\pi R^2) = 13.21 / (4 * 3.14 * 20 * 20) = 0.0026 \text{ mW/cm}^2 < 1 \text{ mW/cm}^2$





Appendix I

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation. To ensure compliance, operations at closer than this distance is not recommended.