



FCC ID: 2AVTJ-CP13  
Report No.: T200311W01-MF

Page 1 / 8  
Rev.: 01

**KDB 447498 D03**  
**47 C.F.R. Part 1, Subpart I, Section 1.1310**  
**47 C.F.R. Part 2, Subpart J, Section 2.1091**

## **RF EXPOSURE REPORT**

**For**

**SPX Sandpiper Digital Display**

**Model: CP13**

**Trade Name: Connectpoint**

*Issued to*

**Connectpoint Inc.**  
**175 Cremona, Goleta, 93117 CA**

*Issued by*

**Compliance Certification Services Inc.**  
**Wugu Laboratory**  
**No.11, Wugong 6th Rd., Wugu Dist.,**  
**New Taipei City, Taiwan. (R.O.C.)**  
**Issue Date: May 25, 2020**

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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Report No.: T200311W01-MF

Page 2 / 8  
Rev.: 01

## Revision History

| Rev. | Issue Date   | Revisions                       | Effect Page | Revised By   |
|------|--------------|---------------------------------|-------------|--------------|
| 00   | May 13, 2020 | Initial Issue                   | ALL         | Angel Cheng  |
| 01   | May 25, 2020 | See the following note Rev.(01) | P.6, P.8    | Allison Chen |

### **Rev.(01)**

1. Revised maximum tune up power for 11n40.



Report No.: T200311W01-MF

Page 3 / 8  
Rev.: 01

## TABLE OF CONTENTS

|                                      |   |
|--------------------------------------|---|
| 1. TEST RESULT CERTIFICATION .....   | 4 |
| 2. LIMIT .....                       | 5 |
| 3. EUT SPECIFICATION.....            | 6 |
| 4. TEST RESULTS.....                 | 7 |
| 5. MAXIMUM PERMISSIBLE EXPOSURE..... | 8 |



Report No.: T200311W01-MF

Page 4 / 8  
Rev.: 01

## 1. TEST RESULT CERTIFICATION

### We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10: 2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.

The test results of this report relate only to the tested sample EUT identified in this report.

| APPLICABLE STANDARDS                                                                                                                                |                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| STANDARD                                                                                                                                            | TEST RESULT             |
| KDB 447498 D03<br>47 C.F.R. Part 1, Subpart I, Section 1.1310<br>47 C.F.R. Part 2, Subpart J, Section 2.1091                                        | No non-compliance noted |
| Statements of Conformity                                                                                                                            |                         |
| Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty. |                         |

Approved by:

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Kevin Tsai  
Deputy Manager  
Compliance Certification Services Inc.



Report No.: T200311W01-MF

Page 5 / 8  
Rev.: 01

## 2. LIMIT

According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

### 3. EUT SPECIFICATION

|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |
|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--|--------|--|--|--------------------|-----------|--------------|--------------------|-----------|--------------|--------------------------|-----------|--------------|--------------------------|-----------|--------------|
| EUT                               | SPX Sandpiper Digital Display                                                                                                                                                                                                                                                                                                                                                                                                                              |              |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |
| Model                             | CP13                                                                                                                                                                                                                                                                                                                                                                                                                                                       |              |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |
| Model Discrepancy                 | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                        |              |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |
| Frequency band<br>(Operating)     | <input checked="" type="checkbox"/> 802.11b/g/n HT20: 2412MHz ~ 2462 MHz<br><input checked="" type="checkbox"/> 802.11n HT40: 2422MHz ~ 2452MHz<br><input type="checkbox"/> 802.11a/n HT20: 5180MHz ~ 5240MHz / 5260 ~ 5320MHz<br>5500 ~ 5700MHz / 5745MHz ~ 5825MHz<br>802.11n HT40: 5190MHz ~ 5230MHz / 5270 ~ 5310MHz<br>5510 ~ 5670MHz / 5755MHz ~ 5795MHz<br>802.11ac VHT80: 5210MHz / 5290MHz / 5530MHz / 5775MHz<br><input type="checkbox"/> Others |              |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |
| Device category                   | <input type="checkbox"/> Portable (<20cm separation)<br><input checked="" type="checkbox"/> Mobile (>20cm separation)<br><input type="checkbox"/> Others                                                                                                                                                                                                                                                                                                   |              |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |
| Exposure classification           | <input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm²)<br><input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm²)                                                                                                                                                                                                                                                                                        |              |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |
| Antenna Specification             | PIFA Antenna<br>2.4GHz: Directional Gain : 5.82 dBi (Numeric gain: 3.82) Worst                                                                                                                                                                                                                                                                                                                                                                             |              |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |
| Maximum Measurement Average Power | <table><tr><td>2.4GHz</td><td></td><td></td></tr><tr><td>IEEE 802.11b Mode:</td><td>21.93 dBm</td><td>(155.955 mW)</td></tr><tr><td>IEEE 802.11g Mode:</td><td>19.91 dBm</td><td>(97.949 mW)</td></tr><tr><td>IEEE 802.11n HT 20 Mode:</td><td>19.79 dBm</td><td>(95.280 mW)</td></tr><tr><td>IEEE 802.11n HT 40 Mode:</td><td>19.74 dBm</td><td>(94.189 mW)</td></tr></table>                                                                             |              |  | 2.4GHz |  |  | IEEE 802.11b Mode: | 21.93 dBm | (155.955 mW) | IEEE 802.11g Mode: | 19.91 dBm | (97.949 mW)  | IEEE 802.11n HT 20 Mode: | 19.79 dBm | (95.280 mW)  | IEEE 802.11n HT 40 Mode: | 19.74 dBm | (94.189 mW)  |
| 2.4GHz                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |
| IEEE 802.11b Mode:                | 21.93 dBm                                                                                                                                                                                                                                                                                                                                                                                                                                                  | (155.955 mW) |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |
| IEEE 802.11g Mode:                | 19.91 dBm                                                                                                                                                                                                                                                                                                                                                                                                                                                  | (97.949 mW)  |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |
| IEEE 802.11n HT 20 Mode:          | 19.79 dBm                                                                                                                                                                                                                                                                                                                                                                                                                                                  | (95.280 mW)  |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |
| IEEE 802.11n HT 40 Mode:          | 19.74 dBm                                                                                                                                                                                                                                                                                                                                                                                                                                                  | (94.189 mW)  |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |
| Maximum tune up power             | <table><tr><td>2.4GHz</td><td></td><td></td></tr><tr><td>IEEE 802.11b Mode:</td><td>22.50 dBm</td><td>(177.828 mW)</td></tr><tr><td>IEEE 802.11g Mode:</td><td>20.50 dBm</td><td>(112.202 mW)</td></tr><tr><td>IEEE 802.11n HT 20 Mode:</td><td>20.50 dBm</td><td>(112.202 mW)</td></tr><tr><td>IEEE 802.11n HT 40 Mode:</td><td>20.50 dBm</td><td>(112.202 mW)</td></tr></table>                                                                          |              |  | 2.4GHz |  |  | IEEE 802.11b Mode: | 22.50 dBm | (177.828 mW) | IEEE 802.11g Mode: | 20.50 dBm | (112.202 mW) | IEEE 802.11n HT 20 Mode: | 20.50 dBm | (112.202 mW) | IEEE 802.11n HT 40 Mode: | 20.50 dBm | (112.202 mW) |
| 2.4GHz                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |              |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |
| IEEE 802.11b Mode:                | 22.50 dBm                                                                                                                                                                                                                                                                                                                                                                                                                                                  | (177.828 mW) |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |
| IEEE 802.11g Mode:                | 20.50 dBm                                                                                                                                                                                                                                                                                                                                                                                                                                                  | (112.202 mW) |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |
| IEEE 802.11n HT 20 Mode:          | 20.50 dBm                                                                                                                                                                                                                                                                                                                                                                                                                                                  | (112.202 mW) |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |
| IEEE 802.11n HT 40 Mode:          | 20.50 dBm                                                                                                                                                                                                                                                                                                                                                                                                                                                  | (112.202 mW) |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |
| Evaluation applied                | <input checked="" type="checkbox"/> MPE Evaluation*<br><input type="checkbox"/> SAR Evaluation<br><input type="checkbox"/> N/A                                                                                                                                                                                                                                                                                                                             |              |  |        |  |  |                    |           |              |                    |           |              |                          |           |              |                          |           |              |

## 4. TEST RESULTS

**No non-compliance noted.**

### Calculation

Given  $E = \frac{\sqrt{30 \times P \times G}}{d}$  &  $S = \frac{E^2}{377}$

Where  $E$  = Field strength in Volts / meter

$P$  = Power in Watts

$G$  = Numeric antenna gain

$d$  = Distance in meters

$S$  = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377 d^2}$$

Changing to units of mW and cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = d \text{ (m)} / 100$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \text{ Equation 1}$$

Where  $d$  = Distance in cm

$P$  = Power in mW

$G$  = Numeric antenna gain

$S$  = Power density in mW / cm<sup>2</sup>



Report No.: T200311W01-MF

Page 8 / 8  
Rev.: 01

## 5. MAXIMUM PERMISSIBLE EXPOSURE

Substituting the MPE safe distance using  $d = 20$  cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where  $P$  = Power in mW

$G$  = Numeric antenna gain

$S$  = Power density in mW / cm<sup>2</sup>

### IEEE 802.11b mode:

| Ch. | Frq.(MHz) | P (mW)  | Gain (num.) | D (cm) | Power density in mW / cm <sup>2</sup> | Limit (mW/cm2) |
|-----|-----------|---------|-------------|--------|---------------------------------------|----------------|
| 6   | 2437      | 177.828 | 3.82        | 20     | 0.1352                                | 1              |

### IEEE 802.11g mode:

| Ch. | Frq.(MHz) | P (mW)  | Gain (num.) | D (cm) | Power density in mW / cm <sup>2</sup> | Limit (mW/cm2) |
|-----|-----------|---------|-------------|--------|---------------------------------------|----------------|
| 11  | 2462      | 112.202 | 3.82        | 20     | 0.0853                                | 1              |

### IEEE 802.11n HT20 mode:

| Ch. | Frq.(MHz) | P (mW)  | Gain (num.) | D (cm) | Power density in mW / cm <sup>2</sup> | Limit (mW/cm2) |
|-----|-----------|---------|-------------|--------|---------------------------------------|----------------|
| 11  | 2462      | 112.202 | 3.82        | 20     | 0.0853                                | 1              |

### IEEE 802.11n HT40 mode:

| Ch. | Frq.(MHz) | P (mW)  | Gain (num.) | D (cm) | Power density in mW / cm <sup>2</sup> | Limit (mW/cm2) |
|-----|-----------|---------|-------------|--------|---------------------------------------|----------------|
| 6   | 2437      | 112.202 | 3.82        | 20     | 0.0853                                | 1              |

--End of Report--