

SCWCX01 modular integration instruction in host device

The SCWCX01 is manufactured by Intuitive Surgical, Inc. to be installed in host products manufactured by Intuitive Surgical, Inc.

The intended use of the SCWCX01 module is to charge mobile phone or tablet and enable touchless login to host device without manual PIN entry. The SCWCX01 module uses wireless power transfer (WPT) transmitter to wirelessly charge mobile phone or tablet (client device) in frequency range 120 – 148.5 kHz and uses active NFC tag (client device) to communicate at 13.56 MHz with NFC reader inside mobile phone or tablet (NFC reader device). The SCWCX01 module has permanently attached coil antenna (50-mm diameter) for WPT and integral loop antenna (10 mm x 10 mm) that are not accessible or replaceable by the end user.

Per FCC KDB 996369, host product manufacturers shall follow modular integration instructions of this document when they integrate SCWCX01 into a host product.

The reasons that SCWCX01 has limited modular approval is because the module does not have its own shielding per FCC §15.212 (a) (1) (i) and it cannot be tested stand-alone.

1. List of applicable FCC rules that are applicable to the modular transmitters
47 CFR §15.207, §15.209 and §15.225.
2. Summary of specific operational use conditions
SCWCX01 has built-in coil antenna and integral loop antenna. Host product manufacturer is not allowed to make changes to the built-in antennas.
3. Limited module procedures
Full testing per FCC §15.207, §15.209 and §15.225 and a Class II permissive change are required on the module grant of SCWCX01 to register the host device as a specific host approved with the SCWCX01 module. Measure the field strength of fundamental against §15.225 limits for the NFC radio and against §15.209 for the WPT device and measure band-edge and out-of-band emissions against §15.225 limits for the NFC radio as well as conducted emissions on AC power port §15.207 and RF exposure assessment. The RF exposure shall be evaluated in portable condition in accordance with section 3.3 of FCC KDB 680106 or latest guidance against the limits of FCC Rules §1.1310.
4. Trace antenna designs
Not applicable. SCWCX01 has built-in coil antenna and integral loop antenna. Host product manufacturer is not allowed to make changes to trace antenna designs.

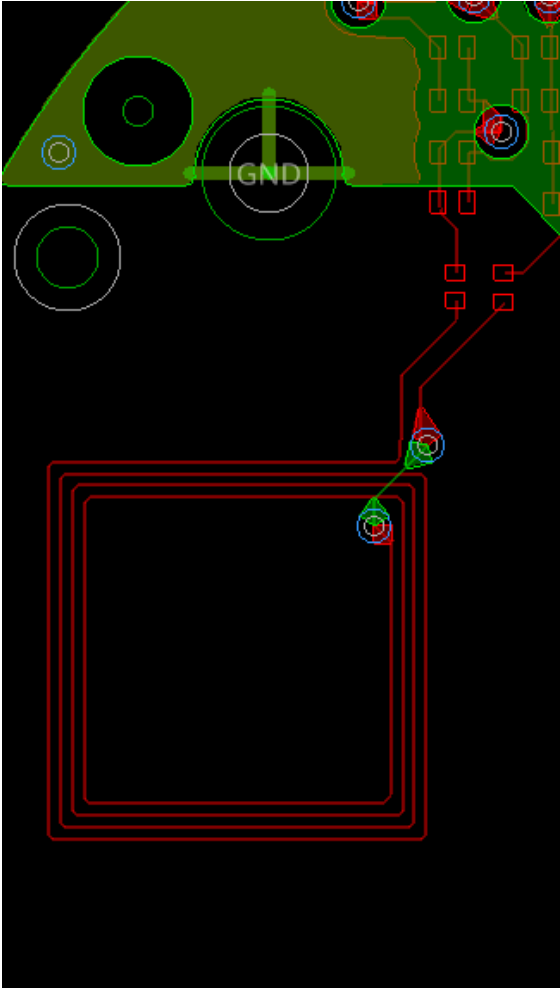
5. RF exposure considerations

SCWCX01 may be installed such that it can be operated as close as 0 cm to users or nearby persons. The use condition applies for portable use. If integration is such that the user would be 20 cm or farther, then mobile use is applied.

6. Antennas

<p>WPT</p>	<p>Coil antenna Inductance: 10 μH</p> <p>The antenna is a circular multi-turn loop that is 5mm in height. The multi-turn coil sits on top of a ferrite disk of 50mm diameter. This antenna is soldered onto the SCWC PCB. It is the product 760308101141 from Wurth Electronics.</p> <div data-bbox="511 772 933 1354"> <p>Dimensions: [mm]</p> <p>Side view dimensions: 5.0 max. height, 46.0 \pm 2.0 length, 10.0 \pm 2.0 width, 12.0 ref. length, 5.0 ref. width, 2.0 gap, 1.0 gap.</p> <p>Top view dimensions: ϕ 50.0 \pm 1.0 diameter, 10.0 \pm 2.0 width, 5.0 ref. width, 2.0 gap, 1.0 gap.</p> <p>Product Marking: </p> <p>Scale - 1:1,25</p> </div> <div data-bbox="511 1365 933 1417"> <p>Product Marking:</p> <table border="1"> <tr> <td>Marking</td> <td>760308101141</td> </tr> </table> </div> <div data-bbox="950 772 1258 1060"> <p>Recommended Land Pattern: [mm]</p> <p>Scale - 1:1,5</p> </div> <div data-bbox="950 1071 1258 1270"> <p>Schematic:</p> </div> <div data-bbox="1274 772 1430 1291"> <p>Electrical Properties:</p> <table border="1"> <tr> <th>Properties</th> </tr> <tr> <td>Inductance</td> </tr> <tr> <td>Q-Factor</td> </tr> <tr> <td>Rated Current</td> </tr> <tr> <td>Saturation Current</td> </tr> <tr> <td>DC Resistance</td> </tr> <tr> <td>DC Resistance</td> </tr> <tr> <td>Self Resonant Frequency</td> </tr> </table> <p>General Information:</p> <p>It is recommended that the temperature be within the following range:</p> <p>Operating Temperature</p> <p>Storage Temperature (in original packaging)</p> <p>Test conditions of Electrical Properties</p> </div> <div data-bbox="950 1396 1430 1564"> <p>Wurth Elektronik eSoc GmbH & Co. KG EMC & Inductive Solutions</p> <p>Max-Eyth-Str. 1 74638 Waldenburg Germany Tel. +49 (0) 79 42 945 - 0</p> <p>www.we-online.com esoc@we-online.com</p> <p>WE WÜRTH ELEKTRONIK</p> <table border="1"> <tr> <td>DATE</td> <td>REV</td> <td>REVISION</td> <td>STATUS</td> </tr> <tr> <td>Ka5</td> <td>01</td> <td>001.000</td> <td>Valid</td> </tr> </table> <p>WE-WPCC Wireless Power Charging Transmitter Coil</p> </div>	Marking	760308101141	Properties	Inductance	Q-Factor	Rated Current	Saturation Current	DC Resistance	DC Resistance	Self Resonant Frequency	DATE	REV	REVISION	STATUS	Ka5	01	001.000	Valid
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This electronic component has been designed and developed for usage in general electronic equipment only. This product is not authorized for use in equipment where a higher safety standard and reliability standard is especially required or where a failure of the product is reasonably expected to cause severe personal injury or death, unless the product is specifically designed for such use. In such cases, the user must be informed about the product's limitations and the user must be informed about the product's limitations. The user must be informed about the product's limitations. The user must be informed about the product's limitations.

NFC	<p>Integral loop antenna</p> <p>Inductance: 450 nH</p> <p>Number of turns: 4-turn loop of 0.005-inch trace width with 0.0085 inch spacing between the traces in square shape with truncated corners. The outer dimension is approximately 10 mm x 10 mm.</p> 
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7. Label and compliance information

FCC

The host product must be labeled with the following:

Contains FCC ID: 2AAZF-SCWCX01

The host product user manual must include the following statements:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.”

ISED

The host product must be labeled with the following:

Contains IC: 11508A-SCWCX01

The host product user manual must include the following statements:

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (eirp) is not more than necessary for successful communication.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Conformément à la réglementation d'Industrie Canada, cet émetteur radio peut fonctionner uniquement à l'aide d'une antenne de type et de gain maximum (ou moindre) approuvés pour l'émetteur par Industrie Canada. Pour réduire le risque d'interférence aux autres utilisateurs, le type d'antenne et son gain doivent être choisis afin que la puissance isotrope rayonnée équivalente (PIRE) n'excède pas celle nécessaire à une communication réussie.

Cet appareil est conforme au(x) standard(s) des CNR d'Industrie Canada pour appareils radio exempt(s) de licence. Son fonctionnement est soumis aux deux conditions suivantes: (1) ce dispositif ne doit pas causer d'interférences nuisibles, et (2) cet appareil doit accepter toute interférence reçue, y compris les interférences qui peuvent provoquer un fonctionnement indésirable.

8. Information of test modes and additional testing requirements

Host product with SCWCX01 installed shall have 5-watt wireless power load simulator and NFC reader place on top (0 cm distance) of the coil antenna and integral loop antenna of the module. A host product requiring FCC approval shall be tested to FCC Part 15 Subpart B to check for emissions that may occur due to the intermixing of emissions with digital circuitry or due to enclosure of the host product. Full testing includes fundamental, spurious, out of band and band edge radiated emissions as well as conducted emissions on AC power port and an RF exposure assessment.

9. Additional testing, part 15 Subpart B disclaimer

SCWCX01 is only FCC authorized for specific rule parts listed on the grant, and the host product



manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. The final host product which requires FCC approval still requires Part 15 Subpart B compliance testing with SCWCX01 installed. Such additional testing should include any co-located radios.