

OPERATIONAL DESCRIPTION

WPROBE

FCC ID: 2AVOO-RE1RAWP

IC: 25857-RE1RAWP

INVENTIS S.R.L.

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General description

WPROBE is the wireless transduction probe of the “Real ear measurement system + Audiometer” system.

This device uses a Bluetooth interface to stream audio signals from the 4 microphones mounted on the probe itself. The two stereo audio streams are then analysed by the main unit in order to calculate the FFT curves.

The device uses also a wireless power charging receiver for the charging.

Technical details

The RE1-EL007 board of the wireless probe contains a BlueCore® CSR8675 BGA, made by Qualcomm. This integrated single-chip solution is used for wireless audio applications, and integrates a dual mode Bluetooth radio, a low power DSP, an application processor, a battery charger, memory and various audio and hardware interfaces.

The frequency of the local oscillator of the CSR8675 BGA chipset is 26 MHz.

For additional information about the CSR8675 BGA chipset, see the datasheet CSR8675 CS-232426-DS-7.pdf, or contact Qualcomm directly.

The CSR8675 BGA RF output is connected to a 2.4GHz Band Pass Filter (p/n: 2450BP14D0100), followed by a 2.4 GHz Mini Antenna (p/n: 2450AT18B100), both made by Johanson Technology:

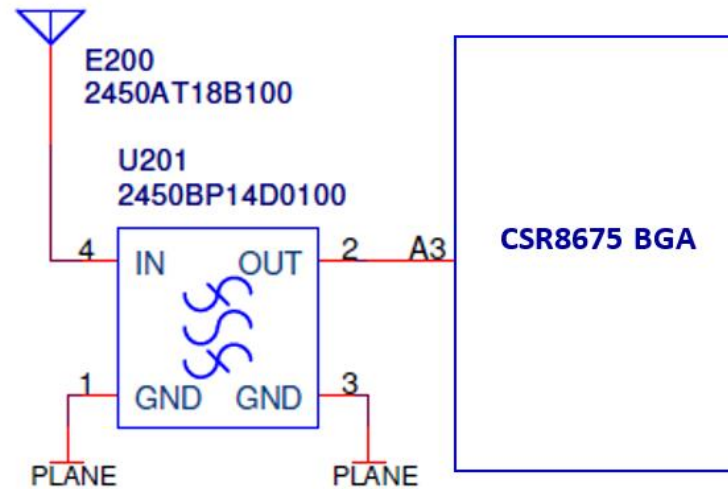
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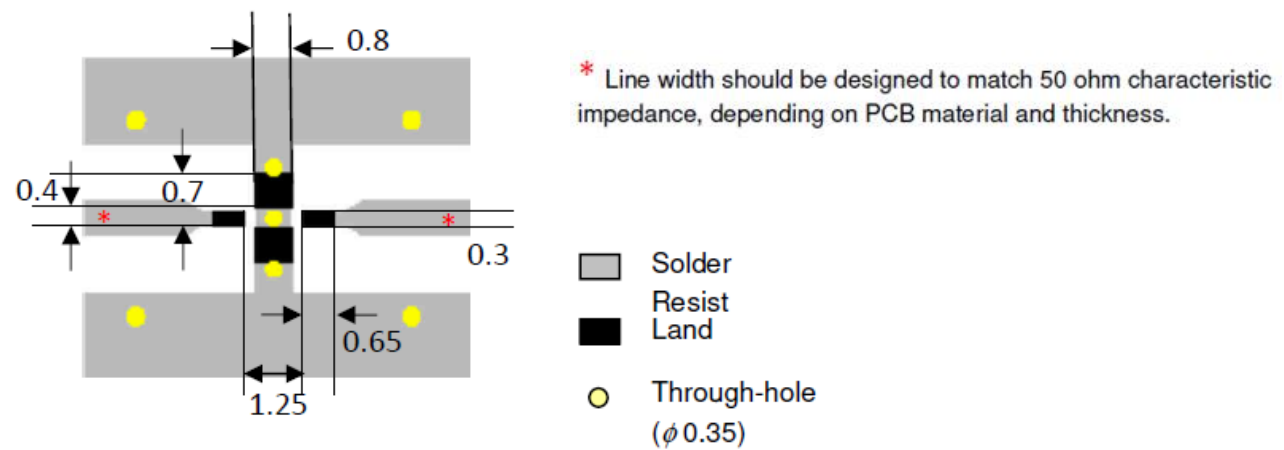
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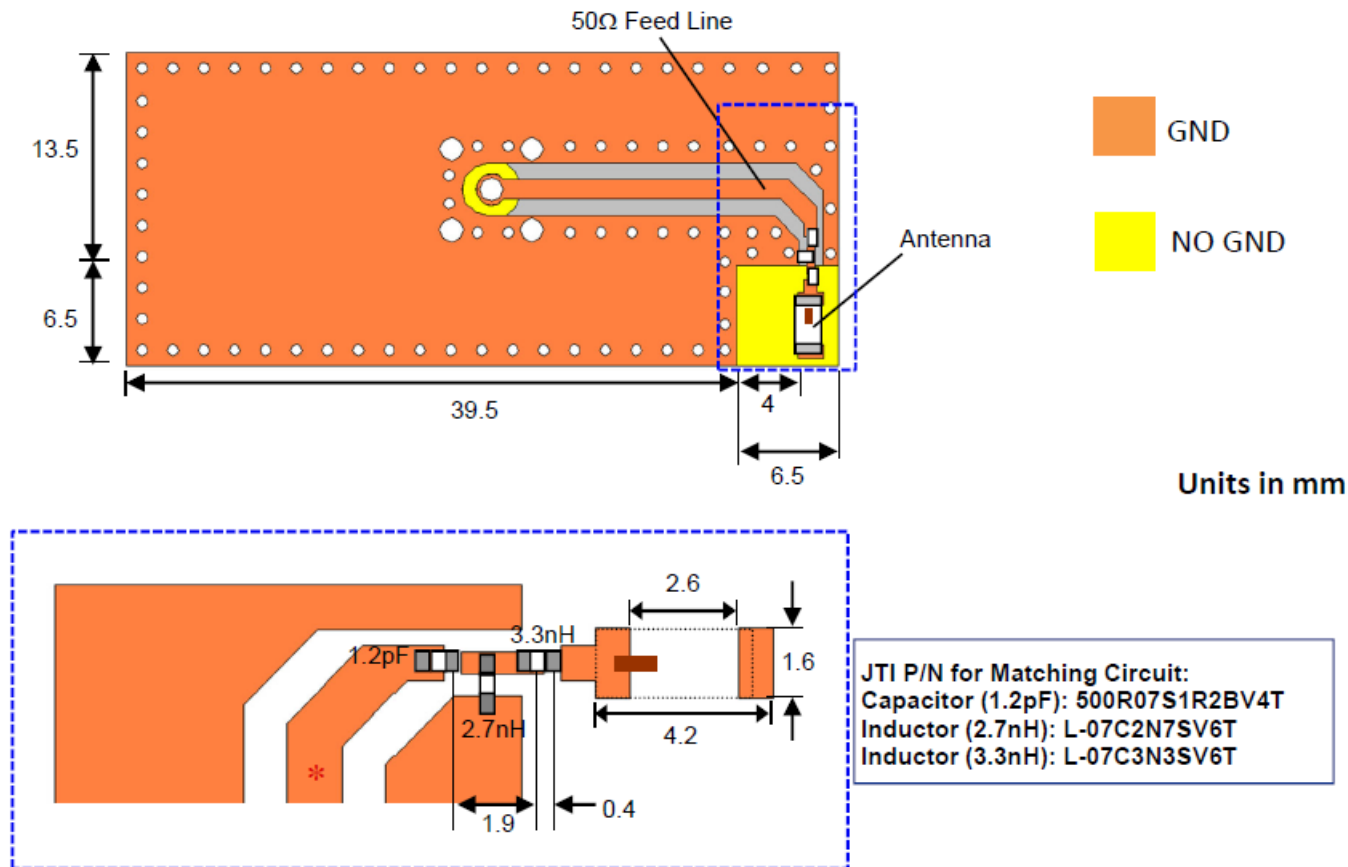
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The pass-band filter has been made considering the following design specifications:



Furthermore, for the 2.4 GHz Mini Antenna (p/n: 2450AT18B100) matching and grounding:



* Line width should be designed to provide 50Ω impedance

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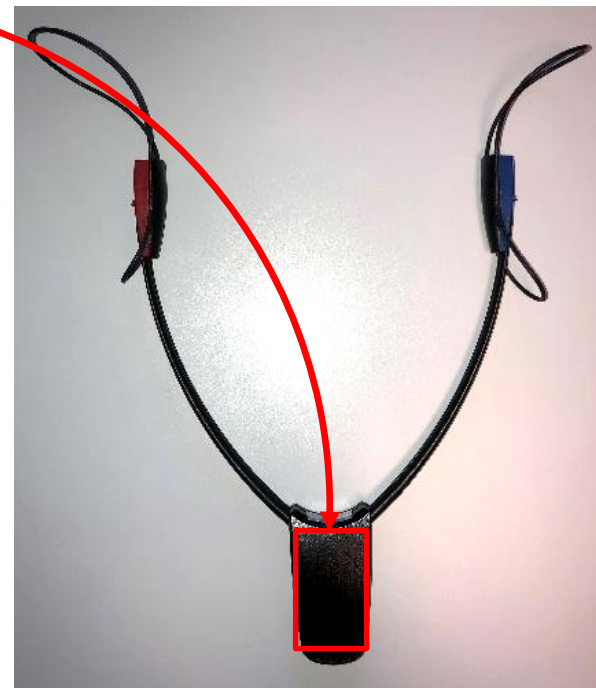
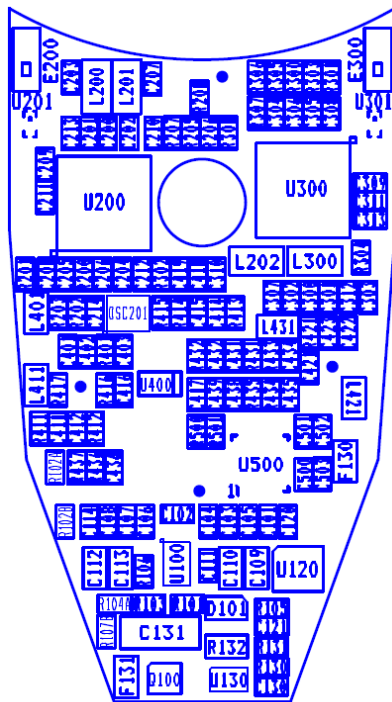
Wireless charging interface

The RE1-EL007 board of the wireless probe contains also a reader for the device wireless charging. The receiver chip is a Texas Instrument bq51010B, an integrated wireless power supply receiver with a 7V regulated supply.

The chipset bq51010B has not a local oscillator.

Remark: during the WPROBE recharging, the wireless interface operates at 142,3 kHz, with a maximum power transfer of 2.1 W.

The receiver bq51010B is physically placed in the RE1-EL007 board:



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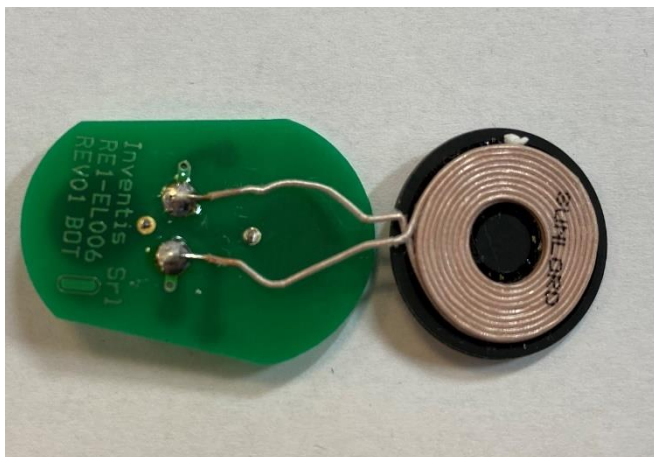
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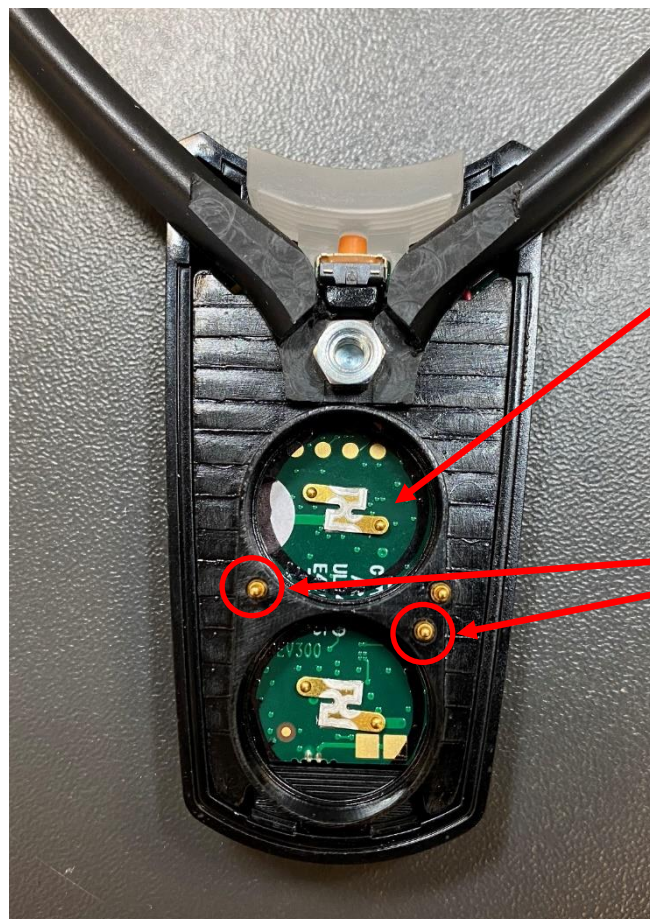
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The Qi charge receiver coil is soldered to a dedicated PCB (RE1-EL006), placed on the back shell of the Wireless probe, and it is connected to the RE1-EL007 board through two pins, put in direct contact when the two shells of the probe are closed:





RE1-EL007 board

Connection pins