Ken Henderson
Cleverscope
ken.henderson@cleverscope.com
+34 644 38 14 28

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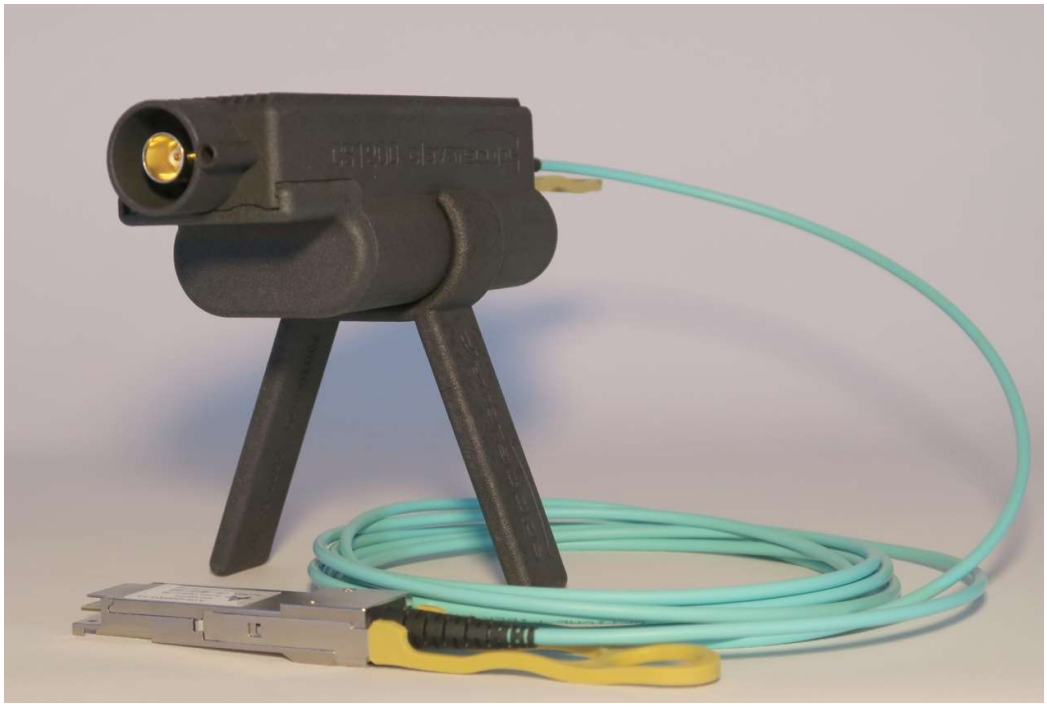
CS1200 IsoPod – User Guide

Introduction

The CS1200 **IsoPod** is a remote isolated digitizer Pod for the CS548 which allows measurement at higher isolation voltage than the CS548 internal limit of 1kVAC CAT III or 2kVDC. It uses a standard QSFP terminated active optical cable (AOC) to connect the CS1200 IsoPod to the QSFP remote sockets on the CS548 front Panel. The input specification is identical to the CS548 internal channels.



CS1200 IsoPod

- 30kV isolation provided >150mm spacing between IsoPod and other structures.
- 2 pF free space capacitance >50 mm above reference plane
- 100 dB CMRR at 50 MHz
- 14 bit resolution, 100dB dynamic range
- 200 MHz Analog BW
- 100uV resolution on 0.8v range
- 200uV rms noise on 0.8V range
- Two input ranges: +/-8V and +/-0.8V.

This user guide shows how to connect and use the IsoPod. Please refer to the CS548 manual for full specifications.

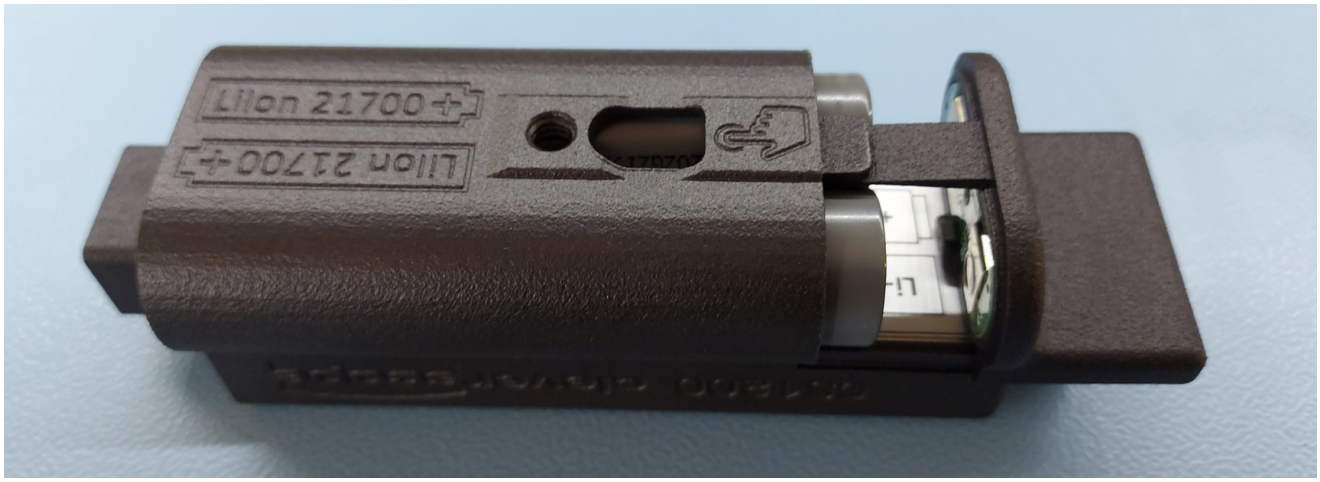
Batteries

The IsoPod uses 2x ‘21700’ size Li-Ion cells. These are normally delivered in a semi discharged state so please fully charge before first use.

Note: The demo system is supplied with 4x 21700 5000mAh cells and 8-cell Li-Ion charger with USB type C adaptor.

Once charged insert 2 cells into IsoPod paying attention to the polarity as shown on the enclosure:

Then slide battery cover into place:

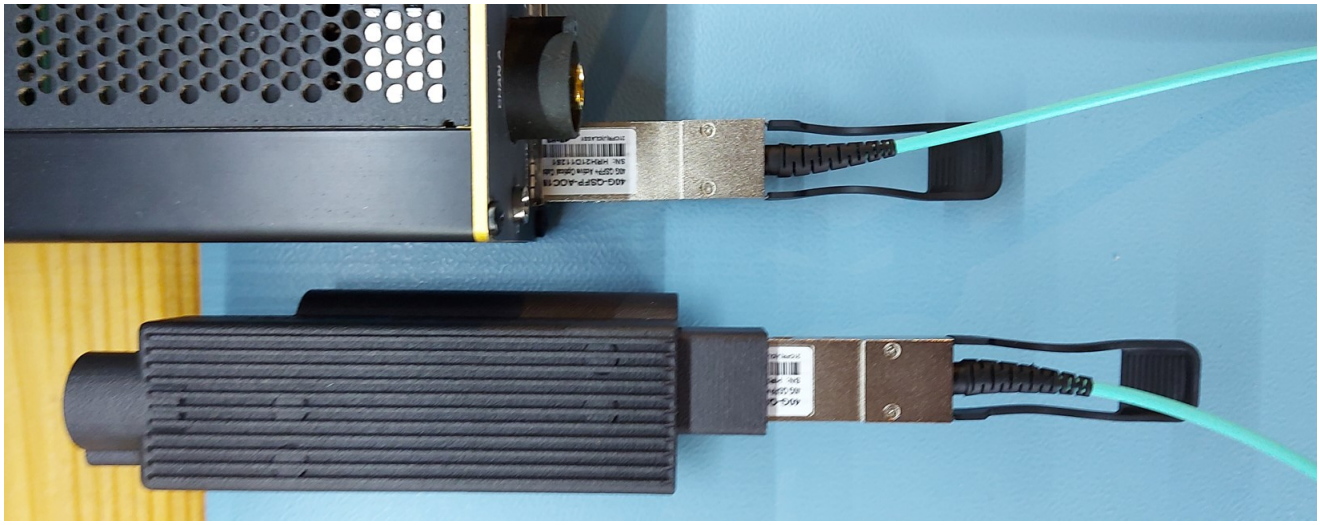


To open the battery cover press the button and pull on cover:

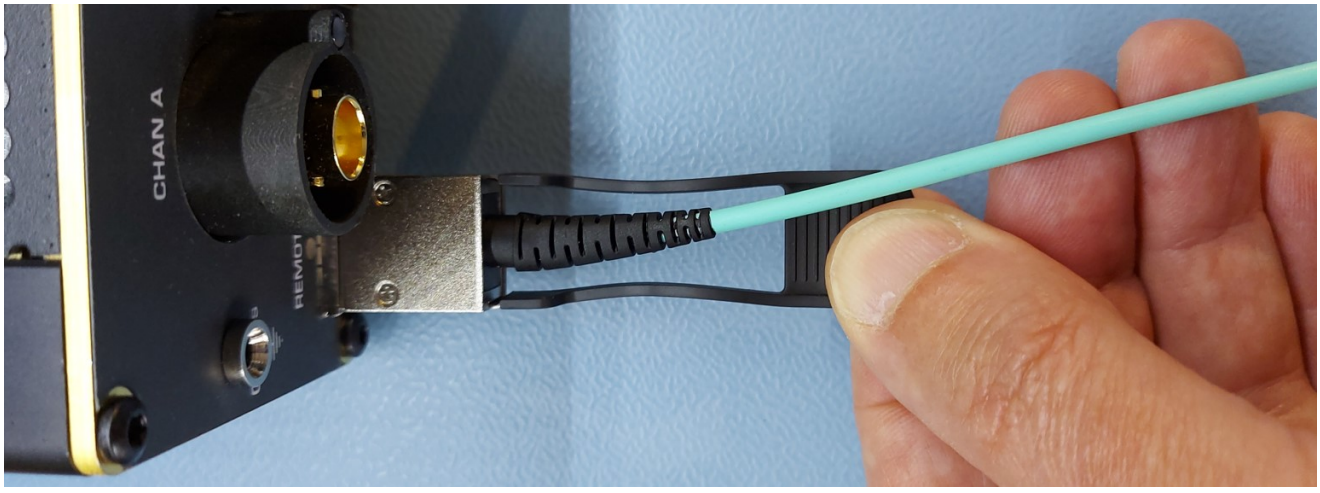
The supplied 5000mAh cells will run the IsoPod for approx 10 hours. At present we have not implemented battery monitoring in the application so keep in mind the amount of time the IsoPod has been running. If the AOC is removed the IsoPod it will go into a low power state extending battery life. However if the IsoPod will not be used for some time it is best to remove the cells.

Fibre Optic Cable

The demo is supplied with a 3m long QSFP Active Optical Cable (AOC) but other lengths are available (5, 10, 15, 20, 25, 30 & 50m). Insert the AOC into the CS548 and IsoPod with the label facing upwards:



Plug in the AOC metal QFSP with the pull tab under the fiber. Use the pull tab right by the QFSP to push the plug in until it clicks. To release pull on the plastic tab. DO NOT PUSH OR PULL ON THE FIBRE, OR THE STRAIN RELIEF.

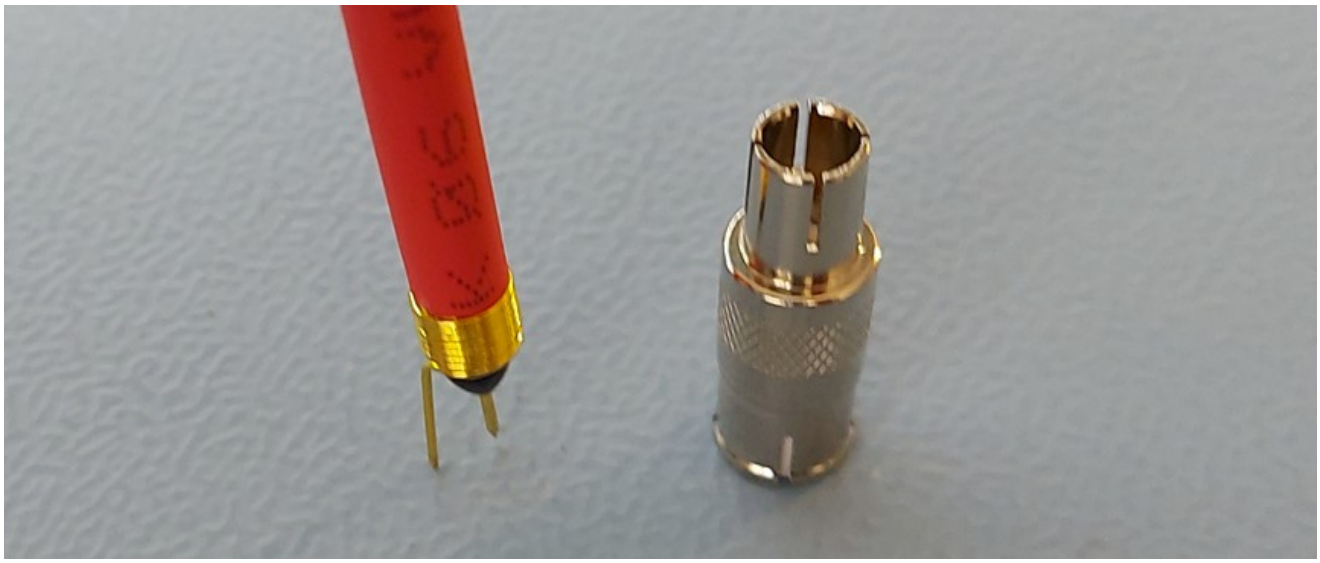


Turn on the CS548. Once power up cycle is complete the IsoPod LED and enabled channel LEDs will be green:

Probing

The IsoPod is supplied with a stand placing it 65mm above the work surface. This will reduce the probe free space capacitance and provide some isolation from ground planes. It is also supplied with a short x10 oscilloscope probe fitted with a common mode choke. The aim is to damp the ringing of probe cable inductance and free space capacitance of the IsoPod.

Probe tip can be fitted with a ground spring or a BNC adaptor. Keeping the ground inductance of the measurement as low as possible is critical for achieving high common mode rejection.



The x10 probe will give a measurement range of +/-8V (0.8V input range) or +/-80V (8V input range). The IsoPod can also be used with other standard oscilloscope probes or coaxial connections.

Application

The default setting is 'INT' for all channels. Click on the INT button to select REM for the remote IsoPod: