When two or four measurement channels are not sufficient, the TiePie engineering Handyscope series of instruments offers a possibility to combine multiple oscilloscopes to one single oscilloscope with many input channels. Just a coupling cable is required to combine the multiple instruments to a single combined instrument with many channels.

When the **Multi Channel oscilloscope software** is started, the coupled instruments are recognized and combined to a large instrument. Combining four Handyscope HS5s results in a unique 8 channel 12 bit 500 MS/s oscilloscope.

Figure 1: *Four Handyscope HS5s*

All channels of the four units sample fully synchronized and can be controlled in one application. Any channel or combination of channels can be used as trigger source. The user gets **one** oscilloscope.

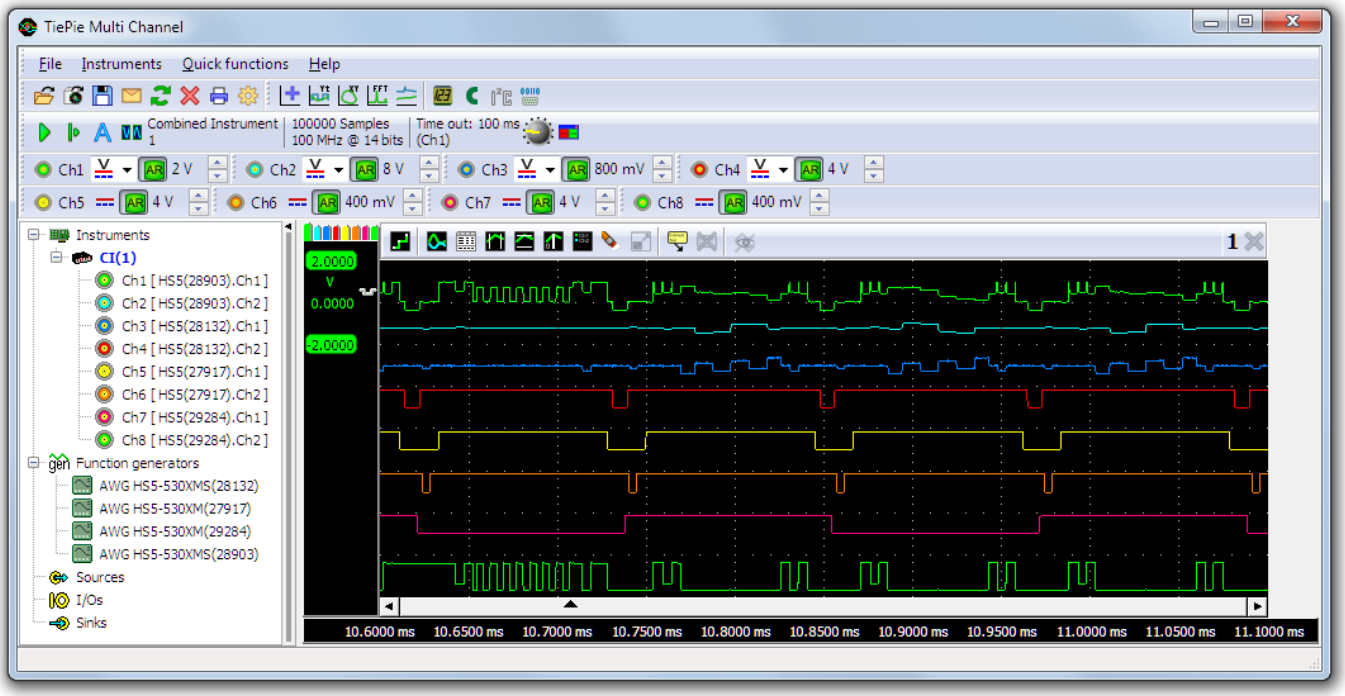

Figure 2: *Four Handyscope HS5s combined to an 8 channel 12 bit 500 MS/s oscilloscope*

Coupling of e.g. ten Handyscope HS5s gives an ultimate and unique 20 channel 12 bit 500 MS/s oscilloscope!

CMI interface

The unique **CMI** (Combine Multiple Instruments) interface that is available by default in the Handyscope HS5 provides an easy way to couple multiple oscilloscopes to one combined oscilloscope.

The CMI interface supports automatic recognition of the instrument.

The high speed trigger bus is automatically terminated with the correct impedance and the high speed sampling bus is automatically configured and terminated at the beginning and end of the bus. The high speed sampling bus takes care that each Handyscope is fully synchronized to ensure that even at the highest sampling rate the instruments operate at the same sample clock (**0 ppm clock error!**).

The connection order when combining multiple instruments is not important. The CMI interface has built-in intelligence to detect the connections and terminate all buses properly at both ends of the bus. So instruments can be connected to each other in random order. Placing terminators and determining the proper connection order is not required!

Advantages of the CMI (Combine Multiple Instruments) interface are:

- automatic instrument recognition,
- automatic creation and termination of the high speed trigger bus,
- automatic creation and termination of the high speed sampling bus,
- automatic master/slave setting of the sampling clock bus.

The Handyscope HS5 series is the only instrument in the world offering this unique CMI interface. Only a coupling cable is required. No difficult software configurations are required, nor placing terminators at the trigger bus and sampling clock bus. Place the coupling cables and and a multi channel instrument is born, without thorough knowledge of coupling buses, terminator resistances and software settings!

Read all about the Handyscope HS5 at www.tiepie.com/HS5

Watch a video demonstrating combining instruments using the CMI interface at www.tiepie.com/CMI