Features

- Complete versatile Multiscaler system
- MCS mode offers two inputs with programmable (fast/slow NIM, rising/falling edge) discriminators
  - Maximum MCS count rates of 400MHz
  - Dwell time from 30 ns for 1 input and 50 ns for 2 inputs up to 761h in steps of 10 ns or external
  - No dead-time between channels, no double counting, no end-of-sweep dead-time
- Automatic sequential mode for up to 65536 sequential MCS spectra
- On board MCS memory (16M x 32bit)
- 8 bit digital I/O lines: external control / sample changer / status
- 4 monitoring outputs for START / STOP1 / STOP2 / CHADV discriminators
- GO-LINE compatible with other FAST products
- Firmware in-the-field upgradable

Description:

The MCS4 is a USB-connected, software controlled Multichannel Scaler. The internal memory is used to accumulate spectra of up to 16M bins. An automatic sequential mode allows to acquire up to 65536 sequential spectra – each with a presettable number of sweeps – with no dead-time between each cycle or synchronized with external signal. The maximum count rate is 400 MHz, dwelltime is ≥ 30 ns for one STOP input or ≥ 50ns for two STOP inputs.

An 8 bit digital I/O port provides controlling external devices or to react on additional external signals. The “GO-LINE” compatibility allows to synchronize start and stop of the experiment across many measurement devices.

The 32 bit or 64 bit MPANT Windows Software is able to handle 6 MCS4 providing up to 12 MCS channels.
MCS4 Series: Two channel Multichannel Scaler with USB bus

Specifications

- **MCS inputs:** START, STOP 1 & 2, Channel Advance MCS inputs: 4x BNC, $Z_{IN} = 50\Omega$ or $Z_{IN} = 4.7\Omega$ pull-up (+3.3V) or pull-down, fast NIM (-300mV) or slow NIM / TTL (+1.3V) thresholds, 400 MHz max
- **On board histogramming memory:** 16M x 32bit
- **Dwell time modes:** software selectable internal, or external channel advance
- **Dwell time / bin:** 30 ns for 1 and 50 ns for 2 inputs...781h settable in steps of 10 ns. ($2^{48} \times 10$ ns)
- **Dead-time between time bins:** zero
- **End-of-sweep dead-time:** 10ns
- **Spectrum length:** up to 16M time bins
- **Sweep Counter:** 48 bit, presettable
- **Sequential mode:** 1...65536 spectra with no dead- time between each cycle or synchronized with external signal
- **8 bit digital I/O lines:** for external control / sample-changer, status

Connectors:

- GATE / MCS inputs: 4x BNC
- FEATURE I/O: 15 pin high density, female D- SUB (Analog Ground, 8 bit Digital I/O, GO-Line, 4x SCA)
- 12V Supply: 2.1mm center pin (rear panel)
- USB 2.0: rear panel) Type A

Power Requirements:

- +11...+14V / 12W power supply enclosed

Physical:

- aluminum case, 260mm x 48mm x 275mm, 1.7 kg
- Shipping case: 420mm x 320mm x 290mm, 4 kg

Applications

- Nuclear- and X-ray spectroscopy
- LIDAR
- Dynamic Desorption Studies
- Cross-correlation measurements
- Scanning Mass Spectroscopy
- Fluorescence Lifetime Studies
- Time-correlated Single Photon and Ion Counting
- Laser induced chemical reactions
- Portable Spectrum Analysis
- High-Energy Physics Acquisition

Order Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCS4</td>
<td>2ch fast MCS, 30 ns dwell time, MPANT Software</td>
<td>MCS4</td>
</tr>
<tr>
<td>MCA4S1</td>
<td>DLL for LabVIEW, ’C’, Visual Basic</td>
<td>MCA4S1</td>
</tr>
<tr>
<td>MCA4S2</td>
<td>LINUX Driver for MCA4 family</td>
<td>MCA4S2</td>
</tr>
<tr>
<td>MCA4MCS</td>
<td>2ch fast MCS, 30 ns (50 ns) dwelltime, option for MCA4-x</td>
<td>MCA4MCS</td>
</tr>
</tbody>
</table>