

The Richter<sup>16</sup> is a 16-bit continuous data acquisition and streaming system. High data rates can be directly streamed to the system's hard disk array which enables several hours of continuous data to be stored.



**DATA ACQUISITION CARD - Analogue Input\***

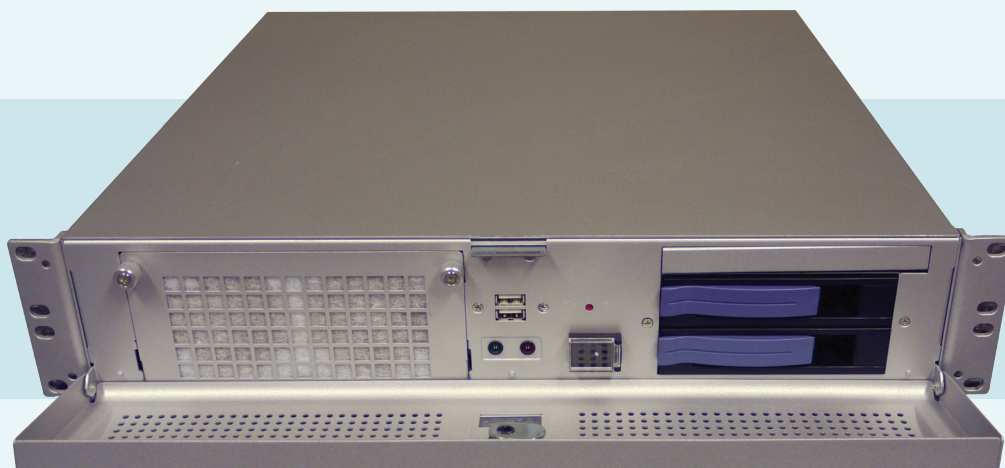
Number of input channels	4
Input type	Single-ended
Impedance	50 Ω or 1 MΩ (software selectable)
3dB Bandwidth	5.1 MHz (50Ω), 90 kHz (1MΩ)
Coupling	DC
ADC Resolution	16 bits
Memory	512 MB onboard memory for data storage
Full-Scale range	± 1 V, ± 5 V (software selectable)
Gain error	± 0.1 % (± 1 V range), ± 0.06 % (± 5 V range)
Offset error	± 0.3 mV
IO Connectors	BNC x 4 for analogue inputs, SMB x 2 for external digital signal inputs
SNR	80 dB (1 MS/s input, SR 10 MS/s, ±1 V range)
SFDR	89 dB (± 1 V range)
Sample Rate (SR)	up to 10 MS/s**
Triggering	Source: Master Card (Channels 1 to 4), External (TTL, 25 ns min pulse width) or Software
PCI Interface	32 bit, 33 MHz bus

**Overview**

The unit can be operated in continuous or triggered acquisition mode at sampling rates of up to 10MS/s per channel. Each Richter unit can simultaneously sample on 4-channels and multiple units can be synchronised together (master-slave setup) to provide an expanded system with a larger number of channels. Integrated with ASC's data acquisition (and hardware control) software, the PC-based Richter unit provides a complete data acquisition solution.

\* The data acquisition card in the Richter<sup>16</sup> system is the PCI-9816 model from Adlink Technologies. Further details on this card are available on the Adlink Technologies website ([www.adlinktech.com](http://www.adlinktech.com)).

\*\* Higher sampling rates are available on request.



### DATA ACQUISITION PC\*

Processor	Intel Core 2 Duo E7500/2.8 GHz (or equivalent)
Memory	2GB DDR2 800/667 SDRAM
Hard-disks	2 x 1 TB SATA disks (RAID 0) for data streaming 1 x 250 GB SATA disk for OS
Optical Drives	Combo CD/CD-R/CD-RW/DVD
Network	Dual 10/100/1000BT
OS	Windows XP Professional
Case Type	2U chassis
Gain Error	± 0.1 % (± 1 V range), ± 0.06 % (± 5 V range)
Offset Error	± 0.3 mV
IO	1 x PS/2 keyboard 1 x PS/2 mouse 1 x VGA port 2 x Serial port 1 x Parallel port 4 x USB ports
Expansion Slots	4 PCI/PCI-X, 1 PCI-Express x4
Physical Dimensions	442 mm (D), 488 mm (W), 88 mm (H)
Weight	12 kg
Power	110/230 VAC
Output	350 W (PFC)
Operating Temperature	0°C to 55°C
Storage Temperature	-20°C to 70°C

\* PC typical specification

### Example Applications

- Microseismic (MS) and acoustic emission (AE) event monitoring
- Vibration monitoring
- Research and laboratory based high speed data acquisition

For more info on the RICHTER<sup>16</sup> acquisition system please contact us:

**UK Tel:** +44 (0)1743 271440 **North America Tel:** +1 416 543 4943

**Web:** [www.appliedseismology.com](http://www.appliedseismology.com) **Email:** [lab@appliedseismology.com](mailto:lab@appliedseismology.com)