

STORAGE AND ACQUISITION MODULE



Removable SCSI Hard Disk

- Data acquisition from 1 to 6 serial ports.
- Low Power Consumption, typically < 1.7 Watts.
- Autonomous data acquisition and archiving.
- 'Hot' swappable removable SCSI hard disk.
- Removable SCSI disk readable in PC and UNIX systems.
- Internal solid state buffer - minimizes disk power consumption.
- Solid state buffer size 4 to 32 Mb option.
- Data storage of GCF block by stream ID.
- Auxiliary high speed monitor port - all input data automatically combined.
- Auxiliary port allows CMG-SAM configuration and provides access to attached remote sensors for configuration and control during data acquisition.
- Optional GPS synchronization to remote digitizers - reduces system cost and power consumption.
- Disk usage power surge buffered by internal battery.
- Built-in LED status for silicon buffer, disk usage and data reception. Optional LED character display provides more detailed information - removes the need for a PC/Terminal.
- Guralp BRP (Block Recovery Protocol) automatically retransmits data on serial links corrupted by poor telemetry links.

The Guralp CMG-SAM Storage Acquisition Module accepts up to eight multi-component digital data streams (as from Guralp sensor/digitizer units), writes the data to its internal silicon file data buffer, and then archives data from the silicon file to an internal removable SCSI hard disk, DAT or Exabyte drive.

Data is stored on the disk in GCF format (Guralp Compressed Format). GCF uses a difference algorithm to express all data as 32, 16 or 8 bit differences, depending on the dynamic range required for the data block. This gives the advantages of reducing baud rates and storage requirements when compared to non-compressed data format.

A built-in removable SCSI hard disk provides data storage. Usually the disk is powered up only at intervals for transfers from the silicon file. An internal battery smooths out the disk-write power surge. LED status indicators show port status, silicon file usage and hard disk usage.

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|---|---|
| Microprocessor | Hitachi H8, 16 MHz clock. |
| Program Memory | 64K EPROM. Up to 512 K RAM available. |
| Data Inputs and Outputs | |
| Basic | 2 Ports, 1 in , 1 out. Standard RS232 interface. (Optional RS422). |
| Optional | 4, or 6 ports. (3, 5 in 1 out). |
| User-selectable Baud rates | 2400 - 115200 baud. . I/O rates on each port are independent. |
| Low-power Silicon File data Buffer | |
| Basic | 4 Mb. |
| Optional | 8, 12,16, or 32 Mb total. |
| Hard Disk Data Storage | Removable SCSI disk. Installs under sealed lid. Automatic support for any capacity. (4 Gb supplied as standard) |
| LED Status Indicators | |
| Port Active | One LED for each installed port. Indicates data is on the port and can be recognized. |
| Silicon File Usage | A binary LED bar graph which increments in 1/16 capacity steps as data is stored to the silicon file. Decrements as the data is transferred to the internal hard disk. |
| Hard Disk Usage | A binary LED bar graph which increments in 1/16 capacity steps as data is transferred to the hard disk from the silicon file. |
| LED Status Display | Optional character module displays more detailed status information. |
| Real Time Clock | |
| Type | CMOS with 240 byte system configuration RAM. |
| Backup | 3.0 V Lithium battery |
| Function | Provides system configuration RAM Time stamp of internal status blocks. |
| External GPS Clock | Interfaces to GPS port. Remote digitizers can be synchronized to GPS with a 2 character per second signal over a half or full-duplex link. The GPS port is configurable as an additional data port (max 19200 baud) |
| Monitor Port | High speed combined data stream output. |
| Waveform Display | Current waveforms (user selectable) display via SCREAM! software on a PC monitor. |
| Parameter Setup | User changes parameters via command line on a terminal or via SCREAM! Software. |
| Power | |
| Normal data acquisition | 110mA @ +12 Vdc |
| During transfer to hard disk | 140mA @ +12 Vdc |
| Internal backup battery | 12 Vdc, 12 Amp-hour rechargeable gel cell. |
| Physical | |
| Digital input/output connectors: | KPT 06F-10-6S, cable end |
| User Access Port Connector: | KPT 06F-10-6S, cable end |
| Power connector: | KPT 06F-12-10S, cable end |
| Dimensions: | 300 x 229 x 216mm (11.8 x 9 x 8.5 in) |
| Weight: | 6 Kg (13 lb) |
| Shipping Weight: | 9 Kg (20 lb) |
| Environmental | |
| Operating temperature range | 5 to 55 ^{°c} . If insulated -20 ^{°c} due to internal heat dissipation from PSU. |
| Storage temperature range | -40 ^{°c} to +70 ^{°c} . |
| Vibration resistance | 2g during operation (hard disk spec) 75g non-operation (hard disk spec) |