Common sense…uncommon innovation

GEOTECH INSTRUMENTS, LLC

FEATURES

- **Scalable, up to 768 channels**

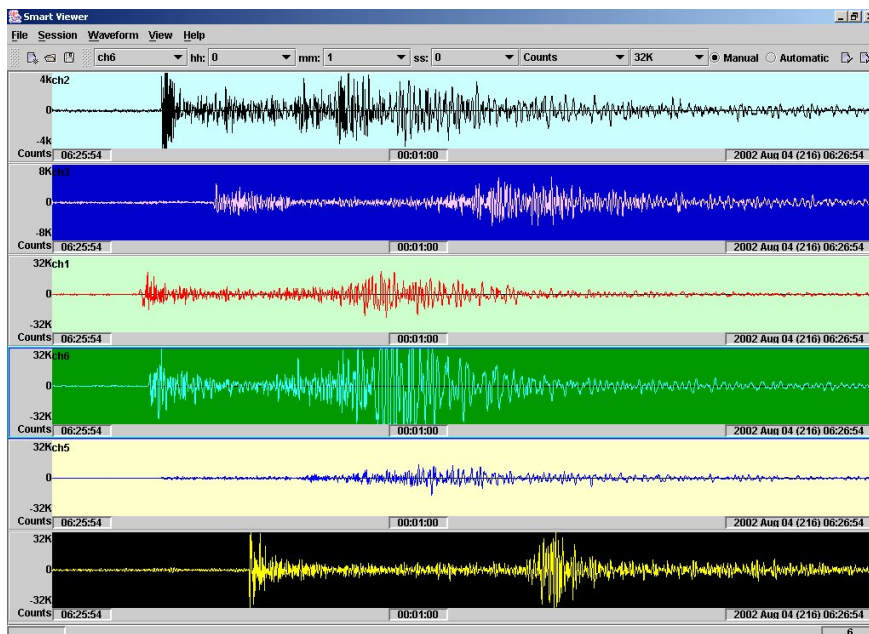- **TCP/IP protocol**

- **Platform independent**

The **SMART Central Station** is primarily based on the **SMARTGeoHub®** Data Server. Its task is to acquire continuous data streams from remote stations (or other **SMART Central Stations**), put them into a database, and interface with other real-time applications.

The **SMARTGeoHub®** accepts data in **CD1.1** protocol from remote stations, like the Geotech's **SMART-24D®** digitizer, **SMART-24R®** recorder and **SMART-24A®** strong motion recorder.

The **SMARTGeoViewer®** is a client able to display real-time data or up to 72 hours of data kept in the database. Several instances can be run in parallel, both locally and remotely, and it can display the arrival time picks determined by **SMARTQuake®**.

THE SMART CENTRAL STATION

SMARTGeoHub® Data Server
SMARTGeoViewer® Real-time Display Client
SMART24Config Remote Setup Client
SMARTDBConfig Data Base Setup Client
SMARTGeoSOHMonitor Alert and Logging Client

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SMART CENTRAL STATION SPECIFICATIONS

SMARTGeoHub® Data Server

The primary task of **SMARTGeoHub® Data Server** is to acquire continuous data streams from **SMART-24D®**, **SMART-24R®**, and **SMART-24A®** Geotech digitizers, recorders or accelerometers, as well as from other Geotech SMART or ICP Central Stations. The communication protocol is the well defined CD1.1 standard, so data streams from other vendor digitizers can be accepted too.

The **SMARTGeoHub® Data Server** allows the user to combine different telemetry types, from VHF/UHF radio modems, spread spectrum radios, telephone, and Internet IP, up to satellite links. The Data Server is built on top of a relational database designed to keep data for as long as 72 hours for quick access. In parallel to the fast-access database, a circular buffer of the raw data is also maintained. Multiple CD1.1, SeedLink or LISS data streams can be sent to different IP addresses. Communication between **SMARTGeoHubs®** allows for different network configurations, from the completely centralized to the totally decentralized networks, as well as a combination of both.

The **SMARTGeoHub® Data Server** keeps a large circular buffer of the incoming data, depending only on the capacity of the hard disk. This disk buffer is used as LIFO buffer for the outgoing data streams. In applications requiring authentication, the circular buffer includes the digital signature of each data frame. In other applications, continuous real-time data files of fixed length are generated for further use by **SMARTQuake®.** Communication with other data hubs is done using **Earthworm** or **SeedLink** protocols.
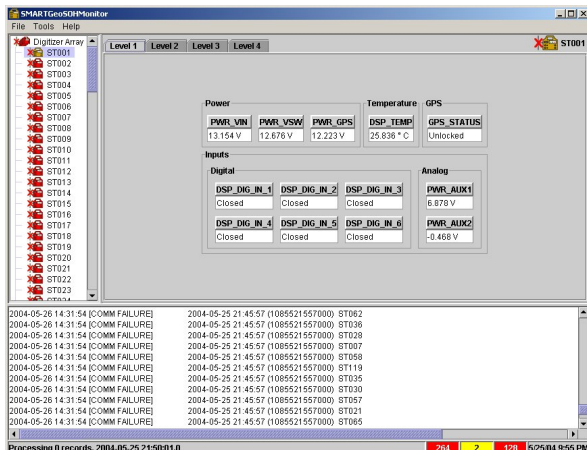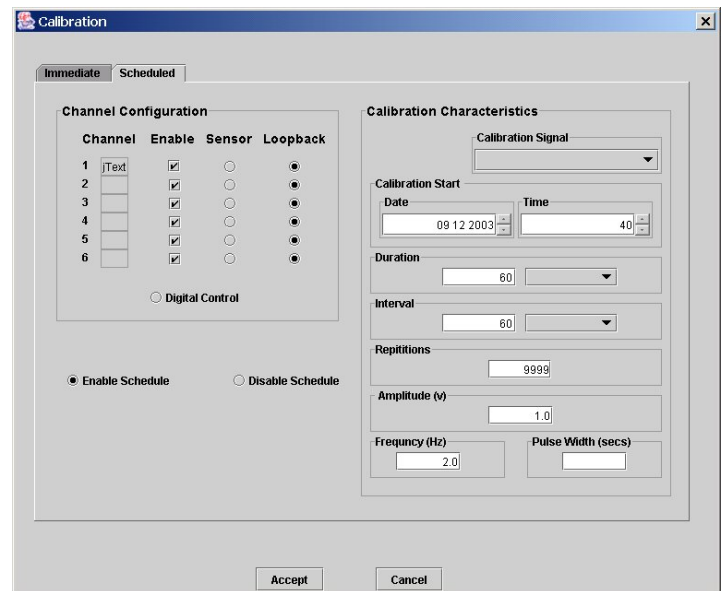

SOH Level 1 dialog window

SMARTGeoViewer® Real-time Display

The **SMARTGeoViewer®** is a client to the **SMARTGeoHub®** and can be started locally or remotely to display real-time data or older data accumulated in the database. The operator can select the channels to be displayed, can zoom in and out the waveform on all channels or one channel only, drag and drop channels, can repeat channels, can use different time windows for individual channels, and can display the arrival times picked by **SMARTQuake®**. In "array mode", the viewer allows for overlapping traces to better use the screen area. A companion client **SMARTGeoSOH** checks and display graphically alarm conditions of remote digitizers **SMART-24D®**, of communication link status, and logs the information in a file on disk.

SMART24Config Remote Setup Module

The **SMART24Config** is a client that can connect remotely to any of the **SMART-24** family of digitizers, portable recorders or strong motion recorders. It uses TCP/IP protocol and being written in Java is, as all SMART Central Station modules, platform independent. **SMART24Config** is used to setup or check the status of the remote units. Another client, **SMARTDBConfig**, is used to setup the dababase.

Calibration dialog window

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