TEST MODULE OPTIONS

Data Acquisition only	✓
Saturation/Consolidation	✓
Standard Triaxial	✓
Stress Paths	✓
Advanced Loading	✓
Permeability	✓
Unsat Testing	✓
K0 (zero lateral strain)	✓
Hollow Cylinder	✓
Oedometer Logging	✓
Dynamic Cyclic Triaxial	✓
Direct Shear Box	✓
Static Simple Shear	✓
Cyclic Simple Shear	✓

GDSLAB control and data acquisition software
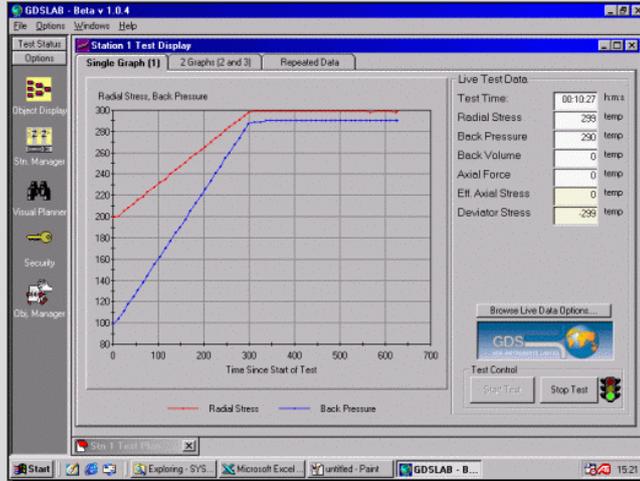
What is it?

GDSLAB is control and data acquisition software for geotechnical laboratory applications. The main advantage of GDSLAB is that as well as the ability to integrate all existing GDS hardware, other manufacturers' hardware can also be used. Whether performing Triaxial, CBR, Direct Shear box, Simple Shear, Hollow Cylinder or simple Consolidation Logging tests, GDSLAB represents a breakthrough in geotechnical laboratory control software.

What are its uses?

GDSLAB can be integrated with existing or new laboratory equipment to provide data acquisition and control for standard or advanced testing. Commercial or research testing is possible with the choice of modules available. In addition, equipment manufactured by other leading manufacturers may be brought under the control of GDSLAB to enable testing to be carried out under computer control.

Alternatively, where computer control is not available, GDSLAB may be used to acquire data from your existing hardware then present data using GDSLAB REPORTS. *For the first time the test software will not be tied to the OEM software supplied.*

ENHANCED SOFTWARE FEATURES

Multiple test stations from a single PC	✓
Batching of multiple tests	✓
Change graph axes 'on the fly'	✓
Change live test data displayed 'on the fly'	✓
Flexibility in allocating the hardware setup	✓
Intuitive graphical hardware configuration and transducer setup	✓
Only required test modules need to be purchased	✓
Sharing of multi-channel data acquisition devices between stations	✓

Required PC Specification

Operating System: Windows XP SP3 or higher (We receoommend that whichever version of Windows you are running, that it is up to date with the latest Service Pack)

PC Spec Hardware: 1GHz (minimum) / 1GB Ram (minimum)
CD Rom

Note 1: Free serial ports/PCI slots/ISA slots/USB ports as required for individual hardware connection.
Note 2: Due to the flexible nature of the GDSLAB software, as many stations may be configured on a single PC as can be physically connected to it! In systems that have multiple and complex stations, a higher specification PC may be required.

How do you use it?

GDSLAB is a modular program that is initially purchased as a Kernel, or 'core' program. This kernel is the initial framework for GDSLAB, and includes data acquisition capability.

Optional test modules are then purchased as 'Add-ins' to bring to the software the ability to control particular tests (e.g. Fig. 1 'Satcon', Saturation and Consolidation module). Test modules integrate fully into GDSLAB to form a single combined program adding further functionality to the Kernel. Each Test Module is purchased according to the type of test you will be performing therefore only the desired test modules need to be purchased.

The modular approach means that as only the required software is purchased, thus keeping the cost to a minimum. Additional test modules may then be added to the package at any time in the future when required.

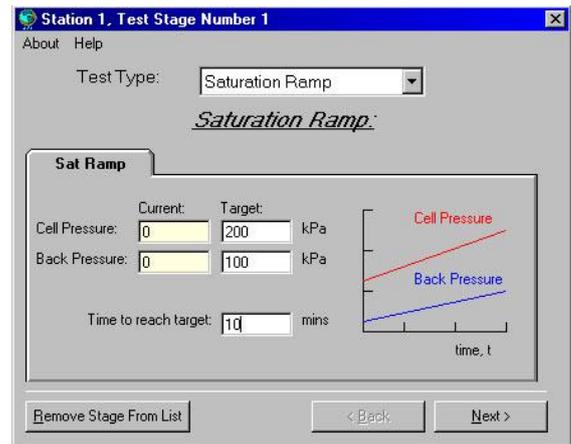A full list of the test modules currently available can be found on page 1 of this datasheet (Test Module Options).

Fig.1: Saturation/Consolidation (Satcon) test module test setup screen.

GDSLAB configuration files (.ini files)

An ini file, or a number of ini files are created specifically for the users system setup. This ini file defines exactly the hardware that is connected to the PC and how the hardware is to be used. The ini file forms the basis for GDSLAB's flexibility in that hardware configurations can be tailored to the user's exact needs. GDSLAB then provides the user with a graphical display of the hardware in terms of the 'Hardware Display' (see below).

Hardware Display – an intuitive user interface

By clicking on any of the devices within the hardware/object display, information about the device will appear in a new window. Depending on the hardware arrangement, this may simply be an information box, or a box where communications (comms) settings must be entered (e.g. RS232 or IEEE parameters). These parameters are set to match the physical settings of the hardware.

Clicking on the "EYE" icon (the eye represents a read devices) will bring up the transducer details for that particular device. Specific transducer details are then entered in the ADVANCED tab such as Transducer Full Scale, Decimal Places and Transducer Upper Limit. The CALIBRATION tab is then used where either the transducer sensitivity is entered, or a full calibration is performed.

This graphical representation of the hardware attached to the PC makes inputting the hardware parameters, as well as diagnosing hardware problems, a simple experience for the user.
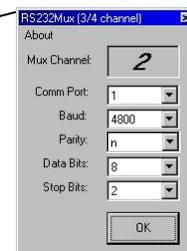
Transducer Details
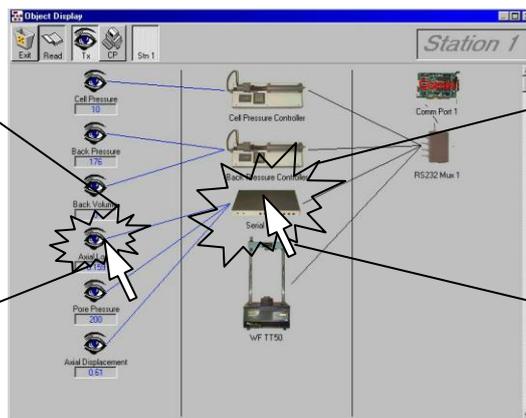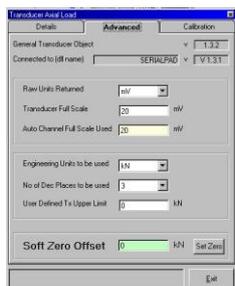
Comms settings

Fig. 2: Setting up devices using the hardware display screen

Upgrade path for existing GDS users

GDSLAB serves as a total software solution for all GDS equipment supplied since 1979. The unique design of the software, allowing for hardware to be easily configured in exactly the way the user requires, provides a perfect solution for upgrading old hardware and software from GDS. A GDSLAB driver exists for all existing GDS hardware in the field to date.

GDSLAB can be used as an upgrade for all existing GDS software packages, for example STDTTS, GDSTAS, STDCTS and all HTB driven software packages from GDS.

Upgrade path for hardware from other manufacturers

GDSLAB requires a hardware device driver for each piece of hardware being configured within the system. Hardware device drivers are available free of charge for all hardware already supported by GDSLAB, and are installed on the users PC by default.

Hardware drivers are constantly being added as hardware is developed by GDS and other manufacturers. For an up to date list of the hardware currently supported by GDSLAB, do not hesitate to contact GDS on support@gdsinstruments.com.

Fig. 3 shows an example of a GDSLAB hardware display from a station setup incorporating a load frame from an OEM other than GDS.
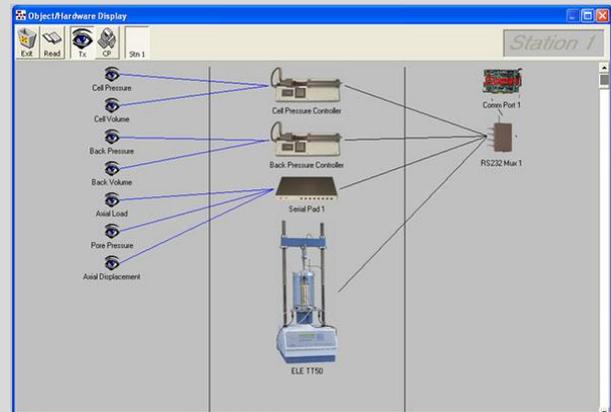

Fig. 3: Hardware Display including equipment from other manufacturers

Key Features

- Multiple stations may be configured to a single computer. This has the added advantage that hardware connected to the same computer may be shared between stations i.e. data loggers.
- GDSLAB enables the user to setup multiple test stages. Either all before commencing testing or at any point during testing.
- Test stages can be paused, stopped or resumed at any point in time. Test stages can also be set to stop automatically on a number of user defined criteria e.g. Max deviator stress during a shearing stage.
- GDSLAB measures the values of all transducers connected to the system constantly and uses these values to calculate all relevant stresses, strains and displacements. These values are then displayed on the screen. The used can choose what data they want displayed before and during a test and can be changed at any time.
- Data is saved to a data file in ASCII format at a user specified time interval. This time interval can be on a linear, square root or log scale. Both the raw data and all the calculated data can be saved to the ASCII datafile.
- All measured and calculated data can be displayed graphically in real-time on up to three graphs. The user can choose what data to display on the graph axes before and during a test and can be changed at any time to suit the user.
- When running the program, GDSLAB will enable the user to have some test stations running while simultaneously configuring stations for other tests.

Why buy GDSLAB?

- Well developed GDSLAB software provides a consistent interface across all of your geotechnical laboratory testing
- You are able to choose particular test modules for your testing requirements or your International Standard requirements
- GDS is now supporting a single piece of software (GDSLAB) for all laboratory products. This means that the testing quality will be dependent on the hardware attached, not the software
- 'Future proof' software as new test modules are added and device drivers are created when new hardware is produced by OEM's

Due to continued development specifications may change without notice