

# midi LOGGER dual GL500A Quick Start Guide

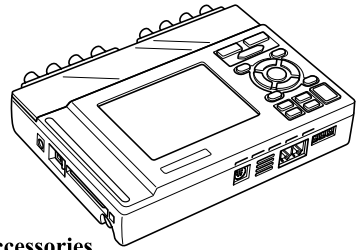
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GL500-UM-852

Thank you for purchasing the Graphtec GL500 midi LOGGER dual. This Quick Start Guide is an easy operation guide that provides explanations on preparations prior to measurement, basic measurement operations, and menu operations, for people who want to start measurement operations right away. Please see your User's Manual for more detailed explanations.

## Checking the Outer Casing

After unpacking, check the GL500's outer casing before use to make sure that there are no surface scratches or other flaws such as stains or dirt.



## Checking the Accessories

- Quick Start Guide: 1
- CD-ROM: 1
- LCD protector: 1
- AC cable/AC adapter: 1 set
- AC cable core: 1
- Screwdriver for input terminal unit: 1

## Connecting to a PC (the PC is not supplied by Graphtec)

- OS: Windows 2000/XP
- Memory: At least 256 MB (512 MB recommended)
- CPU: Pentium 4 or higher
- HDD: 100 MB (1 GB recommended) additional space required for installing the application software

## Connecting the Power Cable

### Connecting to an AC Supply

Connect the output side of the AC adapter to the power connector on the GL500.

### CAUTION:

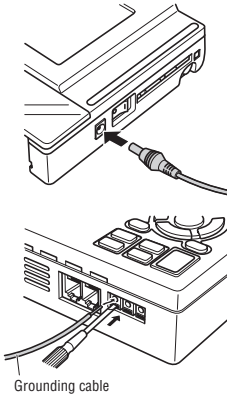
If you are using the GL500 in the EU region, attach the core provided as a standard accessory to the AC cable. For further details, see Section 2.7, "Connecting the Power Cable and Turning on the Power", in your User's Manual.

### Connecting the Grounding Cable

Using the screwdriver provided as a standard accessory, press against the button underneath the ground terminal while connecting the grounding cable to the GL500. Connect the other end of the cable to ground.

### CAUTION:

Always connect the GND terminal and refer to the safety precautions in the User's Manual. The GL500 must be grounded even when connected to other devices and sharing a common ground level.



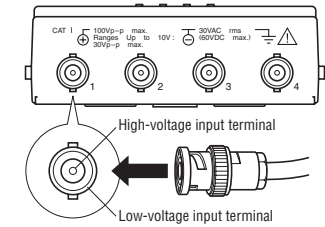
## Connecting the Signal Input Cables to the Input Terminal Units

The input terminal units shown below are for use with the GL500 model only. Input terminal units for other models such as the GL400 cannot be used with the GL500.

### 4VF Input Terminal Unit

This is a 4-channel isolated voltage input terminal unit.

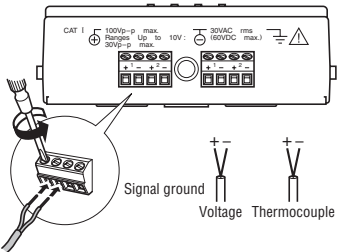
### Terminal Configuration and Input Signal Types



### 4MF Input Terminal Unit

This is a 4-channel isolated voltage and temperature input terminal unit.

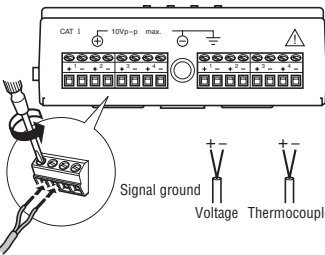
### Terminal Configuration and Input Signal Types



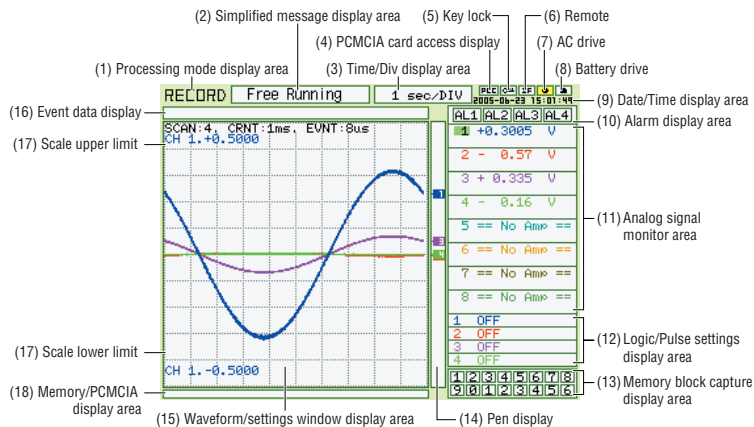
### 8MS Input Terminal Unit

This is an 8-channel non-isolated voltage and temperature input terminal unit.

### Terminal Configuration and Input Signal Types

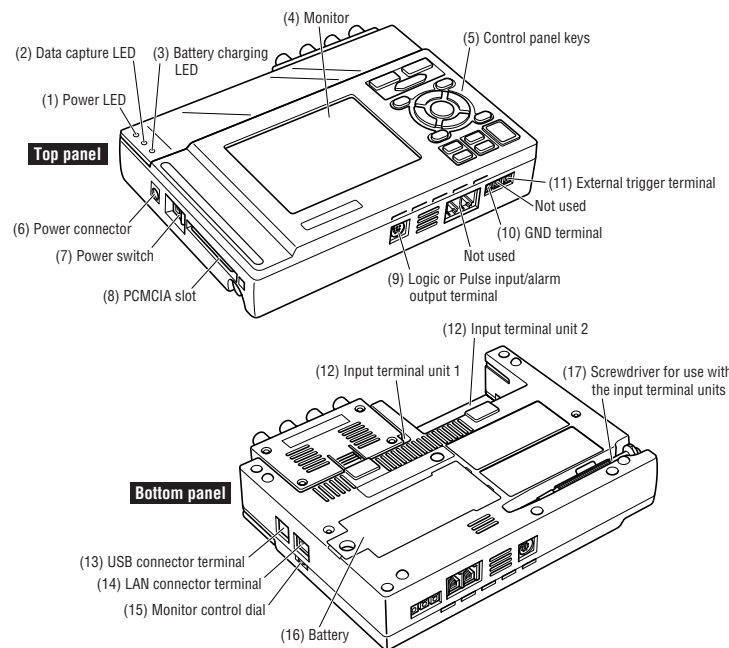


## Monitor Part Names and Functions

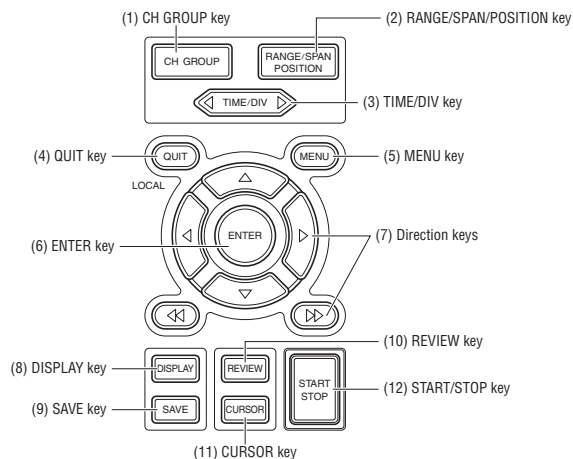


- (1) Processing mode display area: Displays the processing mode currently set.
- (2) Simplified message display area: Displays the system status. ("Free Running") is usually displayed. For example, "Armed" is displayed when waiting for a trigger signal.
- (3) Time/Div display area: Displays the current time scale.
- (4) PCMCIA card access display: The red LED flashes while data on the PCMCIA card is being accessed.
- (5) Key lock: Lit when the GL500 is in key lock status. To enable key lock status, hold down the two [ <<< ] and [ >>> ] keys for at least three seconds.
- (6) Remote: Lit when the GL500 is in remote status.
- (7) AC drive: Lit when the AC power supply is being used.
- (8) Battery drive: Lit when the battery is being used.
- (9) Date/Time display area: Displays the current date and time.
- (10) Alarm display area: Displays the alarm outputs.
- (11) Analog signal monitor area: Displays the input signal values for each channel.
- (12) Logic/Pulse settings display area: Logic: Displays the operation status. Pulse: Displays the measured values. (Display switching: Off, Logic, Pulse)
- (13) Memory block capture display area: Different colors are used to indicate the status of the data captured to memory.
- (14) Pen display: Pens are displayed for each group.
- (15) Waveform/settings window display area: Displays the measurement signal waveforms. The menu windows are also displayed when the condition setting keys are pressed.
- (16) Event data display: Displays the event data capture status.
- (17) Scale upper/lower limit: Displays the measurement scale for the range set.
- (18) Memory/PCMCIA display area: Displays the capture status of the current data (memory and PCMCIA).

## GL500 Main Unit Part Names



## Control Panel Key Names and Functions



- (9) Date/Time display area: Displays the current date and time.
- (10) Alarm display area: Displays the alarm outputs.
- (11) Analog signal monitor area: Displays the input signal values for each channel.
- (12) Logic/Pulse settings display area: Logic: Displays the operation status. Pulse: Displays the measured values. (Display switching: Off, Logic, Pulse)
- (13) Memory block capture display area: Different colors are used to indicate the status of the data captured to memory.
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## Setting Procedures

The following procedures explain how to perform general measurement using the MENU screens displayed on the GL500 monitor.

### 1. Inputting Signals

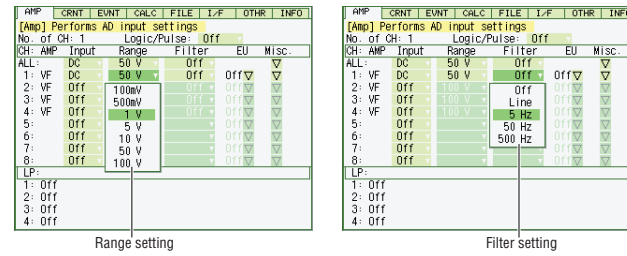
- (1) Connect the signal input cables to the input terminal unit(s). For details on the connection procedure, see "Connecting the Signal Input Cables to the Input Terminal Unit" at the left.
- (2) Turn on the GL500's power switch.
- (3) Check that waveforms are being displayed on the GL500 monitor. The waveforms may be straight lines, depending on the input signals and the setting ranges used.

### 2. Setting up the GL500

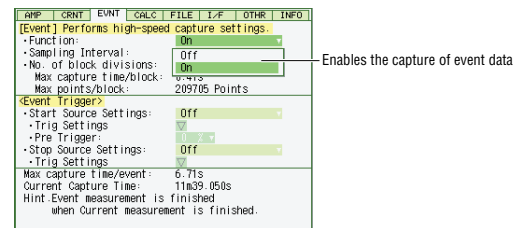
- (1) Press the MENU key to display the MENU screen. The first screen displayed is the Amp menu setup screen. Use the [ <<< ] direction keys to select the parameters that you want to set, and the ENTER key to confirm your settings.

Range: Change the value from 50 V to 1 V (or select a range that is suitable for the input signals).

Filter: Change the value from Off to 5 Hz (or select a filter suitable for the amount of noise).



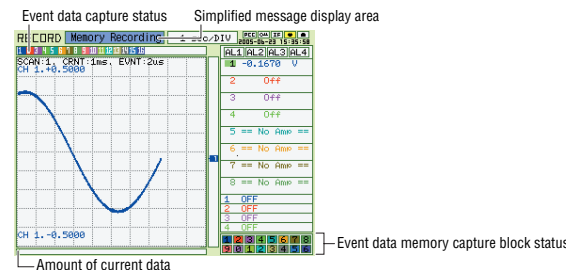
- (2) Press the MENU key or use the [ <<< ] direction keys to display the Current menu setup screen. Use the factory default settings for this screen.
- (3) Press the MENU key or use the [ <<< ] direction keys to display the Event menu setup screen. Use the [ <<<>>> ] direction keys to select the parameters that you want to set, and the ENTER key to confirm your settings. Function: On (to enable this function to be used)



- (4) Press the QUIT key to close the MENU screen.

### 3. Capturing Data to Memory

- (1) Press the START/STOP key to start data capture. "Memory Recording" is displayed in the simplified message display area at the top of the monitor screen. During data capture, the memory blocks at the bottom right of the screen light red in succession to indicate the capture status.

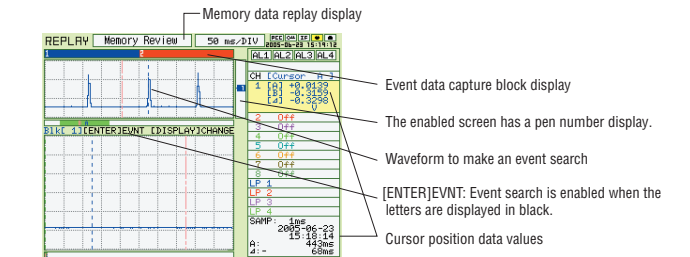


- (2) Press the START/STOP key to end data capture.

## 4. Data Replay

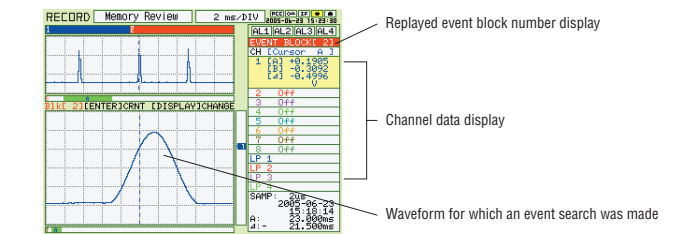
- (1) Press the REVIEW key on the free-running screen to display the replay screen. The current screen is located at the upper area, and the event screen is located at the lower area. Point the cursor to the waveform to make an event search on the current screen. Cursors can be moved with the direction keys.

\* Event search is enabled when [ENTER]EVNT is displayed between screens.

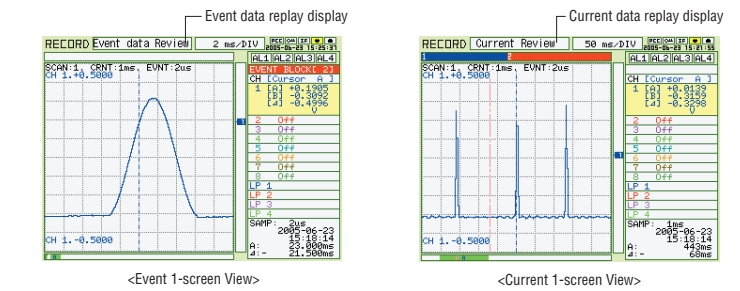


- (2) Press the ENTER key to display the event waveform corresponding to the current waveform on the event screen. Waveforms can be confirmed easier on the event screen than on the current screen.

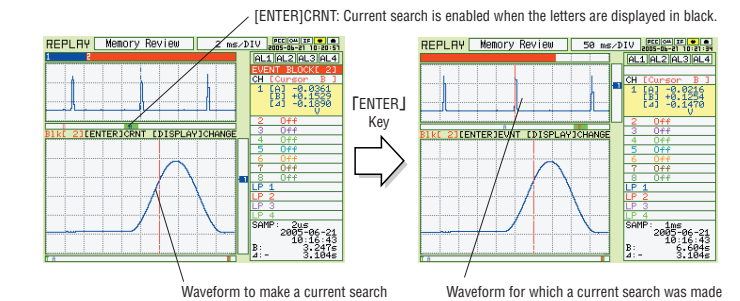
\* Search accuracy depends on the sampling interval.



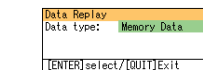
- (3) Press the REVIEW key in the status of (2) to display the event screen on 1-screen. Press the REVIEW key on 2-screen view to display the effective screen on 1-screen. Press the REVIEW key on 1-screen view to go back to 2-screen view.



- (4) Current waveform can be searched from an event waveform in 2-screen view. It is enabled when the event screen is enabled. Move the cursor to the waveform to make a current search on the event screen. Press the ENTER key to display the current waveform corresponding to the event waveform on the current screen. Overall status of the waveform can be confirmed on the current screen. \* Search accuracy depends on the sampling interval.

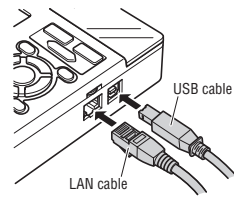


- (5) Press the QUIT key to return to the free running screen. It is enabled from any replay screen.
- (6) When replaying data (procedure (1)), the message below appears once a PCMCIA card is inserted into its slot. Select data type, point the cursor to [Execute] and press [ENTER] to confirm the settings.



## Connecting to a PC

The GL500 can be connected to a PC via a LAN cable or a USB cable. Click the "Connect" button on the main screen to display the connection screen. Select "USB", "TCP-IP" or "LAN" to suit your requirements.

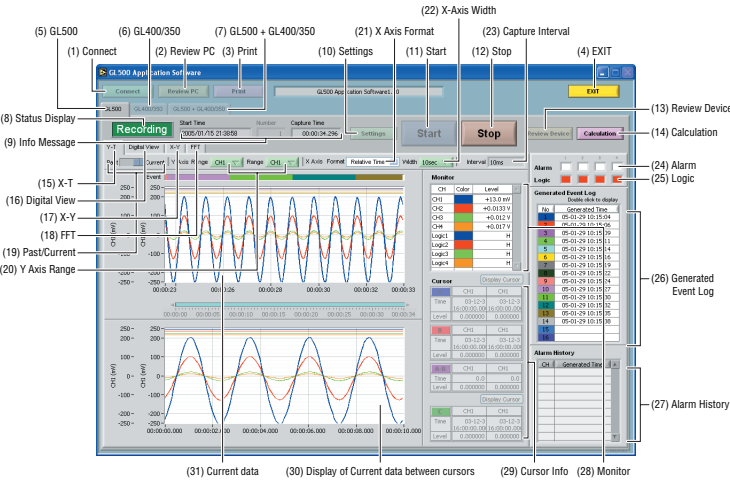


- Note:**
- When using a USB cable, a USB driver must be installed in the PC. Please see your user's manual for the installation procedure.
  - The USB 2.0 interface is required for fast data capture.

## Menu Configuration

### Starting the Software

Click "Start" → "Programs" → "GL500 Application" to launch the application software. Once the program has started up, the following window is displayed.



Menu Name	Selections
(1) Connect	Connection method: GL500, GL400/350 Connect, Disconnect, Save Conditions, Load Conditions State: USB, TCP-IP, USB ID, IP Address, Port, Subnet Mask
(2) Review PC	Open File Superimpose Convert then Save: File Path: Format, Path Data: All, Cursor Spot Samples: Off, Select from 2 to 1000 points Display in Excel: Data: All, Cursor Spot Samples: Off, Select from 2 to 1000 points Print
(3) Print	
(4) EXIT	
(5) GL500	
(6) GL400/350	Settings (only when the GL400 or GL350 is connected)
(7) GL500+GL400/350	Only when the GL500 and a GL400 or GL350 model are both connected.
(8) Status Display	Stopped, Armed, Recording, Free Running
(9) Info Message	Start Time, Capture Time, Capture Interval
(10) Settings	AMP: Number, Event Max. Speed Sampling, Select CH (From 1-8 to 9-16), Analog AMP Settings: All CH, Line Color, Annotation, Input, Range, Filter, Span Upper Limit, Span Lower Limit, Unit Logic, Pulse Settings: Logic/Pulse (Off, Logic, Pulse) Logic Settings: CH, Line Color, Filter Pulse Settings: Input, CH, Line Color, Range, Filter, Slope Current: Device Settings: Sampling Interval (USB 2.0: 1 ms, USB 1.0, TCP-IP: 10 ms), PC Card Settings: File Name, File Path, Trigger Settings: Start (Function), Stop (Function), Trigger Repeat, Amp Trigger Settings: Select CH, Start Trigger, Stop Trigger, Combination Alarm Settings: Select CH, Function, Upper, Lower, Alarm Output, Combination Event: Event: Function, Auto Save to PC after Capture, Sampling Interval, No. of Memory Block Divisions, Capture Time per Block Event Trigger Settings: • Start Trigger: Source, CH, Function, Upper, Lower, Unit, Pre-trigger, Combination • Stop Trigger: Source, CH, Function, Upper, Lower, Unit, Combination File: PC Data Capture Settings: File Name, Auto File Name, Format, File Path Auto Backup Settings: Create Backup File, Backup Interval PC card operation at the device: Data Transfer, Copy File, Delete File, Delete Folder, Format Scaling: Select CH: From 1-8 to 9-16 • Meas. Output: CH, Function, Upper, Lower, Unit • Scaling Output: CH, Upper, Lower, Unit Pulse Settings • Meas. Output: CH, Function, Upper, Unit • Scaling Output: CH, Upper, Unit Arithmetic, XY, FFT: Stat Calc: Statistics Arithmetic Operation: Func., Line Color, CH A, Operator, CH B XY: Disp, Line Color, X Axis, Y Axis FFT: Disp, CH, Window, dB Specification, Averaging Mode, Weighted Average Mode, Number of Averages Other: Synchronize PC and device clocks, Room Temp. Compensation, Power On Start, Store the settings to the GL500, Temp. Unit, Sampled Waveform Display, Factory Default Settings

Menu Name	Selections
(10) Settings	Other: Send E-Mail: Send Email when alarm is generated, Mail Address, Comments, SMTP Server, Sender Mail Address Information: Version, Device Information
(11) Start	
(12) Stop	
(13) Review Device	Open File: Device, Path, Create Folder, Delete, Device Memory Data Convert then Save: File Path: Format, Path Data: All, Cursor Spot Samples: Off, Select from 2 to 1000 points Open in Excel: Data: All, Cursor Spot Samples: Off, Select from 2 to 1000 points
(14) Calculation	
(15) Y-T	
(16) Digital View	1-16, Pulse 1 to Pulse 4
(17) X-Y	
(18) FFT	
(19) Past/Current	
(20) Y Axis Range	Range 1: Analog CH, Pulse Range 2: Analog CH, Pulse
(21) X Axis Format	Relative Time, Absolute Time
(22) X-Axis Width	10 s to 24 h
(23) Capture Interval	
(24) Alarm	1 to 4
(25) Logic	1 to 4
(26) Generated Event Log	Double-click to display
(27) Alarm History	Enabled when an alarm is generated
(28) Monitor	CH, Color, Level
(29) Cursor Info	Enabled when cursors are displayed
(30) Display of Current data between cursors	
(31) Current Data	

## Application Software Measurement Example

The following procedures explain how to perform measurement using your computer and the application software provided. For these explanations, the USB cable is used to connect the GL500 to the computer.

### 1. Connecting to Your PC

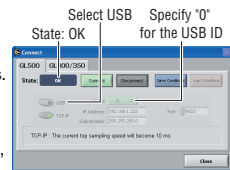
Connect the GL500 to your computer. For the connection method, see the section "Connecting to a PC" at the left, and Section 4.7, "PC Connection Settings", in your User's Manual.

### 2. Inputting Signals

- Connect the signal input cables to the input terminal unit(s). For details on the connection procedure, see Section 2.11, "Connecting the Signal Input Cables to the Input Terminal Unit", in your User's Manual.
- Turn on the GL500's power switch.
- Check that waveforms are being displayed on the GL500 monitor. The waveforms may be straight lines, depending on the input signals and the setting ranges used.

### 3. Launching the Application Software

- Launch the GL500 application software.
- Click the "Connect" button on the main screen to display the Connect window, and then make the required settings.
  - Select USB
  - Specify "0" for the USB ID
- Click the "Connect" button. If the connection is successful, "OK" is displayed for "State".
- Click the "Close" button to return to the main screen.

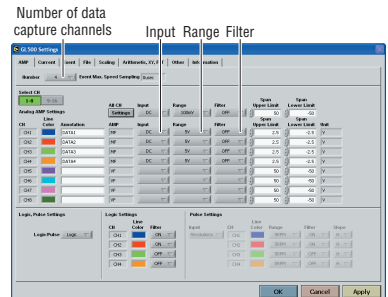


### 4. Setting the Parameters

- Waveforms of the input signals are displayed on the main screen.



- AMP Settings  
Click the "Settings" button. The screen changes to a parameter settings screen. Select the "AMP" tab to display the "AMP" setting screen.

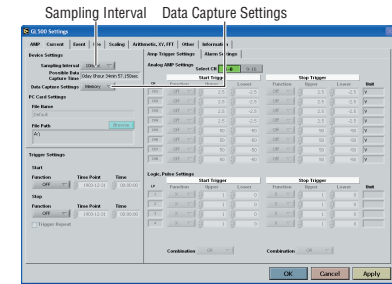


Specify the number of data capture channels for "Number". Use the number of input signals for this value.

Make the "Input", "Range", and "Filter" settings for the selected channels. In the screen displayed above, the following settings were made.

- Input: DC
- Range: 5V
- Filter: OFF

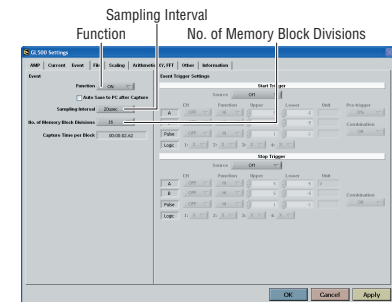
- Current Settings  
Select the "Current" tab to display the "Current" setting screen.



Make the "Sampling Interval" and "Data Capture Setting" settings. In the screen displayed above, the following settings were made.

- Sampling Interval: 10 ms
- Data Capture Settings: Memory

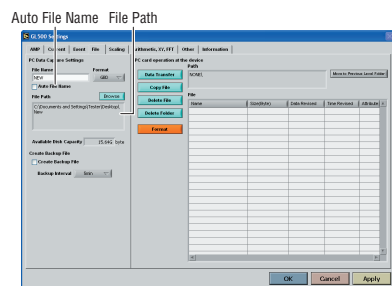
- Event Settings  
Select the "Event" tab to display the "Event" setting screen.



Make the "Function", "Sampling Interval", and "No. of Memory Block Divisions" settings. In the screen displayed above, the following settings were made.

- Function: ON
- Sampling Interval: 20 μsec
- No. of Memory Block Divisions: 16

- File Settings  
Select the "File" tab to display the "File" setting screen.



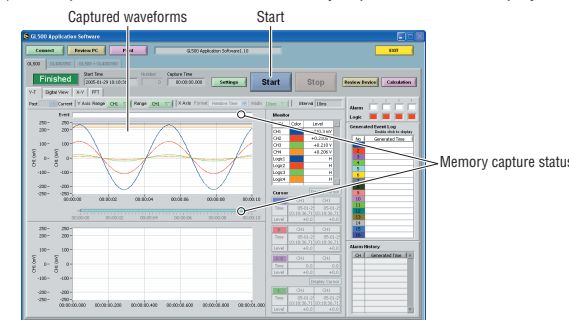
Make the "Auto File Name" and "File Path" settings for data capture at the PC. In the screen displayed above, the following settings were made.

- Auto File Name: Checked (Enabled)
- File Path: PC save location specified

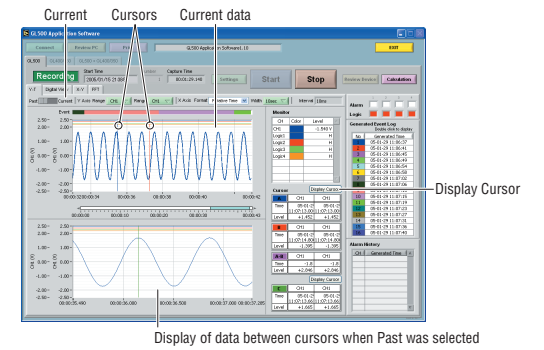
- Ending a Setting Operation  
Click the "Apply" button, and then the "OK" button to return to the main screen.

### 5. Capturing Input Data

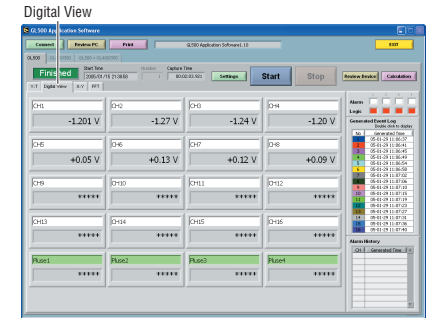
- Press the "Start" button to start data capture.
- The captured waveforms and the memory capture status are displayed.



- Displaying current data  
Select "Current" from the "Past/Current" selections. Current data is displayed on the screen. Past data between the cursors is displayed in the lower part of the screen.

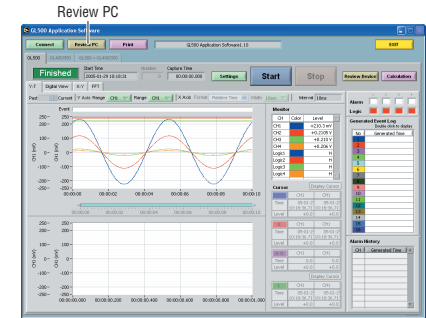


- Digital View  
Select the "Digital View" tab to display the input data as digital values.

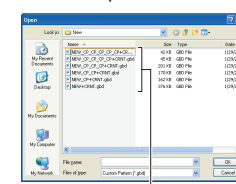


### 6. Replaying Data

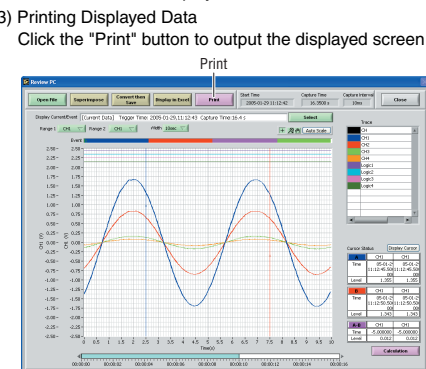
- Replaying PC Data  
Click the "Review PC" button to replay data captured to the computer.



- Selecting a File  
Click the "Open File" button to display the "Open" window.



- Printing Displayed Data  
Click the "Print" button to output the displayed screen to a printer.



### 7. Exiting the Application Software

- Click the "Close" button to close the replay screen.
- Select "Connect" on the main screen and then click the "Disconnect" button to end connection with the PC.
- Click the "EXIT" button on the main screen to exit the application software.