

LR8100s DATA LOGGER, LR8450s MEMORY HiLOGGER MATLAB script

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1. Overview

Using MATLAB, you can start/stop measurement, download data and make measurement settings on the Logger.

2. Supported Instruments

LR8101 and LR8102 DATA LOGGER, LR8450 and LR8450-01 MEMORY HiLOGGER

3. Operation confirmation environment

Microsoft Windows

MATLAB : R2023a 64bit

4. How to Install

Extract the contents of LR8100sLR8450sMatlab.zip to any folder in the PC. In the MATLAB “Path Settings”, specify the directory of that folder.

5. How to Use

First use OpenTCP() to create a TCP/IP client, and then execute each function.

LR8100sLR8450s_Sample.m is provided as a sample program – please refer to this if necessary. Please note that obstacle avoidance codes to address errors have not been embedded into any of the functions.

6. Specifications of Functions

Please refer to the below for details regarding the waveform data.

LR8100s: Instruction Manual, Communication Command Manual

LR8450s: Communication Command Manual

Creating a TCP/IP Client Object		
Syntax	OpenTCP('IPAddress', Port)	
	Input argument	'IPAddress': Enter the IP address of the target connection Port: Port number of the target connection
	Output argument	Client: TCP client object
Description	Specifies the IP address and port number, and creates a TCP/IP client object	
Example	>> t = OpenTCP('192.168.0.5',8802)	

Deleting a TCP/IP Client Object		
Syntax	CloseTCP(Client)	
	Input argument	Client: The TCP client object created using OpenTCP
	Output argument	None
Description	Deletes the TCP/IP client object	
Example	>> CloseTCP(t)	

Sending a Command		
Syntax	SendCmd(Client, 'command')	
	Input argument	Client: The TCP client object created using OpenTCP 'command': Send command
	Output argument	None
Description	Sends a command to the connected equipment	
Example	>> SendCmd(t, ':START')	

Receiving Data		
Syntax	rcvstr = RecvData(Client)	
	Input argument	Client: The TCP client object created using OpenTCP
	Output argument	rcvstr: Data received (char format)
Description	Receives data from the connected equipment	
Example	>> rcv = RecvData(t)	

Sending and Receiving a Query Command		
Syntax	rcvstr = SendQuery(Client, 'command')	
	Input argument	Client: The TCP client object created using OpenTCP 'command': Send command
	Output argument	rcvstr: Data received (char format)
Description	Sends a query command to the connected equipment, and receives a response data	
Example	>> rcv = SendQuery(t, '*IDN?'); >> rcv = 'HIOKI,LR8102,123456789,V1.01'	

Capturing Waveform Data Using BDATA Command		
Syntax	Wave = GetWaveBDATa (Client , CH, chType, top, stepNum, resolution, ratio, offset)	
	Input argument	Client: The TCP client object created using OpenTCP CH: Channel from which to receive waveforms (Example: 'CH1_1') chType: Target channel type top: Data capture start position stepNum: Number of data to capture resolution: Resolution of target data ratio: Ratio for scaling settings offset: Offset for scaling settings
	Output argument	Wave: Captured waveform data (return value, double format)
Description	Capture waveform data for the specified channel and range using the BDATA command	
Example	>> Wave(:,1) = GetWaveBDATa (t, 'CH1_1', 'int32', 0, 5, 0.0001, 1, 0)	

Capturing Waveform Data Using ADATA Command		
Syntax	Wave = GetWaveADATa (Client , CH, top, stepNum, resolution, ratio, offset)	
	Input argument	Client: The TCP client object created using OpenTCP CH: Channel from which to receive waveforms (Example: 'CH1_1') top: Data capture start position stepNum: Number of data to capture resolution: Resolution of target data ratio: Ratio for scaling settings offset: Offset for scaling settings
	Output argument	Wave: Captured waveform data (return value, double format)
Description	Capture waveform data for the specified channel and range using the ADATA command	
Example	>> Wave(:,1) = GetWaveADATa (t, 'CH1_1', 0, 5, 0.0001, 1, 0)	

Capturing Waveform Data Using VDATA Command		
Syntax	Wave = GetWaveVDATa (Client , CH, top, stepNum)	
	Input argument	Client: The TCP client object created using OpenTCP CH: Channel from which to receive waveforms (Example: 'CH1_1') top: Data capture start position stepNum: Number of data to capture
	Output argument	Wave: Captured waveform data (return value, double format)
Description	Capture waveform data for the specified channel and range using the VDATA command	
Example	>> Wave(:,1) = GetWaveVDATa (t, 'CH1_1', 0, 5)	

7. NOTES

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