

Leaptronix[®]

Data Logger Quick User's Guide

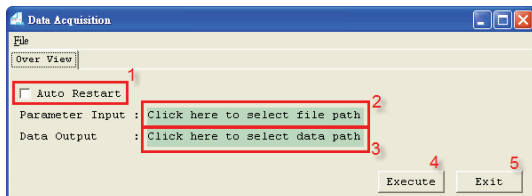
{ Support all Leaptronix Logic Analyzer Series }

Contents

1) Start the program.....	1
2) Load the parameter input.....	1
3) Choose the path for data output.....	3
4) Execute.....	4

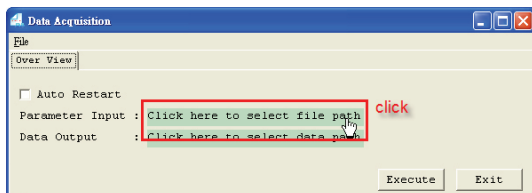
1) Start the program

Main frame :Main frame :



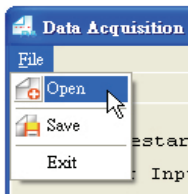
1. Choose the program entering into monitor mode automatically or not.
2. Choose the path for parameter input.
3. Choose the path for storing data output.
4. Execute the software.
5. Exit the software.

2) Load the parameter input

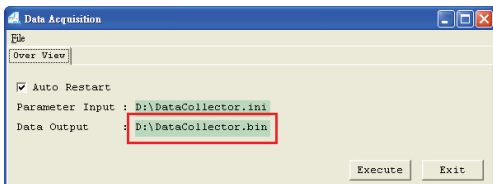


Method 2.

Click "File" → "Open", and choose the parameter input

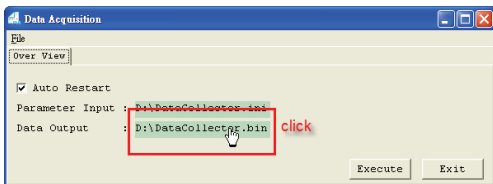


The program will download the path of data output from the parameter file automatically.

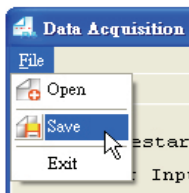


3) Choose the path for data output

Method 1. Click the frame directly to select the path for storing data output.

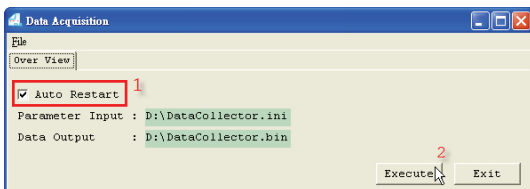


Method 2. Click "File" → "Save", and choose the path for storing data output.

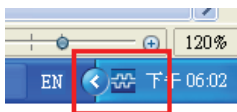


4) Execute

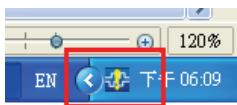
1. After clicking "Execute", the program will enter into the monitor mode. If user clicks the "Auto Restart", the program will enter into the monitor mode once again automatically after retrieving data.



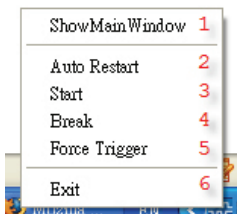
2. After executing, the program will reside and work in the system tray.



3. When there is something changing within the parameter input, the program will cite the new parameter, retrieve the new data and store it in the setting file. If user doesn't click the "Auto Restart", the program will be shown with an exclamation mark and stop monitoring.

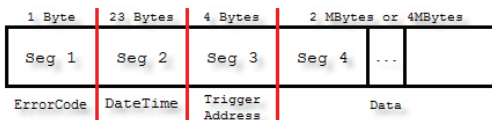


4. User could click the right key of the mouse on the icon to open up the operation list and re-enter in to the monitor mode.



- 1) Show the main window.
- 2) Auto Restart: The program will enter into the monitor mode once again automatically after retrieving data.
- 3) Start: When the program retrieves data and doesn't work with the automatic monitor function, user could click this item and enter into the monitor mode.
- 4) Break: Force to stop retrieving data.
- 5) Force Trigger.
- 6) Exit the program.

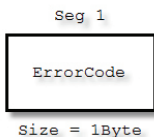
5. File format:



1)

Seg 1:	ErrorCode
Seg 2:	DateTime
Seg 3:	Trigger Address
Seg 4:	Data

2) Error Code



There is one byte Error Code for marking if there is any error within the parameter file format. The meanings of each Error Code are below :

- 0x00 : There is no error in the file format and it already triggered and retrieved the data correctly.

- 0x10 : There is an error in the setting of Sample Rate.
The program will change the sample rate to the default value (250MHz) to retrieve automatically.

- 0x20 : There is an error in the setting of Storage Depth.
The program will change the storage depth to the default mode automatically.

- 0x30 : There is an error in the setting of Post Trigger.
The program will change as non-post trigger automatically.

- 0x40 : There is an error in the setting of Trigger Pattern.
The program will change the trigger pattern to the default mode (all with Don't Care) to retrieve automatically.

- 0x50 : There is an error in the setting of Continue Trigger.
The program will change as non-continue trigger mode automatically.

- 0x60 : There is an error in the voltage setting.
The program will change to use TTL level retrieving automatically.

- 0xF0 : User sets the forced trigger.

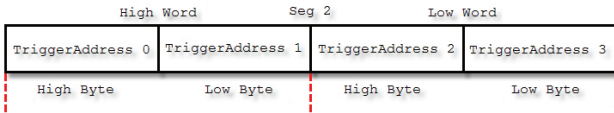
- 0xFF : There are more than one error in the setting.

3) DateTime

There are 23 bytes for the datetime with partition symbol and will store the data in ASCII format. The components include year(four code), month(two code), date(two code), hour(two code in 24 hours tense), minute(two code), second(two code) and millisecond(three code). User should use “/” between the year, month and date, “:” between the hour, minute and second, “.” between second and millisecond to partition.

For example : “13:30:59 pm, Jan. 1st, 2009” will be shown as “2009/01/01/13:30:59.000” .

4) Trigger Address



The data in Trigger Address represents the trigger position of the memory will be two words. The Low Word will be put behind the high one, and the Low Byte will be put behind the high one as well.

For example: When Trigger Address = 0x12345678

High Word: 0x1234, Low Word: 0x5678

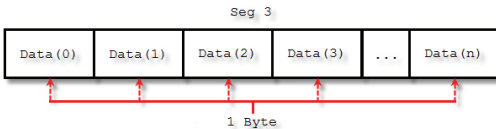
High Byte of High Word: 0x12, Low Byte of High Word: 0x34

High Byte of Low Word: 0x56, Low Byte of Low Word: 0x78

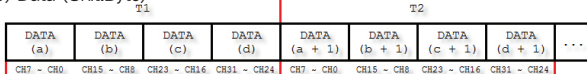
The real address of the Trigger Address sending back to bin is:

Trigger Address =

Trigger Address0 * 0x1000000 (high byte of high word)+ Trigger Address1 * 0x10000 (low byte of high word)+ Trigger Address 2 * 0x100 (high byte of low word)+ Trigger Address3 (low byte of low word)+ 5 (The offset of the beginning address within bin)



5) Data (Unit:Byte)



The data will be permuted by 4 byte(32 bits) steadily.

Under the rule of permutation, the connected data from the same channel (T1 and T2) will be apart by 4 Byte as DATA(a + 1) be the next data after DATA(a).

As each byte represents the data of 8 channels, it will follow the sequence from MSB to LSB.

In the above figure:

b7 of the DATA(a) is channel 7, b0 is channel 0

b7 of the DATA(b) is channel 15, b0 is channel 8

All the data will be circulated by 32bit(4Byte).

If the logic analyzer is 16 channels, the data of the two bytes from channel 16 to channel 31 will be kept in 0xFF.

For example:

Address	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+a	+b	+c	+d	+e	+f	Dump
0000000000000000	00	32	30	30	39	2f	30	31	2f	30	36	2f	31	35	3a	30	.2009/01/06/15:0
0000000000000010	38	3a	31	34	2e	35	33	31	00	00	00	10	01	08	00	00	8:14.531.....
0000000000000020	01	ff	ff	ff	01	ff	ff	ff	01	ff	ff	ff	00	ff	ff	ff	.yyy.yyy.yyy.yyy
0000000000000030	00	ff	ff	ff	00	ff	ff	ff	00	ff	ff	ff	00	ff	ff	ff	.yyy.yyy.yyy.yyy
0000000000000040	00	ff	ff	ff	00	ff	ff	ff	00	ff	ff	ff	00	ff	ff	ff	.yyy.yyy.yyy.yyy

Byte +0: ErrorCode, there is no error in the parameter setting.

Byte +1 ~ Byte +17: DateTime, storing the year, month, date, hour, minute, second and millisecond by ASCII.

Byte +18 ~ Byte +1B: Trigger Address.

Byte +18 & Byte +19: High Word

Byte +1A & Byte +1B: Low Word

After combining the 4 byte, user will get the result 0x00000010, and it is also the Trigger address.

If user set the Byte +0 to be the beginning address, it is in need to add 0x1C(the beginning offset of data) for the real trigger address.

Byte +1C to below: Data, each 4 byte will be one set.

Byte +1C, Byte +1D, Byte +1E, Byte +1F: The data of T1 from Channel 31 to Channel 0.

Byte +20, Byte +21, Byte +22, Byte +23: The data of T2 from Channel 31 to Channel 0.