岱鐠科技股份有限公司
DediProg Technology Co., Ltd.

EM100Pro Series
Software User Manual

Please read the instructions carefully before use.

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I. Introduction

1.1 SPI Flash Emulation

This user manual illustrates the usage of DediProg EM100Pro/EM100Pro-G2/EM100Pro-G3 Serial Flash Emulator. (hereinafter referred to as "EM100Pro Series")

EM100Pro Series is a DediProg Serial Flash Emulator and replaces the SPI Serial Flash memory of the system under development, thus allowing a very fast download of the user's code directly onto the emulator. The EM100Pro Series is based on RAM memory in order to offer the best update performances.

This advanced tool has been designed in close cooperation with the Serial Flash suppliers to emulate the behaviours of all the market Serial Flash and the next generation Serial Flash.

The EM100Pro Series will reduce your development time thanks to its RAM based memory and debugging features. The RAM based emulator can be loaded with new code in a few seconds whatever the densities selected when a standard Serial flash memory would need more than one minute. The file contents and the emulated chip contents can be displayed, compared, edited, and saved into a binary file. The Serial Flash Emulator is connected to the host PC through the USB2.0 high speed bus in order to achieve fast transfer rate. The Serial Flash emulator is transparent and straightforward for your application controller.

EM100Pro-G3 is an upgraded emulator with an emulation capacity of up to 4Gbit (EM100Pro-G2's emulation capacity is 2Gbit). Additionally, we have improved Quad I/O support to 50MHz, making it more stable. It also includes other additional features, such as the ability to switch Vcc automatically based on the IC model and a larger buffer size for SPI trace. However, please note that the EM100Pro-G2/EM100Pro-G3 can only support one IC at a time.

The main difference as below form：

Model	EM100Pro-G3	EM100Pro-G2	EM100Pro
Buffer size for SPI trace	512MB	512MB	Less
Emulation Capacity	Up to 4Gbit	Up to 2Gbit	Up to 512Mbit
Emulating IC concurrently	One IC only	One IC only	One or two ICs
Quad IO support	Up to 50MHz	Up to 50MHz	Worse
Vcc switching	Swap automatically by IC model	Swap automatically by IC model	Need to re-plug after manual selecting
SPI Bus activity indicator	Dual color LED indicator	Dual color LED indicator	No

Fig 1: SPI Flash Emulation

« Save time for your code trials»
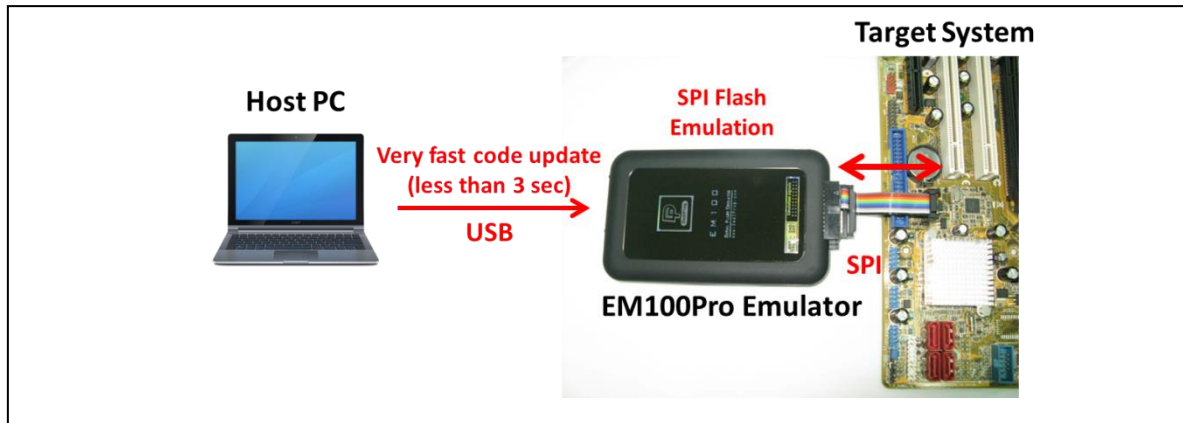
1.2 Application Firmware Debugging Features

EM100Pro Series improves debugger performance:
- With the **SPI Protocol Trace** feature, EM100Pro Series allows to monitor all the SPI bus communication while the system is booting from EM100Pro Series or from the on board chip.

- With the **Hyper Terminal** feature, EM100Pro Series allows to display any debug messages coming from the controller Firmware on the SPI bus while the system is booting from EM100Pro Series or from the on board chip.

- Bi-Directional communication is also possible between your application firmware (BIOS) and your HOST PC through SPI bus to work as a debugger (contact us for more information).

Fig 2: SPI Debugging features
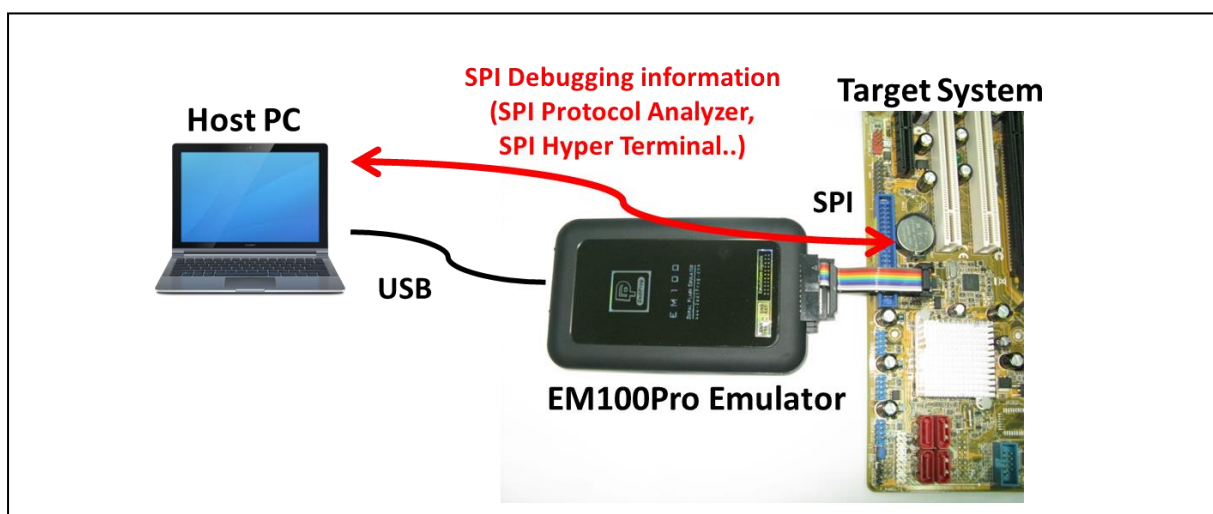
II. Serial Flash and Instructions Supported

2.1 SPI Flash Supported

The EM100Pro Series has been designed to support the common market Serial Flash. Please download our "EM100Pro Series Support devices list" on **www.DediProg.com** for the up-to-date list. If your target standard SPI Flash is not yet supported, please contact **support@dediprog.com** and we will add it to the support list within 2 working days.

2.2 Instructions Set Supported

Find the below instruction set currently supported by the EM100Pro Series:

Tab 1: Instructions Set

SPI command	Instruction code	Description
Page Program	0x02	Page Program (1 up to 256 Bytes)
Read	0x03	Normal Read (continuous with roll over at the end of memory)
WRDI	0x04	Write Disable
RDSR	0x05	Read Status Register
RDFSR	0x70	Read Flag Status Register
WREN	0x06	Write Enable
RDSFDP	0x5A	Read Serial Flash Discovery Parameter
Fast Read	0x0B	Fast Read with dummy byte (continuous with roll over at the end of memory)
Fast Read Dual Output	0x3B	Fast Read Dual Output which data is output on two pins, IO0 and IO1.
Fast Read Dual IO	0xBB	Fast Read Dual IO instruction which access while maintaining two pins, IO0 and IO1.
Fast Read Quad Output	0x6B	Fast Read Quad Output which data is output on four pins, IO0, IO1, IO2 and IO3.
Fast Read Quad IO	0xEB	Fast Read Quad IO instruction which access while maintaining four pins, IO0, IO1, IO2 and IO3.
Sector Erase	0x20	Sector Erase with different granularity according to the target memory
Chip Erase	0x60	Chip Erase
Chip Erase	0xC7	Chip Erase

Block Erase	0xD8	Block Erase with different granularity according to the target memory
Read Jedec ID	0x9F	Read Identification
Read ID	0x90	Read Identification

*More instructions will be added upon customer's request.

III. EM100Pro Series Software Installation Guide

The EM100Pro Series software program is provided in the CD-ROM included with the emulator shipment. The setup program will copy the required files to your hard drive automatically. Update can be found on our website.

1. Insert the installation CD or download the installation software from **www.dediprog.com**

2. Execute EM100Pro_4.x.x.msi file and click next until the installation is finished.

After installed the software, connect the USB cable between the host PC and EM100Pro Series for USB driver installation. If it failed to find a USB driver, please refer the USB Installation Guide on DediProg website.

IV. EM100Pro Series Connections to the Target System

4.1 EM100Pro Series Pins Assignment

The EM100Pro and EM100Pro-G2 both have two 2.54mm pitch males connectors of:

- 2x2 for the Reset and Trig signals

- 2x10 for the Emulation signals

Tab 1: EM100Pro pins assignments

3	1	19	17	15	13	11	9	7	5	3	1
GND	GND	GND	CTRL	CTRL	CTRL	3.3V	*GND*	*WP1*	*MISO*	*CS1*	*Hold2*
Trig	Reset	CTRL	CTRL	3.3V	NC	*Wp2*	*MOSI*	*CLK*	*Hold1*	*Vcc*	*CS2*
4	2	20	18	16	14	12	10	8	6	4	2

Tab 2: EM100Pro-G2/EM100Pro-G3 pins assignments

3	1	19	17	15	13	11	9	7	5	3	1
GND	GND	GND	CTRL	CTRL	CTRL	3.3V	*GND*	*WP1*	*MISO*	*CS1*	NC
Trig	Reset	CTRL	CTRL	3.3V	NC	NC	*MOSI*	*CLK*	*Hold1*	*Vcc*	*CS2*
4	2	20	18	16	14	12	10	8	6	4	2

- The signals 3 to 10 (blue) are used for the SPI Flash 1 and are pin out compatible with the standard SPI pin out.

- For EM100Pro, the signals 1, 2 and 12 are used for the SPI Flash 2 emulation.

- For EM100Pro-G2/EM100Pro-G3, it only supports single SPI Flash emulation. Signal 2 or 3 could be used for CS function and user can configure it in the software.

- The other signals like "CTRL" pins are planned for future options.

※ **Signal 11 and 16 are used for VCC to output 3.3V only. Therefore, no matter what is the emulated IC voltage (1.8, 2.5 or 3.3V), it will only output 3.3V**

※ **EM100Pro-G2 disabled Hold2/WP2 functions because EM100Pro-G2 can only support single chip emulation, EM100Pro still can use CS2/Hold2/WP2 to switch dual chip emulation.**

The signals WP1, CS1, CLK, MISO, MOSI and Hold1 are configured in High Impedance when the emulation is stopped to stay transparent for the application.

The Hold signals can also be driven low by the software configuration to disable the SPI Flash soldered on the board. This configuration can only be used if the Hold pin on the on board serial Flash is pull-up through a resistor (not directly connected to Vcc).

Vcc signal must connected to the application Serial flash power as EM100Pro Series is monitoring the power level in order to enable or disable the SPI outputs.

If Vcc>POR then SPI outputs are enabled

If Vcc<POR then SPI outputs are switched in High impedance to not damage the application controller.

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4.2   Connect EM100Pro Series to application

Connecting EM100Pro Series to the target system consists of plugging one end of the emulation cable(s) to the emulator's connector(s), and the other end to the target system, via the appropriate emulation adapters.

The Reset signal can be connected (through the Reset grabber) to the Reset signal of the target system, in order to automatically force the target system to restart from a Reset condition every time the emulation starts.

※ **Warning 1: the Reset grabber should be connected to your target's reset circuitry input by taking care to not connect it to a push pull output to avoid any possible conflict.**

※ **Warning 2: always make sure to plug the emulation adapter correctly into the target system. Plugging the emulator adapter backward may damage both emulator and target system.**

Download our documentation "EM100Pro Series Hardware connection" for more information.

V. Connecting the EM100Pro Series to the Host PC

Follow the steps below:

1. Connect the EM100Pro Series emulator to the host PC via the USB cable

2. Open the DediProg software

VI. Quick Start

1. Set up emulation settings
Before emulating, you must specify various settings (such as the Serial Flash to be emulated, Hold Pin settings, SPI trace log setting, Hyper Terminal settings, etc.).

2. Load the file
The file must be first loaded in the EM100Pro Series software buffer.

3. Download the file
The EM100Pro Series software buffer must be downloaded to the EM100Pro Series hardware.

4. Start emulation
By clicking the Start Icon, the EM100Pro Series will start emulating the selected SPI flash on the SPI bus.

5. Stop emulation
Stopping the emulation allows you to change emulation settings or read the EM100Pro Series memory content.

6. Batch operation
User can define a list of operations to be executed in one click (Stop Emulation, Reload File, Download File, Verify the Downloaded File, Start Emulation).

VII. EM100Pro Series Software User Guide

7.1 Environment Preparation

EM100Pro Series is a RAM based SPI Flash emulator. The RAM can be accessed from the PC in order to configure the SPI Flash setting as well as download the file and it can also be accessed by the application in order to boot the application. After the software and USB driver are installed, please follow the below steps before running the software.

1. Connect the EM100Pro Series to the host PC through a USB cable. Users must wait about 3 seconds until the hardware initialization is done and the green LED of the EM100Pro Series is ON before using any features of the software. This process will recur each time when EM100Pro Series is plugged to the PC.

2. Connecting EM100Pro Series to the target system consists of plugging one end of the emulation cable(s) to the emulator's connector(s), and the other end to the target system, via the appropriate emulation adaptors.

   DediProg provides users one 2.54mm 2x10 to 2.54mm 2x5 cable, one EM100Pro Series connection adaptor, one female 1.27mm 2x8 cable, one female 1.27mm 2x4 cable, one 2.54mm 2x5 split cable and one grabber clip. Users can easily connect EM100Pro Series to the target systems with these components.

3. Double click on the EM100Pro Series software icon on your desktop.

Remark: Please note that it is recommended to add AC switching power adaptor when users are emulating Quad IO mode.

7.2   Software GUI Overview
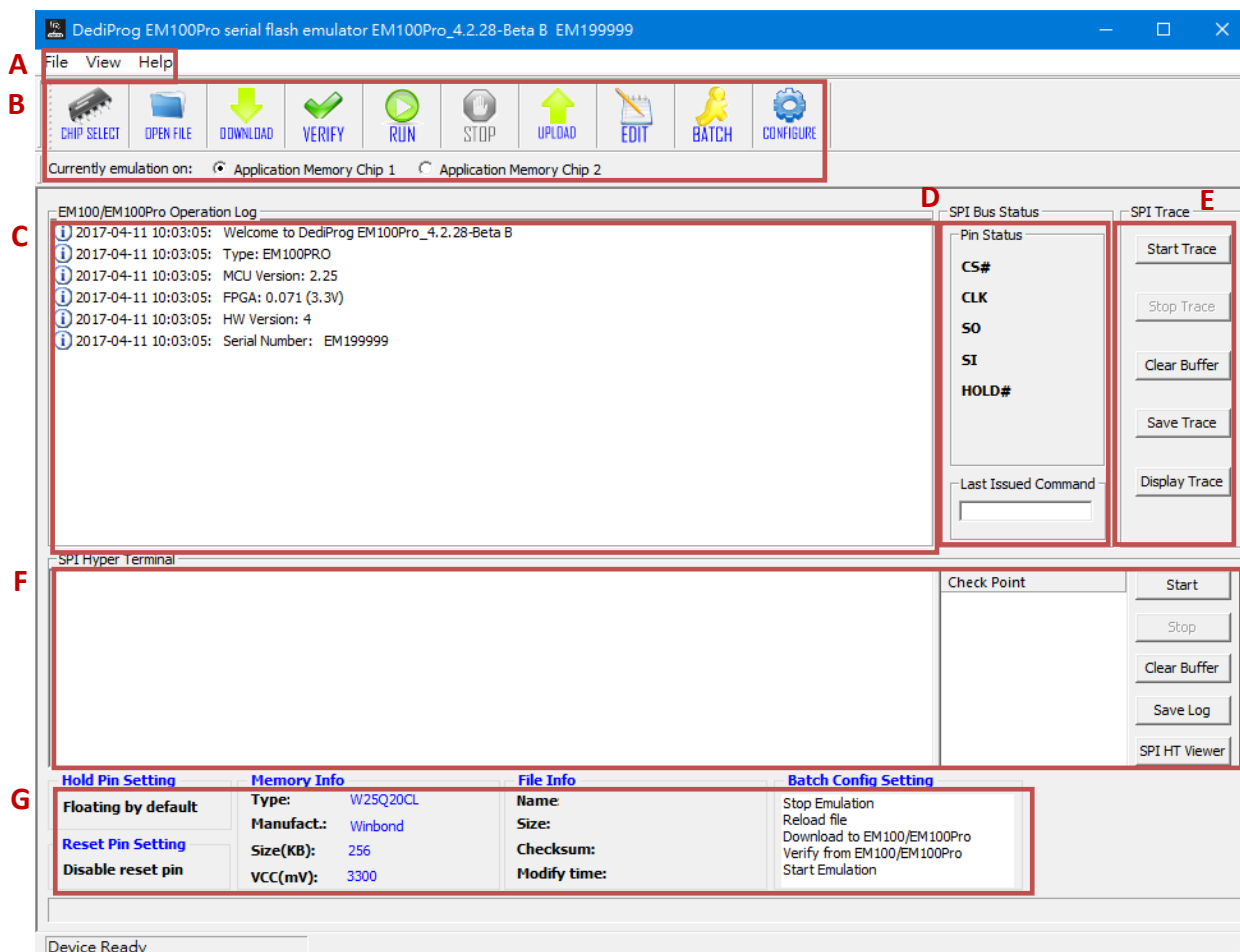
A. Menu
User can choose the function according to his/her needs.

B. Tool Bar
The tool bar groups all the user interface commands. It is placed at the top of the user interface.

C. Emulator Operation Log
The Emulator operation log window displays the history operations performed by EM100Pro Series.

D. SPI Bus Status
In SPI bus status window, users can see the SPI pin status in real time and the last issued command from the host controller to the EM100Pro Series. This feature only works while EM100Pro Series is in "run" mode and SPI trace or SPI Hyper-terminal is not started.

E. SPI Trace

SPI Trace allows users to analyze the detail communications between the host controller and the EM100Pro Series while the system is booting from EM100Pro Series or from the on board chip.

F. SPI Hyper Terminal

Firmware developers can display system debug messages through EM100Pro Series to the PC. The debug messages can be displayed in ASCII codes or hex number in real time while the system is booting from EM100Pro Series or from the on board chip. Certain data format and structures needs to be followed in order to utilize this feature. Please write to **support@dediprog.com** for the SPI Hyper-terminal spec and the sample codes.

G. Information

1) Hold Pin Setting: Display the Hold Pin status.
2) Reset Pin Setting: Display the Reset Pin status.
3) Memory Info: The Memory info displays the emulated memory information such as its part number, memory size and its VCC level.
4) File info: The file info displays the file information such as its name, size, checksum and its modify time.
5) Batch Config Setting

7.3   Menu

File   View   Help

A. File

Save operation log or save buffer content into the assigned file.

B. View

Toolbar or Status Bar shown or hidden selection

C. Help

1)   Voltage Firmware Selection (EM100Pro only)

Switch voltage version according to the current firmware version.

2)   Firmware Manual Update

Select and update the firmware version by yourself.

3)   Serial Number

It is not available yet.

4)   Launch Calculator

Display Windows Calculator tool.

5) SPI Hyper Terminal Tester
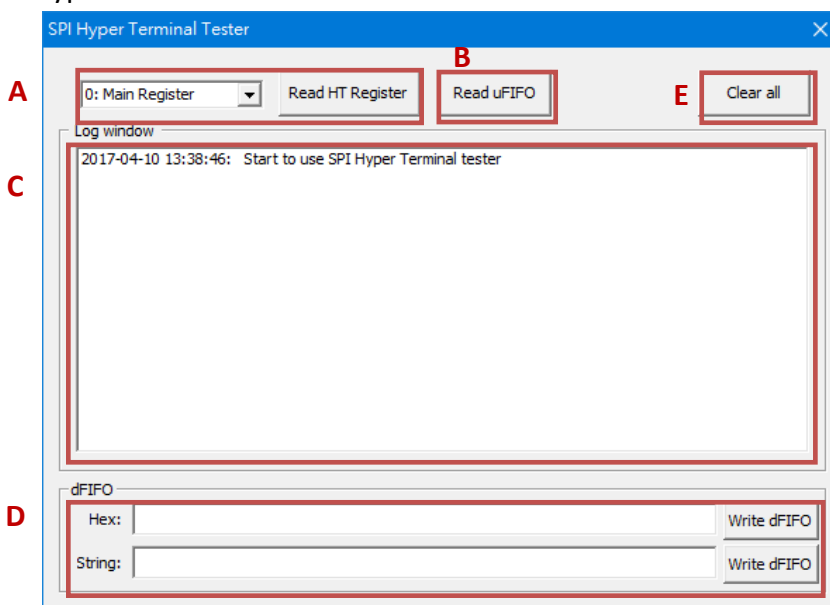
Description:

A. Read HT Register
   Select the register that you need and press Read HT Register, and then it will display its register value.

B. Read uFIFO
   Read the data from the upload FIFO that was written from the client's side. The length limit of Upload FIFO is 512bytes.

C. Log window
   Show the current action.

D. dFIFO write and read
   This tester provides two ways of data type, hex and string to write the dFIFO. Please see the below example:

   Hex dFIFO content:
      FF FF FF FF 12 34 …
   Note: Need a space between the byte data

   String dFIFO content:
      Send string to dfifo…
   Note: The data received on the client's side will be display in ASCII code

   For more register information, please write to **support@dediprog.com** to get EM100Pro Series SPI Hyper Terminal document.

6) User Manual
   Open the user manual

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7.4 Tool Bar

A. Chip Select

Click "CHIP SELECT" to select the target SPI Flash you are willing to emulate. Click "OK". The selected chip type will be shown on the GUI.
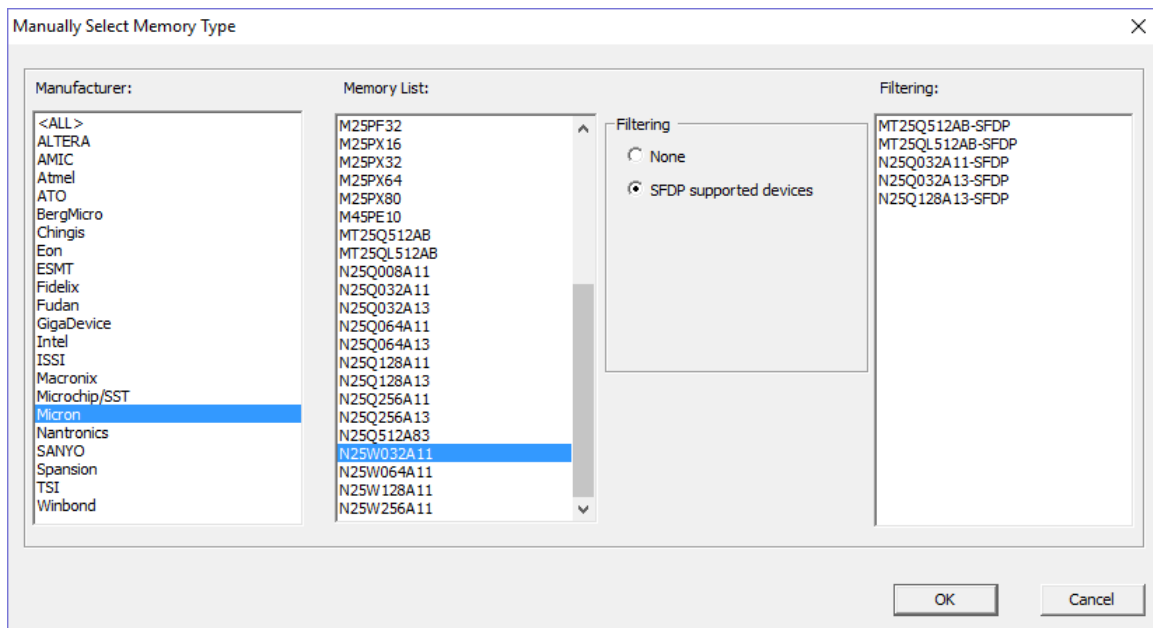
B. Open File

Click on "Open File" and load the image you would like to download to the EM100Pro Series.
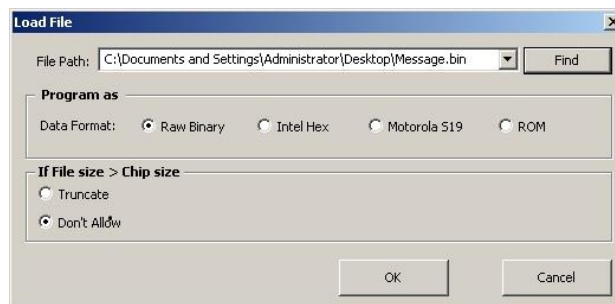
C. Download

Click on this button will download the loaded image to the connected EM100Pro Series.

D. Verify

Click on this button will compare the loaded file contents on the PC side and the downloaded file contents in the emulated memory.

E. Run

Click on "Run" will put the connect EM100Pro Series into emulation mode. Only at this status, the EM100Pro Series is emulating the selected serial flash and the application can access the EM100Pro Series. During emulation mode, the image download from PC to EM100Pro Series or upload from EM100Pro Series to PC are not allowed.

F. Stop

Click "Stop" will put EM100Pro Series into stop mode. During stop mode, users can download from PC to EM100Pro Series or upload from EM100Pro Series to PC. SPI access from the application to EM100Pro Series is disabled during stop mode.

G. Upload

Click on "Upload" will read EM100Pro Series content to the central buffer.

H. Edit

Click on "Edit" will display the central buffer content in the edit window. Also, it provides swap function keys for byte, word, and double word as well as the Fill Buffer function.

I. Batch

Click on "Batch" button will allow EM100Pro Series to perform a set of operations with one single click. The set of operations can be configured in the "Configure" button. The following operations can be grouped together into batch: stop, reload file, download, verify, and start.

J. Configure

In the Configure Setting, users have access to the configuration of Batch Operation, SPI Hyper Terminal, and Hold Pin Setting and reset pin setting.

1) Batch Operation

   In the Batch Operation, users can add operations to a batch group or remove operations from a group.
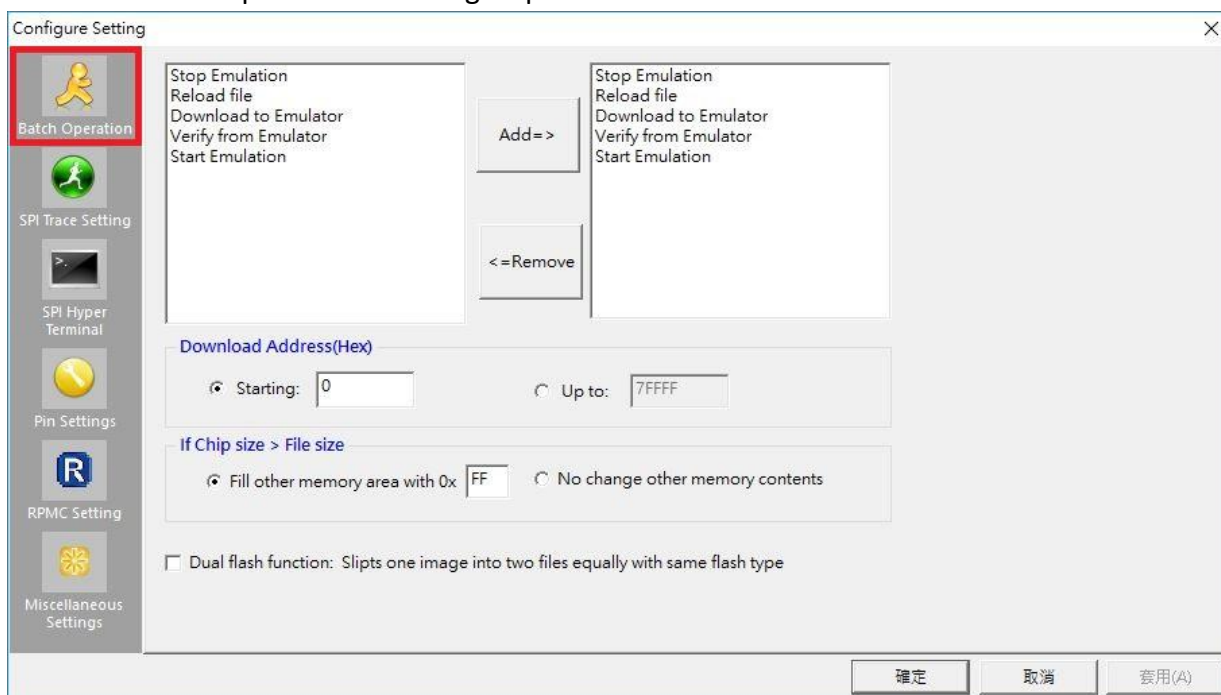
If using EM100Pro-G2/EM100Pro-G3, the Dual flash functions will be disable.

2) SPI Trace Setting

   In SPI Trace Setting, user can enable saving all the SPI trace to file continuously during SPI tracing. If the file size is bigger than 128MB, it would automatically create another new file to save it.
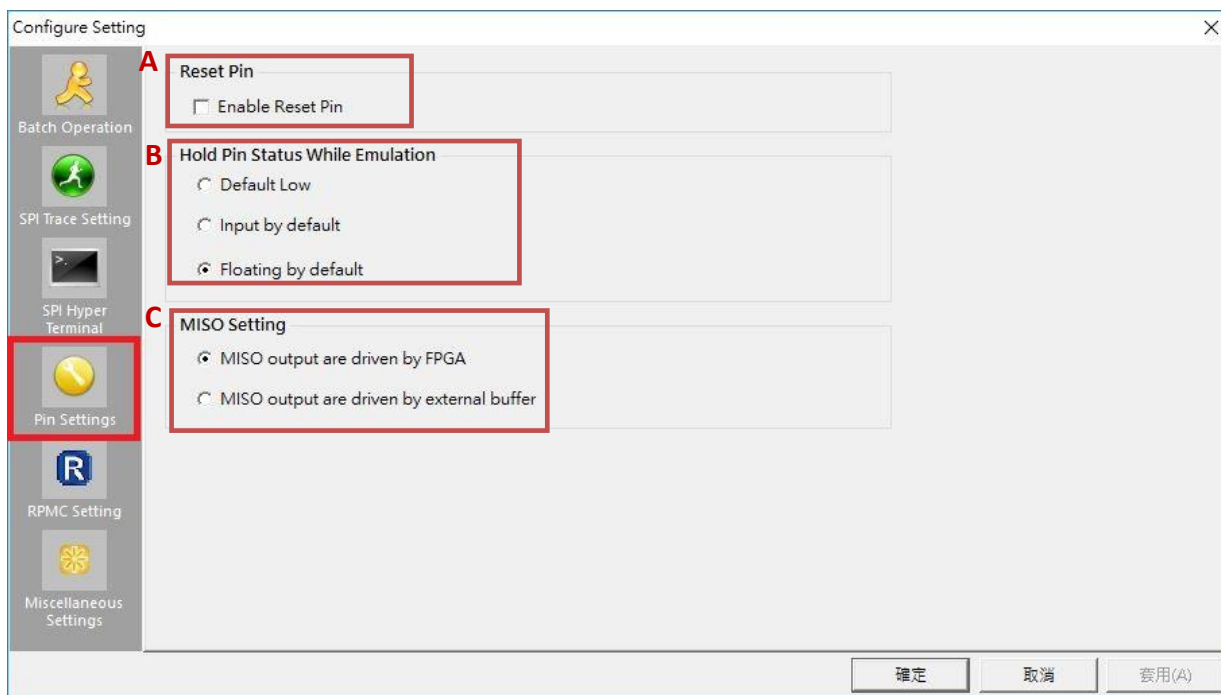
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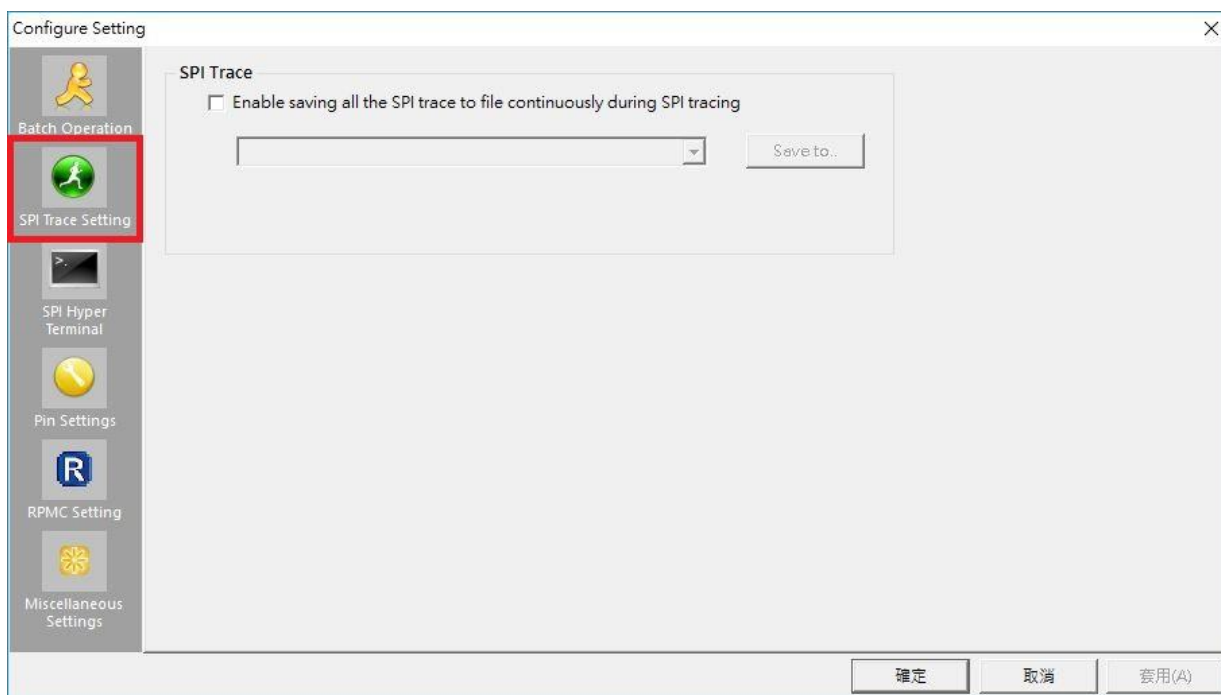
3) Hyper Terminal

In the Hyper Terminal, we add a page program OP Code (0x02), it also provides the display font color function for user to change preferred colors on the log window.
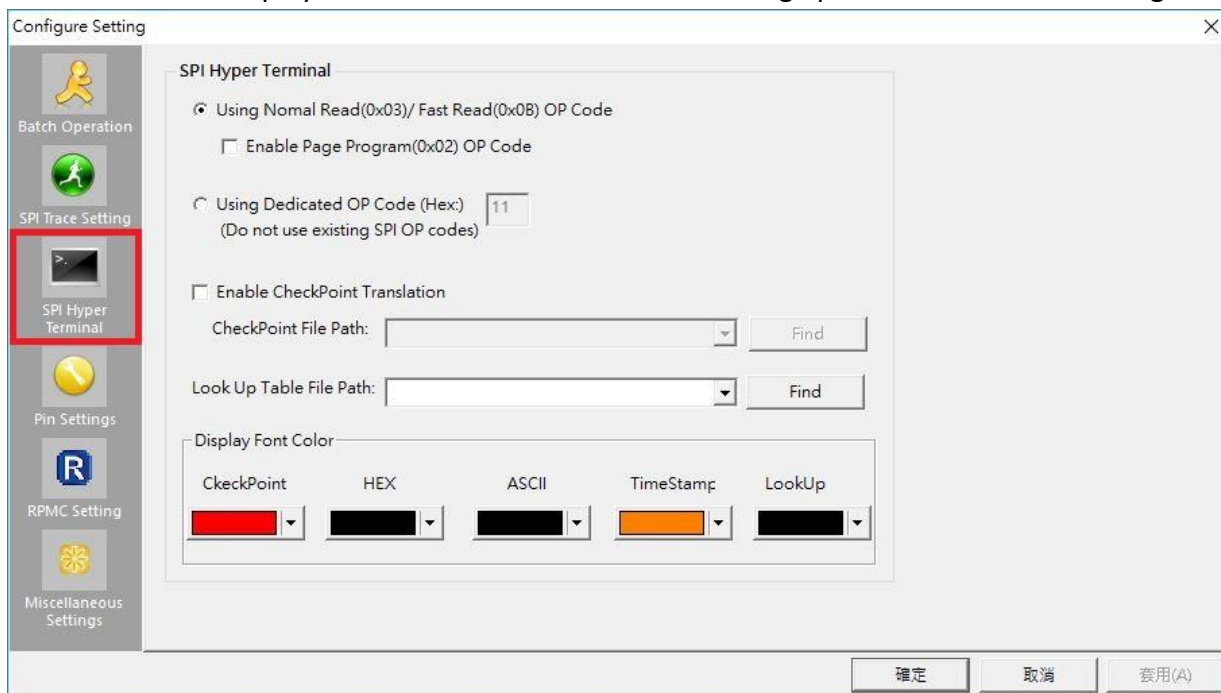
4) Pin Setting

A. Reset Pin Setting
Under Pin Settings, user can disable or enable the Reset Pin. If the reset pin is enabled, then reset pin signal will be pulled low for 1ms then pull high signal in order to restart the power of the board before user start to emulate SPI Flash.

B. Hold Pin Setting
Under Pin Setting, users can select a hold pin setting according to the scenario on the board. If the Real Serial Flash is still soldered on the board and if its hold pin is pulled-up high to Vcc through a resistor then EM100Pro Series Hold pin needs to be configured low to disable the on board Serial Flash. In the other cases, it is recommended to keep the EM100Pro Series Hold signals in floating mode.

C. MISO Setting
Under Pin Settings, user can select MISO pin is driven by FPGA or by External Buffer. It will be according to user needs.

5) RPMC Setting
Please contact DediProg for more information.

K. Dual flashes emulation
You can emulate two different of SPI flash. For first memory setting,
1) Click CS1
2) Click Chip Select to choose the SPI flash and Open file to load your file
3) Click Download

For Second memory setting,
1) Click CS2
2) Click Chip Select to choose the SPI flash and Open file to load your file
3) Click Download
4) Click Run

Then EM100Pro Series can start emulate DUAL SPI flashes that you selected. Select "Batch Operation" and check the "Dual flash function".
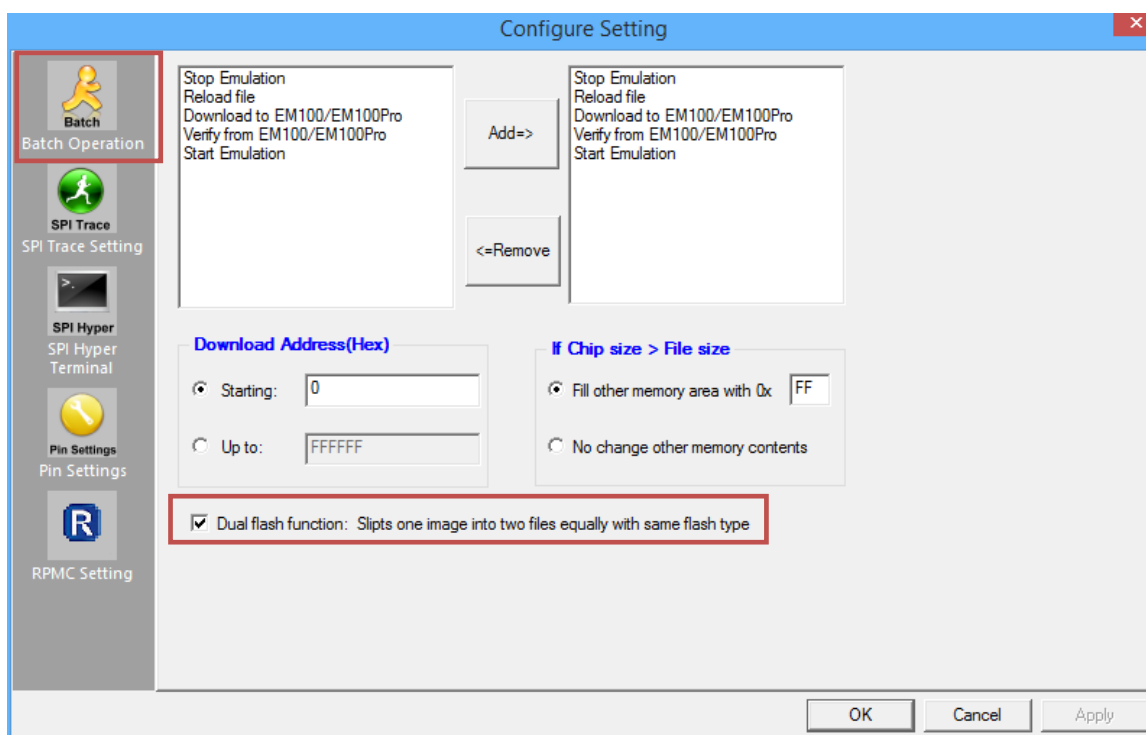
**Use ONE image to emulate 2 same types of SPI flash method.**
For example:
If you want to emulate TWO 32Mb SPI flash, you should load ONE image and its size is 64Mb.

1) Click Configure

2) Under Batch Configuration page, please Tick Dual Flash Function: Split one image into two equally with same flash type. Then press OK.

3) Click Chip Select to choose which flash would be emulated. After selected the flash, it will be emulated TWO same SPI flashes that you selected automatically.

4) Then Open file and LOAD one image that is 2 times bigger of your selected SPI flash. Then it will split into two equal images in the buffer.

5) After the upper procedures, you can click Download and Run for emulation starting.

7.5 SPI BUS Status

EM100Pro Series detects the emulated SPI pin status every 1 second while the EM100Pro Series is in "run" mode and SPI trace or SPI Hyper-terminal is not started. This is a quick way for the users to see how each pin behaves while the system is running. The last issued command represents the last commands issued from the host controller to EM100Pro Series. EM100Pro Series displays the last issued command every 1 second.
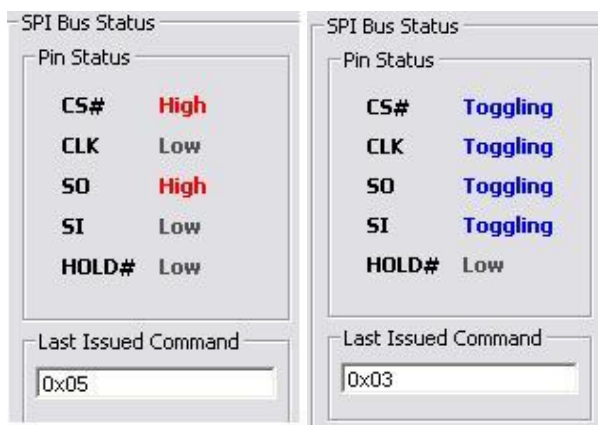
7.6 SPI Trace

When the SPI Trace feature is started, the EM100Pro Series monitors the application SPI bus and displays all the SPI bus communication in the SPI Trace window. The SPI information then can be displayed in Hexadecimal (03h, 0Bh, 02h...) or translated in SPI Flash command (Normal Read, Fast Read, Page Programming...).

SPI information will be tagged with time stamp so that engineers can use it for development with boot time constraints.

In case of buffer overflow due to application high SPI throughput or slow Host PC, the user will be noticed with some Stars inserted "****************" in the SPI trace log data.

> **Note:**
>
> SPI Trace feature also provides getting the SPI trace from the chip that is soldered on the board. Before starting to trace, the chip type name should be selected and the emulate process should be stopped.

A. **Start Trace**

Click on "start trace", EM100Pro Series will start to fetch all the communications between the host controller and EM100Pro Series and put them into a PC buffer. If EM100Pro Series is in "run" mode, then the trace data represents the communication on the SPI bus while the system boot from EM100Pro Series. If EM100Pro Series is in "Stop" mode, then the trace data represents the communication on the SPI bus while the system boot from the on board chip.

B. **Stop Trace**

Click on "stop trace", SPI trace will be stopped.

C. **Clear Buffer**

Click on "clear buffer", the SPI trace data stored in the PC buffer will be cleared.

D. **Save Trace**

Click on "save trace", user can save the SPI trace data in the PC buffer to a file.
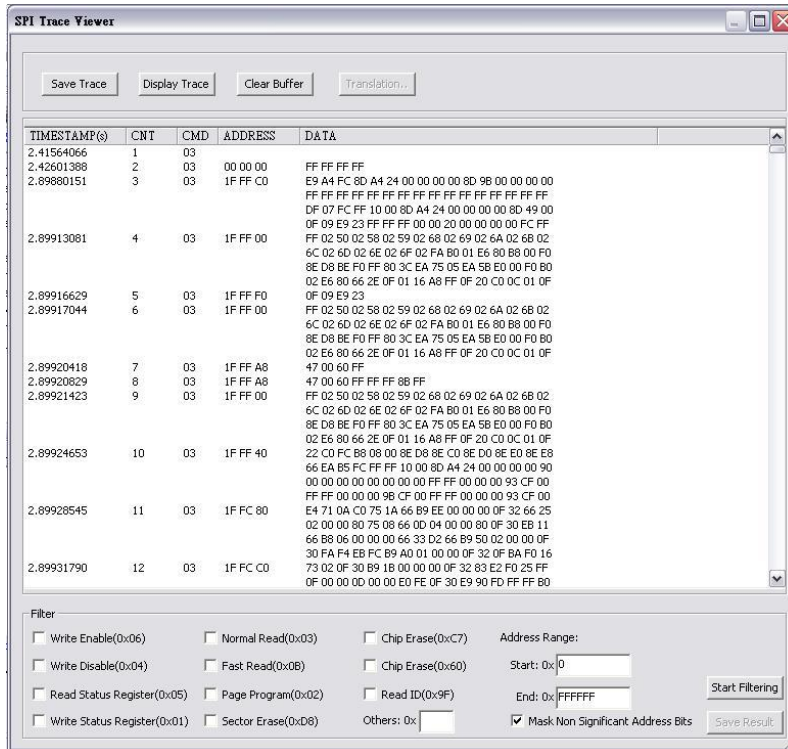
E. **Display Trace**

Click on "display trace", EM100Pro Series will open SPI trace viewer and display all the data in the PC buffer to the SPI trace viewer.

F. **SPI Trace Viewer**
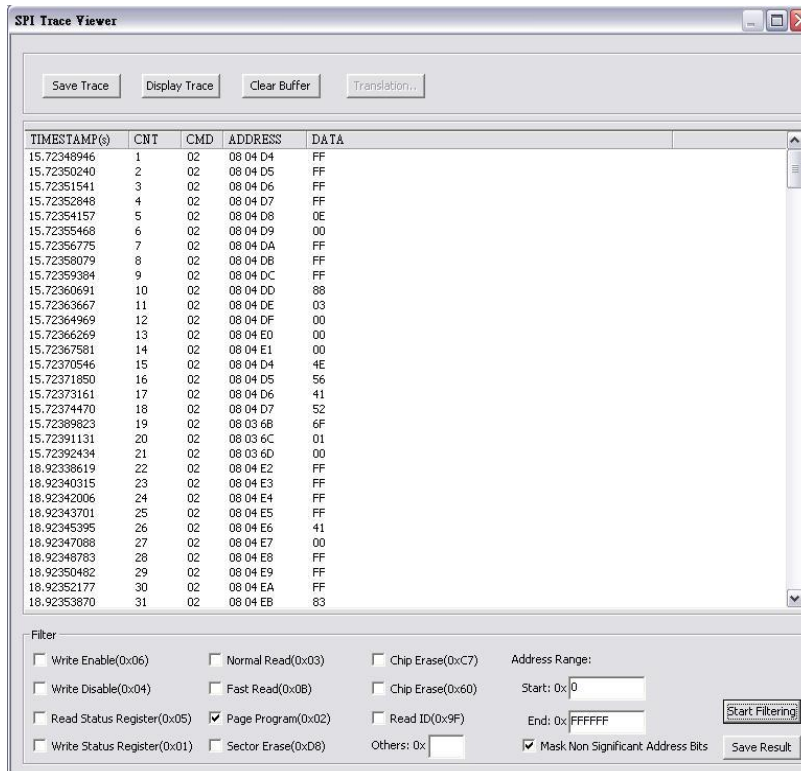
In the SPI Trace Viewer, users can view the whole SPI trace data in an easy-view format including time stamp, the counter of each communication, SPI command, address, and data. The viewer provides different built-in criteria for the users to view only the data they are really interested in.

SPI Trace Viewer with all data

SPI Trace Viewer with only "page program" data

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7.7   SPI Hyper Terminal

The SPI Hyper Terminal window displays Virtual messages coming from the application controller through the SPI bus. Application firmware can send checkpoints, ASCII debugging messages, application information such as look-up table, variable value etc. by using specific protocol through the SPI Bus even during boot from the emulated memory. The SPI Hyper Terminal offers a powerful and flexible method to debug the application in development as each engineer can customize the information sent to PC Host according to his own needs.

The target system controller must include a small portion of code for handling the process of outgoing messages on the SPI bus. Please, contact us to access the SPI Hyper Terminal specification and source code.

Diagram of the SPI Hyper Terminal Interface
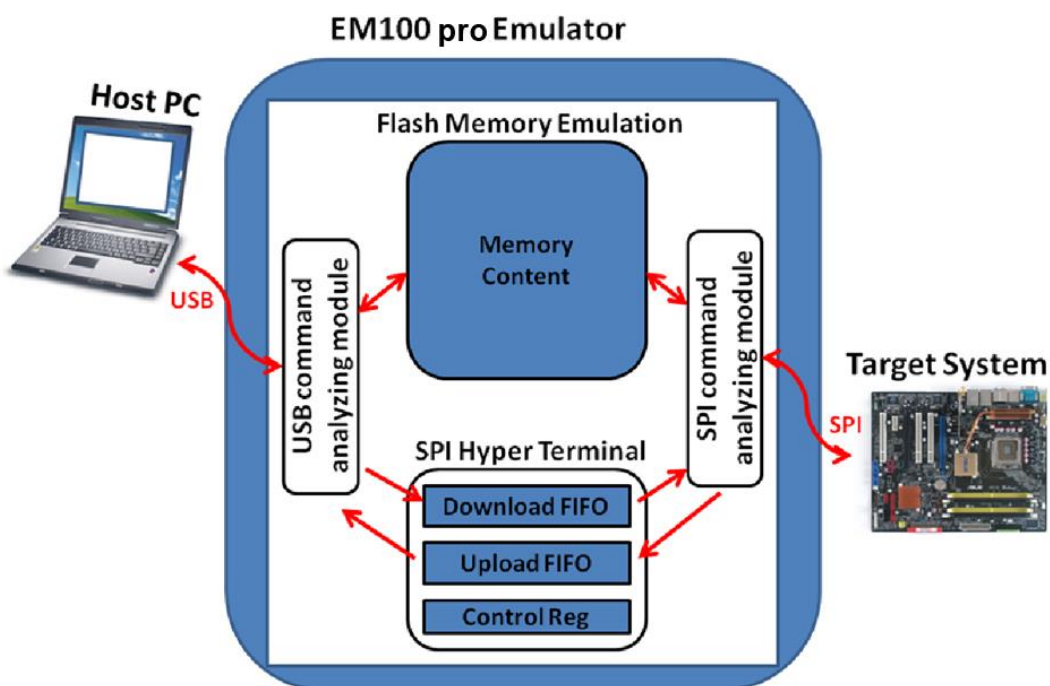
The SPI Hyper Terminal can be used in two ways:

1) Application firmware send debug information to PC host:

In this case, application is writing the upload FIFO by using SPI specific commands. The information will be displayed on the DediProg software if the format is compliant with our Specification.
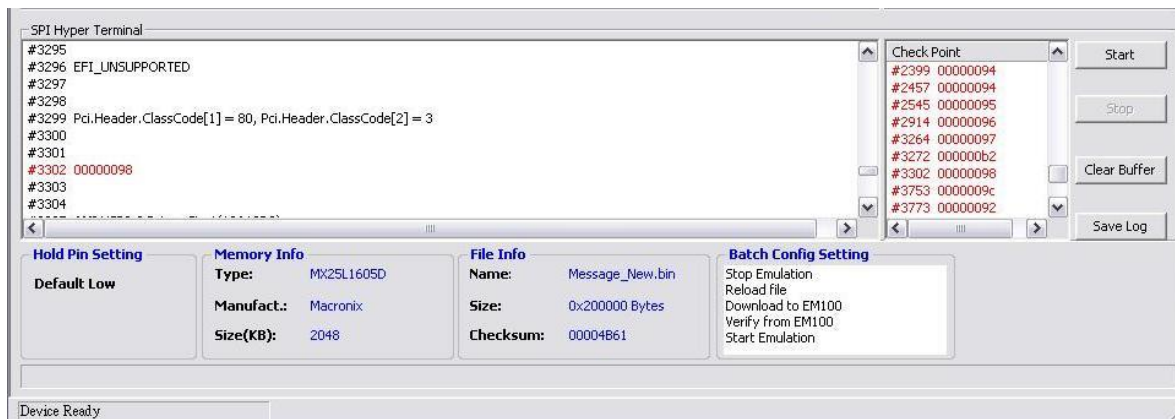
2) EM100Pro Series is used by PC Host as a debugger:

In this case, EM100Pro Series is used as a bidirectional bridge between PC Host and application so that PC Host can control the application as a debugger (breakpoints, step by step, wait mode, provide parameter information…).

Please contact support@dediprog.com **for "DediProg SPI Hyper-Terminal Specification".**

Note:

SPI bus window, SPI Trace window, and SPI Hyper-terminal can have only one work at a time. If either SPI trace or SPI Hyper-terminal is started, users will not have access to the SPI pin status until the functions are stopped. SPI bus status only works while EM100Pro Series is in "run" mode. SPI trace and SPI Hyper-terminal can work in "run" mode for emulator boot and in "stop" mode for on board chip boot.

7.8 EM100Pro Series Window Command Line

EM100Pro Series windows command line software is designed to allow users to control EM100Pro Series directly from window DOS command line without opening the Windows GUI application.

A. How to Start

EM100Pro Series window dos command line software is executed by the file "smucmd.exe". There are three different ways to execute EM100Pro Series command line software.

1) Users can double click on the "EM100-CLI" icon on your desktop and type in smucmd with switches.

2) Change your dos directory to the same location where "smucmd.exe" is located. C:\program files\dediprog\EM100

3) Type in the following command to auto direct the smucmd command to the "smucmd.exe" location.
   Set path=%path%;"c:\program files\DediProg\EM100"

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Window DOS Command

```
                              EM100Pro--CLI                    _  □  ×

Help
Example:
 smucmd --stop --set M25P80 -d x:\file.bin -v --start
Remark:
 -b, -r, -d, -s have to work with --set

Basic Switches:
 -h [ --help ]          show this help message
 --set arg              set chip type
 --stop                 stop the emulation mode
 --start                start the emulation mode
 -c [ --check ]         check the emulator status and the emulator firmware
 -b [ --blank ]         blank check the EM100/EM100Pro contents
 -r [ --read ] arg      read the EM100/EM100Pro contents and save to a
                        bin/hex/s19 file
                        - use STDOUT to the console.
 -d [ --download ] arg  download a file to the EM100/EM100Pro
 -s [ --sum ]           display the downloaded content checksum
 -f [ --fsum ] arg      display the file checksum(needs to work with a file)
 --device arg           (work with all Basic Switches)
                        - 1: activate only the programmer connected to USB1
                        - n: activate only the programmer connected to USBn
                          note: if "--device" is not used, the command will be
                        executed with the same chip type and file on all
                        connected programmer.
 --list-device-id arg

                        - 0 : List all ID of programmers from USB1 to USBn
                        (Default)
                          note: the sequence is assigned by OS during USB
                        plug-in
                        - 1: Prompt the device ID of programmer connected to
                        USB1.
                        - n: Prompt the device ID of programmer connected to
                        USBn.

Optional Switches:
 -v [ --verify ]        verify file and EM100/EM100Pro contents
                        - only works with -d
 -a [ --addr ] arg      starting address(e.g. -d x:\file.bin -a 0x000)
                        - only works with -d -r
 -l [ --length ] arg    length to read/download in bytes(e.g. -r x:\file.bin -l
                        0x10000)
                        - only works with -d -r
 -x [ --fill ] arg      fill the rest area with [byte] data(e.g. -d x:\file.bin
                        -x 0xAA)
                        - only works with -d
 -t [ --truncate ]      Truncate file to chip size if the file size bigger than
                        chip size
                        - only works with -d

Miscellaneous options:
 -g [ --target ] arg (=1) Target Options
                          Available values:
                                1. Chip 1(Default)
                                2. Chip 2
 --hold arg (=1)          Hold Pin Status While Emulation
                                1. Default Low(Default)
                                2. Input by default
                                3. Floating by default
```

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B. **Basic Switches**

EM100Pro Series command line always starts with "smucmd" following with the switches.

Basic Switch:

-h [--help]	show the help message with examples
-set	set chip type
-stop	stop the emulation mode
-start	start the emulation mode
-c [--check]	check the emulator status and the emulator firmware
-b [--blank]	blank check the EM100Pro Series contents
-r [--read] arg	read the EM100Pro Series contents and save to a bin/hex/s19 or STDOUT to the console.
-d [--download] arg	download a file to the EM100Pro Series.
-s [-- sum] arg	display the downloaded content checksum
-f [-- fsum] arg	display the file checksum(needs to work with a file)
--device arg	work with all Basic Switches - 1: activate only the programmer connected to USB1 - n: activate only the programmer connected to USBn **NOTE**: if \"--device\" is not used, the command will be executed with the same chip type and file on all connected programmer.
-- list-device-id arg	- 0 : List all ID of programmers from USB1 to USBn (Default)" **NOTE**: the sequence is assigned by OS during USB plug-in" - 1: Prompt the device ID of programmer connected to USB1." - n: Prompt the device ID of programmer connected to USBn.

Option Switch:

-v [--verify]	verify file and EM100Pro Series contents - only works with -d
-a [--addr] arg	starting address(e.g. -d x:\file.bin -a 0x000) - only works with -d -r
-l [--length] arg	length to read/download in bytes(e.g. -r x:\file.bin -l 0x10000) - only works with -d, -r
-x [-- fill] arg	fill the rest area with [byte] data(e.g. -d x:\file.bin -x 0xAA - only works with -d
-t [--truncate]	Truncate file to chip size if the file size bigger than chip size - only works with -d

Miscellaneous options:

-g [-- target] arg	Target Options
	Available values:
	  - 1, Chip 1(Default)"
	  - 2, Chip 2

--hold	Hold Pin Status While Emulation"
	  - 1, Default Low(Default)"
	  - 2, Input by default"
	  - 3, Floating by default
	NOTE: The hold pin status would keep the last setting

--reset arg	Reset the Target system
	  - 1,Disable reset function (Default)
	  - 2,Enable reset function

Command Line Example

Users can type a series of commands together. For example, if a user types "smucmd --stop --set MX25L3205 -d c:\file.bin -v --start", the EM100Pro Series will firstly stop the emulation mode which means users can download from PC to EM100Pro Series or upload from EM100Pro Series to PC. Then the MX25L3205 IC will be selected, the file from c:\file.bin will be downloaded to the EM100Pro Series and verify. Finally, the EM100Pro Series will start the emulation mode.

For more information, please contact us or your motherboard suppliers.

C. **Exit Code**

0 EXCODE_PASS,

1 EXCODE_FAIL_STOP,

2 EXCODE_FAIL_START,

3 EXCODE_FAIL_SET,

4 EXCODE_FAIL_DOWNLOAD,

5 EXCODE_FAIL_READ,

6 EXCODE_FAIL_VERIFY,

7 EXCODE_FAIL_CHKSUM,

8 EXCODE_FAIL_CHECK,

9 EXCODE_FAIL_BLANK,

10 EXCODE_FAIL_LISTDEVICE,

11 EXCODE_FAIL_FIXDEVICE,

12 EXCODE_FAIL_RESET,

13 EXCODE_FAIL_FW,

14 EXCODE_FAIL_HOLD,

99 EXCODE_FAIL_OTHERS

VIII.   Revision History

Date	Version	Changes
2011/09/01	V1.0	Initial release
2014/05/08	V1.2	Updated the support density from 256Mb to 512Mb
2014/08/21	V1.3	Added command line function: 1. Choosing device 2. Show the ID list 3. Setting Hold pin status
2015/07/07	V1.4	Modify Reset Pin function description.
2016/03/15	V1.5	VCC description changed.
2016/07/12	V1.6	1. Modify the typo 2. Add supported commands
2017/04/10	V1.7	1. Add description about Menu. (Add SPI Hyper Terminal tester function)
2017/07/13	V1.8	Added description about SPI Trace.
2018/12/07	V2.0	1. Add EM100Pro-G2 information. 2. Update some screen shots.
2019/03/27	V2.1	Added remark in Environment preparation.
2021/01/15	V2.2	Added Exit Code.
2022/09/30	V2.3	Updated the Pin Out Table and its description.
2023/06/09	V2.4	Added EM100Pro-G3

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