Smart I/O DDR5 Tester

User Manual

RAM CENTER 瑞勝特科技有限公司
RamCENTER Technology Corporation

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<Smart I/O DDR5 Tester >

Brief Introduction

<Smart I/O DDR5 Tester > has multiple functions, the combination of simple operation interface, software and Smart I/O DDR5 Error Tester Error Detector allows users to experience higher speed and accuracy while using.

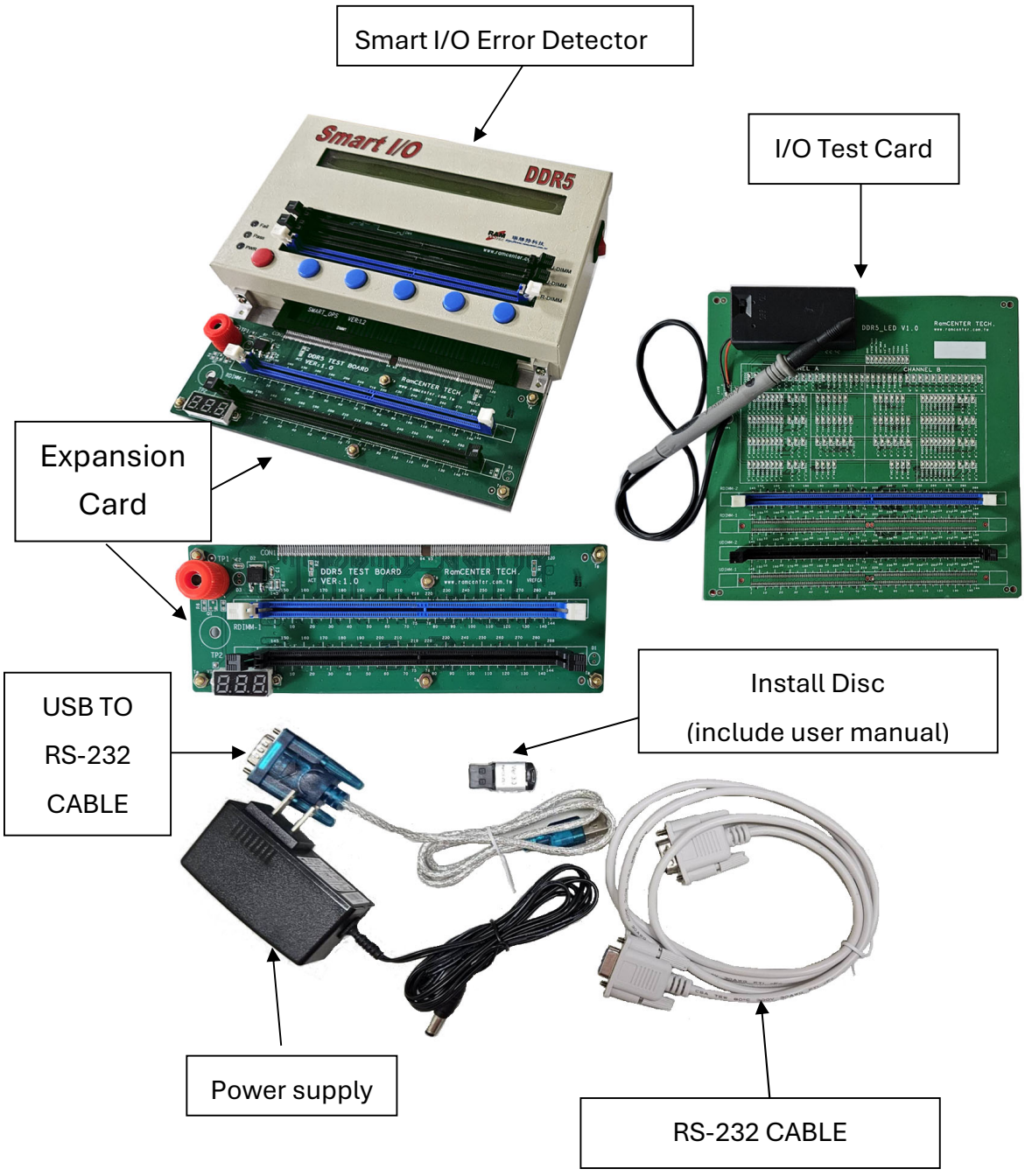
Function Description

<Smart I/O DDR5 Tester > provides the functions below:

1. Support DDR5 U-DIMM and R-DIMM module format
2. Able to run PCB cable Open/Short circuit functions on Smart I/O or through Windows system easily.
3. Provide a single module SPD recode function.
4. Wearable Error Detector allows you to use it anytime, anywhere.
5. Easy to operate with clear LCD functional interface.
6. Clear and easy understandable real-time display of memory module detecting status and measuring voltage
7. With RamCENTER I/O testing system software (Windows interface), you can run XMP EXPO for Overclocked Edtion, Compilation of Manufacturing Information, Auto-generate Serial Code Recoding and Date Code.
8. RS-232 interface can be applied to RamCENTER I/O testing system (Windows interface) for other functional Expansion DIMM Sockets.
9. I/O testing card help corresponding Adress and Date on the module when detecting OPEN/SHORT Circuit.

Package Contents

Please check the package contents. If there is any device shortage, please connect us. The missing device will be delivered to you as soon as possible!



Information for first driver installation

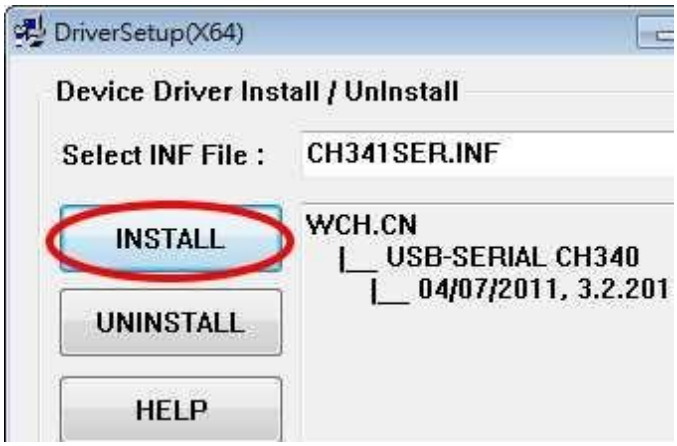
For the computer without RS-232 cable and using the RS-232 To USB, please install the <HL-340.EXE>, from the installation software..

After installation, please move to Microsoft Management Console. The device *USB-SERIAL CH340* is under the Cable(COM and LPT). Choose COM1 if it is not the default.

If the picture on the right side occur, please check the driver of USB TO RS-232 port or the Cable option in management console for currect cable.

Installing USB TO RS-232 driver

The USB TO RS-232 cable is needed for installation. Install the <HL-340.EXE> from the installation Software.



※ The Com1is the default for using the RS-232 cable. For using USB to RS-232 cable, check the COM cable in Computer Management.

Instruction Guide

【Smart I/O DDR5 Tester】has the 2 parts:

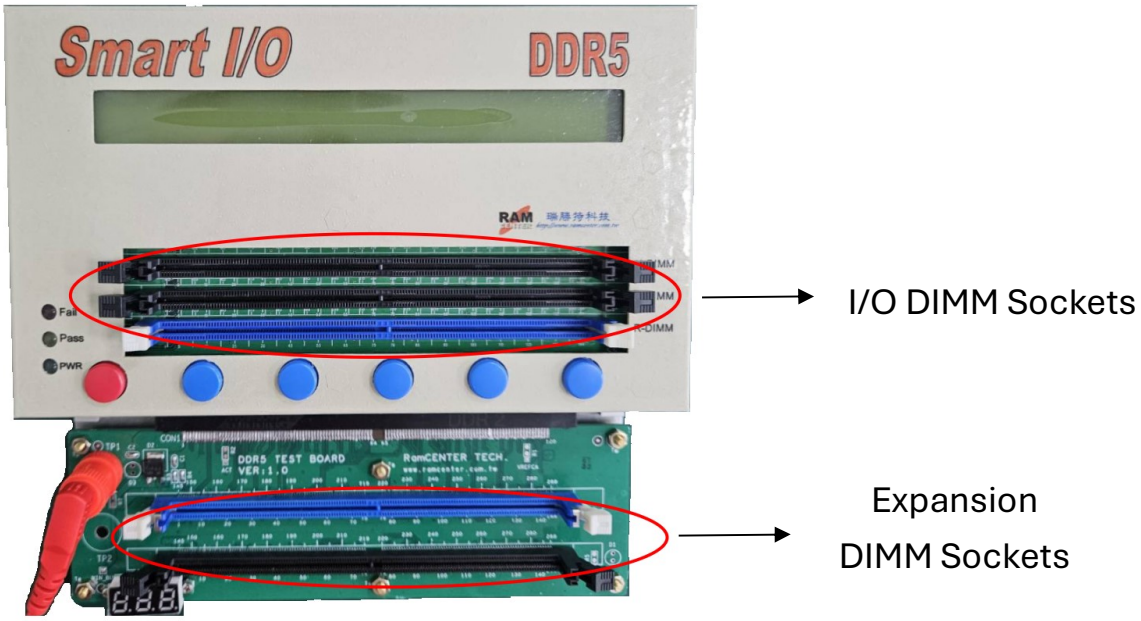
A. Smart I/O DDR5 Tester

B. Windows interface Smart I/O DDR5 Software

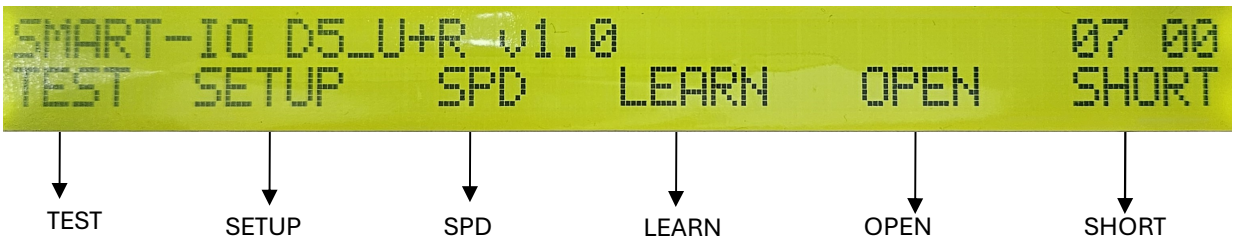
The following will make an instruction for each part.

Part A：Smart I/O DDR5 Tester

Smart I/O DIMM Sockets / Expansion DIMM Sockets



After powered up Smart I/O DDR5 Error Detector, 6 functions will be shown on the LCD screen. Please choose the button by contrasting the screen:



1. TEST ：Test the condition of the module.
2. SETUP ：Setting mode of < Power Short Circuit >、<Cable Open Circuit>、<Cable Short Circuit>、< SPD Recode >、< SPD Verify>
3. SPD ：Single module SPD function.
4. LEARN ：Expansion Sockets module learning mode.
5. OPEN ：Module OPEN circuit testing.
6. SHORT ：Module SHORT circuit testing.

Description of Error Detector Main Functions Page

※ To run TEST, OPEN, SHORT functions, insert an OK module into the "Expansion DIMM Socket", press <LEARN> to start the learning, then chose for TEST, OPEN and SHORT or other functions.

(1)

(2)

※IO DDR5 Host port can run a single module READ, COPY, VERIFY functions. Expansion DIMM Socket support LEARN, TEST, OPEN, SHORT, READ, COPY, VERIFY functions.

1. TEST

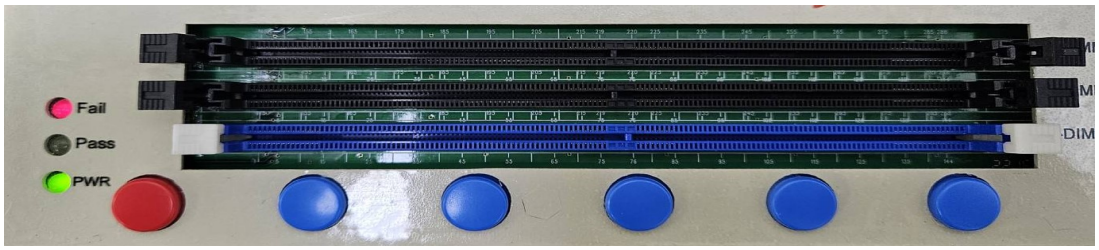
Insert the module into "Expansion DIMM Socket", then press <TEST> to show the images below:

(1)

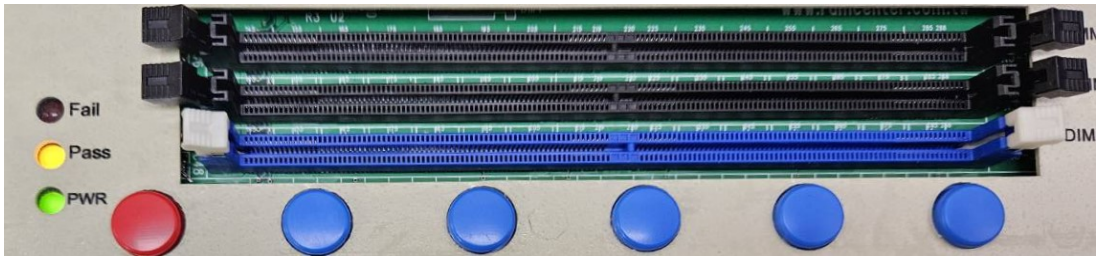
(2)

(3)

(4)



(5)



2. SETUP

Press <SETUP> on the home page to show the following image on Smart I/O screen:

3.SPD

Press <SPD> to run for a single module recording, and the screen will show the following image:

- *.READ*

Press <READ>, Smart I/O will read the SPD data from module, Smart I/O screen will show the following images:

When shown the images above, press <AGAIN> to READ again. There is no need to return to <SPD> function page to restart the process. Press <SPD> to return to function page while finishing reading.

If the module is not well inserted or SPD HUB is damaged, press <READ> to show the images below, press <AGAIN> to READ again. Press <Exit> to return to <SPD> function page while finishing reading.

- ***COPY***

Press <COPY> to copy SPD data to the module, the following images will be shown:

When the images above are shown, press <AGAIN> to <COPY> again. There is no need to return to <SPD> function page to restart the process. Press <SPD> to return to function page while finishing copying.

If the module isn't well inserted or SPD HUB is damaged, press <COPY> to show the images below, press <AGAIN> to copy again. Press <Exit> to return to <SPD> function page while finishing copying.

- *VERIFY*

Press <VERIFY>, Smart I/O DDR5 will verify SPD data from the module, and the following images will be shown:

When the images above are shown, press <AGAIN> to <VERIFY> again. There is no need to return to <SPD> function page to restart the process. Press <SPD> to return to function page while finishing verifying.

If the module is not well inserted or SPD HUB is damaged, press <VERIFY> to show the images below, press <AGAIN> to verify again. Press <Exit> to return to <SPD> function page while finishing verifying.

- *VIEW-MODULE, TESTER, H_REG, and P_REG*

Pressing <VIEW> can display the SPD code in the Writer and module:

1. <MODULE >: Display the SPD code in the module.
2. < TESTER>: Display the SPD code in the Writer.
3. < H_REG>: Display the SPD HUB information in the module.
4. < P_REG>: Display the PMIC information in the module.

- *SPD SETUP- A_s/n, V_s/n, D_s/n, and E_code*

Following picture will appear when pressing <SETUP>. There are 4 modes that can be set.

Selecting <EXIT> can return to the homepage:

A_s/n=> <ON>: Auto setting serial number is on.

A_s/n=><OFF>: Auto setting serial number is off

V_s/n=> <ON>: Will verify all the SPD code information, including the serial number. The verification will fail if all the SPD codes are the same but the serial numbers are different.

V_s/n=><OFF>: Will verify all the SPD code information except the serial number. The verification will succeed even if the serial numbers are different, because the serial number is not in the verified condition.

D_s/n =>Can choose the arrangement of the serial number.

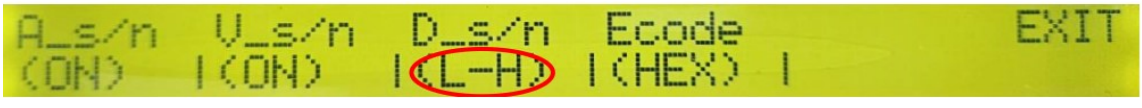
<H-L>: From high to low.

<L-H>: From low to high.

Ecode => Can choose the positional numeral system:

<HEX>: Hexadecimal

<DEC>: Decimal



4.

4.LEARN

Insert an OK module into “Expansion DIMM Socket”, press <Learn> to start learning then run for TEST, OPEN and SHORT functions.

(1)

(2)

Press <DOWN> for the next page, <UP>, which is the first one on the left of <DOWN>, for the previous page. Selecting <EXIT> can return to the homepage when finishing the process.

5. OPEN

Insert the module into “Expansion DIMM Socket”, press <OPEN> to estimate if the module is having an OPEN Circuit.

(1)

If it is having an OPEN circuit, find out which Address or Date is wrong according to the shown information.

(2)

6. SHORT

Insert the module into “Expansion DIMM Socket”, press <SHORT> to see if the module is having a SHORT Circuit.

If it is not having a SHORT Circuit, the following image will be shown.

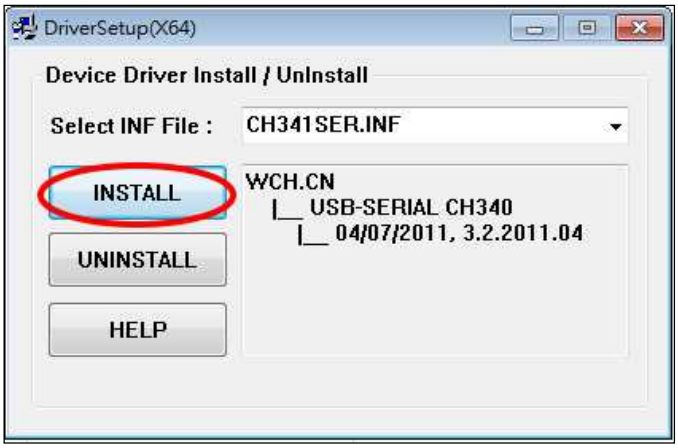
If it is having a SHORT Circuit, find out which is wrong according to the shown information.

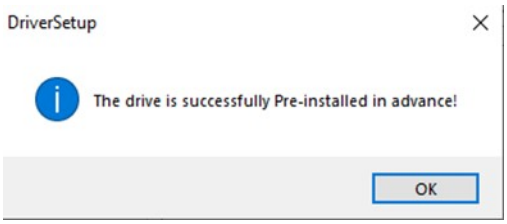
Use a probe to measure whether the voltage is normal

Part B：Windows interface Smart I/O DDR5 Software

Install USB to RS0232 driver

USB to RS-232 converter cable is needed when installing this driver.





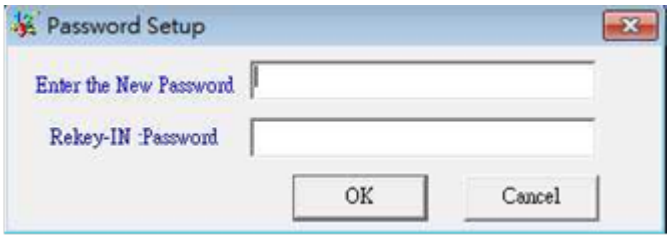
Install <HL-340.EXE> from disc driver.

Install I/O DDR5 Tester Software

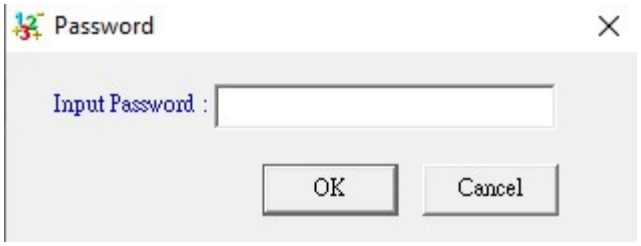
This software has an English and Tradionnal Chinese version. Choose the needed version from the <SETUP.EXE> from the installation USB to execute installation for Smart IO DDR5 Tester.

System Operation

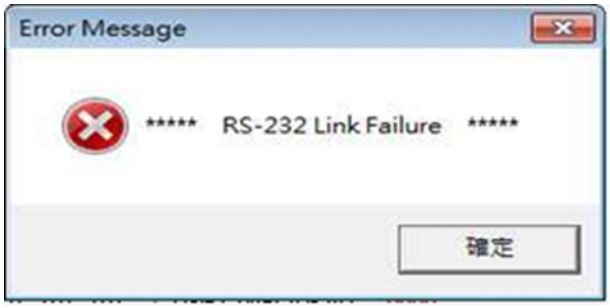
The following image will be shown while entering Smart I/O DDR5 Tester software.



When entering the recoding system for the first time, users will be asked to set a code. After entering the system please log out then log in again.

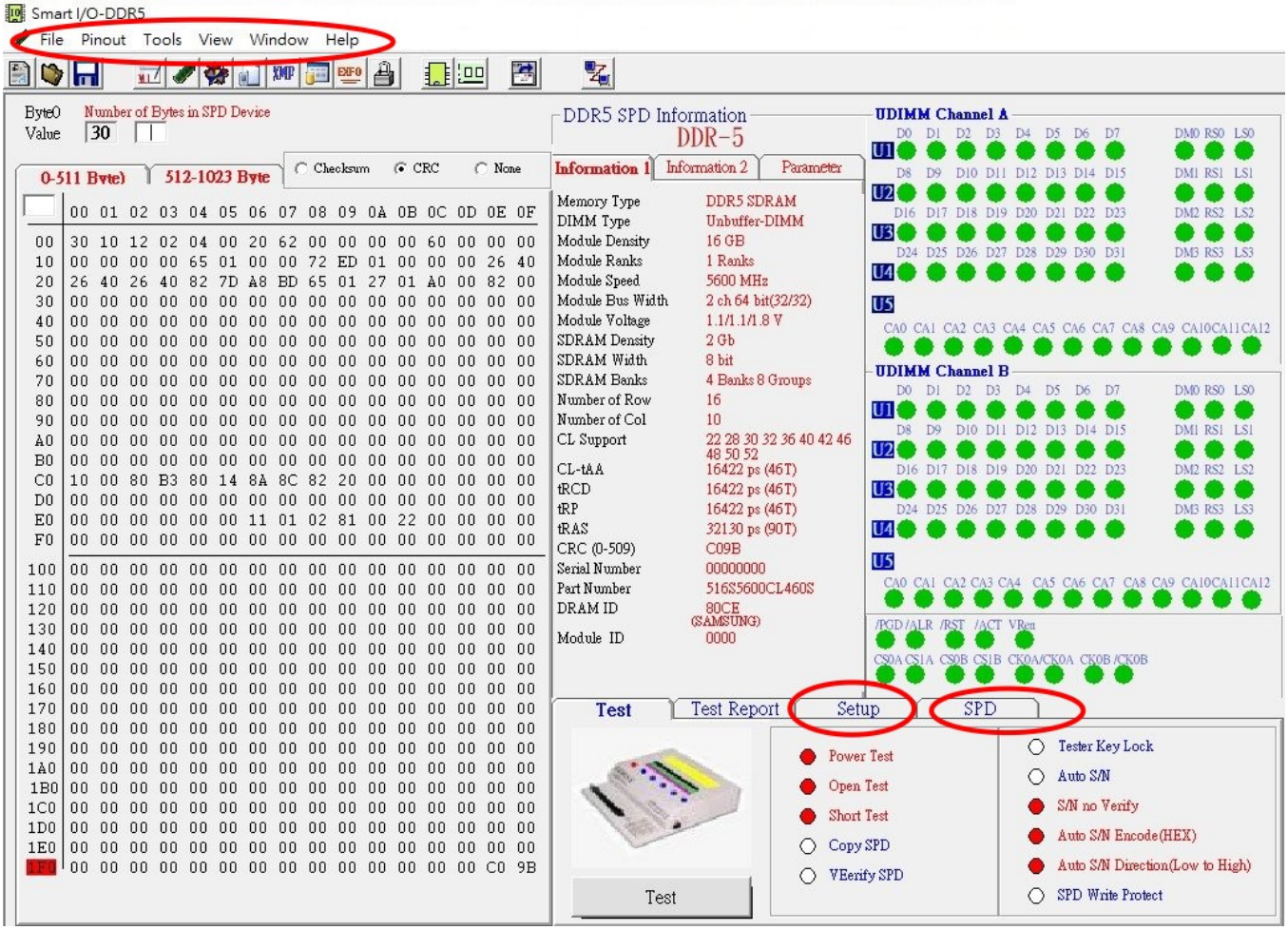


When users log in, a code is required, all function will be available only with a correct code.



Please make sure the power of the Smart I/O is switched on before entering the system, if not, the image on the left will be shown:

According to different functions chosen on Windows homepage, the following will be explained them in 3 parts：



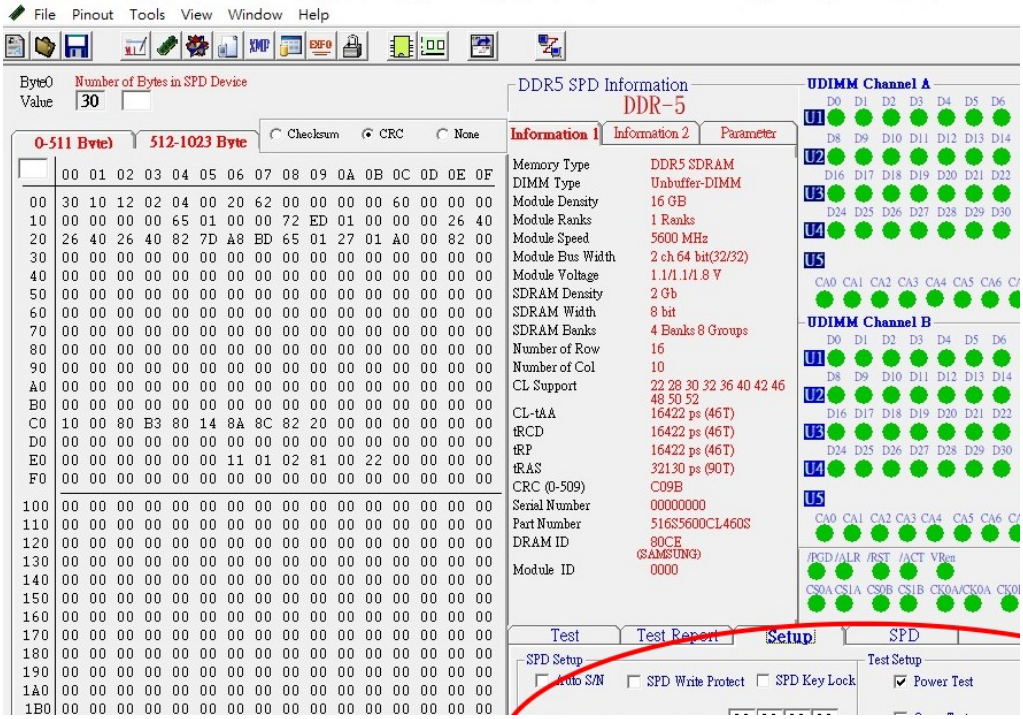
Part I Test Setting

IO Test Setup

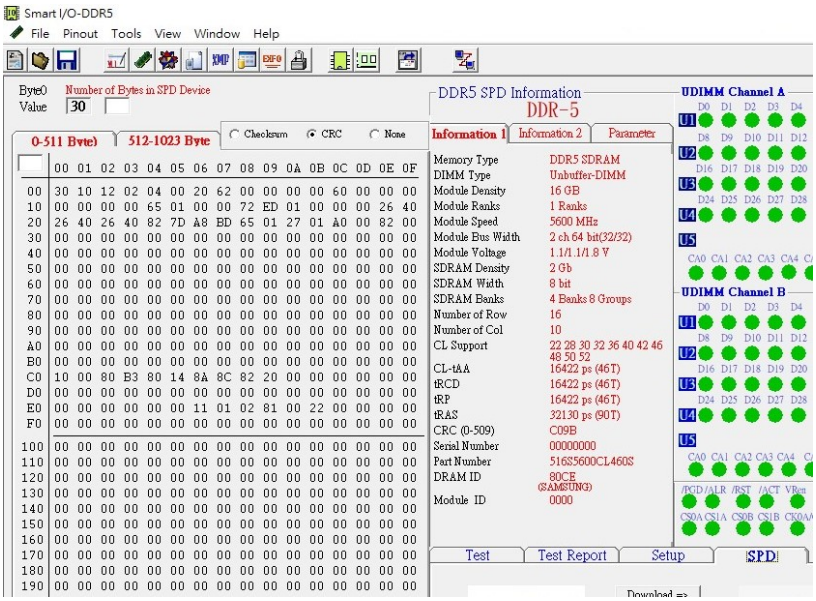
Choose different functions according to your needs:

<Power Short Circuit>, <Cable Open Circuit>, <Cable Short Circuit>, <SPD Record>, <SPD Verify>, <SPD Write Protect>,<SPD Key Lock>

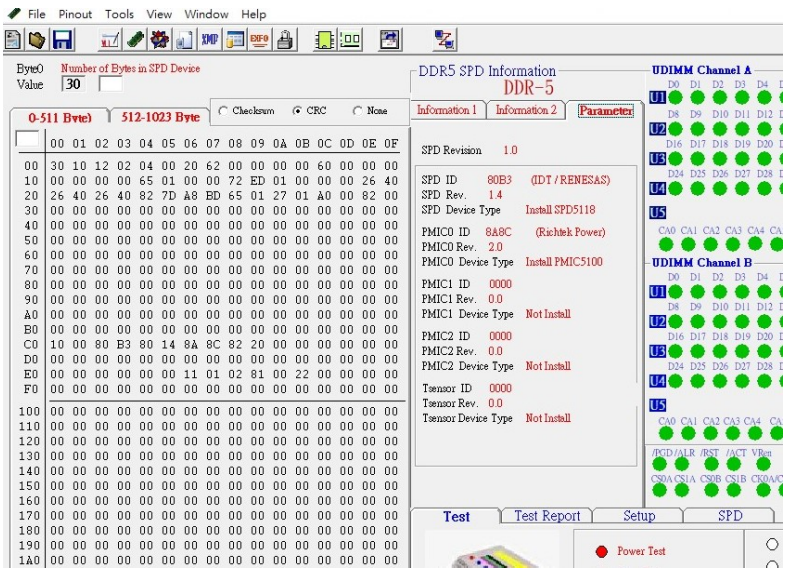
After setting, press <SETUP> to save then choose <TEST> for further testing instructions.



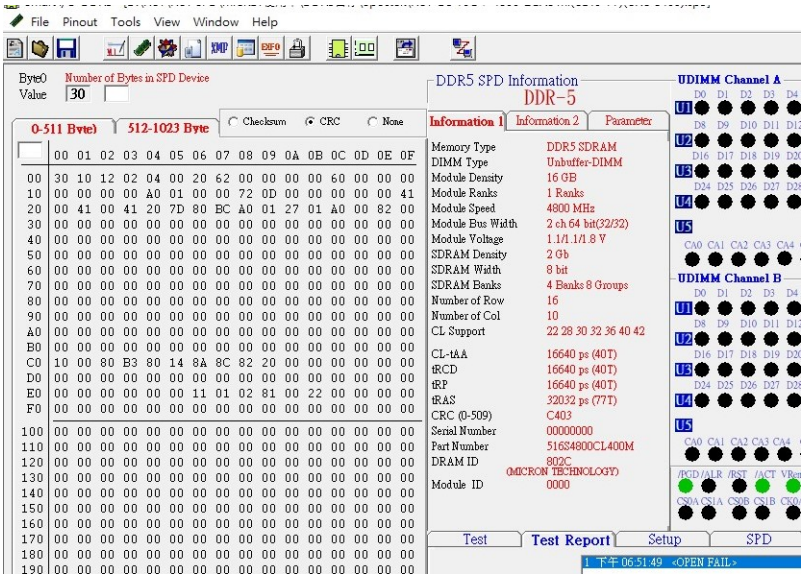
To run testing, insert an OK module into the “Expansion DIMM Socket”, press <LEARN> on Smart I/O DDR5 or click <LEARN> on the software to start the learning, then run for further instructions.



※ Press <TEST> to start testing.



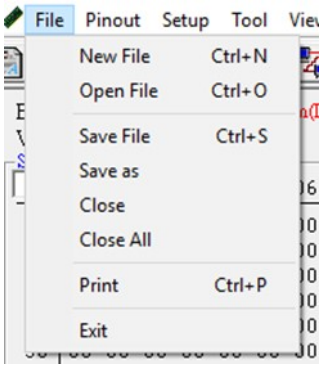
Choose <Test Report> to check the testing process records



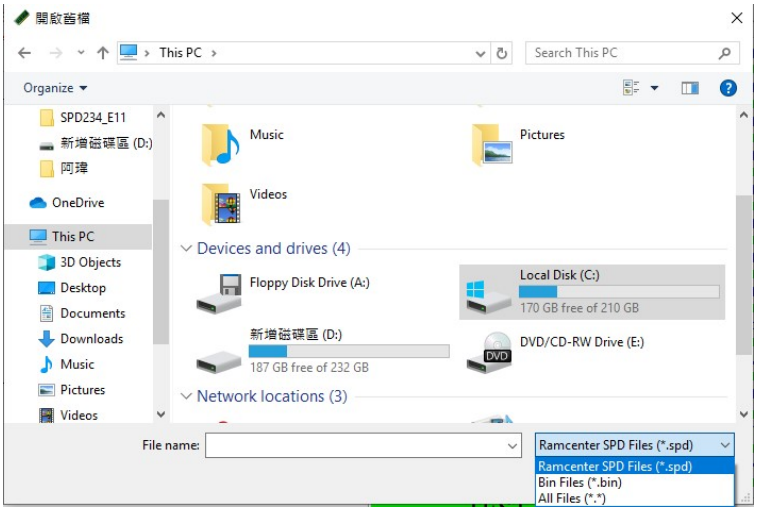
Part II Toolbar Function

<File> Function

Description for the selected functions:



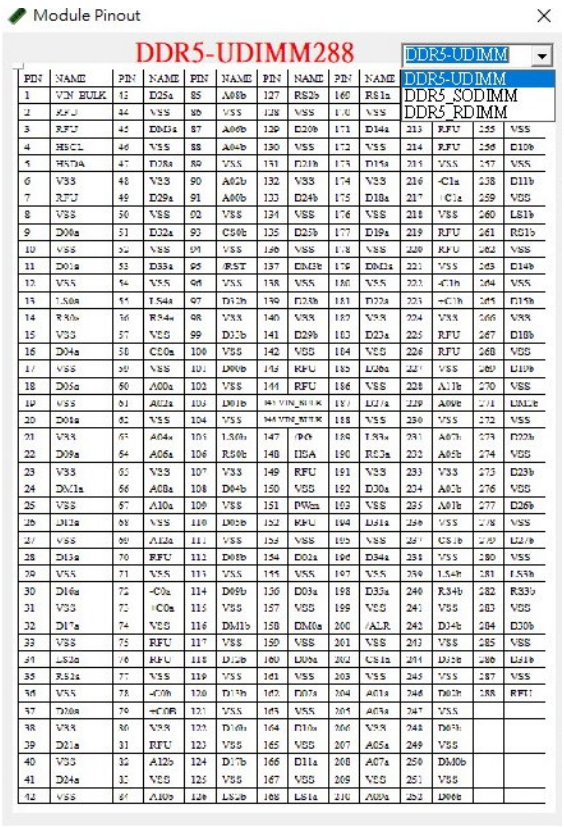
New File: After opening a new file, SPD data can be edit from the homepage.

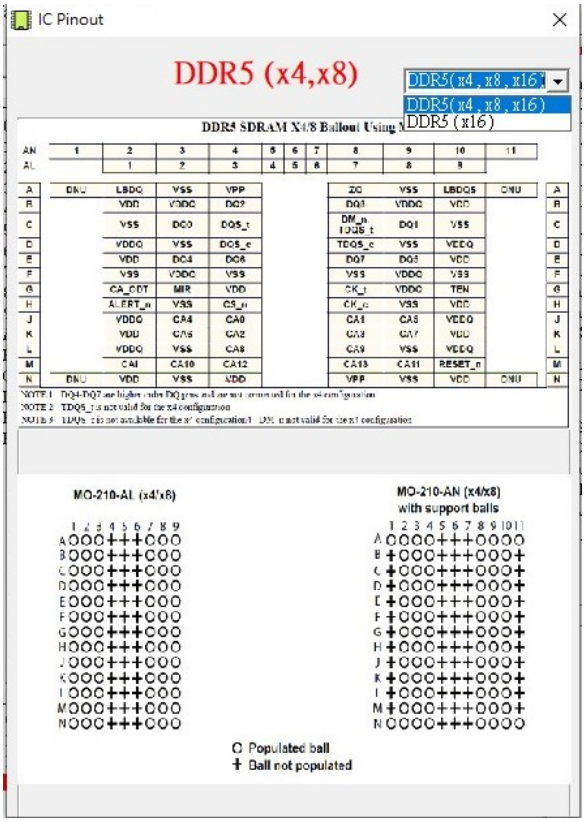


Open File: Open a file, it supports for *.BIN and *SPD file format.

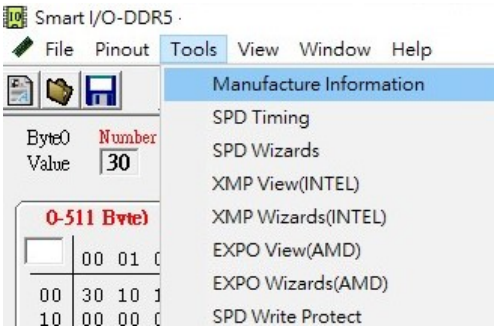
<Pinout> Function

IC Pinout and Module Pinout.

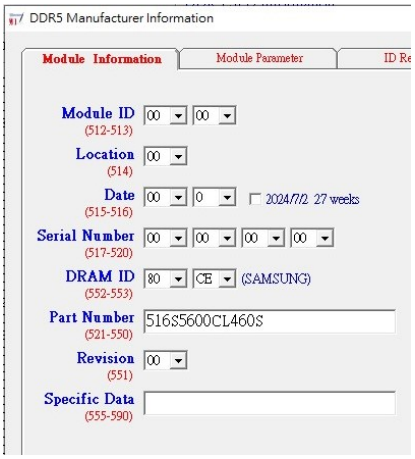


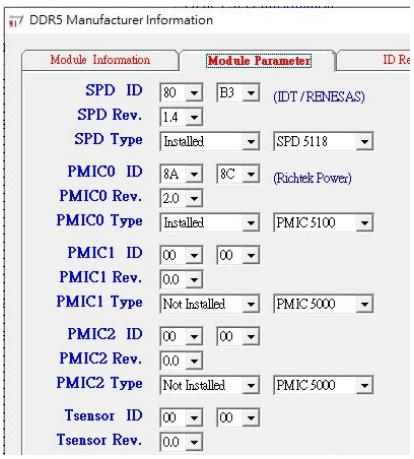


<Tool > Function

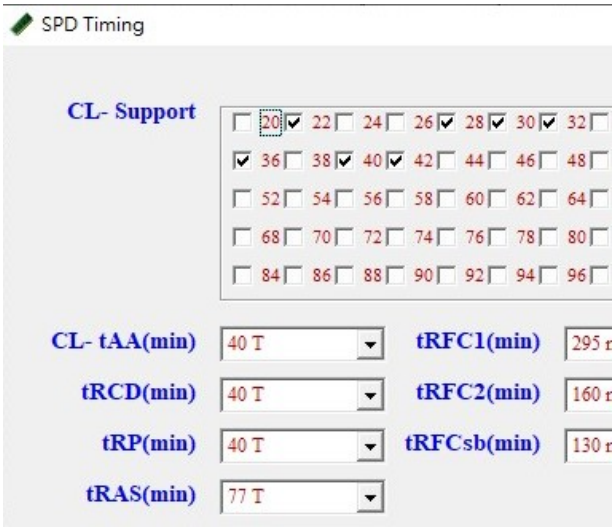


1. Manufacturing Information：Set the information and parameters for the module.

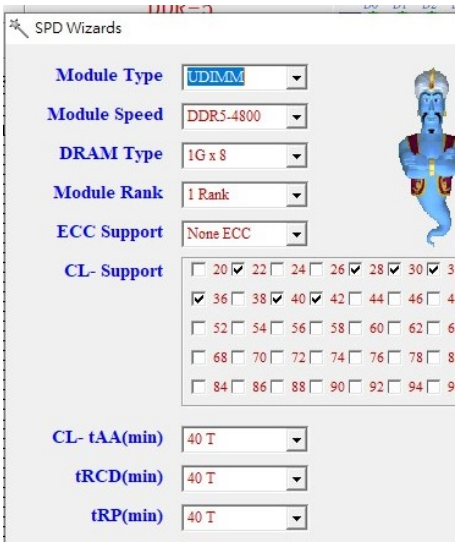




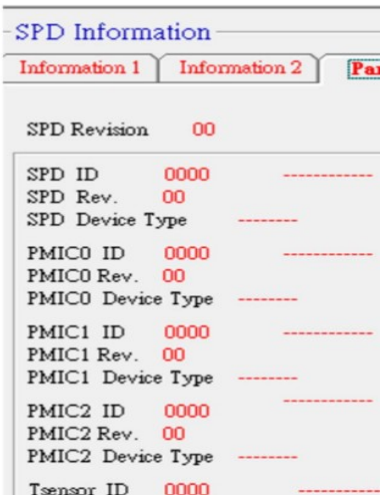
2. SPD Timing：Change the timings of SPD.



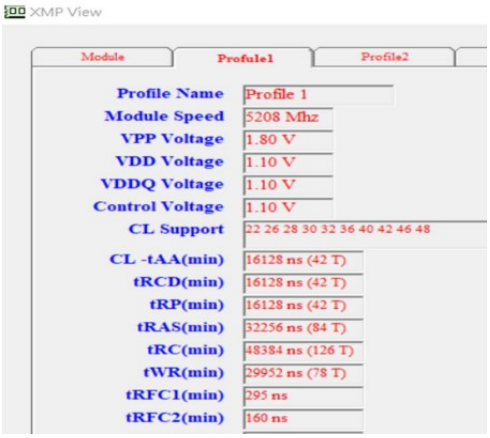
3. SPD Wizards：Establish the needed specification for SPD by wizard.



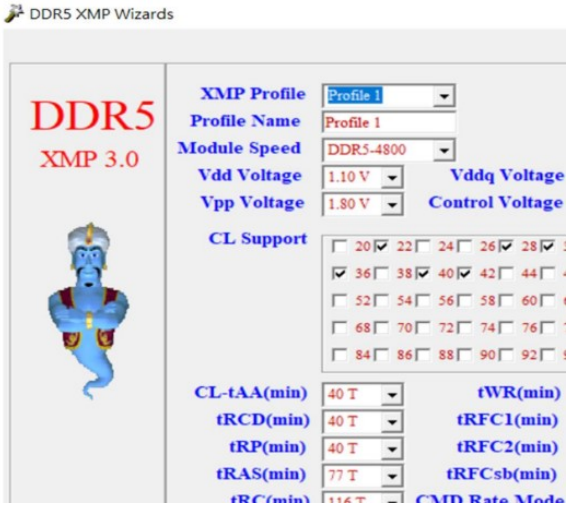
There are 3 tabs for DDR5 module information in “DDR5 SPD information” in the mainpage.



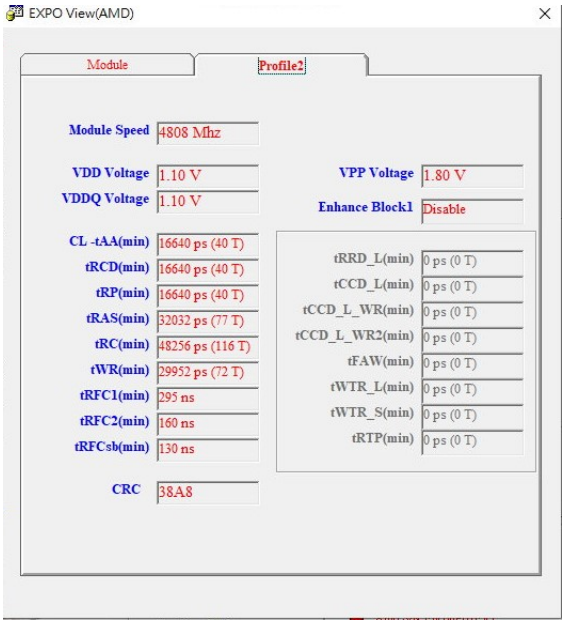
3. XMP View(Intel): Show the information of XMP.



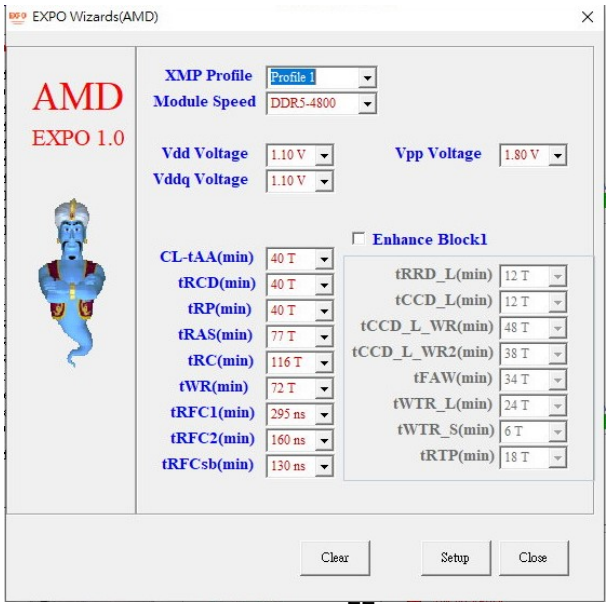
4. XMP Wizards(Intel): Establish the needed specification for XMP by wizard.



3. EXPO View(AMD): Show the information of EXPO.

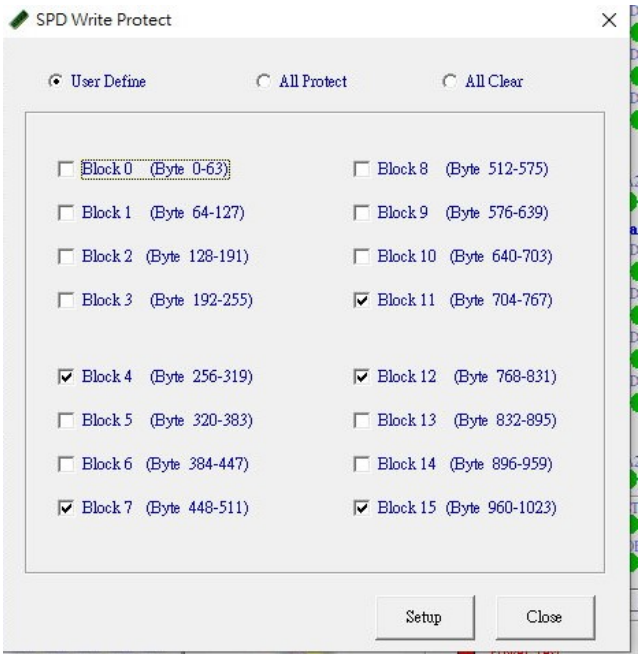


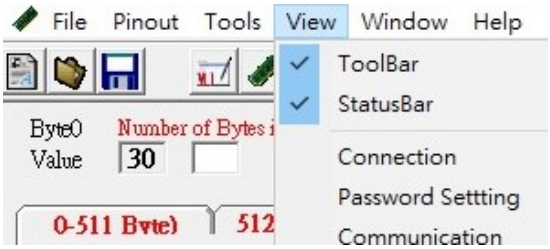
4. EXPO Wizards(AMD): Establish the needed specification for EXPO by wizard.



SPD Write Protect: Setting the writing protect for the block in needed

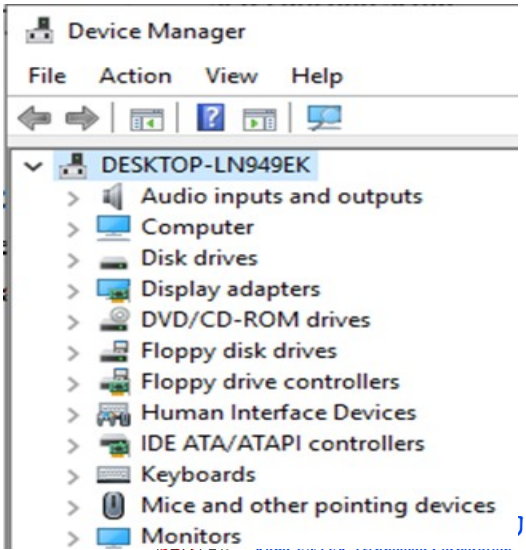
<View> Function



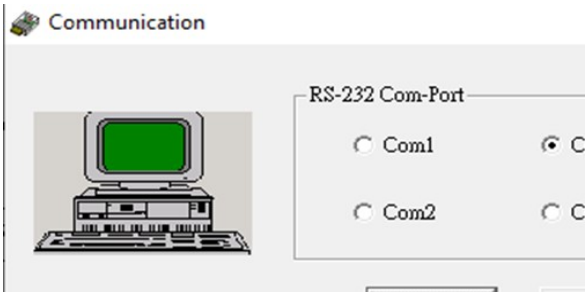


Password Setting : Besides the first code setting, the code may be changed here.

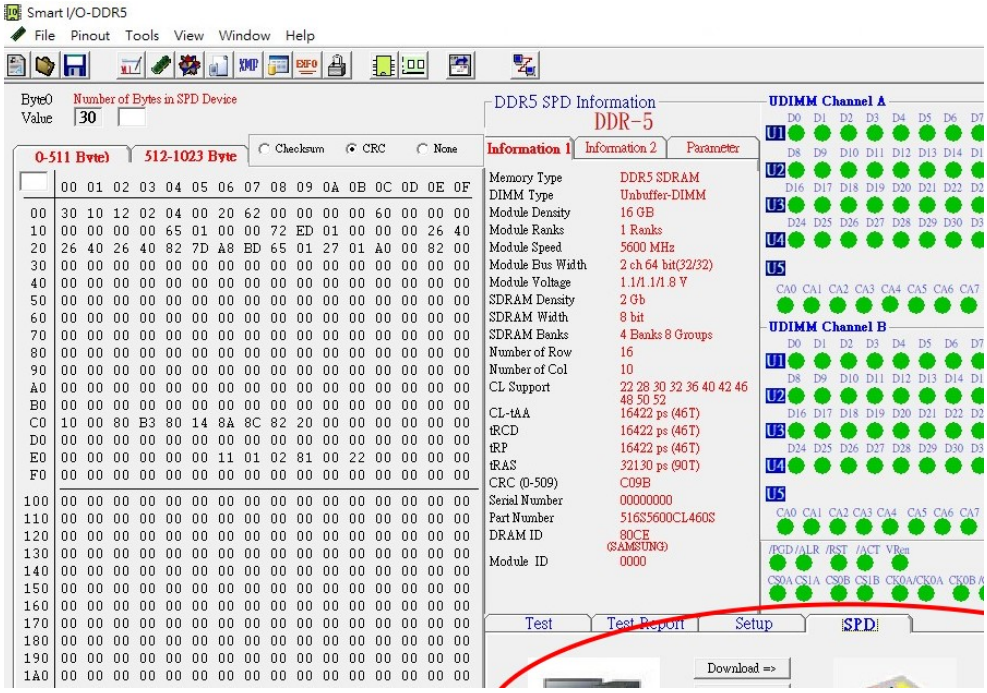
Communication: Choose the connecting port.



RS-232 cable is preset to be Com1. For USB to RS-232 converter cable, please check Device Manager for the COM port, as the following images show:

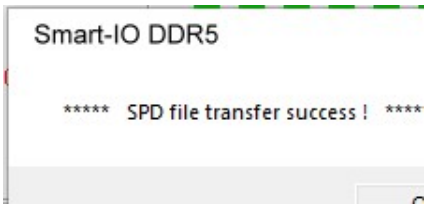


Part III SPD testing

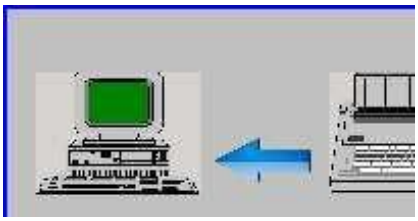


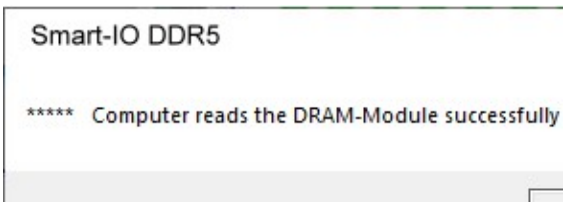
SPD functions on client:

1. Download : Write in the SPD data from the module of Smart I/O shown on the client. The following images will be shown when writing success.

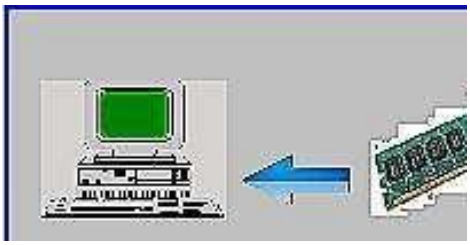


Read Tester: Load the SPD data which are saved in client and show the detail information on the computer screen. The following images will be shown when loading success.

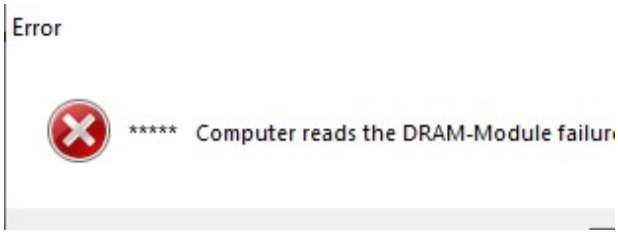




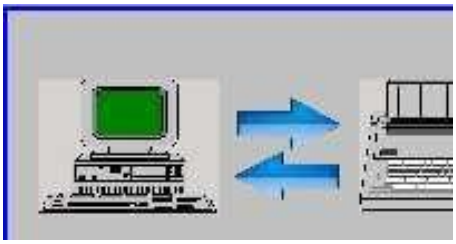
Load Module: Loading SPD data of module into PC Smart I/O and show the detail information. The following images when loading success.



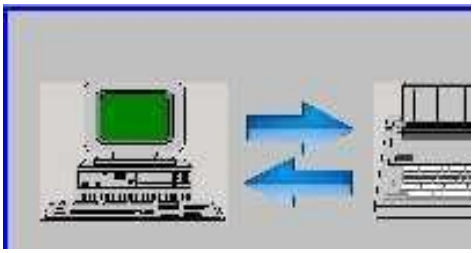
Error will be shown when the module is not well inserted or SPD HUB is damaged:

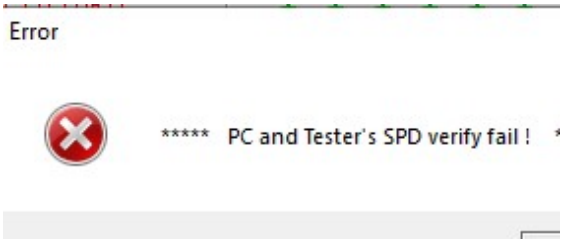


Verify: Verify if the SPD data on Smart I/O match to data on PC-side.



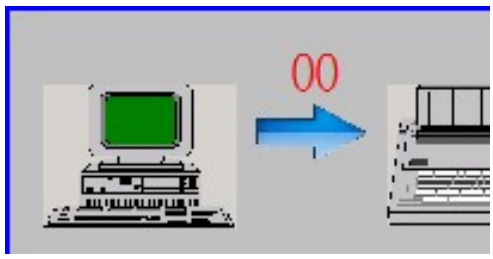
Verify Successfully



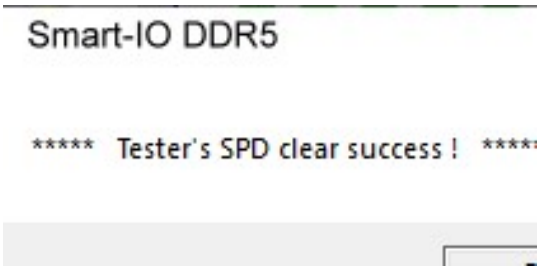


Verify Failure

Clear (00): Clear SDP data on Smart I/O.



Clearing



Clear success

IO Testing functions on the Smart I/O:

1. READ: Read the SPD data from module which is inserted in Smart I/O Error Detector and save the data in the host.

2. COPY: Copy SPD data from Smart I/O Error Detector to the module

3. VERIFY: Verify SPD data recorded from Smart I/O Error Detector with the SPD data from the module.

4.LEARN: Learn the mode of <Open Circuit> and <Short Circuit> on the module from Expansion Slot.

I/O Testing card:

I/O Testing card help corresponding Address and Date on the module while running OPEN/SHORT functions.