

Leaptronix[®]

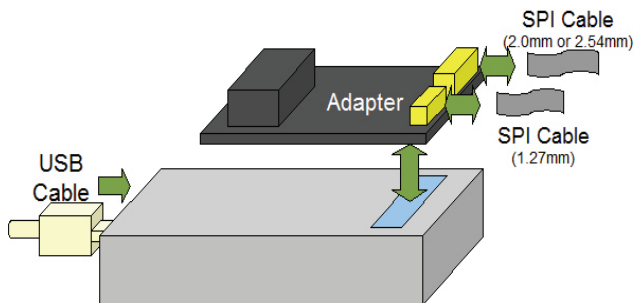
WICE-SPI Hardware Operation Manual

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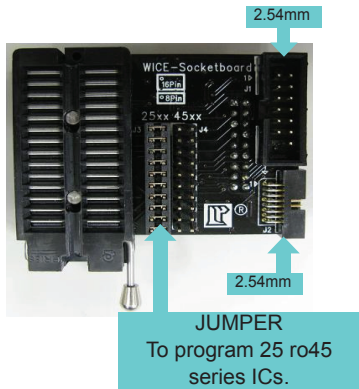
1. Hardware Instruction

1. WICE-SPI processes data transmission, programming or emulation through USB 2.0 interface and needs no external power.
2. WICE-SPI is equipped with a 2.54mm connector for user to connect with the adaptor to program SPI ICs. (User can set the jumper to program 25 series or 45 series ICs)
3. User can achieve IC emulation by connecting the connector of adaptor (2.54mm or 1.27mm) to the external circuit. (2.54mm connector is compatible with 2.54mm or 2.0mm ISP cable.)
4. User also can connect the connector of adaptor to the external circuit via ISP cable to do On board programming.
5. 3.3V (50-100mA) output of WICE-SPI is ONLY used for Off-line programming. To avoid damaging the unit, do not apply 3.3V output to external power consumption.
6. Before doing IC programming or emulation, be sure to insert the adaptor to WICE-SPI. Do not directly connect ISP cable to the connector of WICE-SPI.



2. Pin Definition Of WICE-SPI Connector

1. 2.54mm connector is compatible with 2.54mm or 2.0mm ISP cable. User can refer to Pin definition below to program 25 or 45 series ICs.
2. User also can connect an IC clip to 2.54mm cable to clip the IC on board.
3. 1.27mm ISP cable is only used for programming 25 series ICs. Do not use 1.27mm ISP cable to program 45 series ICs.

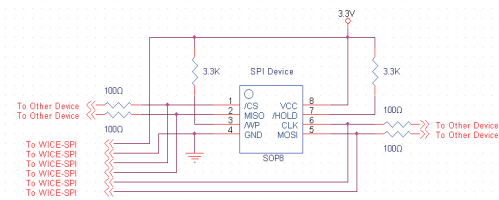


| Connector Pin Define (Adapter) | | | | | |
|--------------------------------|---|--------|--------|---|--------|
| 2.54mm | | | 1.27mm | | |
| /CS | 1 | IC VCC | /CS | 1 | IC VCC |
| SO | | /HOLD | SO | | /HOLD |
| /WP | | SCK | /WP | | SCK |
| IC GND | | SDI | IC GND | | SDI |
| /CS2 | | | | | |
| SYS RST | | | | | |
| | | GND | | | |
| | | | | | |

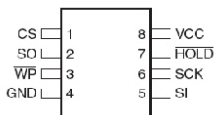
3. Peripheral Circuit Arrangements

1. WICE- SPI will not offer power for SPI IC. User must connect SPI IC's GND & VCC Pins to the connector of adaptor.
2. To process On-Board programming, 100Ω resistor is necessarily used between Chips (Southbridge, SOC, SOC or DSP) and /CS, SO (MISO, SDI (MOSI), SCK (CLK) Pins of SPI IC. (If a resistor already existed in the circuit, just replace the existing resistor by a 100Ω resistor)
3. Suggest to use resistor (3KΩ resistor or above is recommended) when connect /WP and /HOLD (or RESET) Pins to the power of system (Pull-Up). No need to use WICE-SPI's power.
4. Reset motherboard after programming: Connect WICE-SPI's RESET Pin to the RESET Pin of motherboard and enables Reset function of WICE-SPI software to automatically reset motherboard after programming. (Refer to WICE-SPI Quick User Guide/ Function introduction.)

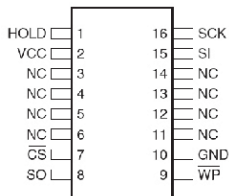
Notice: Before doing On board programming or Emulation, be sure to select Emulator Mode in WICE-SPI software. Besides, the circuit must offer power for SPI IC.



8 Pin SPI FLASH
Top View



16 Pin SPI FLASH
Top View



4. On-Board Programming

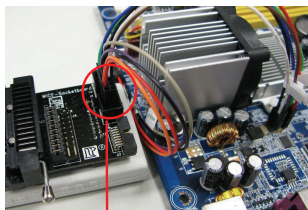
Situation1: SPI FLASH is on PCB that has a SPI signal connector; there are 100Ω resistors between Chips and SPI device.

Solution:

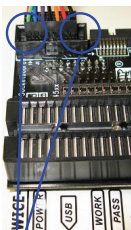
1. Refer to the circuit of PCB to learn how the SPI signals are arranged.
2. Separately connect every ISP signal Pin to the Pin of connector. No need to connect /WP and /HOLD or (/RESET) Pins. User must use Pull Up Resistor in the circuit.

Note: When connecting ISP signal cable to the connector of WICE-SPI, make sure the ISP cable is accurately connected to the connector of WICE-SPI. Misconnection may cause short circuit even damage the unit.

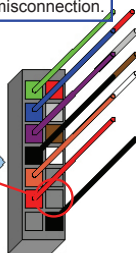
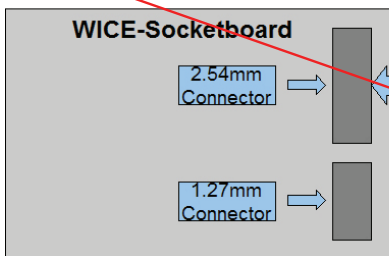
3. Make sure the cable is tightly connected to correct Pin and the connections are ok.
4. Execute WICE-SPI software, load file and then process On-Board programming.



The black cable is at the bottom right of the connector.



Do not make misconnection.



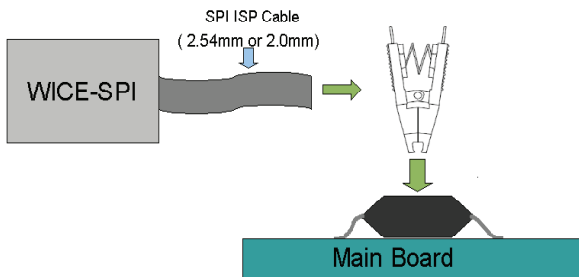
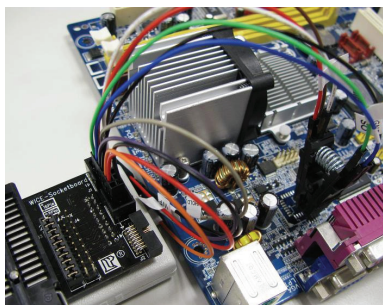
Situation 2: SPI FLASH is on PCB that has no SPI signal connector; there are 100 Ω series resistors between Chips and SPI device.

Solution:

1. Use SOP8 or SOP16 Pin clip. (SOP16 Pin clip is optional accessory)
2. Refer to device datasheet and separately connect every ISP signal Pin to the Pin of connector. No need to connect /WP and /HOLD or (/RESET) Pins. User must use Pull Up Resistor in the circuit.

Note: When connecting ISP signal cable to the connector of WICE-SPI, make sure the ISP cable is accurately connected to the connector of WICE-SPI. Misconnection may cause short circuit even damage the unit.

3. Tightly clip the SPI device on PCB and make sure the cable is tightly connected to correct Pin and the connections are ok.
4. Execute WICE-SPI software, load file and then process On-Board programming.



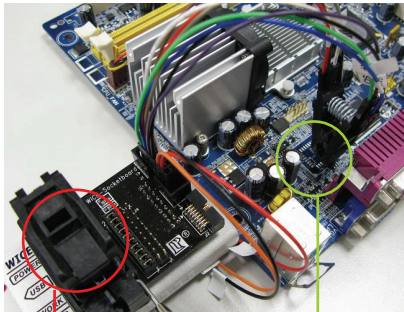
Situation 3: Disable the SPI IC on the PCB and use the SPI IC on WICE-SPI socket to do emulation.

Solution:

1. Put a new SPI IC on the socket of WICE-SPI. (Refer to the figure below)
2. Connect ISP signal cable to IC clip. (All 8 Pins should be connected)

Note: When connecting ISP signal cable to the connector of WICE-SPI, make sure the ISP cable is accurately connected to the connector of WICE-SPI. Misconnection may cause short circuit even damage the unit.

3. Tightly clip the SPI device on PCB and make sure the cable is tightly connected to correct Pin and the connections are ok.
4. Execute WICE-SPI software, load file and then process programming.



New SPI IC

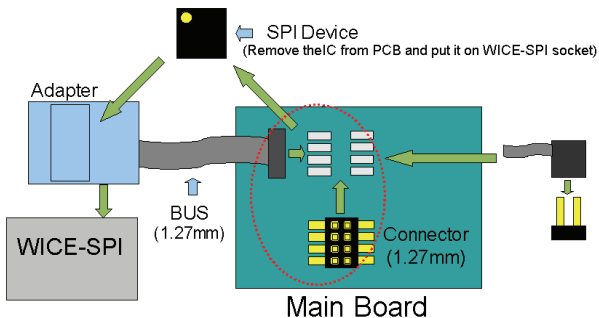
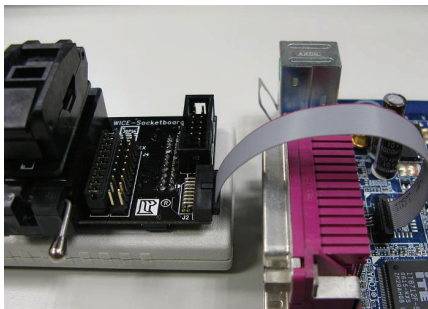
The disabled SPI IC

Situation4: SPI IC is removed from PCB. There are 100Ω series resistors between Chips and SPI device. No SPI signal connector on PCB.

Note: In this situation, only 25 series ICs can be emulated.

Solution:

1. Remove SPI IC from PCB and put the IC on WICE-SPI socket. (Refer to the figure below)
2. Solder a 1.27*1.27mm male connector (Optional accessory) to PCB.
3. Connect 1.27mm ISP cable to the male connector on PCB. Make sure the cable is tightly connected to correct Pin and the connections are ok.
4. Execute WICE-SPI software, load file and then process On board emulation.

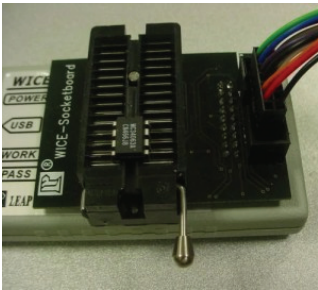


5. Off-Line Programming

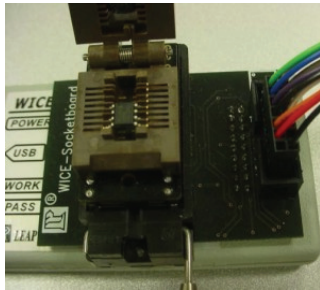
Solution:

1. DIP 8 Pin device: Refer to Figure 1 below.
2. SOP 8 Pin device: Use suitable SOP adaptor (Optional accessory) and refer to Figure 2 below.
3. SOP 16 Pin device: Use suitable SOP adaptor and refer to Figure 3 below
4. SOP 8 207 mil device: The 1st Pin is at the bottom left of the socket. Refer to Figure 4 below.

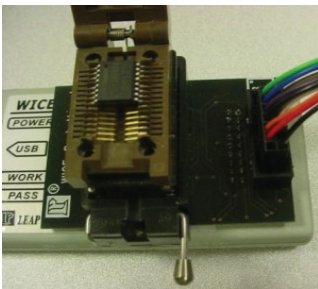
1. DIP 8 Pin Package



2. SOP 8 Pin Package



3. SOP 16 Pin Package



4. SOP 8 207 mil Package

