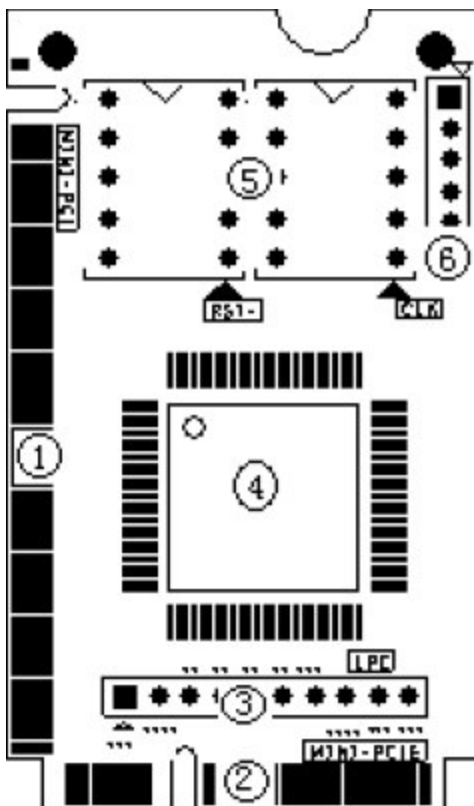


Ver 5.1 Mini PCI / Mini PCI-E / LPC Combo-POST CODE -Card

This notebook Combo-POST CODE-Card supports three bus interfaces: MINI PCI, Mini PCI-E and LPC. For using this Combo-POST CODE-Card, one interface needs to be connected only, and please ensure other two interfaces unconnected. This product is user friendly, and is designed with good stability. It is an ideal tool for notebook repairing.

- _ 1. Combo-POST CODE-Card structure and usage
- _ 2. The Mini-PCI interface in the Combo-POST CODE-Card
- _ 3. The Mini PCI-E interface in the Combo-POST CODE-Card
- _ 4. The LPC interface in the Combo-POST CODE-Card
- _ 5. The LED-Display in the Combo-POST CODE-Card
- _ 6. Part of Error-Code explanation

1. Combo-POST CODE-Card structure and usage



① Mini-PCI interface:

This is used to connect this Combo-POST CODE-Card to notebook's Mini-PCI slot.

② Mini-PCIE interface:

This is used to connect this Combo-POST CODE-Card to notebook's Mini-PCIE slot.

③ LPC interface:

This is used to connect this Combo-POST CODE-Card to notebook's LPC connector.

④ ASIC:

⑤ Two 7-segment LEDs:

This is used to display the Error-code and RST/CLK signals.

⑥ Test port: This port is reserved, and end-user should not use this port.

2. The Mini-PCI interface in the Combo-POST CODE-Card

Mini PCI is a general interface used in notebook. It includes 124 pins. This Combo-POST CODE-Card doesn't fully use those pins, and only 101 pins are used. When installing this Combo-POST CODE-Card to your notebook main-board, you will find the Combo-POST CODE-Card is shorter than the notebook Mini-PCI slot. This is correct, and it serves better for you to plug or unplug this Combo-POST CODE-Card.

3. The Mini-PCIE interface in the Combo-POST CODE-Card

Mini-PCIE is used as a trend in the new notebooks. Compared with Mini-PCI, Mini-PCIE occupies less space. This Combo-POST CODE-Card doesn't use all of the Mini-PCIE bus pins. And only the below pins are used: PIN-8, PIN-10, PIN-12, PIN-14, PIN-16, PIN-17, and PIN-19. In the Mini-PCIE spec, those pins are reserved, and it is not

standard, so some of Notebook manufacturers define it as a LPC POST CODE-port. And more and more notebook manufacturers are using this standard, such as IBM, Toshiba, HP, ASUS, TCL and etc... This Combo-POST CODE-Card can only work in the notebooks, which are with the LPC POST CODE-port definition. For the notebooks don't support this LPC POST CODE-port definition, this Combo-POST CODE-card PCI-E interface will not work.

Note: Please be aware that Mini-PCIE is supported with limitation, and it can works in most of notebooks, but not all.

4. The LPC interface in the Combo-POST CODE-Card

For users whose notebooks don't support the Mini-PCI interface and the Mini-PCIE interface, you can use the third port: LPC interface.

LPC interface exists in all notebooks' main-boards. In the Combo-POST CODE-Card, from left to right, the LPC definition is: PIN1-3.3V, PIN2-LFRAME#, PIN3-LAD3, PIN4-LAD2 PIN5-LAD1 PIN6-LAD0, PIN7-GND PIN8-LRESET# PIN9-LCLK PIN10-3.3V.

Usually, the notebook boards haven't LPC connectors or slots. And users will need to connect this LPC port to the notebook by using wires. Below is some description for how to connect the Combo-POST CODE-Card to your notebook through this LPC interface.

If your notebooks use LPC VBIOS, you can connect the Combo-POST CODE-Card to your notebook's VBIOS bus.

LPC VBIOS Pin definition:

PIN2-RST#	PIN13-LAD0
PIN14-LAD1	PIN15-LAD2
PIN16-GND	PIN17-LAD3
PIN23-LFRAME#	PIN25-VCC
PIN31-CLK	

The connection between Combo-POST CODE-Card and the

notebook's main-board.

Combo-POST CODE-Card

Notebook VBIOS

PIN1-3.3V

PIN25-VCC

PIN2-LFRAME#

PIN23-LFRAME#

PIN3-LAD3

PIN17-LAD3

PIN4-LAD2

PIN15-LAD2

PIN5-LAD1

PIN14-LAD1

PIN6-LAD0

PIN13-LAD0

PIN7-GND

PIN16-GND

PIN8-LRESET#

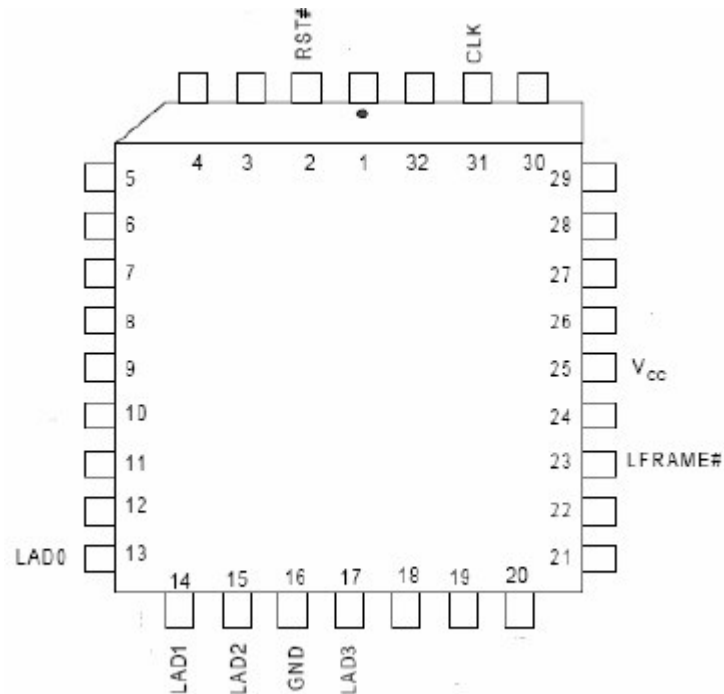
PIN2-RST#

PIN9-LCLK

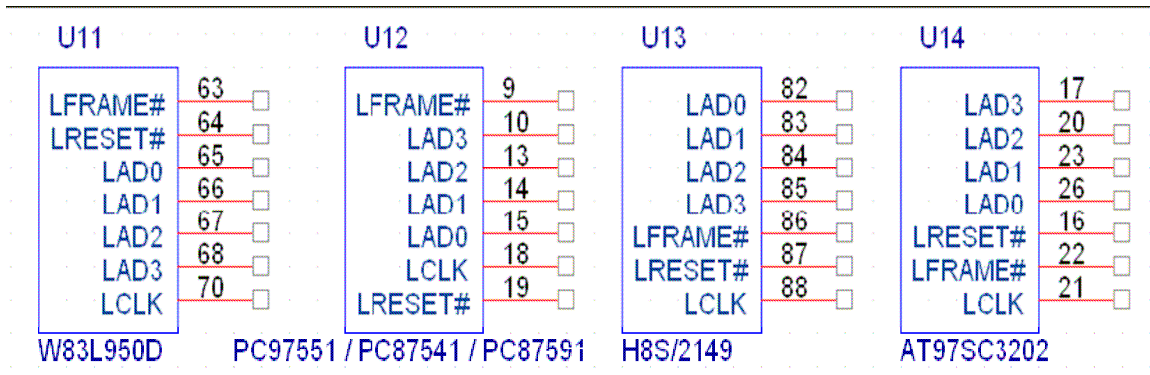
PIN31-CLK

PIN10-3.3V

PIN25-VCC



You can connect this Combo-POST CODE-Card to any LPC bus. Some LPC interface chips are listed as below. You can connect the Combo-POST CODE-Card to the corresponding pins. For more information, please refer those chips' datasheets.



Note: This Combo-POST CODE-Card uses 3.3V as power supply, and you can use any 3V3 and GND signals in your notebook main-board. Please be aware that connecting the Combo-POST CODE-Card to a non-3.3V power may damage this Combo-POST CODE-Card.

For IBM X 60 notebooks, the LPC interfaces are located in the U39 slot of the main-board. The Pin definitions are as below:

A2->LRESET#	A3->LFRAME#
A5->LCLK	A9->LAD3
A10->LAD2	A11->LAD1
A12->LAD0	

For IBM T6 R6 notebooks, the LPC interfaces are located in the J26 slot of the main-board. The Pin definitions are as below:

A1->LCLK	A3->LFRAME#	
B2->LRESET#	B7->LAD3	
A7->LAD2	B6->LAD1	A6->LAD0

5. The LCD-Display in the Combo-POST CODE-Card

The Display portion is composed with two 7-segment LEDs. The two "Dots" of the LEDs are used to indicate the notebook "RST" and "CLK" status. The left side "Dot" is for "RST", and the right side "Dot" is for "CLK". When the notebook is in "Reset" status, the left side "Dot" will be lighted. And when the notebook has a correct CLK output, the right

side “Dot” will be lighted. When you hold on the notebook’s “RESET” button, the left side LED “Dot” will be lighted, and the right side LED “Dot” will be off. When you release the notebook “RESET” button, the left side LED “Dot” will be off, and the right side LED “Dot” will be lighted. Then the two LEDs will show the corresponding POST CODE code. If the left side LED “Dot” is always on, it means your notebook main-board has “RESET” problem.

6. Part of Error-Code explanation

When the notebooks are running, this Combo-POST CODE-Card will show the corresponding POST CODE code. If there is a problem in the notebook, you can judge the problem by the POST CODE code. Below is the explanation for some main error codes.

AWARD BIOS:

The explanation when the Combo-POST CODE-Card shows the below POST CODE codes.

Code	Explanation	Note
C0	Close Cache	
01	Processor Test	
07	CMOS Test	
C1	Memory Size Test	
0A	Set the Interrupt Table	
0C	Initiate the Keyboard	
0D	Initiate the Graphic Card	
1A	Show CPU Frequency	
3C	CMOS Setting	
42	Initiate Hardware	
52	Test the Extended ROM	
FF	Boot	

AMI BIOS:

The explanation when the Combo-POST CODE-Card shows the below POST CODE codes.

Code	Explanation	Note
00	Error in Self Test	
01	Error in Processor Test	
0D,0F	Error in CMOS Test	
1A to 22	Error in Memory Test	
3A	Error in Graphic Card	
FF	Pass the self Test	

Remark: For the POST Code explanation in detail, please check with the bios brand and version, then can be found on website.