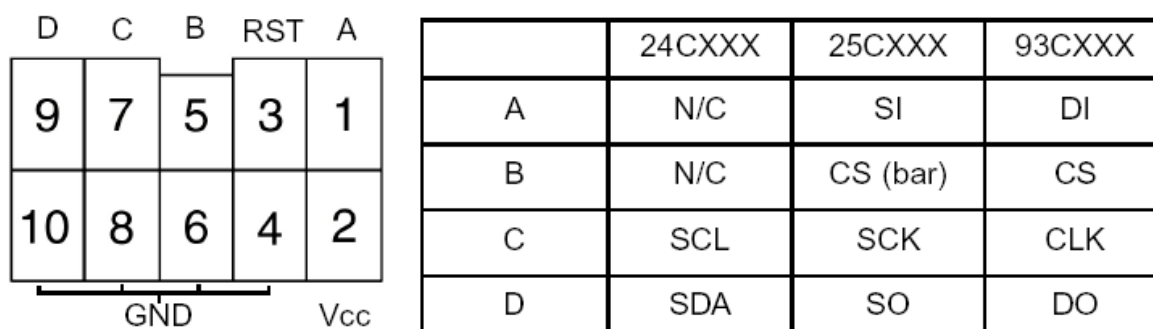

EEISP and EEPROG MANUAL

EEISP is designed to be easy to use, with the versatility of parallel or serial port connections to the PC, while being resistant to damage from faulty target systems. But like all programmers, it does have some requirements for successful use. EEPROG includes a target board with a ZIF socket for 24C, 25C and 93C Serial EEPROMs

TARGET CONNECTION

The programming cable is designed to connect to a target system with a standard Kanda 10pin ISP connector:



Target connector layout

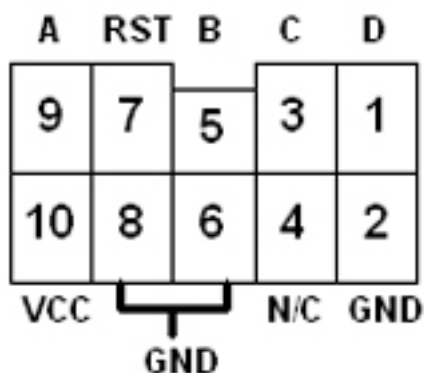
Notes:

- Connect all GND Pins to target Ground. Pin 4 is a unused input but we recommend it is connected to target ground. At least one other GND pin should be connected
- Connector should be 0.1" (2.54mm) pitch Pin header in 5 x 2 format, preferably with box header and polarising notch

End of lead view

The end of the lead is mirrored with respect to the target connector and is shown in the diagram below. Note that pin 4 is NOT connected to programmer ground, so pin 2, 6 or 8 should be grounded.

Use this diagram to make your own 4, 5 or 6 pin adapter.



SIX WAY ADAPTERS

The programmer can be used with 6-way adapters.

Adapters from the 10-way DIL interface to 6-way flying leads, 6-way DIL (3 x 2 0.1" pin header), and 6-way Micromatch connectors are available from Kanda.

Order Codes are:

10FLEX6



10DIL6



10MICR6



TARGET SYSTEM

VCC and GND connections.

PARALLEL: Both VCC and GND must be connected to the ISP connector, to allow connection of the programmer to the PC via the parallel port. See connection diagrams on page 1.

In this case the programmer requires power from the target system, typically 10mA @ 5V. Minimum required VCC is 4V.

SERIAL: A VCC connection is not required to allow connection of the programmer to the PC via the serial port – The programmer is able to draw power from the PC - though VCC connection is recommended, especially where the target VCC is greater than 4V. Minimum target voltage is 2.7V.

Clock and Data lines should be isolated with series resistors (>1K) if programming problems are encountered.

Reset Line

An optional RESET line is included, to isolate any microcontroller that is connected to the EEPROM. This line holds the microcontroller in reset during EEPROM programming operations. The polarity of this line is set on the **Status Register** tab, with the default being OFF.

Set the polarity to Low or High, depending on your microcontroller reset polarity.

EEPROG Board

- The board must be powered with 9-15VDC. The connector is a 2.1mm barrel, centre positive
 - The three different types of device are fitted in different positions in the ZIF socket. The white marks indicate unused slots.
 - There is an ISP header for ISP from the board. See Page 1 for pin descriptions
 - There is a jumper to set board voltage to 3.3V or 5V . If jumper is off, this gives 5V
-

UPDATING THE PROGRAMMER FIRMWARE

The PC LPT port must be used. Recommended setting is EPP1.9 or ECP. As the Parallel port is used, a minimum of 4V must be supplied to the programmer.

The easiest way to do this is to connect to a target system.

The firmware, and an update utility are included as part of the PC software – see **Help > Firmware Update**. Firmware updates are always released as part of a software update.

If the software detects the programmer has a different firmware version to the one included with it, you will be prompted to update the firmware. **Normally the only time that the firmware will need reprogramming is when updating to a new software version.** However, the update utility can be run at any time by selecting "Firmware update" from the help menu.

8 and 16-bit Addressing on 93C devices

93C devices have either Byte (8-bit) or Word (16-bit) addressing modes. Which mode is available on a device varies with the manufacturer. Some are only 8-bit, some are only 16-bit and some are both. Consult the manufacturer's data sheet for details.

This setting is on the Status Register tab, and the default is 16-bit. Change to 8-bit if required.

Users of the EEPROG target board should note that there is a jumper to set the addressing mode. This should be set to match the software setting.

Device Page Sizes.

24C and 25C devices from different manufacturers can have a different number of bytes per page for programming. This number is changed to reflect standard page sizes for different devices, but devices with the same number e.g. 25C512, can have different page sizes. Change the number of bytes on the Status Register tab to match the device datasheet, if programming errors occur.

Bus Address

Some devices have bus address pins (2, 3 or 4) so that multiple devices can be chained together by hardwiring different addresses on to these Address pins. The number in this box can be changed to select the device in the chain that you wish to program. See device datasheets for the availability of this function on your selected device.

Security on 25C devices

Most 25C EEPROMs have security features to prevent further writes to all or part of the device. These settings are found on the Status Register tab.

Status Register

The Status Register is only available on 25C devices. It includes such information as the status of Write Enable and Block Protect bits.

Serial Numbering

A serial number can be added to a location in the memory. It can be 2, 3 or 4-bytes long, and can be in different number formats – decimal, binary, octal or hex.

In Auto Program Options in Device menu, this serial number can be set to increment automatically for each Auto Program cycle.

Pop Up Warnings

This is found under View Menu. If enabled, a pop up box appears if a programming or verify error occurs, which has to be closed by clicking OK or pressing Enter Key. This prevents operators from ignoring errors so easily.

TROUBLESHOOTING

Serial Port

Error message: “AVR PSI ISP (COM) “Programmer was not detected”

- 1) Ensure dongle (PC adapter) is connected to serial port
- 2) Check port setting – COM1, COM2 (Options button)

Error message: “AVR PSI ISP (COM) Communications with ISP failed during this operation”

- 1) Ensure programmer is connected to a powered target (>3V)

Message “Programmer Detected”

Because Serial EEPROM devices do not have any device ID numbers or other way of determining that a device is present, then this message just means that the programmer has been found, NOT that it has actually found a target circuit or a device.

Reading from a non-existent device will return all 0xFF, but so does an empty device. The only way to detect if a device is actually present is to program and verify it with data other than 0xFF.

Parallel Port

Error message: “AVR PSI ISP (LPT) “Programmer was not detected”

- 1) Ensure dongle (PC adapter) is connected to printer port
- 2) Ensure lead is plugged into a powered target (>4V)**
- 3) Check port setting – LPT1, LPT2 etc. (Options button)
- 4) In BIOS try different modes e.g. ECP or EPPv1.9
- 5) Some early versions of XP poll printer port – if you have early XP version, load service packs

Error message: “AVR PSI ISP (LPT) Communications with ISP failed during this operation”

- 1) Ensure programmer is connected to a powered target (>4V)
- 2) Make sure a device is in the powered target circuit

Error message: “AVR PSI ISP (LPT) ISP timed out during this operation”

- 1) Ensure correct device is selected
- 2) Check device is in correct part of socket, with correct orientation

Message “Programmer Detected”

Because Serial EEPROM devices do not have any device ID numbers or other way of determining that a device is present, then this message just

means that the programmer has found a powered circuit, NOT that it has actually found a device.

Reading from a non-existent device will return all 0xFF, but so does an empty device. The only way to detect if a device is actually present is to program and verify it with data other than 0xFF.

Serial and Parallel Ports

Programming Errors – Verify failures

- 1) Ensure your target circuit is wired correctly as shown on page 1
- 2) Check correct device is fitted to match software. On EEPORG board, make sure that device is in correct part of ZIF Socket.
- 3) On 93C devices, check for correct addressing mode for device – 8 or 16-bit in software (Status Register tab), and jumper on EEPORG board
- 4) On 25C devices, check Write Protect is not enabled – read Status Register or Erase device
- 5) Ensure Device Page Size matches page size as shown in manufacturer's datasheet.
- 6) If you get constant errors with different devices and on serial and parallel port, remove program in Control Panel > Remove Program and re-install software. Then run firmware update utility in Help > Firmware Update

FURTHER INFORMATION

Please contact support@kanda.com for technical support or go to our website support pages for latest software.

See www.kanda.com/support

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