



Programmer Application Note: Stand-Alone Programming on the ChipWriter Gang

Document applies to the following Data I/O Corporation Technology Programmer(s): ChipWriter Gang

The ChipWriter Gang can be set up to be used away from a PC. This allows the programming specifications to be completely controlled away from the production area, thus reducing the margin for operator error.

The Stand Alone mode can work in one of two ways. The programmer contains a serial EEPROM which can be set up with the device specifications for the chip to be programmed. The data to be copied can then be programmed into a master device. Exact copies can then be made from the Master socket into any of the sockets 0 to 7. This would be the normal method for copying EPROMs or EEPROMs. The device settings remain stored when the power is turned off.

The second method is to download the device parameters into one 27C512 EPROM. The programmer uses this to store the programming configuration data and algorithms. This method would typically be used if it was desired to set up the programmer for more than one type of EPROM without having to go back to the PC. In this case two EPROMs are needed. A 27C512 for configuration information, and a DATA MASTER EPROM for holding the user data. The DATA MASTER will be the same type as that to be programmed.

Setting up the Internal EEPROM

Select the part you want to program from the PART menu as described in section 6.1. From the MODE menu, select the option: SET UP INTERNAL EEPROM. The programmer is now configured for the selected device. A power on code is displayed (see section 7.4).

Setting up a Master Configuration EPROM

Ensure that the device to be used as the configuration EPROM is a standard 27C512 device.

Select the part you are wanting to program from the PART menu as described in section 6.1. The buffer must be filled with FFh. To do this, use the BUFFER/FILL command as described in 6.3.4. From the MODE menu, select the option: SET UP MASTER EPROM. You will then see that the buffer is filled with the required information to program the selected device type. Now select the 27C512 device being used for the Master and program in the same way as described in 6.5. Only sockets 0 to 7 can be used for programming as the Master socket is Read-Only.

Operating in Stand Alone Mode

Once the configuration is complete, switch off the programmer. If you are using a Configuration EPROM, place the device in the Master socket. If you are using the Internal EEPROM, ensure that the Master socket is empty. When the GLV-32 is powered up, it waits to see if there is a message from the PC. If no message is received, it looks for a 27C512 EPROM in the Master socket. If no device is present, it looks in the internal EEPROM. If no data is found, or if there is a problem locating the Configuration EPROM, the Master LED will flash three times in succession and will continue this error message until the machine is reset.

Once the machine has found the correct device parameters, LEDs 0-7 will display a code byte indicating which type of device it is set up for. See section 7.6 for more information. Once the code has been checked, clear the display by pressing reset.

Programming in Stand Alone Mode

Place the DATA Master EPROM in the master socket, then place the blank devices in sockets 0-7. Press START to begin programming. While programming is taking place, the indicator LEDs will light for each socket in which there is a chip; the master LED will flash. During the VERIFY stage, the master LED will remain on permanently. If programming is successful, a “walking” sequence will appear on the LEDs (LEDs 0,4 1,5 2,6 3,7).. If unsuccessful, the LEDs will flash to indicate which sockets have failed.

Verifying in Stand Alone Mode

Devices are automatically verified after programming. If it is wished to verify them separately, press and hold RESET, press START while still keeping RESET held down; then release START, then release RESET. For any device which fails to verify, the associated LED will flash. Press RESET to clear the error.

LED status

Flashing Master LED repeated three times

BAD MASTER CHIP OR INTERNAL EEPROM NOT SET UP CORRECTLY

Flashing Master LED and any other flashing LED

MISALIGNED OR FAULTY DEVICE. IF ALL EIGHT SOCKET LEDs FLASH, THIS IMPLIES THAT ALL SOCKETS ARE FAULTY OR EMPTY.

Flashing Master LED and any other non-flashing LED.

PROGRAMMING IS TAKING PLACE

Master LED on and other LEDs off

VERIFYING MASTER EPROM

Master LED off and any other flashing LED

VERIFY ERROR

Master LED off and any other non-flashing LED.

POWER UP CODE FOR DEVICE

Power-up codes

When the ChipWriter Gang is set up for Stand Alone mode it will inform the user of the power-up code. These are typically (in HEX):

01	2716	02	2732	03	2764
04	27128	05	27256	06	27512
07	27010	08	27020	09	27040
0A	27080	etc			
11	2816	etc			

If any other power up codes or error codes are reported, contact Data I/O Corporation.