ImageWriter

NEC 78F0124H Device Support Detail & Setup

ImageWriter Support Hierarchy

Manufacturer: NEC

Device: 78F0124H

Objects for 78F0124H

Flow Object Name:	*Program / Execute*	*Verify*	*Load*	*Object Size (Bytes)*
Flash	●	●		0x8000
Checksum		●	●	0x20
Chip Erase	●			0x00
p_NEC[2]	●		●	0x03
p_SPI[1]	●		●	0x08

[1] Default SPI CLK = 500KHz

[2] Default Oscillator Value = 4MHz, Default StartUp = 25mS, Default CSI Mode = CSI+HS

Physical Layer Connector Setup for 70F3233

ImageWriter:		Target:
Connector Pin #	***Pin Name***	***Connections***
1	GND	GND
2	GND	GND
3	TXD (MOSI/TDO)	SI10/P11
4	RXD (MISO/TDI)	SO10/P12
5	RTS (TMS)	FLMD0***
6	CTS	HS/P15**
7	XCLK	!SCK10/P10
8	RST	!RESET
9	SCL	NOCONN
10	SDA	NOCONN
11	GND	GND
12	GND	GND
13	VPP/EXT_IN	NOCONN
14	VPP/EXT_OUT	NOCONN
15*	Target V+ (7.0V max)	3.5-5.5V
16*	Target V+ (7.0V max)	3.5-5.5V
17	GND	GND
18	GND	GND
19	ImageWriter Power	Supply 9-24 VDC
20	ImageWriter Power	Supply 9-24 VDC

*Maximum Pin-Driver output voltage = 4.2V.
**Handshake line is optional, see footnote 1.
***FLMD0 and FLMD1 set the programming mode. FLMD1 in not connected to an ImageWriter pin driver must be held in a steady state during programming. It is recommended FLMD1 be tied to ImageWriter GND (pins 1, 2, 11, 12, 17 and 18)

Support Notes:

1. **!! IMPORTANT !!** This algorithm supports Target Boards with a 12.0MHz oscillator input frequency to the 78F0124H by default. If your board does not use a 12.0MHz oscillator, use the p_NEC device object to configure the target system frequency prior to programming or erasing the 78F0124H.

p_NEC Object Memory Map

Byte 0	Byte 1	Byte 2
CLK Value	Startup Delay	CSI Mode

The p_NEC object maps to three bytes in ImageWriter memory. The CLK value is stored as the oscillator frequency in 100KHz units. (Example: The default 12.MHz value is stored as 0x78 in memory). After programming a non-default oscillator frequency, the value will remain resident until a select Manufacturer:Device CIL command is issued (OD manuf:device). A Select Manufactuer:Device command will reset the oscillator frequency to the default, 12.00MHz.

The Default start-up time is 25mS. This can be adjusted if there is difficulty getting the Flash or Erase Algorithm Init Function to pass. Do not set this parameter to 0.

The Default Device Mode is CSI+HS. If the handshake pin is not accessible, you can change this byte from 0x01 to 0x00 to disable handshake and use standard CSI mode. The only valid values for this byte are 0x00(CSI) or 0x01(CSI+HS)

All p_NEC value must be set in memory. You should perform a load operation first, then edit the desired parameters, then perform a program operation to properly set the p_NEC object parameters.

2. Onboard programming is supported via CSI+HS (default) or CSI method.
3. Block limits are not changeable on the Flash array. You must process the entire array for each operation.
4. Data verification does not occur automatically during program. Include a Verify operation in your flow to ensure data integrity (highly recommended).
5. Erase will erase all sectors of the device.

Disclaimer

Typical implementation of **ImageWriter** includes but is not limited to external power provision to **ImageWriter**, device access restrictions on the target board, external hardware on the target board, or software changes created by the user affecting timing, device erasure, programming, or verification. Data I/O warranty coverage applies only when the product is used in conformance with technical specifications put forth by Data I/O and by the semiconductor device manufacturer.

In the interest of achieving the highest levels of safety and quality, Data I/O recommends that all programming processes be tested and documented in a prototype project prior to transition to volume manufacturing. For additional information see In-System Programming Design Guidelines (http://www.dataio.com/isp).

ImageWriter programs semiconductor devices through the use of circuits designed precisely to operate in accordance with specifications outlined by the device manufacturer. Provision and calibration of power supplies are critical for proper operation. **ImageWriter** has been fully tested by Data I/O Corporation for quality performance.