ImageWriter

Microchip PIC16F687 Device Support Detail & Setup

ImageWriter Support Hierarchy

Manufacturer: Microchip

Device: PIC16F687

Objects for PIC16F687

Flow Object Name:	*Program / Execute*	*Verify*	*Load*	*Object Size (Words)*
FLASH	●	●	●	0x800
EEPROM	●	●	●	0x100[1]
USER ID	●	●	●	0x04
CONFIG	●	●	●	0x01
DEVICE ID			●	0x01
ERASE FLASH/CFG	●			
ERASE FLASH/CFG/UID	●			
ERASE EEPROM	●			
p_MCT16F[2]	●		●	0x08

[1] EEPROM Data is LSB byte data stored in 16-bit words. MSB is read as device dependent don't cares (usually 0x3F or 0x00). Verify operations use entire 16-bit word.
[2] Default Clock Speed = 500KHz

Physical LayerConnector Setup for PIC16F687:

ImageWriter:		Target:
Connector Pin #	***Pin Name***	***Connections***
1	GND	GND
2	GND	GND
3	TXD (MOSI/TDO)	See note 1
4	RXD (MISO/TDI)	RA0
5	RTS (TMS)	NOCONN
6	CTS	NOCONN
7	XCLK	RA1
8	RST	NOCONN
9	SCL	NOCONN
10	SDA	NOCONN
11	GND	GND
12	GND	GND
13	VPP/EXT_IN	Supply 10.0 -12.0 V
14	VPP/EXT_OUT	MCLR
15*	Target V+ (7.0V max)	Supply 4.5-5.5 V
16*	Target V+ (7.0V max)	Supply 4.5-5.5 V
17	GND	GND
18	GND	GND
19	ImageWriter Power	Supply 9-24 VDC
20	ImageWriter Power	Supply 9-24 VDC

[1] Pin 3 must be connect to Pin 4 with an external 1K Ohm resistor in series.

*Maximum Pin-Driver output voltage = 4.2V.

Support Notes:

1. Data verification does not occur automatically during program. Include a Flash Verify operation in your flow to ensure data integrity (highly recommended).
2. If reprogramming a previously programmed device, be sure to `Erase FLASH/Config` prior to programming. Note that the Config Word and FLASH array are erased simultaneously. Alternatively, you can use

Erase FLASH/Config/User ID to erase the FLASH, Config Word, and the 4-word User ID.

3. Erase EEPROM is provided, but is not required as EEPROM is erased on a byte-per-byte basis during program.
4. The Device ID is loaded including revision data.
5. The Configuration Word is mapped per Microchip's device spec.
6. This algorithm does not provide access to the Factory Calibration object, nor is it possible to erase or modify its contents in use.

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.