# ImageWriter

## *STM M93CS & M93S Family Device Support Detail & Setup*

**ImageWriter Support Hierarchy**

**Manufacturer:** STMicroelectronics **Library:** MICROWIRE-Serial-Memory.cab

**Device:** M93CS46, M93CS56, M93CS66, M93CS47, M93CS57, M93CS67, M93S46, M93S56, M93S66

## Objects for M93CS & M93S

| Flow Object Name: | *Program / Execute* | *Verify* | *Load* | *Object Size (Bytes)* | |
|---|---|---|---|---|---|
| EE WORD | ● | ● | ● | M93CS46 | 0x80 |
| | | | | M93CS56 | 0x100 |
| | | | | M93CS66 | 0x200 |
| | | | | M93CS47 | 0x80 |
| | | | | M93CS57 | 0x100 |
| | | | | M93CS67 | 0x200 |
| | | | | M93S46 | 0x80 |
| | | | | M93S56 | 0x100 |
| | | | | M93S66 | 0x200 |
| EE PageWrite | ● | ● | ● | M93CS66 | 0x200 |
| | | | | M93CS67 | 0x200 |
| | | | | M93S46 | 0x80 |
| | | | | M93S56 | 0x100 |
| | | | | M93S66 | 0x200 |
| EE WORD WRAL | ● | ● | ● | M93CS46 | 0x80 |
| | | | | M93CS56 | 0x100 |
| | | | | M93CS66 | 0x200 |
| | | | | M93CS47 | 0x80 |
| | | | | M93CS57 | 0x100 |
| | | | | M93CS67 | 0x200 |
| | | | | M93S46 | 0x80 |
| | | | | M93S56 | 0x100 |
| | | | | M93S66 | 0x200 |
| PR | ● | | ● | 0x2[3] | |
| PR Clear | ● | | | 0x0 | |
| PR OTP[2] | ● | | | 0x0 | |
| p_SPI | ● | | ● | 0x8[1] | |

[1] Default SPI clock frequency = 1 MHz

[2] This is a one time program! See manufacture documentation for more details.

[3] This Loads two bytes to include flag, only Programs up to one byte.

## Physical Layer Connector Setup for M93CS & M93S

| ImageWriter: | | Target: |
|---|---|---|
| ***Connector Pin #*** | ***Pin Name*** | ***Connections*** |
| 1 | GND | GND |
| 2 | GND | GND |
| 3 | TXD (MOSI/TDO) | D |
| 4 | RXD (MISO/TDI) | Q |
| 5 | RTS (TMS) | PRE |
| 6 | CTS | NOCONN |
| 7 | XCLK | C |
| 8 | RST | S |
| 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) | 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 |

*Maximum Pin-Driver output voltage = 4.2V.

## Support Notes:

1. Target V+ supply range minimum can vary depending on part. See manufacture documentation for more detail.
2. Write Enable should be wired to Vcc.
3. EE WRAL programs entire device with same Data. Verify for this object will return valid PASS/FAIL indication, but error messages associated with Verify are not accurate.
4. A post-programming EE Verify operation is highly recommended to ensure data integrity.

## 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.