ImageWriter

Infineon XC164CS-32 Device Support Detail & Setup

ImageWriter Support Hierarchy

Manufacturer: Infineon

Device: XC164CS-32

Objects for XC164CS-32

Flow Object Name:	*Program / Execute*	*Verify*	*Load*	*Object Size (Bytes)*
Flash	●	●	●	0x40000
Flash ISC	●	●	●	0x40000
Chip Erase	●			
Sector Erase	●			0x40000
p_XC166	●		●	0x08
p_RS232[1]	●		●	0x08

[1] Default RS232 Baud = 460.8KBaud

Physical Layer Connector Setup for XC164CS-32

ImageWriter:		Target:
Connector Pin #	***Pin Name***	***Connections***
1	GND	GND
2	GND	GND
3	TXD (MOSI/TDO)	RXD0
4	RXD (MISO/TDI)	TXD0
5	RTS (TMS)	NOCONN
6	CTS	NOCONN
7	XCLK	NOCONN
8	RST	!RSTIN
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)	5V
16*	Target V+ (7.0V max)	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.

Support Notes:

1. **!! IMPORTANT !!** This algorithm only supports Target Boards with a 8MHz input frequency to the XC164CS-32. Contact Data I/O if your board does not comply with this requirement.
2. ImageWriter supports 9600, 115.2K, & 460.8KBaud RS232 settings. Other settings are invalid.
3. In addition to the Physical Layer connections shown above, device pin !RD must be @ Logic 0 during ImageWriter operations.
4. Verification of data transmission is automatically performed during Flash Programming.
5. Block limits are locked on the Flash Object, the entire 0x40000 bytes must be programmed.

6. Erase Flash Memory cells contain all '0's, contrary to standard Flash devices. A blank device will load as 0x00's in its entirety.
7. The Flash ISC object specially supports sector programming; however, the start-address and end-address must be set on a device page boundary (128-byte pages). This object is recommended for advanced users only.

8. Sector Erase will erase only one sector at the specified Sector Address passed to the object.

Sector #	Address
0	0x0
1	0x2000
2	0x4000
3	0x6000
4	0x8000
5	0x10000
6	0x20000
7	0x30000

9. This algorithm has a p_XC166 device object that supports special features as described below.

p_XC166 Object Memory Map

Byte 0	Byte 1	Bytes 2-7
Margin Mode	Reset Mode	Reserved

The p_XC166 object maps to 8 bytes in ImageWriter memory.
Byte 0, Margin Mode:
Margin Mode: 0x00 = Low Margin Mode (Verify weak zeros)
Margin Mode: 0x01 = Default Margin Verify (Default Setting)
Margin Mode: 0x02 = High Margin Mode (Verify weak ones)

Byte 1, Reset Mode
Reset Mode: 0x00 = Standard Mode, reset connected (Default)
Reset Mode: non-zero = Skip BSL Mode, reset not connected

The algorithm supports a special setting where the reset pin need not be connected to the XC164CS-32 to operate. In order to use this mode you must follow this procedure:
1. Perform any device operation with the algorithm in Standard Mode (excluding p_ object operations).
2. Select the p_XC166 object, and change the Reset Mode to Skip BSL Mode. Execute a Program operation to store the new setting.
3. You may now continue using Flash or Erase Load, Program, Verify operations.

Note: In Skip BSL mode the device may become unresponsive if a verify error occurs or an ImageWriter operation is cancelled. The only way to recover is to remove power to the target device and revert IW back to "Standard Mode" to reload the Bootlader.

Skip BSL Mode is not recommended for production environments.

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.