ImageWriter

Renesas M301N2F Device Support Detail & Setup

ImageWriter Support Hierarchy

Manufacturer: Renesas

Device: M301N2F

Objects for M301N2F

Flow Object Name:	*Program / Execute*	*Verify*	*Load*	*Object Size (Bytes)*
Data Flash	●	●	●	0x1000
Program ROM	●	●	●	0x10000
Chip Erase	●			
ID Unlock[2]	●			0x07
Status Register[2]		●	●	0x02
Sync[2]	●			
p_NV ID Unlock[2,3]	●			0x07
p_SPI[1]	●		●	0x08

[1] Default SPI Frequency = 2MHz

[2] Operation available on previously "locked" device.

[3] See Support Notes for detailed information

Physical Layer Connector Setup for M301N2F

ImageWriter:		Target:
Connector Pin #	***Pin Name***	***Connections***
1	GND	GND
2	GND	GND
3	TXD (MOSI/TDO)	P15/RxD0
4	RXD (MISO/TDI)	P14/TxD0
5	RTS (TMS)	CNVss
6	CTS	P17/BUSY
7	XCLK	P16/CLK1
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)	Supply 1.5-6.5 VDC
16*	Target V+ (7.0V max)	Supply 1.5-6.5 VDC
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. A post-programming verify operation is highly recommend to ensure data-integrity.

2. In addition to the pin connections outlined above, the following pin configurations **MUST** be set for successful ISP operations:
   Configuration A: P30/SEL -> VSS ***and*** P31/CE -> VCC

3. This device supports an ID Code Check Function, that is built on password data embedded into the data-file. For a typical data-file, data starting at address 0xFFDF in the PROGRAM ROM object contains the start of the password data for the M301N2F8.

If a device has been previously programmed it must be unlocked prior to Erase, Program ROM, or Data Flash operations. Use the ID Unlock object to send the password data at the appropriate starting address in ImageWriter Memory. A successfully loaded password is valid until VCC is removed from the device or see note 4. below for storing the password for future operations.

If a Sync or Status Register operation passes, but the Erase, Program ROM or Data Flash operations fail Init it indicates a password protected device. Password protected devices are unrecoverable unless the password is known.

4. The p_NV ID Unlock object allows for certain applications where the Renesas device cannot be fully processed prior to VCC being disabled and the password taking effect. This object can only be used on devices that have previously had a password programmed into the ID Code Check Function location.

   Use of this object stores the password data (described in note 3) in a non-volatile fashion between object operations, so that additional Program ROM, Data Flash, or Chip-Erase operations have a sequential ID unlock operation during initialization.

   Use of this object will add a small amount of time to other object operations. As with other p_ objects, the NV Password will be reset and disabled if a Device Select command is sent via IW Tools, CIL commands, or Terminal Mode.

5. For M16C/1N devices, following programming of the ID CODE ROM Protect area in the Program ROM object, it may be required to send the password via the p_NV ID UNLOCK device object to continue further operations even if VCC has not been removed. (Renesas BootROM 2.1x)

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.