



**write  
NOW!**

**WRITENOW! SERIES  
SINGLE AND PARALLEL  
IN-SYSTEM PROGRAMMERS**

**Algocraft®**

## PRODUCT INFORMATION

### OVERVIEW

Based on the proprietary WriteNow! Technology, the WriteNow! Series of In-System Programmers are a breakthrough in the Programming industry. The programmers support a large number of devices (microcontrollers, memories and other programmable devices) from various manufacturers and have a compact size for an easy ATE/fixture integration. They work in standalone or connected to a host PC (RS-232, USB, LAN connections are built-in), and are provided with easy-to-use software utilities.

### KEY FEATURES

- Ultra-fast, Universal In-System Programmers
- True parallel, program up to 8 devices at once (up to 32 channels in demultiplexing)
- Industrial-grade reliability
- Standalone operations or host controlled
- Easy to install and to use
- Compact size, fixture friendly

### HARDWARE FEATURES

- Supports microcontrollers, serial memories, parallel memories, CPLDs and other programmable devices
- High-speed, parallel programming
- Compact size (fixture friendly)
- Standalone operations or host controlled
- Designed for easy ATE interfacing (Keysight, Teradyne, TRI, SPEA, SEICA, etc.)
- Supports multiple interfaces (JTAG, SWD, UART, SPI/QSPI, BDM, SWIM, I2C, DAP, cJTAG, C2, ICSP, PDI, UPDI, FINE, MUST/MICE, MON08, ISSP, ICC, MDI, OUT, PSI5, SBW, custom, etc)

### APPLICATIONS

- On-board programming for Automatic Test Equipment
- On-board programming for standalone stations
- Functional test
- Automotive

- Memorizes data on a built-in memory card
- Programmable power supply output (1.5-12,5V)
- Programmable I/O voltage (1.6-5.5V)
- High-speed I/O
- USB, LAN (isolated), RS-232 (isolated) and low-level interface (isolated)
- ISP I/O relay barrier (only available on the single-site model)
- EOS/ESD I/O protection
- Wide range power supply (15-24V)



8 Parallel



High Speed



Universal



Stand-alone



Relay Barrier and Demultiplexer module



Compact Size



IP Security Protection



Vpp for programming entry



USB LAN RS232 ATE



Compliance with safety standards ISO26262/IEC61508



Recognized as a Worldwide Partner for automotive customers.



Easy to integrate



## THE BENEFITS OF WRITENOW! PRODUCTS IN PRODUCTION

### Programming Time: a key factor

The WriteNow! technology has been designed to achieve high-speed programming without sacrificing high quality and flexibility.



### Universal Device support

The entire WriteNow! Product range is compatible.



### WriteNow! Technology

WriteNow! has consolidated its presence in the automotive market - more than 12 years of experience.



### Worldwide Remote Connection

WriteNow! allows production data to be sent over the Internet from a local R&D laboratory directly to any other WriteNow! instrument in the world.



### Standalone Control

Binary codes, board parameters and programming flow reside inside WriteNow! A simple "exec" command string can be sent by an host to start the programming flow.

```
# exec -o prj -f myproject -s hFF
```

### Compact Size

The 8 channel programmer still represents the most compact programming solution – designed to be integrated inside fixtures.



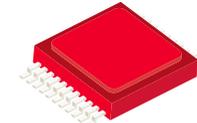
### Protection Mode and Data Encryption

WriteNow! provides a security feature to protect the intellectual property of the embedded firmware code.



### Vpp programming mode

It integrates a programmable port for the generation of the Vpp signal required by the old generation devices or by the ones with a reduced number of pins in order to enter the programming mode.



### Connectivity

Several connection ports to a host PC: ethernet for maximum flexibility, USB for immediate use, RS232 UART for the oldest systems.



### Variable Data Programming

WriteNow! allows to program each device with variable data, such as S/N, MAC address, vendor ID, etc.



### ISO 26262 and IEC61508

WriteNow! programmers have been qualified, by a third party laboratory, as ISP universal programmers compliant with automotive projects that require the safety standard ISO 26262 and IEC61508.



### Best Technical Support

Maintenance of a high standard and identify customer support as a priority. WriteNow! products are supported by a selected worldwide distributive network.



## PARALLELISM, HIGH-SPEED PROGRAMMING



Typically, PCBs are grouped into PCB panels. To program all the devices in a panel, a traditional approach consists on using either multiple programming tools (with added costs and complexity) or a demultiplexing solution (with slower overall programming time). The WriteNow! technology allows the programming of up to 8 devices at once, drastically reducing programming times, costs, and system complexity. In addition, the WriteNow! technology performances allow to reach the theoretical programming speed for any given device, thus shortening as much as possible the programming phase of the production process

## UNIVERSAL DEVICE SUPPORT

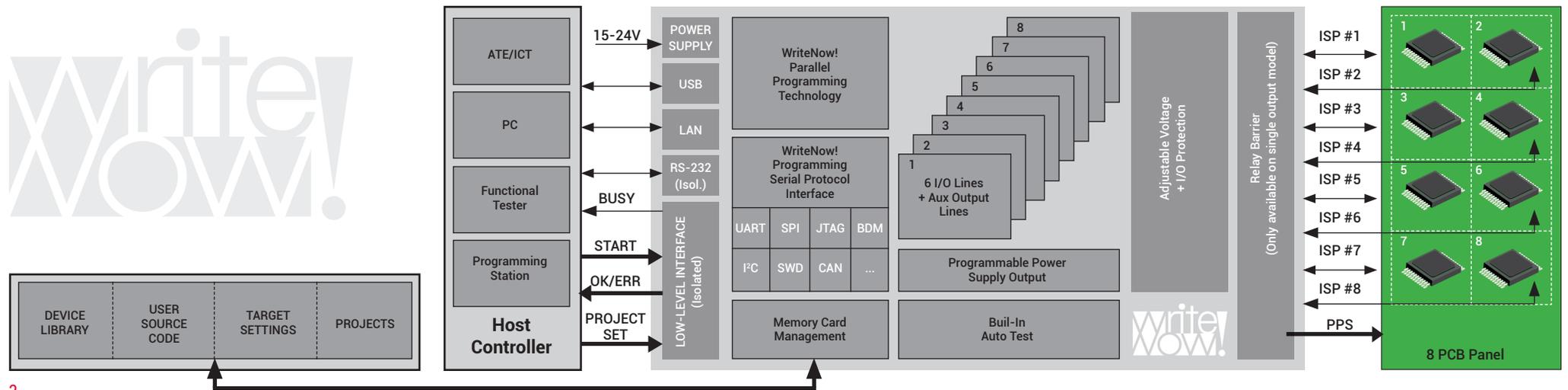
The WriteNow! technology is based on a universal full configurable platform (based on FPGA). New and custom programming protocols can be supported through a software update of the programmer. The I/O digital front end was designed to even support those devices where a high voltage (Vpp) is required, typically at 12V.

Adopting into production a unique Universal programming tool supporting various devices and manufacturers means:

- Only one system to learn;
- Less spare parts;
- Only one company to interface with;
- Engineering time and costs saved;
- More time to dedicate to the quality of the programming/testing flow.



## BLOCK DIAGRAM



## FAMILY/SILICON SUPPORT



TC2X/TC3X Tricore [JTAG/DAP]  
 TLE98XX [SWD]  
 XC166 MCUs [JTAG/UART]  
 XC866 MCUs [JTAG]  
 XC2000 MCUs [JTAG/UART]  
 XE166 MCUs [JTAG/UART]  
 XDPL ICs [I2C]  
 XMC1000 Cortex [SWD]



PSoC M8C [ISSP]  
 PSoC Cortex [SWD]  
 CY95 MCUs [UART]  
 CY96 MCUs [UART]  
 S6J3X Traveo [JTAG]  
 Serial Memories [SPI]  
 Parallel Memories [Bus]



PIC16 & PIC18 MCUs [ICSP]  
 AVR MCUs [SPI]  
 PIC24 & dsPIC MCUs [ICSP]  
 PIC32 MCUs [JTAG]  
 ATSAM Cortex [SWD]  
 ATXMEGA [PDI]  
 Serial Memories [SPI, I2C, uWire]



78K MCUs [UART, SIO]  
 V850 MCUs [UART, SIO]  
 H8 / H8SX MCUs [UART]  
 R8C MCUs [UART]  
 R32C/M16/M32C MCUs [SyncClock]  
 Super H MCUs [UART]  
 RH850 MCUs [UART]  
 RL78 MCUs [UART]  
 Synergy/RA Cortex [UART]



HC08 MCUs [UART]  
 S08 MCUs [BDM]  
 S12/S12X/S12Z MCUs [BDM]  
 MCF51 ColdFire [BDM]  
 MC56800/MWCT MCUs [JTAG]  
 MK Kinetis Cortex [SWD]  
 MPC55, MPC56, MPC57 [JTAG]  
 LPC ARM [SWD, JTAG]



C8051 MCUs [JTAG, C2]  
 EFM32/EFR32 Gecko [SWD]  
 EFM8 MCUs [C2]  
 EMB35X MCUs [SWD]  
 Si4010 MCUs [C2]  
 Z-Wave 300/500 Series [SPI]



CC25XX MCUs [SDI]  
 CC26XX Traveo [JTAG, cJTAG]  
 LM3SX Stellaris [SWD]  
 MSP430F DSPs [JTAG, SBW]  
 TMS320 MCUs [UART]  
 TMS570 Cortex R5 [JTAG]



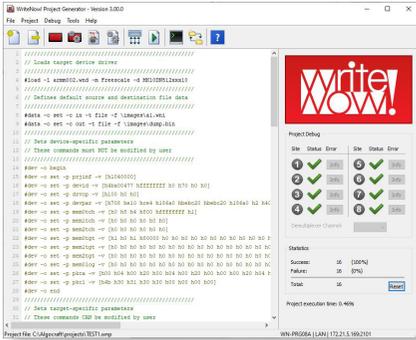
ST7 MCUs [ICC]  
 STM8 MCUs [SWIM]  
 STM32 Cortex MCUs [SWD]  
 STCOM/Blue-ENG, eCOM [SWD]  
 SPC56/SPC58 MCUs [JTAG]  
 UPD32X 8051 [JTAG]  
 Serial Memories [SPI, I2C, uWire]

NEW DEVICES ARE CONSTANTLY ADDED TO THE DEVICE LIST



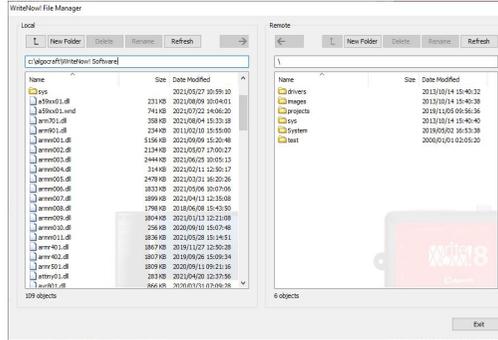
## POWERFUL AND EASY-TO-USE SOFTWARE UTILITIES

The WriteNow! Series of In-System Programmers can be controlled by a host PC through simple ASCII strings, through a standard terminal interface. On top of that, a powerful user interface is provided which allows to setup and control the instruments through easy graphical procedures. The WriteNow! Project Generator guides you through the creation and debugging of a programming Project in a few guided steps: device selection, source file creation, board parameter settings, programming flow options, upload and run of the Project.



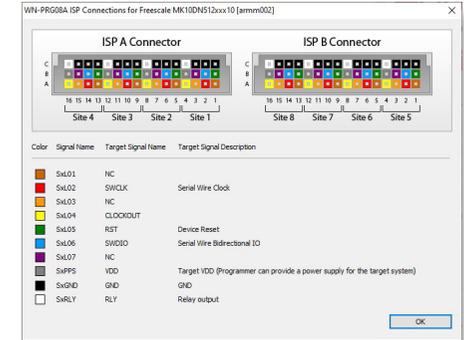
### Project Generator

Create and debug a programming Project in few steps.



### File Manager

Allows you to see the file structure and transfer files with the PC.



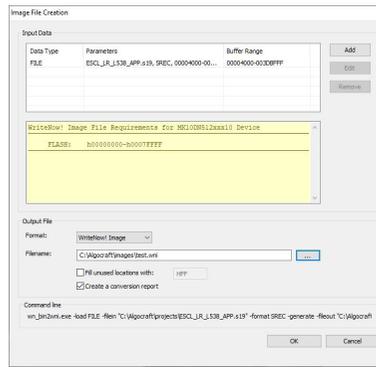
### ISP Signal Connections

Simplifies target wiring.



### Command Line & DLL Library

Simplifies the design of your own PC software that interfaces to the WriteNow! It can be controlled through simple ASCII strings through a standard terminal interface.



### File Merge

Combines different programming data sources (boot, application, variable data, etc.) in a single output file.



### Version Backup/Restore

Instrument firmware and programming data can be backed up and restored on any instrument, at any time. Easy to duplicate production line.

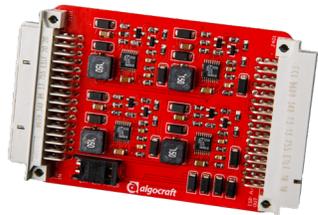
## ACCESSORIES

Algocraft supplies a series of accessories that have been designed to ease the integration to customers as well as saving on engineering time and costs.



### Relay Barrier Modules

The single-site WriteNow! model (WN-PRG01A) is provided with a relay barrier on the ISP connections



### WN-ADP-PSI5A

WriteNow! Adapter for PSI5 interface

| Model     | Nmb. Boards (in parallel) | Nmb. Boards (indemultiplexing) |
|-----------|---------------------------|--------------------------------|
| WN-PRG02A | 2                         | 8                              |
| WN-PRG04A | 4                         | 16                             |
| WN-PRG08A | 8                         | 32                             |



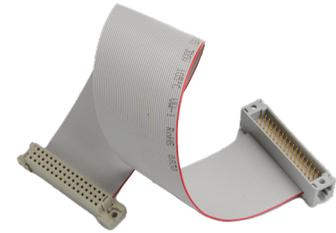
### Demultiplexer Modules

The demultiplexer module is designed to increase the number of ISP lines. A stack up to 4 boards could be mounted to each ISP connector. The Reed relay technology ensures true galvanic isolation



### WN-ADP-XDPLA

WriteNow! Adapter for voltage profile interface for Infineon XDPL devices



### WN-RC30FMA

Ribbon cable, 30 cm, DIN41612 connector 48W female/male



### 122A10619X

DIN41612 wire-wrap connector



### WN-ADP-DBIA

WriteNow! Adapter for Elmos E522.49 differential bus adapter (CAN driver)



#### Package Contents

- WriteNow! unit
- 15V power supply
- RS232/USB/LAN cables
- WriteNow! test board
- 48-way, female wire-wrap connector

#### Our local distributor

| Model                                  | WN-PRG01A   | WN-PRG02A   | WN-PRG04A   | WN-PRG08A   |
|--|---|---|---|---|
| <b>General Features</b>                |   |   |   |   |
| Programming Sites                      | 1   | 2   | 4   | 8   |
| Power Supply                           | 15-24V  |   |   |   |
| Dimensions – with enclosure            | 143 x 90 x 29 mm  | 153 x 110 x 29 mm   |   |   |
| without enclosure                      | 143 x 90 x 17 mm  | 153 x 110 x 16 mm   |   |   |
| Device Type Support                    | Microcontrollers, CPLDs, Serial Memories, Programmable ICs  |   |   |   |
| Programming Protocols                  | JTAG, SWD, UART, SPI/QSPI, BDM, SWIM, I2C, DAP, cJTAG, C2, ICSP, PDI, UPDI, FINE, MUST/MICE, MON08, ISSP, ICC, MDI, OUT, PSI5, SBW, custom, etc |   |   |   |
| Relay Barrier                          | YES   | NO  | NO  | NO  |
| <b>ISP Lines</b>                       |   |   |   |   |
| Adjustable Voltage Range               | 1.6 - 5.5 V   |   |   |   |
| Adjustable Voltage Resolution          | 100 mV  |   |   |   |
| Bidirectional Lines                    | 6   | 12  | 24  | 48  |
| Output Line                            | 1   | 2   | 4   | 8   |
| <b>Programmable Power Supply (PPS)</b> |   |   |   |   |
| Range                                  | 1.6 - 5.5 V   |   |   |   |
| Resolution                             | 100mV   |   |   |   |
| Channels                               | 1   | 2   | 4   | 8   |
| <b>Host Interface</b>                  |   |   |   |   |
| RS-232 (Isolated)                      | Yes   |   |   |   |
| LAN (Isolated)                         | Yes, 100Mbit/s  |   |   |   |
| USB                                    | Yes, Full Speed   |   |   |   |
| Low-Level Interface (Isolated)         | START, OK/ERR, BUSY, PRJ_SEL[0..5]  | START, START_ENA[1..2], OK/ERR[1..2], BUSY, PRJ_SEL[0..5] | START, START_ENA[1..4], OK/ERR[1..4], BUSY, PRJ_SEL[0..5] | START, START_ENA[1..8], OK/ERR[1..8], BUSY, PRJ_SEL[0..5] |
| <b>Accessories</b>                     |   |   |   |   |
| Relay Barrier Module                   | Included  | WN-REB02A   | WN-REB04A   | WN-REB08A   |
| Demultiplexer Module                   | N/A   | WN-DM2X2A (4ch)<br>WN-DM2X3A (6ch)<br>WN-DM2X4A (8ch)     | WN-DM4X2A (8ch)<br>WN-DM4X3A (12ch)<br>WN-DM4X4A (16ch)   | WN-DM8X2A (16ch)<br>WN-DM8X3A (24ch)<br>WN-DM8X4A (32ch)  |
| External Adapter                       | N/A   | YES   | YES   | YES   |

All information is subject to change without notice



SOLUTIONS FOR THE PROGRAMMING INDUSTRY

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