

ProMik XDM-ETH

High-Speed Ethernet Download Module

XDM

SERIES 



Overview

High-Speed flash programming unit supporting the latest Automotive Ethernet standards. Applicable for all use cases of on-board programming and testing in electronic series production. The most powerful End-of-Line programming tool in combination with ProMik Bootloader technology in terms of flash programming speed, Cyber Security capabilities and testing functionality. Achieves lowest production costs for demanding applications that include high density MCU, NAND and NOR memories. Typical areas of application are car multimedia, infotainment instrument clusters.

Software Support

- Combination with ProMikBootloader technology
- Generic DLL to access full ethernet protocol stack
- pOnline_Proflash device drivers
- Custom script execution (python, bash, ...)
- FTP(s) / HTTP(s) server support

Key Features

- Integrated operating system for efficient file handling
- Xilinx Zynq UltraScale+ SoC running Linux 5.10 operating system
- 4 independent Ethernet channels
 - Up to 100 Mbyte/sec per channel
- Target interface supporting 100/1000BASE-T1
 - Future standards on request
- Compliant to IEEE 802.3bw and IEEE802.3bp
- Support of Automotive Ethernet ECU test following Open Alliance TC8
- Supporting Restbus simulation
- On-Board SATA3 SSD for high-speed data storage
 - Up to 2TB storage
 - Up to 600MB/s memory read access
- Power supply connector for real-time coupling and synchronization with PSU2048
- Host Ethernet uplink 10/100/1000 MBit/s (auto sensing speed and full/half duplex mode, auto cross over capability)
- Prepared for SMART ICT test functions
- ProMik 19" Rack compatibility

Layer 5 - 7	SOME/IP	DoIP	XCP
Layer 4	TCP/UDP		
Layer 3	IPv4/IPv6		
Layer 2	MAC		
Layer 1	100/1000BASE-T1		

Electrical Data

- Power supply: 15 V DC (±5%)
- Current consumption: typ. 450 mA
- Temperature range: 0-50 °C

Mechanical Dimensions

The following data applies to the XDM-ETH-R with front panel including the CPU module but without enclosure:

- Size: 160 x 100 x 35mm
- Weight: 210g

The XDM-ETH is a standard 7BU unit for a 19" ProMik rack.

➤ Reach out to us at promik@gsamspl.com

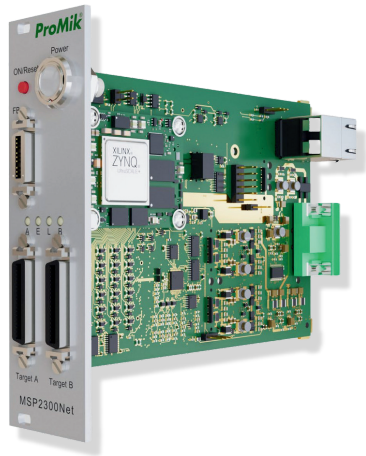
ProMik

MSP2300NET

MSP

F A M I L Y

Multi Standard In-System Programmer



Key Features

- Integrated operating system for efficient file handling
- Xilinx Zynq UltraScale+ SoC running Linux 5.10 operating system
- Multi Standard Programmer with 24 configurable I/Os supporting mixed high-speed target interfaces with individual ground return lines for each signal
 - Automotive Bus Interfaces: 4x CAN FD, 2x Ethernet
 - 100/1000BASE-T1, 2x FlexRay, 2x LIN
 - USB3 high-speed host for data download to target
- Advanced communication concepts enable physical flash speed programming
- Software controlled high current Target Power Supply (TPS):
 - 4 channels High Range Target Power Supply
 - 4 channels Low Range Target Power Supply
- Voltage and current measurement functionality
 - 8 channels for voltage monitoring and Brownout Detection
 - Current measurement capability for high range TPS
- Host Ethernet uplink 10/100/1000 Mbit/s (auto sensing speed and full/half duplex mode, auto cross over capability)
- ProMik19" Rack compatibility

Typical Data

Protocol	Speed	Target	Cable length
JTAG	50 MHz	up to 4	1.5m
SPI	50 MHz	up to 6	1.5m
SWD	30 MHz	up to 6	1.5m
CAN FD	8 Mbit/s	up to 4	10m
1000BASE-T1	1000 Mbit/s	up to 2	10m

Overview

The MSP2300NET is a high-speed flash programming device supporting all common and proprietary communication interfaces. Applicable for any use case of on-board programming and testing in electronic series production. Achieves lowest programming times by reaching the physical flash speed of the target device and therefore reduces production costs for demanding applications that include high density MCUs, NAND and NOR memories, Car Multi-Media, Infotainment Instrument Clusters, Battery Management, Driver Information Platforms, Navigation Systems, Key applications, IoT applications and many more. The most powerful system for parallel programming and testing of multiple targets in the market.

Electrical Data

Target Channel Power Supply - High-Range

Configurable Overcurrent Detection for the High Range Target
 Power supply channels: The current is first limited, then turned off after 1-2s, until the hardware reaches the normal temperature range, then turned on again, cycling on/off if the short circuit persists.

Voltage Range:	2.7 <U <14.0V
Permanent Current Limits:	500mA <I <1.5A
Inrush Current Limits:	500mA <I <3.5A
Inrush Current Time Limit:	7ms <t <500ms
Short-circuit Output Current:	Equals Inrush Current Limit
Reverse Protection:	max. 71V

Target Channel Power Supply - Low-Range

Voltage Range:	1.5 <U <5.5V
Currentlimit:	I _{max} = 300mA

Target Programming Lines

Voltage Range:	1.5 <U <5.5V
Currentlimit:	I _{max} = 25mA
Switchable pull-up resistors	2,2kΩ
Protection	max. 40V

Voltage Measurement and Monitoring

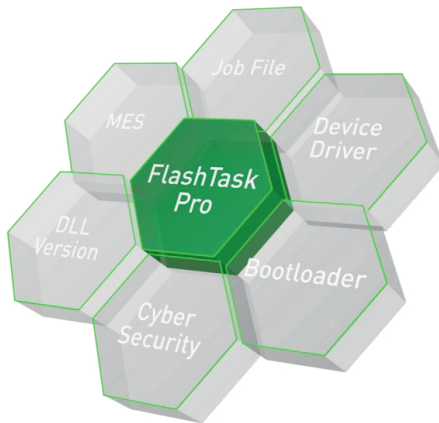
Voltage Range:	0 <U <5.5V
Measurement Accuracy:	± 10mV
Protection limits:	U _{max} ± 40V

Current Measurement

Current Range:	0 <I <3.5A
Measurement Accuracy:	± 1mA

ProMik FlashTaskPro

A Modular Concept

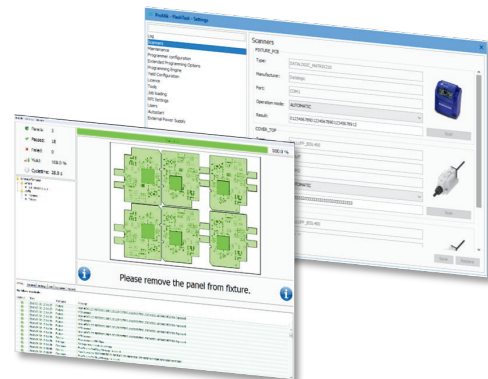


Overview

FlashTaskPro is ProMik's all-in-one production software for managing the complete flash and test process through a single, intuitive interface. It eliminates the need for separate software tools, making it easy for engineers to set up secure and efficient flash stations. Built-in cybersecurity features include password protection, encrypted job files, and traceability logs for audit trails. Administrator and operator modes allow controlled job setup and execution. FlashTaskPro integrates with MES systems like iTAC, camLine, and OpCon to manage job status (e.g., validation, approval, on-hold) and ensure process repeatability. Its modular design supports Industry 4.0 requirements with enhanced traceability, diagnostics, and seamless MES communication.

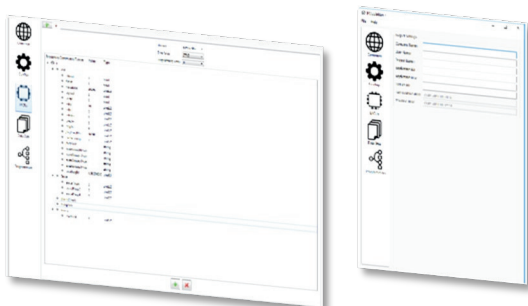
Key Features

- Covering all requirements of modern electronics production
- Process control via Job File
- Operator friendly user interface
- Remote Control Interface for Inline Handling-Systems
- Manufacturing Execution System Interface
- Enhanced traceability and diagnostics
- Cyber Security implementations on device and system level



FT JobEditor

- Intuitive set-up of flash and test jobs
- Menu-guided setup for all task relevant options
- Pull-down menus to set customer specific MCU, task, serial number and traceability options
- Advanced dynamic data programming features (serial numbers, Cyber Security Keys, etc.)
- Merge multiple files into one programming file
- Handles any combination of file formats (S-Record, Intel HEX, Binary)

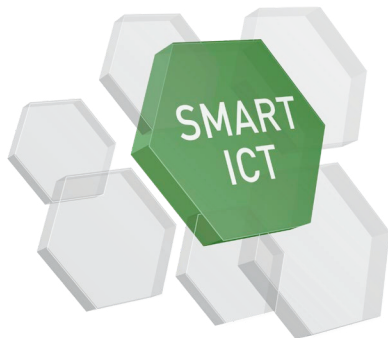


FT Engine

- Executes validated job files created by the FTJobEditor
- Optimized for production use, parallel programming of multiple targets
- Clear text error messaging for quick trouble shooting
- Continuous voltage monitoring during programming process
- Configurable watchdog trigger functions for your target application, e.g.: Square wave, Low / high signal, System Basis Chip control via SPI protocol
- Supports device specific options
- Robust device drivers including high performance algorithms for a reliable flash process

ProMik SMART ICT

Merging Testing & Flashing based on Bootloader Technology



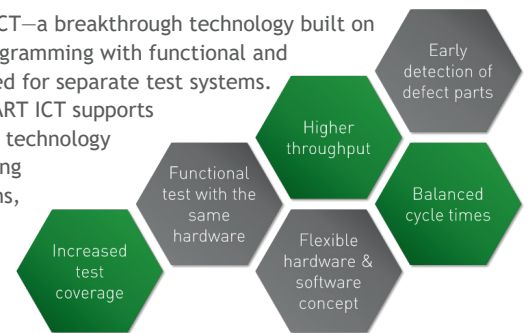
When conventional testing methods reach their limits

SMART ICT represents the latest technology in embedded testing based on ProMik bootloader know-how and offers, in addition to Flash programming, multiple testing capabilities based on standardized hardware and software components. SMART ICT is an inside-out approach to In-Circuit Testing. A SMART ICT bootloader running on the main MCU of the target PCB can test if components and modules are correctly placed and functioning, without the need for physical connection via test pads.

- High-Speed parallel testing
- despite limited access to test pads
- Flexible solution with highest usability

Overview

ProMik, a leading expert in programming and testing of electronic assemblies, introduces SMART ICT—a breakthrough technology built on its proven flash programming bootloader. SMART ICT enables the seamless integration of flash programming with functional and boundary scan testing at the panel level, significantly reducing cycle time and eliminating the need for separate test systems. By using the microcontroller’s own functional units via its debug and programming interfaces, SMART ICT supports high-efficiency testing—even for highly miniaturized electronics with limited test pad access. This technology addresses modern manufacturing challenges such as fewer test points and complex circuits, offering a cost-effective and scalable solution. Reusable, configurable test libraries, parallelized operations, and flexible control further enhance process efficiency. With SMART ICT, ProMik empowers manufacturers to implement faster, smarter, and more integrated flash and test concepts directly within the production environment.



Test of CAN FD Communication

Test Description

The above use case example illustrates how the correct functionality of the CAN-FD communication of a module can be tested quickly and reliably using SMART ICT.

In the first step, the SMART-ICT software is downloaded to the module via JTAG and executed there. This causes the microcontroller to send CAN-FD frames via the corresponding communication lines and transceivers. The frames are read in by the ProMik programming device via its fieldbus interface and checked for correctness.

This test, which can be carried out very quickly, can be used to determine whether the CAN-FD interface and thus all the components on the module that are involved in the communication are functioning correctly before the actual flash programming. After the functionality has been tested, the actual software can now be programmed in a second step.

This example shows how faults can be detected at an early stage using SMART-ICT, thus saving valuable time. In addition, it can be avoided that faults are possibly only detected at the end-of-line where further value-adding process steps have already taken place. In this way, the costs of late defect detection using SMART-ICT can be avoided.

