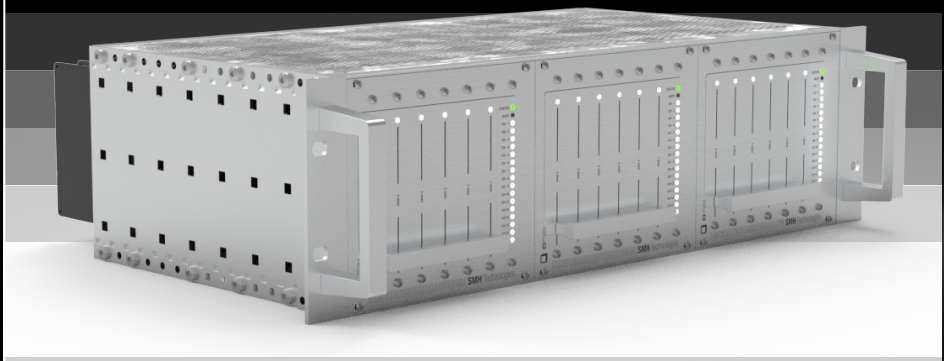
SMH Technologies

DMAX



THE LARGEST SOLUTION
MASS-PRODUCTION ENVIRONMENT

A NEW FRIENDLY INTERACTIVE GUI (GRAPHIC USER INTERFACE)

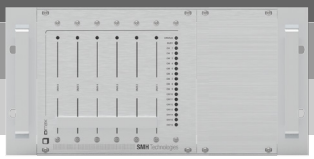
The new GUI interface cuts off overall configuration efforts, guiding the customer in creating a working project in few mouse clicks and detecting mismatches between the target device and customer's firmware, as well as power supply setup.

HARDWARE FEATURES

➜ Supports most ISP/PP protocols (BDM, JTAG, DAP, CSI, SPI, QUAD-SPI, I2C, UART, MC2W, ISSP, SWD, ICSP, EICSP, MDI, PPM, PDI, SWIM, PARALLEL NOR, PARALLEL NAND, eMMC and many others);
➜ Communication frequency towards device up to 25MHz with proper connections;
➜ Cutting-edge digital line driver to improve ISP performances;
➜ Power conversion section to supply targets and boards and to provide programmable voltages to the lines;
➜ Continuous monitoring of all the output voltage supply lines;
➜ Relays on the Demultiplexer boards are guaranteed from the manufacturer for a minimum of 50 million operations;
➜ Independent power supply for each FlashRunner D-MAX unit;
➜ Magnetically separated LAN communication interface;
➜ Optoisolated USB communication interface;
➜ Independent GND lines between system units;
➜ Intel SOC FPGA with 800MHz dual-core ARM;
➜ Cortex-A9 hard processor system (HPS) with support for symmetric and asymmetric multiprocessing;
➜ 1 GB on-board RAM DDR3 memory;
➜ Up to 256 GB Micro SD Card;
➜ On-board timekeeper and calendar for timestamped log file.

D-MAX AVAILABLE CONFIGURATIONS:

Master Boards	Demux Boards	ISP channels
1	1	16
	2	32
	3	48
	4	64
	5	80
	6	96



Master Boards	Demux Boards	ISP channels
2	2	32
	4	64
	6	96
	8	128
	10	160
	12	192

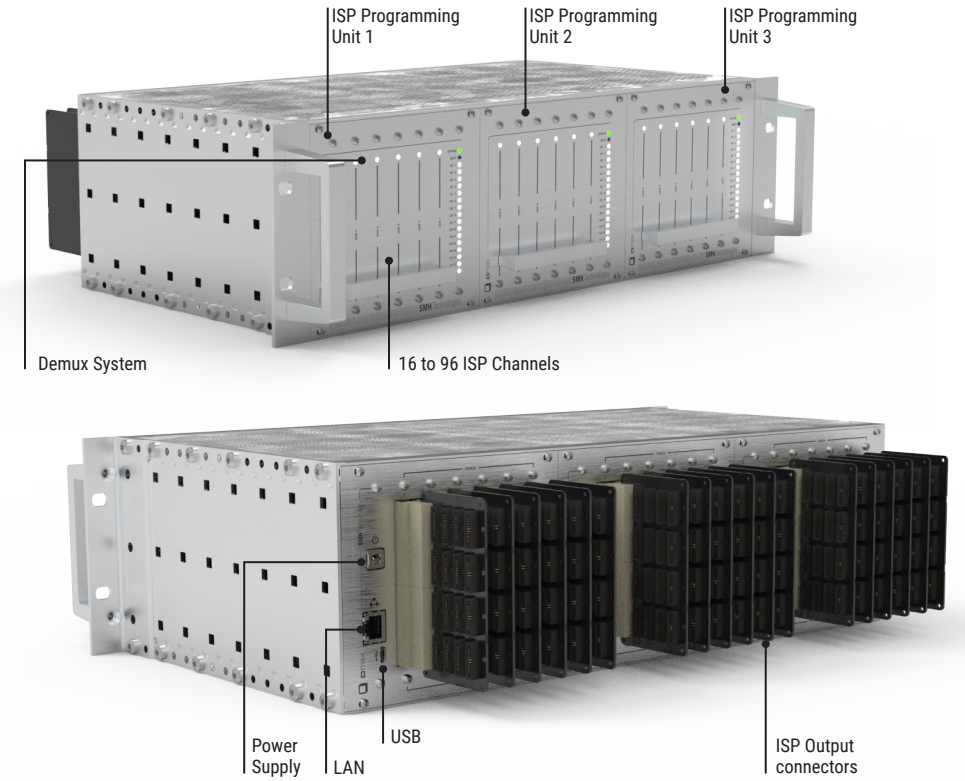
Master Boards	Demux Boards	ISP channels
3	3	48
	6	96
	9	144
	12	192
	15	240
	18	288

OVERVIEW

FlashRunner 2.0 technology is the most advanced in the In-System Programming industry. SMH Technologies, taking advantage of its decennial experience in this field, developed a brand-new programming system which allows to face the challenges of mass-production demand.

WHY FLASHRUNNER D-MAX

FlashRunner 2.0 D-MAX is the **largest industrial 19" Rack-mount Programming System**, featuring up to **288 demultiplexed ISP Channels** with a **parallelism of 48 ISP Channels** in a single system. **FlashRunner 2.0 D-MAX** combines FlashRunner's typical high programming performances and extreme flexibility, to obtain the largest programming solution, reaching up to 288 target devices. The system can be set with maximum scalability, employing up to three independent FR2.0-16CH drivers. Each driver can manage up to 6 demultiplexer boards, reaching 96 target devices per Unit.

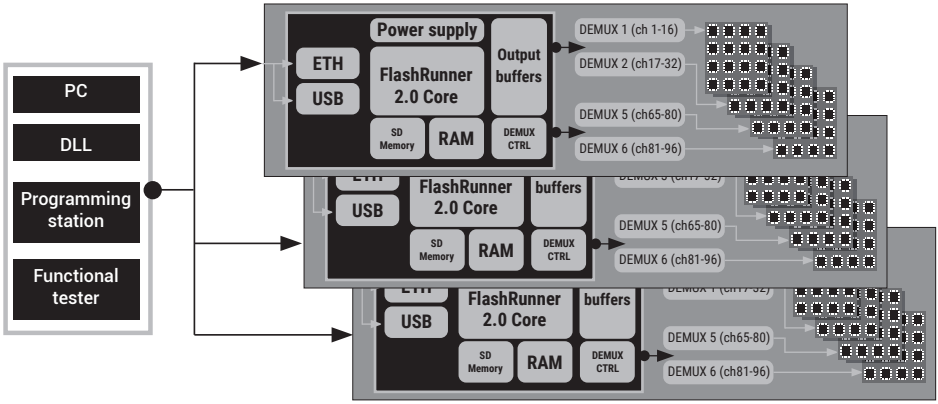


FLASHRUNNER D-MAX MAIN FEATURES

INTEGRATION | HIGH SPEED | INDUSTRIAL STRENGTH | UNIVERSAL

➔ **Mass-production Oriented**: where several target devices need to be programmed with low programming times;
➔ **Highly Scalable System**: from 16 to 96 demultiplexed target devices with a single Programming Unit and from 16 to 288 demultiplexed ISP channels with the complete Rack System;
➔ **Easy Hardware integration**: in pre-programming machines, where several devices are just programmed before being soldered on the board;
➔ **Easy Software integration**: driven by DLLs available for the most common production environments;
➔ **User-friendly GUI**: many new features are available in the latest version of FlashRunner's Workbench;
➔ **Software examples**: sample code and technical documentation is available online and in the Workbench Installation Directory.

TYPICAL APPLICATION



Programming sites	From 16 to 48 parallel and independent ISP channels per Rack System Up to 288 demultiplexed ISP channels per Rack System.
Supported Protocols	BDM, JTAG, DAP, CSI, SPI, QUAD-SPI, I2C, UART, MC2W, ISSP, SWD, ICSP, EICSP, MDI, PPM, PDI, SWIM, PARALLEL NOR, NAND, eMMC, and many others.
Communication frequency	Up to 25MHz with proper cables.
Digital Lines	8 Digital communication lines for each ISP Channel + 2 VPROG lines + 2 GND
Host Interface	Ethernet LAN 1Gbps preferred, micro-USB available.
Dimensions	19" Rack 3U standard - 482mm(L) x 260mm(W) x 133mm(H) Single full programming-unit SUBRACK definition: 3HE x 28TE Interface Board: 15,4mm(L) x 55mm(W) x 100mm(H)

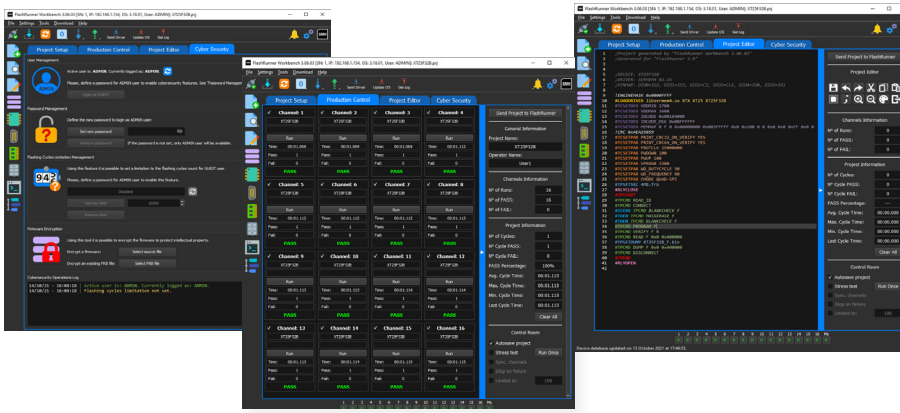
Power Supply	15V DC 6A (90W) Power Jack, center-pin: Ø2.5mm
DIO Shuffling	Dynamic pinout management
ISP Full output Connector	220 position, 5 rows x 44 col + shield, HARDMETRIC TE 5352152 128 DIO, 32 VPROG, 60 GND
ISP Interface board	HEADER 1.27 for Twisted-pair FlashRunner Special Cables 16 Headers: 8DIO, 2 VPROG, 10 GND each.
Dynamic Memory 1 GB RAM DDR3 memory	Static Memory Up to 256 GB micro SD-CARD memory
Voltage monitor	Configurable continuous monitoring for both VProg lines of all ISP channels during programming operations.
Logging	On-board timekeeper and calendar for time-stamped log files.
LED	Status LED for each programming channel and each demultiplexer unit.

SOFTWARE FEATURES

Our friendly and interactive Workbench reduces overall configuration efforts by guiding the user to create a working project in few steps. Each ISP channel can be managed independently and the project can be executed on each Demultiplexer board sequentially or just on the selected ones by setting a specific MASK command in the project Script. Specific commands have been implemented to give the user the possibility to easily manage the entire system. A notification system has been implemented to inform that new software updates are available.

Post-programming Test:
➔ UART/JTAG/I2C/SPI/Signal Generator free drivers allow testing device functionalities if required
Watchdog feed:
➔ square wave generator with trimmable frequency, to feed on-board watchdogs
Cyber Security:
➔ firmware encryption and secure data transfer, User level access
DLL:
➔ easy integration in C, C++, and C# with all the production software facilities

Voltage Monitor:
➔ overvoltages and under voltages detection during the flashing process on VPROG lines
Serial Numbering:
➔ dynamic data flashing, runtime user-defined
Digital lines shuffling:
➔ dynamic pinout management
Conditional erase:
➔ decrease cycle time by adding this option to erase only if a device is not blank
Online driver knowledgebase:
➔ full online Wiki daily updated, online video lectures, troubleshooting articles



CONTROL

- Control Report
- FRB Conversion Report
- Voltage Monitor
- Production batch counter
- Programming cycle time
- Easy wire-wrapping with pinout manager
- DIO shuffling
- Log file Production

COMMAND

- Graphical User Interface
- File transfer Management
- One-click driver updates
- Windows and Linux compatible
- GUI software Interface
- DLL interface libraries for C/C++/C#/Labview/Teststand
- Command line tools

SECURITY

- Encrypted FRB files to avoid binary hacking
- Dump and Compare features of all channels
- User Permission Management
- NDA device management
- FRB integrity check through CRC calculation

TECHNICAL SUPPORT

Purchasing a product is only part of solving your programming needs. We know that you must rely on professional help, should the need arise. FlashRunner is sold and supported by a worldwide network of Technological Partners and Distributors, as well as several SMH operational offices located in America, Far East and Europe. FlashRunner is equipped with a three-year warranty and is backed up by knowledgeable and fast technical support. Additionally, our engineers are available for custom designs and validation reports, to help you start up your projects and providing you with accurate programming flow certifications.

DEVICE SUPPORT

Our supported device list is updated daily and counts more than 10.000+ items.
However, if you still can't find the device you are looking for we offer you a development service, which meets your needs. Every request will be handled in order to meet your production deadlines in time.

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