

In-System (ISP) Gang Programmer SuperPro IS416



Superpro IS416 is a universal ISP Gang programmer which supports devices with almost all serial protocols. Programs up to 16 serial devices simultaneously. Up to 4 parallel devices like eMMC, NAND, NOR FLASH can be programmed in system simultaneously. USB2.0 or network remote and stand-alone operation modes. DLL/API/Command-Line Commands available under license for integration with ICT, FCT, ATE and testing fixture.

Application

- Most suitable for PCB panel programming
- ATE, FCT, ICT, Test Fixture integration
- Core of ISP station
- General ISP gang programming for volume production
- Tool used for firmware in-system update
- Field service and repairing tool for electronic equipment such as automotive and air conditioners.

Multiple Ways to Control SuperPro IS416



Ultra Fast Programming Speed SuperPro IS416 is designed with high programming speed in mind. Our semiconductor manufacturer approved algorithms, precision and clean signals guarantee high programming yield. Special design was made to eliminate overshoot and ground bounce. Algorithms are performed with state machine architecture constructed with FPGA to achieve a ultra-high programming speed.

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Up to 16 PCB Gang Programming SuperPro IS416 supports almost all serial devices including MCUs, serial FLASH/EEPROMs and most parallel memory devices such as eMMC and NAND/NOR FLASH. It is a 96-pin driver programmer with 16 channels (6 I/O x 16 channels). SuperPro IS416 supports most ISP devices to [program 16 channels simultaneously](#). Four parallel high pin count chips, such as NAND/eMMC, can be programmed at the same time



Expansion Up to [12 programmers can be connected to a single PC](#) for programming multiple PCBs or all the programmers can be used in stand-alone mode.



Mass Production Mode SuperPro IS416 has a working mode called "[mass production](#)", that is, once the programmer detects that the target board is ready and receives an ISP signal, it immediately starts the functional operation defined by AUTO without keyboard operation. TPIN and TPOUT in the ISP port are provided for this purpose. TPOUT supplies high level, and TPIN is the level detection input line. If these points are short-circuited on the target board, once ISP signal is applied to the test point, TPIN immediately detects high level, and AUTO command sequence can be started.



Longer Cable Length - Supported with Adjustable Speed For industrial applications, numerous problems arise if in-system programming (ISP) is done with a parallel programmer via an [ISP header](#). Parallel programmers restrict the target board to be programmed at a particular distance (usually less than a couple of inches). SuperPro IS416 is a serial programmer with an ISP cable that can program a target board up to 3 feet (1M) in distance. Beside the cable line drive ability for long distance applications, the advanced in-system driver allows operating speed to be adjusted for execution timing purposes. VDD (0-5.5V /0.5A) and Vpp (0-15V / 0.2A) lines

provided to power the target board and the target devices.



Technical Support Xeltek is proud to offer same day support for technical and sales inquiries. We are available to help customers and representatives resolve issues or help with their requests in an effective way. This service is provided by our highly qualified new support team that will provide the best of their knowledge to bring prompt sales and technical support.



Advanced Software Features

SuperPro IS416 comes with a powerful and easy to use programming software. The biggest advantage is its simplicity so that any operator can operate the programmer with little or no training. SuperPro IS416 software is supported on Windows Vista, 7, 8, and 10 32/64Bits.



Project Files The project file stores preparations before programming. Users could also restore and save work environment. The project file includes device type, buffer data, operation option settings, configuration bit settings and batch commands. Project files may be password protected to increase security and reliability when operated by untrained operators.



Project Group: Operate Multiple Project Files in Batch Mode Multiple chips could be programmed simultaneously using the [Project Group feature on the SuperPro IS416 software](#). Project Group organizes batch running of multiple projects and is available on all SuperPro ISP models. Other ISP programmers require a demultiplexer for programming two chips using a single ISP programmer and this solution is not suitable for volume production because it takes longer to program chips, causes noise interference, and incurs additional hardware and labor cost.



Super Scale Project Group Complicated PCBA or multiple combined PCBAs may need multiple programmers to work properly. The Super Scale Project Group is responsible for the workflow across multiple programmers.



Auto Function The Auto function organizes different functions into a sequential group (erase, blank check, program, verify and protect). Functions are executed in sequential order similar to a batch command.



Production Statistics A log file could be used to save operation information before exiting the program. Log files can also be used to facilitate quality tracking.



Factory Mode This mode is designed for factory volume production. To prevent operation errors from destroying chips and wrong data written to the chip, SuperPro will operate in the Auto function mode. The administrator can set a password to prevent unauthorized access to the system.



XPlayer SuperPro IS416 supports JAM, SVF and Staple files from ACTEL, Xilinx and ALTERA. SuperPro IS416 also supports Direct C files from ACTEL. STP or JAM files can be generated using design tools such as ISE and Quartus II.



Auto Recognition of File Types We support almost all kinds of known file formats including file formats with automatic recognition functions: Binary, Intel (linear & segmented) Hex, Motorola S, Tektronix (linear & segmented), JEDEC, POF, etc.



Auto Increment of Serial Numbers Auto-generation of electronic serial numbers is available on Superpro IS416. This feature is implemented by [setting Auto Increment in Operation](#) Option. Auto Increment allows users to add unique serial number into the device. After each successful programming, the software automatically changes the value by the specified increment mode. **Barcode Management** is also available to fulfill all setup tasks by scanning barcode on the job sheet.



Copyright Protection with SD encryption, project file encryption and access control, volume control and remote control.

Hardware & electrical Specifications

- Supports all common ISP protocol (i.e. I2C, SPI, UART, BDM, MW, JTAG, CAN, RS232). Contact Xeltek for more details.
- PC interface: USB2.0 (high speed), LAN (100M)
- Off-line memory media: SD card
- Keypad and Display: 6-key keyboard, LCD display with 40digits x 4lines
- Power Supply: DC 12V /1.5A. Power adapter
- Main Unit: Dimension: 184 x 160 x 78 (mm); Weight: 0.8Kg
- Package: Dimension: 310 x 250 x 145 (mm); Weight: 1.65Kg
- Operating Temperature: 0-50°C. Humidity: 20%-80%

Expanded Features

- High-speed ISP production programmer with industrial grade quality. The ultimate choice for integrating ISP sub-systems.
- Supports almost all serial chips which include, but not limited, SPI,I2C,JTAG, BDM,UART,MON,SCI,SWD, SBW,C2D,ICC,SWIM,SDQ,DBG,ICE,CSI,LIN
- Supported manufactures include, but not limited, ABOV,Ali,Altera,Atmel,Catalyst,Cypress,Freescale,Fujitsu,Haier,Hitachi,Hynix,Infineon, IR,ISSI,Lattice,Macronix,Maxim,Microchip,Micron,NEC,Numonyx,NXP,ON, Panasonic, Renesas,Rohm,Samsung,Sanyo,Silicon,Labs,Spansion,SST,ST, Teridian, TI, Toshiba, Winbond, Xilinx, Zilog
- Programs up to 16 serial chips or 4 parallel NAND,NOR,eMMC chips simultaneously
- Support ISP serial programming to multiple chips of different models or types in one unit
- General control ports supply signal isolation, relay isolation, power supply control, click detection, LED expansion display and other control signals
- High-speed programming with adjustable speed meets board load requirement or ISP cable length
- Three modes: 1) Online mode. Connected to local PC by USB2.0(high speed) 2) Off-line mode. Using the stand-alone keyboard, LCD display, and mobile memory (standard SD cards), SuperPro IS416 can run independently off-line for flexible production and field setup. Project file size is only limited by the SD card memory size.3) Network mode. Connected to local network, control locally or remotely.
- Advanced pin-driver technology supplies cleaner signals, wider voltage range and accurate / higher clock frequency. Precise time generators ensure devices with 1.2V-5.0V Vcc higher speed and qualified product ratio
- Chip safety security mechanism: the built-in precise voltage self-calibration circuit ensures the voltage is within the preset range at any time. The self-diagnosis function continuously detects hardware fault to ensure the machine run normally.

- Over-current, over-voltage and ESD protection avoids damaging the programmers
- User operation interface is shown by PCBA
- Log document and production statistics function facilitates quality-tracking.
- Copyright Protection with SD encryption, document right management and encryption, output limitation and remote control.
- Customized special functions and algorithm software available
- Web Programmer + Network management software (optional) create a revolutionary network writing management mode. Project setting, task switching and software updating for all programmers can be finished instantly on a server while quality-monitoring and QC statistic can be done in real time. Such mistakes as empty-writing can be tracked, and the written data is saved only on local or remote servers for data safety.
- Using a customized socket adapter, SuperPro IS416 can be used as an off-line production programmer, and programs up to 4 chips simultaneously.

What's in the box?



SuperPro IS416 comes with

- 4 ISP Cables
- Software CD
- AC Adapter
- USB Cable
- [SD Card](#) for stand-alone operation

Optional Accessories

- [Command Line Utility](#)
- [DLL License](#)
- ISP Cables