



CPI2-B1



In-System Device Programmer

The CPI2-B1 device programmer belongs to the ChipProg-ISP2 family of Phyton in-system production device programmers, designed for use with ATE, ICT, programming fixtures and automated handlers. It can also be used for development, and in stand-alone mode for field service. CPI2-B1 can be used for programming microcontrollers, flash memory and programmable logical devices.

Use of some CPI2-B1 programming features requires purchasing additional software licenses:

- The CPI2-ACI license is tied to the programmer's hardware and enables remote control via DLL and other options.
- CPI2-D-XXXX target-specific Device Driver Library licenses enable programming support for a certain group of devices.

The price of a device programmer is the total of prices of hardware and optional licenses: CPI2-ACI and target-specific Device Driver Library license(s).

Major Features

- Designed around extremely fast CPI2 programming engine - see the timing.
- Connects to PC via High Speed USB 2.0, 100 Mbit/s Ethernet or RS232 (optional) interfaces.
- Stand-alone or PC-hosted operation.
- Has a SD card for storing up to 64 projects
- Use of the SD card enables fast project switching and speeds up stand-alone operations.
- Up to 72 programmers can be concurrently controlled by a single PC.
- Supports multiple ISP interfaces: JTAG, JTAG chain, SWD, SPI, SCI, I²C, UART, and more.
- Supports ISP for devices with Vcc voltages in the range of 1.2V to 5.5V.
- Programmable Vpp power supply output from 1.5V to 15V.
- Power source for target board adjustable from 1.2 to 5.5V @ 350 mA.
- Programs devices at distances as long as 10 ft (3m) - actual distance is target specific.

Specification Details

Areas of Application

- Production single and multi-channel device programmer for use in ATE, ICT, fixtures and handlers.
- Development in-system device programmer.
- Stand-alone battery-powered in-field service programmer.

Implementations and Mechanical Options

- Palm-size unit in a plastic enclosure.
- Includes removable plastic bracket for mounting CPI2-B1 units on a standard 35 mm DIN rail.
- An optional small compartment with a lithium battery and controls can be attached to the CPI2-B1 unit for stand-alone operation such as in-field service.

Communication Interfaces

- High Speed USB 2.0 (480Mbps).
- 100 Mbit/s Ethernet with ATE-to-DUT galvanic insulation.
- RS-232C, galvanically isolated (optional, requires CPI2-ISO board).

Control Methods

- Friendly and intuitive graphical user interface (GUI).
- User-configurable simplified interface for use by unskilled personnel.
- Integration with National Instruments® LabVIEW™ Software.
- Controllable by Automated Test Equipment (ATE), In-Circuit Test System (ICT), fixtures and handlers.
- Application Control Interface (DLL).

- Command line mode.
- On-the-fly control utility allows modification of commands in a running programmer without stopping its operation.
- Script language for mastering user-defined scripts.
- Programming can be initiated manually or automatically by connecting to target device or closing the fixture lid.

Project and Configuration Management

- Unlimited number of projects can be created, saved, edited, and easily accessed to start a programming session
- Internal SD card stores up to 64 projects for fast project switching.
- Project files are securely protected against unauthorized access and modification.
- Guaranteed data integrity by CRC calculation for each data transfer to/from PC or ATE system or SD card.
- Ability to store and retrieve interface configurations, colors, fonts, sounds, hot keys, and other settings.
- The battery-powered option allows preloading up to four projects to internal SD card. Desired project image can later be chosen by pressing a button on the battery compartment, and is indicated by corresponding LED.

Power Source Options

- External power adapter 5V@1A.
- Can be powered by PC's USB communication port.
- Rechargeable Li-Ion battery (optional).

Power for Targets

- In a process of programming allows powering target equipment from external sources.
- When powered from an external power adapter (5V@1A), CPI2-B1 can provide Vcc (1.2 to 5.5V @ up to 350mA) and Vpp (1.2 to 15V @ up to 80mA) voltages for the target equipment.

Software Features

- Supports loading and saving files in all popular formats.
- Unlimited number of data buffers can be open simultaneously.
- Arithmetic operations on data blocks in buffers.
- Programmable serialization of target devices.
- Multiple serialization algorithms, including script-controlled ones.
- Allows writing of user-defined signatures and data blocks into target devices.
- Several different algorithms of checksum calculation.
- Special DLL for user-defined checksum calculation.

- Stores logs of programming sessions with time-stamping.
- Easy to use GUI editor for device-specific settings and algorithm parameters, such as fuses, lock bits, protected sectors, boot loader vectors, clock frequency, etc.
- Featured with a link opening connection diagram for currently selected device right from the GUI.
- Comprehensive self-test and diagnostic procedures.

Target Interface Signals

- Equipped with a 20-pin "TARGET" connector and supplied with a 10" ribbon cable with compatible 20-pin headers.
- Ten target-specific logic inputs/outputs with 1.2 to 5.5V levels, individually programmable as I/O, GND or Vcc.
- For stable programming the above ten signal lines are interspersed with GND wires.
- Two inputs/outputs individually programmable as TTL logic I/O, GND, or Vcc or Vpp.

Signals for Interfacing with External Equipment

- TTL-level input and output logic signals for interfacing with external equipment are available at the 20-pin "CONTROL" connector. The signals include:
 - start/stop signal;
 - output status signals: BUSY, GOOD and ERROR;
 - six inputs for selection of one of the 64 pre-loaded projects;
 - one low-current TTL logic voltage output that can be used for driving the above project selection inputs;
 - three GND lines.
 - Use of CPI2-ISO board insures galvanic isolation of all control signals on the "CONTROL" connector.
 - When using CPI2-BB option, the connector provides power for charging the battery but other "CONTROL" signals become unavailable for use.

Dimensions

- Unit: 114 x 73 x 32 mm (~4.49 x 2.88 x 1.25 in)
- Unit with battery compartment: 114 x 99 x 32 mm (~4.49 x 3.88 x 1.25 in)

System requirements

- Microsoft® Windows™ XP, 7, 8 and 10.