

Softlog ICP2PORT Production Quality In-Circuit Service Programmer

Part Number: TPG100009

The **Softlog ICP2PORT Production Quality In-Circuit Service Programmer** is specially designed to meet your service programming needs. This compact, battery-powered device supports up to six different programming environments, making it an ideal, low-cost solution for field upgrades.

Note: All technical support and warranty service will be provided by Softlog. You can contact them at support@softlog.com.

Features

- **Fast programming** of Microchip® 8-bit PIC® MCUs, 16-bit PIC MCUs and dsPIC® DSCs, and serial EEPROMs
- On-board 4MB flash memory for non-volatile storage of 6 environments
- Supports **3 serialization schemes**: sequential, random, and user file (1 to 8 bytes)
- Vdd and Vpp **overload protection** protects programmer and devices to be programmed
- Power supply: 3 AAA batteries, USB or power adapter
- **Configurable counter** allows control of the number of upgrades performed
- Programmable Vdd (2.0 to 5.5V) and Vpp (2.0 to 13.5V)
- **Programmable clock/data speed** (500KHz to 2.5MHz)
- Programmable delay between Vdd and Vpp (0.1 to 250ms)
- Programmable Vdd source (programmer or target)
- Vdd current limit: 50 mA
- Prevents damage to connected microcontroller in case of power ON and power OFF

Additional Information

Softlog Production Quality In-Circuit Programmers

Softlog production quality programmers can program up to 64 target boards simultaneously, and offer advanced features such as Secure Programming, DLL support, and High Current drive. Softlog has produced production quality programmers since 1998.

Several models of Softlog programmers are available. All models program 8-bit devices, including PIC12C, PIC16C, PIC10F, PIC12F, PIC16(L)F, PIC18F, PIC18F(J), and PIC18F(K). The following options are available:

- Option **D – DLL/Command Line Support** for control by external programs or batch files
- Option **P – dsPIC/PIC24 Device Support**
- Option **S – Security Support** for strong encryption and to limit the number of devices programmed (more information)
- Option **K – Keeloq Support**
- Option **X – PIC32 Support**

Microchip P/N	Softlog P/N	Channels	Battery	Drive Capability	DLL/Command Line Support (D)	dsPIC/PIC24 Support (P)	Security Support (S)
TPG100001	**ICP2**	1	-	Normal	-	-	-
TPG100002	**ICP2-DS**	1	-	Normal	Yes	Yes	-
TPG100004	**ICP2GANG-DP**	4	-	Normal	Yes	Yes	-
TPG100005	**ICP2GANG**	4	-	Normal	-	-	-
TPG100006	**ICP2GANG-DS**	4	-	Normal	Yes	-	Yes
TPG100007	**ICP2-DS**	1	-	Normal	Yes	-	Yes
TPG100008	**ICP2(HC)**	1	-	High	-	-	-
TPG100009	**ICP2PORT**	1	Yes	Base	-	-	-
TPG100010	**ICP2PORT-P**	1	Yes	Base	-	Yes	-

Note 1: Keeloq Support(K) and PIC32 Support(X) are not available for these models

Note 2: Any support option (D/P/S/K/X) can be activated remotely. Upgrades for secure programming (S) are available from **microchipDIRECT**. For other options, contact **Softlog Systems** for details.

Note 3: ICP2 programmers can be powered by USB, or by external power adapter (included). ICP2GANG programmers are powered by external power adapter (included).

Note 4: ICP2PORT programmers can be powered by USB, batteries (3 type AAA), or external power adapter (not included).

Capabilities of High-Current Programmer

The **ICP2(HC)** model is designed for target boards with high current requirements:

Parameter	**Microchip P/N: TPG100001** **Softlog P/N: ICP2**	**Microchip P/N: TPG100008** **Softlog P/N: ICP2(HC)**
Supply from USB	Yes (VDD current is limited to 40mA)	Not Available
VDD current, max	250mA (recommended till 100mA)	1000mA
VPP capacitive load, max	22nF	100nF
VPP current, max	25mA	100mA
Clock current, max	5mA (due to in-series resistor 150Ω)	100mA
Data current, max	5mA (due to in-series resistor 150Ω)	100mA

Gang Programmers Can Be Daisy-Chained

ICP2GANG programmers can be daisy-chained together to program up to 64 target devices simultaneously. Only a single USB or RS-232 connection to a PC is required, diagram shown above.

Full Featured GUI Programming Software

Control of ICP2 and ICP2GANG programmers is provided via MPLAB IDE plug-in, or a stand-alone GUI application, screenshot shown above.

Unique Secure Programming Capability

The secure programming feature dramatically reduces the risk of unauthorized reconstruction of hex files, and also limits how many times a hex file can be programmed. Secure programming operates on two levels: the ADMIN level and the USER level.

- The **ADMIN** level of operation corresponds to the developer or owner of the software.
- The **USER** level corresponds to a contract manufacturer or anyone authorized to program devices.

Using the Softlog Integrated Software, the ADMIN initializes the programmer with **unique password**, ID number and secure buffer. Once initialized, the programmer may be shipped to a contract manufacturer. The ADMIN can update the programmer remotely by sending encrypted files to the USER.

To begin a programming job, the ADMIN uses the Softlog Integrated Software to create an **environment file**. The environment file includes hex data, configuration info, and one optional piece of information: a counter that specifies the maximum number of successfully programmed devices. The environment file is protected using **strong encryption**, and can only be decoded by a programmer that has been initialized with the correct password and ID number.

The **optional counter** of successfully programmed devices is stored in non-volatile memory of the programmer. It can be used to ensure that only an authorized number of devices are programmed from a particular environment file.

The **optional secure buffer** provides an extra level of security by replacing a portion of the hex data memory image with dummy values. The content of the secure buffer is stored in protected memory within the programmer, and is programmed into the target device after the complete memory image (including dummy data) has been programmed and verified.

Note: Any security protocol or encryption scheme can be broken, if the attacker is sufficiently motivated and has access to the necessary resources and expertise. The Softlog Secure Programming feature is designed to **dramatically reduce this risk**.

The Secure Programming option can be added to any ICP2 or ICP2GANG programmer, no matter when or where it was purchased:

Softlog SEC-DS Secure Programming Upgrade for ICP2 Programmers (SW500090)

Softlog SEC4CH-DS Secure Programming Upgrade for ICP2GANG Programmers (SW500091)