

# GALEP-5 [USB]

## Universal pocket programmer



- 48 universal pins
- Supports all sorts of programmable devices EPROMs to micro-controllers
- Fast USB 2.0 interface
- Powered via the USB port
- 200 MIPS ARM-9 CPU
- 64 MB of internal RAM
- Shortest programming cycles ever!
- 3 programming voltages up to 25V
- Supports low voltage devices, down to 1.3V
- Driven by an embedded Linux 2.6 kernel.

**GALEP-5**, the smallest programmer of the newly developed GALEP-5 series, is powered by the same advanced technology as its bigger brothers. It's mainly used for development, service, and mobile component programming. However, through its short programming cycles GALEP 5 can also be used as a production programmer. A real universal talent at an astonishingly low price!

**High-Speed Programming:** GALEP-5 is uncompromisingly designed for speed. The programming algorithms run on an internal 200 MIPS ARM-9 processor under Embedded Linux. The processor directly controls the pin drivers via an FPGA, which ensures this way the perfect adaptation of the component to the programming algorithms. The FPGA (user-programmable logic) allows the realization of State Machines, UARTs etc. and thus supports time-critical components that aren't programmable with pure software-based solutions. The programming cycle times are extremely short and the internal 64 MB of RAM serve as data storage and allows you to transfer the data to multiple devices without effort.

**48 universal pin drivers:** A pin driver circuit especially designed for GALEP guarantees optimal signal quality for each component that needs to be programmed. Each of the 48 pins can carry the following signals:

- Logical high, adjustable between 1.3V and 5.0V
- Logical input, with a threshold adjustable between 0.5V and 5.0V
- 3 independent programming voltages, up to 25V
- Ground
- 3 switchable resistors for pullup and pulldown
- Clock with adjustable rate

The universal pin driver supports a huge number of components without using any other adapter, and thus ensures an overall low cost programming system.

**No power supply required:** GALEP-5 is powered through the USB bus and does normally not require any additional power supply. The USB current absorption limit of 500mA is kept. Some old NMOS components and some micro controllers need more than 500 mA; to ensure full USB compatibility, we recommend the usage of the included power supply or batteries (6xAAA) for such components.

**Programming voltages:** The switching regulators for the programming voltages are controlled by D/A converters in 100 mV steps. Further D/A converters are used to control the logic levels (1.3V ... 5.0V) and the input threshold (0.5V ... 5.0V). All the voltages are permanently monitored by an independent coprocessor.

**In System Programming (ISP):** The signals for in-system programming can be taken from a separately available ISP adapter or directly from the ZIF socket. The help system provides information about the wiring of the target system for all the supported components.

**JTAG Support:** Delete, program and verify components with JTAG interface (joint test action group, IEEE Std. 1149.1 ). The following formats are supported: SVF-Script in XSVF(Xilinx) format; JAM byte code player (ALTERA).

**Security:** Prior to each operation, GALEP-5 checks the power consumption, the correct positioning and the contacts for all the pins of the selected component. This prevents the accidental damage of the component or the device.

**Software:** GALEP-5 builds on the award winning GALEP-32 software. The program runs under Windows 95, 98, ME, NT4, 2000, XP and Vista. it features a comprehensive set of functions such as read, program, compare and delete, along with easy-to-use custom configuration options for any special functions required by the selected component. The editor comes with a multitude of functions for editing component contents, which can be saved and loaded in binary, intel-hex, motorola-s or jedec file format. Mass production is supported by providing statistics functions and serial number generation.

The software is permanently improved for supporting new components. Free updates are available on our website on a regular basis.

**Adapters:** GALEP-5 programs all components in DIL sockets up to 48 Pins between 300 ... 600 MIL (ca. 7,5 ... 16 mm) wide, without additional adapters.

Modern electronics products contain mostly SMD components. Universal SMD adapters are available for all components with up to 48 pins. Only one adapter per socket is required; few adapters mean less system costs!

Of course adapters for components with more than 48 pins are also available. Because the pin number of the programming device is smaller than the pin number of the components, such adapters are always specialized. If you have to program components with a high pin number frequently, a GALEP-5D (with up to 240 pins) might be the more effective solution. All GALEP-4 adapters can be used with GALEP-5!

#### **GALEP-5 features:**

- 48 pin ZIF socket
- 48 universal pin drivers
- 200 MIPS ARM-9 RISC CPU
- 64 MB RAM
- 8 MB Flash RAM
- FPGA (50K gates, 64Kb RAM)
- High speed USB 2.0 interface
- 3 linear voltage regulators for the internal power supply
- 4 switching regulators for programming voltages
- 2 linear voltage regulators for logic levels and input threshold
- Built-in microcontroller that monitors the internal power supplies
- Built-in microcontroller that monitors the programming voltages
- 8-channel D/A converter
- 16-channel A/D converter

**Size:** 80x115x33mm (+7mm socket)

**Weight:** ca.185g

**Kit contains:**

- GALEP-5 device
- Power supply
- USB cable
- CD with software and manual (German / English)

**Full warranty:** 24 Months

**Certification:** CE, UL