
# SuperBOT 5A and SuperBOT 5e

Fully Automated IC Programmer - up to 32-Sockets

When it comes to rapid IC programming you need a reliable and affordable automated system. The all-around SuperBOT 5 and SuperBOT 5e were designed by Xeltek to meet the most stringent programming requirements. The SuperBOT 5 and SuperBOT 5e support tape, tray and tube input and output. Both ink and laser are available for marking. Powered by four or eight ultra-high speed SuperPro 7500, the SuperBOT 5 and SuperBOT 5e have the capacity of up to 32 sockets for a phenomenal throughput of up to 2,500 units per hour.

## Standard Features

| Model | SuperBOT 5A | SuperBOT 5e |
|---|---|---|

| | | |
|---|---|---|
| Units Per Hour | 2,500 | 2,100 |
| Nozzles | Quad | Dual |
| Tray | Dual Fixed Tray | Single Fixed Tray |
| Programmer | SuperPro® 7500N | SuperPro® 7500N |
| Sockets | 32 | 16 |
| Adapters | 8 | 4 |
| Vision Check | Dual Camera | Dual Camera |
| Tape Input | Dual | Dual |
| Operating System | Windows™ | Windows™ |
| Computer | Built-In Industrial PC | Built-In Industrial PC |

# Devices and Packages

Supports: NAND, eMMC, NOR Flash and other device memories on the market

Package: WLCSP, SOT, BGA, TSSOP, PLCC & ETC

Size: 2mm - 25mm

# Features

**High Throughput** SuperBOT 5A/5E is based on a high performance servo system that can program up to 2,100 UPH (units per hour) (for devices with programming time less than 36 sec) and is suitable for both small and large capacity devices. Throughput is up to 30 times higher than SuperBot 1, especially higher for large capacity devices like eMMC, NAND/NOR FLASH, SPI FLASH. It can be operated 24x7 and can provide throughput of up to 1,512,000 UPM (units per month). One person can supervise many SuperBOT machines and once they are programmed they can usually be left to operate by themselves.

**High Performance Programmers** SuperBOT 5A/5E are equipped with 4-8 SuperPro® 7500N high-speed universal programmers. Depending on the device programmed, each SuperPro® 7500N can have up to 4 sockets with a total of up to 32 sockets in the system. Most programmers in the market use technology which is up to 10 years old. The best current hardware technology is to use a high speed MCU chip built inside the programmer. SuperPro 7500 programmers employ a very high-speed MCU chip producing not only reliable

programming algorithms but also increasing programming speed. Utilization of ARM11 32bit MCU combined with an internal Linux operating system makes them the most advanced and versatile programmers in the industry.

**LAN Operation** Most volume programming applications need programmers to be operated remotely and this can be achieved by on SuperBOT programmers. Programmers can be connected to a local network and be remotely controlled by any computer on the network via LAN (100M) port. LAN port enables remote project loading, quality monitoring, volume control, file security. Technical department can remote control programming operations and processes, including downloading project file, command execution, project settings, and obtain real time information to achieve production goals. Remote network management provides the most protection for intellectual property. Project data and files are never shared with operators because files are remotely loaded by authorized engineers.

**The Most Durable and Reliable Systems in the Industry** China is the hub of the world Electronics manufacturing and Xeltek automated programmers are widely installed at most major Electronic manufacturing plants with multiple installations at many locations. Most companies run production 24 hours/day and 7 days/week programming millions of devices per year. Xeltek automated programmers have been refined to run non-stop, withstand harsh and battle-ground like environment.

**Largest Device Support** Located in Silicon Valley, we keep good relationships with many major IC companies that are important for us to continuously support new devices. Xeltek currently supports more than 100,000 devices, which is the largest device library in the programming industry.  can be added within a week - average lead time from other manufacturers is over two months.

**Better Yield** Our semiconductor manufacturer approved algorithms, precision and clean signals guarantee high programming yield. Algorithms are performed with state machine architecture constructed with FPGA to achieve an ultrahigh programming speed. Along with the lo w voltage components selection, they program devices down to 1.2 volts.

**Lowest Cost Automated Programming System in Market** SuperBot automated programmers are the most affordable and high value systems in the industry. High volume and extensive production experience enables the programmers to be the most competitive in terms of quality, price, and value in the programming industry.

**Powerful and Intelligent Software** User-friendly software with graphical interface cuts learning curve. Setup data saved for next operation. Software also includes resourceful log table, convenient production and quality tracking, authorization, flexible stopping strategy for bad socket or module.

**Chip Size** Devices between 2x2mm to 30x30mm can be programmed. SuperBOT systems support the SOT23 package which measures only 2x3mm. We do not know of any other

manufacturer who supports such a small package type and this is a testimony that SuperBOT systems excel in its accuracy and precision.

**Short change-over time** I/O devices and socket adapters are easily interchangeable and socket positioning can be performed automatically. Auto Tray and Tape-out can be permanently attached to SuperBot eliminating changeover time when moving from tape-out to auto tray. Tape-in feeder changeover time is below 10 minutes and laser marker changeover time between tray to tape is under 15 minutes.

**Socket Cost and Investment** Cost recovery in short period with low investment in the beginning as socket adapters are universal for up to 144 pin chips. For most of competitor programmers, user has to invest on device specific socket adapters for chips greater than 48 pins thus increasing cost in long term.

**Technical Support** More than 30 engineers are devoted to developing new programmers, socket adapters and device algorithms. Engineers are fluent in English and provide excellent direct support through emails, telephone, live chat an online ticketing system. With our locations in the United Stated and China, providing 17 hours of continuous support worldwide daily, we are confident to be able to provide support anywhere in the world.

## I/O

**Manual Tray (Standard equipped)** Standard I/O device of the machine. Operator will replace the programmed tray from the SuperBot machine manually after the full tray is programmed. Customer does not need to buy any other accessory while using this option.

**Auto Tray Device** This device is an extension of the fixed tray. It includes tray-in and tray-out and users can put 20 trays into the device. When the machine is running, users can add trays or take out trays without stopping the machine. The auto tray device can also be installed outside of the whole machine and trays can be automatically changed without the need to open the upper cover, which saves tray changeover space and avoid human error during tray changeover. The auto tray device can stack up to 20 JEDEC trays.

**Tape-In Device** Electric Tape in feeder. Tape width between 8 and 32mm applicable. Tape-in device can be configured as per the chip to be programmed. For SOIC and TSOP packages customer will need 2-3 types of different tape in the devices depending on the width of chips to be programmed.

**Tape-Out Device** Connects to a SuperBOT for fully automatic operation. 8-32 mm tape widths can be used with the device. Output reel is sealed with heated tape.

**Tube-In** Moves chips in the machine. Chip guider for different chip width (optional). IO is multi feed and upto 8 tubes can be operated at once (optional). Tube IO pages should also be updated accordingly.

**Tube-Out** Moves chips out of the machine. Chip guider for different chip width (optional). IO is multi feed and upto 8 tubes can be operated at once (optional). Tube IO pages should also be updated accordingly.

**Laser Marker System** An optional attachment to the tape-out or the auto tray device for high speed marking. It marks up to 4 characters on the passed chips.

**Tape Ink-Marker** Add-on item for tape out machine. On completion of programming the chip can be automatically marked with a point using ink (optional). **Tray Ink Marker** Add-on item for auto tray machine. On completion of the programming the chip can be automatically marked with a point using ink (optional).

# Specifications

## SuperBOT 5/5e

### Chips and Package Types

| | |
|---|---|
| Chip Size | Min: 2x2mm, Max: 25x25mm |
| Devices Supported | EPROM, Paged EPROM, Parallel and Serial EEPROM, FPGA Configuration PROM, FLASH memory (NOR & NAND), BPROM, NVRAM, SPLD, CPLD, EPLD, Firmware HUB, Microcontroller, MCU, and more. |
| Available Adapters | PLCC, JLCC, SOIC, QFP, TQFP, PQFP, VQFP, TSOP, SOP, TSOPII, PSOP, TSSOP, SON, EBGA, FBGA, VFBGA, uBGA, WLCSP, SCSP, and more. |

### Air

| | |
|---|---|
| Pressure | 0.6MPa |

| | |
|---|---|
| Consumption | 50 liters/min |

## Main Hardware and OS

| | |
|---|---|
| Operation System | Windows™ |
| Computer | Built-in Industrial PC |
| Hardware | SuperPro 7500 |
| Remote Access | LAN Supported |

## Electrical

| | |
|---|---|
| Power Adapter Type | AC |
| Output | 220v |
| Power Consumption | 1.5Kw |

## Dimensions

| | |
|---|---|
| SuperBOT 5 | Width(X): 850mm |
| | Depth(Y): 1,280mm |
| | Height(Z): 1,500mm |
| | Weight: 450kg |
| SuperBOT 5e | Width(X): 850mm |
| | Depth(Y): 1,100mm |
| | Height(Z): 1,500mm |
| | Weight: 300kg |