



### Overview

SuperBot 2 is an automatic IC programmer with high performance and reasonable price for large-scale electronic product manufacturing. This programmer can automatically pick up, place, program, take out and pack up chips. With fully automated operation setup capabilities, it can improve working efficiency and minimize human errors.

### Varied I/O Devices

- **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.
- **Auto Tray Device** An extension of the fixed tray. it includes tray-in and tray-out and users can put 10 trays into the device. 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 15 JEDEC trays.
- **Tape-In Device** YAMAHA pneumatic 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 SuperBOT2 or SuperBOT3 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 up to 4 tubes can be operated at once (optional).
- **Tube-Out** Moves chips out of the machine. Chip guider for different chip width (optional). IO is multi feed and up to 4 tubes can be operated at once (optional)
- **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).

### Motion System

- **Motion System:** High Precision Servo System
- **Resolution:** X axis  $\pm 0.02\text{mm}$ ; Y axis  $\pm 0.02\text{mm}$ ; Z axis  $\pm 0.02\text{mm}$ ;  $\theta$ axis:  $\pm 0.1^\circ$
- **Stroke:** X axis 1000mm; Y axis 500mm; Z axis 40mm
- **Pick & Place Header Accuracy:**  $\pm 0.07\text{mm}$
- **Operable Chip Size:** Minimum 2x2mm; Maximum 25x25mm
- **Maximum Throughput:** 1200 Units Per Hour

### Vision System

- **Camera:** Downward CCD for sockets/ pick-and-place positioning. 512x512 pixels
- **Field of View:** 30x30mm

### Specifications

- **Devices Supported:**  
EPROM, Pages EPROM, Parallel and Serial EEPROM, FPGA Configuration PROM, FLASH memory (NOR & NAND), BPROM, NVRAM, SPLD, CPLD, EPLD, Firmware HUB, Microcontroller, MCU, etc.
- **Package:**  
DIP, SDIP, PLCC, JLCC, SOIC, QFP, TQFP, PQFP, VQFP, TSOP, SOP, TSOPI, PSOP, TSSOP, SON, EBGA, FBGA, VFBGA, uBGA, CSP, SCSP, etc.
- **Power Supply:**  
AAC 200~240V/50~60Hz, single phase
- **Power Consumption:** 1.5KVA
- **Air:** Clean, pressure:0.6MPa, consumption:30 liter/min
- **Size:**  
Main Machine: 820(L)x640(W)x1550(H)mm  
Auto Tray: 110(L)x380(W)x1300(H)mm  
Tape-Out: 1100(L)x380(W)x1300(H)
- **Weight:** 248 Kg (main machine)

### SuperBot-2 comes with

- 4 x SuperPro 7500
- 19" LCD Display
- Built-in Industrial PC with Windows 7
- Keyboard and mouse

## Advantages of SuperBot-2



**High Throughput** SuperBot 2 is based on a high performance servo system that can program up to 1200 UPH (for devices with programming times less than 36 sec) and is suitable for both small and large capacity devices. It can be operated 24x7 and can provide throughput of 863,000 UPM.



**High Performance Programmers** SuperBot 2 is equipped with four SuperPro 7500 high speed universal programmers, with a total of 16 sockets in the system. 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** LAN port enables remote project loading, quality monitoring, volume control, file security. Technical departments can remote control programming operations and processes, including downloading project file, command execution, project settings, and obtain real time information to achieve production goals



**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. Xeltek automated programmers have been refined to run non-stop, withstand harsh and battle-ground like environment.



**Largest Device Support** Xeltek currently supports more than 100,200 devices, which is the largest device library in the programming industry. [Requested device algorithms](#) can be added within a week.



**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 low 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 25x25mm can be programmed. SuperBot 2 supports the SOT23 package which measures only 2x3mm



**Short change-over time** I/O devices and socket adapters are easily interchangeable and socket positioning can be performed automatically. 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



**Technical Support** Xeltek provides 17 hours of continuous support worldwide daily with excellent direct support through emails, telephone, live chat and online ticketing system



**Free Training** is offered for up to 3 personnel at our facility in Nanjing, China. For more details about our training program, please [contact us](#)



### Overview

SuperBot 3 is an automatic IC programmer with high performance and reasonable price for large-scale electronic product manufacturing. This programmer can automatically pick up, place, program, take out and pack up chips. With fully automated operation setup capabilities, it can improve working efficiency and minimize human errors. SuperBot 3 comes with 4 pick & place nozzles, 8 independent socket pressing actuators, two CCD cameras and can work with 2 tape feeders. Up to 2400 units per hour (UPH) for devices with programming time less than 50 sec. Throughput 0.6 to 60 times higher than SuperBot-1 especially higher for large capacity devices like eMMC, NAND/NOR FLASH and SPI FLASH. Suitable for both small and large capacity devices.

### Varied I/O Devices

- **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.
- **Auto Tray Device** An extension of the fixed tray. it includes tray-in and tray-out and users can put 10 trays into the device. 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 15 JEDEC trays.
- **Tape-In Device** YAMAHA pneumatic 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 SuperBOT3 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 up to 4 tubes can be operated at once (optional).
- **Tube-Out** Moves chips out of the machine. Chip guider for different chip width (optional). IO is multi feed and up to 4 tubes can be operated at once (optional)
- **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).

### Motion System

- **Motion System:** High Performance Control Card & Servo Drive System
- **Resolution:** X axis  $\pm 0.02\text{mm}$ ; Y axis  $\pm 0.02\text{mm}$ ; Z axis  $\pm 0.02\text{mm}$ ;  $\theta$ axis:  $\pm 0.1^\circ$
- **Stroke:** X axis 1000mm; Y axis 500mm; Z axis 40mm
- **Pick & Place Header Accuracy:**  $\pm 0.07\text{mm}$
- **Operable Chip Size:** Minimum 2x2mm; Maximum 25x25mm
- **Maximum Throughput:** 2400 Units Per Hour

### Vision System

- **Camera:** Upward CCD for IC positioning while the downward CCD for sockets/ pick-and-place spot positioning 512x512 pixels
- **Field of View:** 30x30mm
- **Vision Accuracy:**  $\Delta x = \Delta y = 0.07\text{mm}$ ,  $\Delta \theta = 0.1^\circ$

### SuperBot-3 comes with

- 8 x SuperPro 7500
- Built-in Industrial PC with Windows 7
- 19" LCD Display
- Keyboard and mouse

### Specifications

- **Devices Supported:**  
EPROM, Pages EPROM, Parallel and Serial EEPROM, FPGA Configuration PROM, FLASH memory (NOR & NAND), BPROM, NVRAM, SPLD, CPLD, EPLD, Firmware HUB, Microcontroller, MCU, etc.
- **Package:**  
DIP, SDIP, PLCC, JLCC, SOIC, QFP, TQFP, PQFP, VQFP, TSOP, SOP, TSOPI, PSOP, TSSOP, SON, EBGA, FBGA, VFBGA, uBGA, CSP, SCSP, etc.
- **Power Supply:**  
AAC 200~240V/50~60Hz, single phase
- **Power Consumption:** 1.5KVA
- **Air:** Clean, pressure: 0.6MPa, consumption: 30 liter/min
- **Size:**  
Main Machine: 1280(L)x840(W)x1500(H)  
Auto Tray: 1100(L)x380(W)x1300(H)mm  
Tape-Out: 1100(L)x380(W)x1300(H)
- **Weight:**  
Main machine: 450 kg  
Auto tray: 80 kg  
Tape out: 80 kg

## Advantages of SuperBot-3



**High Throughput** SuperBot 3 is based on a high performance servo system that can program up to 2400 UPH (for devices with programming times less than 50 sec) and is suitable for both small and large capacity devices. It can be operated 24x7 and can provide throughput of 1,728,000 UPM.



**High Performance Programmers** SuperBot 3 is equipped with eight SuperPro 7500 high speed universal programmers, with a total of 32 sockets in the system. 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** LAN port enables remote project loading, quality monitoring, volume control, file security. Technical departments can remote control programming operations and processes, including downloading project file, command execution, project settings, and obtain real time information to achieve production goals



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**Largest Device Support** Xeltek currently supports more than 100,200 devices, which is the largest device library in the programming industry. [Requested device algorithms](#) can be added within a week.



**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 low 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 25x25mm can be programmed. SuperBot 3 supports the SOT23 package which measures only 2x3mm



**Short change-over time** I/O devices and socket adapters are easily interchangeable and socket positioning can be performed automatically. 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



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### Overview

SuperBot 4 is designed for small to medium automated programming projects. The device includes a tray with automatic chip pickup and placement for programming sockets. The entire programming procedure is automated, thus replacing traditional manual operations.

### SuperBot-4 comes with

- 4 x SuperPro 7500



### Specifications

- Devices Supported:  
EPROM, Pages EPROM, Parallel and Serial EEPROM, FPGA Configuration PROM, FLASH memory (NOR & NAND), BPROM, NVRAM, SPLD, CPLD, EPLD, Firmware HUB, Microcontroller, MCU, etc.
- Package:  
DIP, SDIP, PLCC, JLCC, SOIC, QFP, TQFP, PQFP, VQFP, TSOP, SOP, TSOPI, PSOP, TSSOP, SON, EBGA, FBGA, VFBGA, uBGA, CSP, SCSP, etc.
- Power Supply:  
AC Input 90V to 250V, 50/60Hz, DC output AC 220V
- Power Consumption: 500W
- Size:  
Main Machine: 750(L)x600(W)x622(H)mm
- Weight: 50 Kg (main machine)

### Tech Specs

Motion System	XYZ System, Belt drive + rail. Single nozzle.
Resolution	X axis: ±0.05mm; Y axis: ±0.05mm; Z axis: ±0.02mm
Stroke	X axis: 400mm; Y axis: 350mm; Z axis: 30mm
Operable Chip Size	Minimum: 3x3mm; Maximum: 30x30mm
Maximum Throughput	600 Unites Per Hour
Camera	Downward CCD camera for sockets/ pick & place spots positioning. 512x512
Field of View	30x30mm
Manual Tray	One tray each time. Change tray manually (standard equipped)

#### İLTEK TEKNOLOJİ LTD. ŞTİ.

İLTEK Anayurt Güvenlik Sistemleri Savunma Teknolojileri Bilişim ve Elektronik Ticaret Ltd.Şti.

Tel: +90 312 440 42 85 Fax: +90 312 440 42 86

info@iltekteknoloji.com.tr / www.iltekteknoloji.com.tr

Adres: Hilal Mah. 687 Sokak . Boyner Apt. No: 3/7 Çankaya / ANKARA / TURKEY

## Advantages of SuperBot-4



**High Throughput** SuperBot 2 is based on a high performance servo system that can program up to 1200 UPH (for devices with programming times less than 36 sec) and is suitable for both small and large capacity devices.



**High Performance Programmers** SuperBot 4 is equipped with four SuperPro 7500 high speed universal programmers, with a total of 16 sockets in the system. Utilization of ARM11 32bit MCU combined with an internal Linux operating system makes them the most advanced and versatile programmers in the industry



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**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 25x25mm can be programmed. SuperBot 4 supports the SOT23 package which measures only 2x3mm



**Short change-over time** I/O devices and socket adapters are easily interchangeable and socket positioning can be performed automatically. 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



**Supports Tray-In and Tray-Out** 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



**Compact Desktop** Design with Small Footprint SuperBot-4 has desktop design, small footprint and built-in mute vacuum pump, no external source of air is needed. Suitable for almost any customer's work environment, including office buildings



**Technical Support** Xeltek provides 17 hours of continuous support worldwide daily with excellent direct support through emails, telephone, live chat and online ticketing system