中台四箴行

對上以敬　對下以慈

對人以和　對事以真

丁丑釋惟覺題書於佛里中台禪寺

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Leaptronix®

Company Profile

Leap Electronic was established in 1980, located in TangChen Industrial Park, Sanchung city, Taipei. To help our customers establish completed development system has always been our priority. Due to our company involves in the field of IC test and programming equipments deeply, we have good long-term partner relationships with both foreign IC manufacturers such as ATMEL, INTEL, MICROCHIP, FREESCALE, NXP, SPANSION, ST, SST, RENESAS, etc and domestic IC manufacturers like UMC, WINBOND, MXIC, EON, ESMT, HOLTEK, AMIC, SYNCMOS, etc.

Because of our outstanding performances in R&D, Leap not only meets customer's ODM & OEM requests but also focuses on the promotion of our own brand. For example, we ourselves manufacture IC programmer, emulator, IC tester and interface protector in a name of Leap. The above merchandises we mentioned have good reliability and ISO-9001 certification. Leap's Gang programmer especially gets good reputations from our clients. Leap has been expanding its product line and devoting to the development of measuring instruments. We also produce the first Taiwan-made stand-alone logic analyzer in a name of Leaptronix.

Leap has lots of hands-on experiences in current products, semiconductor equipments and educational electronic goods, and also has many skilled R&D engineers. Our distributors spread all over the world and offer well-organized internet sales, rapid technical service. To promote Leap's products all over the world, Leap obtains ISO 9001 certification and absolutely guarantees customers the best quality. Leap devotes ourselves to keep training professional team, promoting the image of organization and increasing market share, so we have established four branches in Shanghai, Beijing, Tianjin and Dongguan to provide customers well-organized and professional services.

Current situation and future plan

Leap is always eager to cooperate with educational organizations and regularly seminars so we have enough abilities to combine the practical and theoretical. That also helps Leap promote our development abilities. Leap tries our best to carry out our belief "Preserving development technology and preventing brain drain".

Automation will replace manpower gradually because of its high efficiency and accuracy. While doing test & measurement, automation can also solve the following problems, such as 3D (dull, dangerous and dirty). Leap thinks automation will be the mainstream in this industry, and firmly believes that combining automation with test & measurement instrument will be the trend of the high tech industry in the future, hence we creative AH automation series equipped with unique "Robotic Arm" to effectively increase productivity.

Leap sets itself current growth goals of expanding brand awareness, firming company image and offering good consultant service. In order to maintain product quality and protect intellectual property right, we apply product certification and patent. Leap has been insisting a strong faith " things are made in Taiwan equals to reliability." while devoting to the development of test & measurement and we are pretty proud of it. Leaptronix, a manufacturing brand from Taiwan, always holds the spirit that instrument is the source of industry. We try our best to establish positive brand image diligently, and hope Leaptronix could be a leader in the field of digital test & measurement.

SU-6808

Stand-along eMMC Gang 8 Programmer/ Duplicator

Introduction

The SU-6808 is designed to meet eMMC device content programing / duplication / verification/ manufacturing needs with ultra-high speed 8 bits/50MHz.

SU-6808 features high-performance, stand-alone operating eMMC device sockets by 1 master source and 8 target sockets supporting. Moreover, it is equipped with user-friendly PC software. That is, it can get the source from, eMMC, SD card and PC.

Standard Accessories

Main unit x1
USB cable x1
CD, included driver & user's manual x1
AC power cable x1

Features

- Provide 20x4 LCD and 4 keys for Stand-alone mode. Just need to select the project file and start programming.
- User-friendly for Copy and Verification operation.
- Supports auto-detect function for the wrong insertion and bad connection of pins.
- Provide Socket Actuator as an option. It makes the operation easy and efficient for the higher throughout and longer socket lifetime.
- Programming speed is up to 8 bits/50MHz.
- Supports Phison eMMC controller for NAND boot, which is able to program and verify boot and user areas during the booting.

Socket Actuator + Press Bar

SU-68xx-BGA

SU-6808-BGA-K

Specification

Model	SU-6808
Programming side	8
eMMC standard	MMCA, Ver 4.1/4.2/4.3/4.4/4.41/4.51
Embedded storage device	32G Bytes solid-state memory
Communication	USB 2.0 Hight Speed
Display	Main unit: 20x4 LCD with blue back and white character.
	Each site: PASS, FAIL LED
Key	4 keys, [↑], [↓], [Esc], [Go]
Dimension	300x210x66mm
Weight	7.8kg (Not included the Socket Actuation System)
Power	90V~260V, 50/60Hz, 25W

PC System Requirements

Operation system	Windows 7 / Vista / XP (32bits & 64bits)
Processor	Pentium 4 and above
RAM size	2 GB RAM and above
Hard disk	Main program: 500MB above
	Data buffer: 8GB above
Communication	USB 2.0 high speed

Optional Accessories

Ball Grid Array Type Adapter	SU-68xx-BGA-12x16 , SU-68xx-BGA-12x18
	SU-68xx-BGA-14x18 , SU-68xx-BGA-11.5x13
	SU-68xx-BGA162-11.5x13 , SU-68xx-BGA162-12x16
Pogo Pin Type Adapter	SU-6808-BGA-K , SU-6808-BGA162-K
Special Adapter	SU-68xx-PHISON-TS48(TSOP-48)
Socket Actuator , Press Bar	

- *Pogo pin type adaptors: Provide 4 kinds of package 11.5x13 , 12x16 , 12x18 , 14x18mm. They are changeable.*

SU-6808

Stand-along eMMC Gang 8 Programmer/ Duplicator

Introduction

The SU-6808 is designed to meet eMMC device content programing / duplication / verification/ manufacturing needs with ultra-high speed 8 bits/50MHz.

SU-6808 features high-performance, stand-alone operating eMMC device sockets by 1 master source and 8 target sockets supporting. Moreover, it is equipped with user-friendly PC software. That is, it can get the source from, eMMC, SD card and PC.

Standard Accessories

Main unit x1
USB cable x1
CD, included driver & user's manual x1
AC power cable x1

Features

- Provide 20x4 LCD and 4 keys for Stand-alone mode. Just need to select the project file and start programming.
- User-friendly for Copy and Verification operation.
- Supports auto-detect function for the wrong insertion and bad connection of pins.
- Provide Socket Actuator as an option. It makes the operation easy and efficient for the higher throughout and longer socket lifetime.
- Programming speed is up to 8 bits/50MHz.

Specification

Model	SU-6808
Programming side	8
eMMC standard	MMCA, Ver 4.1/4.2/4.3/4.4/4.41/4.51
Embedded storage device	32G Bytes solid-state memory
Communication	USB 2.0 Hight Speed
Display	Main unit: 20x4 LCD with blue back and white character.
	Each site: PASS, FAIL LED
Key	4 keys, [↑], [↓], [Esc], [Go]
Dimension	300x210x66mm
Weight	7.8kg (Not included the Socket Actuation System)
Power	90V~260V, 50/60Hz, 25W

Socket Actuator + Press Bar

SU-68xx-BGA

SU-6808-BGA-K

PC System Requirements

Operation system	Windows 7 / Vista / XP (32bits & 64bits)
Processor	Pentium 4 and above
RAM size	2 GB RAM and above
Hard disk	Main program: 500MB above
	Data buffer: 8GB above
Communication	USB 2.0 high speed

Optional Accessories

Ball Grid Array Type Adapter	SU-68xx-BGA-12x16 , SU-68xx-BGA-12x18
	SU-68xx-BGA-14x18 , SU-68xx-BGA-11.5x13
	SU-68xx-BGA162-11.5x13 , SU-68xx-BGA162-12x16
Pogo Pin Type Adapter	SU-6808-BGA-K , SU-6808-BGA162-K
Socket Actuator , Press Bar	

- *Pogo pin type adaptors: Provide 4 kinds of package 11.5x13 , 12x16 , 12x18 , 14x18mm. They are changeable.*

SU-6808 & SU-6816

Stand-along eMMC Gang 8/16 Programmer/ Duplicator

Introduction

The SU-6808 is designed to meet eMMC device content programing / duplication / verification/ manufacturing needs with ultra-high speed 8 bits/50MHz.

SU-6808 features high-performance, stand-alone operating eMMC device sockets by 1 master source and 8 target sockets supporting. Moreover, it is equipped with user-friendly PC software. That is, it can get the source from, eMMC, SD card and PC.

Standard Accessories

Main unit x1
USB cable x1
CD, included driver & user's manual x1
AC power cable x1

Features

- Provide 20x4 LCD and 4 keys for Stand-alone mode. Just need to select the project file and start programming.
- User-friendly for Copy and Verification operation.
- Supports auto-detect function for the wrong insertion and bad connection of pins.
- Programming speed is up to 8 bits/50MHz.

Specification

Model	SU-6808	SU-6816
Programming side	8	16
eMMC standard	MMCA, Ver 4.1/4.2/4.3/4.4/4.41/4.51	
Embedded storage device	32G Bytes solid-state memory	
Communication	USB 2.0 Hight Speed	
Display	Main unit: 20x4 LCD with blue back and white character.	
	Each site: PASS, FAIL LED	
Key	4 keys, [▲/▼], [▼], [▼/Esc], [OK]	
Dimension	300x210x66mm	500x210x66mm
Weight	7.8kg	9.8kg
Power	90V~260V, 50/60Hz, 25W	

PC System Requirements

Operation system: Windows 7 / Vista / XP (32bits & 64bits)
Processor: Pentium 4 and above
RAM size: 2 GB RAM and above
Hard disk: Main program: 500MB above; Data buffer: 8GB above
Communication: USB 2.0 high speed

Optional Accessories

SU-6808-BGA-12x16
SU-6808-BGA-12x18
SU-6808-BGA-14x18
SU-6808-BGA-11.5x13

SU-6080

Stand-along eMMC Gang 8 Programmer / Duplicator

Introduction

The SU-6080 is designed to meet eMMC device content programing / duplication / verification/ manufacturing needs with ultra-high speed 4 bits/50MHz.

SU-6080 features high-performance, stand-alone operating eMMC device sockets by 1 master source and 8 target sockets supporting. SU-6080 is equipped with unique function and offers Partition, Auto, Mirror, File, User, and AutoScan mode of both Copy and Verify operations suitable for various

Standard Accessories

Main unit x1
User's manual x1
AC power cable x1

Features

- Provide 16x2 LCD and 5 keys for Stand-alone mode. Just need to select the project file and start programming.
- User-friendly for Copy and Verification operation in Partition / Auto / File / Mirror / User / AutoScan mode.
- Supports eMMC BOOT-1/2, General Purpose-1/2/3/4, and User Data Area Partitions as well as EXT_CSD register settings copy and verify operation.
- Programming speed is up to 4 bits/50MHz.
- Please use SU-6010 single site eMMC programmer for producing the master IC.

Specification

Socket site	8 Programming site, 1 master site, 1 update site
eMMC standard	MMCA, Ver: 4.1/4.2/4.3/4.4/4.41/4.51
Display: Main unit	16x2 LCD, each site: PASS, FAIL LED
Key	5 keys, [▲], [▼], [▼], [▼], [START]
Dimension	352x302x55mm
Weight	3kg
Power	100V~240V 50/60Hz 35W

Optional Accessories

SU-6080-BGA-12x16
SU-6080-BGA-12x18
SU-6080-BGA-14x18
SU-6080-BGA-11.5x13

SU-3280

Stand-along Universal Gang Programmer / High-expansion Flexibility /

Introduction

SU-3280 is high speed programming for design engineering and small production. It supports PC-based and Stand-along programming mode which through LCD and keypad download the file to the inside 3.2GB memory.

Moreover, SU-3280 adopts modular design. If with the universal DIP module, you can just use general type adapter on the market for different package. Or you can select gang module for 8-16 site programming.

Standard Accessories

Main unit.....x1
CD.....x1
(Driver and user manual are included)
USB cable.....x1
AC power cord.....x1
SU-3280-DIP48, Universal DIP-48 module x18

Features

- Provides with DUT 75MHz bandwidth and < ±2.5nS signal skew.
- Provides the stand-alone mode operation. Just use 5 keys and 20x4 LCD, you can select a project and start to program.
- Provides asynchronous and concurrent operation for the 4 modules which allows chips to begin programming immediately upon insertion the chip fully on the same module. There is a message show on the LCD to inform operator to take off the finished device and inserts a new device.
- Provides IC insertion test and contact check before programming. Under the AUTO mode, just insert the IC, SU-320 will start the processes automatically.
- Provides high-expansion flexibility modular design. It can use as single-side universal programmer or SPI and FLASH gang programmer.
- Provides mass-production-oriented software. There is used a project file to control to minimize the operator error. Moreover, the log file help the production managements.

Specification

Power Signal:

- Logic Signal Level : 1.5V~6.0V,10mV
- IOL,IOH Current : 10mA
- Logic Signal Frequency : 75MHz (3-5V) / 60MHz (2.5V) / 45MHz (1.8V) / 25MHz (1.5V)
- Signal Skew : <±2.5nS (3-5V)
- Clock : 0Hz~75MHz
- VDD & VIO Level : 1.5V~6.5V,10mV
- IDD & IIO Current : 400mA
- VPP & VHH Level: 1.5V~15.5V,20mV
- IPP & IHH Current: 150mA

Display: 20X4 Character LCD / WORK & PASS LED

Button : Direction key x 4. START key with light x 1

Embedded Memory : 2GBytes FLASH

Module Dimension : 120mm(L) × 75mm(W)

SU-320 Dimension : 360mm(L) × 190mm(W) × 64mm(H)

Weight : 3.0 kg

Support Device : NAND, NOR FLASH, SPI EPROM, EEPROM, MPU, MCU, CPLD, NV-RAM...

Support File format : Binary/Machine Code, Intel HEX, TEK HEX, Motorola HEX

Optional Accessories

- BGA, uBGA, SON, WSON, QFN(MLF), TSOP, TSSOP, SOP, VSOP...adapters
- BGA64-29-X4(10x13), BGA64-29-X4(11x13), BGA64-29-X4(9x9), BGA64-J3-P3-X4(10x13), BGA64-J3-P3-X4(10x8), NOR-TSOP48-X4, NOR-TSOP56-29-X4, NOR-TSOP56-J3-X4, NOR-TSOP56-P3-X4, SFLASH-SOP16-X4, SFLASH-BGA24-4x6B-X4, SFLASH-BGA24-5x5B-X4, SOP8-207-X4, SOP8-150-X4, SON8-4x4-X4, WSON8-1.97x2.46-X4, WSON8-2x3-X4, WSON8-5x6-X4, WSON8-6x8-X4...adapters

PC System Requirement

Operating System	Windows 8 / 7 / Vista / XP (32bits & 64bits)
Processor	Pentium 4 above
Memory	2 GB RAM above
Hard Disk	Main program 500MB above / Buffer 2GB above
Communication	USB 2.0 High Speed

SU-320

Stand-along Universal & Gang Programmer / High-Expansion Flexibility /

Introduction

SU-320 is high speed programming for design engineering and small production. It supports PC-based and Stand-along programming mode which through LCD and keypad download the file to the inside 2 GB memory.

Moreover, SU-320 adopts modular design. If with the universal DIP module, you can just use general type adapter on the market for different package. Or you can select gang module for 2-4 site programming.

Standard Accessories

Main unit.....x1
CD.....x1
(Driver and user manual are included)
AC power cord.....x1
Power Adaptoer DC 5V/2A 10W.....x1
SU-3280-DIP48, Universal DIP-48 module.....x1

Features

- Provides with DUT 75MHz bandwidth and < ±2.5nS signal skew.
- Provides the stand-alone mode operation. Just use 5 keys and 20x4 LCD, you can select a project and start to program.
- Portable and compact design allow you to use everywhere.
- Provides IC insertion test and contact check before programming. Under the AUTO mode, just insert the IC, SU-320 will start the processes automatically.
- Provides high-expansion flexibility modular design.It can use as single-side universal programmer or SPI gang programmer.
- Provides mass-production-oriented software. There is used a project file to control to minimize the operator error. Moreover, the log file help the production managements.

Specification

Power Signal:

- Logic Signal Level : 1.5V~6.0V,10mV
- IOL,IOH Current : 10mA
- Logic Signal Frequency : 75MHz (3-5V) / 60MHz (2.5V) / 45MHz (1.8V) / 25MHz (1.5V)
- Signal Skew : <±2.5nS (3-5V)
- Clock : 0Hz~75MHz
- VDD & VIO Level : 1.5V~6.5V,10mV
- IDD & IIO Current : 400mA
- VPP & VHH Level: 1.5V~15.5V,20mV
- IPP & IHH Current: 150mA

Display: 20X4 Character LCD / WORK & PASS LED
Button : Direction key x 4. START key with light x 1
Embedded Memory : 2GBytes FLASH
Module Dimension : 120mm(L) × 75mm(W)
SU-320 Dimension : 240mm(L) × 115mm(W) × 60mm(H)
Weight : 1.1 kg
Support Device : NAND, NOR FLASH, SPI EPROM, EEPROM, MPU, MCU, CPLD, NV-RAM...
Support File format : Binary/Machine Code, Intel HEX, TEK HEX, Motorola HEX

Optional Accessories

- BGA, uBGA, SON, WSON, QFN(MLF), TSOP, TSSOP, SOP, VSOP...adapters
- BGA64-29-X4(10x13), BGA64-29-X4(11x13), BGA64-29-X4(9x9), BGA64-J3-P3-X4(10x13), BGA64-J3-P3-X4(10x8), NOR-TSOP48-X4, NOR-TSOP56-29-X4, NOR-TSOP56-J3-X4, NOR-TSOP56-P3-X4, SFLASH-SOP16-X4, SFLASH-BGA24-4x6B-X4, SFLASH-BGA24-5x5B-X4,S OP8-207-X4, SOP8-150-X4, SON8-4x4-X4, WSON8-1.97x2.46-X4, WSON8-2x3-X4, WSON8-5x6-X4, WSON8-6x8-X4...adapters

PC System Requirement

Operating System	Windows 8 / 7 / Vista / XP (32bits & 64bits)
Processor	Pentium 4 above
Memory	2 GB RAM above
Hard Disk	Main program 500MB above / Buffer 2GB above
Communication	USB 2.0 High Speed

SU-6000

Flash Gang 4 Programmer

/The best solution for programming high-density Flash memory/

Introduction

SU-6000 is a newly-designed gang programmer for high-density NAND/NOR Flash memory. It provides the highest speed and stability. Furthermore, for the special application of NAND Flash, it provides Bad Block Skip programming, verifying, master reading and device analysis functions. In addition, the innovative adapter design which lets users change adaptors quickly and save the cost of consumptive materials for mass production.

The transmission rate of SU-6000 is up to 480M bytes/minute and SU-6000 is able to support 4 sites NAND Flash Bad Block Skip programming, verifying and master reading at the same time. It is able to simplify the preparation and increase the work efficiency when mass production. With the outstanding characteristics, SU-6000 is undoubtedly suitable for engineers to overcome the next generation IC programming issue.

Features

- Support NAND Flash Bad Block Skip programming & verifying on 4 sites simultaneously.
- Ultra high NAND Flash programming speed: 32M bits/sec.
- Intelligent NAND FLASH master reading: Bad Block Skip or whole device reading.
- Auto-detect function: Wrong insertion of device, bad connection of pins, etc.
- Innovative adapter design: Support different packages by changing adaptor.
- Independent socket circuit: Increase the security and stability.
- High speed data transmission: 480M Bytes/minute.
- Stand-alone industrial LED start button: Pass, Fail, Work LEDs on each site.
- Operating software for mass production: Working by project, control programming quantity, yield rate statistics, etc.
- User-friendly: Flexible for adjusting the operation angle, able to lay the unit horizontally or obliquely.
- Built in auto-switching power: Support 100V~240V AC input.

Standard Accessories

Main unit.....x1
CD.....x1
(Driver and user manual are included)
USB cable.....x1
AC power cord.....x1
Adaptor screw.....x18

Optional Accessories

TSOP, TSSOP, BGA, uBGA, VSOP, SOP, SSOP, PLCC, etc.

Specification

User RAM	64 MBytes
Button/Switch	START LED / ID Setting
User Interface	Power LED, Work / Pass / Fail LEDs on each site
Communication	USB 2.0 High Speed
Power	100V AC~240V AC
Frequency Range	50/60Hz
Power Consumption	75W(Max)
Dimension	315 x 240 x 80mm (Socket and START Key are not included)
Weight	3.5Kg
Operating Altitude	up to 5000m
Operating Humidity	20%~70% (non-condensing)
Temperature	+5℃ ~ +45℃

File Type Supported

- Binary、Intel HEX、Tek HEX、Motorola HEX、ASCII HEX , etc.

PC System Requirement

Operating System	Win 8/ 7/ Vista/ XP
Processor	Pentium 4 and above
Memory	1GB~2GB RAM and above
Hard Disk	500M Byte and above
Communication	USB 2.0

SU-600

Flash Programmer

/The best solution for programming high-density Flash memory on the R&D and small production stage/

Introduction

SU-600 is a newly-designed programmer for the high-density NAND/NOR/SPI Flash. It provides the highest speed and stability for R&D and small production. Furthermore, for the special application of NAND Flash, it provides Bad Block Skip programming, verifying, the master reading, and device analysis function.

In addition, SU-600 support flexible multiprogramming system.

It means you can connect 4 units SU-600 on the same PC for 4 site programming.

SU-600 is the best selection for programming the new generation diverse Flash devices.

Standard Accessories

Main unit.....x1
CD.....x1
(Driver and user manual are included)
USB cable.....x1
AC power cord.....x1
Adaptor screw.....x18

Optional Accessories

TSOP, TSSOP, BGA, uBGA, VSOP, SOP, SSOP, PLCC, etc.

Features

- Support NAND Flash analysis function, able to find the bad block location and the relative size.
- Ultra high programming speed: 32M bits/ sec.
- Support NAND Flash Bad Block Skip programming and verifying.
- Intelligent NAND Flash master reading, you can select Bad Block Skip or whole device reading.
- Auto-detect function for the wrong insertion and bad connection of pins.
- USB high speed interface, able to connect 4 units SU-600 on the same PC for 4 site programming.
- Independent socket circuit design which increase the programming stability.
- Stand-alone industrial LED start button. The Pass, Fail and Work LEDs clearly show the programming situation.
- Provides device data used map analysis function. Let you easily know the whole device data distributed situation.
- Provides mass production oriented software, included project operation, programming quantity control and yield statistics.

Specification

User RAM	64 MBytes
Button/Switch	START LED / ID Setting
User Interface	Power LED, Work / Pass / Fail LEDs on each site
Communication	USB 2.0
Power	90V AC~260V AC
Frequency Range	47/63Hz
Power Consumption	24W(Max)
Dimension	116 x 240 x 60mm (Socket and START Key are not included)
Weight	1.5Kg
Operating Altitude	up to 5000m
Operating Humidity	20%~70% (non-condensing)
Temperature	+5°C ~ +45°C

File Type Supported

- Binary、Intel HEX、Tek HEX、Motorola HEX、ASCII HEX , etc.

PC System Requirement

Operating System	Win 8/ 7/ Vista/ XP
Processor	Pentium 4 and above
Memory	1GB~2GB RAM and above
Hard Disk	500M Byte and above
Communication	USB 2.0

LP-456

Universal Gang 4 Programmer / Universal Pin-driver of high performance /

Introduction

LP-456 is ultra-speedy universal 4x48 pin-drive concurrent production programmer. You can just use the general type adapters on the market for efficient multiprogramming solution.

Standard Accessories

Main unit.....x1
CD.....x1
(Included driver & user's manual)
USB cable.....x1
Power Adaptor x1

Optional Accessories

PLCC, JLCC, SDIP, SOP, VSOP, SSOP, TSOP, TSSOP, QFP, PQFP, TQFP, VQFP, BGA, uBGA, SON, WSON, QFN(MLF)..... adapters

Features

- Four independent universal programming pin-driver in one unit.
- Provides with DUT 75MHz bandwidth and < ±2.5nS signal skew. In addition to the high processing speed, you can verify whether the devices working frequency meet their specifications.
- Provides Hands-free Operation. The asynchronous and concurrent operation allows a chip to begin programming immediately upon insertion of chip.
  The operator just take off the finished device and inserts a new device.
- Provides mass-production-oriented software. There is used a Project file to control LP-456 to minimize the operator error. Moreover, it provides programming history and yield statistic for needs of production managements.
- Provides insertion test and contact check before programming.
- General type adapter can be used on LP-456, save money and convenience.

Specification

Power Signal	Logic Signal Level	1.5V~6.0V,10mV
	IOL & IOH Current	10mA
	Logic Signal Frequency	75MHz (3-5V)
		60MHz (2.5V)
		45MHz (1.8V)
		25MHz (1.5V)
	Signal Skew	<±2.5nS (3-5V)
	Clock	0Hz~75MHz
	VDD & VIO Level	1.5V~6.5V,10mV
	IDD & IIO Current	400mA
	VPP & VHH Level	1.5V~15.5V,20mV
	IPP& IHH Current	150mA
PIN DRIVERS	48 Pin Universal Pin-Driver x4	
DUT SORCKET	DIP-48 ZIF(Zero Insertion Force) x 4	
Dimension	372 x 205 x 45mm	
Weight	2.1kg	

Supported Devices

- NOR FLASH, SPI EPROM, EEPROM, MPU, MCU, CPLD, NV-RAM...etc.

Supported File Format

- Binary, Machine Code, Intel HEX, TEK HEX, Motorola HEX

PC System Requirement

OS	Windows 8 / 7 / Vista / XP (32bits & 64bits)
Processor	Pentium 4 Above
Memory	2 GB RAM Above
Hard Disk	500MB Above
	Buffer 1GB Above
Communication	USB 2.0 HIGH SPEED

LEAPER-56

Pocket Universal Programmer

/ Smart-phone size and ICT level universal programmer

Introduction

The LEAPER-56 is a pocket size universal programmer. It provides with 75MHz bandwidth and < ±2.5nS signal skew just in smart-phone size. The programming efficiency is much better than the other programmers on the market in any time and any condition.
By letting your PC or laptop connect with LEAPER-56, it will perform your outstanding ability of development and debugging. You can easily have professional factory-level productivity.

Features

- Portable mini size. Without socket, only 136mm(L)* 90mm(W)* 20mm(H). You just need to connect with USB cable to use. No additional power supply.
- Provide with PIN 75MHz bandwidth and < ±2.5nS signal skew. In addition to the high processing speed, you can verify whether the ICs processing frequency meets the specifications.
- Via USB HUB, you can connect multiple LEAPER-56s to do gang programming. It makes development and mass production proficient.
- Provide with DUT device pin checking and memory components ID verification. Ensure the best yield rate of processing.
- Provides asynchronous and concurrent operation for the 8 units LEAPER-56 via USB hub which allows chips to begin programming immediately upon insertion to the socket. There is a message show on the UI to inform operator to take off the finished device and inserts a new device.

LEAPER-56 is most suitable on the mobile environment.

The best way to perform your professional capacity and working efficiency.

Standard Accessories

Main unit x1
CD x1
(Included driver and user's manual)
Y-USB cable x1
Soft case x1

Specification

Device power signal	Log ic signal level:	1.5V~6.0V,10mV
	IOL, IOH current:	10mA
	Logic signal frequency:	75MHz (3-5V)
		60MHz (2.5V)
		45MHz (1.8V)
		25MHz (1.5V)
	Signal skew:	<±2.5nS (3-5V)
	Clock frequency :	0Hz ~ 75MHz
	VDD, VIO level:	1.5V~6.5V,10mV
	IDD, IIO frequency:	400mA
	VPP, VHH level:	1.5V~15.5V,20mV
	IPP, IHH frequency:	150mA
Power consumption	4W	
Pin drivers	48 Pin Uuiversal Pin Driver (Zero Inser ion Force)	
DUT socket	DIP 48 ZIF	
Dimension	136 x 90 x 20mm (Socket is not induded)	
Weight	282g	

PC System Requirements

Operating system	Win 8 / 7 / Vista / XP (32bits & 64bits)
Processor	Pentium 4 above
Memory	1GB RAM above
Hard disk	500 MB above / buffer: 1GB above
Communication	USB 2.0 high speed
USB powere	Connect the cable with 2 USB port (600mA above)

Supported Devices

NOR FLASH,SPI,EPROM,EEPROM,MPU,MCU,CPLD,NV-RAM, etc.

Supported File Formats

Binary/Machine Code, Intel HEX,TEK HEX, Motorola HEX

Remarks

1.Must use the USB cable from the standard package, and connect to the USB ports behind your PC. Besides please also connect it with 2 USB ports, or through the USB Hub (5V/1A).

2.When you need adapters to process the high-speed components, be sure to use good quality adapters. In order to have the best high-frequency process performance, the socket and DUT must keep good contact.

LEAP PSTART

Handy PIC IC Writer

Introduction

LEAP PSTART is a PIC device programmer manufacturered under lience from Microchip Technology. LEAP PSTART provides product development engineers with a highly-flexible and low-cost tool to design microcontrollers, such as PIC16C5X, PIC16CXX and PIC17CXX 8-bit one-time-programmable(OTP).LEAP PSTART development system works on any PC-compatible machine running under the Windows 2000/XP operating system. LEAP PSTART is easy to use, also features Microchip acclaimed MPLAB Integrated Development Environment with its built-in editor, assembler and Windows based MPLAB-SIM simulator. Sample software programs help the developer quickly get familiar with the LEAP PSTART development system and Microchip microcontroller families.

Features

- Support PIC 10/12/16/17/18 MCU.
- PSTART is manufactured under license from Microchip.
- Easy to program IC under MPLAB environment. Include built-in editor, assembler and simulator.
- All softwares work under Windows 2000/ XP environment.
- Read, program, verify program code, data memory and parameter setting functions.
- Translate MPASM assembler language sources code to object code.
- MPLAB project can automatically download object file to PIC devices.
- MPLAB-SIM simulator can stimulate the design of all PIC 12/16/17/18 devices.

Standard Accessories

Main unit.....x1
RS-232 cable.....x1
DC 9V/500mA
Power adaptor.....x1
CD.....x1
(Driver and user manual are included)

Optional Accessories

SOP/SSOP/TSSOP/TQFP, etc.

Specification

Dimension	160 x 110 x 45mm
Communication	RS-232
Power	DC 9V/500mA
Weight	500g
Operating Altitude	up to 5000m
Operating Humidity	90% (non-condensing)
Operating Temperature	+5℃ ~ +45℃

PC System Requirement

Operating System	Windows 98/ME/2000/XP
Processor	Pentium III and above
Memory	128MB RAM and above
Hard Disk	30MB and above

Device Supported

MCV08A
MCV14A
MCV18A
MCV28A

PIC10F200
PIC10F202
PIC10F204
PIC10F206
PIC10F220
PIC10F222

PIC12C508
PIC12C508A
PIC12C509
PIC12C509A
PIC12C671
PIC12C672
PIC12CE518
PIC12CE519
PIC12CE673
PIC12CE674
PIC12F508
PIC12F509
PIC12F510
PIC12F519
PIC12F609
PIC12F615
PIC12F629
PIC12F635
PIC12F675
PIC12F683
PIC12HV609
PIC12HV615
rfPIC12C509AF
rfPIC12C509AG

PIC16C505
PIC16C54
PIC16C54C
PIC16C55
PIC16C554
PIC16C558
PIC16C55A
PIC16C56
PIC16C56A
PIC16C57
PIC16C57C
PIC16C58A
PIC16C58B
PIC16C620
PIC16C620A
PIC16C621
PIC16C621A
PIC16C622
PIC16C622A
PIC16C62A
PIC16C62B
PIC16C63
PIC16C63A
PIC16F54
PIC16F57
PIC16F610
PIC16F616
PIC16F627
PIC16F627A
PIC16F628
PIC16F628A
PIC16F630
PIC16F631
PIC16F636
PIC16F639
PIC16F639
PIC16F648A
PIC16F676
PIC16F677
PIC16F684
PIC16F685
PIC16F687
PIC16F688
PIC16F689
PIC16F690
PIC16F716

PIC16C642
PIC16C64A
PIC16C65A
PIC16C65B
PIC16C66
PIC16C662
PIC16C67
PIC16C71
PIC16C710
PIC16C711
PIC16C712
PIC16C715
PIC16C716
PIC16C717
PIC16C72
PIC16C72A
PIC16C73A
PIC16C73B
PIC16C745
PIC16C74A
PIC16C74B
PIC16C76
PIC16C765
PIC16C77
PIC16C770
PIC16C771
PIC16C773
PIC16C774
PIC16C781
PIC16C782
PIC16C923
PIC16C924
PIC16C925
PIC16C926
PIC16CE623
PIC16CE624
PIC16CE625
PIC16F505
PIC16F506
PIC16F526

PIC17C42
PIC17C42A
PIC17C43
PIC17C44

PIC16F72
PIC16F73
PIC16F737
PIC16F74
PIC16F747
PIC16F76
PIC16F767
PIC16F77
PIC16F777
PIC16F785
PIC16F818
PIC16F819
PIC16F83
PIC16F84
PIC16F84A
PIC16F87
PIC16F870
PIC16F871
PIC16F872
PIC16F873
PIC16F873A
PIC16F874
PIC16F874A
PIC16F876
PIC16F876A
PIC16F877
PIC16F877A
PIC16F88
PIC16F883
PIC16F884
PIC16F886
PIC16F887
PIC16F913
PIC16F914
PIC16F916
PIC16F917
PIC16HV540
PIC16HV610
PIC16HV616
PIC16HV785

PIC17C756
PIC17C756A
PIC17C762
PIC17C766

PIC17C752

PIC18C242
PIC18C252
PIC18C442
PIC18C452
PIC18C658
PIC18C858
PIC18F1220
PIC18F1230
PIC18F1320
PIC18F1330
PIC18F2220
PIC18F2221
PIC18F2320
PIC18F2321
PIC18F2331
PIC18F2410
PIC18F242
PIC18F2420
PIC18F2423
PIC18F2431
PIC18F2450
PIC18F2455
PIC18F248
PIC18F2480
PIC18F2510
PIC18F2515
PIC18F252
PIC18F2520
PIC18F2523
PIC18F2525
PIC18F2550
PIC18F258
PIC18F2580
PIC18F2585
PIC18F2610
PIC18F2620

rfPIC12C509AF
rfPIC12C509AG

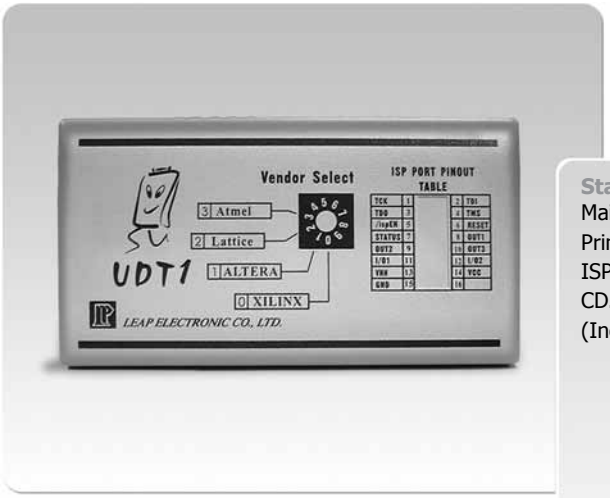
PIC18F2680
PIC18F2682
PIC18F2685
PIC18F4220
PIC18F4221
PIC18F4320
PIC18F4321
PIC18F4331
PIC18F4410
PIC18F442
PIC18F4420
PIC18F4423
PIC18F4431
PIC18F4450
PIC18F4455
PIC18F448
PIC18F4480
PIC18F4510
PIC18F4515
PIC18F452
PIC18F4520
PIC18F4523
PIC18F4525
PIC18F4550
PIC18F458
PIC18F4580
PIC18F4585
PIC18F4610
PIC18F4620
PIC18F4680
PIC18F4682
PIC18F4685
PIC18F6620
PIC18F6720
PIC18F8620
PIC18F8720

UDT-1

Universal JTAG/ISP Programmer

Introduction

PLD (Programming Logic Device) is the most common and easy used logic device. It has lots of advantages, such as high performance, low cost, flexible design and easy field configuration or customization. Each CPLD supplier has its own "download kit" so we develop UDT-1, the universal IN SYSTEM PROGRAMMER. Users can use UDT-1 to program different branded CPLD / FPGA devices.



Standard Accessories

Main unit.....x1
Printer cable.....x1
ISP cable.....x1
CD.....x1
(Including driver)

Features

- Support JTAG and ISP specification, on board program function for CPLD and FPGA devices.
- Use vendor's developing system to process design, compile, simulate, debug, on board program and data download.
- Support JTAG /ISP function of FPGA and CPLD manufacturered by ALTERA, Atmel, Lattice, XILINX, etc.
- Excellent circuit structure, best programming quality, high yield rate and protection design to give the best service for users' valuable device.
- Use Printer port to connect with PC & Notebook, easy operating.
- Light, thin, short, tiny and portable.

Specification

Input / Output	Parallel Port (Printer Port)
Power	DC 12V/500mA
Operating voltage	+1.8V～+6.0V
Output programming voltage	Vhh +12.0V 200mA
Dimension	150 x 80 x 30mm
Weight	20g
Operating Humidity	90% (non-condensing)
Operating Temperature	+5℃～ +45℃

PC System Requirement

Operating System	Same as the PC system requirments and parallel port setting when installing IC vendor's design software.

Other Specifications

- 6 standard JTAG and ISP Cables.
- Selective switch for different vendors.
- Red Power LED.

LER-121A/123A

EPROM Eraser

Introduction

Combining well performance and low cost, LEAP produces EPROM ERASER. LER-121A/123A that accommodates 12/64 devices (24-Pin x 0.6), and suits for small developing environment.

Standard Accessories

Main unit.....x1
User manual.....x1
DC power adaptor
9V/500mA (LER-121A).....x1
AC power cord (LER-123A)
.....x1

Optional Accessories

LER-121A : 4W UV tube.
LER-123A : 10W UV tube.

Features

- Equipped with electronic starter, extend the product life.
- The timer can be set from 0 to 60 minutes.
- Powerful UV tube, all ICs are ensured for maximum UV exposure.
- Protect users from UV exposure by equipped with automatic UV shut off switch when opening the device drawer.
- LED on the top panel to indicate the status of UV tube.
- Provide almost completely erase area.
- Light, rugged metal construction.
- The erase time is approximately 15 minutes.

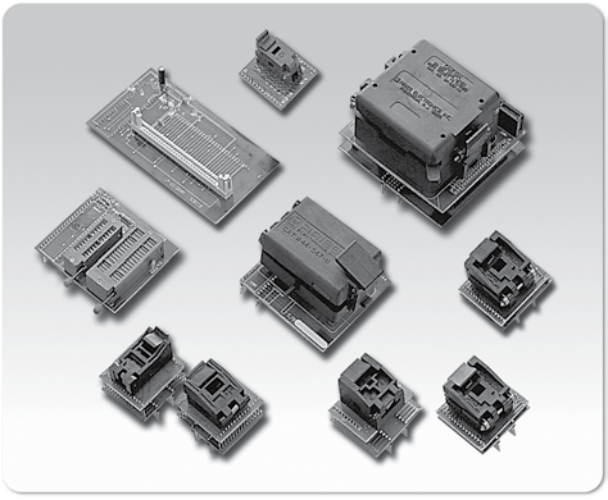
Specification

Model	LER-121A	LER-123A
Erase Quantity	12 pcs (24 PIN)	64 pcs (24 PIN)
Dimension	240 x 85 x 95mm	370 x 180 x 100mm
Weight	1.2Kg	3.1Kg
Operating Altitude	up to 5000m	up to 5000m
Operating Humidity	90% (non-condensing)	90% (non-condensing)
Temperature	+5℃ ~ +45℃	+5℃ ~ +45℃

Adaptor & Converter

PLCC Package	SOP Package
SSOP Package	SOJ Package
TSOP Package	PQFP Package
PSOP Package	QFP Package
TQFP Package	SDIP Package
DIP Package	TSSOP Package
FPGA Package	µBGA Package

EPROM Eraser/Adaptor Series



LEAPER-1A

Handy Digital IC Tester

Introduction

LEAPER-1A is a protable IC Tester that is especially designed for digital ICs. It has 24-PIN ZIF socket to suit different digital ICs. No PC is required to operate LEAPER-1A, it works complete in stand-alone mode through power adaptor or batteries.

Standard Accessories

Main unit.....x1
User manual.....x1
DC 9V/500mA
Power adaptor.....x1

Optional Accessories

SOP, SSOP , TSSOP adaptor

Features

- Easy-operating, particularly designed for the digital ICs.
- Support low voltage device test
  Voltage range: 2.5V/3.0V/3.3V/5V
  Device type:
  54/74 xxxx TTL series
  40/45/14xxx CMOS series
  20xx/28xx Driver IC series
  LEAPER-1A also supports other digital ICs which have same logic function as supported digital ICs.
- Provide idle mode for saving power.
- High-test speed: Generally test an IC in 0.6 second.
- Small, portable, light and power-saving, usable with batteries.
- Display: 16 characters in 1 line LCD.

Device Type

- 74 Series
- 40 Series
- 45 Series
- Driver

Specification

Display	16 x 1 character LCD
Test Pins	14~24 pin
Power	DC 9V/500mA or 9V Alkaline battery x 2
Dimension	160 x 110 x 45mm
Test Voltage	2.5V / 3.0V / 3.3V / 5.0 VDC
Alarm	Various tones for the test result
Weight	312g
Operating Altitude	up to 5000m
Operating Humidity	90% (non-condensing)
Temperature	+5℃~+45℃

Device Supported

74 Serial

7400 7401 7402 7403 7404 7405 7406 7407 7408
7409 7410 7411 7412 7413 7414 7415 7416 7417
7418 7419 7420 7421 7422 7423 7424 7425 7426
7427 7428 7430 7432 7433 7434 7435 7436 7437
7438 7439 7440 7441 7442 7443 7445 7446 7447
7448 7449 7450 7451 7453 74H54 7454 7455 7460
7463 7464 7465 7470 7472 7473 7474
7475 7477 7478 74H78 7480 7481 7482 7483 7484
7485 7486 7487 7489 7490 7491 7492 7493 7494
7495 7496 74105 74107 74109 74110 74111 74112 74113
74114 74116 74125 74126 74128 74132 74134 74135 74136
74137 74138 74139 74140 74141 74142 74143 74144 74145
74147 74148 74150 74151 74152 74153 74154 74155 74156
74157 74158 74159 74160 74161 74162 74163 74164 74165
74166 74168 74169 74170 74173 74174 74175 74176 74177
74178 74179 74180 74181 74182 74183 74184 74185 74189
74190 74191 74192 74193 74194 74195 74196 74197 74198
74199 74230 74231 74240 74241 74242 74243 74244 74245
74246 74247 74248 74249 74251 74253 74257 74258 74259
74260 74265 74266 74273 74274 74276 74279 74280 74283
74289 74290 74293 74295 74298 74299 74322 74323 74347
74348 74350 74351 74352 74353 74363 74364 74365 74366
74367 74368 74373 74374 74375 74377 74378 74379 74382
74386 74390 74393 74395 74399 74412 74425 74426 74445
74447 74465 74466 74467 74468 74490 74518 74519 74520
74521 74522 74533 74534 74539 74540 74541 74563 74564
74574 74573 74576 74580 74597 74620 74621 74622 74623
74638 74639 74640 74641 74642 74643 74644 74645 74646
74647 74652 74654 74668 74669 74670 74682 74683 74684
74685 74688 74689 74795 74796 74797 74798 74804 74805
74808 74810 74811 74821 74827 74832 74841 74874 741000
741002 741003 741004 741005 741008 741010 741011 741020 741034
741035 741036 741244 741245
74H54 (749054) 74H78 (749078) 40H78 (409078)

40 Serial

4000 4001 4002 4006 4007 4008 4009
4010 4011 4012 4013 4014 4015 4016
4017 4018 4019 4020 4021 4022 4023
4024 4025 4026 4027 4028 4029 4030
4031 4032 4033 4035 4038 4040 4041
4042 4043 4044 4048 4049 4050 4051
4052 4053 4054 4056 4060 4063 4066
4067 4068 4069 4070 4071 4072 4073
4075 4076 4077 4078 40H78 4081 4082
4085 4086 4093 4094 4095 4096 4097
4099 40100 40101 40102 40103 40104 40106
40109 40110 40147 40160 40161 40162 40163
40174 40175 40181 40182 40192 40193 40194
40257

45 Serial

4501 4502 4503 4504 4506 4508 4510
4511 4512 4513 4514 4515 4516 4517
4518 4519 4520 4522 4526 4527 4529
4532 4539 4543 4551 4553 4555 4556
4560 4561 4566 4572 4581 4584 4585

Driver

ULN2001 ULN2003 ULN2004 ULN2005 ULN2803 ULN2804

LEAPER-2

Handy Linear IC Tester

Introduction

LEAPER-2 is a portable, small and light Linear IC Tester that provides auto-detection function. Featured for quick search and easy-operating, LEAPER-2 is the best tool to test Linear ICs.

Standard Accessories

Main unit.....x1
User manual.....x1
DC 9V/500mA
Power adaptor.....x1

Features

- Easy-operating, particularly designed for the linear IC. (OP, COMPARATTORS, OPTO, REG., Special Function Device, Transistor Array)
- Small, portable, light and power-saving, usable with batteries.
- Average test time: 0.8 second.
- Equipped with empty-load test, and Auto Power Off function.
- Auto identify the unknown ICs and list the P/N of the IC which has same function.

Specification

Display	16 x 1 character LCD
Tester voltage	5V
Test Pins	14~24Pin
Power	DC 9V/500mA
Dimension	160 x 110 x 45mm
Weight	340g
Operating Altitude	up to 5000m
Operating Humidity	90% (non-condensing)
Temperature	+5℃~+45℃

Device Supported

OP (OPERATIONAL AMPLIFIERS, COMPARATORS)

LM101	LM310	TL022	LF347	UA741	LM107
LM318	TL061	LF351	UA747	LM108	LM324
TL062	LF353	UA748	LM118	LM348	TL064
LF355	OP07	LM124	LM358	TL071	LF356
OP27	LM148	LM1458	TL072	LF357	OP37
LM158	LM2900	TI074	LF411	OP42	LM201
LM2902	TL081	LF412	OP90	LM207	LM2904
TL082	ICL7611	OP97	LM208	LM3900	TL084
ICL7621	OP290	LM218	LMC660	TL094	ICL7641
Op490	LM224	CA358	MC3303	ICL7642	TLC252
LM248	CA3130	MC3403	AD648	TLC272	LM258
CA3140	MC3503	AD711	LP124	LM301	CA3160
MC34004	D712	LP324	LW307	CA3240	NE5532
LT1013	HA17324	LM308	CA3260	NE5534	LT1014
UPC451	RC4558	C4082			

COMPARATTORS

LM139	LM193	LM239	LM293	LM339	LM393
LM2901	LM2903	LM3302	LP239	LP339	LP2901
TLC339	TLC393				

OPTO (OPTOCOUPLERS)

4N25	4N26	4N27	4N28	4N29	4N32
4N33	4N35	4N36	4N37	4N38	4N45
4N46	TIL111	TIL116	H11A1	H11B1	H11D1
H11D2	H11D3	H11D4	CNY75	MCT2	PC817
PC827	PC837	PC847	K827P	K847P	

REG. (VOL TAGE REGULATORS)

UA7805...(LM2930-5.0, LM2931 - 5.0, LM2940CT - 5.0)
UA7806...(need to use DC adaptor)

UA7905	LM217	LM317

SPECIAL FUNCTIONS DEVICE

NE555	NE556	TLC555	TLC556	4016	4066
LM723					

TRANSISTOR ARRAY

ULN2001	ULN2003	ULN2004	ULN2005

Device Type

- Operational Amplifiers
- Optocoupliers
- Comparattors
- VOL Tage Regulators
- N555 Series, Transistor Array

ICT-6D
Digital IC Tester

Introduction
ICT-6D is a desktop digital IC Tester which helps user diagnose the quality of digital ICs. Through its auto-search and auto-detection function, ICT-6D is able to continuously test different digital ICs without pressing any function key.

Standard Accessories
Main unit.....x1
User manual.....x1
AC power cord.....x1

Optional Accessories
SOP, SSOP , TSSOP adaptor

Features
- Reliable desktop design.
- User friendly.
- 16x1 character 8x5 dot matrix LCD backlight display.
- Built in 6 function keys and 10 numerical keys.
- Identify over 1800 CMOS / TTL digital ICs(up to 28 pins).
- High-test speed: generally test an IC in 0.6 second.
- Support low voltage device test
  Voltage range: 2.5V/3.0V/3.3V/5V
  Device type:
  54/74 xxxx TTL series
  40/45/14xxx CMOS series
  20xx/28xx Driver IC series
  ICT-6D also supports other digital ICs which have same logic function as supported digital ICs.
- Automatically identify the unknown ICs and list the part number of the IC that has same function.
- "LOOP function": Continuously test different ICs of the same part number.
- Various "BUZZER" sounds to present the test result "FAIL" or "PASS".

Specification

Button/ Switch	6 Function Keys : (TYRE), BUZZER, LOOP, AUTO, GO, ← , Vlotage
	10 Numeric Keys : 0-9
Display	16 x 1 character dot matrix LCD Display
Power	110V AC~220V AC
Frequency Range	50/60 Hz
Test Voltage	2.5V / 3.0V / 3.3V / 5.0 VDC
Alarm	Various tones for the test result
Dimension	335 x 300 x 105mm
Weight	1.25Kg
Operating Humidity	90% (non-condensing)
Temperature	+10℃ ~ +40℃

Device Supported

74 Serial

7400	7401	7402	7403	7404	7405	7406	7407	7408
7409	7410	7411	7412	7413	7414	7415	7416	7417
7418	7419	7420	7421	7422	7423	7424	7425	7426
7427	7428	7430	7432	7433	7434	7435	7436	7437
7438	7439	7440	7441	7442	7443	7445	7446	7447
7448	7449	7450	7451	7453	74H54	7454	7455	7460
7463	7464	7465	7470	7472	7473	7474		
7475	7477	7478	74H78	7480	7481	7482	7483	7484
7485	7486	7487	7489	7490	7491	7492	7493	7494
7495	7496	74105	74107	74109	74110	74111	74112	74113
74114	74116	74125	74126	74128	74132	74134	74135	74136
74137	74138	74139	74140	74141	74142	74143	74144	74145
74147	74148	74150	74151	74152	74153	74154	74155	74156
74157	74158	74159	74160	74161	74162	74163	74164	74165
74166	74168	74169	74170	74173	74174	74175	74176	74177
74178	74179	74180	74181	74182	74183	74184	74185	74189
74190	74191	74192	74193	74194	74195	74196	74197	74198
74199	74230	74231	74240	74241	74242	74243	74244	74245
74246	74247	74248	74249	74251	74253	74257	74258	74259
74260	74265	74266	74273	74274	74276	74279	74280	74283
74289	74290	74293	74295	74298	74299	74322	74323	74347
74348	74350	74351	74352	74353	74363	74364	74365	74366
74367	74368	74373	74374	74375	74377	74378	74379	74382
74386	74390	74393	74395	74399	74412	74425	74426	74445
74447	74465	74466	74467	74468	74490	74518	74519	74520
74521	74522	74533	74534	74539	74540	74541	74563	74564
74574	74573	74576	74580	74597	74620	74621	74622	74623
74638	74639	74640	74641	74642	74643	74644	74645	74646
74647	74652	74654	74668	74669	74670	74682	74683	74684
74685	74688	74689	74795	74796	74797	74798	74804	74805
74808	74810	74811	74821	74827	74832	74841	74874	741000
741002	741003	741004	741005	741008	741010	741011	741020	741034
741035	741036	741244	741245					
74H54 (749054)		74H78 (749078)		40H78 (409078)				

40 Serial

4000	4001	4002	4006	4007	4008	4009
4010	4011	4012	4013	4014	4015	4016
4017	4018	4019	4020	4021	4022	4023
4024	4025	4026	4027	4028	4029	4030
4031	4032	4033	4035	4038	4040	4041
4042	4043	4044	4048	4049	4050	4051
4052	4053	4054	4056	4060	4063	4066
4067	4068	4069	4070	4071	4072	4073
4075	4076	4077	4078	40H78	4081	4082
4085	4086	4093	4094	4095	4096	4097
4099	40100	40101	40102	40103	40104	40106
40109	40110	40147	40160	40161	40162	40163
40174	40175	40181	40182	40192	40193	40194
40257						

45 Serial

4501	4502	4503	4504	4506	4508	4510
4511	4512	4513	4514	4515	4516	4517
4518	4519	4520	4522	4526	4527	4529
4532	4539	4543	4551	4553	4555	4556
4560	4561	4566	4572	4581	4584	4585

Driver

ULN2001	ULN2003	ULN2004	ULN2005	ULN2803	ULN2804

ICT-7A

Linear IC Tester

Introduction

The new ICT-7A is a desktop IC Tester to determine the quality of linear ICs. It automatically tests IC without keying in IC part number. Built in a 3-PIN regulated socket for user to test Regulator ICs.

Standard Accessories

Main unit.....x1
User manual.....x1
AC power cord.....x1

Features

- Reliable desktop design.
- User friendly.
- 16x1 character 8x5 dot matrix LCD backlight display.
- Built in 6 function keys and 10 numerical keys.
- The following IC series can be tested under +/-5 ~ +/-24V. TIMEER, OP AMP, COMPARATOR, REGULATORS, ZENER, PHOTO COUPLER, COMMUNICATIONS IC, DIRVER, SWITCHING POWER SUPPLY IC.
- Automatically identify the unknown ICs and list the part number of the IC that has same function.
- Various "BUZZER" sounds to present the test result "FAIL" or "PASS".

Specification

Button/ Switch	6 Function Keys : TYPE, AUTO, BEEP, TEST, SEARCH,↵
	10 Numeric Keys : 0-9
	Test Socket, Double binding posts
Display	16 character LCD display
Test Socket	One position for 24-pin IC socket
Power	110V AC~220V AC
Frequency Range	50/60 Hz
Buzzer	Various tones for the test result
Dimension	335 x 300 x 105mm
Weight	1.5Kg
Operating Humidity	90% (non-condensing)
Temperature	+10℃ ~ +40℃

Device Supported

OP (OPERATIONAL AMPLIFIERS, COMPARATORS)

LM101	LM107	LM108	LM113	LM124	LM148	LM158	LM201	LM207	LM208	LM218	LM224
LM248	LM258	LM307	LM308	LM310	LM318	LM324	LM348	LM358	LM1458	LM2900	LM2902
LM2904	LM3900	LMC660	CA358	CA3130	CA3140	CA3160	CA3240	CA3260	CA3401	TL022	TL061
TL062	TL064	TL071	TL072	TL074	TL081	TL082	TL084	TL094	MC3303	MC3403	MC3503
MC34004	NE5532	NE5534	LF347	LF351	LF353	LF355	LF356	LF357	LF411	LF412	ICL7611
ICL7621	ICL7641	ICL7642	AD648	AD711	AD712	LT1013	LT1014	RC4558	uA741	uA747	uA748
OP07	OP27	OP37	OP42	OP90	OP97	OP290	OP490	TLC252	TLC272	LP124	LP324
HA17324	uPC451	C4082									

COMPARATTORS

LM139	LM193	LM239	LM293	LM339	LM393	LM2901	LM2903	LM3302	LP239	LP339	LP2901
TLC339	TLC393										

OPTO (OPTOCOUPLERS)

4N25	4N26	4N27	4N28	4N29	4N32	4N33	4N35	4N36	4N37	4N38	4N45
4N46	CNY75	H11A1	H11B1	H11D1	H11D2	H11D3	H11D4	K827P	K847P	MCT2	PC817
PC827	PC837	PC847	TIL111	TIL116							

VOLTAGE REGULATORS

uA7805. . (LM2930-5. 0, LM2931-5. 0, LM2940CT-5. 0)

uA7806	uA7808	uA7809	uA7810	uA7812	uA7815	uA7818	uA7824	uA7905	uA7908	uA7912	uA7915
uA7924	LM217	LM317	Zener								

REG. (VOL TAGE REGULATORS)

NE555	NE556	TLC555	TLC556	4016	4066	LM723

TRANSISTOR ARRAY

ULN2001	ULN2003	ULN2004	ULN2005

LS-2 Plus

Wireline Simulator

Introduction

ADSL2 PLUS has been more popularly applied because of the increasing application of High-Bandwidth Multi-Media which contains video, data and voice. ADSL2 PLUS is much advanced and popular than traditional copper network , hence it is necessary to have a simulator that can precisely simulate transmission lines. LS-2 Plus is the best solution for the wireline and noise test.

Standard Accessories

Main unit.....x1
AC power adaptor.....x1
RS-232 cable.....x1
CD.....x1
(Driver and user manual are included)

Features

- Simulate 26 AWG up to 23.5kft with 0.25kft minimum resolution.
- Support ADLS2+, ADSL2, XDSL HDSL, T1 and E1 Modems/Transceivers.
- 7-segment LED display to indicate simulating cable length.
- Able to work without PC or the control software. Quickly simulate and test different lengths of cable through switching from different 4 memory keys.
- Utilize an addition and deduction button to progressively divert the simulating cable lengths, for the convenience of under testing the circuit characteristics from the changes and turning points.
- Through a computer user can remotely control via RS-232 interface providing the user with speedy simulation of different cable line lengths.
- Form attached containing program language templates, providing users to develop control programs by themselves.
- Use 19" standard instrument case suitable for users to construct their own testing system.

Specification

Button/ Switch	Power Switch x1
	Line Length Button x2
	Fast Memory Key x4
Display	4 digit red 7 segment LED display
	Remote control indicate light input
Communication	RS-232
Power	110V AC / 220V AC
Dimension	132 x 430 x 386mm
Weight	4.8Kg
Operating Altitude	up to 5000m
Operating Humidity	90% (non-condensing)
Temperature	+5℃ ~ +45℃

Cable Features

Cable Type	26 AWG
Individual Line Distance	23,500ft (Max) / 250ft (Min)
DC Characteristics	100mA(Max), 300V DC
Frequency	Max 2.5 MHz

Connection Features

Front control board : 8 way RJ-45 connection.....x2
Back control board : 8 way RJ-45 connection.....x2
Ground connection.....x2
Terminal.....x1

WICE-ME-SPI/FWH

Flash Emulator

Introduction

With the trend evolving, the change of FLASH ROM nowadays have begun utilizing SPI methods. Therefore, Leap has developed an emulator suitable in correcting errors happening inside the embedded systems of SPI or FWH; furthermore our emulator uses an external connection with the system. No matter if it's Motherboard, CD-ROM Driver, or High performance display card's IC can be emulated, providing the engineers a convenient tool.

Standard Accessories

Main unit.....x1
USB cable.....x1
40-Pin single connector flat cable.....x2
Signal line hook.....x2
CD x1
(Including driver)
DC 12V/2A Power adaptor.....x1

Optional Accessories

SPI POD
FWH POD
PLCC32 hard adaptor
PLCC32 flat cable adaptor

Features

- Special design for detecting wrong insertions, also protects the system from recieving over 5V input.
- Portable, stable, speedy download, saving space and mini volume.
- Support 1.8V～3.3V devices.
- Offer two optional accessories (SPI / FWH POD) to simulate different devices.
- Able to offer a reset output signal, therefore no need to use the reset button.
- Support various file translation formats.
- Unnecessary in programming the IC, a direct simulation can reduce the total time of development speed.

Specification

Communication	USB1.1
Power	DC 12V/2A
Dimension	140 x 110 x 46mm
Weight	380g
Operating Altitude	up to 5000m
Operating Humidity	90% (non-condensing)
Temperature	+5℃ ~ +45℃

PC System Requirement

Operating System	Windows 98/ME/2000/XP
Processor	Pentium III and above
Memory	128MB RAM and above
Hard Disk	30MB and above

Optional Adapter

WICE-ME-FWH

PLCC32 flat cable adaptor

PLCC32 hard adaptor

WICE-SPI

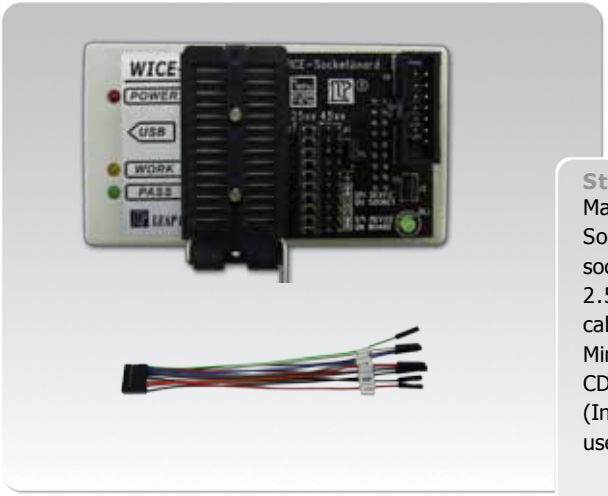
SPI Flash In System Programmer

/Provied ISP and on socket two way programming/

Introduction

As SPI Flash Memory prov ides the characteristics of high capacity, small size, low cost and easy to use, it becomes the main Serial Memory Device for the most of the applications on the market. To accompany with the increasing memory size, the users face the problem of programming and emulating SPI because of lacking a high efficiency and low cost tools.

Now, the WICE-SPI integrates the emulating and programming functions, no matter for development or production, it must be the best in-circuit and off-line solution for SPI Flash Memory.



Standard Accessories

Main unit.....x1
Socket board with DIP28 socket.....x1
2.54mm 11-pin ISP split cable.....x1
Mini USB cable x1
CD x1
(Included driver and user's manual)

Features

- Provides two operation modes:
  1. Programmer :Possessing all functions of programmer and provide many kind of connected way. Users can easily finish the developing or production with the high flexibility and performance.
  2. Emulator: The WICE-SPI can be connected to the circuit board and emulate the SPI directly. The most important, it provides the "WATCH"
- Function: After users compiling the loading file, the WICE-SPI will automatically program the BIOS and reset the circuit board.
- Special design protected function for wrong insertion. If the insertion wrong, the WICE-SPI will not act.
- Tiny, portable, personalized design, via USB for power supply, no environment limit.
- For small production, it able to be clustered 4 sets of WICE-SPI on a PC at the same time.

Applications

- IC design house.
- Field application engineer.
- R&D for debugging and development.
- Factory for small production.
- Components distributor / retail store, for provide repair and small quantity programming service.

Specification

Communication	USB2.0
Power	By USB
Dimension	89 X 50 X 16mm
Weight	60g
Operating Altitude	up to 5000m
Operating Humidity	90% (non-condensing)
Temperature	+5℃ ~ 45℃

PC System Requirement

Operating System	Win 8/ 7/ Vista/ XP
Processor	Pentium VI and above
Memory	512MB RAM and above
Hard Disk	30MB and above

Vendor Supported

AMIC, ATMEL, APLUS, cFeon (EON), ESMT, EECELSEMI, GIGADEVICE, MXIC, NUMONYX, PMC, ST, SST, SPANSION, WINBOND, etc.

Optional Adapter

Density	4Mb	8Mb	16Mb	32Mb	64Mb	128Mb
Program	3.77s	4.81s	7.98s	16.59s	35.77s	66.86s
Verify	0.81s	1.58s	3.11s	6.20s	12.36s	24.70s
Program+Verify	4.58s	6.39s	11.09s	22.79s	48.13s	91.56s

Optional Accessories

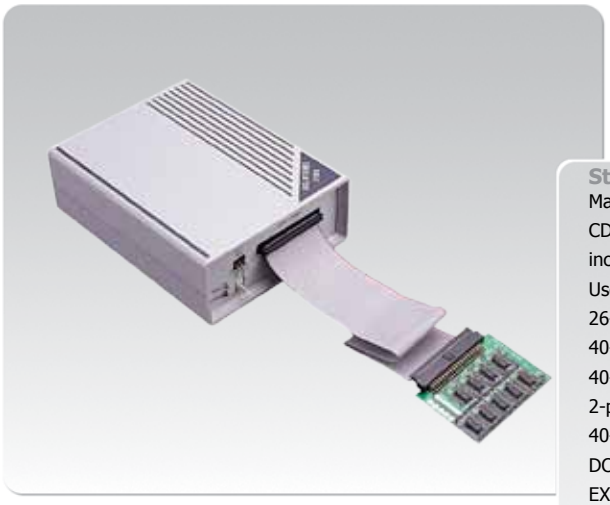
1. Adaptor LP-SOP-16PIN, 150mil
2. Adaptor LP-SOP-8PIN-B, 207mil
3. Adaptor LP-SOP-28PIN-B, 300mil
4. Adaptor LP-WSON8-5X6, 8pin, size 5x6
5. Adaptor LP-WSON8-6X8, 8pin, size 6x8
6. ISP SOP16 testclip
7. 1.27mm 2x4 SMT male header-10pieces
8. 1.27mm 2x8 cable with female header
9. 2.00mm 11-pin ISP split cable
10. ISP SOP8 test clip

WICE-8052

8052 In-Circuit Emulator

Introduction

The WICE-8052, In-circuit Emulator for 8052 microcontrollers, is a well-developed product by LEAP ELECTRONIC. The WICE-8052 is designed specifically for todays engineers who need an excellent tool for their projects. It combines real-time emulation up to 40 MHz with multi-windows, point-and-click, menu-driven function and on-line help. WICE-8052 assists users' designs quickly and efficiently.



Standard Accessories

Main unit.....x1
CD(Driver and user manual are included).....x1
User manual.....x1
26-pin cable.....x1
40-pin module+flat cable.....x1
40-pin cable.....x1
2-pin signal line hook.....x1
40-pin IC socket.....x1
DC 5V/1A power adaptor.....x1
EXT crystal adaptor.....x1

Optional Accessories

PLCC44 adaptor.....x1

Features

- Support 64K hardware full range execution breakpoints, allow for a pause at any point to avoid any other unnecessary procedures.
- Real time to record 32K frame*16 bit address.
- Real time record start and end address, observed program and distribution map.
- Simulate microcontroller family: 80(C)31/32, 80(C)51/52, 87(C)51/52, 89(C)51/52.
- Provide 128K Byte simulation memory (program 64K, data 64K).
- Provide synchronous output signal with RESET for ICE.
- Speedy download via printer port interface.
- Able to disassemble on-line.
- Functional register with categorical displays: directly perform bit-setting on each special functional register. The flag values will assist auxiliary function details.
- Special design for detecting wrong insertions, also protects the system from recieving over 5V input.
- Able to switch internal and external frequencies.
- Speed of emulation up to 40MHz clock.
- Support 3.3V~5V devices.

Specification

Communication	Printer port
Power	100V AC~240V AC
Dimension	140 x 110 x 46mm
Weight	380g
Operating Altitude	up to 5000m
Operating Humidity	90% (non-condensing)
Temperature	+5℃ ~ +45℃

PC System Requirement

Operating System	Windows 98/ME/2000/XP
Processor	Pentium III and above
Memory	128MB RAM and above
Hard Disk	30MB and above

Supported Device

intel	8031 8032 80C31 80C32 8xC51 8xC52 8xC54 8xC58 8xL52 8xL54
ATMEL	89C51 89C52 89C55 89LV51 89LV52
PHILIP	8031 8051 80C31 80C32 8xC51 8xC52 8xCL31 8xCL51 8xC851
SIEMENS	8031 8032 8051 8052 C501 C502
WINDBOND	W78C31B W78C32B

Execution Function

- Full Speed Running Stop, Step Into, Slow Run Into, Slow Run Over, Step Over & Run Until.

File Type Supported

- Binary / Machine code、intel HEX.

WICE-52

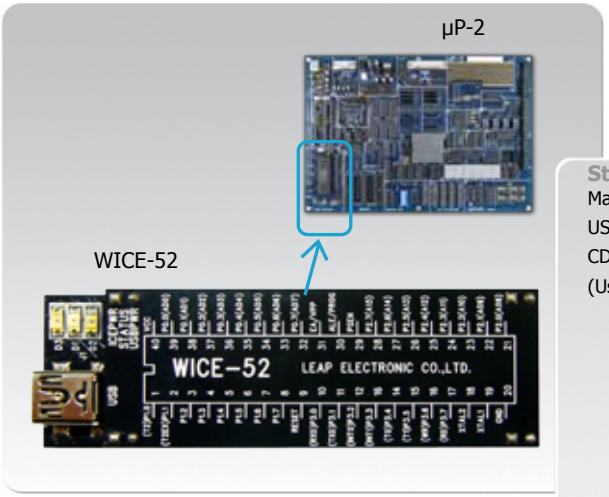
MCS-51 On-Board-Debug

The Best Tool for Emulating/ Debugging/ Learning 8051

Introduction

8051 is the most popular single chip on the microcontroller series. It is the best option to learn the basic experiment or circuit design for the department of Science and Engineering. When you conduct the MCS-51 experiments or debug its program, the WICE-52 can provide you the best assistance.

The WICE-52 adopts OCD(On-Chip-Debug) technology from company Megawin. It is compatible with Keil's 8051 IDE debug simulation interface and supports "Single Step", "Full Speed", "Pause", and "Reset" functions of on-chip debugging.



Standard Accessories

Main unit.....x1
USB Cable.....x4
CD-ROM
(User's manual included)....x4

Features

- Mini size, only 70mm(L) x 23mm(W) x15mm(H). You can insert it into the 8051 socket of the PCB and connect with the PC via USB cable for starting using.
- Support standard MCS-51 series IC which ROM is under 64K Bytes debug &emulate function.
- For 1T MCU commands can be conducted within 1-3 clock and up to 24MIPS. If you want to emulate 4T or 12T 8051 IC by WICE-52, must notice the difference of clock and the delay setting.
- Power Monitor is embedded. When VDD is under-voltage, it will interrupt or reset.
- Directly using Keil 8051 IDE software interface. The debug function is applied to Keil IDE dScope-Debugger. It is compatible with Keil's µVision2 or µVision3. (Note: Keil 8051 IDE software is not included in the product.)
- Powerful debug function: "Single Step", "full Speed", "Pause", and "Reset" etc.
- Programmable interrupts, user can insert 4 interrupts in one time.
- Keil 8051 IDE, contains register/ _disassembler/ watch/ memory etc.
- Going with the Leap UP-2,MCS-51/AVR/ PIC MCU Experimental Board, is best trainer for MCU.

Specification

Communication	USB
Power	USB
Dimension	70 x 23 x 15mm
Weight	22g

Hardware Specification(same as Megawin MPC82G516)

Function	Description	Specification
Internal RC oscillator	Do not need external oscillator	6MHz (1T)
Quartz clock	Built-in quartz clock selection	12/22MHz(1T)
RAM	Internal + Extended SRAM	256+1K(XRAM)
ROM	Internal / External (byte)	64K/64K
I/O port	2 way I/O pins	32、36 or 40
Interrupts	Peripherals work	14 interrupts
EXINT	External Interrupt	4
Timer/ Counter	16-bit counter	3 sets
WDT	Watchdog timer	Support
UART	Asynchronous serial port	2 sets
SPI	Serial peripheral interface	Yes
ADC	10-bit analog to digital	8 channels
PCA	PWM, catcher included	6 sets
Package	IC package	DIP-40

Supported Device

1. The core chip of the WICE-52 is the high performance 1T framework. When using early 4T/ 6T/ 12T 8051 devices, must pay attention to the setting of the clock and delay.
2. Due to the 1T framework, the quartz crystal only needs 24MHz(MAX) can achieve 24MIPS performance. It's much higher other 8051 devices of 4T framework which work at 40MHz, 10MIPS performance. The quartz crystal is embedded in the WICE-52 and common clock is 12MHz/ 22MHz.

PCFACE Series

Learning Kits Series

PCFACE Technical Information

Applications in Industrial Field

PC Extension Interface Protector has the extensive applications of industrial field. Usually, it can be used in three occasions as following.

- Research and Development department: For I/O designing or experimenting.
- Maintenance: To maintain all kinds of Interface Card.

  There are a few problems which can disturb users' work or damage PC by using interface slot on PC:

  1. Short circuits caused by poor soldering within designs or experiment interfaces.
  2. For unknown reasons, by using the ruined Interface Card will damage the main unit.
- Interface Card manufacturer: Using interface protector perform quality control upon interface cards to detect inferior goods.

LEAP ELECTRONIC presents PCFACE series which can prevent problems all of above.

PCFACE Series Features

- Avoid damaging PC during experiment.
- Prevent damages during Interface Card mending.
- Test on PCI- EXPRESS slots, users can rapidly find the inferior goods to prevent the damages that might threaten PCs.
- PCFACE series which is a protector of different motherboard types. Users can turn on/off PCFACE series instead of turning on/off the whole PC system. It is convenient and time saving, especially in testing.
- Prevent malfunctioning from short circuits occurring on the slot by the power protection in PCFACE series.
- The Extension Interface protector protects all signals that are sent to the motherboard, therefore it will not damage the PC or interface card.
- No need for turning off PC, Interface Card can be removed or inserted anytime.
- All signal cables and power have isolation function.
- Built in signal extension system, all signals can be tested on extension slot.
- Four layer designed, low noise and with high stability.
- LED Overload indication.

Application in Education Field

PC plays an important role in industrial fields in terms of its high-speed development, reliable, low price, and various functions. Hardware interface circuit and controlled software complement each other in Microcontroller system. Engineers in this field must fully understand the skills of hardware interface and software designs that function efficiently in microcontroller system.

Laboratories relating to either educational or academic fields, most tutors aren’t willing to teach this section for the following reasons:

- It will damage the PC when poor soldering occurs in experiments on circuit boards.
- Loosing component parts or causing damages from dismantling PC cases.
- It is a waste of time to restart if there are mistakes happening during experiments, due to the necessary load and save process.

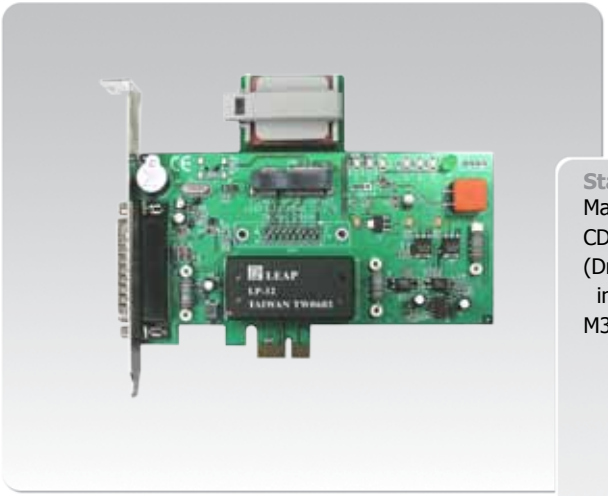
For solving above problems, simply plug in PCFACE series.

PCFACE-mPCIE

Mini PCI-Express Extension Interface Protector

Introduction

The application of Mini PCI-EXPRESS Interface has been getting popular, in that matter Leap Electronic have launched the Mini PCI-Express Extension Protector. According to experimental needs of Mini PCI-EXPRESS Interface product, PCFACE-mPCIE pertains the extended protection to provide a convenient and safety hardware environment. Meanwhile, with the combination of shielding box, it can be built into an ATS system for auto-production.



Standard Accessories

Main unit.....x1
CD.....x1
(Driver and user manual are included)
M3 x 4 Scraw x8

Features

- Providing a convenient and safety Mini PCI-EXPRESS interface for an experimental and a design environment, increasing the work efficiency by 2~5 times.
- Offer hot swap function.
- Auto overload and short circuit protections.
- Overload circuit current will be notified, making trouble shoot easy.
- Designed with an ASIC system to achieve excellent stability and easy maintenance.
- By using Mini PCI-Express protection slot it will be able to increase PC's lifetime.
- The Extension Interface protector protects all signals that are sent to the motherboard, therefore it will not damage the PC or interface card.
- All signal cables and power have isolation function.
- The Extension Interface protector protects all signals that are sent to the motherboard, therefore it will not damage the PC or interface card.
- Through the built in power switch controlling software, users will be able to operate the production process at ease.

Specification

Power Supply Specifications	+3.3V : 1.3Amp
	+3.3VAUX : 400mA
	+1.5V : 650mA
Dimension	180 x 25 x 100mm
Weight	180g
Operating Altitude	up to 5000m
Operating Humidity	90% (non-condensing)
Temperature	+5℃ ~ +45℃

Other Specifications

Hardware Standard	For PCI-Express Version 1.1
Compatibility Test	Mini PCI-Express network interface card

Applications

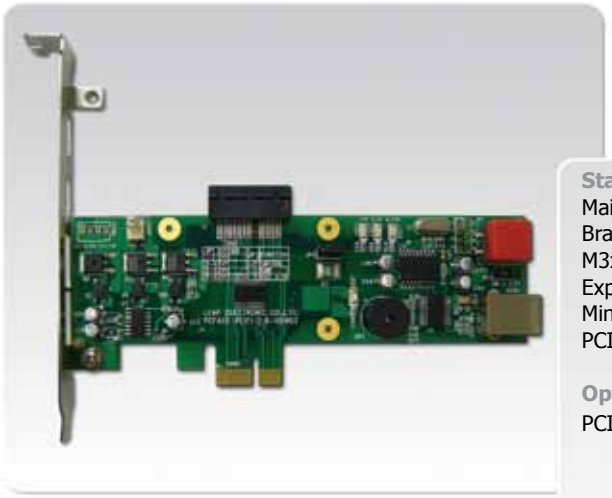
- Applicable in both industrial and academic field.
- R&D Dept and educational institute : for I/O designing or experiments.
- Maintenance Dept : Maintain PCI-Express interface card.
- Interface card manufacturer : to do QC for their products.

PCFACE-PCIE1 2.0

PCI-Express x 1 Extension Interface Protector / The best protector for PCI-Express 2.0

Introduction

For the PCI-Express 2.0 x 1 testing solution, Leap Electronic has developed a new innovative product which is called the PCFACE-PCIE1 2.0. Able to experiment for 1934 interface cards, USB 3.0 cards, internet cards, and SATA cards, etc. Under the PCFACE-PCIE1's protection, users can avoid mistakes from a careless operation and/or inferior devices under test. Moreover, the PCFACE-PCIE1 2.0 provide hot swap function which let users no need to turn off/ on the PC during the testing. It saves a lot of time for users.



Standard Accessories

Main unit.....x1
Bracket.....x2
M3x4 screw.....x2
Express Card x1
Mini PCIE card.....x1
PCI Express x1 card.....x1

Optional Accessories

PCIE1 Extended card

Features

- Over current and short circuit protection functions: PCFACE-PCIE1 will make a beep and then turn power off when it receives over current.
- Hot swap function: Built a power switch on PCFACE-PCIE1 so it's not necessary to turn off the power on motherboard when testing cards.
- Provide 3 sets of LED indicators. Users can connect them for outside control use.
- Able to work under DOS or Windows system.
- Designed under ASIC system with stability.

Specification

Power Supply Specifications	+3.3V: 3A+5%
	+3.3VAUX : 0.37A + 5%
	+12V : 2.1A + 5%
Dimension	140 x 1.6 x 51mm
Weight	50g
Operating Altitude	Up to 5000m
Operating Humidity	90% (non-condensing)
Temperature	+5℃ ~ +45℃

Standard Accessories

PCI Express x1 Card

Express Card

Mini PCIE Card

Applications

- Applicable in both industrial and academic field.
- R&D Dept and educational institute: for PCI-Express x1 designing or experiments.
- Maintenance Dept: Maintain PCI-Express x1 interface card.

Optional Accessories

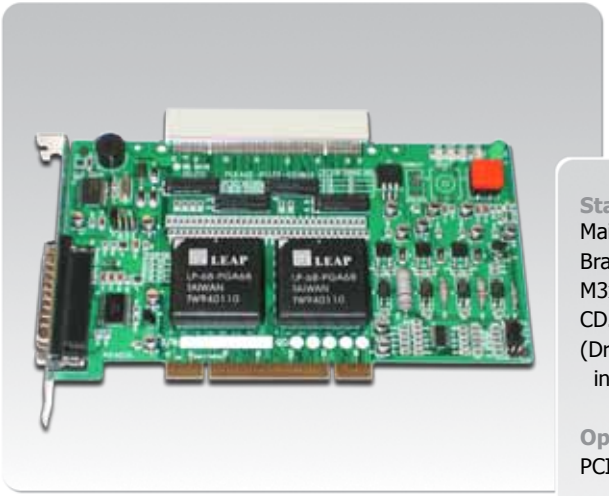
PCIE1 Extended card
9.5cm x 0.16cm x13cm

PCFACE-PCI32

PCI Extension Interface Protector

Introduction

Now PCI interface is a standard specification of computer. One of the advantages of PCI is protecting all signals of PCI BUS. The PCFACE-PCI32 is a high-speed 32-bit PCI bus extension interface protector. Because of PCFACE-PCI32's extraordinary compatibility with various PCI cards, it is a suitable product for the manufacturers who produce PCI cards.



Standard Accessories

Main unit.....x1
Bracket.....x2
M3x 4 screw.....x2
CD.....x1
(Driver and user manual are included)

Optional Accessories

PCI Slot

Features

- Offer hot swap function.
- Protect all signals of PCI BUS.
- Provide convenient and safety PCI Extension Interface in experiment, testing and design environment, also increase the efficiency by 2~5 times.
- Compatible with an external power witch for automation, also equipped with LED indicator.
- Support 3.3V/5V PCI Interface Cards.
- Overload alarm.
- Designed under ASIC system with stability.
- All signal cables and power have isolation function.
- Real signal extension system, all signals on the extension slot can be measured.

Specification

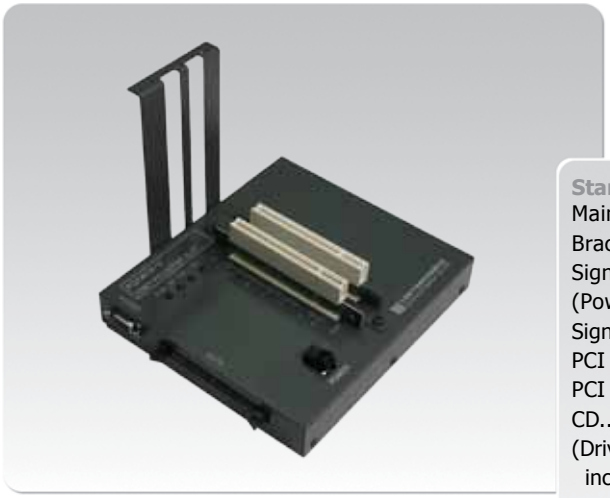
Power Supply	+5V/3A
	+12V/500mA
	−12V/100mA
	+3.3V/3A
Interface Card	Moden card, ADSL card, VGA card, I/O card, NET card, Sound card,
	SCSI card, Game card, MPEG card, Capture card, USB, 1394 card
Dimension	183 x 100 x 20mm
Weight	180g

PCFACE-V

32-bit PCI Extension Interface Protector

Introduction

PCFACE-V can not only support PLX903X/905X chips but also protect all signals of PCI BUS. It is fitting for educational units to perform experiments. By way of PCFACE-V, users can verify a PCI card which was designed under CPLD or FPGA system, also combines the practical and the theoretical.



Standard Accessories

Main unit.....x1
Bracket.....x1
Signal flat cable.....x2
(Power cable.....x1
Signal cable.....x1)
PCI signal card.....x1
PCI power card.....x1
CD.....x1
(Driver and user manual are included)
M3x 4 screw.....x2

Features

- Extend the PCI slot of PC and expands 1 slot to 2 slots.
- Offer hot swap function.
- Auto overload and short circuit protection functions.
- Overload circuit current will be notified through 4 LED indicators, make trouble shoot easily.
- Designed under ASIC system with stability.
- Support 3.3V/5V PCI Interface Cards.
- Avoid damaging motherboard or interface cards.
- All signal cables and power have isolation function.
- Real signal extension system, all signals on the extension slot can be measured.
- Through a power switch controlling software, users will be able to operate the production process with ease.

Specification

Power Supply Specifications	+3.3V/1.5Amp±5%
	+5V/5Amp±5%
Dimension	+12V/600mA±5%
	-12V/100mA±5%
	180 x 27 x 160mm
Weight	500g
Operating Altitude	up to 5000m
Operating Humidity	90% (non-condensing)
Temperature	+5℃ ~ +45℃

Other Specifications

Hardware Standard	For PCI-Express Version 2.2
Compatibility Test	PLX903 X Series I/O Card
	PLX905 X Series I/O Card
	CPLD/FPGA Series PCI Card
Compatibility Interface Card	33MHz/32 bit PCI Interface Card

Applications

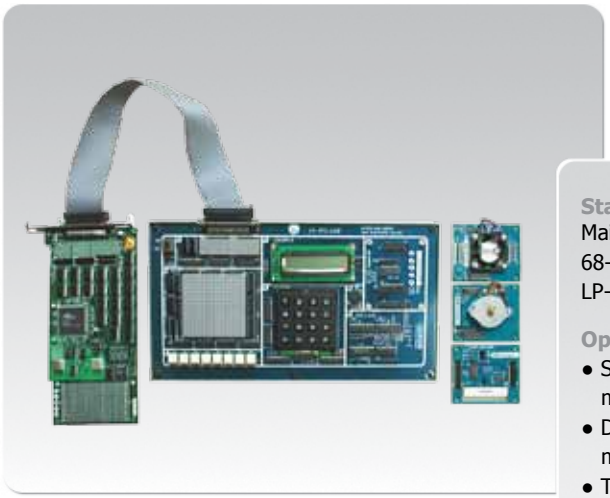
- R&D: For I/O designing and experiments
- Manufacturer: As test equipments for mass production
- Maintenance: For maintain the interface card

LP-PCI-LAB

Universal PCI Development System

Introduction

Because of the widely used PCI application, high speed data acquisition on systems can be acquired. It has replaced ISA interface entirely. In order to meet the trend of PCI interface development, PCI-LAB especially is designed universally for PCI system, which supports engineers and education field usages to understand PCI within the shortest period. The PCI-LAB includes the external platform structure which is able to combine several learning units. Furthermore, there are many suitable teaching materials written by knowledgeable professors, for users to learn how to control I/O with PCI interface within the shortest period.



Standard Accessories

Main unit.....x1
68-pin cable x1
LP-PCI-IO interface card..x1

Optional Accessories

- Step Motor extension module
- Direct Fan extension module
- Temperature Induction extension module

Features

- External platform structure: From the practice of textbooks and tools, users are able to learn quickly in controlling I/O under Windows/DOS through PCI interface card. Users can develop and learn PCI I/O control, furthermore experimenting with C or VB language.
- Outstanding expansionary: External modules include motor, fan, and temperature sensor. Each module can be experimented separately.
- The system contains two main units: One is LP-PCI-IO interface card and the other is LP-PCI-LAB experiment platform.
- Platform design: Provide all experimental units and doesn't require for welding or soldering any extra wires. Strong and durable structure fits for educational and professional training institutes.
- LP-PCI-IO is a standard PCI interface card: It's a formal industrial control card meticulously designed by LEAP. It can be used to develop special subjects or researches. And can be applied to experiments on various PCI peripherals.

Specification

Dimension	280 x 170 x 100mm
Weight	1.5Kg
Operating Altitude	up to 5000m
Operating Humidity	90% (non-condensing)
Temperature	+5℃ ~ +45℃

Other Specifications

Hardware Standard	Compatible with PCI version 2.1 Interface
Logic Input Unit	Logical input keypad x 8
	4 x 4 numeral matrix keypad x 1
Output Unit	16 x 16 dot-matrix LED display x 1
	6 digitals 7 segments display x 1
	16 x 2 character LCD display x 1
	Buzzer output x 1
Linear Unit	1 set 8bits A/D input
	2 sets 8bits D/A output
Extend Unit	10 x 2 pin 2.0mm connector x1
	12 x 2 pin 2.0mm connector x1

Optional Adapter

- **Step Motor extension module**
  1.Quar-phases 12V step motor
  2.Step motor position control
  3.Step motor speed control
- **Direct Fan extension module**
  1.12V direct fan
  2.Fan motor increase/decrease speed control
- **Temperature Induction extension module**
  Temperature induction circuit x 1
- **LP-PC1-10 Interface Card**
  1. Standard PCI Interface Card
  2. 48 Pin two-way I/O
  3. 32+16bits I/O data width

LP-ARM9-2410-SYSTEM

ARM Chip System Design & Experiment Platform /Bring You into System & Embedded World/

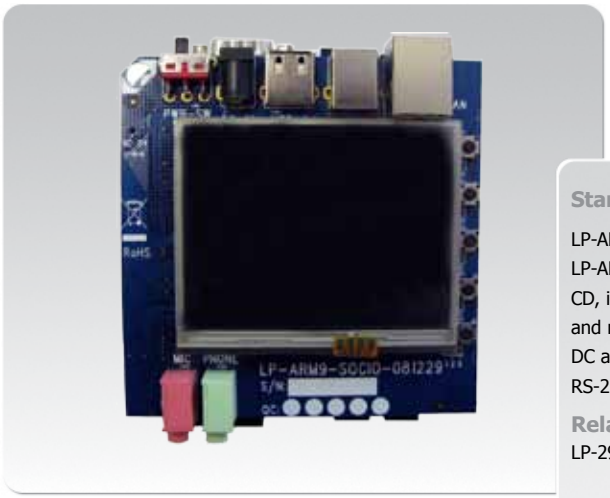
Introduction

Samsung S3C2410 is maturest in the ARM9 chip family, e.g. technical documents, referring books, supported systems, peripheral devices..... and so rich and diversification. It can be said that it the best choice for learning ARM SYTEM. The LP-ARM9-2410-SYTEM provides simple design which allow you to quickly access SOC world, as well as laid good basis of the ability and practical experience for the embedded design.

Moreover, the LP-ARM9-2410-SYTEM compact structure with 3.5 inch touchscreen LCD, 10/100M Ethernet, USB, 250,000 logic gate FPGA and integrity of peripheral interface allow you to easily understand SYTEM and Embedded. And you can use this platform for project development and products systematic.

Features

- Support Samsung S3C24C10 x 32-bits RISC Microprocessor which is under SARM920T frame.
- Use Xilinx Spartan-3E FPGA XC3S250E PQFP208 which contains 250,000 logic gate counts. Let you process ARM+FPGA experiments or topic research.
- Modular design, able to change other CUP boards for learning.
- Provide BootLoader function, able to use C or Assembly for writing Language, via the cable to download to the LP-2900 platform for experiment and verification.
- Able to connect to PC via RS-232 interface. Use the simple terminal program for control and process program download and execute.
- Provide JTAG interface, when writing the program, able to use ADS or RealView for single step trace and debug.
- Provide logic analyzer interface, able to view the SPI, I2C, UART and PWM waveform for analysis. If you use Leaptronix LA or PLA, you can view the protocol decoder as well.
- If you already have LP-2900, you just purchase LP-ARM9-2410 module for upgrade to ARM9 training kit.



Standard Accessories

LP-ARM9-SOCIO.....x1
LP-ARM9-2410-kit.....x1
CD, included demo program and manual.....x1
DC adaptor 5V/1.6A.....x1
RS-232 to USB cable.....x1

Related Products

LP-2900

Specifications

CPU	SAMSUNG S3C24C10x
Memory	SDRAM 64MBytes
	NOR FLASH 4MBytes
	NAND FLASH 64MBytes
Display	3.5 inch TFT LCD, 320 X 240 pixels
Touch interface	4 line resisance type
Net interface	10/100M Ethernet
Communication interface	RS-232
Sound interface	IIS sound interface chip, Stereo audio output interface
	Microphone input interface
JTAG interface	ARM standard JTAG interface
FPGA	Xilinx XCS250E PQFP208
Button	5 button keys
Power	100V~240V AC, auto switching
	50/60 Hz
Dimension	320 x 226 x 30mm
Weight	500g
Operation altitude	5000m
Operation humidity	20%~70% non-condensing

Recommended Bundling Instruments

- Leaptronix LA-2025 / LA-2050 / PLA-1016 / PLA-2532

LP-2900+LP-ARM9-2410-KIT

ARM Design & Experiment Platform / Bring You into SOC and Embedded World/

Introduction

LP-2900 + LP-ARM9-2410 utilize ARM9-32bits chip for learning RISC Microprocessor. It's no need the complex operation system and difficult development process, directly enter CPU command and I/O interface control learning. Let you easily enter SOC and embedded world.

Standard Accessories

LP-2900 platform.....x1
LP-ARM9-2410-KIT module x1
CD.....x1
(Demo program and user's manual are included)
USB to RS-232 cable.....x1
Power cable.....x1

Related Products

LP-ARM9-SOCIO module
FPGA module

Features

- Support Samsung S3C24C10 x 32-bits RISC Microprocessor which is under SARM920T frame.
- Use Xilinx Spartan-3E FPGA XC3S250E PQFP208 which contains 250,000 logic gate counts. Let you process ARM+FPGA experiments or topic research.
- Modular design, able to change other CUP boards for learning
- Provide BootLoader function, able to use C or Assembly for writing Language, via the cable to download to the LP-2900 platform for experiment and verification.
- Able to connect to PC via RS-232 interface. Use the simple terminal program for control and process program download and execute.
- Able to download the program and programming on the NOR Flash Memory on the LP-2900 platform for stand-alone operation.
- Provide JTAG interface, when writing the program, able to use ADS or RealView for single step trace and debug.
- Provide logic analyzer interface, able to view the SPI, I2C, UART and PWM waveform for analysis. If you use Leaptronix LA or PLA, you can view the protocol decoder as well.
- If you already have LP-2900, you just purchase LP-ARM9-2410 module for upgrade to ARM9 training kit

Specifications

CPU	SAMSUNG S3C24C10x
FPGA	XILINX XC3S250E PQFP208
Communication	RS-232 / JTAG
Power	100V AC~240V AC (Auto-Switching)
Frequency Range	50/60Hz
Dimension	320 x 226 x 30/85.6mm
Weight	3.5Kg
Operation Altitude	Up to 5000m
Operation Humidity	20% to 70% (non-condensing)
Operation Temperature	+5℃ ~ +45℃

Experimental Contents

ARM SOC Unit	1. Establish development environment and procedure	
	2. C and Assembly compile and example.	
	3. Bootloader utility and example.	
	4. SOC peripheral experiment	
Memory Unit	1. I²C EEPROM	2. SPI FLASH
	3. NAND FLASH	4. NOR FLASH
Output Unit	1. 8x8 two colors dot matrix LED x 1	2. LCD16 x 2 display x 1
	3. 6 digit, 7 segment display x 1	4. 3 x 4 LED output
	5. Buzzer x 1	
Linear Unit	1. 8 bit D/A converter x 2	2. 8 bit A/D converter x 1

Recommended Bundling Instruments

- Leaptronix LA-2025 / LA-2050 / PLA-1016 / PLA-2532

LP-2900S

CPLD/FPGA Simple Digital Logic Circuit Design Experiment Board

Introduction

Nowadays, CPLD and FPGA have been the first-choice components for the designers. It is suitable for the designers on application for communication, industrial automation, intelligent instrument, image processing, extensive engine control, etc. In order to allow users have excellent experimental platforms, LEAP series has provided platforms based on Altera or XILINX. Enabling engineers to realize the designs of logical circuit from experimental units.

Test Content
Combined logic design, simulation and test

1. Basic logic
2. Deducter
3. Decoder
4. Combined logic
5. Comparator
6. Multiplexer
7. Adder
8. Compiler
9. Demultiplexer

Sequential logic circuit design, simulation and test

1. Flip-flop device
2. Shift register
3. Shift counter register
4. Synchronized counter
5. Non- Synchronized counter

Analog logic circuit design, simulation and test

1. A/D converter
2. D/A converter

Thematic Application Test

1. 8 × 8 dual color spot array LED control test.
2. Digital clock
3. Counter
4. Electronic alarm clock
5. Traffic light control
6. Electronic dice
7. Keyboard scan
8. LCD display control test
9. A/D, D/A converter test
10. Easy CPU design
11. VHDL/AHDL voice design
12. Matching 8051 thematic test

Standard Accessories

Main unit.....x1
CD.....x1
(Including Altera Baseline V9.23 driver)
AC power cord.....x1
25-pin printer cable or USB cable.....x1

Specification

Communication	USB or Printer Port	Weight	3.5Kg
Power	100V AC~240V AC	Operating Altitude	up to 5000m
Frequency Range	50/60 Hz	Operating Humidity	90% (non-condensing)
Dimension	320 x 226 x 30/85mm	Temperature	+5℃ ~ +45℃

Other Specifications

Chip Supported	ALTERA FLEX10K 10A (TQFP-144)	
Signal Generation Unit	1. Programmable frequency generator	
	2. Standard frequency 1K/10K/ 100K/1M/10MHz	
Logic Input Switch	1. 8 × 1 logic input original press point with light	
	2. 8 × 2 logic input Dip switch	
	3. 4 impulse press button generator (2 positive pulse; 2 negative pulse)	
	4. 3 × 4 array keyboard	
Output Unit	1. 8 × 8 dual color point array LCD display.	
	2. LCD 16 × 2 monitor	3. 6 digits 7 nodes monitor
	4. 3 × 4 LED output	5. Buzzer output x 1 set
Linear Unit	1. 8bit D/A converter x 2 sets	2. 8bit A/D converter x 1 set
MPU unit	8051 and CPLD/FPGA match circuit test	

PC System Requirement

Operating System	Windows 98/2000/XP

Application Program Range

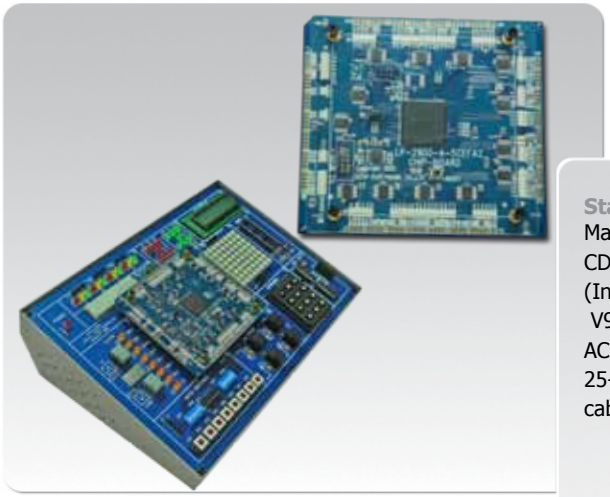
1. Fundamental logic program
2. Digital circuit design program
3. Digital system design circuit program
4. Micro processor principle program
5. VLSI design program
6. OPLD/FPGA chip design program
7. 8051 single chip program
8. Thematic preparation

LP-2900+ CPLD/FPGA CHIP BOARD

CPLD/FPGA Digital Logic Circuit Design Experiment Kit

Introduction

Nowadays, CPLD and FPGA have been the first-choice components for the designers. It is suitable for the designers on application for communication, industrial automation, intelligent instrument, image processing, extensive engine control, etc. In order to allow users have excellent experimental platforms, LEAP series has provided platforms based on Altera or XILINX. Enabling engineers to realize the designs of logical circuit from experimental units.



Standard Accessories

Main unit.....x1
CD.....x1
(Included Altera Baseline V9.23 driver)
AC power cord.....x1
25-pin printer cable or USB cable.....x1

Test Content
Combined logic design, simulation and test

1. Basic logic
2. Deducter
3. Decoder
4. Combined logic
5. Comparator
6. Multiplexer
7. Adder
8. Compiler
9. Demultiplexer

Sequential logic circuit design, simulation and test

1. Flip-flop device
2. Shift register
3. Shift counter register
4. Synchronized counter
5. Non- Synchronized counter

Analog logic circuit design, simulation and test

1. A/D converter
2. D/A converter

Thematic Application Test

1. 8 × 8 dual color spot array LED control test.
2. Digital clock
3. Counter
4. Electronic alarm clock
5. Traffic light control
6. Electronic dice
7. Keyboard scan
8. LCD display control test
9. A/D, D/A converter test
10. Easy CPU design
11. VHDL/AHDL voice design
12. Matching 8051 thematic test

Specification

Communication	USB or Printer Port	Weight	3Kg
Power	100V AC~240V AC	Operating Altitude	up to 5000m
Frequency Range	50/60 Hz	Operating Humidity	90% (non-condensing)
Dimension	320 x 226 x 30/85mm	Temperature	+5℃ ~ +45℃

Other Specifications

Chip Supported	ALTERA	FLEX10K30ATC144 (TQFP-144) / 5CEBA2 F23C8N(BGA-484)
	XILINX	XC2S50 (PQFP-208)
Signal Generation Unit	1. Programmable frequency generator	
	2. Standard frequency 1K/10K/ 100K/1M/10MHz	
Logic Input Switch	1. 8 × 1 logic input original press point with light	
	2. 8 × 2 logic input Dip switch	
	3. 4 impulse press button generator (2 positive pulse; 2 negative pulse)	
	4. 3 × 4 array keyboard	
Output Unit	1. 8 × 8 dual color point array LCD display	
	2. LCD 16 × 2 monitor	3. 6 digits 7 nodes monitor
	4. 3 × 4 LED output	5. Buzzer output x 1 set
Linear Unit	1. 8bit D/A converter x 2 sets	2. 8bit A/D converter x 1 set
MPU unit	8051 and CPLD/FPGA match circuit test	

PC System Requirement

Operating System	Windows 98/2000/XP

Application Program Range

1. Fundamental logic program
2. Digital circuit design program
3. Digital system design circuit program
4. Micro processor principle program
5. VLSI design program
6. CPLD/FPGA chip design program
7. 8051 single chip program
8. Thematic preparation

(OLD)LP-2900+ CPLD/FPGA CHIP BOARD

CPLD/FPGA Digital Logic Circuit Design Experiment Kit

Introduction

Nowadays, CPLD and FPGA have been the first-choice components for the designers. It is suitable for the designers on application for communication, industrial automation, intelligent instrument, image processing, extensive engine control, etc. In order to allow users have excellent experimental platforms, LEAP series has provided platforms based on Altera or XILINX. Enabling engineers to realize the designs of logical circuit from experimental units.

Standard Accessories

Main unit.....x1
CD.....x1
(Included Altera Baseline V9.23 driver)
AC power cord.....x1
25-pin printer cable or USB cable.....x1

Test Content
Combined logic design, simulation and test

1. Basic logic
2. Deducter
3. Decoder
4. Combined logic
5. Comparator
6. Multiplexer
7. Adder
8. Compiler
9. Demultiplexer

Sequential logic circuit design, simulation and test

1. Flip-flop device
2. Shift register
3. Shift counter register
4. Synchronized counter
5. Non- Synchronized counter

Analog logic circuit design, simulation and test

1. A/D converter
2. D/A converter

Thematic Application Test

1. 8 × 8 dual color spot array LED control test.
2. Digital clock
3. Counter
4. Electronic alarm clock
5. Traffic light control
6. Electronic dice
7. Keyboard scan
8. LCD display control test
9. A/D, D/A converter test
10. Easy CPU design
11. VHDL/AHDL voice design
12. Matching 8051 thematic test

Specification

Communication	USB or Printer Port	Weight	3Kg
Power	100V AC~240V AC	Operating Altitude	up to 5000m
Frequency Range	50/60 Hz	Operating Humidity	90% (non-condensing)
Dimension	320 x 226 x 30/85mm	Temperature	+5℃ ~ +45℃

Other Specifications

Chip Supported	ALTERA	FLEX10K30ATC144 (TQFP-144) / 5CEBA2 F23C8N(BGA-484)
	XILINX	XC2S50 (PQFP-208)
Signal Generation Unit	1. Programmable frequency generator	
	2. Standard frequency 1K/10K/ 100K/1M/10MHz	
Logic Input Switch	1. 8 × 1 logic input original press point with light	
	2. 8 × 2 logic input Dip switch	
	3. 4 impulse press button generator (2 positive pulse; 2 negative pulse)	
	4. 3 × 4 array keyboard	
Output Unit	1. 8 × 8 dual color point array LCD display	
	2. LCD 16 × 2 monitor	3. 6 digits 7 nodes monitor
	4. 3 × 4 LED output	5. Buzzer output x 1 set
Linear Unit	1. 8bit D/A converter x 2 sets	2. 8bit A/D converter x 1 set
MPU unit	8051 and CPLD/FPGA match circuit test	

PC System Requirement

Operating System	Windows 98/2000/XP

Application Program Range

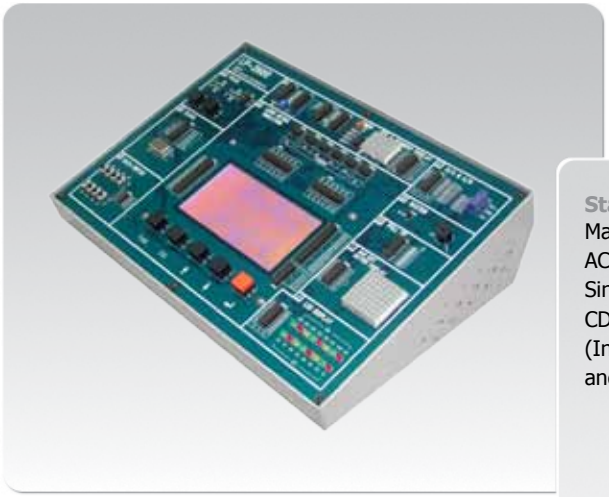
1. Fundamental logic program
2. Digital circuit design program
3. Digital system design circuit program
4. Micro processor principle program
5. VLSI design program
6. CPLD/FPGA chip design program
7. 8051 single chip program
8. Thematic preparation

LP-2600

Smart Logic Design Experimental Kit

Introduction

The LP-2600, a Smart Logic Design Experimental Kit, which helps beginners to comprehend the general design functions of digital circuit, and offers multiple experimental units. The LP-2600 simplifies the process of welding ICs. As long as we load the entire circuit program into the Smart Logic Design Experimental Kit through USB or printer port, the LP-2600 will simulate the circuit.



Standard Accessories

Main unit.....x1
AC power cord.....x1
Single-core cable.....x52
CD.....x1
(Included user's manual and teaching book)

Features

- Don't require TTL and CMOS devices to do experimental circuits. Saving materials and time.
- Help users learn about practical experiments and basic logic programs quickly without soldering IC components.
- Offer smart INPUT and OUTPUT circuit linkage function.
- Offer practical input control settings. Reveal each gate, IC gate and output linkage results on output circuit.
- Offer the pin of measurement point for convenience to measure various test point virtually.
- Fit for standard digital logic experiment programs.
- System built-in various experimental units of basic logic gate, assembled logic and digital logic.

Experimental Content

1. Basic Logic gates experiment
2. Assembled logic gates experiment
3. Adder experiment
4. Subtracter experiment
5. Assembled logic application
6. Digital logic application
7. Sequential logic experiment
8. Sequential logic application
9. D/A converter experiment
10. A/D converter experiment
11. 555 multi-vibrates circuit experiment
12. PULL UP circuit experiment

Specification

Communication	USB1.1
Power	90V AC~260V AC
Frequency Range	50/60 Hz
Dimension	320 x 226 x 30/85mm
Weight	2.8Kg
Operating Altitude	up to 5000m
Operating Humidity	90% (non-condensing)
Temperature	+5℃ ~ +45℃

Other Specifications

Devices Emulating	Display：240 x 128 LCD
Module	Emulating：1. TTL IN (x28) Pin 2. TTL OUT (x28) Pin 3. O.C. OUT (x6) Pin
	Control keypad：FUNC, ESC, ↑, ↓,↵
Input Unit	Logic Switch：S1~S8
	Signal Generator:
	1. A, /A →100 ms Pulse 2. B, /B →100 ms Pulse
	3. Clock：1 Hz/10 Hz/100 Hz/1 KHz/10 KHz/100 KHz/1MHz
	4. CLK/2, CLK/4, CLK/8, CLK/16, CLK/32, CLK/64, CLKIN
Output Unit	Standard Circuit Module:
	1. Common anode LED display x 8 2. Common cathode LED display x 8
	3. Isolated common anode 7 segment display x 2
	4. 8 x 8 monochrome dot matrix LED 5. BUZZER unit 6. VH, VL, common point x 4
	Advanced Circuit Module:
	1. 555 Circuit unit (a. Mono-stable oscillator / b. Non-stable oscillator)
	2. D/A unit 4bit 3. A/D unit 7bit 4. PULL UP circuit experiment
	Advanced Software Module:
	Allow users to edit and revise experimental circuits.
	1. To download experimental circuits to experimental lab
	2. To create experimental circuits for various certificated levels

FPT-1

CPLD/FPGA Logic Circuit Design Experimental Kit

Introduction

In the past, each engineers themselves need to design their own circuit board, which then need a certain amount of universal bread boards and logic components to do trials and errors, all this not only wastes time, also expenses would increase. Now an electronic engineer can finish circuit designs easily by using CPLD / FPGA, only by a few reformation of the software it can be ready for operations. Leap Electronic have considered for the beginners' needs, therefore we have invented FPT-1 combining the CPLD or FPGA for educational purposes. The FPT-1 avoids the soldering issues between the circuits and cable lines.

Standard Accessories

FPT-1 Main board.....x1

Optional Accessories

DC 9V/500mA power adaptor x1

25-pin printer cable.....x1

Features

- Use CPLD/FPGA software and hardware to design Logic IC, in order to replace complicated hardware design of TTL/ CMOS.
- Capable in using Circuit Graphic and digital hardware descriptive syntax (VHDL, ABEL, and AHDL) to develop circuits, and directly download from original manufacturer's software via printer port.
- Modulized design: user can choose ALTERA or XILINX chipboard module.
- Avoid the soldering issues between the circuits and cable lines.

Chip board sepcification

Device supported	**ALTERA** EPF10K10TC144 (TQFP144 pin)	**XILINX** XCS10TQ144(TQFP144 pin)
Chip board model	**ALTERA** FPT-EPF10K10TC144	**XILINX** FPT-XCS10TQ144

1. 8 x 2 LED shown output.
2. 8 x 2 Logical input toggle.
3. 4 pulse keystrokes producer (two positive pulses:two negative pulses).
4. 6 digits and 7 nodes monitor.
5. Own red main power guiding lights.
6. Within 10MHz oscillator.
7. Own main power switch to exchange adaptor with Extend Power Pin.
8. 25pin D Type Connector (Printer Port Download FPGA).
9. Use DC 9V adaptor or Extend Power Pin provided for user. Specification: DC 5V.
10. Support ALTERA MAX +Plus II Baseline and XILINX Foundation's development system.
11. Not use expanded area I/O Pin, provided user definition use.

PC System Requirement

Operating System	Windows 98/2000/XP/Vista 32bits

Application Program Range

1. Fundamental logic
2. Digital circuit design
3. Digital system design
4. Microprocessor principle
5. CPLD/FPGA chip design

Test Content

Combined logic design, simulation and test

1. Basic logic
2. Deducter
3. Decoder
4. Combined logic
5. Comparator
6. Multiplexer
7. Adder
8. Compiler
9. Demultiplexer

Sequential logic circuit design simulation and test

1. Flip-Flop
2. Shift register
3. Shift counter register
4. Synchronized counter
5. Non-Synchronized counter

Thematic Application Test

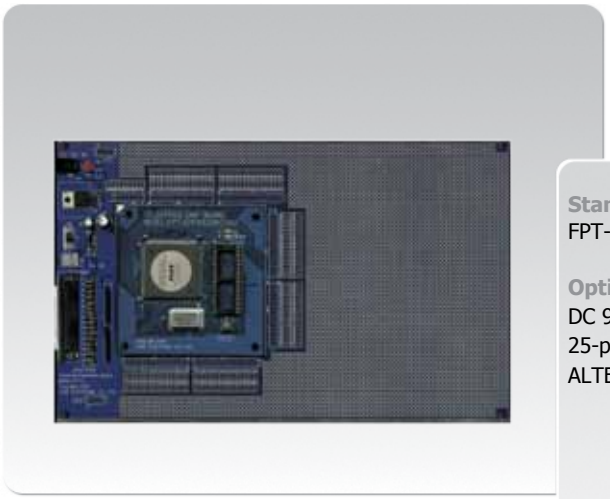
1. Digital clock
2. Counter
3. Electronic alarm clock
4. Traffic light control
5. Electronic dice
6. VHDL/AHDL design
7. Random design of expanded I/O Pin

FPT-2

CPLD / FPGA Logic Circuit Universal Board / Chip Board

Introduction

Leap Electronic designs a whole set omnipotent bread board to support ALTERA and XILINX; therefore users can easily assemble the desired circuit designs. FPT-2 is most apt in assisting towards researches and experiments, also projects.



Standard Accessories
FPT-2 Main board.....x1

Optional Accessories
DC 9V/500mA power adaptor
25-pin printer cable
ALTERA/XILINX chipboard

Features

- After programming a finished file into EPROM (FLASH), it can operate independently.
- Support ALTERA and XILNX development system.
- Capable in using Circuit Graphic and digital hardware descriptive syntax (VHDL, ABEL, and AHDL) to develop circuits.
- Users can choose ALTERA or XILINX chipboard modules.
- Avoid the soldering issues between the circuits and cable lines.

Specification

Communication	Printer Port
Power	DC 9V/500mA
Dimension	205 x 128 x 25nm
Weight	500g
Operating Altitude	up to 5000m
Operating Humidity	90% (non-condensing)
Temperature	+5℃ ~ +45℃

Chip board sepcification

Device Supported		Chip board model	
ALTERA	1. EPF10K10TC144 (TQFP144 Pin)	**ALTERA**	1. FPT-EPF10K10TC144
	2. EPF10K20RC240 (PQFP240 Pin)		2. FPT-EPF10K20RC240
XILINX	1. XCS10TQ144 (TQFP144 Pin)	**XILINX**	1. FPT-XCS10TQ144
	2. XCS30TQ144 (TQFP144 Pin)		2. FPT-XCS30TQ144
	3. XCS20PQ208 (PQFP208 Pin)		3. FPT-XCS20PQ208

PC System Requirement

Operating System Windows 98/2000/XP/Vista 32bits

FPT-2 Universal Board Specifications

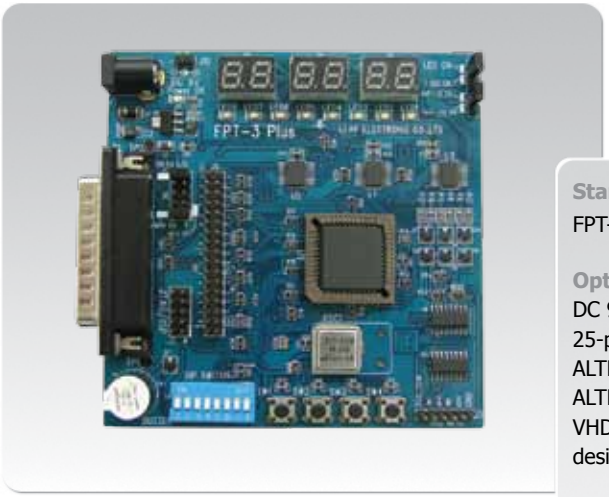
- Provide DC 9V/500mA adaptor or Extend power Pin for user, and the specification is DC 5V.
- Attached with a power switch or Extend power indicator.
- 25pin D Type Connector (Download FPGA by printer port).
- Equipped with Breadboard and provide soldering circuits experiment.
- Support ALTERA MAX + Plus II Baseline and XILINX Foundation's development system.
- Use Graphic, VHDL, ABEL or AHDL to develop circuits.
- All I/O can be expanded by connector.
- Download circuit by printer port from IC vendor's software.

FPT-3 Plus

CPLD/FPGA Simple Logic Circuit Design Board

Introduction

The FPT-3 Plus offers a complete interface to study CPLD circuit interface. It lets the users load the logical circuits to the FPT-3 Plus easily. Utilizing the characteristics of this product, users can examine if the designed circuits are problematic. The FPT-3 Plus comes with a manual containing several units for studying.



Standard Accessories

FPT-3 Plus Main board.....x1

Optional Accessories

DC 9V/500mA power adaptor
25-pin printer cable
ALTERA EPM7064SLC44-10
ALTERA EPM7032SLC44-10
VHDL and Graphic circuit design the teaching material

Features

- Utilize CPLD/FPGA hardware/software development system to learn the newest design of logical IC instead of the complex hardware designs of TTL/CMOS.
- Capable in using Circuit Graphic and digital hardware descriptive syntax (VHDL, ABEL, and AHDL) to develop circuits, and directly download from original IC vendor's software via printer port.
- Able to download the designed software to the CPLD, thus FPT-3 Plus can operate in stand-alone mode.

Specification

Support Altera CPLD MAX7000S	EPM7064/32SLC44-10 (alternative)
Devices series	PLD on EEPROM structure
	5V working voltage
	Support 1,250 logic gates and 64 LCs
System clock	32 I/O availably
Programming interface	4.000MHz
	JTAG/ISP
Power	DC 9V/500mA
Dimension	100 x 115 x 22mm
Weight	500g

Other Specification

Input Unit	1. Logic DIP switch 8 x 1
	2. Negative pulse press button x 4 sets
Output Unit	1. 8 LED (low voltage drove) x 1 set
	2. 6 digits 7 segment display (Common cathode: low voltage drove)
	3. Buzzer x 1 set

PC System Requirement

Operating System	Windows 98/2000/XP/Vista 32bits

Experiment Content

Basic logic

1. Logic experiment (DIP SW + LED)
2. Relationship experiment (DIP SW + LED)
3. Complier/Decoder

Arithmetic logic circuit

1. Adder
2. Subtracter
3. Multiplexer

Frequency divide and count

1. 7 segment display (Binary to Decimalism)
2. 8 LED (Binary to Decimalism)
3. Frequency divide test (LED)
4. All I/O test
5. Upward counter
6. Traffic light display
7. Simple electric piano
8. Hour, minute and second timer control
9. Step motor control

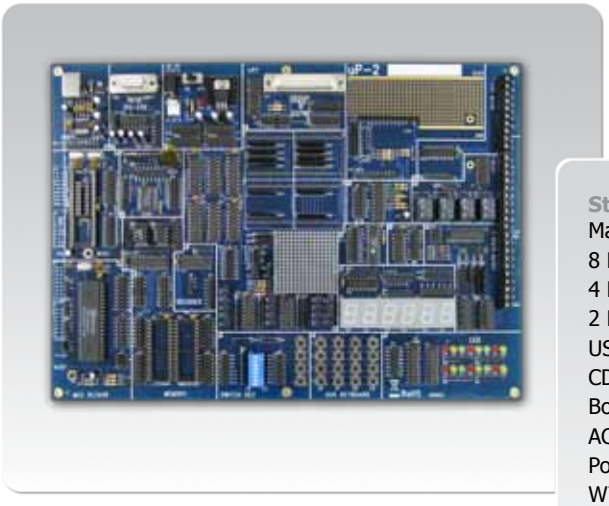
µP-2

MCS-51 / AVR / PIC MCU Experimental Board

The best platform for learning MCU

Introduction

The uP-2 is included MCS-51, AVR and PIC which are the top 3 popular MCUs on the market. The platform is flexible design. Each part of the experiments has their own circuit block. You can combine the experimental example or designated topic circuit for your own subject. The uP-2 is the best platform for learning MCU.



Standard Accessories

Main Board.....x1
8 Pin Cable.....x4
4 Pin Cable.....x4
2 Pin Cable.....x8
USB Cable.....x1
CD (Included user's manual, Boot codes, examples)...x1
AC110V/DC9V/500mA Power Adaptor.....x1
W78E052DDG IC.....x1

Features

- Applied subjects are included MCS-5X/AVR/PIC16F8XX.
- Available 20 or 40 pin MUC.
- Compatible with many brands of emulators.
- System is designed on stand-along CPU, interface separately.
- Provide 26 circuit units.
- All of the circuits are able to combined with cable wires by users.
- No need to Solder, saving time.
- 385 holes on the board which provide users for extended application or subjective experiments.
- The Power is provided two kinds of input, 9V adaptor or DC 9V.

Specification

Communication	Printer / RS-232 / USB Port
Power	9V DC Adaptor / 9V DC Extend Power Pinin
Dimension	316 x 222 x 210mm
Weight	700g

Circuit Unit

- 20 & 40 pin MCS-51/AVR IC socket
- 20 & 40 pin PIC16F8XX IC socket
- USB
- RS-232
- Printer port
- EPROM/FLASH socket for program extension, up to 512K x 8bits
- SRAM socket for program extension, up to 512K x 8bits
- IO decoder
- Red/yellow/green LED
- 6 digits 7 segment display
- Stand-along push button x 4
- DIP switches
- 16x16 two colors dot matrix LED
- System power supply
- A/D ADC0804 IC
- D/A AD7528 IC
- LCD socket extension.
- OP LM324 IC
- Relay x 4
- Step Motor driver ULN2003

Experimental Contents

- LED
- Push button
- Single and dual Traffic light control
- Neon lamp
- Extended program memory
- Extended data memory
- Extended EEPROM recode data
- 16x16 double color dot matrix display, Character/graph
- 6 digits dynamic 7 segment display LCD circuit (LCD is option)
- Step motor driver circuit (need connect to external motor)
- Relay control 4x4 matrix keypad scan circuit
- Press button circuit
- Touch switch read and set
- Timer
- Password key
- Electronic piano
- Counter
- A/D and D/A conversion
- 8255 I/O extension
- Multi I/O decode
- Serial Peripheral Interface
- Printer interface
- USB interface
- USB transfer to RS-232
- OPTO input & output
- 82C55 IO extension
- Buzzer output
- EEPROM 93C46 & 24C02
- Matrix keypad circuit x 16(4x4)
- Photo
- 385 hole universal board

µP-2

MCS-51 / AVR / PIC MCU Experimental Board

The best platform for learning MCU

Optional Accessories

3-in-1 Module Kit

3-in-1 module board

- Using this board for extending motor module,fan module and sensor module.

Motor module

- For step motor control experiment

Fan module

- For fan speed control experiment

Sensor Module

- For heating control and temperature induction experiment

WICE-52 MCS-51 On-Board-Debug

- The WICE-52 adopts OCD(On-Chip-Debug) technology from company Megawin. It is compatible with Keil's 8051 IDE debug simulation interface and supports"Single Step","Full Speed", "Pause", and "Reset" functions of on-chip debugging.
  It is compatible with Keil's µVision2 or µVision3. (Note: Keil 8051 IDE software is not included in the product.)

- All registered trade names and trademarks are the property of their respective owners.

LP-2025

Portable Wind Power Generation Kit

Introduction

LP-2025 is a portable wind power generation kit for projects.
The researcher can use LP-2025 for create practical platform.
Moreover, We can apply the different accessories of the LP-2025 to achieve the variable experiments.

Standard Accessories

Wind power generation body .. 1
Blade 3
Generator head 1
Tail 1
Charge control unit 1
50W power resistor 1
System output board 1
Battery 1
Case 1
USB LED light 1

Features

1. Compact design which make for carrying out or collections very convenient.
2. Easy to install, most of the cables have been completed, just simply install the blades and tail.
3. Wind and solar charge control dual-input, able to directly connect to external solar panels which up to 120W.
4. USB jack which able to recharge mobile, MP3, GPS and other portable devices. On the other hand, able to connect to lighting, fan and other computer peripheral products.
5. Large case space for cable and other accessories.
6. The wind turbine has the strongwind-deviation function. Usually, the blades surface the wind, if face the strong wind, the blade will deviate from an angle to reduce the impact for the generator.

Applications

1.Portable monitoring system experiment.
2.Small wind power generation systems and power suppply experiments.
3. For the green energy industry thematic studies. Using the different accessories to understand the wind power system.
4. Able to use for small power utility applications:
   A. Garden and landscape lighting.
   B. Portable LED or low power comsumption use.
   C. Use of outdoor activities.
   D. The various lighting for family use.

Specification

Blade cycle diameter	75 cm
Start wind speed	2 m /s
Start charging wind speed	2.5 m /s
Charging voltage	12V
Charge current	(12 m /s): 2.3A
Battery	Sealed deep cycle lead-acid battery
Weight	8.6 kg (including battery)
Dimension	445 x 240 x 205mm

GP-6W

Green Power Lab

Product Instruction

- Green Power:
  Green power sources are regarded as new & pure sources generated by modern technology such as solar power, wind power, tidal power and geothermal power, etc. This learning kit is equipped with solar power cell, for users to learn the application of green energy technology, comprehend energy transformation and finally manage green energy more efficiently.
- Solar power module:
  Get different voltage & current, comprehend characteristic curve of I/V, V/P and MPP and learn solar power transformation through solar power module.
- GP-6W Green Power Learning Kit : GP-6W is a basic green energy transduction kit of solar power. It is equipped with a MCU for users to learn MPPT (Maximum Power Point Tracking) algorithm. Users know more about the regeneration of green power through changing MPPT algorithm.

Features

1. Portable suitcase design kit. User can utilize sunlight or rechargeable battery to operate the system in the outdoors.
2. Application of MPPT algorithm.
3. LCD shows input/out voltage, current and power value.
4. DC TO DC CONVERTER Module for learning experiment of output transduction.
5. DC TO AC INVERTER Module for learning experiment of output transduction.
6. Learn the regeneration use of solar power through Charging Module.
7. Battery charging control function: VBAT(Charging Voltage), IBAT(Charging Current) and VMPP(Maximum Power Point) can be set during battery charging
8. Learn the regeneration use of solar power through Load Module. EX: LED shining.
9. Wind and solar modules have their own simple voltage LED display to determine the current value of the input voltage.
10. The kit is based on Open Design. User can change operating procedure during experiment.

Content of Teaching Book

Ch 1: Instruction of green power
Ch 2: Instruction of learning kit
Ch 3: Instruction of software development tool
Ch 4: Learn C language
Ch 5: Feature and basic experiment of MPC82G516
Ch 6: Control of LCM display
Ch 7: Control of analog to digital
Ch 8: Control of PWM
Ch 9: Theory of DC TO DC
Ch10: Control of battery charging & discharging
Ch11: MPPT algorithm
Ch12: Design of DC TO AC

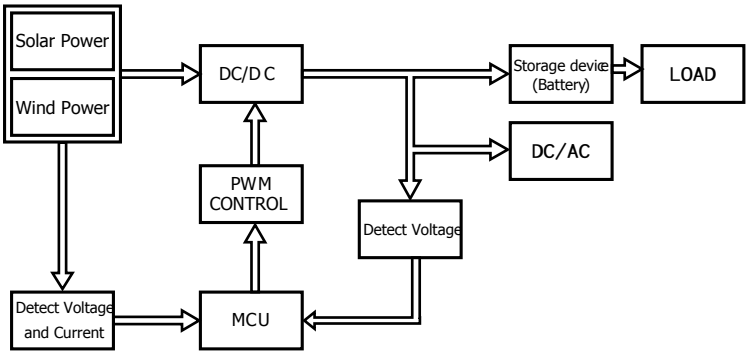
Standard Accessories

1. Main unit.....x1
2. CD.....x1
   (included user's manual, teaching book, source code, example)
3. No. 4 rechargeable battery ...x4
4. Adaptor 12V 0.5A, positive pole inside.....x1
5. USB cable.....x1
6. 10cm 2pin cable with 3.96mm terminal.....x1
7. 30cm 2pin cable with 3.96mm terminal.....x2
8. 34cm 3pin cable with 3.96mm terminal.....x5

Optional Accessories:

1. Halogen lamp, 250W
2. Wind power generation kit LP-2025

Block Diagram of Solar Power System



Product Specification

Output Power Of Solar	6W
Output Voltage of Solar Power	8V (MAX)
Output Current of Solar Power	780mA (MAX)
Communication Interface	USB
System Power	DC 9V~12V/500mA
Dimensiun	335 x 240 x 75mm
Weight	2.5 kg

Content of Experiment

Teach users the way to connect different module and design operating mode of each module so that users can comprehend the basic principle and application of solar power battery.

1. Observe I/V, V/P and MPP characteristic curve of solar power module
2. Set the output (I/V) of solar power module according to the incident angle
3. Design of DC TO DC CONVERTER Module
4. Experiment of DC TO AC INVERTER Module
5. Experiment of basic load and observe the I/V of solar power module
6. Charging and discharge function of battery
7. MPPT algorithm
8. Integrate all experiments above so users can exactly know regeneration and use of green power

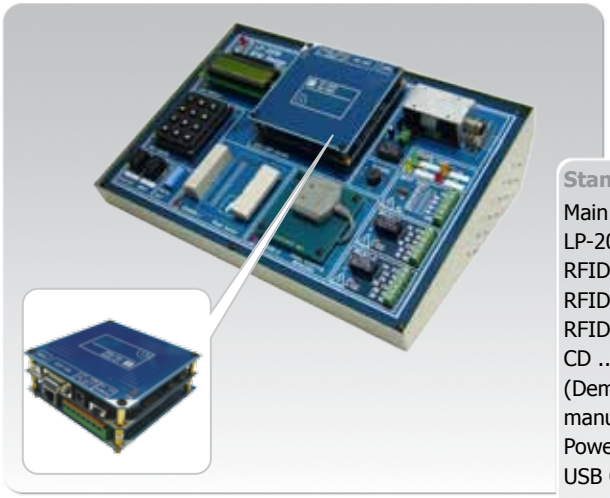
LP-2010

RFID Experimental Trainer

Introduction

The LP-2010 is a modular design trainer and it's also the best introduction for learning RFID (Radio Frequency Identification). User can use this trainer to realize the technique of RFID and develop various program by its high flexible combination applications no matter in software or hardware.

Nowadays, LP-2010 is focusing on RFID HF (High Frequency 13.56MHz) ISO 14443A and ISO 15693 standard. In the future, it will support other vendors' chips and can be used for learning UHF (Ultra High Frequency) as well.



Note 1. User can purchase the LAN/IO extended module, with LP-2010-TRF-7960 board to operate independently."

Standard Accessories

Main Unit x1
LP-2010-TRF7960 .....x1
RFID Induction board x1
RFID Tag (ISO 14443A) x3
RFID Tag (ISO 15693) x3
CD x1
(Demo program, s/w and user's manual are included)
Power Cable x1
USB Cable x1

Features

- Provide 10 modules for establishing users' RFID basic and satisfy their originality and applications.
- Use the standard controller chip TI TRF 7960, meets ISO 14443A & ISO 15693.
- Built-in RTC (Real Time Clock).
- Provide data storing function with loop design to expand the life time of the memory.
- Support VC, VB, Assembly ... with simple but practical example programs.
- All the example programs are close to real applications.
- Designed as open system, user can realize all the programs clearly.

Specification

Communication	USB、RS-232
Operating Voltage Input Port	5~24V DC (MAX)
Operating Voltage RELAY 1,2	1A/125V AC, 2A/30V DC
Power	100V AC~240V AC
Frequency Range	50/60 Hz
Dimension	320 x 226 x 30/85mm
Weight	2.5 kg

Test Content

- Use the simple example programs to control the peripheral devices, included the LCD, relay (Relay-1 & Relay-2), electromagnet (Solenoid), LED (LED-1 to LED-4), reed switch (Sensor-1), glass breaking (Sensor-2), external data entry (Input Port IP-1 to IP-4), status input (SW-1 & SW-2) and data set (DIP Switch-S1).
- Read the data of ISO 14443A RFID tag and show the UID code on LCD.
- Read the data of ISO 15693 RFID tag and show the UID code on LCD. Upload the data of ISO 15693 RFID tag to PC in ASCII code format via USB (or RS-232) and show the ID on Super Terminal.
- Execute ISO 14443A RFID tag reading. Verify the UID with the first I2C memory data and see if they are the same. The result will show on the LED.
- Control the RTC, real time clock, included year, month, date, hour, minute and second.
- Read, write and erase for the single user data area of the ISO 15693 RFID tag.
- Induct several ISO 15693 tags and send UID to PC on Super Terminal via USB.
- Read, write and erase function example for the internal area of ISO 14443A Mifare Card.
- Create the record of entry. LP-2010 will store the ID code and entry time within the second I2C memory. The user can also read and delete the record via Super Terminal on the PC.
- Integrate above experiments and create simple access control system that including workers database, entry time, locked control, glass breaking detect and alarm system.

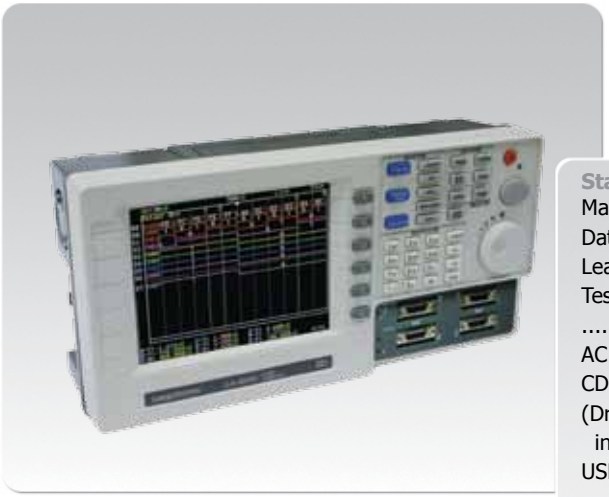
Leaptronix®

LA-2050/2025

Stand-Alone Logic Analyzer Series / Provide the best measurement solution/

Introduction

The LA-20 Series helps minimize users' project risk by providing the most reliable, accurate data capture and a complete view of system behavior. These products are ideally suited for users on hardware/ software debugging, parametric, mixed signal testing, and complex debugging. Moreover, their compact size and ability to connect with a PC for analysis and data logging makes them an ideal solution at remote sites.



Standard Accessories

Main unit x1
Data pod x4
Lead set.....x4
Testing probe (Testing hook) x36
AC power cord x1
CD.....x1
(Driver and user manual are included)
USB cable.....x1

Features

Logic Analyzer:

- External (synchronous) and internal(asynchronous) capture: Offer a more convenient environment for engineers.
- Provide three sets of searching data functions and six cursor marks. The timing of each trigger point can be shown by the cursor mark.
- Binary code and hexadecimal List mode (State) display.
- Able to save measuring data and waveform results in stand-alone mode.
- Offer I2C, SPI, UART and CAN signal decoding function on PC.
- Provide various signal trigger and capture: Total of four kinds of trigger modes including Pattern/Edge/AND/OR.
- Pre-trigger, post-trigger, 3 level trigger, and continued-trigger functions allow users to operate easily.
- Bus analysis and glitch capture functions: 2M Bytes~4M Bytes long memory depth~each CH memory depth is up to 512Kbits~1Mbits.
- The adjustable sample rate size can be set by users, which avoids long capturing time.
- Provide "Trigger Counter" and "Pulse Wide Trigger" function.
- High-speed Zoom In / Zoom Out techniques.
- Smart software provides text file for saving the Binary Code of waveform results.
- Compact, portable for engineers to perform debugging.
- 5.6 inch TFT color LCD display.
- USB 2.0 interface for PC link function, which can connect with PC for user to save, analyze, view and printout.

Specification

Model	LA-2025	LA-2050
Timing Analysis	250MHz	500MHz
State Analysis	200MHz	200MHz
Bandwidth	200MHz	200MHz
Channels	32CH	32CH
RAM Size	2M Bytes	4M Bytes
Storage Depth per Channel	512K bits x 32CH	1M bits x 32CH
Maximum Input Voltage	±15V	±15V
Threshold Range	-4V~+4V	-4V~+4V
Data Skew (Channel to Channel)	4ns typical (±4ns Max)	2ns typical (±2ns Max)
Trigger Condition	Pattern / Edge / AND / OR	Pattern / Edge / AND / OR
Trigger Counter	1~255 times	1~255 times
Pulse Width Trigger	YES	YES
Glitch Capture	4ns	2ns
Display Measure	5.6 inch Colored LCD (320 x 234)	5.6 inch Colored LCD (320 x 234)
Communication	USB 2.0	USB 2.0
Power Source	110V AC~240V AC	110V AC~240V AC
Frequency Range	50~60Hz	50~60Hz
Power Consumption	18W (20W Max)	18W (20W Max)
Operating Temperature	0℃~45℃	0℃~45℃
Dimension	310 x 150 x 90mm	310 x 150 x 90mm
Weight	3.8 Kg	3.8 Kg

PC System Requirement

Operating System	Win 8/ 7/ Vista/ XP

Data Logger

- Provide friendly software, no matter what program language, just key in the timing,trigger condition and logic level etc, then start the data acquisition.
- Use binary for logging the code.

PLA-2532/1016

PC-based Logic Analyzer & Data Logger / P rovide the most economical measurement solution/

Introduction

The PLA series provides complete date acquisition system, Logic Analyzer and Data Logger. This small instrument is making digital software and hardware designers the ability to quickly capture the complex signals for analysis and debugging. Moreover, the PLA is able to cooperate with your own design program for test automation system.

Standard Accessories

Main unit.....x1
Lead Set
16CH.....x1
32CH.....x2
CD.....x1
(Driver and user manual are included)
USB cable.....x1

Optional Accessories

Testing probe (testing hook)

Features

Logic Analyzer

- Internal (asynchronous) and External (synchronous) capture: Offer a more convenient environment for engineers.
- The timing of each trigger point can be shown by the cursor mark.
- Binary code and hexadecimal List mode (State) display.
- Able to save measuring data and waveform results.
- Provide I2C, SPI, UART and CAN signal decoding function on PC.
- Provide various signal trigger and capture: Total of four kinds of trigger modes including Pattern/Edge/AND/OR.
- 256K Bytes ~ 2M Bytes long memory depth : each CH memory depth is up to 128Kbits ~ 512Kbits.
- The adjustable sample rate size can be set by users, which avoids long capturing time.
- "Trigger Counter" and "Pulse Width Trigger" function.
- High-speed Zoom In/Zoom Out function.
- Smart software provides text file for saving the Binary Code of waveform.
- USB 2.0 interface for PC link function, which can connect with PC for user to save, analyze, view and printout.
- Powered by USB.

Specification

Model	PLA-1016	PLA-2532
Timing Analysis	100MHz	250MHz
State Analysis	100MHz	100MHz
Bandwidth	100MHz	100MHz
Channels	16CH	32CH
RAM Size	256K Bytes	2M Bytes
Storage Depth per Channel	128K bits x 16CH	512K bits x 32CH
Maximum Input Voltage	±5V	±5V
Threshold Range	-4V～+4V	-4V～+4V
Data Skew (Channel to Channel)	10ns typical	4ns typical
PC Link Interface	USB 2.0	USB 2.0
Temperature	0℃～45℃	0℃～45℃
Dimension	150 x 80 x 30mm	150 x 80 x 30mm
Weight	230g	240g

PC System Requirement

Operating System	Win 8/ 7/ Vista/ XP

Data Logger

- Provide friendly software, no matter what program language, just key in the timing,trigger condition and logic level etc, then start the data acquisition.
- Use binary for logging the code.

LPP-3030T

Programmable DC Power Supply Series / Provide two completely separate power output /

Introduction

LPP-3030T provides a higher stability in terms of traditional Programmable DC Power Supply. LPP-3030T, linear programmable DC Power Supply Series support USB PC-Link and two completely separate power outputs. With the various characteristics, LPP-3030T is the best choice of power supplies for engineers. With the functions of the power supply of LPP-3030T, it provides two completely separate power output which is able for series or parallel connection; other than the common power supplies on the market of positive/ground/ negative output. In addition, LPP-3030T supports low-voltage digital circuits, also it is able to switch voltage among 1.8V~5.0V. With its characteristics of stability and high-speed twinkling reaction, LPP-3030T provides high quality at a very economical price.

Standard Accessories

Main unit.....x1
AC power cord.....x1
USB cable.....x1
DC output cable.....x3
CD.....x1
(Driver and user manual are included)

Optional Accessories

DC output cable set

Features

- Provide two completely separate power outputs. Users can obtain higher voltage, current, and positive & negative voltage applications by using series or parallel connection.
- Support low-voltage digital circuits: Provides fixed power output also it is able to switch voltage among 1.8V~5.0V.
- OVP (Over voltage protection)/OCP (Over current protection) functions: For each programmable output, users can set desired protective voltage or current value.
- V.Set Limit function: Sets the limit of the maximum voltage.
- When keypad is loked, user can not change the setting of voltage and current. The LPP will be locked even if user restarts the LPP.
- Supply high resolution of V (voltage)/ I (current) for measurement: The resolution of V (voltage)/I (current) can raised up to 10mV/1mA.
- Memory storage: Memorizes up to 10 formats setting of OCP, OVP and V.Set Limit.
- USB Interface: Use USB interface to offer PC-Link function to be able to write the control programs, save data and PC-Remote with simple command text format.

LPP Series

Model	Programable Power Output	Resolution	Output Watt
LPP-3030T	30V , 3.0A (Dual Output)	10mV , 1mA	195W
mPP-3035T	30V , 3.5A (Dual Output)	1mV , 1mA	225W
mPP-6020T	60V , 2.0A (Dual Output)	2mV , 1mA	225W

LPP-3030T Specification

Output

Maximum Number	165W	
# of Output	3 sets(2 of Programmable Output ;1 of Fixed Output)	
Output Ratings	Programmable Output	Fixed Output
Voltage	0.1V～30V(Dual Output)	OFF/1.8V/2.5V/3.0V/3.3V/5.0V
Current	0.01A～3.0A(Dual Output)	~3A
Maximum Output Voltage	30V+0.99V(Dual Output)	5V
Maximum Output Current	3A (Dual Output)	3.3A
Resolution Programming		
Voltage	10mV	-
Current	1mA	-
Load and Line Regulation		
Voltage	Load:≤0.02%+3mV Line:≤0.02%+3mV	-
Current	Load:≤0.02%+5mA Line:≤0.02%+10mA	-
Accuracy		
Voltage	≤0.05%+10mV	-
Current	≤0.2%+10mA	-
Ripple and Noise(20Hz~20MHz)		
Voltage	≤1mVrms/8mVp-p	≤1.5mVrms/15mVp-p
Current	≤2mArms/10mAp-p	-
Stability(8hrs)		
Voltage	≤0.3%+3mV	-
Current	≤0.2%+2mA	-

Temperature

Operating Temperature	0℃～45℃
Temperature Coefficient per℃ + (% output + offset)	
Voltage	≤200ppm/℃
Current	≤0.3%+5mA

Other

Protection	OVP, OCP
Output Model	C.V, C.C
Interface Standard	USB
Memory	Store/Recall ; Point 1~10
AC Power	110V/220V ; 60Hz/50Hz
Warranty	1 year

Dimension

W x H x D	225mm x 310mm x 100mm
Net Weight	6.5 kg

mPP Series

Mini Programmable DC Power Supply Series

Introduction

mPP series (Mini Programmable DC Power Supply) is the most compact linear power supply. The mPP series operates in high performances and pertains reliability. Moreover, it offers high stability for applications that need precise output control and low noise.

Standard Accessories

Main unit.....x1
CD.....x1
(Driver and user manual are included)
AC power cord.....x1
USB cable.....x1
(Part of model is RS-232 cable)
DC output cable
(It is according to the model 1~3 set)

Optional Accessories

USB to RS-232 cable
DC output cable set

Features

- Support low-voltage digital circuits: Provide fixed power output also it is able to switch voltage among 1.5V~5.0V. (mPP - xxxxT)
- Provide two completely separate power outputs. Users can obtain higher voltage, current, and positive & negative voltage applications by using series or parallel connection. (mPP - xxxxT)
- OVP (Over voltage protection)/OCP (Over current protection) functions: For each programmable output, users can set desired protective voltage or current value.
- V.Set Limit function: Set the limit of the maximum voltage.
- When keypad is loked, user can not change the setting of voltage and current. The mPP will be locked even if user restarts the mPP.
- PC control software can display the waveform of voltage/current: It can record 2~4 datas in one second which allows users to view and analyze long period variations of voltage & current.
- Compact and high power output: Although it is only one-third of size compared to the traditional power supply, it can output 225Watts; which provides a better working space for the engineers and production line.
- Supply high resolution V, I for measurement: The resolution of V (voltage) / I (current) supports up to 1mV/1mA, which provides more accurate measurements in circuit designs, verifications, and quality tests.
- Memory Storage: Memorizes up to 100 formats setting of OCP, OVP and V.Set Limit.
- Remote control with PC interface: Using USB interface to offer PC-Link function (some models uses RS-232) able to write control programs, save data, and PC-Remote.

Specification

Model	mPP-3035T	mPP-6020T
Interface Standard	USB	USB
Operating Temperature	0°C~45°C	
Power	110V/220V;60Hz/50Hz	
Dimension	225 x 310 x 100mm	225 x 310 x 100mm
Weight	6.5 kg	7.2 kg
Output Range		
Voltage	0.01V~30V(Max:30.999V)	0.01V~60V(Max:61.000V)
Current	0.01A~3.500A	2.000A
Fixed Output Range		
Voltage	OFF / 1.5V/ 1.8V / 2.5V / 3.0V / 3.3V / 5.0V	
Current	~3A	
Ripple & Noise (20Hz~20MHz)		
Voltage	≤ 1mVrms / 5mVp-p	≤ 2mVrms / 10mVp-p
Current	≤ 2mArms / 6mAp-p	≤ 2mArms / 10mAp-p

Series Model

Model	Output Range	Resolution	Fixed Output Range	Output Watt
mPP-3035T	30V,3.5A (Dual)	1mV, 1mA	1.5V~5.0V,3A	225W
mPP-6020T	60V,2.0A (Dual)	2mV, 1mA	1.5V~5.0V,3A	255W

mPD-501

DC Electronic Load

Introduction

mPD-501 DC electronic load mainly focuses on the testing of power circuit on PCB. mPD -501 offers a solution for function test of Switch step up, Stepdown, Regulators and Driver IC .
Engineer puts components, such as CPU, DSP, FPGA; etc on a PCB after the power circuit has been tested. It's not complete to use a meter to measure the voltage.

mPD-501 offers engineer OVP, OCP and OPP functions that help engineer know the value of overload current . On the other hand, engineer can use a programmable DC power supply (mPP series) to offer external power and connect PCB's output to mPD-501. Then engineer can easily get output watt, figure out the efficiency of power circuit and check if inductances, capacitances and resistances perfectly work with the power circuit.

mPD-501 not only offers loading emulation of current but also provides OVP and OPP. User can use these functions to test solar power battery, rechargeable battery and motor driver.

In school laboratory, mPD-501 helps students do experiment on power circuit, linear circuit and driver circuit.

Features

- Constant current (C.C) & constant voltage (C.V) emulation.
- Display real time voltage, current and watt.
- Both of C.C and C.V mode have 3 sets of memory
- Over current protection (O.C.P), over voltage protection (O.V.P) and over power protection (O.P.P).

Standard Accessories

Main unit x1
DC input cable x1
AC Power cord x1
CD (User manual) x1

Specification

Power	50W*1	**Power Read**	
Current	0~8A	Range	0~50W*1
Voltage	40V	Resolution	10mV
CC MODE		**Modes of Protection**	
Range	0~8A	OPP	50W
Resolution	2mA	OCP	8A
Accuracy	0.01%+/-0.1%FC	OVP	40V
CV MODE		**Modes of Operation (Max)**	
Range	0~40V	Current (CC)	8A
Resolution	10mV	POWER (CP)	50W*1
Accuracy	0.01%+/-0.1%FC		
Voltage Read Back		**Power**	AC 110V/220V ±10% 50/60Hz
Range	0~40V	**Dimension**	106 x 145 x 282mm
Resolution	10mV	**Weight**	3.4Kg
Current Read Back			
Range	0~8A		
Resolution	2mA		

IWT-5000A-12

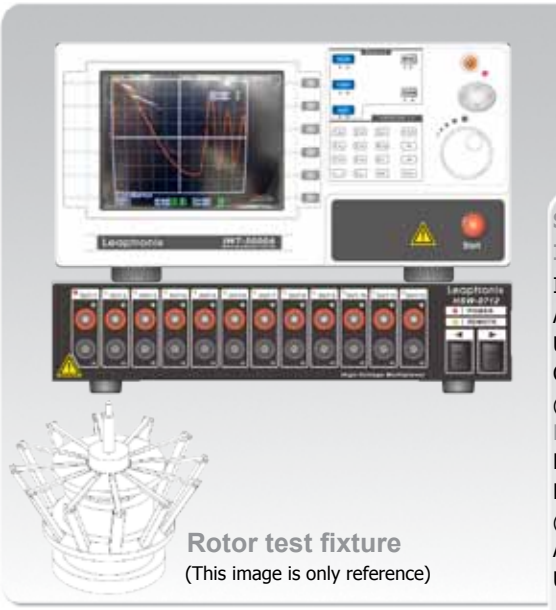
Motor Rotor Test System

Initiative and Passive Component Test System Series

Introduction

This system is designed for testing self insulating property of the multiple coils products such as motor, transformer, electricity generator and booster coil...etc. Connect Impulse Winding Tester- IWT-5000A and Multiplexer HSW-0712 to PC , and with the testing program and fixtures, it can build up the testing system for testing multiple coils.

The influences of winding materials,magnetic materials, frame work and extra fabrication decrease the insulating property of coil layers along with the jumpers and the jacks. IWT-5000A 12 adopts the technology of high speed sampling rate and High Voltage, with the multiple testing algorithms. It can test the self-insulating property of the sample quickly. It judges the quality of the testing coil according to the parameter which is set by the user.



Rotor test fixture
(This image is only reference)

Note: The detailed specification and appearance of the models may be different from this catalog. Leap reserves the right to revise it.

Standard Accessories

IWT-5000A

IWT-5000A main unit x1
AC power cord x2
USB/RS-232 cable x2
CD x1
(Include driver and user manual)

HSW-0712

HSW-0712 main unit x1
High voltage Test Line.....x1 Set
(Include 12 red lines and 12 black lines)
AC power cord X1
USB/RS-232cable.....x1

Optional Accessory

Motor Test Fixture

Features

- It can test 12 channels coils with the fixture at one time. With 2 units of HSW-0712, it can test up to 24 channels coils at one time.
- Low inductance during impulse testing, minimum to 10μH.
- 200V~5000V Programmable impulse voltage.
- The coils will not be damaged by low inductance during impulse testing.
- With 100MHz high sampling rate, it can increase the ability of testing the partial discharge.
- Provide 4 kinds of detection modes: AreaSize Comparison, DiffZone Comparison , Corona Amount Comparison and Corona Number Comparison.
- PC control software for providing testing parameters, definition and standard of testing multiple coils, which is able to finish continuous testing automately.
- HSW-0712 has the hand operated interface for switching test function from out 1 to out 12 manually.
- The comparative result shows Pass/Fail directly. Easy for operator to judge pass or fail.
- Provide RS-232 to PC connection. Use the standard text commend, it's easier to control writting the program, sending the data and build up the automatic testing system.

IWT-5000A Specification

Testing Voltage	200V～5000V(±3%)
Output Energy	0.25J (Max)
Inductance Range Of Test Coil	10μH and above
Sampling Rate	8 bit /10ns (100MHz)
Sampling Memory Depth	5000 Byte
Input Resistance	10MΩ
Display Measure	5.6 inch color TFT-LCD (320 x 234)
Comparison Measures	AreaSize comparison, DiffZone Comparison, Corona Amount comparison and Corona Number comparison.
Storage Waveforms	360 sets of waveform
Comparison Output	Pass/Fail, Beeping
Communication	RS-232/ I/O /USB 2.0
Temperature	25℃~40℃(77℉~104℉)
Power	110V/220V AC
Frequency Range	50/60Hz
Dimension	310 x 150 x 180mm
Weight	5.1 Kg

HSW-0712 Specification

Maximum Voltage of switch	7000V
Switch set	12 Sets
Operation Key	[Up], [Down] Key
Display Measure	Power, Remote Status, OUT#1~#12 Output Enable LED
Communication	RS-232
Power	110V/220V AC
Frequency	50/60Hz
Dimension	310 x 70 x 250mm (draft)
Weight	3.5Kg (draft)

Application

- Manufactures of motor, voltage transformer, generator, inductor, vehicle ignition coil, HID booster coil, electromagnet and relay.
- Incoming inspection of Windings.

IWT-5000A

Impulse Winding Tester

Introduction

IWT-5000A winding tester is a coil (such as voltage transformer, inductance, motor) testing instrument that tests self-insulating property of the coil. The influences of winding materials, magnetic materials, and framework, also extra fabrication decreases the insulating property of coil layers along with the jumpers and jacks. The IWT-5000A adopts the technology of high-speed sampling rate to store the sample waveform of the standard (master) coil in the instrument. By comparing the waveform results of the test coil to the master, the defect in the DUT can be found easily. Moreover, the IWT-5000A judges the quality of the testing coil according to the parameter set by the user.

Standard Accessories

Main unit.....x1
High voltage test line.....x1
AC power cord.....x1
USB cable.....x1
RS-232 Cable.....x1
CD.....x1
(Driver and user manual are include)
RS-232 to USB cable.....x1

Features

- With 200V~5000V programmable impulse voltage, it is capable of low-energy testing, without damaging the coil.
- Provide high-speed sampling rate of 100MHz, which enhances the testing ability for partial discharges.
- 320 x 234 color LCD display clearly for the user to view waveform and test results.
- Provide user-friendly operation interface.
- Low inductance during impulse testing, minimum to 10μH.
- Provide 4 kinds of detection modes: AreaSize Comparison, DiffZone Comparison, Corona Amount Comparison, and Corona Number Comparison.
- The comparative result shows Pass/Fail directly, informing operators the detect test result within a short period of time.
- Offer measurement functions for voltages, timing and frequencies, which provide user a carry-out analysis in detail.
- Able to save 360 sets of standard waveform result of the coil for users to download and implement into testing.
- Provide RS-232 to PC connection. Just using standard text command, you can writing control program and data for communication easily. It's the best way to set up the testing system for mass production.

Specification

Testing Voltage	200V～5000V(100V Steps)
Output Energy	0.25J (Max)
Inductance Range Of Test Coil	10μH and above
Sampling Rate	8 bit /10ns (100MHz)
Sampling Memory Depth	5000 Byte
Input Resistance	10MΩ
Display Measure	5.6 inch Colored LCD (320 x 234)
Comparison Measures	AreaSize Comparison, DiffZone Comparison, Corona Amount Comparison, Corona Number Comparison
Storage Waveforms	360 Sets of waveforms
Comparison Output	Pass/Fail, beeping
Communication	1. USB 2.0 2. RS-232 3. I/O
Power	110V/220V AC
Frequency Range	50/60Hz
Dimension	310 x 150 x 180mm
Weight	5.4Kg
Temperature	25℃～40℃

PC System Requirement

Operating System	Win 7/ Vista/ XP

- To make analysis easier, IWT-5000A offers USB 2.0 interface to connect with PC for users to upload or download the parameters of waveforms results.
- Provide the control function for external I/O, such as the Handler adopts standard D SUB 15-pin connector for connecting with automatic or semi-auto testing system.
- Provide self-calibration function. No need to send back for the vendor's calibration. Saving time and cost.
- Provide the convert software for Excel.

DSO Series

DSO-3000 Series of Digital Storage Oscilloscope

NEW

CE

DSO-3102B

Features

- Signal bandwidth: 25MHz/60MHz/100MHz/200MHz
  Real-time sampling rate: Max. 1Gsps
  Equivalent sampling rate: Max. 50Gsps
- 5.6-inch TFT LCD Color display with better clearance, multi-color schemes available
- With up to 2.4Mpts memory depth, more signal details can be seen.
- Independent vertical scale and position control knobs for each channel
- Edge, Pulse width and Video trigger mode available. Alternating triggering function is also available to stably display asynchronous signals
- Unique variable trigger sensitivity to suit special measurement requirements on different occasions
- Math functions including add, subtract, multiply and 1024-point FFT
- Up to 24 kinds of parameters automatic measurements
- Advanced cursor modes: Manual, Auto and Track
- Practical low-pass, high-pass, band-pass, band-reject digital filters with adjustable cut-off frequency
- Unique waveform recording and playback function.
- PASS / FAIL detection, optical isolated PASS/FAIL output
- Built-in 5 digits hardware frequency counter
- Auto-calibration feature
- Multiple language user interface
- Pop-up menu, the user operation more convenient and intuitive
- Embedded help information system in Chinese and English
- Up to 10 internal setup and waveform files memories, external storage of setup, track, waveform, BMP bitmap and CSV files
- USB Host Port, Support USB disk storage, and firmware upgrade can be carried out through an USB disk.
- PRINT button pressed to directly store the screen image (BMP) or the waveform data (CSV) in an USB disk
- USB device, LAN (only for B series) and RS232C interface for the instrument remote control
- Upgrade the working procedure via USB HOST

Application Fields

- Laboratory and training center in colleges and universities
- Production line test and quality Control
- Test and measurement in R&D department
- Maintenance and aftersales service

Brief Introduction

- DSO-3000 series digital storage oscilloscopes provide you with excellent performance and strong functions in a compact design. Even as a new generation of portable low-priced general product, the series still offers many measurement functions of middle or high end product and meets your measurement requirement with affordable cost.

With bandwidth 25MHz, 60MHz , 100MHz and 200MHz, the series offers a maximum real-time sampling rate of 1Gsps and equivalent sampling rate of 50Gsps to ensure you accurate observation of signal details.

Many standard configured advanced characteristics such as multi trigger modes, auto measurement, digital filtering, waveform storage, math function, FFT, PASS/FAIL judgement, multi communication interfaces, etc. make the measuring more convenient and quickly.

Prominent Signal Measuring Capability

Observation of the signal more clearly

DSO-3000 Series has a 5.6-inch 320x234 TFT LCD color display for watching signals from any viewing angle. Different from traditional oscilloscope's fixed menu display, DSO-3000 series can display the waveform to full screen according to your need.

Single MENU ON/OFF key enables you to view more information in 25% more display area.

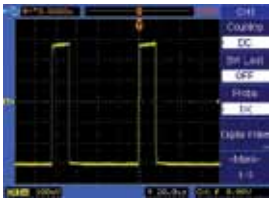


Figure 1 Normal display with menu on

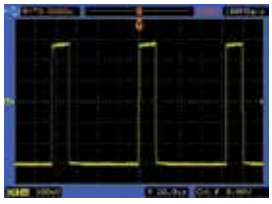


Figure 2 Full-screen display with menu off

Deep memory depth for capturing more

Maximum 2.4Mpts memory depth for each channel on all models, DSO-3000 series is easy to record and analyze the waveform. Even under the slow time base settings, you can maintain a high sampling rate. This allows you observe the signal in more details. In a given sampling rate, the more sampling points mean the longer the time observed.

DSO Series

DSO-3000 Series of Digital Storage Oscilloscope

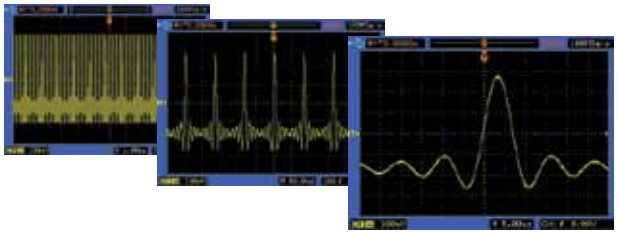


Figure 3 Deep memory depth waveform display

Delayed sweep mode for both details and the whole waveform

In Delayed sweep mode, you can view simultaneously the details on a particular part and the whole waveform. Through split display you can zoom in on a particular area on your signal while still viewing the entire captured waveform.

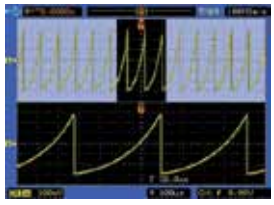


Figure 4 Delay mode to observe signal details

Powerful Functions

DSO-3000 series oscilloscope is your indispensable assistant to get your job done easier and faster.

Auto scale

Auto scale can evaluate all input signals and set the correct condition to best display the signals. Single period or multi periods can be selected to display in the current display window.

Running control

RUN/STOP mode: to continuously observe waveform or freeze the current waveform on the screen.

SINGLE mode: to automatically recognize signal meeting trigger conditions,and to immediately sample the signal to fixedly display,especially suitable to sample single signal.

Math Function and FFT

DSO-3000 series provides some important math operations, including addition, subtraction, multiplication, or 1024-point FFT (Fast Fourier Transforms). For time-domain signal analysis, you can use additions (signal superimpose), subtraction (elimination of noisy component or differential operation, etc.), multiplication (frequency mixing, etc.) processes. For frequency-domain analysis, you have FFT (Fast Fourier Transforms) with five window function (Rectangular, Hanning, Hamming, Blackman, Flat-Top). And spectrum amplitudes of FFT can be displayed in linear or dBV (RMS) scale type.

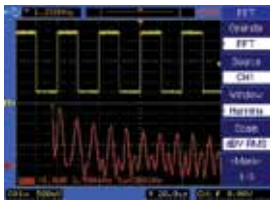


Figure 5 FFT analysis (dBV)

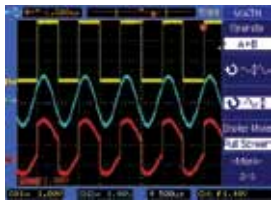


Figure 6 Addition operation

24 Automatic Parametric Measurements

DSO-3000 series provides up to 24 automatic parametric measurements. You can either install three commonly used screen measurements or display all the 24 measurements of the current selected source on the screen. Auto measurement can not only save your time for eye observation, but also provide you more accurate results. Without complicated operation, you can get your measurement results easily and quickly.

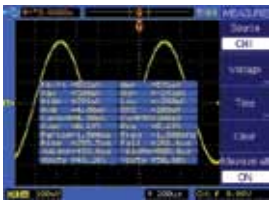


Figure 7 Auto measurement display

Convenient observation of all signals

Roll mode: It is one of the useful features of DSO-3000A/B series to test low-speed signal accurately. Using the Roll mode, the change of ultra slow speed signal can be observed.

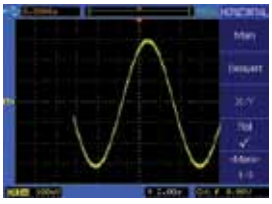


Figure 8 Slow speed signal in Roll mode

X-Y mode: In X-Y mode, channel 1 becomes the X input and channel 2 becomes the Y input. Lissajou's figure can be displayed to calculate phase difference of same-frequency signals.

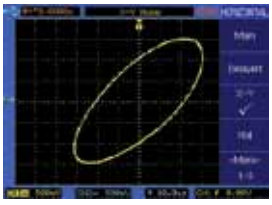


Figure 9 Lissajou's figure in X-Y mode

Video Trigger: DSO-3000 series can synchronously trigger on specified line or field of the standard NTSC or PAL/SECAM video signal.

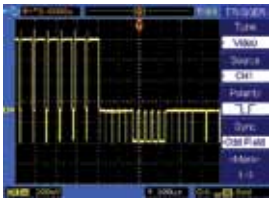


Figure 10 Video trigger mode for TV signal

More Functions

Digital Filter

DSO-3000 series provides several digital filters, including low pass, high pass, band pass, and band reject filters. It can be applied to displayed signals to acquire expected results, such as to simulate the effect of a hardware filter, to reject aliasing noise or error signal to clearly observe a signal of interest, etc. The high and low cut-off frequency can be set randomly.

Figure 11 Signal with noises

Figure 12 Signal processed with a low pass filter

Waveform Record and Replay

DSO-3000 series can record the input signal over a period of time continuously in the internal or external memory for future analysis. Up to 1000 frames can be recorded with the variable time interval ranging from 1 ms to 1000s. The recorded frames can be played back continuously or played frame by frame, so that you can observe any frame and capture any tiny abnormality.

PASS/FAIL Judgment

On the production line, it is valuable to judge some kind of signal and decide if it is good or not. DSO-3000A series can measure the selected input signal and compare it with the predefined PASS/FAIL regulations and then output the PASS/FAIL result. This function is more convenient and quick and reduces error os man-made judgement.

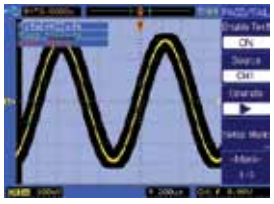


Figure 13 PASS/FAIL measurement

Auto Calibration

DSO-3000 can automatically calibrate its vertical, horizontal and trigger system, so that it can work with the best measurement accuracy.

Unique Built-in Function/Arbitrary Waveform Generator Module

- The first digital oscilloscope with built-in function/ arbitrary waveform generator module in the world
- More accurate, stable and low distortion output with the help of advanced DDS technology
- 200MSa/S sampling rate, 14bits vertical A/D resolution
- 10MHz / 20MHz / 40MHz sine/ square waveform frequency output
- Maximum 10MHz impulse signal frequency output
- Up to 30 kinds of built-in waveforms , such as sine, square, triangular wave etc.
- Built-in multiple modulation function, including AM, FM, PWM, FSK, PSK and Bias modulation.
- 1uHz ~ 10MHz/1uHz ~ 20MHz/1uHz ~ 40MHz frequency sweep in Up, Down and Round sweep mode.
- Up to 30 kinds of commonly used waveforms burst output, including sine, square, triangular waveforms
- 8kpts arbitrary waveform memory depth
- Realize the seamless connection between oscilloscope and function/arbitrary waveform generator

Flexible Human-Machine Interface

Logical and easy operation

Different function areas, including input channels, time base, trigger channel and function areas, are positioned and marked respectively, so that it is easy to access and operate. The main front-panel keys light when the corresponding functions are available or active. This human-oriented feature makes your job much easier.

Figure 14 The front panel key board

Multi interface selections

The instrument provides multi interfaces, including USB host interface used to store waveform files (BMP, CSV file format) to an USB disk by simply pressing “PRINT” key, and USB device interface or RS232 interface used to communicate with a computer to control the instrument or to transmit the waveform data.

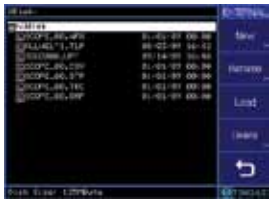


Figure 15 USB disk file system

Software update

The latest updated software of DSO-3000 series can be downloaded free from our website (www.tonghui.com.cn), and can be loaded to the corresponding oscilloscope through the USB host interface.

DSO Series

DSO-3000 Series of Digital Storage Oscilloscope

Specifications

Model		DSO-3022A DSO-3022AS	DSO-3062A DSO-3062AS DSO-3062B DSO-3062BS	DSO-3102A DSO-3102AS DSO-3102B DSO-3102BS	DSO-3202B DSO-3202BS
Sampling System					
Max real time sampling rate		Series A:400Msps Series B:1Gsps			
Max equivalent sampling rate		10Gsps	Series A:20Gsps Series B:50Gsps		
Memory depth		Single channel ON:2.4Mpts Double channel ON:1.2Mpts			
Vertical A/D resolution		8 Bits			
Sampling mode		Sample, Peak detect, Averaging			
Auto scale		Automatically set vertical scale(V/div), time base(s/div), and trigger mode.			
Vertical System					
Channels		2 analog input channels and 1 trigger input channel			
Bandwidth		25MHz	60MHz	100MHz	200MHz
Coupling		DC, AC and GND			
Bandwidth limit (-3dB)		Not available	20MHz		
Calculated rise time		<14.0ns	<5.83ns	<3.50ns	<1.75ns
Vertical scale (V/div)		Series A: 2mV/div to5V/div 1-2-5 step Series B: 2mV/div to10V/div 1-2-5 step			
Vertical gain accuracy		2mV/div, 5mV/div ±4%×reading±0.1div×V/div+0.5mV; 10mV/div to 10V/div ±3%×reading±0.1div×V/div+1mV;			
Vertical offset range		±8 div away from the screen center			
Probe attenuation factor		×1, ×10, ×100, ×1000			
Input impedance		1MΩ||18pF			
Delay differential		±150ps when vertical scale and coupling settings are identical			
Max. input voltage		400V (DC+AC peak,@1MΩ)			
Probe compensation output		3Vp-p, 1kHz			
Horizontal System					
Time base range (1-2-5 step)		10ns—50s/div	Series A:5ns—50s/div Series B: 2ns—50s/div		5ns—50s/div
Horizontal mode		Main, Delayed, X-Y and Roll			
Time base accuracy		±0.01%			
XY mode	Input	X-axis input (horizontal): CH1 Y-axis input (vertical): CH2			
	Bandwidth	25MHz	60MHz	100MHz	200MHz
	Phase error	±3°			
Trigger System					
Trigger source		CH1, CH2, EXT, EXT/5, LINE, Alternating			
Trigger mode		Auto, Normal, Single			
Trigger coupling		DC, AC, LF-reject, HF- reject			
Trigger type		Edge, Pulse width, Video			
Trigger level range		Internal: ±8 div from screen center; EXT:±1.6V; EXT/5: ± 8V			
Trigger sensitivity		0.1div to 1.0div user adjustable			
EXT input impedance		1MΩ||18pF			
EXT max. Input voltage		400V (DC+AC peak,@1MΩ)			
Signal Measurement					
Voltage parameters		Max, Min, VPP, High, Low, Amplitude, Average, RMS, Overshoot, Preshoot, Cycle average, Cycle RMS			
Time parameters		Frequency, Period, Rise time, Fall time, +Width, -Width, +Duty, -Duty, Delay, Phase, X@MAX, X@MIN			
Math functions		A-B, A+B, A×B, FFT(1024points)			
Cursor measurement		Manual, Auto, Track			
Hardware frequency counter		5-digit frequency counter up to full bandwidth			
Storage & Interface					
Internal storage		10 setup files and 10 trace files			
File format		Setup, Waveform, Trace, BMP and CSV file			
Interface		USB HOST, USB DEVICE, RS232C and PASS/FAIL OUT,LAN(only for B series)			
Display System					
Display screen		TFT LCD display, 5.6-inch			
Resolution		320(horizontal)×234(vertical) dot matrix			
Color		24 bit true color			
Menu language		Simplified Chinese, Traditional Chinese, English etc.			
Waveform Display	Scale	Menu ON:8div(vertical)×10div(horizontal) i.e. 200(vertical)×250(horizontal) dot matrix Menu OFF:8div(vertical)×12div(horizontal) i.e. 200(vertical)×300(horizontal) dot matrix			
	Type	Dot , Vector			
	Interpolation	(Sinx)/x, Linear			
	Persistence	Off, Infinite			
	Format	YT / XT			
Other Specifications					
Operation ambient temperature & humidity		0°C to 40°C, ≤90%RH			
Line voltage		99V to 242V AC,47Hz to 440Hz			
Power consumption		≤ 50VA			
Instrument dimension		320mm(W)×156.5mm(H)×123mm(D)			
Net weight		Approx. 2.5kg			

Function/Arbitrary Waveform Generator Specifications

Model	DSO-3022AS	DSO-3062AS/DSO-3062BS	DSO-3102AS/DSO-3102BS/DSO-3202BS
Frequency Characteristics			
Sine waveform	1μHz--10MHz	1μHz--20MHz	1μHz--40MHz
Pulse waveform	1μHz--10MHz		
Other waveforms	1mHz--1MHz		
Frequency resolution	1μHz(Sine, Square, Pulse), 1mHz(other)		
Frequency accuracy	≤±5×10^{-4}		
Frequency stability	±5×10^{-5}		
Sine Characteristics			
Harmonic Distortion	<5MHz: -50dBc		
	≤10MHz: -45dBc		
	>10MHz: -40dBc		
Total harmonic distortion	20Hz--100kHz: ≤0.2%		
Amplitude Characteristics			
Amplitude range into open circuit	When freq.≤ 20MHz, 2mVpp to 20 Vpp When freq. > 20MHz, 2mVpp to 6 Vpp		
Max resolution into 50Ω	1μVp-p		
Max resolution into open circuit	2μVp-p		
Amplitude accuracy	≤±2%+1mV (1kHz sine waveform)		
Amplitude stability	±1 % in 4 hours		
Amplitude flatness (Sine, Square, Pulse)	When freq. ≤ 5 MHz: ±5% When freq. > 5MHz: ±10%		
Amplitude flatness (other waveforms)	When freq. ≤ 50 kHz: ±5% When freq. > 50kHz: ±20%		
Output impedance	50Ω		
AM Modulation Characteristics			
Carrier waveforms	Sine, Square		
Source waveforms	30 commonly used waveforms, including Sine, Square, Triangle etc.		
Source frequency	1mHz to1MHz		
Source depth	0% to 120%		
FM Modulation Characteristics			
Carrier waveforms	Sine, Square		
Source waveforms	30 commonly used waveforms, including Sine, Square, Triangle etc.		
Source frequency	1mHz to 1MHz		
Frequency deviation	0.1% to 99.9%		
PWM Modulation Characteristics			
Carrier waveform	Pulse		
Source waveforms	30 commonly used waveforms, including Sine, Square, Triangle etc.		
Source frequency	1mHz to 1MHz		
Width deviation	1% ~ 99%		
FSK Modulation Characteristics			
Carrier waveform	Sine		
Hop frequency	1μHz to10MHz	1μHz to20MHz	1μHz to40MHz
Interval time	1ms to 40s		
PSK Modulation Characteristics			
Carrier waveform	Sine		
Hop phase	0° to 360°		
Interval time	1ms to 40s		
DCOM Modulation Characteristics			
Carrier waveforms	Sine, Square		
Source waveforms	30 commonly used waveforms, including Sine, Square, Triangle etc.		
Source frequency	1mHz to1MHz		
Function description	Realize addition of carrier waveform and modulated waveform		
Frequency Sweep Characteristics			
Waveforms	Sine, Square		
Frequency range (≤ 6 V_{pp})	1μHz to 10MHz	1μHz to 20MHz	1μHz to 40MHz
Frequency range (> 6 V_{pp})	1μHz to 10MHz	1μHz to 20MHz	1μHz to 20MHz
Sweep mode	Up, Down, Round		
Sweep time	1ms to 500s		
Burst Characteristics			
Waveforms	30 commonly used waveforms, including Sine, Square, Triangle etc.		
Counts	1 to 60000 cycles		
Burst frequency	1mHz to 1MHz		

DSO Series

DSO-3000 Series of Digital Storage Oscilloscope

Ordering Information

Naming principle:

DSO - 3 10 2 B S

- S: Function/Arbitrary Waveform Generator
- B: A: Real-time sample rate 400Msps
  B: Real-time sample rate 1Gsps
- 2: Number of Channel
- 10: Signal Bandwidth 02: 25Mhz 06: 60MHz 10:100 MHz 20:200 MHz
- 3: 3000 Series
- DSO: Manufacture abbreviation

DSO-3000 Series

Model	Real-time sample rate	Equivalent sample rate	Memory depth	Bandwidth	Function/Arbitrary Waveform Generator
DSO-3022A	400Msps	10Gsps	2.4Mpts	25MHz	------
DSO-3062A	400Msps	20Gsps	2.4Mpts	60MHz	------
DSO-3102A	400Msps	20Gsps	2.4Mpts	100MHz	------
DSO-3062B	1Gsps	50Gsps	2.4Mpts	60MHz	------
DSO-3102B	1Gsps	50Gsps	2.4Mpts	100MHz	------
DSO-3202B	1Gsps	50Gsps	2.4Mpts	200MHz	------
DSO-3022AS	400Msps	10Gsps	2.4Mpts	25MHz	10MHz
DSO-3062AS	400Msps	20Gsps	2.4Mpts	60MHz	20MHz
DSO-3102AS	400Msps	20Gsps	2.4Mpts	100MHz	40MHz
DSO-3062BS	1Gsps	50Gsps	2.4Mpts	60MHz	20MHz
DSO-3102BS	1Gsps	50Gsps	2.4Mpts	100MHz	40MHz
DSO-3202BS	1Gsps	50Gsps	2.4Mpts	200MHz	40MHz

Instrument Accessories

DSO--XXX	oscilloscope probe (XXX indicating bandwidth)	2
power cord		1
CD,included PC software and user's manual		1

AH-960C

eMMC Programming Equipment

Introduction

In response to the high-density eMMC application booming, the automated programming equipment efficiency has to be improved. The AH-960C has increased the mechanism movement efficiency and amplified the programming side quantity which make AH-960C is the most effective solution for eMMC mass programming production.

The AH-960C is the first programming equipment which adopt linear motors and use "The two parallel axises synchronous drive" technology on the mechanism movement which ensure the speed and accuracy. Moreover, AH-960C provides CCD module which able to through the image recognition technology to amend the motion control parameters to ensure the ICs reach precisely during the high-speed movement.

For reaching the balance of mechanism efficiency and programming timing, the AH-960C left a large area for the programmers. It can keep the highest capacity time as long as possible by increasing the programmer quantity.

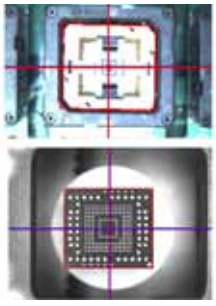
Standard Accessories

- AH-960C Main unit x1
- eMMC Programmer .....x7~11
- ATT-300 Automatic Tray in/out Transporter x1
- User manual x1
- CD x1

Features

- **Support up to 88 site**
  The AH-960C build in 7~11 units of eMMC programmer. Each programmer able to support 1-8 side.
- **"The two parallel axises synchronous drive" guarantee the speed and accuracy**
  The AH-960C is the first programming equipment which adopt linear motors and use "The two parallel axises synchronous drive" technology on the mechanism movement which ensure the speed and accuracy.
- **Vertical and rotary hybrid pick and place mechanism**
  There are two Z axises on the AH-960C horizontal movement. They are the pick and place mechanism for the vertical and rotary. This design is for correct the IC positioning because of the rotary offset.
- **CCD positioning module**
  The AH-960C provides CCD module which able to through the image recognition technology to amend the motion control parameters to ensure the ICs reach precisely during the high-speed movement.
- **Intelligent automatic control**
  In response to the trend of intelligent automation, the AH-960C control software in addition to retain automatic programming should have the function, but also provide the easy to integrate all kind of programmer and measurement system. Moreover, it is able to exchange the data with an external computer.

- The Linear & rotary composite movement design.
  The IC can be tomatically corrected the offset which make the precise pick & place.



- The fixed CCD image recognition system is able to correct the offset which make the positioning precisely.

- "The two parallel axises synchronous drive" technology based on the linear motors and ecision optical ruler which ensure the speed and accuracy.

- ATT-300
  The Automatic Tray Transporter

Specification

Handler	Throughput: 1200 unit per hour (Programming time: 264 sec)	
	Placement accuracy: ±0.06mm	
	Placement repeatability: ±0.03mm	
	Pick and place method: Double vacuum nozzles	
	Dimensions:	Without tower light and Tray transporter 1470mm(W) x 880mm(D)x 1430mm(H)
		With tower light 1470mm(W) x 880mm(D) x 1970mm(H)
		With tower light and Tray transporter 1470mm(W) x 1260mm(D) x 1970mm(H)
	Net weight: 1000kg	
Motion system	Twin-Y and X axis drive device: Linear servo motor	
	Twin-Y and X axis encoder type: Linear optical scale	
	Twin-Y and X axis resolution: 0.001mm	
	Double Z axis resolution: 0.25°	
	Θaxis resolution: 0.05°	
Programmer	Resident Programmer: eMMC Programmer	
	Programming Site: 1 to 11 set, 1 to 8 socket per set, up to 88 socket	
Vision	Fixed CCD:	Field of view: 25x20 mm
		Resolution: ±0.02 mm
		Repeatability: ±0.008 mm
	Carried CCD:	Field of view: 38x25 mm
		Resolution: ± 0.045mm
		Repeatability: ±0.03 mm
Programming System	Resident Programmer: eMMC Gang Programmer	
	Programming and Verify Speed : 22MB/s	
	Socket Site : 1~88 sockets	
	eMMC Version: 4.3/4.4/4.41	
Load and unload	Tray transporter: Auto tray move in and out, stack up to 10 trays for JEDEC standard	
	Tape and reel input: Available for Carrier with 8mm,12mm,16mm,24mm,32mm width	
	Tape and reel output: Press-sealing mode, accept carrier with 8mm to 32mm tape width	
	Tube input: Support 150mil, 207mil, 300mil, tube width	
Control system	Operating system: PC-based control, Windows XP S3	
	Display: TFT LCD touch panel	
	Data entry: Keyboard and mouse	
Power	Input voltage: AC200 to 245V, single-phase, 3 wires	
	Input frequency: 50/60Hz	
	Power consumption: 2.0KVA	
Air	Air pressure: 0.6MPa (6.0kg/cm2)	
	Air flow: 32 liter/min	

AH-480 Series

Automated Programming Equipment

Introduction

AH-480 is an expeditious automated programming system, which provide a special design for programming devices packaged in Tube/Tape/tray. Its unique technology design which has a rotary robotic arm to pick up and position devices. Moreover, The AH-480 contains ultra-high speed programmers that can bring AH-480 into the most efficient UPH.

Features

- **High-performance for various package**
  Not only meet a variety of input and output options with tube, tape and tray, but also perform to support all kind of package on the market.
- **Intelligent Operation**
  Automatic loading, positioning, programming, marking and sorting through system control.
- **High-speed programming system**
  Built-in 16 units LEAPER-56 universal programmer to ensure high quality and stability of the programming system.
- **Marking machine**
  System provide dots, number or character marking for the ICs packaged in tube or tape.
- **Convenient maintenance**
  The special modularized design grants an easy access to exchange the packaging method from tube to tape or vice versa.
- **Powerful operation software**
  User friendly and powerful operation software, which can record all of the production details. The saved results will be used for the next reboot, as well as tracking qualities and productivity.
- **Supports HDCP programming function**
  Support HDCP and custom special function.
- **AOI calibration module**
  AH-480 integrate artificial intelligence and vision inspection which let the calibration easily and quickly.

Support Interface

AH-480 series support the IC input or output in Tube, Tape or Tray device and the marking machine.

ATM-32
Automatic Taping Machine
(8~32mm)

STO-3-xxxkit
Semi-Automatic Tube Unloader

ATT-200
Automatic Tray Transporter

ATF-1
Automatic Air Feeder (8~32mm)

STI-3-xxxkit
Semi-Automatic Tube Loader

Standard Accessories

Model	AH-480	AH-480B
LEAPER-56	x 16	x 16
Automatic Tray Transporter	None	ATT-200
CD x 1 (Windows XP OS: IPC driver, operating software and user manual are included)		

Optional Accessories

Tube In	Semi-Automatic Tube Loader STI-3-xxxkit (xxx:IC size), about 3kg
Tube Out	Semi-Automatic Tube unloader STO-3-xxxkit (xxx:IC size), about 3kg
Tape In	Automatic Feeder ATF-1-xxxkit (xxx:IC tape width) , about 2kg
Tape Out	Automatic Taping Machine ATM-32, about 15kg
Mark Machine	Mark Tube out / Tape out devices (MK-1)
Adapter, Press Bar and Nozzle	In accordance with IC size and package
Precissor	AH-480-PB-xxx (xxx : IC package)

AH-480 Series

Automated Programming Equipment

Specification

	Model	AH-480	AH-480B
	Throughput (UPH)	3K	3K
Transmission System	Repeatable Resolution	X Axis +/- 0.02mm	X Axis +/- 0.02mm
		R Axis +/- 0.067º	R Axis +/- 0.067º
		Z Axis +/- 0.02mm	Z Axis +/- 0.02mm
	Max. Stroke (Max.)	X axis 350mm	Y Axis +/- 0.05mm
		R axis 330º	X axis 350mm R axis 330º
		Z axis 50mm	Z axis 50mm Y axis 550mm
	Pick & Place Method	Vacuum Nozzles	
	Component Detection	Vacuum Sensor	
	Dimensions (with ATM-100 and warning light)	1550mm (W) x 1150mm (D) x 1810mm (H)	
	Net Weight	~380kg	
Position System	Positioning	Preprocessor	
	Precissor Dimensions	30 x 30mm (Max)	
CCD Image recognition	Sensor	CMOS	
	Dynamic resolution	5 Mega Pixels	
Programming System	Programmer	LEAPER-56 Universal Programmer	
	Adapter supported	1-48	
	Pin Driver	48 Universal Pin Driver	
	Devices supported	EPROM, EEPROM, FLASH, NAND Flash, MCU...	
	Applicable packages	BGA, SOP, SSOP, SON, TSSOP, MLP, QFN, SNT, LQFP, PLCC...	
	File formats supported	INTEL HEX, MOTOROLA HEX, TEK MEX, ASCII HEX, BINARY...	
	Communication	USB 2.0	
	Certificate	CE Compliant	
Feeding System	Tube Input	150mil, 207mil, 300mil, 330mil	150mil, 207mil, 300mil, 330mil
	Tube Output	150mil, 207mil, 300mil, 330mil	150mil, 207mil, 300mil, 330mil
	Tape Input	Available for tape with 8~32mm	Available for tape with 8~32mm
	Tape Output	Press-sealing mode, accept tape with 8~32mm	Press-sealing mode, accept tape with 8~32mm
	Tray Input/Output	None	JEDEC Standard
Control Interface	Operating system	PC-Based Control with Windows XP	
	Display	17" TFT LCD Monitor	
	Data Entry Device	Keyboard/Mouse	
Operation	Input voltage	AC220V, Single-phase, 3 Wires	
	Frequency	50/60Hz	
	Power consumption	1KV	
Requirement	Air pressure	0.6MPa (~6.0kg/cm2)	
	Air flow	32 liter/min.	

Patent Information

Patent certificate No.: M 306360 in Taiwan
Patent certificate No.: ZL2006-2-0137588.6 in China
Patent certificate No.: 3129604 in Japan

AH-400 SERIES

High-Speed Automated Programming Equipment

Introduction

AH-400 is an expeditious automated programming system, which provide a special design for programming tiny devices packaged in Tube/Tape/tray. Its unique technology design which has a rotary robotic arm to pick up and position devices. The AH-400 contains a high-speed programmer that can bring AH-400 into the most efficient UPH.

Standard Accessories

- AH Series Automatic Programming system
- SU-6000 Programmer
- ATT-100 Manual Tray in/out Transporter
- ATT-200 Automatic Tray in/out Transporter
- User manual

※Other type of IC loader/unloader and programming adaptor are optional

Features

- **High-performance**
  Not only meet a variety of input and output options with tube, tape and tray, also perform programming, marking and packaging.
- **Intelligent Operation**
  Automatic loading, positioning, programming, marking and sorting through system control.
- **High-speed programming system**
  Built-in SU-6000 Gang 4 programmer to ensure high quality and stability of the programming system.
- **Marking machine**
  System provide dots, number or character marking for the ICs packaged in tube or tape.
- **Convenient maintenance**
  The special modularized design grants an easy access to exchange the packaging method from tube to tape or vice versa.
- **Powerful operation software**
  User friendly and powerful operation software, which can record all of the production details. The saved results will be used for the next reboot, as well as tracking qualities and productivity.

Optional Accessories

Tube In	Semi-Automatic Tube Loader STI-3-xxxkit (xxx:IC size), about 5kg
Tube Out	Semi-Automatic Tube unloader STO-3-xxxkit (xxx:IC size), about 5kg
Tape In	Automatic Air Feeder ATF-1-xxxkit (xxx:IC tape width) , about 2kg
Tape Out	Automatic Taping Machine ATM-100, about 30kg
Mark Machine	Mark Tube out / Tape out devices (MK-1)
Socket Press Block and Nozzle	In accordance with IC size to choose.
Test Socket	We strongly recommend it is better to prepare consumables for replacement.
Processor	AH-400A(B)-08-xxx (xxx : IC size)
Programming Adaptor	Depend on customer's request.

*Please contact Leap sales for a correct P/N when users need to purchase accessories.

AH-400+
(Without Tray in/out Transporter)

AH-400A
(With ATT-100)

AH-400B
(With ATT-200)

Working interface

AH series not only supports tube, tape and tray in/out buy also has marking machine

ATM-100
Automatic Taping Machine

STI-3-xxxkit
Semi-Automatic Tube Loader

ATT-100
Semi-Automatic Tray Transporter

ATF-1
Automatic Air Feeder
(12mm~24mm)

STO-3-xxxkit
Semi-Automatic Tube Unloader

ATT-200
Automatic Tray Transporter

Patent Information

Patent certificate No.: M 306360 in Taiwan
Patent certificate No.: ZL2006-2-0137588.6 in China
Patent certificate No.: 3129604 in Japan

AH-400 SERIES

High-Speed Automated Programming System

Specification

		AH-400+	AH-400A	AH-400B
Transmission System	**Throughput (UPH)**	1.8K		
	Repeatable Resolution	X Axis +/- 0.02mm R Axis +/- 0.067º Z Axis +/- 0.02mm	X Axis +/- 0.02mm R Axis +/- 0.067º Z Axis +/- 0.02mm Y Axis +/- 0.05mm	X Axis +/- 0.02mm R Axis +/- 0.067º Z Axis +/- 0.02mm Y Axis +/- 0.05mm
	Max. Stroke (Max.)	X axis 350mm R axis 330º Z axis 50 mm	X axis 350mm R axis 330º Z axis 50mm Y axis 550 mm	X axis 350mm R axis 330º Z axis 50mm Y axis 550mm
	Pick & Place Method	Vacuum Nozzles		
	Component Detection	Vacuum sensor		
	Dimensions	1160mm (W) x 800mm (D)x 1400mm (H)	1160mm (W) x 800mm (D)x 1400mm (H)	1160mm (W) x 950mm (D) x 1400mm (H)
	Dimensions (with ATM-100 and warning light)	1160mm (W) x 1500mm (D) x 1800mm (H)		
	Net Weight	~300kg		
Position System	**Positioning**	Precissor		
	Precissor Dimensions	30 x 30mm (Max)		
Programming System	**Programmer**	SU-6000 GANG-4 Programmer		
	Adapter supported	2~16		
	Pin Driver	40 Universal Pin Driver		
	Devices supported	EPROM, EEPROM, FLASH, NAND Flash, MCU...		
	Applicable packages	SOP, SSOP, SON, TSSOP, MLP, QFN, SNT, LQFP, PLCC...		
	File formats supported	INTEL HEX, MOTOROLA HEX, TEK MEX, ASCII HEX, BINARY...		
	Communication	USB 2.0		
	Certificate	CE Compliant		
Feeding System	**Tube Input**	150mil, 207mil, 300mil, 330mil		
	Tube Output	150mil, 207mil, 300mil, 330mil		
	Tape Input	Available for tape with 12~24mm		
	Tape Output	Press-sealing mode, accept tape with 12~32mm		
	Tray Input/Output	Jedec stander		
Control Interface	**Operating system**	PC-Based Control with Windows XP		
	Display	17" TFT LCD Monitor		
	Data Entry Device	Keyboard/Mouse		
Operation Requirement	**Input voltage**	AC200 ~ 245V, Single-phase, 3 Wires		
	Frequency	50/60Hz		
	Power consumption	600W		
	Air pressure	0.6MPa (~6.0kg/cm^2)		
	Air flow	32 liter/min.		

AH-160B

Desktop Automated IC Programming Equipment

Introduction

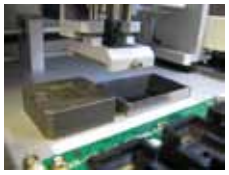
AH-160B is a compact automated programming equipment supporting Flash and Microcontroller. AH-160B can be used in the office, lab or on the production line. Moreover, AH-160B is the best programming solution for the high-density devices because it's superb ultra-high throughput and affordable price.

Standard Accessories

AH-160B-I internal pneumatic or
AH-160B-E external pneumatic x1
BeeHive204AP programmer x1
CD x1
(Included driver and manual)
USB cable x1
AC cable x1

Features

- **Office Automation Design**
  The system power is 100~240V. No need any air facility. Just connect an USB cable to PC, and feed the IC tray, run the operation software. AH-160B satisfy your office and lab automation need. On the other hand, AH-160B is provided the external pneumatic type for production line as well.
- **Flexible Ultra-high Programming module**
  AH-160B build in BeeHive204AP programmer x 1 which is able to support 4 reliable and outstanding quality programming.
- **Friendly Operation**
  AH-160B provides easy-to-learn and easy-to-use software and hardware. The GUI software provides automatic history record function. Moreover, it provides calibration wizard which makes to change package module and calibrate much easier. The hardware is designed for plug-and play for you easy to reach self-learning.
- **Ultra-high Throughput**
  AH-160B is special design for automatic tray-in/out programming solution. The state-of-art robotics deliver 550/uph at the zero programming time.
- **CCD automatic calibration module**
  The AH-160B provides CCD automatic calibration module. It is able to do the self-positioning for the socket which make AH-160B move precisely and quickly.



Specification

	Throughput	550 U.P.H (zero programming time)
Transmission System	Repeatability	X axis ±0.03mm, Y axis ±0.03mm, Z axis ±0.2mm, Bar axis ±0.01mm
	Max. Stroke	X axis 400mm, Y axis 310mm, Z axis 18mm, Bar axis 5mm
	Pick & Place Method	Single Vacuum Nozzles
Position System	Positioning	Preprocessor
	Preprocissor Device Dimensions	30 x 30mm
CCD Image recognition	Sensor	CMOS
	Dynamic resolution	5 Mega Pixels
Programming System	Resident Programmer	High Speed Gang Programmer
	Socket Site	4 Sockets
	Device supported	NOR Flash, NAND Flash, EEPROM
	File Formats Supported	Binary / Machine Code, Intel HEX, TEK HEX, Motorola HEX
Feeding System	Manural Tray-in / out	JEDEC stander
Physical Specifications	Dimensions	520 x 700 x 550mm
	Net Weight	70KG
PC System Requirements	Operating System	Windows7 / Vista / XP (32bit & 64bit)
	Processor	Core 2 Duo above
	Memory	2GB RAM above
	Hard Disk	500 MB above, Buffer 4GB above
	Interface	USB 2.0 High Speed
Operation Requirements	Input Voltage	AC100V~240V, Single-phase, 3-wires
	Input Frequency	50 / 60Hz
	Power Consumption	200W(Max)

Optional Accessories

TSOP, TSSOP, BGA, uBGA, VSOP, SOP, SSOP, PLCC, WSON, QFN

AH-160C

eMMC Programming Equipment

Introduction

AH-160C is a compact automated programming equipment supporting eMMC. AH-160C can be used in the office, lab or on the production line. Moreover,AH-160C is the best programming solution for the high-density eMMC devices because it's superb ultra-high throughput and affordable price.

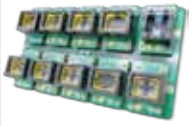
Standard Accessories

Main unit x1
CD x1
(Included driver and manual)
USB cable x1
AC cable x1

Features

- **Complete Support**
  Supports MMC 4.3/4.4/4.41
- **Ultra-high Throughput**
  AH-160C is special design for automatic tray-in/out rogramming solution. The state-of-art robotics deliver 550/uph at the zero programming time. Moreover, it's no need to stop the machine during change the tray.
- **Flexible Ultra-high Programming module**
  AH-160C build in special eMMC programmer x2 which is able to support 16 reliable and outstanding quality programming.
- **Friendly Operation**
  AH-160C provides easy-to-learn and easy-to-use software and hardware. The GUI software provides automatic history record function for production management. Moreover, it provides calibration wizard which makes to change package module and calibrate much easier.
- **CCD automatic calibration module**
  The AH-160C provides CCD automatic calibration module. It is able to do the self-positioning for the socket which make AH-160C move precisely and quickly.





Specification

Transmission System	Throughput	550 U.P.H (zero programming time)
	Repeatability	X axis ±0.03mm, Y axis ±0.03mm, Z axis ±0.2mm, Bar axis ±0.01mm
	Max. Stroke	X axis 400mm, Y axis 310mm, Z axis 18mm, Bar axis 5mm
	Pick & Place Method	Single Vacuum Nozzles
Position System	Positioning	Preprocessor
	Preprocissor Device Dimensions	30 x 30mm
CCD Image recognition	Sensor	CMOS
	Dynamic resolution	5 Mega Pixels
Programming System	Resident Programmer	MMC Gang Programmer
	Programming and Verify Speed	22MB/s
	Socket Site	8~16 sockets
	MMC Version	4.3/4.4/4.41
Feeding System	Auto Tray-in / out	JEDEC stander
Physical Specifications	Dimensions	520 x 700 x 550mm
	Net Weight	70KG
PC System Requirements	Operating System	Windows7 / Vista / XP (32bit & 64bit)
	CPU	Core 2 Duo above
	Memory	2GB RAM above
	Hard Disk	Main program 500 MB above, buffer 4GB above
	Interface	USB 2.0 High Speed
Operation Requirements	Input Voltage	AC100V~240V, Single-phase, 3-wires
	Input Frequency	50 / 60Hz
	Power Consumption	200W(Max)

Optional Accessories

FBGA 153-X4
FBGA 169-X4

AH-160

Desktop Automated IC Programming Equipment

Introduction

AH-160 is a compact automated programming equipment supporting Flash andMicrocontroller. AH-160 can be used in the office, lab or on the production line. Moreover, AH-160 is the best programming solution for the high-density devices because it's superb ultra-high throughput and affordable price.

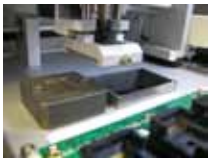
Standard Accessories

AH-160-I internal pneumatic or
AH-160-E external pneumatic x1
SU-320 Stand-along Universal & Gang Programmer x4
CD x1
(Included driver and manual)
USB cable x1
AC cable x1

Features

- **Office Automation Design**
  The system power is 100~240V. No need any air facility. Just connect an USB cable to PC, and feed the IC tray, run the operation software. AH-160 satisfy your office and lab automation need. On the other hand, AH-160 is provided the external pneumatic type for production line as well.
- **Flexible Ultra-high Programming module**
  AH-160 build in SU-320 x 4 which is able to support 4~16 reliable and outstanding quality programming.
- **Friendly Operation**
  AH-160 provides easy-to-learn and easy-to-use software and hardware. The GUI software provides automatic history record function. Moreover, it provides calibration wizard which makes to change package module and calibrate much easier. The hardware is designed for plug-and play for you easy to reach self-learning.
- **Ultra-high Throughput**
  AH-160 is special design for automatic tray-in/out programming solution. The state-of-art robotics deliver 550/uph at the zero programming time.
- **CCD automatic calibration module**
  The AH-160 provides CCD automatic calibration module. It is able to do the self-positioning for the socket which make AH-160 move precisely and quickly.






Specification

	Throughput	550 U.P.H (zero programming time)
Transmission System	Repeatability	X axis ±0.03mm, Y axis ±0.03mm, Z axis ±0.2mm, Bar axis ±0.01mm
	Max. Stroke	X axis 400mm, Y axis 310mm, Z axis 18mm, Bar axis 5mm
	Pick & Place Method	Single Vacuum Nozzles
Position System	Positioning	Preprocessor
	Preprocissor Device Dimensions	30 x 30mm
CCD Image recognition	Sensor	CMOS
	Dynamic resolution	5 Mega Pixels
Programming System	Resident Programmer	High Speed Gang Programmer
	Socket Site	4~16 sockets
	Device supported	NOR Flash, NAND Flash, EEPROM .
	File Formats Supported	Binary / Machine Code, Intel HEX, TEK HEX, Motorola HEX
Feeding System	Manural Tray-in / out	JEDEC stander
Physical Specifications	Dimensions	520 x 700 x 550mm
	Net Weight	70KG
PC System Requirements	Operating System	Windows7 / Vista / XP (32bit & 64bit)
	Processor	Core 2 Duo above
	Memory	2GB RAM above
	Hard Disk	500 MB above, Buffer 4GB above
	Interface	USB 2.0 High Speed
Operation Requirements	Input Voltage	AC100V~240V, Single-phase, 3-wires
	Input Frequency	50 / 60Hz
	Power Consumption	200W(Max)

Optional Accessories

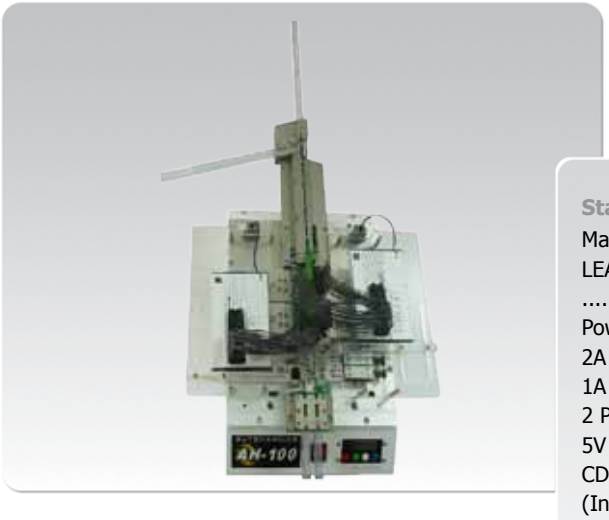
NOR-TSOP48-X4, NOR-TSOP56-29-X4, NOR-TSOP56-J3-X4,NOR-TSOP56-P3-X4,SFLASH-SOP16-X4, SFLASH-BGA24-4x6B-X4, SFLASH-BGA24-5x5B-X4,SOP8-207-X4, SOP8-150-X4, SON8-4x4-X4, WSON8-1.97x2.46-X4,WSON8-2x3-X4, WSON8-5x6-X4, WSON8-6x8-X4,BGA64-J3-P3-X4(10x13), BGA64-J3-P3-X4(10x8),BGA64-29-X4(10x13), BGA64-29-X4(11x13), BGA64-29-X4(9x9) ...etc

AH-100

Semiautomatic Tube IC Programmer

Introduction

AH-100 Semiautomatic Tube IC Programmer is a economical solution for programming IC tubes. User can change IC tubes manually and then AH-100 will automatically program them. AH-100 not only can improve the disadvantage like low efficiency and low yield rate by programming manually. But also help company to reduce costs of production tools. AH-100 Semiautomatic Tube IC Programmer built in two LEAPER-56 Pocket Universal Programmers supports wide rangeof IC.
The IC package supported by AH-100 includes: DIP, SOP, SSOP, TSSOP.



Standard Accessories

Main unit x1
LEAPER-56 IC programmer x2
Power Cable x1
2A / 1B Y-USB Cable x2
1A / 1B USB Cable x1
2 Port USB Hub x1
5V 2.0A DC Adaptor x1
CD.....x1
(Included driver and user'smanual)

Features

- Can insert two IC tubes in the feeder each time.
- Automatically classify the IC according to programming results (NG or OK).
- User can set full tube's IC quantity according to different IC package.
- It will do programming once again when N.G. occurs. Only 2 times N.G occurs, the AH-100 will judge as failure.
- The results can be recorded to PC for the production management.
- No need air pressure source, easy to use.
- At to program two ICs at the same time to help increase production efficiency.

Specification

Power	220VAC, 30W
Throughput	2000~3000UPH (Non-programming time)
Dimension	300 x 400 x 500mm
Weight	10KG

Optional Accessories

IC rail module	DIP 300
	SOP 150, 207, 300
	SSOP 173
	TSSOP 118
Probe Card	PIN- under 48pin, Pitch- above 0.65

APC-100

Automated Package Changer - Taping Machine

Introduction

APC-100 is a transferring system which can be used for transfering device in/out from tray, tube and Reel. It uses industry computer which makes all of the movement precisely and speedily. You can add the AOI module as well.

Features

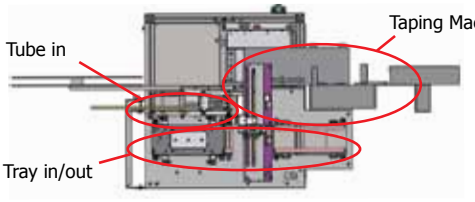
- **Automated tray-in**
  Stack up to 10 tray with JEDEC standard for waiting and empty tray area. Automated push in the waiting area for robot pick movement. Automated pull for the empty tray and keep them in the area. Auto-detect and alarm system to inform waiting and empty tray area situation. Use the Step motor to drive the timing belt which make the ball screw is able to exactly transfer the system movement procedure.
- **Robot**
  Horizontal line movement adopts Servo motor close loop control mode, precisely and speedily. Vertical line movement adopts Fuzzy control mode,will not damage the devices. SMT level nozzle, long life time and reliable.
- **Tape and reel taping machine**
  Supports 8~58mm adjustable tape width. Automated detect if the carrier tape on the wrong position. Automated detect and alarm for jam and empty package. Provide convenient and easy operation user interface.

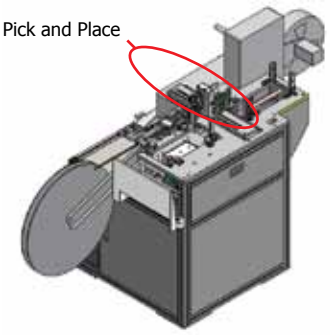
Specification

Control System	Operating system	PC-based control with Windows XP
	Display	17" TFT LCD monitor
	Data entry	keyboard/mouse
Operation Requirement	Input voltage	AC200 ~ 245V, Single-phase, 3-wires
	Input line frequency	50/60Hz
	Power consumption	450W
Specification	Size	800 x 950 x 1312 mm (W/D/H)
	Weight	300Kg

Optional Accessories

Tube In: Semi-Automatic Tube Loader STI-3-xxxkit (xxx:IC size), 3kg
Tube Out: Semi-Automatic Tube unloader STO-3-xxxkit (xxx:IC size), 3kg
Tape In: Automatic Feeder ATF-1-xxxkit (xxx:IC tape width) , 2kg
Tape Out: Automatic Taping Machine ATM-32 / 58, 15kg
AOI Module
Mark Machine: Mark Tape out devices (MK-1)
Nozzle: In accordance with IC size



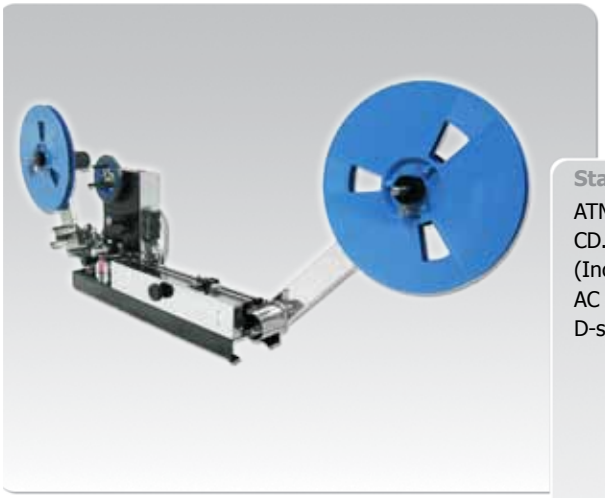


ATM-32

Automated Taping Machine

Introduction

The microprocessor controlled sealer and step motor drive assure precise handling of all taping parameters. Several advance speeds are selectable to accommodate problem parts and to minimize part jumping. Flexible, easy to use, and advanced electronic characteristics make the ATM-32 a perfect chose for taping. It only take 10 second to adjust the tape width without any tool. Moreover, it's low cost and high performance make ATM-32 popular on manufacturers.



Standard Accessories

ATM-32 Main unit.....x1
CD.....x1
(Included driver and manual)
AC power code.....x1
D-sub cable x1

Features

- Adjustable track assembly for tape widths from 8 to 32mm.
- User-friendly software assures ease of setup and operation.
- Current operating parameters and count are saved at power down and restored at power up.
- Optional tape-out mark and optical inspection available.

Specification

Power	120/230VAC, 50/60Hz, 0.2kVa
Dimension	860x 364x 190mm (without arm)
	1347x 429 x190mm (with arm 45 degree)
Net weight	5kg
Adjustable tape width	8 to 32mm
Carrier tape movement	Multiple of 4mm
Compressed air	5kg/cm
Counter	LCD
Seal speed	140mm/sec max
Seal pressure	450g
Seal type	Constant-pressure self-adhesive seal
Trailer/leader	Programmable
Communication	RS-232, I/O
Inspection	Out of Carrier, Out of Tape, Empty, Floating, Location Error

"Four Tenets of Chung Tai"
To our elders be respectful,
To our juniors be kind,
With all humanity be harmonious,
In all endeavors be true.

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