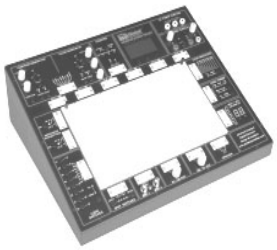
Global® Specialties

ADVANCED ANALOG & DIGITAL DESIGN WORKSTATION

MODEL: PB507



The PB-507 Advanced Analog & Digital Electronic Design Workstation, is a powerful, versatile tool for circuit designers, engineers, technicians, students and hobbyists. All digital controls, USB port, and a wide choice of built-in circuits accessories allow rapid and accurate construction of virtually any type of analog or digital circuit. The PB-507 has an LCD that displays the settings for the active module selected. Simply touch a control element and the LCD switches to that module and displays its settings. Use the USB connection on the PB-507 and you can control or view the module's values from a PC. Using this feature you can project the controls to a large viewing screen for a classroom to observe and follow.

Features:

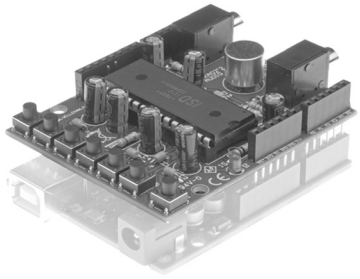
- USB connection enabling viewing and controlling from a PC
- Choose your power source: 6.3/12.6 V AC power, 5 V DC or variable +/-20 V DC
- Draw power from banana plug connections or the tie-point power supplies above each breadboard bus strip
- Powerful 1 MHz bandwidth Function Generator with sine, triangle, and square wave outputs
- Pulse Generator operates for a second, independent Function Generator but that you can modify the duty cycle between 10 to 90%
- Frequency Counter module reports on the output of your own specially designed circuits
- Flush mounted, removable circuit breadboard with over 4,100 contact points

Part No. 01PB507 • Price $960.00

velleman

RGB SHIELD FOR ARDUINO

MODEL: KA01



Control 3 dimmer channels (1 x RGB or 3 single channels) with Arduino UNO™

Also available as completely mounted module VMA01

Features

- downloadable example sketch
- stackable design: the shield can be stacked with other shields
- large user community
- requires 1 Arduino UNO™ (not included)

Specifications

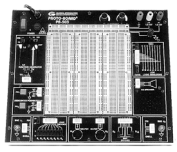
- 2 A load via Vin or 6 A load via external power
- 12 or 24 V external power supply
- uses pin 3, 5, 6 PWM on an Arduino UNO™ board
- dimensions: 68 x 53mm / 2.67 x 2.08"

Part No. 01VKKA01 • Price $18.95

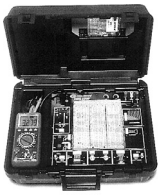
Global® Specialties

PROTO-BOARD® DESIGN WORKSTATION SERIES

MODEL PB503 – Bench-Top Workstation
MODEL PB503C – Portable Unit (Includes Rugged Carrying Case, Meter sold separately)
MODEL PB505 – Advanced Design; Enhanced Features



PB-503



PB-503C

PB-505

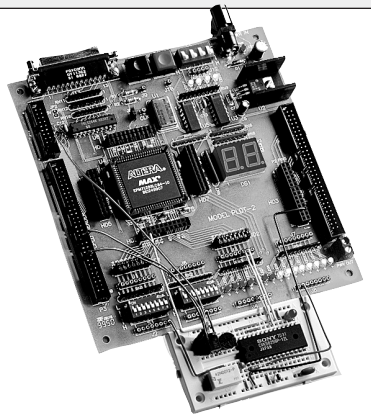
- Multiple test equipment features in one complete instrument.
- 100KHz function generator with sine, square, triangle and TTL.
- Triple output power supply offers 5VDC fixed plus two variable outputs: 1.3 to 15VDC.
- Removable breadboard sections.
- 8 channel logic monitor.
- 8 selectable logic switches.
- Two digital pulsers, audio experimentation speaker.
- High and low buffered logic indicators.
- **Additional Features (*Model PB505)*** – Larger breadboard area, low voltage (12.5VAC), AC supply, built in logic probe, BCD to 7 segment decoder/ display, compatible with optional trainer boards.
- **Courseware for Global PB-503 and PB-505 Trainers**
  Electronic Fundamentals - Student Textbook, Instructor Guide, Breadboard Lab Manual & Instructor Solution Guide with comprehensive coverage basic theories in AC/DC, circuit design, components, schematic symbol guide, formulas, technical glossary
  Digital Electronics Courseware - Student Textbook and Instructor Guide covering sourse in Digital logic in several numbering systems, Boolean algebra, Flip-Flop circuitry, Counters and registers building up to Microcomputing

Part No.	Description	Price
01PB503	Design Workstation – Bench Style	$369.00
01PB503C	Design Workstation – With Case	430.00
	*Meter sold separately	
01PB505	Advanced Circuit Design Trainer	540.00
01GSC2301	Student Text – Electronic Fundamentals	46.95
01GSC2302	Instructor Guide - Electronic Fundamentals	32.95
01GSC2311	Breadboard Lab Manual - Electronic Fundamentals	46.95
01GSC2312	Instructor Solution Guide - Electronic Fundamentals	20.00
01GSC3200	Student Text – Digital Electronics	49.95
01GSC3201	Instructor Guide – Digital Electronics	49.95

RSR PLDT-2 PROGRAMMABLE LOGIC DEVICE PROTOTYPING BOARDS

WHY USE OLD, OBSOLETE TTL GATES TO IMPLEMENT COMPLEX LOGIC & STATE MACHINE DESIGNS?

with the ALTERA® EPM7128SLC™ CPLD



ONLY $79.00

Power Supply and Cable Included

Breadboard Optional

User design software available from the chip manufacturer.* Then download your design from the PC with the parallel port cable (included). each comes with a user's manual containing a complete description of the board together with Lab experiments, power supply and cable.

* *Design software is available at the following chip manufacturer websites: For the **Altera** chip: http://www.altera.com. You can also go to the PLDT page on the Electronix Express website at http://www.elexp.com/tst_pldt.htm which has links directly to the software pages.*

HAS THE ON-BOARD I/O CAPABILITY YOU NEED:

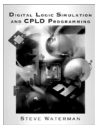
- DIP Switches
- De-bounced Momentary Switches
- LEDs
- 7-Segment Displays
- Numerous Connectors for Jumper-Wires and Ribbon Cables

ACCESSORY KIT *(32RSRFPGAACC)*

INCLUDES: 1 RSR MB-102 Breadboard with Wire Kit
1 RSR LP-610 Logic Probe
50 Breadboarding Pins

Part No.	Description	Price
01PLDT2	PLDT-2 Board	$79.00
31CPLD	CPLD Programming Lab Manual	89.95
31P0130453056	Experiments In Digital Fundamentals With VHDL	91.50
311401840302	Digital Design With CPLD Applications & VHDL, 2Ed.	190.95
32RSRFPGAACC	Accessory Kit	19.95

CPLD PROGRAMMING & DIGITAL LOGIC SIMULATION – *By Steve Waterman*



A lab manual to accompany any digital electronics textbook. This lab manual can help you learn how to use Max+plusII software by Altera Corporation. This manual starts with fundamentals of logic gates, then progresses to MSI devices, latches and flip flops. Then it moves on to clock dependent circuits including counters and registers, memory addressing, and converters.

EXPERIMENTS IN DIGITAL FUNDAMENTALS WITH VHDL

Provides laboratory exercises that support Digital Fundamentals with VHDL by Tom Floyd. The manual supports the PLDT-2 and PLDT-3 boards from RSR Electronics, as well as the DeVry University board, and the Altera University Program board.

DIGITAL DESIGN WITH CPLD APPLICATIONS & VHDL, 2ED

2nd edition; 896 pages. Updated Altera's Quartus II software and Lab.Source CD included with book. Thorough coverage of basic techniques and fundamentals to advanced principles.

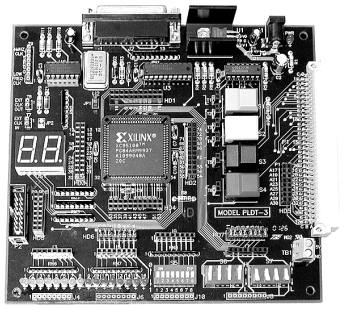
RSR PLDT-3 PROGRAMMABLE LOGIC DEVICE PROTOTYPING BOARDS

WHY USE OLD, OBSOLETE TTL GATES TO IMPLEMENT COMPLEX LOGIC & STATE MACHINE DESIGNS?

with the XILINX® XC95108™ CPLD

ONLY $79.00

Power Supply and Cable Included



User design software available from the chip manufacturer.* Then down-load your design from the PC with the parallel port cable (included). EACH comes with a user's manual containing a complete description of the board together with Lab experiments, power supply and cable.

HAS THE ON-BOARD I/O CAPABILITY YOU NEED:

- DIP Switches
- De-bounced Momentary Switches
- LEDs
- 7-Segment Displays
- Numerous Connectors for Jumper-Wires and Ribbon Cables

* *Design software is available at the following chip manufacturer website: For the Xilinx chip: http://www.xilinx.com*
You can also go to the PLDT page on the Electronix Express website at http;//www.elexp.com/tst_pldt3.htm which has links directly to the software pages.

ACCESSORY KIT *(32RSRFPGAACC)*

INCLUDES: 1 RSR MB-102 Breadboard with Wire Kit
1 RSR LP-610 Logic Probe
50 Breadboarding Pins

DIGITAL ELECTRONICS LABORATORY EXPERIMENTS

USING THE XILINX® XC95108™ CPLD WITH XILINX® FOUNDATION DESIGN AND SIMULATION SOFTWARE

This digital laboratory manual by James Stewart and Chao-Ying Wang, published by Prentice Hall, allows introductory digital electronics students to use the Xilinx® software early in the course. Features of this manual include:

- A step-by-step introduction to Xilinx® software.
- Class-tested laboratory experiments guaranteed to work.
- More than one experiment for most typical areas to allow for greater flexibility in the laboratory environment.

Part No.	Description	Price
01PLDT3	PLDT-3 Board	$79.00
31DELE	Digital Electronics Laboratory Experiments	90.20
32RSRFPGAACC	Accessory Kit	19.95

terasIC FPGA ALTERA BOARD WITH USB

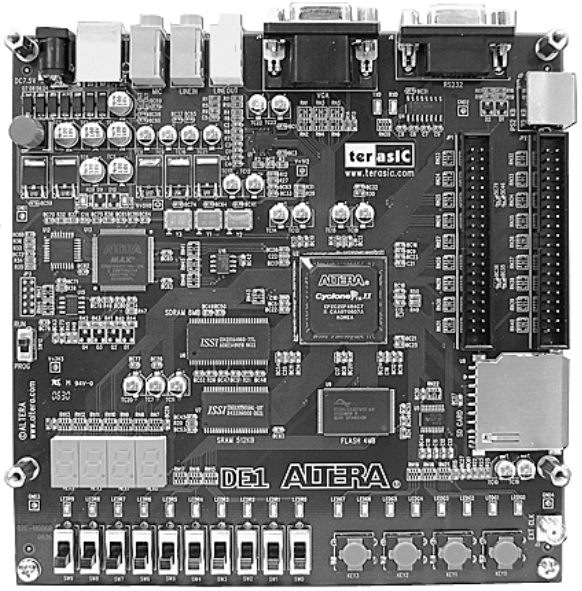
Provides ideal vehicle for advanced design prototyping in the multimedia, storage, and networking. The board offers a rich set of features that make it suitable for use in a laboratory environment for university and college courses, for a variety of design projects, as well as for the development of sophisticated digital systems. Altera provides a suite of supporting materials for the DE1 board, including tutorials, "ready-to-teach" laboratory exercises, and illustrative demonstrations.

Altera DE1: Available on the Altera website (http://university.altera.com/materials/unv-dev-edu-boards.html)t

FEATURES

DE1 board provides users many features to enable various multimedia project development. Component selection was made according to the most popular design in volume production multimedia products. The DE1 platform allows users to quickly understand all the insight tricks to design projects for industry.

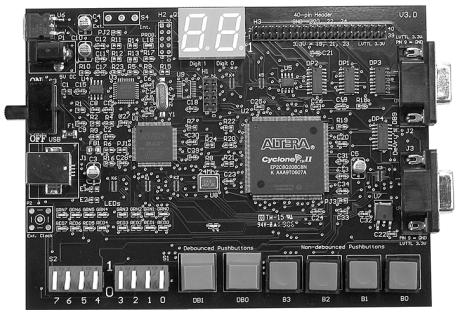
- Altera Cyclone II 2C20 FPGA with 20000 LEs
- Altera Serial Configuration deivices (EPCS4) for Cyclone II 2C20
- USB Blaster built in on board for programming and user API controlling
- JTAG Mode and AS Mode are supported
- 8Mbyte (1M x 4 x 16) SDRAM
- 4Mbyte Flash Memory
- 512Kbyte(256Kx16) SRAM
- SD Card Socket
- 4 Push-button switches
- 10 DPDT switches
- 8 Green User LEDs
- 10 Red User LEDs
- 4 Seven-segment LED displays
- 50MHz oscillator ,24MHz oscillator ,27MHz oscillator and external clock sources
- 24-bit CD-Quality Audio CODEC with line-in, line-out, and microphone-in jacks
- VGA DAC (4-bit R-2R per channel) with VGA out connector
- RS-232 Transceiver and 9-pin connector
- PS/2 mouse/keyboard connector
- Two 40-pin Expansion Headers
- DE1 Lab CD-ROM which contains many examples with source code



Part No. 01FPGA2 • Price: $150.00

FPGA BOARD WITH USB PORT

- Provides means of learning and prototyping digital logic, computer systems and FPGA code. This board provides a complete low cost platform using Altera Cyclone II (EP2C8) chip connected to various LEDs, switches and 7-segment displays. One can use web edition of Altera Quartus II to design FPGA code using Verilog HDL, VHDL as well as other design methods
- USB port for transferring FPGA to chip configurations
- 8 red LEDs, 8 green LEDs
- 2 sets of 4 SPDT switches
- 2 debounced, 4 non-debounced switches
- 40 pin and 2 DB-9 I/O connectors for interfacing
- 24MHz clock; can be multiplied or divided using interal PLL



Part No. 01FPGA4 • Price: $149.00

Global Specialties MICROPROCESSOR TRAINER *Model DL-030*

A highly rated 137 page Lab Manual written by a major U.S. university Professor is included with this trainer. Altera Cyclone ® II ® FPGA based, this unit is capable if integrating seamlessly into both Quartus ® II FPGA design framework and NOIS ® II GNU based development environment. While is is advanced enough to design and prototype complex embedded systems, students are able to create and implement designs in a little as one hour.

- Sleek design with durable portability
- Well written 137 page Student Trainer Lab manual with experiments
- Altera Cyclone ® III, EP3C16F256C8N FPGA
- USB interface cable, Software CD, sturdy jumpers for breadboards
- 270 tie point breadboard, 3 pushbutton switches
- LED's, 3 seven-segment displays requires Widows XP or higher, 10 Gb for installation and 4 Gb to run post installation

Part No.	Description	Price
01MPTDL030	Microprocessor Trainer	$699.00

matrixmultimedia ELECTRONIC PROJECTS

PLATFORM: WINDOWS 3.1/95/98/NT; FORMAT: CD ROM

- 10 projects to build
- Component lists – also included as separate files for easy access
- Fully functional schematic design and PCB layout software included on the CD (CAD Pack)
- Component and general construction guides
- Project specific construction and testing

The projects on this CD are as follows:

- Light, Heat and Moisture Sensor
- Logic Probe
- NE555 Timer
- Egg Timer
- Dice Machine
- Bike Alarm
- Stereo Mixer
- Power Amplifier
- Sound Activated Switch
- Reaction Tester

Part No.	Description	Price
01ELEPSST	Electronic Projects – Student Ver.	$59.00
01ELEPSSI	Electronic Projects – Single User	93.00
01ELEPS10	Electronic Projects – 10 User	192.00

matrixmultimedia ELECTRONIC CIRCUITS AND COMPONENTS – VER. 2

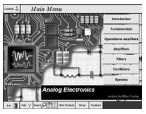
PLATFORM: WINDOWS 95/98/NT/2000/ME; FORMAT: CD ROM

- Highly interactive virtual labs. Clear circuit simulation.
- Spoken text caters to students with low reading ability.
- Thorough assessment – multiple choice, worksheets, fault finding circuits, written exam questions and assignments.
- Flexible resources – stand alone, in front of class, class activity on a network, revision/remediation.
- Browser based – Intranet ready.
- Teachers' notes and editable worksheets included on CD.
- Multi Sim® / Electronics Workbench® circuits provided.

Part No.	Description	Price
01ELECCSI2	Electronic Circ. & Comp – Single User	93.00
01ELECC102	Electronic Circ. & Comp – 10 User Ver.	192.00

matrixmultimedia ANALOG ELECTRONICS

PLATFORM: WINDOWS 3.1/95/98/NT; FORMAT: CD ROM

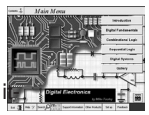


- Virtual labs
- SPICE® simulation of over 50 editable circuits
- Design parameters for circuits included
- Complete hi-fi amplifier case study
- Editable worksheets

Part No.	Description	Price
01ELANAST2	Analog Electronics – Student Ver.	$59.00
01ELANASIN2	Analog Electronics – Single User	93.00
01ELANA102	Analog Electronics – 10 User Ver.	192.00

matrixmultimedia DIGITAL ELECTRONICS

PLATFORM: WINDOWS 3.1/95/98/NT; FORMAT: CD ROM



- Virtual labs
- Full audio commentary
- Over 20 links to pre-designed Electronics Workbench® circuits and crocodile clips
- Teachers' notes
- Editable worksheets

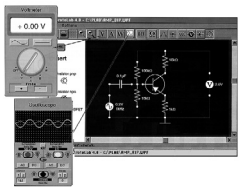
Digital Electronics provides a broad introduction to the principles and practice of digital electronics, including logic gates, combinational and sequential logic circuits, clocks, counters, shift registers, and displays. The CD ROM also provides an introduction to microprocessor based systems.

Part No.	Description	Price
01ELDIGST2	Digital Electronics – Student User	$59.00
01ELDIGSI2	Digital Electronics – Single User	93.00
01ELDIG102	Digital Electronics – 10 User License	192.00

Global Specialties® PROTOLAB™ CIRCUIT SIMULATION SOFTWARE

CREATE AND ANALYZE CIRCUITS INSTANTLY ON YOUR PC!

Release 4.0



Protolab™, a total computer-simulated, electronics laboratory including free built-in test instruments and tools to build and test actual circuits.

- Easy-to-use interface: Create AC&DC circuits moments after installation with ProtoLab's easy "click & drag" component placement and on-line help
- Choose from a complete list of active and passive components
- Five virtual instruments allow for instant, accurate circuit analysis: Voltmeter, Ammeter, Wattmeter, Oscilloscope, Ohmmeter
- Pre-designed circuit library included

SYSTEM REQUIREMENTS:

- IBM/PC 386 or compatible with 4MB RAM
- SVGA video
- Windows 3.1 or Windows 95
- Mouse
- 3½ floppy drive

Part No. 01PL300-0007 • Price: $49.95

RSR PIC WRITER – HANDHELD

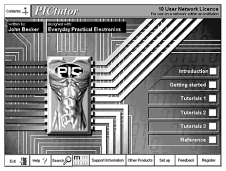
SERIAL PROGRAMMER COMPATIBLE WITH MICROCHIP® MPLAB DEVELOPMENT SOFTWARE

Low cost programmer supports many devices from PIC family. Operates with PC-compatible host system running Windows 3.X/ ME/NT/2000/XP. Reads, programs, verifies EPROM and EEPROM program and data memory. MPLAB Project support to automatically download object file to PSTART. Complete with RS-232 cable, 9V universal power adapter. Includes MPLAB Development Software (CDROM).

LP-PICD is manufactured under license from **MICROCHIP®**

Part No. 01LPPSTART • Price $205.00

matrixmultimedia ASSEMBLY FOR PICmicro® MICROCONTROLLERS CD ROM



- Virtual PIC allows full on-screen simulation programs
- Over 80 exercises
- Over 30 full working programs
- On-screen challenges
- Includes shareware assembler and send programs

The PICtutor is designed to teach users of all levels how to write assembler programs for the PIC series of microcontrollers. The CD ROM's 39 tutorial sections guide the complete beginner through PIC architecture, commands and programming techniques up to advanced programming techniques including discussion and examples of watchdog timers, interrupts and sleep modes. Over 80 exercises and challenges are provided.

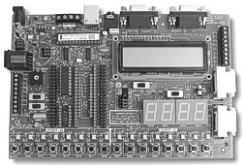
Part No.	Description	Price
01PICST2	Assembly for PICmicro / Student Ver.	$59.00
01PICSI2	Assembly for PICmicro / Single User	125.00
01PIC102	Assembly for PICmicro / 10 User	375.00

matrixmultimedia E-BLOCK™ SYSTEM

The E-Block™ System consists of small circuit boards each of which contains electronics that you would typically find in an Electronic System. The E-Blocks™ range consists of around 150 separate items which can be combined to make a variety of systems offering a wide range of learning opportunities. ***Select a Programmer Board, add a number of peripheral boards, combine with a range of software utilities including "Flow Code" to develop a fully functional electronic system***.

PROGRAMMING BOARDS

PICMICRO DEVELOPMENT BOARD VER. 3

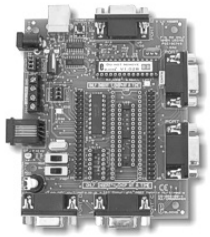


This is an ideal platform for learning how PICmicros are programmed and also for project work. This board programs a range of 8, 14, 18, 28 and 40 pin devices from the 12, 16 and 18 series PIC micro ranges. The on-board LED's, switches and displays can be used in CD ROM based courses or with Microchip's MPLAB software. The board also has two E-Blocks parts (on ports C and D) which makes it compatible with a large range of E-blocks add-ons and sensors.

Features:
- USB Connector
- Single bit audio output
- 2 line LCD display
- Onboard sensors
- Quad 7 segment displays

Part No. 01HP488 • Price: $285.00

PICMICRO MULTIPROGRAMMER



This programmer connects to your PC via USB to provide you with a low cost and flexible PIC microcontroller programmer. This board can be used with Assembly, C or Flowcode programming utilities provided by Matrix Multimedia. This board will programm most 8, 14, 18, 28 and 40 pin flash PIC micro devices using the flexible programming software provided and provided "clean" access to all I/O lines. The board has 5 E-blocks parts to which you can connect a variety of peripheral boards.

Part No. 01EB006 • Price: $115.00

matrixmultimedia

FLOWCODE / PICMICRO

PLATFORM WIN95/98/ME/NT/2000/XP

Flowcode is a very high level language programming system for PICmicro® microcontrollers **based on flowcharts.** Flowcode allows students to design complex robotics and control systems in a matter of minutes. Flowcode is a powerful language that uses macros to facilitate the control of complex devices like 7-segment displays, motor controllers, and LCD displays. The use of macros allows students to control highly complex electronic devices without getting bogged down in understanding the programming involved.

Part No.	Description	Price
01TEFLCST2	Flowcode Student Ver.	$74.00
01TEFLCSI2	Flowcode Single User	235.00
01TEFLC102	Flowcode 10 Users	695.00

PERIPHERAL BOARDS

LED BOARD

It has 8 LEDs which shows the status of each bit on the port

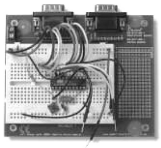
LCD BOARD

This E-block contains a 16 character 2 line alphanumeric LCD display on a 5 wire serial bus.

SWITCH BOARD

This E-block contains 8 push-to-make switches. Connectors allow this board to be used in bus configuration.

PROTOTYPE BOARD



It contains a small breadboard for developing circuits and projects. Connectors for two E-block ports allow prototype wires and leads to be connected to the rows and columns on the prototype board.

SENSOR BOARD

This board contains a variable resistor and a simple light sensor which can be used for simple analog experiments. It also contains sockets which allow users to interface with many other sensors.

BLUETOOTH BOARD

This board allows you to add Bluetooth capability to any microcontroller with UART functionality.

INTERNET BOARD

This board adds Ethernet functionality to a microprocessor with the need for developing a TCP-IP software stack.

VOICE CODEC BOARD

This audio coder-decoder board allows students to investigate Bluetooth systems that use audio. It is based on MC145483 linear 13 bit CODEC which allows voice digitization and reconstruction as well as pre and post filtering.

MOTORS BOARD

This board is based on L298 device which can drive two motors operating up to 46 V @ 4A each. It can be used in a variety of motor control configurations including PID control.

OPTO-ISOLATOR BOARD

This Opto-Isolator Board allows you to add 4 separate optically isolated inputs to your E-blocks system. This is ideal for developing industrial control systems like PLCs (programmable Logic Controllers) where electrical systems need to be isolated from one another.

KEYPAD BOARD

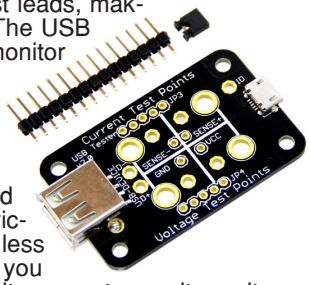
A simple 4 x 3 keyboard that allows data entry into bus based systems.

Part No.	Description	Price
01EB004	LED Board	$22.00
01EB005	LCD Board	32.00
01EB007	Switch Board	22.00
01EB016	Prototype Board	32.00
01EB003	Sensor Board	33.90
01EB024	Bluetooth Board	210.00

Part No.	Description	Price
01EB023	Internet Board	$120.00
01EB032	Voice CODEC Board	210.00
01EB022	Motor Board	95.00
01EB035	Opto-Isolator Board	54.00
01EB014	Keypad Board	26.00

USB TESTER

USB has become the core of many projects. In my experience I've found it to be troublesome to test USB voltage levels and current usage using a breadboard. They usually consist of holding wires attached to the DMM's test leads, making it difficult to get solid readings. The USB Tester will make it much easier to monitor any USB project's power source.

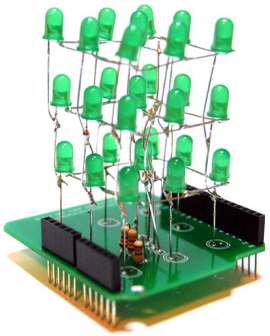


As part of the USB spec, you are limited to 500ma, so you want to monitor how close you are. Most people use USB hubs, both powered and unpowered, and with many devices connected, you can end up with less than 5V which can cause havoc on you projects. The USB Tester will make it a snap to monitor voltage levels and current usage without having to re-wire your breadboard. Just connect to your oscilloscope or DMM test leads, and you're good to go! The USB D+/D- pins are also broken out so you can monitor those on an oscilloscope, or for USB sniffing.

Part No. 01ADA1456 • Price: $15.95

3X3X3 LED CUBE

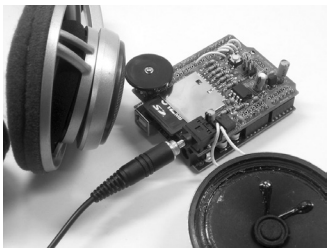
ARDUINO SHIELD



The 3x3x3 LED Cube Arduino Shield was designed and built by young maker, Joey Hudy. This LED Cube is sure to impress. The cube's 3D construction is straightforward and easy to solder using the included jig and instructions. Sample code is available and can easily be modified to make your own basic animations and displays. It's available in both red and green so you can pick your favorite color and have it up and flashing in no time!

Part No. 32SS821003001 • Price: $19.95

adafruit WAVE SHIELD FOR ARDUINO



Adding quality audio to an electronic project is surprisingly difficult. Here is a shield for Arduinos that solves this problem. It can play up to 22KHz, 12bit uncompressed audio files of any length. It's low cost, available as an easy-to-make kit. It has an onboard DAC, filter and op-amp for high quality output. Audio files are read off of an SD/MMC card, which are available at nearly any store. Volume can be controlled with the onboard thumbwheel potentiometer.
This shield is a kit, and comes with all parts you need to build it.
Arduino, SD card, tools, speaker and headphones are not included.

Part No. 01ADAPWSK • Price $22.00

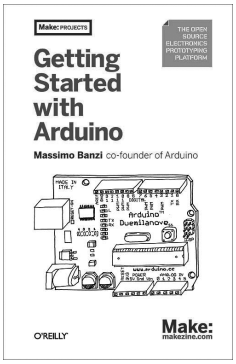
BASIC KIT FOR ARDUINO

The Arduino Sidekick Basic Kit is designed to be used with your Arduino / Seeeduino / Seeeduino ADK / Maple Lilypad or any MCU board. It contains everything needed for a first-time user to connect his/her computer to an Arduino.

It includes many of the most popular accessories for DIY projects : like Breadboard, Jumper wires, Color LEDs, Resistors, Buzzer, etc. All of these coming with its own handy box are easy transport and minimal clutter.

Part No. 32SS815011001 • Price: $19.90

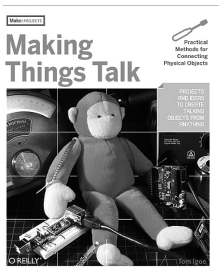
Arduino GETTING STARTED WITH ARDUINO



This valuable little book offers a thorough introduction to the open-source electronics prototyping platform that's taking the design and hobbyist world by storm. *Getting Started with Arduino* gives you lots of ideas for projects and helps you get going on them right away. To use the introductory examples in this book, all you need is a USB Arduino, USB A-B cable, and an LED. This 128-page book is a greatly expanded follow-up to the author's original short PDF that's available on the Arduino website.

Part No. 31ADRGS • Price: $14.95

Arduino MAKING THINGS TALK



Through a series of simple projects, this book teaches you how to get your creations to communicate with one another by forming networks of smart devices that carry on conversations with you and your environment. Whether you need to plug some sensors in your home to the Internet or create a device that can interact wirelessly with other creations, *Making Things Talk* explains exactly what you need.

Part No. 31ADRMTK • Price: $29.95

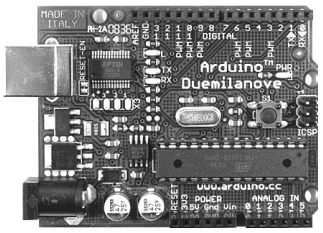
THE ARDUINO STARTER KIT

This kit walks you through the basics of using the Arduino in a hands-on way. You'll learn through building several creative projects. The kit includes a selection of the most common and useful electronic components with a book of 15 projects. Starting the basics of electronics, to more complex projects, the kit will help you control the physical world with sensor and actuators.

The projects in this kit are:
- **GET TO KNOW YOUR TOOLS** an introduction to the concepts you'll need to use this kit
- **SPACESHIP INTERFACE** design to control panel for your startship
- **LOVE-O-METER** measure how hot-blooded you are
- **COLOR MIXING LAMP** produce any color with a lamp that uses light as an input
- **MOOD CUE** clue people in to how you're doing
- **LIGHT THEREMIN** create a musical instrument you play by waving your hands
- **KEYBOARD INSTRUMENT** play music and make some noise with this keyboard
- **DIGITAL HOURGLASS** a light-up hourglass that can stop you from working too much
- **MOTORIZED PINWHEEL** a color wheel that will have your head spinning
- **ZOETROPE** create a mechanical animation you can play forward or reverse
- **CRYSTAL BALL** a mystical tour to answer all your tough question
- **KNOCK LOCK** tap out the secret code to open the door
- **TOUCHY-FEEL LAMP** a lamp that responds to your touch
- **TWEAK THE ARDUINO LOGO** control your personal computer from your Arduino
- **HACKING BUTTONS** create a master control for all your devices!

Part No. 01ARD000007 • Price $125.00

Arduino DUEMILANOVE
AT MEGA 328 I/O BOARD

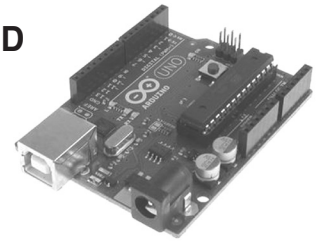


Arduino is an open-source physical computing platform based on a simple i/o board and a user friendly development environment that implements the Processing/Wiring language.
Arduino can be used to develop stand-alone interactive objects or can be connected to software on your computer (e.g. Flash, Processing, MaxMSP,PD).
Duemilanove is the enhanced release of Diecimila version. It adds to the previous new features (autoreset function, extended power connector, built in led, USB overcurrent protection) the automatic power selection. Board comes fully assembled and tested with the new processor ATMega328 pre-loaded with bootloader.

Board has 14 digital input/output pins, 6 analog inputs, 16MHz crystal oscillator, a USB connection, a power jack. Wt. 2oz.

Part No. 01ARDAM328 • Price $37.50

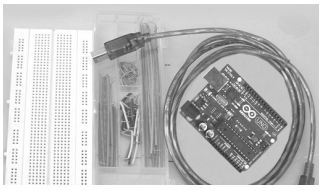
Arduino UNO
AT MEGA 328 I/O BOARD



The Arduino Uno is a microcontroller board based on the ATmega328. It has 14 digital input/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with a AC-to-DC adapter or battery to get started.
The Uno differs from all preceding boards in that it does not use the FTDI USB-to-serial driver chip. Instead, it features the Atmega8U2 programmed as a USB-to-serial converter

Part # 01ARDUNO • Price: $29.95

RSR UNO BASIC PACK



Ideal kit for Arduino projects for schools and hobbiests.
Includes: Arduino UNO Board, breadboard, jumper wire set, USB A-B cable, and battery adapter. Battery not included.

Part No. 32ARDBPK1 • Price $37.95

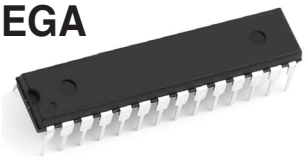
RSR STARTING WITH ARDUINO UNO KIT

Arduino UNO is a micro-processor based board that can sense and control physical objects. It is an open source computing platform. This kit includes the classic book "Getting started with Arduino" by Massimo Banzi (Co-founder of Arduino), Arduino UNO Board, and many electronic components required to perform experiments in his book

- UNO Module
- Book
- USB Cable
- (10) 10K Ohm resistors
- (10) 220 Ohm resistors
- 2 Tactile Mom. Switches
- 2 Photoresistors
- 2 Red LEDs
- 2 green LEDs
- 2 blue LEDs
- 1 RGB LED
- Jumper Wire Kit
- 1 Breadboard (Clear)
- IRF 520 MOSFET
- Battery Adapter
- DC Motor

Part No. 32ARDSAUK • Price $66.95

Arduino IC ATMEGA 328P MPO



Pre-loaded with Arduino UNO Bootloader

Part No. 01ARDA000048 • Price $5.49

RELAY MODULE
ARDUINO COMPATIBLE

The DFRobot single relay allows you to switch on and off a number of electronic modules. It can be used in interactive projects or to control lighting, electrical and other equipment. The modular design makes it easy to expand with the Arduino board (not included). The relay output state is indicated by an LED. It can be controlled through the digital I/O port to trigger a solenoid valve, lamp, motor or other high current or high voltage devices.

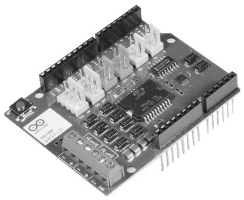
Part No. 01DFR0017 • Price $9.90

GRAPHIC LCD SHIELD
FOR ARDUINO

This LCD4884 Shield provides a 48x48 display. It is able to display English, Chinese, and even images. The shield has 6 Digital IO and 5 Analog IO.

Part No. 01DFR0092 • Price $26.90

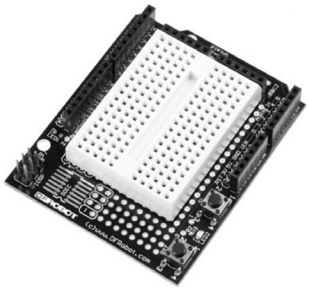
Arduino SHIELD-MOTOR KIT



The Arduino Motor Shield is based on the L298, which is a dual full-bridge driver designed to drive inductive loads such as relays, solenoids, DC and stepping motors. It lets you drive two DC motors with your Arduino board, controlling the speed and direction of each one independently.

Part No. 01ARDSMKIT • Price: $39.95

PROTOTYPING SHIELD FOR ARDUINO



This is a design for an open-source prototyping shield for Arduino NG/Diecimila. It has tons of cool features, to make prototyping on your Arduino easy.
It is shipped fully assembled.

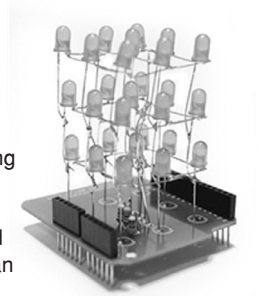
Part No. 01DFR0019 • Price 12.90

adafruit 2.8" TFT TOUCH SHIELD

Spice up your Arduino project with a beautiful large touchscreen display shield with built in microSD card connection. This TFT display is big (2.8" diagonal) bright (4 white-LED backlight) and colorful (18-bit 262,000 different shades)! 240x320 pixels with individual pixel control. It has way more resolution than a black and white 128x64 display. As a bonus, this display has a resistive touchscreen attached to it already, so you can detect finger presses anywhere on the screen.
The shield is fully assembled, tested and ready to go. No wiring, no soldering! Simply plug it in and load up our library - you'll have it running in under 10 minutes! Works best with any classic Arduino (UNO/Duemilanove/Diecimila).

Part No. 01ADFTSH • Price $39.90

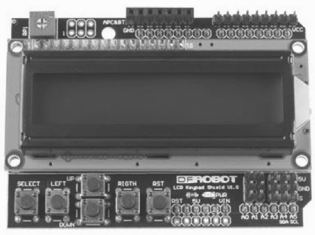
3X3X3 LED CUBE ARDUINO SHIELD



What has 27 LEDs, is 3 dimensional, and is Arduino controlled? It's the 3x3x3 LED Cube Arduino Shield! Designed and built by a young maker, this LED Cube is sure to impress.
The cube's 3D construction is straightforward and easy to solder using the included jig and instructions. Sample code is available and can easily be modified to make your own basic animations and displays. It's available in both red and green so you can pick your favorite color and have it up and flashing in no time!
Arduino not included

Part No.	Description	Price
32MKLEDCUBE-RD	Red LEDs	$15.00
32MKLEDCUBE-GN	Green LEDs	15.00

LCD SHIELD
FOR ARDUINO



This is a very popular LCD keypad shield for Arduino or Freeduino boards. It can be directly plugged onto the Arduino board, no soldering or fly-wiring needed.

FEATURES:
- 16 character x 2 line HD44780 compatible LCD
- Uses Arduino LCD4Bit library
- White character & Blue backlight
- No soldering necessary

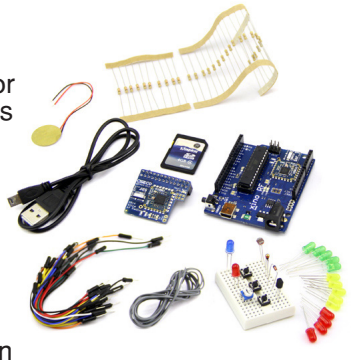
Part No. 01DFR0009 • Price $19.75

IR KIT FOR ARDUINO

Provides remote control capability to your project

Part No. 01DFR0107 • Price $9.90

RASPBERRY PI WIRELESS INVENTORS KIT

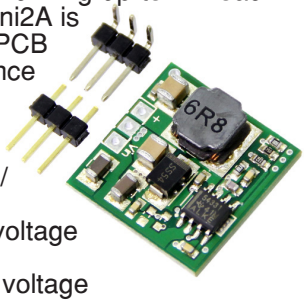


The Wireless Inventors Kit for the Raspberry Pi (RasWIK) is an exciting and affordable addition to the Raspberry Pi. RasWIK demonstrates that with our leading edge technology anyone (and we mean anyone) can build wireless sensors and actuators, you do not need huge experience, a degree or even any tools. We show you even how to connect the devices you build to "the Internet of Things" (IoT) service providers such as Xively.

There are 29 fully documented projects. The 17 hardware projects take you from very basic sensors, actuators and light controls to more complicated ones that include measuring temperature and light levels. Out of the box all the hardware is configured to start you off without you writing a single line of code.

Part No. 01SS110110001 • Price: $96.90

MINI POWER MODULE FOR DIY PROJECTS

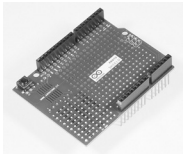


The PNMini2A power module is a high efficiency converter (up to 92%) capable of driving up to 2A load withoutusing!heat!sink.The PNMini2A is available in an innovative small PCB that enhances thermal performance and allows for hand soldering or plugin use.

- One module supports positive / negative output
- 3.5V to 28V for positive input voltage range
- 2.7V to 27V for negative input voltage range
- Supports up to 2A continuous output current (no heat sink required)

Part No. 01SEDPNMINI2A • Price: $15.00

Arduino PROTO SHIELD REV 3 (ASSEMBLED)

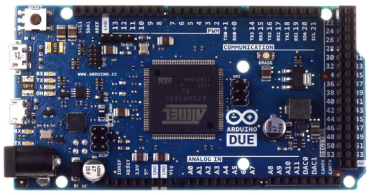


Makes it easy to design custom circuits. Solder parts to prototyping area.

Part No. 01ARD000077 • Price $15.95

ARDUINO DUE

MICROCONTROLLER



The Arduino Due is the newcomer microcontroller board in the Arduino boards family. It's the first board based on a 32 bit ARM core processor, the Atmel SAM3X8E ARM Cortex-M3 MCU, that improve all the standard Arduino functionalities and add more new features.

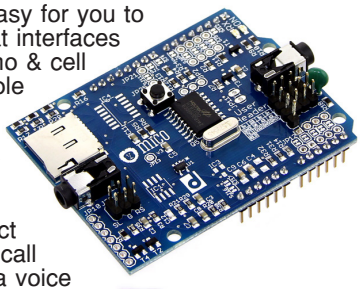
It offer 54 digital input/output pins (of which 12 can be used as PWM outputs, with selectable resolution), 12 analog inputs with 12 bit of resolution, 4 UARTs (hardware serial ports), and two DAC outputs (digital to analog converter), 84 MHz crystal oscillator, two USB connections, a power jack, an ICSP header, a JTAG header, and a reset button. The maximum voltage that the I/O pins can provide or tolerate is 3.3V. Providing higher voltages, like 5V to an input pin could damage the board.

The Due has two usb connectors, the one with the micro-usb AB connector is the native one capable to act as an USB host, that means you can connect compatible external usb peripherals to the board, such as mouse, keyboards, smartphones. While the other USB port with the type B connector is intended for debugging purposes.

Part No. 01ARD000062 • Price: $49.95

MICO SHIELD FOR ARDUINO

EASY INTERFACE WITH CELL PHONE



The MICO Shield makes it easy for you to create an Arduino project that interfaces with a cell phone. The Arduino & cell phone interface unlock a whole new world of possibilities: projects where your Arduino can place phone and receive phone calls.

An example of a MICO project is where it receives a phone call and presents the caller with a voice prompt: "press 1 for lights on". MICO can then decode the caller's button press and take action, in this case turn an output on. Of course everything is customizable: MICO has a microSD card slot so you can store your own voice and all MICO libraries and sketches are open source, free to download and hack.

MICO interfaces to a cell phone's 3.5mm audio jack. MICO has no build-in cell module or antenna. Because of that, MICO provide some key advantages:

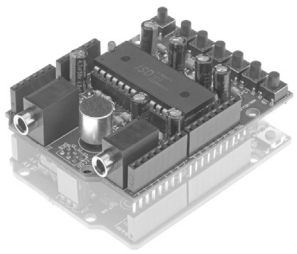
Universal: can work on ANY cell network over the world! GSM, CDMA, TDMA, analog…

Part No. 01SEDMICSLD • Price: $36.50

velleman

AUDIO SHIELD FOR ARDUINO

MODEL: KA02



Record your voice via a built-in microphone or a line input. Also available as completely mounted module VMA02

Features

- 60 second recording time
- start playback, record,... via on-board buttons or via Arduino® UNO
- playback via a speaker or a line output
- downloadable sample sketch and library
- stackable design: the shield can be stacked with other shields
- large user community
- requires 1 Arduino UNO™ (not included)

Specifications

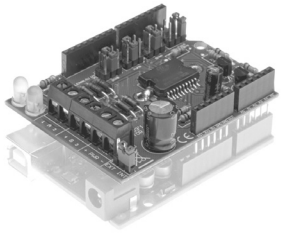
- audio sample frequency: 8 kHz
- uses pin 10 on an Arduino UNO™ board as a Chip Select
- uses the ICSP pins on an Arduino as a serial connection to the shield to free up I/O pins
- memory write up to 100.000 X
- dimensions: 71 x 53mm / 2.79 x 2.08"

Part No. 01VKKA02 • Price $18.95

velleman

MOTOR AND POWER SHIELD FOR ARDUINO

MODEL: KA03



Power shield that can drive: relays, solenoids, DC and stepper motors.
Also available as completely mounted module VMA03.

Features

- 2 channels
- choose between an external or internal (Vin) power supply
- based on the dual full bridge driver L298P
- downloadable sample sketch
- stackable design: the shield can be stacked with other shields
- large user community
- requires 1 Arduino UNO™ (not included)

Specifications

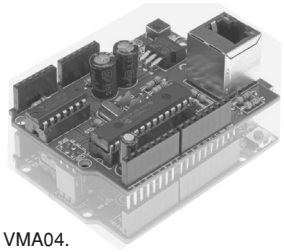
- 2.5 A (max.) output current (each channel)
- 50 V (max.) external power supply input
- used pins on an Arduino UNO board can be
- selected to accommodate for other stacked shields
- dimensions: 68 x 53mm / 2.67 x 2.08"

Part No. 01VKKA03 • Price $18.95

velleman

ETHERNET SHIELD FOR ARDUINO

MODEL: KA04



Configure your Arduino as a simple web server or let it get data from the worldwide web.
Also available as completely mounted module VMA04.

Features

- Based on a Microchip ENC28J60 chip
- Downloadable sample sketches and library
- Stackable design: the shield can be stacked with other shields
- Large user community
- Requires 1 Arduino UNO™ (not included)

Specifications

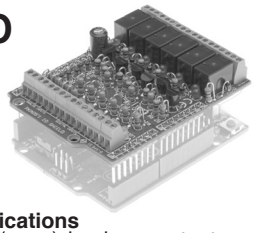
- Data rates up to 10 Mbps
- Integrated MAC controller
- 8 kB Transmit / Receive Packet Dual Port Buffer
- MAC controller supports both Unicast, Multicast and Broadcast packets, has a programmable (up to 64-byte) pattern matching feature within a packet at user defined offset and programmable wake-up on multiple packet formats (Magic Packet, Unicast, Multicast, Broadcast, specific packet match or any packet)
- Uses pin 10 and 2 on an Arduino UNO™ board. It also uses the ICSP connector as a serial connection to the shield to free up I/O pins
- Dimensions: 68 x 53mm / 2.67 x 2.08"

Part No. 01VKKA04 • Price $27.50

velleman

I/O SHIELD FOR ARDUINO

MODEL: KA05



General purpose INPUT - OUTPUT shield for Arduino®

Also available as completely mounted module VMA05.

Features

- 6 relay outputs
- 6 analog inputs
- 6 digital inputs
- Downloadable sample sketch
- Stackable design: the shield can be stacked with other shields
- Large user community
- Requires 1 Arduino UNO™ (not included)

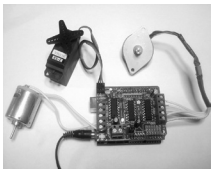
Specifications

- 1 A (max.) load per output
- 120 V max. per output
- Uses pin 8 to 13 as outputs, pin A0 to A5 as analog
- Inputs, and pin 2 to 7 as digital inputs
- Dimensions: 68 x 53mm / 2.67 x 2.08"

Part No. 01VKKA05 • Price $18.95

adafruit

MOTOR SHIELD FOR ARDUINO KIT



Here is a design for a full-featured motor shield that will be able to power many simple to medium-complexity projects.

- 2 connections for 5V 'hobby' servos connected to the Arduino's high-resolution dedicated timer - no jitter!
- 4 H-Bridges: L293D chipset provides 0.6A per bridge (1.2A peak) with thermal shutdown protection, internal kickback protection diodes. Can run motors on 4.5VDC to 25VDC.
- Up to 4 bi-directional DC motors with individual 8-bit speed selection (so, about 0.5% resolution)
- Up to 2 stepper motors (unipolar or bipolar) with single coil, double coil or interleaved stepping.
- Pull down resistors keep motors disabled during power-up
- **Motors and Arduino are not included.**

Part No. 01ADAMSAK • Price $19.50