

# CircuitSpecialists.com

In Business Since 1971

## Circuit Specialists

RoHS Compliant & UL Approved  
PowerSupply1  
Switching Power Supplies



**CircuitSpecialists.com** offers these Highly Reliable, Universal AC input/full range single output power supplies. Choose between various 40, 60, 100 & 150 Watt versions. They comply with RoHS directive and have the approval of UL, cUL and CE and come 100% full load burn-in tested and are protected with overload/over and voltage/short circuit. Also included is a 2 year warranty.

Starting  
as low as  
**\$22.50**

See  
Page 9 For  
Additional &  
Quantity Pricing

## Circuit Specialists

Premium All-In-One Repairing  
Solder System



- Combines the function of a Hot Air Gun, a Soldering Iron and a Desoldering Gun.
- Microprocessor controlled ESD safe unit. All digital display of hot air temperature, soldering iron temperature, desoldering gun temperature and air pressure with touch type panel controls
- The desoldering tool comes with zero crossing circuitry preventing electrical surges and is equipped with air cylinder type strong suction vacuum pump
- The 24V soldering iron is compatible with the compound tip design by connecting the ceramic heater, sensor, control unit and tip as one.

**\$249.00**

See  
Page 7 For  
Details!

Toll Free: 1-800-528-1417

Arizona: 480-464-2485

Fax: 480-464-5824

**www.CircuitSpecialists.com**

### Circuit Specialists

#### Heavy Duty Regulated Linear Bench Power Supplies

- Multi-loop high precision voltage regulation
- Automatic voltage & current stabilizing conversion
- Automatic radiant cooling system
- Over-heating protection
- (**CSI5030S**); 0-50V/0-30A,
- (**CSI12005S**); 0-120V/ 0-5A,
- (**CSI20002S**); 0-200V/0-2A.



[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Power Supplies > DC Power Supplies

| Cat. No.  | Description              | Price    |
|-----------|--------------------------|----------|
| CSI5030S  | 0-50V/0-30A Power Supply | \$595.00 |
| CSI12005S | 0-120V/0-5A Power Supply | \$595.00 |
| CSI20002S | 0-200V/0-2A Power Supply | \$595.00 |

### Circuit Specialists

#### 2 Amp Multi-Output Power Supply

The PS-28 power supply is a must have item for technicians & hobbyists. This unit is switchable and provides regulated outputs of 3V, 4.5V, 6V, 7.5V, 9V & 12V. All outputs provide 2 Amps of power. Fuse protected. Smart grey plastic enclosure with on/off switch & red & black output jacks.



[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > DC Power Supplies

| Cat. No. | Description               | Price   |
|----------|---------------------------|---------|
| PS-28    | Multi-Output Power Supply | \$19.95 |

### Circuit Specialists

#### Triple Output Bench Power Supplies

Provides accurate and stable DC power. It is ideal for test benches, laboratories, schools and repair facilities. The multi-turn voltage control knob helps the user accurately dial in a precise voltage. The large easy to read LCD accurately displays the outputs (voltage & current). This product is expertly manufactured for Circuit Specialists, Inc. and incorporates SMT PC boards and a built-in cooling fan for reliable performance and long life.



- Output: (**CSI3003X3**) 0-3A, 0-30VDC x2 / 3A, 5VDC fixed, (**CSI3005XIII**) 0-5A, 0-30VDC x2 / 3A, 5VDC fixed
- Low ripple voltage: <1mV P-P
- Overload protection circuit
- Rugged reinforced metal frame construction

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Power Supplies > DC Power Supplies

| Cat. No.    | Description              | Price    |
|-------------|--------------------------|----------|
| CSI3003X3   | Triple Power Supply/3Amp | \$188.00 |
| CSI3005XIII | Triple Power Supply/5Amp | \$239.00 |

### Circuit Specialists

#### 13.8V DC Regulated Linear Power Supplies

Very durable and rugged regulated power supplies that provide 13.8 Volts and substantial amounts of current so that they deliver real world power when you need it most! These power supplies are suitable for various applications that include Automotive, Marine and Radio Equipment, along with High-Amp Stepper Motors and CNC (Computer Numeric Control) Machines. Choose from three models; the **CSI1862** with 6 Amps, the **CSI-1865** with a robust 20 Amps or the **CSI-1869** with a beefy 40 Amps at your disposal. All will give you the performance you expect from Circuit Specialists at a price that can't be beat!



[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Power Supplies > DC Power Supplies

| Cat. No. | Description     | Price    |
|----------|-----------------|----------|
| CSI1862  | 13.8VDC / 6 Amp | \$28.95  |
| CSI-1865 | 13.8VDC / 20Amp | \$69.00  |
| CSI-1869 | 13.8VDC / 40Amp | \$119.00 |

### Circuit Specialists

#### Programmable DC Power Supplies

The CSI 3600 Series Programmable DC Power Supplies are equipped with a back-lit LCD display, number keypad and a rotary code switch for ease of use & quick programming. Voltage, Current & Power can all be displayed on the LCD or computer screen (with optional RS-232 interface module). It can be operated at constant current mode, constant voltage mode & constant power mode. It also can be set with maximum limits for current & power output. Ideal instruments for scientific research, educational lab's or any application requiring a sophisticated DC-power source.



| Model       | CSI3644A | CSI3645A | CSI3646A |
|-------------|----------|----------|----------|
| DC Voltage  | 0-18V    | 0-36V    | 0-72V    |
| DC Current  | 5A       | 3A       | 1.5A     |
| Power (max) | 90W      | 108W     | 108W     |

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> Test Equipment > DC Power Supplies

- High Resolution at 1mV
- Up to 10 settings stored in memory
- Over or under voltage & current protection
- Can be set for user defined maximum current
- May be used in series or parallel modes with additional supplies.
- Low output ripple & noise
- Constant voltage & constant current mode
- Number keypad and rotary knob
- LCD display with backlight

| Cat. No. | Description                   | Price    |
|----------|-------------------------------|----------|
| CSI3644A | 18V Programmable Power Supply | \$199.00 |
| CSI3645A | 36V Programmable Power Supply | \$199.00 |
| CSI3646A | 72V Programmable Power Supply | \$199.00 |

### Circuit Specialists

#### Programmable DC Electronic Loads

The CSI 3700 series electronic loads are single input programmable DC electronic loads that provide a convenient way to test batteries and DC power supplies. It offers constant current mode, constant resistance mode and constant power mode. The backlight LCD, numerical keypad and rotary knob make it much easier to use. Up to 10 steps of program can be stored. Perfect for use in laboratory environments and schools. It can also be connected to a PC (with optional PC interface) to implement remote control and supervision.



| Model         | CSI3710A  | CSI3711A  |
|---------------|-----------|-----------|
| Input Voltage | 0-360V DC | 0-360V DC |
| Input Current | 0-30A DC  | 0-30A DC  |
| Input Power   | 0-150W    | 0-300W    |

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Power Supplies > DC Power Supplies

- Mains supply: 110V/220V AC
- Programmable output
- Can be used in a parallel connection
- LCD display with backlight
- High resolution measurement
- Number keypad and rotary knob
- Multifunction menu
- Over or under voltage & current protection

| Cat. No. | Description        | Price    |
|----------|--------------------|----------|
| CSI3710A | DC Electronic Load | \$349.00 |
| CSI3711A | DC Electronic Load | \$499.00 |

Additional Products On Web Site !

### Circuit Specialists

#### Dual Output Bench Power Supplies

High stability LCD digital read-out 0-30VDC bench power supplies featuring constant voltage and current outputs. Short circuit and current limiting protection is provided. SMT PC boards and a built-in cooling fan help ensure reliable performance and long life. The perfect choice for lab and educational use. 1A/5VDC fixed output is on rear panel.



- Output: (**CSI3003X-5**) 0-3A, 0-30VDC adj./ 1A, 5VDC fixed, (**CSI3005X-5**) 0-5A, 0-30VDC adj./ 1A, 5VDC fixed
- Low ripple voltage: <1mV P-P
- Overload protection circuit
- Rugged reinforced metal frame construction

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> Test Equipment > Power Supplies > DC Power Supplies

| Cat. No.   | Description            | Price 1+ | 5+     |
|------------|------------------------|----------|--------|
| CSI3003X-5 | Dual Power Supply/0-3A | \$105.95 | 99.50  |
| CSI3005X5  | Dual Power Supply/0-5A | \$119.00 | 114.00 |



### Circuit Specialists

#### DC Regulated Power Supply

Provides accurate & stable DC power. The voltage control knob helps the user accurately dial in the desired voltage while the easy to read LCD displays accurately display voltage and current. SMT PC boards are used for reliable performance and long life. Ideal for test benches, laboratories, schools & repair facilities. 0-18VDC adjustable, and 0-2A adjustable. Overload Protection.



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> Test Equipment > Power Supplies > DC Power Supplies

| Cat. No. | Description             | Price 1+ | 5+    |
|----------|-------------------------|----------|-------|
| CSI1802X | 0-2A/0-18V Power Supply | \$58.95  | 51.95 |

### Circuit Specialists

#### Laser Digital Tachometer

A compact and very accurate Laser Tachometer. Comes complete with Carry Case, Reflecting Sheets (700mm) and operators manual.

- Auto-Ranging
- 5 digits, .6" LCD Display
- Test Range: 2.5 to 99,999 RPM
- Memory Function: Max/min & last displayed value are automatically stored in memory
- Accuracy of  $\pm(0.05\%+1 \text{ digit})$
- Sampling Time of 0.5 sec. (over 120 RPM)
- Detecting Distance is 50mm to 2 meters



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> Test Equipment > Specialty Test Equipment

| Cat. No. | Description              | Price   |
|----------|--------------------------|---------|
| DT-6234C | Laser Digital Tachometer | \$49.00 |

### Circuit Specialists

#### Industrial Variac

A 3 KVA Variac designed for Industrial/Laboratory use. Provides 30Amps of current at 100VAC output. The front panel contains an analog volt meter and two sets of binding posts that can accommodate spade connectors and banana plugs to connect to the AC source and the equipment being tested. It does not include a power cord or AC receptacle. It is ideal for many applications including UPS's, Satellite Equipment, Transformers, Telecom Equipment, Railroad Switching, Automation Control and for general use in Physics, Chemistry & EE lab's.



- Input Voltage: 110VAC @ 60Hz
- Output Voltage: 0-130VAC
- Dimensions (approx.): 7.5" x 8.5" x 7"

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> Test Equipment > Power Supplies > AC Power Supplies

| Cat. No.   | Description       | Price    |
|------------|-------------------|----------|
| TDGC2-3KVA | Industrial Variac | \$119.00 |

### Circuit Specialists

#### Dual Output Bench Power Supply

High stability LCD digital read-out bench power supplies featuring constant voltage and current outputs. Short circuit and current limiting protection is provided. SMT PC boards and a built-in cooling fan help ensure reliable performance and long life. The perfect choice for lab and educational use. 1A/5VDC fixed output is on rear panel.



Price BreakThrough!

- Output: 0-3A, 0-50VDC adj./ 1A, 5VDC fixed
- Low ripple voltage: <1mV P-P
- Overload protection circuit
- Rugged reinforced metal frame construction

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Power Supplies > DC Power Supplies

| Cat. No.  | Description        | Price 1+ | 5+     |
|-----------|--------------------|----------|--------|
| CSI5003X5 | 0-50V Power Supply | \$114.95 | 109.00 |



#### 300W Single Output Power Supplies

- High reliability, low cost
- Built in fan speed control
- 100% full load burn-in test
- Protections: over current/ over voltage/ over temperature/ short circuit
- 1 year warranty
- Dimensions: 9.64 x 4.96 x 2.6"



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> Test Equipment > Power Supplies

| Cat. No.    | Description | Price 1+ | 10+     |
|-------------|-------------|----------|---------|
| HF300W-S-5  | 5V/60A      | \$97.00  | \$88.50 |
| HF300W-S-9  | 9V/33A      | \$97.00  | \$88.50 |
| HF300W-S-12 | 12V/25A     | \$97.00  | \$88.50 |
| HF300W-S-24 | 24V/12.5A   | \$97.00  | \$88.50 |
| HF300W-S-36 | 36V/8.5A    | \$97.00  | \$88.50 |
| HF300W-S-48 | 48V/6.3A    | \$97.00  | \$88.50 |

### Circuit Specialists

#### Variacs

These are energy saving Variacs with high efficiency and no waveform distortion.



Both are rated at 110V input and have an output voltage of 0-125V.

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> Test Equipment > Power Supplies > AC Power Supplies

| Model     | Capacity (KVA) | Maximum Output Current |
|-----------|----------------|------------------------|
| TDGC2-0.5 | 0.5            | 5A                     |
| TDGC2-2   | 2              | 20A                    |

| Cat. No.  | Description | Price 1+ | 5+    |
|-----------|-------------|----------|-------|
| TDGC2-0.5 | Variac      | \$49.95  | 43.80 |
| TDGC2-2   | Variac      | \$104.00 | 93.59 |

### Circuit Specialists

#### Single Output Bench Power Supply

High stability LCD digital read-out bench power supplies featuring constant voltage and current outputs. Short circuit and current limiting protection is provided. SMT PC boards and a built-in cooling fan help ensure reliable performance and long life. The perfect choice for lab and educational use.



- Output: 0-1A, 0-120VDC
- Low ripple voltage: <1mV P-P
- Overload protection circuit
- Rugged reinforced metal frame construction

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Power Supplies > DC Power Supplies

| Cat. No.  | Description     | Price 1+ | 5+     |
|-----------|-----------------|----------|--------|
| CSI12001X | DC Power Supply | \$119.00 | 114.50 |



#### DIN Rail Series Single Output Power Supplies

##### General Specifications:

- Install on DIN rail TS35/7.5 or 15
- Built-in EMI filter
- High reliability, compact design
- Protections: over current/over voltage/short circuit
- 100% full load burn-in test
- AC input voltage range: 170-264VAC
- Input frequency: 47-63Hz
- Line regulation (full load):  $\leq \pm 0.5\%$
- Output voltage adjust range:  $\pm 10\%$
- Cooling method: convection



Quantity Discounts Available!

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> Test Equipment > Power Supplies

| Cat. No.      | Description | Price   |
|---------------|-------------|---------|
| HF150W-SDR-12 | 12V/12.5A   | \$69.00 |
| HF150W-SDR-24 | 24V/6.5A    | \$69.00 |
| HF150W-SDR-48 | 48V/3.1A    | \$69.00 |



#### 500W-700W Single Output Power Supplies

- High reliability, low cost
- Built in EMI filter
- 100% full load burn-in test
- Protections: over current/ over voltage/ over temperature/ short circuit
- 1 year warranty
- Dimensions: 10.0 x 6.4 x 3.48"



[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Power Supplies

| Cat. No.    | Description   | Price 1+ | 10+      |
|-------------|---------------|----------|----------|
| HF500W-S-12 | 12V/42A       | \$195.00 | \$159.00 |
| HF500W-S-24 | 24V/21A       | \$195.00 | \$159.00 |
| HF500W-S-48 | 48V/11A       | \$195.00 | \$159.00 |
| HF700W-S-48 | (700W)48V/15A | \$219.00 | \$199.00 |

**Circuit Specialists**

**Plug-In Switching Power Supplies**

These **15W** switching power supplies are an inexpensive way to power devices with regulated power and low ripple noise. The low-profile design allow you insert them into a power strip without losing any of the other plugs. Designed with an energy efficient switching technology, the **Universal AC input works from 90-264VAC** with no minimum load required and a 100% burn-in test to ensure they will perform as stated right out of the box. They come with a 1.8 meter output cord and a 5.5 x 2.1mm female plug. UL and cUL approved.



[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Power Supplies > AC/DC Power Supplies

| Cat. No.   | Description          |
|------------|----------------------|
| 3A-161WU05 | 5 Volts / 2.6 Amps   |
| 3A-161WU06 | 6 Volts / 2.5 Amps   |
| 3A-161WU09 | 9 Volts / 1.70 Amps  |
| 3A-161WU12 | 12 Volts / 1.25 Amps |
| 3A-161WU18 | 18 Volts / 0.84 Amps |
| 3A-161WU24 | 24 Volts / 0.63 Amps |

| Price: | Each   | 10+  | 25+  | 100+ |
|--------|--------|------|------|------|
|        | \$9.95 | 9.49 | 8.99 | 7.25 |

**Additional Products On Web Site!**

**Circuit Specialists**

**Low Priced DMM**

A perfect choice for schools and other volume users. Along with AC & DC voltage and DC Current, this unit includes Diode, Audible Continuity, Resistance and Transistor hFE test.

- Overrange Indication
- Display: 3.5 digits, 7 Segment, 15mm high LCD
- Data Hold: Freezes the last reading
- Polarity Indication: "-" displayed for negative polarity
- "V ohms mA" jack: plug in red test lead when testing voltage resistance and current (except 10A) measurements



**Sale \$5.99**

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Digital Multimeters/World Beater Prices

| Cat. No. | Description    | Price  |
|----------|----------------|--------|
| CSI830   | Low Priced DMM | \$5.99 |

**PC Based 200MHz Digital Storage Oscilloscope**

Designed with full knowledge of high speed digital signal processing and software development. The result is an inexpensive PC based oscilloscope with the power of middle/high end stand-alone digital oscilloscopes.

**A Price Breakthrough !!**

**SALE \$819.00**



**Includes 2 Scope Probes**

Combined with a PC/Notebook PC with USB interface, the 200DSO becomes a powerful diagnostic & engineering tool at a fraction of the cost of an equivalent stand alone unit. 200DSO combines all the traditional benefits of a Digital Storage Oscilloscope. From 200MHz bandwidth, 5 GS/s equivalent sampling to advanced triggering options (Logic, Pulse and Delay). It features characteristics such as higher true color (32bits) waveform grading, and automated data transfer to Microsoft Excel and Word. Using 12Mbps, Universal Serial Bus (USB)-powered interface, 200DSO, about the size of your palm, is a true plug-and-play solution. Simply plug it in to a USB port and it is ready to work any time, anywhere.

**SHIPS WITH TWO PROBES!**

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Oscilloscopes/Outstanding Prices

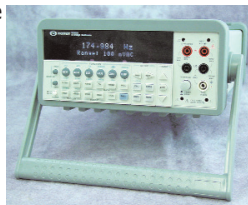
- Max. sample rate: Realtime sampling: 100MS/s using one channel, 50MS/s using two channels Equivalent sampling: 5GS/s
- Channels: 2
- Bandwidth: 200MHz(-3dB) Single shot bandwidth: 50MHz, 20MHz bandwidth limiting function is available
- Vertical resolution: 9 bits/channel

| Cat. No. | Description                  | Price                        |
|----------|------------------------------|------------------------------|
| 200DSO   | PC Based 200MHz DSO          | <del>\$899.00</del> \$819.00 |
| HP-9250  | Replacement Probe for 200DSO | \$39.95                      |



**6-1/2 Digit Digital Multimeter**

A 6 1/2 digit DMM designed with 7 1/2 digit techniques to provide a stable, faster and accurate measurement. Both the sampling rate and the data transfer rate can achieve 2000 readings per second. There are 11 measurements and 8 math functions: DCI, DCV, ACI, ACV, 2WOhm, 4WOhm, Frequency, Period, Diode Test, Continuity, Temperature, Limits, Ratio, MX+B, %, dB, dBm, Min/Max, and Null.



**Compare the specifications and price with the Agilent 34410A!**

- Stability, Speed and Accuracy
- High Performance: 2000 readings/sec
- Multi-Point Scan
- 19 Full-Featured Functions
- Temperature Measurements
- Dual Displays with 3-color Annunciators

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Digital Multimeters/World Beater Prices

| Cat. No. | Description           | Price    |
|----------|-----------------------|----------|
| M3500A   | 6 1/2 Digit Bench DMM | \$689.00 |

**Circuit Specialists**

**Low Cost Multi-Function DMM**

A multi function DMM that provides the features and flexibility for students, technicians and even repair centers at a dynamic price. The CSIMS8264 ships with the temp probe, multi function socket, safety designed test leads and the rubber holster all inclusive at this great price. Not a cheap mini sized DMM, but a robust full sized test meter. Besides the many ranges, this DMM also includes hFE transistor testing, capacitance test, a K type temperature measuring capacity, a DATA HOLD function, audible continuity, diode test, and Auto Power Off function. The digital display is may be operated with backlight if desired. The CSIMS8264 is CAT II safety rated to 1000V & CAT III safety rated to 600V.



[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Digital Multimeters/World Beater Prices

| Cat. No.  | Description  | Price   |
|-----------|--------------|---------|
| CSIMS8264 | Low Cost DMM | \$24.95 |

**Protek**

**Protek 100,000 Count Programmable Data Logging DMM w/RS232**

A power house DMM with 100,000 count accuracy and a built-in data logger that will help you find intermittent problems and monitor equipment while you are busy working on other jobs. The D620 can record and store in its own internal memory up to 37,300 time stamped data values in all functions by simply pressing a button. Finally, a DMM that provides the user with features and performance at a fraction of the cost of a similar FLUKE DMM. Featuring basic accuracy of 0.05%, Compare Mode & Trend Plot, back-lit display and a K type thermocouple. The dual display includes an analog bar graph and also included is an isolated serial port with easy to use software. Circuit Specialists has made a special purchase of this DMM & now can offer it at a **GREAT PRICE!**



[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Digital Multimeters/World Beater Prices

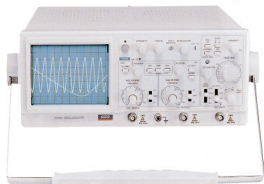
| Cat. No.    | Description      | Price    |
|-------------|------------------|----------|
| PROTEK D620 | Programmable DMM | \$169.00 |



**Protek**

**20MHz Dual Trace Oscilloscope w/Alt-Mag**

- 20MHz Bandwidth
- Alt-Mag sweep for simultaneous display of main and X5 magnified trace
- 1mV/Div Vertical sensitivity
- Alternate trigger
- X5 Sweep Magnification
- Large 6" CRT
- Internal Sync separator circuit for stable triggering on video signals
- Supplied with 2 (X1, X10) probes and manual
- Autofocus



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[> Test Equipment > Oscilloscopes/Outstanding Prices](#)

| Cat. No.    | Description | Price    |
|-------------|-------------|----------|
| PROTEK 6502 | 20MHz Scope | \$289.00 |

**Protek**

**2MHz Sweep Function Generator**

- 0.02Hz-2MHz(7 Ranges)
- Sine, Triangle, Square, Pulse, Ramp, Slew Sine Waveform
- Sync. Out (TTL Square Waveform)
- Accuracy: ±5% of Full Scale to 200KHz, ±8% of Full Scale from 200KHz-2MHz
- Sweep Function
- VCG Input
- DC Offset
- Frequency Range: 0.02Hz-2MHz(7 Ranges)
- Amplitude: 10Vp-p in 50 Ohm Load



Others Sell Identical Unit for \$200 or More!  
Our Price is ONLY \$159.00!

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[> Test Equipment > Function Generators](#)

| Cat. No.    | Description        | Price    |
|-------------|--------------------|----------|
| PROTEK 9205 | Function Generator | \$129.00 |

**Protek**

**PROTEK Dual Trace 100MHZ Oscilloscope**

Outstanding performance and durability for an incredibly low price of \$519. You will find it at most other locations selling for \$975. This offer is for factory original units. They are NOT reconditioned or B stock, and come complete with a full 1yr. factory warranty.



- 4 traces may be simultaneously displayed in ALT-sweep
- 5 vertical Modes Ch1, Ch2, Dual, Add and Subtract
- Bright 6" CRT with an internal graticule
- 12 kv acceleration voltage
- Sweep speeds to 2ns/Div.

Limited Offer  
\$589.00!

[CircuitSpecialists.com >](#)

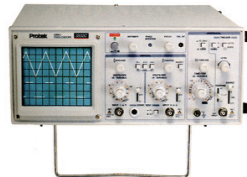
[> Test Equipment > Oscilloscopes/Outstanding Prices](#)

| Cat. No. | Description         | Price    |
|----------|---------------------|----------|
| 6510     | 100MHz Oscilloscope | \$589.00 |

**Protek NEW!**

**20MHz 2Ch Analog Oscilloscope w/Component Tester**

- 2 channels 2 traces
- CRT: 6" (8x10div), 2KV
- Z axis (intensity modulation)
- TV video sync filter
- Component test function
- Bandwidth: DC: DC-20MHz / AC: 10Hz-20MHz
- Trigger Source: CHB, LINE, INT, EXT
- Operating Mode: CH A, CH B, DUAL, ADD
- Frequency Bandwidth: DC-1MHz



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[> Test Equipment > Oscilloscopes/Outstanding Prices](#)

| Cat. No.     | Description            | Price    |
|--------------|------------------------|----------|
| PROTEK 3502C | 20MHz 2Ch Analog Scope | \$359.00 |

**Protek NEW!**

**1GHz & 2GHz Frequency Counters**

- Frequency, Period, Totalize Measurements
- Low Pass Filter
- 2 Channel Inputs (100MHz, 1GHz or 2GHz)
- 8 Digit LED Display
- 3 Steps Gate Time Control
- 1/20 Input Attenuator
- Channel A: 10Hz-10MHz: 10MHz Range, 10MHz-100MHz: 100MHz Range (9100)
- Channel B: 100MHz-1GHz (9100)
- Channel A: 0.1Hz-10MHz: Low Mode, 10MHz-100MHz: High Mode (U2000A)
- Channel B: 10MHz-2GHz (U2000A)



[CircuitSpecialists.com >](#)

[> Test Equipment > Frequency Counters](#)

| Cat. No.      | Description            | Price    |
|---------------|------------------------|----------|
| PROTEK 9100   | 1GHz Frequency Counter | \$199.00 |
| PROTEK U2000A | 2GHz Frequency Counter | \$249.00 |

**Protek NEW!**

**Digital LCR Meter w/GPIB Interface**

- Basic Accuracy of 0.05%
- 5 Test Frequencies
- Stores up to 9 setups in memory
- Remote over RS-232C & GPIB/Handler Interface
- Measurement Modes: Auto, R+Q, L+Q, C+D, C+R
- Equivalent Circuit: Series or Parallel
- Parameters Displayed: Value, Deviation, %Deviation or Bin Number.
- Averaging: 2-10 Measurement
- Test Frequency: 100Hz, 120Hz, 1kHz, 10kHz, 100kHz
- Drive Voltage: 0.1V, 0.25V, 1Vrms
- Measurement Rate: Slow, Medium, Fast: 2,10 or 20
- Triggering: Through external trigger, Continuous, Manual or remote over RS232, GPIB or Handler Interface



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[> Test Equipment > Specialty Test Equipment](#)

| Cat. No.     | Description              | Price     |
|--------------|--------------------------|-----------|
| PROTEK 9216A | Digital LCR Meter w/GPIB | \$1499.00 |

**Protek NEW!**

**10, 40 & 120MHz Digital Function Generator/Counters**

- Frequency Range: Main:100µHz-10MHz(9310)
- Frequency Range: Main:100µHz-40MHz(9340)
- Frequency Range: Main:100µHz-120MHz(93120)
- Frequency Range Stored:100µHz-100kHz
- Resolution: 1µHz
- Accuracy:±5x0.000001
- Stability:±1x0.000001
- Main Waveform: Sine, Square, TTL
- Level Resolution: 12 Bits
- Sampling Rate: 200MS/s
- Sine Waveform Distortion: 0.1%(20MHz-100kHz)
- Square Waveform Rise/Fall Time: Less then 15ns(25ns for 9310)
- Waveforms: 27 Waveforms
- Waveform Length: 4096 Dots



[CircuitSpecialists.com >](#)

[> Test Equipment > Functional Generator](#)

| Cat. No.     | Description              | Price     |
|--------------|--------------------------|-----------|
| PROTEK 9310  | 10MHz Generator/Counter  | \$919.00  |
| PROTEK 9340  | 40MHz Generator/Counter  | \$1166.00 |
| PROTEK 93120 | 120MHz Generator/Counter | \$1489.00 |

**Protek NEW!**

**3GHz & 9GHz Universal Counters**

- Function: Measures frequency, measure period, totalize frequency, ratio self-test, time, pulse width, duty cycle, statistics & more
- Measure Frequency Range: 0.01Hz-10MHz, 0.01Hz-100MHz
- Expanded Measure Frequency Range: Channel A,B; 100MHz/150MHz / Channel C; 9GHz(U9000A), 3GHz(U3000A)
- Measure Period Range: 100ns/10ns-100s
- Measure Time Range: 200ns-1000s
- Dynamic Range: 30mVrms-1.5Vrms
- Channel A,B Couple Mode: AC/DC
- Channel C Couple Mode: AC
- Input Impedance: 1mOhm/45pF of 50Ohm
- Trigger Level: -2.5V - +2.5V
- Time Base: 5MHz



[CircuitSpecialists.com >](#)

[> Test Equipment > Universal Counter-Timers](#)

| Cat. No.      | Description            | Price     |
|---------------|------------------------|-----------|
| PROTEK U3000A | 3GHz Universal Counter | \$1189.00 |
| PROTEK U9000A | 9GHz Universal Counter | \$3495.00 |

**Protek NEW!**

**10MHz Sweep Function Generator**

- Sine, Triangle, Square, Ramp, Pulse Waveform
- Frequency Range: 0.01Hz to 10MHz (9 Ranges)
- Gate & Trigger Output
- Burst Waveform Output
- Sweep Function (Linear/Logarithmic)
- VCG Input
- GCV Function
- AM Modulation
- Variable Symmetry
- Output Attenuator
- DC Offset
- Frequency Counter



[CircuitSpecialists.com >](#)

[> Test Equipment > Function Generators](#)

| Cat. No.    | Description              | Price    |
|-------------|--------------------------|----------|
| PROTEK G305 | 10MHz Function Generator | \$379.00 |

**Protek**

**2.9GHz Field Strength Analyzer**

The **3290N** is a high quality hand-held style RF Field Strength Analyzer with wide band reception ranging from 100kHz to 2900MHz. The 3290N is a compact and lightweight portable analyzer and is a must for RF technicians. Ideal for testing, installing and maintenance of Mobile Telephone Communications Systems, cellular phones, cordless phones, paging systems, cable TV and satellite TV reception systems as well as antenna installation. May also be used to locate hidden cameras using RF transmission.

**New Revised Version!**



The **3201N** is the 2GHz version of this model.

- Frequency Range : 100KHz ~ 2900MHz
- WFM/NFM/AM/SSB modulated signals may be measured.
- Signal Levels up to 160Channels can be displayed simultaneously on the LCD
- PLL tuning system for precise frequency measurement and tuning
- Sweep Speed: 500 to 2000msec
- Built-in Frequency Counter
- RS232C interface
- Built-in speaker

**SALE \$1750.00**

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > RF Test Equipment

| Cat. No. | Description                    | Price     |
|----------|--------------------------------|-----------|
| 3290N    | 2.9GHz Field Strength Analyzer | \$1750.00 |
| 3201N    | 2GHz Field Strength Analyzer   | \$1329.00 |



**3M™ DataCom Cable Tester**

The only UL-Listed DataCom/Coax circuit tracer in the industry that provides the flexibility to test multiple cables/locations in easy, straightforward steps. Made for professional installers and maintenance technicians. This unit allows for mapping, testing and troubleshooting of various lines, including installed data communications, phone wiring and coaxial cable runs. From one location, a technician can quickly and easily map, locate, test and verify both common and modified wiring configurations of different unshielded wiring schemes network cable, telephone cable with RJ-11 and RJ-45 connectors and coax cable. Contractors can perform these tests without the need to continually check between floors to change remotes. Get seven jobs done with just one unit. Performs multiple test on the following cable types, up to 1000 feet in length: Unshielded telephone cables with RJ-11 and RJ-45 connectors; Ethernet 10 (100) Base-T; Token Ring; EIA/TIA-568 A/B; AT&T 258a; USOC; 50 or 75 ohm Coax with F or BNC connectors.



**Originally sold for \$200.00/ Now Only \$49.00!**

- Instant visual indication of wiring fault
- Allows individual testing of pairs
- Tested to UL Standards
- Includes Holster, Case, 7 Remotes & Telecom Alligator Clips
- Automatic shutoff during periods of inactivity

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Specialty Test Equipment

| Cat. No. | Description                 | Price   |
|----------|-----------------------------|---------|
| DT-2000  | DataCom/Coax Circuit Tracer | \$49.00 |



**\*PROMOTIONAL\*  
\*SPECIAL\***

When you place an internet order on the **Circuit Specialists.com** web site for **\$50.00 or more**, you can receive **one** of three **free** items with your order. All that is required is that you enter the proper promotional code and it will be sent along with your order. This is our way of saying "THANKS" for being a valued Circuit Specialists customer!

Enter code **PR-CSI68** to receive this full sized hand-held DMM, valued at \$24.95



**OR**

Enter code **PR-3211** to receive this portable pen-style autorangeing DMM, valued at \$29.95



**OR**

Enter code **PR-HH02075SET** to receive this 10 piece Plier & Cutter set with case, valued at \$15.90



Enter the Promo Code in the field located on the first page of our ordering information, just after "Billing Address".

**INSTEK**

**150MHz Digital Storage Oscilloscope**

- 150MHz Bandwidth With MONO LCD Display
- 125k Memory and 12 Division Horizontal Display
- 25GS/s Sampling Rate for Repetitive Waveforms
- Advanced Trigger: Pulse Width, TV Line, Event Delay and Time Delay
- 15 Auto Measurement Functions to get quick and accurate results
- Go/NoGo, Auto Setup Sequence and TTF Function
- Built-In Help Menu, Multi-Language and FREE PC Software
- Standard Interface: USB, RS-232C, Printer Port



[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Oscilloscopes/Outstanding Prices

| Cat. No. | Description                  | Price    |
|----------|------------------------------|----------|
| GDS-820S | 150MHz Digital Storage Scope | \$825.00 |

**INSTEK**

**60MHz Digital Storage Oscilloscope**

- 60MHz Bandwidth With MONO Display
- 125k Memory and 12 Division Horizontal Display
- 25GS/s Sampling Rate for Repetitive Waveforms
- Advanced Trigger: Pulse Width, TV Line, Event Delay and Time Delay
- Go/NoGo, Auto Setup Sequence and TTF Function
- Built-In Help Menu, Multi-Language and FREE PC Software
- Standard Interface: RS-232C



[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Oscilloscopes/Outstanding Prices

| Cat. No. | Description                 | Price    |
|----------|-----------------------------|----------|
| GDS-806S | 60MHz Digital Storage Scope | \$579.00 |

**INSTEK**

**NEW!**

**High Precision LCR Meter  
12Hz-100kHz**

- Test Frequency: 12Hz to 100kHz (503 steps)
- Continuously Variable Frequencies
- 0.05% High Measurement Accuracy
- 100 Sets Memory for Save/Recall of Setup State
- R/Q, C/D, C/R, L/Q Test Modes
- Absolute Value, Delta Value, and Delta% Measurement Display
- 240 x 128 dot Matrix LCD Display
- Test Condition and Test Result shown on the screen Simultaneously
- Option: RS-232C Interface, Including LCR-Viewer Software
- Basic Accuracy: 0.05%
- Test Signal Levels: 5mV ~ 1.275V (5mV/step)
- Test Mode: R/Q, C/D, C/R, L/Q
- Memory: 100 memory blocks total
- Test Speed: SLOW, MEDIUM and FAST



[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Oscilloscopes/Outstanding Prices

| Cat. No. | Description              | Price     |
|----------|--------------------------|-----------|
| LCR-819  | High Precision LCR Meter | \$1665.00 |



**INSTEK NEW!**

**2 & 4 Channel GDS-2000 Series Digital Storage Oscilloscopes w/TFT Color Displays**

- 200/100/60 MHz Bandwidth
- 2 or 4 Input Channels
- 1 GS/s Real Time Sampling Rate & 25 GS/s Equivalent-Time Sampling
- 25 kpoints Record Length Maximum
- Large 5.6-in TFT Color Display
- FFT Function
- Standard USB Host and Device Interface; Optional GPIB
- Optional DC Power (Factory Installed)
- Auto-Level, AUTO, NORMAL, SINGLE, TV, Edge, Pulse Width Time-delay(2CH Only), Event-delay(2CH Only)



[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Instek Test Equipment

| Cat. No. | Description                              | Price     |
|----------|--|-----------|
| GDS-2062 | 60MHz, 2Ch Digital Storage Oscilloscope  | \$890.00  |
| GDS-2064 | 60MHz, 4Ch Digital Storage Oscilloscope  | \$1210.00 |
| GDS-2102 | 100MHz, 2Ch Digital Storage Oscilloscope | \$1160.00 |
| GDS-2104 | 100MHz, 4Ch Digital Storage Oscilloscope | \$1470.00 |
| GDS-2202 | 200MHz, 2Ch Digital Storage Oscilloscope | \$1470.00 |
| GDS-2204 | 200MHz, 4Ch Digital Storage Oscilloscope | \$1800.00 |

**Additional Products On Web Site !**

**INSTEK NEW!**

**4, 7 & 10MHz DDS Technology Function Generators**

- Frequency Range: 0.1Hz-4MHz/7MHz/10MHz
- DDS Technology and FPGA Chip Design
- High Frequency Accuracy:  $\pm 20$  ppm
- High Frequency Stability:  $\pm 20$  ppm
- Frequency Resolution: 100MHz
- Output Function: Sine, Square, Triangle
- Display: 9 Digit LED Display
- Low Distortion Sine Wave: -55dBc, 0.1Hz-200KHz
- Built-in 6 Digits, 150MHz/High Resolution Counter (SFG-2100 Series Only)
- INT/EXT AM/FM Modulation (SFG-2100 Series Only)
- LIN/LOG Sweep Mode (SFG-2100 Series Only)
- Front Panel Setting Save/Recall with 10 Groups of Setting Memories



[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Instek Test Equipment

| Cat. No. | Description   | Price    |
|----------|---|----------|
| SFG-2004 | 4MHz, DDS Function Generator                          | \$245.00 |
| SFG-2104 | 4MHz, DDS Function Generator w/Counter, Sweep, AM/FM  | \$312.00 |
| SFG-2007 | 7MHz, DDS Function Generator                          | \$256.20 |
| SFG-2107 | 7MHz, DDS Function Generator w/Counter, Sweep, AM/FM  | \$349.00 |
| SFG-2010 | 10MHz, DDS Function Generator                         | \$340.00 |
| SFG-2110 | 10MHz, DDS Function Generator w/Counter, Sweep, AM/FM | \$370.00 |

**NEW!**

**INSTEK**

**150KHz-1GHz Spectrum Analyzers**

- Frequency Range : 150kHz ~ 1000MHz
- Fully Digital Phase Locked Loop Technique Design
- High Frequency Stability:  $\pm 10$ ppm
- High Resolution of Span to Measure the more detailed signal: Zero, 2kHz ~ 100MHz /DIV
- RBW : 3k, 30k, 220k, 4M
- High Input Protection Level: +30dBm,  $\pm 25$ VDC
- Reference Level Range: -30dBm ~ +20dBm
- Good Noise Floor Performance: -95dBm @30kHz, -100dBm typical; over -150dBm/Hz typical @220kHz and 4MHz RBW
- Option: RS-232C Interface, Including LCR-Viewer Software
- Spurious Noise: < -60dB
- Two Markers for Absolute and Relative Measurement
- Functions: Max. Hold, Average (2 ~ 32 traces), Freeze, Peak Search, Marker to Center Function
- 9 Memories of Save/Recall
- RS-232 Interface and Display Software to get Trace from GSP-810 to PC



[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Instek Test Equipment

| Cat. No.  | Description                   | Price     |
|-----------|-------------------------------|-----------|
| GSP-810   | 1GHz Spectrum Analyzer        | \$2137.50 |
| GSP-810TG | Analyzer w/Tracking Generator | \$2947.50 |

**INSTEK**

**NEW!**

**Hi-Pot Electrical Safety Testers**

- 500VA AC output
- True RMS Current read-back
- Arc Detection
- Easy Operation
- 3 ranges of adjustable cut-off current
- Digital display for voltage, current and timer at same time
- Zero Crossing Turn-On (for GPT-805/815, GPI-825)
- Automatic FAIL indicator of alarm lamp and buzzer
- 9 Pin PLC Control for Start, Stop and Test Result Output
- General input power acceptable
- Voltage output adjustable during test period
- Trip Current, mA: 0.3-100mA (20mA for the GPI-826)



[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Instek Test Equipment

| Cat. No. | Description              | Price    |
|----------|--------------------------|----------|
| GPT-805  | Electrical Safety Tester | \$603.00 |
| GPT-815  | Electrical Safety Tester | \$693.00 |
| GPI-825  | Electrical Safety Tester | \$661.50 |
| GPI-826  | Electrical Safety Tester | \$589.50 |

## Circuit Specialists

### Our Premium All-In-One Repairing Solder System

- Combines the function of a Hot Air Gun, a Soldering Iron and a Desoldering Gun.
- Microprocessor controlled ESD safe unit. All digital display of hot air temperature, soldering iron temperature, desoldering gun temperature and air pressure with touch type panel controls
- Desoldering tool comes with zero crossing circuitry preventing electrical surges and is equipped with air cylinder type strong suction vacuum pump
- 24V soldering iron is compatible with the compound tip design by connecting the ceramic heater, sensor, control unit and tip as one. Designed for efficiency, the replacement of tips is with the easy slip in/out method
- Compatible with various air nozzles and tips



**FREE**  
 CSI486 Bench Top ESD Safe Smoke Filter  
 included with the purchase of our  
**NEW CSI-9000 or CSI-9000-DELUXE.**  
 A \$27.99 Value  
 For a limited time only!



[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Soldering Equipment & Supplies > Rework Stations

| Cat. No.        | Description                           | Price    |
|-----------------|---------------------------------------|----------|
| CSI-9000        | All-In-One Repairing Soldering System | \$249.00 |
| CSI-9000-DELUXE | CSI-9000 with 16 Nozzles Included     | \$399.00 |

### Circuit Specialists

#### Focused Infrared Soldering System

The CSI-IR1 is a modular and flexible infrared technology soldering system for effective high yield rework of even the most advanced packages, as well as being suitable for lead or lead-free solder. It brings sophisticated rework systems to the simplicity of a handtool and can be used widely for reworking BGAs, micro-BGAs, QFPs, PLCCs, SOICs, small SMDs, components in mobile phones, computers, and other circuit board components without overheating. It generates heat through concentration of infrared heat waves instead of conventional hot air and has non-contact IR temperature sensing, closed loop temperature control for instant and precise adjustments during soldering and desoldering.



- Power Consumption: Infrared Solderlight Gun 200W, Preheater 500W, Cooling Stand 10W
- Temperature Range: Infrared Solderlight Gun 100 - 500°C (212 - 932°F), Preheating Station 50 - 300°C (122 - 572°F)

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Soldering Equipment & Supplies > Soldering Stations

| Cat. No. | Description             | Price     |
|----------|-------------------------|-----------|
| CSI-IR1  | Infrared Solder Station | \$1399.00 |

### A Full Compliment of Tips available at our Web Site

### Circuit Specialists

#### Digital Quartz IR Preheating Station

Designed with a large infrared quartz heating surface to suit a wide range of purposes and does not utilize hot air thus making PCBs more stable. The digital readout makes for faster recognition of the applied temperature while the advanced technology prevents PCB distortion by properly balancing a gentle heat on both sides of the board.



- Power Consumption: 600W
- Temperature Range: 50-300°C / 122-572°F
- Frequency: 50Hz
- Current: 3A
- Dimensions: 8.8" x 2.8" x 10.0"

**SALE!**  
\$99.00

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Soldering Equipment & Supplies > Soldering Stations

| Cat. No. | Description        | Price                       |
|----------|--------------------|-----------------------------|
| CSI853A  | Quart IR Preheater | <del>\$149.00</del> \$99.00 |

**Additional Products On Web Site !**

### See our Web Site for our Hot Air Nozzle Selection!

### Circuit Specialists

#### Soldering Station W/ Digital Display for Lead Free Solder

The CSI-2900 is **compatible with all lead-free alloy solder and standard solder**. It has excellent thermal recovery without a large increase in tip temperature and utilizes an integrated ceramic heater, sensor, control circuit and tip for greater efficiency, along with a highly dependable 24V output transformer. The effortless replacement of soldering tips makes for quick changes and the optional shutdown setting turns the unit off after 30 min. of idle time.



**SALE!**  
\$59.00

Various tips are available at our Web Site!

- Power Consumption: 70W
- Output Voltage: 24VAC
- Temperature Range: 200-480°C / 392-896°F

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Soldering Equipment & Supplies > Soldering Stations

| Cat. No. | Description              | Price                      |
|----------|--------------------------|----------------------------|
| CSI-2900 | Lead-Free Solder Station | <del>\$69.00</del> \$59.00 |



### Circuit Specialists

#### ESD Safe, CPU Controlled, SMD Hot Air Rework Station

Manufactured just for Circuit Specialists Inc., so we can offer the best price possible! A multi-technology assembly and repair station. The heater and air control system is built-in and adjusted by the simple touch of the front keypad for precise settings. Temperature range is from 100°C to 480°C / 212°F to 896°F, and the entire unit will enter a temperature drop state after 15 minutes of non-use for safety and to eliminate excessive wear. The air controlled pick-up tool is easily accessible and ideal for quick and secure removal of IC's without damaging them. It comes with a replacement wand neck and 4 suction cups of various sizes to accommodate different IC's. Air control for the station is monitored by an easy-to-read airflow meter. Comes complete with 4 hot air nozzles.



**CSI825DELUXE** includes an **ADDITIONAL SET of 16 NOZZLES**. *Save Hundreds of Dollars on our BEST SELLER!!*

**BIG SALE**  
**\$149.00**  
CSI825A++ only!

- CPU Controlled
- Built-in Vacuum System
- Temperature Range: 100°C to 480°C / 212°F to 896°F
- 15-Minute Stand-By temperature "sleep" mode
- Power: 110/120 VAC, 320 W maximum

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Soldering Equipment & Supplies > Rework Stations

| Cat. No.      | Description          | Price                        |
|---------------|----------------------|------------------------------|
| CSI825A++     | Solder Station       | <del>\$199.00</del> \$149.00 |
| CSI825-DELUXE | Station w/16 Nozzles | <del>\$349.00</del> \$299.00 |

**NEW!**

### Circuit Specialists

#### Soldering Station w/Iron & SMD Hot Tweezers

- ESD safe design with grounding measure
- Tweezer directly applies heat to components being repaired while avoiding nearby components
- Power consumption: 60W
- Output Voltage: 24V
- Heating Element: Ceramic Heater
- Temperature Range: 200°C-450°C (392°F-842°F)
- Dimensions: 4.8(w) x 3.2(h) x 5.6"(d)



[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Soldering Equipment & Supplies > Soldering Stations

| Cat. No. | Description                 | Price   |
|----------|-----------------------------|---------|
| CSI-950+ | Soldering & Tweezer Station | \$59.00 |

### Circuit Specialists

#### ESD Safe Compact Desoldering Station

A thermostatically controlled desoldering station for thru-hole components that provides low cost and solid performance to fit the needs of the hobbyist and light duty user. The powerful 50W heat delivery system allows you to desolder at lower temperatures, which means less time on the board and less potential for component or board damage. The double cylinder vacuum pump quickly moves the solder away from the work area to ensure a professional job every time.



Temperature is adjustable from 716°F to 896°F by a simple rotary switch and a calibration port is on the station to allow you to make sure you maintain constant temperature each time you change out the tips. The station comes complete with a lightweight desoldering gun, (6) paper filters, (1) spring filter and grommet, cleaning pin and drill for nozzle, silicone grease to prevent air leakage, and (2) spare tips.

- Power Consumption: 150W
- Station Output Voltage: 24V
- Input Voltage: 110V
- Vacuum Pressure (max): 600mmHG (24in.HG)
- Gun Power Consumption: 24V/50W
- Temperature: 380°C-480°C (716°F-896°F)
- Nozzle to Ground Resistance: <2 Ohms

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Soldering Equipment & Supplies > Rework Stations

| Cat. No. | Description             | Price    |
|----------|-------------------------|----------|
| CSI474   | ESD Desoldering Station | \$119.00 |

### Circuit Specialists

#### ESD Safe Thru-Hole Soldering/Desoldering Repair System

A high precision thermostatically controlled station that is designed for the needs of the repair technician. Includes a 35W Soldering Iron with a heating range of 392°F to 896°F, and a lightweight desoldering gun with a temperature range of 716°F to 896°F. The built in double cylinder vacuum pump provides a constant suction that will quickly and easily remove solder from the work surface. Both tips have a nozzle to ground resistance under 2 ohms and a variable temperature controller that can adjust and lock the thermostat so you maintain a constant temperature when performing critical repair work. Two calibration ports are on the station allowing you to make sure the temperature remains constant each time you change out the tips.



[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Soldering Equipment & Supplies > Soldering Stations

| Cat. No. | Description                      | Price    |
|----------|----------------------------------|----------|
| CSI701   | ESD Safe Thru-Hole Repair System | \$199.00 |

### Circuit Specialists

#### Hot Air Gun w/Digital Display for SMD's

Precise temperature and airflow control is at your finger tips with this digitally controlled Hot Air Gun. Quickly solder and de-solder DIP, BGA and SMT electronic components. Plus, be able to shrink,



"Heat shrink tubing". By utilizing a turbine air flow application process it supplies an even stream of hot air. This unit uses an MCU to independently control the temperature for precision control of heat with a wide range of linear adjustments for air flow control. It is a space saver on the test bench and portable enough to throw in your service bag. LED display makes it easy to determine your exact settings. Comes with 4 tips.

- Variable Temperature: 212°F - 788°F
- Variable Airflow: Up to 15cfm.
- Power: 420 watts
- Voltage: 120 VAC / 60Hz
- Outlet Tube Diameter: (approximately 7/8")
- Push Button Temp. & Air Volume Adjustments
- LED Display of Temperature & Air Volume

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Soldering Equipment & Supplies > Soldering Irons

| Cat. No.    | Description           | Price   |
|-------------|-----------------------|---------|
| CSIHOTGUN-2 | Hot Air Gun w/Digital | \$89.00 |

### Circuit Specialists

#### Analog Display Soldering Station

The CSI-STATION1A features a grounded tip & barrel for soldering static-sensitive devices and uses a ceramic heating element for fast heat up & stable temperature control. It is adjustable from 392° to 896° F. One of the nicest features is the high quality comfort grip soldering iron. The iron connects to the station via an easy screw-on connector making iron replacement a snap. The 1 meter length iron cord provides plenty of length for users to set up the station in a convenient location. Another nice feature is the soldering iron holder. Made of rugged aluminum, it is a separate piece from the main station & allows the user maximum

**OUR BEST SELLER!**



convenience...you don't have to reach all the way back to the station to store the iron. Yet another feature is the stackable design of the CSI-Station1A. The main station is designed for an additional unit to be placed on top of it allowing for space saving placement of the CSI-STATION1A.

[Various tips are available at our Web Site!](http://CircuitSpecialists.com)

- Power consumption: 24AC-40W
- Temperature range: 392° to 896°F
- Tip to ground resistance: <2ohms
- Tip to ground potential: <2mv (TYP 0.6mv)
- Heating element: ceramic heater

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Soldering Equipment & Supplies > Soldering Stations

| Cat. No.      | Description            | Price   |
|---------------|------------------------|---------|
| CSI-STATION1A | Analog Display Station | \$34.95 |

**Circuit Specialists**

**Digital Display Soldering Station**

The CSI-Station2A features a grounded tip & barrel for soldering static-sensitive devices and uses a ceramic heating element for fast heat up & stable temperature control. The CSI-Station2A is adjustable from 392° to 896° F. One of the nicest features is the high quality comfort grip soldering iron. The iron connects to the station via an easy screw-on connector making iron replacement a snap. The 1 meter length iron cord provides plenty of length for users to set up the station in a convenient location.

Another nice feature is the soldering iron holder. Made of rugged aluminum, it is a separate piece from the main station & allows the user maximum convenience.....you don't have to reach all the way back to the station to store the iron. Yet another feature is the stackable design of the CSI-Station2A. The main station is designed for an additional unit to be placed on top of it allowing for space saving placement of the CSI-Station2A.

Various tips are available at our Web Site!

- Power consumption: 24AC-40W
- Temperature range: 392° to 896° F
- Tip to ground resistance: <2ohms
- Tip to ground potential: <2mv (TYP 0.6mv)
- Heating element: ceramic heater

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Soldering Equipment & Supplies > Soldering Stations

| Cat. No.      | Description             | Price   |
|---------------|-------------------------|---------|
| CSI-STATION2A | Digital Display Station | \$49.95 |



**Circuit Specialists**

**ESD Safe, SMD & Thru-Hole Rework Station**

Manufactured just for Circuit Specialists Inc., so we can offer the best price possible ! This multi-purpose station is perfect for all your surface mount and thru-hole requirements. The ESD safe separating iron uses a ceramic heating element for fast heat up & stable temperature control. A separate aluminum constructed soldering iron holder is included (not shown in picture) The comfort grip handle make it easy to use all day, while the easy-off connector make it convenient to move out of the way when not using. The temperature is controlled by a centrally located knob. The hot air soldering is controlled by two adjustable knobs which allow you to achieve a temperature range from 100°C to 500°C / 212°F to 932°F. One knob is for air flow, the other for the temperature. Comes complete with 4 hot air nozzles.

**CSI906DELUXE** includes an **ADDITIONAL SET of 16 NOZZLES. Save Hundreds of Dollars!!**

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Soldering Equipment & Supplies > Rework Stations

| Cat. No.      | Description          | Price    |
|---------------|----------------------|----------|
| CSI906        | Rework Station       | \$169.00 |
| CSI906-DELUXE | Station & 16 Nozzles | \$319.00 |



**Additional Products On Web Site !**

**NEW !**

**Circuit Specialists**

**Environmentally Friendly Smoke Absorber & Working Platform**

- Practical and easy to operate integrated smoke absorber and repair platform
- Made from anti-static materials
- Power input: 110-130V
- Power consumption: 20-25W
- Motor type: Carbonless brush
- Easy adjustable jaws on working platform
- Comes with extra filter



[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Soldering Equipment & Supplies > Soldering Tools & Supplies

| Cat. No. | Description             | Price   |
|----------|-------------------------|---------|
| CSI-488  | Smoke Absorber/Platform | \$39.00 |

**NEW !**

**Circuit Specialists PowerSupply1 Single Output Power Supplies**

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > PowerSupply1 Power Supplies

**UL File Number: E258719**

**RoHS Compliant & UL Approved PowerSupply1 Switching Power Supplies**

**CircuitSpecialists.com** offers these Highly Reliable, Universal AC input/full range single output power supplies. Choose between various 40, 60, 100 & 150 Watt versions. They comply with RoHS directive and have the approval of UL, cUL and CE and come 100% full load burn-in tested and are protected with overload/over and voltage/short circuit. Also included is a 2 year warranty.



**Circuit Specialists**

**Soldering Station for Lead Free Solder**

The CSI-2901 is **compatible with all lead-free alloy solder and standard solder**. It has excellent thermal recovery without a large increase in tip temperature and utilizes an integrated ceramic heater, sensor, control circuit and tip for greater efficiency, along with a highly dependable 24V output transformer. The effortless replacement of soldering tips makes for quick changes and the optional shutdown setting turns the unit off after 30 min. of idle time.

Various tips are available at our Web Site!

- Power Consumption: 70W
- Output Voltage: 24VAC
- Temperature Range: 200-480°C/ 392-896°F

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Soldering Equipment & Supplies > Soldering Stations

| Cat. No. | Description              | Price                      |
|----------|--------------------------|----------------------------|
| CSI-2901 | Lead-Free Solder Station | <del>\$59.00</del> \$49.00 |



**SALE! \$49.00**

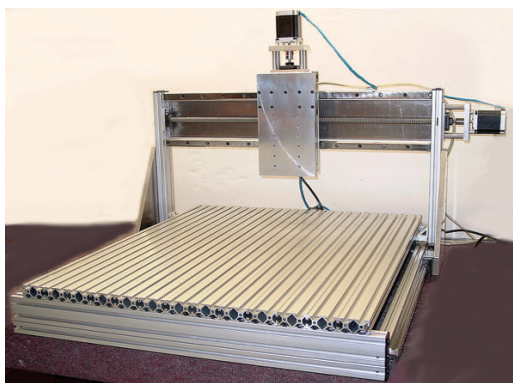
| PowerSupply1  | Qty 1   | Qty 10  | Qty 100 |
|---|---------|---------|---------|
| <b>40W Series</b><br>Available in 5,12,15,24,48V          | \$22.50 | \$18.80 | \$15.89 |
| <b>60W Series</b><br>Available in 5,12,15,24,48V          | \$26.88 | \$21.92 | \$18.25 |
| <b>100W Series</b><br>Available in 3.3,5,7.5,12,15,24,48V | \$32.80 | \$26.49 | \$22.50 |
| <b>150W Series</b><br>Available in 5,7.5,9,12,24,28,36V   | \$40.75 | \$33.70 | \$27.90 |



## Circuit Specialists

### CNC9000 Motion Control Machine

- Z, X and Y Axis.
- Motor Type: Steppers, Nema 23 size motor mounts on all axes. 277 Oz/in torque.
- Travel: X-22" Y-24" Z-4.5"
- Footprint (overall size not including motors): 34" x 34.75" x 21.75"
- Table top size: 32" x 26"
- ABBA Brand Ball screws and linear rails and trucks on all axis
- 5mm per turn pitch lead screws.
- Direct drive motor coupling on all axis
- Using 3 each CW230 Stepper Motor controllers and a 300watt power supply at 36 Volts.
- Tested Tolerance on 6061 aluminum plate with .125 carbide endmil (0.001) 2"x2"x.025" Using a Porter Cable router.
- Standard (Feed rate of 50 inch per minute with stepper motors)
- Made of 6061 Aluminum except rails, trucks, ball screws and fasteners. Steel and other materials.



NEW !

**Our Custom Designed and Manufactured CNC Machine comes complete with all Stepper Motors, Controllers and Power Supply. Features NOT found on the competition!**

| Cat. No. | Description            | Price     |
|----------|------------------------|-----------|
| CNC9000  | Motion Control Machine | \$2995.95 |

Additional Products On Web Site !

## Circuit Specialists

### CNC Rod Kit

This Kit contains the basic linear components for making a small CNC machine. It has 6 Slide shafts with a 60Case harding and Chromium plated finish for better rust resistance plus 12 Linear bearings. All three axis for a small CNC machine. Sizes are:

- (2) 12mm x 8 inches Slide Shafts
- (2) 16mm x 20 inches Slide Shafts
- (2) 20mm x 20 inches Slide Shafts
- (4) 12mm Linear Bearings
- (4) 16mm Linear Bearings
- (4) 20mm Linear Bearings



[CircuitSpecialists.com](http://www.circuitspecialists.com) >

> Motion Control > Controllers & Stepper Motors

| Cat. No.   | Description        | Price    |
|------------|--------------------|----------|
| 3AXIS-LB-S | 3-Axis CNC Rod Kit | \$189.00 |

## Circuit Specialists

### Stepper Motor Controllers

[CircuitSpecialists.com](http://www.circuitspecialists.com) >

> Motion Control > Controllers & Stepper Motors

#### General Specifications:

- DC Power input type: 24V-36VDC
- Output Current: 0.4A
- Dimensions: 100mm x 61mm x 19mm
- Weight: <300g
- Working environment: 15 ~ 40°C, Humidity <90%
- Control: Opto-isolated step / direction
- MicroStep: 1 (200), 1/2 (400), 1/4 (800) and 1/8 (1600)



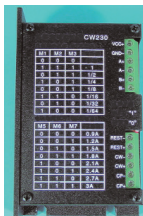
#### Compatible with these motors:

- 42BYGH404 (.4A)
- 57BYGH207 (.4A)

| Cat. No. | Description              | Price   |
|----------|--------------------------|---------|
| XCW220   | Stepper Motor Controller | \$39.95 |

#### General Specifications:

- DC Power input type: 24V-36VDC
- Output Current: 0.9A ~ 3.0A
- Dimensions: 115mm x 72mm x 32mm
- Weight: <300g
- Working environment: 15 ~ 40°C, Humidity <90%
- Control: Opto-isolated step / direction
- MicroStep: 1 (200), 1/2 (400), 1/4 (800), 1/8 (1600), 1/16 (3200), 1/32 (6400), 1/64 (12800)



#### Compatible with these motors:

- 57BYGH303 (2A)
- 57BYGH405 (3A)
- 85BYGH450B-03 (2A)
- 85BYGH450C-03 (3A)

| Cat. No. | Description              | Price   |
|----------|--------------------------|---------|
| CW230    | Stepper Motor Controller | \$59.95 |

## Circuit Specialists

### Stepper Motor Controllers

[CircuitSpecialists.com](http://www.circuitspecialists.com) >

> Motion Control > Controllers & Stepper Motors

#### General Specifications:

- DC Power input type: 24V-36VDC
- Output Current: 0.4A
- Dimensions: 100mm x 61mm x 19mm
- Weight: <300g
- Working environment: 15 ~ 40°C, Humidity <90%
- Control: Opto-isolated step / direction
- MicroStep: 1 (200), 1/2 (400), 1/4 (800) and 1/8 (1600)



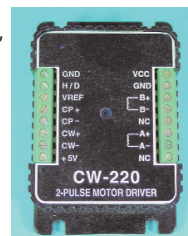
#### Compatible with these motors:

- 42BYGH404 (.4A)
- 57BYGH207 (.4A)

| Cat. No. | Description              | Price   |
|----------|--------------------------|---------|
| XCW220   | Stepper Motor Controller | \$39.95 |

#### General Specifications:

- DC Power input type: 24V-36VDC
- Output Current: 0.1A~1.5A
- Dimensions: 99mm x 65mm x 30mm
- Weight: <300g
- Working environment: 15 ~ 40°C, Humidity <90%
- Control: Opto-isolated step / direction
- MicroStep: 1/2 (400), and 1/8 (1600)



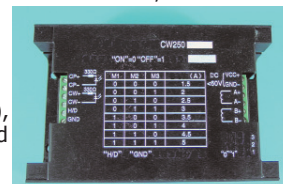
#### Compatible with these motors:

- 42BYGH404 (.4A)
- 57BYGH207 (.4A)

| Cat. No. | Description              | Price   |
|----------|--------------------------|---------|
| CW220    | Stepper Motor Controller | \$49.95 |

#### General Specifications:

- DC Power input type: 24V-36VDC
- Output Current: 1.5A ~ 5.0A
- Dimensions: 140mm x 94mm x 45mm
- Weight: <500g
- Working environment: 15 ~ 40°C, Humidity <90%
- Control: Opto-isolated step / direction
- MicroStep: 1 (200), 1/2 (400), 1/8 and (1600)



#### Compatible with these motors:

- 57BYGH303 (2A)
- 57BYGH405 (3A)
- 85BYGH450B-03 (2A)
- 85BYGH450C-03 (3A)

| Cat. No. | Description              | Price   |
|----------|--------------------------|---------|
| CW250    | Stepper Motor Controller | \$69.95 |

**Circuit Specialists**

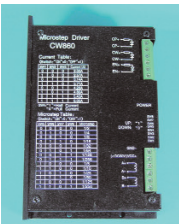
**Stepper Motor Controllers**

CircuitSpecialists.com >

> Motion Control > Controllers & Stepper Motors

**General Specifications:**

- DC Power input type: 24V-36VDC
- Output Current: 2.0A ~ 6.0A
- Dimensions: 147mm x 97mm x 30mm
- Weight: <500g
- Working environment: 15 ~ 40°C, Humidity <90%
- Control: Opto-isolated step / direction
- MicroStep: 1 (200), 1/2 (400), 1/4 (800), 1/8 (1600), 1/16 (3200), 1/32 (6400), 1/64 (12800), 1/125 (25600), 1/5(1000), 1/10(2000), 1/25(5000), 1/50(10000), 1/125(25000), 1/250(50000)



**Compatible with these motors:**

- 57BYGH303 (2A)
- 57BYGH405 (3A)
- 85BYGH450B-03 (2A)
- 85BYGH450C-03 (3A)

| Cat. No. | Description              | Price    |
|----------|--------------------------|----------|
| CW860    | Stepper Motor Controller | \$119.95 |

**Circuit Specialists**

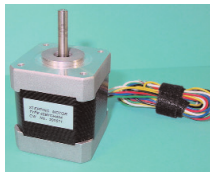
**Stepper Motors**

CircuitSpecialists.com >

> Motion Control > Controllers & Stepper Motors

**General Specifications:**

- Motor Frame size: NEMA 17
- Holding Torque: 3.4 kg.cm / 47 oz.in
- Step Angle: 1.8 Deg ± 5°
- Insulation Resistant: 500VDC 100M Min.
- Insulation Strength: 50Hz 1Minute 500V Min.
- Ambient Temperature: -20 ~ 50°
- Operating Temperature: 110°C Max.
- Radial Play:0.02mm Max.
- End Play: 0.1-0.3mm



| Cat. No.  | Description   | Price   |
|-----------|---------------|---------|
| 42BYGH404 | Stepper Motor | \$17.95 |

**General Specifications:**

- Motor Frame size: NEMA 23
- Holding Torque: 8 kg.cm / 111 oz.in
- Step Angle: 1.8 Deg ± 5°
- Insulation Resistant: 500VDC 100M Min.
- Insulation Strength: 50Hz 1Minute 500V Min.
- Ambient Temperature: -20 ~ 50°
- Operating Temperature: 110°C Max.
- Radial Play:0.02mm Max.
- End Play: 0.1-0.3mm



| Cat. No.  | Description   | Price   |
|-----------|---------------|---------|
| 57BYGH207 | Stepper Motor | \$24.95 |

**Circuit Specialists**

**Stepper Motors**

CircuitSpecialists.com >

> Motion Control > Controllers & Stepper Motors

**General Specifications:**

- Motor Frame size: NEMA 23
- Holding Torque: 15 kg.cm /208 oz.in
- Step Angle: 1.8 Deg ± 5°
- Insulation Resistant: 500VDC 100M Min.
- Insulation Strength: 50Hz 1Minute 500V Min.
- Ambient Temperature: -20 ~ 50°
- Operating Temperature: 110°C Max.
- Radial Play:0.02mm Max.
- End Play: 0.1-0.3mm



| Cat. No.  | Description   | Price   |
|-----------|---------------|---------|
| 57BYGH303 | Stepper Motor | \$29.95 |

**General Specifications:**

- Motor Frame size: NEMA 23
- Holding Torque: 20 kg.cm /277 oz.in
- Step Angle: 1.8 Deg ± 5°
- Insulation Resistant: 500VDC 100M Min.
- Insulation Strength: 50Hz 1Minute 500V Min.
- Ambient Temperature: -20 ~ 50°
- Operating Temperature: 110°C Max.
- Radial Play:0.02mm Max.
- End Play: 0.1-0.3mm



| Cat. No.  | Description   | Price   |
|-----------|---------------|---------|
| 57BYGH405 | Stepper Motor | \$34.95 |

**General Specifications:**

- Motor Frame size: NEMA 34
- Holding Torque: 48 kg.cm /665 oz.in
- Step Angle: 1.8 Deg ± 5°
- Insulation Resistant: 500VDC 100M Min.
- Insulation Strength: 50Hz 1Minute 500V Min.
- Ambient Temperature: -20 ~ 50°
- Operating Temperature: 110°C Max.
- Radial Play:0.02mm Max.
- End Play: 0.1-0.3mm



| Cat. No.      | Description   | Price   |
|---------------|---------------|---------|
| 85BYGH450B-03 | Stepper Motor | \$79.95 |

**General Specifications:**

- Motor Frame size: NEMA 34
- Holding Torque: 63 kg.cm /874 oz.in
- Step Angle: 1.8 Deg ± 5°
- Insulation Resistant: 500VDC 100M Min.
- Insulation Strength: 50Hz 1Minute 500V Min.
- Ambient Temperature: -20 ~ 50°
- Operating Temperature: 110°C Max.
- Radial Play:0.02mm Max.
- End Play: 0.1-0.3mm



| Cat. No.      | Description   | Price    |
|---------------|---------------|----------|
| 85BYGH450C-03 | Stepper Motor | \$119.95 |

**Speed Dome Control Keyboard**

- Embed multi-protocol joystick control
- Screen Display: 16x2 character
- 2 Channel Out
- Communication distance: 2400m max.
- RS485 control interface
- Preset point



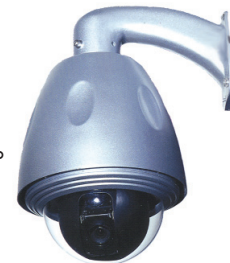
CircuitSpecialists.com >

> Miniature Cameras (Board, Bullet, Mini's, B/W, Color) & Security

| Cat. No.    | Description      | Price    |
|-------------|------------------|----------|
| VC-HKB-8X02 | Control Keyboard | \$149.00 |

**Outdoor Color Speed Dome Camera**

- 1/4" **SONY Exview CCD**
- 768(H) x 494(V) effective pixels
- Horizontal Resolution: 480TV lines
- Up to 80 preset points
- Line scanning
- Continuous 360° horizontal rotation
- Vertical rotation: 0-100°
- RS485 control interface
- Min. Illumination: 0.1Lux (color) / 0.001Lux (B&W)



Shown With Optional Mount

CircuitSpecialists.com >

> Miniature Cameras (Board, Bullet, Mini's, B/W, Color) & Security

| Cat. No. | Description             | Price    |
|----------|-------------------------|----------|
| VC-EX861 | Color Speed Dome Camera | \$899.00 |

**Color Zoom Camera**

- 1/4" Type IT CCD
- 768(H) x 494(V) effective pixels
- Horizontal Resolution: 520TV lines
- Fast Auto Focus
- 22X optical zoom
- Lens: 22X Zoom Video AF F3.9 to 85.8 (F1.6 to F3.7)
- Focusing System: Manual, Normal AF, Zoom Trigger AF
- RS485 control interface
- Min. Illumination: 1Lux (color)



CircuitSpecialists.com >

> Miniature Cameras (Board, Bullet, Mini's, B/W, Color) & Security

| Cat. No. | Description       | Price    |
|----------|-------------------|----------|
| VC-EX47  | Color Zoom Camera | \$229.00 |



**Weather-Proof IR Camera**

- 1/3" **SONY Super HAD CCD**
- 768(H) x 494(V) effective pixels
- Horizontal Resolution: 480TV lines
- IR Wavelength: 850nm
- Auto Tracking White Balance
- Shutter Speed: 1/50(1/60)-1/100,000sec
- Radiation Distance: 15-25m
- Min. Illumination: 0Lux (IR Lamps on)
- Weather-resistant
- Color/mono auto switch
- Energy saving Style Circuit



CircuitSpecialists.com >

> Miniature Cameras (Board, Bullet, Mini's, B/W, Color) & Security

| Cat. No.   | Description             | Price    |
|------------|-------------------------|----------|
| VC-827DIII | Weather-Proof IR Camera | \$129.00 |

**Very Large Infrared Lamp**

This Heavy Duty Infrared Lamp is designed to be mounted in an ideal location so that it will give lighting support to a single or array of low-lux cameras. Now you can generate a large amount of IR light in a vast area and be confident that all your supporting cameras will have sufficient light to provide you with a precise image as the visible light disappears. With its robust aluminum housing and light sensor it will be a support device that will last for years to come and turn on and off automatically as needed. As the area reduces in visible light, let the VC-IR150 flood the area with IR light so that nothing can be hidden from your view. A very valuable tool in your surveillance system! Power Requirements: Universal AC90V-AC240V 50/60Hz.



CircuitSpecialists.com >

> Miniature Cameras (Board, Bullet, Mini's, B/W, Color) & Security

| Cat. No. | Description   | Price    |
|----------|---------------|----------|
| VC-IR150 | Infrared Lamp | \$149.00 |

**SONY Super HAD CCD Color Weatherproof IR Camera**

- Features:
- Day & Night Auto Switch
  - Signal System: NTSC
  - Effective Pixels: 510 x 492
  - Image Sensor: 1/3" **SONY Super HAD CCD**
  - Horizontal Resolution: 480TV lines
  - Built-in Lens: 6mm/F1.5
  - S/N Ratio: > 48dB
  - Min. Illumination: 0Lux
  - Shutter Speed: 1/50(1/60)- 1/100,000 sec
  - Video Output:1.0Vp-p 75W
  - Power Consumption: 12VDC, 120mA (300mA w/LED's on)
  - Housing: Aluminum Alloy
  - IR Lamp irradiation distance: 25m
  - Dimensions: 157mm x 85mm



CircuitSpecialists.com >

> Miniature Cameras (Board, Bullet, Mini's, B/W, Color) & Security

| Cat. No. | Description     | Price   |
|----------|-----------------|---------|
| VC-827D  | Color IR Camera | \$99.00 |

**SONY Super HAD CCD B/W Weatherproof IR Camera**

- Features:
- Day & Night Auto Switch
  - Signal System: EIA
  - Image Sensor: 1/3" **SONY Super HAD CCD**
  - Effective Pixels: 510 x 492
  - Horizontal Resolution: 420TV lines
  - Built-in Lens: 6mm/F1.5
  - S/N Ratio: > 48dB
  - Min. Illumination: 0Lux
  - Shutter Speed: 1/50(1/60)-1/100,000 sec
  - Video Output: 1.0Vp-p 75W
  - Power Consumption: 12VDC, 120mA (300mA w/LED's on)
  - Housing: Aluminum Alloy
  - Infrared Wavelength: 850nm
  - IR Lamp irradiation distance: 30m
  - Dimensions: 157mm x 85mm



CircuitSpecialists.com >

> Miniature Cameras (Board, Bullet, Mini's, B/W, Color) & Security

| Cat. No. | Description   | Price   |
|----------|---------------|---------|
| VC-317D  | B/W IR Camera | \$59.50 |

**Very Large SONY Super HAD CCD Mini Color Weatherproof IR Camera**

- Image Sensor: 1/3" **SONY Super HAD CCD**
- IR LED
- New energy saving style circuit
- Effective Pixels: 510 x 492
- Horizontal Resolution: 330TV lines
- Lens Mount: 12.5mm / F:1.8
- S/N Ratio: > 48dB (AGC OFF)
- Min. Illumination: 0Lux (IR lamps on)
- Video Output: 1.0Vp-p 75 Ohm
- Radiation distance: 30-40m
- Illumination for Infrared Switching: 3Lux
- Dimensions: 8" (Long) x 3.2" (Diameter)

**Special Blowout Price!**  
**\$89.00**



CircuitSpecialists.com >

> Miniature Cameras (Board, Bullet, Mini's, B/W, Color) & Security

| Cat. No. | Description                  | Price   |
|----------|------------------------------|---------|
| VC-772   | Color Weatherproof IR Camera | \$89.00 |

**Additional Products On Web Site !**

**SONY Super HAD CCD Color Weatherproof IR Camera**

- Features:
- Day & Night Auto Switch
  - Signal System: NTSC
  - Image Sensor: 1/4" **SONY Super HAD CCD**
  - Effective Pixels: 510 x 492
  - Horizontal Resolution: 420TV lines
  - Built-in Lens: 4.3mm
  - S/N Ratio: > 48dB (AGC OFF)
  - Min. Illumination: 0Lux
  - Shutter Speed:1/50(1/60) - 1/100,000 sec
  - Video Output: 1.0Vp-p 75W
  - Power Consumption: 12VDC, 120mA (300mA w/LED's on)
  - Housing: Aluminum Alloy
  - Infrared Wavelength: 850nm
  - IR Lamp irradiation distance: 15m
  - Dimensions: 104mm x 62mm



CircuitSpecialists.com >

> Miniature Cameras (Board, Bullet, Mini's, B/W, Color) & Security

| Cat. No. | Description     | Price   |
|----------|-----------------|---------|
| VC-819D  | Color IR Camera | \$62.50 |



**High Performance IEEE488 GPIB Interface**

The ADLINK PCI-3488 GPIB controller interface card is fully compatible with the IEEE488 instrumentation control and communication standard and is capable of controlling up to 14 stand-alone instruments via IEEE488 cables. It is designed to meet the requirements for high performance and maximum programming portability. The 1KB on-board FIFO and a block transfer mode provide up to 1.5 MB/s GPIB transfer rate. With an NI-like driver API and VISA support, the PCI-3488 provides the greatest compatibility with your existing applications and instrument drivers. Delivered with complete software support, including a driver API that is fully binary compatible with NI's GPIB-32.DLL. All programs written based on GPIB-32.DLL can be executed on the PCI-3488 without any modification. VISA library is also supported to ensure compatibility with applications utilizing VISA. It also provides "Plug and Play" compatibility with all your existing applications.



CircuitSpecialists.com >

> NuDAQ Products-PC Based Control& Data Acquisition

| Cat. No. | Description            | Price    |
|----------|------------------------|----------|
| PCI-3488 | IEEE488 GPIB Interface | \$259.00 |
| GPIB-7   | 2M GPIB Cable          | \$39.00  |



**Ammonium Persulfate Etchant Crystals**

Ammonium Persulfate crystals are used as an alternative to the traditional ferric chloride to produce a cleaner copper etchant solution. Mixed product must be stored in a vertical container. One kilogram of crystals will produce four liters of etching solution when mixed with water.



[CircuitSpecialists.com](#) >

> Printed Circuit Board Supplies > Circuit Board Etching

| Cat. No. | Description         | Price   |
|----------|---------------------|---------|
| 410-1KG  | Ammonium Persulfate | \$21.00 |

**FUJICELL**

**'AA' & 'AAA' High Capacity NiMH Rechargeable Batteries**



NEW! "AA" & "AAA" FUJICELL brand rechargeable batteries at fantastic prices. Utilizing steel belt manufacturing technology for improved case integrity after high temperature (150 deg C) exposure. You can recharge these batteries 100's of times without memory problems.

[CircuitSpecialists.com](#) >

> Batteries & Accessories > Nickel Metal Hydride Batteries

| Cat. No.     | Description   | Price1+ | 10+  | 100+ |
|--------------|---------------|---------|------|------|
| FUJICELL1000 | "AAA" 1000MAH | \$0.99  | 0.65 | 0.51 |
| FUJICELL2700 | "AA" 2700MAH  | \$1.45  | 1.25 | 1.09 |

**Deluxe UV Exposure Unit with Vacuum Pump**

An ultra violet lamp system for fast, even exposures of PCB's. Circuit Specialist's positive pre-sensitized boards can be perfectly exposed in 70 to 120 seconds. An integrated vacuum pump "freezes" the PCB for perfect alignment with your artwork.



[CircuitSpecialists.com](#) >

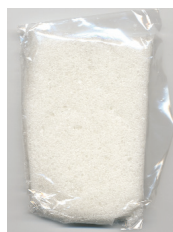
> Printed Circuit Board Supplies > Circuit Board Etching

- Independently switched upper & lower light tubes for exposure of single sided or double sided PCB's
- A built-in vacuum pump and transparent film cover allowing the user to "freeze" the PCB's in place for perfect alignment to artwork.
- An adjustable timer & counter for setting exposure time.
- A convenient "re-expose" button for repeat settings when doing multiple PCB's.
- 110V/200W operation
- 6 each 15 watt UV lamps (3 upper/3 lower)

| Cat. No.  | Description             | Price    |
|-----------|-------------------------|----------|
| KVB-30D   | Deluxe UV Exposure Unit | \$429.00 |
| KVB-LIGHT | Replacement UV Lights   | \$9.95   |

**Positive Developer Powder**

This product is used as the developer on our positive photo-resist printed circuit boards. Includes instructions. 50 gram package. Mixes with water, to make 1 quart of solution.



[CircuitSpecialists.com](#) >

> Printed Circuit Board Supplies > Circuit Board Etching

| Cat. No. | Description        | Price 1+ | 10+  | 25+  |
|----------|--------------------|----------|------|------|
| POSDEV   | Positive Developer | \$0.95   | 0.80 | 0.50 |



**Liquid Positive Developer**

For use with presensitized copper clad boards. Dissolves exposed photoresist. Concentrated formulation - dilute one part developer to ten parts water. For best results, use in conjunction with cat# 416-S foam brush.



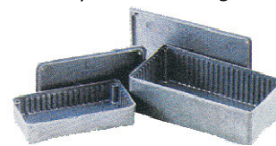
[CircuitSpecialists.com](#) >

> Printed Circuit Board Supplies > Circuit Board Etching

| Cat. No.  | Description               | Price  |
|-----------|---------------------------|--------|
| 418-500ML | Positive Developer, 17oz. | \$9.40 |

**Die Cast Aluminum Enclosures**

These high quality die cast aluminum cases come with channeled walls for easy PCB mounting. Especially useful for RF circuits where shielding is important. Also, these cases will act as an excellent heat sink. Cases come complete with screws.



[CircuitSpecialists.com](#) >

> Enclosures > Die Cast Aluminum Enclosures

| Cat. No. | Description            | Price 1+ | 10+   |
|----------|------------------------|----------|-------|
| 03-125A  | 3.9(L)x2.0(W)x1.0"(H)  | \$5.89   | 3.99  |
| 03-125BR | 4.74(L)x2.6(W)x1.4"(H) | \$6.99   | 4.95  |
| 03-125C  | 7.5(L)x4.3(W)x2.4"(H)  | \$12.69  | 11.69 |

**LED Panel Meters:**

|  |                                       |         |
|--|---------------------------------------|---------|
|  | 9V Independent Ground (PM-129A).....  | \$12.49 |
|  | 5V Common Ground (PM-129B).....       | \$12.95 |
|  | 9V Independent Ground (PM-1029A)..... | \$14.95 |
|  | 5V Common Ground (PM-1029B).....      | \$15.95 |
|  | 9V Independent Ground (CX102A).....   | \$11.49 |
|  | 5V Common Ground (CX102B).....        | \$14.95 |

**LCD Panel Meters:**

|  |   |         |
|--|---|---------|
|  | Jumbo 9V Independent Ground (PM-1028A)..... | \$12.95 |
|  | Jumbo 5V Common Ground (PM-1028B).....      | \$13.95 |
|  | 9V Independent Ground (PM-128A).....        | \$10.25 |

**Digital Panel Meters**

Circuit Specialists offers a wide variety of high quality LCD and LED Panel Meters at an affordable price so that you can utilize them for all your development and prototyping projects.

All of our Panel Meters have Special Quantity Prices Available. Visit our web site: [www.circuitspecialists.com](http://www.circuitspecialists.com) for details

Details & Specs at Web Site > Panel Meters > Digital Panel Meters



Add On Board for CX101 & CX102 Series (CX-ADD ON BOARD).....\$4.50

**LCD Panel Meters:**

|  |  |         |
|--|--|---------|
|  | Selectable 5V/9V, AC/DC version (PM-128E)..... | \$12.25 |
|  | 9V Independent Ground (PM-138).....            | \$10.90 |
|  | 9V Independent Ground (PM-188BL).....          | \$12.50 |
|  | 9V Independent Ground (PM-228).....            | \$12.50 |
|  | 4-1/2 Digit 9V Independent Ground (PM-328).... | \$19.88 |
|  | 9V Independent Ground (PM-438).....            | \$10.95 |
|  | Miniature 9V Independent Ground (CX101A)....   | \$13.50 |
|  | Miniature 5V Common Ground (CX101B).....       | \$13.50 |
|  | Miniature 5V Common Ground (CX101BG).....      | \$13.95 |



### Circuit Specialists

#### Our Best Low Cost DMM Deal!

A multi function DMM that provides the features and flexibility for students, technicians and even repair centers at a dynamic price. The CSIMS8264 ships with the temp probe, multi function socket, safety designed test leads and the rubber holster all inclusive at this great price. Not a cheap mini sized DMM, but a robust full sized test meter. Besides the many ranges, this DMM also includes hFE transistor testing, capacitance test, a K type temperature measuring capacity, a DATA HOLD function, audible continuity, diode test, and Auto Power Off function. The digital display is may be operated with backlight if desired. The CSIMS8264 is CAT II safety rated to 1000V & CAT III safety rated to 600V.



CircuitSpecialists.com >

> Test Equipment > Digital Multimeters/World Beater Prices

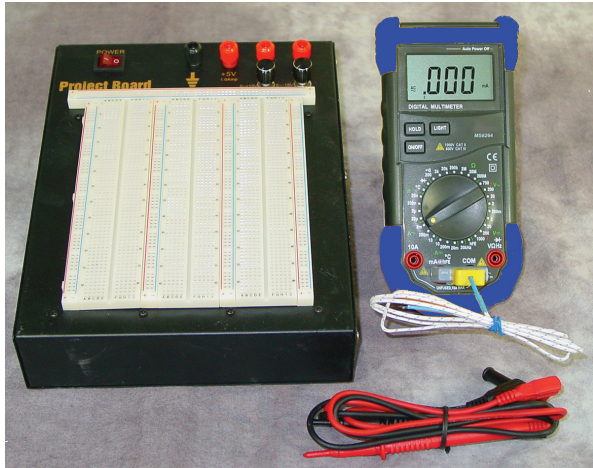
| Cat. No.  | Description  | Price          |
|-----------|--------------|----------------|
| CSIMS8264 | Low Cost DMM | <b>\$24.95</b> |

- DC Voltage: 1000V
- AC Voltage: 750V
- Temperature:-20°C to 1000°C (32°F to 1832°F)
- Data Hold and Backlight
- Capacitance: 2nF - 20µF
- Resistance: 200Ohm - 200MOhm
- DC Current: 20mA - 10A
- AC Current: 2mA - 10A

You Pay **\$24.95** for the CSIMS8264 Low Cost DMM ALONE.

### Circuit Specialists

#### Breadboard/Power Supply/Multifunction DMM Bundle



CircuitSpecialists.com >

> Breadboards & Prototyping Boards > Breadboard Supplies

| Cat. No.   | Price          |
|------------|----------------|
| PBB272-DMM | <b>\$69.99</b> |

Use this Catalog Number to take advantage of this **TREMENDOUS OFFER!**

You Pay only **\$69.99** for the **Combined Bundle**. This is only \$.99 more then the Powered Breadboard ALONE!

**Attn: Schools Classroom Budget Stretcher!**

**FANTASTIC BUNDLE OFFER!**

#### Analog Panel Meters PM801 Series

- Class 2.5 Accuracy
- Includes Mounting Hardware
- Moving Coil
- 2-3/4"W x 2-13/32"H x 1-23/32"D
- 30 Amp model includes current shunt



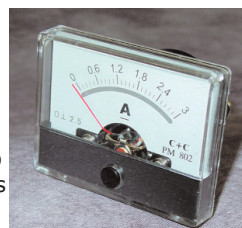
CircuitSpecialists.com >

> Panel Meters > Analog Panel Meters

| Cat. No.     | Description | Price 1+ | 10+   | 100+ |
|--------------|-------------|----------|-------|------|
| PM801-15VDC  | 0-15VDC     | \$8.99   | 7.49  | 5.99 |
| PM801-30VDC  | 0-30VDC     | \$8.99   | 7.49  | 5.99 |
| PM801-150VAC | 0-150VAC    | \$8.99   | 7.49  | 5.99 |
| PM801-15AAC  | 0-15Amps AC | \$8.99   | 7.49  | 5.99 |
| PM801-3ADC   | 0-3Amps DC  | \$8.99   | 7.49  | 5.99 |
| PM801-30ADC  | 0-30Amps DC | \$11.99  | 10.49 | 8.99 |

#### Analog Panel Meters PM802 Series

- Class 2.5 Accuracy
- Includes Mounting Hardware
- Moving Coil
- Mirrored Scale
- 2-3/8"W x 2-13/16"H x 1-13/16"D
- 30 Amp model includes current shunt



CircuitSpecialists.com >

> Panel Meters > Analog Panel Meters

| Cat. No.     | Description | Price 1+ | 10+   | 100+ |
|--------------|-------------|----------|-------|------|
| PM802-15VDC  | 0-15VDC     | \$9.49   | 7.99  | 6.39 |
| PM802-30VDC  | 0-30VDC     | \$9.49   | 7.99  | 6.39 |
| PM802-150VAC | 0-150VAC    | \$9.49   | 7.99  | 6.39 |
| PM802-5AAC   | 0-5Amps AC  | \$9.49   | 7.99  | 6.39 |
| PM802-3ADC   | 0-3Amps DC  | \$9.49   | 7.99  | 6.39 |
| PM802-30ADC  | 0-30Amps DC | \$12.49  | 10.99 | 9.39 |

### Circuit Specialists

#### Breadboard w/Built-In Power Supply

The PBB-272 provides the user with a quick and efficient system for breadboarding electronic circuits. Comes with three regulated power supplies along with a deluxe, easy-to-use breadboard. 110V.



**Price BreakThrough!**

- 5 Distribution Strips (500 tie points)
- 3 Terminal Strips (1890 tie points)
- 4 Binding Posts
- One Ground
- One 5V (1 Amp) Constant Power
- One 0 to +15V (500mA) Variable Power
- One 0 to -15V (500mA) Variable Power

CircuitSpecialists.com >

> Breadboards & Prototyping Boards > Breadboard Supplies

| Cat. No. | Description        | Price          |
|----------|--------------------|----------------|
| PBB-272  | Breadboard w/Power | <b>\$69.00</b> |

You Pay **\$69.00** for the PBB-272 Powered Breadboard ALONE.

Get our **PBB-272** and our **CSIMS8264 DMM** at our Special Bundle Price of **\$69.99**

#### Etching System w/Agitator & Heater

Easy to use and assemble. Etching can occur in 4 minutes. Features graduated markings to assist in setting appropriate etchant depth. Normal usage requires a minimum of 2000cc (2 litre) to a maximum of 2300cc's (2.3 litre) of etching solution Also included are some handy wire clips used to hang your PCB(s) in the tank. This makes it easy to lift the board out for easy quick check of the boards progress.Or, the board progress can be viewed by shining a light into the tank during the etching process.



CircuitSpecialists.com >

> Printed Circuit Board Supplies > Circuit Board Etching

| Cat. No. | Description    | Price   |
|----------|----------------|---------|
| ET20     | Etching System | \$49.95 |

# www.CircuitSpecialists.com

Summer 2007 Supplement



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## CircuitSpecialists.com

### Circuit Specialists

#### Focused Infrared Soldering System

A modular and flexible infrared technology soldering system for effective high yield rework of even the most advanced packages, as well as being suitable for lead or lead-free solder. It can be used widely for reworking BGAs, micro-BGAs, QFPs, PLCCs, SOICs, small SMDs, components in mobile phones, computers, and other circuit board components without overheating. It generates heat through concentration of infrared heat waves instead of conventional hot air and has non-contact IR temperature sensing, closed loop temperature control for instant and precise adjustments during soldering and desoldering.



**Additional Specifications on page 7**

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Soldering Equipment & Supplies > Soldering Stations

| Cat. No. | Description             | Price     |
|----------|-------------------------|-----------|
| CSI-IR1  | Infrared Solder Station | \$1399.00 |

Toll Free: 1-800-528-1417  
Arizona: 480-464-2485  
Fax: 480-464-5824

**NEW !**

### Protek

#### Digital LCR Meter w/GPIB Interface

- Basic Accuracy of 0.05%
- 5 Test Frequencies
- Stores up to 9 setups in memory
- Remote over RS-232C & GPIB/Handler Interface
- Measurement Modes: Auto, R+Q, L+Q, C+D, C+R
- Equivalent Circuit: Series or Parallel
- Test Frequency: 100Hz, 120Hz, 1kHz, 10kHz, 100kHz
- Triggering: Through external trigger, Continuous, Manual or remote over RS232, GPIB or Handler Interface



**Additional Specifications on page 4**

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Specialty Test Equipment

| Cat. No.     | Description              | Price     |
|--------------|--------------------------|-----------|
| PROTEK 9216A | Digital LCR Meter w/GPIB | \$1499.00 |

**NEW !**

### INSTEK

#### 2 & 4 Channel GDS-2000 Series Digital Storage Oscilloscopes w/TFT Color Displays

- 200/100/60 MHz Bandwidth
- 2 or 4 Input Channels
- 1 GS/s Real Time Sampling Rate & 25 GS/s Equivalent Time Sampling
- Standard USB Host and Device Interface; Optional GPIB
- Auto-Level, AUTO, NORMAL, SINGLE, TV, Edge, Pulse Width Time-delay(2CH Only), Event-delay(2CH Only)



**Additional Specifications on page 6**

[CircuitSpecialists.com](http://CircuitSpecialists.com) >

> Test Equipment > Instek Test Equipment

| Cat. No. | Description     | Price     |
|----------|-----------------|-----------|
| GDS-2062 | 60MHz, 2Ch DSO  | \$890.00  |
| GDS-2064 | 60MHz, 4Ch DSO  | \$1210.00 |
| GDS-2102 | 100MHz, 2Ch DSO | \$1160.00 |
| GDS-2104 | 100MHz, 4Ch DSO | \$1470.00 |
| GDS-2202 | 200MHz, 2Ch DSO | \$1470.00 |
| GDS-2204 | 200MHz, 4Ch DSO | \$1800.00 |