



# Test Equipment Tutorial

Cable and Network Test Equipment is vital to the uptime of any datacom system. Reports have shown that up to 70% of network downtime can be traced to the physical layer or a cable. By implementing basic go-no-go cable testers as well as more advanced network test and troubleshooting tools, network downtime can be greatly reduced. L-com offers testers for coax, Cat5e (or better), fiber optic, and RJ11/12 cabling and power. Additionally we offer environmental testers to measure light, sound and temperature.

## Network Cable Testing Terms

**NEXT:** Near End Cross Talk. A signal that crosses between twisted pairs or between conductors. NEXT is measured at the transmission end (near end). Measured in dB, failures for this measurement are often caused by termination problems.

**FEXT:** Far End Cross Talk. Crosstalk that is measured on the conductors that are not being used for transmission at the receiver or far end of the transmission. Measured in dB, failures for this measurement are often caused by termination problems.

**Propagation Delay Skew:** Used to define the difference in signal speed between the fastest and slowest pair within a cable. It can also define the delay within an individual pair. Must be <45ns for a 4-pair horizontal cable.

**Impedance:** Measure of the total opposition a circuit offers to the flow of alternating current. Target impedance for UTP and STP cable is 100 Ohms. This can be affected by the twist of the conductors along with the thickness of the insulation around the

conductors. Return loss failures are often caused by cable impedance problems.

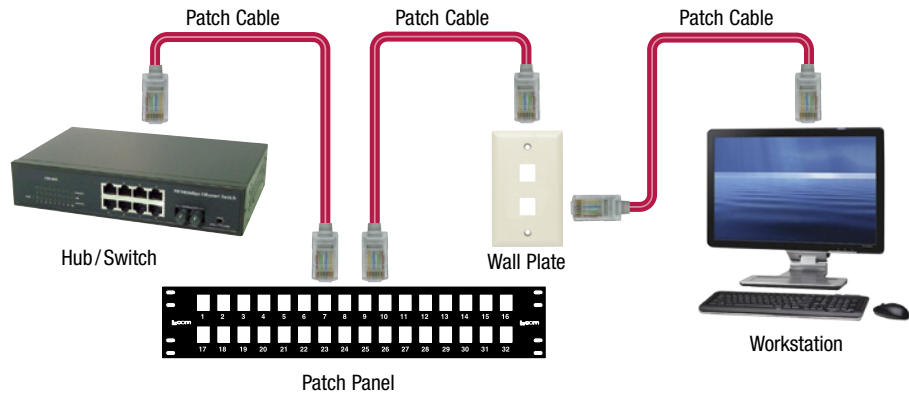
**Return Loss:** The ratio of reflected power to inserted power. It is the measure of the signal reflections occurring along a network cable system. It is often caused by imperfections in the cable conductors, impedance mismatches or bad contacts in a plug or jack.

## Network Channel Testing

Network Channel Testing is a method used to verify performance from the workstation to the hub/switch including patch cords. Channel Testing is not accurate for individual patch cords. Both installers and IT professionals conduct this type of testing to insure that the entire cable system is capable of handling network traffic. Channel Testing differs from Permanent Link Testing in that it includes the patch cords on both ends of the installation. Often, patch cords are overlooked as the cause of network failures.

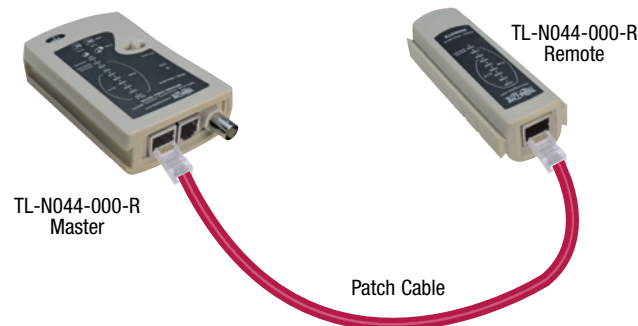
## Permanent Link Testing

Permanent Link Testing is the preferred method used by installers to certify a cable installation at a customer site. This type of testing verifies the installation by measuring many factors such as cable lengths, NEXT, FEXT and Return Loss. Several certification testers exist on the market including Fluke Networks DTX-1800 series products. This type of tester features a Permanent Link adapter that connects from a workstation outlet to the telecom closet outlet.



## Continuity Testing

Continuity Testing is the most basic form of testing conducted on cables. These types of testers look for opens, shorts or crossed connections. For Ethernet, this type of testing does not confirm network transmission capability. The most common mistake in cable pin-out is an EIA568 A to B cross. A simple continuity tester such as the TL-N044-000-R, can easily find this error without the expense of a certification tester.

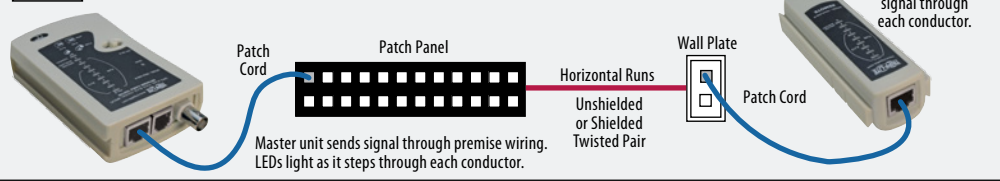


## Wire Mapping/LAN and Cable Testing

If you require more than just a standard continuity test you might consider a Wire Mapping tester like the AEMC-CA7028. With a tester like this you would get a more detailed report of how your cable is wired/paired. All faults and setting info is displayed textually as well as graphically. But beyond that with TDR technology it can determine if the fault lies at the near end or remote end of the cable or if it is somewhere in between. It can even indicate the distance to the fault as well as determine the length of the cable or cable run being tested.



**Tip** Using the TL-N044-000-R for checking premise wiring



Item #	Description	List Price
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**Tripp Lite Multi-Function Network/Phone/Coax Cable Tester**

Tripp Lite's Multi-Function Network Cable Tester allows you to test wiring continuity for Cat5/5e, Cat6, RJ11/12 telephone cord sets as well as 10Base2, RF and CATV coax cable assemblies. It can help identify miswired terminations, shorts and open circuits. It features a two piece design, a main unit and a remote unit. The remote unit is designed to slide onto the side of the main unit but can be removed when testing premise cabling where the two ends of the cable being tested are not close by. The main unit features (1) Shielded RJ45 (8x8) Jack, (1) Shielded RJ11/12 (6x6) Jack and (1) Female BNC. The remote unit features (1) Shielded RJ45 (8x8) Jack on one side of the unit and (1) Shielded RJ11/12 (6x6) Jack on the other. The tester also comes with (1) BNC Terminator with a green LED on the end to test BNC coax assemblies. The kit also includes (2) BNC Male to F-Type Female adapters to allow for the testing of RG59/RG6 CATV Coax. A Storage pouch is provided for safe storage of the tester and accessories when not in use. Power supplied by 9V battery (not included). Comes with a Tripp Lite Lifetime Warranty. **As an authorized Tripp Lite reseller we can bid on RFQs for any Tripp Lite part numbers. Contact us to request a non-obligatory quote.**

TL-N044-000-R	Tripp Lite Multi-Function Network/Phone/Coax Cable Tester	49.72
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**Pyle 13 Plug Pro Audio Cable Tester**

The Pyle PCT40 gives you a simple and easy way to make sure your audio cables are working properly. The unit supports nearly all cable types used in the sound recording industry, providing you with an all-in-one solution to help identify cable continuity issues in your audio set-up. Supports 13 interface types that include USB Type A, TRS Jacks (which can also be used for testing TS), 3 and 5 Pin XLR, Speakon, RCA, RJ45 and more (see chart below for full listing). The Tester features a simple intuitive design, whereby you plug in both ends of the cable you are testing and you turn the selector knob to the different numbered setting to check each conductor individually (tester checks up to 8 conductors). Each numbered setting features two LEDs, one checks the continuity of the conductor the other verifies the ground. Power supplied by 9V battery (not included).

Supports the following connector interfaces:	
• 8 Pin Speakon (speaker twist connector)	• 3 Pin Din
• USB Type A	• 5 Pin Din
• RJ45	• 7 Pin Din
• Banana Plug	• 8 Pin Din
• 1/4" (6.3mm) TRS	• 5 Pin XLR
• RCA Phono	• 3 Pin XLR
	• 4 Pin Speakon (speaker twist connector)

PCT40	Pyle 13 Plug Pro Audio Cable Tester	44.54
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**Senko Fiber Visual Fault Locator**

The Senko AFT-G-FC Fiber Visual Fault Locator features a robust and handy design. It emits a 650nm visible red light in either continuous or pulse mode to allow for the quick inspection of fiber assemblies to confirm light path. Can also be used to visually trace fiber optic cable runs within a building.

SK-AFT-G-FC	Senko Fiber Visual Fault Locator with Universal 2.5mm Connection	124.32
SK-AFT-G-CAC	Senko Universal 2.5mm to 1.25mm Adapter for Fiber Visual Fault Locator	36.25

**CoolMax ATX Power Supply Tester with LCD Display**

The CoolMax ATX Power Supply Tester provides a simple and easy way to verify that your computer power supply is providing the correct power output. The tester features a 1.7 inch x 0.8 inch illuminated LCD display that provides voltage information from the power supply's 20 or 24 pin power connector. The LCD display & readings are turned on by holding down the momentary on/off switch found on the face of the tester. The display provides 7 power readouts (+5V, +12V1, +3.3V, -12V, +12V2, 5VSB & PG). It also features an audible alarm alerting you to low voltage, over voltage or no voltage on one of these readings. The tester also features 3 voltage LEDs for the other connector interfaces (15 pin SATA) (4 pin Molex) (4 pin Floppy) (6/8 pin PCIe) and (4/8 pin CPU) the voltage LEDs light up when the correct voltage is present. The tester's small compact design makes it an ideal tool to keep with your PC repair/maintenance kit, (no batteries required, power provided by power supply being tested).

CM-PS-228	CoolMax ATX Power Supply Tester with LCD Display	25.88
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**PLANET IEEE 802.3af/at Power over Ethernet (PoE) Tester**

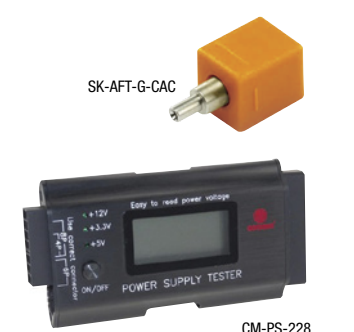
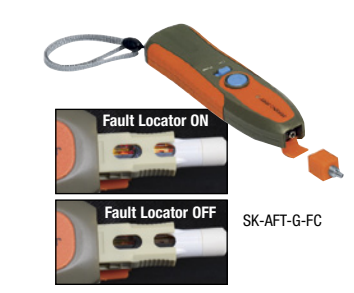
PLANET's POE-TESTER is an easy to use PoE diagnostic adapter for network installers, company MIS and even home users to quickly identify the existence of Power over Ethernet on their network. It is designed to detect if IEEE 802.3af/at PoE voltage is running over your UTP cable, and you can use a short patch cord to test PoE ports on devices directly. The POE-TESTER has two simple LEDs one orange & one green that light up to identify 3 different possible PoE states, Mid-span 802.3af/at, End-span 802.3af/at as well as detecting a 4-pair 60-Watt PoE Injector. **As an authorized PLANET reseller we can bid on RFQs for any PLANET part numbers. Contact us to request a non-obligatory quote.**

POE-TESTER	PLANET IEEE 802.3af/at Power over Ethernet Tester	21.38
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**Microsemi PowerDsine Deluxe IEEE 802.3af/at Power over Ethernet (PoE) Tester**

Microsemi's PD-AFAT-TESTER is a compact designed tester specifically tailored for system integrators and installers. The plug and play design makes it simple to use. The PD-AFAT-TESTER has two bi-color LEDs allowing it to display up to 6 possible PoE states which identifies the type of Power Sourcing Equipment Endspan (Data) or Midspan (Spare) on your network with the 2-pair states indicating 30W and the 4-pairs 60W.

PD-AFAT-TESTER	• 802.3af (Over Spare)	• 802.3at (Over Spare)	• 802.3af (4 Pairs)
	• 802.3af (Over Data)	• 802.3at (Over Data)	• 802.3at (4 Pairs)
			31.07





Item #	Description	List Price
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**Fluke Pocket Toner® NX1**

Test for continuity and short circuits on coaxial cables in one easy step. Basic professional testing does not get any more compact and simple as PTNX1. This tool features lightweight aluminum construction, standard AAA battery, and new dual buzzers that audibly indicate continuity at both ends of the test cable. Like all Pocket Toner® NX test tools, the PTNX1 is 100% low voltage protected so connecting it to live low voltage systems will not damage the tool. **As an authorized Fluke reseller, we can bid on RFQs for any Fluke part numbers. Contact us to request a non-obligatory quote.**

PTNX1	Fluke Pocket Toner NX1	34.19
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**Fluke Pocket Toner® NX2**

The individual PTNX2 is for the technician that works primarily with coaxial cable that wants a powerful but super-compact tool to fit in his or her pocket. In addition to testing for continuity and short circuits PTNX2 is packed with advanced features like indication of AC or DC voltage, 50-75 Ohm terminators and auto shut-off to conserve battery life. PTNX2 instantly displays all test results on an easy to read 8-segment LED display as well as giving audible feedback at both ends of the test cable. Like all Pocket Toner® NX test tools, the NX2 is 100% low voltage protected so connecting it to live low voltage systems will not damage the tool. **As an authorized Fluke reseller, we can bid on RFQs for any Fluke part numbers. Contact us to request a non-obligatory quote.**

PTNX2	Fluke Pocket Toner NX2	44.56
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**Fluke Pocket Toner® Cable Test Kits**

Fluke PTNX series coax toners are unquestionably the ideal primary devices for testing the installation of coax cable. Test for continuity and short circuits on coaxial cables in one easy step. Basic professional coaxial testing does not get any more compact and simple as Fluke PTNX series. Fluke offers a wide variety of test kits to choose from. For detailed information on each kit, please refer to L-com.com. **As an authorized Fluke reseller, we can bid on RFQs for any Fluke part numbers. Contact us to request a non-obligatory quote.**

PTNX2-CABLE	Fluke PTNX2 Cable Test Kit	56.99
PTNX2-DLX	Fluke PTNX2 Deluxe Test Kit	96.37
PTNX8-CABLE	Fluke PTNX8 Cable Test Kit	92.22
PTNX8-DLX	Fluke PTNX8 Deluxe Test Kit	127.45
PTNX8-CT	Fluke Cable and Telephone Test Kit	106.73
PTNX8-VV-PRO	Fluke Voice/Video Test Kit	148.18

**PC Cable Tester Pro ATA**

This flexible cable tester will identify opens, shorts, miswiring and continuity on almost all popular PC cable types. The PC cable tester Pro ATA can test the following cable types; DB25 (M/F), DB9 (M/F), HDB15 (M/F), DB15 (M/F), BNC (F), RJ45, Centronics 36 (F), USB (A and B), ATA and Firewire. This tester is a must for installers and IT professionals in any industry.

MULTI-TEST	PC Cable Tester Pro ATA	144.03
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**V.35 Universal Modify and Test Set**

The Universal Modify and Test Set (UMATS) is the ultimate tool for the data communication specialist or engineer's tool bag. The UMATS can be battery or line powered and supports most current WAN communication interface standards. More than just a breakout box, a bank of level shifters allows converting between any pair of interfaces: V.35 can be converted to RS232, RS422 to RS232, or RS530 to V.35, etc. Each level shifter is also connected to a tri-state LED to allow convenient monitoring of signals levels.

UMATS	V.35 Universal Modify and Test Set	868.34
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**Inline Tester, RJ12 (6x6) M-F with Test LEDs and Contact Points**

Use with 2 or 3 pair, RJ11/12 lines. Copper contacts have an angled edge to prevent alligator clips from falling off. Wire color coded for easy identification. Three 2-color LEDs identify activity. Complete with modular jack on the end.

EC-LMTJ	Test Adapter, 3 Pair Modular	10.31
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**ENVIRONMENTAL TESTERS**

**AEMC CA811 Lightmeter (20fc, 200fc, 2kfc, 20kfc) (20lux, 200lux, 2klux, 20klux)**

The model CA811 Lightmeter is a portable, easy-to-use instrument which features optical sensors that are designed to match the response of the human eye, making them ideal instruments for workspace analysis and planning. The ergonomically designed case, large display and intuitive function selection make this instrument the right choice for any application. The Lightmeter model CA811 is designed for simple one-hand operation. It provides selectable lux or foot candle units for display and features a 3-1/2 digit backlit LCD and HOLD function. The model CA811 offers a MAX function. One 9V Alkaline battery is included. **As an authorized AEMC reseller, we can bid on RFQs for any AEMC part numbers. Contact us to request a non-obligatory quote.**

AEMC-CA811	AEMC Model CA811 Lightmeter (20fc, 200fc, 2kfc, 20kfc) (20lux, 200lux, 2klux, 20klux)	123.31
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**AEMC CA832 Sound Level Meter (35db to 80dB) (50db to 100dB) (80db to 130dB)**

The model CA832 Sound Level Meter is designed to assess sound ambiances or nuisances in accordance with international safety and quality standards. It complies with standard IEC 651. It is a portable, compact instrument with a 2000-count backlit LCD. It is designed for simple, one-hand operation and may be fitted on a tripod for long duration measurements. It features two weighting curves A and C for measurement integrating the sensitivity of the human ear according to sound frequency. Curve A is the general-purpose curve in an industrial environment and C is more suited in presence of low frequency sounds. Also, mode "F" (fast response time) corresponds to the response time of the ear. Mode "S" (slow response time) will be used to obtain a uniform reading when the sound signal level shows fluctuations. One 9V Alkaline battery is included. **As an authorized AEMC reseller, we can bid on RFQs for any AEMC part numbers. Contact us to request a non-obligatory quote.**

AEMC-CA832	AEMC Model CA832 Sound Level Meter (35db to 80dB), (50db to 100dB), (80db to 130dB)	206.20
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**AEMC CA879 Infrared Thermometer (-58°F to +1,022°F) (-50°C to +550°C)**

The model CA879 Infrared Thermometer is a non-contact temperature measuring instrument. It provides precision measurement with its laser target feature. To measure the temperature of an object, simply point the gun at the surface of the object and the temperature will appear on the digital display. The thermometer has an automatic shut-off feature. Shut-off will occur approximately 10 seconds after the trigger is released. One 9V Alkaline battery is included. **As an authorized AEMC reseller, we can bid on RFQs for any AEMC part numbers. Contact us to request a non-obligatory quote.**

AEMC-CA879	AEMC Model CA879 Infrared Thermometer (-58°F to +1,022°F) (-50°C to +550°C)	154.39
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UMATS

EC-LMTJ

AEMC-CA811

AEMC-CA832

AEMC-CA879



Item #	Description	List Price
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**AEMC CA7024 TDR Fault Mapper**

The model CA7024 Fault Mapper is a hand-held, alpha-numeric, TDR (Time Domain Reflectometer) cable length meter and fault locator, designed to measure the length of electrical and communication cables. It can indicate the distance to a fault in the cable (open or short), given access to only one end of a two or more conductor cable. By incorporating fast-edge step TDR technology, the CA7024 measures cable length and indicates the distance to open or short circuit faults to a range of 6000ft (2000m), on virtually any type of cable. The CA7024 indicates the cable length or fault distance and description alpha-numerically on a 128 x 64 graphical LCD. Includes soft carrying case, BNC pigtail cable with alligator clips, four 1.5V AA batteries and user manual. **As an authorized AEMC reseller, we can bid on RFQs for any AEMC part numbers. Contact us to request a non-obligatory quote.**

AEMC-CA7024	AEMC Model CA7024 TDR Fault Mapper	544.00
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AEMC-CA7024

AEMC-CA7027

**AEMC CA7027 Fault Mapper Pro® Telephone Cable Tester/Graphical TDR**

The model CA7027 Fault Mapper Pro® is a hand-held graphical TDR (Time Domain Reflectometer) designed for identifying and locating faults on power and communication cables, given access to one end only. The Fault Mapper Pro® measures cable length and indicates the length and distance to cable faults to a range of 9ft (3m) to 19,000ft (6000m) on virtually any type of cable. It injects a series of pulses into the cable under test. The velocity at which the pulses travel is determined by the type of cable, which is known as the Velocity of Propagation (Vp) of the cable. The Velocity of Propagation (Vp) is adjustable between 1% and 99% enabling accurate calibration to the cable under test. The Vp value is expressed as a percentage of the speed of light (e.g. 67% or ft/mtrs/micro-second), this value will vary according to the type of cable under test. The Fault Mapper Pro® can accept user selectable values between 1 and 99% (or the equivalent value in feet or meters per micro-second). Based on the selected Vp and the time taken for the pulses to travel through the cable, a reflection profile of the cable under test is displayed. An adjustable cursor assists in locating faults and termination. The Fault Mapper Pro® incorporates an oscillating tone tracer, which is detectable with a standard tone tracer, for use in the tracing and identification of cable pairs. **As an authorized AEMC reseller, we can bid on RFQs for any AEMC part numbers. Contact us to request a non-obligatory quote.**

AEMC-CA7027	AEMC Model CA7027 Fault Mapper Pro (Telephone Cable Tester/Graphical TDR)	1031.02
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AEMC-CA7028

AEMC-TR03

**AEMC CA7028 Wire Mapper Pro LAN Cable Tester**

The model CA7028 Wire Mapper Pro is a hand-held structured cable mapping and troubleshooting tester designed for use on UTP, STP, FTP and SSTP cabling equipped with RJ45 connectors and wired to either TIA568A/B (ISO 11801 and EN 50137), USOC or ISDN specifications. It detects open circuit pairs, shorts, crossed wires, crossed pairs, reversed pairs, split pairs and shield faults. The CA7028 has the ability to measure and indicate the length of the cable under test, using a Vp (Velocity of Propagation) set by the user, from a built-in library or manually. It will measure and report the length of all four pairs of wires in the cable under test. It also generates an audible tone that is transmitted into all four pairs on the cable under test. Includes soft carrying case, remote ID (#1), two patch cords, four 1.5V AA batteries and user manual. **As an authorized AEMC reseller, we can bid on RFQs for any AEMC part numbers. Contact us to request a non-obligatory quote.**

AEMC-CA7028	AEMC Model CA7028 Wire Mapper Pro LAN Cable Tester	544.00
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**AEMC Tone Receiver/Cable Tracer Model TR03**

AEMC model TR03 Tone Receiver/Cable Tracer is a small, hand-held tracer that will aid in the identification of tone carrying wires without piercing their insulation. It has a self-contained amplifier and a rugged, moisture resistant speaker. When used in conjunction with the tone transmitter function of the models CA7024, CA7026 or CA7028, wire tracing and locating is quick and efficient. One button turns the unit on and while it is depressed, activates the receiver. A volume control allows you to set the speaker loudness to a desirable level. An audio output jack facilitates the use of an optional commercially available ear piece which inhibits the model TR03's internal speaker. This provides quiet operation in office environments while allowing the operator to hear the signal clearly. **As an authorized AEMC reseller, we can bid on RFQs for any AEMC part numbers. Contact us to request a non-obligatory quote.**

AEMC-TR03	AEMC Model TR03 Tone Receiver/Cable Tracer	56.99
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AEMC-5233

AEMC-502

**AEMC 5233 5000/6000-Count Digital Multimeters**

The model 5233 is a rugged, economical TRMS digital multimeter with a function for non-electrical contact testing (NCV) for detecting live electrical circuits. This multimeter is designed for safety: IEC61010, 600V CAT IV. The multimeter model 5233 provides a Volt, Ohm, Continuity, Diode, Capacitance, Frequency, Duty Cycle and Ammeter function, as well as an AC voltmeter with low input impedance capable of finding ghost voltages by adding a burden to the circuit. It can measure up to 10 Amps directly and can measure temperature in both °C or °F using K-type thermocouples. **As an authorized AEMC reseller, we can bid on RFQs for any AEMC part numbers. Contact us to request a non-obligatory quote.**

AEMC-5233	AEMC Model 5233 Digital Multimeter (TRMS, 6000-cts, V, A, AC/DC, CAP, Ohm, T, NCV)	102.58
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AEMC-AX502

**AEMC 502 Clamp on Meter**

The model 502 Clamp-on Meter is a general-purpose professional clamp-on. A strong mechanical case design, quality materials, full ranges and compliance to international safety and quality standards ensure a professional and reliable tool. The model 502 is a true RMS clamp-on which provides RMS measurements for measuring in non-linear electrical environments. **As an authorized AEMC reseller, we can bid on RFQs for any AEMC part numbers. Contact us to request a non-obligatory quote.**

AEMC-502	AEMC Model 502 Clamp-on Meter (TRMS, 400Aac, 600V AC/DC, Ohms, Continuity)	123.31
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**AEMC AX502 DC Power Supplies/Generators**

The model AX502 offers dual 30V outputs. It provides the ability to display both voltage and current for each output. The model AX502 offers a unique master/slave tracking arrangement whereby the ratio between the master and slave can be setup on the fly as needed during the test. Adjusting the master voltage causes the slave to track. Adjusting the slave voltage causes the ratio from master to slave to change accordingly. It offers a coarse and fine voltage adjustment as well as a current limiting adjustment. It is built to provide many years of reliable, precise, easy-to-use operation and will be a welcome addition to any lab, test bench or production line. **As an authorized AEMC reseller, we can bid on RFQs for any AEMC part numbers. Contact us to request a non-obligatory quote.**

AEMC-AX502	AEMC Model AX502 DC Power Supply (Dual outputs, 0 to 2.5A; 0 to 30VDC)	859.01
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AEMC-NC1

**AEMC NC1 Non-Contact AC Voltage Detector**

The model NC1 offers a simple and safe way to detect the presence of live AC current on a line without the need to expose the wiring. For indoor use only. Includes 2 1.5V AAA batteries. **As an authorized AEMC reseller, we can bid on RFQs for any AEMC part numbers. Contact us to request a non-obligatory quote.**

AEMC-NC1	AEMC Model NC-1 Non-Contact AC Voltage Detector (100 to 240V AC 50/60Hz)	10.31
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**Triplet Outlet/GFCI Tester 110V**

The Triplet Outlet/GFCI Tester examines GFCI for proper operation. It detects faulty wiring in 120V three-wire receptacles. It detects open grounds and neutrals as well as reversed hot/ground connections. Ideal for use on 100 to 125VAC receptacles.

TP-GFCI-TSTR	Triplet Model TP-GFCI-TSTR Outlet/GFCI Tester 110V	8.24
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TP-GFCI-TSTR

Item #	Description	List Price
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FOM120 FOS420

**Advanced Fiber Solutions Fiber Optic Power Meter for Multimode and Single mode Cabling**

The FOM120 is a general-purpose power meter suitable for both premise and outside plant applications. This unit is ideal for measurement of optical power and optical loss/attenuations in a fiber optic network. The FOM120 meter is calibrated at the four most common industry standard wavelengths 850nm, 1300nm, 1310nm and 1550nm for both single mode and multimode transmitters. The 1mm Germanium detector offers a broad dynamic range of ~60dB which far exceeds the requirements of the majority of users.

FOM120	Advanced Fiber Solutions Fiber Optic Power Meter for Multimode and Single mode Cabling	440.38
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**Advanced Fiber Solutions Fiber Source for 850/1300nm Fiber Optic Cables**

The FOS420 light source is for premises and campus cabling networks with multimode fiber, or single mode fibers under 5km. The ST connector outputs can be adapted to any cable plant with hybrid adapters or hybrid cables. The FOS420 becomes a powerful low cost troubleshooting and maintenance tool when used with an Advanced Fiber Solutions FOM120 power meter.

FOS420	Advanced Fiber Solutions Fiber Source for 850/1300nm Fiber Optic Cables	616.54
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FOS430

**Advanced Fiber Solutions Fiber Source for 1310/1550nm Fiber Optic Cables**

The FOS430 laser source is designed for testing single mode fiber cabling in premise or outside plant environments where long wavelengths are used. The single output allows the user to test at both 1310nm and 1550nm without disconnecting and reconnecting the cable. When used with an Advanced Fiber Solutions FOM120 or FOM220 the FOS430 is ideal for testing insertion loss for single mode fiber optic cables and connectors.

FOS430	Advanced Fiber Solutions Fiber Source for 1310/1550nm Fiber Optic Cables	1549.12
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AF-OLK52N-Q

**Advanced Fiber Solutions Multimode/Single mode Fiber Optic Test Kit**

The AF-OLK52N-Q fiber optic test kit allows users to quickly test multimode and single mode fiber cabling. The kit features a power meter and two light sources in a convenient carry case. The power meter supports 850/1300/1310/1490/1550/1625nm light sources and features snap on ST, FC and SC connections. The single mode laser source features the same snap on 3 connector interface as the power meter, while the multimode light source uses an ST connector. The multimode LED source provides 850/1300nm signal and the single mode Laser source provides 1310/1550nm signal. The InGaAs detector in the power meter offers a broad dynamic range of ~60dB which far exceeds the requirements of the majority of users.

AF-OLK52N-Q	Advanced Fiber Solutions Multimode/Single mode Fiber Optic Test Kit	1632.02
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AF-OLK51N-SM

**Advanced Fiber Solutions Multimode or Single mode Fiber Optic Test Kits**

The AF-OLK51N-MM multimode or AF-OLK51N-SM single mode fiber optic test kits feature a fiber optic power meter and a light source to quickly and economically test either multimode or single mode fiber cabling. The power meter supports 850/1300/1310/1490/1550/1625nm light sources and features snap on ST, FC and SC connections. The single mode laser source features the same snap on 3 connector interface as the power meter, while the multimode light source uses an ST connector. The multimode LED source provides 850/1300nm signal and the single mode Laser source provides 1310/1550nm signal. The InGaAs detector in the power meter offers a broad dynamic range of ~60dB which far exceeds the requirements for most applications. Includes a convenient carrying case.

AF-OLK51N-MM	Advanced Fiber Solutions Multimode Fiber Optic Test Kit	823.78
AF-OLK51N-SM	Advanced Fiber Solutions Single mode Fiber Optic Test Kit	1445.50

**Advanced Fiber Solutions Fiber Optic Test Kit with Power Meter, Light Source and Tool Kit**

The TBX51MM features the OS420 light source for use with premises and campus cabling networks that utilize multimode fiber, or single mode fibers under 5km. The ST connector outputs can be adapted to any cable plant with hybrid adapters or hybrid cables. The OS420 becomes a powerful low cost troubleshooting and maintenance tool when used with an Advanced Fiber Solutions OM120 (included with this kit) or OM220. Tool kit includes: safety glasses, sapphire scribe, armored tubing cutters, Kevlar scissors, needle nose pliers, rotary cable stripper, fiber optic stripper, buffer tube stripper, crimp tool, tweezers, polishing puck, polishing plate, continuity tester and a 100x microscope.

TBX51MM	Advanced Fiber Solutions Fiber Optic Test Kit with Power Meter, Light Source and Tool Kit	1652.74
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TBX51MM

**Advanced Fiber Solutions Plastic Optical Fiber (POF) Test Kit**

The Advanced Fiber Solutions POF test kit is the perfect, portable solution for testing plastic and glass optical fiber cables. The FTK51POF includes the OM110 power meter, which is designed for POF (plastic optical fiber) and short wavelength applications (visible and near infrared). It optimizes a silicon detector suitable for large core fibers. It is the ideal tool for working with shorter wavelengths used with glass, plastic or multimode fibers. Additionally, the FTK51POF features the OS417-MD source which houses a 665nm LED in a modular adapter, which makes it adaptable to any connector style.

FTK51POF	Advanced Fiber Solutions Plastic Optical Fiber Test Kit	931.54
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FTK51POF

Item #	Description	List Price
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**Brady BMP21-PLUS Label Printers**

The BMP<sup>™</sup>21-PLUS is the next generation of the popular BMP21 label printer. The ruggedized construction of this device is designed to hold up in rough environments. This printer can handle labels between .25 inches and .75 inches in width. The BMP21-PLUS-KIT1 includes a rechargeable Lithium-ion battery, an AC adapter, and a hard carrying case. **As an authorized Brady reseller, we can bid on RFQs for any Brady part numbers. Contact us to request a non obligatory quote.**

BMP21-PLUS	Brady BMP21-PLUS Portable Label Printer	102.58
BMP21-PLUS-KIT1	Brady BMP21-PLUS Portable Label Printer with Battery, Case and Charger	202.06

**Brady BMP Series Label Printers**

The BMP41, BMP51 and BMP71 label printers provide solutions for a large array of labeling needs, and also for a demanding environment where large quantities of labels are needed. The BMP41 is able to print up to 1 inch labels in width, the BMP51 up to 1.5 inches in width and the BMP71 up to 2 inches. As you move up the line, the speed at which these labels print also increases, up to 1.5 inches per second with the BMP71. **As an authorized Brady reseller, we can bid on RFQs for any Brady part numbers. Contact us to request a non obligatory quote.**

BMP41	Brady BMP41 Portable Label Printer	309.82
BMP41-MAGNET	Brady BMP41 Magnetic Mount	25.91
BMP51	Brady BMP51 Portable Label Printer	445.57
BMP71	Brady BMP71 Portable Label Printer	927.40

**Brady TLS2200™ Premium Thermal Transfer Label Printers**

The TLS2200 system offers the lightweight of a hand-held printer (2.75lbs), while providing the superior capabilities of thermal transfer printing. The Brady printer features a two-line liquid crystal display and produces smear proof, ultra clear print quality and faster output than most other printers on the market. Useful for printing barcodes as well as text and numbers with crystal clear accuracy on labels up to 2" (5.1cm) wide. This means you can now print labels for wire markers, patch panels, circuit boards, cable markers and more, faster and easier than ever before. Includes a 6-month manufacturer's warranty. **As an authorized Brady reseller, we can bid on RFQs for any Brady part numbers. Contact us to request a non-obligatory quote.**

TLS2200	Brady TLS2200 Premium Brady Thermal Transfer Printer	823.78
TLS2200-BP	Brady Replacement Battery	98.44
R6210	Brady Replacement Ribbon for TLS2200	25.91

Item #	Description	Qty/Uom	List Price
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**Brady BMP21-PLUS Cable Labels**

**As an authorized Brady reseller, we can bid on RFQs for any Brady part numbers. Contact us to request a non-obligatory quote.**

M21-375-499	Brady Nylon Cloth White, 0.375"W x 16"L (1cm W x 4.9m L)	1/Roll	22.80
M21-500-499	Brady Nylon Cloth White, 0.50"W x 16"L (1.3cm W x 4.9m L)	1/Roll	23.78
M21-750-499	Brady Nylon Cloth White, 0.75"W x 16"L (1.9cm W x 4.9m L)	1/Roll	24.87
M21-375-423	Brady Permanent Polyester White, 0.375"W x 21"L (1cm W x 6.4m L)	1/Roll	19.69
M21-500-423	Brady Permanent Polyester White, 0.50"W x 21"L (1.3cm W x 6.4m L)	1/Roll	19.17
M21-750-423	Brady Permanent Polyester White, 0.75"W x 21"L (1.9cm W x 6.4m L)	1/Roll	21.76

**Brady BMP41/BMP51 Cable Labels**

**As an authorized Brady reseller, we can bid on RFQs for any Brady part numbers. Contact us to request a non-obligatory quote.**

M-51-427	Brady Self Laminating Vinyl White, 1.00"W x 2.50"H (2.5cm W x 6.4cm H)	110/Roll	41.91
M-91-427	Brady Self Laminating Vinyl White, 1.00"W x 1.50"H (2.5cm W x 3.8cm H)	180/Roll	41.18
M-141-499	Brady Nylon Cloth White, 1.00"W x 1.00"H (2.5cm W x 2.5cm H)	90/Roll	24.77

**Brady BMP71 Cable Labels**

**As an authorized Brady reseller, we can bid on RFQs for any Brady part numbers. Contact us to request a non-obligatory quote.**

M71-17-351	Brady Tamper-resistant Vinyl White, 1.00"W x 0.50"H (2.5cm W x 1.3cm H)	500/Roll	53.83
M71-30-427-AW	Brady Self Laminating Vinyl, 1.50"W x 0.750"H (3.8cm W x 1.9cm H)	250/Roll	36.79
M71-31-351	Brady Tamper-resistant Vinyl White, 1.50"W x 1.00"H (3.8cm W x 2.5cm H)	250/Roll	41.40
M71-20-351	Brady Tamper-resistant Vinyl White, 2.00"W x 1.00"H (5.1cm W x 2.5cm H)	100/Roll	33.11

**Brady TLS2200 Cable Labels**

**As an authorized Brady reseller, we can bid on RFQs for any Brady part numbers. Contact us to request a non-obligatory quote.**

PTL19427	Brady Cable Labels, 1.0"L x 1.0"W x .375"H (2.5cm L x 2.5cm W x 1cm H)	250/Roll	31.03
PTL31427	Brady Cable Labels, 1.0"L x 1.5"W x .50"H (2.5cm L x 3.8cm W x 1.3cm H)	250/Roll	49.62
PTL21427	Brady Cable Labels, 1.0"L x 2.5"W x .75"H (2.5cm L x 6.4cm W x 1.9cm H)	100/Roll	25.85

**Brady Specialty Use Labels**

These labels, designed for use in the BMP41/BMP51 printers utilize materials that are helpful in less typical situations, such as warning signs, outdoor usage, or a variety of other tasks. **As an authorized Brady reseller, we can bid on RFQs for any Brady part numbers. Contact us to request a non-obligatory quote.**

MC-500-595-OR-BK	Brady Indoor/Outdoor Labels 0.5"W x 25"L (1.3cm W x 7.6m L) Orange/Black	1/Roll	36.53
MC-500-584	Brady Reflective Tape Labels 0.5"W x 20"L (1.3cm W x 6.1m L) White/Black	1/Roll	58.87
M-125-075-342	Brady Permasleeve Heat Shrink Labels 0.235"W x 0.75"H (0.6cm W x 1.9cm H)	80/Roll	47.22

Item #	Description	Qty/Uom	1-9	10-24	25-99	100+
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**Cable Labels - Wraparound Style, 3 Sizes to Choose From**

CL0515	Cable Labels, .50"L x 1.5"W x .50"H (1.3cm L x 3.8cm W x 1.3cm H)	30/Roll	7.10	6.96	6.81	CALL
CL1150	Cable Labels, 1.0"L x 1.5"W x .50"H (2.5cm L x 3.8cm W x 1.3cm H)	30/Roll	9.48	9.29	9.10	CALL
CL1375	Cable Labels, 1.0"L x 3.75"W x 1.0"H (2.5cm L x 9.5cm W x 2.5cm H)	30/Roll	7.10	6.96	6.81	CALL

**Note:** CL Series labels are not intended for use with Brady printers.



BMP21-PLUS



BMP41



BMP51



TLS2200

CLEARER AND FASTER THERMAL TRANSFER TYPE



M21-375-499



M-51-427



M71-17-351

PTL19427



MC-500-595-OR-BK



Labels wrap around cable for easy identification.