USER MANUAL

MODEL 542/543
Video Surge Protector



PATTON Electronics Co.

ISO 9001
An ISO-9001 Certified Company

Part # 07M542/543-B
Doc. #072601U,
Rev. C
Revised 1/22/08

SALES OFFICE
(301) 975-1000
TECHNICAL SUPPORT
(301) 975-1007
http://www.patton.com

1.0 WARRANTY INFORMATION

Patton Electronics warrants all Model 542/543 components to be free from defects, and will—at our option—repair or replace the product should it fail within one year from the first date of shipment.

This warranty is limited to defects in workmanship or materials, and does not cover customer damage, abuse or unauthorized modification. If this product fails or does not perform as warranted, your sole recourse shall be repair or replacement as described above. Under no condition shall **Patton Electronics** be liable for any damages incurred by the use of this product. These damages include, but are not limited to, the following: lost profits, lost savings and incidental or consequential damages arising from the use of or inability to use this product. **Patton Electronics** specifically disclaims all other warranties, expressed or implied, and the installation or use of this product shall be deemed an acceptance of these terms by the user.

1.1 SERVICE

All warranty and nonwarranty repairs must be returned freight prepaid and insured to Patton Electronics. All returns must have a Return Materials Authorization number on the outside of the shipping container. This number may be obtained from Patton Electronics Technical Support: **(301) 975-1007**; **http://www.patton.com**; or, **support@patton.com**.

Notice: Packages received without an RMA number will not be accepted. Patton Electronics' technical staff is also available to answer any questions that might arise concerning the installation or use of your Patton Model 542/543. Technical Service hours: **8AM to 5PM EST, Monday through Friday.**

1.2 CE NOTICE

The CE symbol on your Patton Electronics equipment indicates that it is in compliance with the Electromagnetic Compatibility (EMC) directive and the Low Voltage Directive (LVD) of the Union European (EU). A Certificate of Compliance is available by contacting Technical Support.

2.0 GENERAL INFORMATION

Thank you for your purchase of this Patton Electronics product. This product has been thoroughly inspected and tested and is warranted for One Year parts and labor. If any questions arise during installation or use of the unit, contact Patton Electronics Technical Support at (301) 975-1007

2.1 FEATURES

- Connects directly to video security cameras
- Surge capacity of 400 A, 8/20μs wave form
- Protects against transients from either direction
- Provides separate connection to chassis ground
- Silicone Avalanche Diode surge protection
- One male and one female BNC-type connectors on 542
- One male and one female, or two female F-series connectors on 543
- Made in the USA

2.2 DESCRIPTION

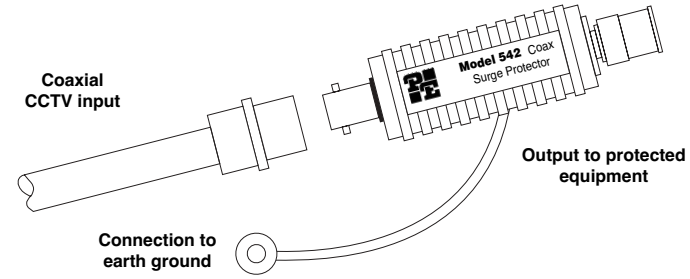
The Model 542 and 543 are primary surge protectors for CCTV and SATV/CATV security systems with coax cabling. To offer extra protection against damaging transient surges, the Model 542 and 543 utilize a "two point" approach: for each CCTV line, one Model 542 protects the building entrance/exit while a second Model 542 protects each remote camera location. The Model 543 works similarly for SATV/CATV lines. Both the Model 542 and 543, with bandwidths of 80 MHz each, clamp surge voltages at 12 volts and have response times of 0.2 μsecs. The Model 542/543 offers two circuits for surge protection, the Primary and the Secondary:

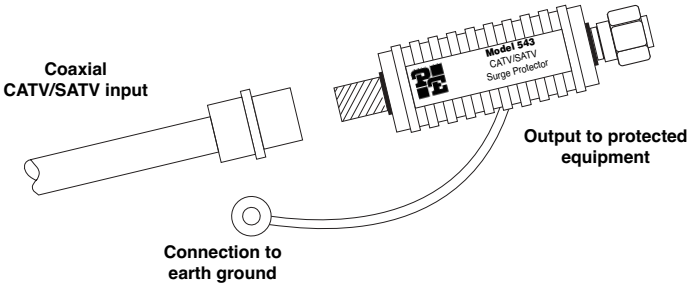
Primary: The Primary circuitry consists of the "quick response" circuitry that protects the data from normal surges that fall into the IEC 801.2, 801.4, and 801.5 categories. The protection is between the data line and the shield ground. The Primary can handle 400A with an 8/20μs wave form. Refer to Appendix A for the specifications.

Secondary: The Secondary circuitry contains powerful surge protection devices that are slower, but can handle larger currents than the faster response SAD. This protection is parallel to the primary protection and between the shield ground and the frame ground (braid connection). The Secondary can handle 20kA with an 8/20μs wave form. Refer to Appendix A for the specifications.

The Model 542 and 543 use Silicon Avalanche Diodes, which do not degrade over time with transient hits, unlike metal oxide varistors. Connecting directly to your equipment's BNC/F-Series connectors, the Model 542/543 can handle repeated surges up to 400 amps primary (8/20μs wave form). If the Model 542/543 receives a surge, *all* voltages will be sent directly to ground through a heavy duty 6" braided metal strap to protect your hardware. The Model 542 and 543 are housed in ABS plastic cases and come with one male and one female BNC/F-Series-type connectors, or two female F-Series connectors, at each end for convenient hook-up using industry standard cables.

Warning—This product will not provide complete protection should your equipment or building be subject to a direct lightning hit.





3.0 INSTALLATION

The Patton Model 542 and 543 are easy to install. The following instructions will clearly explain each step:

1. Unplug the existing connection between the coaxial cable and the CCTV equipment's BNC port for the 542, or the SATV/CATV equipment's F-Series port for the 543.

2. Install the Model 542 or 543 between the incoming coax line and the protected equipment (see below). Place the surge protector as close as possible to the device being protected.

3. Connect the braided grounding strap directly to an earth ground connection on or near the protected device. If you are not sure where to locate an earth ground connection, consult the equipment's user manual or contact the manufacturer. This ground connection is critical for proper operation of the Model 542 or 543.

APPENDIX A

PATTON MODEL 542/543 SPECIFICATIONS

Case: Molded ABS (black) plastic

Interface: Coaxial, with one male and one female BNC-type connector, for CCTV Security Systems, or one male and one female, or two female F-series connectors for SATV/CATV Security Systems.

Circuit: Solid state, bidirectional protection on BNC or F-series connectors

Primary Circuit

Response Time: 400A (8/20μs wave form)clamped to +/- 12V after 0.2μs.

Surge Capacity: 1.5KW for 1mS

Maximum Clamp Voltage: 12 Volts when subjected to 6kV/3kA test transient

Secondary Circuit

Response Time: 100μs

Surge Capacity: 20kA (8/20μs wave form)

Bandwidth (3dB) in 50/50 ohms Circuit: 80 Mhz

Series Resistance: 4.3 ohms

Capacitance: 45pf (line-line or line-ground)

Operational/Storage Temperature: -55 to +100°C (-67 to 212°F)

Grounding: External connection provides separate unit-ground to earth-ground contact

Size: 2.0” long x 1.0” diameter

APPENDIX B

INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC) COMPLIANCE

Meets IEC standards 801.2, 801.4 and 801.5 (CE Mark)

Effective January 1996 the European Economic Community will require that all electronic devices be tested and comply with all applicable International standards relating to the product type and category of use. Electromagetic Compatibility Directive 89/336/EEC specifically addresses communication line surge protection devices, since conformity to immunity standard EN50082-1:1992 is mandatory. The EN50082-1:10992 standard incorporates International Organization for Standardization (ISO) publications 801.2 and 801.4, which describe Electrostatic Discharge and Electrical Fast Transient requirements. ISO 801.5 describes Surge Immunity Requirements and is expected to be adopted as a mandatory requirement under EN50082-1 by the Technical Committee in 1996. Any protector sold into the international community must meet these standards. This device has been tested and found to comply with these standards as evidenced by its CE mark

IEC 801-5 Threat Levels as a Function of Class	
Class	**Sym. Lines Coupling Mode** Line-GND, Zs=42 Ohms
1	1.0 kV
	24 A
2	1.0 kV
	24 A
3	2.0 kV
	48 A
4	(n/a)
	(n/a)
5	4.0 Kv
	95 A
Wave Forms	(1.2 x 50 μs) (1.2 x 50 μs)

Figure B-1. IEC Threat Levels as a Function of Class.

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Dear Valued Customer,

Thank you for purchasing Patton Electronics products! We do appreciate your business. I trust that you find this user manual helpful.

We manufacture one of the widest selections of data communications products in the world including CSU/DSU's, network termination units, powered and self-powered short range modems, fiber optic modems, interface converters, baluns, electronic data switches, data-line surge protectors, multiplexers, transceivers, hubs, print servers and much more. We produce these products at our Gaithersburg, MD, USA, facility, and can custom manufacture products for your unique needs.

We would like to hear from you. Please contact us in any of the following ways to tell us how you like this product and how we can meet your product needs today and in the future.

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Phone - Support	(301) 975-1007
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We are committed to a quality product at a quality price. Patton Electronics is ISO 9001 certified. We meet and exceed the highest standards in the industry (CE, UL, etc.).

It is our business to serve you. If you are not satisfied with any aspect of this product or the service provided from Patton Electronics or its distributors, please let us know.

Thank you.

Burton A.Patton
Vice President

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