

# USER MANUAL

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## MODEL 550 Series High Speed Telco Surge Protectors



**PATTON**  
**Electronics Co.**



An ISO-9001  
Certified Company

Part# 07M550-C1  
Doc# 074070U-C  
Revised 11/13/96

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

## 1.0 WARRANTY INFORMATION

**Patton Electronics** warrants all Model 550 Series 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 non-warranty 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 Service at **(301) 975-1007**. *Packages received without an RMA number will not be accepted.*

The Patton Model 550 Series has no serviceable parts; therefore, it should not be opened by unauthorized personnel. If the Model 550 Series needs replacement, it *must* be returned to Patton Electronics.

Patton Electronics' technical staff is also available to answer any questions that might arise concerning the installation or use of your Model 550 Series. Technical Service hours: **8AM to 5PM EST, Monday through Friday.**

## 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 or problems arise during installation or use of this product, please do not hesitate to contact Patton Electronics Technical Support at (301) 975-1007.

### 2.1 FEATURES

- Meets UL 497A specification for secondary surge protection
- Withstands surges of 3.8 Kilovolts (1.2/50 $\mu$ S)
- Safely handles AC power faults of 600 Volts RMS
- Shunts surges to chassis ground via heavy duty braided metal strap
- Solid state, instant recovery circuit reduces system retries

### 2.2 DESCRIPTION

**The Patton Model 550 Series** of high speed data line surge protectors complies with UL specification 497A for secondary surge protection. Each protector in the series can handle 3.8 Kilovolts of transient voltage spikes (1.2/50 $\mu$ S), and can withstand an AC power fault of 600 volts. The Model 550 series is UL497A listed as a secondary protector; the series provides full protection against AC power crosses.

The Model 550 Series includes four models, each tailored to a different type of data circuit: The Model 550-LL2 protects 2-wire *dial-up telco* circuits. The Model 550-LL4 guards 4-wire *leased telco* lines. The Model 550-DDS protects 4-wire *DDS* circuits. The Model 550-T1 guards 4-wire *T1* lines. All models in the 550 Series employ a solid state combination of varistors, resistors and fuses to achieve the quick response time needed to handle high-speed transients, plus the "muscle" to withstand AC power faults.

Each Model 550 Series protector is equipped with a heavy duty braided metal strap to shunt harmful overvoltages safely to ground. Housed in a sturdy, flame retardant plastic case (UL94-5V flame rating), all Model 550 Series units connect in-line to data comm equipment via RJ-45 modular interface. The Patton Model 550 Series is manufactured in the USA.

*Warning—Should your equipment or building be subject to a direct lightning strike, this product **will not** provide complete protection.*

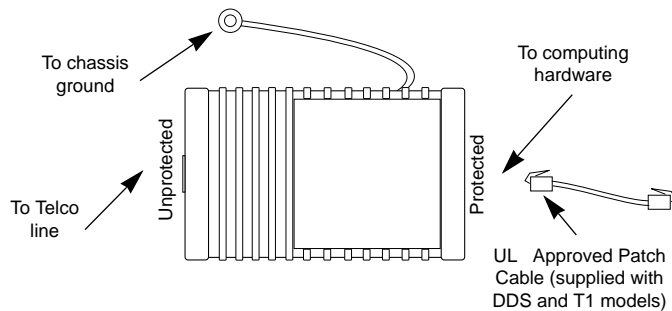
## 4.0 INSTALLATION

The Patton Model 550 Series is easy to install. The following instructions clearly explain each step.

**NOTE:** Make sure you follow the installation instructions exactly; if the suppressor is improperly installed, the current limiting feature could be rendered inoperable.

1. Connect the "protected" interface of the Model 550 to your communications equipment using a *straight through* modular cable of the shortest possible length: dial-up (LL2) and leased lines (LL4) use an RJ-11 interface, DDS and T1 use an RJ-45 interface.

2. Connect the Model 550's braided metal grounding strap securely to the nearest available *chassis ground* (see diagram below).



**NOTE:** If you have any question as to how your hardware is grounded, consult the manufacturer's user manual(s).

3. Connect the "unprotected" interface of the Model 550 to the incoming telco line.

**NOTE:** Since the Model 550 is a secondary device, it is designed for *inside use only*.

**WARNING:** *Do not* attempt to connect this surge protector during a lightning storm. Patton Electronics Company accepts no liability for damage or injury associated with the use of this product.

**NOTE:** The protected device should also have AC suppression to prevent transients from entering the system via the incoming AC power connection. These transients also can show up as failures on the communication link.

## APPENDIX A SPECIFICATIONS

**Category:** UL listed secondary protector according to UL497A

**Interface:** Dial-up, leased line, DDS or T-1, depending upon model

**Connectors:** Modular RJ-11 or RJ-45 female, input and output

**Wires Protected:** Dial-up/ 2 wires, all others/ 4 wires

**Surge Capacity:** 3.8 kV (1.2/50 $\mu$ S), 1.9 kA (8/20 $\mu$ S)

**Clamp Voltage:** Residual surge<sup>†</sup> @ 2 kV (1.2/50 $\mu$ S), 1 kA (8/20 $\mu$ S waveform [105 volts]) (see table below)

**Construction:** UL94-5V rated flame retardant plastic

**Size:** 3" x 1.7" x .8"

**Relative Humidity:** 0 to 95%, non-condensing

**Temperature:** -40 to +85°C (-40 to +185°F)

<sup>†</sup>Residual surge is a special term defined by IEEE and NEMA to replace the term "clamp voltage".

Patton Model	Unit Application	Rated Operating Voltage	Max Clamp*	RJ-11 Pins Protected	RJ-45 Pins Protected
550-LL2	Dial-Up	190	270V	3,4	4,5
550-LL4	Leased Line	75	105V	2,3,4,5	3,4,5,6
550-DDS	DDS	75	105V	–	1,2,7,8
550-T1	T1	130	225V	–	1,2,4,5

\*Maximum surge test waveform  
1.9 kA (8/20 $\mu$ S)  
3.8 kV (1.2/50 $\mu$ S)

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.

Web: <http://www.patton.com>  
Sales E-mail: [sales@patton.com](mailto:sales@patton.com)  
Support E-mail: [support@paton.com](mailto:support@paton.com)  
Phone - Sales (301) 975-1000  
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7622 Rickenbacker Drive  
Gaithersburg, MD 20879 USA

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

Please contact us and let us know how we may provide you with the answers to your needs.

Thank you.

Burton A. Patton  
Vice President

P.S. Please tell us where you purchased this product.

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