DATA HUNTER

DH-SeriaLan Dual RS232 WLAN

Dual RS232 Serial Ports "SeriaLan"

IEEE 802.11b WLAN

2.4 GHz at 11Mbps

SeriaLan (pronounced "Serial-Lan") is a Wireless LAN (WLAN) with two RS232 Serial Ports. Compatible with all 802.11b devices. A SeriaLan can transmit the RS232 data from the serial ports to/from another SeriaLan or to any 802.11b compatible WLAN, Access Point, Router, PCMCIA card, and send the data to a network, PC, Laptop, PDA or anywhere in the World.

- Interface to all RS232 Serial devices.
- Data Rates individually Programmable up to 115 kbps. and as low as 300 bps
- Serial Port options are individually set
- Full Bi-Directional - Serial Data In, and Serial Data Out.
- Local Hardware Flow Control RTS/CTS Handshake signals
- Software Flow Control (XON/XOF).
- Supports full mobility and seamless roaming from cell to cell
- Easy Set Up is quickly accomplished with the Data Hunter USB Set-Up Utility.
- Remote Set Up of the RS232 Serial port settings, remotely over-the-air via the wireless link (or via USB).
- LED Status Indicators - Installation, monitoring and diagnostics supported by valuable LED Status and Activity indicators. These status indicators help make the installation easy for technical and non-technical installers alike.
- More than an Access Point (which a WLAN device uses to interface to a wired Ethernet LAN and the Internet), a SeriaLan also can link to another SeriaLan device. SeriaLan can link in a "Peer" One-to-One link (referred to as "ad hoc"). It can link to another 802.11b wireless WLAN device or an 802.11b Access Point.
- Rugged steel case with optional mounting brackets for bulkhead mounting
- DIN Rail mounting clips available
- Power from +4.5 to +15 VDC. Power directly from vehicle power in automotive applications.

DATA HUNTER
Tel: 714.892.5461 Fax: 714.892.9768
5132 Bolsa Avenue, Unit 102, Huntington Beach CA 92649 USA
www.datahunter.com email: info@datahunter.com

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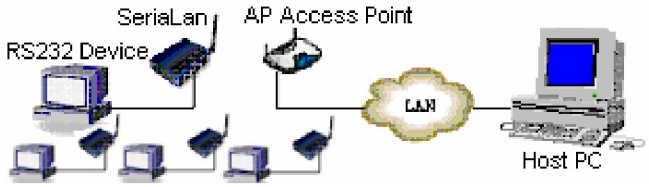
 Document DS-DHSeriaLan-200308.

Installation Versatility – Many Connection Options

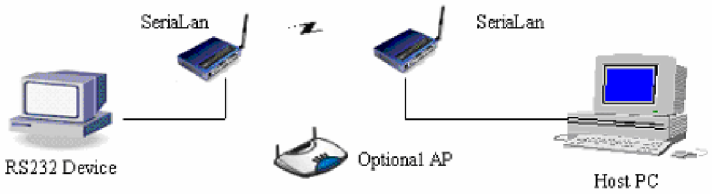
Connecting SeriaLan(s) to Access Point



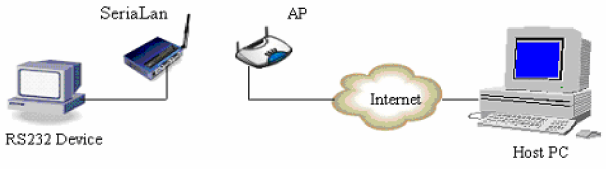
Connecting SeriaLan to PC/Laptop

Connecting SeriaLan to SeriaLan

(Also called "Peer-to-Peer", "Ad Hoc" and "cut-cable.")



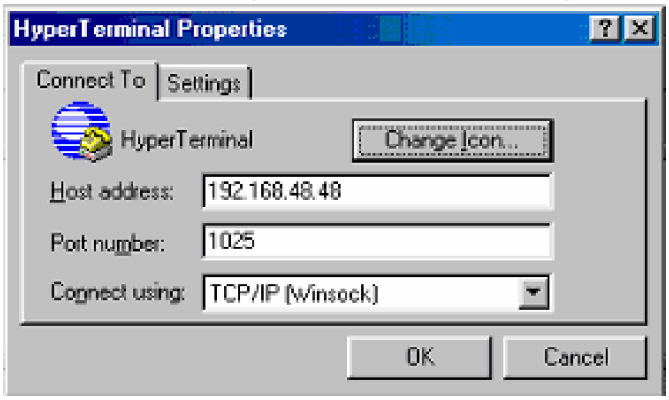
Connecting SeriaLan to Internet



"How do I get the SeriaLan RS232 serial data to/from my Application Program?"

If the Application program you want to use already has TCP/IP network support, then you already have the ability to send data/files/telemetry to/from the SeriaLan. The easiest way to illustrate this is to bring up Microsoft Windows Hyperterm. HyperTerminal is a Microsoft Windows™ program available in all versions of Windows and is usually accessible from the "Start" button using Start|| Programs|| Accessories|| Communications|| HyperTerminal|| HyperTerm.

Instead of selecting a COM port in Hyperterm, select the TCP/IP setting. The "**Host Address**" and "**Port Number**" should be the same values assigned to the SeriaLan during Set Up.



If your application supports COM ports only and not TCP/IP, then **background COM port diversion programs can be used** to divert data intended for the COM port and divert it to/from the TCP/IP network interface. These COM-to-TCP/IP programs are available at no charge as "freeware".

Advanced Programming Direct Control

"I want to set up and control the SeriaLan directly from my instrument with my own software code."

For **Advanced User Applications** - Instead of setting up the SeriaLan using the USB or Serial ports with the supplied Windows GUI Set Up Utility, Advanced User Applications can control the entire operation of the SeriaLan and all settings by coding the control sequences directly from within their own device's program. For advanced direct control applications, request **SeriaLan Configuration Interface Specification DH100665**. (Coding example is show at right.)

```
Struct wlan_cnf{
        Unsigned char WL_OM;                    // 1-bytes data for operation Mode
        Unsigned char WL_SSID_LENGTH;           // 1-byte data for bytes count of SSID
        Unsigned char WL_SSID[32];              // 32-bytes data for SSID of WLAN
        Unsigned short Channel;                 // 2-bytes data for Channel info.
        Unsigned short WepKeyID;                // 2-bytes data for Wep Key ID
        Unsigned char TxRates;                  // 1-byte data for Tx rate slection.
        Unsigned char SystemScale;              // 1-byte data for System scale density
        Unsigned char WepKey64[4][5];           // 20-bytes - 4 sets of 64 bit WEP table
        Unsigned char WepKey128[4][13];         // 52-bytes - 4 sets of 128 bit WEP table
        Unsigned char MacAddr[6];               // 6-bytes of SeriaLan's Mac addr
        Unsigned short Control;                 // 2-bytes control data for WLAN group
                                                // B15 = 1, use SeriaLan's Mac addr
                                                // B15 = 0, use PC-card's Mac addr.
                                                // B14 = 1, WepKey enabled
                                                // B14 = 0, WepKey disabled
                                                // B13 = 1 WepKey is 128 bit
                                                // B13 = 0 WepKey is 64 Bit
        Unsigned char PCMacAddr[6];             // 6-bytes PC-Card's Mac addr.
        Unsigned char reserved[x]               // x = (160-above)bytes of data are
                                                //reserved
};
```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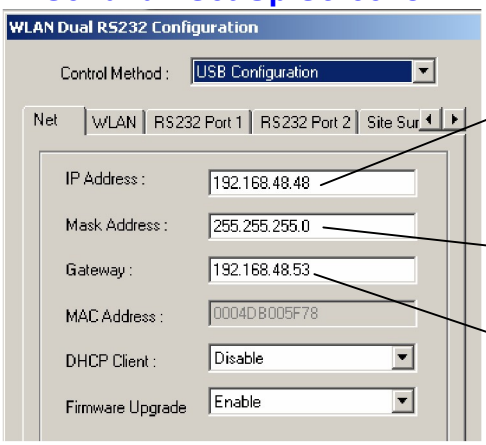
Easy Set Up Utility Software - "Set Up is all about matching the numbers."

Easy to set up using the built-in USB port. Just Plug the USB cable into your PC or laptop, load the Set Up Utility from the CD and match the settings on your WLAN network or target wireless device. Settings are retained forever. (Also either RS232 port can be used for Set Up, and all interrogation and settings can be controlled from your own software, if required.) Below are SeriaLan Set Up Screens showing how easy it can be to match settings to those of a typical WLAN Access Point.

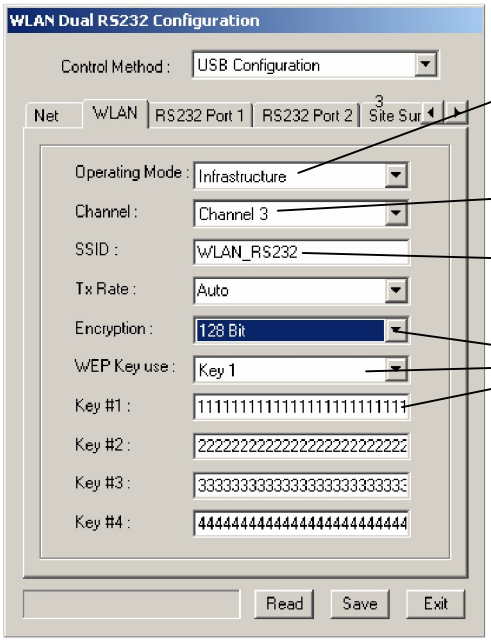
SeriaLan Set Up Screens



The first series of **IP Address settings** are matched to make sure the SeriaLan is within the same **Subnet**. The last number set after the last dot is chosen to define a unique address.

Set the last **Subnet Mask** character to "0" to allow maximum subnet options.

Match the network **Gateway** settings.



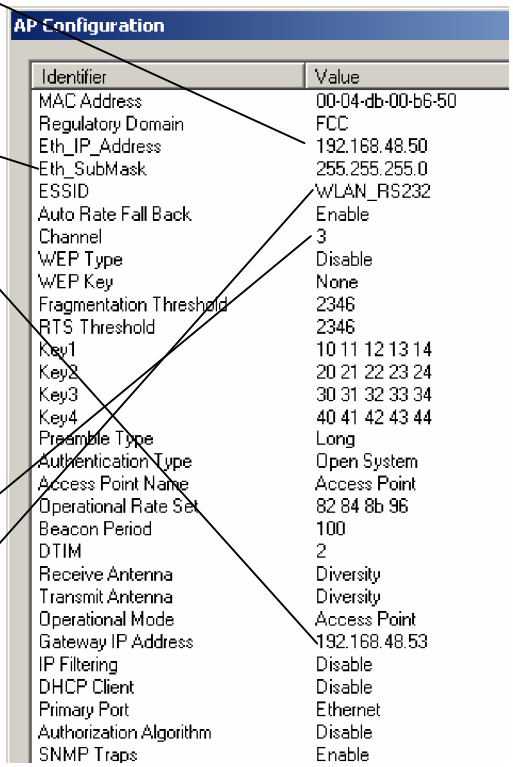
"**Infrastructure**" mode for network installations, "**Ad Hoc**" mode for peer-to-peer installations.

Match the Channel number.

Match the SSID characters

Match the WEP encryption security keys, if used.
Once you have the radio linkage working, then activate the WEP security settings to keep out unauthorized activity.

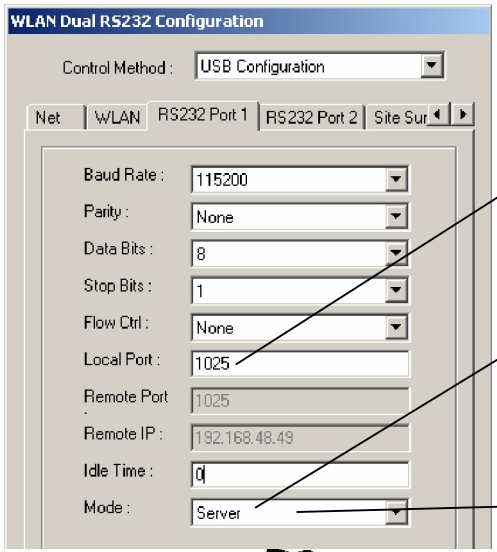
Typical Access Point Set Up Screen



RS232 Serial Ports Set Up

showing "**Infrastructure**" (network) and "**Ad Hoc**" (peer-to-peer) modes.

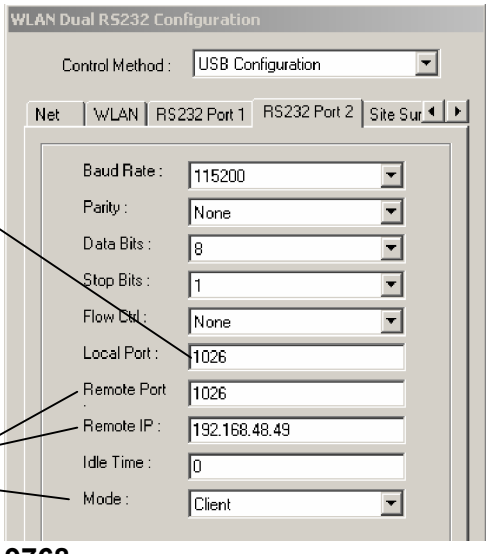
RS232 ports settings can be set up from the USB port, from either RS232 port, or set remotely over the wireless WLAN link.



The "Local Port" value is the IP Address equivalent of the "COM Port" number.

For **Infrastructure** (network) mode, the RS232 ports are set to "**Server**" mode (default).

For "**Ad Hoc**" (peer-to-peer) mode, one of the SeriaLan must be set to "**Client**" mode and one to "**Server**" mode.



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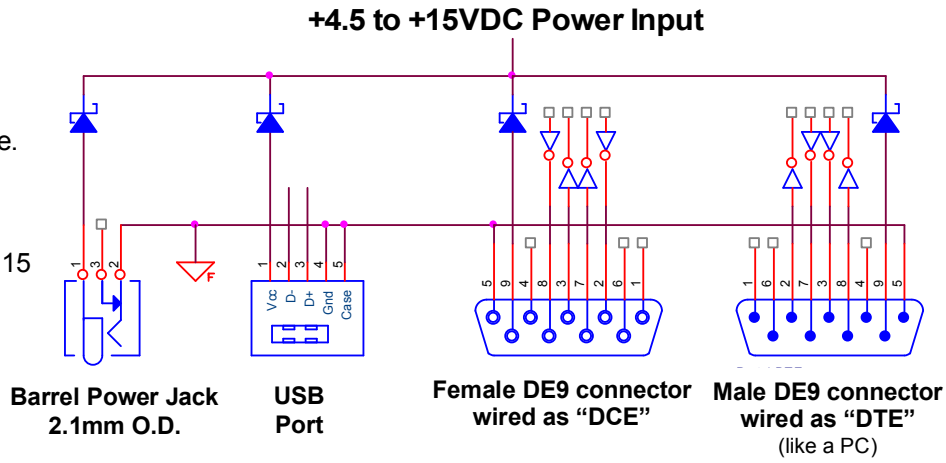
Options for Powering the SeriaLan

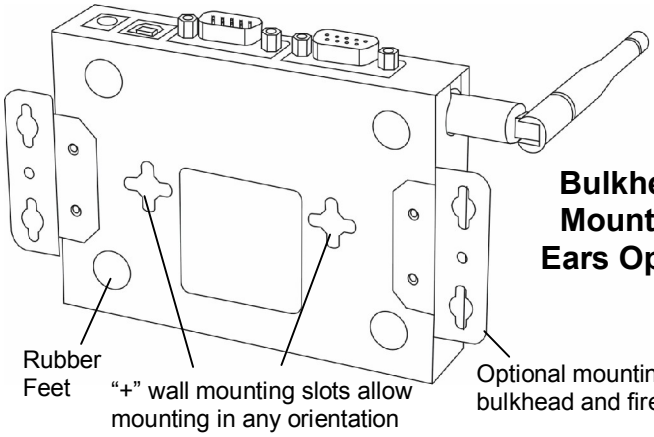
The SeriaLan has several versatile power source options.

1 The AC power supply is able to run from 100 to 240VAC and supplies +5VDC power to the SeriaLan barrel jack.
2 The barrel jack can accept power from any source supplying +4.5 to +15 VDC.
3 Both the Male and Female RS232 serial ports can accept +4.5 to +15 VDC power on pin 9 (“Power-on-9”). This allows installations where the Host Device can supply all power to the SeriaLan through the serial cable.
4 **Automotive/Truck/Bus** can power the SeriaLan directly from the automotive power source since the SeriaLan can accept voltage up to +15 VDC.
5. The USB port can also supply power to the SeriaLan.

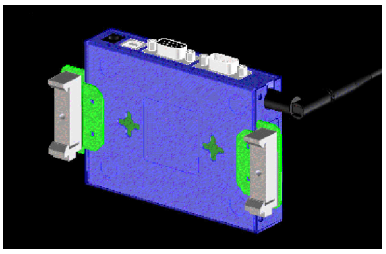


Options for Permanently Mounting the SeriaLan

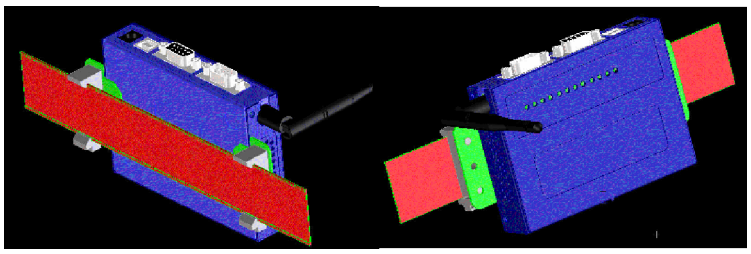
In addition to the rubber feet, the SeriaLan has several permanent mounting options, including “+” slots built into the bottom of the case, and optional bulkhead mounting ears for mounting onto panels, bulkheads or firewalls.



Bulkhead Mounting Ears Option



DIN Rail Mounting Clip Option



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Specifications
SeriaLan – Dual RS232 WLAN

RS232 Features

Baud Rate Options
115000, 57000, 38400, 19200, 9600, 4800, 2400, 1200, 600, 300bps.

Bits Options: 7, 8 (default) Bits

Parity Options: Odd, Even, None (default)

Stop Bits Options: 1 (default), 2 Stop Bits

Handshake Flow Control
RTS/CTS (Primary Hardware flow control)
DSR/DTR (NOT SUPPORTED)
XON/XOF (Software flow control)
Uses XON=11hex, XOF=13hex

Handshake Signal Customization
Local Handshake control (default)
Remote Handshake toggling (optional)
(Remote handshake may be used by some printers to control Activity or Ready status or paper availability.)

RS232 Connection
Wired as **DTE** (Data Terminal Equipment) (like a PC).
9-pin Male DE9 connectors

Serial USART Buffer:
tbd bytes input, tbd bytes output

LAN Radio Features

Protocol Type: 802.11b standard Compliant

Operating Range:
Open Environment: 1000 ft./300m
Office environment: 100-330 ft./30-100m

Security: WEP (wired Equivalent Privacy)
64 and 128 bit encryption

Site Survey Utility: Allows users to Sniff and browse available active Access Points to which SeriaLan Users can connect.

Radio Characteristics:

Spread Spectrum Technology: DSSS (Direct Sequence Spread Spectrum)

RF Range: 2.4 ~ 2.4835 GHz

Data Rate: 11 / 5.5 / 2 / 1 Mbps

Modulation: DBPSK for 1 Mbps,
DQPSK for 2 Mbps,
CCK for 5.5 / 11 Mbps

Operation channels: 11 North America, 13 Europe, 4 France, 2 Spain

RF Power Output: +15 dBm

Receive Sensitivity: -81dBm minimum (11 Mbps @BER 10E-5

Power

Power Supply: 5 VDC Regulated

Absolute Voltage Power Source Range
VDC 4.0 VDC to +15VDC (Supports direct automotive +12VDC Power bus). Power input via barrel power jack or pin-9 (“Power-on-9”) via either Serial port DE9 connector.

Current: Typ.: tbd mA, Max.: tbd mA.

Software

No Drivers Needed. License-free Wireless LAN OS Operating System software is built-into the SeriaLan.
Set Up and Diagnostic software runs on XP/2000/NT/Me/98/95Linux

Mechanical:

Antenna Connector: RP-SMA

Dimensions: 4.45 x 3.25 x 0.91 inches
113 x 82 x 23 mm (excluding connectors and feet)

Weight: 11.2 oz. / 316 g

Optional Flange Ears for Panel/Bulkhead mounting.

DIN rail mounting clips

Environmental:

Temperature: Operating 0 to+55C/ 32 to 133F
Storage: -20 to +65C,-4 to +150F

Relative Humidity: 95% (non-condensing)

EMC Certifications

U.S.A., Canada FCC Part 15, Sections 15.247, 15.205, 15.209, RSS210

Europe ETS 300 328, ETS 300 826, CE Mark

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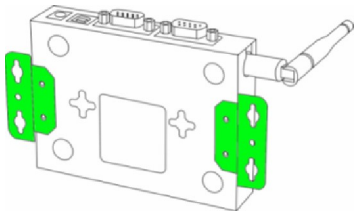
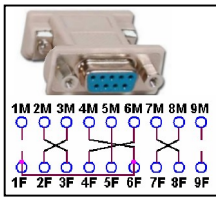
Ordering Information – SeriaLan and Accessories

SeriaLan (pronounced "Serial-LAN")

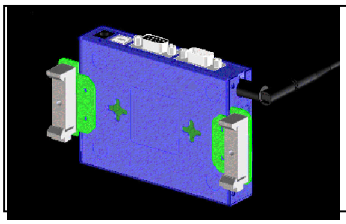
Order Name: "SeriaLan"
Order Number: 100664-000 (for USA flat spade plug)
Order Number: 100664-001 (for Euro round pin AC plug)
Price: Consult Web Price List, Data Hunter or DH Distributor
Includes: **SeriaLan Dual Port RS232 WLAN**
CD disk with Control and Setup Software, Diagnostic software
Power supply, +5VDC regulated (100 to 240 VAC input range)
choice of **USA spade plug** or Euro round pin AC plug
Articulated Rubber Duck Antenna with RP-SMA connector
USB-MM cable for USB set up software
User Manual on disk, Quick Start sheet



Bulkhead Mounting Ears
Order Name: "Mounting Ears -SeriaLan"
Order Number: 100366-000
Price: $4.50 USD
Includes: 2 Bulkhead Mounting Ears with 4 screws to attach brackets to SeriaLan



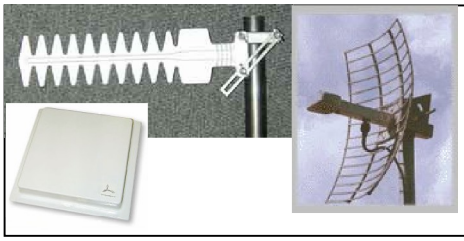
NULL Adapter
Order Name: "Null DE9MF"
Order Number: 100367-000
Price: $2.50 USD
Includes: 1 Null Adapter DE9-MF "Triple Cross" 2&3, 4&6, 7&8



DIN Rail Mounting Clips (Bulkhead Mounting Ears also required)
Description: "DIN Rail Clips - SeriaLan"
Order Number: 100367-000
Price: $5.00 USD
Includes: 2 Plastic DIN Rail Clips

Gender Bender Female-to-Female
Order Name: "Gender-DE9FF
Order Number: 100365-000
Price: $2.50 USD
Includes: 1 F-F Gender Bender

Gender Bender- Male-to-Male,
Order Name: "Gender-DE9MM
Order Number: 100359-000
Price: $2.50 USD
Includes: 1 M-M Gender Bender



Antennas – Long Range
Order Name: call or email
Order Number: call or email
Price: starting at $69 USD
Includes: Antenna with N Female connector

RS232 Cables – DE9 Male-Female
Order Name: "DE9 Cable- XX"
(where xx = length feet)
Order Number: 100647-006 (6 foot)
Price: $4.50 USD (6 foot)
Order Number: 100647-010 (10 foot)
Price: $6.00 USD (10 foot)
Order Number: 100647-025 (25 foot)
Price: $8.00 USD (25 foot)
Order Number: 100647-050 (50 foot)
Price: $10.00 USD (50 foot)
Includes: Cable – Molded, DE9-Male to DE9-Female, XX Length

Antenna Entension Cable
Order Name: call or email
Order Number: call/email
Price: $ call/email
Includes: Coax cable w/"N" or RP-SMA (or other)

Lightning Arrester
Order Name: Arrest-NN
Order Number: tbd
Price: $39 USD
Includes: Lightning Arrester with 2 N Female connectors

High Power Amplifier
Order Name: call or email
Order Number: call/email
Price: $ call/email
Includes: tbd

"All Prices subject to change without notice."

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