



### ■ Who is HyperLink®?

Since 1994, HyperLink Technologies of Boca Raton, Florida, has offered a wide line of wireless products, ranging from bi-directional amplifiers to wireless LAN antenna systems. HyperLink serves a diverse commercial and government customer base worldwide and offers complete, high performance wireless LAN solutions for commercial, government, and military applications. For more detailed information please visit [www.hyperlinktech.com](http://www.hyperlinktech.com).

### ■ Wireless Infrastructure

The term "Wireless" has become the new all encompassing buzzword to describe what was once known as "radio". Today this term also includes many of the modern data communications technologies all of which utilize a radio for signal transmission. In fact there are many wires in a typical wireless system but somewhere along the transmission path the signal is transmitted from one antenna to another wirelessly.

### Wireless Infrastructure Terms

**802.11:** 802.11 and 802.11x refers to a family of specifications developed by the IEEE for wireless LAN technology. Popular standards include 802.11a, 802.11b, 802.11g and 802.11n.

**Antenna:** That part of a radio communications system intended to radiate and/or collect radio frequency energy.

**Antenna Gain:** A relative measure of an antennas ability to direct or concentrate radio frequency energy in a particular direction or pattern. Typically measured in dBi.

**AP:** An Access Point is a base station in a wireless LAN, which is typically a wireless Ethernet (Wi-Fi) LAN. Access Points are generally stand-alone devices that plug into an Ethernet switch or hub. A wireless Client Adapter is normally used on the client side to connect to the network via the AP.

**Bandwidth:** The width of the operating or transmission channel of a system. The difference expressed in Hertz (between the highest and lowest frequencies of a band).

**Cellular:** A wireless communications network architecture that employs "cells" or modular coverage areas, typically serviced by a "cell site", and usually provides hand-off capability between cells for roaming devices.

**Directional Antenna:** An antenna that sends or receives signals most effectively in a particular direction.

**Hot Spot:** A hot spot is another name for a Wi-Fi access point or an area where there is an open wireless network. Typically, a hot spot has free wireless Internet access but it also applies to areas with paid access, such as coffee shops or airports.

**LAN:** A Local Area Network is a computer network (or data communications network), which is confined in a limited geographical area.

**Lightning Arrester:** A device whose purpose is to eliminate transients on a conductor, which are induced by nearby lightning activity. Also called a Surge Protector.

**Omni-Directional Antenna:** An antenna, which radiates RF energy in a 360-degree pattern about an axis.

**PoE:** Power over Ethernet is a technology for wired Ethernet LANs that allows the electrical current, necessary for the operation of each device, to be carried by the data cables rather than by power cords. This minimizes the number of wires that must be strung in order to install the network.

**Propagation:** The travel of a signal through a medium such as air or free space.

**Splitter/Combiner:** Transmission component which divides or sums power between two or more ports.

**Transceiver:** A combination radio transmitter and receiver.

**VSWR:** Voltage Standing Wave Ratio is a measure of impedance mismatch between the transmission line and its load.

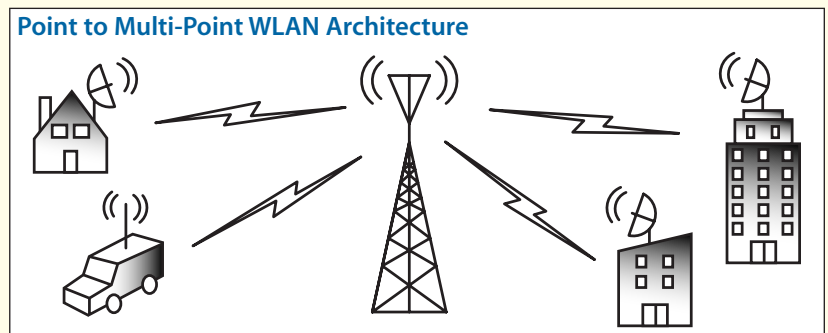
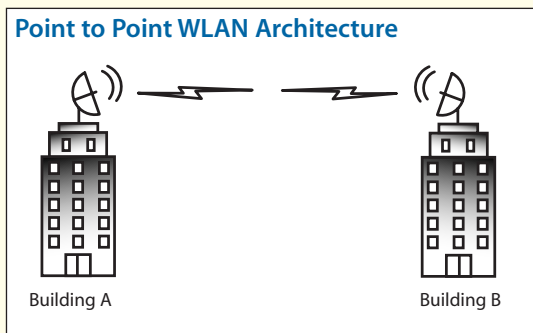
**WAN:** A Wide Area Network or large network formed by bridging smaller LANs or using leased lines like DSL or T1. WANs can span the globe.

**Wireless Ethernet:** A misnomer in actuality since Ethernet is a wired system by definition. It is the standard for wireless networking within a home or office. Also known as a Wi-Fi or 802.11x network, wireless Ethernet is the wireless counterpart to regular, wired Ethernet.

**WLAN:** A Wireless Local Area Network is a short-range computer-to-computer wireless data communications network.

**WISP:** A Wireless Internet Service Provider offers fixed or mobile wireless services to its customers. WISPs provide last mile access to cities, rural areas and small villages as well as industrial parks at the edge of town.

**Yagi Antenna:** A directional antenna named for one of its inventors, which consists of a boom supporting a series of elements, which are typically metal rods or stampings. Often called a beam or directional antenna.



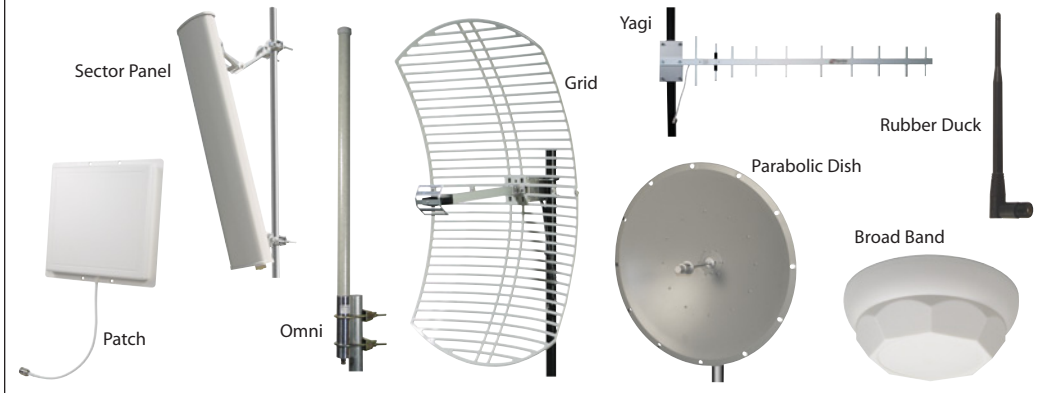
Item #	Description	List Price
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**Popular Wireless Antennas**

Perfect cost-effective solutions for today's demanding wireless applications, HyperGain® wireless antennas offer a unique combination of superior all-weather performance, durability and aesthetics.

**Common Antenna Types**

HyperLink's high performance Wireless LAN Antennas include a wide selection of directional parabolic antennas, reflector grid antennas, patch antennas, rubber duck antennas, radome enclosed yagi antennas, panel antennas, omnidirectional antennas, sectorial antennas, and other wireless Wi-Fi antennas.



**Directional Yagi Antennas - Heavy-duty Construction**

HyperGain® Yagi antennas are designed for long-range operation and can be configured for either vertical or horizontal polarization. They feature heavy-duty construction, perfect for sustained outdoor installation.

Features include:

- Used for long-range 2.4GHz and 900MHz wireless access
- Lightweight construction makes these antennas easier to install
- Heavy-duty mounting bracket guarantees stability
- DC Short lightning protection protects your investment

<a href="#">HG2415Y-NF</a>	2.4 GHz, 15 dBi Yagi Wireless LAN Directional Antenna with Type N Female	44.99
<a href="#">HG913Y-NF</a>	900MHz, 13 dBi Yagi Wireless LAN Directional Antenna with Type N Female	45.99

**Omnidirectional Antennas - Lightweight Fiberglass Radome**

These antennas feature rugged fiberglass construction. They are ideally suited for multi-point applications where very wide coverage is desired.

Features include:

- Designed for multi-point wireless applications requiring wide coverage
- Rugged industrial grade design means these antennas can stand the test of time
- Lightweight fiberglass radome makes these antennas easy to install
- Integral N-Female connector provides fast and simple cable connection

<a href="#">HG2415U-PRO</a>	2.4 GHz, 15 dBi Professional High Performance Omni Wireless LAN Antenna	129.95
<a href="#">HGV-906U</a>	800/900MHz, 6 dBi High Performance Omni Wireless LAN Antenna	54.99
<a href="#">HG5812U-PRO</a>	5.8 GHz, 12 dBi Professional High Performance Omni Wireless LAN Antenna	89.99

**Directional Patch Antennas - Install for Either Vertical or Horizontal Polarization**

These antennas feature aesthetic UV-stable, UL flame rated, white polymer radomes suitable for indoor and outdoor applications. HyperGain® wireless patch antennas are designed for multiple mounting configurations.

Features include:

- Used to provide wireless signals to 2.4/5.8GHz and 900MHz equipment
- Durable UV-stable white ABS radome makes these antennas suitable for indoor or outdoor
- DC Ground lightning protection protects your investment
- Lightweight compact design guarantees ease of installation

<a href="#">HG2414P-NF</a>	2.4 GHz, 14 dBi Flat Patch Wireless LAN Antenna with Type N Female	32.99
<a href="#">HG908P-NF</a>	900 MHz, 8 dBi Flat Patch Wireless LAN Antenna with Type N Female	49.99
<a href="#">HG5819P</a>	5.8 GHz, 19 dBi Flat Patch Wireless LAN Antenna with integral Type N Female	49.99

**Directional Grid Antennas - Provide Superior Gain Performance**

The HyperGain® High-Performance Reflector Grid Wi-Fi Antennas provide superior gain performance with focused beam-width for long-range highly directional applications. They also include point-to-point systems, point to multi-point and wireless bridges. They can be installed for either vertical or horizontal polarization.

Features include:

- Used for long range highly directional wireless connectivity
- Easy assembly allows quick setup
- Die cast aluminum construction ensures long life
- All weather operation provides location flexibility

<a href="#">HG2424G-NF</a>	2.4 GHz, 24 dBi Parabolic Grid Wireless LAN Antenna with Type N Female	54.99
<a href="#">HG915G-NF</a>	900 MHz, 15 dBi Parabolic Grid Wireless LAN Antenna with Type N Female	70.99
<a href="#">HG5827G</a>	5.8 GHz, 27 dBi Parabolic Grid Wireless LAN Antenna with integral Type N Female	53.99

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### ✓ Rubber Duck Antennas - With Tilt and Swivel Design

These high performance omnidirectional Rubber-Duck WiFi antennas provide broad coverage. They use a coaxial sleeve design with an omni-directional pattern. They are ideally suited for IEEE 802.11a, 802.11b, 802.11g and 802.11n wireless LANs, Bluetooth® and other Wireless LAN applications. Tilt and swivel models can be used vertically, at a right angle, or any angle in-between.

Features include:

- Used to provide WiFi wireless broad coverage
- Many styles to choose from provide design flexibility
- Flexible Rubber Duck design ensures durability
- Tilt and swivel design lets you use these antennas vertically and at virtually any angle

<a href="#">HG2405RD-RSP</a>	2.4 GHz, 5.5 dBi Reverse Polarity SMA Wireless LAN Antenna	9.99
<a href="#">HG903RD-RSP</a>	900 MHz, 3 dBi Reverse Polarity SMA Wireless LAN Antenna	10.99
<a href="#">HG2458RD-RSP</a>	2.4/5.8 GHz, 3 dBi Reverse Polarity SMA Wireless LAN Antenna	12.99

### ✓ Range Extender Antennas - For Indoor and Outdoor Applications

The HyperGain® Range Extenders are versatile high performance omnidirectional WiFi antennas that deliver an impressive gain for optimum range and coverage. These omnidirectional antennas are an ideal choice for connecting handhelds and notebooks to public Hot Spots or home wireless routers.

Features include:

- Used to connect handhelds and notebooks to public Hot Spots or home wireless routers
- Compact design saves valuable space
- Magnetic base with 4-foot coax cable provides location flexibility
- Indoor or outdoor applications give these antennas flexibility of application

<a href="#">RE05U-RSP</a>	2.4 GHz, 5 dBi Omni Range Extender Wireless LAN Antenna with Reverse Polarity	8.99
<a href="#">RE07U-RSP</a>	2.4 GHz, 7 dBi Omni Range Extender Wireless LAN Antenna with Reverse Polarity	11.99

### ✓ Coaxial Lightning and Surge Protectors - With Bi-directional Protection

HyperLink Coaxial Lightning and Surge Protectors are available in a wide selection of styles. Gas discharge tube protectors are available for 0-6 GHz and 0-3 GHz operation and feature easily replaced gas tube elements, multi-strike capability and bi-directional protection.

Features include:

- Used to protect valuable wireless equipment from lightning strikes
- Removable gas tube element is easy to replace
- Bi-directional protection guarantees equipment is protected on both sides
- High quality construction ensures durability

<a href="#">AL6-NFNFB-9</a>	Type N Female to Type N Female Bulkhead 0-6 GHz Lightning Surge Protector	29.99
<a href="#">AL-NMNF-9</a>	Type N Male to Type N Female Bulkhead 0-3 GHz Lightning Surge Protector	18.99
<a href="#">AL-RTPRTJB-9</a>	Reverse Polarity TNC Plug to Reverse Polarity TNC Jack Bulkhead 0-3 GHz	23.99

### ✓ Data Line Lightning and Surge Protectors - Protect Ethernet Systems

HyperLink's Data Line Lightning and Surge Protectors are designed to protect CAT5 10/100 Base-T Ethernet systems (a CAT6 10/100/1000 Base-T protector is also available). Indoor and outdoor versions available as well as compact weather resistant models and high-power industrial grade 3-stage protectors. Many of these models are also Power over Ethernet (PoE) compatible.

Features include:

- Used to protect valuable datacomm products
- Metal housing suppresses EMI
- Industrial grade construction ensures long product life
- Cisco® Reverse Polarity PoE compatible ensures design flexibility

<a href="#">HGLN-CAT5-2</a>	Shielded CAT5 Lightning Protector	37.99
<a href="#">HGLN-CAT5-HP</a>	High Power CAT5 Lightning Protector	59.99

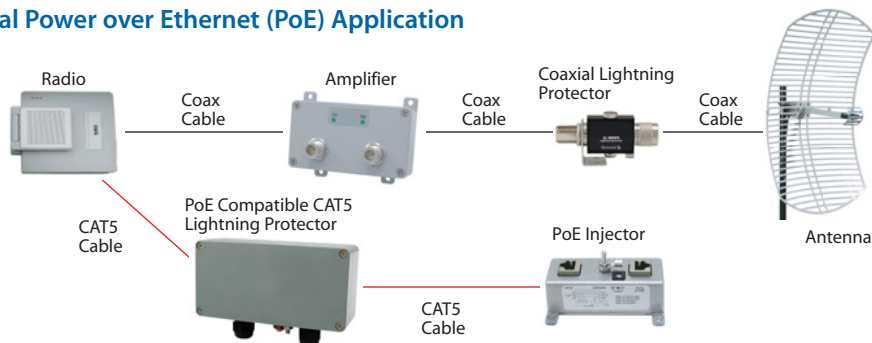
### ✓ Weatherproof Data Line Lightning and Surge Protectors

Features include:

- Used to protect datacomm equipment in outdoor environments
- Gasketed cover and concealed mounting holes keep the elements out
- Power over Ethernet (PoE) compatible
- Removable terminal strips and modular RJ45 jacks provide design flexibility

<a href="#">AL-CAT5W</a>	Weatherproof 10/100 Base-T CAT5 Lightning Protector	44.99
<a href="#">AL-CAT6W</a>	Weatherproof 10/100/1000 Base-T Giga Ethernet CAT Lightning Protector	79.99

### Typical Power over Ethernet (PoE) Application



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Shop at [L-com.com](http://L-com.com) or call **1-800-343-1455**  
E-mail: [sales@L-com.com](mailto:sales@L-com.com) Fax: 978-689-9484

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**NEMA Weatherproof Enclosures for Remote Wi-Fi® Wireless LAN Equipment**

HyperLink Weatherproof Enclosures are ideal for remote Wireless LAN WiFi equipment installations, indoor and outdoor, hot and cold temperature environments, solar powered applications, corrosive environments, sub-zero installations, hotspot applications and protection of equipment from theft or damage. These weatherproof enclosures are available with a wide range of options including heat, cooling, and Power over Ethernet interfaces. Additional applications for these enclosures include test equipment, remote controls, medical devices, scientific instruments, alarm and security systems, inventory control systems, city networks, industrial, lighting controls, SCADA systems, telemetry systems and more.

**Weatherproof Enclosure With 120 VAC Power Module is Ideal for Wireless Access Points**

Features include:

- Used for securing Wireless Access Points and other communications equipment
- Weatherproof ABS enclosure makes them ideal for indoor or outdoor use
- Fully gasketed lockable raised lid guarantees protection from the elements
- NEMA Type 3R / IP42 rated complies with rugged design specs

NBP141004-100	120 VAC NEMA Rated Weatherproof Enclosure with 120 VAC Power Module	39.99
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**Weatherproof Enclosures Allow for Fully Customizable Configurations**

Features include:

- Used for securing Wireless LAN equipment from Cisco®, Symbol®, D-Link®, HyperLink and more
- Fully gasketed raised lid provides protection from the elements
- Molded fiberglass reinforced polyester construction provides durability
- Optional universal equipment shelf and mounting brackets are available allowing you to use these enclosures virtually anywhere
- Fully customized configurations are available to meet your specific application requirements

NB141207-01	Pre-Drilled Fiberglass Weatherproof Enclosure and Mounting Plate	129.99
NB141207-1HF	120 VAC Enclosure, Mounting Plate, Thermostat Controlled Heater and Cooling Fan	249.99
NB141207-400	Weatherproof Enclosure with Mounting Plate and CAT5 PoE interface	159.99



NBP141004-100 (open)



NBP141004-100 (closed)



NB141207-01 (open)



NB141207-01 (closed)



NB141207-1HF (open)



NB141207-1HF (closed)



NB141207-400 (open)



NB141207-400 (closed)

**Enclosure Options and Features**



Enclosure shown secured to pole

- Thermostat-controlled heating or cooling
- NEMA (National Electrical Manufacturers Association) rated
- Sub-zero application models available
- RoHS Compliant

Aluminum mounting plate

Weatherproof ABS or fiberglass construction

AC Power Outlets

Rubber cable glands



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