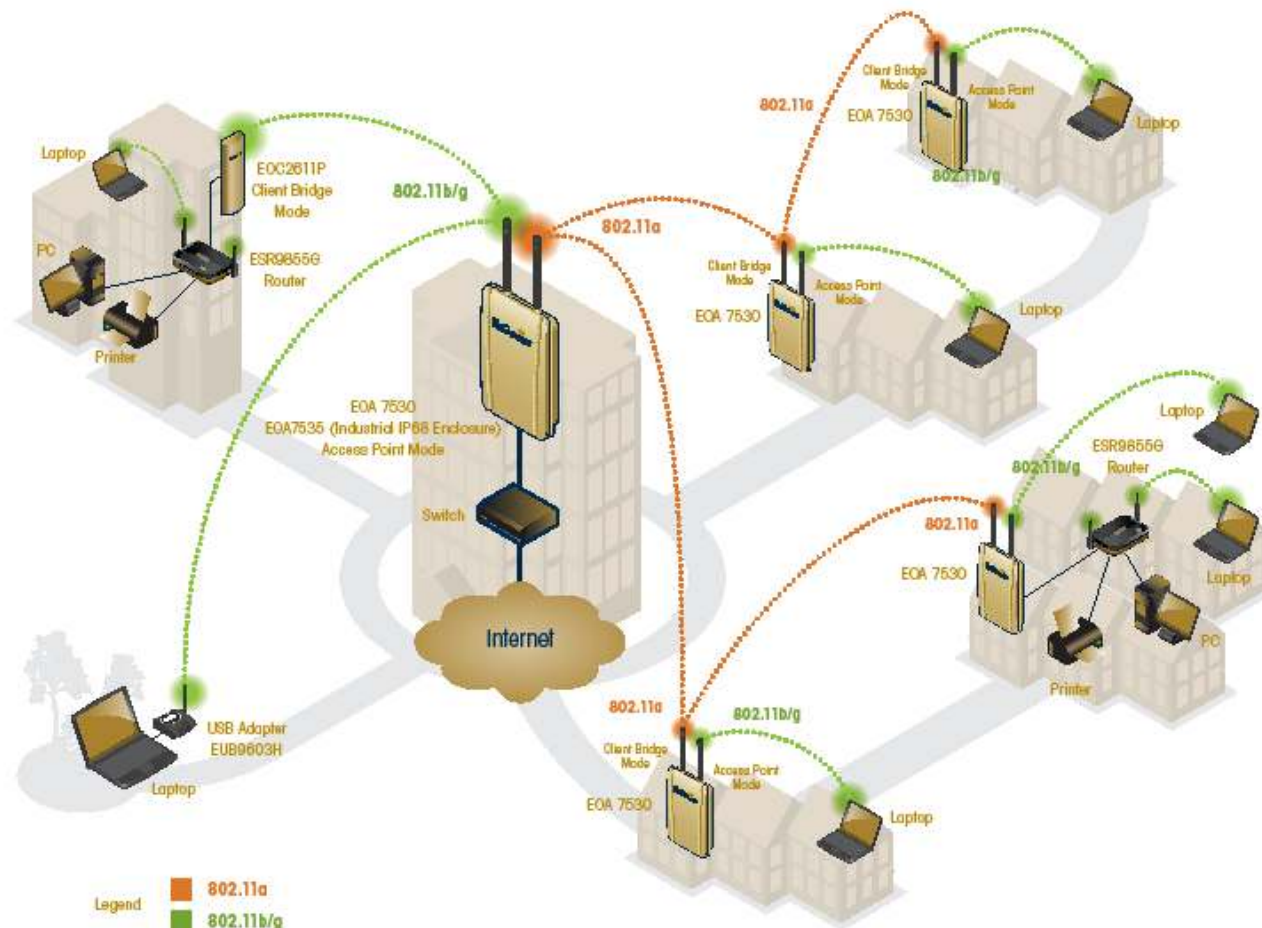


Designing and Planning EnGenius Wi-Fi Networks



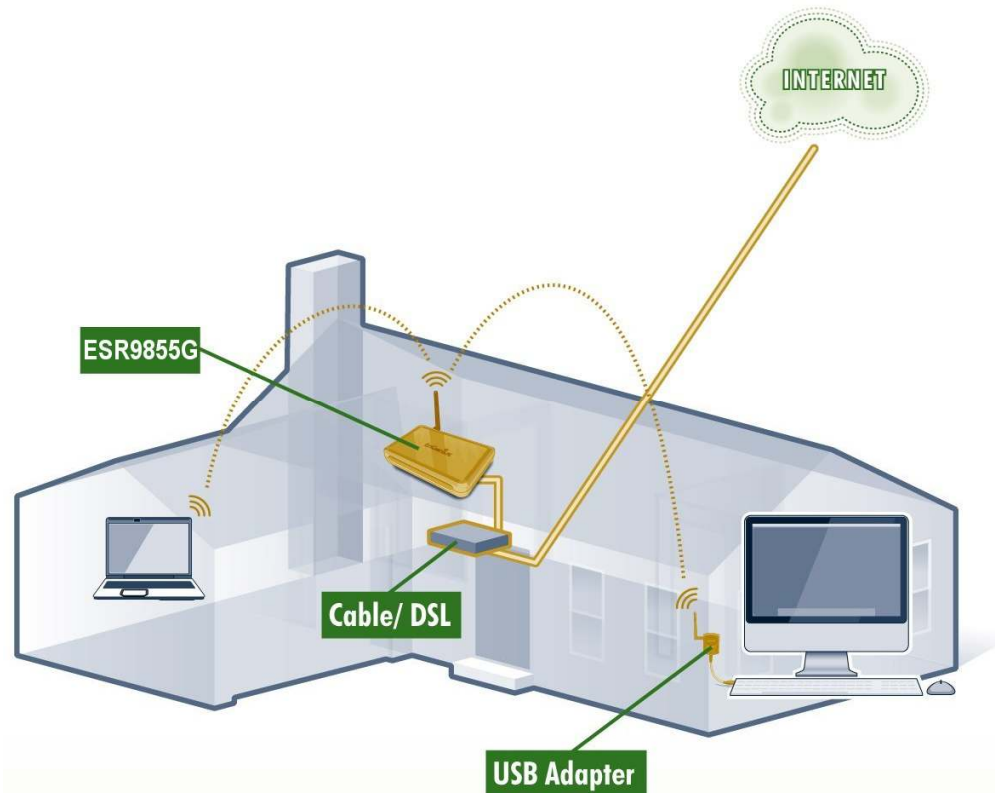
THE LEADER IN
Long Range Data Communications Systems

EnGenius™

Basic Terminology

Access Point (AP)

Allows wireless client devices such as laptops to connect to a network using Wi-Fi technology.



Basic Terminology

Client Bridge (CB)

A device that connects an Ethernet device or network to a wireless access point.

Drivers are not required because they are stand alone devices.



THE LEADER IN

Long Range Data Communications Systems

EnGenius™

Basic Terminology

- **Infrastructure (point-to-multipoint) Mode**
The infrastructure mode requires the use of an access point (AP). In this mode, all wireless communications between clients are through the AP no matter the location of the AP.
- **Ad-Hoc (point-to-point) Mode**
In ad-hoc mode, each client, is peer-to-peer, and requires no access point.
- **WDS**
Wireless Distribution System, commonly used to provide wireless AP-to-AP connectivity. EnGenius devices have a WDS Bridge mode which is an ad-hoc mode recommended for dedicated point-to-point links.

Basic Terminology

- **Site Survey**

A site visit to run tests to determine the presence of RF interference and identify optimum installation locations for access points preferably with a spectrum analyzer.

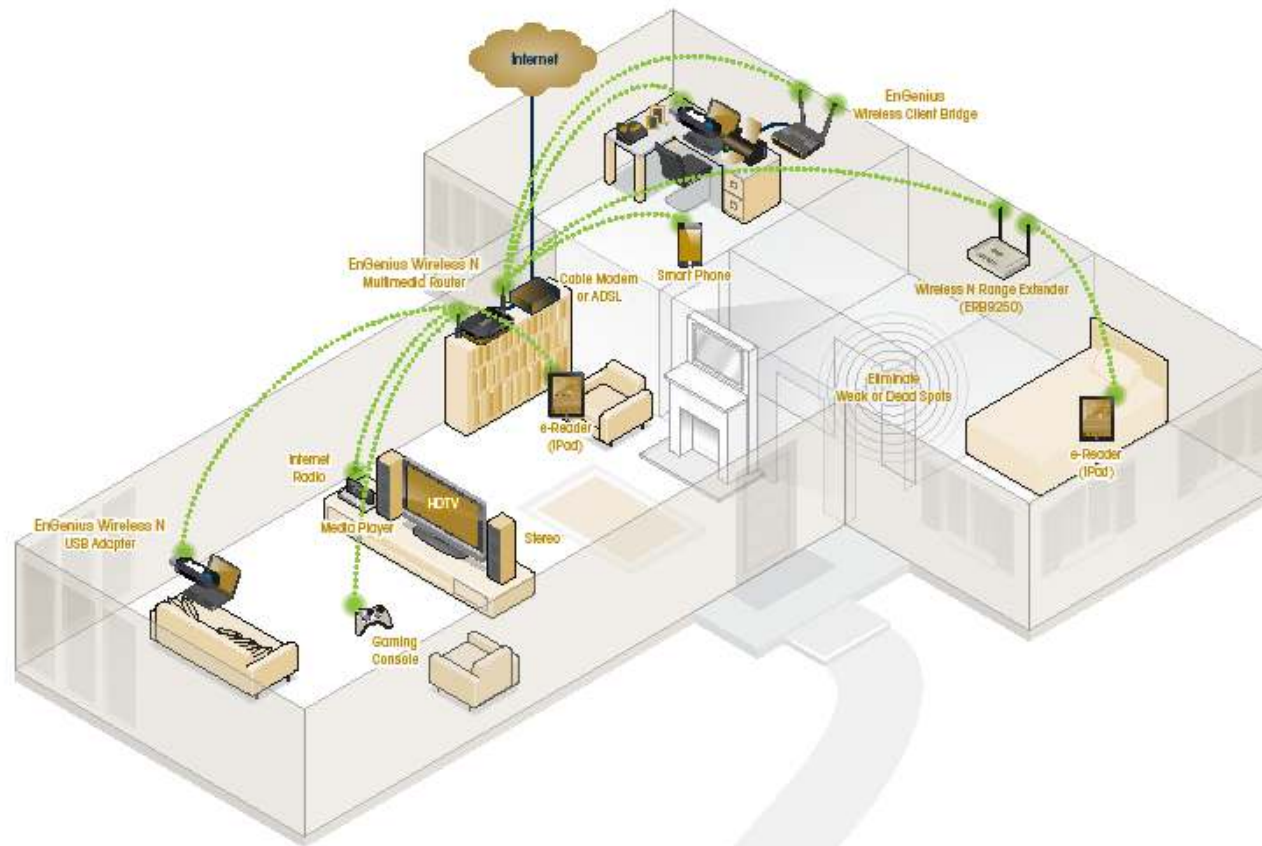
Other considerations are user density and bandwidth requirements.

Wi-Fi Standards

- **802.11b**
2.4GHz, 11Mbps throughput, DSSS modulation
- **802.11a**
5GHz, 54Mbps throughput, OFDM modulation
- **802.11g**
2.4GHz, 54Mbps throughput, OFDM modulation
- **802.11n**
2.4GHz and 5GHz, 300Mbps throughput, MIMO and Spatial Multiplexing, 20-40MHz channels

Wireless Home Network

- A single AP is usually adequate in providing coverage in a small to medium sized home. Wireless routers combine the roles of AP, gateway, and switch into one device.



THE LEADER IN
Long Range Data Communications Systems

EnGenius™

Recommendation

Small home or apartment



ESR-1221 EXT
200mW Power



ESR-9753
150Mbps Router



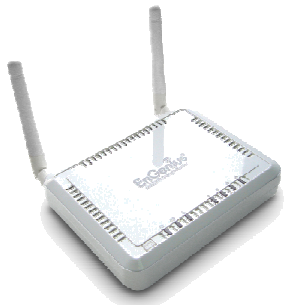
ESR-9752
300Mbps N Router



ERB-9250
Range Extender

- *Cost effective solutions*

Multimedia and Gaming



ESR-9850 300Mbps
Gigabit N Router



ESR-7750 300Mbps
Dualband N Router



ESR-9855G
Gaming Router

- *Enhanced MIMO radio technology for extended range and speed Secure Push-Button Setup*
- *802.11E QoS optimizes multimedia streaming*
- *Easy to use installation wizard for quick setup*

THE LEADER IN
Long Range Data Communications Systems

EnGenius™

USB Clients

802.11n

Long Range Wireless Comparisons

3X greater range
1,200ft

EnGenius Access Point
High Powered Wireless Device

EnGenius Client
High Powered Wireless Device

EnGenius Access Point
High Powered Wireless Device

Brand X Client
Average Powered Wireless Device

800ft

Brand X Access Point
Average Powered Wireless Device

EnGenius Client
High Powered Wireless Device

400ft

Brand X Access Point
Average Powered Wireless Device

Brand X Client
Average Powered Wireless Device

*Compared to standard consumer 802.11g 17dBm/50mW device. Range may vary depends on environments.

ETI—Brands that communicate™

EnGenius®
www.engenustech.com



EUB-9706
300Mbps N



EUB-9801
300Mbps
Dualband N

High Power



EUB-362 EXT
200mW



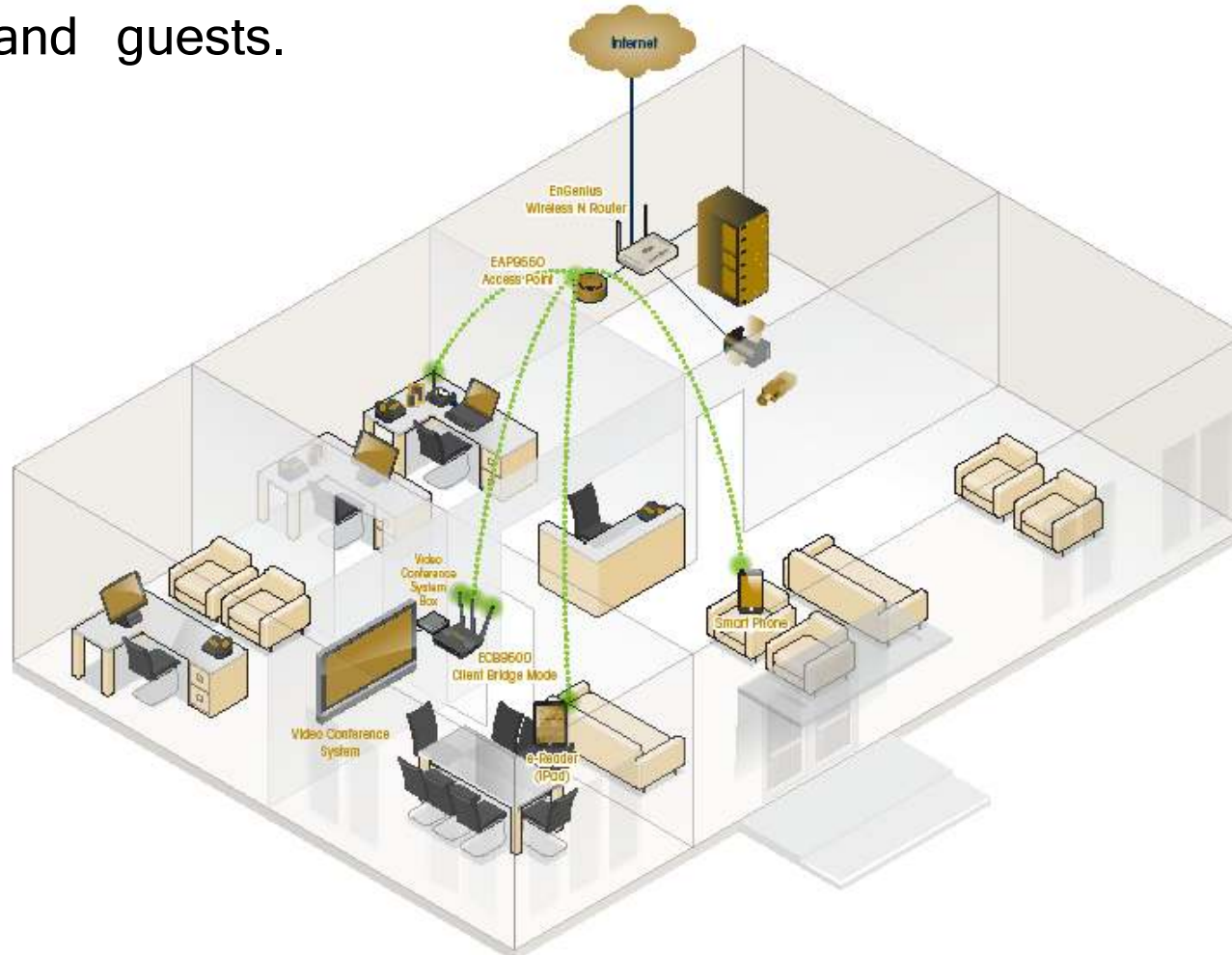
EUB9603H
600mW

THE LEADER IN
Long Range Data Communications Systems

EnGenius™

Hotspot

- Access Points can be added to an existing network to provide wireless access to different network resources for staff and guests.

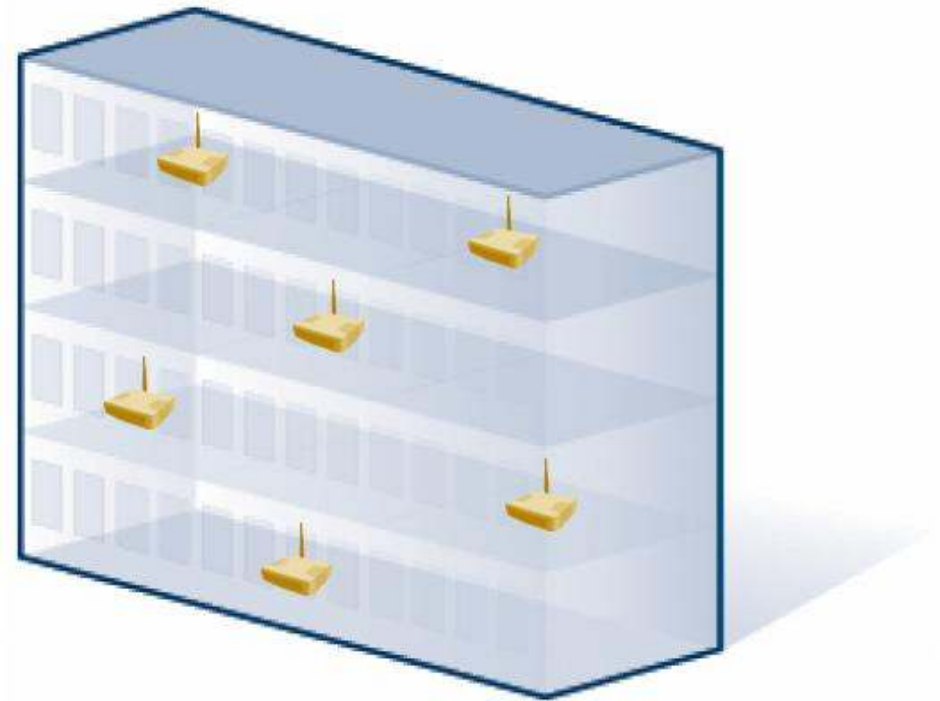
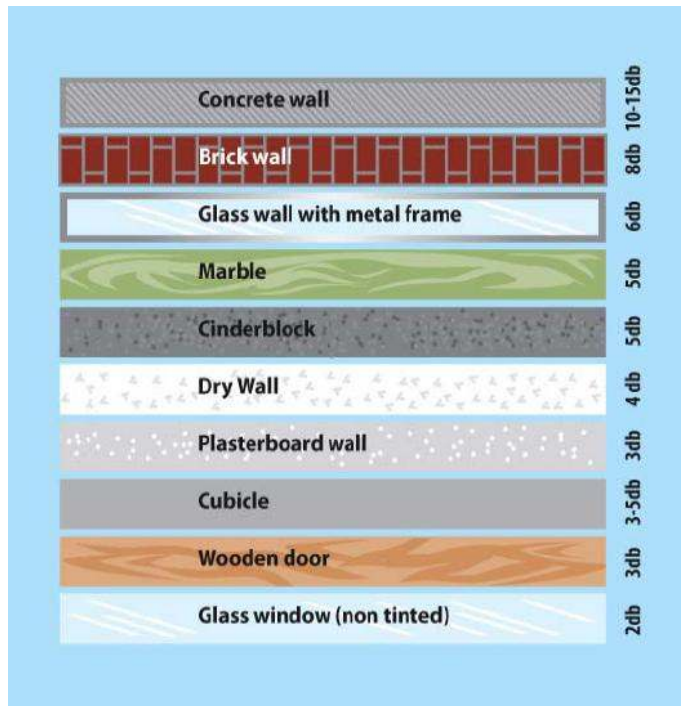


THE LEADER IN
Long Range Data Communications Systems

EnGenius™

Larger Coverage Areas

- For large buildings that require multiple APs, high transmit power and receive sensitivity means fewer devices reducing cost and maintenance.
- dB Loss is a function of material
- Brick or concrete walls: 15 rooms per AP.
- Drywall: 25 rooms per AP



Recommendation

High powered 802.11g AP

- EAP-3660
- ECB-3500



802.11n AP

- EAP-9550
- ECB-9500



ECB-3500

- 802.11g
- 600mW RF output
- Dual diversity antenna
- 802.3af PoE compatible
- Multiple SSID (AP mode)
- Supports VLAN tagging
- WMM QoS
- 7 operation modes



EAP-3660

- 802.11g
- 600mW RF output
- Discreet enclosure design
- 4dBi internal antenna
- 802.3af PoE compatible
- Multiple SSID (AP mode)
- Supports VLAN tagging
- WMM QoS



ECB9500

- 802.11n
- Gigabit Ethernet port
- 802.3af PoE compatible
- Multiple SSID (AP mode)
- Supports VLAN tagging
- WMM QoS
- 7 operation modes



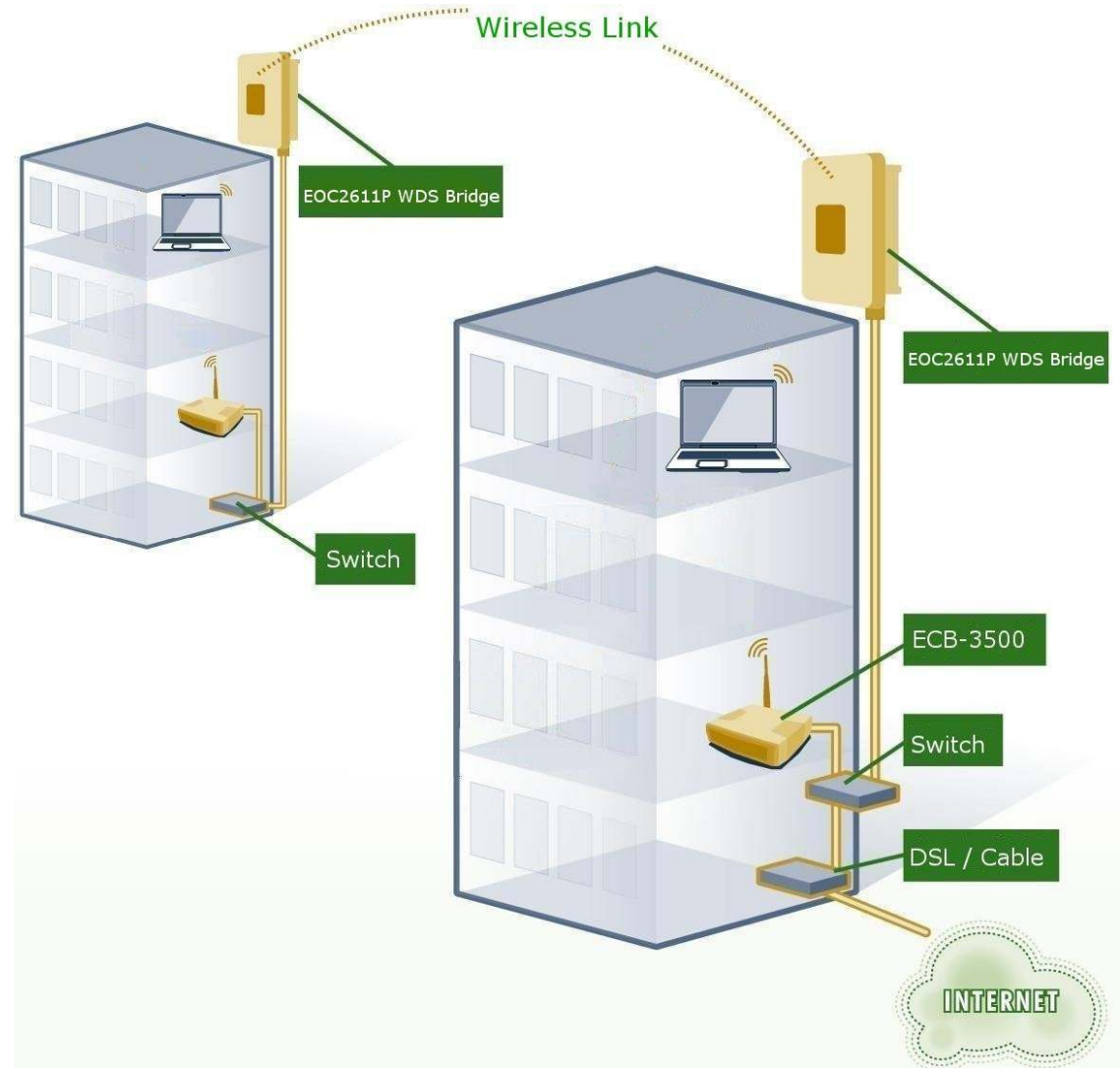
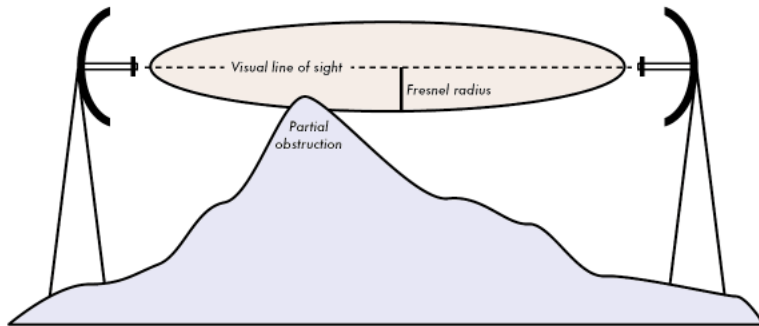
EAP9550

- 802.11n
- Discreet enclosure design
- 4dBi MIMO smart antenna
- 802.3af PoE compatible
- Multiple SSID (AP mode)
- Supports VLAN tagging
- WMM QoS



Point-to-Point Long Range

- Directional antennas
- Clear line of sight



THE LEADER IN
Long Range Data Communications Systems

EnGenius™

Recommendation

802.11g Outdoor AP/CB

- EOC2611P

802.11a Outdoor AP/CB

- EOC5611P



EOC2611P

- IP65 rated outdoor enclosure
- 802.11g
- 600mW RF output
- 24V PoE
- 10dBi Selectable Vertical or Horizontal Polarity
- RP-SMA external antenna connector (hardware switch)
- Metal clamp for mounting



EOC5611P

- IP65 rated outdoor enclosure
- 802.11a/g
- 600mW RF output
- 13dbi 5GHz Selectable Vertical or Horizontal Polarity
- 24V PoE
- RP-SMA external antenna connector (hardware switch)
- Metal clamp for mounting



THE LEADER IN

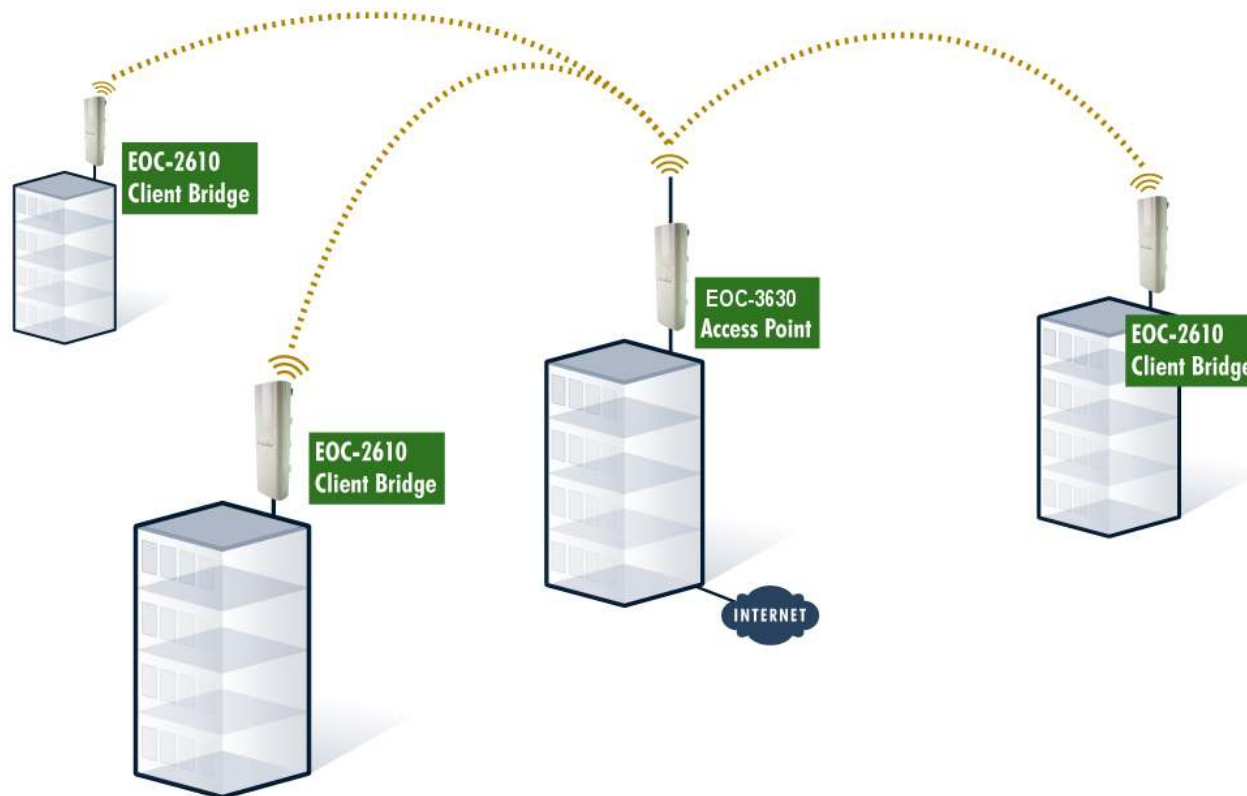
Long Range Data Communications Systems

EnGenius™

Point-to-Multipoint Outdoor

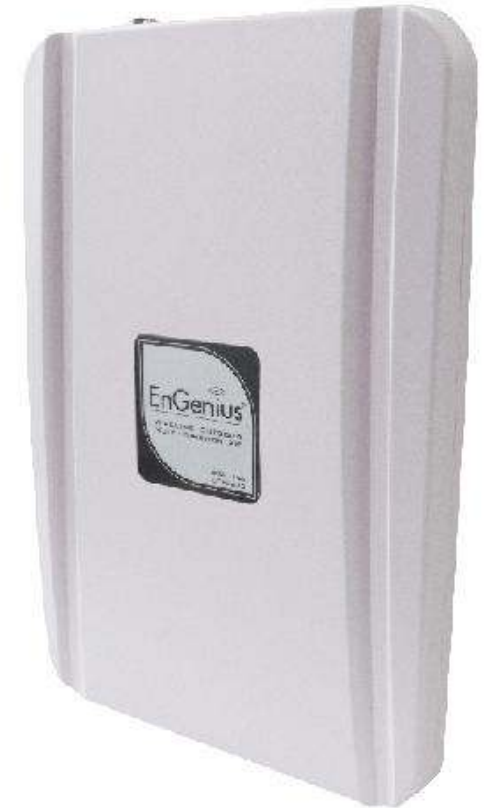
- Omni-directional antenna on AP
- Directional antennas on CBs.

OUTDOOR POINT-TO-MULTIPOINT



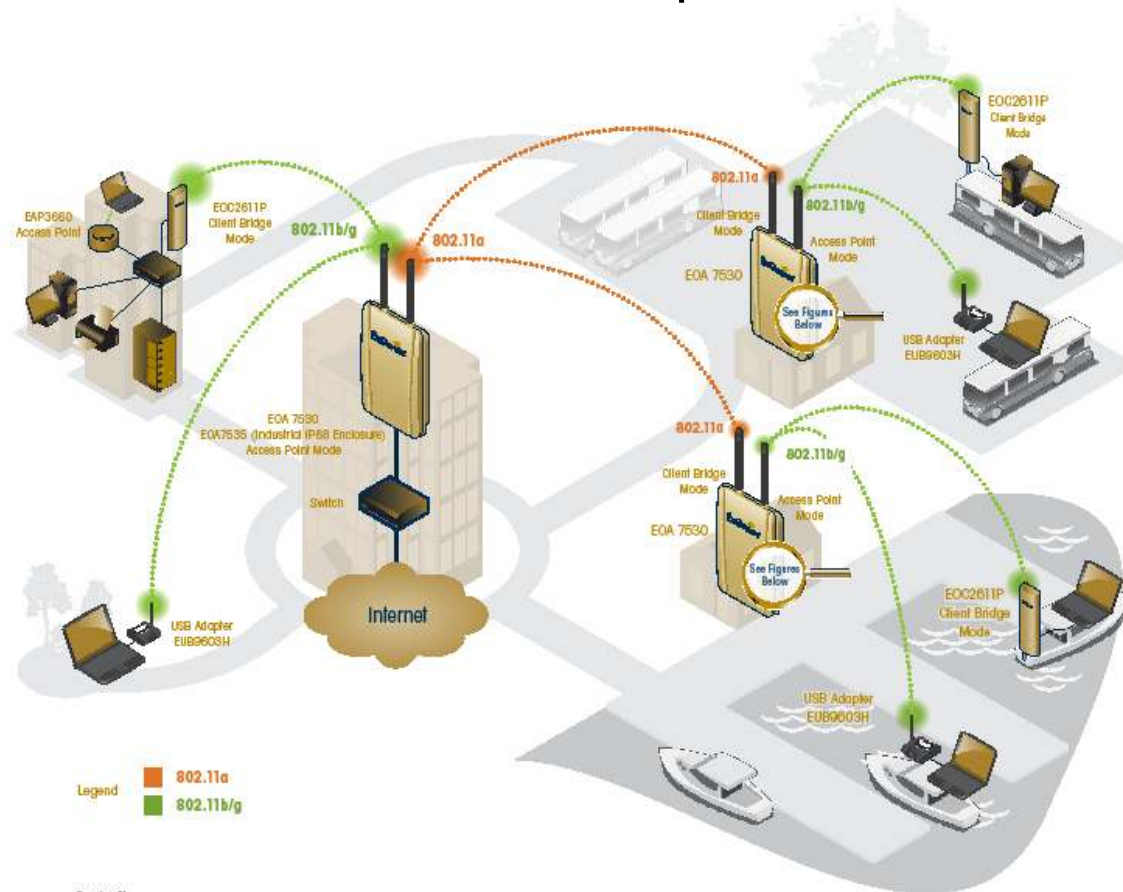
EOA-3630

- IP65 rated outdoor enclosure
- 2.4GHz 600mW
- Type-N RF Connector
- 24V PoE
- Wall or mast bracket



Outdoor Hospitality

- RV Parks, Marinas, Campuses
- Dual Radio Repeaters to separate backhaul traffic
- Running data cables is not an option.



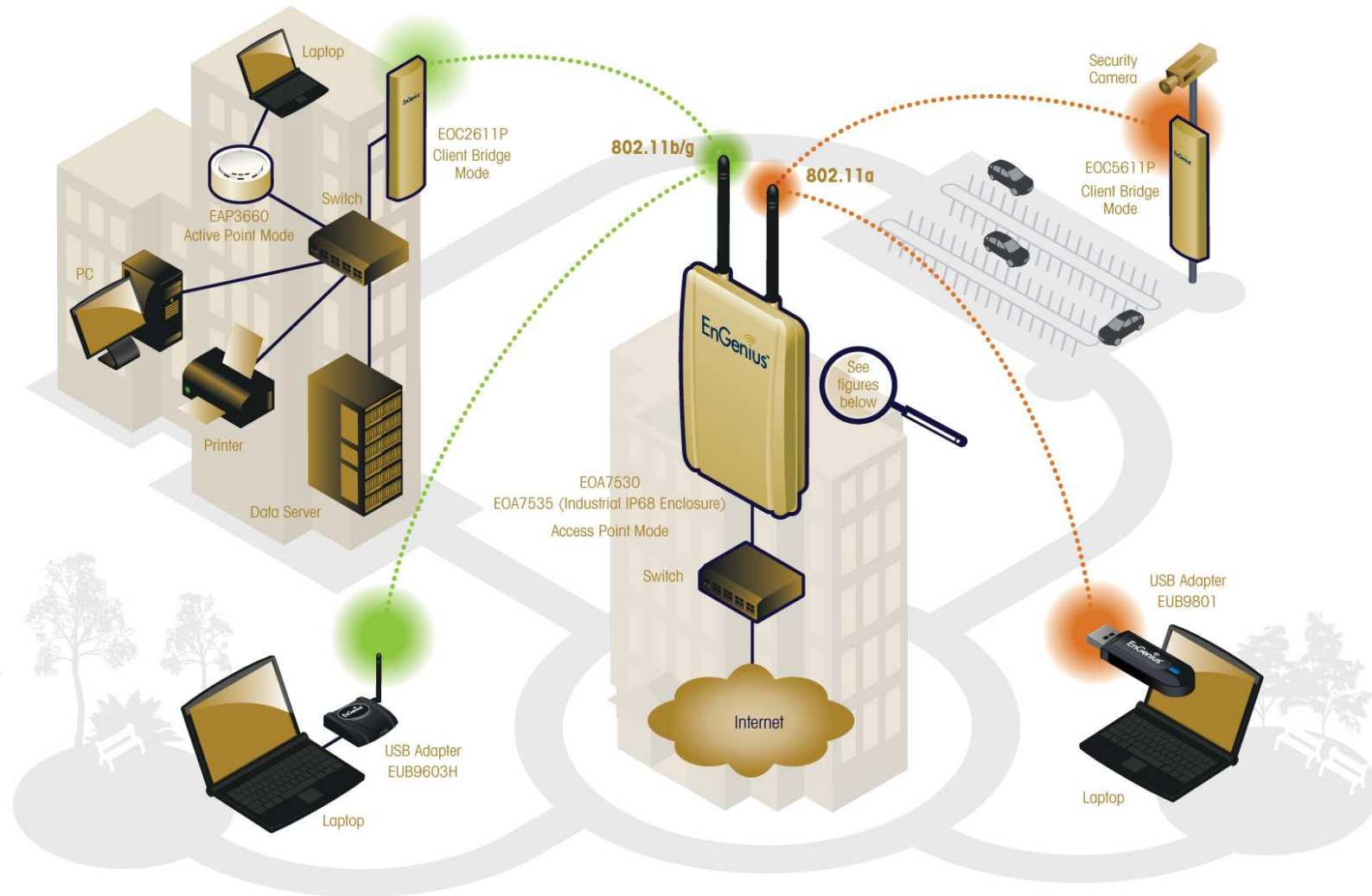
THE LEADER IN
Long Range Data Communications Systems

EnGenius™

Recommendation

Dual Radio AP

- EOR-7750
- EOA-7530
- EOA-7535



THE LEADER IN
Long Range Data Communications Systems

EnGenius™

EOR-7750

- IP65 rated outdoor enclosure
- Radio 1
 - 2.4GHz / 5GHz 600mW
 - Type-N Connector
- Radio 2
 - 2.4GHz 802.11n
 - 6dBi internal antenna
- 24V PoE
- Wall or mast bracket



THE LEADER IN

Long Range Data Communications Systems

EnGenius™

EOA7530

- IP65 rated outdoor enclosure
- Radio 1
 - 5GHz 600mW
 - Type-N Connector
- Radio 2
 - 2.4GHz 600mW
 - Type-N Connector
- 48V PoE
- Wall or mast bracket



THE LEADER IN

Long Range Data Communications Systems

EnGenius™

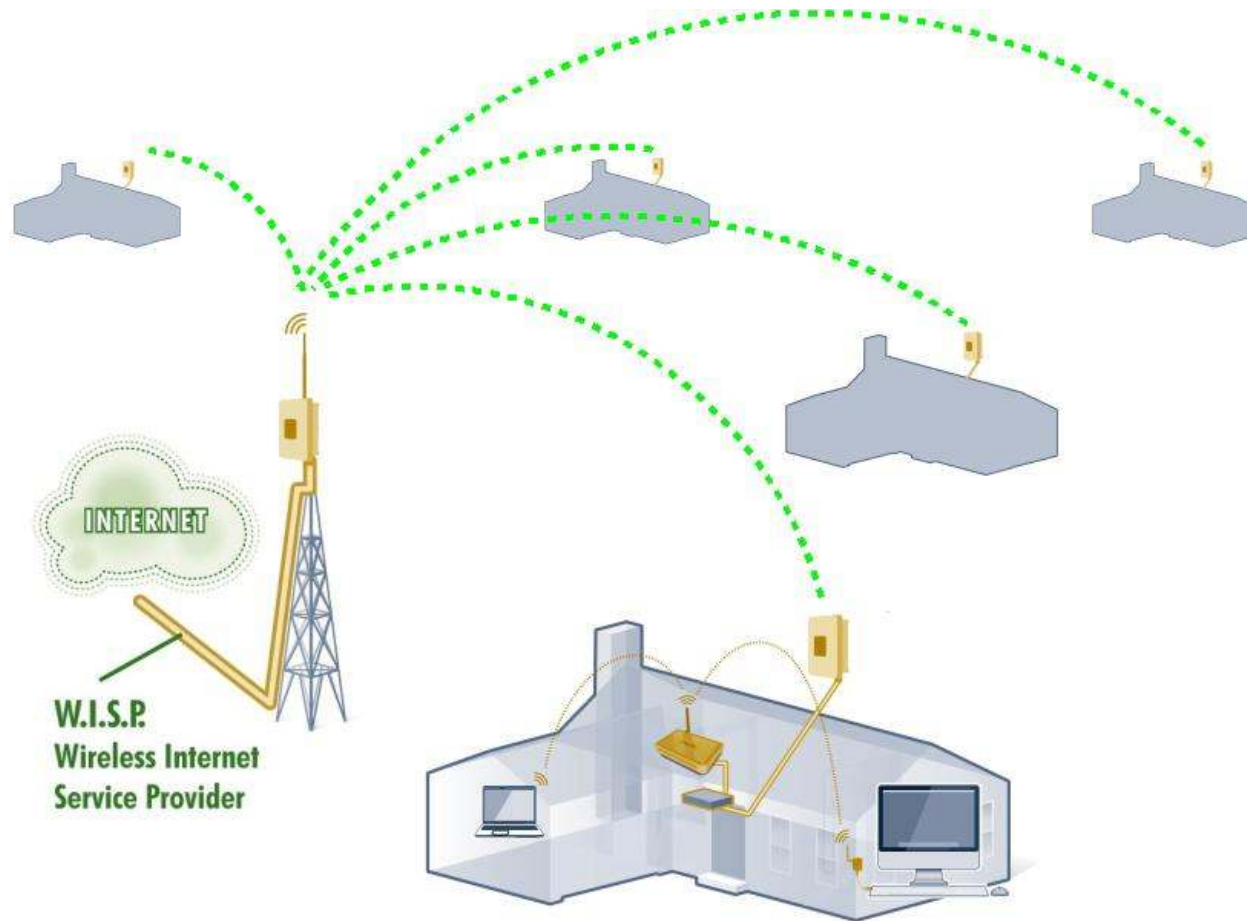
EOA7535

- IP68 rated outdoor enclosure
- Radio 1
 - 5GHz 600mW
 - Type-N Connector
- Radio 2
 - 2.4GHz 600mW
 - Type-N Connector
- 48V PoE
- Ethernet Surge Arrestor
- RF Lightning Protector
- Wall or mast bracket



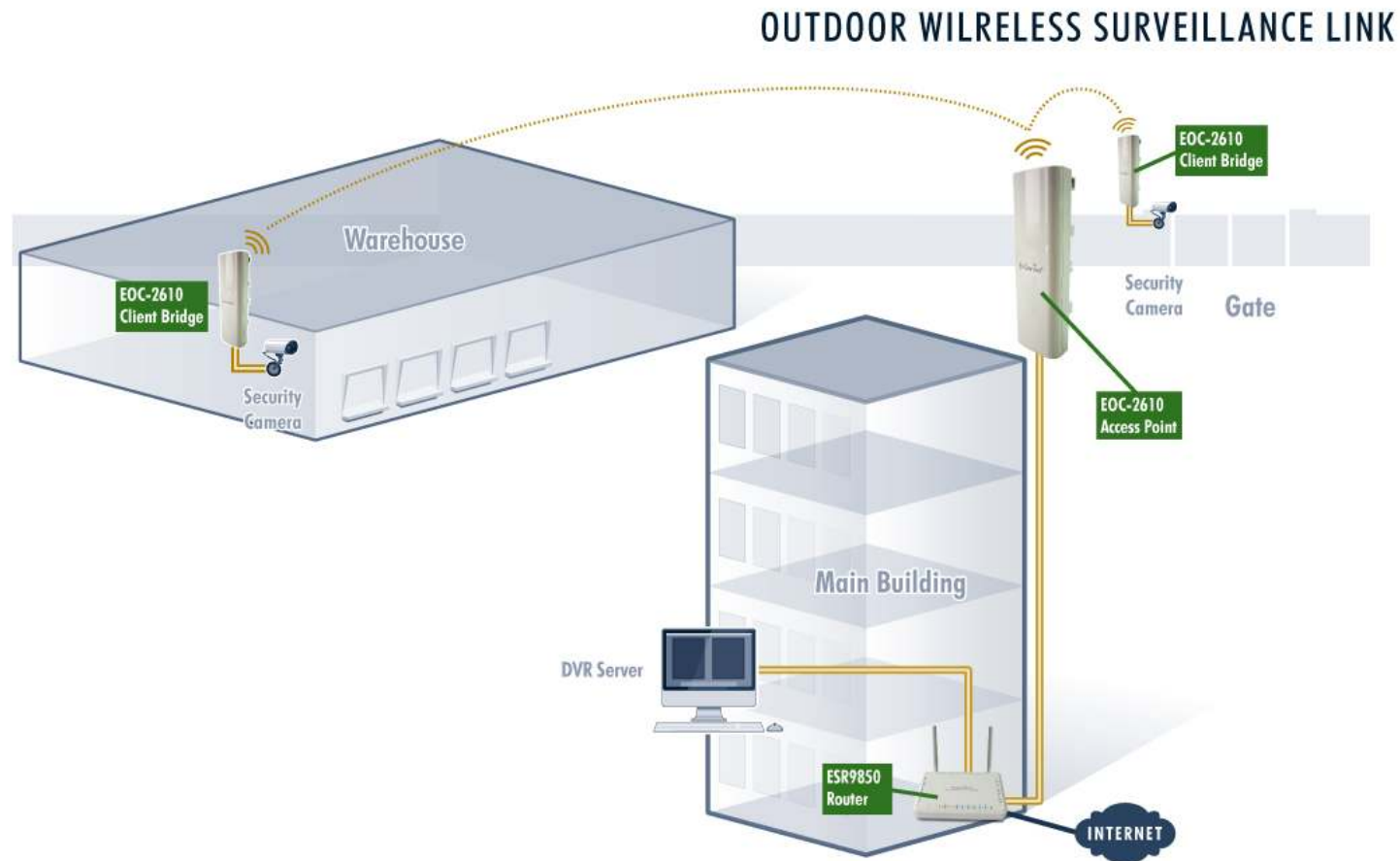
Applying Concepts for WISP

- EOC2611P configured in client bridge mode deployed as CPE devices



Applying Concepts for IP Security Cameras

- EOC2611P configured in client bridge mode for security cameras.

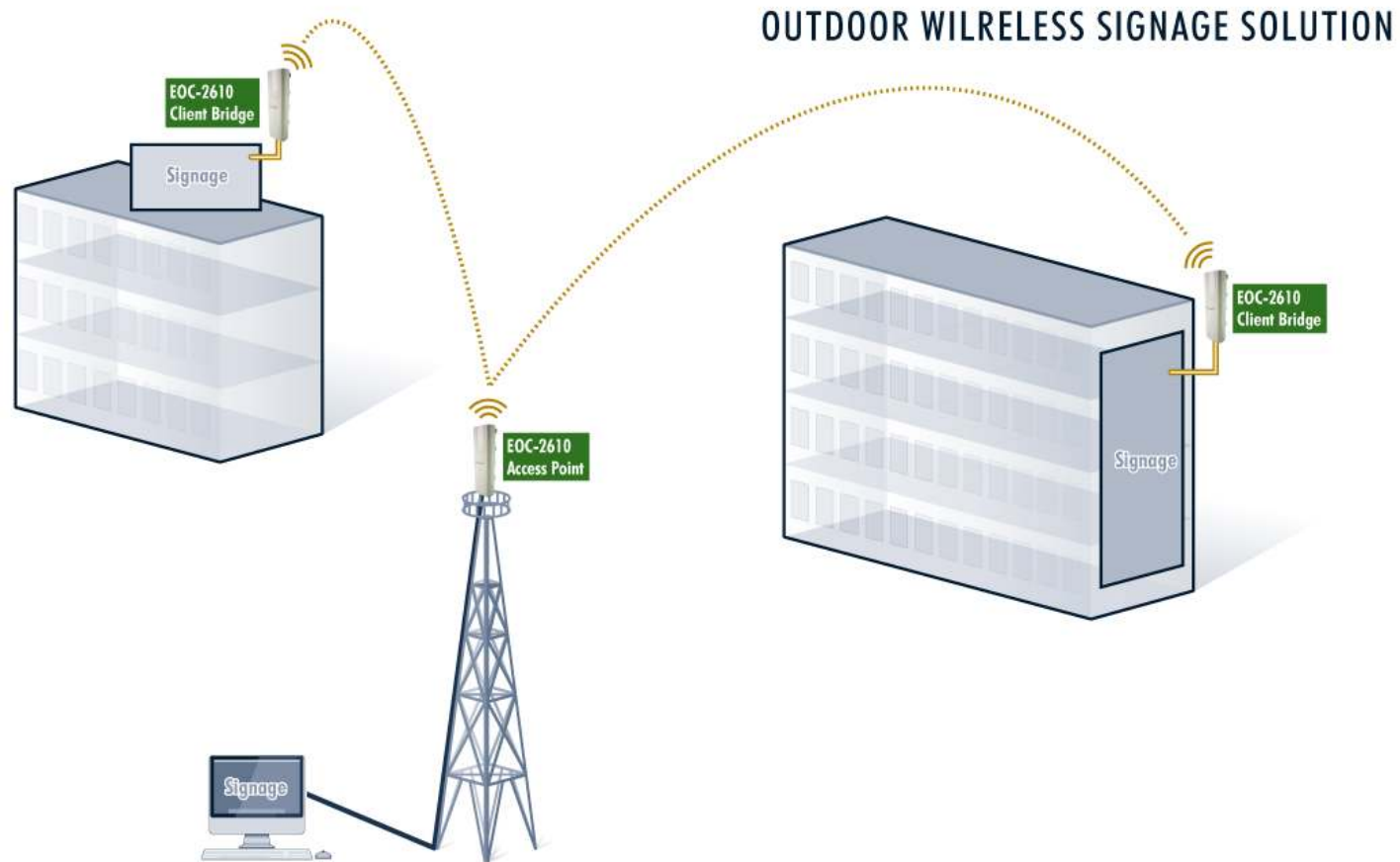


THE LEADER IN
Long Range Data Communications Systems

EnGenius™

Applying Concepts to Any Ethernet Device

- EOC2611P configured in client bridge mode to connect different types of Ethernet devices.



Questions

info@engeniustech.com

888-735-7888

www.engeniustech.com

THE LEADER IN

Long Range Data Communications Systems

EnGenius™