

***Proposed Products for
WiFi Deployment:
Long and Short Range***

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WiBorne, Inc.

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Table of Content

Short-Range: Few Kilometers.....	3
Base:.....	3
Frequency.....	3
Antenna.....	3
Radio.....	3
Controllers.....	3
Non-LoS.....	3
For Small Group of Users.....	4
For Large Group of Users.....	4
CPE.....	4
Backhaul.....	5
High Performance Version.....	5
Cost Effective Version.....	5
Lighten Arrestor / Surge Protection.....	5
Sample Network Diagram.....	5
Long-Range: For 10KM to 30KM+.....	6
Base.....	6
Frequency.....	6
Antenna.....	6
Radio.....	6
Controllers.....	6
Non-LoS.....	6
For Small Group of Users.....	6
For Large Group of Users.....	7
CPE.....	7
Backhaul.....	7
High throughput Version.....	7
Cost Effective Version.....	7
Lighten Arrestor / Surge Protection.....	7
Sample Network Diagram.....	7

Disclaimer: Following information is based on recommendation with spec. of our products. Actual proposal would depend on site information we receive during real site installation and consultation with terrain, environment, backhaul, etc.

Short-Range: Few Kilometers

Base:

Frequency

802.11a (5GHz) or 802.11b/g (2.4GHz), 900MHz. 802.11a and 802.11b are stable, while 802.11g has more throughput but could be unstable after few kilometers.

Antenna

- Less than 12 dBi is sufficient.
- Single omni if 50 or less CPEs. One CPE can have number of users dependent on useful bandwidth / connection
- 3 sectors if approaches to couple of hundreds CPEs
www.wiborne.com/datasheet/OA-2412-brochure.pdf or
www.wiborne.com/datasheet/OA-2412-brochure.pdf

Radio

- WAP-192: Up to 10 concurrent CPEs (maximum is 50), for useful connection.
- WAP-240/500: 50+ for each or more if additional CPEs are connected with.
www.wiborne.com/datasheet/WAP-192-brochure.pdf
www.wiborne.com/datasheet/WAP-240-brochure.pdf
www.wiborne.com/datasheet/WAP-500-brochure.pdf

Controllers

HSG-200 or HSG-1000

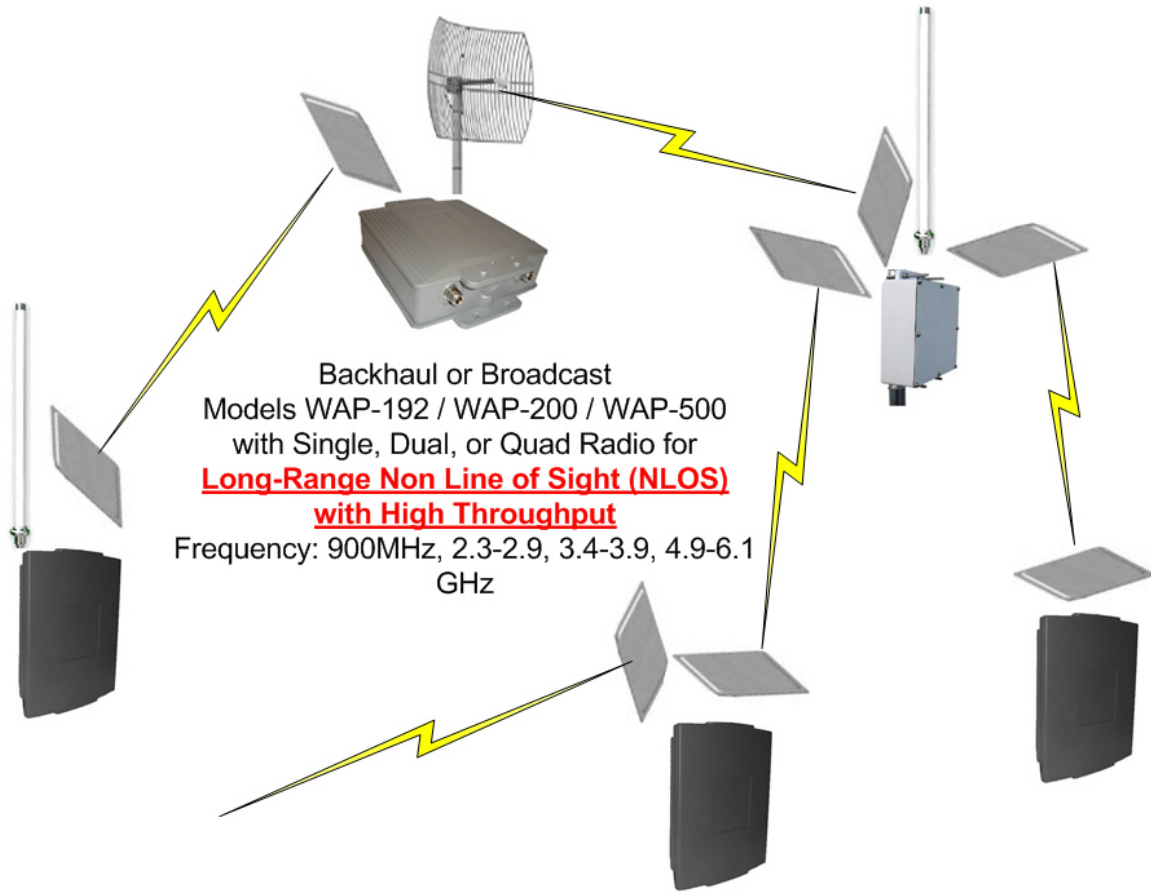
www.wiborne.com/datasheet/HSG-brochure.pdf

Non-LoS

Use dual radio is the most practical approach and cost effective. Use dual radio gear such as WAP-192AG (dual a and b/g radio), or WAP-240/500 for high performance

Mesh node WAP-2450 is a high end model of true mesh nodes for fast deployment of small community, up to 40 repeated hops. WAP-240/500 can offer Mesh for up to 20 of hops for cost effective solutions.

www.wiborne.com/datasheet/WAP-2450-brochure.pdf
www.wiborne.com/datasheet/WAP-240-brochure.pdf
www.wiborne.com/datasheet/WAP-500-brochure.pdf



For Small Group of Users

If for 20 concurrent users, one WAP-192 (outdoor AP) + 10-12 dBi omni antenna is sufficient.

For Large Group of Users

Above Base equipments are fine, while multiple indoor APs connected with individual CPEs.

CPE

- CAP-1912 / CAP-1915 would be sufficient for each group of users, say, one household, one building, one farm, etc.
- Laptop users: use high power USB dongle or external antennas with PCMCIA card that offer external connector.
- Regular PCMCIA cards: up to 200 meters.
- High power USB dongle WLU-2401 is very ideal unit for laptop users for 1 to 2 KM.

www.wiborne.com/datasheet/CAP-1900-brochure.pdf

www.wiborne.com/datasheet/CAP-1912-brochure.pdf

<http://www.wiborne.com/ShortRange.html>

Backhaul

High Performance Version

A pair of 802.11a, WAP-500, can reach 20 to 40 Mbps, depends on requirement for hardwires.

Cost Effective Version

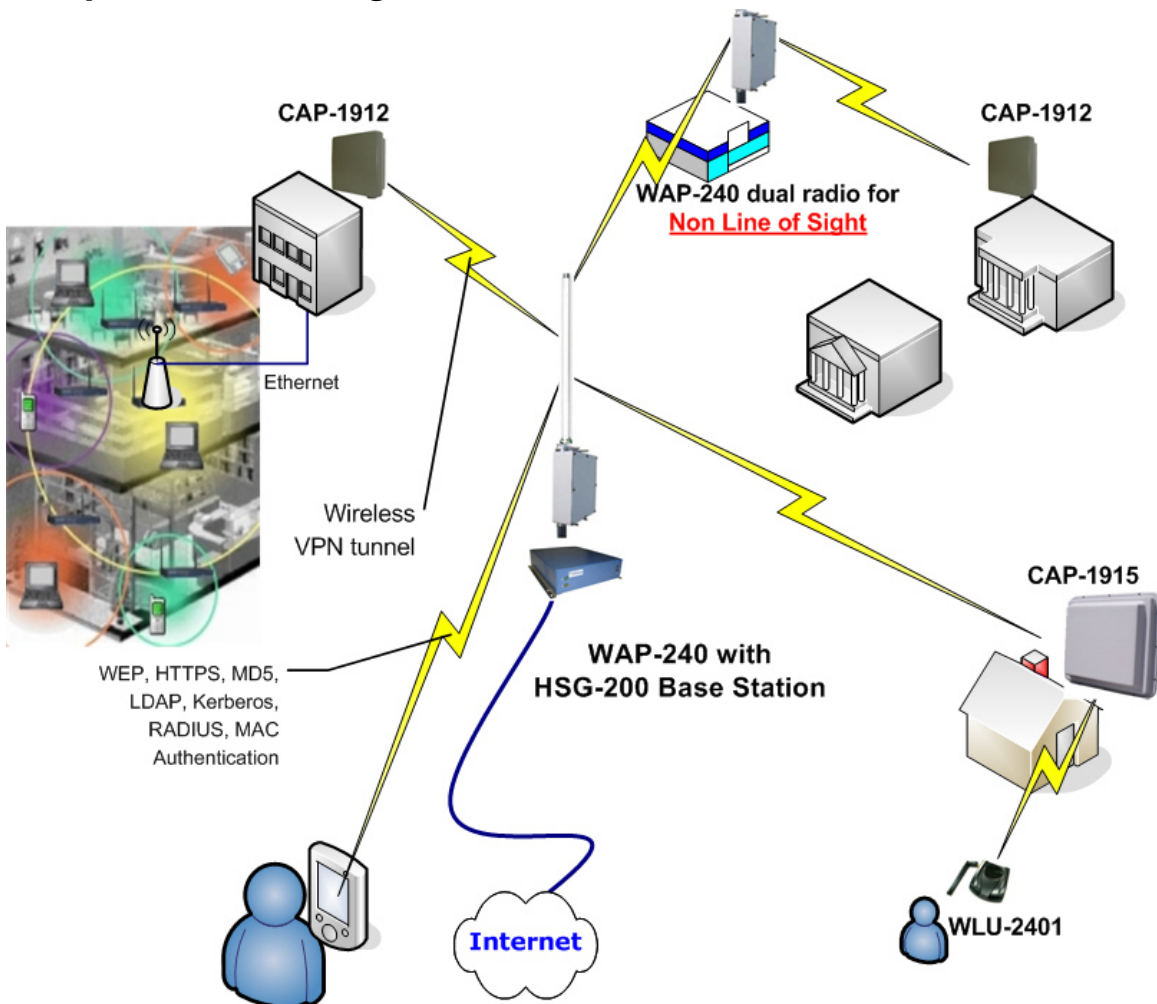
A pair of CAP-1920 or lower that runs 802.11b for stable throughput.

Lighten Arrestor / Surge Protection

All units are capable with USA made lightning protector. More durable arrestor without future replacement is installed for base radio (SP-QWS-1).

www.wiborne.com/datasheet/WiBorne_lighten_protector.pdf

Sample Network Diagram



Long-Range: For 10KM to 30KM+

Base

Frequency

802.11a or 802.11b. Usually 802.11a is for backhaul, or serious with higher throughput. 802.11b is for stable throughput with cost effective – still reach 2Mbps for 20+ KM.

Antenna

- Higher than 12 dBi
- Single omni 15 dBi if less than 15KM
- OAB2413 (13 dBi) can run few hundreds concurrent users with up to 20KM
- 3 sectors of 15dBi or 16dBi for thousand or more of users, or different frequency.

www.wiborne.com/datasheet/OA-2416S-brochure.pdf

www.wiborne.com/datasheet/OA-2417S-brochure.pdf

www.wiborne.com/datasheet/OA-5017S-brochure.pdf

Radio

- WAP-192: 10+ concurrent CPEs (max is 60)
- WAP-250: 100+ concurrent CPEs.
- WAP-240/500: 50+ CPEs for each or more if additional APs are connected with.
- WAP-750 or WAP-520: 3 or 4 radios, hundreds of concurrent users, or 1000+ users

www.wiborne.com/datasheet/WAP-192-brochure.pdf

www.wiborne.com/datasheet/WAP-250-brochure.pdf

www.wiborne.com/datasheet/WAP-240-brochure.pdf

www.wiborne.com/datasheet/WAP-500-brochure.pdf

www.wiborne.com/datasheet/WAP-520-brochure.pdf

www.wiborne.com/datasheet/WAP-750-brochure.pdf

Controllers

HSG-200 or HSG-1000

www.wiborne.com/datasheet/HSG-brochure.pdf

Non-LoS

Use dual radio is the most practical approach and cost effective. Use dual radio gear such as WAP-192AG (2 radio), WAP-240/500/520.

Mesh node WAP-2450 is a high end model of true mesh nodes for fast deployment of small community.

www.wiborne.com/datasheet/WAP-2450-brochure.pdf

See previous Non-LoS for short-range deployment about quad radio nodes.

For Small Group of Users

If for 10 concurrent CPEs, one WAP-192 + 15 dBi omni antenna is sufficient for less 15 dBi, or OAB

For Large Group of Users

Above Base equipments are fine, while multiple indoor APs connected with individual CPEs.

CPE

- CAP-1915/CAP-2415/CAP-5019 for 10+ Km of distance.
- CAP-1920/CAP-2419/CAP-5024 for 20Km of distance
- CAP-192W/CAP-240W/CAP-500W + 24dBi external antenna for 25+ KM of distance

www.wiborne.com/datasheet/CAP-1900-brochure.pdf

www.wiborne.com/datasheet/CAP-2400-brochure.pdf

www.wiborne.com/datasheet/CAP-5000-brochure.pdf

Backhaul

High throughput Version

A pair of 802.11a can reach 20 to 40 Mbps, depends on requirement for hardware and antenna

Cost Effective Version

A pair of CAP-1920s or higher external gain antenna that runs 802.11b for stable throughput, for 20KM of distance. Higher gain of antenna with WAP-192BM is available for further distance

Lighten Arrestor / Surge Protection

Same with solutions for short-range deployment.

Sample Network Diagram

