



Key Benefits

- Overcomes limitations with point-to-multipoint base stations by providing true mesh networking, multiple hops to subscriber nodes, redundancy, and scalable network capacity
- 5 GHz backhaul combines benefits of mesh networking and point-to-point links
 - Mesh networking: 360° coverage, multiple links with optimized routing and link redundancy, load balancing capabilities
 - Point-to-point links: high-power (up to 28.2 W/44.5 dBm EIRP) focused beams and eight 18 dBi antennas improve penetration and extend range up to 10 miles/16 km
- SkyGateways work in conjunction with each other to provide scalability and redundancy
 - Each base station provides up to 20 Mbps of Internet capacity, so network capacity can be scaled easily to address increased performance needs
 - Increases in subscriber density can be addressed easily by adding base stations, which segments subscriber traffic through optimized routing paths
 - Multiple base stations provides redundant Internet paths with failover capability
- Non-line of sight (NLOS) capabilities achieved through OFDM modulation (multipath), high-power transmissions (boring through trees), and routing around obstacles (via mesh)

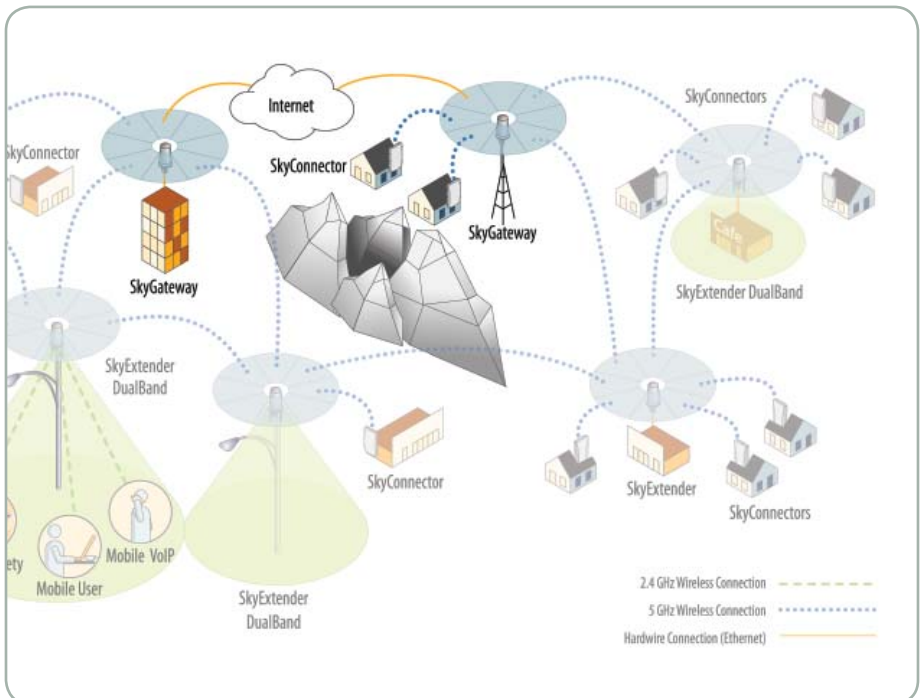
SkyGateway – Carrier-Class Base Station

The SkyGateway™ is a carrier-class base station that provides the traditional functionality of connecting a wireless network with the Internet. The similarity with traditional bases stations, however, ends there. Unlike broadband point-to-multipoint base stations, the SkyGateway provides true mesh networking, multiple hops to subscriber nodes, redundancy, and scalable network capacity by means of SkyPilot’s innovative 8-antenna array, high-power radio technology, and sophisticated link management capabilities.

The reason that the SkyGateway offers so much more functionality than traditional base stations is through the use of multiple point-to-point links within a wireless mesh network. This architecture provides redundant routes within the mesh to provide self-healing capabilities as well as allowing several hops between the subscribers and the base station. When coupled with its long range features and the non-line of sight (NLOS) capabilities of OFDM modulation, the network can be extended to reach a broad base of subscribers.

Another benefit of this mesh architecture is the ability to connect multiple base stations to the same network. This enables multiple, redundant paths to the Internet and SkyPilot’s sophisticated routing algorithm ensures both best-path optimization and failover capabilities in case of changes or failures in the wireless network. And with each SkyGateway providing up to 20 Mbps of network capacity through an integrated 10/100 Base-T Ethernet connection, the network can scale easily and gracefully to meet the capacity needs of growing subscriber base.

Launch your broadband wireless network with the carrier-class SkyGateway base station



Multiple SkyGateways increase network capacity and provide system redundancy.

SkyGateway System Specifications

Traffic Management

- VLAN support: IEEE 802.1q
- Traffic Prioritization: IEEE 802.1p, protocol type, IP port, IP ToS field, and IP address list
- Traffic Filtering: protocol type, IP port, and IP address list
- Traffic Shaping: upstream and downstream per-user rate control

Topology

- Mesh, point-to-multipoint, and point-to-point, in any combination and with multiple hops between base station and subscriber nodes
- Layer 2 transparent bridge

Configuration, Management, & Monitoring

- NMS integration: SNMPv2c
- EMS: SkyProvision and SkyControl
- IP address: DHCP or static
- Firmware: Multiple versions stored in nonvolatile memory; updated over the air via FTP
- Provisioning: Manual or automated
- Configuration file: XML over HTTP
- Support for: MIB-II (RFC 1213); EtherLike (RFC 2665); Bridge (RFC 1493); SkyPilot private MIB
- Remote management: CLI via Telnet, SNMPv2c
- Local management: RS-232 serial console port

Wireless

Frequency band	4.940-5.150, 5.150-5.450, 5.450-5.725, or 5.725-5.850 GHz
EIRP	44.5 dBm/28.2 W peak, 36 dBm/4 W average, 33 dBm/2 W average, 30 dBm/1 W average, or 36 dBm/4 W peak (EIRP selected for country-specific regulations)
Media access	Time Division Duplex (TDD)
Modulation technique	OFDM with adaptive modulation
Modulation rates	6 to 54 Mbps
Throughput	Up to 20 Mbps
Latency	8-10 ms roundtrip per hop
Antennas	8-antenna array (360° coverage), each antenna 45° horizontal x 6° vertical, 18 dBi
Channel width	5, 10, or 20 MHz
Channel resolution	5 MHz frequency control
Receive sensitivity	-90 dBm at 6 Mbps modulation
Connectivity	Connects with SkyExtenders, SkyExtender DualBands, and SkyConnectors
Authentication	MD5-based certificates
Encryption	128-bit AES on all wireless links

Product Specifications

Connectors	RJ-45: Internet connection (10/100Base-T) and power (Power over Ethernet) RJ-45: RS-232 serial for local management
Mounting	Tower, utility pole, building or other infrastructure Outside diameter up to 2.0"
Range	Up to 10 miles/16 km
LEDs	Wireless activity, wireless link
Dimensions	18.0" (45.7 cm) H x 12.2" (31.0 cm) diameter; 25.0" (63.5 cm) H with mounting bracket
Weight	14.0 pounds (6.3 kg)
Operating temperature	-40° to 131° F (-40° to 55° C)
Wind loading	Up to 150 mph (240 km/h)
Enclosure/humidity	NEMA-4X
Power	110-230 VAC, 50-60 Hz input; 10 Watts
Certifications	FCC Part 15, FCC 47 CFR Part 15, Class B USA; compliance with UL safety standards, CE, C-Tick, IC RSS210 Issue 5
EMI and susceptibility	FCC Part 15.107 and 15.109
Warranty	One-year limited warranty on hardware; 90-day limited warranty on software



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09/05 03-005