BLACK BOX NETWORK SERVICES

Manage all system APs from the cloud!

SmartPath Enterprise Wireless

The next generation of wireless technology—today.

- Get fast 802.11n wireless.
- Features smart controller-less architecture.
- Intelligent APs automatically adjust for traffic, interference, and power conditions.
- Ultra-reliable with no single point of failure.
- Cloud-based management eliminates CAPEX.
- Provides high-quality voice or video over Wi-Fi.
- Built-in guest portal for secure iPad® and smartphone connectivity.

Indoors

Hardened/Industrial

Outdoors

888-245-6215 | blackbox.com/go/SmartPath

SmartPath Enterprise Wireless System

The smart way to create an 802.11n network or upgrade an older WLAN or wired LAN for 802.11n Wi-Fi communications.

Black Box's SmartPath™ Enterprise Wireless system combines the stability, security, and speed of a wired network with the versatility and adaptability of a wireless network. It's just what you need to set up fast, 802.11n standard Wi-Fi communications in a logical way.

The technology differs greatly from existing wireless technology available today. You get speed and reliable wireless communications from a system that's simpler—and more affordable—to deploy.

With SmartPath, you get enterprise-class access points (APs) and a suite of management and security functions that provides all the benefits of a controller-based wireless LAN (WLAN) solution—without requiring a controller or an overlay network.

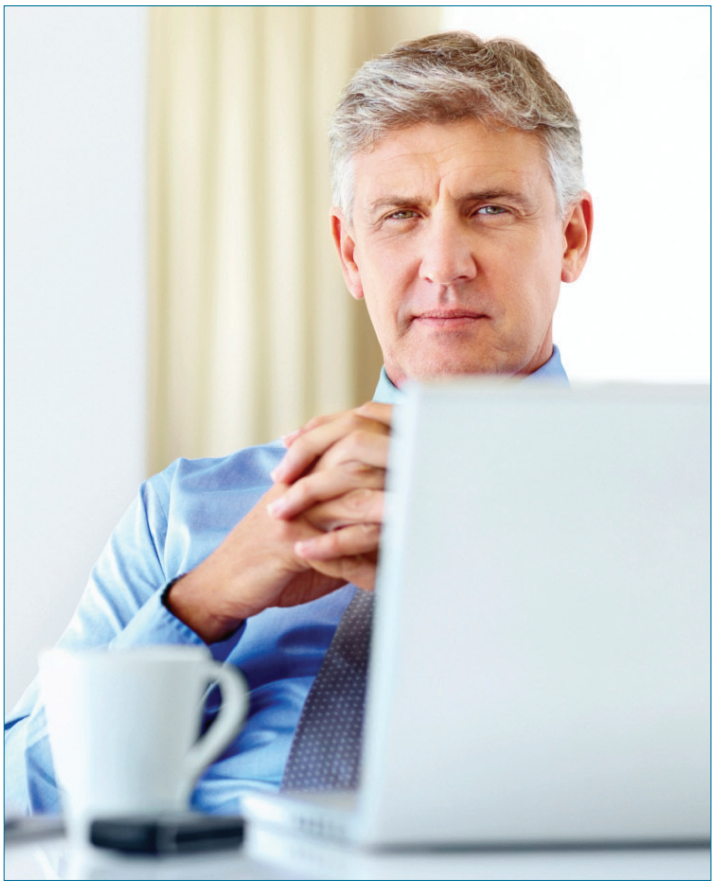
SmartPath APs work together to improve throughput and provide redundancy for your latest 802.11n wireless devices. The SmartPath system combines a distributed WLAN architecture and best-in-class management without a lot of upfront costs or operating expenses.

Black Box's SmartPath Enterprise Wireless system combines the stability, security, and speed of a wired network with the versatility and adaptability of a wireless network.

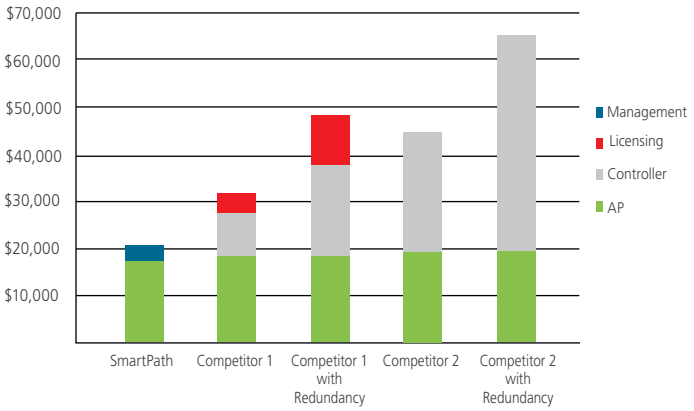
Because there are no expensive controllers required, you can expand from a few APs to thousands of APs easily—with no hidden upgrade costs. Start small, adding APs into an existing wired network as your budget allows, or build a complete enterprise-grade WLAN all at once.

Plus, the system boasts robust security and policy enforcement, including firewall and NAC functionality. Built-in RADIUS server and LDAP/Active Directory™ integration—along with a full-featured guest management system and portal—complete the system, making it perfect for organizations of all sizes.

- Reliability, throughput rivals that of wired networks.
- Supports video and VoIP communications.
- No expensive controllers needed.
- Smart APs sort and send packets to WLAN or wired points.
- Architecture reduces traffic backhauling. QoS and policy enforced right at the edge.



Cost comparison: SmartPath vs. top competitors*:



The best thing about SmartPath Enterprise Wireless is its performance. But don't ignore its very low cost of entry. Versus its two leading industry competitors, it's very cost effective with no big investment to start and no waste as you grow. The main reason: The unique SmartPath architecture eliminates the need for an expensive controller. Plus, you can manage it from the cloud (or a local appliance). If management is lost, the APs will function normally—no backup controllers are needed for redundancy!

*(30) Indoor SmartPath APs (LWN602A) managed via the cloud using (30) SmartPath Enterprise Management System 1-Year Subscriptions (LWN600CM-1) vs. competitor systems with (30) APs, management software, additional licenses (if required), controller(s), and support costs.
NOTE: SmartPath Cloud-Based EMS Subscriptions are represented above as "Management" expenses, and there is no separate license purchase required.

The SmartPath architecture.

Unlike ordinary wireless systems, in which APs function as accessories to the wired network, SmartPath is designed as an *equal partner* to the wired network, making it a practical way to provide wireless across your organization.

First, SmartPath APs work much like the intelligent, smart switching devices found in today's wired networks, devices that actively sort packets and send them only to where they're needed — either to an attached node or to another switch or router for forwarding.

SmartPath APs sort and send the same way, broadcasting packets wirelessly, whether it's to a nearby Wi-Fi laptop user, passing them on to another access point in a wireless mesh arrangement, or sending them through the wired network to another endpoint.

It's really smart — and not something you'll likely find on today's average wireless APs, which function more like legacy network hubs and act only as interfaces to the wired network without making any decisions about where to send packets.

Plus, for seamless mobile user connectivity, SmartPath anticipates motion and proactively tracks users moving from AP to AP. This provides continuous coverage for voice or video applications without an interruption in service or having to connect and authenticate to each new AP. This is done automatically and is transparent to the end user.

Also, advanced circuitry and algorithms enable older 802.11a/b/g devices to share the network without slowing down 802.11n devices.

How SmartPath works.

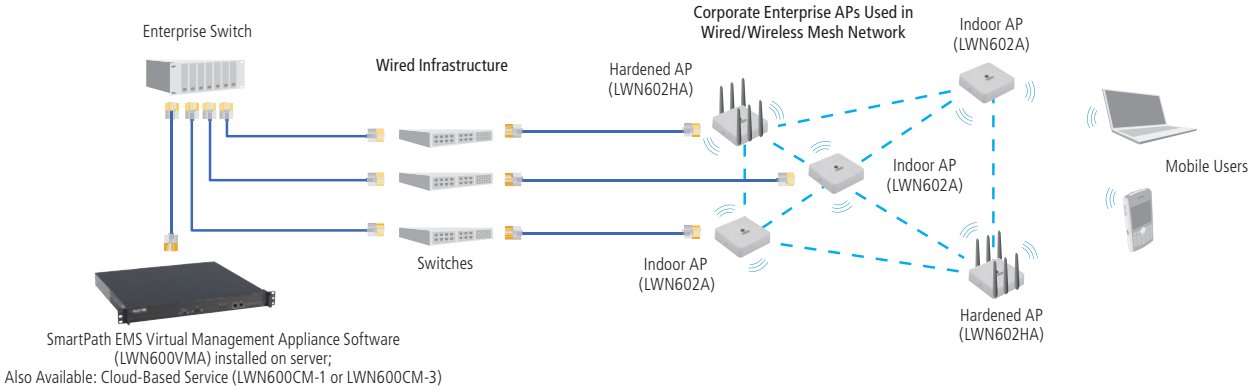
SmartPath uses a collaborative control design based on the same architectural premise behind dynamic routing protocols used by WANs and the Internet, and the Spanning Tree protocols of LANs: By distributing the control and data plane, redundancy and optimization are built into the system, and by centralizing management functions, the entire system can all be run from one location — even from the cloud.

This collaborative design enables multiple APs in the SmartPath network to be organized into groups, or clusters. These clusters of APs "talk" to one another, sharing control information and enabling fast Layer 2/Layer 3 roaming and seamless mobility for users, cooperative RF management, higher security, resiliency, and more.

SmartPath APs discover each other no matter if they're connected to each other over a wired network or linked wirelessly. When neighboring APs are found with the same cluster or mobility credentials, the APs build secure connections to each other. They then use special protocols to provide best-path data forwarding.

This way, APs can dynamically route around any problems or failures, and adding another site is as simple as adding another AP. You never need to upgrade to a higher-capacity controller when you have to add one or more APs.

What's more, the SmartPath network architecture is more reliable and higher performing — and more suitable for voice-over-wireless LAN — than most controller-based architectures.



- Optimized for real-time traffic, 720p video, and VoIP — great for voice over wireless LAN (VoWLAN).
- Advanced controller-less architecture improves network performance and saves you money.
- Incorporates legacy 802.11a/b/g wireless devices with no degradation in 802.11n performance.
- APs work together to improve speed and redundancy.
- APs are easy to manage from the cloud- or Virtual Management Appliance-based SmartPath Enterprise Management System.
- APs work as intelligent, self-aware devices within a distributed, self-healing mesh network.
- Supports Gigabit Ethernet links to a wired network.
- Scalable from one AP all the way up to a wide-area wireless network with thousands of APs.
- Secure with access enforced by per-user policies and SLAs.
- Uses advanced WIDS and wireless VPN communications for secure, seamless roaming.
- PoE-powered APs for reduced power infrastructure needs.
- Resilient. No bottlenecks, no single points of failure.
- Uses collaborative APs instead of controllers.
- Enables secure, fast Layer 2/Layer 3 (L2/L3) roaming.
- Supports HT20/HT40 High-Throughput (HT) and A-MPDU/A-MSDU frame aggregation.
- Standard or hardened AP models available.

SmartPath is the ideal wireless upgrade solution for:

Education

SmartPath is a perfect match for K–12, as well as universities, colleges, trade schools, and other higher-education institutions. It's great for campus-wide, or district-wide, wireless deployment, bringing centrally managed Wi-Fi coverage to every building.

Security is tight, too. SmartPath enables administrators to assign different SSIDs and restrict IP ranges by individual users or groups of users, each with its own security policies.

SmartPath fits well into large, campus-wide infrastructures without adding maintenance and management complexity for IT staff.

Enterprise

SmartPath is an enterprise-class wireless solution for management, mobility, and security at a more reasonable cost than controller-based systems. This distributed, easily scalable solution enables you to increase WLAN capacity quickly and easily with intelligent access points that self-organize into clusters and intelligently share network control information with one another. Full QoS reliably supports latency-sensitive applications such as streaming video and VoIP.

Retail and distribution

SmartPath is the ideal solution for centrally managed wireless connectivity across multiple sites. It's ideal for retail, providing an easy, cable-free way to reach PoS/PoP terminals and stream video to in-aisle displays.

By design, the system has no single points of failure, so you can maintain real-time wireless connectivity in stores and warehouses even if one connection fails. A simple management interface enables you to deploy a wireless inventory control system site by site by pushing data from a central office to all newly installed APs.

Hospitals and healthcare

SmartPath brings high-speed wireless networking to all areas of your facility. Because it supports higher speeds and 802.11n connectivity, SmartPath greatly assists the mobility of today's caregivers and the growing use of networked imaging and video in patient care. What's more, the distributed yet centrally manageable architecture can handle large amounts of traffic and provide fast data availability to clinicians.

Plus, SmartPath is ideal for…

- Government
- Hotels and meeting halls
- Museums
- Small businesses

…and more!

Get ready for the move to 802.11n standard Wi-Fi networks in the coming years.

Productivity

Mobility

Applications

Yesterday's WLANs:

- » Wi-Fi for convenience
- » Nomadic users
- » Limited speed and range
- » Best for smaller office networks
- » An extension of the wired LAN

The 802.11n world:

- » Ideal for mobile users
- » 10x bandwidth potential
- » MIMO antennas for more range, better coverage
- » Dual-mode voice capable
- » Possible wired Ethernet replacement

The needs of enterprise Wi-Fi are growing.

The way that Wi-Fi is being used and the requirements of an enterprise Wi-Fi network are going through a fundamental and generational change. The reason: There's an explosion of Wi-Fi enabled devices, a 10x performance increase with the 802.11n standard, and the migration of Wi-Fi from convenience to mission-critical Ethernet networks.

As a result, the enterprise is demanding a new type of wireless LAN infrastructure. SmartPath technology is designed to meet that demand. With it, your enterprise can get a secure multiservice infrastructure that's capable of supporting voice, video, and data users—as though they each had their own networks. QoS and SLA features help ensure end-user experiences are maintained.

Enterprise users also want the mobility and productivity of Wi-Fi with the scale, performance, resilience, and ubiquity of the Internet. To that end, SmartPath enables you to create a widely accessible, low-cost network with wire-like resilience that is also easy to deploy and use.

The network impact of 802.11n.

Centralized data forwarding is usually sufficient for 802.11a/b/g wireless networks, where network speeds were much lower. But as more bandwidth is used for 802.11n, this centralized approach has a huge impact on backbone links and the controller itself.

But without a controller, you can minimize such backhauling of data. SmartPath architecture offers all the wireless functionality promised by 802.11n in a controller-less design, so:

- Data traffic flows from wireless clients to the AP, then to the client's destination in a direct, open path.
- Control traffic is localized and flows only between APs that are in the same RF neighborhood.
- No required "double-switching," tunneling, or single points of failure. Traffic works just as it does on your wired network.
- Data traffic from higher-speed radios is distributed across the network, is not bottlenecked into and out of a single device, and doesn't need to hit the core.
- Wireless traffic is no longer opaque to the rest of the network. Your WLAN benefits from security and QoS schemes that are already in place.
- Policy enforcement can be provided at the network edge, instead of at the controller.

SmartPath Enterprise Management System (EMS)

- Available as cloud-based subscription or as Virtual Appliance Manager Software to install on your server.
- Manage entire system from a user-friendly GUI console. APs can be configured in minutes through the EMS.
- Platform's policy-based management simplifies large deployments encompassing many sites and offices.
- Use to set up access enforced by per-user policies and role-based guest management delegation with SLAs.
- Group policies can be applied network wide to all APs or individually to certain APs.
- Integrated Wi-Fi planner tool helps you verify optimum SmartPath Wireless AP placement.
- Easily see network topology and status of access points.
- Boasts full 802.1X authentication for secure access.
- Supports RADIUS with Active Directory, LDAP, Open Directory, and eDirectory integration.
- Easily manage security settings, firewall policies, and more.

The SmartPath Enterprise Management System (EMS) brings best-in-class management to a distributed WLAN system, enabling you to centrally manage just a handful or up to hundreds of SmartPath access points.

Chaperone the AP party.

Once plugged in, each SmartPath access point automatically contacts the EMS using the secure CAPWAP-DTLS protocol. The EMS then pushes configuration data to the newly installed access point to bring it into the network. This easy, virtually plug-and-play installation makes it simple to add access points to the network at any time while retaining full control over the process.

With the EMS, you don't need prestaging or preconfiguration to connect access points anywhere on your network, so managing remote access points is as easy as managing a local LAN.

The EMS provides centralized control of the entire SmartPath network but does not actively forward traffic or make forwarding decisions—this is done by the intelligent access points themselves. Because data traffic doesn't travel through the EMS, you avoid the traffic bottlenecks seen with some controller-based wireless solutions, but yet retain full administrative control.

Complete SmartPath WLAN visualization.

This GUI platform enables you to manage the entire SmartPath system from a user-friendly interface. It features a customizable dashboard for advanced functionality without unnecessary complexity. Use it to monitor, upgrade, troubleshoot, and more.

Network maps enable you to see topology and status of access points, and real-time heat maps show RF propagation within your enterprise. The EMS detects both authorized and rogue WLAN clients and access points, and maps them for easy visualization.

Screens also feature details related to SLA compliance and statistics for reporting purposes. Configuration audit capabilities ensure that all configurations are up to date, and you can set up real-time monitoring of alarms and events from all APs.

Group policy and per-user policy enforcement.

Group policy functions automatically create wireless profiles for your users. Whenever a new laptop user joins the domain, wireless access is available quickly.

You can also configure Active Directory for per-user policy enforcement. Supporting up to 64 policy configurations per SSID, the system enables you to set up wireless access by user.

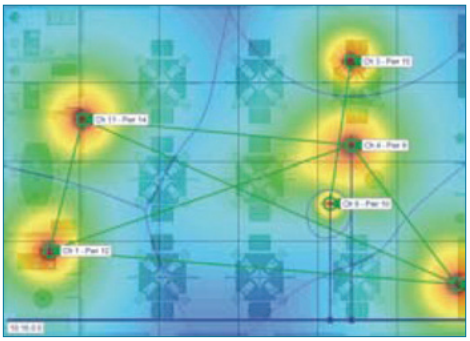
Also keep data secure by restricting guests to the Internet while allowing employees to connect to the Internet and your private network. You can even set it up so an authorized employee can create guest network accounts via the EMS.

Two options: Manage from a cloud or a server.

The **SmartPath EMS, Cloud-Based** version gives you either a 1-year (LWN600CM-1) or a 3-year subscription (LWN600CM-3) for managing one SmartPath AP. On-line management makes it easy to start small and add users to your network as you grow. And with no hardware device to install, configure, or patch, you can manage it from anywhere.

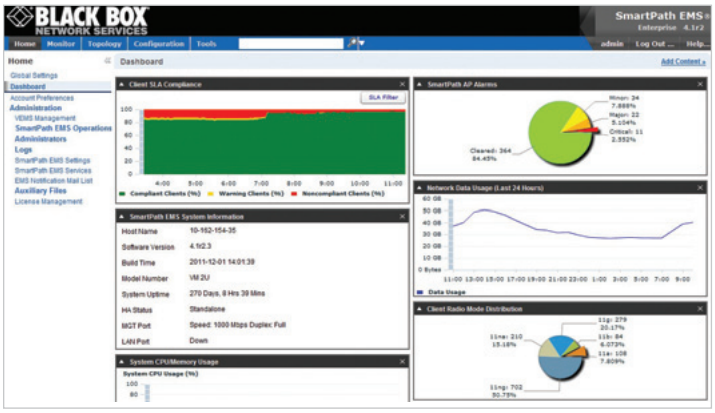
SmartPath on-line is hosted within secure Tier IV SAS 70 Type II data centers, with scheduled backups and disaster recovery capabilities and 24/7 monitoring. None of your traffic traverses the hosted service's network, so your data is kept private and secure.

If, for security reasons, you can't use cloud-based management, you may prefer to use **SmartPath EMS Virtual Management Appliance Software** (LWN600VMA), which installs on your server as VMware® and supports up to 5000 APs. This option requires a one-time perpetual license (LWN600MLA-1) for each AP.

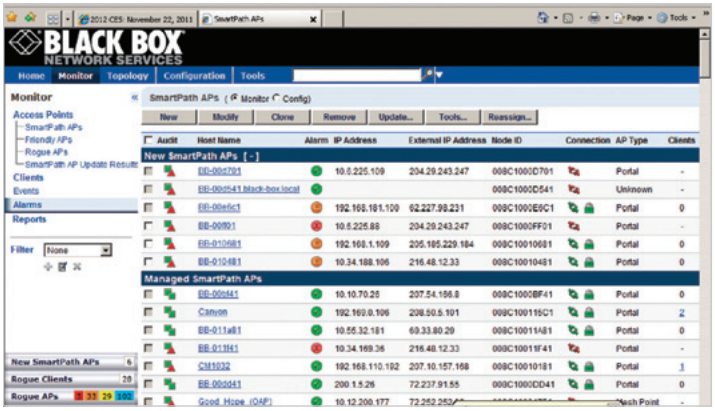


The EMS interface includes a helpful Wi-Fi planning tool.

Guided configuration screen.



SmartPath dashboard screen.



Define user groups, manage APs, and establish security policies from a central, easy-to-use interface.

SmartPath Management in the Cloud

Cloud computing is a hosted service over the Internet that is used as an alternative to hosting data storage or applications on a local server. The SmartPath Enterprise Management System is available as a cloud-based service, offering significant advantages:

» **Flexible**
SmartPath cloud management tools are 100% mobile, so you can manage your wireless from wherever you are.

» **Easy**
All you need is an Internet-connected PC to manage your entire wireless network. A simple, point-and-click graphical interface puts you in complete control.

» **Economical**
Cloud-based management virtually eliminates capital expenditures (CAPEX) because there are no servers to buy. You save on upkeep, too, because SmartPath cloud management tools are maintained by someone else.

» **Centralized**
No matter how large your wireless network grows — even if you have remote sites—you can manage it all through one simple interface.

» **Scalable**
Start with a few access points and add more as you need them—cloud-based management grows with your wireless network.

The standard model for indoor-only applications:

SmartPath Indoor Access Point (with Integrated Antennas)

- Once plugged in, automatically joins the network and contacts the system's SmartPath EMS software for configuration or security setting updates.
- Integrated dual concurrent 2.4-GHz/5-GHz MIMO antennas.
- Scalable from one AP up to thousands of APs.
- Supports Gigabit links on a 10-/100-/1000-Mbps RJ-45 port.
- Fits into most office decors. PVC exterior can be painted.
- PoE-powered device for reduced power infrastructure needs. External power supply also available.
- Uses advanced WIDS and wireless VPN communications for secure, seamless roaming.
- Supports legacy 802.11a/b/g and 802.11n devices, too.

LWN602A

The single-processor SmartPath Enterprise Wireless Indoor AP (with Integrated Antennas) uses two integrated radios to provide an aggregate link speed of 300 Mbps. It's the core of the SmartPath network, working like a high-end switch to sort packets and send them to their destination.

An enterprise-grade solution that's secure.

As part of the SmartPath Enterprise Wireless System, the Indoor AP contains all the features you'd expect from an enterprise-grade wireless product, including Layer 2 switching, 802.1q VPN, and QoS support.

No bottlenecks or latency for bandwidth-heavy applications.

Because the SmartPath Enterprise Wireless Indoor AP functions as a self-aware, smart device without the need for controllers in your enterprise, you can eliminate the bandwidth bottlenecks and latency that result from backhauling traffic through a controller. This, in turn, enables you to create an ideal platform for demanding applications, such as voice over wireless LAN (VoWLAN) deployments.

For RF management, the AP offers cooperative channel selection, with DFS2 support, as well as client load balancing. It can also automatically increase airtime allocation to clients best able to use it.

Easy to set up, power, and manage.

The SmartPath Enterprise Wireless Indoor AP works as a PoE device, so you can power it through Ethernet wiring from a PoE injector or plug it into a nearby wall outlet (with the optional power supply kit). The AP intelligently uses whatever power is available at any given time, from any power source.

Once plugged in, each AP automatically joins the network and contacts the SmartPath Enterprise Management System (EMS). Available as a cloud-based service or as software to be installed on your own server, the EMS is a versatile platform that enables you to manage all APs in your entire wireless network from a single, user-friendly GUI console. (For details on the EMS platform, see **pages 6–7**.)

If the APs lose communication with the SmartPath EMS, all AP functionality is preserved so there is no loss of uptime.

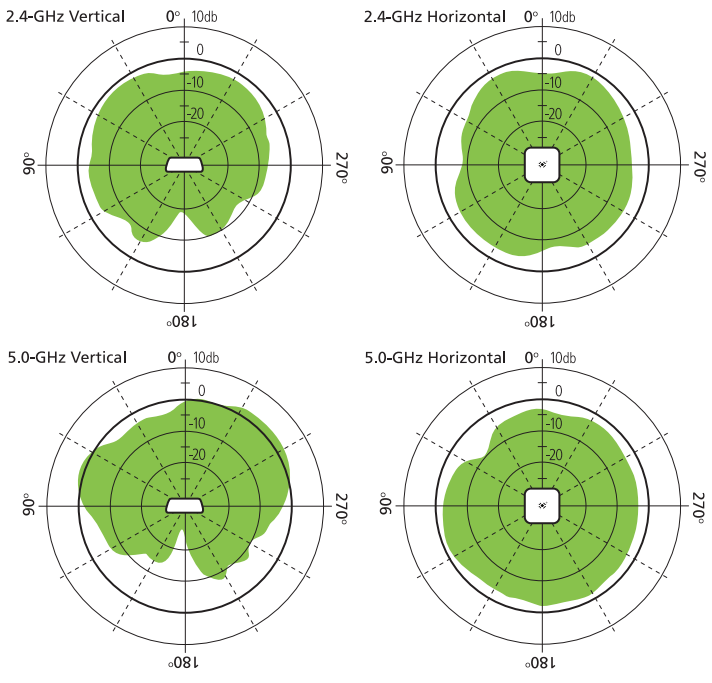
Fits well into the typical office environment.

The SmartPath Enterprise Wireless Indoor AP can be used in any standard office environment. Fasten it to a ceiling with its tile clips (an optional drop ceiling bracket is also available). It is plenum rated.

Its off-white exterior blends inconspicuously into most office decors. A muted LED light radiates from beneath the Black Box logo on its top cover, gently glowing instead of blinking, emitting a specific color light to signal operation status to IT personnel without distracting others nearby.

And to protect it from theft, the AP can be used with Kensington® style locks and features a tamper-proof security screw.

RF Coverage Maps for Indoor Access Point



The hardened model for harsh indoor or sheltered outdoor applications:

SmartPath Hardened Access Point (External Antennas)

- All the features, range, roaming, and scalability of the standard AP but in a hardened design.
- Use in harsh indoor industrial areas.
- Features dual-core processor and six RP-SMA connectors.
- Pair it with separately sold antenna kit.
- Once plugged in, automatically joins the network and contacts the system's SmartPath EMS (order separately).
- Dual 10-/100-/1000-Mbps RJ-45 ports.
- Smart PoE (802.3af/at) powered. Or use with optional standalone AC power supply.

LWN602HA with LWN600A-ANTK

The SmartPath Enterprise Wireless Hardened AP features a dual-core processor and uses two radios to provide an aggregate link speed of 300 Mbps. It's much like the standard office version on the facing page but is designed specifically for use in harsh areas.

The SmartPath Hardened AP, however, features external antenna connections, providing extra flexibility. You choose antennas separately depending on your application and RF needs.

Available antenna and outdoor mounting options.

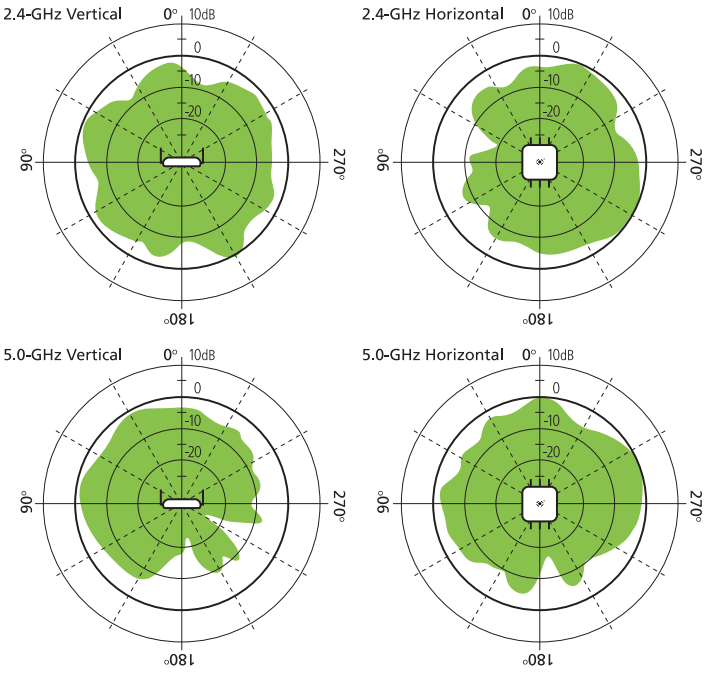
If you order the SmartPath 602HA Antenna Kit (LWN600A-ANTK), you get six antennas that attach to the six RP-SMA connectors on the sides of the access point unit. These antennas suit indoor applications only.

For specifications and other features, see pages 11–12.

WARNING: To install the access point and outdoor kit safely, you must be a qualified installation professional, licensed or certified in accordance with local regulations.

LWN600A-ANTK

RF Coverage Maps for Hardened Model



High-performance wireless for outdoor environments

SmartPath Outdoor Access Point (External Antennas)

- All the features, range, roaming, and scalability of the standard AP but hardened for outdoor use.
- Weatherproof for outdoor use in unprotected locations.
- NEMA 4X rated with an extended temperature range and a waterproof chassis.
- Powered by 802.3at Power over Ethernet.
- Autosensing 10-/100-/1000-Mbps Ethernet port supports Gigabit Ethernet links to a wired network.
- Fast 802.11n throughput rivals that of wired networks.

Outdoor Access Point (LWN602WA)

The SmartPath Outdoor Access Point is an enterprise-grade, high-performance (2x2) MIMO solution, designed to work within a SmartPath wireless network. This access point is NEMA 4X rated, fully hardened with an extended temperature range and a watertight chassis, enabling you to extend your wireless network outdoors.

Tough

Because the Outdoor Access Point is impervious to virtually any weather condition, you can install it outdoors without special protection or shelter. It's NEMA 4X rated, providing protection against corrosion, windblown dust and rain, splashing and hose-directed water, and is also undamaged by ice buildup on the enclosure.

The access point operates in a temperature range of -40 to +131° F (-40 to +55° C), which means it can be deployed in most every outdoor environment on earth.

Part of the SmartPath family

The Access Point supports four antennas and to provide service concurrently on both 2.4-GHz and 5-GHz bands, The access point provides support for 802.11n as well as legacy 802.11a, b, and g clients.

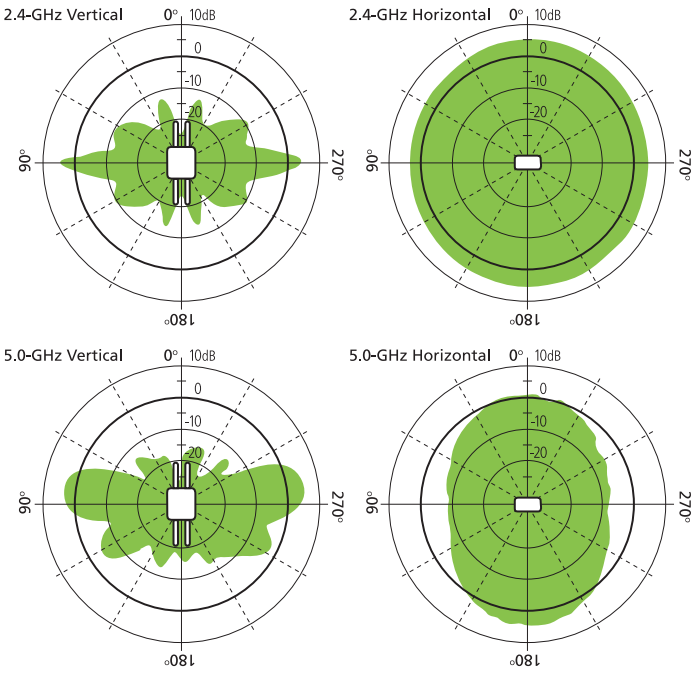
Wire it up

The Outdoor Access Point features four (4) N-type jack antenna connections for external antennas, which are included.

The 10/100/1000 Ethernet port supports 802.3at Power over Ethernet (PoE), so you don't need a nearby power outlet, or you have the option of using the included AC power supply.

Hardware for wall or pole mounting is included.

RF Coverage Maps for Outdoor Access Point



SmartPath features in detail:

Wireless VPN capabilities

- Profile-based split tunneling with NAT support.
- Wireless VPNs supported across mesh network.
- RADIUS, DHCP, NTLM, LDAP, and NTP can be selected to go to a local or remote network.

SLA compliance

- For health of client and APs, system monitors connection quality and triggers and reports on actions to improve quality.
- Automatically boosts, allocates airtime for clients to best reach performance targets.
- Balances loads for clients connecting to APs.

Security

- Wireless privacy and authentication is Wi-Fi CERTIFIED™, meeting WPA™ and WPA2™ protocols, and 802.11i, WEP, 802.1X, and PSK requirements.
- Granular user profile-based management defines VLANs, QoS, mobility policies, and security policies for each user entering the network.
- AES-CCMP, TKIP, and RC4 (WEP only) encryption.
- Mesh traffic encrypted with AES.
- Time-of-day and day-of-week access control and SSID enabling.
- Up to 16 SSIDs per radio for network segmentation.
- Onboard Stateful Inspection firewall policy enforcement with session state sync with neighbors.
- ALG support for SIP, DNS, TFTP, and FTP.
- Destination-based MAC firewall support.
- Tunneled guest networks.
- Cluster-wide client isolation.
- WPA-TKIP vulnerability protection.

Authentication

- 802.1X authentication for WEP, WPA, and WPA2.
- Private PSK authentication enables unique preshared keys (PSK) for each user within a single SSID.
- RADIUS support with PEAP, EAP-TLS, TTLS, LEAP, and EAP-FAST.
- LDAP authentication to directory servers, including OpenLDAP®, Novell® eDirectory, and Apple® OpenDirectory®.
- Authentication to Microsoft® Active Directory™ with local credentials caching: also supports Global Catalog and multiple forests.
- Multiple RADIUS server support (per AP, per SSID).
- RADIUS server (local database or RADIUS proxy).
- Standard Interchange Protocol (SIP2) support for user validation vs. Library Information Systems (LIS).
- MAC-based RADIUS authentication.
- Dynamic Change of Authorization (RFC3576).
- 100 associated clients per LWN602HA; 50 associated clients per LWN602A.

Captive Web portal

- Built-in customizable captive Web portal on APs for guest access.
- Integrates easily with third-party Web portal solutions.
- RADIUS and Active Directory authentication support for the captive portal.

QoS for data, voice, and video at the radio

- Powerful QoS features, the kind typically only found on high-end routers.
- Supports Stateful VoIP roaming and failover.
- User-profile-based queuing, scheduling, and policing.
- QoS can be assigned per VLAN, user profile, service, and MAC address.
- SIP call protocol decoding and dynamic port detection.
- Full queuing support with eight queues (strict and weighted round robin queuing mechanisms).
- Supports rate limiting per VLAN, per user profile, per user, and per service.
- VoIP call admission control (CAC).
- WMM® (802.11e) marking and policing for wireless, 802.1p, and/or DiffServ.
- Wi-Fi CERTIFIED WMM.
- WMM (U-APSD) power saving for Wi-Fi devices.
- Supports SpectraLink® SVP wireless phone protocol.

Wireless IDS and IDP

- Built-in, in-network rogue AP detection.
- Supports AirTight® IDS and IDP integration.
- Rogue AP mitigation and rogue client detection, including ad hoc clients.
- Wireless compliance checking.
- Sophisticated L2/L3 DoS protection with a wide range of L2/L3 attack signatures.
- Port scan, IP spoofing, and IP address sweep protection for added security, particularly for quarantine and guest networks.
- Wide array of security actions, including logging, blocking, disassociation, and banning, so the network can automatically respond to threats.

Mesh and availability

- Flexible radio configuration, enables either interface to be configured as a mesh.
- Ethernet bridging support across mesh connections for a single device or workgroup.
- Automatic neighbor detection and route determination in a mesh.
- Uses L2 routing instead of Spanning Tree for greater performance and less overhead.
- Self-healing enabled by dynamic path selection.
- For high availability, supports full client session synchronization across APs.
- Stateful failover of any AP, even in case of a wired network failure.
- AAA caching of credentials for remote office survivability.
- Mesh failover in case of wired network or switch failure. Automatically changes access radio to backhaul radio if such failure occurs.
- Wireless virtual access console.
- Track IP or gateway automatically initiates failover or troubleshooting tools in case of a failure.
- Station (client) load balancing.
- Supports fast L2/L3 roaming and tunnel load balancing for L3 roaming.
- Wireless VPN supported across the mesh.

Redundant data support (LWN602HA only)

- Dual Ethernet support for redundant data.
- Dual Ethernet connections enable link aggregation for legacy 10/100 or 10/100/1000 switches.
- Intelligently uses available power and adjusts as needs change.
- Enables you to benefit from 802.11n wireless while using legacy 10/100 or 10/100/1000 switches.

TECH SPECS

SmartPath APs:

Environmental —
Operating temperature:
Indoor model: +32 to +104° F (0 to +40° C);
Hardened model: -4 to +130° F (-20 to +55° C);
Outdoor model: -40 to +131° F (-40 to +55° C);
Storage temperature:
Indoor model: -40 to +185° F (-40 to +85° C);
Hardened model: -40 to +176° F (-40 to +80° C);
Outdoor model: -40 to +176° F (-40 to +80° C);
Humidity: Up to 95% noncondensing

Radio Modulation — OFDM (802.11a/g), DSSS (802.11b), or 802.11n (802.11n)

Rated Speed — 300 Mbps

Connectors — Ethernet: (1) RJ-45 (indoor and outdoor models) or (2) RJ-45 (hardened model), 10/100/1000 Mbps, PoE 802.3af and 802.3at compliant; Hardened model only: Serial: (1) RJ-45 (RS-232)

Power — Either PoE or direct power; optional PoE Injector (LPJ001A-T) or 100–240-VAC, 50–60-Hz universal power supply (LWN600PS-US) available

Size — Indoor model: 2"H x 6.5"W x 6.5"D (5 x 16.5 x 16.5 cm);
Hardened model: 1.25"H x 8.5"W x 8"D (3.2 x 21.5 x 20.3 cm);
Outdoor model: Without locking hole extensions: 2.75"H x 7.125"W x 8.8125"D (7 x 18.1 x 22.4 cm);
With locking hole extensions: 3"H x 7.75"W x 9.625"D (7.6 x 19.7 x 24.4 cm)

Weight — Indoor model: 1.75 lb. (0.8 kg);
Hardened model: 3 lb. (1.4 kg);
Outdoor model: Without antennas and brackets: 4.3 lb. (2 kg);
With antennas and brackets: 6 lb. (2.7 kg)

SmartPath EMS Virtual Management Appliance Software (VMware):

Supported APs (Maximum) — 5000

System Requirements (Minimum) — Processor: Dual-core 2 GHz;
Memory: 2 GB VM, 1 GB host;
Storage: 10 GB available disk space

Tested Virtualization Platforms —
ESXi 4.0 or better;
Player on CentOS;
Player on Windows Vista®

RADIO SPECS

802.11a:
Data Rates — 54-, 48-, 36-, 24-, 18-, 12-, 9-, 6-Mbps with auto fallback
Modulation — Orthogonal frequency division multiplexing (OFDM)
Operating Frequency — 5.150–5.950 GHz

802.11b:
Data Rates — 11-, 5.5-, 2-, 1-Mbps with auto fallback
Modulation — Direct-Sequence Spread-Spectrum (DSSS)
Operating Frequency — 2.4–2.5 GHz

802.11g:
Data Rates — 54-, 48-, 36-, 24-, 18-, 12-, 9-, 6-Mbps with auto fallback
Modulation — Orthogonal frequency division multiplexing (OFDM)
Operating Frequency — 2.4–2.5 GHz

802.11n:
Data Rates — MCS0–MCS15 (6.5-Mbps–300-Mbps)
MIMO — Indoor and outdoor models: 2x2; Hardened model: 3x3
Modulation — 802.11n
Operating Frequency — 2.4–2.5 GHz, 5.150–5.950 GHz

Power & Sensitivity Table | Outdoor Access Point

		2.4 GHz, 5 dBi		5 GHz, 8 dBi	
	Rate	TX Power	RX Sensitvity	TX Power	RX Sensitvity
802.11b	1 Mbps	27	-95	—	—
	11 Mbps	27	-90	—	—
802.11g/a	6 Mbps	27	-94	26	-95
	54 Mbps	24	-80	21	-80
802.11n	MCS0	27	-95	27	-94
	MCS7	23	-77	21	-76
	MCS8	27	-90	27	-91
	MCS15	23	-75	21	-73

Power shown is per transmit chain and is a maximum power that the radio is capable of; power limits will be limited by local radio regulations.

Click and find at blackbox.com/go/SmartPath.
International and U.K. power supplies.

Item	Code
First choose your wireless access point(s)…	
SmartPath Wireless Access Point (AP)	
Indoor (with Integrated Antennas)	**LWN602A**
Hardened (without Antennas)	**LWN602HA**
Outdoor (Includes Antennas)	**LWN602WA**
…then select either a cloud-based management service…	
SmartPath Enterprise Management System (EMS), Cloud-Based	
1-Year Subscription per AP	**LWN600CM-1**
3-Year Subscription per AP	**LWN600CM-3**
…or locally deployed software with the required AP licenses …	
SmartPath Enterprise Management System (EMS) Virtual Management Appliance Software (Up to 5000 APs)	**LWN600VMA**
SmartPath Perpetual License for EMS Appliance Virtual Management Appliance Software (Perpetual, per Access Point)	**LWN600MLA-1**
Select the power option for your application:	
802.3at PoE Gigabit Injector, 1-Port	**LPJ001A-T**
SmartPath 30-W Power Kit with Cord, U.S.*	**LWN600PS-US**
For Hardened Access Points, order…	
SmartPath 602HA Antenna Kit (Indoor Use)	**LWN600A-ANTK**
✦ Includes (3) 1.4 GHz and (3) 5-GHz antennas for (1) AP.	
You may also need…	
Indoor Ethernet PoE Lightning Protector	**HGLN-CAT6JT**
Outdoor Ethernet PoE Lightning Protector	**AL-CAT6JTW**

** For use with LWN602A and LWN602HA only.*