Access Port Series

Next-Generation Access Points: More Functionality at a Lower Cost

Wireless Switch System

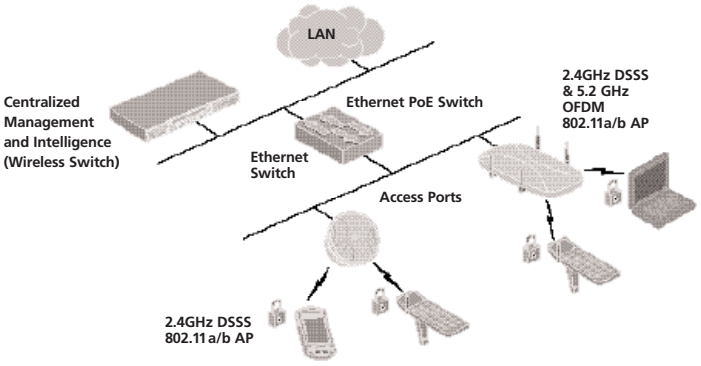
WIRELESS LANs

Powerful Enterprise-Level Next-Generation

Wireless Technology

Access Ports are a key component of Symbol Technologies' award winning Wireless Switch System, the second-generation wireless LAN architecture that does more, yet costs less. Working in conjunction with Symbol's Wireless Switch 5000 and Wireless Switch 2000, Access Ports deliver robust and feature rich IEEE 802.11a, 802.11b, and 802.11a/b wireless LAN connectivity (802.11a/b/g available soon). Access Ports substantially reduce the cost of deploying, implementing and managing a wireless LAN, while significantly increasing features, functionality and security of the wireless LAN infrastructure.

Next Generation Wireless Switch Network Architecture with Access Ports



Access Ports, second-generation wireless LAN technology, replace the traditional access point. Features, functionality, security and management are all centralized in the Wireless Switch—Access Ports become zero configuration devices, obtaining everything from initial configuration to ongoing updates automatically from the Wireless Switch. Much less expensive than their counterparts, the access point, Access Ports substantially reduce the cost of deploying, implementing and managing a wireless LAN, while significantly increasing features, functionality and security.

More Functionality for a Fraction of the Cost of Access Points

Access Ports are much leaner and only a fraction of the cost of first generation WLAN access points, due to the centralized architecture of Symbol's Wireless Switch System. Access Ports connect to a centralized processing and switching engine that resides in the WS 5000 and WS 2000 Wireless Switches via standard 100BaseT cabling—just as the access point connects to an Ethernet hub or switch. But unlike the access point, features, functionality, security and management are all centralized in the Wireless Switch, effectively allowing the Access Ports to become zero configuration devices. Maintenance and management, required for each and every Access Point, is effectively eliminated. Access Ports, once verified as an authorized network device, obtain initial configuration information as well as ongoing updates automatically from the Wireless Switch. Advanced radio processing ensures the most robust wireless performance and range, even in the most demanding environments.

The result is a wireless LAN that delivers the most value—more functionality, low cost and high investment protection. Operational costs are reduced through centralized management. The leaner, less expensive hardware reduces capital expenditures, and the ability to upgrade features centrally on the switch future-proofs your investment.

Symbol's family of Access Ports, in conjunction with the Wireless Switch, offers increased functionality with a comprehensive array of features, including:

Mobility Features

A variety of features ensure peak performance for mobile devices, such as Pre-emptive Roaming, which ensures that devices roam prior to signal degradation for continual operation of critical applications.

Transmit Power Control

Access Ports are capable of automatically adjusting the transmit power per the 802.11a specification, enabling Access Port and mobile client (laptop, PDA, etc.) to agree on a common level of transmit power.

Dynamic Frequency Selection
Dynamic Frequency Selection and Radar Detection and Avoidance per the 802.11a specification enable Access Ports to automatically detect channel conflicts with other Access Ports, dynamically selecting an alternate channel to avoid interference.

Quality of Service (QoS)
Traffic can be prioritized to ensure that critical data traffic—such as voice or a sales application—always have priority over less important traffic such as email.

Load Balancing
Proactively and dynamically distributes mobile clients between access ports to prevent overload as well as degradation of service, ensuring a fast continual wireless connection for users.

Service Fairness
Ensures that all wireless LANs (separate broadcast domains) have appropriate bandwidth to maintain the required service levels.

Mobile Device Management
Provides a wealth of information on mobile clients connected to the wireless network, including rate of throughput, signal strength, power saving mode, security and authentication states, enabling easier management and faster trouble shooting.

Centralized Security
Centralized authentication and encryption provides simpler more cost-effective management of security functions and policies without compromising roaming performance.

Internal and External Antenna Options
The flexibility to select from a complete suite of 802.11a and 802.11b antennas enables coverage patterns to be customized to achieve continuous wireless connectivity—even in the most challenging environments.

Full 12-Channel Bandwidth
The ability to utilize all 12 channels provides full access to 802.11a bandwidth, minimizing interference between adjacent Access Ports, and enabling peak network performance and the most flexible wireless LAN design.

True plug-and play
Symbol's Access Ports are operational right out of the box. Unlike traditional access points, there is no time consuming configuration required—it is automatically downloaded from the Wireless Switch, dramatically reducing the complexity and time required for installation, while eliminating the need for ongoing management of individual devices.

Simple to install anywhere
Typically, installation of access points represents a large portion of the cost of a wireless network. However, Symbol's Access Ports can be installed nearly anywhere in minutes, even in areas where power is not available.

The plenum-rated housing provides complete flexibility for installation anywhere—desktops, wall-mount, or ceiling-mount—above or beneath the ceiling tile. When installed above the ceiling tile, an easily visible LED enables you to visually check on the status at any time. Access Ports can be installed in a wide range of environments—from inside corporate offices to the warehouse and manufacturing floor to the loading dock or refrigerated environments—providing wireless connectivity to all types of users across industries.

The 802.3af compliant Access Ports can be powered via the Ethernet Port with Symbol's Power Injectors or any standard-based 802.3af switch for fast, easy installation, even in areas without outlets. The need to install expensive lines and outlets—up to $1500 per outlet—is eliminated, effectively reducing deployment costs. And the ability to daisy chain one Access Port to extend Power-over-Ethernet (POE) to another Access Port further reduces costs. Symbol offers a complete line of 802.3af Power Injectors, with models that provide POE for one to 12 Access Ports for switches that do not support standards-based POE.
For more information on Symbol's 802.3af Power Injectors, visit **www.symbol.com/wireless**

Maximum communication range
Advanced radio processing (multi-path) capabilities, custom-designed high-gain 3.5 dBi omni-directional cross-polarized diversity internal antennas and an array of external antenna options combine to deliver the most robust wireless performance and coverage possible—regardless of how challenging the environment is, or where Access Ports are mounted (on a desk, wall or above or beneath the ceiling).

Always up to date with the latest features and functionality
To update Access Ports with new features and functionality, simply update the software in the WS 5000 and WS 2000 Wireless Switch. The new features and functionality are automatically distributed to each Access Port—there is no disruption of your wireless LAN, and the need to update each access point individually is eliminated.

Tamper-proof
Access Ports provide an additional layer of security. Network configuration parameters reside in the Wireless Switch, and are downloaded into the volatile memory of the Access Port only when the Access Port is verified as an authorized network device and powered on. If an intruder takes an Access Port offline in an attempt to obtain configuration information, the parameters are lost, reducing the risk of tampering and theft of confidential network parameters.

Easy to manage
With management centralized in the Wireless Switch, managing a group of Access Ports—no matter how large—s as simple as managing a single Access Port. Centralized configuration in the Wireless Switch allows distribution of configuration changes and updates to all Access Ports, eliminating the many hours required for configuring and managing individual devices in an access point-based wireless LAN network.

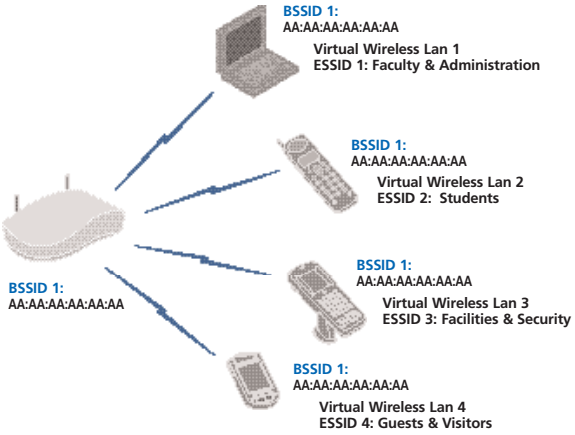
Virtual AP Enables True RF Virtual LANs (VLANs) for Better Device and Network Performance

With Virtual AP, each Access Port can support four separate wireless broadcast domains—functionality that would otherwise require the installation of four first-generation access points. These true wireless VLANs enable separation of mobile end-users, ensuring that broadcast traffic, including network-level ARP messages, reaches only those recipients for which it is intended. Overall network traffic is reduced, network and device performance is improved, and device battery life is increased—at a fraction of the cost required to deliver the same functionality in a first generation access point-based network.

Each Access Port supports four BSSIDs (Basic Service Set Identifiers) and 16 ESSIDs (Extended Service Set Identifiers), enabling granular segmentation of the wireless LAN into multiple broadcast domains to meet specific enterprise needs. Typical access points support only one BSSID, utilizing ESSIDs (instead of BSSIDs) to create VLANs. In the diagram below, four ESSIDs are utilized to create separate wireless LANs for students, faculty, guests and visitors, and facilities. However, since the single BSSID of any access point is automatically adopted by all associated client devices, broadcast traffic, which is sent to a specific BSSID, reaches the users of all 4 wireless LANs. Messages intended for faculty only reach students as well as guests and visitors and facilities—regardless of the ESSID identifier. The resulting increase in traffic reduces throughput and bandwidth, forces client devices to waste battery power processing unnecessary traffic, and potentially compromises confidentiality and security.

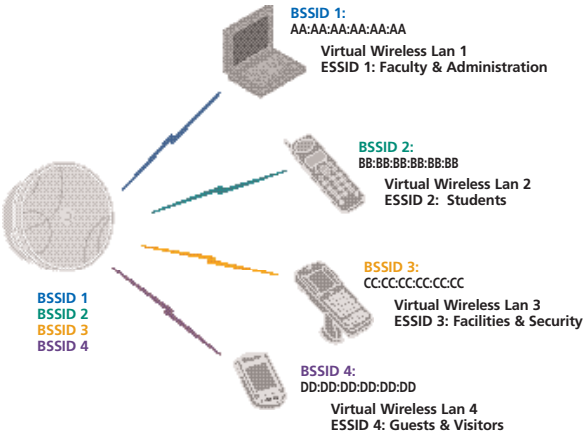
Virtual AP Enables True Virtual LANs

Access Point VLAN Architecture: Single BSSID VLAN
Performance and Security Issues



In a typical access point architecture, VLANs are defined using multiple ESSIDs. Since access points support only one BSSID, broadcast traffic intended only for Faculty and Administration (ESSID1) will be sent to all VLANs—Students (ESSID2), Facilities and Security (ESSID3) and Guests and Visitors (ESSID4). The resulting processing of unnecessary messages reduces battery life and network throughput, and delivery of messages to unintended recipients presents security and confidentiality issues.

Access Port VLAN Architecture: Multiple BSSID VLAN
Improved Performance and Security

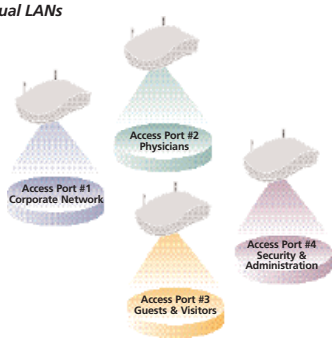


Virtual AP provides support for multiple BSSIDs, enabling the creation of true wireless VLANs. Broadcast traffic is sent only to recipients within a specific wireless VLAN (ESSID), improving overall battery life of client devices and network throughput, and ensuring security and confidentiality for broadcast traffic.

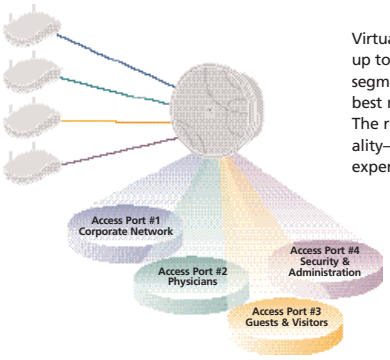
Virtual AP: The functionality of Four Access Points in One Access Port

Access Points with no Virtual AP
Requires Four Devices to Support Four Virtual LANs

Without Virtual AP, an access point can only support one wireless LAN. Separate access points must be deployed for each wireless LAN required, significantly increasing expense and maintenance costs.



Access Ports with Virtual AP
One Access Port Supports Four Virtual LANs



Virtual AP enables Access Ports to support up to four virtual LANs, enabling granular segmentation of the wireless network to best meet the needs of the enterprise. The result is more control, more functionality—with less capital and management expense.

AP 100 with Integrated Internal Antenna

802.11b Access Port

The AP 100 brings the power of IEEE 802.11b Wi-Fi® compatibility to your wireless LAN for true interoperability. The compact and innovative industrial design of the AP 100 provides the flexibility for installation on desktops, walls, above or beneath ceilings. Regardless of where the AP 100 is installed, LED lights are easily visible, providing visual feedback of the state of the Access Port.

The integrated (internal) 3.5 dBi omni-directional cross-polarized diversity antenna provides the strongest wireless coverage possible, regardless of how the Access Port is mounted. And since the
AP 100 receives its firmware from the WS 5000 or WS 2000 Wireless Switch, the cumbersome, time consuming and error prone process of loading traditional access point firmware is eliminated.

AP 100 with Ceiling Piece
(for above ceiling mounting)

AP 100 mounted
on the wall

AP 100 mounted above
ceiling with Ceiling Piece
visible for easy viewing
of status

The external connectors of the AP 100
can accommodate a wide variety
of external 802.11b antennas
to customize wireless coverage
patterns and increase range
to meet network needs

AP 100 with high-performance
omni-directional dipole
antennas attached

AP 100 with External Antenna Options

802.11b Access Port

While the Access Port 100 with integrated antenna provides ample RF coverage for most installations, the AP 100 with external antenna options enables the customization of wireless LAN coverage patterns to ensure wireless connectivity in the most challenging areas of your network. For example, warehouses may contain areas with materials that RF cannot penetrate; the aisles in retail environment may cast shadows where RF coverage would not be available.

While these types of environments would typically require additional Access Ports to provide adequate coverage, the AP 100 with external antenna options enables the customization of the wireless LAN coverage pattern for those hard-to-reach areas. Standard antenna connectors, provided in lieu of the integrated internal antenna, enable selection of the right antenna from Symbol's complete line of 802.11b antennas and accessories, providing the flexibility you need to deliver cost-effective
wireless coverage anywhere in your network.

AP 200

802.11a/b Access Port

The AP 200 is the most flexible Access Port product available, delivering three industry firsts: the ability to accommodate mixed 802.11 technologies, support external antennas and access all 12 channels. The ingenious modular design offers excellent investment protection and cost-effective support for a wide variety of applications, including data, voice and video. The option to select either integrated or external antennas enables the design of coverage patterns to meet the needs of the any environment—and the AP 200 is the only product on the market that can accommodate external antennas. And support for all twelve 5 GHz channels (with integrated 802.11a antennas) delivers maximum bandwidth and enables the wireless LAN to be designed to eliminate interference between mobile devices.

The AP 200 supports IEEE 802.11a and 802.11b, with extensible support for 802.11g. The base unit provides integrated 802.11a support, and 802.11b support is easily added via a snap-on module. The internal 802.11a omni-directional cross-polarized diversity antennas provide strong wireless coverage, regardless of where the Access Port is mounted.

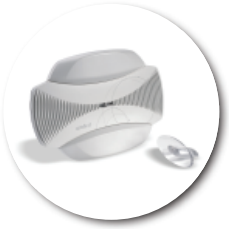
The two AP 200 models allow you to select either internal antennas or external antenna connectors. While most environments need only the coverage of an internal antenna, the AP200 offers an entire suite of 802.11a and 802.11b external antennas to customize coverage patterns and increase coverage range as needed, ensuring wireless connectivity in the most challenging environments.

The AP 200 can be installed anywhere—on desktops, walls, and above or beneath ceilings. Regardless of where it is installed, LED lights are easily visible, providing clear visual feedback of the type of radio in use and the state of the Access Port.

The internal antenna module provides access to all three UNI bands*, which provides access for the first time to all twelve 5 GHz ISM band channels. The resulting flexibility enables the design of wireless networks without overlapping channels, protecting users from experiencing general deterioration of wireless network performance due to interference from others on the same frequency.

*Note: There are three bands in the Unlicensed National Information Infrastructure (UNII) bands:
- 5.15-5.25 GHz
- 5.25-5.35 GHz
- 5.725-5.825 GHz

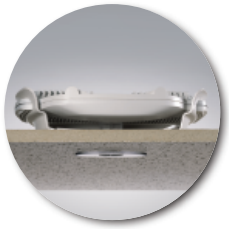
Devices operating in the UNII bands must obey limitations on radiated power, but there are not further constraints imposed on them.



AP 200 with Ceiling Piece (for above ceiling mounting)

AP 200 with internal 802.11a antenna module and optional snap-in 802.11b radio with integrated antenna

AP 200 with optional external antennas and optional snap-in 802.11b radio with external antennas



AP 200 mounted above ceiling with Ceiling Piece visible for easy viewing of status

Features	Benefits
Tight integration with the WS 5000 and WS 2000 Wireless Switch, which centralizes intelligence to the Access Ports	Enables easy addition of features and functionality; ability to expand the wireless LAN without disrupting wireless service
Compact, aesthetic design with flexible mounting options	Enables mounting on a desk, on a wall and on the ceiling—above or below ceiling tiles
Plenum rated housing	Meets fire retardant standards to ensure safe installation in ceilings and other enclosed areas throughout your enterprise
Tamper-proof hardware and software design	Prevents theft of network configuration parameters, without sacrificing flexibility of mounting, even in unsecured areas
Standards-based 802.3af Power-over-Ethernet compatibility	Significantly reduces installation cost and complexity by eliminating the requirement to extend AC or DC power to the Access Port
No configuration required	True plug-and-play right out of the box
Internal and external high power antennas; integrated 3.5 dBi omni-directional cross polarized diversity antenna or external antenna connectors and suite of 16 antennae	Reduces cost and time of installation; provides the flexibility to modify wireless coverage patterns and increase wireless range as needed in challenging environments
Visible status LED color-coded to IEEE specification. Blue for 802.11b, Amber for 802.11a	Easy viewing of Access Port status—even when mounted above the ceiling tiles
No local firmware to manage (provided by the WS 5000 or WS 2000 Wireless Switch)	Eliminates the cumbersome, time consuming and error prone process of loading traditional access point firmware
Centralized wireless LAN packet packet processing offloaded to the Symbol's WS 5000 Wireless Switch	Leaner product design, resulting in significant reduction in hardware and management costs; provides a scalable growth model
Multi-BSS and Multi-ESS capability	Ensures highly efficient use of the wireless network by providing multiple Broadcast/Multicast Domains and a true virtual Wireless LAN experience
Two built-in Ethernet ports (in AP 200)	Enables connection or 'daisy-chaining' of additional Access Ports; reduces cost of extra cabling when upgrading an existing 802.11b Wireless LAN infrastructure

Antennas and Accessories

Omni-Directional Antennas

Omni-directional antennas radiate coverage equally in all directions in a 360º coverage pattern on a horizontal plane. The torus-shaped (doughnut-shaped) coverage pattern is ideal for square or fairly square areas.

802.11b	802.11a
• High Performance Fixed Point Dipole 3.5 dBi • Indoor/Outdoor High Performance OD 5dBi • Low Profile Ceiling/Surface Mount OD 3 dBi, 4' Coax • Low Profile Dual Integrated Diversity OD 2dBi, 3' Coax • PCI Wall and Desk Mount OD Diversity Antenna	• 5.2 GHz High-Performance Fixed Point Dipole • 5.2 GHz High-Performance Omni-Directional

Directional Antennas

Directional antennas concentrate transmission power in a specific direction, resulting in coverage for a greater distance, but at a lesser angle. The conical-shaped coverage pattern of the directional antenna is similar to that of a flashlight—ideal for elongated areas, corners and outdoor point-to-point applications.

802.11b	802.11a
• Heavy-duty Indoor/Outdoor 65° H-Plane Directional Panel 7.5 dBi • Indoor 65° H-Plane Diversity Directional Panel 7 dBi • High Gain Indoor/Outdoor 60° H-Plane Directional Panel 12 dBi • High gain Indoor/Outdoor 120° H-Plane Directional Panel 11 dBi	• 5.2 GHz High-Performance Flat Panel

Bridge Antennas

Bridge antennas deliver effective long-distance transmission, ideal for communications between two buildings or in a multi-building campus-style environment. Bridge antennas are available in directional and omni-directional, for point-to-point and point-to-multi-point implementations.

802.11b	802.11a
• Heavy-duty Outdoor 35° High-Gain Directional Yagi 15 dBi • Heavy-duty Indoor/Outdoor 35° High-Gain Directional Panel 14.5 dBi • Heavy Duty 10° Directional High Gain Parabolic Dish 24 dBi • Heavy Duty, High Gain Outdoor Mast Mount OD & 8 dBi	

Accessories

For a complete installation, Symbol also offers a comprehensive selection of accessories. Kit accessories and connectors provide the necessary tools to customize antenna installation for your wireless LAN.

802.11b	802.11a
• Articulating Ceiling Mount Kits • Jumpers and Lightning Arrestor Kits	

Note: for detailed information and specifications for Symbol's complete line of antennas, refer to the Antennas-at-Glance brochure on **www.symbol.com/wireless**

Specification Highlights

Physical Characteristics	AP 100 (802.11b)		AP 200 (802.11a/b)	
Dimensions:	Without mounting hardware: 6.00 in. Diameter x 3.10 in. H / 15.24 cm Diameter x 7.87 cm H With mounting hardware: 6.12 in. Diameter x 2.04 in. H / 15.54 cm Diameter x 5.18 cm H		AP 200 802.11a external antenna connectors AP 200 802.11a/b external antenna connectors AP 200 802.11a/b internal antennas	10 in. L x 5 in. W x 1.25 in. H 25.4 cm L x 12.7 cm W x 3.18 cm H 10 in. L x 6 in. W x 1.25 in. H) 25.4 cm L x 15.24 cm W x 3.18 cm H 10 in. L x 7 in. W x 1.5 in. H 25.4 cm L x 17.78 cm W x 3.81 cm H
Weight:	13 oz. / 36 kg (Or 368 grams???)		AP 200 802.11a external antenna connectors AP 200 802.11a/b external antenna connectors AP 200 802.11a/b internal antennas	1.7 lbs. / 0.77 kg 1.9 lbs. / 0.86 kg 2.2 lbs. / 1.00 kg
Part Number:	AP100.11b Access Port with integrated internal antenna AP100 .11b Access Port with external antenna connectors	CCRF-5020-10-WW CCRF-5020-00-WW (World-Wide SKU)	A200 A radio Base Access Port with External SMA antenna Connectors AP200 Dual A & B Access Port with external antenna connectors AP200 Dual A & B Access Port with internal antennas AP200 B Radio module with External connectors AP200 B Radio module with Integrated internal Omni antenna	WSAP-5030-100-WW WSAP-5030-200-WW WSAP-5030-210-WW WSM-5030-200-WW WSM-5030-210-WW
Available Mounting Configurations:	Ceiling-Mount (above and below tile); Wall-Mount; Desk-Mount		Ceiling-Mount (above and below tile); Wall-Mount; Desk-Mount	
Plenum Rated Housing:	Certified to UL 2043 - OK			
Status LED:	Provides three different modes of visual status information		2 LEDs with multiple modes indicating presence of 802.11a/802.11b, Power, Adoption and Errors	

Wireless Data Communications	AP 100 (802.11b)	AP 200 (802.11a)	AP 200 (802.11b)
Data Rates Supported:	1, 2, 5.5 and 11 Mbps	6, 9, 12, 18, 24, 36, 48 and 54 Mbps	1, 2, 5.5 and 11 Mbps
Network Standard:	802.11b	802.11a	802.11b
Wireless Medium:	Direct Sequence Spread Spectrum (DSSS)	Orthogonal Frequency Division Multiplexing (OFDM)	Direct Sequence Spread Spectrum (DSSS)
Uplink:	Autosensing 10/100Base-T Ethernet	Autosensing 10/100Base-T Ethernet	Autosensing 10/100Base-T Ethernet
Frequency Bands	**AP 100 (802.11b)**	**AP 200 (802.11a)**	**AP 200 (802.11b)**
FCC:	2.412 to 2.462 GHz	5.150 to 5.250 (UNI -1); 5.250 to 5.350 (UNI -2) 5.725 to 5.825 (UNI -3) 5.725 to 5.850 (ISM)	2.412 to 2.462 GHz
EU:	2.412 to 2.472 GHz	5.150 to 5.250 GHz 5.150 to 5.350 GHz (Country Specific)	2.412 to 2.472 GHz
Japan:	2.412 to 2.484 GHz	5.150 to 5250 GHz	2.412 to 2.484 GHz
Israel:	2.418 to 2.457 GHz	Not yet Approved	Not yet Approved
Mexico:	2.450 to 2.4835 GHz	Not yet Approved	Not yet Approved
Sri Lanka:	2.400 to 2.430 GHz	Not yet Approved	Not yet Approved

Frequency Bands	AP 100 (802.11b)	AP 200 (802.11a)	AP 200 (802.11b)
Operating Channels:	ETSI: 13; Israel: 7; North America: 11; TELEC (Japan): 14; MII: 11	ETSI: 4; North America: TBA; TELEC (Japan): 4	ETSI: 13; Israel: 7; North America: 11; TELEC (Japan): 14; MII: 11
Available Transmit Power Settings:	Max (65 mW, 100mW EIRP w int. ant.), 25 mW, 8 mW, 3 mW, 1 mW	Max 75mW, 35mW, 8.5mW, 8mW, 4mW	Max (75 mW), 45 mW, 16 mW, 8.5 mW, 2.9mW
Nominal Transmitter Power:	17 dBm +/- 1.5 dBm	17.5 dBm +/- 1.0 dBm at 6 Mbps to18 Mbps 15.5dBm +/- 1.0 dBm at 24 and 36 Mbps 14.5 dBm +- 1.0dBm at 48 Mbps 13.5 dBm +/- 1.0 dBm at 54 MBPS	18.2 dBm +/- 1 dBm
Receiver Sensitivity:	11 Mbps @ -84dBm 5.5 Mbps @ -87dBm 2 Mbps @ -88dBm 1 Mbps @ -90dBm	54 Mbps @-73 dBm 48 Mbps @ -77 dBm 36 Mbps @ -80 dBm 24 Mbps @-82 dBm 18 Mbps @ -84 dBm 12 Mbps @-86 dBm 9 Mbps @ -88 dBm 6 Mbps @-89 dBm	-85 dBm @ 11 Mbps -89 dBm @ 5.5 Mbps -90 dBm @ 2 Mbps -92 dBm @ 1 Mbps

User Environment	AP 100 (802.11b)	AP 200 (802.11a/b)
Operating Temperature:	-4°F to -131°F / -20°C to 55°C	-4°F to 131°F / -20°C to 55°C
Storage Temperature:	0°F to 167°F / -40°C to 75°C	0°F to 167°F / -40°C to 75°C
Operating Humidity:	5%-95% (non-condensing)	5%-85% (non-condensing)
Operating Altitude:	2.4 kM (Max)	8000 ft. @ 82°F / 28°C
Storage Altitude:	4.6 kM (Max)	15000 ft. @ 53°F / 12°C
Electrostatic Discharge:	+/- 15 kV (Air)	+/- 15 kV (Air)

Power Specifications	AP 100 (802.11b)	AP 200 (802.11a/b)
Operating Voltage:	48 VDC @ 4W (Typical), 36 VDC to 57 VDC (Range)	48VDC @10W (Typical), 36VDC to 57VDC
Operating Current:	10 mA to 150 mA	190mA @ 48VDC
Integrated Power Over Ethernet Support:	Standards-based IEEE 802.3af (Class 0 Power), Cisco Proprietary, and Symbol Proprietary	Standards-based IEEE 802.3af (Class 0 Power) and Symbol Proprietary

Integrated Antenna Specifications	AP 100 (802.11b)	AP 200 (802.11a)	AP 200 (802.11b)
Type:	Cross Polarized, Omni-Directional Diversity Antenna	Diversity Antenna for transmit diversity. Omni-directional variation: -3 dB 200°/200° -6 dB 315°/315°	Diversity Antenna. Omni-directional variation: -3 dB 200°/200° -6 dB 315°/315°
Band:	2.4GHz to 2.5GHz	Capable of operation from 5.17GHz to 5.805 GHz. Actual operating frequencies depend on regulatory rules and certification agency	2.4 GHz to 2.5 GHz
VSWR:	Less than 1.5	Less than 2.0	Less than 1.5
Gain:	3.5 dBi	2.5 dBi	2.5 dBi
Beam Width:	E-Plane-120° avg H-Plane-95° avg	E-Plane 150°/70° H-plane 85°/70°	E-Plane 150°/70° H-Plane 85°/70°
Diversity:	Two (2) feeds with polarization: Dual Linear (90° orthogonal) and Spatial Separation (_=0.4 at 2450 MHz)	Two (2) feeds with polarization: Dual Linear (90°) and spatial Separation at C_>1.0 at	Two (2) feeds with polarization: Dual (90°) and spatial Separation at C_>1.0 at 2450 MHz

Regulatory	AP 100 (802.11b)	AP 200 (802.11a)	AP 200 (802.11b)
Product Safety Certifications:	cUL 1950, CSA, UL 2043, VDE-GS		
Radio Approvals:	World-Wide including FCC, Industry Canada, CE, TELEC, C-Tick	FCC, Industry Canada, CE, TELEC, C-Tick, Hong Kong, Singapore	FCC, Industry Canada, CE, TELEC, C-Tick, Hong Kong, Singapore

Symbol—Your Complete Wireless Mobility Provider

Symbol Technologies is the industry leader in wireless solutions, providing everything you need to put wireless mobility to work in your enterprise. In addition to the Wireless Switch System, Symbol Technologies offers a broad range of wireless LAN clients and technology. CompactFlash™, PC and PCI-format cards enable PDA, laptop and desktop connectivity. Design-in solutions enable integration of our award-winning technology into original designs. Voice-over-IP appliances bring the power of voice communications to your data network. Rugged and sealed mobile computers—from handhelds to tablets in a wide range of form factors with popular operating systems—integrate data capture and wireless LAN/WAN communications.

Our extensive partner network delivers application software to meet the needs of strategic business initiatives, maximizing the value of your wireless mobile technology. Symbol Services provides the expertise to maximize system performance and realize the full potential of your Symbol wireless network solution—a total solution approach that ensures smooth implementation and offers ongoing 24/7 support.

Symbol Technologies. From wireless innovation and expertise to the most complete range of products, services and solutions, to value and ROI—no other company compares.

For more information, call any of our convenience locations or visit us at **www.symbol.com/wireless**

For system, product or services availability and specific information within your country, please contact your local Symbol Technologies office or Business Partner.

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