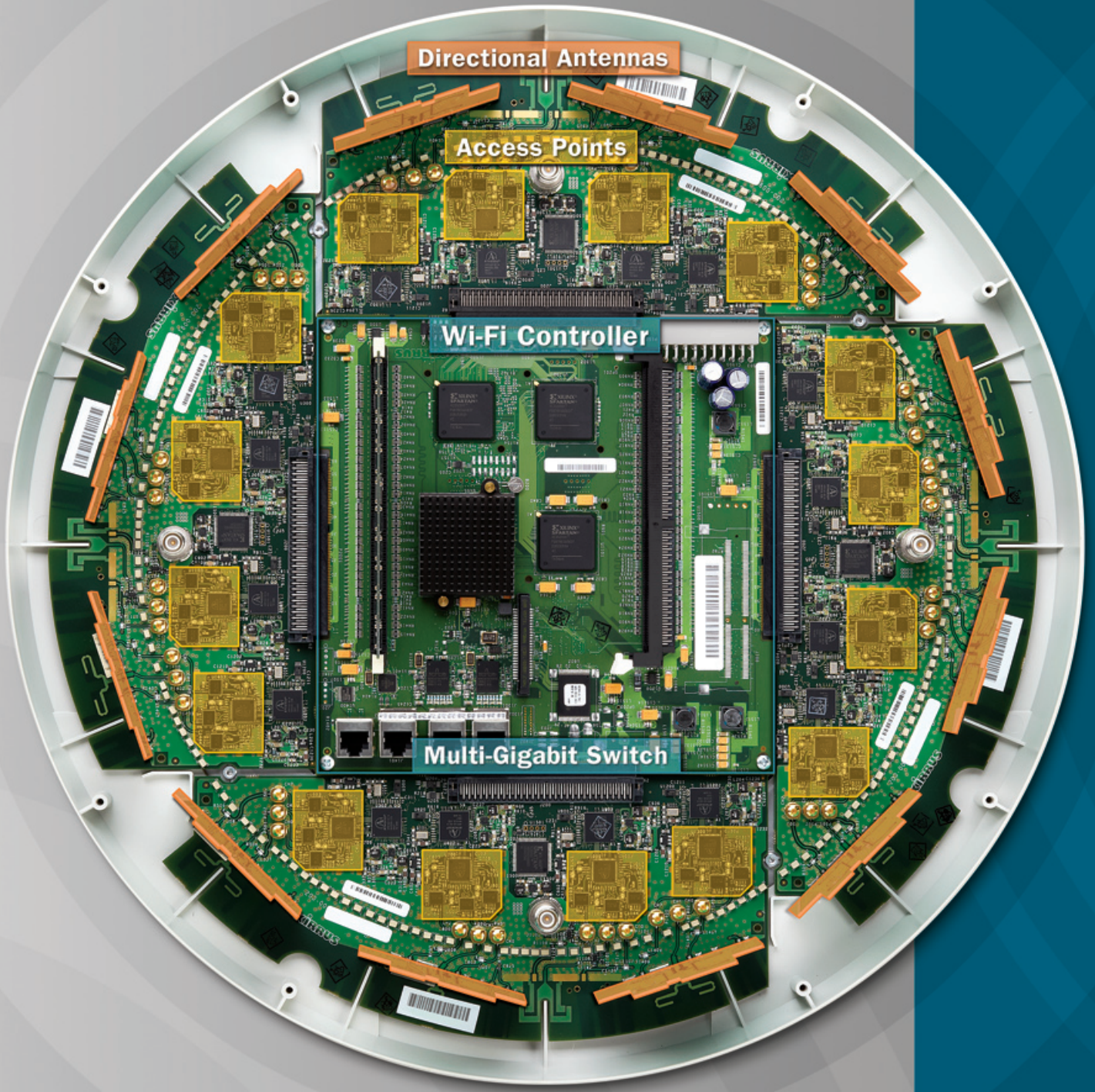


**XIRRUS**  
HIGH PERFORMANCE Wi-Fi™



# XIRRUS<sup>®</sup>

HIGH PERFORMANCE Wi-Fi™



Directional Antennas

Access Points

Wi-Fi Controller

Multi-Gigabit Switch

## Who Are We?

High Performance Wi-Fi – Guaranteed!

## What Is Our Vision?

Wi-Fi will be the primary network connection for the Enterprise.

## What Is Our Mission?

To unwire the Enterprise with Wi-Fi that performs like a wired network.

## How Are We Different?

- **Distributed Intelligence** - our data and control planes are fully distributed to the edge, delivering intelligent wired-like performance = guaranteed performance.
- **Dense Radios** - our dense radio architecture operates across more channels simultaneously, delivering unmatched user and device capacity = guaranteed connectivity.
- **Reliability** - our architecture provides unmatched survivability at the access point, controller, wireless backhaul, wired uplink, and power supply levels backed by a 5 year warranty = utility-grade Wi-Fi.

## How Do We Do It?

With the standards-compliant, patented Wi-Fi Array® - the only access point in the industry capable of delivering the coverage, bandwidth, capacity, and distributed intelligence needed for wired-like performance.

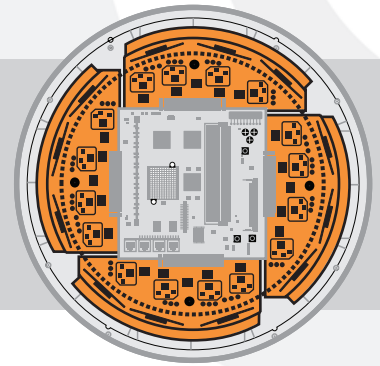
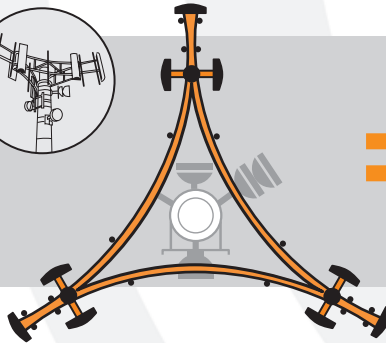
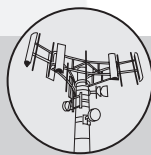
## What Is the Wi-Fi Array?

The Wi-Fi Array product family consists of 4, 8, 12 or 16 802.11n access points integrated with a high-gain, directional antenna system, multi-gigabit switch, controller, firewall, threat sensor, and spectrum analyzer into a single, easy-to-install device.

## What Design Principles Is the Wi-Fi Array Based Upon?

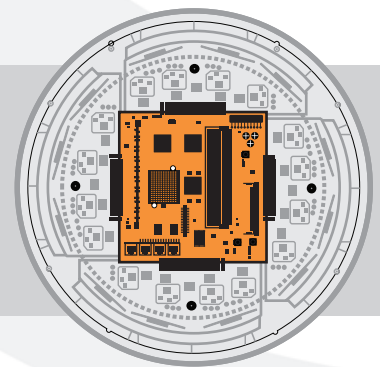
### Cellular/Mobile Tower

Similar to a cellular tower, we integrate multiple radios with directional, sectored antennas to increase coverage, bandwidth, and user density.



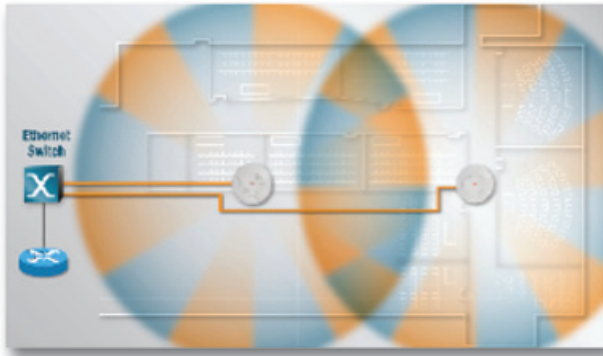
### L2/L3 Switch

Similar to a wired switch, we distribute the processing power and intelligence to the network edge to increase performance and quality of experience.

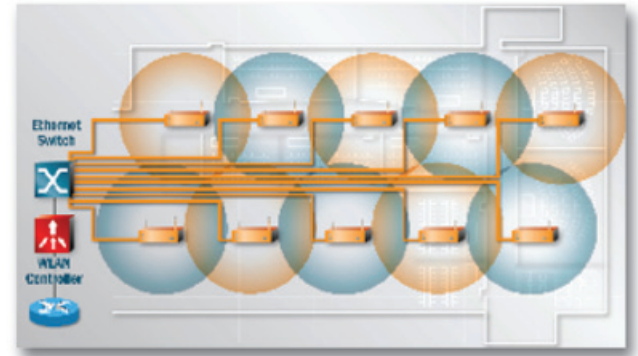


The Xirrus Wi-Fi Array distributes the processing power and network intelligence to the network edge to increase performance and quality of experience. Antiquated thin AP + controller architectures backhaul everything to a central controller located back in the network, creating delay and jitter.

### Distributed Architecture



### Centralized Architecture



## Wi-Fi Array

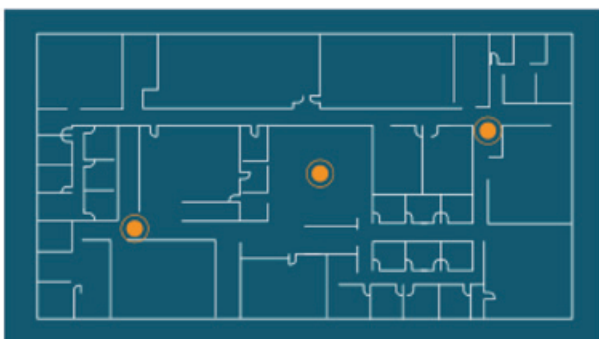
VS.

## Thin AP + Controller

Data Processing	Integrated in Array (line rate data processing)	Backhauled / Tunneled to Controller (introduces additional delay and jitter)
Antenna Design	High-Gain Directional (designed for range and capacity)	Omni-Directional (designed for basic coverage)
Radios	Multi-State (up to 16 configurable APs)	Fixed (one 2.4GHz and one 5GHz AP)
Scalability	Linear (linear cost when adding Arrays)	Stair-Step (dramatic cost when adding controllers)
Management	Centralized	Centralized
Reliability	Native at AP, Array Uplink (wired and wireless)	Requires Redundant Controller

The Xirrus Wi-Fi Array obsoletes all other Wi-Fi offerings by delivering 4X more coverage, bandwidth, and user density, while requiring 4X fewer access points, switch ports, cable runs, and time to install and manage. Xirrus has the best Time-to-Value in the industry – Guaranteed!

### Wi-Fi Array

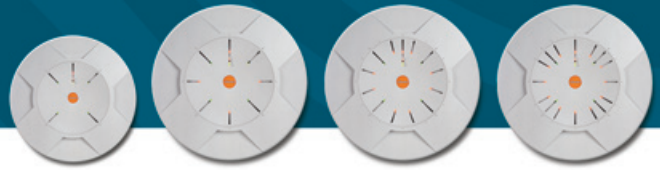


- 3 Wi-Fi Arrays covered the entire Enterprise
- Delivered 14.4Gbps of total bandwidth
- Required 4X less equipment and time to install

### Thin AP + Controller



- 12 APs + Controller needed to cover entire Enterprise
- Delivered only 9.6Gbps of total bandwidth
- Required 4X more equipment and time to install



## 802.11abgn Wi-Fi Arrays

XN4

XN8

XN12

XN16

### RF Specifications

	1.2Gbps	2.4Gbps	3.6Gbps	4.8Gbps
Maximum Wi-Fi Bandwidth	1.2Gbps	2.4Gbps	3.6Gbps	4.8Gbps
Integrated 802.11abgn Access Points	4	4	4	4
Integrated 802.11an Access Points	-	4	8	12
Total Integrated Access Points	4	8	12	16
Dedicated Wi-Fi Threat Sensor	Yes	Yes	Yes	Yes
Maximum Wi-Fi Backhaul Link	900Mbps	900Mbps	900Mbps	900Mbps
RP-TNC Connectors	1	3	3	3
# of Integrated Antennas	20	36	36	48

### Wi-Fi Switch Specifications

Integrated Wi-Fi Switch Ports	4	8	12	16
Gigabit Uplink Ports	1	2	2	2
Maximum Associated Users	384	768	1,152	1,536

### Xirrus Management System

Centralized Management for Large Array Network (*OPTIONAL*)

## General Array Specifications

### Wireless Standards

- 802.11a, 802.11b, 802.11g-only, and 802.11n modes
- 802.11d, 802.11e, 802.11h, 802.11i

### Frequency Bands 11a/b/g/n

- 2.412-2.462 GHz (FCC)
- 2.412-2.472 GHz (ETSI)
- 2.412-2.484 GHz (TELEC)
- 4.940-4.990 (Safety)
- 5.15-5.25 GHz (UNII I)
- 5.15-5.25 GHz (TELEC)
- 5.25-5.35 GHz (UNII II)
- 5.470-5.725 (ETSI)
- 5.725-5.825 GHz (UNII III)

### RF Management

- Automatic channel optimization
- Automatic cell sizing
- Each RF sector individually configurable
- Sharp Cell technology tightly controls edge of cell coverage
- Integrated 24/7 multi-channel Spectrum Analyzer

### Wireless Backhaul

- Up to 3 Integrated Access Points
- Bonded-900Mbps per link
- Up to 4 Wireless Backhauls per Array
- Automatic link failover

### Management

- Web-based HTTPS, SNMPv1/v2c/3, CLI via SSHv2, FTP, TFTP and Xirrus MIB
- Syslog Reporting for alerts/alarms
- Integrated on-line help
- Centralized L3 management of multiple Arrays via the optional Xirrus Management System (XMS)

### Security

- WPA-TKIP: WPA-PSK-TKIP, WPA-AES, WPA-PSK-AES
- WPA2-802.11i: WPA2-AES, WPA2-PSK-AES, WPA2-TKIP, WPA2-PSK-TKIP
- WEP 40bit/128bit encryption
- Integrated Firewall & Filtering
- Supports multiple security settings
- Station to Station blocking
- Define access by time of day

### User and System Authentication

- WPA Pre-shared Key authentication
- Web Page Redirect (Captive Portal)
- Built-in RADIUS Server Supports up to 1,024 users
- 802.1x EAP-TLS
- 802.1x EAP-TTLS
- 802.1x PEAP (MS-CHAPv2)
- LEAP pass-through
- MAC Access Control Lists

### Intrusion Detection and Prevention

- Continuous RF monitoring across all 2.4GHz and 5GHz 802.11 channels
- GUI console presents real-time view of wireless network health
- Detection and prevention of Rogue APs
- Packet level sniffing and decoding
- Notification of alerts & alarms
- Detailed compliance reporting

### Quality of Service (handled at the Array)

- 802.1p wired traffic prioritization
- 802.11e wireless prioritization
- Map COS to TCID
- Fair queuing of downstream traffic
- Spectralink Voice Priority (SVP)

### Users Supported

- Supports up to 96 associated users per Integrated Access Point
- Recommended provisioning of 15 users per Integrated Access Point

### Client Load Balancing

- Automatic between Integrated Access Points

### Roaming

- Caches Pairwise Master Keys (PMK) between Arrays for fast L2 & L3 roaming

### VLAN Support

- 802.1Q compliant
- Supports up to 16 VLANs

### Networking Services

- DHCP Client, DHCP Server (Multiple Pools), NAT, NTP
- 802.1D Spanning Tree Protocol
- IGMP Snooping/Pruning
- Multicast-to-Unicast conversion
- Web Page Redirect

### Multiple SSID Support

- Up to 16 separate SSIDs can be defined
- MAC Security, VLAN, QoS and Guest Access settings to each SSID
- Set SSIDs by frequency band
- Set bandwidth limits per SSID
- Tie specific DHCP pools to each SSID

### Resiliency

- 100% overlap between RF sectors
- Redundant wireless backhaul connections
- Dual Gigabit uplinks offer failover
- Complete Array to Array failover mode

### Location Services

- Integrated single Array station locationing with multiple directional radios
- Centralized multi-Array station and rogue locationing

### Serial Interface

- One RS232 with RJ45 connector

### Environmental

- 0°C to 55°C
- 0-90% humidity (non-condensing)

### Radio Approvals

- FCC (United States)
- ETSI (Europe)

### Safety and EMI Compliance

- FCC Class A
- UL/cUL EN60950
- EN60601

### Warranty

- 5 Year Hardware
- 90 Day Software

### Certifications

- Wi-Fi Alliance
- VeriSign PCI
- FIPS 140-2
- ISO 9001:2008

Protected by Patent #US D526,973 S. Other patents pending.

## Wi-Fi Arrays

Xirrus Wi-Fi Arrays integrate 4, 8, 12 or 16 802.11abgn radios coupled to a high-gain directional antenna system into a single device along with an onboard multi-gigabit switch, Wi-Fi controller, firewall, dedicated Wi-Fi threat sensor, and an embedded spectrum analyzer. The Wi-Fi Array provides more than enough bandwidth, security, and control to replace switched Ethernet to the desktop as the primary network connection.

## Management System

The Xirrus Management System (XMS) provides a powerful platform for central management of a Xirrus Wi-Fi Array network. The XMS automatically discovers, configures, and monitors an Array network, and can scale from single site to large scale, multi-site deployments.

## Power Options

Xirrus offers a Power over Gigabit Ethernet (PoGE) system to provide a simple, low cost means to remotely power Xirrus Wi-Fi Arrays. The PoGE system delivers DC power in-line with the Array's Gigabit Ethernet data connection up to 100m over Category 5e or 6 cable.

## Indoor Enclosures

Xirrus offers a variety of indoor covers to fit a variety of needs. The indoor snap-on cover provides concealment for Wi-Fi Arrays when you don't want the Array's face to be visible, while the protective enclosures provide protection from impact and particles.

## Outdoor Enclosures

The Xirrus protective outdoor enclosure is intended for outdoor applications where securing an Array from harsh environments is required. This enclosure offers protection from rain, heat, cold, direct sun, and wind while providing an additional layer of security.

## Rapid Deployment Kits

The Xirrus Rapid Deployment Wi-Fi Kits are the only solutions capable of supporting hundreds of users over large coverage areas with such simplicity, making them the perfect solution for meetings, conferences, expositions, disaster response, and command posts.



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