CW9164I-MR

Tri-band Wi-Fi 6E AP: 2x2:2 on 2.4 GHz plus 4x4:4 on 5 and 6 GHz, up to 7.49 Gbps aggregate; 1x 2.5G mGig; higher client density and throughput.

Cisco Catalyst 9164I Wi-Fi 6E Access Point

The Cisco Catalyst 9164I is a high-performance tri-band Wi-Fi 6E access point combining 2x2:2 MIMO on the 2.4 GHz radio with 4x4:4 MIMO on both the 5 GHz and 6 GHz radios, delivering up to 7.49 Gbps of aggregate radio rate. It provides one 2.5G mGig uplink with power draw up to 30 W (802.3bt), with lower 802.3at / 802.3af power modes. It targets high-density indoor venues, conference rooms, and bandwidth-heavy workloads, using the 6 GHz band to relieve congestion on legacy 2.4 / 5 GHz radios.

Specification	Value
Radio	Tri-band: 2.4 / 5 / 6 GHz
MIMO	2x2:2 (2.4G) + 4x4:4 (5G / 6G)
Aggregate radio rate	Up to 7.49 Gbps
Uplink port	1x 2.5G mGig (RJ-45)
PoE	802.3bt (up to 30 W) / 802.3at / 802.3af
Antennas	Internal (mid-gain)
Management	Catalyst 9800 / Catalyst Center (IOS XE)
Wi-Fi standard	802.11ax (Wi-Fi 6E)

- Tri-band Wi-Fi 6E with 4x4:4 on 5 and 6 GHz for high density.
- Up to 7.49 Gbps aggregate radio rate.
- Single 2.5G mGig uplink; 802.3bt / at / af PoE.
- Ideal for conference rooms, auditoriums and high-throughput areas.
- Indoor internal-antenna design with flexible mounting.

Radio / Stream	Specification
2.4 GHz radio	2x2:2 802.11ax
5 GHz radio	4x4:4 802.11ax
6 GHz radio	4x4:4 802.11ax (6E)
Aggregate rate	Up to 7.49 Gbps
OFDMA / MU-MIMO	Supported (802.11ax)
WPA3	WPA3-Personal / Enterprise, Enhanced Open

Component	Specification
Uplink	1x 2.5G mGig (RJ-45)
Console	RJ-45 console / management
Power	802.3bt 30 W / 802.3at 25 W / 802.3af 14 W (per datasheet)
Antennas	Internal
Mounting	Ceiling / wall / T-rail mount kits
Form	Indoor, plenum-rated housing

Cisco wireless platforms support the following capabilities as part of the Cisco wireless software release that runs on the platform.

Capability	Support
IEEE standards	802.11a/b/g/n/ac/ax (Wi-Fi 6/6E); 802.11d/e/h/i/k/r/u/v/w
MIMO / spatial streams	2x2:2, 4x4:4, 8x8:8 depending on platform (MU-MIMO and OFDMA)
Band steering	Automatic band steering and load balancing (RRM / DCA)
WPA3 security	WPA3-Personal / Enterprise, Enhanced Open, SAE / OWE transition mode
Fast roaming	802.11r (FT), 802.11k (RRM), 802.11v (BSS Transition)
Application visibility	Cisco AVC, NBAR2-based deep packet inspection
Telemetry	Model-driven telemetry; gNMI, gRPC; streaming telemetry to DNA Center
CleanAir / RF	Cisco CleanAir spectrum analysis (RF interference detection)
Mesh / FlexConnect	Wireless mesh and FlexConnect branch deployments (controller mode)
Guest services	Cisco Identity Services Engine (ISE) integration; web authentication
Location services	CMX / Cisco Spaces / DNA Spaces location services integration
IoT radio	BLE 5.x radio and Zigbee (platform-dependent) for IoT services

Cisco wireless platforms include Radio Resource Management (RRM), application visibility, and streaming telemetry for efficient large-scale Wi-Fi operations.

Capability	Description
Radio Resource Management (RRM)	Cisco RRM with DCA, TPC, CHDM for automatic RF optimization
BandSelect	Automatic band steering of dual-band clients to 5 GHz
Optimized Roaming	RADIUS-assisted client roaming decisions
Application Visibility and Control (AVC)	NBAR2-based application recognition and QoS marking
Bonjour services	Cisco Bonjour gateway / services directory integration

Capability	Description
Streaming telemetry	gNMI / gRPC streaming telemetry to DNA Center / Cisco Spaces
Wi-Fi 6E awareness	6 GHz spectrum support with AFC (Automated Frequency Coordination)
Guest portals	Centralized guest web authentication via DNA Center / ISE
Location services	Cisco Spaces / CMX location services, asset tracking
Spectrum analysis	Cisco CleanAir / RF analysis for interference mitigation
Energy efficiency	Wi-Fi 6 / 6E Target Wake Time (TWT) and 802.3az Energy Efficient Ethernet
Mesh / FlexConnect	Cisco wireless mesh and branch FlexConnect deployments

Catalyst 916x access points and the Catalyst 9800 controllers that manage them fully support IEEE 802.11ax (Wi-Fi 6 / Wi-Fi 6E). The technology features below are delivered by 802.11ax radios.

802.11ax Feature	Description
OFDMA	Orthogonal Frequency-Division Multiple Access for efficient multi-client uplink / downlink
MU-MIMO	Multi-user MIMO up to 4x4:4 on supported radios for concurrent client streams
1024-QAM	Higher modulation for up to ~40% more throughput than Wi-Fi 5
6 GHz (6E)	Dedicated 6 GHz band with new 6E channels, less interference (where enabled)
TWT	Target Wake Time for client power saving and IoT battery life
BSS Coloring	Improved spatial reuse in dense deployments
Enhanced Open (OWE)	Opportunistic Wireless Encryption for open networks
WPA3	WPA3-Personal / Enterprise with GCMP-256 and SAE
OFDMA uplink	Coordinated uplink scheduling for lower latency
Spatial reuse	Adaptive power control for high-density venues
CleanAir	Spectrum analysis on the radio (RF interference detection)
Backhaul	mGig uplink (2.5G / 5G) to avoid radio-to-wire bottleneck

Robust RF management and client security are core to enterprise Wi-Fi. The platform (controller + AP) delivers the following RF and security capabilities.

Capability	Description
RRM (Radio Resource Management)	Automatic channel (DCA) and power (TPC) optimization
BandSelect	Steering dual-band clients to the less congested 5 GHz band
CleanAir	Proactive spectrum analysis and interference mitigation

Capability	Description
WPA3 / Enhanced Open	Modern encryption and secure open networks
802.1X / AAA	Enterprise authentication with RADIUS / ISE integration
Fast roaming	802.11r FT, 802.11k neighbor reports, 802.11v BSS transition
Client analytics	Client 360, RF health and history analytics
Guest access	Centralized web-auth guest portals
FlexConnect	Branch AP mode with local switching / survivability
Mesh	Wireless mesh backhaul for extended coverage
mDNS / Bonjour	Service discovery across subnets (Bonjour gateway)
IoT	BLE / Zigbee radio support on select APs for IoT services

Catalyst 916x access points are managed as part of a Catalyst wireless solution. The capabilities below describe how the AP integrates with its controller and the software that improves the client experience.

Capability	Description
Management protocol	CAPWAP tunnel to Catalyst 9800 controller (local / FlexConnect)
Controller redundancy	AP fails over between N+1 controllers / mobility group members
FlexConnect	Branch / remote mode with local switching and WAN-survivable service
Local image	AP runs IOS XE-based lightweight image managed by the controller
Zero-touch	PnP / DHCP discovery of the controller for plug-and-play adoption
Secure join	AP-Controller mutual authentication (X.509 / shared secret)
Client 360	Per-client analytics, roaming history, RF health on the controller
Fast roaming	802.11r / 802.11k / 802.11v assisted roaming between APs
WPA3 / Enhanced Open	Modern client security enforced from the controller policy
CleanAir	Spectrum analysis events reported to the controller / Catalyst Center
mDNS / Bonjour	Service advertisement handled centrally for cross-subnet discovery
Telemetry	Client and radio telemetry streamed to Catalyst Center / Cisco Spaces

Catalyst 9800 controllers and the APs they manage can be deployed in several architectures for resilience and flexible branch operations.

Architecture	Description
N+1 / N+N redundancy	Standby controllers take over APs on primary failure
SSO (Stateful Switchover)	Active / standby pair with synchronized state (hardware models)
Mobility groups	Controllers in a mobility group share client roaming / guest state
Guest anchoring	Guest traffic anchored to a designated controller / DMZ

Architecture	Description
FlexConnect	Branch APs keep serving locally if WAN / controller link fails
Mesh	AP mesh backhaul extends wireless reach to hard-to-wire areas
Clustering	Controller clustering for scale-out (per-software version support)
Split-tunnel / local switching	FlexConnect local switching to keep branch traffic local
Central / local auth	Central AAA or local EAP for WLAN authentication
Software upgrades	Rolling AP upgrades with minimal client impact (N+1 image management)

Accessories, mounting kits and deployment accessories for CW9164I-MR are available from Cisco and authorized partners.

Accessory	Description
Mounting bracket	Standard AIR-AP-BRACKET or vendor-specific mounting kit
Power adapter	Cisco MA-PWR-30W or MA-PWR-50WAC (for APs that require DC power)
PoE source	IEEE 802.3at / 802.3bt Power-over-Ethernet midspan or switch uplink
Console / management	RJ-45 console cable for controller local CLI access
External antenna	External antenna for -E / -I external-AP models (where applicable)
Spare PSU (controllers)	Hot-swappable AC / DC PSU for hardware controllers (where applicable)
Stacking / clustering	Controller clustering / SSO for hardware platforms (where supported)
Software license	Cisco DNA / Network Essentials or Advantage tier
Smart Net Total Care	Optional service contract for hardware replacement

The platform complies with the following interoperability, safety and environmental standards. Compliance is verified by independent testing laboratories.

Category	Standard
IEEE 802.11 standards	802.11a/b/g/n/ac/ax; 802.11d/e/h/i/k/r/u/v/w; WMM, WMM-PS
WPA3 / security	WPA3-Personal/Enterprise, SAE, OWE, GCMP-256; 802.1x with RADIUS / TACACS+
Networking	RFC 1812 IPv4, RFC 4291 IPv6, RFC 4861 ND; CAPWAP (RFC 5415/5416)
QoS	802.1p, DSCP (RFC 2474), WMM (Wi-Fi Multimedia)
Management	SNMPv2c/v3, NETCONF/YANG, RESTCONF, gNMI/gRPC telemetry, HTTPS WebUI
Time sync	NTPv4 (RFC 5905); AP time sync via CAPWAP / 1588v2
Safety	UL/CSA/IEC/EN 62368-1, UL/IEC/EN 60950-1, AS/NZS 60950.1
EMC / EMI	FCC 47 CFR Part 15 Class B (residential APs) or Class A (enterprise APs), EN 55032/CISPR 32, EN 55024/55035, EN 300 386

Category	Standard
Environmental	RoHS 2011/65/EU, WEEE 2012/19/EU; operating/storage altitude per datasheet
RF regulatory	FCC Part 15 Subpart C / E / Y (US), EN 301 893 / EN 300 328 (EU), TELEC (Japan), RSS-Gen (Canada)

Cisco wireless platforms support the following capabilities as part of the Cisco wireless software release that runs on the platform.

Capability	Support
IEEE standards	802.11a/b/g/n/ac/ax (Wi-Fi 6/6E); 802.11d/e/h/i/k/r/u/v/w
MIMO / spatial streams	2x2:2, 4x4:4, 8x8:8 depending on platform (MU-MIMO and OFDMA)
Band steering	Automatic band steering and load balancing (RRM / DCA)
WPA3 security	WPA3-Personal / Enterprise, Enhanced Open, SAE / OWE transition mode
Fast roaming	802.11r (FT), 802.11k (RRM), 802.11v (BSS Transition)
Application visibility	Cisco AVC, NBAR2-based deep packet inspection
Telemetry	Model-driven telemetry; gNMI, gRPC; streaming telemetry to DNA Center
CleanAir / RF	Cisco CleanAir spectrum analysis (RF interference detection)
Mesh / FlexConnect	Wireless mesh and FlexConnect branch deployments (controller mode)
Guest services	Cisco Identity Services Engine (ISE) integration; web authentication
Location services	CMX / Cisco Spaces / DNA Spaces location services integration
IoT radio	BLE 5.x radio and Zigbee (platform-dependent) for IoT services

Cisco wireless platforms include Radio Resource Management (RRM), application visibility, and streaming telemetry for efficient large-scale Wi-Fi operations.

Capability	Description
Radio Resource Management (RRM)	Cisco RRM with DCA, TPC, CHDM for automatic RF optimization
BandSelect	Automatic band steering of dual-band clients to 5 GHz
Optimized Roaming	RADIUS-assisted client roaming decisions
Application Visibility and Control (AVC)	NBAR2-based application recognition and QoS marking
Bonjour services	Cisco Bonjour gateway / services directory integration
Streaming telemetry	gNMI / gRPC streaming telemetry to DNA Center / Cisco Spaces
Wi-Fi 6E awareness	6 GHz spectrum support with AFC (Automated Frequency Coordination)
Guest portals	Centralized guest web authentication via DNA Center / ISE
Location services	Cisco Spaces / CMX location services, asset tracking

Capability	Description
Spectrum analysis	Cisco CleanAir / RF analysis for interference mitigation
Energy efficiency	Wi-Fi 6 / 6E Target Wake Time (TWT) and 802.3az Energy Efficient Ethernet
Mesh / FlexConnect	Cisco wireless mesh and branch FlexConnect deployments

Catalyst 916x access points and the Catalyst 9800 controllers that manage them fully support IEEE 802.11ax (Wi-Fi 6 / Wi-Fi 6E). The technology features below are delivered by 802.11ax radios.

802.11ax Feature	Description
OFDMA	Orthogonal Frequency-Division Multiple Access for efficient multi-client uplink / downlink
MU-MIMO	Multi-user MIMO up to 4x4:4 on supported radios for concurrent client streams
1024-QAM	Higher modulation for up to ~40% more throughput than Wi-Fi 5
6 GHz (6E)	Dedicated 6 GHz band with new 6E channels, less interference (where enabled)
TWT	Target Wake Time for client power saving and IoT battery life
BSS Coloring	Improved spatial reuse in dense deployments
Enhanced Open (OWE)	Opportunistic Wireless Encryption for open networks
WPA3	WPA3-Personal / Enterprise with GCMP-256 and SAE
OFDMA uplink	Coordinated uplink scheduling for lower latency
Spatial reuse	Adaptive power control for high-density venues
CleanAir	Spectrum analysis on the radio (RF interference detection)
Backhaul	mGig uplink (2.5G / 5G) to avoid radio-to-wire bottleneck

Robust RF management and client security are core to enterprise Wi-Fi. The platform (controller + AP) delivers the following RF and security capabilities.

Capability	Description
RRM (Radio Resource Management)	Automatic channel (DCA) and power (TPC) optimization
BandSelect	Steering dual-band clients to the less congested 5 GHz band
CleanAir	Proactive spectrum analysis and interference mitigation
WPA3 / Enhanced Open	Modern encryption and secure open networks
802.1X / AAA	Enterprise authentication with RADIUS / ISE integration
Fast roaming	802.11r FT, 802.11k neighbor reports, 802.11v BSS transition
Client analytics	Client 360, RF health and history analytics

Capability	Description
Guest access	Centralized web-auth guest portals
FlexConnect	Branch AP mode with local switching / survivability
Mesh	Wireless mesh backhaul for extended coverage
mDNS / Bonjour	Service discovery across subnets (Bonjour gateway)
IoT	BLE / Zigbee radio support on select APs for IoT services

Catalyst 916x access points are managed as part of a Catalyst wireless solution. The capabilities below describe how the AP integrates with its controller and the software that improves the client experience.

Capability	Description
Management protocol	CAPWAP tunnel to Catalyst 9800 controller (local / FlexConnect)
Controller redundancy	AP fails over between N+1 controllers / mobility group members
FlexConnect	Branch / remote mode with local switching and WAN-survivable service
Local image	AP runs IOS XE-based lightweight image managed by the controller
Zero-touch	PnP / DHCP discovery of the controller for plug-and-play adoption
Secure join	AP-Controller mutual authentication (X.509 / shared secret)
Client 360	Per-client analytics, roaming history, RF health on the controller
Fast roaming	802.11r / 802.11k / 802.11v assisted roaming between APs
WPA3 / Enhanced Open	Modern client security enforced from the controller policy
CleanAir	Spectrum analysis events reported to the controller / Catalyst Center
mDNS / Bonjour	Service advertisement handled centrally for cross-subnet discovery
Telemetry	Client and radio telemetry streamed to Catalyst Center / Cisco Spaces

Catalyst 9800 controllers and the APs they manage can be deployed in several architectures for resilience and flexible branch operations.

Architecture	Description
N+1 / N+N redundancy	Standby controllers take over APs on primary failure
SSO (Stateful Switchover)	Active / standby pair with synchronized state (hardware models)
Mobility groups	Controllers in a mobility group share client roaming / guest state
Guest anchoring	Guest traffic anchored to a designated controller / DMZ
FlexConnect	Branch APs keep serving locally if WAN / controller link fails
Mesh	AP mesh backhaul extends wireless reach to hard-to-wire areas
Clustering	Controller clustering for scale-out (per-software version support)
Split-tunnel / local switching	FlexConnect local switching to keep branch traffic local

Architecture	Description
Central / local auth	Central AAA or local EAP for WLAN authentication
Software upgrades	Rolling AP upgrades with minimal client impact (N+1 image management)

Accessories, mounting kits and deployment accessories for CW9164I-MR are available from Cisco and authorized partners.

Accessory	Description
Mounting bracket	Standard AIR-AP-BRACKET or vendor-specific mounting kit
Power adapter	Cisco MA-PWR-30W or MA-PWR-50WAC (for APs that require DC power)
PoE source	IEEE 802.3at / 802.3bt Power-over-Ethernet midspan or switch uplink
Console / management	RJ-45 console cable for controller local CLI access
External antenna	External antenna for -E / -I external-AP models (where applicable)
Spare PSU (controllers)	Hot-swappable AC / DC PSU for hardware controllers (where applicable)
Stacking / clustering	Controller clustering / SSO for hardware platforms (where supported)
Software license	Cisco DNA / Network Essentials or Advantage tier
Smart Net Total Care	Optional service contract for hardware replacement

The platform complies with the following interoperability, safety and environmental standards. Compliance is verified by independent testing laboratories.

Category	Standard
IEEE 802.11 standards	802.11a/b/g/n/ac/ax; 802.11d/e/h/i/k/r/u/v/w; WMM, WMM-PS
WPA3 / security	WPA3-Personal/Enterprise, SAE, OWE, GCMP-256; 802.1x with RADIUS / TACACS+
Networking	RFC 1812 IPv4, RFC 4291 IPv6, RFC 4861 ND; CAPWAP (RFC 5415/5416)
QoS	802.1p, DSCP (RFC 2474), WMM (Wi-Fi Multimedia)
Management	SNMPv2c/v3, NETCONF/YANG, RESTCONF, gNMI/gRPC telemetry, HTTPS WebUI
Time sync	NTPv4 (RFC 5905); AP time sync via CAPWAP / 1588v2
Safety	UL/CSA/IEC/EN 62368-1, UL/IEC/EN 60950-1, AS/NZS 60950.1
EMC / EMI	FCC 47 CFR Part 15 Class B (residential APs) or Class A (enterprise APs), EN 55032/CISPR 32, EN 55024/55035, EN 300 386
Environmental	RoHS 2011/65/EU, WEEE 2012/19/EU; operating/storage altitude per datasheet
RF regulatory	FCC Part 15 Subpart C / E / Y (US), EN 301 893 / EN 300 328 (EU), TELEC (Japan), RSS-Gen (Canada)