SP250-A01

802.11ax, Tri-Band
Outdoor Access Point

Product
Specification

SP250-A01

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Outdoor Access Point

Description

Z-COM SP250-A01 is a Wi-Fi 6 access point with premium performance for high-density outdoor environments such as stadiums, plazas, airports and other outdoor public places.

SP250-A01, which fully complies with IEEE 802.11ax, OFDMA Modulation, MU-MIMO, and BSS Color Spatial Reuse, delivers triple-band transmission with higher capacities and high bandwidth of 5 GHz ensuring uncompromised performance of multimedia streaming for more wireless users simultaneously. Its turbocharging speed is up to 6.574Gbps with reliable connection for high-density outdoor environments. Z-COM SP250-A01 features the latest in rugged weatherproofing and Wi-Fi 6 technology with guaranteed performance and reliability in the harshest environments.

Feature

- Triple-band Wi-Fi 6 (802.11ax), backward compatible with Wi-Fi 5 (802. 11ac)
- Support up to 4,800 Mbps in 5GHz2, 1200Mbps in 5GHz1 and 574 Mbps in 2.4GHz
- Max. EIRP up to 38dBm in 5GHz2, 31dBm in 5GHz1 and 31dBm in 2.4GHz
- IP67-Rated weatherproof & dustproof enclosure withstands harsh environments
- Target wake time to reduce the amount of time of a client/ IoT device at power save mode to be awaken
- Uplink and downlink of MU-MIMO improve transmission between AP and client devices
- with 2 x 2.5 GbE ports which are 2.5 times faster than standard Ethernet (1GbE) enhance network performance

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Overview

Network Performance

Triple-band Wi-Fi 6

8 streams (4x4:4 in 5GHz2, 2x2:2 in 5GHz1, 2x2:2 in 2.4GHz) with 3 radio streams for 2.4GHz (574Mbps), 5GHz1 (1200 Mbps), and 5GHz2 (4800 Mbps), total up to 6574Mbps of reliable data delivery.

High Capacity and Reliable Connections

Z-COM SP250-A01 ensures large numbers of users have smooth and reliable network experiences in high-density outdoor locations.

Flexible Power Options with 2.5Gbps PoE+ Ethernet

With 2 x 2.5Gbps ports, SP250-A01 is able to increase network capacity, demanding more than 1 gigabyte speed and supports Power over Ethernet (PoE) standards for flexible deployment.

Multiple Applications

SP250-A01 addresses the increasing client demands in public such as stadiums, plazas, airports and other outdoor public places

Security and Installation

Hardened-grade for Outdoors

Z-COM SP250-A01 is designed for extreme temperatures and environments with IP67 waterproof and dustproof enclosure that can withstand harsh environments and various weather conditions.

Easy and Flexible Installation

SP250-A01 provides the necessary parts for installation and features Plug-and-play and configuration free for pole mount installation.

Advanced Setting with FAP/TAP

SP250-A01 comes with pre-configuration default settings with FAP mode. Users are able to select APs tunnel by advanced settings for centrally managed traffic forwarding and segmentation, data encryption, and policy enforcement to optimize network performance, roaming and security, .

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Addition Software Feature

Fast Roaming*

SP250-A01 provides fast roaming IEEE 802.11r/802.11k for reliable data and seamless switching to the access point with optimal signal when moving between APs.

Remote VPN Deployment*

With the VPN tunnel you can run both a SSL/IPSec VPN tunnel and an ordinary internet connection – simultaneously.

Dynamic Channel Allocation*

Dynamic channel allocation eliminates the time consuming and error-prone task of managing complex and static VLANs by dynamically assigning policies and keeping traffic secure and separated.

Optimized RF Management*

Airtime Fairness, Load Balance, and Band Steering Technologies guarantee optimal RF performance for wireless applications.

Optional Centralized Management

SP250-A01 can be configured by ZCOM WLC (wireless LAN controller) which contains the centralized management platform (zMEC) to remote monitor, implement trouble shooting and optimize performance easily.

It can also optimize wireless transmission quality and security by zMEC edge computing platform. Moreover, the PaaS provides a flexible cloud platform for running, developing and managing AIoT applications.

Technical Benefits

Advantages of OFDMA

OFDMA is ideal for low bandwidth applications and results in more efficient channel use, reduced latency, and increased efficiency to clients share a channel and not competing for airtime and bandwidth.

Uplink and downlink of MU-MIMO

SP250-A01 with MU-MIMO serves multiple devices simultaneously that enhances the capacity of connected devices for both uplink and downlink data transmission.

Reduced Interference and Waiting Time

SP250-A01 features BBS Coloring maximizing network performance by working even within heavily congested, co-channel interference environments.

Transmit Beamforming

SP250-A01 with beamforming design (TxBF) is able to improve the signal strength and achieve higher range to a specific receiving client for RF reliability.

Note: *The function actives with Z-COM wireless controller or zMEC.

Specification

Wi-Fi		
Wireless Standards	IEEE 802.11 a/b/g/n/ac/ax	
Physical Data Rates Supported Rates	802.11ax: 4 to 4800 Mbps 802.11ac: (1024QAM) 4333Mbps 802.11n: 6.5 to 600 Mbps 802.11a/g: 6 to 54 Mbps 802.11b: 1 to 11 Mbps	
Bandwidth Channelization	2.4GHz: 20/40 MHz	5GHz1: 20/40/80MHz	5GHz2: 20/40/80/160 MHz
MIMO	MU-MIMO	
Radio Chains and Streams	2.4GHz : 2×2:2 5GHz1 : 2×2:2 5GHz2 : 4×4:4	
Frequency Bands and Operating Channels	**Taiwan** 2.412 – 2.462 GHz; 11 channels 5.180 – 5.320 GHz; 8 channels 5.500 – 5.720 GHz ; 12 channels 5.745 – 5.825 GHz; 5 channels	**US** 2.412 – 2.462 GHz; 11 channels 5.180 – 5.320 GHz; 8 channels 5.500 – 5.720 GHz ; 12 channels 5.745 – 5.825 GHz; 5 channels
	EU 2.412 – 2.472 GHz; 13 channels 5.180 – 5.320 GHz; 8 channels 5.500 – 5.700 GHz ; 11 channels	**China** 2.412 – 2.472 GHz; 13 channels 5.180 – 5.320 GHz; 8 channels 5.745 – 5.825 GHz; 5 channels
	Japan 2.412 – 2.472 GHz; 13 channels 5.180 – 5.320 GHz; 8 channels 5.500 – 5.720 GHz; 12 channels	**India** 2.412 – 2.472 GHz; 13 channels 5.180 – 5.320 GHz; 8 channels 5.500 – 5.720 GHz ; 12 channels 5.745 – 5.865 GHz; 7 channels
	*Operating Channel depends on configured regulatory domain.	

RF		
Antenna Type	Internal	
Antenna Gain (max.)	2.4GHz : 5dBi	5GHz1: 5dBi	5GHz2: 11dBi
EIRP	2.4GHz: 31dBm	5GHz1: 31dBm	5GHz2: 38dBm
	*The maximum power setting will vary by channel and according to individual country regulations.	
Frequency Bands	ISM (2.4-2.484GHz) U-NII-1 (5.15-5.25GHz) U-NII-2A (5.25-5.35GHz) U-NII-2C (5.47-5.725GHz) U-NII-3 (5.725-5.85GHz)	

PERFORMANCE AND CAPACITY

Peak PHY Rates	2.4 GHz: 574 Mbps 5 GHz1: 1200 Mbps 5 GHz2: 4800 Mbps
Client Capacity	1536

PERFORMANCE TABLE

	2.4GHZ TX TARGET POWER (PER CHAIN)		5GHZ1 TX TARGET POWER (PER CHAIN)		5GHZ2 TX TARGET POWER (PER CHAIN)	
MU HE40	MCS0	23dBm+/-2dBm	MCS0	23dBm+/-2dBm	MCS0	21dBm+/-2dBm
	MCS11	16dBm+/-2dBm	MCS11	15dBm+/-2dBm	MCS11	16dBm+/-2dBm
MU VHT40	MCS9	20dBm+/-2dBm	MCS9	17dBm+/-2dBm	MCS9	17dBm+/-2dBm
	2.4GHZ RECEIVE SENSITIVITY		5GHZ1 RECEIVE SENSITIVITY		5GHZ2 RECEIVE SENSITIVITY	
HE20	MS0	<-82dBm	MS0	<-82dBm	MS0	<-82dBm
	MS11	<-52dBm	MS11	<-52dBm	MS11	<-52dBm
HE40	MS0	<-79dBm	MS0	<-79dBm	MS0	<-79dBm
	MS11	<-49dBm	MS11	<-49dBm	MS11	<-49dBm
HE80			MS0	<-76dBm	MS0	<-76dBm
			MS11	<-46dBm	MS11	<-46dBm

INTERFACE

Ethernet	1 x 10/100/1000M/2.5Gbps WAN Port 1 x 10/100/1000M/2.5Gbps LAN Port	
Addition	1 x Reset bottom 1 x Grounding Terminal	
Power	**Power Supply**	**Consumption**
	WAN Port: PD Input (802.3bt) LAN Port : PSE Output (802.3af)	Max ≤ 28W PoE out ≤ 41W
Bluetooth	**Version**	**Frequency**
	5.0	2400 ~ 2480MHz
Environmental	**Storage**	**Operating**
	Temperature: -45 ~ 70 ℃ Humidity: 5 ~ 95%	Temperature: -40 ~ 65 ℃ Humidity: 5 ~ 95% (non-condensing)

STANDARDS

Compliance Standards	IEC/EN 62368-1 EN55032 & EN55024 WEEE & RoHS **IEEE standards:** IEEE 802.11a/b/g/n/ac/ax IEEE 802.11d, e, h, i, j, k, r, u, v time stamp, w, and z standards **Multimedia:** Wi-Fi multimedia (WMM) **Security:** Open System WPA/ WPA2 WPA3 **Extensible Authentication Protocol (EAP) types:** EAP-Transport Layer Security (TLS) EAP-Tunneled TLS (TTLS) Protected EAP (PEAP) EAP-Subscriber Identity Module (SIM) *Above partial functions should be configured by Z-COM Wireless LAN Controllers (WLC)

MECHANICAL

Dimensions	296 (L) × 92 (W) × 283 (H) mm
Weight	2.55 KG
Mounting Method	Pole
IP rating	IP67
Anti-static Grade	IEC61000-4-2(Criteria B) Air: ±8kV Contact:±4kV
Green	RoHS compliant
LED Definition	LED by SW control Red (color) - Steady: Connected to the Internet. - Blinking: Can't connect to the Internet.
Supported WLC and container-based	-WS5G2 / WS7G2 /WS10G2 / WS200G2 / WS500G2 / WS1000G2 -zMEC (x86)
Warranty	1 year