

RG-WS6024

Wireless Controller Datasheet



Ruijie RG-WS6024 Wireless Controller tops the class by offering all-in-one wired and wireless control, and PoE power support. The RG-WS6024 is ideal acting as the wireless core for general education, small and medium business networks, and enterprise branches. The versatile wireless controller supports wired Gigabit Ethernet access, 10G fiber uplink, and PoE/PoE+ power supply. The RG-WS6024 offers management of up to 24 APs and is scalable to up to 128 APs with license upgrade.

HIGHLIGHTS

- All-in-one Design: Integrated Wireless Controller & 24-Port PoE+ Switch (With 4x 10G Uplinks)
- Investment on Demand: Support from 24 to 128 APs by Expansion
- Full Resiliency (Power Redundancy and N+1/ N+N Modes)
- Rich Authentication Features

The Wireless Controller supports centralized wireless control and management with ease, delivering remarkable transparency and visibility. Teaming up with Ruijie's leading management platform Smart Network Commander (RG-SNC) and access point series, the RG-WS6024 can flexibly manage AP configuration and optimize radio frequency (RF) coverage to enhance wireless performance and minimize deployment workload at the same time.

The RG-WS6024 enables a vast library of authentication modes including WEB and 802.1X. Gearing up with an internal portal server and local authentication database, the Wireless Controller offers easy control of secure wireless access. It does not only simplify the overall network architecture, but also significantly lowers the implementation costs. The RG-WS6024 Wireless Controller fully satisfies secure access requirements of small to medium-scaled wireless network deployment.

PRODUCT FEATURES

Smart Wireless Experience

Intelligent Identification of Smart Devices

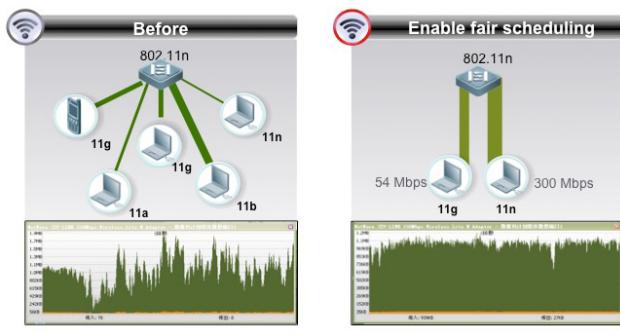
The RG-WS6024 Wireless Controller, with a built-in portal server, intelligently identifies the types of end devices based on their respective features. This feature presents users with an adaptive portal authentication page that fits the screen of any smart device of their choice. It effectively eliminates the trouble of screen size adjustment and offers a significantly better wireless user experience. Fully supports mainstream operating systems including Apple iOS, Android, and Windows.

Fair Scheduling

The RG-WS6024 in collaboration with Ruijie APs enables equal access time for smart devices running different standards such as 802.11g, 802.11n, 802.11ac, etc. The feature solves the problems like high latency, poor AP performance and slow network speed caused by the use of old wireless LAN card or because the end device is far away from the AP. The RG-WS6024 ensures a fair high-speed wireless network for all users with any devices anywhere and anytime.

Fair Scheduling

After fair scheduling is enabled, the whole channel and performance of AP is fully used. Whether low-speed or high-speed the wireless terminal is, they'll have opportunity to send packets.



Fair Scheduling Mechanism

Abundant QoS Policies

The RG-WS6024 supports an extensive array of QoS policies. For example, the wireless controller can set bandwidth limits to give higher priority to critical data transmission applications, delivering guaranteed bandwidth performance for network of all sizes.

Smart RF Management

The RG-WS6024 enables AP to perform on-demand RF scanning for a wireless network. By scanning the wireless bands and channels, the device singles out both rogue APs and networks. Network administrator will also receive alerts for immediate action, enabling round-the-clock network protection. In addition, the RG-WS6024 can control the RF scanning function in real time to measure signal and interference intensities. Working with the software, the wireless controller can dynamically adjust traffic load, power, RF coverage, and channel allocation for maximized signal coverage and capacity.

Seamless Roaming Experience

The advanced clustering technology enables real-time synchronization of all user data among multiple RG-WS6024 devices. In other words, user information and authentication data are shared in the cluster, enabling wireless users to roam freely within the whole network. Users can thereby enjoy a borderless and secure roaming experience while the IP address and authentication status remained unchanged. The RG-WS6024 also supports fast roaming and voice services with the clustering technology.

Intelligent Load Balancing

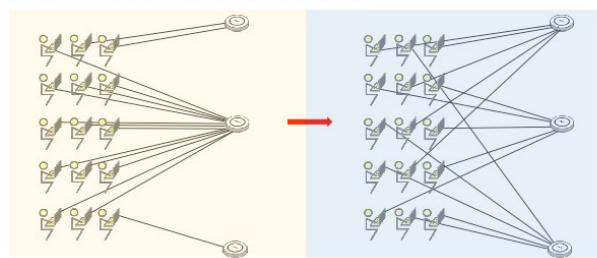
In a populated wireless LAN environment, the RG-WS6024 Wireless Controller, teaming up with Ruijie APs, can intelligently distribute users among different APs according to the number of users and data traffic in real time. This feature balances the load pressure on each AP and improves the average bandwidth and Quality of Service (QoS), enhancing network availability. In addition to the role-based and traffic-based balancing features, the RG-WS6024 also enables load balancing in terms of frequency range. Despite of the fact that the frequency band 5GHz (802.11a/n/ac) can offer a better throughput performance, the majority of Wi-Fi devices adopts 2.4GHz by default. With the frequency-based load balancing, the RG-WS6024 allows users with dual-

band devices to connect to the 5GHz with priority. The bandwidth usage is greatly increased by 30-40% with no additional cost required. The RG-WS6024 delivers an exceptional high-speed wireless performance to all Ruijie clients.

User-based Load Sharing

Wireless users will connect to AP according to their own choose, so certain AP may have too many users and a very heavy load while other APs are idle. This is a very common problem in large-scale wireless network.

Load sharing feature enables Ruijie APs which work in the same group to realize load balance based on number of users and download bandwidth, users then will access to the non-busy APs.



Intelligent Load Balancing Mechanism

Energy Efficiency

Green Design

The RG-WS6024 adopts next-gen hardware architecture with a highly energy-saving circuit design and component selection. The device achieves a marked reduction in energy consumption by more than 40%. In addition to maximized energy saving, the RG-WS6024 also significantly lowers noise pollution. All models in the series deploy variable-speed axial fans, which support intelligent speed adjustment based on the current ambient temperature. All the features enable the wireless controller to work smoothly and reduce power consumption and noise pollution at the same time.

PoE Power Supply

The RG-WS6024 offers three PoE power supply modes - auto, energy-saving and static - to meet various deployment challenges.

The RG-WS6024 also supports auto-power-down mode. When an interface is down for a certain period of time, the system will automatically power it down for extra energy efficiency. EEE energy-saving mode is another feature highlight. The system will automatically turn an idle port into energy-saving mode. When there is a new packet, the system will issue listening streams to the port to resume service.

On-demand Energy-saving Settings

The RG-WS6024 can regularly power off any designated RF transmission interfaces of all managed APs according to the actual needs. The function can also switch off the whole AP as scheduled. In small and medium business scenarios, network administrator can set the wireless controller to automatically disable and turn RF transmission interfaces into energy-saving mode. This feature is especially useful during time slots such as midnight, weekends and public holidays when no wireless service is required. The wireless controller greatly lowers energy consumption and hence provides maximized cost savings for users.

Flexible and Comprehensive Security Policies

Local Authentication

The RG-WS6024 owns a local user database, which supports integration with the built-in portal server, for easy local authentication of wireless users via web authentication. The wireless controller allows local authentication based on the actual user demand, saving costs by getting rid of devices such as external portal and RADIUS server. The network infrastructure is hence largely simplified. The RG-WS6024 fully satisfies the secure access requirements of small and medium-sized networks.

User Data Encryption

The RG-WS6024 fully supports the advanced encryption technologies such as Wired Equivalent Privacy (WEP), Temporal Key Integrity Protocol (TKIP), and Advanced Encryption Standard (AES), ensuring end-to-end security of data transmission over the wireless network.

Virtual Wireless Packet Technology

With the virtual AP technology, the RG-WS6024 can partition multiple SSIDs within the network. Network administrator can separately encrypt and isolate subnets or VLANs that have the same SSID. The deployment thereby enables specified authentication mode and encryption mechanism for each SSID.

RF Security

The RG-WS6024 supports RF probe scanning feature to detect unauthorized access points or other RF interference sources. Once detected, the wireless controller will send real-time alerts to the network management system. Network administrator can hence monitor potential threats and usage status anytime with ease.

Protection Against Viruses and Attacks

The RG-WS6024 provides a wide range of built-in security mechanisms to effectively prevent and control virus spread and network traffic attacks. The mechanisms ensure secure network access by the authorized users only. Such protection mechanisms include IP/MAC/WLAN binding, hardware ACL control, traffic-based bandwidth limitation and so on. The RG-WS6024 is an ideal match for campus, hospital, enterprise networks and settings alike with high security demand for guest access.

Secure User Access

The RG-WS6024 supports Web Authentication, allowing users to use any web browser for authentication.

802.1X authentication is another security highlight. A major difference from web authentication is that 802.1X enables IP/MAC/WLAN binding after authentication. The feature totally guarantees the legitimacy of the user's identity.

Flexible Authentication Modes

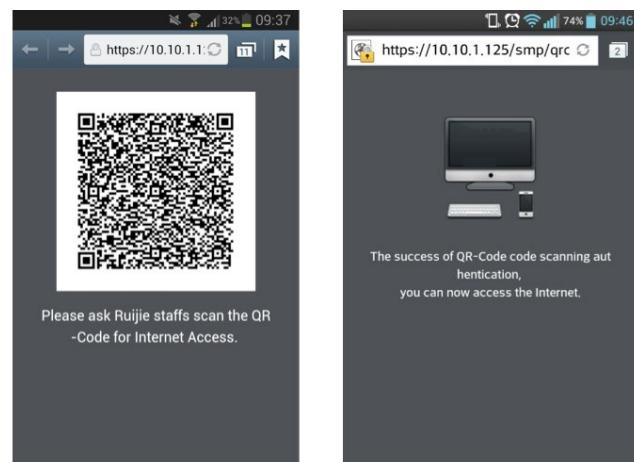
In addition to the traditional Web Authentication and 802.1X Authentication, the RG-WS6024 also supports PEAP Authentication, SMS Authentication, and QR Code Authentication.

The PEAP Authentication allows users to perform password authentication for once only. That means users are only required to enter credentials during their first network visit.

If the SMS authentication is adopted, users first sign in with

their mobile phone numbers and then receive an SMS with login username and password for network access.

QR code authentication is another wireless security highlight. After accessing a wireless network, users will obtain a QR code on their end devices and simply ask any authorized staff's to scan it for network access.



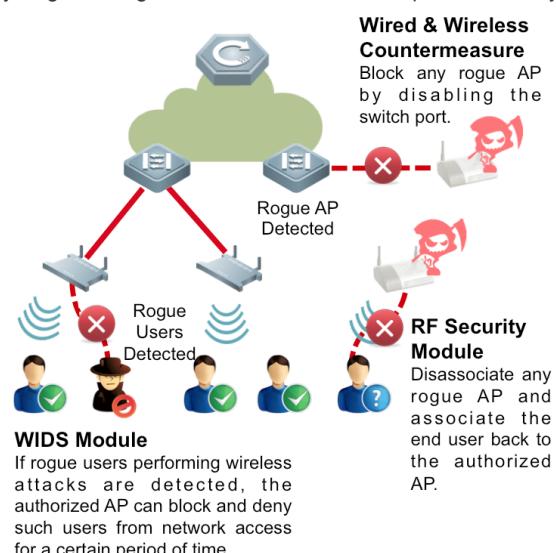
Advanced Guest Wireless Interfaces of the QR Code Authentication

Protection Against ARP Spoofing

Address Resolution Protocol (ARP) detection effectively protects network users against ARP gateway spoofing and host spoofing. Automatic binding can be enabled in both dynamic and static IP address allocation environments to greatly save manpower resources and management costs. The RG-WS6024 can monitor and control the transmission rate of ARP packets to prevent malicious use of scanning tools, which triggers ARP flooding and causes network congestion.

Rogue AP Countermeasure

The RG-WS6024 enables effective rogue AP detection and containment to enhance wireless security. The device arranges an active AP to perform rogue detection, send probe packets and hear probe responses from valid APs. Network administrator can hence easily single out rogue APs from the batch for top-class security.



Rogue AP and User Countermeasures

DHCP Security

With Dynamic Host Configuration Protocol (DHCP) snooping, the RG-WS6024 permits DHCP response messages from the trusted ports only. The wireless controller can thus prevent unauthorized deployment of any DHCP server to disturb the allocation and management of IP addresses and affect normal operation of the network. With the DHCP monitoring function, the RG-WS6024 can effectively prevent ARP host spoofing and source IP address spoofing in the dynamic IP allocation environment by dynamically monitoring ARP and checking source IP address.

Management Information Security

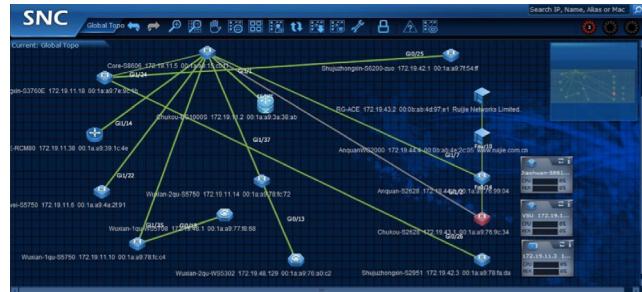
To ensure the security of devices and offer protection against attacks, the Secure Shell (SSH) and SNMPv3 technologies encrypt management information by Telnet and Simple Network Management Protocol (SNMP). The RG-WS6024 offers Telnet access control based on source IP address, offering a high level of granularity on device management. Only the IP addresses authorized by network administrator can log into the wireless controller, which further enhances the security of device network management.

Unified Network Management

Multiple Management Protocols and Unified Management Platform

The RG-WS6024 supports a vast number of management modes (e.g. Command Line). It offers centralized and efficient planning, deployment, monitoring, and management of all APs with minimized investment costs. Working with the Ruijie Smart Network Commander (SNC) which is an all-rounded network management platform, the RG-WS6024 delivers enriched network management services such as topology generation, AP operation status, online

user status, entire network RF planning, user location, security alert, link load, device utilization rate, roaming record and report output. These functions enable network administrator to monitor and manage the operation status of the entire network in the data center.



Ruijie SNC Unified Topology Diagram

Web Interface Management

The RG-WS6024 supports AC web management interface, which provides simplified wireless configuration and high visibility for the whole network operation. With the AC web interface, the wireless controller can also manage the APs and also the associated users, achieving user bandwidth control and network access restriction. Network administrator can hence plan, operate and maintain the wireless network with ease.



Ruijie Smart Web Management Interface

TECHNICAL SPECIFICATIONS

Model	RG-WS6024	
Service Port	24 10/100/1000BASE-T ports 2 100/1000M SFP ports (combo) 2 1G/10GBASE-X SFP+ ports 2 expansion slots Support PoE/PoE+ Dual modular power supplies	
Management Port	1 console port	
Security Standard	GB4943-2011	
EMC Standard	GB9254-2008	
Performance	Switching Capacity	128Gbps
	Packet Forwarding Rate	96Mpps
	Default Number of Manageable APs	24
	Maximum Number of Manageable APs	128 (with license upgrade)

Model	RG-WS6024
Performance	Maximum Number of Configurable APs 96 (up to 512 with license upgrade)
	Maximum Number of Manageable Clients 768 (up to 4,096 with license upgrade)
	VLAN 4,094
	Maximum Number of Clients Supported by the Built-in Portal 768 (up to 4,096 with license upgrade)
	ACL 1,500
	MAC Address Table 16K
	Local Authentication 768 (up to 4,096 with license upgrade)
	ARP Table 1K
	IPv6 Neighbor Table 100
	Inter-AC Roaming Switch Time ≤50ms
LAN	802.1Q VLAN 4K 802.1Q VLAN Port-based VLAN MAC-based VLAN Protocol-based VLAN Private VLAN Voice VLAN Private VLAN IP subnet-based VLAN GVRP
	PoE Compliant with IEEE 802.3af and 802.3at Support automatic, energy-saving, and static power supply modes Hot start with uninterrupted power supply Port priority PoE device stacking
	QinQ Basic QinQ Flexible QinQ N:1 VLAN switching 1:1 VLAN switching
	ACL Standard IP ACL (hardware ACL based on IP address) Extended IP ACL (based on IP address and TCP/UDP port number) MAC-extended ACL (based on source and destination MAC addresses and optional Ethernet type) Time-based ACL Expert ACL (based on the flexible combination of VLAN number, Ethernet type, MAC address, IP address, TCP/UDP port, protocol type, and time) ACL80 IPv6 ACL ACL logging ACL counter ACL remark Global ACL ACL redirect

Model		RG-WS6024
LAN	QoS	Port traffic identification Port traffic control 802.1p/DSCP/TOS traffic classification 8 priority queues on each port SP, WRR, DRR, SP+WFQ, SP+WRR, SP+DRR, RED/WRED queue scheduling
WLAN	802.11 LAN Protocol	802.11, 802.11b, 802.11a, 802.11g, 802.11d, 802.11h, 802.11w, 802.11k, 802.11r, 802.11i, 802.11e, 802.11n, 802.11ac
	CAPWAP	Layer 2/Layer 3 network topology between an AP and AC Enable an AP to automatically discover an accessible AC Enable an AP to automatically upgrade software version from an AC Enable an AP to automatically download configurations from an AC Network Address Translation (NAT) traversal
	Roaming	Intra-AC Layer 2/Layer 3 roaming Inter-AC Layer 2/Layer 3 roaming Intra-AC Layer 2/Layer 3 roaming under local forwarding Inter-AC Layer 2/Layer 3 roaming under local forwarding
	Forwarding	Local forwarding Centralized forwarding
	Wireless QoS	AP-based bandwidth control WLAN-based bandwidth control User-based static and smart speed control Fair balancing
	User Isolation	AC-based user isolation AP-based user isolation WLAN-based user isolation
	Reliability	Fast switching between 2 ACs Multiple ACs redundancy (1:1 A/A and A/S, N:1) Multiple ACs clustering (N:N) Remote Intelligent Perception Technology (RIPT) Nonstop service upgrade
	STA Management	AP-based STA access control SSID-based STA access control AP-based load balancing AP traffic-based load balancing 5G priority access RSSI threshold
	STA RSSI Threshold	0 to 100
	STA Idle Timeout	90 to 86,400 seconds
	STA Average Data Rate Threshold	8 to 819,200 with the accuracy of 8Kbps
	Adjusting Transmit Power of Beacon and Probe Response	Support
	Offline Syslog	Support
	RF Management	Setting country codes Manually setting transmit power Automatically setting transmit power Automatically setting working channel

Model		RG-WS6024
WLAN	RF Management	Automatically adjusting transmission rate Support blackhole compensation Support RF interference detection and avoidance
Security	IPv4 Security	Web authentication 802.1x authentication PEAP authentication SMS authentication QR code authentication
	IPv6 Security	Web authentication 802.1x authentication
	802.11 Security and Encryption	Multiple SSIDs SSID hiding 802.11i-compliant PSK authentication WPA and WPA2 WEP (WEP/WEP128) WAPI TKIP CCMP Protection against ARP spoofing
	SMP	Support
	CPP	Support
	NFPP	Support
	WIDS	Support
	IPv4 Protocol	Ping, Traceroute DHCP Server DHCP Client DHCP Relay DHCP Snooping DNS Client NTP Telnet TFTP Server TFTP Client FTP Server FTP Client
	IPv6 Protocol	DNSv6 Client DHCIPv6 Relay DHCIPv6 Server TFTIPv6 Client FTPv6 Server FTPv6 Client IPv6 CAPWAP ICMPv6 IPv6 Ping IPv6 Traceroute Manual tunnel, automatic tunnel Manual configuration address, automatic local address
	IPv4 Routing	Static routing, RIP
	IPv4 Routing Table Capacity	500

Model		RG-WS6024
Internet Protocols	IPv4 Static Routing Table Capacity	500
	IPv6 Routing	Static routing
	IPv6 Routing Table Capacity	500
	IPv6 Static Routing Table Capacity	500
Management	Network Management	SNMP v1/v2c/v3 RMON Remote probe Syslog
	Network Management Platform	Web management (Smart-web) RG-SNC management Heat Map diagram
	User Access Management	Login via console port Login via Telnet Login via SSH Upload to FTP
Dimensions (W × D × H) (mm)	440 × 260 × 44	
Rack Height	1RU	
Weight	5.8kg (including packing)	
Installation Mode	19-inch rack	
Power Supply	Support dual power supplies (sold separately) AC input: Rated voltage range: 100V to 240V Maximum voltage range: 90V to 264V Frequency: 50Hz to 60Hz DC input: Voltage range: -36VDC to -72VDC	
Switching Power Supply	Supports up to 2 switching power supply modules with at least 1 power module	
Power Consumption	24-port PoE+, ≤850W	
Temperature	Operating Temperature: 0°C to 45°C	
	Storage Temperature: -40°C to 70°C	
Humidity	Operating Humidity: 5% to 95%RH (non-condensing)	
	Storage Humidity: 5% to 95%RH (non-condensing)	
Operating Altitude	0-3000m	

ORDERING INFORMATION

Model	Description
RG-WS6024	Wireless Controller for unified wired and wireless management, 24-port 10/100/1000Base-T (PoE+), 2-port 100/1000M SFP combo and 2-port 1G/10G SFP+, 24 APs license by default, support local forwarding, 2 expansion slots, power supply module sold separately (require at least one)
License	
LIC-WS-16	WS Series Wireless Controllers upgrade license for 16 APs or 32 Wall APs
LIC-WS-32	WS Series Wireless Controllers upgrade license for 32 APs or 64 Wall APs
LIC-WS-128	WS Series Wireless Controllers upgrade license for 128 APs or 256 Wall APs
Optional Accessories	
RG-M5000E-AC500P	AC Power Module, 370W power budget for PoE, up to 24 PoE ports or 12 PoE+ ports
RG-PA1150P-F	AC Power Module, 740W power budget for PoE, up to 48 PoE ports or 24 PoE+ ports
RG-M5000E-DC500P	DC Power Module, -32VDC to -72VDC input voltage, 370W power budget for PoE, up to 24 PoE ports or 12 PoE+ ports
RG-M6000-WS	WS Series Wireless Controller Module, 32 APs or 64 wall APs license by default, up to 128 APs/Wall APs by license upgrade, local forwarding recommended and support up to 64 APs for centralized forwarding, each RG-WS6024 supports 1 RG-M6000-WS Wireless Controller Module only
M2910-01XS	1-Port 10GBASE-X SFP+ Interface Module
M2910-01XT	1-Port 10GBASE-T Interface Module



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