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Dual Band 802.11ax 1800Mbps Wireless Gigabit Router

Amazing Next-generation Wireless High-speed Connection

PLANET WDRT-1800AX Dual Band **802.11ax 1800Mbps Wireless Gigabit Router**, supporting MU-MIMO, Wave 2.0, OFDMA and **EasyMesh** technology, provides a maximum wireless speed of **1200Mbps** in the 5GHz band and **600Mbps** in the 2.4GHz band. The maximum number of client users is up to 64, ensuring more secure and robust connectivity with the adoption of **Wi-Fi 6** technology.

The WDRT-1800AX, suitable for home multi-device streaming connection, smart home and other environments, provides better speed and multi-installation connectivity for high-efficiency networking. Equipped with the next-generation **Wi-Fi 6 (802.11ax)** wireless network standard, the total bandwidth reaches **1800Mbps**, and the **4-stream transmission** technology improves the transmission efficiency of multiple devices, making AR/VR/IoT applications smoother.

Benefits of Wi-Fi 6 technology

As OFDMA, a multi-user version of OFDM, enables the concurrent AP to communicate (uplink and downlink) with multiple clients by assigning subsets of subcarriers called resource units (RUs) to the individual clients. With EasyMesh and Seamless Roaming technologies, it provides a better Wi-Fi user experience, reducing the likelihood of users turning off Wi-Fi and putting more load on the cellular network. These technologies also can solve Wi-Fi congestion issues in open workspaces and conference rooms. The WDRT-1800AX can offer more powerful throughput coverage of up to 64 client users.

IEEE Compliant Wireless LAN and Wired LAN

- Compliant with the IEEE 802.11a/b/g/n/ac/ax wireless technology
- Equipped with 1 WAN and 4 LANs with 10/100/1000Mbps RJ45 ports, and auto MDI/MDI-X

RF Interface Characteristics

- 802.11ax 2T2R architecture with data rate of up to 1800Mbps (600Mbps in 2.4GHz and 1200Mbps in 5GHz)
- High output power with multiply-adjustable transmit power control

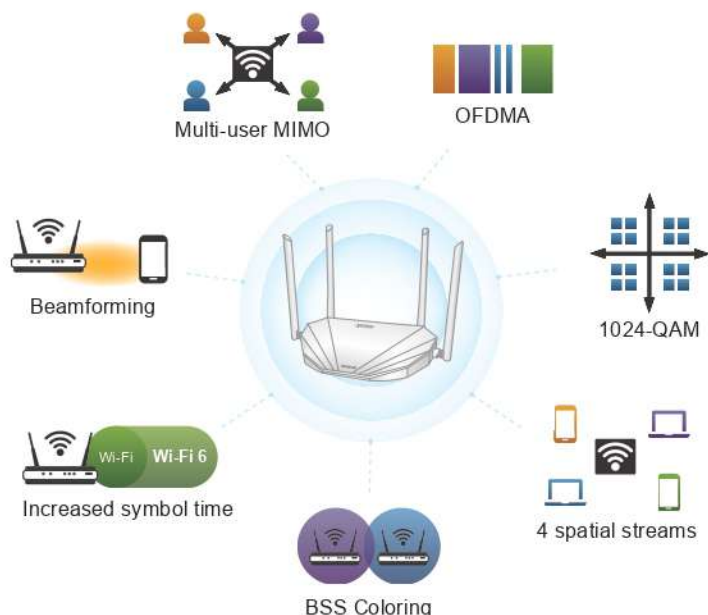### Fixed-network Broadband Router

- Supports WAN connection types: Dynamic, static IP, PPPoE
- Supports Operation Modes: Route, Bridge and Relay mode
- Supports DDNS and DHCP Servers

Multiple Operation Modes and Wireless Features

- Max. Wireless Clients up to 64 (2.4GHz+5GHz)
- Supports MU-MIMO, Wave 2.0, OFDMA, Beamforming and BSS coloring.
- Support Terminal Seamless Roaming with 802.11k, 802.11v, and 802.11r

Comprehensive Wireless Advanced Features

- Easy Installation with EasyMesh Function (Expected to be launched in 2021/Q4)
- Supports guest network to allow users to access different SSIDs
- Supports Wireless QoS to enhance the efficiency of multimedia application
- Supports 3-level Transmitting Power Control to adapt various environments
- Self-healing (Schedule Reboot) mechanism for reliable connection

Multi-user MIMO

OFDMA

Beamforming

1024-QAM

Wi-Fi Wi-Fi 6

Increased symbol time

4 spatial streams

BSS Coloring

Secure Network Connection

- Supports Wi-Fi Protected Setup (WPS)
- Support WPA/WPA2/WAP3 wireless security encryption
- Supports NAT firewall, IP / URL-based access control and MAC address filtering
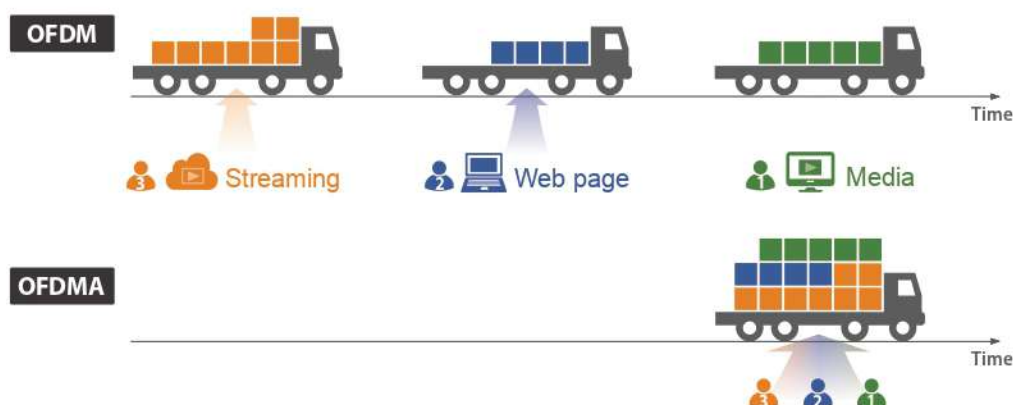
Advanced Networking Function for Specific Application

- Supports Bandwidth Control (QoS) based on different local IP addresses
- Supports NTP, Port Forwarding, ALG and DMZ for various networking applications

Easy Installation and Management

- Web-based UI and quick setup wizard for easy configuration
- Support for centralized management (TR069)
- Remote Management allows configuration from a remote site
- System status monitoring includes DHCP Client List and System Log

■ OFDMA (Orthogonal Frequency Division Multiple Access)

OFDMA is a multi-user evolved version based on OFDM digital modulation technology. In the Wi-Fi 6 (802.11ax) standard, the main function of OFDMA is to improve network performance. Orthogonal frequency division multiple access (OFDMA) enables users to simultaneously operate in the same channel and therefore improves efficiency, latency, and throughput.

A **75%** Reduction in Delays

OFDM

Time

Streaming   Web page   Media

OFDMA

Time

■ Beamforming

Beamforming is to improve your Wi-Fi signal when you are far away from your router. When you use beamforming, Wi-Fi beamforming narrows the focus of that router signal, sending it directly to your devices in a straight line, thus minimizing surrounding signal interference and increasing the strength of the signal that ultimately bring you the following benefits:

- Extend your Wi-Fi coverage
- Deliver a more stable Wi-Fi connection
- Deliver better Wi-Fi throughput
- Reduce router interference

Dedicated and stable signals   Signal loss

■ BSS (Basic Service Set) Coloring

The BSS color is a numerical identifier of the BSS. 802.11ax radios are able to differentiate between BSSs using BSS color identifier when other radios transmit on the same channel. If the color is the same, this is considered to be an intra-BSS frame transmission. In other words, the transmitting radio belongs to the same BSS as the receiver. If the detected frame has a different BSS color from its own, then the STA considers that frame as an inter-BSS frame from an overlapping BSS.
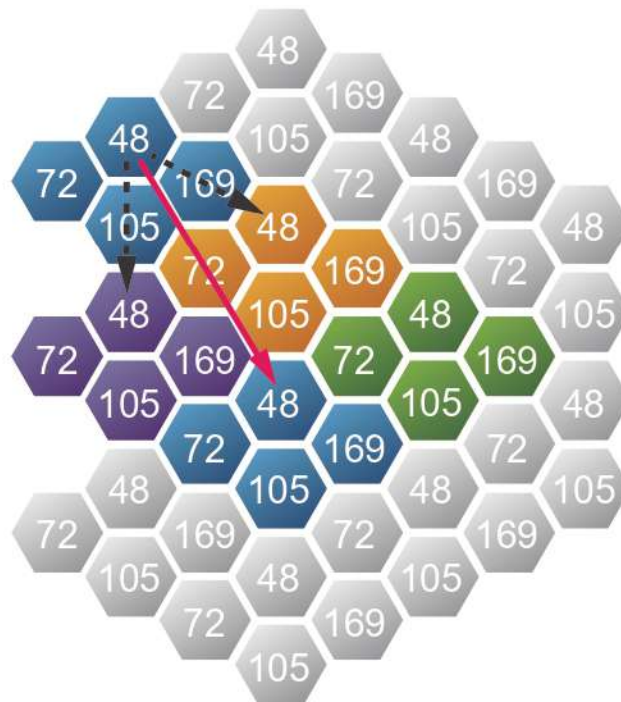
Easy Installation with EasyMesh Function

Wi-Fi EasyMesh provides a standards-based method for implementing multi-access point (AP) Wi-Fi networks. It not only has the advantages of easy-to-use and self-adjusting Wi-Fi, but also has interactive Wi-Fi CERTIFIED ™ equipment that leads to the advantage of improved equipment selection flexibility. The Wi-Fi EasyMesh network uses multiple access points that operate together to form a unified network, providing a smart and efficient Wi-Fi that fully covers indoor and outdoor spaces.

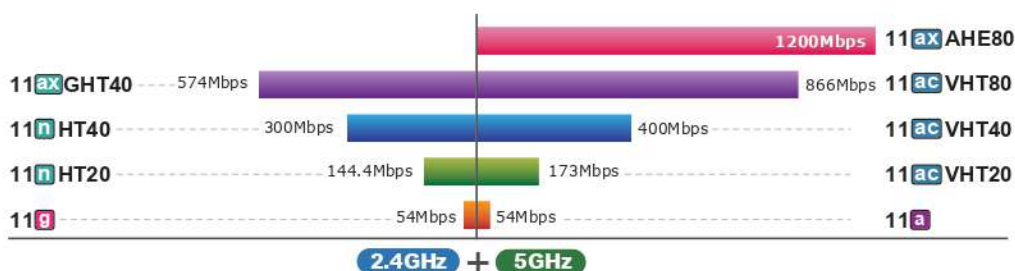*WPA3 Next Generation Security for Your WLAN Solution*

WPA3 is the next generation Wi-Fi security technology that provides the most advanced security protocol to the market. WPA3 makes your connection more secure by preventing hackers from easily cracking your password no matter how simplified the password is. WPA3 can also provide more reliable password-based authentication, so it can better protect the security of individual users.

* WDRT-1800AX only supports WPA3-Personal.

Mesh Wi-Fi and Seamless Roaming for Better Coverage

Moving between a traditional Wi-Fi AP or router and range extender, your Wi-Fi signal can experience lag or a dropped connection. Mesh Wi-Fi comes with four features, including Seamless Roaming, Band Steering, Self-Healing, and Client Steering. A set of packages usually includes three to four APs. Each AP is an independent router. When the main AP functions, other APs are used as satellite APs. The whole system can provide Wi-Fi network connection with zero dead angle, meaning a large area is covered.

Its characteristic is not like the traditional star-shaped or tree-shaped network structure which can only communicate with the upper and lower access points, but each access point can connect and communicate with each other, and at the same time, it can automatically find the best path for transmitting packets. This enables your networking environment to get full coverage and efficient performance.
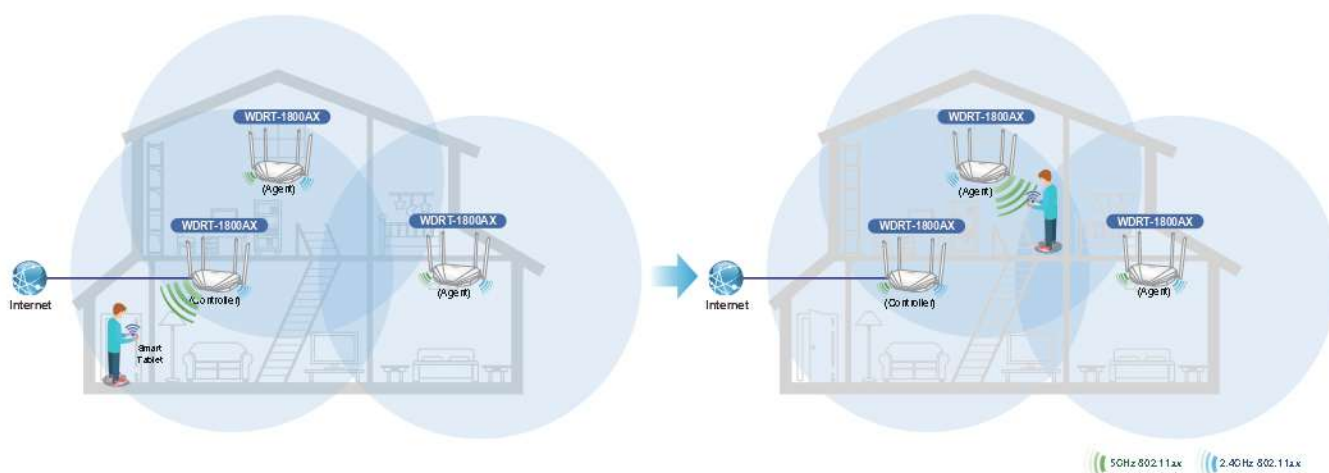
Robust TR-069 Remote Management

To reduce the service provider's manpower needed for on-site maintenance, the WDRT-1800AX supports TR069 (WAN Management Protocol) standard that allows an Auto-Configuration Server (ACS) to perform auto-configuration, provision, collection, and diagnostics to this device remotely.

Specifications

Product	WDRT-1800AX
Hardware Specifications	
Interface	WAN Port: 1 x 10/100/1000 Mbps auto MDI/MDI-X RJ45 port LAN Port: 4 x 10/100/1000 Mbps auto MDI/MDI-X RJ45 port (LAN 1~4)
Antenna	Four external 7dBi high gain omnidirectional antennas (2.4GHz x 2, 5GHz x 2)
Button	1 x WPS/reset button Press for about 1 second to enable WPS function. Press for over 5 seconds to reset the device to factory default.
LED Indicators	PWR x 1 LAN x 4 WAN x 1 WLAN (2.4GHz & 5GHz) x 2
Dimensions (W x D x H)	234 x 148 x 31mm
Weight	343g
Power Requirement	12V DC, 1A
Wireless Interface Specifications	
Standard	IEEE 802.11a/n/ac/ax 5GHz IEEE 802.11g/b/n/ax 2.4GHz
Frequency Band	Simultaneous 2.4GHz and 5GHz
Data Rates	2.4GHz up to 600Mbps 5GHz up to 1200Mbps

Channel	2.4GHz
	  FCC (America): 2.412~2.462GHz (11 Channels)
	  ETSI (Europe): 2.412~2.472GHz (13 Channels)
	5GHz
	  FCC: 5.180~5.240GHz, 5.745~5.825GHz
	  ETSI: 5.180~5.700GHz
	*The actual channels in application may vary depending on the regulations in different regions and countries.

Channel Width	20MHz, 40MHz, 80MHz
Max. RF Power / EIRP	EIRP < 22dBm

Receive Sensitivity	2.4GHz
	  11b 11Mbps: 22dBm
	  11g 6Mbps: 21dBm
	  11g 54Mbps: 20dBm
	  11n MCS0-HT20: 21dBm
	  11n MCS7-HT20: 19dBm
	  11ax MCS11-HE20: 16dBm
	  11n MCS7-HT40: 19dBm
	  11ax MCS9-VHT40: 17dBm
	  11ax MCS11-HESU40: 16dBm
	
	5GHz
	  11a 6Mbps: 21dBm
	  11a 54Mbps: 19dBm
	  11ac MCS8-VHT20: 17dBm
	  11ax MCS11-HE-SU20: 16dBm
	  11ac MCS9-VHT40: 17dBm
	  11ax MCS11-HE-SU40: 16dBm
	  11ac MCS9-VHT80:17dBm
	  11ax MCS11-HE-SU80: 16dBm

Wireless Output Power	2.4GHz
	  11b 1Mbps: -96 dBm
	  11b 11Mbps: -90 dBm
	  11g 6Mbps: -91 dBm
	  11g 54Mbps: -75 dBm
	  11n MCS0-HT20: -91 dBm
	  11n MCS7-HT20: -71 dBm
	  11ax MCS0-HE-HESU20: 91dBm
	  11ax MCS11-HE-HESU20: 62dBm
	  11n MCS7-HT40: -70 dBm
	  11ac MCS9-VHT40: -63 dBm
	  11ax MCS11-HE-HESU40: 58dBm
	
	5GHz
	  11a 6Mbps: -91 dBm
	  11a 54Mbps: -75 dBm
	  11n MCS0-HT20: -91 dBm
	  11n MCS7-HT20: -71 dBm
	  11ax MCS0-HE-HESU20: 91dBm
	  11ax MCS11-HE-HESU20: 62dBm
	  11n MCS7-HT40: -70 dBm
	  11ac MCS9-VHT40: -63 dBm
	  11ax MCS11-HE-HESU40: 58dBm
	  11ac MCS9-VHT80: -58 dBm
	  11ax MCS11-HE-HESU80: 54dBm

Transmit Power Control	Low, Medium, High
Wireless Management Features	
Encryption Security	WPA/WPA2/WPA3
Wireless Security	Wireless MAC address filtering Supports WPS (Wi-Fi Protected Setup)
Wireless Advanced	Supports dual-SSID (2.4GHz and 5GHz) Supports guest network
Max. Supported Clients	2.4GHz wireless: 32 5GHz wireless: 32

Router Features

WAN	Shares data and Internet access with users, supporting the following Internet accesses: ■ Dynamic IP ■ Static IP ■ PPPoE
LAN	Built-in DHCP server supporting static IP address distribution Supports IP MAC binding
Firewall	NAT firewall, SPI firewall Built-in NAT server which supports port forwarding and DMZ Built-in firewall with URL filtering, and MAC address filtering
System Management	Web-based (HTTP) management interface Telnet server Supports UPnP, PLANET DDNS SNTP synchronization System log TR069

Standards Conformance

IEEE Standards	IEEE 802.11ax IEEE 802.11ac IEEE 802.11n IEEE 802.11a IEEE 802.11b IEEE 802.11g IEEE 802.11i IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3ab 1000BASE-T IEEE 802.3x flow control IEEE 802.11k, 802.11v, and 802.11r
Modulation Type	802.3ax: OFDMA (BPSK / QPSK / 16QAM / 64QAM / 256QAM/1024QAM) 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM) 802.11a/g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11b: DSSS (DBPSK / DQPSK / CCK)
Other Protocols and Standards	TCP/IP, DHCP, NAT, PPPoE, NTP
Regulatory	CE, RoHS

Environment

Temperature	Operating: 0 ~ 40 degrees C Storage: -40 ~ 70 degrees C
Humidity	Operating: 10 ~ 90% (non-condensing) Storage: 5 ~ 95% (non-condensing)

Ordering Information

WDRT-1800AX	Dual Band 802.11ax 1800Mbps Wireless Gigabit Router

Related Products

WDAP-C7210E	1200Mbps 802.11ac Wave 2 Dual Band Ceiling-mount Wireless Access Point w/802.3at PoE+ and 2 10/100/1000T LAN Ports
WDAP-W1200E	Dual Band 802.11ac 1200Mbps Wave 2 In-wall Wireless Access Point
WDAP-C1800AX	Dual Band 802.11ax 1800Mbps Ceiling-mount Wireless Access Point w/802.3at PoE+ & 2 10/100/1000T LAN Ports

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