

# **Tri-band Wi-Fi6E Router**

## **WF-815**

### **Product Datasheet**

VERSION1.0

Mar, 2023

**[www.actiontec.com](http://www.actiontec.com)**

## ■ Overview

The tri-band Wi-Fi 6E WF-815 is designed to provide Wi-Fi network connectivity for homes and business based on the latest 802.11ax chipset design. With the WF-815, the user can utilize EasyMesh R4, which provides a self-configuring, self-healing and self-managing Wi-Fi network. It dynamically selects the most reliable Wi-Fi path and enables fast and seamless handoffs for end-users.

WF-815 is one of the best performing WiFi 6E router in the market with up to 11Gbps aggregate throughput (AX11000). It supports 802.11ax on all Wi-Fi radio bands. The 2.4G radio supports 4x4 802.11b/g/n/ac/ax MIMO. The 5G radio supports 4x4 802.11a/n/ac/ax MIMO. The 6G radio supports 4x4 802.11a/ax MIMO WF-815 can meet the requirements for high-speed real-time traffic and high-bandwidth entertainment, such as 4K video, video game streaming and VR.

With global deployments in mind, the WF-815 utilized standard AC/DC adapter, allowing easy adaptation everywhere in every country.



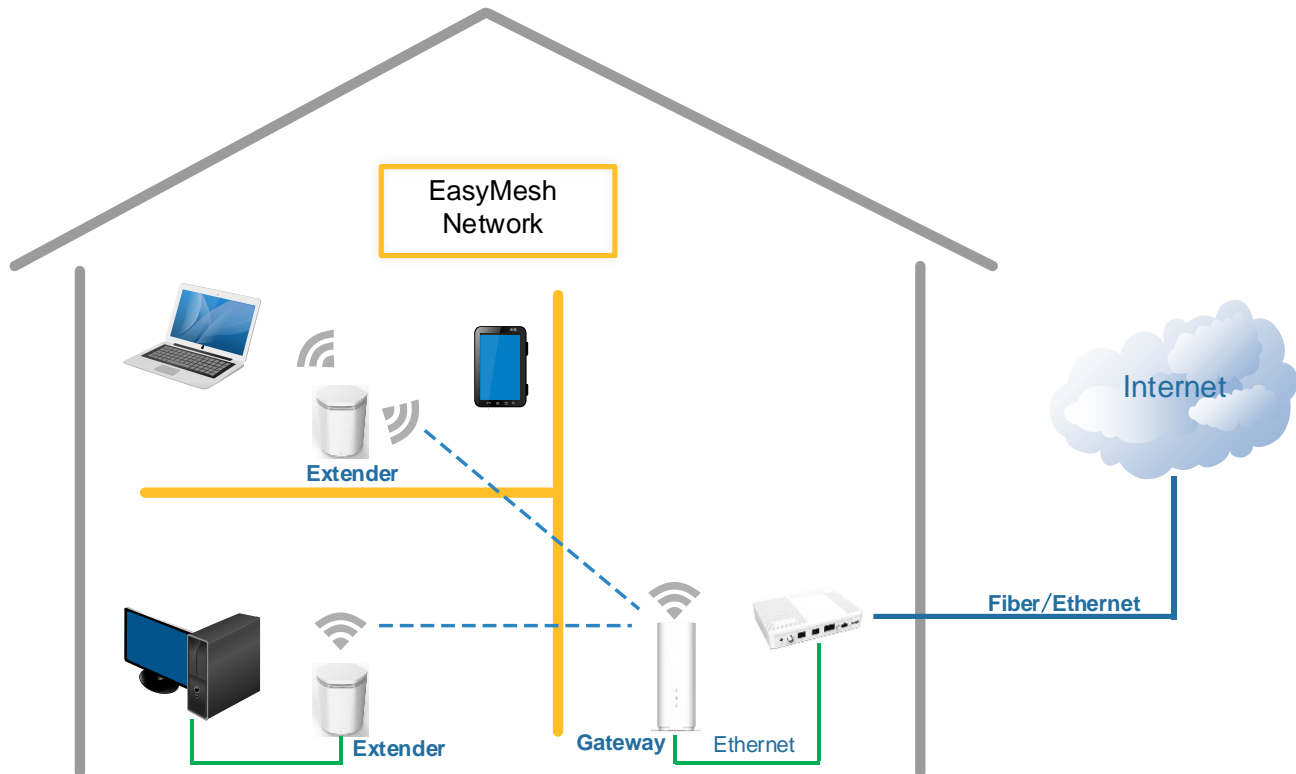


## ■ Key Features

- Desktop placement
- Highest performance at 11Gbps aggregate throughput (AX7800)
- 2.4GHz 40MHz 4x4 802.11b/g/n/ax
- 5GHz 160MHz 4x4 802.11a/n/ac/ax
- 6GHz 160MHz 4x4 802.11a/ax
- WPA/WPA2-PSK(AES)/WPA3
- 8 x Integrated Wi-Fi antennas
- 1 x 10GbE WAN
- 1 x 10GbE LAN
- 3 x 2.5GbE LAN
- 4 x Status LED (multi-color)
- 1 x USB3.0 type A
- 1 x WPS button
- 1 x Reset button
- 1 x DC jack
- Supports router/extender functions
- Supports TR-069 management
- Supports EasyMesh R4

## ■ Application Scenario

- Three WF-815 and WF-810G can form a Wi-Fi mesh network. One configured as the Gateway and the other two configured as the Wi-Fi Extender:



## ■ Software Features

| Category | Features   |
|----------|--|
| Network  | Bridge Mode<br>- DHCP Client<br>- Backhaul with 2.4G/5G/6G Wi-Fi/Ethernet                          |
|          | Router Mode<br>- IPv4<br>- IPv6<br>- NAT<br>- WAN DHCP client<br>- LAN DHCP server<br>- DNS server |

|                          |  |
|--------------------------|--|
|                          | <ul style="list-style-type: none"> <li>- DHCP reservation</li> <li>- uPNP</li> <li>- Port forwarding</li> <li>- Backhaul with Ethernet</li> </ul>  |
|                          | IGMP Snooping  |
| <b>Wi-Fi</b>             | 2.4GHz bandwidth: 20/40MHz, 5/6GHz bandwidth: 20/40/80/160MHz  |
|                          | 802.11 k/ v/ r   |
|                          | Band steering  |
|                          | Channel scan   |
|                          | DFS  |
|                          | SSID broadcast   |
|                          | WPA/WPA2/WPA3 PSK security   |
| <b>TR-069 Management</b> | Network topology display <ul style="list-style-type: none"> <li>- Device connected</li> <li>- Client accessed</li> <li>- Channel</li> <li>- Backhaul type</li> </ul>                             |
|                          | Network optimize   |
|                          | WPA/WPA2/WPA3 PSK security   |
|                          | Freeze client  |
|                          | Device information <ul style="list-style-type: none"> <li>- Status</li> <li>- Online time</li> <li>- IP address</li> <li>- MAC address</li> <li>- Firmware version</li> <li>- Channel</li> </ul> |
|                          | Client information <ul style="list-style-type: none"> <li>- Status</li> <li>- Online time</li> <li>- IP address</li> <li>- MAC address</li> <li>- Channel</li> </ul>                             |
|                          | Network statistic chart <ul style="list-style-type: none"> <li>- Bandwidth usage</li> <li>- RSSI</li> <li>- Channel congestion</li> <li>- Event</li> </ul>                                       |

Utilities  
 - Reboot device  
 - Upgrade remotely  
 - Speed Test

## ■ Specification

| Item                               | WF-815  |
|------------------------------------|---|
| Dimension (D x H)                  | 202mm x 85mm x 235mm (High)   |
| Weight                             | 390g  |
| Installation                       | Desktop placement   |
| LEDs                               | 4x Status LED (multi-color)   |
| Interface                          | 1 x 10GbE WAN<br>1 x 10GbE WAN<br>3 x 2.5GbE LAN<br>1 x DC jack   |
| Input Voltage                      | +15V/4A   |
| Power consumption                  | < 50W   |
| <b>Environmental Specification</b> |   |
| Temperature                        | Operation: 0°C ~ +40°C<br>Storage: -40°C ~ +85°C  |
| Operating Humidity                 | 5% ~ 95% (non-condensing)   |
| Elevations                         | 86kPa ~ 106kPa altitude   |
| Dustproof and Waterproof           | IP20  |
| Compliance                         | <ul style="list-style-type: none"> <li>• IEC 62368-1:2014 (Second Edition)+A11: 2017</li> <li>• UL 62368-1, 2nd Ed, 2014-12-01 (Audio/video, information and</li> </ul> |

| Item                   | WF-815  |
|------------------------|---|
|                        | <p>communication technology equipment Part 1: Safety requirements)</p> <ul style="list-style-type: none"> <li>• CAN/CSA C22.2 No. 62368-1-14, 2nd Ed (Audio/video, information and communication technology equipment Part 1: Safety requirements)</li> <li>• FCC</li> <li>• ETL</li> <li>• RoHS 2011/65/EU compliant (RoHS 10 compliant, no Pb)</li> </ul> |
| <b>Reliability</b>     |   |
| MTBF                   | > 300,000 Hours<br>Telcordia SR-332, Reliability Prediction Procedures for Electronic Equipment, Issue 3, Method 1, Case 3, GB/GC (Ground Benign, Controlled) environment, 25°C ambient temperature. Steady state, not including software failure.  |
| AFR                    | AFR (Annualized Failure Rate) < 1.5% (in continuous operation)  |
| <b>Chipset</b>         |   |
| Wi-Fi SoC              | Qualcomm  |
| Flash                  | 4GB eMMC  |
| DDR                    | 1GB DDR4 RAM  |
| <b>Wi-Fi Interface</b> |   |
| Operating frequency    | 2.4G radio: 2.4000GHz~2.4835GHz   |
|                        | 5G radio: 5.150~5.250,5.250~5.350,5.470~5.725, 5.725~5.850 GHz  |
|                        | 6G radio: 5.925~7.125 GHz   |
| Data Rate              | 802.11b: 1, 2, 5.5, and 11Mbps  |
|                        | 802.11g: 6, 9, 12, 18, 24, 36, 48, and 54Mbps   |
|                        | 802.11a: 6, 9, 12, 18, 24, 36, 48 and 54Mb/s  |
|                        | 802.11n: MCS0~MCS15   |
|                        | 802.11ac: MCS0 ~ MCS9   |
|                        | 802.11ax: MCS0~MCS11  |
| Receive Sensitivity    | 802.11g: -90dBm@6Mbps<br>-74dBm@54Mbps  |



| Item      | WF-815  |        |        |  |  |      |      |  |           |        |        |  |         |        |        |  |  |       |       |       |      |        |        |        |      |        |   |   |      |   |        |        |  |       |       |        |      |        |        |        |       |        |        |        |
|-----------|---|--------|--------|--|--|------|------|--|-----------|--------|--------|--|---------|--------|--------|--|--|-------|-------|-------|------|--------|--------|--------|------|--------|---|---|------|---|--------|--------|--|-------|-------|--------|------|--------|--------|--------|-------|--------|--------|--------|
|           | <p>802.11n:</p> <table border="1" data-bbox="505 411 1053 558"> <thead> <tr> <th></th> <th>HT20</th> <th colspan="2">HT40</th> </tr> </thead> <tbody> <tr> <td>MCS0/8/16</td> <td>-90dBm</td> <td colspan="2">-87dBm</td> </tr> <tr> <td>MCS7/15</td> <td>-71dBm</td> <td colspan="2">-68dBm</td> </tr> </tbody> </table> <p>802.11a: -90dBm@6Mbps<br/>-74dBm@54Mbps</p> <p>802.11ac:</p> <table border="1" data-bbox="505 751 1128 949"> <thead> <tr> <th></th> <th>VHT20</th> <th>VHT40</th> <th>VHT80</th> </tr> </thead> <tbody> <tr> <td>MCS0</td> <td>-90dBm</td> <td>-87dBm</td> <td>-84dBm</td> </tr> <tr> <td>MCS8</td> <td>-67dBm</td> <td>/</td> <td>/</td> </tr> <tr> <td>MCS9</td> <td>/</td> <td>-61dBm</td> <td>-58dBm</td> </tr> </tbody> </table> <p>802.11ax:</p> <table border="1" data-bbox="505 999 1128 1146"> <thead> <tr> <th></th> <th>VHT20</th> <th>VHT80</th> <th>VHT160</th> </tr> </thead> <tbody> <tr> <td>MCS0</td> <td>-89dBm</td> <td>-83dBm</td> <td>-80dBm</td> </tr> <tr> <td>MCS11</td> <td>-60dBm</td> <td>-54dBm</td> <td>-51dBm</td> </tr> </tbody> </table> |        |        |  |  | HT20 | HT40 |  | MCS0/8/16 | -90dBm | -87dBm |  | MCS7/15 | -71dBm | -68dBm |  |  | VHT20 | VHT40 | VHT80 | MCS0 | -90dBm | -87dBm | -84dBm | MCS8 | -67dBm | / | / | MCS9 | / | -61dBm | -58dBm |  | VHT20 | VHT80 | VHT160 | MCS0 | -89dBm | -83dBm | -80dBm | MCS11 | -60dBm | -54dBm | -51dBm |
|           | HT20  | HT40   |        |  |  |      |      |  |           |        |        |  |         |        |        |  |  |       |       |       |      |        |        |        |      |        |   |   |      |   |        |        |  |       |       |        |      |        |        |        |       |        |        |        |
| MCS0/8/16 | -90dBm  | -87dBm |        |  |  |      |      |  |           |        |        |  |         |        |        |  |  |       |       |       |      |        |        |        |      |        |   |   |      |   |        |        |  |       |       |        |      |        |        |        |       |        |        |        |
| MCS7/15   | -71dBm  | -68dBm |        |  |  |      |      |  |           |        |        |  |         |        |        |  |  |       |       |       |      |        |        |        |      |        |   |   |      |   |        |        |  |       |       |        |      |        |        |        |       |        |        |        |
|           | VHT20   | VHT40  | VHT80  |  |  |      |      |  |           |        |        |  |         |        |        |  |  |       |       |       |      |        |        |        |      |        |   |   |      |   |        |        |  |       |       |        |      |        |        |        |       |        |        |        |
| MCS0      | -90dBm  | -87dBm | -84dBm |  |  |      |      |  |           |        |        |  |         |        |        |  |  |       |       |       |      |        |        |        |      |        |   |   |      |   |        |        |  |       |       |        |      |        |        |        |       |        |        |        |
| MCS8      | -67dBm  | /      | /      |  |  |      |      |  |           |        |        |  |         |        |        |  |  |       |       |       |      |        |        |        |      |        |   |   |      |   |        |        |  |       |       |        |      |        |        |        |       |        |        |        |
| MCS9      | /   | -61dBm | -58dBm |  |  |      |      |  |           |        |        |  |         |        |        |  |  |       |       |       |      |        |        |        |      |        |   |   |      |   |        |        |  |       |       |        |      |        |        |        |       |        |        |        |
|           | VHT20   | VHT80  | VHT160 |  |  |      |      |  |           |        |        |  |         |        |        |  |  |       |       |       |      |        |        |        |      |        |   |   |      |   |        |        |  |       |       |        |      |        |        |        |       |        |        |        |
| MCS0      | -89dBm  | -83dBm | -80dBm |  |  |      |      |  |           |        |        |  |         |        |        |  |  |       |       |       |      |        |        |        |      |        |   |   |      |   |        |        |  |       |       |        |      |        |        |        |       |        |        |        |
| MCS11     | -60dBm  | -54dBm | -51dBm |  |  |      |      |  |           |        |        |  |         |        |        |  |  |       |       |       |      |        |        |        |      |        |   |   |      |   |        |        |  |       |       |        |      |        |        |        |       |        |        |        |





## ■ Federal Communications Commission (FCC) Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generate, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

### **RF exposure warning**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 49 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.

FCC regulations restrict operation of this device to indoor use only. The operation of this device is prohibited on oil platforms, cars, trans, boats, and aircraft, except that operation of this device is permitted in large aircraft while flying above 10000 feet. Operation of transmitters in the 5.925-7.125 GHz band is prohibited for control of or communications with unmanned aircraft systems.

## ■ Contact Information

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