# AltoPlex
# P423 Bridge Kit

## 60GHz Outdoor Wireless Gigabit Network Bridge

The P423 Bridge Kit is a pair of 60GHz radios, a P423 and P421, with integrated 128-element beamforming antennas that provide best-in-class link resiliency and full capacity range in a very compact form factor. It is pre-configured for point-to-point (PtP) connectivity. This kit provides wireless data and PoE for up to 2 devices at one end for remote cameras, Wi-Fi APs, and more. Both radios are carrier-grade, manufactured in the USA and feature IP67 weather-sealing for reliable operation outdoors and in harsh environments.

The P423 Bridge Kit includes everything needed to quickly install a multi-gigabit point-to-point link.


### High Capacity
Up to 2Gbps aggregate

### Low Latency
Sub 1ms latency

### Adaptive Beamforming
128-element, phased array, beamforming antennas with 90° azimuth and 40° elevation scanning for maximum link resiliency and ranges up to 1312ft (400m) MCS-9

### Gigabit Ethernet and PoE Connectivity
- 1 gigabit RJ-45 PoE input on both radios
- 2 additional gigabit RJ-45 PoE outputs on the P423 radio for connecting cameras, Wi-Fi, Altowav radios, and more.

### Wi-Fi Management and GPS Location
Connect locally using the Wi-Fi network interface to manage the radios directly. Easily locate the radios using the integrated GPS receivers.

### Dense Network Ready
60GHz spectrum with beamforming and TDMA for extremely reliable dense networks

### Security
AES 128 encryption with automatic secure key distribution

### Carrier-Grade
IP67 rated enclosure and built in USA for reliable, long-term operation in the field

### Simple and Rapid Installation
Altowav's antennas auto-align for easy installs. Our Open API and native Layer 2 architecture enable easy integration into operators' existing networks

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# Specifications

## SYSTEM

| | |
|---|---|
| **Configuration** | Point-to-Point |
| **Frequencies** | 57 - 66GHz |
| **Channel Bandwidths** | 4 non-overlapping 2.16GHz channels |
| **Channel Access** | TDMA/TDD |
| **Modulation and Coding Schemes** | 12 levels, adaptive—MCS-0 (BPSK) to MCS-12 (16QAM) |
| **Antenna** | Integrated 128-element beamforming antenna with wide scanning range: 90˚ azimuth, 40˚ elevation |
| **Maximum EIRP** | 40dBm |
| **Range** | Up to 400m (MCS9) |
| **Capacity** | Up to 2Gbps aggregate |
| **Ethernet Frame Type** | Transparent bridging of all Ethernet types including VLAN and VLAN stacking |
| **Latency** | < 1ms |
| **L2 switching** | Complete Layer 2 switching, including VLAN support |
| **Security** | AES 128 |
| **Wi-Fi Management Interface** | 2.4GHz IEEE 802.11b/g/n wireless management interface (not a data access point) |
| **Location** | Integrated GPS receiver to identify and locate individual radios |

## CONNECTIVITY

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|---|---|
| **Ethernet** | **P421:** 1 x 1GbE RJ45<br>**P423:** 3 x 1GbE RJ45 |
| **Voltage** | 56VDC |
| **PoE Input** | **P421:** 802.3af<br>**P423:** 802.3bt, Type 4, 90W |
| **PoE Ouput** | **P423:** 2 x Active, 802.3bt, Type 3, 75W total with up to 60W Max for a single port |
| **Power Consumption** | **P421:** 11W maximum<br>**P423:** 12W maximum (not including PoE output) |

## MANAGEMENT

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| **Management** | Web GUI, CLI, REST API and AltoCommand (optional) |

## MECHANICAL

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|---|---|
| **Dimensions (H x W x D)** | **P421:** 5.9" x 3.8" x 1.4" (150 x 95 x 35mm)<br>**P423:** 6.88" x 6.88" x 1.62" (174.75 x 174.75 x 41.15mm) |
| **Weight** | **P421:** 14oz (400g)<br>**P423:** 1.59 lbs (720 grams) |
| **Operating Temperature** | -40° to +131°F (-40° to +55°C )<br>-22°F (-30°C) cold start |
| **Casing** | Die-cast powder-coated aluminum chassis with PC-ABS radome |
| **Ingress Protection** | IP67 |
| **Regulatory** | FCC, IC, CE (pending) |
| **ESD** | IEC EN 61000-4-2 |
| **EMC** | IEC EN 61000-4-3 |
| **Radio** | ETSI EN 303 722,<br>EN 300 328,<br>EN 303 413 |
| **Mounting** | Integrated wall and pole mount supporting .5" band clamps. Additional mounting accessories supporting elevation adjustment are available. |

## MODEL NUMBER

| | |
|---|---|
| **AW3-P423-POW-BRI** | Q423 Bridge Kit – P423 3-Port and P421 Single-Port 60GHz Network PtP Radios with PoE Injectors |

## INCLUDED ACCESSORIES

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|---|---|
| **AX-P-IN-AF-1G-US** | Indoor 802.3af (15W) 1GbE PoE injector with 2.6ft (0.8m) US power cord |
| **AX-P-IN-BT-5G-US** | Indoor 802.3bt (90W) 5GbE PoE injector with 2.6ft (0.8m) US power cord |

## OPTIONAL ACCESSORIES

| | |
|---|---|
| **AX-AW3-MT-WALL** | Wall standoff bracket that enables azimuth adjustment |
| **AX-AW3-EXT-MOUNT** | Extended range pole mounting kit for AltoPlex radios, enabling up to +60/-45° elevation adjustment |