

# Unlicensed Band Radio

# P2P

ion4I2 / ion4I3/ ion4I4



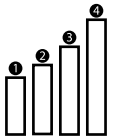
IO Enterprise/ Carrier Grade point-to-point solution is optimally designed to support low to medium capacity enterprise applications in the unlicensed 5 GHz spectrum for short to long range links. Integrated Dish Antenna ensures lesser space needed on an already crowded cell tower.

## Multiple Variants

- **ion4I2** : 5 GHz 700 Mbps UBR with Integrated 23 dBi Dish Antenna
- **ion4I3** : 5 GHz 700 Mbps UBR with Integrated 25 dBi Dish Antenna
- **ion4I4** : 5 GHz 700 Mbps UBR with Integrated 27 dBi Dish Antenna
- **ion4I2\_d**: 5 GHz 700 Mbps UBR with Integrated 23 dBi Dish with dying gasp
- **ion4I3\_d**: 5 GHz 700 Mbps UBR with Integrated 25 dBi Dish with dying gasp
- **ion4I4\_d**: 5 GHz 700 Mbps UBR with Integrated 27 dBi Dish with dying gasp

## Features

### Quality of Service (QoS)



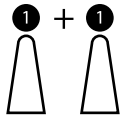
Prioritize the internet traffic in case of wireless congestion. Configure your type of traffic such as background, best effort, video, and voice with four different priority levels (low, medium, high, and highest) respectively.

### ATPC



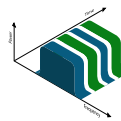
Automatic Transmit Power Control not only helps reduce network interference but also minimizes the stress on the power amplifiers in turn reducing power consumption and improving life of equipments

### Redundant Link Switching



Supports 1+1 deployments with switching time <100 ms for mission critical applications.

### High Capacity TDMA radio



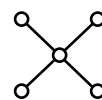
IO's UBRs utilize TDMA access supporting aggregated throughput upto 700 Mbps making these suitable for enterprise & carrier deployments.

### Management VLAN



Keep your management traffic on a separate VLAN ID. Unauthorized users cannot make changes to your network or monitor the network traffic.

### MIMO and OFDM



Built on advanced MIMO and OFDM technologies, the UBR provides a high-capacity link at channel bandwidth of 80MHz and supports 10, 20, 40, 80 MHz bandwidths.

## Highlights

- Integrated with Dish Antenna
- Multiple variants classified by Antenna gain
- 2x2 MIMO operation; Modulation support up to 256 QAM
- Up to 700 Mbps aggregate UL/DL throughput
- IPv4 and IPv6 network protocol support
- IP67 rated enclosure
- Flexibility for both 1+0 and 1+1 deployment

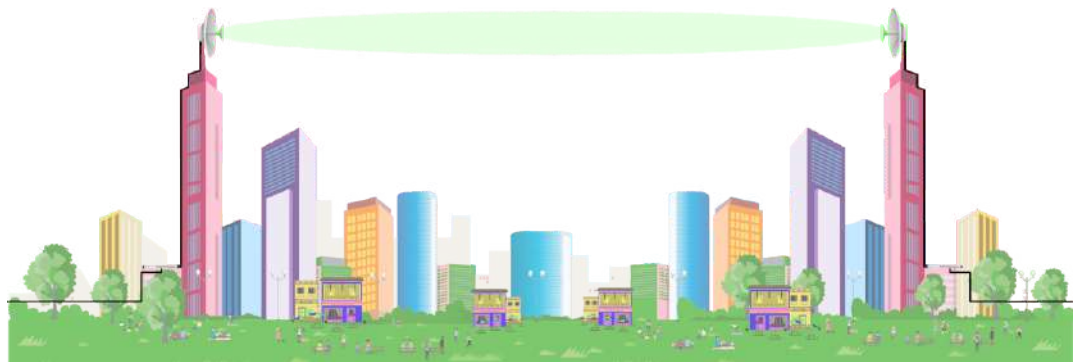
ion4In



5 GHz 700 Mbps UBR with Integrated Dish Antenna

## P2P Link

Connects two locations together through line of sight (LOS).



## Data Protection

The UBR device has full end-to-end WPA, WPA2 and 128-bit AES PSK with hardware acceleration protection and ensures that the information and resources of the industry are protected from attacks and threats. This includes three core concepts of security: confidentiality, integrity, and availability.

## Remote Management

Powerful and intuitive multi-site management via EMS (Element Management System), eliminating the cost and complexity of traditional on-site wireless controllers.

## IP67

IO UBRs are able to withstand extreme weather elements and harsh environmental conditions without compromising on the performance. They are IP67 certified to protect against water and dust contaminants, ingress.

## Supports Advanced 5G Features

Supports 5G advanced features of ultra-high-speed, high bandwidth, low latency, and improvement in the reliability of wireless communications, which is essential to address massive-scale and highly-diverse future industrial networks.

# Applications

- Low to medium capacity enterprise applications like public safety agencies
- Critical Infrastructure such as electricity distribution grids & power plants



## WIRELESS

<b>Access Technology</b>	TDMA
<b>Radio Mode</b>	2x2 MIMO & TDMA upto 256 QAM
<b>Radio Frequency Band</b>	5 GHz (with extended 5 GHz channel support, country-specific restrictions apply)
<b>Peak Throughput</b>	Up to 700 Mbps aggregate UL/DL throughput
<b>Max Transmit Power</b>	27 dBm for 5 GHz (will depend on country-specific guidelines)
<b>Channel Size</b>	10/20/40/80 MHz
<b>Modulation Schemes</b>	Supports upto 256 QAM
<b>Processor</b>	Qualcomm IPQ4019 SOC
<b>RF Power</b>	Automatic transmit power control (ATPC) for enhanced adaptability to the changing environment
<b>Power</b>	IEEE 802.3af Active PoE
<b>Max Power Consumption</b>	<15 W (max..)
<b>Interface</b>	1 X 10/100/1000BASE-T Ethernet
<b>Antenna</b>	Integrated high performance antenna.
<b>Receiver Sensitivity</b>	-84 dBm @ 80 MHz -87 dBm @ 40 MHz -90 dBm @ 20 MHz

## SECURITY & FEATURES

<b>Security</b>	WPA, WPA2 and 128-bit AES PSK with hardware acceleration
	Supports dying gasp feature (optional)
	<b>WAN Protocols:</b> Static IPv4/v6, DHCP client v4/v6
	<b>Management:</b> Standalone (via GUI) or through appliance-based EMS or cloud-based
<b>High Level Features</b>	<b>Smart Spectrum Management:</b> Active scan; monitors/logs ongoing RF interference across channels (no service impact); Dynamic auto-optimization of channel and bandwidth used, Adjustable upstream/downstream bandwidth ratio
	<b>QoS:</b> 802.11e WMM
	<b>GPS Location:</b> GNSS-1 (GPS + GLONASS)
	<b>Co-location Synchronization:</b> 1PPS GPS Tx/Rx synchronization for collocated co-channel radios
	<b>Two-Way Active Measurement Protocol (TWAMP):</b> Enables measurement of round-trip network performance of links
	In-built temperature sensor (optional)

## PHYSICAL & ENVIRONMENTAL

<b>Enclosure</b>	UV protected ABS + PC top and bottom body, and an aluminium heat sink at bottom
<b>Dimensions</b>	185 X 170 X 65 mm ( 7.28 x 6.69 x 2.56 in)(For Integrated antenna variant: antenna not considered in calculation)
<b>Weight</b>	0.775 kg (for External antenna variant)
<b>Mounting</b>	Pole mounting Turning Angle: 140° H & 60° V Weight: 185 grams
<b>Visual Indicators</b>	Link, Alarm, & Power LEDs
<b>Operating Temperature</b>	-15° C to 55° C
<b>Operating Humidity</b>	5 to 95% (non-condensing)
<b>Operating Altitude</b>	As per QM333 (3050 meter/10000 feet )
<b>Wind Sustainability</b>	150 km/hour (sustained winds)
<b>Certifications</b>	FCC Class A, CE, RoHS 3.0
<b>Outdoor Ingress Protection Rating</b>	IP67

## SAFETY & OTHER COMPLIANCES

- Safety Protection as per IEC 60950 and IEC 60215
- Electrostatic Discharge Immunity as per IEC 61000-4-2, Contact L2 and Air Discharge, L3 Level
- DC Surge Immunity as per IEC 61000-4-5, Level 2 (power port + signal port)
- Electrical Fast Transient/Burst Immunity as per IEC 61000-4-4, Level 2
- Radiated susceptibility as per IEC 61000-4-3 Level 2
- Conducted Susceptibility as per IEC 61000-4-6, Level2
- Bump and vibration as per QM333
- Radiated Emission as per CISPR 22 Class A
- Conducted Emission as per CISPR 22 Class A (power port+signal port)
- Voltage Variation: AC- as per IEC 61000-4-11 and DC- as per IEC 61000-4-29

## Ordering Information

MODEL NUMBER	PRODUCT DESCRIPTION
ion4l2	IO 5 GHz 700 Mbps UBR with Integrated Antenna (23 dBi)
ion4l3	IO 5 GHz 700 Mbps UBR with Integrated Antenna (25 dBi)
ion4l4	IO 5 GHz 700 Mbps UBR with Integrated Antenna (27 dBi)
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