

Tropos 3320/3310 Indoor Mesh Router



The 3320 Indoor Mesh Router provides a turnkey solution for extending Tropos outdoor mesh networks into indoor environments. Ideal for extending municipal, utility, enterprise, industrial, or military outdoor mesh networks into indoor offices or other facilities, the unit features a next-generation high-sensitivity radio design for superior stability and throughput.

Capable of simultaneous support for multiple applications, the 3320 Indoor Mesh Router includes an onboard Ethernet port for hard-wired connection of peripheral devices such as security cameras for video surveillance. Single or multiple 3320 Indoor Mesh Routers are easily deployed in a wide variety of indoor settings, and the compact, elegant form factor provides support for any 802.11a/b/g/n client device.

FEATURES AND BENEFITS

Software

- ❖ Support for 802.11n features delivers significant performance enhancements
- ❖ Available in single (2.4 GHz) or dual-radio (2.4/5 GHz) configurations
- ❖ Advanced auto-configuration capabilities streamline system deployment

Software

- ❖ Decentralized architecture optimizes throughput and ensures scalability
- ❖ Dynamic selection of optimal end-to-end paths boosts performance
- ❖ Tunes network performance and capacity by optimizing signal strength on a per-connection basis



Simple Installation and Configuration

The 3320 Indoor Mesh Router is simple to deploy, bringing existing outdoor service inside to provide robust wireless broadband connectivity without cabling or difficult system configuration. Users simply power up the router and auto-configuration takes place via Tropos Predictive Wireless Routing Protocol (PWRP™), a patented algorithm that dynamically configures and optimizes mesh connections.

Government buildings, libraries, utility substation control rooms, warehouses, and satellite offices of all types can be quickly and easily brought online. Users will benefit from full client support for laptops, wireless-enabled desktops, tablets, handhelds, IP scanners, video security equipment, and more.

The router is available in two versions:

- ❖ **3320 Indoor Mesh Router** — Dual-band unit with one 2.4 GHz, 802.11n and one 5 GHz 802.11a radio. Designed to support higher-capacity indoor networks, the unit supports mesh communications with other routers and client connectivity on both bands for superior performance, resiliency, and capacity. Designed to leverage existing outdoor network investments, the 3320 enables the indoor network to be scaled to meet demands through deployment of additional 3320 or 3310 Indoor Mesh routers.
- ❖ **3310 Indoor Mesh Router** — Single-band unit with one 2.4 GHz 802.11n radio. Designed for indoor networks with lighter traffic loads that do not require 802.11a support, the unit is ideal for leveraging existing outdoor network investments. The 3310 also enables the indoor network to be scaled through deployment of additional 3310 Indoor Mesh routers.

Resilient, High-Performance Networks From Tropos – the Wireless IP Broadband Market Leader

As the leader in IP broadband mesh networking solutions, Tropos is the right choice for organizations interested in deploying a robust infrastructure capable of supporting both outdoor and indoor environments. Designed to enhance operational efficiencies, Tropos technology provides the backbone for the top-performing outdoor wireless IP networks across the globe. For further information, visit us on the Web at www.tropos.com.

Wireless

- IEEE 802.11b/g/n radio
 - Frequency band: 2.4-2.483 GHz
 - Modulation: 802.11g/n - OFDM (64-QAM, 16-QAM, QPSK, BPSK); 802.11b - DSSS (DBPSK, DQPSK, CCK)
 - Media Access Protocol: CSMA/CA with ACK
 - TX Power: ETSI/EU 5-20 dBm (EIRP) set in 1 dB units; FCC/IC 20-35 dBm (EIRP) set in 1 dB units
 - Multi-Antenna System: 1-TX x 3-RX
 - Support for 802.11n MRC
 - Three 4 dBi omnidirectional antennas
 - RX Sensitivity:

-97 dBm @ 1 Mbps	-95 dBm @ 18 Mbps
-94 dBm @ 5.5 Mbps	-92 dBm @ 24 Mbps
-92 dBm @ 11 Mbps	-89 dBm @ 36 Mbps
-96 dBm @ 6 Mbps	-85 dBm @ 48 Mbps
-96 dBm @ 12 Mbps	-84 dBm @ 54 Mbps
- IEEE 802.11a radio
 - Frequency band: 5.725 - 5.850 GHz (FCC/IC) 5.470 - 5.725 GHz with DFS (ETSI/EU)
 - Modulation: 802.11a/n - OFDM (64-QAM, 16-QAM, QPSK, BPSK)
 - Media Access Protocol: CSMA/CA with ACK
 - TX Power: ETSI/EU 15-30 dBm (EIRP) set in 1 dB units; FCC/IC 19-34 dBm (EIRP) set in 1 dB units
 - 4 dBi Omnidirectional antenna
 - RX Sensitivity:

-94 dBm @ 6 Mbps	-86 dBm @ 24 Mbps
-93 dBm @ 9 Mbps	-83 dBm @ 36 Mbps
-92 dBm @ 12 Mbps	-78 dBm @ 48 Mbps
-89 dBm @ 18 Mbps	-76 dBm @ 54 Mbps

Networking

- Full 802.11b/g, 802.11a, 802.11n Client Compatibility
- IEEE 802.3u 10/100BaseT Ethernet Ports
- IPv4; IPv6-ready
- BGP
- 802.1q VLAN Support (ESSID and IP based tagging)
- Support for static and dynamic addressing for wireless and wired clients
- Onboard DHCP Server and Relay
- Plug and Play Wired Client Interface
- Session-Persistent Mobility across Subnets
- Location Based Services
- Layer 2 Emulation (L2E)
- NAT

Quality of Service

- 802.11e WMM
- 802.1p/q with 4 queues per VLAN and ESSID
- 802.1p and DSCP
- VoIP and VoWiFi Support
 - Heuristics-based Voice Classification
 - Call Admission Control
 - TSpec Classification
 - Seamless Mobility
 - Call Reporting
- Rate Limiting (Airtime and Throughput Based)

Management

- RADIUS Accounting
- Local and Remote Management Tools via HTTPS
- Router Access Control
- Identity-Based Authentication (4 levels)
- Configuration Save and Restore
- Software Upgrades with Rollback
- Command Line Interface (CLI) via SSH
- SNMP (standard MIBs and Tropos MIB)
- Wireless, Network and Client Monitoring and Statistics

Security

- Authentication: WPA, WPA2, 802.11i, RADIUS, 802.1x (includes EAP-TLS, EAP-TTLS, EAP-SIM, PEAP)
- Encryption: Open, WEP, AES-CCM, TKIP
- Hardware assisted encryption
- AES encryption of mesh and control traffic
- Multiple BSSIDs & ESSIDs (ESSID suppression)
- Full VPN compatibility (VPN filtering)
- Password and Certificate-based HTTPS and SSH Remote Access
- Packet Filtering & Forwarding
- Peer-to-Peer Blocking
- Client Access Control Lists
- Router Access Control
- Evil Twin Detection and Reporting
- Denial of Service Attack Detection
- Tamper-Evident Seal
- FIPS 140-2 Level 2 compliant

Environmental Specifications

- Operating temperature range: -40°C to 55°C
- Storage temperature range: -40°C to 85°C
- Weather rating: IP11
- Shock & vibration: ETSI 300-19-2-4 spec T41.E class 4M3
- Transportation: ISTA 2A

Package Contents

- Tropos 3320/3310 Outdoor Mesh Router
- Mounting bracket
- Quick Start Guide
- Antennas

Warranty

- One (1) year on parts and labor; return to point of purchase
- Optional standard and premium support packages available

Approvals

- FCC CFR 47 Part 15, Class B Subpart C
- Industry Canada RSS 210
- EN 301 489-17
- EN 300 328
- EN 301 893
- EN 60950
- IEC 950
- UL 60950-1
- CSA 22.2 No. 60950-1
- UL 579/IEC 60529 IP67 rated for outdoor use
- UL 1449/IEC 60664-1
- CE

Hardware Specifications

- Auto-sensing 802.3u 10/100BASE-T Ethernet
- Power input: PoE (20-60 VDC); 100-277 VAC with external accessory
- Power consumption: 10 W typical
- Power-on and network status lamp: Green/Red/Blue
- Dimensions (w/o antennas): 8.5" (21.6 cm) x 7" (17.8 cm) x 3" (7.6 cm)
- Weight: 2.2 lbs (1 kg) max., with mounting brackets

Protection Circuits

- Antenna Protection Integrated
- Electrical Protection:
 - EN61000-4-4 Level 2 Electrical Fast Transient Burst Immunity
 - EN61000-4-3 Level 2 EMC Field Immunity
 - EN61000-4-2 Level 2 (contact), Level 3 (air) ESD immunity

Ordering Information

**Part Number: 33201000 for FCC and Canada
Tropos 3320 Indoor Mesh router, FCC TX; 2.4 & 5.8 GHz; Four 4 dBi omni antennas, mounting brackets**

**Part Number: 33101000 for FCC and Canada
Tropos 3310 Indoor Mesh router, FCC TX; 2.4 GHz; three 4 dBi omni antennas, mounting brackets**

