



Netkrom

High Capacity Point-to-Point Solution for License-exempt Frequencies



WaveKROM Backhaul

The WaveKROM Backhaul bring together the speed, the reliability and the flexibility of the unlicensed bands. Operating in the 4.9 to 5.8 GHz wideband at Ethernet data rates up to 108 Mbps and 45 Mbps net throughput at ranges of up to 20 miles / 32 kms, the radios are designed for virtually any environment - near-line-of-sight, line-of-sight and high interference - where high performance is a major requirement.

By far it is a truly enterprise class radio that comes complete with full function bridge/router software and extensive network protocol and network management support.; it combines a high power OFDM radio with a high performance, QoS based bridge/router, the Netkrom outdoor backhaul bridge is a powerful, yet easy-to-use product for all of your point-to-point and multipoint broadband wireless needs; such


capability allows end-users to download large data files, high resolution images, video clips, and MP3 files within a matter of seconds. Streaming video and multiple VoIP connections can now be delivered or backhauled seamlessly.

The WaveKROM Backhaul device is comprised of an Outdoor Unit and an Indoor Unit to be used as an integrated antenna CPE for short and mid distance or with high gain external antenna for long distance as a Point-to-Point Element in Point-to-Point installations. Implemented in a robust all-weather metal enclosure, the WaveKROM Backhaul equipment can be used as a cost-effective solution both in PTP and PMP scenarios.

In Point-to-Point links the WaveKROM Backhaul units can be used along with Netkrom Airmux Wireless TDM Transport Equipment to transmit up to 4 E1/T1 streams.

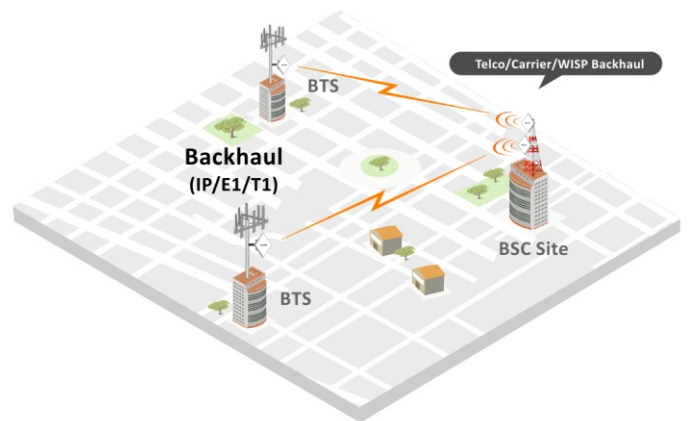


FEATURES

- High capacity, point-to-point, robust outdoor wireless solution
 - Wideband frequency coverage 4.9 to 5.8GHz
 - Long range distance - up to 40 miles or 60 km
 - TDM and Ethernet over a single wireless link
 - High capacity transmission suitable for megapixel cameras
 - OFDM technology for operation in nLOS scenarios
 - Advanced network Features (IP Routing, Firewall, DHCP, NAT, Bandwidth Management, QoS, etc) for data, voice and video (wireless link prioritization)
 - Full local and remote network management capabilities from centralized location
 - Advanced security technologies- WEP, WPA and AES
- 

APPLICATIONS

- Wireless broadband access -ADSL alternative for connecting to remote buildings
- Backhaul Link for Wireless Carrier and ISP's
- Building to building connectivity - leased line replacement
- Public Safety networks and Emergency/Disaster recovery
- Video surveillance and traffic control applications
- Video conferencing, e-Education, e-Health
- Mobile Backhauling
- SCADA - Monitoring remote systems



SPECIFICATIONS

Radio

Frequency	4.990 - 5.850 GHz (Country Dependent)
Data Rate	108 Mbps, 72 Mbps, 54 Mbps, 36 Mbps, 18 Mbps, 12 Mbps, 9 Mbps, 6 Mbps
Channel Bandwidth	5, 10, 20, 40MHz (software selectable)
Channel selection/ Power control	DFS/TPC (Dynamic Frequency Selection /Transmit Power Control)
Modulation	OFDM (BPSK,QPSK, 16-QAM, 64-QAM)
Media Access	TDD with CSMA/CA
RF Operation Mode	Point to Point and Point to Multipoint
TX power	28dB (600mW) Maximum
RX Sensitivity	-94dBm@6Mbps, -86dBm@24Mbps, -74dBm@54Mbps
Range	15 Miles (24 km) with integrated antenna and 50 Miles (80Km) with high gain external antenna

Networking

Ethernet	10/100BaseT Interface with Auto-negotiation (IEEE 802.3)
Bridging	Layer 2
Routing	Layer 3 Static Routing Dynamic Routing RIP v1 / v2 Firewall NAT DHCP (Server, Relay and and Client) PPPoE - PPTP Client Monitor Utils (Ping and Trace Route)
QoS - Bandwidth Management	Committed Information Rate (CIR) Peak Information Rate (PIR) Committed Burst Size (CBS) Excess Burst Size (EBS)
VLAN	802.1Q Support
Security	Access Control List Open/Shared Key Authentication WEP 64/128 WPA1/WPA2 with TKIP & AES ciphers

Configuration and Management

System management	SNMP NTP HTTP SSH (Remote Shell) Netkrom NMS - Graphical User Interface (for Windows, Linux, etc)
Configuration tool	Antenna Alignment (Site Survey / Link Quality / Signal Level)

Physical and Environmental

Dimensions	Radio Unit BH-1000 integrated antenna: 13.3in x 13.3in x .43in (33.8cm x 33.8cm x 1.1cm) BH-1000-C: 8.6in x 8.6in x 3.17in (21.8cm x 21.8cm x 8.1cm) PTP Pair box with accessories BH-1000 integrated antenna: 16inx16inx16in (40.6cm x 40.6cm x 40.6cm) BH-1000-C: 12inx12inx12in (30.5cm x 30.5cm x 30.5cm)
Weight	Radio Unit Radio with integrated antenna: 5.5lb (2.5 kg) Radio with external antenna: 3lb (1.36 kg) PTP Pair box with accessories BH-1000 integrated antenna: 25lb (11.34kg) BH-1000-C: 16lb (7.26 kg)
Temperature	-40°F to +140°F (-40°C to +60°C) operating
Humidity	0-100% condensing
Power supply	+18Vdc / 0.8A, via Power-over-Ethernet, indoor DC injector (included)
Power consumption	Standard IEEE 802.3af (15.4 W Max.)

Regulatory Standards and Regulations

Radio Compliance	FCC part 15.247, ETSI: EN 301 753, EN 301 893 (1.3.1) , EN 300 440-1/2, EN 300 328
EMC	FCC part 15 class B, ETSI: EN 301 489-1

ORDERING INFORMATION

- **BH-1000** WaveKROM Backhaul PTP 100 Wideband 4.9 to 5.8GHz 600mW Radio (Integrated 23dBi Antenna) Complete PTP Link
- **BH-1000-C** WaveKROM Backhaul PTP 100 Wideband 4.9 to 5.8GHz 600mW Radio (Connectorized for external antenna) Complete PTP Link