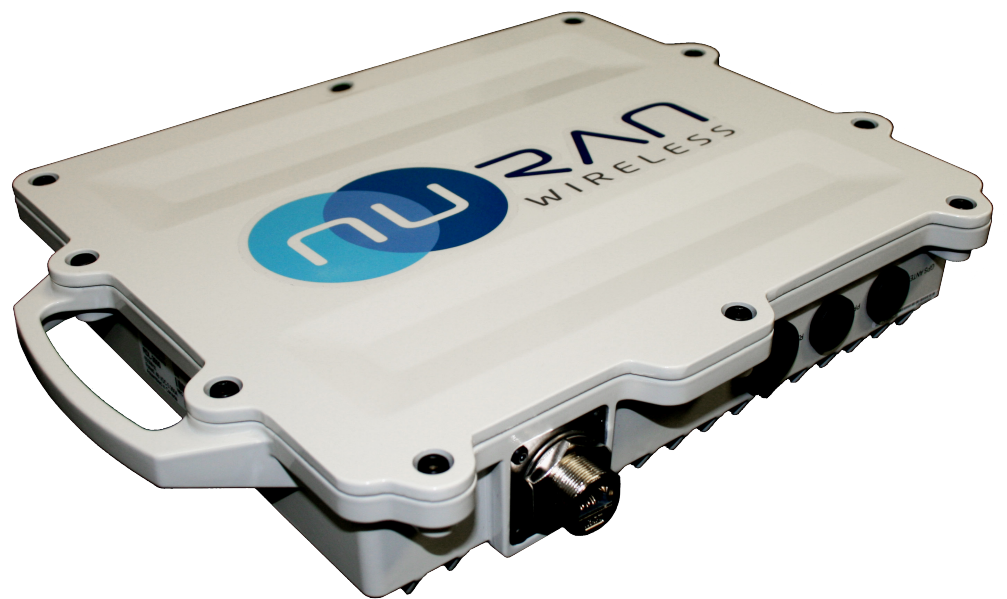


TVWS BH2

PRODUCT SHEET



TVWS BH2

TVWS Data Terminal for Extended Ranges

NuRAN's TVWhite Space (TVWS) backhaul provides an interesting alternative to traditional microwave and satellite backhaul technologies. Operating in the unoccupied television channels and guard bands, it benefits from the excellent propagation characteristics of the UHF spectrum, and can establish reliable long-range (up to 100 km), high throughput links. The lower frequencies of TVWS perform very well in non-line-of-sight (NLOS) scenarios where trees, hills, or constructions partially block the transmission path.

The BH2 and BH3 TVWS backhaul may be used as point-to-point (PTP) terminals to establish dedicated links. The same terminals may be used in conjunction with a BH1 for a point-to-multipoint (PMP) configuration, connecting multiple terminals to a central hub.

Reliable BH links can be established by minimally skilled workers. The units have built-in sweep capability to easily identify unoccupied channels, and antennas have wider beam making alignment simpler than their microwave counterparts.

It is an ideal solution to backhaul remote sites to the nearest city, or to connect several sparsely-located villages to a single satellite terminal.

FEATURES AND BENEFITS

Highly reliable data terminal with flexible architecture adapts to meet the most challenging PMP and PTP deployment scenarios

High throughput for concurrent transport of M2M telemetry and telecontrol, data, video and voice services

Durable all-weather enclosure for reliable operation in extreme temperature ranges and environmental conditions

Over-the-air monitoring, configuration and software keyed features enable upgrades without physical access

Software-defined architecture enhances reliability and service lifetime

SYSTEM AT A GLANCE

Outdoor software-defined wireless terminal for PMP and PTP applications

Flexible architecture solves tough deployment challenges

Reliable fast transport of M2M, data, HD video and voice traffic

Geo-location using built-in GPS

Wide selection of MIMO antennas

-40 to 60 °C operating range using dynamic and thermal dissipation (no moving parts)

High-grade cyber security features

Very low latency supports time-sensitive applications

Low power requirement suitable for solar applications

SPECIFICATIONS

Capability	LOS/NLOS PMP Terminal, PTP Terminal
Wireless transmission	OFDM (orthogonal frequency-division, multiplexing), TDD/TDMA, 2 x 2 MIMO A/B with STBC & MRRC
Frequency range	470-698 MHz
Channel Size	3.5 / 5 / 6 / 7 / 10 / 12 / 14 / 20 MHz
Modulation	BPSK, QPSK, 16-QAM, 64-QAM
Data rate	Up to 100 Mbps
Max Range	100 km
Max Tx Power	+23dBm / +28dBm
Antenna Info	External MIMO
Wireless QoS	Dynamic Spectrum Access & Management
MAC	Dynamic ARQ
Security	AES 128/256 (OTA, FIPS 197 compliant); HTTPS (SSL), SSH (CLI), SNMP v3; MAC-based, Mutual Authentication; ECDSA Certificates Authentication ¹ ; FIPS-140-2
Authentication	X.509 Certificates (software keyed)
Connection	10/100 Ethernet (RJ-45), 2xRF N(f)
Layer 2	512 Kbps to 100 Mbps
Latency	<10 ms
Processing	(PPS) >150,000
Attributes	Transparent bridge, DHCP pass-through, 802.1Q VLAN
Network QoS	CIR, PIR support, multiple services per terminal, 802.3x, 802.1p
Management	NMS, SNMP v2, HTTP (Web), Telnet (CLI), RADIUS (User Authentication)
Provisioning	Automatic templates using NMS
Temperature	-40 to 60 °C
Enclosure	IP67 (IEC 60259)
Humidity	100% humidity, condensing
Surge Protection	Built-in: PoE and RF ports
Power	<17W;Standard; IEEE 802.3at (PoE); CAT-5 cable 100 m (330 ft) max.
Dimensions	306.8 x 230 x 60.3 mm (12.079 x 9.06 x 2.375 in)
Weight	2.7 kg (6.0 lbs) without bracket or antenna

