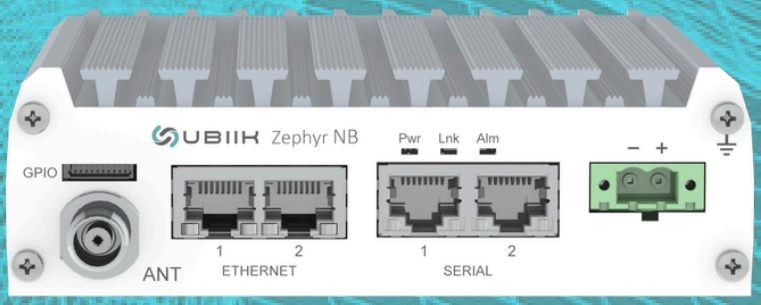
UBIIK mimomax

Zephyr Platform



Low Power Consumption Multipoint SCADA Radio

- Water, Wastewater & Electric Utilities
- Irrigation Automation
- Oil & Gas

ZEPHYR MULTIPOINT PLATFORM: 400-520MHz

Key Benefits of Zephyr

- Designed for ultra-low power consumption - only 1.8W in Rx Idle mode
- Ultimate solution for isolated sites running on solar and battery
- Offering 64QAM modulation for significantly higher throughput than legacy 9k6 SCADA communications
- Ability to connect up to 250 endpoints in one network or run several polling systems in one network
- 5W Tx power and up to 100km range
- Additional variants available - 1+1 variant for critical use cases plus external duplexer variant
- Centralized firmware upgrades and monitoring for large networks via web interface or CLI

Zephyr NB - Narrowband

Designed to offer ultra-low power consumption, the Zephyr platform only consumes 1.8W during Rx idle mode, making it the ideal choice for sites running on solar & battery power. The Zephyr radio offers up to 64QAM modulation for higher throughput and the ability to support multiple polling systems within a single network.

With 5W Tx Power and a range of up to 100km (60 miles), Zephyr is a robust SCADA radio for network upgrades and replacements of legacy radio networks.

Zephyr Dx - External Duplexer Variant

The optimal solution for noisy RF environments, the Zephyr DX enables an external duplexing setup. Ubiik Mimomax also offers an external bandpass duplexer configured with Zephyr which only takes up 1.5U of a standard 19" rack.

The Zephyr DX shares the rest of the same specifications as the Zephyr NB.

Zephyr 1+1 - Redundant Variant

Designed for mission critical use cases, the Zephyr 1+1 ensures no loss of data should the active radio go down.

Comprising of two Zephyr radios and a changeover unit, this hot-swappable solution is designed for the ultimate operational resilience.

Gold-Standard Security

- AES 256 Encryption - the global benchmark for symmetric encryption
- RADIUS Authentication to prevent unauthorized access.
- Hardware Unique Keys (HUK) - a device-specific unique key serving as the root for deriving other keys within a system

Designed for SCADA

- Supports SNMP for multi-vendor interoperability
- Simultaneous, segregated connectivity for multiple polling systems via ethernet or serial
- Terminal Server functionality for Serial to IP ensuring support for legacy devices
- Contention-free MAC ensures no collision even during Report By Exception or unsolicited protocols
- Offers a single level of Store & Forward

400MHz UBIIK ZEPHYR NB RADIO SPECIFICATIONS

RF Specifications	
Frequency Range	400-520MHz *
Modulation	QPSK, 16 QAM, 64 QAM
Channel Size	12.5kHz, 25kHz (6.25 and 50kHz on request)
Power Consumption (Typical) Power Consumption (Max)	1.8W during Rx Active/Tx Standby 60W (12V, 5A) during Tx Active
Power Supply	12V/24V (9-30 VDC non-isolated)
Transmitter Output Power	Up to 5W (software configurable)

Throughput	
RF data rate	Up to 108 kbps in 25kHz
Network capacity	Up to 250 endpoints per base

Interfaces and Security	
Serial Data	2 x RS232
Ethernet	2 x 10/100 base T
Data Encryption	AES 256

Physical	
Dimensions - Base	134 (W) x 177 (D) x 41 (H) mm 5.27 in (w) x 6.97 in (d) x 1.6 in (h)
Dimensions - Remote	134mm (w) x 133mm (d) x 41mm (h) 5.27 in (w) x 5.23 in (d) x 1.6 in (h)

Note: figures above are for housing only, not including mounting brackets or connectors (which change per variant)

Compliance (approvals pending)	
Radio Performance	AS/NZS 4768.3:2018 FCC 47CFR part 90 IC Canada RSS-119 ETSI EN 302-561 (25kHz and 50kHz) ETSI EN 300 113 (12.5kHz)
EMC	FCC 47CFR part 15 ETSI EN 301 489

Important: Specifications are subject to change without prior notice

*The radio platform is frequency agile - other frequency bands may be available on request

HIGH-CAPACITY BACKHAUL

Tornado 400MHz

Renowned for offering the highest throughput in narrowband channels, Ubiik Mimomax's Tornado radio is the ideal solution for backhauling large amounts of aggregated data from the network edge to the core.

Utilizing MIMO, full duplex communications and high order modulation, the Tornado radio offers up to 1.2 Mbps throughput in 50kHz channels. Ultra-low latency also ensures near real-time visibility across the network.

For the ultimate resilience for mission-critical use cases, the Tornado is available in a hot swappable 1+1 variant.

Tornado

Tornado 1+1

UBIIK MIMOMAX CASE STUDY

Combining a deep understanding of RF engineering with expertise gained from numerous deployments across the globe, Ubiik Mimomax is renowned for providing utility, public safety, oil & gas, mining and government customers with cost-effective, resilient wireless communications networks to connect people and assets.

Water & Wastewater SCADA Network for Talquin Electric Cooperative
Location: Florida, USA

Talquin's legacy water and wastewater SCADA communications system was built around a centralized master repeater serving the whole territory. Furthermore, while Talquin's water sites are positioned up high, the wastewater sites are typically situated in low lying locations which make RF connectivity difficult. The utility deployed Ubiik Mimomax's Tornado and Tornado X radios to achieve their aims of network decentralization, low latency, boosted data throughput and high resiliency.

"In terms of throughput, the performance of the new system is amazing. From an RF perspective, the results have been good even though we are using the 400MHz band which is popular for LMR and pagers."

***Nathan Sutfin**, Network Manager, Talquin Electric Cooperative*

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