



## RADWIN 2000

### High-Capacity Sub-6 GHz Backhaul Solution

RADWIN 2000 is a high-capacity sub-6 GHz solution that addresses service providers' backhaul needs. Built on RADWIN's unique air interface, together with advanced OFDM and MIMO technologies, RADWIN 2000 delivers optimal performance and unmatched robustness in all environments. Offering native TDM and Ethernet over a single link, RADWIN 2000 grants operators flexibility and a seamless migration path from TDM to IP.

Simple to install and easy to maintain, RADWIN 2000 is designed to meet service providers' field requirements and lowers total cost of ownership. Supporting multiple bands and frequencies over a single radio platform, RADWIN 2000 provides 100 Mbps net throughput and operates at ranges of up to 120 Km/75 miles.

The flexible radio system is ideally suited for a variety of applications, including Cellular Backhaul, backhaul for IP and WiMAX networks and broadband wireless connectivity for large corporations and private networks.



## Advanced Radio Technologies Inside

RADWIN 2000 deploys today's most advanced radio technologies to achieve unparalleled performance in sub-6GHz bands.

### OFDM Modulation

Orthogonal Frequency-Division Multiplexing (OFDM) is a leading modulation technique that enables effective transmission of large amounts of digital data over a radio link in multi-path and signal intensive environments. Based on the concept of redundant transmission, OFDM works by splitting the radio signal into multiple, smaller sub-carriers transmitted simultaneously at different frequencies to the receiver. OFDM enables RADWIN 2000 to operate smoothly even in challenging non line-of-sight environments.

### MIMO

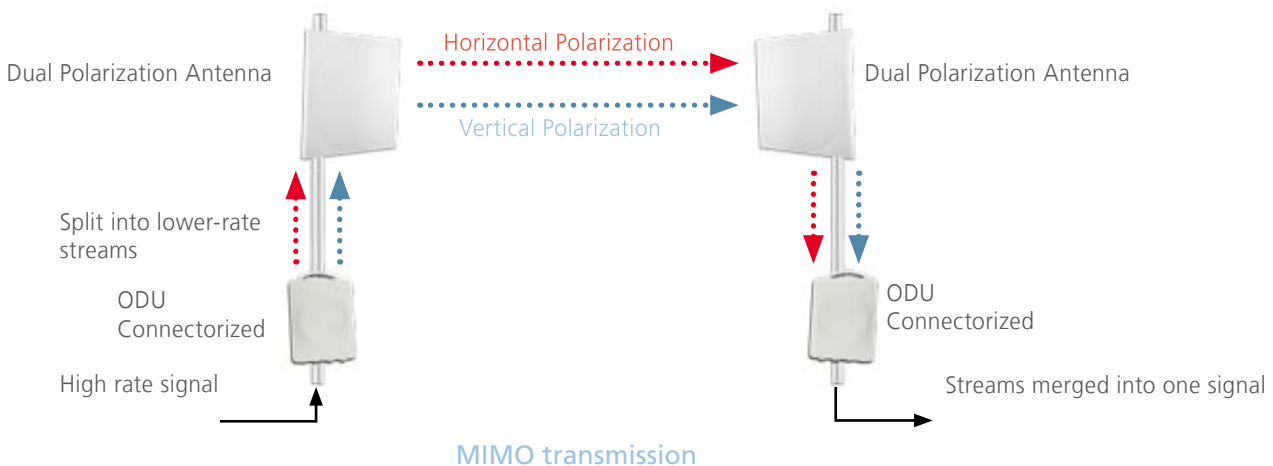
MIMO (Multiple Input Multiple Output) spatial multiplexing gives RADWIN 2000 the power to increase channel capacity, extend operational range and enhance link availability without the need for additional bandwidth or transmit power. The high-rate information signal is split into two lower-rate streams, with each stream transmitted from a different antenna on the same frequency channel and efficiently reproduced at the receiver side.

### Diversity

Antenna diversity uses two antennas to improve the quality and reliability of the wireless link. When applied, the same data stream is duplicated and transmitted over both antennas allowing the receiver to select the best of the two signals. Employing antenna diversity allows RADWIN 2000 to compensate for multipath interference and improves wireless connectivity.

## Superior Air Interface: Field-Proven Worldwide

RADWIN 2000 employs interference-resistant mechanisms specially designed by RADWIN for sub-6GHz bands. These unique mechanisms are successfully deployed with RADWIN products in over 120 countries.



RADWIN 2000

RADWIN 2000 offers superior ease of installation and maintenance, resulting in major OPEX savings. RADWIN 2000 systems are typically up and running in less than one hour. Installation and commissioning is done via the RADWIN Manager application, which is intuitive and easy-to-use. Link commissioning requires only one technician to install, align and configure both sides of a link, using only basic tools and requiring minimum training.



## **Robust Air Protocol**

RADWIN 2000 incorporates a robust air interface with a unique air protocol designed to ensure non-stop, high-quality transmission, even when challenged by interference and harsh conditions. The air interface is partially based on RADWIN's unique Automatic Repeat Request (ARQ) mechanism, which detects and resends corrupted or missing data to maintain transmission quality.

## **Automatic Channel Selection**

Automatic Channel Selection ensures that transmission is performed on the best possible channel by monitoring available channels and dynamically selecting the optimal channel in response to interference.

## **Superior Spectral Efficiency**

RADWIN 2000 offers unparalleled spectral efficiency at 20 MHz bandwidth. This enables high-capacity service delivery in a crowded spectrum environment and significant spectrum savings.

## **Automatic Adaptive Rate**

Automatic Adaptive Rate is a means of dynamically adapting the transmitted rate by changing both signal modulation and coding. Automatic Adaptive Rate optimizes data throughput according to interference levels, while still maintaining service quality.

## **Enhanced Security**

RADWIN 2000 uses an advanced ODU to ODU link locking mechanism and an AES 128 encryption to ensure enhanced air interface security.

## **Native TDM and Ethernet**

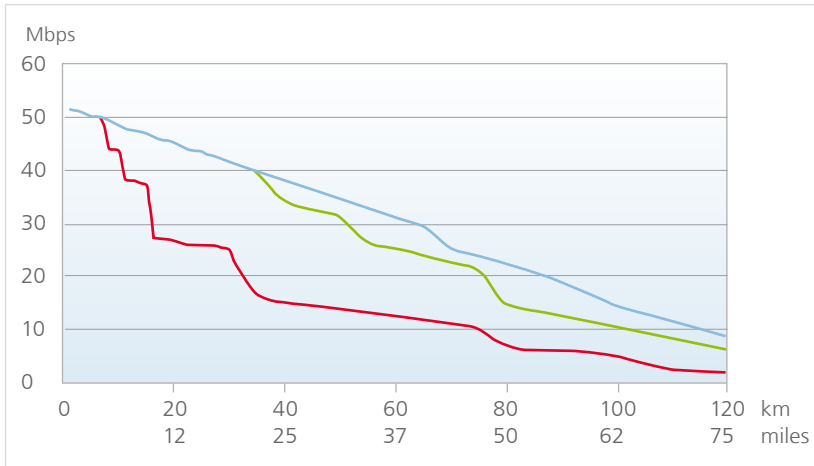
RADWIN 2000 transports native TDM and Ethernet over the same wireless link. Transmission of native TDM ensures clock accuracy at the receiver side, data completeness and low latency which are critical for carrier-grade transmission of TDM traffic.

# Technology Background

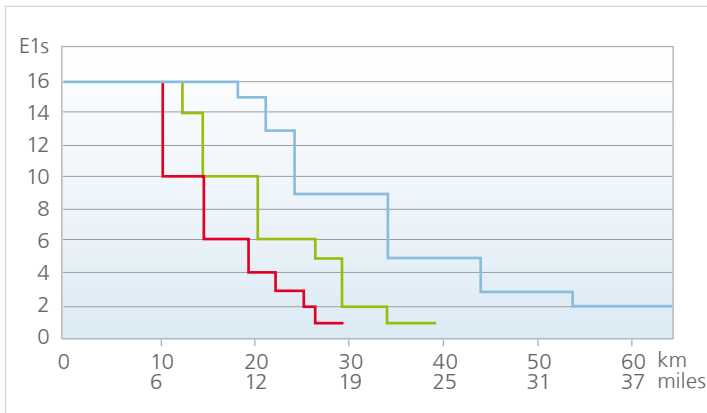
## RADWIN 2000 Performance

RADWIN 2000 achieves outstanding performance at 20 MHz channel bandwidth.

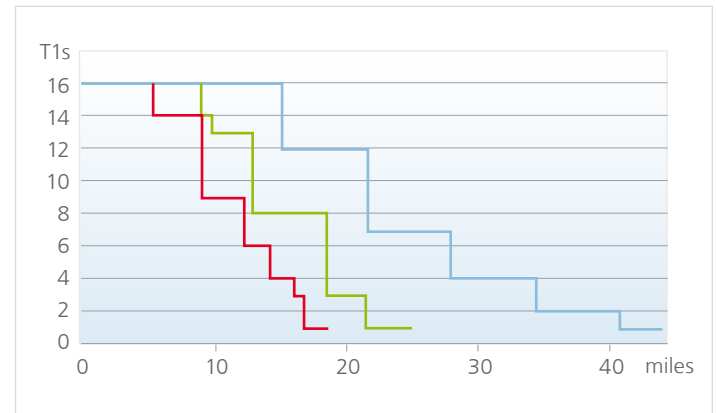
### Total Net Throuput (Full Duplex)



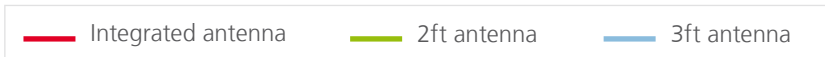
### E1 Performance \*



### T1 Performance \*



\* Typical performance at 5.8GHz with 99.99% availability



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