



NetStream 5x200 is the ultimate solution for operators requiring carrier class, affordable backhaul solutions.

Transferring native TDM (no conversion to IP in the wireless link) and Ethernet over a single wireless link, NetStream incorporate advanced technologies such as MIMO and OFDM to ensure unrivalled robustness and resiliency in operation in the sub-6 GHz bands.

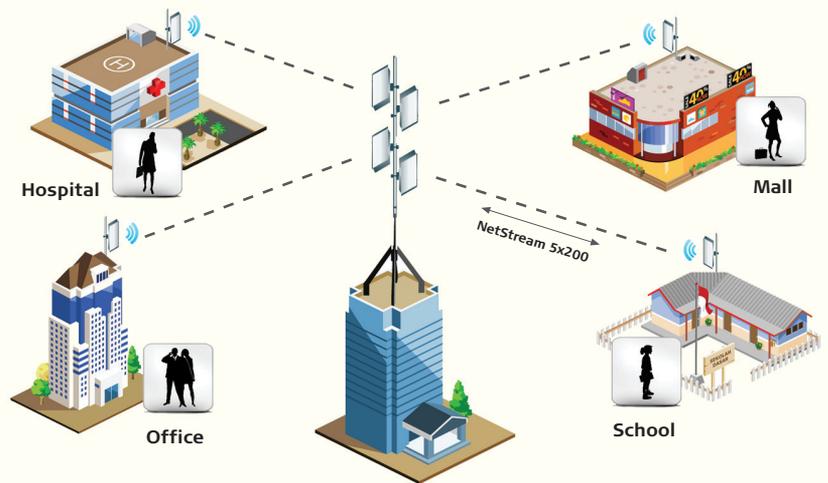
NetStream 5x200 provides a flexible combination of native TDM and Ethernet (up to 16 E1s/T1s), preparing operators for seamless migration from TDM to IP and enabling them to offer both voice and data services to their customers. Delivering multiple frequencies over a single platform, the NetStream 5x200 multi-band radio ensures utmost transmission resiliency and field flexibility.

# NetStream 5x200

**Carrier Class, High Capacity  
Sub-6 GHz Solution for Transfer of TDM  
(up to 16 E1) and IP (up to 200 Mbps)**

## Product Highlights

- Native TDM and Ethernet (up to 16E1s/T1s)
- 200 Mbps net throughput
- Superior spectral efficiency @ 20 MHz
- Long range up to 120 Km/75 miles
- Single radio supporting multiple bands (2.4 and 4.8 - 6.1 GHz)
- Advanced MIMO and OFDM technologies
- Built-in mechanisms to mitigate interference
- Monitored Hot Standby 1+1 support



Leveraging from Netronics proprietary air interface, coupled with advanced built-in OFDM, MIMO and Diversity technologies, NetStream 5x200 delivers optimal performance and unequalled robustness in sub-6 GHz bands. The high-capacity solution can be deployed in various topologies including point-to-point, cascading and multiple point to point, and support collocation with other NetStream radios utilizing Hub Site Synchronization (HSS) functionality.

Built for carrier-grade networks, NetStream 5x200 is available with Monitored Hot Standby 1+1 support. In this mode, a secondary link is used to backup the primary link in case of an equipment failure or loss of air interface, thus ensuring maximum service availability.

## Key Benefits

- Flexible combination of E1s/T1s and Ethernet over a single wireless link
- High capacity and long range to meet today's and tomorrow's backhaul requirements
- Enabling seamless migration from TDM to IP
- Easy to install, simple to maintain
- Built-in advanced technologies: OFDM, MIMO, Diversity
- Significant reduction in cost of ownership (lower CAPEX and OPEX)

 Net Throughput	 LOS/NLOS	 10 - 20 - 40 MHz Channels	 Both Native	 Vertical Horizontal
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## Specifications

### Configuration

Architecture	ODU: Outdoor Unit with Integrated Antenna or Connectorized for External Antenna IDU: Indoor Unit or PoE device with Ethernet interfaces
IDU TO ODU Interface	Outdoor CAT-5e cable; Maximum cable length: 100 m

### Radio

Range	Up to 120 km/ 75 miles
Frequency Bands	Multi-band radio supporting 2.412 - 2.462 GHz and 4.800 - 6.080 GHz
Channel Bandwidth	10/20/40 MHz
Modulation	2x2 MIMO-OFDM (BPSK/QPSK/16QAM/64QAM)
Adaptive Modulation & Coding	Supported
Automatic Channel Selection	Supported
Max Tx Power	25 dBm @ 4.8 - 5.9 GHz; 20 dBm @ 6.0 GHz
Duplex Technology	TDD
Error Correction	FEC k = 1/2, 2/3, 3/4, 5/6
Encryption	AES 128
Diversity	Supported
Spectrum View	Supported
Hub Site Synchronization	Up to 16 collocated links

### TDM Interface

Number of Ports	Up to 16
Type	E1/T1 configurable by Netronics Manager
Framing	Unframed (transparent)
Timing	Independent timing per port, Tx and Rx
Connector	RJ-45
Standards Compliance	ITU-T G,703, G,826
Line Code	E1: HDB3 @ 2.048 Mbps, T1: B8ZS/AMI @ 1.544 Mbps
Latency	Configurable: 5 - 20 msec (default: 8 msec)
Impedance	E1: 120Ω, balanced T1: 100Ω, balanced
Jitter & Wander	According to ITU-T G.823, G.824
Monitored Hot Standby 1+1	Supported

### Ethernet

Max Throughput	100 Mbps net aggregate full duplex throughput (200 Mbps total) in symmetric mode and 40 MHz channel, 90 Mbps in asymmetric mode and 20 MHz channel
VLAN Support	VLAN transparent for user traffic; Separation for management traffic

### Management

NMS Application	NetStream NMS (NSNMS)
Protocol	SNMP and Telnet

### Mechanics

Dimensions	ODU with Integrated Antenna: 37.1(w) x 37.1(h) x 10.0(d) cm; 3.5 kg/ 7 lbs ODU Connectorized: 19.0(w) x 27.0(h) x 7.0(d) cm; 1.8 kg/ 3.6 lbs IDU: 43.6(w) x 4.4(h) x 21(d) cm; 1.5 kg/ 3.3 lbs
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### Power

Power Feeding	Dual feeding, -20 to -60 VDC (AC/DC converter is available)
Power Consumption	< 35 W (IDU + ODU)

### Environmental

Operating Temperatures	ODU: -35°C to + 60°C / -31°F to +140°F IDU: 0°C to +50°C / 32°F +122° F
Humidity	ODU: Up to 100% non-condensing, IP67 IDU: 90% non-condensing

### Radio Regulations

FCC	47CFR, Part 15, Subpart C
IC (Canada)	RSS - 210
WPC (India)	GRS - 38
MII (China)	5.8 GHz Band Regulation

### Safety

FCC/IC (cTUVus)	UL 60950-1, CAN/CSA 60950-1 C22.2
ETSI	EN/IEC 60950-1



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