



## NetStream 5x200

NetStream 5x200 is a carrier-class radio supporting the 5.x GHz bands and complying with FCC, IC (Canada), MII (China) and WPC (India) regulations (factory default: 5.8 GHz FCC). The multi-band radio is part of the NetStream Series that delivers high capacity and extended range for carriers' backhaul needs.

Packing native TDM and Ethernet over a single wireless link, the NetStream Series provides 200 Mbps net aggregate throughput (up to 16XE1/T1 plus Ethernet) at a range of up to 120 km/75 miles.

NetStream 5x200 comes with an integrated antenna.

### Product Highlights

- 200 Mbps Ethernet net throughput and up to 16 E1s/T1s
- Native TDM transport
- GBE support
- Processing Speed 380,000 PPS
- Long range – up to 120 km/75 miles
- Adaptive asymmetric throughput – dynamic allocation between uplink and downlink
- Single radio supporting multiple bands (5.x GHz)
- Advanced MIMO, OFDM and Diversity technologies
- Robust and reliable to operate in tough conditions, extreme temperatures and non line-of-sight scenarios



## Product Specifications

### Configuration

Architecture	Outdoor Unit with Integrated Antenna
PoE to ODU Interface	Outdoor CAT-5e cable; Maximum cable length: 100 m @100BaseT and 70m @1000BaseT

### Radio

Capacity	200 Mbps net aggregate throughput (up to 16 E1s/T1s plus Ethernet)
Range	Up to 120 km / 75 miles
Channel Bandwidth	Configurable: 5, 10, 20 or 40 MHz
Modulation	2x2 MIMO-OFDM (BPSK/QPSK/16QAM/64QAM)
Adaptive Modulation & Coding	Supported
Automatic Channel Selection	Supported
Diversity	Supported
Spectrum View	Supported
Max Tx Power	25 dBm
Duplex Technology	TDD
Error Correction	FEC k = 1/2, 2/3, 3/4, 5/6
Processing Speed	380,000 PPS
Encryption	AES 128
Ethernet Interface	10/100/1000BaseT
Supported Indoor Units	IDU-NetStream RM 2xGBE and IDU-NetStream RM 4xE1 2xEth; ODU NetStream 5836 PoE; NetStream PoE device
QoS	Packet classification to 4 queues according to 802.1p and Diffserv, Dynamic scheduling according to air interface changes
VLAN	Supported
Ethernet Ring Protection	Supported, including Ethernet 1+1
Hub Site Synchronization (HSS)	Up to 16 collocated links (NetStream Series)
Monitored Hot Standby (MHS)	1+1 with NetStream link

### Supported Bands

Band	Channel BW 5 MHz	Channel BW 10 MHz	Channel BW 20 MHz	Channel BW 40 MHz	Radio Compliance
<b>5.8 GHz FCC/IC*</b>	<b>5.7275 - 5.8475 GHz*</b>	<b>5.725 - 5.850 GHz*</b>	<b>5.725 - 5.850 GHz*</b>	<b>5.710 - 5.850 GHz*</b>	<b>FCC 47CFR, Part 90, Subpart C and IC RSS-210</b>
5.0 GHz Universal	4.9975 - 5.1525 GHz	4.995 - 5.155 GHz	4.990 - 5.160 GHz	4.980 - 5.170 GHz	
5.1 GHz Universal	5.1475 - 5.3375 GHz	5.1475 - 5.340 GHz	5.140 - 5.345 GHz	5.130 - 5.355 GHz	
5.2 GHz FCC/IC	5.2525 - 5.3475 GHz	5.255 - 5.345 GHz	5.255 - 5.345 GHz	5.235 - 5.345 GHz	FCC 47CFR, Part 15, Subpart E and IC RSS-210
5.4 GHz FCC	5.4775 - 5.7175 GHz	5.480 - 5.715 GHz	5.480 - 5.715 GHz	5.460 - 5.715 GHz	FCC 47CFR, Part 15, Subpart E
5.4 GHz IC	5.4775 - 5.7175 GHz	5.480 - 5.715 GHz	5.480 - 5.715 GHz	5.460 - 5.715 GHz	IC RSS-210
5.4 GHz Universal	5.4725 - 5.7225 GHz	5.470 - 5.725 GHz	5.465 - 5.730 GHz	5.455 - 5.740 GHz	
5.8 GHz MII China	5.7375 - 5.8375 GHz	5.735 - 5.8340 GHz	5.730 - 5.845 GHz	5.720 - 5.855 GHz	MI I for 5.8 GHz
5.9 GHz Universal	5.7275 - 5.9525 GHz	5.725 - 5.955 GHz	5.720 - 5.960 GHz	5.710 - 5.970 GHz	
5.8 GHz WPC	5.8325 - 5.8675 GHz	5.830 - 5.870 GHz	5.825 - 5.875 GHz	5.815 - 5.855 GHz	WPC GSR-38

### Mechanical

ODU Dimensions	37.1(w) x 37.1(h) x 11.0(d) cm
ODU Weight	3.5 kg / 7 lbs

### Power

Power Feeding	Power provided over ODU-IDU cable
Power Consumption	<35 W (IDU + ODU)

### Environmental

Operating Temperatures	-35°C - 60°C / -31°F - 140°F
Humidity	100% condensing, IP67 (totally protected against dust and against immersion up to 1 m)

### Safety

FCC/IC (cTUVus)	UL 60950-1, UL 60950-22, CAN/CSA C22.2 60950-1, CAN/CSA C22.2 60950-22
ETSI	EN/IEC 60950-1, EN/IEC 60950-22

### EMC

FCC	CFR47 Class B, Part15, Subpart B
ETSI	EN 300 386, EN 301 489-1, EN 301 489-4
CAN/CSA-CEI/IEC	CISPR 22-04 Class B
AS/NZS	CISPR 22-2004 Class B



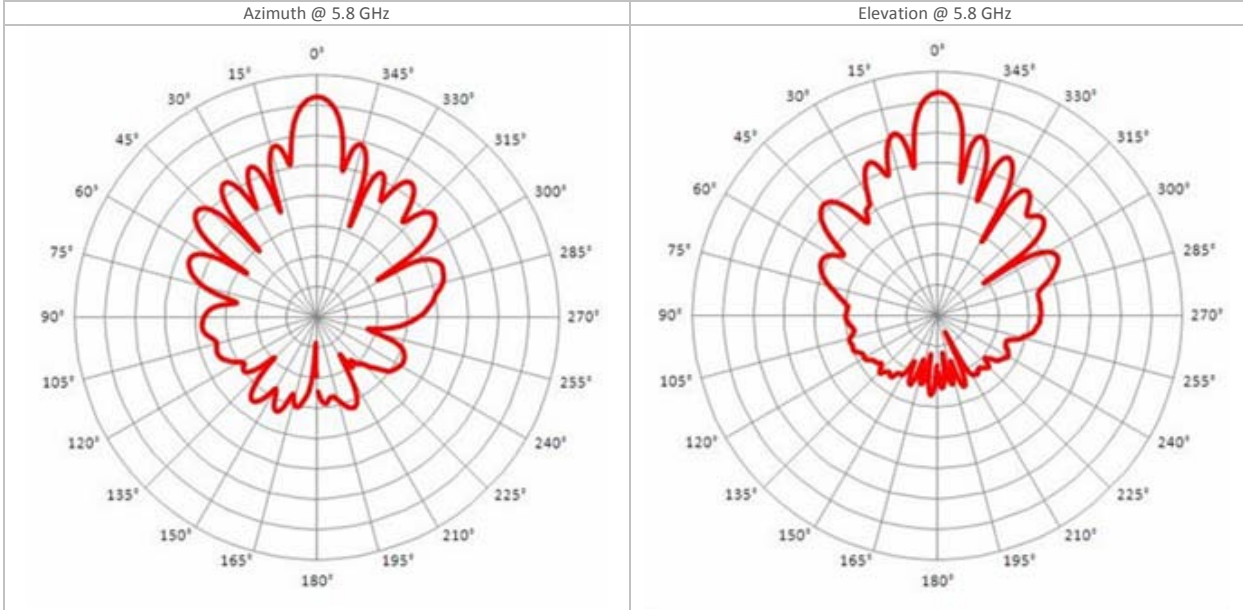
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### Integrated Antenna

Minimum Peak Gain	22.5 dBi $\pm$ 0.5 @ 5.15-5.25 GHz 23 dBi $\pm$ 0.5 @ 5.25-5.875 GHz
VSWR	1.5 : 1 (typ) 1.7 : 1 (max)
3 dB Beam width	9° (typ)
AZ & EL Beam Squint	$\pm$ 2° Port V & Port H
Polarization	Dual Linear (Vertical and Horizontal)
Side lobes Level	ETSI EN 302 085 V1.1.2, TS1-TS3
Cross Polarization	ETSI EN 302 085 V1.1.2, TS1-TS3
F/B Ratio	35 dB (max)
Port To Port Isolation	40 dB (min)
Lightning Protection	DC grounded

### Antenna Pattern



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