RADWIN MultiSector™ Integrated

1.5Gbps multi-sector dual carrier base station for low TCO deployments

RADWIN MultiSector™ is an innovative base station solution for network operators, looking to provide MicroPoP broadband connectivity in locations sensitive to TCO. This includes areas beyond the network footprint with fewer customers such as rural villages, small business parks on the city outskirts or private network operations such as oil and gas fields and more.

RADWIN MultiSector is a unique, fully integrated dual-carrier PtMP base station that provides coverage of up to 360°. The MultiSector solution provides up to 1.5Gbps and assures low Capex and OpEx. It also outperforms omni antenna MicroPoP solutions that are highly sensitive to radio interference.
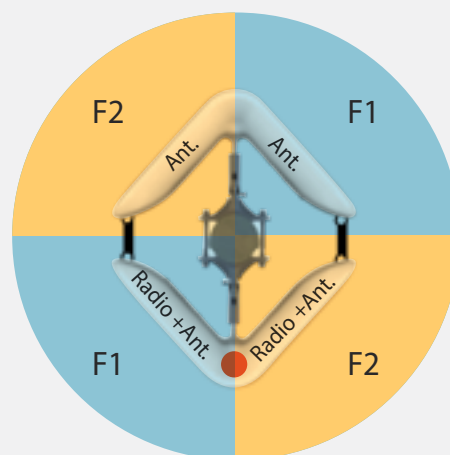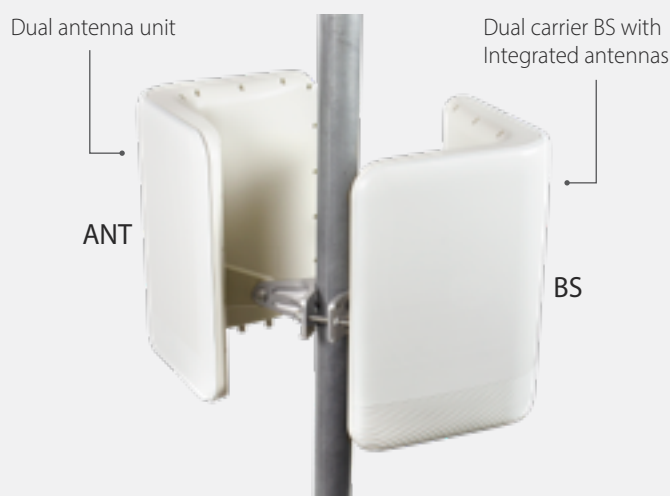
MultiSector is a self-contained base station that supports entry level and cost sensitive wide-scale deployments while significantly minimizing site complexity, tower space, installation time and cost, by reducing glue components on the tower. MultiSector can seamlessly scale up in capacity, number of sectors and the amount of customers served.

Highly flexible, the MultiSector architecture allows for a variety of external antenna connections to extend the customer reach or support self-backhaul.

MultiSector highlights

» 1.5Gbps dual carrier base station

» 180˚ coverage using two integrated 90˚ sector antennas

» Up to 360˚ coverage using an add-on MultiSector Antenna unit or 3rd party external antenna

» Built-in GPS

» Optional self-backhaul, no need for a PtP radio

» Single PoE or SFP port per site

MultiSector

Dual antenna unit

Dual carrier BS with Integrated antennas

ANT

BS

F2   F1

Ant.   Ant.

Radio +Ant.   Radio +Ant.

F1   F2

MultiSector Base Station with antenna (BS)

Providing up to 1.5Gbps, RADWIN MultiSector dual carrier PtMP base station includes a pair of integrated 90˚ antennas and connectors for optional external antennas (one per carrier).

An internal GPS receiver significantly reduces the risk of mutual interference with local or remote networks.

To enable best spectrum utilization when deployed in a wide network, MultiSector is designed to support frequency reuse 2, thus requiring only 2 channels per site.

RADWIN offers two MultiSector models: One serving 16 customers (upgradable by license key to 128) and the other supporting 128.
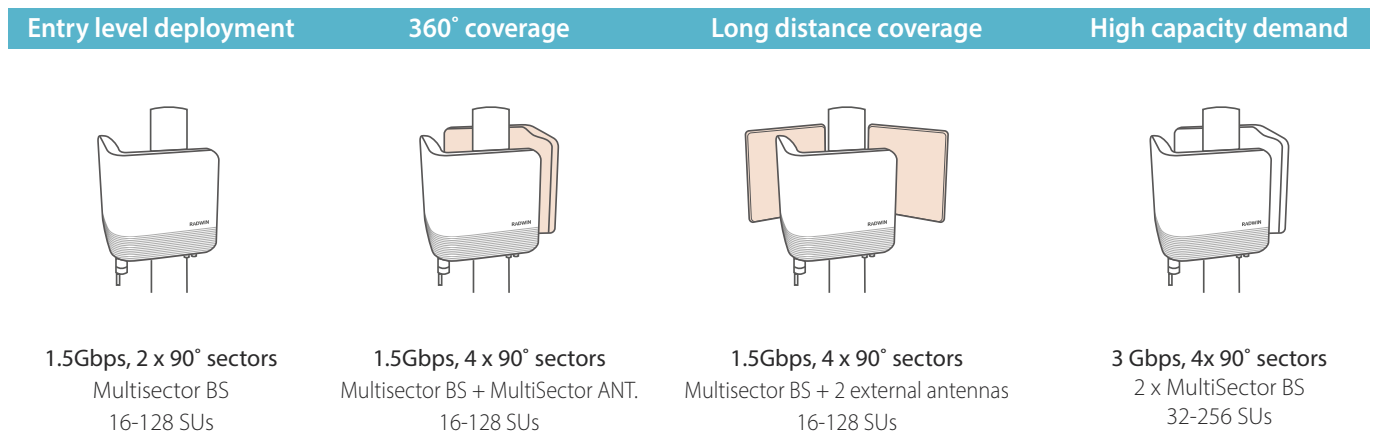
MultiSector Antenna (ANT) - Add-on unit

The MultiSector ANT consists of dual 90˚antennas and is used to expand MultiSector BS coverage from 180˚ to 360˚ (4 x 90˚ sectors).

When the MultiSector ANT is attached to the BS, each radio shares its carrier resources on a time basis between the integrated antenna and the external MultiSector ANT unit, ultimately covering two 90˚ sectors.

Scalable and flexible site architecture

As shown in the diagrams below, the MultiSector BS site is highly scalable and flexible, enabling seamless growth for extended coverage (180° to 360°), higher capacity (1.5Gbps to 3Gbps) and more customers (16 to 256). Extended reach for faraway customers is also obtained using a high gain 3rd party external antenna.

Entry level deployment	360˚ coverage	Long distance coverage	High capacity demand
1.5Gbps, 2 x 90˚ sectors Multisector BS 16-128 SUs	**1.5Gbps, 4 x 90˚ sectors** Multisector BS + MultiSector ANT. 16-128 SUs	**1.5Gbps, 4 x 90˚ sectors** Multisector BS + 2 external antennas 16-128 SUs	**3 Gbps, 4x 90˚ sectors** 2 x MultiSector BS 32-256 SUs

MultiSector is ideal for limited budget MicroPoP deployments, supporting a variety of service providers and private network applications including:

Isolated or shadowed residential areas

Rural villages

Industrial parks on the city outskirts

Video surveillance connectivity

Remote control and automation of oil & gas fields

Solution benefits

» Low investment for entry level deployment
» Reduce base station site complexity to a minimum:
  › Save upon PoEs, switch and site wiring
» High capacity and scalable base station site:
  › 1.5 to 3Gbps per site
  › 2 to 4 sectors
  › 16 to 256 customers
» Flexible architecture
  › 3rd party external antenna for extended reach
  › Optional self-backhaul
» Spectrum efficiency using frequency reuse-2
» Better Interference immunity than an omni antenna

MultiSector BS Specifications

Architecture	Outdoor unit with two 90° integrated antennas and connectors for 2 external antennas (4 x TNC type)
Net aggregate Capacity	Up to 1.5 Gbps (2 x 750 Mbps)
Frequency band and regulation	FCC: 5.1, 5.8GHz IC:5.8GHz, Universal: 4.9-6GHz, ETSI: 5.4, 5.8GHz
Radio	
Subscriber Units (SUs) support	Two models are available: Up to 16 or up to 128 per unit
End to End Latency	Typical: 3.5msec
SLA management	CIR, MIR, Best Effort
Radio access scheme	OFDM, Auto MIMO 2x2 /Diversity per SU
Adaptive Modulation	(BPSK/QPSK/16QAM/64QAM/256QAM
Encryption	AES 128
Duplex Technology	TDD, Configurable Uplink/Downlink ratio
TDD Synchronization	Inter and Intra site synchronization through built-in GPS
Max Tx Power	23 dBm per radio per port
Antenna gain (BS unit)	13dBi
Channel Bandwidth	Configurable: 10, 20, 40, 80 MHz , automatic selection between 20,40,80MHz
Interfaces	
Data Interfaces	1000BaseT (over PoE) or SFP (1GbE Full Duplex, supports single and multi-mode)
PoE to ODU Interface	Outdoor CAT-5e; Maximum cable length: 75m for 1000BaseT
Networking	
Sub convergence layer	Layer 2, Bridging learning of 5K MAC addresses
QoS	Packet classification to 4 priority queues according to 802.1P or Diffserv
VLAN Support	802.1Q, QinQ, 4094 VLANs
Management	
Protocol	IPv4/IPv6 dual-stack; SNMP v1 and v3; HTTP/ HTTPS using web browser
NMS application	RADWIN NMS -WINManage
Mechanical	
ODU Dimensions	24(w) x 34 (h) cm per side
ODU Weight	4 kg
Power	
Power Feeding	Provided over PoE cable
Power Consumption	<30W
Environmental	
Operating Temperatures	-40°C to 60°C / -31°F to 140°F
Humidity	100% condensing, IP67 (totally protected against dust and against immersion in water up to 1m)
Safety	US/CAN (cTUVus), CE/IEC
EMC	FCC, ETSI, CAN/CSA-CEI/IEC, AS/NZS

MultiSector ANT unit Specifications

Architecture	Two 90° antennas (4 x TNC type)
Antenna gain	13dBi
Mechanical	
Dimensions	24(w) x 34 (h) cm per side
Weight	4 kg

RADWIN

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