



The High-Capacity Micro-cell Base Station

Main Features

- Designed for micro-cellular network deployments in urban scenarios
- Available in 2.5GHz, 3.5GHz and 4.9GHz bands, with more bands to come soon
- Supports both FDD and TDD profiles
- All-outdoor base station design
- Hardware features include:
 - AC and DC power options
 - 100/Gigabit Ethernet
 - On board GPS receiver for TDD operations
- HiperMAX uses PicoChip® based Software defined radio (SDR) array, rated at 600 billion instructions/s
- HiperMAX supports different antenna options including:
 - Single Input Single Output (SISO)
 - Tx and Rx Diversity
 - 2x2 Multiple Input Multiple Output (MIMO)
 - 4 or 8 element SAS



HiperMAX-micro Base Station

HiperMAX-Micro has been designed for micro-cellular deployment in dense urban environment, or as a micro-cell infill solution as part of a macro-cell deployment.

HiperMAX-micro is a variant of the HiperMAX platform and the same technology including SDR and OBSAI underpin both products. It has been optimised for deployment on low cost sites such as power poles, street lighting, rooftops or the sides of buildings.

Like its bigger sibling, HiperMAX-micro is fully compatible with the Mobile WiMAX Network Reference Model (NRM), forming part of the Access Service Network (ASN). It supports the ASN interfaces between the base station and the ASN Gateway as well as between base stations. HiperMAX-micro interworks with Airspan's ASN Gateway, ControlMAX and with other third party ASN gateways.

High capacity and small footprint makes this product ideally suited for mobile WiMAX deployments in crowded cities where demand for services is high but space is at a premium.

HiperMAX-micro is available in the 3.5GHz band. It is also available in the 4.9GHz band and has been deployed in large quantities in Japan.

The HiperMAX-micro base station is based on an all –outdoor, split design architecture consisting of an outdoor baseband enclosure, outdoor transceivers and antennas. A typical HiperMAX-micro deployment with antenna diversity will consist of the baseband unit connected to two transceiver units using the same fiber optic interface used in HiperMAX, and two antennas, one per transceiver.

HiperMAX-micro fully supports the extensive QoS features of the IEEE 802.16 standard, including full support for UGS, rtPS, nrtPS and BE service classes. In addition, it incorporates specific additional radio resource management features that allow applications like VoIP to be robustly delivered by implementing Admission Control on a per call basis.

HiperMAX-micro is managed by Netspan, Airspan's SNMP based management platform.



Technical Data Sheet - HiperMAX-micro Base Station

RF Interface

Physical Layer	OFDM (SDR software upgradable to SOFDMA)	
Frequency Bands	3.3-3.8GHz, 2.3-2.4GHz, 2.5-2.7GHz, 4.9-5.0GHz	
Channel Size	1.75MHz, 3.5MHz, 5MHz, 10 MHz	
FFT	256 (SDR software upgradable 512 and 1024)	
Duplex Method	FDD + TDD	
Sector Angle	60, 90, 120, 180, omni	
Modulations Supported	64QAM, 16QAM, QPSK, BPSK	
WiMAX Profiles Supported	Fixed WiMAX (SW upgradeable to Mobile WiMAX)	
Nomadic Support	Yes	
Mobility Support	With SW upgrade to Mobile WiMAX	Note 1: Tx powers apply for QPSK operation. 64QAM support requires appropriate power back-off.
Standards Compliance	IEEE 802.16e-2005	
Tx Power (see note 1)	Up to +40dBm per antenna element	Note 2: Rx sensitivities apply to the minimum channel bandwidth supported and include maximum sub-channelisation.
Rx Sensitivity (see note 2)	-115dBm (1/16), -103dBm (1/1)	
AAS & Diversity Gains (Downlink / Uplink)	Up to 5dB / 5dB	

RF Interface Options

Adaptive Antenna System (AAS) Support	No for standard configuration	
Multi Channel Tx Diversity	Yes	
Nth Order Rx Diversity	Yes	
Space Division Multiple Access (SDMA) Support	No for standard configuration	
Spatial Freq. Interference Rejection (SFIR) Support	No for standard configuration	
MIMO	No for standard configuration	
Uplink Sub-Channelisation Support	1/2, 1/4, 1/8, 1/16 (+1/32 with software upgrade)	
Dynamic Frequency Selection (DFS) Support	N/A	
Turbo Coding Supported	Yes, with Mobile WiMAX	
Configurable Cyclic Prefix	1/4, 1/8, 1/16, 1/32	
Configurable Frame Duration	2.5, 4, 5, 8, 10, 12.5, 20ms	
GPS Clock Synch Supported	Yes (integralGPS option)	

IP Options/Features

Bridging Mode	802.1D self-learning bridge for Fixed WiMAX	
IPv	IPv4 + IPv6	
802.1Q VLAN	Yes	
MIR / CIR	Yes	
DiffServ	Yes	
Packet IPv6 over 802.3/Ethernet	Yes	
Packet IPv4 over 802.1Q	Yes	
Packet IPv6 over 802.1Q	Yes	
Payload Header Suppression	Yes	
Multicast Polling	Yes	
ARQ	Yes	
Packing	Yes	

Scheduling

Unsolicited Grant Service	Yes	
Real Time Polling	Yes	
nonReal Time Polling	Yes	
Best Effort	Yes	

Encryption & Management

DES (3DES Keys)	Yes	
AES	Yes	
Managed Subscriber Station	N/A	

User/Network Interface Options

User / Network Interface	100bT/1000bT Ethernet	
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Powering & Interconnect

Supply Voltage	90-265V AC,	
Indoor / Outdoor Interconnect	All Outdoor Solution	

Environment

Outdoor Equipment	ETS 300 019-1-4 Class 4.1E	
Indoor Equipment	N/A	



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