Airmux-5000i

Redefining Point-to-Multipoint Wireless Connectivity in Sub-6 GHZ Bands

Airmux-5000i Highlights

Airmux-5000i is a disruptive point-to-multipoint beamforming solution, excellent for operation in heavily congested unlicensed bands and licensed bands where spectrum resources are scarce. Delivering up to 250 Mbps per sector, Airmux-5000i is the ideal choice for First Mile connectivity and high-end applications requiring guaranteed SLA.

Powerful Base Station for Bandwidth Demanding Applications

- Base station with smart beamforming antenna
- Up to 250 Mbps per sector, 1 Gbps per cell (4 sectors using 2 x 40 MHz)
- Guaranteed SLA per end-user
- Fixed and nomadic capabilities
- Low jitter
- Long range – 40 km/25 miles
- TDD radio synchronization for greater radio capacity

Variety of MIMO Subscriber Units

- Subscriber/remote units – 10, 25, 50 Mbps, upgradeable to 100 Mbps
- Pay-as-you-grow capacity
- Small form factor for low visual impact

Backward Compatible

- Backward compatible with Airmux-5000 subscriber units
- Co-exists with Airmux point-to-point solutions

Multiband Radio

- 3.3-3.8/3.65 GHz or 5.1-5.8 GHz in the same unit

Airmux Beamforming Highlights

- Small-form factor base station (sector radio) with integrated beamforming antenna
- Antenna steering for best link performance over a 90° sector
- Effective narrow beam of 8° @ 5.x GHz, 15° @ 3.x GHz
- OFDM, MIMO 2x2/diversity

Airmux Beamforming Benefits

- High interference immunity similar to point-to-point (due to directional narrow beam antenna)
- Industry's highest throughput
- Improved capacity at the cell edges
- Optimized frequency reuse
- Robust operation in nLOS/NLOS
- Simplified network planning

Airmux-5000i – Smart Beamforming Solution

Airmux-5000i is a breakthrough point-to-multipoint solution, incorporating a disruptive smart beamforming MIMO antenna at the base station that redefines the performance of broadband wireless access. Airmux-5000i beamforming antenna is formed from an array of antenna elements that are combined to generate a narrow and steerable beam. The smart beamforming antenna solution offers unique advantages.

Interference immunity

Airmux-5000i

Interference

HSU

Airmux-5000-i beam pattern

Common base station antenna
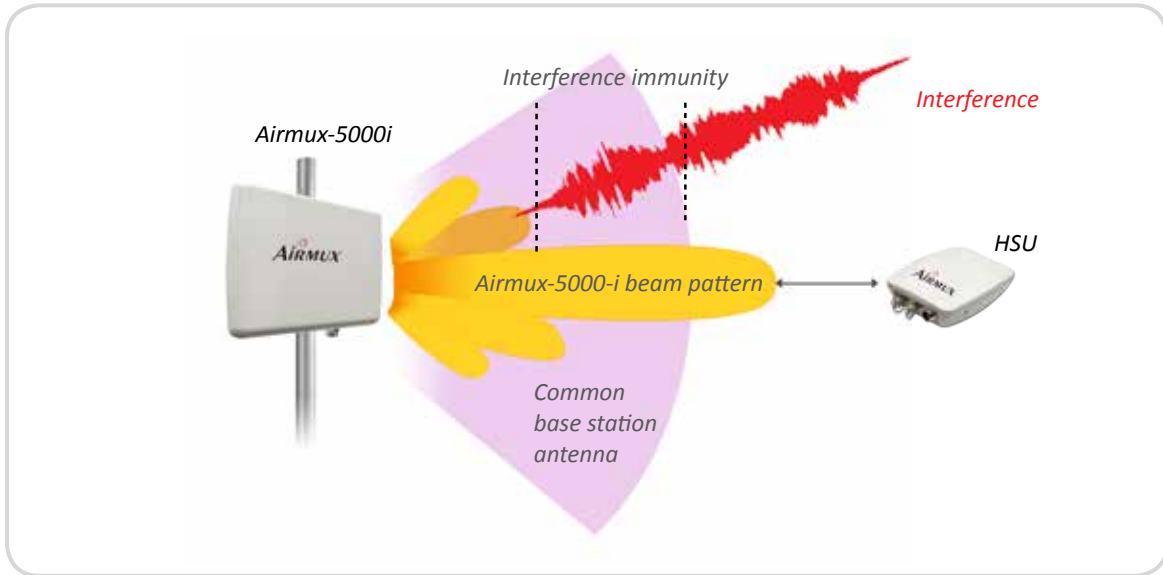
- **Improved interference immunity, similar to PtP**
  A result of the narrow beam replacing the wide beam of common sector antennas.

HSU

Airmux-5000i

HSU

Extra gain

Airmux-5000i beam pattern

HSU

Common base station antenna

HSU

HSU
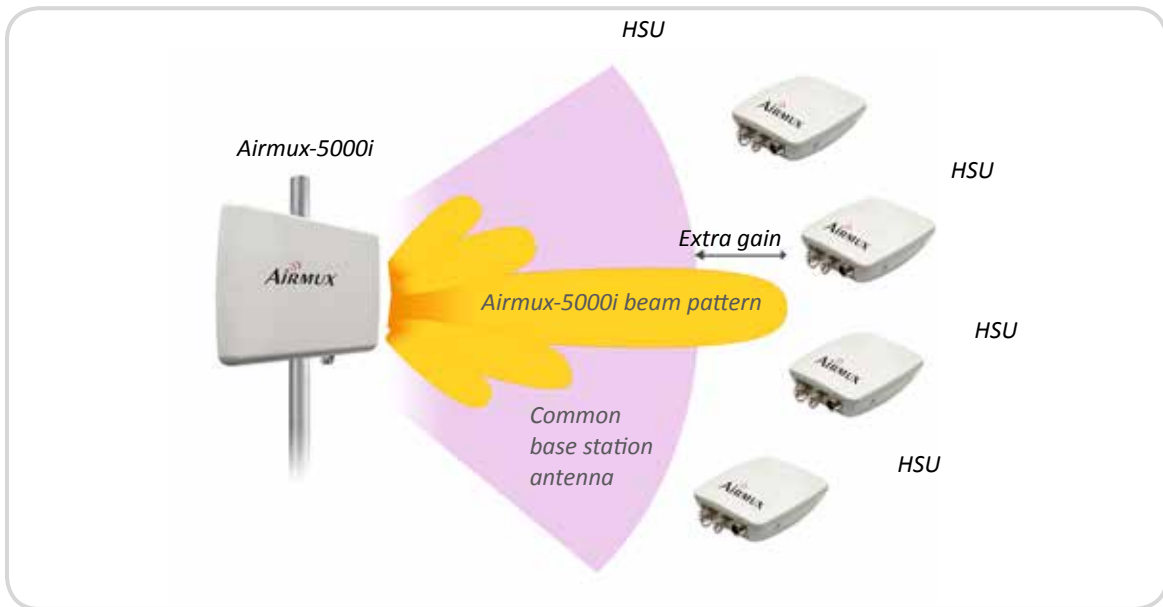
- **Increased antenna and system gain**
  Boost capacity, range and link robustness.

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Airmux-5000i Specifications

Capacity

	Base Station	Subscriber Units		
	HBS 5B00	HSU 510	HSU 525	HSU 550
Maximum Net Aggregate Capacity	250 Mbps	10 Mbps	25 Mbps	50 Mbps

Frequency Bands & Antenna Configurations

3.3-3.8 GHz, 3.65 GHz	Beamforming antenna 16dBi	Int. 13dBi, 20dBi Con.	Int. 13dBi, 20dBi Con.	Int. 20dBi Con.
5.1-5.8 GHz	Beamforming antenna 20dBi	Int. 17dBi, 23dBi Con.	Int. 17dBi, 23dBi Con.	Int. 23dBi Con.

Radio

Number of HSUs per HBS	Up to 32 HSUs simultaneously
Range	Up to 40 km/25 miles
Frequency Bands	Multiband radio supporting 5.1-5.8 GHz or 3.3-3.8/3.65 GHz
Channel Bandwidth	Configurable: 5, 10, 20 , 40 MHz
Dynamic Channel BW Selection (D-CBS)	20/40 MHz
Radio Access scheme	2x2 MIMO OFDM
Modulation	BPSK/QPSK/16QAM/64QAM
Adaptive Modulation & Coding	Supported
SLA Management	CIR, MIR
End to End Latency	Typical: 3.5 msec for 2 HSUs; 20 msec for 32 HSUs
Duplex Technology	TDD
Uplink/Downlink BW Allocation	Configurable: symmetric or asymmetric
Max Tx Power	HBS: 25dBm @ 5.x GHz, 23dBm@ 3.x GHz (in all modulation schemes) HSU: 25dbm
DFS (FCC & ETSI)	Supported
Diversity	Supported at HBS & HSU, auto MIMO/diversity per HSU
Spectrum Viewer	Supported at HBS & HSU
TDD Synchronization	Inter & intra site synchronization (co-existence with Airmux-400 point-to-point)
Encryption	AES 128

Interfaces

Ethernet Interface	HBS: two ports for data & management, 10/100/1000BaseT HSU: 10/100BaseT

Networking

Sub convergence layer	Layer 2
QoS	Packet classification to 4 queues according to 802.1p and DiffServ, Strict Priority, TTL
VLAN	802.1Q, QinQ , 4094 VLANs

Management

Management Application	HBS & HSU: Airmux manager & Web-based management
Protocol	SNMPv1, SNMPv3, Telnet, HTTP, IPv4 & IPv6
NMS Application	RADview system via standard MIBs

Power	
Power Feeding	Provided over PoE interface
Power Consumption	HBS < 25W, HSU < 12W
Environmental	
Operating Temperatures	-35°C to °60C / 31°F to 140°F
Humidity	100% condensing, IP67 (fully protected against dust and immersion up to 1m)
Radio Regulations	
FCC	47CFR Part 15 Subpart C and Subpart E. 47CFR Part 90 Subpart Z – Restricted & Unrestricted modes
IC	RSS210- issue 8, RSS192- issue 3, RSS197- issue -1 Restricted mode
ETSI	EN 301 893, EN 302 326-2, EN 302 502
Safety	
FCC/IC (cTUVus)	UL 60950-1, UL 60950-22, CAN/CSA C 22.2 60950-1, CAN/CSA C 22.2 60950-22
ETSI	EN/IEC 60950-1, EN/IEC 60950-22
EMC	
FCC	CFR47 Class B, Part15, Subpart B
ETSI	EN 301 489-1, EN 301 489-4
CAN/CSA	CISPR 10 - 22 Class B
AS/NZS	CISPR 2009 - 22 Class B

Ordering options

5.x GHz:
- **Airmux-5000i /BS/F58F/INT (20dbi)**
- **Airmux-5000i /BS/F54E/INT (20dbi)**
- **Airmux-5000i /BS/F54U/INT (20dbi)**

3.x GHz:
- **Airmux-5000i /BS/F3XE/250M/INT (16dbi)**
- **Airmux-5000i /BS/F3XF/250M/INT (16dbi)**

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