# PRODUCT DATASHEET

## EC SYSTEM ECM-H5-A23R200

### 4.9 - 6.0 GHz

| Description | **EC SYSTEM** High-capacity 300 Mbps  
Integrate 23 dBi  
Dual-polarization Antenna Point-to-Point Backhaul |
| --- | --- |

<table>
<thead>
<tr>
<th>Performance</th>
<th>280 Mbps throughput</th>
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<th>Distances</th>
<th>up to 30 km</th>
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| Radio | • Radio technology: MIMO 2x2 with OFDM 64/128  
• Modulation types: BPSK ½ to QAM64 5/6  
• Transmit power: up to 23 dBm  
• Receiver sensitivity: -67...-101 dBm  
• Frequency bands: 4.9-6.0 GHz  
• Channel bandwidth: 5/10/20/40 MHz  
• 23 dBi dual-pol integrated antenna  
• Instant DFS (optional) |
| --- | --- |

| Wired Interfaces | • Gigabit Ethernet port (10/100/1000 Base-T) RJ-45 connector  
• Serial port (RS-232) |
| --- | --- |

| Power Consumption | Consumption:  
Up to 12 Watts  
Power options:  
• 110-240 VAC @ 50/60 Hz  
• ±43..56 VDC |
| --- | --- |

| Form Factor and Dimensions | • Outdoor Unit (ODU):  
370 x 370 x 90 mm, 3.5 kg  
• Indoor Unit (IDU-BS): 124 x 72 x 38 mm, 0.3 kg |
| --- | --- |

| Part Number Options | ECM-H5-A23R200  
**Instant DFS (yes/no)**  
H5  
HSD  
Output Power  
2x200  
2x23  
Ant.  
Options 300M  
Capacity 280 Mbps |
| --- | --- |

| Part Number Example | ECM-H5-A23R200-300M |
Features

RADIO
- Voice/RTP Aware Superpacketizing
- to minimize jitter and latency for multimedia applications
- DFS
- intelligent search for the cleanest channel and interference avoidance
- radar detection (depending on regulatory domain)
- continuous background spectrum monitoring (for Instant DFS enabled units only)
- seamless channel change in case of congestion or radar detection (for Instant DFS enabled units only)
- Automatic Bitrate Control
- to ensure a 100% stable link irrelevant of changes in external conditions
- Automatic Transmit Power Control
- to track and keep optimal input signal level to maximize performance for each link and reduce overall interference within a given transmit power and ERP limitations
- Automatic Distance Learning
- to optimize performance for any link distances from dozens of meters to 100 km and above
- Channel Time Adjustment
- to improve performance on heavily loaded links
- Spectrum Analyzer mode
- interference detection
- non-invasive spectrum analysis (for Instant DFS enabled units only)
- Channel testing tools
- channel performance measurement
- advanced diagnostics

MANAGEMENT FEATURES
- Web-interface
- basic settings
- channel diagnostics: spectrum analysis, antenna alignment, channel throughput measurement
- unit and RF links monitoring
- maintenance: firmware upgrade, license and configuration import/export
- tech support diagnostic reports generation
- command-line access
- Command-line interface for in-depth configuration and diagnostics accessible via:
  - secure shell (SSH)
  - ksh/net
  - serial port
  - remote shell
  - SNMPv1 / SNMPv3 support
  - (MIB II, private MIB)
  - Configurable SNMP Traps

NETWORKING
- Ethernet-over-IP tunneling
- ARP protocol support
- MAC/IP Filtering
- Full-fledged 2nd layer switch:
  - Transparent transport for any type of Ethernet traffic including MPLS, stacked VLANs, etc.
  - Multiple switching groups
  - Full VLAN support including Q-in-Q (IEEE 802.1q and 802.1ad)
  - STP/VTP support
  - IGMP Snooping with Querier mode
  - Trunk groups support
  - RIPv2 / OSPFv2 / static routing
  - Tunneling (Ethernet-over-IP, IP-over-IP)
  - L2/L3 Firewall
  - NAT (multipool, H.323-aware)
  - DHCP client/server/relay

QUALITY-OF-SERVICE
With many QoS permutations, QoS implementation works transparently in the network based on IEEE802.1p standard as well as Tos/Diffserv, guaranteeing optimal performance under any load conditions and lowest latency/delay for priority traffic.

Quality-of-Service features:
- 16 priority queues
- IEEE 802.1p support
- IP IPOS / Diffserv support
- Full voice support
- Traffic limiting (absolute, relative, mixed)
- Traffic redirection

MAC
- Dynamic adaptive Polling
- Centralized marker grant mode
- Dynamically takes into account channel activity
- Permanent channel testing
- Pseudo-radio Interface
- unique Wireless feature to join Wireless networks via 3rd party equipment (Wired Ethernet segments, IP clouds)
- Automatic over-the-air firmware upgrade

STANDARD COMPLIANCE
- Radio
  - EN 301 893 v.1.5.1
  - EN 302 502 v.1.2.1
  - FCC Part 15.247
  - EMC
    - EN 301 489-1
    - EN 301 489-17
    - FCC Part 15 Class B
- Safety
  - EN 60 950-1:2006
- RoHS
  - Directive 2002/95/EC

SECURITY FEATURES
- Storm / Flood protection
- Password protection
- Protocol messages encryption
- Secure command-line access via SSH protocol

ENVIRONMENTAL
- Outdoor Units:
  - -40…+60C, 100% humidity, condensing
- Indoor Units:
  - 0…+40C, 95% humidity, non-condensing