## Description

**EC SYSTEM ECM-H5-A28R200**

**4.9 - 6.0 GHz**

**EC SYSTEM** High-capacity 300 Mbps
Integrated 28 dBi Dual-polarization Antenna
Point-to-Point Backhaul

## Performance

- 80 Mbps throughput

## Distances

- up to 0 km

## 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
- 28 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:

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

## Form Factor and Dimensions

- Outdoor Unit (ODU):
  - 600 x 600 x 75 mm, 6.8 kg
- Indoor Unit (IDU-BS): 124 x 72 x 38 mm, 0.3 kg

## Part Number Options

<table>
<thead>
<tr>
<th>Part Number Options</th>
<th>Options</th>
<th>Capacity</th>
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<tbody>
<tr>
<td>ECM-H5-A28R200</td>
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<tr>
<td><em>Instant DFS (yes/no)</em></td>
<td>H5D H5</td>
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<tr>
<td>Output Power</td>
<td>2x28</td>
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<td>Ant.</td>
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## Part Number Example

- ECM-H5-A28R200-300M
Features

RADIO
- Voice/RTP Aware Superpacketing
  - to minimize jitter and latency for multimedia applications
- DFS
  - intelligent search for the clearest 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)
  - telnet
  - serial port
  - remote shell
- SNMPv1 / SNMPv3 support (MB 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/STP support
  - IGMP Snooping with Querier mode
  - Trunk groups support
- IPv6 / OSPFv3 / 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 jitter/delays for priority traffic.

Quality-of-Service features:
- 16 priority queues
- IEEE 802.1p support
- IP TOS / 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/ouds)
- 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...+60°C, 100% humidity, condensing
- Indoor Units:
  - 6...+40°C, 95% humidity, non-condensing