PRODUCT DATASHEET

EC SYSTEM ECM-S5-A23Rx

4.9 – 6.0 GHz

EC SYSTEM

Description	**EC SYSTEM** Medium–capacity lightweight Integrated 23 dBi Dual-polarization Antenna Point-to-Point Backhaul
Performance	• 8 Mbps (up to 8 Mbps net) • 20 Mbps (up to 20 Mbps net) • 50 Mbps (up to 50 Mbps net) • 300 Mbps (up to 180 Mbps net) • License upgradeable
Distances	up to 10-15 km
Radio	• Radio technology: MIMO 2x2 with OFDM 64/128 • Modulation types: BPSK ½ to QAM64 5/6 • Transmit power: up to 18 or 23 dBm • Receiver sensitivity: -67..-97 dBm • Frequency bands: 4.9-6.0 GHz • Channel bandwidth: 5/10/20/40 MHz • 23 dBi dual-pol integrated antenna
Wired Interfaces	• 2x Fast Ethernet (10/100 Base-T) PoE output at the second Ethernet port RJ-45 connector
Power Consumption	Consumption: • Up to 7 Watts Power options: • 110-240 VAC @ 50/60 Hz • +9..56 VDC
Form Factor and Dimensions	• Outdoor Unit (ODU):

371 x 371 x 83 mm, 2.0 kg
• Indoor Unit (IDU-CPE): 85 x 76 x 36 mm, 0.15 kg

Part Number Options	ECM-S5-A23R	Option	Output Power	Option	Capacity
		63	2x63	L8M	8 Mbps
		500	2x500	L20M	20 Mbps
				L50M	50 Mbps
				300M	300 Mbps

Part Number Example	ECM-S5-A23R63-300M

Features

RADIO

- **Voice/RTP Aware Superpacketing**
  - to minimize jitter and latency for multimedia applications
- **DFS**
  - intelligent search for a 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 EIRP 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** (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/rSTP support
  - IGMP Snooping with Querrier 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 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 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 Unit:**
  - 0..+40C, 95% humidity, non-condensing