## PRODUCT DATASHEET

**EC SYSTEM ECM-P5-CR500-500M**

### Description

**EC SYSTEM** Profi external antenna high-capacity point-to-point backhaul

### Performance

- **4.9 – 6.0 GHz**
- **Up to 480 Mbps**

### Distances

- **100 km**

### Radio

- **Radio technology:** MIMO 2x2 (Cyclic single carrier)
- **Modulation types:** from QPSK to QAM256, as well as QAM1024
- **Transmit power:** up to 27 dBm (average, per Tx chain) @ QPSK to QAM256. Up to 24 dBm @ QAM1024
- **Receiver sensitivity:** -94 dBm @ 10 MHz, QPSK
- **Frequency bands:** 4.9-6.0 GHz
- **Channel bandwidth:** 10, 20, 40 MHz

### Wired Interfaces

- **2x 10/100/1000 Base-T copper ports, RJ-45**
- **SFP port**

### Power Consumption

- **Consumption:** up to 30 Watts
- **Power options:**
  - 90-240 VAC~ @ 50/60 Hz
  - 43..56 VDC

### Form Factor and Dimensions

- **253 x 240 x 85 mm, 2.1 kg**

### Part Number Options

- ECM-P5-CR500-500M
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
      (MIB II, private MIB)
    - Configurable SNMP Traps

NETWORKING
- Ethernet-over-IP tunneling
- ARP protocol support
- MAC/IP filtering
- Full-routed 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
    - IPv6/IPv4 tunneling
    - L2/L3/4 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/delay 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 occupancy
  - 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 v1.5.1
  - EN 302 502 v1.2.1
  - 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 message encryption
- Secure command-line access via SSH protocol

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

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