

Parvus DuraMAR 31-5915

IP67 Rugged Cisco 5915 Mobile IP Router,
RJ-45 or M12 Connectors

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Overview

The Parvus® DuraMAR® 31-5915 is a rugged Cisco IOS-managed mobile router designed to extend enterprise networking infrastructure beyond the reach of traditional fixed-networks into mobile and embedded networking applications. With Cisco's 5915 Embedded Services Router (ESR) card, isolated vehicle-grade power supply, and fully dust and water proof (IP67) enclosure, the DuraMAR 31-5915 is an ideal mobile networking solution to interface with onboard computers, cameras, Ethernet switches, sensors, monitoring devices, and command-and-control gear in harsh environment and vibration environments, including tactical, mobile, vehicle, and outdoor installations in transportation, military, offshore drilling, underground mining, smart grid, homeland security, and public safety applications.

The unit has a shock/vibration resistant design supporting extended temperature operation from -40°C to +71°C (-40°F to +160°F) and provides five 10/100 Ethernet ports (2x WAN Uplinks, 3x LAN ports) over rugged field deployable RJ-45 or M12 connectors in a sealed and fanless metal chassis designed for mounting to any machine or flat surface. These capabilities can enable transportation authorities, government agencies, energy companies, and heavy industry suppliers to deploy Cisco Mobile Ready Net capabilities, including data, video, and voice services virtually anywhere LAN or WAN connectivity may be required.

With Cisco Enterprise IOS software, the DuraMAR 31-5915 delivers the performance, security, advanced Quality of Service (QoS), high availability, and manageability that customers expect from Cisco IOS-based routing technology. Advanced Enterprise IOS software supports extensive IPv4 and IPv6 routing protocols, IP multicasting, and Mobile IP routing for transparent connectivity to a roaming vehicle network in Comms on the Move (COTM) applications. An onboard AES hardware encryption engine offloads encryption processing from the router to provide highly secure yet scalable data, video, and voice services. For customers that require MIL-STD-1275/704/810/461 certifications and DTL-389899 connectors, Parvus also offers the "DuraMAR 5915" model (refer to related datasheet).

Key Features

- Rugged Cisco 5915-based Mobile IP Router
- Cisco Enterprise IOS Management/Security Software with Data, Video Voice Services
- 5x 10/100 Ports (2x Routed, 3x Switched)
- IP67 Ingress Protected (Dust/Water Proof)
- Rugged Aluminum Chassis with Choice of Industrial RJ-45 or M12 Connectors
- Size, Weight & Power (SWaP) Optimized: ~3.5 lbs Weight, 87 inch³ Size, < 15 Watts
- Vehicle-Grade Isolated DC Power Supply with Voltage Transient Protections
- Designed for Harsh Environments (Outdoor, Mobile, Vehicle)

Application

- In-Vehicle / Aircraft Switching / Routing
- Extreme Environments (Cold / Hot Temperatures, Humidity, Rain, Dust, Shock, Vibration)
- Transparent Mobile Data, Voice and Video In-Vehicle Communications and On-Demand Network Connectivity
- Mobile, Outdoor, and In-Vehicle, Train (Railway) Applications
- Border Security, Disaster Recovery, First Responder
- Underground Mining, Offshore Drilling, Oil Exploration
- Outdoor/Underground Embedded Platforms

Features

Cisco Technology:

- Ruggedized Cisco 5915 Router with Enterprise IOS Software for Robust Security, Management, QoS, VLAN, IPv4 / IPv6 Routing, IP Mobility
- 5 Ethernet Ports (3x 10/100 Switched, 2x 10/100 Routed)
- Integrated Services Router (ISR) Features Support Concurrent Data, Video, and Voice Services, Firewall and Hardware AES Encryption Acceleration
- Modular, Open Architecture Rugged COTS PC104 Hardware Design

Mobile Networking:

- Extensive Routing Protocols, IPv4 / IPv6 Support, Mobile Ad Hoc Networking, Radio Aware Routing, Mobile IP, and Management Capabilities
- Sophisticated Networking Capabilities, including Quality of Service (QoS) to Ensure the Most Important Data Gets Through When Links are Degraded
- Security to Protect the Network and the Data Transmitted Over the Network
- Remote Voice Services with Cisco Unified Communications Manager Express
- Streaming Multicast Video Support
- Self-Forming, Immediate Connection with No Preconfiguration of Peers Required, Eliminating the Need for Connectivity to the Centralized Network

Rugged Mechanical Design:

- Water Tight, Sealed Metal Enclosure
- Anodized Coated Aluminum Chassis for Durability
- Integrated Heat sinking for Fanless Cooling
- -40 to +71C Fanless Extended Temp Operation with No Moving Parts
- Rugged RJ-45 or M12 Connectors for Anti-Shock and Vibe Protection
- IP67 Ingress Protected from Sand, Dust, Moisture, Immersion
- Bulkhead Mountable Enclosure with Integrated Flanges
- Inherently Rugged Open Architecture PC-104 Based

Reliable Power:

- Robust Vehicle-Grade Wide Input DC Power Supply
- Voltage/Surge Protection and EMI Filtering

Specifications Summary

Applications

- IP Network Routing in Extreme Environments (Cold / Hot Temperatures, Humidity, Rain, Dust, Shock, Vibration)
- Transparent Mobile Data, Voice and Video In-Vehicle Communications and On-Demand Network Connectivity
- Tactical, Mobile, Outdoor and Vehicle Applications, including Border Security, First Responder Vehicles, Underground Mining Equipment, Offshoring Drilling Rigs, Petrochemical Processing Plants, Shipboard, Electric Utility Substations, Energy Grid, Bus / Train Installations, Outdoor Embedded Networks, etc.

Cisco Technology

- Integrated Cisco 5915 Embedded Services Router (ESR) PCI-104 Card
- Cisco Enterprise IOS - Base Image or Advanced Services Image w/ optional Communications Manager Express Licenses
- Support for IPv6 Routing, VoIP / CME, VPN / Firewall / IPS, Mobile IP, IPSec Exclusive to Advanced IOS only
- Migration Path for Cisco 3200-based Mobile Access Routers (~ 350% performance increase over Cisco 3251)

Connections

- 2x 10/100Mbps Fast Ethernet WAN Router Ports
- 3x 10/100Mbps Fast Ethernet Switched LAN Ports
- 1x RS-232 Console Port

Management & Monitoring

- Base or Advanced Enterprise Cisco IOS Software with Command Line Interface (CLI)
- Configuration Management via Serial Console or Ethernet Port Through Terminal Emulation Application
- SNMPv2/v3, Telnet, RADIUS, TACACS+, Cisco Service Assurance Agent, Syslog, Response Time Reporter, NTP Client, TFTP Client and Server, DHCP Client and Server, DHCP Relay, HSRP
- Network Address Translation; Address Conservation; DHCP Client Address Negotiation, Easy IP Phase I

Voice Support

- Cisco Unified Communications Manager Express for Remote IP Telephony/Command & Control Comms, 5 / 25 / 50 -User License Support (Advanced IOS Add-On Option)



Rugged Field RJ-45 Connector Option



Top View of RJ-45 Version



Rugged M12 Connector Option

Specifications Summary

Routing / Bridging

- IPv4 and IPv6 Routing (IPv6 Features Available in Advanced Enterprise IOS Image only)
- Routing Protocols: RIPv1v2; OSPF; EIGRP-IP; Cisco Discovery Protocol, Cisco GMP; IP Multicast PIM v1 / v2; PIM -Sparse Mode (PIM-SM); IGMPv1v2; IP Policy Routing, IP Multicast Load Splitting; Point-To-Point Protocol (PPP), Frame Relay, X.25, XOT, High-Level Data Link Control (HDLC), Telnet, Dial-On-Demand Routing (DDR), UDP Telnet
- VLAN: Virtual Local Area Network Logical Segmentation of Network for Optimal use of Bandwidth
- Radio Aware Routing (RAR) RFC 5578 – OSPFv3/EIGRP w/ Mobile Ad-Hoc Networks(MANET) Extensions (PPPoE)
- Mobile IP Routing and Cisco Mobile Network Support (Advanced Enterprise IOS Only)

Security

- Authentication: Route, PAP, CHAP, MS-CHAP Local Password, IP Access Lists, Time-Based ACLs
- Generic Routing Encapsulation; Fast Switching, Cisco Express Forwarding, Process Switching, STAC/RTP Compression
- Advanced Enterprise IOS Only: Stateful Inspection Firewall; Intrusion Detection System ; Easy VPN for Client/Server/Remote; MPLS VPN; Hardware Accelerated Crypto: IPSec, 3DES, AES, IKE Protocols; Port-To-Application Mapping; Tunnel Endpoint Discovery; Secure Shell (SSH) Protocol Client and Server

Information Assurance

- Cisco 5915 ESR is Federal Information Processing Standard (FIPS) 140-2 Level 1 Approved, Cisco 5915 ESR has Common Criteria Evaluation and Validation Scheme (CCEVS) EAL2 Product Validation and has DISA APL Approval
- NSA Suite-B support in Cisco IOS Software cryptography, including Suite-B-GCM-128, Suite-BGCM-256, Suite-B-GMAC-128, and Suite-B-GMAC-256 as described in RFC-4869

QoS

- Quality of Service (QoS) Classification / Prioritization of Data, Guaranteeing Determinism for Mission-Critical Data: Generic Traffic Shaping, Class-Based Ethernet Matching, Mobile Access Routing (802.1p Class of Service), Committed Access Rate, Flow-Based WRED, Low-Latency/Priority/Weighted Fair Queuing, Dial Backup, Dialer Profiles, Dialer Idle Timeout, Dial on Demand, Class-Based Weighted Fair Queuing, Traffic Policing RSVP; 802.1Q VLAN) Trunking and Encapsulation

Power

- DC Voltage Input Range: 12-36 VDC
- Power Consumption: <15W Max
- Steady State Voltage, Ripple, Surges, Spikes; Galvanic Isolation: 1500 V

Physical

- Dimensions (LxWxH): 5.6" (~14.2 cm) x 5.9" (~15.0 cm) x 2.63" (~6.68 cm), Excluding Connectors & Mounting Plate; 6.85" (17.4cm) wide including mounting base, 3.4" (8.64cm) high with RJ-45 connectors and caps
- Weight: < 3.5 lbs (< 1.6 kg)
- Installation: Integrated Flange Mount Plate for Bulkhead / Wall Mount
- Chassis: Aluminium Alloy, Corrosion Resistant, Anodize Finish
- Cooling: Passive Natural Convection. No Moving Parts
- Degree of Protection: IP67 / NEMA 6 Dust Proof / Waterproof
- Connectors: IP67 Rated RJ-45 or 4-Pin M12 Data Connections, IP67 3-pin M12 Power, IP67 DB-9 Console

Environmental

- Temperature: -40C to +71C (-40°F to +160°F) Operational / -40°C to +85°C (-40°F to 185°F) Storage
- Shock and Vibration: Designed for Mobile, Vehicle, Marine, & Offshore Use
- Humidity: Up to 95% RH @ 40C, Non-Condensing
- Water Immersion: No Water Ingress - 1 Meter Submersion (Similar to IPX7)
- Dust Ingress: No Dust Ingress (Similar to IP6X)

Specifications Summary

Reliability

- Designed & Manufactured using ISO 9001:2000 Certified Quality Program
- Industrial-Grade Components, Including Circuit Card Assemblies Qualified to Mil-STD-810
- No Moving Parts; Passive Cooling; Sealed Against Dust and Water Ingress

MTBF

- Mean Time Between Failure (MTBF) Calculated per MIL-HDBK-217F:
- Ground Benign, +25°C: 681,975 / 665,146 hours (M12 / RJ-45)
- Ground Mobile, +25°C: 121,677 / 117,277 hours (M12 / RJ-45)
- Airborne Inhabit, +25°C: 73,722 / 72,679 hours (M12 / RJ-45)
- Airborne Rotary, +25°C: 54,785 / 52,704 hours (M12 / RJ-45)

Export Jurisdiction

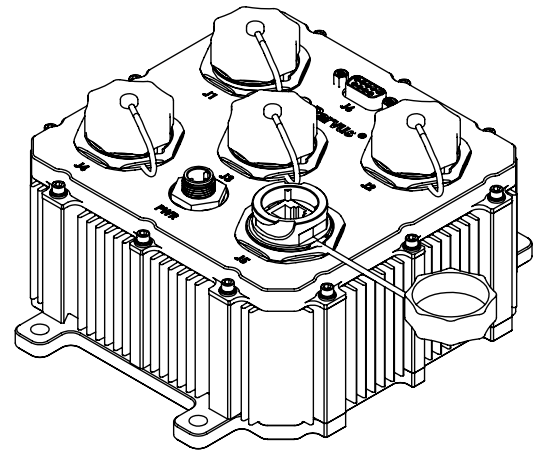
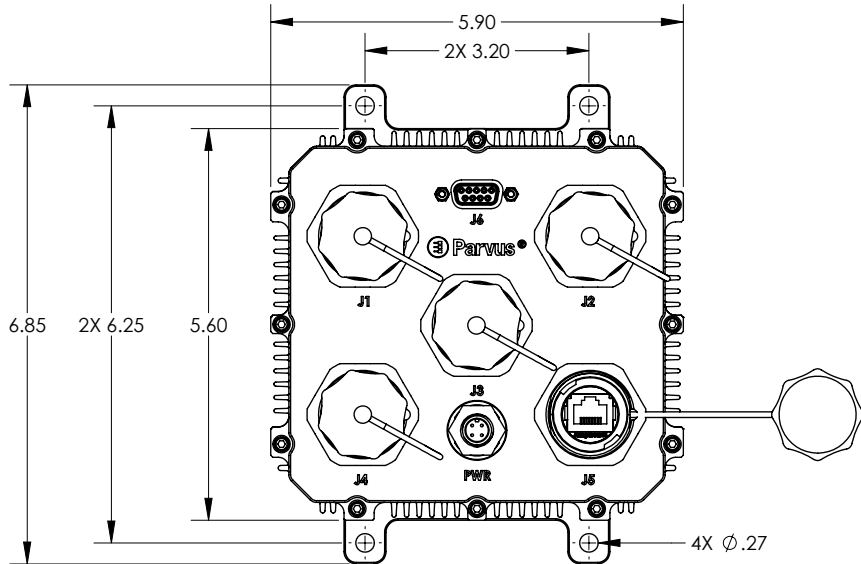
- NON ITAR: U.S. Commerce Export Administration Regulations (EAR) Controlled

Warranty

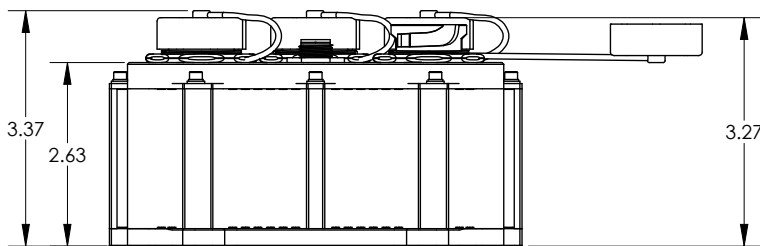
- Standard 90-Day Return to Depot Warranty;
- Multi-Year Extended Service Agreements Bundling Cisco SmartNET Available (for Access to IOS Software Upgrades/ Updates)

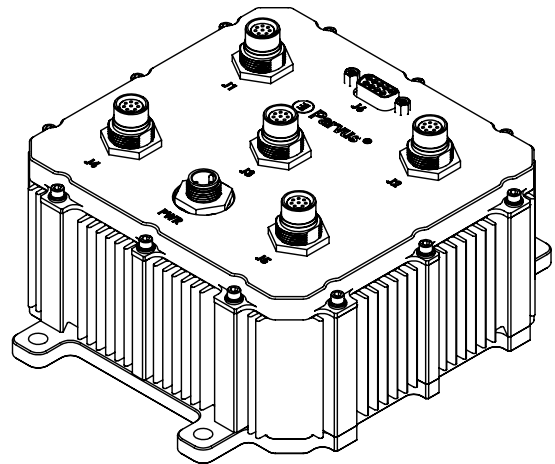
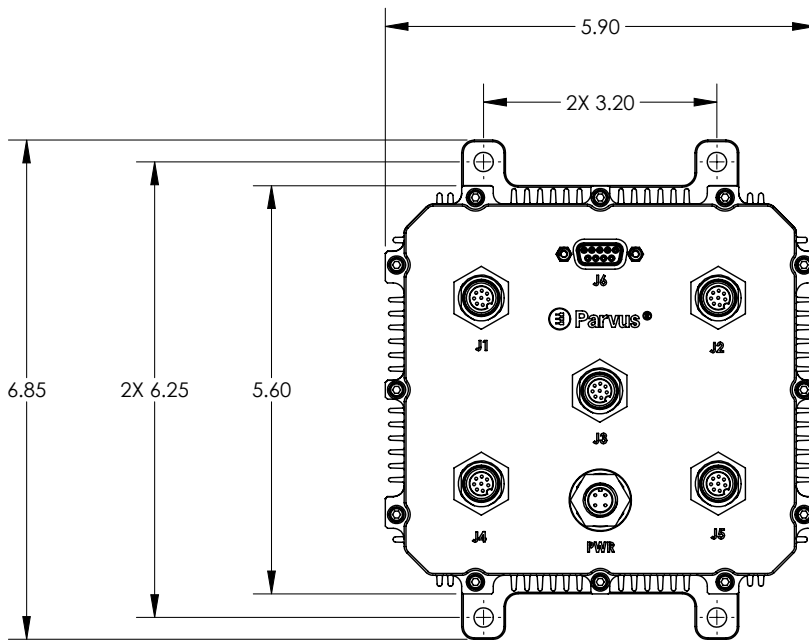
Recommended Ordering Codes

- DUMAR-31-5915-00: DuraMAR 31-5915 IP67 Rugged Mobile Router, M12, Base Enterprise IOS
- DUMAR-31-5915-01: DuraMAR 31-5915 IP67 Rugged Mobile Router, M12, Adv. Enterprise IOS
- DUMAR-31-5915-02: DuraMAR 31-5915 IP67 Rugged Mobile Router, M12, Adv. Enterprise IOS, CME-5 Users
- DUMAR-31-5915-03: DuraMAR 31-5915 IP67 Rugged Mobile Router, M12, Adv. Enterprise IOS, CME-25 Users
- DUMAR-31-5915-04: DuraMAR 31-5915 IP67 Rugged Mobile Router, M12, Adv. Enterprise IOS, CME-50 Users
- DUMAR-31-5915-10: DuraMAR 31-5915 IP67 Rugged Mobile Router, RJ-45, Base Enterprise IOS
- DUMAR-31-5915-11: DuraMAR 31-5915 IP67 Rugged Mobile Router, RJ-45, Adv. Enterprise IOS
- DUMAR-31-5915-12: DuraMAR 31-5915 IP67 Rugged Mobile Router, RJ-45, Adv. Enterprise IOS, CME-5 Users
- DUMAR-31-5915-13: DuraMAR 31-5915 IP67 Rugged Mobile Router, RJ-45, Adv. Enterprise IOS, CME-25 Users
- DUMAR-31-5915-14: DuraMAR 31-5915 IP67 Rugged Mobile Router, RJ-45, Adv. Enterprise IOS, CME-50 Users
- CBL-MAR-31-5915-02: Starter Power Cable for DuraMAR 31-5915, w/Mating M12 Connector
- CBL-MAR-31-5915-01: Starter Ethernet Cable for DuraMAR 31-5915, M12 to RJ-45 (for a single port)



ISOMETRIC VIEW
FOR REFERENCE ONLY
SCALE: NONE





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SCALE: NONE

