

# Viasat VDC-500 IP Data Controller

The VDC-500 IP Data Controller is designed to extend IP network services, including SMTP email, FTP file transfer, and other applications, over noisy half duplex low data rate radio communication channels. The problems experienced when trying to extend Internet Protocol-based applications over low data rate half-duplex radio communication channels include TCP/IP backoff due to errors and delays among others. The bursty nature of most TCP/IP traffic is not a good match for half-duplex radio channels.



ViaSat developed technology in the VDC-500 to overcome these effects in several ways and has been proven on a variety of challenging radio channels including UHF SatCom, UHF line-of-sight, VHF, HF and wireline channels.

Two VDC-500s can be used to route IP traffic over a radio subnet, forming a bridge over the radio link between two LANs. This allows native IP-based applications to use the radio links to bridge between the LANs, without experiencing the difficulties normally associated with such a radio bridge. The VDC-500 includes IP-layer software that "bundles" IP packets for more efficient transmission. The IP routing features in the VDC-500 include support for routing multicast IP datagrams across the radio network.

The VDC-500 is fully interoperable with ViaSat's line of Data Controller products (VDC-200, VDC-300, and VDC-400). The VDC-500 can act as a gateway between TCP/IP networks and MIL-STD-188-184 networks. It works together with existing LAN-based mail and file servers to provide mail and FTP service to a network of ADC users. When acting as a gateway, the VDC-500 uses application layer proxies for the widely used SMTP and POP email protocols, and for File Transfer Protocol (FTP). The application proxies perform several steps of the application protocol before accessing the radio links, thus further increasing the efficiency and speed as seen by the end user.

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## Key Features

- Internet Protocol over Radio
- IP Routing
- Multicast Protocol Support
- Gateway for IDC Users
- Flexible Standard Interfaces
- Browser Management Interface
- Enhanced Error Correction
- Real Time Data Compression

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## Specifications



### FUNCTIONAL

Operating Modes	Half-duplex, full duplex, simplex
Channel Rate	Up to 128 kbps
Channel Types	SatCom, LOS, HF, VHF, wireline
Management	Command line via telnet or TTY console emulator; HTTP browser via ethernet
Network Size	Up to 64 users per channel
Message Connectivity	Point-to-point, multicast, broadcast
Channel Access	CSMA or Instant-On
Compatible COMSEC Devices	AN-CSZ-1A, KY-57/58, ANDVT Tacterm, KY-99/99A/100, KG-84 A/C, KIV-7, STU-III, STE and others

### INTERFACES

Data Interface	Ethernet RJ-45 or AUI, serial DB-9 for TTY console or SLIP
COMSEC Interface	MIL-188-114 compatible, DB15 connector 75 bps - 128 kbps, sync
Voice Interface	H-189/H-250 handset

### ENVIRONMENTAL

Temperature	Operating temperature 0°C - 50°C Storage Temperature -30°C - 50°C
Humidity	<90% non-condensing
Altitude	40,000 ft.
Vibration	20-20,000 Hz, 0.06 g <sup>2</sup> /Hz Aircraft, Ship, Vehicle
Shock	40G, bench, basic, crash safety

### PHYSICAL

Dimensions	3 inches high X 5.73 inches wide X 7.4 inches deep
Weight	3.25 lb
Volume	109 cubic in.
Mount	Standard avionics DZUS rail

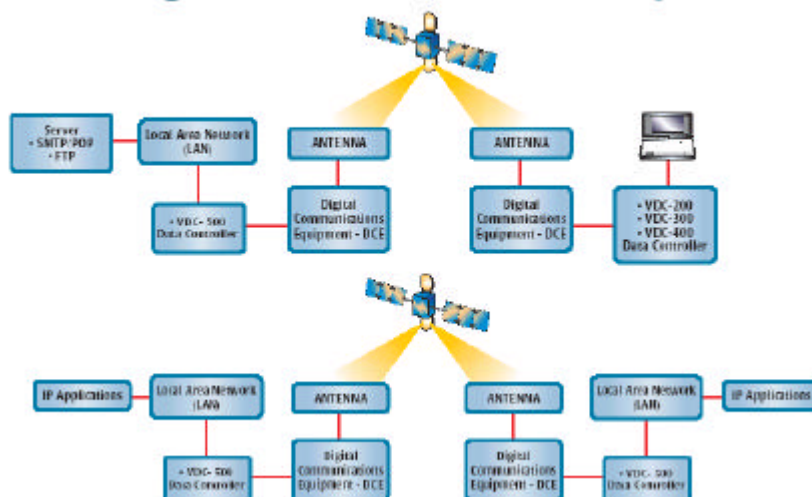
### ELECTRICAL

DC Input	18 to 36 VDC
Transient Protection	MIL-STD-704
Power Dissipation	7.5 watts operation, 6.25 watts standby

### ACCESSORIES & OPTIONS

Cables	Computer; KY-57/58; KG-84A/C; KY-99; AN/CSZ-1A; SINCGARS; STU-III; STE; KY-100; LST-5D/E; KIV-7; AN/PSC-5; AN/PRC-117F,-138B,-150; and others
Power Cables	Model VPS-502, wall mount power adapter, 100-240VAC, 50-60Hz, plugs for US, UK, Europe, and Australia
Mounting Adapter	Model VRA-301, allows two units to be mounted together in a 19" rack
Channel Simulator	Model VCS-232, ideal for testing VDC's when no radios are available

### Diagram of mobile communication options.



Rugged Systems is one of Europe's leading suppliers of rugged, mobile computer, display and communications solutions and services. Specialising in applications such as test & measurement, command and control, data acquisition, secure data & computing, TEMPEST and ultra-reliable message transfer over noisy tactical communication channels. The company strives to be innovative and provide cost effective solutions, through many years of knowledge and experience