

TACTICAL IP NETWORKING OVER COMBAT NET RADIO

Are You Getting the Picture? (Over Your Combat Net Radio)

The VDC-500 delivers the Common Operating Picture and IP routing over your existing combat net radio.



GIG & Internet Connectivity to the Last Tactical Mile
Run net-centric web applications over your existing combat net radio with the VDC-500 Data Controller. The VDC-500 works with any tactical radio to deliver the Common Operating Picture - even over severely degraded radio channels. With a ViaSat Data Controller (VDC), you can send error-free data and employ TCP/IP services over existing radios, creating network-centric connections that link warfighters on the tactical edge to the Global Information Grid (GIG).

Using a combat net radio, computer, and Data Controller, you can run critical combat communications applications such as Cursor-on-Target, Situational Awareness, Blue Force Tracking, whiteboard collaboration, chat, messaging, and email.

Trusted for TCP/IP – Even Over Channels Too Noisy for Voice

The bursty nature of TCP/IP traffic poses difficult challenges for half-duplex radio communication channels, causing timeout errors and delays due to low data rates. Featuring several ViaSat-developed technologies, the VDC-500 overcomes half-duplex issues and is field-proven to handle IP connectivity on a variety of challenging radio channels including UHF SatCom, UHF line-of-sight, VHF, HF and wireline channels.

IP Routing for Native IP and Multicast Applications

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 Data Controller includes IP-layer software that bundles IP packets for more efficient (less bursty) transmission. The IP routing features also support routing multicast IP data across a radio network.

Gateway for VDC Users – Provides Access to IP Networks

The VDC-500 is fully interoperable with ViaSat's line of Data Controller products, including the VDC-600 and VDC-800. 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 VDC users.

Fast, Reliable, Error-free – Ultra-Robust Protocol

The VDC-500 uses the same MIL-STD-188-184 data communications protocol that is implemented in all VDC products for fast and reliable data transfer across the radio link. It supports networks of up to 64 users per channel with point-to-point, multicast, and broadcast messages. A combination of Forward Error Correction and Automatic Request for retransmission (ARQ) with a unique application of diversity combining, transfers data as quickly as possible. These powerful error correction techniques send data over poor quality channels with bit error rates in excess of 15% as long as the radios and encryption devices are able to perform. Data from the user is automatically compressed before transmission and restored at the receiving end. Many users can share a single channel using the built-in cooperative carrier sense multiple access (CSMA) protocol to avoid collisions from simultaneous transmissions.

ViaSat eMail® – Full-Featured Software for eMail and FTP

When teamed with a VDC, the ViaSat eMail application delivers powerful electronic mail capabilities during tactical operations. Used with a VDC-500, ViaSat eMail is an intuitive, familiar-looking Microsoft® Windows® application that enables warfighters to send, receive and log FTP data and communicate with both IP-based and POP3 eMail. Warfighters rely on ViaSat eMail to send email, photos, map overlays and other documents over noisy radio channels. The software is available for free to VDC customers.

SPECIFICATIONS

GENERAL CHARACTERISTICS

Operating Modes	Half-duplex, full-duplex, simplex
Channel Rate	Up to 128 kbps (Call for details)
Channel Types	SATCOM, LOS, HF, VHF, wireline and others
Management	Command line via telnet or TTY console emulator

INTERFACES

Data Interface	Ethernet: RJ-45 or DB-15 AUI; Serial: DB9
DCE Interface	MIL-STD-188-114A or RS-232 compatible, DB-15 connector, 75-128,000 bps synchronous
Voice Interface	H-189/H-250 handset

POWER

DC Input Voltage	18 to 38V, DB9 connector
Transient Protection	MIL-STD-704
Consumption	7.5 watts operation

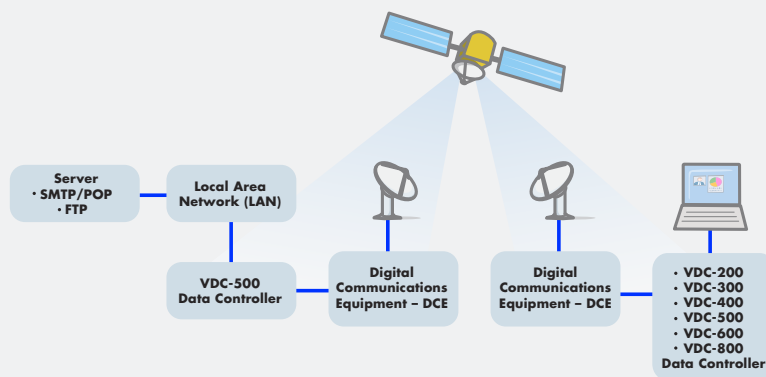
ENVIRONMENTAL

Operation Temperature*	-0° C to 50° C
Storage Temperature*	-30° C to 50° C
Humidity	< 90% non-condensing
Altitude	40,000 ft.
Vibration	20Hz-2kHz, 0.06 g ² /Hz Aircraft, Shipboard, Vehicular
Shock	40G, bench, basic, crash safety

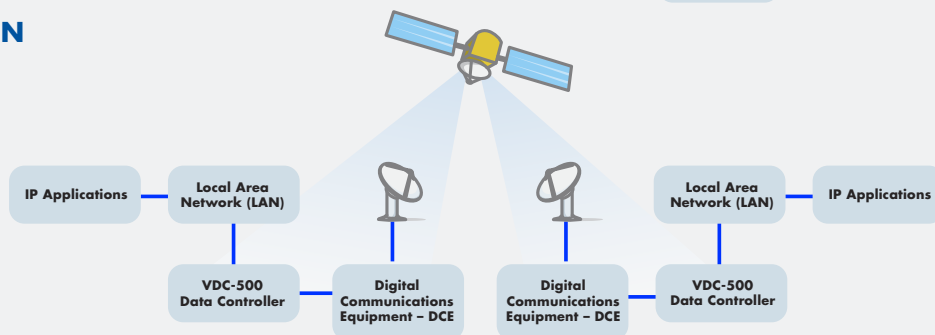
PHYSICAL CHARACTERISTICS

Dimensions (WDH)	5.73 x 8.5 x 3 in. (146 x 216 x 77 mm) including front panel knobs and rear connectors
Weight	3.25 lb
Volume	109 in ³
Mount	Standard avionics DZUS rail

Communications from a VDC Network to a LAN



Bridging two LANS over an RFN



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