

Modem and UHF Receiver All in One Chassis

Viasat's high-performance modem optimizes use of channel bandwidth to achieve UHF satcom Medium Data Rates (MDR) and adds a UHF receiver, all in one low-cost, flexible package.

Control the Turbo modem with either the Viasat Control Indicator (right), or Viasat's Network Terminal Control (VNTC) PC-based software.



The MD-1324A+(c)/U Turbo modem includes a UHF receiver and MDR data rates supporting all IW, DAMA, and DASA UHF SATCOM modes.



FOR AIRCRAFT, SHIP, SHORE OR PORTABLE APPLICATIONS

The MD-1324A+(c)/U provides modulation and/or demodulation to airborne, ship, shore, and transportable terminals operating over UHF 5 and 25 kHz non-processed transponders. The MD-1324A+(c)/U interfaces to UHF satcom radios (with a 70 MHz transmit interface) and fully supports the Legacy DAMA and IW modes of operation. The small, lightweight design is particularly well-suited to aircraft, ships, transportable terminals, or other UHF satcom applications with limited space and/or weight requirements. Downlink and uplink doppler correction allows interoperability with existing IW, DAMA, and DASA systems (e.g., TD-1271), including highly dynamic airborne platforms.

INTEGRATED WITH MANY SATCOM RADIOS

The MD-1324 modem has been successfully integrated and certified with UHF satcom systems containing the following radios: ARC-187, ARC-171, WSC-3, ARC-210, and RT-1771 for legacy DAMA operations.

ADAPTS TO FUTURE REQUIREMENTS

Users will be able to upgrade the MD-1324A (c)/U to fully support the Integrated Waveform (IW) with minor hardware changes. Programming access is through either an interface on the modem or through the PC Card slot in the Viasat Control Indicator. The modem provides orderwire encryption and Automatic Control (AC) orderwire processing that is required for interoperability.

MIL SPEC CERTIFIED/ENDORSED TO MIL-STD-188-181, -182, AND -183

The MD-1324A (c)/U is certified for all three MIL standard operating modes: MIL-STD-188-181, -182 and -183. Additionally, the frequency table position of MIL-STD-188-183A has been implemented. The MD-1324A+(c)/U upgrade provides full IW DAMA/DASA capability.

USER-FRIENDLY CONTROL

Viasat offers several different means of controlling the modem. With the companion Viasat Control Indicator, users have complete control over terminal configuration in a small chassis that is designed for airborne avionics or other rugged field operations. Users also have the option to control the modem via a PC executing Viasat's Network Terminal Control software.

SAME SIZE AS MD-1324(C)/U; INCLUDES A UHF SATCOM RECEIVER MODULE

The MD-1324A+(c)/U modem enables users of half-duplex radios (e.g., ARC-187, ARC-210, WSC-3) and other satcom UHF receivers to achieve full-duplex operation using only one radio. Re-engineering enables the MD-1324A+(c)/U to retain the compact size of our standard modem by fitting the UHF receiver into the same chassis, helping the user overcome space limitations or lack of satcom radios.

SUPPORTS ALL WAVEFORMS, DUAL DSPS PLUS MORE MEMORY FOR GROWTH

Faster dual DSP processors (TMS320C548) and increased memory ensure that all waveforms, including MIL-STD-188-181B Medium Data Rate (MDR), will operate with existing satcom radios. The MD-1324A+(c)/U has been certified by JITC with data rates up to 9,600 bps on 5 kHz channels and 56,000 bps on 25 kHz channels. The MD-1324A+(c)/U also includes support for changes in MIL-STD-181 for OTCIXS compatibility, and MIL-STD-188-182A for improved 5 kHz voice, as well as Integrated Waveform MIL-STDs (MIL-STD-188-181C, -182B, and -183B).

Viasat MD-1324A+(c)/U IW, DAMA, DASA Satcom Modem

SPECIFICATIONS

GENERAL CHARACTERISTICS

Operating Modes	5 kHz DAMA (bps)	Non-DAMA (kpbs)	25 kHz DAMA (bps)
USER I/O Rate	75, 300, 600, 1200, 2400	1.2, 2.4, 4.8, 7.2, 8.0, 9.6, 16.0, 19.2, 28.8, 32.0, 38.4, 48.0, 56.0	75, 300, 600, 1200, 2400, 4800, 16000
Burst Rate	600, 800, 1,200, 2400, 3000 sps	N/A	9.6, 19.2, 32 ksp/s
Modulation	SOQSPK	SBSK, FSK, CPM	BPSK, DEQPSK
Coding	R1/2, 3/4, 7/8	RS	RS1/2, 3/4
I/O Ports	2	1	1
Control	MIL-STD-188-114 » Viasat Control Indicator » PC or Workstation		
IW	All mandatory rates supported		
Key Fill	KYK-13, KYX-15, KOI-18, AN/CYZ-10, SKL		

PERFORMANCE CHARACTERISTICS

Frequency Offset	Acquisition with up to ± 1200 Hz offset
Doppler Correction	Uplink for operation with narrow bandwidth acquisition modems (e.g., TD-1271)
BER	Within 1.5 dB of theory
Acquisition	Typically <5 seconds

MD-1324A+(C)/U MIL-STD CAPABILITIES

188-183	188-181B	188-182B	Encrypted O/W
Yes/(AC/DC)	Yes	Yes	Yes

MD-1324A+(C)/U MIL-STD CAPABILITIES (IW)

188-183B	188-181C	188-182B	Encrypted O/W
Yes	Yes	Pending	Yes

INTERFACES

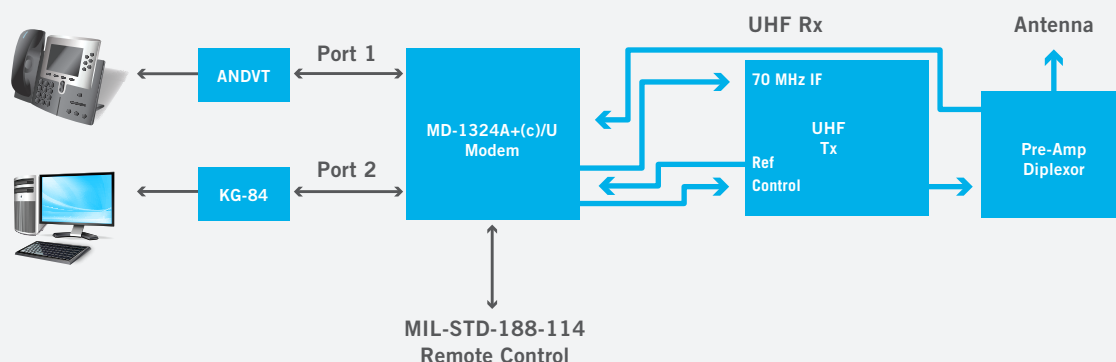
Data	MIL-STD-188-114 balanced or unbalanced; synchronous data, clock, and control
Compatible	Minterm, Tacterm, Airterm, Vinson
COMSEC	KG-84 and others
Freq Ref In	1,5, or 10 MHz STD, 0 ± 10 dB
TX	70 MHz IF: 0 dBm nominal
RX	"A" 243 to 270 MHz: Receive level ≤ -10 dBm, Noise figure <12 dB
Remote Control	Asynchronous to RS-422, RS-423, and RS-232
Radio Control	MIL-STD-188-114 asynchronous allowing interface to RS-422, RS-423, and RS-232
Power Source	16 to 40 VDC (28 VDC nominal) MIL-STD-704A, 21 W nominal

PHYSICAL CHARACTERISTICS

Dimensions (W x H x D)	4.88 x 6.75 x 10.63 in. deep (# 1/2 ATR short)
Volume	<350 in ³
Weight	<11 lb (<13 lb with tray)

ENVIRONMENTAL/EMI

Operational Temperature	-40° to +71° C
Altitude	0 to 70,000 ft (MIL-STD-5400 Class 2)
Humidity	100%
Vibration	MIL-STD-5400 (fixed & rotary wing aircraft)
Shock, Crash Safety, Salt Fog	MIL-STD-5400
Cooling	Natural convection cooled (no forced air)
EMI	MIL-STD-461



CONTACT

SALES

TEL +1 760 522 4482 FAX +1 760 929 3968

TECHNICAL SUPPORT

TEL +1 760 476 2457 EMAIL gov.satcom@viasat.com WEB www.viasat.com