

## 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 (ABOVE), 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).

## SPECIFICATIONS

### GENERAL CHARACTERISTICS

Operating Modes	5 kHz DAMA (bps)	Non-DAMA (kbps)	25 kHz DAMA (bps)
<b>User I/O Rate</b>	75, 300, 600, 1,200, 2,400	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, 1,200, 2,400, 4,800, 16,000
<b>Burst Rate</b>	600, 800, 1,200, 2,400, 3,000 sps	N/A	9.6, 19.2, 32 kbps
<b>Modulation</b>	SOQSPK	SBSK, FSK, CPM	BPSK, DEQPSK
<b>Coding</b>	R1/2, 3/4, 7/8	RS	R1/2, 3/4
<b>I/O Ports</b>	2	1	2

**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  $\pm 1200$ 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 sec.

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

188-183	188-181B	188-182A	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,  $0 \pm 10$  dB

**TX** 70 MHz IF: 0 dBm nominal

**RX** "A" 243-270 MHz: Receive level  $\leq -10$ 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 Watts nominal

### PHYSICAL CHARACTERISTICS

**Dimensions (WHD)** 4.88 x 6.75 x 10.63 in deep (# 1/2 ATR short)

**Volume** < 350 cubic in

**Weight** < 11 lb (<13 lb with tray)

### ENVIRONMENTAL/EMI

**Operation Temperature**  $-40^{\circ}$  C to  $+71^{\circ}$  C

**Altitude** 0 to 70,000 ft (MIL-STD-5400 Class 2)

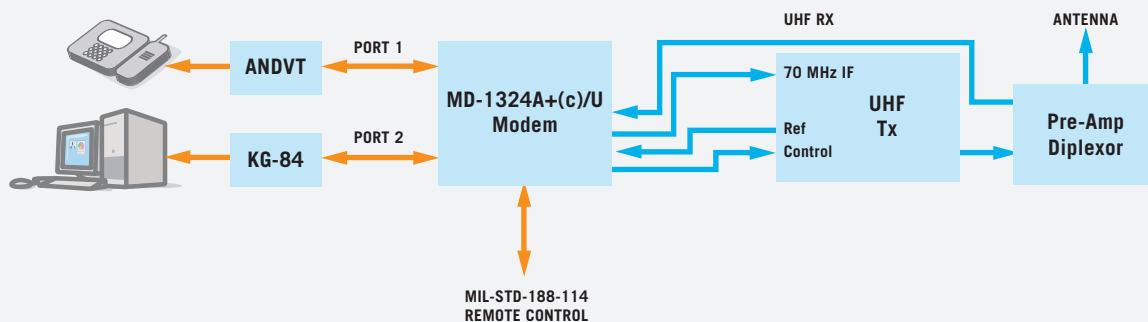
**Humidity** 100%

**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

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### SALES

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### TECHNICAL SUPPORT

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