RT-1831(P)/A
Airborne UHF Terminal

The RT-1831(P)/A provides full-duplex UHF DAMA satcom and LOS capability with optional pre-detection combining for improved performance.

F-CARD TERMINAL — STANDARD ATR CHASSIS WITH ROOM FOR GROWTH

The RT-1831(P)/A UHF satcom terminal provides either one or two UHF satcom channels using a VME64x open architecture that enables easy modification of configuration or selection of only the features necessary to meet user requirements. With an internal 50W or 100W power amplifier, LNA/diplexer, and antenna, the RT-1831(P)/A provides a complete low-cost, airborne-qualified, UHF satcom terminal that meets all existing and proposed Demand Assigned Multiple Access (DAMA) waveform standards. The core terminal is made up of four VME modules: 5/25 kHz DAMA & non-DAMA modem; four-port input/output (I/O) module; UHF upconverter (U/C); and UHF downconverter (D/C). Additional available slots on the RT-1831 can accommodate a second independent channel or alternatively mix and match variations of other VME-based functions such as additional I/O modules (maximum of 8 per channel) and spatial processors for antenna combining or interference rejection. All ViaSat DAMA terminals conform to MIL-STD-188-181B, -182A, and -183. A simple software download will upgrade the terminal to other MIL-STD revisions, such as -183A, as they become available.

OPEN VME ARCHITECTURE — FOR MODULAR GROWTH

The VME64x architecture of the RT-1831(P)/A promotes modularity and growth of the terminal. You can add additional channels by adding VME modules. The open architecture enables low-cost growth paths for other features and functions.

EXPANDABLE — VME MODULARITY PROVIDES MANY FLEXIBLE OPTIONS

The modular design of the RT-1831(P)/A makes it easy to expand capabilities. For example, the terminal can be configured for either single or dual-channel operation. Additionally, each channel can operate either UHF satcom only or both UHF satcom and LOS by selection of the appropriate U/C and D/C modules. Pre-detection combining is offered as a P3I upgrade by adding a Spatial Processor Module and up to three additional D/C modules for a maximum of four input antenna combining on each channel. Combining can provide up to 6 dB performance improvement over conventional single antenna operation.

VIASAT CONTROL INDICATOR — OR USE OTHER CONTROL OPTIONS

The RT-1831(P)/A may be controlled by a variety of means including the ViaSat C-12480/U Control Indicator, serial asynchronous interface (PC), Ethernet interface, or MIL-STD-1553. ViaSat's Network Terminal Control (VNTC) software is also available to control the terminal.

C-12840/U

SPECIFICATIONS

GENERAL CHARACTERISTICS

Operating Modes	25 kHz DAMA	5 kHz DAMA	Non-DAMA
User I/O Rate (bps)	75, 300, 600, 1200, 2400, 4800, 16000	75, 300, 600, 1200, 2400	1200, 2400, 4800, 6000, 7200, 8000 9600, 19.2K, 28.8K, 38.4K, 48K, 56K
Burst Rates	9.6, 19.2, 32 ksps	600, 800, 1200, 2400, 3000 sps	N/A N/A
Modulation	BPSK, DEQPSK	SOQPSK	SBPSK, FSK, CPM
Coding	R1/2, 3/4	R1/2, 3/4, 7/8	RS
I/O Ports	4	2	1

Control (all)

- MIL-STD-188-114 Compatible
  - C-12480/U Control Indicator
  - PC based Control Software
- MIL-STD-1553B Bus
- Ethernet

INTERFACES

Data MIL-STD-188-114 compatible balanced or unbalanced; synchronous data, clock and control

Compatible COMSEC AN/USC-43 (ANDVT), KY-99A, KY-100, KY-58, KG-84A/C; KIV-7 and others

Frequency 1, 5 or 10 Mhz STD, 0 ± 10 dBm

Reference Input IF Interface

- **TX:** 292 to 318 Mhz, 50 ohms
- **RX:** 243 to 270 Mhz, 50 ohms

Remote Control Via Ethernet, MIL-STD-1553 bus or MIL-STD-188-114 compatible asynchronous allowing interface to RS-422, RS-423 and RS-232

Power Source

- 22 to 31 VDC (28 VDC nominal)
- MIL-STD-704A (50 Watts nominal)
- AC Power Req: 400 HPA, 3 phase 200 VAC L-L AC power per MIL-STD-704A
- DC Power Req: 600W max
- AC Power Req: 600W max

HPA Control MIL-STD-188-114 compatible asynchronous allowing interface to RS-422, RS-423 and RS-232

PERFORMANCE CHARACTERISTIC

Frequency Offset Acquisition with up to ± 1200 Hz offset and up to 32 Hz/sec rate of charge

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

PHYSICAL CHARACTERISTICS

Dimensions (WHD) 10.12 x 7.62 x 19.62 in

Volume < 1513 cubic in

Weight < 50 lb

Weight w/Tray < 60 lb

ENVIRONMENTAL/EMI

Operation Temperature -40° C to 50° C

Altitude 0 to 50,000 ft

Humidity 100%

Vibration MIL-STD-5400 (fixed and rotary wing aircraft)

Shock, Crash Safety MIL-STD-5400

Salt Fog MIL-STD-5400

Cooling Natural convection cooled (no forced air)

EMI MIL-STD-461

WAVEFORM CAPABILITIES

MIL-STD-188-181B
MIL-STD-188-182A
MIL-STD-188-183

CONTACT

6155 EL CAMINO REAL, CARLSBAD, CA 92009

SALES
TEL 760.522.4482 **FAX** 760.929.3968 **EMAIL** GOV.SATCOM@VIASAT.COM **WEB** WWW.VIASAT.COM

TECHNICAL SUPPORT
TEL 760.476.2457