DOCCT/S TS-4528A

DAMA/IW Orderwire Channel Controller Trainer/Simulator

Manage IW/DAMA/DASA Services

A turnkey trainer/simulator for UHF satellite communications (SATCOM), Viasat DOCCT/S has the flexibility to address an entire range of UHF DAMA and IW satellite communications equipment training, integration, and mission rehearsal requirements.

TRAIN, INTEGRATE, REHEARSE PRIOR TO GOING OVER-THE-AIR

Viasat DOCCT/S replicates Demand Assigned Multiple Access (DAMA) and Integrated Waveform (IW) network control station and legacy network terminal operations. Internal satellite simulation includes frequency translation, digital transponder band-limiting and hard-limiting, variable digital propagation delay, and thermal noise. Viasat DOCCT/S empowers developing, integrating, and training on UHF satellite communications equipment, without the expense and time constraints associated with accessing live satellite channels.

COMPACT, RUGGED, PORTABLE—RACK-MOUNTED COMPONENTS IN A SHOCK-PROOF CASE

The Viasat DOCCT/S terminal architecture is based on Viasat's proven RT-18XX family of UHF SATCOM terminals, with additional hardware and software to emulate network control and communication over a UHF satellite transponder. A set of five VME modules consisting of an I/O module, DSP module, transmitter module, receiver module, and satellite simulator module in a Viasat DOCCT/S terminal replicates two to four UHF SATCOM channels.

5 KHZ & 25 KHZ CHANNELS—PER MIL-STD-188-181B/C, -182A, -183B, -183, -183A, -185A

Viasat designed and developed the fielded and JITC-assessed IW Phase 1 and 2 Channel Control system, providing increased bandwidth efficiency and communications quality. Viasat DOCCT/S reproduces IW Phase 1 and 2 Channel Control system software in the rack-mount PC so terminal login and communications service requests are handled with the MIL-STD required protocol. Viasat DOCCT/S also includes free training at Viasat covering DAMA/IW theory, operation, maintenance, and troubleshooting procedures for up to one year after delivery. For an additional travel surcharge, training can be done at a customer site.

ACHIEVE PROJECT OBJECTIVES—CONFIGURE OPERATION PARAMETERS

Viasat DOCCT/S is easy to configure. DOCCT/S can include TRANSEC for encrypted orderwires. DOCCT/S Multiport UHF Interface Drawer (MUID) allows up to four user network terminals to connect directly at UHF. Configure DOCCT/S for local RF operation to enable up to 2,000 additional user network terminals to participate in LOS UHF SATCOM via antenna at ranges up to 12 miles.

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SPECIFICATIONS

OPERATING MODES

IW	5/25 kHz, MIL-STD-188-181C, -182B, -183B, -185A
DAMA/DASA	5 kHz, MIL-STD-188-182A; 25 kHz, MIL-STD-188-183- and 183A supported
Dedicated Access	MIL-STD-188-181B and other waveforms

PERFORMANCE

Satellite Simulation

- Frequency translation
- Digital band-limiting and hard-limiting
- Variable digital propagation delay
- Variable digital thermal noise

Channel Simulation

- 1 to 4 UHF SATCOM channels; 1 channel per set of 5 removable 6Ux160 VME I/O, DSP, Receiver, Transmitter, and SatSim modules
- Multi-channel system based on Viasat RT-1828 9U 20-slot network terminal
- Encrypted orderwire via optional NSA-endorsed Orderwire Encryption Board (OEB)

User Terminal

Transmit Frequency	292 to 318 MHz
Receive Frequency	243 to 270 MHz

Interoperability All JITC assessed UHF SATCOM terminals

User Interface (Direct Connection)

- 1 to 4 user terminals in addition to local RF (direct connection) connected user terminals
- Provisions for half or full-duplex user terminals via MUID N-type connectors
- RF input power protection up to 250 W
- Provisions for remote user terminal location via user variable downlink attenuation

User Interface (Local RF Connection)

- 1 to 2,000 user terminals in addition to directly connected user terminals
- Configuration options from 1 mile up to 12 mile range

Interoperability

- KY-57, KY-58, KY-99, KY-100M, KIV-7, KYV-5, KG-84, AN/USC-42, VDC-550, VDC-850

User I/O Rates (bps)

IW	75, 300, 600, 1200, 2400, 4800, 6000, 7200, 8K, 9.6K, 16K, 19.2K, 28.8K, 32K, 38.4K, 48K, 56K
5 kHz DAMA	75, 300, 600, 1200, 2400
25 kHz DAMA	75, 300, 600, 1200, 2400, 4800, 16K
Non-DAMA	1200, 2400, 4800, 6000, 7200, 8000, 9600, 19.2K, 16K, 28.8K, 32K, 38.4K, 48K, 56K

PERFORMANCE (CONTINUED)

Modulation	SOQPSK, BPSK, DEQPSK, (S)BPSK, FSK, CPM
Cryptographic Keyfill	KYK-13, KYX-15, KOI-18, AN/CYZ-10, SKL
External Reference	1, 5, or 10 MHz

Operator Interface

- DOCCT/S Planning Tool (DPT) network management and planning tool (optional)
- Terminal operation documentation via printable event log and alarm display
- Windows® 11 operating system

Storage Devices

- 160 GB or greater hard disk drive
- CD-ROM drive

Portability, Transportability

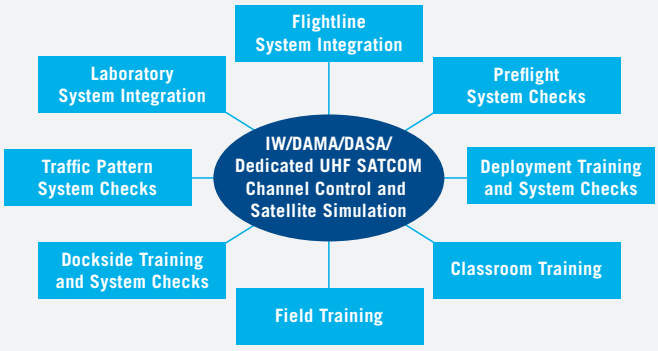
- Shock-proof, fungus-resistant, water-tight, air-tight, portable case equipped with internal storage pouch and stainless external hardware including anti-shear locks, 90° stop metal handles, lifting/tiedown rings, coupling catches, locking cables/hasps, and removable swivel-style castors
- Turnkey set-up with pre-installed 19 in. rack-mount components, rack-mounted PC and factory-preset database parameters
- User-configurable database parameters for custom default start-up configuration

MECHANICAL

Dimensions (W x H x D)	29 x 34 x 30 in.
Weight	230 lb. (two-channel system)
Power	110 to 240 V to all installed equipment

GENERAL

Technical Documentation	Commercial Operation and Maintenance Manual (English)
Hardware Warranty	One year on Viasat, Inc. manufactured items, with 30-day turn-around time at Viasat, Inc. depot maintenance facility
Installation and Training	Provided at delivery, in English



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