

SDT 500

Secure Data Transceiver

The SDT 500 is a rugged data encryption transceiver designed specifically for low power consumption in harsh conditions. Developed initially by MASS as a key component of the ATRACKS helicopter and ground data tasking system, the SDT 500 is a fully accredited device using the Pritchel II chipset developed for the Bowman programme.



FEATURES

- High Grade encryption PRITCHEL II algorithms
- CESG certified High Grade
- Half duplex synchronous or asynchronous operation (75 to 9,600 baud)
- Minimal 1200 bit encryption overhead for optimised data throughput
- Advanced Crypto synchronisation scheme
- Built in test and Crypto alarms for simple operation
- 8 built-in Key Variable (KV) stores
- Emergency purge of keystores
- Very low power consumption
- Extended operating temperature range
- Full airworthiness (Form 100A) clearance
- Lightweight, fully rugged design
- Small footprint
- Small and easy to lock away in secure container when not in use
- Designed to interface with portable PC devices

ADVANCED CRYPTO KERNEL TECHNOLOGY

The PRITCHEL II Crypto Kernel ASIC provides efficient High Grade algorithms and a powerful synchronisation scheme including forward error correction.

POWERFUL KEY MANAGEMENT FUNCTIONS

The SDT 500 provides 8 battery-backed secure Key Variable (KV) stores capable of retaining the fill for up to 200 days. The KV manager also provides integrity checking as part of the fill process. The KV stores are filled using the MASS-developed CFD 900 Fill Gun (BIDC/5004) – see separate data sheet.



trusted to support secure operations

MASS is an independent UK Systems House with a strong Defence & Aerospace market focus, offering specialist skills in:

- Electronic Warfare
- Technology & Innovation
- Information Technology

MASS (Head Office)
Grove House
Rampley Lane
Little Paxton St Neots
Cambridgeshire PE19 6EL
United Kingdom

Tel: +44 (0)1480 222600
Fax: +44 (0)1480 407366

MASS (Lincoln Office)
1 Alumina Court
Tritton Road
Lincoln
Lincolnshire LN6 7QY
United Kingdom

Tel: +44 (0)1522 502050
Fax: +44 (0)1522 690250

E-mail: systems@mass.co.uk
Web Site: www.mass.co.uk

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General

Encryption	Pritchell II High Grade encryption algorithms
Accreditation	High Grade awarded Apr 04
Size	150 x 200 x 36 mm
Weight	970 gm

Operation

Processor	Pritchell II Application Specific Integrated Circuit (ASIC)
Type	Semi duplex
Speed	Maximum ASIC speed 288 kbs
Keystores	8 selectable key variable stores, battery maintained
Fill Standard	DS 102 encryption fill protocol
Indications	Warnings: Invalid Key, Incorrect Load, Missing Key, Pritchell ASIC failure Fill gun Connection
Test	Built in LED test

Security

Keystore security	Purge button with sprung cover protection – purges all stores E-purge on battery removal E-purge on removal of rear panel CESG anti-tamper labels
Kernel security	Randomise button to scramble empty store

Power

Requirement	15 – 36V DC
Consumption	17mA @ 28V
Keystore Battery	+3.6v, 2.1 A/Hr Lithium AA-size, Disposable, draws < 0.3mA on shutdown. Approx life : 200 days

Interfaces

IN (Red Data)	RS232 Serial 9600 baud – 8 bit - even parity – hardware handshaking
OUT (Black Data)	RS232 Serial Sync: clock from external source (modem), or Async: Baud Rates 75 - 9600

Environmental

Temperature	-40 to +75 °C (+90°C storage)
Humidity	35% to 85% (relative) (BS 3G.100 Part 2)
Pressure	523 mm Hg (10,000 ft)
Sustained Acceleration	6g for 10 s (DEF STAN 00-35:1999 (Part3)/3)
Vibration	Helicopter (SK4) main fuselage zone mount. (DEF STAN 00-35:1999 (Part3)/3)
Noise	140 dB, 31.5 to 10,000 Hz for 3 hours (DEF STAN 00-35 (Part 3)/3)
EMC	DEF STAN 95-41 (Part 3)/5
Power Supply	DEF STAN 61-5 (Part 4)/2. DEF STAN 61-5 (Part 6)/5. BS 3G.100 : Part 3 : 1979
Microbiological	DEF STAN 00-35 (Part 3)/3 Test CN1
Fluid	DEF STAN 00-35 (Part 3)/3 Test CN4
Shock	30 g, 18 ms, 4 shocks (DEF STAN 00-35 (Part 3)/3)
Drop & Topple	10 to 50 mm, 12 shocks (DEF STAN 00-35 (Part 3)/3)
Bump	10 g, 18ms, 1002 shocks (DEF STAN 00-35 (Part 3)/3)
Tropical Exposure	95% rh, 20 to 35 °C (BS 3G.100 Part 2)
Drip-Proof (operational)	379 dm ³ /m ² /hr (DEF STAN 00-35:1999 (Part3)/3)
Dust & Sand	2 kg/m ³ Coarse grade, Turbulent, for 2 hours (DEF STAN 00-35 (Part 3)/3)
Salt Atmosphere	Salt spray at 15 to 35 °C for 2 hours, then storage at 40 °C, 93% rh for 20 to 22 hours, repeated twice(DEF STAN 00-35 (Part 3)/3)
Explosive Atmosphere	PAEWG/R/2

