

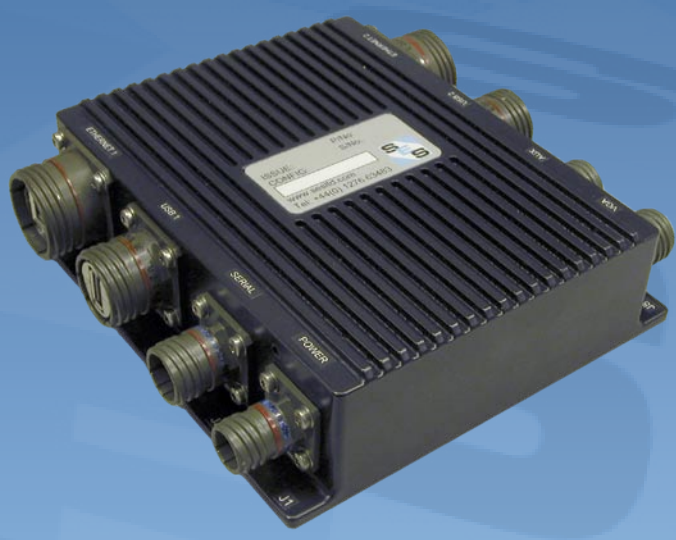
Data Processing

S3DP-V

SES Solid State Data Processor
Vehicle Format



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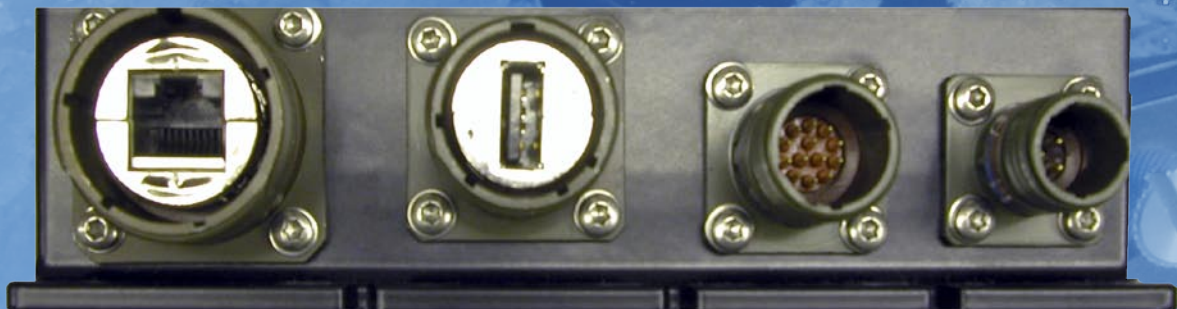
SES Solid State Rugged Computing

The SES range of Solid State Data Processors (S3DP Family) offer an extremely powerful, solid state, processing solution with a significant range of out of the box inputs and outputs.

The SES rugged computer S3DP-V supports all major operating systems. The product delivers PC technology in demanding rugged vehicle applications.

Where size and space are at a premium, the S3DP-V product packs maximum processing power and interfaces into the minimum space envelope. Rugged performance in vibration, extended temperature range and environmental protection is supported by Mil Spec qualification.

The S3DP-V is a computing-specific variant of the SES S3DR data recording solutions, which are used operationally throughout the world in a wide range of mission critical applications. The S3DP-V products benefit from 50+ man years of existing investment, together with ongoing investment in the S3DR product range.



The S3DP-V offers a qualified rugged solution to general purpose computing requirements. S3DP-V is a solid state data processor that can be used in extreme environments including vehicle and naval applications. It has a wide operating temperature performance (-40°C to $+80^{\circ}\text{C}$), as well as extreme resilience to shock, vibration and acceleration.

Construction is a rugged two-part aluminium enclosure complete with a high-performance and scratch-resistant finish that provides total protection against corrosion and all common contaminants.

The product is fitted with military specification connectors which can be capped when not in use, ensuring protection to IP67 standards against water and dust ingress.

S3DP-V employs filtering and isolation to achieve high levels of EMC immunity and emissions performance.

On Board GPS

An optional GPS module offering unrivalled 50 channel performance. The main features are:

- GNSS receiver utilizing GPS, GALILEO and SBAS (WAAS, EGNOS, MSAS, GAGAN) satellites
- High sensitivity -160dBm for tracking and reacquisition, -144dBm for cold starts.
- 1 second time to first fix for hot starts, 29 seconds for cold starts.
- Active antenna with short and open circuit supervisor.
- On-board back-up battery for storing ephemeris data independently of the main power to the unit.

On Board Accelerometer

An optional onboard accelerometer with the following characteristics:

- Three-axial sensor
- User programmable $\pm 2g$ or $\pm 8g$ levels
- Selectable output data rate of 100 samples/sec or 400 samples/sec
- Free fall detection.
- Motion activated interrupts with user selectable thresholds.

Optional USB Mass Storage Interface

S3DP-V includes on-board solid state storage up to 32GB

The S3DP-V can be configured as a Standalone USB V2.0 Mass Storage device. In this mode of operation the on board Solid State memory can be accessed as (if it were) a simple USB mass memory device that can be accessed by a USB V2.0 Host controller.

The S3DP-V does not require power in this configuration as all required power is provided by the USB 2.0 Host Controller.

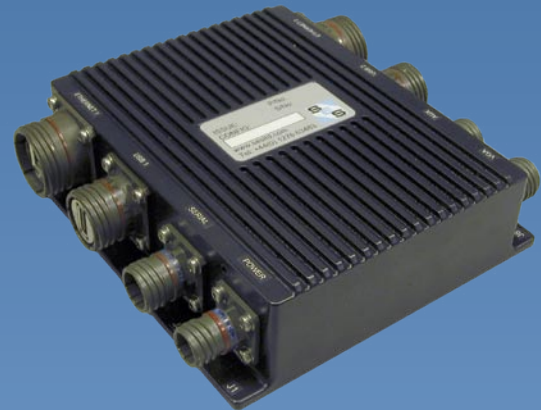
On board operating system files and applications can be modified, or the large onboard solid state memory can be used as a data store that can be remotely download over a USB 2.0 connection.

This extremely flexible approach allows the S3DP-V to be mounted in inaccessible locations, whilst retaining full unpowered access to all features of the unit in the absence of power. This eases maintenance and ensures that software and operating system upgrade or download of data is a simple in-situ operation.

Supported Operating Systems

- Windows XP/XPe*
- Linux:
 - Ubuntu 7.10 (Gutsy)
 - Gentoo (Kernel 2.6.20)
- RTOS: OnTime V5.11
- Object Ada V7.2.2

*Operating System of choice – Windows XP



Adaptable Connectors The Best of Two Worlds

Military type 38999 connectors are provided throughout for optimal operational performance. For convenience during development and non-operational trials, commercial USB 2.0 devices, and Ethernet, can quickly be installed using the familiar commercial push-fit connectors of the USB and RJ45 style.



S3DP-V Specification



Dimensions:	164 x 170 x 47mm (incl. connectors)	CAN bus interface:	2x CAN2.0B and PeliCAN 11-bit/29-bit identifier to 1Mbit/s
Weight:	1.6kg	Ethernet:	2x Ruggedised RJ45 Ethernet Port 10/100/1000 Mbps
Casing:	Aluminium Alloy	USB:	2x Ruggedised USB 2.0 HiSpeed 480Mbps
CPU:	Intel Atom Z510/Z530 1.1GHz/1.6GHz	Asynchronous Serial:	2x RS232/422/485 up to 1 Mbps Hardware/Software Flow Control
Chipset:	Intel US15W	VGA:	VGA Mil-Std-38999 Circular Connector
Display:	Chrontel 7022 Resolution up to 1600x1200	Stereo Line Out: (Optional)	Audio (Headphone/Mono Speaker) Mil-Std-38999 Circular Connector
Memory:	DDRII RAM up to 1GB	GPS: (Optional)	50-Channel GPS & GALILEO ready receiver
Solid State Memory:	Up to 32GB	Keyboard/Mouse:	Via USB 2.0 Port

OPERATING TEMPERATURE:	-40°C to 80°C	WATER INGRESS:	Mil Std 810F (Equivalent to IP67, connectors mated or capped)
STORAGE TEMPERATURE:	-55°C to 90°C	FINISH:	Matt black as standard Materials do not provide nutrients for Fungi (Mil-Std 810F) Unaffected by common contaminants
HUMIDITY:	10% to 90% (Condensing)	POWER:	24V 10W nominal (8W-15W depending on configuration) (6-32Vdc, fully protected against high voltage transients & reverse polarity connection)
EMC:	CE Marking		
SHOCK:	40g all axes to Mil Std 810F		
VIBRATION:	Random Mil-Std 810F		

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