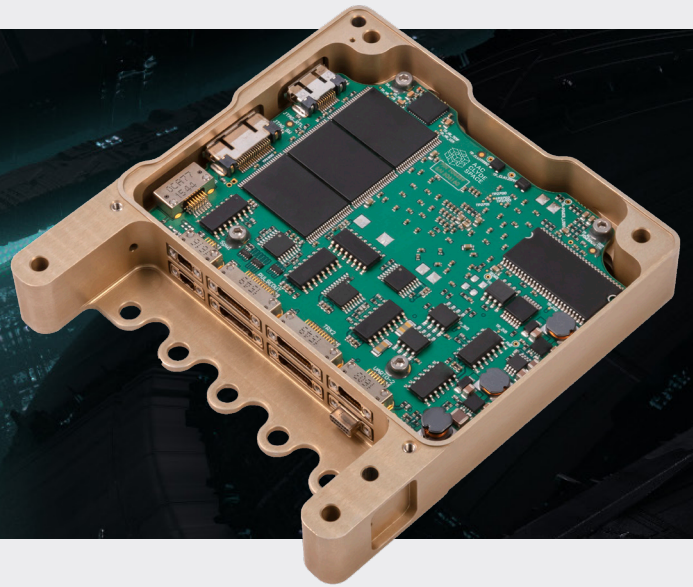


## DEPENDABLE DATA HANDLING



Flight proven across multiple mission applications for a range of customer requirements, this readily available solution has a reputation for reliability and performance for advanced satellite missions. The Sirius TCM LEON3FT has inherited advanced error detection and correction in its design. The real-time operating system runs on a LEON3FT fault-tolerant soft processor, compliant to IEEE 1754 SPARC v8, and fault tolerance is secured by using triple-modular redundancy on FPGA and memory scrubbing.

Sirius spacecraft avionics are modular in design, modules can be combined to offer redundant configurations or to simply accommodate mission specific requirements. The Sirius Command and Data Handling system has a standard single string system that consists of an on-board computer (Sirius OBC) and a combined mass memory with CCSDS stack (Sirius TCM). The OBC runs mission specific software and manage the spacecraft system. The TCM receives and stores payload data and platform housekeeping data while at the same time distributing telecommands and serving mass memory data to the transceiver.



### PERFORMANCE

With 50 MHz LEON3FT soft processor, RTEMS real-time operating system (RTOS) and 32 GB mass storage capacity delivering high-performance computing. Utilizing SpaceWire onboard the main data bus for high bandwidth and on-board data transfer. The transceiver interface uses CCSDS encoding standards for satellite link services, compatible with leading ground station networks.



### RELIABILITY

Sirius TCM solutions have autonomous single event latch-up protection in logic and data storage. Our inbuilt protections are based on over a decade of design heritage and guarantee realtime-on-time operations. Designed and qualified for five years in LEO.



### ADAPTIVE

Designed for the most demanding missions, the Sirius TCM comes with S-band and X-band transceiver interfaces and offers the ability to update software on orbit via telecommands. With pulse commands for low level, basic commanding.

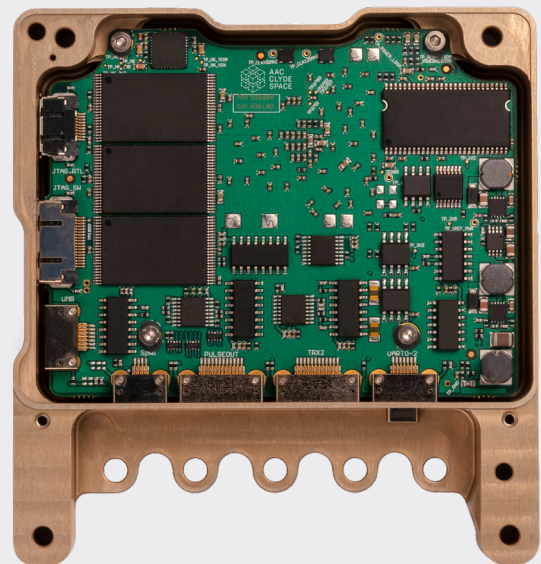
# TECHNICAL SPECIFICATIONS

General	
Expected Life	5 years in LEO
Processor	32-bit LEON3FT (IEEE-1754 SPARC v8) fault-tolerant processor
Processor Clock	50 MHz
SCET	15.25 us accuracy
SDRAM	64 MB (post-EDAC)
Instruction Cache	8 kB
Data Cache	8 kB
NVRAM	16 kB (post-EDAC)
Operating Temperature Range	-30°C to +60°C
Nonvolatile System Memory Nand Flash	2 GB (post-EDAC)
Mass Memory Storage	32 GB (post-EDAC)
Power Supply Input	4.5 V to 16 V

Interfaces		
SpaceWire	50Mbps	2
Serial Ports	RS422 / RS485 UARTs	3
Serial Ports	RS485-only UARTs	2
PSS Interface	RS485 PPS input	1
GPIO	3.3 V logic	12
CCSDS SBand	RS422 level data stream and TRX command and housekeeping	1
CCSDC XBand	LVDS level data stream and both RS422 and LVDS level TRX command and housekeeping	1
CCSDS Umbilical	RS422 level data stream	1
Pulse Command Output	RS422 level CPDU pulse output	12

Size, Weight & Power	
Nominal Power Consumption	1.3 W
Mass	130 g
Length	95.89 mm
Width	90.17 mm
Height	17.20 mm

To make an enquiry, request a quotation or learn about AAC Clyde Space's other products and services, please contact: [enquiries@aac-clydespace.com](mailto:enquiries@aac-clydespace.com)



**#SPACEISAWESOME**

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