



MTG. Scan assembly electronics (SCAE)



SENER AEROSPACE & DEFENSE / SPACE / SPACE

*MTG. SCAN ASSEMBLY
ELECTRONICS (SCAE)*

Cliente: ESA

País: Space

The main function of the MTG (Meteosat Third Generation) scan assembly electronics (SCAE) is to provide a controlled, high precision scan and sweep movement of the mirror of the main telescope.

To achieve this, the electronics house the following functions:

- Accurate control and input of the dual axis motors: N/S (North/South) and E/W (East/West)
- Control and input of blocking/unblocking motors of the mechanism
- Monitoring and fault management
- Communications with the spacecraft
- Conditioning and internal distribution of power
- Data processing and management

Most of these functions take place in SW developed by SENER on a LEON2 platform.

The unit consists of a nominal and a redundant section, both identical. Each of these sections houses the modules:

- Modules:
- DC/DC converter
- Backplane, to interconnect modules
- Processing module
- Acquisition and motor drive module



Aerospace & Defense



- **Mass:** 5 Kg
 - **Size:** Length: 247; height: 150; width: 175
 - **Thermal power:**
 - Operating range: -20°C: +50°C
 - With start at – 25°C
 - **Redundancy:** Two fully redundant sections in a single box.
 - **Input:** Input bus: +28 V
 - Power consumption: 25-30 W (approximate values according to the operating mode)
 - **Observability and controllability:**
 - Each section has various 1553 MilBus and SpaceWire communication buses for control and monitoring and dispatch of data, respectively
 - The unit implements a reduced set of PUS services
 - **Features of the processing module:**
 - Processor: LEON2 AT913E
 - Link SpW up to 80 Mbit/s (with capacity of 200 Mbit/s)
 - PROM memory: 32 kB
 - EEPROM memory: 4Mbit
 - SRAM memory: 5 MB (including fault detection and correction (EDAC))
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