

# Caractéristiques de l'instrument DORIS DGXX-S

## Caractéristiques techniques

- High precision Doppler measurements and on-board navigation
- provides elementary velocity measurements with an accuracy better than 0.3mm/s
- delivers real time PVT information in ITRF and J2000 reference frames with sub metric to centimeter accuracy depending on orbit and spacecraft characteristics
- capacity to provide geodesic data to help altimeter tracking
- Beacons tracking capability
- up to 7 beacons simultaneously (7 dual frequency channels)
- Autonomous operation
- routine high precision navigation mode reached autonomously
- only Maneuver prediction TC needed in routine, if any
- Power supply
- 22 - 37 V DC
- 23 W typical; 30 W at Warm up, less than 2 hr
- Telemetry/Telecommand Interface
- MIL-STD-1553 / CCSDS packet terminal protocol
- max TM rate < 4kbits/s (all TM activated)
- 2 Bi-Level status per chain (power and software status)
- 10 MHz reference signal distribution
- high stability
- monitored with an accuracy of  $10^{-12}$
- Internally cross-strapped
- On board time tagging capacity
- external pulse time tagging capacity or pps distribution
- microsecond accuracy W.r.t. International Atomic Time Scale

- CPU/SW
- rad tolerant design with SPARC ERC32 processor and memory fault detection and recovery
- whole software stored twice in 2 redundant banks of EEPROM ; may be fully uploaded w/o any mission interruption