

# SPARTE 2 L/S - band Compact Station

## Model references

### Versions

Conical Scanning	SPARTE d CS
Single Channel Monopulse	SPARTE d SCM
	<b>d</b> = reflector diameter (meters)
	= 1.2/ 1.5/ 1.8/ 2/ 2.4/ 3/ 4

# ACS-RTR

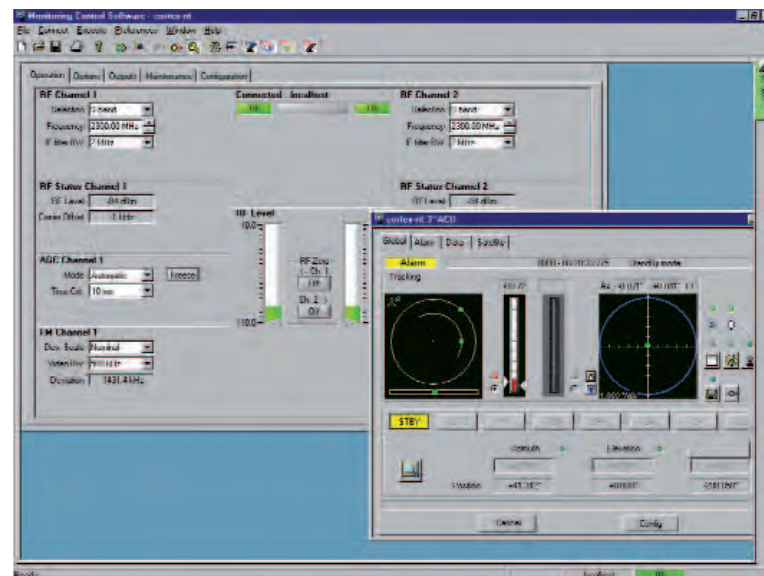
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**Integrated  
 Antenna Control System  
 &  
 Broad band Radio Telemetry  
 Receiver**  
 ◆◆◆



## User friendly Man Machine Interface

- ◆ Fully digital dual channel receiver with integrated Antenna Control System
- ◆ S or L/S band 2 channel polarity diversity combiner
- ◆ FM, PM, optional BPSK, QPSK, AQPSK available ; (other modulations : consult us)
- ◆ Programmable IF filtering, AGC time constant, and video filtering
- ◆ Slave mode (through Ethernet or RS232 link)
- ◆ Windows Microsoft™ user-friendly Graphical User Interface

For more information,  
 refer to the RTR data sheet.



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# SPARTE 2 - L/S-band Compact Station



with  
**SPARTE**

+

**CORTEX ACS-RTR**

**operate  
 your fixed or mobile  
 complete tracking station  
 for your flight test telemetry  
 or simplex/duplex data links applications**



## IN-SNEC®

includes :

- ◆ SPARTE S or L band antenna
- ◆ Antenna Control Unit
- ◆ Tracking receiver
- ◆ Dual channel receiver
- ◆ Combiner
- ◆ Optional bit synchronizer

## Main benefits

- TAILORED PEDESTAL DESIGN
  - ◆ High tracking accuracy
  - ◆ Low mechanical backlash
  - ◆ High stiffness
  - ◆ Unlimited azimuth rotation
- REVOLUTIONNARY ACS-RTR
- HIGHLY COMPACT, LIGHT, STRONG
  - ◆ rigid mechanics
  - ◆ steadiness to strongest winds
  - ◆ easy transportation
- EASY TO MOVE, TO INSTALL, TO MAINTAIN
- COST-EFFECTIVE
- HIGH PERFORMANCES
- FRIENDLY GUI, NO TUNING

IN-SNEC reserves the right to change specifications without notice - FTP0000107\_4.2

# L/S-Band tactical compact station

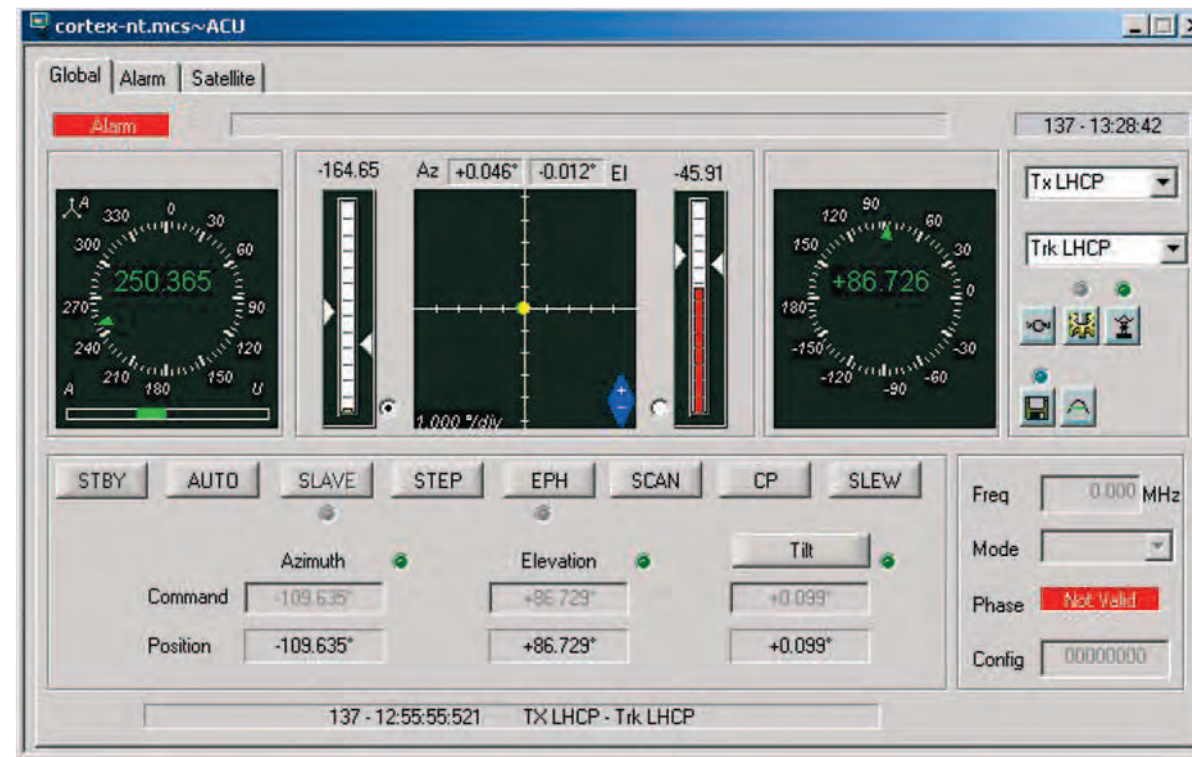
# with 2 axes pedestal

## Main features

- ◆ Telemetry IRIG 106 up to 20 Mbps ; Analog color video capability
- ◆ L and/or S band operation ; double polarization : simultaneously RHCP + LHCP
- ◆ Only 2 elements : ACS-RTR digital receiver and SPARTE antenna
- ◆ Pedestal with hemispheric coverage (-5°; +95°); 0.3° accuracy
- ◆ 40°/s<sup>2</sup> acceleration ; 25°/s speed
- ◆ Monopulse or conical scan tracking
- ◆ PC based architecture with Windows OS and Ethernet remote control
- ◆ High integration with drastically reduced hardware
- ◆ Many operational modes
- ◆ Easy remote control from a PC supporting the ACS-RTR interface
- ◆ Many available options
  - extended angular speed to 30°/s (dish smaller than 2m)
  - bit synchronizer (PCM/FM), frame synchronizer (IRIG106)
  - 4 channels preD/postD combiner
  - additional receivers, additional modulations
  - motorized video camera and screen to display the line of sight
  - external test equipment, spectrum analyzer software for ACS-RTR unit
  - auxiliary omni-directional antenna with automatic or manual switch

## Operating modes

In all modes, the antenna speed and acceleration are limited by the pedestal performances.



### SURVIVAL mode

In this mode, the antenna is set to its survival position : +90°

### LOCAL mode

The motions are controlled from the Antenna Drive Unit.

### [STBY] STAND BY mode

In this mode, drives controlling motors are inhibited.

### [AUTO] AUTOTRACK mode

This mode consists of servo-control the antenna onto the target by means of tracking errors generated by the Primary Feed. The ACU receives both azimuth and elevation tracking errors from the telemetry receiver (Cortex RTR).

- ◆ Autotrack mode offers sub-modes, as follows:
  - Automatic switch into tracking mode on high AGC threshold (Auto-acquisition mode)
  - Change to previous mode on low AGC threshold
  - Tracking either on LHCP or RHCP (manual selection)
  - Selection of servo bandwidth (2)
  - Multipath clipping (stand by on elevation axis, autotrack on azimuth axis).
- ◆ Typical antenna performance :
  - Tracking error : 1° for 6°/s<sup>2</sup> acceleration
  - Max acceleration of target withstand by antenna : about 20°/s<sup>2</sup>

### SUN TRACK mode

The sun can be used for tracking and pointing tests

### [SLAVE] SLAVE mode

The slave data is received via a LAN or an RS232 serial bus at a sub-multiple of 20 Hz.

- ◆ Command rate : 20Hz max

### [SCAN] SCAN mode

3 scan figures are available : box, azimuth, spiral scan. All scans are fully programmable (type, widths, sweep time)

### [CP] MANUAL POSITION mode

In this mode, the antenna homes onto a position command. When position control is selected, the position commands taken are automatically those of the current antenna position on the ACU display.

- ◆ Data input : keyboard
- ◆ Max execution time : 10s

### PRESET mode

Recall of azimuth/elevation/frequency from stored fixed target.

### [SLEW] SLEW mode (local mode only)

In this mode, each of the 2 axes is under proportional speed control via a joystick. No servo drift when the joystick is released.

## Main electrical specifications

### Pedestal

- ◆ Max speed 25°/s in any direction
- ◆ Max acceleration 40°/s<sup>2</sup> in any direction
- ◆ Elevation travel -5° to +95°
- ◆ Azimuth travel continuous
- ◆ Pointing accuracy ± 0.3° global

### Monopulse feed

- ◆ SCM monopulse type @500Hz, prime focus geometry
- ◆ Frequency bandwidth 2188 - 2475 MHz
- ◆ Gain before/after LNA\* ≥ 40dB /70 dB
- ◆ G/T\* @ f= 2300MHz; 20° el > 3 dBK<sup>-1</sup>
- ◆ Beamwidth\* @f= 2300MHz -3 dB 7°
- ◆ Side lobes (typical) -18 ± 2 dB
- ◆ Received polarizations simultaneously RHCP & LHCP

### Conical scan feed

- ◆ Specifications idem monopulse feed except:
- ◆ Frequency bandwidth L + S band
- ◆ G/T\* @ f= 2300MHz; 20° el > 6 dBK<sup>-1</sup>

### Zoom (option)

- ◆ With tracking
- ◆ Beamwidth 30°

### RTR

◆ see next page

### Primary power requirements

- ◆ Voltage 100 - 240Vac/50 - 60Hz
- ◆ Power\* 1000VA mean

### Environmental specifications

- ◆ Temperature range operating -35° to +55°C
- ◆ Relative humidity up to 100%, non condensing
- ◆ Wind (operational) 100 km/h
- ◆ Wind (survival) 200 km/h

\* depending on reflector dimension  
indicated values for Ø 2m

## Main mechanical specifications

- ◆ Available reflector diameters 1.2m; 1.5m; 1.8m; 2m; 2.4m; 3m; 4 meters
- ◆ Antenna (Ø 1.5m)
  - total weight 180 kg
  - height (in survival position) 1.65 m

## Ground station synoptic

