

Miniature Tracking Antenna System

OTA2 is a 2 axes rotations pedestal made of alloy structure and controlled by 2 brushless motors. Its compact size embeds motors electronic interface as well as a very light specific and customizable antenna.

OTA2 can be used for ground station or embedded onto mobile devices.

OTA2 is a miniature tracking system mainly composed of five complementary elements:

- a twin axes pedestal (OTA2)
- an embedded calculator (for control)
- a GPS sensor
- an inertial measurement unit (IMU)
- a MMI software

OTA2 uses GPS and IMU to track the ground station antenna at any time to ensure a permanent radio data link. Moreover, a very efficient MMI software allows the user a complete and particularly easy control and monitoring.



FEATURES

OTA2 is a 2 axes positioned. Its main advantages are:

- high rotation speed
- no-limit azimuth angle range
- large elevation angle travel
- excellent reactivity and real-time feedback
- compact size and low weight for easy mounting

SPECIFICATIONS

Pedestal:

Type:	Elevation & Azimuth
Rotation speed:	125°/ sec
Azimuth range:	No limit (slip ring)
Elevation range:	From -30° to +38°
Motor type:	Brushless
Antenna RF connector:	SMA F 50 ohms
Weight (with antenna):	2.45 Kg
Size:	269 x 168 mm
Color:	Grey RAL 7000

Antenna:

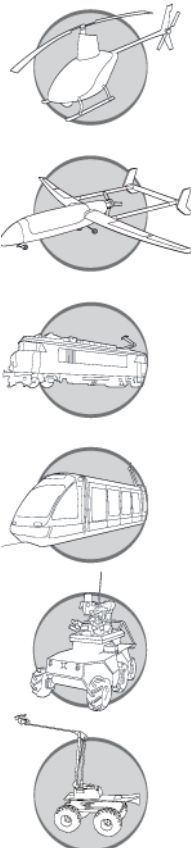
Frequency:	2.23, 2.25 or 2.46 GHz
Bandwidth:	100 MHz
Gain:	7 dBi
VSWR:	<1.8:1
Polarization:	Circular RHCP or LHCP

Antenna Control Unit:

Tracking:	GPS signal
Manual control:	PC command (RS232/485)

Environmental:

Operating Temperature:	-40°C to 70°C
Dust & Water resistance:	IP67
Power:	20 to 30 VDC / 7.5W



MMI SOFTWARE

The MMI software is specially designed for ease of use with an ergonomic layout.

It allows the user to access, in real time, calculator's data:

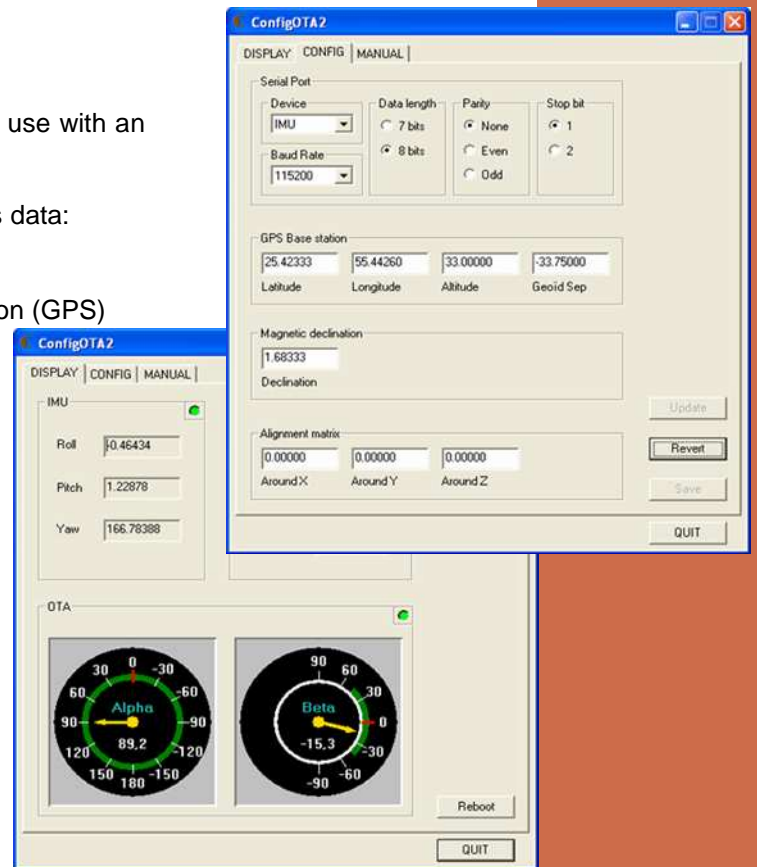
- Roll, Pitch and Yaw (IMU informations)
- Latitude, Longitude, Altitude and Geoid Separation (GPS)
- Alpha and Beta antenna's angles (Pedestral)

and to configure parameters such as:

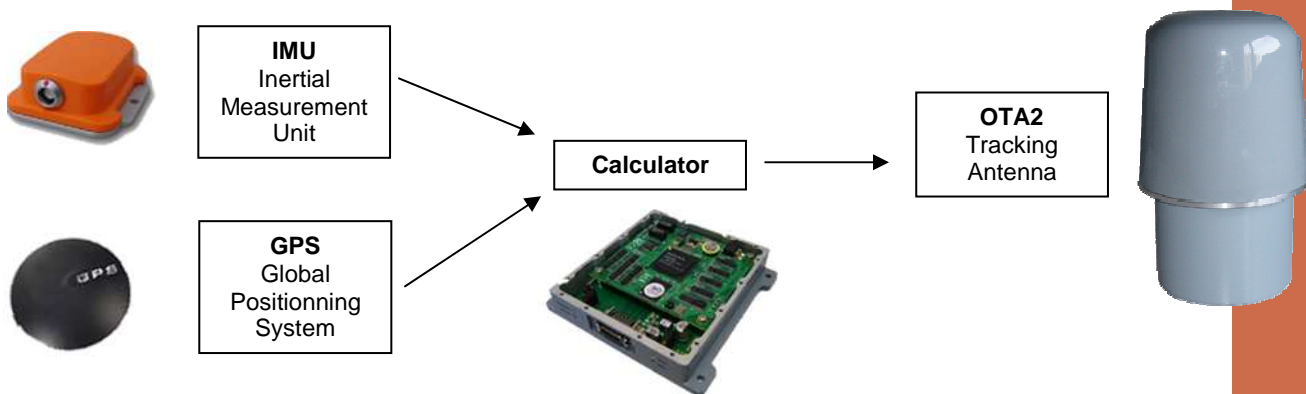
- RS232 serial port
- Magnetic declinaison
- Alignment matrix
- GPS Base station coordinates

The MMI software interprets and displays this information which is continuously updated (every second). The user can configure OTA2 and store the parameters values for any postprocessing.

This MMI software runs under Windows, PC, laptops, workstations or 19" rack mounted rugged PC.



TYPICAL APPLICATION



IMU

Pitch dynamic range:	+/-90 deg
Roll/Yaw dynamic range:	+/-180 deg
Max Onboard processing:	120 Hz
Max external processing:	512 Hz
Interface:	RS232, RS422
Power supply:	4.5 to 30 VDC
Consumption:	350 mW
Operating temperature:	-20° to 60°C

GPS

Tracked satellites:	12
Update rate:	1 Hz
Min signal tracked:	-175 dBW
Interface:	RS232
Power supply:	5 VDC
Consumption:	<170 mA @ 4.5-5.5V
Operating temperature:	-40° to +80°C

Calculator

Processor:	ARM9 32 bit 192 MHz
Memory:	16MB RAM, 8MB flash onboard
Serial interface:	4 RS232 serial ports
Ethernet interface:	10/100 Mbps Ethernet
I/O protection:	ESD protection
Operating system:	µClinux, Kernel 2.6
Embedded servers:	HTTP, FTP, Telnet
Power supply:	7 to 32 VDC
	(20 to 32 VDC with pedestral)
Consumption:	180 mA @ 24V without pedestal
	500 mA @ 24V with pedestal
Operating temperature:	-40° to +75°C
Size:	116 x 101 x 25 mm
Color:	Grey RAL 7000
Weight:	410 g