maturo GmbH
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3-Axis Positioner APL-50kg

The maturo 3-axis APL positioning system is especially designed for antenna measurements in near-field or far-field.

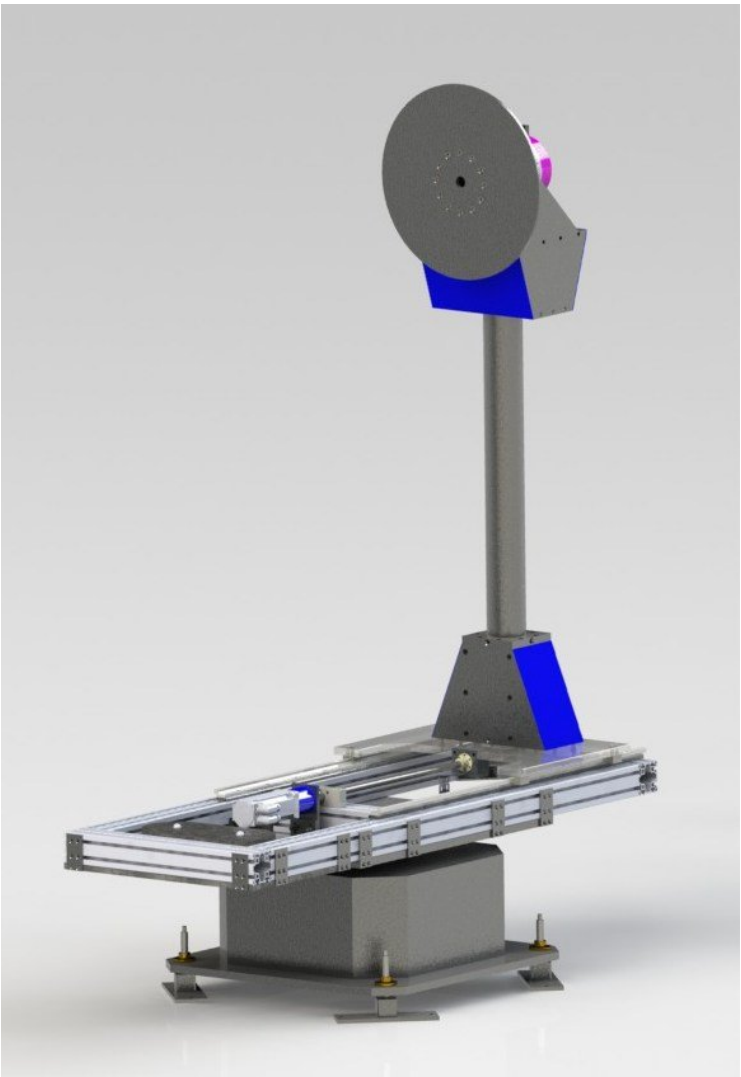

Fig.: Principle build-up of Positioner

Features:

- Used for antenna measurements
- Independent rotations azimuth and polarisation
- Variable speed adjustments at all axes
- Possibility of operation in manual, semi-automatic and simultaneous remote control mode via IEEE 488.2 (GPIB bus) with the controller NCD using fibre optic control
- Readout by high accurate encoders
- Use of reliable, long-lasting and maintenance-free bearings
- Integrated rotary joint for power supply of EUT available upon request
- Easy installation in existing chambers

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Specifications:

Azimuth Positioner

Fixed directly onto Groundplane of chamber

Diameter	900 mm
Operation load capability	50 kg
Bending Moment	500 Nm
Rotating speed adjustable up to	5 rpm
Rotating angle	± 180°
Positioning accuracy	± 0.05°
Repeatability	0.02°

Polarisation Positioner

Height of rotation axis	1.5 m
Diameter of mounting plate	400 mm
Operation load capability	50 kg
Bending Moment	500 Nm
Rotating speed adjustable up to	5 rpm
Rotating angle	± 180°
Positioning accuracy	± 0.05°
Repeatability	0.02°

Linear Positioner

Fixed to the azimuth Positioner

Operation load capability	50 kg
Movement range	500 mm
Positioning accuracy	+/- 0.5 mm

Motor	Brushless stepper motors 200 W
Drive unit	shielded and radio interference suppressed under EN 55022 class B

Control cable		Fibre optic lines
Remote control via		IEEE interface
Current consumption	max.	32A
Voltage		380-400 VAC, 50/60 Hz, 3-phase
Temperature range		+5 °C...+35 °C
Material of structure		Aluminium
Total weight	approx.	340 kg

Brief description

The Device **APL-50kg** is especially designed for antenna measurements and tests. Different sized of antennas can be mounted on the rotating plate.

The polarisation positioner is mounted onto the azimuth positioner to have both 360° vertical and horizontal rotation for 3D measurements.
The system performs three-dimensional over-the-air radiation measurements.

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Controller NCD

The new developed Multiple Control Device **NCD** is suited for the operation of up to 8 devices with multiple axis of motion. Those devices can be any combinations of antenna masts, turntables, cable guide rails or any other positioning equipment.
This controller NCD permits the operation in manual, semi-automatic and remote control mode via IEEE 488.2 (GPIB bus), or optionally other interfaces, of multiple devices simultaneously.

Figure: NCD with option “tip-up handle”

Technical Data

Data interfaces	IEEE 488.2 (GPIB-Bus) and Ethernet (Optional available: USB, RS232, etc.)
Transmission	Fibre optic cable (up to 2000 m distance)
Transfer rate	Real time 100 Mbit/s (fast Ethernet)
Display	5.7“ TFT Touch screen-Display
Voltage	100-240 VAC, 50/60 Hz, single phase
Current consumption	approx. 70W
Fuse	T 0.63A
Size (W X D)	19” Rack mount and table unit (427 x 300 mm) (Optional with tip-up carry handle)
Height	3 HE (133 mm)
Temperature range	5°C - 40°C
Total weight	approx. 8 kg
Accessories	1.5 m power supply cable, Service manual

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Brief description of NCD

The multiple control device NCD works with Agilent, Rohde & Schwarz, Teseq and other software. The IEEE 488 (GPIB) is available as a standard interface device. Other interfaces available upon request.

- **User-friendly, time-saving function keys**
  The function keys F1 to F10 allows the implementation of individual, customer-specific sequence programs for user-friendly, times-saving handling and operation. The individual programs can be stored and accessed by one function key.

- **Error analysis based on error codes**
  Diagnosis via USB interface possible
  Optional analysis via internet and Ethernet interface possible

- **USB interface**
  Updates easily implemented by USB stick
  Possibility to plug in a computer mouse and keyboard

- **Easy operation with touch panel**
  Fast and reliable operability based on touch panel technology
  Layout of touch screen display can easily be adjusted according to customers' request

- **Position keys**
  With the position keys Up/DOWN, CW/CCW and VER/HOR the Positioners can easily be moved in manual mode.

- **Real-time capable**
  Each program cycle will finished in the default time frame be no matter how many devices are controlled at the same time. Due to this feature no overflow of commands can happen when using fast remote computers.

- **Handheld control unit**
  Easy implementation of standard or customer-specific handheld control units possible

- **Precise Display Accuracy**
  The display resolution is highly precise with position readout increments of 0.1 mm respectively 0.01 degree.

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