



Rainford EMC Single Control Unit

Controller SCU

The new developed Single Control Unit SCU is suited for the operation of one device with one axis of motion. Those devices are usually used for the operation of turntables, cable guide rails or any other positioning equipment. This controller SCU permits the operation in manual, semi-automatic and remote control mode via IEEE 488.2 (GPIB bus) of multiple devices simultaneously.



Technical Data

Data interface	IEEE 488.2 (GPIB-Bus)
Device interface	CAN-Bus via fibre optic cable
Transfer rate	100 baud
Display	4 x 40 characters
Voltage	208-230 VAC, 50/60 Hz, single phase
Current consumption	approx. 20W
Fuse	T 125mA, 250V
Size (W X D)	19" Rack mount (427 x 300 mm)
Height	2 HE (87 mm)
Temperature range	5°C - 40°C
Total weight	5 kg
Accessories	1.5 m power supply cable Service manual

The single control unit SCU works with HP, R&S, and etc. software. The IEEE 488 (GPIB) is available as an interface device.



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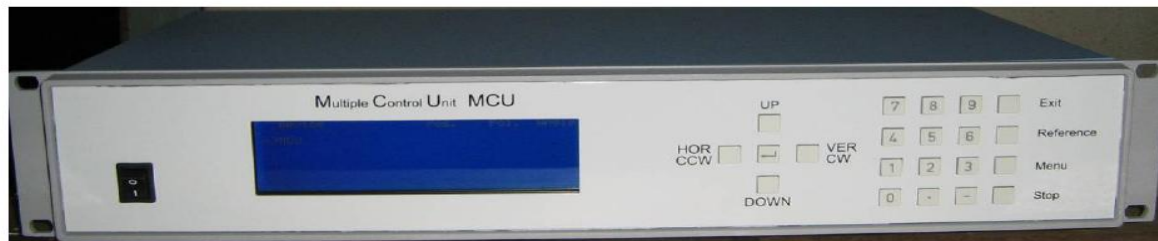


Rainford EMC Multiple Control Unit

Controller MCU

The new developed Multiple Control Unit MCU is suited for the operation of up to four 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 MCU permits the operation in manual, semi-automatic and remote control mode via IEEE 488.2 (GPIB bus) of multiple devices simultaneously.



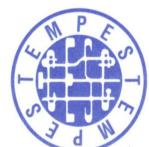
Technical Data

Data interface	IEEE 488.2 (GPIB-Bus)
Device interface	CAN-Bus via fibre optic cable
Transfer rate	100 baud
With 4 device connectors	
Display	4 x 40 characters
Voltage	208-230 VAC, 50/60 Hz, single phase
Current consumption	approx. 20W
Fuse	T 125mA, 250V
Size (W X D)	19" Rack mount (427 x 300 mm)
Height	2 HE (87 mm)
Temperature range	5°C - 40°C
Total weight	5 kg
Accessories	1.5 m power supply cable Service manual

The multiple control unit MCU works with HP, R&S, and etc. software. The IEEE 488 (GPIB) is available as an interface device.



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Rainford EMC PAS 2.0

Pneumatic Antenna Stand PAS 2.0

Technical Data

Antenna height adjustable manually	0.7 m to 2.0 m
Total mast height	2.2 m
Load capability	max. 6 kg
Depending on the distance of the antenna centre of gravity	
Material	Plastic + reinforced fibreglass, weatherproof
Mast cross-section	0.06 m x 0.06 m
Base L x W	0.9 m x 0.6 m
Moveable with 4 casters	
Polarisation	0°/90° (vert./hor.)
Polarisation time 0°/90°	approx. 3 sec
Polarisation drive	Pneumatic rotary actuator
Control	Solenoid valve
Pressure	max. 6 bar
Temperature range	-10 °C...+35 °C
Total weight	25 kg
Accessories	Interface to SCU/MCU Controller 2x 15 m air hose Service manual

Brief description

The Pneumatic Antenna Stand **PAS 2.0** is specifically designed for measurements in electromagnetic absorption chambers at a fixed measuring height.

The PAS 2.0, with the exception of the rotary actuator, is fabricated from plastic (PVC and reinforced fibreglass).

Polarisation occurs using compressed air. A solenoid valve located outside of the chamber regulates the compressed air flow. The antenna bar height is manually adjustable.

Antenna Adapters for all commercially available antennas are available upon request.

All antennas during polarisation rotate around their axis to eliminate any elevation errors.

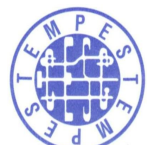
The **IEEE 488.2 (GPIB) bus** provides an additional control option for all functions, when operated with the **SCU/MCU Controller**.



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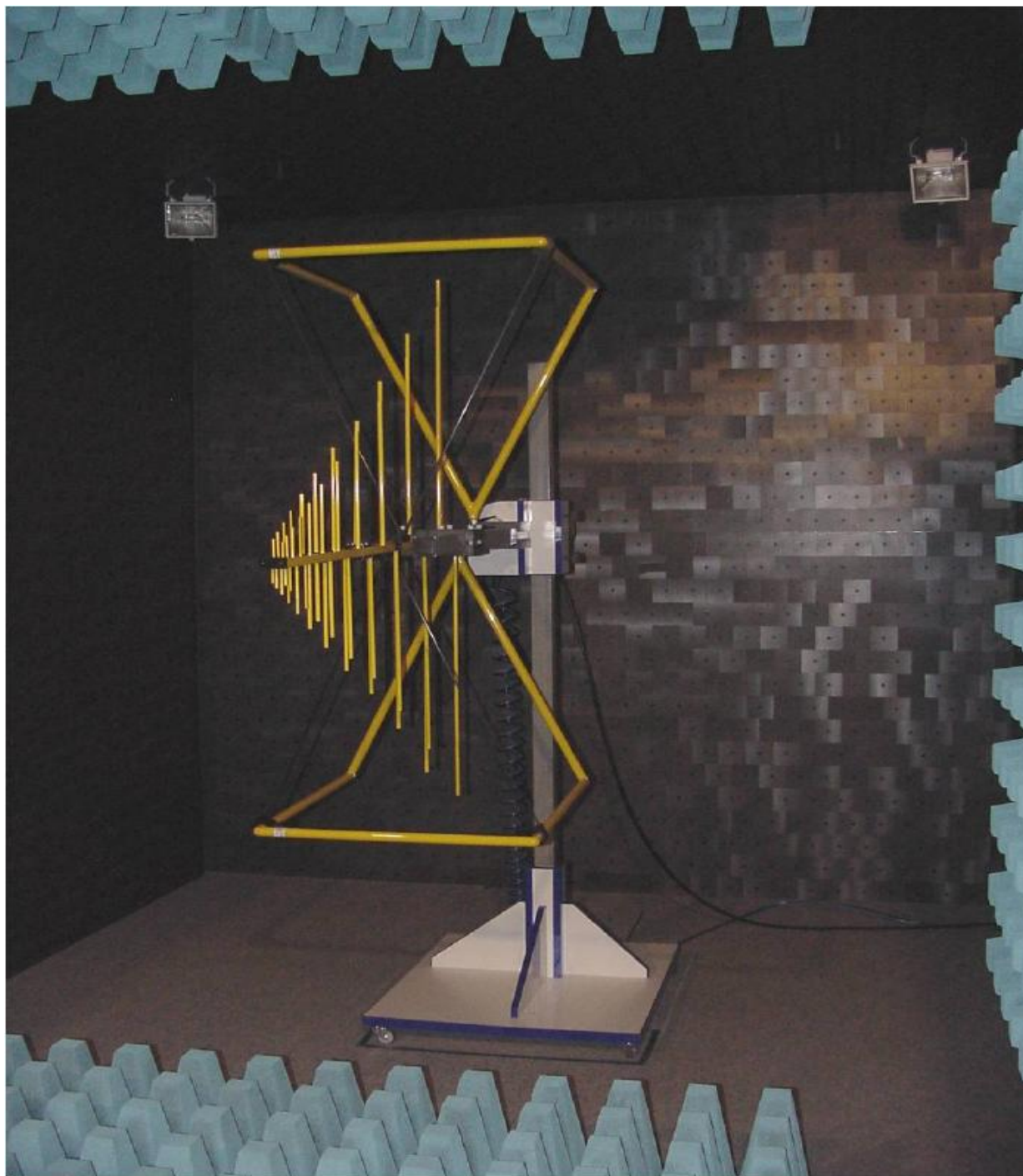
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Rainford EMC PAS 2.0



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Rainford EMC PTT

Plastic Test Table PTT-Styrodur

The Plastic Test Table PTT is especially designed as freestanding test table for installation on top of a turntable in electromagnetic absorption chambers. The table is fabricated from non-conductive material with a very low dielectric constant ϵ_r .



Tabletop standard sizes:

- Diameters 1.0 to 1.5 m
- Rectangular Lengths 1.0 to 1.5 m
- Widths 0.8 to 1.2 m

Standard heights

0.6 to 0.8 m

Permissible load

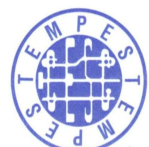
100 kg

Material:

- Structure Styrodur
- Dielectric constant ϵ_r at 1 MHz approx. 1.2
- Table Top "Perdinax" $t = 2\text{mm}$
- Dielectric constant ϵ_r at 1 MHz approx 1.6
- Table Top removable



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Rainford EMC TD 1.5

Turn Device TD 1.5-10kg

Technical Data

Height of rotation axis above chamber floor	1.5 m standard (other heights available)
Load capability	10 kg
Material above drive unit	Plastic & reinforced plastics with low dielectric constant
Rotating speed adjustable between	0.3 to 3.0 rpm
Rotating angle	+375°/-100°
Positioning accuracy	± 1°
Turntable drive	Toothed belt drive, worm gear
Motor	Brushless DC motor 150 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. 2 A
Voltage	208-230 VAC, 50/60 Hz, single phase
Temperature range	-10°C to +35°C
Total weight	35 kg
Accessories	Interface to SCU/MCU Controller 1.5 m power supply cable Service manual

Brief description

The Turn Device **TD 1.5-10kg** is especially designed for mobile telephone measurements with or without “phantom heads”. Different sized mobile telephones can be mounted within the rotating frame along the “phantom head”.

The Turn Device, with the exception of the drive unit, is fabricated from plastic (PVC and reinforced fibreglass). Metal parts are located only in the base plate and the drive mechanism (max. 0.3 m above ground level).

The **IEEE 488.2 (GPIB) bus** provides an additional control option for all functions, when operated with the **SCU/MCU Controller**.



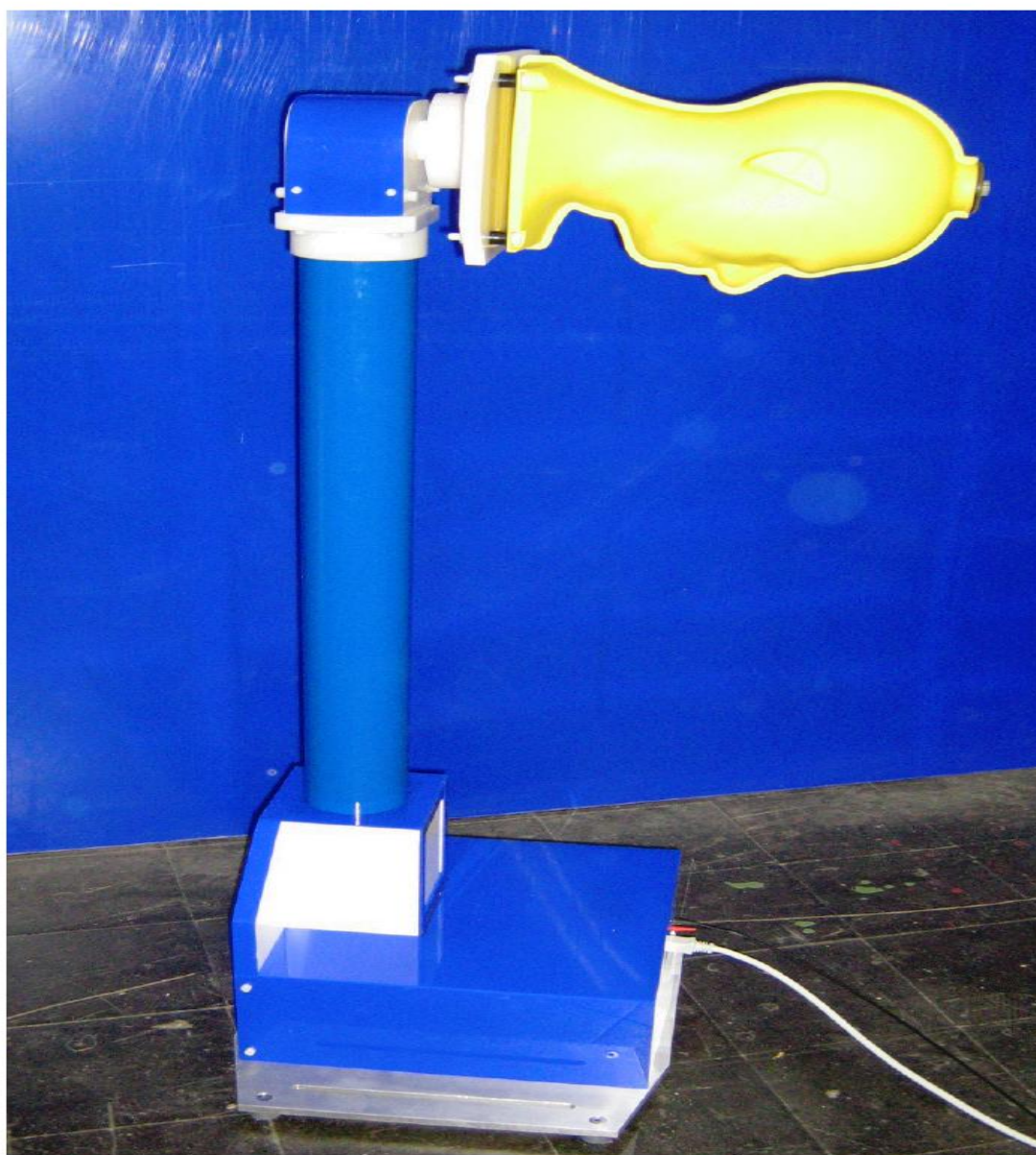
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Rainford EMC TD 1.5

Turn Device TD 1.5-10kg



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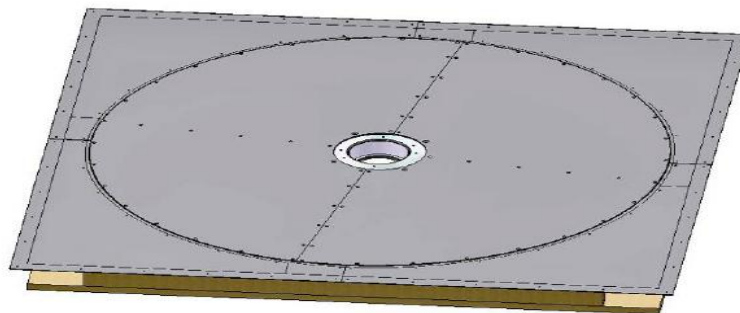
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Rainford EMC TT 1.5 SI

Turntable TT 1.5 SI

Technical Data

Diameter	1.5 m
Load capability	500 kg
Height	130 mm
Material cover plate	stainless steel
Rotating speed adjustable between	0.5 to 2.0 rpm
Positioning accuracy	better +/- 1°
Rotating angle	+400°/-200°
Turntable drive	Belt drive, worm gear
Motor	Brushless DC motor 150 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. 2A
Voltage	208-230 VAC, 50/60 Hz, single phase
Concentricity tolerance	+/- 3 mm
Elevation tolerance less than	5 mm
Ground plane connecting every	50 mm
Square form environment (for easy connection to ground plane)	1.8 m x 1.8 m
Temperature working range	-10 °C...+35 °C
Accessories	Interface to SCU/MCU Controller 1.5 m power supply cable Service manual



Brief description

The turntable **TT 1.5 SI** is especially designed for flush mounted installation in semi anechoic electromagnetic absorption chambers. The carrier plate is made of stainless steel. A 200 mm diameter opening in the centre of the turntable provides the capability to insert power supply for testing.

The **IEEE 488.2 (GPIB) bus** provides an additional control option for all functions, when operated with the **SCU/MCU Controller**.



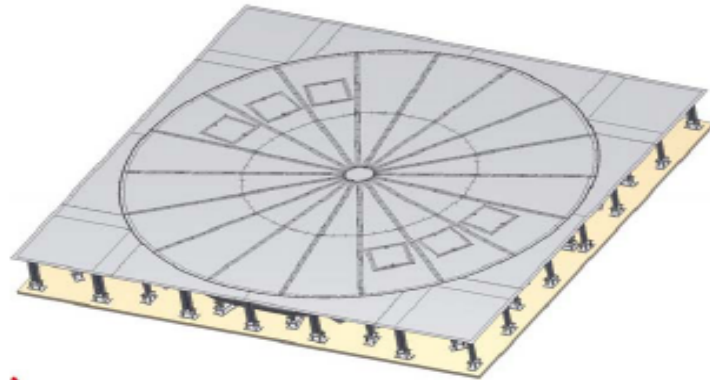
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Rainford Heavy Duty Turntable

Turntable TT 10.0-70t



Technical Data

Diameter	10.0 m
Load capability	70.000 kg
Point load	8.000 kg (at 300 x 200 mm)
	No other loads within an area of radius 1m
Height	1.8 m
Material cover plate	stainless steel
Rotating speed adjustable between	0.3 to 1.0 rpm
Positioning accuracy	+/- 0.5°
Rotating angle	0° to 400°
Turntable drive	High precision helical-bevel gear
	Asynchrony motor
Frequency inverter	Manufacturer Siemens
Drive unit	Shielded and radio interference suppressed less than 0 dB under EN 55022 class B

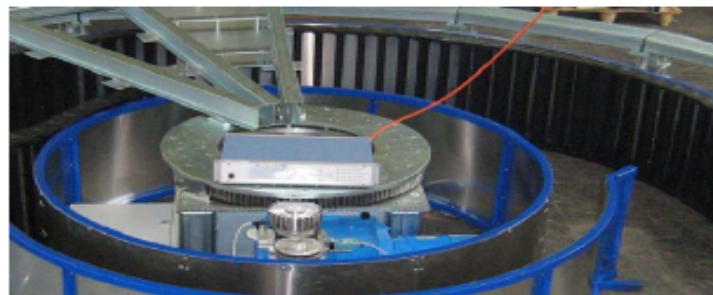


Figure: Drive unit assembly of turntable

Control cable	Plastic optical fibre cable 980/1000 µm
Attenuation of fibre cable	625 nm



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Rainford Heavy duty Turntable

Remote control via	IEEE interface
Current consumption	max. 32A
Voltage	400 V AC, 50/60 Hz, 3-phase
Concentricity tolerance	+/- 3 mm
Elevation tolerance less than	5 mm
Ground plane connecting every	50 mm
Temperature working range	-10 °C...+40 °C
Accessories	Interface to SCU/MCU Controller 3 m power supply cable Service manual

Brief description

The turntable **TT 10.0-70t** is especially designed for flush mounted installation in semi anechoic electromagnetic absorption chambers. The carrier plate is made of stainless steel.

A 400 mm diameter opening in the centre of the turntable provides the capability to insert power supply for testing.

The **IEEE 488.2 (GPIB) bus** provides an additional control option for all functions, when operated with the **SCU/MCU Controller**.

Power supply in the centre of the turntable:

It is possible to integrate various types of connectors for the power supply of the EUT



Figure: Power supply in the centre for EUT

Limit switches:

The turntable is equipped with a limit switch and positioning switch system to guarantee the exact positioning of the turntable. An "overturning" of the system is prevented by using limit switches.



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Rainford Heavy duty Turntable

Connection to the ground plane:

There is a long-lasting, maintenance-free contact systems included:
Material: hollow core copper beryllium tubing



Figure: Contact system between the turntables and to the ground plane

Covering:

The covering is made of stainless steel, the gap between the turntable and the ground plane less than 5 mm.
The radial run out is within a tolerance of ± 3 mm.
The height differences are within a range of 10 mm or better.



Figure: Level system of turntable for height adjustment

Turntable structure:

Solid welded steel construction; parts are assembled with screws (for easy transportation).
The complete structure is galvanised for long-lasting performance of the system.

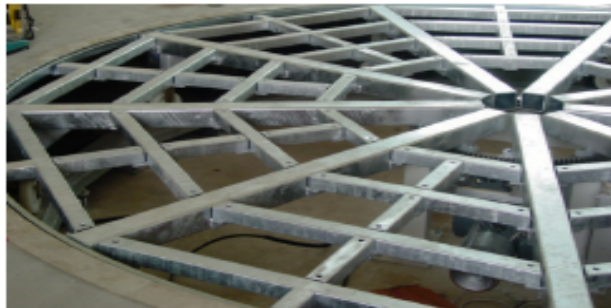


Figure: Turntable structure made of solid welded galvanised steel



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