

new controller version: generation 3.0

new controller generation

- MCU production terminated due to discontinued components
 - last order up to 03/31/2019
 - 10 years spare parts guarantee
- new controller version, generation 3.0
available for order from 01/01/2019

FCU 3.0 – fibre control unit

general information

- control via existing PC
- software included
- TCP/IP into the drive system
- automation via LAN up to 100 Mbit/s
- Possibility to combine with existing GPIB devices



FCU 3.0 – fibre control unit

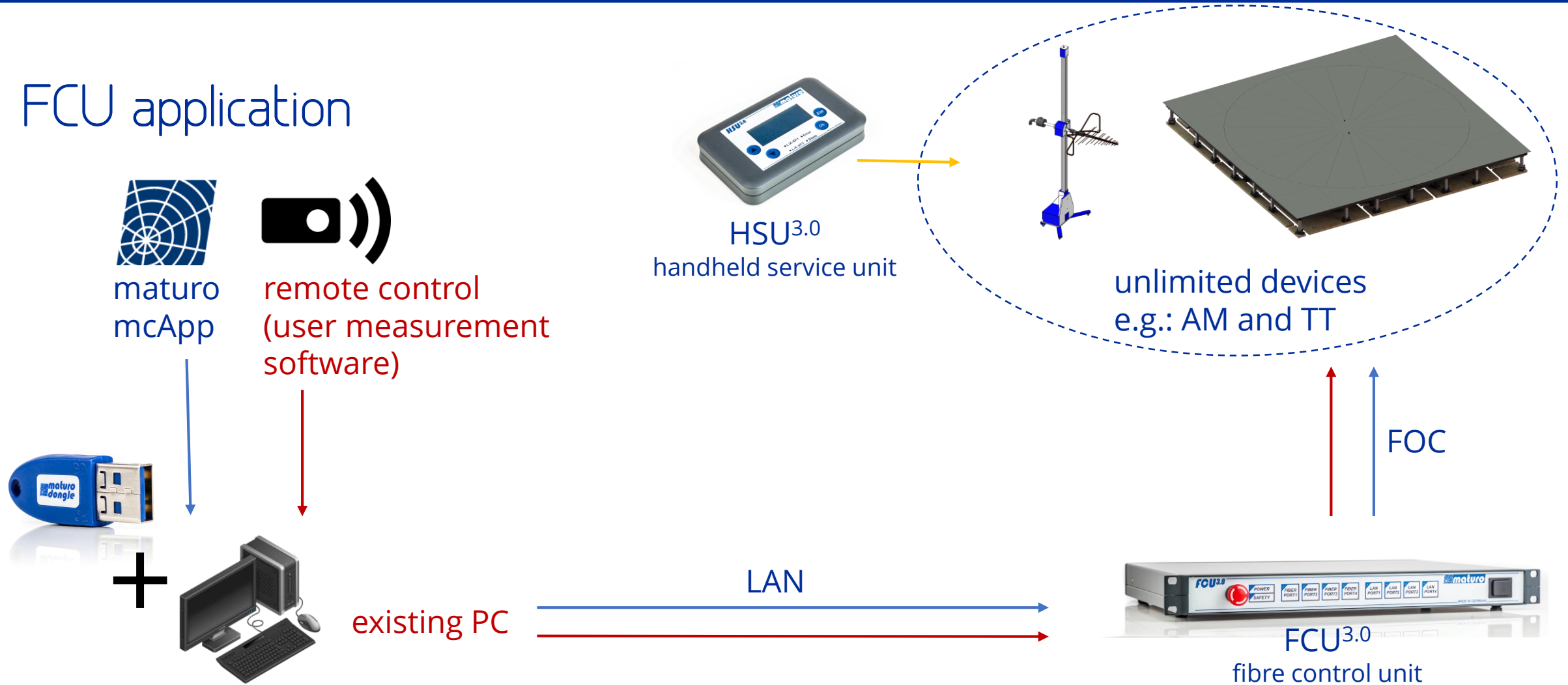
general information

- highest flexibility due to decentralization of drive intelligence (comparable to the MCU-system)
- unlimited combination of various positioners independent of the controller version 3.0
- extended interface for development of own applications



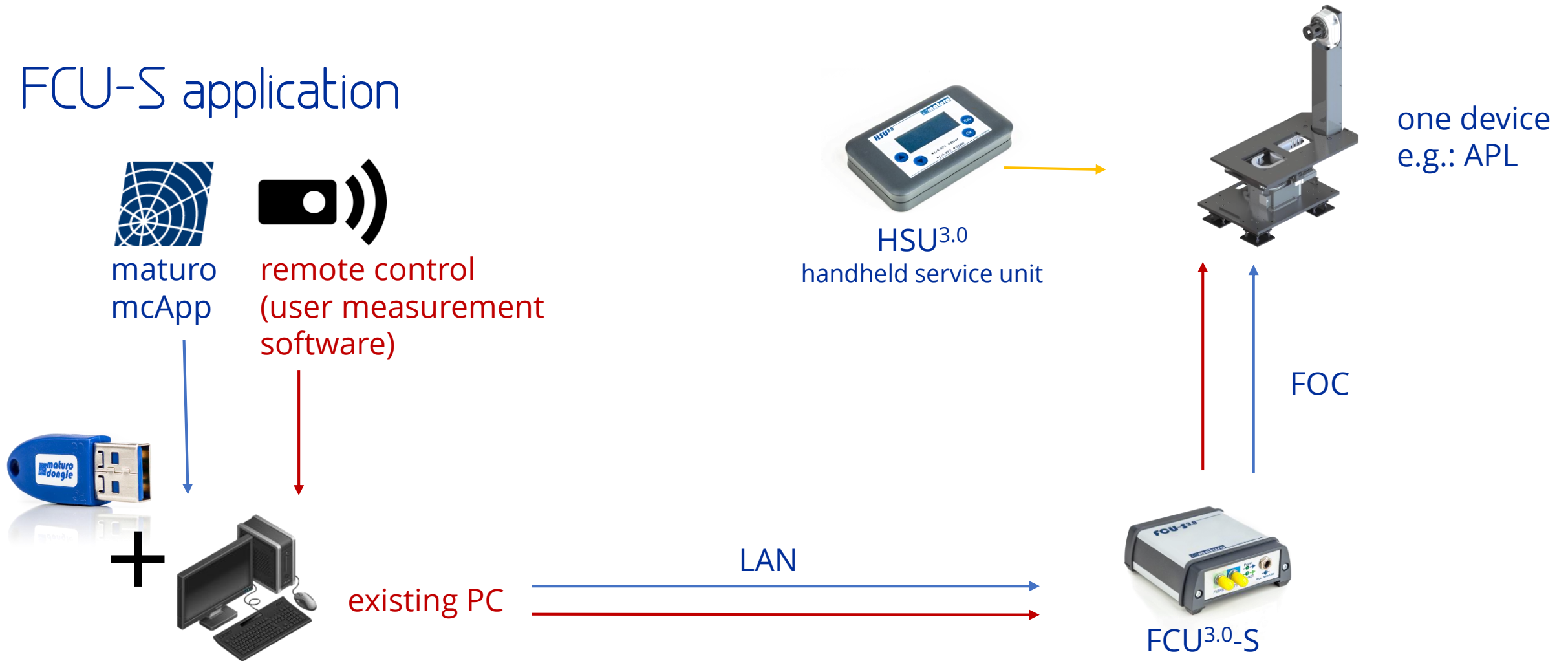
FCU 3.0 – fibre control unit

FCU application



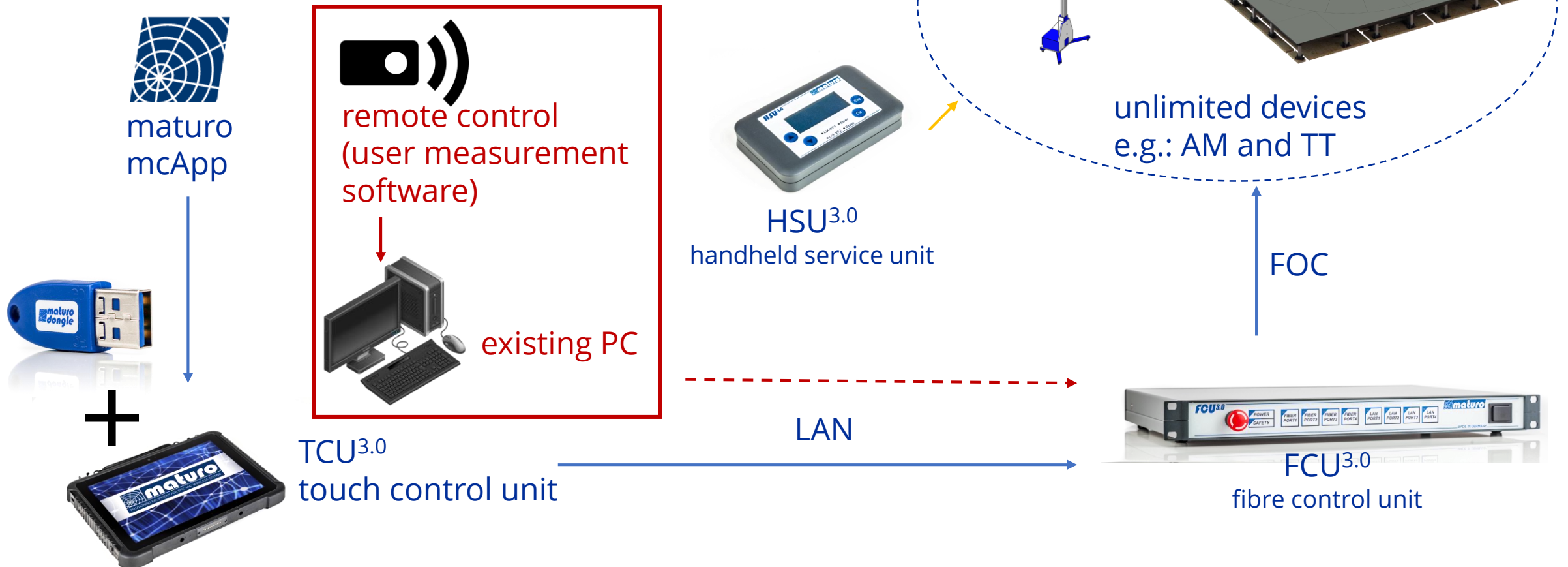
FCU 3.0 – fibre control unit

FCU-S application



FCU 3.0 – fibre control unit

FCU application with TCU^{3.0}



FCU 3.0 – fibre control unit

single components

- FCU^{3.0} controller
- TCU^{3.0} optional operating tablet
- HSU^{3.0} handheld service unit
- mcApp – maturo control Application
- maturo dongle

FCU 3.0 – controller

properties

- use of common FSMA cables
- integration of emergency stop switches combinable
- FOC connection up to 2 km
- optimization of interfaces → fastest operation times
- integrable in the company network



green lights on the front and on the back of the controller:
- lights up during physical connection
- flashes during data transfer



FCU 3.0 – controller

technical data

| | |
|---------------------|--|
| ports | 4x LAN, 4x Fibre optics |
| transfer rate | 100 Mbit/s |
| voltage | 100 V – 240 V / 50 Hz – 60 Hz |
| current consumption | max. 20 W |
| fuse | 2x T1,6 A |
| size in mm (W x D) | 19" Rack mount (427 x 300) |
| height | 1 HE (44 mm) |
| temperature range | 5°C – 40°C |
| total weight | 3 kg |
| accessories | 1.5 m power supply cable HSU ^{3.0} handheld service unit service manual |

FCU^{3.0} - S - controller

same properties as the FCU^{3.0} - controller
technical data

| | |
|------------------------|--|
| ports | 1x LAN, 1x Fibre optic |
| transfer rate | 100 Mbit/s |
| voltage | 100 V – 240 V / 50 Hz – 60 Hz |
| current consumption | max. 20 W |
| fuse | 2x T1,6 A |
| size in mm (W x D x H) | 100 x 105 x 40 |
| temperature range | 5°C – 40°C |
| total weight | 600 g |
| accessories | 1.5 m power supply cable HSU ^{3.0} handheld service unit service manual |



TCU 3.0 – touch control unit

properties and technical data

- Windows 10 industrial tablet
- rugged design
- IP65 and MIL-STD-810G, gorilla glass 3
- mcApp preinstalled
- can be used instead of a PC



TCU 3.0 – touch control unit

technical data

| | |
|------------------------|--|
| data interface | Wi-Fi (802.11 a/b/g/n), LAN (RJ45) |
| ports | USB 2.0 Type-A, micro USB, LAN (RJ45), RS232 |
| system specification | Intel®Cherry Trail Atom™ Z8350 Intel® HD graphics 4 GB DDR3L RAM 64 GB SSD, expendable via micro SD |
| display | 10,1" (25,65cm) IPS 1280x800 pixel, 280 cd/m² 10-point capacitive (Corning Gorilla Glass 3) |
| battery | Lithium-ion, 10000 mAh, 3.7V, removable |
| protection class | IP65 and MIL-STD-810G |
| size in mm (L x W x H) | 280 x 187 x 22 |
| temperature range | -20°C – 60°C |
| total weight | 1,2 kg |
| accessories | Charging cable Docking station Carrying strap & hand strap |

properties and technical data

- included with every FCU^{3.0} and FCU-S controller
- for initial installation FCU^{3.0} controller not necessary – can be done with the HSU^{3.0}
- simple update possibility via USB
- any settings can be changed
e.g. TCP/IP – address
- ports: USB Type A, USB Type B, LAN, maturo service interface
- size in mm (W x D x H): 150 x 92 x 30
- weight: 210 g



maturo dongle

properties

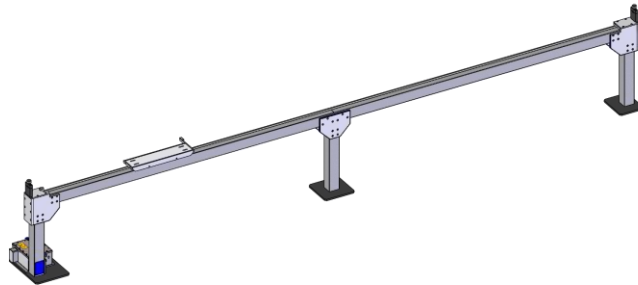
- USB stick Type – A
- size in mm (L x W x H): 23 x 15 x 8
- weight: 4g
- necessary for running the devices



maturo control App

properties

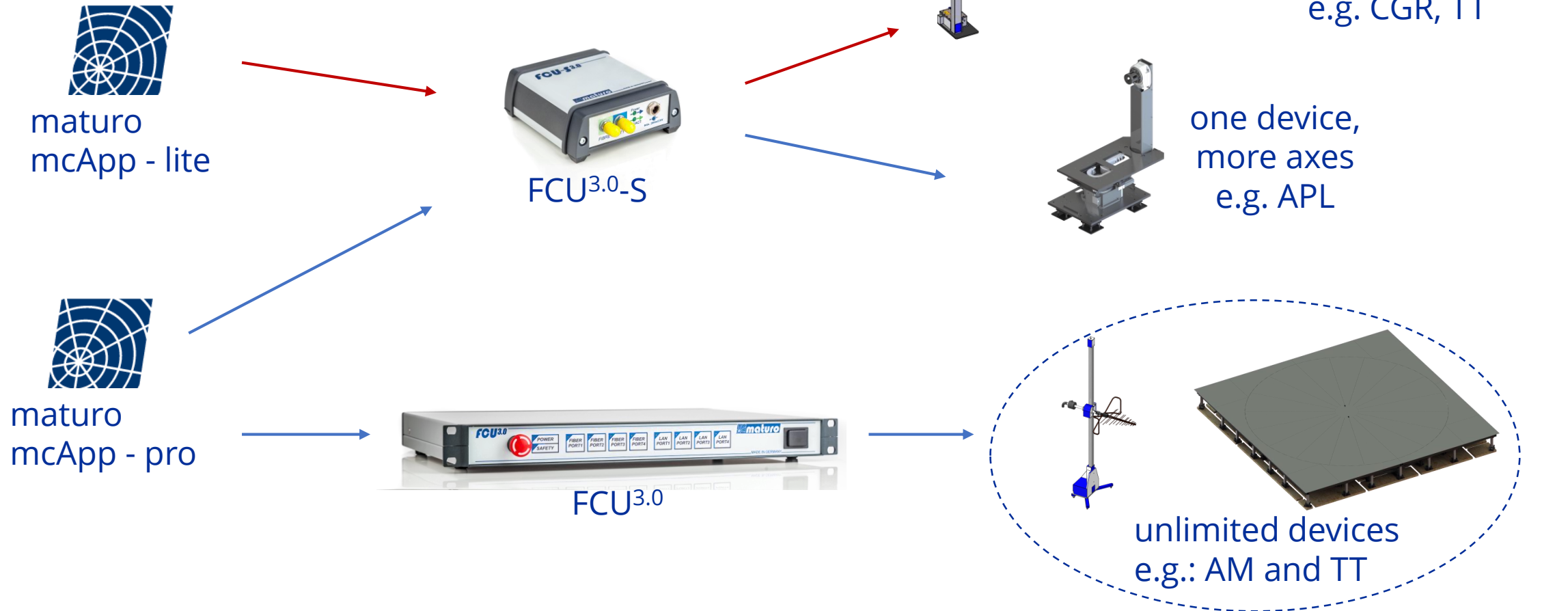
- one software to control all axes of all devices
- realtime interaction with the devices
- lite version
→ mcApp lite controls one axis
e.g.: CGR, TT



maturo dongle
for lite version

maturο control App

pro and lite version - possibilities

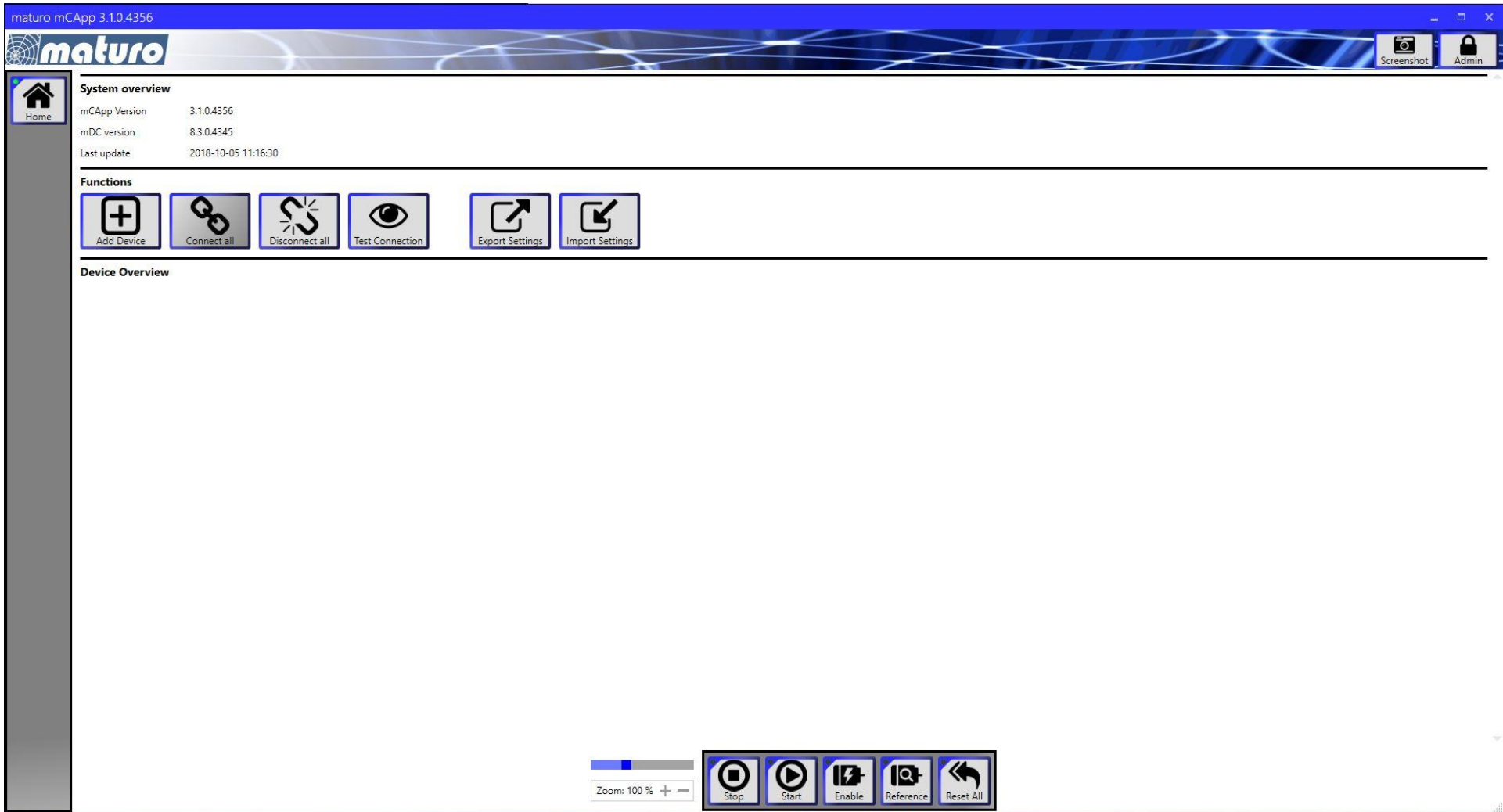


requirements for existing PC

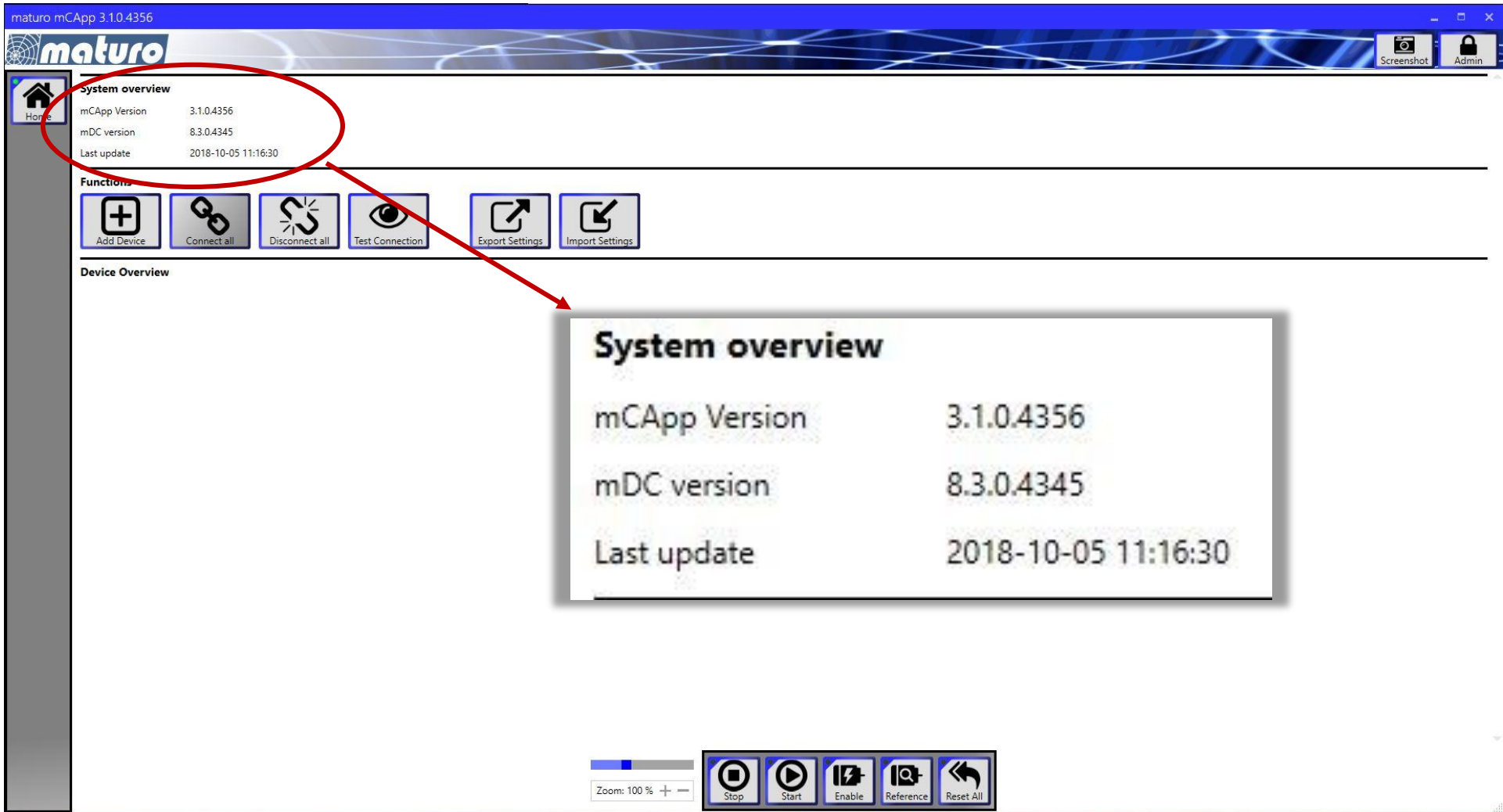
- Windows 7 32/64bit or better
- .NET Framework (included with mcApp software)
- 1 GB RAM
- 1 GHz Processor
- 5.5 GB disk space
- fixed IP of the PC in the same subnet mask
→ recommendet to have a second network interface card
- optional: USB – network adapter from maturu always included
→ easiest way to have a second network interface card



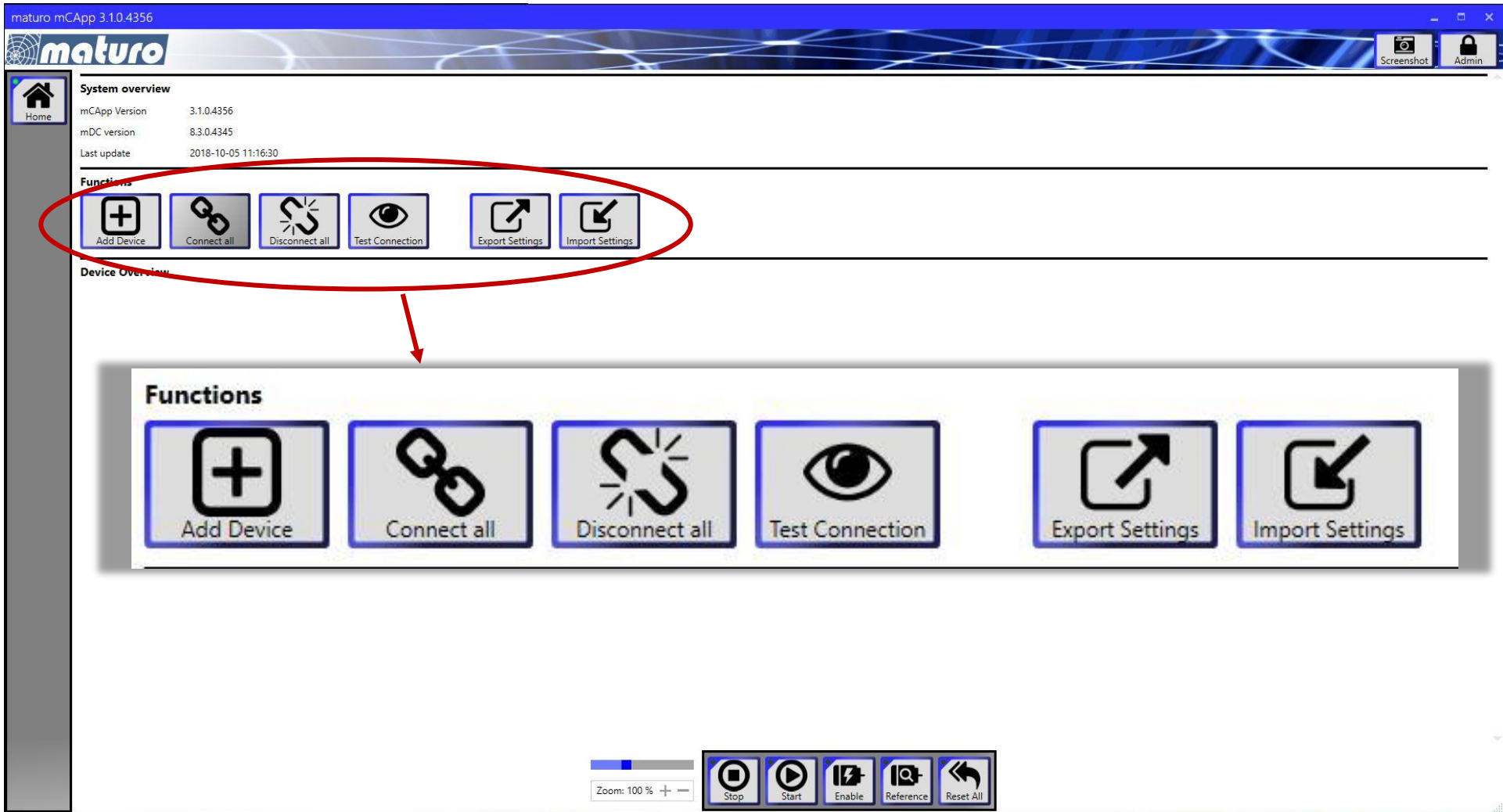
mcApp - homescreen



mcApp - homescreen



mcApp - homescreen



mcApp - homescreen

maturo mcApp 3.1.0.4356

System overview

mCApp Version: 3.1.0.4356
mDC version: 8.3.0.4345
Last update: 2018-10-05 11:16:30

Functions

Add Device, Connect all, Disconnect all, Test Connection, Export Settings, Import Settings

Device Overview

| # | Name | Connection | Position | Status | Ip Address | Actions |
|---|----------|------------|-----------------------------------|---------------------|--------------|---------------|
| 1 | BAM4.0-P | Disconnect | 100,00 cm Horizontal 0,00 ° | Ready for operation | 172.16.21.50 | [Menu] [Stop] |

Zoom: 100 % + -

Stop, Start, Enable, Reference, Reset All

- all added devices are listed
- some informations already shown

- all added devices are listed
- to get to the respective menu



mcApp - devicescreen

maturo mCApp 3.1.0.4356

ScreenshotAdmin

Home

D1
BAM4.0-P

IsStopped

Error

Enabled

Referenced

Connected

Info
Ready for operation.

Jog Min

Jog Max

Actual Polarization

Actual Tilt Angle [°]

BAM4.0-P A1 Height

Disconnect

Target Position [cm]

Actual Position [cm]

Drive State

Error NC

Settings BAM4.0-P

A1 Height

Tilt Options

Speed [cm/s]

Acceleration [cm/s²]

Deceleration [cm/s²]

Limit Min [cm]

Limit Max [cm]

Offset [cm]

EUT Height [cm]

EUT Distance [cm]

Tilt enabled

BAM4.0-P Diagnostic

PLC Terminals

General Information

BAM4.0-P Remote

General Outputs

Height Diagnostic

Tilt Diagnostic

Zoom: 100 %

Stop

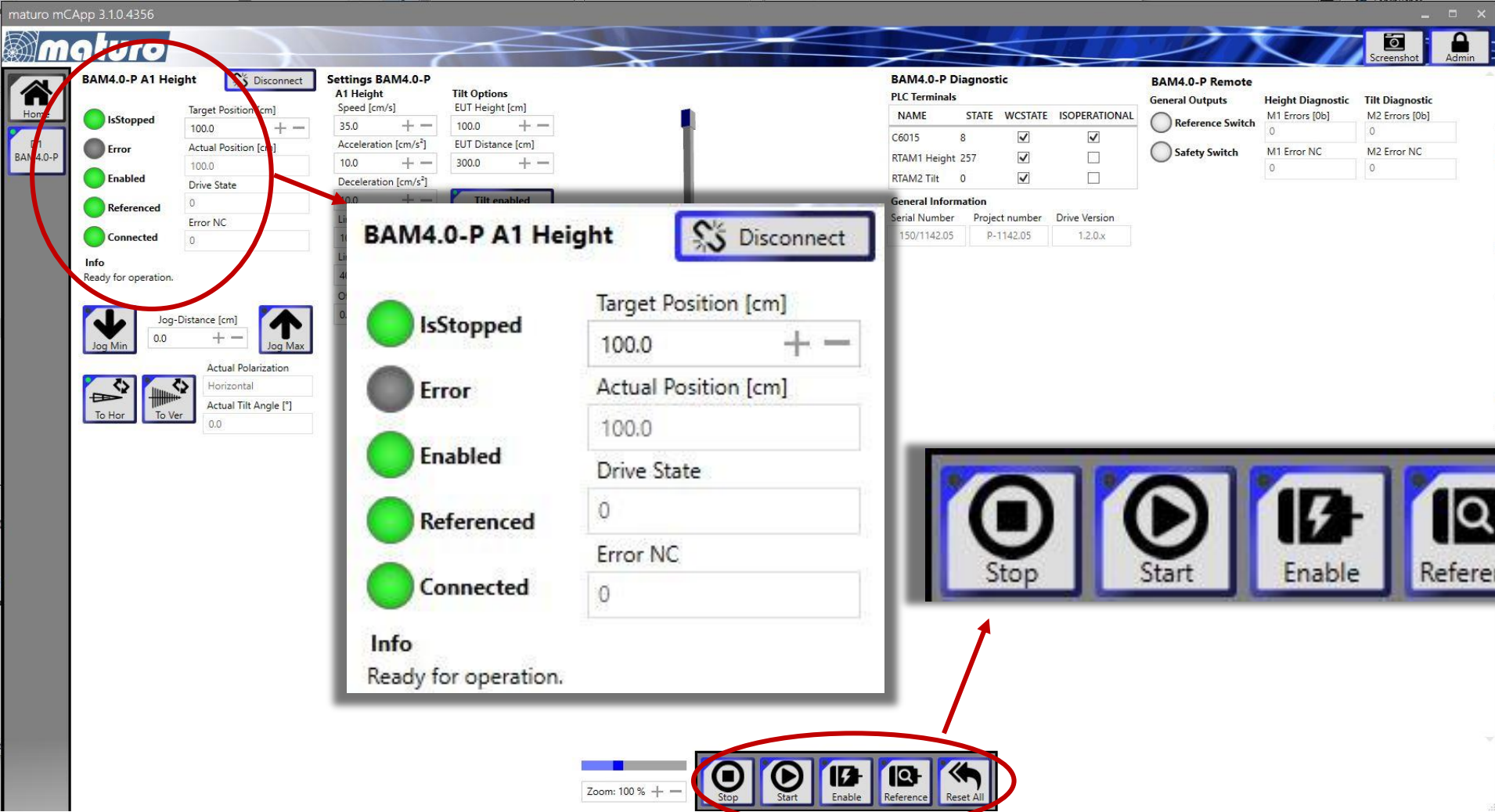
Start

Enable

Reference

Reset All

mcApp - devicescreen



mcApp - devicescreen

maturo mcApp 3.1.0.4356

BAM4.0-P A1 Height Disconnect

IsStopped ☒ **Error** ☐ **Enabled** ☒ **Referenced** ☒ **Connected** ☒

Info
Ready for operation.

Jog Min **Jog Max**

Actual Polarization
Horizontal
Actual Tilt Angle [°]
0.0

Settings BAM4.0-P

A1 Height
Speed [cm/s] 35.0
Acceleration [cm/s²] 10.0
Deceleration [cm/s²] 10.0
Limit Min [cm] 100.0
Limit Max [cm] 400.0
Offset [cm] 0.0

Tilt Options
EUT Height [cm] 100.0
EUT Distance [cm] 300.0
Tilt enabled

BAM4.0-P Diagnostic

PLC Terminals

| NAME | STATE | WCSTATE | ISOPERATIONAL |
|--------------|-------|-------------------------------------|-------------------------------------|
| C6015 | 8 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| RTAM1 Height | 257 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| RTAM2 Tilt | 0 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

General Information

| Serial Number | Project number | Drive Version |
|---------------|----------------|---------------|
| 150/1142.05 | P-1142.05 | 1.2.0 v |

BAM4.0-P Remote

General Outputs
☐ Reference Switch
☐ Safety Switch

Height Diagnostic
M1 Errors [0b] 0
M1 Error NC 0

Tilt Diagnostic
M2 Errors [0b] 0
M2 Error NC 0

Jog-Distance [cm]
0.0

Actual Polarization
Horizontal
Actual Tilt Angle [°]
0.0

To Hor **To Ver**

Stop **Start** **Enable** **Reference** **Reset All**

Zoom: 100 %

mcApp - devicescreen

maturo mcApp 3.1.0.4356

BAM4.0-P A1 Height Disconnect

IsStopped ☒ **Error** ☐ **Enabled** ☒ **Referenced** ☒ **Connected** ☒

Info
Ready for operation.

Jog Min **Jog Max**

Actual Polarization
Horizontal
Actual Tilt Angle [°]
0.0

Settings BAM4.0-P

A1 Height
Speed [cm/s] 35.0
Acceleration [cm/s²] 10.0
Deceleration [cm/s²] 10.0
Limit Min [cm] 100.0
Limit Max [cm] 400.0
Offset [cm] 0.0

Tilt Options
EUT Height [cm] 100.0
EUT Distance [cm] 300.0
Tilt enabled

BAM4.0-P Diagnostic

Settings BAM4.0-P

A1 Height
Speed [cm/s] 35.0
Acceleration [cm/s²] 10.0
Deceleration [cm/s²] 10.0
Limit Min [cm] 100.0
Limit Max [cm] 400.0
Offset [cm] 0.0

Tilt Options
EUT Height [cm] 100.0
EUT Distance [cm] 300.0
Tilt enabled

BAM4.0-P Remote

General Outputs
☐ Reference Switch
☐ Safety Switch

Height Diagnostic
M1 Errors [0b] 0
M1 Error NC 0

Tilt Diagnostic
M2 Errors [0b] 0
M2 Error NC 0

Zoom: 100 %

Stop **Start** **Enable** **Reference** **Reset All**

mcApp - devicescreen

maturo mcApp 3.1.0.4356

BAM4.0-P A1 Height

Settings BAM4.0-P

A1 Height
Target Position [cm]: 100.0
Actual Position [cm]: 100.0
Drive State: 0
Error NC: 0

Speed [cm/s]: 35.0
Acceleration [cm/s²]: 10.0
Deceleration [cm/s²]: 10.0
Limit Min [cm]: 100.0
Limit Max [cm]: 400.0
Offset [cm]: 0.0

Tilt Options
EUT Height [cm]: 100.0
EUT Distance [cm]: 300.0

BAM4.0-P Diagnostic

PLC Terminals

| NAME | STATE | WCSTATE | ISOPERATIONAL |
|--------------|-------|-------------------------------------|-------------------------------------|
| C6015 | 8 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| RTAM1 Height | 257 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| RTAM2 Tilt | 0 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

General Information

| Serial Number | Project number | Drive Version |
|---------------|----------------|---------------|
| 150/1142.05 | P-1142.05 | 1.2.0.x |

BAM4.0-P Remote

General Outputs
☐ Reference Switch
☐ Safety Switch

Height Diagnostic
M1 Errors [0b]: 0
M1 Error NC: 0

Tilt Diagnostic
M2 Errors [0b]: 0
M2 Error NC: 0

BAM4.0-P Diagnostic

PLC Terminals

| NAME | STATE | WCSTATE | ISOPERATIONAL |
|--------------|-------|-------------------------------------|-------------------------------------|
| C6015 | 8 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| RTAM1 Height | 257 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| RTAM2 Tilt | 0 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

General Information

| Serial Number | Project number | Drive Version |
|---------------|----------------|---------------|
| 150/1142.05 | P-1142.05 | 1.2.0.x |

BAM4.0-P Remote

General Outputs
☐ Reference Switch
☐ Safety Switch

Height Diagnostic
M1 Errors [0b]: 0
M1 Error NC: 0

Tilt Diagnostic
M2 Errors [0b]: 0
M2 Error NC: 0

status information of the device

FCU^{3.0} – Highlights

- flexible in its use
- only state of the art components
- for each application individual customizable
- future-oriented
- always up to date due to simple update process



maturo gmbh

Am Kalvarienberg 24
www.maturo-gmbh.de

92536 Pfreimd
info@maturo-gmbh.de

Germany