

# NPU / RPU QuickManual



Version XIV.05 deutsch / english





## Intended Use

The complete grandMA2 family is intended for control of all kinds of lighting genres such as conventionals, moving lights, LEDs, video and media via DMX signal or within an network environment.

The grandMA2 replay unit is the ideal member of the grandMA2 family when it comes to architectural control or easy to mount backup solutions.

The Network Processing Unit (NPU) unites the calculation power in the network and offers the same CPU power as the consoles do.

All grandMA2 components, despite different hardware solutions, are running with the same software. All components are fully integrable into network environment.

The consoles are intended only for indoor use.



**grandMA2 RPU (with two optional screens)**



**grandMA2 NPU**

**Manufacturer:** MA Lighting Technology GmbH  
Dachdeckerstraße 16  
Germany D – 97297 Waldbüttelbrunn

More information and detailed manuals: [www.malighting.com](http://www.malighting.com)

If there are any questions left, just send us an e-mail with your contact details and subject information at [tech.support@malighting.com](mailto:tech.support@malighting.com). This E-Mail Service is monitored during MA Lightings regular business hours in Germany from 8.30 a.m. until 5 p.m., Monday through Friday. Alternatively you can call our Technical Support during that time: +49.5251.688865-30. For emergency services please contact your local distributor or contact the MA Lighting Service Hotline. Call: +49.5251.688865-99 Please note, this 24/7 hotline is strictly for emergency cases (so-called show stoppers) – for people being in trouble out in the field. Thank you for your understanding.

**NPU / RPU**

**Data**

**Transport**

**Important Safety  
Instructions**

**Safety and  
Environment**

**Quickstart  
Connect**

**Quickstart  
ON / OFF**

**Maintenance**

**Conformity**

## Data 1

### **grandMA 2 RPU (Replay Unit)**

Weight: 10,2 kg

Dimensions: 485 x 379 x 126 mm / 19 x 15 x 5 inch

Control up to 65,536 parameters (up to 256 DMX universes)

6x DMX OUT

1x DMX IN

1 internal command screen – multi-touch (7")

### **NPU (Network Processing Unit)**

Weight: 8,4 kg

Dimensions: 485 x 332 x 126 mm / 19 x 13 x 5 inch

Control up to 65,536 parameters (up to 256 DMX universes)

8x DMX OUT

1 internal command screen – multi-touch (7")

**NPU / RPU**

**Data**

**Transport**

**Important Safety  
Instructions**

**Safety and  
Environment**

**Quickstart  
Connect**

**Quickstart  
ON / OFF**

**Maintenance**

**Conformity**

## Data 2

Voltage: 230 V ~ 50Hz  
120 V ~ 60 Hz (USA, Canada)  
No switching necessary!

Cable type: Only adequately protected cables may be used ( min. Ø 3 x 1,0mm<sup>2</sup>)  
(Power supply cabel and connector not included ex works)

Socket type power in: PowerCon (blue) by NEUTRIK AG, Liechtenstein  
Socket type power out: PowerCon (grey) by NEUTRIK AG, Liechtenstein  
Make sure the rated output of all units connected in aggregate does not exceed the maximum rated output of the socket.

Rated Power Consumption:

grandMA 2 RPU (Replay unit): max. 950 VA

grandMA2 NPU (Network Processing unit) max. 950 VA

[NPU / RPU](#)

[Data](#)

[Transport](#)

[Important Safety Instructions](#)

[Safety and Environment](#)

[Quickstart Connect](#)

[Quickstart ON / OFF](#)

[Maintenance](#)

[Conformity](#)

Please be aware of the weight of the product. Be careful when moving it; otherwise you may injure your back or other parts of your body.

NPU (network processing unit)	approx. 8.4 kg
RPU (replay unit)	approx. 10.2kg

Secure all covers prior to transport. Remove all cables (on the back cover and the USB connectors on the front panel).

Handles on the products are designed exclusively for personnel to hold and carry the product. It is not permissible to use handles for fastening to the product or for means of transport such as lifting devices, cranes, fork lifts, wagons, etc. The user is responsible for securely fastening the products for the means of transport and for observing the safety regulations of the manufacturer when using means of transport. Non-compliance can result in personal injury or material damage.

Do not place the console on surfaces, vehicles, cabinets or tables that are for reasons of strength or stability unsuitable for this purpose. Do not twist the body.



**Check the apparatus after transport before installation! If body of the apparatus is damaged (bent or broken), or the monitor is broken or keys or faders are damaged do not connect the apparatus to power! Call our hotline for technical support!**

NPU / RPU

Data

Transport

Important Safety Instructions

Safety and Environment



Quickstart Connect

Quickstart ON / OFF

Maintenance

Conformity

## Symbols and warning labels

			<b>I 0</b>	~
<b>Warning</b> Danger Area	<b>Warning</b> Danger of electric shock		Supply voltage ON/OFF	Alternating current (AC)

NPU / RPU

Data

Transport

**Important Safety Instructions**

**Safety and Environment**

**Quickstart Connect**

**Quickstart ON / OFF**

**Maintenance**

**Conformity**

## General Safety Instructions

Read all the instructions in the user's manual, especially the safety requirements, see Safety requirements  
Follow all instructions. Keep the user's manual for future use.  
Follow all cautions and warnings indicated on the unit.  
Disconnect the mains plug before cleaning the unit; do not use any liquid or spray cleanser. Clean with a dry cloth.  
Do not use the unit near water. Do not expose it to a humid environment. Do not spill any liquid over the unit.  
Unplug this apparatus during lightning storms or when unused for long periods of time.  
Do not block or cover any ventilation slots in the housing - they are necessary for the essential airflow within the unit and protect it against overheating. Do not install the unit into a frame unless sufficient ventilation is guaranteed. Install in accordance with the manufacturer's instructions.  
Do not insert any objects through the slots of the unit, as these could get in contact with live parts or could cause short circuits. This could cause a fire and/or an electric shock.  
Do not place the unit on unstable surfaces. It may fall and become damaged.  
Do not place any objects on the power cord. Protect it from being walked on or pinched particularly at the plugs and the point where they exit from the apparatus.  
If using an extension cord, make sure the rated output of all units connected in aggregate does not exceed the maximum rated output of the extension cord.

If the power cord or the mains plug is damaged, let a qualified technician replace it immediately.  
Only use power cords which are safety-marked for purpose.  
All service work should be exclusively performed by qualified service technicians.  
Do not use any high-power walkie-talkies or cellular phones near the unit. The unit is provided with a safety plug.  
This plug can only be used with safety sockets. These precautions should be followed by all means. If the plug should not fit into a given socket (e.g. the case with old

sockets), the socket should be replaced by an electrician.

Do not ignore the safety purpose of the grounding-type plug. A grounding type plug has two blades and a third grounding connection. The third connection is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement with an appropriate outlet.

As with all industrially manufactured goods, the use of substances that induce an allergic reaction such as aluminium cannot be generally excluded. If you develop an allergic reaction (such as a skin rash, frequent sneezing, red eyes or respiratory difficulties), consult a physician immediately to determine the cause.

Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped. Besides potential harm to others, you run the risk of suffering an electric shock. If one of the following conditions occurs, please disconnect the mains plug and call your dealer or technical support!

- Power cord or mains plug is damaged or worn.
- Liquid penetrated the unit.
- The unit was exposed to rain or high ambient humidity.
- The unit does not function properly, even when following all the instructions in the manual. Only manipulate the controls as stated in the manual, wrong settings on the controls may damage the unit.

The unit has fallen and the housing damaged.  
**WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE**

NPU / RPU

Data

Transport

Important Safety Instructions

Safety and Environment

Quickstart Connect

Quickstart ON / OFF

Maintenance

Conformity

## Important Safety Instructions

Read these instructions.

Keep these instructions.

Heed all warnings.

Do not use this apparatus near water.

Clean only with dry cloth.

Do not block any ventilation openings.

Do not install near any heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.

Protect the power cord (not included) from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

Only use attachments / accessories specified by the manufacturer.

When a cart is used, use caution when moving the cart / apparatus combination to avoid injury from tipping over.

Unplug this apparatus during lightning storms or when used for long period of time.

Refer all servicing to qualified service personnel. Periodic servicing is required. Servicing is also essential before powering up or using the equipment in the case of the apparatus being damaged in any way, if liquid has been spilled or objects have fallen into the apparatus, if the apparatus has been exposed to rain or moisture, or it does not operate in any normal manner or has been dropped. Refer also to qualified service personnel if any visual inspection identifies any abnormalities.

**NPU / RPU**

**Data**

**Transport**

**Important Safety  
Instructions**

**Safety and  
Environment**

**Quickstart  
Connect**

**Quickstart  
ON / OFF**

**Maintenance**

**Conformity**

## Electric shock warning on the rear panel

The unit should be serviced by qualified personnel only, as live parts may be exposed when opening and/or removing coverings; besides others, you run the risk of suffering an electric shock.



NPU / RPU

Data

Transport

Important Safety  
Instructions

Safety and  
Environment

Quickstart  
Connect

Quickstart  
ON / OFF

Maintenance

Conformity

## Operating limits

Temperature 0°C - 40°C / 32°F – 104°F

Deeper temperature can cause failure of the displays, higher temperature can overcharge the cooling system of the apparatus and can destroy hardware components.

Humidity

Operation: 20% - 80% relative humidity (no condensation)

Storage: 10% - 80% relative humidity (no condensation)

Environment

Follow all the IMPORTANT SAFETY INSTRUCTIONS

Use the apparatus only within the environment operating limits

Use the apparatus only indoor

Air must be free of dust and hazardous and explosive substances.

Avoid vibrating support, and extreme loud environment

This apparatus is not protectet against splash water. Do not use this apparatus near water.

Do not use the apparatus in rain or moisture.

NPU / RPU

Data

Transport

Important Safety  
Instructions

Safety and  
Environment

Quickstart  
Connect

Quickstart  
ON / OFF

Maintenance

Conformity

## Front panel

NPU (Network Processing Unit) and RPU (Replay Unit)

Standby switch

First push = ON (If power connector on the back panel is in "I" position  
Second push = OFF (all modules within the apparatus are supplied with power)



2x USB (e.g. mouse, keyboard)

RESET ( if nothing else works)

Command Touch Screen

NPU / RPU

Data

Transport

Important Safety  
Instructions

Safety and  
Environment

Quickstart  
Connect

Quickstart  
ON / OFF

Maintenance

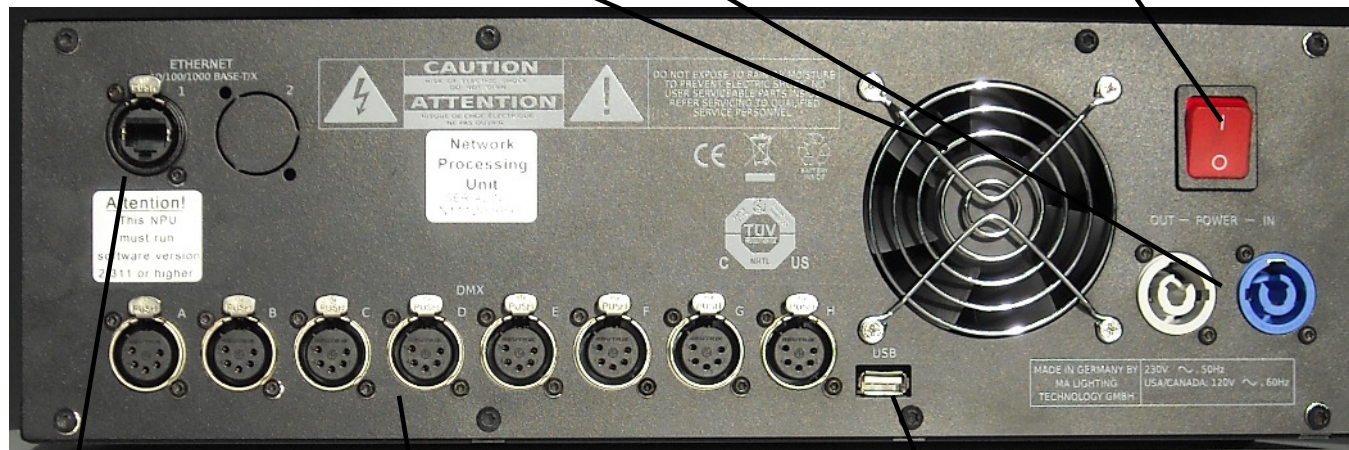
Conformity

## NPU (Network Processing Unit) Back panel

Power switch ON / OFF (In standby mode – switch on “I”, the AC power voltage is present within the instrument, even if the apparatus is switched off by the push button on the front))

Power supply 120 / 230V, 50 / 60Hz no switching of voltage necessary (Cable not included ex works)  
CAUTION: The total current power consumption of the units, connected in series, must not exceed the maximum of the power source! Power Out: max 8A / 800 VA!

Do not cover or block ventilation



Ethernet (for connecting other MA-consoles and onPC)

Connect 8x DMX OUT

Connect USB (e.g. mouse, keyboard)

NPU / RPU

Data

Transport

Important Safety Instructions

Safety and Environment

Quickstart Connect

Quickstart ON / OFF

Maintenance

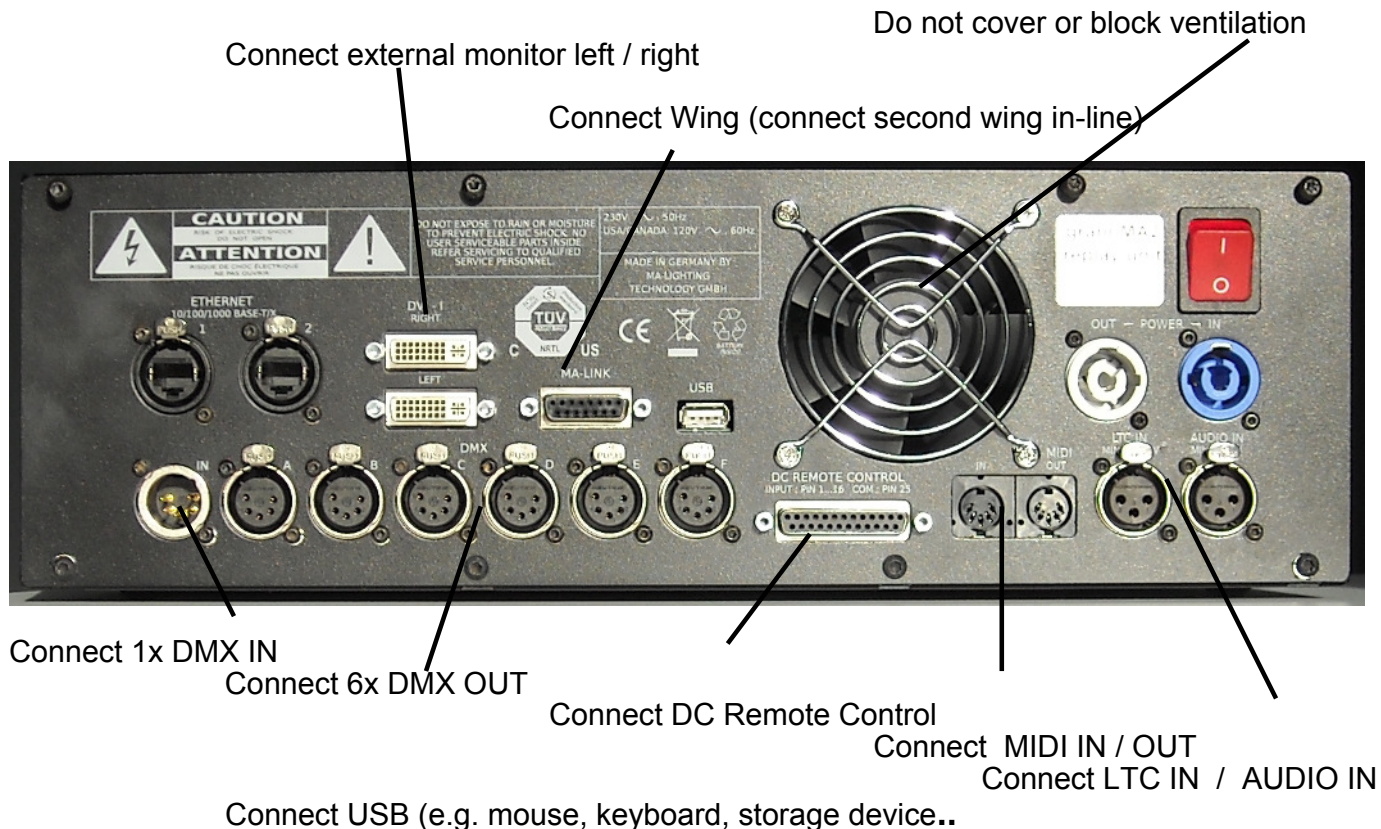
Conformity

## RPU (Replay Unit) Back panel

Power switch ON / OFF (In standby mode – switch on “I”, the AC power voltage is present within the instrument, even if the apparatus is switched off by the push button on the front)

Power supply 120 / 230V, 50 / 60Hz no switching of voltage necessary (Cable not included ex works)  
CAUTION: The total current power consumption of the units, connected in series, must not exceed the maximum of the power source! Power Out: max 8A / 800 VA!

2x Ethernet ( for connecting other MA-interfaces, onPC, 3D , Remote PDA... via WLAN)



NPU / RPU

Data

Transport

Important Safety  
Instructions

Safety and  
Environment

Quickstart  
Connect

Quickstart  
ON / OFF

Maintenance

Conformity

## Switching the unit On/Off

**Caution: Do not power down during booting.** Such a switch-off may lead to corruption of the solid state disk files.

### Power connector

#### Position I = ON

In the I position, the instrument is in standby mode or in operation, depending on the position of the ON/STANDBY key at the front panel.

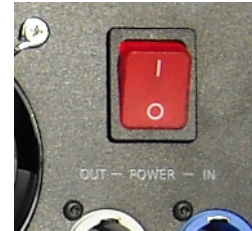
**Note:** The AC power switch may remain ON continuously.

Switching to OFF is only required when the instrument must be completely removed from the AC power source.

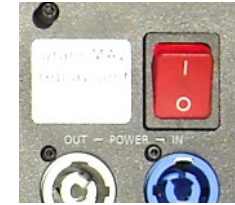
#### Position O = OFF

The 0 position implies an all-pole disconnection of the unit from the AC power source.

AC power switch on the back panel NPU



and RPU



### Standby switch

(NPU and RPU)

The ON/STANDBY switch activates two different Modes:

**Operation ON – First push on ON/STANDBY - switch**

The unit starts booting. All modules within the instrument are supplied with power.

**Note:** After a current interruption the unit automatically returns to the status before the failure – if the switch stays in this mode.

**STANDBY – Second push on ON/STANDBY – switch**

**Caution: In standby mode, the AC power voltage is present within the unit**

### Switching On the unit

In order to switch on the unit, set the power switch on the rear panel to position I.

Set the unit to operating mode by pressing the ON/STANDBY switch on the front panel.

### Switching Off the unit

In order to switch off the unit, push the ON / STANDBY switch on the front panel and confirm with the softbutton “YES”. In this standby mode, the AC power voltage is present within the unit. For longer non use switch the power switch to “0”.

ON/STANDBY switch on the front panel



NPU / RPU

Data

Transport

Important Safety Instructions

Safety and Environment

Quickstart Connect

Quickstart ON / OFF

Maintenance

Conformity

## Cleaning

The unit only requires minor attention. Clean the surface only with dry soft cloth and check ventilation holes is clear. Do not use any liquid cleaner or compressed air.

## Maintenance

Electric shock warning: The unit should be serviced by qualified personnel only, as live parts may be exposed when opening and/or removing coverings; besides others, you run the risk of suffering an electric shock.

[NPU / RPU](#)

[Data](#)

[Transport](#)

[Important Safety Instructions](#)

[Safety and Environment](#)

[Quickstart Connect](#)

[Quickstart ON / OFF](#)

[Maintenance](#)

[Conformity](#)

## Declaration of Conformity

**Manufacturer's name:** MA Lighting Technology GmbH

**Manufacturer's address:** Dachdeckerstraße 16  
D-97297 Waldbüttelbrunn  
Germany

*declares that the products*

**Product category:** Control unit

**Name of product:** grandMA2 replay unit (RPU)  
grandMA2 network processing unit (NPU)

are conform to the following directives and harmonized standards:

**Safety:** EN60065, EN60950-1

**EMV (EMC):** 2014/30/EG  
EN55103-1:2009 (E1) as well as EN55103-2:2009 (E2)

**ROHS (II):** 2011/65/EU

**Additional information:** DMX512, ethernet, USB. Malink, DVI, LTC, Audio In, Midi and analogue inputs must be shielded and the shielding must be connected to the earthing resp. to the housing of the corresponding plug.

Waldbüttelbrunn, February 4<sup>th</sup> 2013

Dipl. Ing. Michael Adenau



NPU / RPU

Data

Transport

Important Safety  
Instructions

Safety and  
Environment

Quickstart  
Connect

Quickstart  
ON / OFF

Maintenance

Conformity

# ..the other members of the grandMA2 family



grandMA2 full-size



grandMA2 light



grandMA2 ultra-light



grandMA2 faderwing



grandMA2 NPU (network processing unit)



grandMA2 RPU (replay unit)

Gerätetyp / model: :.....

Optionen / options:.....

Seriennummer / serial number.....

Baujahr / year of manufacture.....

Distributor:



Notizen/notes:.....

.....

.....

.....

.....

.....

.....

.....

.....

.....



Vervielfältigung oder Veröffentlichung dieses Booklets, auch teilweise, in jeglicher Form nur mit schriftlicher Genehmigung durch MA Lighting Technology GmbH.  
Änderungen ohne vorherige Ankündigungen möglich.  
Keine Haftung bei Fehlern oder Ungenauigkeiten in diesem Booklet.

Without having any written permission from MA Lighting Technology GmbH it is not allowed to copy, reproduce or publish any part of this booklet, neither in printed form nor by photos or electronic media.  
All technical specifications are subject to change without notification.  
We do not assume liability for any incorrect information in this booklet.