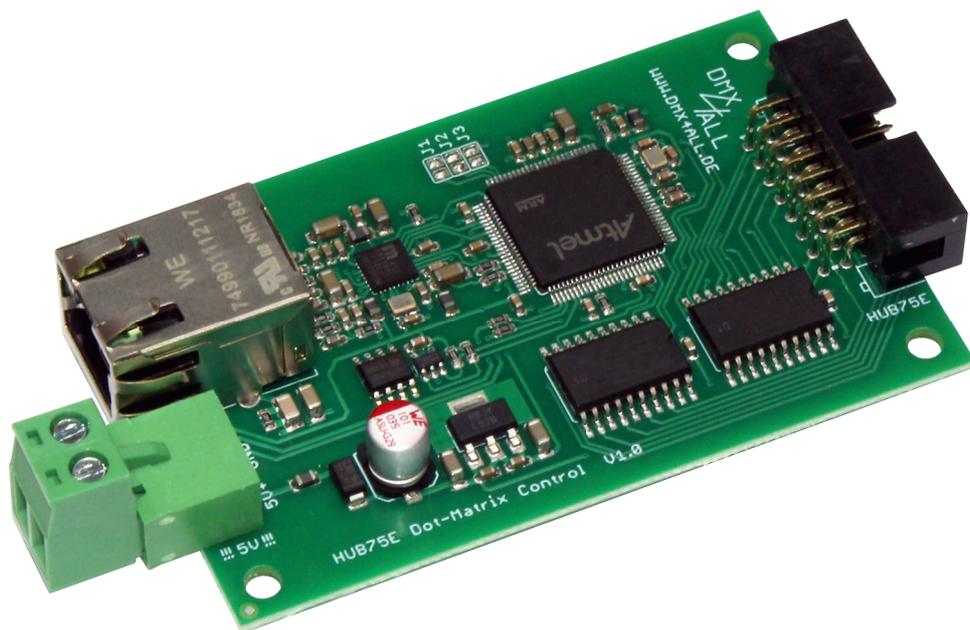


# HUB75E Dot-Matrix Control

User manual



**DMX** <sup>®</sup>  
**4**  
**ALL**



For your own safety, please read this user manual and warnings carefully before installation.

## Description

The **HUB75E Dot-Matrix Control** is a controller for controlling several Dot-Matrix-Displays.

A Standard RJ45 net work connector is to be used to connect the ethernet net work.

### **Up to 5440 RGB-Pixel**

Up to 5440 RGB pixels can be controlled by the HUB75E Dot-Matrix Control.

### **Adjustable Dot-Matrix Parameter**

The parameters for the dot matrix are adjustable. So, different dot-matrix displays can be controlled via the HUB75E Dot-Matrix Control.

### **Art-Net™ or TPM2.net**

The data transfer occurs per Art-Net™ or TPM2.net.

### **Muteable Status-LEDs**

The LED-Displays on the HUB75E Dot-Matrix Control can be switched off via ArtNet-Command (AcLedMute) or time-controlled.

This is especially useful on stages to avoid disturbing "light spots".

### **Easy Configuration**

A user-friendly configuration via a web browser allows a quick and uncomplicated setting of all parameters. No special software is necessary, a normal web browser is enough.

This allows configuration at any time from PC, smart phone or tablet.

For an easy setting of the IP, we provide the IP-Configurator as a PC-Tool or Android app free of charge. This allows leaving the network settings unchanged and configure the IP without any problems.

### **Use together with WiFi-Components**

In connection with a WiFi-Bridge the HUB75E Dot-Matrix Control can be integrated into standard WiFi-Networks.

### **Firmware-Update-Function**

To use future functions the HUB75E Dot-Matrix Control offers a Firmware-Update-Function. This can be started from a web browser, so no direct access to the device is necessary!

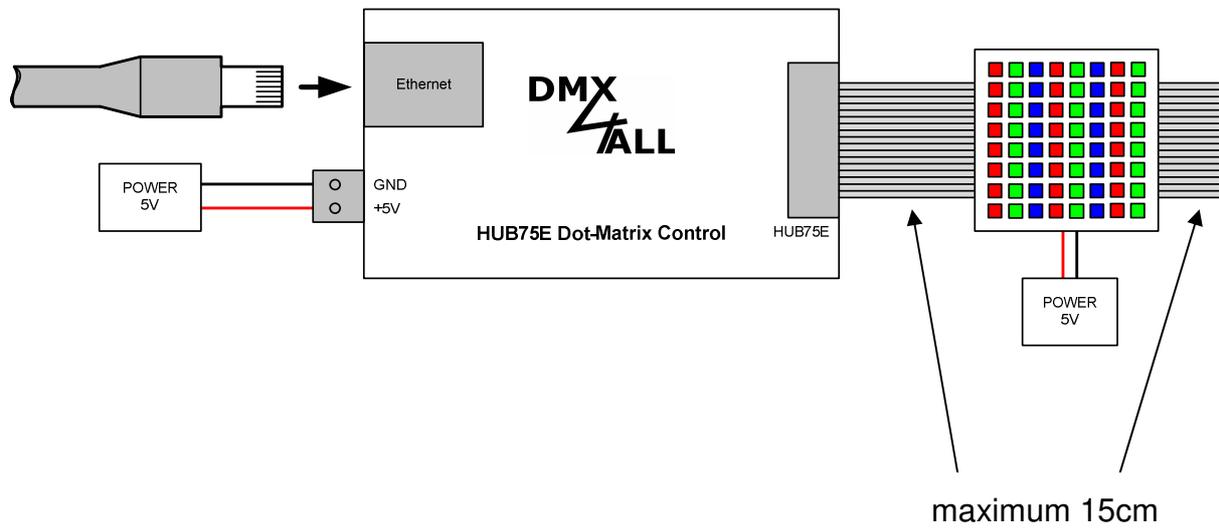
## Data sheet

<b>Power supply:</b>	5V DC (200mA@5V)
<b>Connections:</b>	Ethernet: RJ45 Power: 2pin screw terminals HUB75E: 16pin pin header
<b>Data Fail:</b>	Hold Blackout Saved Picture
<b>Dot-Matrix Parameter:</b>	Panel number (1-10) Panel width (32, 64, 96, 128) Panel height (8, 16, 32, 64) Panel Scan Rate (1/4, 1/8, 1/16, 1/32) Panel RGB Groups (1, 2) Color depth (3-24 Bit)
<b>Protocol:</b>	Art-Net™ 4 (maximal 32 Universes) TPM2.net (maximal 16384 Channels)
<b>Color sequence:</b>	RGB
<b>User Picture:</b>	User configurable output which is outputted after power on or after data fail
<b>LED-Displays:</b>	Green: Ethernet-Connection Yellow: Data transfer
<b>Ambient temperature:</b>	0 – 40°C
<b>Dimensions:</b>	80mm x 50,5mm (without overhanging mounting components)

## Contents

- 1x HUB75E Dot-Matrix Control
- 1x Screw terminals 2pin / RM5
- 1x Quick guide german and english

## Connection



The length of the data connection between the HUB75E Dot-Matrix Control and the Dot-Matrix-Modules or between two Dot-Matrix-Modules must not overrun 15cm !

## Connection of several dot-matrix modules

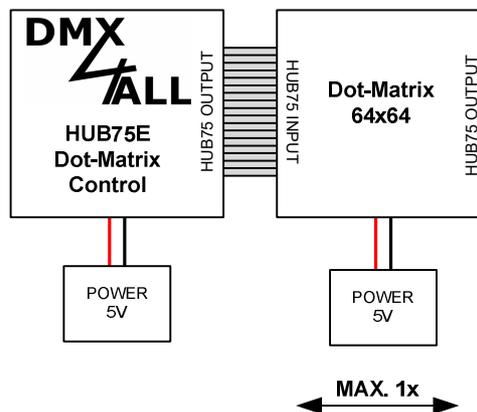
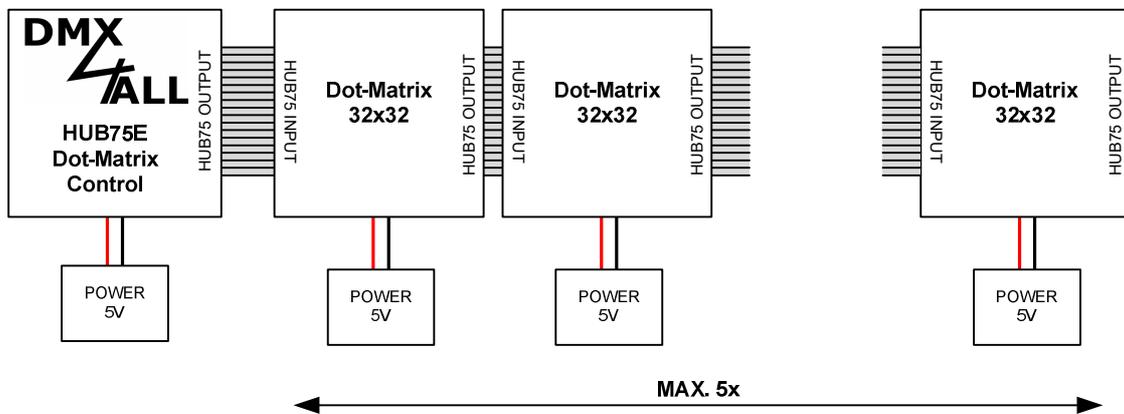
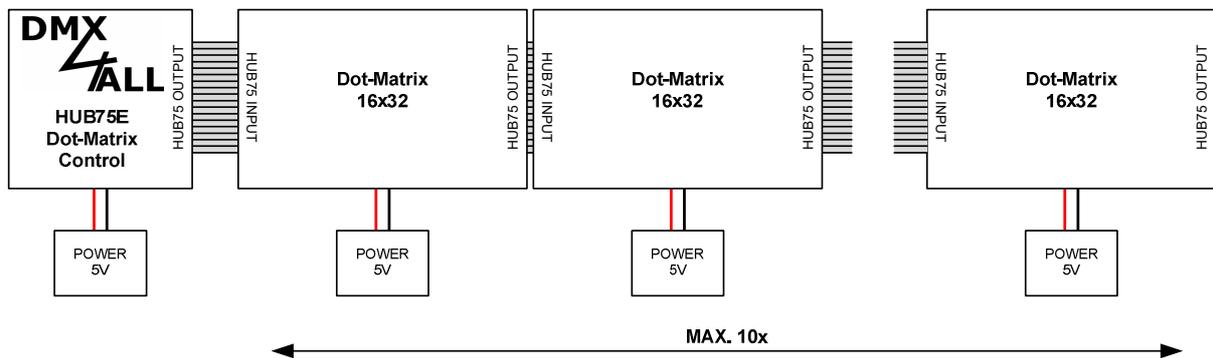
Several dot-matrix panels can be connected to one HUB75E Dot-Matrix Control. For this purpose a dot matrix panel provides a HUB75 data input and a HUB75 data output to connect the panels together.

The number of Dot-Matrix-Panels limits



The number of Dot-Matrix-Panels limits

- The number of 32 universes / 16384 channels
- The maximum length of one whole line to 620 RGB-Pixel



## LED-Display

### LED green

The green LED flashes, if no Ethernet-Connection is available and lights permanently, if an Ethernet-Connection is available.

### LED yellow

The yellow LED lights up as soon as data are received.

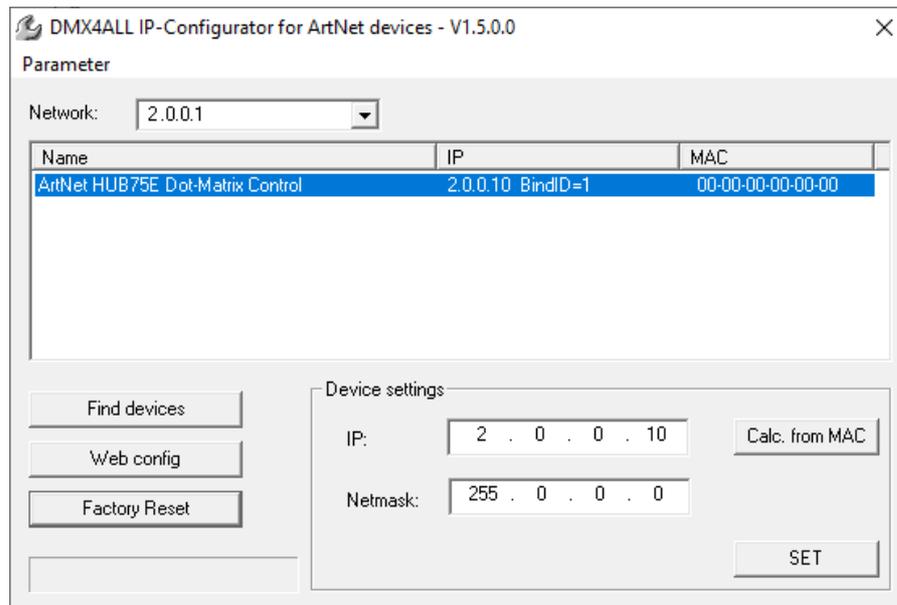
## Configuration

The **HUB75E Dot-Matrix Control** configuration occurs via a web interface, which can be accessed via any web browser.

### Set the IP with IP-Configurator

The **IP-Configurator** allows setting the IP-Address and net mask setting also, if the net work setting of the PC is not in the range of the IP range of the HUB75E Dot-Matrix Control.

- Install the program IP-Configurator
- Connect the HUB75E Dot-Matrix Control with the net work and start it
- Start the software IP-Configurator



- The DMX HUB75E Dot-Matrix Control is shown in the list
- Select the entry (click)
- Enter the new IP and net mask
- Click SET

## Set the IP with web browser

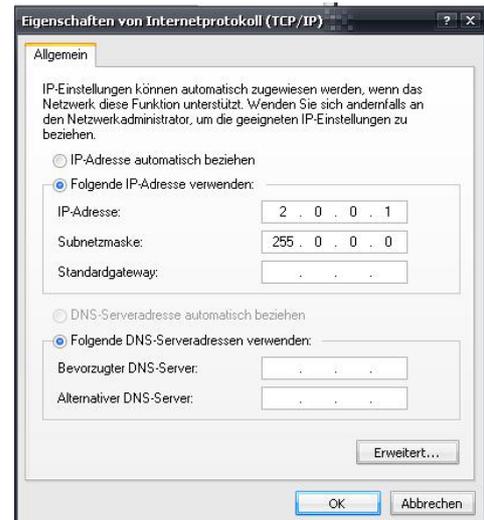
The assigned **IP-Address** within the delivery status is **2.0.0.10** which will be used for the web-interface.

Please set the net work card of your computer to this IP range to call the IP-Address 2.0.0.10 via the web browser.



The network settings of the computer must be set to the **IP-Address 2.0.0.1** and the **subnet mask must be 255.0.0.0** .

Please take further details from the ArtNet-Specifications.



## Device Configuration

Call the IP of the HUB75E Dot-Matrix Control in the web browser and within the address bar (delivery status: 2.0.0.10) to get the following configuration page:



Each node needs an own **IP-Address** so the assignment can occur clearly within the network. Use in accordance to the ArtNet-Specifications the IP-Address 2.x.x.x or 10.x.x.x

Any other IP-Address can also be used e.g. 192.168.1.10 .  
In this case the net mask has to be fitted to 255.255.255.0 !

For a better distinction you can give every ArtNet-Node any name.  
The **Short-name** is limited to 18 marks and the **Long-name** is limited to 64 marks.

The **Netmask** is to be left at 255.0.0.0 according to the ArtNet-Specification.

The ArtNet-Parameter **Net**, **SubNet** and **Port** show the received DMX-Universe.

If the option **LED indicator auto off** is activated, the LEDs at the device are shut down after 10 minutes of operation with a permanent net work connection.

**Channels** specify the number of used DMX-Channels in each universe.

**SAVE** stores the Configuration.

## Output Configuration

The **HUB75E Dot-Matrix Control** can be used to control several Dot-Matrix-Panels.

Click **Output** to get the following configuration site:

**DMX4ALL HUB75E Dot-Matrix Control**

Output 1

▶ Main Settings ▶ Output ▶ Service

**Output settings**

Panel width: 32

Panel height: 16

Panel count: 1

Scan rate: 1/8

RGB groups: 2 (6 data lines)

Color depth: 15 Bit (Real Color)

Refresh rate: 250 fps

**Default display**

Power on: BlackOut

Data fail: BlackOut

Set current output as Saved Picture

**Sync Options**

Enable ArtSync / Madrix Sync

Save

**User Information**

The HUB75E Dot-Matrix Control is designed to control RGB LED Matrices with HUB75 connections.

The output is universal to control a lot of different versions.

It is possible to setup a total pixel height up to 64 pixel and a total pixel width up to 620 pixel.

Please read the manual to find more details about the setup.

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**Panel width** specifies the wide of the Dot-Matrix-Panels.

**Panel height** specifies the heights of the Dot-Matrix-Panels.

**Panel count** shows how many Dot-Matrix-Panels are connected.

**Scan rate** specifies the number of single controlled lines of a Dot-Matrix-Panel.

**RGB groups** show the number of RGB-Color connections.

**Color depth** sets the color depth at which the display is to be made.

**Refresh rate** shows the repeat frequency resulting from the previously made settings. An update is made after saving the settings.



The **Scan rate** as well as the **RGB groups** can be found in the manufacturers specifications for the dot matrix panels which are used.

The **Default Display** options are helpful for setting the behavior after turn on (**Power on**) and in case of data fail (**Data fail**).

The output is shut down by selecting the option **BlackOut**.

If you select the option **Saved Picture** the stored picture will be outputted.

To save a picture with the option Saved Picture the text box field **Set current output as Save Picture** is to activate. After clicking save the output is frozen and saved. It must be ensured that the wanted output is available at this time.

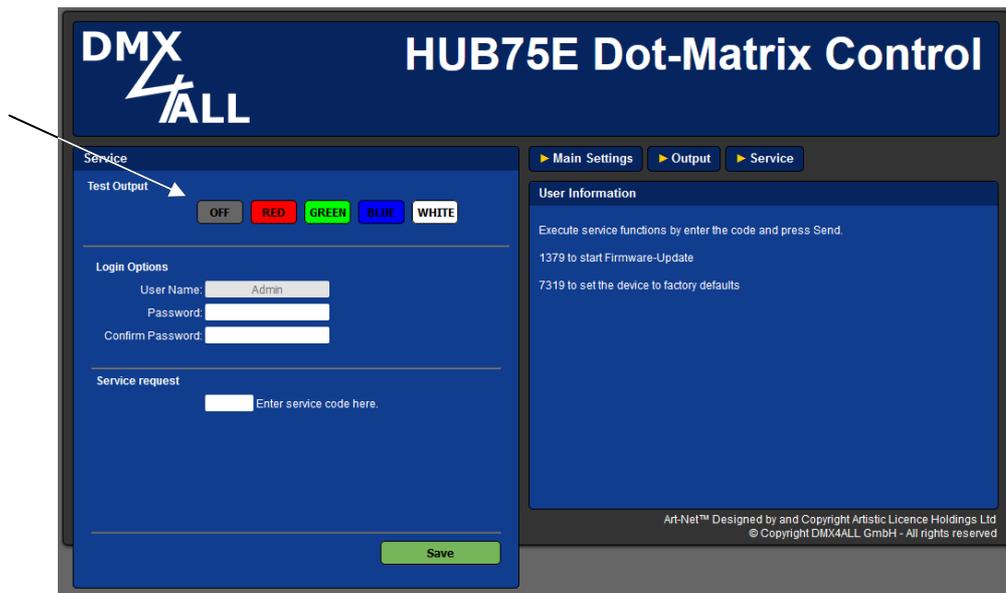
Via **ArtSync/Madrix Sync** the output can be synchronized.

## Check connected Dot-Matrix

The **HUB75E Dot-Matrix Control** provides a test output for an easy check of the connected Dot-Matrix.

You find the buttons OFF, RED, GREEN, BLUE and WHITE on the service site under Test Output.

By clicking the buttons the LEDs are controlled according to the selected color.



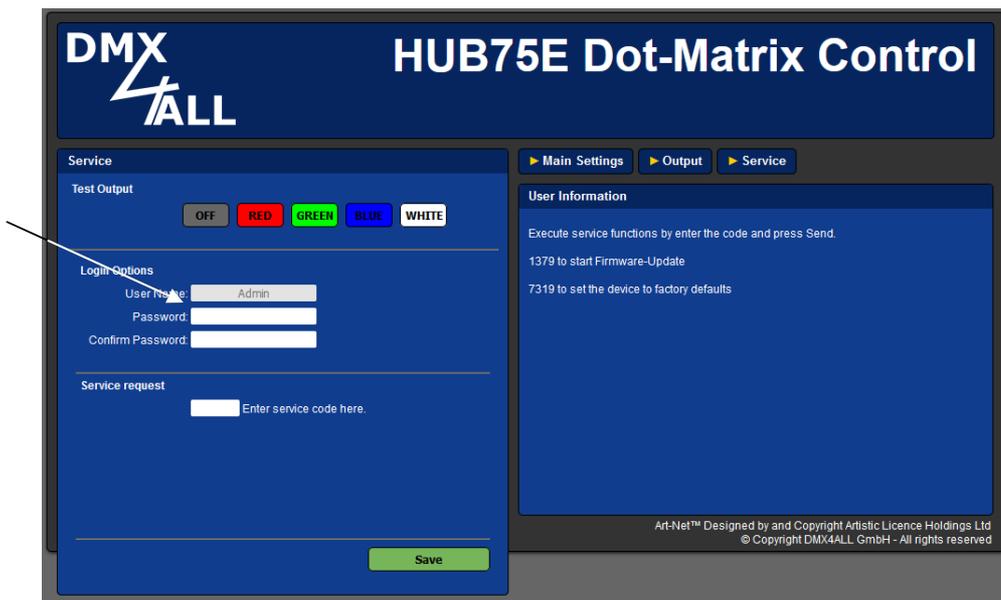
For Test Output no control signal may be sent to the HUB75E Dot-Matrix Control! An external control signal is handled with priority over a test output.

## Login for web surface

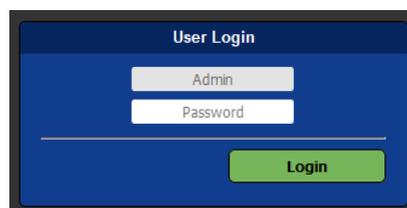
The **HUB75E Dot-Matrix Control** offers the option to fix a Login for the web surface.

Under Login Options on the service site a **Password** can be entered. An empty password allows an access without password request.

The **User Name** can't be changed and is always „Admin“.



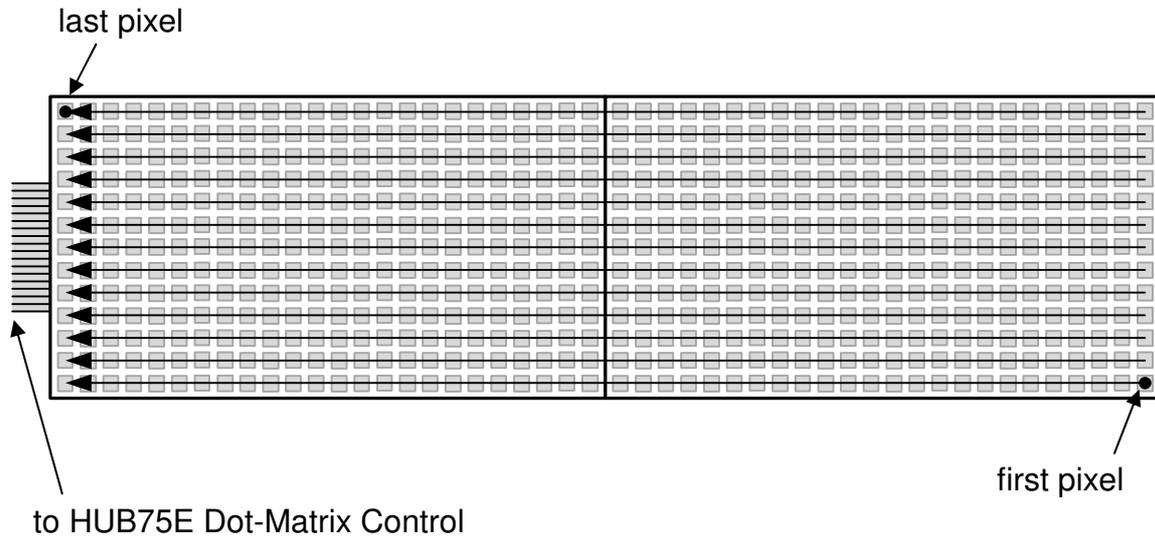
If a password is specified, it is requested in order to access the web interface.



If a password is assigned and no longer known, a factory reset must be performed to reset the password. In this case, all settings are also reset to the delivery status!

## Pixel-Patch

The **HUB75E Dot-Matrix Control** assigns the RGB pixels to the channels for control according to the following picture:



This makes it possible to create a simple patch in the software by selecting **horizontal + begin bottom right** for the pixel arrangement in the arrangement shown above.

## Factory Reset

To reset the **HUB75E Dot-Matrix Control** into the delivery status please proceed as follows:

- Open web browser and call the **Service** site
- Enter the service code „7319“ into the text box
- Click *Send*
- Then wait at least 10 seconds



If a factory reset is done via the web page, the IP address and net mask are also reset. It is possible that a return is not available always. Reset the IP if necessary (*see Setting the IP with the IP Configurator or Setting the IP via web browser*).

Generate the delivery status via the **DMX4ALL LAN-Updater**:

- Turn off the device
- Start the software **DMX4ALL LAN-Updater**
- Generate a network connection to your PC
- Turn on the device
- The yellow LED lights up for ca. 3 seconds
- Click **FIND** during the yellow LED lights
- Select **HUB75E Dot-Matrix Control** from list
- Click **FACTORY RESET**
- The reset is now executed

Generate the delivery status via the **DMX4ALL IP-Configurator**:

- Turn on the device
- Start the software **DMX4ALL IP-Configurator**
- Click **FIND**
- Select the **HUB75E Dot-Matrix Control** from list
- Click **FACTORY RESET**
- The reset is done

## Execute Firmware-Update

The **HUB75E Dot-Matrix Control** has an update function which enables transferring prospective firmware-versions.

Proceed as follows:

- Open web browser and call the **Service** site
- Enter the service code „1379“ into the text box
- Click *Send*
- Start the update software **DMX4ALL LAN-Updater**
- Select the **HUB75E Dot-Matrix Control** from list
- Click *Firmware-Update*
- Select and confirm the firmware file (.bin)
- Wait until the update has finished  
 (entry *RUN Application.* appears)
- Click *Back* within the web browser

Execute Firmware-Update without web browser:

- Turn off the device
- Start the software **DMX4ALL LAN-Updater**
- Generate a net work connection to your PC
- Turn on the device
- The yellow LED lights up for ca. 3 seconds
- Click **FIND** during the yellow LED lights
- Select **HUB75E Dot-Matrix Control** from list
- Click *Firmware-Update*
- Select and confirm firmware file (.bin)
- Wait until the update has finished  
 (entry *RUN Application.* appears)



If an error occurs during the update you can always activate the firmware update with the DMX4ALL LAN-Updater (without web browser) and start again.



## Accessories

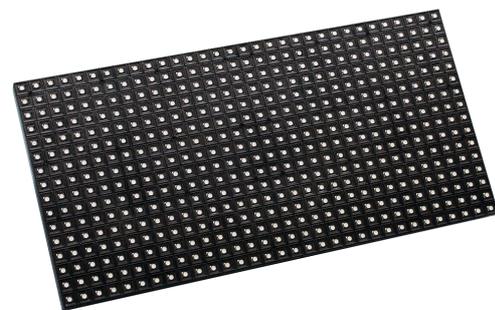
Aluminium housing 1455C801



Net work cable



HUB75 Dot-Matrix Panel



## CE-Conformity



This assembly (board) is controlled by a microprocessor and uses high frequency. In order to maintain the properties of the module with regard to CE conformity, installation into a closed metal housing in accordance with the EMC directive 2014/30/EU is necessary.

## Disposal



Electronical and electronic products must not be disposed in domestic waste. Dispose the product at the end of its service life in accordance with applicable legal regulations. Information on this can be obtained from your local waste disposal company.

## Warning



This device is no toy. Keep out of the reach of children. Parents are liable for consequential damages caused by nonobservance for their children.

## Risk-Notes



You purchased a technical product. Conformable to the best available technology the following risks should not be excluded:

### **Failure risk:**

The device can drop out partially or completely at any time without warning. To reduce the probability of a failure a redundant system structure is necessary.

### **Initiation risk:**

For the installation of the board, the board must be connected and adjusted to foreign components according to the device paperwork. This work can only be done by qualified personnel, which read the full device paperwork and understand it.

### **Operating risk:**

The Change or the operation under special conditions of the installed systems/components could as well as hidden defects cause to breakdown within the running time.

### **Misusage risk:**

Any nonstandard use could cause incalculable risks and is not allowed.

**Warning:** It is not allowed to use the device in an operation, where the safety of persons depend on this device



DMX4ALL GmbH  
Reiterweg 2A  
D-44869 Bochum  
Germany

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