WORK PRO®

LM Serial

EN

User Manual

Rev 16.01.01

EN

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GENERAL VIEW

Visión general del LM Serial

LM Serial is a programmable UDP-Serial (232&485) interface with 4 GPIO ports and internal clock. This guide describes the LM Serial and its functionality.

It is possible to transmitt control sentences, built-in in the own OSC command or external string saver that can be saved inside a memory bank.

These memories can trigger the execution of one or several UDP/OSC commands or open/close contacts through GPIO ports.

Ports:

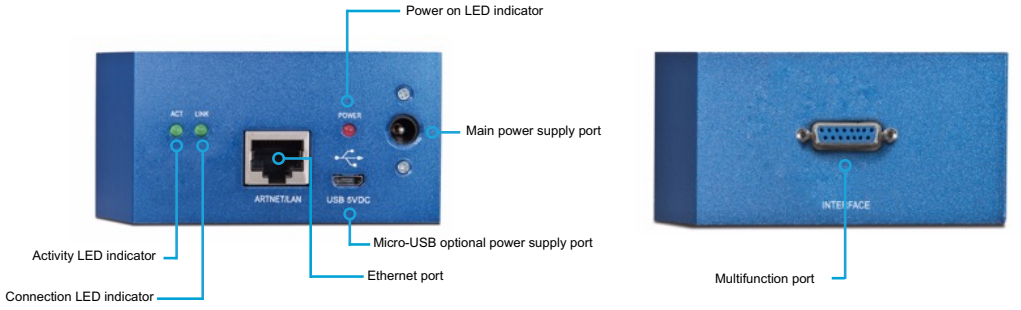
Port number 1: RS232

Port number 2: RS232 / RS485 (configurable)

Contacts:

4 GPIO contacts

Connectors and elements of the interface:



CONNECTIONS

Device connection

Ethernet port, in order to connect the LM Serial to a local network. The connection is made through RJ45.

Take into account that if you want to connect the device directly to a PC, IT IS NECESSARY a Crossover cable (in case your PC is not AutoMDIX compatible).

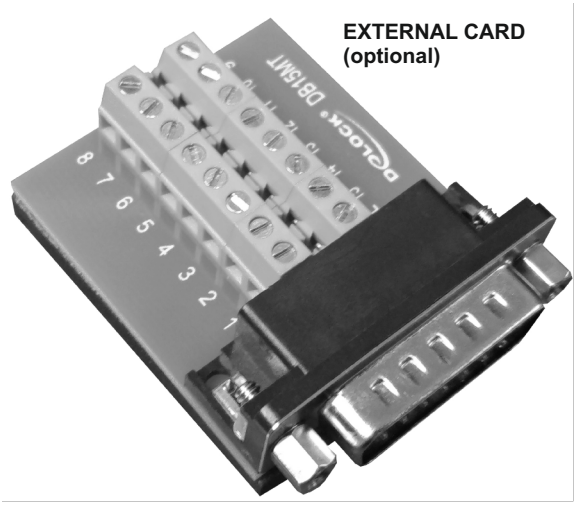
Main power supply port, in orer to connect the external power supply (+5VDC) included with the device.

Optional power supply port, allows to supply the device through USB

Multifunction connection port, is a port with SUB-D15 port used to connect it externally according to closed table or using the card which allows to connectin the terminal block (optional).

SUB-D15 terminals occupation

PIN 1	**RS232_1_TX**
PIN 2	**GND**
PIN 3	**RS232_2_RX**
PIN 4	**RS485_D+**
PIN 5	**GND**
PIN 6	**GPIO2**
PIN 7	**GPIO4**
PIN 8	**GND**
PIN 9	**RS232_1_RX**
PIN 10	**RS232_2_TX**
PIN 11	**GND**
PIN 12	**RS485_D-**
PIN 13	**GPIO1**
PIN 14	**GPIO3**
PIN 15	**GND**



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WORKCAD CONNECTION

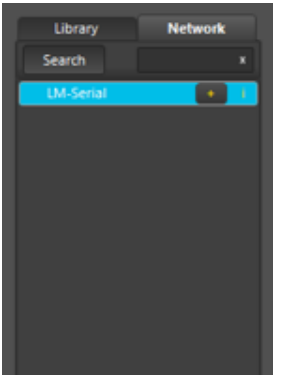
Using WorkCAD

All advanced control functions are made through WorkCAD software. It can be downloaded in our website using the following link:

http://workproaudio.com/productos/Docs/Software/WorkCADSetup.zip

Detecting LM Serial in WorkCAD

Start WorkCAD software and select "Network" tab in order to check all devices connected in the network.



Moving the mouse over “LM Serial” line, it is possible to view 3 different icons:

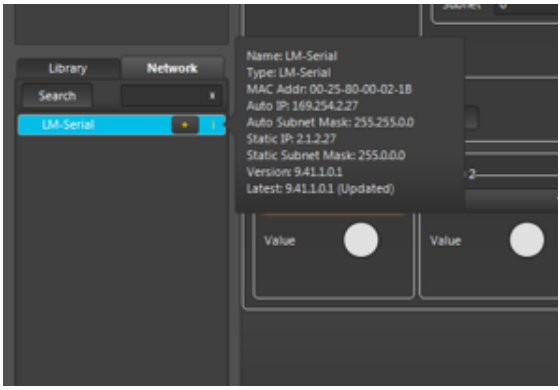
^ : It indicates thatt the device IS NOT UPGRADED.

+ : Pressing on this icon, we will add it to the current project. Take into account that, if the device is not updated, we can not add it to the project.

i : If you press this icon, you can check the device information (Static IP, Auto IP, Device name, software version, etc.).

Obtain LM Serial information in WorkCAD

In order to obtain information about the device, push the "**i**" icon in the device line.



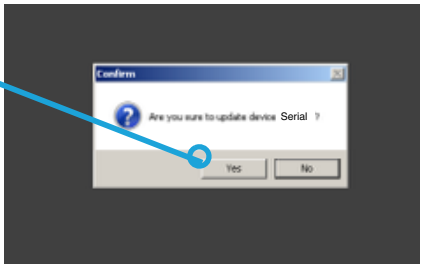
Updating a LM Serial device in WorkCAD

After installing LM serial, we recommended to check it to the most recent software version, this version will includes bug fix and new functionalities. The steps for updating process are the following:

1. Start WorkCAD software, press "Network" tab. unfolded it to check LM family devices that you can find in the local network.

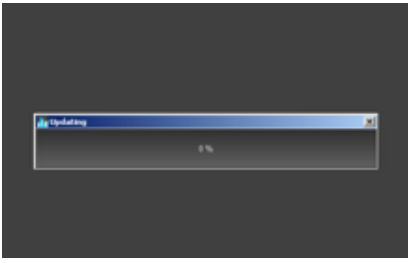
2. Navigate through LM serial device, you can check several icons. If this icon "^" appears, it means that the device is not updated.

3. Press this icon in order to start the updating process.

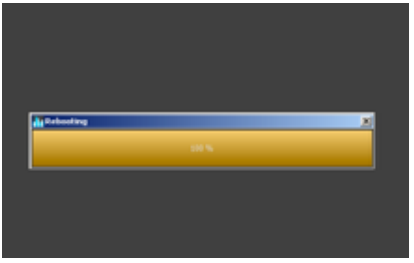


4. Press "YES" to start the updating process.

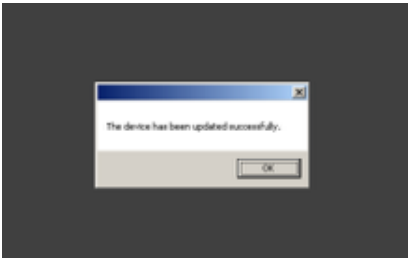
If you press "Yes" and it appears an error, please, check that the IP range in the PC where the WorkCAD sosftware is installed, is in the same that the LM device that you want to update.



5. During updating process, the progress bar will stop some seconds during its re-starting process, please, wait some seconds and DO NOT DISCONNECT the device until all process finish.



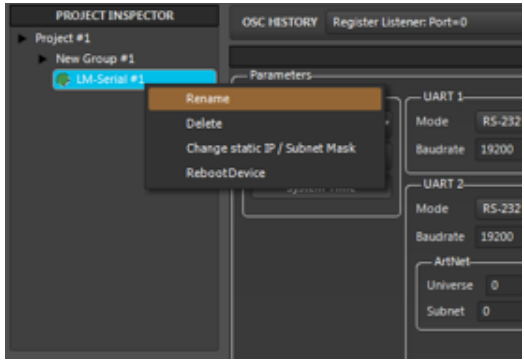
6. Once the updating process has finished, WorkCAD will show a windows indicating that the process is made correctly.



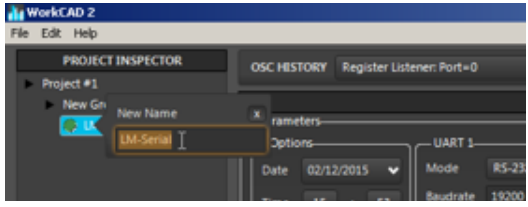
Changing the LM Serial name in WorkCAD

1. To change the name of the device, it is necessary to add it in a project previously. Press "Network" tab and, in the LM Serial name press "**+**" icon. The device will be copied in the upper windows, inside "Project Inspector".

2. Press right button in the mouse over the device name and the software will show an unfolded menu. select "Rename" option.



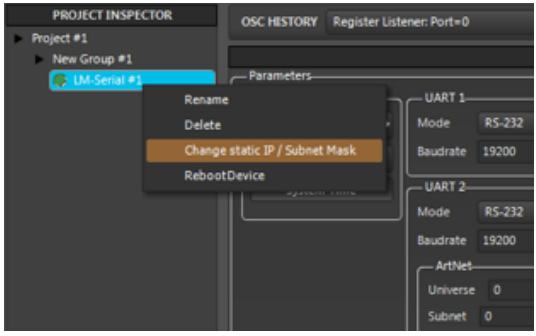
3. Assign a new name to the device.



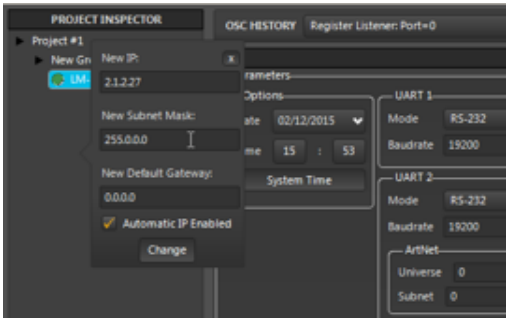
Once modified the name or IP address, it is advisable to reset the device in order to save the data correctly.

Changing the IP address in a LM serial using WorkCAD

1. Press right button in the mouse over the device name and the software will show an unfolded menu. select "Change static IP" option.



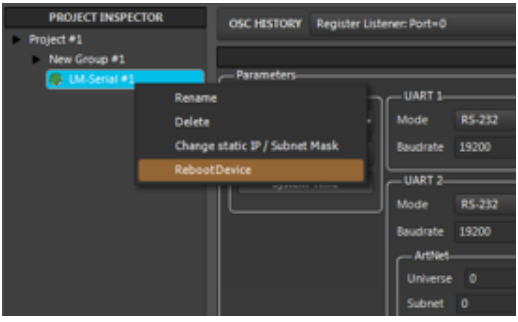
2. Assign a new IP address to the device



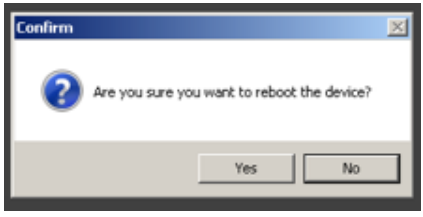
Once modified the name or IP address, it is advisable to reset the device in order to save the data correctly.

Reset a LM Serial device from WorkCAD

1. Press right button in the mouse over the device name and the software will show an unfolded menu. select "RebootDevice" option.



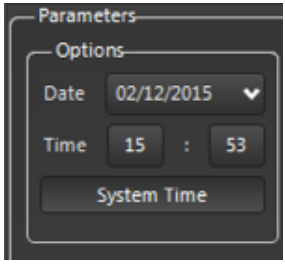
2-WorkCAD will request confirmation to reset the device



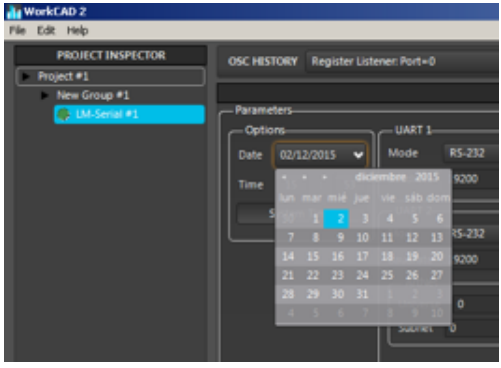
CONFIGURATION

Calendar adjustment

LM Serial includes an internal clock with up to 7 days reservation for to trigger events.



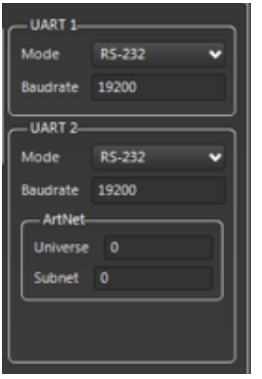
The time adjustment can be made automatically through "System Time" button, also can made manually using the date and time adjustment unfolded menu.



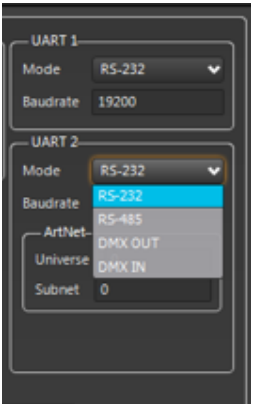
TO APPLY THE CHANGES, IT IS NECESSARY TO PRESS "SAVE"

Input/Output ports adjustment

It is possible to configure both ports independently. Take into account that port 1 only can be configured as RS232, adjusting the baudrate for the UART 1 according to installations necessities. By default, this value is 19200 baud



Port 2 (UART 2) through unfolded menu, can be configured as RS232, RS485 and DMX (IN or OUT) .

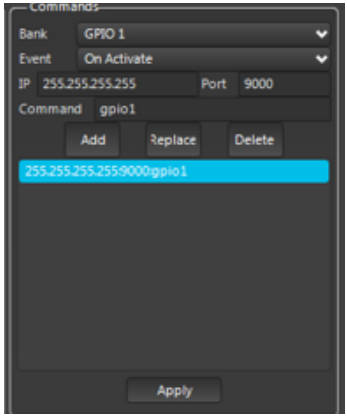


TO APPLY THE CHANGES, IT IS NECESSARY TO PRESS “SAVE”

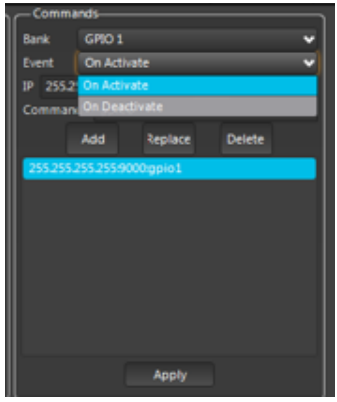
Programming Commands

From "Commands" menu is possible to program event inside memories or to assign functions to GPIO ports.

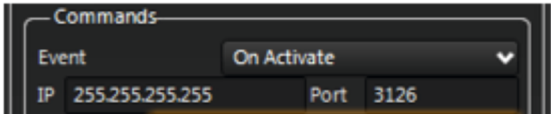
1º Press "click" over "Bank" unfolded menu to select the memory or GPIO event that we want to create.



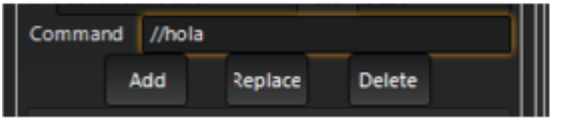
2º Select the command that will be executed when the event will be activated or deactivated.



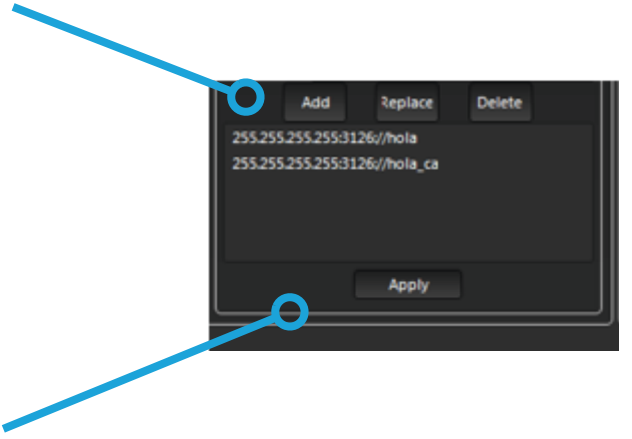
3º Enter the IP address of the device that will receive the message. In case to want to send a message to all network, enter 255.255.255.255.



4º Enter en command (in ASCII format) that we want to send. Remember that WorkCAD incorporates a tool, "OSC to ASCII" in case to need to check any command.



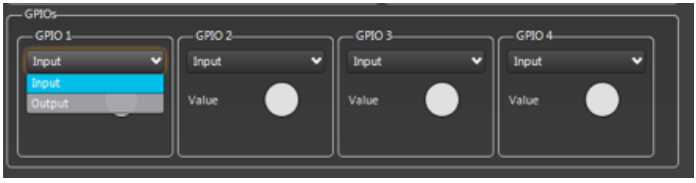
Once written the command, make "click" over "Add" button in order to apply the changes.



Configurating GPIO ports

The 4 ports GPIO can be configured as much input as output.

Through unfolded menu, it is possible to select its behaviour (Input or output)



In the lower side, you can find a state indicator, if the contact is being used, it will lit in green colour. When it is configured as output, it is possible to act over the contact manually, making "click" over the indicator.

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EXAMPLES OF USE

Using the device as ArtNet node

1. Configurate the UART 2 as DMX OUT
2. Connect the DMX cable from the lighting devices to the GPIO/RS485 terminals taking into accont:

PIN 1	**DATA +**
PIN 2	**DATA -**
PIN 3	**GND**

Using the device as ArtNet emitter

1º- Configurate the UART 2 as DMX IN
2º- Connect the DMX cable from the lighting console to the GPIO/RS485 terminals taking into accont:

PIN 1	DATA +
PIN 2	DATA -
PIN 3	GND

Using the device as UDP / RS232 interface

1. Configure the UART 1 with the adequate baudrate according to the device features that we need to control.

2. From the control device that send the UDP messages, we send the following message:

/serial1/out;s;"xxxxxx_serial";

Where:

- ***serial1*** indicates the port through we want to send the command (it can be serial1 or serial2).

- **xxxxxx_serial** indicates the RS232 or RS485 command that we want to send

Using the device as SERIAL / UDP interface

1. Configure the UART 1 or 2 with the adequate baudrate according to the device features that we need to control.

2. From the control device that send the messages, we send the following message:

/udp/out;,siib;"iptarget";fport;lport;"xxxxxx_udp";

Where:

- iptarget indicates the IP address that the device will receive the message

- fport indicates the desttination port of the message.

- lport indicates de local port from the message is sent.

-xxxxxx_udp indicates the sent message

Example:

To rise the gain of Output 1 in Digiline

/udp/out;,siib;"192.168.1.3";9000;6000;"//out1/gain;fFF;10.00;";

Adjust the levels of 3 or more DMX when a command is received through serial port

1º-Configurate the UART 1 with the correct baudrate.

2º-Configurate UART 2 as DMX OUT

3º-In “Commands” tab, select “Memory Bank 1”

4º-Write the command:

#//dmx1/ch/1;,i;128;

This command adjusts the channel 1 with a value of 128

(In the appendix you can find a table with the commands list)

5º-Make “click” over “Add” tab.

6º-Repeat the steps 4 and 5 introducing the following commands:

#//dmx1/ch/2;,i;255; It adjusts channel 2 to 255 value

#//dmx1/ch/3;,i;192; It adjusts channel 3 to 192 value

7º-From the main control device, we send the command:

#//memory1/exec;,;

(Parity None)
(Data size 8)

When the LM receives this command, it will execute memory 1 with the 3 new DMX values.

COMMAND TABLE 6

Executing a memory	/memory3/exec;,;
Activate or deactivate GPIO	/gpio1/value;,i;1;
To send data through Ethernet	/udp/out;,siib;”iptarget”;fport;lport;”xxxxxx_udp”;
To check the date	/config/date;,;
To send data through serial	/serial1/out;,s;”xxxxxx_serie”;
Adjust master level	/dmx1/ch/-1;,i;100;

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