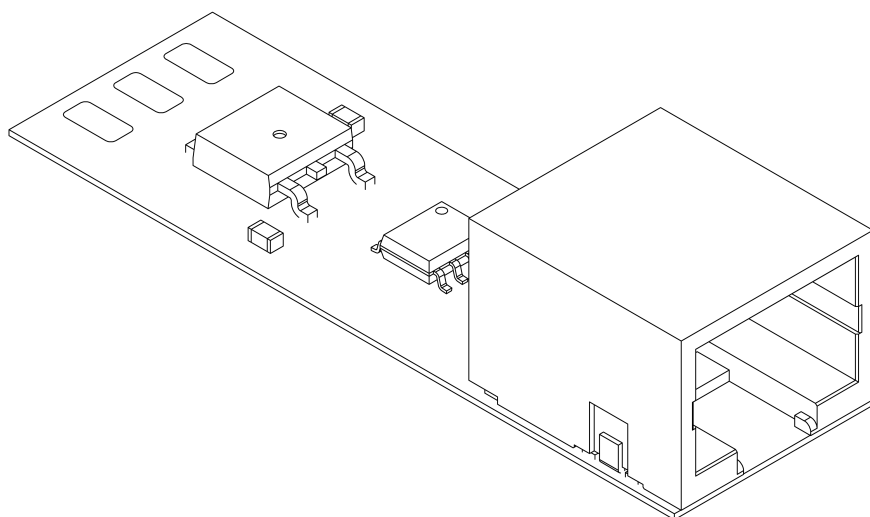




Rx48 RECEIVER MANUAL



THANK YOU FOR CHOOSING DIGIDOT!

DiGidot offers powerful products and solutions to control LED pixels. The DiGidot C4 is the heart of our control system and offers great flexibility and easy infrastructures. In order to benefit from all our system advantages, we offer some innovative accessories like range extending equipment.

These products allow you to send high speed SPI protocols over large distances. This allows you to install the DiGidot C4 controllers in a central place, this can drastically decrease the amount of hardware and it simplifies your infrastructure.

Have fun creating mesmerizing lighting installations!

Your DiGidot team

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INTRODUCTION

SPI protocols are sensitive to data distortion and often only work safely up to 2 meters (6.5 ft) of cable distance. The DiGidot Rx48 is a small size receiver module that can be used in combination with DiGidot C4 and a DiGidot Transmitter module. It uses DiGidot PxLNet to send sensitive SPI protocols over huge distances, up to 250 meters. Any single wire SPI protocol (Data only) that can be outputted from a DiGidot C4 can be received. This product translates PxLNet to the original SPI signal that is configured in the DiGidot C4 user interface.

You can connect the same amount of universes to this receiver as to the DiGidot C4 output port.

The onboard voltage regulator accepts voltages ranging from 12Vdc up to 48Vdc and can therefore be powered from the same power source as many pixel controlled LED Products.

Installation is easy thanks to the RJ45 connector but it can also be soldered on the underside. The output can be soldered directly to most industry standard SPI controlled LED strips.

PRODUCT INFORMATION

Contents

- DiGidot Rx48 Receiver module (PCB only)

NOTE: We put great care in our products and have a high quality control standard. Nonetheless we advise to double check for missing or damaged items.

In case of any missing or damaged items, please contact your supplier immediately. Never use damaged products!

TECHNICAL SPECIFICATIONS

Electrical

Input Voltage:	12-48VDC
Max. power consumption:	1W

Mechanical

Dimensions:	43.8 x 15.8 x 15.3 mm 1.72 x 0.62 x 0.6" (L x W x H)
Net weight:	6gr 0.11oz

Environmental

Operation Temperature (Tc):	0 to 50°C 32 to 122°F
Max. ambient Temp. (Ta ^{max}):	40°C 104°F
Storage temperature:	-20 to 50°C -4 to 122°F
Max. operating relative humidity:	90% (indoor use only)

Protection

IP rating:	IP00 (unprotected, indoor use only)
Voltage input:	Overvoltage protection (max. 60VDC)

Connectivity

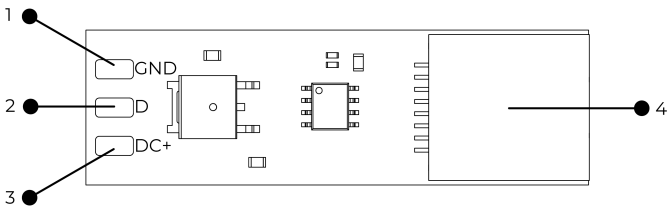
Solder pad wiring:	0,3-0,5 mm2 20-24 AWG
Terminal wiring:	Recommended: 0,3-0,5 mm2 20-24 AWG / max. 2,5 mm2 14 AWG

Quality

Warranty:	1 year carry in factory warranty
Compliances:	CE, RoHS
Applied standards:	EN60950-1:2006 +A11:2009 + A1:2010 + A12:2011 + A2:2013, IEC60950-1 / EN60950-1, EN61006-6-3, EN55032
HS Code:	8537109090

Product description

Topside	Type	Description
1	Power	GND/DC-
2	BUS I/O	Data out
3	Power	DC+ / 12-48V
4	RJ45 Bus	Data input
Pin 1 (orange/white)	BUS I/O	Data + in
Pin 2 (orange)	BUS I/O	Data - in
Pin 7 (brown/white)	Power	GND/DC-
Pin 8 (brown)	Power	GND/DC-
Underside	Type	Description
5	Power	DC+ / 12-48V
6	BUS I/O	Data out
7	Power	GND/DC-
8	BUS I/O	Data + in
9	BUS I/O	Data - in



BEFORE INSTALLATION

Before installing DiGidot products it's important to take notice of following safety and installation instructions.

Safety instructions

- ▶ Before installation and use of this product, read this manual carefully.
- ▶ Make sure that these instructions are handed over to the end-user and those responsible for installation and usage.
- ▶ Local electrical and safety rules and guidelines always overrule this manual.
- ▶ DiGidot Technologies B.V. cannot be held liable for improper handling, product installation, usage or storage.
- ▶ Installation should only be carried out by a professional and certified installer that is qualified to work on the electric installation.
- ▶ Do not conduct any repairs of the device (there are no user serviceable parts inside). Any unapproved repairs and/or product modifications will void product warranty. DiGidot Technologies B.V. cannot be held liable for any consequences.
- ▶ Repairs of this product may only be carried out by the manufacturer DiGidot Technologies B.V.
- ▶ Repairs and maintenance on the installation may only be carried out by qualified technicians.
- ▶ Always disconnect the mains power when working on a high voltage electric installation, not doing so may result in product damage or personal injuries.
- ▶ Do not connect or modify this product other than described in this manual.
- ▶ Never use a product that is damaged or does not work correctly or when the product is visibly damaged or when the product starts to smoke, or when a crackling/sizzling noise is audible. If this is the case in any way, disconnect power and please contact your supplier immediately.
- ▶ This is a low voltage device. Working voltage is 12-48 Vdc only.
- ▶ The only way to power off this product is to disconnect it from the power source.
- ▶ The product is designed for indoor use (dry locations) only. Exposure to rain or moisture may cause fatal damage.

INSTALLATION & WIRING

Mounting options

We recommend to place this product in a protected enclosure such as a junction box.

Double sided (foam)tape may be used to on the underside of this product, to hold it in place. Please be careful when applying pressure, small components can come off when applying excessive force.

When using heat shrink, please cover the entire module and be careful when applying heat, especially with heat guns. When overheating this product, components and soldering may come loose resulting in fatal damage.

TIP: It's safe to use and cover this product with appropriate electronic protection resin to improve IP rating.

Another option to improve IP rating is to use a conformal coating spray for electronics after all wires have been connected.

WARNING!

- ▶ This product should not be subjected to higher temperatures than their specification range (risk of fatal damage)!
- ▶ Keep this products away from direct sunlight, rain or other moisture (short circuit risk).
- ▶ Do not use this product outdoors or in humid environments (short circuit risk).

WARNING! TAKE ESD SAFETY PRECAUTIONS!



When working with PCB modules such as this product, it is required to work according to ESD guidelines and undertake all necessary ESD safety precautions to minimise the risk of ESD inflicted product damage.

There are several ways to connect and integrate this receiver module.

You can use the RJ45 connector on the signal input side or you can solder your signal wires to the underside of the product.

Data in

Use the RJ45 bus to connect a Cat-5E network cable or better.

or

Solder a DMX cable (110Ω impedance) or Cat-5E or better to the D+ and D- solder pads on the underside of the PCB. Solder the ground wire to the GND solder pad.

Data out & power in

Solder this module directly to the solder pads of any pixel tape that has a matching solder pad layout.

or

Solder wires with a wire gauge of 0,3-0,5 mm² | 20-24 AWG, to GND, D, and 12-48V

GND = Ground

D = Data signal

12-48V = DC+ supply voltage

NOTE: Keep wires between output and LED product within 2 meters (6.5 ft) in length.
Ground output wire from Rx48 must be equal in length as the Data wire.

Power supply

To power this product, the DC+ and GND must be connected to a SELV rated power supply that provides appropriate power at the required supply voltage.

Connecting power

Before connecting power, make sure that the outputs are wired and soldered correctly to avoid short circuits.

WARNING: This product has no reverse polarity protection. Connecting applying voltage incorrectly will cause fatal damage!

IMPORTANT: Make sure to equalize the ground potentials.

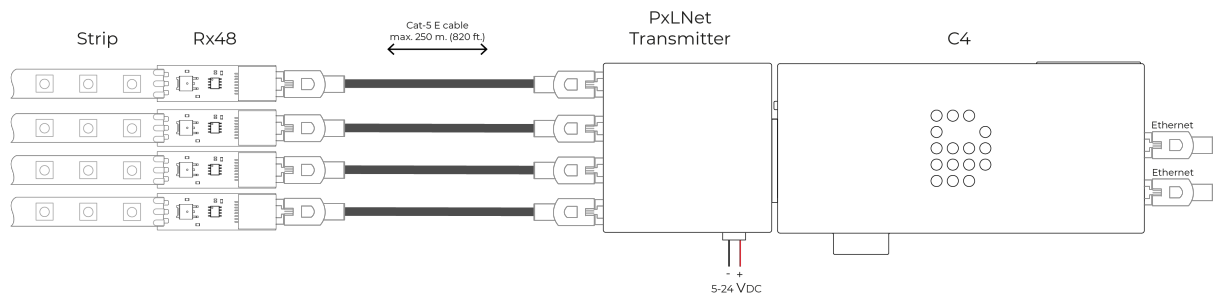
Always connect grounds (DC-) of DiGidot C4 controller and every power supply, connected to every product that is controlled by a single DiGidot C4 controller to each other.

If the grounds are not connected, this may cause malfunctioning.

Wiring schemes

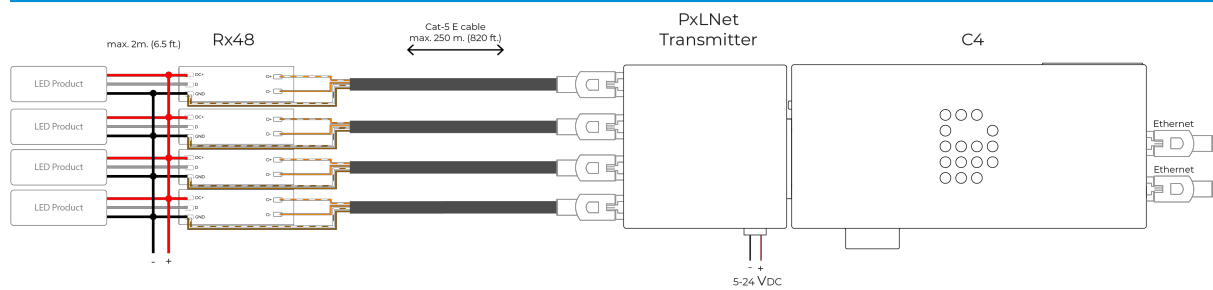
Following wiring schemes show various options to connect this product.

Wiring scheme 1



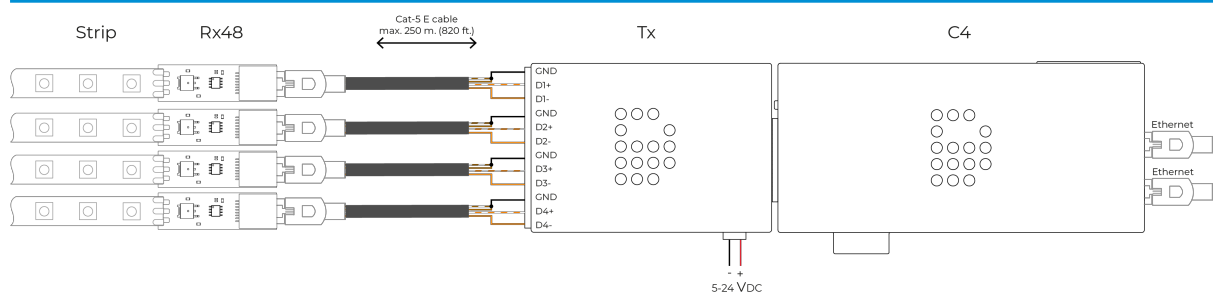
DiGidot C4 with PxLNet Transmitter connected by Cat-5E network cables to Rx48 receivers that are soldered directly to pixel controlled LED strips.

Wiring scheme 2



Transmitter connected by Cat-5E network cables that are soldered to Rx48 receivers and output wires soldered that are connected to LED products.

Wiring scheme 3



DiGidot C4 with Tx module connected by Cat-5E network cables to Rx48 receivers that are soldered directly to pixel controlled LED strips.

TIPS & TROUBLESHOOTING

In case you run into any trouble, please check your setup according to following checklist.

Standard troubleshooting checklist

1. Double check all cables and connections.
2. Double check soldered connections
3. Double check Network cable pinout and crimped connectors
4. Is the DiGidot C4 powered correctly?
5. Are the LEDs powered correctly?
6. Are all power supplies connected correctly to your mains power supply.
7. Is your network setup done correctly?
 - Prevent IP Address conflicts
 - Make sure that the subnet mask range is set correctly and that all IP Address are set within the appropriate range.
8. Are the inputs and outputs configured correctly?
 - Make sure that the correct IC/SPI protocol is configured.
 - Make sure that input and output matches the system setup.
9. Is your ground (DC-) from the DiGidot C4 output terminal connected to all the grounds of the LED products power supplies?

GENERAL INFORMATION

Online resources

For technical specifications, latest documentation, manuals, product information, support and upgrades, please visit www.digidot.eu.

Remarks

We've put great care in writing this manual. However in case you encounter any discrepancies or unclarities, please contact us.

This manual and function specific instructions are based on firmware and interface versions mentioned in the chapter 'Manual version'. §

Compliances & EU declaration of Conformity

This product is designed and produced by DiGidot Technologies B.V., Amsterdam, The Netherlands.



Hereby, DiGidot Technologies BV declares that this product complies with and was tested according to essential requirements of all relevant CE directives.

Warranty



This product is covered by a carry-in manufacturer's warranty of 1 year which covers any design faults, production faults and component failures.

Warranty voids if the product was installed or used incorrectly or not in accordance with this manual, and/or if the product was damaged due to external factors, modified or electrically overloaded. Warranty conditions of DiGidot Technologies B.V. apply. Warranty claims have to be issued by email: support@digidot.eu.

Disposal and recycling



This product should not be disposed with other household waste. When you decide to dispose this product and/or its battery, do so in accordance with local environmental and recycling regulations.

Feedback

Tell us all about your experience with DiGidot!

The continuous development of the DiGidot control platform is only possible thanks to feedback from our users. If you have any suggestions, please contact us by email: info@digidot.eu.

Imprint

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