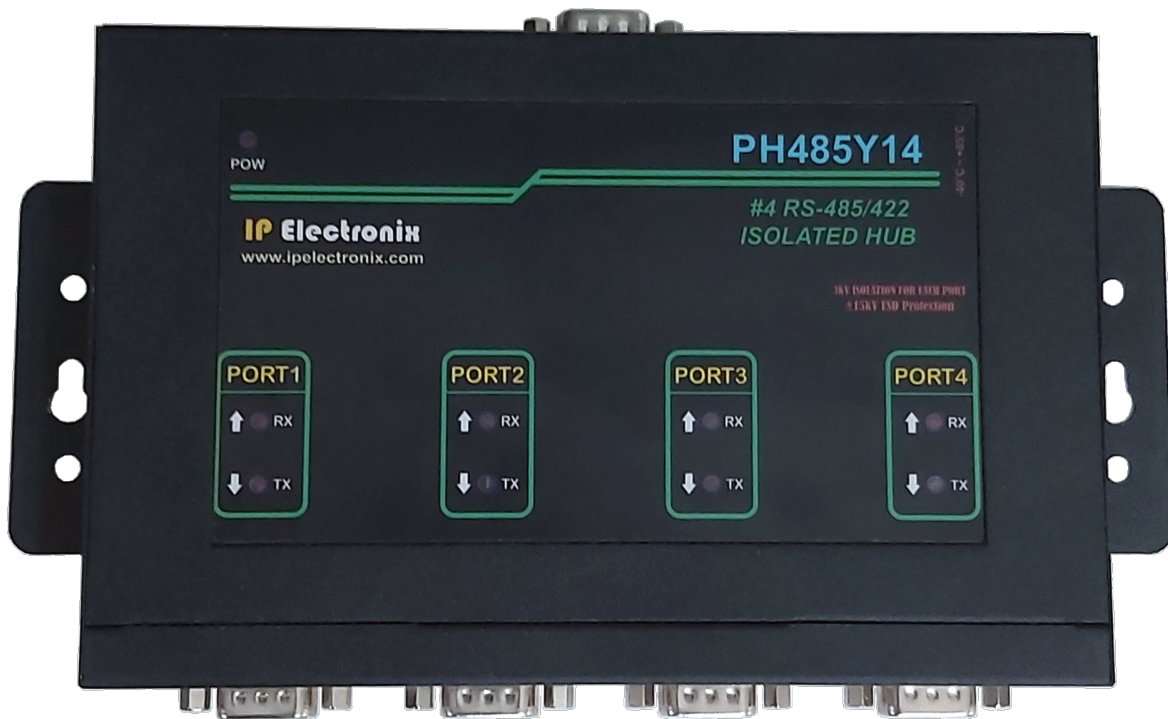# USER'S MANUAL

PH485Y14

#1 to #4 RS-485/RS-422 ISOLATED HUB (REPEATER, ISOLATOR & AMPLIFIER)

IPEX

(IP Electronix)

16 January 2022

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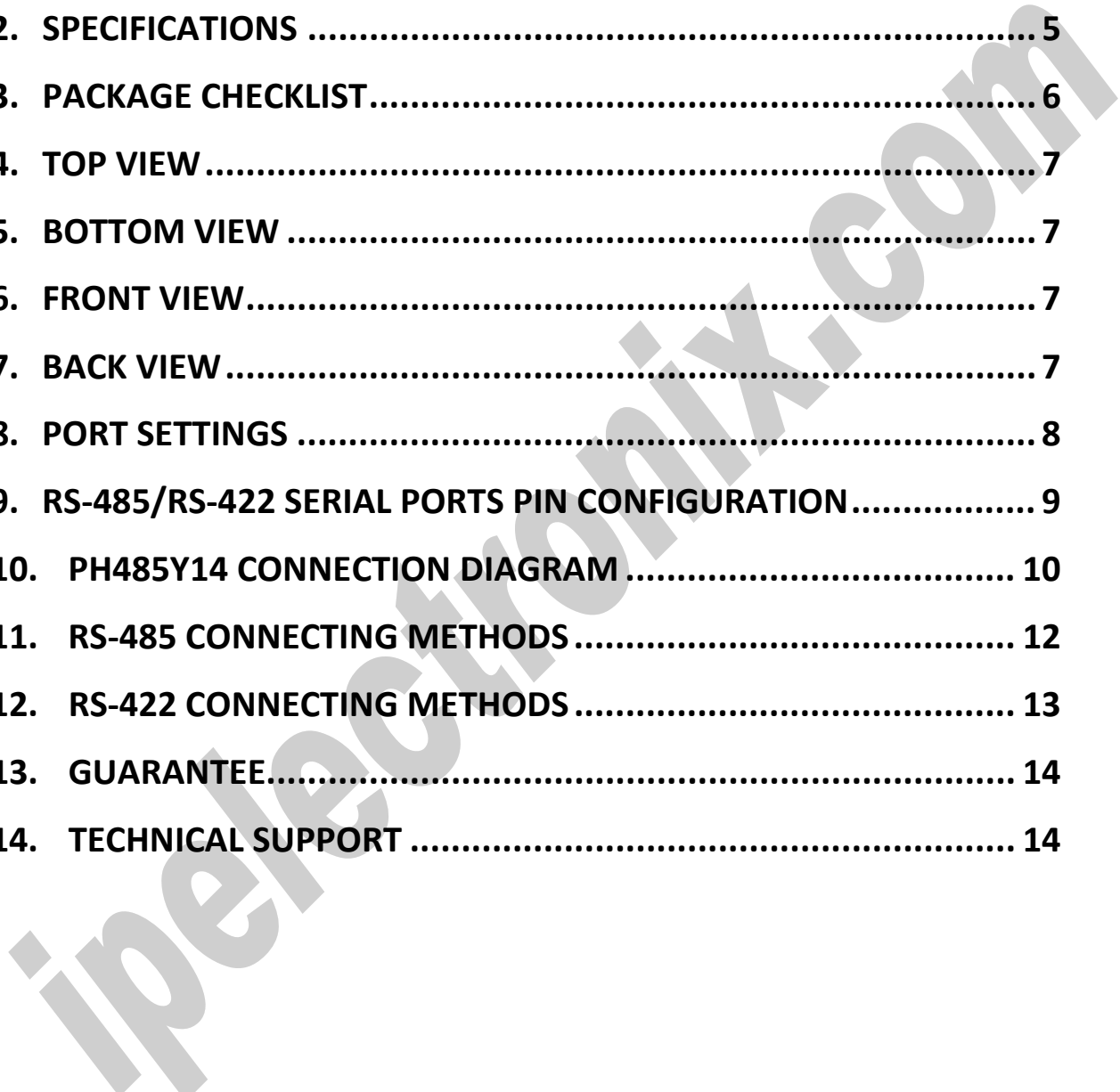
1. INRODUCTION

IPEX PH485Y14 is a 1 to 4 RS-485/RS-422 HUB that provides #4 RS-485/RS-422 ports from one single RS-485/RS-422 port. It works with Baud-Rate from 300bps to 230400bps. Using this device, you can connect a RS-485/RS-422 line, to 4 different devices.

PH485Y14 can also be used as a RS-485/RS-422 Repeater and Amplifier. In addition, due to the fact that 3kV Optical and Electrical insulations have been used in the design of this device, this means all the ports are insulated from each other, so using this device in the RS-485/422 line, can be very effective in eliminating electrically and electromagnetically noises. Also, the length of the RS-485/RS-422 line increases from 1200m to 2400m (1200m on each side).

Protection against Surge, ESD and EMI is considered in its design, so, **PH485Y14** is good for industrial usage and are useful for Industrial Automation, Telecommunications, SCADA systems, DCS systems...

2. SPECIFICATIONS

- **RS-485/422 Repeater,** Isolator and Amplifier;
- **Number of Ports:** #1 RS-485/422 to #4 RS-485/422 Bi-Directional Repeater;
- **Serial Standard:** Meets or Exceeds the Requirements of RS-485/422 Standards;
- **RS-485 Signal:** Data+, Data-, GND;
- **RS-422 Signal:** TX+, TX-, RX+, RX-, GND;
- **RS-485/422 Parity:** Even, Odd, None, Mark and Space;
- **Maximum Communication Distance:** 2400m (1200m each side);
- **Loading:** RS-485 and RS-422 Side up to 32 Nodes are supported;
- Fully **Plug & Play;**
- **Wide Range Power Supply:** +8V to +48V DC;
- **Serial Transmission Speed** up to 230.4 kbps;
- **Power (Green)** LED Indicator;
- **Transmit (Blue)** and **Receive (Yellow)** LED Indicator;
- **Isolation Protection:** 3kV Instantaneous, 500V DC Continuous;
- **Surge Protection:** Embedded 1500W Surge Protection;
- **Magnetic Isolation:** 1.5 kV Built-in;
- **ESD Protection:** Exceeds ±15 kV Using Human-Body Model (HBM);
- **Dimensions:** 218mm x 122mm x 30mm (8.58in x 4.80in x 1.18 in);
- **Operating Temperature:** -10°C to +70°C (+14°F to +158°F);
- **1 Year Guarantee** and **5 Years Support.**

3. PACKAGE CHECKLIST

Before installing the PH485Y14, verify that the package contains the following items:

1) #1 PH485Y14   2) #2 Din Rail Brackets with the corresponding screws

3) #1 Document and Driver CD-ROM   4) #4 DB9 Female Connector

5) #1 220V AC to 12V DC Adaptor

NOTE: Notify your sales representative if any of the above items is missing or damaged.

4. TOP VIEW

5. BOTTOM VIEW

## 6. FRONT VIEW

7. BACK VIEW

8. PORT SETTINGS

Connect PH485Y14 to your PC or Laptop by means of Ethernet RJ-45 port, the default IP of the device is 192.168.1.100 and the default subnet mask is 255.255.255.0.

Make sure the PC IP and is in the PH485Y14 IP Range and the PC subnet mask is same as PH485Y14.

Now open a web browser like Google Chrome or Firefox on your PC and type the device IP on the address bar of the web browser, then you can see the device port settings page as shown below and you can change the settings to what you want and then press save button to save them and close the browser.
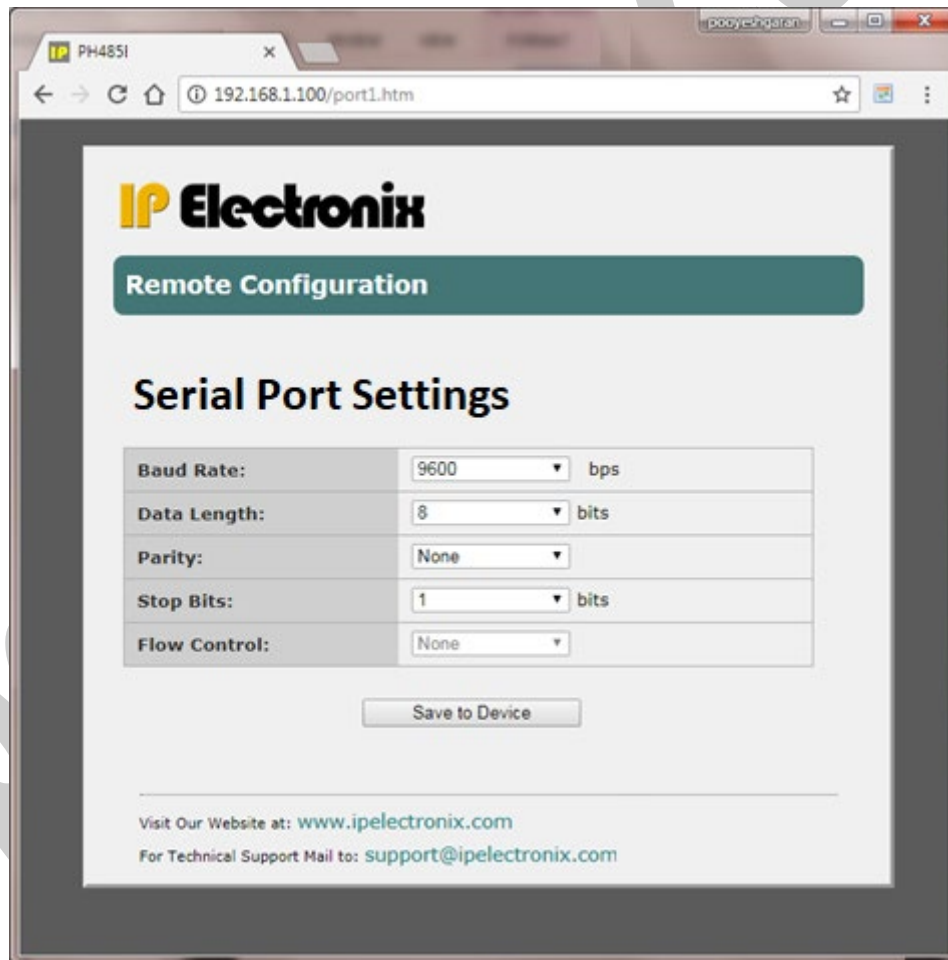
9. RS-485/RS-422 SERIAL PORTS PIN CONFIGURATION

Port	Pin #	Name	Task	Type
RS-422	1	TX+	Transmit +	Output
	2	TX-	Transmit -	Output
	3	RX+	Receive +	Input
	4	RX-	Receive -	Input
	5	GND	Ground	GND
RS-485	6	NC	No Connection	--------
	7	DATA-	Data -	Bi-Directional
	8	DATA+	Data +	Bi-Directional
	9	GND	Ground	GND

Connector Type: DB9 Male

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⑥⑦⑧⑨

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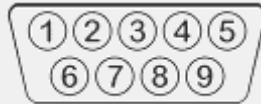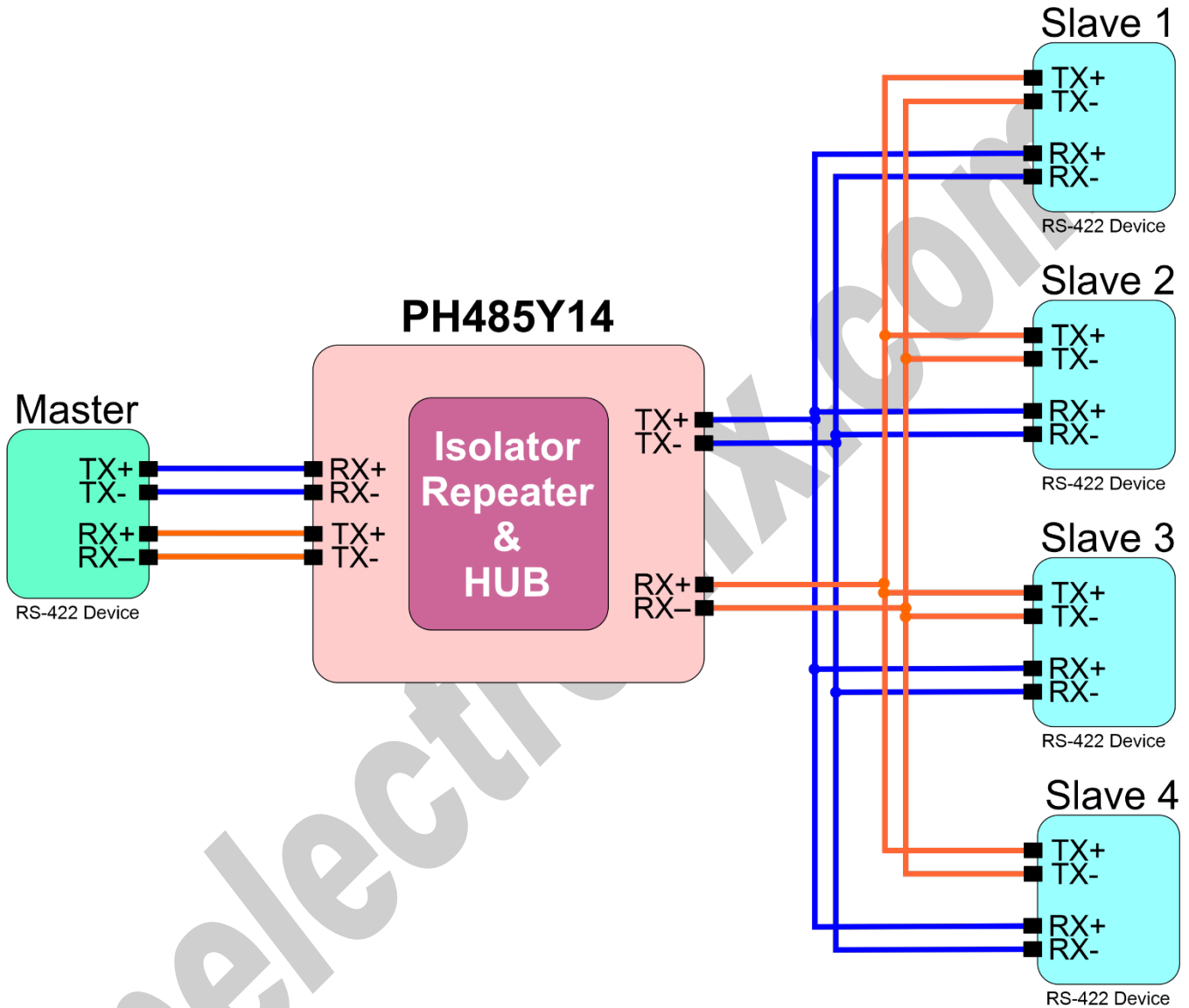
10.   PH485Y14 CONNECTION DIAGRAM

- **PH485Y14 in RS-485 Mode**
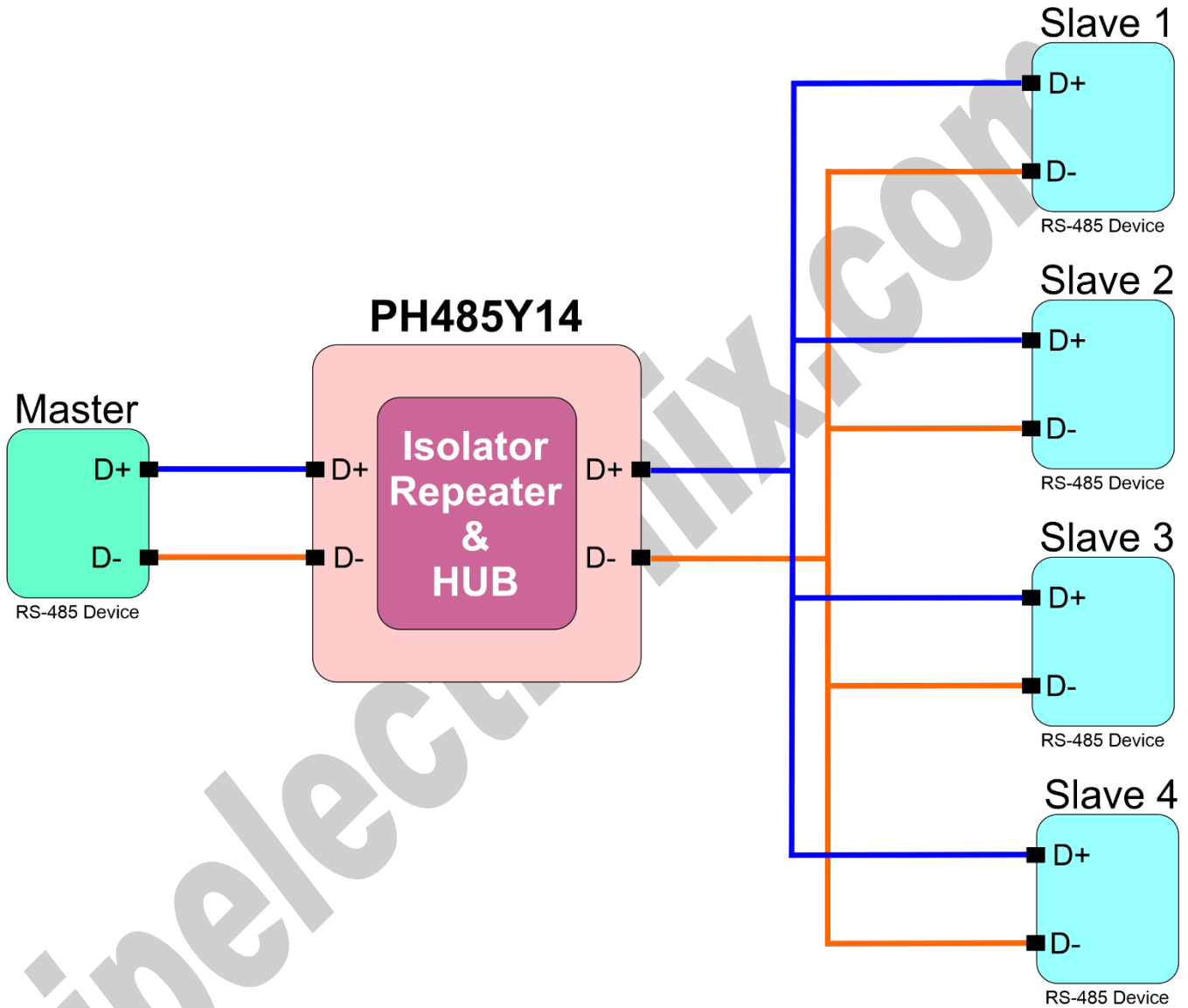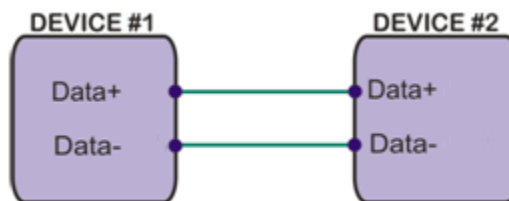
- **PH485Y14 in RS-422 Mode**
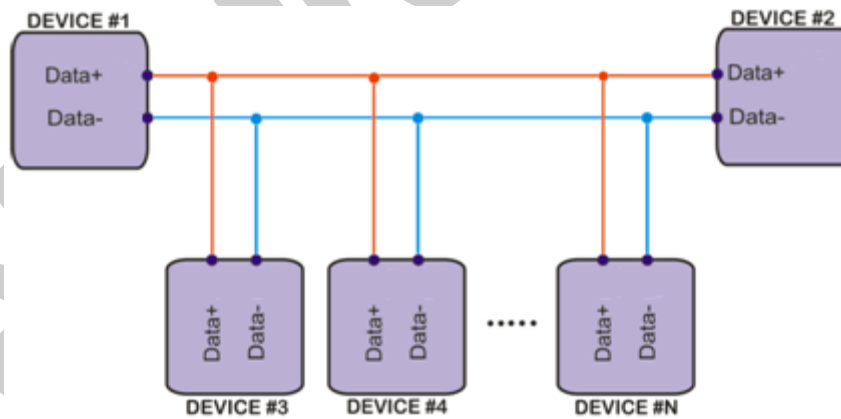

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- **PH485Y14 in Mixed Mode**

It is possible to use device in mixed mode, this means you can use one side in RS-485 mode and another side in RS-422 mode.

11. RS-485 CONNECTING METHODS

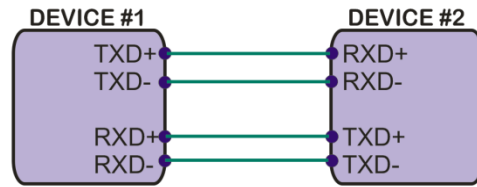- **RS-485: Point to Point Connection**

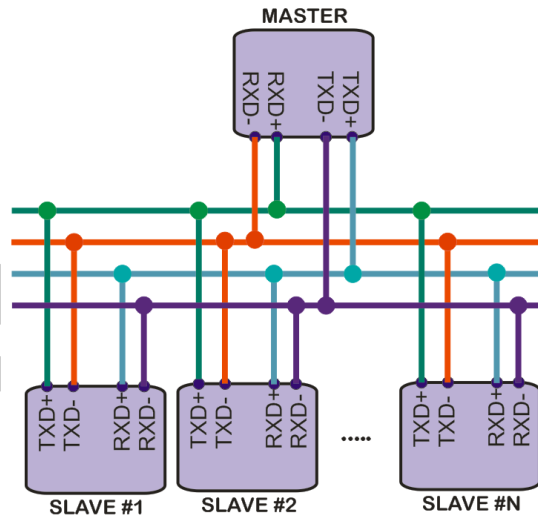- **RS-485: Multipoint Network**

12. RS-422 CONNECTING METHODS

- **RS-422: Point to Point**

- **RS-422: Multi-Drop Network**

13.   GUARANTEE

All products manufactured by **IPEX** are under warranty regarding defective materials for a period of one year from the date of delivery to the original purchaser.

14.   TECHNICAL SUPPORT

If you have any technical question or need any technical support, please contact us using this Email address: support@ipelectronix.com.