

PLANET ICS-100 Setup Guide

For operation with ROW

Preamble

Planet ICS-100 is a serial device server/media converter that provides serial RS-232/422/485 communication interface over Ethernet networks. This manual describes configuration and operation of Planet ICS-100 (*further referred to as Planet*) for use with LDI **Remote Optical Watcher** (*further referred to as ROW*).

In this use case, Planet works as a device server, allowing user to address ROW for configuration and/or monitoring over Ethernet networks (LAN, Internet) from the LDI software (*ROW Manager* or *ROW Configurator*) running on a Windows computer.

Planet is connected to *ROW* over RS-485 interface.

For any additional information or use cases not covered in this manual, please refer to the ICS-100 user guide enclosed with the device, as well as the manufacturer's web site:

<https://www.planet.com.tw/en/product/ics-100>

Hardware

Planet is powered from 5VDC/2A adapter. It is recommended to use the power adapter provided with the device (labeled “PLANET”).

NB! Do not connect the ROW 12V adapter to the Planet! Make sure to use the correct adapter!

Planet is connected to *ROW* over the RS-485 interface using the dedicated DB-9 plug on the end of the ROW cable. The plug which is labeled as “PLANET” should be plugged into the *Planet's* DB-9 socket.

There are two plugs installed on the end of the ROW cable. The one which is labeled as “USB” can be used to connect ROW to a computer over USB using the enclosed USB to RS-485 adapter.

The pinout of the Planet DB-9 port for RS-485 operation mode is provided below:

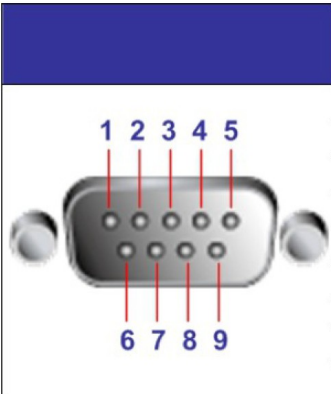
	DB9-PIN	RS-485 2-wire
	1	
	2	
	3	
	4	Data B(-)
	5	
	6	
	7	Data A(+)
	8	
	9	

Illustration 1: ICS-100 RS-485 pinout. Source: Planet ICS-100 user manual.

Please refer to the Planet ICS-100 user manual for any additional hardware information.

Initial configuration

Planet ICS-100 comes from LDI preconfigured to be used with ROW, for the simplified “out-of-the-box” testing and configuration. However, some user input is required for integration of Planet into the user's network.

NB! The default network settings:

IP Address: 192.168.0.100
Console username: admin
Console password: admin

Direct connection to the computer

For initial configuration, the planet can be connected directly to the computer using an Ethernet cable. Certain measures must be taken to ensure the connectivity on the computer side.

As the direct connection does not support automatic allocation of the IP addresses, the network configuration of the computer should be edited manually. For this procedure, administrative rights are required on the computer.

To do this, first connect the Planet with the computer using an Ethernet cable. Proceed to the *Network and Sharing Center* (Control Panel → Network and Internet → Network and Sharing Center). An *Unidentified network* should appear there with no network access.



Illustration 2: Planet network displayed as Unidentified due to failure to obtain IP address.

Click on the [Local Area Connection](#). A *Local Area Connection Status* window will appear.

Click *Properties*. In the *Local Area Connection Properties* window that appears, find the Internet Protocol Version 4 (TCP/IPv4) line, select it and click *Properties*.

In the *Internet Protocol Version 4 (TCP/IPv4) Properties* window select the Use the following IP address setting, and input the following values:

IP address: 192.168.0.1
Subnet mask: 255.255.255.0

Close all the dialog windows pressing “OK” or “CLOSE” where possible.

The network status of the *Unidentified network* should change to the “No Internet access”.



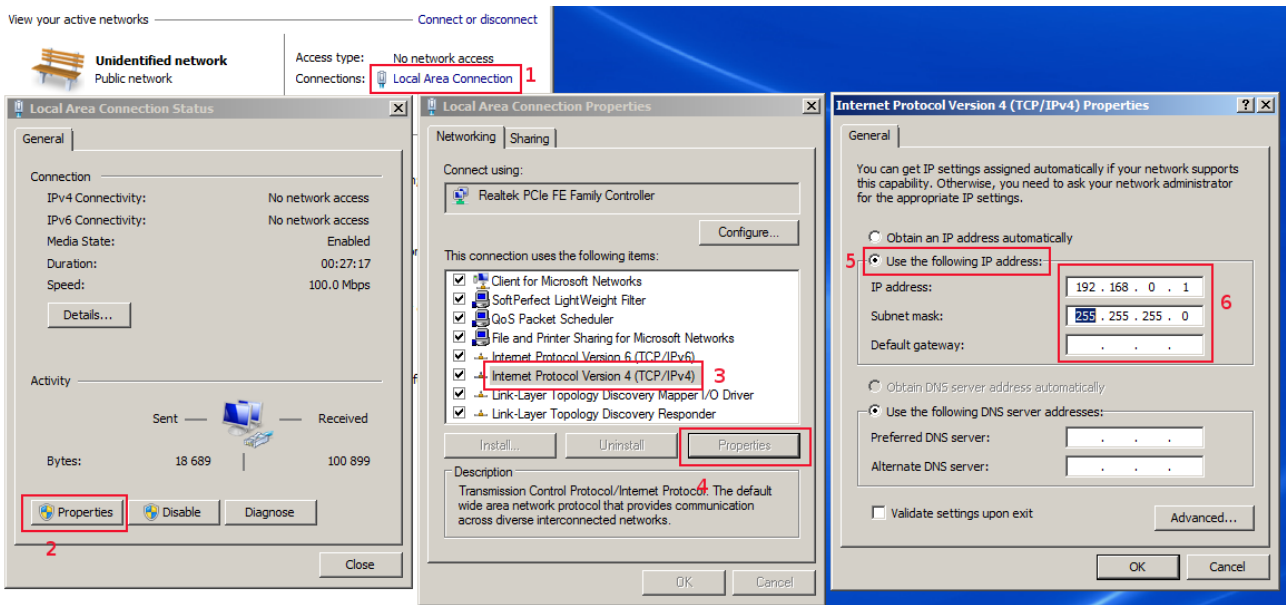


Illustration 3: Manual configuration of computer network settings

Accessing the web management console

To access the console, open your preferred browser, and enter the IP address of the Planet in the address bar. The default IP address is 192.168.0.100.

The login page should appear in your browser. Enter the login credentials (by default username: admin, password: admin).

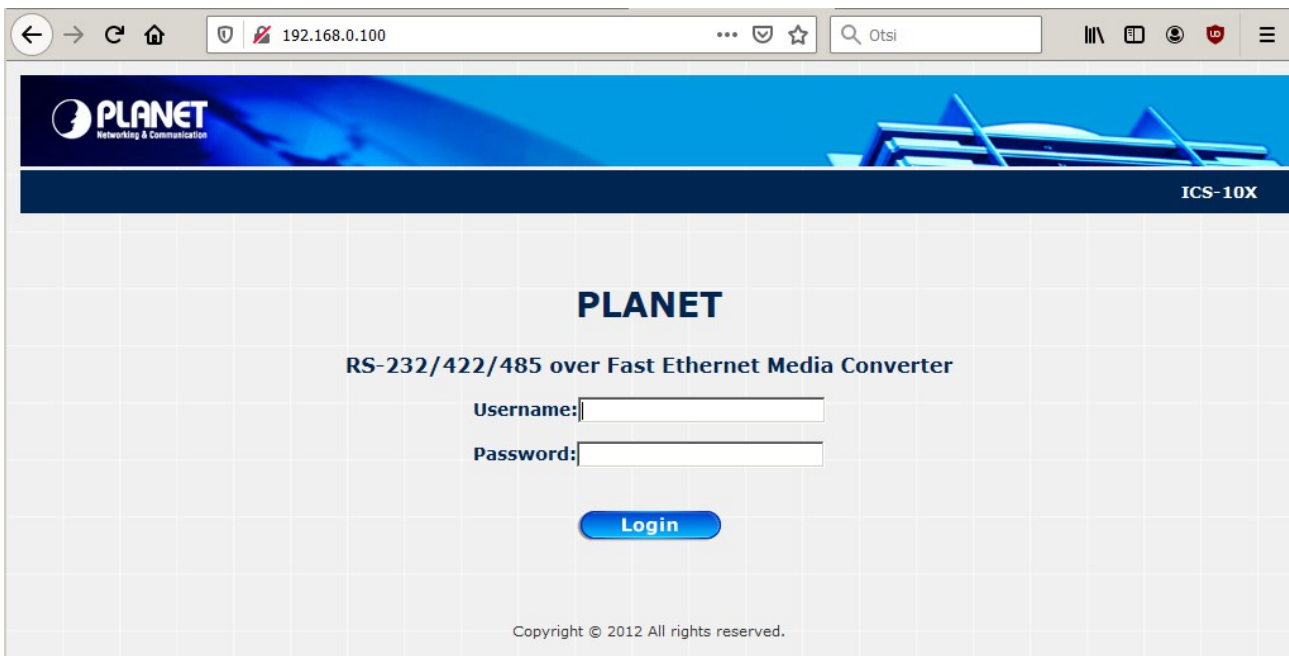


Illustration 4: Planet ICS-100 Web Management Login Page

Press “Login” to enter the web management console.



Illustration 5: ICS-100 Web Management Console welcome page

Access credentials

It is recommended to change the default user name and password to prevent unauthorized access to the management console.

To do this, go to *System* → *Password Setting*

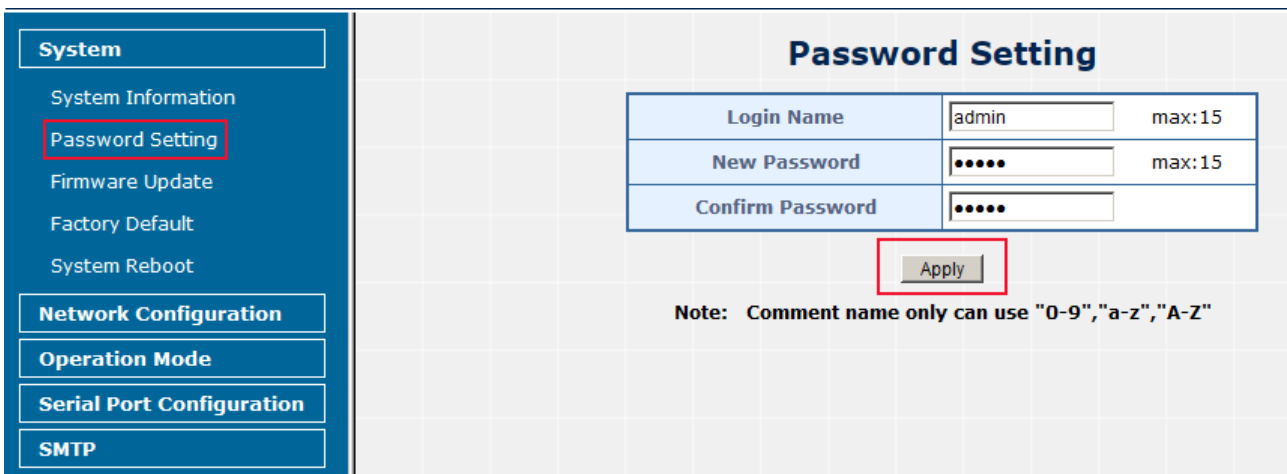


Illustration 6: Changing the access credentials

Enter the new Login Name (username), and the new password. Repeat the new password. Memorize the new credentials and click “Apply”.

The system will prompt a reset. Click the “Reset” button to reset the Planet and apply the changes.

NB! In case new credentials are lost or forgotten, accessing the Planet will only be possible after a factory reset. Refer to the “Factory Reset” section of this manual below.

Network Configuration

The default configuration of the Planet allows direct connection to a computer using a point-to-point Ethernet cable. Those settings should be adjusted to integrate the device into the User's network. **Network integration is user's responsibility.**

Click “*Network Configuration*” in the sidebar to open the IP Configuration page.

IP Configuration	
DHCP Client	Disable
IP Address	192 . 168 . 0 . 100
Subnet Mask	255 . 255 . 255 . 0
Gateway	192 . 168 . 0 . 254
DNS	192 . 168 . 0 . 254
System Name	ICS-10X Maximum Length: 11

Apply

Illustration 7: ICS-100 IP Configuration page

Change the parameters to the required ones, then click Apply. The system will prompt a reset. Click *Reset* to reset the device and apply the changes.

NB! After applying the changes, Planet will no longer respond to the old IP address. To reset the network configuration to default parameters, refer to the “Factory Reset” section of this manual below.

Advanced settings

The Planet ICS-100 comes from the LDI preconfigured to work with ROW. Usually, changing any serial parameters is not necessary. However, it is possible to change some of the parameters to accommodate for non-standard use cases.

Operation Mode Configuration

For operation with ROW, Planet should be in **TCP Server** operating mode. “Reverse Telnet” should be cleared.

The **TCP Port** for communication between ROW software and device can be changed here.

Default TCP Port is 23.

If high latency is expected on the network, “Inactive timeout” can be changed here. However, it is recommended to leave this parameter to the default settings. **Default Inactive Timeout is 1 (*5 s).**

Operation Mode Configuration	
Serial Port Operating Mode	TCP Server
Support Protocol	<input type="checkbox"/> Reverse Telnet
TCP Port Number	23 Suggest Value = 1024~65535
Inactive Timeout	1 *5 Second (Max:259200,0=Disable)

Apply

Illustration 8: Operation Mode Configuration and its default parameters

Serial Port Configuration

For operation with ROW, **Serial port mode should be RS485.**

Baudrates of ROW and Planet should be equal. If it is necessary to change the baudrate, ROW baudrate should be changed first using ROW Configurator. **Default Baudrate is 57600.**

Other parameters are hardcoded in ROW and should be kept default as they came from LDI.

Item	Setting
Mode	RS485
Baudrate	57600
Character Bits	8
Parity Type	none
Stop Bit	1
Hardware Flow Control	none
Uart Memory Overflow Count	0M,0K,0Byte
Uart FIFO Overflow Count	0 Times
Delimiter	<input type="checkbox"/> Character 1: C8
	<input type="checkbox"/> Character 2: B5
	<input type="checkbox"/> Silent time: 102 (1~255)*200ms
	<input type="checkbox"/> Drop Character
<input type="button" value="Update"/>	

Illustration 9: Serial Port Configuration and its default parameters.

Factory Reset

If it becomes necessary to perform a factory reset to the Planet ICS-100, please use the following steps.

- Power on the device
- Find the Hardware Reset (RESET) button on the side of the Planet where the power port is located
- Hold the RESET button over 10 seconds

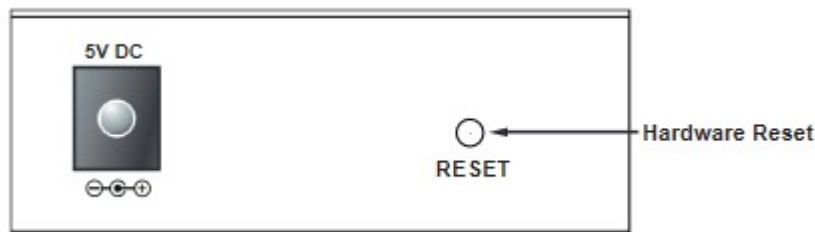


Illustration 10: Location of the RESET button

The device will go back to factory settings.

IMPORTANT! After the factory reset, the device will go to *factory default settings*, not the *LDI default settings*! Device will not work with ROW under *factory default settings*. Be sure to configure the Operation Mode and Serial Port configurations on the corresponding pages. Refer to illustrations 6 and 7 for the *LDI default settings*.

Working with ROW

You can access ROW using either *ROW Configurator* (for configuration) or *ROW Manager* (for monitoring).

Before attempting to connect, make sure ROW is connected to the Planet (DB-9 RS-485 connector labeled “PLANET” is plugged into the DB-9 socket on the Planet), ROW is powered on, Planet is powered on and accessible over the network.

ROW Configurator

For the introduction to ROW Configurator, please consult ROW User Manual.

To connect to ROW, open ROW Configurator, and in “*Connection Type*” select “TCP”.

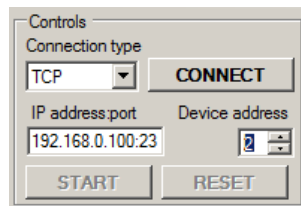
Enter the IP address and Port into the “IP address:port” field in the following pattern:

XXX.XXX.XXX.XXX:YYYY

Where the XXX.XXX.XXX.XXX is the IP address, and YYYY is port (default: 23).

For example, if the Planet IP address is set to 192.168.0.100, and the port is set to 23 (default), the following line should be entered: 192.168.0.100:23

In “Device Address” select the ROW device address, and press Connect.



The software should operate normally, as in case of USB connection. Higher latency may be expected however on some networks.



Illustration 11: ROW Configurator connected to ROW over TCP

ROW Manager

For the introduction to ROW Manager, please consult ROW User Manual.

To add the network device to the ROW Manager Device list, click the “Add new device” button. The *Link Settings* window will appear.

In *Link Settings* section:

- Select connection type as *TCP/IP*.
- In *Address* field enter the IP address of the Planet (without port).
- In *Port* field enter the port (by default 23).
- If necessary, change *Timeout*, or leave it as default (increasing timeout might help on high-latency networks).

In *Device Settings* section:

- In *Dev. Address* field enter the ROW device address.
- To check if the configuration is correct, press “*TestLink*” button. You should see “Link state: Ok.” in the data stream field above.

Press *OK* to save the settings and return.

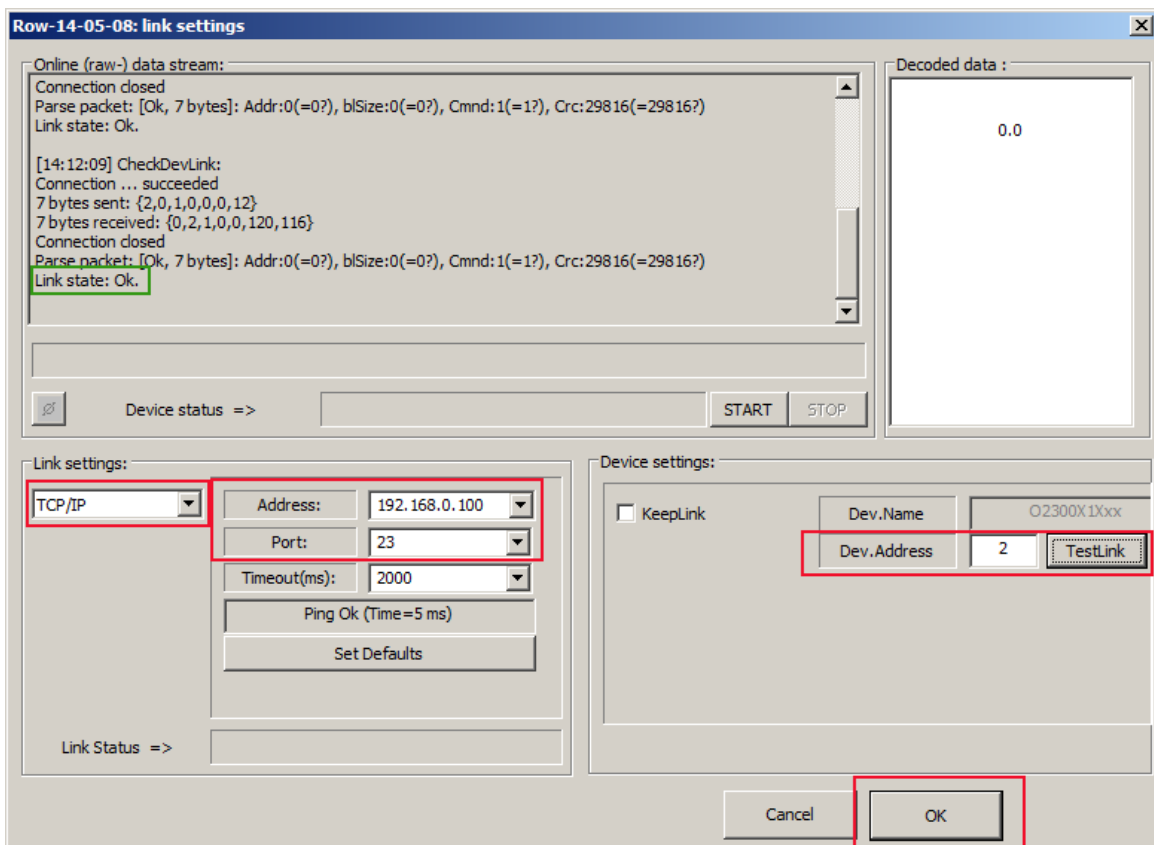


Illustration 12: ROW Manager Link Settings

Right-click on the device in the list, and press “Start”. You should see the “Status” column change to “ROW on 'XXX.XXX.XXX.XXX:YY': Online and OK”.