

Product Specifications

RS232/RS422/RS485 Serial Device Server

ICS-110 / ICS-115A

Version 1.0

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Change History:

Revision	Date	Author	Change List
1.0	2020/2/13	Angeline	Initial release

Author	Angeline	Editor:	Angeline
Reviewed by:		Approved by:	Kent Kang

1. PRODUCT DESCRIPTION

Cost-effective Solution for RS232/422/485 Serial-to-Ethernet Application

PLANET ICS-11x Serial Device Server series is specially designed to convert RS232, RS422 or RS485 serial communication to Fast Ethernet networking to extend the network distance efficiently and inexpensively.

There are one 10/100BASE-TX RJ45 port and single-mode/multi-mode media available in the ICS-11x series and its operating temperature ranges from -10 to 60 degrees C for your network needs. The ICS-11x series is a time-saving and cost-effective solution for users and system integrators to quickly transform their serial devices into the Ethernet network with no need of replacing the existing serial devices and software system.

Convert Serial Communication to IP Networking



Remote Management

As the ICS-11x series provides an easy serial-to-Ethernet connectivity and connection to a TCP/IP network, the remote network system can thus be managed efficiently via its Web, telnet and VCOM management interfaces. It supports both application and serial operation modes for alarm or IP address connection, which saves the network administrator's time in detecting and locating network problems without visual inspection of the cabling and devices. Multiple connection options are available for large networking environment as well.

Remote Management



Easy Chassis Installation

The ICS-11x series can be used as a stand-alone unit or as a slide-in module to the PLANET Media Converter Chassis (MC-700 and MC-1500 chassis series). The media chassis can assist in providing DC power to the ICS-11x series and can be DIN-rail or wall mounted for efficient use of cabinet space, without the need of replacing the existing serial equipment and software system.

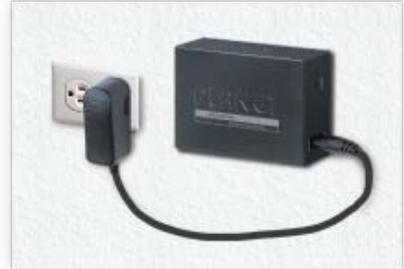
Optional installation method



Media Chassis Installation



DIN-rail Installation



Wall-mount Installation

2. PRODUCT FEATURES

➤ **Serial Interface**

- One DB9 interface supports RS232, 2-wire RS485, 4-wire RS485 and RS422 operation
- Asynchronous serial data rates up to 921600bps
- Data mode including VCOM, RFC2217, TCP Server, TCP Client, UDP, Remote Pair, Modbus converter server / client and Serial Telnet modes

➤ **Ethernet Interface**

- 1-port **10/100BASE-TX** RJ45 with auto MDI/MDI-X function or 1-port **100BASE-FX**
- Ethernet ports support Ethernet switch or cascading operation for easy wiring

➤ **Management**

- IPv4 and IPv6 dual stack management
- Remote Management Interfaces
 - IP-based Web management
 - Telnet console management
 - Windows-based VCOM utility supports searching, monitoring and configuration setting
- IP NTP (Network Time Protocol)
- Standard TCP/IP interface and versatile operation modes
- Software Protocol supports ICMP, TCP/IP, UDP, HTTP server, DHCP client, Telnet server/client
- Serial Operation mode selected via management interface
- Pair Connection mode for connecting two serial devices over a network
- Allows a max. of 4 hosts to be accessed as TCP client mode
- Firmware upgrade via HTTP protocol
- Accessible IP security control to prevent illegal users
- Event notification
 - Remote Syslog server
 - SNMP trap
- DHCP client for IP address assignment
- PLANET Smart Discovery utility automatically finds the client devices on the network

➤ **Case and Installation**

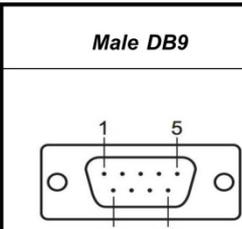
- Compact size for easy Installation:
 - Standalone - Wall mountable or DIN-rail mounting (optional accessory)
 - Co-works with PLANET MC family Media Chassis (**MC-700/1500**)
- External Power Adaptor 5V DC / 2A max.
- Supports 6000 VDC Ethernet ESD protection
- -10 to 60 degrees C operating temperature
- Supports extensive LED indicators for network diagnosis
- Reset button for resetting to factory default

3. PRODUCT SPECIFICATIONS

3.1 MAIN COMPONENTS

Serial Port Server Controller	Confidential information	x 1
CPU	Embedded 32-bit CPU, 150MHz	x 1
RS232 Line Driver	ZT3243E	x 1
RS422/RS485 Line Driver	AZRS3078	x 2
PHY	IP101GR	x 1
Flash Size	32M bytes	x 1
DRAM Size	64M bytes	x 1

3.2 FUNCTION SPECIFICATIONS

Product	ICS-110	ICS-115A																																																		
Serial Interface																																																				
Serial Ports	1 x DB9 male																																																			
Serial Standards	RS232/RS422/4-wire RS485/2-wire RS485																																																			
Baud Rate (Data Rate)	50bps to 921Kbps																																																			
Data Bits	5, 6, 7, 8																																																			
Stop Bit	1, 1.5, 2																																																			
Parity Type	Odd, Even, None, Space, Mark																																																			
Flow Control	RTS/CTS and DTR/DSR (RS232 only) XON/XOFF																																																			
Signals	RS232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND RS422: Tx+, Tx-, Rx+, Rx-, GND 4-wire RS485: Tx+, Tx-, Rx+, Rx-, GND 2-wire RS485: Data A (+), Data B (-), GND																																																			
Pin Assignment	 <table border="1" data-bbox="603 1406 1324 1702"> <thead> <tr> <th>Male DB9</th> <th>Pin</th> <th>RS232</th> <th>RS422 RS485-4W</th> <th>RS485-2W</th> </tr> </thead> <tbody> <tr> <td></td> <td>1</td> <td>DCD</td> <td>TxD+</td> <td>--</td> </tr> <tr> <td></td> <td>2</td> <td>RxD</td> <td>TxD-</td> <td>--</td> </tr> <tr> <td></td> <td>3</td> <td>TxD</td> <td>RxD-</td> <td>Data-</td> </tr> <tr> <td></td> <td>4</td> <td>DTR</td> <td>RxD+</td> <td>Data+</td> </tr> <tr> <td></td> <td>5</td> <td>GND</td> <td>GND</td> <td>GND</td> </tr> <tr> <td></td> <td>6</td> <td>DSR</td> <td>--</td> <td>--</td> </tr> <tr> <td></td> <td>7</td> <td>RTS</td> <td>--</td> <td>--</td> </tr> <tr> <td></td> <td>8</td> <td>CTS</td> <td>--</td> <td>--</td> </tr> <tr> <td></td> <td>9</td> <td>--</td> <td>--</td> <td>--</td> </tr> </tbody> </table>		Male DB9	Pin	RS232	RS422 RS485-4W	RS485-2W		1	DCD	TxD+	--		2	RxD	TxD-	--		3	TxD	RxD-	Data-		4	DTR	RxD+	Data+		5	GND	GND	GND		6	DSR	--	--		7	RTS	--	--		8	CTS	--	--		9	--	--	--
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Ethernet Interface																																																				
Ethernet Ports	1 x RJ45	1 x SFP																																																		
Standard	10/100BASE-TX	100BASE-FX																																																		
Distance	100m																																																			
Switch Architecture	Store-and-Forward-																																																			
ESD Protection	6KV																																																			

Hardware	
Installation	DIN-rail kit and wall-mount ear
Dimensions (W x D x H)	97 x 70 x 26mm
Weight	184 g
LED Indicators	System: Link TP Port: Link/Active Serial Port: Active
Power Requirements	External Power Adaptor 5V DC / 2A max.
Power Consumption	5.5 watts (max)
Mechanical	Metal
Reset Button	< 5 sec: System reboot > 5 sec: Factory default
Management	
Management Interfaces	Web management Telnet Console management Windows-based VCOM Utility management SNMPv1, v2c / SNMP Trap UNI-NMS monitoring PLANET Smart Discovery Utility
IP Version	IPv4 and IPv6
Operation Mode	TCP Server / TCP Client UDP Client Virtual COM RFC2217 Telnet Server Pair Connection – Remote (Slave) Pair Connection – Local (Master) Modbus converter server / client
Virtual COM Utility Platform Supports	Windows-based Only: Windows XP Windows Server 2003 Windows 7 Windows Server 2008 Windows 8 (Must install the latest version of WinPcap) Windows Server 2012 (Must install the latest version of WinPcap) Windows 10
Fault Alarm	Record: System log / SNMP trap
Time	NTP
Security	Accessible IP (white list)
SNMP	SNMP v1 and v2c
Standards Conformances	
Regulatory Compliance	FCC Part 15 Class A,

	CE Certification Class A
Standards	IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX/100BASE-FX RFC 768 UDP RFC 793 TFTP RFC 791 IP RFC 792 ICMP RFC 854 Telnet RFC 958 NTP RFC 1908 SNMPv2c RFC 2068 HTTP RFC 2131 DHCP Client RFC 2732 Format for Literal IPv6 Addresses in URL's RFC 3315 DHCPv6 Client RFC 3513 IPv6 Addressing Architecture RFC 4443 ICMPv6 EIA/TIA RS232/422/485
Regulatory Approval	RoHS
Compatible Media Converter Chassis	MC-700 / 1500
Note.	Reset Button on the rear panel for resetting to factory default
Environment	
Operating Temperature	-10 ~ 60 degrees C
Storage Temperature	-10 ~ 70 degrees C
Humidity	5 ~ 95% (non-condensing)

3.3 PHYSICAL SPECIFICATIONS:

Dimensions:

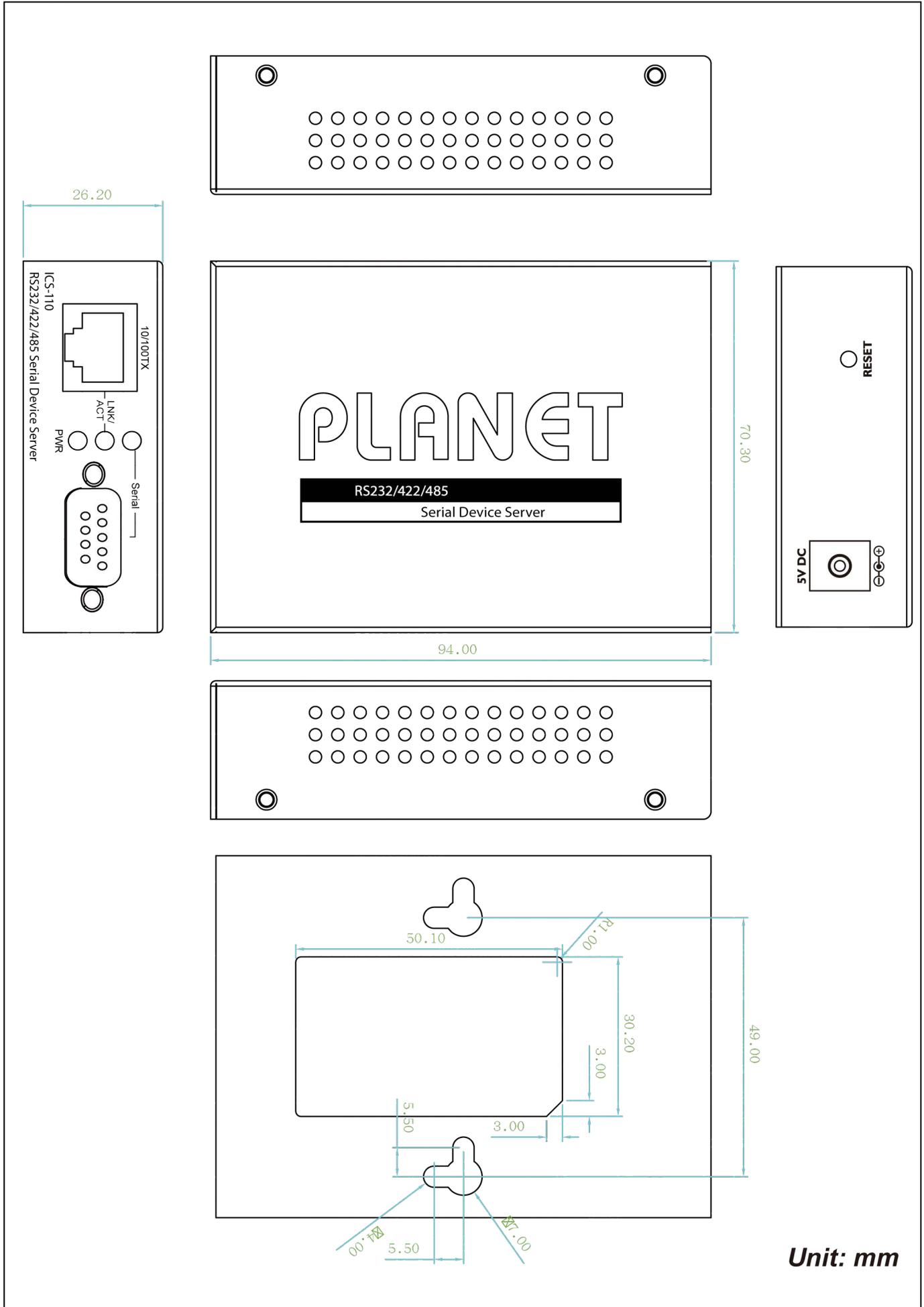
- 97 x 70 x 26mm (W x D x H)

Weight:

- **ICS-110:** 184g
- **ICS-115A:** 185g

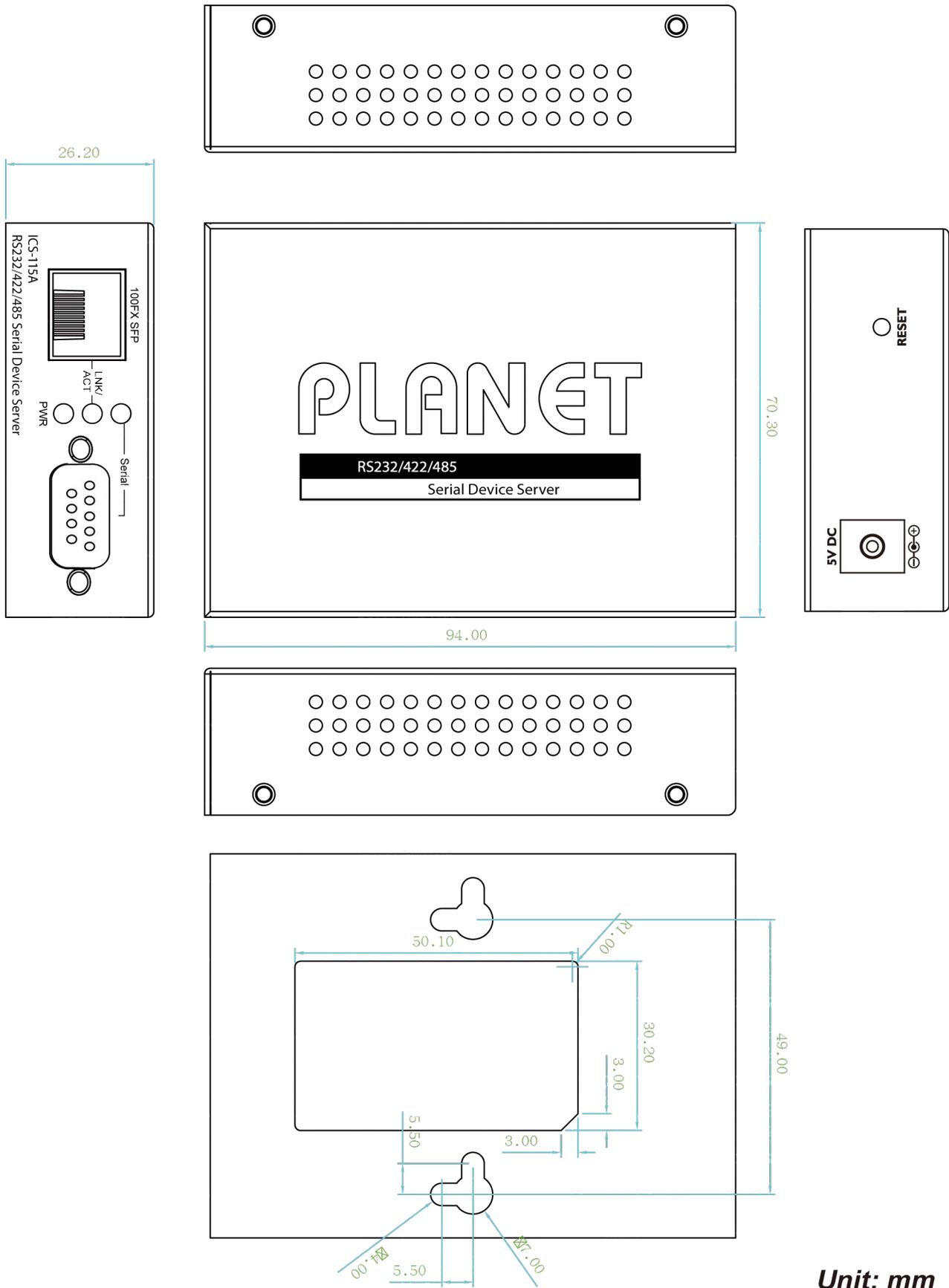
Drawing:

- **ICS-110:**



Unit: mm

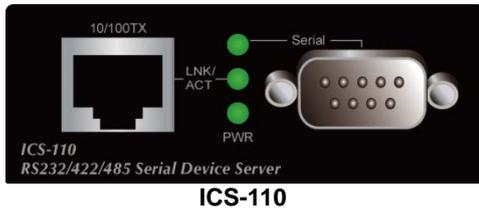
■ **ICS-115A:**



Unit: mm

3.4 Panel view:

■ **Front Panel:**



■ **Rear Panel:**



ICS-110/ICS-115A Rear Panel

■ **Serial Port PIN Assignment**

Male DB9	Pin	RS232	RS422 RS485-4W	RS485-2W
	1	DCD	TxD+	--
	2	RxD	TxD-	--
	3	TxD	RxD-	Data-
	4	DTR	RxD+	Data+
	5	GND	GND	GND
	6	DSR	--	--
	7	RTS	--	--
	8	CTS	--	--
	9	--	--	--

LED Definition:

■ **System**

LED	Color	Function
PWR	Green	Lights To indicate that the Switch is powered on.
TP or Fiber	Green	Lights To indicate that the Fast Ethernet port is successfully connecting to the network at 10Mbps or 100Mbps (Fiber port only 100Mbps)
Serial	Green	Blinks To indicate the Serial Port is receiving or sending data

3.5 ENVIRONMENTAL SPECIFICATIONS

Operating:

Temperature: -10 ~60 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

Storage:

Temperature: -10 ~70 degrees C

Relative Humidity: 5% ~ 95% (non-condensing)

3.6 ELECTRICAL SPECIFICATIONS

Input Power: External power adapter 5V / 2A

Power Consumption: 5.5 Watts / 18.8 BTU (maximum)

3.7 REGULATORY COMPLIANCE

FCC Part 15 Class A, CE

Stability Testing:

- IEC60068-2-32 (Free Fall)
- IEC60068-2-27 (Shock)
- IEC60068-2-6 (Vibration)

3.8 RELIABILITY

MTBF > 50,000Hrs

3.9 BASIC PACKAGING

- The Serial Server x 1
- Quick Installation Guide x 1
- External AC-DC Power Adapter x 1

3.10 PACKING INFORMATION

	ICS-110	ICS-115A
Box Dimensions (W x D x H):	280 x 133 x 66mm	
Gross Weight:	458g	454g
Carton Dimensions (W x D x H):	595 x 375 x 325mm	
Total Weight:	9.9kg	9.8kg
Quantity:	20pcs in one carton	