Installation and Configuration Quick Guide

SDS200

Serial Device Server

(1 Eth + 2 RS232 + 1 RS485)

Package Contents

Before installing your SDS200 Serial Server, please verify the kit contents as
following.1 x SDS200 Serial Device Server(3 terminal)1 x power adapter(12V DC/1A)1 x Ethe

1 x Quick Start Guide 1 x Ethernet Cable

*If any of the above items is missing or damaged, please contact your sales representative.

Environmental Requirements

Input voltage: 7.5V-32V(standard DC12V/1A) Operating temperature: -30 to +70 °C Storage temperature: -40 to 85°C Relative humidity: < 95% (no condensation)

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Hardware Introduction

1. Overview



2. LED Indicators

Name	Color	Status	Description			
PWR	Green	On	Server is powered on			
		Off	Server is powered off			
Ethernet	Green	On, blinking	Link connection is working			
		Off	Link connection is not working			
WiFi	Green	On	Link connection is working			
		Off	Link connection is not working			
Com1	Green	On, blinking	Connect with data			
			communication			
		Off	Disconnect or fail to connect			
Com2	Green	On, blinking	Connect with data			
			communication			
		Off	Disconnect or fail to connect			
	Name PWR Ethernet WiFi Com1 Com2	NameColorPWRGreenEthernetGreenWiFiGreenCom1GreenCom2Green	NameColorStatusPWRGreenOnPWRGreenOffEthernetGreenOn, blinkingWiFiGreenOnWiFiGreenOffCom1GreenOn, blinkingCom2GreenOn, blinkingOffOn, blinkingOffOffOn, blinkingOffCom2GreenOn, blinkingOffOffOff			

3. Reset Button

After powered up the server, press and hold the RST button for 10 seconds, and release the button to return the server to factory defaults.

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Hardware Installation

1. Connect the Server to a Computer for configuration

Connect an Ethernet cable to the Ethernet port of the Serial Server, and connect the other end of the cable to your computer.

2. Connect the Server to Serial Device/Terminal

This server provide 3 serial ports for connection:

COM1: One RS485 + One RS232 terminal block interface, when you use com1 connection, terminal block RS485 and RS232 couldn't use simultaneously, only one of them can be selected.

	RS485		RS232			
G	В	А	GND	RXD	TXD	
GND	Data	Data	GND	Data	Data	
	Output	Input		Input	Output	



COM2: One RS232 DB9 interface



3. Mount the Server

The server can be placed on a desktop or mounted to a wall. Use 2 pieces of drywall screws to mount the server with the wall mounting kit on the wall.

4. Power Supply

Connect the power adapter to the power input interface of the server. It provide two power supply interfaces and wide voltage input during 7.5V-32V DC.

Round hole jack interface and Terminal block interface:



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PC Configuration

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Serial device server provide web browser access for parameter overview and configuration. Connect the Server Ethernet port to computer with a Ethernet cable, then configure PC static IP address manually within the same subnet of the server. Please refer to the steps below. Here take **Windows 10** as example, and the configuration for windows system is similar.

1. Click Start > Control panel, click Network and Internet, click Network and Sharing Center, click Change Adapter Settings, and then double-click Local Area Connection (Ethernet).



eneral		
Connection		
IPv4 Connectivit	y: Inter	net
IPv6 Connectivit	y: No Internet acc	ess
Media State:	Enal	bled
Duration:	02:21	1:13
Speed:	100.0 M	bps
Dgtails		
Activity		
Activity	Sent — 👽 — Recei	ved
ActivityBytes:	Sent — Recei 6,736,534 56,885,	ved 692
ActivityBytes:	Sent — Recei 6,736,534 56,885, @Disable Diagnose	ved 692

2. Click **Properties** in the window of **Local Area Connection (Ethernet)** Status.

3. Choose Internet Protocol Version 4 (TCP/IPv4) and click Properties.

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-	1	
Connect using:		
Atheros AR8	162/8166/8168 PCI-E Fa	ast Ethernet Controlk
		Configure
This connection use	s the following items:	
Client for M	icrosoft Networks	
🗹 👵 Liebao Wifi	Package Filter	1
VMware Br	idge Protocol	
		121
QoS Packe	t Scheduler	=
QoS Packe File and Pri Internet Pro	t Scheduler nter Sharing for Microsoft stocol Version 6 (TCP/IP)	t Networks
QoS Packe GoS Packe File and Pri Internet Pro The Intern	tt Scheduler Inter Sharing for Microsoft stocol Vension 6 (TCP/IP stocol Vension 4 (TCP/IP)	t Networks
QoS Packe Geo S Packe File and Pri File and Pri Internet Pro Internet Pro	nter Scheduler Inter Sharing for Microsoft stocol Version 6 (TCP/IP stocol Version 4 (TCP/IP III	t Networks v6) v4)
Cos Packe Cos Packe Pile and Pile Internet Pire Cos Packe Internet Pire Cos Packe Install	tt Scheduler nter Sharing for Microsoft tocol Vension 6 (TCP/IP) tocol Vension 4 (TCP/IP) III Uninstall	t Networks v6) v4) •
Cost Packet Cost Price and Pri Cost Price and Pri Cost Price Price Cost Pric	nter Sharing for Microsoft tocol Version 6 (TCP/IP) tocol Version 4 (TCP/IP) tocol Version 4 (TCP/IP) tri Uninstall	t Networks v6) v4) + Properties
Cost Cost Cost Cost Cost Cost Cost Cost	st Scheduler nter Sharing for Microsoft stocol Version 6 (TCP/IP) stocol Version 6 (TCP/IP) tocol Version 4 (TCP/IP) III Uninstall trol Protocol/Internet Pro	t Networks
CoS Packe GoS Packe File and Pri File and Pri File and Pri File Install Description Transmission Con wide area retwork	tt Scheduler nter Sharing for Microsoft tocol Version 6 (TCP/IP) tocol Version 6 (TCP/IP) "" Uninstall trol Protocol/Internet Pro k protocol that provides a econometed networks	Networks v6) v4] Properties tocol. The default communication

server, serial server default IP address is 192.168.1.1, subnet mask is 255.255.255.0, so PC static IP address set as 192.168.1.xxx (XXX can be any

neral	
ou can get IP settings assigne his capability. Otherwise, you r or the appropriate IP settings.	d automatically if your network supports need to ask your network administrator
Obtain an IP address auto	matically
• Use the following IP addre	ss:
IP address:	192.168.1.2
Subnet mask:	255.255.255.0
Default gateway:	192.168.1.1
Obtain DNS server address	s automatically
• Use the following DNS serv	ver addresses:
Preferred DNS server:	192.168.1.1
Alternate DNS server:	
	• <u>PL_2022</u>

4. Configuring the IP address of PC.

Configured a static IP address manually within the same subnet of the

5. Click **OK** to finish the configuration.

Serial Server Configuration

1. Log in the Server

To log in to the management page and view the configuration status of your server, please follow the steps below.

1) On your PC, open a web browser such as Internet Explorer, Google or Firefox etc.

2) From your web browser, type the IP address of the server into the address bar and press enter. The default IP address of the server is **192.168.1.1**, though the actual address may vary.



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3) In the login page, enter the username and password, then click **Login**. The default username and password are "**admin**".



4) After logging in, the home page of the SDS200 Serial Server's web interface is displayed, for example.

System Status	ee Overview at				
Basic Network >	Status				
Advanced Network >					
(PN Continuation	System				
	Router Name	M2M		Product Name	\$\$2031
ystem Management >	Firmware Version	Serial Server v2.0.1225		Product ID	11205522005080002
ogout	Local Time	Fri May 8 12:06:45 2020		Hardware Class	Serial Server
	Uptime	0h 14m 37s		MAC Address	34.0a:68.25:17.bd
	Load Average	0.06, 0.10, 0.11		WAN Mode	only Wired
	Network Wired WAN Status Active Connections		Type: thcp Address: 0 0 0 0 ethil MAC Address: 34 0 A 68 25 17 80 ethil Remark: 254 255 255 Gateway: 0 0 0 0 139 / 16384 (0%)		
	Memory				
	Total Available		88524 k8 / 124288 kB (71%)		
	Free		82816 kB / 124288 kB (66%)		
	Buffered		5708 kB / 124288 kB (4%)		

2. Configure Wired Network Connection

There are three methods to configure Wired Network connection of this server.

1) DHCP (Default)

DHCP is system default setting, serial server offer wired bridge connection to upper level serial server/router, so as to access internet network. (**Note:** Serial server IP address must be different with upper level router/server gateway IP, otherwise it will cause network conflict)

Click **Basic Network > Wired Network > WAN**, choose "**DHCP client**" as the Protocol, don't change other default settings, click **SAVE & APPLY** button.



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2) Static Address

Serial server WAN port can manually set IP address to bridge connection to upper level serial server/router .

(**Note:** Serial server IP address must be different with upper level router/server gateway IP, otherwise it will cause network conflict)

Click **Basic Network > Wired Network > WAN**, choose "**Static address**" as the Protocol, click **SWITCH PROTOCOL** button

System Status >	4 BOOK 9	
Basic Network •		
Hotranes	NRS LUN: MCT	
	Interfaces - WAN	
	On this page you can contigue the elevion interfaces. You can bridge elevies interfaces by looing the 'bridge interfaces' held and while the names of several network interfaces separated by spaces. You can also use <u>12.81</u> induition [INSFACE, VLANS <u>(E.g.</u> , evol. 1].	
Wired Netwox	Common Configuration	
	General Stop	
State address	Status MMC 2403.49251780	
Advanced Network >	TX 1446(6078x)	
VPN Configuration	Protect Static address •	
System Management >	Rel/patch patch	
Logout		
	SAVE & APPRY	

Fill in IPv4 address, IPv4 netmask, IPv4 gateway, Use custom DNS servers as below(Upper level gateway example at 192.168.10.1, actual setting refer

to your upper level gateway IP), then click **SAVE & APPLY** button.



3) PPPoE dial up

This way is for the internet access that uses Internet Service Provider(ISP) account and password to dial up.

Click **Basic Network > Wired Network > WAN**, choose "**PPPoE**" as the Protocol, click **SWITCH PROTOCOL** button.

System Status	e Sitax mitterina								*
Basic Network 👻									
	KAN LAN MGT								
	Interfaces - WAN								
	On this page you can configure th	he network interfac	es. You can bridge i	everal interfaces b	cking the "bridge interfaces" field and en	ter the names of several network int	efaces separated by spaces. You can	also use <u>VLAN</u> notation INTERFACE.vLAN	t (<u>e.g.</u> ett0.1).
	Common Configuration								
	General Setup								
		Status	MAC: 34 04 68 25	1780					
Advanced Network >		_	RX: 1.17 MB (8387 TX: 1.70 MB (7821	Pies) Pies)					
VPN Configuration		Protocol	PPPoE	•					
System Management)	Real	ly switch protoco?	SWITCH PROTO	co.					
Logout									
									SAVE & APPLY

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Fill in Username and Password, click SAVE & APPLY button.

System Status >	Switch x: Wind Network x
Basic Network 🗸 👻	
Hostnames	WAN LAN MGT
Switch	Interfaces - WAN
Static Routes	On this page you can configure the network interfaces. You can bridge several interfaces by ticking the "bridge interfaces" field and enter the names of several network interface
Wired Network	Common Configuration
Wireless Network	General Setup Advanced Settings
Static address	Status RX:06 (0 Pkts.)
Advanced Network >	TA OD (UTAS)
VPN Configuration	Protocol pppoE
	PAP/CHAP upername gdf123456
System Management >	
Logout	The particular particular in the particular in t
	Access Concentrator auto
	Leave empty to autodetect
	Service Name auto
	Leave empty to autodetect

3. Configure Smartlink

This Serial Device Server provide M2M (Machine to Machine) and IoT (Internet of Thing) connectivity, serial Data Transfer Unit(DTU) and serial to Ethernet function configuration in smartlink.

1) Default configuration of smartlink

Click **Advanced Network > Smartlink** , check the default configuration of smartlink in Serial Device Server as below:

Mode Configuration: Working Mode is TCP Server, Server Address/Listen Port is 30001/30002 (COM1/COM2), Protocol is "Pass-Through" (Transparent Transmission)

Serial Configuration: Speed(Baud rate) 115200, Data Bit 8, Stop Bit 1, Parity None, Flow Control None.

System Status	e contra a										*	Tab oper
Basic Network												
Advanced Network 👻	General Advance											
	Mode Configuratio	n										
	Enabled	Name	Working Mode	Server Address/Listen Port	Status	Conns	Protocol	Interface	Device Mode			
	¥.	665	TCP Server	30001	Listening	0	Pass-Through	COMI	Pass-Through	EDIT	DELE	IE.
	4		TCP Server	30002	Disconnect	0	Pass-Through	COM2	Pass-Through	EDIT	DELE	TE .
	ADD											
Straffink		-										
	Serial Configuratio	n										
	inte	erface	Speed	Data Bit	Stop Bit		Parity	F	ow Control			
	a	CM1	115200	8	1		None		None		edit	
VPN Configuration	a	DM2	115200	8	1		None		None		edit	
System Management >												
Logout										s	AVE & APPLY	RES

2) Configuration guide

When the the default setting in smartlink couldn't meet your requirement, please follow below guide to configure smartlink parameter.

A) Advanced Configuration of Smartlink

Click **Advanced Network > Smartlink > Advance**, it is the master switch and setting of smartlink, configure the parameter you want and click **SAVE & APPLY** button finally

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B) Serial Configuration (COM1/COM2)

Click Advanced Network > Smartlink > General > Serial Configuration, click EDIT button of COM1/COM2, enter COM/Serial configuration, it can change the parameter of COM1/COM2 such as Speed (Baud rate), Data Bit, Stop Bit, Parity, Flow Control, Frame Interval, Frame Length.

(Note: Com1 for terminal block interface RS232/RS485, Com 2 for DB9 interface RS232)

System Status	H States					
Basic Network >						
Advanced Network 🔹	General Advance					
	COMT					
		Speed	115200	•		
		Data Bit	8	,		
		Stop Bit	1			
		Parity	None			
		Flow Control	None			
KON Pattern		Frame Interval	60			
			mie			
Network Mandor		Frame Length	1450			
VPN Configuration			htte			
System Management +						
loonit.	BALK TO OVERVIEW					SAVE & APPLY

C) Mode Configuration

Serial server offer 9 modes to support customer working scenario, customer can select different working mode according to the actual demand. Following introduce each working mode and configuration:

• TCP Server Mode

The serial server work as a TCP server and configures an IP port number, passively waiting for remote host to connect. When remote host initiates a connection request and establishes connection with the serial server, the remote host can achieve two-way transparent transmission with serial device through the network connection. Remote host can read or send data to a serial device simultaneously.

TCP Server Mode Topology



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> Click Advanced Network > Smartlink > General > Mode Configuration > click EDIT, Select TCP Server Working Mode, click SAVE & APPLY button Note: COM1 is terminal block interface, COM2 is DB9 form interface



• TCP Client Mode

Serial server host IP and port number actively establish a TCP protocol connection with remote PC, then serial server can achieve two-way transparent transmission with remote PC through the network connection. Remote PC can send and receive data to a serial device simultaneously.



> Click Advanced Network > Smartlink > General > Mode Configuration > click EDIT, Select TCP Client Working Mode, fill in Server Address (IP:Port), click SAVE & APPLY button



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• UPD Server Mode

Similar with TCP Server Mode, the different is it use UDP protocol to build network connection

• UDP Client Mode

Similar with TCP Client Mode, the different is it use UDP protocol to build network connection

• RealCom Mode

Serial server connect with virtual serial port of remote PC. Virtual serial tool establish transparent transmission between the host and serial device, then mapping server serial port to local virtual serial device, achieve transparent transmission between the real serial port and virtual serial port.



> Click Advanced Network > Smartlink > General > Mode Configuration > click EDIT, Select RealCom Working Mode, click SAVE & APPLY button

System Status	44	Smartlink ×				
Basic Network						
Advanced Network 👻		General Advance				
QoS		Mode Configuration - Co	DM1			
DMZ			Enabled	8		
Firewall			Name	666		
Repeater			Working Mode	RealCom		When serial server configure to RealCom mode,
Port Forwards			Dratasal	Dave Three h		its listen port must set to be 30001
Static NAT			Protocor	Pass-Inrough	•	
Smartlink			Device Mode	Pass-Through	٠	
M2M Platform						
UPnP		BACK TO OVERVIEW				
Network Monitor						
VPN Configuration						
System Management >						
Logout						

• UDP Range Mode

Serial server establish connection with multiple hosts on the same network segment specified by the user through UDP protocol, it can achieve point-to-multiple data communication. Serial devices in UDP Range Mode can receive data from one or multiple hosts.

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UDP Range Mode Topology



> Click Advanced Network > Smartlink > General > Mode Configuration > click EDIT, Select UDP Range Working Mode, fill in Address.Start/End, click SAVE & APPLY button

System Status 🔹 🔲	Smatthine x	
Basic Network		
Advanced Network 👻	General Advance	
QoS	Mode Configuration - COM1	
DMZ	Enabled 😿)
Frewall	Name 666	
Repeater	Working Mode UDP Range	
Port Forwards		
Static NAT	Protocol Pass-Through	
Smartlink	Addr. Start 192.168.3.192.50001 Hosts in this IP address range: use similar UDP client mode achieve	
M2M Platform	Addr. End 192 168.3.196.50001	
UPnP	Range port must be same	
Network Monitor	Device Mode Pass-Through •	
/PN Configuration >		
System Management	BACK TO OVERVIEW	
y sterre management y		
ogout		

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• UDP Multicast Mode

Serial server use UDP protocol to unicast or multicast data to one/multiple hosts assigned by the user, it can receive unicast and multicast data from one/multiple devices.

UDP Multicast Mode Topology



> Click Advanced Network > Smartlink > General > Mode Configuration > click EDIT, Select UDP Multicast Working Mode, fill in Destination Address/Reception Address (IP:Port), click SAVE & APPLY button



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• Pair Master/Slave Mode

This mode require two serial server to work together, one configured as Pair Slave Mode and the other configured as Pair Master Mode, it can break through serial data transmission distance limitation. One serial server work as server, the other work as client.

Pair (Master/Slave) Mode Topology



> Serial Server A: Click Advanced Network > Smartlink > General > Mode Configuration > click EDIT, Select Pair Master Working Mode, fill in Server Address(IP:Port), click SAVE & APPLY button System Status Basic Network General Advance Advanced Network Mode Configuration - COM1 Enabled 💽 Frewal Name 666 Repeate orking Mode Pair Maste Port Forw ver Address 192 168 10 192 30001 + Static NAT Smartlink Protocol Pass-Through M2M Platto Device Mode Pass-Through BACK TO OVERVIEW VPN Configura Logout

> Serial Server B: Click Advanced Network > Smartlink > General > Mode Configuration > click EDIT, Select Pair Slave Working Mode, fill in Listen Port , click SAVE & APPLY button



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