HelloDevice UniversalComm

Users Guide

Version 1.0.0

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1. Overview

HelloDevice UniversalComm is a program that enables the users to flexibly send/receive data through TCP or UDP or Serial RS232 connections. The purpose of the program is to test the communication functions of the HelloDevice or to help deciding the network configuration of the HelloDevice application environment by testing the data communication.

O/S Support:

Microsoft Windows 98/ME/NT/2000/XP

Screen layout:

- Communication mode setup frame (Server Setting)
- Received data display frame (Received Data)
- Data Transfer frame (Sending Data)

HelisDevice UniversalComm	
Server Setting	
TCP Server/Client Server Port Destination IP	Destination Port:
LDP Server/Client Server Port Destination IP	Destination Port:
Image: Figure 1 COM Baud Rate Data Bits Parity Stop Bits Handshakin; COM1 115200 8 bits No Parity 1 Stop Bit Hardware Handshaking(RTS)	Change Seting
State: No Select	No Select
Received Data	
8988888	Received State No Running
	F Auto Scroll
	Clear Save
Sending Data	
88808880	Sender State No Running
	Periodic Send
	ms
	Clear Save Load

2. Installation

1) Run the setup program, Setup_HDUniversalComm_1.0.0.exe.

2) Proceed to the installation process according to the guide.

🖟 HelloDevice UniversalCom	m – InstallShield Wizard	×
	Welcome to the InstallShield Wizard for HelloDevice UniversalComm	
	The InstallShield(R) Wizard will install HelloDevice UniversalComm on your computer. To continue, click Next.	
	WARNING: This program is protected by copyright law and international treaties.	
	< Back Next > Cancel	

3) If the installation is completed,

- It will be automatically copied to the following location.

C:\Program Files\sena\HelloDevice UniversalComm folder.

- The shortcut will be created into *Desktop* and *Program menu*.

4) Run the program.

3. Configuration of the communication mode

The Server Setting frame is composed of the following sections.

- Communication mode set-up section
- Communication parameter set-up section.
- Status bar and the command buttons

3.1 Frame layout

Server Setting				
TCP Server/Client	Server Port:	Destination IP	Destin	ation Port:
UDP Server/Client	Server Port:	Destination IP	Destin	ation Port:
RS-232 COM	Baud Rate Data Bits 115200 8 bits	Parity Stop Bits No Parity 1 Stop Bit	Handshaking Hardware Handshaking(RTS/CTS	Change Setting
State:			No Select	No Select
Description de Deste				

1) Communication mode check box

Specifies TCP/UDP or RS-232 communication mode

2) Parameter box

Specifies the Server port when users want to create server session, and Destination IP/ Destination Port to connect to the remote host

3) State box

Displays the current session status according to the communication mode specified (Connected, Disconnected, Listening, Waiting Data, Open, Close)

4) [Change Setting] button

Available only when it is specified as RS-232 mode Used in configuration of the serial communication parameters

5) Command button

Available operation is shown on the button according to the communication mode specified. If pressed, the communication session will be created.

TCP

Client mode: [Connect] or [Disconnect] Server mode: [Listen] or [Stop Listen] UDP

[Bind] or [Stop Bind]

RS232

[Open] or [Close]

3.2 TCP Server mode setting

1) Enter the Listening TCP port number into the Server Port field, and enable the TCP Server/Client check box.

Server Setting -								
TCP Serve	r/Client	Server Port:	6000	Destinatio	n IP 🔽		Destination Port:	
UDP Serve	r/Client	Server Port:	_	Destinatio	n IP		Destination Port:	
F RS-232	COM COM1	Baud Rate	Data Bits 8 bits	Parity No Parity	Stop Bits 1 Stop Bit	Handshaking Hardware Handshaking(R)	TS/CTS	hange Setting
State:]			Listen	Stop List	ten

2) Press [Listen] button, and then the TCP Server session is created.

3.3 TCP Client mode setting

1) Enter the IP address and TCP port number of the remote host to connect into the field Destination IP and Destination Port, and then, enable the TCP Server/ Client check box.

Server Setting				
TCP Server/Client	Server Port:	Destination IP 192	. 168 . 18 . 1	Destination Port: 6000
UDP Server/Client	Server Port:	Destination IP		Destination Port:
RS-232 COM	Baud Rate Data Bits 115200 8 bits	Parity Stop Bits No Parity 1 Stop Bit	Handshakinç Hardware Handshaking(RT	S/CTS Change Setting
State: No	Running		Connect	Disconnect

2) Press [Connect] button, and then it will connect to the remote host specified as a TCP client mode.

3.4 UDP Server mode setting

1) Enter the UDP server port number into the Server Port field, and enable the UDP Server/Client check box.

ſ	Server Setting				
l	TCP Server/Client	Server Port:	Destination IP	Destina	ation Port:
l	UDP Server/Client	Server Port: 6000	Destination IP	Destina	ation Port:
	F RS-232 COM	Baud Rate Data Bits	Parity Stop Bits No Parity 1 Stop Bit	Handshaking Hardware Handshaking(RTS/CTS	Change Setting
	State: No	o Running		Bind	Stop Bind

2) Press [Bind] button, and then the UDP Server session is created.

3.5 UDP Client mode setting

 Enter the IP address and UDP port number of the remote host to connect into the field Destination IP and Destination Port, and then, enable the UDP Server/ Client check box.

Server Setting						
TCP Server/Client S	erver Port:	Destination If	Ρ		Destination Port:	
UDP Server/Client S	erver Port:	Destination If	P 192.	168 . 18 . 1	Destination Port: 600	0
☐ RS-232 COM COM1	Baud Rate Data Bits 115200 8 bits		Stop Bits 1 Stop Bit	Handshaking Hardware Handshaking(RT	S/CTS Change Setting	
State: No R	unning			Bind	Stop Bind	

2) Press [Bind] button, and then UDP client session is created.

3.6 UDP tunneling mode setting

UDP tunneling mode is the one that only peer-to-peer data transfer is available under this mode. The incoming data from the specified remote host is received only through Server port, and outgoing data is transferred only to the specified host with specified IP address and the port number.

 Enter the UDP server port number into the Server Port field, and enter the IP address and UDP port number of the remote host to connect into the field Destination IP and Destination Port. 2) Enable the UDP Server/ Client check box.

Server Setting			
TCP Server/Client Server Port:	Destination IP		Destination Port:
UDP Server/Client Server Port: 6000	Destination IP 192	. 168 . 18 . 1	Destination Port: 6000
☐ RS-232 COM Baud Rate Data Bits	Parity Stop Bits	Handshaking	Change
COM1 115200 8 bits	No Parity 1 Stop Bit	Hardware Handshaking(R1	rs/crs Change Setting
State: No Running		Bind 1	Stop Bind
,			5/00 E/ms

3) Press [Bind] button, and then UDP tunneling session is created.

3.7 RS-232 serial mode setting

1) Enable RS-232 check box.

PRS-232	COM COM1	Baud Rate		Stop Bits 1 Stop Bit	Handshaking Hardware Handshaking(RTS/	CTS Change Setting
State:	No Ri	unning]		Open	Close

2) Press [Change Setting] button, and configure serial communication parameters.

Serial Part Config	uration					×
COM Port	Baud Rate	Data Sita	Parity Bits	Stop Bits	Handshaking	06
Сомі 💌	115200	8 bite 💌	No Party 💌	1.Stop Bit 💌	Herdware Handshaking(ISTS/CTS)	Cancel

3) Press [Open] button, and then serial port is opened for data send/receive in the PC.

4. Data Communication

If users perform the session creation command such as Listen, Connect, Bind and Open after they configure the communication mode, the HelloDevice UniversalComm program creates the session for the corresponding communication.

4.1 Receiving data

Received Data frame is the one that displays the incoming data under the corresponding communication mode. It is composed of a couple of columns to display the data information efficiently, i.e. Number of incoming data bytes (hex representation), ASCII code value and the character itself.

Ī	Received Data									Received State									
ľ	10h = 16 k	oyte		A	SCII	cod	e va	ilue (of th	e cł	arat	er,	·0" ·	30	•			Character Display	F Auto Scroll
											Clear Save								

The figure above shows the display of incoming data when the data stream of "0123456789abcdef" is coming to the program.

- [Save] button
 Used to store the data displayed in Received Data frame into file.
- 2) [Clear] button

Used to clear the data displayed in Received Data frame.

[Auto Scroll] check box
 If enabled, the incoming data is displayed with scroll continuously.

4.2 Sending Data

Sending Data frame is the one that users can send data under the corresponding communication mode. It is composed of a couple of columns to send the data in a couple of ways, i.e. either by ASCII code value or by the keyboard character itself.

Sending Data

 conconce
 30
 31
 32
 33
 34
 35
 36
 37
 38
 39
 61
 62
 63
 64
 65
 66
 0123456789abcdef
 Sender State

 00000000
 30
 31
 32
 33
 34
 35
 36
 37
 38
 39
 61
 62
 63
 64
 65
 66
 0123456789abcdef
 No Running

 Periodic
 Send
 Send
 Send
 Send
 Send

Clear

Save Load

- [Load] button
 Used in opening the file to transfer.
- [Save] button
 Used in storing the user input data to file.
- [Clear] button
 Used in clearing the user input data.
- 4) [Send] button

If pressed, the program will transfer the user input data by using specified method.

5) Periodic check box

To use this function, users have to enter the data transfer period in *msec* unit into the [ms] filed. If user press [Send] button after the period is set up, the program will periodically send the data in the Sending Data frame.

6) [Stop] button

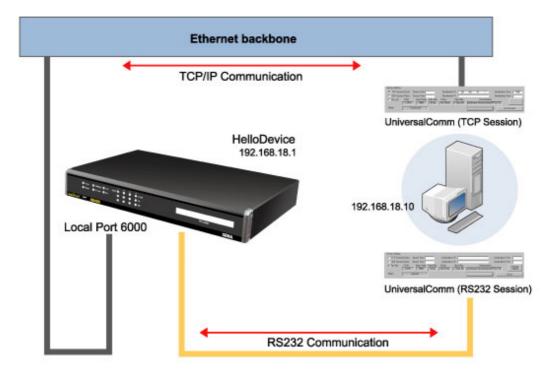
Used to cancel the periodic data transfer.

5. Test operation

Using the HelloDevice UniversalComm (user PC) and the HelloDevice, users can test the communication between PC and the HelloDevice both in TCP mode and in RS232 mode.

The test scenario is as follows.

- Create TCP session in one program instance and the RS232 connection in the other instance.
- Transfer data back and forth between both HelloDevice UniversalComm (User PC in TCP and RS232) and the HelloDevice Communication



5.1. Connections

- Before starting the test, users have to prepare the followings.
 - HelloDevice: One of 1320E, LS100, PS100/200/400 and SS100/110/400/800
 - RS232 serial cable
 - User PC connected to the network
 - HelloDevice UniversalComm program
- Hook up the RS232 serial cable between COM1 of PC and the serial port of the HelloDevice.
- 2) Hook up the Ethernet cable to the HelloDevice.

5.2. Configuration

- IP address of User PC: 192.168.18.10
- HelloDevice Configuration
 - IP address: 192.168.18.1.
 - Host mode:

1320, LS100, PS100/200/400, SS100: TCP Server mode (Local port: 6000) SS110/400/800: TCP mode, Listening port 6000

- Serial parameters: 9600, 8, N, 1, H/W flow control
- HelloDevice UniversalComm Configuration
 - TCP Client
 - 1) Run HelloDevice UniversalComm program by clicking the shortcut or menu.
 - Specify the Destination IP and Destination port. And then enable the TCP Server/Client mode.

Server Setting								
TCP Serv	ver/Client	Server Port	_	Destinatio	n IP 🗖 TS	32 . 168 . 18 .		Destination Port: 5000
T UDP Serv	/er/Client	Server Port:	_	Destinatio	n IP -	HelloDevice		HelloDevice
F RS-232	COM	Baud Rate	Data Bits	Parity	Stop B	IP address	haking	Listening port
	COMI	9600	8 bits	No Parity	1 Stop a	sic Inardware narro	anaking(RT	SVC13 SKUL9
State: Connected				Connec	1	Disconnect		

- 3) Press [Connect] button to create the TCP session between the HelloDevice and the user PC.
- RS-232 connection
 - 1) Run one more instance of the HelloDevice UniversalComm.
 - Configure the serial port setting of the PC to make it same as the one of the HelloDevice connected to the PC by using [Change Setting].

Server Setting TCP Server/Client Server Port:[Destination IP		Destination Port:
UDP Server/Client Server Port:	Destination IP	· · · · ·	Destination Port:
RS-232 COM Boud Rate	Data and it using the	op Bits Handshaking Stop Bit Hardware Handshaking/RT	S/CTS Change Setting
State: Opened	HelloDevice Serial parameter	Úpes	Close

 Create RS232 connection between the PC and the HelloDevice by pressing [Open] button.

5.3. Operation

5.3.1. Data transfer by TCP communication

- 1) Enter the data stream, "0123456789abcdef" in the Sending Data frame under the program working as TCP session, and then press [Send] button.
- 2) Check the Received Data frame under the other program working as RS232 connection, whether it displays the same data sent from the TCP session.

5.3.2. Data transfer by RS232 serial communication

- 1) Enter the data stream, "0123456789abcdef" in the Sending Data frame under the program working as RS232 connection, and then press [Send] button.
- 2) Check the Received Data frame under the other program working as TCP session, whether it displays the same data sent from the TCP session.

Construction and the second	and a second	لتخليله
Server Setting		
P TCP Server/Chest	Server Part Destrution IP 102 162 13	Destination Parts 6000
F UDP Server/Client	Server Part Dectnation P	Destination Parts
F RS-292 COM		Handshalling Kandshalling RTS/CTS
5 <u>5</u>		
	.ITTNCAE	CTCLT: Disconnect.
Received Data		Product Prod
88889888 38 31 88888880	32 33 34 35 36 37 38 29 61 62 63 64 65 66 812345	56789-abcdef Fecelved State
		C Auto Scroll
	D HelsDevice Universit	
	Server Setting	
	TCP Sever/Client Server Port: Destination	Destrollan Port
Setting Data	I" USP Sarver/Client Server Port Destination	BP Destrutes Port
08988888 39 21	F RS-232 COM Baud Pade Data Bits Party	Sap film Handshaking Charge
	COMI S600 FEbre No Party	T Step Bit Hardware Handahaking/RTS/CTS
	State: Opened	Close
	Received Data	
lav		62 64 65 66 8122456789abcdef Received Date
	e0000010	
		IT Auto Scroll
		Char Saw
	and the second s	
	Sending Data	
	00000000 30 31 32 33 34 35 36 37 38 39 61 62	63 64 65 66 #123456789abcdef No Running
	easanata	F Petatic Send
		ine ine i
		and the second se
		Clear Save Load