

HsTcp2Com v2.0.1

User Manual

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1 Welcome to HsTcp2Com!

HsTcp2Com is a communication application for Windows which allows forwarding / bridging of data between serial ports (RS232, bluetooth, IrDA, USB) represented as COM ports and TCP/IP connections or UDP/IP links. In the simplest scenario it is an RS232 to TCP/IP converter. But HsTcp2Com can also be used to interconnect and bridge data as follows:

- Any COM port to any other COM port (total 32 COM ports are currently supported)
- COM port to TCP/IP (TCP client mode)
- COM port to TCP/IP (TCP server mode)
- COM port to UDP
- TCP/IP client to UDP
- TCP/IP server to UDP
- TCP/IP server to TCP/IP client
- TCP/IP server to TCP/IP server
- UDP to UDP

Up to 32 links each interconnecting 2 ports in any combination shown above are able to operate concurrently.

HsTcp2Com supports a number of data forwarding (packetization) options:

- Forward instantly on data receive
- Forward on buffer full
- Forward on inter-character timeout
- Forward on frame end character

HsTcp2Com supports a number of diagnostic and statistics functions:

- Port status display
- Port receive and transmit byte counters
- Event log displayed on screen and saved to disk file
- Data traffic trace in ASCII or HEX format displayed and saved to disk file
- Data traffic echo function (port loopback)
- Data traffic generation function (a specified buffer is sent periodically on a timer)
- Send specified single buffer function

HsTcp2Com supports an option to automatically re-connect disconnected or failed ports.

2 Installing and Running HsTcp2Com

If during the installation you tick the checkbox "Start with windows", HsTcp2Com will be started everytime the PC boots up and a user logs in.

HsTcp2Com creates an icon in the windows taskbar. When you click the system menu close button, the application continues running hidden. When you click on the icon in the windows taskbar, HsTcp2Com control window is shown again.

To fully quit HsTcp2Com application, go to HsTcp2Com program's menu -> Tools -> Exit.

3 Creating New Links

To create a new link click "New Link" button or via main menu: Tools -> New Link. "Add New Link" dialog box will appear. An HsTcp2Com link consists of 2 ports (IP or serial) which will be interconnected. The configuration for these two ports is presented in the "Add New Link" dialog box.

You can give a link your descriptive string name in the edit box "Descriptive Link Name".

4 Editing Existing Links

To edit an existing link, select the required link in the "Configured Links" list in the main program screen and click "Edit Link" or via the main menu: Tools -> Edit Link. If the ports of the link are active, they are automatically de-activated.

5 Removing Links

To remove an existing link, select the required link in the "Configured Links" list in the main program screen and click "Remove Link" or via the main menu: Tools -> Remove Link

6 Port Configuration Options

Port configuration options presented in New Link and Edit Link dialog boxes are explained here:

- "Activate on Save" - check to apply port settings on clicking "Save" button. Port shall be disconnected and reconnected with the new settings. If these button is unchecked, some of the options will be saved but will not take effect until the port is manually disconnected and re-connected (with "Activate Port x", "Deactivate Port x" buttons).
- "Port Type" - select port type from the list "Serial/COM" or "TCP/UDP"
- "COM Port" - select COM port number from the list (from COM1 to COM32), applicable and displayed only if Port Type is "Serial/COM"
- "Baud Rate" - select COM port speed from the list (110 to 256000 baud), applicable and displayed only if Port Type is "Serial/COM"
- "Data Bits" - select COM port data bits from the list (5,6,7 or 8), applicable and displayed only if Port Type is "Serial/COM"
- "Parity" - select COM port parity from the list (even, mark, none, odd, space), applicable and displayed only if Port Type is "Serial/COM"
- "Stop Bits" - select COM port stop bits from the list (1, 1.5, 2), applicable and displayed only if Port Type is "Serial/COM"
- "IP Protocol Type" - select IP protocol from the list (TCP or UDP), applicable if port type is TCP/UDP
- "Client or Server" - select client or server mode, applicable if port type is TCP/UDP and protocol is TCP.
- "IP Port Number" - TCP or UDP port number. The meaning of this parameter depends on the setting of the port type, IP Protocol and client / server mode. For Port type : Serial / COM this setting is not applicable. For port type TCP/UDP and IP protocol TCP: if client mode is selected, IP port Number is the remote port number to connect to. If the server mode is selected, IP port number is the port to listen incoming TCP connection. If IP protocol is UDP, the IP Port Number is used for both outgoing and incoming traffic.
- "Remote IP address or domain name" - remote IP address or DNS name string for TCP client mode, or for UDP, applicable if port type is TCP/UDP and protocol
- "Forward instantly on data receive" - data received on this port will be immediately forwarded to another interconnected port on the same link
- "On Buffer Full, Buf Size" - if checked, the data received in this port shall be stored in a forwarding buffer until it becomes full. When the buffer is full the contents of the buffer is forwarded to interconnected port on the same link. Specify buffer size for the forwarding buffer

- "Interchar Timeout (ms)" - if checked, data received on this port will be forwarded to another interconnected port on the same link if inter-character timer specified in milliseconds has expired, in other words no characters have been received since the last character for the specified amount of time. This option can be used together with "On Buffer Full" option.
- "On frame end character" - if checked the data received on this port is continuously monitored for the frame end character selected from the list. If the frame end character not detected, the data is stored into the forwarding buffer. If forwarding buffer is full the buffer is sent to interconnected port. If the frame end character is detected, the content of the buffer accumulated so far is sent to interconnected port. This option can be used together with "On Buffer Full" and "Interchar Timeout" options.
- "Auto Re-connect in secs" - if checked, the port will periodically attempt to auto reconnect if it becomes disconnected. Specify time in seconds between auto-reconnect attempts.
- "Port Loopback (Echo Received Data)" - if checked, the data received on this port will be sent back out immediately.
- "Generate Traffic (Send Buffer)" - if checked, a data buffer will be sent out on this port periodically. Check "Hex" or "Ascii" radio button to select preferred entry format and then enter data to be sent in the data box. Enter traffic generation interval in milliseconds in the edit box below.

7 Activating and Deactivating Ports

To manually activate or deactivate port, first select a link in the links list in the main program screen, then click "Activate Port x" or "Deactivate Port x" to perform the necessary action. The ports of a link are automatically de-activated when invoking the link edit function.

8 Status and Statistics

Link and port status are shown in the configured links list in the "Status" column and in the "Selected Link Stats" list box when a link is selected.

9 Diagnostics

- Sending Buffers Manually: To send a buffer over any configured port, first select a link and then click "Send Buffer". In the "Send Buffer" dialog box, select outgoing port from the list, select data format (Ascii or HEX), enter data in the edit box, if necessary click "Append CR" to add carriage return character 0x0d to the end of buffer and click "Send".
- Event Log: all important events are shown in the event log list view together with corresponding timestamps. If you check the checkbox "Log Events to File" the same events are also appended to the end of disk file named "event.log" in the program's working directory
- Data Trace: if enabled by checking checkbox "Enable Tracing", all incoming and outgoing data is logged in the trace window along with timestamp Port information, direction (receive or transmit) length of data and first several bytes of data in ASCII or HEX format. ASCII or HEX format is selected with the corresponding check boxes "Hex" and "Ascii". The contents of the trace window can be cleared by clicking "Clear Trace" button. The trace is also saved to disk file "trace.log" if the checkbox "Log Trace to File" is checked.