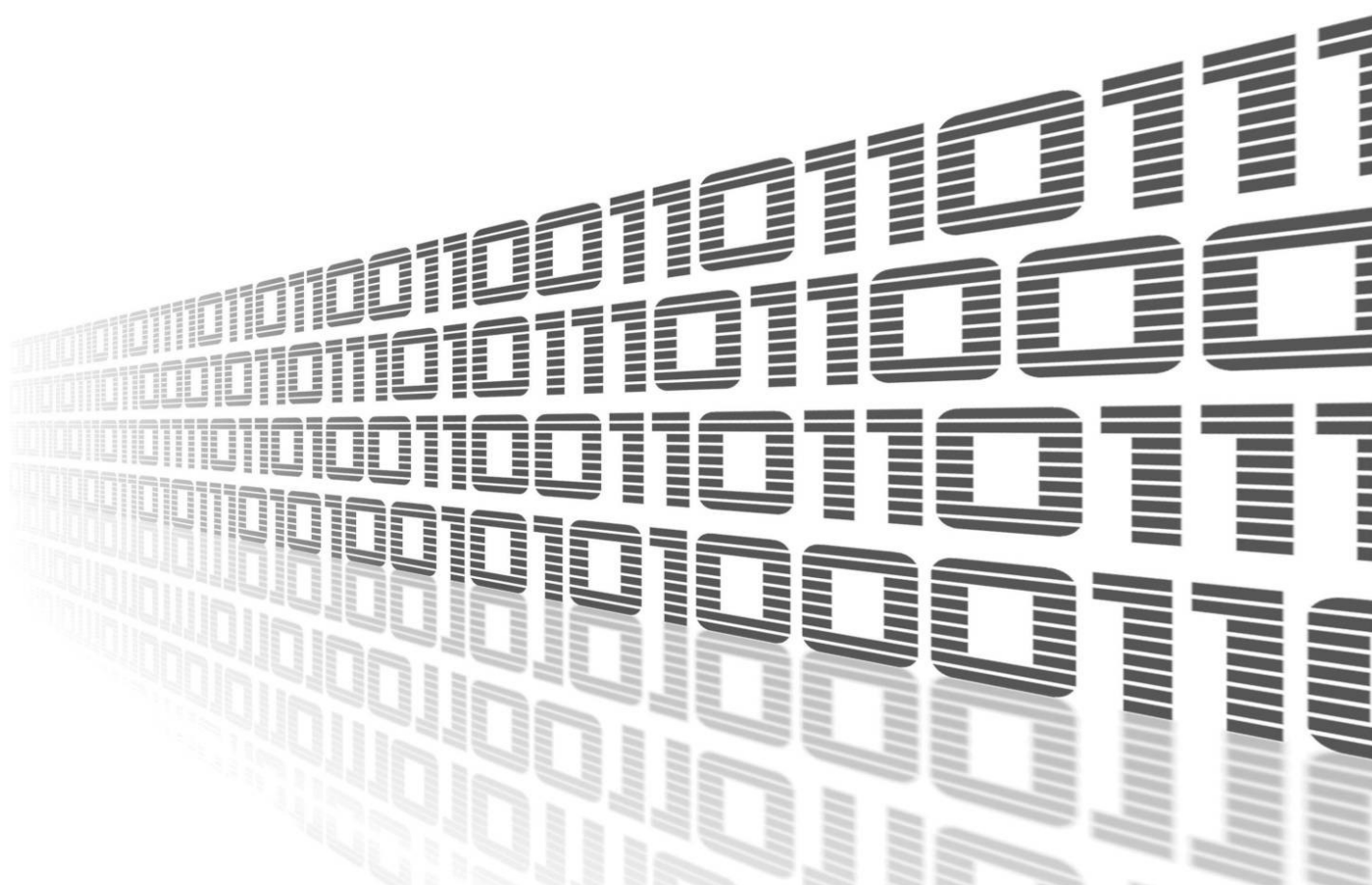




Serial to TCP



© 2026 Advantech Czech s.r.o. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photography, recording, or any information storage and retrieval system, without prior written consent. Information in this manual is subject to change without notice and does not represent a commitment by Advantech.

Advantech Czech s.r.o. shall not be liable for any incidental or consequential damages arising from the use, performance, or furnishing of this manual.

All brand names used in this manual are registered trademarks of their respective owners. The use of trademarks or other designations in this publication is for reference purposes only and does not imply endorsement by the trademark holder.

Used symbols



Important

Important — Indicates a risk to personal safety or potential damage to the router. Follow these instructions precisely to prevent injury or equipment damage.



Warning

Warning — Highlights conditions that may cause malfunction, loss of data, or unexpected behavior in specific situations. Read carefully before proceeding.



Info

Info — Provides helpful tips, context, or references that improve understanding but are not strictly required to complete the task.

Contents

1. Router App Description	1
2. Configuration	2
3. System Log	5
4. Related Resources	6

List of Figures

1	<i>Serial to TCP</i> router app function principle	1
2	Menu of the router app	2
3	Menu of the router app	3
4	System Log	5

List of Tables

1	Configuration of the serial port connection	4
2	TCP Clients configuration	4

1. Router App Description

Warning

Router app *Serial to TCP* is not included in the standard router firmware. Uploading of this router app is described in the Configuration manual (see Chapter [Related Resources](#)). This router app was tested on firmware version 6.3.10. If you update the router's firmware, check whether a compatible version of this router app has also been released, as an update may be required.

Serial to TCP router app allows connecting of the serial line device and TCP Server or Servers. Communication in both ways – serial to TCP and TCP to serial – is possible. It can be used in data collecting and measurement applications – sending data from serial line connected meter or sending commands and control data to any meters or serial line devices remotely via TCP. Function principle is demonstrated in figure 1.

Warning

The router must have an RS-232 port or a USB port with a connected RS-232 converter. After uploading of the router app, you can set the serial line communication parameters and up to 5 TCP Servers. The router then performs as a TCP Client and arranges the communication between the TCP Servers and the serial line.



Figure 1: *Serial to TCP* router app function principle

The firmware provides the same functionality; however, it can connect to only one TCP server. The *Serial to TCP* router app provides connection to up to five TCP servers. Otherwise, the firmware supports RS-485/422.

The both firmware and *Serial to TCP* router app only sends raw data between router's serial port and PC. If you need a more complex serial port mirroring to PC (virtual serial port), try our different router app *Serial over LAN*.¹

¹<https://icr.advantech.com/products/software/router-apps#serial-over-lan>

2. Configuration

Configuration of the *Serial to TCP* module is accessible via web interface of the router in the *Customization* section. Clicking on the *Router apps*, installed router apps can be viewed. Clicking on the *Serial to TCP*, it can be configured.

Menu contain *Status* section containing *System Log*, which shows System log, *Configuration* menu section containing *Global* menu item where the configuration takes place and *Administration* menu section where *Return* menu item can be found, which return the user into router's configuration.

Status
System Log
Configuration
Global
Administration
Return

Figure 2: Menu of the router app

Info

Configuration settings can be changed only by users with the *Admin* role. Users with the *User* role can view the configuration, but the *Apply* button is not available to them.

When clicked on the Global menu Item the configuration of the Router App shows.

Serial to TCP Module Configuration

☐ Enable Serial to TCP

Use Port

RS-232

Baudrate

9600

Data Bits

8

Parity

none

Stop Bits

1

Split Timeout

200

msec

TCP Clients Setup

	Status	Server Address	TCP Port
1.	Disable		
2.	Disable		
3.	Disable		
4.	Disable		
5.	Disable		

Apply

Figure 3: Menu of the router app

To activate the router app, check the *Enable Serial to TCP* item (change applies after clicking the *Apply* button). The *Use Port* field lists only the RS-232 expansion ports actually present in the router (labeled *RS-232*, or *RS-232 (1)* and *RS-232 (2)* if the router has two), plus *USB (needs converter)* if the router has a USB connector. If the router has neither an RS-232 nor a USB port available, the configuration page shows only the message *No RS-232 or USB port available.* instead of the form.



Info

If a listed port is already used for another purpose in the router’s configuration (for example, RS-232 access over TCP/UDP, or the AT-SMS protocol), applying the configuration with that port selected shows an error naming the conflicting feature.

The remaining serial line connection parameters are defined below – see the table.

Item	Description
Use Port	Selects which port is used for the serial connection: an RS-232 expansion port, if present in the router, or <i>USB (needs converter)</i> , if the router has a USB port for connecting a USB-to-serial converter.
Baudrate	Applied communication speed.
Data Bits	Number of data bits.
Parity	Control parity bit: • none – will be sent without parity • even – will be sent with even parity • odd – will be sent with odd parity
Stop Bits	Number of stop bits.
Split Timeout	Time to rupture messages. If the receiver identifies the gap between two characters longer than this parameter in milliseconds, then all of the received data will be compiled and sent in a message. Default: 200 ms.

Table 1: Configuration of the serial port connection

In the last part – *TCP Clients Setup* – there can be up to 5 TCP Clients (for connecting to 5 TCP Servers) configured. Configuration items for particular TCP Client are described in the table below:

Item	Description
Status	Enable/Disable
Server Address	IP address of the TCP Server
TCP Port	Port of the TCP Server

Table 2: TCP Clients configuration

When configured properly, serial line data are sent by TCP Clients to TCP servers – all the configured and listening servers will receive the same data from the serial line. Data sent from any configured TCP Servers will reach the serial line as well (it is received by the particular TCP Client and sent to the serial line).

3. System Log

In case of any problems with connection it is possible to view the system log – pressing the *System Log* menu item. This log is filtered to show only messages from the *Serial to TCP* router app, including information about successful or failed connection attempts. To view the complete, unfiltered system log, navigate to *Status* → *System Log* in the main router web interface. Press the *Save* button to save the system log to your computer.

System Log

System Messages

2014-09-29 14:39:16 pppsd[733]: turning on module

2014-09-29 14:39:16 pppsd[733]: selected SIM: 1st

2014-09-29 14:40:42 pppsd[733]: WARNING: SIM card is missing

2014-09-29 14:40:42 pppsd[733]: turning off module

2014-09-29 14:41:01 pppsd[733]: turning on module

2014-09-29 14:41:01 pppsd[733]: selected SIM: 1st

2014-09-29 14:42:01 serial2tcp[904]: 1. TCP connection: connect socket error: Connection timed out

2014-09-29 14:42:29 pppsd[733]: WARNING: SIM card is missing

2014-09-29 14:42:29 pppsd[733]: turning off module

2014-09-29 14:42:49 pppsd[733]: turning on module

2014-09-29 14:42:49 pppsd[733]: selected SIM: 1st

2014-09-29 14:43:04 serial2tcp[904]: 2. TCP connection: connect socket error: Connection timed out

2014-09-29 14:44:18 pppsd[733]: WARNING: SIM card is missing

2014-09-29 14:44:18 pppsd[733]: turning off module

2014-09-29 14:44:39 pppsd[733]: turning on module

2014-09-29 14:44:39 pppsd[733]: selected SIM: 1st

2014-09-29 14:45:10 serial2tcp[904]: 1. TCP connection to 10.40.30.48 established

2014-09-29 14:46:06 serial2tcp[904]: 1. TCP connection to 10.40.30.48 closed

2014-09-29 14:46:08 pppsd[733]: WARNING: SIM card is missing

2014-09-29 14:46:09 pppsd[733]: turning off module

2014-09-29 14:46:09 serial2tcp[904]: 1. TCP connection to 10.40.30.48 established

2014-09-29 14:46:13 serial2tcp[904]: 2. TCP connection to 10.40.30.48 established

2014-09-29 14:46:30 serial2tcp[904]: 2. TCP connection to 10.40.30.48 closed

2014-09-29 14:46:31 pppsd[733]: turning on module

2014-09-29 14:46:31 pppsd[733]: selected SIM: 1st

Save Log

Save Report

Figure 4: System Log

4. Related Resources

You can obtain all product-related documents, software updates, and supplementary materials on the Advantech Engineering Portal at icr.advantech.com.

For easy access to specific resources, please refer to the following sections of the portal:

- **Router Support Materials:** To access your router's supporting documents (such as the *Hardware Manual* and *Configuration Manual*), the latest firmware, or other technical resources, navigate to *Support* → [Router Models](#). Locate your specific model and select the appropriate tab under the *Documents to download* section. Available tabs include *Brochures*, *Manuals*, *Certificates*, *Firmware*, *Images/3D Models*, *PCN/SA*, and *Others*.
- **Router Apps:** To extend your router's functionality, installation packages and comprehensive manuals for various extension modules are available by navigating to *Download* → [Router Apps](#).
- **Application Notes:** For detailed guides, configuration examples, and step-by-step instructions for implementing specific networking features and use cases, navigate to *Download* → [Application Notes](#).
- **Development Documents:** If you are interested in custom scripting, programming your own applications, or compiling custom modules, navigate to [Development](#) page.