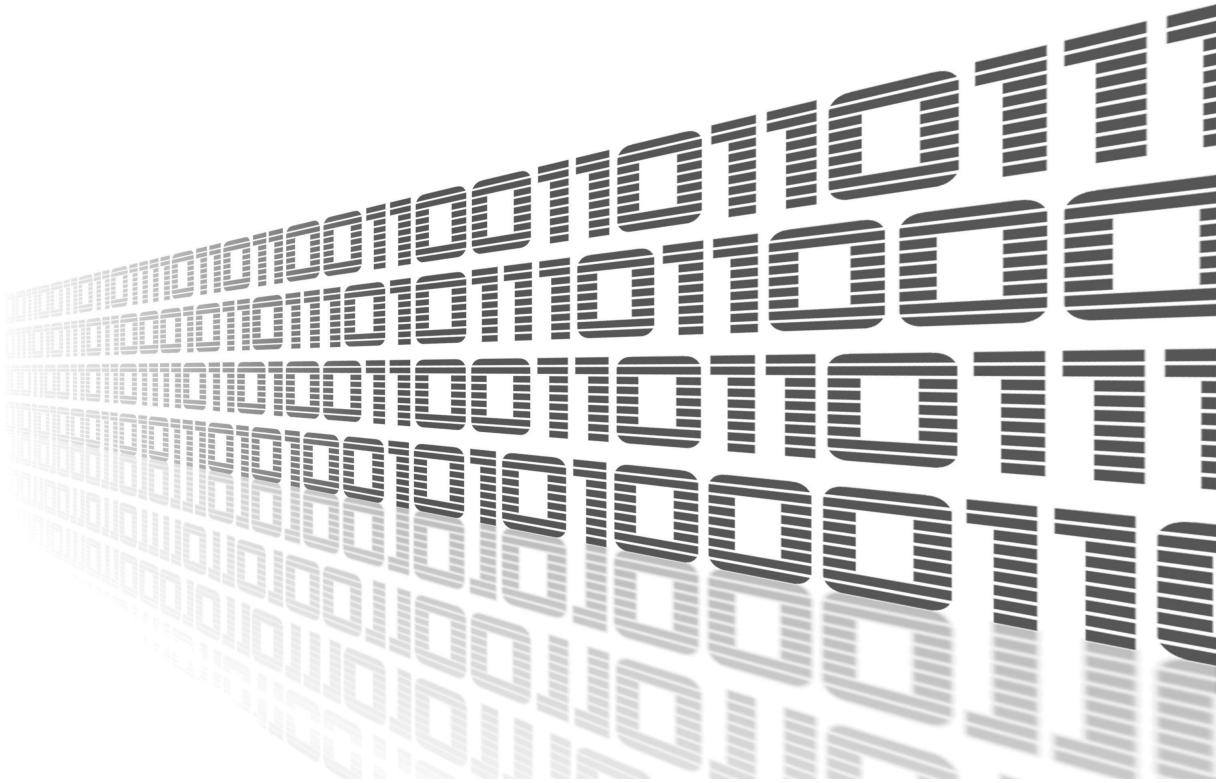
RouterApp

User Module

Serial2TCP

APPLICATION NOTE



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Used symbols

Danger – Information regarding user safety or potential damage to the router.

Attention – Problems that may arise in specific situations.

Information or notice – Useful tips or information of special interest.

Example – example of function, command or script.

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User module *Packet Splitter* is not a part of the standard router's firmware. Uploading of this user module is described in the Configuration manual (see [1, 2]).

The user module is v2 and v3 router platforms compatible.

Serial2TCP module 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.

To make the user module work, a serial expansion port has to be installed in the router. After uploading of the user module, you can set the serial line communication parameters and up to 5 TCP Servers. Router then performs as a TCP Client and arranges the communication of TCP Servers and serial line. The module is designed specifically for RS232 standard of serial line communication.

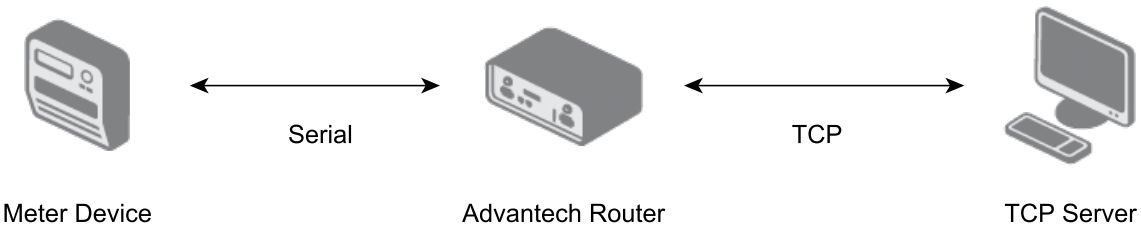

Figure 1: *Serial2TCP* user module function principle

2. Configuration

Configuration of the *Serial2TCP* moudule is accessible via web interface of the router in the *Customization* section. Clicking on the *User Modules*, installed user modules can be viewed. Clicking on the *Serial2TCP*, it can be configured. Screenshot of the configuration is shown in the figure 2. There's menu on the left, containing *System Log* (shows system log) and *Return* (to return into router's configuration) items. There's configuration of the user module on the right.

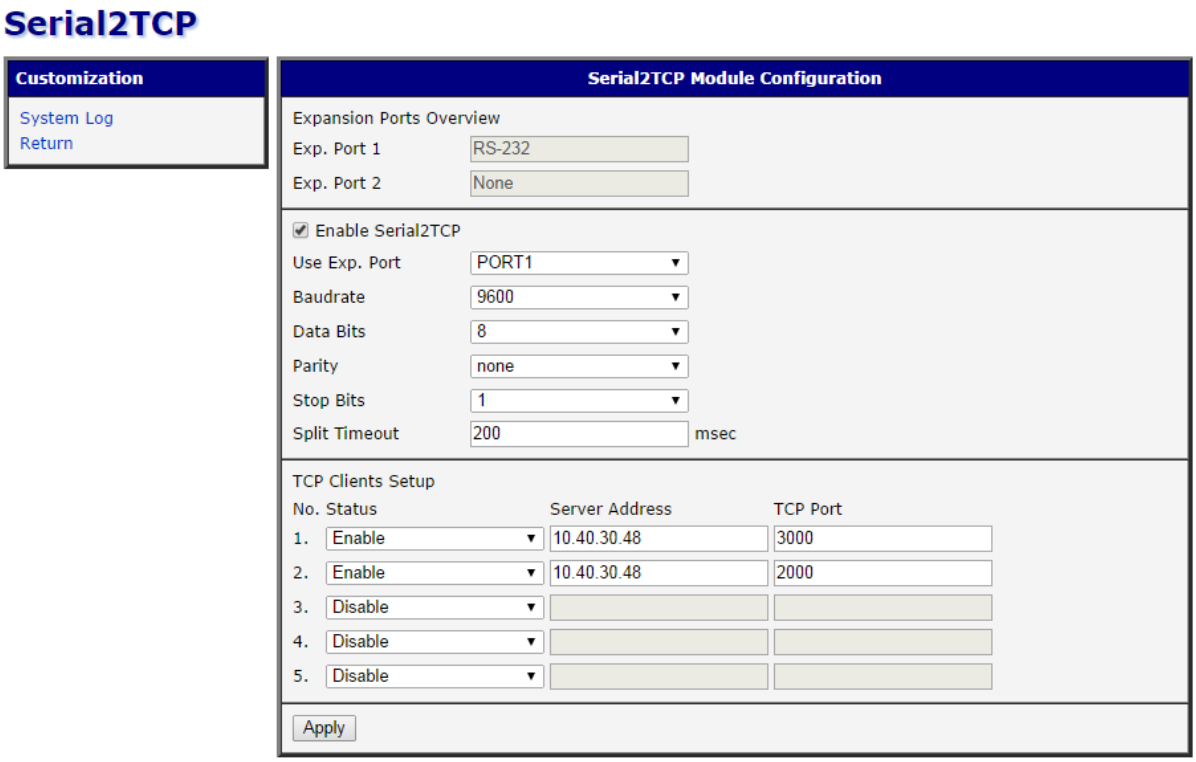

Figure 2: Configuration of the *Serial2TCP* user module

In the upper part of the configuration – *Expansion Ports Overview* – there are installed expansion ports shown. In case of using all the expansion ports the other way (e.g. TCP/UDP access enabled in the *Expansion Port 1/2* section in the routers's configuration) the attention appears.

To activate the module, check the *Enable Serial2TCP* item (change applies after clicking the *Apply* button). There is definition of a serial line connection parameters below – see the table.

Item	Description
Use Exp. Port	Expansion port select – which one will be used.
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.

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:

Položka	Popis
Status	Enable/Disable
Server Address	IP adress 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. There are detailed reports from individual applications running in the router displayed. Activity of the *Serial2TCP* module is indicated in rows starting with "serial2tcp". *System Log* also displays informations about the successful or unsuccessful connection establishment. Press the emphSave button to save the system log to your computer.

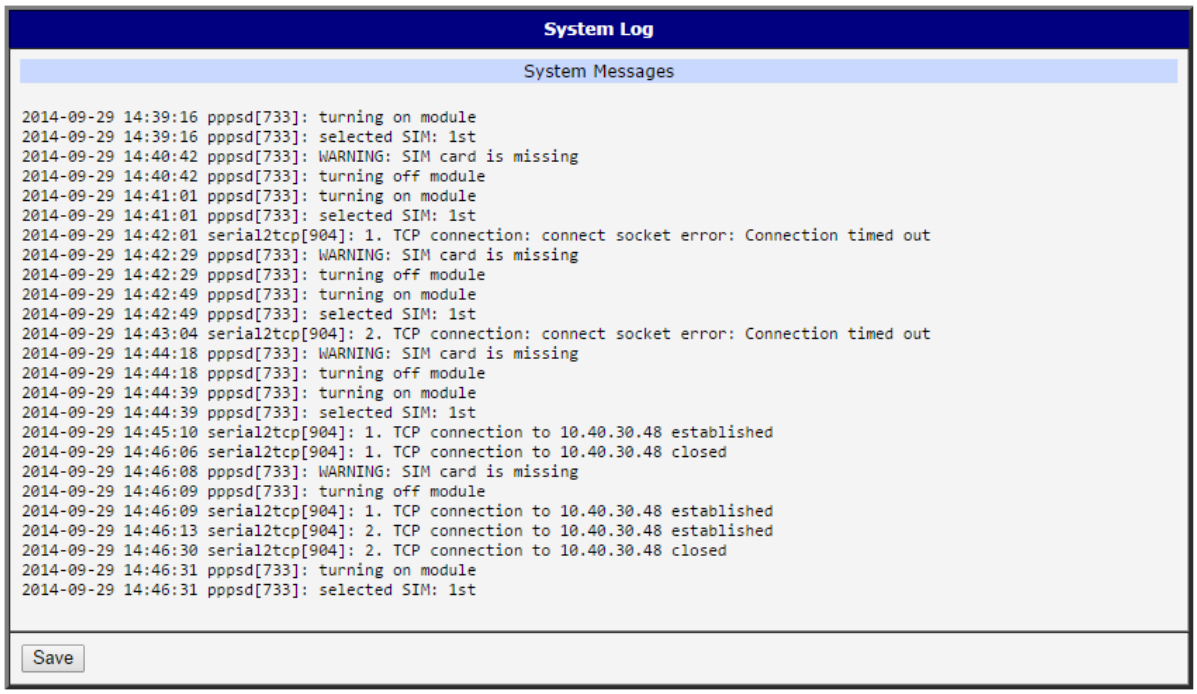

Figure 3: System Log

4. Related Documents

[1] Advantech Czech: **v2 Routery – konfigurační manuál** (MAN-0021-CZ)
[2] Advantech Czech: **SmartFlex konfigurační manuál** (MAN-0023-CZ)
[3] Advantech Czech: **SmartMotion konfigurační manuál** (MAN-0024-CZ)
[4] Advantech Czech: **SmartStart konfigurační manuál** (MAN-0022-CZ)
[5] Advantech Czech: **ICR-3200 konfigurační manuál** (MAN-0042-CZ)

Dokumentaci k produktům je možno získat na portálu *Engineering Portal*, na adrese https://ep.advantech-bb.cz/.