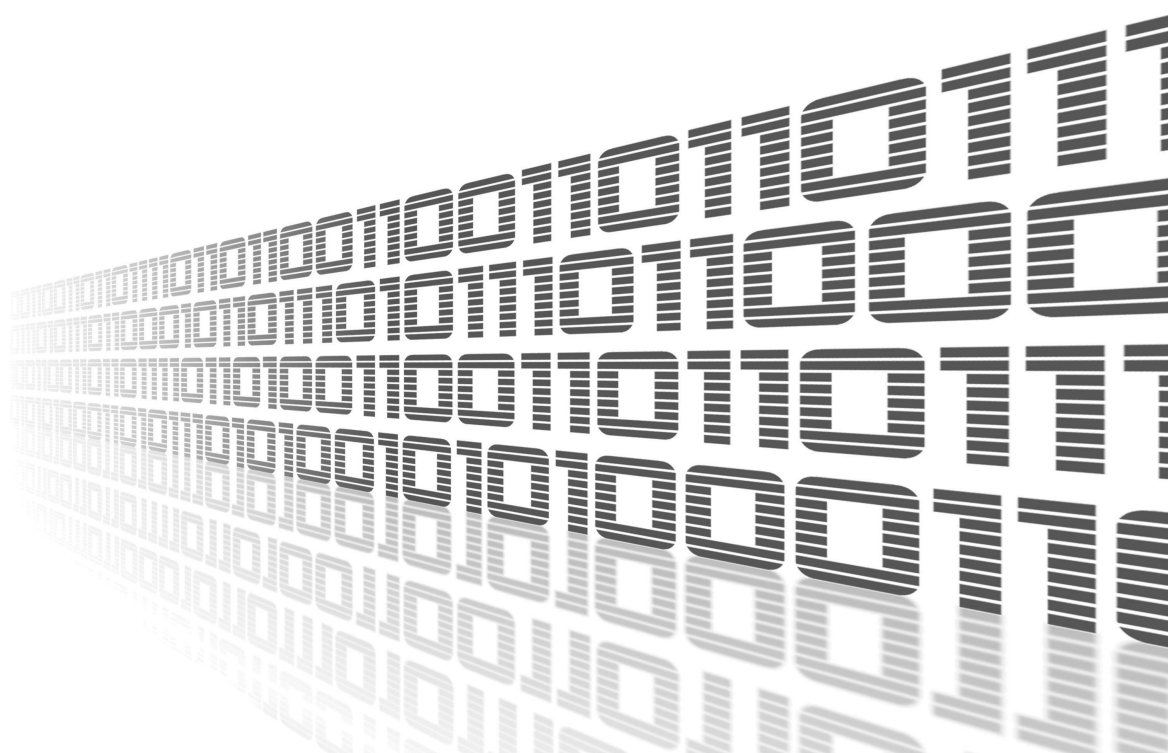




User Module

RTUMAP

APPLICATION NOTE



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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1. Description of user module



User module *RTUMAP* is not contained in the standard router 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.

Using this module, it is possible to periodically read data from the buffer which stores values obtained from connected measuring devices (meters). To each measuring device can be assigned a certain number of registers (or coils). These ranges follow each other, so *RTUMAP* module reads data from a total number of assigned registers (or coils) starting from the specified start address. Well-arranged model diagram can be found in the following figure:

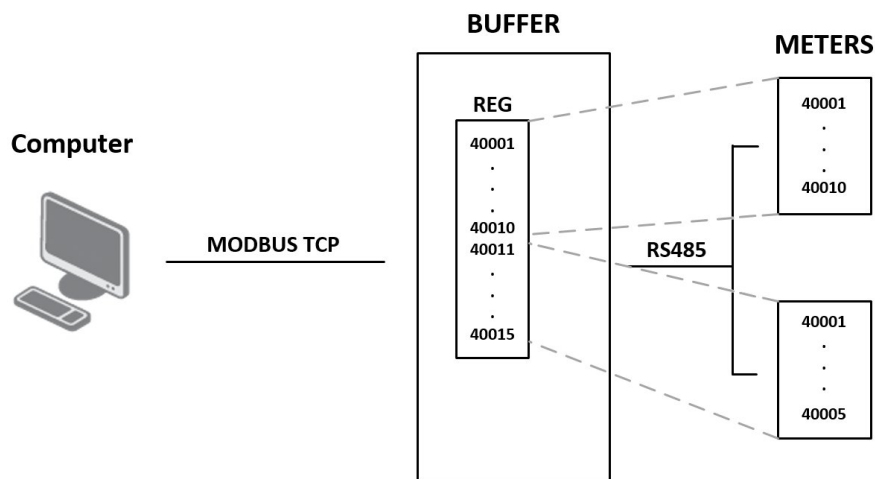


Figure 1: Model diagram

For configuration *RTUMAP* user module is available web interface, which is invoked by pressing the module name on the *User modules* page of the router web interface. The left part of the web interface (ie. menu) contains only the *Return* item, which switches this web interface to the interface of the router.

2. Configuration of user module

The actual configuration of this user module is performed via the form on the right side. The first item in this form – *Enable RTUMAP on expansion port* – is used to activate these user module. Meaning of other items is described in the table below:

Položka	Význam
Expansion port	Corresponding expansion port (<i>PORT1</i> or <i>PORT2</i>)
Baudrate	Modulation rate (number of distinct symbol changes – signaling events – made to the transmission medium per second)
Data Bits	Number of data bits (7 or 8)
Parity	Parity (<i>none</i> , <i>even</i> or <i>odd</i>)
Stop Bits	Number of stop bits (1 or 2)
Split Timeout	The delay between readings (in milliseconds)
Read Period	Period of reading data from the buffer (in seconds)
TCP Port	TCP port number
Start Address	Start address of register

Table 1: Description of items in configuration form

At the bottom of the configuration form is also available a list of connected meters with information about their settings.

All changes will take effect after pressing the *Apply* button.

Figure 2: Configuration form

2.1 Adding and removing a measuring device

Individual meters (measuring devices) can be removed from the list by clicking *[Delete]* item which is situated in front of the meter description. To add meter click on the *[Add Meter]* item. Before adding a meter, it is necessary to enter *Meter Address*, *Start Address*, number of registers or coils (*Number Of Values (Register or Coils)*) and select *Read Function* (see the figure below). This way it is possible to add up to 10 devices.

RTUMAP New Meter	
Meter Address	<input type="text" value="1"/>
Start Address	<input type="text" value="0"/>
Number Of Values	<input type="text" value="1"/> (Registers or Coils)
Read Function	<input type="text" value="3"/> ▼
<input type="button" value="Add Meter"/>	

Figure 3: Adding a measuring device

2.2 Read and write functions

The following figure describes functions that are used for reading and writing between PC, *RTUMAP* user module and meter. Functions 0x01 (read) and 0x0F (write) are intended only for coils. To be able to write some values to coils on MODBUS RTU device (by function 0x0F), set the read function in a meter declaration to function number 1.

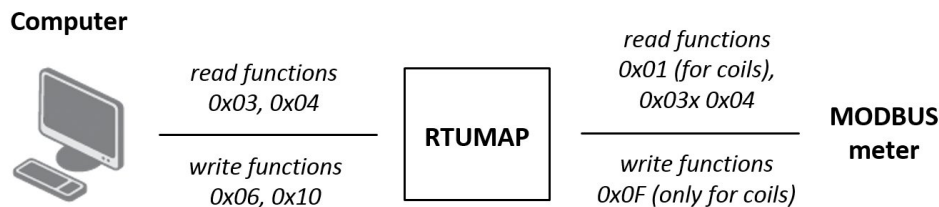


Figure 4: Read and write functions supported by the RTUMAP user module

3. Related Documents

- [1] Advantech Czech: **v2 Routers Configuration Manual** (MAN-0021-EN)
- [2] Advantech Czech: **SmartFlex Configuration Manual** (MAN-0023-EN)
- [3] Advantech Czech: **SmartMotion Configuration Manual** (MAN-0024-EN)
- [4] Advantech Czech: **SmartStart Configuration Manual** (MAN-0022-EN)
- [5] Advantech Czech: **ICR-3200 Configuration Manual** (MAN-0042-EN)



Product related documents can be obtained on *Engineering Portal* at www.ep.advantech-bb.cz address.