TRB143 Serial Utilities

The information in this page is updated in accordance with firmware version **TRB1_R_00.07.09**.

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Contents

Summary

The **Serial Utilities** page is used to make serial communication configurations of different types. This manual page provides an overview of the Serial Utilities page in TRB143 devices.

Over IP

The **Over IP** serial type is used to manage serial connections over a TCP/IP network.

Instance Example

Here's an example demonstrating Over IP in action, running in Client + Server Mode.

Serial Device Configuration

Configure serial port communication parameters in the **Serial Device Configuration** section.

Field	Value	Description
Enable	off | on; default: **off**	Turns the instance on or off.
Name	string; default: **none**	Instance name, generated by the user when first creating the configuration.
Device	MBUS; default: **MBUS**	Specifies which serial port will be used for serial communication.
Data bits	8; default: **8**	Number of data bits for each character.
Stop bits	1; default: **1**	Stop bits sent at the end of every character allow the receiving signal hardware to detect the end of a character and to resynchronise with the character stream. Electronic devices usually use one stop bit. Two stop bits are required if slow electromechanical devices are used.
Parity	Even | default: Even	In serial transmission, parity is a method of detecting errors. An extra data bit is sent with each data character, arranged so that the number of 1 bits in each character, including the parity bit, is always odd or always even. If a byte is received with the wrong number of 1s, then it must have been corrupted. However, an even number of errors can pass the parity check. • **None** (**N**) - no parity method is used. • **Odd** (**O**) - the parity bit is set so that the number of "logical ones (1s)" has to be odd. • **Even** (**E**) - the parity bit is set so that the number of "logical ones (1s)" has to be even.
Flow control	None; default: **None**	In many circumstances a transmitter might be able to send data faster than the receiver is able to process it. To cope with this, serial lines often incorporate a "handshaking" method, usually distinguished between hardware and software handshaking.

Over IP Configuration Settings

You can configure network related parameters of the serial connection in the **Over IP Configuration** secion.

Field	Value	Description
Mode	Server | Client | Client + server | Bidirect; default: **Server**	This device's role in the connection: • **Server** - the device waits for incoming connections. • **Client** - the device initiates the connection. • **Client + server** - launches service in server and client(s) mode simultaneously. • **Bidirect** - acts as client by default but waits for incoming connections at the same time.

Protocol	TCP | UDP; default: **TCP**	Protocol used in the communication process.
Client: Destination address	IP | Port; default: **empty**	Specify server address and port for client to connect to. E.g first field for address second for port. 16 destination addresses are allowed.
Server: UDP: Predefined addresses	IP | Port; default: **empty**	Set predefined IP and port for UDP connection. E.g first field for address second for port.
Listening port	[1..65535]; default: **empty**	When enabled, all data will be transmitted transparently.

Field	Value	Description
Use TLS/SSL	off | on; default: **off**	Mark to use TLS/SSL for connection.
TLS version	Support all | tlsv1.0 | tlsv1.1 | tlsv1.2 | tlsv1.3; default: **Support all**	Minimum TLS version allowed to be used.
TLS type	Certificate based | Pre-Shared-Key based; default: **Certificate based**	Select the type of TLS encryption.
Require certificate	off | on; default: **on**	Demand certificate and key from peer and verify them against certificate authority.
Verify host	off | on; default: **off**	Check if the server certificates Common Name (CN) matches hostname to which client is connecting.
Certificate files from device	off | on; default: **off**	Choose this option if you want to select certificate files from device. Certificate files can be generated here.
Certificate file	.crt file; default: **none**	Upload certificate file.
Key file	.key file; default: **none**	Upload key file.
CA file	.ca file; default: **none**	Upload CA file.
Pre-Shared-Key	string; default: **none**	The pre-shared-key in hex format with no leading “0x”.
Identify	string; default: **none**	Specify the identity.

Field	Value	Description
Raw mode	off | on; default: **on**	When enabled, all data will be transmitted transparently.
Remove all zeros	off | on; default: **off**	When checked, indicates that the first hex zeros should be skipped.

Inactivity timeout	integer [0..36000]; default: **300**	Specifies period of time in seconds, where server connection must be inactive, to disconnect client. To disable timeout input 0.
Serial timeout	integer [0..1000]; default: **none**	Specifies the maximum milliseconds to wait for serial data.
Max clients	integer [1..32]; default: **4**	Specify how many clients are allowed to connect simultaneously.
TCP echo	on | off; default: **off**	Enable software TCP echo.
Close connections	on | off; default: **off**	Close TCP connections everytime data is sent or received (might result in serial data loss).
Keep alive	on | off; default: **off**	Enable keep alive.
Keep alive time	integer [0..32000]; default: **0**	Close TCP connections everytime data is sent or received (might result in serial data loss).
Keep alive interval	integer [0..32000]; default: **0**	The interval between subsequential keepalive probes.
Keep alive probes	integer [0..32000]; default: **0**	The number of unacknowledged probes.

IP Filter

The **IP Filter** section is used for configuring which network is allowed to communicate with the device. You may add a new instance by selecting the Interface and pressing Add.

Then enter the IP address and save.