

Serial and Serial Line Redundant

Configuration of communication line of "Serial", "Serial Line Redundant" and "Serial System&Line Redundant" categories

Communication line parameters of "Serial", "Serial Line Redundant" and "Serial System&Line Redundant" categories do not depend on hardware used for serial communication, because the operation of serial interfaces is solved by means of asynchronous port drivers in Windows system (device drivers). Definitions are the same either for communication via standard ports COM1 up to COM4, or e.g. via intelligent asynchronous communication adapters DigiBoard, Moxa, VSCOM or other extension cards or devices. These parameters may be configured in four independent modes.

Parameters

Baud rate

Setting of the line baud rate. Valid values: 110, 150, 300, 600, 1200, 2400, 4800, 9600, 19200, 38400.

Number of bits

Number of data bits. Valid values: 5, 6, 7, 8.

Number of stop bits

Number of stop bits. Valid values: 1, 1.5, 2.

Illegal combinations:

5 data bits and 2 stop bits,

6, 7 or 8 data bits and 1.5 stop bit.

Parity

Settings of the parity of asynchronous transmission:

- No parity
- Even
- Odd

Handshaking

Configuration of handshaking on the level of Windows driver.

- **None**
- **RTS/CTS** - hardware handshake
- **XON/XOFF** - software handshake
- **Custom** - own configuration of the handshake

None

It allows to set RTS, DTR signals to required permanent values.

RTS/CTS

RTS signal is used for the standard hardware handshake controlled directly by the serial asynchronous port driver. It allows to set a permanent value of DTR signal.

XON/XOFF

Software XON/XOFF handshaking is controlled directly by the serial asynchronous port driver.

Custom

At transmission, RTS and DTR signals may be controlled by **Receive Delay** and **Transmit Delay time parameters**. Own setting of the handshaking is suitable to use for RS232/485 converters controlled by these signals.

Hardware

DTR/DSR

Custom mode sets DTR as the active signal for the handshaking control.

RTS/CTS

Custom mode sets RTS as the active signal for the handshaking control.

Inverse

For the handshaking of **Custom** type, controlled signals RTS or DTR are inverted.

RTS=0 (RTS=1)

It sets constant RTS signal level in case that is not active used by selected handshaking type.

DTR=0 (DTR=1)

It sets constant DTR signal level in case that is not active used by selected handshaking type.

WaitTxEMPTY

If the option is enabled, the communication thread is waiting for the transmission to end. The option enables the synchronization of RTS or DTR signal control at the end of the transmission (see **Receive delay**) in case of the handshake of **Custom** type. Seeing that standard serial drivers of Windows operating systems allow to get information only about transmission of the last byte into the transmission shift register of UART device (but not physically

sent out), then in case of this option, there is 1 character with 0xFF value added to the end of transmitted message. At the moment of transmission indication of this character into transmit register, the inherent message is sent out safely and **Receive delay** (if nonzero) is starting to wear on. See also **Note**.

Transmit delay

Delay (in milliseconds), that is inserted between RTS signal setting (**Custom** handshaking **RTS/CTS**) or DTR signal setting (**Custom** handshaking **DTR/DSR**) and the beginning of message transmission.

Receive delay

Delay (in milliseconds), that is inserted from the end of transmission to the deactivation of RTS signal (**Custom** handshaking **RTS/CTS**) or DTR signal (**Custom** handshaking **DTR/DSR**). For real starting of this delay at the moment of the transmission end, it is necessary to use **WaitTxEMPTY** option.

Other options

ConstOpen

If the option is enabled, then the communication port of the line is still opened, otherwise the port is used only in case of need. The option allows to share ports with other applications.

CheckError

If the option is enabled, the communication error check will be executed - Parity, Frame, Overrun, Break Error.

Balast

Number of empty minor characters (with 0x00 value), which are inserted before transmitted message. It is advantageous when controlling modems /radiomodems or converters controlled by own data signal. See also **Note**.

Note: **Balast** and **WaitTxEMPTY** options insert special characters before (or behind) the transferred message, which may disable the communication with devices. Further information can be found in documentations for individual [communication protocols](#) which communicates by asynchronous serial ports.



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