

# 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 the hardware used for serial communication, because the operation of serial interfaces is solved by means of asynchronous port drivers in Windows system (device drivers) or Linux serial port interface. Definitions are the same either for communication via standard ports COM1 up to COM99, 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. Communication stations can subsequently use one (or even more) of these modes for their communication.

**Note:** if the D2000 KOM process is running on a Linux/Raspberry PI platform, you must enter the *Device* parameter value as a full path to the device that corresponds to the serial port (eg /dev/ttyAMA0 or /dev/ttyS0).

### Parameters

#### Baud rate

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

#### Number of bits

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

#### Number of stop bits

A 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 setting 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 setting a permanent value of the 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 a constant RTS signal level in case that is not actively used by the selected handshaking type.

#### DTR=0 (DTR=1)

It sets a constant DTR signal level in case that is not actively used by the 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. As the standard serial drivers of Windows operating systems allow to get information only about the transmission of the last byte into the transmission shift register of the UART device (but not physically sent out), then in the case of this option, there is 1 character with 0xFF value added to the end of the transmitted message. At the moment of transmission indication of this character into the transmit register, the inherent message is sent out safely, and **Receive delay** (if nonzero) is starting to tick. See also **Note**.

#### Transmit delay

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

## Other options

#### ConstOpen

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

#### CheckError

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

#### Ballast

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

**Note:** **Ballast** 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 the documentation for individual [communication protocols](#) that communicate via asynchronous serial ports.

## Tell command LNSTAT

The tell command [LNSTAT OPEN/CLOSE](#) stops communication (CLOSE) and disconnects the communication port. Communication resumes after the LNSTAT OPEN command or when the communication process is restarted.



#### Related pages:

[Communication lines](#)