

XTEST Driver Manual

Serial Line Testing Master Driver



TAS-HMITalk test driver for loopback communications



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Process Monitoring and Industrial Automation Software

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1. Driver details

1.1. Driver overview

The XTEST driver allows you to test communication ports and communication links before attaching intelligent physical devices such as PLCs (Programmable Logic Controllers), RTUs, (Remote Terminal Units), Stand-Alone Controllers, Acquisition Modules, RS-232 Networks, etc.

XTEST can send a message to the communication port and then wait to read it back as a valid answer, provided Tx and Rx are BRIDGED in some point of the communication link. The answer contains random values that are received in different channels, simulating analog values coming from the field equipment.

Also it allows you to send a custom message to see how the connected device reacts.

LOOP TEST:

The most important feature of the XTEST driver is its ability to determine how your communications link is working, independent of the physical device being used.

Usually, it is difficult to initiate communications with a given device due to several factors.

Device-Independent Factors:

PC Hardware:

- Is your board working OK?
- Does it conflict with other boards? External Link:
- Is your cable OK? Is it damaged?
- Is your RS-232/422 converter working OK?
- Is your RS-232/485 converter working OK?
- Is your modem link working OK?
- Is your radio link working OK?
- Is your satellite link working OK?

Device-Dependent Factors:

Required Hardware:

- Are you using the right board according to your device requirements (RS-232/422/485/etc.)?
- Does your external device have the ability to communicate with a PC?
- Are you connecting the cable to the right port in your device? (Maybe you are using a network port or the programming port.)
- Have you checked if your device has a switch to enable communications?
- Does your device have a switch to select different communication protocols?
- Are you using the correct driver to communicate with your device? Port Settings:
- Are you matching your device's required port settings:
 - BaudRate?
 - Parity?
 - DataBits?

- StopBits?
- Timeout?
- Other COM flags? Required Cable:
- Did you adhere to the cable specifications given in your device's manual?

The important contribution XTEST makes to configurators is that it allows them to check every aspect of the communication that is device-independent. By connecting RX and TX on the device side, you can assure that you are not having problems with your PC hardware, nor with your external link.

RS-232 PORT:

Standard in your PC, may have plugs DB-25 or DB-9.

PIN DB-25 DB-9

1		
2	TX	RX
3	RX	TX
4	RTS	DTR
5	CTS	SGN
6	DSR	DSR
7	SGN	RTS
8	RSD	CTS
9		
20	DTR	

1.2. Supported devices

This driver can communicate with these devices, but is not necessarily limited to this list:

RS-232 Port
RS-422 Port
RS-485 Port

2. Command list

2.1. Generate Random Values

Description of this command:

Sends a message loaded with random values and waits to receive the same message as an answer. When the message is received, the driver parses and returns the embedded values as if they were replied by a real device. Tx and Rx must be shorted somewhere in the communication link for this command to behave properly.

Type of data handled by this command:

Analog Input

Number of points accepted by this command:

1-250

Meaning of the DriverP0 parameter:

0

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP2 parameter:

0

3. Appendices

3.1. Error messages

The following list shows all the possible error messages that can be returned by the protocol driver during a failed communication in the 'DriverStatus' property.

This list does not include some error messages that can be returned by the activex component while attempting to establish a connection.

- [1005] DRIVER (Internal): Invalid driver stage
- [1300] PROTOCOL (Timeout): No answer
- [2001] CONFIG (DataType): Analog outputs are not supported by this driver
- [2002] CONFIG (DataType): Digital inputs are not supported by this driver
- [2003] CONFIG (DataType): Digital outputs are not supported by this driver
- [3036] CONFIG (P0): Invalid header noise length (max=250)
- [3554] CONFIG (P1): Invalid footer noise length (max=250)

3.2. Keywords list

The following list shows a set of words directly related to this driver.

"Line, Master, RS232, RS422, RS485, Serial, Testing".