Interfacing FlashRunner 2.0 with the STD_UART driver

This driver is meant to be used as simple communication mechanism for sending/receiving commands to target device. With simple commands can be used for functional test purposes, reading certain memory areas, calibration, and so on.
It can be used without a license. Just create a new project using Workbench software, and select STD_UART device in the Device Selection wizard page.
Protocol supported:

- UART 1 wire
- UART 2 wires

Driver Parameters

PARITY_TYPE

PARITY_TYPE <NONE|EVEN|ODD>

Set this parameter to add the EVEN or ODD parity bit to the UART communication. If not needed set it to NONE.

DELAY

DELAY <delay>

Intra-byte delay between each UART transmission.

TX_PULLUP

TX_PULLUP <YES|NO>

Activate or not the pullup on the TX line, which is the TX for the devices and the RX for the FlashRunner. In UART1 communication the line is kept in pullup when the FlashRunner2.0 has ended the transmission.

STOP_BITS

STOP_BITS <num_stop_bits>

Define how many stop bits are required at the end of a transmission:

- 1: 1 stop bit
- 2: 2 stop bits
- 3: 2 stop bits only in the last byte to send

READ_TIMEOUT

READ_TIMEOUT <timeout_ms>

Define in milliseconds the timeout for the read operation.

RX_REM_START_NULL

RX_REM_START_NULL <YES|NO>

Remove for a *READOUT* operation the NULL character (0x00) at the beginning of the communication. This option can be useful when the device is not powered by FlashRunner and the PULLUP of the FlashRunner on the TX line is too strong for the device; for this reason the TX line is LOW. These NULL values can be ignored thanks to this command. The timeout is the one set by *READ_TIMEOUT* paramter.

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Commands List

CONNECT

Connect function: Power on

READBACK

READBACK <size> <AT_MOST|ASCII> <ASCII>

It will read size bytes (maximum 0x800 - 2048 characters) and print them in hex on the Terminal and on the Log.

- AT_MOST: the user can tell the driver to read at most N bytes. If less than N are received, no error is thrown, but the bytes received are printed. This can be used if the user does not know exactly the length of the asnwer.
- ASCII: the output will be in ascii and not in hex.

WRITE

WRITE <byte_1> <byte_1> ... or TPCMD WRITE <"string"> <CR-LF>

It transmits N characters defined as parameters.

With the first syntax the user can send bytes in hex format. Example: TPCMD WRITE 0x00 0x01. The maximum number of bytes is 18.

With the second syntax the user can send a string in ASCII format. The maximum number of words is 18 with a maximum length of 40. A word is everything that is separated by space inside the quotes plus the CR-LF. This last parameter can be used to append the carriege-return (CR), the line-feed (LF) or both (CR-LF) at the end of the string. Example: TPCMD WRITE "This is a test-test" CR-LF. Here there are four words plus one for the CR-LF.

WRITE_FRB

WRITE_FRB <start_addr> <size>

It transmits all characters in the FRB file included in <start_addr> <size> window. The maximum size is 0x100.

FLUSH

Cleans RX FIFO to remove dirty values.

SEND_XMODEM

SEND_XMODEM <"string"> <CR-LF>

It transmits N characters defined as parameters.

With the first syntax the user can send bytes in hex format. Example: TPCMD WRITE 0x00 0x01. The user can send a string in ASCII format. The maximum number of words is 18 with a maximum length of 40. A word is everything that is separated by space inside the quotes plus the CR-LF. This last parameter can be used to append the carriege-return (CR), the line-feed (LF) or both (CR-LF) at the end of the string. Then FRB file (set using command: #TPSETSRC filename.frb) is sent to the device in packets of 128 bytes of payload as specified by XMODEM protocol.

GET_XMODEM

GET_XMODEM <byte_1>

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For file transmission from device to Flashrunner via XMODEM protocol over UART. The file is saved in FR in the file specified by the command: #TPSETDUMP filename.bin.
The parameter specifies file dimension.

READ_CHECK

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READ_CHECK <"string"> <CR-LF>
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To verify if the specified string in the first parameter has been received. If the message to be received must contain ending characters carriege-return (CR), line-feed (LF) or both (CR-LF), this must be specified in the second parameter.

DISCONNECT

Disconnect function: Power off

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