

Updating Variables Over Serial Connection

Summary

The following software shows how to update variables over a serial connection.

Description

When networking 2 QED Boards by RS-232 or RS-485, it is easy to send forth commands over the serial port from a master board to a slave board. The master can send data to the slave, which will put the data on the stack. Then the master can send a forth word and the slave will execute the word, thereby using the data on the stack.

Instead of putting data on the stack, it is also possible to send data from the master directly to update a variable in memory on the slave board. The following code demonstrates how to do this.

 $\$ this routine assumes that a command string in the form $\$ string" <cr> $\$ is sent to the Forth task on the QED Board. \setminus The 32bit <xaddress> specifies the location where the string is to be \ stored in memory. \setminus With a simple modification of this code, you could use a constant \land destination <xaddress>, or keep the destination xaddress in a variable \setminus so that you don't have to send it over the serial line each time. ANEW STRING. ROUTINES DECIMAL. 90 CONSTANT MAX. CHARS/STRING \ used by \$MOVE : MOVE. STRING&COUNT (destination. xaddr\source. xaddr\count --) \ moves the counted string starting at specified xaddr.of.count in memory \ to the specified destination. a max of MAX. CHARS/STRING are moved. LOCALS{ &count x&source x&dest } &count MAX. CHARS/STRING MIN TO &count \land clamp count \land save count at destination &count x&dest C! (source. xaddr\dest. xaddr\cnt --) x&source x&dest 1XN+ &count $(--) \setminus$ move the body of the string CMOVE : \$SAVE (destination. xaddr <"string"> --) \ this routine, pronounced "string-save",
\ removes xaddr from data stack and removes " string" from input stream.

 \ saves counted string starting at specified xaddress in memory.

 ASCII " PARSE 3DROP \ in input stream, move to leading

 ASCII " PARSE

 (destination. xaddr\source. xaddr\c

 \ in input stream, move to leading " character
(destination. xaddr\source. xaddr\cnt --) **MOVE. STRI NG&COUNT** \land **EXAMPLE**: HEX BOOO O XCONSTANT DESTINATION. XADDR \ in on-chip ram DESTINATION. XADDR \$SAVE " Here is the string of interest" CR DESTINATION. XADDR COUNT. TYPE CR \ this types out \setminus in on-chip ram \ this types out the string from memory

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