

JSD-80 RS232, USB, and Ethernet Remote Control



This document lists a subset of the JSD-80 commands that are typically used for control by a server over RS232 or Ethernet. Note that the JSD-80 echoes the command and parameters. The parameters are space (0x20) or tab (0x09) delimited. The command line is terminated by a carriage return (0x0d). Responses are tab delimited.

A typical exchange is shown below. These are the responses from the JSD-80.

```
00>button
5
00>button 6

00>button
6
00>
```

Here's a hex dump of a similar exchange.

```
62 75 74 74 6F 6E 0D 0A 36 0D 0A 30 30 3E 62 75 74 74 6F 6E 20 36 0D 0A
0D 0A 30 30 3E 62 75 74 74 6F 6E 0D 0A 36 0D 0A 30 30 3E 62 75 74 74 6F
6E 20 35 0D 0A 0D 0A 30 30 3E
```

Commands ARE case sensitive and MUST be lower case. Commands that do not return values will have a blank line before the prompt for the next command. All results are returned as ASCII 24 bit hex with leading zeros dropped. These commands can be sent through RS232 (8N1, 38.4kbps), USB (Silicon Labs VCP or DLL), or TCP port 10,001. RS232 includes RTS/CTS handshaking. See [JSD-80 RS232 Handshake](#) for details. Each of these paths in to the command interpreter drive the same command interpreter, so the various paths should not be used simultaneously. If they are, the command on one input will corrupt the command on another. NOTE that there is a substantial change in the command interpreter with the introduction of Ethernet and USB to the JSD-80. The changes should generally be backward compatible. With this change, several new commands are added. These are identified as NEW in the table below. In addition, leading zeros are now dropped in results that are returned. Previously, the JSD-80 always returned 6 digit hex values. Now, leading zeros are dropped, so the returned result may be less than 6 digits. This speeds up operation since less data needs to be transferred.

Note that the "00>" is a prompt from the JSD-80. It should not be transmitted to the unit.

Users may want to experiment with commands using a terminal program such as Tera Term (available at <http://www.uslinc.com:8880/ftp/MultiProduct/tterm23.zip>). In addition, the USL Ethernet Discoverer (http://www.uslinc.com:8880/ftp/MultiProduct/Ethernet_Discoverer_v1_0_1.zip) can be used to determine the IP address of the JSD-80.

Command Table

Command	Description	Sample Output
button	Select the format corresponding to the specified button or read which button is currently selected. Simulates pushing one of the buttons (one through eight) on the JSD front panel. Loads the format data from eeprom into the format buffer in RAM, sets the saved level, sends DSP commands to select format and set level. The front panel is updated. If, instead of a format number, a question mark follows the command (after the space), the currently selected format number (button number) one through eight is returned. The currently selected format button is also returned if no button is specified (question mark not required). If the button number is followed by a space and an 'x', the level adjustment to that saved with the new format is excluded (level remains unchanged).	00>button 1 00>button 8 00>button ? 8 00>button 8 00>button 8 x 00>

<p>date</p>	<p>If the word date is followed by a number, the date is set to the date represented by that number. The number is DECIMAL YYMMDD format. For example, July 7, 2004 would be 040707. If the word date is followed by a space and a question mark, or followed by nothing at all (just a carriage return), the date is returned as a 6 digit number in YYMMDD format with leading zeros suppressed.</p>	<pre>00>date 40707 00>date ? 40707 00>date 040408 00>date 40408 00>date 040707 00>date 40707 00></pre>
<p>dhcp</p>	<p>NEW - Sets or reports the Dynamic Host Configuration Protocol setting. Returns 1 if DHCP is enabled. Returns 0 if it is not. Changed values are stored to eeprom and will be used on the next power-up.</p>	<pre>00>dhcp 0 00>dhcp 0 00></pre>
<p>dumplog</p>	<p>Dumps the activity log from the specified DSP board (6 or 9). Output format is date (YYMMDD) time (HHMMSS) and event description.</p>	<pre>00>dumplog 6 040514 092356 Button 02 040514 092416 Button 07 040514 092416 Button 08 040514 092417 Button 07 040514 092417 Button 06 040514 092417 Button 05 040514 092418 Button 04 040514 092418 Button 03 040514 092418 Button 02 040514 092418 Button 01 040514 092435 Level 01.0 00></pre>
<p>ethinfo</p>	<p>NEW - Returns basic info about the Ethernet settings. The PHID values can be used to verify that SPI communications with the chip is working. Note that this (obviously) is supported only by JSD-80 units with Ethernet.</p>	<pre>00>ethinfo ENC PHID1=83 ENC PHID2=1400 IP Address=192.168.1.159 Subnet Mask=255.255.255.0 MAC Address=0:23:a3:3:12:34 00></pre>
<p>formatupdate</p>	<p>Reads format data (except level) for the currently selected format from eeprom and sends commands to DSPs to set the format. Similar to the button command, but requires no argument and does not change level.</p>	<pre>61>formatupdate 61></pre>

gateway	<p>NEW - Set or read the IP gateway address for the Ethernet connection. If no command line parameters are given, the gateway address is reported as four DECIMAL numbers. To set the gateway address, follow the gateway command with four DECIMAL numbers separated by tab or space. The new gateway address is saved to eeprom and used on the next power-up. NOTE that the Ethernet commands accept parameters and report values in decimal. All other commands are in hex. The Ethernet commands are in decimal for ease of use.</p>	<pre>00>gateway 192 168 1 1 00>gateway 192 168 1 1 00></pre>
ip	<p>NEW - Set or read the IP address for the Ethernet connection. If no command line parameters are given, the IP address is reported as four DECIMAL numbers. To set the IP address, follow the ip command with four DECIMAL numbers separated by tab or space. The new IP address is saved to eeprom and used on the next power-up. NOTE that the Ethernet commands accept parameters and report values in decimal. All other commands are in hex. The Ethernet commands are in decimal for ease of use.</p>	<pre>61>ip 192 168 1 159 61>ip 192 168 1 159 61></pre>
level	<p>Sets main level control to value specified in hex (00 to 64, corresponding to 00 to 100 decimal and 0.0 to 10.0 on the front panel display). Updates front panel display and sends appropriate commands to DSPs. If level is followed by a space and then a question mark, it returns the current level as a hex number (0 to 64 corresponding to 00 to 100 decimal and 0.0 to 10.0 on the front panel display). Similarly, if the level command is provided with no parameter, the current level is returned.</p>	<pre>00>level 63 00>level ? 63 00>level 63 00></pre>
mask	<p>NEW - Sets or reads the Ethernet subnet mask. If no command line parameters are given, the subnet mask is reported as four DECIMAL numbers. To set the subnet mask, follow the mask command with four DECIMAL numbers separated by tab or space. The new subnet mask is saved to eeprom and used on the next power-up. NOTE that the Ethernet commands accept parameters and report values in decimal. All other commands are in hex. The Ethernet commands are in decimal for ease of use.</p>	<pre>61>mask 255 255 255 0 61>mask 255 255 255 0 61></pre>
picver	<p>Returns the revision date of the code in the PIC in YYMMDD format. The first digit is changed to a D if the code was compiled using DTS options.</p>	<pre>11>picver 21211 11></pre>
printfmatbuffer	<p>Shows the data loaded from eeprom for the current format.</p>	<pre>00>printfmatbuffer FormatCode 05 Text1 For SR Text2 Enable Proj1 1 Enable Proj2 1 Enable Aux 0 Enable Mic 0 Enable NonSync 0 Enable Digital 0 Enable Slit EQ 1 Enable Mono EQ 0</pre>

		NR Type SR Matrix Normal Input Slot 1 SPDIF Enabled 0 Mic Phase Center AES/EBU Enabled 0 Level 73 00>
projector	Specify or read the currently selected projector. To select a projector, follow the command 'projector' with a space and the desired projector number (1 or 2). To read the currently selected projector, follow the command with a space and a question mark. The currently selected projector is returned. The command can also be sent with no argument (number or question mark), in which case the current projector is returned (as is the case if the argument is a question mark).	00>projector ? 1 00>projector 2 00>projector ? 2 00>projector 1 00>
time	If the word time is followed by a space and a question mark or followed just by a carriage return, the current time in 24 hour decimal HHMMSS format is returned. For example, if the time is 3:25:03 PM, 152503 is returned. If the word time is followed by a number, the time is set to that number. The number should, once again, be a 6 digit decimal number in 24 hour HHMMSS format.	00>time 152343 00>time ? 152345 00>time 152500 00>time 152500 00>time 152503

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JSD-80 RS232 Handshake



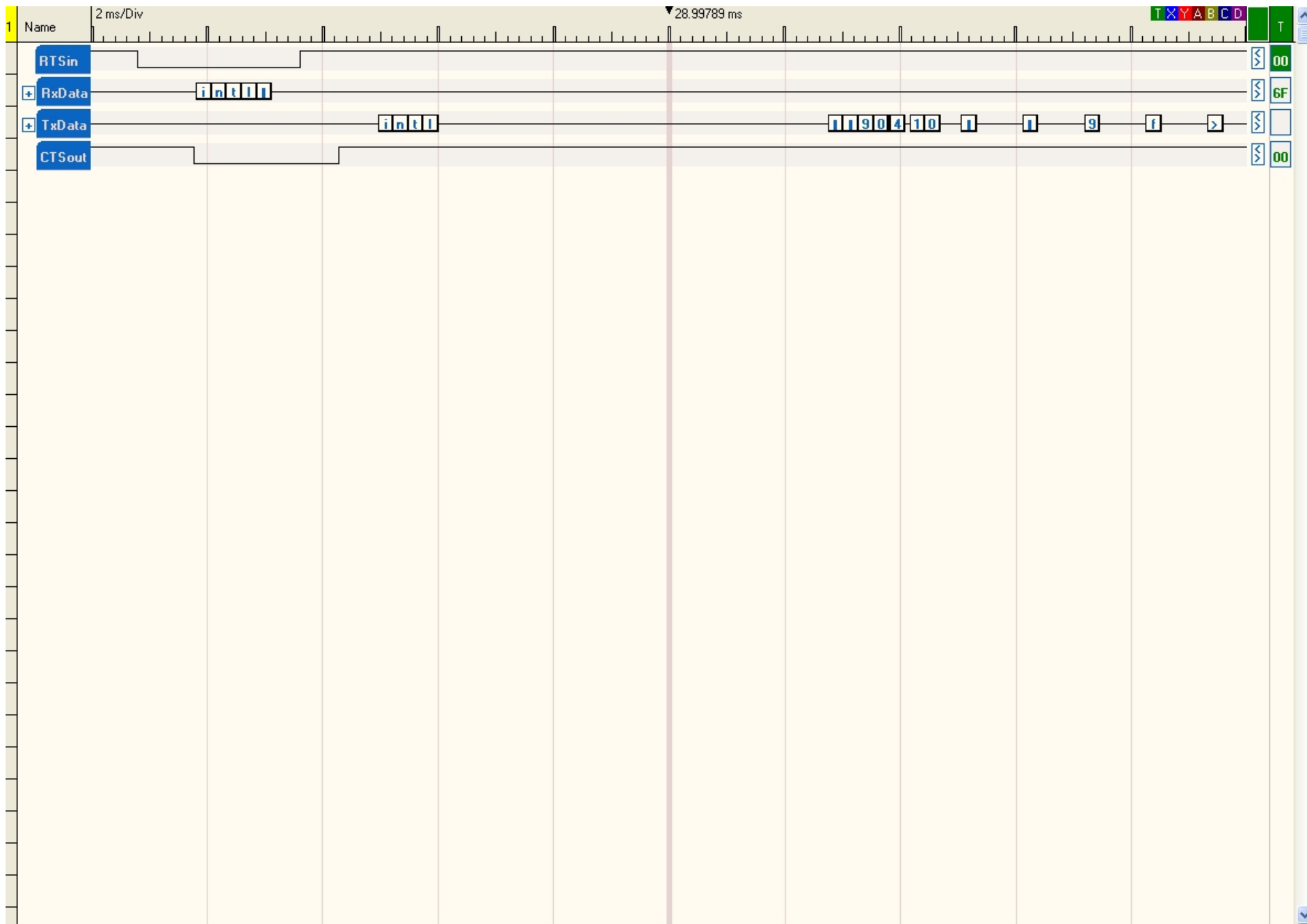
The JSD-80 uses a cooperative multitasking system. The rear panel RS232 port drives an SPI UART that is polled. If the JSD-80 is busy with other tasks, characters could be missed. To avoid this, the host PC drives RTS true (low in the attached waveform) and waits for the JSD-80 to drive CTS true (also low). The JSD-80 stays in a loop polling the UART for several milliseconds after the last character is received while RTS is true. CTS tells the host whether the JSD-80 is in this mode where it is waiting for input.

It is also possible to insure the UART is not overrun by checking for a character echo. The UART includes an 8 byte FIFO, so if the host computer checks for character echo and transmits no more than 8 characters ahead, no data will be lost.

Note that earlier JSD-80 units (prior to the addition of Ethernet and USB) always drive CTS true and ignore RTS. The same handshake procedure can be used with all units.

Logic Analyzer Plot of Handshake

Note that the CTS and RTS signals are shown as seen by the UART. They will be opposite polarity on the RS232 lines. For example, when RTS is low in the plot, it will be about +12V on the RS232 line (true).



6/24/2009 3:26:27 PM

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