JSD-80 RS232 Handshake

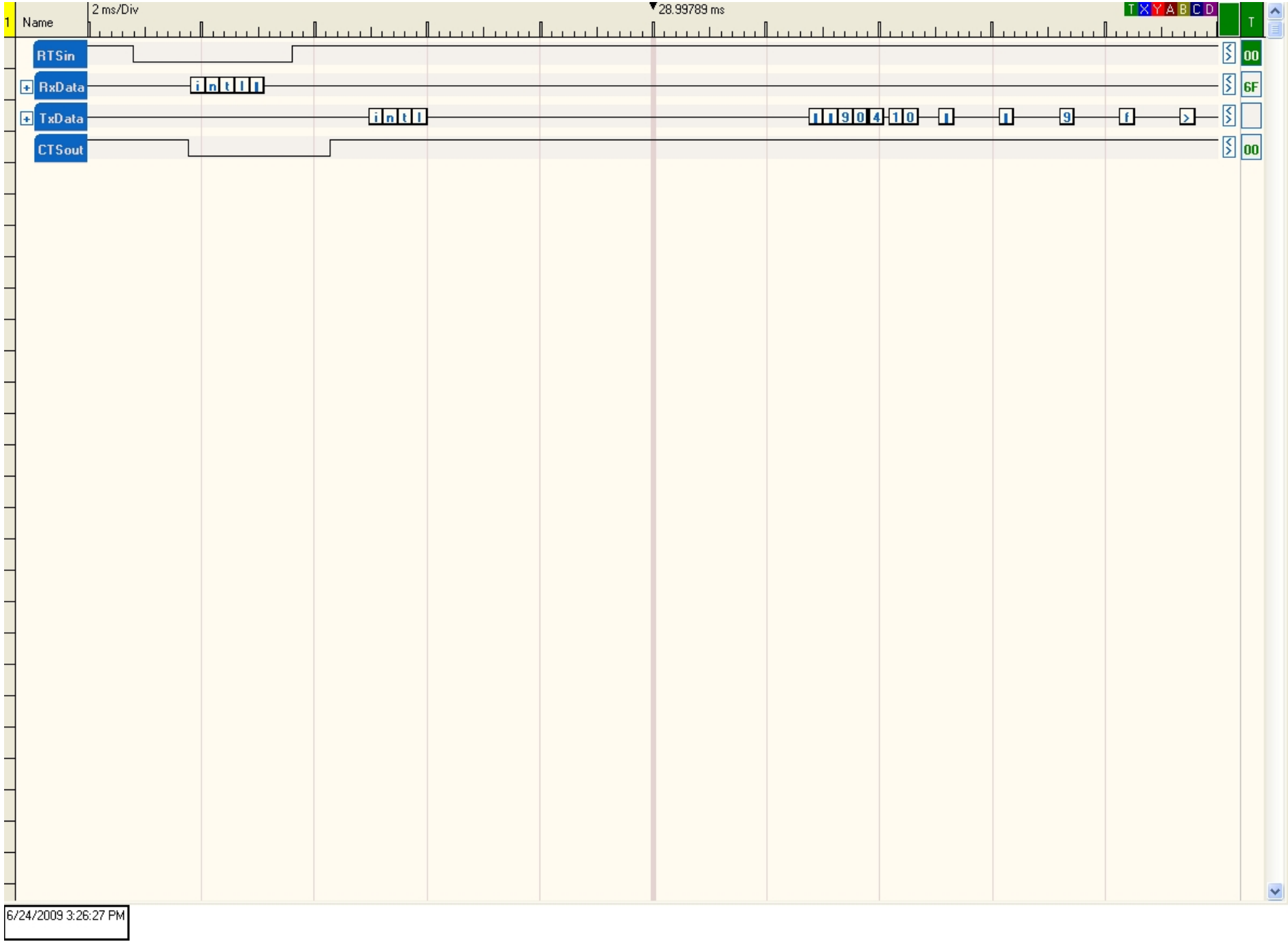
The JSD-80 uses a cooperative multitasking system. The rear panel RS232 port drives an SPI UART that is polled. If the JSD-80 is busy with other tasks, characters could be missed. To avoid this, the host PC drives RTS true (low in the attached waveform) and waits for the JSD-80 to drive CTS true (also 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).


1
Name
2 ms/Div
28.99789 ms
T X Y A B C D
T
RTSin
RxData
TxData
CTSout
00
6F
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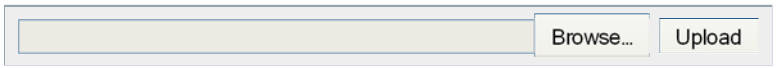
6/24/2009 3:26:27 PM



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