



Technical Services Application Note TSAN 011DataTap

Products

Datatap
T-96SR
Integra-TR
Integra-H
RNet-JSLM
DL3400
Dataradio ComTest
Dataradio Field Programming Software

Application

User data output on DTE and DCE pin 2 and 3 monitoring within the Dataradio ComTest or Field Programming Software programs.

Set-up

The purpose of this TSAN is to describe the method of displaying user (application) data from within the ComTest or Field Programming Software ASCII or HEX terminal windows. Both a DTE and DCE can be monitored. In this application note the ComTest program is monitoring only and not supplying the user data transmissions. A PC with two serial ports may be used for this purpose. One port is needed for user data testing and one port will be used for monitoring.

The methodology will allow an end user to capture and review the actual serial messages as they are transmitted and received via the serial COM port of a 9-pin serial connection. This TSAN will be application to any product that uses the Windows[®] based Field Programming Software, T-96SR, Integra-TR, Integra-H, RNet-JSLM, DL3400, or the ComTest program.

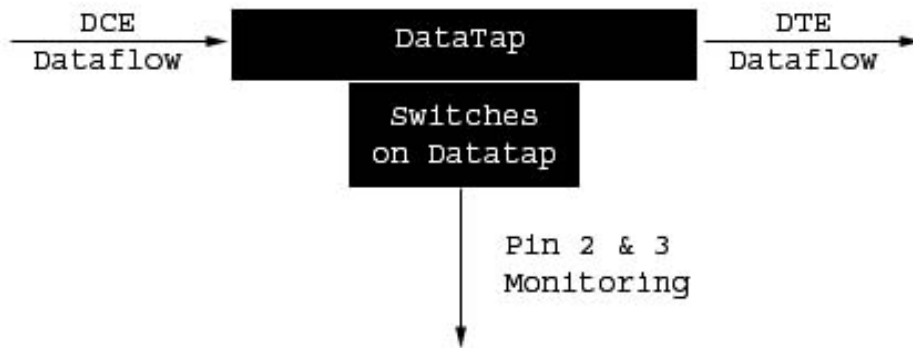
One external device is required: a datatap device. The datatap has compensation circuitry and switching that makes it most suitable for the process. 25 to 9 pin serial cable adapters may be required if the serial connections are dB-25 types.

A breakout box may be used to segregate the RTS, CTS, DSR, CD, and DTR connections on the data monitoring port.

Test Set-up

The connections and software as described herein will be based on the ASCII and Hex ComTest program set-ups. The ASCII and Hex features are contained within the various Dataradio Field Programming Softwares as well.

Figure 1

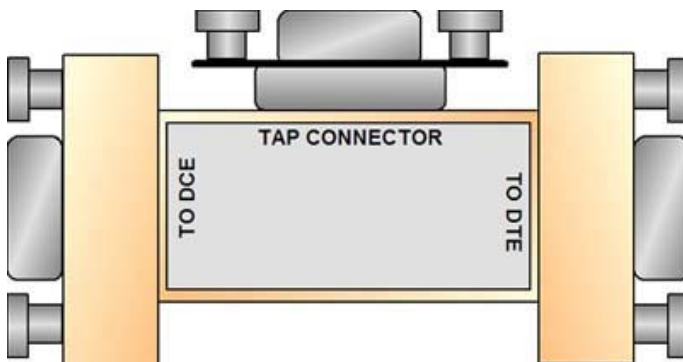


The user data is received in ASCII or HEX terminal screens as it is transmitted or received from the user equipment. Since there is no delineation of the data by the ASCII or HEX terminal programs, the user should know the structure of his data. This will allow one to review the start of a message and the end of the message.

If single message events can be captured, then single message structures can be copied and stored into PC memory as test files. These messages would need to be copied from the receive or transmit buffers and stored in a text file. These message structures can be opened and then copied and pasted into the transmit buffer of the ASCII or HEX terminal program. Transmissions can then be done under the control of the user and may simulate a polling situation. The received messages can then be shown in the receive portion of the terminal program.

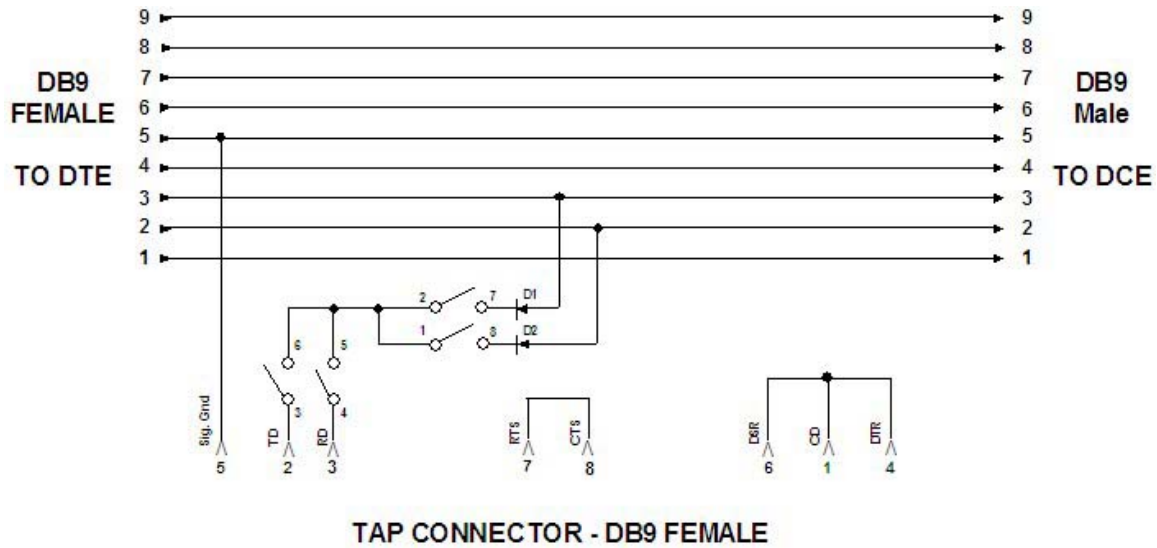
Pins 2 and 3 of the datatap are switchable so both directions of the transmissions can be monitored. The ability to store these messages can add greatly to the ability to debug a particular protocol and its behavior before, during, and after transmission.

Figure 2 – The Datatap



The Data Tap will allow an RS-232 port to tap in and check the data being transmitted between two other RS-232 ports. The switches make it easy to choose between monitoring the DCE or DTE port. The data tap allows the monitoring port to be either DCE or DTE.

Figure 3 – Tap Connector to DB9 Female



The DTE connector is Male and the DCE and Tap connectors are female. All nine lines are run through from the DCE to the DTE connectors. On the tap connector RTS (pin 7) is tied to CTS (pin 8) and DSR (pin 6) is tied to CD (pin 1) and DTR (pin 4). Signal ground (pin 5) is tied into the signal ground for the DCE and DTE connectors.

Table 1 – Switch Descriptions

Switch	Description
SW 1	Monitor RD (pin 2)
SW 2	Monitor TD (pin 3)
SW 3	Tap receives data on pin 2
SW 4	Tap receives data on pin 3