Apex Destiny-6100 RS232 Troubleshooting Guide

7/10/00

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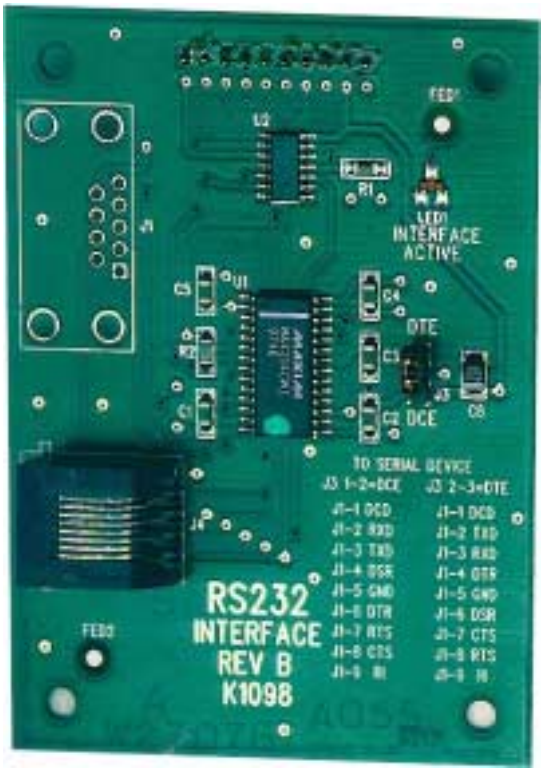


Figure 1 - RS232 Interface Board

Figure 2 - Modular connector on RS232 Interface Board

Apex Destiny-6100 RS232 Troubleshooting Guide - Overview

Why was this guide prepared?
This guide was put together by inside tech specialists to 'cut to the chase' as to aid in the wiring and troubleshooting of the Apex RS232 interface board of the Destiny-6100. The Destiny-6100 installation instructions, and supporting CD, comes with many pages of information to support this RS232 feature. However, this document offers additional information that may help this sometimes-confusing topic.

RS232 can be complicated – what we support:
Ademco Technical Support Group wants to support as much as possible in regards to the Destiny-6100 alarm control. However, we are only able to support the RS232 interface board up to and including the RJ45 8-conductor jack and the RJ45 to DB9 adapter that comes with the interface board. The cable and the device the that is to connect to the RS232 interface board (Phastlink, Crestron, dumb terminal, computer, etc) is the responsibility of the installer. However, we would like to help when we can. So, we put together this guide to help connect the cable as well. After the cable is connected and the programming listed in the "Testing Apex Control as Stand-alone" section is performed, RS232 data should be operating properly.

DTE vs DCE
For the purposes of this guide, DCE is the selected option. DTE will not be discussed here. While we built this guide, we connected to three Compaq Deskpro computers using DCE only – we wanted to take the most common use and make that work.

Figure 3 - Shown head-to-head for viewing, this 'standard' RJ31X phone cable is 'reversed' and needs special consideration

Standard Cable vs Straight-through cable
This issue can be confusing. Since the 'standard' RJ31X cable (see figure 3 – notice the colors) seems like a 'plug-and-play cable you can easily fall into the trap of using that cable and thinking it should work. However, the result of using that cable causes problems since TXD and RXD are reversed, as well as DTR being put on the wrong conductor. Because so many of these 8-conductor connectors are in our industry (RJ31X) the techs decided to accommodate those customers who want to use that cable rather than maker one. Included is a schematic that re-wires the RJ-to-DB9 adapter to "reverse" the "reverse".

Only four conductors in the cable are needed
TXD – Transmit; RXD – Receive; DTR – Data Terminal Ready; Ground. The other conductors are not supported by the RS232 Interface board. We recommend you place the extra conductors in the manner we describe in the "Configuration of DB-9 Connector" section.

To Summarize:
The Technical Support Group hopes this document helps some of our customers get through the sometimes-difficult RS232 connections. However, if you run into trouble please call us. Remember we will first try to determine if our equipment is working. After that we will try to help as much as we can with the cable. That way we're not 'passing the buck' blindly – at least we'll know that our equipment is working before we ask you to call the vendor of your 'computer' device.

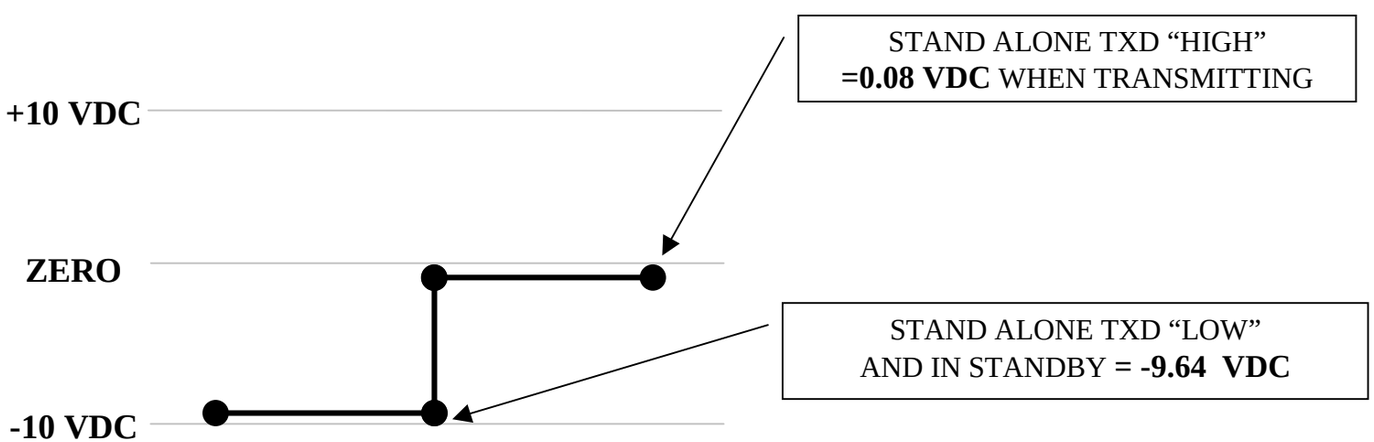
TESTING APEX CONTROL AS STAND-ALONE

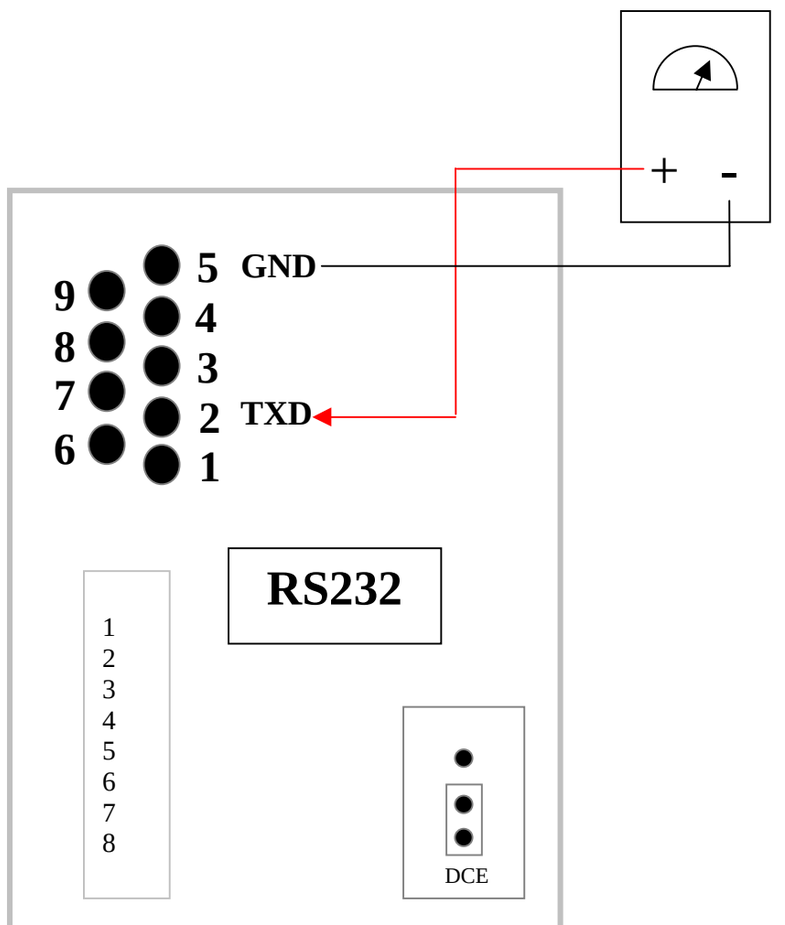
This will eliminate the Apex control as being a possible problem

Programming:
1.) Place the system into program mode (default: **9,1,7,3**)
2.) Enter location **0155** and then enter the sum of options to be enabled.
3.) To enable 2-way communication, enter **009.**
For example, (**001**-Enable the RS-232 adapter) + (**008**-Enable 2-Way RS-232 communication (for PC connections) = (**Total 009**).

NOTE: Each zone is individually programmed to report to central station as well as each zone type.

When sending a report to the RS232, ***Dialer Options*** must be enabled for each zone type with a (value: **016**) to report to the RS232. This value is added to your dialer options listed on the Report Codes chart in your Installation Instruction Manual.

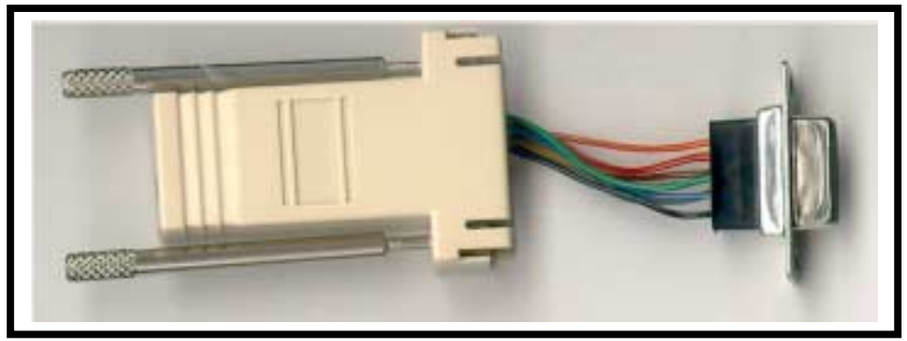




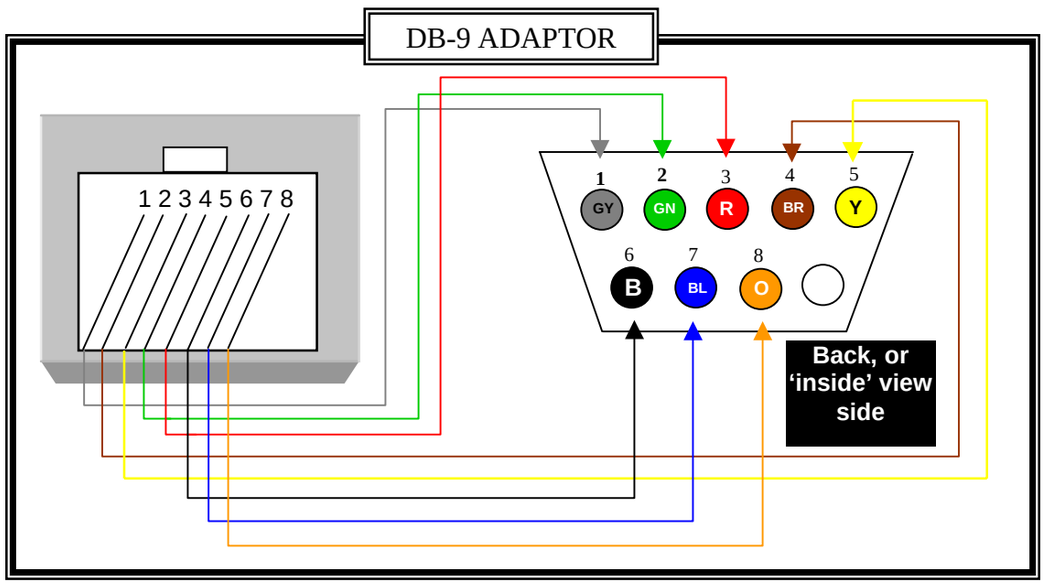
CONFIGURATION OF DB-9 CONNECTOR

INSIDE VIEW: Install crimp pins in matching DB-9 locations

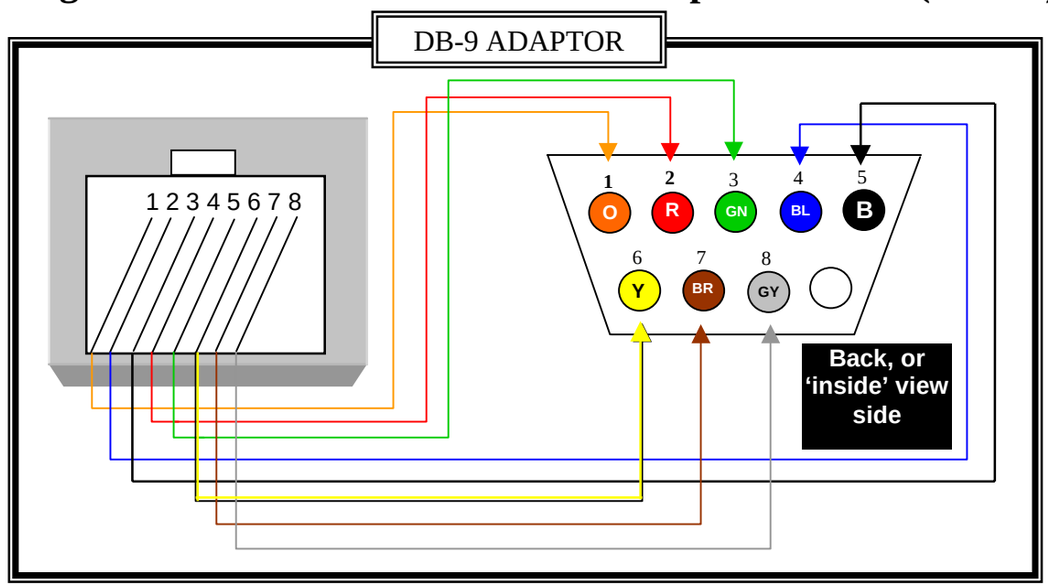
Here are two examples of how the modular connector can affect the RS232 connection. On the left is to be used for a straight through cable. The one on the right is to be used when your 8-conductor modular cable is a 'standard' phone-type (RJ31X) cable. This cable is reversed and the connection on the right will reverse the pins in the adapter to accommodate the reversal.



Configuration with Straight through conductor cable



Configuration with Standard 8 conductor "phone" cable (RJ31X)



THE DB-9 SUMMARY OF CONNECTIONS

with Custom Straight-through 8-conductor cable.

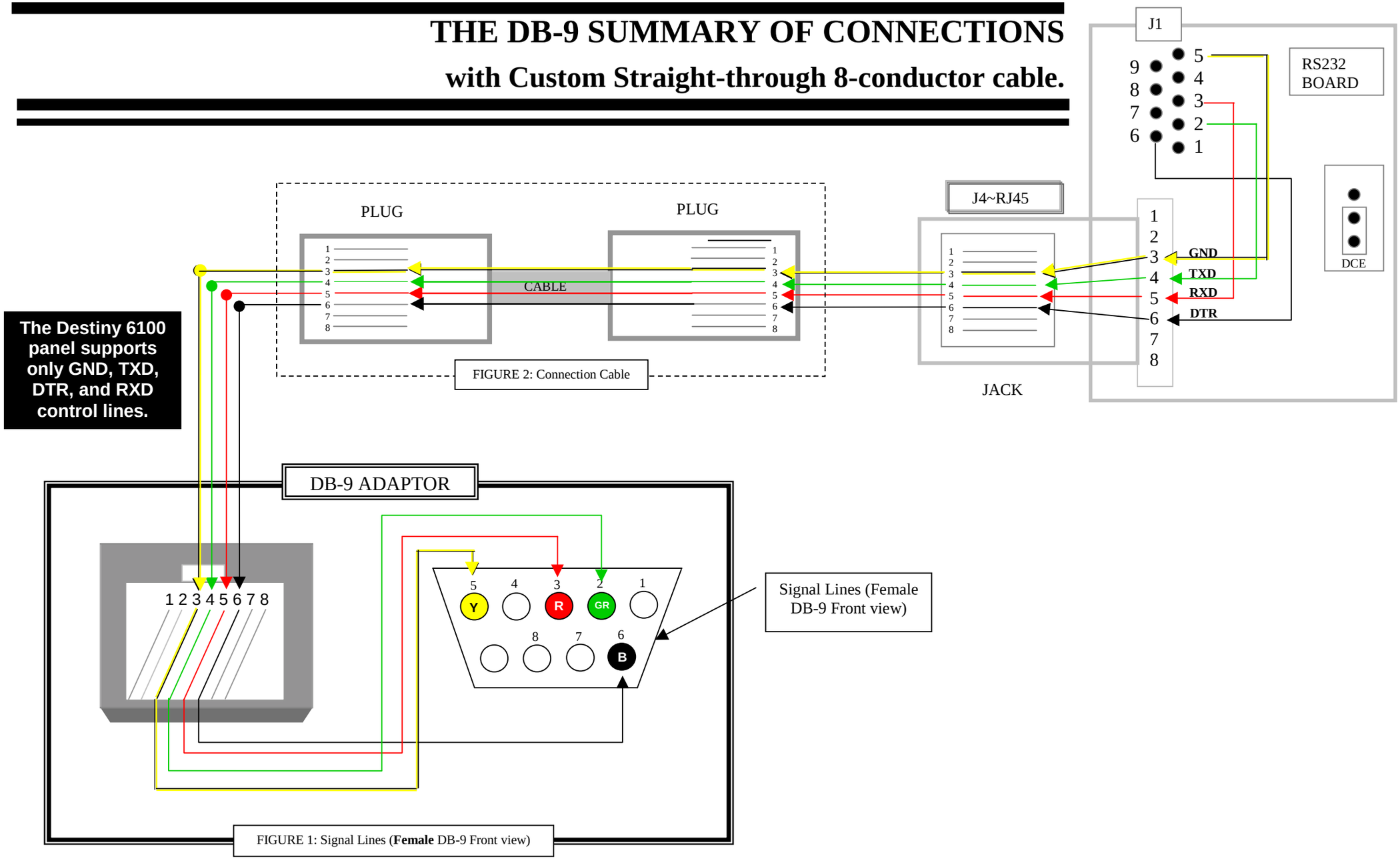
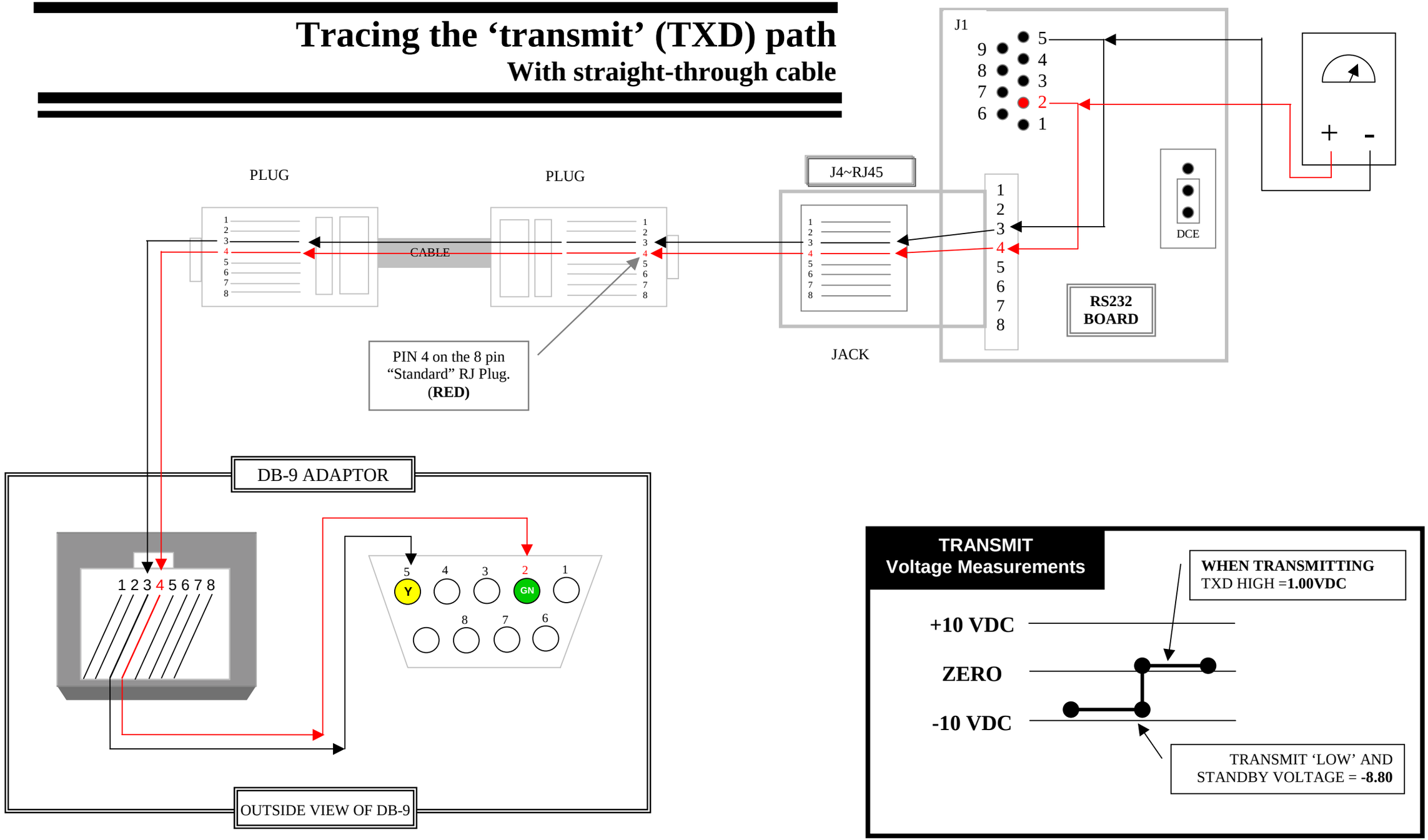


FIGURE 2: Connection Cable

FIGURE 1: Signal Lines (**Female** DB-9 Front view)

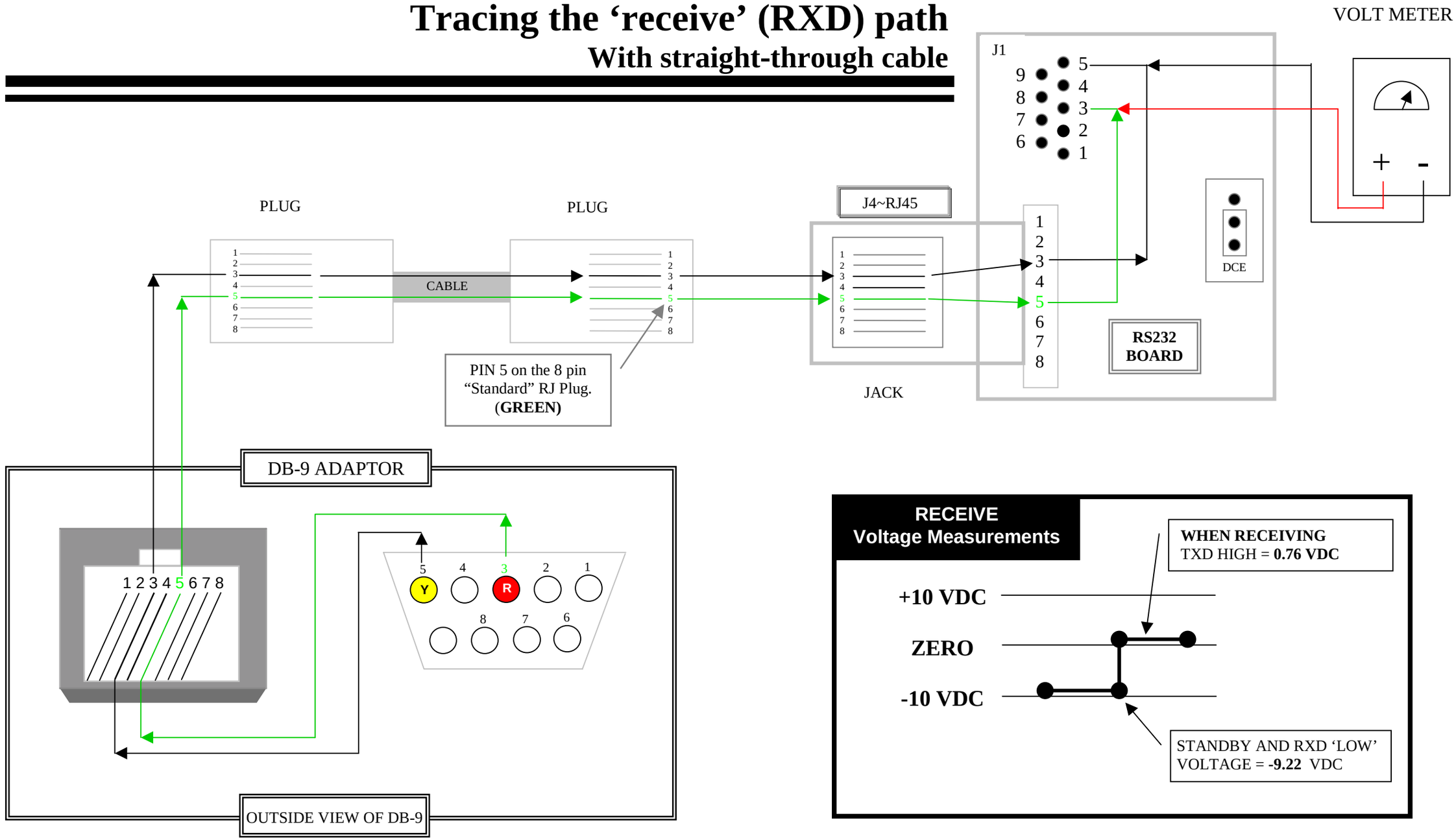
Tracing the ‘transmit’ (TXD) path

With straight-through cable



Tracing the ‘receive’ (RXD) path

With straight-through cable



RECEIVE
Voltage Measurements

WHEN RECEIVING
TXD HIGH = **0.76 VDC**

+10 VDC

ZERO

-10 VDC

STANDBY AND RXD ‘LOW’
VOLTAGE = **-9.22** VDC

The DB-9 Summary of Connections

with Standard 8-conductor “phone”cable.

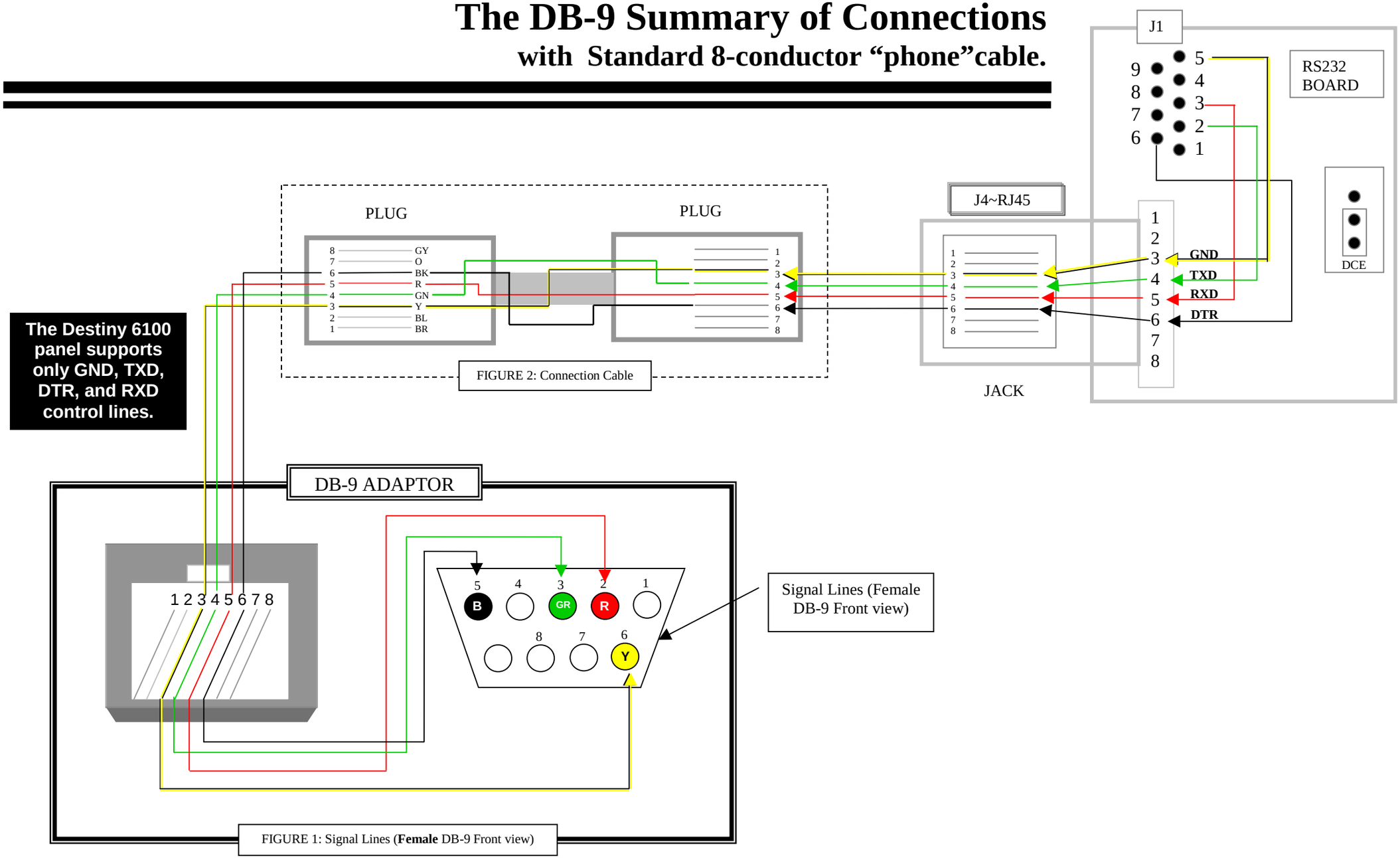
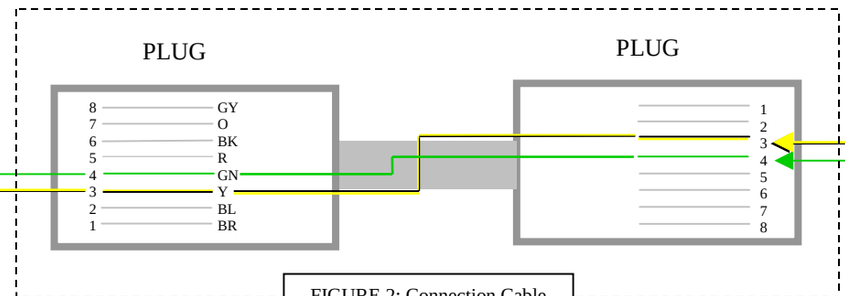


FIGURE 2: Connection Cable

FIGURE 1: Signal Lines (**Female** DB-9 Front view)

Tracing the ‘transmit’ (TXD) path

With ‘standard’ 8-conductor phone cable



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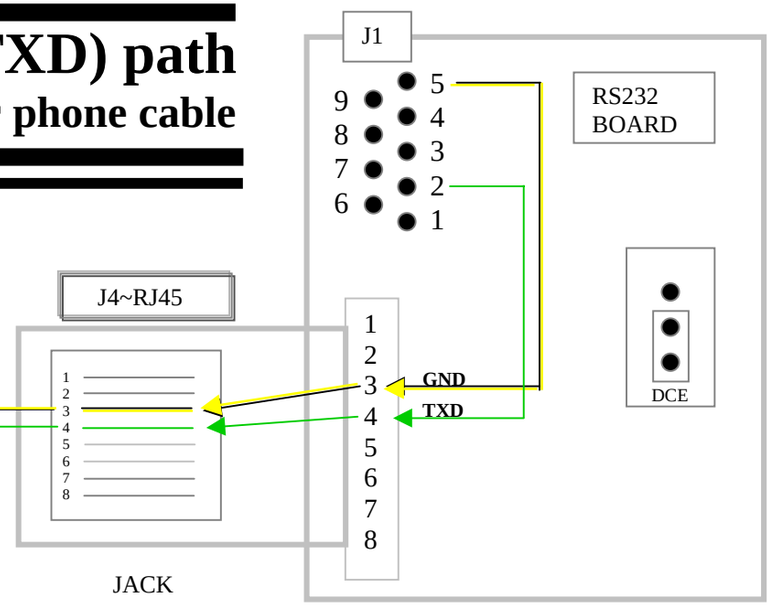

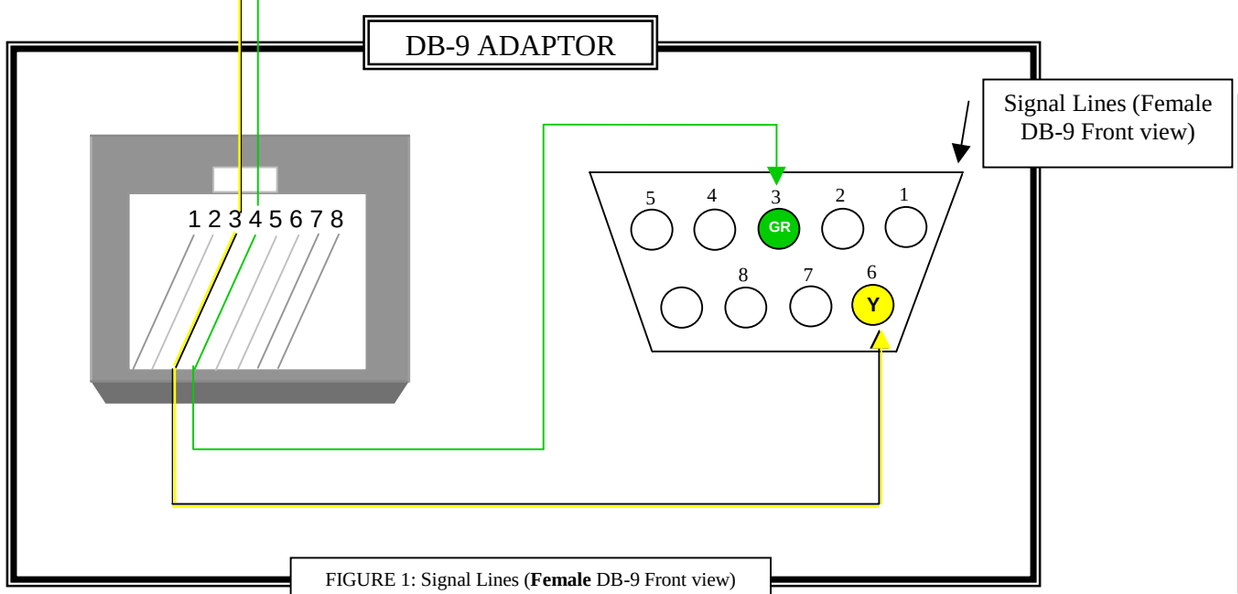

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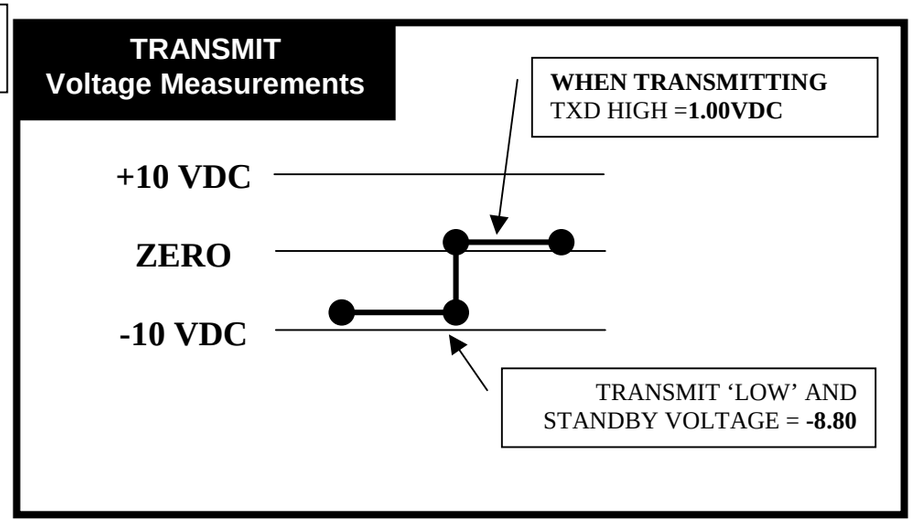


Tracing the ‘receive’ (RXD) path

With standard 8-conductor ‘phone’ cable

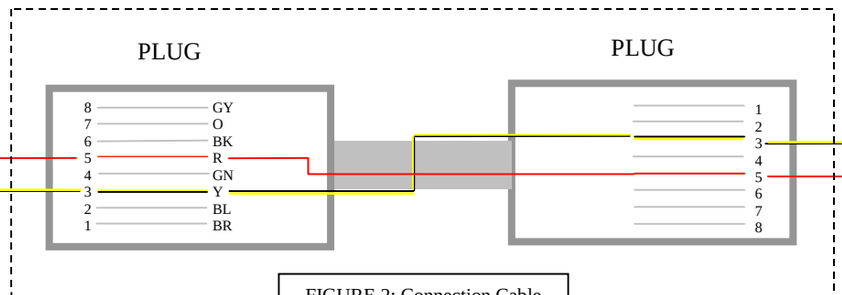
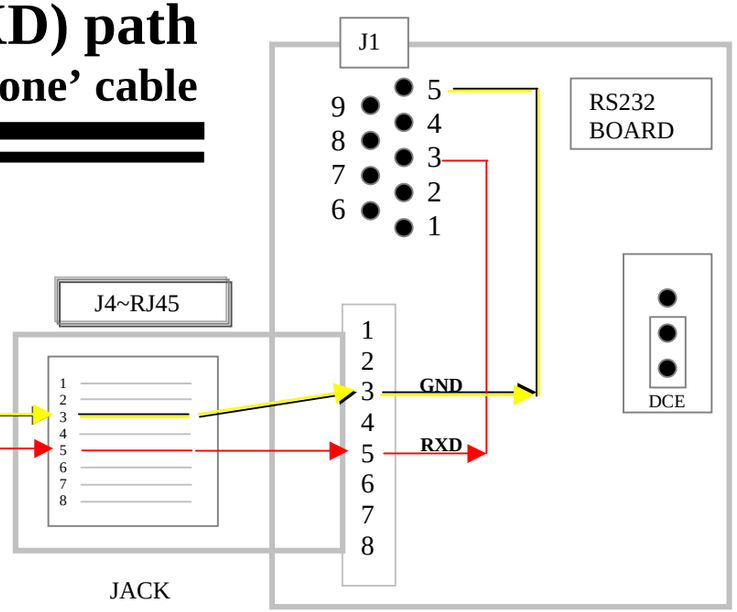
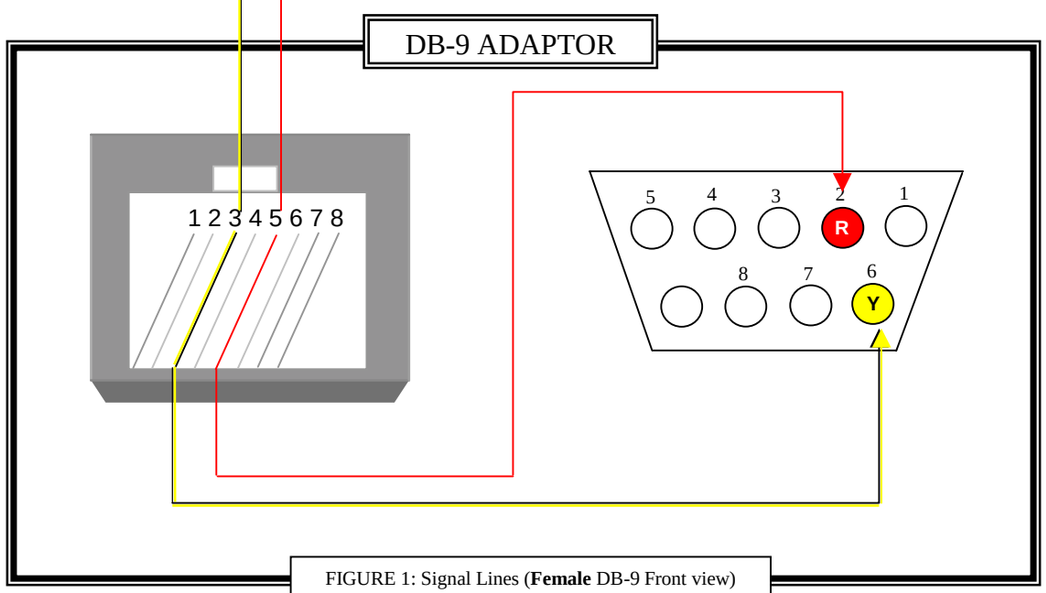


FIGURE 2: Connection Cable





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