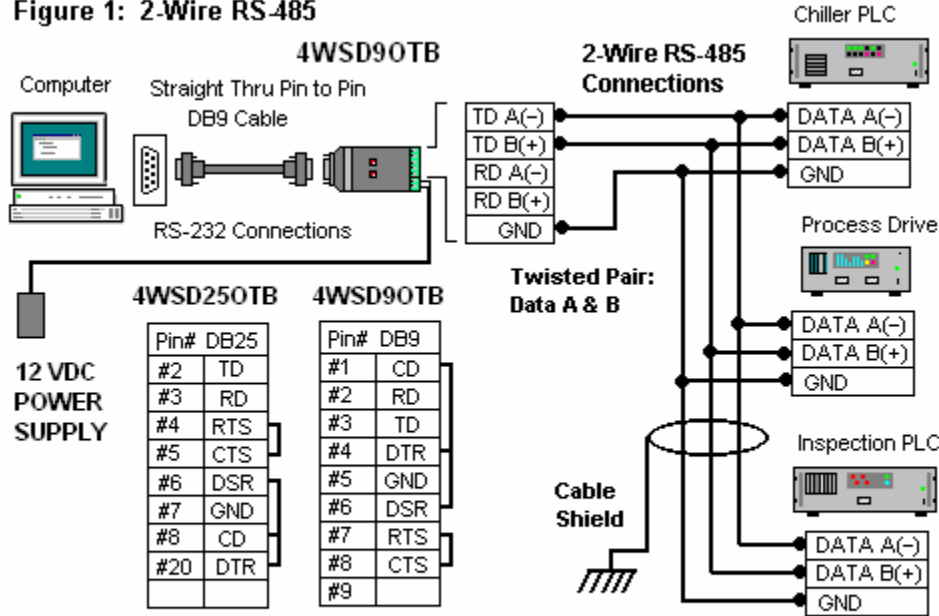


**Q: Connections for RS-485 or RS-422 to the 4WSD90TB or 4WSD250TB Converters?**

**Figure 1: 2-Wire RS-485**



**Table 2** DCE DCE  
**RS-232 Pinouts** Loopbacks are in Converter

Pin#	DB25	Pin#	DB9
#2	TD	#1	CD
#3	RD	#2	RD
#4	RTS	#3	TD
#5	CTS	#4	DTR
#6	DSR	#5	GND
#7	GND	#6	DSR
#8	CD	#7	RTS
#20	DTR	#8	CTS
		#9	

Mode/Switches	Switch 1 (Tx)	Switch 2 (Rx)	Switch 3 (bridge)	Switch 4 (bridge)
RS-485 2-Wire Mode (half duplex)	RS-485	Echo Off	2-Wire	2-Wire
RS-485 4-Wire Mode (full duplex)	RS-485	Echo On	4-Wire	4-Wire

**Figure 2: 4-Wire RS485**

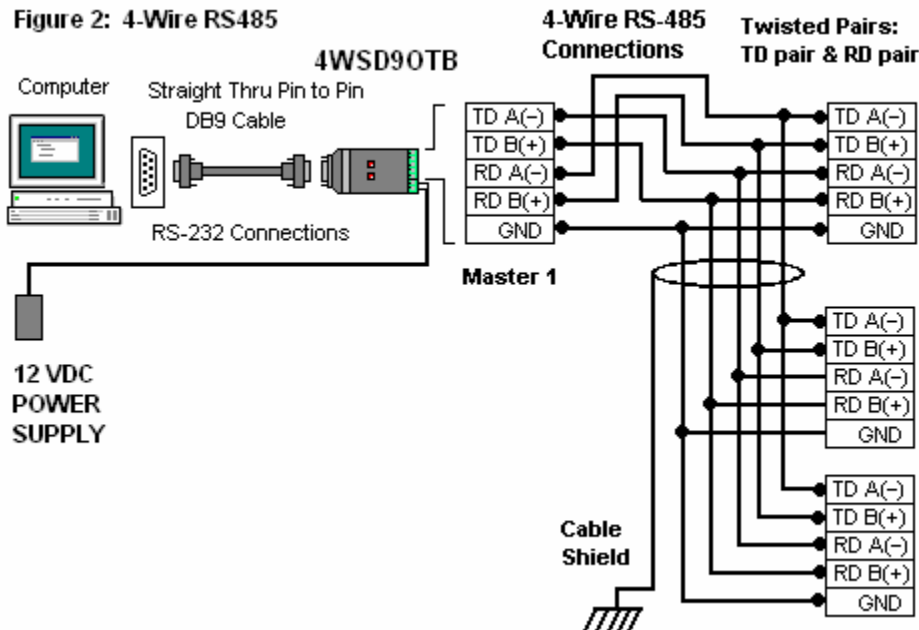
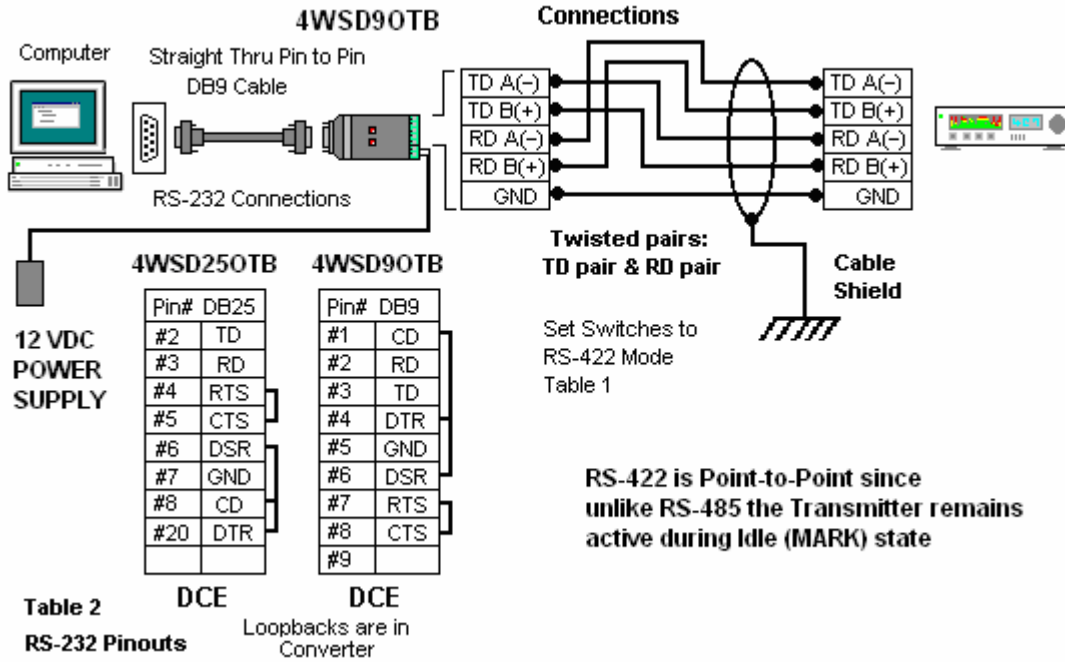
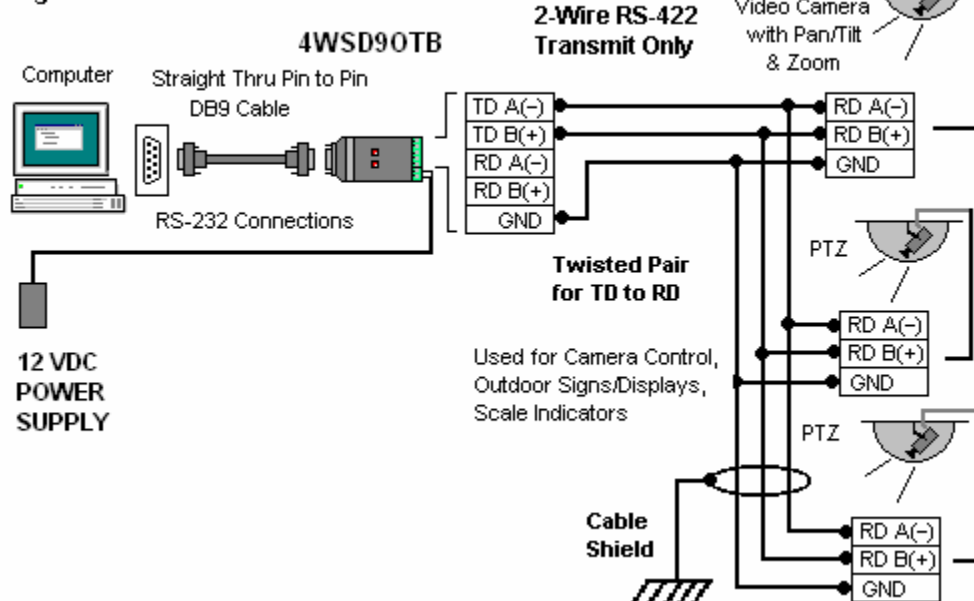


Figure 3: 4-Wire RS-422



Mode/Switches	Switch 1 (Tx)	Switch 2 (Rx)	Switch 3 (bridge)	Switch 4 (bridge)
RS-422 4-Wire Mode (full duplex)	RS-422	Echo On	4-Wire	4-Wire

Figure 4: 2-Wire RS-422 - No Receive



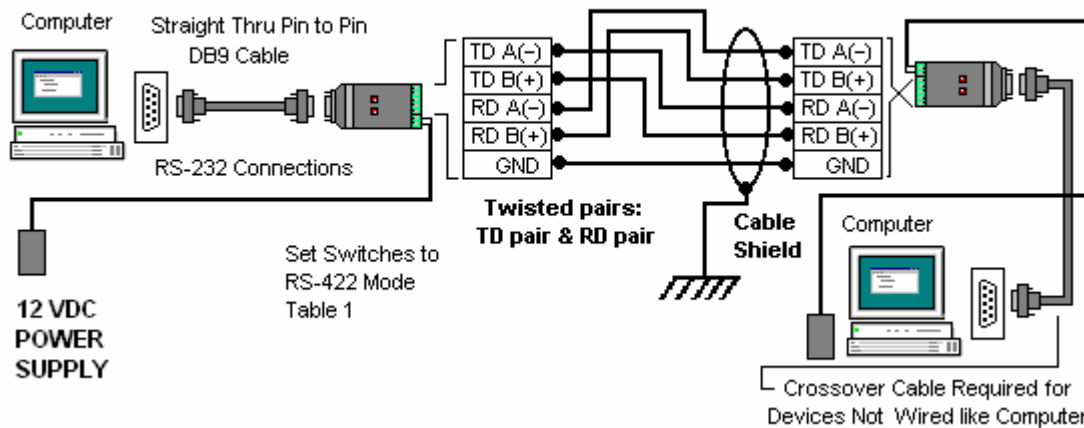
**Table 1 – Switch Settings for Operating Mode**

Mode/Switches	Switch 1 (Tx)	Switch 2 (Rx)	Switch 3 (bridge)	Switch 4 (bridge)
RS-485 2-Wire Mode (half duplex)	RS-485	Echo Off	2-Wire	2-Wire
RS-485 4-Wire Mode (full duplex)	RS-485	Echo On	4-Wire	4-Wire
RS-422 4-Wire Mode (full duplex)	RS-422	Echo On	4-Wire	4-Wire
Loopback Test Mode*	As Desired	Echo On	2-Wire	2-Wire

\*Used with HyperTerminal or another terminal program to confirm operation of data through converter.

The ComTest program is available on our website in the Technical Library (Tech Notes) under Software Tools.

**Figure 5: Extending RS-232 with RS-422 4-Wire RS-422 Connections**



**Null Modem Cable - Crossover Cable DB9 to DB9**

RS-232 Signal Names	DB9 Pin#	Connections	Pin# DB9
Carrier Detector (DCD)	CD #1		#1 CD
Receive Data (Rx)	RD #2		#2 RD
Transmit Data (Tx)	TD #3		#3 TD
Data Terminal Ready	DTR #4		#4 DTR
Signal Ground/Common (SG)	GND #5		#5 GND
Data Set Ready	DSR #6		#6 DSR
Request to Send	RTS #7		#7 RTS
Clear to Send	CTS #8		#8 CTS
Ring Indicator	RI #9		#9 RI

Only #2, #3 & #5 needed w/DB9, #2, #3, & #7 needed w/DB25

  
**2-wire**

Full Duplex 4-wire operation usually works best for RS-232 signals. Half Duplex operation using "2-wire" connections is usually NOT satisfactory because the RS-485 bus takes time to "turn-around" between transmit and receive, some of the first byte sent may be lost. RS-232 devices don't wait before responding to a data request, but RS-485 devices designed for 2-wire operation wait.

This information should help you make the needed connections.