

## SP337 PINOUT RECOMMENDATION FOR SINGLE DB-9 CONNECTOR

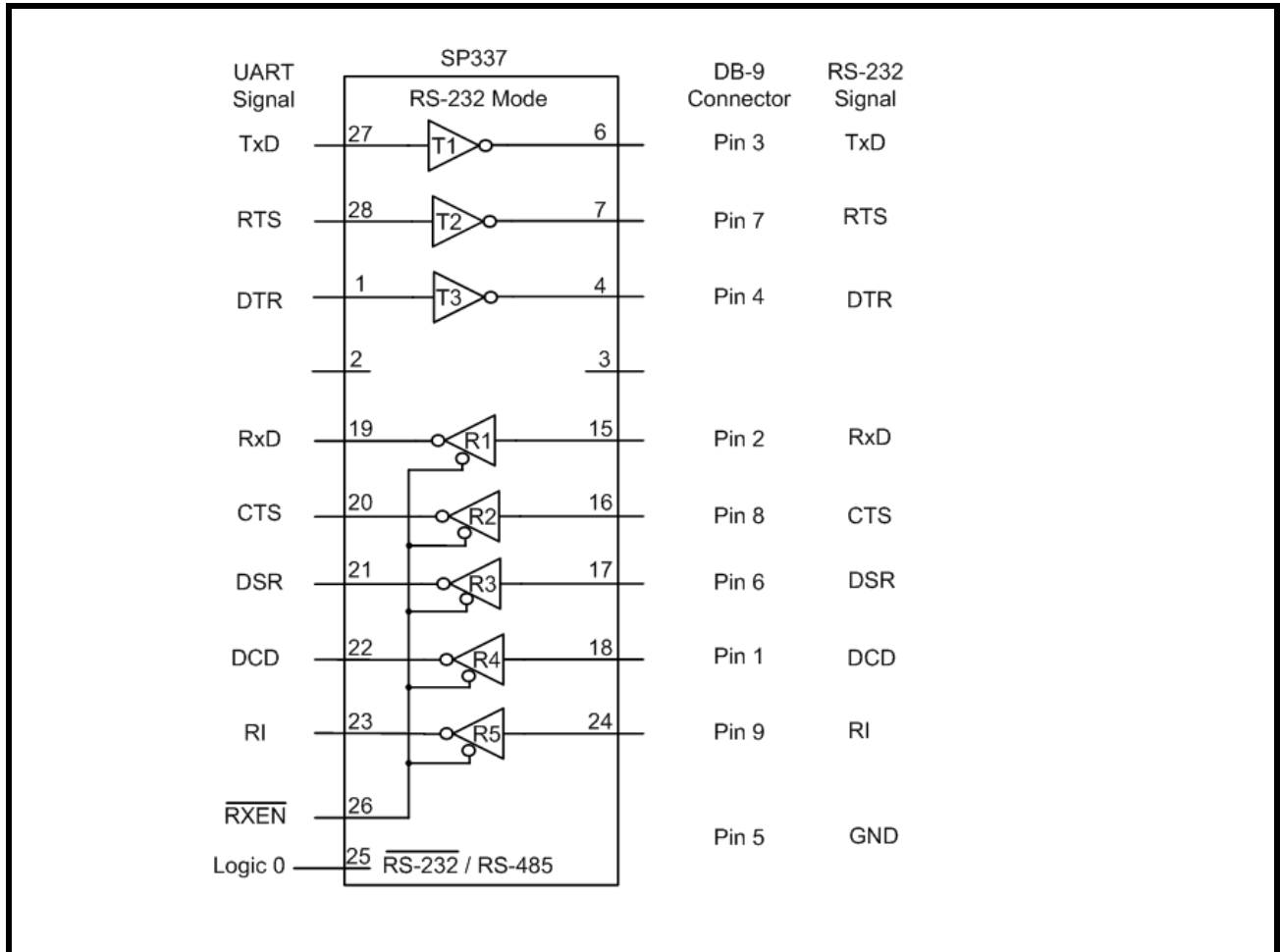
### 1.0 INTRODUCTION

This document provides recommendations on how the SP337 can be used to support RS-232, full-duplex RS-485/RS-422 and half-duplex RS-485 on a single DB-9 connector.

### 2.0 RS-232 PINOUT

Figure 1 below shows the signals from the UART that are connected to the SP337. For RS-232, the DB-9 pins are defined.

FIGURE 1. RS-232 PINOUT

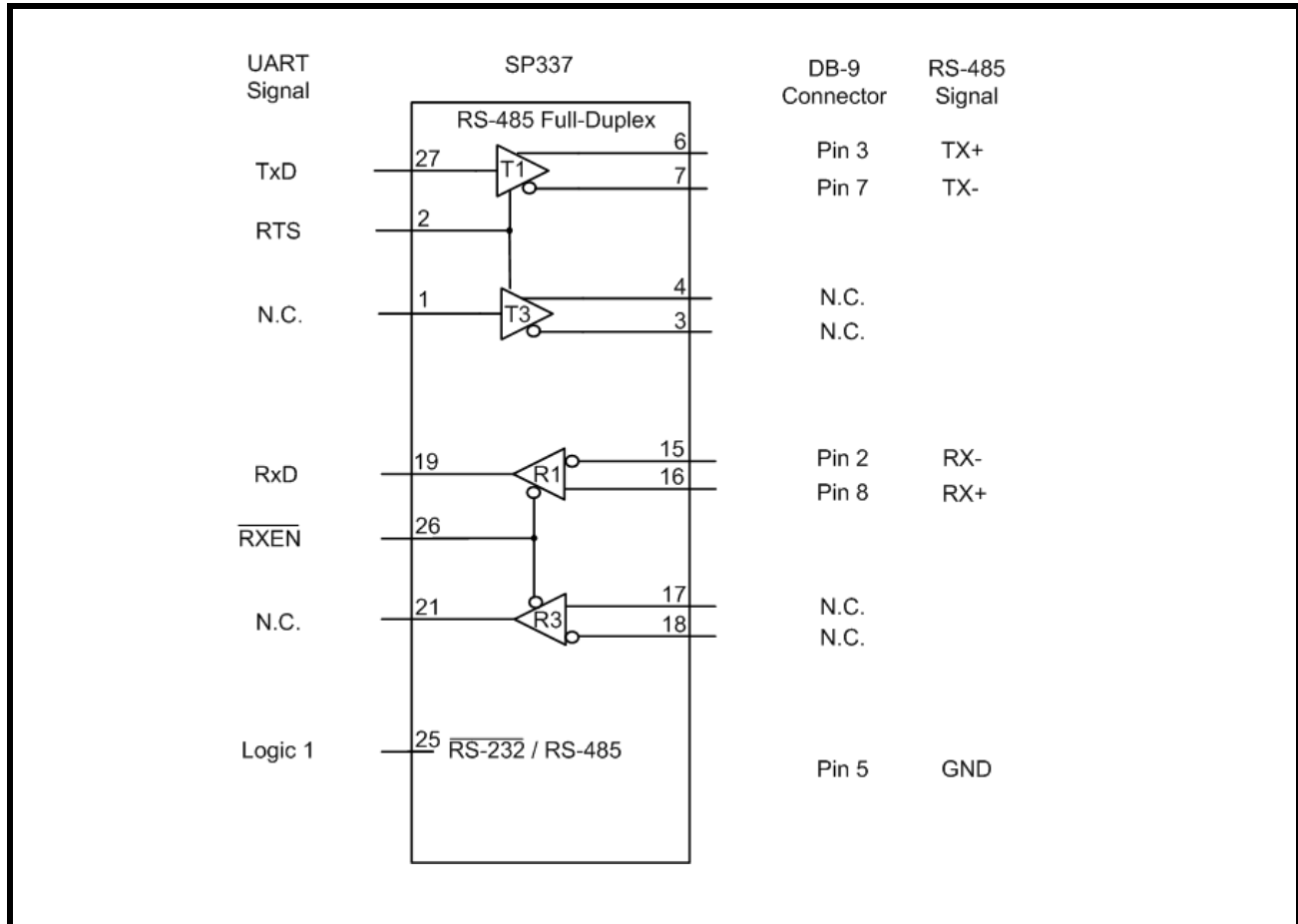


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3.0 FULL-DUPLEX RS-485/RS-422 PINOUT

Figure 2 below shows which pins the full-duplex RS-485/RS-422 signals will be on the DB-9 connector when using the same UART connections shown in Figure 1. The RTS pin from the UART can be used to enable/disable the differential driver outputs.

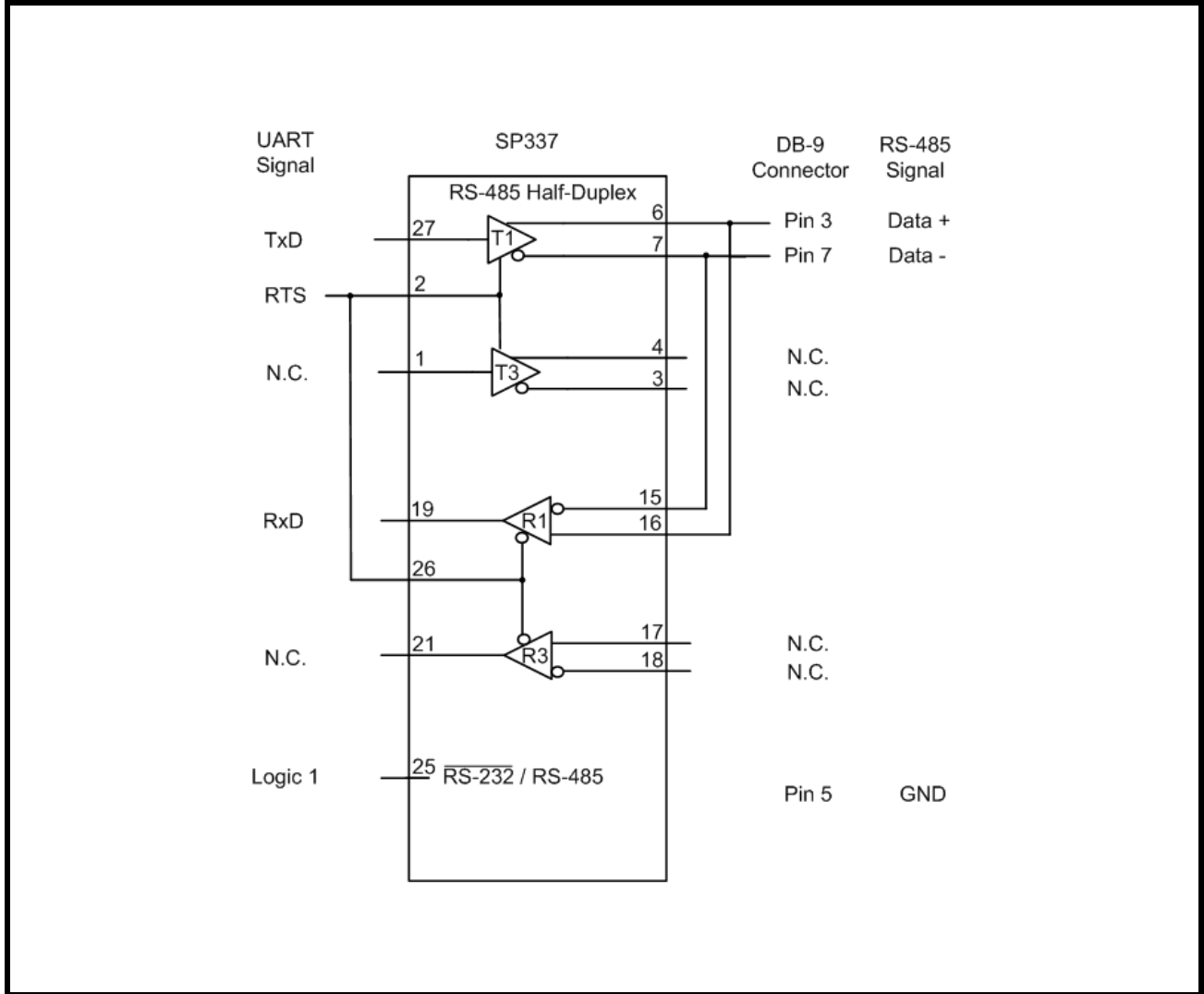
FIGURE 2. FULL-DUPLEX RS-485/RS-422 PINOUT



**4.0 HALF-DUPLEX RS-485 PINOUT**

Figure 3 below shows the half-duplex RS-485 connections. The RTS pin is used to control the direction of the RS-485 differential drivers and receivers.

**FIGURE 3. HALF-DUPLEX RS-485 PINOUT**



**4.0.1 Considerations for using SP337 in both half-duplex RS-485 and RS-232 mode**

If device is to be used in RS-232 mode then the connections from pin 15 to 6 and 16 to 7 must be opened. Considerations may also be needed for connection from pin 26 to 2. For a more simplified RS-485 half-duplex configuration please use SP336.

Open/Close these connections by:

- A. Use a two pin header.
- B. Use an opto relay
- C. Use a half-duplex wired mating connector.

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**5.0 SUMMARY**

The tables below summarize the configurations in this document. Table 1 shows what the pin signals will be at the DB-9 connector.

**TABLE 1: DB-9 CONNECTOR PIN CONNECTIONS**

	DB-9 PIN 1	DB-9 PIN 2	DB-9 PIN 3	DB-9 PIN 4	DB-9 PIN 5	DB-9 PIN 6	DB-9 PIN 7	DB-9 PIN 8	DB-9 PIN 9
RS-232 Mode	DCD	RxD	TxD	DTR	GND	DSR	RTS	CTS	RI
RS-485/RS-422 Mode (Full-Duplex)		RX-	TX+		GND		TX-	RX+	
RS-485/RS-422 Mode (Half-Duplex)			Data +				Data -		
SP337 Pin Number	18	15	6	4	8	17	7	16	24

Table 2 shows the same information as table 1 but presented in a different way.

**TABLE 2: SP337 PIN CONNECTIONS**

	SP337 PIN 4	SP337 PIN 6	SP337 PIN 7	SP337 PIN 8	SP337 PIN 15	SP337 PIN 16	SP337 PIN 17	SP337 PIN 18	SP337 PIN 24
RS-232 Mode	DTR	TxD	RTS	GND	RxD	CTS	DSR	DCD	RI
RS-485/RS-422 Mode (Full-Duplex)		TX+	TX-	GND	RX-	RX+			
RS-485/RS-422 Mode (Half-Duplex)		Data +	Data -						
DB-9 Pin Number	4	3	7	5	2	8	6	1	9

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