Configuration Notes for MFJ 1270B TNC

Radio Connector Pin Outs

The pinout of J2 is shown below

Pin 1	Microphone audio, from the TNC to your transmitter.
Pin 2	Ground, audio and PTT common.
Pin 3	Push-to-talk, to allow the TNC to key your transmitter.
Pin 4	Receive audio, from your receiver to the TNC.
Pin 5	Squelch input (optional) to allow the TNC to detect activity on a shared-mode channel.

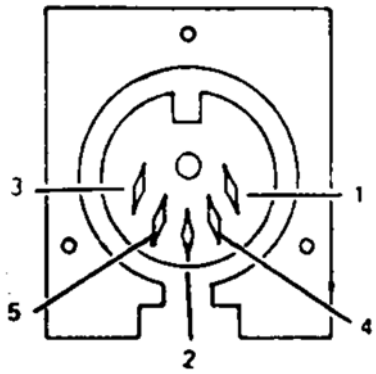

Fig. 3-1. J2 radio port connector

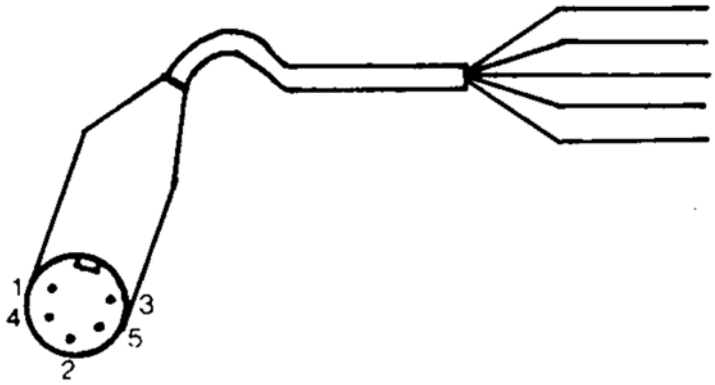

Fig. 3-1a. 5-pin male DIN cable

TNC 2 Serial Port Pin Functions

This section describes the pins used on the TNC's RS-232C serial port connector. It is intended for packet operators with special applications requiring hardware handshaking. This information should not be needed by most users.

Pin	Mnemonic	Name
1	FG	Frame Ground
2	TXD	Transmit Data
3	RXD	Receive Data
5	CTS	Clear To Send
6	DSR	Data Set Ready
7	SG	Signal Ground
8	DCD	Data Carrier Detect
9	---	+ 12V unregulated reference
10	---	- 12V unregulated reference
20	DTR	Data Terminal Ready

Frame Ground is provided for attachment to the chassis of the TNC and the chassis of the attached device (computer or terminal). This pin is brought out to a feedthrough on the TNC 2 PC board near pin 1 of the serial connector. It is not electrically connected anywhere else on the TNC circuit board.

Transmit Data is an input line to the TNC on which the attached device sends data.

Receive Data is an output line from the TNC on which the attached device receives data.

Clear To Send is an output from the TNC signaling the attached device to send or refrain from sending data to the TNC. This line is used for hardware flow control.

Data Set Ready is an output from the TNC telling the attached device that the TNC-is operational.

Signal Ground is the common, or return, path for all signals between the TNC and the attached device.

Data Carrier Detect is an output from the TNC. As normally configured, DCD reflects the status of the CON LED: It is true when an AX.25 connection exists between your TNC and another station; it is false when no connection exists. This configuration is useful when the TNC is used with a telephone style Bulletin Board system, since the AX.25 connection, analogous to a modem signal on the telephone, indicates the presence of a user. Shorting JMP1 on the TNC 2 PC board will cause this output to always be true.

Pins 9 and 10 provide access to the TNC's unregulated +/-12 volt supplies for use by an external device. These are not intended to power an accessory, and should not be used to source or sink more than a couple of milliamperes

Data Terminal Ready is an input to the TNC signaling that the attached device is ready to accept data from the TNC. This line is used for hardware flow control.

Radio Baud Rate

The radio data transmission rate is set by switches 6# 7 and 8 of D1P switch SW2 (Do not change these switches while power is on, and make sure only one of these three switches is on at any time while the TNC is powered). The rates available are:

Table 5-2. DIP switch settings for radio baud rates.

Radio Data Rate (baud)	SW2 6	SW2 7	SW2 8
300	ON	OFF	OFF
1200	OFF	ON	OFF
9600	OFF	OFF	ON

Note that there is no relationship between terminal baud rate and radio baud rate. In order to communicate with another packet station you must use the same radio baud rates. The length of time required to send a given amount of information increases as the baud rate decreases. For example, it takes four times as long to send data at 300 baud as at 1200 baud. If you use slow radio baud rates, you should limit the length of transmissions by setting MAXFRAME to 1 and choosing PACLEN so that the hardware watchdog timer does not disrupt your transmissions and channel traffic is broken up frequently.

Serial Port Baud Rate

NOTE* The serial port baud rate used between the TNC and the computer has no relationship to the baud rate used over the radio. The serial port baud rate you set on your TNC must match the baud rate used by your computer serial port.

Table 2-4. DIP switch settings for computer serial port baud rates.

Baud Rate	SW21	SW22	SW23	SW24	SW25
300	ON	OFF	OFF	OFF	OFF
1200	OFF	ON	OFF	OFF	OFF
2400	OFF	OFF	ON	OFF	OFF
4800	OFF	OFF	OFF	ON	OFF
9600	OFF	OFF	OFF	OFF	ON

CAUTION: Only one of these switches may be ON at any time.

Power Required

+12 volts DC at 400 to 500 mA. Connector is centre positive.

Jumper Functions

The following table lists the function of each jumper on the TNC 2 PC board. The default positions for JMP7, JMP8, JMP9, and JMP10 are necessary for normal operation to occur.

Jumper	Position	Function
JMP1	ON	!DCD (RS-232C) stays on
	OFF (default)	!DCD reflects connect status
JMP2	LEFT	4.92 MHz CPU clock
	RIGHT (default)	2.46 MHz CPU clock
JMP4	ON	disable Tx watch-dog
	OFF (default)	enable Tx watch-dog
JMP5	ON	Lithium battery connected
	OFF (default)	Lithium battery disconnected
JMP6	ON (default)	U23 is type 27256
	OFF	U23 is not type 27256
JMP7	ON	analog loopback mode
	OFF (default)	normal modem operation
JMP8	ON	demodulator enabled
	OFF (default)	demodulator calibrate
JMP9	TOP	calibrate U16 tones
	MID	calibrate U20 tone
	LOW	bypass state machine
	OFF (default)	normal modem operation
JMP10	ON	digital loopback mode
	OFF (default)	normal modem operation
JMP11	LEFT	transmit data NRZ

	RIGHT (default)	transmit data NRZI
JMP12	PIN 2,3 (default)	16k RA14 (2 x 6264)
	PIN 1,2	32k RAM (1 x 43256)

HP/VHF Switch (SW3)

The HF/VHF (SW3) is located in the back panel of the TNC 2. This switch selects which set of transmit tones are being used and which set of resistors and capacitors are connected to the demolulator of the TNC 2.

In VHF operation R77 (space), R78 (mark), R93, R95, C45 and C54 are selected. the mark frequency is factory set to 1200 Hz and the Space factory set to 2200 Hz.

In HF operation R105 (space), R106 (mark), R102, R101, C64, C45 and C65 are selected. the Mark frequency is factory set to 1600 Hz and the Space frequency is factory set to 1800 Hz.

The HF/VHF switch (SW3) is set OUT for VHF and IN for HF.