

VOX Sensitivity Adjustment

Refer to Figure 2, "Handsfree PCB Links & Adjustments".

Although the VOX circuitry has been designed to operate in varying conditions, it may be necessary to change the minimum threshold for VOX operation.

1. Monitor TP5, without the directional microphone connected.
2. Adjust RV67. Turning RV67 clockwise increases sensitivity, and anticlockwise decreases sensitivity.

Note: For the majority of applications, it is recommended that the setting is left at the factory setting of 0.8V.

Radio Programming

The radio may need reprogramming to accommodate the handsfree unit. The **Auxiliary** key (Ⓛ) for the T2010, T2015 and T2020 or the **Function** key (Fn) for trunked radios must be programmed for latching if VOX mode is to be used. Refer to the T2000 programming user's manual.

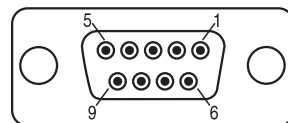
For T203X and T2040 radios, the "handsfree" option will also need to be selected under 'Specifications' (refer to the "Specifications" section of the programming user's manual).

D-Range Connector Wiring

The following table and diagram shows the pin designations of S21, as viewed from the rear of the radio.

Note: S21 pins 3, 4 and 5 are only used when the T2000-A50 or -A51 kit is fitted together with a T2600-A66 Uart. For further information, refer to the T2000-A66 fitting instructions (IPN 418-26600-03, or later) .

S21 Pin	Signal
1	GND (ground)
2	MIC (input for directional microphone audio)
3	GND (ground)
4	RXD (receive data - serial data input to UART PCB)
5	TXD (transmit data - serial data output from UART PCB)
6	FT-SWCH (requests handsfree transmission)
7	VOX (output signalling valid VOX operation)
8	GND (ground)
9	DGND (digital ground)



9 way D-Range Connector S21
(viewed from rear)

Servicing

Refer to the M2000-00 Series II Service Manual (issue 301, or later), Section 8.11.

Introduction

The T2000-A50 and T2000-A51 handsfree kits are designed for use with all T2000 Series II mobiles, and allow communication through the normal PTT microphone, or handsfree operation through a directional microphone. In addition, the T2000-A50 kit contains a footswitch, which can be used to manually activate the transmitter (MOX mode).

When handsfree operation is being used, the transmitter is activated automatically, by detecting the sound of a voice (voice operated transmit, or VOX mode). VOX operation is only intended for use in quiet modern vehicles.

Note: With trunked radios, a call needs to be established before VOX or MOX becomes operative. Normal handsfree operation can be used on a conventional channel.

This handsfree PCB (IPN 225-01210-04, or later) can be fitted to a T2030, T2035 or T2040 radio in conjunction with a T2000-A66 single port UART PCB. For detailed instructions, refer to the T2000-A66 fitting instructions IPN 418-26600-03, or later.

Parts Required

The T2000-A50 and -A51 handsfree kits contain the following items:

Qty	Description
1	handsfree PCB assembly
1	directional microphone (with optional sunvisor clip or tie clip)
1	9 way high density D-range plug and shroud, with two in-line connectors & microphone socket attached
1	2 way in-line connector (spare)
3	M3x8 pan Pozi Taptite screws (handsfree PCB mounting)
1	12 way Micromatch connectors (#S13 on the logic PCB)
1	16 way Micromatch connector (#S14 on logic PCB)
1	female screw lock kit (in plastic bag)
2	4-40x5/16 pan Pozi Taptite screws (black)
1	footswitch (T2000-A50 only)

Fitting

Refer to Figure 1.

1. Remove the top cover of the radio by unscrewing the four bottom cover screws, unscrew the logic PCB and fold out.
Unclip the D-range blanking plate in the rear of the T2000 chassis.
2. Fit the Micromatch connectors provided in the kit in positions #S13 and #S14 on the top side of the enhanced logic PCB.
Position the handsfree PCB as shown, and connect the Micromatch connectors P13 and P14 on the handsfree PCB to #S13 and #S14 on the T2000 enhanced logic PCB.
3. T2010 & T2015: remove R513 (0Ω resistor), on the logic PCB (refer to Figure 1).
4. Select the handsfree PCB link options, as described in "Handsfree Link Options".
5. Adjust RV67 on the top side of the handsfree PCB, as described in "VOX Sensitivity Adjustment".

6. Carefully fold the logic and handsfree PCBs back into position, guiding the handsfree D-range socket (S21) through the hole provided in the T2000 chassis.

Secure the PCBs using the three logic PCB retaining screws and the three M3x8 screws provided.

7. Fit the female screw lock kit to S21, and plug the D-range assembly provided in the kit into the handsfree D-range socket.

Note: Holes are provided in the T2000 Series 1 chassis for the D-range screw locks. Use the two black 4-40 Taptite screws provided to form threads for the screw locks, and discard the screw lock kit nuts.

8. Refit the top cover.

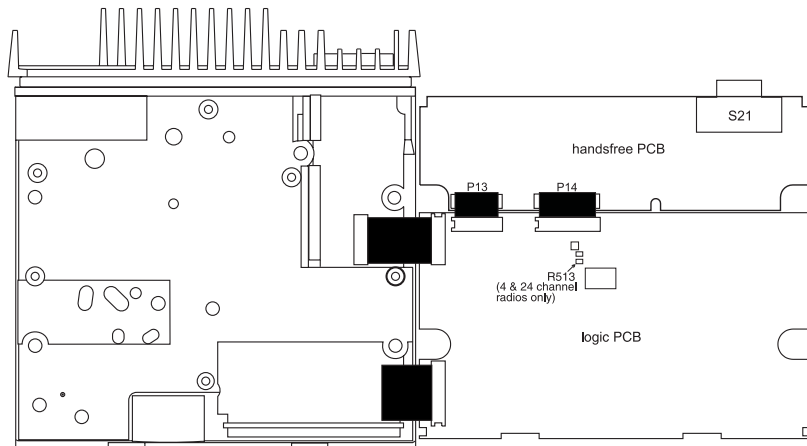


Figure 1: Handsfree PCB Mounting

Handsfree Link Options

After manufacture, the handsfree PCB links are left open and will need to be customer selected. Solder short the links, or fit 0Ω SMD resistors to links 1D, 2, 3, 4 and 5. Add a short length of insulated wire if either Link1A, 1B or 1C is required.

The following table describes the linking options available on the handsfree PCB.

Link	A	B	C	D	No Link	Function
LINK1	auxiliary	emergency	hush	horn	disabled	External*
LINK2	disabled	—	—	—	enabled	ALC control
LINK3	locked on	—	—	—	AUX control	VOX control
LINK4	vox muted	vox inhibit	—	—	disabled	Busy control
LINK5	disabled	enabled	—	—	—	Receive audio inhibits transmit

* The external line is available at the T2000 power connector, P3, on pin 1.

The following diagram shows the bottom side of the handsfree PCB, with test points, links and adjustment points indicated.

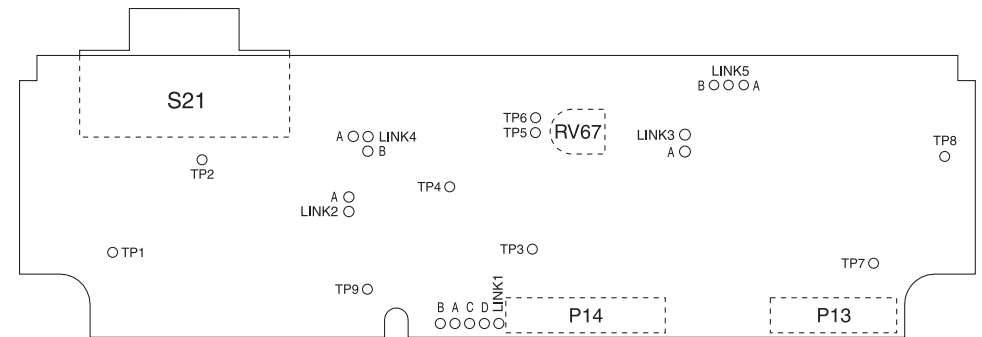
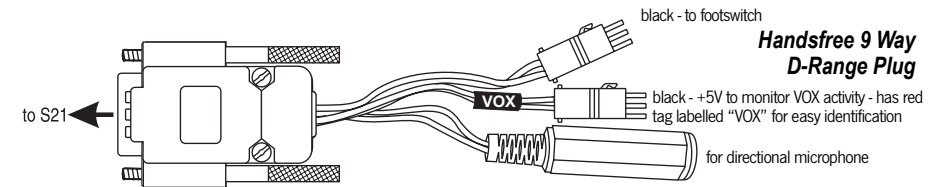


Figure 2: Handsfree PCB Links & Adjustments

Vehicle Mounting



1. Directional Microphone Mounting

Plug the directional microphone into the T2000 via the D-range assembly microphone socket. The positioning of the microphone is important for correct operation of the handsfree unit and some experimentation may be necessary to obtain the best performance from the VOX.

- The microphone should be mounted in a position 20cm or less from the driver.
- The microphone location should be free from vibration.
- The microphone must face the driver.

2. Footswitch Mounting (T2000-A50 only)

Plug the footswitch into the D-range interface via the 2-way in-line connector which does not have the "VOX" label.

Note: It is recommended that the footswitch be screwed to the floor.

The 3m lengths of the footswitch and microphone can be effectively extended by fitting a standard 9 way D-range extender cable between the radio and the D-range assembly. These extension cables are not included as standard but are available from most computer outlets.

3. Monitoring VOX Activity

A +5V logic signal is provided to indicate VOX activity (S21 pin 7). 'VOX' (violet wire) and 'ground' (grey wire) are both available from the D-range assembly in-line connector which has the red tag labelled "VOX".

A spare in-line connector is also included in the kit for interfacing to an appropriate visual indicator e.g. an LED.