

Modifications to the KEY KM3000 Transceiver for AX25 Packet operation

Refer to the diagrams on Sheet 2 of this document.

This document applies to the version of the radio with the 15 way Molex accessory connector (J30). Access is via the lower cover plate which is held on by two screws.

Procedure:

1. Unscrew the metal plate holding J30, disconnect headers J9 and J11 and remove the cableform.
2. Cut the 15 white wires at the back of J30 and remove it from the metal plate.
3. Fit the female 9-way DB9 connector to the metal plate as shown in the diagram on Sh.2.
This is achieved by filing two slots in the centre of each side of the Molex connector cutout.
4. Twist the two wires from J9 pins 7 & 8 together.
5. Twist the three wires from J11 pins 1, 2 & 3 together.
6. Twist the two wires from J11 pins 5 & 7 together.
7. Remove R136 (100R) from the underside of the PCB to isolate the VOICE MOD connection.
This is done by removing the seven fixing screws (numbered) and carefully hinging the board up.
R136 is located below C117 next to J3 (see picture on Sh.2).
8. Fit a wire from J3 pin 22 to connect to the DB 9 connector Pin 1.
9. Connect the eight wires prepared in steps 4, 5, 6 and 8 above to the 9-way DB connector as follows:

Pin 1 - J3 Pin 22/VOICE MOD	Transmit Modulation.
Pin 2 - N/C	
Pin 3 - J9 Pin 8/EXT PTT IN	PTT.
Pin 4 - J11 Pin 1/TX1 OUT*	
Pin 5 - J11 Pin 7/DET_AUDIO	Unfiltered Receiver Audio.
Pin 6 - N/C	
Pin 7 - J11 Pin 3/COM1 0V*	
Pin 8 - J11 Pin 2/RX1 IN*	
Pin 9 - J9 pin 7 & J11 pin 5	Ground

* = RS232 connections for radio programming.

Except for pins 4, 7 & 8 these match the pinout used on the NinoTNC and many other TNCs.

10. Trim off the unused wires from J9 & J11.

Alternative connections for the rear RJ45 connector version of the radio:

Unfiltered receive audio is available on J3 pin 12 (DET).

PTT is available on J3 pin 16 (R/ \bar{T}).

Ground is on J3 pin 2.

The connections to the rear RJ45 connector are the RS232 serial port for radio programming (J11 pins 1, 2 & 3).

Technical Stuff:

VOICE MOD:

1.7V pk-pk for 1.5kHz deviation at 1kHz AF.

Input impedance = 2k ohms.

AC coupled into the modulation circuits.

Frequency response: Flat from near DC (-3dB @ 10Hz) to > 10kHz.

EXT PTT IN:

5V DC. Pulled low for PTT.

DET_AUDIO:

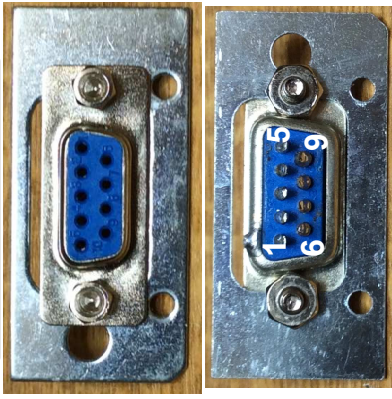
400mV pk-pk for 1.5kHz deviation at 1kHz AF.

AC coupled (via 1uF) from pin 11 of a Motorola MC3371M narrowband FM IF chip.

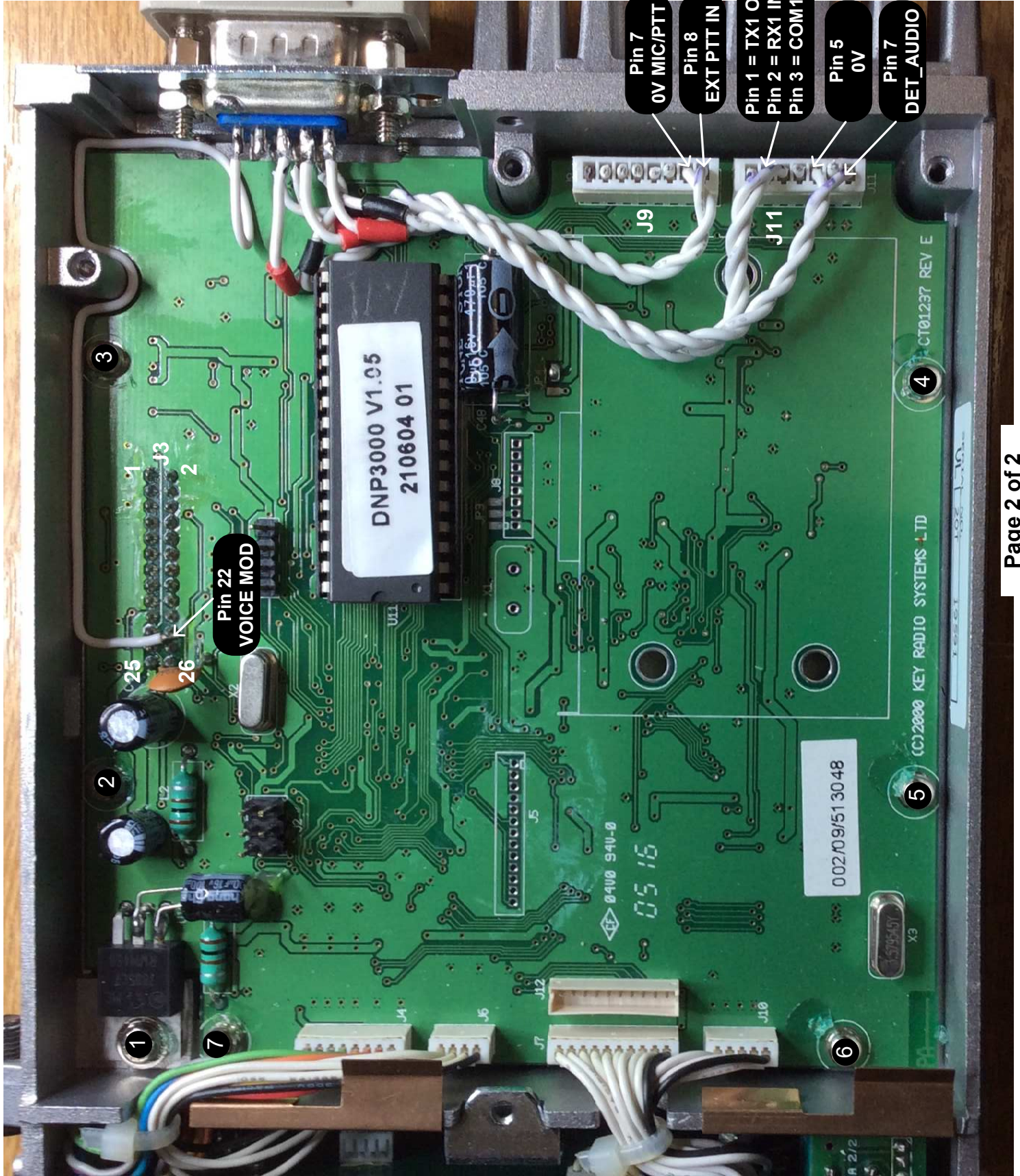
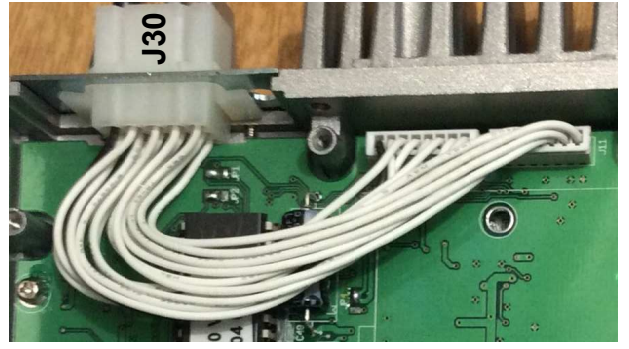
Output impedance = 450 ohms.

Frequency response: near DC to -3dB @ 3.5kHz.

Mounting the DB9 Connector



Location of R136



3

1

2

2

25

26

1

7

Pin 22
VOICE MOD

DNP3000 V1.05
210604 01

05 16

0410 9410-0

002/09/51 30 48

4

5

J9

J11

Pin 7
0V MIC/PTT

Pin 8
EXT PTT IN

Pin 1 = TX1 OUT
Pin 2 = RX1 IN
Pin 3 = COM1 0V

Pin 5
0V

Pin 7
DET_AUDIO

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