

## **Modifications Made To HT50 Control PCB, E03462, Issue 2**

**01/12/00**

### **Overview**

The HT50 control PCB, E03462, has been modified to include additional components for a DSC variant of the radio. This will be called the HD52. Other additional components have also been included for an accessory socket variant of the HT50 radio. A universal control PCB is to be used for all variants of the radio although components will only be fitted for the variant of radio being built.

### **DSC variant, E03614**

The Additional components fitted for the DSC variant form an NMEA data receiver. The NMEA data is inductively coupled into the HD52, the data sending elements being in the TC52 battery charger.

This circuit has no affect on the main radio functions of the unit and is simply a means of transferring external NMEA data to the control PCB micro-controller IC10.

### **Accessory Socket variant, E03957**

The addition components fitted for the accessory variant of the radio form an audio amplifier stage for driving an external speaker. a transistor switch for disabling the main unit microphone and control components for accessory PTT and to indicate the presence of an accessory. Additional EMC de-coupling capacitors have also been fitted.

The additional audio amplifier circuit formed by IC14 and associated components is a copy of the main radio audio amplifier formed by IC2 and associated components. This therefore has the same frequency response and performance as the main audio amplifier.

TR17 is used to switch in the main microphone element. This biased via resistor R115 and is only turned off if the accessory PTT key is pressed. This switch has no affect on the frequency response or performance of the modulator circuit.

All of the above changes have no affect on performance of the radio functions. No changes have been made to the RF PCB. A sample radio with the modified control PCB fitted has been tested to EN 300-828 and has passed all of the applicable tests (Refer to ReportEMC038).

## **Changes made to Drawing E03461 - Control PCB circuit diagram and PCB E03462**

| #  | Change From             | Change To                | Reason                        |
|----|-------------------------|--------------------------|-------------------------------|
| 1  | Drawing E03461, Issue 2 | Drawing E03461, Issue 2E | Additional components added   |
| 2  | PCB E03462, Issue 2     | PCB E03462, Issue 2D     | Additional Components added   |
| 3  |                         | Add C122, 10nF           | DSC NMEA data Receiver        |
| 4  |                         | Add C123, 15nF           | DSC NMEA data Receiver        |
| 5  |                         | Add C125, 100pF          | DSC NMEA data Receiver        |
| 6  |                         | Add C126, 1nF            | DSC NMEA data Receiver        |
| 7  |                         | Add C127, 10nF           | DSC NMEA data Receiver        |
| 8  |                         | Add C128, 100nF          | DSC NMEA data Receiver        |
| 9  |                         | Add R110, 1M             | DSC NMEA data Receiver        |
| 10 |                         | Add R111, 1M             | DSC NMEA data Receiver        |
| 11 |                         | Add R112, 1M             | DSC NMEA data Receiver        |
| 12 |                         | Add R113, 820K           | DSC NMEA data Receiver        |
| 13 |                         | Add R114, 10K            | DSC NMEA data Receiver        |
| 14 |                         | Add R122, 2K2            | DSC NMEA data Receiver        |
| 15 |                         | Add R123, 10K            | DSC NMEA data Receiver        |
| 16 |                         | Add C124, 10nF           | DSC NMEA data Receiver        |
| 17 |                         | Add D7, BAT17-04         | DSC NMEA data Receiver        |
| 18 |                         | Add TR19, BC846B         | DSC NMEA data Receiver        |
| 19 |                         | Add IC12, MC14069UBD     | DSC NMEA data Receiver        |
| 20 |                         | Add IC15, 4066           | DSC NMEA data Receiver        |
| 21 |                         | Add L1, 100uH            | DSC NMEA data Receiver        |
| 22 |                         | Add C129, 1uF            | Accessory Socket AF Amplifier |
| 23 |                         | Add C130, 100nF          | Accessory Socket AF Amplifier |
| 24 |                         | Add C131, 1nF            | Accessory Socket AF Amplifier |
| 25 |                         | Add C132, 1nF            | Accessory Socket AF Amplifier |
| 26 |                         | Add C133, 100pF          | Accessory Socket AF Amplifier |
| 27 |                         | Add C134, 100pF          | Accessory Socket AF Amplifier |
| 28 |                         | Add C135, 100nF          | Accessory Socket AF Amplifier |
| 29 |                         | Add R117, 100K           | Accessory Socket AF Amplifier |
| 30 |                         | Add R118, 100K           | Accessory Socket AF Amplifier |
| 31 |                         | Add R119, 4R7            | Accessory Socket +V Buffer    |
| 32 |                         | Add TR18, FDC624L        | Accessory Socket AF Amplifier |
| 33 |                         | Add IC14, TDA7052AT      | Accessory Socket AF Amplifier |
| 34 |                         | Add TR17, BC846B         | Microphone Switch             |
| 35 |                         | Add R120, 100K           | Microphone Switch             |
| 36 |                         | Add R115, 4K7            | Accessory Socket PTT/CNTL     |
| 37 |                         | Add R116, 470R           | Accessory Socket PTT/CNTL     |
| 38 |                         | Add C137, 10pF           | EMC De-Coupling               |
| 39 |                         | Add C138, 10pF           | EMC De-Coupling               |
| 40 |                         | Add C139, 100pF          | EMC De-Coupling               |
| 41 |                         | Add C140, 100pf          | EMC De-Coupling               |
| 42 |                         | Add C136, 100pF          | EMC De-Coupling               |
| 43 |                         | Add PLG1                 | Accessory Socket Connector    |