

Using the DRC-1 with the Yaesu™ (Vertex) VXR7000 Desktop base-station in local mode (DC cable)

The DRC-1 provides an excellent platform for dispatcher type systems. Among the many features available to the user of the DRC-1 are :-

- Common headset working between telephone and radio
- Data modem access to radio set
- Radio to telephone interconnect
- Selective calling encode and decode
- Status messages
- 10,000 call sign alpha tags
- 2000 status alpha tags
- Ten deep calling queue with operator scroll and select

The Yaesu VXR-7000 base station is equipped with a remote signalling (line) connector on its rear panel. This connector is an RJ45 type, 8 way. The connector terminates on the VRX's control board and needs a small modification to be compatible with the DRC-1 dispatcher terminal. This document sets out to describe the necessary modification.

It is recommended that the base station be programmed and tested prior to the modification for operation with the DRC-1.

Background

The Yaesu interface employs an opto isolator for PTT function. Both ends of the emitter diode within the opto device are presented to the remote RJ45 connector. This modification instructs the engineer how to provide a 5 volt bias on the opto emitter, and to reorganise the interface connector to enable compatibility with the DRC-1.

Procedure

1. Ensure the base station is disconnected from the power supply.
2. Remove the base station's lid to expose the control board
3. Locate the opto isolator device in the top right hand corner of the control board.
4. Solder a 330Ω resistor between the +5v rail and pin 1 of the device, see photo Fig1.

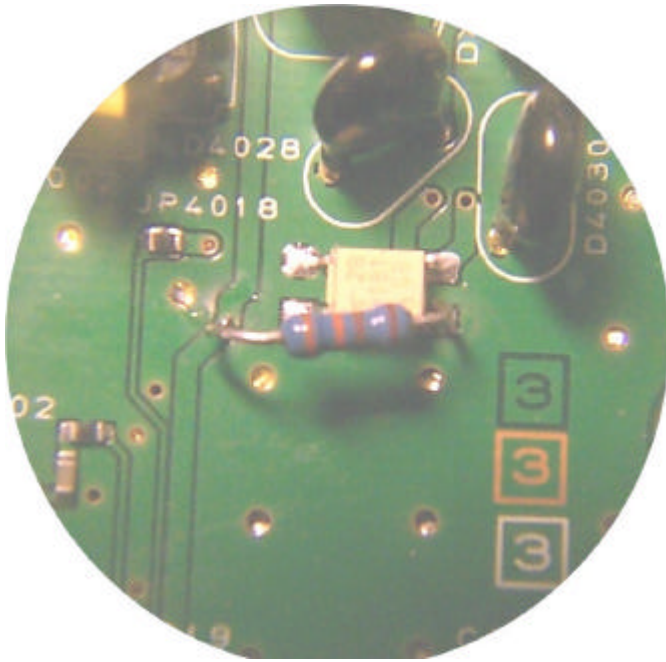


Fig 1, resistor bias on photo emitter. Note pin 1 of the device is indicated by an indentation.

Step 2,

Unplug the connector J4009 and carefully remove the wires complete with connector pins. This is easily done by lifting the retaining plastic lugs with a small screwdriver whilst applying a small pulling pressure on the wire.

When the wires are removed, relocate those indicated into the connector as shown in photo Fig2.

Cut the pin from the end of the grey wire, and solder the grey wire to ground.

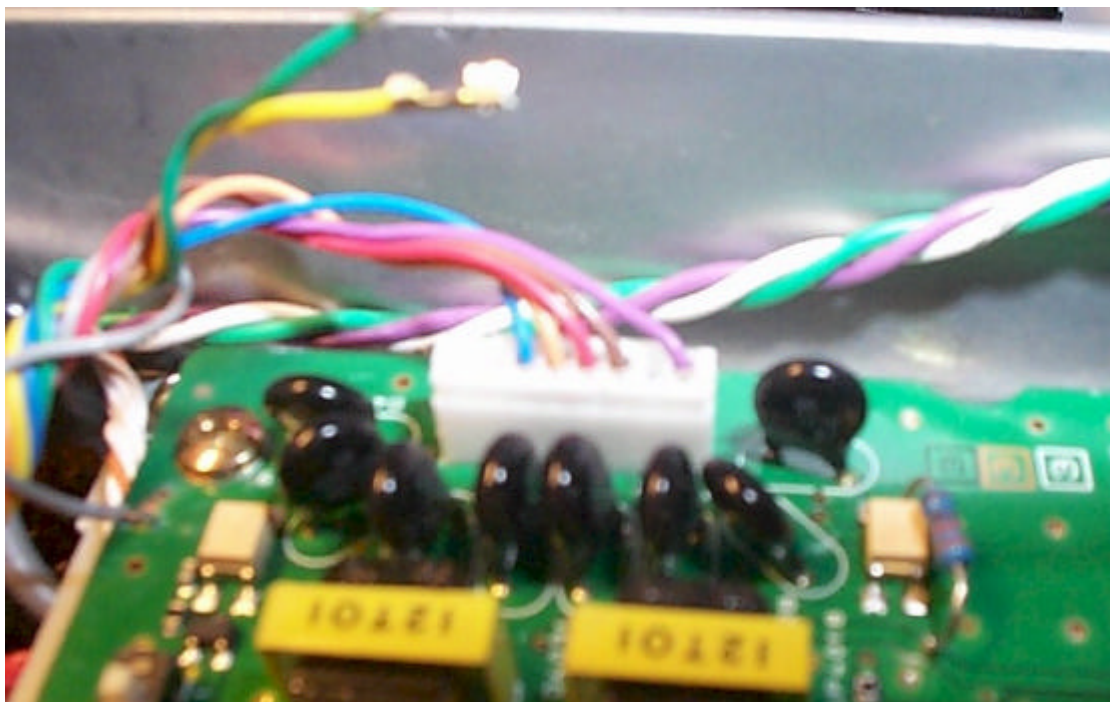
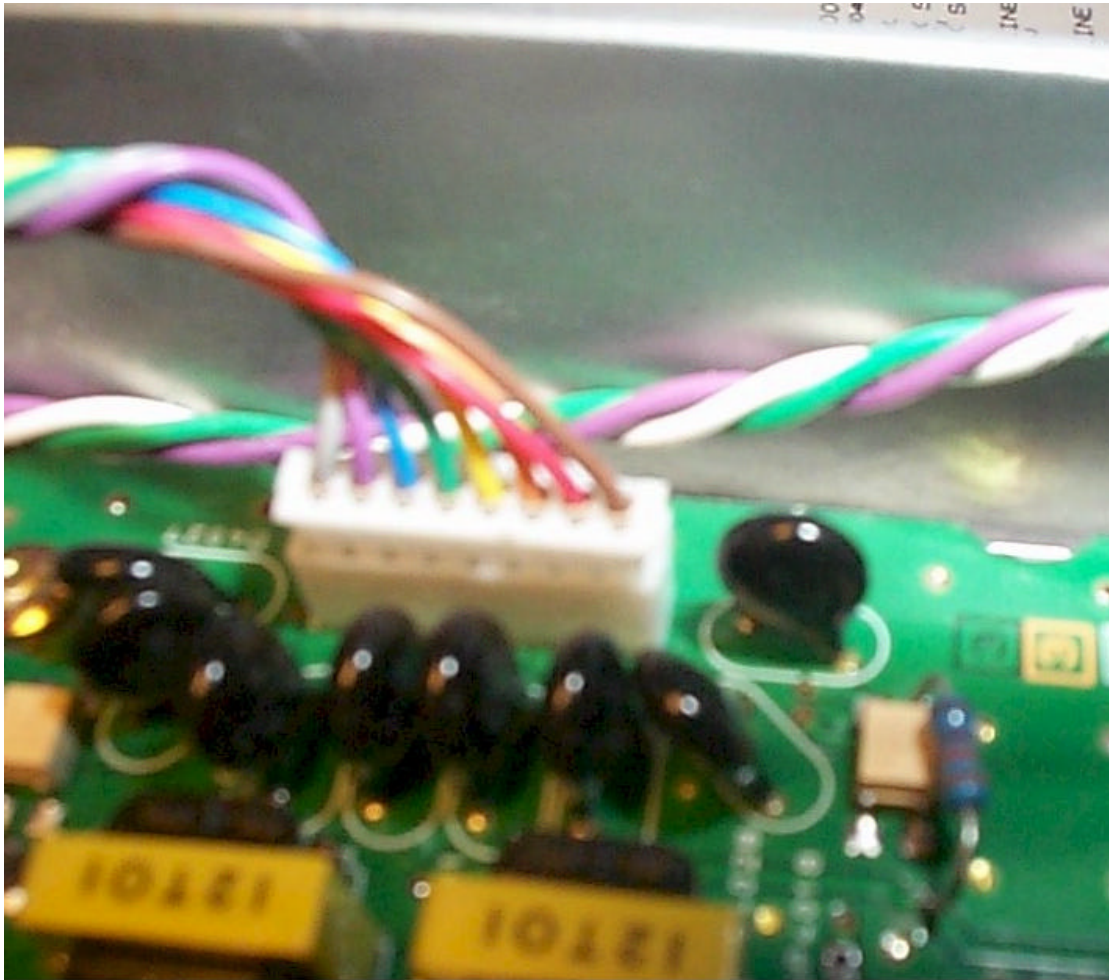


Fig 2, the new wiring pattern

We include here the connector before alteration, in case you wish to return it to normal.



Talk Through.

If the VXR-7000 is equipped for duplex operation, Talk through may be achieved in several ways.

1. By depressing the “Repeater” button on the front of the VXR-7000. The talk-through path is then internal to the base station, and the DRC-1 is able to monitor both sides of the conversation, and join in by use of the PTT.
2. By setting the TT button on the DRC-1 unit, the talk through path is via the DRC-1. The operator is able to monitor both sides of the conversation, and join in by use of the PTT. The DRC-1 option (installation menu) “Talk-through mode” should be set to local for this talk through version to operate.

This is the likely choice if the base station is to be located elsewhere in the building. It should be noted that the base station TT button should not be used when the DRC-1 is to control talk-through.

3. By setting “Night Service” on the DRC-1. Night service was designed to provide talk through when the dispatcher is off duty. In night service the reception of any valid sell call will enable talk through and the DRC-1 will

send an All call code which opens all the on air mobiles and portables for reception. This talk through facility will time out as per the DRC-1 installation menu option TT timer, or can be turned off by reception of a close down code.

This application note includes views and details of the Yaesu VXR-7000 by kind permission of Yaesu UK Ltd.