Remote Display for Series 6000 Direction Finder

A Technical Application Note from Doppler Systems

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1.0 Introduction

Normally, the Series 6000 direction finders are used at remotely linked fixed sites and the Series 6100 direction finders are used for mobile operation. However, some customers have asked for directions on using the Series 6000 in a mobile environment with a small remote display such as the DDF5921. This application note describes how to modify a Series 6000 direction finder for use with the DDF5921 remote display in a mobile environment. The change may be made to the following models only: DDF6000B, C, D, d and DDF6001f.
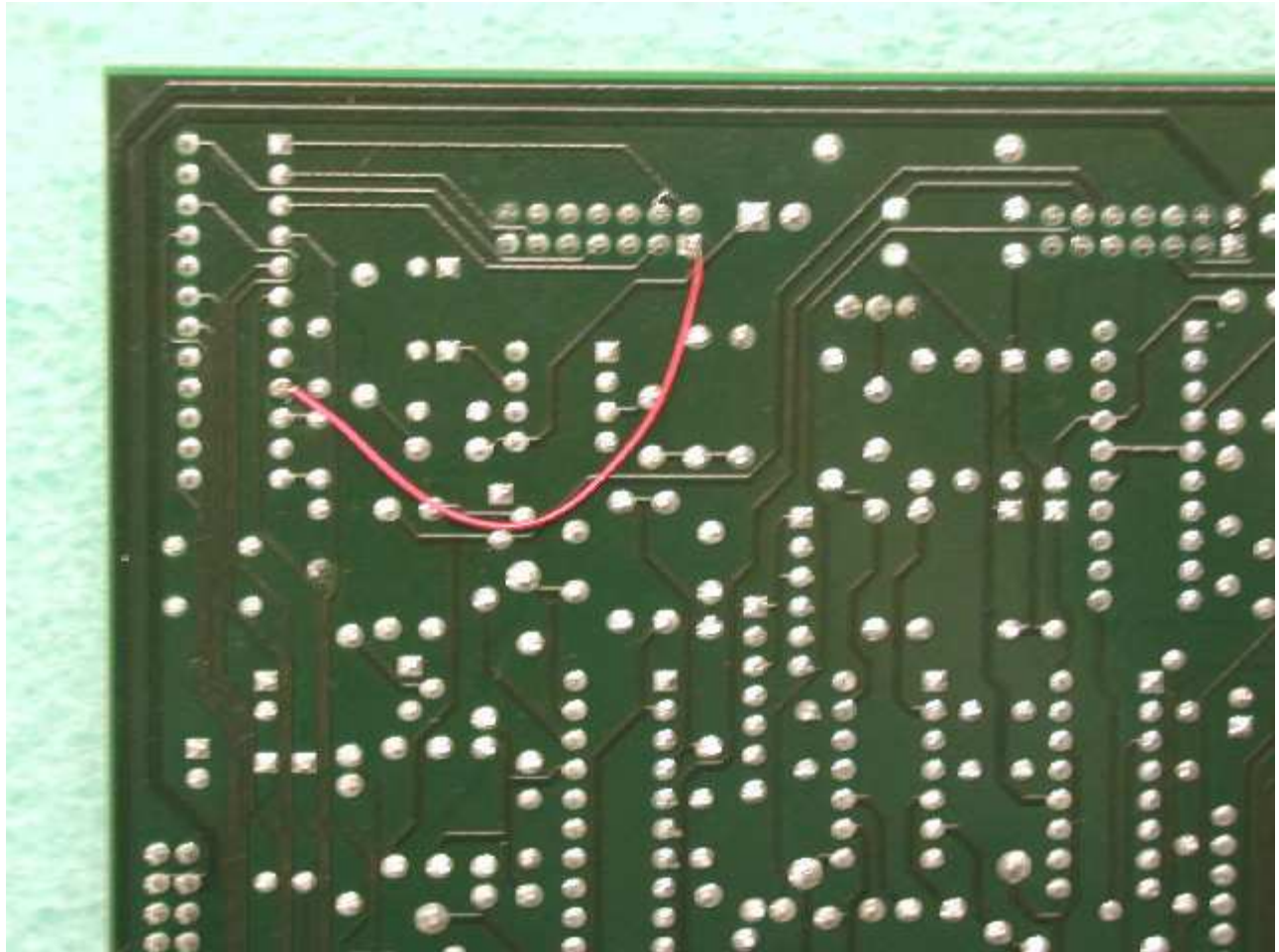
2.0 Display/Processor Modifications

Two jumper wires must be added to the connector board, DDF6114 and one jumper wire added to the main logic board DDF6102. It is necessary to remove the top cover and all four circuit boards from the chassis to make these changes. Be sure to note the location of all hardware and spacers removed so you can reinstall them properly. You can also return the unit to your local distributor or the factory for this modification.
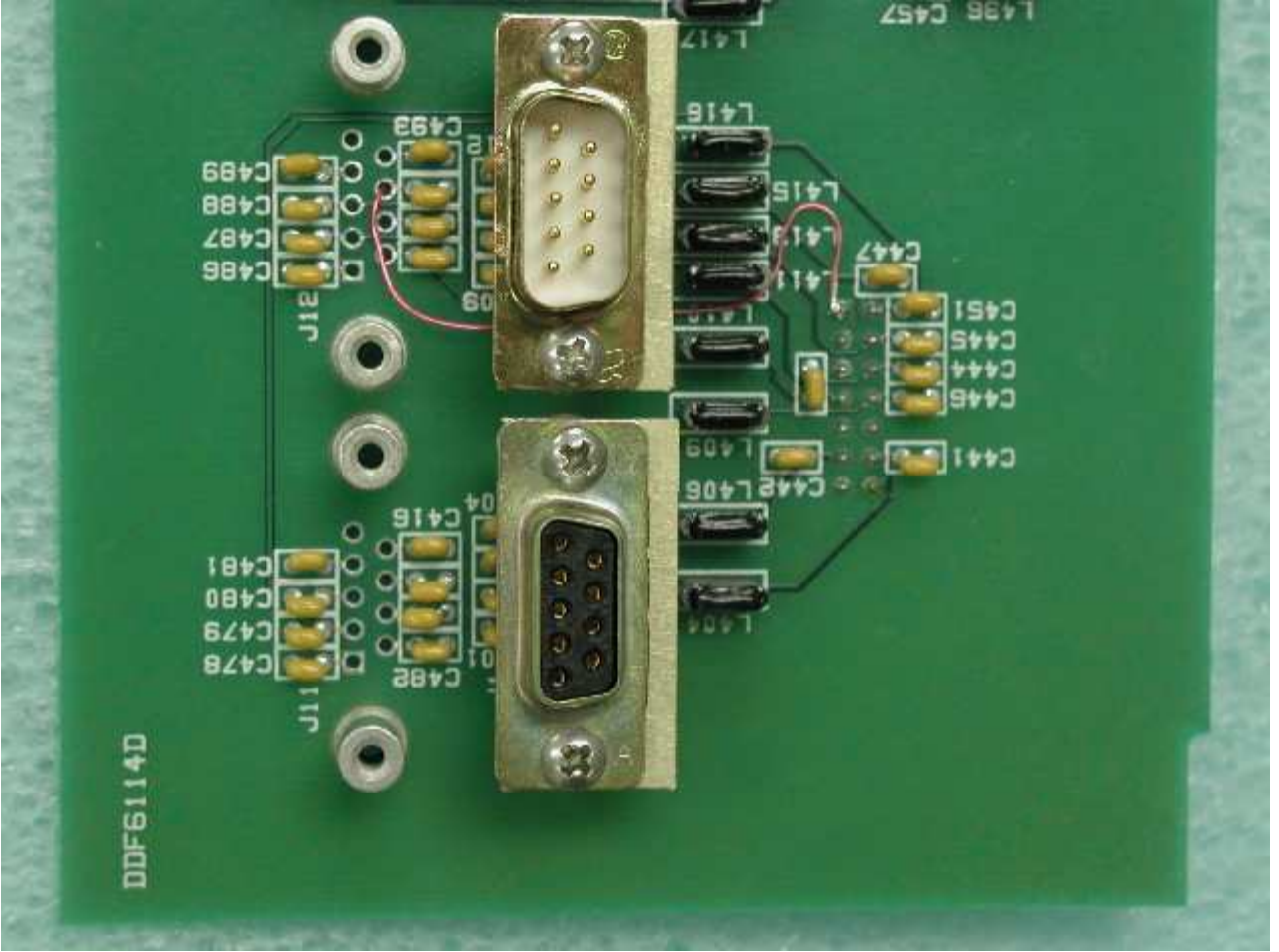
1. Remove the small black screws on the top cover.
2. Unplug the speaker and remove the cover.
3. Remove the three screws holding the power supply in place and unplug it.
4. Remove the 8 flat head screws holding the front panel in place and unplug it.
5. Remove the 4 screws holding the logic board in place and unplug it.
6. Remove all of the screws, jack screws and nuts retaining the connector board to the chassis and remove it.
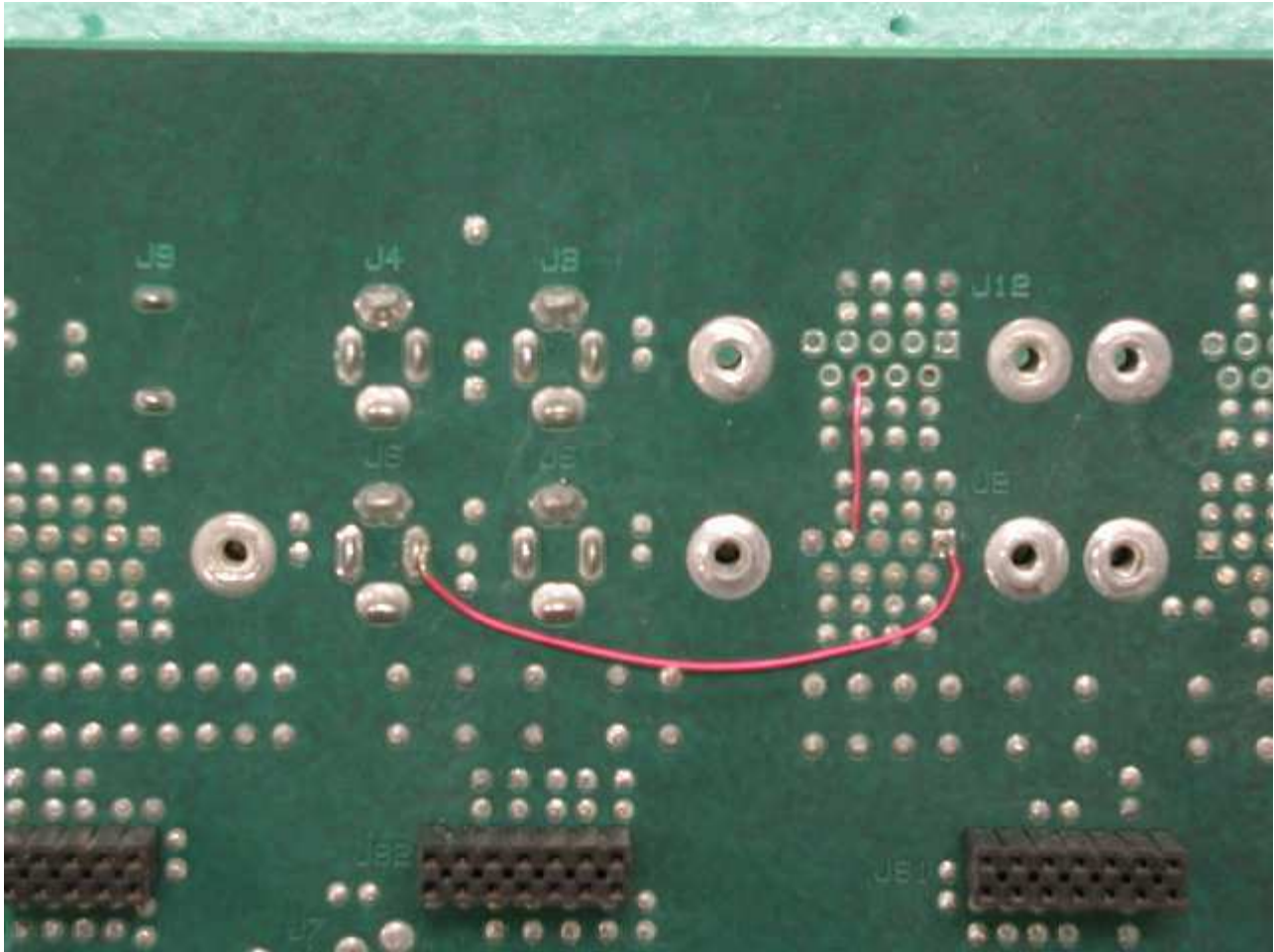
On the bottom side of the logic board, connect VCC (5 VDC) to pin 1 on JP1. VCC located on pin 9 of the MAX208 (U101) used on the DDF6102D and DDF6102E boards. VCC is located on pin 24 of the MC145408 (U101) used on DDF6102B and DDF6102C boards.

The following picture shows this connection on the DDF6102E board.

On the connector board, connect the "EXT SPKR" signal to pin 1 on J2. This connection can be made on the back side of the board. Also connect VCC from pin 1 on JS1 to pin 4 on J2. This connection requires routing the wire through one of the unused holes in J12 between front and back sides. The following pictures show these connection on the DDF6114D board.

DDF6114D

L436 C457
L417
L416
L415
L413
L411
C447
C451
C445
C444
C446
C441
C442 L406
L409
L410
L404
C489
C488
C487
C486
C493
J13
J12
J11
C481
C480
C479
C478
C482
C416

Replace the EPROM with the latest version which can be downloaded from this web site. The EPROM must be version 4.22 or later for this feature. Be sure to use the EPROM file that corresponds to your specific model and version of hardware (for example, DDF6001f).

Reassemble the direction finder.

3.0 Remote Display Cabling

You can order a remote display DDF5921 with a special null modem cable or make your own as indicated below. **DO NOT** use a null modem adapter as it will damage the direction finder and/or remote display.

The cable between the direction finder J2 and the remote display should be a shielded cable with DB9 female connectors on each end. Connect the wiring as follows:

Left end connector pin number	Right end connector pin number
1	1
2	3
3	2
4	6
6	4
5	5
Shield	Shield

Note that this cable is symmetrical, so it can be used in either orientation.

4.0 Setup

To enable J2 on the direction finder to provide remote display and control from the DDF5921, the unit must first be placed into a special mode. This mode is retained in EE memory so this command only needs to be sent once.

The easiest method is to use the latest version (V1.1.1 or later) of WinRDFCMD, available by download from this web site, which has a menu command to enable or disable the remote display mode. Alternatively, you can issue the following command to J1 with the DF in ASCII mode using Hyperterm:

$15<enter> $671<enter> enables the remote display mode.

$15<enter> $672<enter> disables the remote display mode.