

Product Identification and Compatibility of Obsolete Models

A Technical Application Note from Doppler Systems

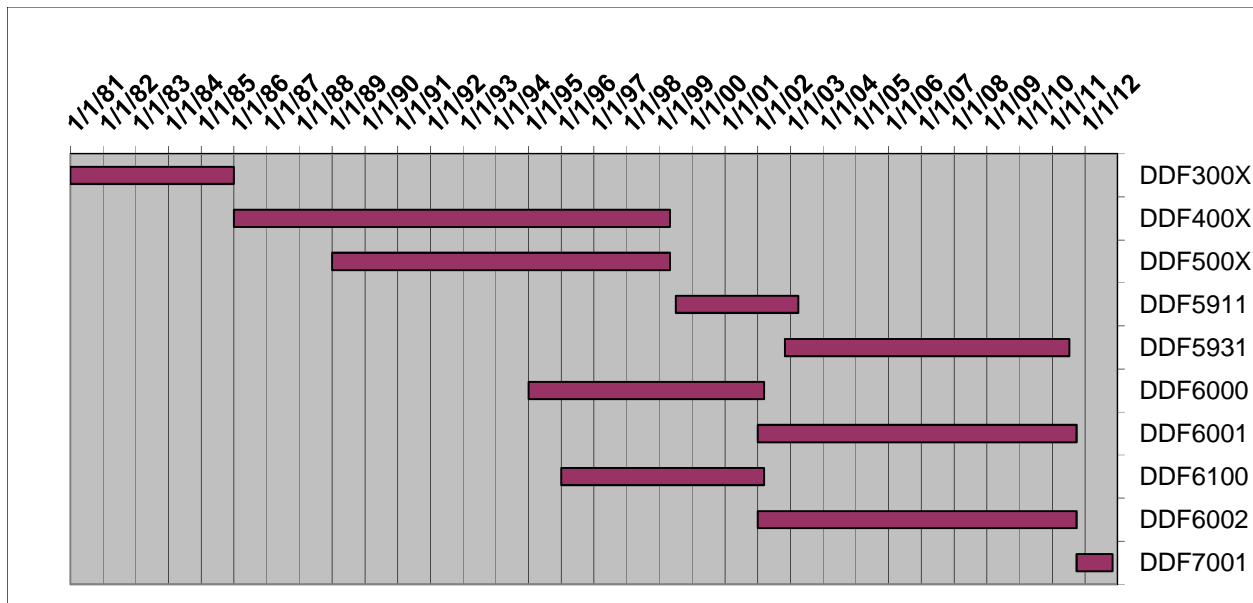
June 26, 2006 revised November 24, 2011

1.0 Introduction

Since 1981 Doppler Systems has introduced 9 different series of radio direction finding systems. Many of these, while no longer made, are still in use and we get frequent questions regarding the compatibility of the various RF summers sold with these models with newer models. This application note can be used to identify the various models of DF processors, displays and RF summers and which cables - if any - can be used to connect them.

2.0 Model Identification

The following figure show when various direction finders were manufactured.



2.1 Series 300X

The DDF300X had a self contained RF summer which worked only in the VHF high band (150 MHz). RCA phono jacks were used for the antenna inputs and summer output. This series is not compatible with any of the later models. Almost all of the parts used are now obsolete and we no longer support this model.

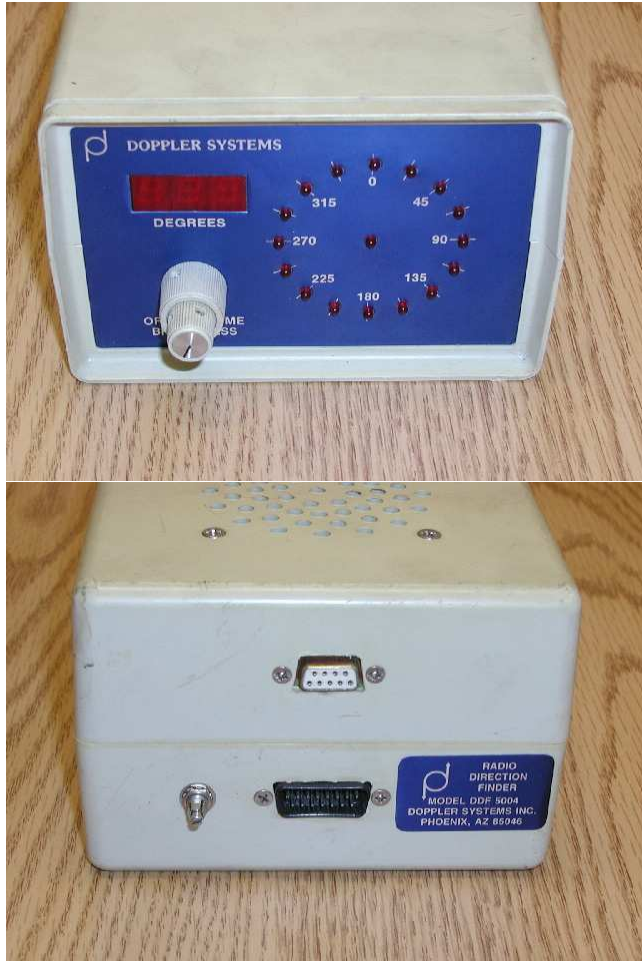


2.2 Series 400X

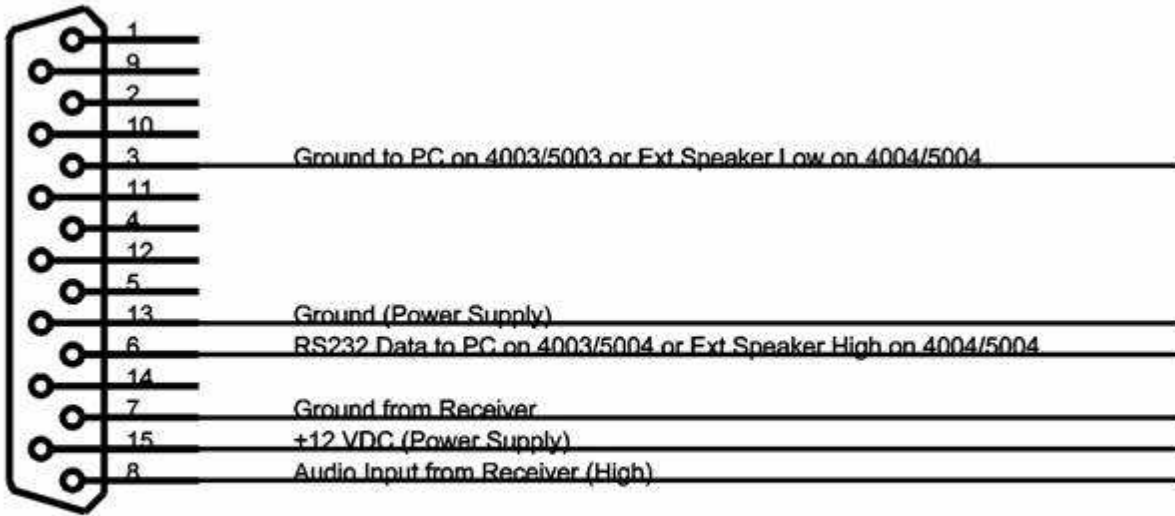
The DDF400X also had a self contained RF summer which worked effectively from about 50 to 480 MHz. BNC connectors were used for the antenna inputs and summer output. The DDF4003 had a simple serial interface fixed at 300 baud while the 4004 had a speech synthesizer to articulate the bearing.

2.3 Series 500X

The DDF500X used an external RF summer, the model DDF5060 which operated up to 1000 MHz. Like the 400X series, the 5003 had a serial interface fixed at 300 baud and the 5004 had a speech synthesizer.



Connection to the series 400X and 500X is via the 15 pin Dsub connector on the rear panels. Both series use the cable connections shown in the following diagram.



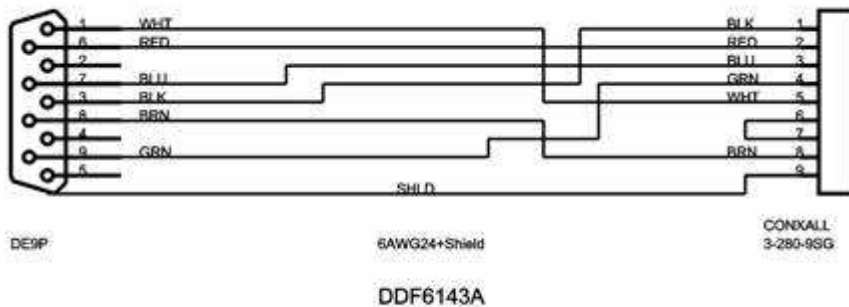
DA15S

Cable Wiring DDF400X and DDF500X

The RF summer used with the series 500X was a model DDF5060. Prior to 1996, this summer was made with the control cable and coax terminated directly on the electronics; from 1996 on, connectors were used on the side of the housing.



The latter model summers were also used with the model DDF5911, DDF6000 and DDF6100 DFs (see below). But for use with the Series DDF500X, the DDF5060 summer required a 6 conductor shielded cable, DDF6143A, shown below.



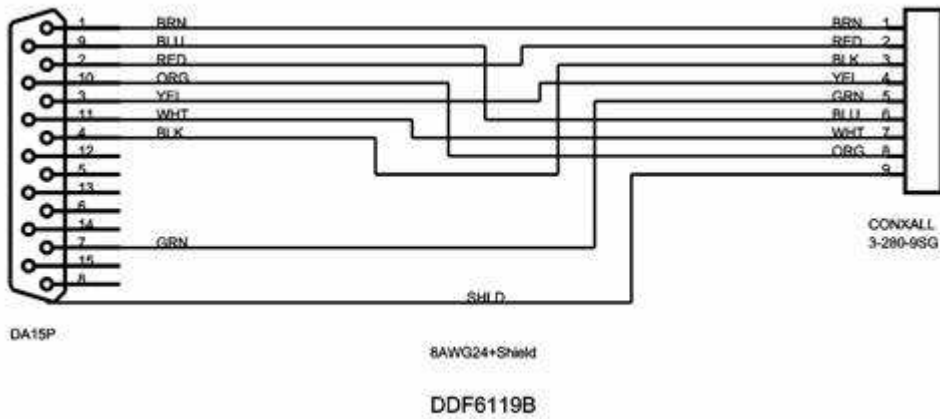
Printed manuals are still available for the Series 400X and 500X direction finders. Please contact the factory for price and delivery. We can generally repair these models, but considering their age, we recommend upgrading to a newer model.

2.4 Model 5911

The DDF5911 was a mobile unit that used the DDF5960 RF summer and DDF5921 remote display. It looks very similar to the current production model DDF5931. The RF summer used with the 5911 was the same as that used with the series 500X (above) but with a different cable. The DDF5911 is most easily identified by the 15 pin female Dsub connector used for the RF summer. ***Do not attempt to use the DDF5911 with the current production DDF5980 RF summer which has a 9 pin circular female connector on its side in place of the 9 pin male connector used on the DDF5060 and DDF5960 summers. The DDF5980 summer is also larger (5 inch square) compared to the DDF5060 and DDF5960 which were 4 inches square.***



The cable used to connect the DDF5911 to the RF summer was an 8 conductor shielded cable, DDF6119B, shown below. The DDF5911 cannot be used with the fixed site 8 element antennas used with the models DDF6000.



Although the DDF5911 has been replaced by the newer DDF5931 direction finder, we continue to support this product. The latest version of the firmware is available for downloading at [Firmware Upgrades](#) and the manual is available for downloading from [Manuals](#).

2.5 Models DDF6000 and DDF6100

These two models were generally used for fixed site and mobile use respectively. In outward appearance they are very similar to the latest production models DDF6001 and DDF6002. **However, the RF summing circuit is different and the new model summer must not be used with the older model display processors or visa versa.** The DDF6000 and DDF6100 are labeled on their front panels and the antenna control cable connection used on the back panel is a 15 pin female Dsub. (This connector was changed to a 15 pin male Dsub on the DDF6001 and DDF6002). **Do not attempt to defeat this change by using a gender changer!**



The DDF6000 and DDF6100 can be used with either the 8-element fixed site antennas (such as the DDF6052 at VHF) or with the 4-element RF summer DDF5960. In the latter case, the cable DDF6119B shown above is used to connect the DF processor/display to the RF summer DDF5960. **Do not attempt to use the DDF6000 or DDF6100 with the later production DDF5980**

RF summer which has a 9 pin circular female connector on its side in place of the 9 pin male connector used on the DDF5060 and DDF5960 summers. The DDF5980 summer is also larger (5 inch square) compared to the DDF5060 and DDF5960 which were 4 inches square.

The DDF6000 and 6100 models are fully supported. You can download the latest firmware from [Firmware Upgrades](#) and the manual from [Manuals](#). However, due to the number of variations in the hardware, it is generally easiest to return these models to the factory for upgrading.

Although the RF summers/antennas and display/processors cannot be mixed between these older models and the current units, the software programs BearingTrack and AutoTrack available from [Software](#) are fully compatible with either. Therefore, for example, a network of fixed site direction finders running BearingTrack can consist of both older DDF6000's and newer DDF6001's.