

DIRSIG 4.2 Beta Release

Installation Instructions for Windows

The DIRSIG 4.2 software is released on the Windows platform as a traditional Windows “installer”. Simply double-click the installer file and follow the standard directions to install the software. DIRSIG 4.2 is built on Windows XP and has been tested on Windows 2000 and Windows Vista. DIRSIG 4.2 for Windows is a 32-bit application at this time.

The default install location for DIRSIG is in the **C:\Program Files** folder. For the 4.2 release (and all updates), the programs and supporting data files will be in **C:\Program Files\DIRSIG 4.2**. Any updates to this release (e.g. 4.2.1, 4.2.2, etc.) will upgrade the files by *replacing* them with newer versions. Therefore, you should make a copy of the installed files if you have made modifications to them **before** updating with a new release.

The main graphical user interface is in **C:\Program Files\DIRSIG 4.2\bin** as **dirsig_edit**. The command line version of the model is in the same directory as **dirsig**. The installer also adds a **DIRSIG 4.2** item to the Windows **Start** menu.

1 Command Line Setup

Since the 4.2 release, DIRSIG has been distributed with a graphical user interface that allows the user to configure and run a DIRSIG simulation without using any command line tools. However, there are still many reasons you might want to run a DIRSIG simulation from the command line. If you want to run DIRSIG from the command line (e.g. cmd command prompt, etc.) you to have the path to the DIRSIG executables configured and the DIRSIG_HOME environment variable set. The installer should automatically add the DIRSIG_HOME environment variable and the DIRSIG executables directory to the PATH environment variable. This can be verified in the **Environment**

Variables dialog available on the **Advanced** tab of the **System** control pane The following descriptions of these two configuration elements are provided below for clarity.

- The DIRSIG_HOME environment variable points to the top of the installation directory. On the Windows platform, the default installation directory is **C:\Program Files\DIRSIG 4.2**.
- The DIRSIG executables directory is in your path. The directory containing the DIRSIG executables is **C:\Program Files\DIRSIG 4.2\bin**.

2 MODTRAN Setup

2.1 MODTRAN Requirements

The Windows version of DIRSIG requires that the user have a more recent version of MODTRAN that supports the Card 1A4 option. This feature was added to later releases of MODTRAN4 and most releases of MODTRAN5. For example MODTRAN 4 Version 1, Release 1 (April 2000) *does not* support this feature but MODTRAN 4 Version 3, Release 1 (April 2003) *does* support this feature.

2.2 Installing MODTRAN

Just like every other DIRSIG operating system platform, you need to have MODTRAN and installed. Explaining how to compile and install MODTRAN is beyond the scope of this DIRSIG installation guide. New MODTRAN users are encouraged to read the documentation supplied with MODTRAN. If you have acquired MODTRAN through the traditional channels, the release CDROM usually comes with a version of MODTRAN pre-compiled for Windows.

2.3 DIRSIG Configuration

In order for DIRSIG to use MODTRAN, DIRSIG must know where MODTRAN is installed. This is described to DIRSIG and supporting programs via the configuration file for the `make_adb` program (the primary tool that interacts with MODTRAN). This configuration file can be found in the `config` subdirectory under the DIRSIG installation directory. On the Windows platform, that file

is \$DIRSIG_HOME\config\make_adb. This file can be edited using NotePad or WordPad, however make sure that the file is saved back as a plain text file with the same exact name. The contents of this file are shown below:

```
MAKE_ADB_CFG = 1.0
```

```
MODTRAN {  
    MODTRAN_EXE = C:\Mod4v3r1\Mod4v3r1.exe  
    MODTRAN_DATA_DIR = C:\Mod4v3r1\DATA\  
    MODTRAN_MIN_DELTA = 1.0  
}
```

```
BACKGROUND_RADIANCE_FILE = C:\Program Files\DIRSIG 4.2\lib\data\misc\star_light.dat
```

The key items to setup that might vary from installation to installation are the MODTRAN related items inside the MODTRAN section. In this example file, MODTRAN was compiled and installed into the C:\Mod4v3r1 directory, where Mod4v3r1 refers to MODTRAN4, version 3, release 1. However, MODTRAN can be compiled and installed in any directory.

The MODTRAN_EXE variable contains the path to the MODTRAN executable. The MODTRAN_DATA_DIR variable contains the path to the MODTRAN “data” directory that contains all the band model files, etc. (**Important Note:** the trailing ‘\’ at the end of the directory assigned to the MODTRAN_DATA_DIR variable **must** be included for this initial release.). The MODTRAN_MIN_DELTA variable contains the maximum spectral for this version of MODTRAN. The resolution limit for MODTRAN4 is 1 wavenumber (cm^{-1}) and for MODTRAN5 it is 0.1 wavenumber (cm^{-1}).