2300-218

Power Tools®
&
Utilities

Software User's Guide

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VNAs

This directory contains utilities for 360B, 37xxx and MS462xx Vector Network Analyzers (VNAs).

DOS

This directory contains two sub-directories: PCMCIA and STDGPIB. These directories contain libraries and sample programs for use in the DOS environment.

Utility

The `Setup.exe` file located in this directory and will guide the user through the installation of the following utilities.

CAP 37000

The CAP3700 program is a Windows-based program used to capture, display, save, and print data from an Anritsu VNA. The available output formats include bitmaps (*.BMP), plotter graphics (*.HGL), printer graphics (*.PGR), and metafiles (*.WMF). In addition, the CAP3700 allows both color or black and white captures.

VNA Utilities for GPIB

VNAUTIL is a utility program to download utility files to the 37000 VNA or to upload data from the 37000 VNA to a local file.

Anritsu GPIB Exerciser

A program for sending GPIB commands to a GPIB controlled device. Similar to National Instruments Win32 Interactive Control.

Anritsu Logo Editor

A utility program for customizing the logo which appears on plots from the VNA. The user can replace the logo on the data plots for personalized plots.

VNA Trace Manager

A program for the Lightning 37xxx series VNAs that captures `.S2P` files via GPIB and performs other useful functions.

NT

Within the NT directory are two sub-directories, disk1 and disk2. The `Setup.exe` application is in the disk1 directory. Double-click on the setup file to launch the installation wizard and install the National Instruments NT GPIB drivers on the PC.

Win95

Within the Win95 directory are two sub-directories, disk1 and disk2. The `Setup.exe` application is in the disk1 directory. Double-click on the setup file to launch the installation wizard and install the National Instruments Win95 GPIB drivers on the PC.

Power Tools

This directory contains the files necessary for installing the Power Tools Software Development Kit (SDK) on the PC. There are two sub-directories in this directory.

Redistribution

There are two sub-directories in this directory; disk1 and disk2. The `Setup.exe` file is located in the disk1 directory and will guide the user through the redistribution process.

Version 4.0

There are eight sub-directories in this directory; disk1 through disk8. The `Setup.exe` file is located in the disk1 directory and will guide the user through the Power Tools installation process. This setup file installs the Power Tools files, and the LabWindows components, for both VNAs and sources.

Sources

The sources directory contains the files for using the complex modulation capabilities of the 68xxx and 69xxx sources.

Utility

The `Setup.exe` file is located in this directory and will guide the user through the installation process.

Understanding and Using Power Tools

Power Tools (Anritsu part number 2300-218) is an instrument driver that replaces GPIB command mnemonics with meaningful function names. Since Power Tools is packaged as Dynamic Link Libraries (DLL), it supports most Windows-based software development tools. In this way, Power Tools provides an intuitive and straightforward approach to controlling Automatic Test Equipment (ATE) application programs.

Power Tools includes support for Anritsu 37xxx and MS462xx VNA's in addition to 68xxx and 69xxx synthesizers.

What can Power Tools do for you?

Power Tools is a Windows based instrument driver that eases the task of programming Anritsu VNAs and El Toro synthesizers. Rather than deciphering often cryptic ASCII commands, Power Tools allows the user to use intuitive function calls from C/C++ or Visual Basic for instrument control. The following is an example using GPIB mnemonics in Visual Basic:

```
'Get array data
Call ibwrt(idev, "TRS; WFS")
Call ibwrt(idev, "FMC; LSB; OFD")
sBuf$ = Space(166)
Call ibrd(idev, sBuf$)
Debug.Print sBuf$
```

The following is an example using Power Tools in Visual Basic:

```
AwnaTriggerSweep(sHandle&, AWNA_TRUE)
AwnaGetMeasuredDataSingle&(sHandle&, dtype%, tempdata(0),
   arraySize&)
```

As can be seen from the above examples, Power Tools provides a more intuitive interface than GPIB mnemonics alone. Using Power Tools also ensures compatibility of program code between different Anritsu VNAs or 68xxx/69xxx sources. For example, a program written using Power Tools for a Lightning VNA will also work with a Scorpion VNMS.

Power Tools includes a hypertext help file that explains functions and their required parameters in detail. This file not only is a good starting point for first time users, it also provides a convenient electronic resource for experienced users looking for a particular function or the appropriate `.h` or `.bas` file for an application.

Power Tools Details

Visual Basic

Power Tools includes the `.bas` files required for access to the Power Tools dynamic linked libraries. When creating a project in Visual Basic, the required `.bas` files must be added to the modules section of the project. The `.dll` files will automatically be placed in the `/windows/system` directory of the PC when the setup utility is run.

C/C++

Power Tools includes the `.h` files required for access to the Power Tools dynamic linked libraries. When creating a project in C or C++, simply use the `# include` statement to include the appropriate `.h` files for the functions being used. The `.dll` files will automatically be placed in the `/windows/system` directory of the PC when the setup utility is run.

LabWindows CVI

The Power Tools functions can also be used in LabWindows CVI, as it is a C-based environment. For these applications, the `.lib` files are included for use in LabWindows projects along with the `.h` files.

The instrument functions are organized into function calls which in turn call DLLs to control the instrument. Using CVI, one can call these functions directly and develop efficient control programs. It should be pointed out, that while this is not an official LabWindows CVI driver, the functionality is supported allowing LabWindows to be used without trouble.

There is one important area to watch out for when using these Power Tools drivers with LabWindows CVI. The header file names (*.h) and the library file names (*.lib) must be the same. With Power Tools v4.0, the header file names are missing the “32" in the file name which will cause errors when loading the project files (*.prj). Simply rename the files such that the library file names are equivalent to the header file names, and everything should work correctly.

The files which need to be renamed can be found in (assuming they were installed to C:):

```
C:\ProgramFiles\Anritsu Company\Anritsu Power
    Tools\SDK\CVI\INCLUDE
```

What’s on the disk?

The table below gives a brief description of the directories on this CDROM.

Directory	Contents
National	National Instruments GPIB drivers for Windows 95 and NT
Power Tools	The Setup program to install Power Tools
Sources	Complex Modulation Utility for the 68xxx and 69xxx Sources
VNAs	VNA Utilities such as CAP3700, etc.

The contents and use of the files in each of these directories are further explained in the following sections.

National

This directory contains the setup programs to install National Instruments GPIB card drivers. There are two sub-directories in this directory.

> **NOTE**: Run these setup programs only if the National Instruments GPIB card is not already configured for the PC.