Standard Data Format

Technical Data

All of Hewlett Packard's new dynamic signal analyzers store data to disk in Standard Data Format (SDF). When used with the PC-based SDF Utilities included with these products, customers can:

- Share data between instruments
- View data graphically on a PC
- Annotate displays
- Print and plot data
- Convert old data file formats to SDF
- Convert to third party file formats
- Access SDF data from a C program

## SDF and PC-Based Utilities Greatly Increase Instrument Flexibility

Data Compatibility Between Instruments

Moving data between analyzers is simple. Just save the data to the built-in floppy disk and then insert the disk in a different analyzer. For example, move data from the HP 35665A instrument to the PC-based HP 3566/67A multi-channel analyzer. Since the file format is the same, any 3.5 inch disk can be transferred between analyzers.

Data can be moved from low cost analyzers to more expensive full-functioned analyzers for further analysis such as curve fitting. Or sometimes you may just want to compare data taken on one analyzer with new data taken on a different analyzer. Standard Data Format makes it easy.
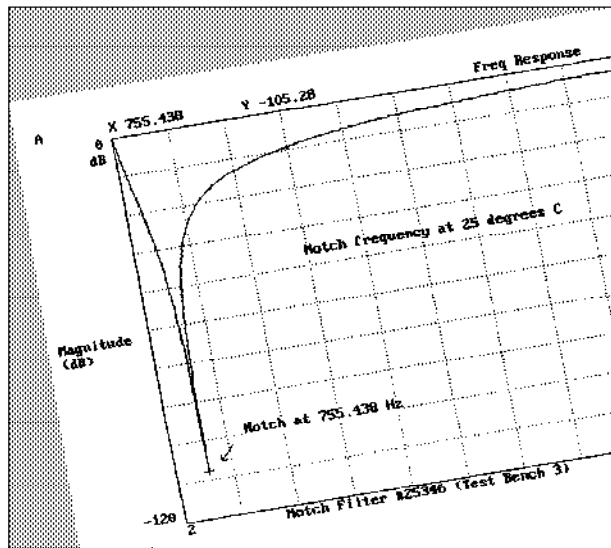
Your Data Never Becomes Obsolete

The data taken with any analyzer may be important long after the analyzer is obsolete. Since all new HP dynamic signal analyzers and some RF analyzers will support Standard Data Format, you will always be able to work with old data. By inserting the old disk into the new analyzer you can compare the old data to new data - compatibility is guaranteed. You can even use features of the new product that didn't exist on the old analyzer (there may be some exceptions).
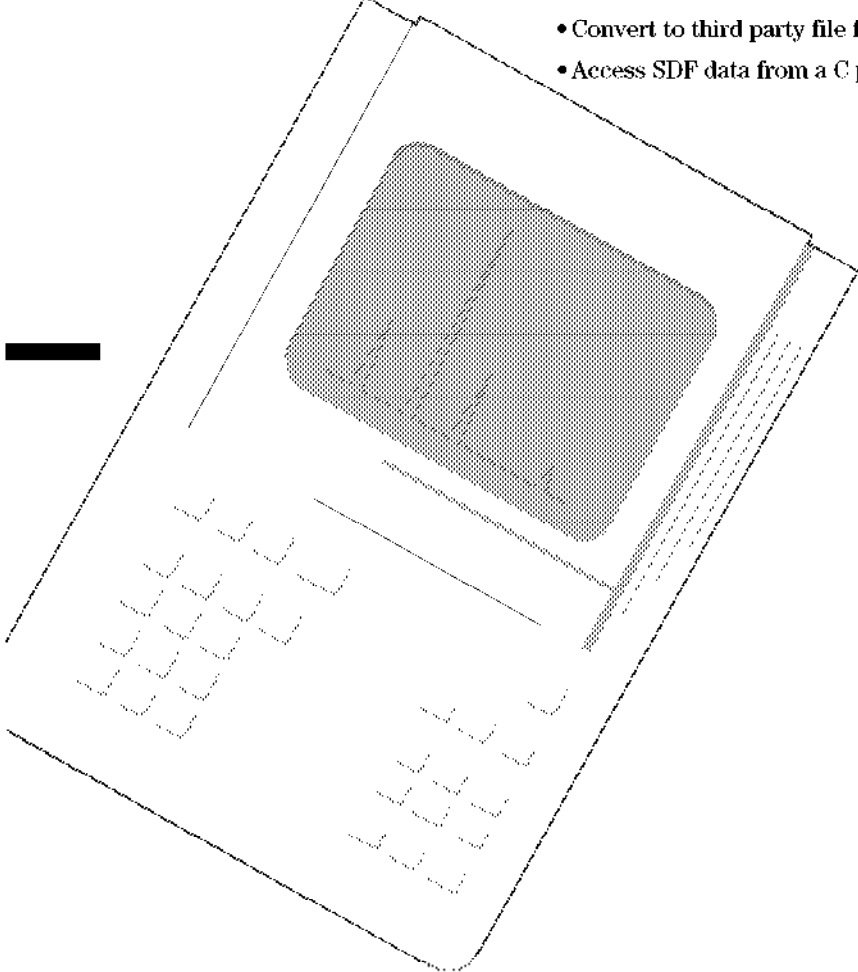
View Data Graphically on a PC

Included free with each new HP dynamic signal analyzers and some RF analyzers is a PC-based utility that lets you look at 1, 2, or 3 traces of data in various formats. This data could be any combination of SDF data from an analyzer, data taken with an HP 3562A or 3563A, or ASCII data. The data viewer is extremely powerful in its display capability and has built-in Help text.

Add custom annotation anywhere in the display area.

Compare data with multiple displays and markers.

Display Mode
- 1, 2, or 3 traces simultaneously
- Overlaid traces
- Waterfall (Only one complete map can be displayed)
- A versus B (Point by point x-y plot of trace A y data versus trace B y data)

Y Coordinates
- Real
- Imaginary
- Mag
- LogMag
- dB
- dBm
- Phase
- Unwrapped Phase
- Nyquist (polar)
- Nichols

X Coordinates
(Units depend on data.)
- Log
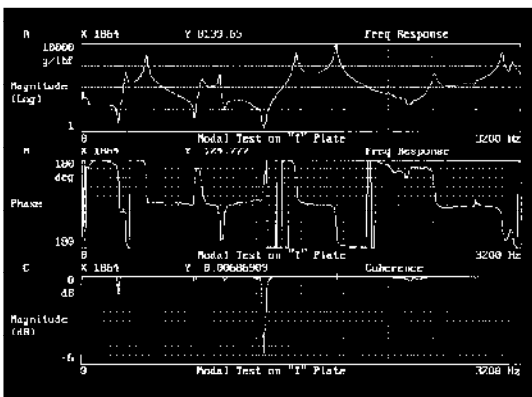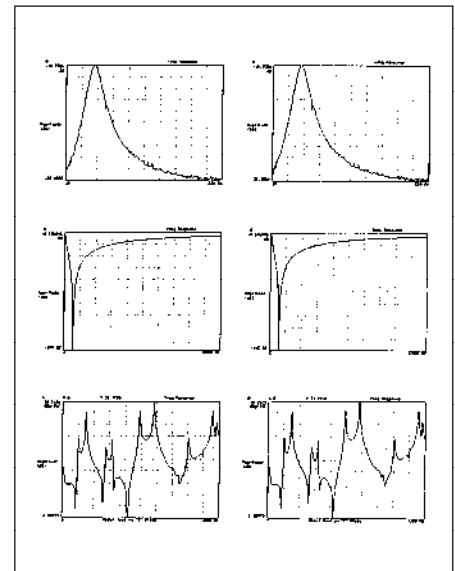- Linear

Maneuver Quickly with Hot Keys or a Mouse

Markers and x-axis zooming or scrolling are easily controlled using "hot keys" or a mouse. This lets you quickly find and display the important part of a trace.

Making Annotated Prints and Plots

For many applications the finished product is not just the measured data, but an annotated print or plot. The data viewer supports both graphical and text annotation anywhere in the display. For example, text comments can be made with arrows that point to part of the trace. The measurement type, resolution bandwidth, date, point and direction (for modal data), or a user created title will automatically be printed below the trace display.

All displays, including annotation, can be printed or plotted to any PCL printer, HP-GL plotter, or to a file. You can even do more than 12 plots per page in vertical or horizontal format.

Plots or prints can be made while looking at the data viewer. Or utilities are included for unattended batch printing or plotting. By using the batch mode, whole sets of measurements can be automatically printed or plotted using just one command. Since the plots are done from a PCd, there is no need to tie up your analyzers. This saves you time and money.

Print or plot multiple traces per page in vertical or horizontal formats.
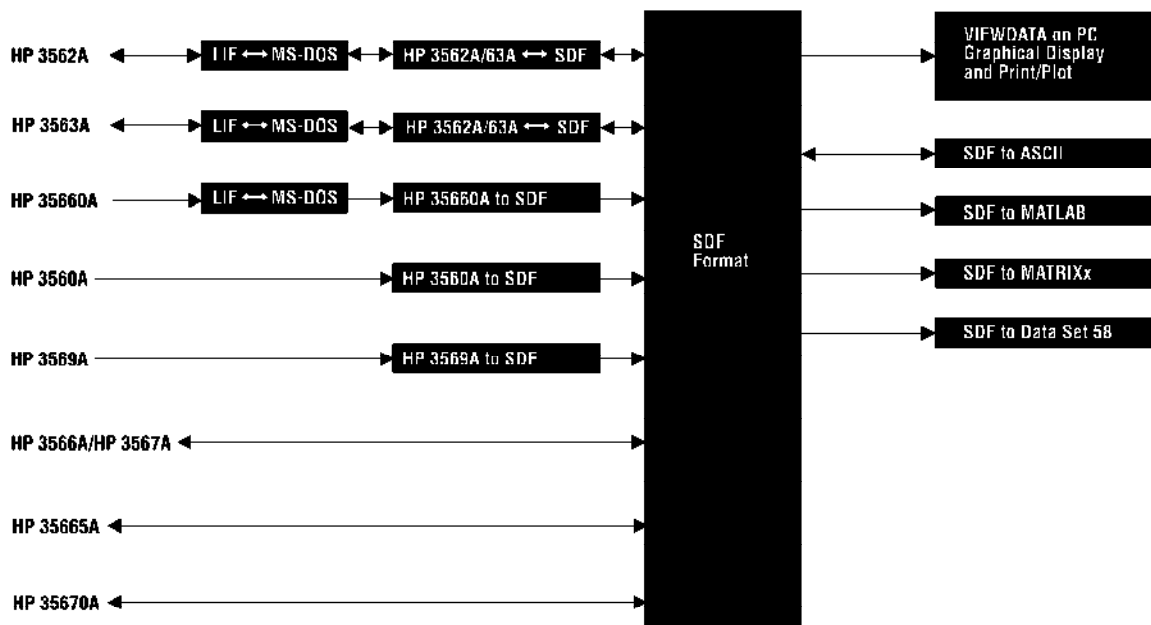
Free PC-Based SDF Utilities

In order to further increase the benefits of SDF, a set of SDF utilities is included free with the HP 3560A, 3569A, 3566A, 3567A, 35665A, 35670A, 3588A, 3589A, 89440A and 89410A.

Extend Benefits of SDF to Other Analyzers by Format Conversion

The benefits of SDF are too good not to extend to products created before SDF existed. Free utilities are included to convert old formats to SDF. This is true even of products that stored data to LIF formatted disks instead of MS-DOS® disks. This allows data taken with the portable HP 3560A or HP 3569A to be moved to the HP 3562A for curve fitting. Or old data taken with the HP 3562A to be compared to new data taken with the HP 35670A.

File Format Conversion Utilities
- LIF disk to MS-DOS disk
- MS-DOS disk to LIF disk
- HP 3562A to SDF
- SDF to HP 3562A
- HP 3563A to SDF
- SDF to HP 3563A
- HP 35660A to SDF
- HP 3588A to SDF
- HP 3589A to SDF
- HP 3560A to SDF (since the HP 3560A does not have a built-in disk)
- SDF to SDF
- Interpolate to a specified number of lin/log evenly spaced points (Used for performing math or curve fitting of swept sine data.)
- Change the number of lines of resolution (Used to look at data on an analyzer with fewer lines of resolution.)
- Interpolate to new start and stop frequencies (Used for perfectly aligning frequency bins on analyzers with differing spans.)

SDF Compatibility Chart

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Conversions to Third Party Formats

To help you use measurement data with third party application programs, utilities are included to convert to their file formats.

File Conversions to Third Party Formats

- SDF to MATLAB (A general purpose DSP and graphics package from The Math Works Inc..)
- SDF to MATRIXx (A linear systems analysis package from Integrated Systems, Inc..)
- SDF to Data Set 58 (An industry standard format used by Structural Dynamics Reasearch Corporation.)
- SDF to ASCII (useful for exporting data to Microsoft's® Excel or Lotus® 123®.)
- ASCII to SDF (Useful for importing data created by a user's custom program.)

Access SDF Data from Microsoft® C Program

For customers who want to create their own C programs that access data saved in SDF files, C libraries are included to make accessing the data easy. A complete detailed definition of the SDF file format is also included.

Note: All data is subject to change. New enhancements may be added to the Standard Data Format utilities at any time.

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