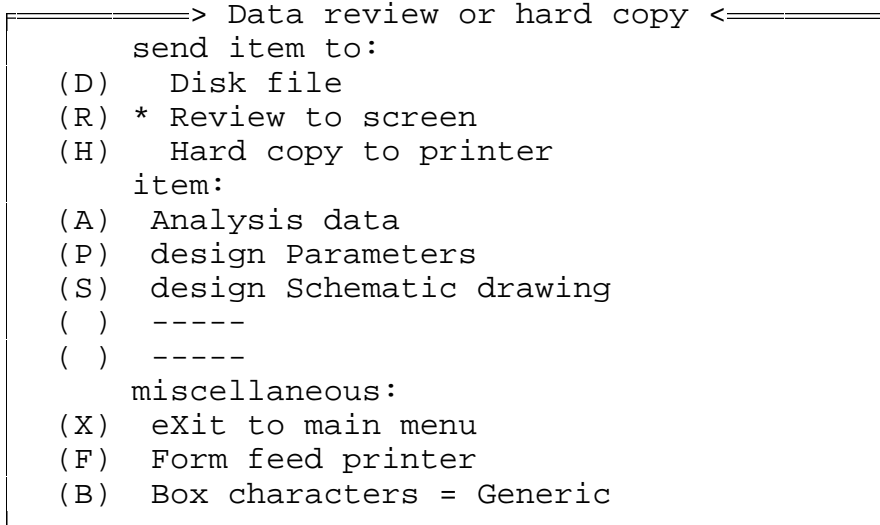
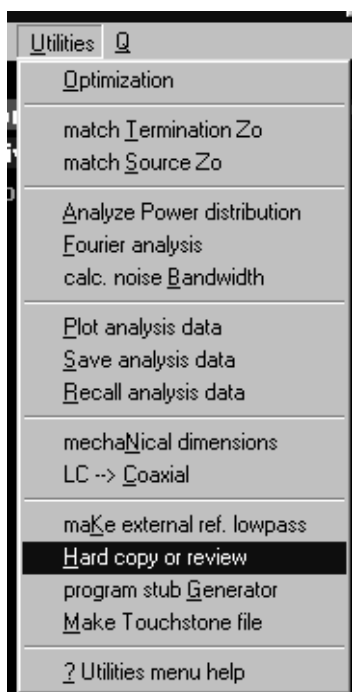


Design documentation and review

Once a design has been finalized, it is usually necessary to document the design and all of the data involved. The data is usually sent to a printer, but it is also desirable to be able to send this same data to a disk file for the purpose of including it into documents. In addition, it should also be possible to review the data to the screen. The hard copy option on the Utilities menu provides all these features.

When the hard copy option is selected, This menu appears:



<u>b</u> ack	<u>D</u> isk	<u>R</u> evue	<u>H</u> ard copy	<u>A</u> nalysis	<u>P</u> arameters
?-h <u>e</u> lp	<u>S</u> chematic	<u>N</u> -dimension	e <u>X</u> it	<u>F</u> orm feed	<u>B</u> ox char

Selections can be made using the selection dialog box below the window, by pressing the key letter or directly on the window menu using your mouse.

The first three options select where the data will be sent. The "*" asterisk identifies the destination. Initially, the destination will be the CRT screen so that the data may be reviewed.

```
send item to:
(D)  Disk file
(R)  * Review to screen
(H)  Hard copy to printer
```

Disk files generated will have the same name as the active filename shown on the main control menu but will have one of these unique extensions:

```
FILENAME.1HC - Analysis data
FILENAME.2HC - Design parameters
FILENAME.3HC - Schematic drawing (as drawn by the circuit editor)
FILENAME.4HC - Some appropriate optional item
FILENAME.5HC - Mechanical dimensions for transmission line designs
```

When a disk file is written, its file name will be displayed.

```
|          item:      writing: default.3HC          |
```

Several other documentation disk files are generated directly by other modules. For more information, see the section on the module involved. These are:

```
FILENAME.0HC (.zeroHC) - L-C tubular —> coaXial converter
FILENAME.AHC through FILENAME.ZHC - Power analysis module
```

What is to be documented is selected from the list of items displayed in the middle of the menu. The first three items are universal and apply to virtually all designs.

```
      item:
(A)  Analysis data
(P)  design Parameters
(S)  design Schematic drawing
```

Two other optional items may be selected that are relative to specific design types. When no additional options are appropriate, the options are blanked out.

```
( )  _____
( )  _____
```

When appropriate, the items could be any of the following:

```
mechanical dimensions
Individual section parameters
TEM design data (Zo and Norm. caps.)
3 dB Loading bandwidth
Line and Stub Impedances
Coupling coefficients
```

Printing schematic drawings

(B) Box characters = Generic

The character set used for drawing schematic diagrams to the screen is the extended IBM box drawing character set or Windows "OEM" font. This font draws perfect connecting lines for the schematic diagrams. These characters are probably not compatible with your printer. Printers intended for Windows use will usually not print these characters properly, an alternative set that, although crude in appearance, will print on any printer. The extended character set may be substituted for printing to the screen or to a disk file by selecting the (B) Box characters = Extended option on the menu. When printing to the printer, only the "Generic" character set is used. For a comparison of the two character sets, look at chapter 5, the section on files and compatibility with other software.

Disk files using the extended characters can be viewed by older DOS text editors. Word processors can also be used so long as they support the characters and have a fixed pitch. Proportional spaced fonts will not allow the lines between elements to align. A command line utility is provided (IBM2ASCII.EXE) that will convert these extended characters to ASCII (Generic) equivalents on an existing file if needed.

(A) Analysis data

Probably the most useful feature of the "Review to screen" destination is the ability to display the analysis data presently in memory. For this reason, review to screen of analysis data is the default combination of "item" and destination. This calls the same scroll window as used by the power analysis module and the main analysis module when using the "Tabulated" mode. This allows the analysis data to be scrolled up or down by line or page. The assumed component "Q" and delay mode used for the analysis run are also displayed. The far right column of data will be the same data displayed by the (X)-_____ option of the graphics plot module. This will be complex input impedance of the filter in rectangular form. It could also be voltage, current or loss from the power analysis program.

Inductor Q=150 Cap. Q=1500 Trans. Q=1000 (Fast delay)						
Frequency (MHz.)	Rtn. loss (dB)	Atten. (dB)	Delay (nSec)	Phase (Deg.)	Impedance R +-jX	
80.000	0.070	103.473	4.665	-960.086	2.61	125.81
80.268	0.072	102.504	4.732	-959.628	2.69	127.89
80.537	0.074	101.525	4.870	-959.157	2.78	130.03
80.805	0.076	100.537	5.015	-958.673	2.87	132.23
81.074	0.079	99.538	5.166	-958.174	2.96	134.50
81.342	0.081	98.529	5.324	-957.659	3.06	136.84
81.611	0.084	97.509	5.489	-957.129	3.16	139.26
81.879	0.087	96.478	5.663	-956.581	3.27	141.76
82.148	0.089	95.434	5.846	-956.016	3.38	144.35
82.416	0.092	94.379	6.038	-955.433	3.51	147.02
82.685	0.096	93.311	6.239	-954.830	3.63	149.79
82.953	0.099	92.230	6.451	-954.206	3.77	152.66
83.221	0.102	91.135	6.675	-953.561	3.91	155.63
83.490	0.106	90.027	6.911	-952.893	4.06	158.71
83.758	0.110	88.903	7.160	-952.201	4.22	161.91
84.027	0.114	87.765	7.423	-951.484	4.39	165.23
84.295	0.119	86.610	7.702	-950.740	4.57	168.69
84.564	0.123	85.439	7.997	-949.967	4.77	172.29
84.832	0.128	84.251	8.310	-949.164	4.97	176.04

Printing control

***** NOTE! *****

It is very important to realize that printing is done only when the "Form Feed" button is pressed, when you exit from the hard copy window or when a single page (piece of paper) is full. This allows more than one "item" to be put on a single sheet of paper. If you are not aware of this, you will select an item to be printed and wait wondering why nothing is coming out if the printer!

Merging plots into word processor documents

PCFILT can also generate a file that is compatible with most graphic drawing programs. It can be used to print analysis plots from these files or to merge plots into word processor documents. A file having the same filename as shown on the main control menu with the ".PCX" extension (such as DEFAULT.PCX) can be generated. The feature can be found on the menus of the modules that display graphics.

Printing graphic screens

The analysis plot window, Fourier analysis and coaxial tubular windows have the ability to screen dump directly to the printer. The feature is available on the coaxial and Fourier analysis screens from the top menu **Documentation** option. From the plot screen it can be found under the **Transfer** option.