Technical Support
Knowledge Center Open

35670A: Transferring Display Data Across GPIB

KEYSIGHT TECHNOLOGIES

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Assuming the Keysight 35670A measurement is set up and has been made via the front panel interface or other programming, the programming steps required for transferring the 35670A display data are as follows:

1. Set format to real,64
2. Set active trace. CALC:ACT A|B|C|D|AB|CD|ABCD
3. CALC<n>:X:DATA? Get X data
4. Read binblock
5. Remap data so there are the same number of X points and Y points
6. CALC<n>:DATA? Get Y data
7. Read binblock
8. Combine X and Y data into x,y coordinate data pairs
9. Plot.

Number 5 works as is, but begs for more explanation. Each display point is represented as an X,Y coordinate pair. An undocumented "feature" of the 35670A is that it returns more X data points than you have set up for lines of resolution, while all you see on the display is one point per line of resolution continuously connected. The extra data is aliased data that is not used in the display. Unfortunately, the programmer has to take care of this data when the trace data is transferred across GPIB. When you setup the 35670A for the following resolution values, the actual X array sizes read as follows:

Resolution Setting	CALC<n>:X:DATA? Array Size
400	513
800	1025
1600	2049
max	4097

The maximum number of X data points returned from any possible 35670A setup is 4097. Two setups that give this are setting up for a 1600 line resolution FFT and looking at the time capture data or setting up the display format to all lines on and the input front end setup to anti-alias off.

Keysight VEE, C++, and LabView all understand IEEE-754 binary block data (binblock). Visual Basic does not, but the Keysight Intuilink I/O object library module makes this easy with VB. IntuiLink SDK is the library and it is installed with any of the free IntuiLink instrument drivers or can be obtained from factory support.

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