

instruNet World can digitize directly To Ram, or directly To File on disk.

Digitize directly Into RAM if your RAM is large enough

RAM based digitizing is easier, since data in RAM can easily be saved in different file formats, is easily loaded back into RAM from disk to be saved to disk in another file format, and supports faster digitizing rates. Due to these advantages, we recommend digitizing directly To Ram unless, your RAM is not large enough to hold the data. To do this, set the Digitize Into [or Save Data] field to "To Ram Buffer". Also, when digitizing into RAM, we recommend that you digitize one Scan (set the No. Of Scans field to 1), and then use the Points Per Scan field to determine how long you digitize. If you digitize multiple scans directly ToRam, data is overwritten in the RAM buffer and lost. After digitizing into RAM one can press the Save button in the Record page to save the data in the RAM buffer to disk in the format specified by the File Type field. To transfer data to another software package, one typically sets File Type to "Text Merge". This causes a file named "Excel Waveform Data.txt" to be saved to disk that is easily opened by a spreadsheet, with each channel in its own column. To save RAM based data in a compact fast format, we recommend "Binary Merge". To calculate the amount of RAM used to hold your data, multiply the number of points, by the number of channels, by 4bytes-per-point. For example, 3 channels of 10K points each would consume 120KBytes of RAM ($120KB = 4 * 3 * 10000$).

Digitize directly To File for big data, yet figure out how you are going to process that huge file on disk before you digitize.

Digitizing directly To File is a very different ballgame. Here, you can have many scans (e.g. set No. Of Scans field to 10000), and the amount of data that is digitized is limited by the amount of free space on disk. To do this, set the Digitize Into (or Save Data) field to "To File", and set the File Type field to "Binary Merge". Then, when the Start button is pressed in the Record page, it will prompt you for a file name before digitizing, and send the data directly to disk. The main issue, when digitizing directly To File is, "How are you going to deal with all that data on disk?". instruNet World will not allow you to load it into ram (since file based data is typically too large to fit into ram) and then save it back out in another file format. It will only allow you to scroll through and view the data (it automatically pages in segments from disk, as needed, for display). And to digitize To Disk quickly, you need to use the Binary Merge File Type, which interlaces all channels into one file, in 32bit floating point form. There is physically no other way to spool to disk at fast rates without saving in this manner. Therefore, to process a large disk based stream, one typically needs a software package that interprets 32bit floating point interlaced data. For details on this file format, please see Application Note #48.