Subject: Memory mode / file mode on recorders

NASE8440-02-00

Several save modes are available on SEFRAM 8440, DAS600 and DAS1400 recorder. This application note only refers to memory mode and file mode; it will enable to determine their differences and their respective operation cases.

Characteristics of each mode

Table of characteristics

	Memory	***Memory size***	***Life-time of the save***	***Max sampling rate (internal clock)***
Memory mode	***Internal memory (Blocks)*** ***+*** ***(Optional) Hard disk (internal) USB key, ... (external) Real-Time save***	***Limit: 32Msamples (64Mb)***	***Internal memory (blocks) Erased when the recorder is switched off*** ***Hard disk Unlimited***	***Internal memory (blocks): 1,2Msamples/s (number of channels : unlimited)*** ***Internal hard disk: 1,2Msamples/s (bin) 1,0ksamples/s (ASCII)*** ***External : See features of the save support***
File Mode	***Internal hard Disk*** ***External: USB Key, external HD***	***Internal: 40Gsamples (80Gb) (may be different according to the recorder)*** ***External: See features of the save support***	***Unlimited***	***Internal hard disk: 1,2Msamples/s (bin) 1,0ksamples/s (ASCII)*** ***External : See features of the save support***

Real-time save: is the save, on real time, of curves on hard disk or external support. It is a typical type of file mode save but it can also be activated in memory mode (optional).

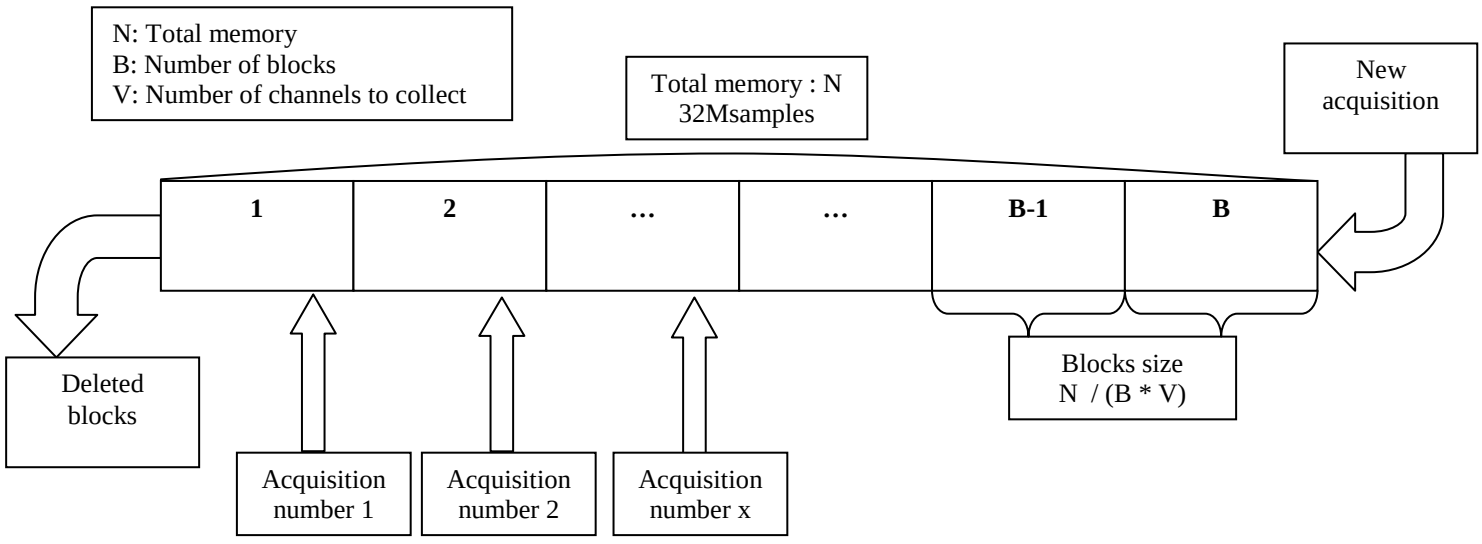
Memory size: represents the storage capacity of data from different memories.

Their differences

Memory Mode:

Save is necessarily executed from the internal memory. It is a 32Msamples memory that can be segmented into blocks, 128 blocks max. (250ksamples per blocks). An acquisition never exceeds the block size in which it is saved. Each new acquisition positions itself on the first bloc that is free (in increasing order). When all blocks are full, the first blocks are erased and new acquisitions come on the last blocks. This block memory is reset each time the unit is turned-off. With this mode (without acquisition on hard disk), it is possible to sample quickly many channels in a short time.

RAM memory partitioning

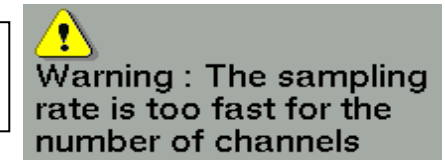


Memory mode also enables to perform a real-time acquisition on unit internal hard disk (or on an USB key). In this case, it is possible to select the file size (in amount of samples), so the recorder shows the corresponding save time according to different set parameters. Nevertheless, each acquisition is limited by the block size and the max. sampling rate (refer to table of characteristics).

File mode:

Save is directly performed on internal hard disk of the recorder or on an USB key (no blocks system). Memory size is potentially high: it depends on the space available on the support. It is possible to select the file size (in amount of samples); so the recorder shows the save time corresponding according to different parameters. Sampling rate can be limited by the data writing time on hard disk (refer to table of characteristics). This mode also enables to create a supplementary file with a different sample rate. If some channels represent low signals, it is possible to save them in the secondary file, with a low sampling rate to avoid an oversampling and to save useless data.

The recorder automatically shows if baud rate on the support is exceeded. Therefore, it is recommended to adapt the sampling rate or to reduce the number of saved channels.



Operations

Because of their differences, these two modes are used in different applications.

Memory mode without real-time save on hard disk:
- Possibility of sampling many high speed channels in a short time.

Whatever the mode selected, it is possible to save the file on a support after acquisition.

Memory Mode with real-time save on hard disk:
- Capture and save of defaults on a small-size file.

File mode:
- Constant save of signals on a large file. Two sampling rates can be set for different channels.

It is not recommended to create voluminous files because their reading can be long and difficult. For example, it takes 5mins to open an 85Msample-REC file with Flexpro software.

Product link: *http://www.sefram.com/wwwFR/F_quick_search.asp?st=8440*