

CHAPTER 2

MENU STRUCTURE AND USE

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MENU MODE

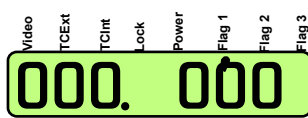
GENERAL STRUCTURE OF THE MENUS

The NAGRA V incorporates a system of menus similar to the "tree" of directories and sub-directories on the hard disk of a PC. The functions that are available via the menu mode are in principle settings of the NAGRA V rather than operations that need to be done frequently during normal use of the machine in the field. Menu viewing and modification is made using shift + the grey push-button keys located on the front panel, and the 8 digit LCD display.

In this manual, all terms referring to MENUS will be written in **BOLD ITALIC PRINT**. For example: select **MANUAL** in the **Pow. Delay** menu.

NAVIGATION THROUGH THE MENUS

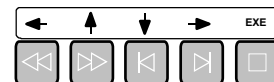
Navigation through the menus is relatively straightforward. There are 22 principal menus, each of which has its sub-menus, which will be explained below.





The SHIFT key needs to be held down to navigate through the menus. If it is pressed twice in quick succession then the "FLAG 1" comma will light

on the display to indicate that the shift key is locked on and need not be held down. Pressing the shift key again or moving the main function selector will release it. Once the menu is displayed, navigation through the menus is made by using the transport keys combined with the signs above the keys.

↑	To move up
↓	To move down
←	To move left
→	To move right
EXE	To execute a menu
Yellow bar	Stored in template
Red bar	Default settings
Blue bar	after SET LOST
Folder_A	Sample text



When the user accesses a menu position using the right arrow key, the display will indicate the currently selected setting / value. To choose an alternative, simply display the desired choice using the UP / DOWN arrow keys, and press the EXE key to confirm the selection.

Note:  means press the EXE key. All text in blue print i.e.  must be considered as sample text.

DISPLAYING AND ACTIVATING MENUS

Menus written in CAPITAL letters may be executed. All menus written in lower case characters (or a mix of upper and lower case) are menu tree positions that are not executable. Example: The "Template" cannot be executed, but the "RECALL X" can be executed. When the EXE key has been pressed a "beep" will be heard (either on the speaker or on the headphones depending on the present setting of the beep function) to indicate that the selection has been correctly accepted and executed.

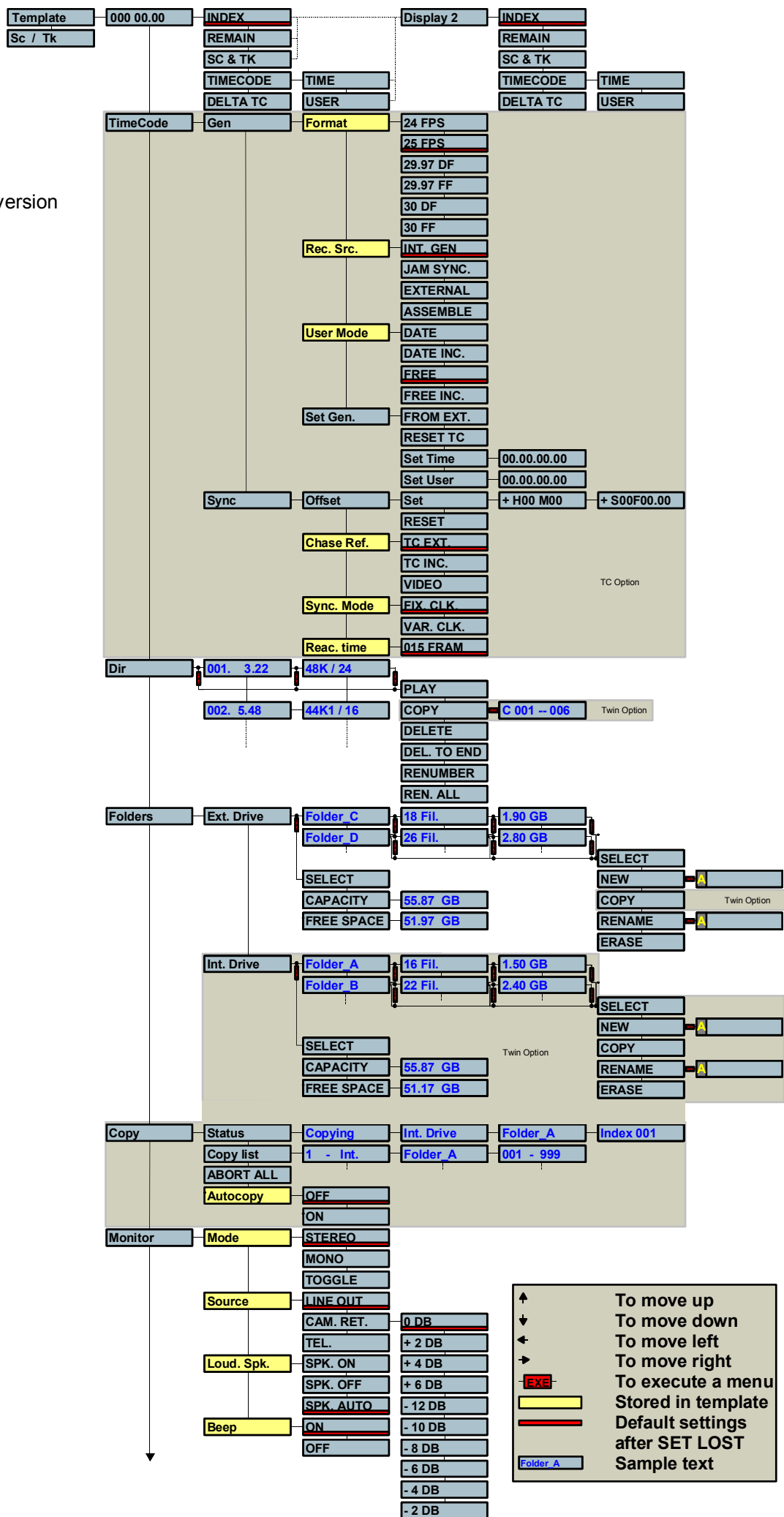
If the display remains on the selected choice after EXE has been pressed, this indicates that the feature has NOT been executed for some reason. This could be because it is not an executable function or that the machine will not allow it to be selected due to other settings.

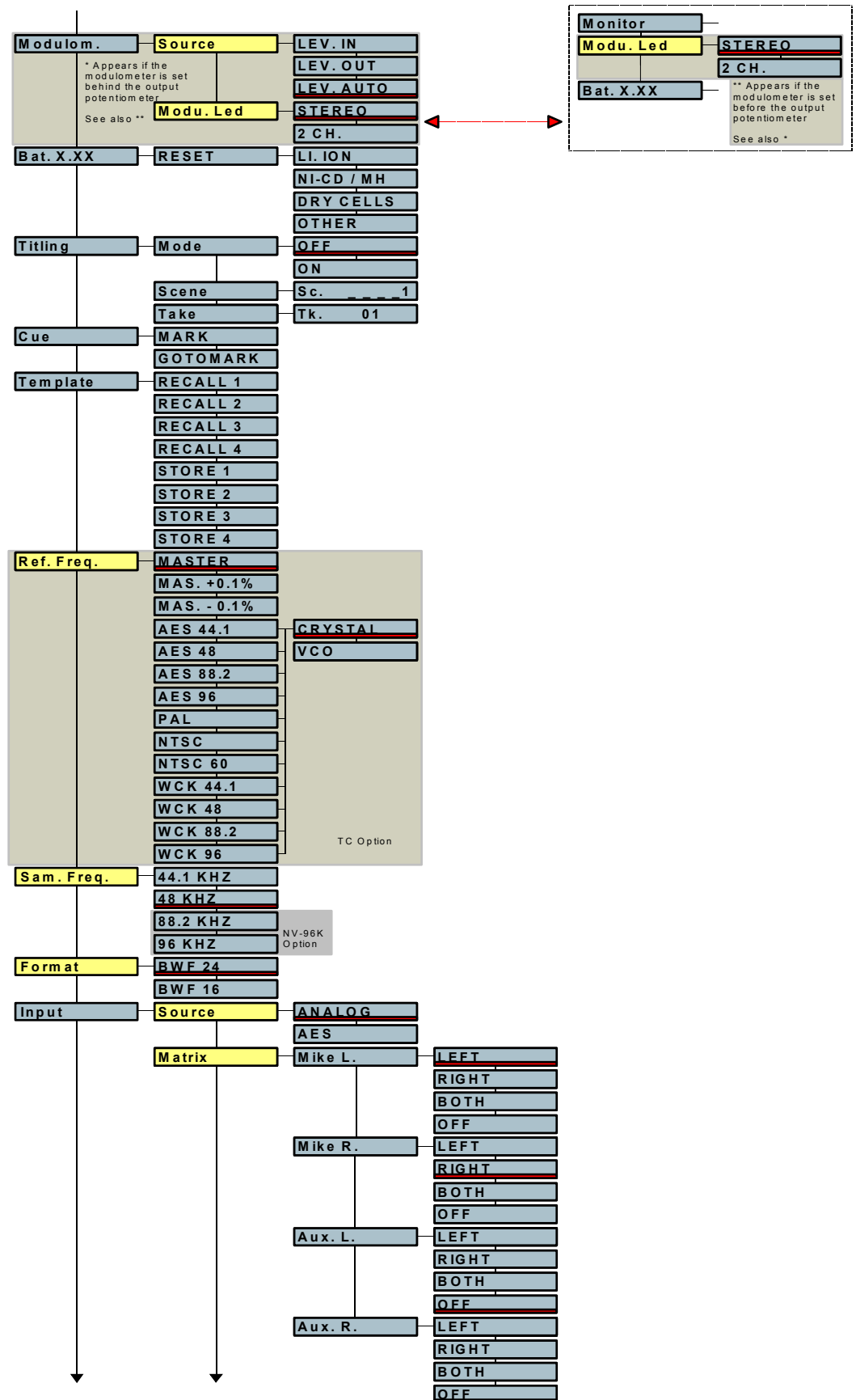
SCROLLING THROUGH THE SETTINGS

Pushing down the BAT switch briefly will scroll through the current menu settings of the machine. If the BAT selector is briefly pushed down twice then the time code and synchroniser settings will be shown assuming the machine is equipped with the internal time code option.

TREE

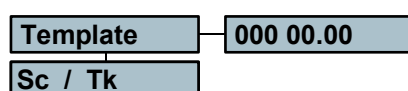
Software version
V3.10





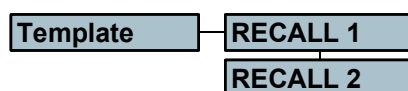
	Mike Lim.	OFF	
	Limiter Option	LEFT	
		RIGHT	
		BOTH	
Output	W. Length	24 BITS	
		16B. DITH	
	MS Dec.	OFF	
		ON	Mid. Gain
			0 DB
			-1 DB
			-2 DB
			-3 DB
			-4 DB
			-5 DB
			-6 DB
Line Pot.	POT. OUT		
	POT. IN		Side Gain
	POT. IN - L		0 DB
	POT. IN - R		-1 DB
	POT. OUT + S		-2 DB
	POT. IN + S		-3 DB
	POT. OFF		-4 DB
			-5 DB
			-6 DB
Prerec.	OFF		
	ON	1 SEC.	
		3 SEC.	
		5 SEC.	
		10 SEC.	
		15 SEC.	
		20 SEC.	
Auto Rec.	OFF		
	ON	Threshld	-6 dB
			-12 dB
			-18 dB
			-24 dB
			-30 dB
			-36 dB
		Trig. Dly	0.0 SEC
			0.1 SEC
			0.3 SEC
			1.0 SEC
		Stop Dly	NONSTOP
			5 SEC
			15 SEC
			30 SEC
			1 MIN
			2 MIN
			5 MIN
			15 MIN
Disk	Reformat	Ext. Drive	FAT 32
		Twin Option	FAT 16
			Int. Drive
Reel Nb.	Mode	ON	FAT 16
		OFF	
	Current	Curr. XXX	
	Next	Next XXX	
Other	Date Time	Time	T XX.XX.XX
		Date	XX.XX.20XX
	Pow. Delay	MANUAL	
		2 SEC	
		5 SEC	
	PTT lev.	4.4 VOLT	
		1.55 VOLT	
	Software	V X.XX	DV V X.XX TC V X.XX
		DD-MM-YY	
	RESET		

MENU SHORTCUTS



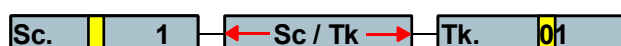
Pressing the left arrow key, from the main display position, will give immediately access to the **Template** menu or the **Sc / Tk** menu.

Template shortcut



From this position moving to the right will go directly to **RECALL X** menus. See also the **Template** paragraph.

Sc / Tk shortcut



From the main display, move left (Template) and then down to access the **Sc / Tk** menu. Moving left or right from here gives access to the Scene or Take number respectively. Once attempted the **Sc** or **Tk** menu, the first digit starts flashing. Pressing the up arrow key gives directly access to number selection. Pressing the down arrow key gives directly access to character selection.

Note: If a **Sc / Tk** name, number is entered using the spaces, once executed, they will disappear. Example: Entering for **Sc** "A_12_" and execute will show afterwards "A12".

Reset TC

Moving to the **Time Code** menu and pressing the **EXE** key selects automatically the **RESET TC**. Once **RESET TC**. Is on the display, press again the **EXE** key to reset.

Speaker On, Off, Automatic

By holding the **SHIFT** key and pressing the **BATT.** switch will change the status of the speaker.

Go to mark

From the main display, hold the **SHIFT** key and press the **EXE** key returns to the mark position of the index.

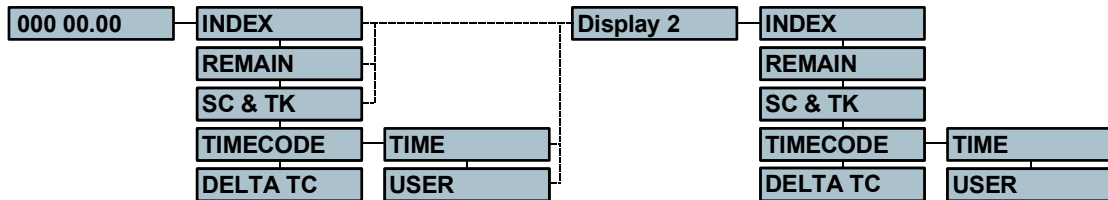
Battery selection forced to OTHER

Hold the **BATT.** switch an turn on the machine.

This solution can be used in the case that the machine doesn't switch due to the voltage level of the battery or external power. The machine ignores the settings in the **Bat. X.XX** menu and automatically selects the **OTHER** position which gives the largest possible voltage range. Switching off an on again (without pressing the **BATT.** switch) selects again the standard setting.

DISPLAY SELECTION

This is the first line of the status display, and will always indicate the pre-selected mode. Moving to the right and scrolling, the user can see and select the different display modes possible. This selection is automatically displayed when the machine is switched on or after a scrolling of the selected settings has been completed. The possible selections are **INDEX**, **REMAIN**, **SC & TK**, **TIMECODE**, and **TC DELTA** (the TC displays are only available if NV-TC option is installed).



Index

When this position is selected, the display will indicate the current index number followed by the time from the beginning of the present index, which is indicated in h.mm.ss. The index number will automatically be incremented by "1" each time the machine is put into record mode. This display can be used when the machine is in all operational modes. The index number may be incremented without coming out of record by simply pressing the **EXE** key during the recording to create a new index number.

Remain

This indicates, in hours and minutes, the remaining recording time available on the HDD according to the current settings of the machine (Sampling frequency, bit rate etc).

Sc & Tk

When **Titling** is turned on, the **Scene** and **Take** naming are automatically added in the Meta-Data of the recorded file. Every time a new record is made, the **Tk** will increment by 1. If during record, the **EXE** key is pressed this to start immediately a new record, the **Tk** will not be incremented. This is in the case that the previous recording was considered as a false start. Once attempted the **Sc** or **Tk** menu, the first digit starts flashing. Pressing the up arrow key gives directly access to number selection. Pressing the down arrow key gives directly access to character selection.

Time Code

This gives access to the time code displays (only if the machine is fitted with the NV-TC option). When moving to the right from this display, the time or user portion can be chosen for display.

TC Delta

This is the dynamic difference between the external time code reference and the time code of an index while the machine is in the chase synchronise mode.

Display 2

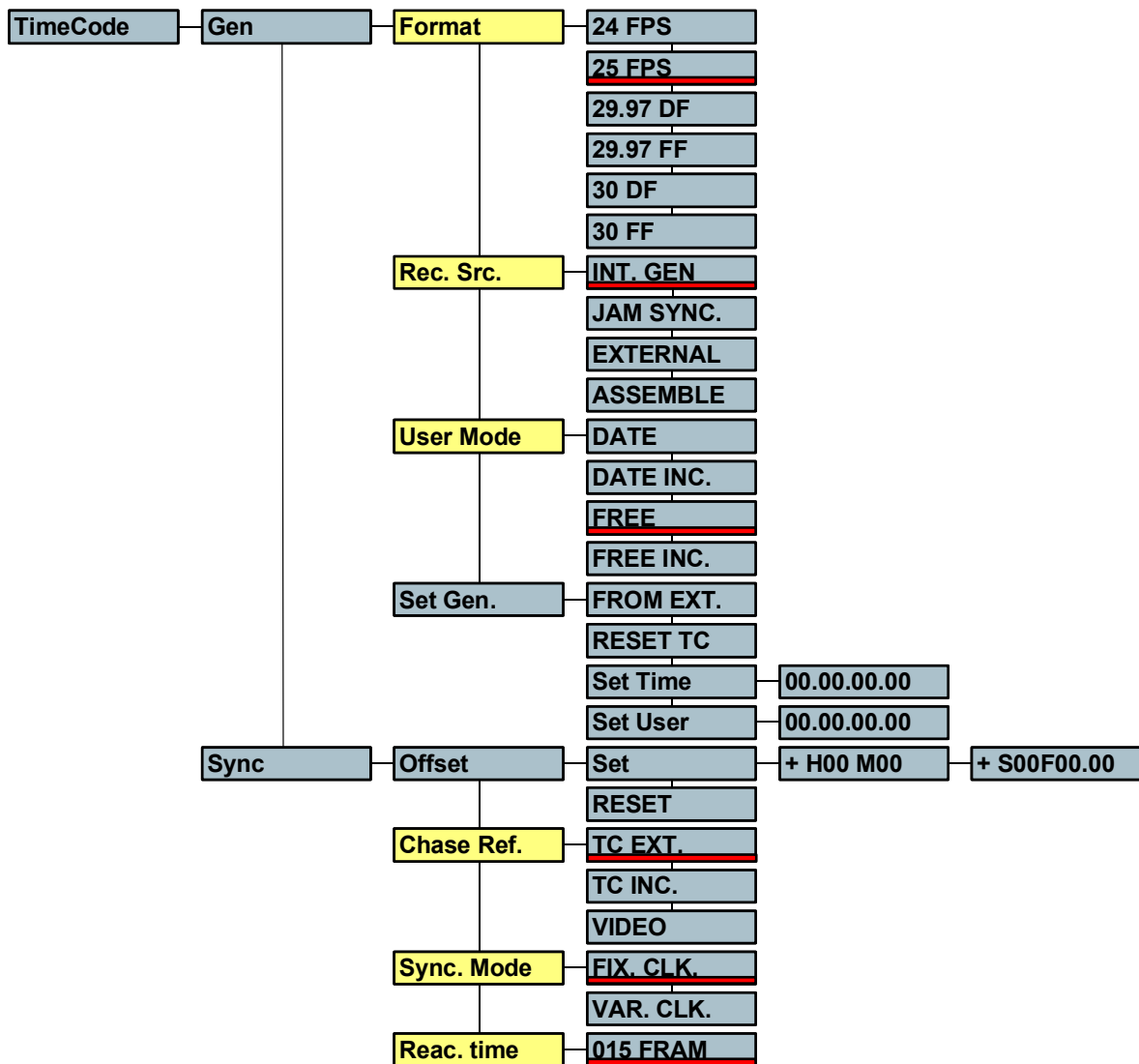
The second display section allows the user to program alternative display information that can be briefly accessed each time the **"SHIFT"** key is pressed. For example if **INDEX** is the standard display, the remaining time may be briefly seen at any time. Releasing the **"SHIFT"** key returns to the initial display.

TIME CODE SELECTION

(The Time code menus display will only be indicated if the machine is fitted with the NV-TC time code option # 70 31120 000)

This menu allows the access and setting of all the time code options of the machine. It permits the setting of the internal time code generator, for both TIME and USER data, as well as frame rate selection and the time code mode. It also allows the choice of the time code to be recorded, as well as access to the internal time code synchroniser features, including modes of operation as well as external references to be used.

The currently selected time code menu settings can be seen on the display by pressing the **BAT** switch twice in quick succession.



Gen

When the right arrow is pressed from the **TIMECODE** position, access is given to all the internal generator features. Hence "in-the-field" access to setting of all features concerning the internal time code generator.

If the down arrow is pressed from this point, the display will change to **SYNC**, which allows access to all the settings of the internal time code synchroniser. Pressing the right arrow from the **GEN** position will move to **FORMAT** allowing all the different operating modes and features of the internal generator to be set.

Format

When the right arrow is pressed from the **Gen.** position the operator can select the frame rate of the internal time code generator. The internal time code generator can generate all presently used formats i.e. 24, 25, 29.97 and 30 (the latter two either with or without drop frame). The first value indicated is the presently selected choice. The default value, automatically selected if the memory has been lost, is 25 frames per second.

Rec SRC

If the down arrow is pressed from the **Format** position the display will show **Rec.Src.** This is the source selection for the time code to be recorded on the disk. It can be set between **INTERNAL**, **JAM SYNC**, **EXTERNAL** or **ASSEMBLE**. If set to the external position, then a longitudinal SMPTE/EBU time code must be fed to the time code LEMO connector on the right side of the machine in order to be recorded. The TC.EXT. flag will light on the display as soon as an external time code is present on this connector.

If **INTERNAL** is selected then the internal time code generator of the machine will be recorded.

In the **JAM SYNC** position, the internal time code generator of the NAGRA V will automatically be set as soon as a valid time code is connected to the time code input connector. If the cable providing the external time code signal is left connected to the machine, a new jam sync will be performed automatically as soon as the machine detects a difference between the internal time code generator and the external signal of more than 2 ms. In order for the jam sync function to operate when the cable is connected, certain conditions are verified before the set is made. The incoming TC must be at the correct speed ($\pm 1\%$) for 10 consecutive frames. Frozen or reverse time code will prevent a jam of the generator from occurring.

If **ASSEMBLE** is selected each time the machine is put into REC mode a full time code assemble will be performed. This is done by calculating the time code value of the last frame of the previous index (taking into account the sampling frequency) and using the next consecutive frame number as the time stamp for the beginning of the next index. There will be no time code discontinuity between indexes.

User Mode

This menu selects the operating mode of the user bits portion of the time code generator.

The possible modes can be either, date mode or free mode. In the **DATE** position, the date in the DD.MM.YY.xx format must be used. The date will be automatically updated at midnight (except when running 29.97 non-drop or 30 drop frame).

In the **FREE** mode, each digit of the user bits can be any value in hexadecimal (0 to F).

Both of these modes also have an INC (Increment) feature meaning that the last two right-most positions (xx) will automatically be increased by "1" each time a new index is made in record, starting from 00 up to a maximum value of 99.

Set Gen

This sub-menu gives access to the value of the internal time code generator. **FROM EXT** indicates that the internal generator will be set from the external time code on the LEMO connector, if the "EXE" key is pressed. From this position pressing the down arrow will indicate **RESET TC** which will reset the time portion of the time code system to zero, and will put the current date of the internal clock into the user bits. If the user bits are in the free mode then they will not be altered by the reset function. In the **SET TIME** menu, if the right arrow is pressed the display will indicate 00.00.00.00 and the left most digit will flash. Pressing the arrow keys modifies the values of each digit as required. Press EXE to store the new values into generator. The **SET USER** position accesses the values of the user bits to be set in the same manner as for the time code. If the generator is in the "date" mode then the numbers entered must correspond to the DD.MM.YY.xx format. If they are in the **FREE** mode then any value from 0 to F (hex) can be entered in each position.

If the **Rec Src.** menu is set to the **ASSEMBLE** position, then the Set Gen. command will allow the time code recording to start from a given value once the recording is started. It will effectively inhibit the assemble command for the next recording.

Sync

This gives access to the selections affecting the internal time code chase synchroniser of the NAGRA V. The synchroniser is activated by pressing the SHIFT key while moving the main function selector to the play position. Be sure that an external reference is supplied.

Offset

The **Offset** position allows the operator to have access to the time code offset between the "off disk" time code and the time code reference. If the right arrow is pressed then the display will show **Set** meaning that the operator has the possibility to press the right arrow again and set the offset in hours and minutes, and then automatically the seconds, frames and bits afterwards. This has to be done on two different display screens as there are only eight digits and it is not possible to indicate the hours portion and the bits of offset at the same time. Once the offset has been set, if the "EXE" key is pressed it will be stored in the offset register. Any offset stored in the memory of the machine will be lost as soon as the machine is powered OFF. The **RESET** command will remove any previously stored offset from the memory.

Chase Ref

The **Chase ReF.** selects of the manner of synchronisation of the NAGRA V. In the normal SYNC mode (Shift while selecting PLAY on the main selector) the time code coming from the HDD corresponds exactly to that of the external reference.

TC INC (incremental) means that there is an unknown time code offset between the external reference and the time code coming from the disk. When the machine is put into the **TC INC** mode the offset between the two time codes at that exact moment is stored in the offset register automatically.

The final possibility is the **VIDEO** selection. In this mode the machine will lock the time code from the HDD to the external video signal on the BNC connector on the side of the machine.

Syncmode

The NAGRA V has two possible clock references that affect the operation of the synchroniser.

Fix Clk

In the **FIX CLK** mode the machine will always follow the external reference. Once the machine is in the LOCKED state the internal synchroniser will no longer influence the transport and the transport speed is controlled entirely by the reference frequency (REF FREQ menu). If however the synchroniser of the NAGRA V sees an error of more than 1 frame, it will re-engage itself to correct the synchronisation error. **This is the recommended operating mode.**

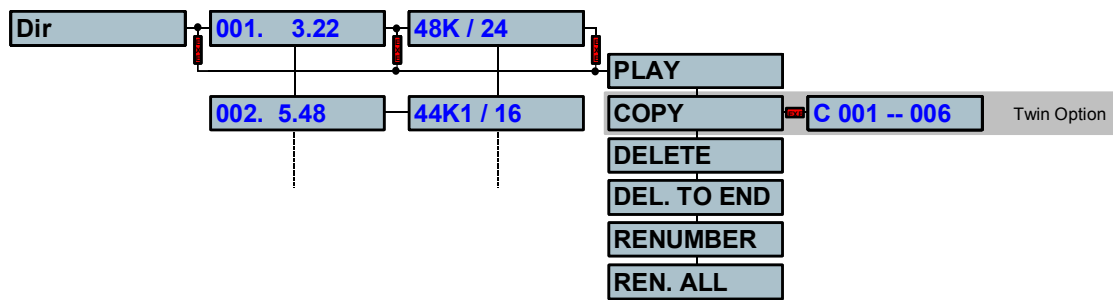
Var Clk

This mode is designed to allow the machine, using the internal synchroniser, to follow an external reference that is not the same as the reference frequency selected in the menu. This setting allows the internal synchroniser to modify the internal clocks in such a way as to follow this reference (for example NTSC / NTSC 60). In this mode the digital output is not available and the quality of the analogue outputs may be slightly degraded. Such a situation arises when the recording has 30FF time code and the external reference is NTSC (59.94). The machine will slow down to 29.97 FPS. There will be an increase in jitter in the clocks in this mode, and should be avoided unless absolutely necessary.

Reactime

This feature gives access to the reaction time of the internal synchroniser. This is the number of incorrect consecutive frames that will be accepted during the SYNC mode before the NAGRA V will drop out of the LOCKED state. The default setting for this is 15 frames, and can be set to any value from 15 to 999 frames (33 seconds at 30 fps or 42 seconds at 24 fps). This is used to handle time code drop-outs during post production. The reaction time of the internal synchroniser can be stored in a template.

DIRECTORY MENU



IMPORTANT: THE DIRECTORY ONLY DISPLAYS INDEXES FROM THE WORKING FOLDER. If another directory needs to be shown, first select this other directory as the working directory.

Moving to the right in this menu will first indicate the index (file) numbers, which can be scrolled through. Moving to the right again will indicate the recording format of the selected file. By pressing the **EXE** key a sub menu appears allowing:

PLAY

Play back the selected index, even if the sampling frequency is different from the current settings of the NAGRA V.

COPY

Permits to copy from that index number one or more indexes to the other drive.

DELETE

Delete current index. This command is followed by "**SURE?**" which requires confirmation by pressing **EXE** again. An accidentally deleted index can be reconstructed using a PC in the same way as a computer file is retrieved, assuming NO recording OR renumbering has been performed since the erasure took place. However this cannot be guaranteed as it depends on the fragmentation / usage of the disk – in the same way as a computer file may not always be successfully retrieved.

DEL TO END

Delete from the start of the current index to the end of the disk. This command is followed by "**SURE?**" which requires confirmation by pressing **EXE** again.

RENUMBER

Executing this function will renumber all the indexes from this point onwards consecutively. This will only have effect if indexes have been erased from the disk after this index number. Index numbers prior to this index will not be effected. This command is followed by "**SURE?**" which requires confirmation by pressing **EXE** again.

REN. ALL

Renumber all the indexes on the disk consecutively starting from "1". This command is followed by "**SURE?**" which requires confirmation by pressing **EXE** again.

Attention: If during record the file size reaches 2 GB, the file will automatically be closed and a new file will start without losing any sound. This to prevent any problems when transferring the file to an editing system, as most workstations do not like to deal with files exceeding 2GB.
(2 GB represents 2 hours of 24 bit 48 kHz, or 1 hour at 96 kHz)


FOLDERS.

Today, high drive capacity allows backup of several jobs on the same disk, thanks to this new feature, the NAGRA V can now handle multiple folders. This lets you organize your work by storing different jobs in different folders on the same disk. The NAGRA V works with one folder at a time, which is called the "working folder". The default working folder is "NAGRAV". All transport operations (record, playback, ...) are done on indexes located in the working folder. Each folder can contain up to 999 indexes. The NAGRA V can manage up to 100 folders per disk.

In the folder menu, you can explore your folders in alphabetical order. With the right arrow key you can scroll through the folder information which gives you the number of files and the number of gigabytes used by each folder.

Note: The number (quantity) of files viewed in the folder menu is the total number of ALL types of file found in the folder. This number can be higher than the number of NAGRA indexes if another machine (PC, MAC, ...) has stored some other file types in the folder. (for example a .doc or .xls file)


Each disk can contain several **Folders**. Seen via a PC by Explorer, it looks as follows:



Name	Size	Type	Modified
FOLDER_A		File Folder	07.06.2004 12:32
FOLDER_B		File Folder	14.06.2004 13:39
FOLDER_C		File Folder	07.06.2004 12:37
NAGRAV.INI	1 KB	Configuration Settings	15.06.2004 09:35

A folder is a directory into which audio recordings are stored.

This makes it easy to classify the different recordings into different folders, for instance one folder name per day. The above example shows 3 folders. The NAGRAV.INI file is only used by the NAGRA V to remember the last selected working folder.



Name	Size	Type	Modified
003001.WAV	388 KB	Wave Sound	07.06.2004 12:32
003002.WAV	233 KB	Wave Sound	07.06.2004 12:32
003003.WAV	198 KB	Wave Sound	07.06.2004 12:32
003004.WAV	768 KB	Wave Sound	07.06.2004 12:32

When opening the **FOLDER_A** it shows that 4 audio files are present.

WORKING FOLDER.

The working folder is shown on the menu scrolling display (press the batt./solo key once). When entering the **Folder** menu, the first folder shown is the working folder. In the **Dir** menu you can see and manage the indexes of the working folder. To record and playback indexes from any other folder you must first select it as the new working folder.

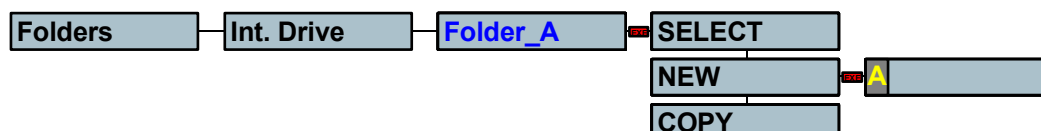
Note: The name of the working folder is not stored in the NAGRA V but on the disk itself. So this setting will follow the disk and not the NAGRA V. This setting is stored in a file called "nagrav.ini" in the directory of the disk. If no nagrav.ini file is found, the NAGRA V will use "NAGRAV" as the working folder automatically.

CHANGING WORKING FOLDER.



To change the working folder, in the **Folders** menu go to the new folder that you want to work with, press the **EXE** key and choose the **SELECT** function. The NAGRA V shows briefly the **Reading** message followed by the number of indexes located in this folder. The NAGRA V is now ready to work with this folder.

NEW FOLDER.



This sub-menu gives the possibility to create folders on the disk.

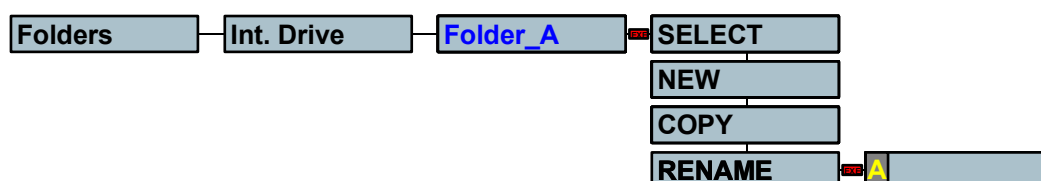
Maximum 8 characters can be entered.

To create a new folder, go to the folder name and press the **EXE** key.

Scroll down until **NEW** appears and press the **EXE** key again and the display shows a blinking **A**. The characters can now be selected by pushing the up or down arrow keys. To advance to the next character, press the right arrow key. Once the new folder name is entered, press the **EXE** key to validate. The NAGRA V will show the message **0 index** which means that this new empty folder has been created. The NAGRA V is now ready to work in this new folder. This becomes the working folder automatically.

Note: If after entering a new folder name the message shows a number of index other than 0, this means that the folder already exists and it is not empty.

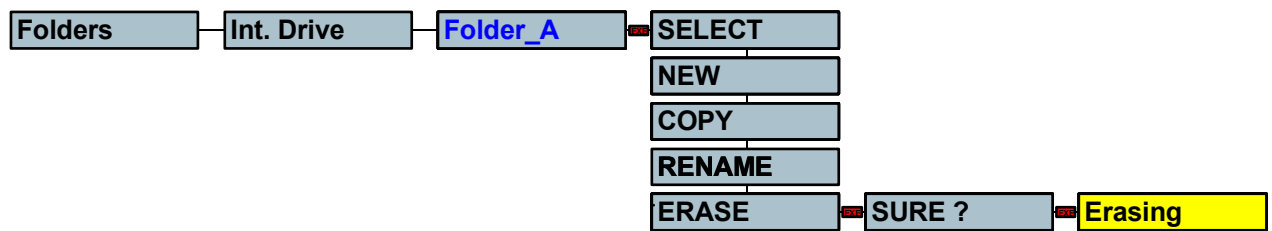
RENAMING A FOLDER.



To rename a folder, in the **Folders** menu move to the folder name which you wish to change. Press **EXE** key and select the **RENAME** function. Enter the new name and press **EXE**.

Note: The working folder can't be renamed, to do so you must first select another folder as the working folder.

DELETING / ERASING A FOLDER.



To delete an entire folder, in the **Folders** menu go to the folder name you want to delete. Press the **EXE** key and select the **ERASE** function. The message **SURE?** gives you a last a chance to cancel your request .

Press **EXE** key again and the folder AND ALL files and indexes inside are definitively deleted.

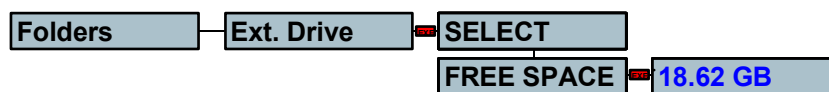
Note: The working folder can't be erased. To do so, you must first select another folder as the working folder or use the **DELETE** function in the **Dir** menu to delete all the indexes.

DELETING / ERASING AN ENTIRE DISK.

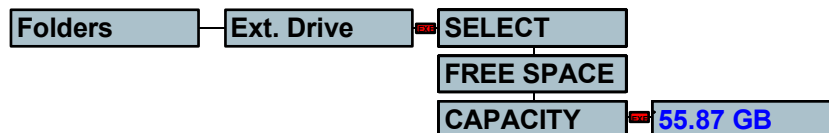
To delete all folders on a disk, use the reformat command (see **Reformat** menu). This is the speediest and the safest way to do it. Reformatting a disk guarantees that it is error free and formatted with an optimal cluster size for the NAGRA V.

Note: This command will erase ALL files stored on the disk.

DISK FREE SPACE AND DISK CAPACITY.

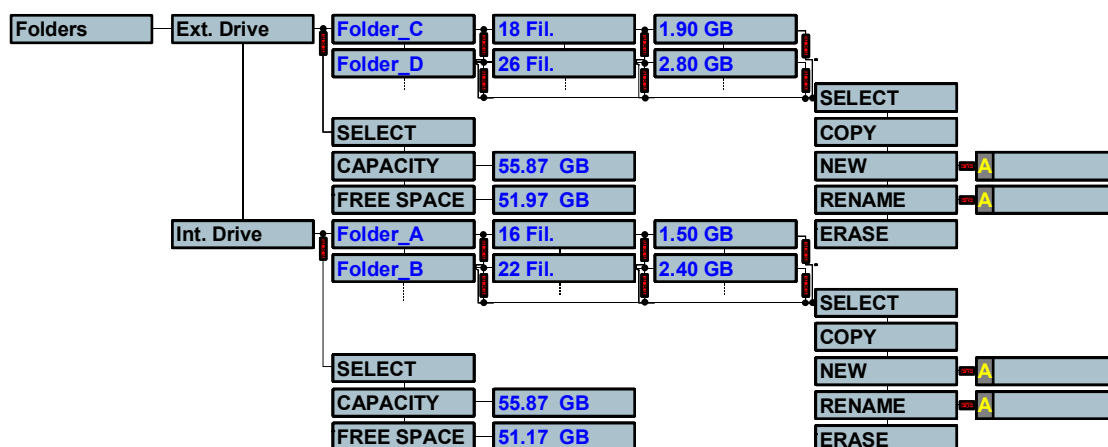


To know the free disk space or the disk capacity, in the **Folders** menu press **EXE** on the desired drive (ie **Ext. Drive**) select **FREE SPC.** or **CAPACITY**. This will show you the selected value in gigabytes.



Note: To know the remaining recording time which depends on the file format and the sampling frequency, use **REMAIN** in the main display menu instead.

TWIN-DRIVE.



With the Twin-Drive option you have an internal drive in addition to the external drive. This lets you choose the working disk. Furthermore you have the possibility to copy indexes or even entire folders from one disk to the other.

WORKING DRIVE.

The working drive can be seen on the scrolling menu settings (press the batt./solo key), it is the first setting shown, followed by the working folder. When entering in the **Folders** menu the drive is displayed first (i.e. **Int.Drive** or **Ext.Drive**) indicating that this is the working drive. All transport operations (record, playback, ...) are made on the working folder of the working drive, the other drive is not used.

CHANGE WORKING DRIVE.

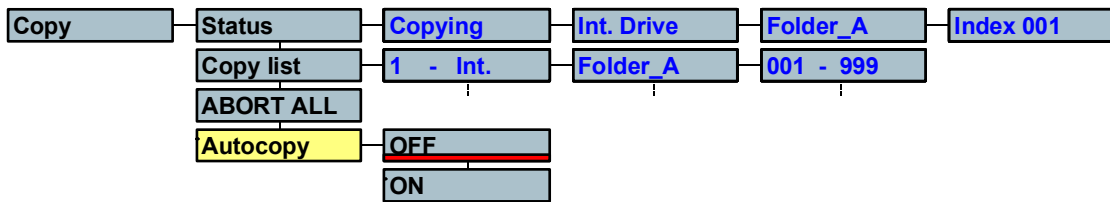


When you select a working folder, the working drive is selected at the same time. In the **Folders** menu, if you select or create a folder on the internal drive (**Int.Drive**) as working folder, the internal drive becomes implicitly the working drive. Likewise, selecting a folder of the external drive (**Ext.Drive**) as working folder, selects the external drive as the working drive.



You can also select a drive as working drive by pressing **EXE** on the drive itself and choosing the **SELECT** function. In this case the NAGRA V looks for the working folder name stored on this disk (saved in the nagrav.ini file) and will select it as the working folder. If no nagrav.ini file is found, the NAGRA V will use "NAGRAV" as the working folder automatically.

COPY FUNCTION.



With the Twin-Drive option, the need to copy indexes between the two drive becomes obvious. The NAGRA V makes it possible thanks to its powerful background copy process. You are able to copy indexes and folders even while recording.

HOW THE COPY WORKS.

The NAGRA V manages a **Copy List**, which can contain up to 20 items. Each index or folder to be copied is added to this list as a copy "item". A list item contains the drive, the folder name and the index range to be copied.

As soon as an item appears in this list, the NAGRA V starts the copy process automatically. The indexes are copied to the other drive maintaining the same index number and using the same folder name. If the folder doesn't exist on the destination disk, it is automatically created.

Note: It may be possible that some index numbers, in the index range chosen to be copied, do not exist. This doesn't generate an error. These index numbers are simply ignored by the copy process.

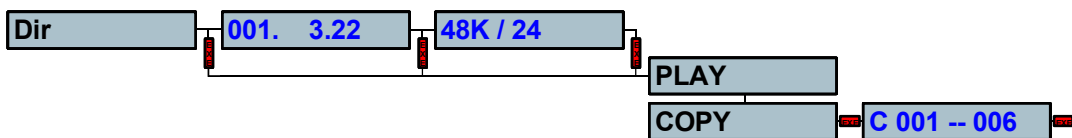
Example of a simple copy of several indexes from the directory:



This means that the indexes from **003** to **006** (i.e. 4 indexes) in the folder named **Folder_A** on the internal drive will be copied to the external drive. After the copy you will find these indexes on the external drive in a folder with the same name.

If, for example, the index 005 doesn't exist, indexes 003, 004 and 006 only will be copied.

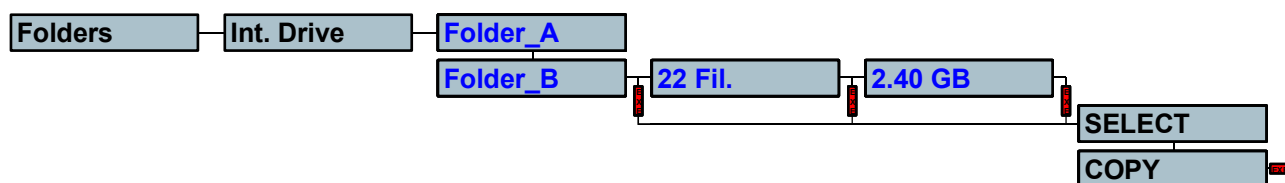
COPYING ONE OR SEVERAL INDEXES.



To copy one or several indexes of the working folder, in the **Dir** menu go to the index you want to copy. Press the **EXE** key and select the **COPY** function. Then the display will show the selected index number twice, separated by a hyphen "-": This is the index range to copy. If you want to copy more than one index edit the second number to extend the range. Pressing **EXE** will add this copy command to the copy list and begin the copy process.

To copy all indexes of a folder see next section.

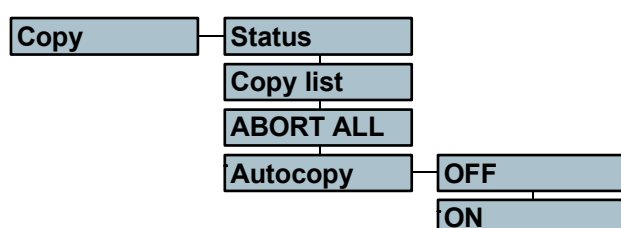
COPYING A FOLDER.



To copy all indexes within a folder as well as the folder itself, in the **Folders** menu go to the folder name you want to copy. Press **EXE** and choose the **COPY** function. This will add this copy command to the **Copy List**.

If you don't want to copy all indexes of a folder but just a few, you must select this folder as working folder first and use the method described in the previous section to copy individual indexes or ranges.

AUTOMATIC COPYING.



In the **AutoCopy** menu you can choose to enable the auto-copy function. This handy feature makes copy of your new indexes automatically. Each time an index is finished recording, it will be added to the **Copy List**.

Note: In the event of a copy error, the auto copy will not be executed until the copy error is resolved as the copy process is stopped.

COPY ERROR.

While a copy is running in the background, you may be alerted by the error message **Copy Err.** This tells you that copy process has stopped and needs your intervention. Refer to the "Copy Status" section to resolve this situation.

COPY STATUS.



In the **Copy** menu, the **Status** sub-menu lets you see what the copy process is doing. Except in the **Idle** mode, by pressing the right key, you can access the index number that the copy process is currently dealing with.

OPERATIONAL MESSAGES



The copy list is empty, no copies are running, no errors on previous copy.

Copying

The copy process is running.

Suspend

You are in record mode and the current copy destination is the same drive as the working folder. The copy is suspended to avoid file fragmentation on disk and to guarantee you a reliable remaining recording time.

Aborting

The copy process was asked to stop, cleaning of the partially copied index.

COPY ERROR MESSAGES

In case of errors the possible messages are:

DiskFull

The destination disk for the copy is full.

ExistErr.

The next index to be copied in the copy list already exists on the destination disk.

Pow. Lost

The copy was stopped due to a loss of power.

Fold. Err.

Unable to create the destination folder for the copy file.

Read Err.

Error reading source index file.

WriteErr.

Error while writing destination index / file.

Open Err.

Unable to create destination index / file.

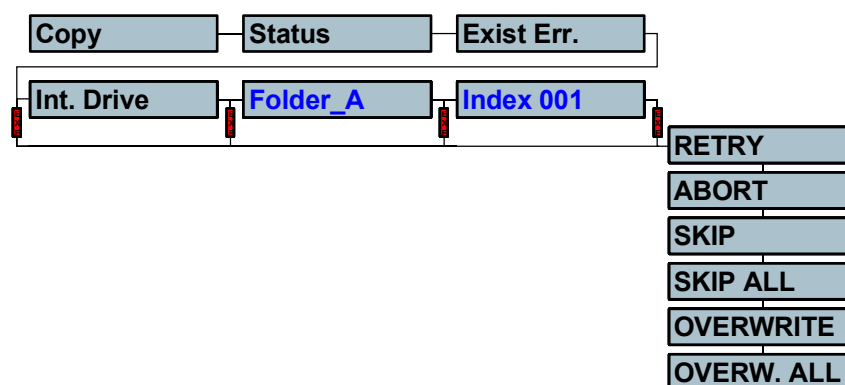
NotFound.

Unable to access source index / file.

Del.Err.

Unable to delete an index / file (overwrite mode).

WHAT TO DO IN CASE OF AN ERROR.



In the case of an error, pressing **EXE** in the **Status** menu gives you a list of possible functions:

RETRY

Try to copy this index again.

ABORT

Remove the current copy list item (item number 1) and start copying with the next copy list item if any.

SKIP

Skip this index and continue with the next index.

SKIP ALL

Skip this index and continue with next index. If another subsequent index of the current copy list item generates an error, it will be automatically skipped without warning.

The next two functions are only possible in event of **ExistErr**.

OVERWRITE

Overwrite this index. The existing index on the destination disk is deleted before the copy.

OVERW.ALL

Overwrite this index. The existing index on the destination disk is deleted before the copy. If another index of the current list item already exists on the destination drive, it will be automatically deleted without warning.

The next function is available when the NAGRA V was powered down without finishing a copy. This is the only function possible in this case (see copy and power off section).

RETRIEVE



Retrieve the uncompleted copy list items prior to power off. This function doesn't clear the error. You have to press EXE again to have the function list describe above.

SOLUTIONS TO DIFFERENT PROBLEMS DURING COPY.

Solutions in case of Disk Full

- Delete unnecessary indexes on your destination disk (see **Folders** menu). Then execute the **RETRY** function.
- Change the destination disk. Power off the machine to do it! Power up the NAGRA V with another disk. Execute the **RETRIEVE** function and execute the **RETRY** function. The copies will continue on this new disk.

Solutions in case of Exist Err

- In the **Folders** menu, delete or rename the existing folder on the destination drive and execute the **RETRY** function.
- Use the **SKIP**, **SKIP ALL**, **OVERWRITE** or **OVERW.ALL** function. Be careful with these functions because you may find a mix of previous and new indexes in the destination disk!

Solution in case of Pow. Lost

- Execute the **RETRIEVE** function then execute the **RETRY** function to continue the copy.

Solution in case of Fold. Err.

- Your disk is certainly not present or not formatted, or not switched on (Ext. disk only). Verify it!

Solution in case of Read Err.

- Initially use the **RETRY** function. The copy process is unable to manage the disk while under shock conditions. If the error re-appears your index or your disk may be damaged.

Solution in case of WriteErr.

- Initially use the **RETRY** function. The copy process is unable to manage the disk while under shock conditions. If the error re-appears your disk may be damaged.

Solution in case of Open Err.

- Initially use the **RETRY** function. The copy process is unable to manage the disk while under shock conditions. If the error re-appears your index or your disk may be damaged.
- Index with file attribute set to hidden or read-only can cause this error; this problem must be resolved with a PC and cannot be changed on the NAGRA V.

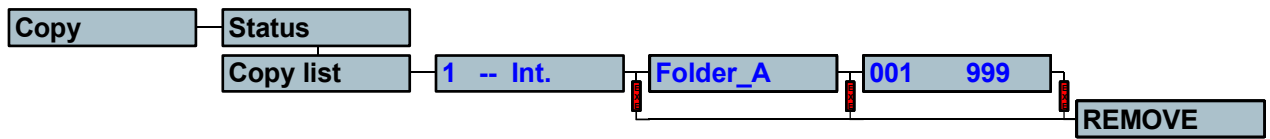
Solution in case of Not Found

- Initially use the **RETRY** function. The copy process is unable to manage the disk under shock conditions. If the error re-appears your index or your disk may be damaged.

Solution in case of Del. Err.

- Initially use the **RETRY** function. The copy process is unable to manage the disk while under shock conditions. If the error re-appears your disk may be damaged.
- Index with file attributes set to read-only can cause this error; this problem must be resolved with a PC.

COPY LIST.



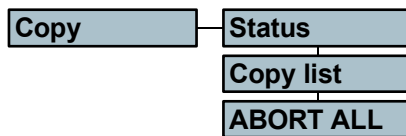
In the **CopyList** menu, you can see all the copy list items not yet executed. They are numbered from 1 to “n” (n = the number of copy list items). They are in the order that they will be executed. The item number 1 is the item that the copy process is currently dealing with. When the copy specified by an item is finished, the item is deleted and the following items are renumbered starting from 1.

You can see all the fields of the item by scrolling with the right key. Pressing the **EXE** key on an item allows you to **REMOVE** it from the list.

Removing the first item in the list is possible, stopping the copy of the current index, but the indexes that have already been copied entirely are not removed. If the copy was stopped by an error, removing the first item will clear it and restart the copy on the next item.

Note: To avoid selecting a wrong item for removal, this list is not automatically refreshed. To refresh it just scroll up or down. To follow the copy process in real time, use the copy **Status** menu instead.

ABORT ALL MENU.



This command stops the copy process, empties the copy list and clears all types of copy errors.

STOPPING A COPY.

To stop a copy, go to **CopyList** menu and remove the item you want to stop execution (see Copy list section). You can use also the **ABORTALL** command, this command remove all the copy list items (see ABORTALL section).

COPY AND POWER OFF.

If the NAGRA V is still copying and you don't want to wait for the process to finish. No problem! Put it in power off, it will display the message **Copying**. The NAGRA V will finish all the copies in the list before powering off.

Later you can verify if the copy was done. Power-up the machine and look for copy status (see Copy status section). The **Idle** status tells you that the copy was entirely completed without problem.

In the event of an error, the status will show it, as well as the number of the index being copied at the moment the error occurred. In this case the copy list is empty but not lost. Press **EXE** in the **Status** menu and execute the **RETRIEVE** function, this retrieves the undone copy list item when the NAGRA V was powered off. You can now resolve the error in a normal way (see copy status section).

Note: After power off, the possibility to retrieve the copy list remains as long as no new copies are added to the copy list. When a new copy is added the retrievable copy list is lost and the error is cleared. So you don't have to worry about possible incomplete copy of a previous job when you power up the machine to start a new job.

OTHER ERROR MESSAGES.

Copying

Attempt to **DELETE** or **RENUMBER** indexes or **SELECT**, **RENAME** or **ERASE** a folder while the selected indexes or folder is still in the copy list. You have put the NAGRA V in power off and it has not yet finished to copy, this is not an error message in this case (see copy and power off section).

List Full

The copy list can contain up to 20 items. This list is full and you can't add another copy at this time.

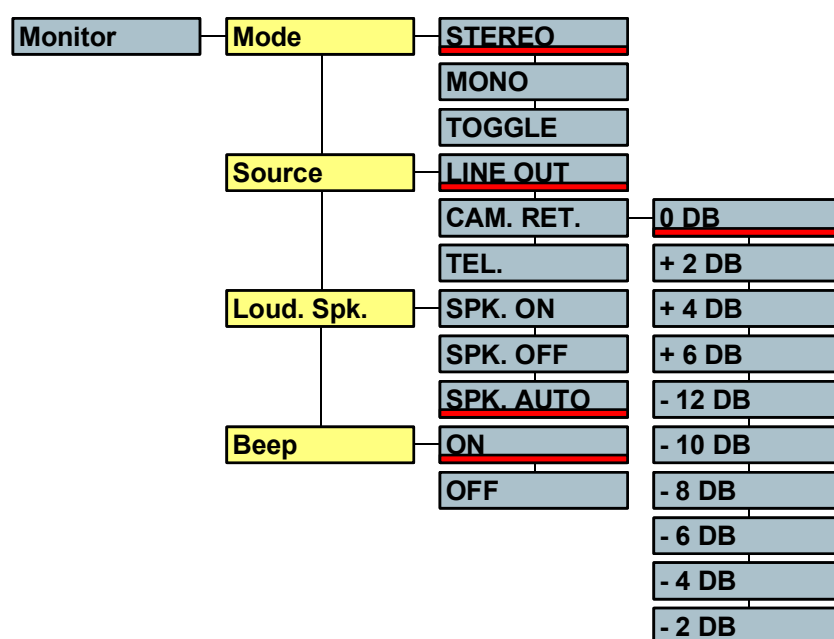
In Use

Folder destination in use. Attempt to copy to the working folder, this is not allowed.

Copy Err.

A copy was stopped because an error occurred. See Copy error section.

MONITOR MENU



The monitoring menu gives access to the audio monitoring of the NAGRA V.

In the **Mode** menu, the user can select whether the headphone monitoring is stereo or mono. In the toggle position it will alternate between stereo and mono each time the BATT switch is pressed.

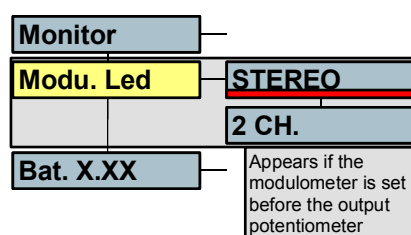
The **Source** menu permits the source of the headphone signal to be selected. It can be set to monitor the signal which is available on the line output of the machine, the signal coming back from the camera (connected to the camera return jack on the side of the machine) or the telephone output on the banana connectors.

The level in the headphones of the signal coming to the camera return socket can be adjusted by moving to the right in this menu and adjusting the level using the arrow keys. The level may be adjusted from – 12dB to +6 dB in 2 dB steps (this does not adjust the signal level on the input but only the headphone level). The camera return signal is monitored by moving the EE / AUTO / TAPE switch to the TAPE position. In AUTO and EE the operation of the monitoring is the same as under normal operation.

The Loudspeaker selection enables the user to turn the speaker On and Off or to select Automatic. In the **AUTO** position the speaker is ON in playback and inhibited during test and record modes of the machine. The speaker selection can also be toggled rapidly directly from the front panel if desired by pressing SHIFT and then pressing the BAT selector next to the modulometer.

The **Beep** menu activates or deactivates the beep warning signal. When activated, a Beep signal can be heard in the headphones to confirm certain information or as a warning.

MODULOMETER MENU

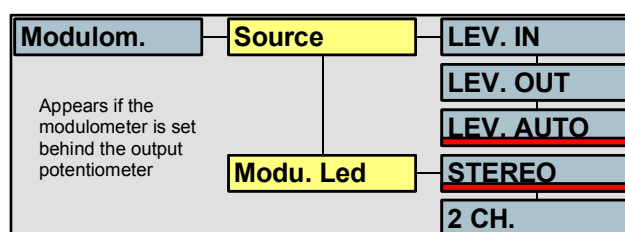


The **Modu.Led** menu allows the user to select the two different modes of operation for the green leds located in the front face of the modulometer. In the stereo position, the led's will indicate which of the two channels is the strongest. When set to the 2CH. Position, each led corresponds to its dedicated channel.

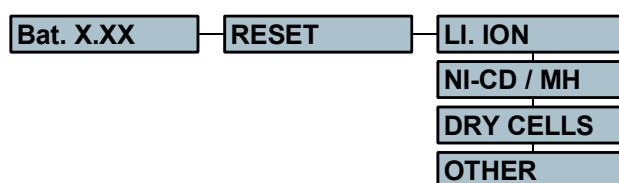
Earlier machines (serial number < 3100400) had a different motherboard and the modulometer was located (electrically speaking) after the line potentiometer. This meant that it a menu was needed in order to select it to indicate Input or Output levels correctly. This selection is still possible but is made using 2 jumpers on the box motherboard and a code change via the NV-COM software.

On earlier machines, if the modulometer is set after the line output potentiometer (only on non-modified boards 9131 300 000 A or from box motherboard 9131 300 000 B), the modulometer of the NAGRA V can be set to the *LEV. AUTO* position in which case it will behave as on a standard NAGRA. That is to say in TEST and REC it will indicate the input signal and in playback it will indicate the output signal. It is also possible to select either *LEVEL IN* or *LEVEL OUT* and it will only indicate this position irrespective of the selected operating mode of the machine.

On earlier machines the menu tree was like this:



BATTERY RESERVE DISPLAY



This sub-menu is very important to obtain the correct "Low Bat" warning as well as preventing the eventual destruction of the battery pack.

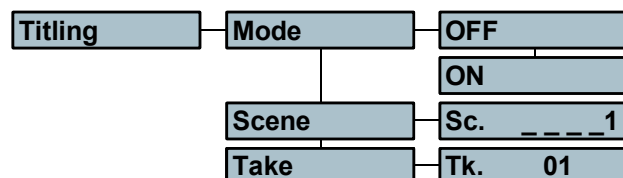
BAT X.XX displays a simple timer, which indicates in hours and minutes the time since it was last reset. The user can reset this when the internal batteries are replaced. It gives the user an idea of how much time remains. It will only count while the machine is ON.

Moving to the right allows the type of power supply being used to be selected. Although this selection has no bearing on the operation of the machine it changes certain indications (such as the LOW BAT warning) which changes for different cells. Equally the correct selection of this menu means that the BAT indication on the modulometer will be in the correct portion of the green zone when the switch is pressed. For example, eight "D" cells when fully charged will have 12V and the meter pointer will be at the right-hand end of the green zone. Fully charged Nickel Cadmium cells will only be 9.6 volts and the pointer would be in the middle of the green zone. This selection will correct this offset.

Selection of a specific battery type will automatically reset the counter to zero under the

assumption that a new battery is being installed. The type of battery selected will be ignored by the machine if, during power ON, the BAT switch is held down while the main selector switch is moved from the STOP position. This allows the machine to be powered up if the supplied voltage to the external connector is lower than that of the selected menu.

TITLING



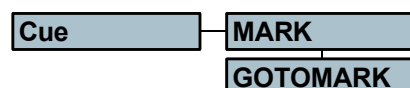
The titling feature allows information in the pseudo standard format to be added to each index during recording. This information can then be read by the postproduction workstation directly. Any text of NOTE information needs to be entered using a PC and the NV-COM software. When the **Titling Mode** is OFF, nothing will be automatically added to the description area in the chunk of each recorded file.

When the **Titling Mode** is ON, important information will automatically be added to the description area:

nSCENE=X	gives the scene number automatically
nTAKE=X	automatically increments at each new record session
nNOTE=X	the text in this area can only be manually added via the NV-COM software.
nTAPE=X	will automatically increment if a new formatted empty HDD is inserted if the Reel Number Mode on the NAGRA V is ON
nUBITS=X	will automatically introduce the user bits if the machine is equipped with TC
nFRAMRATE=X	will automatically introduce the frame rate if the machine is equipped with TC

The Scene number as well as the Take number can be pre-set. Starting a new record will automatically increment the Take number (Index).

CUE

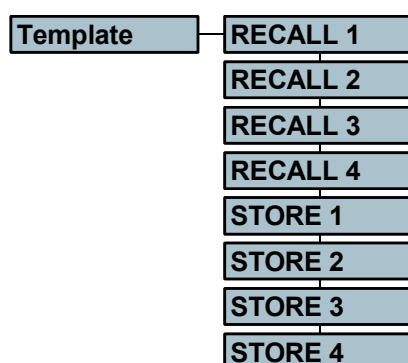


This menu allows a marker to be entered during record or playback. Select **Cue** followed by **MARK** and enter the position by pressing the EXE key.

To return during playback to the Cue position, select **Cue** again followed by **GOTOMARK** and press the EXE key.

The shortcut of Shift+Stop can be used to access the GOTO MARK rapidly without using the menu.

TEMPLATE MENU



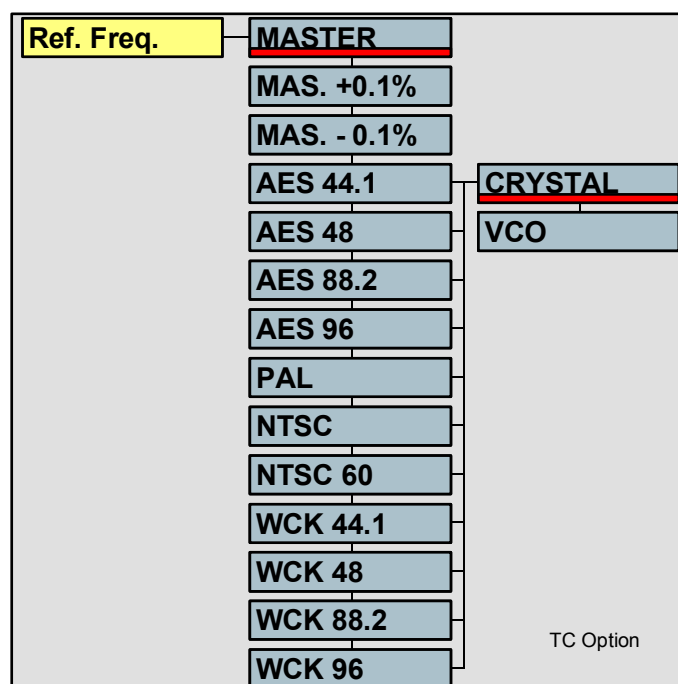
Various settings of the machine can be stored for rapid access to avoid having to go through the menus to reset the machine for different applications.

The settings that can be stored are indicated in grey on the main menu sheet. To use this feature simply set the machine to all the required settings in the menu mode and then store in one of the four registers. To recall these settings at a future time simply execute the corresponding recall register. This feature may be especially useful after the machine has been left for a long time without power.

Shortcut: Holding the SHIFT key and pressing the left arrow key will jump to the **Template** menu at once. Continue to hold the SHIFT key and pressing now the right arrow key will jump to **RECALL 1** at once.

REFERENCE FREQUENCY SELECTION

(**PAL**, **NTSC** etc. menu will only appear if the internal time code option NV-TC is installed)



This is the reference frequency selection that tells the machine to which signal the internal clocks of the machine are to be synchronised. Generally the machine will be synchronised to its internal crystals (MASTER position), which will guarantee the correct sampling frequency and the full dynamic range. It is however possible to select another external reference, by moving through the possible choices using the arrow keys. If an external reference is being used then this signal must be stable. Pressing EXE on any of these positions will select the displayed choice as reference, and a single beep will be heard. These selections can be stored in a template.

MASTER Machine is set to be “master”, the internal clocks are synchronised using the internal crystals.

MAS + 0.1% As master but accelerated by 0.1% for NTSC applications.

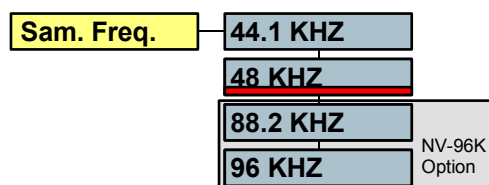
MAS - 0.1% As master but slowed down by 0.1% for NTSC applications.

AES 44.1	External ref to be used is arriving on the digital input at 44.1 kHz
AES 48	External ref to be used is arriving on the digital input at 48 kHz
AES 88.2	External ref to be used is arriving on the digital input at 88.2 kHz
AES 96	External ref to be used is arriving on the digital input at 96 kHz
PAL	External reference is on the BNC connector in PAL 25 fps
NTSC	External reference is on the BNC connector in NTSC 29.97 fps
NTSC 60	External reference is on the BNC connector in NTSC 30 fps
WCK 44.1	External word clock on the BNC connector at 44.1 kHz
WCK 48	External word clock on the BNC connector at 48 kHz
WCK 88.2	External word clock on the BNC connector at 88.2 kHz
WCK 96	External word clock on the BNC connector at 96 kHz

Moving to the right the choice between CRYSTAL and VCO can be made for all positions except the three master selections. **CRYSTAL** is the normal operating position and will allow a variation of $\pm 100\text{ppm}$ in the reference signal this is the recommended position as the clock jitter is better in this mode. In the **VCO** position variations of up to $\pm 4\%$ in the external reference are permitted. (4% is the difference between 24fps and 25fps time code).

Alarm: If the red record led starts blinking, it indicates that a wrong **Ref. Freq.** was selected. Simultaneously, the message "Unlock" appears on the display.

SAMPLING FREQUENCY SELECTION

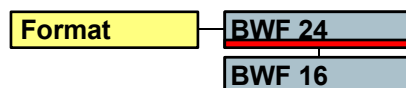


The sampling frequency selection is used to select the sampling frequency of the internal A/D converters, and to select the necessary internal clock frequencies.

If the right arrow is pressed then the display will indicate the presently selected sampling frequency (i.e. 48 kHz) the down arrow will then move through the other options which are 44.1 kHz, 96 kHz and 88.2 kHz (if option installed). If execute is pressed while one of these is on the display then that value will be selected as the digital sampling frequency for the incoming analogue audio signals.

NOTE: The 96 kHz and 88.2 options will only appear in the menu if the NV-96K option is installed.

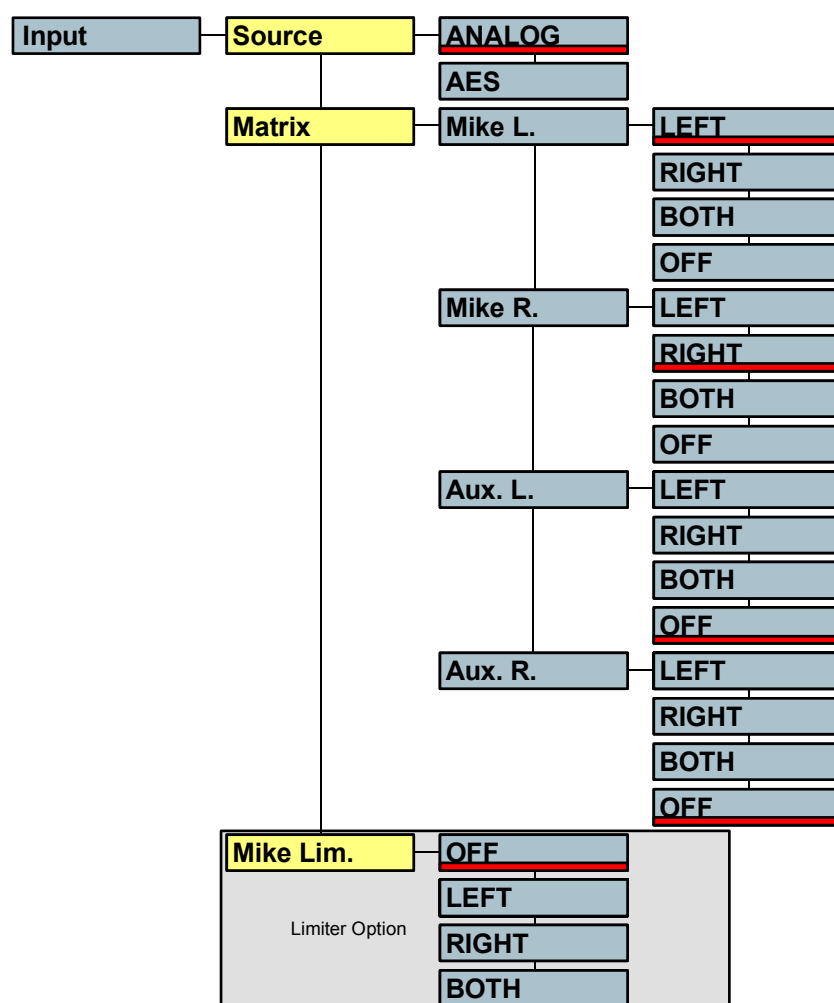
FORMAT MENU



The format menu allows the user to decide the recording file format of the HDD. This means that it can be set to either 16 or 24 bits Broadcast Wave file format. This means that if the post production stage is only equipped with 16 bit equipment this will avoid the additional step of re-dithering (or even truncating) later on.

In the **BWF 16** position the A/D converter still operates at 24 bits per sample, however the signal actually recorded on the disk is re-dithered to 16 bits.

INPUT MENU



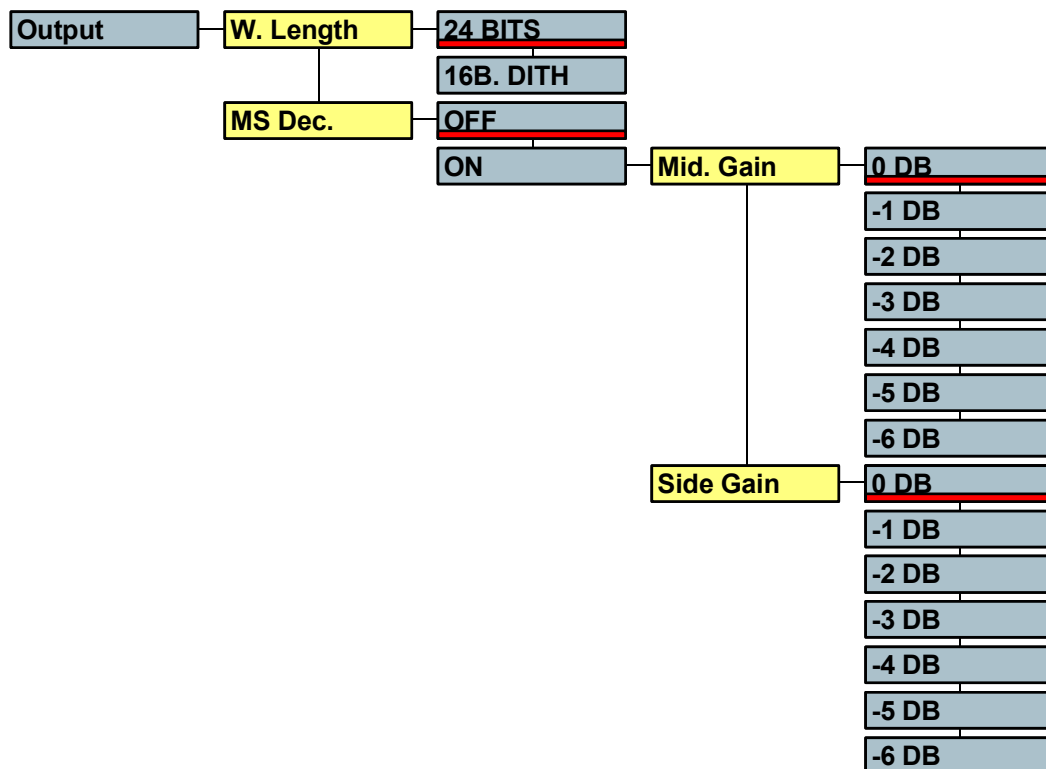
The **Input** menu not only allows the operator to select whether the input signal is Digital (Via the digital input cable) or analogue using the **Source** menu, but also allows the matrix switching of all the inputs to either channel as well as the enabling or disabling the limiters. There are 4 possible analogue inputs to the NAGRA V. Two are on the standard microphone input connectors and the other two are on the 15 pin miniature “D” extension connector.

The **Matrix** menu allows each of the four inputs to be independently sent to either the left channel, right channel or both (mono). Each channel can also be turned off which will avoid spurious noise from open-ended microphone pre-amplifiers affecting the signal-to-noise ratio. The **Mike Lim** menu permits to enable or disable each channel individually. This menu only appears if the limiter option is installed.

Note: Be aware when using an AES input, if the machine is equipped with the Time Code option, that also the corresponding **Ref. Freq.** must be selected. Machines not equipped with the Time Code option will automatically lock to the incoming AES bus clock.

Alarm: If the AES input is selected without a digital input signal connected, the red record led starts blinking (ON-OFF-ON-OFF-OFF-ON-OFF-ON-OFF-OFF etc.). This means that the internal clock can not synchronise with the external clock.

OUTPUT MENU

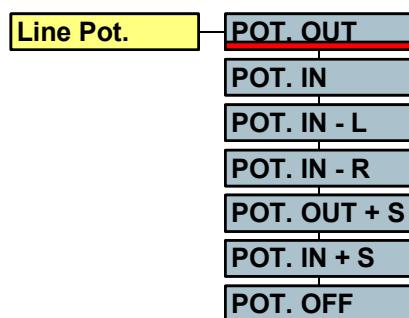


The output menu selection has two principal functions. It allows the user to decide what digital audio word length should be sent to the outputs, either the standard 24 bits or alternatively a 16 bit re-dithered signal. In the 16 bit re-dithered position the D/A converters will also be operating at 16 bits of quantization.

Note: This option detects automatically if the sound is already 16 bits coded, in this case this sound will not be re-dithered.

The other option gives access to the **MS Dec.** decoder settings. The MS decoder of the NAGRA V acts not only on the headphones but also on the outputs. It cannot be used while working with AES bus input signals. Apart from being able to switch it on or off, it is also possible to adjust the **Mid. Gain** and the **Side gain** independently to adjust the MS stereo image width.

LINE POTENTIOMETER MENU



This menu gives access to the mode of operation of the third potentiometer on the front panel of the machine (AUX IN & LINE OUT).

It is possible to adjust either the AUX. input **POT. IN** or LINE output **POT. OUT**.

If the **POT. IN – L** mode is selected the potentiometer will only adjust the left aux. Input. In the same manner **POT. IN – R** acts on the right input. In both cases the unaffected input retains its previous setting.

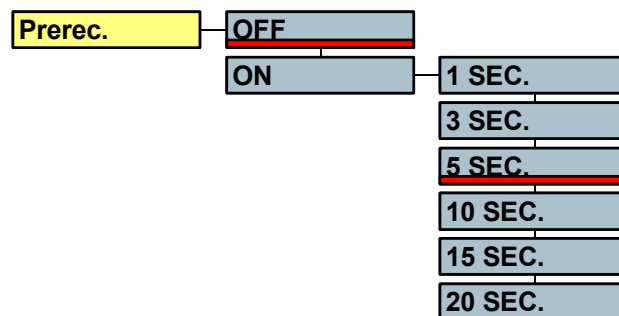
In the **POT. OUT + S** mode it will adjust the input signal if the SHIFT key is kept pressed otherwise it acts on the output signal.

In the **POT. IN + S** mode it will adjust the output signal if the SHIFT key is kept pressed otherwise it acts on the input signal.

These values are stored in the memory of the machine.

When changing this selection, the previous potentiometer position will be kept in memory even if the machine is switched off, assuming there is power available. When **POT. OFF** is selected, the last known position for input and output adjustment will be kept in memory and the potentiometer is no longer active.

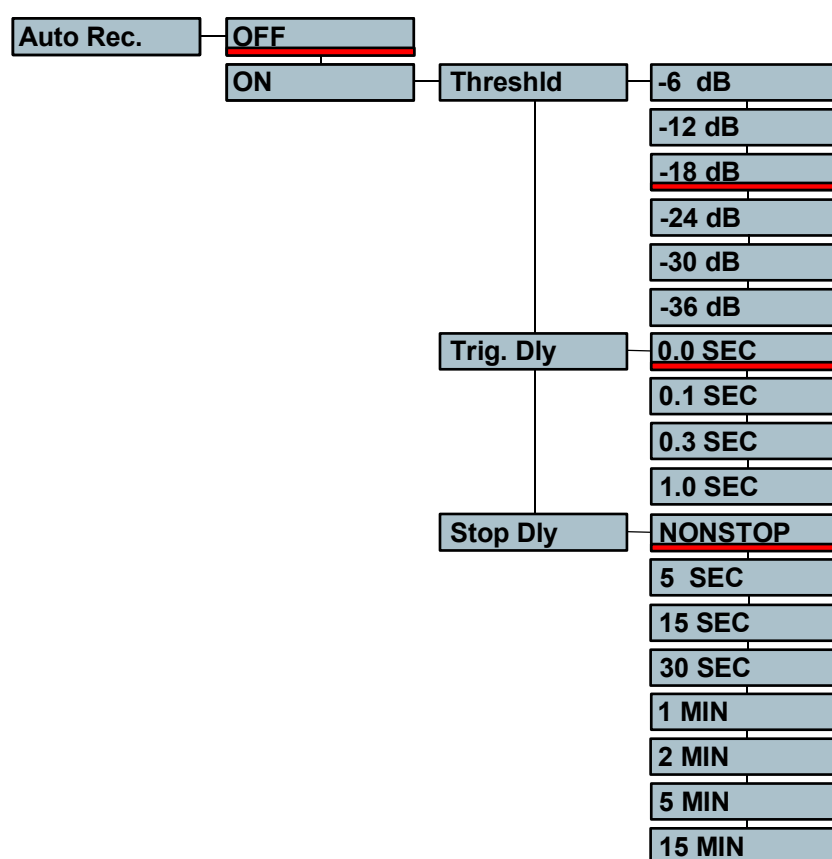
PRE-RECORD MENU



The **Prerec.** menu gives the user the possibility to turn on or off the pre-recording buffer of the NAGRA V. This buffer is programmable up to 20 seconds. This is the period to be recorded to HDD as soon as it is set to record.

The buffer is filled to its maximum in the TEST position (Record LED will flash), in such a way that when the main selector is put into the RECORD position, the previous “n” seconds of audio are also recorded.

AUTO RECORD MENU



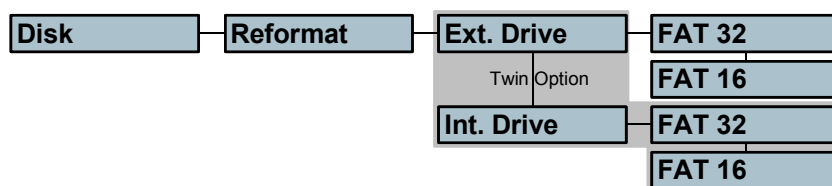
The **Auto Rec.** menu permits to turn on or off the auto record mode. This mode of recording permits to start automatically a recording depending on the settings of the different parameters described below. Once the parameters set, put the machine in the record mode. The recording will start once the requested level and length of any incoming sound is obtained. This mode can also be combined with the pre-record buffer.

The **Threshld** sub-menu permits to adjust the level detection to start the recording and can be set in steps of 6 dB from –6 dB to –36 dB.

The **Trig. Dly** (trigger delay) menu permits to adjust the continuous duration or length of the sound level before the recording starts. It can be set from 0.0 seconds to 1 second. Example: if you clap your hands a single time and the start delay is set to 0.1 second, the recording will not start, as the handclap was shorter than 0.1 seconds.

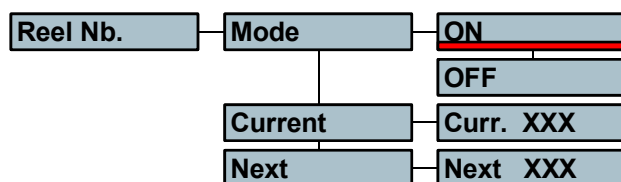
The **Stop Dly** (stop delay) permits to adjust the duration of recording once the sound level drops below the threshold level and can be set from 5 seconds up to 15 minutes or nonstop.

DISK MENU



The **Reformat** menu permits to format the recording media into a *FAT 16* or *Fat 32* mode. Beware that recording media bigger than 2 GB must be formatted in Fat 32. FAT 16 allows max. 2 GB.

REEL NB. MENU



The **Reel Nb.** Allows you to manage the first 3 digits of the file names in the folder. The generic sound file name is rrrnnn.wav where rrr is the reel number and nnn is the index number. The reel number is also used for the "TAPE" keyword in the metadata (see titling menu). All files in a folder have the same reel number.

With the **Mode** set to **ON** this feature allows the auto numbering of the reel number so that each folder has a different reel number automatically. When selecting a new or empty folder as working folder the Nagra V uses the **Next** reel number.

The **Next** value is not immediately incremented by 1 to prevent holes in the numbering. It is done when leaving the working folder either by selecting another folder or by powering off the Nagra V. In this case and if the folder is not empty (it has at least 1 sound file), the reel number is considered as used and the **Next** value is incremented.

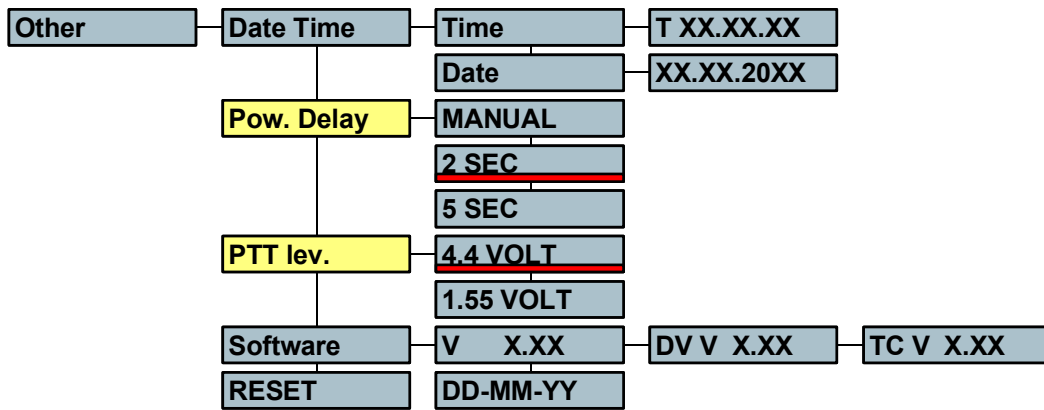
The **Next** value can be modified to start the reel numbering from a specific value. When modified, the next value is frozen, waiting to be assigned to an empty folder. The maximum reel number value is 999.

With the **Mode** set to **OFF**, the **Next** value is not used and all new empty folders has a default reel number of 000.

When selecting a non-empty folder as working folder, no reel number is assigned. The reel number is extracted from the existing sound files name (the last index) in order to avoid mixed reel numbers in the folder. This behaviour does not depend on **Mode** value.

The current reel number value of the working folder can be checked in the **Current** menu. Changing the current reel number modifies all sound file names of the working folder in accordance with the new value. The file metadata ("TAPE" keyword) is not modified.

OTHER SETTINGS



The **Other** settings menu relates to various other selections within the machine that do not fall easily into any of the other categories. There are several settings that are rarely accessed but may be needed occasionally.

The **Date Time** menu is the internal clock of the machine and will be recorded in the directory of the HDD. It is totally independent of the time code setting. It is set in the same way as a time code, by moving to the desired digit using the arrow keys and changing it's value with the Up and Down keys.

The **Pow.Delay** is a very useful feature for the NAGRA V. Under normal circumstances the machine will automatically switch Off when the main function selector is set to the STOP position. When it is turned on again the user must wait about 20 seconds for the BOOT process to finish. This menu allows the user to program the delay before the power is cut totally, which should avoid inadvertently stopping the machine completely. It can be programmed for 2 seconds or 5 seconds, or even manual. In the **MANUAL** position, the machine will remain switched on permanently until there is no longer sufficient power fed to the machine. The **ONLY** way to stop the machine in this case is to hold the SHIFT key while turning the main function selector to the STOP position and then keeping the SHIFT key pressed for an additional 2 seconds. Then the machine will power off completely.

The **PTT lev.** selection permits the selection of the output voltage on the banana connectors on the right side of the machine, used when connecting to a telephone line.

The **Software** menu gives the user access to the different versions of software installed in the NAGRA V. The first position shows the version V X.XX of the software in the lower half of the machine. The DV X.XX indicates the deck version number, and the last position is the version of the time code software.

The **RESET** position of the menus is used to reset the menus of the machine to the default settings. This can be used if the user needs to be sure that no peculiar settings remain in the memory, from previous users' settings. However this will perform a **POWER OFF** of the machine in order to reset everything. The reset function will only work if the machine is in the STD.BY mode.

The **RESET** function does not erase the templates.