PROFESSIONNAL PORTABLE
MULTITRACK RECORDER

SONOSAX
MINIR82

User Manual

Audio Equipment Manufacturer

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QUICK START

Powering

External PSU: use only the optional SONOSAX power supply .

Batteries: use only rechargeable NiMh batteries, standard dry cell batteries can not power the MINIR82. Insert batteries as shown on the picture below.

External DC supply : The MINIR82 can also be supplied from an external suitable DC source from 5 to 9 V. A 2 meter long cable with the DC plug is available, part nr V980010. For use with high capacity 12V battery, a 9V to 18V DC/DC converter will soon be available.

Power On

Press simultaneously the UP and DOWN key to turn on the MINIR82.

CF Card

Before using a new CompactFlash card with the MINIR82, you must format it FAT32 on your PC Some cards are faster than others and you must use fast CF cards only. Please contact your nearest SONOSAX distributor for further information.
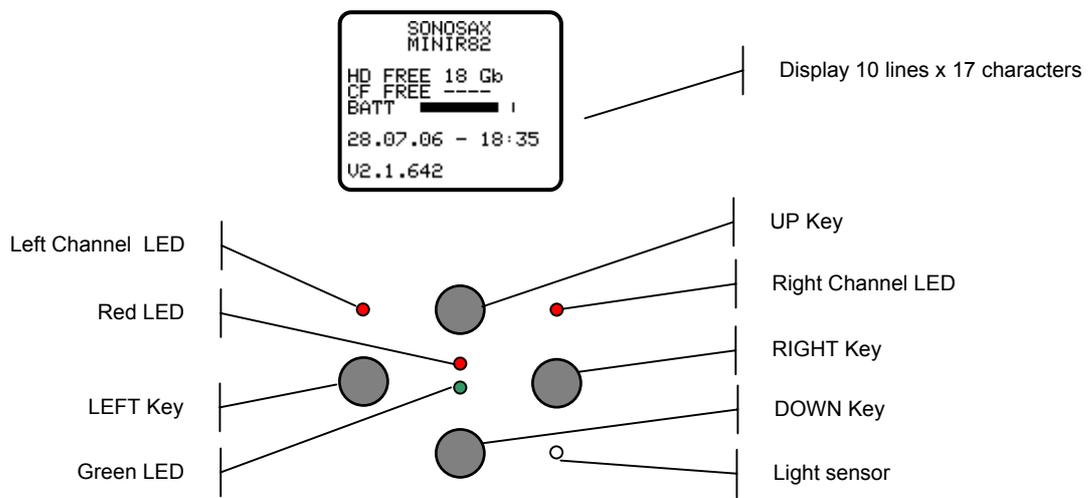
Firmware up-date

Firmware file name: Vxxxxx.BIN   (e.g. V20431.bin => version 2.0.431)

- For safety, save all your files .
- Connect the MINIR82 to the USB2 port of your PC, two drives named [CONFIG] and [AUDIO] will be automatically mounted.
- For safety, back up all your files on your PC, including your "User Settings" stored on the folder named "SETTING" in the [CONFIG] drive.
- Use Windows Explorer to copy the firmware file to the root directory of the [AUDIO] drive of the MINIR82 (e.g: G:\V20431.BIN)
- Alternatively you can also copy the firmware file to root directory of the CF card.
- Remove the USB2 cable and turn Off the MINIR82 as displayed on the MINIR82 screen.
- Turn On the MINIR82, go to the "MENU" page, select "Browse Files". The firmware file appears on the screen at the bottom of the list of files. If not, use the "Down" Key to scroll down and highlight the firmware file.
- If the firmware was copied ot the CF card, select […] then [COMPACTFLASH]
- Highlight the Firmware (ex. V20431.BIN) using the "Down" key and press "SELECT". The screen displays the current version « Running Version : (e.g. 2.0.422) » and the new version to be installed « File Version : (e.g. 2.0.431) ». Press "OK" to confirm the up-date or "CANCEL" to abort.
- Once the up-date begins, a progression bar is displayed. Please wait until the up date is competed and then press "OK".
- Due to compatibility issues between firmware versions, it is advised to reformat both [CONFIG] and [AUDIO] drives as well as the CF card. Use the Quick Format option to save time.
- Restore your "SETTING" folder to the [CONFIG] drive

Pyramix

Before using your PYRAMIX NATIVE, please register to www.merging.com/pyramix/native

User Interface

Display 10 lines x 17 characters

```
       SONOSAX
       MINIR82

HD FREE 18 Gb
CF FREE ----
BATT ████████ ▌

28.07.06 - 18:35

V2.1.642
```

Left Channel LED

Red LED

LEFT Key

Green LED

UP Key

Right Channel LED

RIGHT Key

DOWN Key

Light sensor

Turning ON the MINIR82

Turning ON the MINIR82 is done by pressing simultaneously the UP and DOWN Keys.
A boot up screen is displayed for approx. 2 seconds and shows following information's:

- The remaining free available space on the hard disk and on the CompactFlash card
- A power indication of either the batteries or the external PSU by means of a bar graph
- Date and Time
- The running firmware version

```
        SONOSAX
        MINIR82

HD FREE 18 Gb
CF FREE ----
BATT  ████████ ı

28.07.06 - 18:35

V2.1.642
```

Note : it can take a while until the remaining available free space is displayed

Principle of operation

Status

The MINIR82 status is shown by means of the green or red "status" led's and the screen display
Following status are possible:

- RECORD READY
  the Red LED is flashing, the MINIR82 is ready to start recording
- RECORDING
  the Red LED lights On steady, confirming that a recording is in progress.

- PLAYING
  the Green LED lights On steady, a take is being played
- PLAY PAUSE
  the Green LED flashes, indicating that the Take being played is actually Paused.
- PLAY STOP.
  a Take is loaded ready to be played, no LED light on nor flashes

Clipping LEDs

The "Left Channel" and "Right Channel" Led's shows two particular status that are either:

- Limiters : either the Left or the Right LED lights On independently when the Microphone
  Input signal reaches a level of 2,5dB before clipping, thus activating the Limiter.
- Clipping: the Input signal is too high on the microphone A/D Converter, both Left and
  Right LED's light On together

On screen Display and Keys

The main working page (Tracks Monitoring) displays the 8 Peak Meters.
The meter range starts at –72dBfs and goes up to 0dBfs in 1dB steps from –72dB up to –24dB
and in 0,5dB steps from –23,5dB up to 0dB.
A configurable reference (-9, -12, -18 et –20 dB) can be displayed (see configuration menu)

The bottom line of the display shows the functions of the Keys. Conventionaly, the UP and
DOWN keys are used to change the parameters, the Left key is used to "Select" and the Right
Key to "Cancel".
A single Arrow symbol denotes that an action is achieved by briefly pushing the key.
A double Arrow symbol means that the key must be pushed longer to validate the action.

Architecture - Audio path

The MINIR82 offers12 physical Inputs channels, up to 8 of these audio channels can be used at the same time. These 8 channels are configured per pair :
- 1, 2 : either AES or Microphone input
- 3, 4 : either AES or Line input
- 5, 6 : AES
- 7, 8 : AES

The routing Matrix allows to route and mix any of the input channels onto any of the 10 tracks. Then first 8 tracks are dedicated for the hard disk (HD) and the 2 additional tracks for the CompactFlash card (CF).

For Monitoring purpose, you can configure and listen any combination of these 10 tracks. However, the display shows only the 8 hard disk tracks Peakmeters
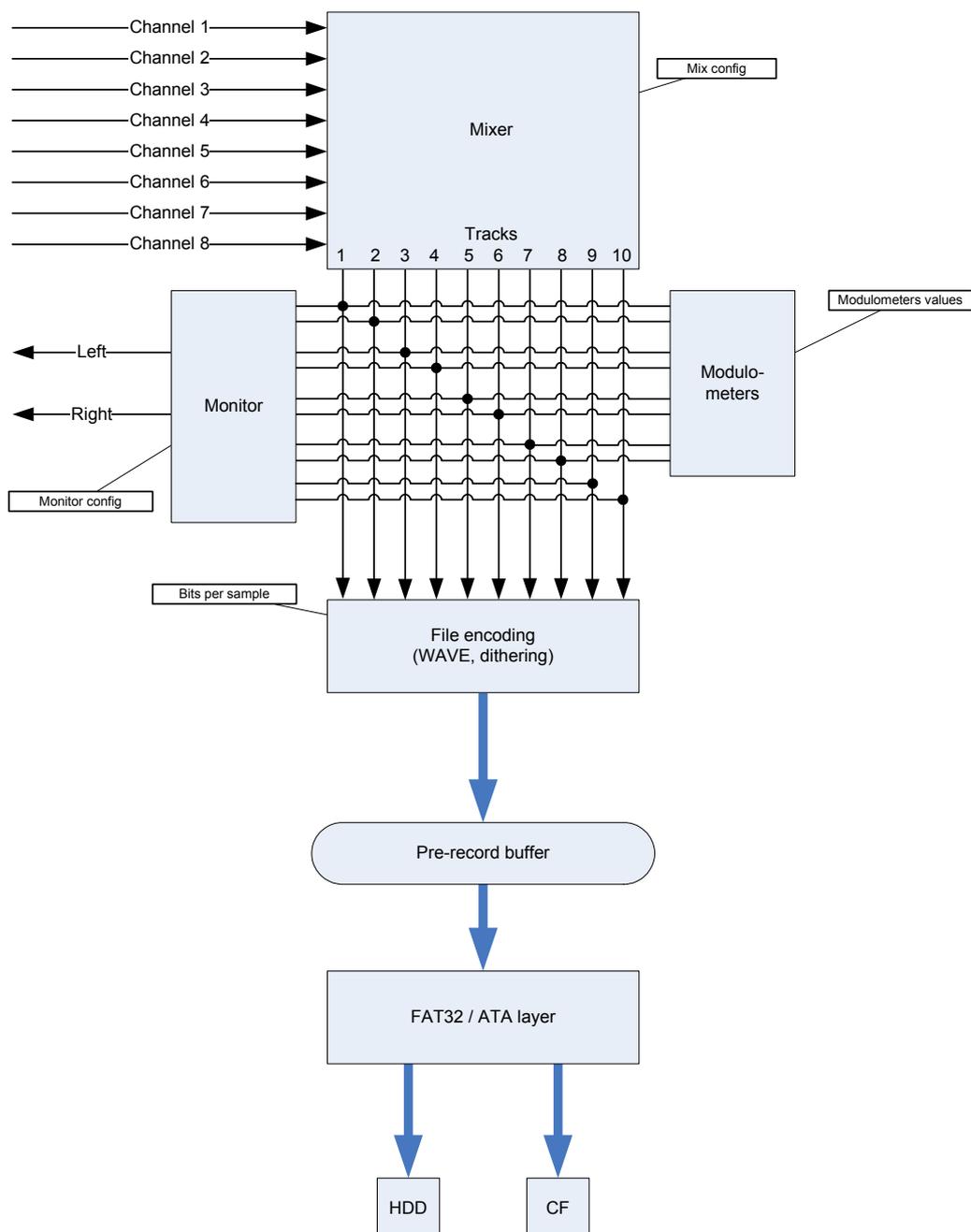
Track Monitoring

The TRACK MONITORING is the main screen displayed by the MINIR82. The numbering is always displayed and is related to the HD tracks. The number of each active track in use is shown in reverse video.
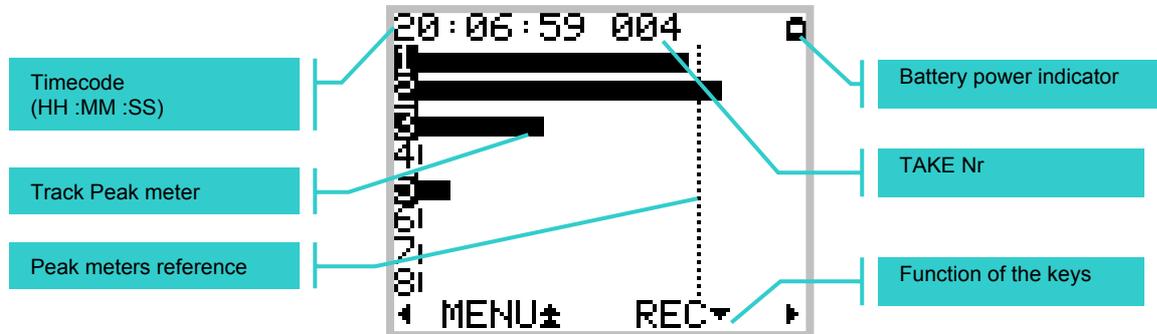
Note: the Peak meter reference is adjustable in the "Configuration" menu.
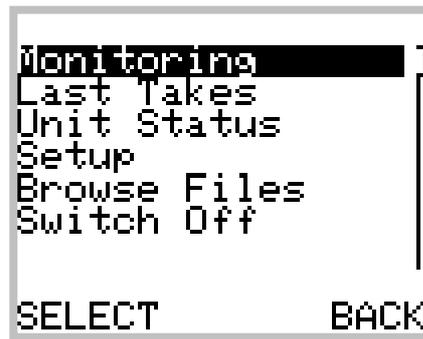
Actions or function of the keys are described as below:

Key	Short pressure	Long pressure
LEFT	Reduce the headphone volume by 1dB	Keep pressing to continuously reduce the volume down to min
RIGHT	Increase the headphone volume by 1dB	Keep pressing to continuously increase the volume up to max
UP	Enter Solo Monitoring page	Enter contextual Menu page
DOWN, while Record Ready	Start Recording	
DOWN, while Recording	Add an index **	Stop Recording
DOWN, in Stop	Start Playing	
DOWN, while Playing	Pauses at current position	Stop playing
DOWN, in Pause	Play from current position	Switch to Stop mode
LEFT & RIGHT	Lock/Unlock keypad	

Pressing the LEFT or the RIGHT key display a temporary screen showing the headphone level by means of a bargraph. The headphone level is adjustable in 1dB step from –30dB to +18dB.

Contextual Menu

```
┌─────────────────────────┐
│ ▐Monitoring▌          ] │
│ Last Takes              │
│ Unit Status             │
│ Setup                   │
│ Browse Files            │
│ Switch Off              │
│                         │
│ SELECT          BACK    │
└─────────────────────────┘
```

The Contextual Menu allows a quick navigation between the different pages and configurations menu of the MINIR82. The Contextual Menu can only be accessed from the Track Monitoring Page

Key	Short pressure	Long pressure
LEFT	Confirm the selection	
RIGHT	Return from the menu to the Tracks Monitoring page	
UP	Scroll the selection upward	
DOWN	Scroll the selection doqnward	

The possible choices in the Contextual Menu depend of the current "Status" of MINIR82 as described below:

While in Status "Recording"
- Monitoring
- Unit Status

While in Status "Playing"
- Last Takes
- Monitoring
- Unit Status
- *Delete Take*

While in Status "Record Ready"
- Monitoring
- Last Takes
- Unit Status
- Setup
- Browse Files
- Switch Off

While in Status "Stop"
- Last Takes
- Exit Player Mode
- Monitoring
- Unit Status
- Browse Files
- Delete Take
- Switch Off

Solo Monitoring

The "Solo Monitoring" page is accessed from the "Track Monitoring" page by briefly pressing the UP Key. It allows to Monitor in mono any individual track or a specific pair of track.
The displayed page is visually identical to the "Track Monitoring" page except that a round dot replaces the selected track being soloed.

The track selection sequence is as follow: 1, 2, 1+2, 3, 4, 3+4, 5, 6, 5+6, 7, 8, 7+8.
The UP key moves the selection upward, the DOWN key moves the selection downward
The SoloMonitoring is only possible with active (armed) tracks

Key	Short pressure	Long pressure
LEFT	Reduce the headphone volume by 1dB	Keep pressing to continuously reduce the volume down to min
RIGHT	Increase the headphone volume by 1dB	Keep pressing to continuously increase the volume up to max
UP	Select the previous track or pair of tracks	Retour au tracks monitoring
DOWN	Select the next track track or pair of tracks	
LEFT & RIGHT	Lock/Unlock keypad	
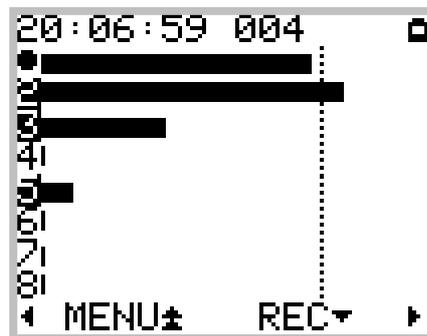
The example above shows a configuration of 4 active (or armed) tracks :1, 2, 3, 5
the track 1 being currently selected for Solo Monitoring.

In this particular case, the selection sequence for the Solo is: 1, 2, 1+2, 3, 5

Monitoring

This Monitoring page allows you to mix the 10 tracks of the MINIR82 for it's headphone output.
The configuration of the monitoring is done by means of a specific menu as shown below

```
MONITORING

HD 1-2 STEREO
HD 3-4 REV STEREO
HD 5-6 ---
HD 7-8 MS
CF 1-2 ---


SELECT      DONE
```

The Monitoring is always configured per pair of tracks (10 tracks = 5 pairs of tracks)
The table below shows the available choices and their respective monitoring results on the stereo headphone output for the pair of tracks 1 and 2.

Key	Short pressure	Long pressure
---	Muted	Muted
MONO	1 + 2	1 + 2
STEREO	1	2
REV STEREO	2	1
MS	1 + 2	1 – 2
MONO L	1 + 2	Muted
MONO R	Muted	1 + 2

The table below describes the key functions

Key	Short pressure	Long pressure
LEFT	Change the Monitoring type	
RIGHT	Save the modifications and return to the previous Menu	
UP	Move the selector upward	
DOWN	Move the selector downward	

Note: If a pair of track is not activated (or not armed) the only possible value is "No Monitoring"
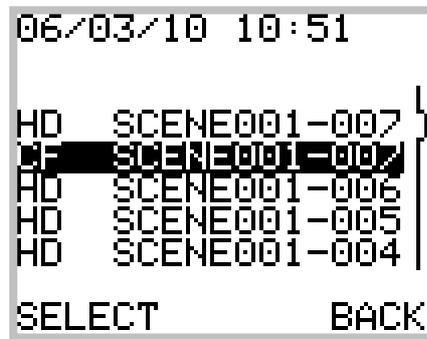
Last Takes

This screen allows you to rapidly access a list of the Last Takes having been recorded in a reverse order, the very last Take is at the top od the list.

The first line displays the date (YY/MM/DD) and the time of the selected Take
La première ligne donne la date (format YY/MM/DD) et l'heure de la prise sélectionnée.
Each TAKE is presented with following forms:

$$XX \ \ YYYYYYYY\text{-}ZZZ$$

Where   XX is the media source where the TAKE is stored (HD or CF)
                    YYYYYYYY is the scene name and ZZZ   is the TAKE number.
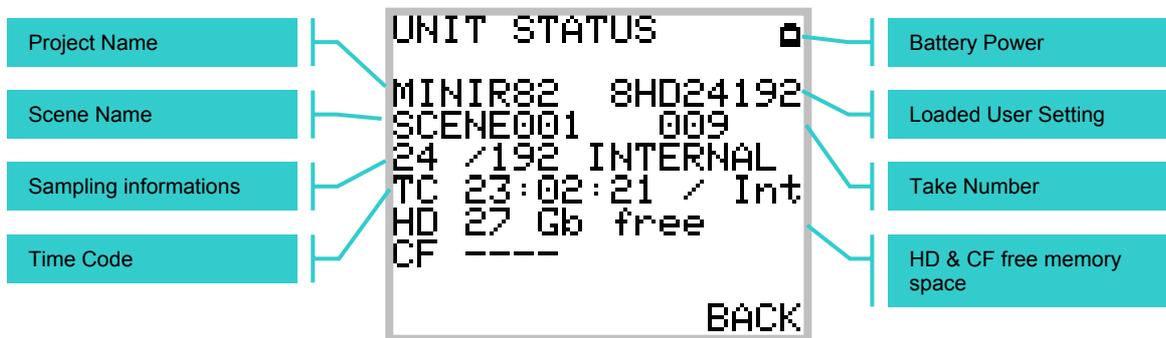
By selecting a TAKE, the MINIR82 loads it to it's memory. Depending of the media source and the TAKE length, it may take a certain time before the TAKE becomes ready for the Playback.

.

```
06/03/10 10:51


HD   SCENE001-007
CF   SCENE001-00
HD   SCENE001-006
HD   SCENE001-005
HD   SCENE001-004

SELECT        BACK
```

Key	Short pressure	Long pressure
LEFT	Load the selected TAKE	
RIGHT	Back to the Contextual Menu	
UP	Move the selector upward	
DOWN	Move the selector downward	

Unit Status

This page dispays the major parameters of the MINIR82

Project Name		Battery Power
Scene Name		Loaded User Setting
Sampling informations		Take Number
Time Code		HD & CF free memory space

```
UNIT STATUS        ▢

MINIR82   8HD24192
SCENE001     009
24 /192 INTERNAL
TC 23:02:21 / Int
HD 27 Gb free
CF ----

              BACK
```

The displayed parameters are :

- Line 1 :   Battery power indicator (fuel gauge)
- Line 3 :   Project Name – Loaded User Setting (displayed only if the configuration has been loaded and not been modified)
- Line 4 :   Scene Name - Take number
- Line 5 :   Sampling rate (24/16) / Sampling frequency, synchronisation source (INTERNAL, AES, WCK IN)
  or video stream type : PAL/25, NTSC/29.97, 1080/23.97, 1080/24, 1080/25, 1080/29.97, 1080/30, 720p/24, 720p/25, 720p/29.97, 720p/30, 720p/50, 720p/59.94, 720p/60, 295M-P/25 or Video Err.
- Line 6 :   Time Code value and its format : Int (Internal), 24, 25, 29 (29.97Non Drop), 29D (29.97 Drop), 30 (30 Non Drop) or 30D (30 Drop). If the Time Code can not be read (unknown format) the Time Code value becomes: -- :-- :--
- Line 7 :   Remaining available free space on the Hard Disk
- Line 8 :   Remaining available free space on the CompactFlash card

| Key	Short pressure	Long pressure
LEFT		
RIGHT	Back to the Contextual Menu	
UP		
DOWN		

Setup (Configuration Menus)

The Menus of Configuration are posted by calling the Contextual Menu and by selecting "Setup" in the list. The menus are classified in headings (rubrics), and grouped in a logical order. The navigation from heading to heading is done by the keys UP and DOWN. On the line of the screen, a scrool bar indicates the position in the list of choice of the headings.
The LEFT key (SELECT) makes it possible to enter the sub-heading and the RIGHT key (EXIT, BACK) makes it possible to return to the preceding screen.

The tree structure of the menus imposes the use of sub-menus until arriving at the parameter which one wishes to modify.

```
INPUT SETTINGS

INPUT
SOURCE                )




SELECT        BACK
```
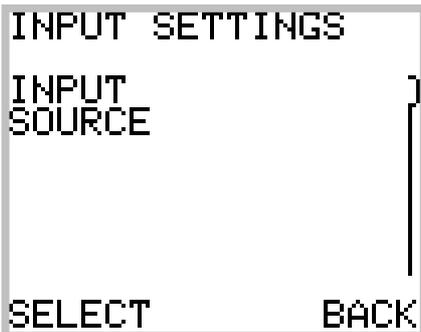
The menu without parameter posts a heading by screen. It makes it possible to classify the various parameters.

```
SAMPLING SETTINGS

SAMPLING
FREQUENCY             )


        48.0 kHz

SELECT        BACK
```
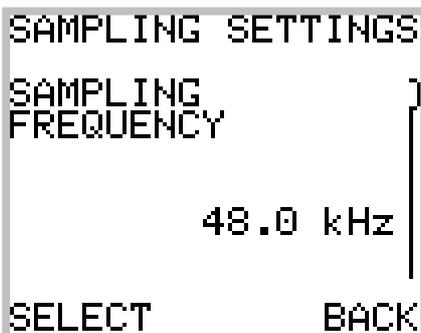
The menu with parameter corresponds at the end of the tree structure of the menu, it thus presents the current value of the parameter which can be modified

While pressing on SELECT in a menu with parameter, the user can change its value. One distinguishes several manners of carrying out this change.

```
SAMPLING
FREQUENCY

44.1 kHz            )
48.0 kHz
88.2 kHz
96.0 kHz
176.4 kHz

SELECT        BACK
```
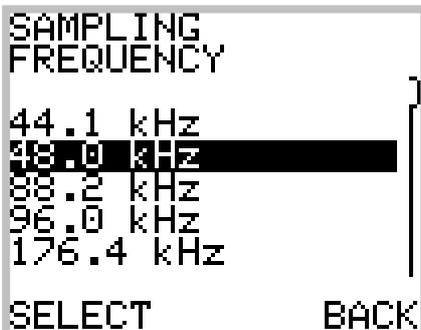
The menu with a list presents the possible choices of a parameter. The selection is posted in reverse video.

```
PROJECT NAME


        ▲
    [MINIR82]
        ▼



◄◄ DONE    CANCEL ►►
```

The menu of text-editing.
The text to be modified is presented between brackets which shows the limits of the text size (max. 8 characters). Two arrows show the selected character.
The keys react as follows: UP and DOWN allow to modify the selected character. Keep pressing to scroll the characters.
LEFT and RIGHT keys move the cursor to select the character.
A long pressure on LEFT saves the text and returns to the preceding menu. A long pressure on RIGHT cancels the edition and returns to the preceding menu

Tree structure of the menus

The menus in gray represent the menus where the parameters are visible.

Level 1	Level 2	Level 3	Changeable values
ROUTING SETTINGS	ROUTING	Specific Menu (cross matrix)	
	MIXING LEVEL		NONE, ATT1.5, ATT3, ATT6
RECORD SETTINGS	PROJECT NAME		Text editor
	SCENE NAME		Text editor
	FILE FORMAT		MONO, STEREO
	SAMPLING SETTINGS	SAMPLING FREQUENCY	44.1, 48, 88.2, 96, 176.4, 192 kHz
		SAMPLING UP/DOWN	Nominal, UP o/oo, DOWN o/oo
		SAMPLING RATE	24 bits, 16 bits dither, 16 bits
	PRE-RECORD TIME		1, 2, 5, 10, 20 sec
	PRE-INDEX DELAY		0, 1, 2, 3, 5 sec
	SYNC MODE		OFF, WDCKIN, VIDEO IN
INPUT SETTINGS	INPUT SOURCE	IN 1-2	AES, MIC
		IN 3-4	AES, LINE
	MIC LOW FREQ CUT	IN 1	OFF, ON
		IN 2	OFF, ON
	LINE IN LEVEL		+15, +6, 0, -10 dBu
TIMECODE SETTINGS	INPUT SOURCE		EXTERNAL JAM SYNC, EXTERNAL NO JAM, INTERNAL
	INPUT FORMAT		AUTODETECT, 24, 25, 29.97 NON-DROP, 29.97 DROP, 30 NON-DROP, 30 DROP
	RUNNING MODE		FREE RUN, RECORD RUN
	SET MANUAL		
	SET FROM TIME		
MODULOMETERS SETTINGS	REFERENCE		NONE, -9, -12, 18, -20 dB
	HOLD TIME		NONE, 5 sec, 10 sec, 2 min, INFINITE
USER SETTINGS	Specific Menu		
MISC	DATE	Specific Menu to set up Date	
	TIME	Specific Menu to set up Time	
	SYSTEM INFO	Post the revision software and others infos	
	USER INTERFACE CHECK	Allows to test the screen, LEDs and the Keys	
	FACTORY SETTINGS	Re-initialized all current parameters	

Explanation of each menu is given in the following page.

SETUP > ROUTING SETTINGS > ROUTING

The configuration of the routing is carried out by means of a specific menu describes below:
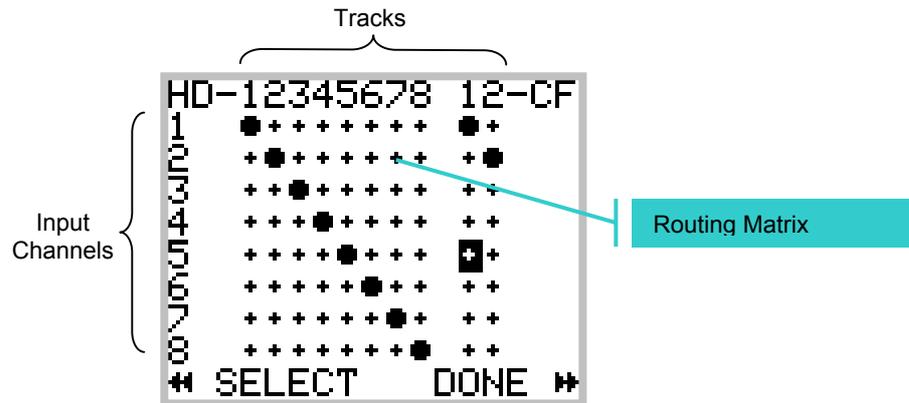
The round dot sets or remove a connection between the Inputs (Channels Input) and the Tracks. In the figure above, a routing 1: 1 is established between the Inputs and the hard disk Tracks.

The table below summarizes the actions of the keys:

Key	Short pressure	Long pressure
LEFT	Move the selection to the Left	Confirm the routing modification (active/inactive)
RIGHT	Move the selection to the Right	Save the configuration and returns to the preceding menu
UP	Move the selection upward	
DOWN	Move the selection downward	

Notes :   in this menu, it is not possible to leave without saving the configuration.
The unsed input channels (no dot on the crossing) are automatically desactivated.

SETUP > ROUTING SETTINGS > MIXING LEVEL

When two or more inputs are routed and mixed on the same Track, the MIXING LEVEL menu allows to apply an attenuation in dB, on a per channel basis, in order to avoid digital overload. The MINIR82 will then automatically calculate the total attenuation according to the number of input channels to be mixed together. Four possible choices are offerred:
- NONE   no attenuation is applied
- ATT1.5   to be used when sources have no phase coincidence
- ATT3   to be used when sources do have a phase coincidence (stereo pair)
- ATT6   to be used when sources are in phase

The table below summarizes the attenuations carried out:

Number of Input channels assigned to the same Track	NONE [dB]	ATT1.5 [dB]	ATT3 [dB]	ATT6 [dB]
1	0	0	0	0
2	0	1.8	3.3	6
3	0	2.5	5	10.1
4	0	3.3	6	12
5	0	3.3	7.2	14.5
6	0	4.1	7.2	14.5
7	0	4.1	8.5	18.1
8	0	5	8.5	18.1

SETUP > RECORD SETTINGS > PROJECT NAME

This menu allows to specify the Project Name. This one is used with several aims:
- Name of the directory where the Takes will be stored.
- Archivage of the Project Name in each WAVE file (sub-chunk BWF and iXML)

The format of the Project Name is as follows:
- 8 characters maximum
- alphanumerics characters and space only (A..Z, 0..9, ' ')

SETUP > RECORD SETTINGS > SCENE NAME

This menu allows to specify the Scene Name. This one is used with several aims:
- Partially Name the directory where the audio files of the Takes will be stored
- Archivage of the Scene Name in each WAVE file (sub-chunk BWF and iXML)

The format of the Scene Name is as follows:
- 8 characters maximum
- alphanumerics characters and space only (A..Z, 0..9, ' ')

SETUP > RECORD SETTINGS > FILE FORMAT

The File format offers two choices :
- MONO
- STEREO

If MONO is selected, each track is recorded in a separated file, in mono.
If STEREO is selected, the system records a pair of tracks in a stereo file. The pairs are always 1+2, 3+4, 5+6 and 7+8.
If the configuration of the Routing sets incomplete pairs of tracks (for example tracks 1, 3, 4 and 7) each insulated track is recorded in a stereo file and uses a half of the file size.

SETUP > RECORD SETTINGS > SAMPLING SETTINGS > SAMPLING FREQUENCY

This menu allows defines the sampling frequency. Choices are : 44.1, 48, 88.2, 96, 176.4,192 kHz. The selected value is **not used** when the MINIR82 uses the AES Inputs. In this case the MINIR82 will lock on the incoming AES sample frequency.

SETUP > RECORD SETTINGS > SAMPLING SETTINGS > SAMPLING UP / DOWN

This menu makes it possible to define the possible correction for the NTSC world. The possible values are NOMINAL (use of the nominal sampling value), UP ‰ (positive correction of one per thousand) and DOWN ‰ (negative correction of one per thousand).

SETUP > RECORD SETTINGS > SAMPLING SETTINGS > SAMPLING RATE

This menu sets the number of bits per sample (sampling rate) stored in WAVE files. The possible values are 24 bits, 16 bits dither and 16 bits. The dithering is of triangular type.

SETUP > RECORD SETTINGS > PRE-RECORD TIME

The Pre-Record time can be set from de 1 second and up to 20 seconds. The definite value may not always be possible because of the physical limitation of the built-in memory and the selected configuration. The pre-record time depends on the following factors:
- Number of Tracks being used
- Sampling frequency
- Sample Rate and Pull UP/ Pull DOWN correction

When the pre-record time required is not possible, the MINIR82 will work on "best effort" to provide with the possible maximum. The table below shows the max. values of the pre-record time [sec.]:

16 bits	Tracks count									
fs	1	2	3	4	5	6	7	8	9	10
44100	20.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	18.5	16.6
48000	20.0	20.0	20.0	20.0	20.0	20.0	20.0	19.1	17.0	15.3
88200	20.0	20.0	20.0	20.0	16.6	13.9	11.9	10.4	9.2	8.3
96000	20.0	20.0	20.0	19.1	15.3	12.7	10.9	9.6	8.5	7.6
176400	20.0	20.0	13.9	10.4	8.3	6.9	5.9	5.2	4.6	4.2
192000	20.0	19.1	12.7	9.6	7.6	6.4	5.5	4.8	4.2	3.8

24 bits	Tracks count									
fs	1	2	3	4	5	6	7	8	9	10
44100	20.0	20.0	20.0	20.0	20.0	18.5	15.9	13.9	12.3	11.1
48000	20.0	20.0	20.0	20.0	20.0	17.0	14.6	12.7	11.3	10.2
88200	20.0	20.0	18.5	13.9	11.1	9.2	7.9	6.9	6.2	5.5
96000	20.0	20.0	17.0	12.7	10.2	8.5	7.3	6.4	5.7	5.1
176400	20.0	13.9	9.2	6.9	5.5	4.6	4.0	3.5	3.1	2.8
192000	20.0	12.7	8.5	6.4	5.1	4.2	3.6	3.2	2.8	2.5

In these tables, the UP/DOWN correction is not taken into account (negligible).

SETUP > RECORD SETTINGS > PRE-INDEX DELAY

The pre-index delay is the time of anticipation when adding an index. It proposes the following values: 0, 1, 2, 4 and 5 seconds. The graph below shows to what corresponds this time:
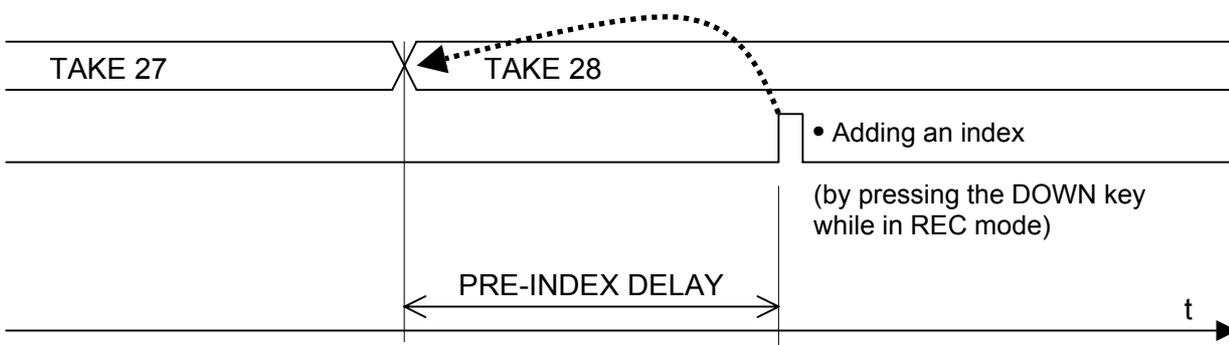
The pre-delay index is not absolute, the software making doing his best to cut the Take to nearest of desired time (best effort).

However, no data is lost during the addition of the index !

SETUP > RECORD SETTINGS > SYNC MODE

This menu allows to define the mode of synchronization of the MINIR82. By synchronization, one means the use of an external clock on a given signal. This section does not treat the use of timecode.
The mode of synchronization used by the MINIR82 is posted in the menu "Unit Status".
Different the mode are explained below with the various parameters and their validity.

OFF
Internal Generator
The MINIR82 has an very stable internal clock generator, capable to generate all the audio frequencies (44.1, 48, 88.2, 96, 176.4 and 192 Khz) within 1ppm. This generator is used only when no other clock is available.
Sampling frequency :   active
Sampling up/down :   active
Sampling rate: active

Synchronisation on AES input
The MINIR82 is locked automatically on the **incoming AES clock of the channels 5-6**
Sampling frequency :   inactive
Sampling up/down :   inactive
Sampling rate: active

WCK IN
Synchronisation WCK IN
WCK IN must be set in the menu SYNC MODE to use the Word Clock connected on the SYNC IN.
This mode is not used if a valid AES signal is present.
Sampling frequency :   inactiv
Sampling up/down :   inactiv
Sampling rate: active

VIDEO IN
Synchronisation Video IN
VIDEO IN must be set in the menu SYNC MODE to use the Clock of a Video feed
This mode is not used if a valid AES signal is present
Sampling frequency :   active
Sampling up/down :   inactive
Sampling rate: active

SETUP > INPUT SETTINGS > INPUT SOURCE

This menu one can select which Input source must be applied to the channels 1-2 and 3-4.
For channels 1-2, the possible sources are:
- AES
- MIC

For channels 3-4, the possible sources are:
- AES
- LINE

SETUP > INPUT SETTINGS > MIC LOW FREQ CUT

When channels 1-2 are configured as MIC, a low-pass filter can be activated for each channel individually by this menu,.

SETUP > INPUT SETTINGS > LINE IN LEVEL

When channels 3-4 are configured as LINE, the input level can be adapted to properly match with the A/D Converter, thus the selected value matches the 0dBfs of the A/D.
It presents the following choices:
- +15 dBu
- + 6 dBu
- 0 dBu
- -10 dBu

SETUP > TIMECODE SETTINGS > INPUT SOURCE

The Time Code source is configurable with following choices:
- External Jam Sync
- External No Jam
- Internal

SETUP > TIMECODE SETTINGS > INPUT FORMAT

The MINIR82 is able to automatically detect the Time Code format present on the T.C. input
However, in order to be sure to use the good format, it is possible to specify it. In this case, the detection of a format different from that specified will give an alarm. The formats suggested are:
- Autodetect
- 24
- 25
- 29.97 Non Drop
- 29.97 Drop
- 30 Non Drop
- 30 Drop

SETUP > TIMECODE SETTINGS > RUNNING MODE

Two possible choices:
- FREE RUN
- RECORD RUN

In FREE RUN mode, the Time Code is absolute and linear. It runs continuously and never stops.
In RECORD RUN mode, the Time Code is running only while Recording.

SETUP > TIMECODE SETTINGS > SET MANUAL

This menu makes it possible to adjust the Time Code manually.

SETUP > TIMECODE SETTINGS > SET FROM TIME

This menu will adjust the Time Code exactly at the time of the real time clock of the MINIR82.

SETUP > MODULOMETERS SETTINGS > REFERENCE

To set and display a level reference on the screen of the modulometers (Track Monitoring).
The choices of references are:
- NONE
- - 9 dB
- -12 dB
- -18 dB
- -20 dB

SETUP > MODULOMETERS SETTINGS > HOLD TIME

The function "Hold Time" detect the absolute peak level and keep it posted for:
- NONE
- 3 secondes
- 10 secondes
- 2 minutes
- INFINITE

SETUP > USER SETTINGS

The "User Settings" makes it possible to save, load or up date a complete configuration setting to/ from an ASCII file.

CREATE NEW…
Allows to create a new file of configuration based on the running (active) configuration of the MINIR82.

RECALL SELECTED
Allows to load a configuration file. Caution: this operation will crush the current configuration!

DELETE SELECTED
Delete the seleted configuration file.

OVERWRITE SELECTED
Overwrite an existing configuration by the current configuration of the MINIR82

SETUP > MISC > DATE

To set the Date of the internal Real Time Clock (format is DD.MM.YYYY).

SETUP > MISC > TIME

To set the Time of the internal Real Time Clock (format HH:MM:SS).

SETUP > MISC > SYSTEM INFO

This menu shows all the hardware and software characteristics of the MINIR82: firmware version of the DSP, the firmware version of the display microcontroler (PIC), battery voltage and hardware version of the AES receivers.
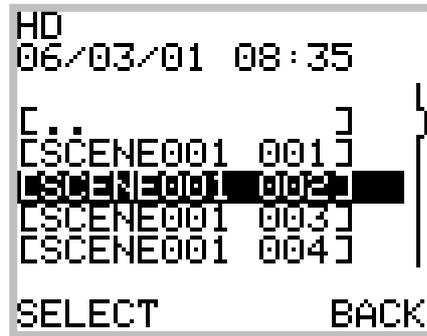
SETUP > MISC > USER INTERFACE CHECK

This menu allows to check the LCD display, the LEDs and the keys.

SETUP > MISC > FACTORY SETTINGS

This menu allows to re-initialyze the MINIR82 in its basic configuration (factory default).
Caution: this operation crushes the currently loaded configuration. It does not modify the audio data on the discs nor the user settings.

Browse Files

The file browser uses a specific menu :

```
HD
06/03/01  08:35

[..          ]
[SCENE001  001]
[SCENE001  002]
[SCENE001  003]
[SCENE001  004]

SELECT      BACK
```

The directory [..] allows to go back one step in the tree structure.
The LEFT key (SELECT) action depends of the context :

- If it is about a Take directory, the selected Take is loaded.
- If it is about a directory (e.g. a Project), its contents is posted.
- If it is about a firmware release, the update starts after a request for confirmation
- In all the other cases, an error message is posted (see below).

Selecting [..] at the root level of a disk (e.g. the root of the HD) allows to swap to the other disk (e.g. the root of the CF). This is achieved by means of a selection menu.

When a file is not recognized or cannot be interpreted, the following message is posted:

```
_____

UNKNOWN FILE
FORMAT

_____
```

Organisation of the disks

The hard disk is always splitted in 2 partitions:
- Partition [CONFIG] , size = about 50 to 100Mb, format : FAT32
- Partition [AUDIO] , size = all remaining space, format FAT32

The aim of having two partitions is that it makes it possible to format the audio partition without losing the configurations (User Settings).

The software of the MINIR82 does not support "hot plugin" of the CompactFlash card (CF).
If the action is carried out, a warning message will be posted and in some cases it might be necessary to reboot the MINIR82.

The "Config" partition is structured as explained below:

[CONFIG]
- CONFIG.DAT
  Binary file, it contains all informations of the current configuration. This file is loaded while powering on the MINIR82, it is overwriten with the current (active) configuration and settings while powering off. This file is not modifiable by the user.
- [SETTINGS]
  Directory containing the files of the saved configurations (saved User Settings) which can be reloaded on the "User Setting" menu. These files can be modified and even created with an ASCII editor such as the Windows Notepad.

The "Audio" partition is structured as follow:

[AUDIO]
- [PROJECT NAME]
  Project directory (8 characters) the directory name is that of the "Projet Name".
  - [SCENE_NAME.TAKE_NUMBER]
    the directory name is that of the "Scene Name" (8 characters) directly followed by a dot then by the TAKE number (3 digit).
    This directory contains the BWF audio files and a configuration file (CONFIG.INI).
    This file is formatted in ASCII and represents the configuration of the MINIR82 at the time of the shot. It is used to reconfigure the MINIR82 for the playback and is not intended to be modified.

USB

The MINIR82 is equipped with a USB 2.0 port. The MINIR82 authorizes connection to a computer for file transfer (PC or Mac) and, when connected, it will automatically activate the USB port while the MINIR82 is in one of the following menu:

- Tracks monitoring
- Solo monitoring
- Unit Status

The MINIR82 posts the following screen when the USB connection is active:

```
 _____

      USB
   CONNECTED

 _____
```

When disconnecting the USB cable, the MINIR82 forces the user to extinguish the apparatus

```
 _____

USB DISCONNECTED
PRESS OK TO
POWER DOWN

 _____

OK
```
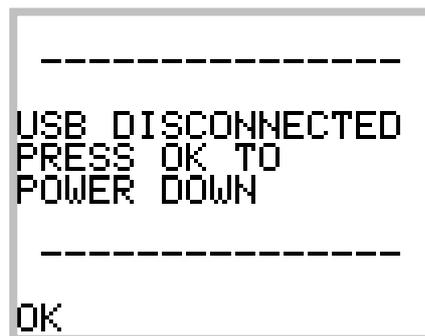
It is then necessary to press the LEFT key to switch off the MINIR82.

Alarms

Certain situations require that the user have to be alerted on a particular point. When this occurs, the MINIR82 intermittently posts a warning concerning the detected problem and a beep tone is heard in the headphone. The beep tone remain only until the user presses on any key.
One distinguishes 5 types of alarms, whose causes are explained below:
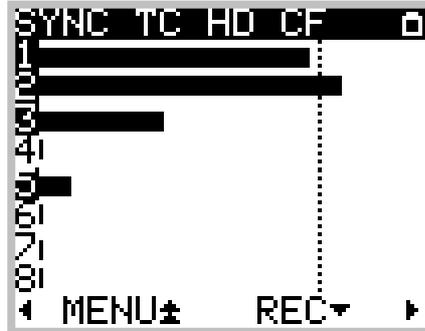
Alarm SYNC occurs when one of the following conditions is checked:
- One or more Tracks is assigned from an AES input, but no AES signal is present
- No AES input being assigned, the MINIR82 is set to WCK IN but no WordClock signal is present or the WordClock signal is invalid.
- No AES input being assigned, the MINIR82 is set to VIDEO IN but no Video signal is present or the Video signal is invalid.

Alarm TC occurs when one of the following conditions is checked:
- The TimeCode is set in Free Run - External Jam Sync, a TC signal is present but the format selected in the MINIR82 does not correspond to the detected format.
- The TimeCode is set in Free Run - External No Jam, but no TC signal is present
- The TimeCode is set in Free Run - External No Jam, a TC signal is present but the format selected in the MINIR82 does not correspond to the detected format.

Alarm HD or CF occurs when one of the following conditions is checked :

- The hard disk does not comprise the two awaited partitions.
- It remains less than 100Mb of free space in a disk
- The recording in progress written in files whose size approaches the possible maximum size of 4Gb. Alarm engages when there remains less than 100Mb.

The power Alarm occurs when the supplied voltage is soon too weak to maintain the MINIR82 in function.

Treatment of the errors

This section treats of the possible errors and problems that may occur while using the MINIR82.

Power issue
When the supply voltage becomes too weak, the MINIR82 proceeds to a safe shut down. If a recording is in progress, it is stopped properly.

> Note: please remember not to use dry cell batteries but NiMh rechargeable batteries instead

Insufficient disk space
If the remaining free space in a disk is too small, the recording in progress is stopped. When two discs are used (HD + CF), the recording is stopped if one of the two discs does not have enough free space.

Maximum file size
The FAT32 file system limits the size of the files to 4 GB. If the recording in progress reaches this limit, the MINIR82 adds an index and continues to record in the new Take (without loss of data).

Disk too fragmented
During the power-up, the MINIR82 checks the fragmentation of the discs. In case of severe fragmentation the recording is not allowed, an error message informs the user of the problem. It is then advisable to re-format the disk (while having saved the existing data before !!!!).

Real Time Clock (RTC)
During the power-up, the MINIR82 checks if the Date and the Time of the system are coherent. If it is not the case, a menu forces the user to define them. While setting the date, an error message can occur if the date format is not valid.

> Note: the MINIR82 does not have an internal back-up battery to keep the RTC running ininterrupted when NiMh batteries are removed or external DC supply is not present. However it maintain Date and Time for a period of approx 2 hours. It is therefore advised to leave well charged batteries in their compartment.

Recommendations

The architecture of the MINIR82 and its operating software brings to some recommendations :

Copy of Takes
It is strongly advised to copy (transfert) the Takes carried out by the MINIR82 to the hard disk of a computer. The opposite is however not possible: the MINIR82 will not be able to read an audio file copied to its disk from a computer.

Defragmentation
Never attempt to defragment the discs used by the MINIR82. For performance reasons, Recording the Takes is carried out by interlacing the various files which make it up. These files must remain interlaced so that the playback of the Takes remains possible. In the event of too severe fragmentation of a disc, it should be re-formatted (the fast formatting is enough).

Note: please remember back-up your file before reformatting a disk !!

Deleting files
Deleting a files is possible, but it must always be carried out by Take (suppression of the Take directory only). The suppression of a project is completely possible too.
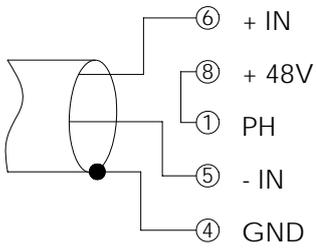
Formating
The MINIR82 works only with the FAT32 filing system. The setting of the clusters size can be left in the default value.
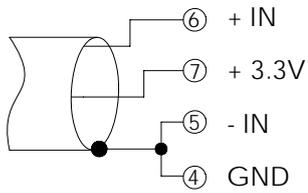
Use of the hard disk
The hard disk of the MINIR82 is accessible via the USB interface. In a general way, the hard disk must be used for the audio recording. However, it is completely possible for the user to to lay out of the disk space with an aim other than that of the audio recording. It is on the other hand important that this use does not penalize the fragmentation of the disc.
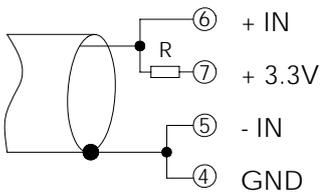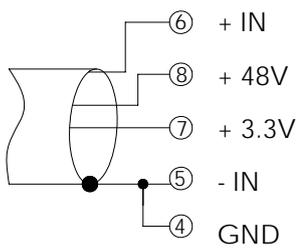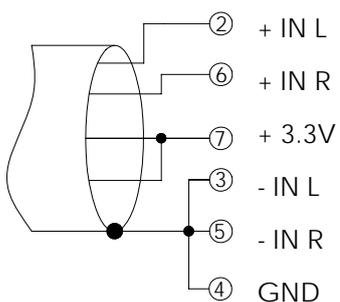
MICROPHONES CONNECTIONS MINIR82

⑥ + IN
⑧ + 48V
① PH
⑤ - IN
④ GND

Microphone 48V Phantom

⑥ + IN
⑦ + 3.3V
⑤ - IN
④ GND

Electret 3 wires

⑥ + IN
R
⑦ + 3.3V
⑤ - IN
④ GND

Electret 2wires
R ≅ 2.2kohms

⑥ + IN
⑧ + 48V
⑦ + 3.3V
⑤ - IN
④ GND

Microphone Schoeps active cable
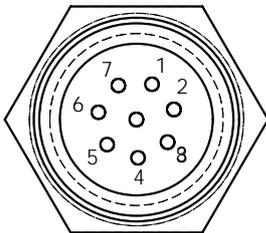
② + IN L
⑥ + IN R
⑦ + 3.3V
③ - IN L
⑤ - IN R
④ GND

Microphone Sanken COS 22

MINIR82
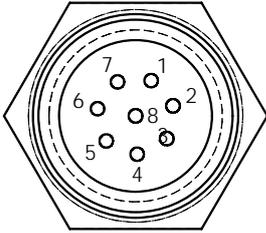
MIC/LINE IN LEFT CONNECTOR

1) PH
2) - -
3) - -
4) GROUND
5) IN- (LEFT)
6) IN + (LEFT)
7) + 3.3V
8) + 48V

MIC/LINE IN RIGHT CONNECTOR

1) PH
2) IN + (LEFT)
3) IN - (LEFT)
4) GROUND
5) IN - (RIGHT)
6) IN + (RIGHT)
7) + 3.3V
8) + 48V