**PROFESSIONAL PORTABLE
MULTITRACK RECORDER**

SONOSAX
SX-R4+

USER INTERFACE

Firmware version 1.2

TABLE OF CONTENT

1. INTRODUCTION

This manual describes the user interface, the operating instructions and all functionalities related to the Firmware version 1.2 of the SONOSAX SX-R4+.

For all information's concerning the hardware, powering information's, connectors diagram, specifications etc please refer to the SONOSAX SX-R4+ User Manual "Hardware Description".

1.1 CONVENTIONS

For sake of clarity in reading this manual, please note:

- Input, output, channel: refer to physical inputs or outputs of the recorder
- Tracks: refer to virtual tracks of the recorder
- Knob: refer to a physical knob
- Button or Key: refer to a logical "tactile" function on the touch screen

- A single arrow ► implies that an action is achieved by a short pressure on a knob or a tactile button
- A double arrow ►► implies that an action is achieved by a long pressure on a knob or a tactile button

- A check key ✅ implies that a selection must be confirmed by pressing the key
- Information key ⓘ displays additional information related to the selected field

 A button is mostly used to activate / enable a function and/or toggle parameter values when dark, the function is disabled
When highlighted in blue, the function is enabled and the parameter value is posted

 A key can also be used to call a sub-menu in which functionalities and/or parameter values can be set. The chosen functionality respectively the selected values are posted.

 A button with a scroll bar is used to select a specific parameter; the symbol appears on the top right corner of the screen indicating that parameter values are set by turning the encoder wheel.

1.2 TOGGLE SWITCH

← PLAY   REC →

Play-Pause-Stop   Start/Stop Recording / Add an Index

The action of the toggle switch depends of the operating mode:

RECORDER operating mode

Toggle switch	Short pressure ►	Long pressure ►►
RIGHT in any situation except recording	Start recording	
RIGHT while recording	Add an INDEX **	Stop recording
LEFT while in record ready	Call the last take and start playing	

** INDEX = New TAKE: pressing the toggle switch briefly to the right while recording automatically creates a new TAKE; the Take number is automatically incremented by 1.

PLAYER operating mode

Toggle switch	Short pressure ►	Long pressure ►►
LEFT while in Stop	Play the Take from the beginning of the Take	
LEFT while Playing	PAUSES at current position	STOP playing
LEFT while in Pause	Play the Take from the current position	
RIGHT	Switches to Record mode and start recording (scratch record)	

2. PRINCIPLE OF OPERATION

2.1 FRONT PANEL

Potentiometers controlling XLR inputs 1 to 4
with programmable push-on switches

Light Sensor

Headphone volume / Encoder
with programmable push-on switch

Potentiometers controlling
Line Inputs 5 & 6, with
programmable switch

Primary and Secondary
SD Card slots under
protection cover

SD Card status Led's

Color TFT Display
with Touch Screen

Toggle Switch
► Power ON
► REC ► INDEX
►► REC -> STOP
◄ PLAY ◄ PAUSE
◄◄ PLAY -> STOP

FEATURES	FUNCTIONS / DESCRIPTION
Potentiometers 1 to 4	Level or Gain control of XLR's inputs 1 to 4 (controlling the DSP) • Primarily assigned to XLR inputs 1 to 4, either set as analogue or digital input • Fader range adjustable by menu
Push-On switch 1 - 4	Switches with two programmable functions selected by a short press or a long press such as: • Solo monitoring - Mute - Phase reversal - etc
Potentiometers 5 & 6	Retractable potentiometer with a function switch • Analogue volume control dedicated to Line inputs 5 & 6 on TA3 • User programmable switch to activate Solo monitoring of the input is activated by releasing the knob
Headphone Encoder	Multifunction encoder with push-on switch, • Primarily controls the headphones volume • Scroll specific functions or values according to displayed contextual menu
Push-On switch	Switches with two programmable functions selected by a short press or a long press such as: • Lock/Unlock touch screen - Lock/Unlock volume control
Toggle Switch	Primarily dedicated for Record and Playback functions
SD Card slots	Accepts SD/SDHC/SDXC cards, High speed class 10 or higher are recommended. Press to insert with notched corner oriented toward the right. Press to eject. Push protection cover firmly in place to avoid dust and water ingression
SD Card Led status	The Led's indicate the status of the SD Cards such as: • Blinking: ready to Record • ON: recording in progress • OFF: SD Card not present, not formatted or full
Color Touch Screen	Touch the screen to call and navigate sub-menus

2.2   SWITCHING ON THE UNIT

► **ON**

Press the toggle switch to the right to power on the SX-R4+ . A boot up screen is displayed for a couple of seconds, followed by:

If the working day has changed while powering up the unit, the system asks to confirm the date of the new working day. This allows keeping the date of the current working days if the on going production works is passing across midnight.

Press [OK] to confirm the new working day
Press [CANCEL] to keep the current working day

When one of the key is pressed, the unit will continue the booting procedure; wait a few seconds until the main screen is displayed.

2.2.1   Switching Off the unit

Switching OFF the unit is controlled by the software, accessed via the [MAIN] menu then [POWER].
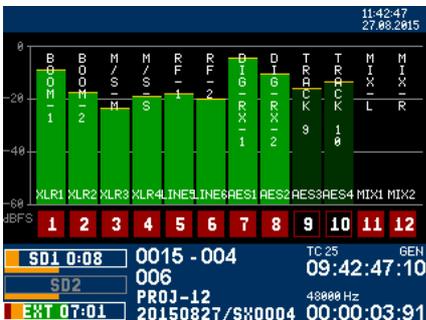
Touch in the modulometers area

Select the [POWER] key
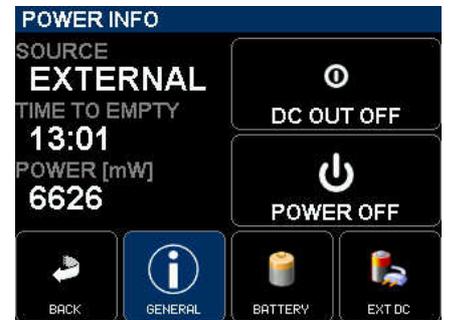
Under [GENERAL] Tab Select [POWER OFF]

Select [OK] to power off the recorder

3. MAIN SCREEN DISPLAY

When the booting procedure is completed, the main screen displays the modulometers of the tracks, information's related to the set up of the recorder and most of the recording parameters.

The modulometers are displayed "dynamically", showing only the assigned tracks whether armed or not. The overall meter's range is 60 dBFS with a resolution of 0.5dB

Touching the screen within the modulometers area calls the [MAIN MENU]

Touching the centre of the blue area calls an overlay to quickly edit the metadatas.

Examples of typical displayed screens

		System Date and Time
Track name		Track name
Input sources and Mix assignment		Input source & MIX assignment
Track nr / highlighted tracks = armed		Non-highlighted tracks nr = not armed
Remaining capacity on SD1 Remaining capacity on SD2		Time Code format ,and value
		Sampling rate
Power source and voltage		Elapsed time
0015 - 004	Sequence nr - Shot nr	
007	Take nr	Touching the screen over this area calls an overlay to edit metadatas
PROJ-12	Project name	
20150528 / SX0005	Working Day / Filetag	

|		
		System Date and Time
Track name		Non-highlighted tracks nr means the tracks are not armed, the corresponding modulometer is darkened.
Input sources and Mix assignment		
Track nr / highlighted tracks = armed		
Bargraph of the SD1 Ram buffer		Time Code format ,and value
Bargraph of the SD2 Ram buffer		Sampling rate
Power source and voltage		Elapsed time

4. MAIN MENU

Pressing the main screen anywhere above the blue area will call the Main Menu. Pressing any key calls a Sub-Menu.
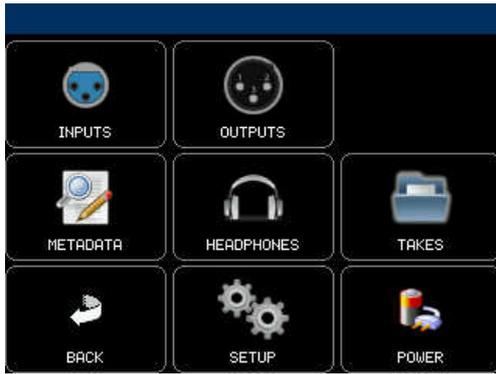
[INPUTS] configure the physical inputs of the recorder

[OUTPUTS] configure the physical outputs and the MIX

[METADATA] edit the Metadatas

[HEADPHONE] configure the Headphones outputs

[TAKES] browse recorded takes on the SD cards

[BACK] return to the main screen

[SETUP] configure all parameters of the recorder

[POWER] displays power sources informations

4.1 INPUTS

The [INPUT] menu gives access to the configuration pages of the physical inputs of the recorder. Pressing a key calls subsequent configuration and setting pages.
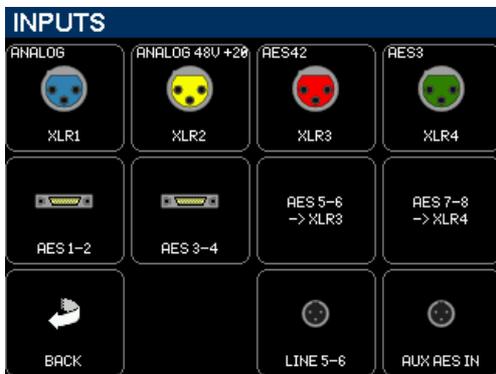
[XLR1 to XLR4] configure the physical XLR inputs of the recorder, each XLR can independently be configured as Analogue, AES42 or AES3. The icon reflects the actual settings

[AES 1-2] to [AES 3-4] configure the physical AES3 type digital input of the 26 pin connector

[LINE 5-6] configure the physical TA3 Line Inputs 5 & 6 connectors

[AUX AES] configure the physical TA3 AES I/O connector

4.2 XLR SETUP

Pressing on a XLR icon calls the corresponding [XLR SETUP] page, showing the current configuration and settings.

When an [XLR SETUP] page is called, the headphones monitoring switches to SOLO mode so that the corresponding input is heard in solo in the headphones; a bargraph displays the modulation level of the physical input (not the level of the track on which the input is assigned.

4.2.1 XLR SETUP - Analogue

When an XLR is set as analogue for a Microphone or a Line input, that particular input is obviously a mono input and is heard as such in the headphone. The modulation level is shown by a single bargraph.

	XLR2 SETUP	
LF CUT: toggles OFF, 60Hz, 120Hz	LF CUT 60Hz / PHASE NORMAL / LEVEL +3.3 dB / ASSIGN TRACK 2	Call a sub-menu to assign the input on a track
Input Modulometer	XLR2	
Toggle the polarity of the input: (phase normal or phase reversed)		Call a sub-menu to adjust the range of the fader and how the range is stepped; the actual fader level is displayed
Call a sub-menu to setup the type of the XLR input, showing the actual status		
Return to previous page	BACK / STATUS ANALOG 48V / PREVIOUS / NEXT	Call the Setup page of the Next or Previous physical input

NOTE: - When the XLR is configured as Analogue input, the [LF CUT] key activates an analogue circuitry in the input preamplifier. The [PHASE] and [LEVEL] are controlled by the DSP.
 - The analogue inputs are protected by an internal RF Filter

4.2.2 XLR SETUP - Digital

A digital input, whether AES42 for a digital Microphone or as AES3 for a digital line, carries two channels; therefore the [XLRx SETUP] show controls and modulation level for booth channels. The headphones monitors in stereo, the odd channel on the Left and the even channel on the Right.

	XLR3 SETUP	
LF CUT: toggles OFF, 60Hz, 120Hz	LF CUT OFF — PHASE NORMAL — LEVEL -4.6 dB — ASSIGN TRACK 13	Call a sub-menu to assign the input on a track
Input Modulometer of the Left channel	AES5	
Toggle the polarity of the input: (phase normal or phase reversed)	LF CUT OFF — PHASE NORMAL — LEVEL -4.6 dB — ASSIGN TRACK 14	Call a sub-menu to adjust the range of the fader and how the range is stepped; the actual fader level is displayed
Input Modulometer of the Right channel	AES6	
Return to previous page	BACK — STATUS AES42 — PREVIOUS — NEXT	Call a sub-menu to configure the input type (Analogue AES42, AES3) , the current type is displayed

4.2.3 XLR INPUT TYPE

Pressing the [STATUS xxx] key calls a new page to configure the input type of the XLR connector

	XLR1 TYPE	
Select the input type or turns the input OFF to save on battery	OFF — ANALOG — AES — AES42	Select Analogue for a Mic/Line input Select AES3 for a digital line Select AES42 for a digital microphone
When configured as analogue input, a primary gain of 20dB and the 48V Phantom can be activated.	GAIN +20 dB — PH 48V — AES 1-2	This example shows that AES1-2 is available for the 26 pin connector
Return to previous page	XLR1 — XLR2 — XLR3 — XLR4	Short cut the another XLR input

4.2.4 NOTES ABOUT THE AES RECEIVERS

The SX-R4+ recorder is equipped with 4x independent AES receivers, representing 8 audio input channels grouped per pair (as per AES standard); each of them having its own ASRC (Asynchronous Sample Rates Converter) allowing connection of non-synchronized digital sources.

These 4x AES receivers can be individually connected either on the 26 pin [AES IN] connector or on a XLR connector:

- AES receiver 1 can receive a feed from 26 pin AES 1-2 or from XRL1
- AES receiver 2 can receive a feed from 26 pin AES 3-4 or from XRL2
- AES receiver 3 can receive a feed from 26 pin AES 5-6 or from XRL3
- AES receiver 4 can receive a feed from 26 pin AES 7-8 or from XRL4

For example, if XLR x is configured as AES42 or AES3, the corresponding AES x on the 26 pin is no longer available.

XLR1 configured as Analogue input
The AES 1-2 on the 26 pin is available

XLR3 configured as AE42 input
AES 5-6 on the 26 pin is not available

INPUT menu showing that
XLR3 has taken AES 5-6
XLR4 has taken AES 7-8

4.2.5 LEVEL SETUP

The faders 1 to 4 control the level (or gain) of the corresponding XLR inputs 1 to 4 on the DSP. The [LEVEL] key calls a page where the parameters of the fader can be set according to the selected input type.

The range of a fader is stepped differently if it has to control the gain of a microphone or the level of a line input (analogue or digital). The fader range is adjustable and goes up to 128dB, but in most case the overall necessary range rarely exceeds 60 to 70dB.

The fields [MINIMUM] and [MAXIM] define the limits of the fader range and how it is stepped; typical settings would be:

- Dynamic Microphone: Min 0dB   Max 70dB
- Condenser microphone: Min 0dB   Max 50dB
- Line input (analogue or digital):   Min -50dB   Max +12dB

	P1 LEVEL SETUP	
		Use the encoder wheel to set values
Indicate the level value (or gain) as per fader position	LEVEL VALUE +0.6 dB MINIMUM -10	Set the minimum value between -50 to +60dB of gain
	MAXIMUM +60	Set the maximum value between the settled minimum up to +78dB
Indicate the range of the fader as set per Min and Max fields	LEVEL RANGE 70 DB	
	MUTE AT MIN	Mute the input when the fader is closed
LINK the input with another fader	LINK P2 BYPASS	Bypass the fader control
Return to previous page	PRESET 1 PRESET 2 PRESET 3 PRESET 4	4 presets to store and recall user settings

LINK: Channels can be linked together; select the [LINK] field and set the potentiometer [P1 to P4] with which the channel must be linked with the encoder wheel. The channel is then controlled by the selected fader. A fader can control multiple XLR input channels so that a stereo pair, an M/S or double M/S system or a multi-channel microphone, such a Soundfield for example, can be controlled by a single fader.
To ensure that the gain or level settings are identical on all linked channels, the fader range must be set with the same value on each channel.

OFFSET: an offset can be applied between linked channels by changing the fader range of a channel. An offset allows to vary the spread on an M/S pair for example, or to correct a stereo pair when the microphones are not perfectly matched. For example if a [MIN] value is set to -12 on one channel and to -9 on the other, a constant offset of 3dB is applied between channels.

PRESETS: Press 2 seconds on a [PRESET] key to store the settings as they appear on screen. A brief pressure recalls a stored configuration. These presets are useful to sore the configuration of input sources being used on regular basis; for example
Preset 1 = Condenser mic / Preset 2 = close vocal mic / Preset 3 = RF Receiver / Preset 4 = digital mic

4.2.6 TRACK ASSIGNMENT

Any input can be freely assigned to any track or onto multiple tracks, but multiple inputs can not be summed on a single track.

On the [XLR SETUP] page press on the [ASSIGN TRACK…] key to call a matrix showing the 16 tracks of the recorder, then select the track(s) on which that input is to be routed.

	XLR1 TRACK ASSIGN	
Track number Assigned input	1 XLR1 2 XLR2 3 XLR3 4 XLR4	
	5 6 7 8	Track number Assigned input
	9 10 11 12	
	13 14 15 16	Un-assigned tracks
Return to previous page		

4.3 AES INPUT SETUP

Pressing on a multi-pin connector icon calls the corresponding [AES SETUP] page, showing the current configuration and settings of that input. The configuration and settings are done in a similar way as on the [XLR SETUP].

Obviously an AES input implies two channels, therefore when an AES setup page is called, the headphones monitoring switches to SOLO mode in stereo.

Toggles LF CUT: OFF, 60Hz, 120Hz		Call a sub-menu to assign the input channel on a track
Modulometer of the odd / left channel		
		Call a sub-menu to trim the input gain of the channel. The channels can be adjusted independently
Modulometer of the even / right channel		
Return to previous page		Turns the input On or Off to save on battery

NOTE: The [LF CUT] is controlled by the DSP; the slope is 12dB/octave.

4.3.1 AES INPUT GAIN TRIM

The level of a digital input can be controlled by means of a Gain Trim. Each channels of the AES pair can be adjusted individually within a range of - 20dB to +20dB.

Bargraph indicating the Gain trim of the channel,		
Adjust with the UP or Down keys or with the encoder wheel from -20dB to +20dB		
Return to previous page		

4.4 LINE INPUTS & AUX AES SETUP

The [LINE 5-6] and [AUX AES] inputs are configured and settled in exactly the same way as the AES inputs
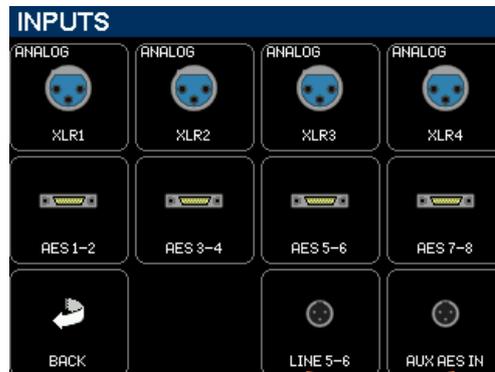
NOTE: By default the [AUX AES] TA3 connector is set as an input. Setting this connector as an output is done in the [OUTPUTS] menu.

4.5 OUTPUTS

The [OUTPUTS] menu configures the stereo / 2 channels analogue [LINE OUT], the [AUX AES] when set as an output, the [REFERENCE TONE] generator and the [MIX] of the recorded tracks

	OUTPUTS	
Turns the LINE OUT output On or Off to save on battery	**LINE OUT POWER** — **LINE OUT ROUTING**	Calls a sub-menu to route tracks to the LINE OUT output
Switches the AUX I/O to output mode and toggles the output's sampling rate at 48, 96 or 192kHz	**AUX AES OFF** — **AUX AES ROUTING**	Calls a sub-menu to route tracks to the AUX AES output
Return to previous Menu	BACK — REF TONE GEN — MIX	Call a sub-menu to configure the Ref Tone generator
		Call a sub-menu to configure the Mix

4.5.1 LINE OUT ROUTING & SETUP

The modulation routed to the TA3 [LINE OUT] connector can be configured as a stereo pair or as two independent mono channels.

The tracks are grouped per pair so that stereo or M/S microphones can be routed accordingly; in this case the odd tracks are routed to the Left channel and the even track to the Right channel of the [LINE OUT] connector.
Each track can also be individually routed as a mono track.

- A primary switch toggles the different modes per pairs 1-2, 3-4 … 15-16:
  OFF – MONO – STEREO – REVERSE STEREO – M/S – OFF.
- Two secondary switches freely assigns each tracks of the pair to the Left or Right channel of the Line Output:
  OFF (–) ; Left [L] ; Right [R] ; Centre [C] *(route the track with an equal volume to the Left and Right channels)*; when the tracks are individually assigned the primary switch displays "USER".

	LINE OUT	
Primary switches toggles the monitoring mode per pair: OFF, MONO, STEREO, REV-ST, M/S	1-2 3-4 5-6 7-8 — ST ST ST ST — 9..16	Call 2nd page to configure tracks 9 to 16
Odd track of the pair Secondary switches route each track individually: OFF - L - R- C *Even track of the pair*	1 L 3 L 5 L 7 L — 2 R 4 R 6 R 8 R — SETUP	Call a SETUP page for the monitoring
Return to previous Menu	PRESET 1 PRESET 2 PRESET 3 PRESET 4	4 preset keys to store and recall user's selections *see note*

NOTE: Press 2 seconds on a [PRESET] key to store the configuration as it appears on screen.
Briefly press on a [PRESET] key to recall a configuration.

Pressing the [SETUP] key calls a sub-menu to adjust various parameters of the Line Output

	LINE OUT SETUP	
Use the encoder wheel to adjust the LINE OUT level from +20dB to 80dB	**LEVEL** 0.0 dB — **MIXING LEVEL** -1.5 dB	Adjust le mixing level from 0 to -6dB *see chapter below*
Enable / disable the ALARM level on the LINE OUT output	**ALARM ENABLE** — ALARM LEVEL -20.0 dB	Adjust the ALARM level on the LINE OUT outputs
Enable / disable the REC TONES on the LINE OUT output	**REC TONES ENABLE** — REC TONES LEVEL -40.0 dB	Adjust the REC TONE level on the LINE OUT outputs
Return to LINE OUT page	BACK	

4.5.2 AUX AES ROUTING & SETUP

The TA3 [AUX AES] connector can be configured either as a digital input or as a digital output; the digital format is AES3.

When the AES I/O button is darkened in the [OUTPUTS] page, the AES I/O is configured as a digital input; touching the AES I/O key switches the [AUX AES] TA3 connector to output mode and toggles the output sampling frequency to 48, 96 or 192 kHz. The AUX AES output has its own ASRC (Asynchronous Sampling Rate Converter) so that the sampling frequency at this output can be different than the sampling frequency set for the recordings.

When set as an output, the modulation routed to the [AUX AES] connector is routed and configured exactly in the same manner as the [LINE OUT].
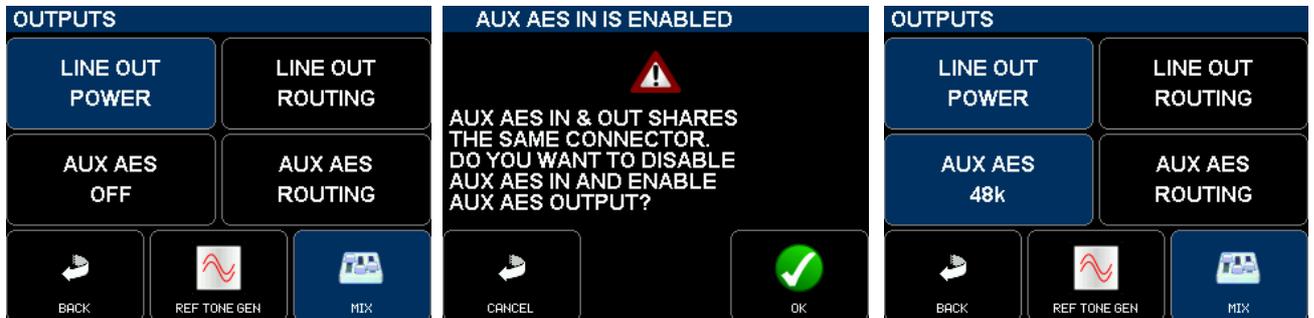
|		
AUX AES set as an input	Selecting AUX AES as an output posts a warning	AUX AES set as an output at 48kHz sampling frequency

4.5.3 MIX SETUP

The [MIX] and [MIX SETUP] pages are used to create a down-mix of the recorded tracks (not of the inputs). One can create a stereo mix, 2 independent mono mixes or a single mono mix.

The routing matrix works in the same manner as the LINE OUT where the tracks are grouped per pair so that stereo or M/S microphones can be routed accordingly, but any track of a pair can be considered as a mono track and can be freely assigned to MIX1 (L) or MIX 2 (R) in the MIX SETUP page.

Primary switches toggles the monitoring mode per pair: OFF, MONO, STEREO, REV-ST, M/S		Call 2nd page to configure tracks 9 to 16
Odd track of the pair Secondary switches route each track individually: OFF - L - R- C *Even track of the pair*		Call a SETUP page for the monitoring
Return to previous Menu		4 preset keys to store and recall user's selections *see note*

Use the encoder wheel to adjust the MIX level from -80 to +20dB		Adjust le mixing level from 0 to -6dB *see chapter below*
Use the encoder wheel to freely assign the MIX1 (Left) to any of the 16 tracks		Use the encoder wheel to freely assign the MIX2 (Right) to any of the 16 tracks
Return to previous Menu		

NOTE: Press 2 seconds on a [PRESET] key to store the configuration as it appears on screen.
Briefly press on a [PRESET] key to recall a configuration.

4.5.4 SETUP >> MIXING LEVEL
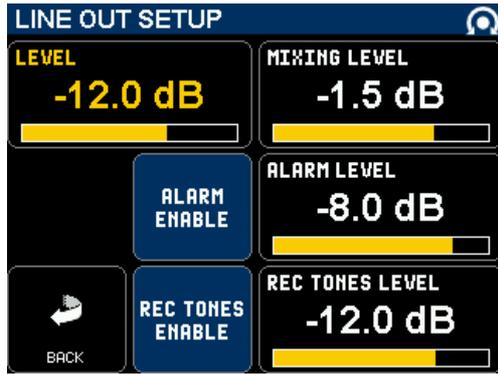
The [MIXING LEVEL] button on the [LINE OUT] [AUX AES] [MIX] and [PHONES] pages defines the attenuation to be applied to each track when summing (mixing) multiple tracks onto the same output or track; the attenuation is computed to avoid a digital clipping. The mixing attenuation is set with the encoder wheel from 0 to +6dB, the choice depends essentially on the phase coincidence of the sources.

- 0 dB   no attenuation at all
- - 1.5 dB   mainly used if the sources have no phase coincidence
- - 3.0 dB   recommanded for phase coincident sources such as stereo or M/S microphone
- - 6.0 dB   only used if the sources are absolutely in phase

The table below summarizes the exact attenuations applied according to the number of summed track.

Number of input channels assigned to the same track	NONE [in dB]	ATT1.5 [in dB]	ATT3 [in dB]	ATT6 [in dB]
1	0	0	0	0
2	0	1.5	3.0	6.0
3	0	2.4	4.8	9.5
4	0	3.0	6.0	12.0
5	0	3.5	7.0	14.0
6	0	3.9	7.8	15.6
7	0	4.2	8.5	16.6
8	0	4.5	9.0	18.1
9	0	4.8	9.6	19.1
10	0	5.0	10.0	20.0
11	0	5.2	10.4	20.8
12	0	5.4	10.8	21.6
13	0	5.6	11.1	22.3
14	0	5.7	11.5	22.9
15	0	5.9	11.8	23.5
16	0	6.0	12.0	24.0

4.5.5 Reference Tone Generator

A 1 kHz Reference Tone Generator can be toggled On or Off from the [OUTPUTS] menu. When turned On, the reference tone is sent to all assigned tracks regardless if armed or not.

The reference level can be adjusted from 0dBFS to -60dBFS with the encoder wheel.

NOTE: a "double wave" symbol is posted on the main screen when the reference tone is enabled.

4.6 TRACKS MONITORING [HEADPHONES]

The modulation sent to the [PHONES] output corresponds to the track's selection and their routing as set in this menu.

The tracks are grouped per pair so that stereo or M/S microphones can be heard accordingly; in this case the odd tracks are routed to the Left channel and the even track to the Right channel of the headphones. However each track can also be individually routed as a mono track.

- The first row of switched activate SOLO MONITORING mode.
- A primary switch toggles the different monitoring modes per pairs 1-2, 3-4 … 15-16:
  OFF – MONO – STEREO – REVERSE STEREO – M/S – OFF.
- Two secondary switches freely assigns each tracks of the pair to the Left or Right channel of the monitor output:
  OFF (–) ; Left [L] ; Right [R] ; Centre [C] (equal volume to the Left and Right channels);
  when the tracks are individually assigned the primary switch displays "USER".

	PHONES	
The first row activates the SOLO MONITORING	1-2 3-4 5-6 7-8	
Primary switches toggles the monitoring mode per pair: OFF, MONO, STEREO, REV-ST, M/S	ST ST ST ST 9..16	Call 2nd page to configure tracks 9 to 16
Odd track of the pair Secondary switches route each track individually: OFF - L - R- C *Even track of the pair*	1 L 3 L 5 L 7 L 2 R 4 R 6 R 8 R SETUP	Call a SETUP page for the monitoring
Return to previous Menu	PRESET 1 PRESET 2 PRESET 3 PRESET 4	4 preset keys to store and recall user's selections **

NOTE: Press 2 seconds on a [PRESET] key to store the configuration as it appears on screen.
Briefly press on a [PRESET] key to recall a stored configuration.

4.6.1 SOLO MONITORING MODE *(not yet implemented)*

Touching a key in the first row on the [PHONES] page activates the SOLO MONITORING; this page is used to listen in SOLO any individual track, or pair(s) of track(s) or any combination.

	SOLO MONITORING	
Enable / disable the pair, the monitoring mode is as configured in the PHONES page (Non exclusive selection)	1 - 2 3 - 4 5 - 6 7 - 8 --- TRACK 4 --- --- 9..16	Second row: enable / disable the pair and toggles its listening mode: Odd - Even - Stereo - MS - OFF (Non exclusive selection)
3rd and 4th row: Select each track individually in exclusive mode, all other tracks are muted	1 3 5 7 2 4 6 8	
Return to PHONES page, the monitoring is resettled in its original configuration	PRESET 1 PRESET 2 PRESET 3 PRESET 4	No Preset in Solo Monitoring mode

4.6.2 MONITORING SETUP

Touching the [SETUP] key in [PHONES] page calls the MONITORING SETUP page;

	PHONES SETUP	
Adjust the PHONES volume by turning the encoder wheel from -80dB to +20dB	LEVEL -4.5 dB MIXING LEVEL -1.5 dB	Adjust le mixing level from 0 to -6dB *see chapter above*
Enable / disable the Alarms in the phones output	ALARM ENABLE ALARM LEVEL -20.0 dB	Adjust the ALARM level on the phones outputs
Enable / disable the REC TONES in the phones output	REC TONES ENABLE REC TONES LEVEL -40.0 dB	Adjust the REC TONE level on the phones outputs
Return to PHONES page	BACK	

4.7 METADATA

The audio files embed metadatas in both BWF and iXML formats. Metadatas can be pre-settled while the recorder is in Record Ready mode, edited while recording and/or re-edited post-recording when the unit is in Player mode.

Editing the metadata can be done either directly on the [METADATA] page or by using a smartphone or a tablet through the WiFi interface.

|		
The upper 4 fields concern the next Takes to be recorded		Select a field then edit with the encoder wheel
When enabled, all subsequent takes will be tagged as Wildtrack		Last recorded TAKE name Tag the last recorded Take as Circled, No Good or False Start
Return to Main Menu		Edit the PROJECT name, calls a keyboard to type the project name
		NOTE, calls a keyboard to type notes,
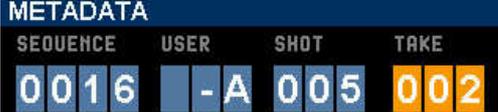
The [METADATA] page displays several editable fields:

- The upper row concerns the metadatas of the next take to be recorder; these four fields are the same as shown - and editable - on the main screen: Sequence (or scene name) / User ID / Shot nr / Take nr.
  When a Sequence and/or a Shot nr is modified, the Take nr is automatically reset to 001.

- When "Wild Track" is enabled, all subsequently recorded files will be tagged as "Wild Track". the symbol ![] is posted on the main modulometger's screens warning the user that the tag is enabled. Recorded audio files are notified with the suffix "W" in the [TAKE] menu.

- The 3 keys [CIRCLED], [NO GOOD] and [FALSE START] concern the last recorded Take. The name of the last Take is posted just above these 3 keys. If no file is available the screen posts [NO TAKE AVAILABLE]
  The Firmware version 1.2 does not provide with a trash bin. When a file is tagged as False Start it simply appears in red in the TAKES list.

- The PROJECT key calls a keyboard to type the project name with up to 8 characters.
  Typing a new Project name will create a new directory at the root level of SD Card(s); all subsequently recorded files are stored in "working day's" subdirectories in that Project folder.

- The NOTE key calls a keyboard to type notes, up to 256 characters.

4.7.1 METADATA Quick Editing Mode

Metadatas can be rapidly edited by using the "on screen short cut"; touching the screen within the metadata area will overlay four data fields showing: SEQUENCE - USER ID - SHOT NR - TAKE NR

Touching a field will highlight the corresponding data; use the encoder wheel to rapidly incremented the value.
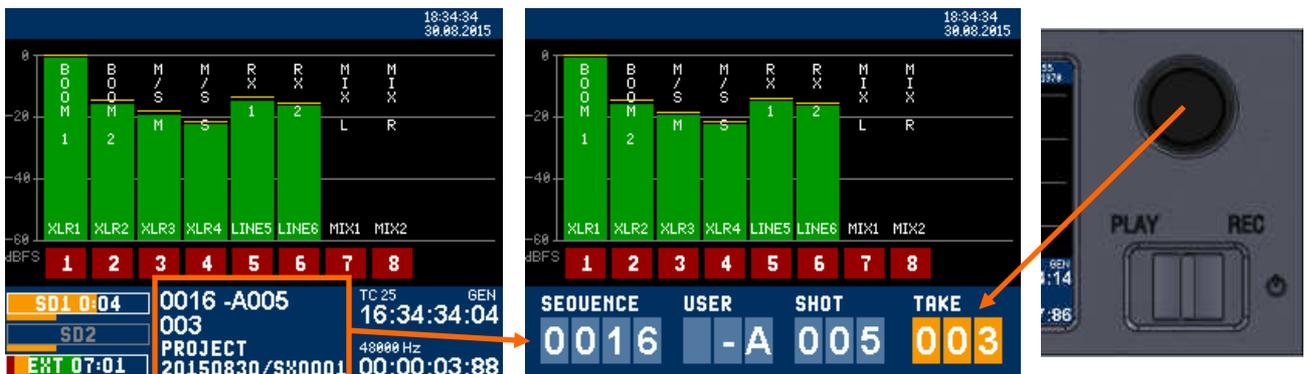
4.8 TAKES MENU

The [TAKES] key calls a [TAKE LIST] displaying all takes recorded on both SD cards **(see notes)*. The takes are listed in reverse order so that the last recorded take is posted on the top of the list.

The takes are sorted by "File Tag", a unique identifier generated by the system, see [FILE TAG] in the [SYSTEM] menu.

Scroll the takes with the encoder wheel, the selection is highlighted in blue in the middle of the screen; press on the encoder wheel to load the selected take in the player.

TAKE LIST 4/17: the highlighted take is the 4th of 17 takes in the list

SCENE	= sequence nr followed by the shot nr
TAKE	= take nr
TR	= track count *(number of recorded tracks)*
TAG	C = circled
	F = False Start or No Good
	W = Wild track
LENGTH	= duration of the take
START	= time code value at the start of the take

Additional Information's related to the selected take:
SX0014	= File Tag of the take	48000Hz	= Sampling frequency
20150827	= working day	30MB	= Size of the file
SD1**	= file is stored on SD1	TCxxx	= TimeCode at start

NOTE: Depending on how the SD cards are managed by the user, the content on SD1 and SD2 may be different. The Take List shows the content of both cards; if a file is present on both cards, the blue field of additional informations will post SD1 SD2. If a file is stored only on one card, the system will mention on which SD card the file is stored.

4.9 PLAYER MODE

When a TAKE is loaded, the recorder switches to PLAYER mode and automatically starts playing the selected take. Press the toggle switch toward [PLAY] to Pause, Stop or Start playing

- While in Play: a brief press will Pause at current location
- While in Pause: a brief press will start playing from current position
- In Play or Pause: a long press will stop and "rewind" to the beginning of the take

The main screen of the Player is similar to the screen of the Recorder except that a progression bar is posted under the modulometers. This bar is a graphical representation of the "time line". While in PLAY or in PAUSE touching along the time line in the green area jump to another location in the time line.
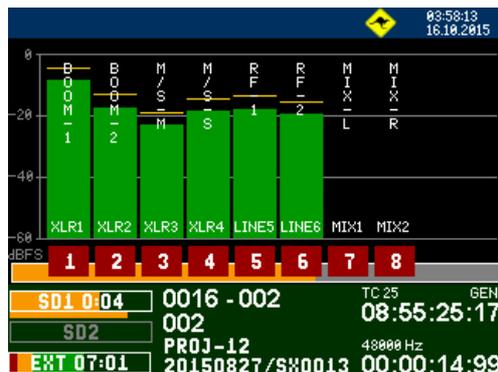
Time Line's progression bar

Touch in the green area to play from another location in the time line

4.9.1 METADATA IN PLAYER mode:

Editing the metadata of an existing audio file implies that the take is loaded in the Player. Select the file to be edited in the [TAKE] menu; then press on the encoder wheel to load that file in the player. Once loaded, return to the Main menu and press on the [METADATA] key to edit the metadata of the played file.

4.9.2 EXIT PLAYER

Touch on the modulometer area to call the Main menu, then touch the [EXIT PLAYER] key to return in Recorder mode.

4.10 POWER INFORMATIONS

This menu displays information about the power source and has a button to activate the [DC OUT] On or Off.

When powered from the internal battery, the SX-R4+ communicate with it through the SMBus and display all informations related to that particular battery on the [BATTERY] page.

All informations related to an external power supply are displayed on the [EXT DC] page. The [DC IN] connector is also SMBUS compatible; all battery informations will be displayed as well if a SMBus battery is connected.

	POWER INFO	
Indicates which source is currently powering the SX-R4+. Shows the current working time to empty according to the remaining capacity and current load. Indicates the instant power consumption.	SOURCE **EXTERNAL** TIME TO EMPTY **13:01** POWER [mW] **6626** DC OUT OFF POWER OFF	Toggles the DC Out supply ON / OFF *See note* Power Off the recorder
Return to previous page	BACK GENERAL BATTERY EXT DC	Call pages to display informations related to the internal battery or the external power supply

NOTE : The voltage on the Hirose 4 pin connector [DC OUT] depends on the power source of the SX-R4+ :
- if the recorder is powered from the internal battery the DC Out voltage is internally regulated to 12V
- if externally powered, the DC Out voltage is directly derived for the Hirose 4 pin [DC IN] connector.

INTERNAL POWER
CHARGE **95 %**
TIME TO EMPTY **07:08**
REM CAPACITY **3000**

VOLTAGE	+14.4 V
CURRENT	3 mA
CYCLE COUNT	48
DESIGN VOLTAGE	14400
DESIGN CAPACITY	3125

SETUP

BACK GENERAL BATTERY EXT DC

Voltage and Current values as measured by the SX-R4+

Other informations are given by the battery through the SMBus

[SETUP] key calls a page to set the "Alarm" parameters

BATTERY POWER
TIME TO EMPTY ALARM
10 MIN
BACK
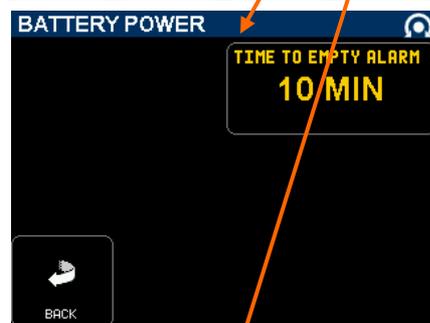
Use the encoder wheel to set the Alarm "Time to Empty"
between 0 to 60 minutes

IMPORTANT NOTE:
The "TIME TO EMPTY" value posted in the previous page is given by the battery and is not calculated by the SX-R4+. Experiences have shown that the battery may shut down itself before the announced Time to Empty.
It is highly advised to set the alarm at least to 10 to 15 minutes and to replace the battery as soon as the alarm is posted to avoid un uncontrolled shut down.

EXTERNAL POWER
TIME TO EMPTY ALARM
10 MIN
ALARM VOLTAGE
9.0 V
MINIMUM VOLTAGE
8.5 V
BACK
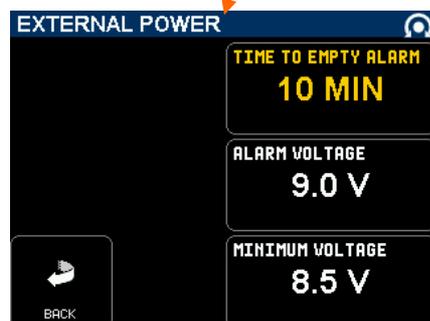
Set the Alarm "Time to Empty"; available only if a SMBus battery is connected to the [DC IN] connector. *See note above*

Set the "Low Voltage" alarm of the external DC, set this value according to the kind of DC source being used. For example if a12V NimH battery is used, the alarm would be set at 11,8V

Set the "Minimum Voltage" at which the SX-R4+ will either shut down or switch to its internal battery. For example if a12V NimH battery is used, the value would be set at 11,5V to avoid a deep discharge of the battery.

5. SETUP

The [SETUP] page provides miscellaneous parameter's setting of the recorder

	SETUP	
Calls the Users Settings sub-menu	USER SETTINGS • RECORD SETTINGS • METERS	Calls the Meters Settings page
Calls the Record Settings sub-menu		
Calls the Time Code sub-menu	13:41:03.29 TIMECODE • SD CARDS	Calls the SD card sub-menu
Return to Main Menu	BACK • SYSTEM	Call the System Setup page

5.1 USER SETTINGS *(not yet implemented)*

The [USER SETTINGS] menu allows saving, loading or updating a complete configuration. This feature is not available

5.2 RECORD SETTINGS

	RECORD SETTINGS	
Calls a sub-page to arm/unarm the tracks	TRACK ARMING — SAMPLING FREQUENCY 48000	Use the encoder wheel to scroll the sampling frequencies from 44,1kHz to 192kHz
Calls a sub-page to name the tracks	TRACK NAME — PRE-RECORD TIME 4 SEC	Use the encoder wheel to set the pre-record time from 0 to 20 seconds
Return to SETUP page	BACK	

5.2.1 TRACK ARMING

TRACK ARMING

BOOM1 **1** XLR1	BOOM2 **2** XLR2	M/S M **3** XLR3	M/S S **4** XLR4
RX1 **5** LINE5	RX2 **6** LINE6	MIX L **7** MIX1	MIX R **8** MIX2
TRACK 9 **9**	TRACK 10 **10**	TRACK 11 **11**	TRACK 12 **12**
TRACK 13 **13**	TRACK 14 **14**	TRACK 15 **15**	TRACK 16 **16**

Touch the field of a track nr to arm / unarm a track.

Track name

Input source currently assigned to the track

NOTE: Only armed tracks will be recorded. An input assigned to an unarmed track will not be recorded and consequently will not be contained in the audio file. The example above shows that tracks 5 & 6 are not armed; therefore the audio file will contain only 6 tracks tagged as tracks nr 1-2-3-4-7-8 in the metadatas.

5.2.2 TRACK NAME

The name of the tracks is stored in the metadatas; it can contain up to 8 characters. Touching a track field calls a keyboard to edit the track name.

Calls a numerical keyboard
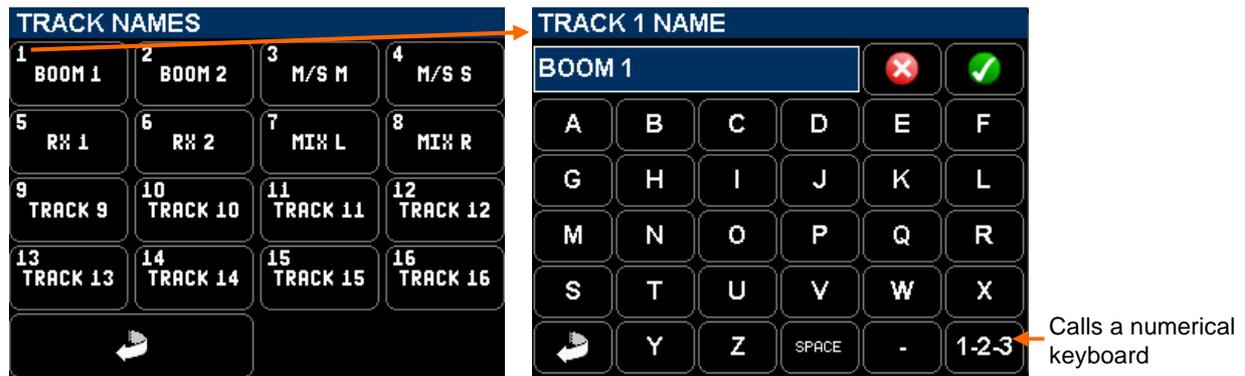
5.3 METERS SETTINGS

Not yet implemented; will offer a selection of colour themes.

Set the reference level of the modulometers from 0 to -30 dBFS. Below the settled level, the modulation'a level is posted in green and in orange above the reference level.

Set the time during which the peak level is posted (Peak Hold) between 0 to 600 seconds

5.4 TIMECODE SETUP

The SX-R4+ can simultaneously receive and generate Time Code at any of the conventional frame rates; following sub-menus are used to set the required TimeCode parameters.

When ON, the TC value is jammed on an external source, then it runs on its own clock		Select the desired Frame Rate
		Select the desired Frame Rate
Shows the TimeCode value and is fps as received on the Lemo connector		Shows the generated TimeCode value and is fps as set in this page
Return to SETUP page		Grab the system time of the internal real time clock to set the TC value

NOTE: When the receiver locks on an external TimeCode, the time difference between the generator and the receiver is posted between the two time code values.

5.5 SD CARDS

For data safety and integrity, the SONOSAX SX-R4+ uses UDF file format. Any other file format such as FAT32, NTFS, HFS+ etc will not be recognized by the recorder. All SD cards being used with the SX-R4+ must be formatted as UDF media exclusively with the formatting tool provided in the [SD CARDS]; third party formatting tools will not necessary be compatible and/or may lead to unrecognized card or data corruptions.

Insert card(s) in SD1 and/or SD2 slot(s); the system will display card's information such as card type, manufacturer ID, model name and total capacity.

SD 1		FORMAT CARD?	SD 1	
CARD TYPE	SDHC	⚠	CARD TYPE	SDHC
MANUFACTURER	SD		MANUFACTURER	SD
MODEL NAME	SL16G		MODEL NAME	SL16G
CAPACITY	15GB		CAPACITY	15GB
STATUS	UNMOUNTED	This will erase all card content. Continue?	STATUS	MOUNTED
TOTAL SPACE			TOTAL SPACE	15GB
REM SPACE			REM SPACE	15GB
	FORMAT CARD			FORMAT CARD
BACK SD 1 SD 2 UNMOUNT		CANCEL OK	BACK SD 1 SD 2 UNMOUNT	

Insert a SD card in a slot, then press the Format Card | A warning is posted press OK to proceed | Formatting completed; the card is mounted, the SD Led starts flashing

NOTES:

- When two cards are inserted, the SX-R4+ records on both cards simultaneously in "Mirroring" mode"
- SD1and SD2 may have different capacities; e.g. SD1 could be a 64Gb or 128Gb to record all files of the same project, SD2 could a 8 or 16Gb for the daily rushes.
- There is no limit in terms of capacity; one can use 256 or 512Gb.

- The remaining capacity is posted on the lower left corner of the mains screen by means of a progression bar.
- The remaining recording time noted in the progression bar is calculated according to the number of armed tracks and sampling frequency.
- An alarm is posted when the remaining capacity drops under 100Mb.
- When the remaining capacity drops under 5Mb, the SX-R4+ stops recording and closes the audio file; the recording continues on the second card providing it has sufficient free space.

- The SONOSAX SX-R4+ does not provide a trash bin, therefore recovering free space by trashing audio files is not possible. Deleting file using a computer is not possible.
- When a card is full, it must be un-mounted with the [UNMOUNT] key and reformatted to recover free space. *(do not forget to back-up your audio files before reformatting your card).*

- The SD cards being formatted as UDF media and being "write protected", computers can not alter the content of the card; copying, writing or deleting files on the SD card connected on a computer is not possible.
- The tiny locker switch (write protect locker) aside the SD Card is ignored by the SX-R4+; thus the SXR4+ can record on the card what ever is the switch position.

Cards limitations:

Due to some SD cards limitations, recording 16 tracks @ 96kHz is not yet guaranteed; SD cards performance tests are under course. At the time of publication, we recommend following cards:

- SanDisk Ultra 16, 32 or 64Gb: 16 tracks @48kHz; 12 tracks,@96kHz with 2 seconds of pre-recording

- SandDis Extreme16, 32 or 64Gb: 16 tracks @48kHz; 16 tracks @96kHz with 2 seconds of pre-recording seems to work but not yet certified

- SanDisk ExtremePro16, 32 or 64Gb: 16 tracks @48kHz; 16 tracks @96kHz with 2 seconds of pre-recording seems to work but not yet certified

Tips: if your card seems to be slow and stop recording a few second after recording has started, try reducing the pre-record time to 2 sec only.

6. SYSTEM SETUP

The [SYSTEM] menu gives access to various system parameters, system informations and WLan settings for the Wifi interface.

	SYSTEM	
Adjust the brightness of the TFT backlight and of the SD1& SD2 Led	BRIGHTNESS FILETAG	
Set the function of each push button	PUSH BUTTON DATE TIME	Set system date
		Set time of the system real time clock time
Return to SETUP page	BACK SYSTEM INFO WLAN	Displays system information
		Set WiFi Wlan parameters
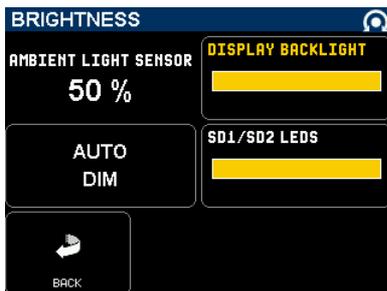
[LIGHT SENSOR] indicates the ambient light intensity

[DISPLAY BACKLIGHT] select this field and then set the backlight intensity using the encoder wheel.

[AUTO DIM] when activated the backlight and led's intensity are automatically dimmed according to the ambient light.

[SD1/SD2 LEDS] select this field and then set the leds intensity using the encoder wheel.

[FILETAG] is a unique identifier automatically generating the audio files name. The first 2 characters can be modified by the user, which might be useful to identify the recorder unit when multiple recorders are used on the same production.

The last 4 digits are automatically incremented by 1 at each new take. When the numbering reaches 9999 it starts again at 0000 and the alphabetic prefix is incremented to the next value (SX → SY).

Change the values with the [+] & [-] keys or the encoder wheel then validate with the ✅ key

The [PUSH BUTTON ASSIGN] page allows users to program the functions of each push button; select a field - highlighted in yellow - then use the encoder wheel to select a function.

Push buttons of faders 1 to 4 have two programmable functions; the selected functions are called respectively by a short or a long pressure on the knob.

Note: the function activated by the switches of faders 5 & 6 is not yet implemented

[SYSTEM TIME] and [SYSTEM TIME] are set in a similar manner; select a field then use the encoder wheel to set the value. Validate the selection with the ✅ key.

[SYSTEM INFO] gives access to: Reset all parameters of the recorder   Spread hardware informations over
                                  with factory default settings   7 pages

6.1 WIFI WLAN SETUP

The SONOSAX SX-R4+ can communicate with a smartphone, a tablet or even a laptop through its integrated WiFi interface; for sake of clarity only "tablet" will be mentioned on following chapters.

The WiFi interface enables remote control of functionalities such as Record Start/Stop, track arming, metadatas editing and displaying the modulometers by using the web browser of a tablet.

The SX-R4+ can be configured as a single Access Point to communicate directly to one WiFi device or can be configured to join an existing WiFi network. Press on the [WLAN] key on the [SYSTEM] page to access the WiFi configuration's page.
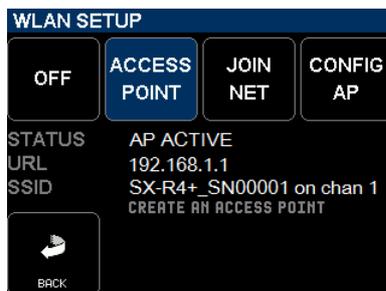
[OFF] turns the WiFi interface off to save on battery.

[ACCESS POINT] activates the WiFi interface as single Access Point with its unique SSID.

[JOIN NET] activates the WiFi interface and join an existing network once the SX-R4+ has been configured with the. [CONFIG AP]

[CONFIG AP] a special web page is broadcasted so that the WiFi interface of the SX-R4+ can be configured using an external WiFi device - such as a tablet - to join an existing WiFi network .

6.1.1 Set the SX-R4+ as [ACCESS POINT]

The [ACCESS POINT] key turns the WiFi interface on and configures the SX-R4+ as a single access point. In this mode, the SX-R4+ broadcasts a WiFi network with its own SSID; only one external device such as a tablet can be connected to the SX-R4+ network.

Connecting your tablet to the SX-R4+:

- open the WiFi manager of the tablet; all available WiFi network will be listed
- locate and select the SX-R4+ network named [SX-R4+_ _SNxxxxxx]
  (xxxxxx denotes the serial nr of your SX-R4+)
- confirm with "connect" to join the WiFi network of your SX-R4+
- open the web browser of the tablet and type directly on the URL bar: 192.168.1.1
- wait a few seconds until the SX-R4+ webpage appears on the web browser

6.1.2 SX-R4+ on your web browser

Once your tablet, or other WiFi device, is connected to the SX-R4+ network, open the web browser of the tablet and type the URL: 192.168.1.1 directly in the URL bar *(not in the search field of the browser !)*

Wait until the SX-R4+ web page is displayed in the web browser as illustrated below; depending on the WiFi interface and the web browser of the tablet it may take several seconds to load.
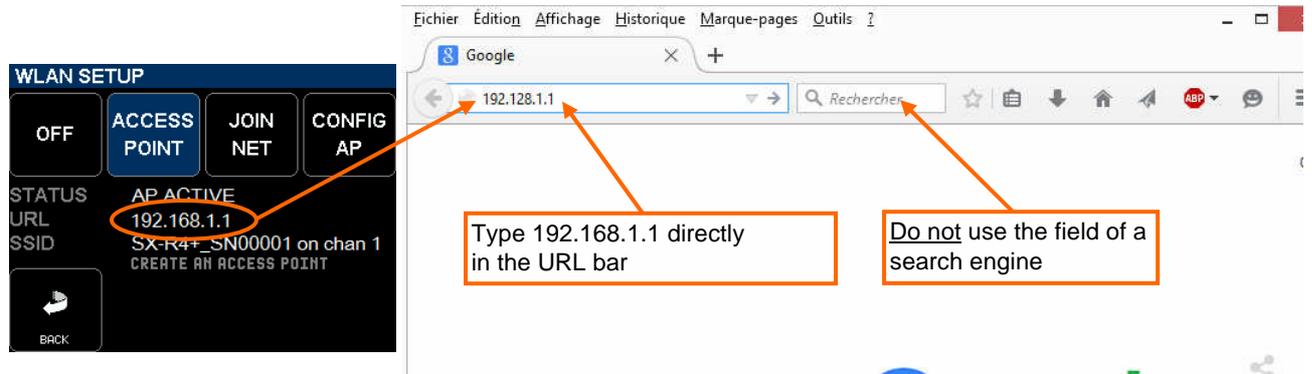
Once the page is loaded, the web browser must be connected with the SX-R4+ interface. Press on the "Connection" button on the web page, a new window appears on the left; press the "Connect" button to connect the web browser with the SX-R4+.

User can also chose to display a grid in the modulometers area.
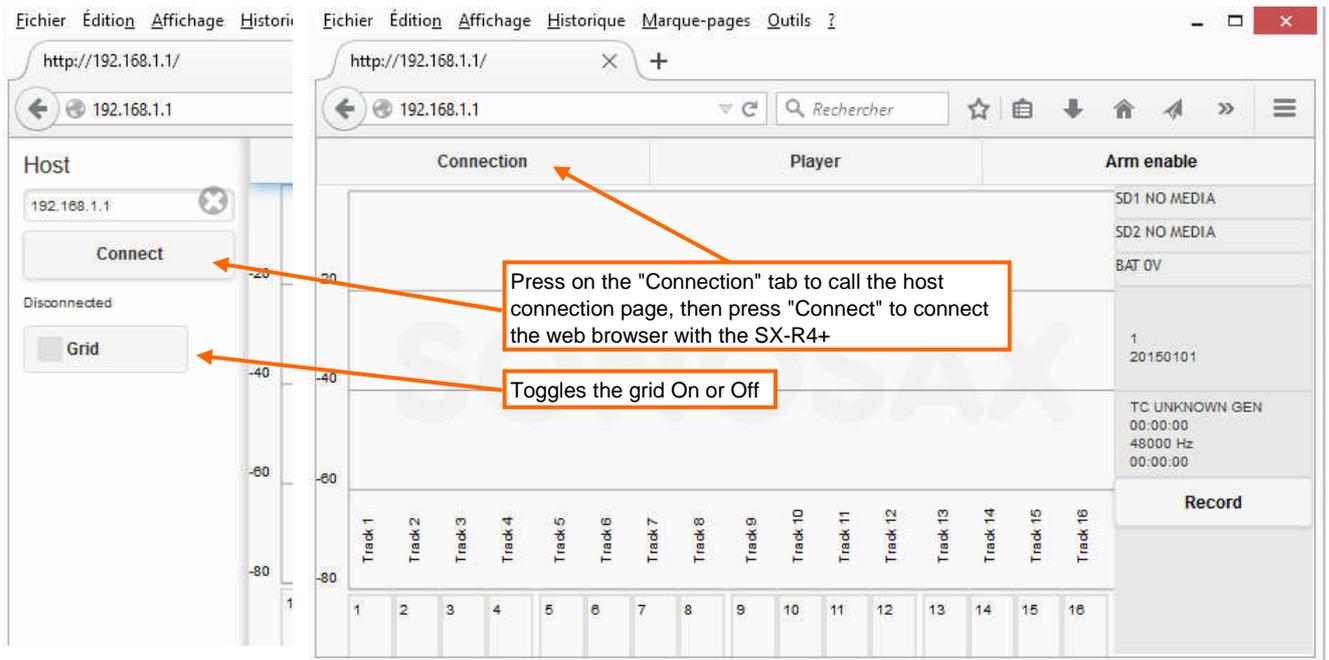
IMPORTANT NOTE: the web pages of the SX-R4+ are coded in HTML5; not all web browsers fully support HTML5 encoding. At the time of this release only **Safari** (MacOS) and **Firerfox** (Windows or Android) are properly displaying the web page.
On web browsers such as Opera, Internet Explorer or Google Chrome the SX-R4+ web pages appears shifted and/or incomplete.

Once the connection between the web browser and the SX-R4+interface is established, the web page appears as illustrated below. All informations posted in the SX-R4+ main screen are displayed in the webpage.
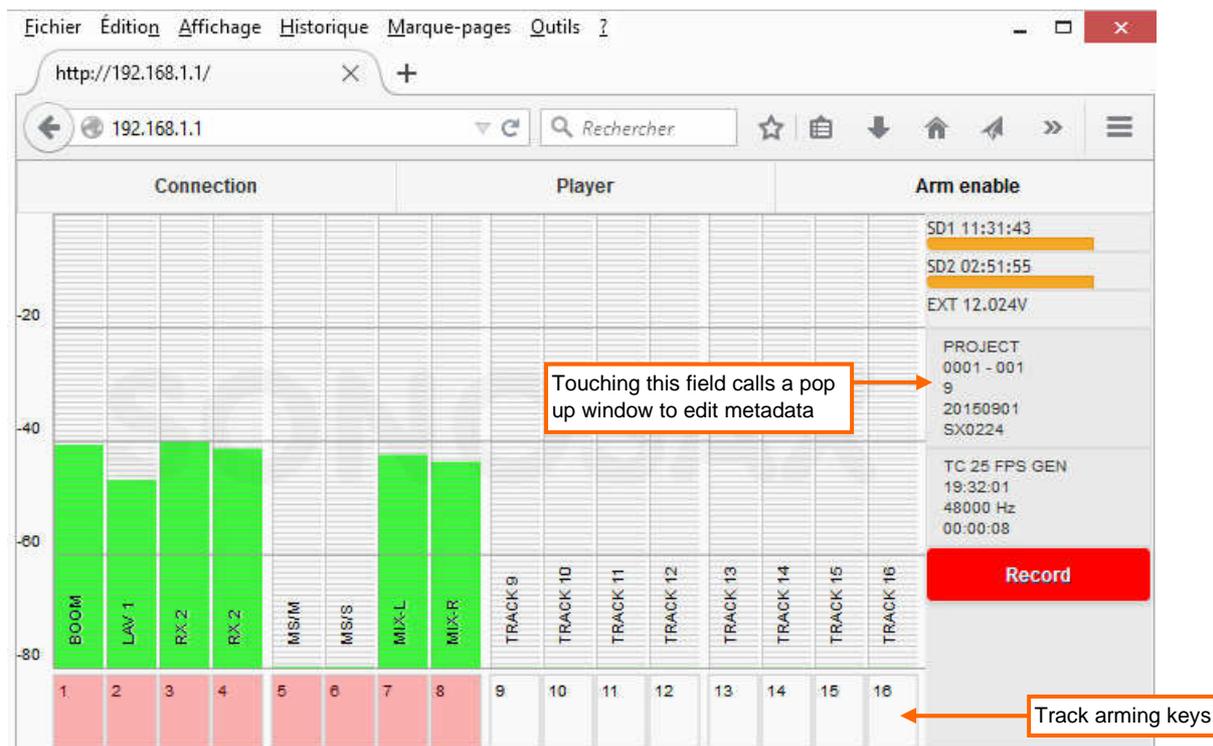
The three tabs on the top of the page, the "record" button and the metadata field provide with following functionalities:

- **Connection:** post a page to connect/disconnect the browser to the SX-R4+ and toggle the grids On or Off.
- **Player:** not yet implemented
- **Arm enable:** Enable / disable the track arming keys at the bottom of the page. The tab turns red when the keys are enabled (active).
  When enabled, press on a "Track arming key" at the bottom of the page to arm or disarm a track. Once the tracks are armed it is advisable to disable the keys to avoid arming/disarming a track inadvertently.
- **Record:** press the button to Start / Stop recording; button is flashing in record ready mode and steady in red when recording
- **Metadata:** touching the metadata field calls a pop up window in which metadatas can be edited. Select a field then type data using the keypad of your tablet. When the editing is completed, validate the changes with the [SET] key.
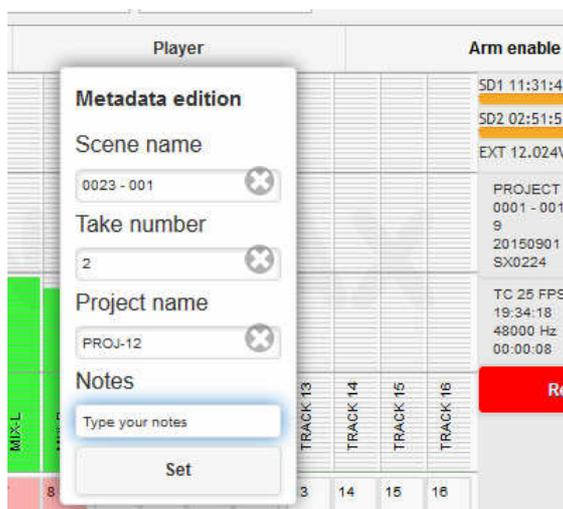
6.1.3 Set the SX-R4+ as WiFi client

The SX-R4+ can join an existing WiFi network as "client". However, as the SX-R4+ can not browse through available WiFi network, its interface must be manually configured to join a network.
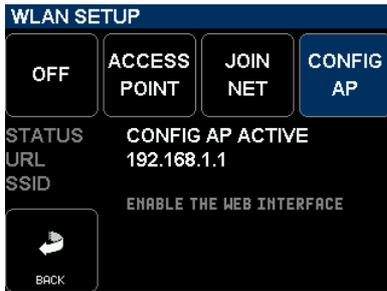
Press on the [CONFIG AP] key to turns the WiFi interface on; message is posted confirming that the access point configuration page is active.

A network configuration page is broadcasted by the SX-R4+ and must be loaded in the web browser of the tablet to configure the WiFi module of the SX-R4+.

Connect your tablet to the WiFi configuration page of the SX-R4+ as follow :

- open the WiFi manager of the tablet; all available WiFi network will be listed
- locate and select the SX-R4+ network named [SX-R4+_ _SNxxxxxx]
- confirm with "connect" to join your SX-R4+
- open the web browser of the tablet and type directly on the URL bar: 192.168.1.1
- wait a few seconds until the "WiFly Module Configuration" page appears on the web browser
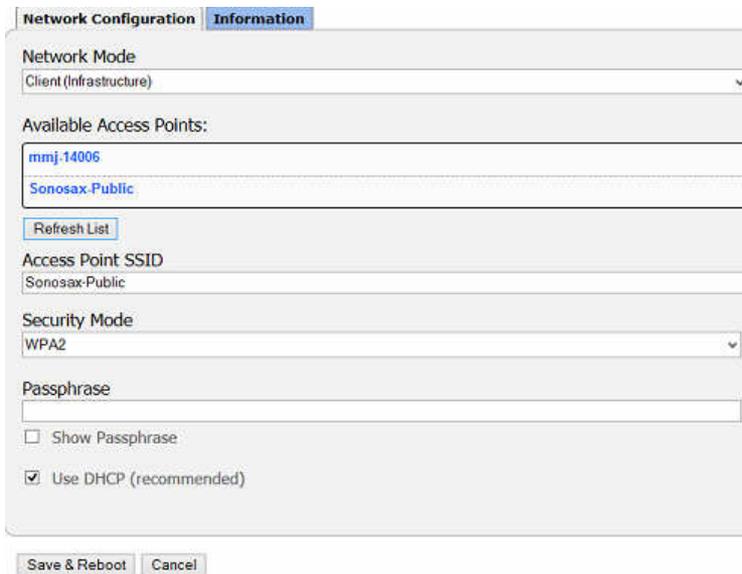
- Select "Client infrastructure

- Click on the "Refresh List" button to list available network
- Chose the WiFi network to by accessed by the SX-R4+ in the available list

- The selected SSID appears in this field

- Select the security mode as define by the existing network

- Eventually type the password to access the chosen WiFi network

- Confirm with "Save & Reboot

Once the WiFi module of the SX-R4+ is configured as client, press on the [JOIN] button the join the chosen network.
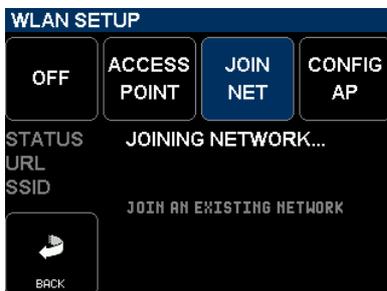
NOTE: When the WiFi interface is turned On, a WiFi icon is flashing on the upper right corner on the main screen, once the WiFi communication is established the WiFi icon is posted steadily

7. APPENDIX

7.1.1 iXML implementation chart

VENDOR	SONOSAX			DATE	01.06.2011
MODEL	Recorders version 4.0 and greater			VERSION	v1.52
IXML MASTER TAG	**IXML SUB TAGS**	**WRITTEN**	**READ**	**REMARKS**	
<PROJECT>		O	O	Max 8 chars	
<SCENE>		O	O	Max 8 chars	
<TAKE>		O	O	Range: 001..999	
<TAPE>		O	O	Working day: YYYYMMDD	
<CIRCLED>		O	O		
<WILD TRACK>		O	O		
<FALSE START>		O	O		
<NO GOOD>		O	O		
<FILE_UID>		O	O	= BWF Originator Reference	
<UBITS>		X	X		
<NOTE>		O	O	Max 32 chars	
<BEXT>		O	X		
<USER>		X	X		
<SPEED>		O	O		
<SPEED>	<NOTE>	X	X		
<SPEED>	<MASTER_SPEED>	X	X		
<SPEED>	<CURRENT_SPEED>	X	X		
<SPEED>	<TIMECODE_RATE>	O	O		
<SPEED>	<TIMECODE_FLAG>	O	O		
<SPEED>	<FILE_SAMPLE_RATE>	O	X		
<SPEED>	<AUDIO_BIT_DEPTH>	O	O		
<SPEED>	<DIGITIZER_SAMPLE_RATE>	O	O		
<SPEED>	<TIMESTAMP_SAMPLES_SINCE_MIDNIGHT_HI>	O	O		
<SPEED>	<TIMESTAMP_SAMPLES_SINCE_MIDNIGHT_LO>	O	O		
<SPEED>	<TIMESTAMP_SAMPLE_RATE>	O	X		
<SYNC_POINT_LIST>		X	X		
<SYNC_POINT>	<SYNC_POINT_TYPE>	X	X		
<SYNC_POINT>	<SYNC_POINT_FUNCTION>	X	X		
<SYNC_POINT>	<SYNC_POINT_COMMENT>	X	X		
<SYNC_POINT>	<SYNC_POINT_LOW>	X	X		
<SYNC_POINT>	<SYNC_POINT_HIGH>	X	X		
<SYNC_POINT>	<SYNC_POINT_EVENT_DURATION>	X	X		
<HISTORY>		X	X		
<HISTORY>	<ORIGINAL_FILENAME>	X	X		
<HISTORY>	<PARENT_FILENAME>	X	X		
<HISTORY>	<PARENT_UID>	X	X		
<FILE_SET>		O	O		
<FILE_SET>	<TOTAL_FILES	O	O		
<FILE_SET>	<FAMILY_UID>	O	O	= BWF Originator Reference	
<FILE_SET>	<FAMILY_NAME>	O	O		
<FILE_SET>	<FILE_SET_INDEX>	O	O		
<TRACK_LIST>		O	O		
<TRACK_LIST>	<TRACK_COUNT>	O	O		
<TRACK>	<CHANNEL_INDEX>	O	O		
<TRACK>	<INTERLEAVE_INDEX>	O	O		
<TRACK>	<NAME>	O	O		
<TRACK>	<FUNCTION>	X	X		
				O = YES	
				X = NO	
NOTES:					
Not all Sonosax recorders support track naming and NOTE					