# Stelladat II

# **User's manual**

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### 1. Introduction & QuickStart

Your Stelladat II digital recorder has been designed to assure you many years of irreproachable performances. Stelladat II's reliability is due as much to its solid mechanical engineering as to a meticulous manual assembling of selected electronic components. The updatable software management of the device's main elements allows you the use of sophisticated functions, unthinkable until now on a recorder of that size, and guarantees you always access to the most recent developments.

Stelladat II, portable DAT recorder, unique on the market offering you the choice of 2 and 4 tracks, features extremely advanced engineering and characteristics.

Stelladat II includes four mic/line inputs, all outfitted with legendary SONOSAX mic preamplifiers, input gain control, limiters, low pass filters, pan pots and output level controls. These four inputs can be routed towards two or four tracks, with or without panpot, depending on the application. Stelladat II has a true 4 channels input mixer. Included is a tone generator, a slate microphone and a control loudspeaker. To also maintain the reliability under difficult temperature or humidity conditions, the recorder contains a tape scanner heater switching on automatically when circumstances require it.

Stelladat II records and plays back at 44.1 kHz and 48 kHz (and at 96 kHz on option). It can also use pull-up and pull-down sample frequencies (+0.1% and -0.1%) to meet the requirements of NTSC video.

While Time Code DAT machines have become notorious for their frequency instability, (Time Code drift of 20 ppm is typical), Stelladat II is as stable as its Swiss analog predecessors (Time Code drift < 2 PPM, typically < 1 PPM), and offers an optional High Stability (oven stabilized) crystal providing frequency stability better that 0.1 PPM.

Unique circuit design allows Stelladat II to achieve unheard of power efficiency in a DAT recorder. Stelladat II uses only 10 to 15 watts, depending on the configuration. The power saving software allows you to power off the analog inputs one by one, the optical inputs and outputs and the analog outputs. Power requirements in stand by are considerably lowered allowing many hours of typical production from a single NP-1 battery.

Stelladat II has been designed and manufactured to meet the highest standards of reliability to operate under very rugged conditions. If service should be required, its modular design allows any module to be removed and replaced with one single 2 mm hex wrench.

Although Stelladat II has been particularly sturdily constructed and all precautions have been taken to avoid any damage caused by incorrect use, we advise you to invest some of your time to carefully read this user manual.

That being said, Stelladat II is not a complicated recorder and if you don't find the time to read this user manual before your first recording, you most certainly will achieve to use it. Its basic functionalities are very similar to these of other well known analog portable recorders.

If you are in a hurry, before you go on to your first recording session with your new recorder, just read these few fundamental, little restricting rules for an optimal and comfortable use of Stelladat II's resources:

• Never attempt to carry any hardware modification or to take apart any module before having studied the manual.

• Never try to touch or clean the tape scanner with any object. The 4 heads inside the drum are very fragile and can be easily damaged. Operations on these elements can only be executed by authorized service centers.

• To clean the heads, use a cleaning cassette (Ex.: SONY DT-10 CL or similar) and read carefully the instructions enclosed with it. We recommend playing back the cleaning

cassette a few seconds only. Keep in mind that the tape scanner rotates at 2000 turns/minute.

• Avoid recording programs in different formats on the same tape (e.g 2 tracks 48 kHz followed by 4 tracks 48 kHz). Although nothing forbids it in isolation, the transition from one format to another requires a full switching of Stelladat II, needing a certain amount of time and is likely to cause localization problems on the tape.

• A DAT cassette lifespan is not unlimited. Playback or recording on a worn cassette can cause errors not only in the PCM parts (audio) but also in the subcode parts which can lead to tape-locating problems.

### • Whenever possible, avoid activating the RS422 port when it is unused.

When you use a battery, make sure that the recorder is correctly set (Power Menu > **Battery** select). This precaution allows to select the correct battery manager program controlling the switching off of Stelladat II whenever the battery is exhausted.

Always turn Stelladat II off when replacing a battery. Preferably take the battery out when you use the external power supply.

It is normal that the power-on needs few seconds, necessary for the initialisation of the different functions. Three microprocessors (four with the Time Code Option), two high quality AD/DA convertors and highly sophisticated power circuits will have to communicate while you are recording.

If you're working with Time Code, check in the Time Code Menu that the desired frame rate is selected.

### At this point, you are ready for your first recording. If anything is not working the way you figured - don't shout: start to read this manual.

This user's manual will be updated with each new software release, allowing you to exploit to the utmost the possibilities of your Stelladat II.

## 2<sup>a</sup>. Description - Top



1		CASSETTE TRAY
2	STAND BY	POWER SWITCH
3	EJECT	CASSETTE EJECT KEY
4	ESC	ESCAPE KEY
5		JOYSTICK
6	REC / F5	RECORD KEY / FUNCTION 5
7	STOP / F4	STOP KEY / FUNCTION 4
8	PLAY / F3	PLAYBACK KEY / FUNCTION 3
9	FF / F2	FAST FORWARD KEY / FUNCTION 2
10	REW / F1	REWIND KEY / FUNCTION 1
11	LINK	LINK CHANNELS 3 AND 4 KEY
12	OVD	OVERLOAD LED FOR CHANNELS 1-4
13	LINK	LINK CHANNELS 1 AND 2 KEY
14	LEVEL	CHANNEL LEVEL CONTROLS 1-4
15	PAN	PANPOTS CHANNELS 1 - 4
16	80 / LIN /120	HIGH-PASS FILTERS CHANNELS 1, 2, 3, 4
17	GAIN	GAIN SELECTORS
(18)	12 / DYN/LIN / 48	LINE / MICROPHONE POWER SELECTOR

## 2<sup>b</sup>. Description - Front



1		LCD DISPLAY
2	LEFT / ST / 1-2	MAIN CONTROL CHANNELS 1-2
3		SLATE MICROPHONE
4	RIGHT / 3-4	MAIN CONTROL CHANNELS 3-4
5	MON	DIRECT / TAPE KEY
6	DISP	STATUS DISPLAY / *(LEVEL METER SWITCHING) KEY *(FOR 4 TRACKS MODE)
7	PRG	BLANK SEARCH ON /OFF KEY
8		REWIND / INDEX SEARCH BACK KEY
9		FAST FORWARD / INDEX SEARCH FORWARD KEY
10		RECORDING / POWER ON KEY
11		PAUSE KEY
12		STOP / POWER OFF KEY
(13)		PLAYBACK KEY

## 2<sup>c</sup>. Description - Left



1	LEFT / 1 IN	ANALOG INPUT LEFT / CHANNEL 1
2	LEFT / 1 OUT	ANALOG OUTPUT LEFT / CHANNEL 1
3	RIGHT / 2 IN	ANALOG INPUT RIGHT / CHANNEL 2
4	RIGHT / 2 OUT	ANALOG OUTPUT RIGHT / CHANNEL 2
5	3 IN	ANALOG INPUT CHANNEL 3
6	3 OUT	ANALOG OUTPUT CHANNEL 3
7	4 IN	ANALOG INPUT CHANNEL 4
8	4 OUT	ANALOG OUTPUT CHANNEL 4
8	L/1, R/2, 3, 4, ST/1-2, 3-4	MONITORING SELECTOR
9	PHONES	HEADPHONE SOCKET
10	MS ON / OFF	MS MATRIX SWITCH
11	STEREO / MONO	MONITORING MONO / STEREO SELECTOR
12	HP ON / OFF	CONTROL LOUDSPEAKER SWITCH
13	MON LEVEL	MONITORING LEVEL CONTROL

## 2<sup>d</sup>. Description - Right



1	ACC	ACCESSORY SOCKET
2	WCK LOOP	WORDCLOCK LOOP SWITCH
3	SYNC OUT /WCK	SYNC / WORDCLOCK OUTPUT
4	SYNC IN / 75 $\Omega$	SYNC / WORDCLOCK INPUT
5	тс	SMPTE / AES-EBU TIMECODE INPUT / OUTPUT LEMO SOCKET
6	IN ST / 1-2 3-4	DIGITAL OPTICAL SPDIF STEREO INPUTS / TRACKS 1- 2 AND TRACKS 3-4
7	OUT ST / 1-2 3-4	DIGITAL OPTICAL SPDIF STEREO OUTPUTS / TRACKS 1-2 AND TRACKS 3-4
8	TC IN	SMPTE / AES-EBU TIMECODE XLR INPUT
9	TC OUT	SMPTE / AES-EBU TIMECODE XLR OUTPUT
10	AES ST / 1-2 IN	DIGITAL AES/EBU STEREO INPUT / TRACKS 1-2
11	AES ST / 1-2 OUT	DIGITAL AES/EBU STEREO OUTPUT / TRACKS 1-2
12	AES 3-4 IN	DIGITAL AES/EBU STEREO INPUT / TRACKS 3-4
13	AES 3-4 OUT	DIGITAL AES/EBU STEREO OUTPUT / TRACKS 3-4
14	RS 422	SONY 9-PIN STANDARD RS 422 SOCKET
(15)	EXT DC INPUT	EXTERNAL DIRECT CURRENT POWER SOCKET

## 2<sup>e</sup>. Description - Rear





BATTERY (LITHIUM ION 14.4 V RECOMMENDED)

CONTROL LOUDSPEAKER

### 3. Hardware Setup

### **Inserting A Battery**

Stelladat II uses NP-Format batteries. These different types are suitable:

- NP-1B 12 V Ni-Cd and similar
- NPX 13.2 V Ni-Cd and similar
- NP-L40 (see note) or NP-L46 14.4 V Lithium Ion and similar (Recommended)

It's necessary to configure the device for each of these types of batteries (See Software > Power Menu > **Battery Select**).



Some batteries don't respect the NP-Standard in size and are thus too short, too long or too thick. These batteries cannot be used on Stelladat II.

The battery holder is located on the rear side of the recorder.

Insert the battery into the holder watching over the insertion direction. To do this, first slide the battery into the left side of the holder, the arrow on top, pointing towards the loudspeaker of the device. Push lightly on the vertical side of the battery near the arrow and the battery will insert correctly.



DO NOT CONNECT THE NEGATIVE POLE OF THE BATTERY TO THE GROUND OF THE DEVICE !

Powered with a 46 Wh Lithium Ion battery, Stelladat II provides e.g. more then 3 hours of continuous recording.

<u>Note</u> : By wrongly inserting the cable of the external power supply, you may cause a short circuit between pins 1 and 4 of the external DC power socket. If an IDX NP-L40 battery is in the holder, this causes an apparent « dead » state of the NP-L40. To correct the problem, insert the battery once into the charger. The problem has been corrected by IDX for NP-L46.

### **Removing A Battery**

To remove a battery, grab it between your index finger and your thumb through the side openings of the holder and push lightly back. Then lift the battery to extract it from the holder.

### **Connecting The External Power Supply**

The power supply provided with Stelladat II, to be connected on 100-240V 50/60Hz AC main, delivers 12V DC. Connect the XLR-4 plug of the supply to the external DC power socket.



If the external power supply is connected while a battery is in the holder, Stelladat II switches automatically to the external power supply. Preferably take the battery out when you use the external power supply.

### **Connecting Other Power Sources**

Stelladat II can be powered from another DC source. Here is the pin out of the external DC power socket (XLR-4):

1	0 V	TO USE
2	U Batt	
3	T Batt	DUNUTUSE
4	8.8 V* - 18 V DC / 2.5 A	TO USE

\*)10.8 V with High Precision Oscillator Option

 $\triangle$ 

To keep its maximal performances, Stelladat II must use a separate power source (avoid using one source for several appliances).

### **Power On**

Stelladat is turned on with the STAND BY key (2) (page 6), located on the top of the device. Depending of the position of its use, it can also be switched on with the REC key (1) (page 8) located on the front side of the recorder. The power on takes few seconds, necessary to initialize different functions.

### **Power Off**

Stelladat II is turned off with the STAND BY key (2) (page 6). The STOP key (2) (page 8) can also be used for powering off. As a safety measure, switching off by this mean needs to hold the key for at least 3 seconds.

### **Opening The Lid**

To open the lid, pinch the locker between thumb and index finger. Closing the lid works the same way.

### **Extracting The Lid**

For interior or studio use the transparent lid can be extracted to facilitate access to the elements located on the device's top side. Open the lid placing it in the upright position and pull up gently : the hinges release from their slot. Store the lid where it cannot be scratched.

To put the lid back in place, grab one hinge with each hand, holding it upright and insert gently the hinges into their respective slot. Push down softly until you hear a click.

### Loading A Cassette

Press the EJECT key () (page 6). The cassette tray opens. Insert the cassette into the tray in the direction of the arrow. Close the drawer pushing down gently until you hear a click. The cassette is loaded.



Use professional DAT cassettes only. Don't use cassettes longer than 120' (thinner tape).

**A DAT cassette's lifespan is not unlimited.** Playback or recording on a worn cassette can cause errors not only in the PCM parts (audio) but also in the subcode parts which can lead to tape locating problems.

### **Configuring Stelladat II**

Stelladat II can be configured in 2-tracks or 4-tracks mode, using various sample frequencies (Configuration Menu > Working Cfg > **Working mode**). Moreover, each mode offers several routing configurations of the inputs towards the tracks. Mode and audio routing configuration is carried out by software (Configuration Menu > **Audio Routing**).

### **Connecting Audio Sources**

Stelladat II was designed to support all types of analog and digital audio signals. The selection of audio type source, analog or digital is carried as well by software (Configuration Menu > Working Cfg > **Source select**).

Analog inputs and outputs are located on the left side of the recorder. Digital inputs and outputs are located on the right side.

### **Connecting an Analog Source**

Before connecting a source, set the Line / Microphone Power Selector 🕲 (page 6) of the selected input to the position corresponding to the signal to be connected. Set the selector to the center position (DYN/LIN) for dynamic microphones or line level signals. Place the selector to the left for microphones requiring T12 V powering. The right position is for microphones with a phantom +48 V powering.

To avoid overload of the pre-amps, place the gain selector (7) (page 6) in its 0 position.

Insert the XLR-3 plug into the (1), (1), (5) or (7) (page 10) selected input.

### **Optimal Gain Setting**

The gain selectors (7) (page 6) allow to set the amplification of the analog inputs of the recorder in a range of 70 dB by steps of 14 dB. The Overload LED's (2) detect too hot signals for each input. When a LED lights up, the gain has to be decreased until the LED goes out. The fine gain setting is done with the Channels Level Controls (4).

Maximal input level: + 18 dBu.

In order to save energy, the analog outputs of Stelladat II are OFF by default. To switch them on by software, see Power Menu, > Analog Power > **Outputs**.



The output level of Stelladat II depends on the software selected dB scale (Setup Menu > Display > **dB scale**). See Output Levels Table on page 74.

### **Level Setting**

For this setting the Main Controls (2) and (4) (page 8) must be set into their 0 position. Adjust the channel level control (4) (page 6) until the LED lights up, then turn gently back until the LED goes out.

### **Modulation Setting**

The modulation setting is carried out by the Main Controls (2) and (4) (page 8), depending on the software selected audio routing (Configuration Menu > **Audio routing**).

In four-tracks configuration the main controls have effect on the input channels 2 by 2 (1-2 and 3-4). In stereo or double-stereo configuration, or for other applications, the channel level controls can be linked 2 by 2 with the LINK switches ((1) and (1) (page 6).

### Filters

Each analog input has a two-position High Pass Filter 🖻 (page 6): 80 Hz and 120 Hz. These filters have a slope of 12 dB/octave. The LIN position of the selector sets the filters off and leaves the signal unchanged.

### Limiter

Each input module includes a limiter. These limiters can be switched on or off by software (Setup Menu > Limiter). Their default configuration is **ON**.

Stelladat II's limiters, designed from the legendary limiter of the SXS portable mixer offer a large modulation reserve. Their use allow not to hesitate to modulate hot, not for all that to risk an overload. They're protecting the AD converter from overloads and limit the signal to -2 dBFS. The limiters can be set **OFF** whenever the signal level is predictable (rehearsed recordings). For voice, news, documentary or feature recordings they can stay constantly on. Their acting will be absolutely inaudible by brief overmodulations.

### **Overload LED's**

The Overload LED's (a) (page 6) light up 4 dB under the input's overload level. The input level is measured at the preamp's output, after the filter.

### **Panpots**

The Panpot's (1) (page 6) function is to distribute the incoming signal towards the tracks. Their working depend on the selected audio routing configuration (Configuration Menu > Audio routing). In some configurations, they're ineffective.

### **Connecting A Digital Source**

The digital AES/EBU format is supported at the inputs and outputs of Stelladat II.

The digital inputs are located on the right side of the recorder.

The digital input sockets (1) (page 12) for tracks 1 and 2 and (1) for tracks 3 and 4 are XLR-3, as are the digital output sockets (1) (tracks 1 and 2) and (2) (tracks 3 and 4).

The optical digital in- and outputs are usually covered by a protective plate main-tained in place by a knurled-head screw. The sockets (a) are the optical inputs for tracks 1 - 2 and 3 - 4 and the sockets (b) are the outputs.

In order to save energy the optical digital in- and output's default configuration is OFF. They can be turned ON by software (Power Menu > **Optical**).



By simultaneous connecting of signals on both types of digital inputs, optical and XLR, the signal connected to the optical sockets has priority.

No level setting is necessary on both types of digital inputs, thus the signal is recorded at its nominal level.

### **Connecting Time Code**

Stelladat II has on option an internal Time Code generator accepting all usual formats at in- or output:

- 30 non-drop
- 30 drop
- 29.97 non-drop
- 29.97 drop
- 24
- · 25

The generator is also designed to regenerate incoming Time Code (JAM SYNC function). So the user, configuring the recorder in the Time Code Menu, can select a setting perfectly adapted for his application.

The Time Code can be connected to two types of sockets, at user's choice. In the case of two Time Code signals connected simultaneously to both types of input sockets, the Lemo socket

has priority (signal auto detection). For output, both types of sockets can be used simultaneously.

The sockets (a) and (a) (page 12), respectively the input and output, are XLR type (SPMTE/EBU Time Code Format). The input sensitivity of these sockets is 200 mV - 10 V pp for an impedance < 2 k diff. The output voltage is 2 V diff. nominal pp for an impedance < 250 k.

The Lemo-type ( $\blacksquare$ ) socket is a combined in/output in Aaton format, fully compatible with the Aaton standards (Time Code and ASCII). The Lemo socket is at TTL level. The input impedance is > 10 k and the output impedance < 250 k

The Time Code inputs and outputs are located on the right side of the recorder.

### **Connecting Digital Sync (WordClock)**

Stelladat II can be synchronized with an external WordClock or video (NTSC and PAL) signal which is to be connected on the BNC-type socket (4) (page 12). The recorder recognizes automatically the type of signal used and displays it on the Status screen:

- WCK 44
- WCK 48
- VIDEO PAL
- VIDEO NTSC

Stelladat II can also act as a WordClock generator or be inserted in a sync chain, thus has therefore an output (()). When the output is not used, the WordClock loop switch WCK LOOP () must be set to the WCK position.

### Connecting RS422

A SONY-9 pin type remote can be connected to the RS 422 socket <sup>[4]</sup> (page 12). This DB-9 type socket is software activated (Configuration Menu > Remote Control > **RS422**). Here is the pinout of the socket:

- 1 Frame Ground
- 2 Transmit A
- 3 Receive B
- 4 Transmit Common
- 5 NC
- 6 Receive Common
- 7 Transmit B
- 8 Receive A
- 9 Frame Ground



It is strongly recommended to inactivate the RS 422 function when it is not used.

### Accessory Socket

The Acc socket (1) (page 12) allows connecting an external parallel remote. The socket is of type SONOSAX # 002211 (Arting or compatible). Here is the pin-out table of the socket:

- 1 MON L
- 2 MON GND
- 3 MON R
- 4 GND
- 5 GND
- 6 ACCESSORY
- 7 PRG
- 8 REW
- 9 MON
- 10 REC
- 11 ACCSDA
- 12 ACCI2CINT
- 13 ACCSCL
- 14 DGND
- 15 U LED (100mA max)
- 16 +5V (100mA max)
- 17 STOP
- 18 PAUSE
- 19 FWD
- 20 PLAY

### Monitoring



The monitoring selector (\*), page 10 (shown above) is used to select one two tracks to be monitored with the headphones and with the control loudspeaker. The MONO / STEREO selector (\*) specifies the listening mode and the monitoring level control (\*) adjusts the listening level.

### **Headphones**

The headphones are to be plugged into the PHONES socket (1) (6.25 mm stereo Jack, +15 dBu (200)) located on the left side of the recorder. The monitoring of MS stereo with the phones is easy thanks to an MS matrix, switched ON or OFF with the MS switch (1), in the center of the monitoring pane.

### **Control Loudspeaker**

A control loudspeaker (2) (page 14) with a deliberately limited bandwidth is integrated on the back side of the recorder. It's switched ON or OFF with the HP switch (10) (page 10), in the lower right of the monitoring panel. It's level can be adjusted with the monitoring level control (10).

The loudspeaker is switched off automatically in REC mode.

### **Slate Microphone**

### **1 kHz Tone Generator**

### Main Keyboard

The main command keys are located on the front side of the recorder.



Fast Forward (FF) key. The LED lights up. To stop : STOP key.

Two or more rapid keystrokes put the recorder in Index forward search mode. e.g. 6 strokes = 6 ID forward. The LED glows up. When all leds are off: the searched ID is reached. Stelladat II's behavior depends then from the selected Mode after loc option from the Configuration menu.

In **PLAY** mode: Audible search mode forward at x5 speed.

	PAUSE key. In PLAY mode, stops the playback. The LED glows up and the PLAY
	LED keeps glowing. To resume playback: <b>PLAY</b> key.
	In <b>REC</b> mode, stops recording. The LED lights up and the REC LED keeps glowing. To resume recording: <b>REC</b> key.
	<b>PLAY</b> key: playback. The LED glows up. To stop playback: <b>PAUSE</b> or <b>STOP</b> key.
	Works also as optional record unlock key.
	In PLAY or REC mode, tape positions marker key (Locator).
	<b>Rewind</b> (REW) key. The LED glows up. To stop rewinding: <b>STOP</b> key.
•	Two or more rapid keystrokes put the recorder in Index back search mode. e.g. 4 strokes = 4 ID back. The LED glows up. When all leds are off: the searched ID is reached. Stelladat II's behavior depends then from the selected <b>Mode after loc</b> option from the Configuration menu.
	In <b>PLAY</b> mode: Audible search mode back at x5 speed.
	<b>Recording</b> (REC) key. Depending of its programming (Configuration Menu > Record key mode), single or associated with the <b>PLAY</b> key: starts recording. The LED glows. To stop recording: <b>PAUSE</b> or <b>STOP</b> key.
•	In <b>REC</b> mode, a keypress records a new START ID.
	In <b>Power OFF mode</b> : holding down the key turns the recorder on.
	<b>STOP</b> key. Leaves the other modes. The LED glows. The tape is engaged in the tape scanner. A subsequent keypress disengages the tape off the tape scanner. The LED turns off.
	In <b>Power ON</b> and <b>STOP</b> mode: holding the key during 3 sec. turns the recorder off.
MON	MON key. In REC mode: A press on this key switches the monitoring to TAPE mode: the recorded tape is monitored. THEE is displayed. A subsequent press on the key resumes DIRECT monitoring mode: the sound before recording is monitored, DIRECT is displayed.
	tape has not been ejected since, Stelladat II locates the tape at the end of the last recording.
	Pressed simultaneously with the <b>DISP</b> key: Display of PCM errors.
PRG	<b>PRG</b> key (a.k.a. <b>User key</b> ). In <b>STOP</b> or <b>PLAY</b> mode, a press on the key enters the <b>BLANK SEARCH</b> mode: The device detects the blank unrecorded section of the tape. In PLAY mode, the recorder stops the tape at the end of the recorded part. A subsequent press exits the <b>BLANK SEARCH</b> mode.
	In <b>REC</b> mode this key is assignable (Configuration Menu > Function keys def > PRG key). The user has three choices: <b>MIC MUTE</b> , <b>TONE MUTE</b> or <b>Disabled</b> .
DISP	<b>DISP</b> key. In <b>REC</b> , <b>PLAY</b> or <b>STOP</b> mode, repeated strokes on this key display the Status screens: a set of useful informations about the recorder's confi-guration consultable even while recording.
	If the four-tracks module is installed: holding this key for two sec. switches <b>meter display mode</b> : the four meters are drawn broader for better readability.
	Pressed simultaneously with the <b>MON</b> key: Display of PCM errors.

### **Function Keys**

These keys are located on the recorder's top.



The default function of these keys is described by their primary name. Many other functions can be software assigned to these keys, at the needs of the user. See Software > **Function keys**.

### **LCD Display**



Stelladat II is fitted with an LCD screen which, because of its transflective nature, is visible also in high ambient lighting conditions. A backlighting, whom intensity is software set (Power Menu > **Backlight**), allows reading in the darkness. The main function of the display is for checking the record and playback levels. The type of meter (VU-meter or Peak-meter) and the dB-scale are software set (Setup Menu > Display > **dB scale**).

The display allows moreover a visual check of many functions of Stelladat II: Battery power gauge, two programmable counters, Time Code rate, source of monitoring, working mode, sync mode, alarms, etc.

The many menu options are also displayed on the LCD screen. See Software > Menus.

### 4. Software

Stelladat II's software contains many possibilities of configuration, multiple useful settings and several sophisticated functions, unique on a recorder of that size.

The Menu Tree is displayed on the LCD screen. The first line shows the active menu or submenu. The access to the Menu Tree is only available in STOP mode, pressing vertically on the joystick.

### **Joystick**



The joystick and the ESC key allow access to all the menus of the recorder. The joystick is the main tool for navigating through the menus. It is also used in the JOG and SHUTTLE modes to varispeed-search the tape in both directions, and from the Locator to reach four previously stored tape locations.

### ESC Key

The first function of the ESC key is to cancel the last choice while navigating in the menus.

It is also the enter and exit key for the LOCATOR Menu (in STOP mode) and allows to clear stored tape locations in PLAY or REC mode.

### Stelladat II's Menus

Stelladat II's menus can be accessed in STOP mode only. A vertical press on the joystick is all it needs to display the MAIN MENU window. A push on the joystick to the right  $\diamondsuit$  accesses the Time Code Menu. Pushing down  $\diamondsuit$  scrolls down to the next menu. In this way it is possible to navigate through the menus, the sub-menus and the latter's choices. A vertical press confirms a displayed choice. If the user decides however to maintain his previous selected choice, pressing on the ESC key cancels. To scroll back in the Menu Tree, move the joystick to the left  $\diamondsuit$  or up

 $\diamondsuit$ . After having confirmed a choice with a vertical press on the joystick, a subsequent press exits the menus and resumes to STOP mode. While the menus are being displayed, the others functions of the recorder are disabled.

### **Detailed Menu Description**

Time Code Menu	This page
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Setup Menu	Page 31
Configuration Menu	Page 34
Power Menu	Page 38
User Settings Menu	Page 40
Information Screen Menu	Page 41
Locator Menu	Page 42

### > Time Code Menu

This menu manages the optional Time Code module. If Stelladat II is not outfitted with it, the Time Code menu is not displayed.

### > Generator sub-menu:

> Set from external sub-menu:

By calling this function the user synchronizes the internal Time Code generator to an external reference provided via the Aaton or the XLR TC socket. **Set from external** is only a punctual setting of the internal generator and shouldn't be confused with **Input source/External** below.

> Set from rec clock sub-menu:

This function sets the Time Code to the value of the internal clock.

### > Set manual sub-menu:

To manually enter a start value for the Time Code generator.

### > Running mode sub-menu:

There are two modes of Time Code incrementation. In the first one, **Free run**, the Time Code is incremented continuously, as long as the recorder is powered on, whereas in **Record run** mode, the Time Code is only incremented when Stelladat II is in REC mode. **Record run** is essential to get continuous Time Code on tape.



So that the **Record run** mode can work, **Internal** has to be selected in the **Output source** sub-menu below.

### > User bits mode sub-menu:

Defines the allocation of the user bits of the Time Code

- Date
- Date auto inc.
- Free
- Free auto inc.

The mention **auto inc.** means that the counter formed by the two last digits is incremented by each new START ID writing.

### > Input format and Output format sub-menus:

Allow to define the incoming and outgoing Time Code formats:

- 30 non-drop
- 30 drop
- 24
- 25
- 29.97 non-drop
- 29.97 drop

Note: The option Auto detect is not implemented yet.

### > Input source sub-menu:

Allows to set the source of incoming Time Code. To select the internal generator's Time Code, activate the **Internal** option.

**External no jam** and **Ext. jam sync** are two useful options when the Time Code used is external (TC XLR or Aaton sockets) with this difference: If the external Time Code flow is interrupted (cable disconnected, for ex.) the Time Code freezes if the option **External no jam** has been selected, it gets regenerated by the internal generator when **Ext. jam sync** has been chosen.

### > Output source sub-menu:

Allows to set the source of outgoing Time Code, i.e. the Time Code present on the TC output sockets and on the display. There are two choices: The Time Code recorded on tape (**Tape**) or the one produced by the internal generator (**Internal**)



So that the **Record run** mode can work, **Internal** has to be selected in the **Output source** sub-menu below.

### > **Default values** sub-menu:

The options

- User def. Set
- User def. Recall

allow respectively to save and to recall a default user Time Code setting. The options

- Film USA
- Video USA
- Film Europe
- Video Europe

are another way to define TC format, based on the applications and taking existing standards in account.

### > Chase offset sub-menu:

The user can manually enter an offset value on this screen, to be used in Chase mode. (Offset is the difference between an external Time Code and the Time Code on tape for any given point to be synchronized).

### > ID's Menu

This menu is dedicated to the management of IDs.

> PNO sub-menu:

The option **AUTO ON** makes Stelladat II associate a number to every START ID written on tape. This number equals the previous ID number +1 or is equal to 001 if the cassette is at the BEGIN OF TAPE or if Stelladat II couldn't read the previous START ID since the cassette was loaded. This option is ineffective if the **AUTO OFF** option of the **Start ID** sub-menu below has been selected, because there can't be any PNO without START ID. If the **AUTO OFF** option of the sub-menu PNO is selected, no number will be associated to the START ID.

> Next PNO sub-menu:

Allows to associate a number to the next START ID to be written on tape.

### > Reset PNO on eject sub-menu:

The default value of this function is **ON**. If **ON** is selected, the PNO recording counter is reset when the cassette is ejected. If **OFF**, on the other hand, has been selected, the value of the last PNO written on the ejected tape is stored. In this way, the ID numbering can be carried on from one cassette to the other without any further intervention of the user.

> Start ID sub-menu:

Activates (**AUTO ON**) or disables the automatic recording of a START ID by each press on the REC key.

> Display sub-menu:

> Meter selection sub-menu:

To select level meter mode:

- Peak meter
- Peak meter max
- VU-meter

### > Counter # 1 and Counter # 2 sub-menus:

The two counters displayed on screen are configurable according to the needs of the user and the options installed in the recorder. **Counter #1** is the upper counter and **Counter #2** the lower one. The values assignable to the counters are:

- Absolute time
- **Program time** (elapsed time since the last START ID)
- Index time (useful option for the manufacturer only)
- Timecode time
- Timecode us. bits (user bits)
- Delta TCext vs tape which indicates in Chase mode (Configuration Menu > Chase Mode) the offset between Stelladat II and an external Time Code. When Stelladat II is locked to an external Time Code, the offset value is 00:00:00:00.

### > Rec date display sub-menu:

To display the date recorded on tape on the lower part of the screen, instead of the power gauge.

> dB scale sub-menu:

To select the level meter dB scale. Each dB scale has a corresponding analog output level and a 1 kHz tone generator level. To see these values, see the Output Level Table, page 75.

### > Limiter sub-menu:

Enables the limiter (LIMITER ON), or disables it (LIMITER OFF).

### > Sonorous alarm sub-menu:

There are mainly two acoustic communication modes from Stelladat II towards the user:

The *message mode* characterized by a single beep to inform that (for ex.) there is no cassette in the holder even though a transport key has been pressed.

The *alarm mode* characterized by intermittents beeps to warn of facts of a higher seriousness, generally of working or configuration problems of the recorder.

These acoustic warnings come together with an error message on screen, describing the issue. In this sub-menu, the user can enable (**ON**) or disable (**OFF**) the sonorous alarm, without however affecting the error message display.

### > Recording Mode sub-menu:

### > The ASSEMBLE REC option

is used for normal audio recording. In this mode, Stelladat II records two or four tracks as well as subcodes, i.e. related informations like Time Code and ID's.

### > When the SUBCODE ONLY option

is selected, the ID status screen accessible via the **DISP** key changes look and displays the subcodes modification options:

### - SUB MODIFICATION -> START ID WRITE START ID ERASE RENUMBER

### > The START ID WRITE option

lets you write a START ID directly on tape. For this, place the cursor (>) facing **START ID WRITE** and hit the **REC** key.

### > The START ID ERASE option

lets you erase a START ID on tape. Place the tape downstream of the START ID to be erased, place the cursor (>) facing **START ID ERASE** and hit the **REC** key.

### > Finally, the **RENUMBER** option

lets you renumber all the START ID's present on the tape, in increasing order and by unity step without modifying their location. Insert a cassette in the tray, place the cursor (>) facing **RENUMBER** and press the **REC** key: a new screen opens where you're expected to enter, via the joystick, the number for the first START ID of the tape. Pressing vertically on the joystick starts the operation which can last a certain amount of time because one single START ID's modification requires at least 9 seconds.

> Rec date clock sub-menu:

To set the time and date recorded in the subcode. The display format is Year | Month | Day - HH | MM | SS.

> Output select sub-menu: (new in v. 1.32)

Allows to diversify the signal routing towards the analog outputs. See Applications > Monitoring.

**Auto** option: unchanged functioning compared to the previous software versions. In PLAY mode, the audio on the analog outputs is identical to what can be heard in the headphones. In all other modes, the analog output of the mixer is routed towards the analog outputs without AD / DA conversion.

**Monitor** option: In all modes, the audio on the analog outputs is identical to what can be heard in the headphones.

### > Configuration Menu

- > Working cfg sub-menu:
  - > Working mode sub-menu:

To select the recording format:

- 2 tracks 44.1 kHz
- 2 tracks 48 kHz
- 2 tracks 96 kHz
- 4 tracks 48 kHz

### > Sampling up/dwn sub-menu:

To alter the sampling frequency according to the needs of NTSC video:

- Nominal
- Down 1‰
- Up 1‰

See explanatory text page 49.

> Emphasis sub-menu:

Enables (**ON**) or disables (**OFF**) the use of emphasis by recording. Tapes recorded with emphasis will playback correctly regardless of the option selected here (Autodetection).

### > Source select sub-menu:

Let's you select the audio source type for recording:

- Analog
- Digital

### > Reference Clock sub-menu:

Indicates Stelladat II on which clock to line up. **Internal** makes it derive its clock from the internal oscillator. **Digital** does it take the clock from the incoming digital signal. Lastly, **External Ref** orders it to take the clock from the incoming sync signal (via BNC socket).

### > Audio Routing sub-menu:

Audio can be software routed in eight different ways. The audio routing affects the distribution of the four inputs towards the configuration-depending available tracks, the action of the main controls on Stelladat II's front panel as well as the effect of the panpots :

- Mono
- Stereo
- Stereo link
- 2 tracks direct
- Input 1 > L Input 2-3-4 > R
- 4 tracks direct
- Double stereo
- 1-2> Stereo 3-4 > direct

For a detailed description of all available possibilities, see the **Audio Routing Table** on page 47.

> Record key mode sub-menu:

RECORD mode can be launched either by a single press on the **REC** key or by holding down the **PLAY** key and pressing the **REC** key. In this sub-menu the user decides which way is more appropriate to him (**Rec/Play key or Rec Key**).

### > Function Keys def. sub-menu:

### > PRG key (in Rec mode) sub-menu:

Let's define the allocation of the PRG key in REC mode. There are three options:

- **TONE MUTE**: Activates the 1 kHz tone generator in solo-mode on all tracks.
- **MIC MUTE**: Activates the slate microphone in solo-mode on all tracks.
- **Disabled**: This option inactivates the key and allows thus to avoid any accident if the key is inadvertently pressed during recording.

The selected option is displayed on the status screen, ID's STATUS pane.

### > F1 - F5 sub-menu:

These sub-menus allow to assign one option among 14 to each of the five function keys:

- **Original**: The original key's function corresponding to the second menu indication (e.g. F3 / **PLAY**).
- **Tone**: In STOP or REC mode, holding down the key activates the 1 kHz tone generator on all tracks in addition to any incoming signals.
- **Tone mute**: In STOP or REC mode, holding down the key activates the 1 kHz tone generator on all tracks in solo mode.
- **Tone toggle**: In STOP or REC mode, a stroke on the key activates the 1 kHz tone generator on all tracks in addition to any incoming signals. A subsequent press inactivates it.
- **Tone mute toggle**: In STOP or REC mode, a press on the key activates the 1 kHz tone generator on all tracks in solo mode. A subsequent stroke inactivates it.
- **Mic**: In STOP or REC mode, holding down the key activates the slate microphone on all tracks in addition to any incoming signals.
- **Mic mute**: In STOP or REC mode, holding down the key activates the slate microphone on all tracks in solo mode.
- **Shuttle mode**: In STOP or PLAY mode, pressing key enters the SHUTTLE mode: Fast manual tape navigation is commanded by pushing the joystick.
- **Jog mode**: In STOP or PLAY mode, pressing the key enters the JOG mode: Fine manual tape navigation is commanded by a holding the joystick.
- Locator mem 1 4: If tape location have been stored (See Locator Menu and "Stelladat II's modes > Locator), the allocation of the keys to these functions allow to access a location immediately with a single key press.
- **Go to last rec**: This function is useful during a recording session and allows, if the user has executed any operation as a rewind for a check monitoring, to find the end of the previous recording in a minimal amount of time. The function remains operational even if Stelladat II was turned off in the meanwhile, but is inhibited as soon as the cassette is ejected. Go to last rec is compatible with the Record run mode of the internal Time Code generator which provides a continuous Time Code on tape. This function is also available, without any configuration, with a 1 second press on the MON key in STOP mode (new v. 1.32).
- TC chase ON/OFF: This function allows to assign a key to enter / exit the CHASE mode (see "Stelladat II's modes > Chase Mode and sub-menu Chase Mode below).

### > Remote control sub-menu:

The **RS422** option allows to remotely control Stelladat II with a SONY-9pin type remote connected on the RS 422 (#) (page 12) socket. This function activates (**RS422**) or inhibits (**OFF**) the serial port, located on the right side of the recorder. For more information on the possibilities of Stelladat II in remote mode, see "Stelladat II's modes > **Remote (RS422)** on page 47.



It is strongly recommended to disable the RS422 function while it's not in use.
#### > Mode after Loc. sub-menu:

This sub-menu allows to define in which mode the recorder is set after an ID or Locator address search. The choices are:

- PLAY Mode
- STOP Mode

See "Stelladat II's modes > Locator on page 46.

#### > Power Menu

This menu treats of power management and allows to exploit the resources of Stelladat II in good knowledge to save the battery's load for increased autonomy.

#### > Led brightness sub-menu:

The LED's associated with the transport keys can glow at **HIGH** or **LOW** intensity, at the user's choice.

#### > Screen contrasts sub-menu:

To adjust the LCD screen's contrast manually via the joystick.

#### > Backlight sub-menu:

To select the LCD screen backlight's intensity:

- OFF
- LOW
- MEDIUM
- HIGH

#### > Optical sub-menu:

To activate (ON) or inhibit (OFF) the powering of the digital optical in/outputs.

#### > Analog Power sub-menu:

The analog inputs can be powered off separately (Input channel 1 to 4, **ON/OFF**) while the four analog outputs are powered together (**Outputs ON/OFF**).

#### > Time Out sub-menu:

Opens a new page, Time out menu, which displays:

#### > Drum in stop mode sub-menu:

To set the time during which the tape scanner remains rotating in STOP mode:

- 30 sec
- 15 min

#### > High Osc sub-menu:

This function only appears in the sub-menu if Stelladat II has an optional High Precision Oscillator. The function allows to power the oscillator during an amount of time defined by the user after having turned the recorder off, in order to maintain the internal Time Code Generator's alignment with an external reference, e.g. common to several equipment.

- Off immediately
- 15 min
- 30 min
- 1 hour
- 2 hours
- 3 hours
- 4 hours
- 5 hours

When Stelladat II is off and the oscillator is powered, the STAND BY LED, located on the top side of the recorder, is blinking.

### > User Settings Menu

Stelladat II can store four different User Settings for specific applications. This function is also useful if several people work with the same recorder, saving to everyone the trouble of manually enter the various parameters. Called by default **User Setting 1** to **4**, these settings can be configured, named, loaded and edited anytime and include Stelladat II's following parameters:

- Time Code (running mode Free run or Record run sources and in- and output formats)
- Battery type
- Display configuration (counters, level meters, date)
- Audio routing
- Recording mode (number of tracks, sampling frequency, assemble or subcodes).
- Audio source (analog or digital).
- Reference clock (internal, external or digital).
- Powering state of the analog in- and outputs and of the digital optical in/output.

As well as several options:

- · Limiter on or off
- Emphasis
- Key combination to start recording (REC key only or REC and PLAY key simultaneously)
- Automatic recording of START ID and END ID
- Mode after loc
- Rotating time of the tape scanner in STOP mode
- Activation of the RS422 serial port

To save a configuration: Place the cursor > facing the **User Setting** number under which the parameters are to be stored, select **Store** and confirm by pressing on the joystick.

To load an existing configuration, the procedure is identical but **Recall** is to be selected instead of **Store**.

To name a **User Setting** after having saved it with **Store**, select the **Name** function: a new screen appears which allows to compose a name with alphanumeric characters. The moves of the joystick



allow to navigate through the characters, a vertical pressure selects one. The ESC key cancels the procedure if the field is empty or erases the last entered character. A name can include 14 characters and is validated as soon as the 14th character has been entered. If the name includes less than 14 characters, fill up the field with spaces.

# > Information Screen Menu

#### > General Information sub-menu:

This screen displays several informations useful for the user or for SONOSAX or his authorized service centers:

Software version	: Main software version
Heads	: Hours of use of the heads
Mst serial #	: Serial # of the device
Trsp serial #	: Serial # of the transport assembly
Quartz type	: Oscillator type (standard or High Precision)
Screen type	: LCD screen type (standard or High Contrast)
Pic version	: Auxilliary software version

#### > Power Information sub-menu:

This screen displays various electrical values present in the device, useful for the user or for SONOSAX or his authorized service centers. All what you have to do is multiply the voltage by the indicated value. e.g. U +V :  $34 \times 0.33$  V = 11.22 V

Ulith.	Voltage of the safeguard battery (acceptable values: 3.1V - 2.9V)
U +V	Analog power voltage (normal value: 11V)
U DV	Digital voltage (normal value: 5V)
l Brut	Current (normal value 1A /12V)
U Brut	Powering voltage (normal value 9V - 18V)

To enter the Locator Menu, press [ESC] in STOP mode.

The Locator allows the user to store four tape locations (Time Code or Abs Time addresses) and to access them automatically and rapidly later on.

The LCD displays indicates the still available Locator memory registers, maximal 4 (**4Mk**). In PLAY or REC mode a push on the PLAY key stores the current tape location's address in the next available memory register. To recall a stored location, enter the Locator menu (press [ESC] in STOP mode) and select the desired register with the joystick:

# $\diamondsuit$

A vertical pressure on the joystick starts instantly the search of the selected location on tape.

Another, faster way to access Locator stored locations is to assign one or several memory registers to the function keys. A push on the corresponding key searches then the stored location.

(See also Mode after Loc. sub-menu on page 37)

Please note that the four Locator memory registers are cleared as soon as the cassette is ejected.

The two sub-menus **Loc to Abstime** and **Loc to TCtime** allow to manually enter an address. A vertical pressure on the joystick starts the search of the desired location on tape. In STOP mode, pressing the ESC key exits the Locator menu. In PLAY or REC mode, pressing this key clears the memory registers and makes them available for new locations.

**Status Screens** 

These screens can be accessed in REC, PLAY and STOP modes pressing the **DISP** key and allows to verify rapidly the main selected configuration options, even while recording.

The first two screens are dedicated to the configuration of the recorder:

	STATUS (1)
Cfg	: Track system selected (TWO TRACKS or FOUR TRACKS)
Rout	: Selected audio routing (e.g. STEREO)
Freq	: Sample frequency selected (44.1 kHz, 48 kHz or 96 kHz).
-	+ or - point out pulling up or down. <b>INT</b> indicates the recorder's configuration.
	TAPE indicates the value read in playback.
Sync	: Selected sync source (INTERNAL, EXTERNAL, VIDEO PAL, VIDEO NTSC or
	WCLK)
Emph	: Emphasis enabled (ON) or disabled (OFF). INT stays for the recorder's
	configuration. <b>TAPE</b> indicates the value read in playback.
Record	: Recording mode: ASSEMBLE (audio) or SUBCODES ONLY
	STATUS (2)
Lim	: Limiter enabled (ON) or disabled (OFF)
Таре	: Cassette unlocked (WRITEABLE) or locked (WRITE PROT)
	<b>NO TAPE</b> : No cassette in the tray.
Сору	: Copy (ALLOWED) or (PROHIBITED)
	<b>NO TAPE</b> : No cassette in the tray.
Blank	: BLANK SEARCH function enabled ( <b>ON</b> ) or not ( <b>OFF</b> ).
Remote	: Remote mode activated ( <b>RS422</b> ) or not ( <b>OFF</b> ).
Temp	: Internal temperature of the recorder in Celsius (e.g. + 36 deg [C]).

The third status screen's first panel is dedicated to the ID's. The second panel handles of powering of the inputs and outputs:

	ID's STATUS
User prog	: Function allocated to the PRG key in REC mode: TONE MUTE or MIC MUTE
AUTO PNO	: Automatic ID number by each press of the <b>REC</b> key: ( <b>ON</b> or <b>OFF</b> )
AUTO START	: Automatic START ID by each press of the <b>REC</b> key: ( <b>ON</b> or <b>OFF</b> )
	POWER STATUS
Ins	: III E 3 4 e.g. means "analog inputs 1 and 2 powered, analog inputs 3 and 4 not powered"
• •	

Outs	: ON or OFF shows the powering	Opt: ON or OFF: powering state of
	state of the analog outputs	the digital optical in/outputs

The fourth screen is dedicated to Time Code configuration:

# ---- TC STATUS 03.01 --- (Time Code software version)

In	: Incoming Time Code format (30d, 30, 29d, 29, 25 or 24) and source (Int or Ext)
Out	: Outgoing Time Code format (30d, 30, 29d, 29, 25 or 24) and source (Int or Ext)
Gen	: Running mode of the TC generator (Record run or Free run)
Ubits	: Content of the TC user bits (Date, Date auto inc, Free or Free auto inc)
C.mode	: Shows the Chase mode option selected (Mute chase, Soft chase or Hard
	Chase)
Offset	: Indicates the Chase mode offset value entered. e.g. 01:30:00:00

#### Stelladat II's Modes

Stelladat II, besides the classical modes of every DAT recorder, offers to the user 5 particular modes allowing many ways of additional applications. These tools improve greatly the comfort of use and increase the productivity:

#### JOG Mode

This mode allows fine manual navigation on tape by means of the joystick, the search of a precise spot (e.g. the start of a take, a particular dialog line or the beginning of a musical phrase).

To access this mode, assign **Jog mode** (Configuration Menu > **Function keys def.**) to a function key.

In **STOP** or **PLAY** mode, pressing on the previously assigned key enters the **JOG** mode: Tape navigation is controlled by holding the joystick. A steady press on the right  $\diamondsuit$  activates forward playback at nominal speed. Pushing the joystick halfway to the top switches to the 2x speed, halfway to the bottom the 3x speed. When the joystick reaches the upper  $\diamondsuit$  or lower  $\diamondsuit$  position or when it's released, playback stops. Holding the stick to the left  $\diamondsuit$  activates reverse playback in the same way.

A press on the **STOP** key exits the **JOG** mode.

#### SHUTTLE Mode

This mode permits fast manual navigation in both directions on tape by means of the joystick. It's useful to search a musical passage, one take among others, a particular atmosphere. The advantage of being able to change speed or direction almost instantly makes it a very flexible tool.

To access this mode, assign **Shuttle mode** (Configuration Menu **> Function keys def.**) to a function key.

In **STOP** or **PLAY** mode, pressing on the previously assigned key enters the **SHUTTLE** mode: Tape navigation is controlled by the joystick. A stroke on the joystick to the right  $\diamondsuit$  activates forward playback at nominal speed. Each subsequent push on the joystick in the same direction increases the speed according the series 2x, 3x, 5x, 9x, 16x. Each push in the reverse direction reduces the speed until stop, and then activates reverse playback according the same series. In any speed, a vertical press on the stick stops playback. The mode (**SHT**), the playback direction and the speed are displayed.

A press on the **STOP** key exits the **SHUTTLE** mode.

#### Locator

This device is not strictly speaking a mode. It allows to store four tape locations and to retrieve them automatically and rapidly. It permits also to reach any Time Code or Absolute time address on tape in a flash.

The LCD display indicates the number of still available memory registers, maximal 4 (**Mk4**). In PLAY or in REC mode a press on the **PLAY** key stores the current tape location's address in the next available memory register. To recall a stored location, enter the Locator menu (press [**ESC**]

in STOP mode) and select the desired register with the joystick  $\heartsuit$ . A vertical press on the joystick starts instantly the search on tape of the selected location.

Another, faster way to access Locator stored locations is to assign one or several memory registers to the function keys. A press on the corresponding key searches then the stored location.

(See also Mode after Loc. sub-menu).

Please note that the four Locator memory registers are cleared as soon as the cassette is ejected.

The two sub-menus **Loc to Abstime** and **Loc to TCtime** allow to enter an address manually. A vertical pressure on the joystick starts the search of the desired location on tape.

In STOP mode, pushing the **ESC** key exits the Locator menu. In PLAY or REC mode, pressing this key clears the memory registers and makes them available for new locations.

#### **Chase Mode**

This mode allows to synchronize Stelladat II to an external Time Code originated from another Time Code outfitted DAT recorder (Stelladat or else), from a VTR, from a digital video or audio workstation or from any other Time Code output enabled equipment. An offset can be entered by the user if the external Time Code and the one on the tape of Stelladat II are different for any given point.

The Chase mode works only in PLAY mode, it is, for obvious reasons, impossible to record in this mode.

To access the mode, assign **TC chase ON/OFF** (Configuration Menu > **Function keys def.**) to one of the five a function keys.

In STOP mode, a press on the beforehand assigned key enters the Chase mode, a subsequent press exits it. If Stelladat II receives an external Time Code, it attempts immediately to find it and to synchronize to it. This message appears on the LCD display, indicating in which direction and at which speed de recorder searches the corresponding Time Code on tape:

#### e.g. CHS: >16 or CHS: < 5

As soon as Stelladat II has encountered the corresponding Time Code, it locks to it and displays:

#### CHS: > 1LCK

If no Time Code is present at any Time Code input Stelladat II stops and this message is displayed:

#### CHS: STP (TC EXT IS MISSING)

If the external Time Code is smaller as the Time Code at Stelladat II's tape start, the recorder exits the Chase mode resuming the STOP mode and displays:

#### START OF TAPE

If the external Time Code is greater as the Time Code at Stelladat II's tape end, the recorder exits the Chase mode resuming the STOP mode and displays:

#### END OF TAPE

The offset, i.e. the value of the difference between both TIme Codes for any given point of the tape to be synchronized, can be entered manually with the Chase offset option of the Time Code menu.

One of the counters option (Setup Menu > Display > **Counter # 1** and **Counter # 2** sub-menu) allows to display **DeltaTCext vs tape** on one of the counters. The displayed value indicates the current difference between external the Time Code and the playback Time Code. When Stelladat II has locked in Chase mode, this value is 00:00:00:00.

Three options of the Configuration Menu allow to modify the behaviour of the recorder in Chase mode:

The **Mute chase** option mutes the audio while Stelladat II is searching a Time Code to synchronize to it. The **Soft chase** option dims the audio down 12 dB.

The **Hard chase** option is useful when the external Time Code and/or the code on the tape itself are not steady. If it's selected, as soon as Stelladat II in CHASE mode could lock without any doubt to the external Time Code, it switches driftless to PLAY mode.

#### **Remote Mode**

This option allows to remotely control Stelladat II wit a SONY-9pin standard remote connected on the RS 422 socket (\*) (Page 12). It is thus possible to remote Stelladat II from a video editor, from a digital video or audio workstation, from a multi-track recorder or any other device delivering a command signal at the SONY-9pin standard.

All the playback functions of this standard are recognized by Stelladat II, including the cassette's ejection. The recording functions are not implemented yet.

To access this feature, select the option **RS422** in the Configuration Menu > **Remote Control**.

The \*\*\* **REMOTE** \*\*\* message is displayed.



It is necessary to disable the **RS422** function when it is not in use.

# 2 Tracks mode

MONO	TRACKS		
	1	2	
Input 1	X	X	
Input 2	X	X	
Input 3	X	X	
Input 4	X	X	
LEFT / ST / 1-2	X	X	
RIGHT / 3-4			

STEREO	TRACKS		
STEREO	1	2	
Input 1	Р	Р	
Input 2	Р	Р	
Input 3	Р	Р	
Input 4	Р	Р	
LEFT / ST / 1-2	X		
RIGHT / 3-4		X	

STEREO Link	TRACKS	
	1	2
Input 1	Р	Р
Input 2	Р	Р
Input 3	Р	Р
Input 4	P	Р
LEFT / ST / 1-2	X	X
RIGHT / 3-4		

Two tracks Direct	TRACKS	
	1	2
Input 1	X	
Input 2		X
Input 3		
Input 4		
LEFT / ST / 1-2	X	
RIGHT / 3-4		X

Input 1 > Left	TRACKS	
Input 2-3-4 > Right	1	2
Input 1	X	
Input 2		X
Input 3		X
Input 4		X
LEFT / ST / 1-2	X	
RIGHT / 3-4		X

# 4 Tracks mode

Four Tracks direct	TRACKS			S
Four macks direct		2	3	4
Input 1	X			
Input 2		X		
Input 3			X	
Input 4				X
LEFT / ST / 1-2	X	X		
RIGHT / 3-4			X	X

Double STEREO		TRACKS		
		2	3	4
Input 1	Ρ	Ρ		
Input 2		Ρ		
Input 3			Ρ	Ρ
Input 4			Ρ	Ρ
LEFT / ST / 1-2	X	X		
RIGHT / 3-4			X	X

1-2 > STEREO	-	TRA	CKS	S
3-4 > direct	1	2	3	4
Input 1	Ρ	Ρ		
Input 2	Ρ	Ρ		
Input 3			X	
Input 4				X
LEFT / ST / 1-2	X	X		
RIGHT / 3-4			X	X

#### Software configured

#### Default configuration

**X** = connected

Empty = not connected

**P** = connected through panpot.

Improvements may cause change of features and specifications without notice. SAS SA

Version: September 24 1998 JS

# 5. Applications

## Pull up, pull down

A few words of explanation about the **Sampling up/down** function of the Configuration menu:

The NTSC video standard is used in North America, in several countries of South America, in Japan and in many other countries. For historical and technical reasons the frame rate of this system, which was originally 30 frames per second became 29.97 Fr/Sec with the introduction of color television.

Film runs in the whole world at the speed of 24 Fr/Sec through film cameras. It is projected at the same speed in theaters. Films are transferred on video for television or for editing on systems using video pictures. In NTSC countries, the machine used for this transfer, the telecinema, runs at 23.976 Fr/Sec. That is 0,1% (or 1‰) slower. To remain in sync with the picture, the sound must also be slowed down by 1‰. This slight slowing down is applied since long ago on analog sound and works with no other problem than an almost imperceptible slightly lower pitch.

But in the digital sound world, things are different. One could playback the recordings with a 1 lower sampling frequency, of course, which has the same effect as slowing down an analog tape, but most of the digital recorders aren't able to do this. And the AES/EBU standard, which benefits worldwide recognition, defines that the sampling frequency is 48 KHz (or 44.1 KHz). Well, if a standard exist, let's respect it!

The solution is quiet simple: All that is necessary is to use, during the recording, a sampling frequency 1‰ higher (48.048 KHz instead of 48.00 KHz) and so a tape played back for the telecinema at the AES/EBU standard 48 KHz will run 1‰ slower, at the same speed as the picture and thus will be in sync with it. Moreover, this solution avoids a sample frequency conversion, always harmful to the sound quality.

Stelladat II's **Sampling up/down** option allows exactly to face this problem, in different ways: Selecting the option **Up 1%**, the user has at his disposal a 1% higher sampling frequency, thus 48.048 Khz. If the tape is recorded at 44.1 KHz, **Up 1 ‰** provides a sampling frequency of 44'144 Hz.

Selecting the **Down 1**‰ option, Stelladat II can be used to playback tapes recorded at 48 Khz on other recorders, for a telecinema or a digital video or audio workstation.

What happens with Time Code? If the user selected 30 non drop code at 48.048 KHz, this code will become 29.97 non drop code if the tape is played back at the standard sampling frequency of 48 KHz.

Synchronous playbacks for music videos ask the opposite problem and are generally recorded with a 44.1 KHz sampling frequency with 29.97 (drop or non-drop) Time Code. With Stelladat II, no special or different recording is necessary: it's enough to playback the music tape on set with the **Up 1‰** option selected, this provides the needed 1‰ fast playback with the 30 necessary code. No one, other than the playback mixer has to do anything special and he is, after all, the "specialist" anyway!

(After Manfred N Klemme)

#### Monitoring

Since Stelladat II's launching until the software version 1.31, the audio available at the recorder's four analog outputs was:

- The recorded signal on tape in PLAY mode.
- The mixer's output signal in all other modes (in particular in REC mode).

Since the software version 1.32 a new option, **Output select** (Setup Menu > **Output select**) allows to dispatch the signal toward the analog output diversifying the audio routing. A judicious use of this options needs however the principles of audio dispatching in the recorder to be well understood:



The simplified audio block diagram above shows this dispatching emphasizing the three electronic switches having an effect on it:

- Switch 1: Source select (Configuration Menu > Working configuration > Source select) allows the user to select the audio signal type to be recorded, Analog or Digital. In the schematics above, the analog source was selected.
- Switch 2: Gives the choice to send to the analog-digital converter either the digitized audio intended for the DSP (digitized output of the mixer or incoming signal from the digital inputs) or the audio played back on tape. This switch is associated to the MON key (Tape/Direct) located on front of the recorder. On the diagram, the switch is placed in Direct position. Notice that the monitoring is always fed by the digital-analog converter (DAC). So, when recording an analog source, the "direct" sound heard in the headphones is the mixer's output converted *twice* (ADC then DAC).
- Switch 3: Routes towards the analog outputs either the unconverted mixer's output, or the DAC's output. In the 1.31 and previous software versions, this switch is in the lower position (DAC) in PLAY mode and in the upper position in all other modes.

The **Output select** (Setup Menu > **Output select**) function, introduced from the 1.32 software version, offers two choices:

- Auto: Unchanged working compared to the previous software versions.
- **Monitor**: The switch 3 is in lower position in the REC and STOP modes and thus the sound available at the analogic outputs is identical to what can be heard in the headphones or in the control loudspeaker.

Note:

When the Monitor option is activated, the usual display is replaced by **MTAPE** or **MDIRECT** respectively, to remind the user of a different routing towards the analog outputs.

#### **Simultaneous Monitoring of Four Tracks**

The headphones don't allow to monitor simultaneously more than two tracks. To hear more tracks:

- Connect the analog outputs to an external mixer.
- Select the Analog option of Source select (Configuration Menu > Working Cfg > Source select > Analog).
- Power on the analog outputs (Power Menu > Analog Power > Outputs > ON).
- Select the Monitor option of the Output select function (Setup Menu > Output select > Monitor).

At this point the four analog inputs of Stelladat II are dispatched towards the external mixer.

#### Stelladat II, High Quality Four Tracks DA Converter

The Output Select function makes possible to use Stelladat II as high quality occasional digital to analog converter. To do this, proceed as follows:

- Connect a digital AES/EBU format source to Stelladat's XLR or optical digital inputs (If both types of sockets are used, the signal present on the optical sockets has priority).
- If the digital optical sockets are to be used, think to power them on (Power Menu > Optical > ON).
- Select the Digital option of Source select (Configuration Menu > Working Cfg > Source select > Digital).
- Power the analog outputs (Power Menu > Analog Power > Outputs > **ON**).
- Select the Monitor option of the Output select function (Setup Menu > Output select > Monitor).

At this stage, the available audio at the four analog outputs is the incoming converted digital sound.

# 6. Specifications

#### TRANSPORT

Conforms to DAT Standard Rotary, 4 Heads Normal Speed Mode: 8.15 mm/s Double Speed Mode: 16.3 mm/s Max. 60 sec. with 120 minutes tape 1x, 2x, 3x, 5x, 9x, 16x 1x, 2x, 3x Tape loaded: 1 sec. Tape unloaded: 2.5 sec.
Tape unioaded. 2.5 sec.

# **ELECTRONICS**

**Frequency Response** 

Dynamic Range Signal to Noise Ratio THD Crosstalk Samplig Frequencies

**Tape Configurations** Emphasis Phase Difference Between Channels Signal Delay Time Level Meter

#### 10 Hz - 21 kHz ± 0.3 dB (44.1 / 48 kHz) 10 Hz - 42 kHz ± 0.3 dB (96 kHz) > 90 dB > 90 dB < 0.01% (-10 dBFS, 1 kHz) > 100 dB (at 1 kHz) 44.1 kHz, 48 kHz, 96 kHz Up / Down 1‰ supported 2 tracks, 4 tracks 50 µs/15 µs < 10° (20 kHz) ~ 100 ms (read after write) Peak and VU meters

#### **TIME CODE (optional)**

Time Code Reader 24, 25, 29.97D, 29.97ND, 30D, 30ND frame rates supported 24, 25, 29.97D, 29.97ND, 30D, 30ND frame rates supported **Time Code Generator** JAM Sync function **REC RUN function ASCII** Communication Supported XLR3-31 Active Balanced (transformerless), 4k (INPUT) XLR3-32 Transformer Balanced, 200 (OUTPUT) 5p. LEMO (IN / OUT / ASCII TTL)

#### **MIXER**

Connectors

Configuration Phantom Power Low Cut Filter Panpots Input Gain Level Pots Limiter

4 Channels T12, 48V 80 Hz (12 dB/oct.), 120 Hz (12 dB/oct.) YES 0 - 70 dB Linkeable 2 by 2 ON/OFF selectable, activated 2 dBFS before clip

# **INTERFACE IN/OUT**

ANALOG AUDIO		
Inputs	Mode: Impedance: Connector: SRL Level: Max. Level:	Transformerless Active Balanced 6 k XLR3-32 + 6 dBu + 18 dBu
Outputs	Mode: Impedance: Connector: SRL Level: Max. Level:	Transformerless Active Balanced Max. 50 XLR3-31 + 4 dBu / + 6 dBu + 26 dBu
Phones	6 mm Stereo Phon (Load Impedance I	e Jack Min. 50 )
DIGITAL AUDIO		
Inputs	Format: Connectors:	AES/EBU XLR3-31 (110 )& Optical
Outputs	Format: Connectors:	AES/EBU XLR3-32 (110 )& Optical
WORD / EXT SYNC SIGNAL	_	
Input	Format:	Standard Selection of Square Wave Rising or Falling Edge (TTL Compatible)
	Impedance:	75
Output	Connector:	BNC Standard Selection of Square Ways Dising or
Output	Formal.	Falling Edge (TTL Compatible)
	Connector:	BNC
VIDEO SYNC SIGNAL		
Input	Format: Level: Impedance: Connector:	NTSC/PAL/SECAM 0.3 - 4.0 V p-p 75 BNC
SERIAL I/O, PARALLEL I	/0	
RS-422	Format: Connector:	Serial D-SUB 9p. (female)
Sonosax Acc.	Format: Connector:	Specific # 002211 (Arting or compatible)

# **GENERAL SPECIFICATIONS**

Dimensions (W x H x D):	280 mm x 80 mm x 216 mm
Weight:	3.6 kg (Battery excluded)
Power Requirements:	AC 100-240 V, 50/60 Hz (External Power Supply)
	DC 11 - 18 V (DC Direct Feed)
Battery	NP-1B 12 V NiCd /NPX 13.2 V NiCd / NP-L46 14.4 V Li-Ion
Power Consumption:	~ 15 W (depending on configuration)
Operating Conditions:	n.a.
Storage Conditions:	Refer to as above

# 7. Options & Accessories

## **Stelladat II's Options**

Stelladat II offers several options allowing either to improve its performances or to respond particularly to an application wished by the user. All options ca be installed afterwards, together or at once by SONOSAX or its authorized service centers.

### **Time Code Option**

The Time Code option is essential for for film or TV intended sound recordings, but also very useful in other fields, in particular if editing on a DAW is considered or a a precise locating on tape is necessary. Time Code provides a mean to identify uniquely every frame on a tape, i.e. every 25ieth or 30ieth of a second (depending of the standard used). It consists of a time marking on tape allowing later access in a highly precise and fast way any to spot of the recording. It's unavoidable every time a sound recording must keep track of the precise instant it was made or when the recorded audio must run synchronous with a picture on whatever medium.

The Locator, Chase and Remote modes are all based on Time Code.

Stelladat II's Time Code meets the worldwide recognized AES/EBU international standard.

### **High Precision Oscillator Option**

Oven stabilized crystal. Frequency stability better that 0.1 PPM.

### **Stelladat II's Accessories**

Several useful accessories are available by SONOSAX or its authorized service centers.

### **SXS Remote**

#### Case



A Porta-Brace® case for Stelladat II is available exclusively from SONOSAX or its distributors. The case allows operating the recorder comfortably on the shoulder and provides easy access to all controls and connections of the device. A battery, in particular, can be exchanged rapidly without extracting Stelladat II from the case. The latter, moreover, offers a good protection against shocks, dust, sand and humidity and allows, thank to the flexible clear vinyl windows to use the recorder even in hostile environment (rain, snow, blizzard, etc.). The second part of the case includes 2 compartments to help organize the most essential accessories. It holds spare cassettes, batteries, wireless microphones, and other small items.

# 8. Maintenance

### **Head Cleaning**

To clean the tape scanner heads, SONOSAX recommends to use a head cleaning cassette (e.g. SONY DT-10CLD or similar). Read carefully the instructions enclosed with the cassette. We recommend to play it back few seconds only. Keep in mind that the tape scanner rotates with 2000 turns per minute !

### **Replacing The Heads**

The **Information Screen Menu** displays the number of hours of use of the heads. After 1500 hours of use the heads are considered to be worn and should be replaced. This delicate operation can only be executed by SONOSAX of its authorized service centers.

# 9. Troubleshooting

Dear user,

in spite of the care we took designing and manufacturing your recorder, certain problems can appear at least.

We indicate you here two procedure allowing to, to our knowledge, to put right nearly all break downs.

In the case where you should contact us, give us absolutely the serial number of your recorder, the installed software version number and the version number of the time code software if it is present. We dispose of an up-to-date data base including the hardware configuration of the manufactured equipment, and these informations can help saving time. You can easily find them on your recorder.

#### **Software Reset**

If your Stelladat II shows any sign of malfunctioning, carry out a software reset. You'll resume to the default configuration corresponding to the installed software version.

#### To reset:

press simultaneously [ESC], [MON] and the joystick  $\Psi$  (down).



A reset clears your own configuration and your User Settings!

#### **Powering Software Reset**

If you can't turn on your Stelladat II at all, carry out the following operations in order :



If you aren't sure that you can execute them out with the necessary precision, contact your distributor or SONOSAX.

- Disconnect the external power supply.
- Remove the battery from its holder.
- Open the bottom plate of Stelladat II: Using a 2 mm hex wrench, unscrew the four feet and the two screws.
- WARNING: An electrostatic discharge can destroy some electronic circuits. Avoid touching the circuits, and before the next stage, touch the chassis of Stelladat II so as to discharge yourself.
- Carefully remove the 4 track board # 072101, by pulling it upwards.



- With tweezers or a small piece of wire, make a short circuit for one second on the JP7 (PIC RESET) point, according to the PIC RESET DIAGRAM in Appendix B.
- Plug in the 4 track board # 072101 back again, checking carefully that the contacts are well inserted.
- Close the bottom plate of Stelladat II, screwing back the 2 screws and the 4 feet.
- Reconnect the external power supply.
- Turn on Stelladat II and check that it starts up correctly.



If you persist to note any anomalies, don't try anything else but contact your local dealer or SONOSAX.

# **Error Messages**

#### Full list of error messages:

- Alarm type: This kind of message must be acknowledged by the user pressing any key before any other command.
- **Message type:** This type of message hasn't to be acknowledged. It's cleared as soon as the problem which originated it is resolved.

Note: Don't take in account the messages which may appear in the first seconds after a reset.

Message displayed	Туре	Meaning
AUDIO ROUTING ERROR	Alarm	Switching from a two tracks confi-guration to four tracks or inversely, the previously selected audio rou-ting is invalidated and replaced by the default option, i.e. STEREO in two tracks and FOUR TRACKS DIRECT in four tracks. Acknowledge the alarm and change the audio routing if needed.
BAD EXT FREQ	Inactive message	
BAD SYNC CHOICE	Message	There is an incompatibility between Stelladat II's configuration at 96 kHz and an external sync refe-rence at 44.1 kHz (AES/EBU or wordclock). Change Stelladat II's configuration.
BAT LO	Message	The battery has reached its minimal charge level: replace it without delay
BATT NOT SELECTED	Message	If the recorder is powered with a battery its recommended for a longer lasting of the battery itself to inform Stelladat II of the type of battery used, so that it can choose the best adapted power mana-ging program.
BLANK DETECTED	Alarm	This alarm informs that the tape section after the current location is not format-ted. (In BLANK SEARCH <b>ON</b> only)
DOWN 1Ω SELECTED	Alarm	By Stelladat II's power on only. Reminds that the sampling frequency is altered according to the needs of NTSC video.
END OF RECORD	Inactive message	
END OF TAPE	Message	Self-explanatory.
EXTERN DC TOO HIGH	Message	The external powering voltage is higher than the maximal allowed value.
EXT LO	Message	The external powering voltage is lower than

		the minimal allowed value.
HIGH ERROR RATE	Message	In PLAY and REC modes this message appears when the error rate threatens the sound quality. When starting playback, this message may appear briefly if the cassette's format is different of Stelladat II's configuration (e.g. tape recorded at 96 kHz on Stelladat II set at 44.1 kHz). In this case in particular, this message is not to be take in account. If the display persists, it can mean that the cassette is damaged or that Stelladat II requires some maintenance (cleaning cassette).
HI OSC TIME ELAPSED	Alarm	For recorders outfitted with the High Precision Oscillator only: By Stelladat II's power on only. This alarm warns that the oscillator's power-ing time has been exceeded and thus that it may be necessary to realign the time code to the external reference generator.
HI OSC WAS OFF	Alarm	For recorders outfitted with the High Precision Oscillator only: Warns that the oscillator has not been powered after Stelladat II's powering off.
LOW TEMP! HEATER ON	Message	The tape scanner heater switches auto- matically on if Stelladat II's internal temperature is lower than 10°C.
MACHINE TOO HOT	Inactive message	
MOISTURE! HEATER ON	Message	The transport assembly is outfitted with a humidity detector. Conden-sation can arise e.g. in warm countries when exiting an air-conditioned building. The tape scanner heater is switched on automatically.
NO REC IN SUB ONLY	Message	Recording is not possible in SUBCODE ONLY mode. Set the recording mode to ASSEMBLE REC.
NO SAMPLING UP/DWN	Alarm	If Stelladat II is configured for pull up / pull down and that it's fed by an external sync reference that doesn't require alte-ring of the sam-ple frequency (e.g. PAL signal), the recorder restores automati-cally the sampling frequency to its nominal value and informs its user by this alarm.
NO SYNC FOR REC		This alarm appears only in RECORD RUN timecode mode and warns the user that the last punch in couldn't be executed. The recorder resumes then STOP mode.

NO TAPE INSERTED	Message	Appears when the user presses a transport key while the cassette tray is empty.
PIC TRANS ERROR	Message	Informs of a communication error between the main processor (Master) and an auxillirary processor (PIC). The concerned command is transmitted again to the auxilliarry processor for processing. If this message doesn't persist don't take any particular measure.
PAUSE ENDED	Message	When Stelladat II is in PLAY/PAUSE mode, an internal counter makes sure that the tape scanner doesn't rotate indefinitely, which is harmful for the tape on the long run. After 1 min., Stelladat goes automatically in STOP mode and displays this message.
READY!	Message	This message informs the user that Stelladat II just finished the task it was executing (e.g. Go to last rec).
RS422 ERROR TIME OUT	Message	Command reception error on the RS422 port.
RS422 REPLY TIME OUT	Message	Data transmission error on the RS422 port.
START OF TAPE	Message	Self-explanatory.
TAPE ERROR	Alarm	Transport error: the two reels are blocked and the tape doesn't run any more. Eject the cassette and verify.
TAPE JAM	Alarm	Transport error: one reel is blocked. Eject the cassette and verify.
TAPE WRITE PROTECT	Message	Appears by an attempt to record on a write protected cassette.
TC AATON COM ERROR	Message	For recorders outfitted with the Time Code module only: Problem or time-out encountered while communicating with an external Aaton Time Code device.
TC DISPATCH ERROR	Alarm	For recorders outfitted with the Time Code module only:
TC EXT IS MISSING	Message	For recorders outfitted with the Time Code module only: The external Time Code is missing (in CHASE mode in particular). Verify connections.
TC EXT RAM ERROR	Alarm	For recorders outfitted with the Time Code module only: Time Code CPU error.*

TC FUNC NOT EXEC	Alarm	For recorders outfitted with the Time Code module only: Time Code CPU error. *
TC HSI ERROR	Alarm	For recorders outfitted with the Time Code module only: Time Code CPU error. *
TC INT RAM ERROR	Alarm	For recorders outfitted with the Time Code module only: Time Code CPU error. *
TC INVALID DATE	Alarm	For recorders outfitted with the Time Code module only: Invalid time format in the Time Code user bits.
TC INVALID TIME	Alarm	For recorders outfitted with the Time Code module only: Invalid time format in the Time Code generator.
TC I2C NOT FOUND	Alarm	For recorders outfitted with the Time Code module only: Time Code CPU error. *
TC I2C TIME OUT	Alarm	For recorders outfitted with the Time Code module only: Time Code CPU error. *
TC PGA1 ERROR	Alarm	For recorders outfitted with the Time Code module only: Time Code CPU error.*
TC PGA2 ERROR	Alarm	For recorders outfitted with the Time Code module only: Time Code CPU error. *
TC PRESENT BUT KO	Alarm	For recorders outfitted with the Time Code module only: An error occurred during the Time Code module initialization at Stelladat II's power on. If the alarm persists, the Time Code module possibly broke down. Contact SONOSAX or one of its authorized service centers.
TC RESERVED ERROR	Alarm	For recorders outfitted with the Time Code module only: Time Code CPU error.*
TRSP ERROR	Alarm	Tape format playback error. If this message persists, press the STOP key and the PLAY key again.
UNKNOWN DIG SOURCE	Message	This message displays when the digital

		source isn't present or doesn't meet the AES/EBU standards 44.1 kHz or 48 kHz.
UNKNOWN EXT FREQ	Message	If there is an attempt to sync up Stelladat II with an external video reference which is neither PAL nor NTSC or if the reference is not present, the recorder switches automatically on its internal clock and displays this message. This message also appears if the external reference is of type WordClock other than 44.1 kHz or 48 kHz.
UP 1Ω SELECTED	Alarm	By Stelladat II's power on only. Reminds that the sampling frequency is altered according to the needs of NTSC video.

\* All Time Code CPU errors indicate hardware fault conditions that would indicate, if they happen regularly, some fault with parts of the Time Code CPU hardware circuitry.

Such errors should be handled by contacting SONOSAX or one of its authorized service centers.

#### **Frequently Asked Questions (FAQ)**

- 1.) How can I modify the subcode of a recorded tape?
- 2.) Why does the Time Code generator start at zero again after powering off the recorder, although it is set in RECORD RUN mode?
- 3.) Which recorder can playback a four-tracks cassette recorded on Stelladat II?
- 4.) In RECORD RUN mode, Stelladat II displays NO SYNC FOR REC and doesn't execute the punch in.
- 5.) I can't turn on Stelladat II at all.
- 1.) How can I modify the subcode of a recorded tape?

Proceed as follows:

- Select SUBCODE ONLY in Setup Menu > Recording mode > SUBCODE ONLY and exit the menus.
- Press 3 times the DISP key to display the SUB MODIFICATION status screen. This screen is only visible if Stelladat II is in SUBCODE ONLY mode.
- Place the cursor > facing the operation to be executed: START ID WRITE, START ID ERASE or RENUMBER.
- Press the REC key to start the operation.

Note: To erase a START ID the tape must be placed after the ID to be erased.

2.) Why does the Time Code generator start at zero again after powering off the recorder, although it is set in RECORD RUN mode?

Your recorder is probably wrongly configured. In Timecode Menu > Output source, make sure that the selected option is really **Internal**.

3.) Which recorder can playback a four-tracks cassette recorded on Stelladat II?

Sonosax is the only manufacturer worldwide to offer a 4-tracks DAT recorder. The 4-tracks cassettes recorded on Stelladat II can thus only be played back on a Stelladat II or on a StellaMaster (SONOSAX's rack version of the DAT recorder). On the other hand, the 2-tracks recorded cassettes can of course be played back on any DAT recorder.

4.) In RECORD RUN mode, Stelladat II displays NO SYNC FOR REC and doesn't execute the punch in.

The punch in to maintain continuous Time Code on tape in RECORD RUN is a very sensitive operation because it must be executed within a frame: Stelladat II must read the tape until the last frame recorded in the previous take, than instantly switch to record the next frame. If for any particular reason Stelladat II is unable to detect the last frame to preserve, it cancels the operation, displays the NO SYNC FOR REC message and stops.

The most frequent cause of this error is due to tape dust clogged up on the playback tape heads. We advise to clean the head with a cleaning cassette.

5.) I can't turn on Stelladat II at all.

This type of breakdown happens sometimes with the first Stelladat II units, in particular with recorders still having the old powering software (Pic v.1.01). If your recorder really contains this old version, it is recommended to have it replaced by SONOSAX or an authorized service center. There are three ways to check this out:

• Go to Information Menu > General information > **Pic version** 

or

• Remove the recorder's bottom plate and read the label on the Pic v.1.xx PROM.

or

• Contact SONOSAX indicating the serial # of your recorder. We dispose of an up-to date data base of the manufactured equipment.

If you can't part with your Stelladat II when the breakdown occurs, there is a troubleshooting procedure to repair temporarily (See page 58).

# 10. PROM Replacement on Stelladat II

PROM Replacement On The Motherboard (Main Software)

- Disconnect the external power supply.
- Remove the battery from the holder.
- Open the bottom plate of Stelladat II: Using a 2 mm hex wrench, unscrew the four feet and the two screws.
- WARNING: An electrostatic discharge can destroy some electronic circuits. Avoid touching the circuits, and before the next stage, touch the chassis of Stelladat II so as to discharge yourself.
- Using a PROM extractor, delicately remove the "MASTER" identified PROM.



- Insert the new PROM watching that its 45° bevelled angle matches with the one on the socket.
- · Close the bottom plate of Stelladat II, screwing back the 2 screws and the 4 feet.



Once the PROM has been replaced, please let us know which version has been installed and the recorder's serial number.

## PROM Replacement On The Transport Board (PIC, Transport Software)

Prior to turning Stelladat II off, open the cassette tray pressing the EJECT key.

- Turn the recorder off.
- Disconnect the external power supply.
- Remove the battery from its holder.
- To extract the lid place it in the upright position and pull up gently: the hinges release from their slot. Store the lid where it cannot be scratched.
- Using a 2 mm hex wrench, unscrew the four outside screws of the transport plate.



- WARNING: An electrostatic discharge can destroy some electronic circuits. Avoid touching the circuits, and before the next stage, touch the chassis of Stelladat II so as to discharge yourself.
- Carefully lift up the transport plate, holding the open cassette tray.
- Protect the chassis (with a cloth or some paper) and without pulling the wires, place the transport plate on it.

Continued



• Using a PROM extractor, delicately remove the "TRSP" identified PROM.



Continued

- Insert the new PROM watching that its 45° bevelled angle matches with the one on the socket.
- Put the transport plate back into the recorder, being very careful not to trap or squeeze wires.
- Screw back the four transport plate screws.
- To put the lid back in place, grab one hinge with each hand holding it upright and insert gently the hinges into their slot. Push down softly until you hear a click.



Once the PROM has been replaced, please let us know which version has been installed and the recorder's serial number.

# PROM Replacement On TheTime Code Board (TC Software)

Prior to turning Stelladat II off, open the cassette tray pressing the EJECT key.

- Turn the recorder off.
- Disconnect the external power supply.
- Remove the battery from its holder.
- To extract the lid place it in the upright position and pull up gently: the hinges release from their slot. Store the lid where it cannot be scratched.
- Using a 2 mm hex wrench, unscrew the four outside screws of the transport plate.



- WARNING: An electrostatic discharge can destroy some electronic circuits. Avoid touching the circuits, and before the next stage, touch the chassis of Stelladat II so as to discharge yourself.
- Carefully lift up the transport plate, holding the open cassette tray.
- Protect the chassis (with a cloth or some paper) and without pulling the wires, place the transport plate on it.

Continued



• Carefully pull out the Time Code board which is fixed to the motherboard by two connectors. It may, therefore require a little effort to pull it out.



• Using a PROM extractor, delicately remove the "TC" identified PROM.



- Insert the new "TC" PROM watching that its 45° bevelled angle matches with the one on the socket.
- Put the transport plate back into the recorder, being very careful not to trap or squeeze wires.
- Screw back the four transport plate screws.

• To put the lid back in place, grab one hinge with each hand holding it upright and insert gently the hinges into their slot. Push down softly until you hear a click.



Once the PROM has been replaced, please let us know which version has been installed and the recorder's serial number.
# Stelladat II – Menutree

Software V1.32

August 12th, 2000

		Default configuration		
MAIN MENU	SUB MENU 1	SUB MENU 2	SUB MENU 3	
Timecode	TIMECODE MENU			
	Generator	TC GENERATOR MEI	NU	
		Set from external	Set time & ubits	
			Set time	
			Set User bits	
		Set from rec clock	Set time & ubits	
			Set time	
			Set User bits	
		Set manual	Set time	
			Set User bits	
		Running mode	Free run	
			Record run	
		User bits mode	Date	
			Date auto inc.	
			Free	
			Free auto inc.	
	Input format	30 non-drop		
		30 drop		
		Autodetect		
		24		
		25		
		29.97 non-drop		
		29.97 drop		
	Input source			
		External no jam		
		Ext. Jam sync		
	Output format	30 non-drop		
		30 drop		
		Autodetect		
		24		
		25 20.07 manualman		
		29.97 hon-drop		
		29.97 Ulop		
	Output source	Tano		
	Default values			
	Delault values			
		Film Europe		
		Video Europe		
		llear dat Sat		
		llser def Recall		
	Chase offset	(manual numbering)		
1	31103C 0113CL	(manual numbering)		

IDs	IDs MENU		
	PNO	AUTO ON	
		AUTO OFF	
	Next PNO	(manual numbering)	
	Reset PNO on eject	ON	
		OFF	
	Start ID	AUTO ON	
		AUTO OFF	

Setup	SETUP MENU		
	Display	DISPLAY MENU	
		Meter selection	Peak meter
			Peak meter max
			VU meter
		Counter #1	Timecode time
			Timecode us. Bits
			Delta TC ext vs tape
			Absolute time
			Program time
			Index time
		Counter #2	Limecode time
			Limecode us. Bits
			Delta TC ext vs tape
			Absolute time
			Program time
		Pag data diaplay	Dete diaplay off
		Rec date display	Date display on
		dB coole (1)	Date display off
		ub scale (1)	DSP Homman U
			DAT standard -10
	l imiter		
	Sonorous Alarm	OFF	
		ON	
	Recording mode	ASSEMBLE REC	
		SUBCODE ONLY	
	Rec date clock	(manual numbering)	
	Output Select	Auto	
		Monitor	

Note (1)

Analog output levels	0dB on the display	Full Scale on the display
DSP nominal 0	+ 15dBu	+ 15dBu
DAT standard -12	+ 6dBu	+ 18dBu
DAT standard -18	+ 4dBu	+ 22dBu

Configuration	<b>CONFIGURATION M</b>	IENU		
	Working cfg	WORKING CFG MENU		
		Working mode	Two tracks 48 KHz	
		-	Two tracks 44.1KHz	
			Two tracks 96 KHz	
			Four tracks 48KHz	
		Sampling up/down	Nominal	
			Down 1 o/oo	
			Up 1 o/oo	
		Emphasis	ON	
			OFF	
		Source Select	Analog	
			Digital	
		If Working mo	de = 96KHz	
			Analog	
			Digital	
			Digital transfer	
		Reference clock		
		If Source Sele	ct = Analog	
			Internal Ref.	
			Digital Ref.	
			External Ref.	
		If Source Sele	ct = Digital	
			Digital Ref.	
	Audio routing	If Working mo	de = Two tracks	
		Mono		
		Stereo link		
		Stereo IIIK		
		2 (I. IN IZL INZ-3-4ZR	do – Four trocko	
		4 tracks direct	de – Four tracks	
		- lidens ulleel		
		1-2 Stereo 3-4 >		
		direct		
	Record key mode	Rec/Play Key		
		Rec Key		

Continued

Function Keys def.	lef. FUNCTION KEYS MENU	
-	PRG key (in Rec	Tone mute
	mode)	Mic mute
	,	Disabled
	F1/REW	Original
		Tone
		Tone mute
		Tone toggle
		Tone mute toggle (burs
		Mic
		Mic mute
		Shuttle mode
		Jog mode
		Locator mem 1
		Locator mem 2
		Locator mem 3
		Locator mem 4
		Go to last rec
		TC chase ON/OFF
	F2/FF	Original
		Tone
		Tone mute
		Tone toggle
		Tone mute toggle (burst
		Mic
		Mic mute
		Shuttle mode
		Jog mode
		Locator mem 1
		Locator mem 2
		Locator mem 3
		Locator mem 4
		Go to last rec
		TC chase ON/OFF
	F3/PLAY	Original
		Tone
		Tone mute
		I one toggle
		Tone mute toggle (burst
		Mic
		Shuttle mode
		Jog mode
		Locator mem 1
		Locator mem 2
		Locator mem 3
		Locator mem 4
		Go to last rec
	E MOTOD	TC chase ON/OFF
	F4/STOP	Original
		Tone
		Tone mute
		Tone toggle
		Tone mute toggle (burst
		Mic
		Mic mute
		Shuttle mede

		Jog mode Locator mem 1 Locator mem 2 Locator mem 3 Locator mem 4 Go to last rec TC chase ON/OFF
	P3/REC	Tone Tone mute Tone toggle Tone mute toggle (burst) Mic Mic mute Shuttle mode Jog mode Locator mem 1 Locator mem 2 Locator mem 3 Locator mem 4 Go to last rec TC chase ON/OFF
Remote control	OFF RS422	
Mode after Loc.	Mode Play Mode Stop	
Chase mode	Mute chase Soft chase Hard chase	

Power	POWER MENU		
	Led brightness	LOW	
	-	HIGH	
	Screen contrast	(manual adjustement)	
	Backlight	OFF	
	-	LOW	
		MEDIUM	
		HIGH	
	Optical I/O	ON	
		OFF	
	Battery select (2)	NP-1 / 12V	
		NP-1 / 13V	
		NP-L40 / 14V	
		External limit	
	Analog Power	ANALOG POWER MENU	
		Input channels 1	ON
			OFF
		Input channels 2	ON
			OFF
		Input channels 3	ON
			OFF
		Input channels 4	ON
			OFF
		Outputs	ON
			OFF
	Time out	TIME OUT MENU	
		Drum in stop mode	15 min.
			30 sec.
		High Osc *	Off immediately
			15 min.
			30 min.
			1 hour
			2 hours
			3 hours
			4 hours
			5 hours

\* Only with the super high stability Quartz type option.



Note (2)

**Battery select** must be selected after reset, even if an external power supply is plugged in.

User settings	USER SETTINGS MENU	
	User setting 1	Recall
		Store
		Name
	User setting 2	Recall
		Store
		Name
	User setting 3	Recall
		Store
		Name
	User setting 4	Recall
		Store
		Name

Informations	INFORMATIONS MENU			
	General Information	Software version	:	
		Heads	:	
		Mst serial #	:	
		Trsp serial #	:	
		Quartz type	:	
		Screen type	:	
		Pic version	:	
	Power Information	U Lithium	:	XX * 0.10 V
		U +V	:	XX * 0.33 V
		U DV	:	XX * 0.10 V
		l Brut	:	XX * 0.10 A
		U Brut	:	XX * 0.55 V

# Reset buttons: Press [ESC] [MON] [DOWN joystick] simultaneously = back to default configuration

LOCATOR MENU	SUB MENU 1
Verify memory	MEMORY TIME
	1: XX:XX:XX:XX
	2: XX:XX:XX:XX
	3: XX:XX:XX:XX
	4: XX:XX:XX:XX
Loc to Abstime	(manual numbering)
Loc to Tctime	(manual numbering)

Note:

To access the Locator menu, press [ESC] in stop mode.

Improvements may cause changes without notice SAS SA 2000 Last update: 12.08.00 NH





Stelladat II - Schéma bloc audio

### STELLADAT II ACESSORY WIRING

22.06.1999 jmf



WARNING : DO NOT CONNECT GND WITH MON GND



J2 MUST BE ASSEMBLED WITH

2 WASHER SX986830 AND SX980222

072082 PART NR	DAT2_ACCESSORY			
MATERIAL: FR4		DR BY:	JS	DATE: 20.2.1997
FINISH:		CH BY:	JS	DATE: 28.02.1997
SCALE: -		AP BY:	JS	DATE: 22.02.1999
SONOS	SAX			AUDIO EQUIPMENT CH-1162 ST-PREX



AUDIO EQUIPMENT CH-1162 ST-PREX





#### Procedure to perform a Pic reset (power manager micro-controller)

Please follow those steps:

- 1. Remove the bottom cover (6 screws)
- 2. Remove the 4-tracks board, which is held on the main board by two connectors
- 3. Short-circuit on the main board the two Pic reset contacts (two soldering points)
- 4. Put the 4-tracks board back in its place
- 5. Screw the bottom cover





## SONY 7030 Settings to "PULL DOWN"

#### DAT Cassettes Recorded at 30 FPS Time Code at 48.048KHz:

(The following data has been made available by: **Eric Benton**, Audio Systems Supervisor at **MODERN VIDEOFILM** in Burbank California.)

### Email to Eric Benton <a href="mailto:ebenton@ix.netcom.com">ebenton@ix.netcom.com</a>

With SONY Version 5.0 Software, the only Time Code that we can "PULL DOWN" is 30FPS Non Drop. (SONY V5.1 (Beta) does support 30FPS DF, but has not been tested as of 01/18/96)

To change menu settings on the 7030, hold down the MENU key and rotate the search dial to get the desired menu in the display. Hold down the DATA key and rotate the search dial to set the desired function or *Address* flashing in the display. Press the set key to store.

To properly position the Time Code within the Video frame, you must provide Video to the rear panel connector (do **NOT** set the front panel Sync Sw. to Video.).

To precisely sync the DAT to house, provide either 48 KHz AES/EBU or 48 KHz word sync (set Ext. sync Sw. on reat panel of the 7030 to DI or word). Set front panel sync Sw. to EXT.

If AES/EBU or word sync is not available, set the front panel sync Sw. to INT, most 7030s are accurate enough for production audio using alalog audio outputs.

#### SONY 7030 DAT Menu Settings, software Version 5.x

"SYnc rEc"	"on"
"tc bASE"	"Auto"
"rEF tcF"	"30 ndF"
"rEc tc"	"inPut"
"SYnc" nrr"	"on"
"rE-cHASE"	"PLAY"
"cHASE-S"	"on"
"[SEt Grd]"	"EnHancED"
"[SEt tc]"	"cLoSE" "oPEn": Gen out = "oFF", tc rEGEn = on, tc dLY = d out
"[SEt SYS]"	"cLoSE" "oPEn": [sYnc Pb, LocAL, inPut-s, PAnEL-s] = "EnAbLE"

**MENUs:** 

"[SEt dSP]"	"cLoSE"
"[SEt SP]	"cLoSE"
"[SEt Ed]"	"cLoSE"
"inPt"	"00hr 00min 00sec 00fr"
"outPt"	"00hr 00min 00sec 00fr"
"GAin rnG"	"12 db"
"inPGain"	"00db 00db"
"croSFAdE"	"10"
"Error"	
"cAution"	
"Au rEF"	dbdb
"Au rEF-P"	dbdb
[dSp Grd}	"EnHancED"
"Last Err"	"00hr 00min 00sec 00fr"
"Ecc 001"	
"tApe tcF"	
"OPtion"	
"Hour-t"	

#### SONY 7030 with V5.0A Software

#### FOR DATS recorded at 48048 Hz with 30 FPS.

#### Sony 7030 DAT Version 5.0A Menu settings.

Sony 7030s with 5.0A will "PULL DOWN" either **"30 Non Drop"** or **"30 Drop"**. Tested, May - 1996 with tapes recorded on a Stelladat.

Use switch and menu settings below to "PULL DOWN" DAT tapes recorded at 40048 Hz, with 30 FPS (Film speed) time-code to 48000 Hz, 29.97 FPS (NTSC Video speed) time code:

To change menu settings on DAT, hold down the MENU key and rotate the search dial to get the desired menu in the display. Hold down the DATA key and rotate the search dial to set the desired function or Address flashing in the display. Press the set key to store.

To properly position timecode within the Video frame, you must provide Video to the rear panel connector (do NOT set front panel sync switch to Video).

To precisely sync the DAT to house, provide either 48 KHz AES-EBU or 48 KHz word sync (set Ext. sync switch on rear panel of the 7030 to DI or word ). Set front panel sync switch to EXT.

If AES-EBU or word sync is not available, set front panel sync Switch. to INT, most 7030s are accurate enough for transfering "production takes". Without sync, use analog audio outputs or a rate-converter.

To determine the T.C. type, be sure that "[SEt Grd]" and "[dSp Grd]" are both "EnHancED" Play the tape during a take", hold down the MENU key and rotate the search dial to get "tApe tcF" in the display One easy way to arrive at the settings on the next page is, "rcL FActorY" and make the following changes:

MENU	change to:
"rEF tcF"	"30 ndF" or "30 dF" to match T.C. that was used on the set.
"rEc tc"	"inPut"
"[SEt Grd]"	"EnHancED"
"[SEt SYS]"	"oPEn, change "LocAL" to "EnAbLE"
"[dSp Grd]"	"EnHancED"

#### FOR DATS recorded at 40048 Hz with 30 FPS.

#### Sony 7030 DAT Version 5.0A Menu settings.

MENU	change to:
"SEtuP"	"LASt"
"Sync rEc"	"on"
"tc bASE"	"Auto"
"rEF tcF"	"30 ndF" or "30 dF" to match T.C. that was used on the set.
"rEc tc"	"inPut"

"Sync nrr"	"on"
"rE-cHASE"	"on-1"
"cHASE- Au"	"PLAY"
"cHASE-S"	"on"
"[SEt Grd]"	"EnHancED"
"[SEt tc]"	"cLoSE" "oPEn": Gen out = "oFF", tc rEGEn = on, tc dLY = d out
"[SEt SYS]"	"cLoSE" "oPEn": [ sync Pb, LocAL, inPut-S, PAnEL-S ] = "EnAbLE"
"[SEt dSP]"	"cLoSE"
"[SEt SP]"	"cLoSE"
"[SEt Ed]"	"cLoSE"
"inPt"	"00hr 00min 00sec 00fr"
"outPt"	"00hr 00min 00sec 00fr"
"GAin rnG"	"12 db"
"inPGain"	"00db 00db"
"croSFAdE"	"10"
"Error"	
cAution"	
"Au rEF"	dbdb
"Au rEF-P"	<i>db</i> db
[dSp Grd]	"EnHancED"
"Last Err"	"00hr 00min 00sec 00fr
"Ecc 001"	
"tApe tcF"	
"OPtion"	
"Hour-t"	