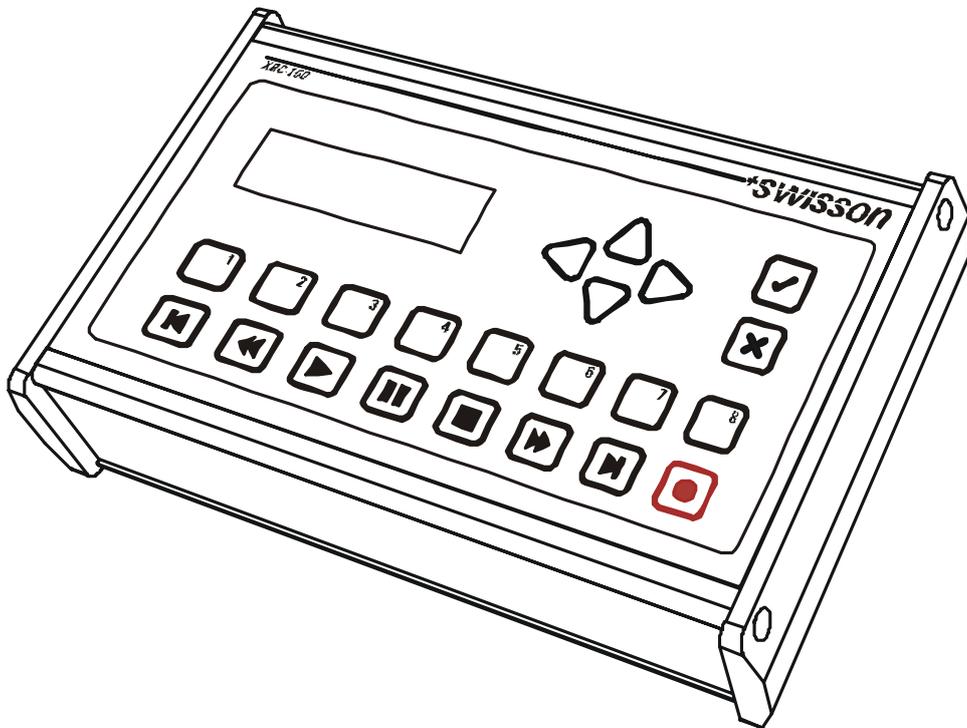


XRC-150
DMX Dynamic Recorder
User Manual





XRC-150 DMX Dynamic Recorder
User Manual
Issue 1 (2007-29-01)

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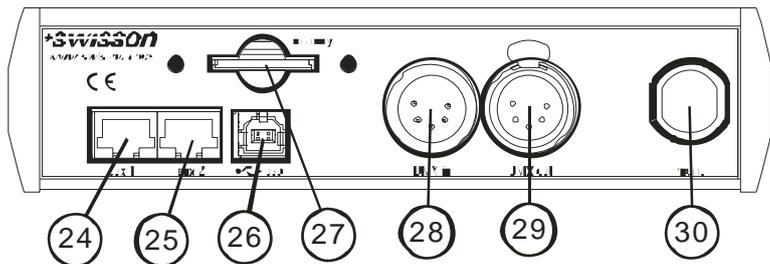
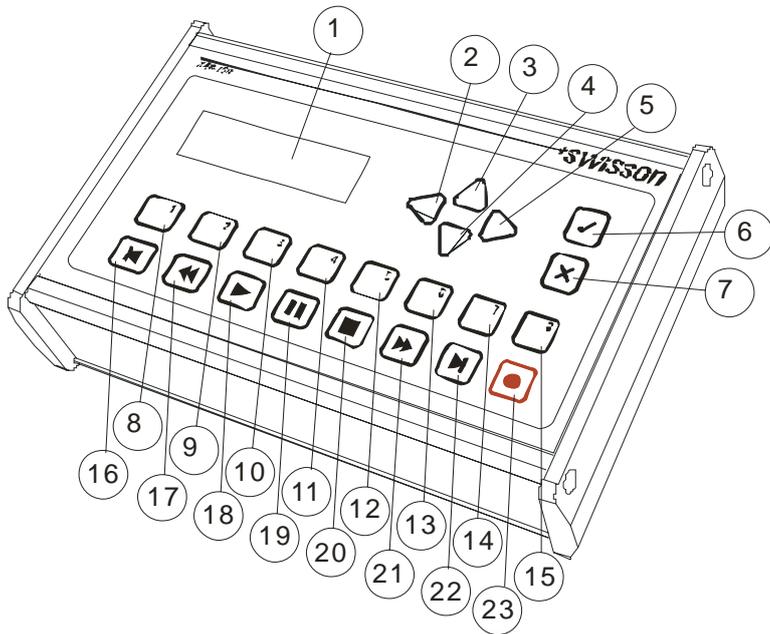
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Overview



- 1 **Display**
LCD display with LED backlight
- 2  **NAVITGATE**
Use to navigate to the left in the user menu
- 3  **Navigate / Increase**
Use to navigate up in the user menu or increase a value
- 4  **Navigate / Decrease**
Use to navigate down in the user menu or decrease a value
- 5  **NAVITGATE**
Use to navigate to the right in the user menu
- 6  **OK, Confirm**
Choose a menu point or confirm a value

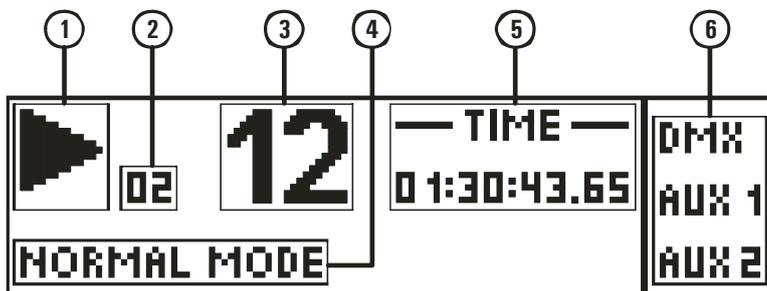
- 7  **Cancel**
Escape from a menu point
- 8 - 15  **Fast Access Buttons**
Fast access to sequences. Pressing one of these buttons will play the dedicated sequence. The fast access buttons can be custom configured.
- 16  **Sequence skip backward**
Skip backward through sequences
- 17  **Spool – backward**
Spool backward in a sequence
- 18  **Play**
Play sequence
- 19  **Pause**
Pause while playing sequence
- 20  **Stop**
Stop when playing or recording
- 21  **Spool – forward**
Spool forward in a sequence
- 22  **Sequence Skip forward**
Skip forward through sequences
- 23  **Record**
Start recording a sequence
- 24 **AUX 1**
Auxiliary Port 1
- 25 **AUX 2**
Auxiliary Port 2
- 26 **USB**
USB Port connector

- 27 **Memory**
All data is saved in an external flash card. The card can be taken from one recorder and plugged into another XRC-150 to playback a pre-recorded show
- 28 **DMX in**
XLR connector to receive DMX
- 29 **DMX out**
XLR connector to send DMX
- 30 **Power Input**
Main Power Cable
85 – 275 VAC 50/60 Hz 0.3A

Display Design

Playing

The following will appear when playing back a sequence:



Symbol (1)

When playing sequences, there is always one of three symbols shown on the top left area of the display.

The following symbols are displayed (always only one at the same time).



(Play)

This symbol means that the XRC-150 is in the process of playing back a sequence.



(Pause)

This symbol means that the XRC-150 has been paused while playing back a sequence.



This symbol means that the XRC-150 is stopped and is no longer playing a sequence.

Actual Sequence (2)

This number shows the actual sequence playing **only** while skipping backwards or forwards through sequences. Please note that while skipping backward or forward through sequences, the XRC-150 will not play the chosen sequence. The  button has to be pressed first to play selected sequence.

Actual Sequence / Next Sequence (3)

This number shows the actual sequence being played (unless skipping forward or backwards through sequences while the XRC-150 is currently playing a sequence). As soon as there is sequence skipping (forward or backward), this number will show the sequence being skipped to (not the actual sequence being played). Once the sequence has been selected from skipping playback will occur by pressing  button.

Mode (4)

This section of the display shows the current operation mode of the XRC-150. These modes are explained in chapter **Set Mode** on page **23**.

Time (5)

This section of the display shows the actual time relative to the running sequence. Time is shown the following format:

Hours: Minutes: Seconds. Hundredth of a second
(see the example below)

0 1:30:43.65

When a sequence is fading in or the user is spooling forward/backward, the time will be displayed with inverted (highlighted) background: (see the example below)

00:00:04.95

DMX and AUX information (6)

The right side of the display shows information about the incoming signals (DMX and AUX). If there is a valid incoming DMX signal, the DMX symbol will be inverted (highlighted). If no valid DMX signal is available, the DMX symbol will be not inverted (highlighted):



Valid incoming DMX signal



No valid incoming DMX signal

There are 2 different auxiliary ports on the XRC-150. Each time an auxiliary port receives a valid command, the corresponding symbol is inverted (highlighted) for a short time:



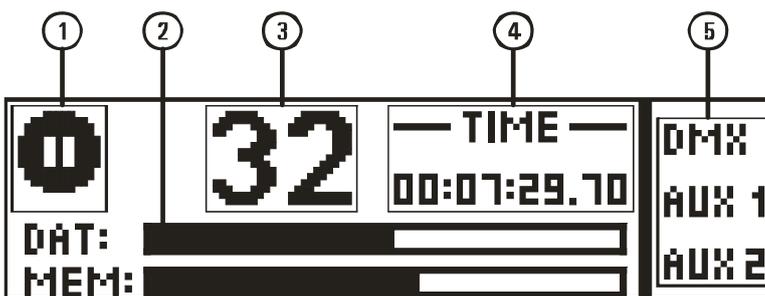
Valid Incoming command



No incoming command

Recording

When recording sequences, the following symbols appear in the display:



Symbol (1)

When recording sequences, there is always one of two symbols shown in the top left area of the display. Following symbols are displayed (one at the same time).



(Record)

This symbol indicates that the XRC-150 is in the process of recording a sequence.



(Pause while recording)

This symbol indicates that the record procedure on the XRC-150 has been paused.

Memory/Data Information (2)

The XRC-150 does more than just record the raw DMX data. Data is compressed in a very sophisticated algorithm, thus there are always two bars shown at the bottom of the display indicating memory and data levels. The lower bar indicates how much memory is left. The upper bar indicates how much data is stored in the memory. This gives an idea to the user of how long they are able to record until the memory is full.

Actual Sequence (3)

This number indicates which sequence is being recorded.

Time (4)

This section of the display shows how much time on the sequence has been recorded. The format of the time is as follows:

Hours : Minutes : Seconds . Hundredth of a second

DMX and AUX Information (5)

The right side of the display displays information regarding the incoming DMX signals. If there is a valid incoming DMX signal, the DMX symbol will be inverted (highlighted). If no valid DMX signal is available, the DMX symbol will be not inverted (highlighted).



Valid incoming DMX signal



No valid incoming DMX signal

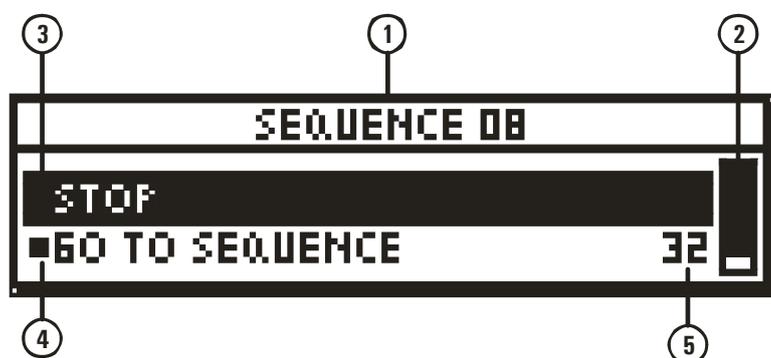
User Menu Construction

To enter the user menu, the XRC-150 must be stopped and not be recording or playing back a

sequence. To stop those functions press the  button. It's not possible to enter the user menu when the XRC-150 is actually playing or recording.

To enter the user menu, press the select/confirm button .

In the user menu, all parameters of the XRC-150 can be set or adjusted. The following image is an example of what a "menu point" looks like. It is followed by definitions of the sections that make it up.



Actual Menu Item (1)

The current menu item is always shown at the top of the display.

Cursor (2)

The cursor shows current position in the menu item. The more items a menu point contains, the shorter the cursor bar is.

Menu Point Items (3)

There are always two menu items shown in the display. The user can navigate in the menu point by pressing buttons UP -  and DOWN -  buttons. The current menu item is inverted (highlighted).

Active – Indicator (4)

There are some menu points where the user can set an option by selecting a menu point. In this case, the active setting is always indicated by having a  symbol next to it.

Actual Value (5)

Whenever a parameter can be set to a specific value, this value is always displayed to the right side of the corresponding menu point. If there is no value shown, this means that there is no adjustable parameter.

Main Operations

Recording

Recording terms

To recording a sequence, the XRC-150 must be set to normal mode (see chapter **Set Mode** on page **23**) and the device must be unlocked (see chapter **Lock Device** on Page **24**).

Further, the DMX input of the XRC-150 must receive a valid DMX value.

The XRC-150 will inform the user if any of these points are not true.

If the XRC-150 is not in the normal mode and the user wants to record, the following information will appear on the display:



If the XRC-150 is in the normal mode but the device is locked and the user wants to record, the following information will appear on the display:



If the XRC-150 is in normal mode and the device is unlocked, but there is no DMX available, the following information will appear on the display if the user wants to record:



All these messages will disappear automatically after a few seconds. They serve to warn the user to set the XRC-150 in the proper mode and corresponding parameters for recording.

Record a sequence

Before recording a sequence, the XRC-150 must be stopped by pressing the stop button. With the sequence skip- backward and sequence skip forward button, you can select the sequence number you wish to record. Press the record button to start the recording procedure of your selected sequence. If your selected sequence for recording is not empty, the XRC-150 will ask if this sequence should be overwritten:



Press cancel button to abort the recording procedure thus saving the information on that sequence. You may choose another sequence that is empty, or record over a different sequence. Press the confirm button to delete the sequence and the record procedure will continue.

The XRC-150 now is ready to record and the following information will appear on the display:



DMX input now is bypassed directly to DMX output enabling you to see what the XRC-150 is going to record.

Press the play  or pause  button to begin recording.

The XRC-150 can be paused while recording by pressing the pause  button. To continue recording, press play  or pause  button. To end your recording simply press the stop  button.

Play Back a Sequence

There are two possibilities to start play back of a sequence:

Press a fast access button  -  to start playing a sequence directly

OR

Choose a sequence with the sequence skip backward  or sequence skip forward  button and then press the play  button. This will also start play back.

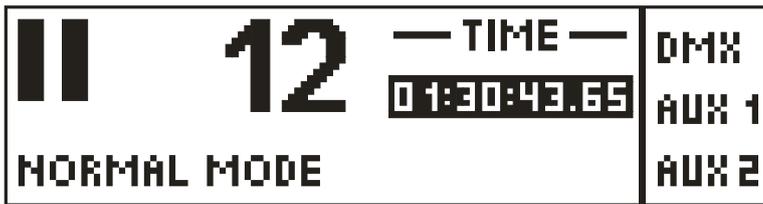
If an empty sequence is selected for play back, the following information will appear on the display:



The message will disappear after a few seconds and the XRC-150 will not play back a sequence.

While playing back a sequence, the sequence can be paused by pressing the pause  button. To continue the sequence, either press the play  or pause  button.

With the XRC-150, there is also the possibility to spool forward or backward in a sequence. To do so, press the spool backward  or spool forward  button. When this is done, the dedicated sequence is paused and the time is inverted (highlighted). Press and hold the spool buttons to go to a dedicated position in the sequence:



Once the dedicated position is reached, press play button to continue.

Note:

It takes some time for the XRC-150 to start playing at a chosen time after it has been spooled. The longer the time spooled, the longer it takes the XRC-150 to restart playing.

The Main Menu

Before entering the user menu, the XRC-150 must be stopped by pressing the stop button.

Press the confirm/select button and the XRC-150 main menu will appear on the display:



At the top of the main menu, the software version of the device is written (in this example it's version 1.10).

The main menu contains the following items:

1. Sequence Settings
2. System Settings
3. External Devices
4. Options

Sequence Settings

Choose "Sequence Settings" in the main menu and press the confirm button. The sequence settings menu will appear on the screen.

The sequence settings menu contains the following submenu items:

1. DMX Remote Control
2. Link Sequences
3. Start-up Sequence
4. Shutdown Sequence
5. Sequence Fade Time
6. Delete Sequence

DMX Remote Control

In this menu point an individual DMX remote channel for each sequence can be set. Choose “DMX Remote Control” in the sequence settings menu and press the confirm button:



On the left the sequence numbers are written. On the right you can see the actual DMX remote channel for this sequence.

Press and hold the UP- or DOWN - button to choose a sequence. Press the confirm button to enter a new DMX remote address for the chosen sequence:



Press and hold the UP - or DOWN - button to set a new DMX remote channel for the chosen sequence (001 – 512). Press the confirm button to confirm and set the new value or press the cancel button to cancel and keep the old value.

Note1:

If a DMX remote channel controls several different sequences, this remote channel will always only affect the sequence with the highest numeric value. For example if DMX address 001 is set for remote sequence1, sequence2 and sequence3, only sequence3 will be controlled by this remote channel.

Note2:

*If you want to control play back with the DMX remote feature, the XRC-150 operation mode has to be set to “DMX Remote” (see chapter **Set Mode** on page 23).*

Link Sequences

In this menu point sequences can be linked up for playback e.g. there is the possibility to set up a play list.

The XRC-150 offers a very intelligent linking system with many possibilities.

Choose "Link Sequences" in the sequence settings menu and press the confirm button. The corresponding sub menu will appear in the display:



Press and hold the UP - or DOWN - button to choose a sequence. Press the confirm button to set the link option for the chosen sequence:



For each sequence the number of repeats can be set. On the right side of the submenu point the actual number of repeats is written.

To change this number, choose "Number of Repeats" and press the confirm button.



Press and hold the UP - or DOWN - button to set a new number of repeats for the chosen sequence (0 – 9999). Press the confirm button to confirm and set the new value or press the cancel button to cancel and keep the old value.

The XRC-150 will repeat the sequence as many times as the entered number. When the desired number of repeats is reached the XRC-150 will offer the "Action on End" option. To set this action

on the XRC-150, select “Action on End” and press the confirm button:



Press the UP - or DOWN - button to choose one out of three different options. Press the confirm button to set the selected option. The active action is marked with the active indicator ■. symbol

1. Stop:
After the number of repeats is reached, the XRC-150 stops playing back.
2. Go to Sequence XX:
After the number of repeats is reached, the XRC-150 will can be set to playback different sequence allowing the user to set up a play list of different sequences. The next sequence number can be entered easily:



Press and hold the UP - or DOWN - button to set a new “go to” sequence for the chosen sequence (0 – 32). Press the confirm button to confirm and set the new value or press the cancel button to cancel and keep the old value.

3. Go to Last Sequence:
If this option is set, the XRC-150 will go back to the last sequence played before.

The links can be easily deleted by scrolling down to the end in the “Link Sequences” menu point. The last menu item is “Clear Links”. Choose “Clear Links” and press the confirm button to clear all links. The XRC-150 will ask you if “sure”. Press the confirm button again to definitively clear all links. This function sets all number of repeats to 1 and sets the action on end to “Go to Sequence XX”. XX

will be 1 for sequence 1, 2 for sequence 2 and so on. This means each sequence repeats itself.

Start-up Sequence

Choose “Start-up Sequence” in the sequence settings menu and press the confirm button. You can choose now the sequence you want to set as the start-up sequence:



Press and hold the UP - or DOWN - button to choose a start-up sequence. If you don't want to have a start-up sequence, choose “No Start-up Sequence”. Press the confirm button to set the dedicated start-up sequence (marked with the active indicator symbol). Press the cancel button to exit the menu point.

If the XRC-150 runs in auto start mode, the start-up sequence will be played when power up.

Shutdown Sequence

Choose “Shutdown Sequence” in the sequence settings menu and press the confirm button. You can now select the sequence you want to set as the shutdown sequence:



Press and hold the UP - or DOWN - button to choose a shutdown sequence. If you don't want to have a shutdown sequence, choose “No Shutdown Sequence”. Press the confirm button to set the dedicated shutdown sequence (marked with the active indicator symbol). Press the cancel button to exit the menu point.

If the XRC-150 runs in auto start mode, the shutdown sequence will be played when the stop button is pressed.

Sequence Fade Time

Choose “Sequence Fade Time” in the sequence settings menu and press the confirm button. You can now set a fade in time for each sequence:



Press and hold the UP - or DOWN button to choose a sequence in which you want to change the fade in time. The actual fade time is written at the right side. Press the confirm button to change the fade in time:



Press and hold the UP - or DOWN - button to change the fade in time. The format of the fade time goes as follows: Minutes: Seconds. Hundredths of a second. The fade time can be set between 00:00.00 and 54:36.75. The resolution is 50ms. Press the confirm button to confirm and set the new fade time or press the cancel button to cancel and keep the old value.

If you want to set the same fade time for all sequences, simply choose “All Sequences” in the sequence fade time menu point. Set the fade time and press the confirm button. The fade time now is equal on each sequence.

Delete Sequence

Choose “Delete Sequence” in the sequence settings menu and press the confirm button. You can delete a specific sequence or delete all sequences at one time:



The sequence status is written on the right side (empty or not empty).

Press the confirm button to delete the selected sequence. The XRC-150 will ask you if “sure”.

Press the confirm button again and the chosen selected sequence will be definitively deleted.

System Settings

Choose “System Settings” in the main menu and press the confirm button. The system settings menu will appear on the screen.

The system settings menu contains the following submenu items:

1. Fast Access Buttons
2. Set Mode
3. Choose Language
4. Lock Device
5. Change Password

Fast Access Buttons

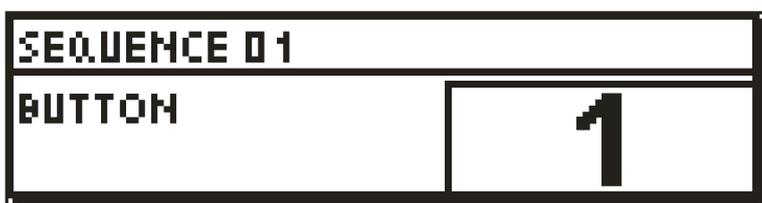
In this menu point you can link the 8 fast access buttons ¹ - ⁸ to the sequences you want to have fast access to.

Choose “Fast Access Buttons” in the system settings menu and press the confirm button. The sub menu will appear on the display:



On the left the sequence numbers are written. On the right you can see the actual fast access buttons linked.

Press and hold the UP - or DOWN - button to choose a sequence. Press confirm to link a new fast access button for the chosen sequence:



Press one of the fast access buttons ¹ - ⁸ to link them and confirm by pressing the confirm button. Press the cancel button if you don't want to change.

Note:

It's possible to link several buttons to the same sequence. In this case only the button with the highest numeric value will be written on the display.

Set Mode

In this menu point the operation mode of the XRC-150 can be set.

Choose "Set Mode" in the system settings menu and press confirm button. The sub menu will appear on the display:



Press the UP - or DOWN - button to choose a mode. Press confirm to set the new mode. The active mode is always marked with active indicator symbol.

There are 5 different modes:

1. Normal:
In this mode, the XRC-150 operates with full access. It's possible to record and for playback, all buttons can be used.
2. Backup:
In this mode, you can plug the XRC-150 between a DMX desk and your running light show. If the DMX signal from the desk fails, the XRC-150 will detect the failure and switch immediately to playback. If a start-up sequence is defined, will run first. The XRC-150 now operates like normal mode, but cannot record.
As soon as the DMX signal from the desk is ok again, the XRC-150 will stop playing and the signal from the DMX desk will take over again.
3. Auto start:
In this mode, the XRC-150 automatically starts playing when powered up. If a start-up sequence is defined, this will be run first. When pressing stop, shutdown sequence will be ran.
4. DMX Remote:
In this mode, the XRC-150 is remote controlled through DMX signal, all buttons

are locked so it's only possible to control the XRC-150 through DMX remote signal. Setting a DMX value higher than 20% will start playing the corresponding sequence (see chapter **DMX Remote Control** on page 16). Decreasing the DMX value below 10% will stop playing.

5. Slave:
The XRC-150 has the possibility of being daisy chained with several other XRC-150 for recording and playing back more than 512 channels. In this case, one XRC-150 has to be the master and all other XRC-150 in the daisy chain have to run in slave mode. For more details, see chapter Fehler! Verweisquelle konnte nicht gefunden werden. on page Fehler! Textmarke nicht definiert..

Choose Language

On this menu point, the display language can be set either to English or German.

Lock Device

Choose "Lock Device" in the system settings menu and press the confirm button. The XRC-150 now can be locked:



Press the UP - or DOWN - button to select if you want to lock or unlock the device. Press confirm to set; a marker (■) shows if the device actually is locked or unlocked.

When "locked" is set, the device will lock as soon as the user menu is quitted (e.g. when you will see the normal play back display). In the case of the device being locked, it's not possible to record sequences and for entering the user menu, a pass code must be entered:

ENTER PASSCODE

0000

Use the right or left button to change the cursor position, UP or DOWN button to adjust the pass code. Press to confirm the pass code. If the code was correct, the XRC-150 will enter the user menu.

If the password was wrong, a message will appear:

WRONG PASSCODE

If now there is no action, the XRC-150 will reboot after a while. Press the confirm or cancel button and the XRC-150 will reboot immediately.

Change Password

Choose “Change Password” in the system settings menu and press confirm . You can now enter a new password. Entering a new pass code is done the same way as described above. Press to confirm and set the new pass code.

External Devices

This menu point will be used to configure the external devices for the XRC-150. The instructions for them will come with the corresponding devices.

Options

Choose “Options” in the main menu and press confirm . The options menu will appear on the screen.

The options menu contains the following submenu items:

1. Record Stop Scene
2. Restore Default
3. Software Update
4. Format Flashcard

Record Stop Scene

Choosing this submenu will record the stop scene. It's a static record of all 512 DMX channels. When the XRC-150 is actually stopped, this scene will be set to the DMX output. This is very useful because you can exactly define how your lights should react in case of the XRC-150 being stopped.

To record stop scene, connect the XRC-150 to your DMX desk and set up your stop scene on the desk. Choose "Record Stop Scene" in the options menu and press confirm :



Press confirm again and the XRC-150 records the input DMX to the stop scene.

Note:

Invalid DMX data will be saved as '0'. Therefore if you record the stop scene without valid DMX input, stop scene will be set completely to '0'.

Restore Default

Choose "Restore Default" in the options menu to restore all default values and press confirm . The XRC-150 will ask you if "sure". Press confirm again and the XRC-150 will set all parameters to their default value:

1. DMX Remote control:
 - Sequence 1: DMX address 001
 - Sequence 2: DMX address 002
 -
 - Sequence 32: DMX address 032
2. Link Sequences:
 - Repeat all sequences 1 time
 - Action on end = loop to same sequence
3. Start-up Sequence:
 - No start-up sequence
4. Shutdown Sequence:
 - No shutdown sequence
5. Sequence fade time:
 - Set all fade time to 1 second
6. Fast Access Buttons:
 - Button 1: Sequence 1

Button 2: Sequence 2

.....

Button 8: Sequence 8

7. Operation Mode:
Set to normal mode
8. Language:
Set to English
9. Device Lock:
Unlock device
10. Password
Set to "0000"

Software Update

Choose "Software Update" in the options menu and press the confirm button. The XRC-150 will ask if sure. Press confirm again and connect the XRC-150 over the USB port to your personal computer. Start downloading the software upgrade.

If you entered here by mistake, simply disconnect the XRC-150 from power and re-power, nothing will be changed.

Note 1:

The USB cable is not contained in delivery of the XRC-150.

Note 2:

After a software update, all parameters will be set to their default values (see above).

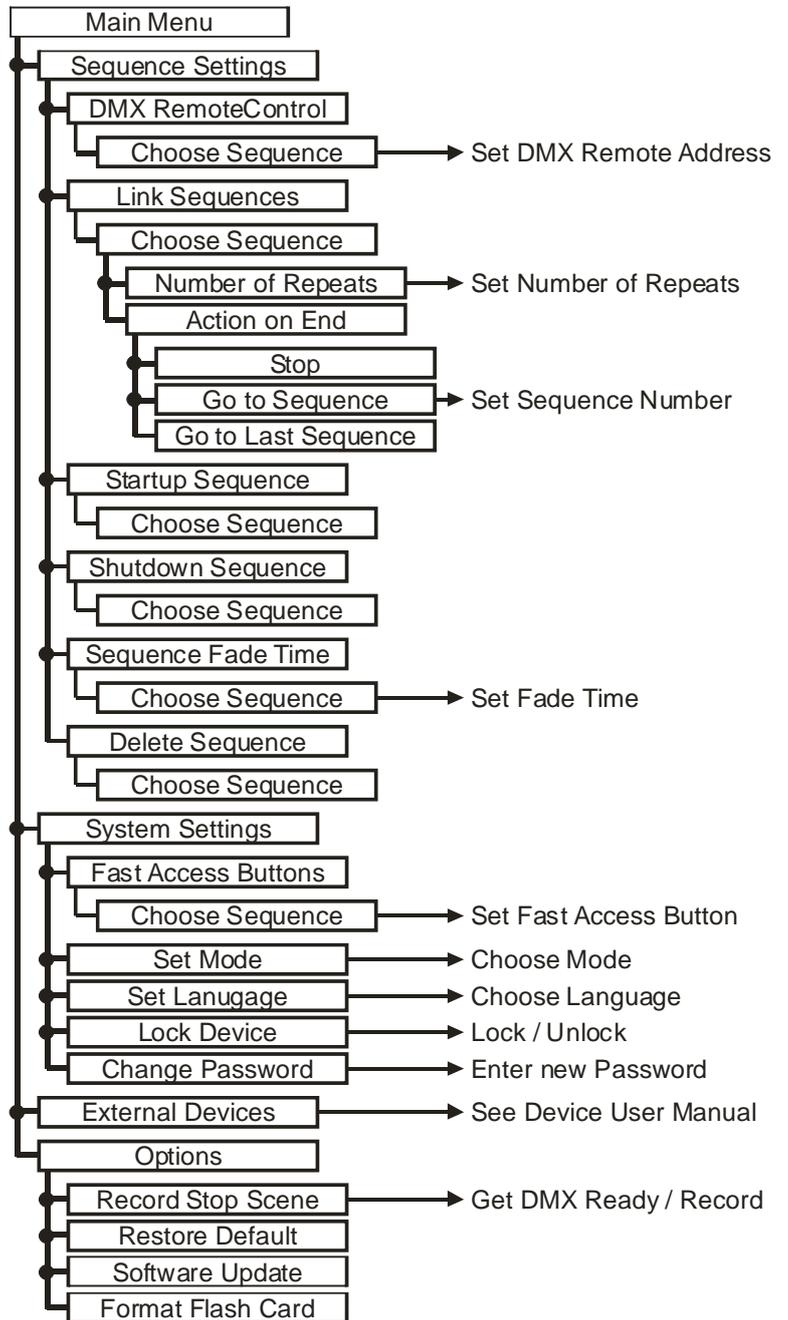
Format Flash Card

Choose "Format Flash Card" in the options menu and press the confirm button. The XRC-150 will ask if "sure". Press confirm again to format the entire flash card. **ATTENTION:** All sequences data will be deleted and all parameters will be set to their default values (see chapter **Restore Default** on page **26**).

A bar graph will show you the progress of the format procedure.

Overview

The following image gives you a brief overview of the XRC-150 user menu:

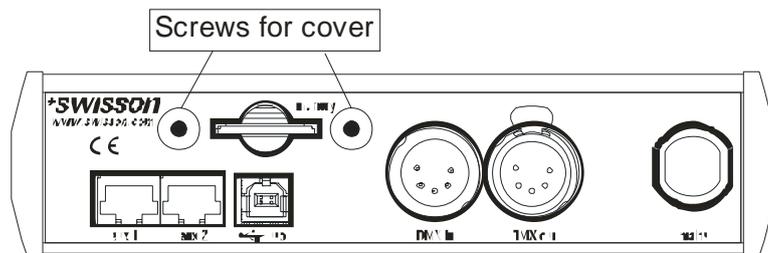


Special Instructions

Flash Card

All recorded data are saved in a flash card. Also all parameters (fade time, sequence link etc.) are saved in a flash card. This card can be removed from the XRC-150 and inserted into another XRC-150. The result would be to have exactly the same sequences and settings on the XRC-150 where the card was just inserted.

To protect the card from being removed from unauthorized personal, the slot of the flash card is protected by a cover. If you want to remove the card, simply remove the two screws and take the cover away:



Now you can easily take the card out off the XRC-150.

When there is no card inserted, the following message will appear on the display:

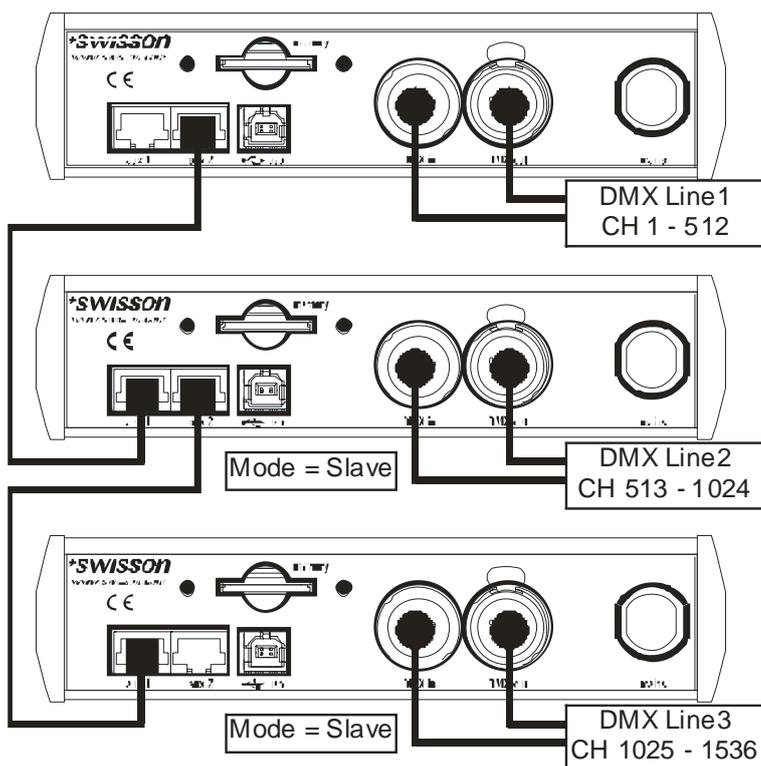


Insert the flash card again and press the confirm button. The XRC-150 will go back to normal operation.

Daisy Chain

The XRC-150 can be daisy chained. This is very useful if you want to record a show with several DMX lines (more than 512 channels). For each DMX universe one XRC-150 is required.

The connection is done over the AUX ports:



Note1:

The number of XRC-150 to be daisy chained is unlimited

Note2:

The first device MUSTN'T be in slave mode. All other devices MUST be in slave mode. All commands (play, pause, stop, record etc.) will be sent from the master to the slaves. The slave will do always the same as the master.

Note3:

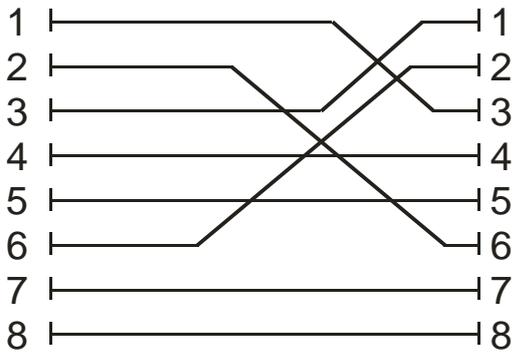
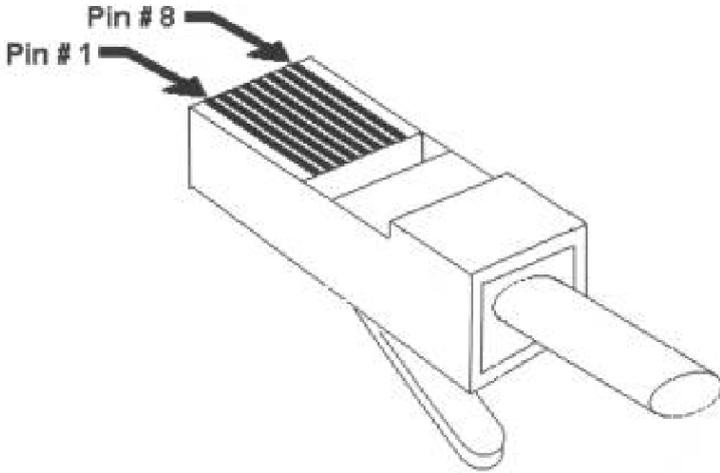
The sequences MUST be recorded in daisy chain to guarantee a correct operation when playing back sequences.

Note4:

It doesn't matter on which aux port the XRC-150 is connected.

Note5:

For wiring you have to use a standard RJ45 8 pole CROSS OVER network cable.



The communication runs on 250kBaud, therefore you don't need to have a high speed cable. The cable is NOT included in the delivery.

Technical Data

Recorded Channels	512 channels
Storage Capacity	Due to a very sophisticated DMX data compression there is no fixed storage capacity. The more DMX channels are changing their value, the faster the memory would be full
Number of sequences	32 different sequences can be recorded
Link up sequences	Number of repeats and "action on end"
DMX termination	120Ohm built in
Input Power	50VAC – 276VAC 50/60Hz 0.3A
Operating temperature	-0°C to 45°C
Dimensions / weight	184 mm x 111mm x 45mm / 1000g

Safety notes

Consider the following notes absolutely when you set up, connect and use the XRC-150 DMX Dynamic Recorder:

- Connect the cables only with the proper plugs and sockets.
- Set the cables in an accident-proof fashion. Connected cables mustn't be stressed mechanically too much.
- Keep the device away from sources of electrical interference.
- Only connect accessories certified for this device.
- Never open the device yourself. Don't touch the plug contacts with metal or other pointed objects.
- Clean the XRC-150 DMX Dynamic Recorder only with a soft, damp cloth. Don't use chemicals or other harsh scrubbing agents.
- Protect the device against extreme dampness, liquids, dust and dirt.
- Don't use the device in places with excessive direct sunlight or heat.
- Don't use the device in highly combustible areas.