XMT-120A / XMT-350

DMX Measurement Tool / Tester
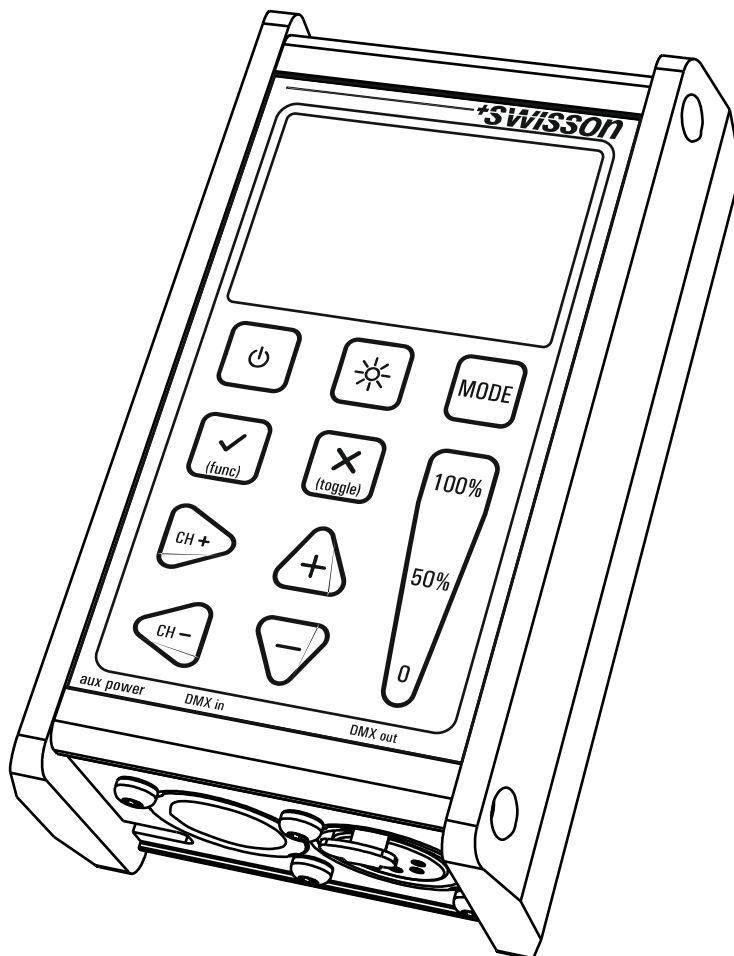
USER MANUAL

Revisions History

Revision	Description	Date
1	First Draft	23.08.12
1.1	Draft English XMT-120A and XMT-350 (ler)	09.10.12
1.3	Edited (boc)	22.03.13

**+SWISSON**

Table of contents

1   Introduction

The XMT-120A and XMT-350 are the new generation of powerful DMX-512 measurement and test equipment for architecture, entertainment, film and TV lighting and installations using DMX512. The versatile functions of the XMT-120A simplify the debugging of lighting and installations, or any application where DMX is used to control lighting. The unit can monitor DMX-512 signals as well as analyze and display them. The device can also generate DMX-512 signal and supports the control of more complex DMX-512 fixtures such as moving lights. The testing of RGB LED lighting with many channels is easy to do with the XMT-120A or with the XMT-350. With additional features such as cable tester, timing analysis, sequence editor, channel "tracer", dip-switch display and Min / Max display this device is ideal for troubleshooting and resolving DMX-512 signal challenges and yet remains very simple to operate.

The XMT can be connected via USB to a PC. The Windows software allows managing the fixture library for intelligent devices and updating the device's firmware.

2   Applications

- Concert Lighting
- Live Events
- Multimedia Shows
- Theater

- TV Sets
- Theme Parks
- Architectural Lighting
- Installation

3   Typical Application
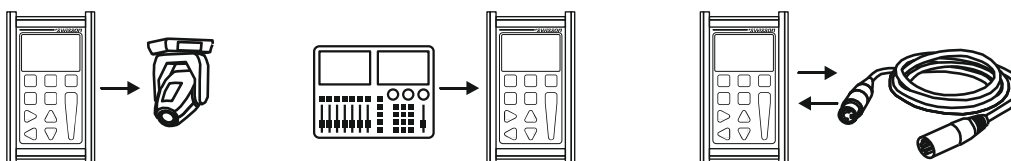
4   Unpacking

XMT-120A: The following items are included:
- The device
- This user manual

XMT-120A-SET: The following items are included:
- The device
- Nylon case
- 1 adapter XLR 3-pin to XLR 5-pin
- 1 adapter XLR 5-pin to XLR 3-pin
- This user manual

XMT-350: The following items are included:
- The device
- This user manual

XMT-350-SET: The following items are included:
- The device
- Nylon case
- 1 adapter XLR 3-pin to XLR 5-pin
- 1 adapter XLR 5-pin to XLR 3-pin
- This user manual

5   Overview

1 ☼ **BACKLIGHT**
With this button the backlight can be switched on or off

2 ⏻ **POWER**
With this button the device can be switched on or off

3 ✓ (func) **OK [OK]**
Choose a menu point with this button
Enter special settings
Enter the special settings menu

4 ✕ (toggle) **Cancel [CANCEL]**
Escape from a menu point with this button
Toggle
Toggle values in send mode

5 CH+ **CHANNEL + [RIGHT]**
Increase the DMX channel (address)
NAVITGATE
Use to navigate to the right in the user menu

6 CH– **CHANNEL - [LEFT]**
Decrease the DMX channel (address)
NAVITGATE
Use to navigate to the left in the user menu

7 + **VALUE + [UP]**
Increase DMX value
NAVITGATE
Use to navigate up in the user menu

8 – **VALUE - [DOWN]**
Decrease DMX value
NAVITGATE
Use to navigate down in the user menu

9 0 **CHANNEL to 0%**
Set the DMX value to 0%
(Fast Access Button)

10 50% **CHANNEL to 50%**
Set the DMX value to 50%
(Fast Access Button)

11 100% **CHANNEL at 100%**
Set the DMX value at 100%
(Fast Access Button)
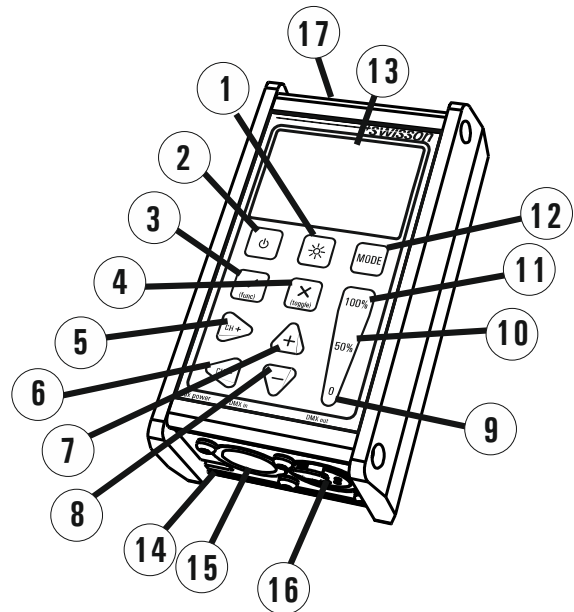
12 MODE **MODE**
The operating mode can be selected by pressing the mode button

13 **DISPLAY**
LCD display with LED backlight

14 **MICRO-USB SOCKET**
Micro-USB socket for power-supply, PC connection and firmware-update

15 **DMX IN**
Connector to receive DMX

16 **DMX OUT**
Connector to send DMX

17 **BATTERY**
Battery compartment for 9V block battery

6   Battery

The XMT uses a 9 volt alkaline battery.
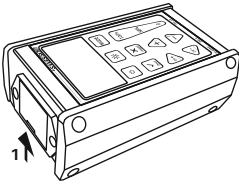
Lift to open the battery compartment.	Pull to remove the battery compartment.	Check battery pole positions. Push the battery on the spring down into the compartment.	Push the battery compartment to the touch.
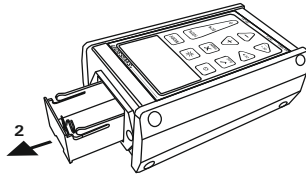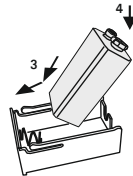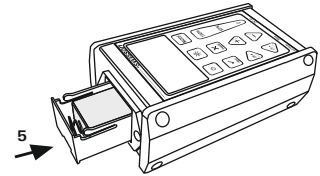
If power is supplied to the XMT via the USB port, the battery is disconnected. As soon as the USB power supply is removed, the XMT will automatically switch to battery operation. It's also possible to use a rechargeable 9 volt battery.

The battery is not charged by the XMT.

The battery status of the XMT is displayed graphically in the upper right corner of the display. When USB power is available, the battery symbol disappears and is replaced with a power connection symbol.

USB powered   Battery powered

In order to increase the battery life time, the XMT will by default automatically turn off after not being used for a few minutes. Please refer to the Power Settings chapter on how to change this behavior.

7   USB Port

The USB port is used to power the XMT and to connect it to a PC. Any 5V USB adapter, which is capable to supply 150mA can be used to power the XMT as well. The USB socket type is: **Micro-USB B.** The USB cable is not supplied with the XMT.
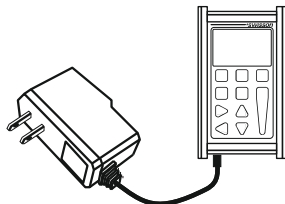
USB Adapter
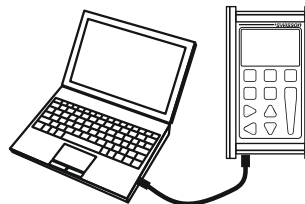
8   Backlight

☼ Press the [Backlight] button to turn on and off the backlight.

The backlight uses a lot of energy. The battery life-time may be dramatically reduced when the backlight is used excessively.

9   Choose Operating Modes

When the [MODE] button is pressed, while the device is in one of the basic operation modes, a menu will appear on the display.

RECEIVE DMX	Mode to receive and display DMX values.
SEND DMX	Mode to edit levels and send DMX.
RDM CONTROLLER	Mode to operate RDM (available only on the XMT-350).
CABLE TESTER	Cable test mode.
CHANNEL TRACER	Mode to receive a DMX channel and trace the level frame by frame.
TIMINGS	Mode to analyze DMX timings.
SEQUENCE	Sequence editor and player .

FIXTURE	Configure fixtures and patch them.
OPTIONS	Options of the XMT.
CONNECT TO PC	Mode to connect the XMT to the PC software.

On the XMT-120A:

Select the desired mode by using the navigation buttons [CH+] and [CH-].

Press [OK] to confirm the selection or [CANCEL] to return to the previous mode.

On the XMT-350:

Select the desired mode by using the navigation buttons [CH+], [CH-], [+] and [-].

Press [OK] to confirm the selection.

10 RECEIVE DMX

Press the [MODE] button and choose RECEIVE DMX. Now, press the [OK] button to enter the receive mode.
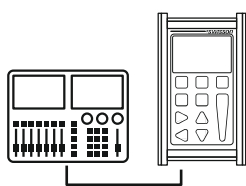
Connect a DMX source to the XMT's DMX in port.
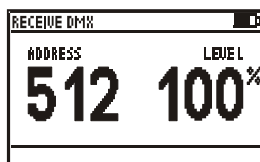
If a DMX signal is received without any errors, the data of the DMX signal will be displayed.

Choose the DMX address with [CH+] and [CH-] buttons. The corresponding level will be shown in real time.
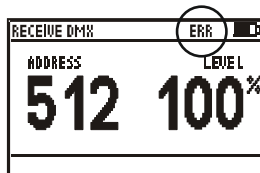
If the DMX signal is good enough to be decoded, but some errors are detected, the received data will be displayed while an error sign will appear.
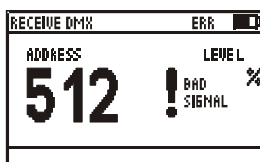
If the incoming DMX signal can't be decoded by the XMT, BAD SIGNAL will be shown instead of the value.
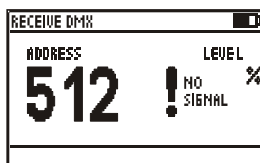
If no signal is detected, NO SIGNAL will be shown instead of the value.
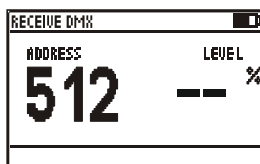
If a DMX signal is received, but the selected channel is not available, "--" will be shown instead of the value.

Note: DMX-512 can transmit up to 512 channels but it's possible that a controller sends less than 512 channels.

In receive mode, the received signal will be amplified and sent to the DMX out port. This allows you to connect the XMT in the middle of the DMX line and the signal will be terminated at the DMX in port of the XMT.
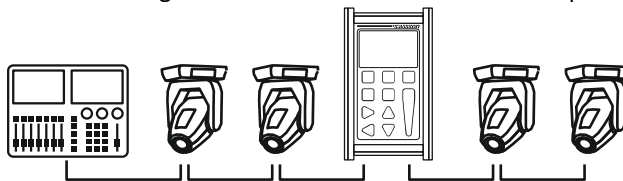
11 Receiver Options

When the XMT is in receive mode, press the [OK] button to enter the special settings menu.

STORE SCENE Create a snapshot of the incoming DMX data and store the values to a scene.

SHOW LEVEL AS Choose whether the level is displayed in percents, decimal or hexadecimal.

DISPLAY MODE Select one of the following view types: Normal view, Table view or Graphical view.

ADDRESSES Navigate through all channels or only through channels receiving a non-zero DMX value.

11.1 STORE SCENE

In receive DMX mode:
- Press [OK] to access receiver options.
- Press [OK] again to access the list of scenes.
- Choose a scene with [UP] and [DOWN] buttons.
- Press [OK] to confirm.
- Press [CANCEL] twice to exit the receiver options.

There are 32 scenes which are accessible from the receive DMX mode, as well as from the send DMX mode. Storing the received signal to a scene overwrites all 512 channels of that scene with the currently received values. The scenes can be combined to a sequence by using the sequence editor. See chapter SEQUENCE.

11.2 SHOW LEVEL AS

In receive DMX mode:
- Press [OK] to access the receiver options.
- Choose the SHOW LEVEL AS item with [UP] or [DOWN] buttons.
- Press [OK] to change the level display format.
- Press [Cancel] to exit the receiver options.

The levels can be displayed in percent, decimal or hexadecimal.

In the Table view, the levels are always displayed in percents and 100% is shown as "FL".

11.3 DISPLAY MODE

In receive DMX mode:
- Press [OK] to access the receiver options.
- Choose the DISPLAY MODE item using the [UP] and [DOWN] buttons.
- Press [OK] to change the display mode.
- Press [Cancel] to exit the receiver options.
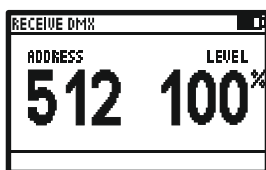
Display Mode: **Normal**   Display Mode: **Table**   Display Mode: **Graph**
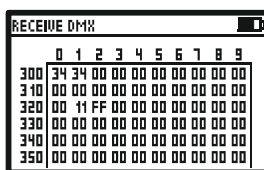
11.4 ADDRESSES

In receive DMX mode:
- Press [OK] to access the receiver options.
- Choose the ADDRESSES item with the [UP] and the [DOWN] buttons.
- Press [OK] to change the address access mode.
- Press [Cancel] to exit the receiver options.

ADDRESSES = ALL

ADDRESS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LEVEL	25	36	5	58	0	0	0	0	80	78	12	0	0	77	0	1

ADDRESSES = OPEN

ADDRESS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LEVEL	25	36	5	58	0	0	0	0	80	78	12	0	0	77	0	1

When ADDRESSES is set to ALL you can iterate through all channels using the [CH+] and the [CH-] buttons. When ADDRESSES is set to OPEN, pressing the [CH+] button will cause the XMT to jump to the next higher address receiving a non-zero DMX value. Similarly, pressing the [CH-] button will cause the XMT to jump straight to the next lower address receiving a non-zero value.
Note: This option only applies to the Normal display mode.

12 SEND DMX

Press the [MODE] button and choose SEND DMX. Now, press the [OK] button to enter the send mode.

Connect your DMX fixtures to the DMX out port of the XMT.

Use [CH+] and [CH-] buttons to select the address.
Use [+] and [-] buttons to set the level for the current channel.
Use [0%], [50%] and [100%] to set level to 0,50% and 100%.

12.1 Set Level of all Channels

Use [CH-] button to select address 1.
Use [CH-] button again to access the group of all channels.
Use the [+], [-], [0%], [50%] and the [100%] button to set the level of all channels.

12.2 Set Level of Group of Channels (LED)

```
SEND DMX          ▮▮◻
GROUP        LEVEL
            100%
EVERY 3RD +2
```
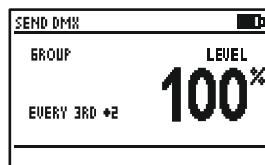
Use [CH+] and [CH-] buttons to select a group of channels. All groups are located below the channel 1.
Use the [+], [-], [0%], [50%] and the [100%] buttons to set the level of a group of channels.
The available groups are shown below.

3RD

4TH

3RD +1

4TH +1

3RD +2

4TH +2

4TH +2
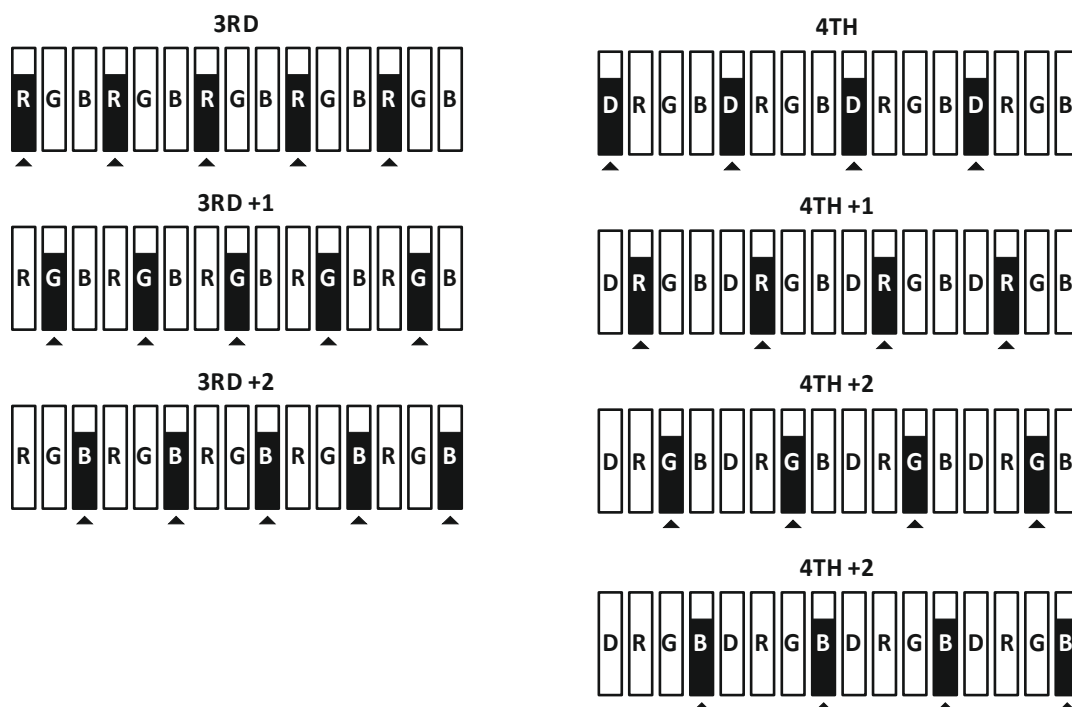
13 Send Options

When the XMT is in send mode, press the [OK] button to enter the special settings menu.

CLEAR ALL CHANNELS	Set all channels to zero.
STORE SCENE	Store the edited values to a scene.
LOAD SCENE	Load a scene.
SHOW LEVEL AS	Choose whether the level is displayed in percents, decimal or hexadecimal.
EDIT MODE	Choose edit mode. Normal or direct.
REFRESH RATE	Set the DMX refresh rate for the DMX transmitter.

13.1 CLEAR ALL CHANNELS

In send DMX Mode:
• Press [OK] to access the send options.
• Choose CLEAR ALL CHANNELS with the [UP] and the [DOWN] button.
• Press [OK] to confirm.
• Press [CANCEL] to exit the send options.
Because the CLEAR ALL CHANNELS item is at the top of the send options menu, pressing the [OK] button twice will clear all channels.

13.2 STORE SCENE

In send DMX mode:
• Press [OK] to access the send options.
• Choose STORE SCENE with the [UP] and the [DOWN] button.
• Press [OK] to access the list of scenes.

- Choose a scene with [UP] and [DOWN] buttons.
- Press [OK] to confirm.
- Press [CANCEL] twice to exit the send options.

Note: The scenes in receive DMX mode and in send DMX mode are shared. All 512 channels are stored into a scene. Storing to a scene overwrites the scene's previous content. The scenes can be combined to a sequence by using the sequence editor. See chapter SEQUENCE.

13.3 LOAD SCENE

In send DMX mode:
- Press [OK] to access the send options.
- Choose LOAD SCENE with [UP] and [DOWN] buttons.
- Press [OK] to access the list of scenes.
- Choose the scene with [UP] and [DOWN] buttons.
- Press [OK] to confirm.
- Press [CANCEL] twice to exit the send options.

All 512 channels of the scene are loaded.

13.4 SHOW LEVEL AS

In send DMX mode:
- Press [OK] to access the send options.
- Choose the SHOW LEVEL AS item with the [UP] or with the [DOWN] button.
- Press [OK] to change the level display format.
- Press [Cancel] to exit the send options.

The levels can be displayed in percents, in decimal or in hexadecimal.

13.5 EDIT MODE

In send DMX mode:
- Press [OK] to access the send options.
- Choose the EDIT MODE item with the [UP] / [DOWN] buttons.
- Press [OK] to change the edit mode. The edit mode can be NORMAL or DIRECT.
- Press [Cancel] to exit the send options.

Note: The edit mode setting does not affect groups of channels.

Normal Mode
In normal mode, the level of the current channel may be edited using the keypad. The adjusted level stays stored at when the current channel is changed using the [CH+] and the [CH-] keys.

Direct Mode
When changing the address in direct mode, the level of the previous address is cleared and the currently set level is assigned to the new address automatically.
To keep the level of an address when changing the current channel, it's possible to store its level using the [CANCEL] key. When the level of the current channel has been stored to a value that will stay when changing to another channel, "STORED" will be shown on the display.

NORMAL MODE

DIRECT MODE

SEND DMX

ADDRESS	LEVEL
512	**100**%
	STORED
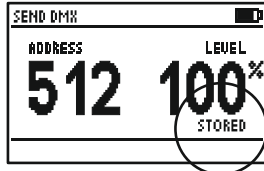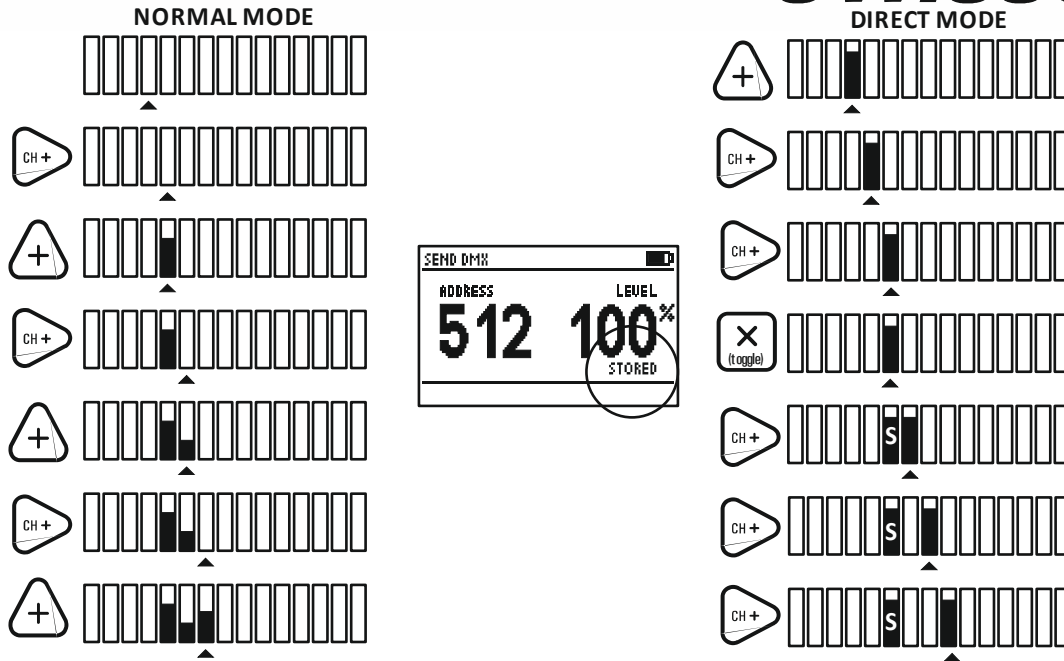
13.6 REFRESH RATE

In send DMX mode:

- Press [OK] to access the send options.
- Choose the REFRESH RATE item with the [UP]/[DOWN] buttons.
- Press [OK] to change the refresh rate.
- Press [Cancel] to exit the send options.

Available refresh rates are: 5, 10, 15, 20, 25, 30, 35, 40, 44 Hz (frames/sec).

14 CABLE TESTER

Press the [MODE] button and choose CABLE TESTER. Now, press the [OK] button to enter the cable tester mode.
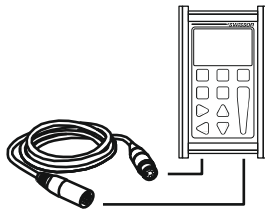
Connect the cable to test to the DMX in and to the DMX out port. The XMT scans all pin connections automatically.

CABLE TESTER		CABLE TESTER		CABLE TESTER		CABLE TESTER	
OUT	IN	OUT	IN	OUT	IN	OUT	IN
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5
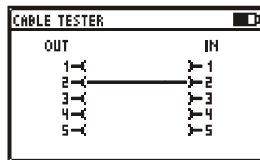
If the connection between a pair of pins is OK, it's indicated by a straight line connecting the pins.

Pin 2 is connected to pin 3. This is usually an error with DMX cables.
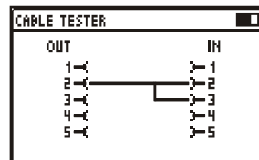
Pin 2 is shorted with pin 3. This is usually an error with DMX cables.
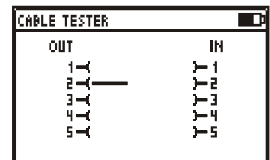
Pin 2 is not connected. (broken circuit). This is usually an error with DMX cables.

The speed of the scanning can be modified with the [0%], [50%], [100%] buttons.

15 CHANEL TRACER

Press the [MODE] button and choose CHANNEL TRACER. Now, press the [OK] button to enter the channel tracer mode.

Connect a DMX source to the XMT's DMX in port.

CHANNEL TRACER

CH 002
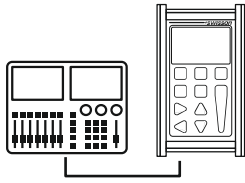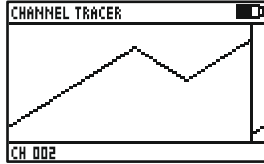
The level of one channel is traced. The address of the current channel is displayed on the bottom left of the screen.
Use [CH+] and [CH-] buttons to change that address.
Use the [Cancel] button to stop and resume the tracing.
When stopped a small cursor appears. The position of the cursor is displayed on the bottom right of the screen. The first value shows the DMX level and the second value shows the time at which this channel was received relative to the time at which the tracing was stopped.
Use [CH+] and [CH-] buttons to move the cursor.
Use [0], [50%] and [100%] buttons to zoom in and out.
Scroll up and down with [+] and [-] when zoomed in.
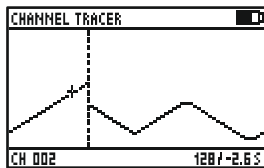
CHANNEL TRACER

CH 002   128/-2.6s

16 TIMINGS

Press the [MODE] button and choose TIMINGS. Now, press the [OK] button to enter the timings mode.
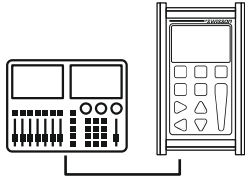
Connect a DMX source to the XMT's DMX in port.

TIMINGS DMX IN	
DMX SIGNAL	OK
REFRESH RATE	32 HZ
BREAK LENGTH	192 US
MARK AFTER BREAK	16 US
CHANNEL RECEIVED	512

The XMT shows basic DMX-512 timings.

DMX SIGNAL	Shows if a DMX signal is OK or faulty.
REFRESH RATE	Shows the numbers of frames received per second.
BREAK LENGHT	Shows the length of the break in microseconds.
MARK AFTER BREAK	Shows the mark after break time in microseconds.
CHANNELS RECEIVED	Shows the number of channels received.
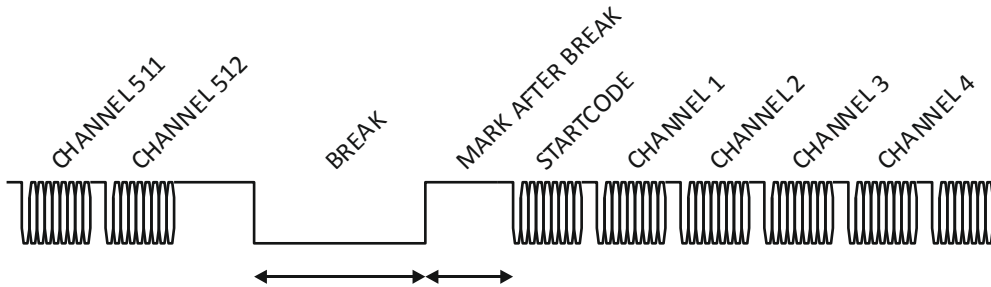
	BREAK LENGTH	MAB LENGTH
USITT DMX-512/1986	≥88us	≥4 us
USITT DMX-512/1990	≥88us	≥8 us
ANSI E1.11-2004	≥92us	≥12us

Refresh Rates (indicative only)

<1 frames per second	not compliant to standard
1-10 frames per second	very slow, compliant to standard but may cause problems with some equipment.
10-25 frames per second	slow
25-44 frames per second	typical for most equipment
44 frames per second	maximum speed when sending all 512 channel.
>44 frames per second	only possible when sending less than 512 channel. Compliant to standard but may cause problems with some equipment.

Refer to ANSI E1.11 for more detailed information on DMX-512 timings. The accuracy of the XMT's timing measurement is approximately 1.5 microseconds.

17 SEQUENCE

Press the [MODE] button and choose SEQUENCE. Now, press the [OK] button to enter the sequence menu.
The sequence menu has three items.

EDIT SEQUENCE	Create and edit the sequence.
PLAY SEQUENCE	Play and stop the sequence, edit speed and fade time.
DELETE SEQUENCE	Delete the sequence.

17.1 EDIT SEQUENCE

- Choose the EDIT SEQUENCE item with [UP]/[DOWN] buttons.
- Press [OK] to enter the sequence editor.

The sequence can be created with up to 100 steps using 32 scenes. The scenes can be recorded in receive and send mode.

Choose a step with the [CH+] and [CH-] buttons.

For each step, choose a scene with the [+] and [-] button.

Set the end of the sequence by choosing scene 0 (will be displayed as "end").
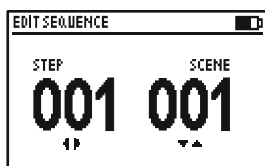
Step 1	Scene 1
Step 2	Scene 2
Step 3	Scene 15
Step 4	Scene 16
Step 5	Scene 16
Step 6	Scene 8
Step 7	Scene 9
Step 8	END

```
EDIT SEQUENCE            ▪▫
STEP        SCENE
001  001
 ◄►          ▼▲
```

17.2 PLAY SEQUENCE

- Choose the PLAY SEQUENCE item with [UP]/[DOWN] buttons.
- Press [OK] to enter the replay mode.

```
PLAY SEQUENCE
ACTUAL STEP:    23      PLAY

▲▼ SPEED
100 FADE +     0  FADE −
✓ PLAY STOP    ✗ EXIT
```

- Use the [OK] button to play and stop the sequence.
- Use the [+] button to increase and the [-] button decrease the replay speed.
- Use [0] and [100%] to increase/decrease the fade time.

Step 1 — Step 2 — Step 3 — Step 4 — Step 5 — Step 6 — Step 7

Speed   Fade Time
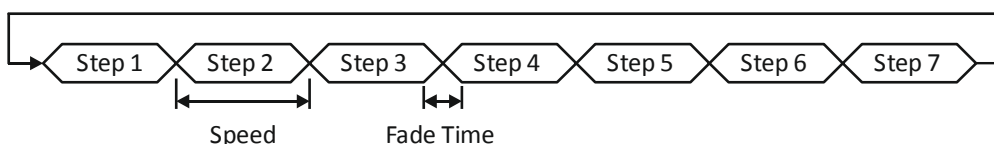
17.3 DELETE SEQUENCE

- Choose the DELETE SEQUENCE item with [UP] / [DOWN] buttons and press [OK].
- Press [OK] again to confirm.

18 FIXTURES

Press the [MODE] button and choose FIXTURES. Now, press the [OK] button to enter the fixtures menu.

The fixtures menu has three items.

PATCH FIXTURES   Patch fixtures to DMX addresses.
CLEAR PATCH   Clear the entire patch.
EDIT FIXTURES   Edit fixture definitions.

18.1 PATCH FIXTURES

- Choose the PATCH FIXTURES item using the [UP] / [DOWN] buttons.
- Press [OK] to enter the fixture patch editor.

A list containing the defined fixtures types appears.

- Select a fixture type with the [+] and [-] buttons, and press [OK].
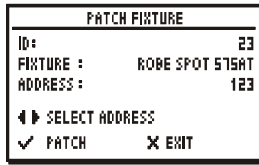
ID The fixture ID. It will be incremented automatically.
FIXTURE Name of the fixture type.
ADDRESS The patch address for the fixture.
The XMT proposes the next free DMX address as the patch address. This address can be changed with the [CH+] and [CH-] buttons.
- Press [OK] to patch the device.
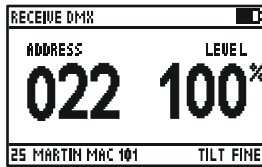
If a fixture is patched, the receive DMX mode and the send DMX mode will show information about the current channel on the bottom of the screen.

Parameter Description
Fixture Name
Fixture ID
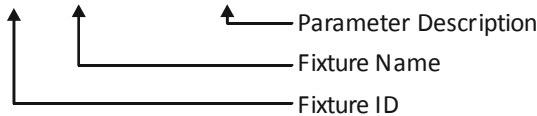
18.2 EDIT FIXTURES

The fixture types can be created and modified on the XMT itself or more conveniently with the XMT Fixture Library Editor on a computer.
- Choose the EDIT FIXTURES item with [UP] or [DOWN] button.
- Press [OK] to enter the fixture type editor.
The entire patch will be cleared.
- Press [OK] to confirm.
- Use [+] and [-] button to edit a fixture or CREATE NEW FIXTURE to create a new one.

NAME	Name of the fixture.
NUMBER OF CH	Number of DMX channels used by this fixture.
CHANNEL DEF	Definition of the channel description.
DELETE FIXTURE	Delete the fixture definition.

Name
- Use [+] and [-] buttons to select NAME.
- Select the cursor position by pressing [CH+] or [CH-] and change the character at the cursor position with [+] and [-].
- Pressing [0] will set the character to a blank space.
- When done press [OK] and the name will be saved. Press [CANCEL] keep the old name.
Number of channels
- Use [+] and [-] buttons to select NUMBER OF CHANNELS.
- Use [+] and [-] to set the number of channels for the fixture
Channel definition
- Use [+] and [-] buttons to select CHANNEL DEF.
A list with all channels of the fixture appears.
- Use [+] and [-] buttons to select the channel.
- Press [OK] to edit the channel description.
- Select the cursor position by pressing [CH+] or [CH-] and change the character at the cursor position with [+] and [-].
- Pressing [0] will set the character to a blank space.
- When done press [OK] and the name will be saved. Press [CANCEL] keep the old name.

19 Connect to PC

The XMT PC Software can be downloaded from the Swisson website. www.swisson.com
- Install the XMT PC Software before connecting the XMT to the PC.
- Connect the XMT to the PC with a USB cable.
- Press the [MODE] button and choose PC Connection. Press now the [OK] button to enter the PC connection mode.

PC   XMT-120A / XMT-350
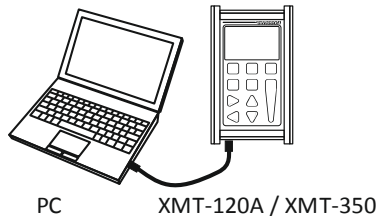
20 OPTIONS

Press the [MODE] button and choose OPTIONS. Now, press the [OK] button to enter the options menu.

The options menu has following items.

ENTER NAME	Personalize your XMT.
LOAD DEFAULT OPTIONS	Load the factory defaults.
SHOW BINARY ADDRESS send	Show a binary representation of the address in the DMX receive mode and in the DMX mode.
SHOW MIN MAX	Show minimum and maximum values in the DMX receive mode.
CONTRAST	Contrast setting for LCD display.
POWER SETTINGS	Configure power settings of the XMT.
FIRMWARE UPDATE	Mode to perform firmware update of the XMT.

20.1 ENTER NAME

Choose the ENTER NAME item with [UP] or [DOWN] button
Press [OK] to enter the name dialog.
Select the cursor position by pressing [CH+] or [CH-] and change the character at the cursor position using [+] and [-].
Pressing [0] will set the character to a blank space.
When done press [OK] and the name will be saved. Press [CANCEL] to keep the old name.

ENTER NAME
SWISSON
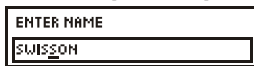
The name is displayed on the boot screen every time the XMT is turned on.

20.2 LOAD DEFAULT OPTIONS

- Choose the LOAD DEFAULT OPTIONS item with [UP]/[DOWN] buttons.
- Press [OK] to load the factory defaults.

20.3 SHOW BINARY ADDRESS

- Choose the SHOW BINARY ADDRESS item with [UP] or [DOWN] buttons.
- Press [OK] to select between NO, YES 0 and YES 1.

NO	Binary address display is disabled.
YES 0	Binary address display is enabled. Address is displayed as 0-based binary.
	Address 1 to 512 are mapped to the range of 0 to 511 for binary display. This is useful for 9bit dip switches on DMX fixtures.
YES 1	Binary address display is enabled. The range of the binary addresses is 1 to 512.
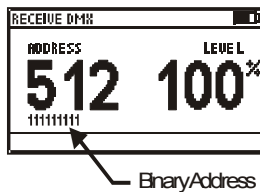
If enabled, the binary representation of the address is displayed below the address in receive DMX mode and in send DMX mode.

20.4 Show Min and Max Values

- Choose the SHOW MIN-MAX item with [UP] or [DOWN] buttons.
- Press [OK] to toggle between YES and NO.
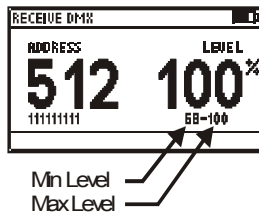
If enabled, the min and max values of a level are displayed below the level in receive DMX mode.

20.5 CONTRAST

- Choose the CONTRAST item with the [UP]/[DOWN] buttons.
- Press [OK] to enter the contrast editor.
- Use [+] and [-] buttons to modify the contrast.

20.6 POWER SETTINGS

- Choose the POWER SETTINGS item using the [UP]/[DOWN] buttons.
- Press [OK] to enter the power settings menu.

The power settings menu has three items:

BACKLIGHT BRIGHTNESS	Set the brightness of the backlight.
BACKLIGHT DURATION	Set the duration of the backlight.
TURN OFF IF IDLE	Automatic turn-off time for the XMT when battery operated.

BACKLIGHT BRIGHTNESS

- Choose the BACKLIGHT BRIGHTNESS item with [UP] or [DOWN] buttons.
- Press [OK] to change the backlight brightness from 10% to 100% in steps of 10%.

BACKLIGHT DURATION

- Choose the BACKLIGHT DURATION item with [UP] or [DOWN] buttons.
- Press [OK] to change the backlight duration from 10sec to 2min.

> The LED backlight of the LCD screen use a lot of energy. Try to set the backlight as low as possible and the duration of the backlight as short as necessary to save battery life.

TURN OFF IF IDLE

- Choose the TURN OFF IF IDLE item with [UP] or [DOWN] buttons.
- Press [OK] to change the time after which the XMT will turn off automatically when battery operated.

Possible values are: NO = stays on, 1min, 2min, 3min, 5min, 10min. The time is reset to zero whenever a button of the keypad is pressed.

The XMT will not turn off automatically when it's USB powered.

20.7 FIRMWARE UPDATE

• Choose the FIRMWARE UPDATE item with the [UP]/[DOWN] buttons.
• Press [OK] to enter the firmware update mode.
This feature does the same as PC CONNECTION. See section PC CONNECTION.

21 RDM Controller (XMT-350 Only)

Press the [MODE] button and choose RDM. Now, press the [OK] button to start the RDM controller.
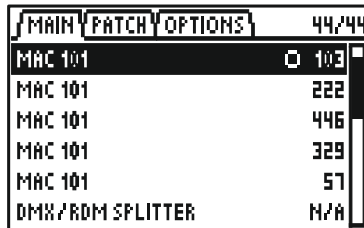
21.1 RDM Discovery

The XMT performs a full discovery when starting the RDM controller. During discovery, the XMT searches for connected RDM devices. The discovery can be aborted using the [CANCEL] button.

```
╔═══════════════════════════════╗
║  REMOTE DEVICE MANAGEMENT      ║
║     DEVICES FOUND: 34          ║
║  ┌─────────────────────────┐   ║
║  └─────────────────────────┘   ║
║        DISCOVERING...          ║
╚═══════════════════════════════╝
```

21.2 RDM Main Screen

After the full discovery the main screen of the RDM controller is displayed. An incremental discovery is running in background to detect RDM fixtures connected once the full discovery is completed.
The main screen shows a list of the RDM devices discovered.

```
┌─MAIN─┬PATCH┬OPTIONS─┐  44/44
│ MAC 101          O  103 │
│ MAC 101             222 │
│ MAC 101             446 │
│ MAC 101             329 │
│ MAC 101              57 │
│ DMX/RDM SPLITTER    N/A │
└─────────────────────────┘
```

The device description and the DMX address is displayed for all found RDM devices:

MAC 101   329

The currently selected device is inverted:

MAC 101   329

A small rotating animation appears when the connection to an RDM devices is lost:

⌐MAC 101

N/A is displayed instead of the DMX address when the RDM device does not have a DMX address. Typically, devices such DMX splitters have no DMX address:

DMX/RDM SPLITTER   N/A

Each RDM device has an identify mode. A blinking dot shows, which device is currently in this mode. By default, the XMT-350 puts the currently highlighted device into identify mode. This behavior can be disabled. See section 21.5 RDM Options on page 22.

MAC 101   ● 329
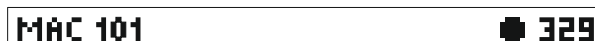
When an RDM responder is found, the UID is shown until more detailed information is available.

(4567ACSCD32B)

On the upper right corner, the number of currently connected devices and the totally detected number of device.

42/44

21.3 RDM Device Details

Use the [+]/[-] buttons to select an RDM device. Press OK to enter the details screen of the RDM device.

Parameters with a small arrow on the left can be edited by pressing [OK].

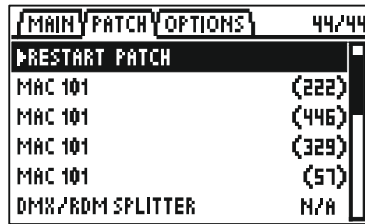The following parameters are currently supported by the XMT-350:

LABEL:	Editing is currently not supported by the XMT-350.
MODEL:	Model is a fixed name set by manufacturer.
MAN.:	Manufacturer of the RDM device.
DMX STARTADDRESS:	Current DMX address of the RDM device.
DMX PERSONALITY:	Current personality (mode). Press [OK] to change the personality.
DMX SLOTS:	Number of slots used by the RDM responder in the current DMX personality. (Number of DMX channels)
MOVING LIGHT MENU:	
PAN INVERT:	Pan invert mode of the RDM device. Toggle on or off with [OK].
TILT INVERT:	Tilt invert mode of the RDM device. Toggle on or off with [OK].
PAN TILT SWAP:	Pan/tilt swap mode of the RDM device. Toggle on or off with [OK].
DEVICE DETAILS:	
RESET:	
WARM RESET:	Press [OK] to start a warm reset of the RDM device.
COLT RESET:	Press [OK] to start a cold reset of the RDM device.
DEVICE HOURS:	Operating hours of the RDM device.
LAMP MENU:	
LAMP ON MODE:	Press [OK] to change the lamp on mode.
OFF	Lamp stays off until directly instructed to strike.
DMX	Lamp strikes upon receiving a DMX512 signal.
ON	Lamp strikes automatically at power-up.
AFTER CALIBRATION	Lamp strikes after calibration or homing procedure.
LAMP STATE:	Status of the lamp. OFF, ON, STRIKE, STANDBY, NOT PRESENT, ERROR.
LAMP HOURS:	Operating hours of the lamp.
LAMP STRIKES:	Number of strikes of the lamp.
SENSOR MENU:	The sensor menu lists the sensors and their values reported by the RDM device.
UID:	The RDM unique identifier of the RDM device.

Newer firmware versions may support additional undocumented parameters.

Parameters not supported by the RDM responder will be displayed as N/A. Some editable parameters may be "read only" with some RDM responders.

21.4 RDM Patch DMX Addresses

Use [CH+] or [CH-] to enable patch mode.

```
┌MAIN┐PATCH┐OPTIONS┐      44/44
▶RESTART PATCH
MAC 101                  (222)
MAC 101                  (446)
MAC 101                  (329)
MAC 101                   (57)
DMX/RDM SPLITTER          N/A
```

Select a device with the [+]/[-] buttons and press [OK] to patch / readdress the device. A patch dialog will show up. The XMT-350 proposes a DMX address. This address can be changed manually. Use the [+] and [-] buttons to change the proposed DMX address. Press [OK] to patch the device or [CANCEL] to abort.

```
┌─────────────────────────┐
│      MARTIN MAC 101     │
│                         │
│  ACTUAL ADDRESS:   244  │
│                         │
│  PATCH TO ADDRESS  222⬍ │
│                         │
│  ✓ OK      ✗ CANCEL     │
└─────────────────────────┘
```

A device which has not been patched yet, is displayed with the DMX address in brackets. A soon the device is patched the brackets disappear.

```
MAC 101                  (222)
```

The brackets are a guide for the user to know which devices has already been readdressed (patched).
The first item on the list is ">RESTART PATCH".
Select this Item to restart the patch. In this case all devices will be marked with the brackets.

```
▶RESTART PATCH
```

The devices in the list which are marked as "not patched" with the brackets are sorted by UID (unique identifier). All patched devices are sorted by DMX address. The sorting can be disabled. See Chapter 21.5 RDM Options on page 22.

21.5 RDM Options
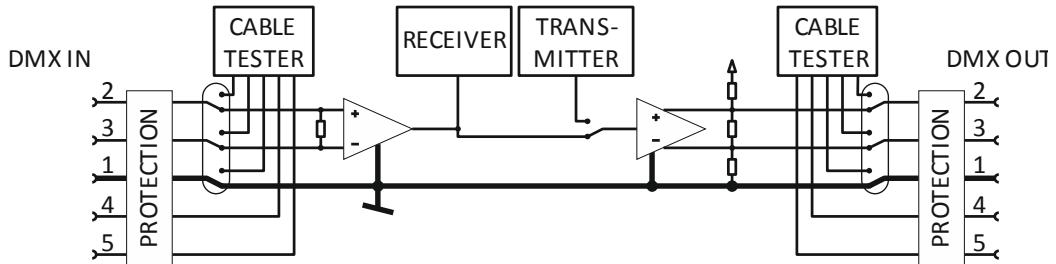
Use [CH+] or [CH-] to enter the RDM options.
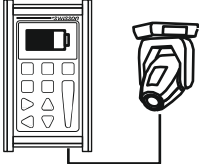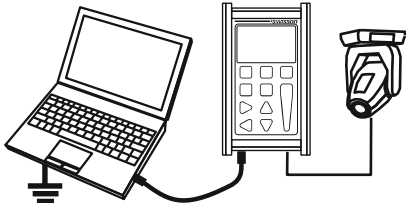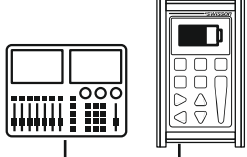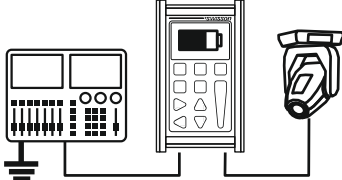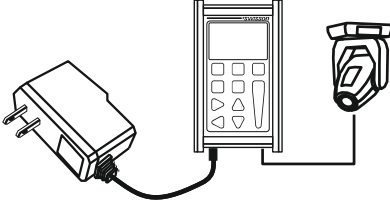The following options are available:

IDENTIFY: Enable and disable identify mode.
SORT PATCH TAB.:   Enable and disable the sorting of the patch table.

22 Additional Technical Information

22.1 Block Diagram XMT Interfaces

22.2 Ground Topologies

Is the XMT battery operated, the DMX out port is an **isolated transmitter.**

Is the XMT connected to a PC, the DMX out port might be a **ground referenced transmitter** when the USB is grounded.

Is the XMT battery operated, the DMX in port is an **isolated receiver**.

Is the XMT connected to a PC, the DMX in port might be a **ground referenced receiver** when the USB is grounded.

Is the XMT connected to a DMX controller with a ground referenced transmitter, the XMT DMX out port is a **ground referenced transmitter**.

Is the XMT connected to a USB charger, the DMX in port might be an **isolated transmitter** when the USB is not grounded.

23 Safety Information

Consider the following notes absolutely when you set up, connect and use the XMT.

This product is not for household use. Read this manual before operating the device, follow the safety precautions and observe all warnings in this manual.

Use this device only in accordance with local laws and regulations.

- **Do not expose the device to rain or moisture.**
- **Do not operate the device if any cover or component is missing damaged or deformed.**
- **Refer any service operation not described in this manual to Swisson.**
- **Provide unrestricted airflow around the device.**
- **Do not operate the device if the ambient temperature exceeds 55°C (131°F).**
- **Do not modify the device in any way not described in this manual or install other than genuine Swisson parts.**
- **Do not use the device in areas where it is exposed to direct sunlight.**
- **Do not use the device in areas that are considered to be 'highly combustible'.**

24 Technical Data

Hardware

Display type	LCD
Display back light	LED green
Display resolution	128x64 pixel
FLASH memory	16MBytes
DMX in port	Neutrik 5-pin male connector
DMX out port	Neutrik 5-pin female connector
DMX ports electrical standard	ANSI E1.11 / ANSI E1.20
USB port	Micro USB B type
Battery	9V block battery
USB Power consumption	150mA max
Use of rechargeable battery	Yes
Battery recharge	No
Cable tester	5-pin, open circuit, short circuit, wrong wiring
DMX in termination	120 Ohm, permanent (except cable tester)
DMX out termination	RDM bias network, RC-termination
Operating temperature	0°C to +45°C / 32°F to 113°F
Dimensions	119mm x 71mm x 46mm / 4.7" x 2.8" x 1.8"
Weight	400g / 0.88 lbs

Firmware (XMT-120A Version 1.15, XMT-350 Version 1.02)

Received DMX channels	512
Transmitted DMX channels	512
Refresh rates	5, 10, 15, 20, 25, 30, 35, 44 frames per second
Transmitter break length	140-150 microseconds / not configurable
Transmitter MAB length	28-32 microseconds / not configurable
Timing measurement	Frames per second / Break / MAB
Display formats	Percents, Decimal, Hexadecimal
DMX scene storage	32 scenes, 512 channels each
Number of sequences	1
Steps in sequence	99
Number fixture types	100
Channels per fixture	45
RDM controller	XMT-120A: NO / XMT-350: YES