Sunsistema MT-1

User Guide

version 0.1

Sunsistema, 2020

Contents

1 Introduction

MT-1 is a MIDI and USB device which lets you play programmed scale and always stay within the key. Map scale notes to white keys or mute the ones which do not belong to the scale. Choose any of 60 available scales or create your own. MIDI and USB outputs will allow you connecting MT-1 in various ways to your hardware.

Features

- 60 scales, fully programmable with MIDI controller

- MIDI over USB

- high contrast OLED screen with mini keyboard display

- 4 play modes - white keys only, filter, snap left, snap right

- bypass mode with single button press

- startup defaults

- sleep mode

- USB powered from PC or with any phone charger

- low power consumption

- dimensions: 124 x 71 x 40 mm

1.1 Front panel
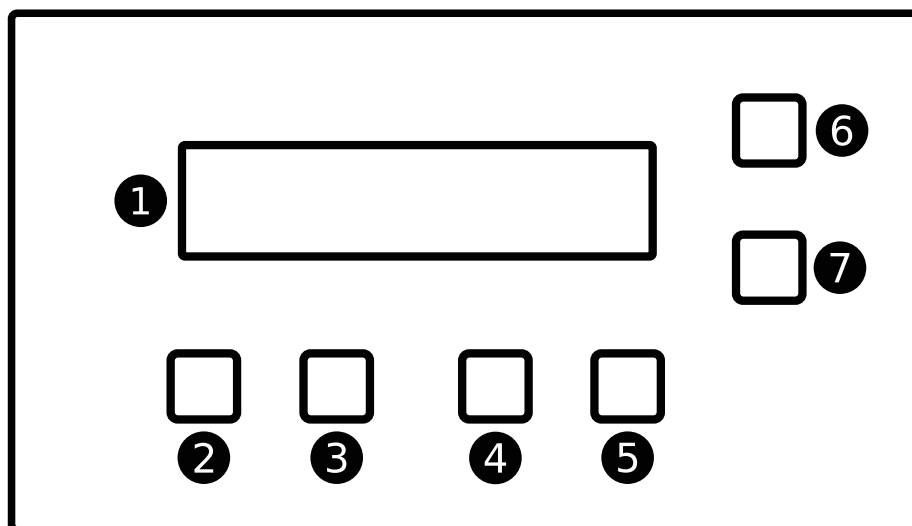
1. OLED screen

2. SCALE ▲ button

3. SCALE ▼ button

4. KEY ◀ button

5. KEY ▶ button

6. F1 button

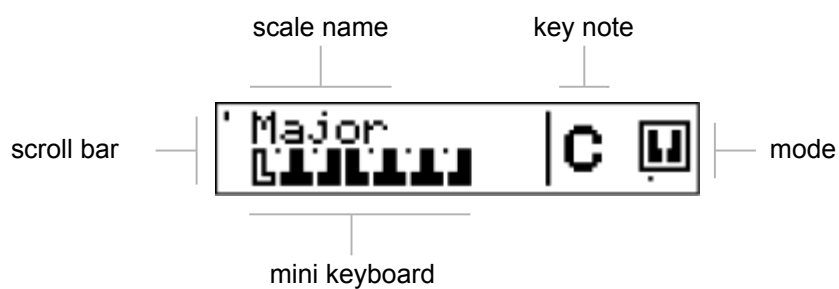7. F2button

1.2 Back panel
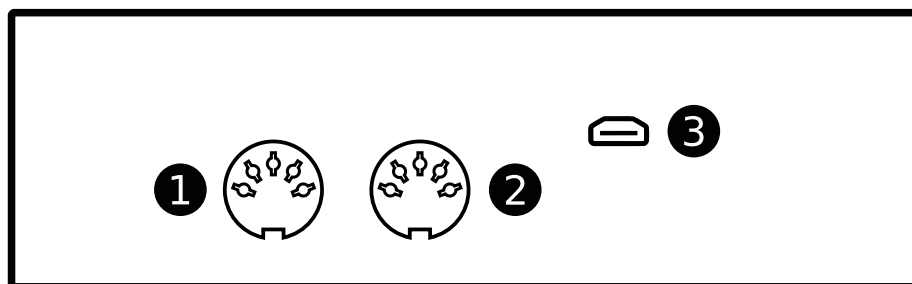
1. MIDI OUT port

2. MIDI IN port

3. Micro USB 2.0 port

   MT-1 can be powered with a computer USB port or with a standard mobile USB phone charger. Connecting to computer allows sending and receiving MIDI signals over USB.
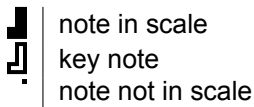
2 Play screen

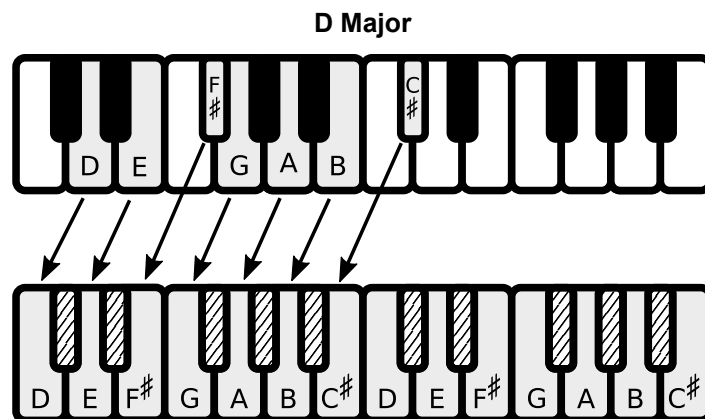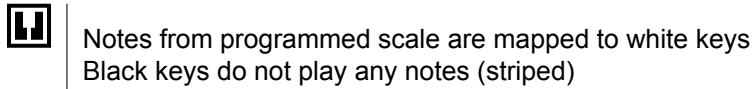## Buttons

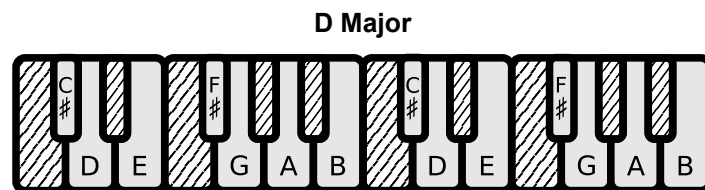|	
SCALE ▲	previous scale
SCALE ▼	next scale
KEY ◄	previous key
KEY ►	next key
F1	change mode
F1 (hold)	go to menu
F2	bypass mode
F2 (hold)	sleep mode

Mini keyboard view

■ note in scale
⬓ key note
▪ note not in scale

3 Play modes

3.1 Map to white keys

Notes from programmed scale are mapped to white keys
Black keys do not play any notes (striped)

D Major

3.2 Filter

Filter mode mutes notes that are not in the programmed scale (striped)

D Major

3.3 Snap right

If played note does not belong to the programmed scale (dark key)
then MT-1 will find closest note on the right and play it

D Major

4
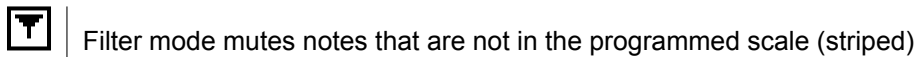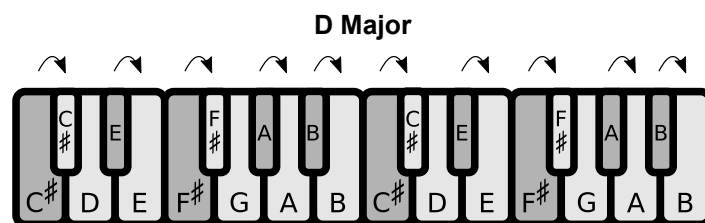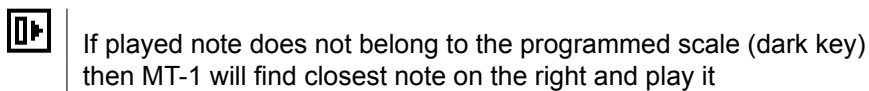
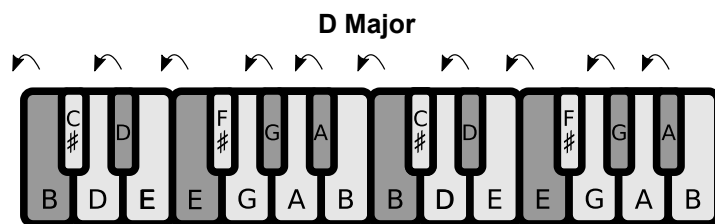## 3.4 Snap left

If played note does not belong to the programmed scale (dark key)
then MT-1 will find closest note on the left and play it

D Major

3.5 Bypass

Additional mode which quickly disables any processing of input notes
MIDI OUT port works then as if it was MIDI THRU port

4   Menu

Buttons

SCALE ▲	previous menu option
SCALE ▼	next menu option
F1	OK

4.1 Edit scale

```
Edit scale
          CH:ALL
```

CH:ALL means that programming commands will be accepted on all MIDI channels. Refer to section
4.3.3 on page 6 to learn how to change this setting.
Editing scales is described in details in chapter 4.3.4 on page 6.

4.2 Save defaults

```
Save defaults
```

Remembers selected scale, key note and play mode. After next power up defaults will be restored.

4.3 Settings

```
Settings
```

4.3.1 Middle C

MT-1 allows changing MIDI note for middle C. This is especially important for non heptatonic scales
(having different number of notes in scale than seven). In *Map to white keys* mode MT-1 spreads notes
around selected middle C note.

4.3.2 MIDI out

Select output of MIDI signal. Possible options:

- *OUT* - MIDI OUT only

- *USB* - MIDI over USB only

- *BOTH* - MIDI OUT and MIDI over USB

4.3.3 Programming channel

When editing scales, MT-1 by accepts commands on all MIDI channels. This setting can be changed to:

- one of MIDI channels 1-16

- all channels

4.3.4 Factory reset

This option restores all factory settings and scales. In order to perform factory reset:

1. Choose *Factory reset* option in system menu, confirm with F1.

2. Switch selected *[NO]* option to *[YES]*
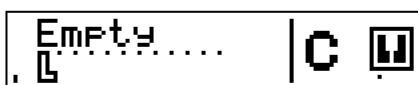
3. Hold F1 button until factory reset starts
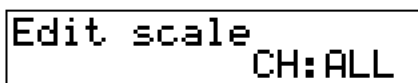
5 Editing scales

Buttons

F1	OK
F2	Back
F2 (hold)	Cancel

Steps

1. Navigate to the scale you want to edit

2. Hold F1 button and go to Menu, select *Edit scale* option, confirm with F1.

3. *Notes* screen will open.

4. Turn notes on and off by pressing keys on MIDI controller, confirm with F1
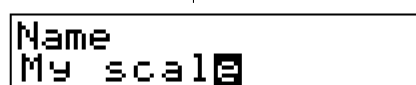

5. Set key note by pressing key on MIDI controller, confirm with F1

6. Set the new name using buttons listed below and confirm with F1

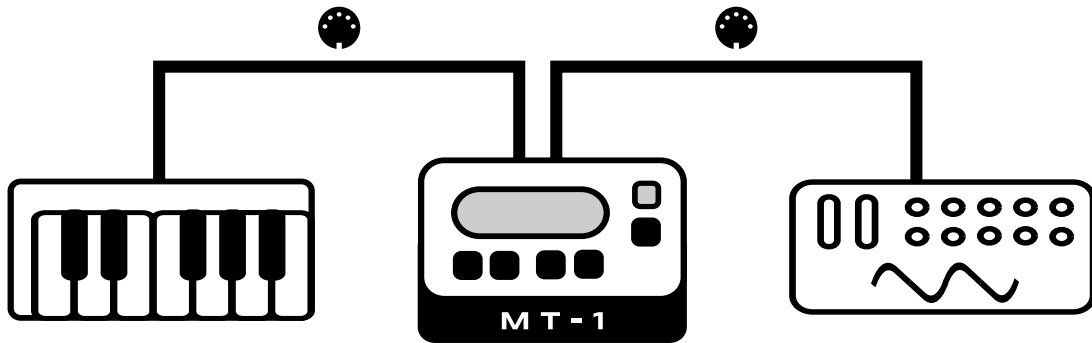|	
SCALE ▲	move cursor left
SCALE ▼	move cursor right
KEY ◄	previous character
KEY ►	next character
KEY ◄ (hold)	switch case
KEY ► (hold)	switch case

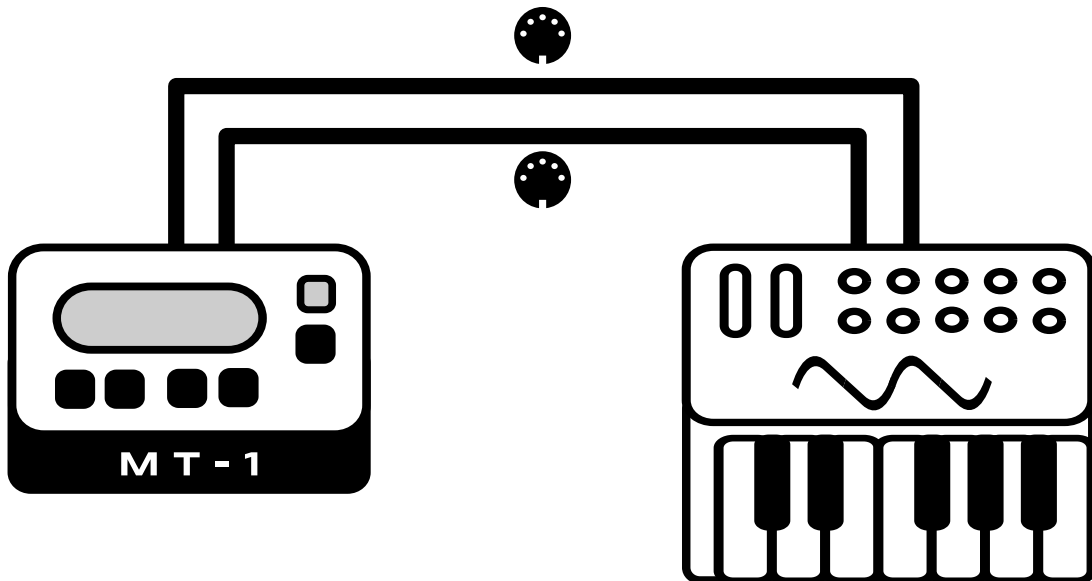7. The new scale is ready to play

6 Hardware setup

6.1 MIDI controller → MT-1 → synth

This setup uses only MIDI ports in MIDI controller, MT-1 and synthesizer.

6.2 MT-1 ↔ synth (local off mode)

Synthesizer in local off mode will not play notes by itself after key is pressed but will only send them to MIDI OUT port. After MT-1 processes the note it will be sent back to the synthesizer.
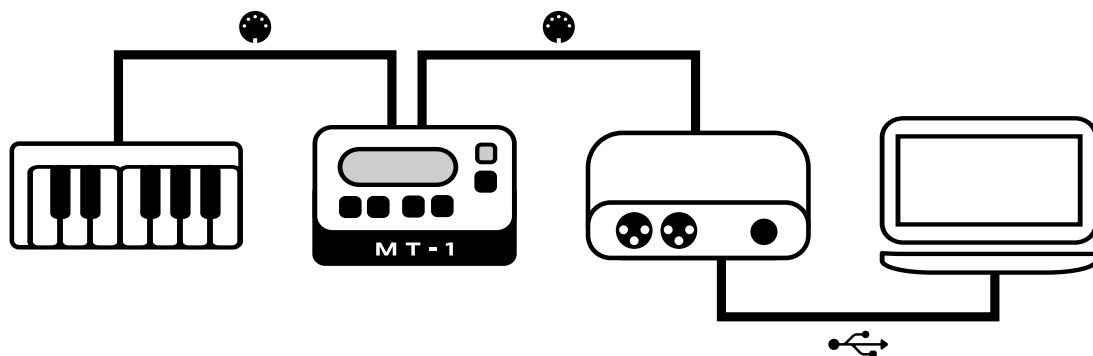
6.3 MIDI controller → MT-1 → PC

MT-1 has built in support for sending MIDI data over USB. After you connect it to the PC it will be listed in the OS as any other MIDI controller.
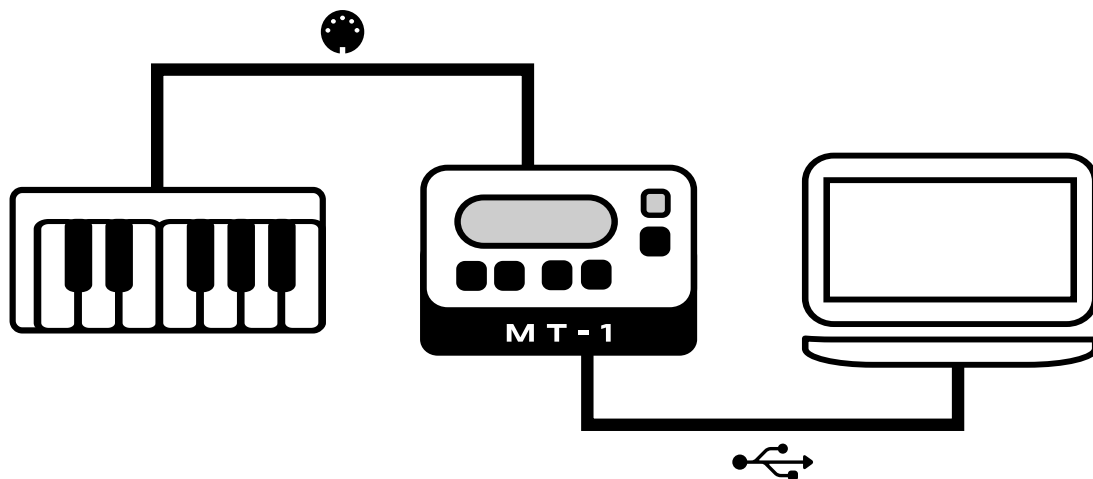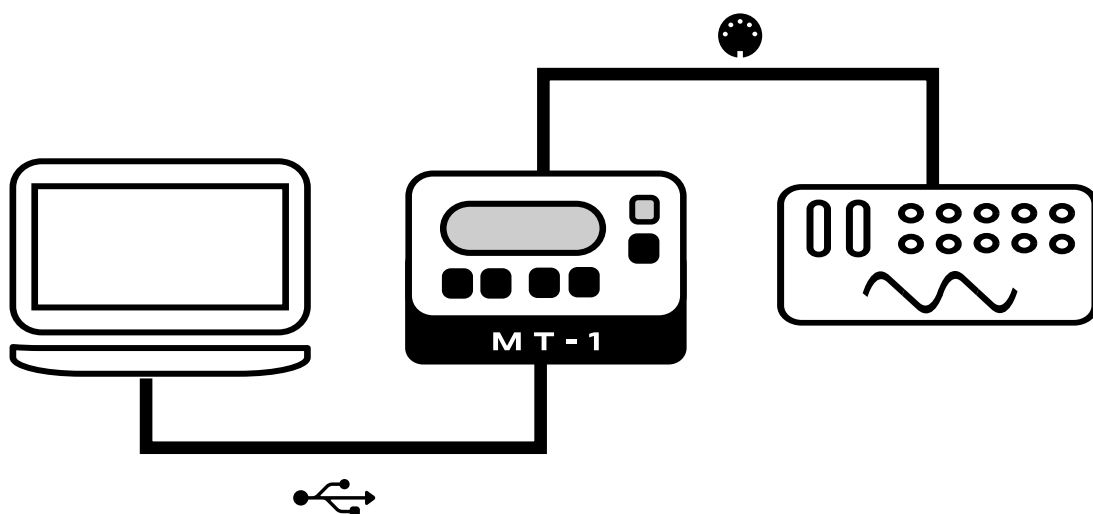
6.4 MIDI controller → MT-1 → audio/MIDI interface → PC

Although MT-1 can send MIDI over USB directly it can be also connected to the PC with an audio/MIDI interface using MIDI OUT port.
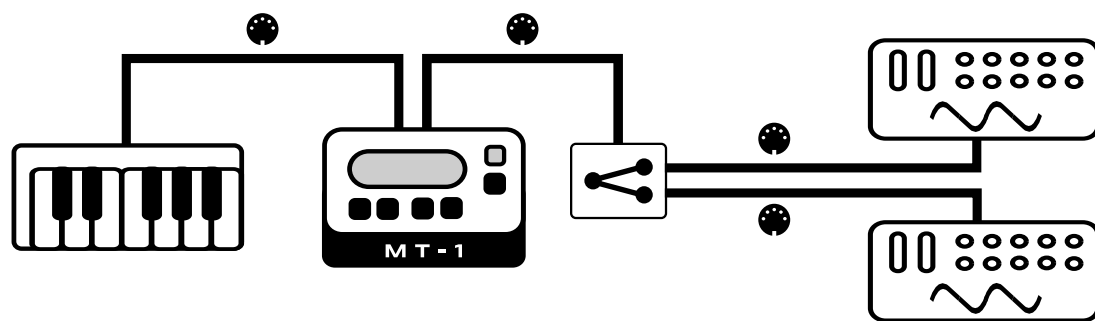
6.5 PC → MT-1 → synth

MT-1 can accept MIDI data over USB and send it further out using MIDI OUT port

6.6 Splitting MT-1 signal

MIDI signal going out from MT-1 can be split using MIDI splitter so more than one synthesizer can be controlled using the same settings. Synthesizers need to have either same or different MIDI IN channels

selected for listening.

7 Predefined scales

Major	Minor	H. Minor	Penta Maj.
Penta Min.	Blues	Dorian	Phrygian
Lydian	Mixolydian	Locrian	Chromatic
Fifths	Octaves	Whole Tone	Arabian
Augmented	Chinese	Enigmatic	Egyptian
Hindu	Japanese	Oriental	Persian
Empty1	Empty2	Empty3	Empty4
Empty5	Empty6	Empty7	Empty8