AMT Electronics

FS-2MIDI
Footswitch with MIDI interface
User's Manual

www.amtelectronics.com

Safety rules

CAUTION! The unit contains no user-serviceable parts. Only qualified professionals can carry out repair of the device.
WARNING! To avoid malfunctions, the device must not be exposed to rain or moisture. The device interior must not be exposed to water or other liquid. Do not place containers filled with liquids, such as vases, etc. on top of the device.

⚠️ This symbol indicates important information about the operation of the device and its servicing as reflected in the accompanying documentation.

Please read the instruction manual carefully.
1. Keep the instruction manual at hand.
2. Please pay attention to the warning signs.
3. Do not forget to follow all the instructions contained in the manual.
4. Before cleaning the device unplug it from the power adapter. Use only dry cloth to clean the device.
5. Do not place the device near heat sources; avoid direct sunlight.
6. Lay the mains cord in such a way that it is not stepped upon. Make sure it is not in contact with sharp angles etc. If the mains plug or the socket of the adapter is used to switch the device off, they must be easily accessible.
7. Use only auxiliary devices and accessories recommended by the manufacturer.
8. Disconnect the device from the power adapter (when using power adapter) during thunderstorm.
9. All works, related to the device repair must be carried out only by qualified service personnel.
10. WARNING! All service instructions are intended exclusively for qualified personnel. Do not carry out any repairs not described in the instruction manual. The repair works must be carried out only by qualified specialists.

Contents

AMT Electronics

IMPORTANT INSTRUCTIONS!

THE FAILURE TO OBSERVE THE FOLLOWING INSTRUCTIONS MIGHT RESULT IN YOUR DEVICE DAMAGE. THE GUARANTEE IS VOID IF THESE INSTRUCTIONS ARE NOT FOLLOWED.

➢ After transportation or storage of the device under low temperatures keep the device inside its original packaging under the room temperature for AT LEAST 2 HOURS before using it!

➢ To connect FS-2MIDI footswitch (further on FS-2MIDI) to other devices use exclusively the cables intended for such connections.

➢ DO NOT use other types of cables e.g. speaker cables and so on.

CONNECTION of FS-2MIDI to power adapter:

➢ The connection is to be made ONLY AFTER all other connections have been completed!

➢ Before connecting FS-2MIDI to the power adapter make sure that the housing, the cable and the mains plug of the power adapter are intact: no cuts, cracks, dents etc. and are in operative condition.

➢ In order to connect FS-2MIDI to the power adapter first insert the power adapter low-voltage connector to the corresponding socket on the rear panel of FS_2MIDI and then insert the power adapter's plug into the mains.

DISCONNECTION of FS-2MIDI from power adapter:

➢ To disconnect FS-2MIDI from the power adapter first disconnect the power adapter's plug from the mains and then disconnect its low-voltage connector from the socket on the rear panel of the device.

COMPLETE SET

The complete set includes:

1.	FS-2MIDI	1
2.	Instruction manual	1
3.	Packaging box	1
4.	Warranty card	1

INTRODUCTION

AMT FS-2MIDI is designed to be used both in studio and during live performances.

AMT FS-2MIDI is a 2-button footswitch capable of switch control via MIDI-interface.

With FS-2MIDI you can combine devices with standard footswitch-controlled connectors and almost all modern devices having MIDI-interface into a single complex in which the required presets or channels switching for all devices will be carried out by a push of a button.

FS-2MIDI allows:

- channels switching of external devices having corresponding control connector by means of a footswitch or MIDI-control commands.
- managing parameters of external devices with a MIDI-interface, depending on the current state of the device.

FS-2MIDI Features:

✓ Operating MIDI-devices via one of the 16 MIDI-channels (user adjustable);

✓ User-defined MIDI-command type: Control Change (CC) or Program Change (PC);

✓ CC or PC command adjustment for each device state from 0 to 127;

✓ 3 operational modes;

✓ Informative display;

✓ All parameters and adjustments as well as the device state are kept in the nonvolatile memory of the device and are immediately restored when the device is switched on;

✓ Additional connector for switching some of the AMT Electronics-made pedals, allowing to use the device as a MIDI-converter;

✓ Compact and lightweight.

⚠ **CAUTION! AMT FS-2MIDI like any other top class device is very demanding when it comes to the power source quality. We insist that you use the power adapter corresponding to the necessary quality requirements (recommended: AC/DC Adapter SA09DC-9V 1.11A or AC/DC Adapter SA12DC-12V 1.25A).**

Before you start

To ensure safe transportation the unit was carefully packed at the manufacturing facility. However, if the packaging box is damaged, you should immediately inspect the unit visually for the lack of external damage.

➢ **If you detect any damages, please DO NOT send the device to the manufacturer's address, but notify the seller or transportation company, otherwise you'll lose your right to compensation.**

➢ **In order to avoid damages during storage or transportation please use the original packaging at all times.**

➢ **Do not allow children to play with the device or the packaging.**

➢ **Please recycle all packaging materials to avoid any harm to environment.**

➢ **To avoid the device overheating provide sufficient air circulation around it. Do not cover it and don't place it close to heat-emitting sources.**

➢ **Using the device near powerful radio transmitters and high frequency sources might result in MIDI-interface malfunctioning. If this is the case, increase the distance between the device and transmitter and use shielded cables for all connections.**

SPECIFICATIONS

Output FSW 1&2 OUT

Max resistance of relay contacts	0.1 Ω
Max current via contacts	1 A

MIDI interface

MIDI channels	1-16
Control Change commands	0-127
Program Change commands	0-127

Power supply

Voltage	9-12 VDC
Current consumption	0.12A
Power adapter (option)	Recommended:
	AC/DC Adapter SA09DC-9V 1.11A
	AC/DC Adapter SA12DC-12V 1.25A
Voltage	9-12 VDC

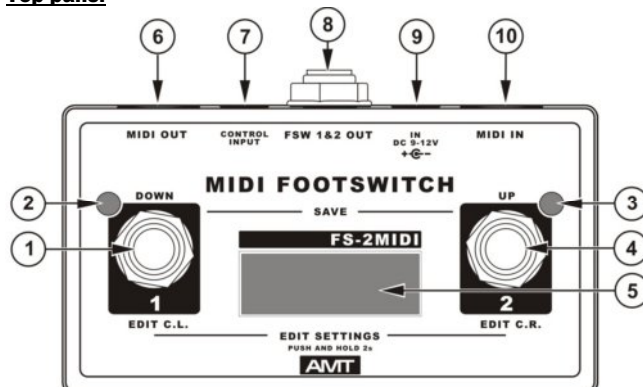**Dimensions / Weight**

NET dimensions (WxHxD).	111x52x67 mm
NET weight	0.21 kg
Overall dimensions (WxHxD).	Approx. 125x83x103mm
GROSS weight	Approx. 0.3 kg

⚠ **Use only auxiliary devices and accessories recommended by the manufacturer.**

CONTROLS

Top panel

1. **1 / DOWN / EDIT C.L.** – footswitch left button used for **TIP-SLEEVE** contacts switching control in **FSW 1&2 OUT** connector in main mode. In parameter mode adjustment – the adjustable parameter decrease.
2. Indicator of closed contacts **TIP-SLEEVE** in **FSW 1&2 OUT connector**.
3. Indicator of closed contacts **RING-SLEEVE** in **FSW 1&2 OUT connector**.
4. **2 / UP / EDIT C.R.** – footswitch right button used for **RING-SLEEVE** contacts switching control in **FSW 1&2 OUT** connector in man mode. In parameter adjustment mode – adjustable parameter increase.
5. Indicator.
6. **MIDI OUT** – device MIDI-interface output.
7. **CONTROL INPUT** – input connector for switching AMT-made devices equipped with a corresponding connector.
8. **FSW 1&2 OUT** –channels control output for the devices equipped with control connectors (connection by means of a 3-wire cable tipped with 6.3 mm stereo jacks).
9. **IN DC 9-12V** – power adapter connector.
10. **MIDI IN** – device MIDI-interface input.

Only for qualified personnel.

There are no user-serviceable parts inside the device. The device must be repaired only by qualified specialists.

BASIC OPERTION OF AMT FS-2MIDI

Switching and adjustment of the device is done by using the two buttons of the footswitch. There are several types of button pressings:

- short pressing of a button (button holding time must not exceed 1.5 seconds) is used to quickly change the current state in main mode, or for settings change in the setup mode;

- simultaneous short pressing of two buttons (buttons holding time must not exceed 1.5 seconds) is used to confirm the data entered or move to the next parameter in setup mode;

- long pressing of a button (for over 1.5 seconds) in the main mode is used to enter command setup assigned to the button; in setting mode it is used for fast scrolling of parameter values;

- simultaneous long pressing of both buttons (for over 1.5 seconds) in main mode - entrance to the device modes setting.

ADJUSTABLE PARAMETERS

The device is distinguished by flexible adjustments, allowing the user to make the most of his equipment. Basic settings are listed below (algorithms are given in the appeidx):

1. A MIDI-channel number (from 1 to 16) allows you to configure MIDI channel, which will send and receive MIDI-messages.

2. Command type: CC (Control Change) or PC (Program Change). The user may, at its discretion, depending on his convenience or the used MIDI-equipment change the type of control command. This device will ignore other incoming commands.

3. Mode (OP.2c, OP.3c, OP.4c - default).

AMT FS-2MIDI OPERATIONAL MODES

OP.4c mode is the basic mode when the device works like an ordinary 2-button footswitch, when each pressing of the left ("1", 1) or right ("2", 4) button results in FSW 1&2 OUT connector switching state change.

Working with MIDI in OP.4c mode:

CC commands, assigned to the corresponding button, with the parameter value from 0 to 63 will break contacts in the connector, but with the parameter values from 64 to 127 – close them. When you use the footswitch the output MIDI OUT will receive appropriate CC commands with the parameters 0 (off) and 127 (on). At the same time the display shows the number of CC command (c.XXX, where XXX is the number of command) and its parameter (on or off).

PC commands will perform actions in accordance with the settings - on and off by means of the left ("1") and right ("2") footswitch matching its PC command number. The user needs to make sure that the custom PC command is not repeated; otherwise it may lead to incorrect operation of the device when receiving external MIDI-commands. When you do switching by means of the footswitch the output connector «MIDI OUT» will receive the appropriate PC commands; the display shows the number of the sent PC command (P. XXX, where XXX is the command number).

OP.3c mode is a special mode of operation introduced for proper management of devices, which have 3 channels (for example, AMT SS-10), as well as the correct external pedals state conversion via Control Input connector (such as AMT BC-1, AMT SS -20 v2) into MIDI commands. The operating algorithm from the foot switches is not different from OP.4c mode, but the sent MIDI commands uniquely characterize the currently engaged channel (one of the three - typically, Clean, Drive High, Drive Low).

Working with MIDI in OP.3c mode:

CC commands assigned to the appropriate channel of the external device (Clean, Drive High, Drive Low) with the parameter value from 64 to 127 will set the state of the left ("1") and right (2) switches so that the device connected to the FSW 1 & 2 OUT connector switch to the assigned channel (Clean command switches off the left switch without changing the state of the right and Drive High or Drive Low command sets the left switch to active state, and the right one, respectively, in active or off state). Incoming CC commands with the parameter values from 0 to 63 are ignored. When use the foot switch, the output connector «MIDI OUT» will receive 2 commands: one CC command with "0" parameter value corresponding to the switched channel; the second CC command with "127" parameter value corresponding to the switched channel. The display shows the number of the second CC command (c.XXX, where XXX is command number) and its parameter value (on). When you switch the right ("2"), foot switch when the left ("2") is off (Clean mode), the transmission of commands does not occur, because actually there is no channel change in the switching device.

PC commands assigned to the appropriate channel of the external device (Clean, Drive High, Drive Low) will carry act in accordance with the algorithm similar to CC commands. The user needs to check that the custom PV command is not repeated; otherwise it may lead to incorrect operation of the device when receiving external MIDI commands. When you use the foot switch the output connector «MIDI OUT» will receive the appropriate PC commands and the display will show the number of PC command (P. XXX, where XXX is command number)

OP.2c mode - in this mode, FS-2MIDI has only 2 states: active left ("1") or right ("2") footswitch. Both switches can't be off or active. Pressing either footswitch does not change the device state and does not send any MIDI commands.

Working with MIDI OP.2c mode:

CC command assigned to the corresponding button, with the parameter value from 64 to 127 will activate the appropriate footswitch, while the other switch changes its state to off (according to the algorithm in this mode). Commands with a parameter value from 0 to 63 are ignored. When you use the foot switch, the output connector «MIDI OUT» will receive 2 commands: one CC command with the parameter value "0", corresponding to the off state of the switch, the second CC command with the parameter value "127", corresponding to the activated switch. The display shows the number of the second CC command (c.XXX, where XXX is command number) and its setting (on).

PC commands will act in accordance with the settings – switch to an active state the left ("1") or the right ("2") footswitch. The user needs to check that the custom PC command is not repeated; otherwise it may lead to incorrect operation of the device when receiving external MIDI commands. When you use the foot switch the output

connector «MIDI OUT» will receive appropriate PC commands; the display shows the number of PC command (P. XXX, where XXX is command number).

MIDI CC and PC commands for different modes are stored independently, allowing you to work without losing any previously configured commands in different modes.

CONTROL INPUT

CONTROL INPUT is used to connect several devices produced by AMT and equipped with the appropriate output connector CONTROL OUTPUT (for example, AMT BC-1, AMT SS-20 v2, etc.). Using AMT FS-2MIDI in OP.3c mode with 3-channel devices can accurately convert the state of the connected device (currently active channel) into MIDI commands. After connecting an external device it is necessary to synchronize its state with the FS-2MIDI by switching any channel of the external device (by pressing the foot switch on the front panel). This must be done, as FS-2MIDI monitors only the changes in the states of switches at the CONTROL INPUT.

FACTORY SETTINGS RESTORATION

To restore the factory settings turn the device on (insert the adapter into the mains socket) while pressing the right button. The display device will briefly show "- - - -", indicating successful factory settings restoration.

WARNING All user settings will be permanently lost!

CONNECTION TO EXTERNAL DEVICES

⚠ **WARNING! All connections must be made after the device has been switched off!**
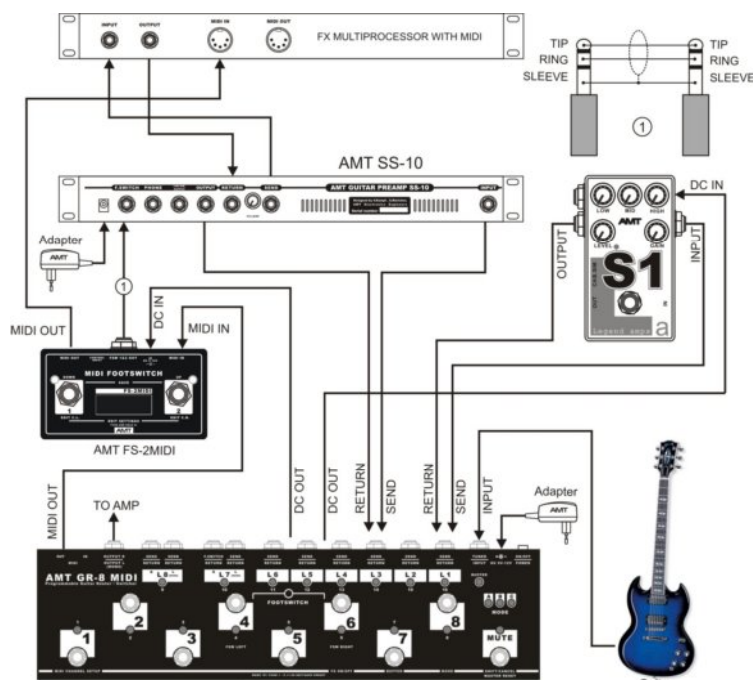
Possible connections with external devices:
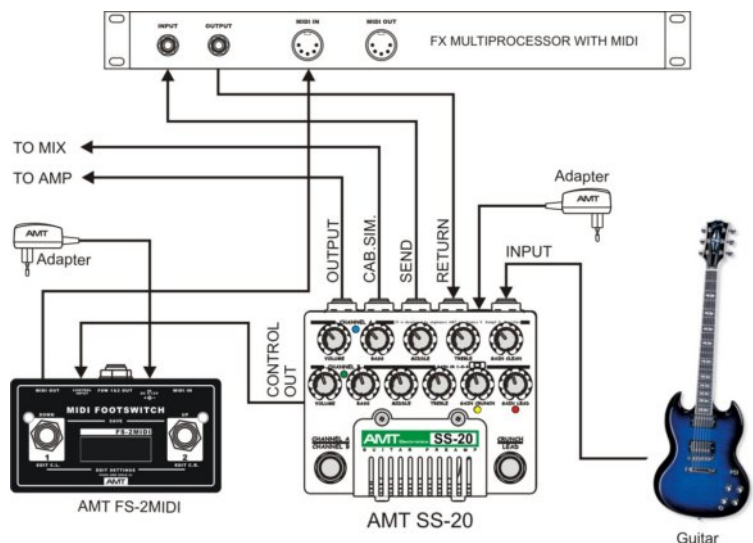
AMT Electronics reserves the right to make changes in the design and appearance of its product without impairing its consumer properties without preliminary notice. Specifications and product appearance may differ from those shown in this document.

ADJUSTMENTS ALGORITHMS OF FS-2MIDI

Device Modes Settings

Main Mode

`Ch.  1`

Press **L + R** >1.5 sec

MIDI channels 1-16 setting

`Ch.  1`

Press **R** to to increase number (after 16 follows 1)

`Ch.  2`

Press **L** to decrease number (after 1 follows 16)

`Ch. 16`

Adjusted channel indication

Press **L + R** to store setting

`Ch.  2` → `Ch.  2`

`Ch. 16` → `Ch. 16`

Blinking indicator confirms setting storage

Main mode

Press **L + R** without **changing** previous setting

Choosing MIDI command type cc – Control Change, Pc – Program Change

`cc.Pc`

Press **R** or **L** to change setting

`cc.Pc`

Adjusted parameter indication

Press **L + R** to store setting

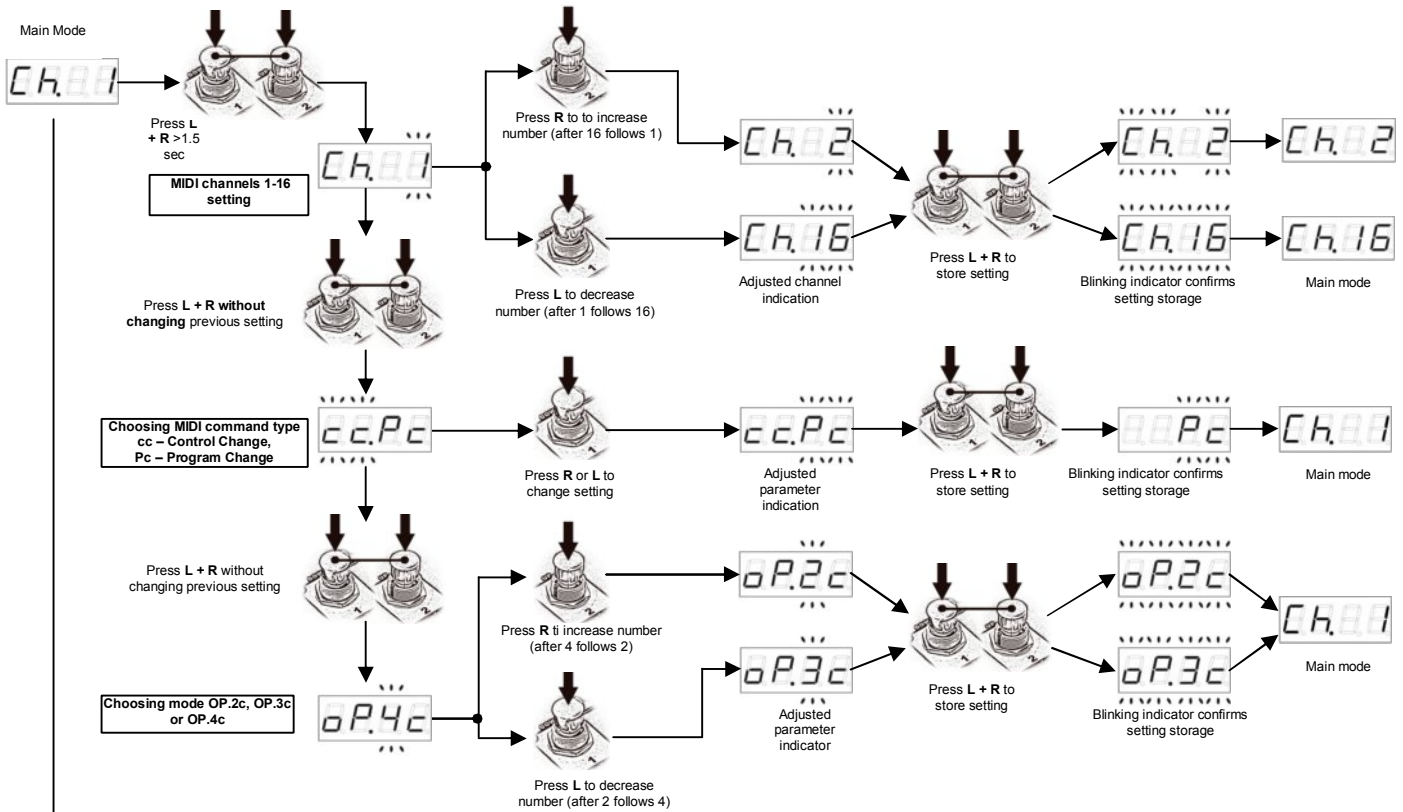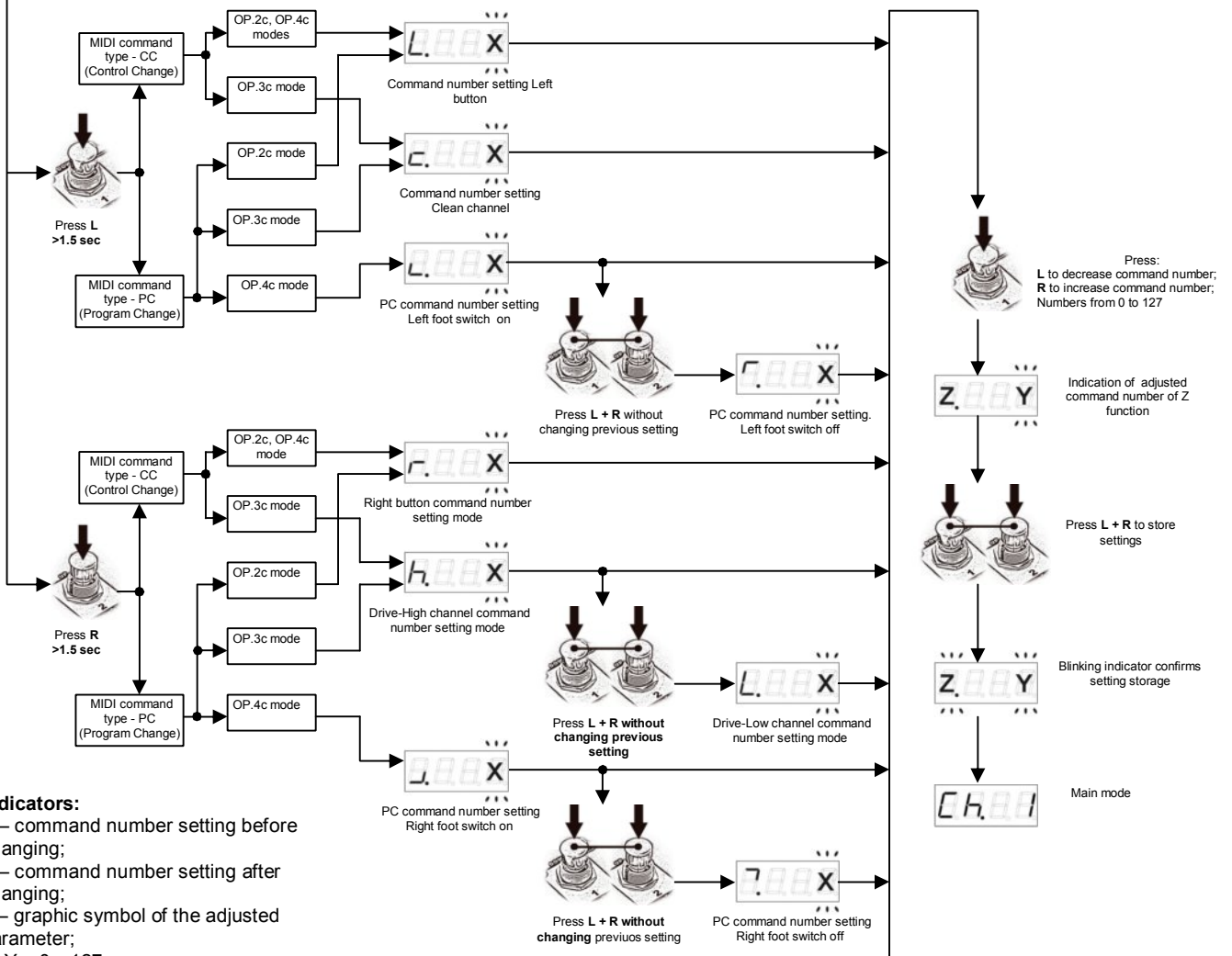`   Pc` → `Ch.  1`

Blinking indicator confirms setting storage

Main mode

Press **L + R** without changing previous setting

Choosing mode OP.2c, OP.3c or OP.4c

`oP.4c`

Press **R** ti increase number (after 4 follows 2)

`oP.2c`

Press **L** to decrease number (after 2 follows 4)

`oP.3c`

Adjusted parameter indicator

Press **L + R** to store setting

`oP.2c`

`oP.3c`

`Ch.  1`

Main mode

Blinking indicator confirms setting storage

Setting MIDI commands

MIDI command type - CC (Control Change)

OP.2c, OP.4c modes → `L.   X` Command number setting Left button

OP.3c mode

OP.2c mode → `c.   X` Command number setting Clean channel

OP.3c mode

Press **L** >1.5 sec

MIDI command type - PC (Program Change)

OP.4c mode → `L.   X` PC command number setting Left foot switch on

Press **L + R** without changing previous setting → `r.   X` PC command number setting. Left foot switch off

Press: **L** to decrease command number; **R** to increase command number; Numbers from 0 to 127

`Z.   Y` Indication of adjusted command number of Z function

Press **L + R** to store settings

MIDI command type - CC (Control Change)

OP.2c, OP.4c mode → `r.   X` Right button command number setting mode

OP.3c mode

OP.2c mode → `h.   X` Drive-High channel command number setting mode

OP.3c mode

Press **R** >1.5 sec

MIDI command type - PC (Program Change)

OP.4c mode → `L.   X` Drive-Low channel command number setting mode

Press **L + R** without changing previous setting

`Z.   Y` Blinking indicator confirms setting storage

`J.   X` PC command number setting Right foot switch on

Press **L + R** without **changing previous setting** → `r.   X` PC command number setting Right foot switch off

`Ch.  1` Main mode

Indicators:
X – command number setting before changing;
Y – command number setting after changing;
Z – graphic symbol of the adjusted parameter;
X, Y = 0…127

## What's new in hardware version 1.11

Congratulations on becoming an owner of FS-2MIDI with new improved hardware version 1.11! If compared with the previous version the pedal received new functional abilities in term of external devices control by means of MIDI protocol.

When the pedal is on you'll see the following:

`FS-2` → `1.11`
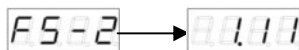
New mode named `oP.1c` allows to flip up/down Program Change commands within 0…127 range (in command mode `Pc`) or parameters of any chosen Control Change command (in command type mode `cc.`). The switching in FSW 1&2 OUT connector is the same as before entering `oP.1c` mode and can't be changed because both footswitches are used for flipping through corresponding commands. It's also good to remember that the device does not receive MIDI commands in this mode and only reroutes received signals to MIDI OUT.

Swtching and operation in `oP.1c` mode

To engage `oP.1c` mode do the following:
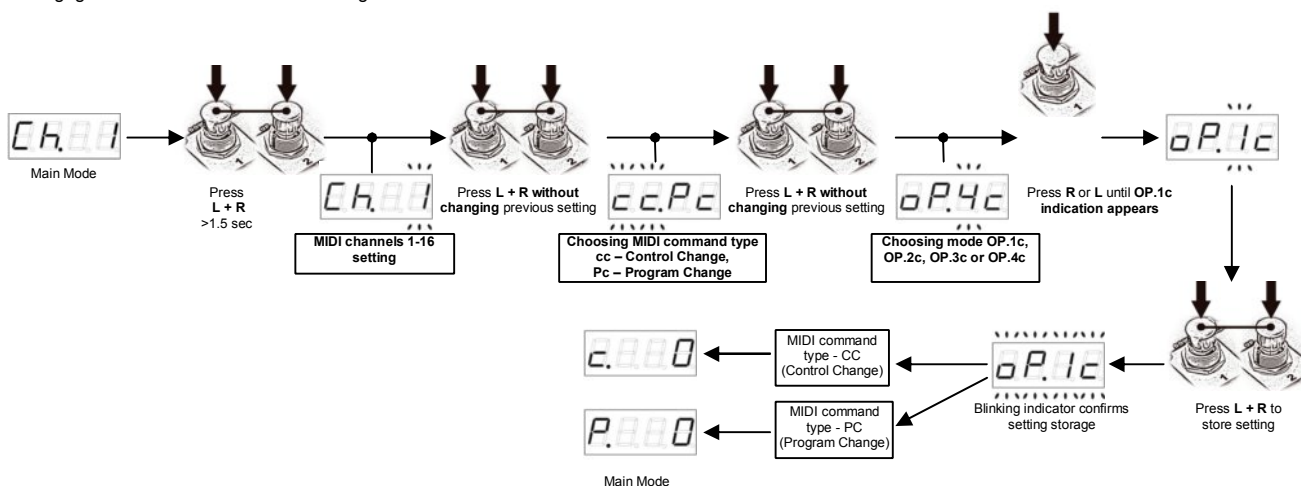
Another button **L** pressing will result in Program Change command transfer via MIDI interface (in command type mode `Pc`) or parameter of chosen Control Change command (in command type mode `cc.`) decreased by 1 (after minimum value of 0 goes 127).

Pressing **R** will result in Program Change command via MIDI interface (in command type mode `Pc`) or parameter of chosen Control Change command (in command type mode `cc.`) increased by 1 (after maximum value of 127 goes 0).

Pressing **R** or **L** for over 1.5 s engages auto repeat used for quick flipping through commands.

Selection of Control Change command to be sent in `oP.1c` mode (at chosen command type `cc.`)
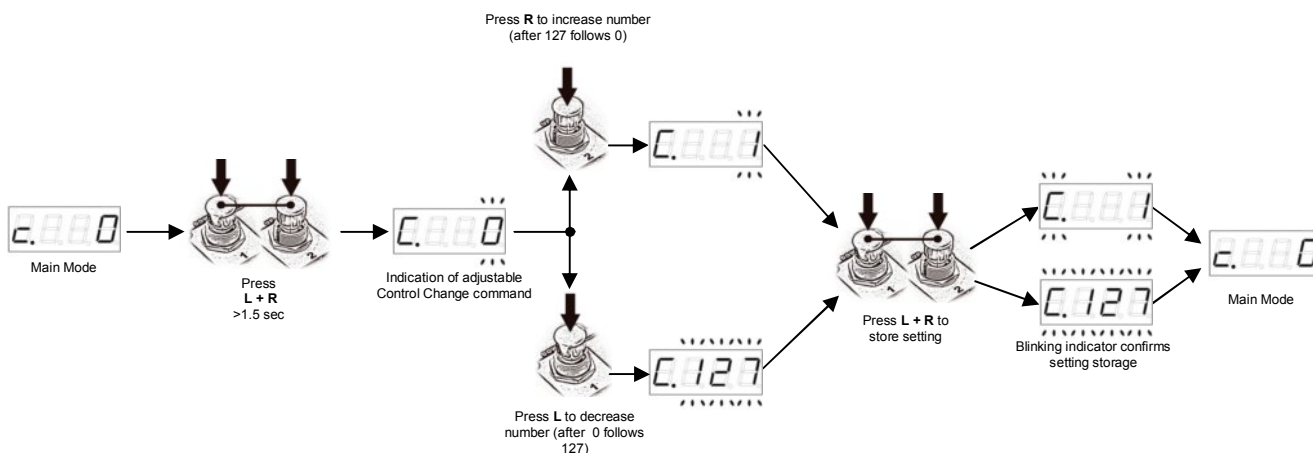
In order to enter the general MIDI channel adjustment menu, command type and operation mode without changing adjustable Control Change command press both **L**+**R** simultaneously.