Telonics Pro Audio

Handy Patch – MC100

Hand operated MIDI Controller

User's Manual

Revision 1

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Introduction

Thank you for purchasing the Handy Patch MIDI Controller. It is our sincere hope that this unit will assist you towards achieving the very best steel guitar sound possible, enhance your performance and operate trouble free for many years.

Before using the Handy Patch we would highly recommend you read the manual to gain an understanding of how the product functions.

The Handy Patch was designed with Steel players, the Telonics TCA-500B Combo and the TC Electronic G-Major 2 Effects Processor in mind; however, it can be used as a MIDI controller for the Lexicon MX200 or any other MIDI controllable effects processor.

Front Panel Controls &

Connections Overview

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MC100

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Normal Operation

1 – **UP button**

When momentarily pushed the Preset number is increased by one; MIDI Program Change and Control Change messages are output to select the effect Preset number and set the effect volume level. If the Preset number is 'P99' when the button is pushed the display resets back to 'P01'. When the button is held for more than 1 second the Preset number rapidly scrolls forward until the button is released; MIDI messages are output when the button is released.

2 – **DOWN button**

When momentarily pushed the Preset number is decreased by one; MIDI Program Change and Control Change messages are output to select the effect Preset number and set the effect volume level. If the Preset number is 'P01' when the button is pushed the display rolls back to 'P99'. When the button is held for more than 1 second the Preset number rapidly scrolls back until the button is released; MIDI messages are output when the button is released.

3 – **FAST 1 button**

When pushed the first time it selects a specific Preset (default 10); MIDI Program Change and Control Change messages are output. When pushed a second time it recalls the Preset displayed before the Fast 1 button was pressed; MIDI messages to recall the original Preset are output.

Fast buttons are useful for selecting Presets that might be needed for a short period in a song, for example the T-Bro effect.

4 – **FAST 2 button**

When pushed the first time it selects a specific Preset (default 25); MIDI Program Change and Control Change messages are output. When pushed a second time it recalls the Preset displayed before the Fast 2 button was pressed; MIDI messages to recall the original Preset are output.

5 – **FAST 3 footswitch**

A standard ¼" mono jack socket that allows a momentary footswitch to be connected to the Handy Patch. When operated the first time it selects a specific Preset (default 30);

MIDI Program Change and Control Change messages are output. When operated a second time it recalls the Preset displayed before the Fast 3 footswitch was operated; MIDI messages to recall the original Preset are output.

6 – CC Wheel / button

The CC Wheel (knob) has no rotational limits and also incorporates a push-button. The Control Change value can be read or stored by pushing the Wheel button and the value adjusted by rotating it. The 7-Display text below describes how the Wheel affects the display and the MIDI output.

Technical Note: References to Control Change messages in the Normal Operation section of this manual describe how the Handy Patch CC Wheel functions by default when connected to a TC Electronic G-Major 2 Effects Processor. When used with an alternative effects processor the capability of the unit to interpret Control Change messages should be checked. By default the CC Wheel transmits messages on Control Change Controller Number 7 (volume), this allows the effect level to be controlled. The output volume of the Lexicon MX200 Effects Processor cannot be changed using Control Change Controller Number 7. The MX200 can interpret other Control Change Controller Number's. Refer to the MX200 User's Manual.

7 – DISPLAY

In Normal Operation the display has two functions:

(i) Preset Display
Display's the current Preset Number – When the UP, DOWN, FAST buttons or FAST footswitch is operated the display changes to the Preset display. The Preset display is indicated by a '**P**' letter displayed in the third digit. The 'Front Panel Controls & Connections Overview' picture shows the Preset P01 has been selected.

(ii) Control Change Display
Displays the Control Change value associated with the selected Preset – When the CC Wheel button is pressed the letter 'P' disappears telling the user the Preset display is no longer indicated and the current Control Change value is shown. Alternatively, if the CC Wheel is rotated the 'P' disappears and the current Control Change value is initially indicated. As the Wheel is rotated further the value can be increased or decreased. Note the minimum value is zero and the maximum value is 127.

Important – As the CC Wheel is moved Control Change messages are sent to the effects unit in real time; allowing the player to control the effect level during live performance.

Due to the limit of values that can be sent within a short time, it might be noted that fast movements of the Wheel are not followed by the display value.

Control Change value not stored indicator – (decimal point)

When the Control Change display is selected and the Control Change value is not the same as the stored value a small decimal point is lit to the right of the first digit. The current Control Change value can be stored by pressing the CC Wheel. The decimal point should turn off when the stored value and the indicated value are the same.

8 – DISPLAY BRIGHTNESS button (latching)

This button allows the brightness of the display to be selected. Pressed IN, the display is dimmed; typically used on darker stages. Button OUT, the display is set to maximum brightness; typically used in sunny conditions.

9 – MIDI OUT socket

The Handy Patch MIDI **Out** socket can be connected to an effects processor MIDI **In** socket using a standard 5 Pin MIDI Lead. MIDI signals generated can be used by the effects processor to select Presets using MIDI Program Change messages and change parameters in the effects processor using MIDI Control Change messages.

The MIDI Out socket of the Handy Patch is not only compatible with a standard MIDI lead it will also accept a custom 7 Pin MIDI lead that allows power to be carried along the MIDI cable. A 7 Pin MIDI lead is available to interface the Handy Patch with the Telonics TCA-500 Combo See Figs 2 and 3.

When the Handy Patch is used with the Telonics TCA-500 Combo Control Change message are typically used to control the effects level.

10 – DC Power socket

This socket allows the Handy Patch to be powered up using a Telonics PS-1 or PS-2 regulated 24VDC PSU. These are available as an optional accessory if a standard MIDI lead is used to control the effects processor – See Fig 1.

If the 7 Pin MIDI lead is used with the Telonics TCA-500B Combo power is picked up via the MIDI lead and no additional power supply is necessary – See Fig 2.

If the 7 Pin MIDI lead is used to power the Handy Patch the DC Power Socket may be used to send power to a Telonics FP-100 volume pedal – See Fig 2.

Note : Combo models TCA-500B onwards have a back panel connector that provides power to the Handy Patch. Earlier TCA-500 and TCA-500A Combo's were not manufactured as standard with this connector fitted. This connector may be retrofitted to earlier models by the manufacturer.

11 – **Mounting Adaptor**

Attachment to the leg of a steel guitar or stand is provided by a ¼" UNC Mounting Adaptor fitted to the bottom of the Handy Patch. An Attachment Bracket for a steel guitar can be fitted to this. These are available as an optional accessory.

Optional Accessories

Handy Patch to TCA-500B Combo 7 Pin MIDI Lead, length 5 metres – MC100/7PIN-LEAD1

FP-100 Pedal power lead, 4 foot – WI008610-004

Attachment Bracket for a Steel Guitar -

Footswitch -

PS-2 Power Supply – PS008402-001

Basic Setup & Connections

Fig 1 - Handy Patch controlling an Effects Processor

Standard MIDI

Foot Switch

Effects Processor

Power to
Handy Patch

PS-2

midi controller
Handy Patch
TELONICS

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MC100
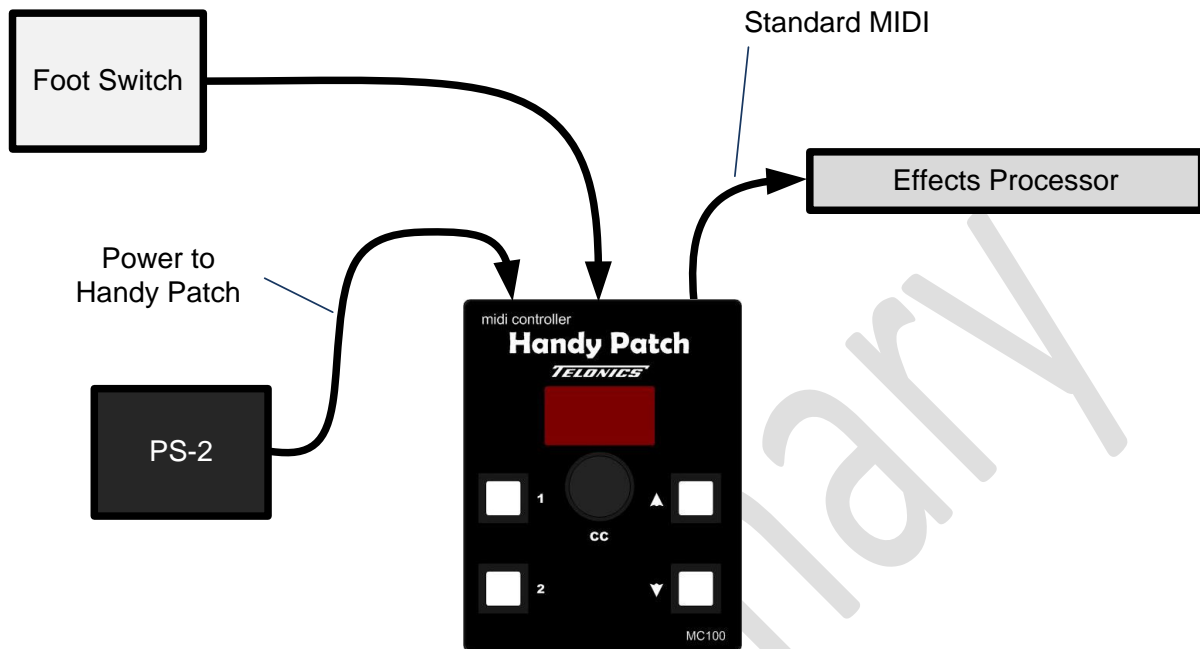
Fig 2 - Handy Patch used with the TCA-500B Combo and FP-100 Volume Pedal

MIDI Out + Power In (7 PIN)

Foot Switch

Power to Pedal

FP-100
Volume Pedal

TCA-500B
Combo
Amplifier

midi controller
Handy Patch
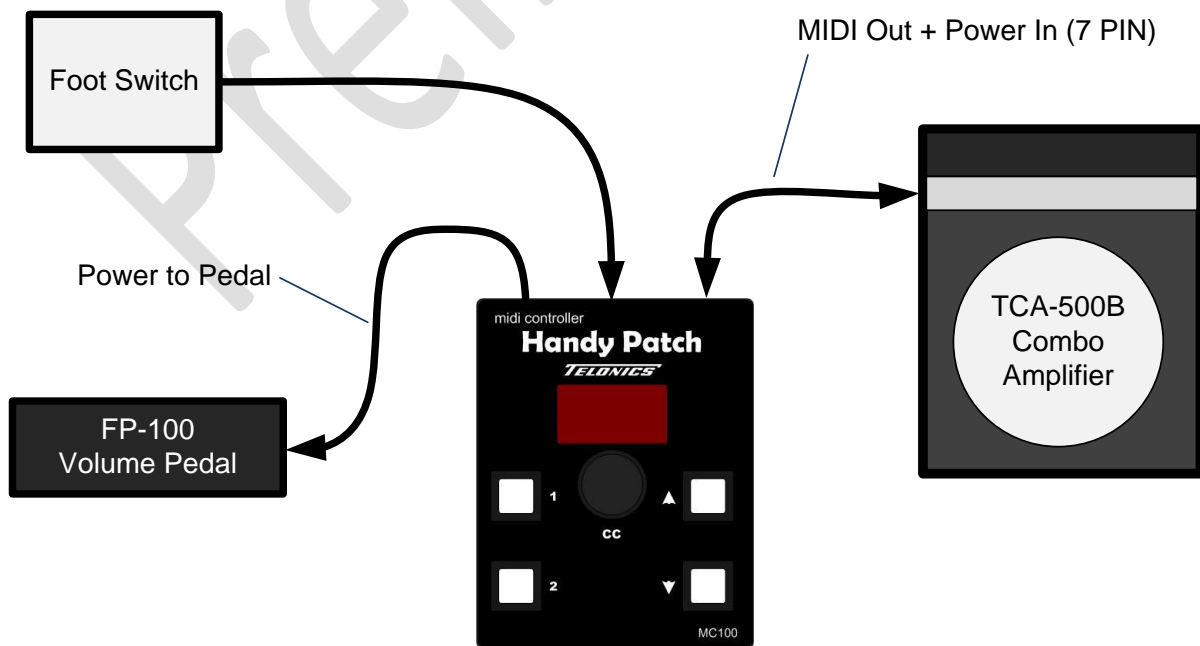*TELONICS*

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Fig 3 - TCA-500 Combo back panel connection

The picture below shows the connections to the Combo using the Handy Patch 7 Pin MIDI lead.
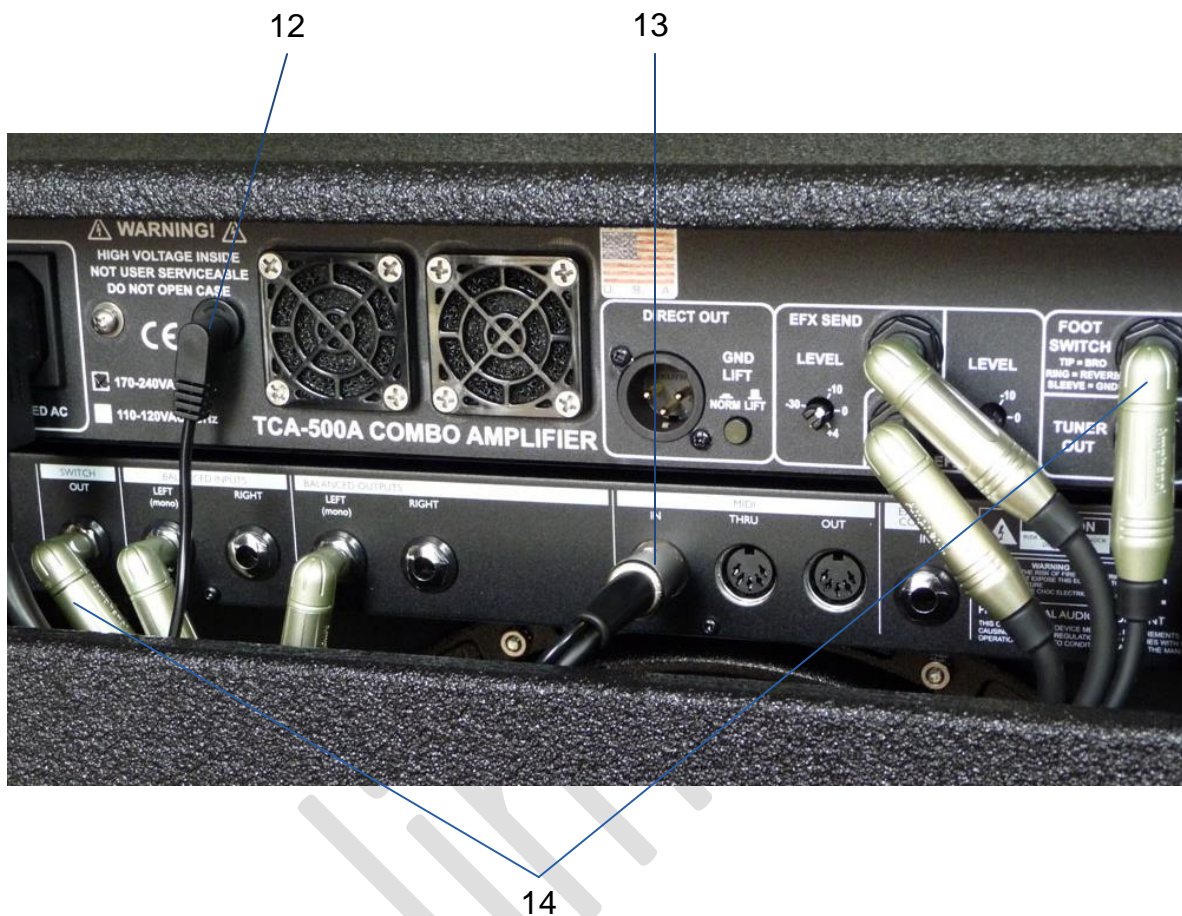
12 – DC Power output socket

13 – MIDI In socket of the TC Electronic G-Major 2 Effects Processor.

14 – Stereo Jack to Jack Lead used to switch ON/OFF the Combo T-Bro and Internal Reverb.

Memorised values

The Preset number is stored whenever a button is pressed. If power is disconnected and then reapplied the last Preset number selected will be recalled and a MIDI message output to ensure the Handy Patch and effects processor Preset numbers are synchronised.

The Control Change value attached to each Preset is recalled whenever a new Preset is selected. The Control Change value can be read, changed and stored using the CC Wheel and push-button.

Setup Mode – *Advanced Users*

Accessing Setup Mode

To enter Setup Mode – With no power applied - Press and hold the Fast 1 & 2 buttons – Apply power – The software version number should be displayed.

Software Version

Software released August 2015 - Version 1.10

Setup Menu Controls

The **UP** or **Down** button is used to enter the **Menu Selector**
- The display should change to **n.01**

The **Up & Down** buttons can now be used to select the menu's n.01 to n.09

The **Fast 1** button now functions as the **Enter Menu** button. When entering the menu the current value is displayed.

Rotating the **CC Wheel** allows the selected menu item to be changed. The decimal point to the right of the first digit indicates the value has been changed and not saved. Note the CC Wheel push-button has no function.

Pressing the **Up** or **Down** button returns to the Menu Selector.

When the Enter Menu button has been pressed and the CC Wheel has been used to select a different value, the **Fast 2** button now functions as the **Save** button. Note the decimal point to the right of the first digit should be lit if the value has been changed – Pressing the Save button will turn off the decimal point.

Menu Options

The following options can be selected and saved:

Fast Preset selection

Any Preset can be assigned to the Fast 1 & 2 buttons and the Fast 3 footswitch. The following menus are used to change the default values:

n.01 – The Fast 1 button Preset number ……….. Setting range P01 to P99 ….. Default P10

n.02 – The Fast 2 button Preset number ……….. Setting range P01 to P99 ….. Default P25

n.03 – The Fast 3 footswitch Preset number …. Setting range P01 to P99 ….. Default P30

MIDI Channel selection

The Handy Patch can be set to transmit on any MIDI Channel. The following menu is used to change the default value:

n.04 – General MIDI Channel Number ……………. Setting range 1 to 16 ………… Default 1

CC Wheel & Control Change Controller Number selection

The Control Change Controller Number (default value 7) assigned to the CC Wheel can be configured in a number of ways. The following table describes how the CCCNC value changes the way Control Change messages are assigned to Preset numbers. The following menu is used to change the default CCCNC value:

n.05 – Control Change Controller Number Configuration (CCCNC) …. Setting range 0 to 3

CCCNC	Control Change function	Used
0	Control Change message are disabled - Only MIDI Program Change messages will be output.	1 If the effects processor is confused by Control Change messages. 2 If you do not wish to use the CC Wheel and would like to ensure the Preset number is always displayed.
1 (Default)	Control Change messages are enabled – All Presets use the Control Change Controller Number selected in menu **n.06**	1 If the CC Wheel is globally required to change effect output volume. 2 If the same CC Wheel function is required for all Presets.
2	Control Change messages are enabled - Presets in the range **P01 to P49** use the Control Change Controller Number 1 selected in menu **n.06** - Presets in the range **P50 to P74** use the Control Change Controller Number 2 selected in menu **n.07** - Presets in the range **P75 to P99** use the Control Change Controller Number 3 selected in menu **n.08**	1 If the CC Wheel is required to control multiple parameters. For example, it might be desirable to have a Preset where the CC Wheel controls delay time. Control Change 12 could be mapped to control this parameter. 2 The G-Major 2 has a very powerful External Control/Modifier facility that allows multiple parameters to be modified by a single control.
3	MIDI Program Change messages are **disabled** – Only Control Change Messages are output. Uses the Preset range and menu's as detailed in CCCNC 2. Note: Every Preset has a stored Control Change value that is recalled and output when a new Preset is selected.	1 If a player has favourite Preset that doesn't need switching, but specific parameter values need recalling and changing during a performance. 2 If a specific parameter value needs changing in set list order.

n.06 – Control Change Controller Number 1 …. Setting range 0 to 127 …. Default 7

n.07 – Control Change Controller Number 2 …. Setting range 0 to 127 …. Default 12

n.08 – Control Change Controller Number 3 …. Setting range 0 to 127 …. Default 13

Reset and Recall Defaults

The Handy Patch can be factory reset by using this menu. This procedure resets all the other setup menu's to their default values and sets all the Control Change values assigned to Presets numbers to 127.

Warning : Your settings will be lost and cannot be recovered using this procedure.

n.09 – Reset and recall defaults ……………………. Setting range 0 to 127

Procedure:

1. The Handy Patch should be in **Setup Mode** – Power applied with Fast 1 & 2 buttons pressed.
2. Use the **Up** button to select menu **n.09**
3. Press the **Fast 1** button – number **0** should be displayed.
4. Use the CC Wheel to select the number **100**
5. To factory reset the unit press the **Fast 2** button
6. The display returns to **0** to indicate the unit has been factory reset.
7. Disconnect power to exit Setup Mode.

Appendix

MIDI Implementation Chart

Handy Patch MIDI Controller – Aug 2015

Function		Transmitted	Recognised	Remarks
Basic Channel	Default	**1**	**X**	
	Changed	**1-16**	**X**	
Mode	Default			
	Messages	**X**	**X**	
	Altered			
Note Number		**X**	**X**	
	True Voice	**X**	**X**	
Velocity	Note ON	**X**	**X**	
	Note OFF	**X**	**X**	
After Touch	Keys	**X**	**X**	
	Ch's	**X**	**X**	
Pitch Bend		**X**	**X**	
Control Change		**0 - 127**	**X**	
Program Change		**O**	**X**	
System Exclusive		**X**	**X**	
Common	Song Pos	**X**	**X**	
	Song Sel	**X**	**X**	
	Tune	**X**	**X**	
System real time	Clock	**X**	**X**	
	Commands	**X**	**X**	
Aux Messages	Local ON/OFF	**X**	**X**	
	All Notes OFF	**X**	**X**	
	Active Sense	**X**	**X**	
	Reset	**X**	**X**	

O : Yes
X : No

Technical Specification

Handy Patch MIDI Controller – Aug 2015

Inputs

Footswitch jack socket - Standard ¼" mono jack socket that allows a momentary footswitch to be connected.

Outputs

MIDI Out + Power In socket – DIN socket that allows a standard 5 Pin MIDI Lead or 7 Pin MIDI Lead to be connected; see 7 Pin MIDI Socket Pin-out drawing below.

Power

DC Power socket – Allows the unit to be powered using a Telonics PS-1 or PS-2 Power supply. When the powered by the MIDI lead a short link lead allows the FP-100 to be powered from the Handy Patch.

Supply current when used with a PS-1 or PS-2 24VDC power supply – 80mA max.
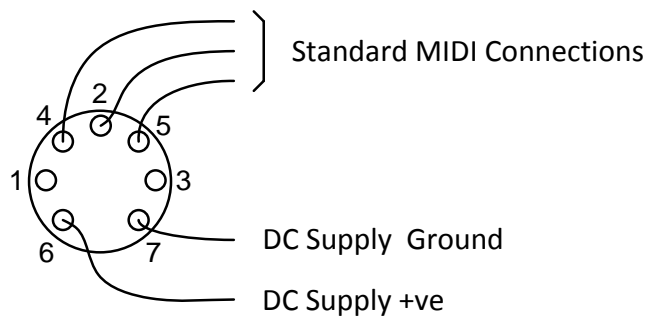
Size

128L x 95W x 55H (Millimetres) - Excludes cabling.

Weight

0.39kg (0.86lbs)

7 Pin MIDI Socket Pin-out

Handy Patch MIDI Controller – Aug 2015

What is the maximum MIDI Lead length?

The Handy Patch has been tested with the Rocktron 5/7-Pin MIDI Cable that is 9 metres (30 foot). Runs of 50 foot should be possible if high quality cable is used.

What type of power supply can be used to power the Handy Patch?

We would recommend using a Telonics PS-1 or PS-2 power supply. However, if you misplace the recommended supply, the Handy Patch can be powered from any **regulated** power supply that outputs between 9VDC and 24VDC rated at 100mA or more. The DC Power Socket connection isn't polarity sensitive and will operate with both positive (Telonics) and negative (Boss) centre pin supplies.

Important – The enclosure of the Handy Patch is connected to the outer sleeve of the DC Power Socket. Power fed into the DC Power Socket should not be used to power other equipment whilst supplying the Handy Patch.

Does the Handy Patch contain a battery?

No: The Handy Patch uses newer technology that doesn't need a battery to maintain memorised values.

Why is the maximum Control Change value 127?

MIDI message are based on 8 bit binary numbers. Control Change messages use 7 bits of an 8 bit number to define a value. With 7 bits numbers from 0 to 127 can be represented. Using the full range of Control Change numbers allows users to set values as accurately as possible.