# MIDI Solutions

*PROFESSIONAL SERIES*

# F8

**8-INPUT MIDI FOOTSWITCH CONTROLLER**

# OPERATING INSTRUCTIONS

## INTRODUCTION

Thank you for purchasing the MIDI Solutions F8 8-input MIDI Footswitch Controller.

The MIDI Solutions F8 can be programmed to generate a variety of MIDI messages in response to contact closures between the tip and sleeve of its eight 1/4" phone jack inputs. It is also possible to program the footswitch inputs to perform a variety of other functions, such as Rechannelize, Transpose, and Tap Tempo. All programmed settings are retained even after power is removed from the unit. The MIDI Solutions F8 is MIDI-powered and requires no batteries or power supply to operate.
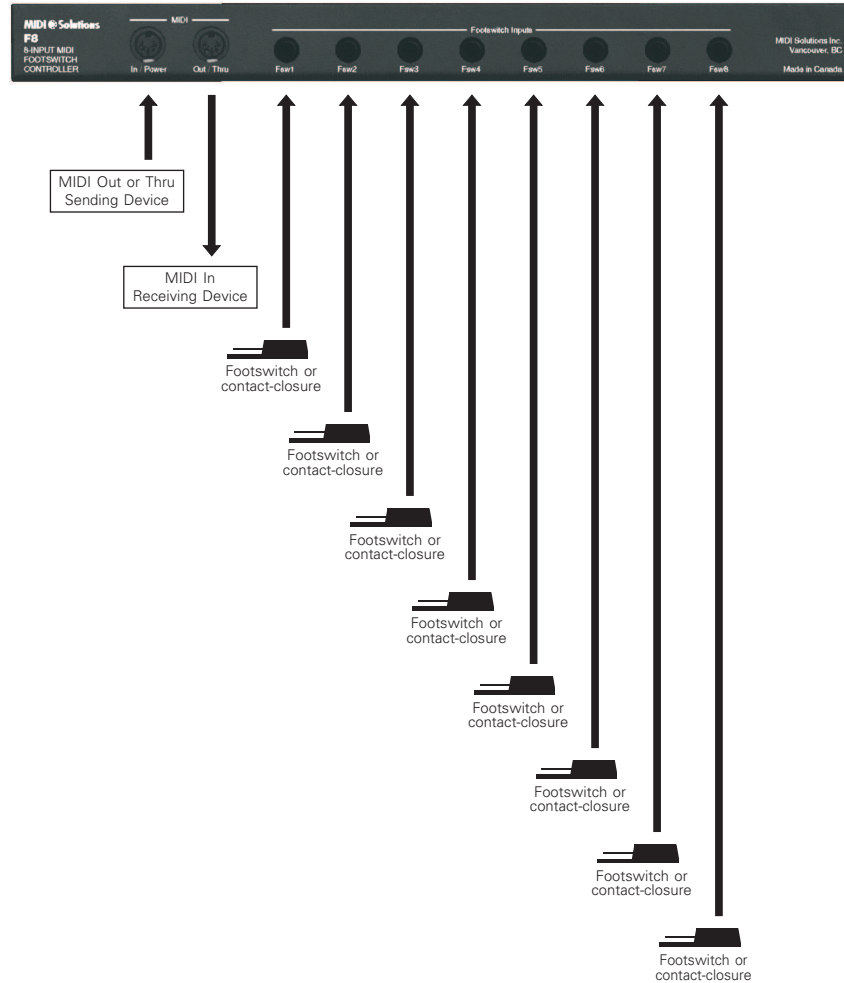


## CONNECTIONS

To program the F8 connect the MIDI Out from your MIDI interface to the MIDI **In** of the F8. The MIDI **Out** and footswitch inputs can be left disconnected during programming.

Once the F8 has been programmed it can be inserted wherever it is required in your MIDI setup. Connect the footswitches (or any contact closures from tip to sleeve of a 1/4" phone jack) to the F8's footswitch inputs (**Fsw1 - Fsw8**). Connect the MIDI Out or Thru of the sending device to the MIDI **In** of the F8. The F8 draws power from the device that is connected to its MIDI input, so even if the F8 does not need to receive MIDI messages from this device this connection is still required in order for the F8 to draw power (the F8's Echo parameter can be programmed to OFF to prevent any unwanted incoming MIDI messages from being echoed to the F8's MIDI Out). Connect the MIDI **Out** of the F8 to the MIDI In of the receiving MIDI device. It is recommended that the number of MIDI Solutions products powered by a single MIDI Out or Thru be limited to four.

## PROGRAMMING

The F8 is programmed by sending it MIDI System Exclusive programming commands from a computer with a MIDI interface. These commands are described on the MIDI Solutions website, however **the Programming Tools software creates these commands automatically (see www.midisolutions.com/support.htm).**

Upon receipt of a programming command, the F8's MIDI indicator LED flashes rapidly for about one second to indicate that the setting has been stored. Ensure that the LED completes its flashing after receiving a programming command before sending another programming command (the Programming Tools software automatically inserts these delays). Settings are retained after power is removed, and the unit can then be inserted wherever it is required in your MIDI setup.

## OPERATION

Ensure that the footswitches are connected to the F8 before it is powered up as their polarities are stored at this time (if auto-polarity is selected). The F8's MIDI Indicator LED will light as soon as the sending device is turned on, and flashes whenever MIDI data passes through the unit. Depressing the footswitches causes the F8 to perform its programmed functions.

## PROGRAMMING COMMANDS

### CLEAR SETTINGS

To clear all of the F8's settings, send it the following System Exclusive programming command:

▶ **F0 00 00 50 24 00 00 F7  (all values in Hexadecimal)**

It is recommended to send the Clear Settings command to the F8 prior to programming the unit to ensure that all previous settings are cleared.

### DEVICE PARAMETERS

The following Device Parameters are in effect regardless of the functions that each of the footswitch inputs have been programmed to perform.

**Echo:** When Echo is ON, all incoming MIDI messages received by the F8 are echoed to its MIDI output. When Echo is OFF, only the messages generated by the F8 are sent to its MIDI output.

**Send State on Power-up:** The F8 can be programmed to send the state of all footswitch inputs on power-up.

**Toggle:** When the Toggle parameter is OFF for a particular footswitch, the footswitch performs the *depress operation* when it is *depressed,* and the *release operation* when it is *released.* When Toggle is ON, the footswitch toggles between the *depress operation* and the *release operation* each time the footswitch is depressed (nothing is done on release of the footswitch).

**Footswitch Polarity:** When Auto Polarity is ON for a footswitch, the F8 determines the polarity of the footswitch based on its power-up state. When Auto Polarity is OFF, the polarity is forced according to the Polarity settings.

**Wait for Next Bar:** The F8 can wait until the beginning of the next bar to perform the footswitch action.

**Debounce Time:** The Debounce Time specifies the length of time after a footswitch changes state before a new change of state is allowed to occur.

To program these parameters, send the F8 the following System Exclusive programming commands:

▶ **F0 00 00 50 24 00 01 aa (bb) F7**     (**bb** is optional)

    **ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

    **aa** = 00: Echo OFF     **aa** = 01: Echo ON

    **bb** is optional, If **bb** = 01 the F8 will send the state of each footswitch on power-up.

▶ **F0 00 00 50 24 00 02 ii bb cc dd (ee) F7**      (**ee** is optional)

    **ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

    **bb** = 00: Toggle OFF     **bb** = 01: Toggle ON

    **cc** = 00: Auto Polarity OFF     **cc** = 01: Auto Polarity ON

    **dd** = 00: Normally OPEN polarity     **dd** = 01: Normally CLOSED polarity     (**dd** is ignored if **cc** = 01)

    **ee** is optional. If **ee** = 7F, the F8 waits for the beginning of the next bar to perform the footswitch action


▶ **F0 00 00 50 24 00 03 (00) tt F7**      (**00** is optional)

All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

    **tt** = Debounce time in ms

    **00** is optional, if included the above debounce time **tt** is doubled

    The clear settings command resets the debounce time to 50 ms


**Examples**

To program the F8 to echo incoming MIDI messages to the MIDI output and send nothing on power-up, send it the following System Exclusive programming command:

F0 00 00 50 24 00 01 **01** F7

To program the toggle parameter of Fsw8 to ON and force the polarity to NORMALLY OPEN, send the F8 the following System Exclusive programming command:

F0 00 00 50 24 00 02 **07 01 00 00** F7

To program the footswitch debounce time to 100 ms send the F8 the following System Exclusive programming command:

F0 00 00 50 24 00 03 **64** F7

## INDIVIDUAL FOOTSWITCH FUNCTIONS

Each footswitch input of the F8 can be programmed with one of the functions on the following pages.

## NOTE-ON

To program the F8 to send out up to eight Note-On messages when a footswitch is depressed, send it the following System Exclusive programming command:

▶ **F0 00 00 50 24 aa ii (tt) nn vv cc (nn vv) F7**     (**tt** and **nn vv** are optional)

All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

**aa** specifies mode of transmission as follows:

01: Send Note-On(s) on depression of footswitch, Note-Off(s) on release

11: Send Note-On(s) on depression of footswitch, nothing on release

21: Send Note-On(s) on depression of footswitch, Note-Off(s) after the duration specified by **tt** (see below)

31: Send Note-On(s) on depression of footswitch, Note-Off(s) when the footswitch is released after the minimum duration **tt** (see below)

41: Send Note-On(s) on depression of footswitch, Note-Off(s) when the footswitch is released up to the maximum duration **tt** (see below)

51: Cycle through each Note-On on depression of footswitch, send the corresponding Note-Off on release

61: Cycle through each Note-On on depression of footswitch, send nothing on release

**ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

**tt** = Duration in 8 ms increments, or 1 s increments if preceded by 00.    (**tt** is only included if **aa** = 21, 31, or 41)

**nn** = Note number

**vv** = Note-On velocity

**cc** = MIDI channel (see MIDI channel table at end)

**nn vv** = Additional notes and velocities (up to eight notes total)

**Example**

To program the F8 to send out a middle C of velocity of 64 on MIDI channel 5 when Fsw6 is depressed, and send the corresponding Note-Off after 7 seconds, set **aa = 21** (Send Note-On on depression of footswitch, Note-Off after the duration specified by tt), **ii = 05** (Fsw6), **tt = 00 07** (insert 00 prior to 07 to specify 1s increments), **nn = 3C** (middle C is Note number 60, 3C is the hexadecimal value for 60), **vv = 40** (40 is the hexadecimal value for 64), and **cc = 04** (04 specifies MIDI channel 5). These values result in the following System Exclusive programming command:

F0 00 00 50 24 **21 05 00 07 3C 40 04** F7

## CONTROL CHANGE

To program the F8 to send out up to eight Control Change (CC) messages when a footswitch is depressed, send it the following System Exclusive programming command:

▶ **F0 00 00 50 24 aa ii (tt) nn vv cc (nn vv) F7** (**tt** and **nn vv** are optional)

All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

**aa** specifies mode of transmission as follows:

02: Send CC(s) on depression of footswitch, CC(s) of value 0 on release

12: Send CC(s) on depression of footswitch, nothing on release

22: Send CC(s) on depression of footswitch, CC(s) of value 0 after the duration specified by **tt** (see below)

32: Send CC(s) on depression of footswitch, CC(s) of value 0 when the footswitch is released after the minimum duration **tt** (see below)

42: Send CC(s) on depression of footswitch, CC(s) of value 0 when the footswitch is released up to the maximum duration **tt** (see below)

52: Cycle through each CC on depression of footswitch, send the corresponding CC of value 0 on release

62: Cycle through each CC on depression of footswitch, send nothing on release

**ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

**tt** = Duration in 8 ms increments, or 1 s increments if preceded by 00.   (**tt** is only included if **aa** = 22, 32, or 42)

**nn** = Control Change number

**vv** = Control Change value (sent on depression of footswitch)

**cc** = MIDI channel (see MIDI channel table at end)

**nn vv** = Additional CC numbers and values (up to eight CCs total)

**Example**

To program the F8 to send maximum volume on all MIDI channels when Fsw5 is depressed, set **aa = 12** (Send CC on depression of footswitch, nothing on release), **ii = 04** (Fsw5), **nn = 07** (volume is CC#7), **vv = 7F** (7F is the hexadecimal value for 127, the maximum value), and **cc = 7F** (7F specifies all MIDI channels). These values result in the following System Exclusive programming command:

F0 00 00 50 24 **12 04 07 7F 7F** F7

## START/STOP

To program the F8 to send MIDI Start and Stop messages, send it the following System Exclusive programming command:

▶ **F0 00 00 50 24 05 ii (ss) F7** (**ss** is optional)

**ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

**ss** specifies the mode of transmission as follows:

00: Send Stop on depression of footswitch, nothing on release

01: Send Start on depression of footswitch, nothing on release

**ss** omitted: Send Start on depression of footswitch, Stop on release

Note that the F8 can be programmed to toggle between Start and Stop each time the footswitch is depressed by setting the Footswitch Toggle parameter to Toggle ON (see Device Parameters).

## PITCH BEND

To program the F8 to send out a Pitch Bend message when a footswitch is depressed, send it the following System Exclusive programming command:

▸ **F0 00 00 50 24 aa ii ll mm cc F7**

  All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

  **aa** specifies the mode of transmission as follows:

  03: Send **ll mm** value on depression of footswitch, reset pitch to zero on release

  13: Send **ll mm** value on depression of footswitch, nothing on release

  **ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

  **ll** = LSB pitch value

  **mm** = MSB pitch value

  **cc** = MIDI channel (see MIDI channel table at end)

### Example

To program the F8 to send out a pitch bend message of +1 semitone (to a device that is set to a full octave pitch bend range) on channel 12 when Fsw1 is depressed, set **aa = 03** (send value on depression, reset pitch to zero on release), **ii = 00** (Fsw1), **ll mm = 2B 45** (2B 45 is the value for +1 semitone bend in a full octave range), and **cc = 0B** (0B specifies MIDI channel 12). These values result in the following System Exclusive programming command:

F0 00 00 50 24 **03 00 2B 45 0B** F7

## PROGRAM CHANGE

To program the F8 to send out a Program Change message when a footswitch is depressed, send it the following System Exclusive programming command:

▸ **F0 00 00 50 24 04 ii pp cc (qq) (bb bb) (dd dd) F7**     (**qq**, **bb bb**, and **dd dd** are optional)

  All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

  **ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

  **pp** = Program number sent on depression of footswitch

  **cc** = MIDI channel (see MIDI channel table at end)

  **qq** is optional, specifies Program number sent on release of footswitch

  **bb bb** is optional, specifies Bank Select MSB and LSB values to precede **pp** on depression of footswitch

  **dd dd** is optional, specifies Bank Select MSB and LSB values to precede **qq** on release of footswitch

### Example

To program the F8 to send out Bank Select MSB 3 + Bank Select LSB 6 + Program Change 0 on all MIDI channels when Fsw2 is depressed, and nothing when the footswitch is released, set **ii = 01** (Fsw2), **pp = 00** (Program Change 0), **cc = 7F** (7F specifies all MIDI channels), **omit qq** (nothing sent on release), **bb bb = 03 06** (Bank Select MSB = 3, Bank Select LSB = 6), and **omit dd dd** (nothing sent on release). This results in the following System Exclusive programming command:

F0 00 00 50 24 04 **01 00 7F 03 06** F7

## PROGRAM CHANGE CAPTURE

To program the F8 to capture the Program Change and Bank Select messages it receives while a footswitch is depressed, send it the following System Exclusive programming command:

▶ **F0 00 00 50 24 0D ii F7**

    **ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

Once the Program Change and Bank Select data has been captured, tapping the footswitch causes the F8 to resend the captured data. Captured data is retained even after power is removed from the F8.

## PROGRAM CHANGE INC/DEC

Any two inputs of the F8 may be programmed to provide an increment/decrement Program Change function. The inputs are programmed as follows:

▶ **INC input:  F0 00 00 50 24 07 ii 01 cc (xx yy) F7**    (**xx yy** is optional)

▶ **DEC input:  F0 00 00 50 24 07 ii 00 cc (xx yy) F7**    (**xx yy** is optional)

    All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

        **ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

        **cc** = MIDI channel (see MIDI channel table at end)

        **xx yy** is optional. **xx** = minimum value, **yy** = maximum value

**Example**

To program the F8 to increment the Program number on MIDI channel 16 when Fsw5 is depressed and decrement it when Fsw6 is depressed, send the F8 to following System Exclusive programming commands:

F0 00 00 50 24 07 **04** 01 **0F** F7

F0 00 00 50 24 07 **05** 00 **0F** F7

## PROGRAM CHANGE ENTER AND SELECT

To program the F8 to allow a keyboard to be used as a numeric keypad to enter program numbers, or notes from a keyboard to select specific programs numbers, send the F8 the following System Exclusive programming command:

▶ **F0 00 00 50 24 14 ii mm cc F7**

    All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

        **ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

        **mm** specifies the mode of operation as follows:

            00: Keyboard is used as a numeric keypad to enter the program number (0 - 127) while footswitch is depressed, with middle C representing "0", to A above middle C representing "9"

            >0: Keyboard is used to select a specific program number (0 - 127) while footswitch is depressed, starting from note **mm** for program #0. Pressing the note twice adds 64 to the program value.

        (the Program Change message is sent on release of the footswitch)

        **cc** = MIDI channel (see MIDI channel table at end)

## SYSTEM EXCLUSIVE

To program the F8 to send out a System Exclusive message when a footswitch is depressed, send it the following System Exclusive Programming commands:

▶ **F0 00 00 50 24 06 ii 01 F7**   followed by   **F0 ... F7**

    where **F0 ... F7** is the System Exclusive message the F8 is being programmed to send **(max. 20 byes)**

    All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

    **ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

To program the F8 to send out a System Exclusive message when a footswitch is released, send it the following System Exclusive Programming commands:

▶ **F0 00 00 50 24 06 ii 00 F7**   followed by   **F0 ... F7**

    where **F0 ... F7** is the System Exclusive message the F8 is being programmed to send **(max. 20 byes)**

    All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

    **ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

**Example**

To program the F8 to send out the MIDI Machine Control *Play* command (F0 7F 7F 06 02 F7) when Fsw4 is depressed, and the MIDI Machine Control *Stop* command (F0 7F 7F 06 01 F7) when Fsw4 is released, send the F8 the following System Exclusive Programming commands:

F0 00 00 50 24 06 **03 01** F7  followed by  **F0 7F 7F 06 02 F7**

F0 00 00 50 24 06 **03 00** F7  followed by  **F0 7F 7F 06 01 F7**

## NOTE-ON FILTER

To program the F8 to filter Note-On messages on a selected MIDI channel when a footswitch is depressed, send it the following System Exclusive programming command:

▶ **F0 00 00 50 24 0C ii cc aa F7**

    **ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

    **cc** = MIDI channel (see MIDI channel table at end)

    **aa** = **01**: Send All-Notes-Off on depression of footswitch, **aa = 00:** do not send All-Notes-Off on depression

To start filtering Note-On messages depress the footswitch (the All-Notes-Off message is sent out at this time), to stop filtering release the footswitch.

## RECHANNELIZE

To program the F8 to rechannelize an incoming MIDI channel to a selected outgoing MIDI channel when a footswitch is depressed, send it the following System Exclusive Programming command:

▶ **F0 00 00 50 24 09 ii (10) cc (pp) (00) F7**      (**10**, **pp**, and **00** are optional)

All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

**ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

**10** is optional, if included then the 16 notes from middle C up are used to select the channel. If omitted, then the number of notes played while the footswitch is depressed is used to select the channel.

**cc** = Incoming MIDI channel to rechannelize (see MIDI channel table at end)

**pp** is optional, specifies preset outgoing MIDI channel (see MIDI channel table at end)

**00** is optional, if included then incoming notes are ignored while footswitch is depressed

To rechannelize an incoming MIDI channel depress the footswitch (the All-Notes-Off message is sent out at this time), select the channel by playing notes on the keyboard (these notes are not echoed to MIDI Out), and release the footswitch. If no notes are received by the F8 during this period, the outgoing MIDI channel is set to the preset **pp**. To program the F8 to ignore incoming notes and change directly to the preset MIDI channel **pp** when the footswitch is depressed, insert **00** in the above command as shown.

### Example Setting

To program the F8 to accept rechannelize selection for incoming MIDI channel 1 when Fsw1 is depressed, send it the following System Exclusive programming command:

F0 00 00 50 24 09 **00 00** F7

### Example Operation with Above Setting

To rechannelize from MIDI channel 1 to MIDI channel 2 depress Fsw1, play any two notes, and release the footswitch. All MIDI channel 1 messages will now be rechannelized to MIDI channel 2. Continuing to tap the footswitch will cause the F8 to toggle between the original and selected channels.

## TRANSPOSE

To program the F8 to transpose incoming note messages by a selected interval by depressing a footswitch, send it the following System Exclusive Programming command:

▶ **F0 00 00 50 24 0A ii cc (pp) (00) F7**      (**pp** and **00** are optional)

All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

**ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

**cc** = Incoming MIDI channel to transpose (see MIDI channel table at end)

**pp** is optional, specifies preset transpose interval (40 = zero transpose)

**00** is optional, if included then incoming notes are ignored while footswitch is depressed

To specify a transpose interval depress the footswitch (the All-Notes-Off message is sent out at this time), play the note above or below middle C corresponding to the transpose interval (this note is not echoed to MIDI Out), and release the footswitch. If no notes are received by the F8 during this period, the transpose interval is set to the preset transpose interval **pp**. To program the F8 to ignore incoming notes and change directly to the preset transpose interval **pp** when the footswitch is depressed, insert a **00** after the **pp** in the above programming command.

## TAP TEMPO

To program the F8 to operate in Tap Tempo mode sending MIDI timing clocks at a tempo corresponding to the taps of one of its footswitch inputs, send it the following System Exclusive programming command:

▶ **F0 00 00 50 24 0B ii F7**

　All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

　　**ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)


To program the F8 to operate in Tap Tempo mode and also send a Note or Control Change message along with each tap of the footswitch, send it the following System Exclusive programming command:

▶ **F0 00 00 50 24 0B ii aa nn vv cc (00) F7**　　(**00** is optional)

　All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

　　**ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

　　**aa** = 01 to send Note, 02 to send Control Change

　　**nn** = Note number if **aa** = 01, Control Change number if **aa** = 02

　　**vv** = Note velocity if **aa** = 01, Control Change value if **aa** = 02

　　**cc** = MIDI channel of outgoing Note or Control Change message (see MIDI channel table at end)

　　**00** is optional. If inserted, nothing is sent on release of the footswitch. If not inserted then a Note-Off (if **aa** = 01) or Control Change of value zero (if **aa** = 02) is sent on release of the footswitch.


To program the F8 to operate in Tap Tempo mode and also respond to a Note or Control Change message (of value>0) as a tap, send it the following System Exclusive programming command:

▶ **F0 00 00 50 24 0B ii aa nn cc F7**

　All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

　　**ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

　　**aa** = 11 for Note, 12 for Control Change

　　**nn** = Note number if **aa** = 11, Control Change number if **aa** = 12

　　**cc** = MIDI channel of incoming Note or Control Change message (see MIDI channel table at end)


To program the F8 to operate in Tap Tempo mode and also to respond to a Note to specify the exact tempo in bpm, send it the following System Exclusive programming command:

▶ **F0 00 00 50 24 0B ii 21 bb cc F7**

　All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

　　**ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

　　**bb** = offset added to Note number to obtain tempo

　　**cc** = MIDI channel of incoming Note message (see MIDI channel table at end)


To program the F8 to operate in Tap Tempo mode and also to respond to a Control Change message to specify the exact tempo in bpm, send it the following System Exclusive programming command:

▶ **F0 00 00 50 24 0B ii 22 nn bb cc F7**

　All bytes must be in Hexadecimal format (see hexadecimal conversion table at end)

　　**ii** = Footswitch Input (00 for Fsw1 ... 07 for Fsw8)

　　**nn** = Control Change number

　　**bb** = offset added to Control Change value to obtain tempo

　　**cc** = MIDI channel of incoming Control Change message (see MIDI channel table at end)

## SONG SELECT

To program the F8 to send out a Song Select message when a footswitch is depressed, send it the following System Exclusive programming command:

▶ **F0 00 00 50 24 0E ii ss (tt) F7 (all values in Hexadecimal)**

    **ii** = Footswitch input (00 for Fsw1 through to 07 for Fsw8)

    **ss** = Song Select sent on depression of footswitch

    **tt** is optional, specifies Song Select sent on release of footswitch

**Example**

To program the F8 to send out Song Select #5 when Fsw1 is depressed, send it the following System Exclusive programming command:

F0 00 00 50 24 0E **00 04** F7

## SONG SELECT INC/DEC

Any two inputs of the F8 may be programmed to provide an increment/ decrement Song Select function. The inputs are programmed as follows:

▶ **INC input:  F0 00 00 50 24 0F ii 01 (xx yy) F7   (all values in Hex)**

▶ **DEC input:  F0 00 00 50 24 0F ii 00 (xx yy) F7   (all values in Hex)**

    **xx yy** is optional. **xx** = minimum value, **yy** = maximum value

    **ii** = Footswitch input (00 for Fsw1 through to 07 for Fsw8)

**Example**

To program the F8 to increment the Song Select number when Fsw8 is depressed, and decrement the Song Select number when Fsw7 is depressed, send the F8 the following System Exclusive programming commands:

F0 00 00 50 24 0F **07** 01 F7

F0 00 00 50 24 0F **06** 00 F7

## SIMULATE FOOTSWITCH CLOSURE

To cause the F8 to simulate the action of any footswitch without physically depressing or releasing the footswitch, send it the following following System Exclusive message:

▶ **F0 00 00 50 24 10 ii aa F7 (all values in Hexadecimal)**

    **ii** = Footswitch input (00 for Fsw1 through to 07 for Fsw8)

    **aa** = 00: Simulate RELEASE, **aa** = 01: Simulate DEPRESSION

**Example**

To cause the F8 to simulate the release operation of Fsw5, send it the following System Exclusive message:

F0 00 00 50 24 10 **04 00** F7

## MIDI CHANNEL TABLE

The value **cc** in the programming commands is assigned according to the following table:

| MIDI Channel | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | ALL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **cc** | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 0A | 0B | 0C | 0D | 0E | 0F | 7F |

## MIDI CONTROL CHANGE TABLE

| Decimal | Hexadecimal | Control Function |
|---|---|---|
| 0 | 00 | Bank Select |
| 1 | 01 | Modulation wheel or lever |
| 2 | 02 | Breath Controller |
| 3 | 03 | Undefined |
| 4 | 04 | Foot controller |
| 5 | 05 | Portamento time |
| 6 | 06 | Data entry MSB |
| 7 | 07 | Channel Volume |
| 8 | 08 | Balance |
| 9 | 09 | Undefined |
| 10 | 0A | Pan |
| 11 | 0B | Expression Controller |
| 12-13 | 0C-0D | Effect Controls 1-2 |
| 14-15 | 0E-0F | Undefined |
| 16-19 | 10-13 | General Purpose Controllers (#'s 1-4) |
| 20-31 | 14-1F | Undefined |
| 32-63 | 20-3F | LSB values for 0-31 |
| 64 | 40 | Damper pedal (sustain) |
| 65 | 41 | Portamento On/Off |
| 66 | 42 | Sostenuto |
| 67 | 43 | Soft pedal |
| 68 | 44 | Legato Fsw (vv=00-3F: Normal, 40-7F: Legato) |
| 69 | 45 | Hold 2 |
| 70 | 46 | Sound Controller 1 (default: Sound Variation) |
| 71 | 47 | Sound Controller 2 (default: Timbre/Harmonic Content) |
| 72 | 48 | Sound Controller 3 (default: Release Time) |
| 73 | 49 | Sound Controller 4 (default: Attack Time) |
| 74 | 4A | Sound Controller 5 (default: Brightness) |
| 75-79 | 4B-4F | Sound Controllers 6-10 (no defaults) |
| 80-83 | 50-53 | General Purpose Controllers (#'s 5-8) |
| 84 | 54 | Portamento Control |
| 85-90 | 55-5A | Undefined |
| 91 | 5B | Effects 1 Depth (formerly External Effects Depth) |
| 92 | 5C | Effects 2 Depth (formerly Tremolo Depth) |
| 93 | 5D | Effects 3 Depth (formerly Chorus Depth) |
| 94 | 5E | Effects 4 Depth (formerly Celeste (Detune) Depth) |
| 95 | 5F | Effects 5 Depth (formerly Phaser Depth) |
| 96,97 | 60,61 | Data increment, Data decrement |
| 98,99 | 62,63 | Non-Registered Parameter Number LSB, MSB |
| 100,101 | 64,65 | Registered Parameter Number LSB, MSB |
| 102-119 | 66-77 | Undefined |
| 120-127 | 78-7F | Reserved for Channel Mode Messages |

## HEXADECIMAL CONVERSION TABLE

| Dec/Hex | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 00 | 16 | 10 | 32 | 20 | 48 | 30 | 64 | 40 | 80 | 50 | 96 | 60 | 112 | 70 |
| 1 | 01 | 17 | 11 | 33 | 21 | 49 | 31 | 65 | 41 | 81 | 51 | 97 | 61 | 113 | 71 |
| 2 | 02 | 18 | 12 | 34 | 22 | 50 | 32 | 66 | 42 | 82 | 52 | 98 | 62 | 114 | 72 |
| 3 | 03 | 19 | 13 | 35 | 23 | 51 | 33 | 67 | 43 | 83 | 53 | 99 | 63 | 115 | 73 |
| 4 | 04 | 20 | 14 | 36 | 24 | 52 | 34 | 68 | 44 | 84 | 54 | 100 | 64 | 116 | 74 |
| 5 | 05 | 21 | 15 | 37 | 25 | 53 | 35 | 69 | 45 | 85 | 55 | 101 | 65 | 117 | 75 |
| 6 | 06 | 22 | 16 | 38 | 26 | 54 | 36 | 70 | 46 | 86 | 56 | 102 | 66 | 118 | 76 |
| 7 | 07 | 23 | 17 | 39 | 27 | 55 | 37 | 71 | 47 | 87 | 57 | 103 | 67 | 119 | 77 |
| 8 | 08 | 24 | 18 | 40 | 28 | 56 | 38 | 72 | 48 | 88 | 58 | 104 | 68 | 120 | 78 |
| 9 | 09 | 25 | 19 | 41 | 29 | 57 | 39 | 73 | 49 | 89 | 59 | 105 | 69 | 121 | 79 |
| 10 | 0A | 26 | 1A | 42 | 2A | 58 | 3A | 74 | 4A | 90 | 5A | 106 | 6A | 122 | 7A |
| 11 | 0B | 27 | 1B | 43 | 2B | 59 | 3B | 75 | 4B | 91 | 5B | 107 | 6B | 123 | 7B |
| 12 | 0C | 28 | 1C | 44 | 2C | 60 | 3C | 76 | 4C | 92 | 5C | 108 | 6C | 124 | 7C |
| 13 | 0D | 29 | 1D | 45 | 2D | 61 | 3D | 77 | 4D | 93 | 5D | 109 | 6D | 125 | 7D |
| 14 | 0E | 30 | 1E | 46 | 2E | 62 | 3E | 78 | 4E | 94 | 5E | 110 | 6E | 126 | 7E |
| 15 | 0F | 31 | 1F | 47 | 2F | 63 | 3F | 79 | 4F | 95 | 5F | 111 | 6F | 127 | 7F |

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