MIDI ● Solutions

Dual Footswitch Controller

OPERATING INSTRUCTIONS

MIDI Solutions Dual Footswitch Controller Operating Instructions M414-100

INTRODUCTION

Thank you for purchasing the MIDI Solutions Dual Footswitch Controller.

The MIDI Solutions Dual Footswitch Controller can be programmed to generate a variety of MIDI messages in response to a contact closure between the tip and sleeve, and a contact closure between the ring and sleeve, of its 1/4" phone jack input. It is also possible to program the Dual Footswitch Controller 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 Dual Footswitch Controller is MIDI-powered and requires no batteries or power supply to operate.
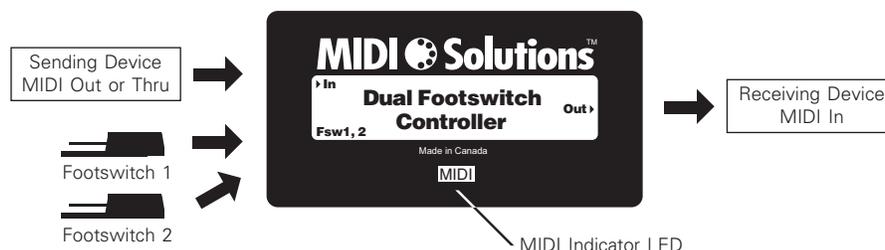
CONNECTIONS

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

Once the Dual Footswitch Controller has been programmed it can be inserted wherever it is required in your MIDI setup. Connect the footswitches (or any contact closures from tip-sleeve and ring-sleeve of a 1/4" phone plug) to the Dual Footswitch Controller's footswitch input (**Fsw1, 2**). Connect the MIDI Out or Thru of the sending device to the MIDI **In** of the Dual Footswitch Controller. The Dual Footswitch Controller draws power from the device that is connected to its MIDI input, so even if the Dual Footswitch Controller does not need to receive MIDI messages from this device the connection is still required in order for the Dual Footswitch Controller to draw power (the Dual Footswitch Controller's Echo parameter can be programmed to OFF to prevent any unwanted incoming MIDI messages from being echoed to the Dual Footswitch Controller's MIDI Out). Connect the MIDI **Out** of the Dual Footswitch Controller 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 Dual Footswitch Controller is programmed by sending it MIDI System Exclusive programming commands from a computer with a MIDI interface. These commands are described in detail on the following pages.

Upon receipt of a programming command, the Dual Footswitch Controller's MIDI indicator LED flashes rapidly for about one second to indicate that the setting has been stored. 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 Dual Footswitch Controller before it is powered up as their polarity is stored at this time (if auto-polarity is selected). The Dual Footswitch Controller'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 Dual Footswitch Controller to perform its programmed functions.

PROGRAMMING COMMANDS

CLEAR SETTINGS

To clear all of the Dual Footswitch Controller's settings, send it the following System Exclusive command:

▶ **F0 00 00 50 14 00 00 F7 (all values in Hexadecimal)**

It is recommended to send the Clear Settings command to the Dual Footswitch Controller 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 Dual Footswitch Controller are echoed to its MIDI output. When Echo is OFF, only the messages generated by the Dual Footswitch Controller are sent to its MIDI output.

Send State on Power-up: The Dual Footswitch Controller 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 Dual Footswitch Controller 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 Dual Footswitch Controller 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 Dual Footswitch Controller the following System Exclusive programming commands:

▶ **F0 00 00 50 14 00 01 aa (bb) F7**   (**bb** is optional)

    ii = Footswitch Input (00 for Fsw1 ... 01 for Fsw2)

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

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

▶ **F0 00 00 50 14 00 02 ii bb cc dd (ee) F7**   (**ee** is optional)

    ii = Footswitch Input (00 for Fsw1 ... 01 for Fsw2)

    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, wait for the beginning of the next bar to perform the footswitch action

▶ **F0 00 00 50 14 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 Dual Footswitch Controller 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 14 00 01 **01** F7

To program the toggle parameter of Fsw1 to ON and force the polarity to NORMALLY OPEN, send the Dual Footswitch Controller the following System Exclusive programming command:

F0 00 00 50 14 00 02 **00 01 00 00** F7

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

F0 00 00 50 14 00 03 **64** F7

INDIVIDUAL FOOTSWITCH FUNCTIONS

Each footswitch input of the Dual Footswitch Controller can be programmed with one of the functions on the following pages.

NOTE-ON

To program the Dual Footswitch Controller 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 14 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 ... 01 for Fsw2)

        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 Dual Footswitch Controller to send out a middle C of velocity of 64 on MIDI channel 5 when Fsw2 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 = 01** (Fsw2), **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 14 **21 01 00 07 3C 40 04** F7

CONTROL CHANGE

To program the Dual Footswitch Controller 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 14 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 ... 01 for Fsw2)

        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 Dual Footswitch Controller to send maximum volume on all MIDI channels when Fsw1 is depressed, set **aa = 12** (Send CC on depression of footswitch, nothing on release), **ii = 00** (Fsw1), **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 14 **12 00 07 7F 7F** F7

START/STOP

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

▶ **F0 00 00 50 14 05 ii (ss) F7**   (**ss** is optional)

        ii = Footswitch Input (00 for Fsw1 ... 01 for Fsw2)

        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 Dual Footswitch Controller 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 Dual Footswitch Controller to send out a Pitch Bend message when a footswitch is depressed, send it the following System Exclusive programming command:

► **F0 00 00 50 14 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 ... 01 for Fsw2)

ll = LSB pitch value

mm = MSB pitch value

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

Example

To program the Dual Footswitch Controller 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 14 **03 00 2B 45 0B** F7

PROGRAM CHANGE

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

► **F0 00 00 50 14 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 ... 01 for Fsw2)

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 Dual Footswitch Controller 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 14 04 **01 00 7F 03 06** F7

PROGRAM CHANGE CAPTURE

To program the Dual Footswitch Controller 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 14 0D ii F7**

    ii = Footswitch Input (00 for Fsw1 ... 01 for Fsw2)

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

PROGRAM CHANGE INC/DEC

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

▶ **INC input: F0 00 00 50 14 07 ii 01 cc (xx yy) F7**   (**xx yy** is optional)

▶ **DEC input: F0 00 00 50 14 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 ... 01 for Fsw2)

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

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

Example

To program the Dual Footswitch Controller to increment the Program number on MIDI channel 16 when Fsw1 is depressed and decrement it when Fsw2 is depressed, send the Dual Footswitch Controller to following System Exclusive programming commands:

F0 00 00 50 14 07 **00** 01 **0F** F7

F0 00 00 50 14 07 **01** 00 **0F** F7

PROGRAM CHANGE ENTER AND SELECT

To program the Dual Footswitch Controller 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 Dual Footswitch Controller the following System Exclusive programming command:

▶ **F0 00 00 50 14 14 ii mm cc F7**

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

        ii = Footswitch Input (00 for Fsw1 ... 01 for Fsw2)

        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 Dual Footswitch Controller to send out a System Exclusive message when a footswitch is depressed, send it the following System Exclusive Programming commands:

▶ **F0 00 00 50 14 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 ... 01 for Fsw2)

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

▶ **F0 00 00 50 14 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 ... 01 for Fsw2)

Example

To program the Dual Footswitch Controller to send out the MIDI Machine Control *Play* command (F0 7F 7F 06 02 F7) when Fsw1 is depressed, and the MIDI Machine Control *Stop* command (F0 7F 7F 06 01 F7) when Fsw1 is released, send the Dual Footswitch Controller the following System Exclusive Programming commands:

F0 00 00 50 14 06 **00 01** F7 followed by **F0 7F 7F 06 02 F7**

F0 00 00 50 14 06 **00 00** F7 followed by **F0 7F 7F 06 01 F7**

NOTE-ON FILTER

To program the Dual Footswitch Controller 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 14 0C ii cc aa F7**

    ii = Footswitch Input (00 for Fsw1 ... 01 for Fsw2)

    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 Dual Footswitch Controller 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 14 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 ... 01 for Fsw2)

    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 Dual Footswitch Controller during this period, the outgoing MIDI channel is set to the preset **pp**. To program the Dual Footswitch Controller 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 Dual Footswitch Controller 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 14 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 Dual Footswitch Controller to toggle between the original and selected channels.

TRANSPOSE

To program the Dual Footswitch Controller 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 14 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 ... 01 for Fsw2)

    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 Dual Footswitch Controller during this period, the transpose interval is set to the preset transpose interval **pp**. To program the Dual Footswitch Controller 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 Dual Footswitch Controller 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 14 0B ii F7**

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

  ii = Footswitch Input (00 for Fsw1 ... 01 for Fsw2)

To program the Dual Footswitch Controller 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 14 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 ... 01 for Fsw2)

  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 Dual Footswitch Controller 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 14 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 ... 01 for Fsw2)

  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 Dual Footswitch Controller 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 14 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 ... 01 for Fsw2)

  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 Dual Footswitch Controller 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 14 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 ... 01 for Fsw2)

  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 Dual Footswitch Controller to send out a Song Select message when a footswitch is depressed, send it the following System Exclusive programming command:

▶ **F0 00 00 50 14 0E ii ss (tt) F7 (all values in Hexadecimal)**

  ii = Footswitch input (00 for Fsw1 through to 01 for Fsw2)

  ss = Song Select sent on depression of footswitch

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

Example

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

F0 00 00 50 14 0E **00 04** F7

SONG SELECT INC/DEC

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

▶ **INC input: F0 00 00 50 14 0F ii 01 (xx yy) F7   (all values in Hex)**

▶ **DEC input: F0 00 00 50 14 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 01 for Fsw2)

Example

To program the Dual Footswitch Controller to increment the Song Select number when Fsw2 is depressed, and decrement the Song Select number when Fsw1 is depressed, send the Dual Footswitch Controller the following System Exclusive programming commands:

F0 00 00 50 14 0F **01** 01 F7

F0 00 00 50 14 0F **00** 00 F7

SIMULATE FOOTSWITCH CLOSURE

To cause the Dual Footswitch Controller 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 14 10 ii aa F7 (all values in Hexadecimal)**

  ii = Footswitch input (00 for Fsw1 through to 01 for Fsw2)

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

Example

To cause the Dual Footswitch Controller to simulate the release operation of Fsw2, send it the following System Exclusive message:

F0 00 00 50 14 10 **01 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

WARRANTY

MIDI Solutions Inc. warrants this product to be free from defects in material and workmanship for a period of one (1) year from date of purchase. This warranty is void if the product has been damaged by accident, misuse, alteration, unauthorized repairs or other causes not arising out of defects in material or workmanship. Under no circumstances will MIDI Solutions be liable for any loss of profits, benefits, time, interrupted operation, commercial loss, or consequential damages arising out of the use or inability to use the product. MIDI Solutions specifically disclaims any implied warranties of merchantability and fitness for a particular purpose. If the product requires service, a Return Merchandise Authorization (RMA) number must be obtained from MIDI Solutions and the product must be shipped prepaid to a specified Service Center. MIDI Solutions will repair or replace the product at our discretion and will pay return shipping fees. The customer is responsible for any damage or loss sustained during shipment in any direction.