

| HAWK-800 - MIDI Implementation Chart                      |                     |                      | <a href="https://www.hawk800.com">https://www.hawk800.com</a>   |
|---|---------------------|----------------------|---|
| Document Version: 2.68 issued Sept 15 <sup>th</sup> 2020  |                     |                      |   |
| Basic Information (Section 1 of 4)                        | Transmit/<br>Export | Recognize/<br>Import | Remarks   |
| MIDI channels   | Yes                 | Yes                  | 1-16  |
| Note numbers  | 36 - 84             | 36-84                | Can be extended using extended mode (global 31)   |
| Program change  | 0-63                | 0-127                | Wraps around when receiving program changes above 63.   |
| Bank Select response? (Yes/No)                            | No                  | Yes                  | There are four user patch banks each having 64 patches. Send MIDI Controller Bank Select with data as follows: 0-31=bank 1, 32-63=bank 2, 64-95=bank 3 and 96-127=bank 4. |
| Modes supported : Mode 1: Omni-On, Poly (Yes/No)          | No                  | Yes                  |   |
| Mode 2: Omni-On, Mono (Yes/No)                            | No                  | No                   |   |
| Mode 3: Omni-Off, Poly (Yes/No)                           | No                  | Yes                  |   |
| Mode 4: Omni-Off, Mono (Yes/No)                           | No                  | No                   |   |
| Multi Mode (Yes/No)                                       | No                  | No                   |   |
| Note-On Velocity (Yes/No)                                 | Fixed               | Yes                  | See owners manual for details.  |
| Note-Off Velocity (Yes/No)                                | No                  | No                   |   |
| Channel Aftertouch (Yes/No)                               | No                  | No                   |   |
| Poly (Key) Aftertouch (Yes/No)                            | No                  | No                   |   |
| Pitch Bend (Yes/No)                                       | Yes                 | Yes                  |   |
| Active Sensing (Yes/No)                                   | No                  | Yes                  |   |
| System Reset (Yes/No)                                     | No                  | No                   |   |
| Tune Request (Yes/No)                                     | No                  | No                   |   |
| Universal System Exclusive: Sample Dump Standard (Yes/No) | No                  | No                   |   |
| Device Inquiry (Yes/No)                                   | No                  | No                   |   |
| File Dump (Yes/No)  | No                  | No                   |   |
| MIDI Tuning (Yes/No)                                      | No                  | No                   |   |
| Master Volume (Yes/No)                                    | No                  | Yes                  |   |
| Master Balance (Yes/No)                                   | No                  | No                   |   |
| Notation Information (Yes/No)                             | No                  | No                   |   |
| Turn GM1 System On (Yes/No)                               | No                  | No                   |   |
| Turn GM2 System On (Yes/No)                               | No                  | No                   |   |
| Turn GM System Off (Yes/No)                               | No                  | No                   |   |
| DLS-1 (Yes/No)  | No                  | No                   |   |
| File Reference (Yes/No)                                   | No                  | No                   |   |
| Controller Destination (Yes/No)                           | No                  | No                   |   |
| Key-based Instrument Ctrl (Yes/No)                        | No                  | No                   |   |
| Master Fine/Coarse Tune (Yes/No)                          | No                  | No                   |   |
| Other Universal System Exclusive                          | No                  | No                   |   |
| Manufacturer or Non-Commercial System Exclusive           | Yes                 | Yes                  | See "System Exclusive" section below.   |
| NRPNS (Yes/No)  | No                  | Yes                  | See owners manual for details.  |
| RPN 00 (Pitch Bend Sensitivity) (Yes/No)                  | No                  | No                   |   |
| RPN 01 (Channel Fine Tune) (Yes/No)                       | No                  | No                   |   |
| RPN 02 (Channel Coarse Tune) (Yes/No)                     | No                  | No                   |   |

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| RPN 03 (Tuning Program Select) (Yes/No)                                      | No                | No               |   |
| RPN 04 (Tuning Bank Select) (Yes/No)   | No                | No               |   |
| RPN 05 (Modulation Depth Range) (Yes/No)                                     | No                | No               |   |
| <i>2. MIDI Timing and Synchronization</i>                                    |                   |                  |   |
| MIDI Clock (Yes/No)  | Yes               | Yes              |   |
| Song Position Pointer (Yes/No)   | No                | No               |   |
| Song Select (Yes/No)   | No                | No               |   |
| Start (Yes/No)   | Yes               | Yes              |   |
| Continue (Yes/No)  | No                | No               |   |
| Stop (Yes/No)  | Yes               | Yes              |   |
| MIDI Time Code (Yes/No)  | No                | No               |   |
| MIDI Machine Control (Yes/No)  | No                | No               |   |
| MIDI Show Control (Yes/No)   | No                | No               |   |
| If yes, MSC Level supported  |                   |                  |   |
| <i>3. Extensions Compatibility</i>   |                   |                  |   |
| General MIDI compatible? (Level(s)/No)                                       | No                | No               |   |
| Is GM default power-up mode? (Level/No)                                      | No                | No               |   |
| DLS compatible? (Levels(s)/No)   | No                | No               |   |
| (DLS File Type(s)/No)  | No                | No               |   |
| Standard MIDI Files (Type(s)/No)   | No                | No               |   |
| XMF Files (Type(s)/No)   | No                | No               |   |
| SP-MIDI compatible? (Yes/No)   | No                | No               |   |
| <b>MIDI Implementation Chart Control Number Information (Section 2 of 4)</b> |                   |                  |   |
| Control # Function   | Transmitted (Y/N) | Recognized (Y/N) | Remarks   |
| 0 Bank Select (MSB)  | No                | No               | For patch bank select see Bank Select (LSB)                   |
| 1 Modulation Wheel (MSB)   | Yes               | Yes              | DCO modulation depth  |
| 2 Breath Controller (MSB)  | Yes               | Yes              | VCF modulation depth  |
| 3  | No                | No               |   |
| 4 Foot Controller (MSB)  | No                | No               |   |
| 5 Portamento Time (MSB)  | No                | No               |   |
| 6 Data Entry (MSB)   | No                | Yes              | For NRPN parameter changes (see NRPN below)                   |
| 7 Channel Volume (MSB)   | No                | Yes              | Master volume control   |
| 8 Balance (MSB)  | No                | No               |   |
| 9  | No                | No               |   |
| 10 Pan (MSB)   | No                | No               |   |
| 11 Expression (MSB)  | No                | No               |   |
| 12 Effect Control 1 (MSB)  | No                | No               |   |
| 13 Effect Control 2 (MSB)  | No                | No               |   |
| 14   | No                | No               |   |
| 15   | No                | No               |   |
| 16 General Purpose Controller 1 (MSB)  | No                | No               |   |
| 17 General Purpose Controller 2 (MSB)  | No                | No               |   |
| 18 General Purpose Controller 3 (MSB)  | No                | No               |   |

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| 19 General Purpose Controller 4 (MSB) | No | No  |  |
| 20                                    | No | No  |  |
| 21                                    | No | Yes | Execute an action with data as follows:<br>0=Start sequencer.<br>1=Stop sequencer.<br>2=Enter sequencer edit mode.<br>3=Sequencer edit step forward.<br>4=Sequencer edit step back.<br>5=Exit Sequencer edit mode.<br>6=Lock current sequence to disable editing.<br>7=Unlock current sequence to allow editing.<br>8=Mute local sequencer.<br>9=Un mute local sequencer.<br>10=Start arpeggiator<br>11=Stop arpeggiator |
| 22                                    | No | Yes | Parameter Change Bank Selector 0-63 corresponds to banks 1x-8x and 64-127 correspond to extended banks 1x-8x.  |
| 23                                    | No | Yes | Parameter data value for first parameter in bank.  |
| 24                                    | No | Yes | Parameter data value for second parameter in bank.   |
| 25                                    | No | Yes | Parameter data value for third parameter in bank.  |
| 26                                    | No | Yes | Parameter data value for fourth parameter in bank.   |
| 27                                    | No | Yes | Parameter data value for fifth parameter in bank.  |
| 28                                    | No | Yes | Parameter data value for sixth parameter in bank.  |
| 29                                    | No | Yes | Parameter data value for seventh parameter in bank.  |
| 30                                    | No | Yes | Parameter data value for eight parameter in bank.  |
| 31                                    | No | Yes | Sequence select (0-127 selects sequences 1 through 8) when in advanced sequencer mode.   |
| 32 Bank Select (LSB)                  | No | Yes | This controller changes the selected bank but does not change the current sounding patch. A separate patch change must be initiated in order to change the current sounding patch. Data values can be scaled 0-127 or absolute 0-3 dependent upon global parameter 47.   |
| 33 Modulation Wheel (LSB)             | No | No  |  |
| 34 Breath Controller (LSB)            | No | No  |  |
| 35                                    | No | No  |  |
| 36 Foot Controller (LSB)              | No | No  |  |
| 37 Portamento Time (LSB)              | No | No  |  |
| 38 Data Entry (LSB)                   | No | No  |  |
| 39 Channel Volume (LSB)               | No | No  |  |
| 40 Balance (LSB)                      | No | No  |  |
| 41                                    | No | No  |  |
| 42 Pan (LSB)                          | No | No  |  |
| 43 Expression (LSB)                   | No | No  |  |
| 44 Effect Control 1 (LSB)             | No | No  |  |
| 45 Effect Control 2 (LSB)             | No | No  |  |
| 46                                    | No | No  |  |
| 47                                    | No | No  |  |
| 48 General Purpose Controller 1 (LSB) | No | No  |  |
| 49 General Purpose Controller 2 (LSB) | No | No  |  |
| 50 General Purpose Controller 3 (LSB) | No | No  |  |
| 51 General Purpose Controller 4 (LSB) | No | No  |  |

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| 52 - 63   | No                | No               |  |
| MIDI Implementation Chart Control Number Information (Section 3 of 4) |                   |                  |  |
| Control # Function  | Transmitted (Y/N) | Recognized (Y/N) | Remarks  |
| 64 Sustain Pedal  | Yes               | Yes              | 0-63=Off, 64-127=On  |
| 65 Portamento   | No                | No               |  |
| 66 Sostenuto  | No                | No               |  |
| 67 Soft Pedal   | No                | No               |  |
| 68 Legato Footswitch  | No                | No               |  |
| 69 Hold 2   | No                | No               |  |
| 70 Sound Controller 1 (default: Sound Variation)                      | No                | No               |  |
| 71 Sound Controller 2 (default: Timbre / Harmonic Quality)            | No                | Yes              | VCF Resonance  |
| 72 Sound Controller 3 (default: Release Time)                         | No                | No               |  |
| 73 Sound Controller 4 (default: Attack Time)                          | No                | No               |  |
| 74 Sound Controller 5 (default: Brightness)                           | No                | Yes              | VCF cutoff   |
| 75 Sound Controller 6 (GM2 default: Decay Time)                       | No                | No               |  |
| 76 Sound Controller 7 (GM2 default: Vibrato Rate)                     | No                | Yes              | LFO1 frequency rate  |
| 77 Sound Controller 8 (GM2 default: Vibrato Depth)                    | No                | No               |  |
| 78 Sound Controller 9 (GM2 default: Vibrato Delay)                    | No                | No               |  |
| 79 Sound Controller 10 (GM2 default: Undefined)                       | No                | No               |  |
| 80 General Purpose Controller 5                                       | No                | No               |  |
| 81 General Purpose Controller 6                                       | No                | No               |  |
| 82 General Purpose Controller 7                                       | No                | No               |  |
| 83 General Purpose Controller 8                                       | No                | No               |  |
| 84 Quick parameter change select                                      | No                | Yes              | Quick parameter change parameter selection 0-63 is original parameters 11-88 while 64-127 is extended parameters 11-88.  |
| 85 Quick parameter change data  | No                | Yes              | Quick parameter data change. Select desired parameter first using MIDI CC 84 then set data value using this MIDI CC 85. Parameter data values are either scaled (using full 0-127 data range) or absolute dependent upon global parameter 47.  |
| 86 HAWK-800 Key Assign Mode   | Yes               | Yes              | Pressing any of the front panel key assign buttons will result in transmission of this controller. When HAWK-800 receives this controller it will change key assign modes (but not if the sequencer is running). Data values are recognized as follows: 0=Poly, 1=Hold, 2=Chord, 3=Portamento Mono, 4=Portamento Unison. |
| 87 - 90   |                   |                  |  |
| 91 Effects 1 Depth (default: Reverb Send)                             | No                | No               |  |
| 92 Effects 2 Depth (default: Tremolo Depth)                           | No                | No               |  |
| 93 Effects 3 Depth (default: Chorus Send)                             | No                | No               |  |
| 94 Effects 4 Depth (default: Celeste [Detune] Depth)                  | No                | No               |  |
| 95 Effects 5 Depth (default: Phaser Depth)                            | No                | No               |  |

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| 96 Data Increment   | No  | Yes |   |
| 97 Data Decrement   | No  | Yes |   |
| 98 Non-Registered Parameter Number (LSB)                                    | No  | Yes | Values 00-63 apply to original parameters 11-88 while values 64-127 apply to extended parameters 11-88.                           |
| 99 Non-Registered Parameter Number(MSB)                                     | No  | Yes | To change parameter running values the NRPN MSB must match global parameter 16. Possible values are 00-63 (factory default is 1). |
| 100 Registered Parameter Number (LSB)                                       | No  | No  |   |
| 101 Registered Parameter Number(MSB)  | No  | No  |   |
| 102 - 119   | No  | No  |   |
| 120 All Sound Off   | No  | No  |   |
| 121 Reset All Controllers   | No  | No  |   |
| 122 Local Control On/Off  | No  | No  |   |
| 123 All Notes Off   | Yes   | Yes |   |
| 124 Omni Mode Off   | No  | Yes |   |
| 125 Omni Mode On  | No  | Yes |   |
| 126 Poly Mode Off   | No  | No  |   |
| 127 Poly Mode On  | No  | No  |   |
| <b>MIDI Implementation Chart System Exclusive Messages (Section 4 of 4)</b> |   |     |   |
| Patch Reception   | <p>Allows sending a single patch to the HAWK-800.</p> <p>On reception of the following message:<br/> <b>F0 42 21 06 0x 0h(1) 0l(1) ... 0h(128) 0l(128) F7</b></p> <p>The HAWK-800 receives the data and saves it in the patch location (in the current selected patch bank) specified by 0x where x is 00-63 and these values refer to patch 11 thru 88. And x is 64 applies the patch to the running patch scratch memory. And if x is greater than 64 then no patch is affected by reception of this message and no confirmation message is sent. The HAWK-800 responds with the following confirmation message on successful reception of a valid patch:<br/> <b>F0 42 21 7E 06 xx F7 where xx is the patch number that was received.</b></p> <p>Refer to the patch memory table for the specific data format of the patch memory.</p>   |     |   |
| Request Patch Transmission  | <p>Allows requesting that the HAWK-800 send a sysex dump of the requested patch from within the current selected patch bank.</p> <p>The HAWK-800 transmits a single patch where x is the desired patch on reception of the following message:<br/> <b>F0 42 21 07 0x F7.</b></p> <p>The HAWK-800 replies by sending the patch memory in the following format:<br/> <b>F0 42 21 06 0x 0h(1) 0l(1) ... 0h(128) 0l(128) F7.</b></p> <p>Notice that this format is identical to a patch reception transmission (see above) which means that you can easily cascade HAWK-800 devices together or cut and paste the sysex patch message for storage on file and later use.</p> <p>Refer to the patch memory table for the specific data format of the patch memory.</p>   |     |   |
| Global parameters reception   | <p>Allows setting the global parameters of the HAWK-800.</p> <p>On reception of the following message the HAWK-800 will have its global parameters set.<br/> <b>F0 42 21 08 0h(1) 0l(1) ... 0h(63) 0l(63) F7.</b></p> <p>The HAWK-800 does NOT send out any confirmation message after receiving the global parameters message.</p>   |     |   |
| Chord settings reception  | <p>Allows setting the chord progression (as normally set by playing notes in "Hold" mode).<br/> <b>F0 42 21 09 0x1 ... 0x7 F7.</b></p> <p>Receives seven bytes and places them into the chord array such that chord mode is configured for desired chord operation. This is used when the Poly-800 is in cascade sync mode to enable slave units (such as an EX-800) to play the same chord progressions. The HAWK-800 does not send any acknowledgment after successfully receiving the chord settings message.</p> <p>The HAWK-800 can also automatically send a chord settings message when placed into "sync" mode (set global parameter 33 to 1). In this mode, pressing the "Chord" button will instruct the HAWK-800 to send a chord settings message where a downstream device can receive it (for example: a second HAWK-800).</p> |     |   |
| Bulk dump request   | <p>Allows requesting a bulk dump of certain information including bulk patch dump.<br/> <b>F0 42 21 0A 0x F7.</b></p>   |     |   |

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|   | <p>Where 0x is the bulk dump request type. 0=bulk patch dump, 1=sequencer data dump, 2=global data dump.</p> <p>F0 42 21 0A 00 F7 is a bulk patch dump request. This request will initiate a bulk dump of all 64 patches (from the current selected patch bank) as 64 sequenced patch dump messages (of patch dump receive type 0x06). Each message is spaced out with xxx mS spacing so that another HAWK-800 equipped Poly-800 is able to process the entire bulk dump.</p> <p>F0 42 21 0A 01 F7 is a sequencer data dump request. This request will initiate a dump of all sequencer data.</p> <p>F0 42 21 0A 02 F7 is a bulk global data dump request. This request will initiate a bulk dump of all global data.</p>   |   |
| Sequencer data receive  | <p>Allows receiving sequencer data.</p> <p><b>F0 42 21 0B 0x1(l) 0x1(h) ... 0x256(l) 0x256(h) F7</b></p> <p>Receives 256 bytes of sequencer data made up of 512 MIDI bytes representing the low and high nibbles of each sequencer byte. On successful reception of the sequencer data, the HAWK-800 will respond with the following acknowledgment. <b>F0 42 21 7E 0B 01 F7</b>. The sequencer data will be copied into the sequence location specified by global parameter 44.</p>  |   |
| EX-800 sysex bulk dump receive  | <p>The HAWK-800 (in "Tools" mode) is able to receive both patches and sequencer data when receiving a EX-800 formatted bulk dump message. See EX-800 documentation for EX-800 bulk dump format. Ensure that the EX-800 dump data is paced out slow enough that the HAWK-800 is able to receive and process the data without causing an overload condition. Confirmation that the bulk dump has been successful is confirmed when the HAWK-800 transmits a confirmation message as follows: <b>F0 42 21 7E 01 01 F7</b></p>  |   |
| Poly-800 MK2 sysex bulk dump receive  | <p>The HAWK-800 (in "Tools" mode) is able to receive patches when receiving a MK2 formatted bulk dump message. The HAWK-800 ignores all other data when receiving a MK2 bulk dump. Ensure that the MK2 dump data message is paced out slow enough that the HAWK-800 is able to receive and process the data without causing an overload condition. Confirmation that the bulk dump has been successful is confirmed when the HAWK-800 transmits a confirmation message as follows: <b>F0 42 21 7E 0C 01 F7</b></p>  |   |
| Identify HAWK-800   | <p><b>F0 42 21 0D F7</b> - Request that the HAWK-800 identify itself. HAWK-800 will acknowledgment by transmitting:</p> <p><b>F0 42 21 7E 0D 0x F7</b> where x is 0=Poly-800 MK1, 1=EX-800, 2=Poly-800 MK2</p>  |   |
| Patch bank change   | <p><b>F0 42 21 0E 0x F7</b> - Change the patch bank where x=0-3 corresponding to banks 1-4. ; HAWK-800 will acknowledges by transmitting <b>F0 42 21 7E 0E 01 F7</b></p>  |   |
| Patch parameter change  | <p><b>F0 42 21 0F xx yy F7</b> - Change the current operating patch parameter where xx is the parameter number (P1 11-88 corresponds to values 0-63 and P2 11-88 corresponds to values 64-127) and yy is the parameter data value. Data values are scaled or absolute dependent upon global parameter 47 (where 0 is scaled and 1 is absolute).</p>   |   |
| Save Running Patch  | <p><b>F0 42 21 12 F7</b> - Copies running patch into current selected patch. If patch write switch is disabled then no action is taken and an NOT acknowledge message indicating that no copy occurred will be sent as F0 42 21 7E 12 00 F7. If the copy was successful then an acknowledgment message is sent as F0 42 21 7E 12 01 F7.</p>   |   |
| <b>SPECIAL System Exclusive Messages</b><br>The system exclusive messages below should be used with caution. Misuse can cause patch memory loss, instrument malfunction and other unexpected results. |   |   |
| Peek at an address location   | <p>Allows reading any address location within the HAWK-800 memory. This would include the entire address space from 0000h thru FFFFh which includes input output devices, ROM, RAM and FLASH memory.</p> <p>On reception of the following message:</p> <p><b>F0 42 21 02 &lt;high address high nibble&gt; &lt;high address low nibble&gt; &lt;low address high nibble&gt; &lt;low address low nibble&gt; F7.</b></p> <p>The HAWK-800 replies with the data byte read from the target address with the message output format as: <b>F0 42 21 02 &lt;data byte high nibble&gt; &lt;data byte low nibble&gt; F7.</b></p>   |   |
| Poke data into an address location  | <p>Allows writing a single data byte into any address location within the HAWK-800 memory. This would include the entire address space from 0000h thru FFFFh.</p> <p>On reception of the following message:</p> <p><b>F0 42 21 03 &lt;data byte high nibble&gt; &lt;data byte low nibble&gt; &lt;high address high nibble&gt; &lt;high address low nibble&gt; &lt;low address high nibble&gt; &lt;low address low nibble&gt; F7.</b></p> <p>The data byte nibbles are written as one byte into the address location specified and the HAWK-800 replies with a confirmation message with the message output as:</p> <p><b>F0 42 21 03 F7.</b></p>  |   |
| Dump a block of memory length of data byte and start from address location  | <p>Allows requesting a dump of a block of memory from the HAWK-800 address space. The length of the block can be from 1 to 256 bytes (corresponding to 1-255 and 0 for 256 bytes). On reception of the following message:</p> <p><b>F0 42 21 04 &lt;block length high nibble&gt; &lt;block length low nibble&gt; &lt;high address high nibble&gt; &lt;high address low nibble&gt; &lt;low address high nibble&gt; &lt;low address low nibble&gt; F7.</b></p> <p>The HAWK-800 replies with a message that contains the data of memory address locations where x is the high nibble and y is the low nibble:</p> <p><b>F0 42 21 04 0x 0y 0x 0y ... F7</b></p> <p>It sends an 0x 0y pair times the number of bytes sent according to the block length data byte.</p> |   |

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| Erase a block of memory              | <p>Allows setting a byte or block of memory to all zeroes.</p> <p>On reception of the following message:</p> <p><b>F0 42 21 05 &lt;block length high nibble&gt; &lt;block length low nibble&gt; &lt;high address high nibble&gt; &lt;high address low nibble&gt; &lt;low address high nibble&gt; &lt;low address low nibble&gt; F7</b></p> <p>The memory block specified by the block length and starting address location will be set to zeroes. The HAWK-800 responds with the following confirmation message on completion:</p> <p><b>F0 42 21 05 F7.</b></p> |   |