Consolidated Drum Programming Notes

Drum instruments form a special case, as they do not have a specific pitch like on a piano or trumpet. A specific MIDI channel is used to transmit the playback of drum instruments. In General Midi, it is channel 10, but you will find synthesizers that can be programmed to receive drums on any channel.

In the case of a channel assigned to drum instruments (and also for special sound effects often included in synthesizers), the NOTE ON and NOTE OFF message information for the pitch is in fact used to select which drum or sound effect will play.

For General MIDI, you can find the standard list of drum instruments here (at the end of that page):

[General MIDI drum instruments list](http://www.midi.org/techspecs/gm1sound.php)

For instance, to play a bass drum instrument on channel 10, send the NOTE ON message as follows:

* 0x99 0x23 0x40

0x99 is the STATUS byte for the NOTE ON message, using channel 10 (coded 9). 0x23 is decimal 35 which is the note number used for the acoustic bass drum in the GM list above. 0x40 is decimal 64 for a velocity around the *mezzo forte* nuance. You should then send the NOTE OFF message as follows:

* 0x89 0x23 0x00

Table 1(Below): Denotes the key value that needs to be sent on channel 10 to trigger the desired drum sound.

|  |  |  |  |
| --- | --- | --- | --- |
| **General MIDI Level 1 Percussion Key Map** | | | |
| On MIDI Channel 10, each MIDI Note number ("Key#") corresponds to a different drum sound, as shown below. GM-compatible instruments must have the sounds on the keys shown here. While many current instruments also have additional sounds above or below the range show here, and may even have additional "kits" with variations of these sounds, only these sounds are supported by General MIDI Level 1 devices. | | | |
| **Key#** | **Drum Sound** | **Key#** | **Drum Sound** |
| 35 | Acoustic Bass Drum | 59 | Ride Cymbal 2 |
| 36 | Bass Drum 1 | 60 | Hi Bongo |
| 37 | Side Stick | 61 | Low Bongo |
| 38 | Acoustic Snare | 62 | Mute Hi Conga |
| 39 | Hand Clap | 63 | Open Hi Conga |
| 40 | Electric Snare | 64 | Low Conga |
| 41 | Low Floor Tom | 65 | High Timbale |
| 42 | Closed Hi Hat | 66 | Low Timbale |
| 43 | High Floor Tom | 67 | High Agogo |
| 44 | Pedal Hi-Hat | 68 | Low Agogo |
| 45 | Low Tom | 69 | Cabasa |
| 46 | Open Hi-Hat | 70 | Maracas |
| 47 | Low-Mid Tom | 71 | Short Whistle |
| 48 | Hi-Mid Tom | 72 | Long Whistle |
| 49 | Crash Cymbal 1 | 73 | Short Guiro |
| 50 | High Tom | 74 | Long Guiro |
| 51 | Ride Cymbal 1 | 75 | Claves |
| 52 | Chinese Cymbal | 76 | Hi Wood Block |
| 53 | Ride Bell | 77 | Low Wood Block |
| 54 | Tambourine | 78 | Mute Cuica |
| 55 | Splash Cymbal | 79 | Open Cuica |
| 56 | Cowbell | 80 | Mute Triangle |
| 57 | Crash Cymbal 2 | 81 | Open Triangle |
| 58 | Vibraslap |  |  |

**May-16**

* Modified snare file to reset snare velocity upon flag reset, so that the value doesn’t continue to get sent. Not sure if this is necessary, but I do believe that when testing, the analogRead LED stayed LIT.
* Also, not sure which note to send, considering remapping.