**MML To MIDI Language Specification**

**Introduction**

The music macro language (MML) is a music description language that has been in use since 1978, although this was an early version. There has never been an official specification, so each implementation varies slightly, and over the years the language has evolved. The MML to MIDI converter uses a version of the MML derived from the “Modern MML” syntax, including new specific commands. This document outlines this version of MML used by the program.

**Comments**

Comments are started with a hash character, “#”. This makes the remainder of the line a comment; any more hashes found on the line have no effect.

**Playing Notes**

Playing notes is done by starting a line with the word “play”, then writing the notes to be played after a space. Any spaces aside from this initial one are ignored, and the command is ended with a new line. An example of the play command is:

play c5e5g5

**Note Syntax**

Notes are written as the note name followed by the length of the note as a digit – each value for this digit represents a musical note length, which can be seen in the table below. A rest is represented by “r”. To play a sharp or flat note a “+” or “-”, respectively, is added after the note name.

|  |  |  |
| --- | --- | --- |
| MML Note Value Number | Musical Note | |
| Relative Value | Name |
| 0 | 1/32 | Demisemiquaver |
| 1 | 1/16 | Semiquaver |
| 2 | 1/16 + 1/32 | Dotted semiquaver |
| 3 | 1/8 | Quaver |
| 4 | 1/8 + 1/16 | Dotted quaver |
| 5 | 1/4 | Crochet |
| 6 | 1/4 + 1/8 | Dotted crochet |
| 7 | 1/2 | Minim |
| 8 | 1/2 + 1/4 | Dotted minium |
| 9 | 1 | Semibreve |

**Note Commands**

There are some commands that tell the converted how to play each note, and are entered with the notes as they are usually called frequently. These are listed below:

* o[digit] – set the octave each following note is played in. The number represents the scientific pitch notation (SPN) number of the desired octave. All notes entered before this command is entered are played in the 4th SPI octave (“A” will be 440 Hz).
* v[digit] – the v command sets the volume of the following notes. A 9 as the digit will set the volume to 100%. A 0 will set the volume to 10%. By default, notes will play at 100% volume.

**Meta Commands**

These commands are entered on their own lines only once. These tell the converter how the entire file should be played and add information to the MIDI file. They are listed below:

* tempo [BPM] – set the tempo in BPM of the track (where a beat is a crochet.) This should be set the same in each MML track file when combining them into one MIDI file. If multiple tempo commands are found in the file, only the latest one will be used. The default tempo is 120 BPM.
* instrument [general MIDI patch number] – set the instrument the file should be played with. If multiple instances of this command are found, only the latest will be used. The default instrument is a piano (GM patch number 0.)
* name [name] – set the name of the track. This is put verbatim into the MIDI file in a track name meta event.

**Macros**

A macro in this version of MML is a statement that tells the converter to replace every instance of a string with another string in the entirety of the program. This is a powerful tool that can make the file more readable and much less verbose. A macro is initialised by writing the string to be replaced as the first word on a line, then an equals character, “=”, and then the replacing string. An example macro definition is below:

MiddleA = o4a5

Spaces are ignored and the macro is ended with a new line.

**Full Example**

To conclude the document, a full example is shown below.

[Example, add soon]