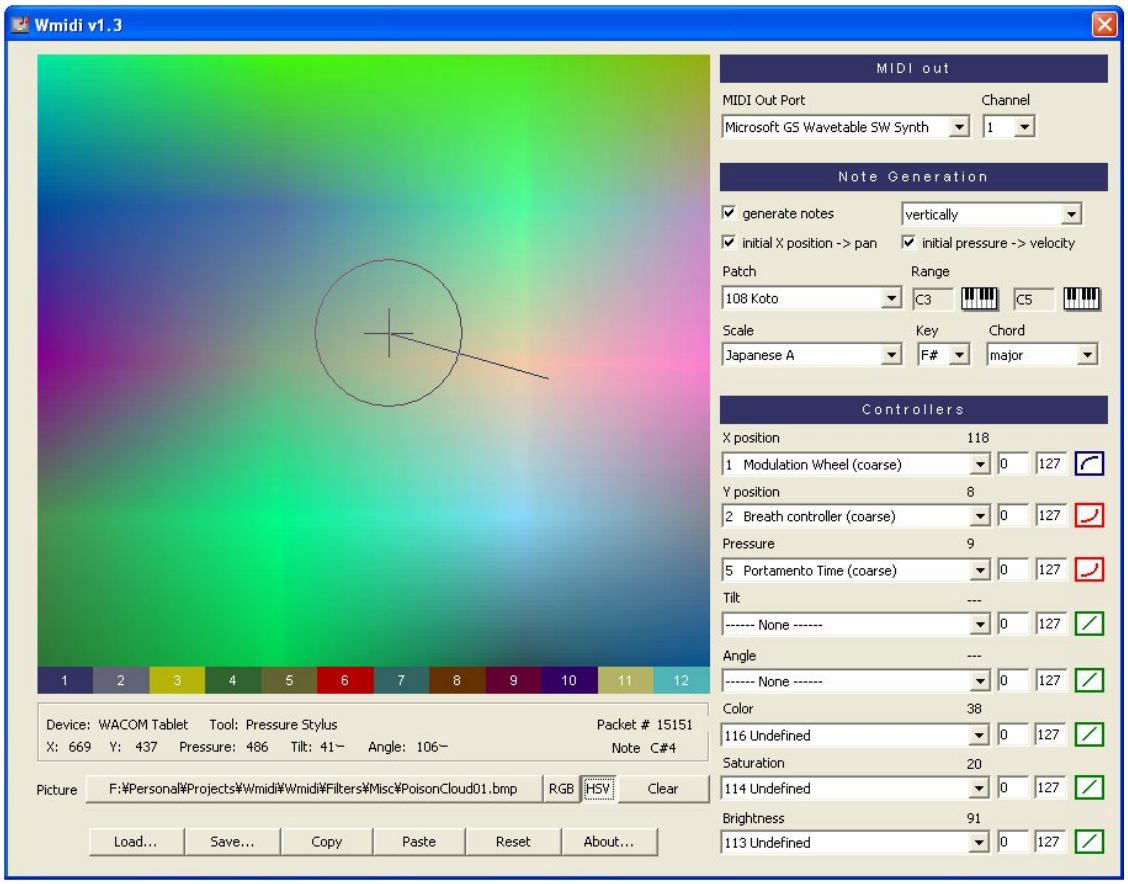
Wmidi 1.3

This is a short documentation for Wmidi 1.3. Make sure this is the latest version at www.nicolasfournel.com/wmidi.htm
Please note that this program has been initially written for my personal use.
Therefore, there is no warranty of any kind. Use it at your own risk!

Nicolas Fournel



Contents

1 - What is Wmidi ?

Wmidi transforms your graphic tablet into a musical instrument and a MIDI controller. It was initially written and tested for Wacom tablets (hence the name), but since it is using the WinTab API, it should be compatible with all kinds of tablets.

2 - The tablet area

The colored area corresponds to the graphic tablet. The position of the stylus on the tablet is represented by a cross. A line is drawn to show the orientation of the stylus, as well as a plain circle, which corresponds to the pressure.

Just below the tablet area, the precise position, pressure, angle and tilt values are indicated. The model of the tablet and the type of tool (for example pencil or eraser) are also displayed. Finally, the number of packets sent by the tablet to Wmidi is indicated.

3 - The settings area

On the right part of the window are the MIDI settings. On the top, you can select the MIDI Out port and the channel number. Below, two sections let you specify how you want to generate notes and continuous controller messages.

3.1 - Generating notes

If the "generate notes" box is checked, notes will automatically be triggered while moving the stylus vertically or horizontally on the tablet (of course, the patch associated with the MIDI out channel can be selected). In order to generate music that does not sound totally random, Wmidi only plays notes from a chosen scale (see appendix 1 for the full list of the 270 available scales). You can also select the base key, and the note range can be specified by clicking on the small keyboard icons, which represent the lowest and highest notes. If your stylus has an eraser, you can also use it to trigger chords instead of single notes. 24 types of chords are available (see appendix 2 for the full list).

Two checkboxes let you set the behavior of Wmidi when a new note is generated (either because the stylus just touched the tablet or because the user moved the stylus to a new position, triggering a new note). In that case, the initial X coordinate can be interpreted as the pan, and the initial pressure can be interpreted as the velocity of the MIDI note(s) generated.

3.2 - Generating control change messages

If you press on the stylus' first button while moving it, you can send control change messages. If the note generation was activated, the current note or chord is locked and moving the stylus on the tablet will send control change messages instead of triggering new notes.
Control change numbers can be selected for the X and Y coordinates the pressure, the angle and the tilt of the stylus. For each of them, you can also specify the range of values that will be generated, and a mapping curve.
For the range, the minimum value can be bigger than the maximum value, in which case the mapping curve will be inverted.

3.3 - Changing, loading and saving configurations

Wmidi keeps 12 sets of MIDI parameters in memory at all time. You can switch between them at any time by clicking on the small colored rectangles located below the tablet area, or by pressing the function keys (F1 to F12). You can load and save all the configurations as a single .wdi file. This is a text file, so you can edit / generate it if needed. (Note: Wmidi 1.3 can still read all the files saved with the previous versions).
To copy settings from one configuration to another, select the source configuration, press copy, select the destination configuration, and press paste. A reset button allows you to go back to the default settings of Wmidi.

3.4 – Using a background picture to generate messages

Starting with version 1.3 of Wmidi, it is possible to load a background picture. When moving the stylus on the tablet, the color of the pixel under the cursor on the screen will be analyzed. Then the corresponding control change messages will be sent.
Two color models are supported: RGB and HSV. The first color model lets you generate controller messages depending of the red, green, and blue components of the pixel color.

The second color model generates controller messages based on the hue, saturation and brightness. You can choose the color model simply by clicking on the corresponding button. The background picture as well as the color model can be different for each of the 12 configurations. The clear button can be used if you already loaded a background picture but don't want one anymore.
You can use any picture you have, and if they don't fit exactly, they will be resized. Wmidi can read most of the usual image file formats such as .bmp or .jpeg. It's also a good idea to create specific images, based on the color model you will use and the type of effect you want to create. There is plenty of room for experimentation. For example, you could load a stone / rocky texture, and use the HSV model. The brightness could be used to drive the friction parameter of a physical modelling synthesizer.

4 - How to use Wmidi ?

You can use Wmidi in live to create music. Simply set the MIDI port to a MIDI interface or a sound card. But you can also route the MIDI out port to the MIDI in port of any other MIDI program (sequencer, softsynth, etc...). A way to do that is to use a virtual MIDI device such as Hubi Loopback Device.
You can also use Wmidi to record control change curves to insufflate life into your tracks. In that case, you might want to uncheck the “generate notes” checkbox.

5 - Future improvements

This is version 1.3 of Wmidi. Future improvements could include:

- an additional "speed" parameter to send controller data.
- using a different MIDI channel / patch for the chords.
- in addition to control changes, generating pitch bend, aftertouch and NRPN.
- creating different zones on the tablet area.
- speeding up the processing of the packets sent by the tablet.

6 - History

07/12/2006 version 1.3

- added possibility to load a background image, and to send control change messages based on color, saturation, and brightness or red, green and blue components.
- added buttons to copy / paste settings between the 12 configurations.

06/23/2006 version 1.2

- added a way to switch between 12 different configurations.
- added an option to trigger notes by vertical or horizontal move.
- added a nicer version of the documentation in PDF.

06/19/2006 version 1.1

- added checkbox to enable / disable note generation.
- added minimum and maximum values for the control changes.
- added mapping curves for controller messages.
- added buttons to load / save a configuration.
- added reset button.
- added chromatic scale.

06/05/2006 finally debugged, added documentation and compiled final version 1.0.

10/12/2005 version 1.0 beta.

Appendix 1: list of scales

8 tone Spanish
8 tone Spanish Mode II
8 tone Spanish Mode III
8 tone Spanish Mode IV
8 tone Spanish Mode V
8 tone Spanish Mode VI
8 tone Spanish Mode VII
8 tone Spanish Mode VIII
Aeolian
Aeolian bb7
Algerian
Alt Alt
Alt bb3
Alt bb3 bb7
Alt bb6 bb7
Alt bb7
Alt n2
Alt n5 bb7
Alt n6
Arabian n2
Arabian
Augmented
Augmented Mode II
Balinese
Bebop Dominant
Bebop Dominant Mode IV
Bebop Dominant Mode V
Bebop Dominant Mode VI
Bebop Dominant Mode VII
Bebop Dominant Mode VIII
Bebop Dorian
Bebop Dorian Mode II
Bebop Dorian Mode III
Bebop Dorian Mode IV
Bebop Dorian Mode V
Bebop Dorian Mode VI
Bebop Dorian Mode VII
Bebop Dorian Mode VIII
Bebop Locrian Add5
Bebop Locrian n2
Bebop Locrian n2 Mode II
Bebop Locrian n2 Mode III
Bebop Locrian n2 Mode IV
Bebop Locrian n2 Mode V
Bebop Locrian n2 Mode VI
Bebop Locrian n2 Mode VII
Bebop Locrian n2 Mode VIII
Bebop Major
Bebop Major Mode II
Bebop Major Mode III
Bebop Major Mode IV
Bebop Major Mode V
Bebop Major Mode VI
Bebop Major Mode VII
Bebop Major Mode VIII
Bebop Minor
Blues
Blues M3
Blues M3 Mode II
Blues M3 Mode III
Blues M3 Mode IV
Blues M3 Mode V
Blues M3 Mode VI
Blues M3 Mode VII
Blues Mode II
Blues Mode III
Blues Mode IV
Blues Mode V

Blues Mode VI
Byzantine
Chinese
Chinese Mongolian
Chromatic
Composite II
Composite II Mode II
Composite II Mode III
Composite II Mode IV
Composite II Mode V
Composite II Mode VI
Composite II Mode VII
Diminished
Dominant #2
Dominant Augmented
Dominant Sus
Dominant Sus Mode II
Dominant Sus Mode III
Dominant Sus Mode IV
Dominant Sus Mode V
Dominant Sus Mode VI
Dominant b2
Dorian #4
Dorian
Dorian Augmented
Dorian b2
Dorian b2,#4
Dorian b4
Dorian b5
Double Harmonic
Egyptian
Enigmatic
Enigmatic Minor
Enigmatic Minor Mode II
Enigmatic Minor Mode III
Enigmatic Minor Mode IV
Enigmatic Minor Mode V
Enigmatic Minor Mode VI
Enigmatic Minor Mode VII
Enigmatic Mode II
Enigmatic Mode III
Enigmatic Mode IV
Enigmatic Mode V
Enigmatic Mode VI
Enigmatic Mode VII
Ethiopian ARaray
Ethiopian Geez
Half Whole Diminished
Harmonic Major
Harmonic Minor
Hawaiian
Hindu
Hindustan
Hirojoshi
Hirojoshi Mode II
Hirojoshi Mode III
Hirojoshi Mode IV
Hirojoshi Mode V
Hungarian Gypsy
Hungarian Gypsy (2)
Hungarian Gypsy Persian
Hungarian Major
Hungarian Minor
Ionian #2
Ionian #5
Ionian #6
Ionian
Ionian Augmented #2
Ionian b5
Japanese A
Japanese B
Japanese Ichikosucho

Japanese Taishikicho
Javaneese
Jewish Adonai Malakh
Jewish Ahaba Rabba
Jewish Magen Abot
Kumoi
Kumoi Mode II
Kumoi Mode III
Kumoi Mode IV
Kumoi Mode V
Locrian
Locrian bb3 bb7
Locrian bb6
Locrian bb7
Locrian n2
Locrian n2 n7
Locrian n3
Locrian n6
Locrian n7
Lydian #2
Lydian #3
Lydian #6
Lydian #6,#2
Lydian
Lydian Augmented #3
Lydian Augmented #6
Lydian Augmented
Lydian Augmented #2
Lydian Dominant
Lydian Dominant Augmented
Lydian Minor
Lydian b2
Lydian b3
Major
Major Locrian
Major Pentatonic
Mela Bhavapriya
Mela Chakravakam
Mela Chalanata
Mela Charukesi
Mela Chitrambari
Mela Dharmavati
Mela Dhatuvardhani
Mela Dhavalambari
Mela Dhenuka
Mela Dhirasankarabharana
Mela Divyamani
Mela Gamanasrama
Mela Ganamurti
Mela Gangeyabhusani
Mela Gaurimanohari
Mela Gavambodhi
Mela Gayakapriya
Mela Hanumattodi
Mela Harikambhoji
Mela Hatakambari
Mela Hemavati
Mela Jalarnavam
Mela Jhalavarali
Mela Jhankaradhvani
Mela Jyotisvarupini
Mela Kamavardhani
Mela Kanakangi
Mela Kantamani
Mela Kharaharapriya
Mela Kiravani
Mela Kokilapriya
Mela Kosalam
Mela Latangi
Mela Manavati
Mela Mararanjani
Mela Mayamalavagaula

Mela Mechakalyani
Mela Naganandini
Mela Namanarayani
Mela Nasikabhusani
Mela Natabhairavi
Mela Natakapriya
Mela Navanitam
Mela Nitimati
Mela Pavani
Mela Ragavardhani
Mela Raghupriya
Mela Ramapriya
Mela Rasikapriya
Mela Ratnangi
Melodic Augmented
Melodic Minor
Minor
Minor Pentatonic
Minor Pentatonic Mode III
Minor Pentatonic Mode IV
Minor Pentatonic Mode V
Mixolydian
Natural Minor
Neapolitan Major
Neapolitan Minor
Oriental
Pelog
Pelog Mode II
Pelog Mode III
Pelog Mode IV
Pelog Mode V
Pelog Mode VI
Pentatonic Major
Pentatonic Minor
Persian
Persian Mode II
Persian Mode III
Persian Mode IV
Persian Mode V
Persian Mode VI
Persian Mode VII
Phrygian #4
Phrygian
Phrygian b4
Phrygian bb3
Phrygian n3
Super Locrian
Super Lydian Augmented
ThetaAsavari
ThetaBhairav
ThetaBhairavi
ThetaBilaval
ThetaKafi
ThetaKalyan
ThetaKhamaj
ThetaMarva
Whole Half Diminished
Whole Tone

Appendix 2: list of chords

major
major 7
major 9
major 13
minor
minor 6
minor(major7)
minor 7
minor 11
minor 13
power chord
flattened 5
6
6/9
7
9
1/2 diminished 7
diminished 7
b9
13
augmented
suspended 2
suspended 4
+11