Arpology

A 4-voice arpeggiating synth, with an auto-improvisation feature.

How to use:

1) Press a piano key and Arpolgy will play a 4-voice appegiating
   pattern based on what note you are pressing.

2) To shift the keyboard up an octave *tap* the right button.
   To shift the keyboard down an octave *tap* the left button.

3) Arpology uses two separate User Interface (U/I) "frames." A U/I
   frame determines which parameters are controlled by the onboard
   pots.   The two U/I frames for Arpology are:

           1) The Envelope Frame (BLUE LED is on)

                 Top   Pot controls envelope attack
                 Bottom Pot controls envelope decay/sustain.

           2) The Arpeggiator Frame (RED LED is on)

                 Top   Pot selects arpeggiation pattern.
                 Bottom Pot controls arpeggiation rate.

4) To switch between U/I frames, *press* the left or right buttons.
   Pressing the right button selects the Envelope Frame.
   Pressing the left button selects the Arpeggiator Frame.

5) To activate the automatic improvisor *double-tap* the left button.
   Arpology now "plays itself." The LED for the current frame will
   begin flashing, indicating that the auto-improvisor is on. While
   the auto-improvisor is on, Arpology will not respond to key
   presses. To turn off the auto-improviser *double-tap* the left
   button again.

6) There are 10 presets for Arpology. These can be selected by
   double-tapping the right button and then pressing one of the
   following piano keys:

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   C  (0)   - turn off all vibrato and panning effects
   C# (1)   - add vibrato to high voices
   D  (2)   - use a slow panning effect
   D# (3)   - use a medium-speed panning effect
   E  (4)   - use a fast panning effect
   F  (5)   - play "Ambia", a slow moving improv
   F# (6)   - use a major tonality
   G  (7)   - play "Streaker", a fast moving improv
   G# (8)   - use a minor tonality
   A  (9)   - reset Arpology to its initial state
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Types of button presses:

Tap: quickly tap a button
Press: long-press a button
Double-Tap: quickly double-tap a button
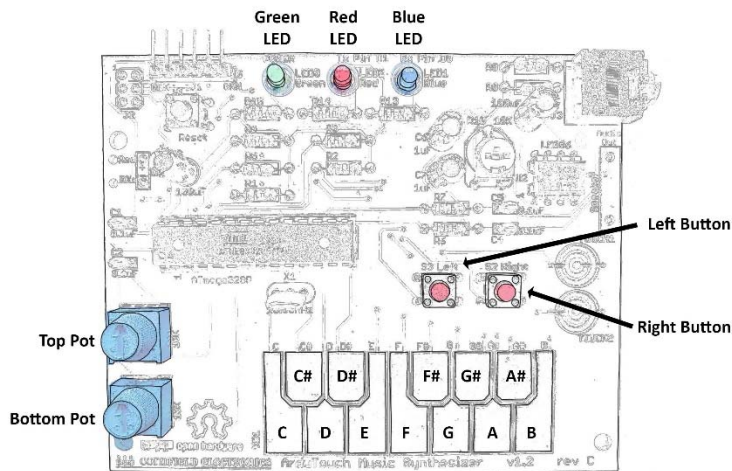
Programming Notes:

1) Arpology is meant to be compiled using the "Stand-alone" runtime
   model. Otherwise, the LEDs will not operate. This runtime model
   can be set by uncommenting the "#define __STNDLONE__" statement
   in Model.h of the ArduTouch library.