Basic DIY MIDI EVI functional requirements:

1. The controller will have DIN MIDI out
2. The controller will be able to be transposed to a different key than C standard
3. The controller will have a seven octave range, using 6 touch sensitive rollers
4. The controller will have 4 keys plus 3 auxiliary trill keys (see fingering chart)
5. All keys and benders will be touch capacitance actuated
6. The controller will have a breath sensor
7. The controller will have a bite sensor or other sensor on the mouthpiece for sending portamento and controlling portamento time
8. The controller will have a lip sensor that is touch sensitive using metal again the players lip to increase or decrease a MIDI controller (Foot Controller on my midi EVI)
9. The controller will have a vibrato mechanism (on the EVI this is not touch sensitive) that creates realistic vibrato
10. The controller will have up and down bending plates (Touch Sensitive)
11. The controller will have the ability to be battery powered with a reasonably long battey operation life to allow for wireless midi performance
12. The controller will have an on/off button
13. The controller will have an LED to indicate when the breath sensor is transmitting
14. The controller will have an Led to indicate when the portamento sensor is transmitting
15. The controller will remember the user's last configuration (transposition settings, etc.) on power-down and power-up
16. The user will be able manually adjust the sensitivity and offset for breath, portamento, pitchbend (this includes vibrato, but could also be independent), portamento, and the extra controller (lip controller). This is necessary due to conditions like humidity and heat.

"Nice to Haves" Down the Road:

1. MIDI EVI Slur Sustain and Chord interval setting