VC1 Product Brief

Our VC1 combines an adaptive Pitch Follower especially developed for the human voice, with conversion to MIDI or direct conversion for synthesizers or samplers. A short demonstration video can be seen at https://youtu.be/tFu_xNMp8bM.

The VC1 does not use a conventional microphone to capture the singers voice: instead it uses an inbuilt **throat-microphone** or **laryngophone**, a type of contact microphone. The throat-mic enables the VC1 to work reliably also under the condition of a loud environment, as e.g. in a rehearsal room or live on stage, a situation that cannot be mastered using a conventional microphone.
More, the throat-microphone strongly attenuates non-convertible hiss and breathing noises, making the conversion highly reliable.

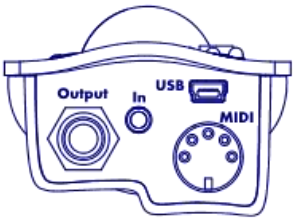
We have developed a conversion algorithm that takes into account the particularities of the human voice, being especially able to detect conversion errors and eliminate them on the fly. The algorithm provides a latency close to the physical limit of only 2 vocal frequency periods.
In addition, the algorithm can provide auto corrected intonation, or can follow precisely the singers pitch, employing Pitch Wheel events. (For precise tuning the MIDI receiver has to be GM compatible or higher.)

To avoid the keyboard-centred MIDI bottleneck and its disadvantages for the human voice, the conversion can also be directly coupled to e.g. our proprietary WaveRaker synthesizer or a multi-layer sample-based sound engine we have in preliminary prototype stage.

Currently we have a hardware prototype based on an ARM Cortex M4 MCU which not only runs the pitch and amplitude conversion to MIDI, but also a monophonic version of our modular synthesizer WaveRaker. On request we are happy to showcase this prototype.

The VC1 could be produced in different versions, from a high-end wireless device with own inbuilt sampler and/or synthesizer, but also as a low-cost PC based device. To give you a basic understanding of production cost and possible retail prices, here are two examples:

1 Our current prototype provides the MIDI conversion (via USB and native MIDI receptacle) and the synthesizer output using a 6mm stereo phone jack. The UI consists of a monochrome LCD Display, a force sensor, 7 keys and 3 LEDs. Costs for the electronics, inclusive product assembly, is 35.-€. (Quote for 1000 units from LPlus Technology, Hong Kong, March 2016). Production costs for the hand-held housing has to be calculated separately according to the desired specifications.



2 A low cost version would offer inbuilt MIDI conversion (via USB and native MIDI receptacle) plus a PC based sampler or syntesizer. The hardware would come with a simple UI consisting of a force sensor and 7 keys. The estimated electronic costs for 1000 units would be within 10.-€, excluding the additional cost for the housing. The PC software has a mostly finished sound engine, but still needs an OS independent UI to be able to run on Windows, Mac OS X and iOS.

If you are interested to know more, please visit www.audiodevel.com or contact Michael at mkraft@audiodevel.com, phone: +351-916665350

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