

## KARA MIDI CONTROLLER - SUMMARY [ U.S. Patent Pending ]

Kara combines capacitive touch and motion sensors with simple finger gestures to unleash the powers of electronic synthesizers and musicians. Sending standard MIDI messages, Kara controls a multitude of music hardware and software.

The touch sensitive controls of the Kara are four-octave Pitboard, Motion Triggers and Note Triggers. There are four Note Triggers, one for each MIDI channel. Motion Triggers activate sending of Pitch Bend and MIDI Control Change messages.

Notes are selected by touching small fingertip-shaped pits on the Pitboard. The note layout of the Pitboard enables an effortless playing of chords, even with barre-like technique.

By tapping one or several Note Triggers, selected notes are sent through one to four MIDI channels.

By strumming a Note Trigger, selected notes are played through one of the four MIDI channels. The speed of strumming defines the velocity for the selected notes.

When strumming, the selected notes keep on playing, even if player is not touching the Pitboard any longer.

The strummed notes can be replayed just by strumming. There is no need to select them again from the Pitboard.

To send various MIDI Control Change (MIDI CC) messages, player double taps a pit on the Pitboard. Each pit of the Pitboard has a MIDI CC number and a value. With a double tap, Kara starts sending CC messages. After the initial double tap, only one tap is required.

MIDI Control Change 76 messages are sent when player turns Kara around its x-axis while touching a Motion Trigger.

To send Pitch Bend messages, player turns Kara around its z-axis while touching a Motion Trigger.

To toggle on the Motion Triggers, touch both of them. To toggle off the Motion Triggers, touch one of them.

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High resolution photos can be downloaded from:

[http://www.deomo.com/Kara\\_Top\\_Large.jpg](http://www.deomo.com/Kara_Top_Large.jpg)

[http://www.deomo.com/Kara\\_Front\\_Large.jpg](http://www.deomo.com/Kara_Front_Large.jpg)

## FUNDING

The Finnish Cultural Foundation with Anja and Jalo Paananen has awarded two grants for building Kara, in 2015 and in 2017.

## MAKER

Kara has been created by me, Tomi Itkonen. I designed, coded, created electronic schematics, tested different forms and materials, and finally, assembled it. I did not use CNC machine. However, I did use laser cutter.

## EXTERNAL SUPPLIERS

External suppliers were responsible for 3D printing, manufacturing capacitive touch PCBs, aluminium CNC machining and powder coating.

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