



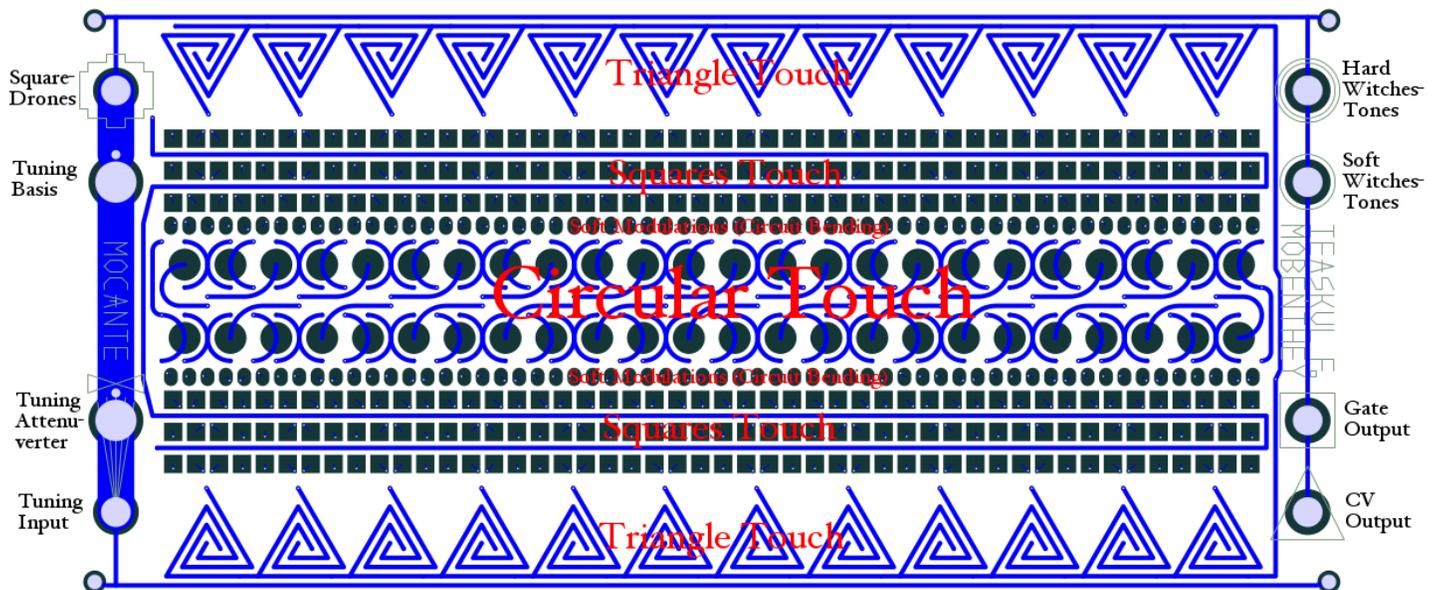
*“Sideways, orange sunset  
Light transverses the woods with sparkles and textural shadows;  
A baby un-mosses an ancient, golden toy.”  
-Wang Wei*

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The *Mocante* module is a crossover from the Tocante series of touch-instruments, geared for Eurorack by Mobenthey. It features a twenty-four operator array of oscillators- in this case phase analysis units- tuned by capacitor series in the Tocante scale. As a touch controller, it outputs a control voltage representing the unique tunings of this scale, a gate signal, as well as a host of witches-tones and square-drones that derive from the Phase Lock Loop (PLL) machineries within.

*Mocante* is the first of Mobenthey's ultra-raftable modules series, featuring all circuitry and the front panel on one circuit board. The final module thickness is only as deep as the 3.5mm jacks and potentiometers- not more than about a centimeter, so it can fit in a thin wooden case similar to those used for the Tocante instruments proper.

*Mocante* is a 54HP Eurorack module that runs on +12 and -12 volts. Actually it completely shuns the negative twelve volts, and thus it can run from a unipolar, plus twelve supply. This helps make it raftable, as it only requires a branch power line from the increasingly common 12V trunk. Thus, when ordered with a wooden case, it has a 2.1mm, tip positive, 12 V jack to power it. Also, it can be powered by 9 volt battery. If ordered without a case, for Eurorack mounting, it will come with a power connector traditional to that format.



*Mocante* has three main areas of touch:

- Triangle Touch is the traditional touch controller, associated with the CV and Gate outputs. When untouched, the CV outputs an undefined voltage, and Gate outputs a logic low (about 0.4 volts). When touched, the CV outputs a voltage proportional to the frequency of the operator, and Gate goes high (between 4 and 7 volts).
- Squares Touch takes the ultrasound machinery of each operator and octave shifts it into audible and sub-audible ranges. When touched, they manifest an output at “Square Drones.” That jack is unbuffered so it can potentially act as input, to insert a signal into the toucher traces.
- Circular Touch is the most ephemeral, associated with the hard and soft witches-tones outputs. It enables the ultrasound signals at each operator to heterodyne with others, creating audible whistling sounds and other noises... Soft witches-tones use heterodyne phase comparison to generate sweeter, sine-like sounds, whereas hard witches-tones use phase-lock pulses to make sawtooth forms.



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Between Squares and Circular touch areas, there is a small strip of soft modulations, for touching fingers to bend and mutilate the PLL circuitry of each operator.

The “Tuning Basis” knob sets the base rate of each operator, from audible frequencies to their ideal range in ultrasound and radio. The best tuning to operate triangle touch is at noon or later in the day, which results in an approximately 20-200 khz range, and smoothest operation on the lower manual. To bring the upper manual into focus, bring the tuning higher.

The “Tuning Input” ties to an attenuverter, marked by a characteristic bow-tie. An attenuverter works like this: at noon the modulations are nulled out, they have no effect; clockwise from there they increase in intensity, with positive input meaning “more”; to the counter-clockwise direction, modulations increase as well, but with negative input meaning “more”. This knob is essential to controlling how much, and in which direction, your modulations apply.

To explore the module by itself, start with the more ephemeral aspects- the witches tones and square drones. Send them into a mixer to hear their relationships. Next, explore pairing the module with others; rig up a classic situation between *Mocante* and *Denum*- CV output to FM input and gate out to AM input. Together, the triangle-touch monophonic synth thus speaks with the drones and spooky winds.

## Manifesto

The idea of the “touch controller” propels the new line of Mobenthey modules. The interrogajoke concept focuses on interrogating and also playing with the touch interface. Is it a piano? How does it feel the finger? How does the finger feel it? Most touch devices use a high frequency signal that courses through the fingers and senses their capacitance. Although this is a signal, the module neglects it as unseemly ultrasound and denies it sonic presence. That is the core of the interrogajoke- how to give sonic presence to capacitive sensing waves. The classic pairing of 4046 Phase Locked Loop and 4040 Ripple Counter predominates in clock synthesizers for all sorts of devices including the older computers by Apple. Using only these chips, the interrogajoke exploits the phase detection of cap-sense, hacks it and cross references it with classical technologies to yield a unique Eurorack module.

The toucher is a body without organs- it is not filled with knobs and switches that demand legends, but rather the cryptic runes inspired by sensor fields. As such, it is a place for stumbling fingers, not the precise en-goaled tweaker.

Rue is planted outside witches door. They are called witches tones because of the windy whistling sounds of the ultrasound heterodynes. When a vampire opens its mouth, there is a special sound which only the old-school television can only translate. The vampire, like its forebear the bat, emits ultrasound out its white-noise mouth, as a be-witching and en-trancing tool for its victims. Only an old-school TV can translate this in vampire programming, because it too emits an ultrasound wave by the action of its flyback transformer, which can mix through non-linearities in its amplifier with the vampire waves to generate a similar witches tone, en-trancing those within earshot of the TV.

Audiologists shall not rue the ultrasound wave but use it as a powerful, secret spell.