

QD FEATURES:

- **22hp** Eurorack module, 12V: 100mA, -12V: 10mA, 5V: 0mA
- **four** independent **digital drum voices**, each can be
 - a digitally **modeled** drum
 - a **sample** from a **sample set**, loaded from a **memory card**
 - a **wavetable VCO** from a **wavetable bank**, loaded from a **memory card**
- built-in **stereo panning mixer with 3-band EQ and Compressor**, every voice can be **mixed** and left/right **panned** into **two** output channels
- four **flexibly assignable CV inputs and LFOs**, each CV input or LFO can be assigned to any one of the twelve control potentiometers, volume and pan level
- save and recall **64 presets**

QD USER INTERFACE:

- the **four** drum voices are arranged in four corners of a **square**, counting from bottom left we have: voice 1 (**blue**), voice 2 (**red**), voice 3 (**yellow**) and voice 4 (**green**)
- the **trigger inputs** are on the left and right edge of the module, arranged in the same **square** as the drum voices
- each of the four drum voices has **three potentiometers**
 - for digital modeling: control **pitch**, **decay** and a drum **specific parameter**
 - for sample playback: control **pitch**, **decay** and **sample selection**
 - for wavetable VCO: control **pitch**, **decay** and **wavetable selection**
- there are four **bottom LED buttons** arranged in a somewhat **square** layout, these correspond to the four **drum voices** in the corners as well as to the four **CV inputs** right next to them
- four **CV inputs** are also arranged in a somewhat **square** layout, they are selected with the four **bottom LED buttons** just next to them
- there is a central **rotary encoder** with **push button** function and a **circle** of sixteen color LEDs around it - **circles, yay!!!**
- a **three-way toggle switch** that switches the control between **MUTE/voice selection** (top), the **mixer/EQ** (middle) and **CV / LFO assignment** (bottom)
- the **top F-Button** to access special functions, see below

MEMORY CARD OPERATION AND ORGANIZATION:

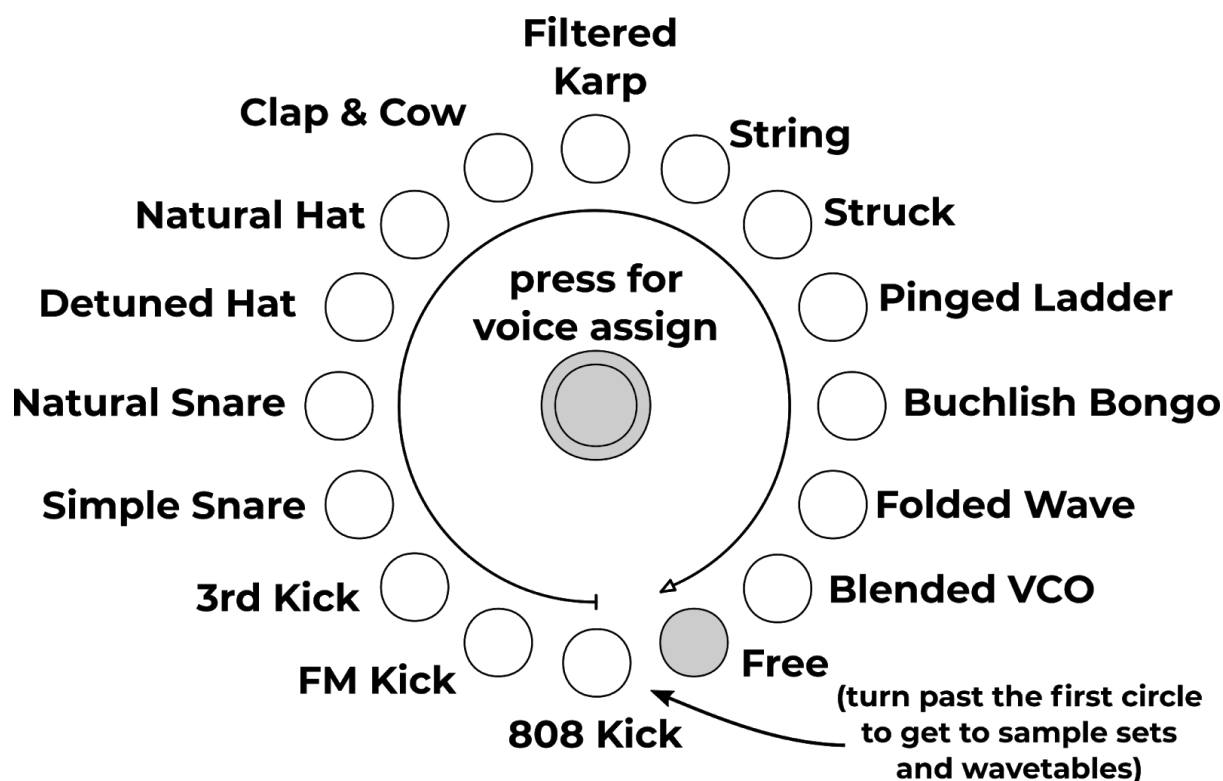
- during **startup** the module will **scan the card** for **sample sets** or **wavetable banks**, the LED circle with light up cyan/pink for every set found
- **removing** and **swapping** the card while powered up is **not (yet) supported**
- **NOTE:** for **optimal performance**, none of the files should be **fragmented** on the card. To ensure **no fragmentation**, it is recommended to **erase all files** from the card, then copy **all files in a single copy operation** from the PC/Mac
- a **sample set** is a **folder** in the **root directory** of the card with up to **128 WAV** files samples inside, samples are **16-bit, MONO, 44.1khz or 48kHz**
- samples can be of **any length**, up to the size of the memory card.
- a **wavetable bank** is a **folder** in the **root directory** of the card with a **single WAV file** inside, **16-bit, MONO**
- the **name** of a **wavetable folder** must include the letters **"WT"** and a number that gives the **number of samples per wavetable**, e.g. **WT256_bank01** for a bank with **256 sample** wavetables.
- the maximum number of samples per wavetable bank is **16k (16384 samples)**, so there can be a maximum of e.g. **64** wavetables of length **256** in a bank
- a maximum of **32 sample sets and wavetable banks** are supported, all others are ignored.
- a **maximum** of **1024** samples or wavetables **in total** is supported
- all **sample sets and wavetable banks** are sorted **alphabetically** according to the folder name - note the sorting will only happen **after** the **first 32** folders have been found

MUTE/VOICE ASSIGNMENT :

- put the toggle switch in the **top** position (**MUTE**)
- the four LED buttons **mute/unmute** each of the four voices. the LED buttons also show trigger activity for that voice with short flashes
- to assign a voice, press the **encoder button**:
 - the four **bottom LED buttons** show the currently selected voice, press any of them to select each voice individually
 - the **LED circle** shows what model/sample set/wavetable bank is assigned to this voice (**blinking**) as well the assignment for the other voices (**steady color**)
 - **rotate** the encoder to select another model, sample set or wavetable bank
 - to **manually trigger** a voice, press the same **LED button** again
 - press the **encoder button** or move the **toggle switch** to leave voice assignment

starting from the LED right above the **toggle switch**, the voice assignment is shown on the LED circle in a clockwise direction:

position 1-16 (WHITE): digital modeling drum voices:

**Notes:**

- **Clap & Cow:** PITCH: filter cutoff / DECAY: filter resonance
- **Filtered Karp:** MOD: lowpass/highpass blend
- **Pinged Ladder:** PITCH: filter cutoff / DECAY: filter resonance

position 17-32 (CYAN): sample set/wavetable bank **1-16**

position 33-48 (VIOLET): sample set/wavetable bank **17-32**

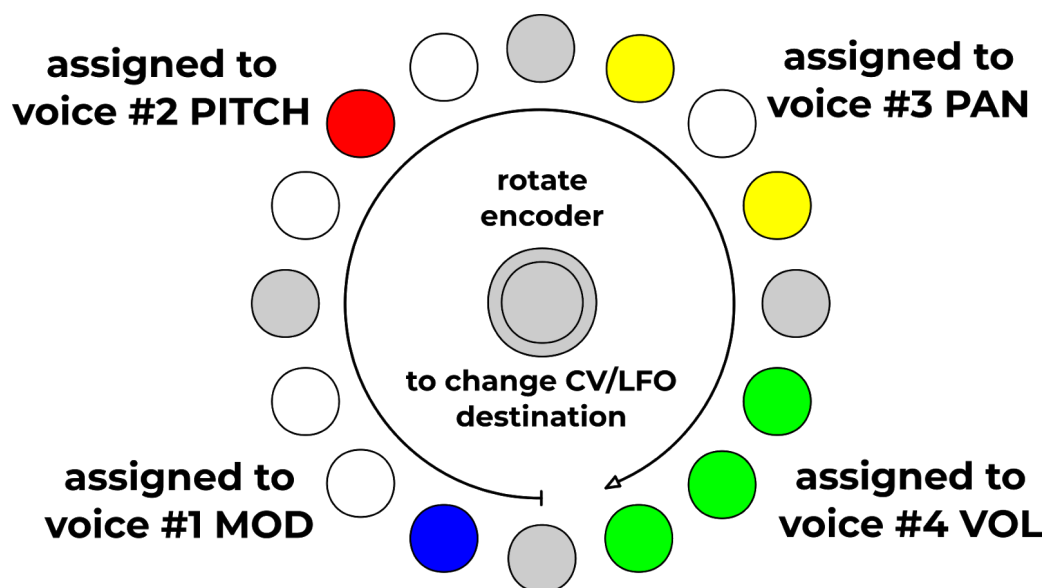
- **samples**, controls: **pitch +/-1 octave, decay, sample selection** (if there is more than one sample file in a set)
- **wavetables**, controls: **pitch +/-2 octaves, decay, wavetable selection** (if there is more than one wavetable in a bank)
- if the same sample is triggered **repeatedly**, it will be played with **minimal latency** (<1ms) since the start of the file is **cached** in internal memory, when changing the sample via **CV control** the latency will **increase** slightly (<2.5ms) since a new file has to be loaded from the **memory card**

MIXER, PAN, EQ, COMPRESSOR:

- put the **toggle switch** in the **middle** position (**MIX**)
- the four **LED buttons** show the currently **selected voice**, press any of them to select each voice individually
- the **LED circle** shows the current **VOLUME** level of the selected voice (in the color of the voice), there are **32 steps** between **muted** and **maximum** level
- **long press** the **LED buttons** to access the **PAN level** control, **rotate** the encoder to move the panning **left/right**, then release the LED button again
- press the **encoder button** to access the **EQ/compressor** control, use the **LED buttons** to select the **EQ bands**: (blue: **low**, green: **mid**, yellow: **high**, red: **compressor level**), rotate the encoder to change the EQ band **gain** or the **compressor level**
- press the **encoder button** or move the **toggle switch** to leave **EQ/compressor** control

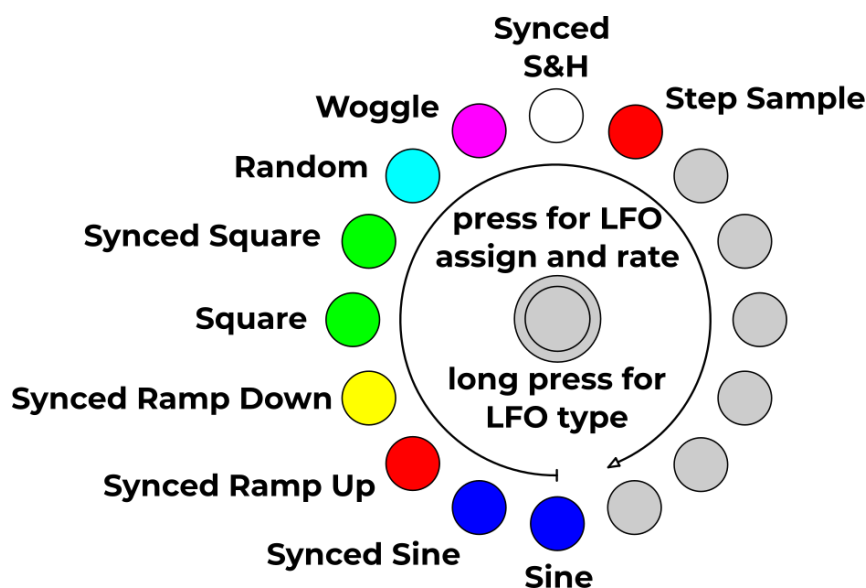
CV ASSIGNMENT AND CONTROL:

- put the **toggle switch** in the **bottom** position (**CV**)
- the **four LED buttons** show the currently **selected CV input**, press any of them to select each CV input individually (CV inputs are **-5V** to **5V**)
- the **LED circle** shows what potentiometer the **selected CV input** is **assigned** to (in the color of the drum voice) as well as the current **CV attenuation level** (in **WHITE/GRAY**)
- **rotate** the encoder to change the CV attenuation in **32 steps** from CV **fully attenuated** (disabled) to CV at **maximum** level (at maximum level the CV is scaled to **V/octave**)
- the attenuated CV signal is **added** to the assigned potentiometer value
- press the **encoder button** to change the CV assignment:
 - the LED circle will **blink** at the currently **assigned** potentiometer (in the color of the drum voice)
 - **rotate** the encoder to change the assigned potentiometer
 - if you turn the encoder past the first circle you can also assign the CV to the voices **PAN** or **VOLUME** level
 - press the **encoder button** or move the **toggle switch** to leave CV assignment

**LFO ASSIGNMENT AND CONTROL:**

- put the **toggle switch** in the **bottom** position (**CV**)
- the **four LED buttons** show the currently **selected CV or LFO**, press **two adjacent buttons** at the same time to select an **LFO**, two LED buttons will light up
- the **LED circle** shows what potentiometer the **selected LFO** is **assigned** to (in the color of the drum voice) as well as the current **LFO attenuation level** (**CYAN**)

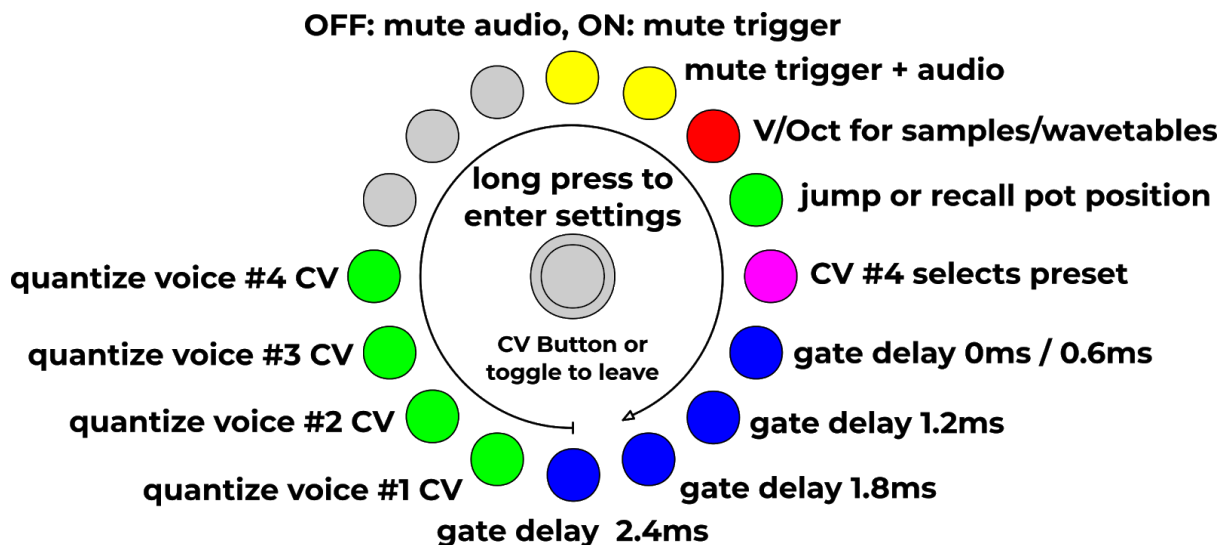
- rotate the encoder to change the LFO attenuation in **32 steps** from LFO **fully attenuated** (disabled) to LFO at **maximum** level
- the attenuated LFO signal is **added** to the assigned potentiometer value
- press the **encoder button** to change the LFO **assignment**:
 - the LED circle will **blink** at the currently **assigned** potentiometer (in the color of the drum voice)
 - **rotate** the encoder to change the assigned potentiometer
 - like for **CVs** you can also assign to the **PAN** or **VOL** level of a voice
 - press the **encoder button twice** or move the **toggle switch** to leave LFO assignment
- press the **encoder button** again to change the **LFO speed**:
 - the LED circle will show a shape (**VIOLET**) that moves slow or fast depending on the current LFO **speed** and **type**
 - **rotate** the encoder to change the **LFO speed** in **48 steps**
 - press the **encoder button** or move the **toggle switch** to leave LFO speed control
- **long press** the **encoder button** to change the **LFO type**:



- press the **encoder button** or move the **toggle switch** to leave LFO type selection

SETTINGS:

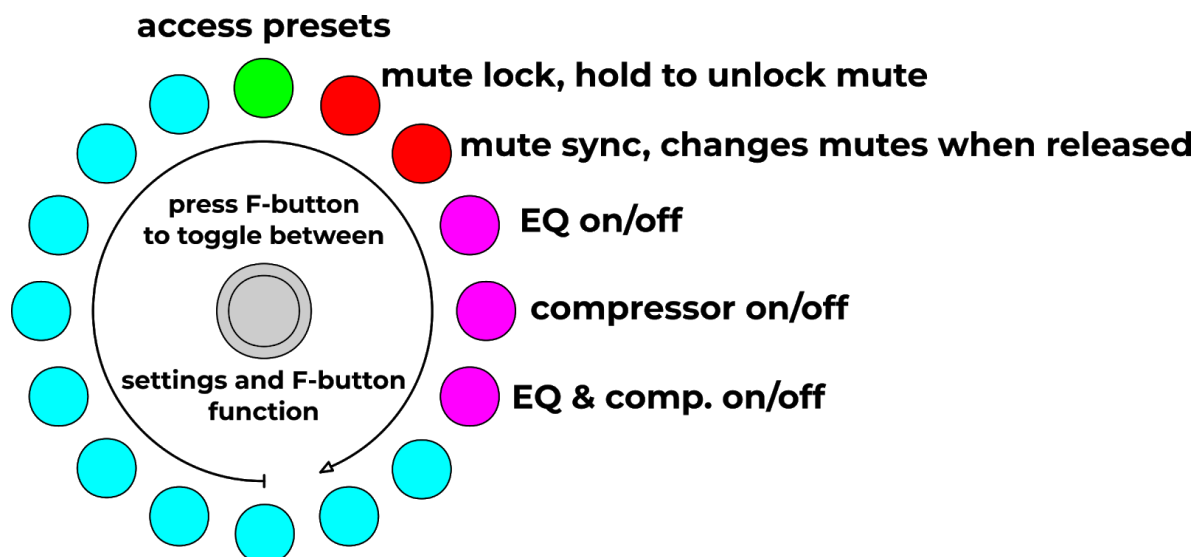
- **long press** the encoder button to access settings
- **rotate** encoder to select a **setting**, press **encoder button** to turn a setting **on** or **off**:



- press **LED buttons** or move the **toggle switch** to leave settings

F-BUTTON:

- the **F-Button** allows you to map one “special” function to this button and then access it quickly.
- the currently available functions are:



- press the **F-button** while in **Settings** to access **F-Button functions**
- rotate** encoder to a function, then press **encoder button** to **confirm** it
- press **LED buttons** or move the **toggle switch** to leave settings

PRESETS:

- press **F-Button** to access **presets**
- 64** presets in 4 **banks** of 16
- current** preset is selected, **saved** presets are shown in bank color, **empty** slots are dark
- use bottom **LED buttons** change to another **bank** (1-4)
- rotate** encoder to select another preset
- long press** encoder button to **save**, **short press** to **load** a preset
- presets store **everything** including the pot positions, except for the mute state
- after a preset is loaded, the **pot behaviour** depends on setting **#4**: “**jump**” will change the value **immediately** to the new value if the pot is moved, “**recall**” will not change unless you move to the **previously saved** position
- with setting **#5** enabled, **CV #4** will control the current preset, **0V - 5V unipolar** is spread across all **saved** (non-empty) presets
- press **F-Button** again to leave **presets**

QD FIRMWARE UPDATES:

- check vpme.de/QD for firmware updates, download and save the **.UPD** file to your PC
- the **current firmware** version last digit is shown as a **red** dot on the **blue** LED circle at startup, so e.g. for version 1.0 it's the LED right above the MUTE label
- Copy the **.UPD** file to the **root** folder of your **memory card**
- safely** eject the card from your PC/Mac
- power off the module and insert the **memory card** into the slot
- Press and hold the **top LED button** and power on your system, the **top LED button** will blink..
- Press the **middle encoder button** to start the update process, the four bottom LED buttons will blink during the update process.

when the update was **successful**, press any of the four **bottom LED buttons** to **restart** the unit with the new firmware.

CALIBRATION:

units will come **already calibrated**, to redo the calibration you need an exact **3V** CV source

- connect the unit to your rack and let it warm up for **15 minutes**
- power down, remove all cables and power up the unit holding the **two left LED buttons**
- the LED circle will show the **0V** offset for the selected **CV** input in **blue**, rotate the middle encoder to **center** the display on the top **12 o'clock** position
- use the **LED buttons** to select all 4 CV inputs and repeat the process
- plug an exact **3V** signal into one of the CV inputs, the LED circle will change to **red**, again use the encoder to **center** the readout at **12 o'clock**
- repeat the process for all 4 CV inputs
- to save the calibration, **press and hold** the middle encoder button, the unit will restart

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www.facebook.com/tonydekaro

- deKaro Signature Drums & Glitches

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instant.wtf

- INSTANT Kicks, Hats, Claps and Clacks

Marco Scherer

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- CWEJMAN S1 SYNTHESIZER BATTERY KITS
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all wavetables courtesy of

waveeditonline.com

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Simple Compressor (source)

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EQ.C - Main Source file for 3 band EQ

(c) Neil C / Etanza Systems / 2K6

Shouts / Loves / Moans = etanza at lycos dot co dot uk

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FatFs - Generic FAT Filesystem Module R0.11

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