# NEW FEATURES in 1.10:

**"EASTER EGG" FEATURES:**

- **REVERB:** when in the **EQ/COMPRESSOR** screen, **long press** the encoder to access the **reverb** settings
  - reverb only works on QD main outputs **1** and **2**
  - use the bottom LED buttons to select **blue**: reverb mix, **red**: feedback, **yellow**: diffusion, **green**: reverb time
  - when the reverb **mix** is not 0, the reverb setting can be accessed with a normal press on the encoder: **MIX -> EQ/COMP -> REVERB -> MIX**.
  - reverb settings are **stored** with presets
- **EXTRA:** with the toggle switch in the **MUTE** position, **press and hold** a mute LED button to access an "**extra"** parameter for sample/wavetables and **most** of the digital models, note that the extra value resets to 0 when you change the model, but will be kept if you are switching between samples or wavetables

**LOW PASS GATES:**

- samples and wavetables now also have an **EXTRA** namely **LOW PASS GATES**
- with **EXTRA** at zero, the standard **decay** envelope is used.
- with **EXTRA** not zero, the decay envelope is replaced with a **resonant low pass gate**.
- with increasing **EXTRA**, the **resonance** is increased, in the 2nd half of the circle the **cutoff frequency** is also reduced - try it out :)

**NEW FEATURES:**

- when editing the **CV attenuation level** a blinking **purple LED** shows the **current CV signal** of the selected CV input - this is useful to see the range of the incoming CV signal
- **new** model **#15 - BLENDED VCO**: the **EXTRA** feature allows to change the **PWM value** from **0.5** to **1.0**
- **new** digital model **#15 - SUPERSAW VCO**: MOD changes the detune amount, **EXTRA** morphs between super saw and **super triangle** (less harmonics)
- new **EXTRA** handling: **EXTRA** value is now stored per voice, not per model, when you change the model, the **EXTRA** value is reset to 0

# NEW FEATURES in 1.11:

- when QD scans the **memory card** for samples, it checks if the samples are **continuous** or **fragmented**. If a sample set has fragmented file(s), it will show a **WHITE LED** instead of the sample set colours. If the sample set has WAV files that are **not compatible** with QD, it will show a **RED LED**.
- **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
- when a **sample set** has only **one** file, the **MOD** pot allows to change the **start point** for the sample playback. this will only work for files that are **not fragmented**, so make sure you copy these files cleanly, see the above notice
  In this mode, the LOW PASS GATE **EXTRA** is not available, instead **press and hold** the mute LED button and use the **encoder** to **fine tune** the sample start point, this offset is **saved** with presets
- if a folder has "**FOREVER**" in it's name, the sample(s) will **autostart** and **loop** forever, the trigger signal will just **trigger** the envelope. the sample(s) will still change due to **MOD** pot and **CV/LFO** when there is a **trigger or they loop**
- in **MIX** mode, press the **bottom two** LED buttons together to access the **master volume**, it allow to change the total volume of all 4 voices between **25%** and **100%**, this is also saved with presets
- **CHOKE:** a trigger on voice **4** will stop **(choke)** voice **3**, with long press also voice **2** will choke voice **1** **(NOTE:** before **1.11** the order was **2 choke 1,** then **4 choke 3)**
- **QEX:** a new setting allows a trigger on **QEX CV2** to trigger **all 4 voices** at the same time (see QEX manual) - a **Gaz Williams** special request feature :)

# NEW FEATURES in 1.12:

**LOADING / SAVING OF A SINGLE VOICE TO A PRESET**

With **QEX** installed, it is possible to **load** or **save** a single voice to or from a **preset** instead of loading/saving the complete set of all 4 voices.

- press **F-button** to access **presets**. (See below for standard preset operations)
- all four **QEX** LED buttons are lit, indicating that you are loading or saving presets with all 4 voices.
- **long press** a **QEX** LED button to select the **voice** that you want to load/save from/to. A single **QEX** LED button will light up indicating you are in **single voice loading / saving mode** for that particular voice.
- **rotate the encoder** to select a preset (blinking cursor) or use the QD LED buttons to change banks
- **long press** the encoder to **save** that **particular** voice to the selected preset
    - **NOTE:** single voices cannot be saved to **empty** preset!
- or **short press** the encoder to **load** that **particular** voice from the selected preset
- or **long press** an **unlit QEX LED** button to change the voice selection for loading/saving
- or **long press** the **lit QEX LED** button to return to standard preset mode (4-voice)

at any time press the **F-button** to exit preset mode

**SINGLE VOICE LIMITATIONS**

Standard **(4-voice)** presets save **everything**: all four voices, 8 LFOs, 8 CVs, both EQ settings, and master volume. These settings greatly influence how each voice sounds.

Single voice preset operations are more limited. They only save/load:

- model or sample/wavetable selection
- pitch, decay, and mod settings
- mix settings (level, pan for channels 1/2, fade for channels 3/4)
- extra parameter

When loading a single voice, the current LFO, CV, and EQ settings remain **unchanged**. This means:

- The loaded voice might sound different than expected because it uses the current modulation settings and EQs instead of the original preset's settings
- Loading a single voice might miss crucial modulations that were part of the full preset
- Saving a single voice won't store any active modulations that shape the current sound

While this feature enables **new workflows**, use it carefully, especially with complex presets or expect very **happy accidents**.

# NEW FEATURES in 1.12.3:

**SAVING / LOADING PRESETS TO / FROM THE MEMORY CARD:** (see below in the presets section)

**QD FEATURES:**

- **22hp** Eurorack module, 12V: 100mA, -12V: 10mA, 5V: 0mA
- **four** independent **digital drum voices**, each can be
    - a digitally **modelled** drum
    - or a **sample** from a **sample set,** loaded from a **memory card**
    - or 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 modelling: 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 colour 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 ORGANISATION:**

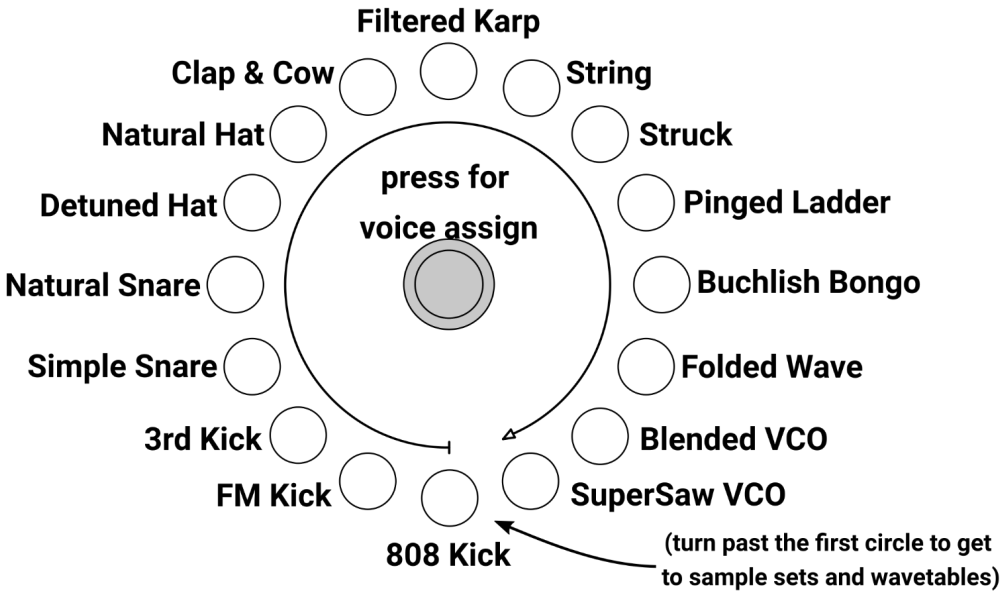
- during **startup** the module will **scan the memory card** for **sample sets** or **wavetable banks**, the LED circle with light up cyan/pink for every set found
- **removing** and **swapping** the card while powered up is **not (yet) supported**
- **NOTE:** for **optimal performance**, none of the 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, see also the **SPECIAL FEATURES** section below
- **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**
- **44.1kHz** samples are **pitched up** to match **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 memory 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 **48 sample sets or wavetable banks** are supported, all others are ignored.
- a **maximum** of **1536** samples or wavetables **in total** is supported
- all **sample sets and wavetable banks** are sorted **alphabetically** according to the folder name - the sorting only happens **after** the **first 48** folders have been found
- if a folder has "**RANDOM**" in its name, every trigger will pick a **random** sample from that folder, the **MOD** pot controls the amount **randomness**

**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 colour**)
    - **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 modelling** 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
- **SuperSaw**: 7 detuned saw wave oscillators, **MOD** controls detune

**position 17-32 (CYAN):** sample set/wavetable bank **1-16**
**position 33-48 (VIOLET)**: sample set/wavetable bank **17-32**
**position 33-48 (ORANGE)**: sample set/wavetable bank **33-48**

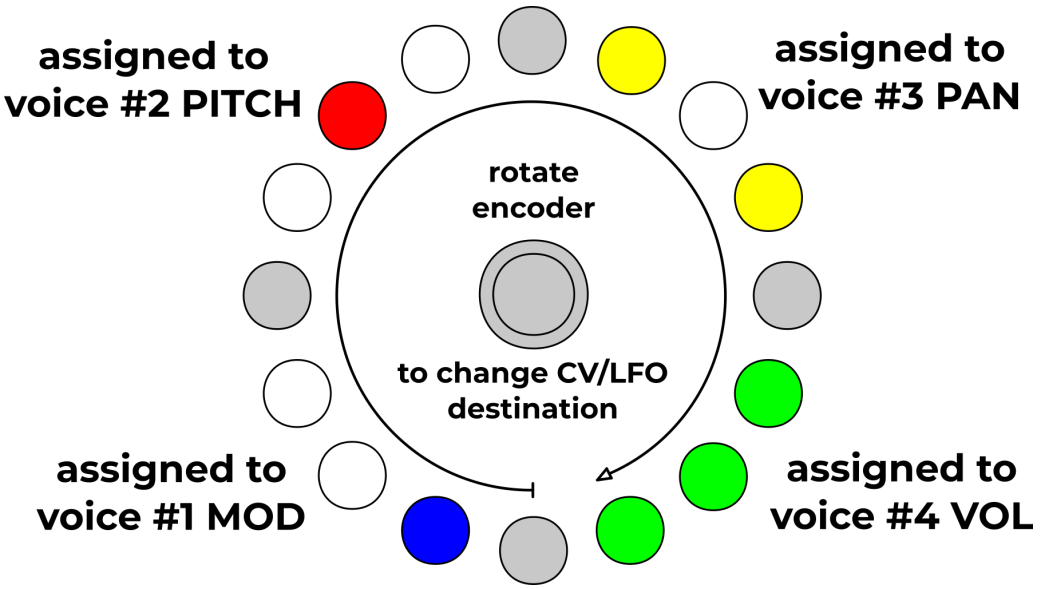
- **samples**, controls: **pitch +/-1 octave, decay, sample selection** (if there is more than one sample file in a set)
- **wavetables**, controls: **pitch +/-2 octaves, decay, wavetable selection** (if there is more than one wavetable in a bank)
- if the same sample is triggered **repeatedly**, it 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 colour of the voice), there are **32** steps between **muted** and **maximum** level
- **NEW in 1.11:** press the **bottom two** LED buttons together to access the **master volume**, it allow to change the total volume of all 4 voices between **25%** and **100%**, this is also saved with presets
- **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

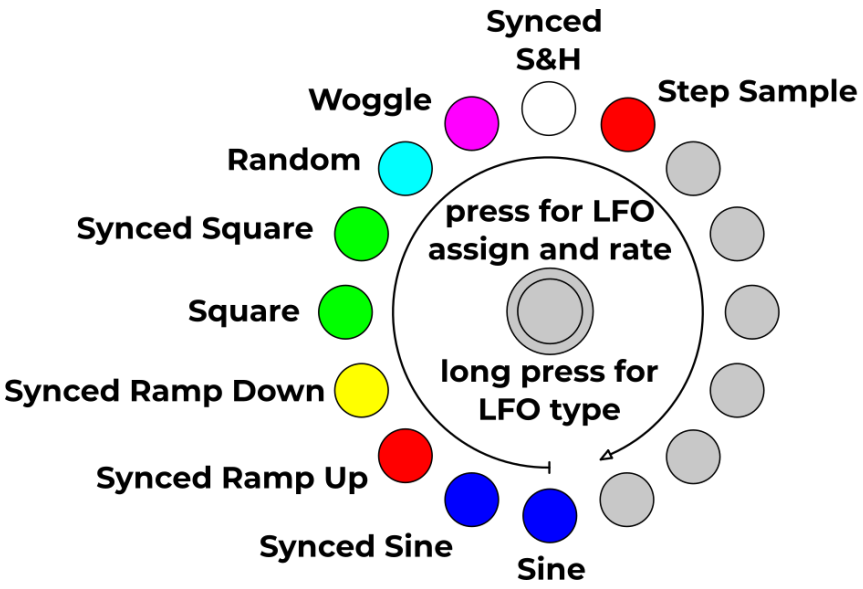
**CV ASSIGNMENT AND CONTROL:**

- 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 colour of the drum voice) as well as the current **CV attenuation level** (in **WHITE/GREY**)
- **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 colour 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:**

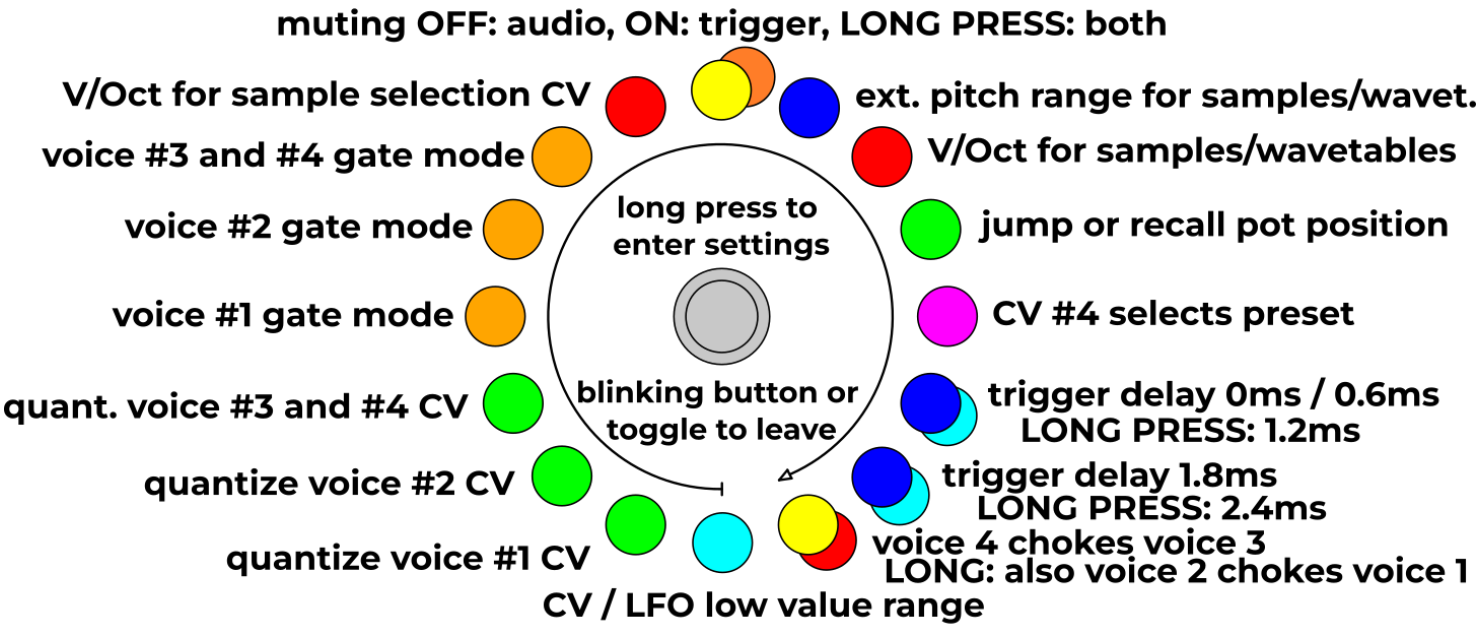
- put the **toggle switch** in the **bottom** position (**CV**)
- the **four LED buttons** show the currently **selected CV or LFO**, press **two adjacent buttons** at the same time to select an **LFO**, two LED buttons will light up
- the LED **circle** shows what potentiometer the **selected LFO** is **assigned** to (in the colour 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 colour of the drum voice)
    - **rotate** the encoder to change the assigned potentiometer
    - like for **CV**s 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

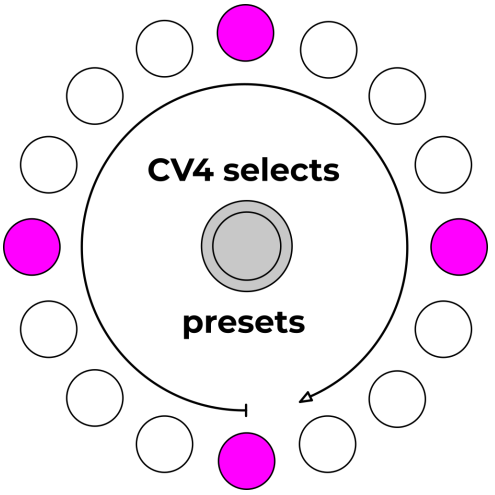
**SETTINGS:**

- **long press** the encoder button to access **settings** **toggle switch** in **MUTE** or **MIX**
- **rotate** encoder to select a **setting**, press **encoder button** to turn a setting **on** or **off**




- if the setting has a **second** state/colour, **long press** the encoder to enable it

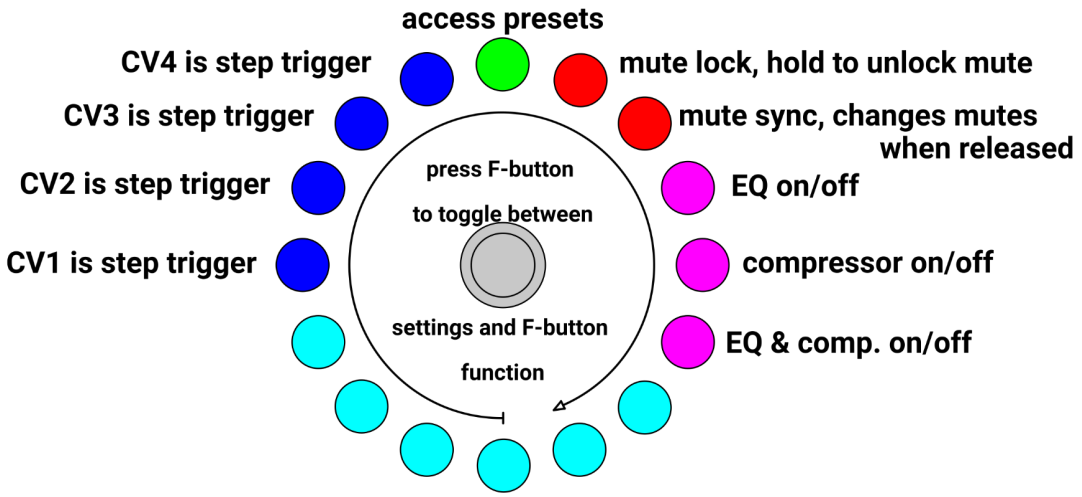
- **mute mode** merged into one setting, **short press** for mute trigger, **long press** for mute trigger and audio
- **trigger delay** merged into 2 settings, use short or long press
- **quantize voice:** settings for quantizing voice **3 and 4** have been combined into one
- **EXTENDED PITCH RANGE:** OFF: **2/4** octaves, ON: **4/6** octaves (for **samples/wavetables**)
- **CHANGED: CHOKE:** a trigger on voice **4** will stop **(choke)** voice **3**, with long press also voice **2** will choke voice **1** **(NOTE:** before **1.11** the order was **2 choke 1,** then **4 choke 3)**
- **CV / LFO low value range**: with this enabled, there are an additional 32 steps of very low **CV amount** or **LFO speed**. when reducing the CV amount there is another 32 steps between step 1 and 0 of the high range, the **LED circle** will **blink** to show its in **LOW range**
  so: **0 - 31** steps of **LOW** range, then **1- 32** steps of **HIGH range** (as before)
- **GATE MODE:** in this mode samples, wavetables and some models will not start to decay until the trigger/gate is **released**, only then will the decay envelope **start**
- **V/Oct for sample selection:** with this enabled, CV will be **quantized to semitones** (1/12V) when selecting samples, this way you can use a sequencer to exactly determine what sample to play **regardless of the total number of samples** in the folder (needs to have the CV attenuator set to maximum)
- **CV #4 selects presets:** in this case the **CV assignment** LED display for **CV #4** will look like this:




- press blinking **LED button** 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 (LEDs 1-12):




- 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

**EXTRA SETTINGS ON F-BUTTON PAGE:**

- **CV STEP TRIGGERS:** the last 4 LEDs in the **F-BUTTON** settings enable **CV STEP TRIGGERS**, for each voice you can make the **CV** next to it act as a step trigger and advance to the next sample. this is similar to the **STEP LFO**, but you can control it externally via the **CV** inputs

**PRESETS:**

- press **F-button** to access **presets**
- **64** presets in 4 **banks** of 16
- **current** preset is selected, **saved** presets are shown in bank colour, **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
- **COPY and DELETE presets:**
    - press and hold **LED bank button** to enable **copy/delete** mode, cursor turns **cyan**
    - in **copy/delete** mode, **long press** encoder to **delete** a preset, circle will flash **orange**
    - in **copy/delete** mode, **short press** encoder to **copy** a preset, cursor will turn **purple**
    - release **LED bank button,** cursor stays **purple**, then **long press** encoder to **paste** the copied preset into another slot.
- press **F-button** again to leave **presets**

**SAVING / LOADING PRESETS TO / FROM THE MEMORY CARD: (NEW in 1.12.3)**

- press **F-button** to access **presets**
- **press and hold** all 4 bottom **LED buttons**, the LED circle will turn **white**
- to **save** the presets, turn **encoder** to the right until half the LED circle is **green** and the bottom LED buttons **flash**, then **long press** the encoder button to **save** the presets from the memory card
- to **load** the presets, turn **encoder** to the left until half the LED circle is **red** and the bottom LED buttons **flash**, then **long press** the encoder button to **load** the presets from the memory card
- 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 the **number of red dots** on the **blue** LED circle at startup, so e.g. for version "**1.11**" eleven **red dots** are shown
- 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.

**FULL DEVICE RESET:**

- to perform a **full reset** to factory defaults:
    - **power off** QD
    - press and hold the lower four **LED buttons**
    - **power on** QD and wait a few seconds
    - device will reboot into factory defaults, **all settings and presets will be lost!**

**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

**ACKNOWLEDGEMENTS:**

Samples on the memory card courtesy of and used with permission:

**Tony Gieracki / Tony deKaro** www.facebook.com/tonydekaro

- deKaro Signature Drums & Glitches

**Matthias Millhoff / INSTANT** instant.wtf

- INSTANT Kicks, Hats, Claps and Clacks

**Marco Scherer** www.marcoscherer.de

- Marco Scherer Kicks, Snares, Hats, Toms, Claps & Percussion

**Richard Devine** www.devinesound.net

- BENT TR-808 SAMPLES & BATTERY KIT
- CWEJMAN S1 SYNTHESIZER BATTERY KITS
- MODDED ARP 2600 SAMPLES & BATTERY KITS

**WAVETABLES:**

all wavetables courtesy of waveeditonline.com

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