# OPERATION_1 CIRCUIT PACK

## USER GUIDE & MANUAL

### Patches

Each 2-letter patch prefix (CL, DG, DN…) corresponds to an OP-1 engine (Cluster, Digital, DNA…). Each engine contains 16 patches. With these 8 engines, there are a total of 128 patches. Below are the descriptions of each engine.

From the OP-1 manual:
*Cluster – up to six oscillators chained in a cluster*
*Digital – pure digital raw engine*
*DNA – cpu id noise synthesis*
*Dr Wave – raw 8-bit style engine*
*DSynth – dual oscillator*
*String – physical modeling of a string instrument.*
*FM – frequency modulation synthesis made easy. this is the type of engine that is found in the classic DX7 synthesizer.*
*Phase – phase distortion type engine.*
*Pulse – square wave engine.*

Patch numbers groups on OPERATION_1:
#01-16 - CL: Cluster
#17-32 - DG: Digital
#33-48 - DN: DNA
#49-64 - DR: Dr Wave
#65-80 - DS: DSynth
#81-96 - FM: FM
#97-112 - PH: Phase
#113-128 - PU: Pulse

*Note: Planned for future release:*
*ST: String*
*VO: Voltage*

For each patch, the goal was to get maximum musical expressiveness, with the original sounds as the starting point. That means that each sound was crafted to be as close as the original patch on the OP-1. For movements or textures where the Circuit Tracks engine couldn't emulate, effort was made to make it come as close as possible, yet still maintain the usefulness of the sound i.e. to make it as usable as possible for music creation.

The OP-1 approach was not to describe the sounds of each of the patches, apart from hints in their names. It's an effective way to encourage creative exploration, and best approached with a 'discover and be inspired' mindset, where each patch doesn't have a preconceived notion of what it sounds like.

**Macros**

Each macro knob is meant to give maximum range for exploring sounds in a musical way, and can change the sound quite drastically.

The macros are meant to be explored - the settings were designed to get you knob twiddling and finding out how the sounds change and you get a large range of tonality and texture.

All 8 macros correspond to the labelling on the Circuit Tracks, so they're easy to remember.

Macro 1 (Oscillator)
Affects Oscillator 1 in some way. Examples are density, detune, vibrato.

Macro 2 (Oscillator Mod)
Affects Oscillator 2 in some way. Examples are density, detune, vibrato. For some patches, it introduces an oscillator in a separate octave. Does not necessarily match the same parameter as Macro 1 for Oscillator 1.

Macro 3 (Amp Envelope)
Affects the amp envelope. For slow attacks, it increases attacks. Sometimes it shortens releases. Try tapping a note continually and turning the knob to see what happens.

Macro 4 (Filter Envelope)
Always affects the filter envelope, either positively or negatively. Tweak in combination with Macro 5 & 6.
Note: For some patches, you will hear changes only when you increase the Cutoff (Macro 6) or Resonance (Macro 6)

Macro 5 (Filter Frequency)
Always affects the cutoff frequency, either positively or negatively, depending on whether the base patch is bright or dark sounding i.e. patches that start out bright will be filtered dark on clockwise turns, and patches that start out dark will get brighter on clockwise turns*. Tweak in combination with Macro 4 & 6 for maximum effect.

*This is to ensure that patches sound as close as possible to the default OP-1 patches, and that all macros start from 0 as default. This way, if you want to go back to the default settings, just spin the knobs fully counterclockwise.

Macro 6 (Resonance)
Always affects the resonance positively, increasing with clockwise turns.

Macro 7 (Modulation)
Always increases chorus effect, either increasing the mix, the feedback or the depth. Tweak and play to hear the changes.

Macro 8 (FX)
Always adds distortion, increasing with clockwise turns. The patches are programmed to level evenly with added distortion, so they don't become much louder, just dirtier.

Notice that the best way to work with the Macros is to keep continually playing notes or to sequence some notes and play the sequence, then tweak the knobs as the notes are playing and repeating. That way, you can best hear the effect of the changes in your notes.

**Projects**

There are 16 projects to demo the various engines, with 2 demo projects for each engine.

They are organised as:
1-2 CL (Cluster)
3-4 DG (Digital)
5-6 DN (DNA)
7-8 DR (Dr Wave)
9-10 DS (DSynth)
11-12 FM (FM)
13-14 PH (Phase)
15-16 PU (Pulse)

**Full Patch List**

| | | | | | |
|---|---|---|---|---|---|
| #001 | CL BFace | #044 | DN Pnopad | #087 | FM Organz |
| #002 | CL CPillar | #045 | DN Riser | #088 | FM Rpt |
| #003 | CL Ctrings | #046 | DN RunLate | #089 | FM RizBass |
| #004 | CL Solver | #047 | DN TigRight | #090 | FM Space |
| #005 | CL DBass | #048 | DN TinPeggio | #091 | FM Square |
| #006 | CL GDrive | #049 | DR Bsting | #092 | FM SBass |
| #007 | CL KShow | #050 | DR Delicate | #093 | FM Sweet |
| #008 | CL LChords | #051 | DR Dimensn | #094 | FM Cello |
| #009 | CL MLegato | #052 | DR FPiano | #095 | FM Warn |
| #010 | CL NDay | #053 | DR FazPad | #096 | FM Yohshinko |
| #011 | CL SBass | #054 | DR Fina | #097 | PH BassFaze |
| #012 | CL SLonely | #055 | DR GOrgan | #098 | PH Bobble |
| #013 | CL SBend | #056 | DR Pulse | #099 | PH ClassLFO |
| #014 | CL Striings | #057 | DR Beam | #100 | PH HoldDown |
| #015 | CL T4m | #058 | DR Plink | #101 | PH Jongle |
| #016 | CL XFiles | #059 | DR PLead | #102 | PH Kidd |
| #017 | DG ARptr | #060 | DR Scoboard | #103 | PH Critter |
| #018 | DG Boo | #061 | DR Sxwave | #104 | PH BandPass |
| #019 | DG Dlight | #062 | DR Thinnie | #105 | PH Purity |
| #020 | DG Did | #063 | DR Trystar | #106 | PH Reflect |
| #021 | DG Forgot | #064 | DR Nerves | #107 | PH RowrBass |
| #022 | DG Glen | #065 | DS BBass | #108 | PH RoundBass |
| #023 | DG LEnd | #066 | DS Beeep | #109 | PH SchBass |
| #024 | DG LulTime | #067 | DS Chrono | #110 | PH SpiritPad |
| #025 | DG Organbra | #068 | DS Dsynth | #111 | PH Valentino |
| #026 | DG Prince | #069 | DS Evolve | #112 | PH WorkIt |
| #027 | DG QBass | #070 | DS Haunt | #113 | PU OrientWhistle |
| #028 | DG Recognise | #071 | DS Jam | #114 | PU Chord |
| #029 | DG Soogar | #072 | DS LegaC | #115 | PU PhatBass |
| #030 | DG Tmrw | #073 | DS Piano | #116 | PU PhunkBass |
| #031 | DG Violin | #074 | DS Pleep | #117 | PU Histeria |
| #032 | DN Basslide | #075 | DS Plugin | #118 | PU Moon |
| #033 | DN ChordT | #076 | DS Secrete | #119 | PU Mistik |
| #034 | DN Dcept | #077 | DS Shin | #120 | PU Pizz |
| #035 | DN DestU | #078 | DS SunMorn | #121 | PU PLead |
| #036 | DN Base | #079 | DS Wastelan | #122 | PU Shrink |
| #037 | DN ElBass | #080 | DS Zamfeer | #123 | PU Soff |
| #038 | DN FkleBass | #081 | FM BigLow | #124 | PU SysBass |
| #039 | DN GCode | #082 | FM DocFM | #125 | PU Twonkle |
| #040 | DN Harpsichord | #083 | FM Drill | #126 | PU Vibe |
| #041 | DN Malmsteen | #084 | FM InSpace | #127 | PU WPad |
| #042 | DN MChord | #085 | FM Mantra | #128 | PU Warp |
| #043 | DN Nag | #086 | FM Neutron | | |