DE-22: Tangram

Tangram is a 8hp dual LFO with a chaotic core. Each LFO has 2 outputs, triangle and Square which are 10v ppv.

The chaotic internal CV signal (of which there are 2) are normalled to the CV inputs of each LFO. Using the corresponding pots for each CV input lets you dial in the right amount of the chaotic signal. This makes the LFO to behave in a semi random behavior. Each LFO has a range switch (labeled "SLOW" on the panl) switching between two different initial speeds of each LFO. There is also a mix output which blends both chaotic signals with the Square wave from LFO 1 and the Triangle from LFO 2 creating very interesting waveforms and patterns

(especially when applying CV control over the LFO's like mentioned above). The naked chaotic CV signal is also available through the unlabeled output above the mix output.

This build is as straight forward as it gets and contains very few parts:

- Start with the power connector. Use the silkscreen so you know what side it should be placed on. Place it on the same side where the silkscreen reads "RED STRIPE". Solder it in from the top side (same side as the pots, jacks etc)
- Solder one pin on the pots from the top (that way it won't fall off).
- Place the jacks and solder the ground pin so they won't fall off (that is the pin that goes outside of the jack and has a square pad – the one that is easiest to reach from the top.
- Place the leds, D6 is the standard LED and D2 and D3 are dual color leds. Short leg goes through the square pad.
- Attach the panel and screw all nuts. Make sure everything is aligned, leds peeping out from beneath the panel– if not: heat the one soldered pin on the jack/pot and align it. When everything looks right solder all pins from the bottom side. Be careful not to touch any pre-soldered components.
- Attach the knobs on the pots.

    Done.

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Part	Designator	QTY	INFO	Product link
Thonkiconns	J1–J2, J4–J9	8		thonk, tayda, aliexpress: https://www.thonk.co.uk/shop/thonkiconn/
Alpha 9mm potentiometer T18 100K Lin	RV1–RV4	4		https://www.taydaelectronics.com/tayda-100k-ohm-linear-taper-potentiometer-spline-shaft-pcb-mount-9mm.html
Eurack power pins 2x5	SV1	1		https://www.taydaelectronics.com/2x40-pin-2-54-mm-double-row-pin-header-strip.html
Micro knobs T18	For RV1–RV5	4	Must be Black	https://www.thonk.co.uk/shop/micro-knobs/
SPDT ON-ON	SW 1–2	2		https://www.taydaelectronics.com/mini-toggle-switch-spdt-on-on.html

Single color led	D6	1	White	https://www.taydaelectronics.com/led-3mm-white-water-clear-ultra-bright.html
Dual color led	D2–D3	2	White/red	https://www.ebay.com/itm/190894964341?var=490181180284