Sleeper Awakes Build Doc

Warning! This is a bit more difficult build than the usual pre-soldered SMD release from DE since it contains some headers.

Sleeper awakes is a 12hp dual Lo-fi sampler based on the ISD1820 IC which is an old answering machine chip. It is inspired by several other projects based on the ISD1820 chip (Lonershy and BASTL builds comes to mind but also others). Each channel is identical to each other. There is a mixer combining both dry inputs with the sampler outputs. The individual outs only contain the sampler out signal. Each output of each channel is cross modulation the channel next to it in, so 1-2 modulate eachothers CV input. Inserting a cablei into a CV in jack breaks this (inter)connection.

Each channel has an input and an output. A pitch knob with a dedicated attenuated cv attached to it. A filter with lowpass to the left and high pass to the right. It also has a dedicated trig in jack with tactile switch for these functions: record in, momentary play and full play of the sample. The trig inputs need a +5v gate to be able to operate. There is also a

Loop switch which makes it play the sample over and over. For more info on functions check out my [YouTube video on Beneath the Bush of Ghosts which is a quad version of this module.](#)

As a "bonus" I include a electro magnetic stereo pick up made of inductors. You can use this to sample strange noises from your phone (or other electrical devises), which rests easy if the module is mounted horizontally. The pick ups are normaled to each input, so inserting a cable here will remove the function of the pic ups entirely.

In order to record you need to turn loop, switch off, set the pitch to around the 10 to 2 o'clock (you can experiment with this), CV knob usually influence sample speed so make sure it is full CCV. Insert an input signal hit record, the LED will flash, when it flashes again the memory of the chip should be full. It's a simple as that!

Build guide:

I usually start with this IC holders for the 1820 IC's and the powerheader. Then I continue with headers on this one since there are plenty of those and should be the most difficult part. I usually solder in female headers on the SMD board and male on the component/jack board. Follow the silkscreen to get the headers on the right side of the pcb. When doing so I only solder one pin on each header before putting them together like a sandwich. This will make it way easier to fit the two boards when constructing the sandwich. If one is tilted in the wrong way, simply warm up the one solder point and align. Move on until both fits and inspect around the boards that all headers have contact with each other and that no pins are sticking out. One pitfall with this operation is if you are forced to take the two boards apart, then usually the one in you soldered will stay, breaking the surrounding plastic and thus destroying the header. So be very careful if you need to restart and take the boards apart before soldering all pins. If needed reheat that one point and separate the boards with the point, go over all pins and carefully solder them in. Inspect and reinspect.) 90% of the errors I've done with my builds on this module are header solder points touching each other or missing completely. Don't rush this!

I then place the ICs into the holders.

Then I move on to the component board, usually solder one point on the components from the top side, the ground pin on all jacks (the one sticking out from the jack that has a square pad), one point on the pots and no soldering on the switches and LEDs. LEDs goes with the short leg (GND) through the square pad. I don't solder anything on the tactile switches just place them, they wont fall off when flipping the board. I then insert the caps on these switches before the panel is mounted so you can wiggle them in place if needed.

Then attach the panel with just a few nuts. Double check from the other side that panel looks good, that the LED are peeping out correctly and don't look weird. Then systematically go through the whole board and solder everything in. There are quite a lot of components on this one so makes sure all solder points are soldered at least twice.

Time to start up and test. Enjoy.

BOM

Part	Designator	QTY	INFO	Product link
3mm clear White LED (Ultrabright)	D7, D8	2	Short leg goes to square	https://www.taydaelectronics.com/led-3mm-white-water-clear-ultra-bright.html
Thonkiconns	J1-J12, J17	13		thonk, tayda, aliexpress: https://www.thonk.co.uk/shop/thonkiconn/
Header 1x11 Female	J15, J16, J20, J21	4		https://www.taydaelectronics.com/10-pin-2-54-mm-single-row-female-pin-header.html
Header 1x11 Male	J13, J14, J18, J19	4		https://www.taydaelectronics.com/40-pin-2-54-mm-single-row-pin-header-strip.html
Alpha 9mm potentiometer T18 100K Lin	RV1-RV6	6		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
ISD1820	U1-U2	2	Through hole part	ebay or aliexpress
Tall knobs	For RV3 and RV4	2	Black, Tall Synthpointer	https://www.thonk.co.uk/shop/tall-satin-synthpointer-knobs/
Micro knobs T18	For rest of the knobs	4	Must be Black	https://www.thonk.co.uk/shop/micro-knobs/
SPDT ON-ON	SW 7-8	2		https://www.taydaelectronics.com/mini-toggle-switch-spdt-on-on.html
Tactile Switch Mouser# 612-TL1105SPF100Q	SW 1-6,	6		https://www.mouser.se/ProductDetail/612-TL1105SPF100Q
Switch caps for tactile Switches Mouser# 612-1R-BK		6	Must be black	https://www.mouser.se/ProductDetail/612-1R-BK
IC Sockets for ISD1820 IC's 14pin		2		https://www.taydaelectronics.com/14-pin-machine-tooled-ic-socket.html

3Mh Power Inductor	L1-L2	2	You can try different 1-10Mh power inductors, value doesn't seem to be critical but will affect gain.	https://www.taydaelectronics.com/2-mh-power-inductor-140-ma-radial-3684.html