CARBON

CARBON IS A DEVICE THAT TRANSLATES GRAPHITE MARKINGS ON PAPER INTO SIGNALS THAT MANIPULATE SOUND AND VISUALS. CARBON'S INTERFACE IS PENCIL, PAPER, AND AN LED SCREEN THAT REFLECTS THE USER'S MARKS ON PAPER AND TRANSLATES SIGNALS FROM OTHER MODULES INTO LIGHT AND COLOR.

A SYNTHESIZER FEATURES KNOBS, SLIDERS AND BUTTONS THAT ALLOW THE USER TO MANIPULATE SOUND. THE OPPOSITE ENDS OF A KNOB OR A SLIDER REPRESENT TWO ENDS OF AN AXIS SUCH AS SLOW AND FAST OR LOW PITCH AND HIGH PITCH, OR, IN CASE OF BUTTONS, ON AND OFF OR PLAY AND PAUSE. EACH OF THESE ELEMENTS, CONTROLLING SINGULAR VALUES, COMBINE TO FORM AN INTERFACE BETWEEN THE MUSICIAN AND SOUND.

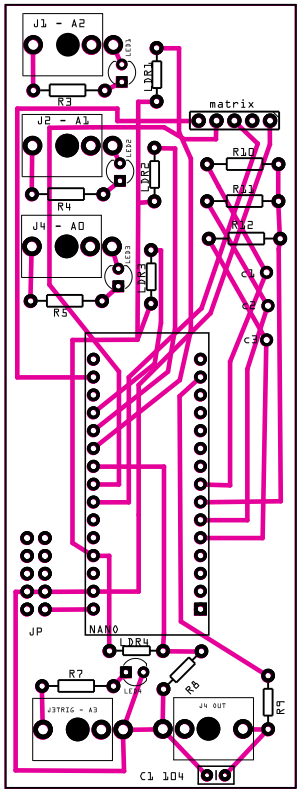
ON A SCALE OF VISIBLE AND INVISIBLE, THE INTERFACE OF THE SYNTHESIZER IS VERY VISIBLE.

IT'S DIFFICULT TO INTERFACE WITH A SYNTH INTUITIVELY. THE USER NEEDS TO BE KNOWLEDGEABLE ABOUT HOW TO MAKE MUSIC TO EXPERIMENT OR IMPROVISE. THE INTERFACE DOESN'T RESPOND TO GESTURES OTHER THAN TURNING KNOBS OR DRAGGING SLIDERS. THE LARGE NUMBER OF CONTROLS ON A SYNTH MEANS THESE CONTROLS NEED TO BE ARRANGED IN AN EFFICIENT WAY. THUS, MORE IMPORTANT CONTROLS WHICH ARE USED MORE OFTEN ARE MORE EYE CATCHING AND EASIER TO REACH. WHILE THIS IS IMPORTANT FOR FUNCTION, IT ALSO CREATES A BIAS ON WAYS OF INTERFACING WITH SOUND. SOME ASPECT OF SOUND ARE MORE IMPORTANT TO MANIPULATE WHILE SOME CAN BE LEFT ALONE FOR THE MOST PART.

CARBON IS AN EXPERIMENT ON THE EFFECT INTERFACES CAN HAVE ON DECISION-MAKING AND THE CREATIVE PROCESS.

THE KNOWLEDGE OF HOW TO USE PENCIL AND PAPER IS MUCH MORE WIDESPREAD THAN THE KNOWLEDGE OF PLAYING AN INSTRUMENT. REPLACING THE INTERFACE OF A SYNTH WITH A SHEET OF PAPER AND A PENCIL OPENS THIS DEVICE UP TO PEOPLE WHO WOULDN'T KNOW HOW TO INTERACT WITH A MUSICAL INSTRUMENT. THE USER CAN MAKE DECISIONS BASED ON THE WAY THEY WANT TO MOVE THEIR HAND OR THE SHAPE OF MARKS THEY WANT TO LEAVE ON THE PAPER. IN A WAY, CARBON IS ALSO A TRANSLATOR BETWEEN AUDIO AND VISUAL. A MUSICIAN CAN USE THE SOUND OUTPUT OF THE SYNTH TO GUIDE THEIR DRAWING IN THE SAME WAY AN ILLUSTRATOR CAN USE SHAPES ON PAPER TO CONTROL SOUND.

CARBON IS BORN OUT OF A DESIRE TO INTERFACE WITH A MEDIUM ONE IS UNFAMILIAR WITH. THE LACK OF TECHNICAL KNOWLEDGE IN MUSIC THAT STARTED OUT AS AN INSECURITY ENDED UP GUIDING ME THROUGH THIS PROJECT IN EXPLORING HOW I CAN INTERACT WITH THE UNFAMILIAR THROUGH THE FAMILIAR.



INSTRUCTIONS:

Solder the rest of the components:
3.5 mm audio jacks on J1, J2, J3, and J4.
1K resistors on R3, R4, R5, R7
1M resistors on R10, R11, R12
150K resistor on R9
5*2 male header pin on JP
5*1 female header pin on MATRIX
Wires on c1, c2 and c3

Insert an LDR and an LED inside a piece of shrink tube and heat it. This is called a vactrol. Repeat this four times.
Solder these vactrols on the board, paying attention to the labels and making sure that LDRs and LEDs are soldered on corresponding holes. The positive leg of the LED should be soldered on the square shaped hole.

Cover one side of this paper with condutive paint and tape the cables on the Carbon module on to that side of the paper. you can then turn the other side and draw to make music.