Capacitive touch sensing

SEND

74HC4051 module   +5V   +5V

GND

J3   J4
1   1
2   2
3   3
GND   GND
RECEIVE_1 4   4   KEY_0
MUX_0   5   5   KEY_1
MUX_1   6   6   KEY_2
MUX_2   7   7   KEY_3
           8   8   KEY_4
GND   9   KEY_5
          10   KEY_6
          11   KEY_7

R1 R2 R3 R4 R5 R6 R7 R8

74HC4051 module   +5V

+5V
GND

J5   J6
1   1
2   2
3   3
GND   GND
RECEIVE_2 4   4   KEY_8
MUX_0   5   5   KEY_9
MUX_1   6   6   KEY_10
MUX_2   7   7   KEY_11
           8   8   KEY_12
GND   9   KEY_13
          10   KEY_14
          11   KEY_15

R9 R10 R11 R12 R13 R14 R15 R16

TP1 TP2 TP3 TP4 TP5 TP6 TP7 TP8
TP9 TP10 TP11 TP12 TP13 TP14 TP15 TP16
Solder pads for the keys

Pro Micro headers

Capacitive touch
LEDs

J1
RECEIVE_2   1   D1
LED_0   2   D0
            3   GND
GND   4   GND
LED_1   5   D2
LED_2   6   D3
AIR_0   7   D4
AIR_1   8   D5
AIR_2   9   D6
AIR_3   10   D7
AIR_4   11   D8
AIR_5   12   D9

Light sensors

+5V   J2
       1   RAW
GND   2   GND
       3   RST
       4   VCC
RECEIVE_1   5   D21
MUX_0   6   D20
MUX_1   7   D19
MUX_2   8   D18
RGB_CO   9   SCLK
           10   D14
RGB_DO   11   MOSI
SEND   12   D10

Capacitive touch
RGB lighting

RGB LED strip connector

+5V   J7
       1
RGB_DO 2
RGB_CO 3
       4
GND

LEDs

LED_0   R17
        100
LED_1   R18   TP17
        100   TP18
LED_2   R19   TP19
        100

A LED #6
K
A LED #5
K
A LED #4
K
A LED #3
K
A LED #2
K
A LED #1
K

Connected to off-board Charlieplexed LEDs

Light sensors

Photo-transistor #6
Photo-transistor #5
Photo-transistor #4
Photo-transistor #3
Photo-transistor #2
Photo-transistor #1

TP20 TP21 TP22 TP23 TP24 TP25 TP26

AIR_0 AIR_1 AIR_2 AIR_3 AIR_4 AIR_5   +5V

R20   R21   R22   R23   R24   R25
10k   10k   10k   10k   10k   10k

GND   GND   GND   GND   GND   GND

Connected to off-board phototransistors

OpeNITH controller board
Designed by WinEpic, ported to KiCad by mickabrig7