J4

GND

VBAT_GND

P20/SDA
P19/SCL
SDA
SCL

3V
VCC

P16
P15/MOSI
P14/MISO
P13/SCK
RESET
MOSI
MISO
SCK

P2
P2

P12/ACCS
P11/BTN_B
JD_DATA

P10*
P9**
P8
1k
R6
FLOW

P1
P1

P7*
P6*
P5/BTN_A
P4*

P0
P0

P3*

P$40 P$39 P$38 P$37 P$36 P$35 P$34 P$33 P$32 P$31 P$30 P$29 P$28 P$27 P$26 P$25 P$24 P$23 P$22 P$21 P$20 P$19 P$18 P$17 P$16 P$15 P$14 P$13 P$12 P$11 P$10 P$9 P$8 P$7 P$6 P$5 P$4 P$3 P$2 P$1
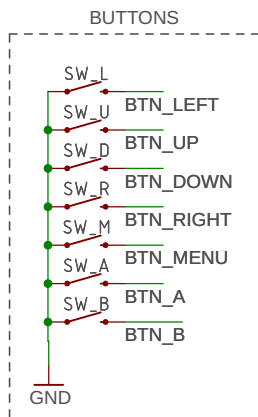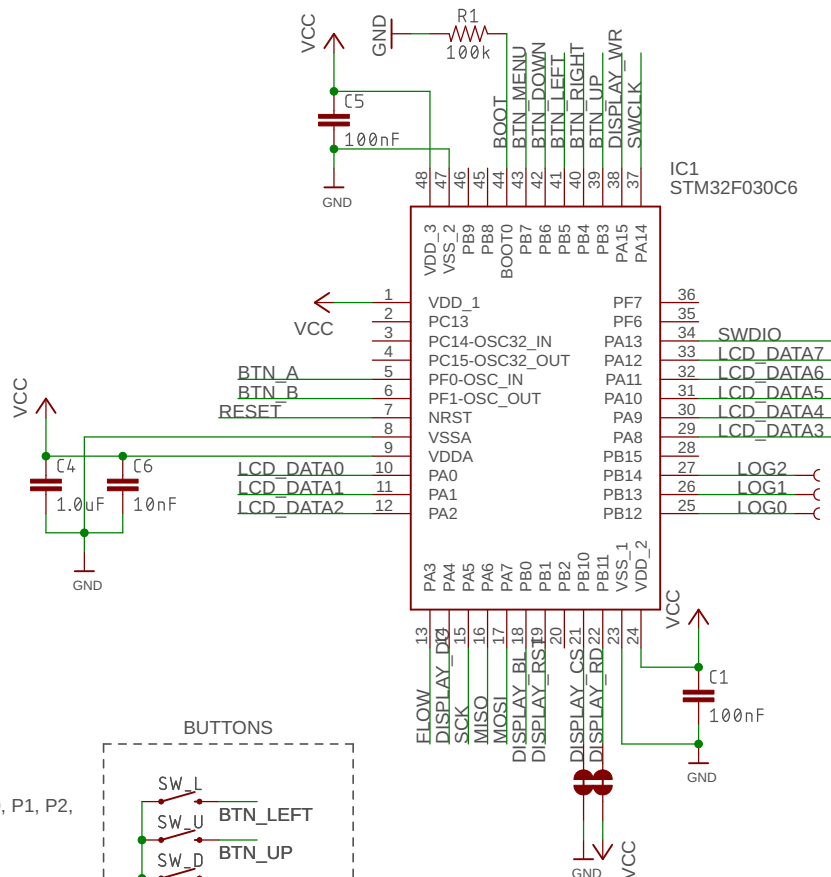
GND

Power supply, JACDAC, external rings for P0, P1, P2,
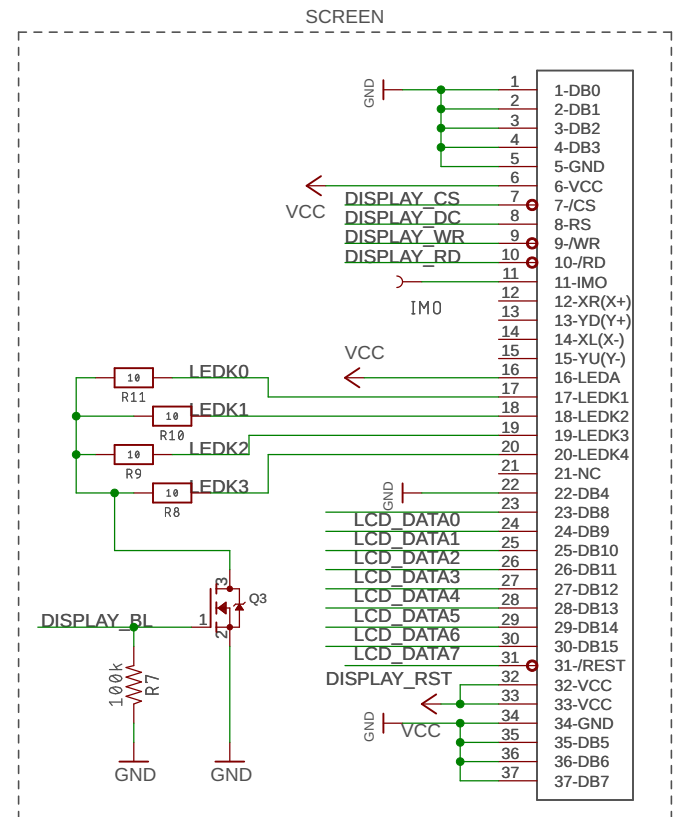are the same as in the simple shield.

Input shift registers are removed;
hardware configuration is done
by the MCU firmware.

The 128x160 LCD is replaced with SCREEN here,
and the pinout of the edge connector
is as indicated here.

VCC
GND
R1
100k

C5
100nF
GND

BOOT
BTN_MENU
BTN_DOWN
BTN_LEFT
BTN_RIGHT
BTN_UP
DISPLAY_WR
SWCLK

IC1
STM32F030C6

48 47 46 45 44 43 42 41 40 39 38 37

VDD_3 VSS_2 PB9 PB8 BOOT0 PB7 PB6 PB5 PB4 PB3 PA15 PA14

VCC

1 VDD_1
2 PC13
3 PC14-OSC32_IN
4 PC15-OSC32_OUT
5 PF0-OSC_IN   BTN_A
6 PF1-OSC_OUT   BTN_B
7 NRST   RESET
8 VSSA
9 VDDA
10 PA0   LCD_DATA0
11 PA1   LCD_DATA1
12 PA2   LCD_DATA2

PF7   36
PF6   35
PA13 34 SWDIO
PA12 33 LCD_DATA7
PA11 32 LCD_DATA6
PA10 31 LCD_DATA5
PA9   30 LCD_DATA4
PA8   29 LCD_DATA3
PB15 28
PB14 27 LOG2
PB13 26 LOG1
PB12 25 LOG0

VCC
C4
1.0uF
C6
10nF
GND

PA3 PA4 PA5 PA6 PA7 PB0 PB1 PB2 PB10 PB11 VSS_1 VDD_2
13 14 15 16 17 18 19 20 21 22 23 24

FLOW DISPLAY_DC SCK MISO MOSI DISPLAY_BL DISPLAY_RST DISPLAY_CS DISPLAY_RD

VCC

C1
100nF
GND

GND
VCC

BUTTONS

SW_L   BTN_LEFT
SW_U   BTN_UP
SW_D   BTN_DOWN
SW_R   BTN_RIGHT
SW_M   BTN_MENU
SW_A   BTN_A
SW_B   BTN_B

GND

No external pull-ups are needed on buttons
(using internal MCU pull-ups).

For most screens, DISPLAY_CS/RD don't need
to be connected to IC1, just to GND/VCC, as indicated.

SCREEN

GND

VCC
DISPLAY_CS
DISPLAY_DC
DISPLAY_WR
DISPLAY_RD

IMO

VCC

1 1-DB0
2 2-DB1
3 3-DB2
4 4-DB3
5 5-GND
6 6-VCC
7 7-/CS
8 8-RS
9 9-/WR
10 10-/RD
11 11-IMO
12 12-XR(X+)
13 13-YD(Y+)
14 14-XL(X-)
15 15-YU(Y-)
16 16-LEDA
17 17-LEDK1
18 18-LEDK2
19 19-LEDK3
20 20-LEDK4
21 21-NC
22 22-DB4
23 23-DB8
24 24-DB9
25 25-DB10
26 26-DB11
27 27-DB12
28 28-DB13
29 29-DB14
30 30-DB15
31 31-/REST
32 32-VCC
33 33-VCC
34 34-GND
35 35-DB5
36 36-DB6
37 37-DB7

10 R11 LEDK0
10 R10 LEDK1
10 R9   LEDK2
10 R8   LEDK3

LCD_DATA0
LCD_DATA1
LCD_DATA2
LCD_DATA3
LCD_DATA4
LCD_DATA5
LCD_DATA6
LCD_DATA7

DISPLAY_RST

GND
VCC

DISPLAY_BL
Q3
100k R7
GND
GND

PRELIMINARY