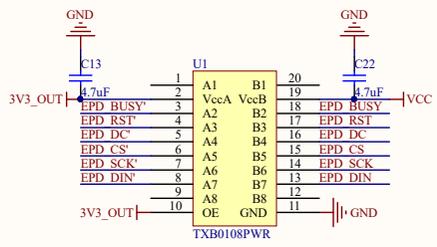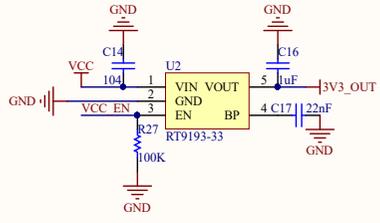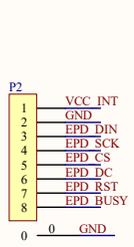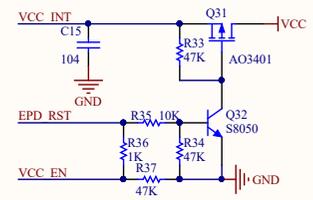# 7.3inch e-Paper HAT

W Waveshare

Type	BS1	BS0	SPI mode
1	0	0	4-wire SPI
2	0	1	3-wire SPI
3	1	0	Standard 4-wire SPI/Dual SPI/Quad SPI
4	1	1	
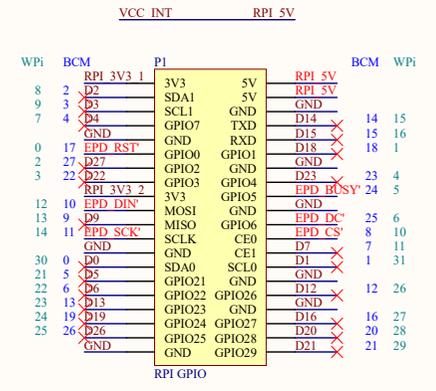
BS	VCC	GND
Interface	3-line SPI	4-line SPI

FPC 0.5 50P 4.37inch

J1

Pin	Signal
1	VPP
2	TFT_VCOM — TFT_VCOM
3	FPL_VCOM — FPL_VCOM
4	VDD — VDD
5	GDRH
6	RESEH — RESEH
7	GDRL
8	RESEL
9	GDRC — GDRC
10	RESEC — RESEC
11	VPC — VPC
12	GNDA+(GND)
13	VGL — VGL
14	VPH — VPH
15	VSH — VSH
16	VSH_LV — VSH LV
17	VSH_LV2 — VSH LV2
18	VSL — VSL
19	VSL_LV — VSL LV
20	VSL_LV2 — VSL LV2
21	GNDA+(GND)
22	REFN — REFN
23	REFP — REFP
24	TSCL
25	TSDA
26	BS0 — BS0
27	BS1
28	RST_N — EPD_RST'
29	BUSY_N — EPD BUSY'
30	DC — EPD DC'
31	CSB1 — EPD CS'
32	SCL — EPD SCK'
33	SI0 — EPD DIN'
34	SI1 — EPD D1
35	SI2 — EPD D2
36	SI3 — EPD D3
37	VDDD0/VDDD — VDDD/VDDDO
38	VDD — VDD
39	GNDA/GND
40	VDDIO — VDDIO
41	VCP2
42	CP2N — CP2N
43	CP2P — CP2P
44	VCP1 — VCP1
45	CP1N — CP1N
46	CP1P — CP1P
47	CGH1N
48	CGH1P
49	VGH — VGH
50	VCOMBD — VCOMBD

Power section

3V3_OUT — L1 10uH — Q1 BSS138 — D1 MBR0530 — VPH — R3 0R — VGH

C20 4.7uF/10V, C3 10uF/25V, C12 10uF/25V

D2 MBR0530 — VGL — C21 10uF/25V
D3 MBR0530
R1 1M, R2 0.47R

GDRH, RESEH

3V3_OUT — R4 1M — C19 4.7uF/10V
GDRC — Q2 SI2301CDS-T1-E3 — D4 MBR0530 — VPC — C28 10uF/25V
L2 10uH, RESEC — R5 0.47R

C1 4.7uF/10V, C2 0.47uF/25V, RA 0R
C5 10uF/25V, C6 10uF/25V, C7 10uF/25V, C8 10uF/25V, C9 10uF/25V, C10 10uF/25V
C11 1uF/10V, C18 1uF/10V
C23 2.2uF/6V
3V3_OUT
C24 1uF/10V, C25 1uF/10V, C29 1uF/10V, C26 1uF/10V
C4 104
RB 0R, C27 0.47uF/25V

P2

Pin	Signal
1	VCC_INT
2	GND
3	EPD_DIN
4	EPD_SCK
5	EPD_CS
6	EPD_DC
7	EPD_RST
8	EPD_BUSY

GND

J3
3V3_OUT — 1
BS0 — BS0
GND — 1

U2 RT9193-33
VCC — C14 104 — VIN VOUT — 3V3_OUT — C16 1uF
VCC_EN — GND EN BP — C17 22nF
R27 100K
GND

U1 TXB0108PWR
C13 4.7uF — 3V3_OUT
	A1	B1		
2	VccA	VccB	19	VCC
EPD BUSY' 3	A2	B2	18	EPD BUSY
EPD RST' 4	A3	B3	17	EPD RST
EPD DC' 5	A4	B4	16	EPD DC
EPD CS' 6	A5	B5	15	EPD CS
EPD SCK' 7	A6	B6	14	EPD SCK
EPD DIN' 8	A7	B7	13	EPD DIN
9	A8	B8	12	
3V3_OUT 10	OE	GND	11	GND
C22 4.7uF

Level shifter transistors
Q31 AO3401, R33 47K, VCC
C15 104
EPD_RST — R35 10K — Q32 S8050
R36 1K, R34 47K
VCC_EN — R37 47K — GND

RPI GPIO — P1

WPi	BCM	P1		BCM	WPi
		3V3	5V		RPI_5V
8	2	SDA1	5V		RPI_5V
9	3	SCL1	GND		GND
7	4	GPIO7	TXD	14	15
		GND	RXD	15	16
0	17	GPIO0	GPIO1	18	1
2	27	GPIO2	GND		
3	22	GPIO3	GPIO4	23	4
		3V3	GPIO5	24	5
12	10	MOSI	GND		
13	9	MISO	GPIO6	25	6
14	11	SCLK	CE0	8	10
		GND	CE1	7	11
30	0	SDA0	SCL0	1	31
21	5	GPIO21	GND		
22	6	GPIO22	GPIO26	12	26
23	13	GPIO23	GND		
24	19	GPIO24	GPIO27	16	27
25	26	GPIO25	GPIO28	20	28
		GND	GPIO29	21	29

VCC_INT — RPI_5V
RPI_3V3_1, RPI_3V3_2
EPD_RST', EPD_DIN', EPD_SCK', EPD_BUSY', EPD_DC', EPD_CS'