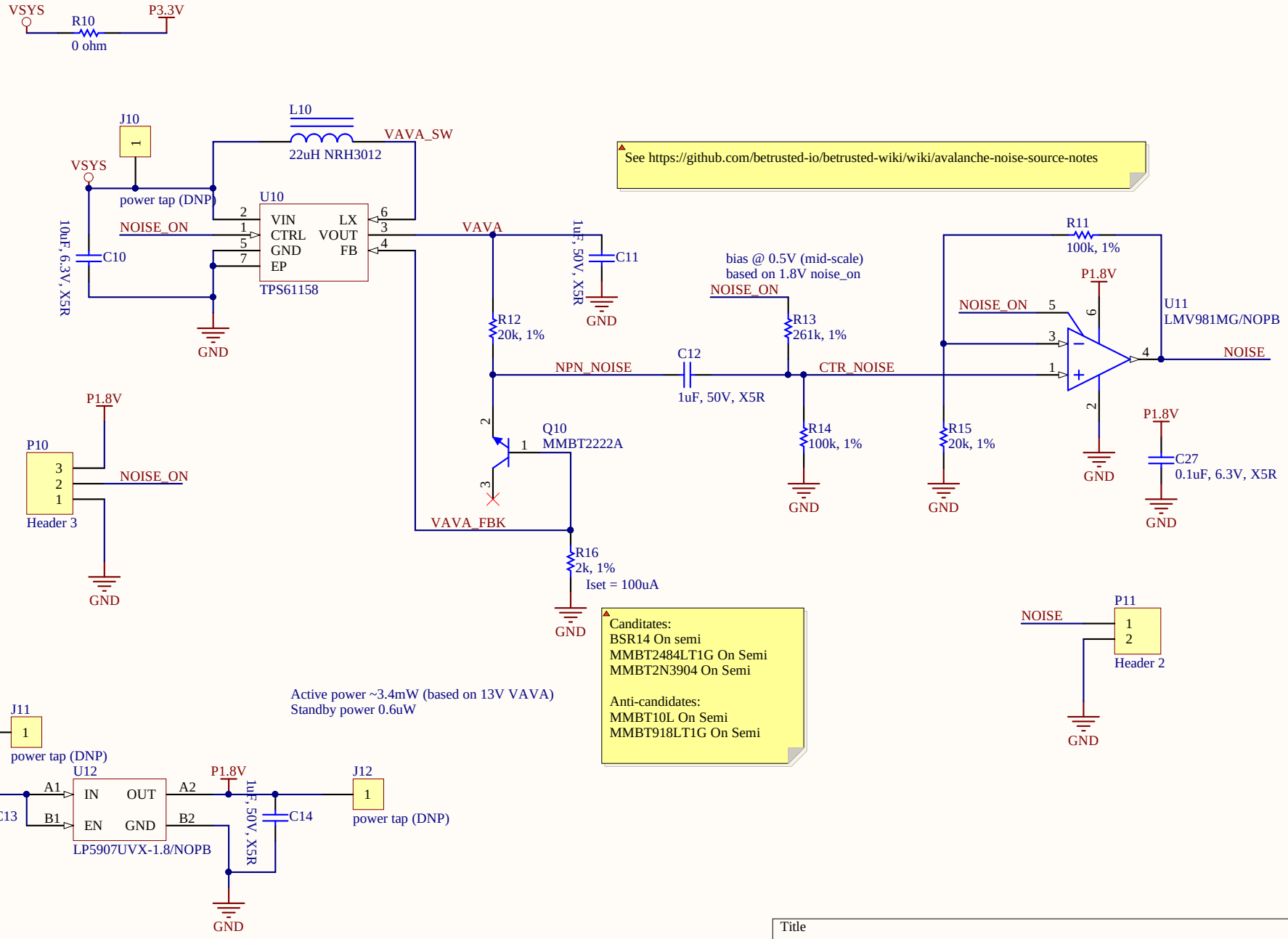
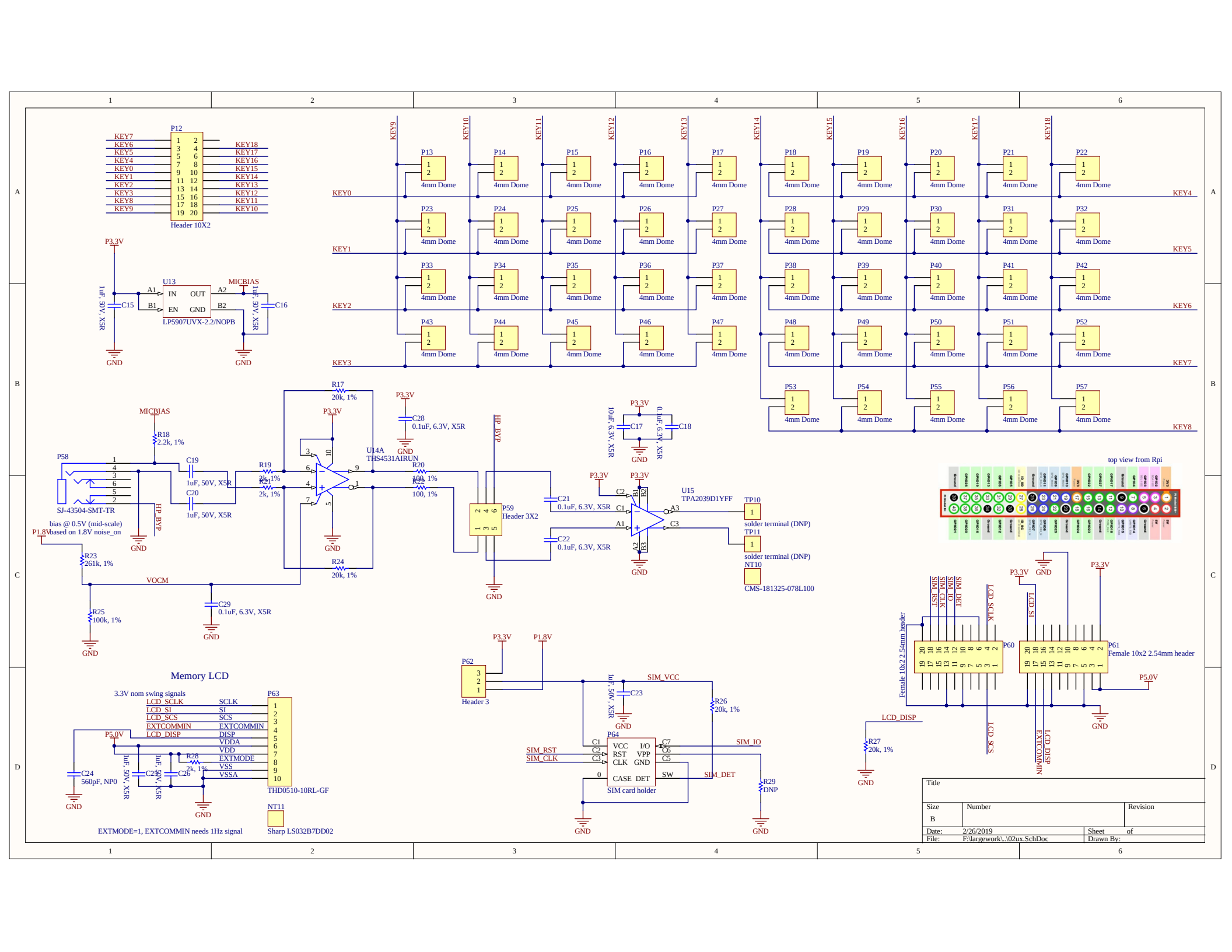
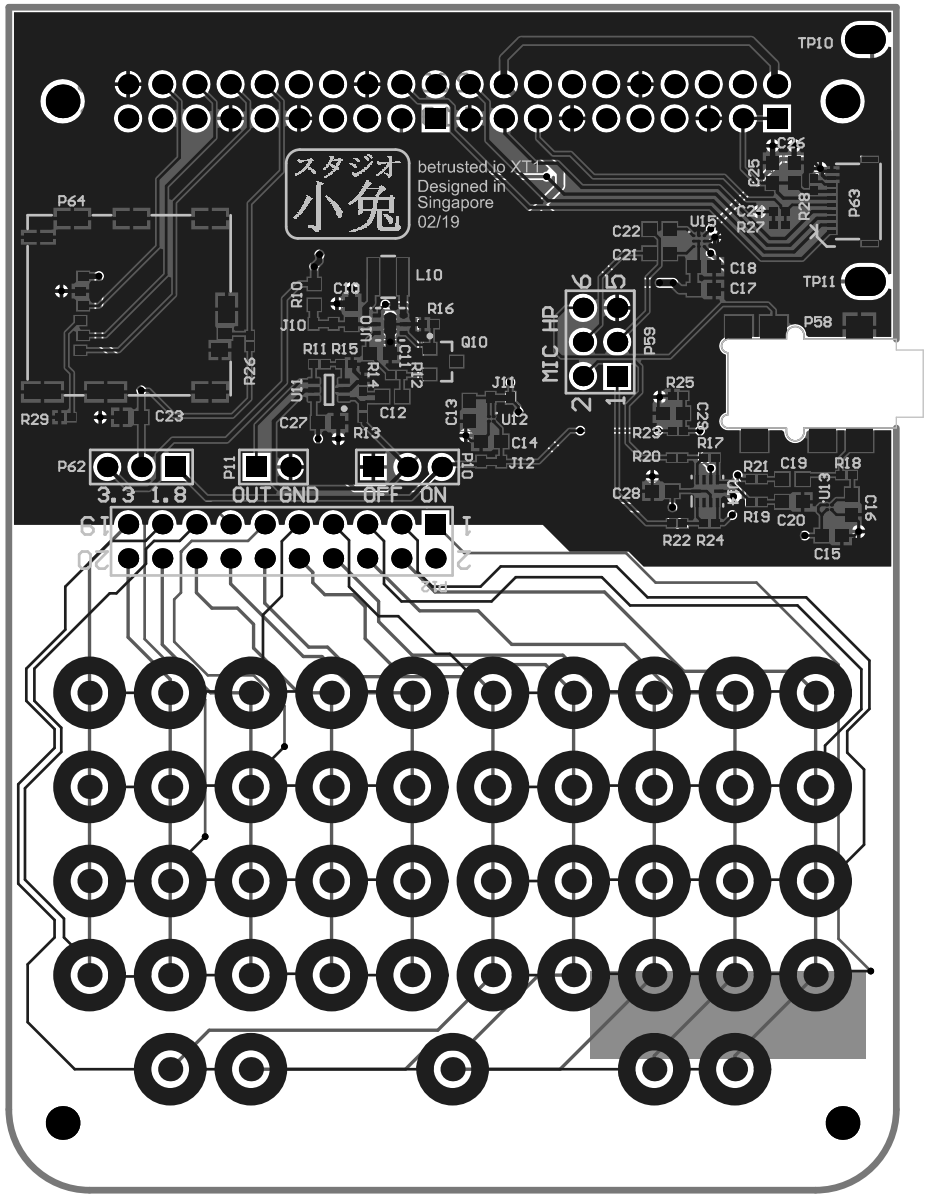

VSYS
R10
0 ohm
P3.3V
J10
power tap (DNP)
L10
22uH NRH3012
VAVA_SW
U10
TPS61158
VIN
LX
CTRL
VOUT
GND
FB
EP
NOISE_ON
10uF, 6.3V, X5R
C10
VAVA
1uF, 50V, X5R
C11
See https://github.com/betrusted-io/betrusted-wiki/wiki/avalanche-noise-source-notes
bias @ 0.5V (mid-scale)
based on 1.8V noise_on
R11
100k, 1%
P1.8V
U11
LMV981MG/NOPB
NOISE
R12
20k, 1%
R13
261k, 1%
C12
1uF, 50V, X5R
NPN_NOISE
CTR_NOISE
R14
100k, 1%
R15
20k, 1%
C27
0.1uF, 6.3V, X5R
P10
Header 3
Q10
MMBT2222A
VAVA_FBK
R16
2k, 1%
Iset = 100uA
Canditates:
BSR14 On semi
MMBT2484LT1G On Semi
MMBT2N3904 On Semi
Anti-candidates:
MMBT10L On Semi
MMBT918LT1G On Semi
P11
Header 2
Active power ~3.4mW (based on 13V VAVA)
Standby power 0.6uW
J11
U12
LP5907UVX-1.8/NOPB
IN
OUT
EN
A1
A2
B1
B2
C13
C14
J12
Title
Size
A
Number
Revision
Date:
2/26/2019
Sheet
of
File:
F:\largework\..\01rng.SchDoc
Drawn By:


P12
KEY7
KEY6
KEY5
KEY4
KEY0
KEY1
KEY2
KEY3
KEY8
KEY9
KEY18
KEY17
KEY16
KEY15
KEY14
KEY13
KEY12
KEY11
KEY10
Header 10X2
P3.3V
U13
IN
OUT
EN
GND
A1
B1
A2
B2
MICBIAS
C15
C16
1uF, 50V, X5R
LP5907UVX-2.2/NOPB
4mm Dome
P13
P14
P15
P16
P17
P18
P19
P20
P21
P22
P23
P24
P25
P26
P27
P28
P29
P30
P31
P32
P33
P34
P35
P36
P37
P38
P39
P40
P41
P42
P43
P44
P45
P46
P47
P48
P49
P50
P51
P52
P53
P54
P55
P56
P57
R17
20k, 1%
C28
0.1uF, 6.3V, X5R
U14A
THS4531AIRUN
HP BYP
C17
C18
10uF, 6.3V, X5R
0.1uF, 6.3V, X5R
top view from Rpi
P58
SJ-43504-SMT-TR
R18
2.2k, 1%
C19
C20
1uF, 50V, X5R
R19
2k, 1%
R21
R20
100, 1%
R22
R23
261k, 1%
R24
R25
100k, 1%
C29
bias @ 0.5V (mid-scale)
based on 1.8V noise_on
P1.8V
VOCM
P59
Header 3X2
C21
C22
U15
TPA2039D1YFF
TP10
TP11
NT10
solder terminal (DNP)
CMS-181325-078L100
Memory LCD
3.3V nom swing signals
LCD_SCLK
LCD_SI
LCD_SCS
EXTCOMMIN
LCD_DISP
SCLK
SI
SCS
EXTCOMMIN
DISP
VDDA
VDD
EXTMODE
VSS
VSSA
P63
THD0510-10RL-GF
NT11
Sharp LS032B7DD02
P5.0V
C24
560pF, NP0
C25
C26
R28
2k, 1%
EXTMODE=1, EXTCOMMIN needs 1Hz signal
P62
Header 3
P1.8V
SIM_VCC
C23
R26
20k, 1%
P64
SIM card holder
SIM_RST
SIM_CLK
SIM_IO
SIM_DET
R29
DNP
P60
P61
Female 10x2 2.54mm header
LCD_SCLK
LCD_SI
LCD_SCS
LCD_DISP
EXTCOMMIN
SIM_RST
SIM_CLK
SIM_IO
SIM_DET
R27
20k, 1%
Title
Size
B
Number
Revision
Date: 2/26/2019
Sheet of
File: F:\largework\..\02ux.SchDoc
Drawn By:

Board cutting outline



Layer	Name	Material	Thickness
1	Top Overlay		
2	Top Solder	Solder Resist	0.010mm
3	Top Layer	Copper	0.036mm
4	Dielectric 1	FR-4	0.710mm
5	Bottom Layer	Copper	0.036mm
6	Bottom Solder	Solder Resist	0.010mm
7	Bottom Overlay		

Total thickness: 0.8mm +/-0.1mm

Finish: immersion gold

Soldermask color: green

Silkscreen: white