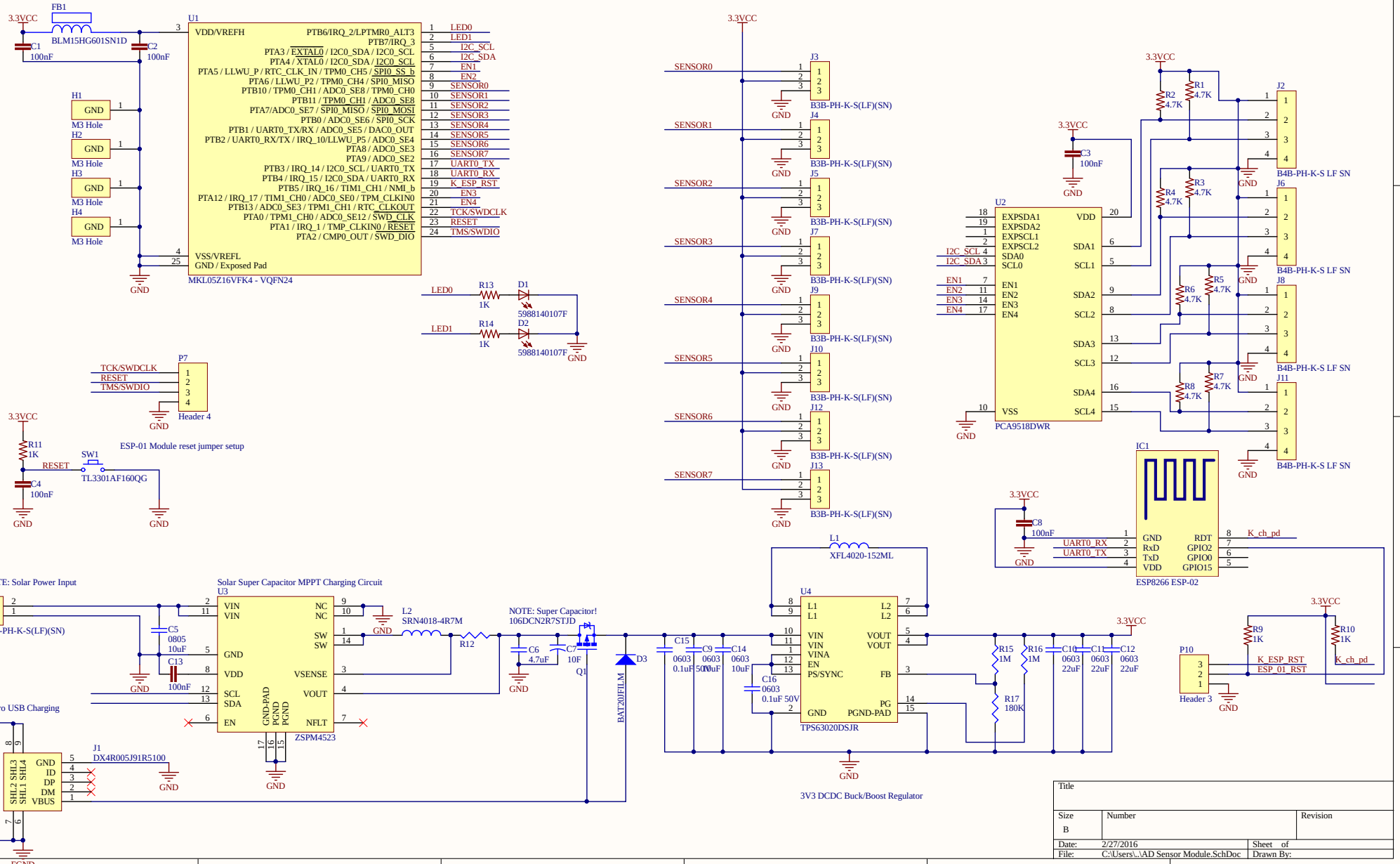
FB1
BLM15HG601SN1D
3.3VCC
C1
100nF
C2
100nF
U1
VDD/VREFH
PTB6/IRQ_2/LPTMR0_ALT3
PTB7/IRQ_3
PTA3 / EXTAL0 / I2C0_SDA / I2C0_SCL
PTA4 / XTAL0 / I2C0_SDA / I2C0_SCL
PTA5 / LLWU_P / RTC_CLK_IN / TPM0_CH5 / SPI0_SS_b
PTA6 / LLWU_P2 / TPM0_CH4 / SPI0_MISO
PTB10 / TPM0_CH1 / ADC0_SE8 / TPM0_CH0
PTB11 / TPM0_CH1 / ADC0_SE8
PTA7/ADC0_SE7 / SPI0_MISO / SPI0_MOSI
PTB0 / ADC0_SE6 / SPI0_SCK
PTB1 / UART0_TX/RX / ADC0_SE5 / DAC0_OUT
PTB2 / UART0_RX/TX / IRQ_10/LLWU_P5 / ADC0_SE4
PTA8 / ADC0_SE3
PTA9 / ADC0_SE2
PTB3 / IRQ_14 / I2C0_SCL / UART0_TX
PTB4 / IRQ_15 / I2C0_SDA / UART0_RX
PTB5 / IRQ_16 / TIM1_CH1 / NMI_b
PTA12 / IRQ_17 / TIM1_CH0 / ADC0_SE0 / TPM_CLKIN0
PTB13 / ADC0_SE3 / TPM1_CH1 / RTC_CLKOUT
PTA0 / TPM1_CH0 / ADC0_SE12 / SWD_CLK
PTA1 / IRQ_1 / TMP_CLKIN0 / RESET
PTA2 / CMP0_OUT / SWD_DIO
VSS/VREFL
GND / Exposed Pad
MKL05Z16VFK4 - VQFN24
LED0
LED1
I2C_SCL
I2C_SDA
EN1
EN2
SENSOR0
SENSOR1
SENSOR2
SENSOR3
SENSOR4
SENSOR5
SENSOR6
SENSOR7
UART0_TX
UART0_RX
K_ESP_RST
EN3
EN4
TCK/SWDCLK
RESET
TMS/SWDIO
H1
H2
H3
H4
M3 Hole
GND
R13
1K
R14
1K
D1
D2
5988140107F
P7
Header 4
ESP-01 Module reset jumper setup
R11
1K
SW1
TL3301AF160QG
C4
100nF
J3
J4
J5
J7
J9
J10
J12
J13
B3B-PH-K-S(LF)(SN)
U2
PCA9518DWR
EXPSDA1
EXPSDA2
EXPSCL1
EXPSCL2
SDA0
SCL0
EN1
EN2
EN3
EN4
VDD
SDA1
SCL1
SDA2
SCL2
SDA3
SCL3
SDA4
SCL4
VSS
C3
100nF
R1
4.7K
R2
4.7K
R3
4.7K
R4
4.7K
R5
4.7K
R6
4.7K
R7
4.7K
R8
4.7K
J2
J6
J8
J11
B4B-PH-K-S LF SN
IC1
ESP8266 ESP-02
GND
RDT
GPIO2
GPIO0
GPIO15
TxD
RxD
VDD
C8
100nF
K_ch_pd
NOTE: Solar Power Input
J14
S2B-PH-K-S(LF)(SN)
Solar Super Capacitor MPPT Charging Circuit
U3
ZSPM4523
VIN
NC
SW
GND
VDD
VSENSE
VOUT
SCL
SDA
EN
NFLT
GND-PAD
PGND
C5
0805
10uF
C13
100nF
L2
SRN4018-4R7M
R12
NOTE: Super Capacitor!
106DCN2R7STJD
C6
4.7uF
C7
10F
Q1
D3
BAT20JFILM
L1
XFL4020-152ML
U4
TPS63020DSJR
VIN
VINA
EN
PS/SYNC
L1
L2
VOUT
FB
PG
PGND-PAD
C15
0603
0.1uF
C9
0603
C14
0603
10uF
C16
0603
0.1uF 50V
R15
1M
R16
1M
R17
180K
C10
0603
22uF
C11
0603
22uF
C12
0603
22uF
3V3 DCDC Buck/Boost Regulator
Micro USB Charging
J1
DX4R005J91R5100
SHL2 SHL3
SHL1 SHL4
GND
ID
DP
DM
VBUS
FGND
P10
Header 3
R9
1K
R10
1K
K_ESP_RST
ESP_01_RST
K_ch_pd
Title
Size
B
Number
Revision
Date:
2/27/2016
Sheet of
File:
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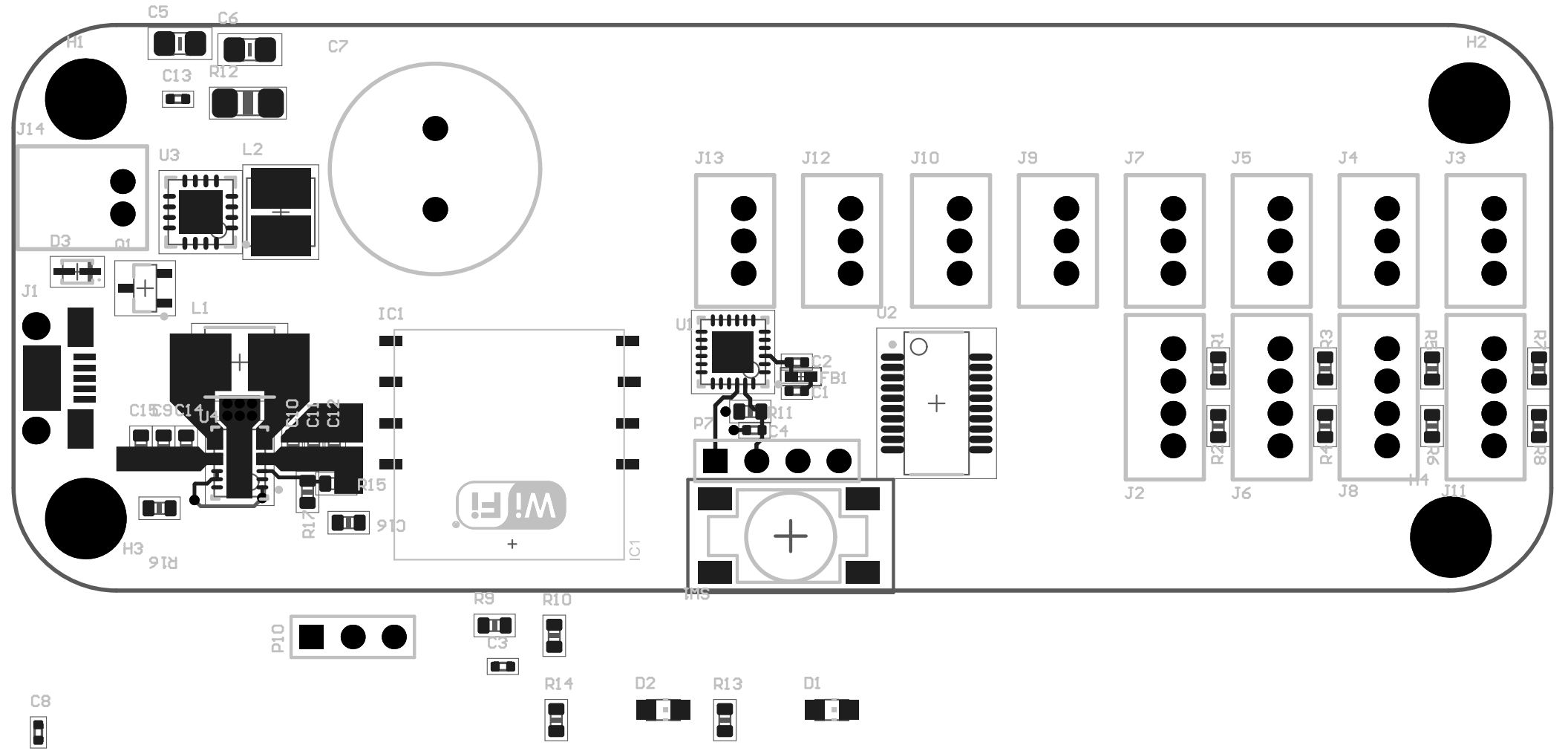
Drawn By:


C5
C6
C7
H1
H2
C13
R12
J14
U3
L2
J13
J12
J10
J9
J7
J5
J4
J3
D3
Q1
J1
L1
IC1
U1
U2
C2
FB1
C1
R11
P7
C4
R1
R3
R5
R7
R2
R4
R6
R8
J2
J6
J8
J11
H4
C15
C9
C14
U4
C10
C11
C12
R15
R17
C16
W! Fi
IC1
H3
R16
SW1
P10
R9
R10
C3
R14
D2
R13
D1
C8

Board S