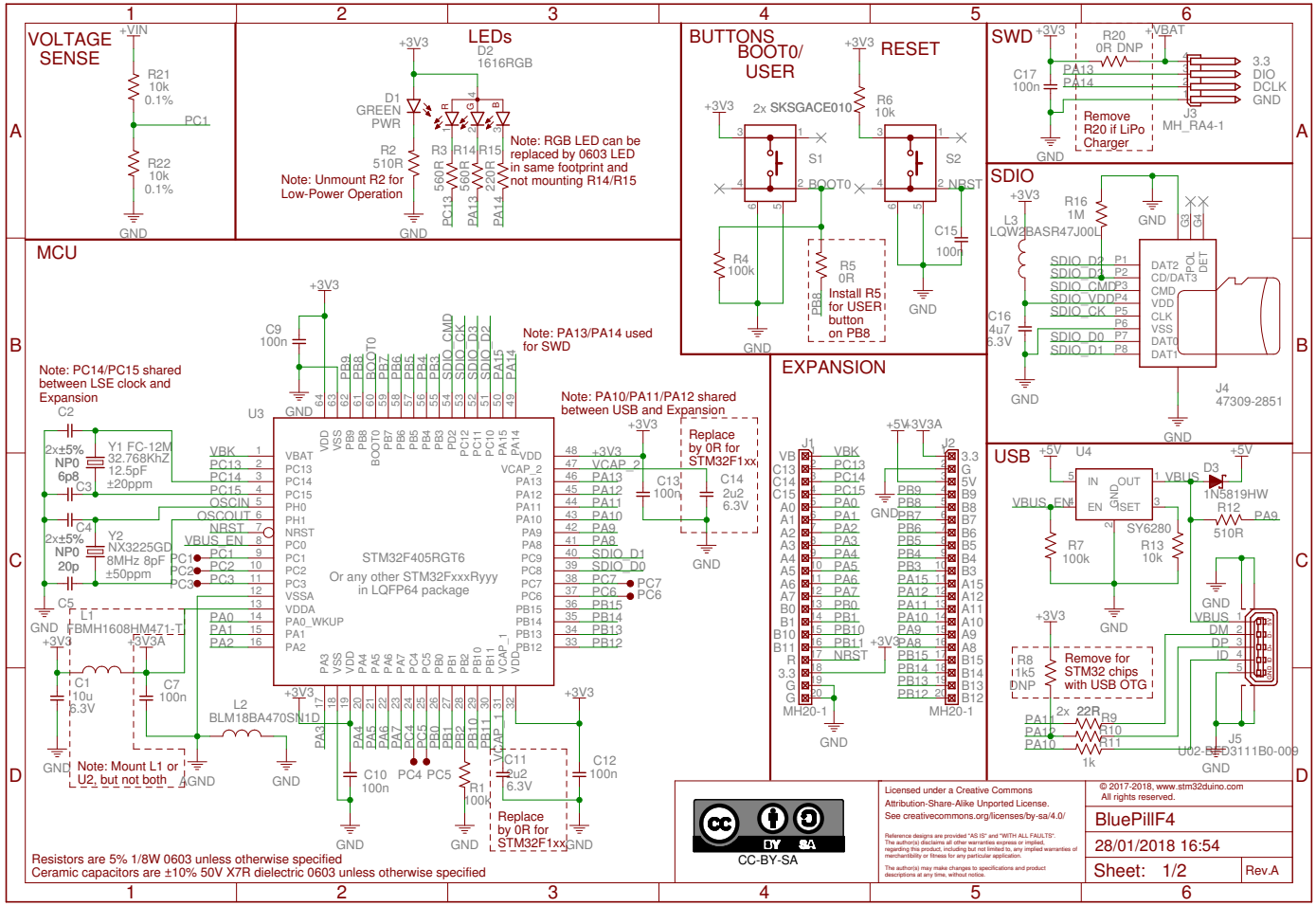
VOLTAGE SENSE
+VIN
R21 10k 0.1%
PC1
R22 10k 0.1%
GND
LEDs
D2 1616RGB
+3V3
D1 GREEN PWR
R2 510R
R3 560R
R14 560R
R15 220R
PC13
PA13
PA14
Note: Unmount R2 for Low-Power Operation
Note: RGB LED can be replaced by 0603 LED in same footprint and not mounting R14/R15
BUTTONS
BOOT0/ USER
2x SKSGACE010
S1
BOOT0
R4 100k
R5 0R
PB8
Install R5 for USER button on PB8
RESET
R6 10k
S2
NRST
C15 100n
SWD
R20 0R DNP
+VBAT
C17 100n
PA13
PA14
3.3
DIO
DCLK
GND
J3 MH_RA4-1
Remove R20 if LiPo Charger
SDIO
R16 1M
L3 LQW2BASR47J00L
C16 4u7 6.3V
SDIO_D2
SDIO_D3
SDIO_CMD
SDIO_VDD
SDIO_CK
SDIO_D0
SDIO_D1
DAT2 CD/DAT3 CMD VDD CLK VSS DAT0 DAT1
P. POL DET
J4 47309-2851
MCU
Note: PC14/PC15 shared between LSE clock and Expansion
Note: PA13/PA14 used for SWD
Note: PA10/PA11/PA12 shared between USB and Expansion
C9 100n
U3
STM32F405RGT6
Or any other STM32FxxxRyyy in LQFP64 package
VBAT
PC13
PC14
PC15
PH0
PH1
NRST
PC0
PC1
PC2
PC3
VSSA
VDDA
PA0_WKUP
PA1
PA2
VDD
VCAP_2
PA13
PA12
PA11
PA10
PA9
PA8
SDIO_D1
SDIO_D0
PC7
PC6
PB15
PB14
PB13
PB12
PA3
PA4
PA5
PA6
PA7
PC4
PC5
PB0
PB1
PB2
PB10
PB11
VCAP_1
VDD
2x±5% NP0 6p8
C2
C3
Y1 FC-12M 32.768KHz 12.5pF ±20ppm
2x±5% NP0 20p
C4
Y2 NX3225GD 8MHz 8pF ±50ppm
C5
VBK
PC13
PC14
PC15
OSCIN
OSCOUT
NRST
VBUS_EN
PC1
PC2
PC3
PA0
PA1
PA2
L1 FBMH1608HM471-T
C1 10u 6.3V
C7 100n
L2 BLM18BA470SN1D
Note: Mount L1 or U2, but not both
C10 100n
PC4 PC5
R1 100k
C11 2u2 6.3V
C12 100n
Replace by 0R for STM32F1xx
C13 100n
C14 2u2 6.3V
Replace by 0R for STM32F1xx
EXPANSION
J1
J2
MH20-1
+5V
3V3A
USB
U4
IN
OUT
EN
GND
ISET
SY6280
D3 1N5819HW
VBUS
VBUS_EN
R12 510R
PA9
R7 100k
R13 10k
R8 1k5 DNP
Remove for STM32 chips with USB OTG
2x 22R
R9
R10
R11
1k
PA11
PA12
PA10
J5 U02-B-FD3111B0-009
DM
DP
ID
Resistors are 5% 1/8W 0603 unless otherwise specified
Ceramic capacitors are ±10% 50V X7R dielectric 0603 unless otherwise specified
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Sheet: 1/2
Rev.A