MCU Decoupling

+3V3

C1 4u7 C2 100n C4 100n C6 100n C7 100n C10 100n

GND

+3V3   +3.3VA
FB?
600 @ 100 MHz   C? 1u   C? 10n
GND   GND

Ext. Flash
+3V3   +3V3   +3V3
R4 10k   R5 10k   C12 100n
GND

U3
SPI2_MOSI 5 SI/SIO0   VCC 8 +3V3
SPI2_CLK   6 SCLK
SPI2_!CS   1 CS   SO/SIO1 2 R6 0 SPI2_MISO
FLASH_!WP   3 WP/SIO2
FLASH_!HOLD   7 HOLD/SIO3   GND 4
MX25R3235FM2xx1
GND

+3V3   +3.3VA
1 19 32 48 64 13
VBAT VDD VDD VDD VDD VDDA

U1
NRST 7 NRST   PA0 14
BOOT0 60 BOOT0   PA1 15
                      PA2 16
          31 VCAP_1 PA3 17
          47 VCAP_2 PA4 20
C8 2u2 C9 2u2   PA5 21
GND GND   PA6 22
                      PA7 23
                      PA8 41
HSE_IN   5 PH0   PA9 42
HSE_OUT 6 PH1   PA10 43
                      PA11 44 USB_D-
          54 PD2   PA12 45 USB_D+
                      PA13 46
          8 PC0   PA14 49
          9 PC1   PA15 50
          10 PC2
          11 PC3   PB0 26
          24 PC4   PB1 27
          25 PC5   PB2 28
FLASH_!HOLD 37 PC6   PB3 55
FLASH_!WP   38 PC7   PB4 56
          39 PC8   PB5 57
          40 PC9   PB6 58
          51 PC10   PB7 59
          52 PC11   PB8 61
          53 PC12   PB9 62
          2 PC13   PB10 29
          3 PC14   PB11 30
          4 PC15   PB12 33 SPI2_!CS
                      PB13 34 SPI2_CLK
          18 63 12   PB14 35 SPI2_MISO
          VSS VSS VSSA PB15 36 SPI2_MOSI
          STM32F405RGTx
GND

Y1 16MHz
HSE_IN   R1 47   HSE_OUT
C3 12p   C5 12p
GND

Power ORing
VBUS
+12V   D1 D_Schottky_Small

Q1 AO3401A
3 2   F1 300mA   600 @ 100 MHz   BUCK_IN
1   FB1   C13 10u
GND   GND

BUCK_BST
C14 10n
BUCK_SW

BUCK_IN   U2
C11 2u2   5 IN   BST 1 BUCK_BST
          4 EN   SW   6 BUCK_SW
GND   BUCK_EN FB   3 BUCK_FB
          2 GND
          MP2359
          GND

+3V3
47k R9
BUCK_FB
15k R10
270 R11
GND

BUCK_IN
R7 100k
BUCK_EN
R8 68k
GND

BUCK_SW   L1 10u   +3V3
D2 B5819W C15 2u2   C16 2u2
GND   GND GND

DCDC

USB
VBUS   VBUS
U4   J1 USB_B_Micro
USB_D- 6   VBUS 1
USB_CONN_D- 1   D+ 3 USB_CONN_D+
            4 USB_D+   D- 2 USB_CONN_D-
            3 USB_CONN_D+   ID 4
            2
USBLC6-2SC6   Shield 6 5 GND
GND   GND

Under construction

Sheet: /
File: board.sch
Title: Custom STM32 Board
Size: A4   Date: Rev:
KiCad E.D.A. kicad (5.1.9)-1   Id: 1/1