SCHEMATIC

JTAG

3.3V

JTAG
BH20S

R22 NA R23 10k R24 10k R25 10k R26 10k

TRST
TDI
TMS
TCK
TDO
RST

10k R27   R28 10k
10k R29   R30 10k
+5V_JTAG

R-T
OPEN TRST

USB_OTG

+5V

U3 ST2052BD
EN1 OUT1
EN2 OUT2
#OC1 IN
#OC2 GND

USB_VBUSON
USB_FAULT

33k 33k
R33 33k 3.3V

C25 100nF

+5V_OTG_PWR
3.3V
R34 0R(NA) OTG_VBUS

U4 USBLC6-2P6
R35 22R OTG_DM
R36 22R OTG_DP
C26 100nF C27 47pF(NA) C28 47pF(NA)
OTG_ID

USB MICRO_AB
VBUS
D-
D+
ID
GND

+5V_OTG_PWR
USB_OTG D-
USB_OTG D+
OTG_ID

C23 100nF C24 2.2uF/6.3V
L2

U1 STM32F107VCT6

3.3V
HN1x3 R1 10k PB2/BOOT1
B1_1/B1_0

3.3V_MCU_E
CLOSE

VDD VDD VDD VDD VDD
VSS VSS VSS VSS VSS VSS

C1 100nF C2 100nF C3 100nF C4 100nF C5 100nF

PA0/WKUP/USART2_CTS/ADC12_IN0/TIM2_CH1_ETR/TIM5_CH1/ETH_MII_CRS_WKUP
PA1/USART2_RTS/ADC12_IN1/TIM5_CH2/TIM2_CH2/ETH_MII_RX_CLK/ETH_RMII_REF_CLK
PA2/USART2_TX/TIM5_CH3/ADC12_IN2/TIM2_CH3/ETH_MII_MDIO/ETH_RMII_MDIO
PA3/USART2_RX/TIM5_CH4/ADC12_IN3/TIM2_CH4/ETH_MII_COL
PA4/SPI1_NSS/DAC_OUT1/USART2_CK/ADC12_IN4
PA5/SPI1_SCK/DAC_OUT2/ADC12_IN5
PA6/SPI1_MISO/ADC12_IN6/TIM3_CH1/TIM1_BKIN
PA7/SPI1_MOSI/ADC12_IN7/TIM3_CH2/ETH_MII_RX_DV/ETH_RMII_CRS_DV/TIM1_CH1N
PA8/USART1_CK/OTG_FS_SOF/TIM1_CH1/MCO
PA9/USART1_TX/TIM1_CH2/OTG_FS_VBUS
PA10/USART1_RX/TIM1_CH3/OTG_FS_ID
PA11/USART1_CTS/CAN1_RX/TIM1_CH4/OTG_FS_DM
PA12/USART1_RTS/CAN1_TX/TIM1_ETR/OTG_FS_DP
PA13/JTMS/SWDIO
PA14/JTCK/SWCLK
PA15/JTDI/SPI3_NSS/TIM2_CH1_ETR/SPI1_NSS

WKUP
EXT1-4
EXT1-5
EXT1-6
EXT2-29
EXT2-28
EXT2-27
EXT2-26
EXT2-25
EXT2-24
OTG_VBUS OTG_VBUS
OTG_ID OTG_ID
OTG_DM OTG_DM
OTG_DP OTG_DP
TMS TMS
TCK TCK
TDI TDI

PB0/ADC12_IN8/TIM3_CH3/ETH_MII_RXD2/TIM1_CH2N
PB1/ADC12_IN9/TIM3_CH4/ETH_MII_RXD3/TIM1_CH3N
PB2/BOOT1
PB3/JTDO/SPI3_SCK/TRACESWO/TIM2_CH2/SPI1_SCK
PB4/JNTRST/SPI3_MISO/TIM3_CH1/SPI1_MISO
PB5/I2C1_SMBAL/SPI3_MOSI/ETH_MII_PPS_OUT/ETH_RMII_PPS_OUT/TIM3_CH2/SPI1_MOSI
PB6/I2C1_SCL/TIM4_CH1/USART1_TX/CAN2_TX
PB7/I2C1_SDA/TIM4_CH2/USART1_RX
PB8/TIM4_CH3/ETH_MII_TXD3/I2C1_SCL/CAN1_RX
PB9/TIM4_CH4/I2C1_SDA/CAN1_TX
PB10/I2C2_SCL/USART3_TX/ETH_MII_RX_ER/TIM2_CH3
PB11/I2C2_SDA/USART3_RX/ETH_MII_TX_EN/ETH_RMII_TX_EN/TIM2_CH4
PB12/SPI2_NSS/I2C2_WS/I2C2_SMBAL/USART3_CK/TIM1_BKIN/CAN2_RX/ETH_MII_TXD0/ETH_RMII_TXD0
PB13/SPI2_SCK/I2S2_CK/USART3_CTS/TIM1_CH1N/CAN2_TX/ETH_MII_TXD1/ETH_RMII_TXD1
PB14/SPI2_MISO/TIM1_CH2N/USART3_RTS
PB15/SPI2_MOSI/I2S2_SDT/TIM1_CH3N

EXT1-15
EXT1-16
PB2/BOOT1
TDO TDO
TRST TRST
EXT1-17
EXT1-18
EXT1-19
EXT1-20
EXT1-21
EXT1-22
EXT1-23
EXT1-24
EXT1-25
EXT1-26
EXT1-27

PC0/ADC12_IN10
PC1/ADC12_IN11/ETH_MII_MDC/ETH_RMII_MDC
PC2/ADC12_IN12/ETH_MII_TXD2
PC3/ADC12_IN13/ETH_MII_TX_CLK
PC4/ADC12_IN14/ETH_MII_RXD0/ETH_RMII_RXD0
PC5/ADC12_IN15/ETH_MII_RXD1/ETH_RMII_RXD1
PC6/I2S2_MCK/TIM3_CH1
PC7/I2S3_MCK/TIM8_CH2
PC8/TIM8_CH3
PC9/TIM8_CH4
PC10/UART4_TX/USART3_TX/SPI3_SCK
PC11/UART4_RX/USART3_RX/SPI3_MISO
PC12/UART5_TX/USART3_CK/SPI3_MOSI
PC13/TAMPER-RTC
PC14/OSC32_IN
PC15/OSC32_OUT

EXT2-23
EXT2-22
EXT2-21
EXT2-20
EXT2-19
EXT2-18
STAT1
STAT2
EXT2-17
EXT2-16
EXT2-15
EXT2-14
EXT2-13
EXT2-12

PD0/OSC_IN/CAN1_RX
PD1/OSC_OUT/CAN1_TX
PD2/TIM3_ETR/UART5_RX
PD3/USART2_CTS
PD4/USART2_RTS
PD5/USART2_TX
PD6/USART2_RX
PD7/USART2_CK
PD8/USART3_TX/ETH_MII_RX_DV
PD9/USART3_RX/ETH_MII_RX_DD
PD10/USART3_CK/ETH_MII_RX_D2
PD11/USART3_RTS/ETH_MII_RX_D3
PD12/TIM4_CH1/USART3_RTS/ETH_MII_RX_D3
PD13/TIM4_CH2
PD14/TIM4_CH3
PD15/TIM4_CH4

EXT2-4
EXT2-5
EXT2-6
EXT2-7
EXT2-8
EXT2-9
EXT2-10
EXT2-11
EXT1-28
EXT1-29
EXT1-30
EXT1-31
EXT1-32
EXT1-33
EXT1-34
EXT1-35

R7 NA Q2 C12 10pF
32768Hz/6pF C13 10pF

VDDA
VSSA
L1
C6 10uF/6.3V/TANT C7 100nF

EXT1-36
R2 22R VREF+
C8 100nF
C9 NA VREF-
R3 0R(NA)
EXT1-37
EXT1-38

3V_BAT D5 BAT54C VBAT
WE2S
HN1x3 R4 10k BOOT0
B0_1/B0_0

C10 27pF OSC_IN
Q1 8.000MHz/HC-49SMD/20pF
C11 27pF R6 150R OSC_OUT R5 NA

RST NRST
NC

EXT2-37 PE0/TIM4_ETR
EXT2-36 PE1
EXT2-35 PE2/TRACECK
EXT2-34 PE3/TRACED0
EXT2-33 PE4/TRACED1
EXT2-32 PE5/TRACED2
EXT2-31 PE6/TRACED3
EXT2-30 PE7/TIM1_ETR
EXT1-7   PE8/TIM1_CH1N
EXT1-8   PE9/TIM1_CH1
EXT1-9   PE10/TIM1_CH2N
EXT1-10 PE11/TIM1_CH2
EXT1-11 PE12/TIM1_CH3N
EXT1-12 PE13/TIM1_CH3
EXT1-13 PE14/TIM1_CH4
EXT1-14 PE15/TIM1_BKIN USB_FAULT

BUTTON

3.3V
WKUP
C29 100nF
R19 100R/1%
R20 330R/1% WKUP
R21 33k

POWER SUPPLY CIRCUIT

+5V 3.3V

EXT1-40
EXT2-40

EXT1-1
EXT2-1

3.3V_E
CLOSE

G1 DB104(SMD)
PWR_JACK
YDJ-1134
6VAC 9VDC

VR1(5V) LM1117IMPX-ADJ
IN OUT
ADJ/GND

+5V_JTAG
+5V_OTG_PWR
+5V_EXT
PWR_SEL
HN2x3

VR2(3.3V) LM1117IMPX-ADJ
IN OUT
ADJ/GND

R10 220R/1%
C14 470uF/16VDC R8 330R/1% C15 100nF C16 C17 47uF/6.3V/TANT
GND R9 330R/1%

C18 100nF R11 R12 PWR R13 330R/1% C20 C21 100nF
240R/1%

EXT1-39
EXT2-39
EXT2-38

EXT1-2
EXT2-2

RESET CIRCUIT

3.3V
U2 NA(STM1001RWX6F)
VCC RESET
GND

R14 10k
R16 330R/1% RST EXT1-3 EXT2-3
R15 100R/1%
C22 100nF
RESET

STATUS LEDS

STAT2 R17 390R/1%
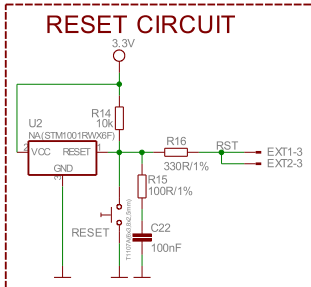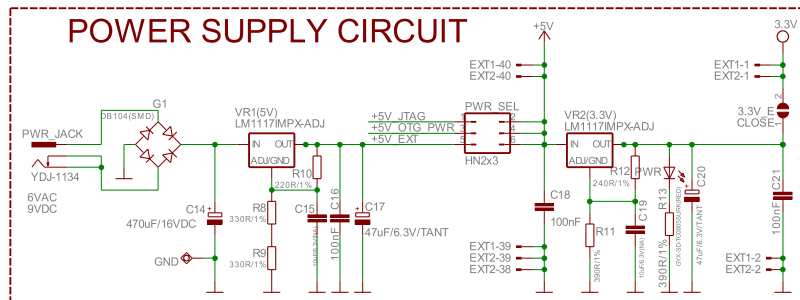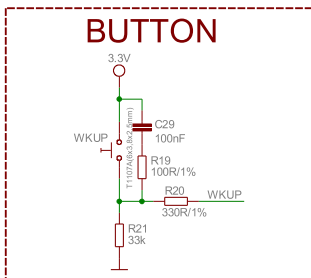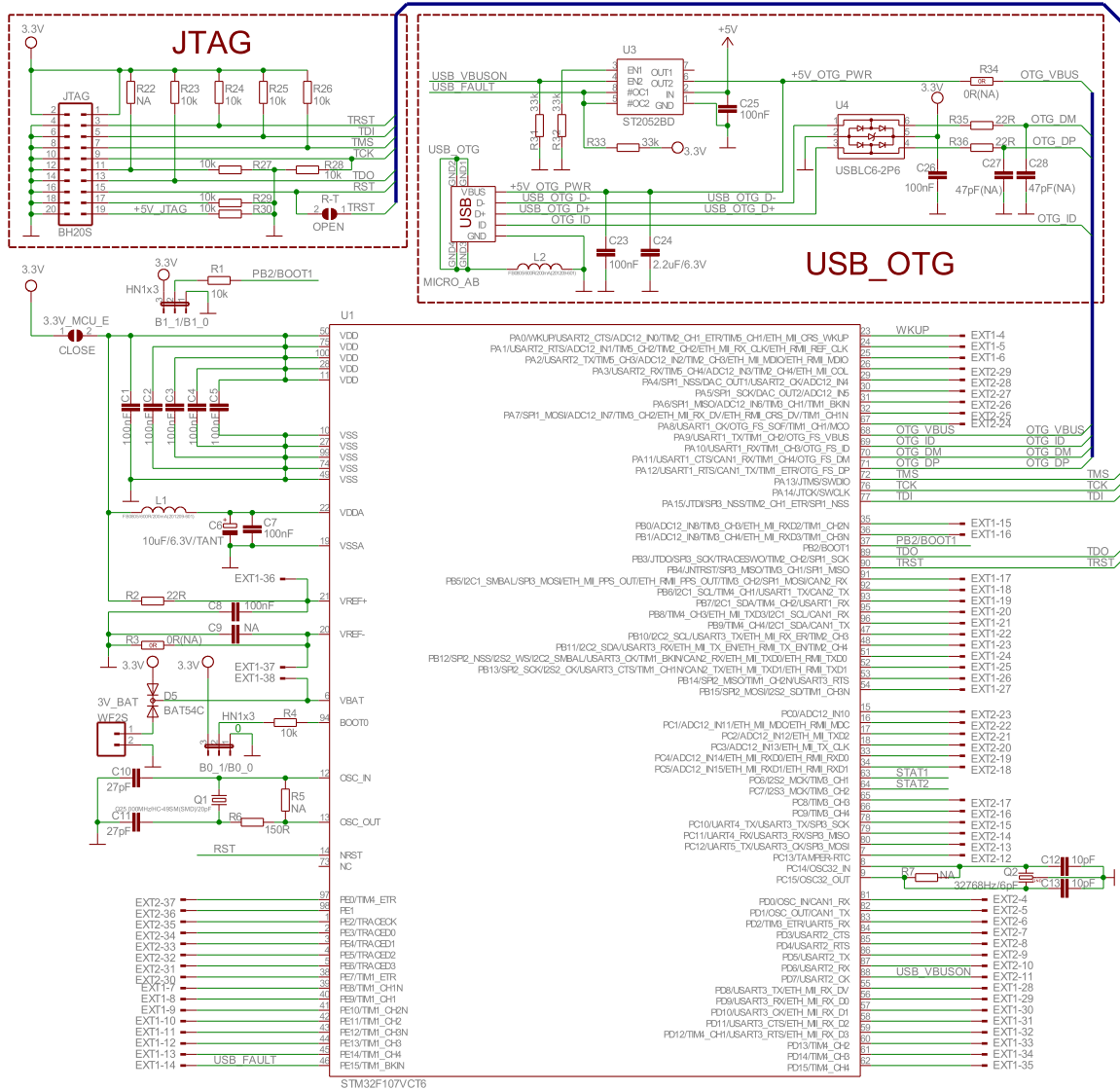STAT1 R18 390R/1%

STAT1 STAT2
GREEN/GYX-SD-TC0805SGC YELLOW/GYX-SD-TC0805SYC

STM32-H107

Rev. Initial

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