U_Connectors
Connectors.SchDoc

PA[0..15]
PB[0..15]
PC[0..15]
PD[0..15]
PE[0..15]
PF[0..15]
PG[0..15]
PH[0..2]
COMP2_INP
BOOT0
NRST

U_MCU_144
MCU_144.SchDoc

PA[0..15]
PB[0..15]
PC[0..15]
PD[0..15]
PE[0..15]
PF[0..15]
PG[0..15]
PH[0..2]
COMP2_INP
BOOT0
USB_DP
USB_DM
USB_VBUS
USB_ID
USB_GPIO_OUT
USB_GPIO_IN
NRST
TCK
TMS
SWO
STLK_RX
STLK_TX
MCO
RMII_TX_EN
RMII_TXD0
RMII_TXD1
RMII_RXD0
RMII_RXD1
RMII_CRS_DV
RMII_MDC
RMII_MDIO
RMII_REF_CLK

U_USB
USB.SchDoc

USB_DP
USB_DM
USB_VBUS
USB_ID
USB_Disconnect
USB_PowerSwitchOn
USB_OverCurrent
VBUS_DET

U_Ethernet
Ethernet.SchDoc

RMII_TX_EN
RMII_TXD0
RMII_TXD1
RMII_RXD0
RMII_RXD1
RMII_CRS_DV
RMII_MDC
RMII_MDIO
RMII_REF_CLK
NRST

U_ST_LINK_V2-1
ST_LINK_V2-1.SCHDOC

NRST
TCK
TMS
SWO
STLK_RX
STLK_TX
MCO
PWR_ENn

U5
LD1117S50TR
Vin
Vout
Tab
VIN
VIN_5V
C17
10uF(25V)
C18
10uF

JP3
Header 3X2
E5V
U5V
SB1
Open
C16
4.7uF
C11
100nF
R27
10K
R21
1K
U4
IN
IN
OUT
OUT
FAULT
SET
ON
GND
ST890CDR
LD5
Red
R28
2K7

+5V
R29
1K
C23
1uF_X5R_0603
C22
100nF
LD6
Green

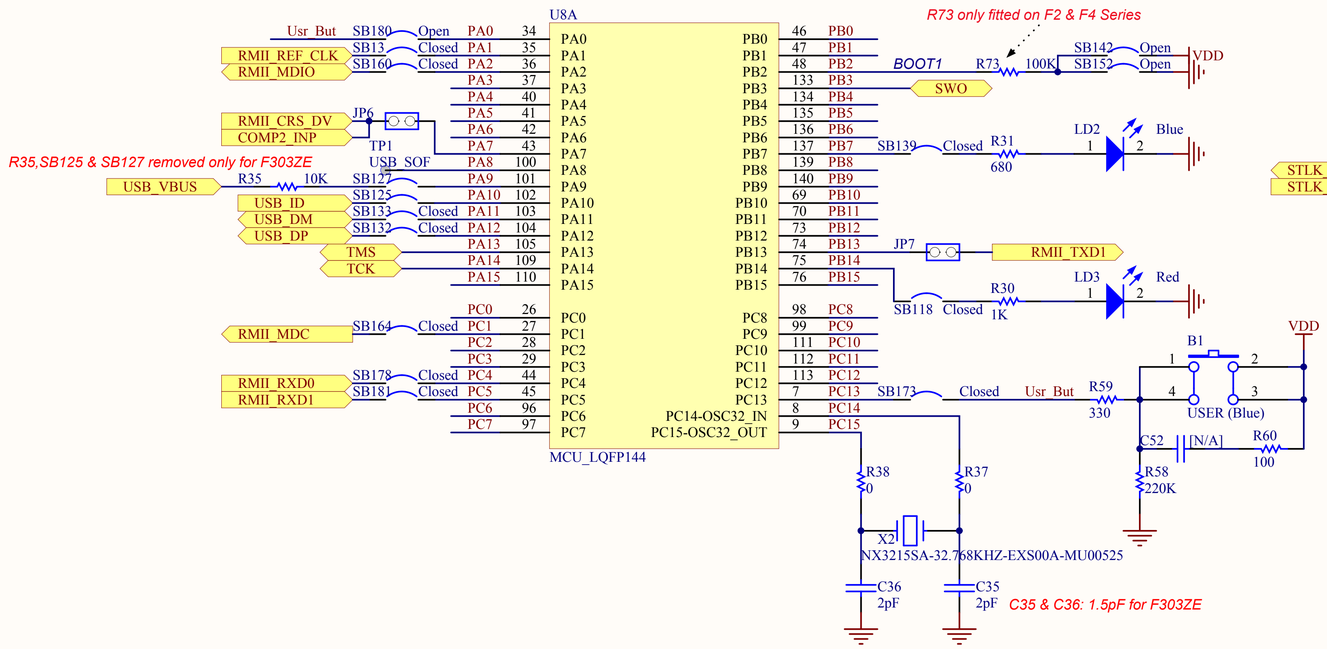
U6
LD39050PU33R
VI
EN
GND
GND
PG
VO
NC
SB3
Closed
C20
1uF_X5R_0603
C19
100nF
+3V3
JP5
VDD
SB2
Closed
+3V3_PER

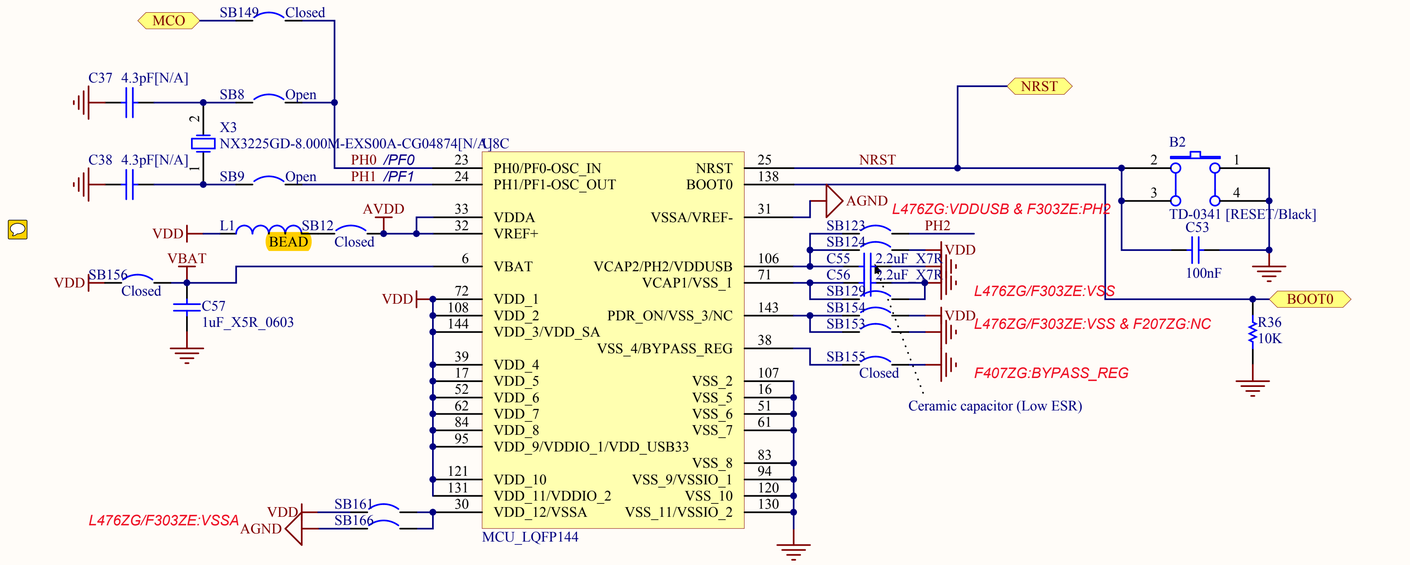
Power Switch to supply +5V
from STLINK USB

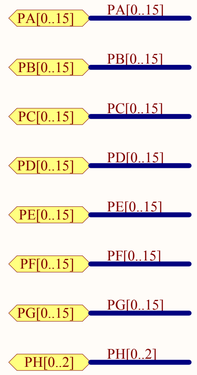
Note1: Text in italic placed on a wire does not correspond to net name. It just helps to identify rapidly Arduino's signal related to this wire.
2. Add C58 4.7uF ceramic capacitor on VDD from A-01 to B-01
3. R33's value changed to 200Kohm from A-01 to B-01
4. Add pull-up & pull-down resistors on PB2 for BOOT1 (F4 series) from A-01 to B-01
5. All peripherals' power changed to +3V3_PER from A-01 to B-01
6. C36 & C37's value changed to 2pF from A-01 to B-01
7. Add R76 1.5K pull-up circuit to USB_DP for F303ZE only from A-01 to B-01
8. LD1 can be controlled by PB0 from A-01 to B-01
9. D11 on CN7 can be set to PB5 from A-01 to B-01

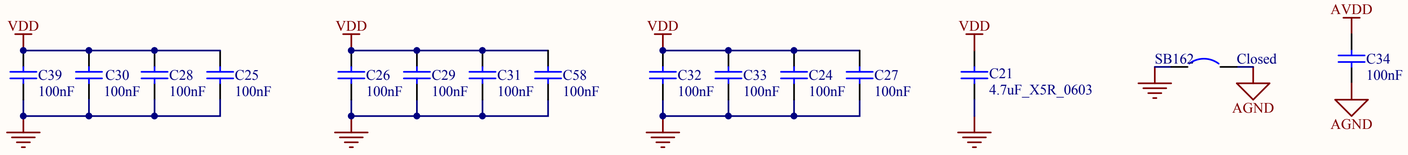
Title: **TOP & POWER**		
Project: **NUCLEO-XXXXZX**		
Size: A4	Reference: MB1137	Revision: B-01
Date: 12/2/2015		Sheet: 1 of 6

life.augmented



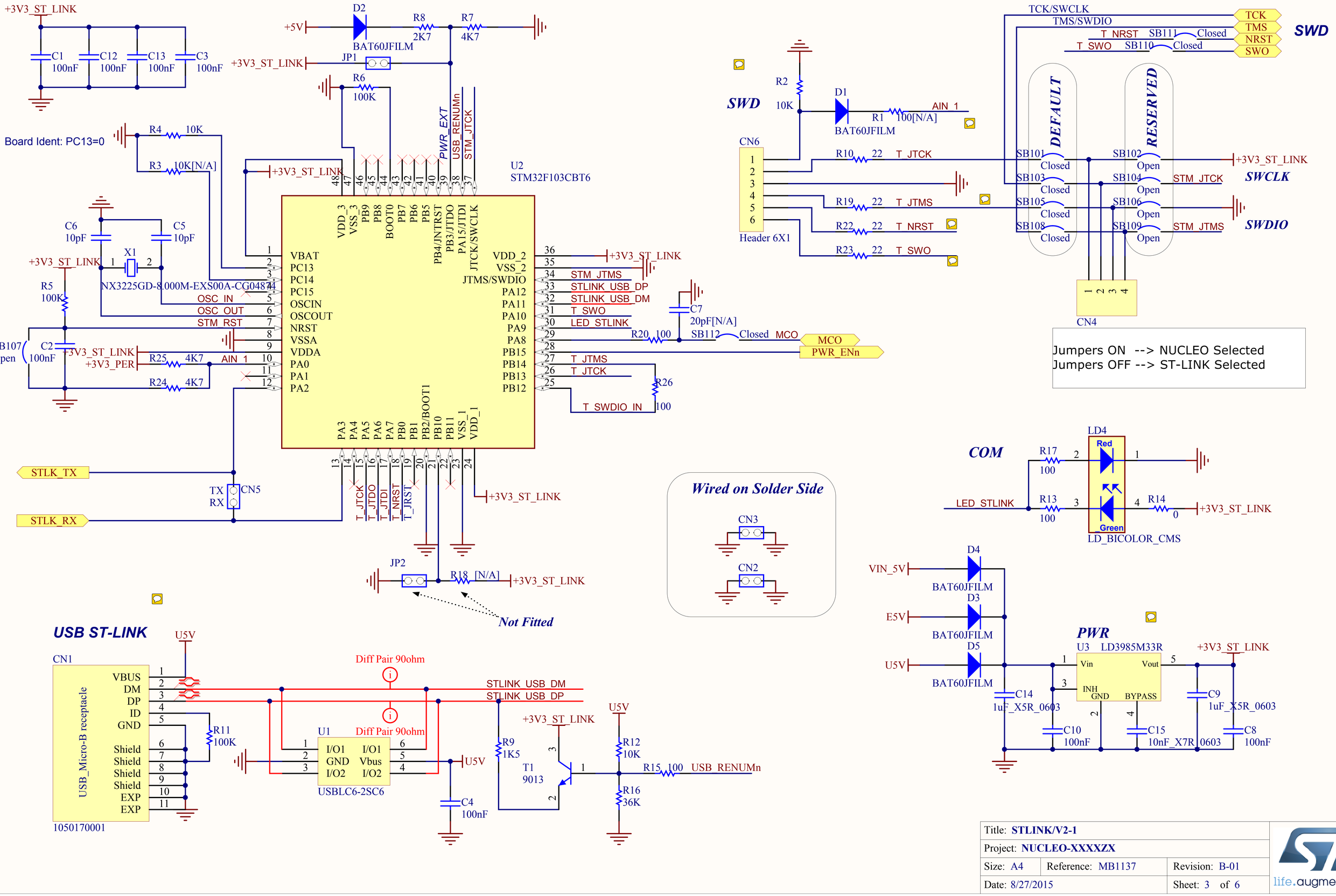






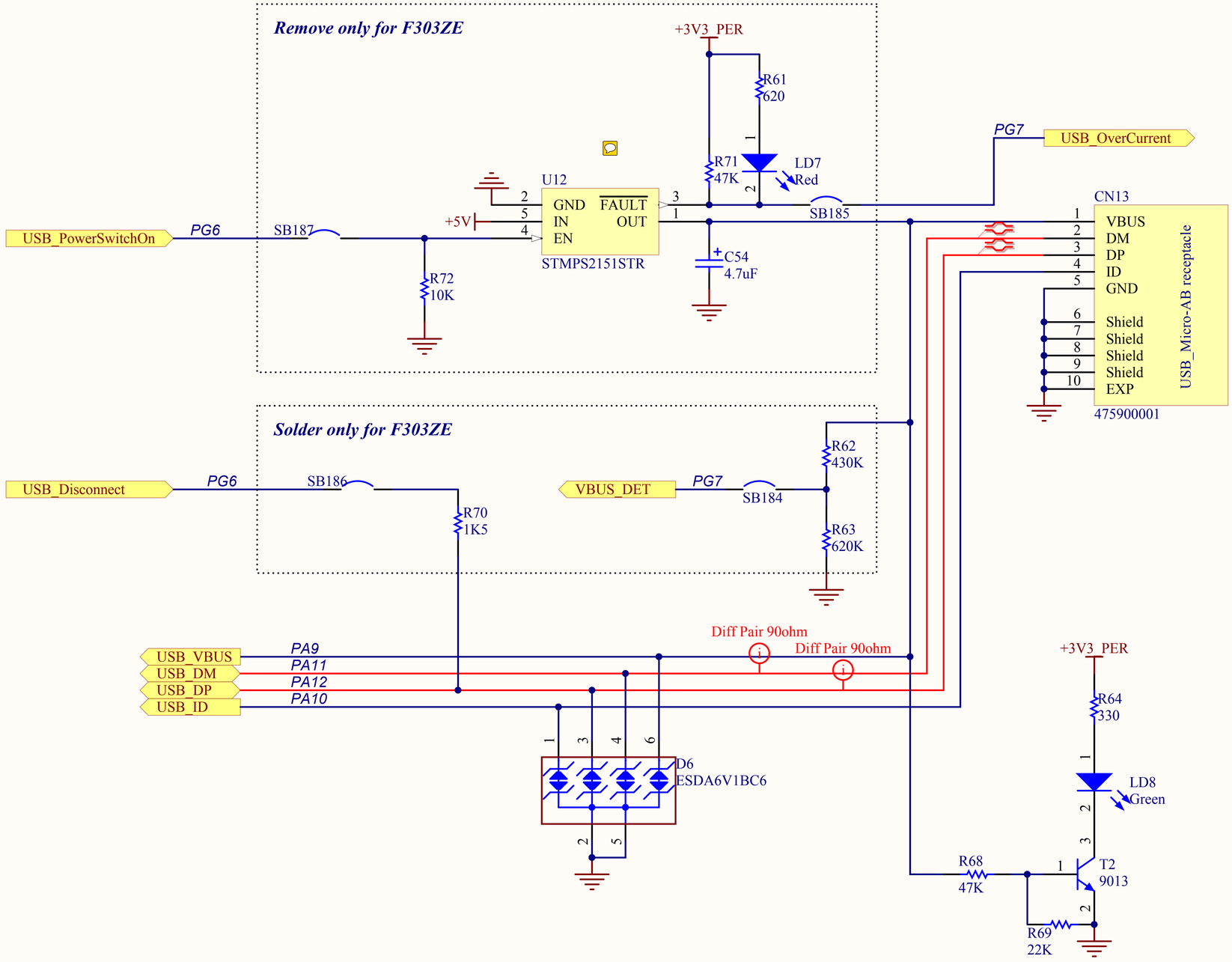
Title: **MCU**		
Project: **NUCLEO-XXXXZX**		
Size: A3	Reference: MB1137	Revision: B-01
Date: 10/13/2015		Sheet: 2 of 6

life.augmented



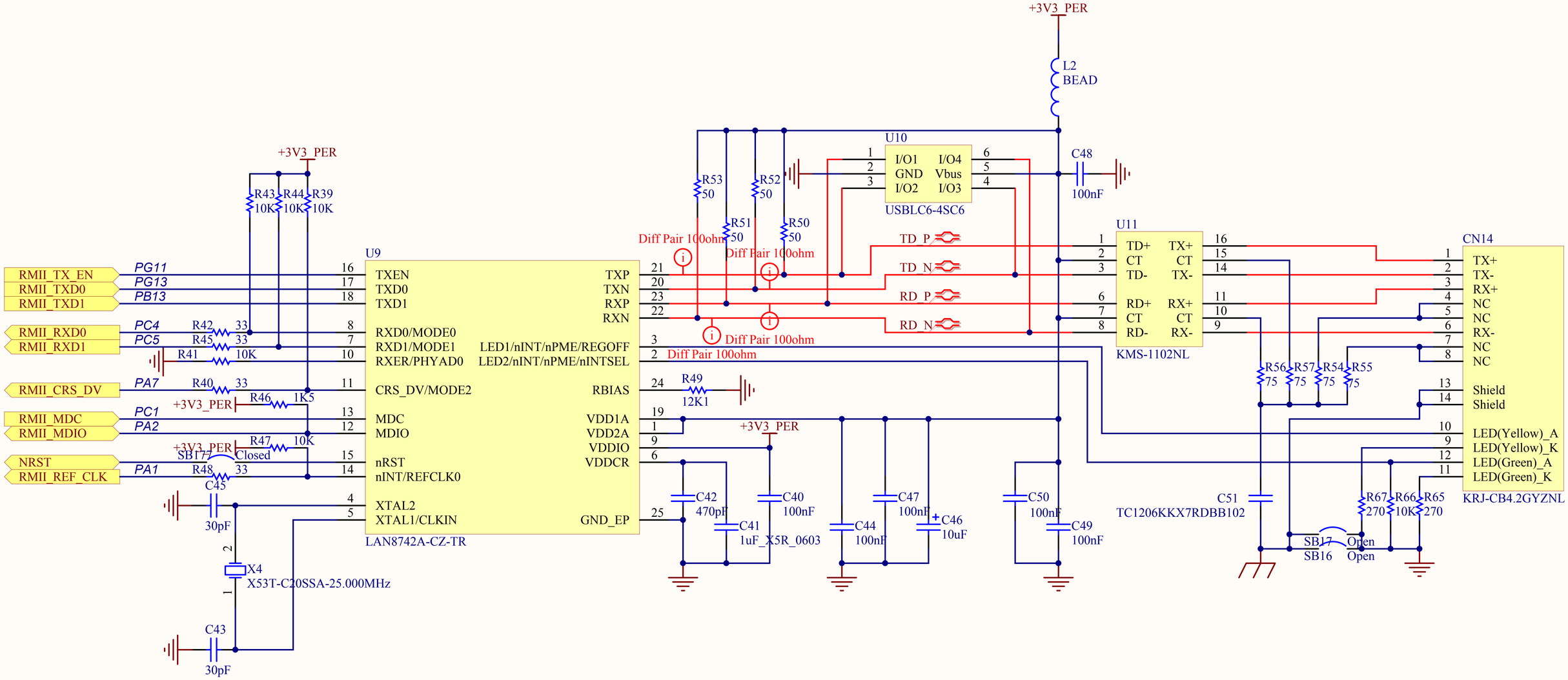
Title: **STLINK/V2-1**		
Project: **NUCLEO-XXXXZX**		
Size: A4	Reference: MB1137	Revision: B-01
Date: 8/27/2015		Sheet: 3 of 6

life.augmented



Title: **USB**		
Project: **NUCLEO-XXXXZX**		
Size: A4	Reference: MB1137	Revision: B-01
Date: 8/24/2015		Sheet: 4 of 6

life.augmented



Title: **Ethernet PHY with RJ45 connector**		
Project: **NUCLEO-XXXXZX**		
Size: A4	Reference: MB1137	Revision: B-01
Date: 8/27/2015		Sheet: 5 of 6

life.augmented

Extension connectors

Morpho connector

CN11 — Header 36X2

PC10	1 2		PC11
PC12	3 4		PD2
VDD	5 6		E5V
BOOT0	7 8		
PF6	9 10		
PF7	11 12		IOREF
PA13	13 14		NRST
PA14	15 16		+3V3
PA15	17 18		+5V
	19 20		
PB7	21 22		
PC13	23 24		VIN
PC14SB144 Open	25 26		
PC15SB145 Open	27 28		PA0
PF0/PH0 SB148 Open	29 30		PA1
PF1/PH1 SB163 Closed	31 32		PA4
	33 34		PB0
VBAT	35 36		PC1
PC2	37 38		PC0
PD4	39 40		PD3
PD5	41 42		PG2
PD6	43 44		PG3
PD7	45 46		PE2
PE3	47 48		PE4
	49 50		PE5
PF1 /PH1	51 52		PF2
PF0 /PH0	53 54		PF8
PD1	55 56		PF9
PD0	57 58		PG1
PG0	59 60		
PE1	61 62		PE6
PG9	63 64		PG15
PG12	65 66		PG10
PH2	67 68		PG13
PD9 SB4 Closed	69 70		PG11
	71 72		

+3V3 SB114 Closed IOREF
+3V3_PER SB113 Open

Zio connector
Arduino Uno compatible

CN8 — Header 8X2_Female

IOREF	1 2	PC8	D43 SDMMC_D0
	3 4	PC9	D44 SDMMC_D1/I2S_B_CKIN
NRST	5 6	PC10	D45 SDMMC_D2
+3V3	7 8	PC11	D46 SDMMC_D3
+5V	9 10	PC12	D47 SDMMC_CK
	11 12	PD2	D48 SDMMC_CMD
VIN	13 14	PG2	D49 IO
	15 16	PG3	D50 IO

SB174/171/167 Close only for F303ZE
SB165/150/140 Close only for F412ZG

CN9 — Header 15X2_Female

PF3 SB146			
PD11 SB174	A0 PA3	PD7	D51 USART_B_SCLK
PC1 SB165	A1 PC0	PD6	D52 USART_B_RX
PF5 SB147	A2 PC3	PD5	D53 USART_B_TX
PD12 SB171	A3	PD4	D54 USART_B_RTS
PC4 SB150	A4	PD3	D55 USART_B_CTS
PF10 SB157	A5		
PD13 SB167			
PC5 SB140			
PB9 SB143 Open			
PB8 SB138 Open			
PA1 SB11			
PB2 SB137			
PB6 SB136	D72		
PF2 SB169	D71	PE2	D56 SAI_A_MCLK
PA8 SB115	D70 I2C_B_SMBA	PE4	D57 SAI_A_FS
PH1/PF1 SB170	D69 I2C_B_SCL	PE5	D58 SAI_A_SCK
PA9 SB128	D68 I2C_B_SDA	PE6	D59 SAI_A_SD
PH0/PF0 SB176		PE3	D60 SAI_B_SD
PA10 SB126	D67 CAN_RX	PF8	D61 SAI_B_SCK
	D66 CAN_TX	PF7	D62 SAI_B_MCLK
	D65 IO	PF9	D63 SAI_B_FS
		PG1	D64 IO

SB143/SB138 Close only for I2C on A4/A5
SB11 Close only for F303ZE
SB137 Close only for L476ZG
SB136 Close only for L476ZG
SB115/128/126 Close only for F303ZE
COMP2_INP
COMP1_INP

Zio connector
Arduino Uno compatible

CN7 — Header 10X2_Female

I2S_A_MCK	D16 PC6	1 2	PB8	D15	I2C_A_SCL
I2S_A_SD	D17 PB15	3 4	PB9	D14	I2C_A_SDA
I2S_A_CK	D18 PB13	5 6			
I2S_A_WS	D19 PB12	7 8	AVDD		
I2S_B_WS	D20 PA15	9 10	PA5	D13	SPI_A_SCK
I2S_B_MCK	D21 PC7	11 12	PA6	D12	SPI_A_MISO
I2S_B_SD/SPI_B_MOSI	D22 PB5	13 14		D11	
I2S_B_CK/SPI_B_SCK	D23 PB3	15 16	PD14	D10	SPI_A_CS/TIM_B_PWM3
SPI_B_NSS	D24 PA4	17 18	PD15	D9	TIMER_B_PWM2
SPI_B_MISO	D25 PB4	19 20	PF12	D8	

SB121 Closed PA7 SPI_A_MOSI/TIM_E_PWM1
SB122 Open PB5 SPI_A_MOSI/TIM_D_PWM2

AGND AVDD

CN10 — Header 17X2_Female

ADC_A_IN A6 PB1	1 2	PF13	D7	
ADC_B_IN A7 PC2	3 4	PE9	D6	TIMER_A_PWM1
ADC_C_IN A8	5 6	PE11	D5	TIMER_A_PWM2
QSPI_CS D26 PB6	7 8	PF14	D4	
QSPI_CLK D27 PB2	9 10	PE13	D3	TIMER_A_PWM3
	11 12	PF15	D2	
	13 14	SB131 PG14		
	15 16	SB151 PC4	D1	
		SB130 PG9	USART_A_TX	
		SB134 PG9	D0	
		SB141 PC5	USART_A_RX	
		SB135 PG10		
QSPI_BK1_IO3	D28 PD13 SB168			
	PF10 SB10			
QSPI_BK1_IO1	D29 PD12 SB172			
	PF5 SB14			
QSPI_BK1_IO0	D30 PD11 SB175			
	PF3 SB15			
QSPI_BK1_IO2	D31 PE2			
TIMER_C_PWM1	D32 PA0 SB179 Closed			
TIMER_D_PWM1	D33 PB0			
TIMER_B_ETR	D34 PE0			
		PE8	D42	TIMER_A_PWM1N
		PE7	D41	TIMER_A_ETR
		PE10	D40	TIMER_A_PWM2N
		PE12	D39	TIMER_A_PWM3N
		PE14	D38	TIMER_A_BKIN2
		PE15	D37	TIMER_A_BKIN1
		PB10	D36	TIMER_C_PWM2
		PB11	D35	TIMER_C_PWM3

PF4 SB158
PA2 SB159
SB159 Close only for F412ZG
SB10/14/15 Close only for F303ZE

Morpho connector

CN12 — Header 36X2

PC9 SB117 Closed	1 2	Closed	SB116 PC8
PB8	3 4	PC6	
PB9	5 6	PC5	
AVDD	7 8	U5V	
	9 10	Closed	SB7 PD8
PA5	11 12	PA12	
PA6	13 14	PA11	
PA7	15 16	PB12	
PB6	17 18	PB11	
PC7	19 20		
PA9	21 22	PB2	
PA8	23 24	PB1	
PB10	25 26	PB15	
PB4	27 28	PB14	
PB5	29 30	PB13	
PB3	31 32		AGND
PA10	33 34	PC4	
PA2	35 36	PF5	
PA3	37 38	PF4	
PD13	39 40	PE8	
PD12	41 42	PF10	
PD11	43 44	PE7	
PE10	45 46	PD14	
PE12	47 48	PD15	
PE14	49 50	PF14	
PE15	51 52	PE9	
PE13	53 54		
PF13	55 56	PE11	
PF12	57 58	PF3	
PG14	59 60	PF15	
	61 62	PF11	
PD10	63 64	PE0	
PG7	65 66	PG8	
PG4	67 68	PG5	
	69 70	PG6	
	71 72		

SB151/141 Close only for F303ZE
SB130/135 Close only for L476ZG

PA[0..15] PA[0..15]
PB[0..15] PB[0..15]
PC[0..15] PC[0..15]
PD[0..15] PD[0..15]
PE[0..15] PE[0..15]
PF[0..15] PF[0..15]
PG[0..15] PG[0..15]
PH[0..2] PH[0..2]
NRST NRST
BOOT0 BOOT0

+3V3_PER
U7 TSV631AILT
R32 510
LD1 Green
R33 200K
R34 10K
SB120 Closed PB0
SB119 Open PA5

Title: **Extension connectors**		
Project: **NUCLEO-XXXXZX**		
Size: A3	Reference: MB1137	Revision: B-01
Date: 12/2/2015		Sheet: 6 of 6

life.augmented