STM32MP15-DISCO

MB1272

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Sheet 11: Peripherals

Legend

New in Rev C : X6 OSC, 100nF->1uF on C147 to C161, C191/C192 added, X1 NDK reference, ANA0/1 -> ARD_A2/3

Text to be added to silkscreen.

Warning text.

Notes to generate the board layout.

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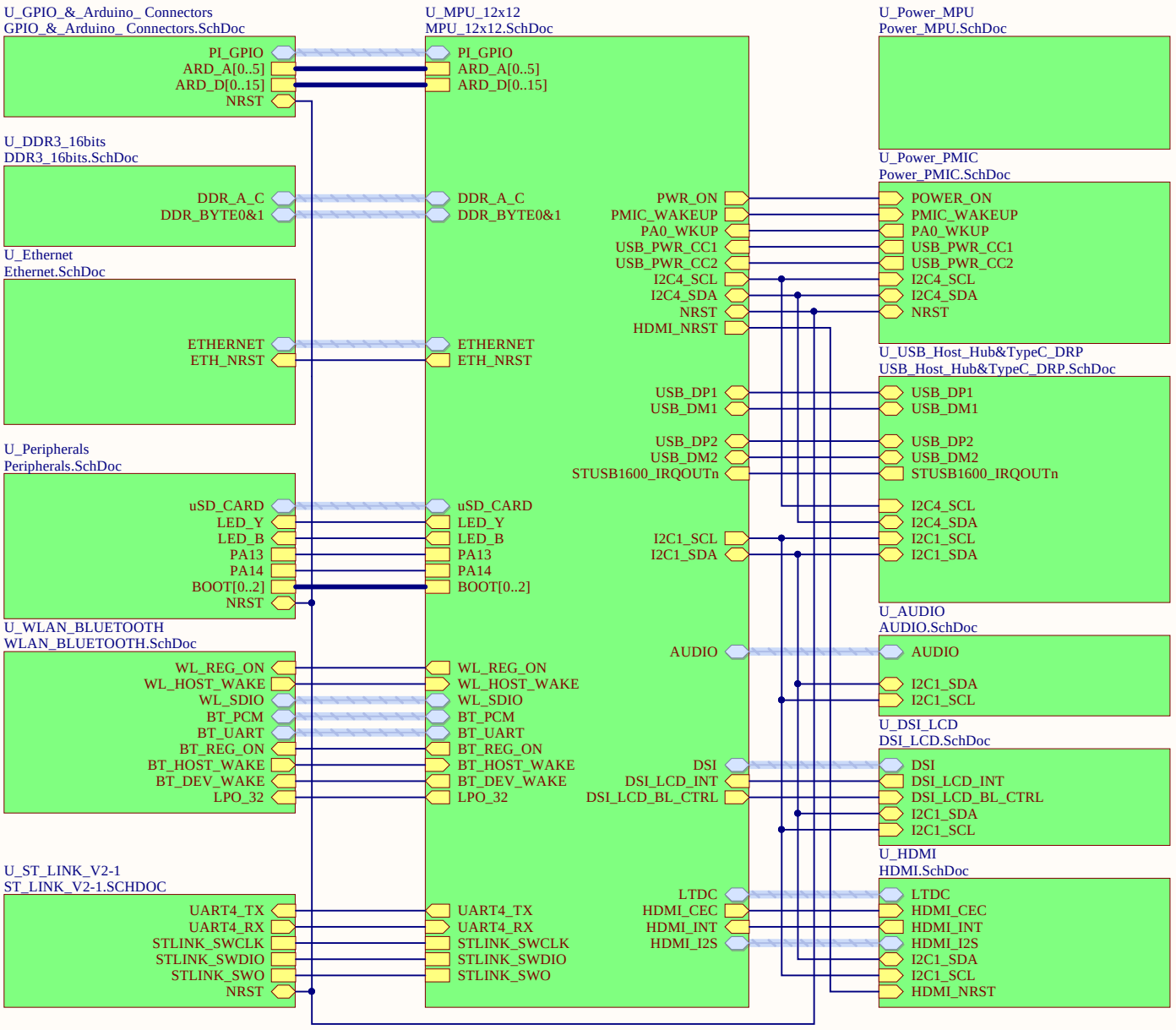
U_MB1272-TOP
MB1272-TOP.SchDoc

Title: **MB1272**			
Project: **STM32MP15-DISCO**			
Variant: DK2			
Revision: C-01		Reference: MB1272	
Size: A4	Date: 12-SEP-18	Sheet: 1 of 15	

life.augmented



Title: **MB1272-TOP**		
Project: **STM32MP15-DISCO**		
Variant: DK2		
Revision: C-01		Reference: MB1272
Size: A4	Date: 12-SEP-18	Sheet: 2 of 15

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WLAN-BLUETOOTH

WL_REG_ON
WL_HOST_WAKE
BT_REG_ON
BT_HOST_WAKE
BT_DEV_WAKE
LPO_32

BT_PCM: BT_PCM_CLK, BT_PCM_SDI, BT_PCM_SDO, BT_PCM_WS

BT_UART: USART2_TX, USART2_RX, USART2_CTS, USART2_RTS

WL_SDIO: SDMMC2_D[0..3], SDMMC2_CMD, SDMMC2_CK

AUDIO

AUDIO: SAI2_SCKA, SAI2_FSA, SAI2_SDA, SAI2_SDB, SAI2_MCLKA, AUDIO_RST

SB3 SAI2_SCKAm
SB1 SAI2_FSAm
SB2 SAI2_SDAm
SB4 SAI2_SDBm

ETHERNET

ETHERNET: ETH_MDINT, ETH_CLK125, ETH_TXD[0..3], ETH_MDIO, ETH_MDC, ETH_RX_CLK, ETH_GTX_CLK, ETH_TX_EN, ETH_RXD[0..3], ETH_RX_DV, ETH_CLK

ETH_NRST — R300 10K — 3V3

GPIO & ARDUINO

I2C1_SCL — R1 1K5 — 3V3
I2C1_SDA — R2 1K5 — 3V3
I2C5_SDA — R166 1K5 — 3V3
I2C5_SCL — R167 1K5 — 3V3

PI_GPIO: MCO1, MCO2, TIM5_CH2, PI_GPIO7, SPI5_NSS, SPI5_MISO, SPI5_MOSI, SPI5_SCK, TIM4_CH2, TIM3_CH2, USART3_TX, USART3_RX, USART3_CTS, USART3_RTS, SAI2_SCKA, SAI2_FSA, SAI2_SDA, SAI2_SDB, SDMMC3_CK, SDMMC3_CMD, SDMMC3_D0, SDMMC3_D1, SDMMC3_D2, SDMMC3_D3

DNF SB14 SAI2_SCKAm
DNF SB16 SAI2_FSAm
DNF SB15 SAI2_SDAm
DNF SB13 SAI2_SDBm

ARD_A[0..5]
ARD_D[0..15]

ST LINK

STLINK_SWDIO
STLINK_SWCLK
STLINK_SWO
UART4_TX
UART4_RX

U13A

PA0_WKUP AB3
ETH_RX_CLK AA4
ETH_MDIO AC3
LTDC_B5 U2
USB_PWR_CC1 V4
USB_PWR_CC2 V3
ETH_MDINT AC8
ETH_RX_DV AB8
MCO1 A13
I2S2_CK A8
HDMI_NRST Y17
ARD_D15 I2C5_SCL AA18
ARD_D14 I2C5_SDA AB19
PA13 N2
PA14 T2
DSI_LCD_BL_CTRL C19

ETH_RXD2 AB6
ETH_RXD3 AA7
UART4_RX Y16
SDMMC2_D2 A11
SDMMC2_D3 B13
ETH_CLK Y8
HDMI_CEC Y14
uSD_DETECT D11
LTDC_B6 AB10
I2S2_WS B10
USART3_TX Y3
ETH_TX_EN AB1
USART3_RX AC5
USART3_CTS AA10
SDMMC2_D0 C13
SDMMC2_D1 B12

AC19
USB1_N AB17
USB1_P AC17
USB2_N AB16
USB2_P AC16
R44 3K AB18

PA0 PC0 AB5 LTDC_R5
PA1 PC1 AA6 ETH_MDC
PA2 PC2 Y2 ETH_TXD2
PA3 PC3 W2 ARD_A4
PA4 PC4 AC7 ETH_RXD0
PA5 PC5 AB7 ETH_RXD1
PA6 PC6 B14 DSI_TE
PA7 PC7 B11 TIM3_CH2
PA8 PC8 D18 SDMMC1_D0
PA9 PC9 D17 SDMMC1_D1
PA10 PC10 D15 SDMMC1_D2
PA11 PC11 D16 SDMMC1_D3
PA12 PC12 D13 SDMMC1_CK
PA13 PC13 K2 PMIC_WAKEUP
PA14 PC14-OSC32_IN L2
PA15 PC15-OSC32_OUT L1

PB0 PD0 B8 WL_HOST_WAKE
PB1 PD1 B9 ARD_D7
PB2 PD2 D12 SDMMC1_CMD
PB3 PD3 D14 USART2_CTS
PB4 PD4 B6 USART2_RTS
PB5 PD5 A7 USART2_TX
PB6 PD6 D2 USART2_RX
PB7 PD7 D10 SDMMC3_D3
PB8 PD8 K3 LTDC_B7
PB9 PD9 K1 LTDC_B0
PB10 PD10 B5 LTDC_B3
PB11 PD11 AC10 LED_B
PB12 PD12 Y18 I2C1_SCL
PB13 PD13 AA19 TIM4_CH2
PB14 PD14 L3 ARD_D3
PB15 PD15 J2 ARD_D5

OTG_VBUS JTMS-SWDIO C20 STLINK_SWDIO
USB_DM1 JTCK-SWCLK B20 STLINK_SWCLK
USB_DP1 JTDI A20 JTDI
USB_DM2 JTDO-TRACESWO A19 JTDO_TRACESWO
USB_DP2 NJTRST B19 JTRST
USB_RREF

TP3 TP5 TP4 TP8 TP9 TP2

TP19
PDR_ON R2 PWR_ON
NRST M3 NRST
PWR_LP N3 TP23
PDR_ON R3
PDR_ON_CORE T3
NRST_CORE M4
BYPASS_REG1V8 AB13 TP22
C92 10nF

BOOT0 N1
BOOT1 N4
BOOT2 M2

STM32MP157CAC3

U13C

LTDC_G5 C1
LTDC_G6 E3
LTDC_G7 E2
I2S2_SDO E1
LTDC_B4 E4
SAI2_SCKAm F3
SAI2_SDAm F4
SAI2_FSAm F2
LPO_32 L4
LTDC_VSYNC H4
LTDC_HSYNC T1
STUSB1600_IRQOUTn P4

BT_PCM_CLK G3
BT_PCM_SDI G1
BT_PCM_SDO J4
BT_PCM_WS G4
I2C4_SCL G2
I2C4_SDA H2
BT_REG_ON H1
BT_DEV_WAKE J3

BOOT0 N1
BOOT1 N4
BOOT2 M2

PI0 DSI_D0P C15 DSI_D0_P
PI1 DSI_D0N B15 DSI_D0_N
PI2 DSI_D1P B17 DSI_D1_P
PI3 DSI_D1N A17 DSI_D1_N
PI4 DSI_CKP B16 DSI_CK_P
PI5 DSI_CKN A16 DSI_CK_N
PI6
PI7
PI8
PI9
PI10
PI11

PZ0 ANA0 U3 ARD_A2
PZ1 ANA1 U4 ARD_A3
PZ2
PZ3
PZ4
PZ5
PZ6
PZ7

STM32MP157CAC3

U13B

SAI2_MCLKA D6
ARD_D2 C8
ETH_TXD3 Y1
SDMMC2_CK C9
DSI_RESET D19
LTDC_G0 C11
LTDC_G1 C10
ARD_D0 AA11
ARD_D1 AC13
ARD_D6 AA9
ARD_D4 Y15
ARD_D10 A4
ARD_D13 B4
ARD_D12 A3
ARD_D11 C6
LTDC_R7 D3

SDMMC3_D0 D8
SDMMC3_CMD A5
DSI_LCD_INT A14
PI_GPIO7 U1
SDMMC3_D1 D9
SDMMC3_D2 D7
SPI5_NSS AA13
SPI5_SCK AB12
SPI5_MISO AC11
SPI5_MOSI AA14
LTDC_DE Y12
SAI2_SDBm Y10
ARD_A5 Y9
ARD_A1 Y5
ARD_A0 AC4
I2C1_SDA Y4

PE0 PG0 AC2 ETH_NRST
PE1 PG1 W1 HDMI_INT
PE2 PG2 V2 MCO2 TP1
PE3 PG3 T4 ARD_D8
PE4 PG4 AB2 ETH_GTX_CLK
PE5 PG5 Y6 ETH_CLK125
PE6 PG6 A10 SDMMC2_CMD
PE7 PG7 AC14 LTDC_CLK
PE8 PG8 AB9 USART3_RTS
PE9 PG9 Y13 AUDIO_RST
PE10 PG10 AB11 LTDC_B2
PE11 PG11 Y7 UART4_TX
PE12 PG12 K4 LTDC_B1
PE13 PG13 AA2 ETH_TXD0
PE14 PG14 AA1 ETH_TXD1
PE15 PG15 B7 SDMMC3_CK

PF0 PH0-OSC_IN P1 HSE_IN
PF1 PH1-OSC_OUT P2 HSE_OUT
PF2 PH2 AB4 LTDC_R0
PF3 PH3 AA3 LTDC_R1
PF4 PH4 B3 WL_REG_ON
PF5 PH5 A2 BT_HOST_WAKE
PF6 PH6 Y11 ARD_D9
PF7 PH7 W4 LED_Y
PF8 PH8 D5 LTDC_R2
PF9 PH9 C5 LTDC_R3
PF10 PH10 C2 LTDC_R4
PF11 PH11 C4 TIM5_CH2
PF12 PH12 B2 LTDC_R6
PF13 PH13 D1 LTDC_G2
PF14 PH14 C3 LTDC_G3
PF15 PH15 B1 LTDC_G4

STM32MP157CAC3

C90 6.8pF
X4 NX2012SA 32.768KHz
C91 6.8pF
R71 0R

SB9 SB10
DNF SB12 DNF SB11

DDR_BYTE_0&1

DDR_DQ0 E22
DDR_DQ1 F22
DDR_DQ2 H21
DDR_DQ3 E21
DDR_DQ4 J21
DDR_DQ5 J22
DDR_DQ6 H22
DDR_DQ7 G21
DDR_DQS0_P G22
DDR_DQS0_N G23
DDR_DQM0 H23

DDR_DQ8 T21
DDR_DQ9 U21
DDR_DQ10 T22
DDR_DQ11 W21
DDR_DQ12 W23
DDR_DQ13 T23
DDR_DQ14 W22
DDR_DQ15 Y21
DDR_DQS1_P U22
DDR_DQS1_N U23
DDR_DQM1 V22

DDR_BYTE0&1

U13E

DDR_DQ0 DDR_CLKP N22 DDR_CLK_P
DDR_DQ1 DDR_CLKN N23 DDR_CLK_N
DDR_DQ2
DDR_DQ3 DDR_A0 L20 DDR_A0
DDR_DQ4 DDR_A1 P22 DDR_A1
DDR_DQ5 DDR_A2 J20 DDR_A2
DDR_DQ6 DDR_A3 K22 DDR_A3
DDR_DQ7 DDR_A4 V20 DDR_A4
DDR_DQS0P DDR_A5 H20 DDR_A5
DDR_DQS0N DDR_A6 W20 DDR_A6
DDR_DQM0 DDR_A7 E20 DDR_A7
DDR_A8 Y20 DDR_A8
DDR_DQ8 DDR_A9 G20 DDR_A9
DDR_DQ9 DDR_A10 R22 DDR_A10
DDR_DQ10 DDR_A11 R20 DDR_A11
DDR_DQ11 DDR_A12 P23 DDR_A12
DDR_DQ12 DDR_A13 F20 DDR_A13
DDR_DQ13 DDR_A14 R21 DDR_A14
DDR_DQ14 DDR_A15 P20
DDR_DQ15
DDR_DQS1P DDR_BA0 L23 DDR_BA0
DDR_DQS1N DDR_BA1 U20 DDR_BA1
DDR_DQM1 DDR_BA2 M21 DDR_BA2

DDR_RASN N21 DDR_RASN
DDR_CASN N20 DDR_CASN
DDR_CSN M22 DDR_CSN
DDR_CKE T20 DDR_CKE
DDR_WEN M20 DDR_WEN
DDR_ODT L22 DDR_ODT

B22 DDR_DQ16
D22 DDR_DQ17
D23 DDR_DQ18
B21 DDR_DQ19
A21 DDR_DQ20
E23 DDR_DQ21
D21 DDR_DQ22
A22 DDR_DQ23
C22 DDR_DQS2P
B23 DDR_DQS2N
C23 DDR_DQM2

Y23 DDR_DQ24
Y22 DDR_DQ25
AB21 DDR_DQ26
AB20 DDR_DQ27
AC22 DDR_DQ28
AC21 DDR_DQ29
AA23 DDR_DQ30
AA22 DDR_DQ31
AB22 DDR_DQS3P
AB23 DDR_DQS3N
AA20 DDR_DQM3

DDR_RESETN D20 DDR_RESETN
DDR_VREF AC20
DDR_ZQ K23
DDR_ATO Y19
DDR_DTO0 K20
DDR_DTO1 L21

STM32MP157CAC3

DDR_A_C

DDR_CLK_P
DDR_CLK_N
DDR_A0
DDR_A1
DDR_A2
DDR_A3
DDR_A4
DDR_A5
DDR_A6
DDR_A7
DDR_A8
DDR_A9
DDR_A10
DDR_A11
DDR_A12
DDR_A13
DDR_A14
DDR_BA0
DDR_BA1
DDR_BA2
DDR_RASN
DDR_CASN
DDR_CSN
DDR_CKE
DDR_WEN
DDR_ODT
DDR_RESETN

DDR_A_C

VREF_DDR
C68 100nF
R38 240R
TP14 TP10 TP13

VDD
R304 10R
C300 10nF
X6 NZ2016SH 24MHz
DNF C88 6.8pF
DNF C87 6.8pF
R303 1K
PWR_ON R302 10K
DNF R73 0R
HSE_IN
HSE_OUT

uSD CARD

SDMMC1_D[0..3]
SDMMC1_CK
SDMMC1_CMD
uSD_DETECT
uSD_CARD

HDMI

LTDC_R[0..7]
LTDC_G[0..7]
LTDC_B[0..7]
LTDC_HSYNC
LTDC_VSYNC
LTDC_CLK
LTDC_DE
LTDC

I2S2_CK
I2S2_WS
I2S2_SDO
HDMI_I2S

HDMI_CEC
HDMI_INT

MISC

BOOT[0..2]
I2C1_SDA
I2C1_SCL
PA13
PA14
LED_Y
LED_B

DSI LCD

DSI_TE
DSI_RESET
DSI_CK_P
DSI_CK_N
DSI_D0_P
DSI_D0_N
DSI_D1_P
DSI_D1_N
DSI

DSI_LCD_INT
DSI_LCD_BL_CTRL

USB Host - TypeC

USB_DM1 USB1_N
USB_DM2 USB2_N
USB_DP2 USB2_P
USB_DP1 USB1_P
STUSB1600_IRQOUTn

POWER - PMIC

USB_PWR_CC2
USB_PWR_CC1
HDMI_NRST
PWR_ON
NRST
PMIC_WAKEUP
PA0_WKUP
I2C4_SDA or I2C2_SDA
I2C4_SCL or I2C2_SCL

R40 10K — 3V3
R7 1K5 — VDD
R5 1K5

Title: **MPU_12x12**			
Project: **STM32MP15-DISCO**			
Variant: DK2			
Revision: C-01		Reference: MB1272	
Size: A3	Date: 12-SEP-18	Sheet: 3 of 15	

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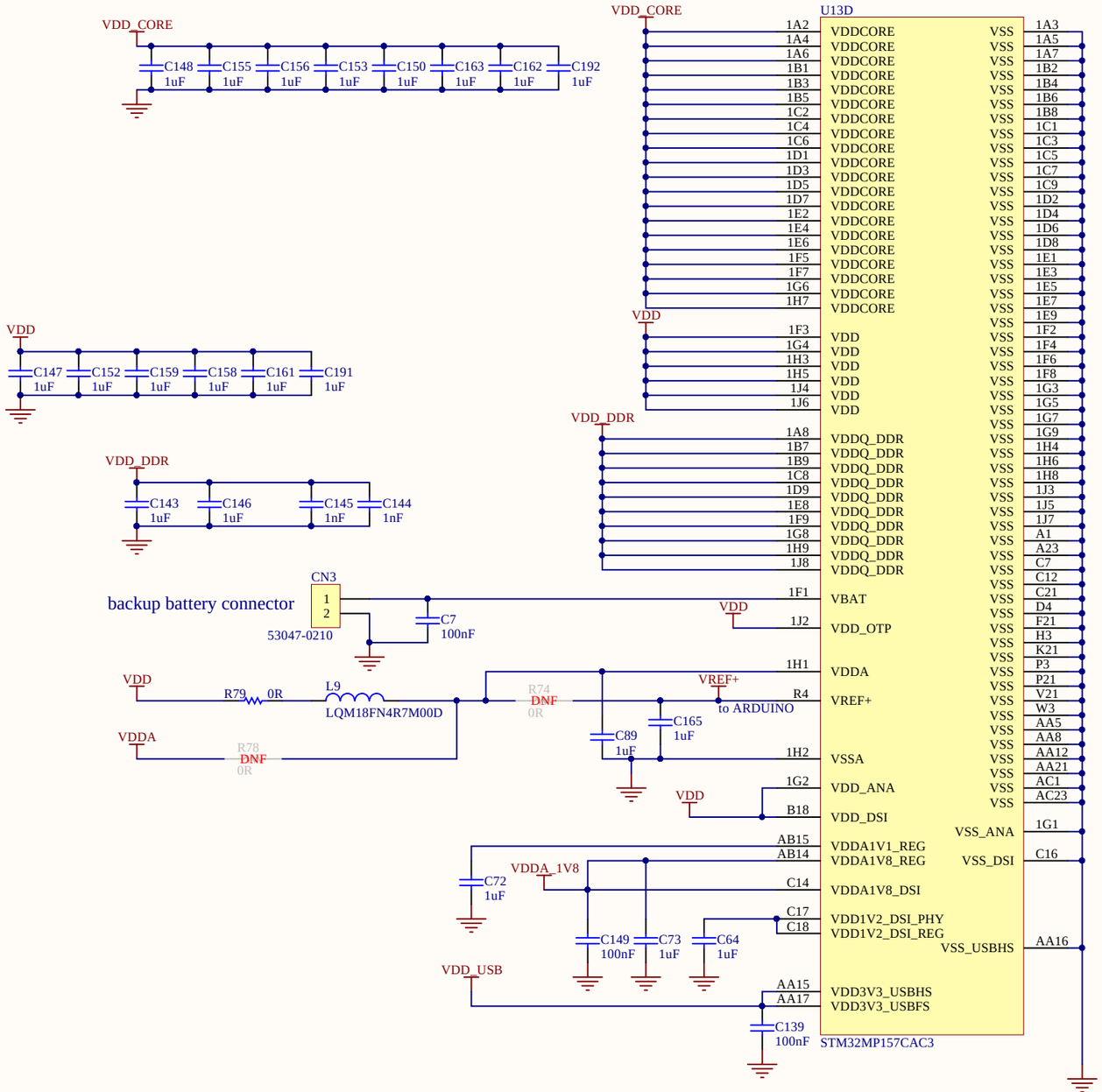

Title: **Power_MPU**			
Project: **STM32MP15-DISCO**			
Variant: DK2			
Revision: C-01		Reference: MB1272	
Size: A3	Date: 12-SEP-18	Sheet: 4 of 15	

CN6
317JD24BZTF3K3C3
USB TYPE-C
CC1
CC2
SBU1
SBU2
D+1
D+2
D-1
D-2
TX1+
TX1-
RX1+
RX1-
TX2+
TX2-
RX2+
RX2-
VBUS1
VBUS2
VBUS3
VBUS4
GND4
GND3
GND2
GND1
Shield1
Shield2
Shield3
Shield4
U16
ESDA7P120-1U1M
C69
100pF
C70
100nF
R47
0R_0603_ULO
C71
10uF
Q2
STL9P3LLH6
Q1
BCM857BS7F
C60
47uF
R41
330R
LD2
GREEN
Do not change the 47µF package.
The value can be increased if needed
R45
47K
R39
47K
C61
100nF
CC2
CC1
47K
R56
USB_PWR_CC2
USB_PWR_CC2
PA5
47K
R49
USB_PWR_CC1
USB_PWR_CC1
PA4
U15
ESDA25L
R48
5K1
R57
5K1
5V_VIN
U4
BUCK1IN
PGND1
BUCK1
VOUT1
VLX1
C5
10uF
L3
DFE252012P-1ROM=P2
LNK2
R3
0R_0603_ULO
VDD_CORE
C3
22uF
BUCK2IN
PGND2
BUCK2
VOUT2
VLX2
C4
10uF
L2
DFE252012P-1ROM=P2
LNK1
VDD_DDR
C2
22uF
BUCK3IN
PGND3
BUCK3
VOUT3
VLX3
C43
10uF
L6
DFE252012P-1ROM=P2
VDD
C44
22uF
BUCK4IN
PGND4
BUCK4
VOUT4
VLX4
C41
10uF
L5
DFE252012P-1ROM=P2
3V3
C42
22uF
R12
DNF
47K
VLXBST
PGND5
BOOST
VIN
BYPASS
BSTOUT
PWR_USB_SW
VBUSOTG
R9
DNF
0R
SWIN
PWR_SW
SWOUT
GNDLDO
VREF = VOUT2 / 2
VREF
VREF_DDR
C15
1uF
LDO3IN
LDO3
LDO3OUT
VTT_DDR
C9
10uF
LDO16IN
LDO1
LDO1OUT
1V8_AUDIO
C33
4.7uF
LDO6
LDO6OUT
1V2_HDMI
C31
4.7uF
LDO25IN
LDO2
LDO2OUT
3V3_HDMI
C20
4.7uF
LDO5
LDO5OUT
VDDA
C32
4.7uF
VIN
INTLDO
AGND
INTLDO
C10
4.7uF
PWR MUX
BSTOUT
VBUSOTG
vin_max
LDO4
LDO4OUT
VDD_USB
C16
4.7uF
VIO
SDA
SCL
PWRCTRL
RSTn
WAKEUP
PONKEYn
Logic / Control
NVM
INTn
EPGND
ep
STPMIC1APQR
I2C4_SDA
I2C4_SCL
POWER_ON
NRST
or I2C2_SDA
or I2C2_SCL
PZ5
PZ4
PWR_ON
NRST
R6
0R
PA0
PA0_WKUP
PMIC_WAKEUP
PC13
B1
SW-PUSH-TS-02H-Blue
C114
10nF

Title: **Power_PMIC**		
Project: **STM32MP15-DISCO**		
Variant: DK2		
Revision: C-01		Reference: MB1272
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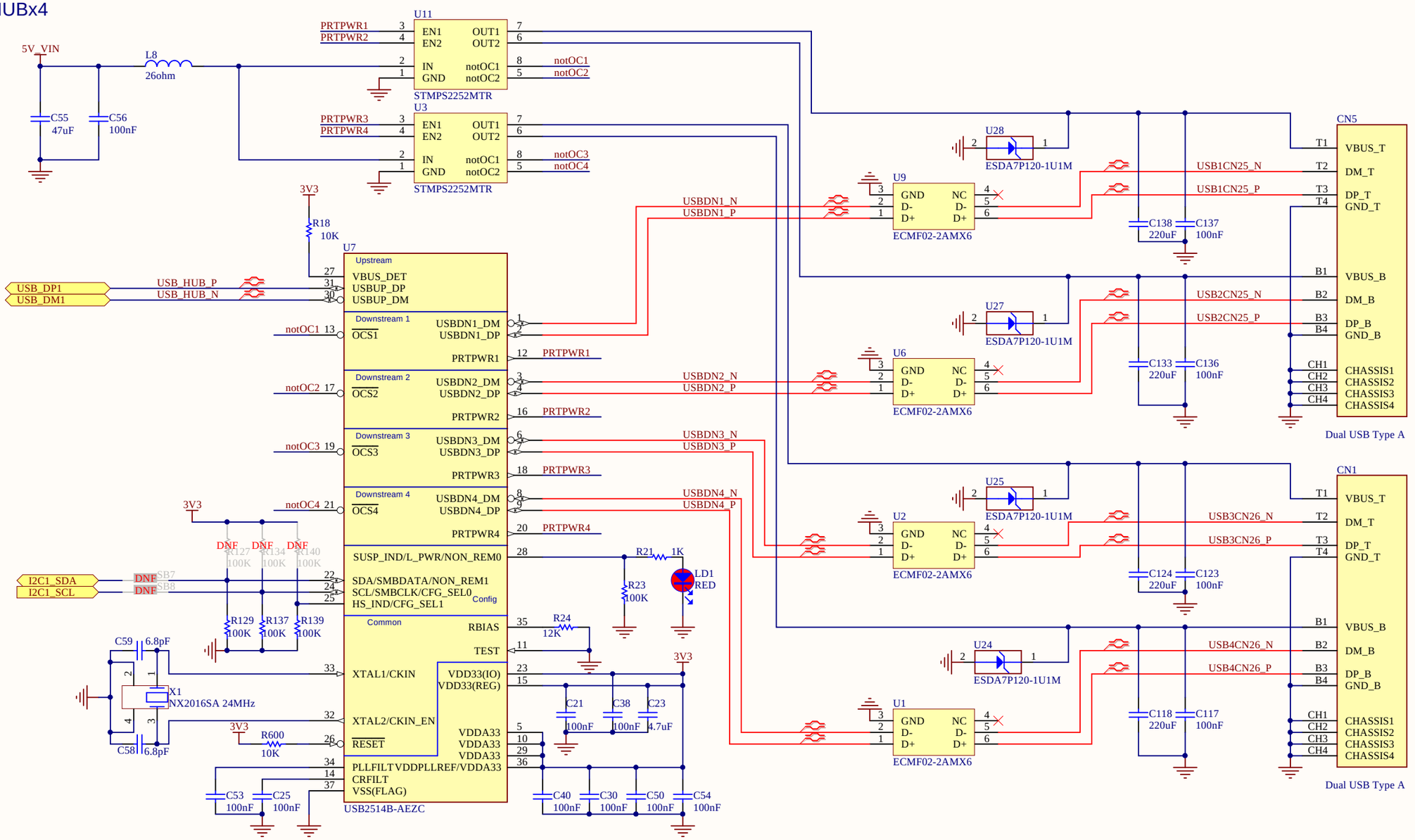
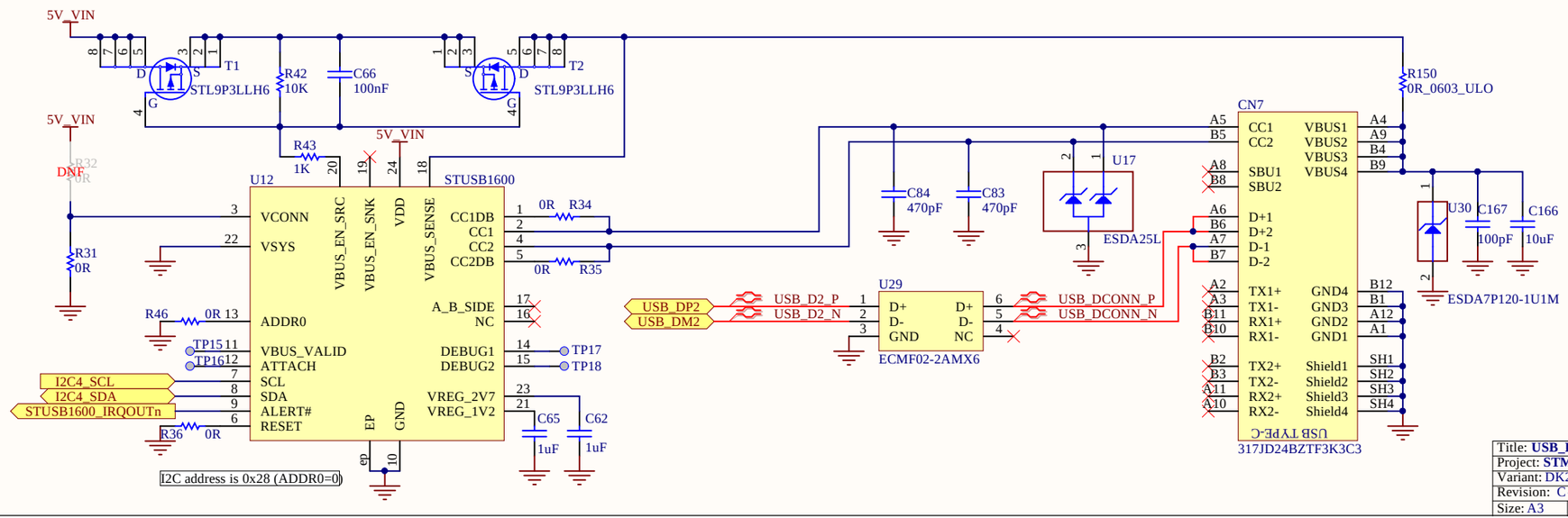
USB_HOST_HUBx4



USB_TYPE_C_DRP

Source only



Title: **USB_Host_Hub&TypeC_DRP**		
Project: **STM32MP15-DISCO**		
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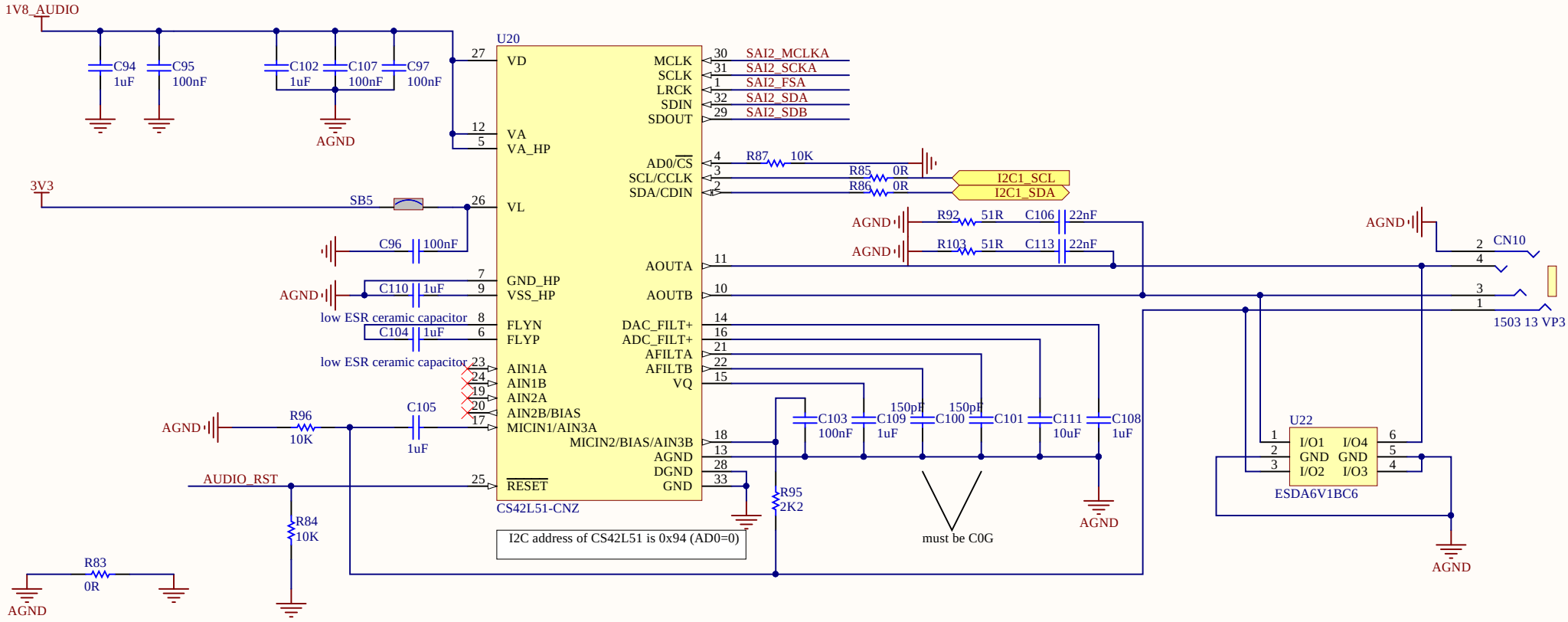
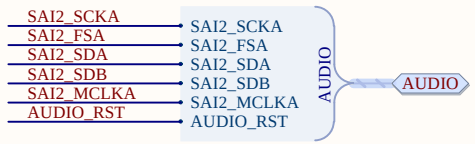
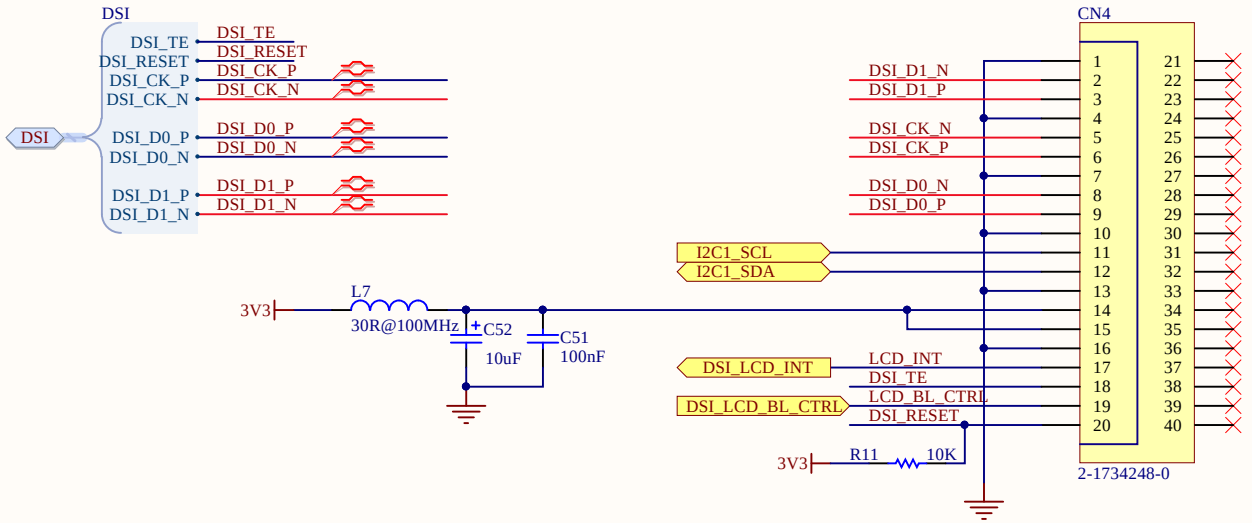
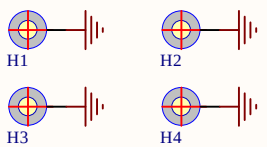




Title: **AUDIO**		
Project: **STM32MP15-DISCO**		
Variant: DK2		
Revision: C-01		Reference: MB1272
Size: A4	Date: 12-SEP-18	Sheet: 7 of 15

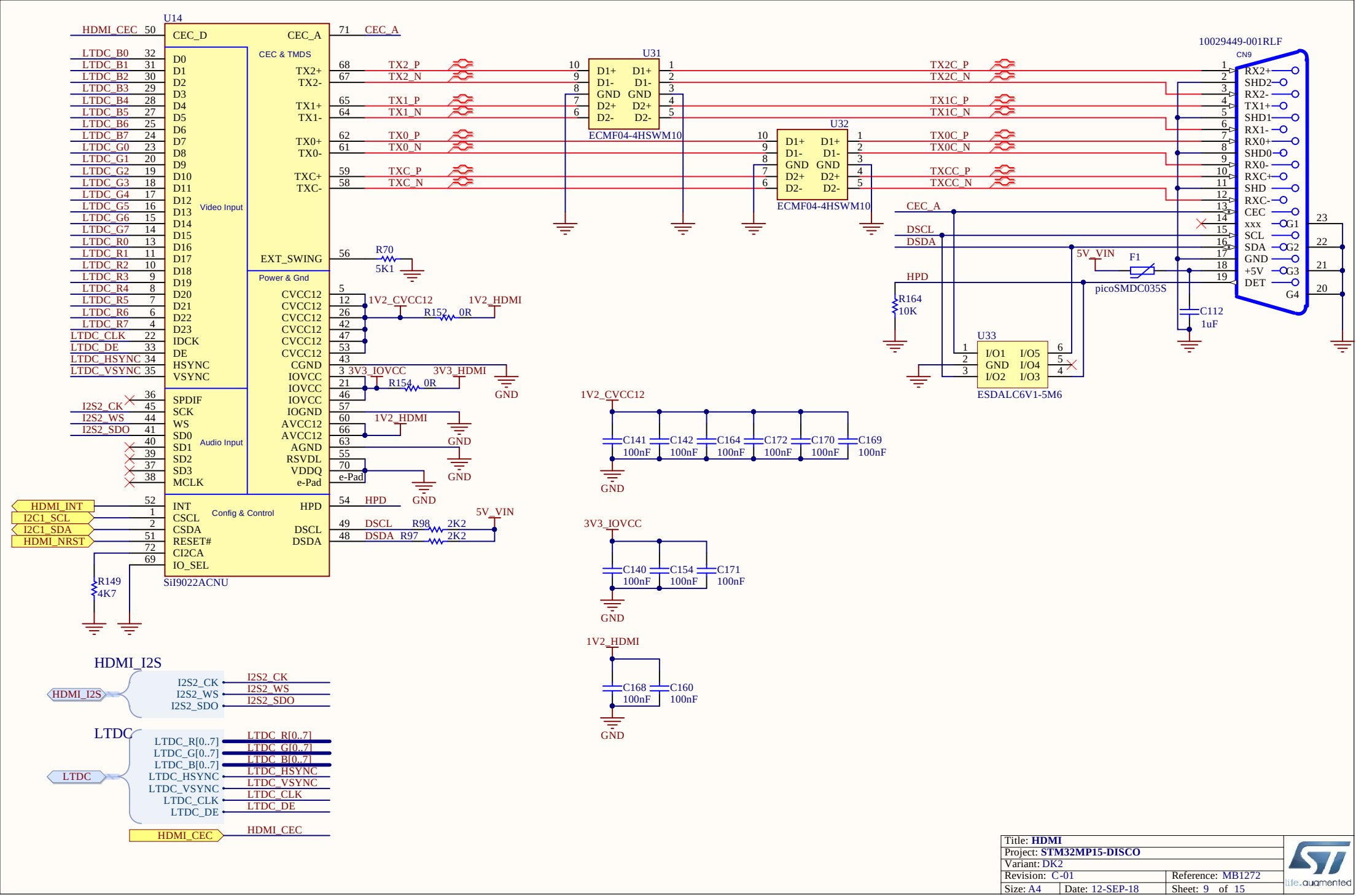
MB1407 I2C Address : 0101 0100





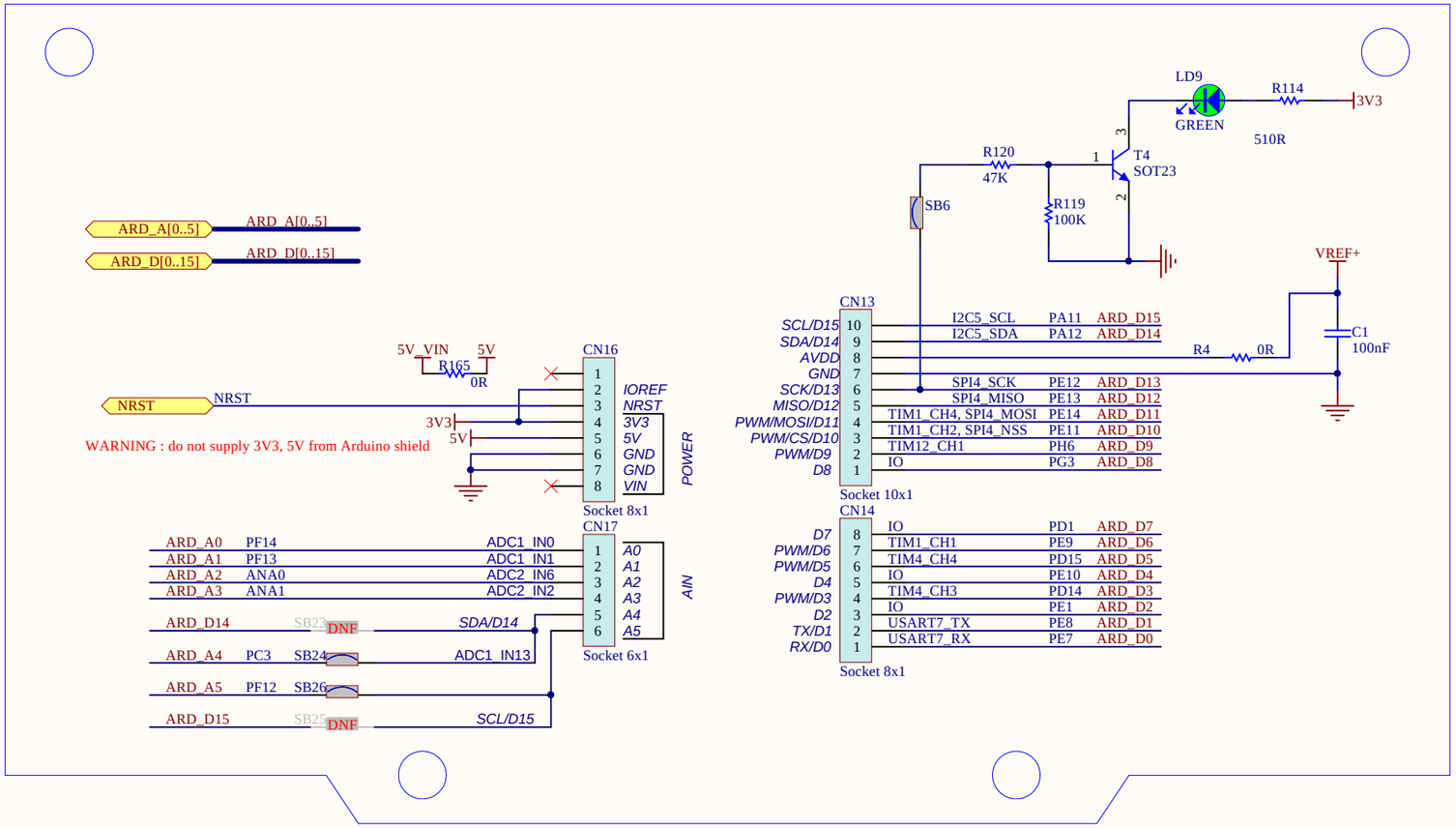
Title: **DSI_LCD_connector**		
Project: **STM32MP15-DISCO**		
Variant: DK2		
Revision: C-01		Reference: MB1272
Size: A4	Date: 12-SEP-18	Sheet: 8 of 15

life.augmented

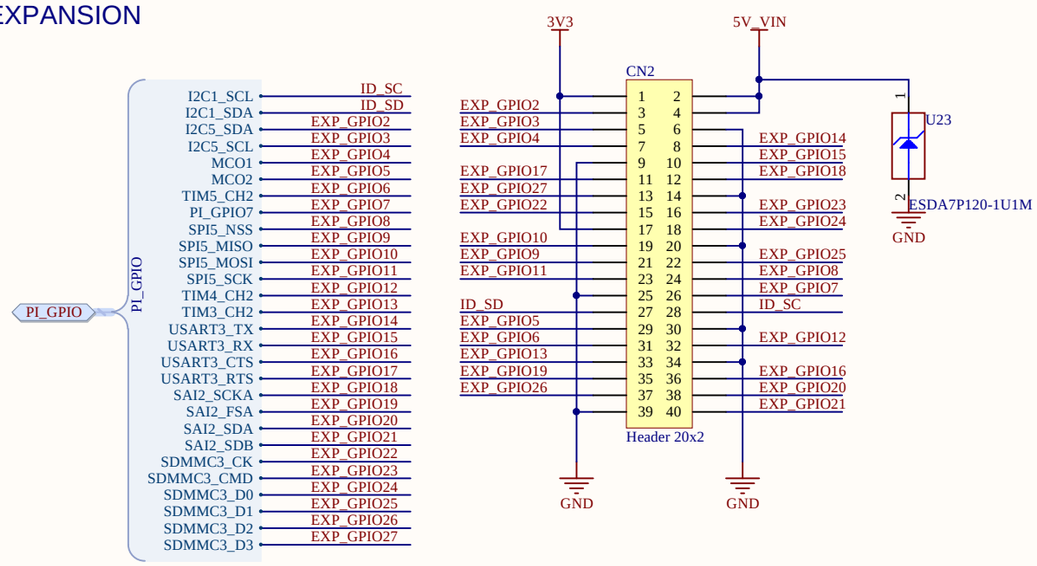


Title: **HDMI**		
Project: **STM32MP15-DISCO**		
Variant: DK2		
Revision: C-01		Reference: MB1272
Size: A4	Date: 12-SEP-18	Sheet: 9 of 15

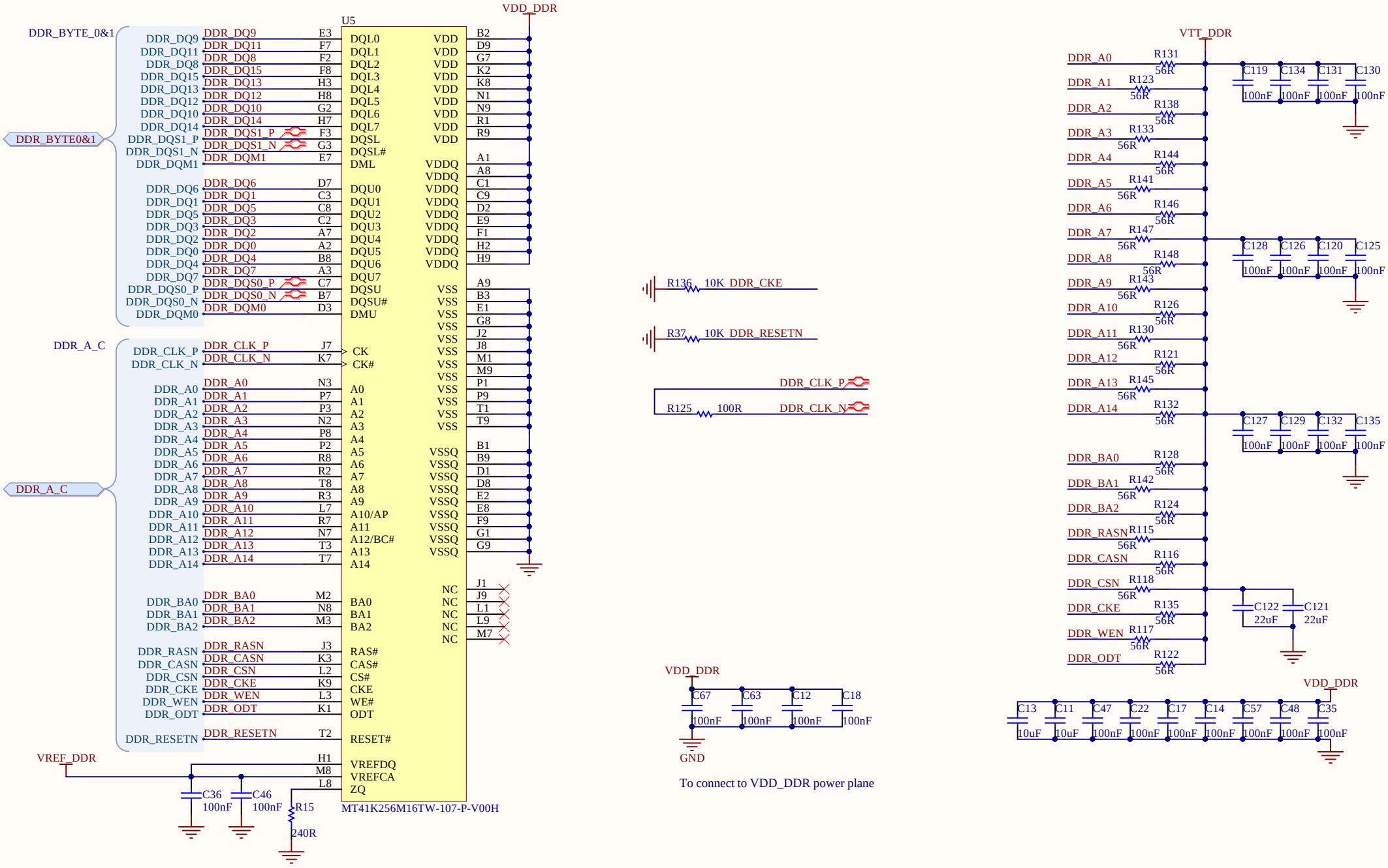
ARDUINO UNO connector



GPIO EXPANSION

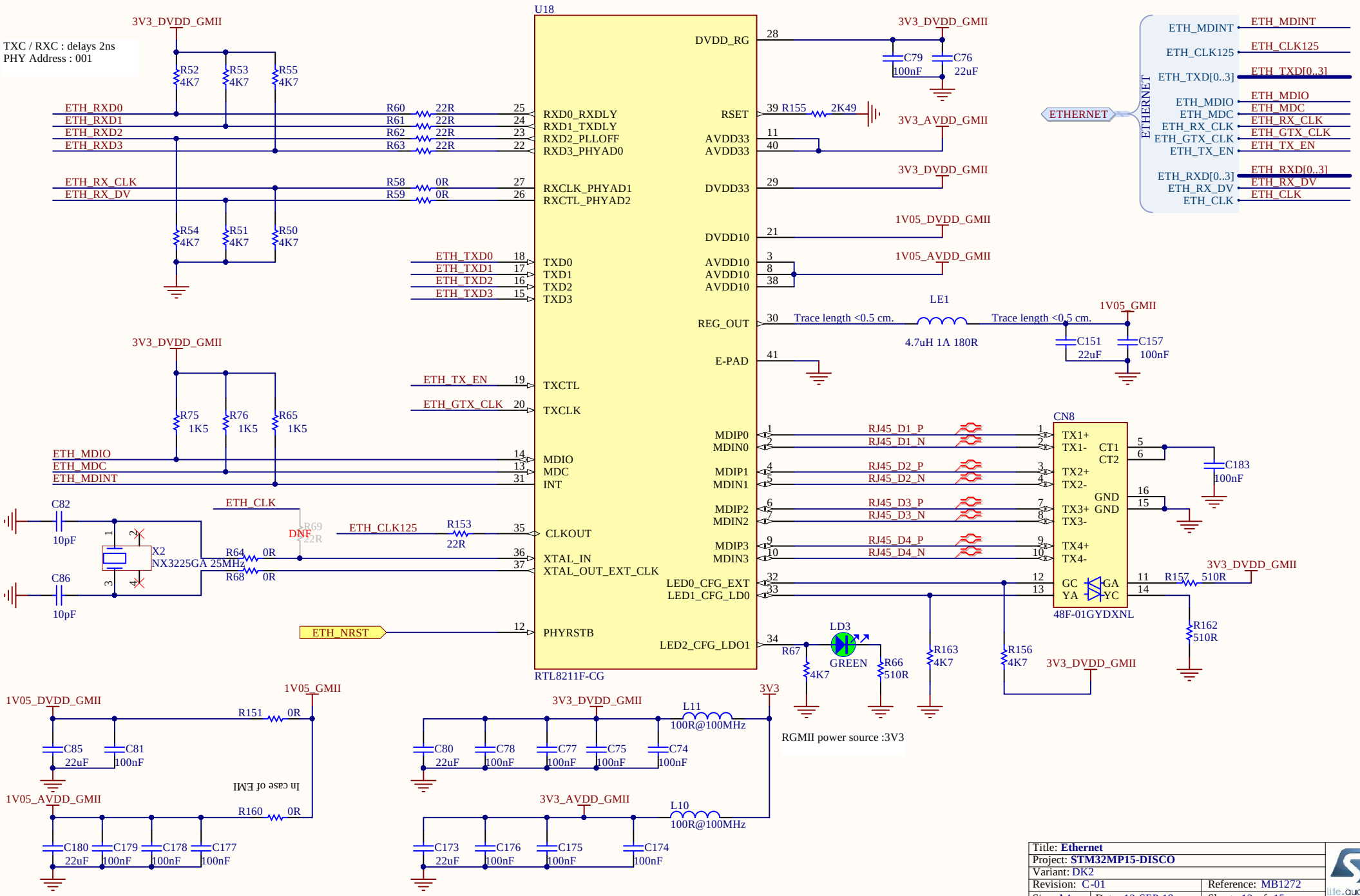


Title: **GPIO_&_Arduino_ Connectors**		
Project: **STM32MP15-DISCO**		
Variant: DK2		
Revision: C-01		Reference: MB1272
Size: A3	Date: 12-SEP-18	Sheet: 10 of 15



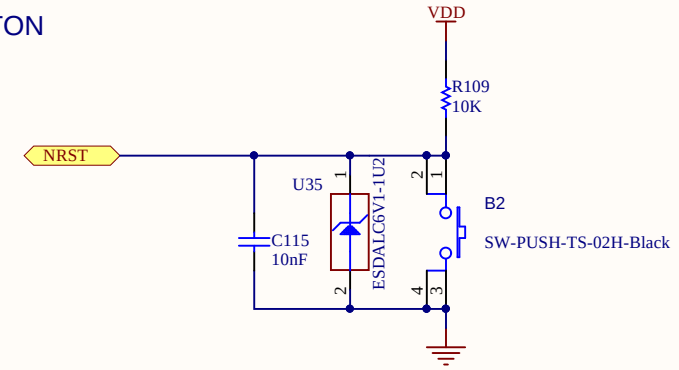
Title: **DDR3L 16 bits**		
Project: **STM32MP15-DISCO**		
Variant: DK2		
Revision: C-01		Reference: MB1272
Size: A4	Date: 12-SEP-18	Sheet: 11 of 15

life.augmented

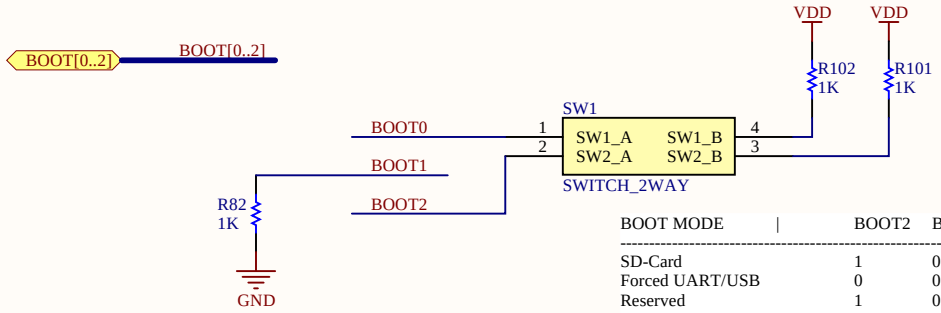


Title: **Ethernet**		
Project: **STM32MP15-DISCO**		
Variant: DK2		
Revision: C-01		Reference: MB1272
Size: A4	Date: 12-SEP-18	Sheet: 12 of 15

RESET BUTTON

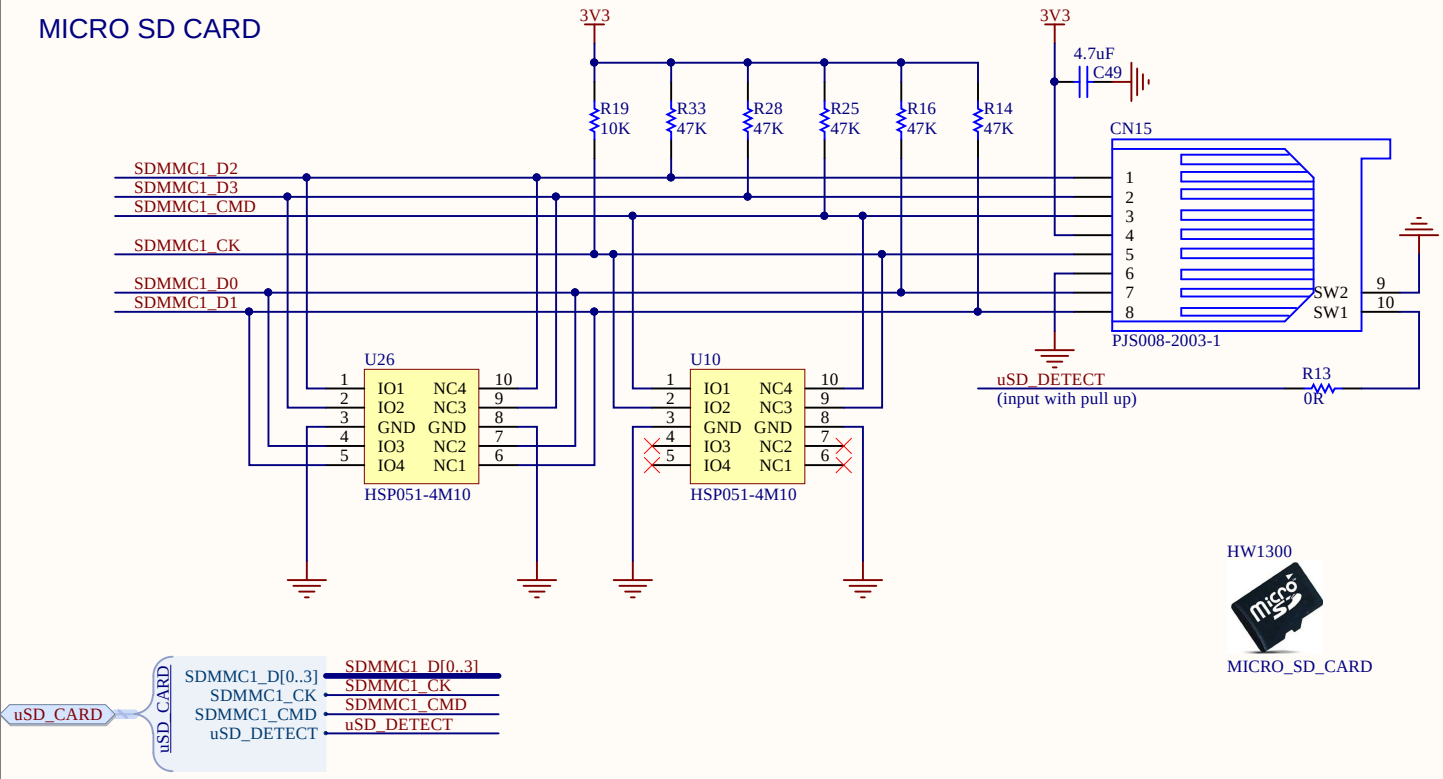


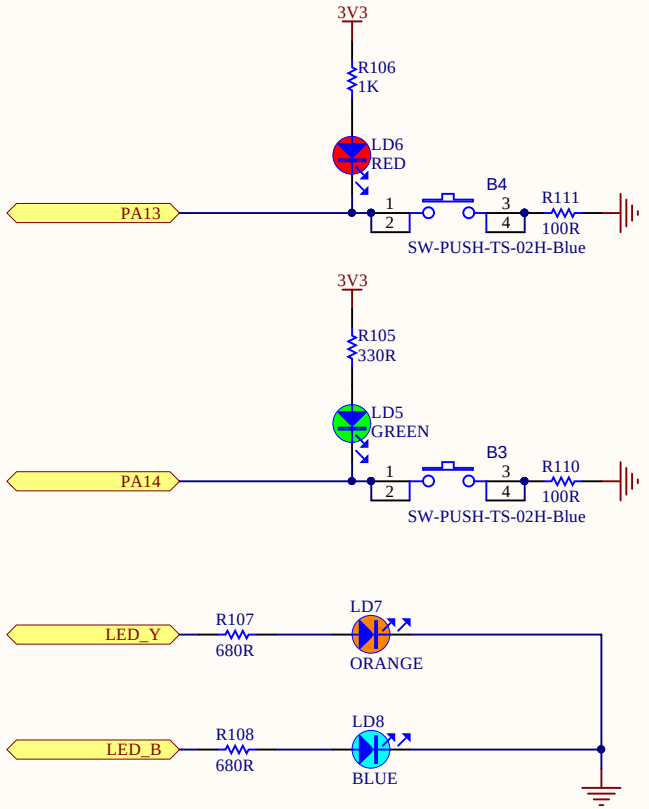
BOOT MODE



BOOT MODE	BOOT2	BOOT1	BOOT0
SD-Card	1	0	1
Forced UART/USB	0	0	0
Reserved	1	0	0

MICRO SD CARD





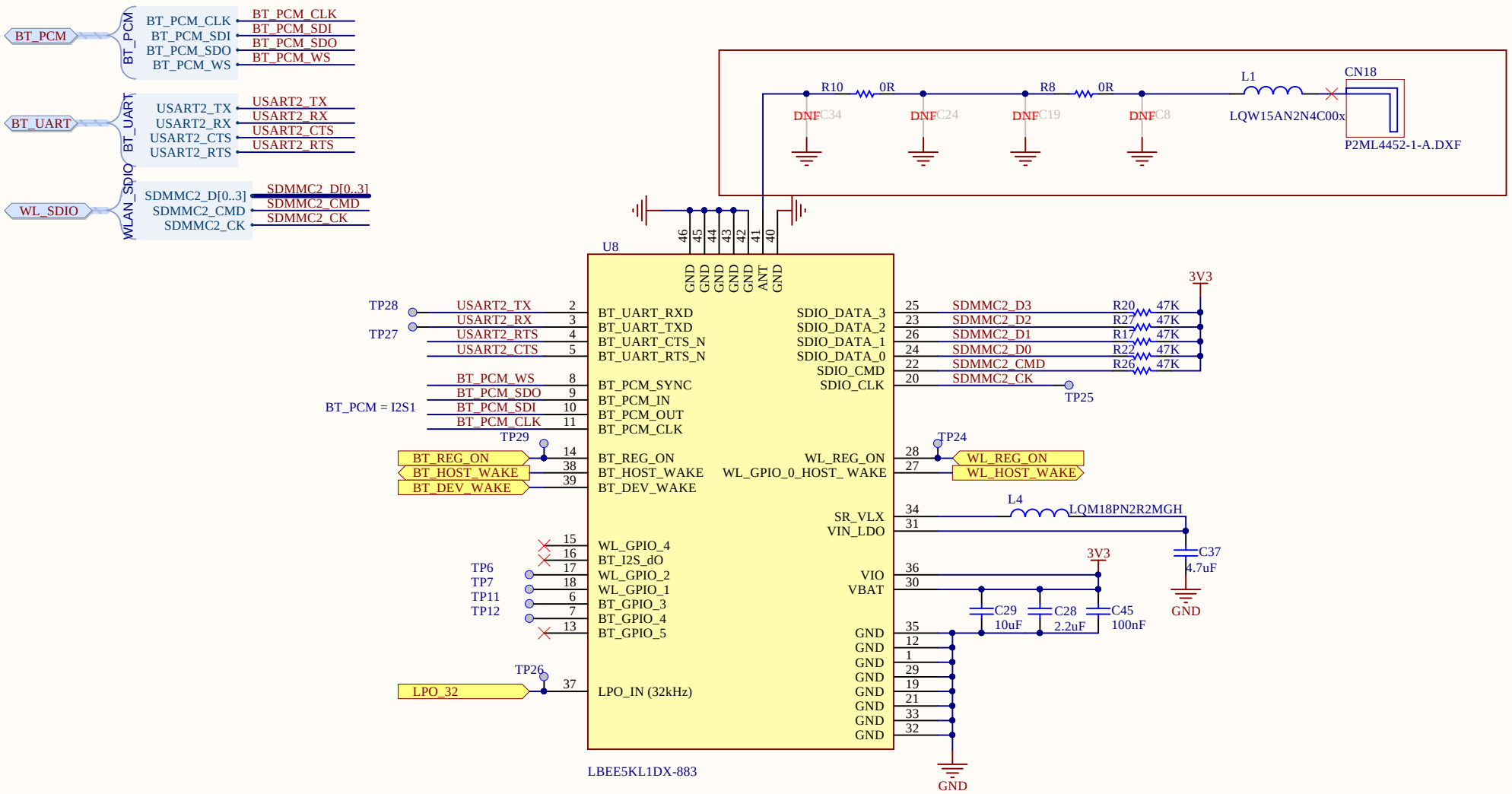
HW1302
BOARD CPN
Board CPN

HW1303
BOARD REF
MBxxxxy-zz syywwxxxxx

HW1301
PCB
MBxxxxy

Title: **Peripherals**		
Project: **STM32MP15-DISCO**		
Variant: DK2		
Revision: C-01		Reference: MB1272
Size: A4	Date: 12-SEP-18	Sheet: 13 of 15

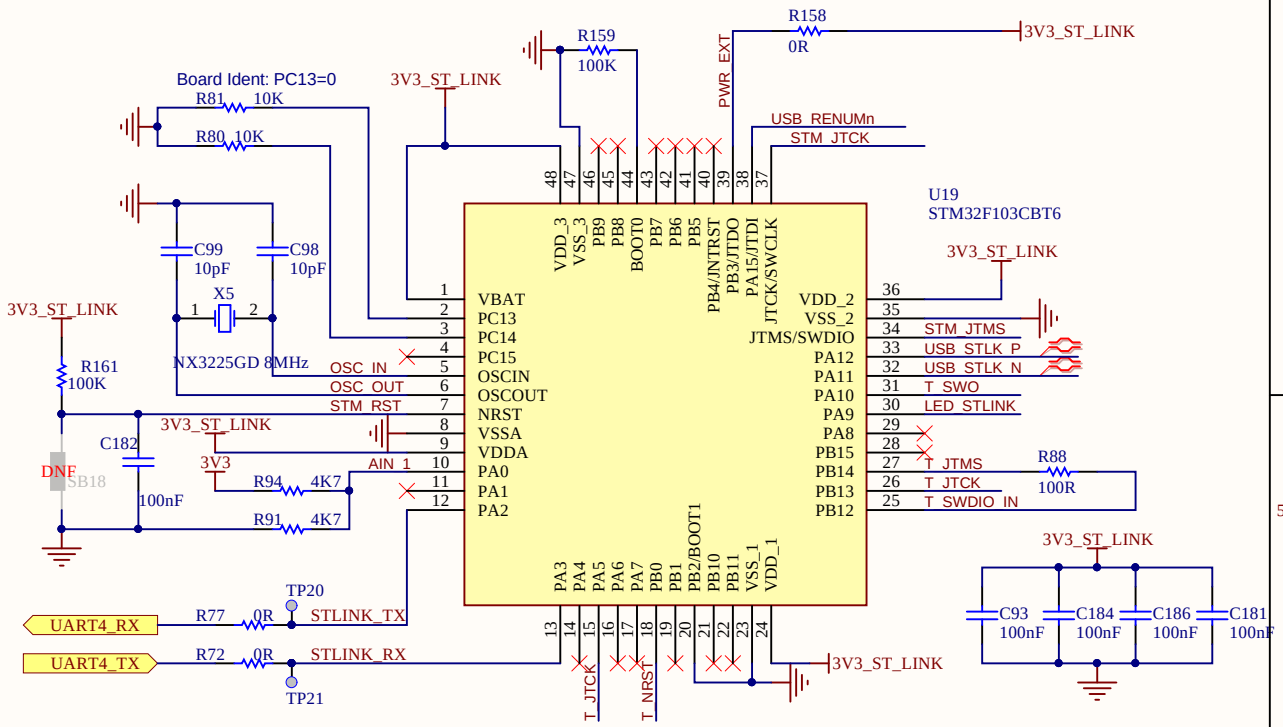
life.augmented



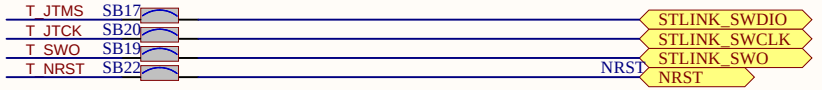
Title: **WLAN_BLUETOOTH**		
Project: **STM32MP15-DISCO**		
Variant: DK2		
Revision: C-01		Reference: MB1272
Size: A4	Date: 12-SEP-18	Sheet: 14 of 15

life.augmented

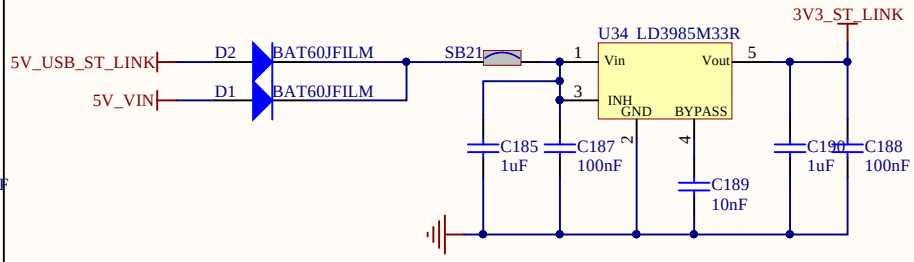
ST-LINK MCU



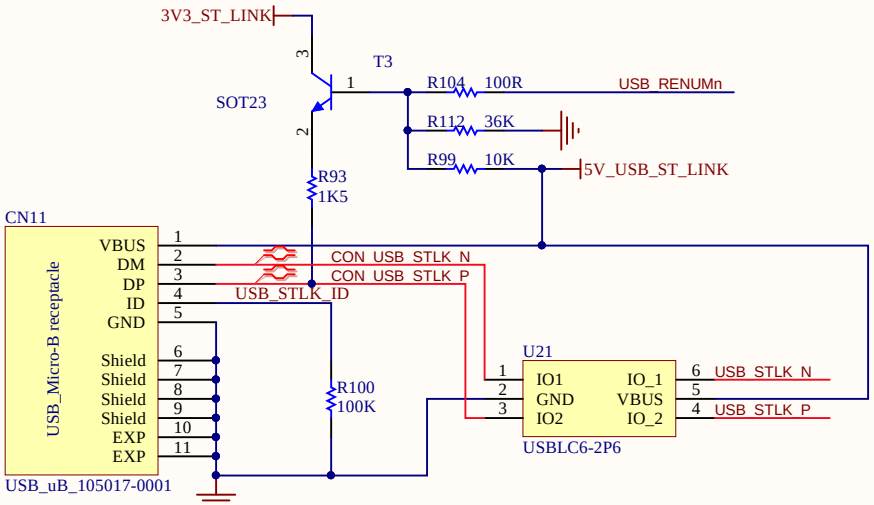
SWD INTERFACE



ST-LINK POWER 3V3 / 150mA

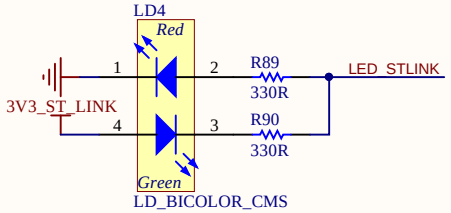


ST-LINK USB CONNECTOR

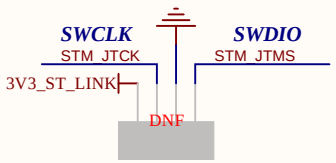


ESD PROTECTION SHOULD BE CLOSE TO THE CONNECTOR

STLINK_LED



ST-LINK DFU



Must be on a border of the PCB.

Title: **ST-LINK/V2-1 with support of SWD only**		
Project: **STM32MP15-DISCO**		
Variant: DK2		
Revision: C-01		Reference: MB1272
Size: A4	Date: 12-SEP-18	Sheet: 15 of 15