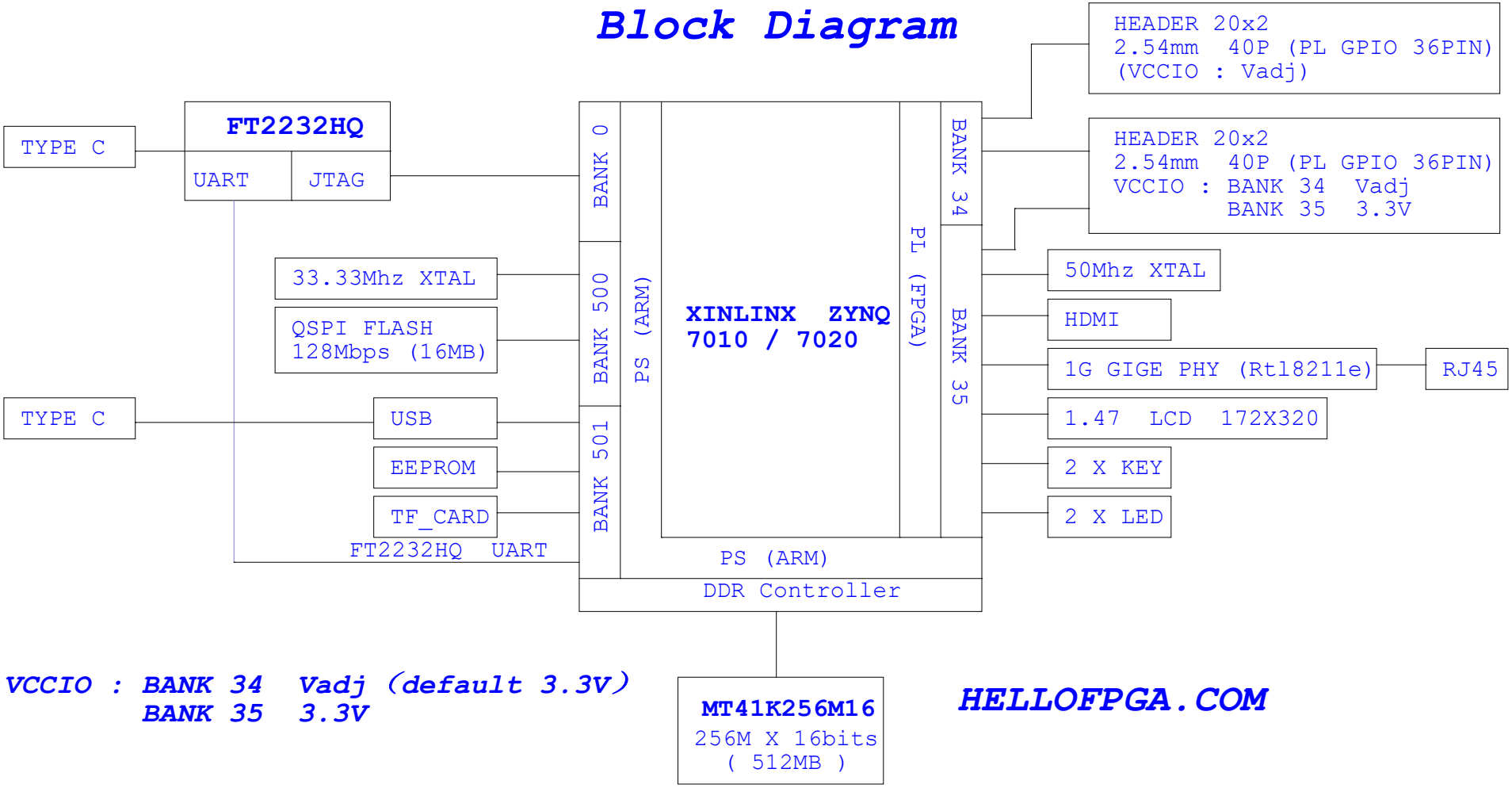
# Smart ZYNQ Block Diagram




***VCCIO : BANK 34 Vadj (default 3.3V)***
***BANK 35 3.3V***

***HELLOFPGA.COM***

| | | |
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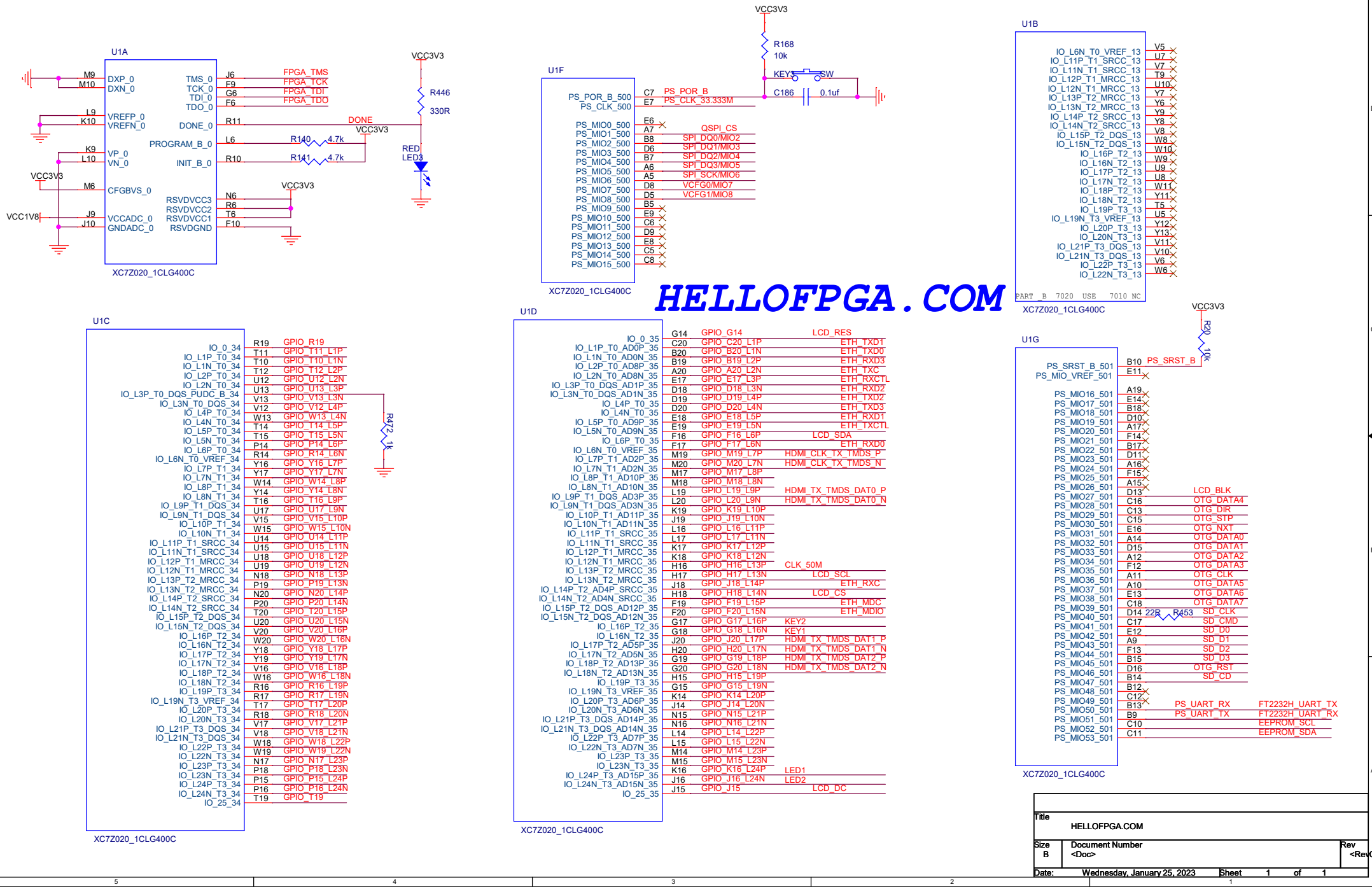
| Title | HELLOFPGA.COM | |
| Size C | Document Number <Doc> | Rev <RevCode> |
| Date: Wednesday, January 25, 2023 | Sheet 1 of 1 | |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M9
M10
DXP_0
DXN_0
L9
K10
VREFP_0
VREFN_0
K9
L10
VP_0
VN_0
VCC3V3
M6
CFGBVS_0
VCC1V8
J9
J10
VCCADC_0
GNDADC_0
TMS_0
TCK_0
TDI_0
TDO_0
DONE_0
PROGRAM_B_0
INIT_B_0
RSVDVCC3
RSVDVCC2
RSVDVCC1
RSVDGND
J6
F9
G6
F6
R11
L6
R10
N6
R6
T6
F10
FPGA_TMS
FPGA_TCK
FPGA_TDI
FPGA_TDO
DONE
R140
4.7k
R141
4.7k
VCC3V3
R446
330R
RED
LED3
XC7Z020_1CLG400C
U1F
PS_POR_B_500
PS_CLK_500
PS_MIO0_500
PS_MIO1_500
PS_MIO2_500
PS_MIO3_500
PS_MIO4_500
PS_MIO5_500
PS_MIO6_500
PS_MIO7_500
PS_MIO8_500
PS_MIO9_500
PS_MIO10_500
PS_MIO11_500
PS_MIO12_500
PS_MIO13_500
PS_MIO14_500
PS_MIO15_500
C7
E7
E6
A7
B8
D6
B7
A6
A5
D8
D5
B5
E9
C6
D9
E8
C5
C8
PS_POR_B
PS_CLK_33.333M
QSPI_CS
SPI_DQ0/MIO2
SPI_DQ1/MIO3
SPI_DQ2/MIO4
SPI_DQ3/MIO5
SPI_SCK/MIO6
VCFG0/MIO7
VCFG1/MIO8
XC7Z020_1CLG400C
VCC3V3
R168
10k
KEY1
SW
C186
0.1uf
U1B
IO_L6N_T0_VREF_13
IO_L11P_T1_SRCC_13
IO_L11N_T1_SRCC_13
IO_L12P_T1_MRCC_13
IO_L12N_T1_MRCC_13
IO_L13P_T2_MRCC_13
IO_L13N_T2_MRCC_13
IO_L14P_T2_SRCC_13
IO_L14N_T2_SRCC_13
IO_L15P_T2_DQS_13
IO_L15N_T2_DQS_13
IO_L16P_T2_13
IO_L16N_T2_13
IO_L17P_T2_13
IO_L17N_T2_13
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IO_L20N_T3_13
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IO_L21N_T3_DQS_13
IO_L22P_T3_13
IO_L22N_T3_13
V5
U7
V7
T9
U10
Y7
Y6
Y9
Y8
V8
W8
W10
W9
U9
U8
W11
Y11
T5
U5
Y12
Y13
V11
V10
V6
W6
PART B 7020 USE 7010 NC
XC7Z020_1CLG400C
U1C
IO_0_34
IO_L1P_T0_34
IO_L1N_T0_34
IO_L2P_T0_34
IO_L2N_T0_34
IO_L3P_T0_DQS_PUDC_B_34
IO_L3N_T0_DQS_34
IO_L4P_T0_34
IO_L4N_T0_34
IO_L5P_T0_34
IO_L5N_T0_34
IO_L6P_T0_34
IO_L6N_T0_VREF_34
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IO_L7N_T1_34
IO_L8P_T1_34
IO_L8N_T1_34
IO_L9P_T1_DQS_34
IO_L9N_T1_DQS_34
IO_L10P_T1_34
IO_L10N_T1_34
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IO_L11N_T1_SRCC_34
IO_L12P_T1_MRCC_34
IO_L12N_T1_MRCC_34
IO_L13P_T2_MRCC_34
IO_L13N_T2_MRCC_34
IO_L14P_T2_SRCC_34
IO_L14N_T2_SRCC_34
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IO_L15N_T2_DQS_34
IO_L16P_T2_34
IO_L16N_T2_34
IO_L17P_T2_34
IO_L17N_T2_34
IO_L18P_T2_34
IO_L18N_T2_34
IO_L19P_T3_34
IO_L19N_T3_VREF_34
IO_L20P_T3_34
IO_L20N_T3_34
IO_L21P_T3_DQS_34
IO_L21N_T3_DQS_34
IO_L22P_T3_34
IO_L22N_T3_34
IO_L23P_T3_34
IO_L23N_T3_34
IO_L24P_T3_34
IO_L24N_T3_34
IO_25_34
R19 GPIO_R19
T11 GPIO_T11_L1P
T10 GPIO_T10_L1N
T12 GPIO_T12_L2P
U12 GPIO_U12_L2N
U13 GPIO_U13_L3P
V13 GPIO_V13_L3N
V12 GPIO_V12_L4P
W13 GPIO_W13_L4N
T14 GPIO_T14_L5P
T15 GPIO_T15_L5N
P14 GPIO_P14_L6P
R14 GPIO_R14_L6N
Y16 GPIO_Y16_L7P
Y17 GPIO_Y17_L7N
W14 GPIO_W14_L8P
Y14 GPIO_Y14_L8N
T16 GPIO_T16_L9P
U17 GPIO_U17_L9N
V15 GPIO_V15_L10P
W15 GPIO_W15_L10N
U14 GPIO_U14_L11P
U15 GPIO_U15_L11N
U18 GPIO_U18_L12P
U19 GPIO_U19_L12N
N18 GPIO_N18_L13P
P19 GPIO_P19_L13N
N20 GPIO_N20_L14P
P20 GPIO_P20_L14N
T20 GPIO_T20_L15P
U20 GPIO_U20_L15N
V20 GPIO_V20_L16P
W20 GPIO_W20_L16N
Y18 GPIO_Y18_L17P
Y19 GPIO_Y19_L17N
V16 GPIO_V16_L18P
W16 GPIO_W16_L18N
R16 GPIO_R16_L19P
R17 GPIO_R17_L19N
T17 GPIO_T17_L20P
R18 GPIO_R18_L20N
V17 GPIO_V17_L21P
V18 GPIO_V18_L21N
W18 GPIO_W18_L22P
W19 GPIO_W19_L22N
N17 GPIO_N17_L23P
P18 GPIO_P18_L23N
P15 GPIO_P15_L24P
P16 GPIO_P16_L24N
T19 GPIO_T19
R472
1k
XC7Z020_1CLG400C
U1D
IO_0_35
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IO_L1N_T0_AD0N_35
IO_L2P_T0_AD8P_35
IO_L2N_T0_AD8N_35
IO_L3P_T0_DQS_AD1P_35
IO_L3N_T0_DQS_AD1N_35
IO_L4P_T0_35
IO_L4N_T0_35
IO_L5P_T0_AD9P_35
IO_L5N_T0_AD9N_35
IO_L6P_T0_35
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IO_L7P_T1_AD2P_35
IO_L7N_T1_AD2N_35
IO_L8P_T1_AD10P_35
IO_L8N_T1_AD10N_35
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IO_L9N_T1_DQS_AD3N_35
IO_L10P_T1_AD11P_35
IO_L10N_T1_AD11N_35
IO_L11P_T1_SRCC_35
IO_L11N_T1_SRCC_35
IO_L12P_T1_MRCC_35
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IO_L18P_T2_AD13P_35
IO_L18N_T2_AD13N_35
IO_L19P_T3_35
IO_L19N_T3_VREF_35
IO_L20P_T3_AD6P_35
IO_L20N_T3_AD6N_35
IO_L21P_T3_DQS_AD14P_35
IO_L21N_T3_DQS_AD14N_35
IO_L22P_T3_AD7P_35
IO_L22N_T3_AD7N_35
IO_L23P_T3_35
IO_L23N_T3_35
IO_L24P_T3_AD15P_35
IO_L24N_T3_AD15N_35
IO_25_35
G14 GPIO_G14 LCD_RES
C20 GPIO_C20_L1P ETH_TXD1
B20 GPIO_B20_L1N ETH_TXD0
B19 GPIO_B19_L2P ETH_RXD3
A20 GPIO_A20_L2N ETH_TXC
E17 GPIO_E17_L3P ETH_RXCTL
D18 GPIO_D18_L3N ETH_RXD2
D19 GPIO_D19_L4P ETH_TXD2
D20 GPIO_D20_L4N ETH_TXD3
E18 GPIO_E18_L5P ETH_RXD1
E19 GPIO_E19_L5N ETH_TXCTL
F16 GPIO_F16_L6P LCD_SDA
F17 GPIO_F17_L6N ETH_RXD0
M19 GPIO_M19_L7P HDMI_CLK_TX_TMDS_P
M20 GPIO_M20_L7N HDMI_CLK_TX_TMDS_N
M17 GPIO_M17_L8P
M18 GPIO_M18_L8N
L19 GPIO_L19_L9P HDMI_TX_TMDS_DAT0_P
L20 GPIO_L20_L9N HDMI_TX_TMDS_DAT0_N
K19 GPIO_K19_L10P
J19 GPIO_J19_L10N
L16 GPIO_L16_L11P
L17 GPIO_L17_L11N
K17 GPIO_K17_L12P
K18 GPIO_K18_L12N
H16 GPIO_H16_L13P CLK_50M
H17 GPIO_H17_L13N LCD_SCL
J18 GPIO_J18_L14P ETH_RXC
H18 GPIO_H18_L14N LCD_CS
F19 GPIO_F19_L15P ETH_MDC
F20 GPIO_F20_L15N ETH_MDIO
G17 GPIO_G17_L16P KEY2
G18 GPIO_G18_L16N KEY1
J20 GPIO_J20_L17P HDMI_TX_TMDS_DAT1_P
H20 GPIO_H20_L17N HDMI_TX_TMDS_DAT1_N
G19 GPIO_G19_L18P HDMI_TX_TMDS_DAT2_P
G20 GPIO_G20_L18N HDMI_TX_TMDS_DAT2_N
H15 GPIO_H15_L19P
G15 GPIO_G15_L19N
K14 GPIO_K14_L20P
J14 GPIO_J14_L20N
N15 GPIO_N15_L21P
N16 GPIO_N16_L21N
L14 GPIO_L14_L22P
L15 GPIO_L15_L22N
M14 GPIO_M14_L23P
M15 GPIO_M15_L23N
K16 GPIO_K16_L24P LED1
J16 GPIO_J16_L24N LED2
J15 GPIO_J15 LCD_DC
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U1G
PS_SRST_B_501
PS_MIO_VREF_501
PS_MIO16_501
PS_MIO17_501
PS_MIO18_501
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PS_MIO50_501
PS_MIO51_501
PS_MIO52_501
PS_MIO53_501
B10 PS_SRST_B
E11
A19
E14
B18
D10
A17
F14
B17
D11
A16
F15
A15
D13 LCD_BLK
C16 OTG_DATA4
C13 OTG_DIR
C15 OTG_STP
E16 OTG_NXT
A14 OTG_DATA0
D15 OTG_DATA1
A12 OTG_DATA2
F12 OTG_DATA3
A11 OTG_CLK
A10 OTG_DATA5
E13 OTG_DATA6
C18 OTG_DATA7
D14 22R R453 SD_CLK
C17 SD_CMD
E12 SD_D0
A9 SD_D1
F13 SD_D2
B15 SD_D3
D16 OTG_RST
B14 SD_CD
B12
C12
B13 PS_UART_RX FT2232H_UART_TX
B9 PS_UART_TX FT2232H_UART_RX
C10 EEPROM_SCL
C11 EEPROM_SDA
VCC3V3
R20
10k
XC7Z020_1CLG400C
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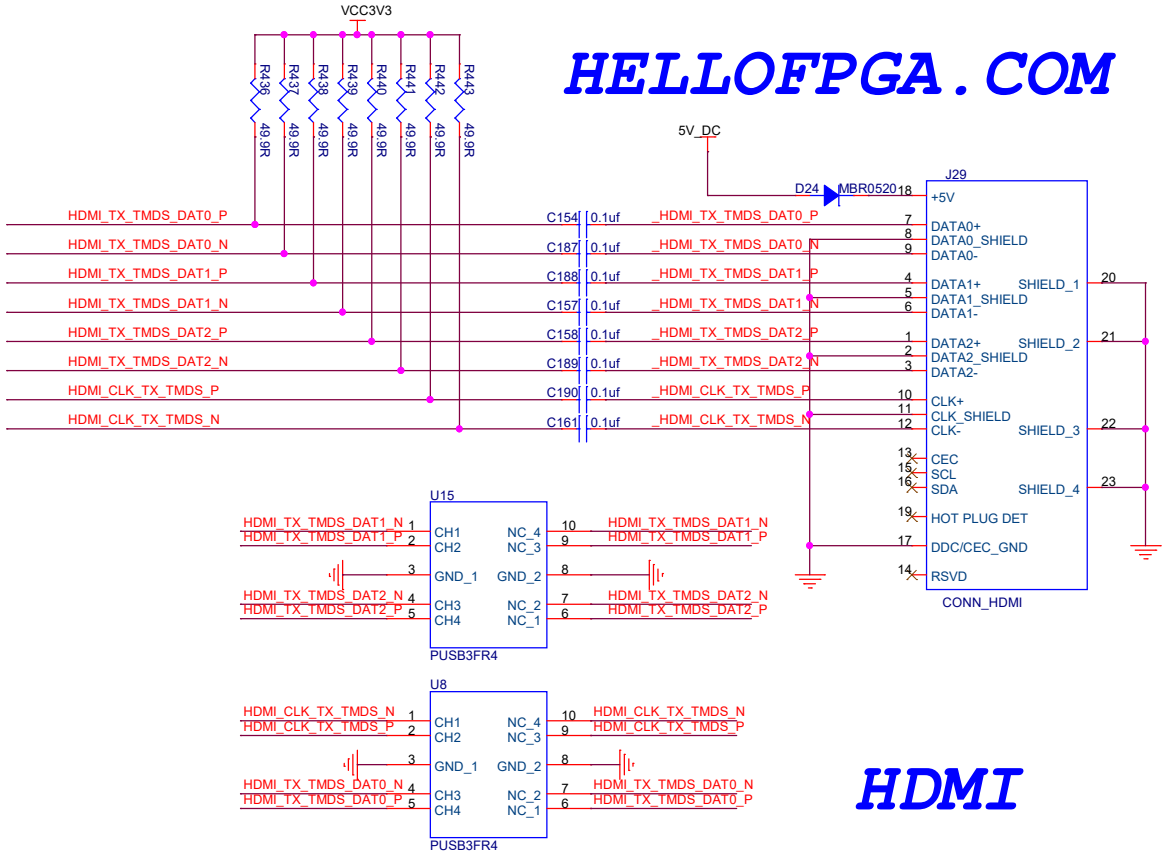


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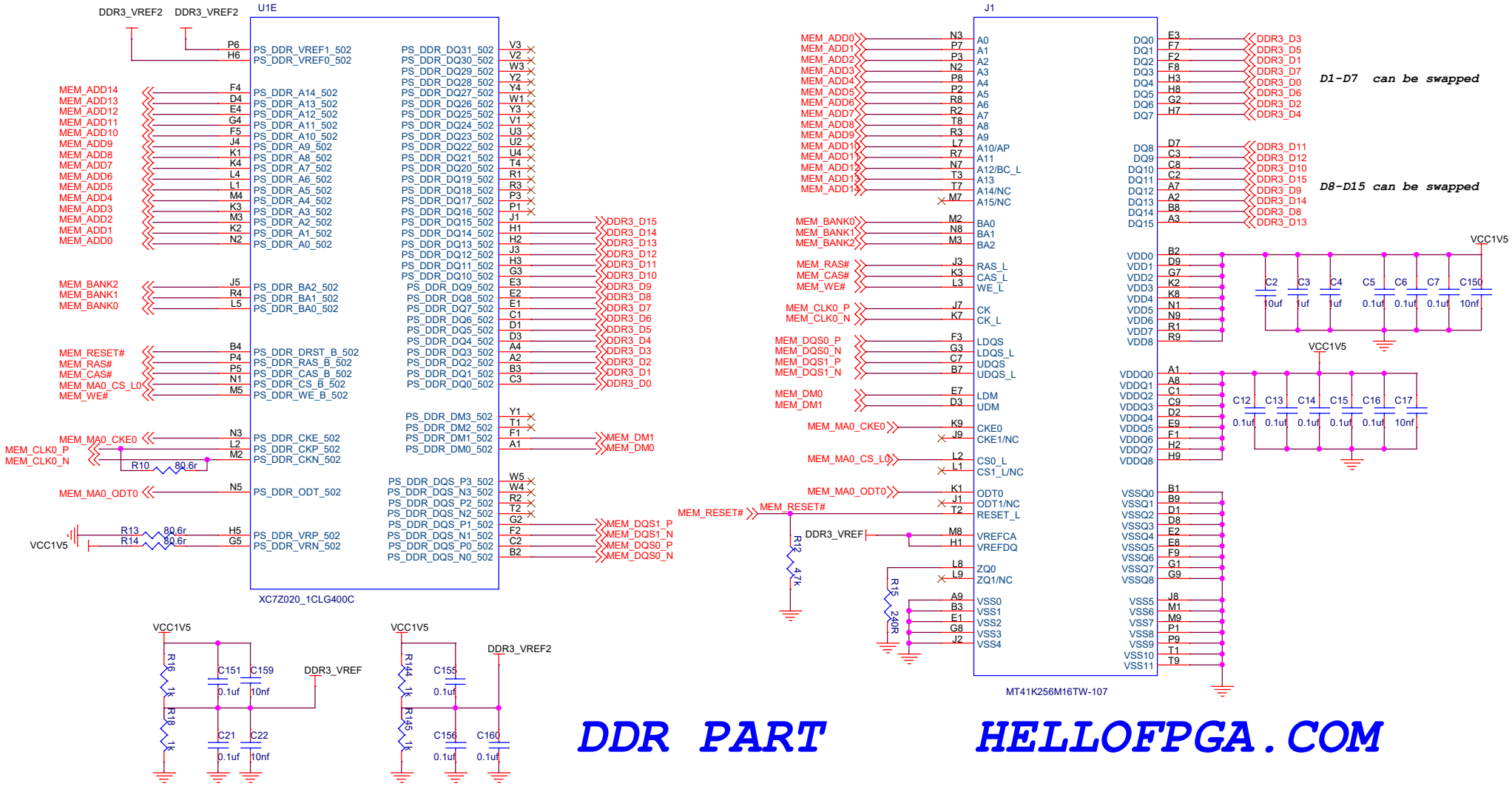


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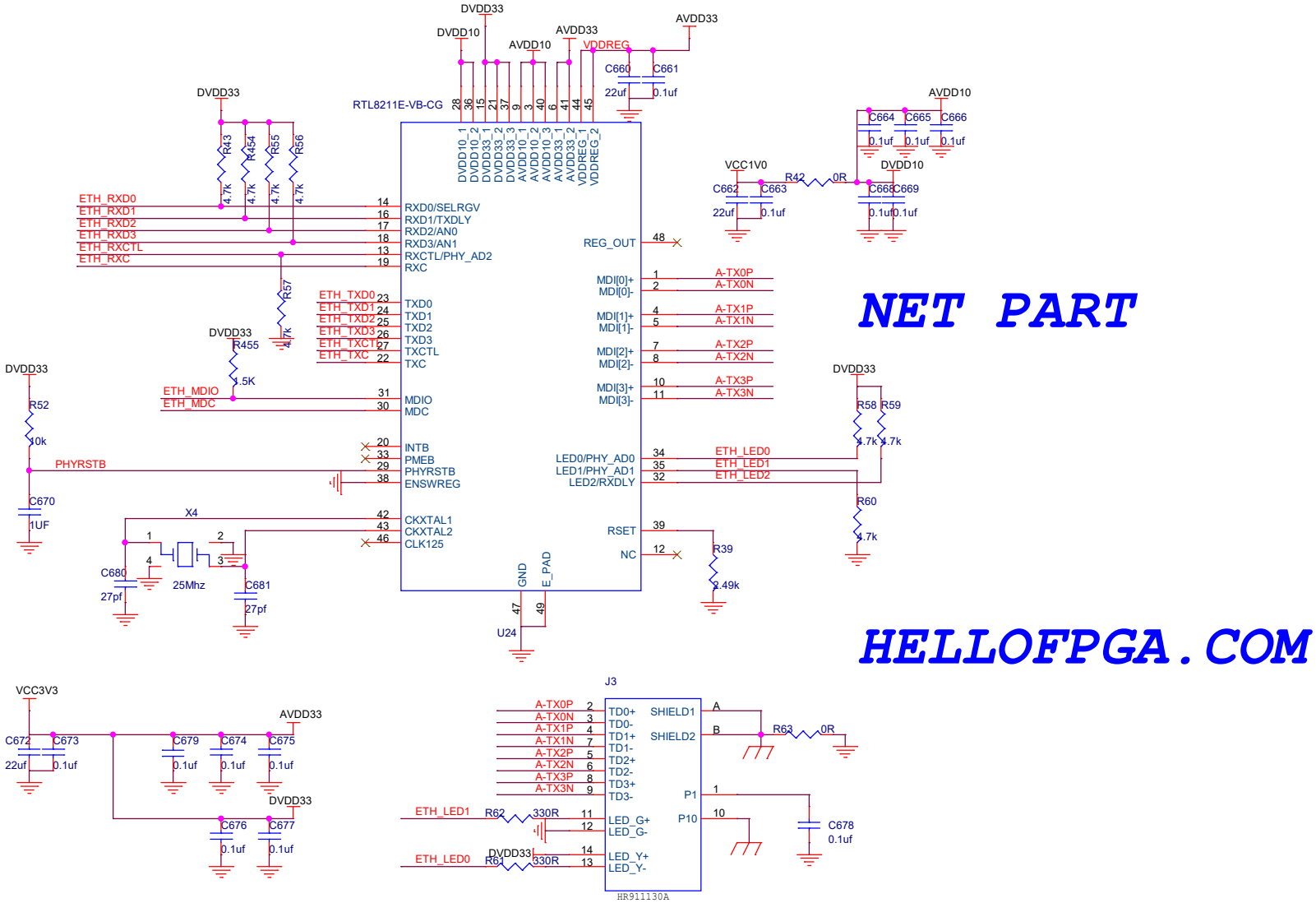


NET PART

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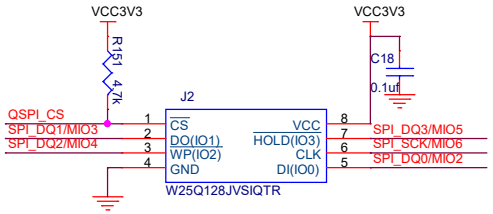
# QSPI FLASH

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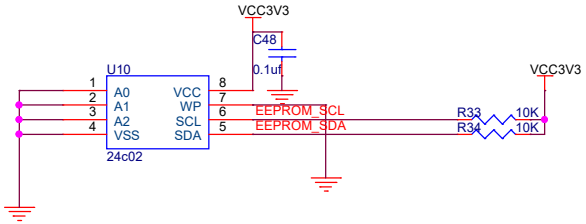
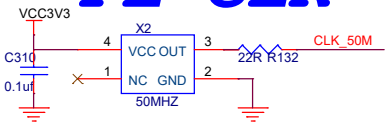
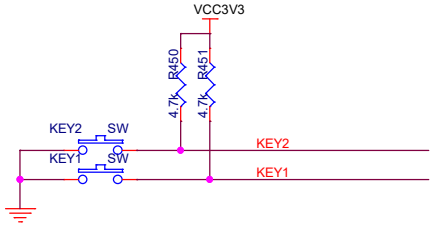



# PL CLK




# KEY

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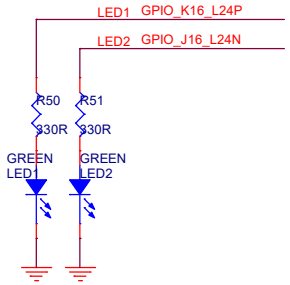


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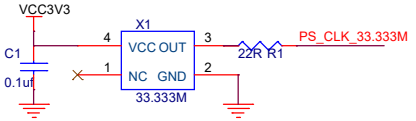


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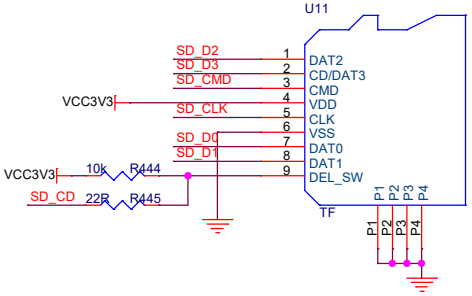
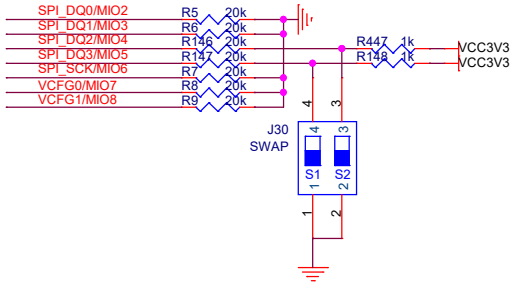



# BOOT




# BOOT

| BOOT | S1 | S2 |
|---|---|---|
| JTAG | ● | ● |
| QSPI | ○ | ● |
| SD | ○ | ○ |

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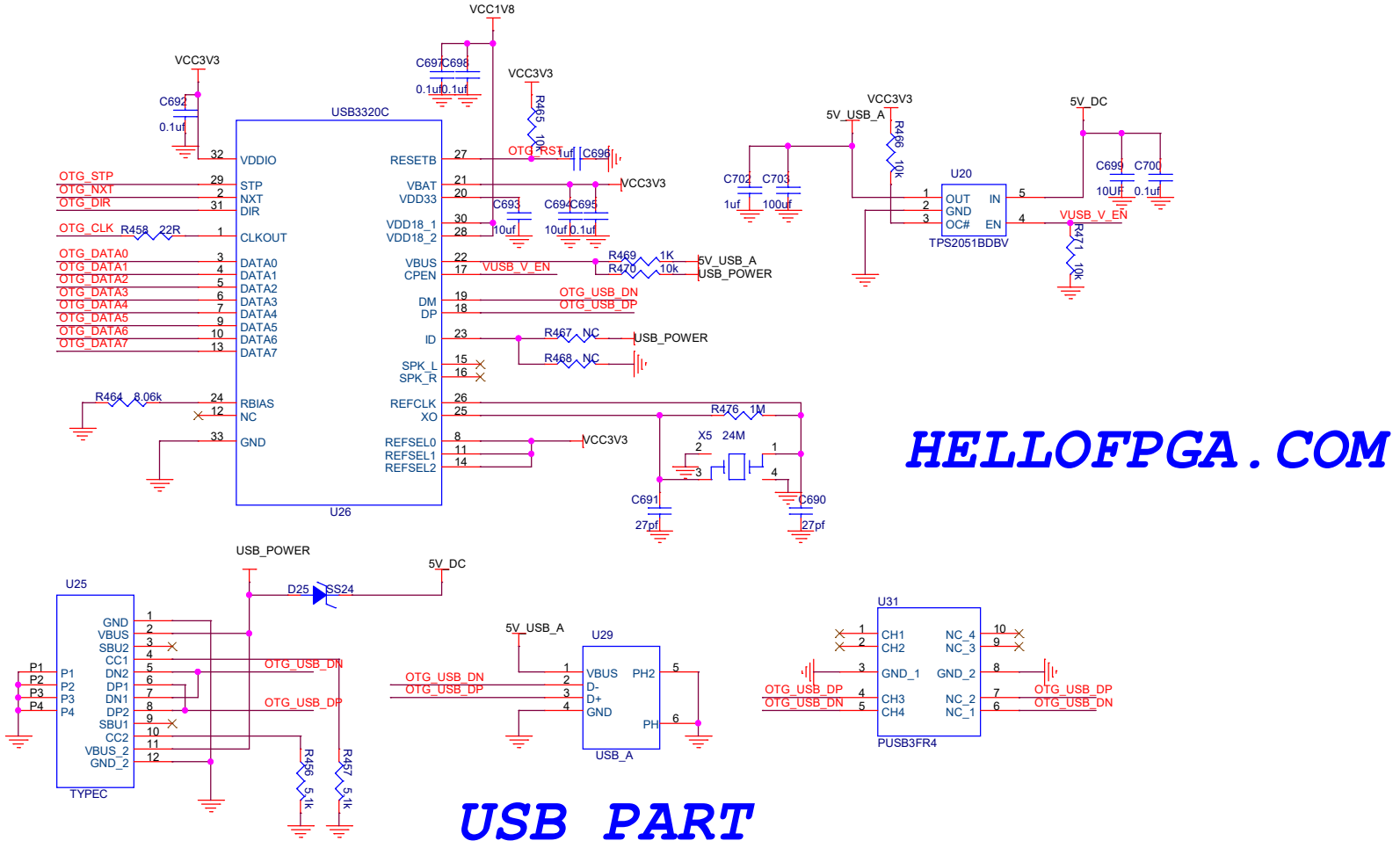


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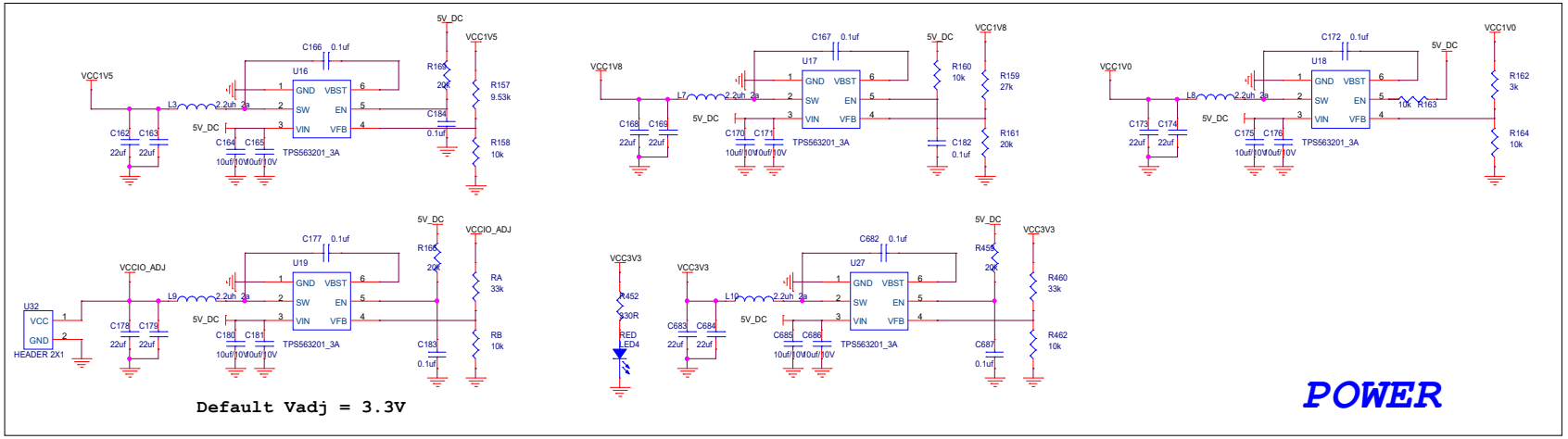


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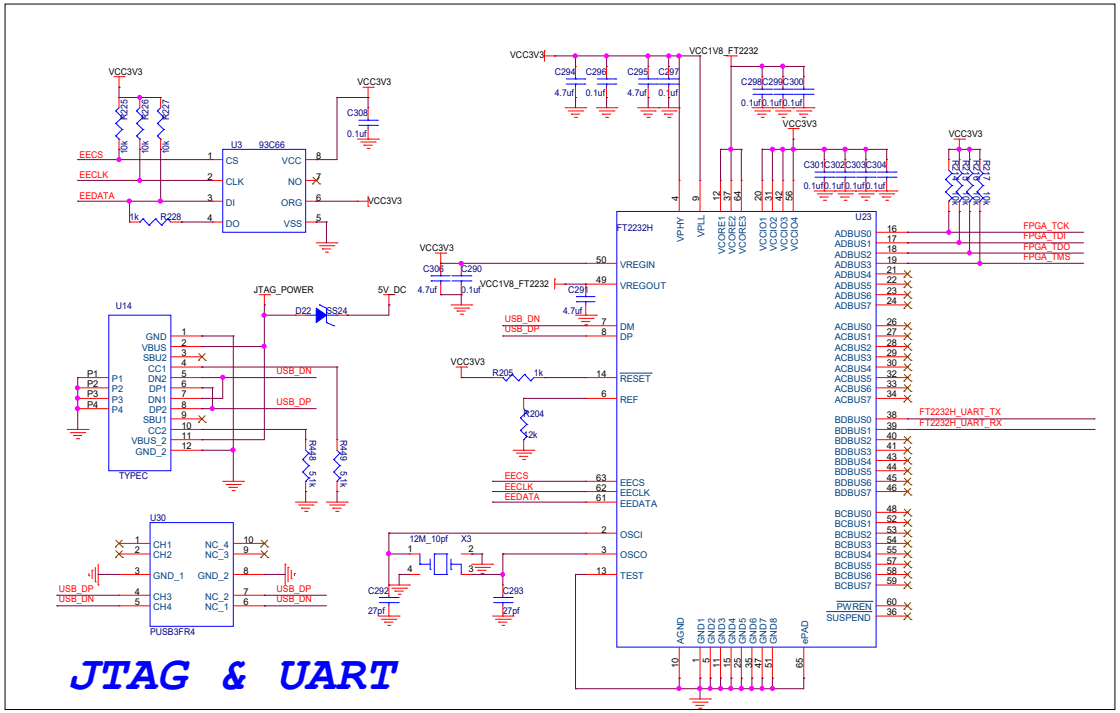


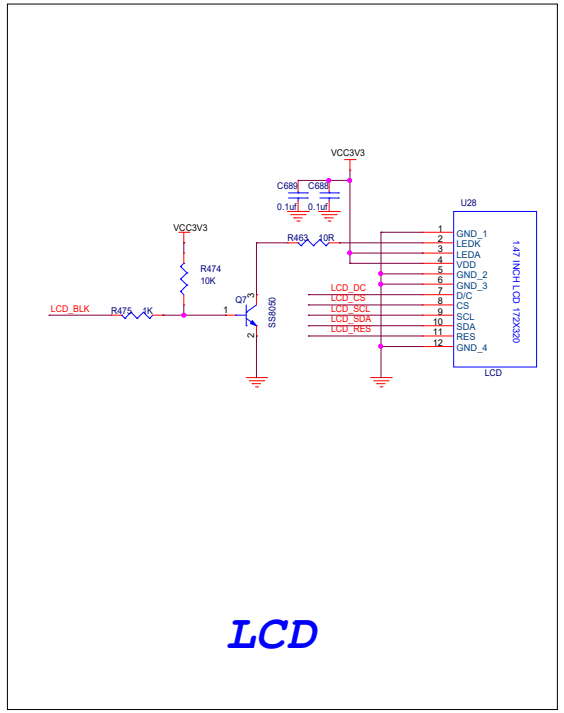


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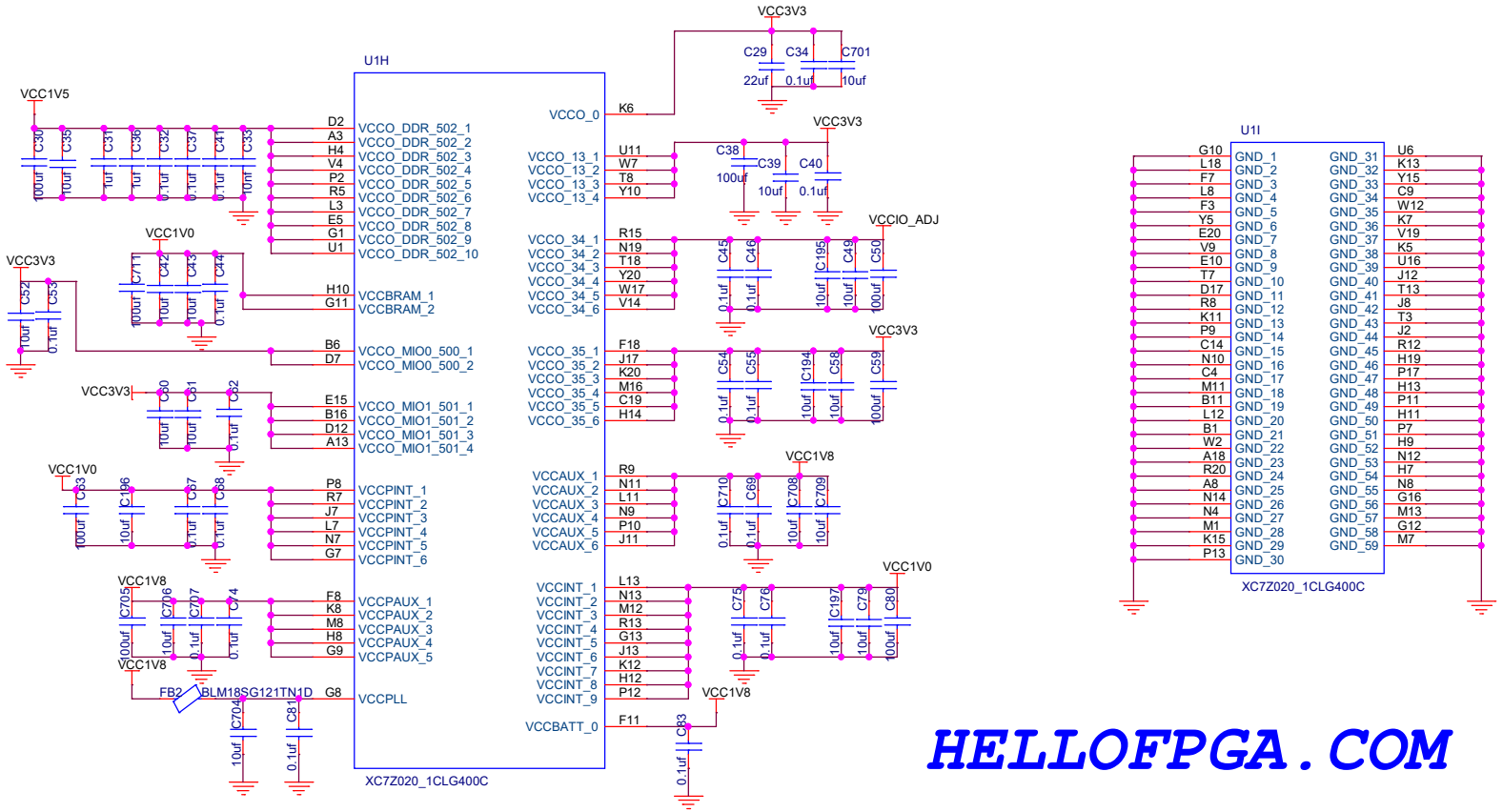


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## HDMI

| | |
|---|---|
| CLK | M19 |
| D0 | L19 |
| D1 | J20 |
| D2 | G19 |

## UART

| | |
|---|---|
| ZYNQ_TX | MIO51 |
| ZYNQ_RX | MIO50 |

## EEPROM

| | |
|---|---|
| SCL | MIO52 |
| SDA | MIO53 |

## 50M CLOCK

| | |
|---|---|
| CLK | H16 |

## KEY & LED

| | |
|---|---|
| KEY1 | G18 |
| KEY2 | G17 |
| LED1 | K16 |
| LED2 | J16 |

## LCD 320X172

| | |
|---|---|
| LCD_DC | J15 |
| LCD_CS | H18 |
| LCD_SCL | H17 |
| LCD_SDA | F16 |
| LCD_RES | G14 |
| LCD_BLK | MIO27 (PS) |

(LCD BLK : default high level by External pull-up resistance )

## HELLOFPGA.COM

## GigE phy

| | |
|---|---|
| ETH TD0 | B20 |
| ETH TD1 | C20 |
| ETH TD2 | D19 |
| ETH TD3 | D20 |
| ETH TX_CTL | E19 |
| ETH TXC | A20 |
| ETH RD0 | F17 |
| ETH RD1 | E18 |
| ETH RD2 | D18 |
| ETH RD3 | B19 |
| ETH RX_CTL | E17 |
| ETH RXC | J18 |
| ETH MDIO | F20 |
| ETH MDC | F19 |

| | | |
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| Size: C | Document Number: <Doc> | Rev: <RevCode> |
| Date: Sunday, February 05, 2023 | Sheet 1 of 1 | |