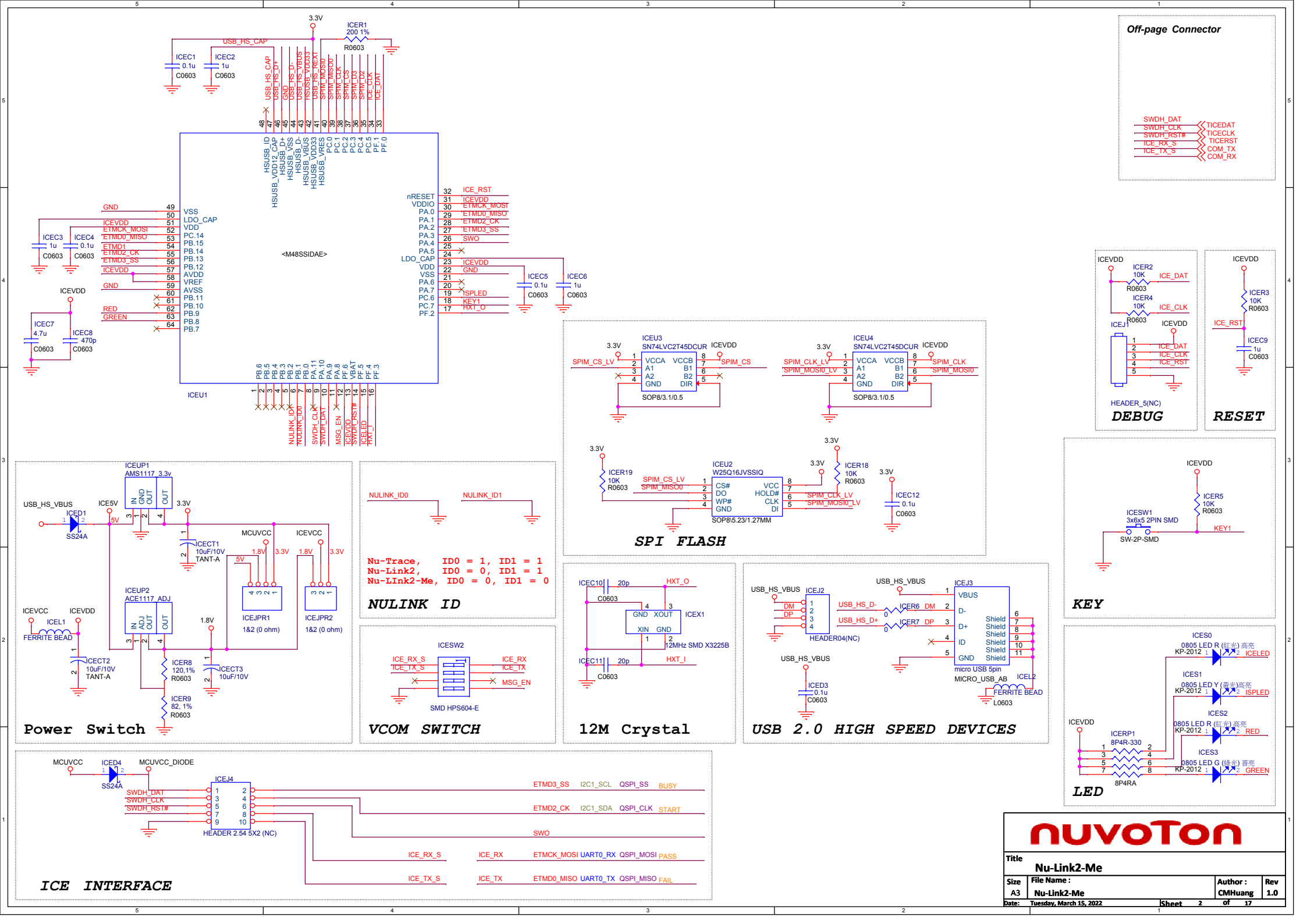
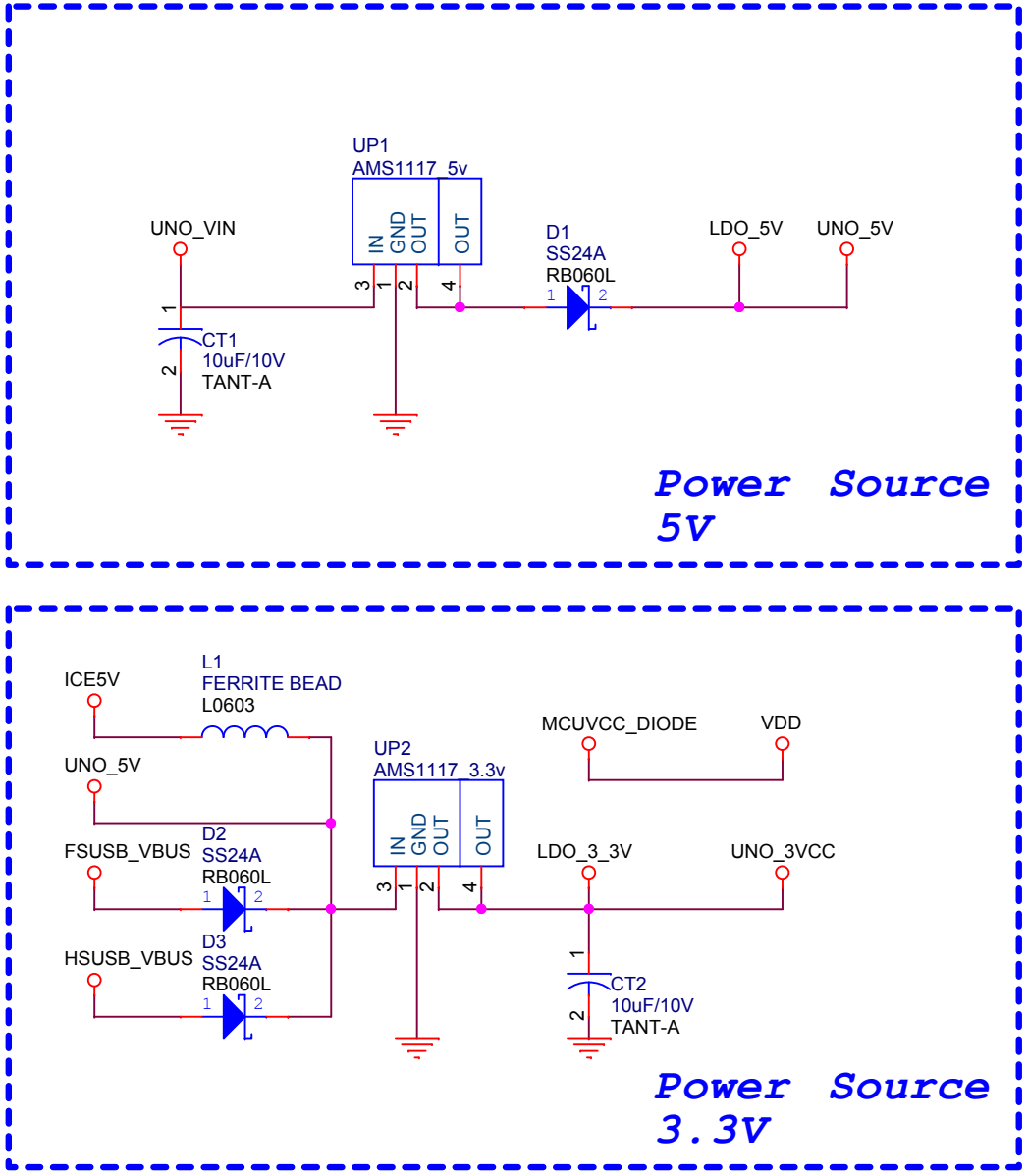
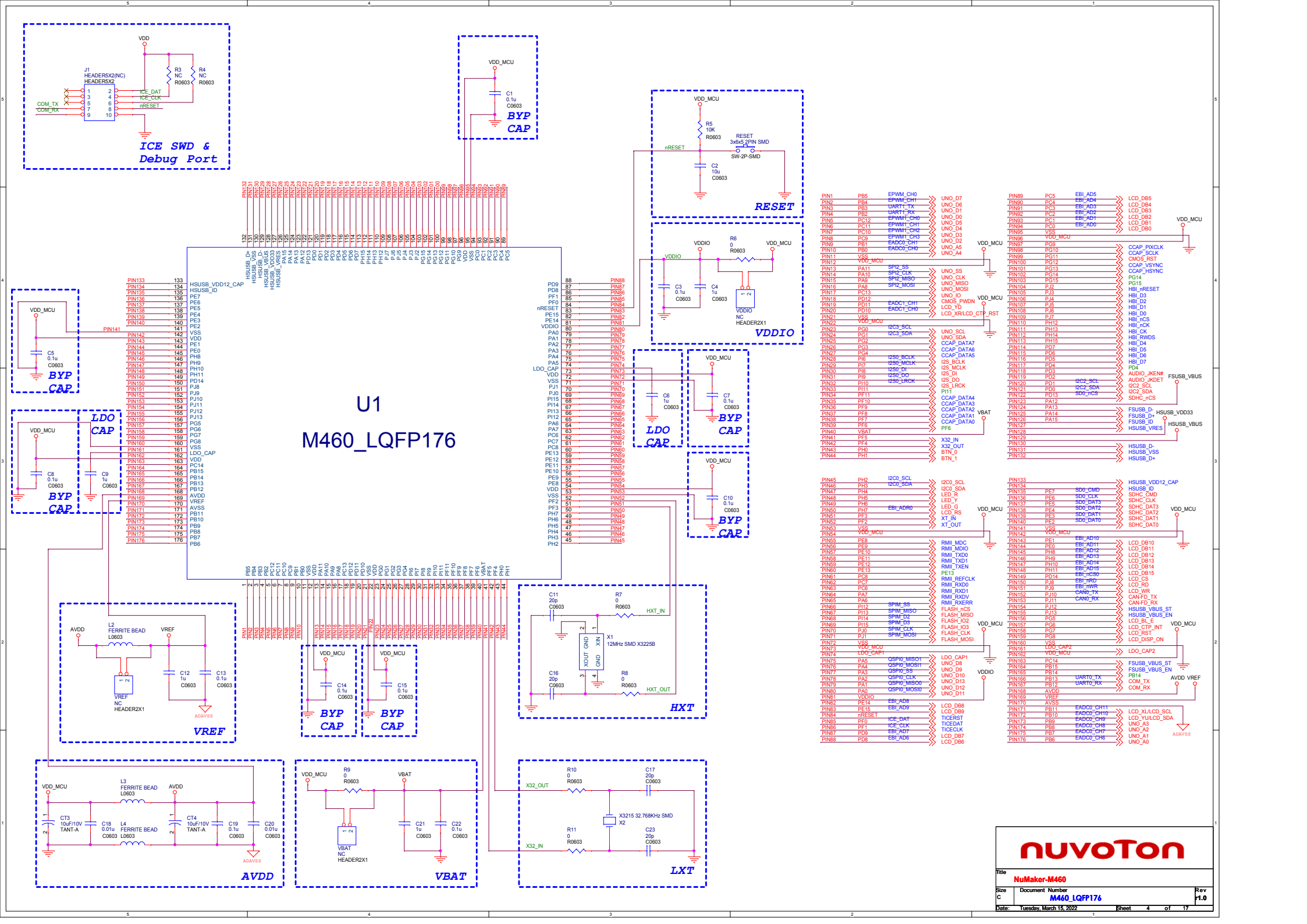
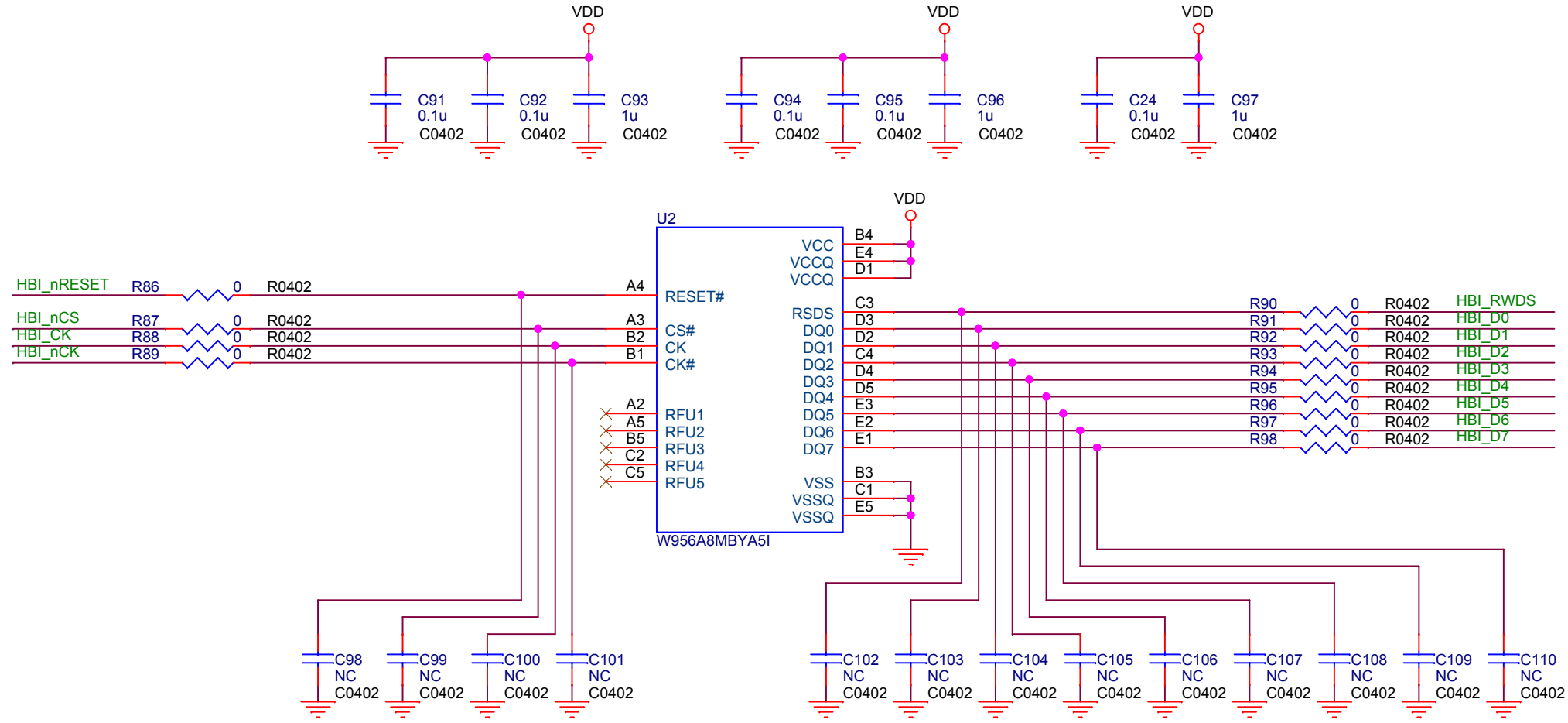

Off-page Connector
SWDH_DAT
SWDH_CLK
SWDH_RST#
ICE_RX_S
ICE_TX_S
TICEDAT
TICECLK
TICERST
COM_TX
COM_RX
3.3V
ICER1
200 1%
R0603
USB_HS_CAP
ICEC1
0.1u
C0603
ICEC2
1u
C0603
<M48SSIDAE>
ICEU1
VSS
LDO_CAP
VDD
PC.14
PB.15
PB.14
PB.13
PB.12
AVDD
VREF
AVSS
PB.11
PB.10
PB.9
PB.8
PB.7
nRESET
VDDIO
PA.0
PA.1
PA.2
PA.3
PA.4
PA.5
LDO_CAP
VDD
VSS
PA.6
PA.7
PC.6
PC.7
PF.2
ICE_RST
ICEVDD
ETMCK_MOST
ETMD0_MISO
ETMD2_CK
ETMD3_SS
SWO
ISPLED
KEY1
HXT_O
ICEC3
1u
C0603
ICEC4
0.1u
C0603
ICEC5
0.1u
C0603
ICEC6
1u
C0603
ICEC7
4.7u
C0603
ICEC8
470p
C0603
GND
ICEVDD
ETMCK_MOSI
ETMD0_MISO
ETMD1
ETMD2_CK
ETMD3_SS
RED
GREEN
ICEU3
SN74LVC2T45DCUR
SPIM_CS_LV
SPIM_CS
SOP8/3.1/0.5
ICEU4
SPIM_CLK_LV
SPIM_MOSI0_LV
SPIM_CLK
SPIM_MOSI0
ICEU2
W25Q16JVSSIQ
CS#
DO
WP#
GND
VCC
HOLD#
CLK
DI
SPIM_CS_LV
SPIM_MISO0_LV
SPIM_CLK_LV
SPIM_MOSI0_LV
SOP8\5.23/1.27MM
ICER19
10K
R0603
ICER18
10K
R0603
ICEC12
0.1u
C0603
SPI FLASH
ICEVDD
ICER2
10K
R0603
ICE_DAT
ICER4
10K
R0603
ICE_CLK
ICEJ1
HEADER_5(NC)
DEBUG
ICER3
10K
R0603
ICE_RST
ICEC9
1u
C0603
RESET
ICEUP1
AMS1117_3.3v
USB_HS_VBUS
ICED1
SS24A
ICE5V
5V
3.3V
ICECT1
10uF/10V
TANT-A
MCUVCC
ICEVCC
1.8V
3.3V
ICEJPR1
1&2 (0 ohm)
ICEJPR2
1&2 (0 ohm)
ICEUP2
ACE1117_ADJ
ICEVCC
ICEVDD
ICEL1
FERRITE BEAD
ICECT2
10uF/10V
TANT-A
1.8V
ICECT3
10uF/10V
ICER8
120,1%
R0603
ICER9
82, 1%
R0603
Power Switch
NULINK_ID0
NULINK_ID1
Nu-Trace, ID0 = 1, ID1 = 1
Nu-Link2, ID0 = 0, ID1 = 1
Nu-LInk2-Me, ID0 = 0, ID1 = 0
NULINK ID
ICESW2
ICE_RX_S
ICE_TX_S
ICE_RX
ICE_TX
MSG_EN
SMD HPS604-E
VCOM SWITCH
ICEC10
20p
C0603
HXT_O
GND
XOUT
XIN
GND
ICEX1
12MHz SMD X3225B
ICEC11
20p
C0603
HXT_I
12M Crystal
USB_HS_VBUS
ICEJ2
DM
DP
HEADER04(NC)
USB_HS_D-
USB_HS_D+
ICER6 DM
ICER7 DP
ICEJ3
VBUS
D-
D+
ID
GND
Shield
micro USB 5pin
MICRO_USB_AB
ICED3
0.1u
C0603
ICEL2
FERRITE BEAD
L0603
USB 2.0 HIGH SPEED DEVICES
ICESW1
3x6x5 2PIN SMD
SW-2P-SMD
ICER5
10K
R0603
KEY1
KEY
ICES0
0805 LED R (紅光) 高亮
KP-2012
ICELED
ICES1
0805 LED Y (黃光)高亮
ISPLED
ICES2
0805 LED R (紅光) 高亮
RED
ICES3
0805 LED G (綠光) 普亮
GREEN
ICERP1
8P4R-330
8P4RA
LED
MCUVCC
ICED4
SS24A
MCUVCC_DIODE
ICEJ4
HEADER 2.54 5X2 (NC)
SWDH_DAT
SWDH_CLK
SWDH_RST#
ETMD3_SS
I2C1_SCL
QSPI_SS
BUSY
ETMD2_CK
I2C1_SDA
QSPI_CLK
START
SWO
ICE_RX_S
ICE_RX
ETMCK_MOSI
UART0_RX
QSPI_MOSI
PASS
ICE_TX_S
ICE_TX
ETMD0_MISO
UART0_TX
QSPI_MISO
FAIL
ICE INTERFACE
nuvoTon
Title
Nu-Link2-Me
Size
A3
File Name :
Nu-Link2-Me
Author :
CMHuang
Rev
1.0
Date:
Tuesday, March 15, 2022
Sheet
2
of
17



nuvoTon

Title	NuMaker-M460	
Size A	Document Number Power Source	Rev r1.0
Date: Tuesday, March 15, 2022	Sheet 3 of 17	


U1
M460_LQFP176
ICE SWD & Debug Port
BYP CAP
RESET
VDDIO
LDO CAP
VREF
HXT
VBAT
LXT
AVDD
12MHz SMD X3225B
X3215 32.768KHz SMD
NC
HEADER2X1
HSUSB_VDD12_CAP
HSUSB_ID
LDO_CAP
VDD_MCU
VDDIO
VBAT
AVDD
VREF
ADAVSS
COM_TX
COM_RX
ICE_DAT
ICE_CLK
nRESET
HXT_IN
HXT_OUT
X32_OUT
X32_IN
FSUSB_VBUS
HSUSB_VDD33
HSUSB_VBUS
HSUSB_D-
HSUSB_D+
HSUSB_VSS
LDO_CAP2
VBAT
UNO_D7
UNO_D6
UNO_D1
UNO_D0
UNO_D5
UNO_D4
UNO_D3
UNO_D2
UNO_A5
UNO_A4
UNO_SS
UNO_CLK
UNO_MISO
UNO_MOSI
UNO_IO
CMOS_PWDN
LCD_YD
LCD_XR/LCD_CTP_RST
UNO_SCL
UNO_SDA
CCAP_DATA7
CCAP_DATA6
CCAP_DATA5
I2S_BCLK
I2S_MCLK
I2S_DI
I2S_DO
I2S_LRCK
PI11
CCAP_DATA4
CCAP_DATA3
CCAP_DATA2
CCAP_DATA1
CCAP_DATA0
PF6
X32_IN
X32_OUT
BTN_0
BTN_1
I2C0_SCL
I2C0_SDA
LED_R
LED_Y
LED_G
LCD_RS
XT_IN
XT_OUT
RMII_MDC
RMII_MDIO
RMII_TXD0
RMII_TXD1
RMII_TXEN
PE13
RMII_REFCLK
RMII_RXD0
RMII_RXD1
RMII_RXDV
RMII_RXERR
FLASH_nCS
FLASH_MISO
FLASH_IO2
FLASH_IO3
FLASH_CLK
FLASH_MOSI
LDO_CAP1
UNO_D8
UNO_D9
UNO_D10
UNO_D13
UNO_D12
UNO_D11
LCD_DB8
LCD_DB9
TICERST
TICEDAT
TICECLK
LCD_DB7
LCD_DB6
LCD_DB5
LCD_DB4
LCD_DB3
LCD_DB2
LCD_DB1
LCD_DB0
CCAP_PIXCLK
CCAP_SCLK
CMOS_RST
CCAP_VSYNC
CCAP_HSYNC
PG14
PG15
HBI_nRESET
HBI_D3
HBI_D2
HBI_D1
HBI_D0
HBI_nCS
HBI_nCK
HBI_CK
HBI_RWDS
HBI_D4
HBI_D5
HBI_D6
HBI_D7
PD4
AUDIO_JKEN#
AUDIO_JKDET
I2C2_SCL
I2C2_SDA
SDHC_nCS
FSUSB_D-
FSUSB_D+
FSUSB_ID
HSUSB_VRES
HSUSB_D-
HSUSB_VSS
HSUSB_D+
SDHC_CMD
SDHC_CLK
SDHC_DAT3
SDHC_DAT2
SDHC_DAT1
SDHC_DAT0
LCD_DB10
LCD_DB11
LCD_DB12
LCD_DB13
LCD_DB14
LCD_DB15
LCD_CS
LCD_RD
LCD_WR
CAN-FD_TX
CAN-FD_RX
HSUSB_VBUS_ST
HSUSB_VBUS_EN
LCD_BL_E
LCD_CTP_INT
LCD_RST
LCD_DISP_ON
LDO_CAP2
FSUSB_VBUS_ST
FSUSB_VBUS_EN
PB14
COM_TX
COM_RX
LCD_XL/LCD_SCL
LCD_YU/LCD_SDA
UNO_A3
UNO_A2
UNO_A1
UNO_A0
nuvoTon
NuMaker-M460
M460_LQFP176
Tuesday, March 15, 2022
Sheet 4 of 17
Rev r1.0



PIN104	PJ2
PIN105	PJ3
PIN106	PJ4
PIN107	PJ5
PIN108	PJ6
PIN109	PJ7
PIN110	PH12
PIN111	PH13
PIN112	PH14
PIN113	PH15
PIN114	PD7
PIN115	PD6
PIN116	PD5

HBI_nRESET
HBI_D3
HBI_D2
HBI_D1
HBI_D0
HBI_nCS
HBI_nCK
HBI_CK
HBI_RWDS
HBI_D4
HBI_D5
HBI_D6
HBI_D7

off-Page Singals

nuvoTon

Title: **NuMaker-M460**

Size	Document Number	Rev
A	HyperRAM	r1.0

Date: Tuesday, March 15, 2022 Sheet 5 of 17

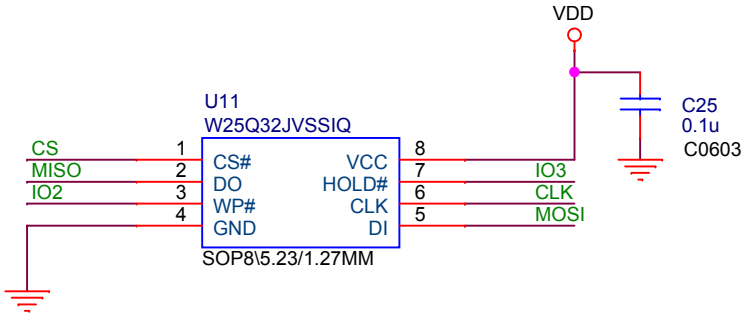
PIN66	PI12	SPIM_SS	QSPI0_MISO1	FLASH_nCS
PIN67	PI13	SPIM_MISO	QSPI0_MOSI1	FLASH_MISO
PIN68	PI14	SPIM_D2	QSPI0_SS	FLASH_IO2
PIN69	PI15	SPIM_D3	QSPI0_CLK	FLASH_IO3
PIN70	PJ0	SPIM_CLK	QSPI0_MISO0	FLASH_CLK
PIN71	PJ1	SPIM_MOSI	QSPI0_MOSI0	FLASH_MOSI

off-Page Singals

SPIM / QSPI Selection

These resistors are used to determine the SPI Flash is controlled by which i/f. By default, it's controlled by SPIM.

SPIM_SS	R12 0 R0603	QSPI0_SS	R13 NC R0603	CS
SPIM_CLK	R14 0 R0603	QSPI0_CLK	R15 NC R0603	CLK
SPIM_MOSI	R16 0 R0603	QSPI0_MOSI0	R17 NC R0603	MOSI
SPIM_MISO	R18 0 R0603	QSPI0_MISO0	R19 NC R0603	MISO
SPIM_D2	R20 0 R0603	QSPI0_MOSI1	R21 NC R0603	IO2
SPIM_D3	R22 0 R0603	QSPI0_MISO1	R23 NC R0603	IO3

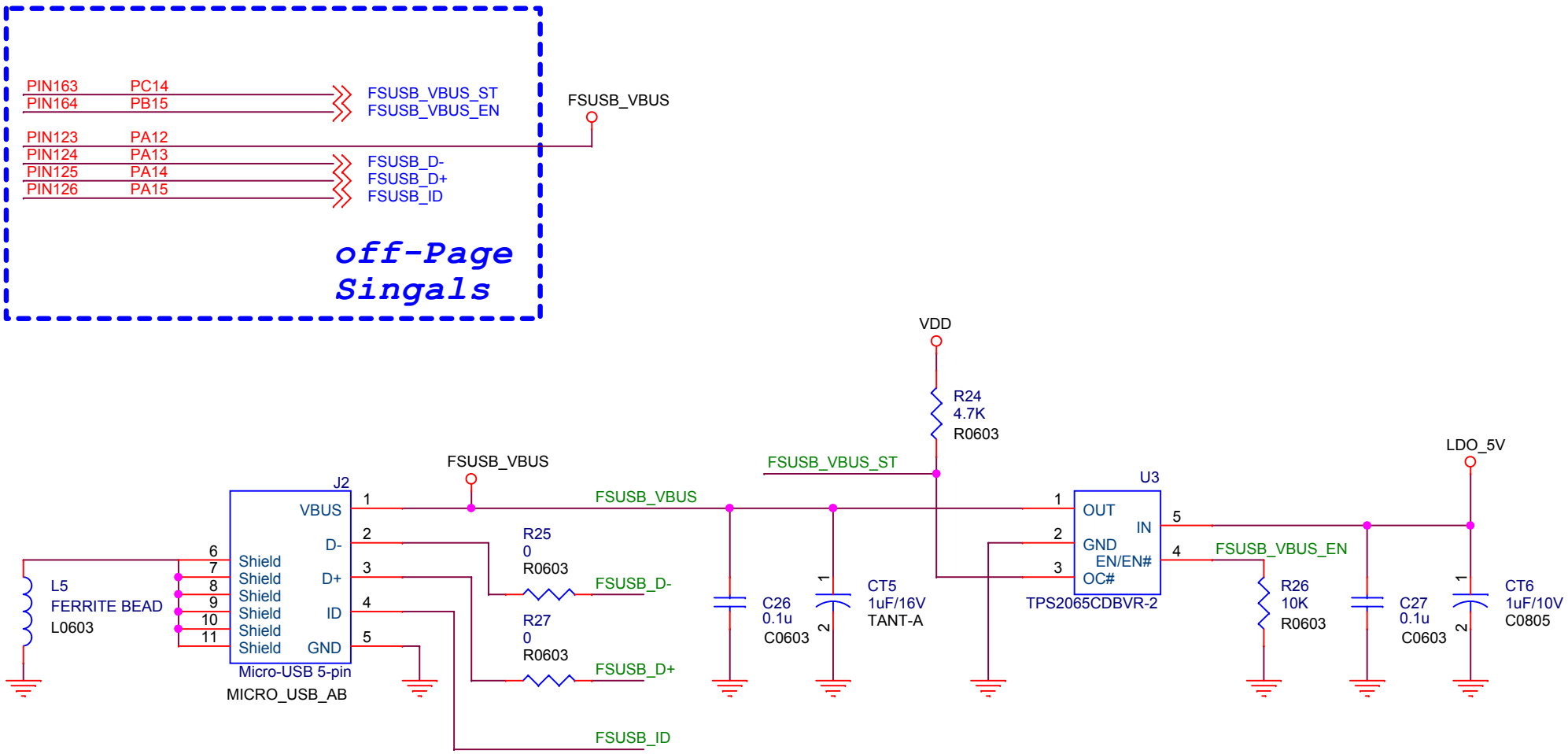


nuvoTon

Title: NuMaker-M460

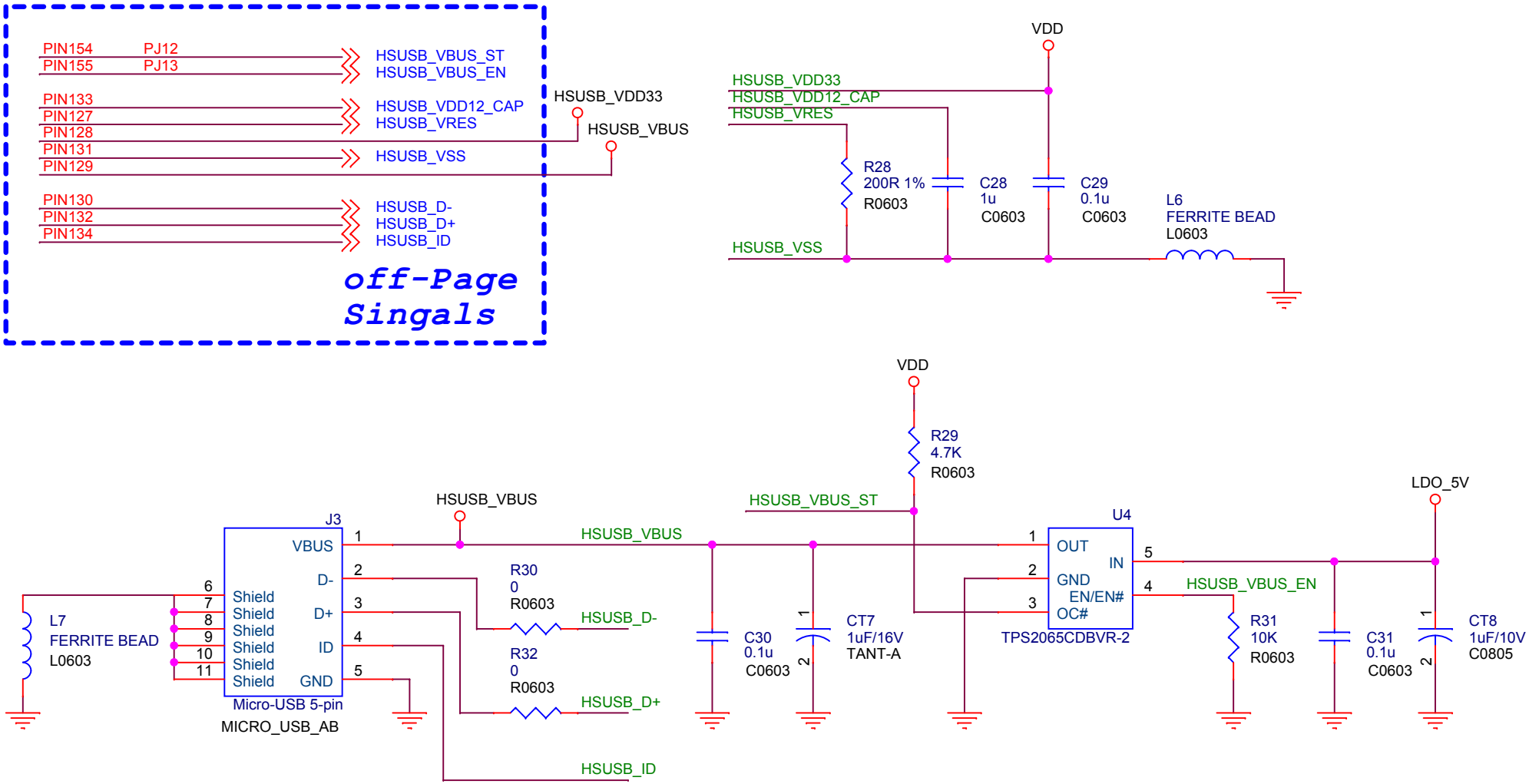
Size	Document Number	Rev
A	SPI Flash	r1.0

Date: Tuesday, March 15, 2022 Sheet 6 of 17

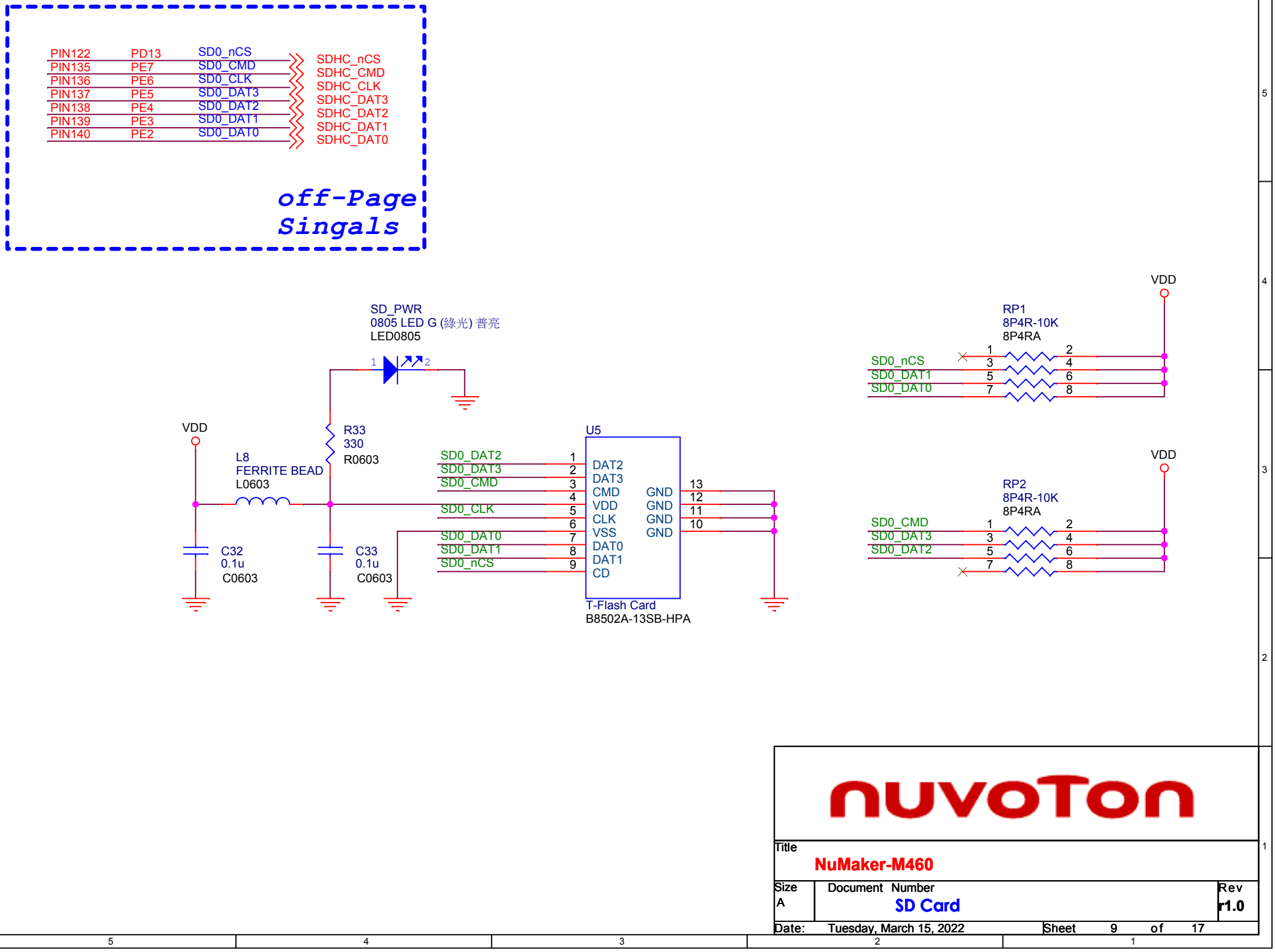


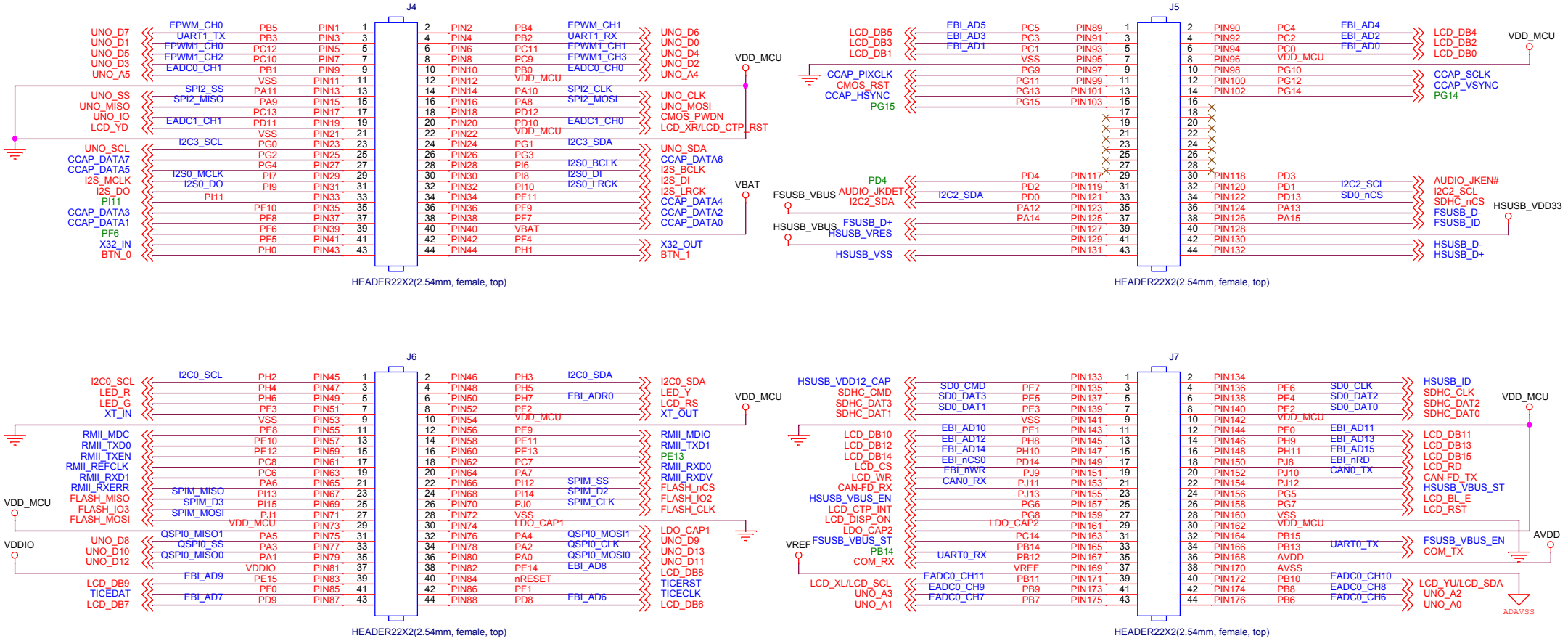
nuvoTon

Title: NuMaker-M460		
Size: A	Document Number: FS-USB	Rev: r1.0
Date: Tuesday, March 15, 2022	Sheet 7 of 17	

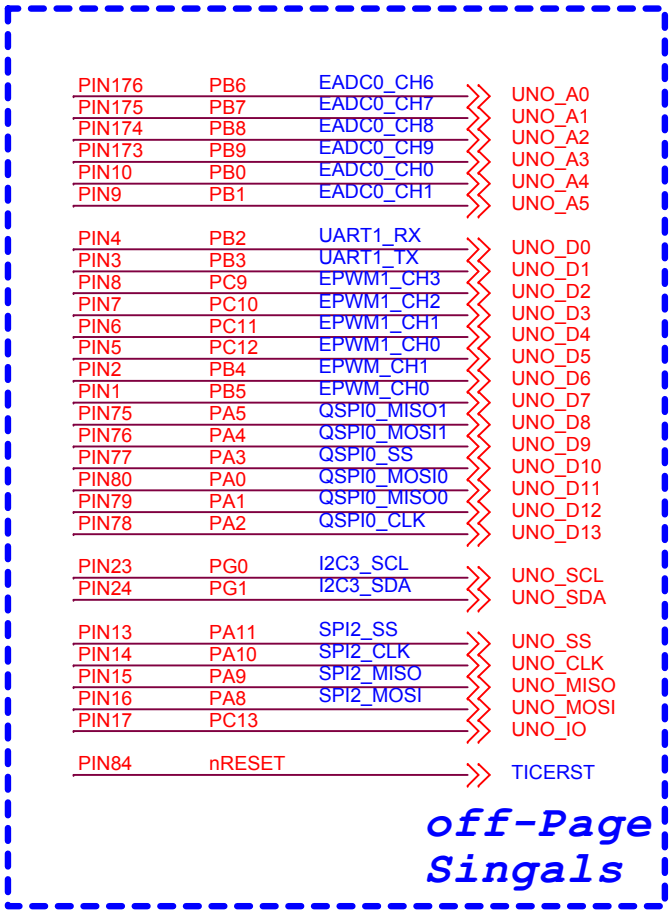


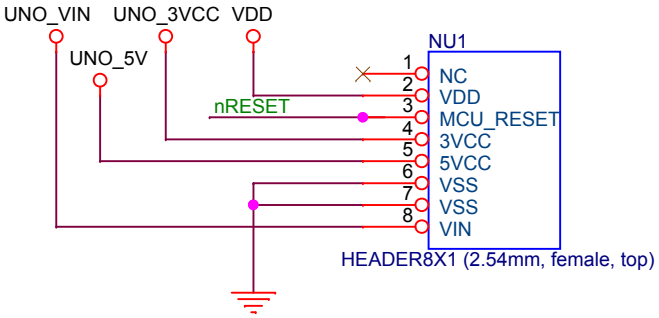
Title	NuMaker-M460	
Size A	Document Number HS-USB	Rev r1.0
Date: Tuesday, March 15, 2022	Sheet 8 of 17	

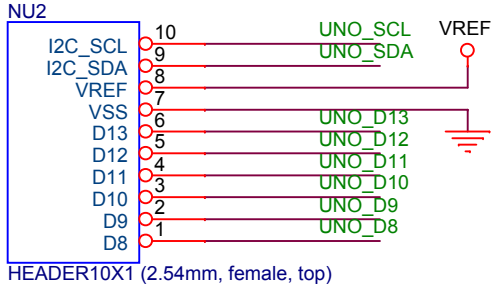

PIN122 PD13 SD0_nCS
PIN135 PE7 SD0_CMD
PIN136 PE6 SD0_CLK
PIN137 PE5 SD0_DAT3
PIN138 PE4 SD0_DAT2
PIN139 PE3 SD0_DAT1
PIN140 PE2 SD0_DAT0
SDHC_nCS
SDHC_CMD
SDHC_CLK
SDHC_DAT3
SDHC_DAT2
SDHC_DAT1
SDHC_DAT0
off-Page Singals
SD_PWR
0805 LED G (綠光) 普亮
LED0805
VDD
R33
330
R0603
L8
FERRITE BEAD
L0603
C32
0.1u
C0603
C33
0.1u
C0603
U5
SD0_DAT2
SD0_DAT3
SD0_CMD
SD0_CLK
SD0_DAT0
SD0_DAT1
SD0_nCS
DAT2
DAT3
CMD
VDD
CLK
VSS
DAT0
DAT1
CD
GND
GND
GND
GND
T-Flash Card
B8502A-13SB-HPA
RP1
8P4R-10K
8P4RA
SD0_nCS
SD0_DAT1
SD0_DAT0
RP2
8P4R-10K
8P4RA
SD0_CMD
SD0_DAT3
SD0_DAT2
nuvoTon
Title
NuMaker-M460
Size
A
Document Number
SD Card
Rev
r1.0
Date: Tuesday, March 15, 2022
Sheet 9 of 17

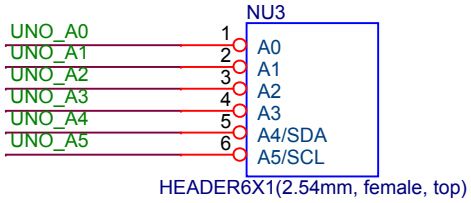


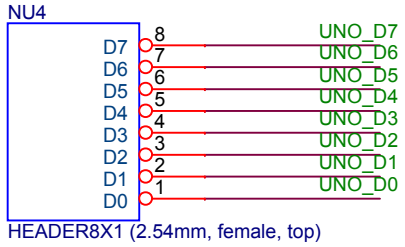
Title	NuMaker-M460		
Size B	Document Number: External Connector		Rev 1.0
Date: Friday, March 18, 2022	Sheet 10 of 17		

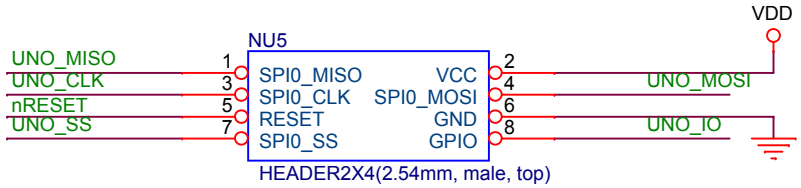






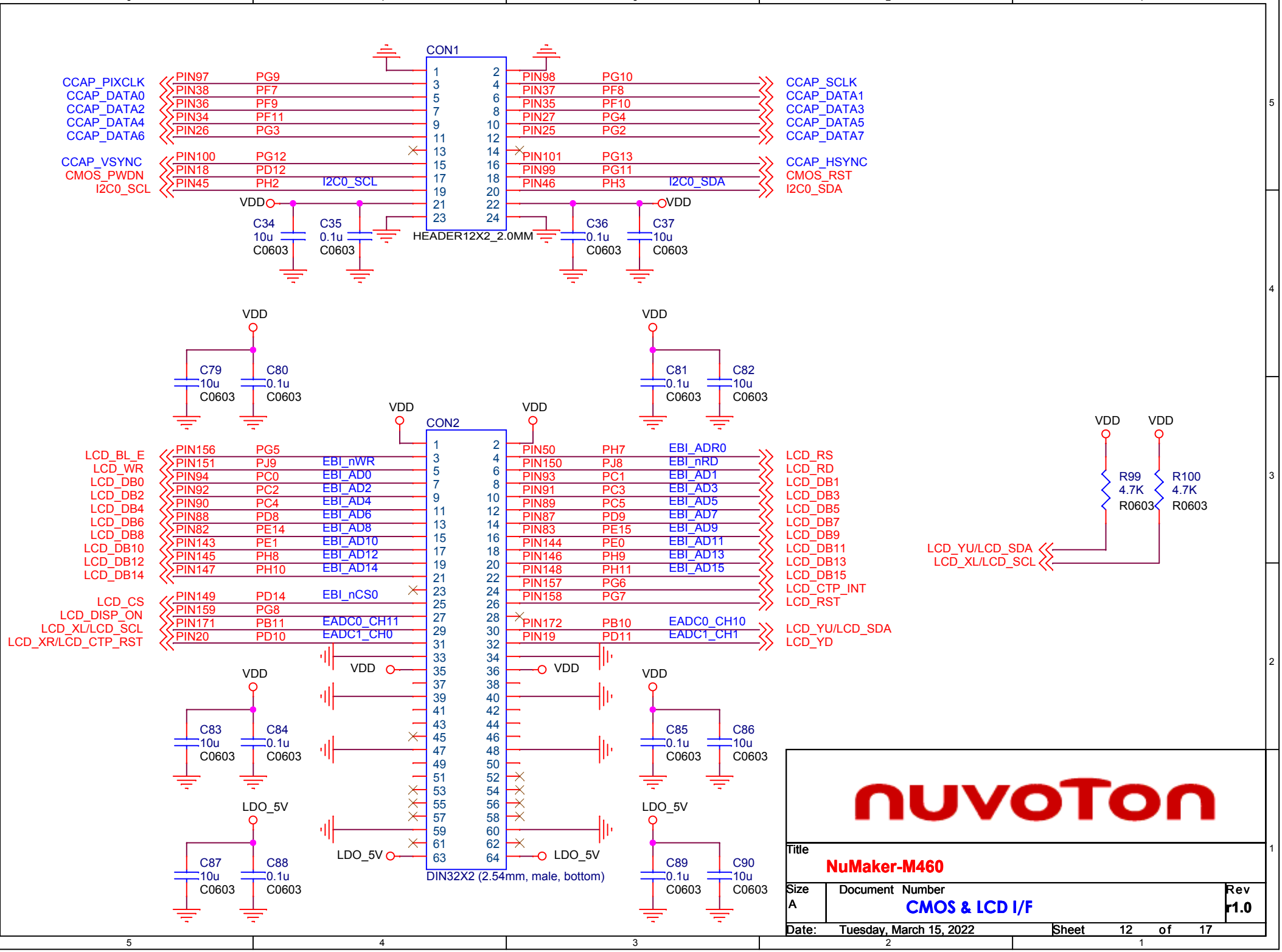






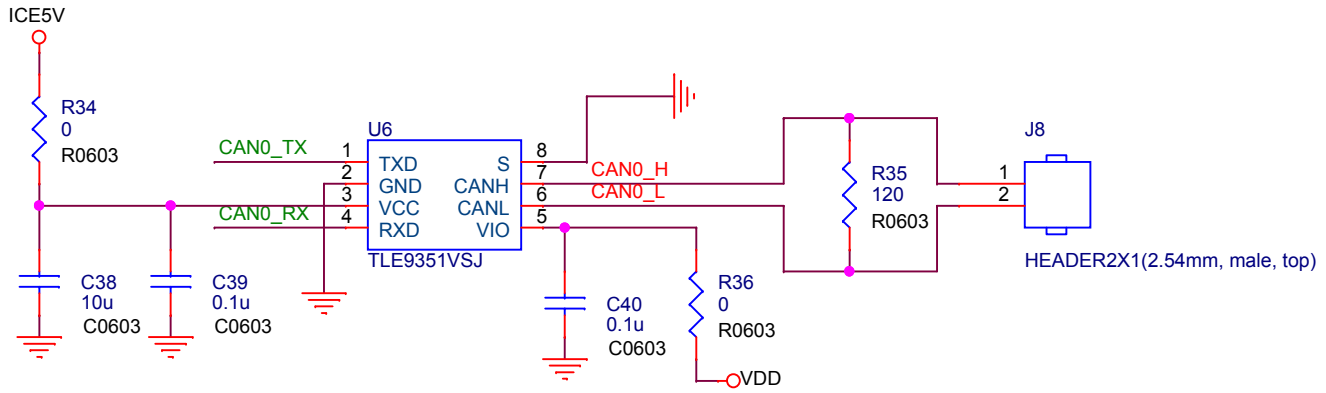
nuvoTon

Title: NuMaker-M460		
Size: A	Document Number: UNO I/F	Rev: r1.0
Date: Tuesday, March 15, 2022	Sheet 11 of 17	


CON1
CCAP_PIXCLK
CCAP_DATA0
CCAP_DATA2
CCAP_DATA4
CCAP_DATA6
CCAP_VSYNC
CMOS_PWDN
I2C0_SCL
CCAP_SCLK
CCAP_DATA1
CCAP_DATA3
CCAP_DATA5
CCAP_DATA7
CCAP_HSYNC
CMOS_RST
I2C0_SDA
HEADER12X2_2.0MM
C34 10u C0603
C35 0.1u C0603
C36 0.1u C0603
C37 10u C0603
C79 10u C0603
C80 0.1u C0603
C81 0.1u C0603
C82 10u C0603
CON2
LCD_BL_E
LCD_WR
LCD_DB0
LCD_DB2
LCD_DB4
LCD_DB6
LCD_DB8
LCD_DB10
LCD_DB12
LCD_DB14
LCD_CS
LCD_DISP_ON
LCD_XL/LCD_SCL
LCD_XR/LCD_CTP_RST
LCD_RS
LCD_RD
LCD_DB1
LCD_DB3
LCD_DB5
LCD_DB7
LCD_DB9
LCD_DB11
LCD_DB13
LCD_DB15
LCD_CTP_INT
LCD_RST
LCD_YU/LCD_SDA
LCD_YD
DIN32X2 (2.54mm, male, bottom)
C83 10u C0603
C84 0.1u C0603
C85 0.1u C0603
C86 10u C0603
C87 10u C0603
C88 0.1u C0603
C89 0.1u C0603
C90 10u C0603
LDO_5V
R99 4.7K R0603
R100 4.7K R0603
LCD_YU/LCD_SDA
LCD_XL/LCD_SCL
nuvoTon
Title
NuMaker-M460
Size A
Document Number
CMOS & LCD I/F
Rev r1.0
Date: Tuesday, March 15, 2022
Sheet 12 of 17

PIN152 PJ10 CAN0_TX
PIN153 PJ11 CAN0_RX
CAN-FD_TX
CAN-FD_RX

off-Page Singals

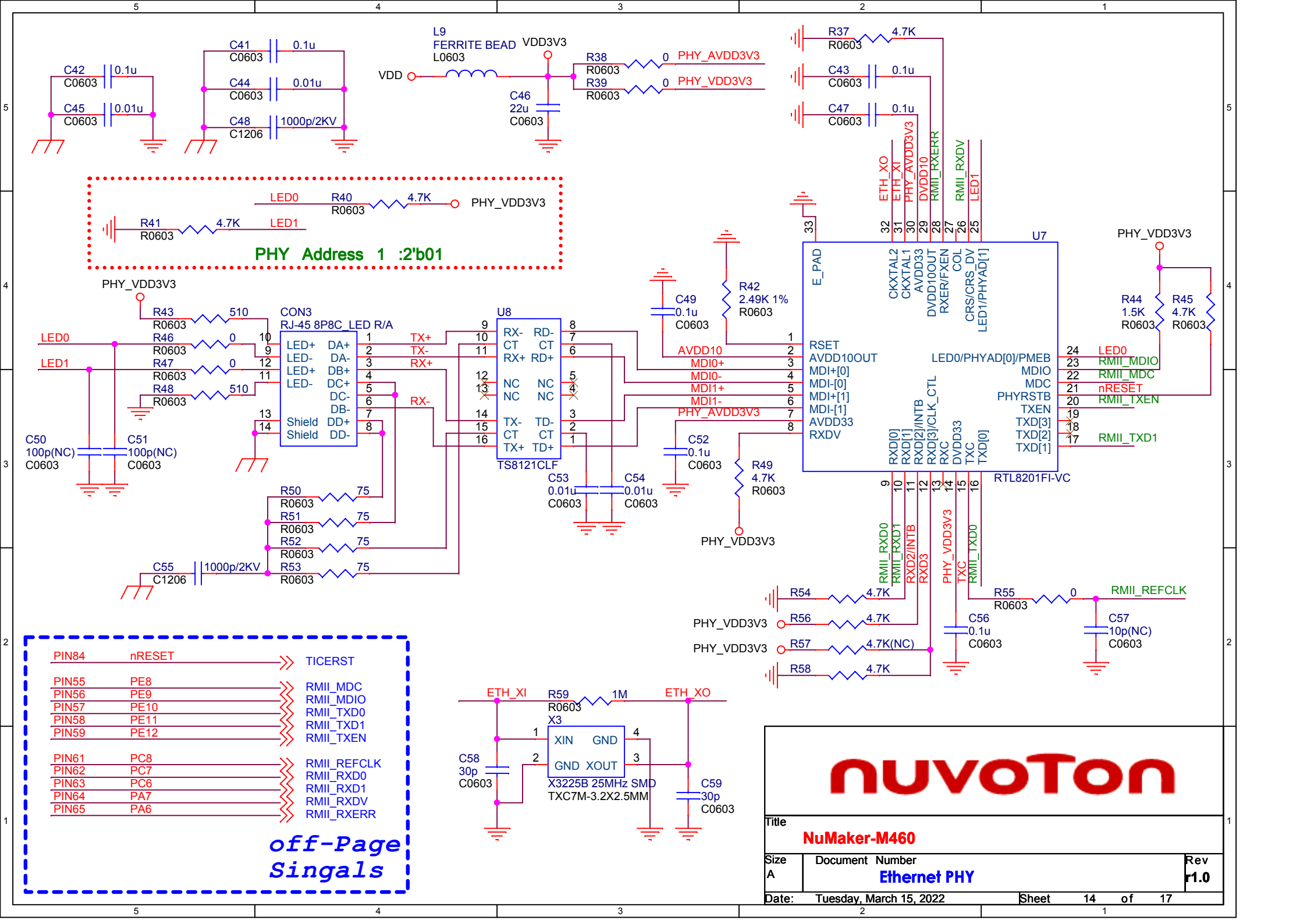


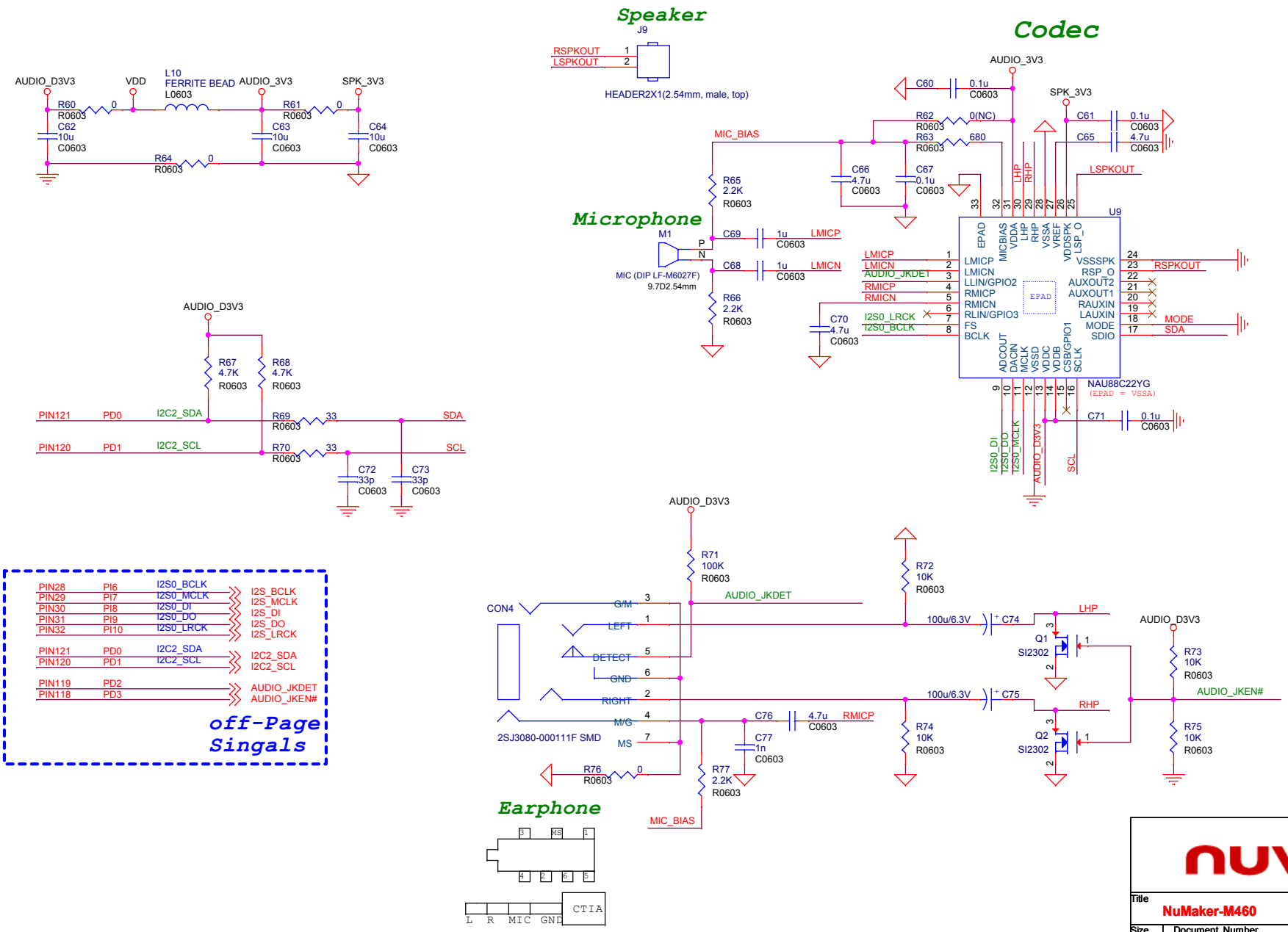
nuvoTon

Title
NuMaker-M460

Size	Document Number	Rev
A	CAN-FD	r1.1

Date: Tuesday, March 21, 2023 Sheet 13 of 17


C42 0.1u C0603
C45 0.01u C0603
C41 0.1u C0603
C44 0.01u C0603
C48 1000p/2KV C1206
L9 FERRITE BEAD L0603
VDD
VDD3V3
C46 22u C0603
R38 0 PHY_AVDD3V3
R39 0 PHY_VDD3V3
R37 4.7K R0603
C43 0.1u C0603
C47 0.1u C0603
LED0 R40 4.7K PHY_VDD3V3
R41 4.7K LED1
PHY Address 1 :2'b01
PHY_VDD3V3
R43 510 R0603
R46 0 R0603
R47 0 R0603
R48 510 R0603
LED0
LED1
CON3
RJ-45 8P8C_LED R/A
LED+ DA+
LED- DA-
LED+ DB+
LED- DC+
DC-
DB-
Shield DD+
Shield DD-
TX+
TX-
RX+
RX-
C50 100p(NC) C0603
C51 100p(NC) C0603
C55 1000p/2KV C1206
R50 75 R0603
R51 75 R0603
R52 75 R0603
R53 75 R0603
U8
RX- RD-
CT CT
RX+ RD+
NC NC
NC NC
TX- TD-
CT CT
TX+ TD+
TS8121CLF
C53 0.01u C0603
C54 0.01u C0603
C49 0.1u C0603
R42 2.49K 1% R0603
AVDD10
MDI0+
MDI0-
MDI1+
MDI1-
PHY_AVDD3V3
C52 0.1u C0603
R49 4.7K R0603
PHY_VDD3V3
U7
E_PAD
RSET
AVDD10OUT
MDI+[0]
MDI-[0]
MDI+[1]
MDI-[1]
AVDD33
RXDV
CKXTAL2
CKXTAL1
AVDD33
DVDD10OUT
RXER/FXEN
COL
CRS/CRS_DV
LED1/PHYAD[1]
ETH_XO
ETH_XI
PHY_AVDD3V3
DVDD10
RMII_RXERR
RMII_RXDV
LED1
LED0/PHYAD[0]/PMEB
MDIO
MDC
PHYRSTB
TXEN
TXD[3]
TXD[2]
TXD[1]
RXD[0]
RXD[1]
RXD[2]/INTB
RXD[3]/CLK_CTL
RXC
DVDD33
TXC
TXD[0]
RTL8201FI-VC
PHY_VDD3V3
R44 1.5K R0603
R45 4.7K R0603
LED0
RMII_MDIO
RMII_MDC
nRESET
RMII_TXEN
RMII_TXD1
RMII_RXD0
RMII_RXD1
RXD2/INTB
RXD3
PHY_VDD3V3
TXC
RMII_TXD0
R54 4.7K
R56 4.7K
R57 4.7K(NC)
R58 4.7K
R55 0 R0603
RMII_REFCLK
C56 0.1u C0603
C57 10p(NC) C0603
ETH_XI
R59 1M R0603
ETH_XO
X3
XIN GND
GND XOUT
X3225B 25MHz SMD
TXC7M-3.2X2.5MM
C58 30p C0603
C59 30p C0603
PIN84 nRESET TICERST
PIN55 PE8 RMII_MDC
PIN56 PE9 RMII_MDIO
PIN57 PE10 RMII_TXD0
PIN58 PE11 RMII_TXD1
PIN59 PE12 RMII_TXEN
PIN61 PC8 RMII_REFCLK
PIN62 PC7 RMII_RXD0
PIN63 PC6 RMII_RXD1
PIN64 PA7 RMII_RXDV
PIN65 PA6 RMII_RXERR
off-Page Singals
nuvoTon
Title
NuMaker-M460
Size A
Document Number
Ethernet PHY
Rev r1.0
Date: Tuesday, March 15, 2022
Sheet 14 of 17

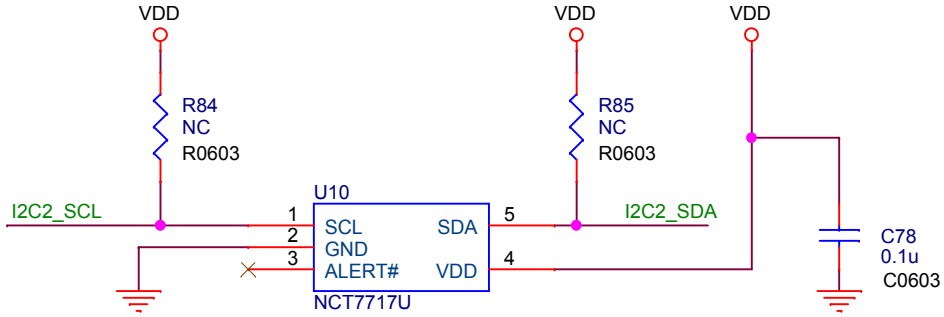


Title	NuMaker-M460		
Size B	Document Number Audio		Rev 1.0
Date: Tuesday, March 15, 2022		Sheet 15 of 17	

PIN121 PD0 I2C2_SDA
PIN120 PD1 I2C2_SCL
I2C2_SDA
I2C2_SCL

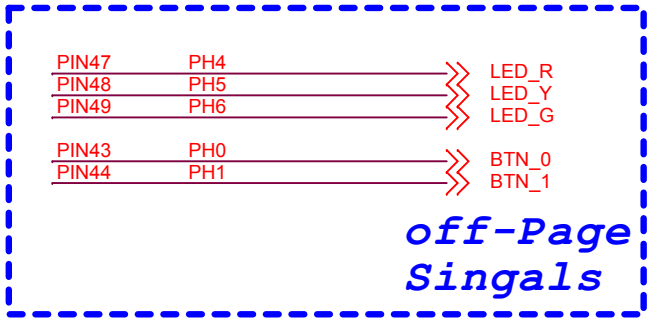
The thermal sensor (NCT7717U) and audio codec (NAU88C22) are shared with the same I2C bus (I2C2)

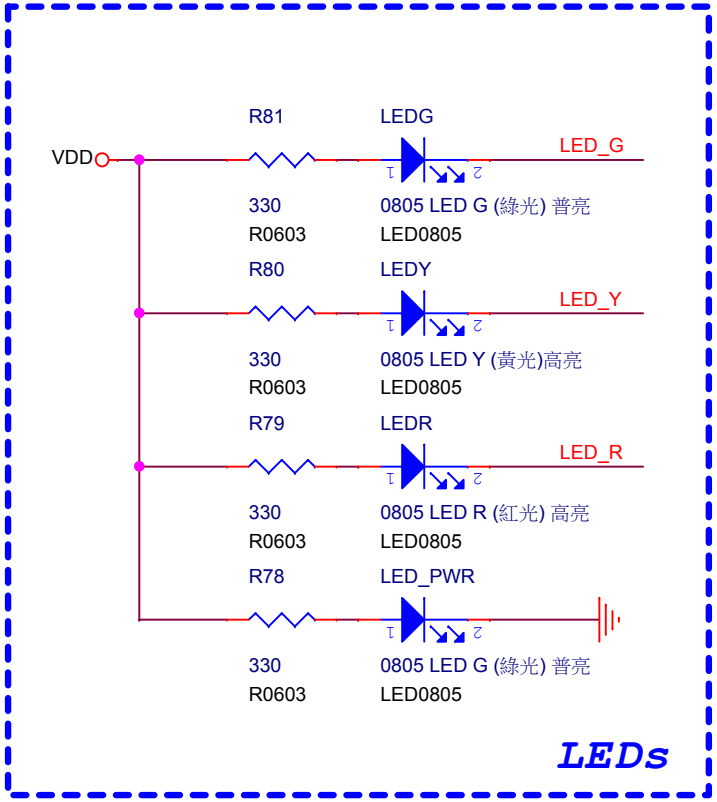
off-Page Singals

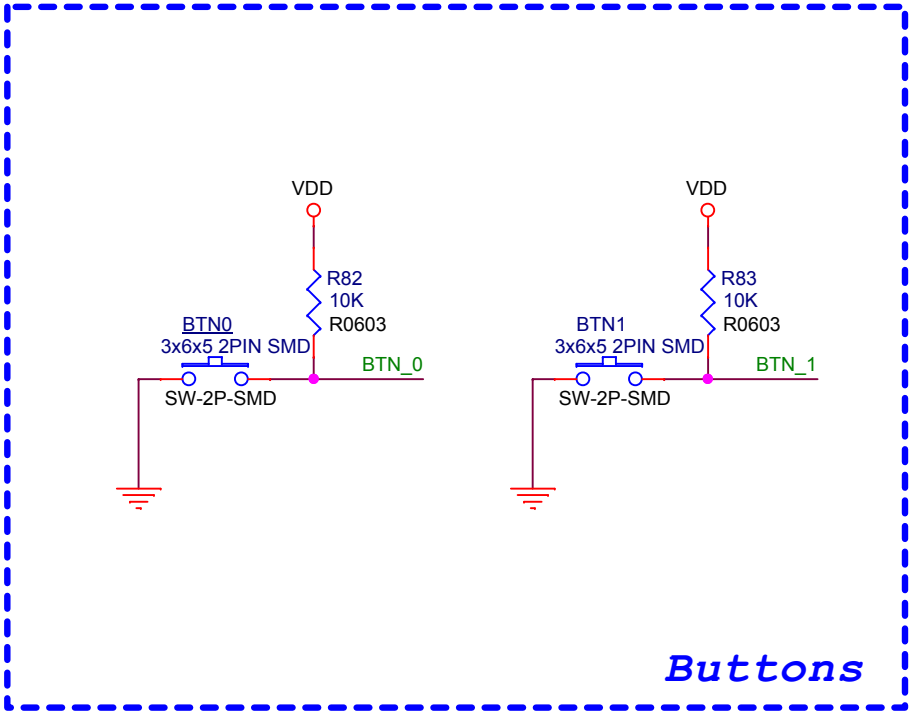


nuvoTon

Title	NuMaker-M460	
Size A	Document Number Thermal Sensor	Rev r1.0
Date: Tuesday, March 15, 2022	Sheet 16 of 17	







nuvoTon

Title	NuMaker-M460	
Size A	Document Number Leds and Buttons	Rev r1.0
Date: Wednesday, March 30, 2022	Sheet 17 of 17	