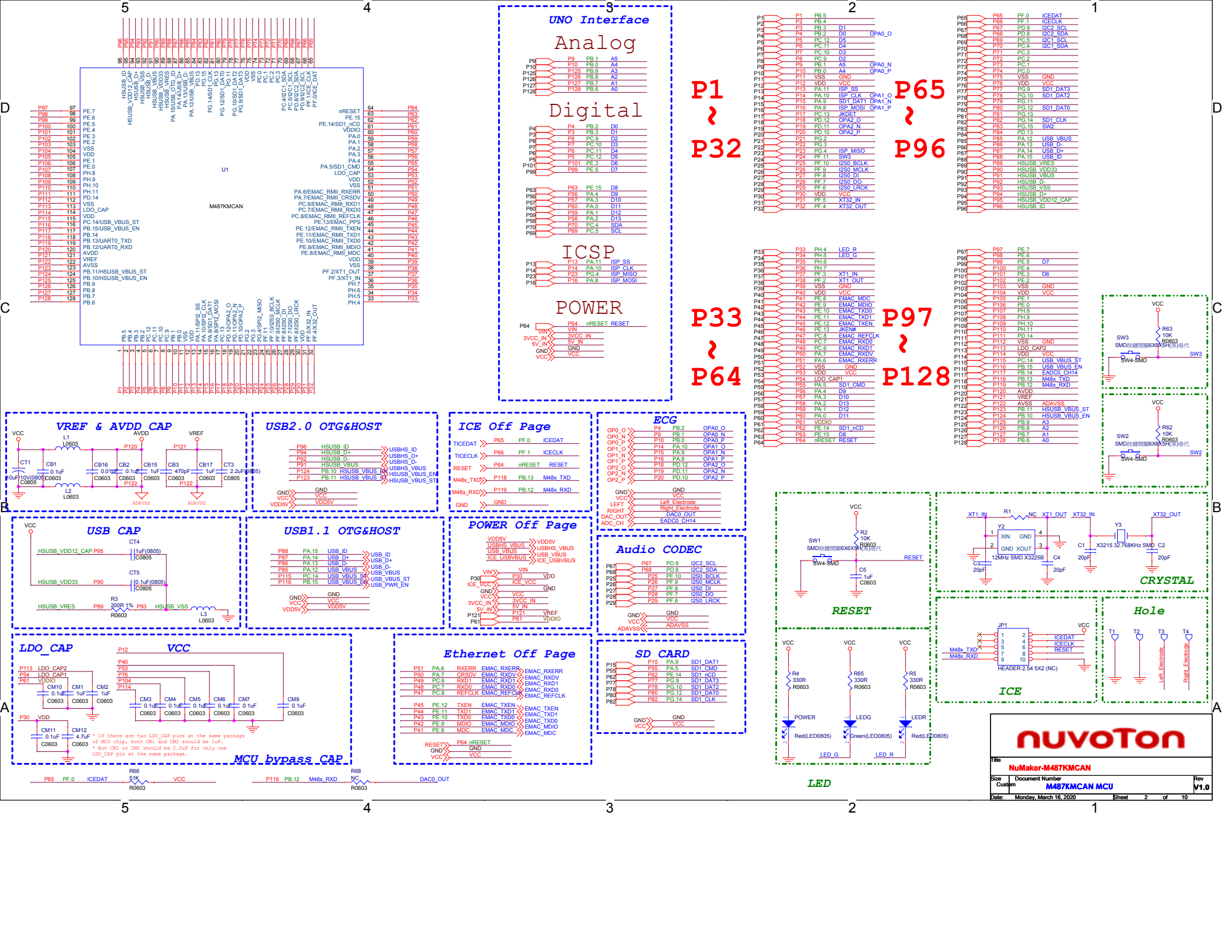
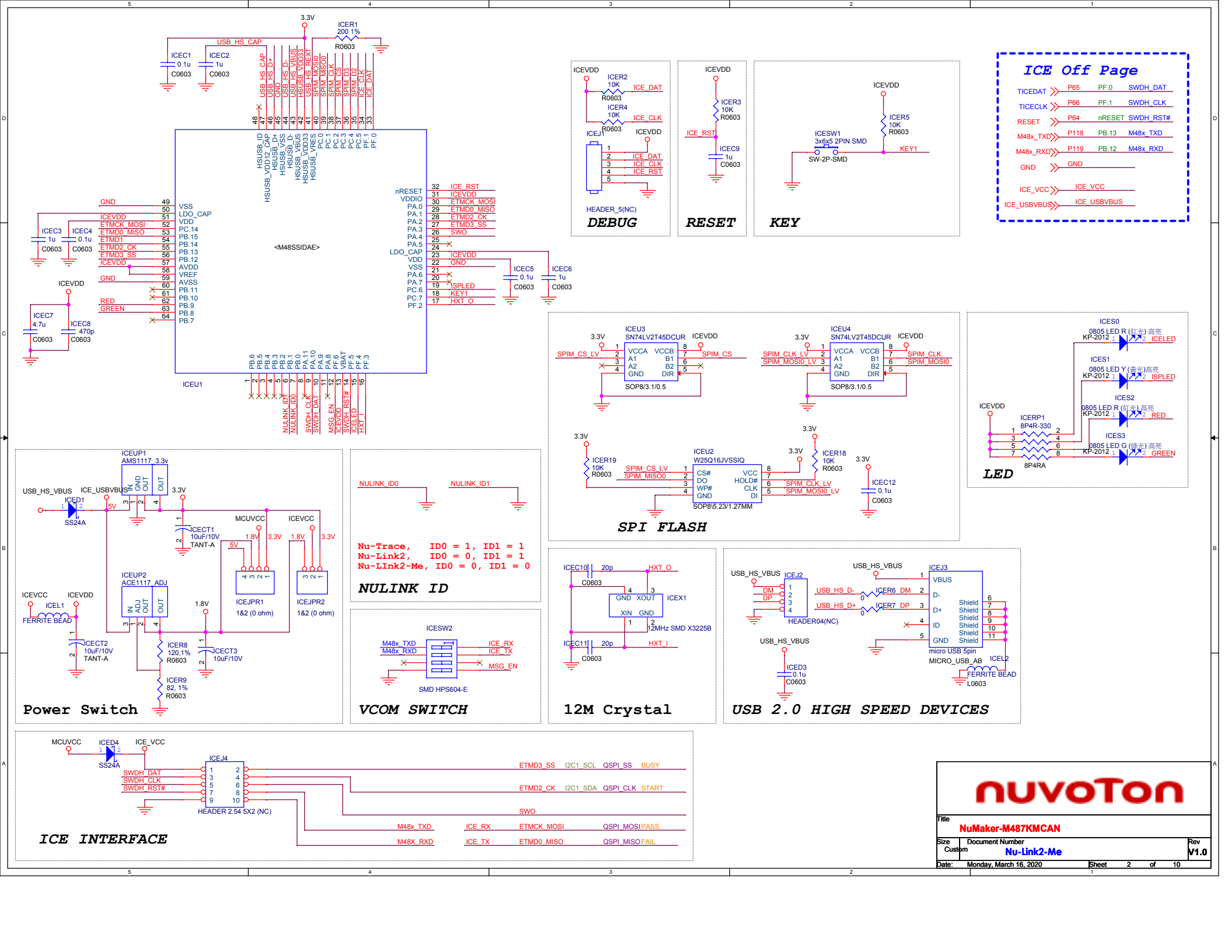

UNO Interface
Analog
Digital
ICSP
POWER
P1 ~ P32
P33 ~ P64
P65 ~ P96
P97 ~ P128
M487KMCAN
VREF & AVDD_CAP
USB2.0 OTG&HOST
ICE Off Page
ECG
USB CAP
USB1.1 OTG&HOST
POWER Off Page
Audio CODEC
SD CARD
LDO_CAP
VCC
MCU_bypass_CAP
Ethernet Off Page
RESET
CRYSTAL
Hole
ICE
LED
nuvoTon
NuMaker-M487KMCAN
M487KMCAN MCU
V1.0
Monday, March 16, 2020


ICE Off Page
TICEDAT P65 PF.0 SWDH_DAT
TICECLK P66 PF.1 SWDH_CLK
RESET P64 nRESET SWDH_RST#
M48x_TXD P118 PB.13 M48x_TXD
M48x_RXD P119 PB.12 M48x_RXD
GND GND
ICE_VCC ICE_VCC
ICE_USBVBUS ICE_USBVBUS
DEBUG
RESET
KEY
SPI FLASH
LED
NULINK ID
Nu-Trace, ID0 = 1, ID1 = 1
Nu-Link2, ID0 = 0, ID1 = 1
Nu-LInk2-Me, ID0 = 0, ID1 = 0
Power Switch
VCOM SWITCH
12M Crystal
USB 2.0 HIGH SPEED DEVICES
ICE INTERFACE
<M48SSIDAE>
nuvoTon
Title
NuMaker-M487KMCAN
Size Custom
Document Number Nu-Link2-Me
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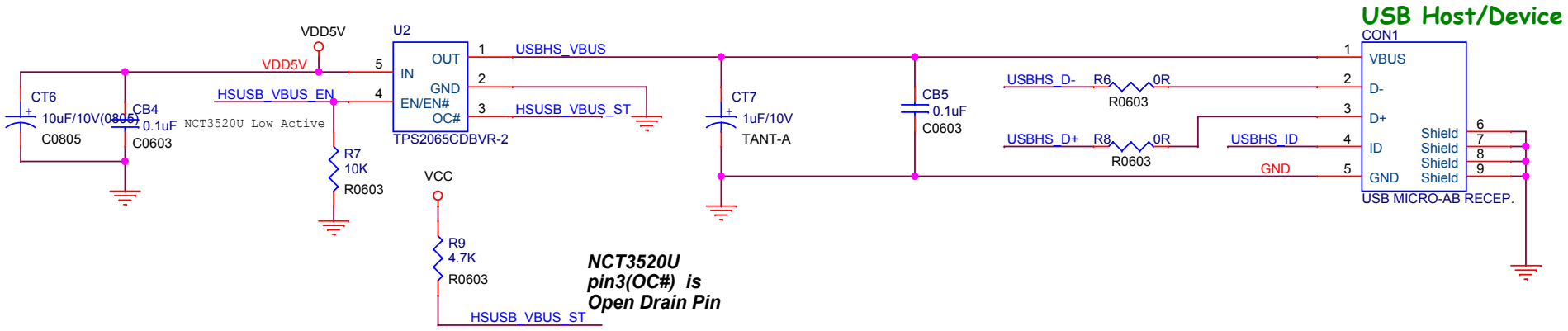
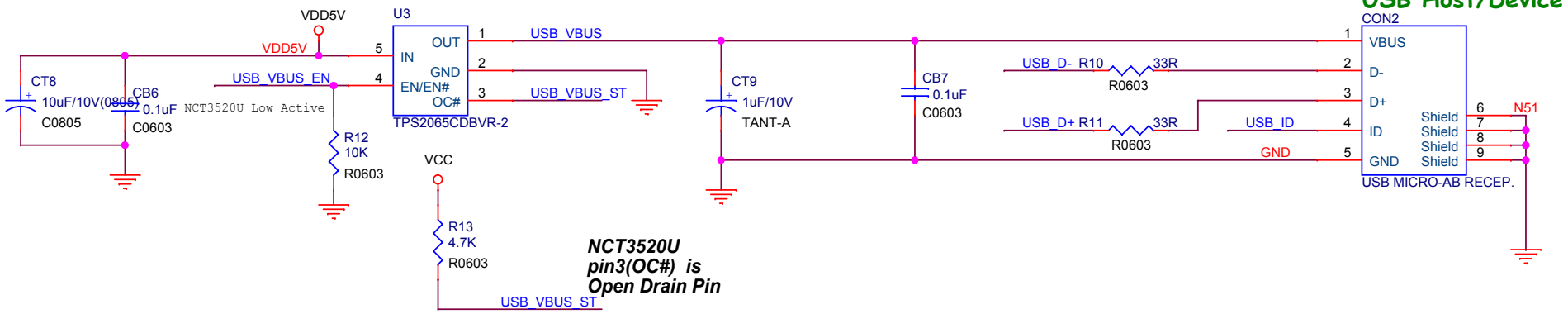
Sheet 2 of 10

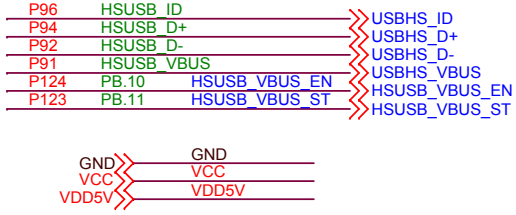
USB2.0 OTG HOST/DEVICE



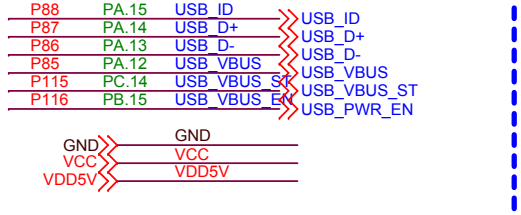
USB1.1 OTG HOST/DEVICE



USB2.0 OTG&HOST



USB1.1 OTG&HOST



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Title: NuMaker-M487KMCAN		
Size: A4	Document Number: USB OTG	Rev: V1.0
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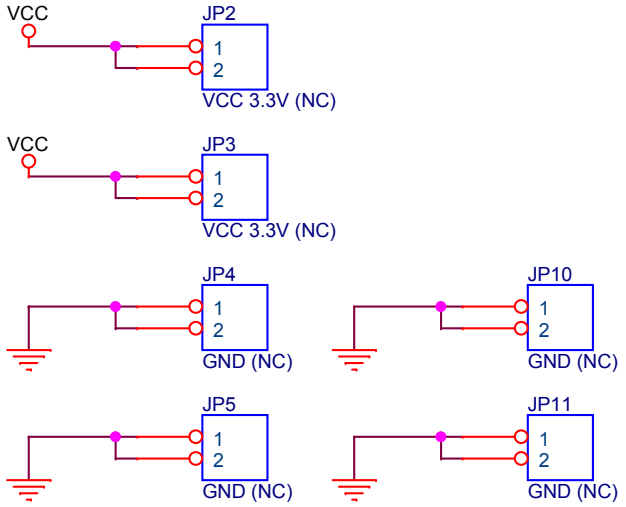
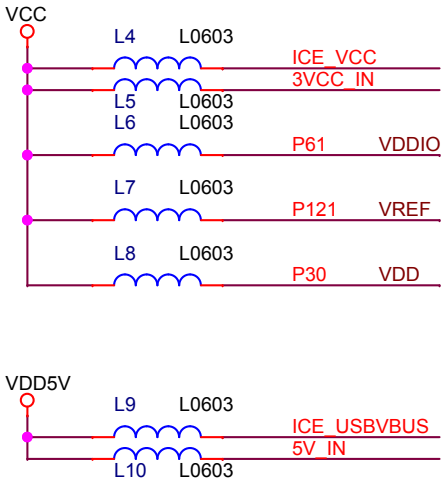
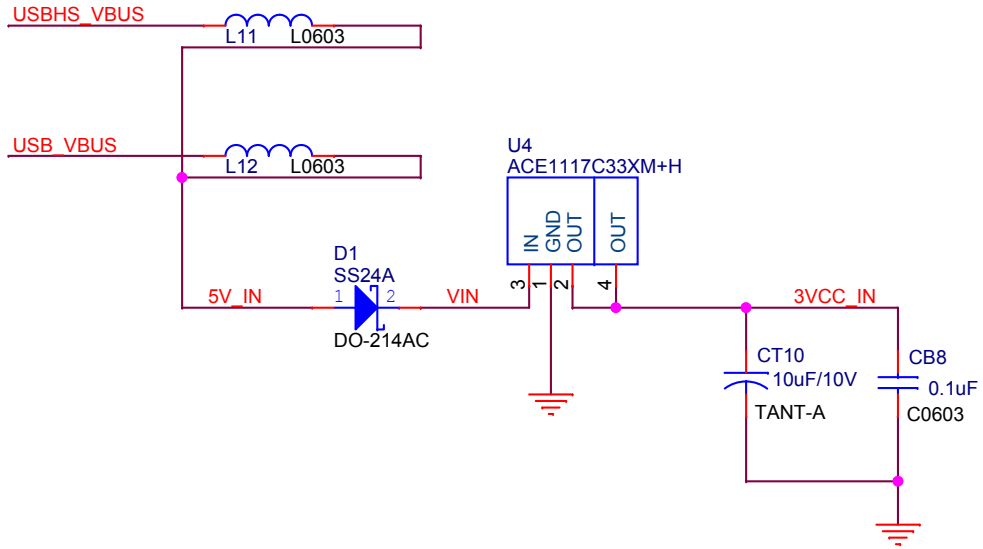
Power (3.3V) Connector

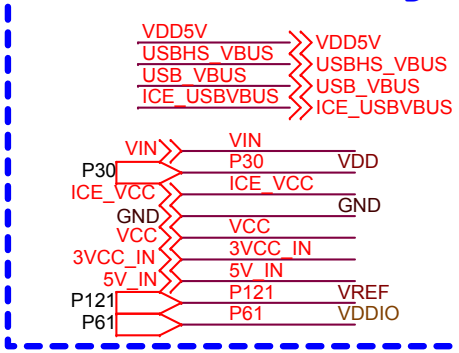


Power Selector





POWER Off Page



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Title: NuMaker-M487KMCAN		
Size: A	Document Number: POWER	Rev: V1.0
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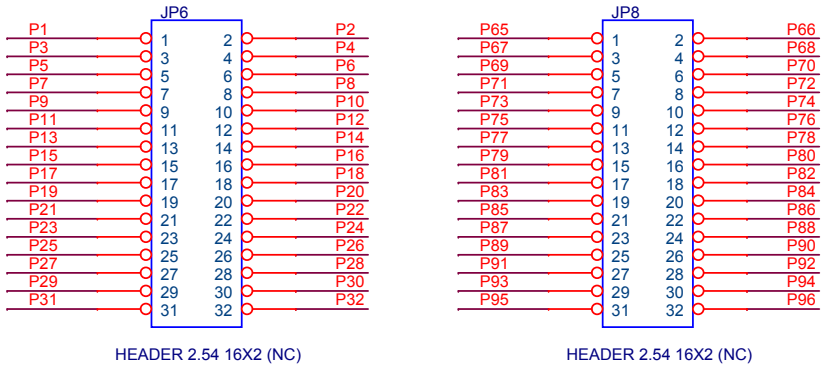
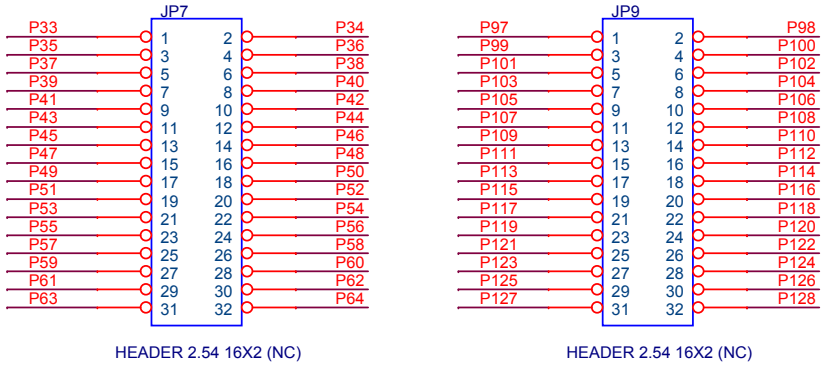


MCU CONNECTOR



P1 ~ P32

P1	PB.5		
P2	PB.4		
P3	PB.3	D1	
P4	PB.2	D0	OPA0_O
P5	PC.12	D5	
P6	PC.11	D4	
P7	PC.10	D3	
P8	PC.9	D2	
P9	PB.1	A5	OPA0_N
P10	PB.0	A4	OPA0_P
P11	VSS	GND	
P12	VDD	VCC	
P13	PA.11	ISP_SS	
P14	PA.10	ISP_CLK	OPA1_O
P15	PA.9	SD1_DAT1	OPA1_N
P16	PA.8	ISP_MOSI	OPA1_P
P17	PC.13	JKDET	
P18	PD.12	OPA2_O	
P19	PD.11	OPA2_N	
P20	PD.10	OPA2_P	
P21	PG.2		
P22	PG.3		
P23	PG.4	ISP_MISO	
P24	PF.11	SW3	
P25	PF.10	I2S0_BCLK	
P26	PF.9	I2S0_MCLK	
P27	PF.8	I2S0_DI	
P28	PF.7	I2S0_DO	
P29	PF.6	I2S0_LRCK	
P30	VDD	VCC	
P31	PF.5	XT32_IN	
P32	PF.4	XT32_OUT	

P65 ~ P96

P65	PF.0	ICEDAT	
P66	PF.1	ICECLK	
P67	PD.9	I2C2_SCL	
P68	PD.8	I2C2_SDA	
P69	PC.5	I2C1_SCL	
P70	PC.4	I2C1_SDA	
P71	PC.3		
P72	PC.2		
P73	PC.1		
P74	PC.0		
P75	VSS	GND	
P76	VDD	VCC	
P77	PG.9	SD1_DAT3	
P78	PG.10	SD1_DAT2	
P79	PG.11		
P80	PG.12	SD1_DAT0	
P81	PG.13		
P82	PG.14	SD1_CLK	
P83	PG.15	SW2	
P84	PD.13		
P85	PA.12	USB_VBUS	
P86	PA.13	USB_D-	
P87	PA.14	USB_D+	
P88	PA.15	USB_ID	
P89	HSUSB_VRES		
P90	HSUSB_VDD33		
P91	HSUSB_VBUS		
P92	HSUSB_D-		
P93	HSUSB_VSS		
P94	HSUSB_D+		
P95	HSUSB_VDD12_CAP		
P96	HSUSB_ID		

P33 ~ P64

P33	PH.4		
P34	PH.5		
P35	PH.6		
P36	PH.7		
P37	PF.3	XT1_IN	
P38	PF.2	XT1_OUT	
P39	VSS	GND	
P40	VDD	VCC	
P41	PE.8	EMAC_MDC	
P42	PE.9	EMAC_MDIO	
P43	PE.10	EMAC_TXD0	
P44	PE.11	EMAC_TXD1	
P45	PE.12	EMAC_TXEN	
P46	PE.13	JKEN#	
P47	PC.8	EMAC_REFCLK	
P48	PC.7	EMAC_RXD0	
P49	PC.6	EMAC_RXD1	
P50	PA.7	EMAC_RXDV	
P51	PA.6	EMAC_RXERR	
P52	VSS	GND	
P53	VDD	VCC	
P54	LDO_CAP1		
P55	PA.5	SD1_CMD	
P56	PA.4	D9	
P57	PA.3	D10	
P58	PA.2	D13	
P59	PA.1	D12	
P60	PA.0	D11	
P61	VDDIO		
P62	PE.14	SD1_nCD	
P63	PE.15	D8	
P64	nRESET	RESET	

P97 ~ P128

P97	PE.7		
P98	PE.6		
P99	PE.5	D7	
P100	PE.4		
P101	PE.3	D6	
P102	PE.2		
P103	VSS	GND	
P104	VDD	VCC	
P105	PE.1		
P106	PE.0		
P107	PH.8		
P108	PH.9		
P109	PH.10		
P110	PH.11		
P111	PD.14		
P112	VSS	GND	
P113	LDO_CAP2		
P114	VDD	VCC	
P115	PC.14	USB_VBUS_ST	
P116	PB.15	USB_VBUS_EN	
P117	PB.14	EADC0_CH14	
P118	PB.13	M48x_TXD	
P119	PB.12	M48x_RXD	
P120	AVDD		
P121	VREF		
P122	AVSS	ADAVSS	
P123	PB.11	HSUSB_VBUS_ST	
P124	PB.10	HSUSB_VBUS_EN	
P125	PB.9	A3	
P126	PB.8	A2	
P127	PB.7	A1	
P128	PB.6	A0	

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UNO Interface

Analog

P9	P9	PB.1	A5
P10	P10	PB.0	A4
P125	P125	PB.9	A3
P126	P126	PB.8	A2
P127	P127	PB.7	A1
P128	P128	PB.6	A0

Digital

P4	P4	PB.2	D0
P3	P3	PB.3	D1
P8	P8	PC.9	D2
P7	P7	PC.10	D3
P6	P6	PC.11	D4
P5	P5	PC.12	D5
P101	P101	PE.3	D6
P99	P99	PE.5	D7

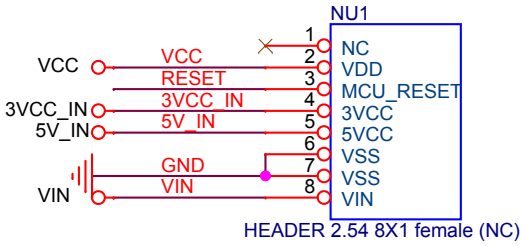
P63	P63	PE.15	D8
P56	P56	PA.4	D9
P57	P57	PA.3	D10
P60	P60	PA.0	D11
P59	P59	PA.1	D12
P58	P58	PA.2	D13
P70	P70	PC.4	SDA
P69	P69	PC.5	SCL

ICSP

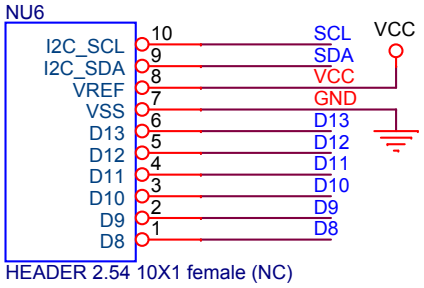
P13	P13	PA.11	ISP_SS
P14	P14	PA.10	ISP_CLK
P23	P23	PG.4	ISP_MISO
P16	P16	PA.8	ISP_MOSI

POWER

P64	P64	nRESET	RESET
VIN	VIN		
3VCC_IN	3VCC_IN		
5V_IN	5V_IN		
GND	GND		
VCC	VCC		



HEADER 2.54 8X1 female (NC)



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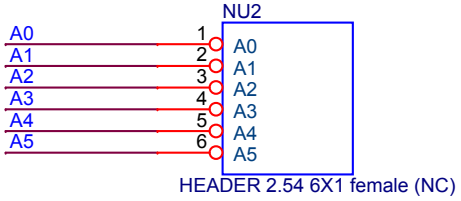

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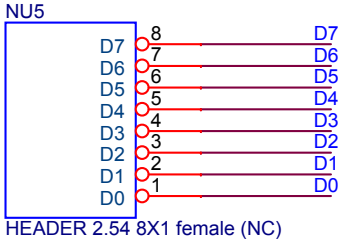

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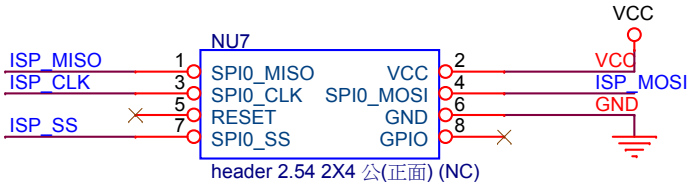

header 2.54 2X4 公(正面) (NC)

UNO INTERFACE CONNECTOR

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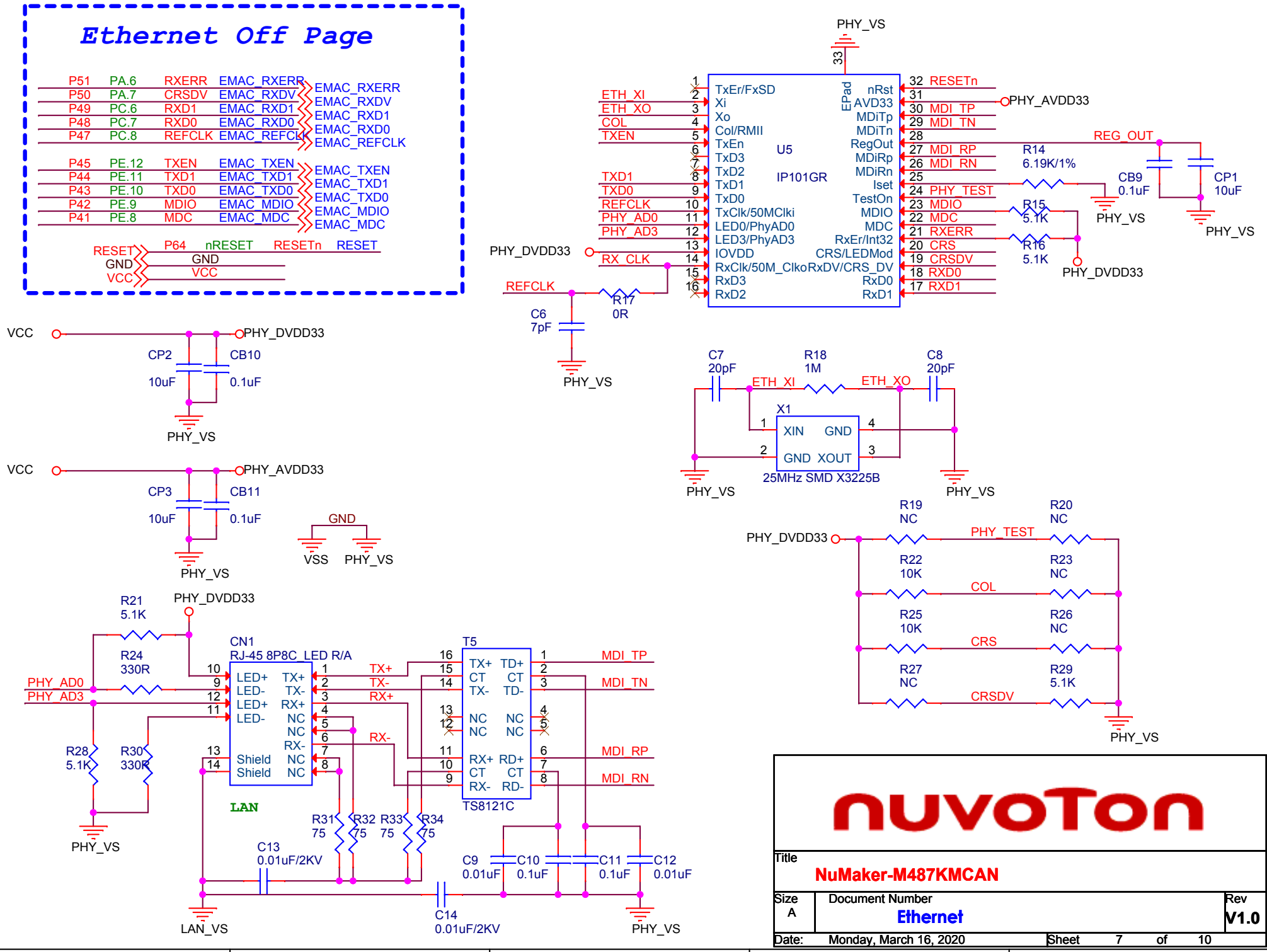
Ethernet Off Page
P51 PA.6 RXERR EMAC_RXERR
P50 PA.7 CRSDV EMAC_RXDV
P49 PC.6 RXD1 EMAC_RXD1
P48 PC.7 RXD0 EMAC_RXD0
P47 PC.8 REFCLK EMAC_REFCLK
EMAC_RXERR
EMAC_RXDV
EMAC_RXD1
EMAC_RXD0
EMAC_REFCLK
P45 PE.12 TXEN EMAC_TXEN
P44 PE.11 TXD1 EMAC_TXD1
P43 PE.10 TXD0 EMAC_TXD0
P42 PE.9 MDIO EMAC_MDIO
P41 PE.8 MDC EMAC_MDC
EMAC_TXEN
EMAC_TXD1
EMAC_TXD0
EMAC_MDIO
EMAC_MDC
RESET P64 nRESET RESETn RESET
GND GND
VCC VCC
PHY_VS
33
U5
IP101GR
TxEr/FxSD
Xi
Xo
Col/RMII
TxEn
TxD3
TxD2
TxD1
TxD0
TxClk/50MClki
LED0/PhyAD0
LED3/PhyAD3
IOVDD
RxClk/50M_Clko
RxD3
RxD2
EPad
nRst
AVD33
MDiTp
MDiTn
RegOut
MDiRp
MDiRn
Iset
TestOn
MDIO
MDC
RxEr/Int32
CRS/LEDMod
RxDV/CRS_DV
RxD0
RxD1
ETH_XI
ETH_XO
COL
TXEN
TXD1
TXD0
REFCLK
PHY_AD0
PHY_AD3
RX_CLK
PHY_DVDD33
RESETn
PHY_AVDD33
MDI_TP
MDI_TN
REG_OUT
MDI_RP
MDI_RN
PHY_TEST
MDIO
MDC
RXERR
CRS
CRSDV
RXD0
RXD1
R14 6.19K/1%
R15 5.1K
R16 5.1K
CB9 0.1uF
CP1 10uF
R17 0R
C6 7pF
VCC
CP2 10uF
CB10 0.1uF
PHY_DVDD33
CP3 10uF
CB11 0.1uF
PHY_AVDD33
GND
VSS
C7 20pF
R18 1M
C8 20pF
X1
XIN GND
GND XOUT
25MHz SMD X3225B
R19 NC
R20 NC
R22 10K
R23 NC
R25 10K
R26 NC
R27 NC
R29 5.1K
R21 5.1K
R24 330R
R28 5.1K
R30 330R
CN1
RJ-45 8P8C_LED R/A
LED+ TX+
LED- TX-
LED+ RX+
LED- NC
NC
RX-
Shield NC
Shield NC
TX+
TX-
RX+
RX-
T5
TS8121C
TX+ TD+
CT CT
TX- TD-
NC NC
NC NC
RX+ RD+
CT CT
RX- RD-
LAN
R31 75
R32 75
R33 75
R34 75
C13 0.01uF/2KV
C14 0.01uF/2KV
C9 0.01uF
C10 0.1uF
C11 0.1uF
C12 0.01uF
LAN_VS
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NuMaker-M487KMCAN
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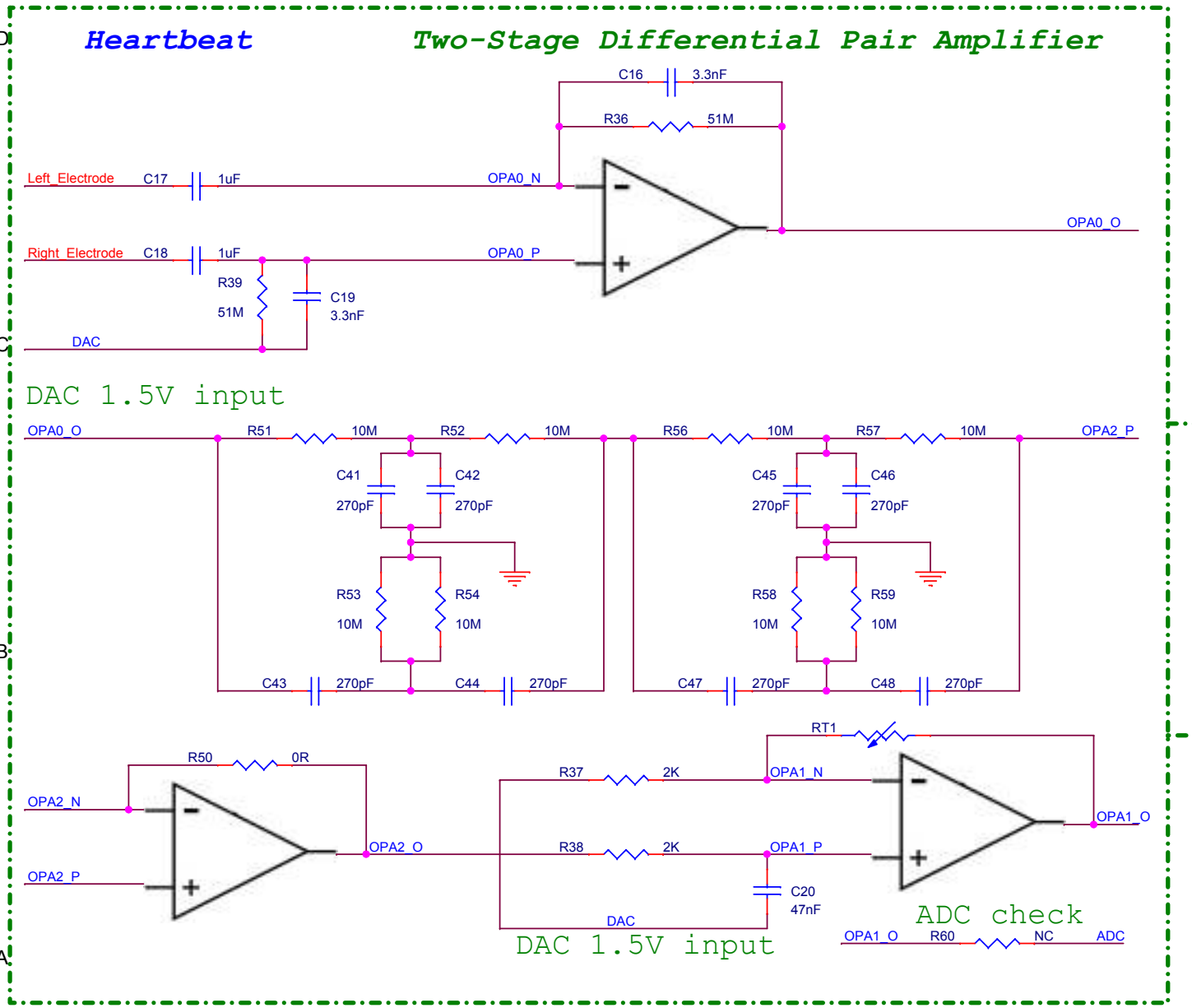

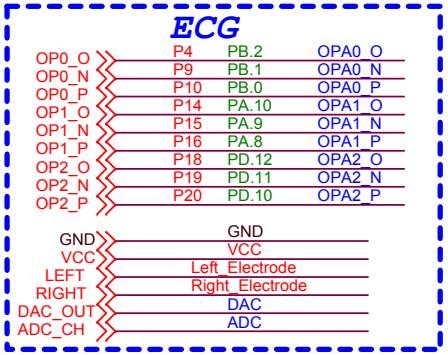

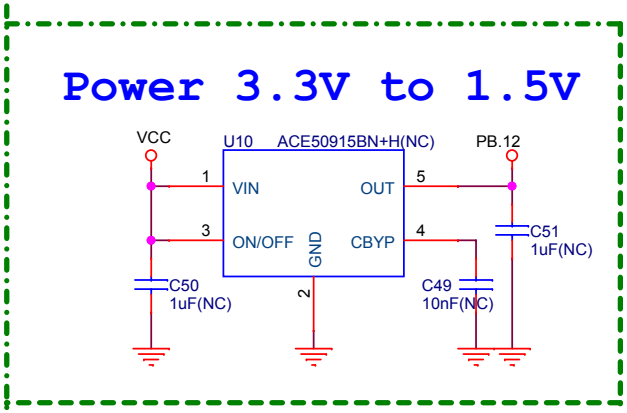

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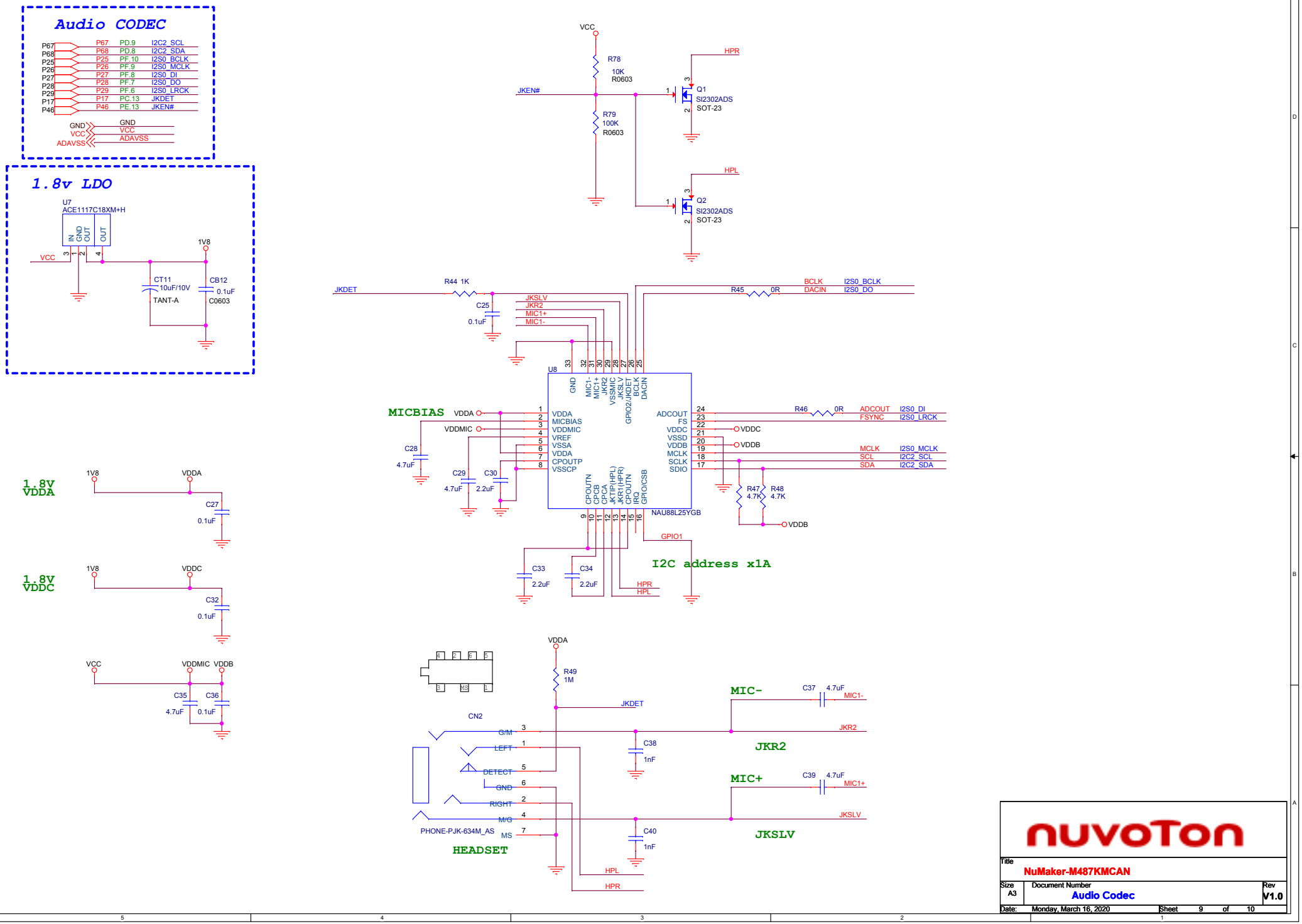
Audio CODEC
P67 PD.9 I2C2_SCL
P68 PD.8 I2C2_SDA
P25 PF.10 I2S0_BCLK
P26 PF.9 I2S0_MCLK
P27 PF.8 I2S0_DI
P28 PF.7 I2S0_DO
P29 PF.6 I2S0_LRCK
P17 PC.13 JKDET
P46 PE.13 JKEN#
GND
VCC
ADAVSS
1.8v LDO
U7
ACE1117C18XM+H
IN GND OUT OUT
VCC
1V8
CT11
10uF/10V
TANT-A
CB12
0.1uF
C0603
1.8V
VDDA
C27
0.1uF
1.8V
VDDC
C32
0.1uF
VCC
VDDMIC
VDDB
C35
4.7uF
C36
0.1uF
VCC
R78
10K
R0603
JKEN#
R79
100K
R0603
Q1
SI2302ADS
SOT-23
HPR
Q2
SI2302ADS
SOT-23
HPL
JKDET
R44 1K
C25
0.1uF
JKSLV
JKR2
MIC1+
MIC1-
R45 0R
BCLK I2S0_BCLK
DACIN I2S0_DO
U8
GND MIC1- MIC1+ JKR2 VSSMIC JKSLV GPIO2/JKDET BCLK DACIN
MICBIAS
VDDA
VDDMIC
C28
4.7uF
C29
4.7uF
C30
2.2uF
VDDA
MICBIAS
VDDMIC
VREF
VSSA
VDDA
CPOUTP
VSSCP
ADCOUT
FS
VDDC
VSSD
VDDB
MCLK
SCLK
SDIO
CPOUTN CPCB CPCA JKTIP(HPL) JKR1(HPR) CPOUTN IRQ GPIO/CSB
NAU88L25YGB
R46 0R
ADCOUT I2S0_DI
FSYNC I2S0_LRCK
VDDC
VDDB
MCLK I2S0_MCLK
SCL I2C2_SCL
SDA I2C2_SDA
R47 4.7K
R48 4.7K
VDDB
GPIO1
I2C address x1A
C33
2.2uF
C34
2.2uF
HPR
HPL
VDDA
R49
1M
JKDET
CN2
G/M
LEFT
DETECT
GND
RIGHT
M/G
MS
PHONE-PJK-634M_AS
HEADSET
C38
1nF
C40
1nF
MIC-
C37 4.7uF
MIC1-
JKR2
JKR2
MIC+
C39 4.7uF
MIC1+
JKSLV
JKSLV
HPL
HPR
nuvoTon
Title
NuMaker-M487KMCAN
Size A3
Document Number
Audio Codec
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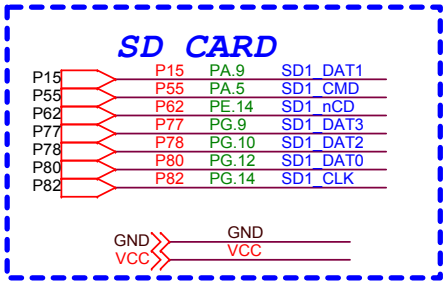

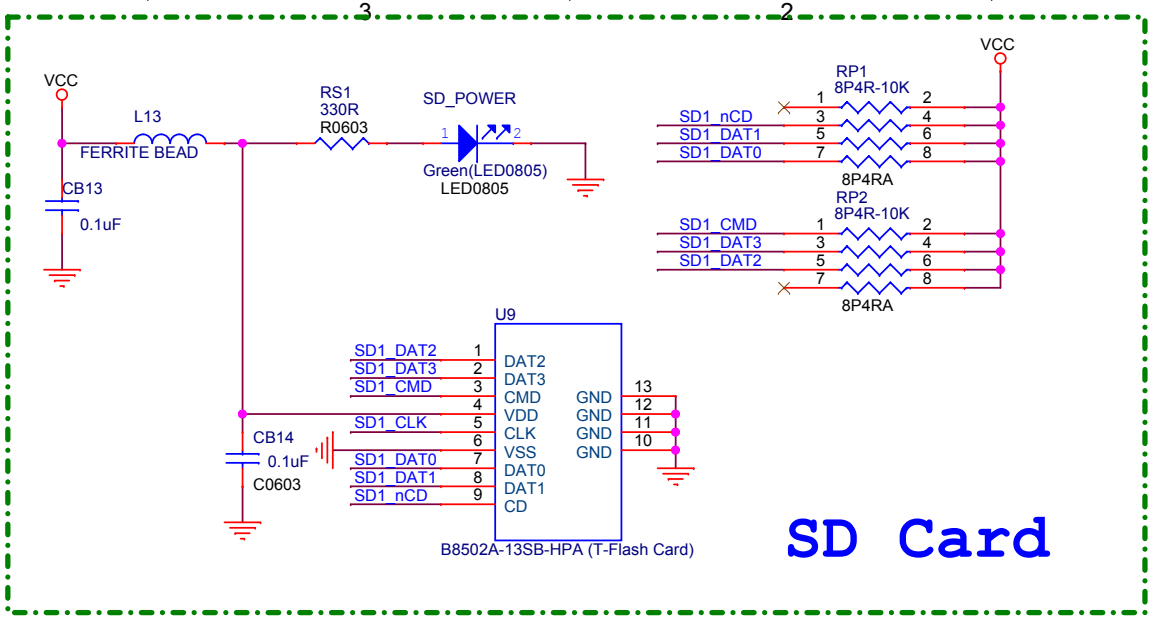

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