Sheet: PDSP-I4-08-PSU

File: PDSP-I4-08-PSU.sch

Sheet: PDSP-I4-08-PREAMP-IN

File: PDSP-I4-08-PREAMP-IN.sch

Sheet: PDSP-I4-08-PREAMP-OUT

File: PDSP-I4-08-PREAMP-OUT.sch

Sheet: PDSP-I4-08-ESP32

File: PDSP-I4-08-ESP32.sch

Sheet: PDSP-I4-08-DSP

File: PDSP-I4-08-DSP.sch

Sheet: PDSP-I4-08-CONNECTOR_UI_CONFIG

File: PDSP-I4-08-CONNECTOR_UI_CONFIG.sch

1 1 H1
Trou_3.2mm_6mm_metal

1 1 H2
Trou_3.2mm_6mm_metal

1 1 H3
Trou_3.2mm_6mm_metal

1 1 H4
Trou_3.2mm_6mm_metal

Feuille: /	Auteur: Pierre Dandine
Fichier: PDSP-I4-08.sch	Approbation:
Projet: PDSP-I4-08	
Création: 2021-08	Modifié: 2021-09-29
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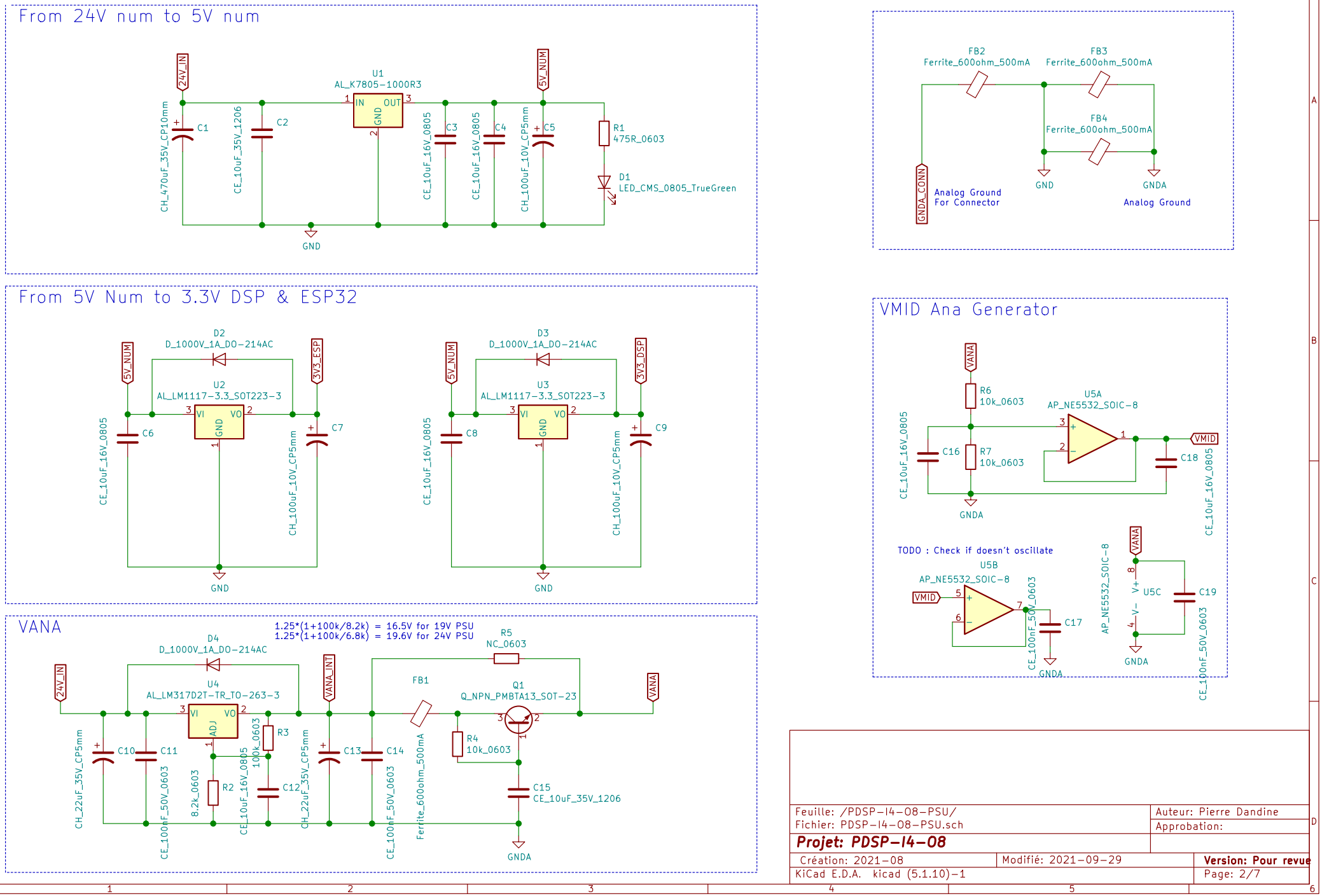
From 24V num to 5V num
24V_IN
U1
AL_K7805-1000R3
IN
OUT
GND
5V_NUM
C1
CH_470uF_35V_CP10mm
C2
CE_10uF_35V_1206
C3
CE_10uF_16V_0805
C4
CE_10uF_16V_0805
C5
CH_100uF_10V_CP5mm
R1
475R_0603
D1
LED_CMS_0805_TrueGreen
GND
From 5V Num to 3.3V DSP & ESP32
D2
D_1000V_1A_DO-214AC
U2
AL_LM1117-3.3_SOT223-3
VI
VO
GND
5V_NUM
3V3_ESP
C6
CE_10uF_16V_0805
C7
CH_100uF_10V_CP5mm
D3
D_1000V_1A_DO-214AC
U3
AL_LM1117-3.3_SOT223-3
5V_NUM
3V3_DSP
C8
CE_10uF_16V_0805
C9
CH_100uF_10V_CP5mm
GND
VANA
1.25*(1+100k/8.2k) = 16.5V for 19V PSU
1.25*(1+100k/6.8k) = 19.6V for 24V PSU
D4
D_1000V_1A_DO-214AC
U4
AL_LM317D2T-TR_TO-263-3
VI
VO
ADJ
24V_IN
VANA_INT
R5
NC_0603
FB1
Q1
Q_NPN_PMBTA13_SOT-23
R4
10k_0603
R3
100k_0603
R2
8.2k_0603
C10
CH_22uF_35V_CP5mm
C11
CE_100nF_50V_0603
C12
CE_10uF_16V_0805
C13
CH_22uF_35V_CP5mm
C14
CE_100nF_50V_0603
C15
CE_10uF_35V_1206
Ferrite_600ohm_500mA
GNDA
FB2
Ferrite_600ohm_500mA
FB3
Ferrite_600ohm_500mA
FB4
Ferrite_600ohm_500mA
GNDA_CONN
Analog Ground
For Connector
GND
GNDA
Analog Ground
VMID Ana Generator
VANA
R6
10k_0603
U5A
AP_NE5532_SOIC-8
C16
CE_10uF_16V_0805
R7
10k_0603
VMID
C18
CE_10uF_16V_0805
GNDA
TODO : Check if doesn't oscillate
U5B
AP_NE5532_SOIC-8
VMID
C17
CE_100nF_50V_0603
GNDA
U5C
AP_NE5532_SOIC-8
V+
V-
C19
CE_100nF_50V_0603
GNDA
Feuille: /PDSP-I4-08-PSU/
Fichier: PDSP-I4-08-PSU.sch
Auteur: Pierre Dandine
Approbation:
Projet: PDSP-I4-08
Création: 2021-08
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KiCad E.D.A. kicad (5.1.10)-1
Version: Pour revue
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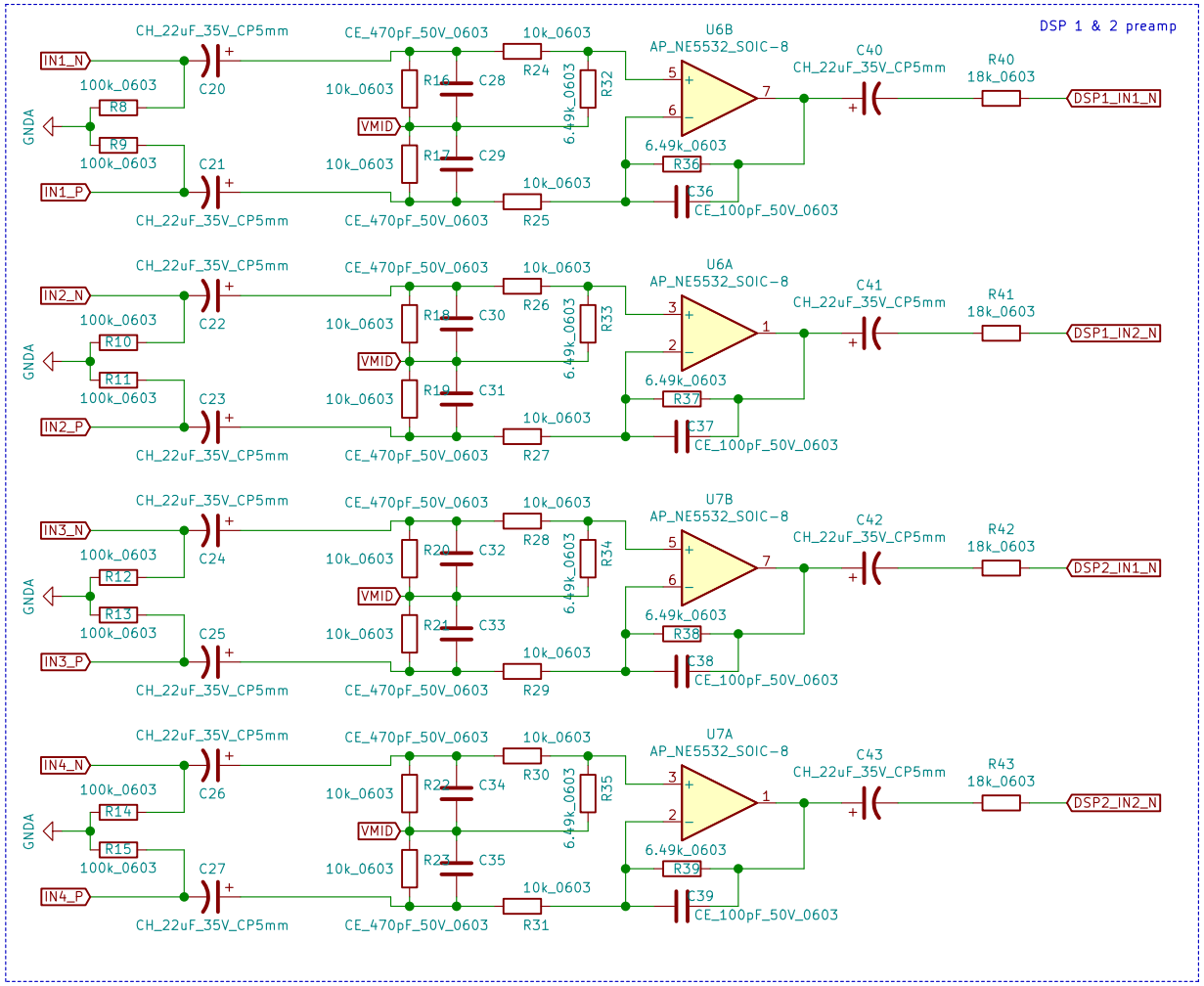

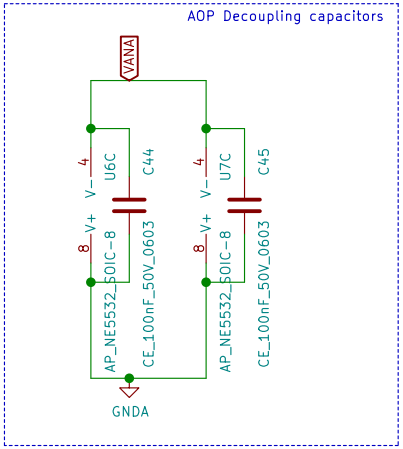

2VRMS IN with 18k ((18+2)/100µA = 2Vrms)
Need 3.08V input for 2V, so x1.54
=> 10k/6.49k = 1.54, perfect

Feuille: /PDSP-I4-08-PREAMP-IN/	Auteur: Pierre Dandine
Fichier: PDSP-I4-08-PREAMP-IN.sch	Approbation:
Projet: PDSP-I4-08	
Création: 2021-08 / Modifié: 2021-09-29	**Version: Pour revue**
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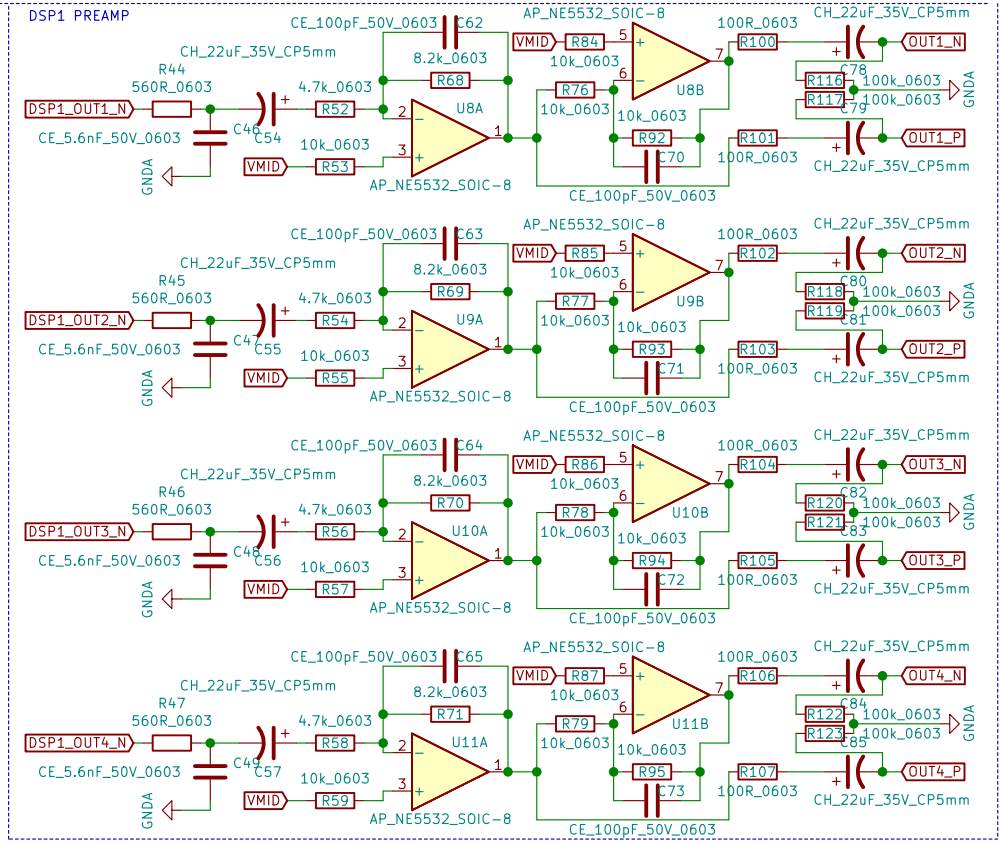
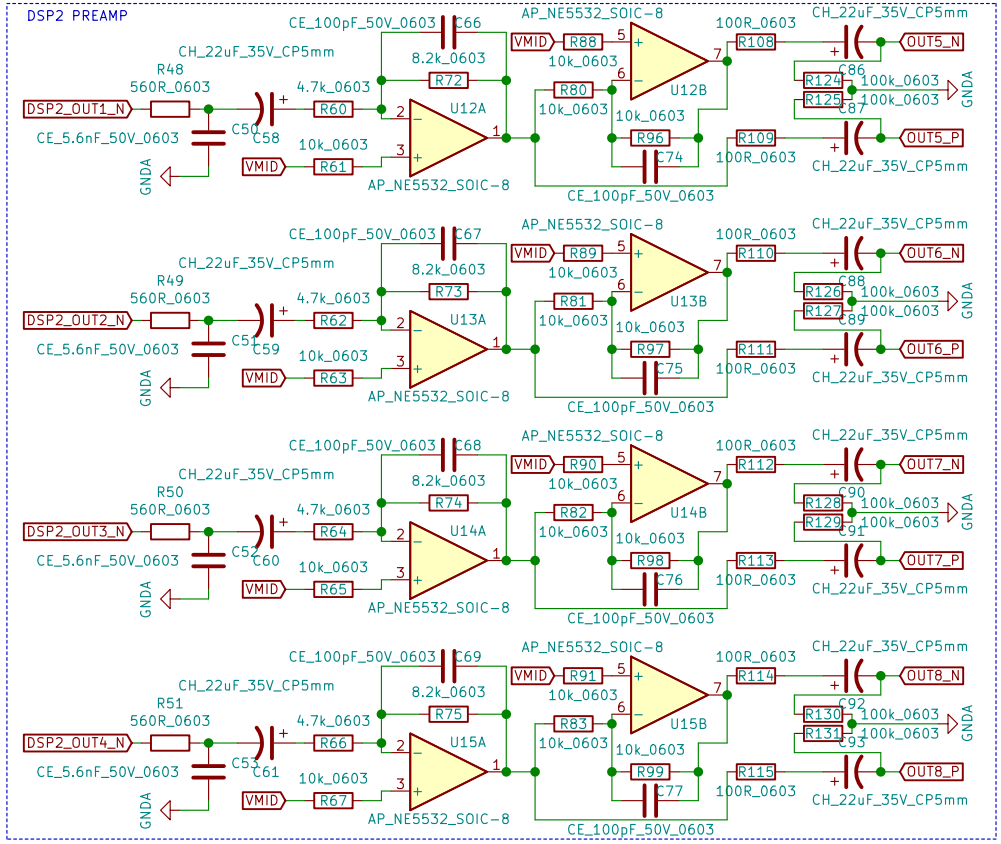
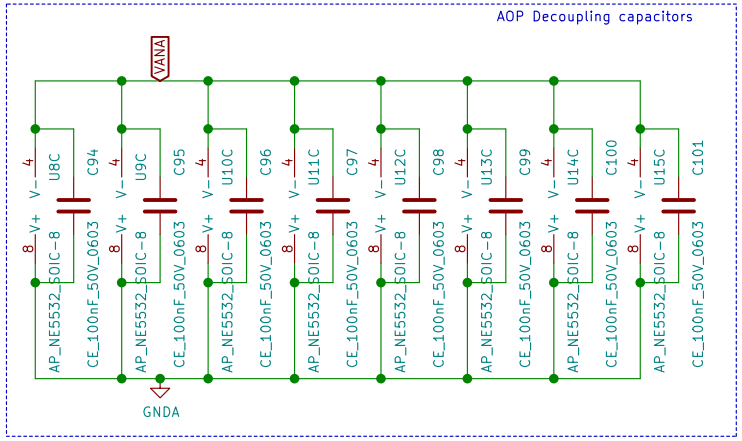




DAC OUT = 0.9Vrms = 1.3dBu
=> Requires 4.7dB to reach 12dBu (with 6dB sym) = *1.717
=> 8.2k / 4.7k gives *1.745 = 4.83dB. OK, 0.15dB higher, to be removed in DSP



Feuille: /PDSP-I4-O8-PREAMP-OUT/	Auteur: Pierre Dandine
Fichier: PDSP-I4-O8-PREAMP-OUT.sch	Approbation:
Projet: PDSP-I4-O8	
Création: 2021-08 / Modifié: 2021-09-29	**Version: Pour revue**
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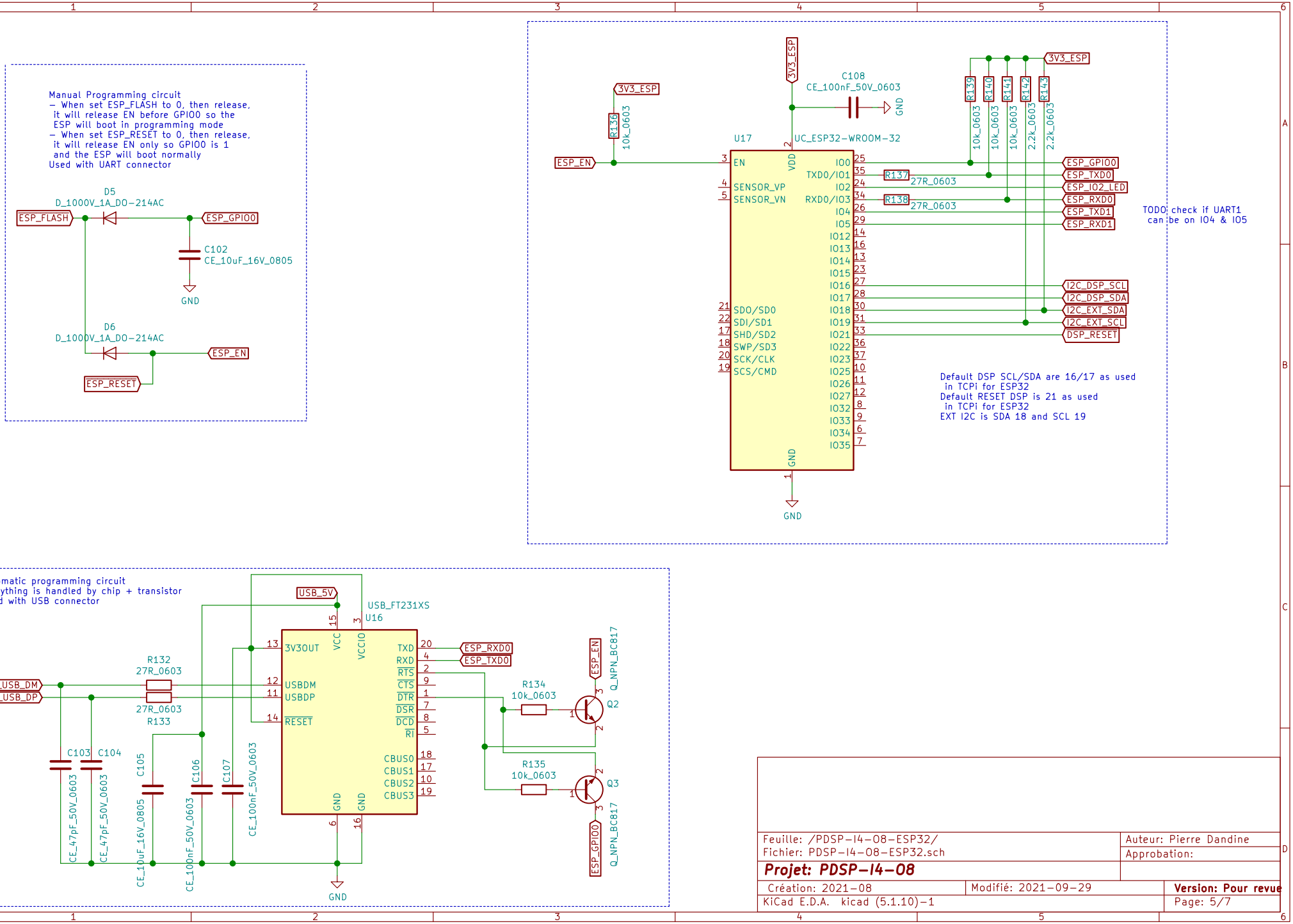

Feuille: /PDSP-I4-08-ESP32/	Auteur: Pierre Dandine
Fichier: PDSP-I4-08-ESP32.sch	Approbation:
Projet: PDSP-I4-08	
Création: 2021-08	Modifié: 2021-09-29
KiCad E.D.A. kicad (5.1.10)-1	**Version: Pour revue**
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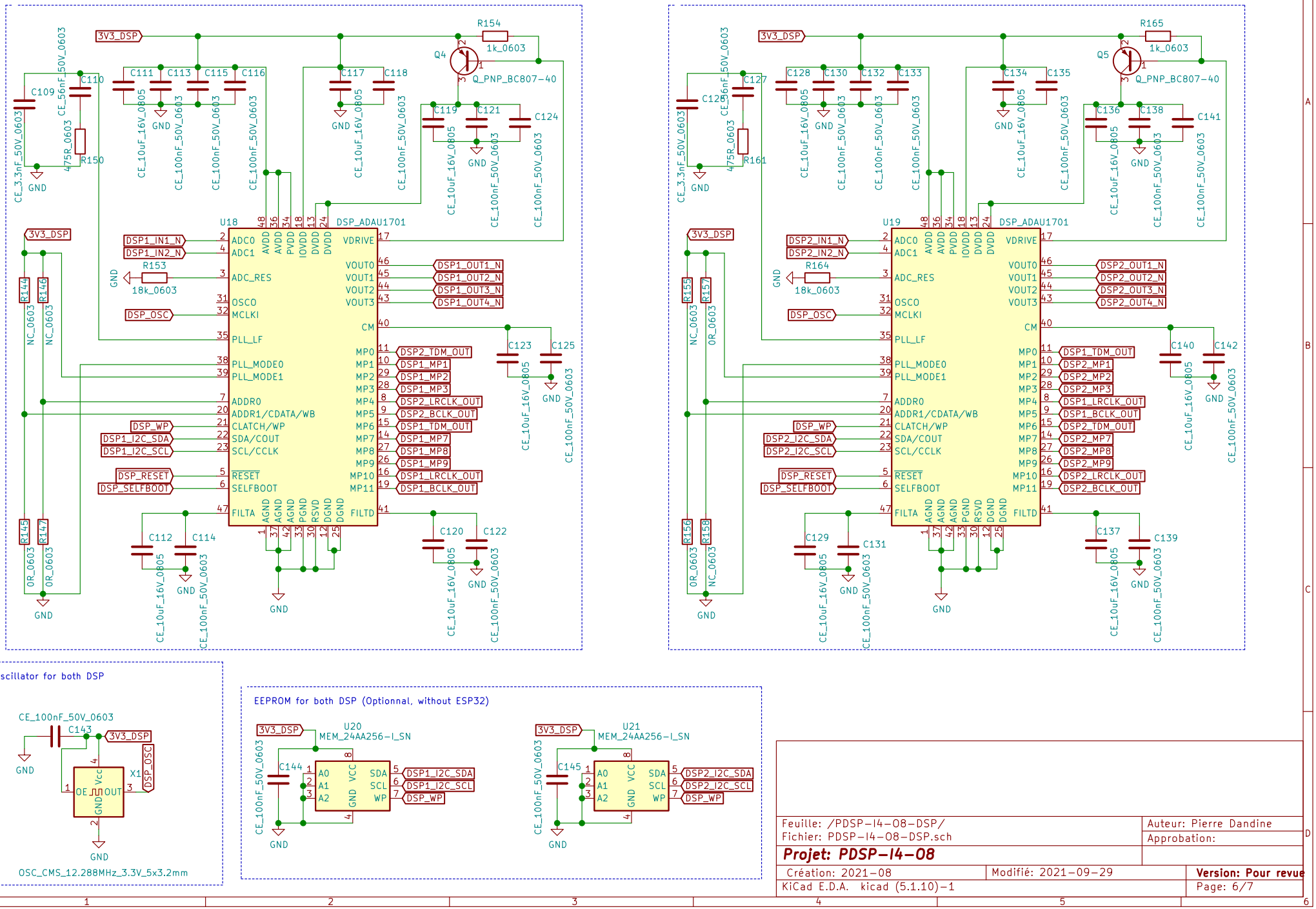

Feuille: /PDSP-I4-08-DSP/	Auteur: Pierre Dandine
Fichier: PDSP-I4-08-DSP.sch	Approbation:
Projet: PDSP-I4-08	
Création: 2021-08	Modifié: 2021-09-29
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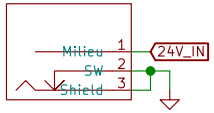
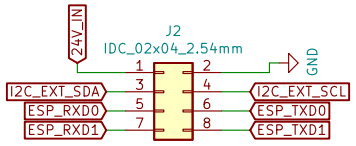
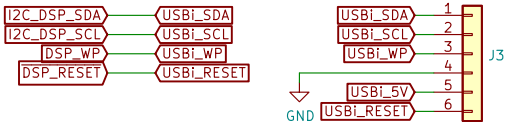
PSU IN
Can be removed for direct wier soldering

J1
Embase_DC_5.5x2.1-2.5mm_TR_CD



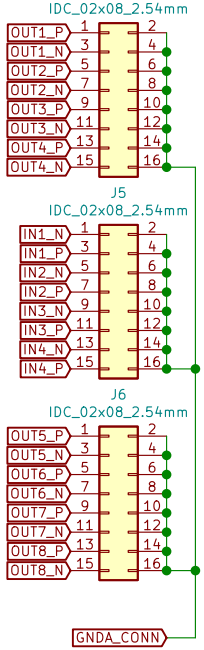


Extension connector for front I/O
For now, just another i2c, 24V and UART to flash ESP32
2 extra pins for future use (other UART ??)



USBi connection using clone WONDOM DB-DP11219 pinout

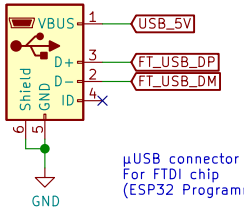
AUDIO EXT CONN



IN polarity
is inverted to
have same XLR
interface board
in mirror

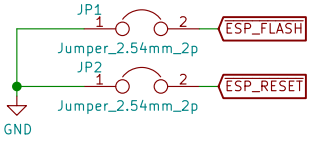
Specific GND to avoid noise

J8
USB_B_Micro_Vertical_TR

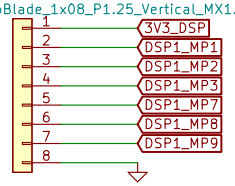


µUSB connector
For FTDI chip
(ESP32 Programming)

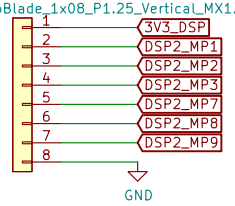
ESP32 programming
When no FTDI chip
Use 2x jumper to flash



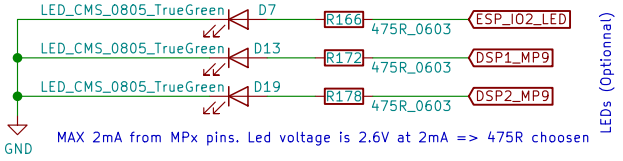
J9
Molex_PicoBlade_1x08_P1.25_Vertical_MX1.25



J10
Molex_PicoBlade_1x08_P1.25_Vertical_MX1.25



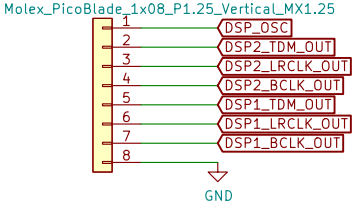
Header for MP pins (Optionnal)
To be used if required external LED, IO, POT etc...
(Remove internal LED then)



MAX 2mA from MPx pins. Led voltage is 2.6V at 2mA => 475R choosen

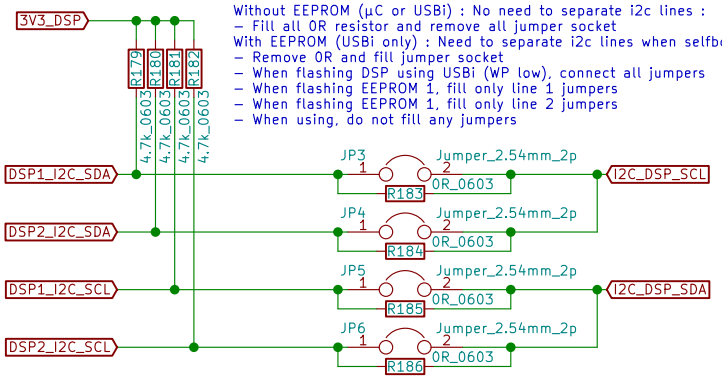
I2S on MP in case of require 2 boards = 4 DSP on same I2S bus

J7
Molex_PicoBlade_1x08_P1.25_Vertical_MX1.25

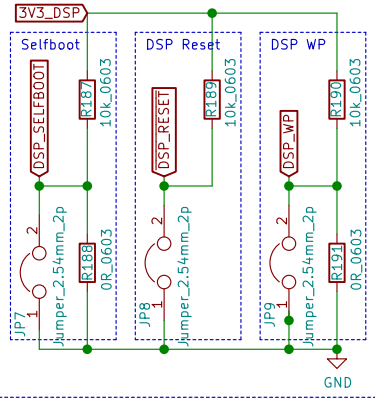


1 = DSP OSC (not required)
2 = DSP1 MP0 / DSP2 MP6
3 = DSP1 MP4 / DSP2 MP10
4 = DSP1 MP5 / DSP2 MP11
5 = DSP1 MP6 / DSP2 MP0
6 = DSP1 MP10 / DSP2 MP4
7 = DSP1 MP11 / DSP2 MP5

Pull-Up supposed to be 2.2k, but sometimes 2 in //, sometimes not



Without EEPROM (µC or USBi) : No need to separate i2c lines :
- Fill all 0R resistor and remove all jumper socket
With EEPROM (USBi only) : Need to separate i2c lines when selfboot
- Remove 0R and fill jumper socket
- When flashing DSP using USBi (WP low), connect all jumpers
- When flashing EEPROM 1, fill only line 1 jumpers
- When flashing EEPROM 1, fill only line 2 jumpers
- When using, do not fill any jumpers



If selfboot with EEPROM :
- On WP, connect 10k pull-up, and jumper down (used to flash DSP & EEPROM)
- On SELFBOOT, connect 10k pull-up (no jumper required)
If µC control :
- Connect 0R down on WP and SELFBOOT (no jumper required)
Note :
- WP of both DSP are connected together to have only one jumper
- On RESET, connect jumper down and 10k pull-up to be able to reset both DSP

Feuille: /PDSP-I4-08-CONNECTOR_UI_CONFIG/ Fichier: PDSP-I4-08-CONNECTOR_UI_CONFIG.sch	Auteur: Pierre Dandine Approbation:
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