

TimIQ–RF

Project

Beamlines synchronization system
Laser IQ modulator
TimIQ – RF board

Schematics

Page 01 : Cover page
Page 02 : Top sheet
Page 03 : PLL
Page 04 : DAC
Page 05 : DAC / IQ modulator interface
Page 06 : IQ modulator
Page 07 : Frequency dividers
Page 08 : Frequency mixers
Page 09 : ADC
Page 10 : Digital interface
Page 11 : Power supplies

Description

This is the RF board of the IQ modulator project.
It contains the PLL to upconvert the frequency to 2.8 GHz,
the IQ modulator and the frequency mixers for the feedback.

Revision

Rev 0.1 – May 04, 2016: Prototype
Rev 1.0 – September 20, 2016:
* P. 11 : changed fixation hole from 2.8 mm to 3.1 mm
Rev 1.1 – April 27, 2017:
* P. 5 : added note for MAX IV
* P. 9 : adjusted amplification stages gains
Rev 1.2 – August 10, 2017:
* P. 3 : Changed C20 Qty to 0 ; added information for MAX IV config.
* P. 7 : Changed R83 to 0R ; R84 Qty to 0

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Designed by

Jean–Paul Ricaud

February 24, 2016

Checked by

Approved by

TOP

top.sch

Title: TimIQ–RF

Description: Cover Sheet

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Project: TimIQ

Sheet: /

File: TimIQ–RF_sch.sch

Author: Jean–Paul Ricaud

Size: A3

Date: 2017–08–10

KiCad E.D.A. kicad 4.0.2–stable

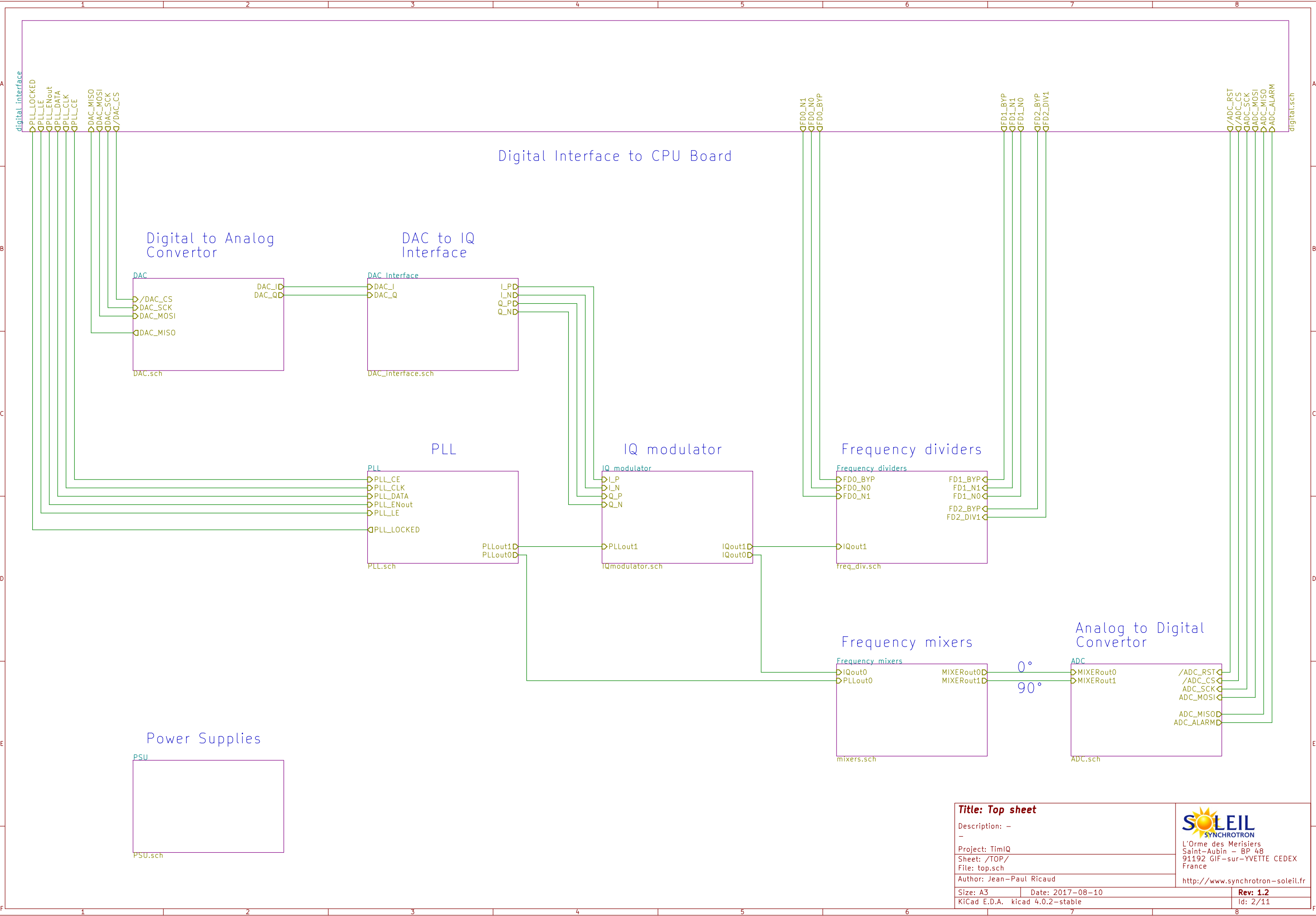
Rev: 1.2

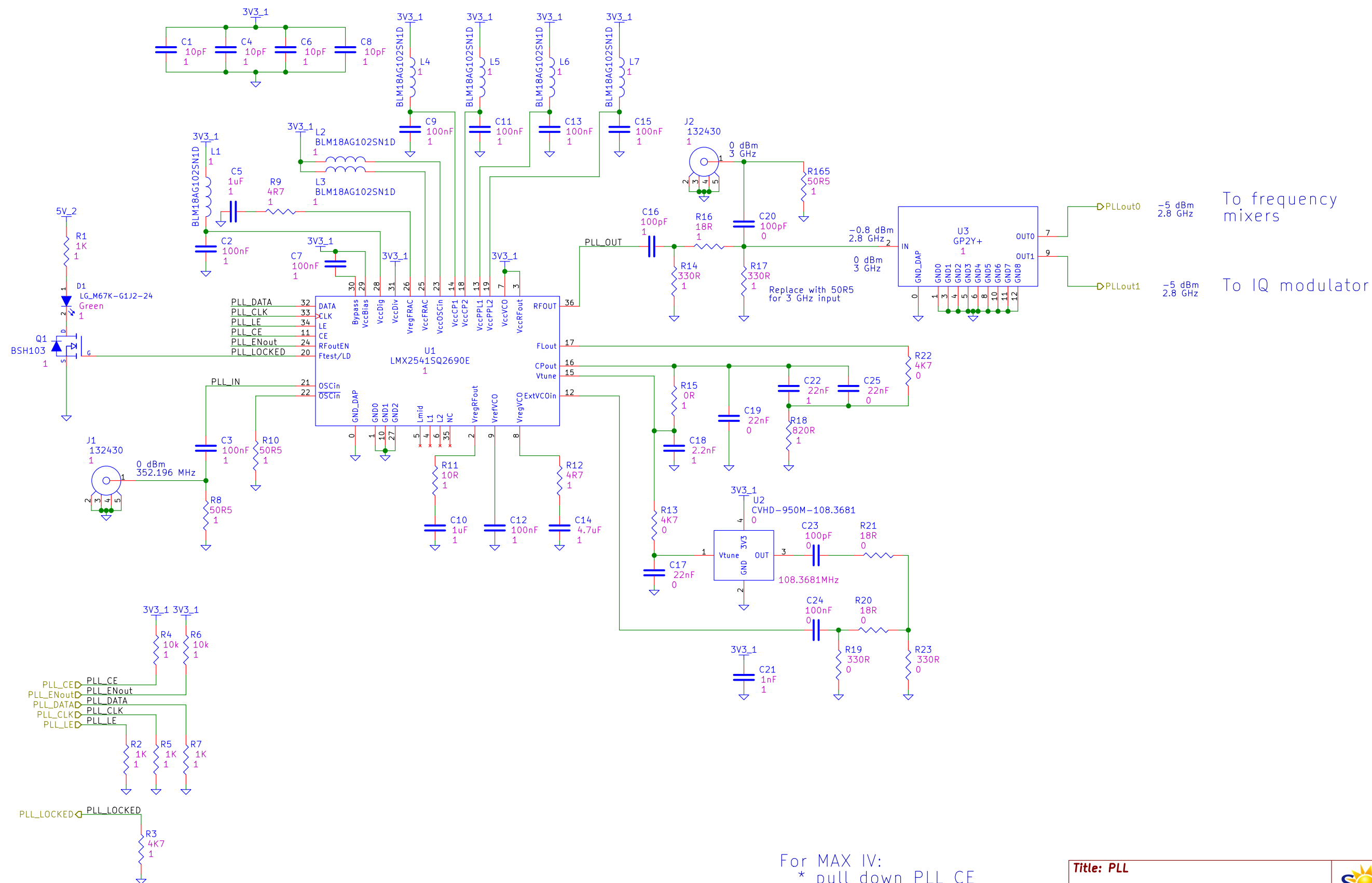
Id: 1/11




L'Orme des Merisiers
Saint–Aubin – BP 48
91192 GIF–sur–YVETTE CEDEX
France

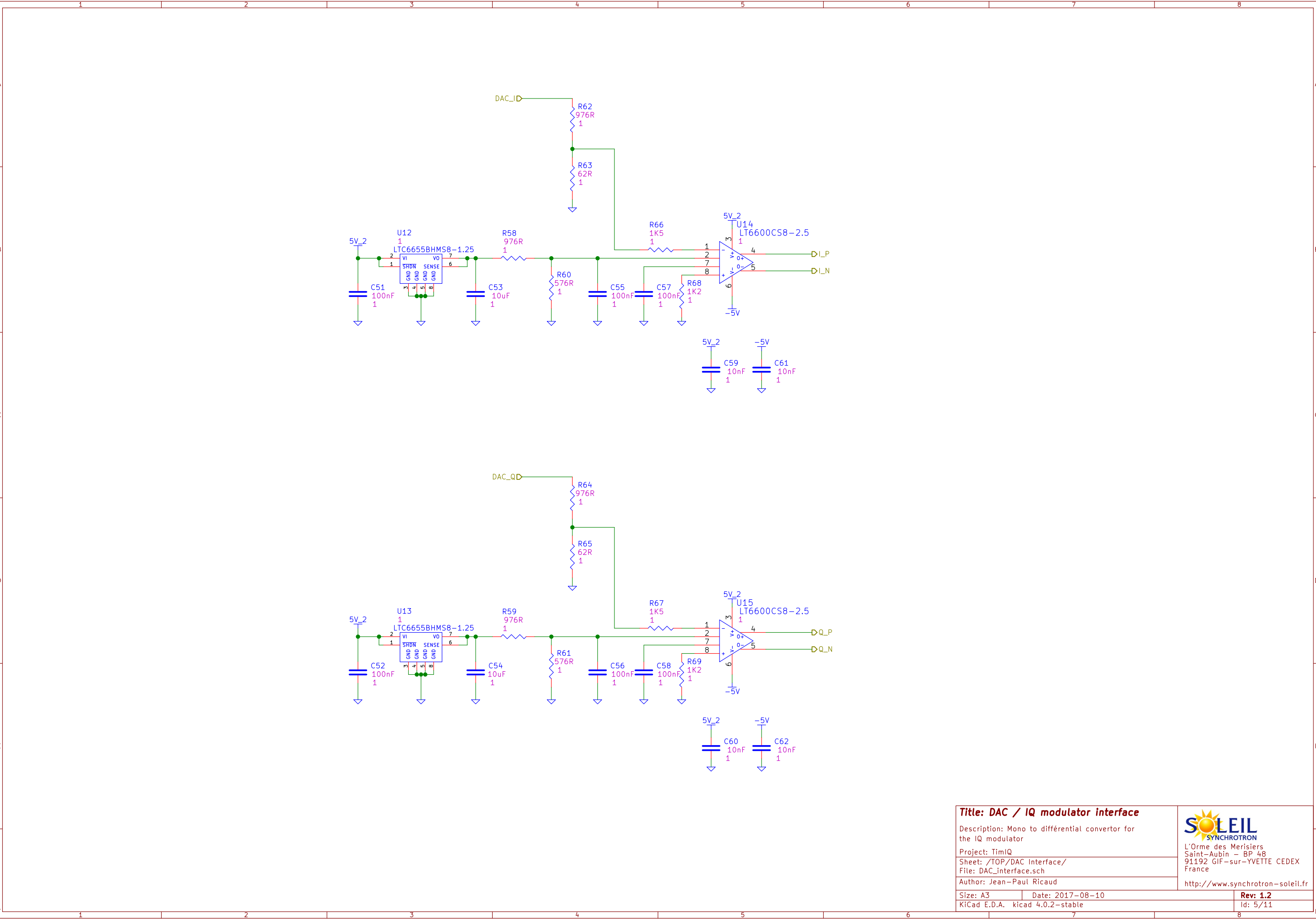
<http://www.synchrotron–soleil.fr>

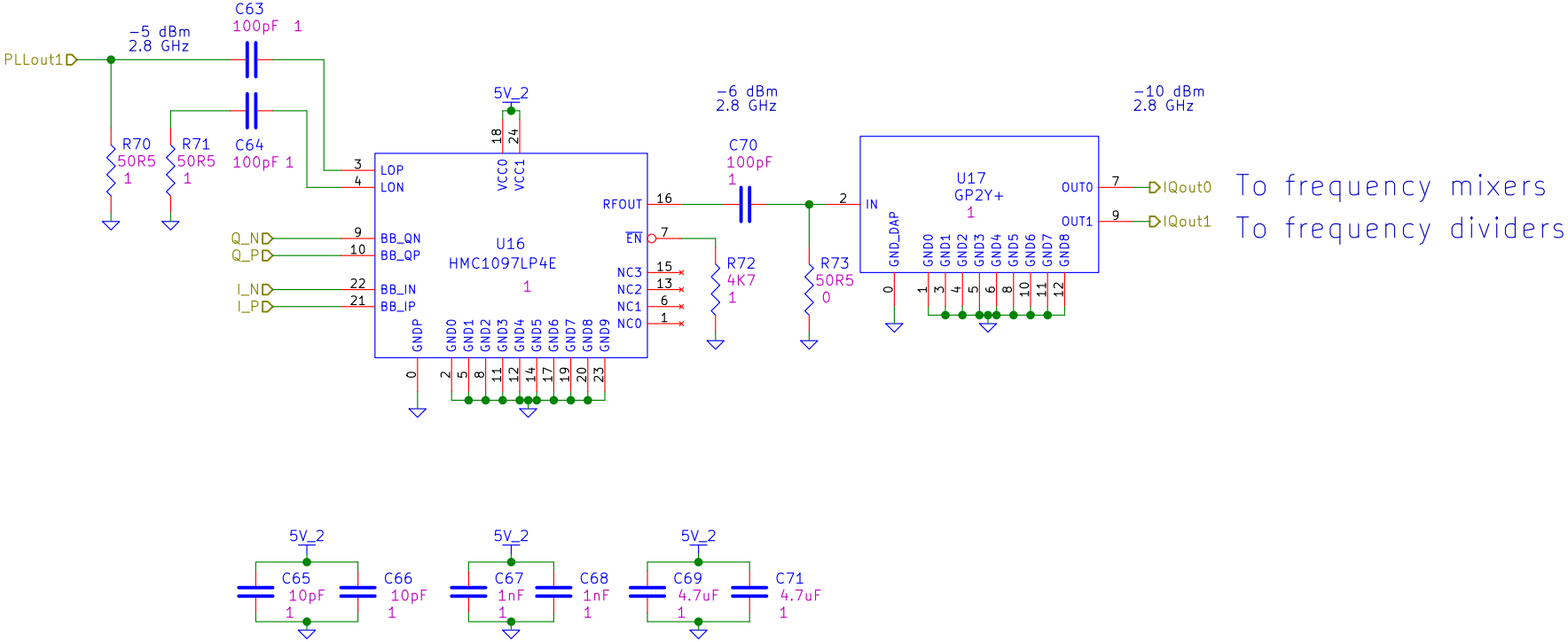





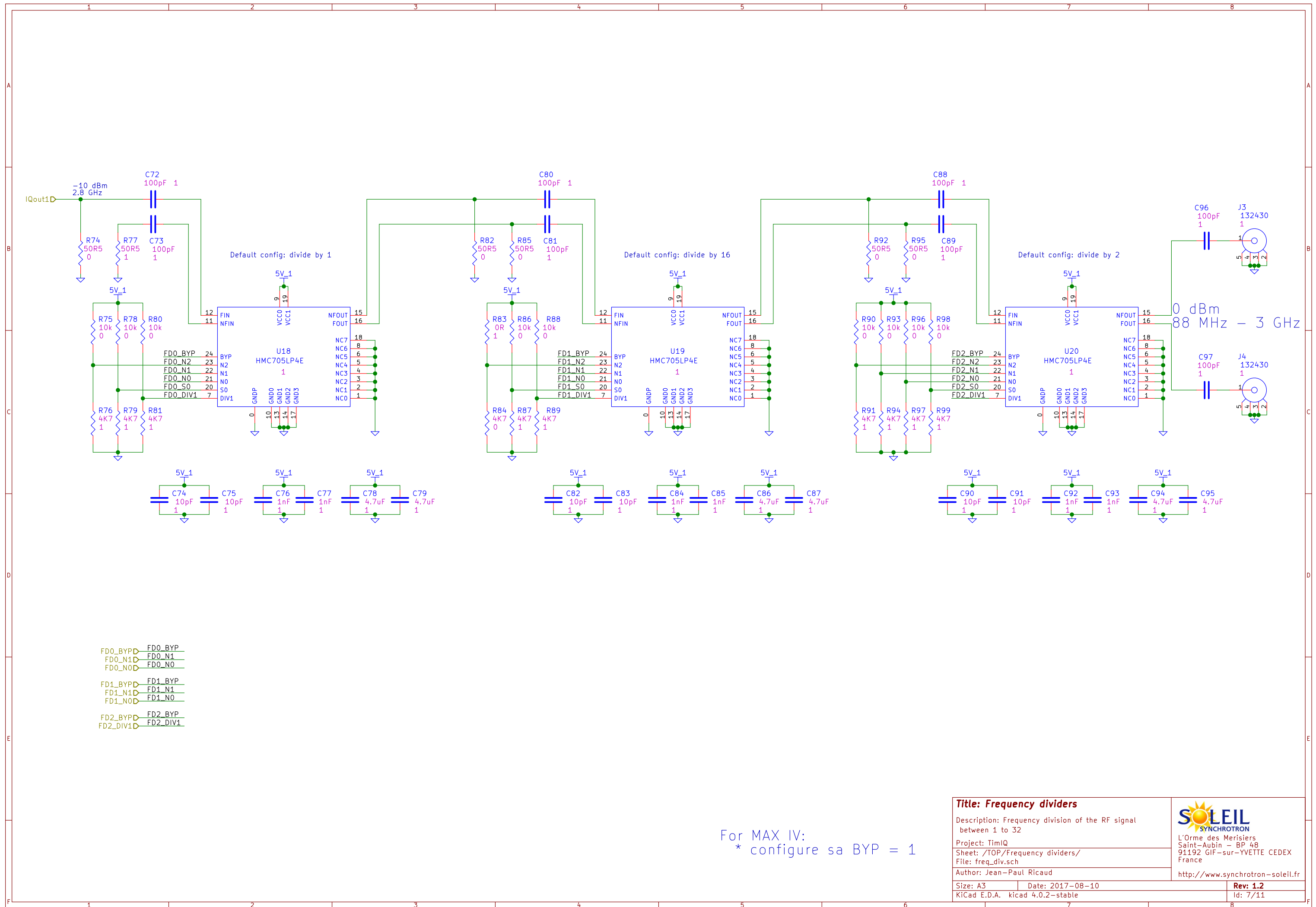
For MAX IV:
 * pull down PLL_CE
 * remove R16
 * remove R17
 * solder C20


Title: PLL		 L'Orme des Merisiers Saint-Aubin – BP 48 91192 GIF-sur-YVETTE CEDEX France http://www.synchrotron-soleil.fr
Description: PLL 352.196 MHz to 2.8 GHz convertor		
Project: TimIQ		
Sheet: /TOP/PLL/ File: PLL.sch		
Author: Jean-Paul Ricaud		
Size: A3	Date: 2017-08-10	Rev: 1.2 Id: 3/11
KiCad E.D.A. kicad 4.0.2-stable		

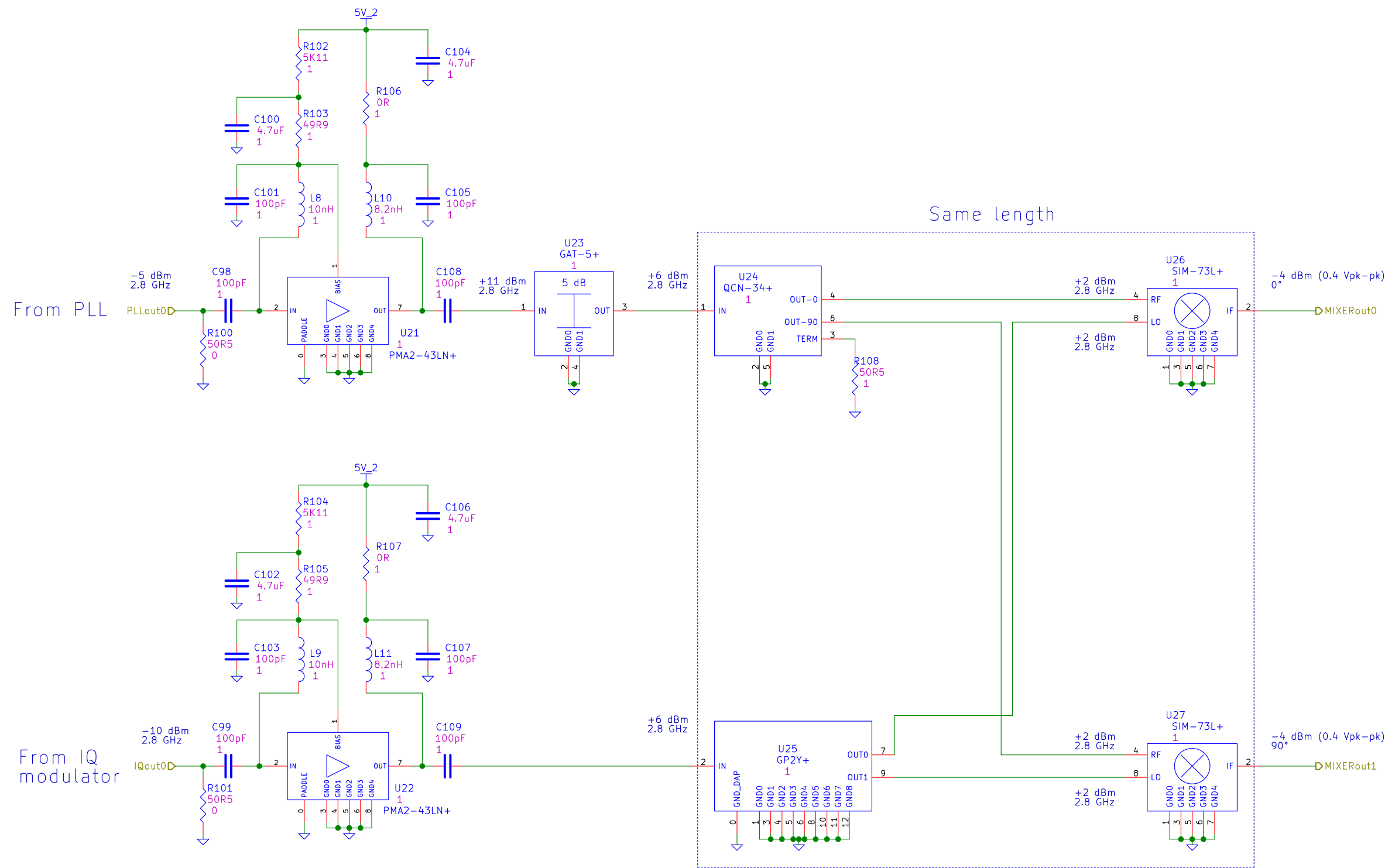





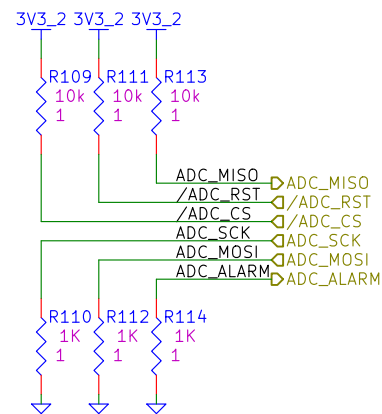
Title: IQ modulator		 L'Orme des Merisiers Saint-Aubin – BP 48 91192 GIF –sur–YVETTE CEDEX France http://www.synchrotron-soleil.fr
Description: IQ modulator		
–		
Project: TimIQ		
Sheet: /TOP/IQ modulator/ File: IQmodulator.sch		
Author: Jean–Paul Ricaud		
Size: A3	Date: 2017–08–10	Rev: 1.2
KiCad E.D.A. kicad 4.0.2–stable		Id: 6/11




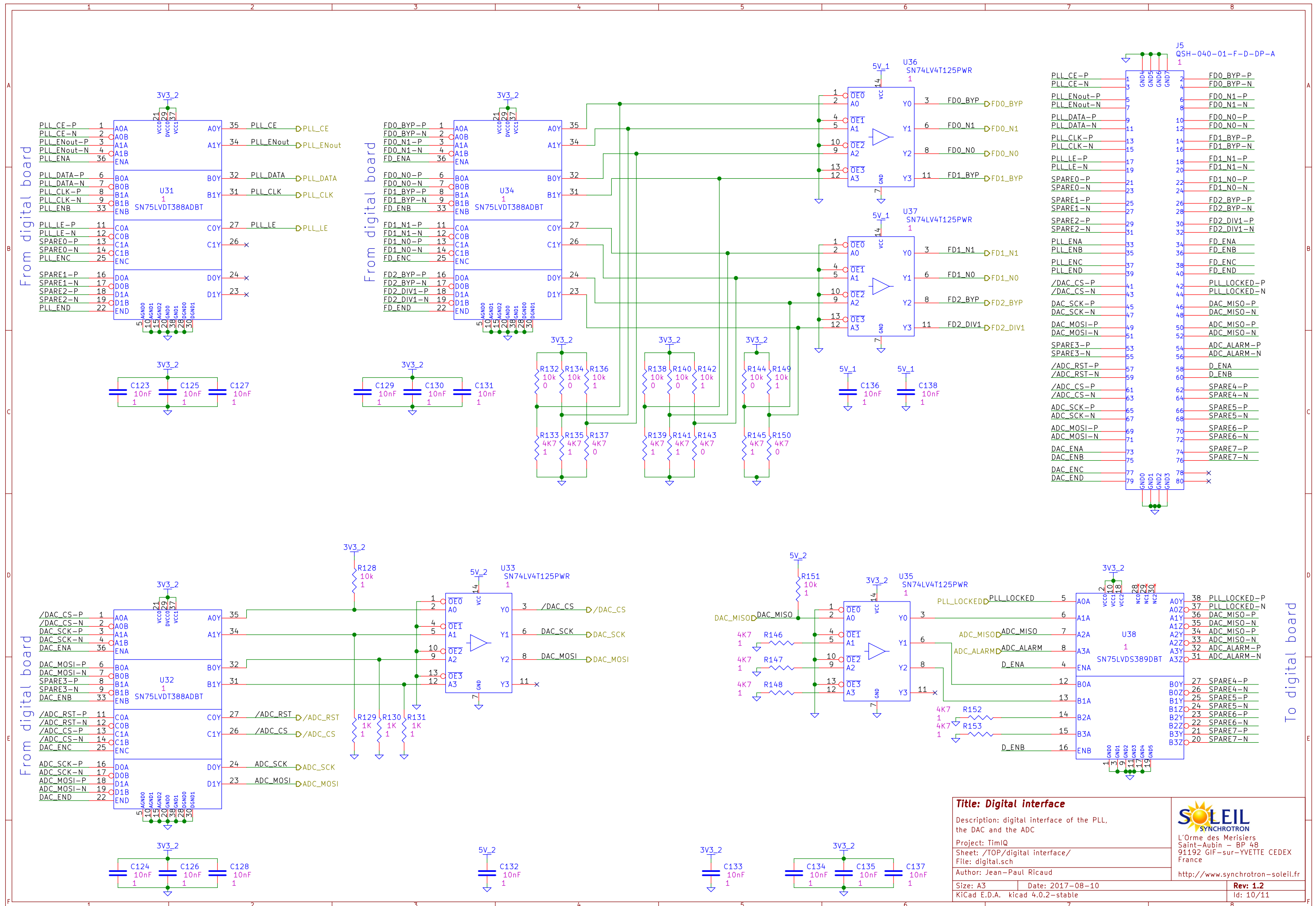
Title: Frequency dividers		 L'Orme des Merisiers Saint-Aubin - BP 48 91192 GIF-sur-YVETTE CEDEX France http://www.synchrotron-soleil.fr
Description: Frequency division of the RF signal between 1 to 32		
Project: TimIQ		
Sheet: /TOP/Frequency dividers/ File: freq_div.sch		
Author: Jean-Paul Ricaud		
Size: A3	Date: 2017-08-10	Rev: 1.2
KiCad E.D.A. kicad 4.0.2-stable		Id: 7/11

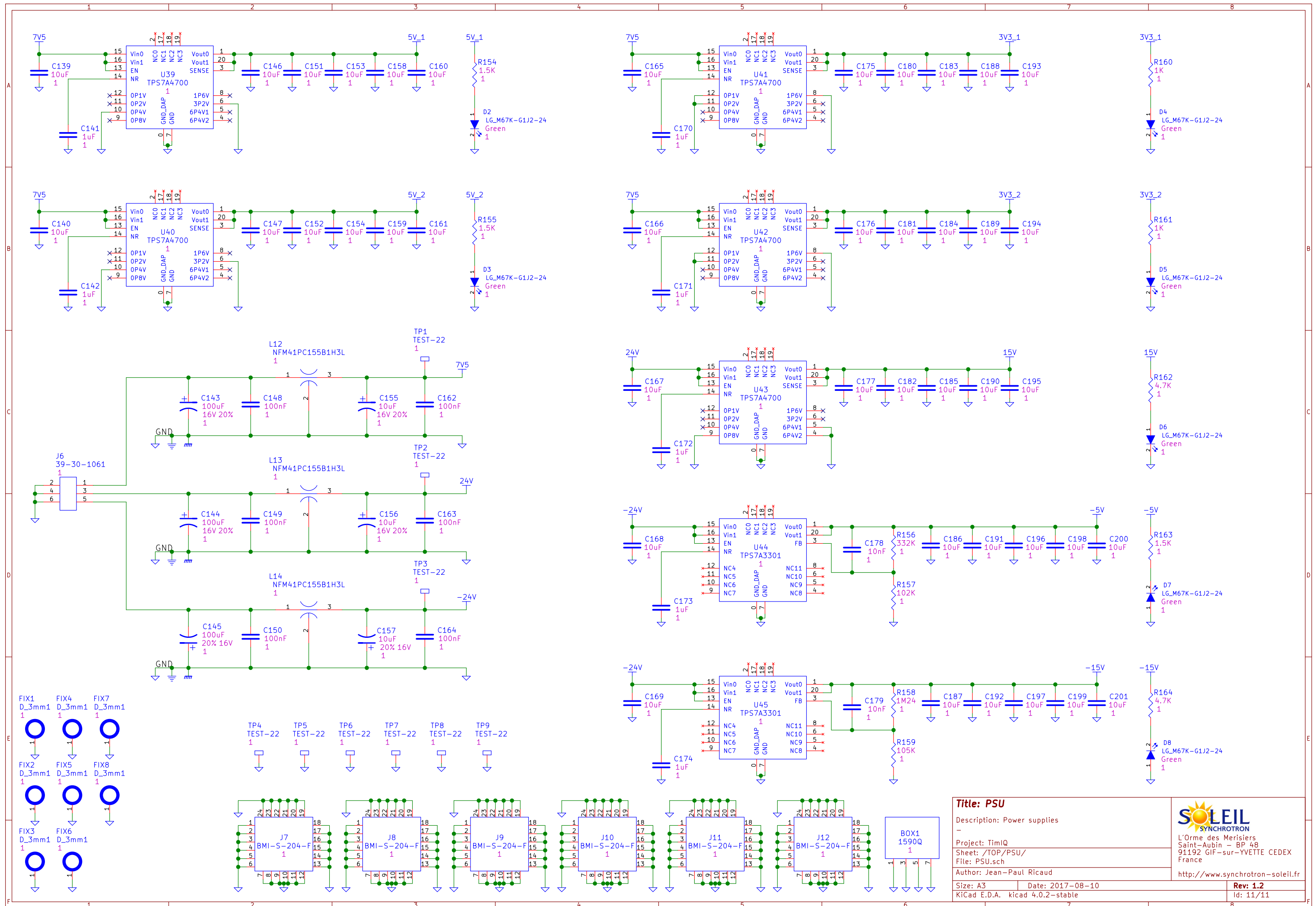


Title: Frequencies mixers		 L'Orme des Merisiers Saint-Aubin – BP 48 91192 GIF-sur-YVETTE CEDEX France http://www.synchrotron-soleil.fr
Description: RF frequencies mixers Phase mesurement between the input and the output		
Project: TimIQ		
Sheet: /TOP/Frequency mixers/ File: mixers.sch		
Author: Jean-Paul Ricaud		
Size: A3	Date: 2017-08-10	Rev: 1.2
KiCad E.D.A. kicad 4.0.2-stable		Id: 8/11



Title: ADC Description: Analog to digital convertor - Project: TimIQ Sheet: /TOP/ADC/ File: ADC.sch Author: Jean-Paul Ricaud		 L'Orme des Merisiers Saint-Aubin - BP 48 91192 GIF-sur-YVETTE CEDEX France http://www.synchrotron-soleil.fr
Size: A3 KiCad E.D.A. kicad 4.0.2-stable	Rev: 1.2 Id: 9/11	





Title: PSU		<p>L'Orme des Merisiers Saint-Aubin - BP 48 91192 GIF-sur-YVETTE CEDEX France</p> <p>http://www.synchrotron-soleil.fr</p>
Description: Power supplies		
Project: TimIQ		
Sheet: /TOP/PSU/ File: PSU.sch		
Author: Jean-Paul Ricaud		
Size: A3	Date: 2017-08-10	Rev: 1.2
KiCad E.D.A. kicad 4.0.2-stable		Id: 11/11