

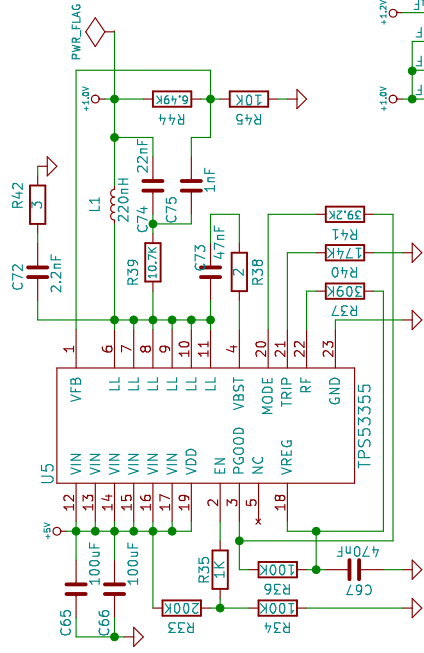


Sheet: /		D
File: c1aa_acc.sch		
<b>Title: C1AA-ACC Block Diagram</b>		
Size: A4	Date: 2019-08-28	
KiCad E.D.A. kicad 5.0.2+dfsg1-1bpo9+1		Rev: V1.4 Id: 1/16

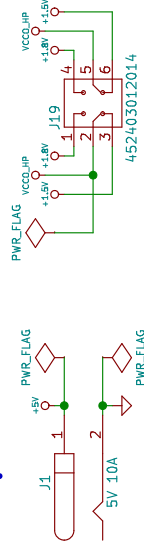




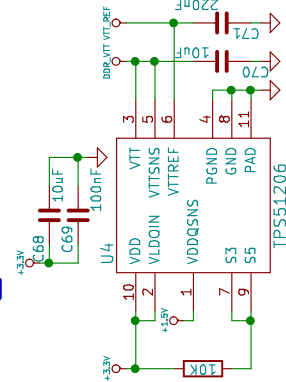
## +1.0V 25A



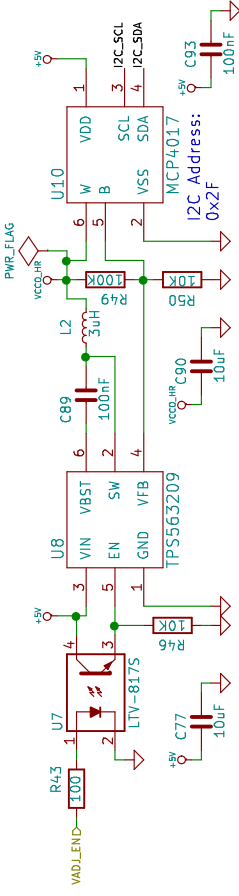
## DC Input +5V 10A



## DDR\_VT +0.75V



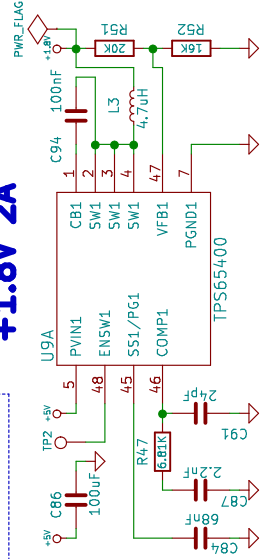
## VADJ 2A



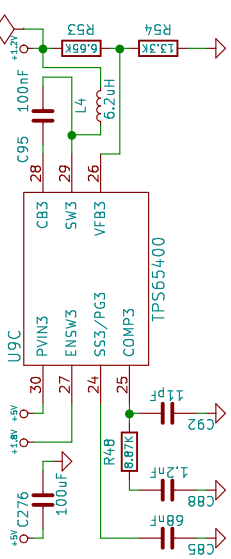
"EN" del TPS563209:  
Conectado a pines del FPGA para  
apagar antes de cambiar feedback,  
ver si va con 1.5V o poner transistor

## Power Supply

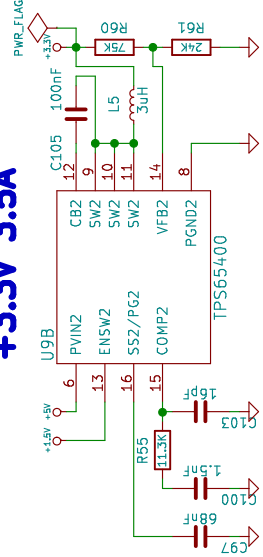
## +1.8V 2A



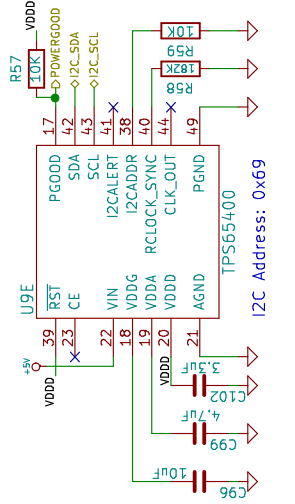
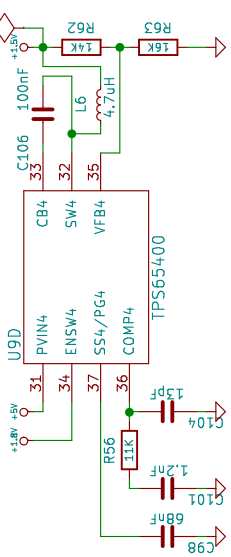
## +1.2V 0.5A



## +3.3V 3.5A



## +1.5V 2A



Last POWERGOOD signal, when it is active  
all voltages are in the right level.

Voltage	Power
+1V	25W
+1.2V	0.6W
+1.5V	3W
+1.8V	3.6W
+3.3V	11.55W
VADJ	6.6W
Total	50W

Authors: See 'doc/CHANGES.txt' file. License: See 'doc/LICENCIA\_CIAA\_ACC.txt' file.  
**COMPUTADORA INDUSTRIAL ABIERTA ARGENTINA. CIAA-ACC (HPC)**  
Sheet: /Principal/PMIC/  
File: PMIC.sch

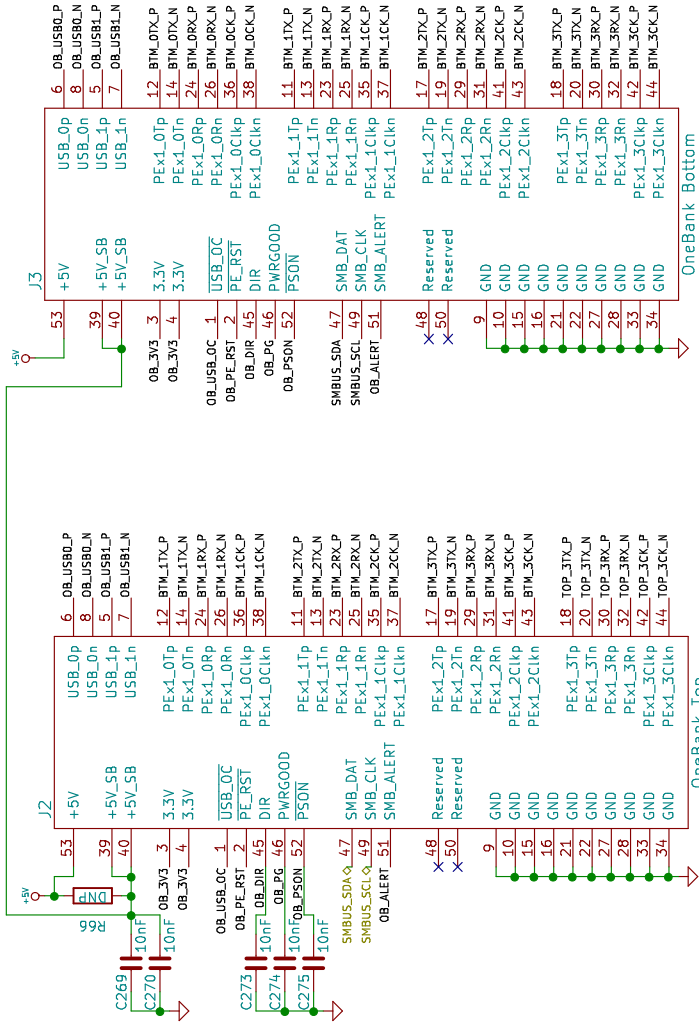
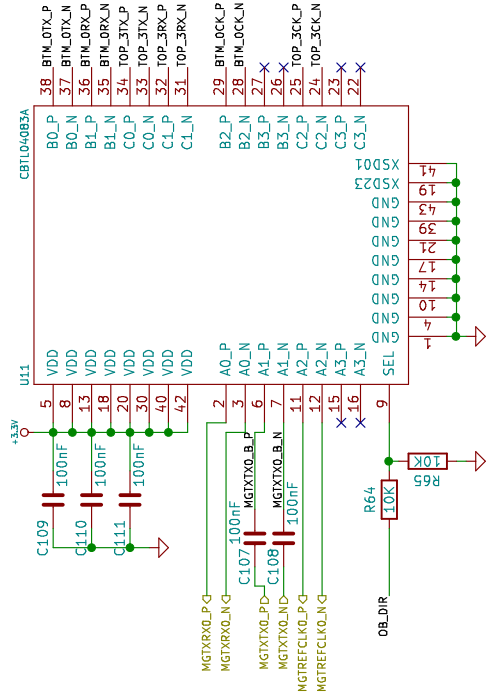
**Title: CIAA-ACC Power supply**

Size: A4 Date: 2019-08-28  
KiCad E.D.A. kicad 5.0.2+dfsg1-1bp09+1

**Rev: V1.4**  
Id: 4/16

PCIe/104 OneBank Connector

Mux/Demux Switch



PCIe OneBank device routing:  
Max. length: 4 inches  
Target Z<sub>0</sub> (diff): 85 Ohms +/- 15%  
Spacing between links: 20 mils  
Matching tolerance (intra-pair): 5 mils  
Matching tolerance (inter-pair): Not required

Authors: See 'doc/CHANGES.txt' file. License: See 'doc/LICENCIA\_CIAA\_ACC.txt' file.  
**COMPUTADORA INDUSTRIAL ABIERTA ARGENTINA, CIAA-ACC (HPC)**

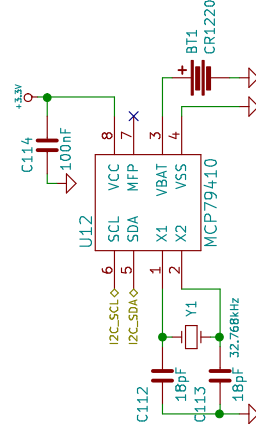
Sheet: /Principal/OneBank/  
File: OneBank.sch

**Title: CIAA-ACC PCIe/104 OneBank Connector**

Size: A4 Date: 2019-08-28  
KICad E.D.A. kicad 5.0.2+dfsg1-1bpo9+1

Rev: V1.4  
Id: 5/16

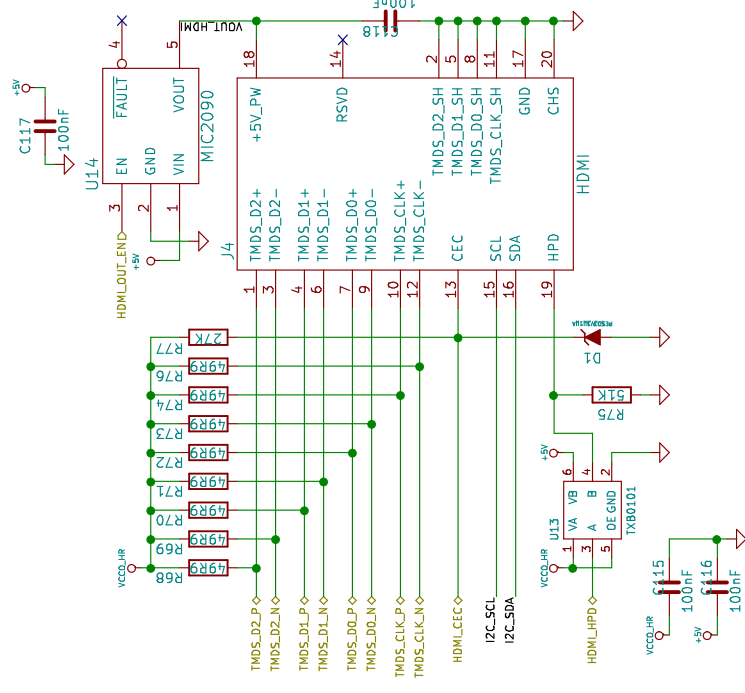
## HDMI / RTC



Mounting indication:  
Please remove battery  
holder pins before solder.

I2C Addresses: 0x6F & 0x57

## Real Time Clock



## HDMI DUAL ROLE

Note for HDMI: VCCO\_HR must be 3.3V

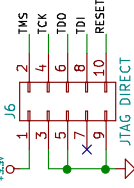
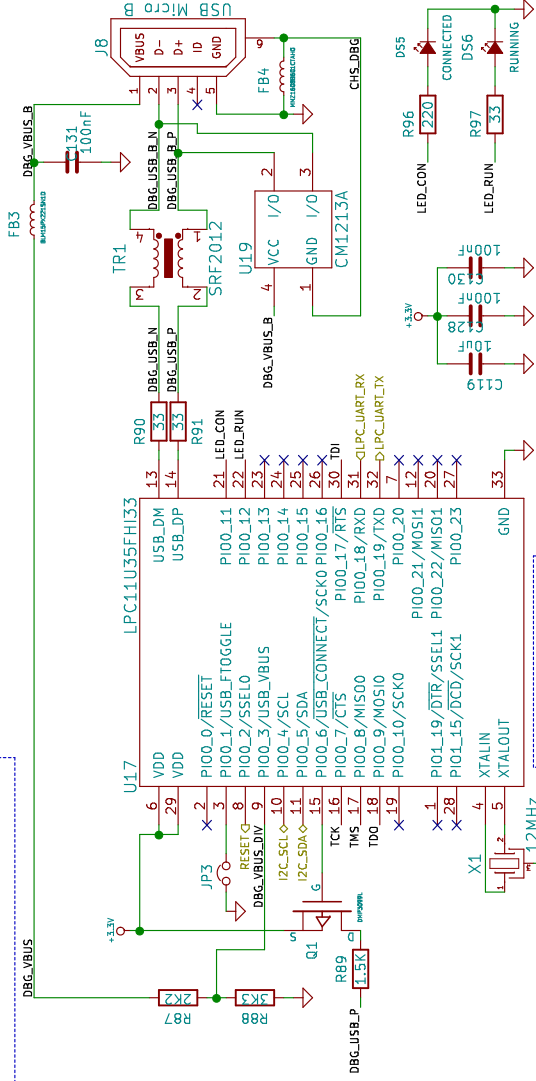
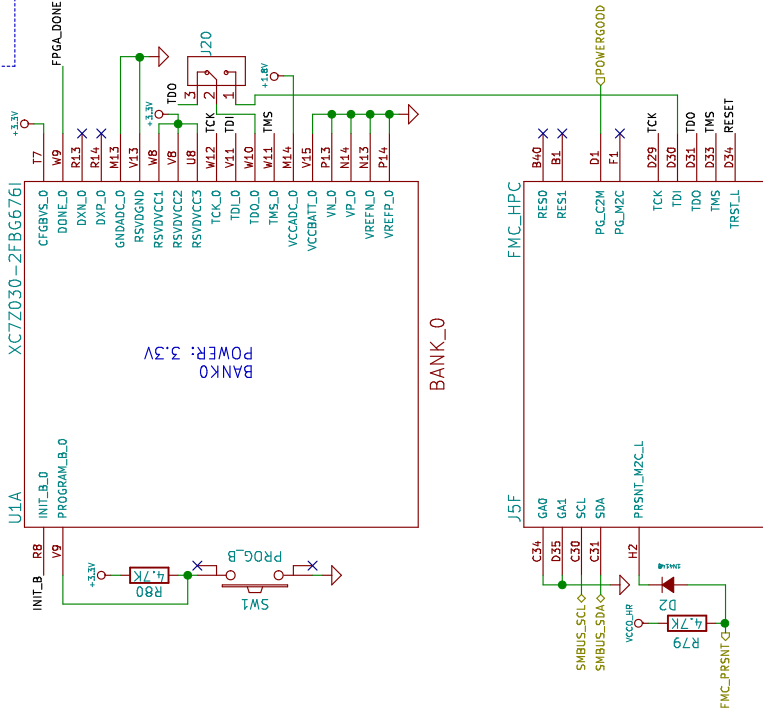
Authors: See 'doc/CHANGES.txt' file. License: See 'doc/LICENCIA\_CIAA\_ACC.txt' file.

**COMPUTADORA INDUSTRIAL ABIERTA ARGENTINA. CIAA-ACC (HPC)**

**Title: CIAA-ACC HDMI Dual Role**

Size: A4	Date: 2019-08-28	Rev: V1.4
KiCad E.D.A. kicad 5.0.2+dfsg1-1bpo9+1		Id: 6/16

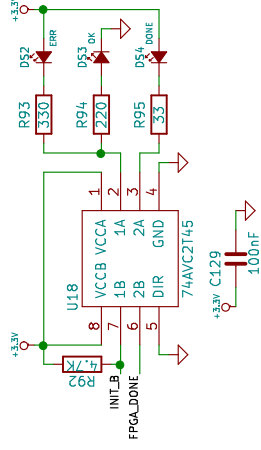
# USB JTAG UART / FMC JTAG



TDI: Output from LPC  
TDO: Input of LPC  
RESET: System reset  
(drive as open drain)

USB routing:  
Max. length: 14 inches  
Target Zo (diff): 90 Ohms +/- 15%  
Spacing to other signals: 50 mils  
Matching tolerance (intra-pair): 10 mils

## FPGA CFG LEDs



Authors: See 'doc/CHANGES.txt' file. License: See 'doc/LICENCIA\_CIAA\_ACC.txt' file.  
**COMPUTADORA INDUSTRIAL ABIERTA ARGENTINA. CIAA-ACC (HPC)**

Sheet: /Principal/BANK\_0/  
File: BANK\_0.sch

**Title: CIAA-ACC USB JTAG UART / FMC JTAG**

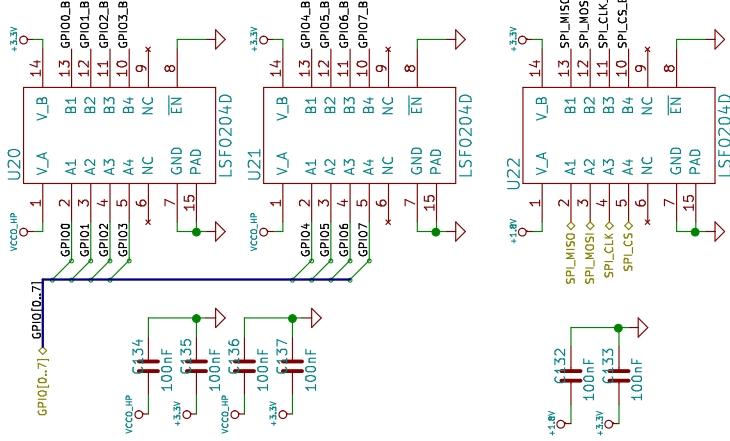
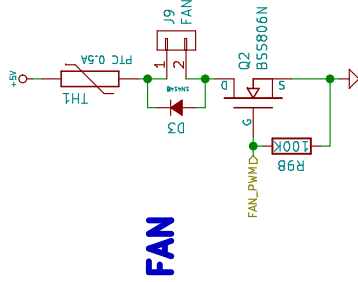
Size: A4 Date: 2019-08-28

KiCad E.D.A. kicad 5.0.2+dfsg1-1bpo9+1

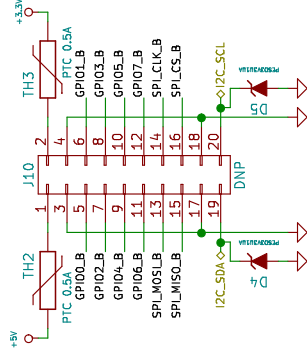
**Rev: V1.4**  
Id: 77/16

## Expansion Header / FAN Connector

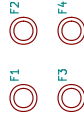
### Voltage level translator



### Expansion Header



GPIO Only available when  
VCC0\_HIP = 1.8V



Authors: See 'doc/CHANGES.txt' file. License: See 'doc/LICENCIA\_CIAA\_ACC.txt' file.  
**COMPUTADORA INDUSTRIAL ABIERTA ARGENTINA, CIAA-ACC (HPC)**

Sheet: /Principal/Expansion/  
File: Expansion.sch

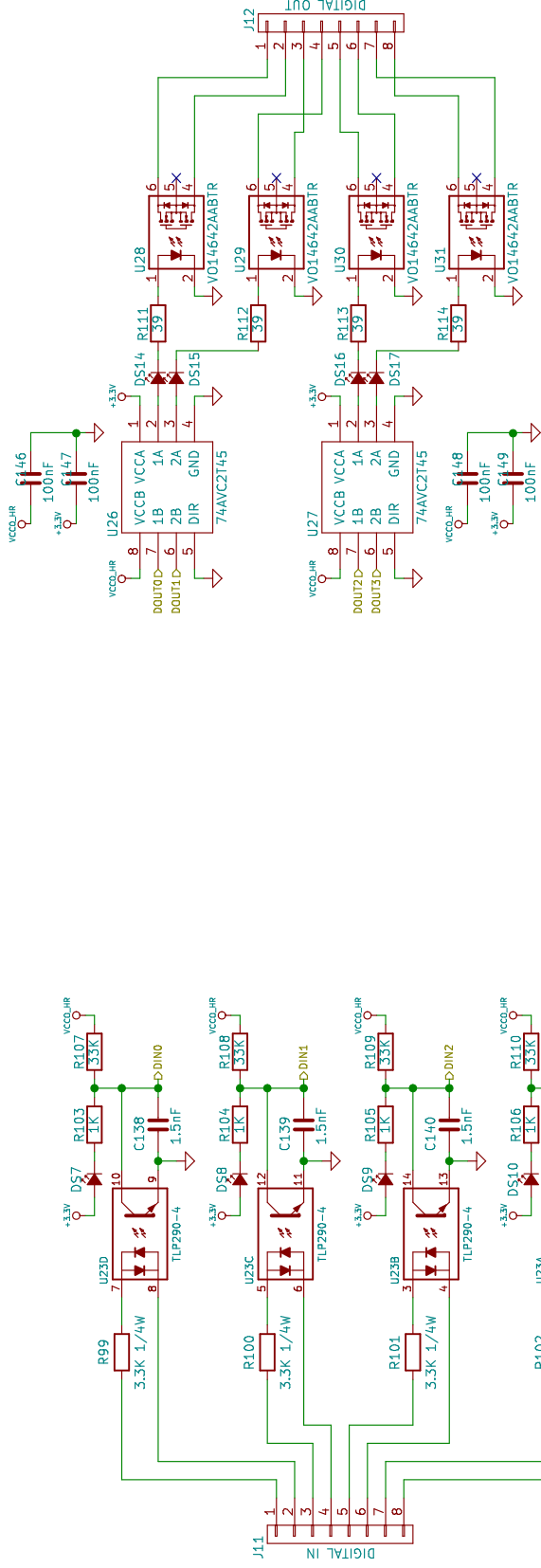
**Title: CIAA-ACC Expansion Header (GPIO, SPI, I2C) / FAN Connector**

Size: A4 Date: 2019-08-28 **Rev: V1.4**

KiCad E.D.A. kicad 5.0.2+dfsg1-1bp09+1 Id: 8/16



## Digital Inputs and Outputs



## ISOLATED DIGITAL INPUTS

Range: 12 to 24 V

## ISOLATED DIGITAL OUTPUTS

Range: up to 60 V

Authors: See 'doc/CHANGES.txt' file. License: See 'doc/LICENCIA\_CIAA\_ACC.txt' file.  
**COMPUTADORA INDUSTRIAL ABIERTA ARGENTINA. CIAA-ACC (HPC)**

Sheet: /Principal/Digital\_I/O/  
File: Digital\_I/O.sch

**Title: CIAA-ACC Digital Inputs and Outputs**

Size: A4 | Date: 2019-08-28 | **Rev: V1.4**

KiCad E.D.A. kicad 5.0.2+dfsg1-1bpo9+1

Id: 9/16

PCIe / FMC Transceiver

MGTREF must have matched length with MGTATRCAL.



XC7Z030-2FBG676I

U1G

MGTXRX0_PD_A83	MGTXRXN0_112	MGTXRXN0_112	MGTREF_112
MGTXRX0_PD_A84	MGTXRXPD_112	MGTXRXPD_112	MGTXRXPD_112
DP0_W2C_N_V3	MGTXRXN1_112	MGTXRXN1_112	MGTXRXN1_112
DP0_W2C_P_V4	MGTXRXPD_112	MGTXRXPD_112	MGTXRXPD_112
DPL_W2C_N_V3	MGTXRXN2_112	MGTXRXN2_112	MGTXRXN2_112
DPL_W2C_P_V4	MGTXRXPD_112	MGTXRXPD_112	MGTXRXPD_112
DP2_W2C_N_I3	MGTXRXN3_112	MGTXRXN3_112	MGTXRXN3_112
DP2_W2C_P_I4	MGTXRXPD_112	MGTXRXPD_112	MGTXRXPD_112
MGTREFCLK1_PD_B5	MGTXRXN4_112	MGTXRXN4_112	MGTXRXN4_112
MGTREFCLK1_PD_B6	MGTXRXPD_112	MGTXRXPD_112	MGTXRXPD_112

BANK\_112

J5H

FMC\_HPC

DP5_C2M_N	DP5_C2M_P	DP5_W2C_N	DP5_W2C_P	DP6_C2M_N	DP6_C2M_P	DP6_W2C_N	DP6_W2C_P	DP7_C2M_N	DP7_C2M_P	DP7_W2C_N	DP7_W2C_P	DP8_C2M_N	DP8_C2M_P	DP8_W2C_N	DP8_W2C_P	DP9_C2M_N	DP9_C2M_P	DP9_W2C_N	DP9_W2C_P
X A39	X A38	X A19	X A18	X B37	X B36	X B17	X B16	X B33	X B32	X B13	X B12	X B29	X B28	X B9	X B8	X B25	X B24	X B5	X B4
DP0_C2M_N	DP0_C2M_P	DP0_W2C_N	DP0_W2C_P	DP1_C2M_N	DP1_C2M_P	DP1_W2C_N	DP1_W2C_P	DP2_C2M_N	DP2_C2M_P	DP2_W2C_N	DP2_W2C_P	DP3_C2M_N	DP3_C2M_P	DP3_W2C_N	DP3_W2C_P	DP4_C2M_N	DP4_C2M_P	DP4_W2C_N	DP4_W2C_P
C3	C2	C7	C6	A23	A22	A3	A2	A27	A26	A7	A6	A31	A30	A11	A10	A35	A34	A15	A14

TXRX

PCIe routing:  
Target Zo (diff): 85 Ohms +/- 15%  
Spacing between links: 20 mils  
Matching tolerance (intra-pair): 5 mils  
Matching tolerance (inter-pair): Not required

Coupling capacitor for transceivers must be in FMC mezzanine card.

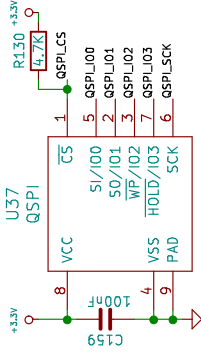
Authors: See 'doc/CHANGES.txt' file. License: See 'doc/LICENCIA\_CIAA\_ACC.txt' file.  
**COMPUTADORA INDUSTRIAL ABIERTA ARGENTINA, CIAA-ACC (HPC)**

Sheet: /Principal/BANK\_112/  
File: BANK\_112.sch

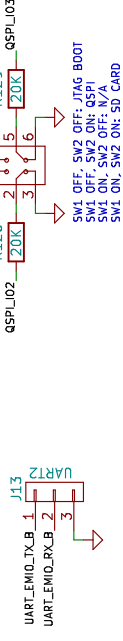
**Title: CIAA-ACC FPGA PCIe / FMC transceiver**

Size: A4	Date: 2019-08-28	Rev: V1.4
KiCad E.D.A. kicad 5.0.2+dfsg1-1bpo9+1		

**UART, QSPI, I2C, CAN, RS485**

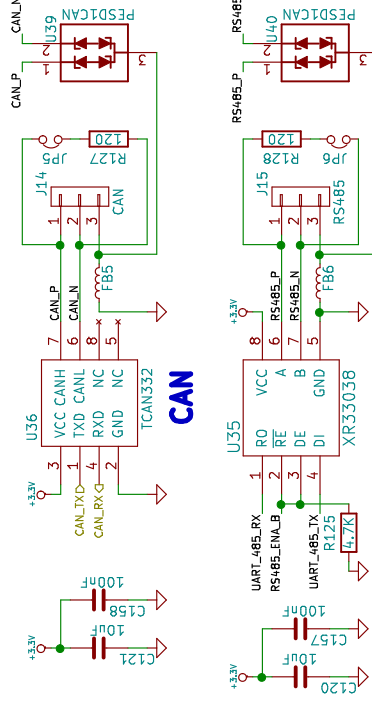
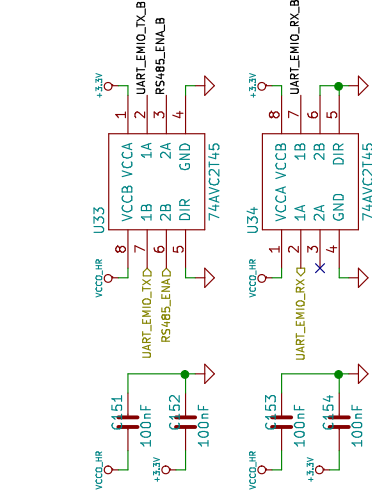


QSPI Routing:  
Target Zo: 50 Ohms +/- 5%  
Spacing to other signals: 3w  
Matching tolerance: 3 mm



## UART 2

## BOOT SELECTOR



## RS-485

Authors: See 'doc/CHANGES.txt' file. License: See 'doc/LICENCIA\_CIAA\_ACC.txt' file.  
**COMPUTADORA INDUSTRIAL ABIERTA ARGENTINA. CIAA-ACC (HPC)**

Sheet: /Principal/BANK\_500/

File: BANK\_500.sch

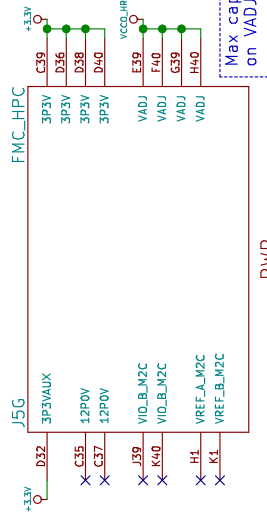
**Title: CIAA-ACC UART, QSPI, I2C, CAN, CAN, RS485**

Size: A4	Date: 2019-08-28	Rev: V1.4
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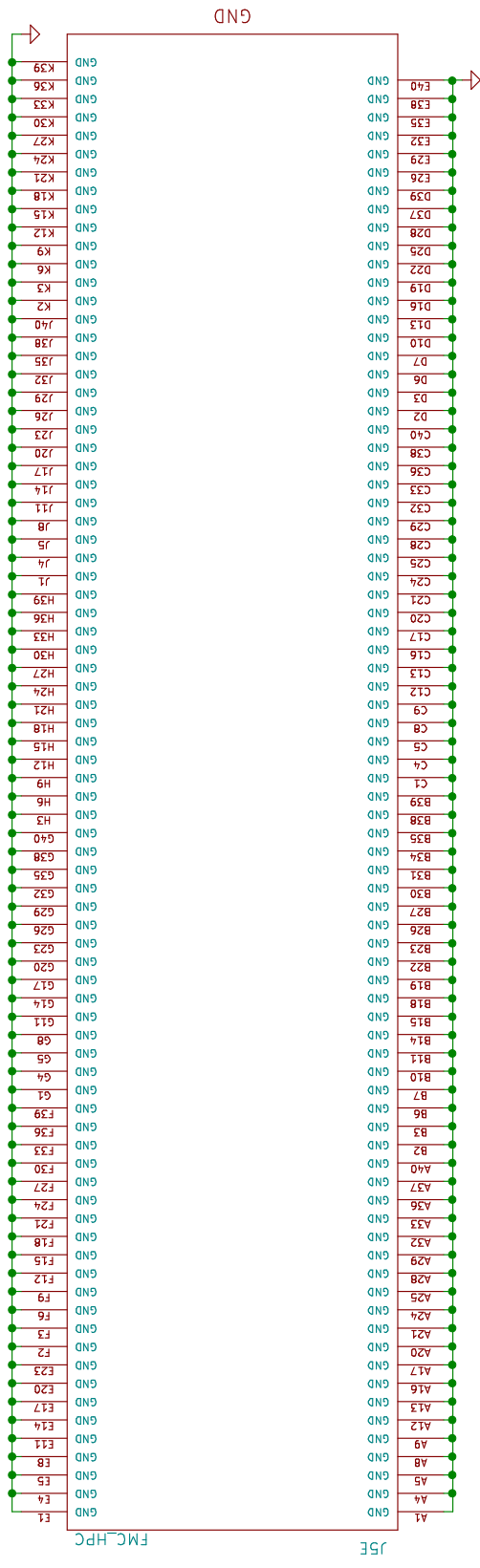
KiCad E.D.A.	kicad 5.0.2+dfsq1-1bpo9+1
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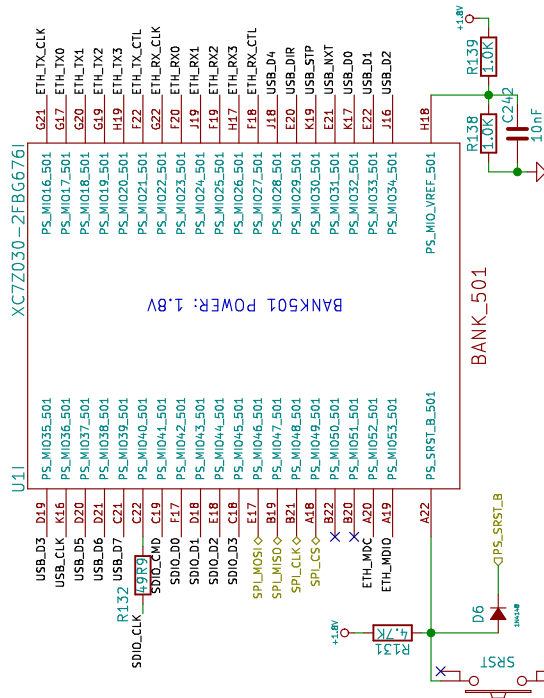
FMC POWER PINS



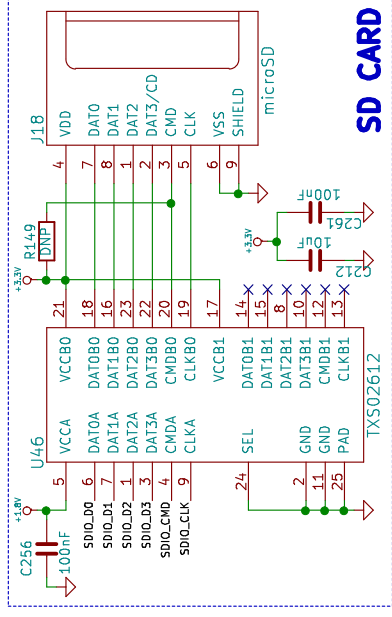
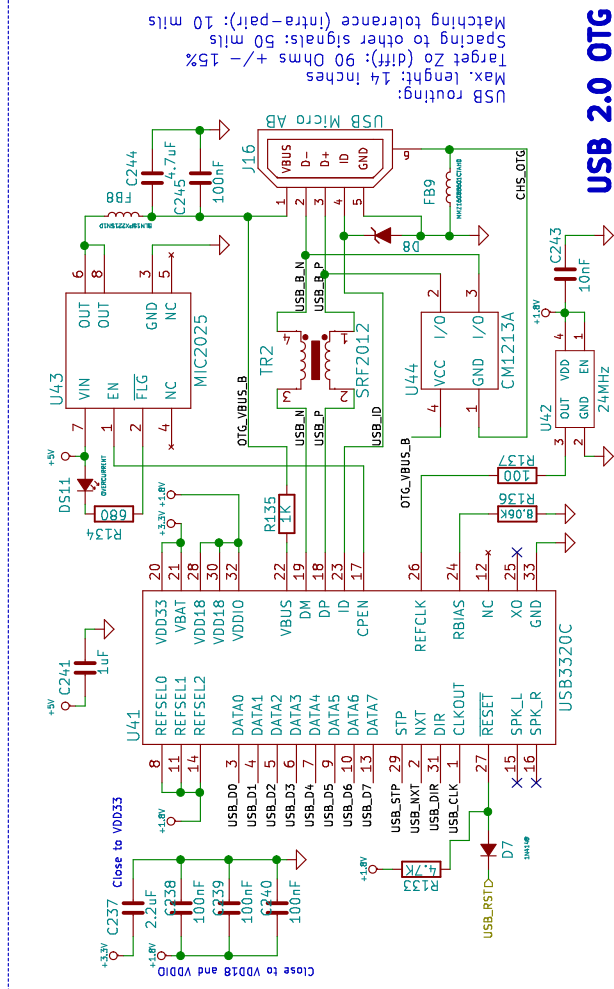
PWR



## ETH, SDIO, USB OTG



## GIGABIT ETHERNET



Authors: See 'doc/CHANGES.txt' file. License: See 'doc/LICENCIA\_CIAA\_ACC.txt' file.  
**COMPUTADORA INDUSTRIAL ABIERTA ARGENTINA. CIAA-ACC (HPC)**

Title: CIAA-ACC Ethernet, SDIO, USB OTG

Size: A4	Date: 2019-08-28	<b>Rev: V1.4</b>
KICad E.D.A. kicad 5.0.2+dfsg1-1bpo9+1		Id: 14/16





FMC LA / FPGA BANKS 12, 13

XC7Z030-2FBG676I

U1B

FMC CC Type	W14 LED_OK	W17 LED_ERR
FMC.IA.1.N_A013	IO.0.12	IO.25.12
FMC.IA.1.P_A013	IO.112P_T1_MRCC.12	IO.112P_T1_MRCC.12
FMC.CLK0.C2M.N_A014	IO.113N_T2_MRCC.12	Y11 FMC.IA.4.N
FMC.CLK0.C2M.P_A014	IO.113P_T2_MRCC.12	Y12 FMC.IA.4.P
FMC.CLK0.M2C.N_A014	IO.114N_T2_SRCC.12	AC11 FMC.IA.9.N
FMC.CLK0.M2C.P_A014	IO.114P_T2_SRCC.12	AB12 FMC.IA.9.P
FMC.IA.30.N_A015	IO.115N_T2_D05.12	AA10 FMC.IA.2.N
FMC.IA.30.P_A015	IO.115P_T2_D05.12	Y10 FMC.IA.2.P
FMC.IA.20.N_A015	IO.116N_T2.12	AB10 FMC.IA.3.N
FMC.IA.20.P_A015	IO.116P_T2.12	Y11 FMC.IA.3.P
FMC.IA.28.N_A016	IO.117N_T2.12	W13 FMC.IA.7.P
FMC.IA.28.P_A016	IO.117P_T2.12	AA12 FMC.IA.8.N
FMC.IA.33.N_A017	IO.118N_T2.12	AA13 FMC.IA.8.P
FMC.IA.33.P_A017	IO.118P_T2.12	AD10 FMC.IA.6.N
FMC.IA.11.N_A017	IO.119N_T3_VREF.12	AE10 FMC.IA.6.P
FMC.IA.11.P_A017	IO.119P_T3.12	AF12 FMC.IA.13.N
FMC.IA.23.N_A016	IO.120N_T3.12	AE12 FMC.IA.13.P
FMC.IA.23.P_A016	IO.120P_T3.12	IO.18P_T1.12
FMC.IA.25.N_A016	IO.121N_T3_D05.12	IO.19N_T1_D05.12
FMC.IA.25.P_A017	IO.121P_T3_D05.12	IO.110N_T1.12
FMC.IA.10.N_A014	IO.122N_T3.12	AF13 FMC.IA.14.N
FMC.IA.10.P_A015	IO.122P_T3.12	AE13 FMC.IA.14.P
FMC.IA.19.N_A015	IO.123N_T3.12	AD11 FMC.IA.0.N
FMC.IA.19.P_A016	IO.123P_T3.12	AC12 FMC.IA.0.P
FMC.IA.12.N_A015	IO.124N_T3.12	
FMC.IA.12.P_A016	IO.124P_T3.12	

BANK\_12

U1C

XC7Z030-2FBG676I

FMC CC Type	W19 QUART_ENIO_RX	W18 DR54B5_ENA
FMC.IA.18.N_A024	IO.0.13	IO.25.13
FMC.IA.18.P_A023	IO.112P_T1_MRCC.13	IO.112P_T1_MRCC.13
FMC.IA.17.N_A021	IO.113N_T2_MRCC.13	IO.113N_T2_MRCC.13
FMC.IA.17.P_A020	IO.113P_T2_MRCC.13	AB25 >TMD5.D1.N
FMC.IA.26.N_A022	IO.114N_T2_SRCC.13	AC26 >TMD5.D1.P
FMC.IA.26.P_A021	IO.114P_T2_SRCC.13	AB26 >TMD5.D2.N
FMC.PRSNTD-A019	IO.115N_T2_D05.13	AE26 >TMD5.D2.P
FMC.IA.21.N_A020	IO.116N_T2.13	AD25 >D00U11
FMC.IA.21.P_A019	IO.116P_T2.13	AE25 >D00U13
FMC.IA.31.N_A018	IO.117P_T2.13	IO.14N_T0.13
FMC.IA.27.N_A018	IO.118N_T2.13	AD25 >D00U12
FMC.IA.27.P_A018	IO.118P_T2.13	AE25 >QDIN1
FMC.IA.22.N_Y20	IO.119N_T3_VREF.13	AB24 >TMD5.D0.N
FMC.IA.22.P_W20	IO.119P_T3.13	AD24 >TMD5.D0.P
FMC.IA.29.N_A020	IO.120N_T3.13	AE22 >CAN_TX
FMC.IA.29.P_A019	IO.120P_T3.13	AE22 >CAN_LPX
FMC.IA.32.N_A018	IO.121N_T3_D05.13	AF23 >HDMI_OUT_EN
FMC.IA.32.P_A018	IO.121P_T3_D05.13	AE23 >UART_ENIO_TX
FMC.IA.24.N_A019	IO.122N_T3.13	AB22 >HDMI_HPD
FMC.IA.24.P_A019	IO.122P_T3.13	AB21 >HDMI_CEC
FMC.IA.15.N_W19	IO.123N_T3.13	AD23 >TMD5.CLK.N
FMC.IA.15.P_W18	IO.123P_T3.13	AD22 >TMD5.CLK.P
FMC.IA.16.N_A018	IO.124N_T3.13	AD24 >QDIN0
FMC.IA.16.P_Y18	IO.124P_T3.13	AD23 >QDIN2

BANK\_13

FMC CC Type	J5C	FMC_HPC
FMC.IA.17.N_D21	UA17.N.CC	G7 FMC.IA.0.N
FMC.IA.17.P_D20	UA17.P.CC	G6 FMC.IA.0.P
FMC.IA.18.N_C23	UA18.N.CC	D9 FMC.IA.1.N
FMC.IA.18.P_C22	UA18.P.CC	D8 FMC.IA.1.P
FMC.IA.19.N_H23	UA19.N	H7 FMC.IA.2.N
FMC.IA.19.P_H22	UA19.P	H7 FMC.IA.2.P
FMC.IA.20.N_G22	UA20.N	G10 FMC.IA.3.N
FMC.IA.20.P_G21	UA20.P	G9 FMC.IA.3.P
FMC.IA.21.N_H26	UA21.N	H11 FMC.IA.5.N
FMC.IA.21.P_H25	UA21.P	H10 FMC.IA.5.P
FMC.IA.22.N_G25	UA22.N	D12 FMC.IA.5.N
FMC.IA.22.P_G24	UA22.P	D11 FMC.IA.5.P
FMC.IA.23.N_D24	UA23.N	C11 FMC.IA.6.N
FMC.IA.23.P_D23	UA23.P	C10 FMC.IA.6.P
FMC.IA.24.N_H29	UA24.N	H14 FMC.IA.7.N
FMC.IA.24.P_H28	UA24.P	H13 FMC.IA.7.P
FMC.IA.25.N_G28	UA25.N	G13 FMC.IA.8.N
FMC.IA.25.P_G27	UA25.P	G12 FMC.IA.8.P
FMC.IA.26.N_D27	UA26.N	D15 FMC.IA.9.N
FMC.IA.26.P_D26	UA26.P	D14 FMC.IA.9.P
FMC.IA.27.N_C27	UA27.N	C15 FMC.IA.10.N
FMC.IA.27.P_C26	UA27.P	C14 FMC.IA.10.P
FMC.IA.28.N_H32	UA28.N	H17 FMC.IA.11.N
FMC.IA.28.P_H31	UA28.P	H16 FMC.IA.11.P
FMC.IA.29.N_G31	UA29.N	G16 FMC.IA.12.N
FMC.IA.29.P_G30	UA29.P	G15 FMC.IA.12.P
FMC.IA.30.N_H35	UA30.N	D18 FMC.IA.13.N
FMC.IA.30.P_H34	UA30.P	D17 FMC.IA.13.P
FMC.IA.31.N_G34	UA31.N	C19 FMC.IA.14.N
FMC.IA.31.P_G33	UA31.P	C18 FMC.IA.14.P
FMC.IA.32.N_H38	UA32.N	H20 FMC.IA.15.N
FMC.IA.32.P_H37	UA32.P	H19 FMC.IA.15.P
FMC.IA.33.N_G37	UA33.N	G19 FMC.IA.16.N
FMC.IA.33.P_G36	UA33.P	G18 FMC.IA.16.P

BANK\_LA

FMC\_HPC

FMC CC Type	J5D	FMC_HPC
FMC.CLK1.C2M.ND_J3	CLK1.C2M.N	G3 FMC.CLK0.C2M.N
FMC.CLK1.C2M.PD_J2	CLK1.C2M.P	G2 FMC.CLK0.C2M.P
FMC.CLK1.M2C.NG_K5	CLK1.M2C.N	H5 FMC.CLK0.M2C.N
FMC.CLK1.M2C.PG_K4	CLK1.M2C.P	H4 FMC.CLK0.M2C.P
✗ B21	GBTCLK1.M2C.N	D5 MGTREFCLK1_B_N267
✗ B20	GBTCLK1.M2C.P	D4 MGTREFCLK1_B_P268

CLK

Authors: See 'doc/CHANGES.txt' file. License: See 'doc/LICENCIA\_CIAA\_ACC.txt' file.  
**COMPUTADORA INDUSTRIAL ABIERTA ARGENTINA. CIAA-ACC (HPC)**

Sheet: /Principal/BANKS\_HR/  
File: BANKS\_HR.sch

**Title: CIAA-ACC FMC LA / FPGA BANKS 12, 13**

Size: A4	Date: 2019-08-28	<b>Rev: V1.4</b>
KiCad E.D.A. kicad 5.0.2+dfsg1-1bp9+1		Id: 16/16