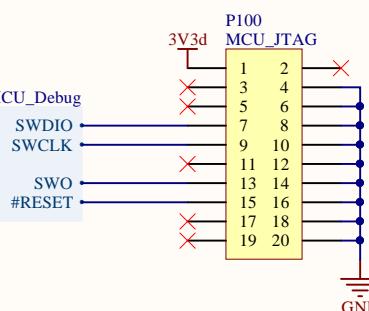
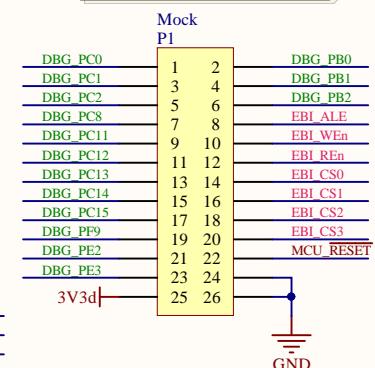
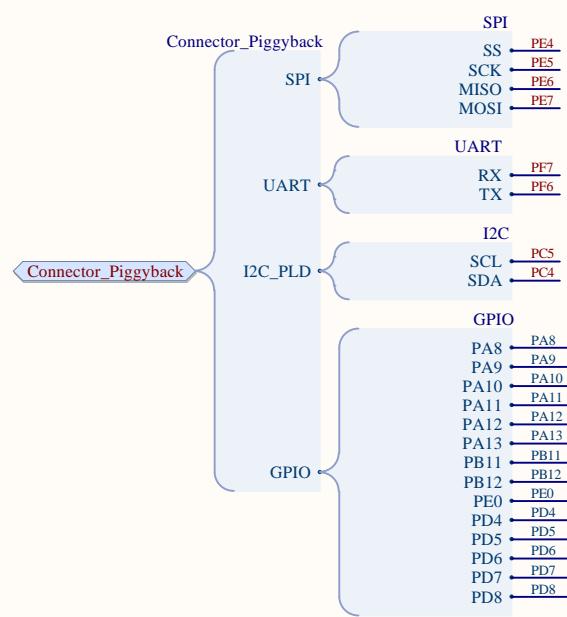


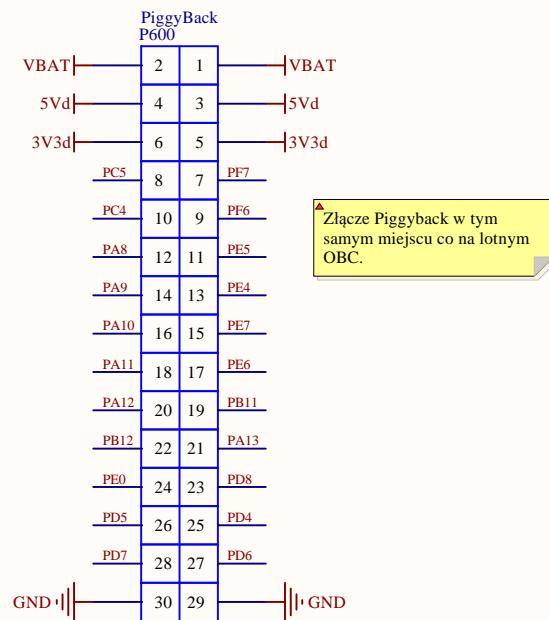
▲ Złącze Mock umieścić tam, gdzie wygodnie. Można dowolnie zamieniać piny. Złącze proste.



A



B



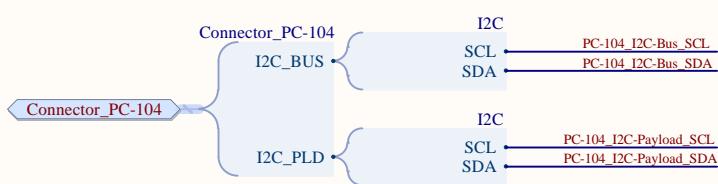
C

D

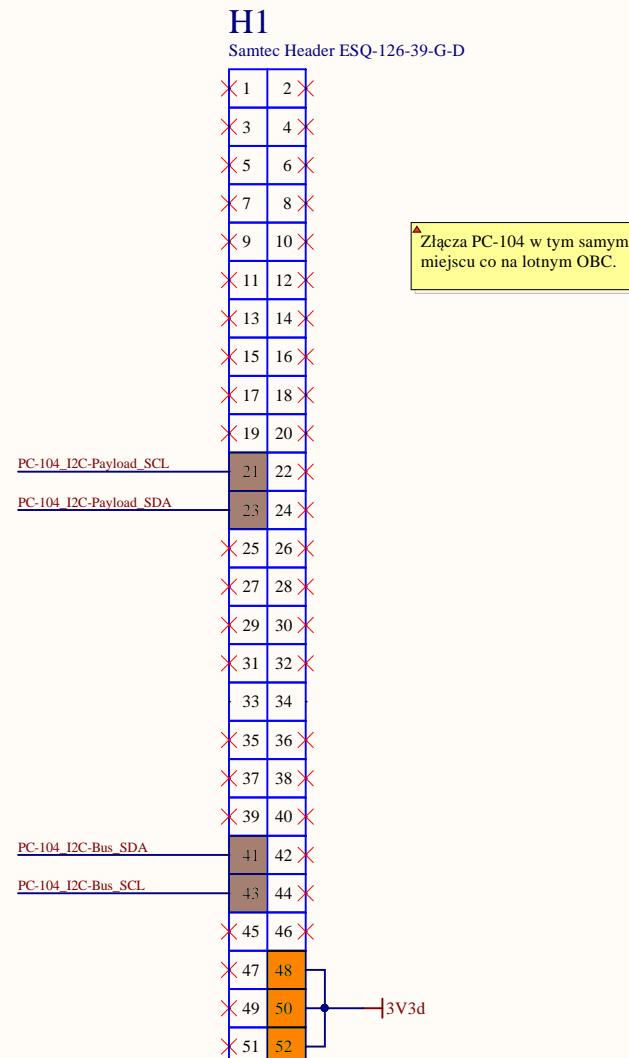


Project:		PW-Sat2 / OBC / EM			
Title:		OBC / Connectors / Piggyback			
Model:	Document Number:	PWSat2-xxx-DW-xxx	Rev:	Date:	Sheet:
EM			2	2019/2/26	10 of 10
Author:		Checked by:		Approved by:	
Piotr Kuligowski		Grzegorz Gajoch		(not approved)	
File name: OBC_Connectors_Piggyback.SchDoc					

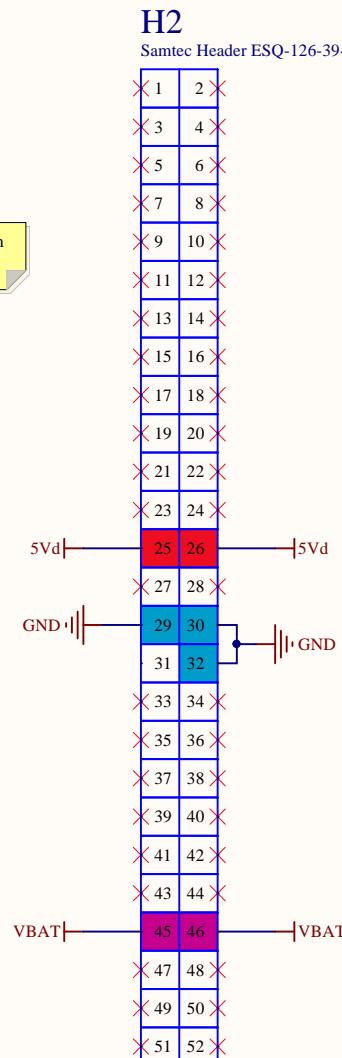
A



B



C



D



Project:		PW-Sat2 / OBC / EM			
Title:		OBC / Connectors / PC-104			
Model:	Document Number:	PWSat2-xxx-DW-xxx	Rev:	Date:	Sheet:
Author:		Checked by:	Approved by:		
Piotr Kuligowski		Grzegorz Gajoch	(not approved)		
File name: OBC_Connectors_PC-104.SchDoc					

A

A

B

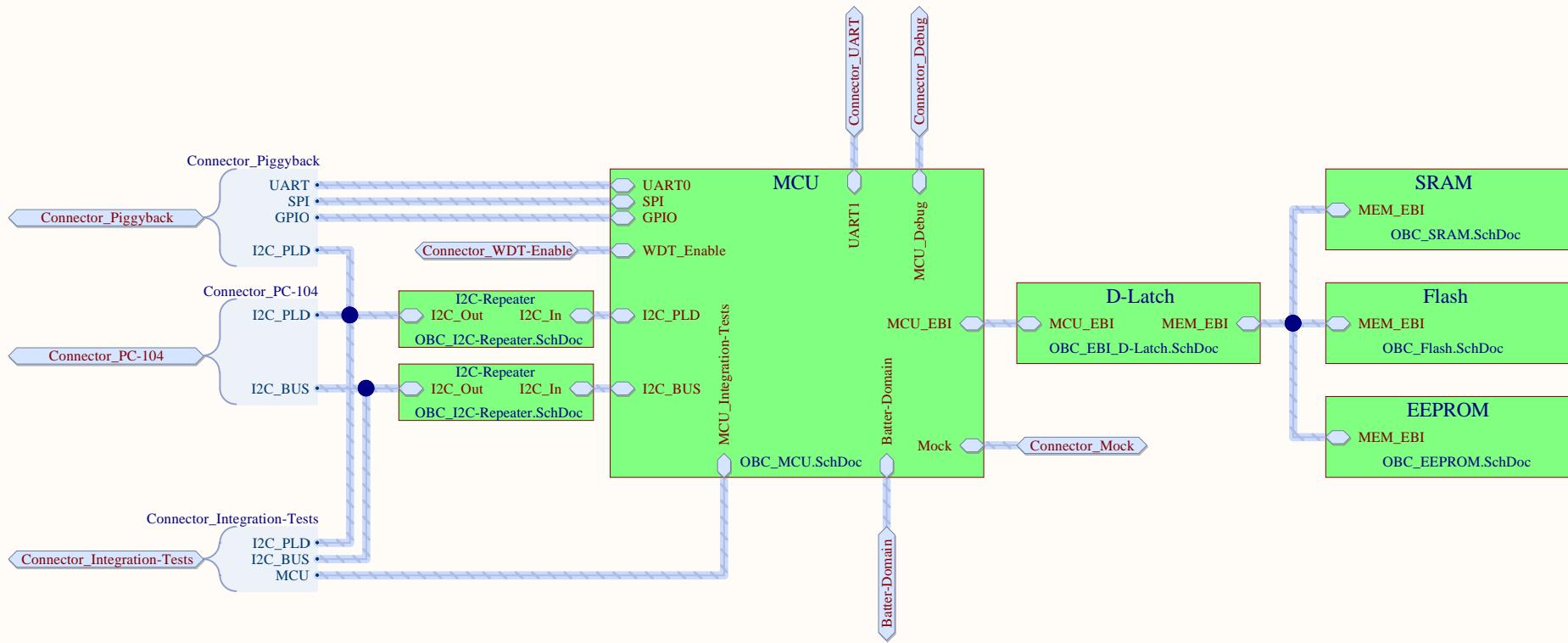
B

C

C

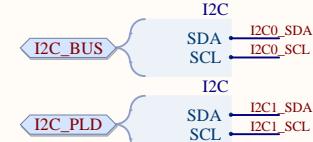
D

D



Project:		PW-Sat2 / OBC / EM			
Title:		OBC / Top			
Model:	Document Number:	PWSat2-xxx-DW-xxx	Rev:	2	Date: 2019/2/26 Sheet: 4 of 10
Author: Piotr Kuligowski		Checked by: Grzegorz Gajoch		Approved by: (not approved)	
File name: OBC_Top.SchDoc					

A



3V3d

Batter-Domain

Pull-Up BU_VIN

Pull-Down

GPIO_PDS

R20 2.2k

GND

R21 2.2k

GND

GPIO_PA8

GPIO_PA9

GPIO_PA10

GPIO_PA11

GPIO_PA12

GPIO_PA13

GPIO_PB11

GPIO_PB12

GPIO_PE0

GPIO_PD4

GPIO_PD5

GPIO_PD6

GPIO_PD7

GPIO_PD8

MCU_Debug

SWDIO

SWCLK

SWO

#RESET

3V3d

GND

C11 100nF/50V

10uF/16V

GND

C12 100nF/50V

10uF/16V

GND

C13 100nF/50V

10uF/16V

GND

C14 100nF/50V

10uF/16V

GND

C15 100nF/50V

10uF/16V

GND

C16 100nF/50V

10uF/16V

GND

C17 100nF/50V

10uF/16V

GND

C18 100nF/50V

10uF/16V

GND

C19 100nF/50V

10uF/16V

GND

C20 10nF/50V

10uF/16V

GND

C21 10nF/50V

10uF/16V

GND

C22 10nF/50V

10uF/16V

GND

3V3d

GND

C23 100nF/50V

10uF/16V

GND

C24 100nF/50V

10uF/16V

GND

C25 10nF/50V

10uF/16V

GND

C26 10nF/50V

10uF/16V

GND

C27 100nF/50V

10uF/16V

GND

C28 100nF/50V

10uF/16V

GND

C29 100nF/50V

10uF/16V

GND

C30 100nF/50V

10uF/16V

GND

C31 100nF/50V

10uF/16V

GND

C32 100nF/50V

10uF/16V

GND

C33 100nF/50V

10uF/16V

GND

C34 100nF/50V

10uF/16V

GND

C35 100nF/50V

10uF/16V

GND

C36 100nF/50V

10uF/16V

GND

C37 100nF/50V

10uF/16V

GND

C38 100nF/50V

10uF/16V

GND

C39 100nF/50V

10uF/16V

GND

C40 100nF/50V

10uF/16V

GND

C41 100nF/50V

10uF/16V

GND

C42 100nF/50V

10uF/16V

GND

C43 100nF/50V

10uF/16V

GND

C44 100nF/50V

10uF/16V

GND

C45 100nF/50V

10uF/16V

GND

C46 100nF/50V

10uF/16V

GND

C47 100nF/50V

10uF/16V

GND

C48 100nF/50V

10uF/16V

GND

C49 100nF/50V

10uF/16V

GND

C50 100nF/50V

10uF/16V

GND

C51 100nF/50V

10uF/16V

GND

C52 100nF/50V

10uF/16V

GND

C53 100nF/50V

10uF/16V

GND

C54 100nF/50V

10uF/16V

GND

C55 100nF/50V

10uF/16V

GND

C56 100nF/50V

10uF/16V

GND

C57 100nF/50V

10uF/16V

GND

C58 100nF/50V

10uF/16V

GND

C59 100nF/50V

10uF/16V

GND

C60 100nF/50V

10uF/16V

GND

C61 100nF/50V

10uF/16V

GND

C62 100nF/50V

10uF/16V

GND

C63 100nF/50V

10uF/16V

GND

C64 100nF/50V

10uF/16V

GND

C65 100nF/50V

10uF/16V

GND

C66 100nF/50V

10uF/16V

GND

C67 100nF/50V

A

A

B

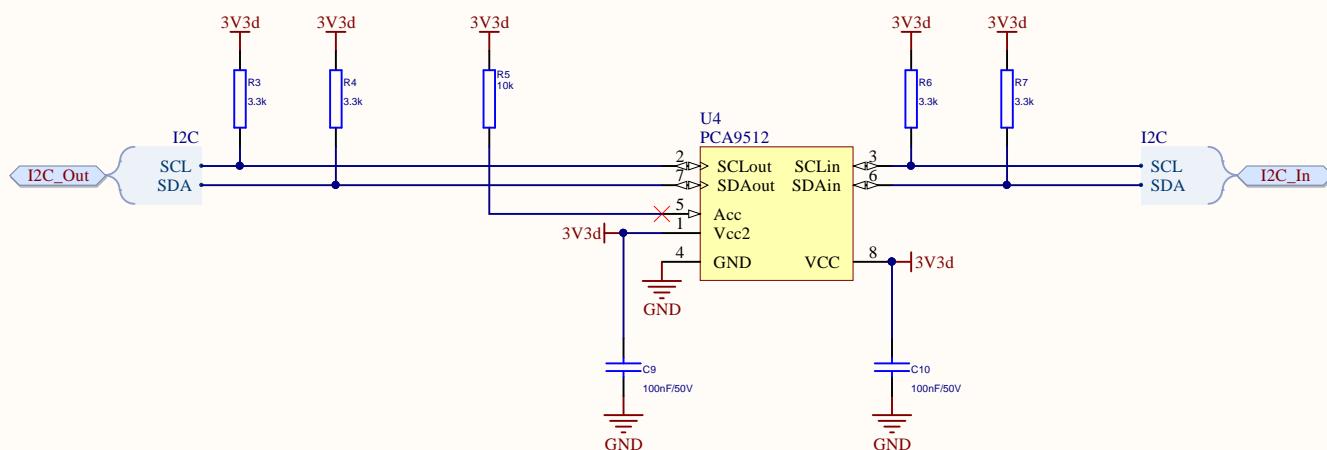
B

C

C

D

D



Project:		PW-Sat2 / OBC / EM			
Title:		OBC / I ₂ C Repeater			
Model:	Document Number:	PWSat2-xxx-DW-xxx	Rev:	2	Date: 2019/2/26 Sheet: 10 of 10
Author:		Checked by:		Approved by:	
Piotr Kuligowski		Grzegorz Gajoch		(not approved)	
File name: OBC_I2C-Repeater.SchDoc					

A

A

B

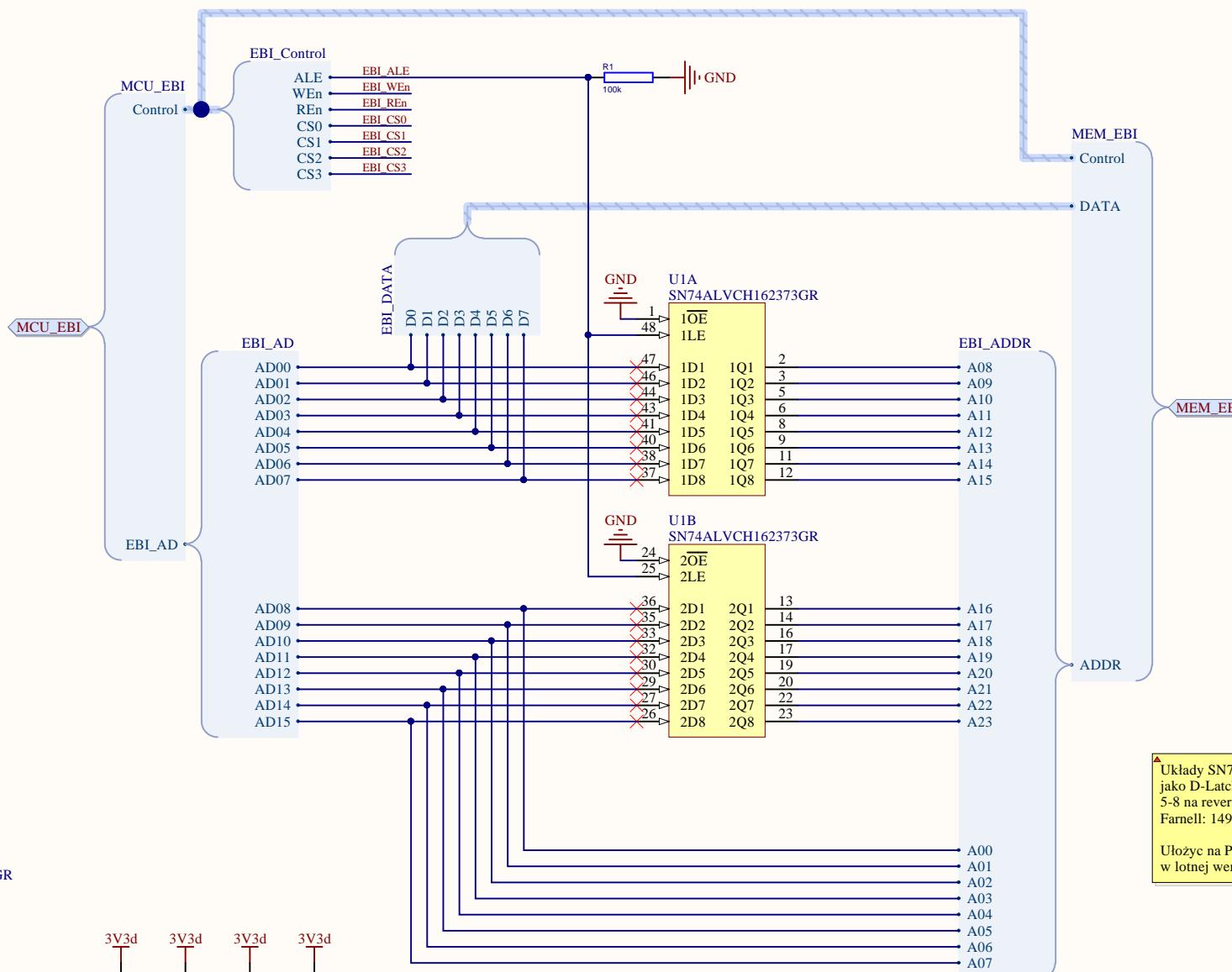
B

C

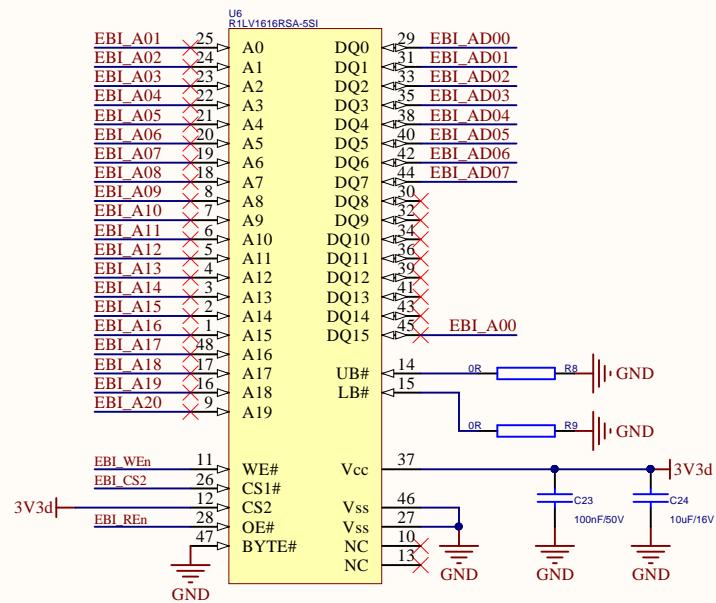
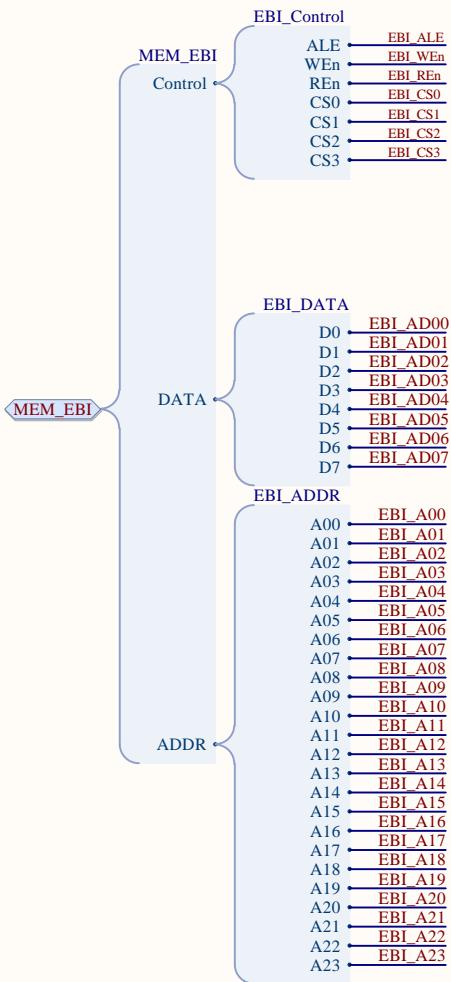
C

D

D



Project:		PW-Sat2 / OBC / EM			
Title:		OBC / EBI / D-Latch			
Model:	Document Number:	Rev:	Date:	Sheet:	
EM	PWSat2-xxx-DW-xxx	2	2019/2/26	7	of 10
Author:		Checked by:		Approved by:	
Piotr Kuligowski		Grzegorz Gajoch		(not approved)	
File name: OBC_EBI_D-Latch.SchDoc					

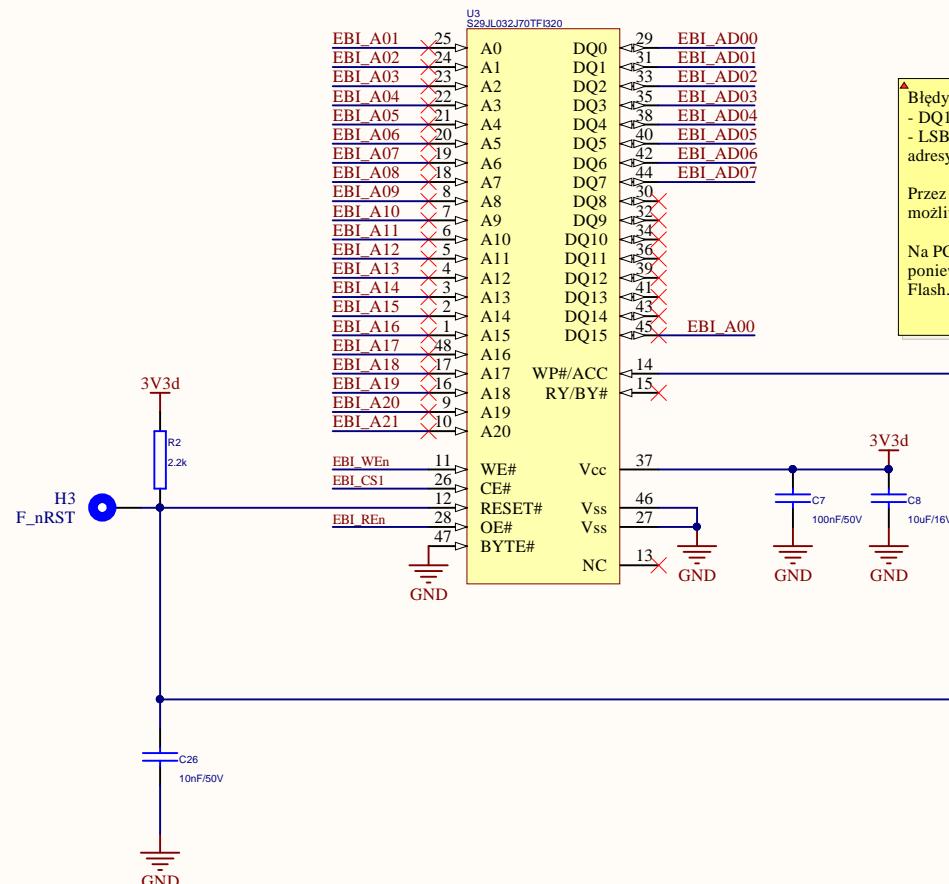
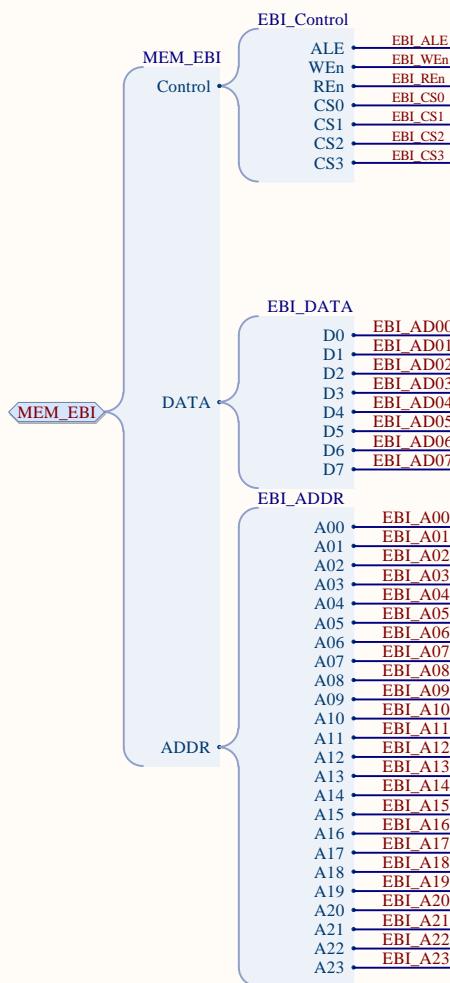


Jeden SRAM R1LV1616RSA-5SI
Digikey: R1LV1616RSA-5SI#B0-ND
Ulożyc na PCB w tym samym miejscu, co
w lotnej wersji. W lotnej wersji są dwie
pamięci, tutaj będzie jedna.



Project:		PW-Sat2 / OBC / EM			
Title:		OBC / SRAM			
Model:	Document Number:	Rev:	Date:	Sheet:	
EM	PWSat2-xxx-DW-xxx	2	2019/2/26	8 of 10	
Author:		Checked by:		Approved by:	
Piotr Kuligowski		Grzegorz Gajoch		(not approved)	
File name: OBC_SRAM.SchDoc					

A



▲ Blody:

- DQ15/A-1 był pływający
- LSB szyny adresowej to A-1, a nie A0 (wszystkie adresy przesunięte o 1)

Przez to flash nie jest rozpoznawany i nie ma możliwości dogadania się z nim.

Na PCB zwarto DQ15/A-1 do masy ale to nic nie daje, ponieważ potrzeba LSB (A-1), aby nawiązać kontakt z Flash.

▲ Jedna kość Flash S29JL032J.
Farnell: 1972451

Ulożyc na PCB w tym samym miejscu, co w lotnej wersji.



Project:		PW-Sat2 / OBC / EM			
Title:		OBC / Flash			
Model:	Document Number:	PWSat2-xxx-DW-xxx	Rev:	2	Date: 2019/2/26 Sheet: 10
Author:		Checked by:		Approved by:	
Piotr Kuligowski		Grzegorz Gajoch		(not approved)	
File name: OBC_Flash.SchDoc					

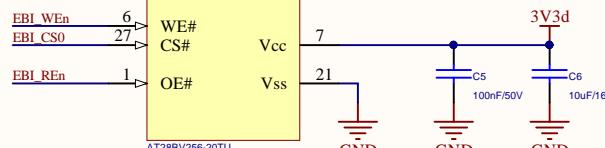
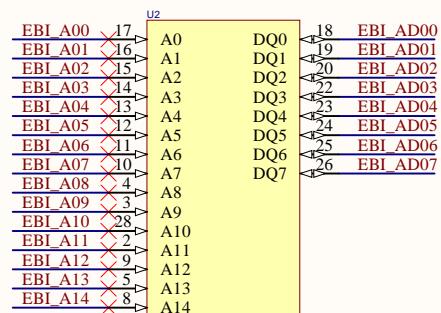
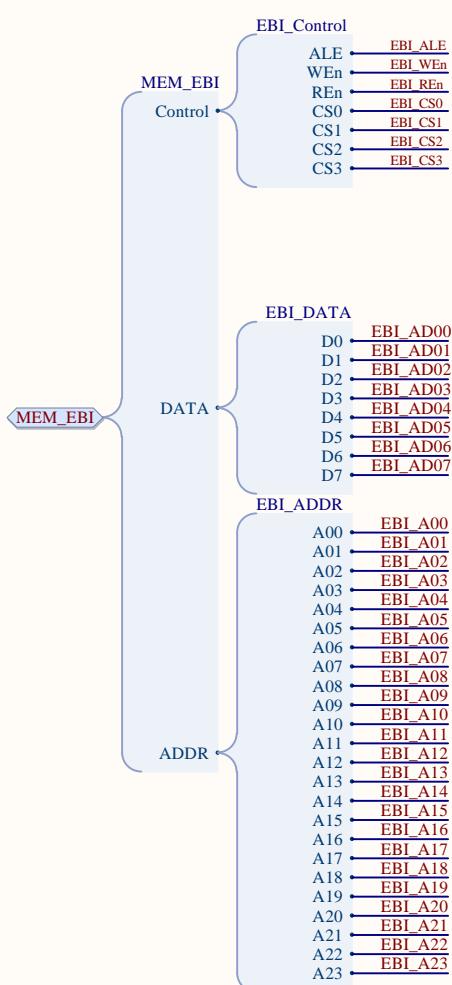
A

B

C

D

A



▲ Jedna kość EEPROM AT28BV256.
Farnell: 2345612
Ułożyć na PCB w tym samym miejscu, co
w lotnej wersji.



Project:		PW-Sat2 / OBC / EM		
Title:		OBC / EEPROM		
Model:	Document Number:	PWSat2-xxx-DW-xxx	Rev:	Date: 2019/2/26 Sheet: 10 of 10
Author: Piotr Kuligowski		Checked by: Grzegorz Gajoch		Approved by: (not approved)
File name: OBC_EEPROM.SchDoc				

P500 <WDT Enable>



MCU RESET

P1 <MOCK>

GND	○ ○
GND	○ ○
nRST	○ ○
EBI_nCS3	○ ○
EBI_nCS2	○ ○
EBI_nCS1	○ ○
EBI_nCS0	○ ○
EBI_REN	○ ○
EBI_WEN	○ ○
EBI_ALE	○ ○
PB2	○ ○
PB1	○ ○
PB0	○ □

OBC EM. 2. 02

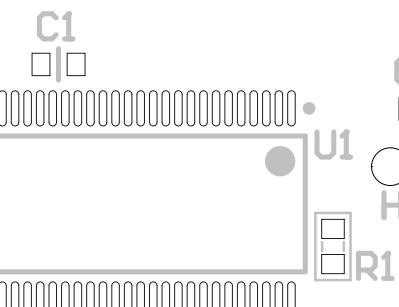
P4

3. 3V	○
PE3	○ ○
PE2	○ ○
PF9	□
PC15	○ ○
PC14	○ ○
PC3	○ ○
PC12	○ ○
PC11	○ ○
PC8	○ ○
PC2	○ ○
PC1	○ ○
PC0	○ ○

R9 R8

C24
C23

Active high
Active low



PC8 → ACMP1
PC2 → ACMPO
PC1 → Power SRAM2
PC0 → Power SRAM1
PC14→Enable SRAM1
PC15→Enable SRAM2
PE2→FPGA ctrl. pin
PE3→FPGA ctrl. pin
PB0→FPGA err. pin
PB1→FPGA err. pin
PB2→FPGA err. pin
PF9→WDT enable/toggle

U6

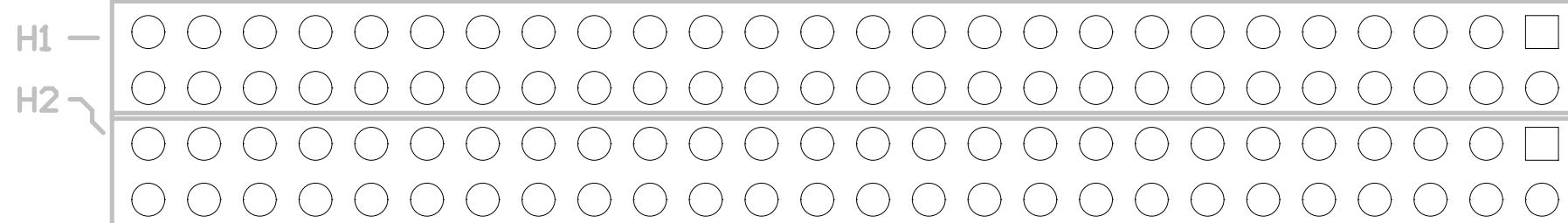
U3

POWER
R16 □□ □□

H70 ○ H69

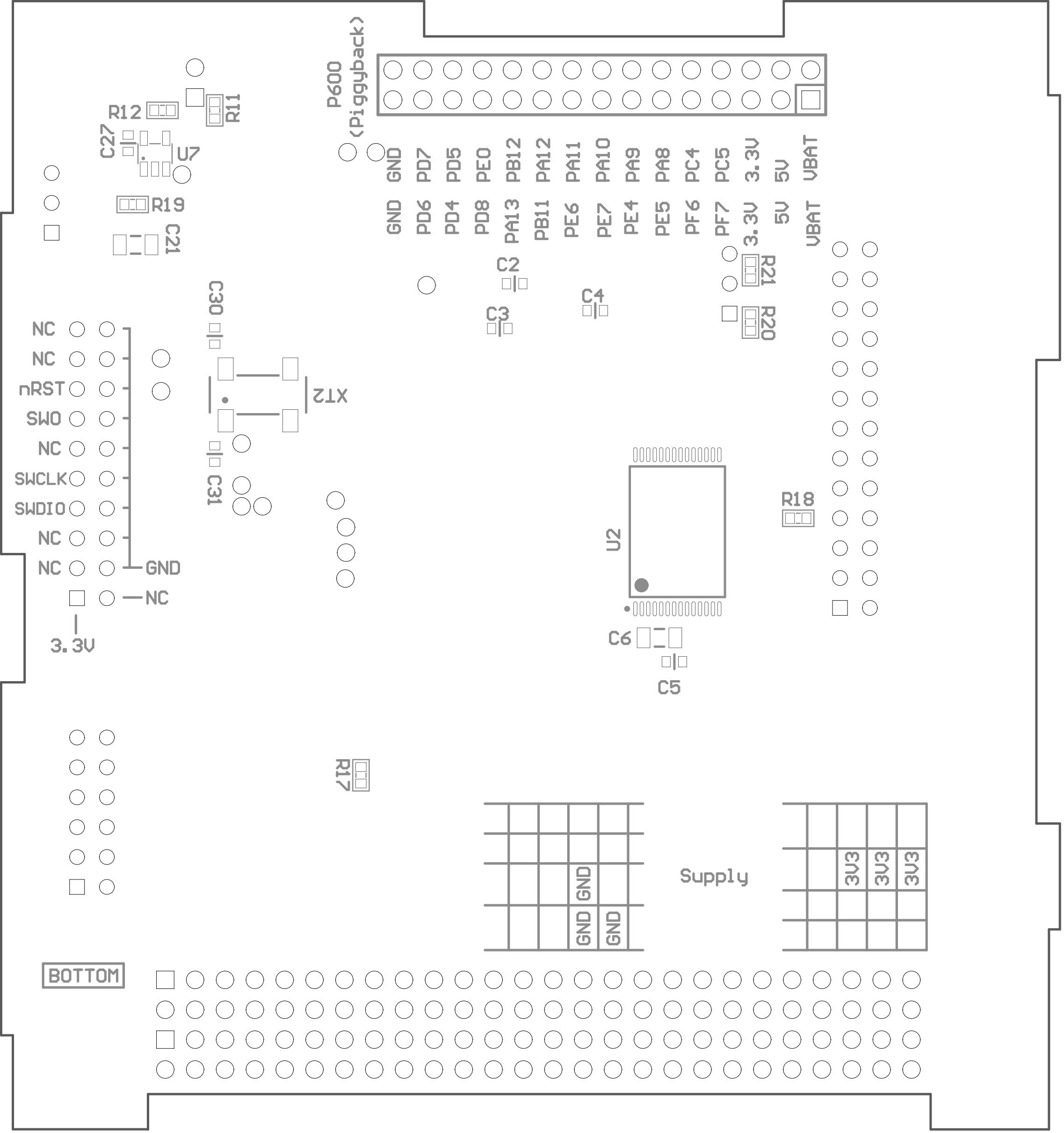
C15
C19
C18
C25
R10
C29
C20
C16
. . .

WDT
GND
RX
TX
C28
C22
C14
C16
C17
H26
H35
H21
C12
C11
H12
H14
H13
R13
R14
R15
LED_PD1
LED_PD2
LED_PD3
R2
C26
R1
C8
C7
R6_1
R3_1
C9_1
R6_2
R3_2
C9_2
C10_1
C10_2
R5_1
R7_1
R4_1
R5_2
R7_2
R4_2
TOP



P100 <SWD>

P3
<Integration>
nRST
GND
PC5
PC4
<BUS>
~SCL
~SDA
3. 3V
PE1
PDO
PB6
<U1>
RX
TX
R5_1
R7_1
R4_1
R5_2
R7_2
R4_2



S/N: 888

