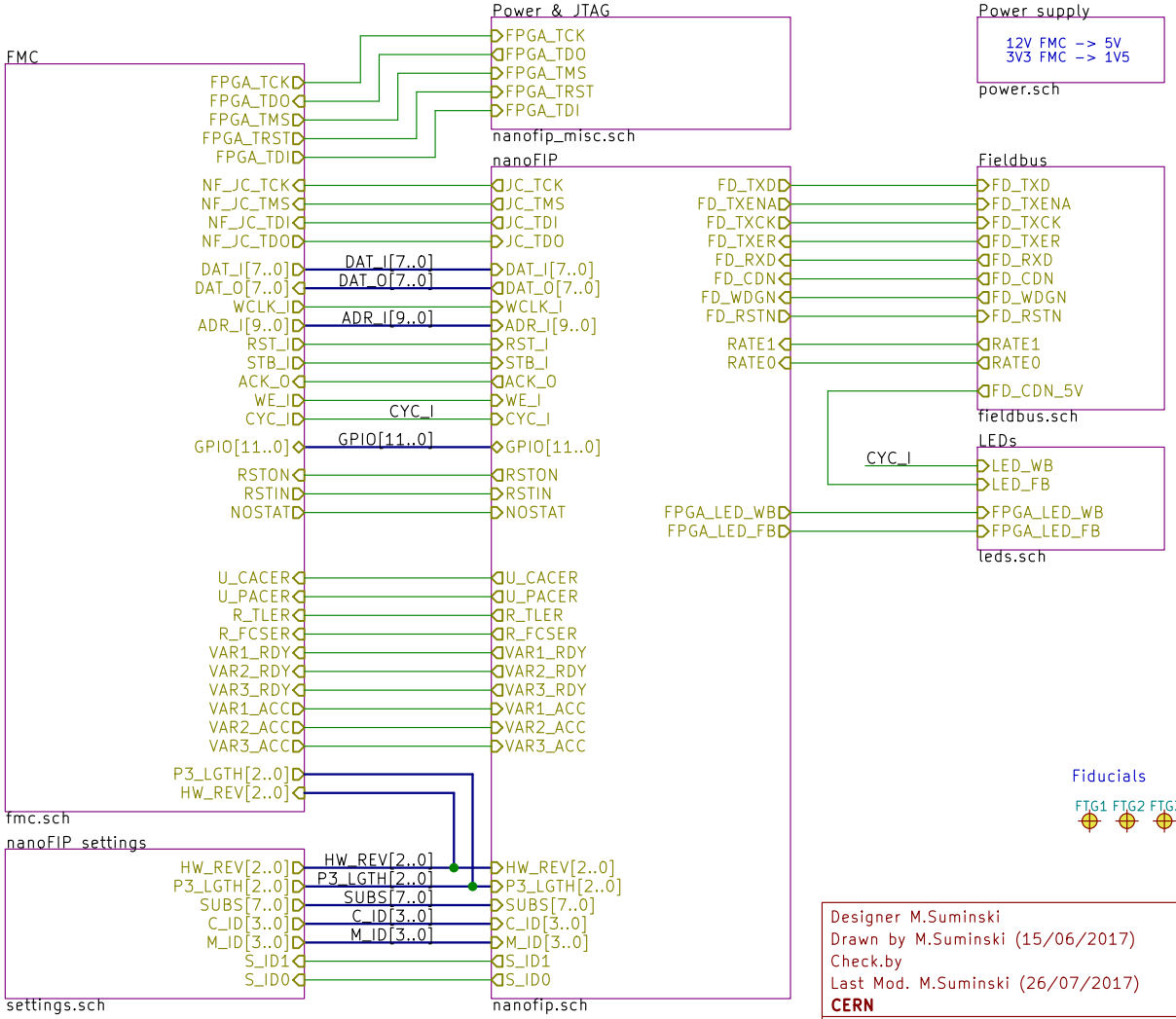
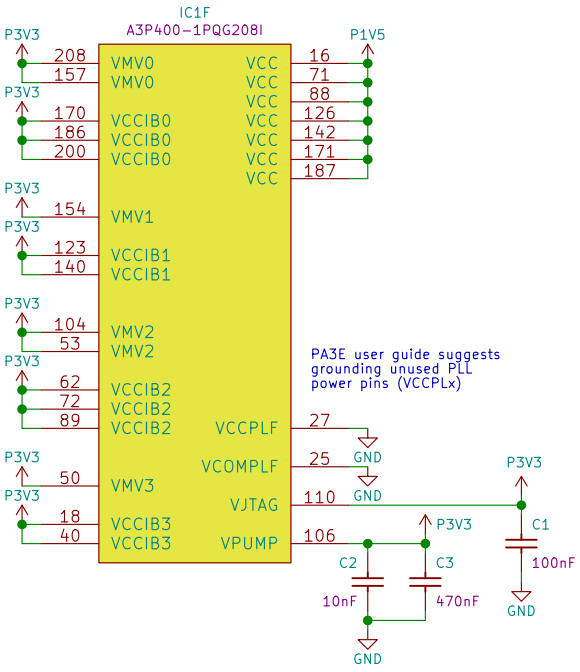
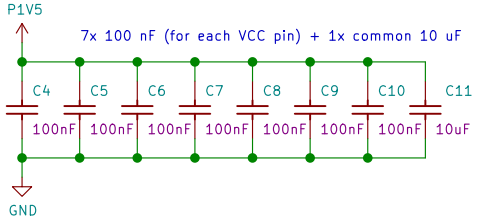
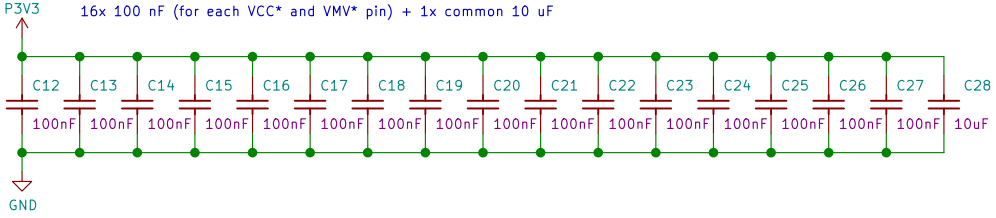
http://www.ohwr.org/projects/fmc-nanofip

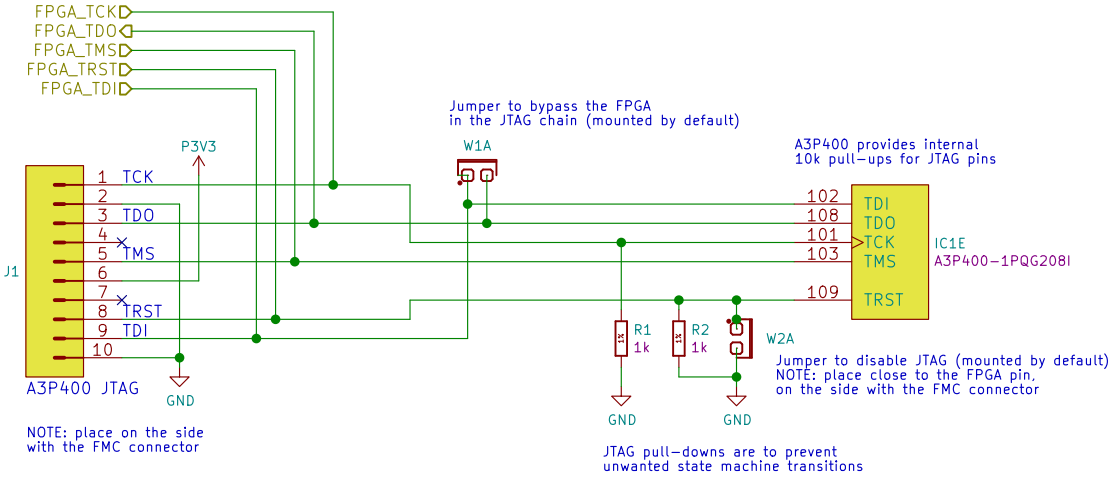


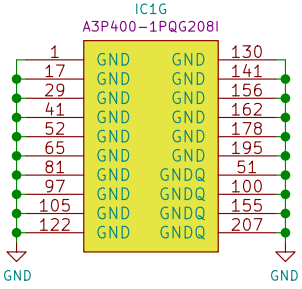
Designer M.Suminski		
Drawn by M.Suminski (15/06/2017)		
Check.by		
Last Mod. M.Suminski (26/07/2017)		
CERN		
Sheet: /		
File: fmc-nanofip.sch		
Title: FMC-nanoFIP		
Size: A4	Date: 2017-07-26	**Rev: 8**
KiCad E.D.A. kicad (2017-07-25 revision 161045f17)-master		Id: 1/8

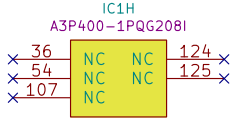






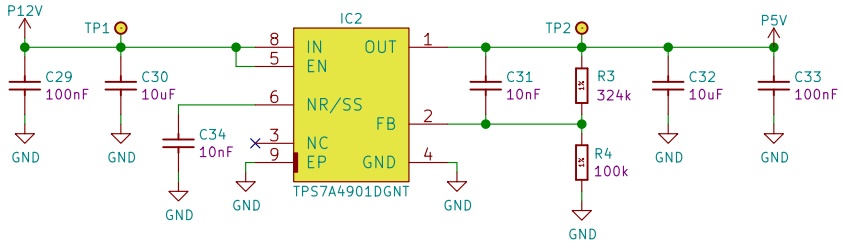






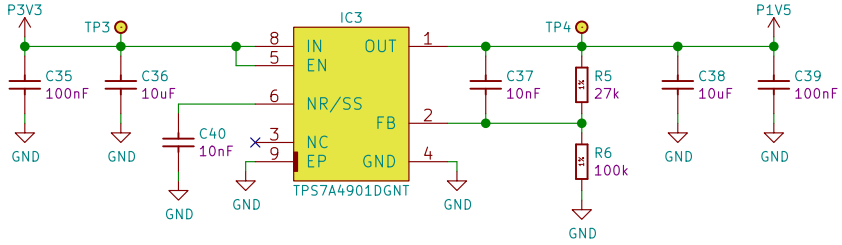
Designer M.Suminski	
Drawn by M.Suminski (15/06/2017)	
Check.by	
Last Mod. M.Suminski (25/07/2017)	
CERN	
Sheet: /Power & JTAG/	
File: nanofip_misc.sch	
Title: FMC-nanoFIP JTAG & Power	
Size: A4	Date: 2017-07-26 — **Rev: 8**
KiCad E.D.A. kicad (2017-07-25 revision 161045f17)-master	Id: 2/8

Vout = (R11 / R12 + 1) * Vfb = (324k / 100k + 1) * 1.185 = 5.0244 V



place testpoints on the side without the FMC connector

Vout = (R13 / R14 + 1) * Vfb = (27k / 100k + 1) * 1.185 = 1.50495 V



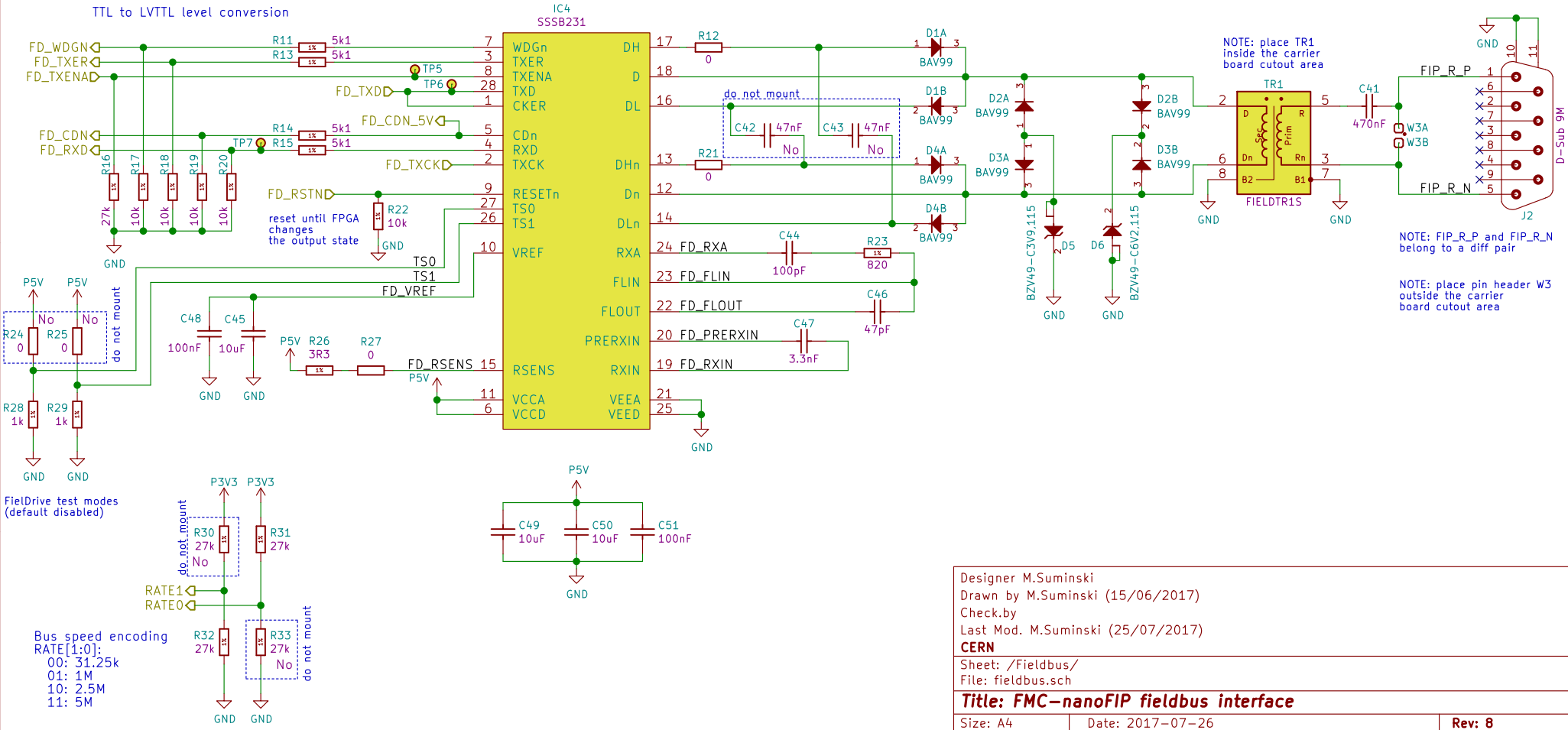
Designer	M.Suminski
Drawn by	M.Suminski (15/06/2017)
Check.by	
Last Mod.	M.Suminski (25/07/2017)
CERN	
Sheet:	/Power supply/
File:	power.sch
Title: FMC–nanoFIP power supply	
Size: A4	Date: 2017–07–26 — **Rev: 8**
KiCad E.D.A.	kicad (2017–07–25 revision 161045f17)–master — Id: 3/8

nanoFIP bus speed

marking resistor	31.25k R7 (do not mount / 0 / No)	1M R8 (0)	2.5M R9 (do not mount / 0 / No)	5M R10 (do not mount / 0 / No)
C41	3.3uF	470nF	100nF	100nF
C47	100nF	3.3nF	1.5nF	1.5nF
C46	1nF	47pF	27pF	27pF
C44	15nF	100pF	33pF	33pF
C42, C43	47nF	not mounted	not mounted	not mounted
D6	BZV49-C8V2	BZV49-C6V2	BZV49-C6V2	BZV49-C6V2
D1, D4	BAT54S	BAV99	BAV99	BAV99
D5	BZV49-C4V7	BZV49-C3V9	BZV49-C3V9	BZV49-C3V9
R27	3R3	0R	0R	0R
R23	330R	820R	820R	820R
R30	not mounted	not mounted	27k	27k
R31	not mounted	27k	not mounted	27k
R32	27k	27k	not mounted	not mounted
R33	27k	not mounted	27k	not mounted
TR1	FIELDTR 31.25S	FIELDTR 1S	FIELDTR 2.5S	FIELDTR 2.5S

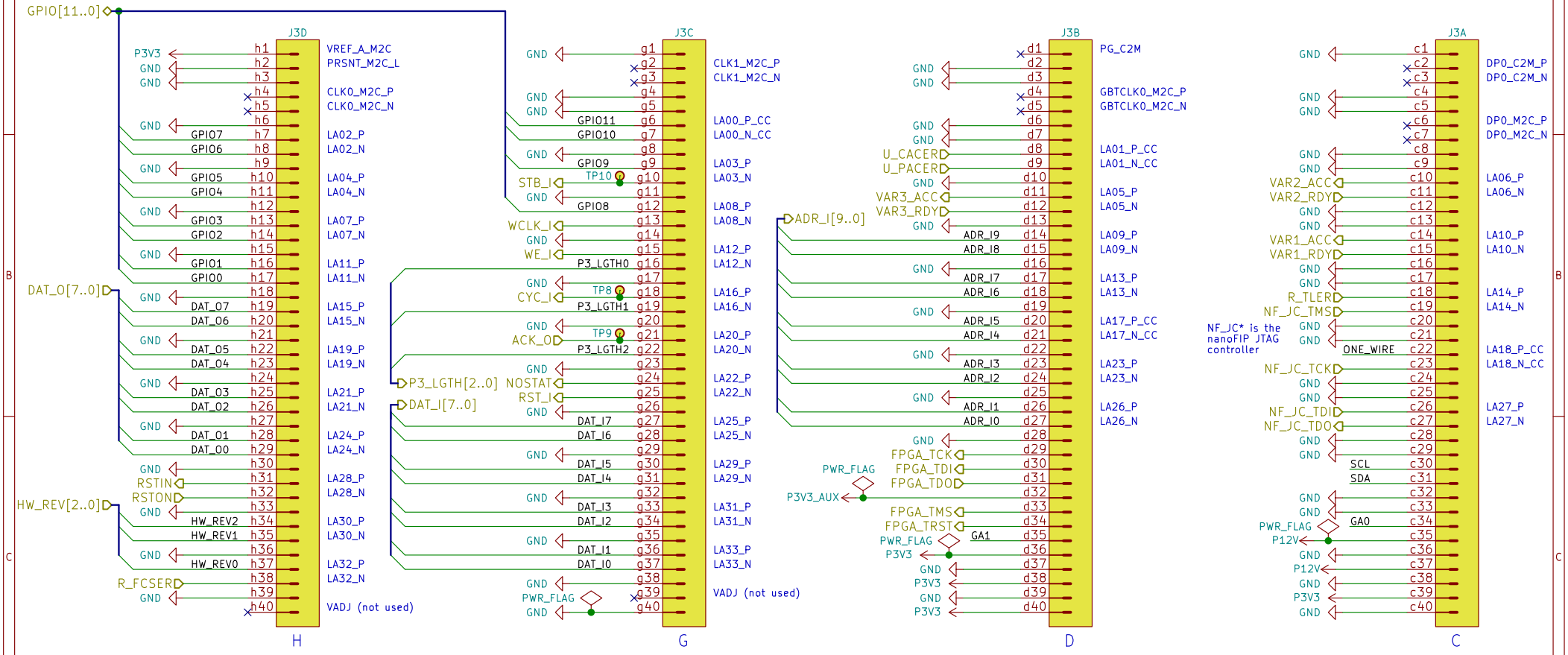
selected variant

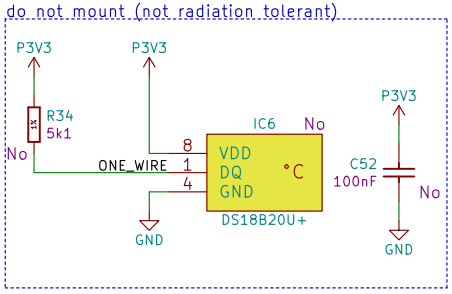
NOTE: place a label indicating bus speed next to the marking resistors

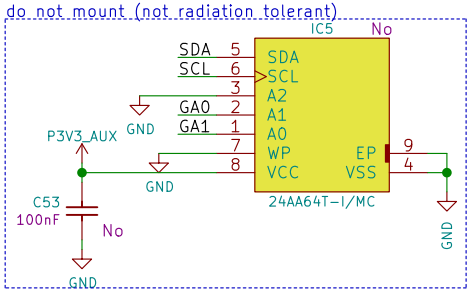


Designer M.Suminski		
Drawn by M.Suminski (15/06/2017)		
Check.by		
Last Mod. M.Suminski (25/07/2017)		
CERN		
Sheet: /Fieldbus/		
File: fieldbus.sch		
Title: FMC-nanoFIP fieldbus interface		
Size: A4	Date: 2017-07-26	**Rev: 8**
KiCad E.D.A. kicad (2017-07-25 revision 161045f17)-master		Id: 4/8

NOTE: pin swapping between LA* pins possible
place test points on the side without the FMC connector

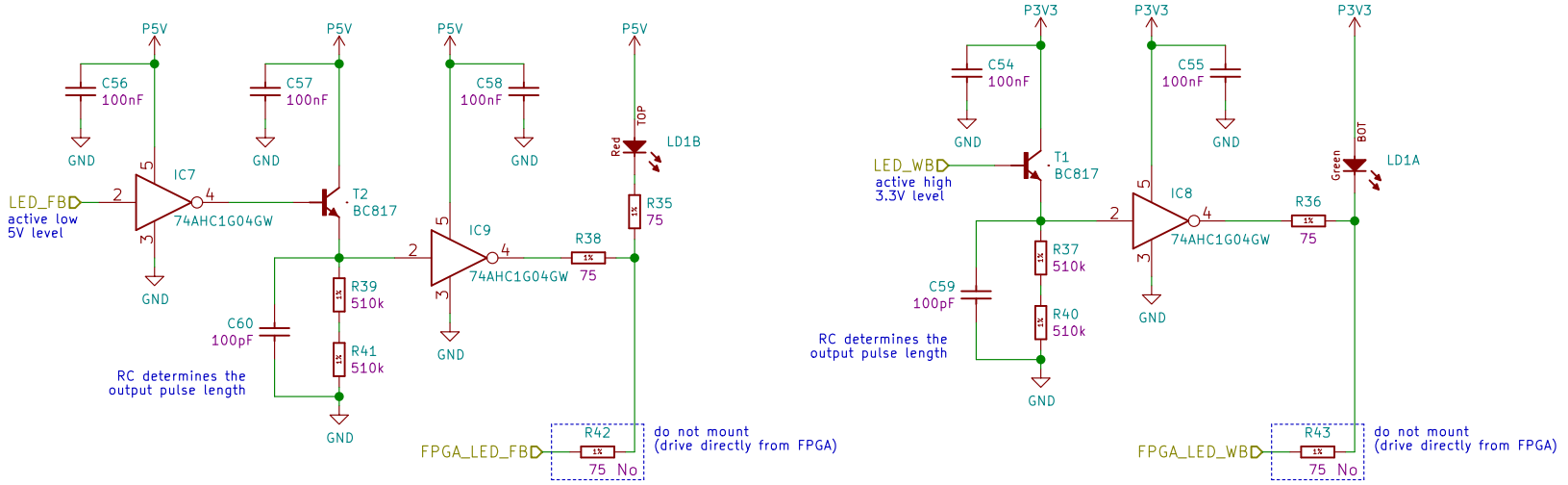




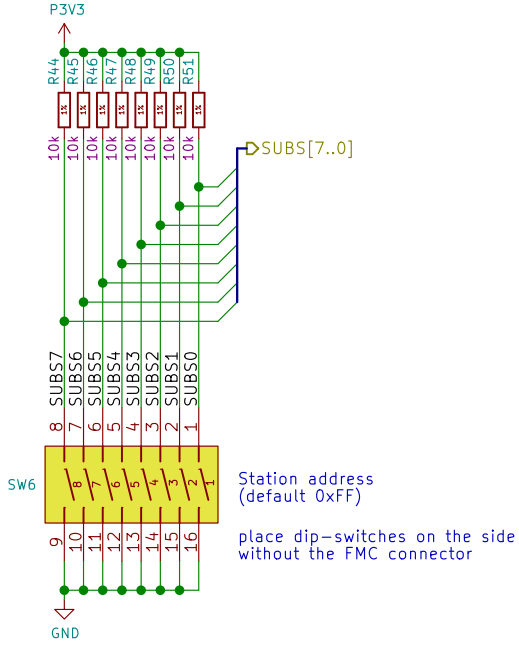


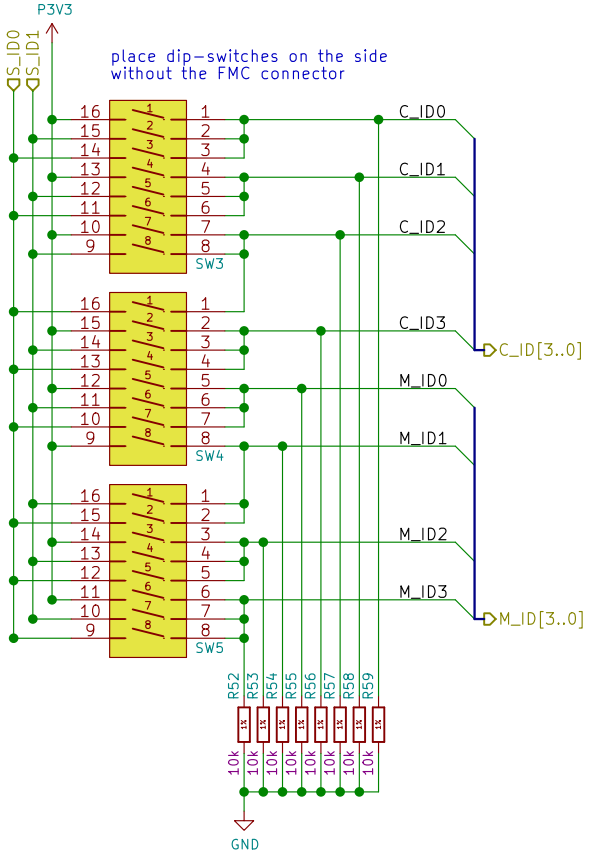
Designer	M.Suminski
Drawn by	M.Suminski (15/06/2017)
Check.by	
Last Mod.	M.Suminski (25/07/2017)
CERN	
Sheet:	/FMC/
File:	fmc.sch
Title:	**FMC–nanoFIP FMC connector (LPC)**
Size: A4	Date: 2017–07–26 — **Rev: 8**
KiCad E.D.A.	kicad (2017–07–25 revision 161045f17)–master — Id: 5/8

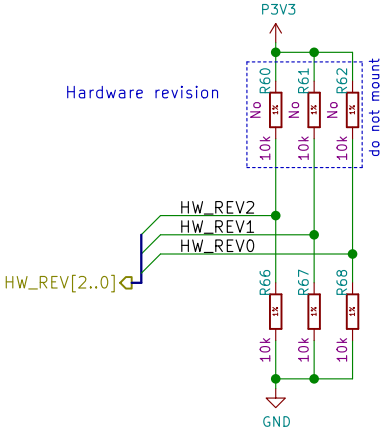
One-shot triggers to extend the LED pulse duration

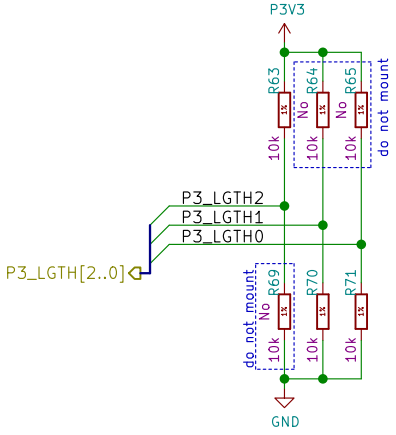


Designer	M.Suminski
Drawn by	M.Suminski (15/06/2017)
Check.by	
Last Mod.	M.Suminski (25/07/2017)
CERN	
Sheet:	/LEDs/
File:	leds.sch
Title: FMC-nanoFIP LEDs	
Size: A4	Date: 2017-07-26 — **Rev: 8**
KiCad E.D.A.	kicad (2017-07-25 revision 161045f17)-master — Id: 6/8









Produced variable data length

P3_LGTH[2:0]:
- 000: 2 bytes
- 001: 8 bytes
- 010: 16 bytes
- 011: 32 bytes
- 100: 64 bytes (default)
- 101: 124 bytes
- other: reserved

(FMC signals can override the value set with resistors)

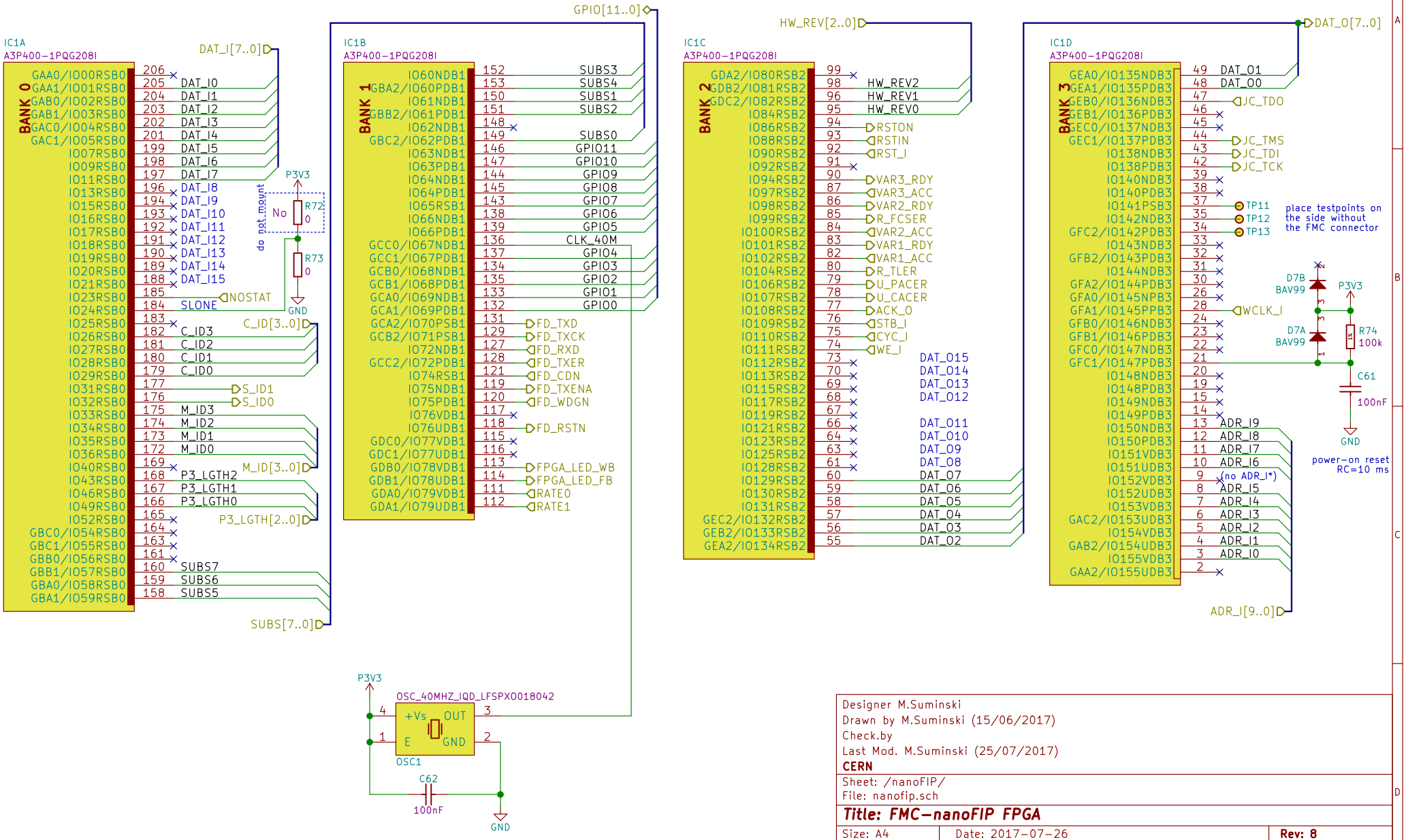
Constructor & Model ID (default 0x00)

C_ID[i]/M_ID[i] connected to: Gnd S_ID0 S_ID1 Vcc

Constructor/Model[2*i]	0	1	0	1
Constructor/Model[2*i+1]	0	0	1	1

Designer M.Suminski		
Drawn by M.Suminski (15/06/2017)		
Check.by		
Last Mod. M.Suminski (25/07/2017)		
CERN		
Sheet: /nanoFIP settings/		
File: settings.sch		
Title: FMC-nanoFIP settings		
Size: A4	Date: 2017-07-26	**Rev: 8**
KiCad E.D.A. kicad (2017-07-25 revision 161045f17)-master		Id: 7/8

NOTE: pin swapping not possible
(only GPIO pins can be moved)
nanoFIP FPGA (IC1) is preprogrammed



Designer M.Suminski		
Drawn by M.Suminski (15/06/2017)		
Check.by		
Last Mod. M.Suminski (25/07/2017)		
CERN		
Sheet: /nanoFIP/		
File: nanofip.sch		
Title: FMC-nanoFIP FPGA		
Size: A4	Date: 2017-07-26	**Rev: 8**
KiCad E.D.A. kicad (2017-07-25 revision 161045f17)-master		Id: 8/8