ADC

wrx.ADC.sch

FPGA_Power

wrx.FPGA_power.sch

GPS

wrx.GPS.sch

Power_Supplies

wrx.power_supplies.sch

BeagleBone

wrx.BeagleBone.sch

Active_Antenna

wrx.active_antenna.sch

FPGA_IO

wrx.FPGA_IO.sch

Power_Injector

wrx.power_injector.sch

File: wrx.sch		
Sheet: /		
Title: wrx		
Size: A4	*Date: 4 may 2015*	*Rev: 1*
KiCad E.D.A.		Id: 1/9

Chebyshev 30MHz LPF
See homepage.eircom.net/(tilda)ei9gq/lpf.html

TO PWR INJ J5

J1
ANT+
ANT−
TB_2

Z401
TVS 40V

C406 470n
C405 1n

L401 330nH
L402 270nH
L403 150nH
L404 330nH

LP1
LP2
LP3
LP4

C401 56p
C402 160p
C403 160p
C404 56p

C429 100n
C430 1n
C428 1n
C433 100n
C432 1n
C431 100n
C412 2.2u
C408 100p

R402 68R6
3.3A
L407 FB 600Z
VA
VCM

C407 1n
C410 470n
C409 1n
C414 470n
IN+
IN−
RF+
RF−

R403 28R7

U405
LTC6401-20
+20 dB

L405 150nH
L406 150nH
OUT+
OUT−
40 MHz
LC LPF
C411 100p
AIN+
AIN−

U404
LP5907 3.3V 250mA
VIN
VOUT
NC
GND
EN
C426 1u
C427 1u
L408 FB 600Z

ZR402
RF_SHIELD_COVER 29x19

ZR401
RF_SHIELD 29x19
SHIELD

R406 10K
R409 10K
MD1
R410 10K
R407 DNL
R408 0R
MODE
SENSE
VCM
C415 2.2u
C416 100p
C423 100n

R404
ADOV
AD13
AD12
AD11
AD10
AD9
AD8
OVFL
D13
D12
D11
D10
D9
D8
100R

C418 1u
C419 1u
C420 2.2u
C421 100n
C422 100n
REFH
REFL
AIN+
AIN−

U401
LTC2248
VDD
VCM
SENSE
MODE
OVFL
D13
D12
D11
D10
D9
D8
O_VDD
O_GND
D7
D6
D5
D4
D3
D2
D1
D0
CLK
SHDN
OE_N
PAD

C424 100n

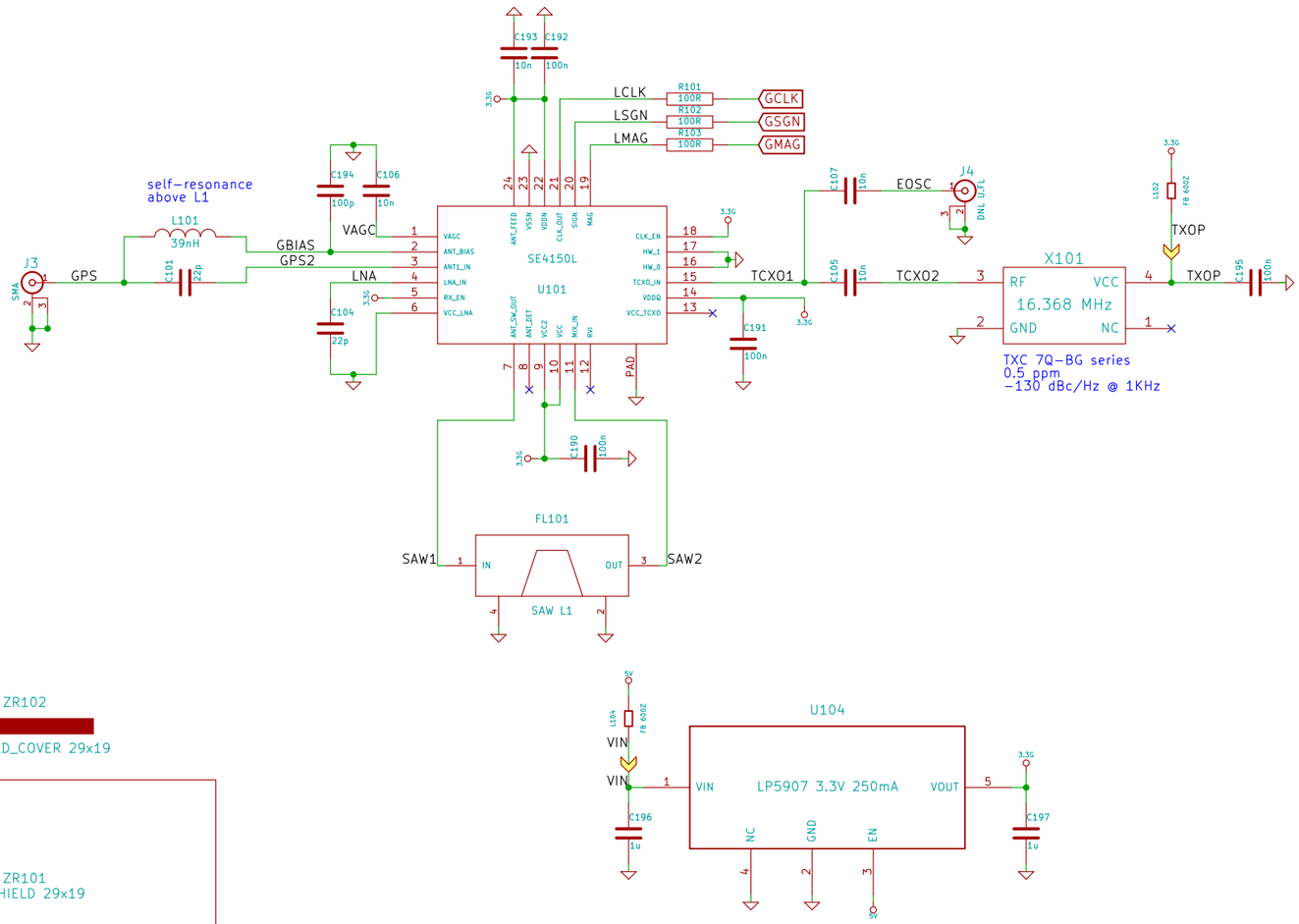
R405
AD7
AD6
AD5
AD4
AD3
AD2
AD1
AD0
100R

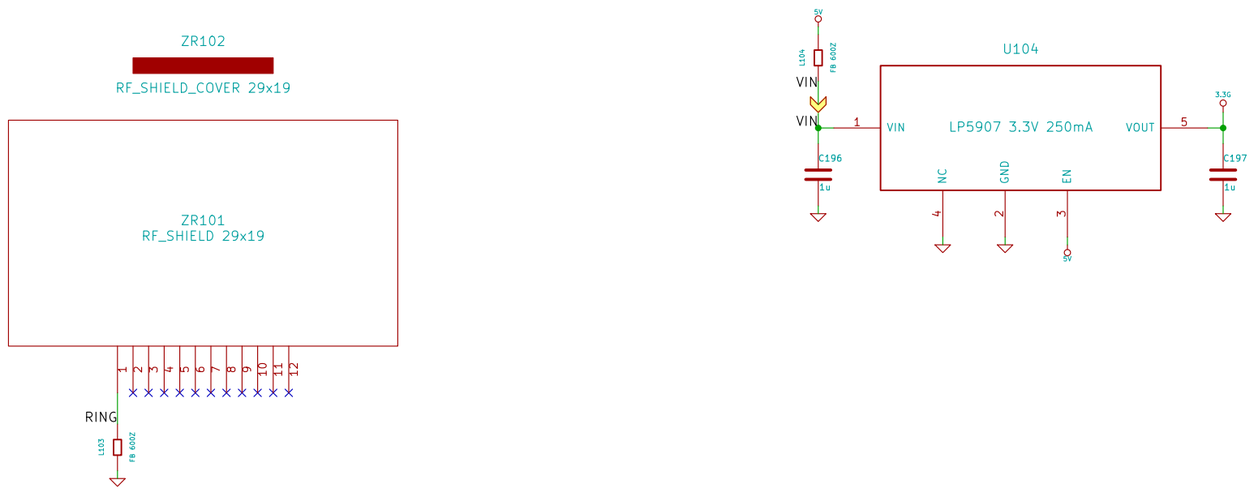
CTS 357 series
pull +/− 50 ppm
stab +/− 50 ppm
phase jitter <= 1 ps rms
−90 @ 100
−130 @ 10K
−150 > 100K

U402
C425 10n
VCXO
65.360 MHz

U406
NC7SZ126
C413 10n
LCLK
R401 100R
ACLK

File: wrx.ADC.sch		
Sheet: /ADC/		
Title: ADC		
Size: A3	Date: 4 may 2015	Rev:
KiCad E.D.A.		Id: 2/9





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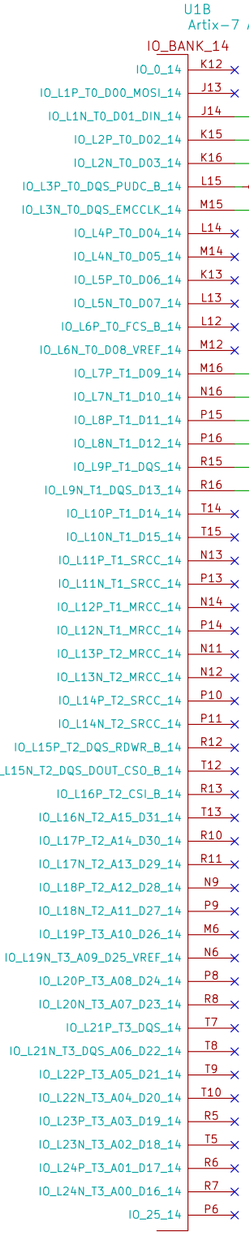
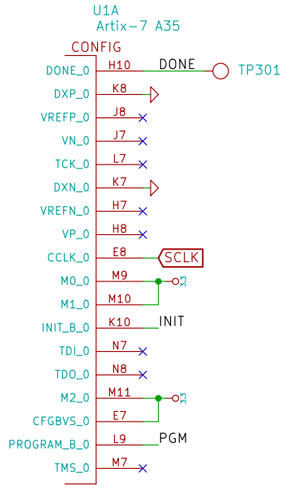
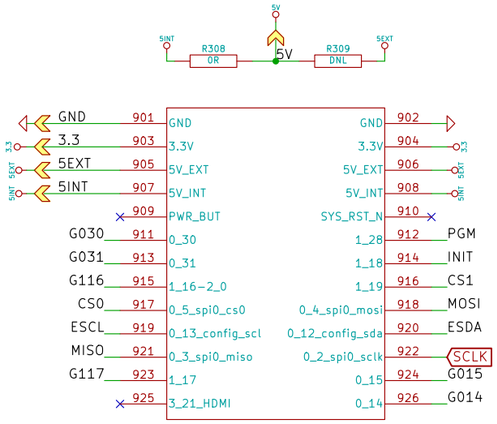
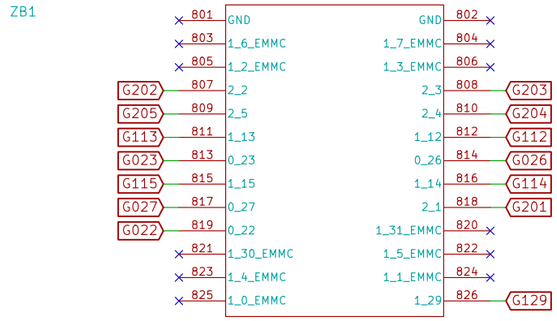
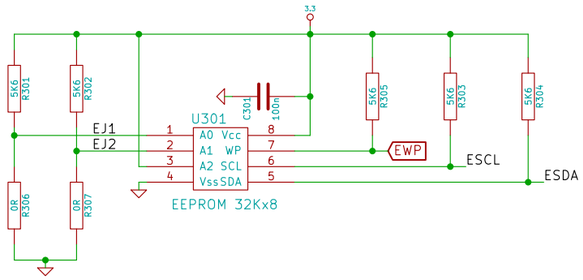
Sheet: /GPS/		
Title: GPS		
Size: A3	Date: 4 may 2015	Rev:
KiCad E.D.A.		Id: 3/9











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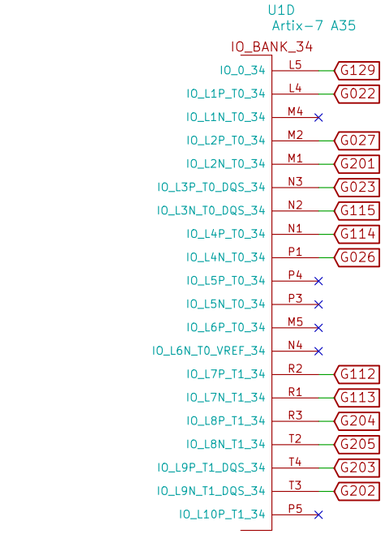
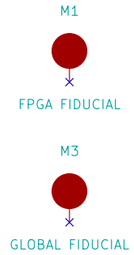
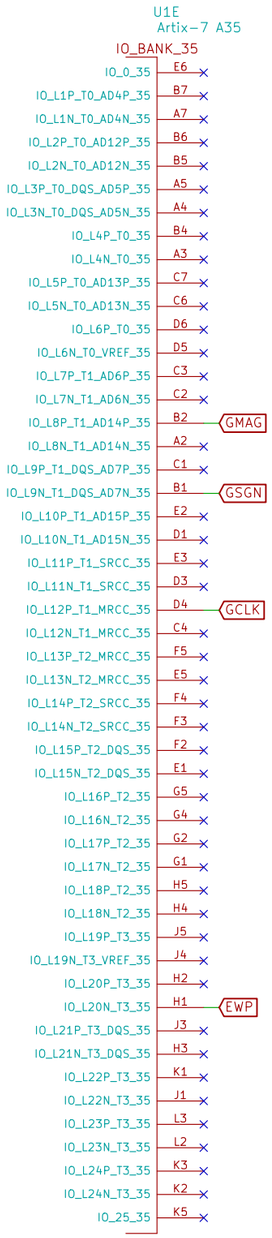
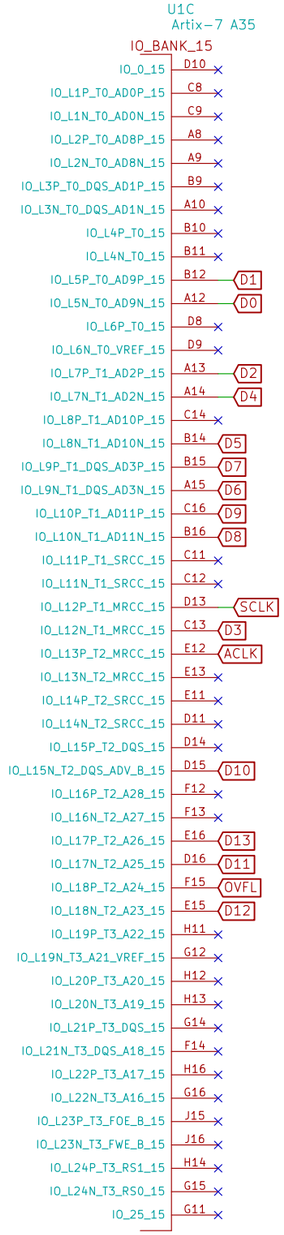
Title: BeagleBone Interface		
Size: A3	Date: 4 may 2015	Rev:
KiCad E.D.A.		Id: 4/9









File: wrx.FPGA_IO.sch		
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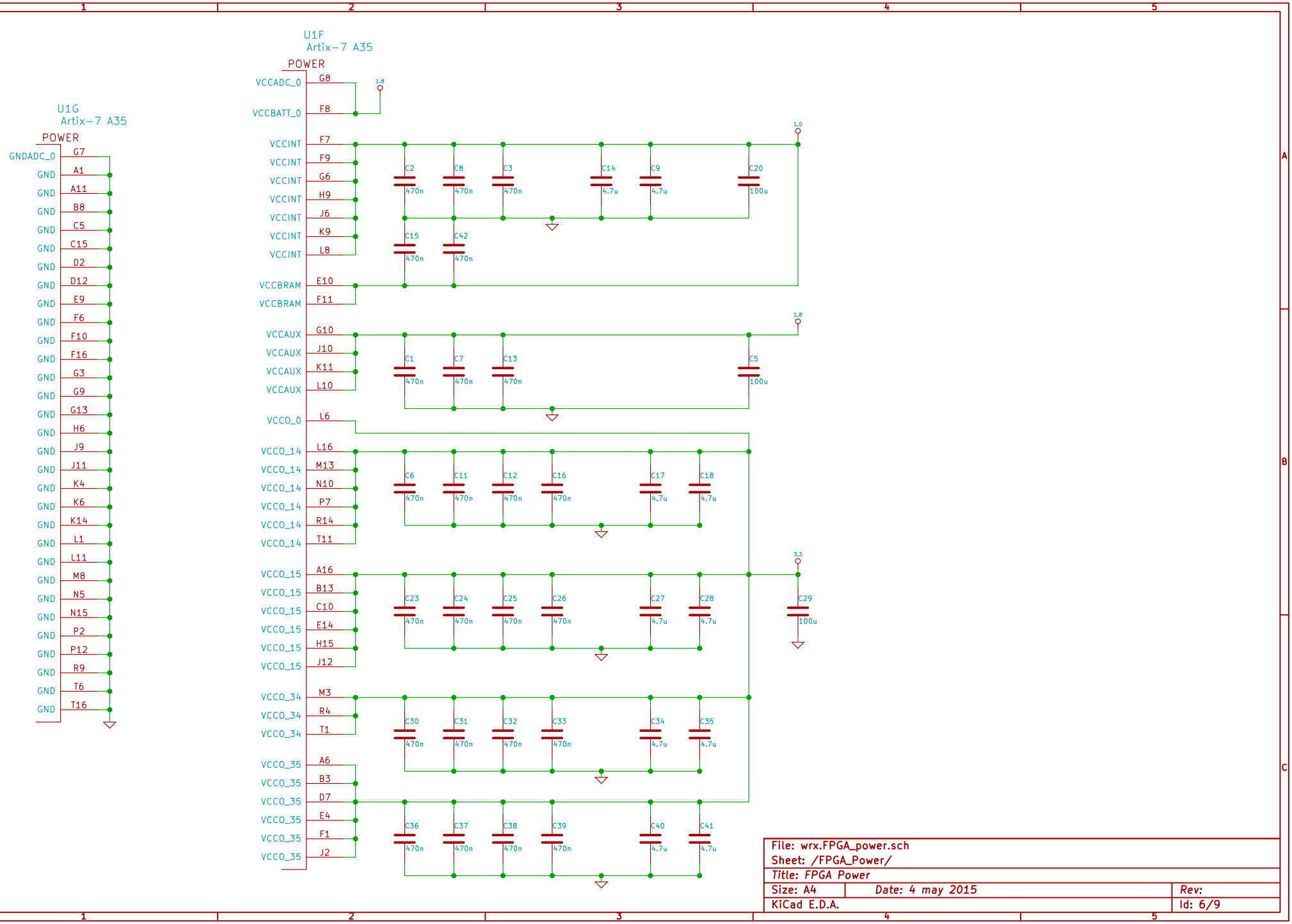
Title: FPGA I/O		
Size: A3	Date: 4 may 2015	Rev:
KiCad E.D.A.		Id: 5/9


U1G
Artix-7 A35
POWER
GNDADC_0 G7
GND A1
GND A11
GND B8
GND C5
GND C15
GND D2
GND D12
GND E9
GND F6
GND F10
GND F16
GND G3
GND G9
GND G13
GND H6
GND J9
GND J11
GND K4
GND K6
GND K14
GND L1
GND L11
GND M8
GND N5
GND N15
GND P2
GND P12
GND R9
GND T6
GND T16
U1F
Artix-7 A35
POWER
VCCADC_0 G8
VCCBATT_0 F8
1.8
VCCINT F7
VCCINT F9
VCCINT G6
VCCINT H9
VCCINT J6
VCCINT K9
VCCINT L8
VCCBRAM E10
VCCBRAM F11
1.0
C2 470n
C8 470n
C3 470n
C14 4.7u
C9 4.7u
C20 100u
C15 470n
C42 470n
VCCAUX G10
VCCAUX J10
VCCAUX K11
VCCAUX L10
1.8
C1 470n
C7 470n
C13 470n
C5 100u
VCCO_0 L6
VCCO_14 L16
VCCO_14 M13
VCCO_14 N10
VCCO_14 P7
VCCO_14 R14
VCCO_14 T11
C6 470n
C11 470n
C12 470n
C16 470n
C17 4.7u
C18 4.7u
VCCO_15 A16
VCCO_15 B13
VCCO_15 C10
VCCO_15 E14
VCCO_15 H15
VCCO_15 J12
3.3
C23 470n
C24 470n
C25 470n
C26 470n
C27 4.7u
C28 4.7u
C29 100u
VCCO_34 M3
VCCO_34 R4
VCCO_34 T1
C30 470n
C31 470n
C32 470n
C33 470n
C34 4.7u
C35 4.7u
VCCO_35 A6
VCCO_35 B3
VCCO_35 D7
VCCO_35 E4
VCCO_35 F1
VCCO_35 J2
C36 470n
C37 470n
C38 470n
C39 470n
C40 4.7u
C41 4.7u
File: wrx.FPGA_power.sch
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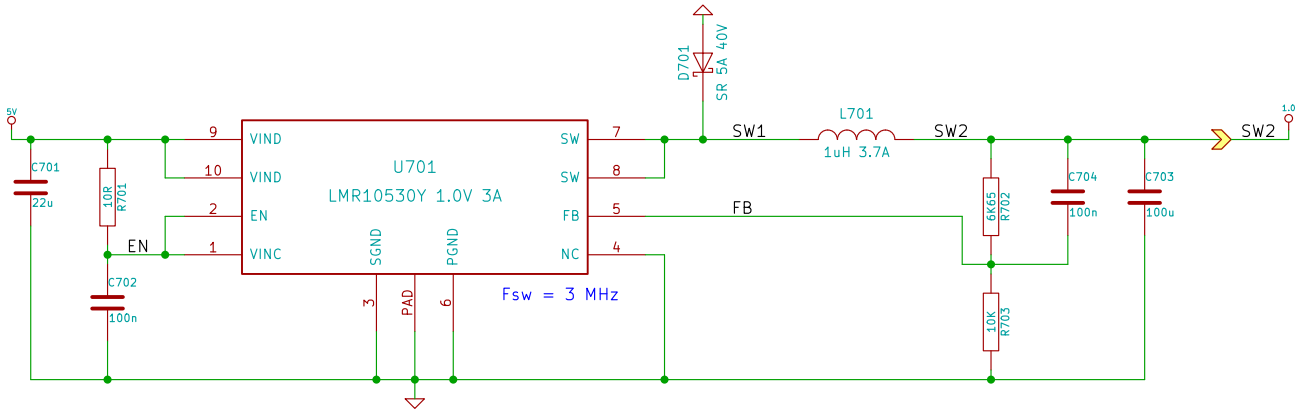
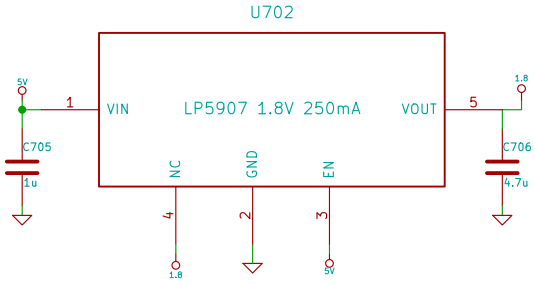
Title: FPGA Power
Size: A4
Date: 4 may 2015
Rev:
KiCad E.D.A.
Id: 6/9





File: wrx.power_supplies.sch		
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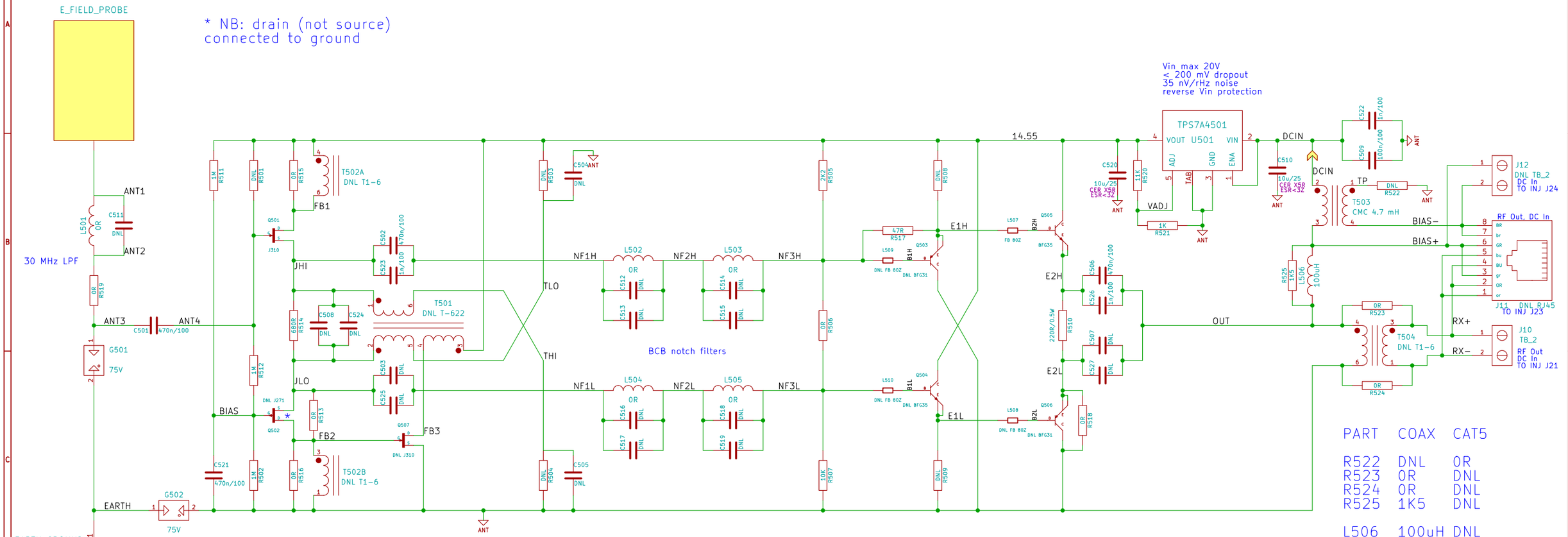
Title: Power Supplies		
Size: A4	*Date: 4 may 2015*	*Rev:*
KiCad E.D.A.		Id: 7/9



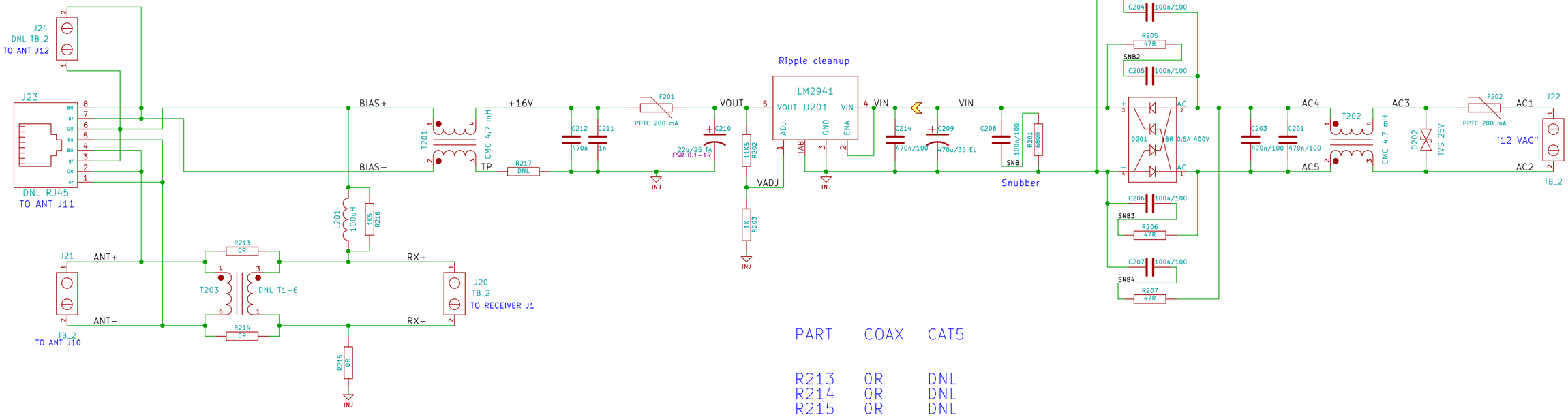
PART	PAORDT MINI WHIP	TRASK COMP PUSH PULL	TRASK NEG FEED BACK
R501	DNL	1M	1M
R502	1M	1M	1M
R503	DNL	DNL	100R
R504	DNL	DNL	100R
R505	2K2	100K	100K
R506	0R	2K2	2K2
R507	10K	100K	100K
R508	DNL	470R	470R
R509	DNL	470R	470R
R510	220R	10R	10R
R511	1M	DNL	DNL
R512	1M	0R	0R
R513	0R	DNL	DNL
R514	680R	100R	DNL
R515	0R	0R	DNL
R516	0R	0R	DNL
R517	47R	DNL	DNL
R518	0R	DNL	DNL

PART	PAORDT MINI WHIP	TRASK COMP PUSH PULL	TRASK NEG FEED BACK
C502	470n	470n	470n
C503	DNL	470n	470n
C504	DNL	DNL	470n
C505	DNL	DNL	470n
C506	470n	470n	470n
C507	DNL	470n	470n
C508	DNL	470n	DNL
C521	470n	DNL	DNL
C523	1n	1n	1n
C524	DNL	1n	DNL
C525	DNL	1n	1n
C526	1n	1n	1n
C527	DNL	1n	1n

PART	PAORDT MINI WHIP	TRASK COMP PUSH PULL	TRASK NEG FEED BACK
Q501	J310	J310	J310
Q502	DNL	J271	J271
Q503	DNL	BFG31	BFG31
Q504	DNL	BFG35	BFG35
Q505	BFG35	BFG35	BFG35
Q506	DNL	BFG31	BFG31
Q507	DNL	DNL	J310
T501	DNL	DNL	T-622
T502	DNL	DNL	T1-6
L507	LOAD	LOAD	LOAD
L508	DNL	LOAD	LOAD
L509	DNL	LOAD	LOAD
L510	DNL	LOAD	LOAD

PART	COAX	CAT5
R522	DNL	0R
R523	0R	DNL
R524	0R	DNL
R525	1K5	DNL
L506	100uH	DNL
T504	DNL	T1-6
J11	DNL	OPT
J12	DNL	OPT

File: wrx.active_antenna.sch	
Sheet: /Active_Antenna/	
Title: Active Antenna	
Size: A3	Date: 26 apr 2015
KiCad E.D.A.	Id: 8/9



PART	COAX	CAT5
R213	0R	DNL
R214	0R	DNL
R215	0R	DNL
R216	1K5	DNL
R217	DNL	0R
C202	DNL	DNL
T203	DNL	T1-6
L201	100uH	DNL
J23	DNL	OPT
J24	DNL	OPT

File: wrx.power_injector.sch		
Sheet: /Power_Injector/		
Title:		
Size: A3	Date: 26 apr 2015	Rev:
KiCad E.D.A.		Id: 9/9