WARP Radio Board

MAX2829 Version - Rev x3

Schematic Pages:

CMC - Rice University	
Title: WARP Radio Board	
Description: Table of Contents	Rev: x3
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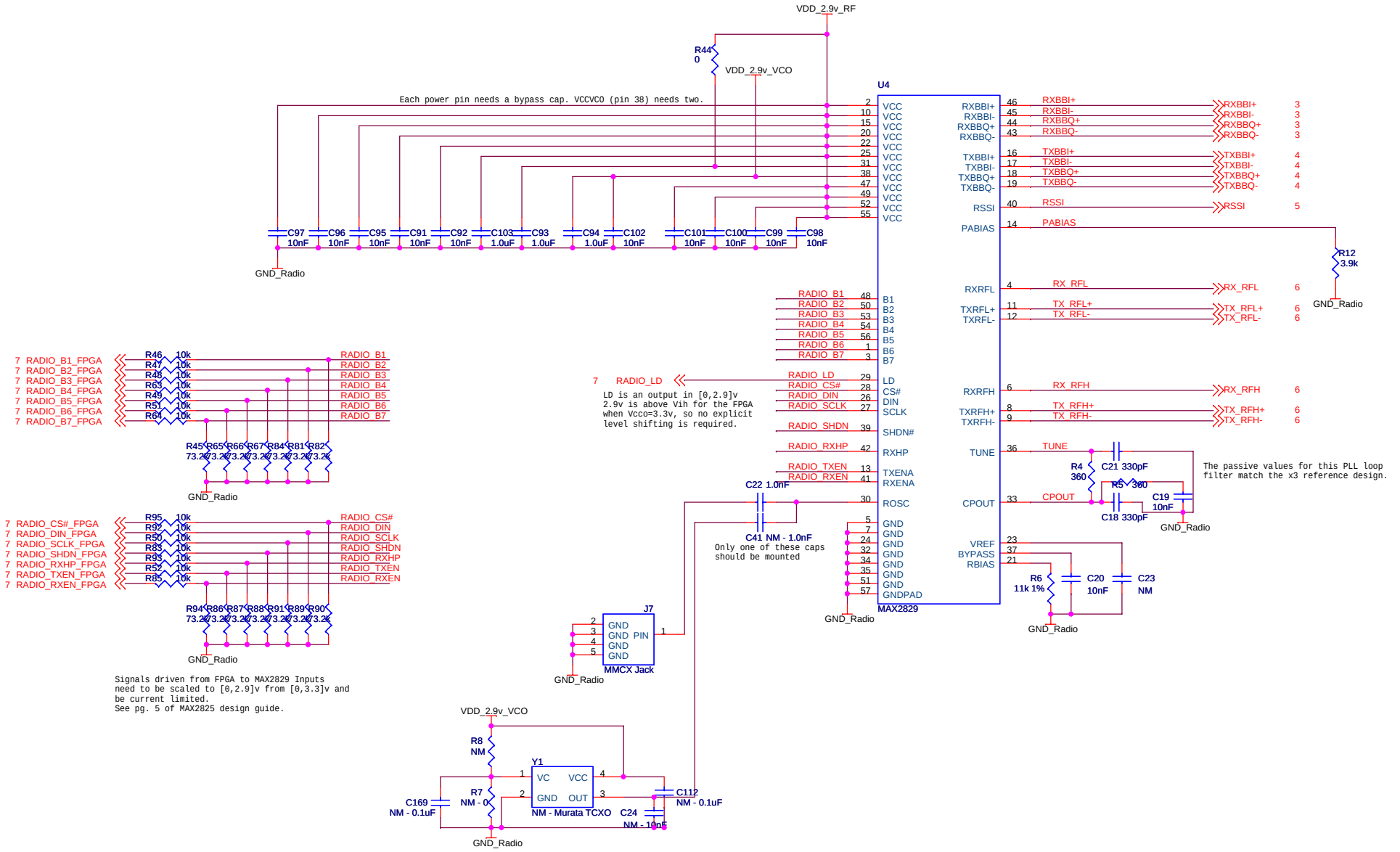

CMC - Rice University	
Title: WARP Radio Board	
Description: MAX2829 RF Transceiver	Rev: x3
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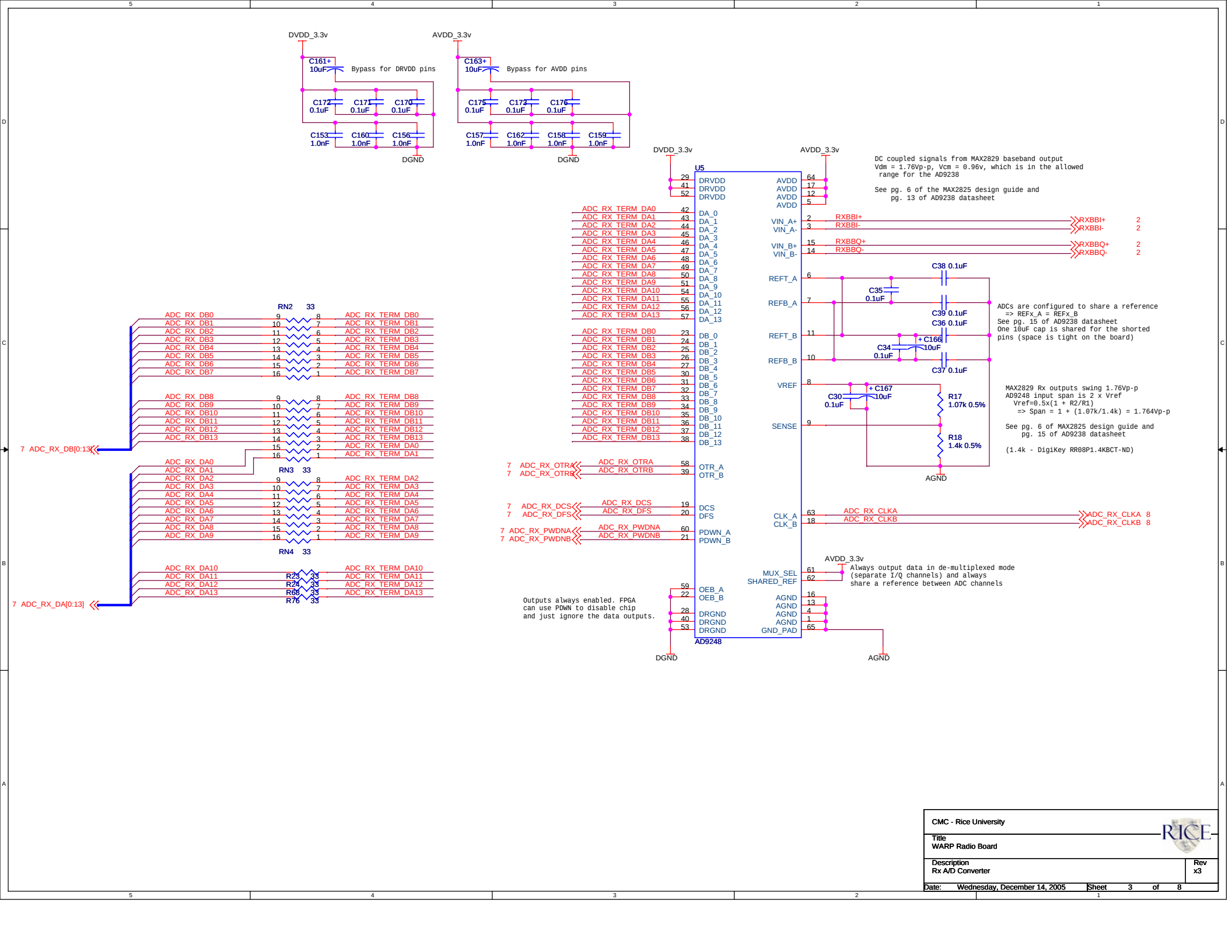

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Title: WARP Radio Board	
Description: Rx A/D Converter	Rev: x3
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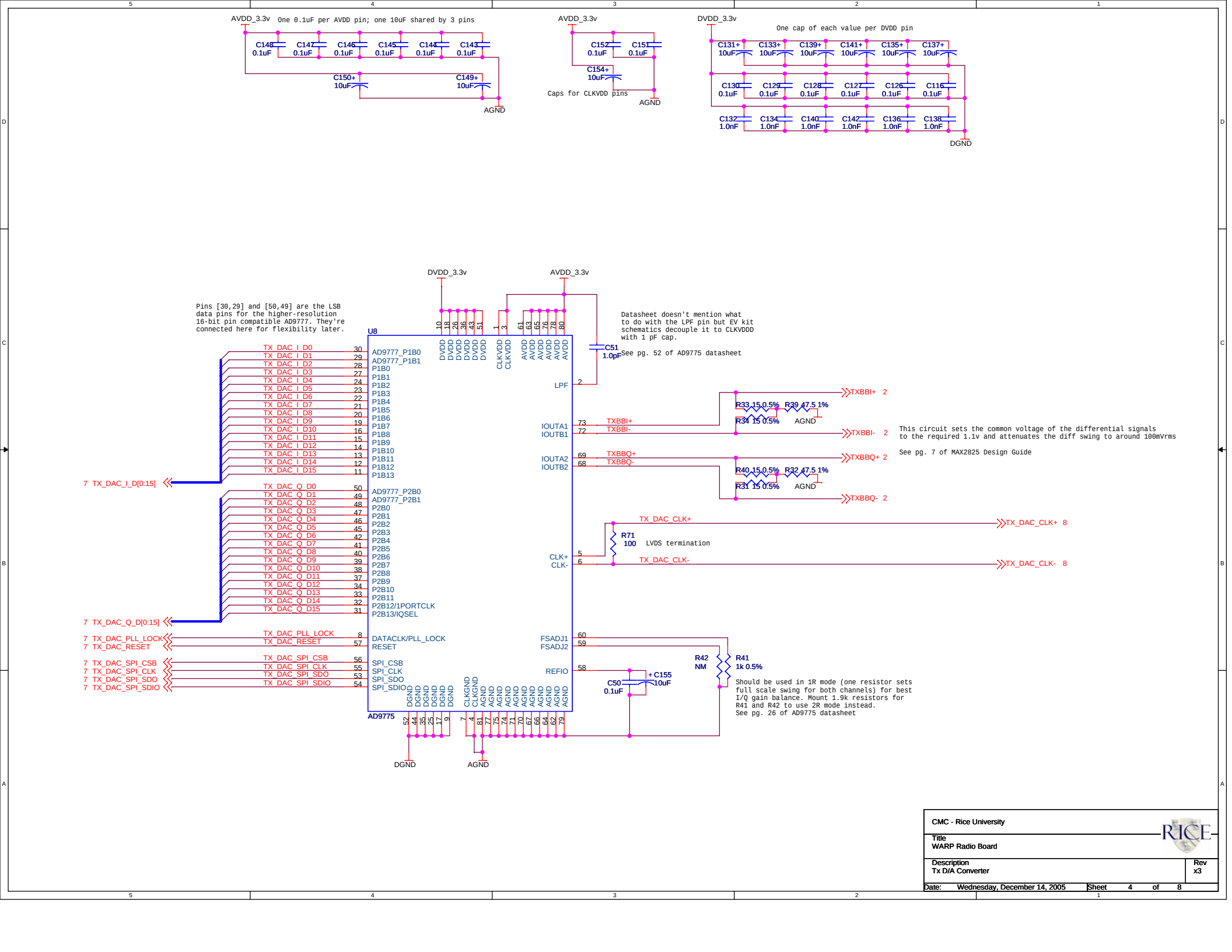

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Title: WARP Radio Board			
Description: Tx D/A Converter			Rev: x3
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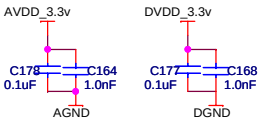

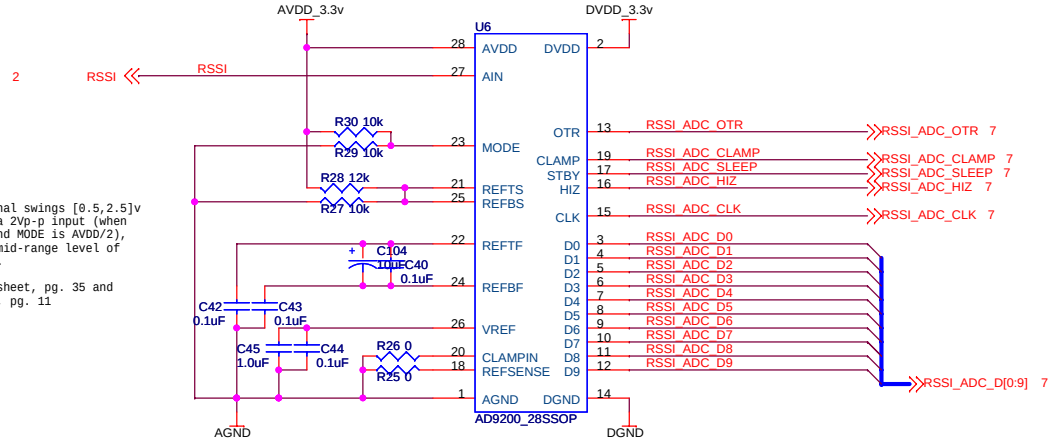

MAX2829 RSSI signal swings [0.5,2.5]v
AD9200 supports a 2Vp-p input (when
REFSENSE is 0v and MODE is AVDD/2),
so this needs a mid-range level of
1.5v=REFTS=REFBS.

See MAX2829 datasheet, pg. 35 and
AD9200 datasheet, pg. 11

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Title: WARP Radio Board	
Description: RSSI A/D Converter	Rev: x3
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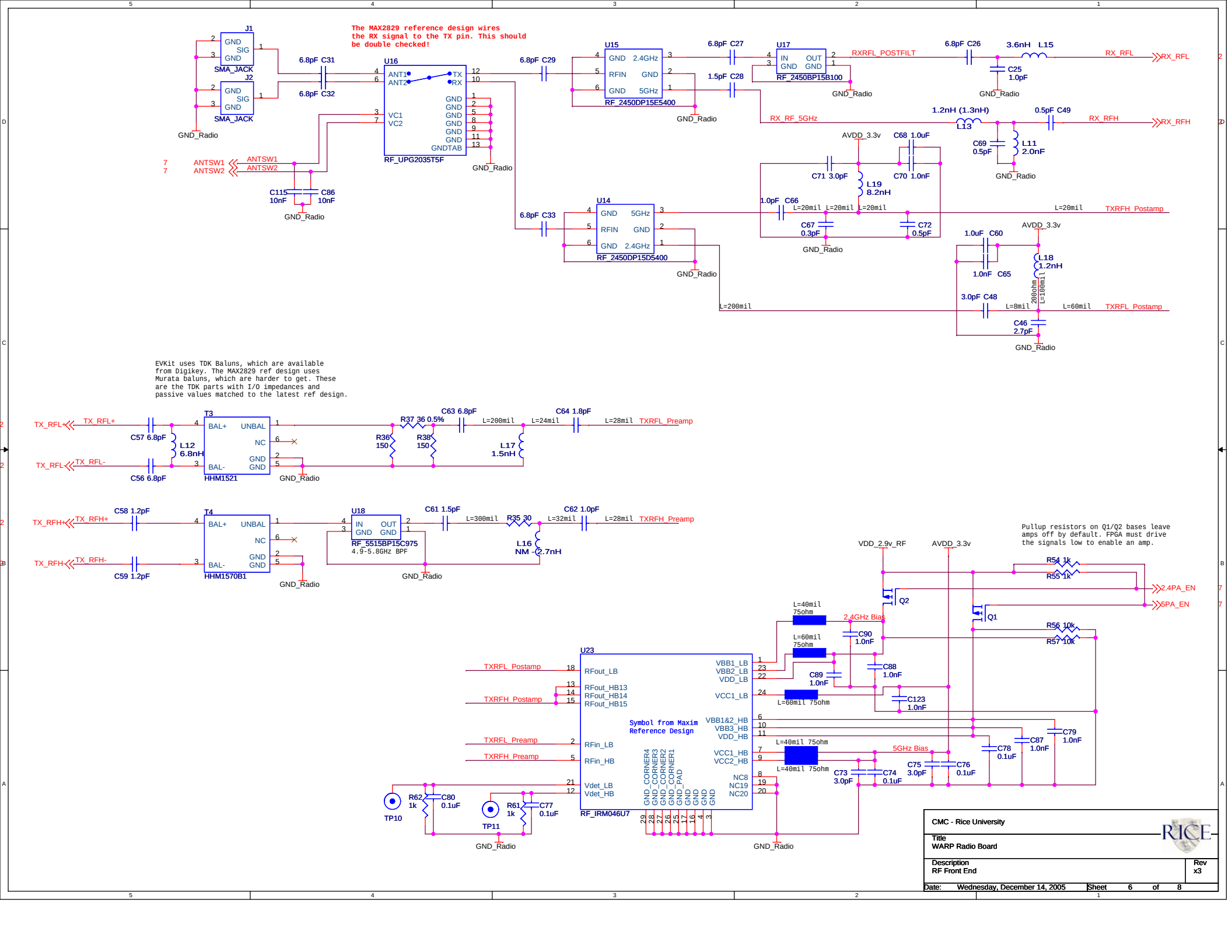
The MAX2829 reference design wires the RX signal to the TX pin. This should be double checked!
J1
J2
SMA_JACK
GND_Radio
6.8pF C31
6.8pF C32
U16
ANT1
ANT2
TX
RX
VC1
VC2
GND
GNDTAB
RF_UPG2035T5F
ANTSW1
ANTSW2
C115 10nF
C86 10nF
6.8pF C29
U15
GND 2.4GHz
RFIN
GND 5GHz
RF_2450DP15E5400
6.8pF C27
1.5pF C28
U17
IN OUT GND GND
RF_2450BP15B100
RXRFL_POSTFILT
6.8pF C26
3.6nH L15
C25 1.0pF
RX_RFL
RX_RF_5GHz
1.2nH (1.3nH) L13
0.5pF C49
RX_RFH
C69 0.5pF
L11 2.0nH
AVDD_3.3v
C68 1.0uF
C71 3.0pF
C70 1.0nF
L19 8.2nH
1.0pF C66
L=20mil
C67 0.3pF
C72 0.5pF
TXRFH_Postamp
6.8pF C33
U14
RF_2450DP15D5400
1.0uF C60
1.0nF C65
L18 1.2nH
200ohm L=100mil
3.0pF C48
L=8mil
L=60mil
TXRFL_Postamp
C46 2.7pF
L=200mil
EVKit uses TDK Baluns, which are available from Digikey. The MAX2829 ref design uses Murata baluns, which are harder to get. These are the TDK parts with I/O impedances and passive values matched to the latest ref design.
TX_RFL+
TX_RFL-
C57 6.8pF
C56 6.8pF
L12 6.8nH
T3
BAL+
BAL-
UNBAL
NC
HHM1521
R37 36 0.5%
C63 6.8pF
L=200mil
C64 1.8pF
L=24mil
L=28mil
TXRFL_Preamp
R36 150
R38 150
L17 1.5nH
TX_RFH+
TX_RFH-
C58 1.2pF
C59 1.2pF
T4
HHM1570B1
U18
IN OUT GND GND
RF_5515BP15C975
4.9-5.8GHz BPF
C61 1.5pF
L=300mil
R35 30
L=32mil
TXRFH_Preamp
L16 NM - 2.7nH
Pullup resistors on Q1/Q2 bases leave amps off by default. FPGA must drive the signals low to enable an amp.
VDD_2.9v_RF
AVDD_3.3v
R54 1k
R55 1k
2.4PA_EN
5PA_EN
Q2
Q1
R56 10k
R57 10k
L=40mil 75ohm
2.4GHz Bias
C90 1.0nF
L=60mil 75ohm
C88 1.0nF
C89 1.0nF
C123 1.0nF
U23
TXRFL_Postamp
TXRFH_Postamp
TXRFL_Preamp
TXRFH_Preamp
RFout_LB
RFout_HB13
RFout_HB14
RFout_HB15
RFin_LB
RFin_HB
Vdet_LB
Vdet_HB
VBB1_LB
VBB2_LB
VDD_LB
VCC1_LB
VBB1&2_HB
VBB3_HB
VDD_HB
VCC1_HB
VCC2_HB
NC8
NC19
NC20
GND_CORNER4
GND_CORNER3
GND_CORNER2
GND_CORNER1
GND_PAD
Symbol from Maxim Reference Design
RF_IRM046U7
5GHz Bias
C78 0.1uF
C87 1.0nF
C79 1.0nF
C75 3.0pF
C76 0.1uF
C73 3.0pF
C74 0.1uF
TP10
TP11
R62 1k
C80 0.1uF
R61 1k
C77 0.1uF
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Title
WARP Radio Board
Description
RF Front End
Rev
x3
Date: Wednesday, December 14, 2005
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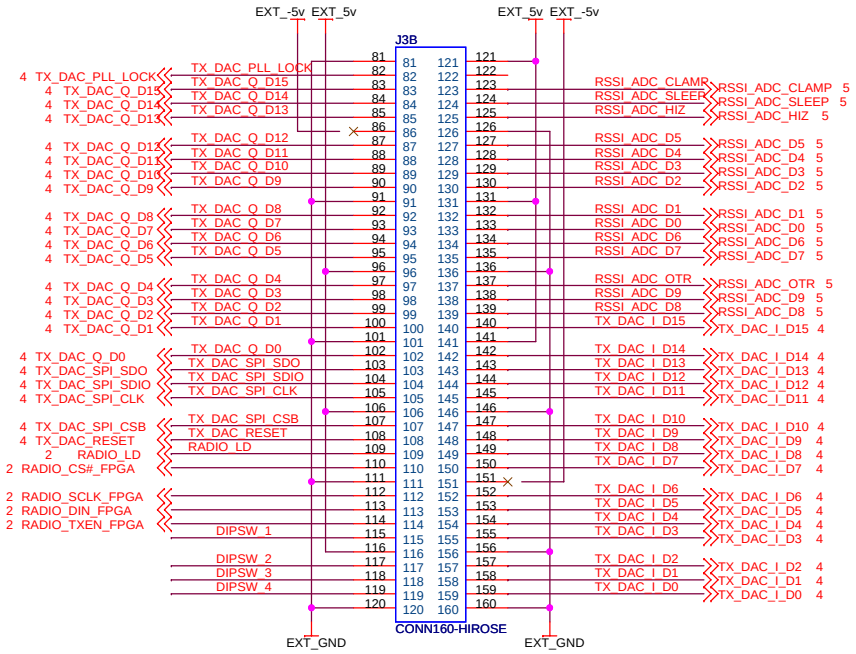

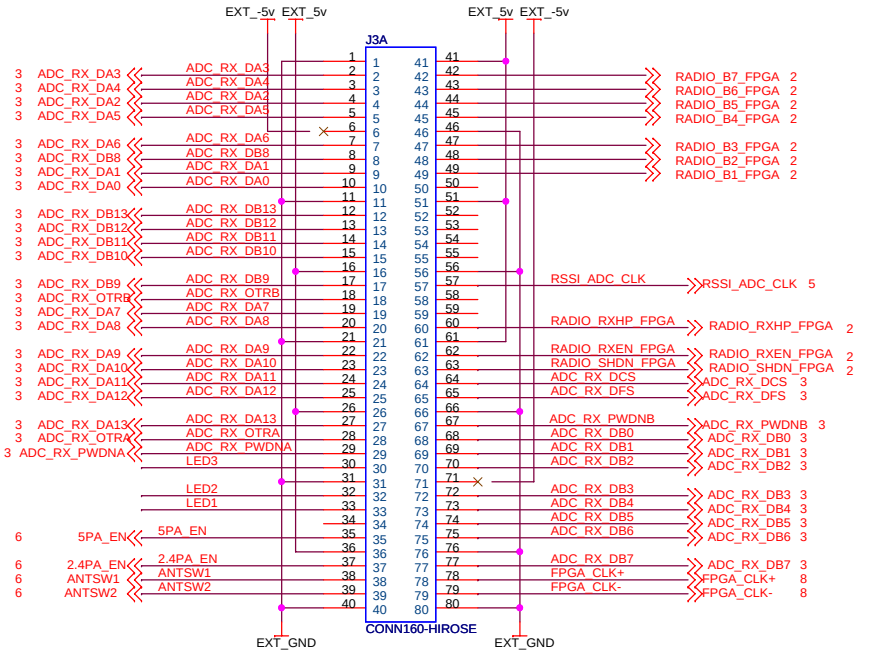

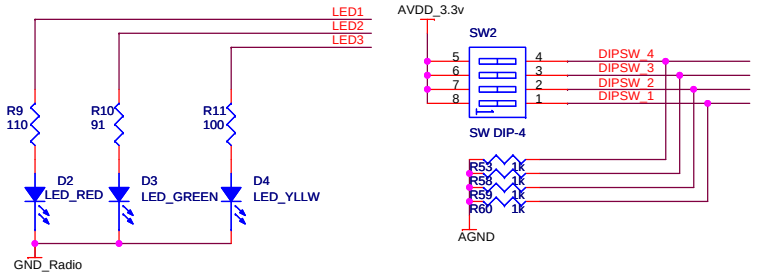

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Title
WARP Radio Board

Description
FPGA Board Headers

Rev
x3

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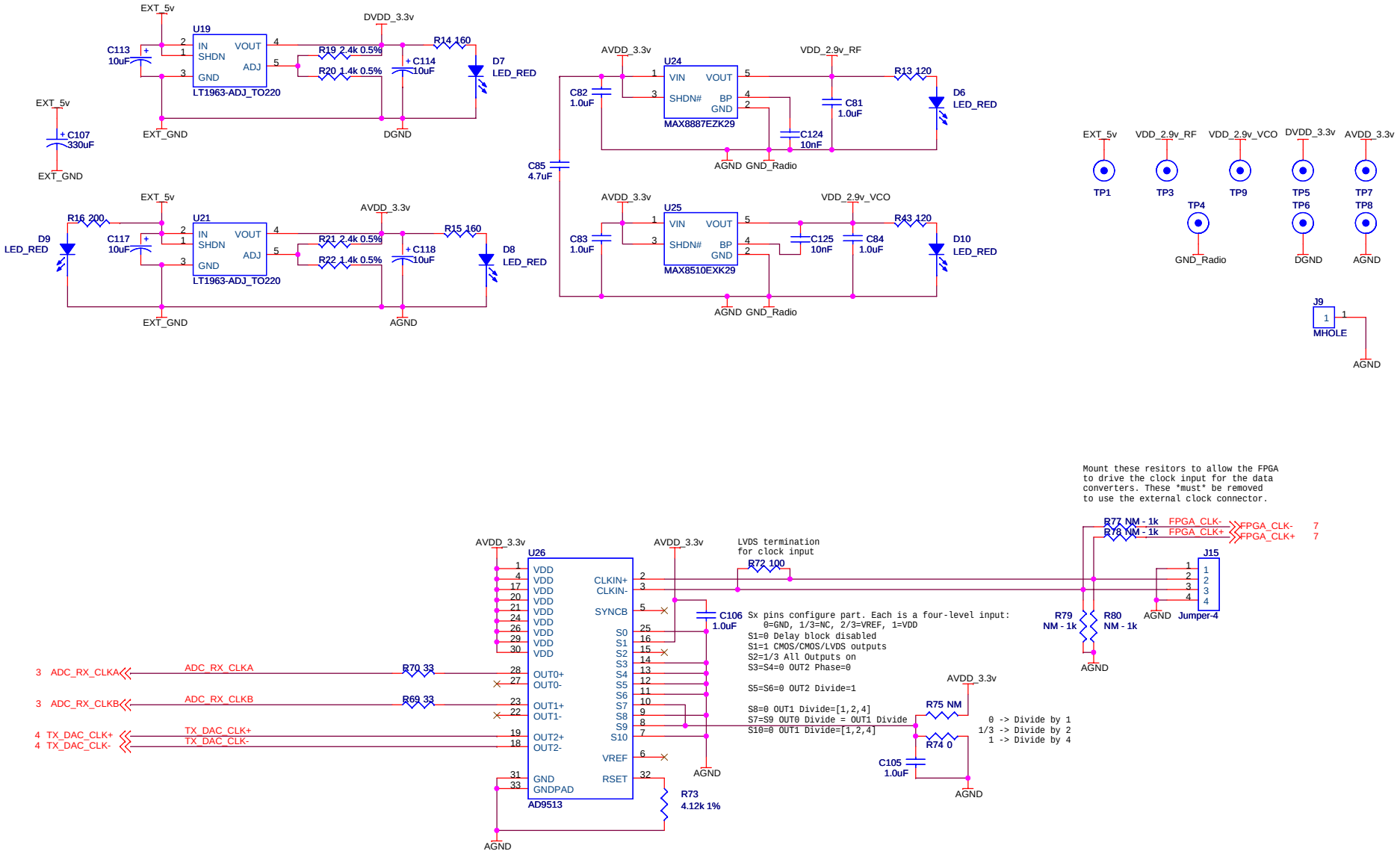

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Description: Clocks & Power	Rev: x3
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