

Elecraft KX3 Schematics

March, 2013

This document contains the schematics for the Elecraft KX3 transceiver and its internal options. The schematics are preceded by a block diagram for context.

The schematics are ordered as the basic KX3, then various options.

KX3 Block Diagram

KX3 RF Board

KX3 Control Panel

KXPD3 Paddle

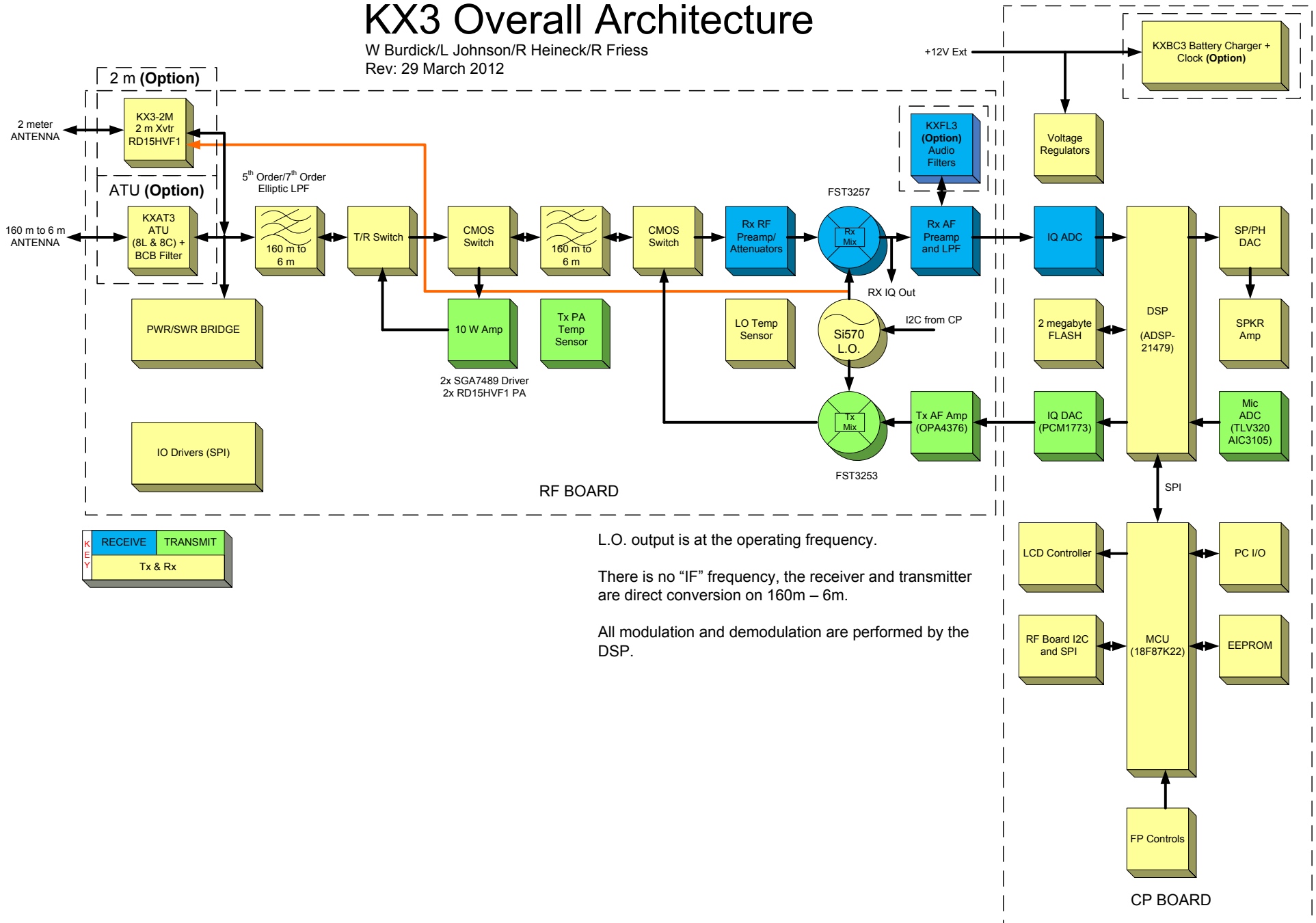
KXAT3 ATU

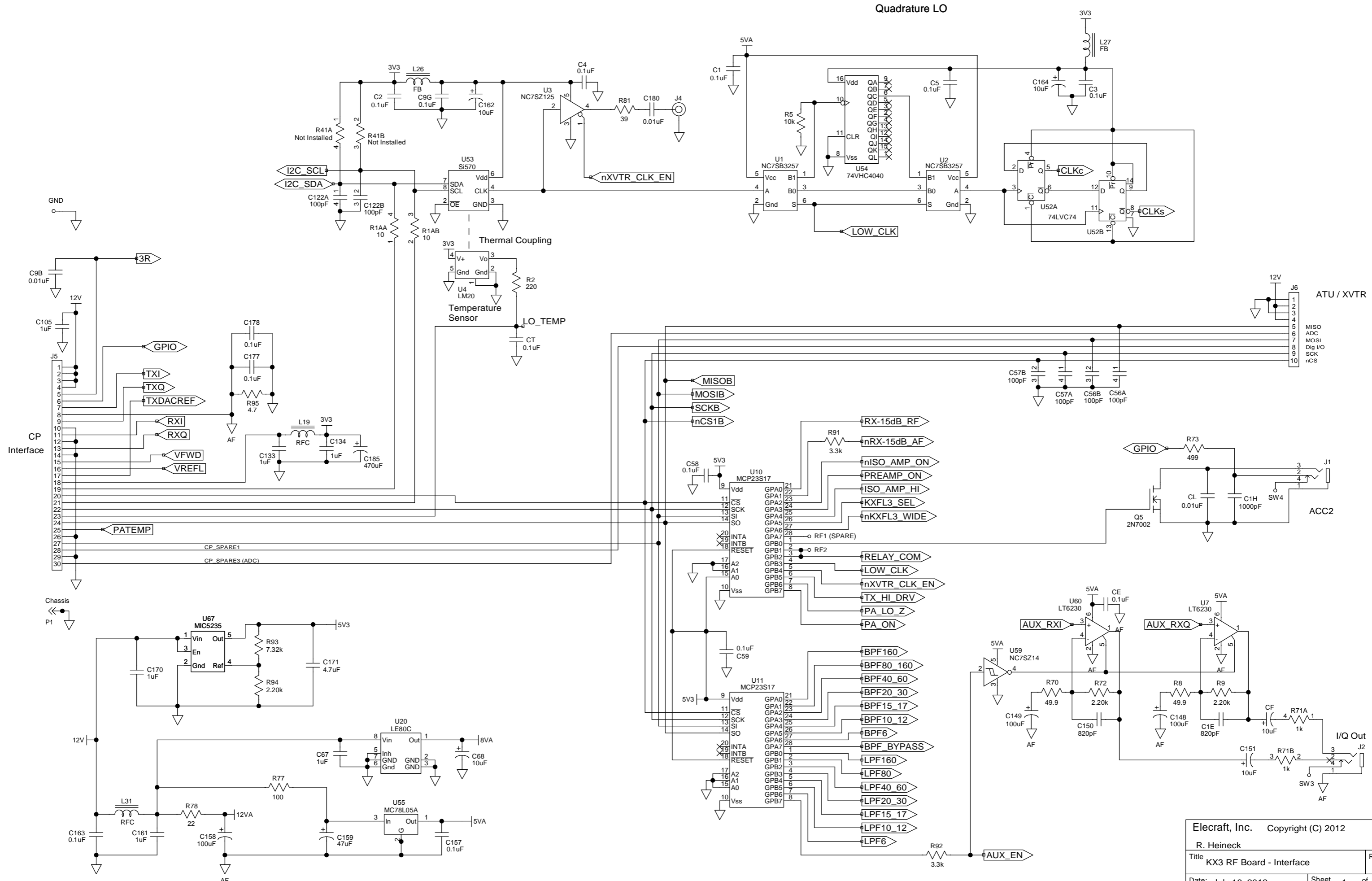
KXFL3 Roofing Filter

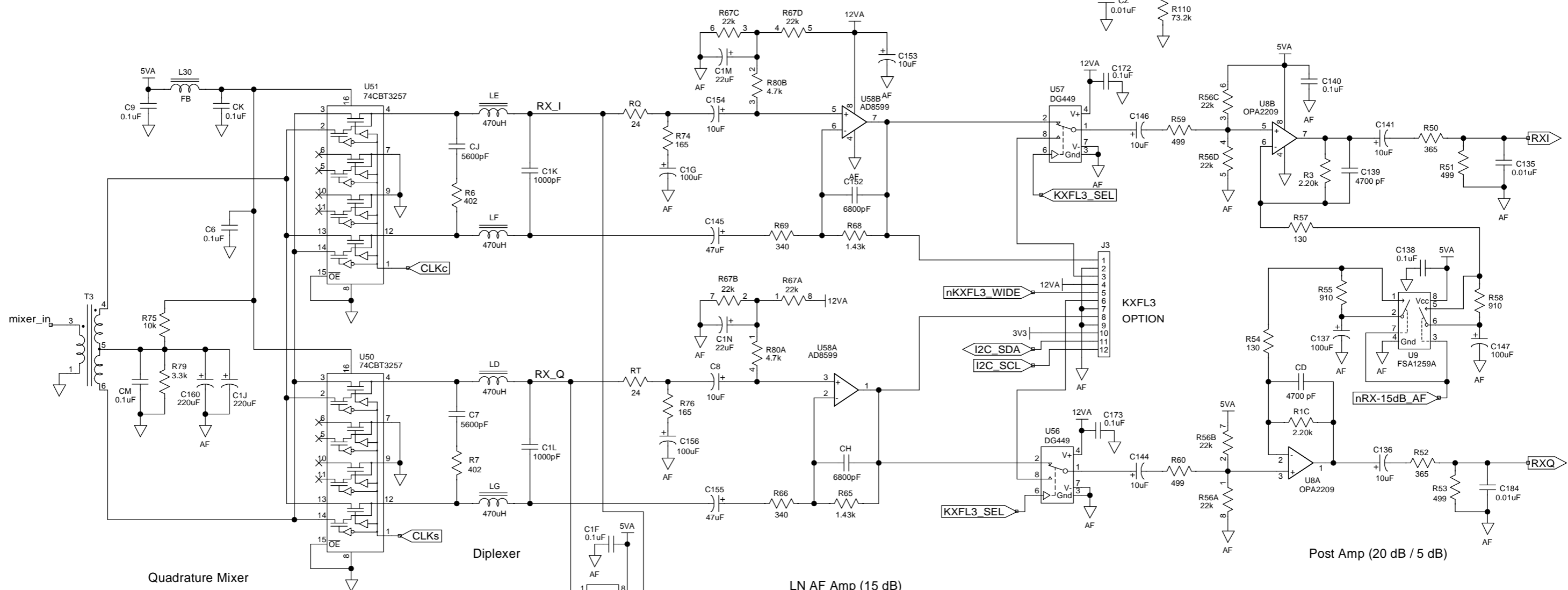
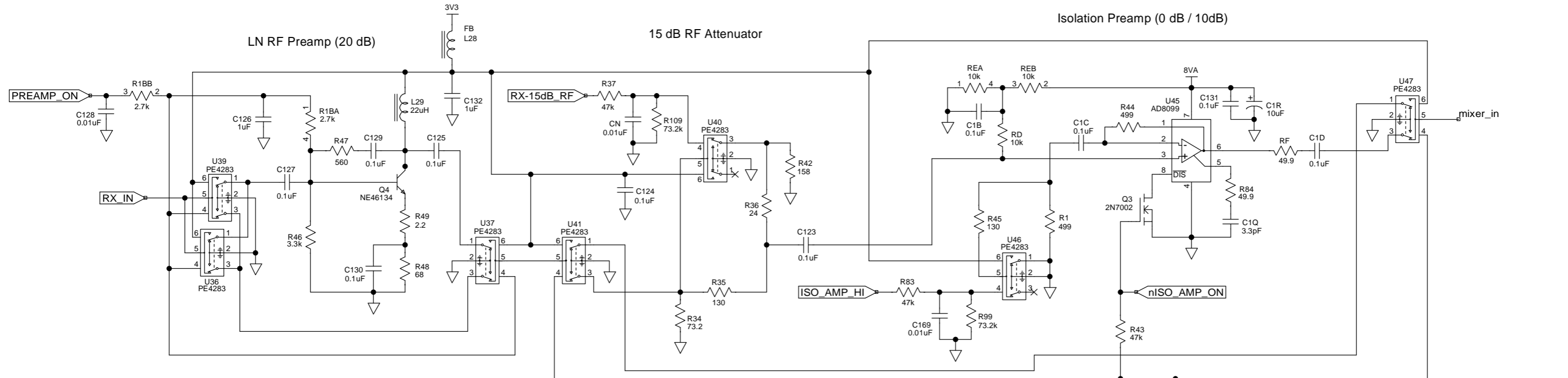
KXBC3 Battery Charger and Real Time Clock

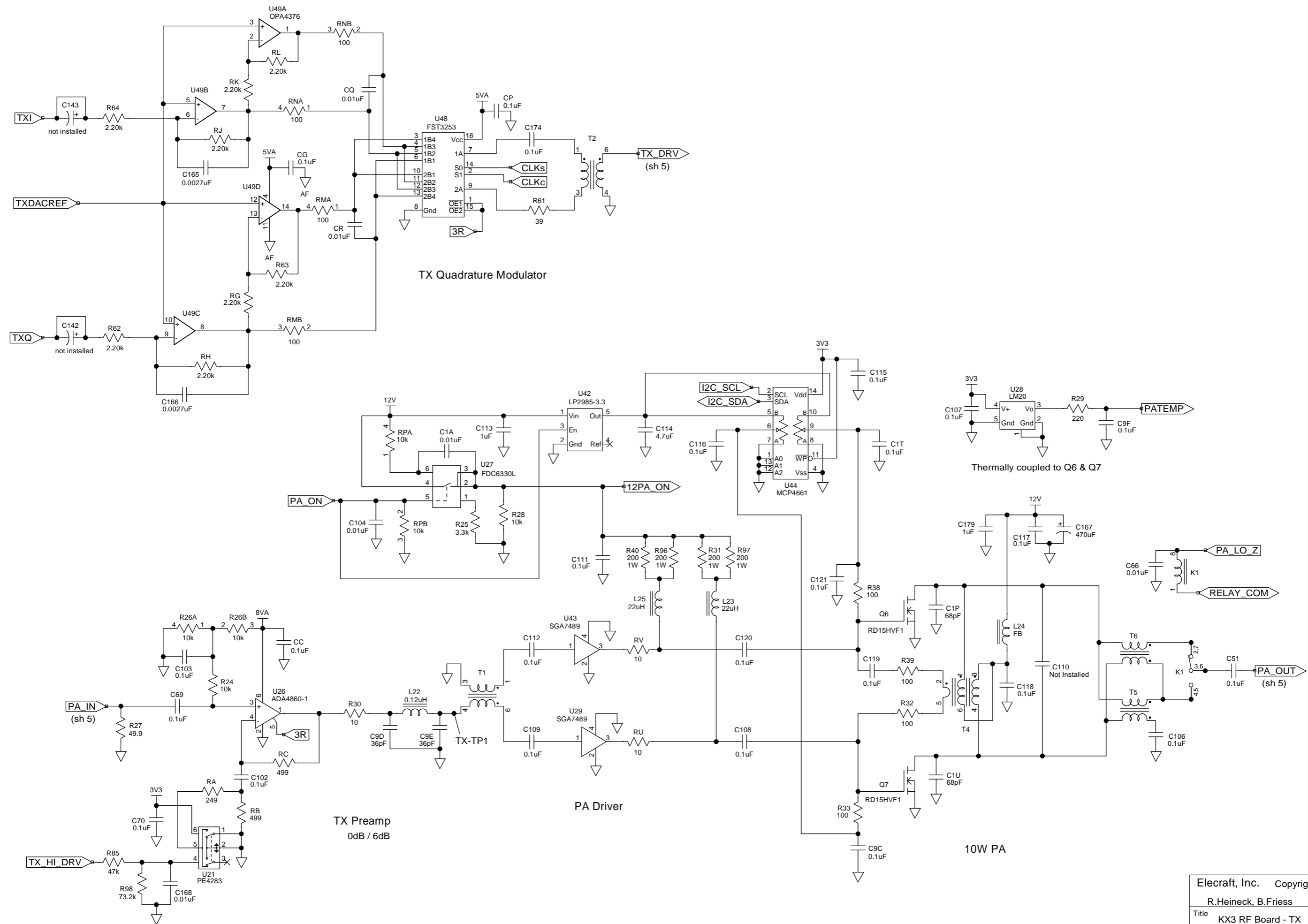
KX3 Overall Architecture

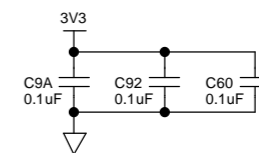
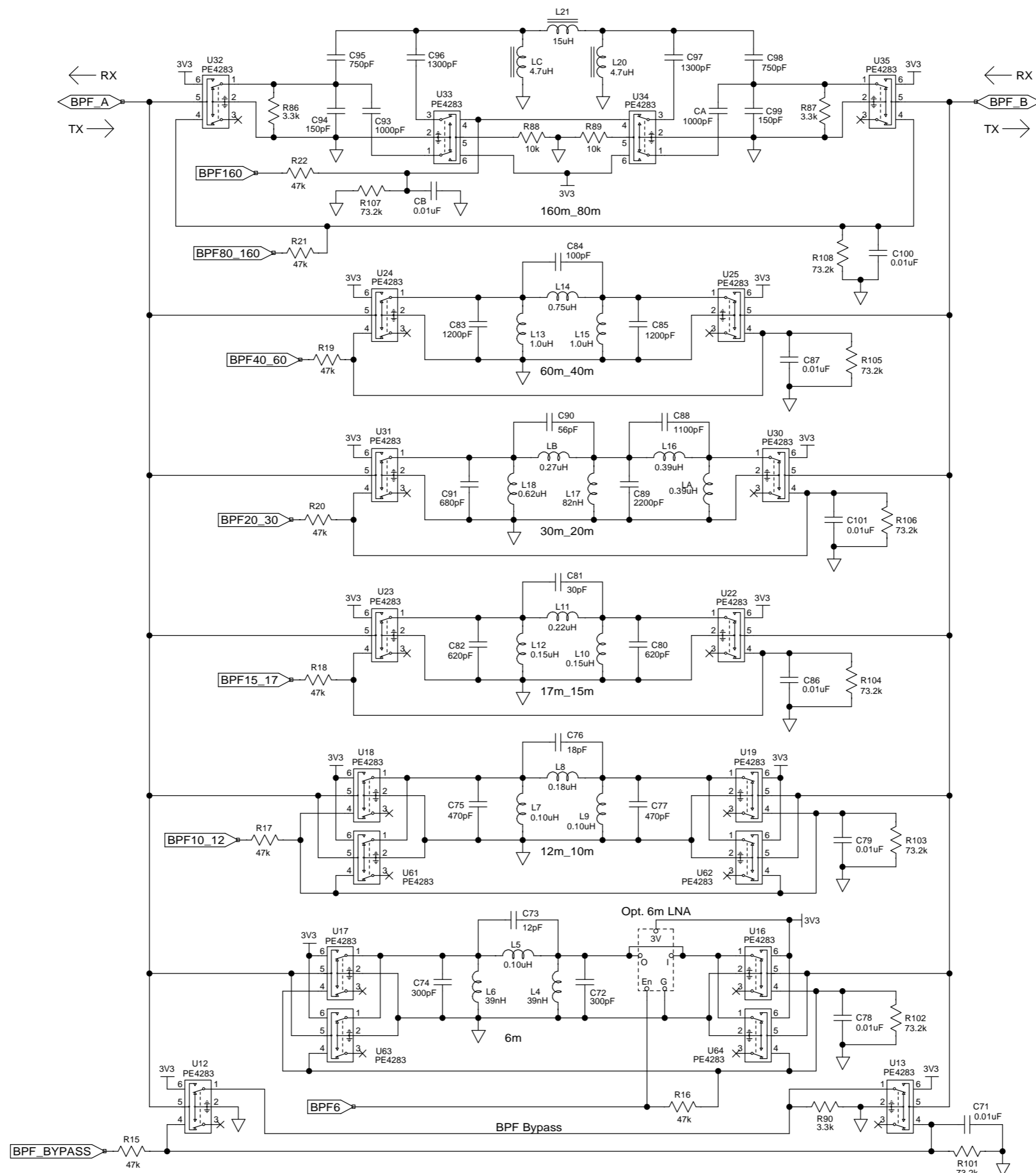
W Burdick/L Johnson/R Heineck/R Friess
Rev: 29 March 2012

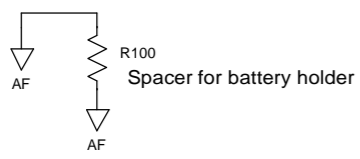
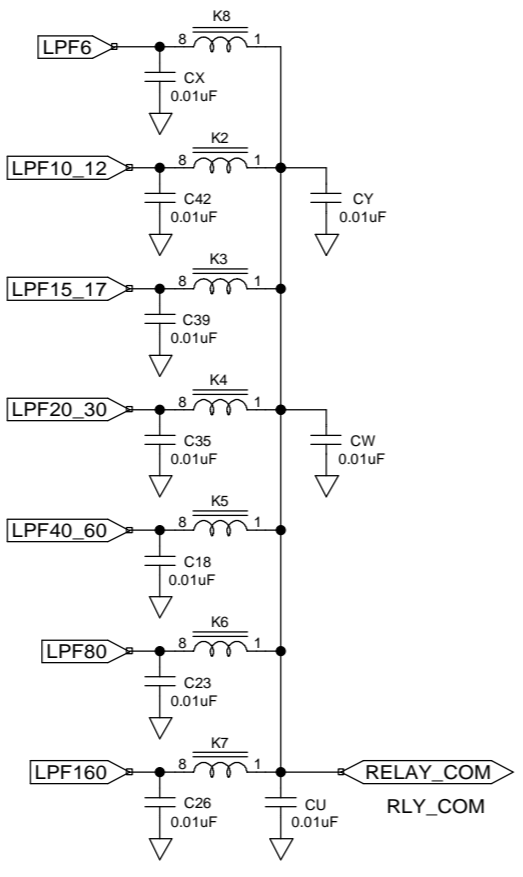
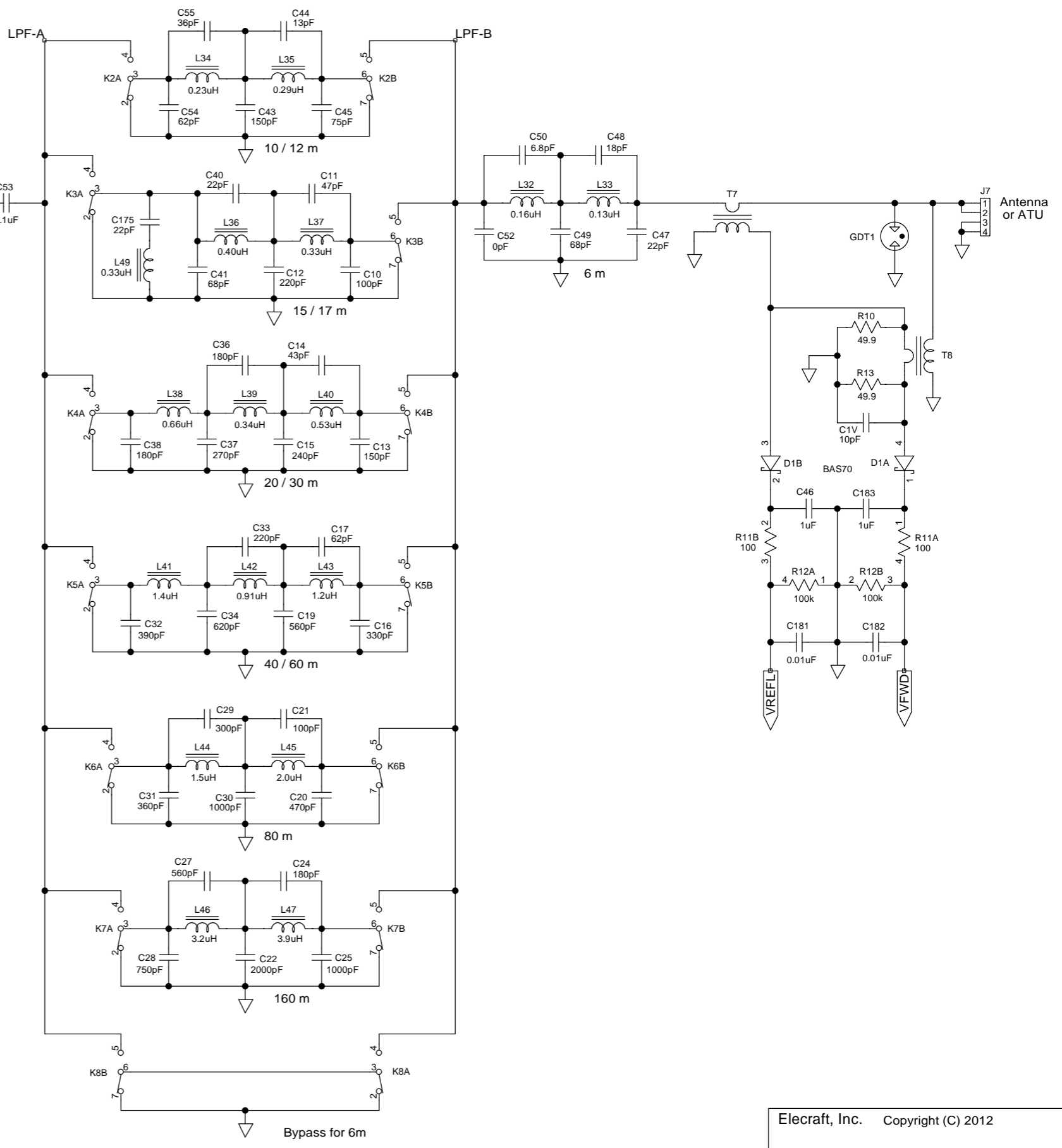
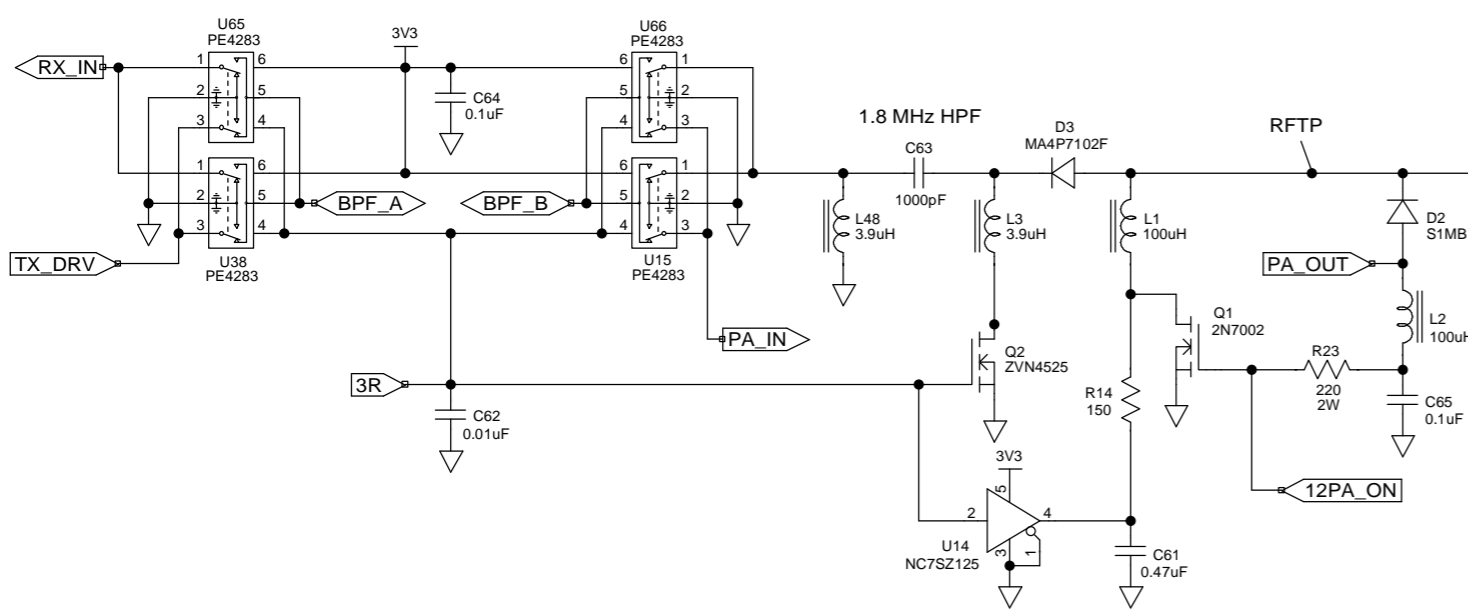


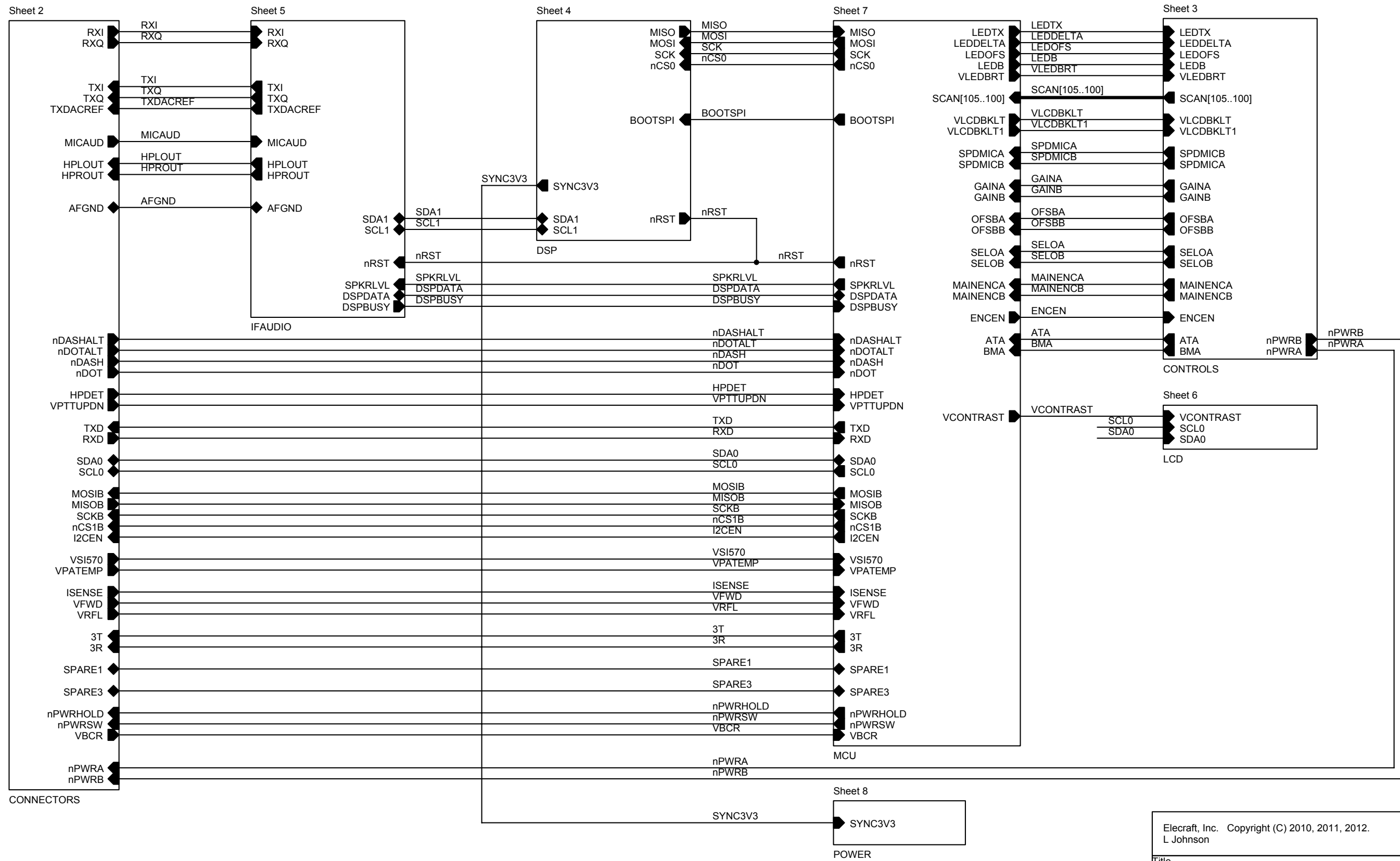


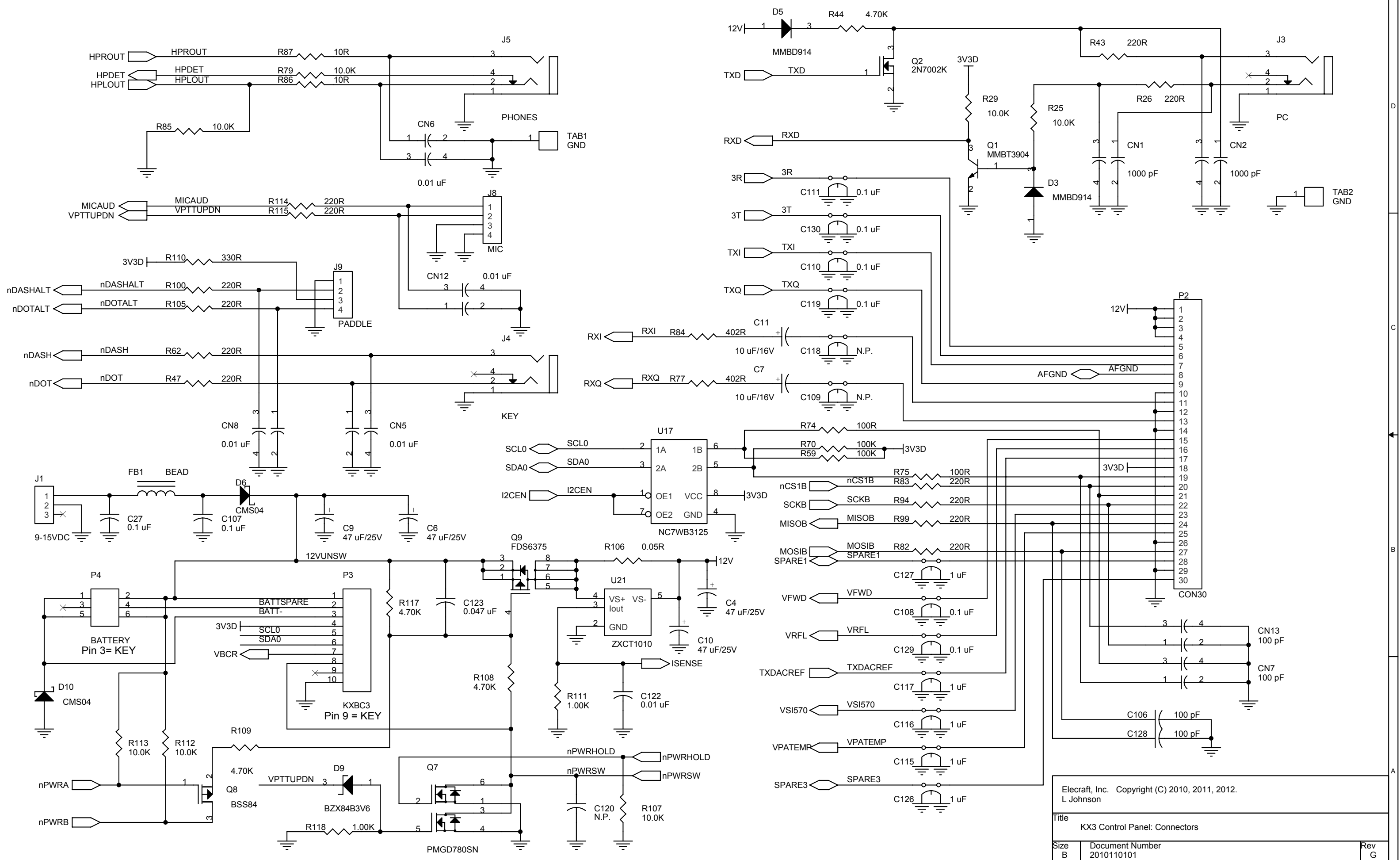




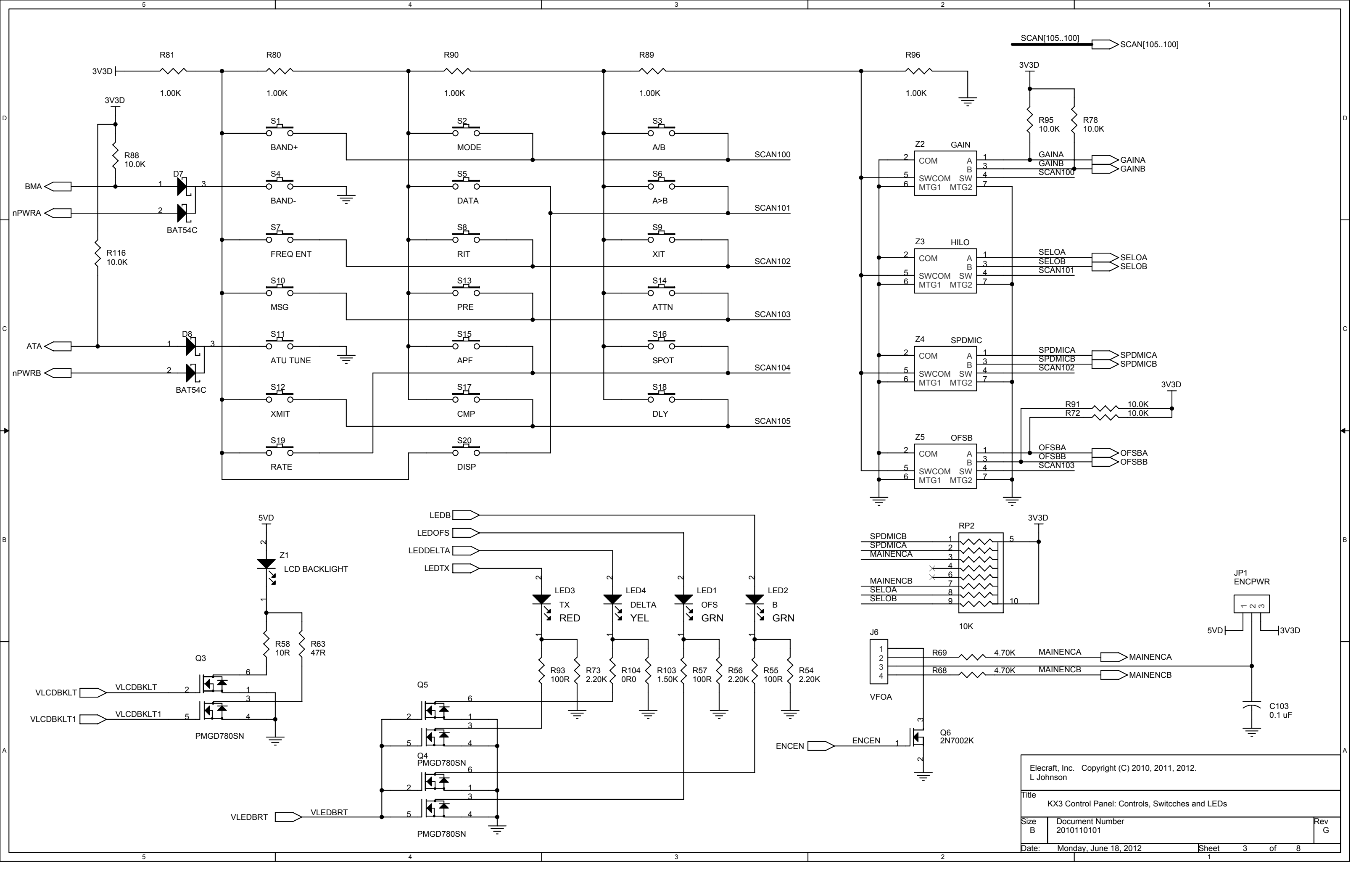




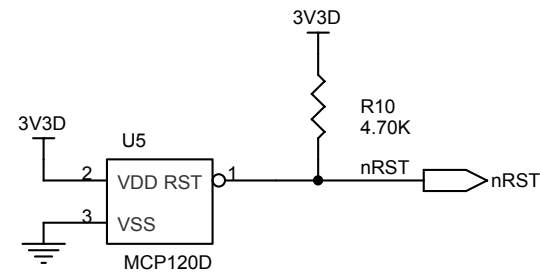
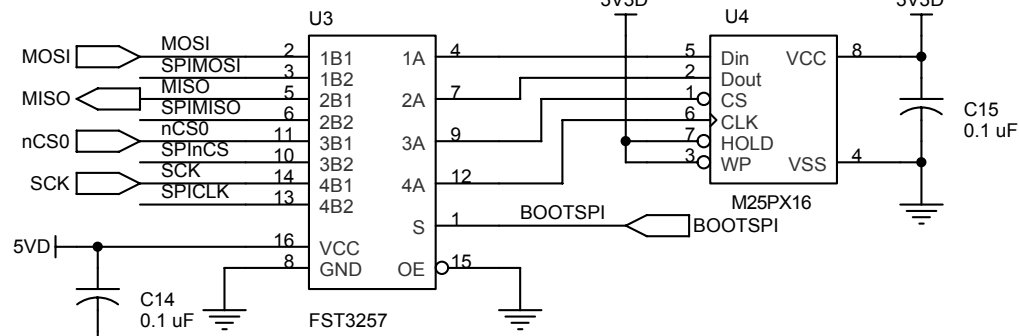
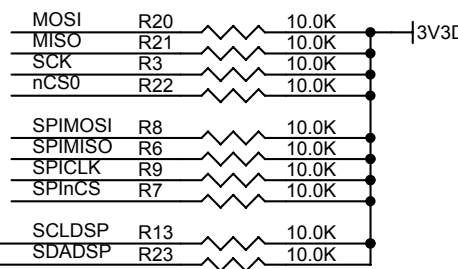
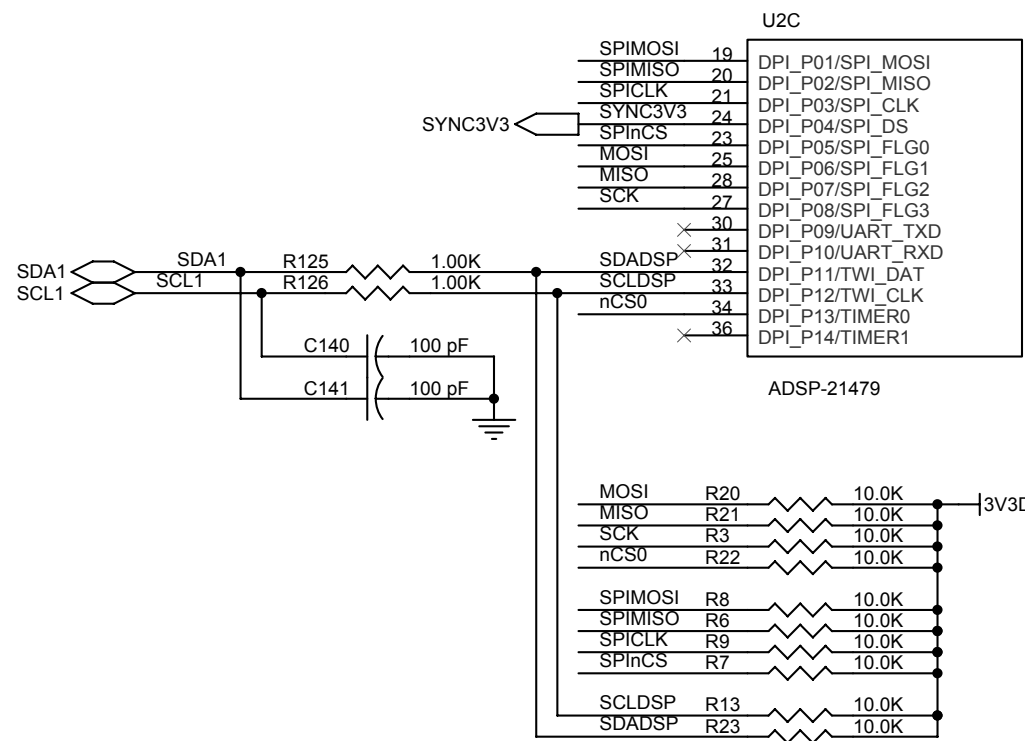




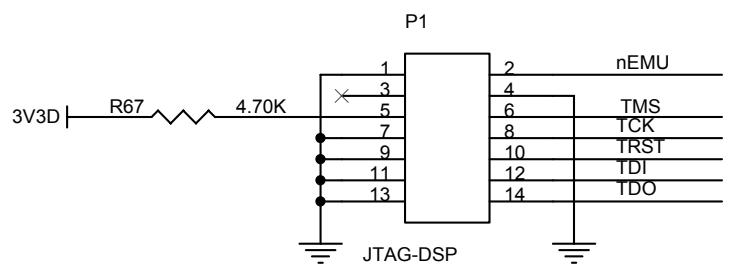
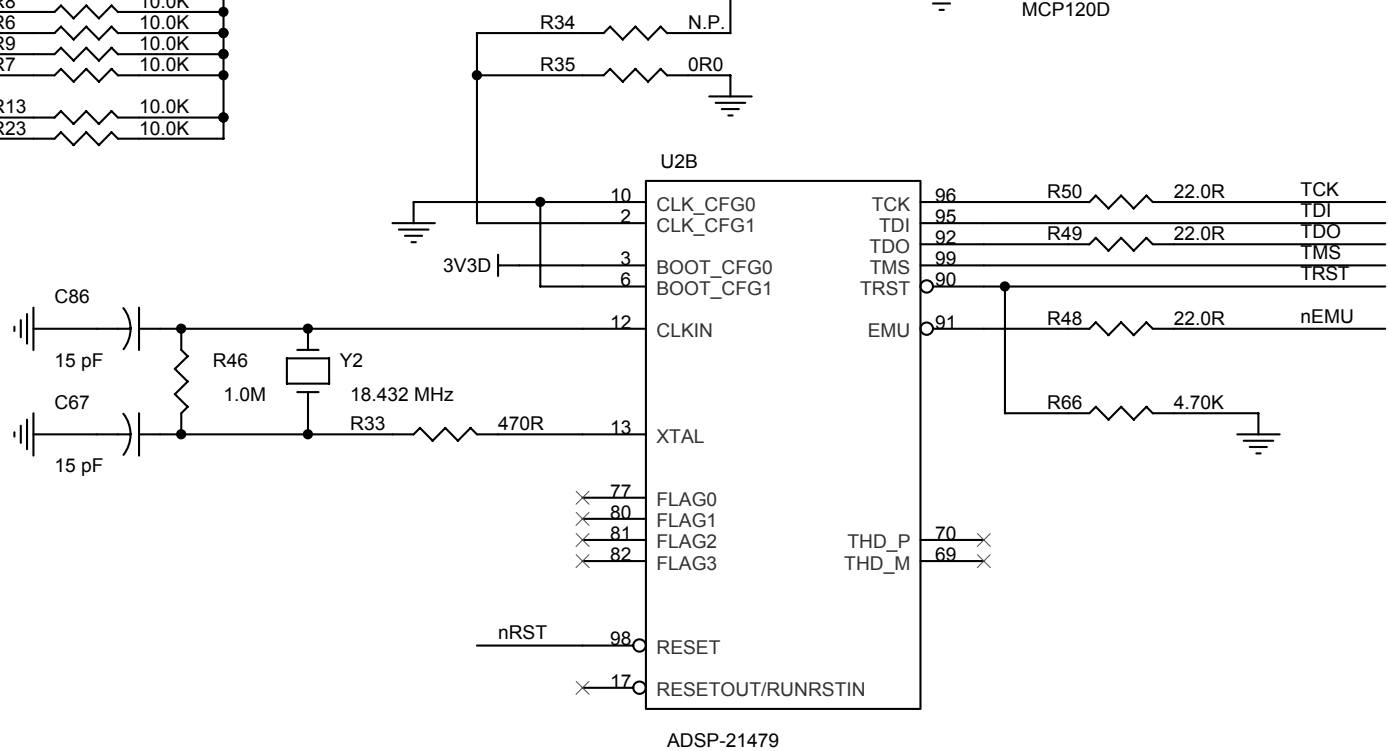
Elecrcraft, Inc. Copyright (C) 2010, 2011, 2012. L. Johnson		
Title KX3 Control Panel: Connectors		
Size B	Document Number 2010110101	Rev G
Date: Monday, June 18, 2012	Sheet 2 of 8	



Elecraft, Inc. Copyright (C) 2010, 2011, 2012.
 L Johnson
 Title
 KX3 Control Panel: Controls, Switches and LEDs
 Size B Document Number 2010110101 Rev G
 Date: Monday, June 18, 2012 Sheet 3 of 8

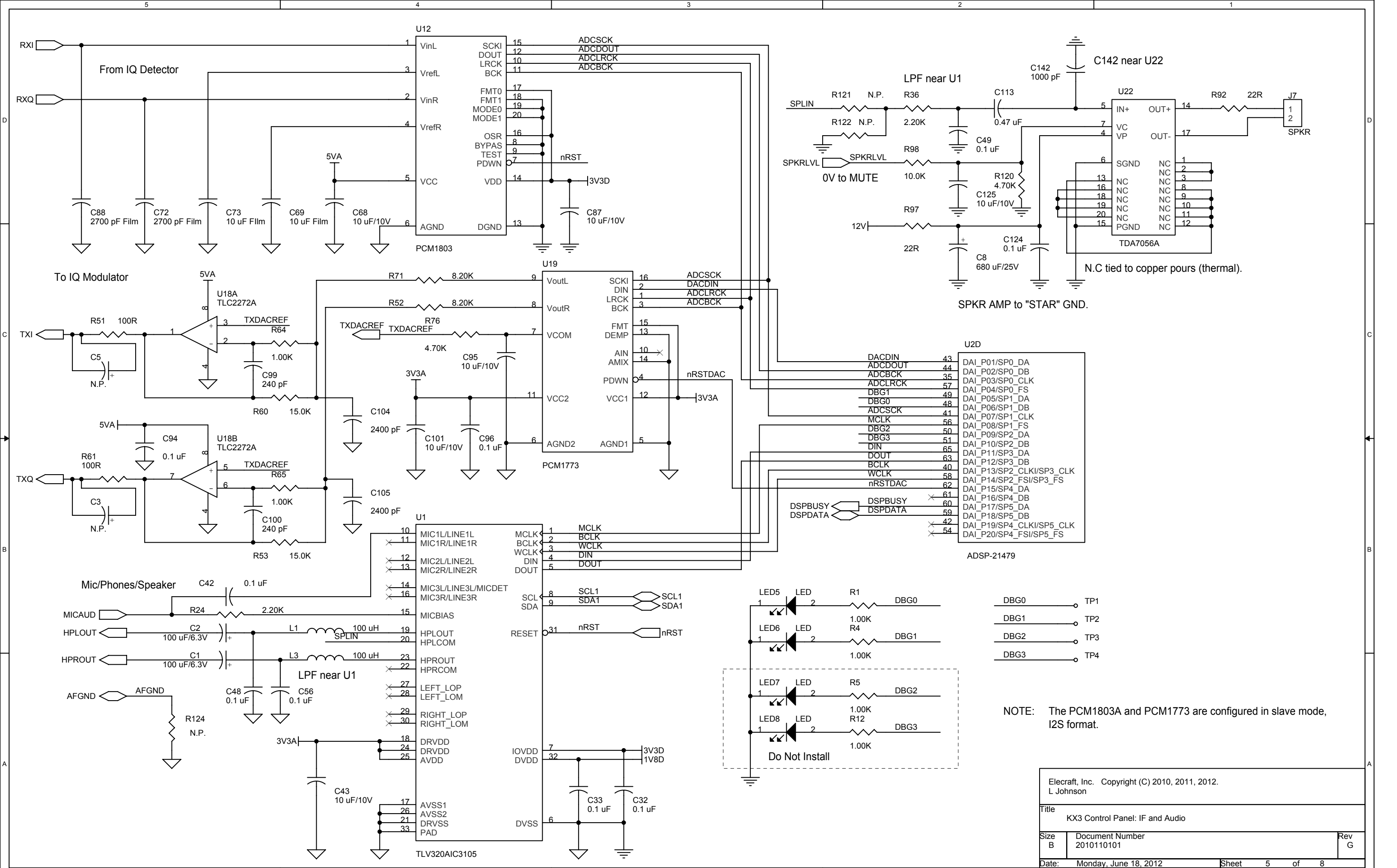


Place one but NOT both resistors.
 HI = 294 MHz default Clk.
 LO = 147 MHz default Clk.



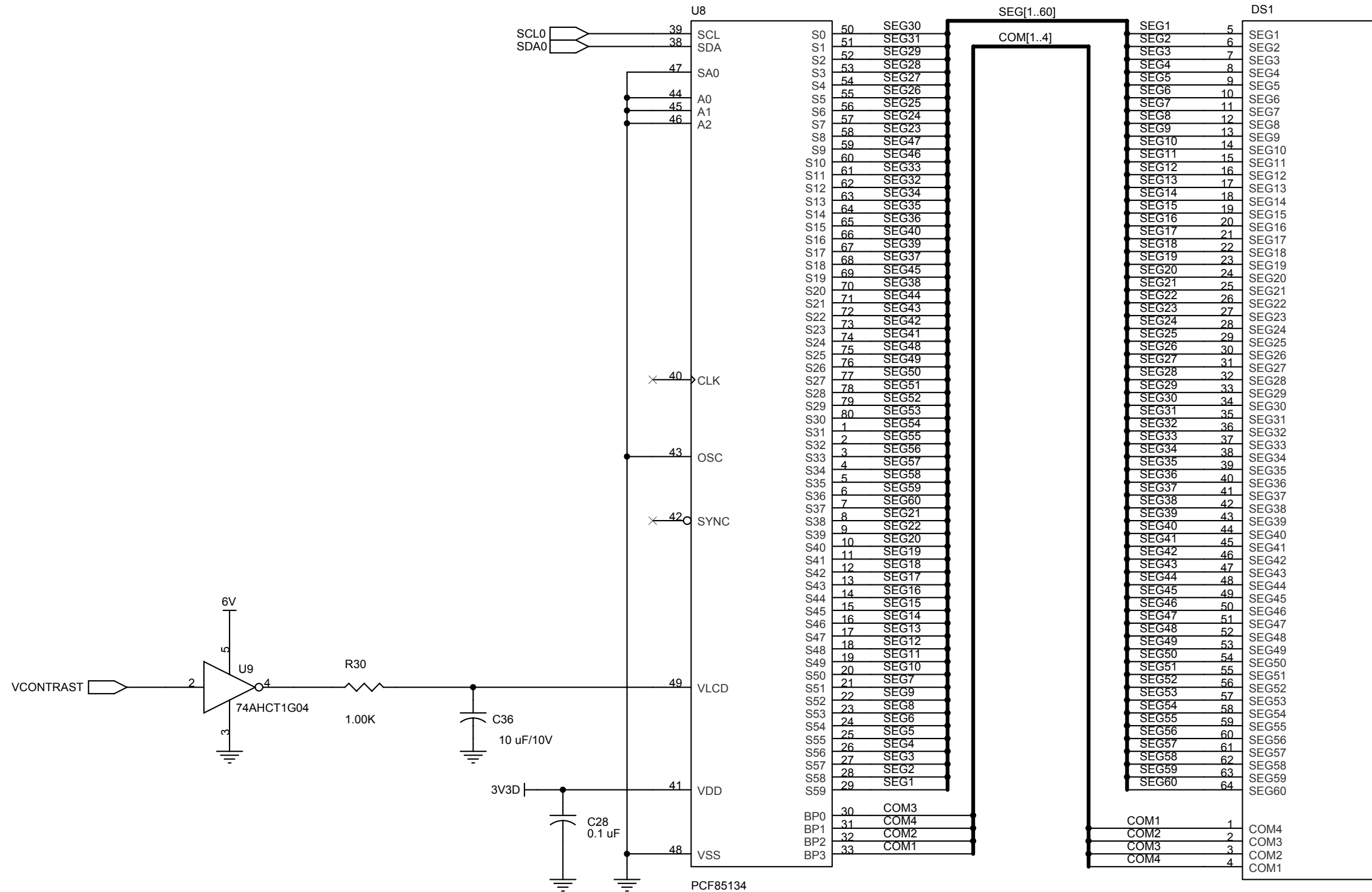
NOTE: nRST=0 then 1, BOOTSPI=1: SPI MASTER BOOT from Flash
 nRST=0, BOOTSPI=0: Load SPI Flash from MCU

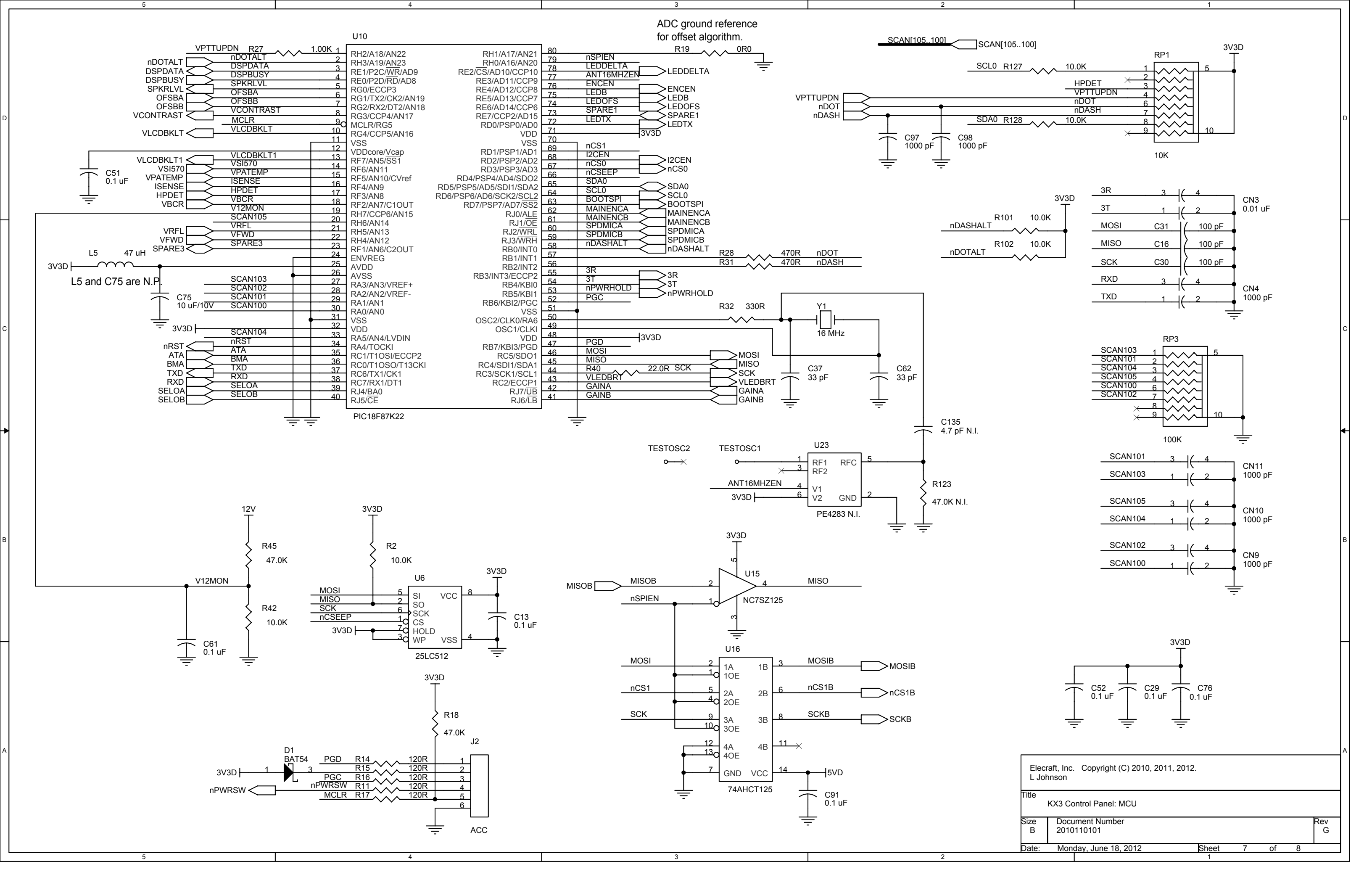
Elecrafft, Inc. Copyright (C) 2010, 2011, 2012. L Johnson		
Title KX3 Control Panel: DSP		
Size B	Document Number 2010110101	Rev G
Date: Monday, June 18, 2012	Sheet 4	of 8



NOTE: The PCM1803A and PCM1773 are configured in slave mode, I2S format.

Elecraft, Inc. Copyright (C) 2010, 2011, 2012. L Johnson		
Title KX3 Control Panel: IF and Audio		
Size B	Document Number 2010110101	Rev G
Date: Monday, June 18, 2012	Sheet 5 of 8	





ADC ground reference
for offset algorithm.

SCAN[105..100] SCAN[105..100]

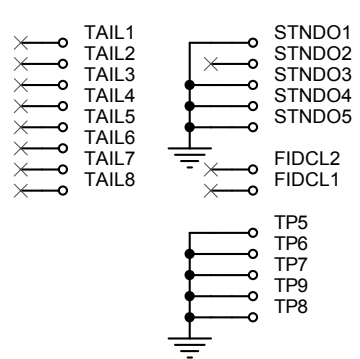
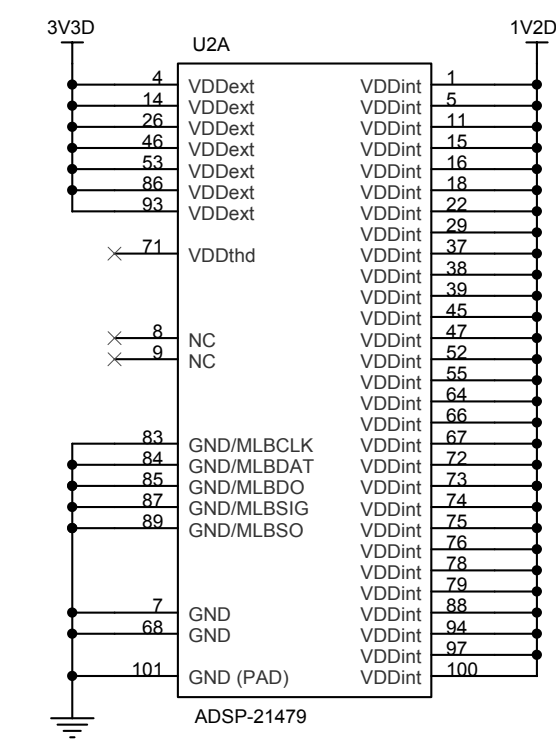
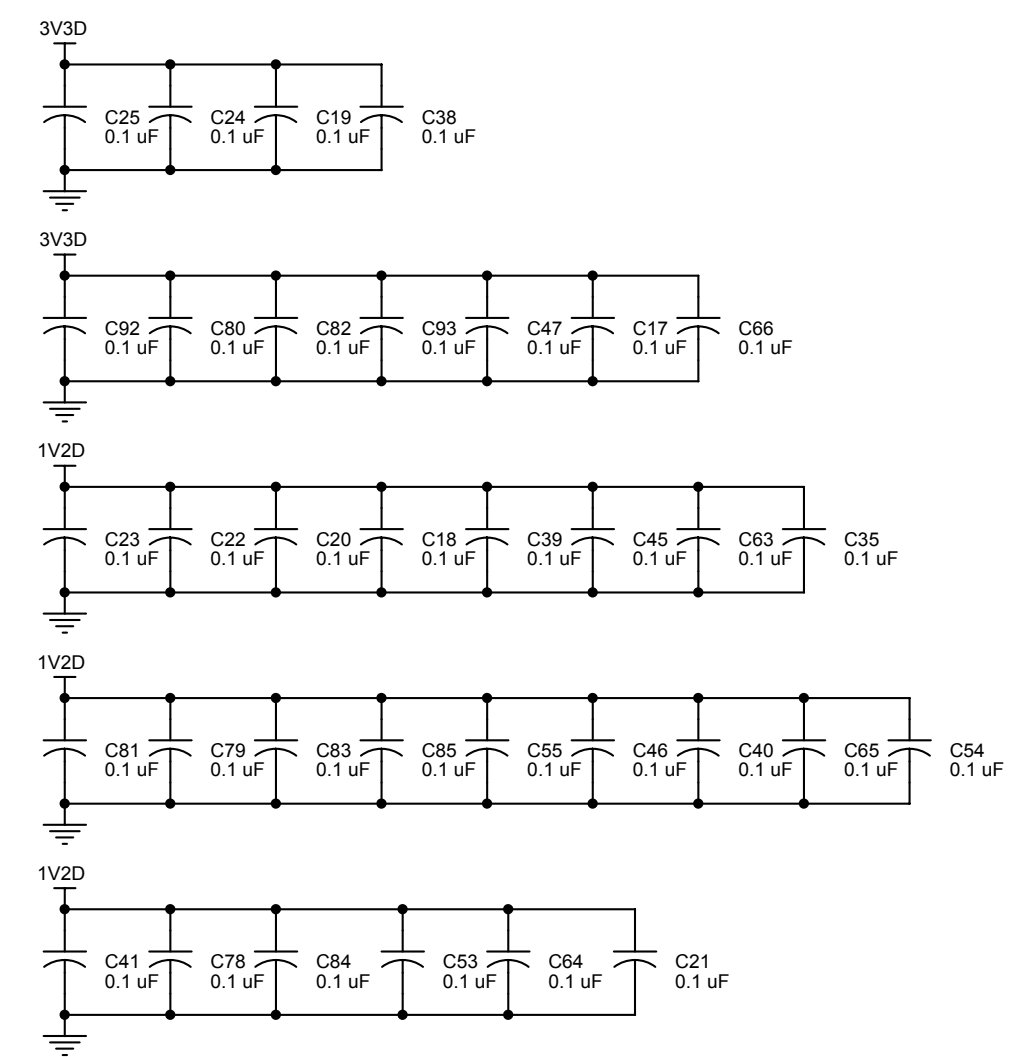
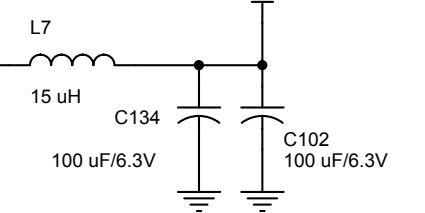
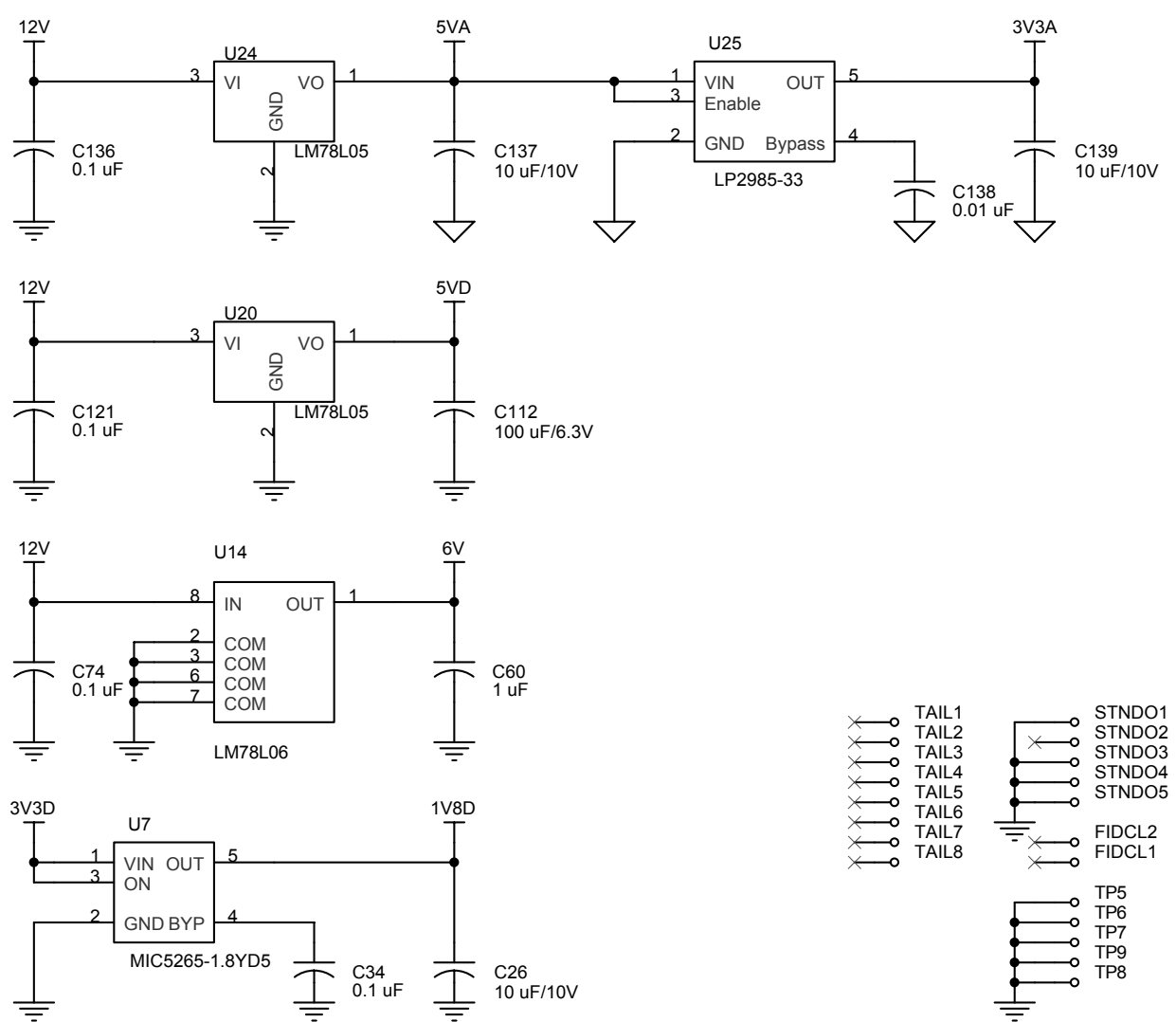
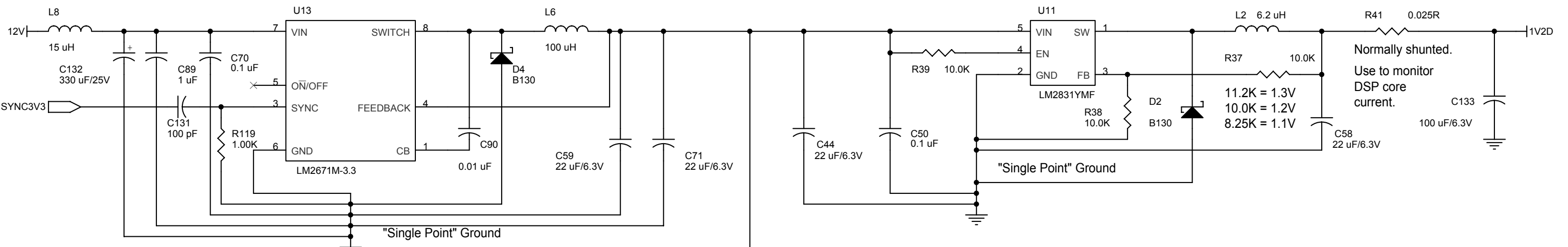
TESTOSC2

TESTOSC1

Elecrafft, Inc. Copyright (C) 2010, 2011, 2012. L Johnson		
Title KX3 Control Panel: MCU		
Size B	Document Number 2010110101	Rev G
Date: Monday, June 18, 2012	Sheet 7	of 8

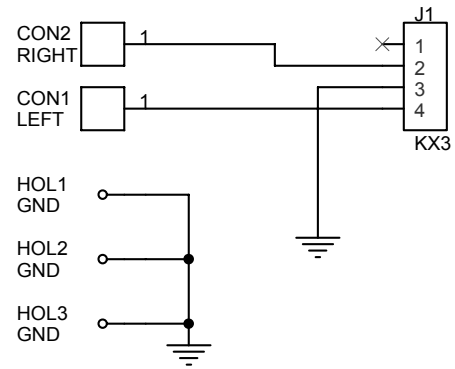
8-16V in, 3.3V out, 82%, 1A

3-4V in, 1.2V out, 70%, 1.0A

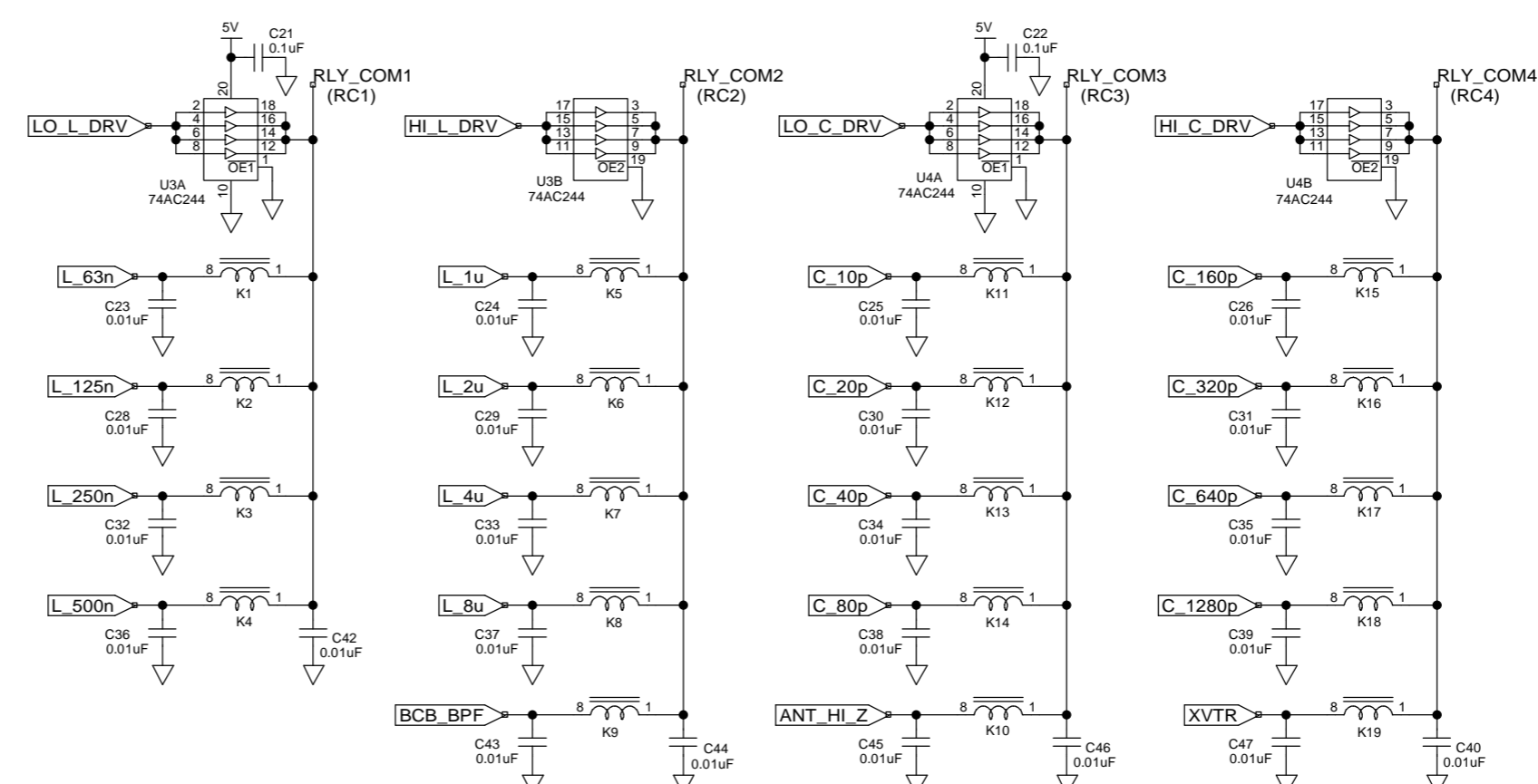
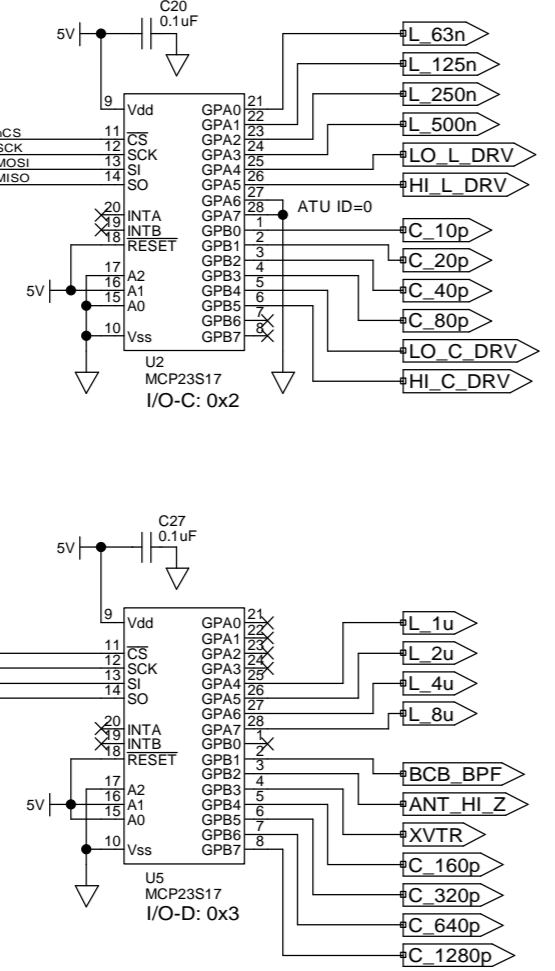
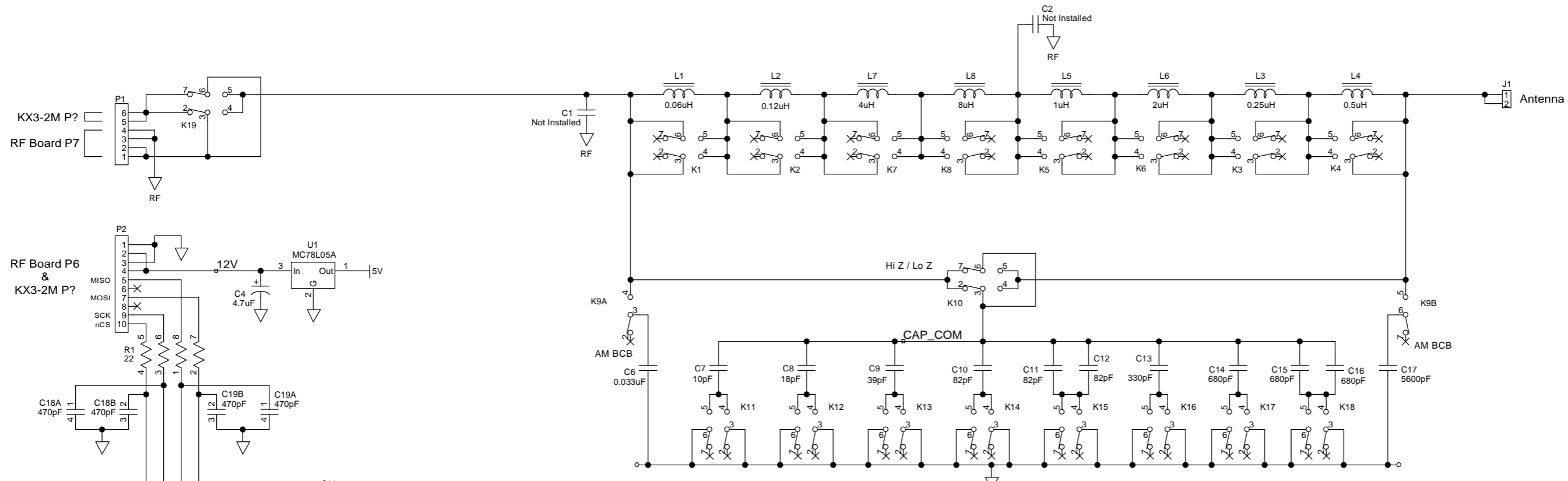


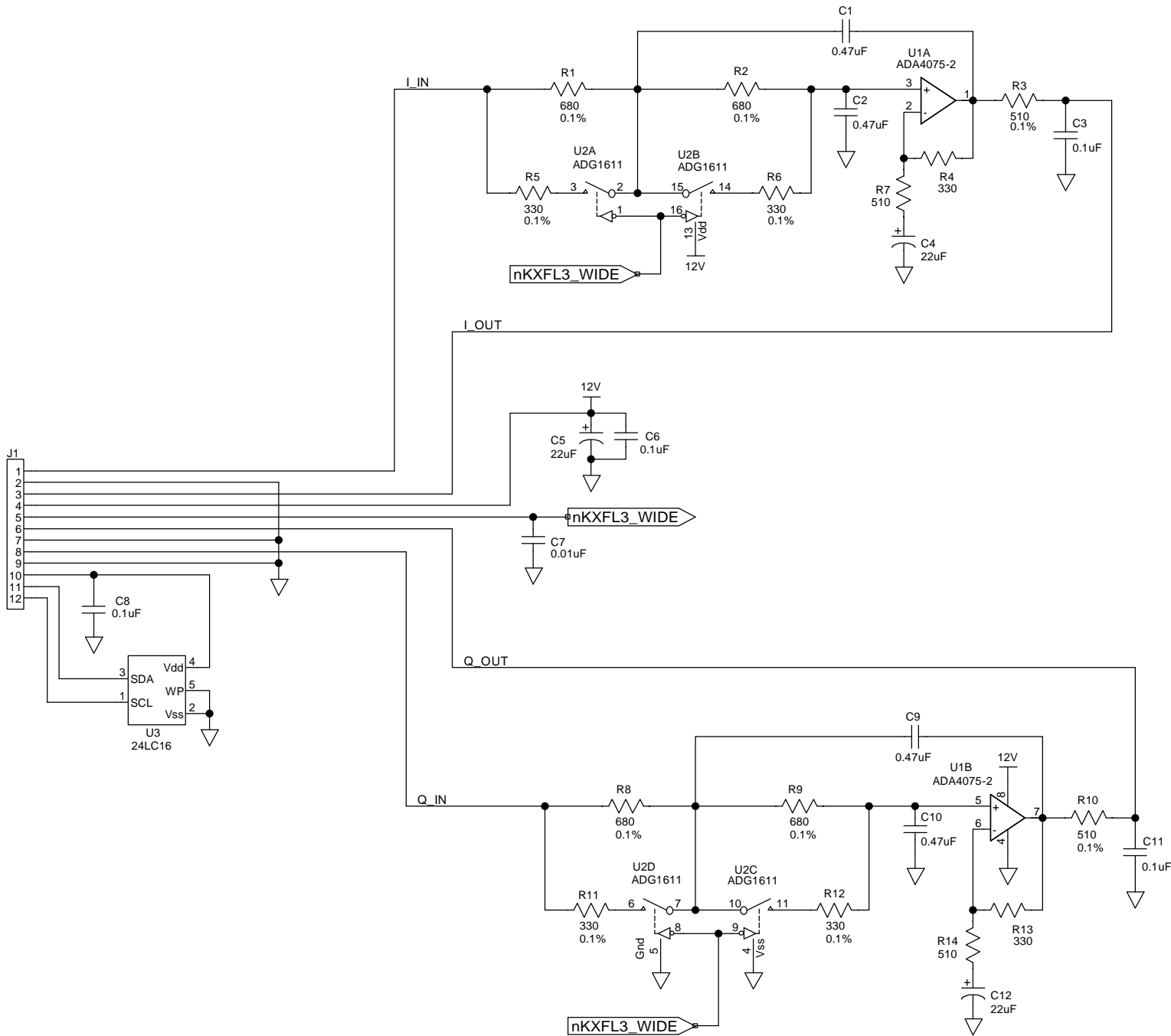
DSP requires +1.2 and +3.3 only.

Elecrafc, Inc. Copyright (C) 2010, 2011, 2012. L Johnson		
Title KX3 Control Panel: Power		
Size B	Document Number 2010110101	Rev G
Date: Monday, June 18, 2012	Sheet 8	of 8

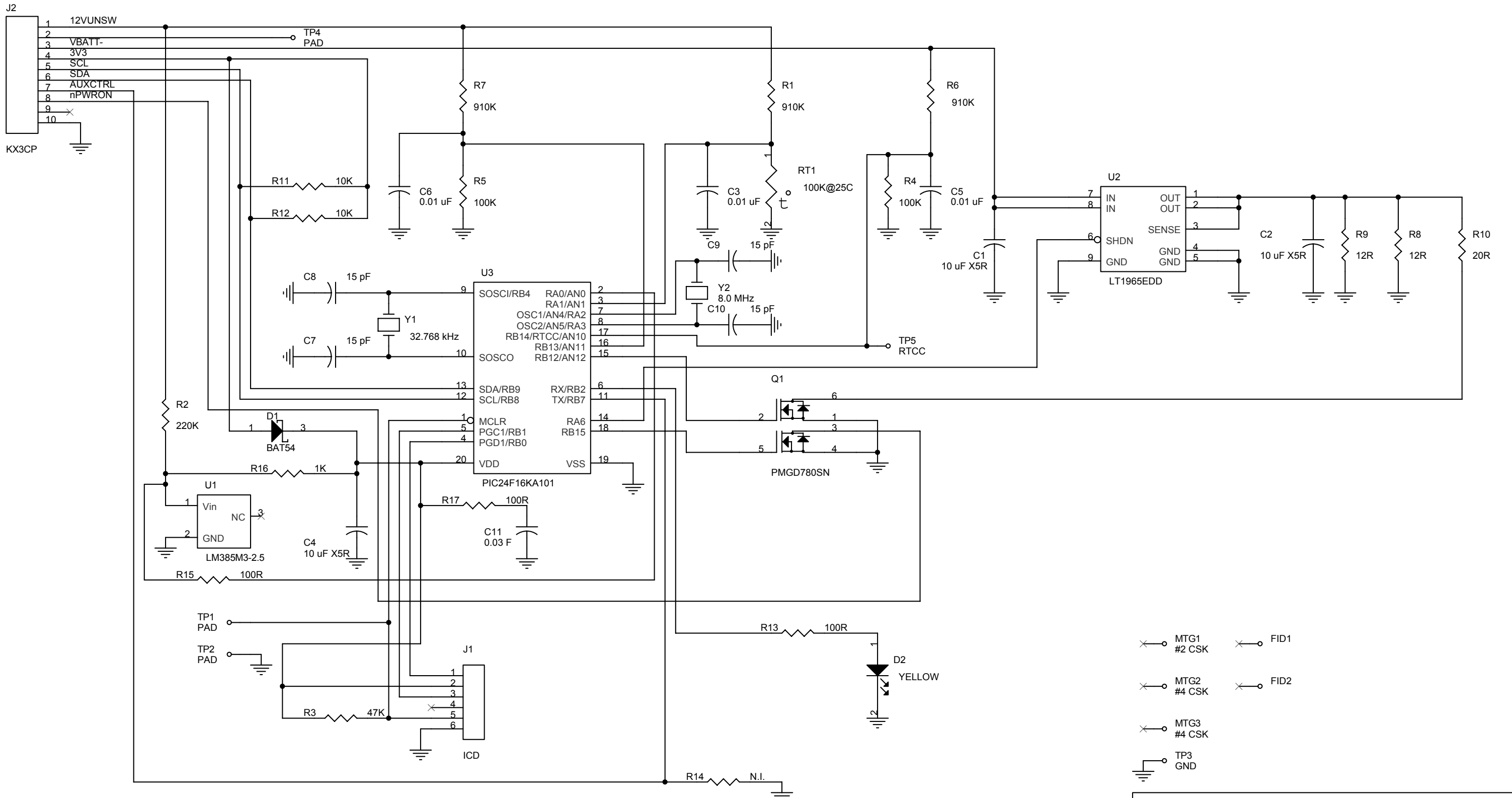


Title		
KXPD3		
Size	Document Number	Rev
A	2011090701	A
Date:	Friday, March 02, 2012	Sheet 1 of 1





Pin 9 = KEY



- ⊗ MTG1 #2 CSK
- ⊗ MTG2 #4 CSK
- ⊗ MTG3 #4 CSK
- ⊗ TP3 GND
- ⊗ FID1
- ⊗ FID2

Elecrafit, Inc. Copyright (C) 2011, 2012, 2013 L Johnson		
Title KXBC3: KX3 BCR/RTC/RETAINER		
Size B	Document Number 2011082391	Rev XG
Date: Wednesday, March 06, 2013	Sheet 1	of 1