



K3S Schematic Files
E740323, Rev A
Release Date: July 24, 2017

Elecraft K3S Schematics

This document contains the schematics for the Elecraft K3S Transceiver and its internal options. The schematics are preceded by a Block Diagram for context.

The schematics are ordered as the basic K3S/10, then various options.

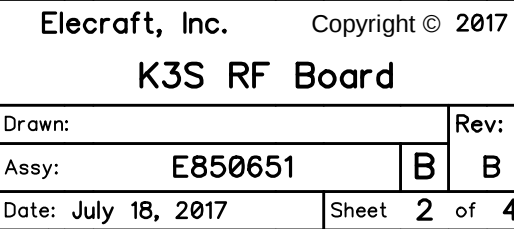
BLOCK DIAGRAM

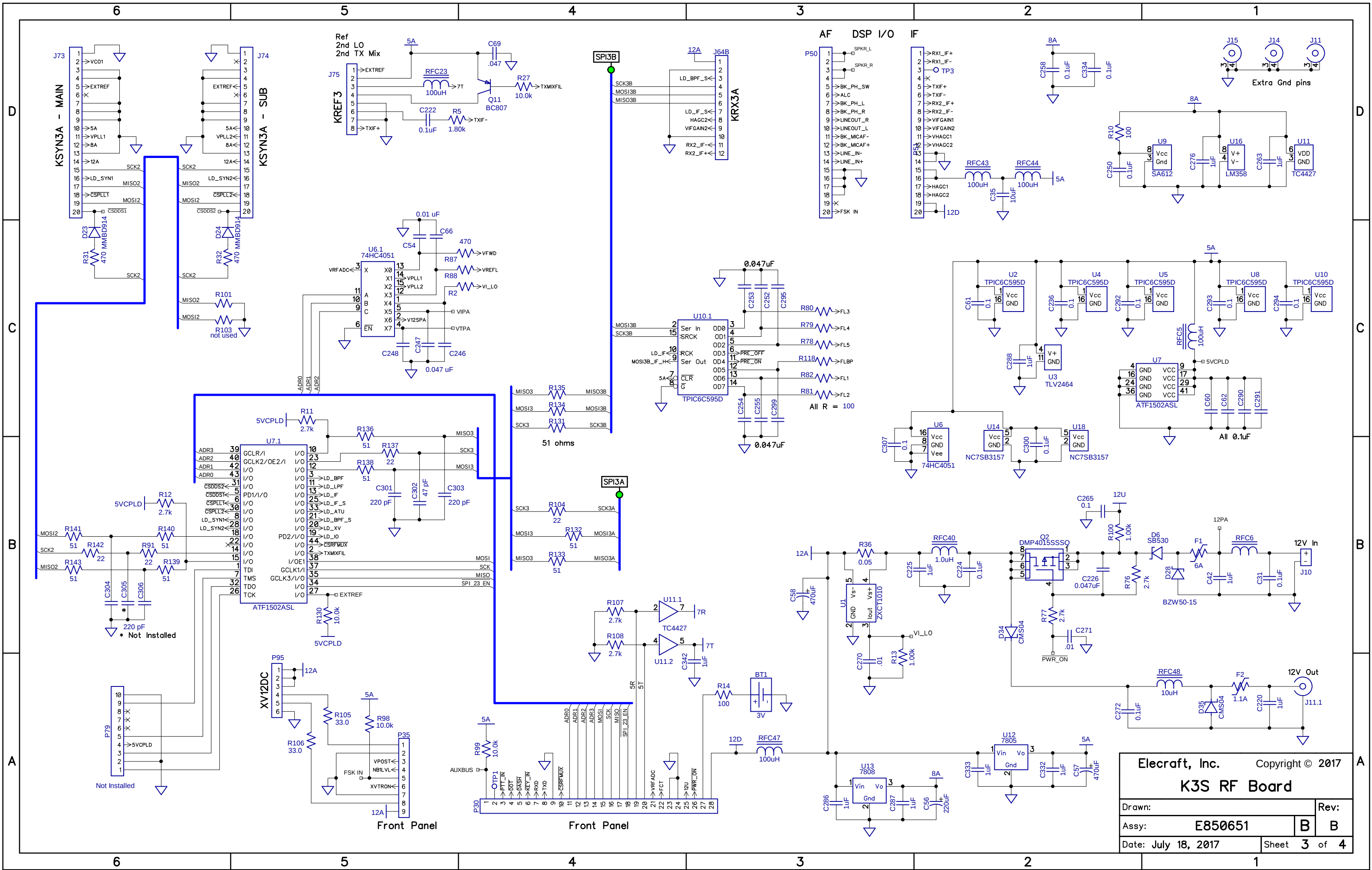
K3S/10

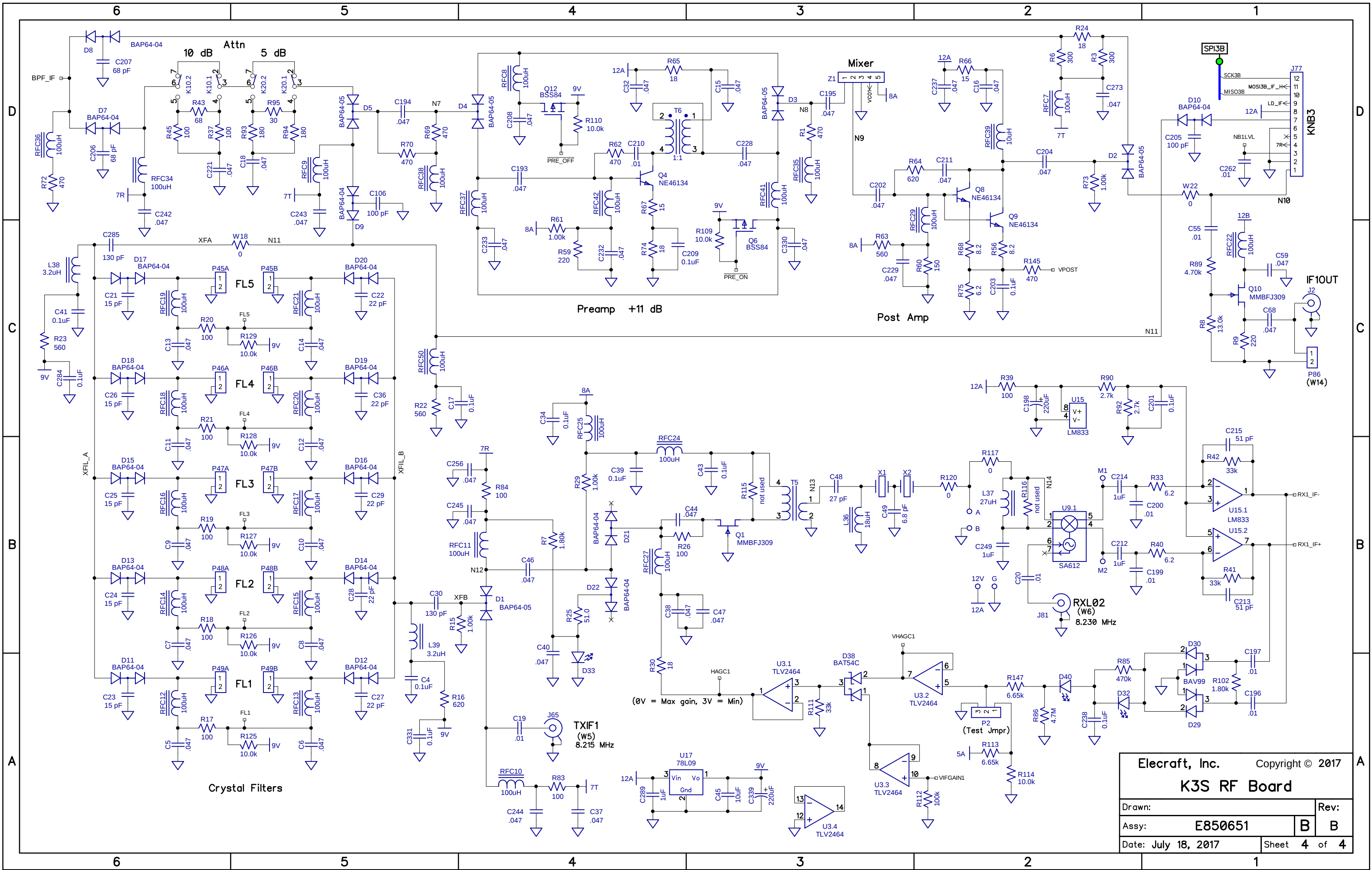
RF Board	Main module
Mixer	High dynamic range 1 st mixer
Crystal Filter	Roofing filter
KIO3B	I/O module with USB
KXV3B	Transverter Interface, 12m-6m Preamp, Rx Ant Switch w/K144XV Support
KANT3	Antenna Connector if no KAT3 installed
KNB3	Pre-IF Noise Blanker
KREF3	Reference oscillator, Tx mixer/Filter, Rx 2 nd Mixer
KSYN3A	High-Performance Synthesizer
Front Panel	Control logic
DSP	Digital Signal Processing
10-watt PA	Low power amplifier

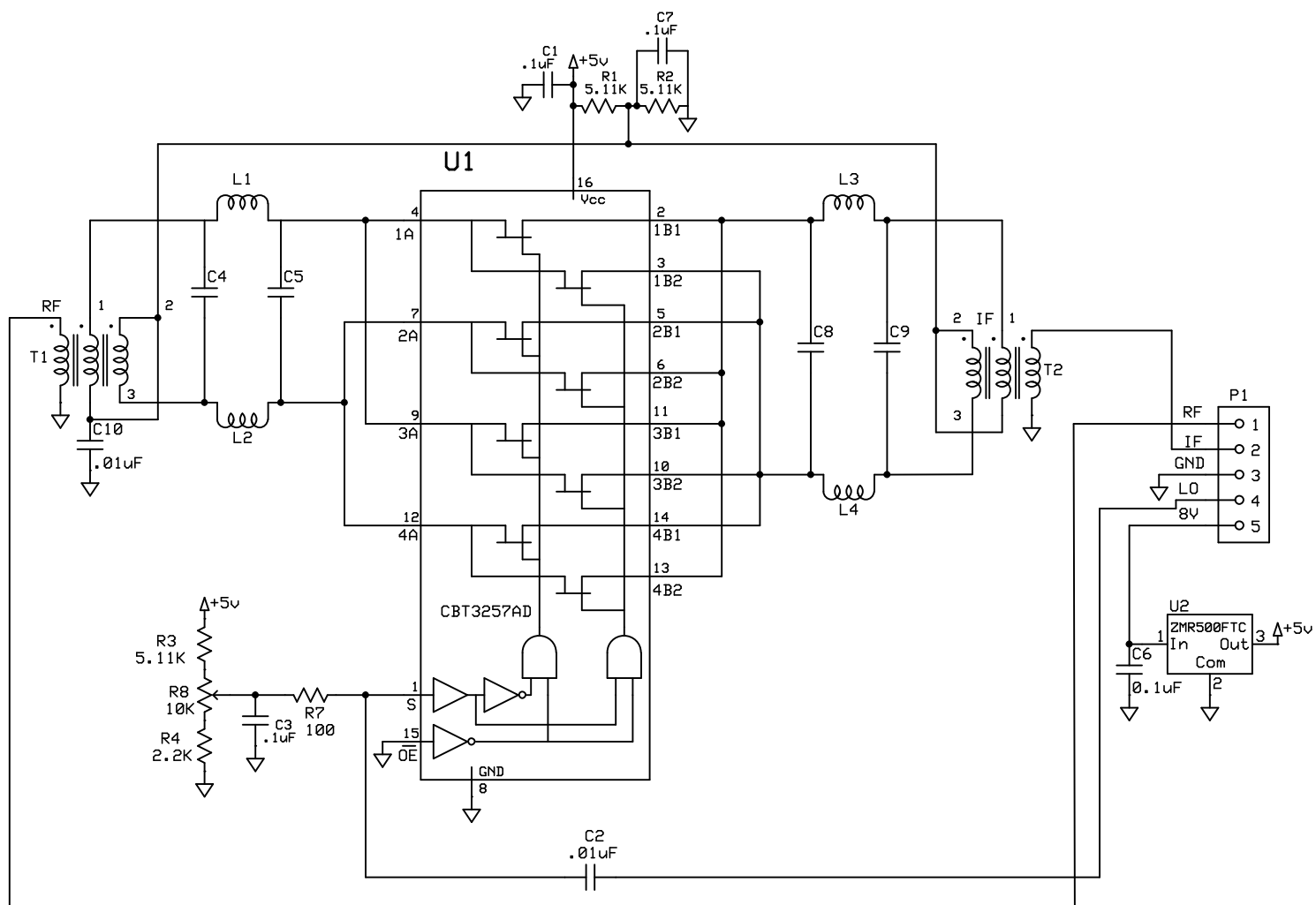
OPTIONS

KBPF3A	General Coverage Receiver Bandpass Filters
KAT3A	100-watt Antenna Tuner
DVR	Digital Voice Record/Playback
KPAIO3 A	Part of 100-watt PA
KPA3A	Part of 100-watt PA (MOSFET)
AuxDSP	Part of KRX3 Second Receiver
KRX3A	Part of KRX3 Second Receiver
K3EXREF	Frequency Locking for Reference Oscillator
K144XV	Internal 2m Module
K144RFLK	Frequency Locking for K144XV

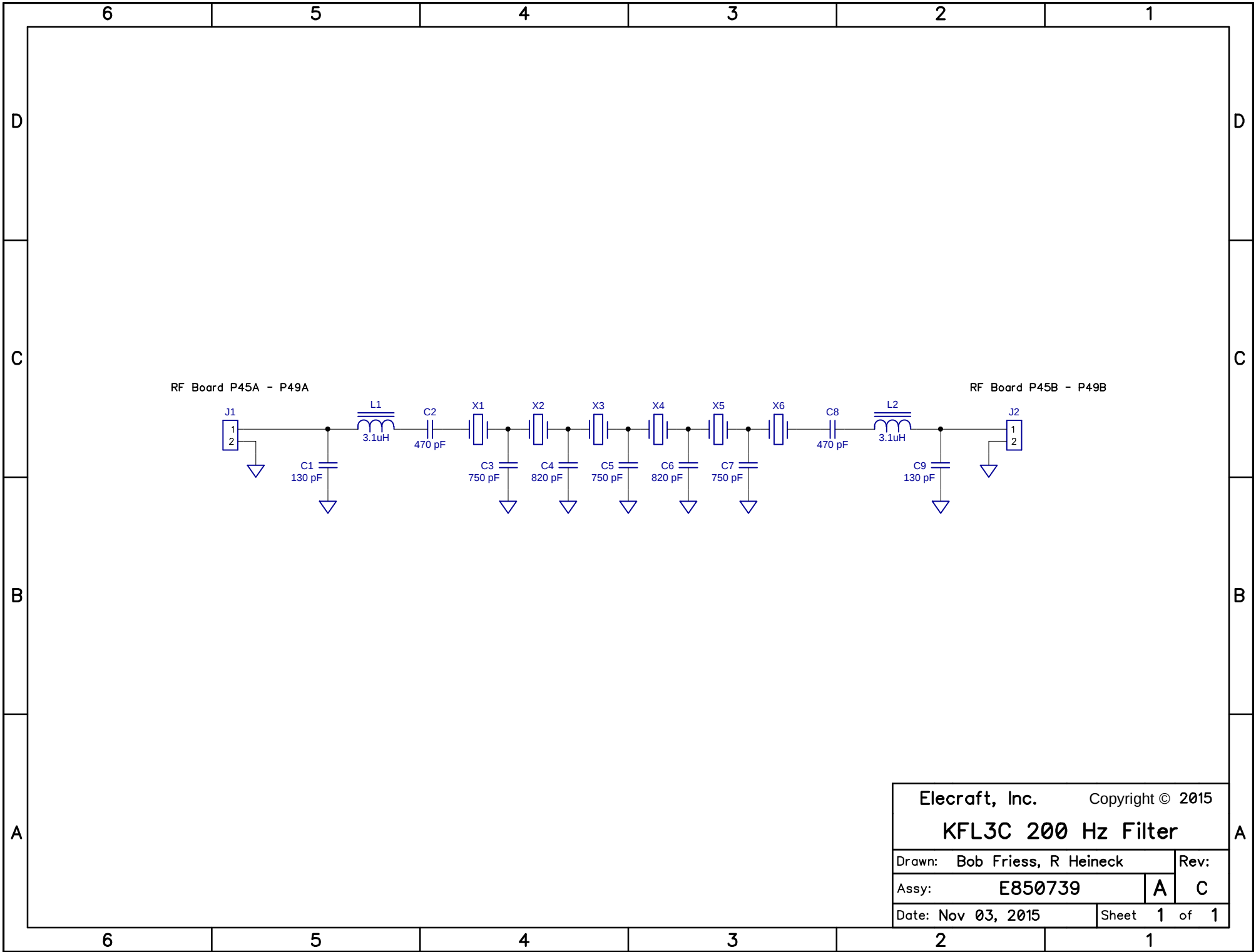








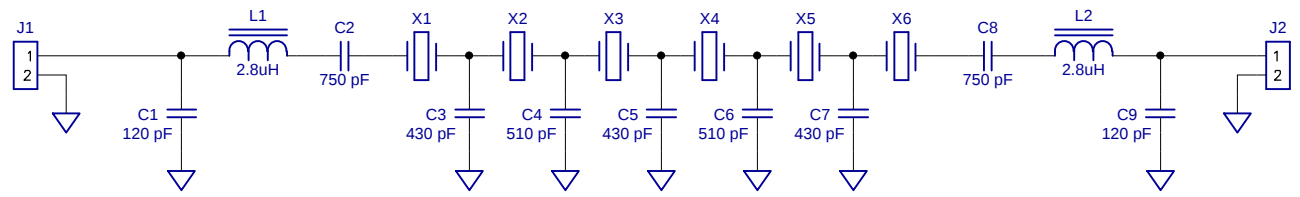
Elecraft		
KR MIXER		
W. Burdick	Rev XC	Page 1 of 1
	2/11/2007	



Elecraft, Inc.		Copyright © 2015	
KFL3C 200 Hz Filter			
Drawn: Bob Friess, R Heineck			Rev: C
Assy: E850739		A	
Date: Nov 03, 2015		Sheet 1 of 1	

RF Board P45A - P49A

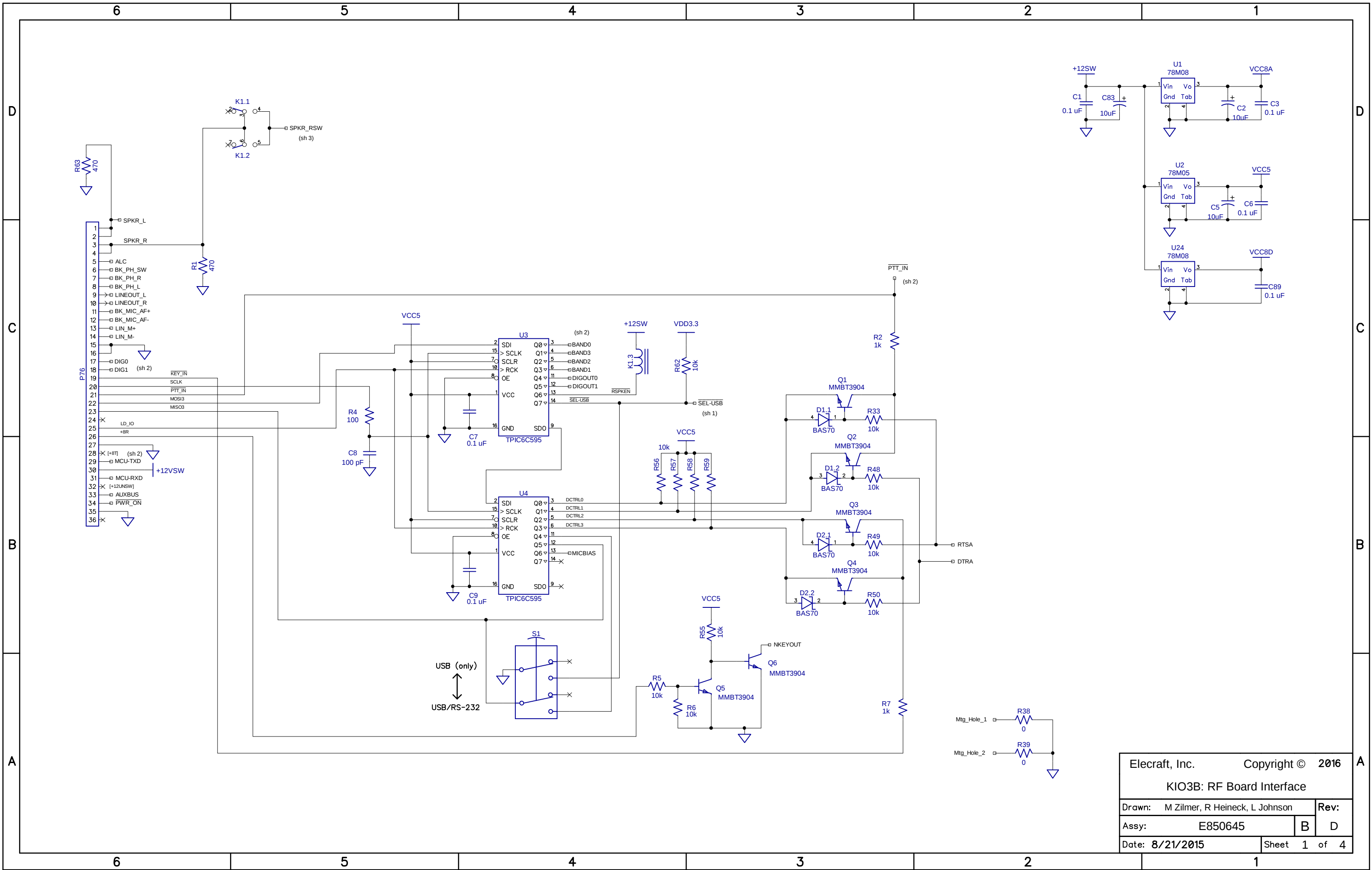
RF Board P45B - P49B



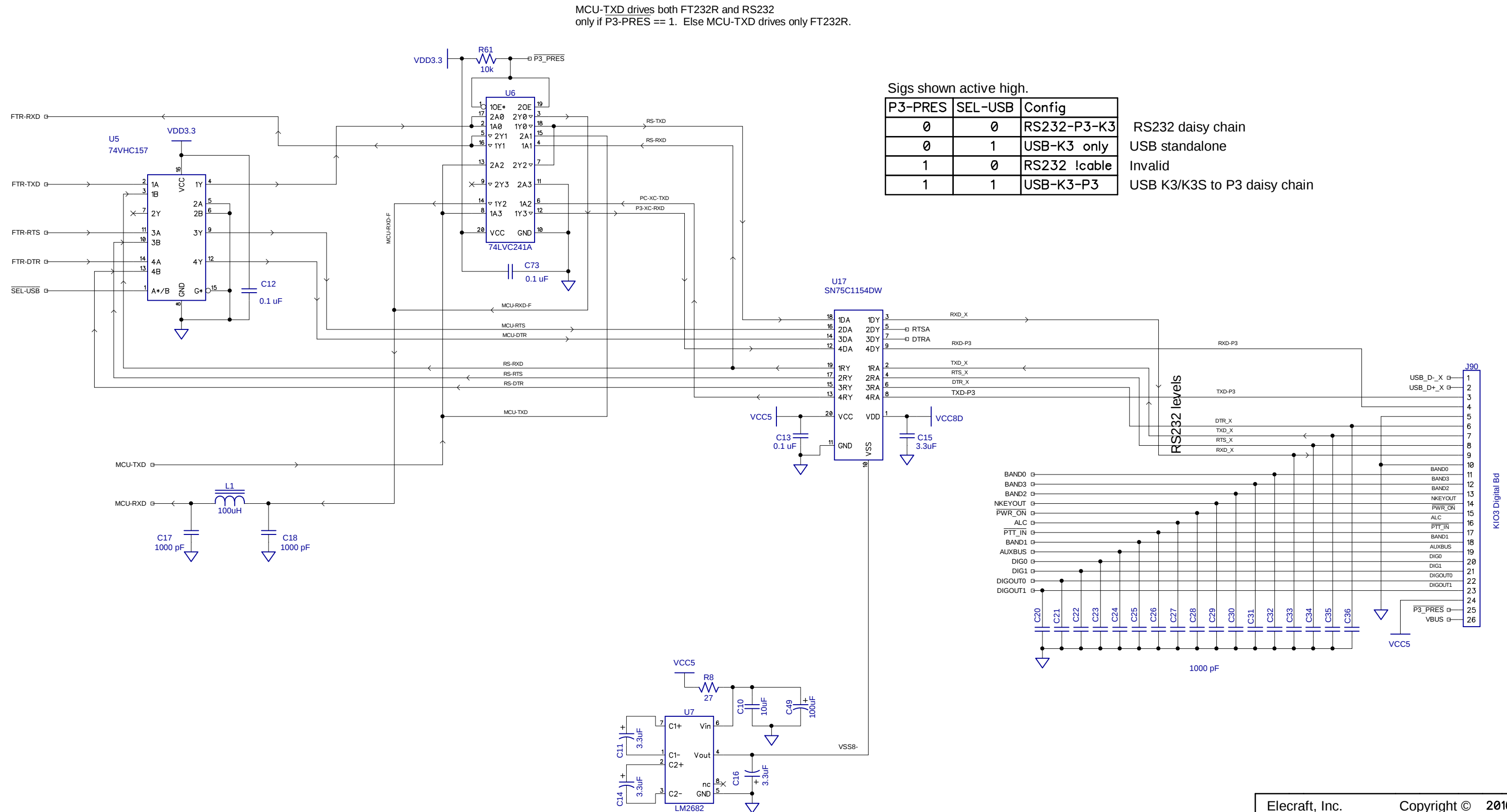
Elecraft, Inc. Copyright © 2015

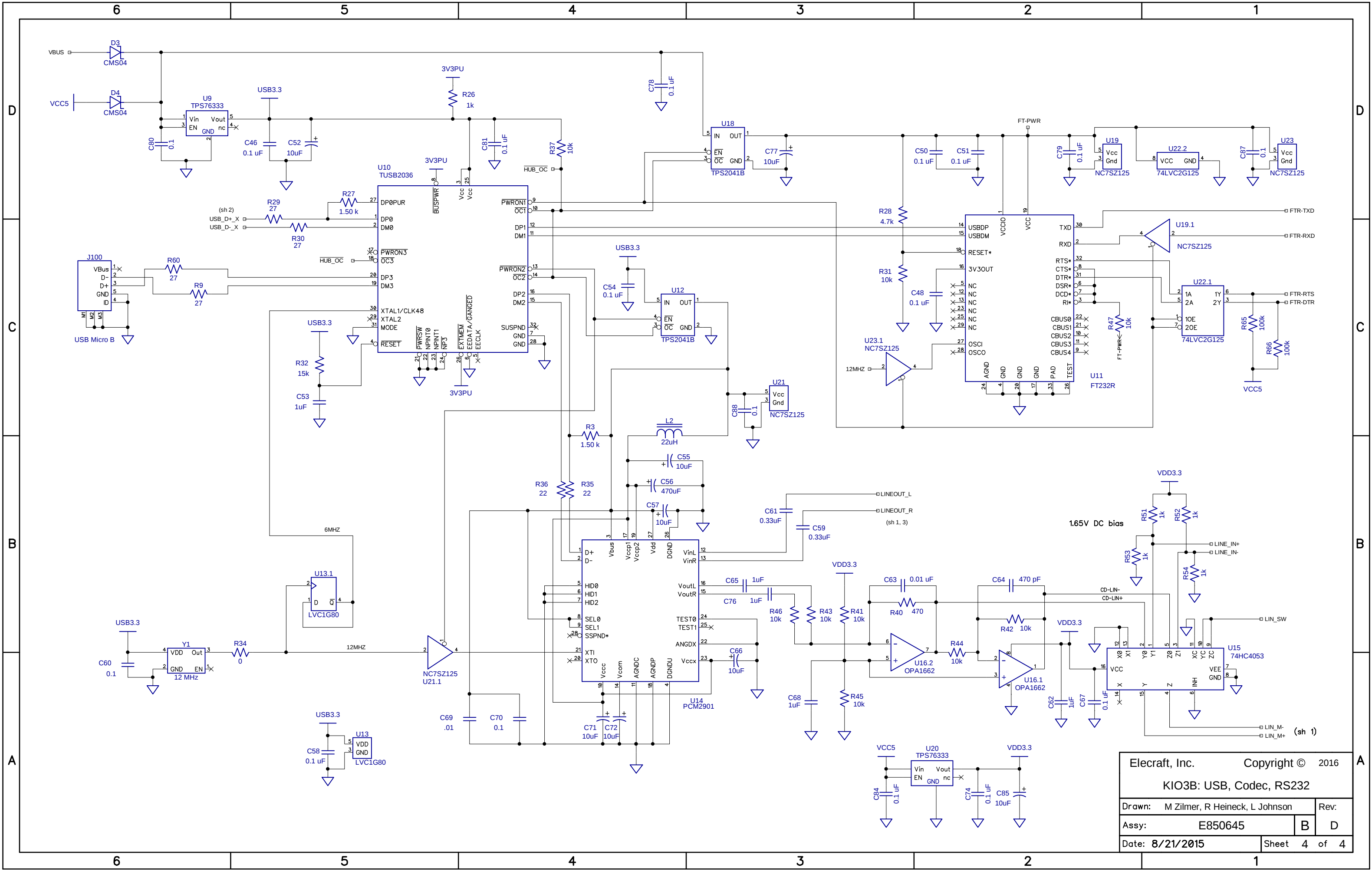
KFL3C 400 Hz Filter

Drawn: Bob Friess, R Heineck		Rev:	
Assy: E850740		A	C
Date: Nov 03, 2015		Sheet 1 of 1	



Elecraft, Inc. Copyright © 2016	
KIO3B: RF Board Interface	
Drawn: M Zilmer, R Heineck, L Johnson	Rev: B
Assy: E850645	D
Date: 8/21/2015	Sheet 1 of 4





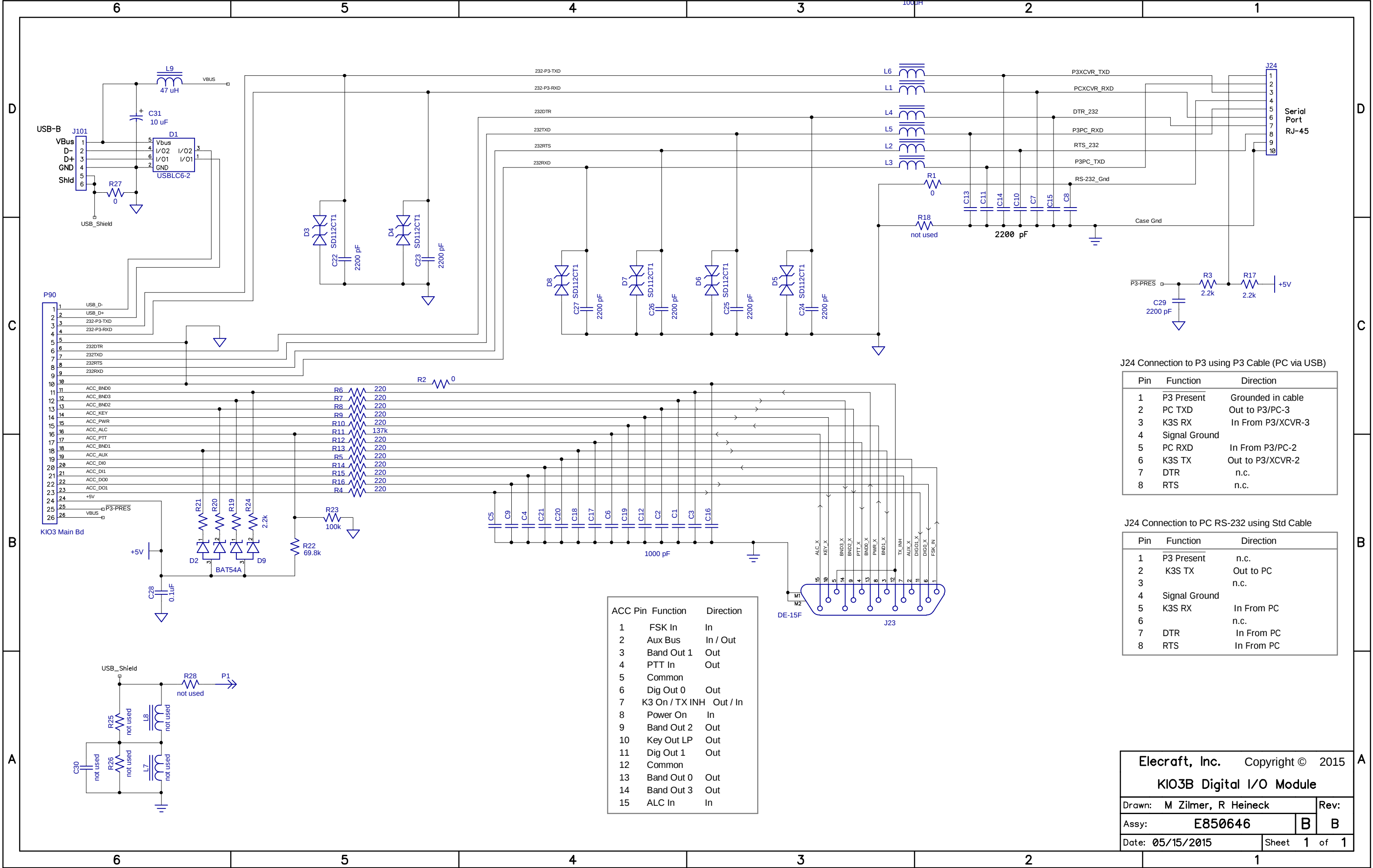
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KIO3B: USB, Codec, RS232

Drawn: M Zilmer, R Heineck, L Johnson Rev:

Assy: E850645 B D

Date: 8/21/2015 Sheet 4 of 4



J24 Connection to P3 using P3 Cable (PC via USB)

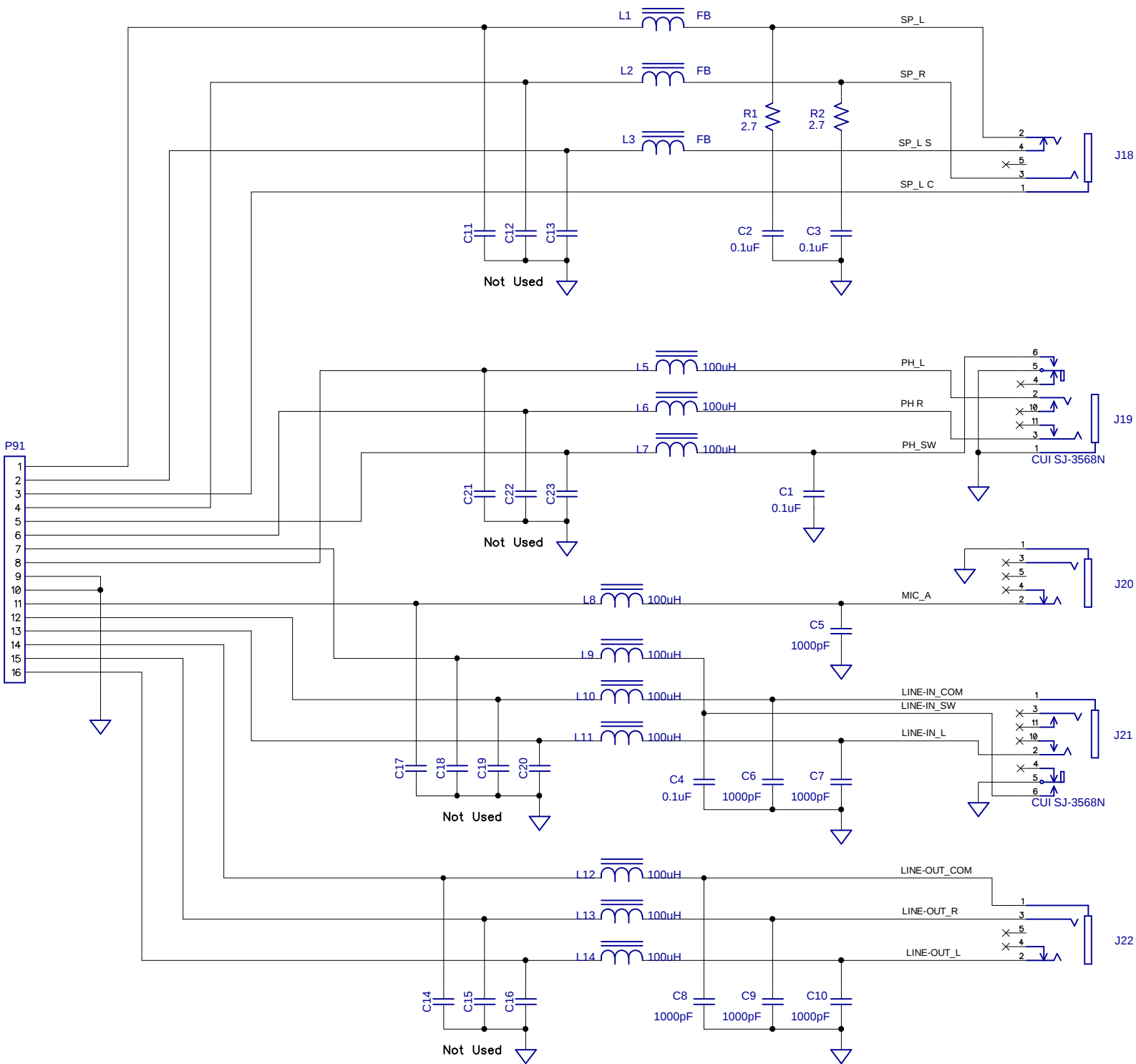
Pin	Function	Direction
1	P3 Present	Grounded in cable
2	PC TXD	Out to P3/PC-3
3	K3S RX	In From P3/XCVR-3
4	Signal Ground	
5	PC RXD	In From P3/PC-2
6	K3S TX	Out to P3/XCVR-2
7	DTR	n.c.
8	RTS	n.c.

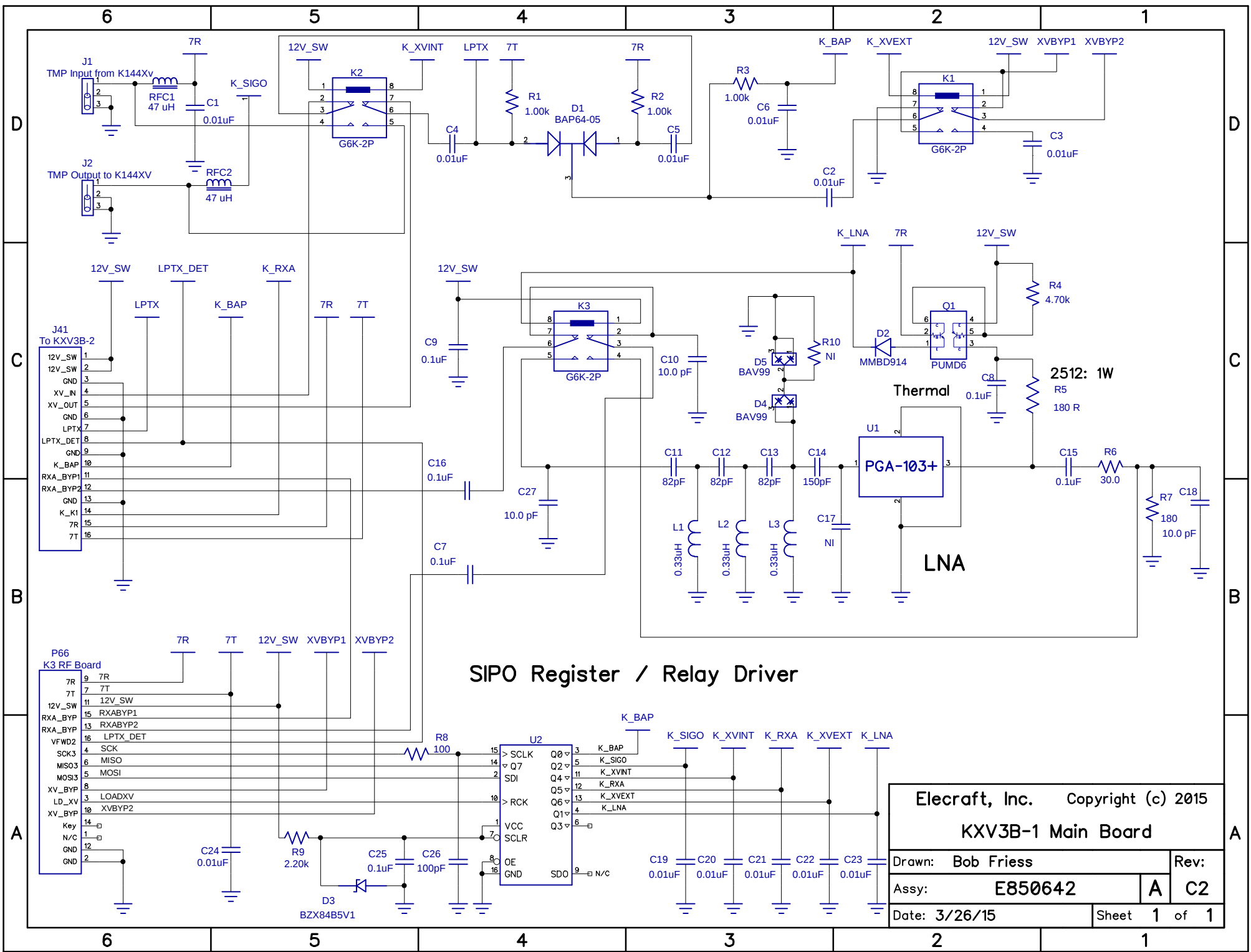
J24 Connection to PC RS-232 using Std Cable

Pin	Function	Direction
1	P3 Present	n.c.
2	K3S TX	Out to PC
3		n.c.
4	Signal Ground	
5	K3S RX	In From PC
6		n.c.
7	DTR	In From PC
8	RTS	In From PC

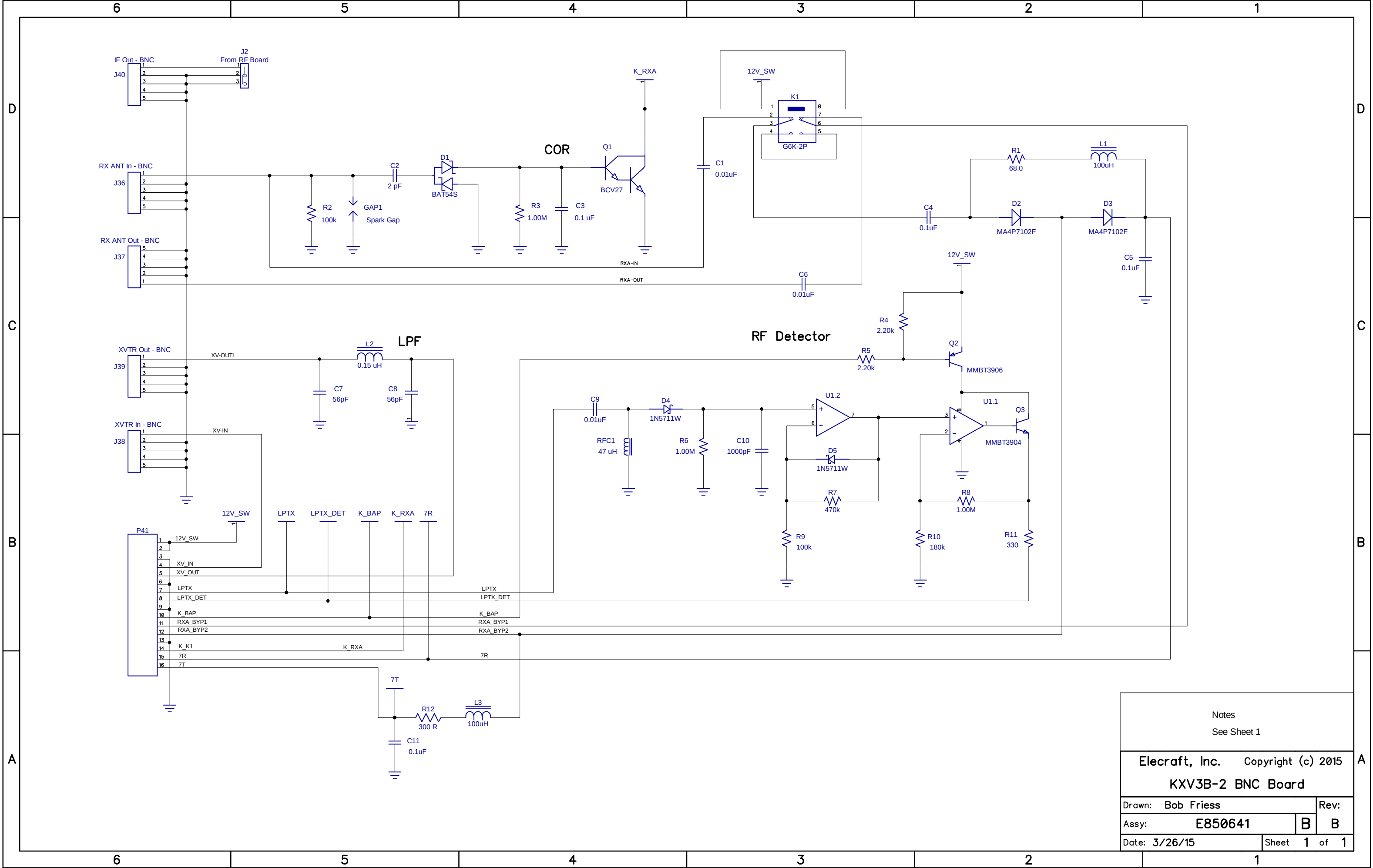
KIO3 Main Bd

1	Spkr L
2	Spkr L S
3	Spkr L C
4	Spkr R
5	Phones SW
6	Phones R
7	LIN SW
8	Phones L
9	Phones C
10	Mic C
11	Mic A
12	LIN C
13	LIN L
14	LOUT C
15	LOUT R
16	LOUT L





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KXV3B-1 Main Board		
Drawn: Bob Friess	Rev: A	
Assy: E850642	C2	
Date: 3/26/15	Sheet	1 of 1



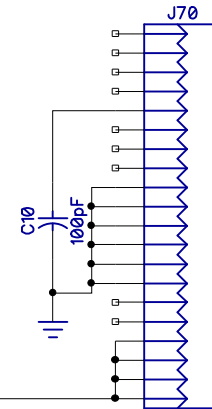
Notes See Sheet 1			
Elecra ^{ft} , Inc. Copyright (c) 2015			
KXV3B-2 BNC Board			
Drawn: Bob Friess			Rev:
Assy: E850641			B B
Date: 3/26/15		Sheet	1 of 1

ANT 1
J69A

SA1

R1

560K



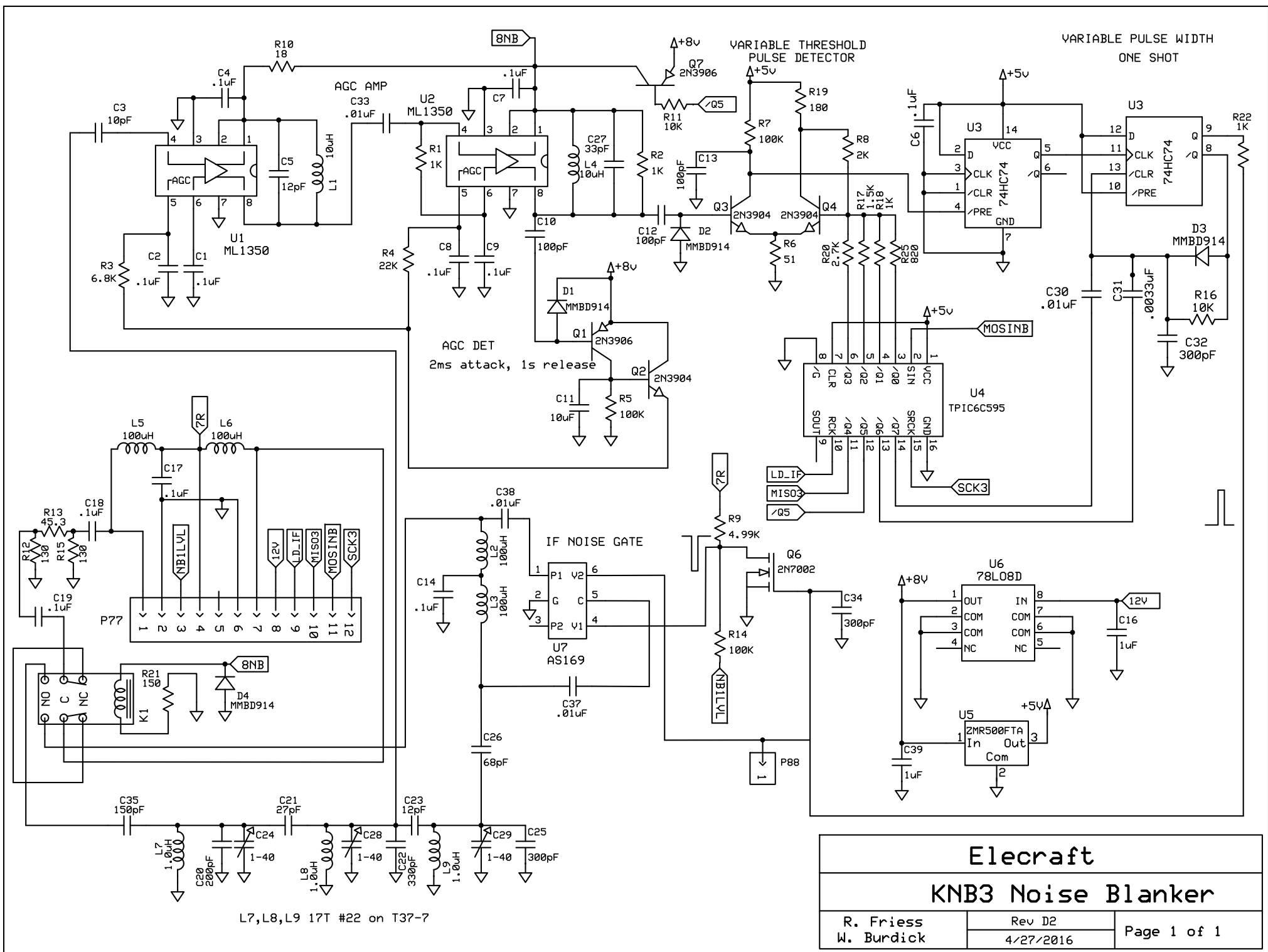
Elecraft, Inc. Copyright (c) 2014

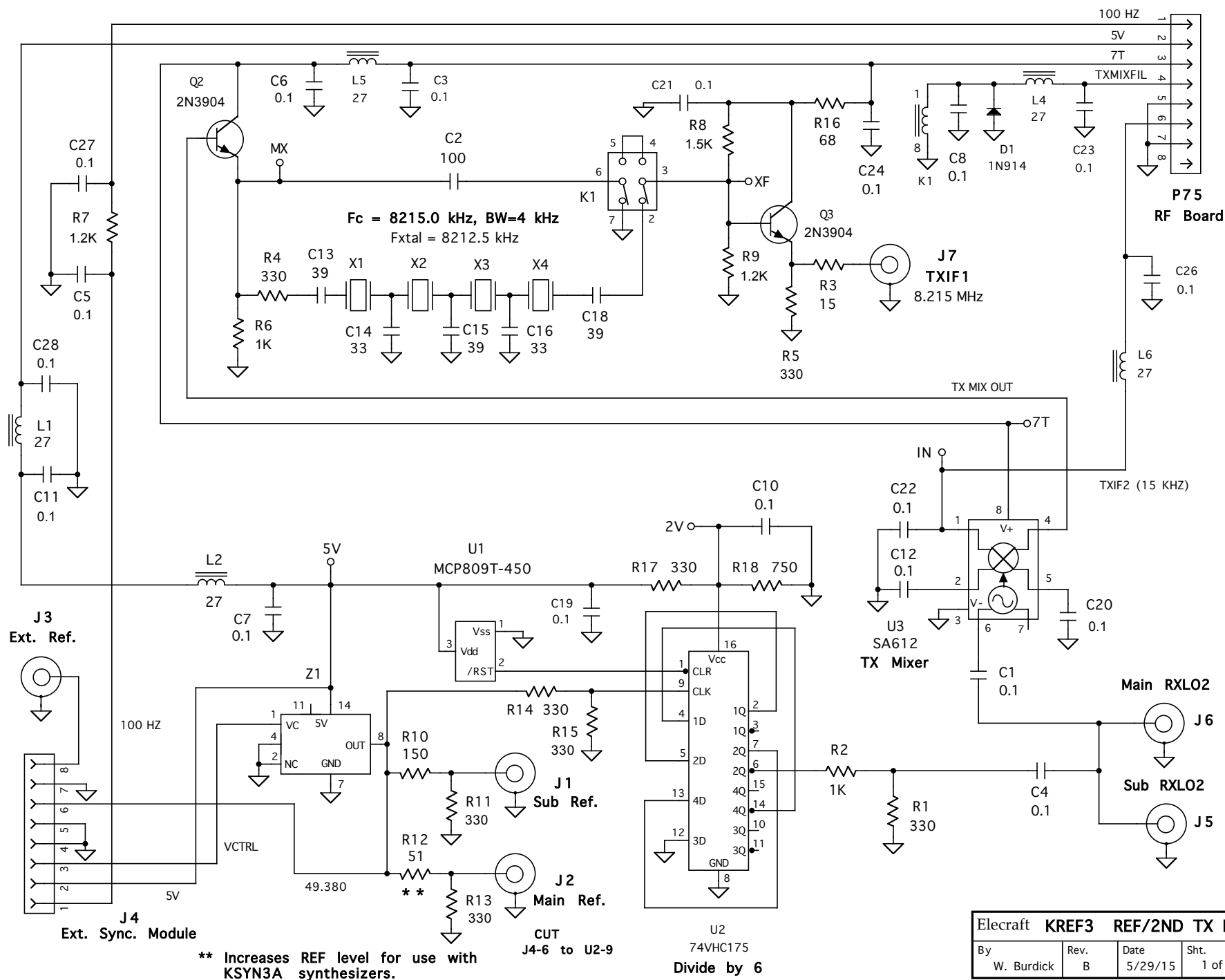
KANT3

Drawn: Bob Friess Rev:

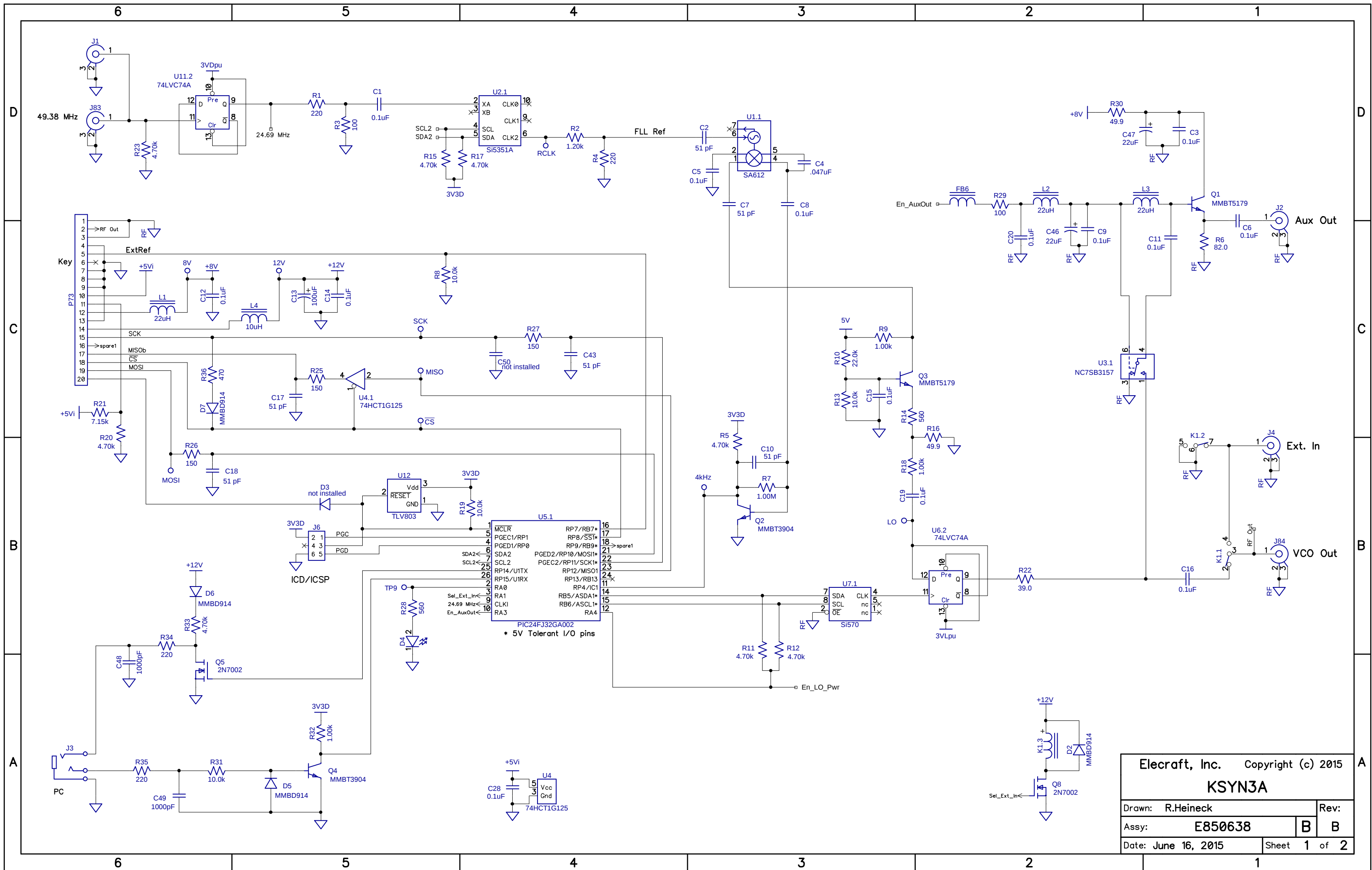
Assy: E850248 A A3

Date: 6/9/15 Sheet: 1 of 1

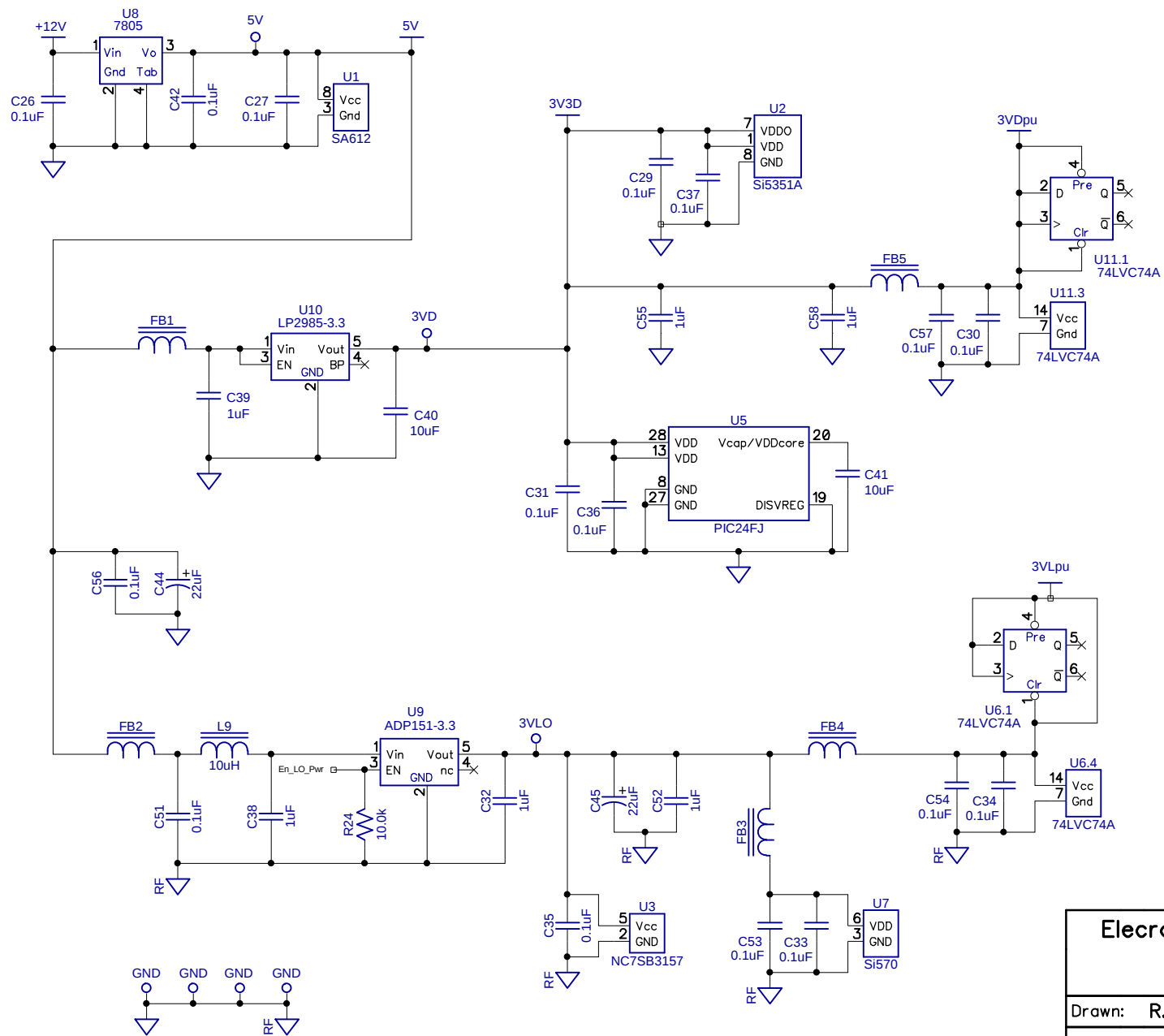




Elecraft KREF3 REF/2ND TX IF			
By W. Burdick	Rev. B	Date 5/29/15	Sht. 1 of 1



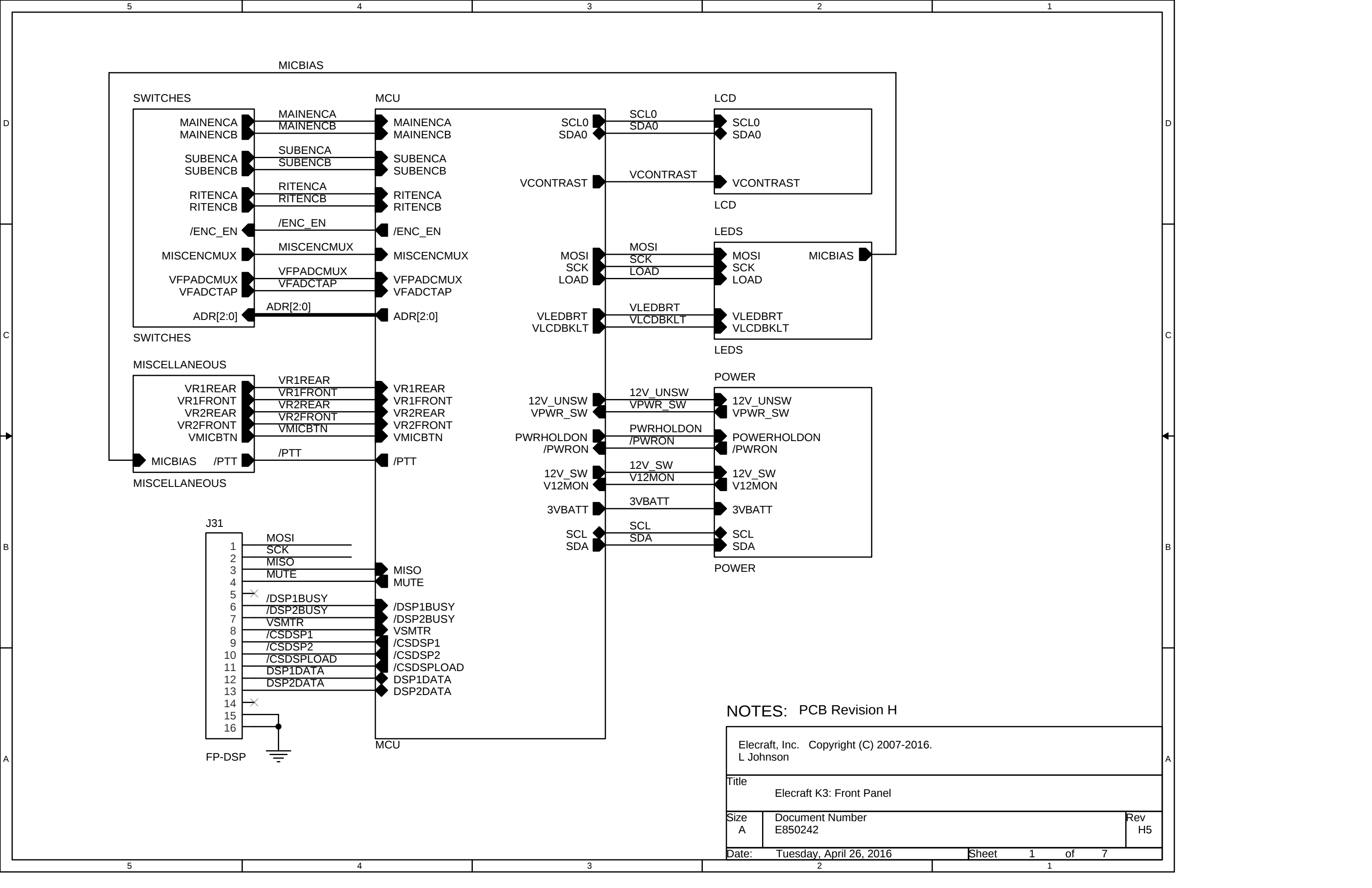
Elecra [®] ft, Inc. Copyright (c) 2015	
KSYN3A	
Drawn: R.Heineck	Rev:
Assy: E850638	B B
Date: June 16, 2015	Sheet 1 of 2

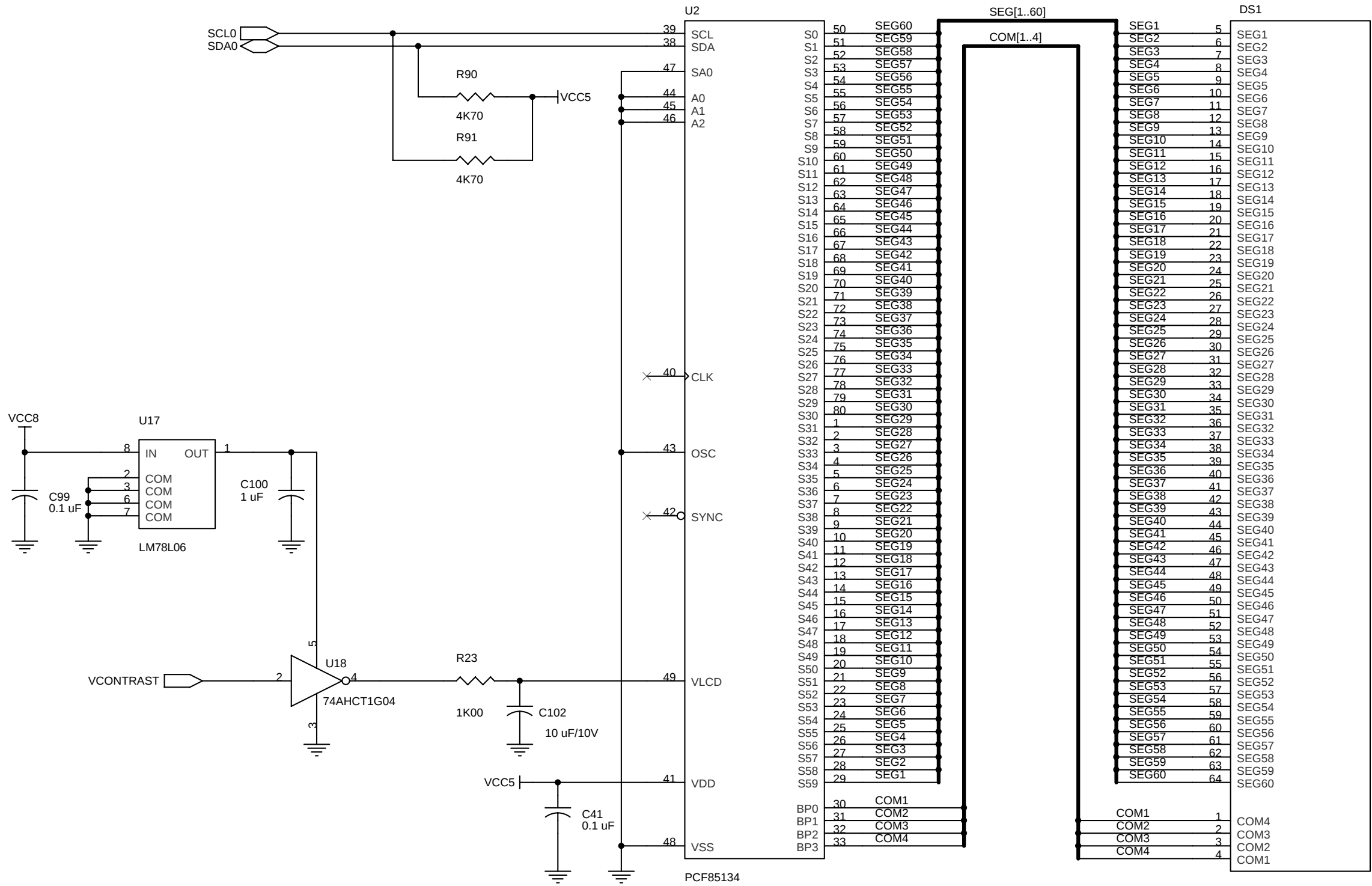


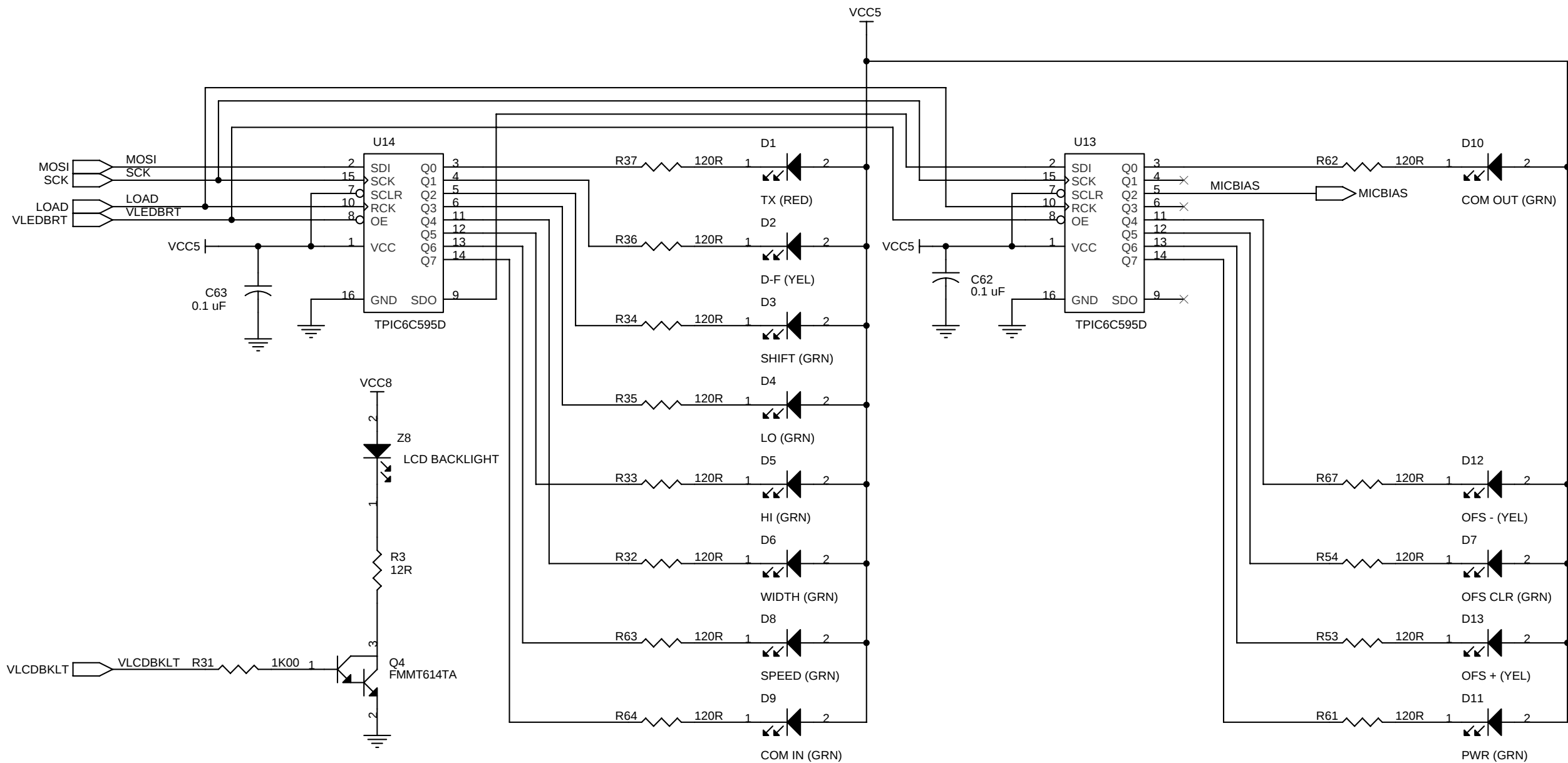
Elecraft, Inc. Copyright (c) 2014

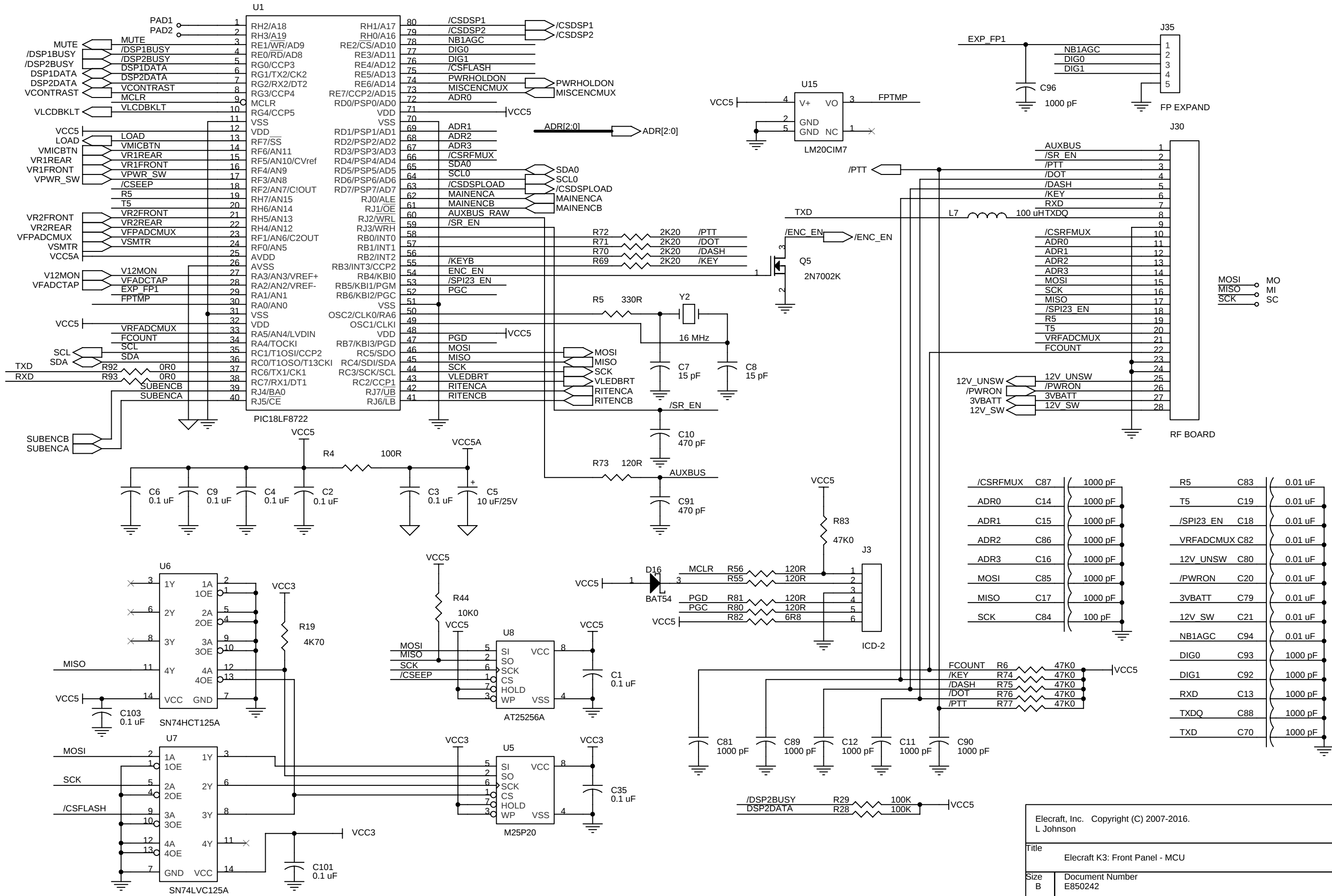
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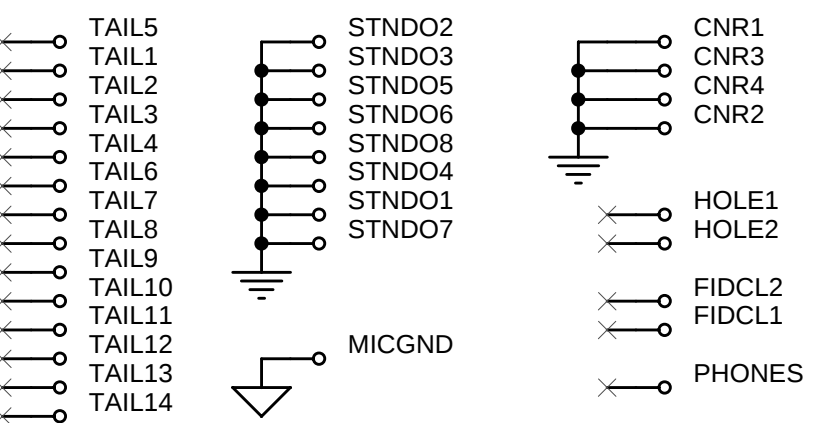
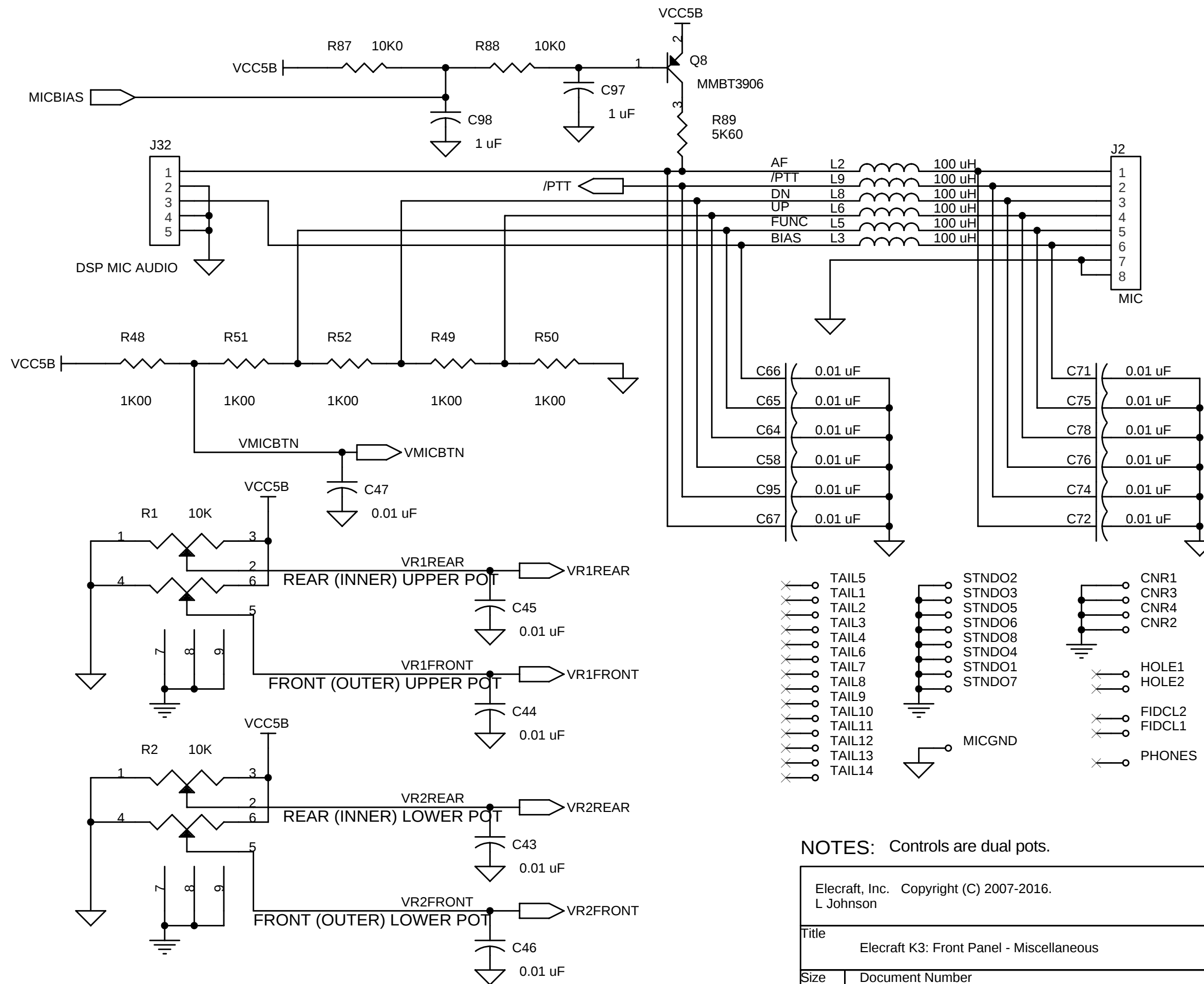
Drawn: R.Heineck	Rev:	
Assy: E850638	A	B
Date: September 4, 2014	Sheet 2	of 2





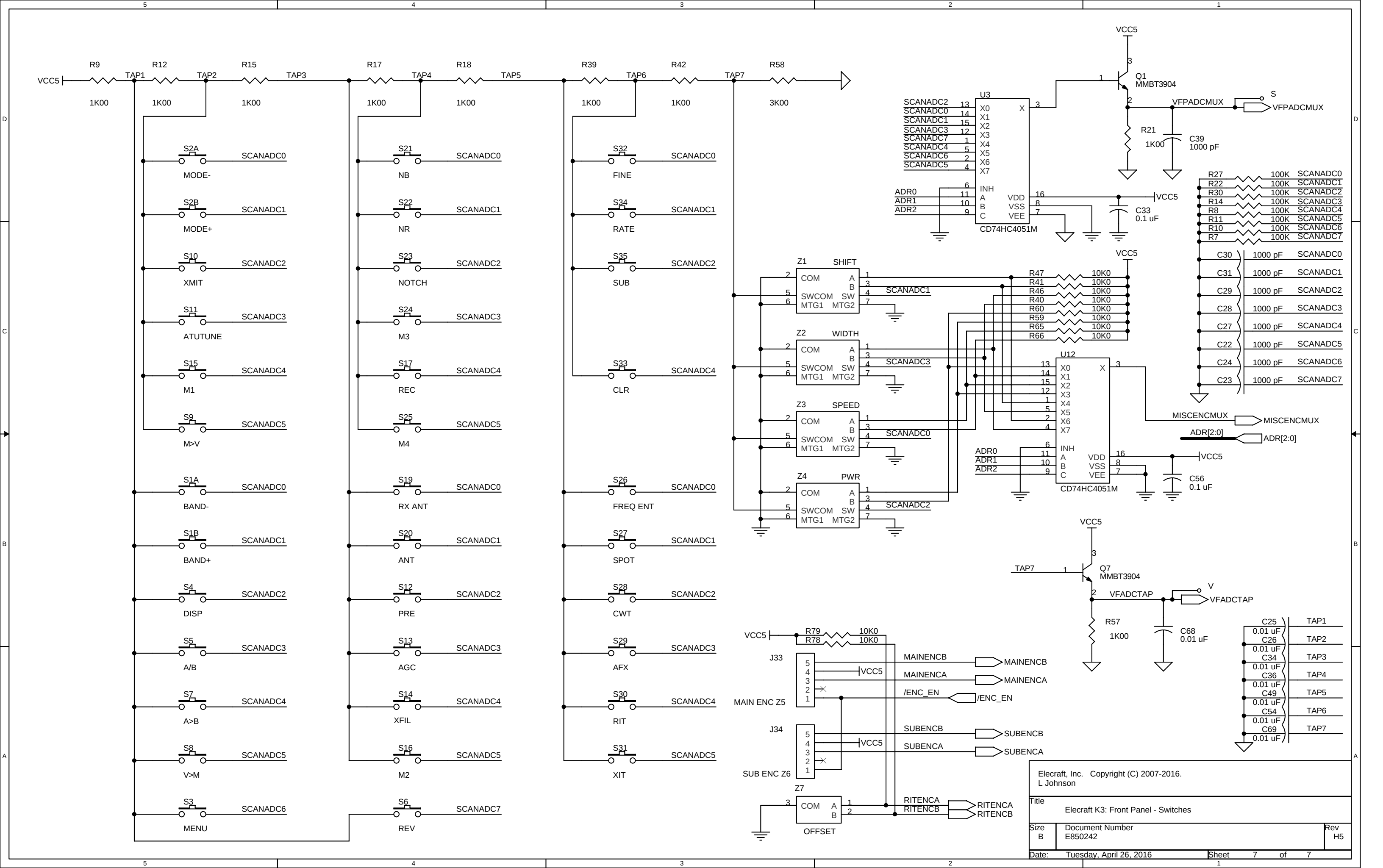


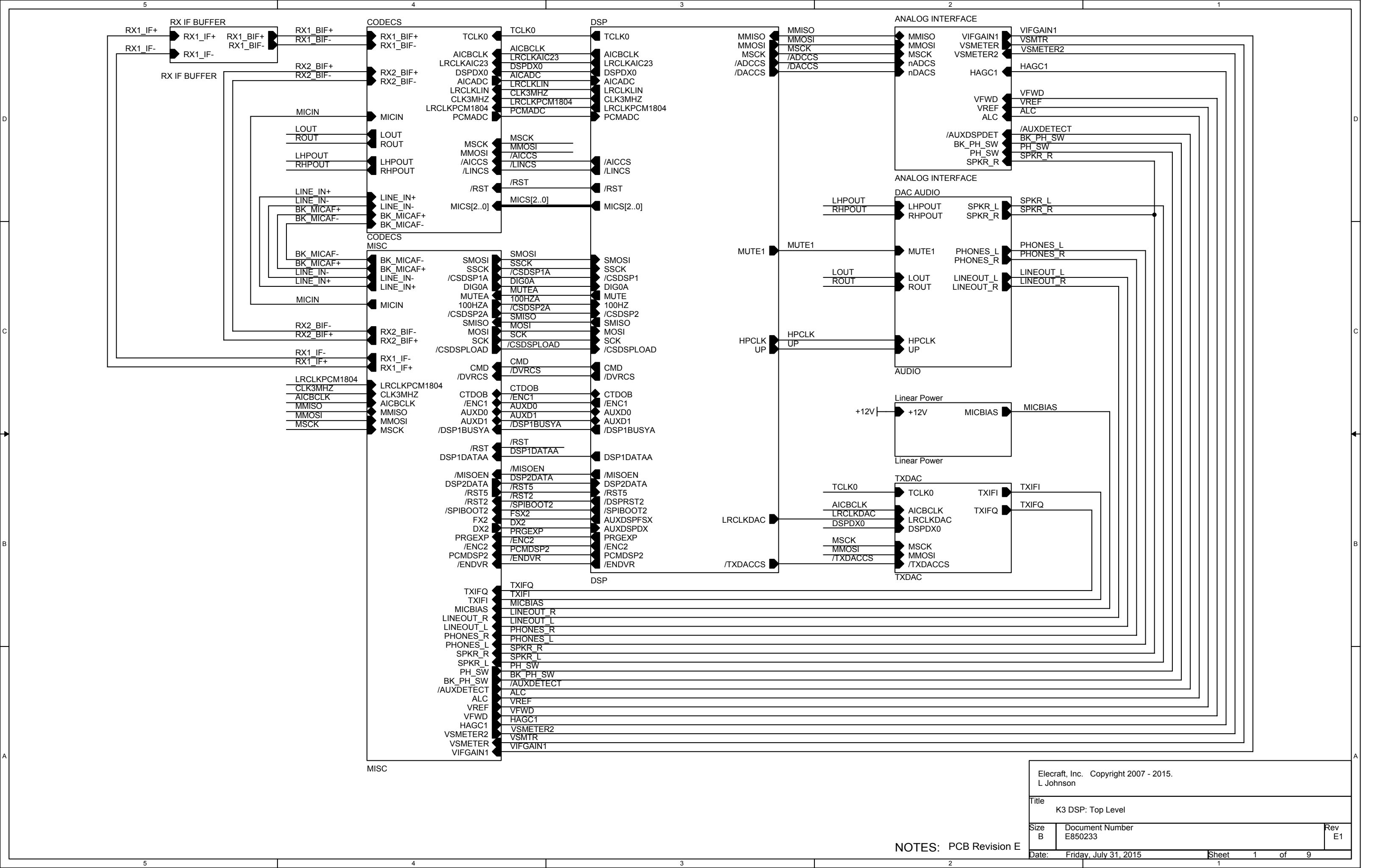


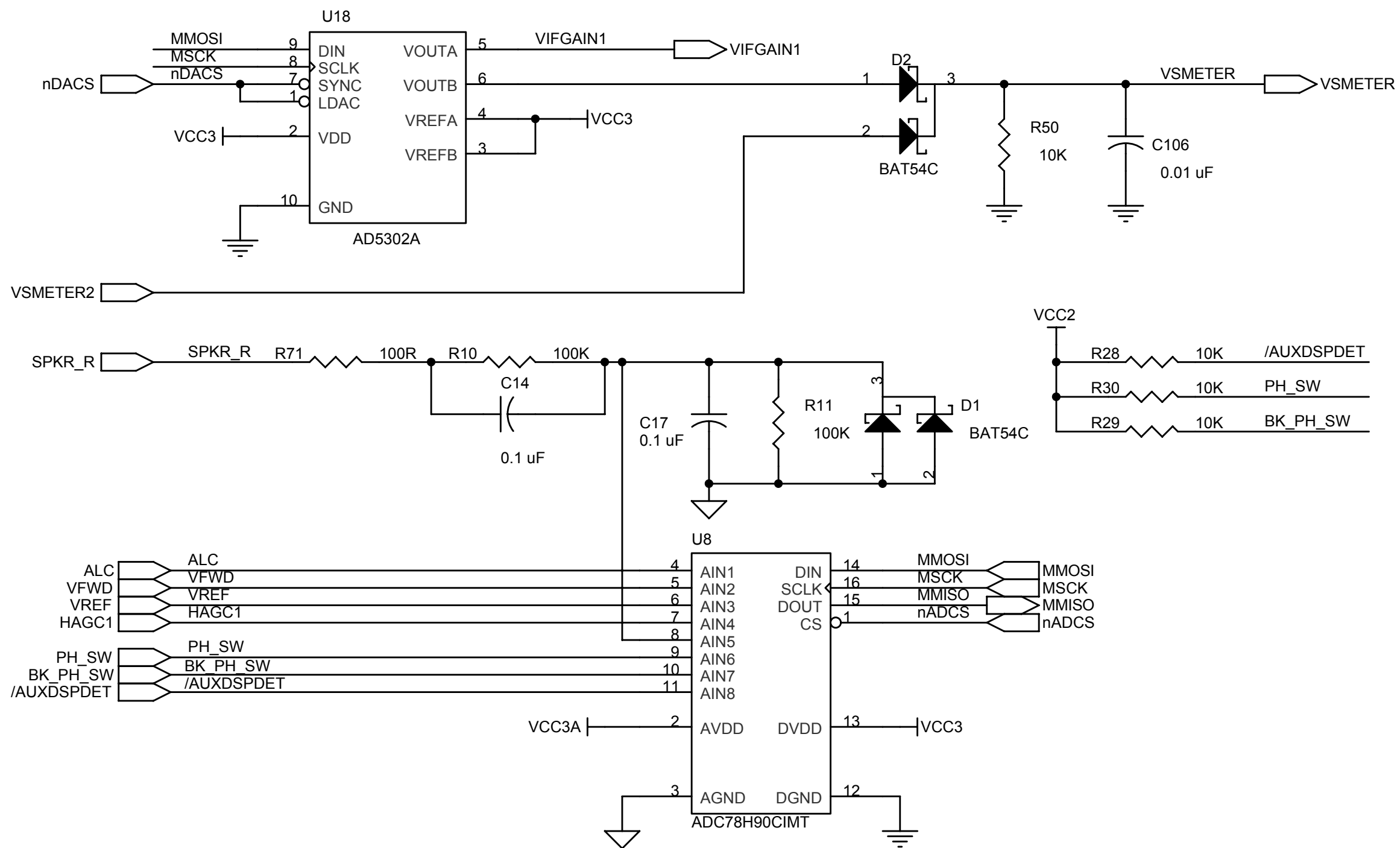


NOTES: Controls are dual pots.

Elecraft, Inc. Copyright (C) 2007-2016. L Johnson		
Title Elecraft K3: Front Panel - Miscellaneous		
Size A	Document Number E850242	Rev H5
Date: Tuesday, April 26, 2016	Sheet 5	of 7

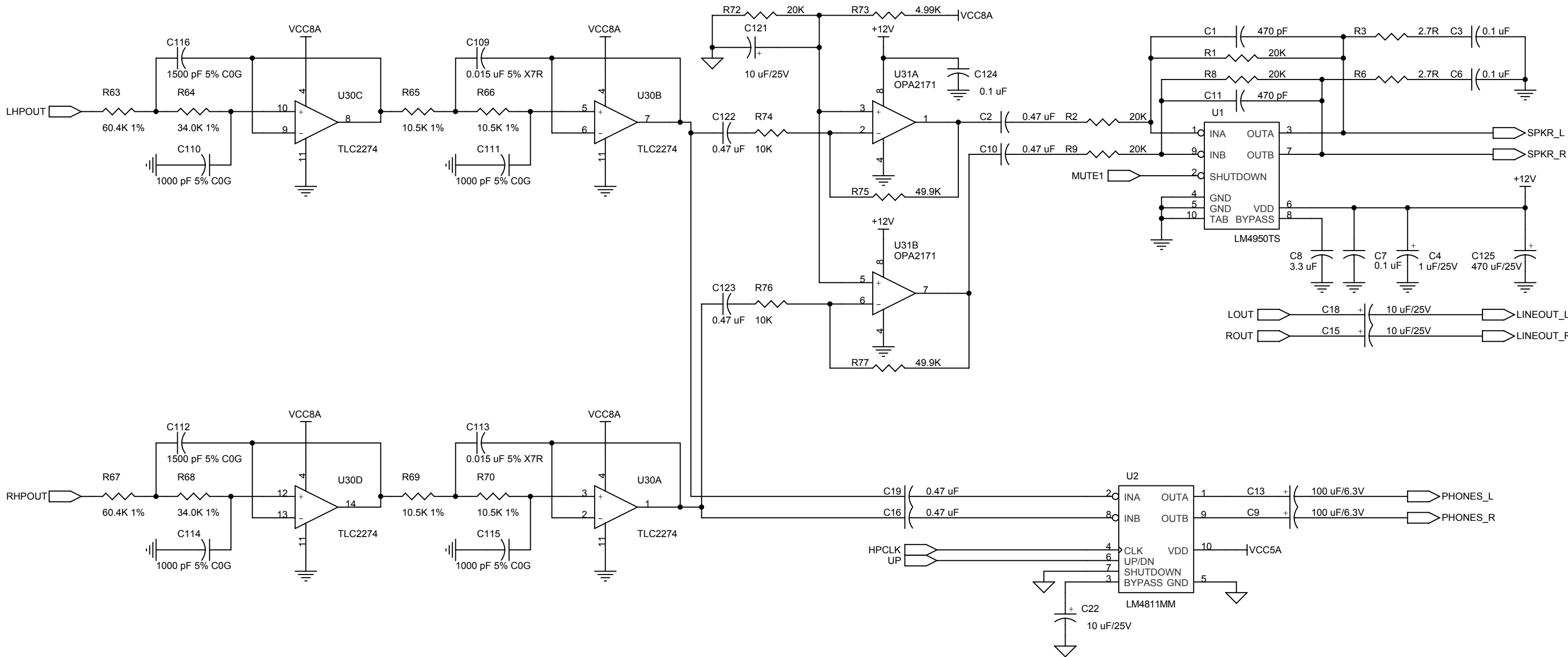






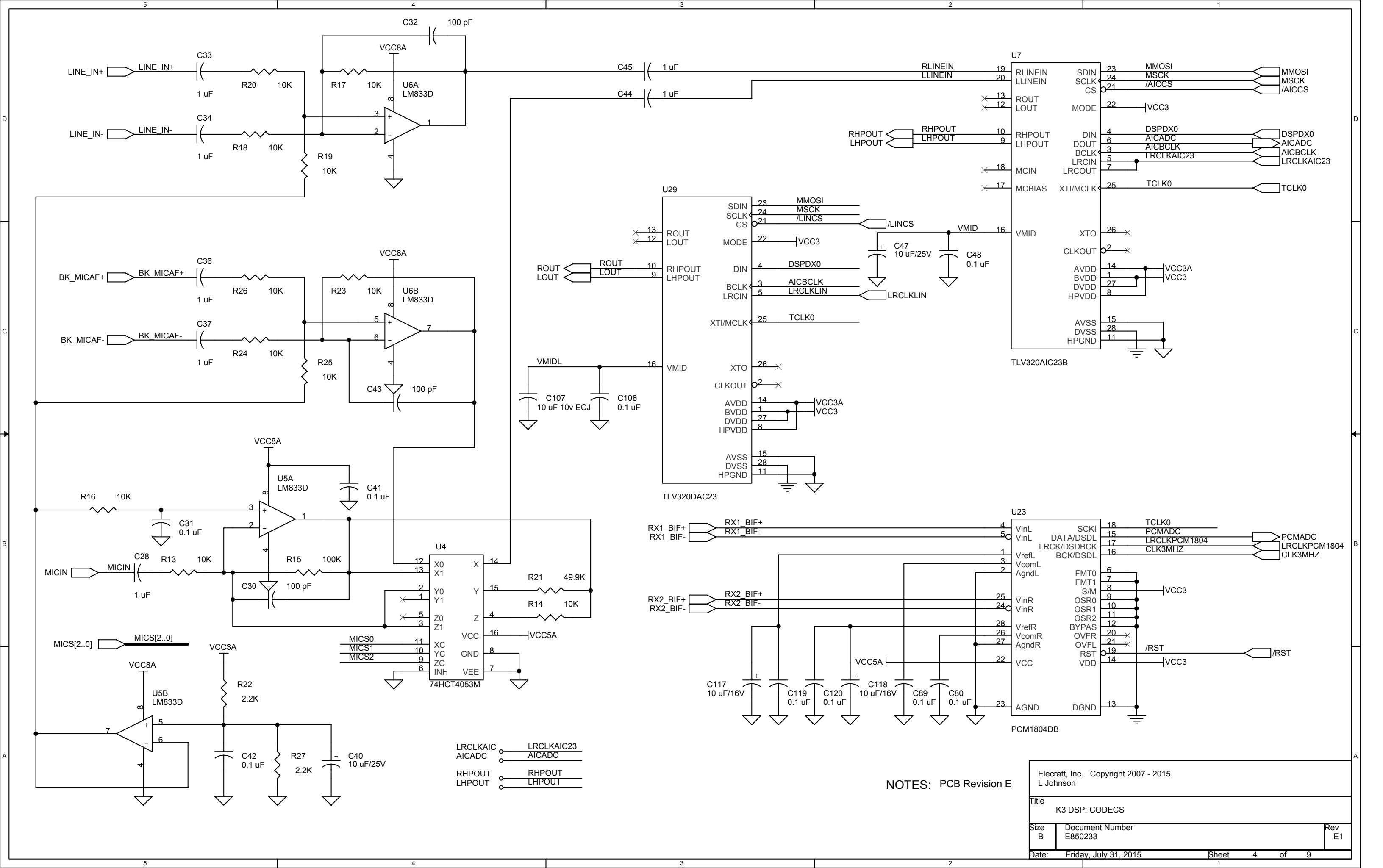
NOTES: PCB Revision E

Elecraft, Inc. Copyright 2007 - 2015. L Johnson		
Title K3 DSP: Analog Interface		
Size A	Document Number E850233	Rev E1
Date:	Friday, July 31, 2015	Sheet 2 of 9



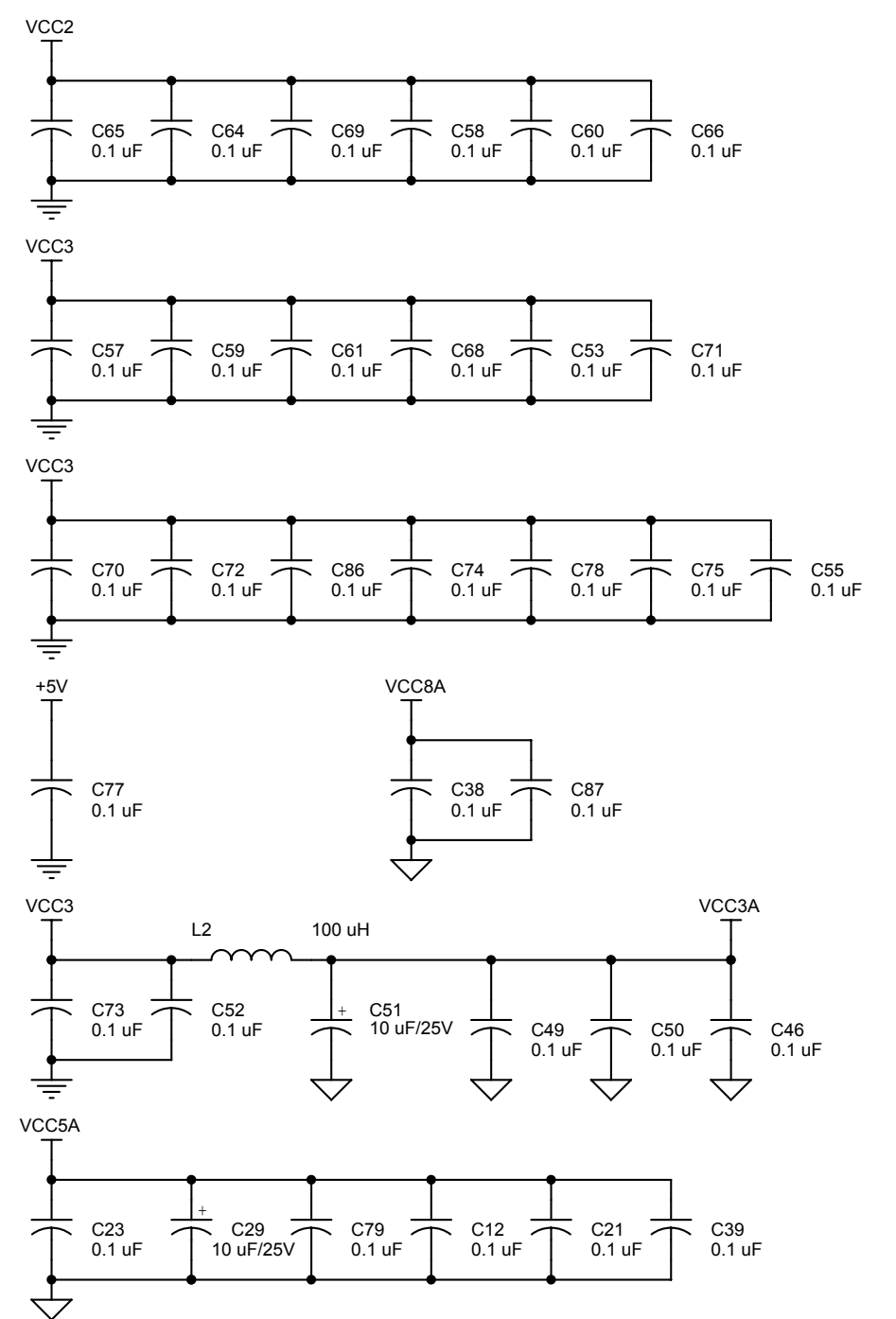
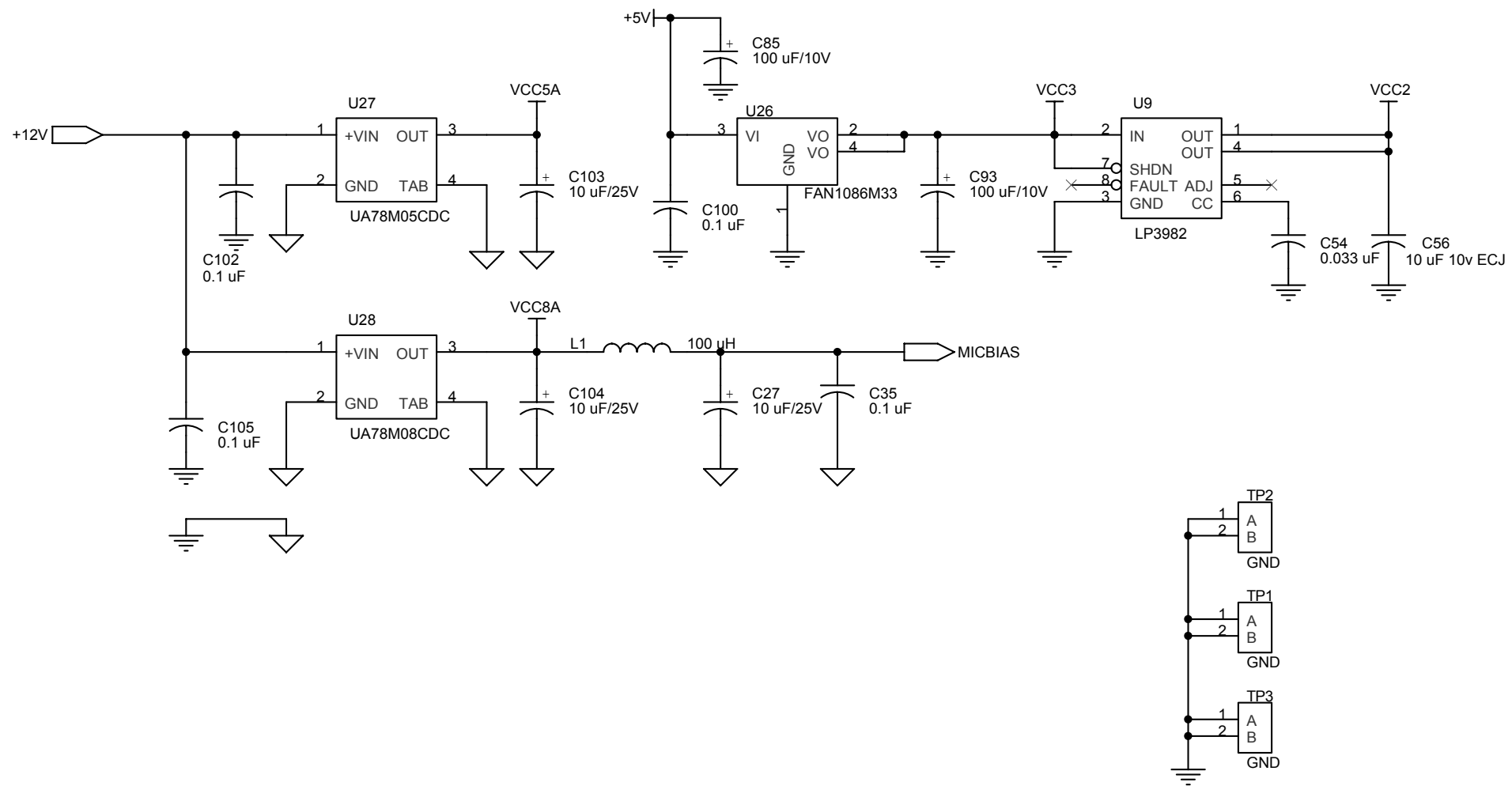
NOTES: PCB Revision E

Elecraft, Inc. Copyright 2007 - 2015. L Johnson		
Title K3 DSP: DAC Audio		
Size B	Document Number E850233	Rev E1
Date:	Friday, July 31, 2015	Sheet 3 of 9



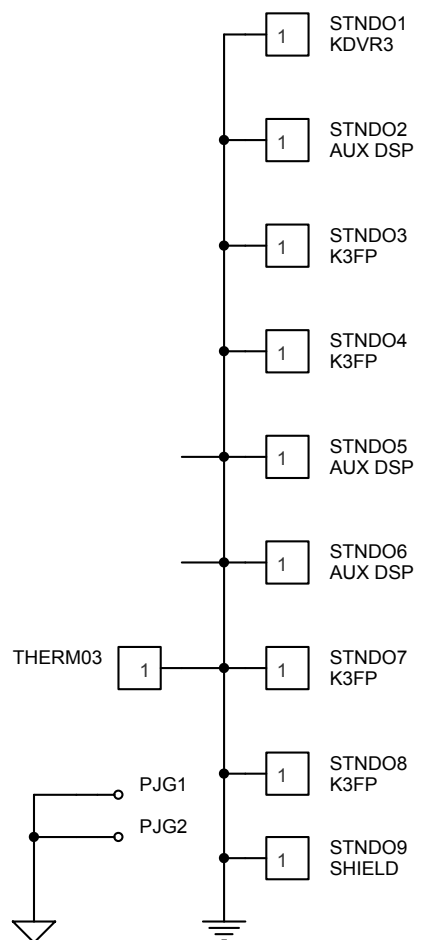
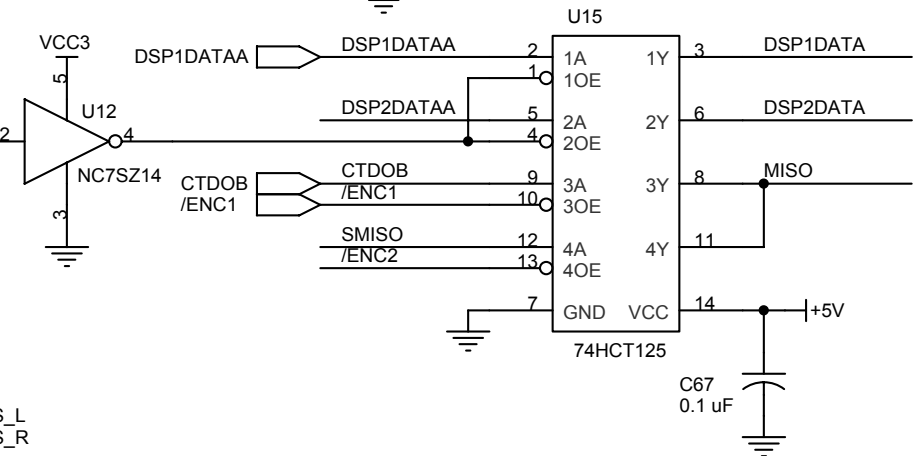
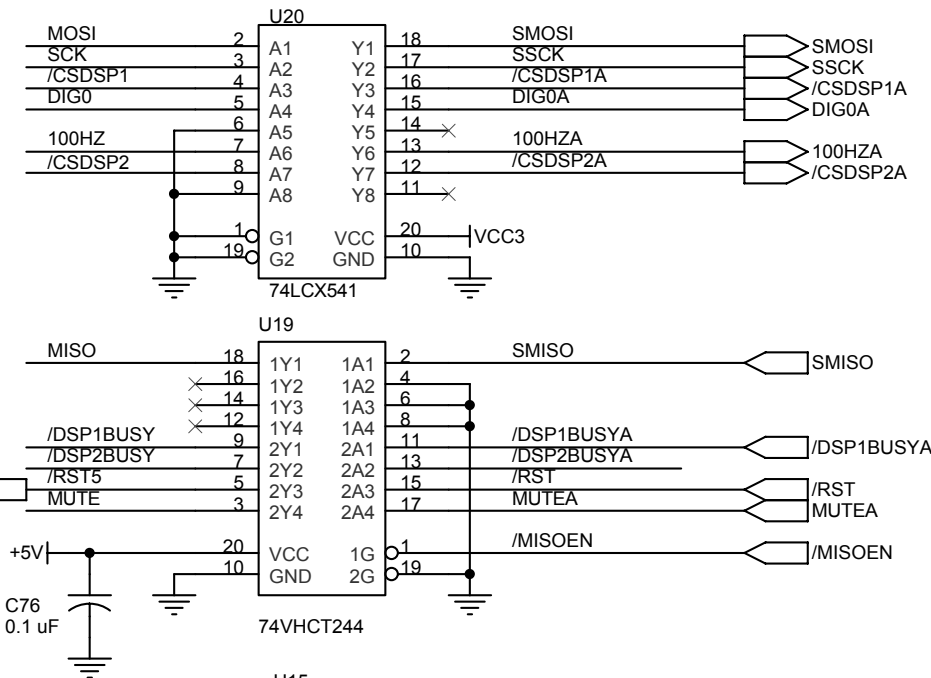
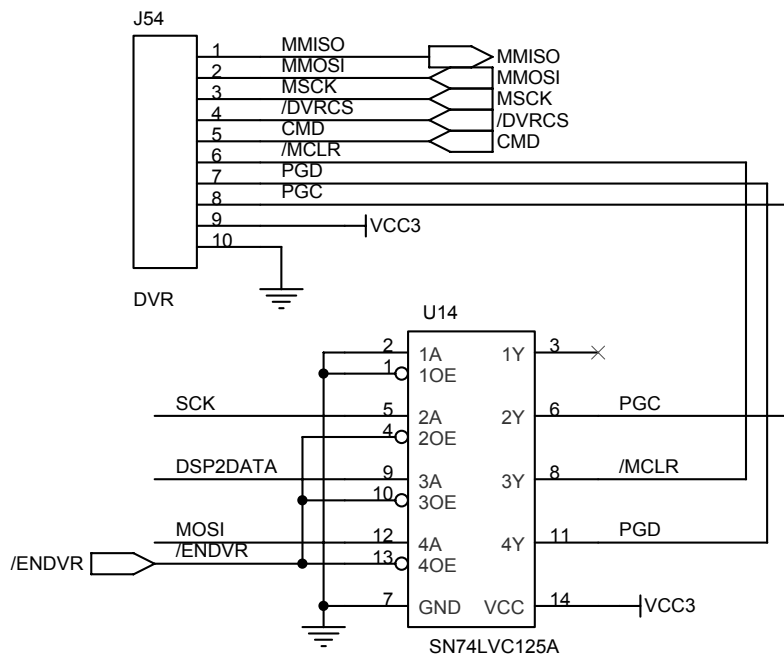
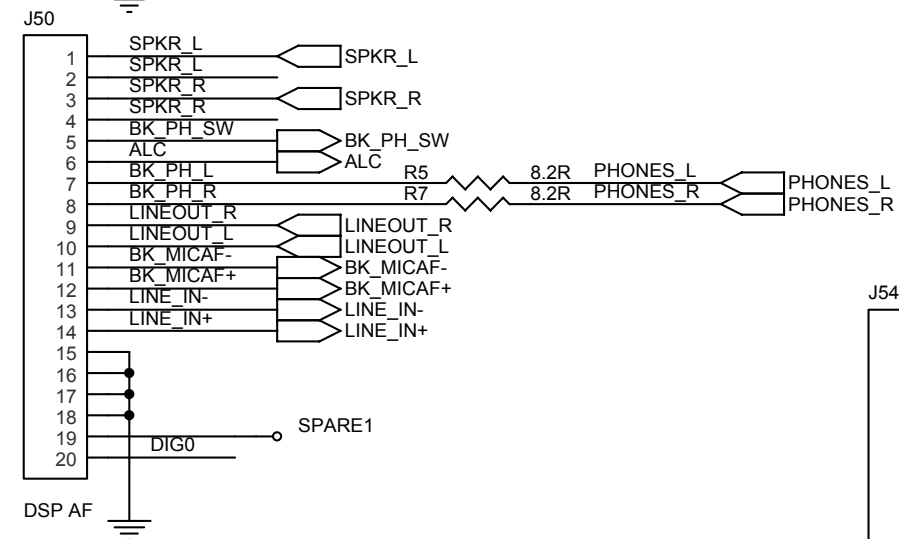
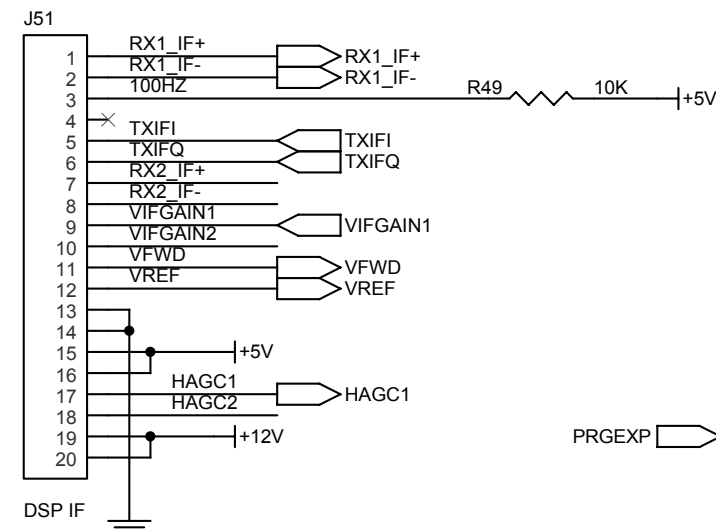
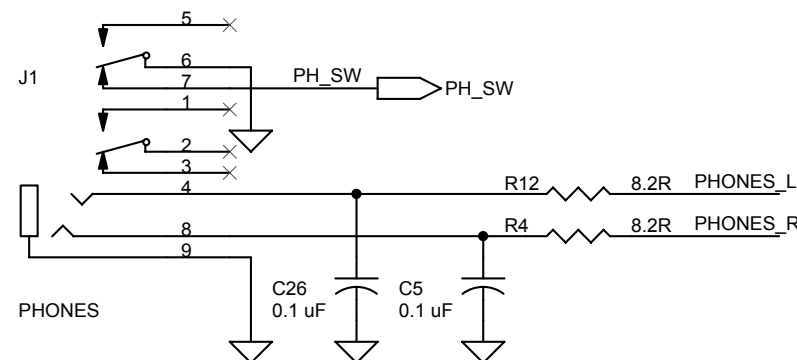
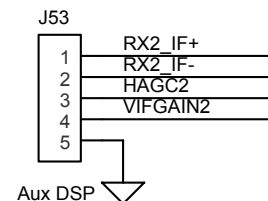
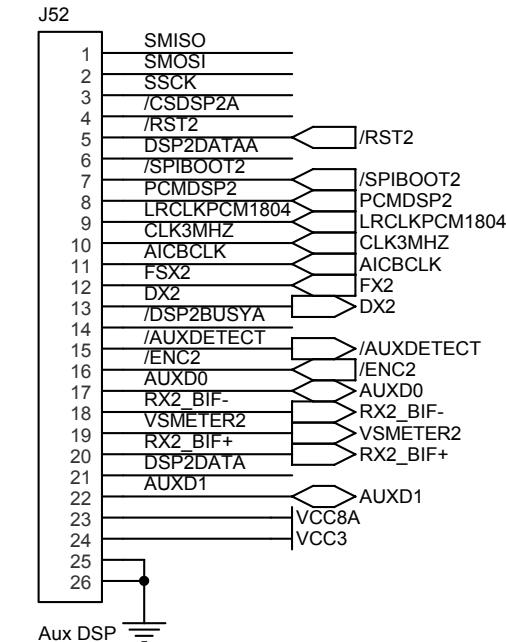
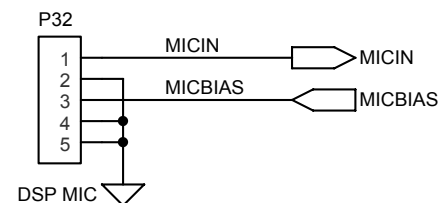
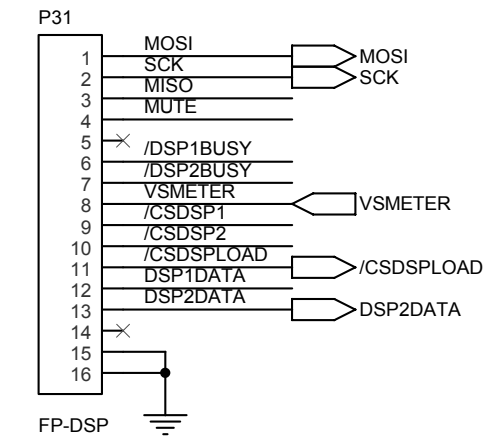
NOTES: PCB Revision E

Elecrafit, Inc. Copyright 2007 - 2015. L Johnson		
Title K3 DSP: CODECS		
Size B	Document Number E850233	Rev E1
Date: Friday, July 31, 2015	Sheet 4	of 9



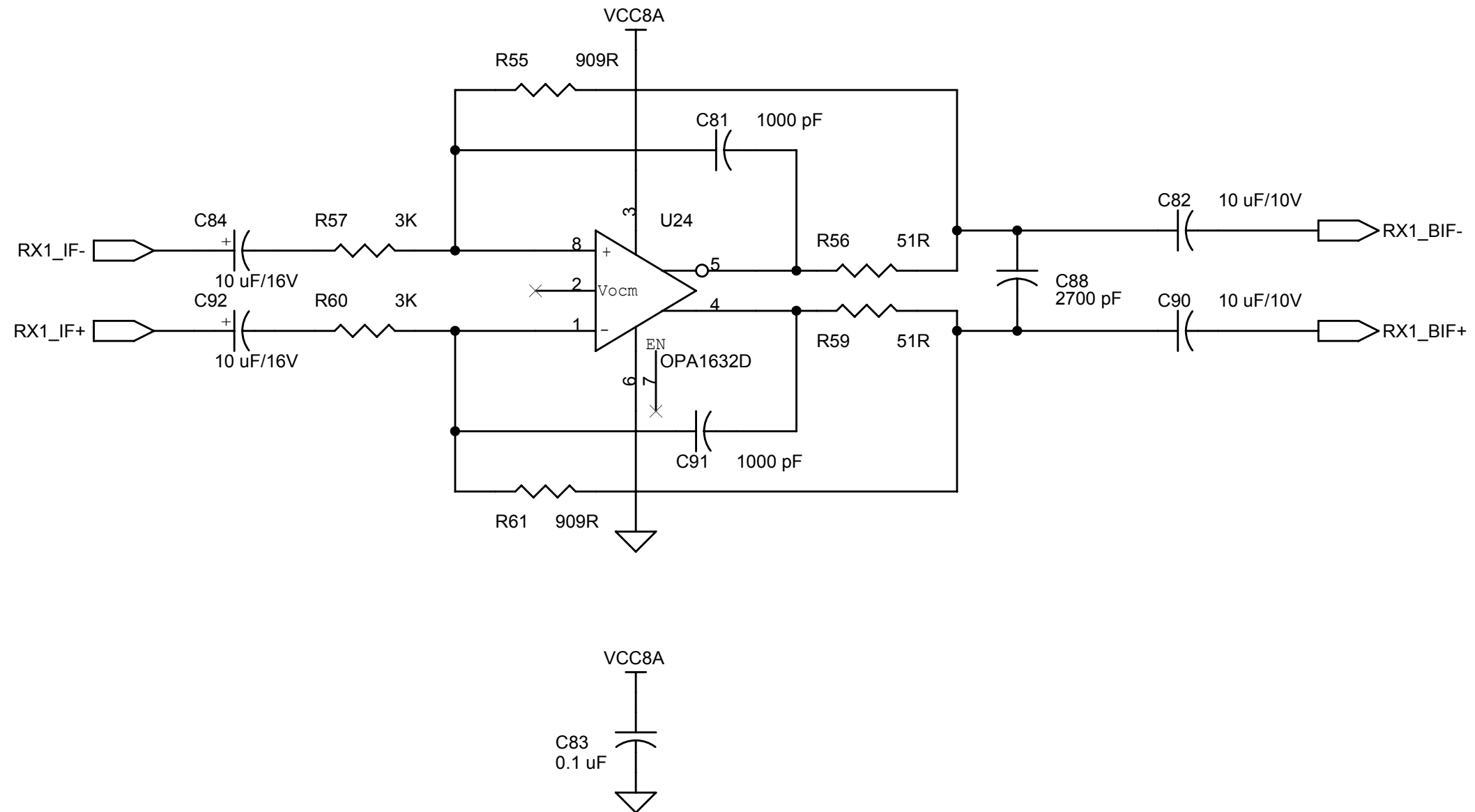
NOTES: PCB Revision E

Elecrafft, Inc. Copyright 2007 - 2015. L Johnson		
Title K3 DSP: Power Supply		
Size B	Document Number E850233	Rev E1
Date: Friday, July 31, 2015	Sheet 6	of 9



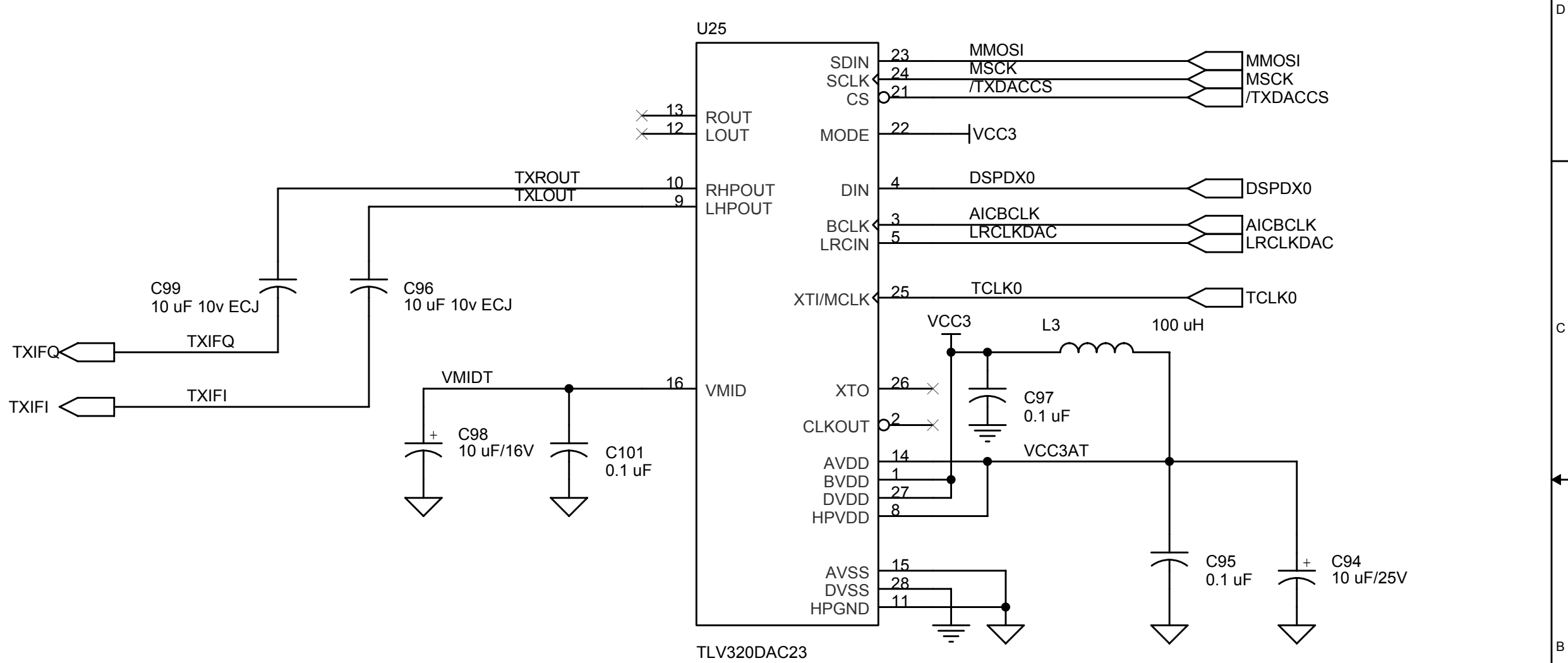
NOTES: PCB Revision E

Elecrafit, Inc. Copyright 2007 - 2015. L Johnson		
Title K3 DSP: INTERCONNECTS AND MISCELLANEOUS		
Size B	Document Number E850233	Rev E1
Date: Friday, July 31, 2015	Sheet 7	of 9



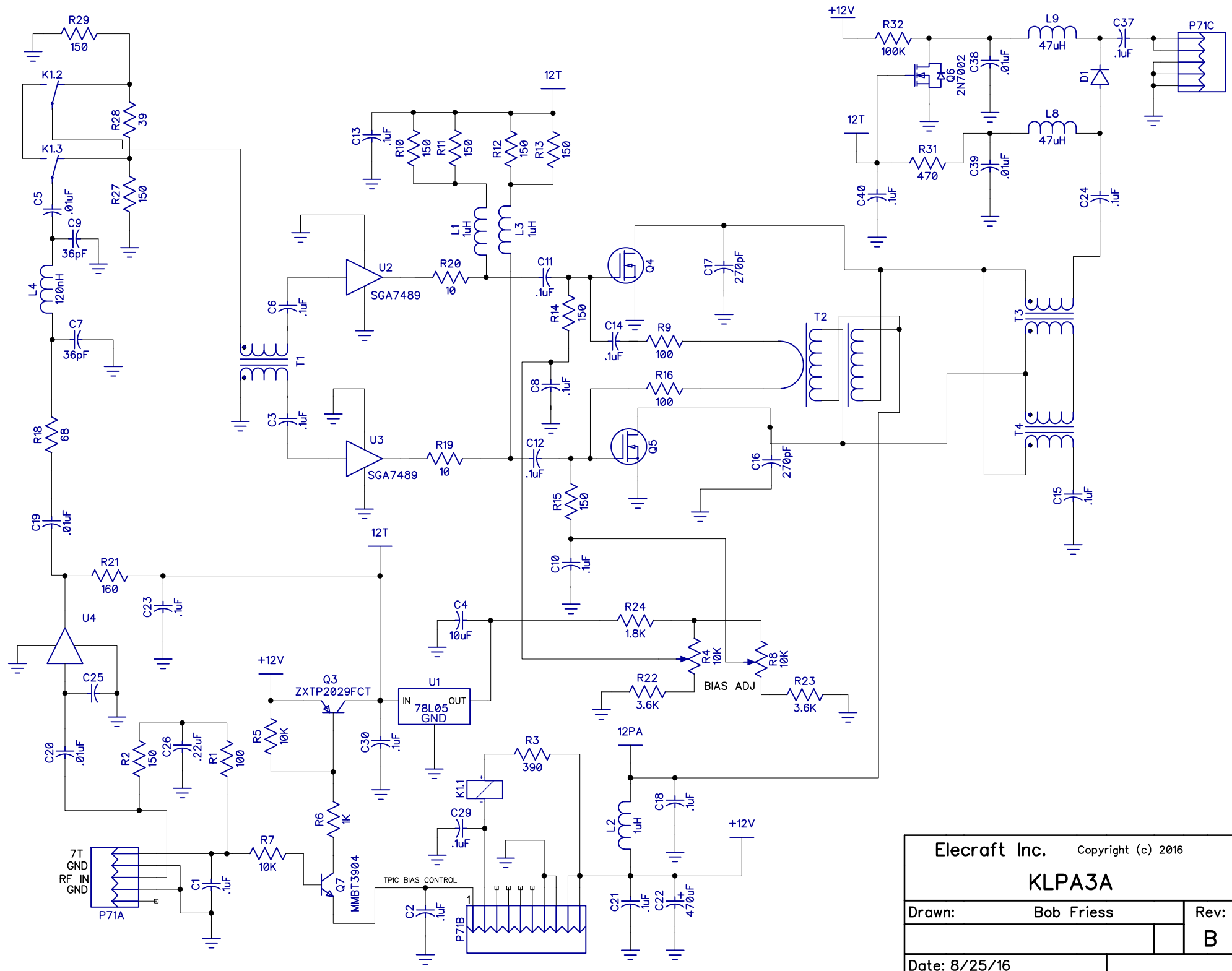
NOTES: PCB Revision E

Elecraft, Inc. Copyright 2007 - 2015. L Johnson		
Title K3 DSP: RX IF BUFFER		
Size A	Document Number E850233	Rev E1
Date:	Friday, July 31, 2015	Sheet 8 of 9

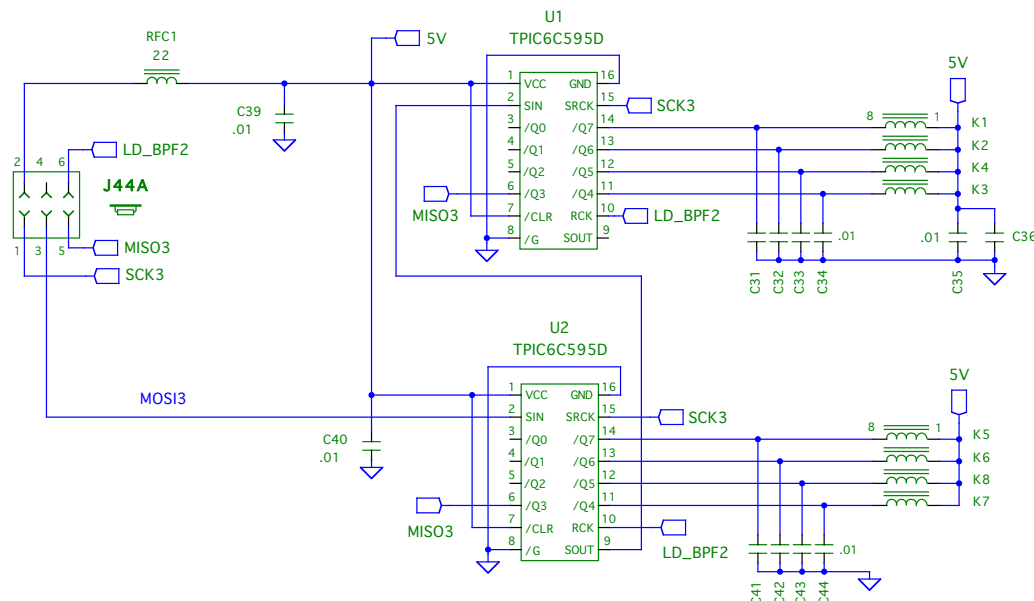
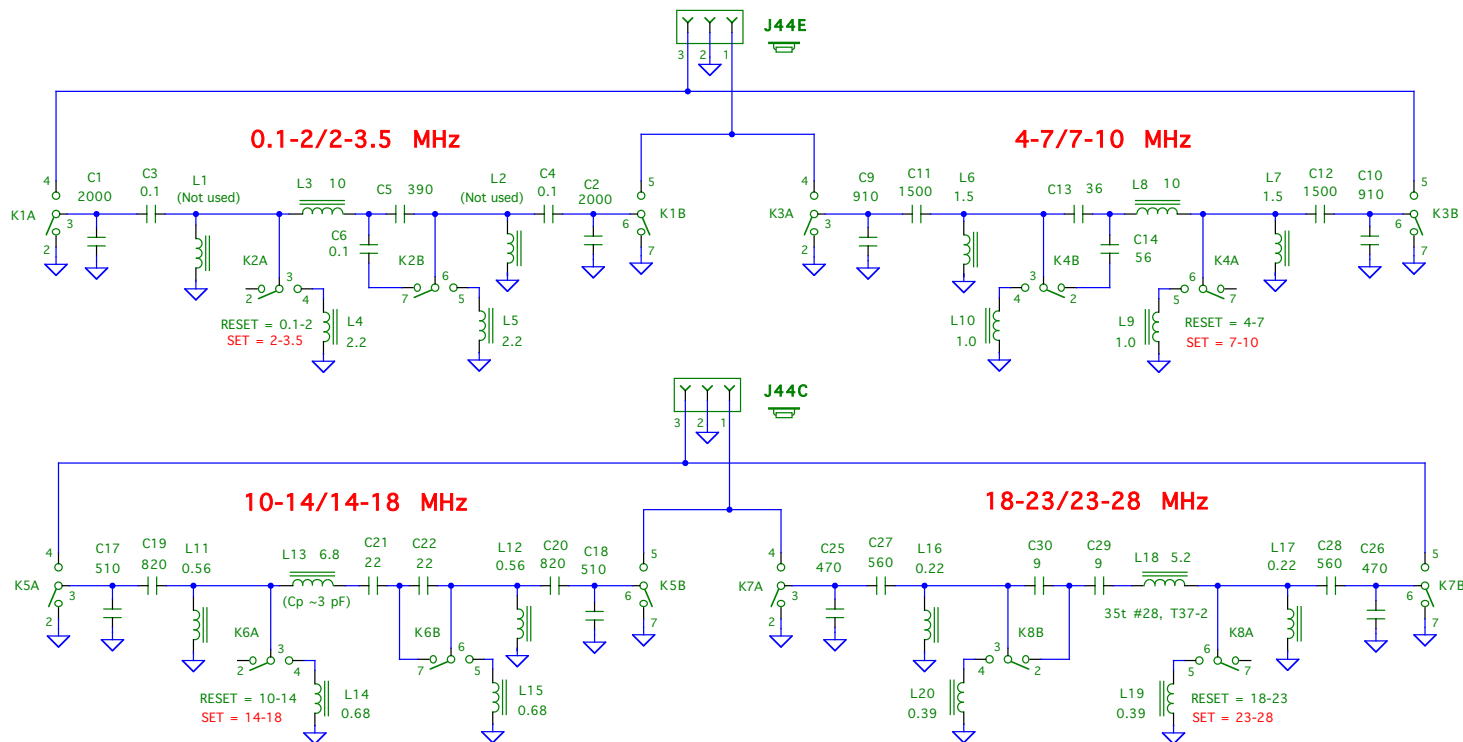


NOTES: PCB Revision E

Elecraft, Inc. Copyright 2007 - 2015. L Johnson		
Title K3 DSP: TX DAC		
Size A	Document Number E850233	Rev E1
Date:	Friday, July 31, 2015	Sheet 9 of 9



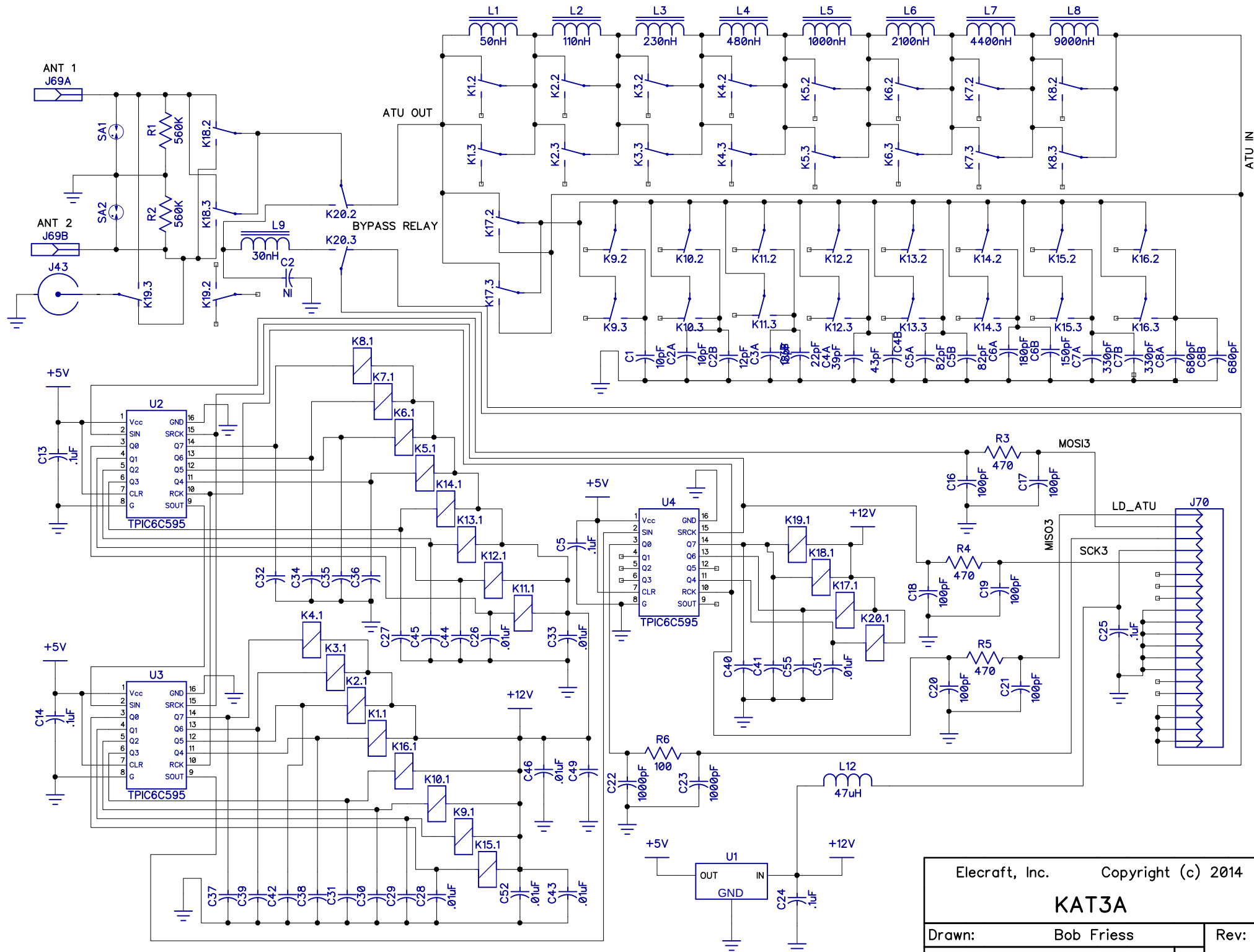
Elecraft Inc. Copyright (c) 2016	
KLPA3A	
Drawn: Bob Friess	Rev: B
Date: 8/25/16	



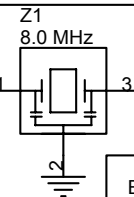
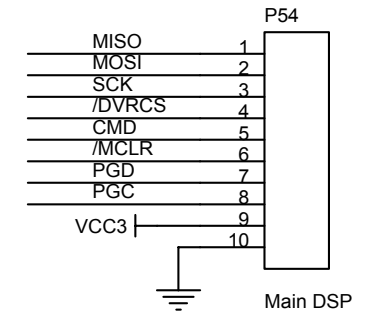
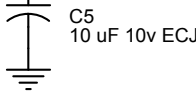
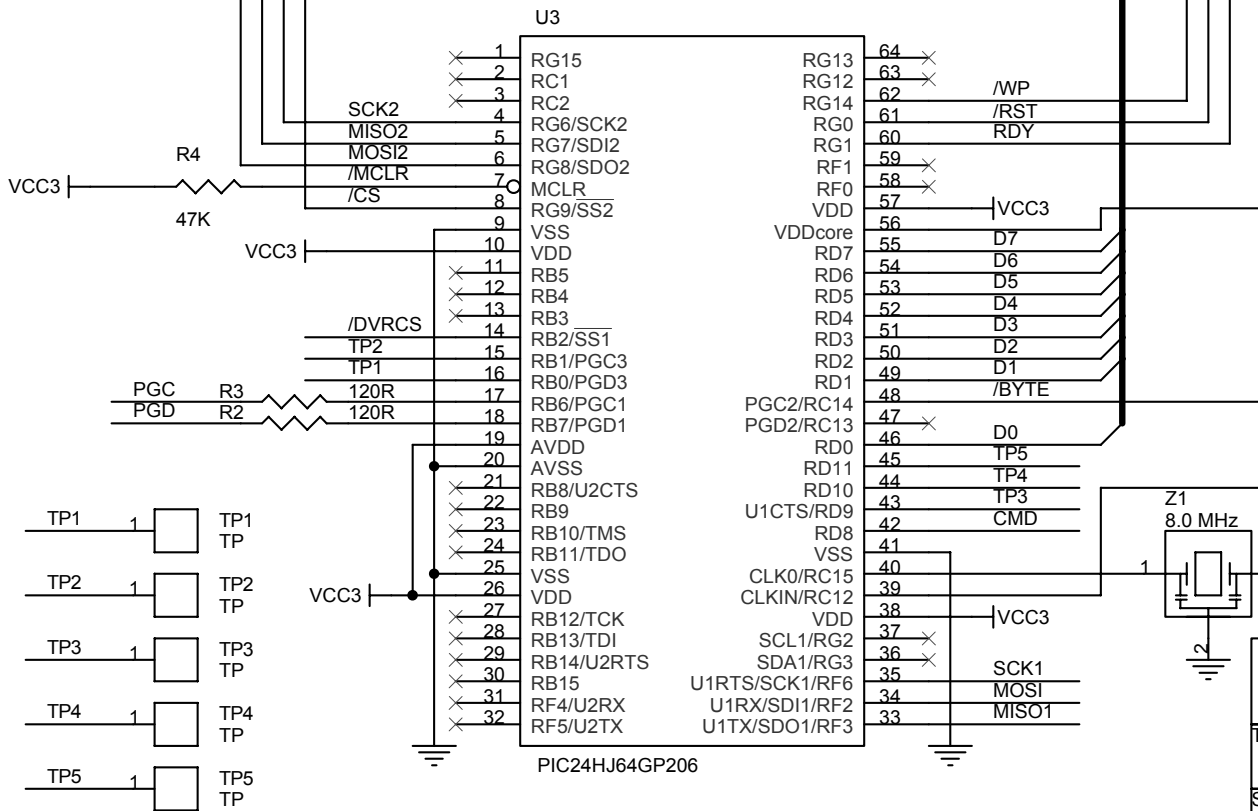
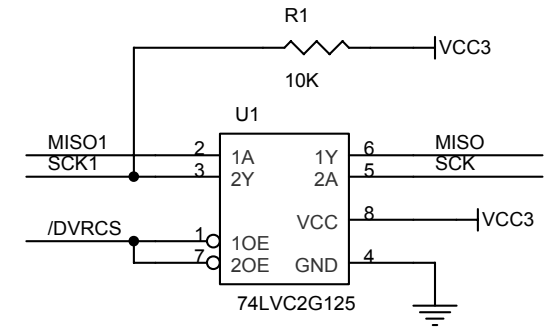
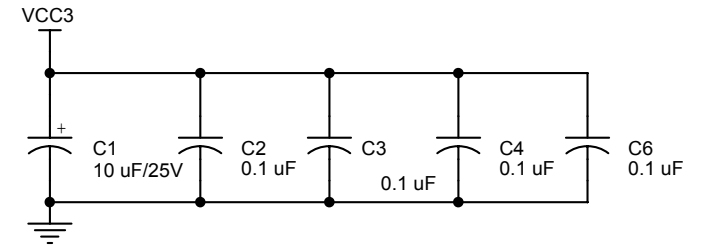
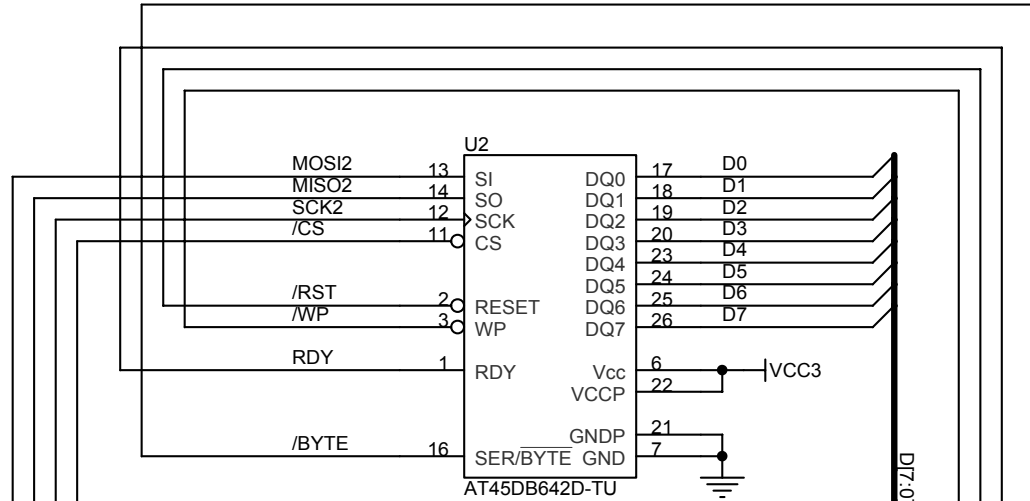
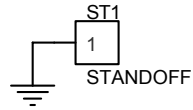
NOTE: K1-K8 are shown in the RESET position.
 All relays are mounted on the back side of the PCB.

Appendix B

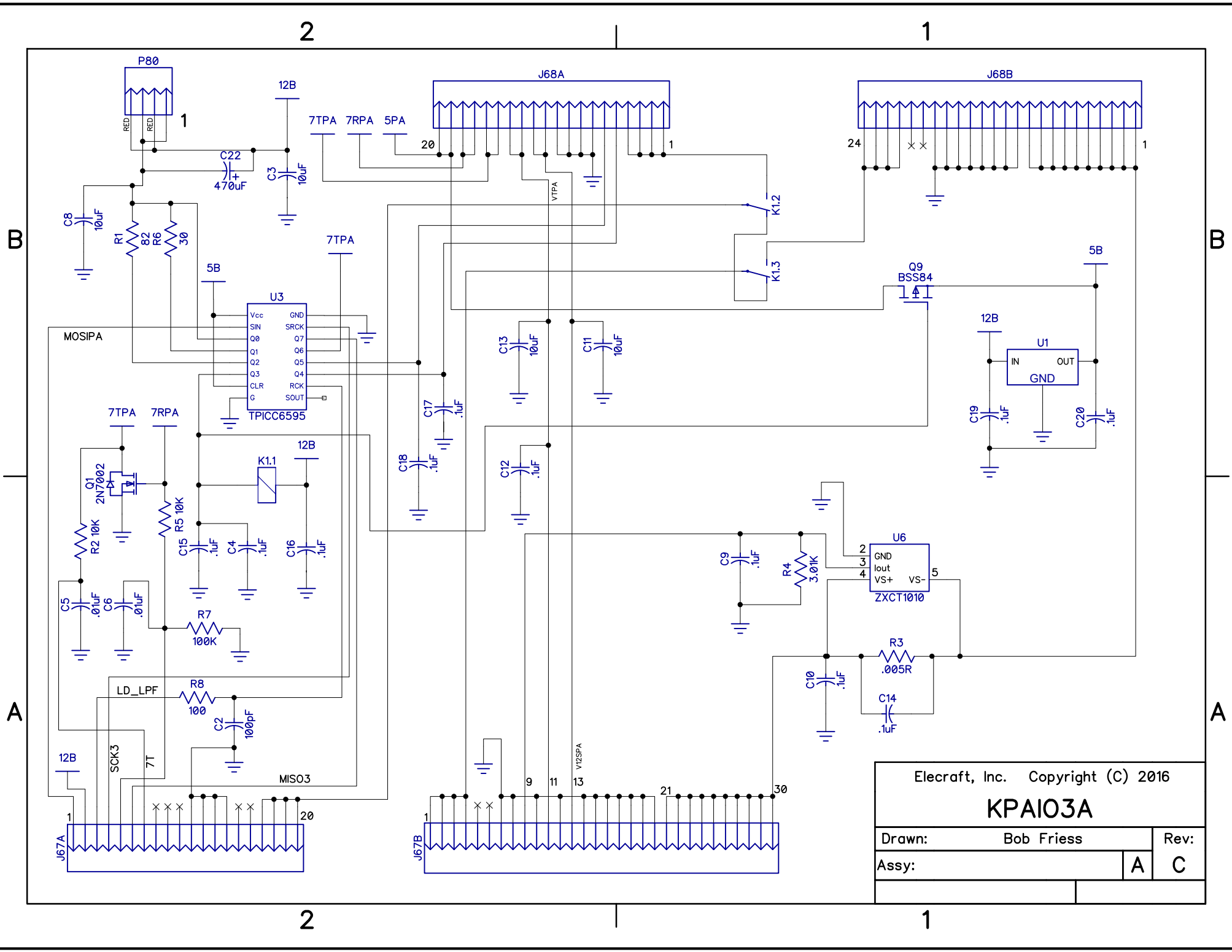
Elecrafft		KBPF3A		
By	Rev.	Date	Sht.	
W. Burdick	C	5/4/15	1 of 1	



Elecraft, Inc.		Copyright (c) 2014	
KAT3A			
Drawn:		Bob Friess	
Assy:		A	
Date:		3/18/15	
Sheet:		1 of 1	



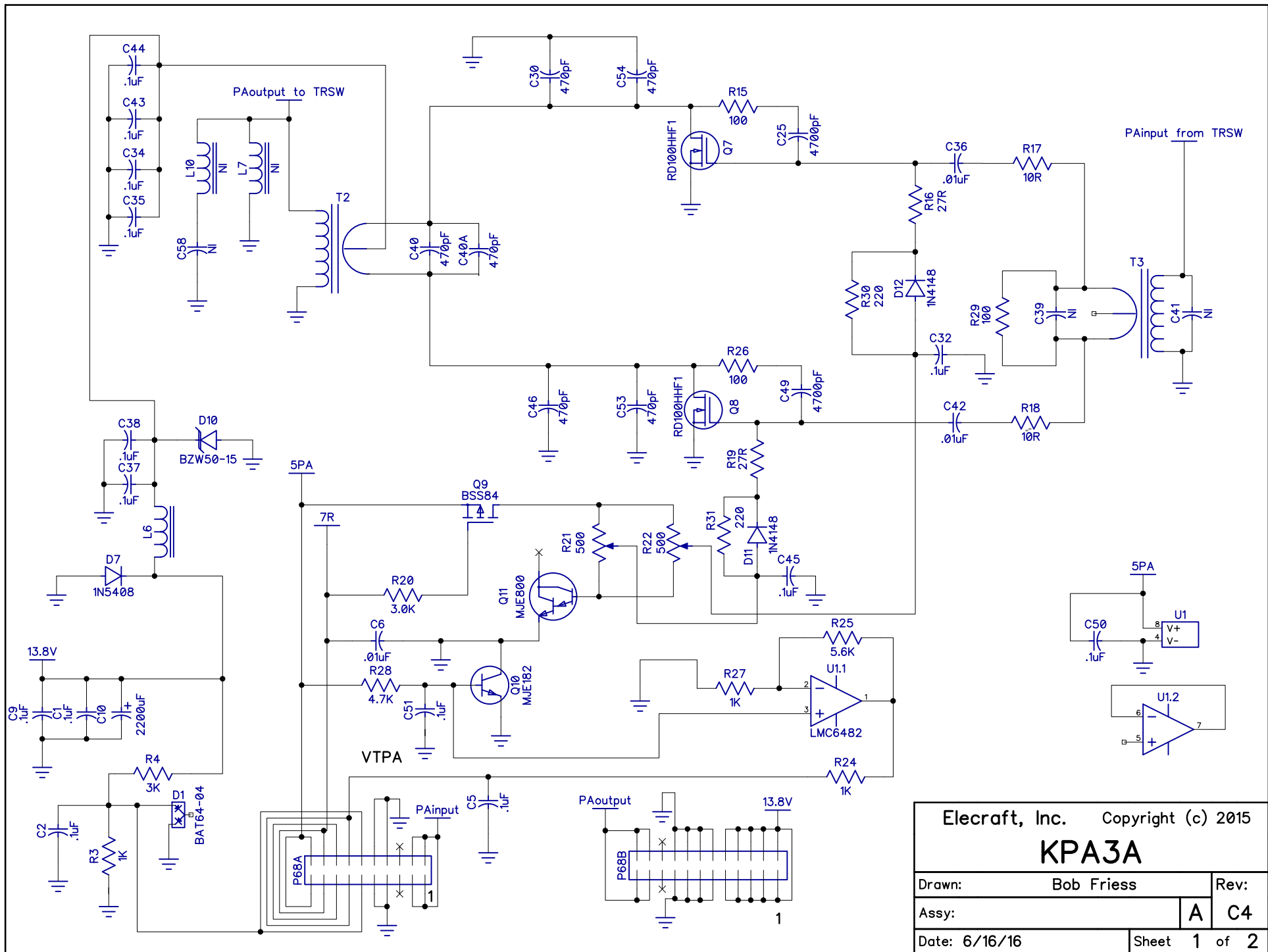
Elecrafft, Inc. Copyright (C) 2008 - 2010. L. Johnson		
Title K3: Digital Voice Recorder		
Size A	Document Number 2004090101	Rev XG
Date: Wednesday, June 16, 2010	Sheet 1	of 1



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KPA103A

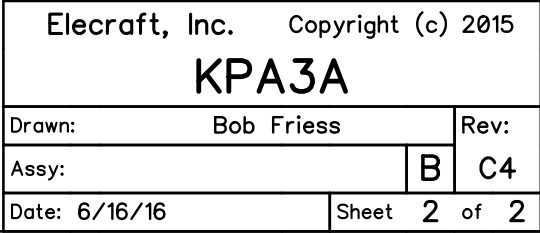
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Assy: A		

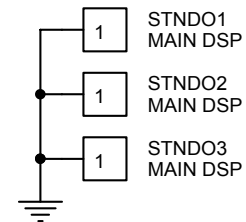
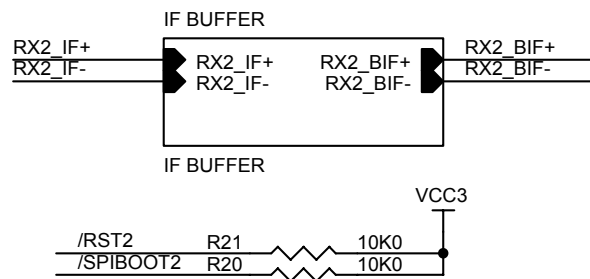
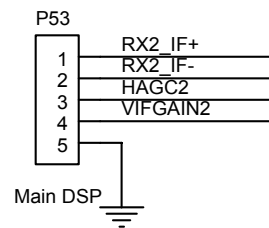
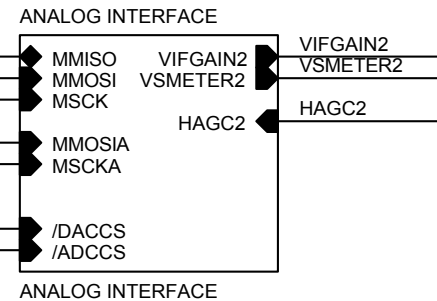
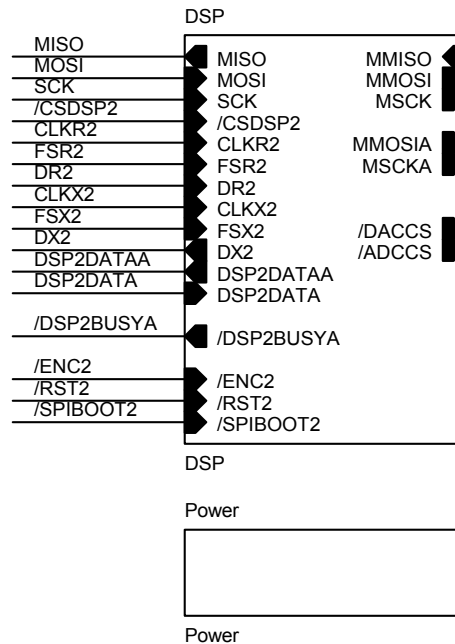
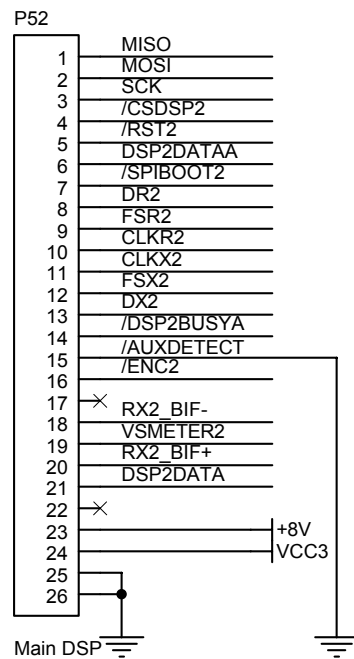


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KPA3A

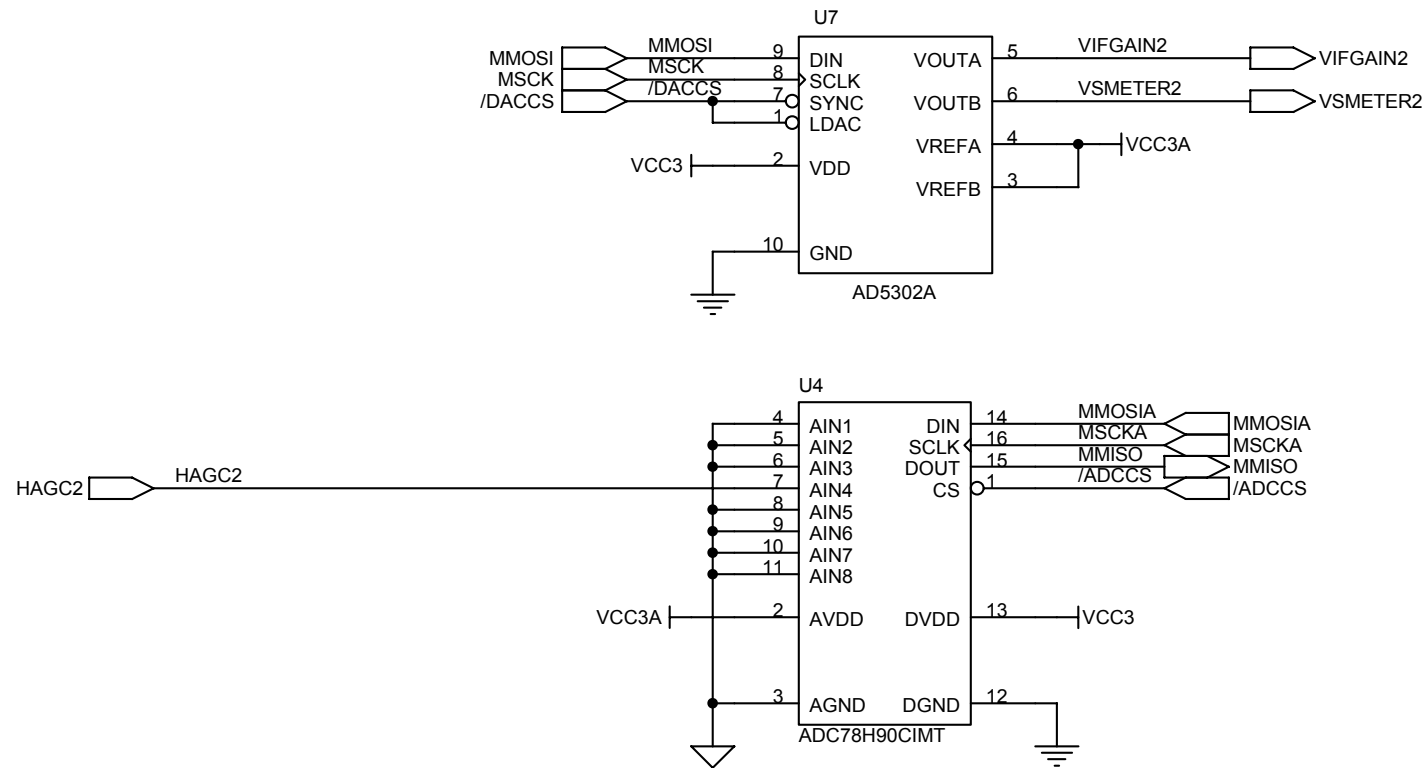
Drawn:	Bob Friess	Rev:	
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Date: 6/16/16	Sheet	1	of 2





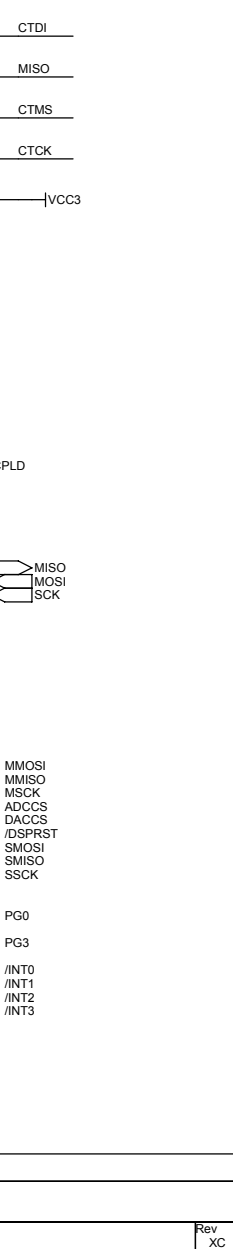
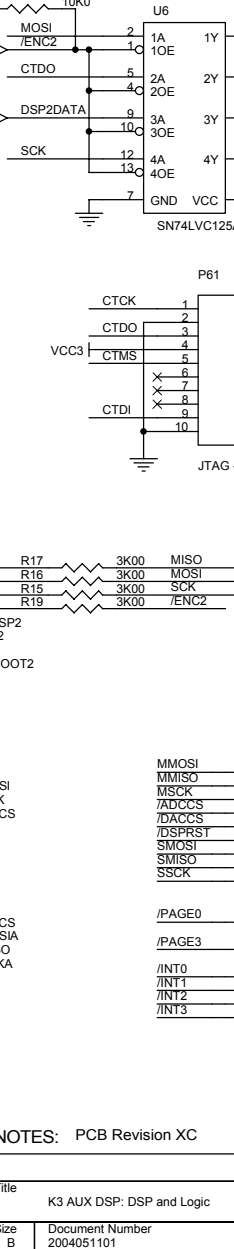
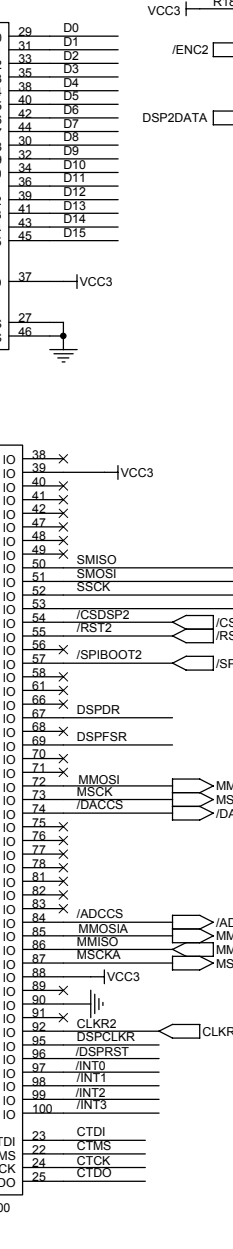
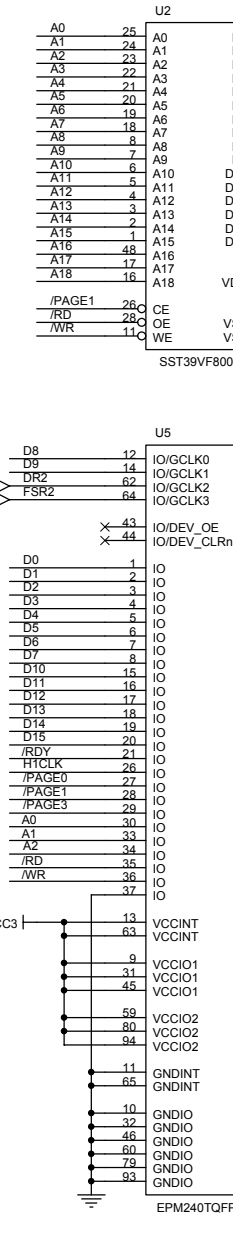
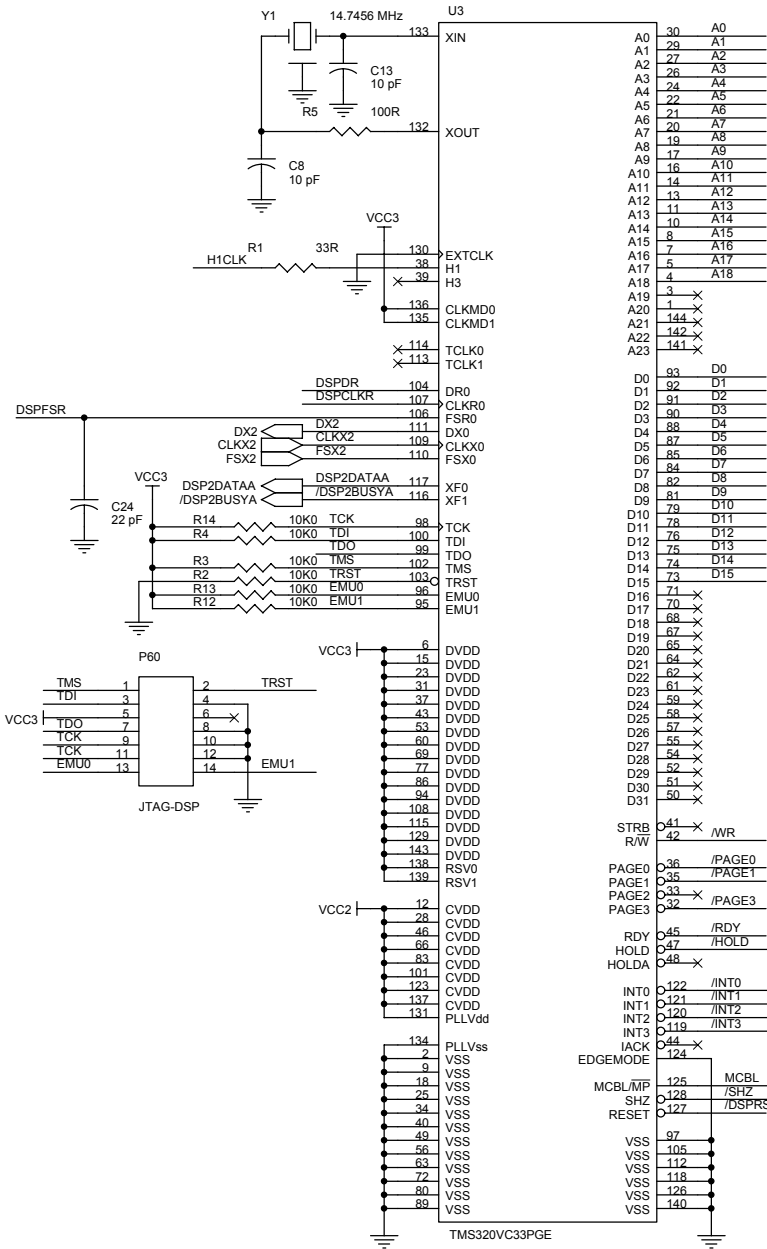
NOTES: PCB Revision XC

Title		
K3 AUX DSP: Top Level		
Size	Document Number	Rev
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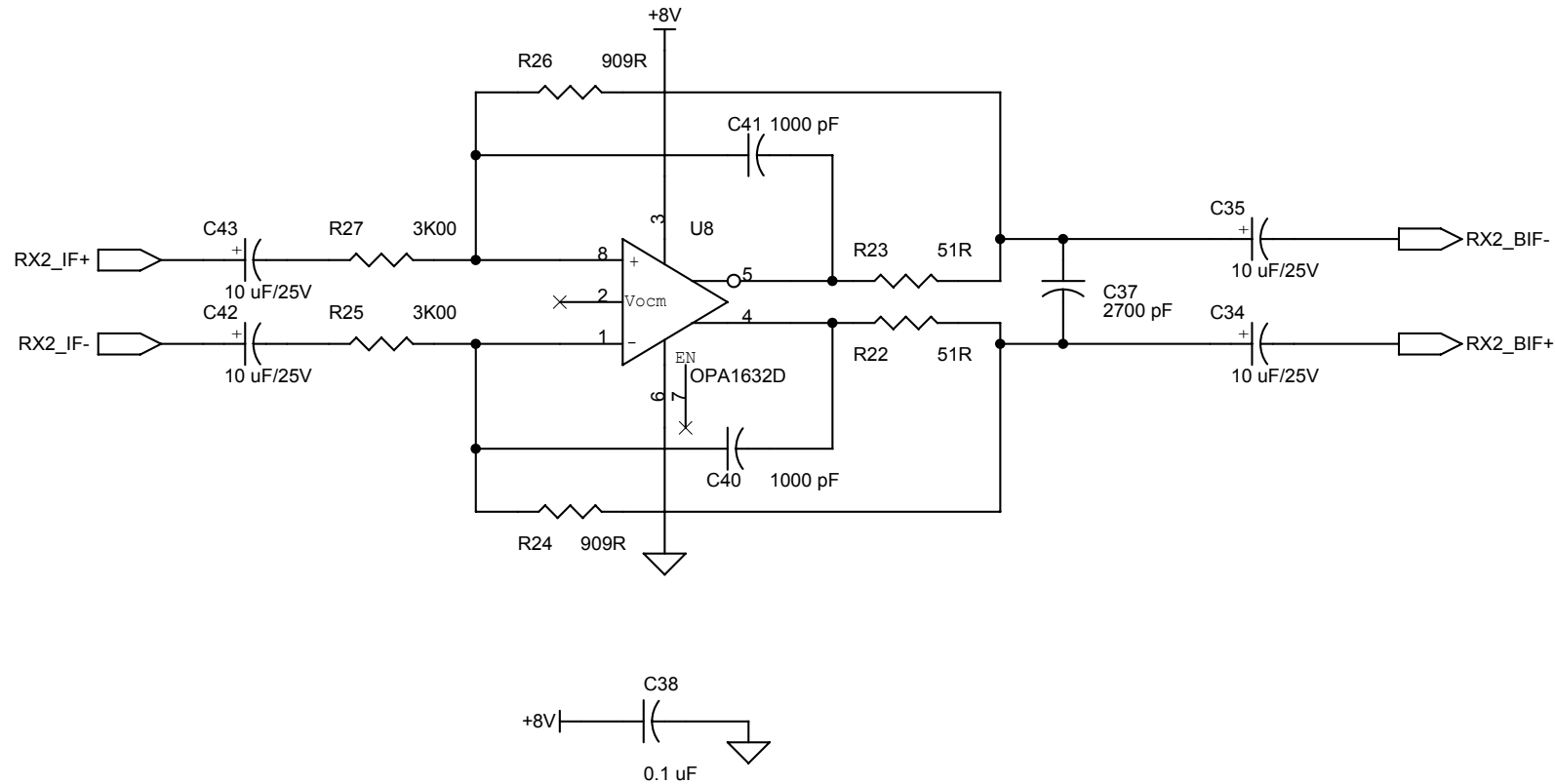
NOTES: PCB Revision XC

Title		
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Size	Document Number	Rev
A	2004051101	XC
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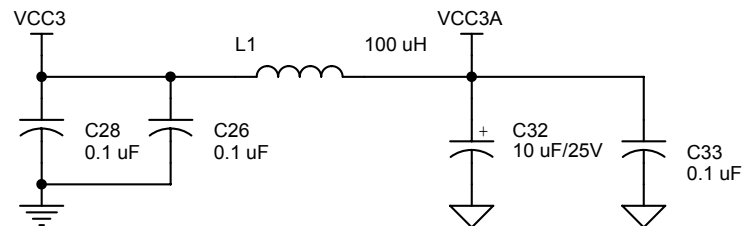
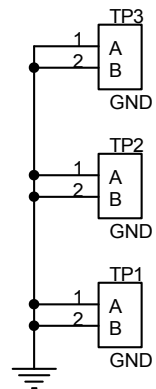
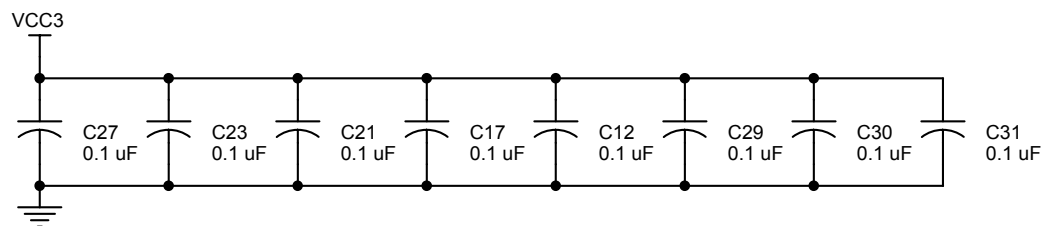
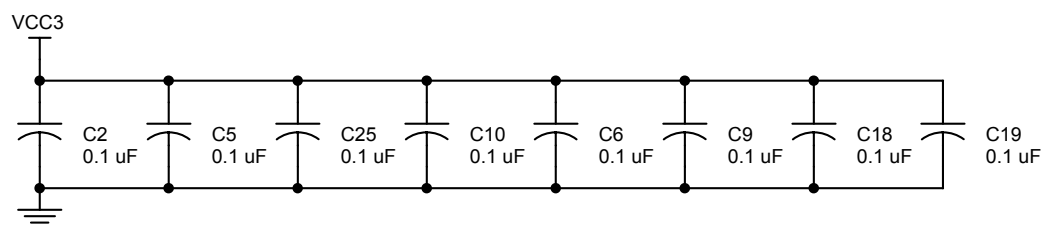
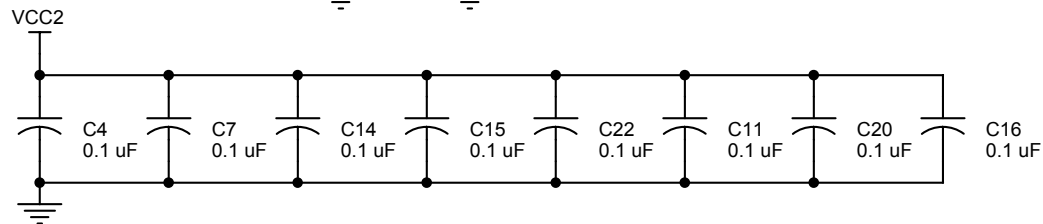
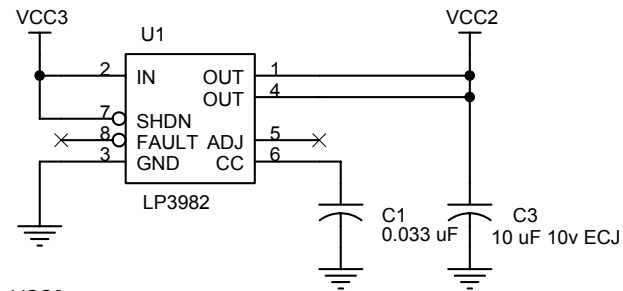
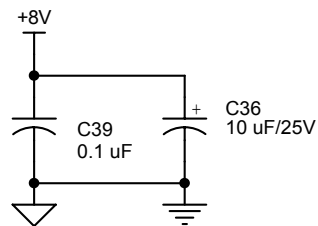
NOTES: PCB Revision XC

Title		
K3 AUX DSP: DSP and Logic		
Size	Document Number	Rev
B	2004051101	XC
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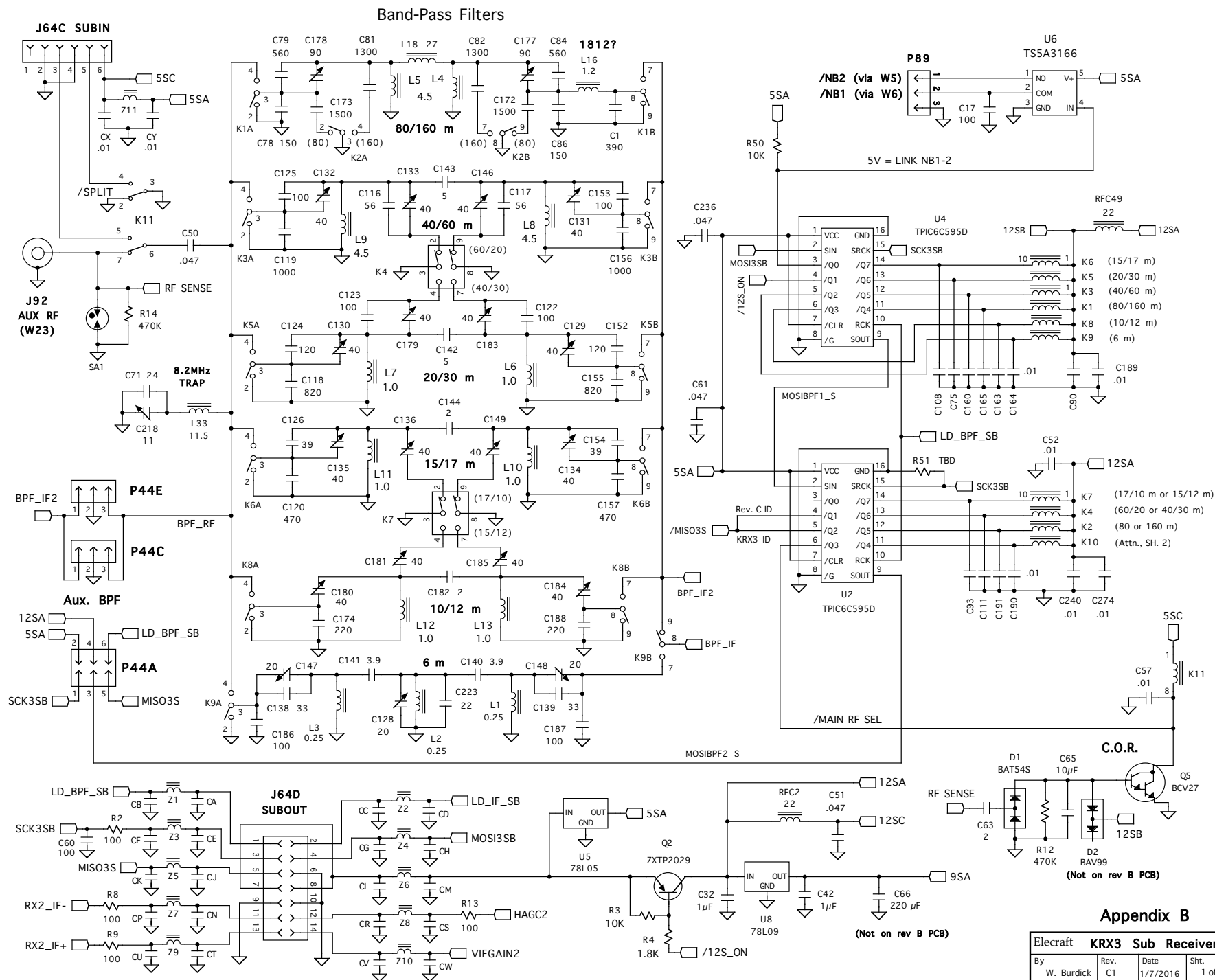
NOTES: PCB Revision XC

Title		
K3 AUX DSP: IF BUFFER		
Size	Document Number	Rev
A	2004051101	XC
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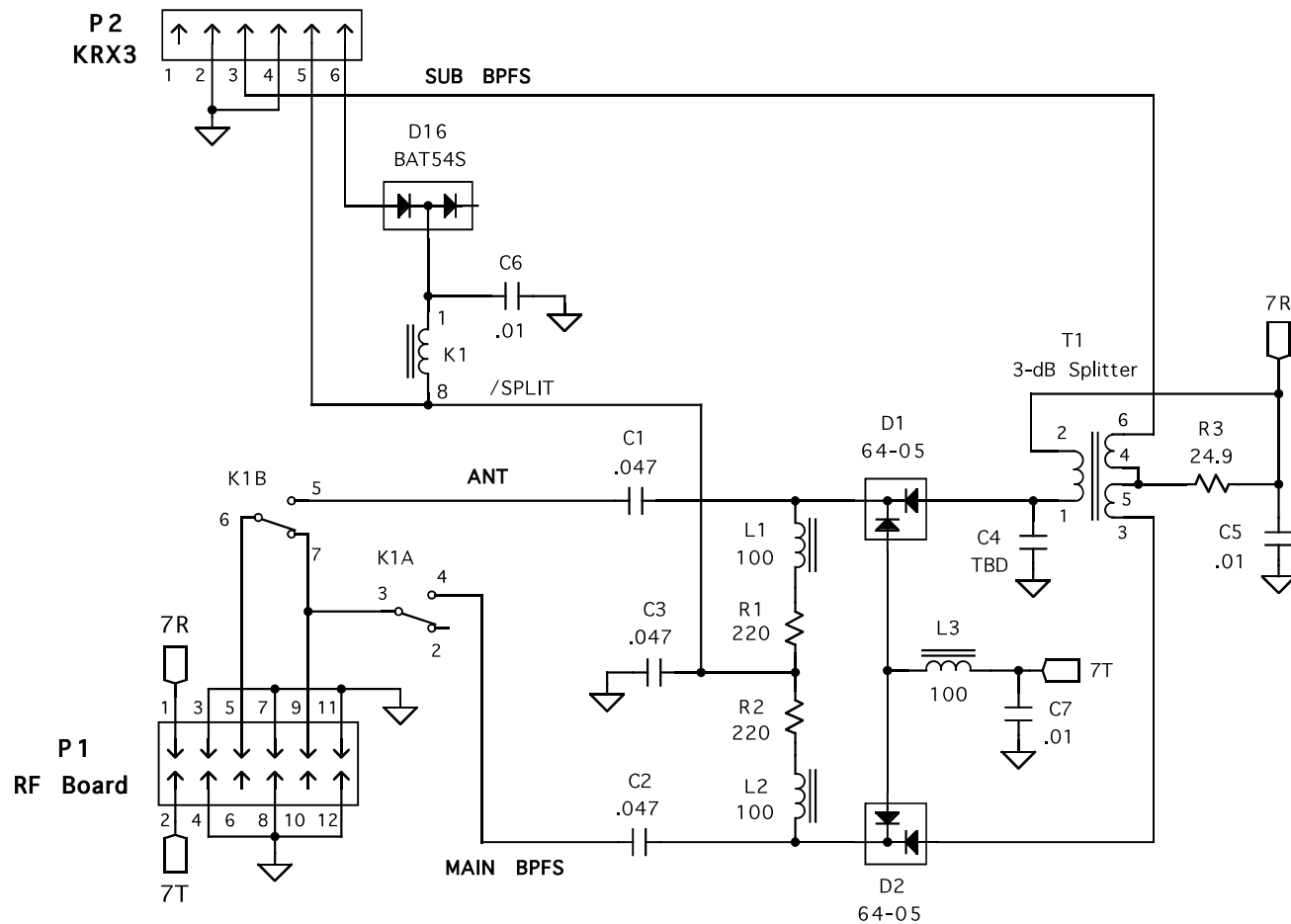


NOTES: PCB Revision XC

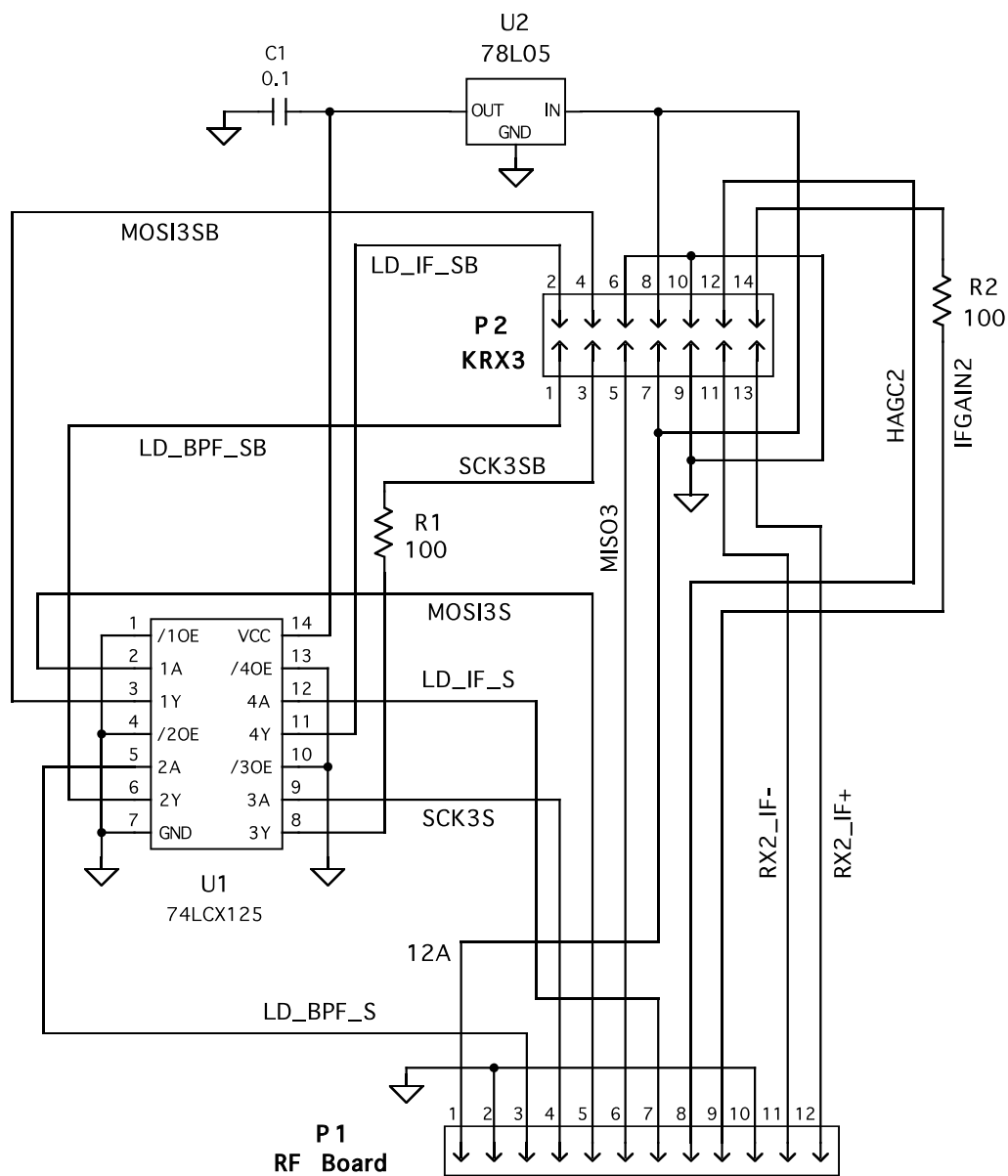
Title		
K3 AUX DSP: Power		
Size	Document Number	Rev
A	2004051101	XC
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Elecraft SUBIN Module			
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Elecraft SUBOUT Module			
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