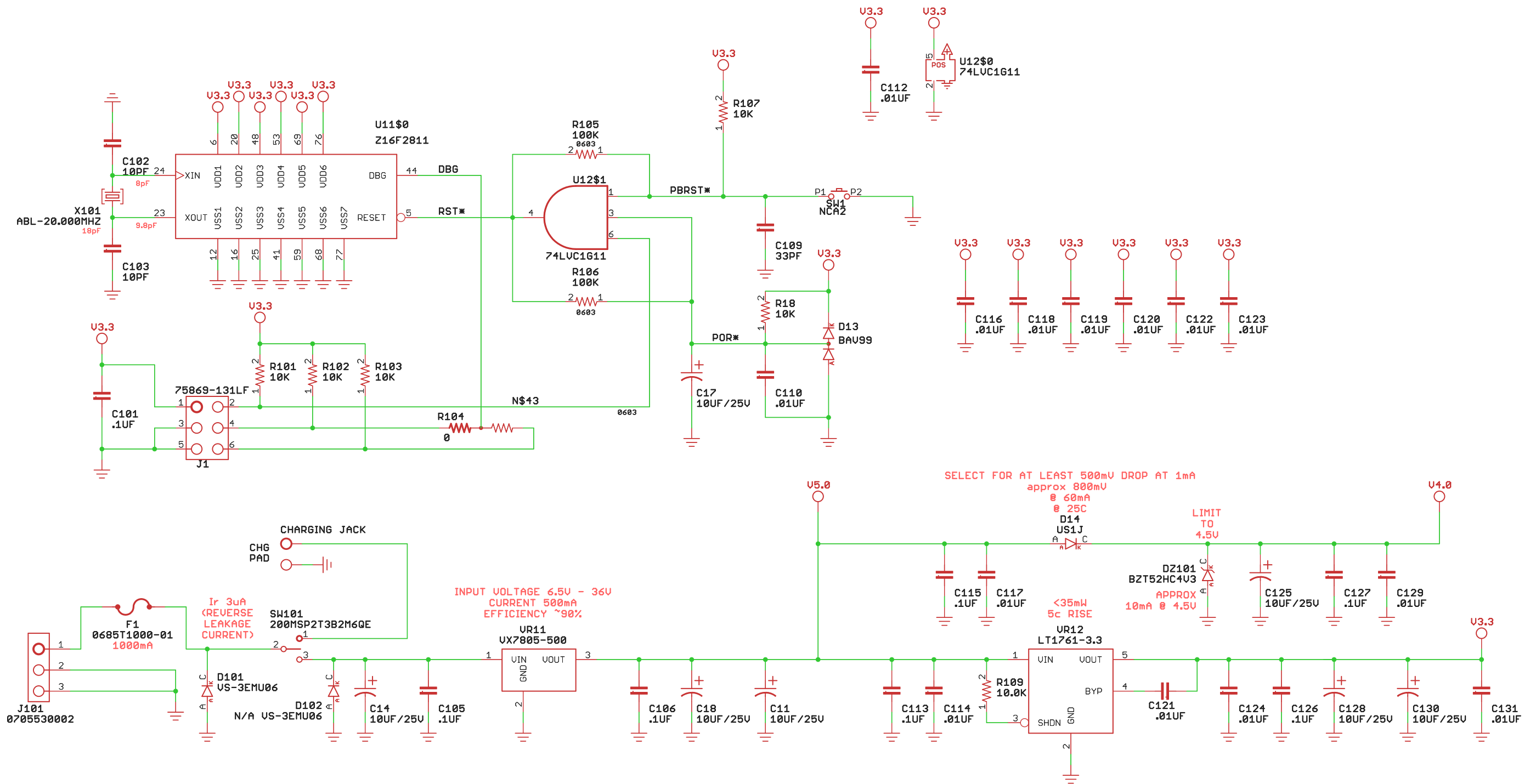


POWER CONDITIONING zNEO PROGRAM/RESET



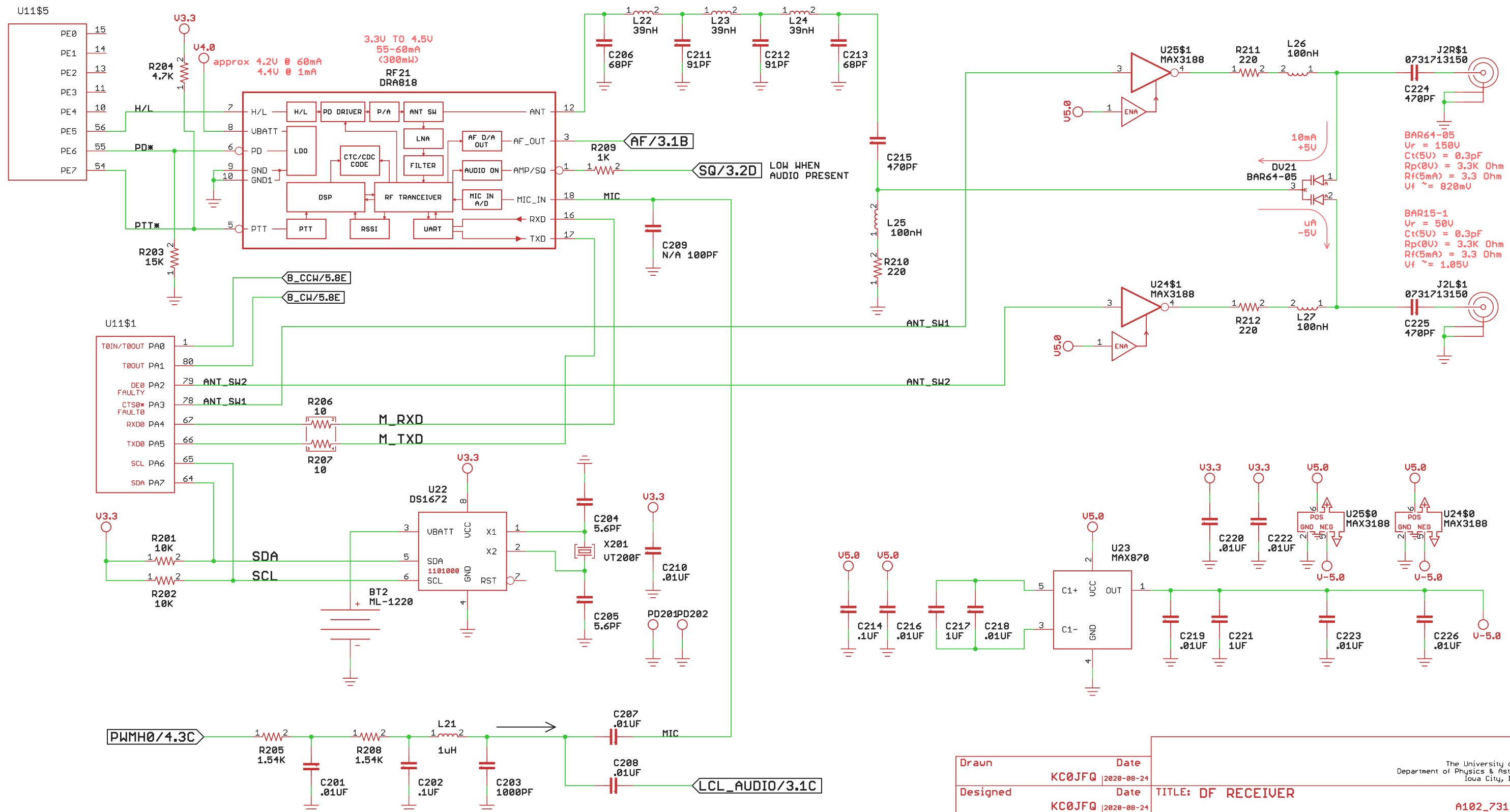
THIS BOARD CONTAINS
STATIC SENSITIVE
DEVICES. HANDLE
ONLY IN STATIC SAFE
ENVIRONMENT

Drawn Date
KC0JFQ 2020-08-24
Designed Date
KC0JFQ 2020-08-24

MARK ZERO POINT FOR
PICK & PLACE FILE ON
PRINTED CIRCUIT BOARD

TOP_FULL	BOARD ASSY			
DRAWING FRAME SHOWN ON CIRCUIT BOARD	DRAWING FRAME SHOWN ON CIRCUIT BOARD			
BOT_COMPACT	BOARD-ID			
DRAWING FRAME SHOWN ON CIRCUIT BOARD	DRAWING FRAME SHOWN ON CIRCUIT BOARD			
PWB RELEASED AS 2D354 102-73185-0				
PWA RELEASED AS 2D354 102-73185-0				
The University of Iowa Department of Physics & Astronomy Iowa City, IA, USA				
TITLE: DF RECEIVER				
A102_73185_0				
CAGE	Series	FOX DF TOOLS	Number	Rev
2D354	102	B	73185	0
Date: 10/11/20 7:30 PM		10/11/20 7:30 PM	Sheet: 1/7	

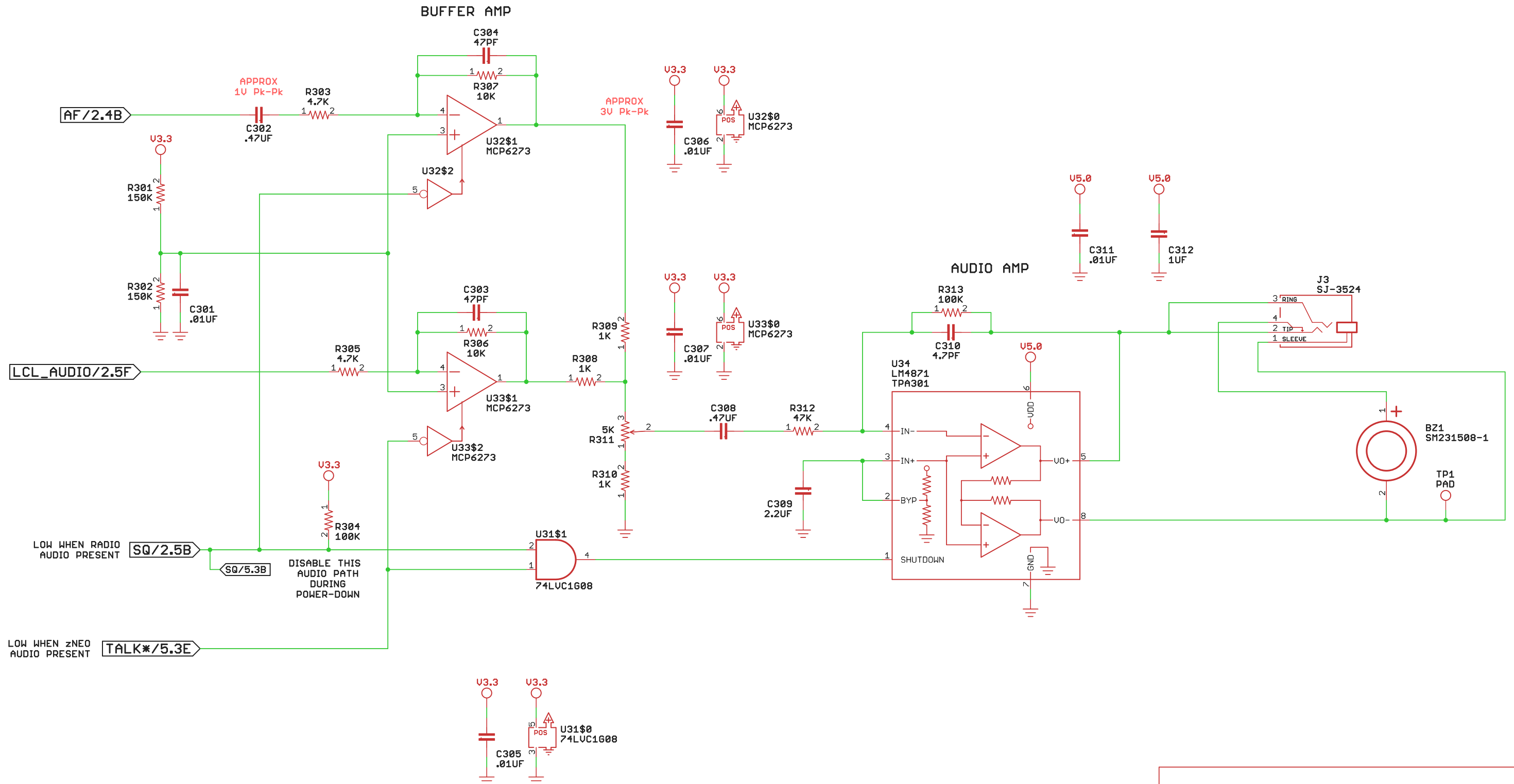
RF TRANCEIVER AND ANTENNA SWITCHING



Drawn	KC0JFQ	Date	2020-08-24	The University of Iowa Department of Physics & Astronomy Iowa City, IA, USA	
Designed	KC0JFQ	Date	2020-08-24	TITLE: DF RECEIVER	
CAGE	2D354	Series	102	Number	73185
			FOX DF TOOLS	B	Rev
				0	
Date:	10/11/20 7:30 PM		10/11/20 7:30 PM	Sheet:	2/7

A102_73185_0

AUDIO AMPLIFIER

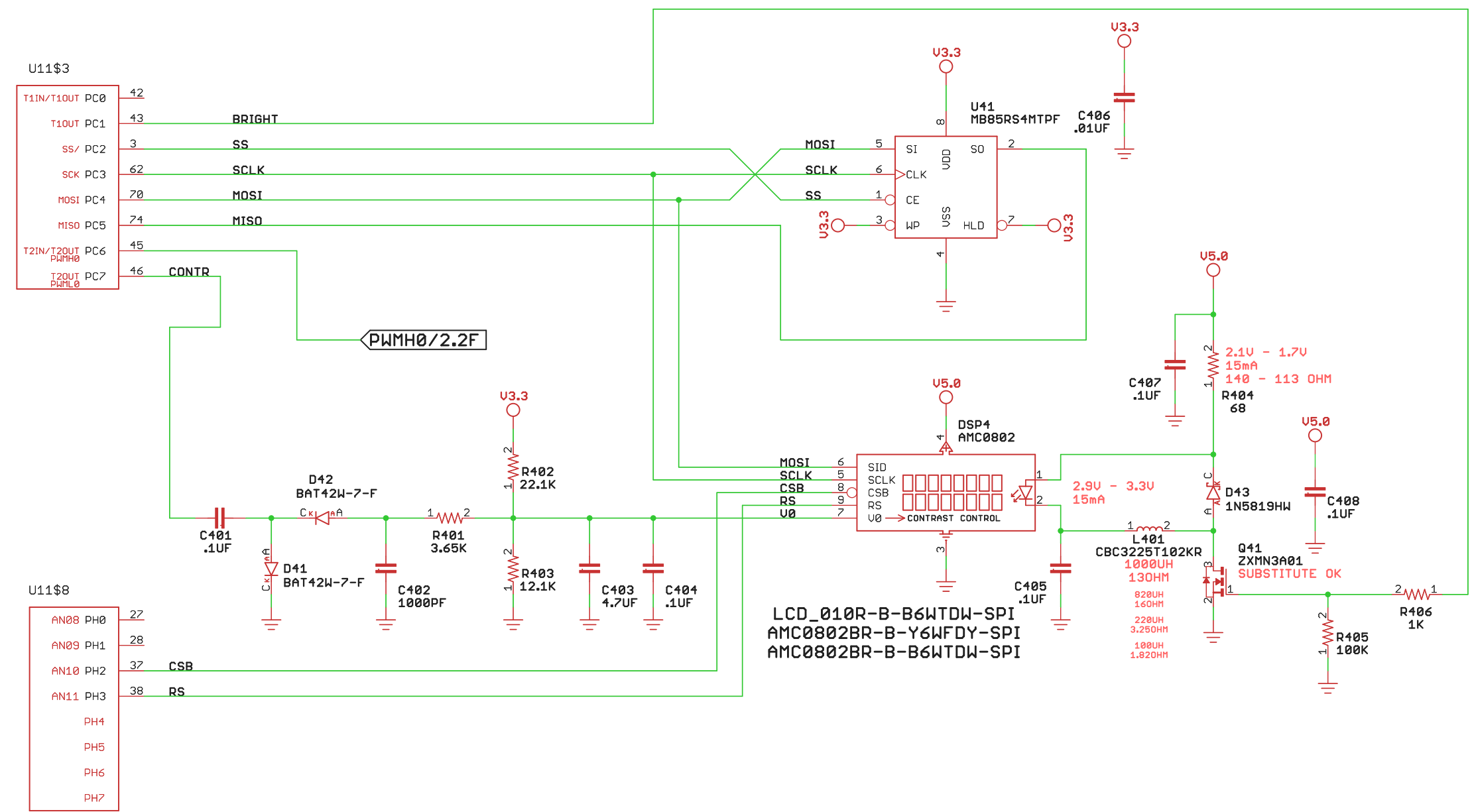


Drawn	Date
KC0JFQ	2020-08-24
Designed	Date
KC0JFQ	2020-08-24

The University of Iowa Department of Physics & Astronomy Iowa City, IA, USA	
TITLE: DF RECEIVER	
A102_73185_0	

CAGE	Series	FOX DF TOOLS	Number	Rev
2D354	102		B 73185	0
Date: 10/11/20 7:30 PM		10/11/20 7:30 PM	Sheet: 3/7	

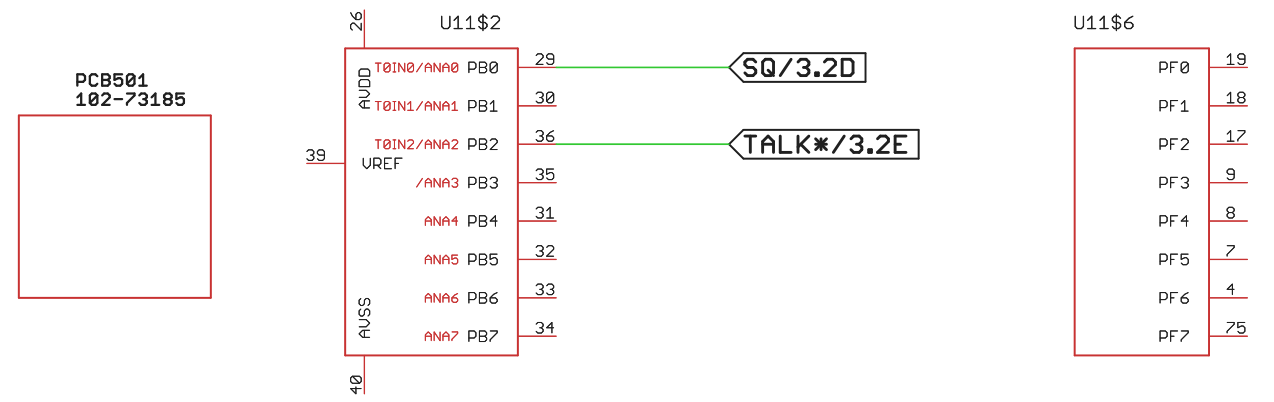
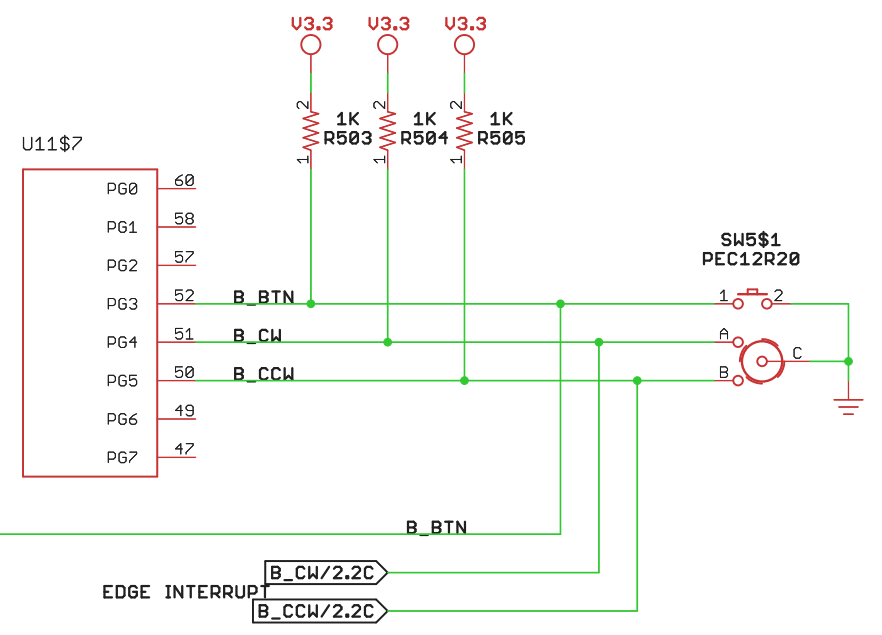
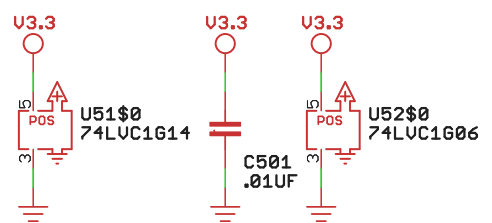
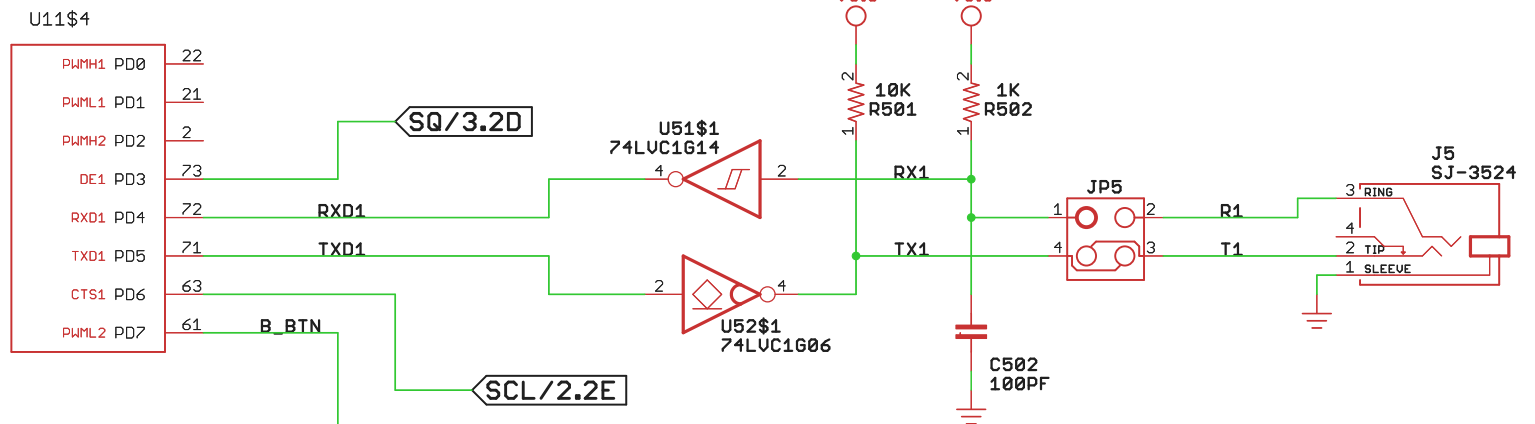
SPI PERIPHERALS LCD DISPLAY & FLASH MEMORY



Drawn	Date
KC0JFQ	2020-08-24
Designed	Date
KC0JFQ	2020-08-24

The University of Iowa Department of Physics & Astronomy Iowa City, IA, USA			
TITLE: DF RECEIVER		A102_73185_0	
CAGE	Series	Number	Rev
2D354	102	73185	0

Date: 10/11/20 7:30 PM	10/11/20 7:30 PM	Sheet: 4/7
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Drawn	KC0JFQ	Date	2020-08-24	The University of Iowa Department of Physics & Astronomy Iowa City, IA, USA		
Designed	KC0JFQ	Date	2020-08-24			
TITLE: DF RECEIVER				A102_73185_0		
CAGE	Series	FOX DF TOOLS	Number	Rev		
2D354	102		B 73185	0		
Date: 10/11/20 7:30 PM		10/11/20 7:30 PM		Sheet: 5/7		

POWER BUDGET

		STOP	HALT	IDLE	ACTIVE
3.3V RAIL					
U1	Z16F2810	1.000	4.000	5.000	18
74LVC*4		.500	.500	.500	1
U5	MAX870	.700	.700	.700	1
U6/U11	MAX3188	0.001	0.001	0.001	0.50
		<u>2.2mA</u>	<u>5.2mA</u>	<u>6.2mA</u>	<u>20.5mA</u>
		7.25mW	17.2mW	20.5mW	67.7mW
		11mW	26mW	31mW	103mW
5V RAIL					
U1	DRA818	.050	.050	55	60
U1	LM4871	.050	.050	6.5	10
		<u>2.5mA</u>	<u>5.5mA</u>	<u>68mA</u>	<u>91mA</u>
		12.5mW	27.5mW	340mW	455mW
MEASURED<UNIT 1>		<u>???.?mA</u>	<u>???.?mA</u>	<u>???.?mA</u>	<u>???.?mA</u>
		???.?mW	???.?mW	???.?mW	???.?mW
		???.?mW	???.?mW	???.?mW	???.?mW

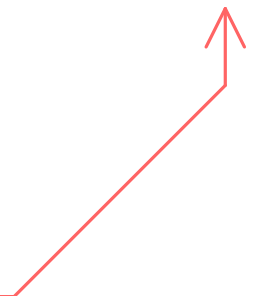
VR2
3.3V
5.0V

VR1
5.0V

BATT CURRENT
BATT VOLTAGE
BATT POWER

BATTERY CAPACITY

	Ucell	Upack	Unominal	mAh	mWh	Run Time
LR03 ALKALINE						
6 CELLS	1.5	9.0	7.5	1000	7500	15H
8 CELLS	1.5	12.0	10.0	1000	10000	20H
HR03 NiMH						
6 CELLS	1.25	7.5	6.5	1200	7800	15H
8 CELLS	1.25	10.0	8.5	1200	10200	18H



Drawn KC0JFQ	Date 2020-08-24	The University of Iowa Department of Physics & Astronomy Iowa City, IA, USA		
Designed KC0JFQ	Date 2020-08-24	TITLE: DF RECEIVER		A102_73185_0
CAGE 2D354	Series 102	FOX DF TOOLS B	Number 73185	Rev 0
Date: 10/11/20 7:30 PM		10/11/20 7:30 PM		Sheet: 6/7

ICARC DTOA RECEIVER PORT BIT ASSIGNMENTS

	BIT 7	BIT 6	BIT 5	BIT 4	BIT 3	BIT 2	BIT 1	BIT 0	BASE
PORT A	A(I2C) SDA	A(I2C) SCL	A TXD0	A RXD0	O ANT_SW1	O ANT_SW2	INT B_CW	INT B_CCW	
PORT B						O TALK*			
PORT C	A(TIM) CONTR	A(PWM) PWMH0	A(SPI) MISO	A(SPI) MOSI	A(SPI) SCLK	O(SPI) SS*	A(TIM) BRIGHT		
PORT D	INT B_BTN	I SCL	A TXD1	A RXD1	I SQ				
PORT E	O PTT*	O PD*	O H/L						
PORT F									
PORT G			I B_CCW	I B_CW	I BTN				
PORT H					O RS	O(SPI) CSB			

UART 0 DRA818 CONTROL PORT
 UART 1 PROGRAMMING PORT
 SPI FRAM/LCD
 I2C TOY CLOCK
 PD* DRA818 POWER DOWN
 ANT_SW? DTOA ANTENNA ENABLES
 B_??? ROTARY ENCODER
 SQ DRA818 AUDIO SQUELCHED
 PTT* DRA818 TRANSMIT ENABLE
 PD* DRA818 POWER DOWN
 H/L DRA818 OUTPUT POWER LEVEL
 RS LCD REGISTER SELECT
 CSB LCD SPI DEVICE SELECT
 TALK* ENABLE zNEO DAC TO AUDIO AMP

I BIT INPUT
 O BIT OUTPUT
 A(I) ALTERNATE FUNCTION (INPUT)
 A(O) ALTERNATE FUNCTION (OUTPUT)
 A(?) ALTERNATE FUNCTION
 INT INTERRUPT/WAKEUP