

DIODES  
GERMANIUM ONLY, DO NOT SUBSTITUTE SILICON  
LIGHT SENSITIVE  
MATCH THE DIODES

TEST POINTS  
SEE NET NAMES ON PAGE 2

POWER CONTROL  
ALL POWER COME THROUGH THE LED  
R5 ELIMINATED

## PARTS SELECTION

D2/D3 SELECT FOR LOW  
CAPACITANCE AND LOW LEAKAGE  
AXIAL, SOD123 OR SOD323

U1 SELECT FOR LOW POWER  
AND LOW INPUT BIAS AND LEAKAGE

U5/C15/C65 MAY BE ELIMINATED IF AUDIO  
IS ADEQUATE.  
REPLACE R61 OR R62 WITH A  
WIRE JUMPER  
THIS IS A TINY (STO23) PART  
MAY REQUIRE ASSISTANCEW INSTALLING

R15 WE MAY WANT TO INCREASE  
RESISTANCE TO LOWER POWER  
THROUGH D1 (WASTE HEAT!)

U4 IS SURFACE MOUNT LOW  
DROPOUT REGULATOR.  
EASY TO SOLDER AS IT IS LARGE

## ALIGNMENT

1. APPLY POWER  
LED ILLUMINATES  
VOLTAGE ACROSS R15 CONSISTENT WITH EXPECTED CURRENT

2A. RANGE=MAX  
ADJUST R9 TP2=500mV (NOT CRITICAL)  
BIAS DETECTOR TO JUST BELOW CONDUCTION SO V<sub>f</sub> IS NOT CRITICAL

2B. TP1+ TP2-  
ADJUST R12 FOR 7mV (NOT CRITICAL)  
TRIM OUT THE OFFSET IN THE OP-AMP

2C. TP3+ TP2-  
ADJUST R12 FOR 45mV TO 55mV  
GAIN CONTROL TRIM

3A. TP1+  
LOW POWER FROM VHF T<sub>x</sub> (LESS THAN 1W)  
LOOK FOR INCREASE IN VOLTAGE WHEN TRANSMITTING  
(D2 PROBLEM IF VOLTAGE DECREASES)

3B. TP1+ D3-K (BAND)  
TRANSMIT  
VOLTAGE WELL BELOW 1V  
(D3 PROBLEM IF INCORRECT)

4A. HEADPHONES/SPEAKER INSTALLED  
RANGE MAX  
ADJUST R9 SO TONE JUST STARTS  
RANGE=MID, TONE STOPS

5. ANTENNA ON J1  
T<sub>x</sub> SET TO TARGET FREQ.  
RANGE=MAX  
TONE PITCH INCREASE WHEN TRANSMIT  
SEPERATE TX AND FINDER AND PEAK C1  
FOR HIGHEST PITCH

BASED ON 15 BOARDS

Per Board	Quan	Vendor web page
29.00	15	<a href="https://pcbshopper.com">https://pcbshopper.com</a> (QUOTES MULTIPLE VENDORS)
30.00	15	<a href="https://www.pcbway.com/">https://www.pcbway.com/</a>
13.99	15	<a href="https://jlcpcb.com/quote">https://jlcpcb.com/quote</a>
11.61	15	<a href="https://www.pcbuniverse.com">https://www.pcbuniverse.com</a>
3.32	15	<a href="https://www.pcbcart.com">https://www.pcbcart.com</a>

# KCØJFQ

PWB RELEASED AS 2D354 102 - 73156 -5

PWA RELEASED AS 2D354 102 - 73156 -5

TOP_FULL	BOARD ASSY	BOT_COMPACT	BOARD-ID
DRAWING FRAME SHOWN ON CIRCUIT BOARD			
Drawn		Date	
W. ROBISON		12/2018	
Designed		Date	
BOB REIF		1/2001	
TITLE: NVARC FOX FINDER			
A102_73156_5			
CAGE	Series	JUICE/RIME	Number
2D354	102	B	73156
Date: 12/19/19 12:49 PM		12/19/19 12:50 PM	Sheet: 1/2

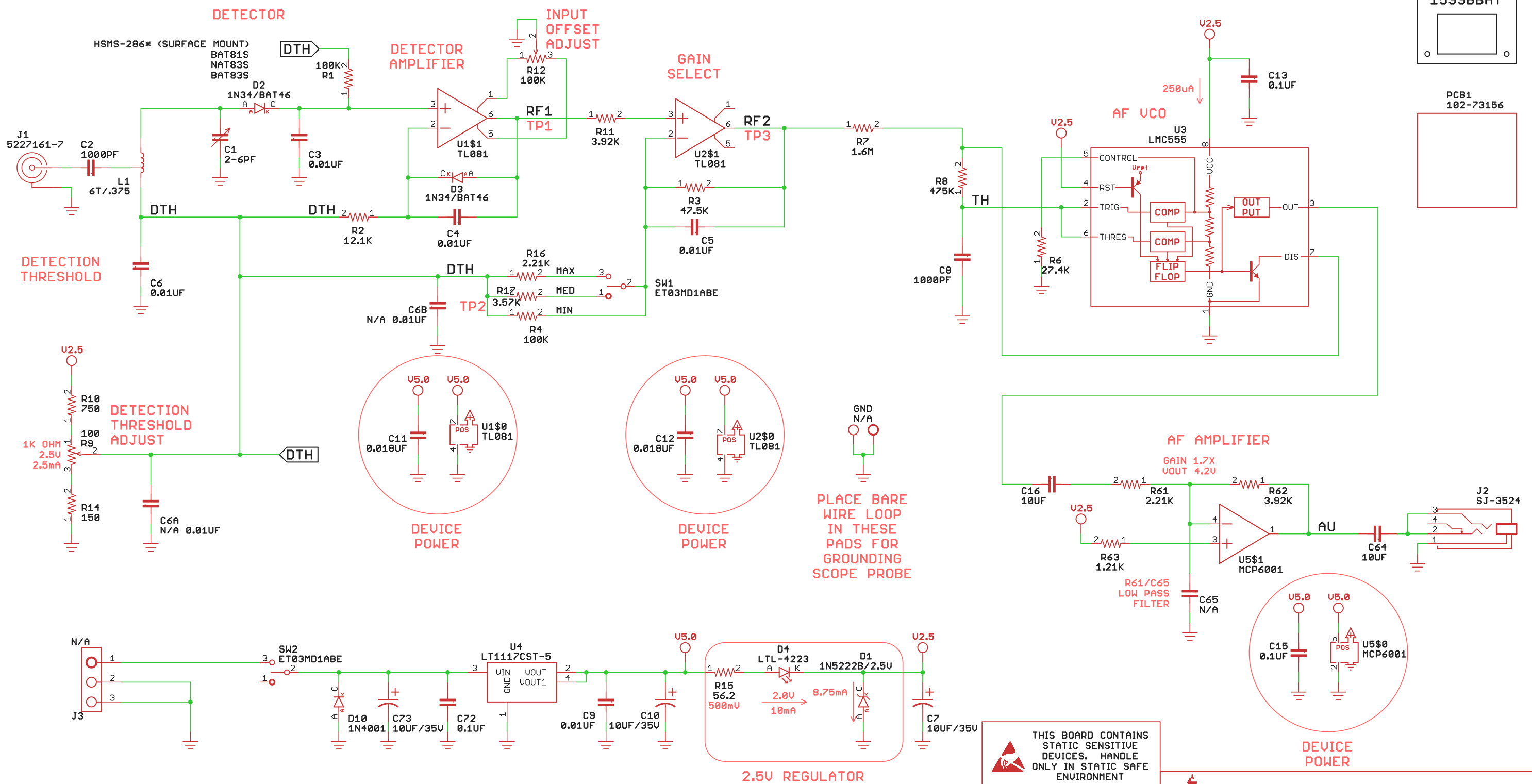
The University of Iowa  
Department of Physics & Astronomy  
Iowa City, IA, USA

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

# THRU HOLE

ENCLOSURE  
ENCL1  
1599BBAT

PCB1  
102-73156



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

Drawn	W. ROBISON	Date	12/2018
Designed	BOB REIF	Date	4/2001



The University of Iowa  
Department of Physics & Astronomy  
Iowa City, IA, USA

TITLE: NVARC FOX FINDER  
A102\_73156\_5

CAGE	Series	Number	Rev
2D354	102	73156	5

Date: 12/19/19 12:49 PM 12/19/19 12:50 PM Sheet: 2/2