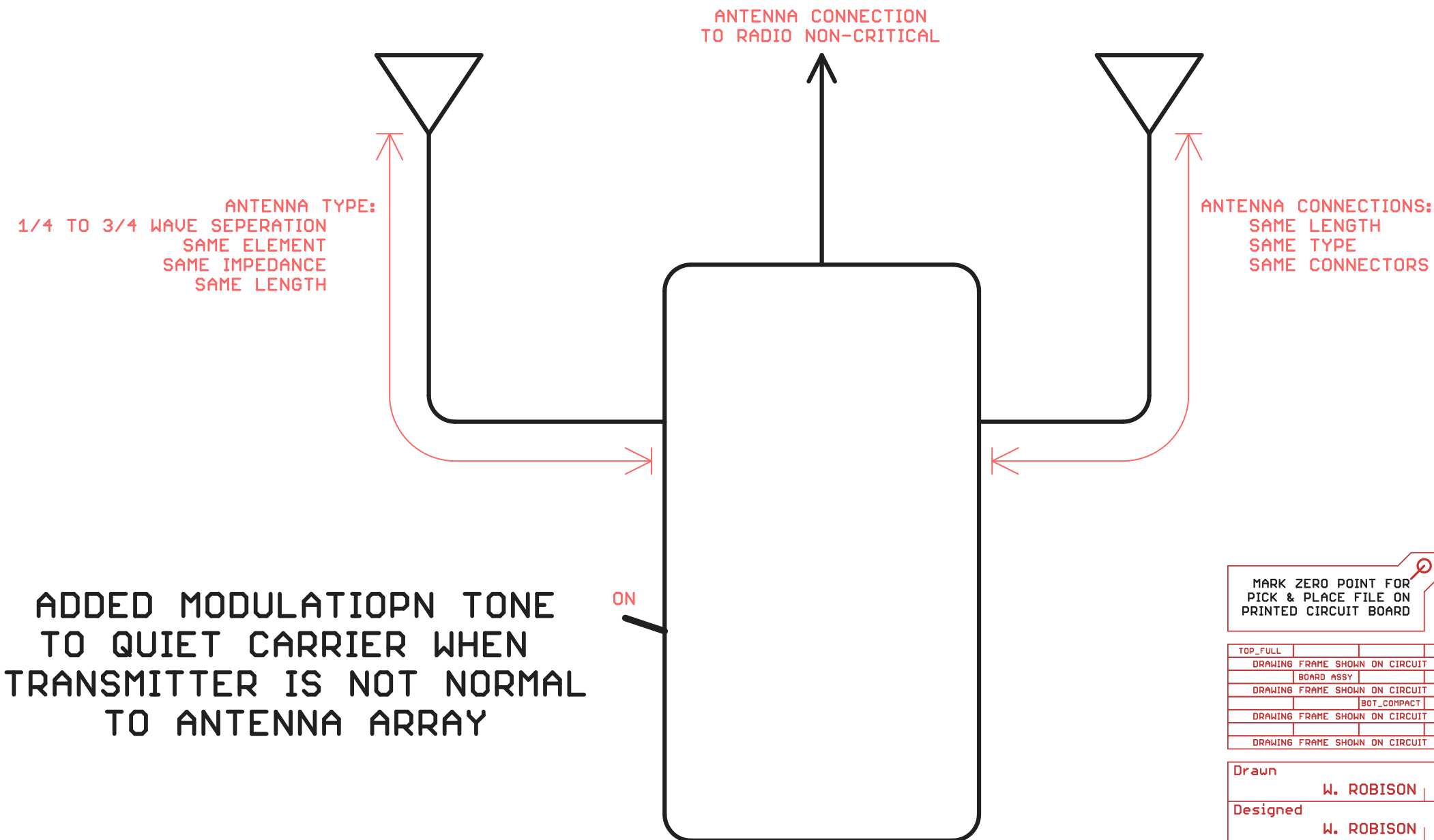


DIFFERENTIAL TIME OF ARRIVAL DIRECTION FINDER

UPDATES&CHANGES

FROM 102-73170-A:
 CHANGE FROM 555 TO 4047
 (4047 PRODUCES SQUARE WAVE DIRECTLY)
 CHANGE PIN DIODE DRIVE SCHEME
 AND ADD 4049 BUFFER
 ISOLATION ALL ON-BOARD
 CHANGE R3A TO LOWER COST POT
 ADD FUSIBLE LINK TO
 REVERSE POLARITY MANAGEMENT
 REDUCE CIRCUIT BOARD SIZE



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

KC0JFQ

TOP_FULL	
DRAWING FRAME SHOWN ON CIRCUIT BOARD	
BOARD ASSY	
DRAWING FRAME SHOWN ON CIRCUIT BOARD	
BOT_COMPACT	
DRAWING FRAME SHOWN ON CIRCUIT BOARD	
BOARD-ID	
DRAWING FRAME SHOWN ON CIRCUIT BOARD	

PWB RELEASED AS 2D354 102 - 73170 -20

PWA RELEASED AS 2D354 102 - 73170 -20

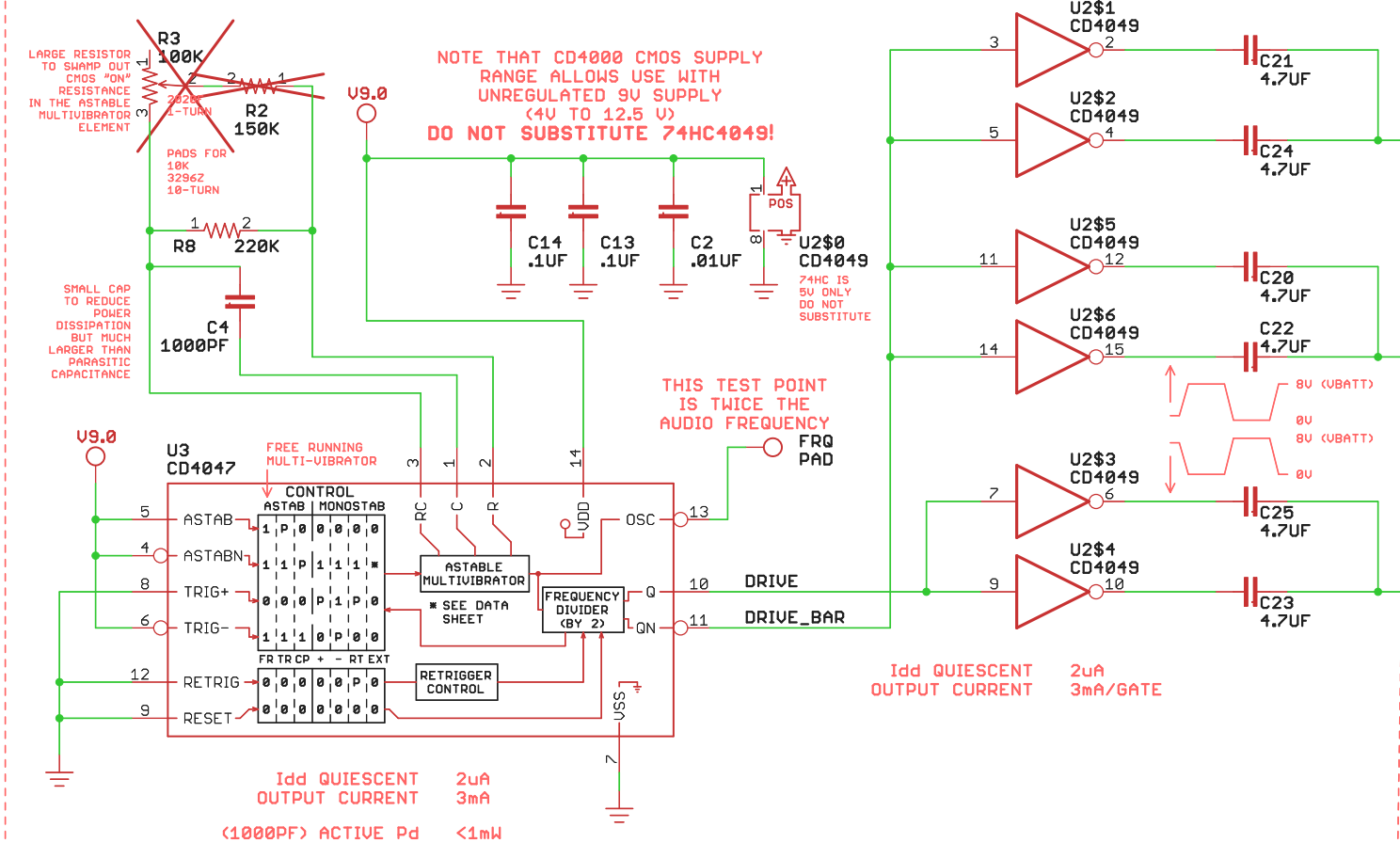
Drawn	Date
W. ROBISON	8/2019
Designed	Date
W. ROBISON	8/2019

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

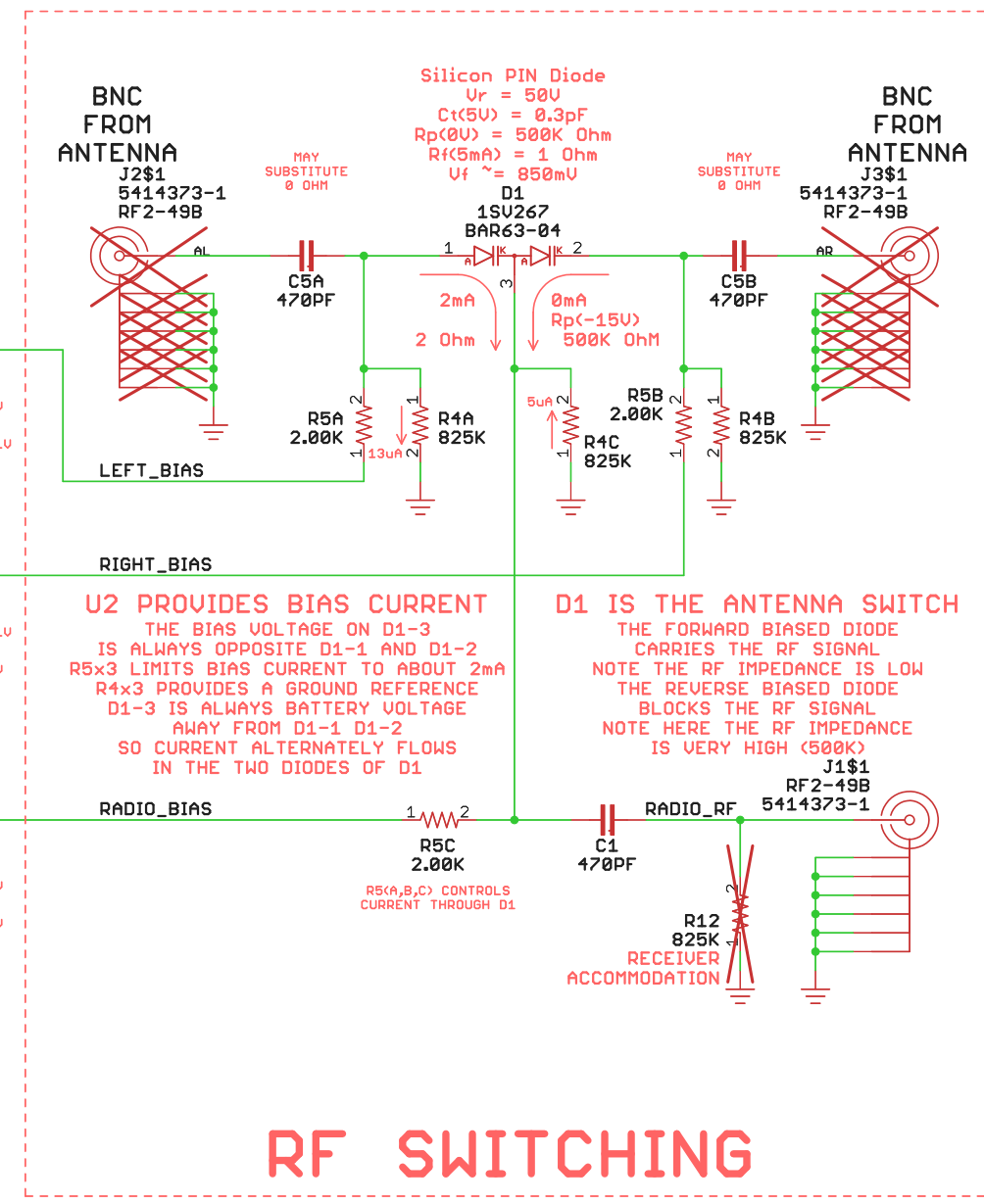
TITLE: ICARC DTOA DIRECTION FINDER, CD4047
 A102_73170_20
 PROD

CAGE	Series	Number	2 Layers	Rev
2D354	102	B 73170		20
Date: not saved!		3/27/24 9:04 AM	Sheet:	1/4

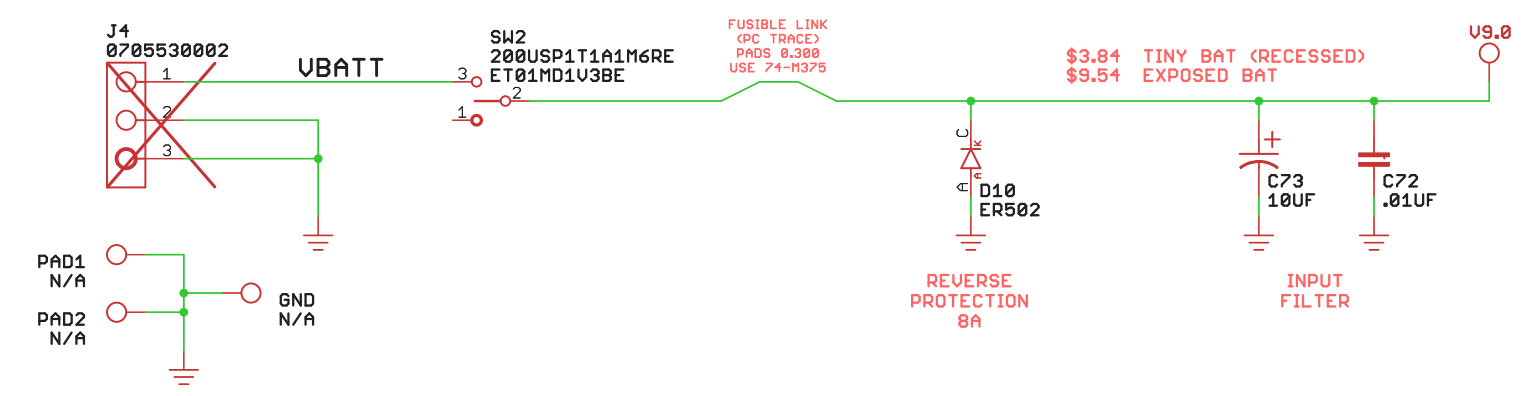
AF UCO	R	1000PF	1200PF	1500PF
4.40*RC	270K	842	701	561
	250K	909	758	606
	220K	1033	861	689
	180K	1263	1052	842
REPLACE R3 WITH R8 TO SAVE \$\$\$	150K	1515	1263	1010
	120K	1894	1578	1263



AUDIO FREQUENCY CLOCK

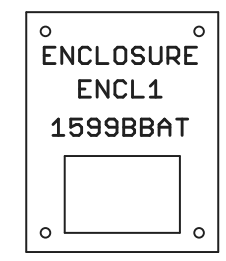
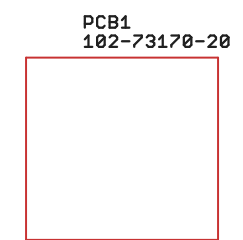


RF SWITCHING



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

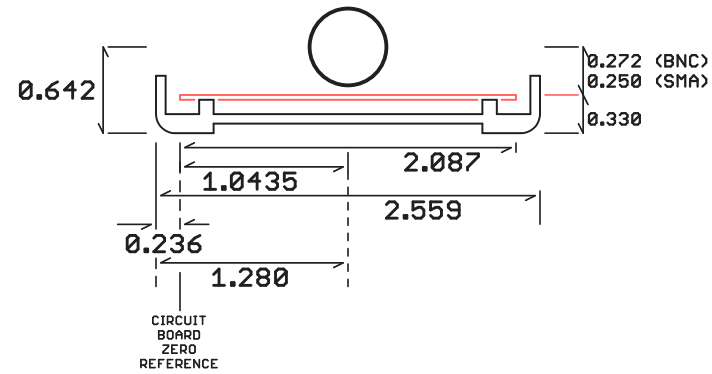
Drawn	W. ROBISON	Date	8/2019
Designed	W. ROBISON	Date	8/2019



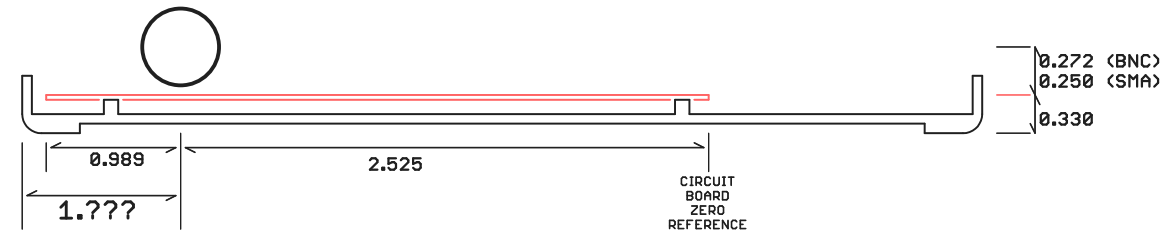
The University of Iowa Department of Physics & Astronomy Iowa City, IA, USA			
TITLE: ICARC DTOA DIRECTION FINDER, CD4047			
CAGE	Series	Number	Rev
2D354	102	B 73170	20
Date: not saved!		3/27/24 9:04 AM	Sheet: 2/4

HM1599BBAT MECHANICAL DETAILS

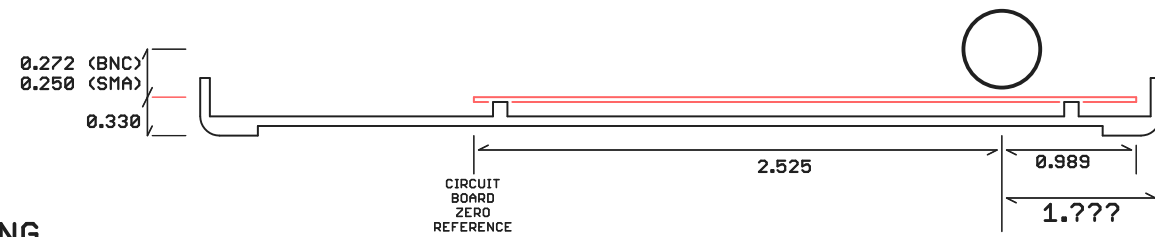
RADIO CONNECTOR



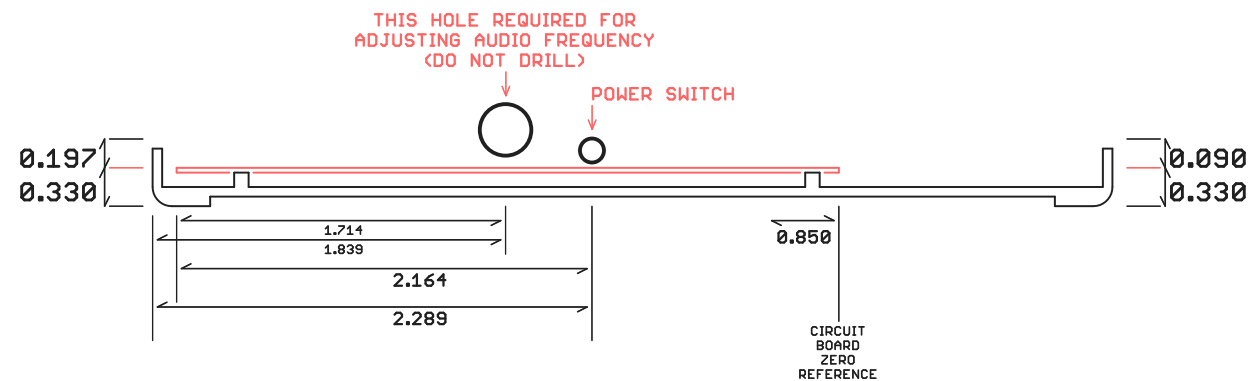
ANTENNA CONNECTORS



ANTENNA CONNECTORS



POWER AND TIMING



CIRCUIT BOARD HEIGHT ABOVE BASELINE



CIRCUIT BOARD HEIGHT ABOVE BASELINE (BASE)



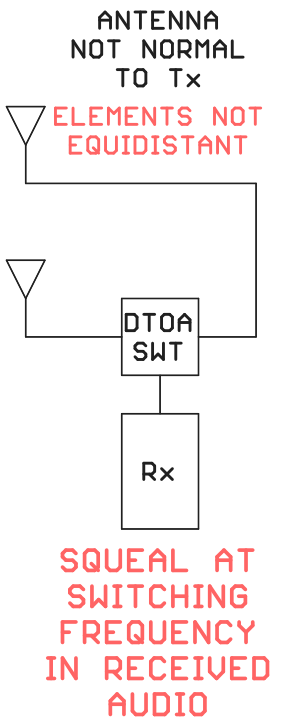
NOT TO SCALE

Drawn	Date
W. ROBISON	8/2019
Designed	Date
W. ROBISON	8/2019

The University of Iowa Department of Physics & Astronomy Iowa City, IA, USA					
TITLE: ICARC DTOA DIRECTION FINDER, CD4047 A102_73170_20 PROD					
CAGE	Series	B	Number	2 Layers	Rev
2D354	102		73170		20
Date: not saved!		3/27/24 9:04 AM	Sheet: 3/4		

ILLUSTRATING THE EFFECT OF THE DTOA SWITCH ON Rx AUDIO

UNEQUAL PATHLENGTH:
SIGNAL WAVEFRONT ARRIVES AT
BOTH ANTENNAS AT DIFFERENT TIME
ANTENNA SWITCHING INTRODUCES
A PHASE SHIFT THAT THE RADIO
SEES AS A FREQUENCY SHIFT
FREQUENCY SHIFT == FM MODULATION
SQUEAL OCCURS IN THE AUDIO!



The University of Iowa Department of Physics & Astronomy Iowa City, IA, USA				
TITLE: ICARC DTOA DIRECTION FINDER, CD0047 AP02_73170_20 PROD				
CAGE	Series	Number	2 Layers	Rev
2D354	102 iCARC FOX HUNT	73170		20
Date: not saved!		3/27/24 9:04 AM	Sheet: 4/4	



EQUAL PATHLENGTH:
SIGNAL WAVEFRONT ARRIVES AT
BOTH ANTENNAS AT SAME TIME

