
SEA
2016
PAC

WELCOME

To The DIY 2016 SEA-PAC QRP Workshop

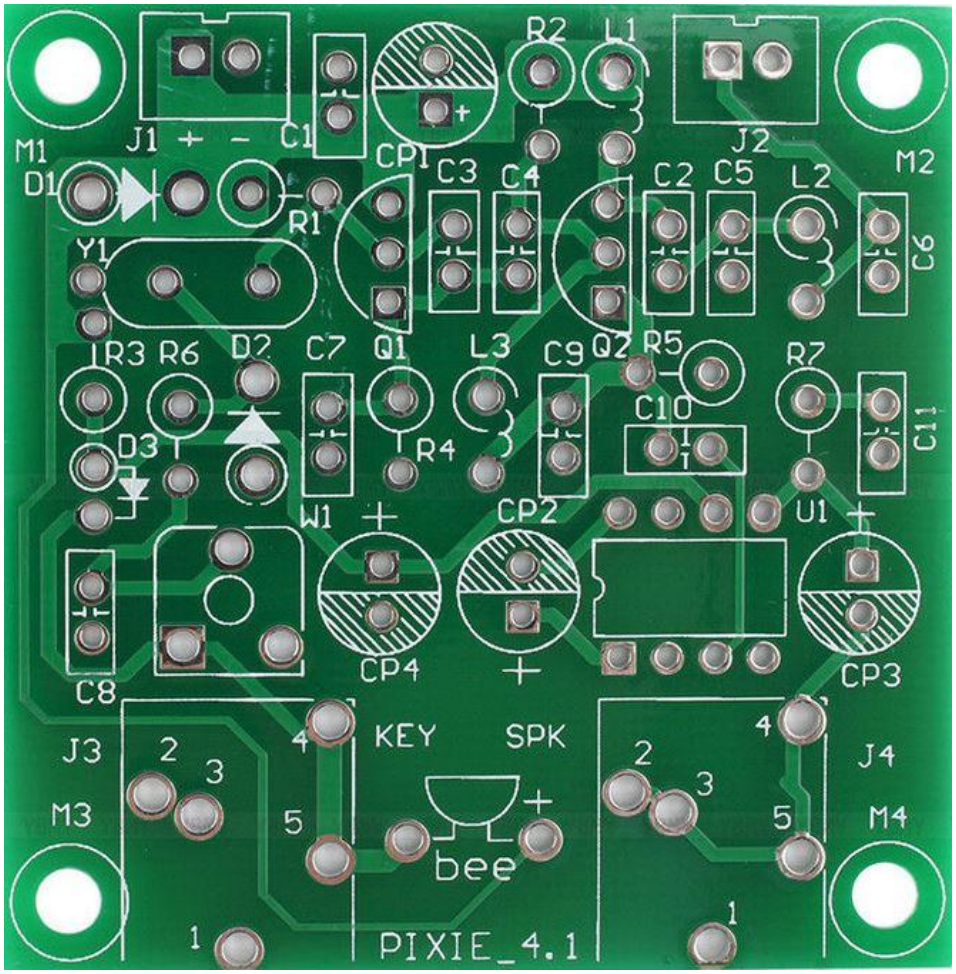
1. **Introductions:**
2. Soldering: Oxidation.
3. CW Practice PC-Board:
4. Ionosphere:
5. Antenna Considerations:
6. Build the Kit:
7. Parts Considerations:

1. Introductions:

Curt Black	WR5J
Rick Gilbert	KG7JBV
Tom Saunders	N7OEP
Delvin Bunton	N7QMT
Bill Balzarini	KL7BB

1. Introductions:

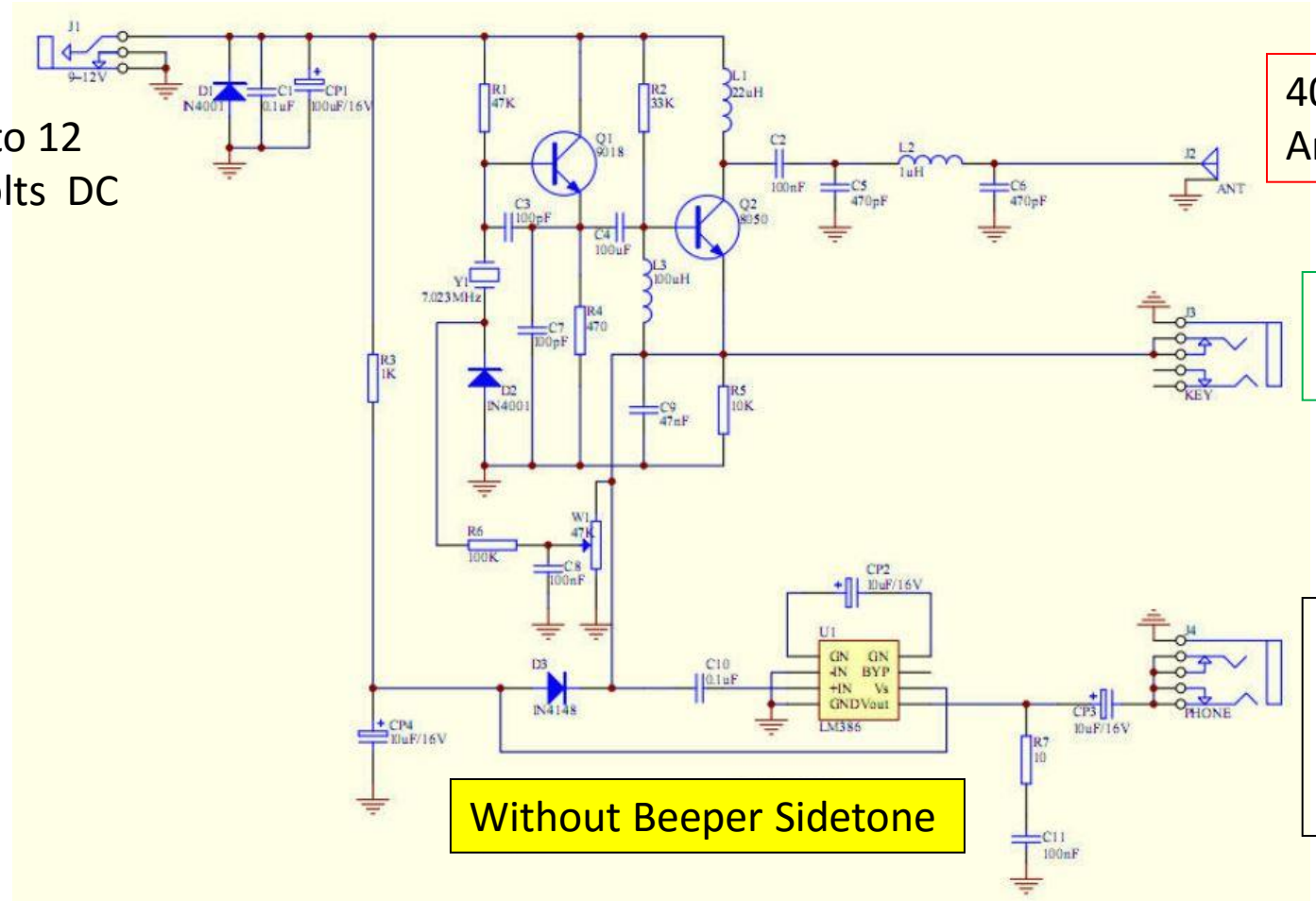
The PIXIE PC-Board 4.1



1. Introductions:

The PIXIE v4.1 Schematic

9 to 12
Volts DC



Without Beeper Sidetone

40 Meter Antenna

Thumb Key or Hand Key

Speaker, Headphone or Amplified Audio System

1. Introductions:

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2. Soldering: Oxidation.

A. Keep the Soldering tip clean and clear of Oxidation. (Dirty Color)

B. Start by wiping tip on a damp sponge, so it is clean, bright & shiny.

2. Soldering: Oxidation.

2. Soldering:

A. Soldering Iron is used to transfer hot solder to the components and then to the PC-Board.

B. Use very light pressure while soldering.

1. Introductions:
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LAURA KF7ELG

Good soldering shines, with its shape like Mount Fujiyama, naturally sloping down outward. This profile is called a “fillet”.

3. Soldering Practice :

A. Install practice resistors and capacitors to the practice PC-Board.

B. Use wide radius turns & leave room for parts **leads** to move. No Binds

3. Soldering Practice :

A. Install some resistors vertically (Axial Mount).

B. (That is what those White Circles mean over on the PIXIE PC Board).

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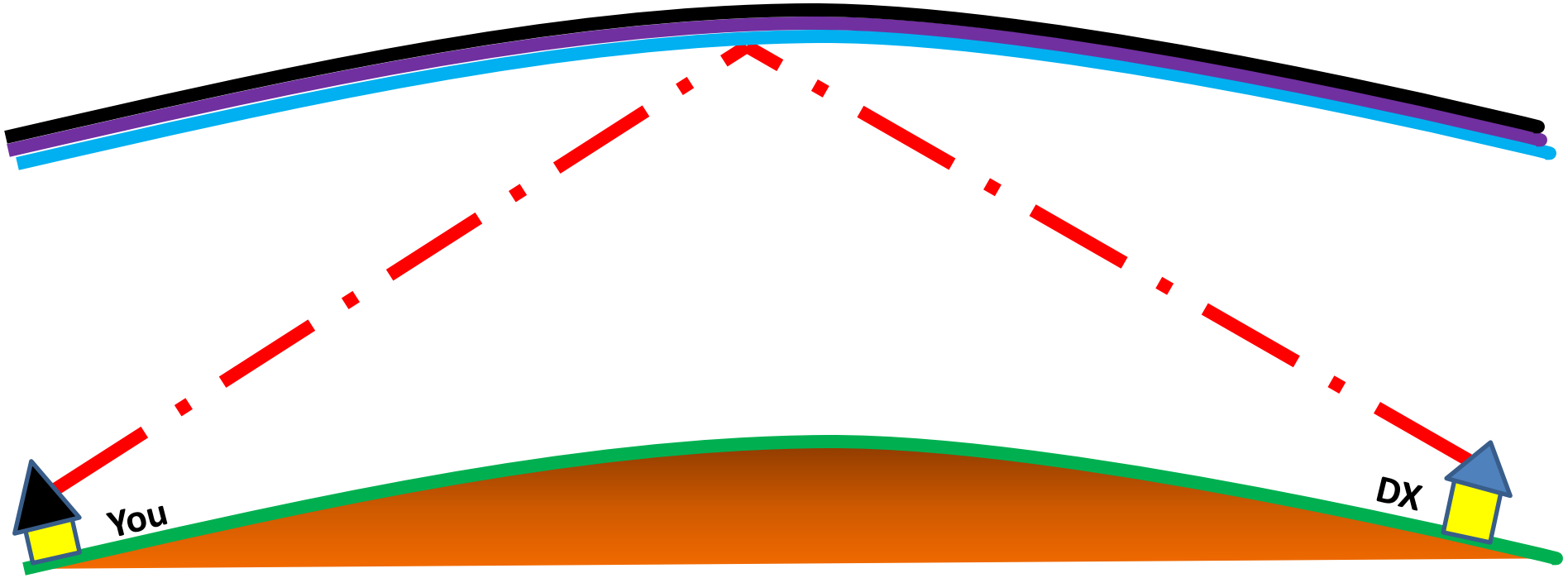
4. Ionosphere:



Your RF signal reflects off of the Ionosphere to far away HF "DX"

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5. Antenna Considerations:

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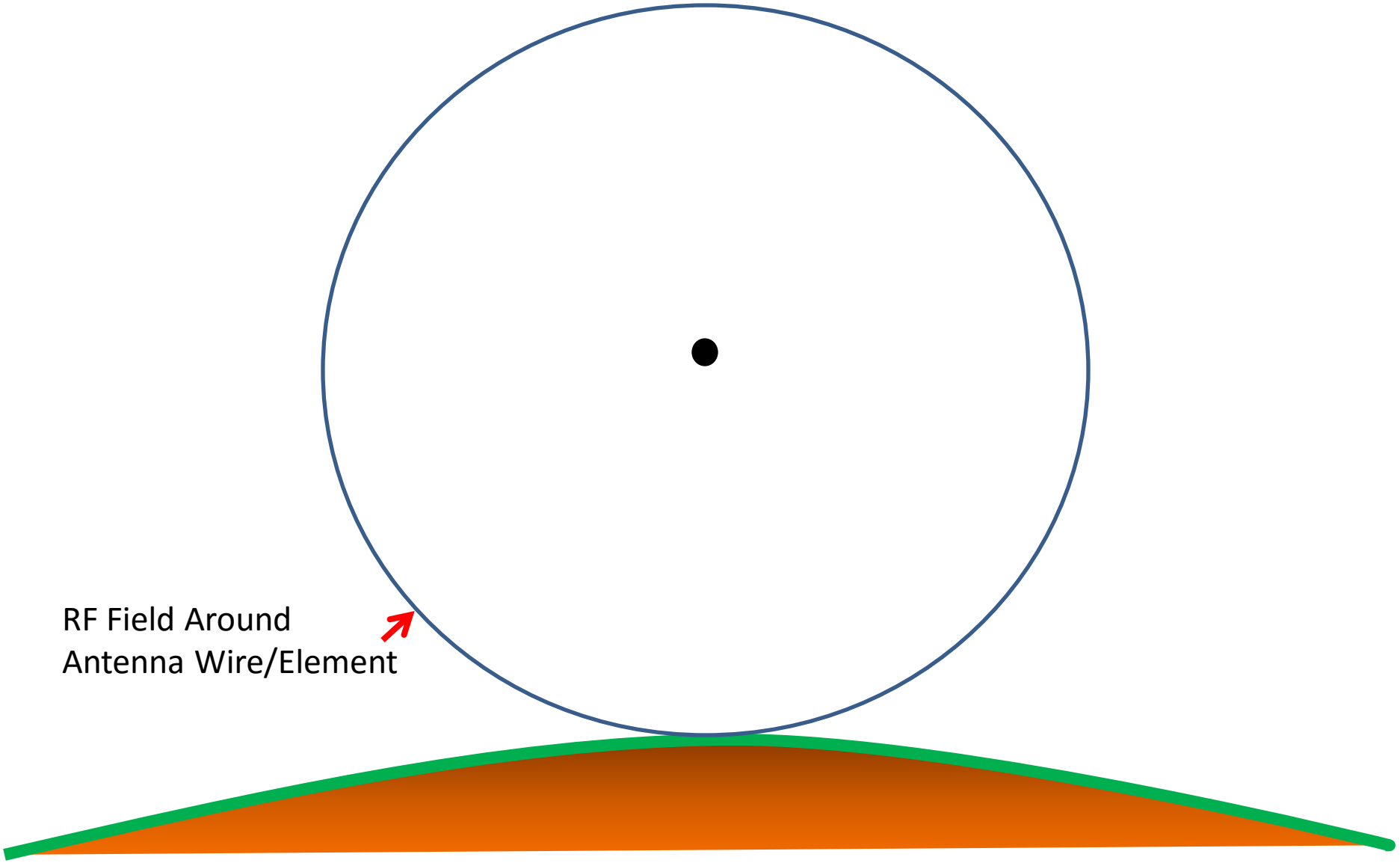
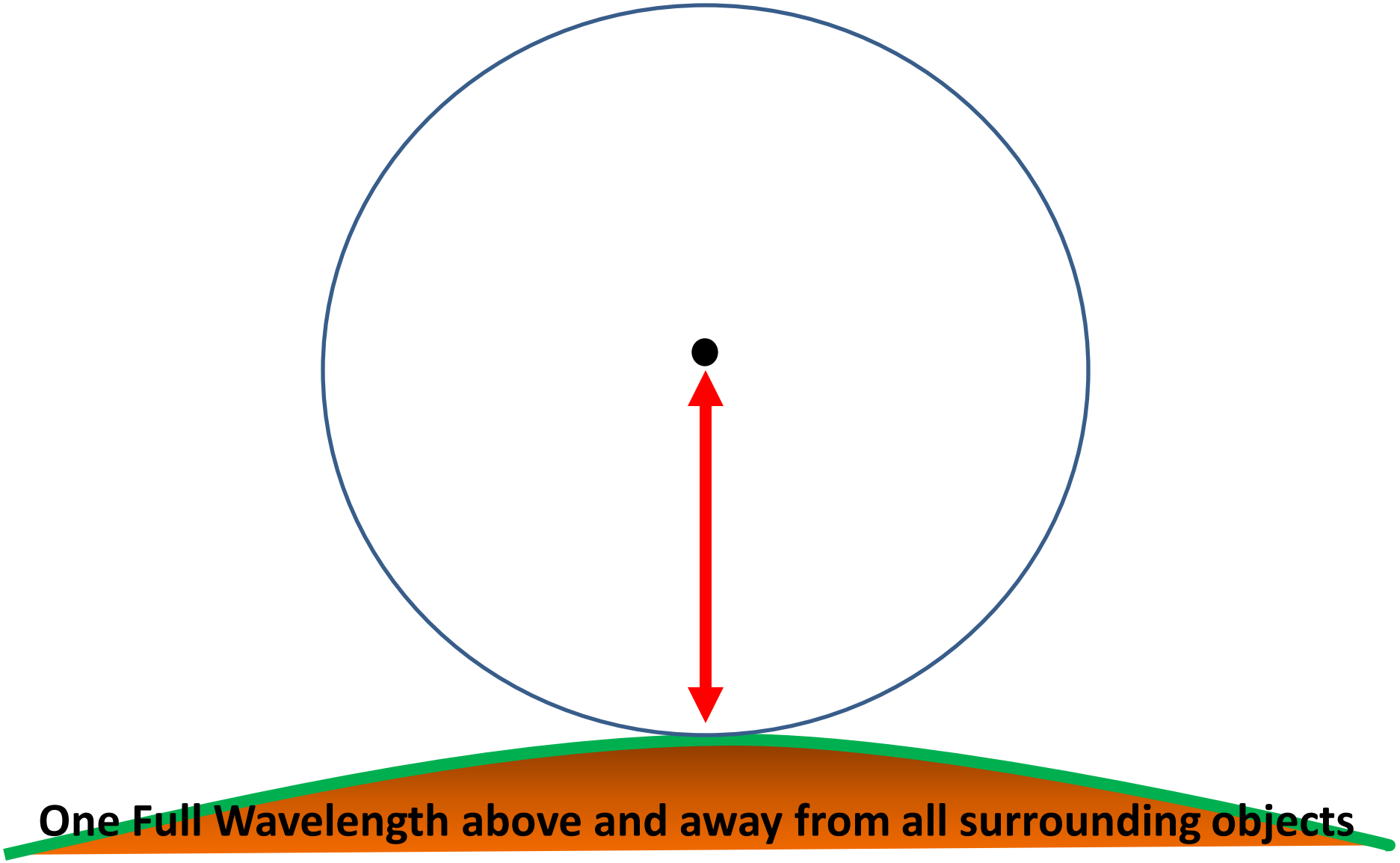
5. Antenna Considerations:

Antenna Wire/Element
End View

5. Antenna Considerations:

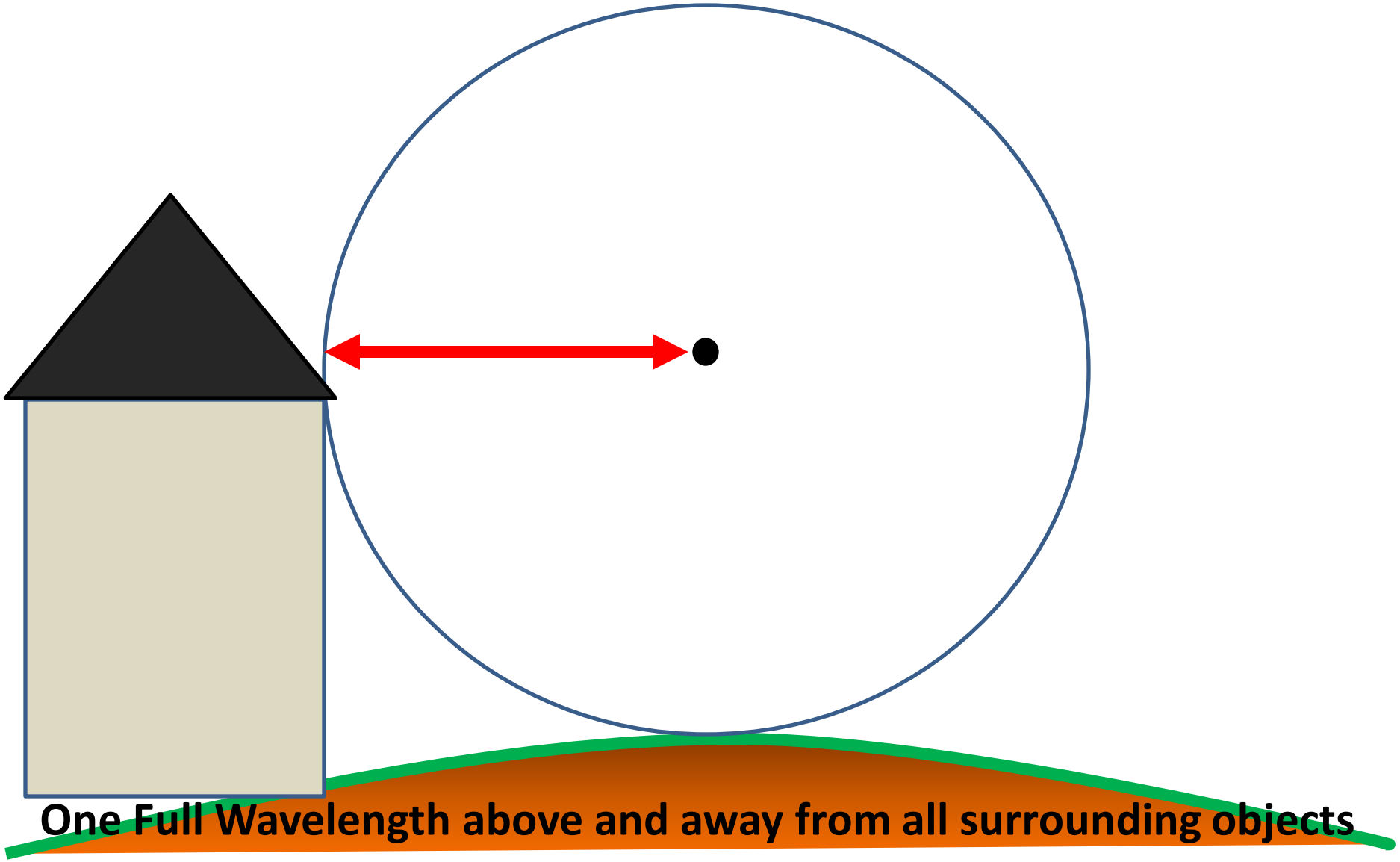


5. Antenna Considerations:



One Full Wavelength above and away from all surrounding objects

5. Antenna Considerations:



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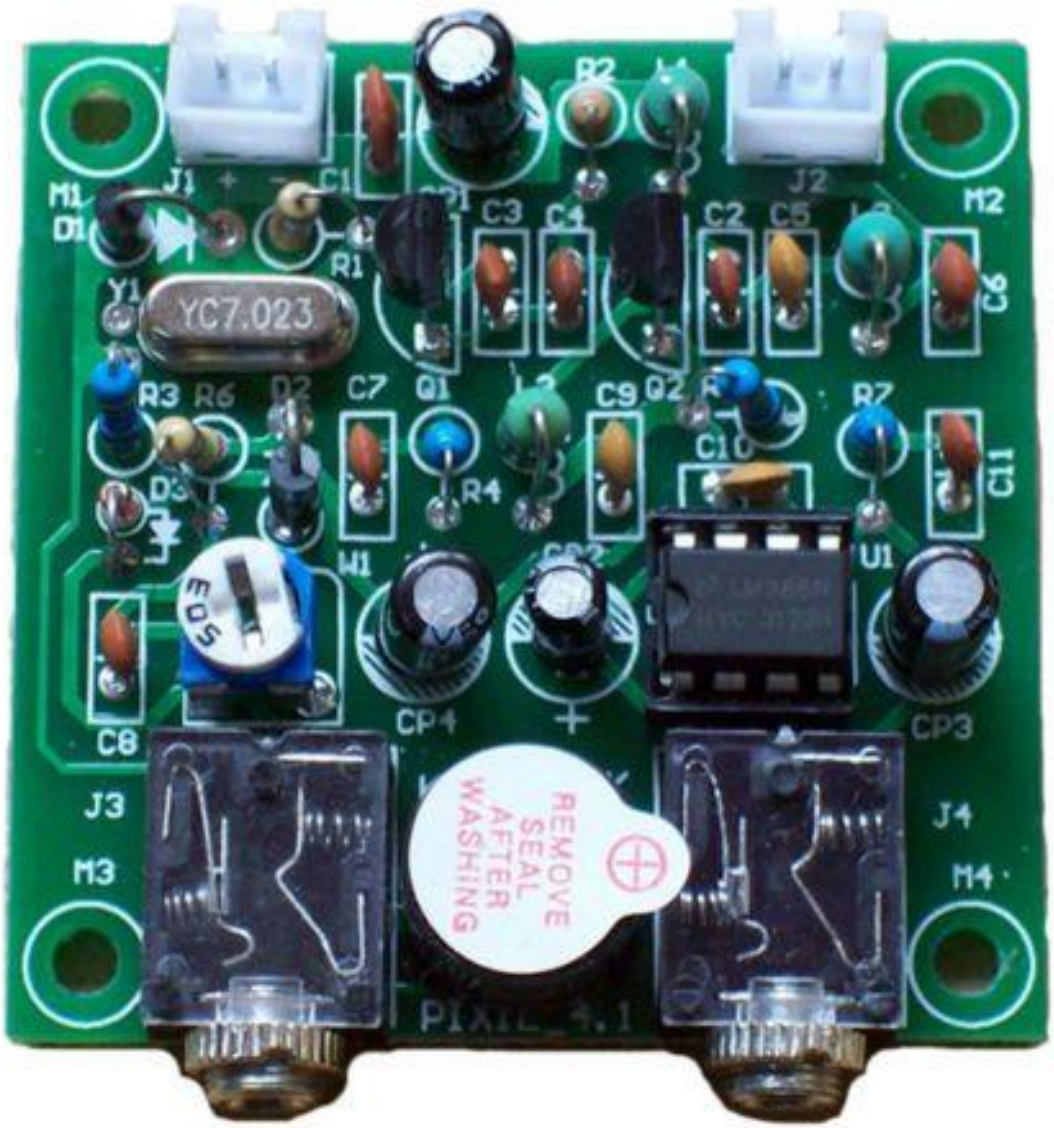


6. Build the Kit:

6. Build the Kit: Parts List

Package list: ***2016 SEA-PAC DIY Pixie (ver 4.1) QRP 40 Meter TxRx***

1/4W 固定电阻 Fixed resistor		电解电容 Electrolytic capacitor	
R1 YEL PUR RED SILV	4.7K	CP1	100uF /16V
R2ORG ORG ORG SIL	33K	CP2、CP3、CP4	10uF /16V
R3BRN BLK RED SILV	1K	晶体管 Silicon Semi-conductor Parts	
R4 YEL PUR BRN SILV	470欧 Ohm	D1、D2 Diode	1N4001 Black (white band)
R5 BRN BLK ORG SILV	10K	D3 Diode	1N4148 / 1N4001 Glass
R6 BRN BLK YEL SILV	100K	Q1 Transistor	9018
R7 BRN BLK BLK SILV	10欧	Q2 Transistor	8050
可调电阻 Adjustable resistance			
W1 Variable Resistor	47K（473）		
固定电感 Fixed inductance			
L1 RED RED BLK SILV	22uH（色环电感）	集成电路 The integrated circuit	
L2 BRN BLK GLD SILV	1uH（色环电感）	U1 Audio IC chip	LM386（DIP8）8 Pins
L3 BRN BLK BRN SILV	100uH（色环电感）	晶体	
电容 Ceramic disk capacitors (brown)		Y1 40 Meter Crystal	7.023MHz 7.0475MHz
C1	0.1uF（104）	其他元件	
C2、C4、C8、C11	100nF（103）	J1 POWER JACK	黑色电源插座 power plug
C3、C7	100pF（101）	J2 ANTENNA JACK	ANTENNA JACK
C5、C6	470pF（471）	J3 KEY JACK	3.5mm 立体声插座（KEY）
C9、C10	0.047uF（473）	J4 Headphones Jack	3.5mm 立体声插座（PHONE）
		PCB电路板×1 片	Pixie (ver 4.1) QRP PC-Board
In addition.Suite also has a 1w 51 ohms resistor, to act as dummy load test			

0 BLK / 1 BRN / 2 RED / 3 ORG / 4 YEL
5 GRN / 6 BLU / 7 PUR / 8 GRY / 9 WHT

6. Build the Kit:

6. Build the Kit:

1. Start by installing the Small Brown **C**apacitors First.

2. Install the White colored Power and Antenna **J**acks next. (note the Notch)

3. Install the Black 8 pin IC chip-**S**ocket with the notch matching the silkscreen guide.

4. Install Resistors Vertically and leave room for a nice round bend in the leads. (No sharp bends.) Resistor Locations are shown with a circle for the vertical component.

5. Install the **D**iodes with the arrow symbol pointing toward the White Band-Marking.

6. Build the Kit:

6. Install the Electrolytic **C**apacitors with the minus sign towards the white PCB markings.

7. Install the **T**ransistors (observe the flat side) for orientation.

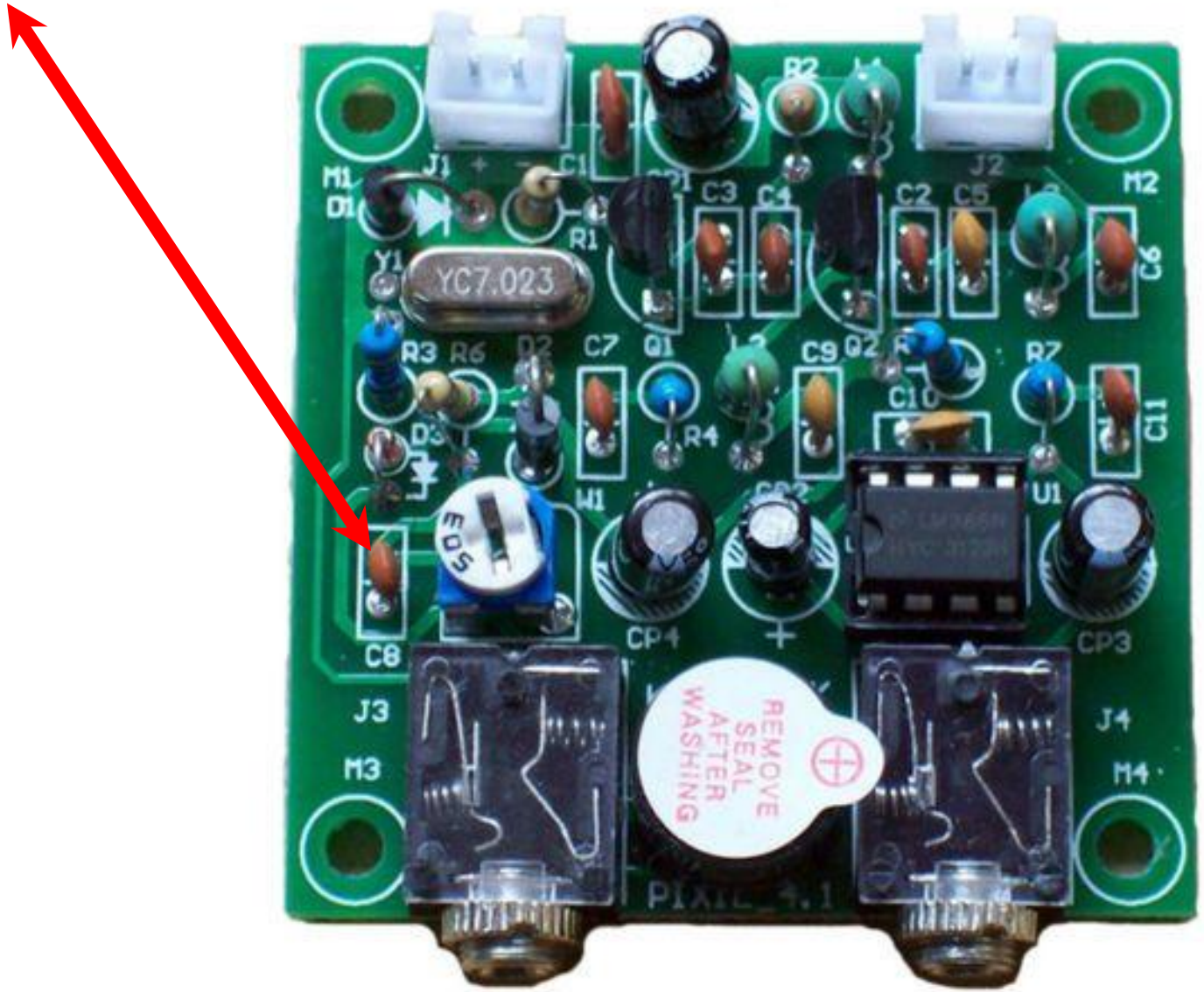
8. Install the 7.0475MHz **C**rystal, Leaving room 1/8” gap between the PC Board.

9. Hookup the 9 volt battery **l**eads to the power plug. (delay battery install until End)

10. Solder 51 Ohm **R**esistor to the red and Black leads of the antenna plug.

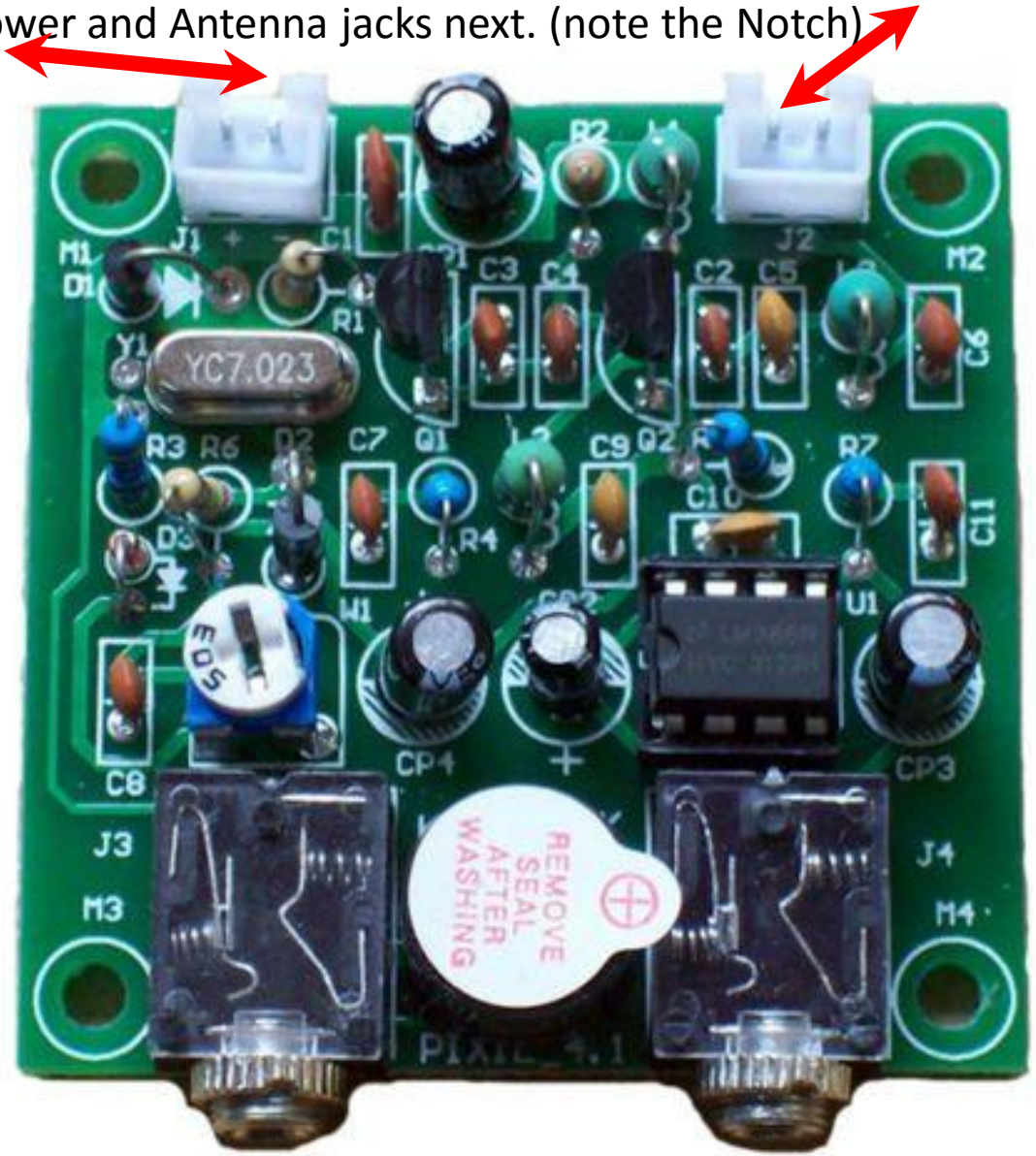
6. Build the Kit:

Start by installing the Small Brown Capacitors First. Each has a tiny 3 digit number.



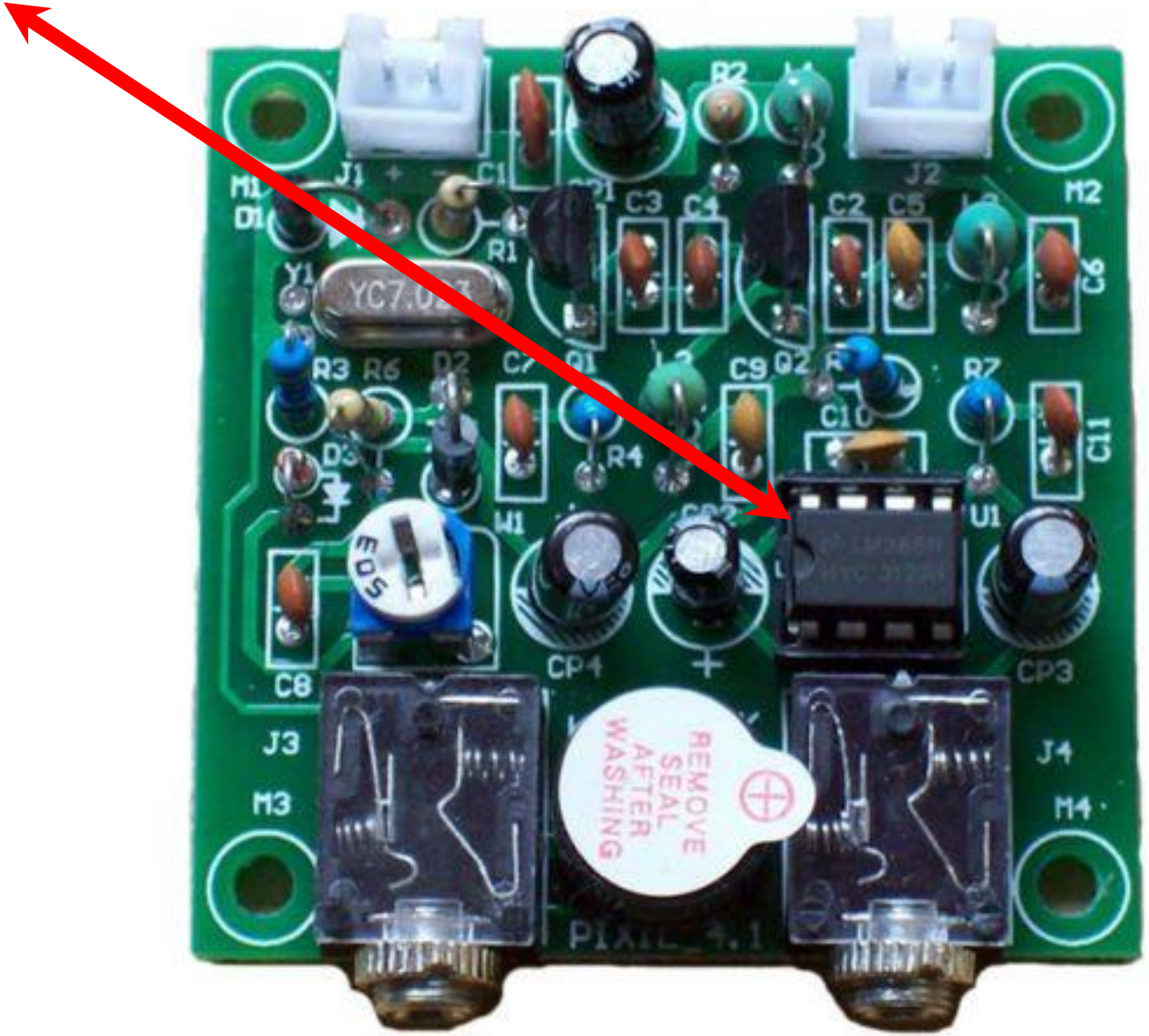
6. Build the Kit:

Install the White colored Power and Antenna jacks next. (note the Notch)



6. Build the Kit:

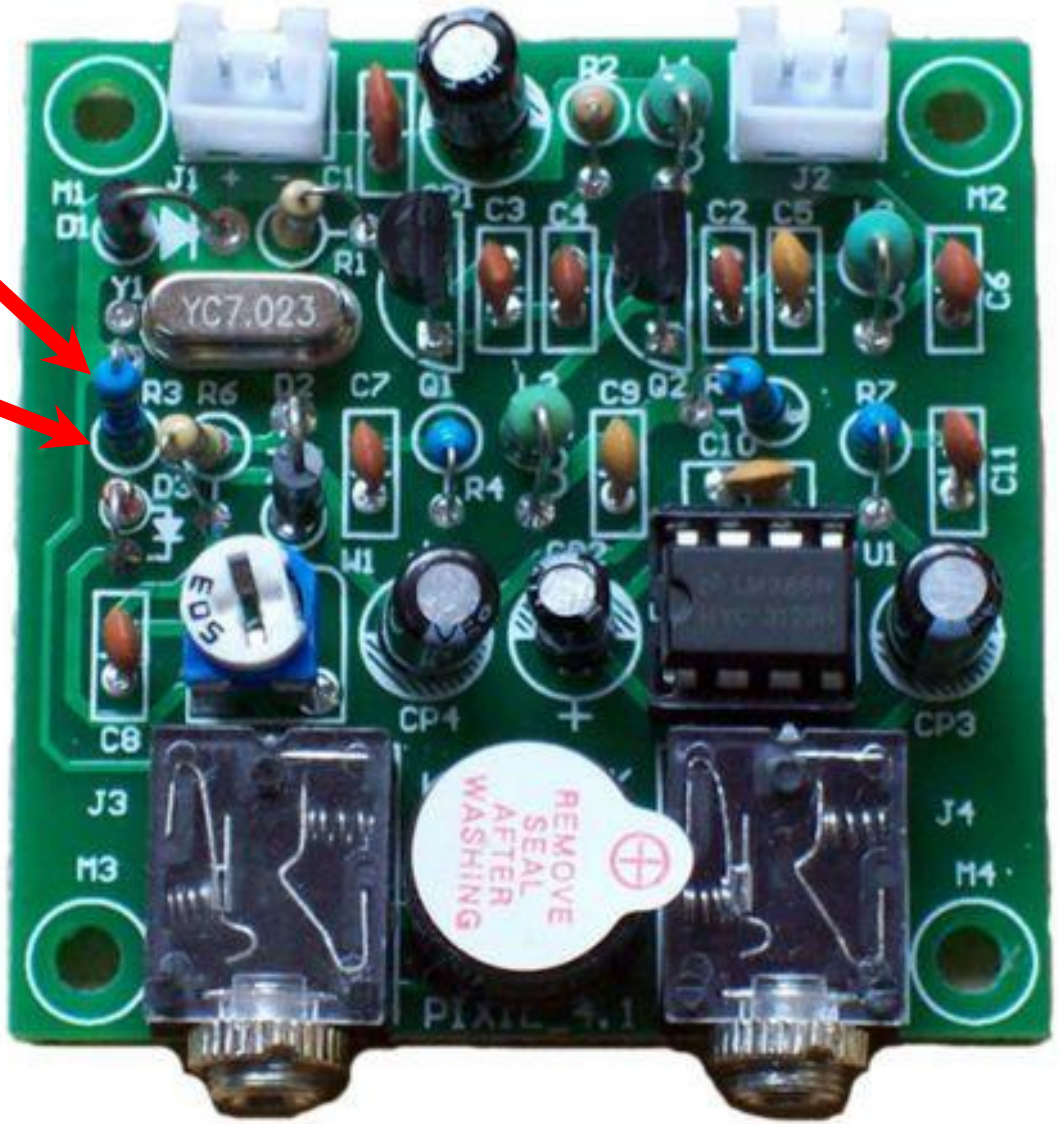
Install the Black 8 pin IC chip-**socket** with the proper orientation of the Notch.



6. Build the Kit:

Install Resistors and leave room for a nice round bend in the leads. (No sharp bends.)

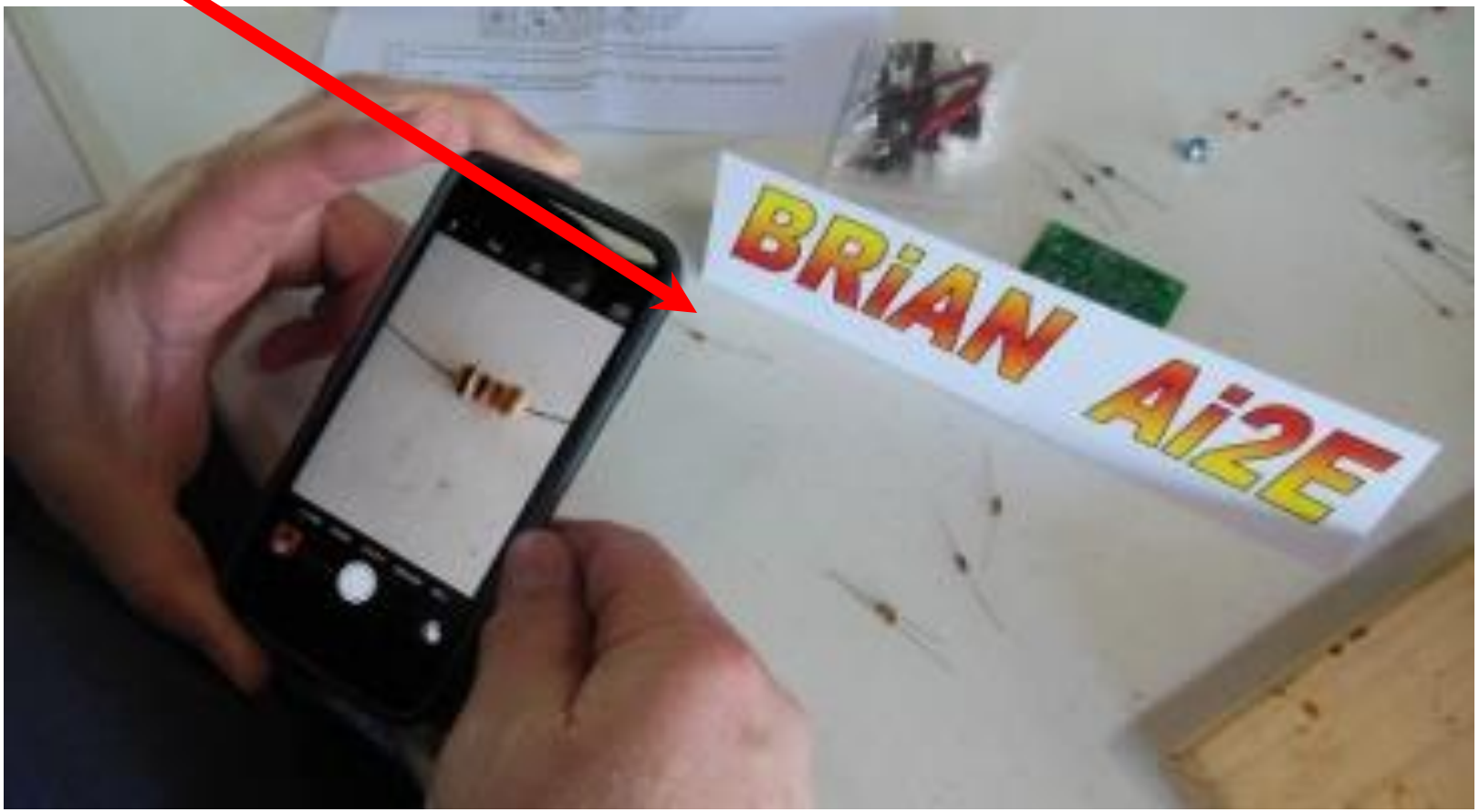
Resistor Locations are shown with a circle for the vertical component.



6. Build the Kit:

Install Resistors and leave room for a nice round bend in the leads. (No sharp bends.)

Cell Phone application to enlarge viewed parts. (also helps to see color bands)



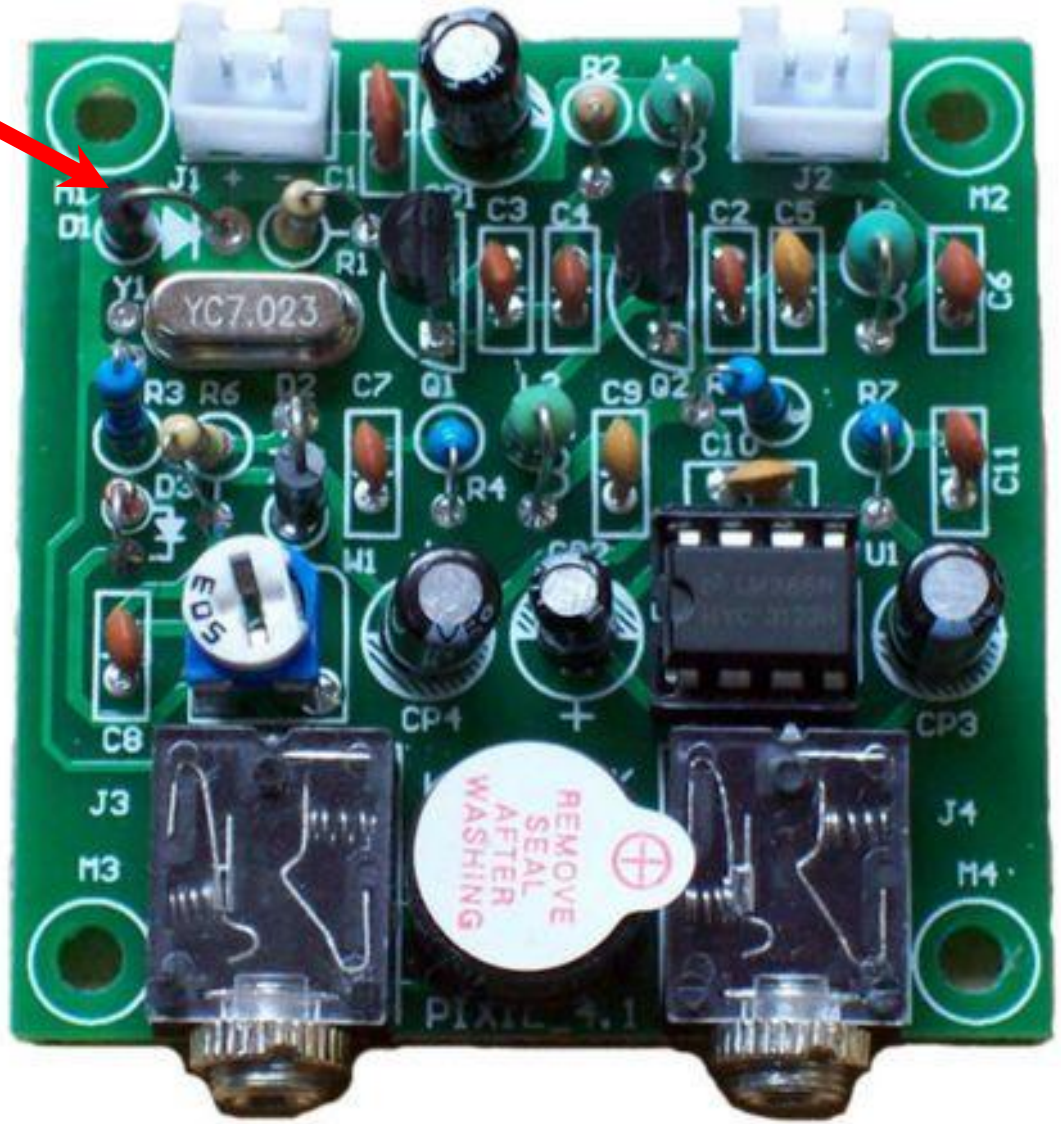
6. Build the Kit:

Install Resistors and leave room for a nice round bend in the leads. (No sharp bends).

Use Cell Phone Application to help with color coded values of Resistors. (33K ohms)

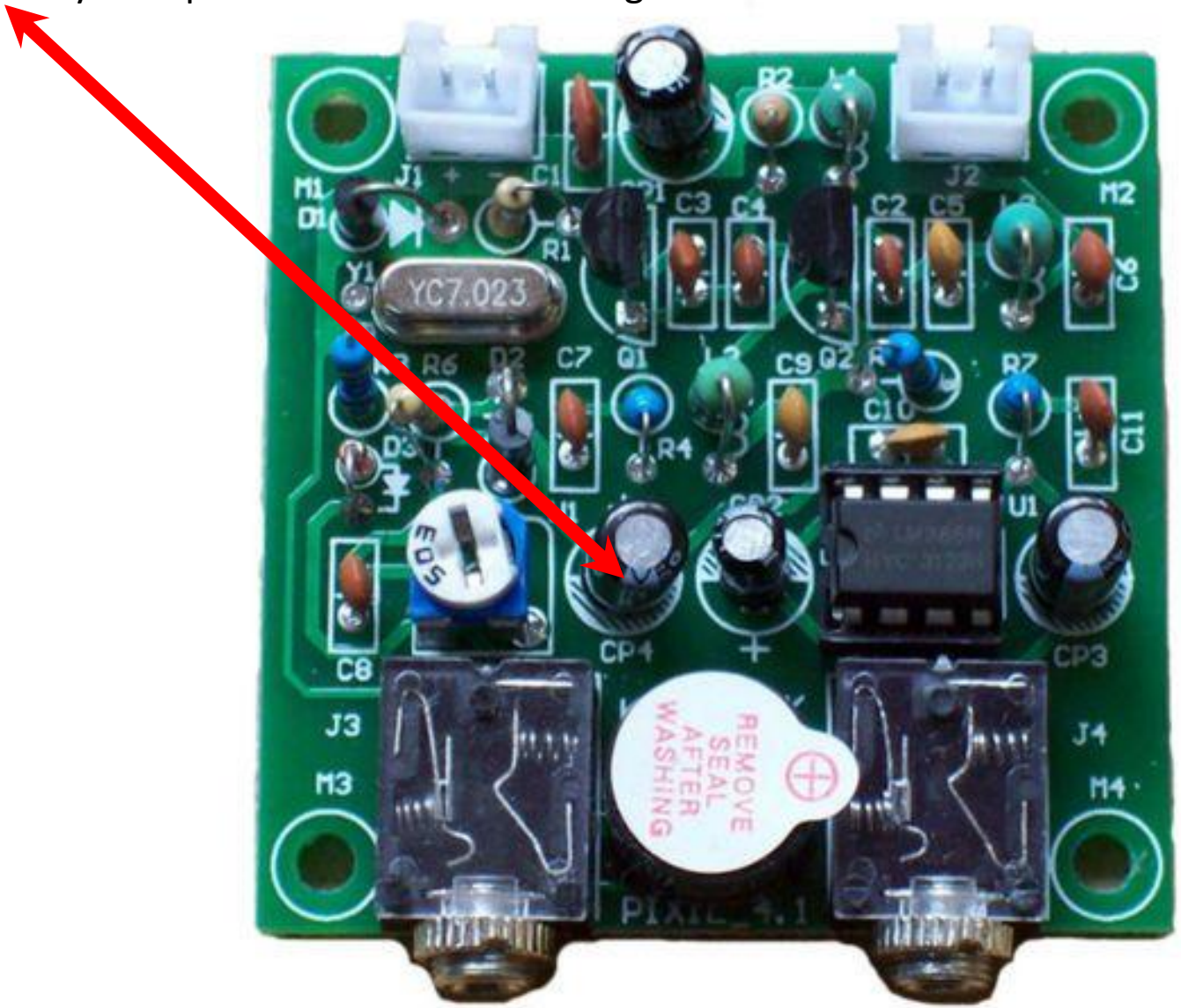
6. Build the Kit:

Install the Diodes with the arrow symbol pointing toward the White Band Marking on Diode.



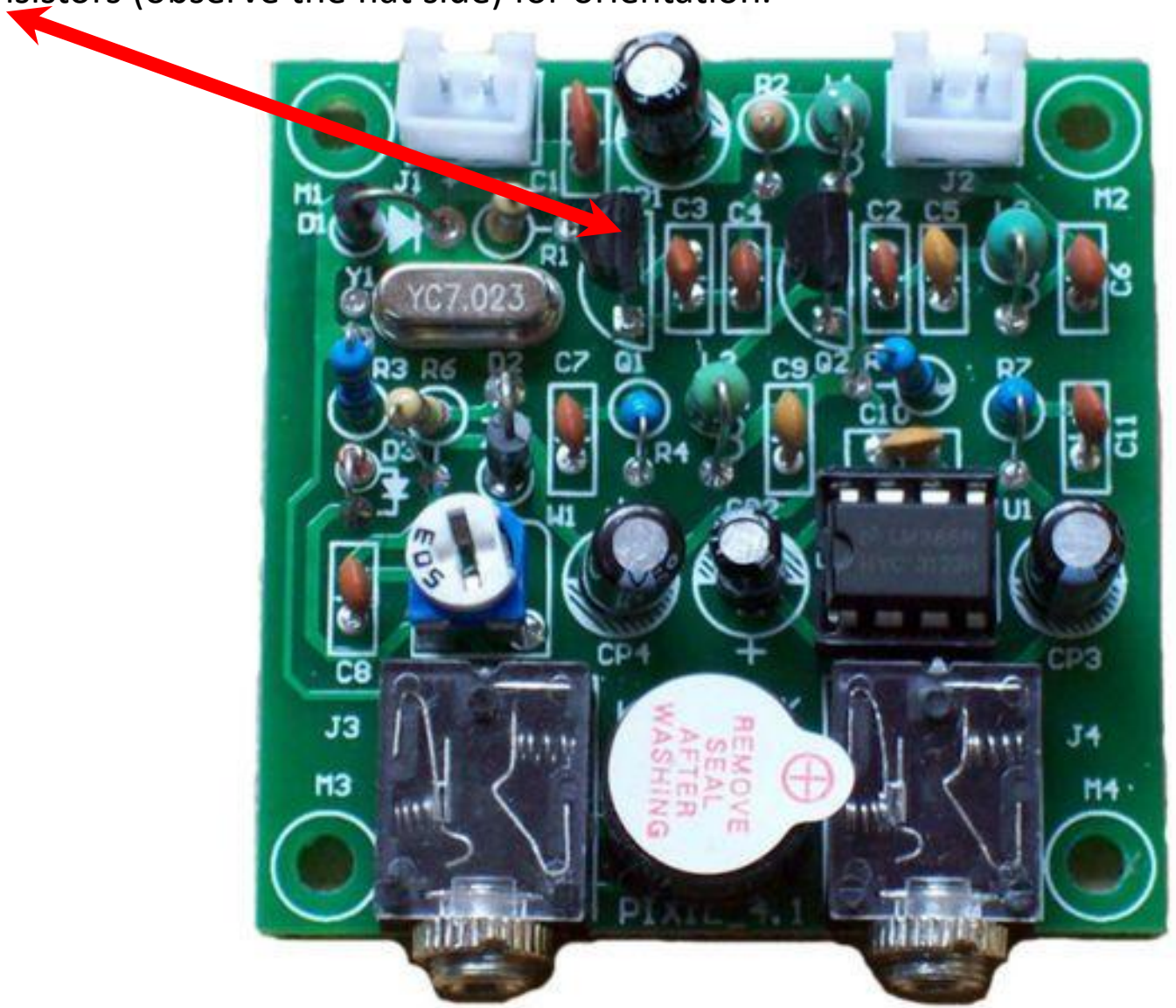
6. Build the Kit:

Install the Electrolytic Capacitors with the minus sign towards the White PCB markings.



6. Build the Kit:

Install the transistors (observe the flat side) for orientation.

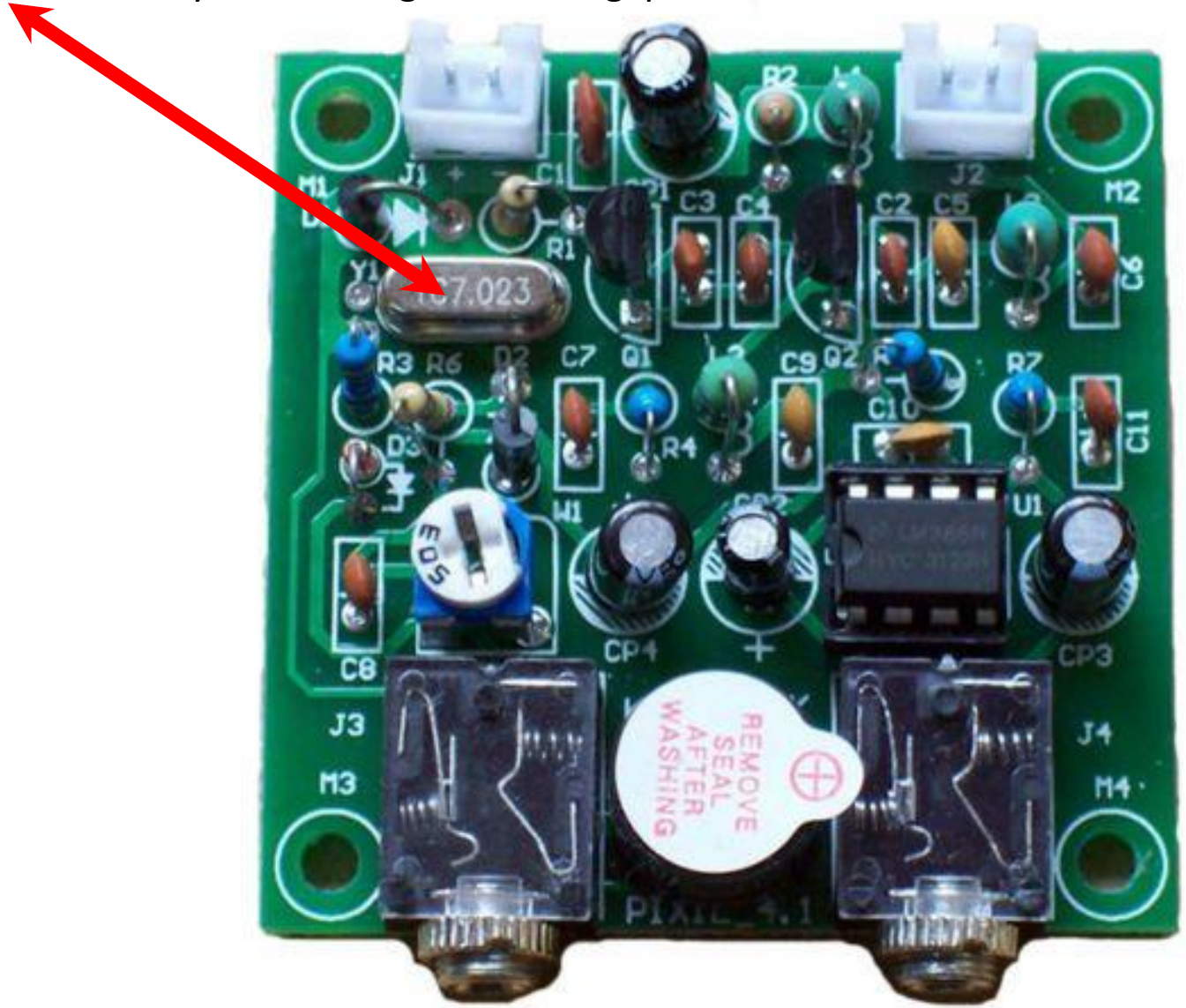


6. Build the Kit:

Install the transistors (observe the flat side) for orientation.

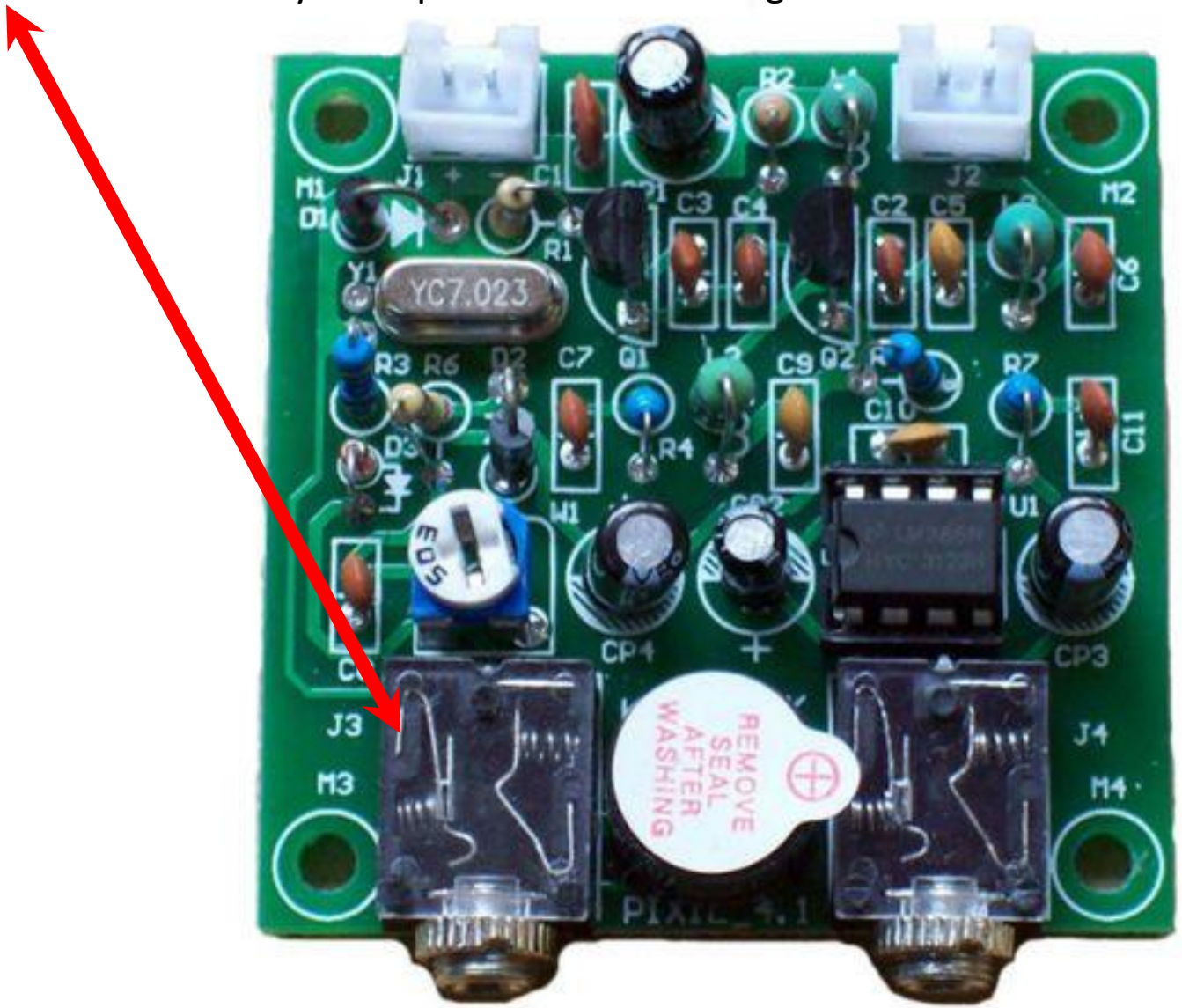
6. Build the Kit:

Install the 7.0475MHz Crystal, Leaving room 1/8”gap between the PC Board.



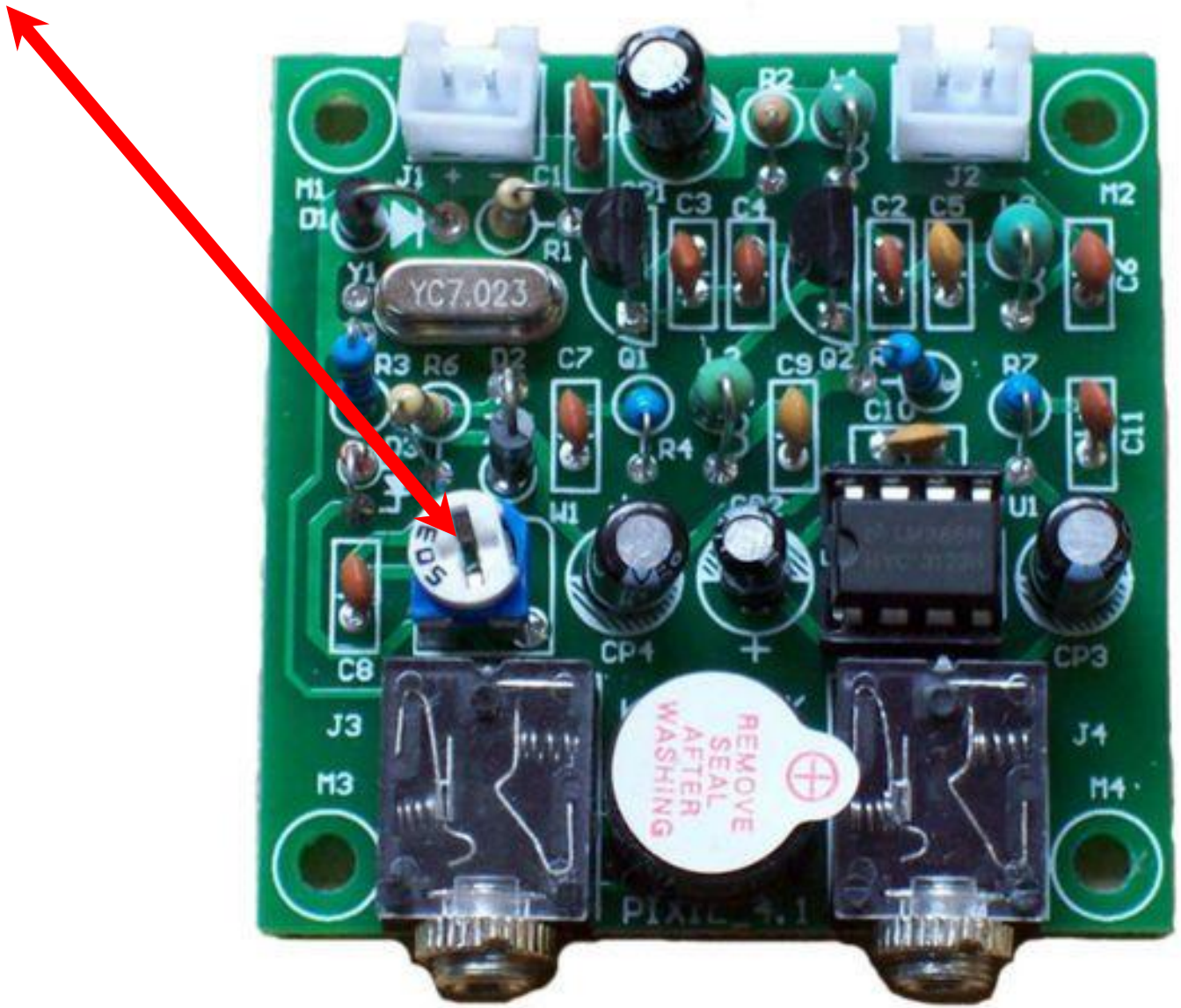
6. Build the Kit:

Install the Jacks J3 and J4 – they take quite a bit of heat to get the solder to flow…



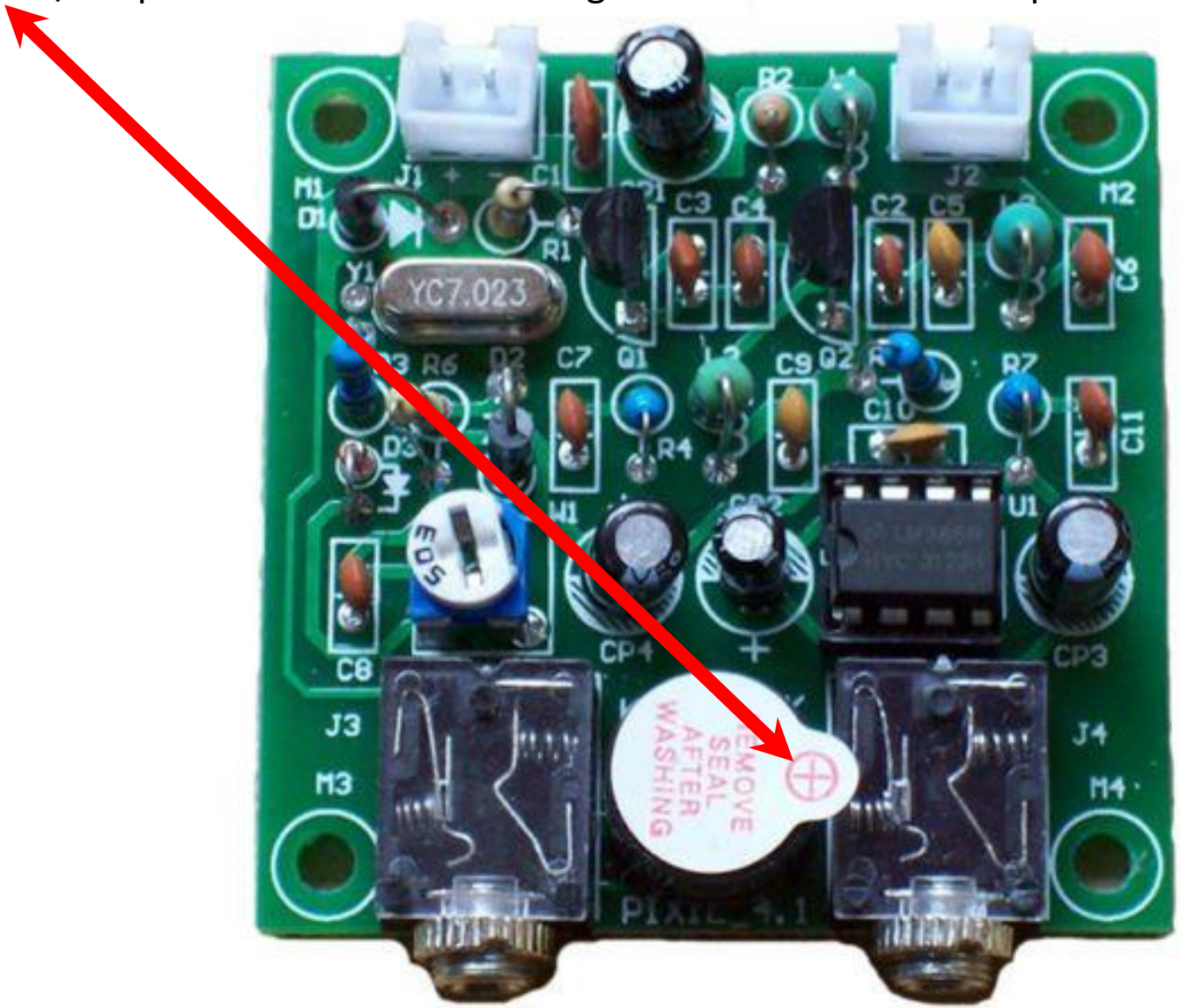
6. Build the Kit:

Install the Variable Resistor W1



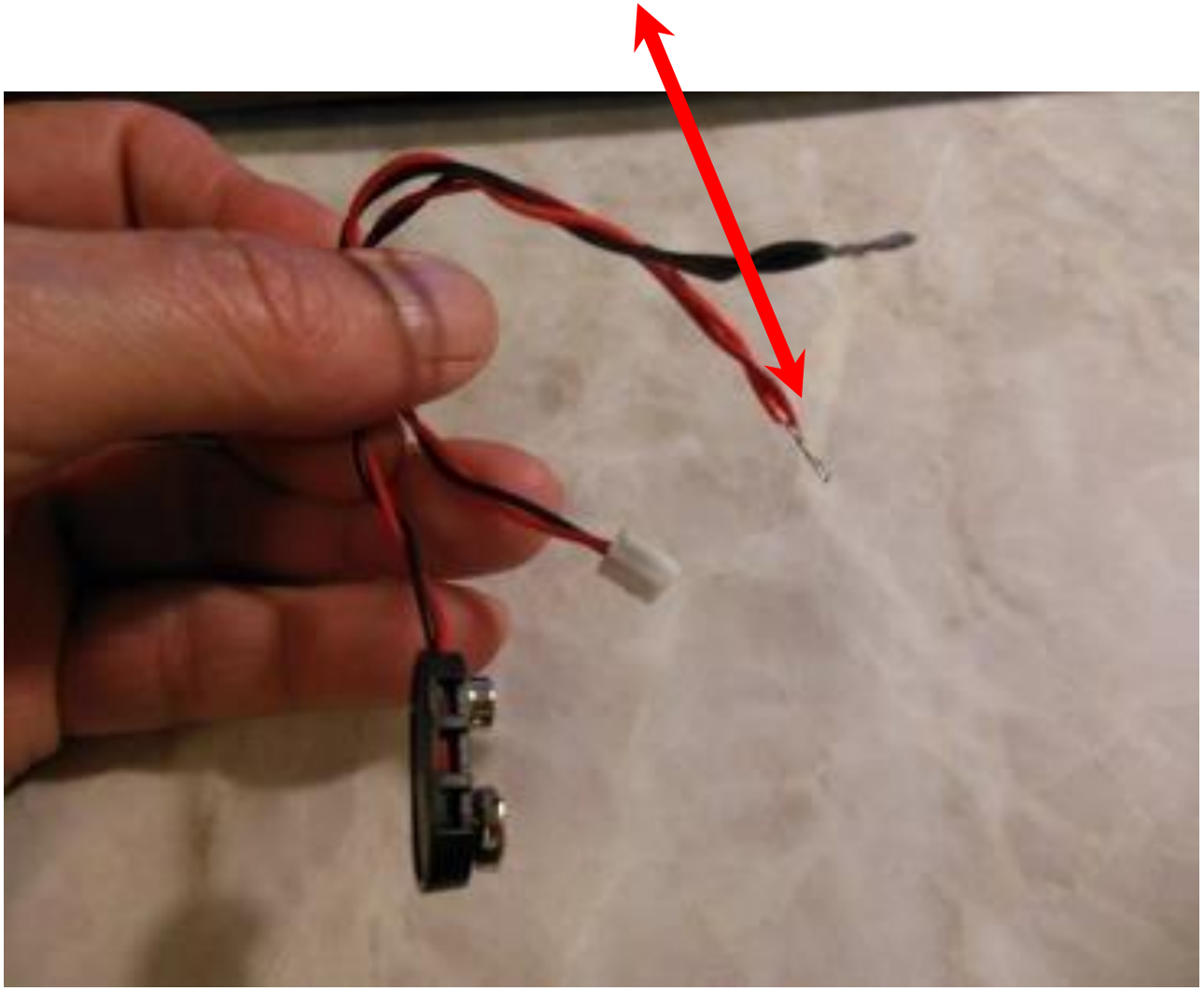
6. Build the Kit:

Install the Buzzer/Beeper and note the + markings and orientation on the part & PCB.



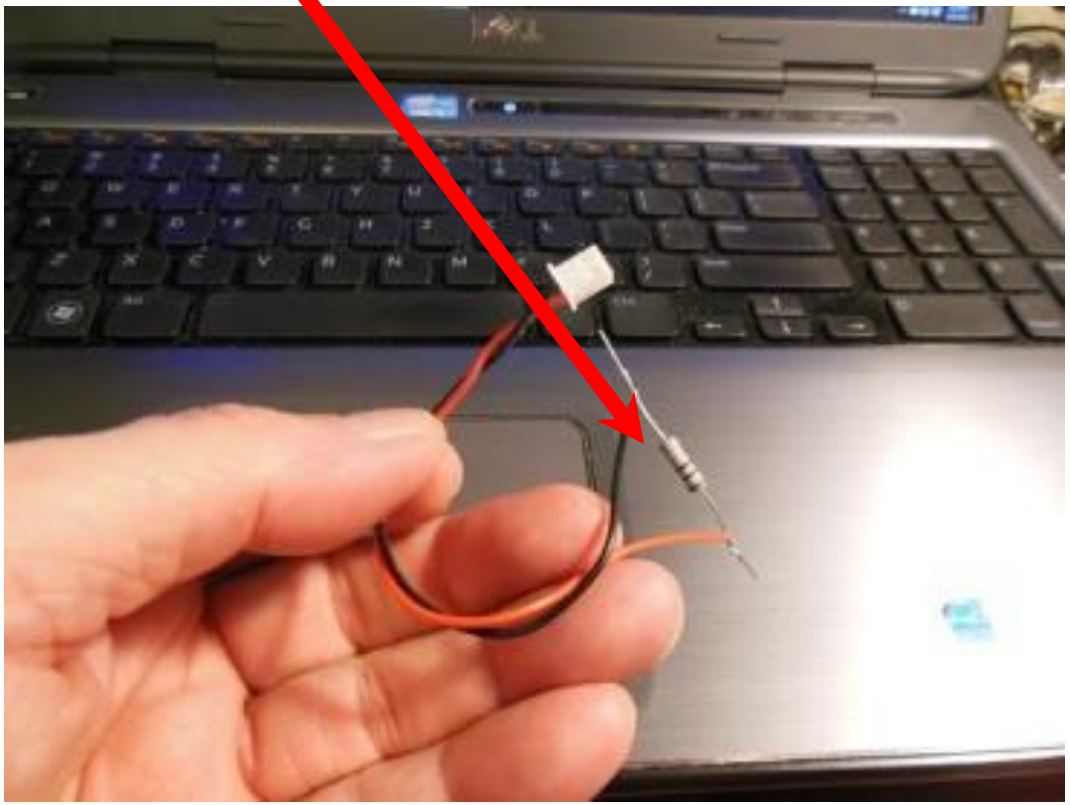
6. Build the Kit:

Install the Battery Clip leads to the power plug Red to Red and Black to Black Wires.



6. Build the Kit:

Install the 51 OHM Resistor to the Red and Black leads of the Antenna Plug.
(green, brown, black = 51 ohms)



6. Build the Kit:

Time to Double check your work and Solder Connections.


JOHN KE7OXR


SEA
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KL7BB's "Original Digital" ™ Writing Test For Morse Code.

Take the writing test. Write as many lines A-Z 0-9 as you can in one minute.

ABCDEFGHIJKLMNOPQRSTUVWXYZ 0123456789

1

2

3

4

5

1 full line				*2 full lines*		*3 full lines*	*4 full lines*
25÷5=5	36÷5=7.2	50÷5=10	65÷5=13	72÷5=14.4	100÷5=20	108÷5=21.6	144÷5=28.8

Total Letters + Numbers = _____ ÷ 5 = _____ WPM