EK-1A 3 Band CW QRP Transceiver kit 2014

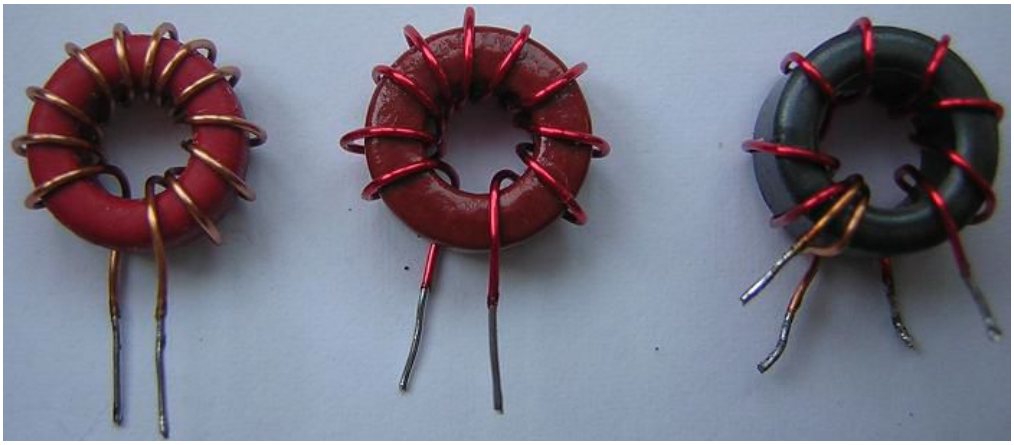
Assemble manual

EK-1A 2014 3 Band (40m, 30m,20m) CW QRP transceiver kit is easy to build, it has SMD finished by the factory. There are 2pcs of PCB, the main board and display board. To guarantee the building success, the display board and main board have been assembled and tested including the MCU, LCD and DDS.

EK-1A 2014 part list

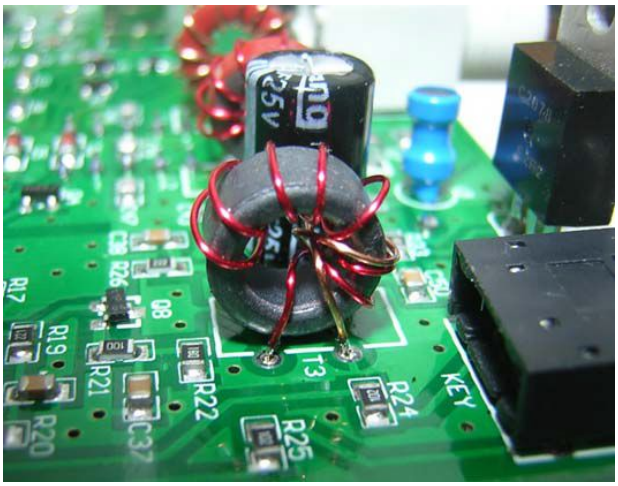
Name	Description	QTY	Mark
Encoder		1	
Volume adjustment	1K with on/off	1	AF/SW
Volume adjustment		1	
Q9 mounts		1	ANT
Battery socket		1	BAT
Power jack		1	+V
Headphone jack		2	PHONE、KEY
I-inductance	10uH	1	L8
Electrolytic capacitors	470uF	2	C15, C39
Electrolytic capacitors	100uF	2	C27, C28
IF Transformer		2	T1 T2
Toroid	Black core	1	T3
Magnetic inductance	Red core	2	L1、L2
enamel insulated wire	red、yellow 0.5meter each		
Transistor	2078	1	Q9
LED indicator	5mm red	1	LED
relay	EA2-12	2	K1
resistor	680ohm	1	30
3mm*8 screw black	Secure 2078	1	
3mm nut	Secure 2078	1	
3mm*5 screw black	Secure enclosure	10	Countersunk head
insulation pad	Secure 2078	1	
Insulating particles	Secure 2078	1	
Display board	Assembled tested	1	
Main board	SMD finished	1	
enclosure		1	

3 cores need to made by builder:



Magnetic inductance L1: please use yellow enamel insulated wire, about 20cm, make 12 turns.
Magnetic inductance L2: please use red enamel insulated wire, about 20cm, make 10 turns. As above.

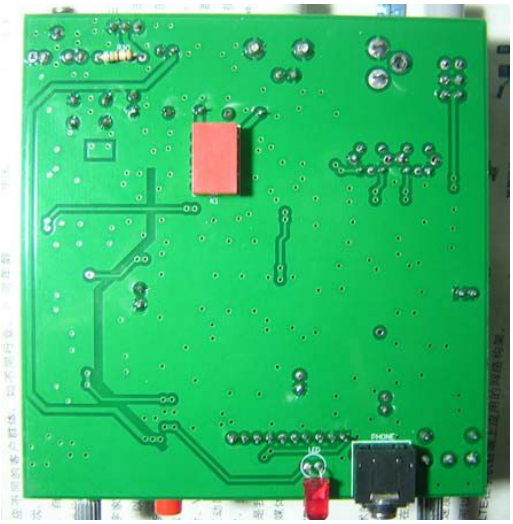
T1 transformer is 8:2, please use red enamel insulated wire, about 15cm, make 8 turns as primary. Use yellow enamel insulated wire, about 6cm, make 2 turns as secondary. Connect primary to the 2 pads connected to R26 and Q8, secondary to the pad connected to R23 and ground. As below.



Please install all other parts except Q9 and Q10.

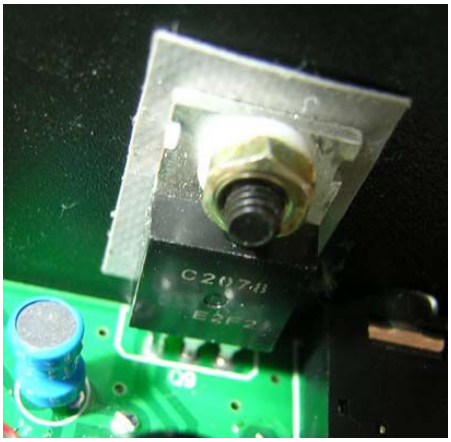
Notice：

1. Please notice the direction of Relay K1, must follow the direction on PCB， also the direction of Electrolytic capacitors C15,C27,C28,C39, never install them in wrong direction.



2. K1, LED, R30, PHONE are all installed at back side of PCB, please check below pic.

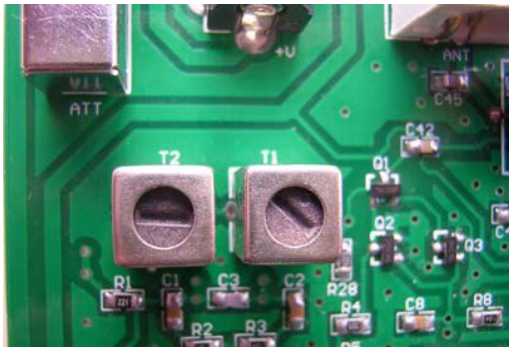
3. After installing all other parts, please install the the back cover and secure the Q9 , solder them to the PCB and cut the extra leads. Then secure the Q9, but use insulation pad and insulating washer then secure Q10, as below.



Testing:

Double check all the soldering point then connect power and turn it on. If the current is around 80-90mA, it's OK to proceed. Current higher or lower than 90mA, there are issues that must be corrected before processing.

Plug your headphone to phone jack, put signal generator to ANT, put generator with a 5uV signal, adjust frequency to 7.100Mhz or close to this frequency, put EK-1A on same frequency, now adjust VC to receive a 700Hz beat frequency, then adjust T1,T2 to max the receiver sensitivity.



Please plug your key to Key/Paddle jack, test key, if it's OK then testing finished. Now we can finish the assemble.

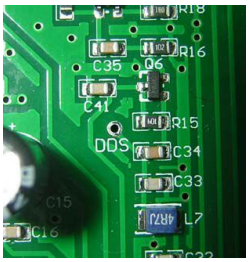
Secure the back cover with screws, put studs on the display board and then secure the front cover. Install two knobs, assemble finished.

DDS Calibration

DDS has been calibrated in factory, if a calibration is needed, please follow below:

1. Power off, press and push V/M/SAV and RIT/SET then power on, showing below on screen then release these two buttons.

2. Waiting for 2 second, display change to below. Put your frequency counter to DDS testing point, the pad close to R27.

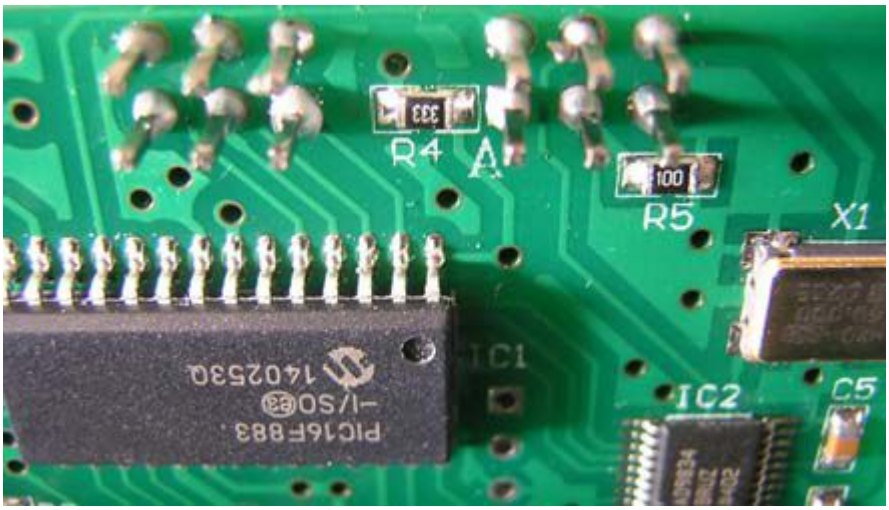


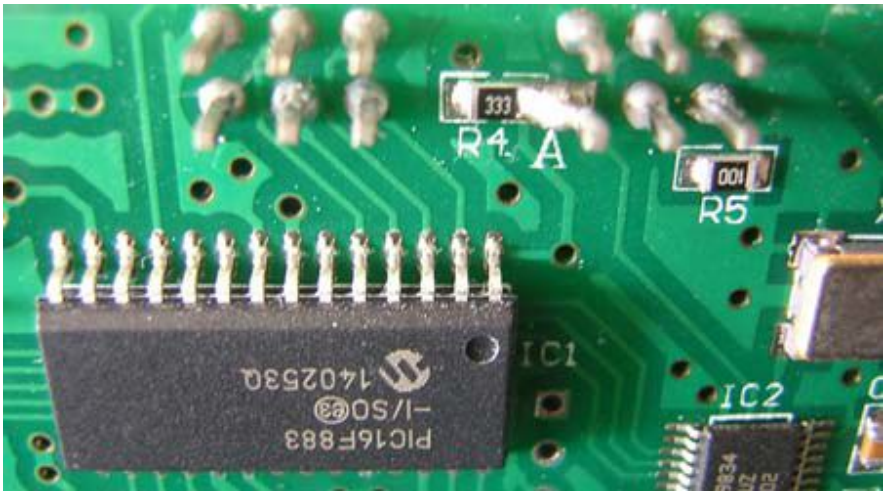
Now the frequency counter reading should be same as screen display (10000.00KHz), please adjust the tune knob if adjustment needed, pressing V/M/SAV for 2 second, the screen display below release, push V/M/SAV again to end.

The 10 memory position will also be reset back to factory when you do the DDS calibration.

30M band MOD

30m band only has RX at factory default, if you need 30m TX, connect “A” (right side of R4) on front display board, then you have 40m 30m 20m RX and TX.





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2014-12-06