

Frog Sounds HAM Radio QRP Kit Telegraph CW Transceiver

Receiver Radio Station V3

Description:

This is a very small volume of a simple 40 meter band micro-power amplitude telegraph transceiver, 9V square battery or external 9-12V DC power supply. Spread good time, and the nearby provinces hundreds of kilometers amateur radio communications. This machine was first introduced by domestic radio enthusiasts, but also it played a nice name "frogs". The frogs calling Kit V3 public version based combined with the actual usage Fixed several key issues, after several debugging before the formation of the current version.

Key Indicators

Power supply: 9V-12V (Recommended 12V linear regulated power supply)

Antenna: 50 ohm, unbalanced

Transmission power: 2W (9V Power), 3W (12V power)

Frequency: transmitter local oscillator frequency: 7023 KHz; receive local oscillator frequency: about 7023-7026 KHz

Operating mode: CW

Use

This machine is simple direct conversion transceiver interference, selectivity can be compared and the super heterodyne receiver, it is necessary to use not worse than the length of a half-wave dipole antenna, or communication is relatively poor. The selection disturbance is relatively small; spread the good opportunity for communication experiment, it is best to make an appointment with your friend's communication. Communication distance of about 150-300 km more secure, to greater distance depends on the propagation environment and the operator's operating skills. If the broadcast interference is relatively large, use 5K GAIN potentiometer signal attenuation, emergent signal from the radio interference. Attenuation potentiometer is critical, carefully adjusted; you will receive an unexpected effect. In the dissemination of good times with of this machine FT80C goods shortwave radio with a signal on a distant contrast reception, this local effect is no difference between basic commodity machine, which makes unexpected.

Recommendations for improvement

1N4001 replaced by appropriate varactor tube (recommended the 0P-100P), can increase the receive frequency range. Q1 9018 power between 0.8W ~ 1.2W 8050 power between 1.5W to 2W (select 8050 will make D882 In a critical state, need to be careful).

The list of components

1/4W fixed resistor			Electrolytic capatitors		
R1、 R2	10ohm	▲	CP1、 CP7	100uF/16V	●
R3、 R19	39ohm	▲	CP2、 CP5、 CP6、 CP8、 CP9	10uF/16V	●
R4	200 ohm	▲	CP3、 CP4	47uF/16V	●
R6、 R7、 R8、 R9、 R10	1K	▲	CP10	1uF/16V	●
R5、 R11、 R12、 R13	10K	▲	Transistor		
R14	47K	▲	D1、 D2、 D5、 D7	1N4148	●
R15	100K	▲	D3、 D6	1N4001	●
R16、 R17	150K	▲	Q1	9018	●
R18	220K	▲	Q2	2N7000	●
Adjustable resistance			Q5	8050	●
W2	47K(473)	■	Q3	D882	●
W1	4K7	★	Q4	8550	●
Fixed inductors			LED	LED(2 colors)	■
L1	100mH(8*10 Shape)	●	IC		
L3	1mH(Color ring inductance)	●	U1	78L06(T092)	●
L4	22uH (Magnetic)	●	U2	NE602(DIP8)	■
L5	1uH (Magnetic)	●	U3	LM386(DIP8)	■
Ceramic capacitors			U4	74HC00(DIP14)	■
C14、 C15、 C16、 C17、 C18、 C19	0.1uF(104)	▲	Crystal		
C8、 C9、 C10、 C11、 C12、 C13	0.01uF(103)	▲	Y1、 Y2	7.023MHz	■
C1	22pF	▲	other		
C2、 C3、 C4	82pF	▲	J2	Antenna pedestal	★
C20	0.47uF(474)	▲	J4	Black power outlet	★
C5、 C6	470pF(471)	▲	J3	3.5mm Stereo Jack(KEY)	★
C7	4700pF(472)	▲	J1	3.5mm Stereo Jack(PHONE)	★
PCB * 1		★	heat sink for D882		★
Diametor of 0.51mm enameled wire					★
Inaddition,with the kit as well as a 51ohm refers 1W resistor used to act as a dummy load for testing.					●
Note:LM386 due to different manufacturesr,there will be such the GM386,KA386,JRC386 are LM386 compatible models!					

PCB ASSEMBLY



