

MODIFICATIONS TO DICK SMITH EXPLORER 430 MHz TRANSCEIVER

ALLEN CREWTHOR VK3SM
28 REYNOLDS PDE PASCOE VALE STH 3044

If, after having assembled the Explorer kit, the transmitter section won't function, here are a few ideas that I have used to put some units on the air.

1. Make sure that all the capacitors, transistors and coils are hard down on the board. A very short length of lead is a lot of inductive reactance at these frequencies.
2. Capacitors C103, 163, 164 & 166 must be small NPO type (ie have a black dot on the top). They were not supplied in some kits. (NPOs are also called for in the VCO circuit.)
3. All coils must be correctly wound as per the instruction book and the height of the hairpin coils must be as shown, a suitable drill bit under the loop when soldering will check for you.
4. The voltage at the collector of Q1 should be $+10 \pm 0.1V$. It can be adjusted by changing R4 and R5. A low voltage here can be a problem in getting the crystal oscillator to work.
5. The 8.5333 MHz crystal is generally high in frequency. Add up to 10 pF to C144 to correct it.
6. When adjusting the transmitter section, do NOT hold the PTT button for MORE THAN A FEW SECONDS at a

time as Q25 may fail.

7. Up to TP4 no trouble should be encountered and the correct levels should be obtained but often no reading can be seen at TP5. If this is the case, try items 8, 9 and 10.
8. REMOVE R99 from across C108.
9. REMOVE C104 (39 pF). (These mods will cause Q14 to operate in the correct tripler mode.)
10. Return to TP4 and readjust, then move to TP5. Now, there should be sufficient drive to permit lining up the rest of the transmitter section.
11. A good point to check the frequency with a counter is at C57, position F10. The operating frequency will be:-
— Receive $F(\text{counted}) \times 3 + 10.7 \text{ MHz}$.
— Transmit $F(\text{counted}) \times 3 \text{ MHz}$.

Once it is on the air, you will (or may) get reports that it is off frequency. This is not the trouble; it is the microphone supplied.

Get a better one or do the following modification.

Fit a 10 k $\frac{1}{4}$ W resistor from the 10V TX link near the microphone socket to the spare contact on the socket. In the microphone disconnect the microphone element and fit an electret element snuggled in a piece of foam. Rearrange the wires to follow the circuit shown in Fig 1. Across the microphone socket bypass the 10k resistor with a 10 μ F electrolytic capacitor.

This mod will improve your audio and hopefully eliminate the "off frequency" reports.

On one unit here the audio amplifier on the receiver failed. In this case, I adopted the easy way out and pulled out all the amplifier components and replaced them with an LM 380 on a small matrix board. The circuit and layout is shown in Fig 2.

Good luck and see you on 430. **ar**

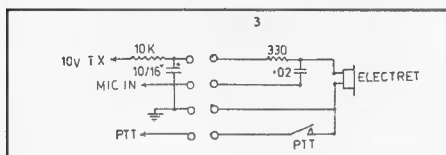


Fig 1. Microphone rewiring.

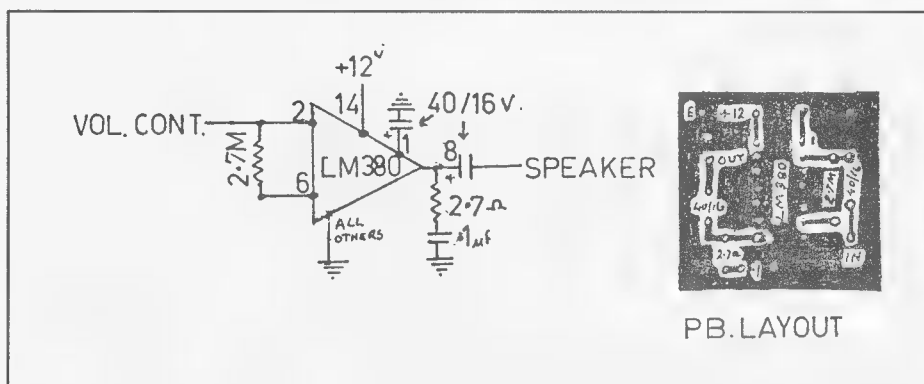


Fig 2. Audio amplifier.

Try This Ribbon Revival

I read with interest the paragraph in Bits "N" Bytes concerning the aerosol cans of ribbon reviver. I too had seen advertisements for this product and was considering buying some as I get through a large number of ribbons on my printers.

A few months ago one of my two printers packed up so I summoned a repairman. After he had repaired the printer I asked him for his opinion on

this reviver. After a chuckle he said that this was rather expensive in his opinion. The trick he and many others in the trade use is the ubiquitous WD40 lubricating fluid at £1.89 a can. The method he gave is as follows:-

1. Remove the lid of the ribbon cartridge and from about 12 inches lightly spray the ribbon in the box. Also wind in the portion of ribbon outside the box and spray that.
2. Leave the lid off overnight and replace the following morning.

I have tried this and it works very well

indeed, allowing about 5 doses before the ribbon is finally exhausted.

He also stated that no harm would be done to the printer or print head and in fact the WD40 lubricated the pins in the print head.

For information, the gentleman concerned was, before retirement, an engineer for Epson (UK).

BRIAN LONNON G3ZUM

(RP7 seems to work too - Ed.)

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