FEATUERS
- 1000 mwatt output min.
- Broadband No-tune design
- constant amplitude response.
- out of lock power down
- Harmonic Filter
- LCD frequency readout
- LCD lock status indication
- PTH black oxide board
- RF ground plane double sided board
- Audio (deviation) Adjust

SPECIFICATIONS
- Frequency Range: Selectable over 87.5-108MHz
- Step Size: 100 kHz Steps
- Frequency Generation: microprocessor controlled PLL vco.
- Frequency Stability: Better than +/- 1 KHz max, typ +/-500Hz
- Spurious Emissions: Better than -75dB reference to carrier
- Harmonic emissions: Better than -60dB reference to carrier
- RF Power Output: 800mW min./1000 mW typ.
- Power Supply: 12-15v DC regulated
- Audio Input Sensitivity: 0.775 V rms (typ) for +/- 75 KHz dev ( adjustable )
- Signal To Noise Ratio: -75 dBu
- audio Distortion: Better than 0.2 % THD
- audio Frequency Response: Flat from 20 Hz to 100 KHz

SOLDERING
Always make sure the iron nib is clean before soldering a joint, a good idea is to have a small damp sponge to wipe the nib on after a few joints to keep the iron nib clean from dirt ( clogging up). Always apply the iron to the joint first , this gives the joint a shiny and cone like appearance, which is correct. Do not put a blob of solder on to the iron and then to the joint, the solder will not bond to the cold joint. Heat the joint up first with the iron and then feed in solder to the heated joint.

ASSEMBLY INSTRUCTIONS
1. Empty the contents of the kit and proceed to check all of the components against the component list, It is a good idea to tick off each component as you go through. When you have double checked all the parts proceed.
2. We always start with the lowest height components first which are resistors, Insert each resistor and solder one at a time taking care to make a good joint and not to short across any other pads/holes. Double check the component is the correct one before soldering.
3. Now insert VD1 (SEE DIAGRAM ). Move on to insert the choke L3 and solder this in also.
4. Now insert IC1 and IC2 (see diagram)
5. Next its time to insert the capacitors C1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,21,22,23,24,25,26,27,28,29,30,31 and 32 These can be inserted any way round. They are not polarised. Now insert the polarised electrolytic capacitors C3,4,8,10,11,12,9,10 and 20 making 1000/0 SURE they are soldered in correctly. ( SEE DIAGRAM ) The board has a positive symbol next to the positive hole of each polarised capacitor. Insert the negative stripe side away from the positive ( + ) marking, the last fixed capacitor is C19 (this component may need to be omitted from the unit, see pre emphasis section overleaf to decide if you need to include it. If you do need to include it choose the correct value from component list / pre-emphasis)
6. Insert and solder T1 ,T2 ,T3 then move onto T4. Next IC3 observing the correct component orientation marked on the board ( SEE DIAGRAM ).
7. Insert the crystal and VC trimmer next to the crystal and then the metal canned coil L1 and moulded coils L4 and L5.
8. Wind the toroid core with the supplied twisted enamelled wire as shown in the diagram and insert and solder as shown in the diagram. Push the clip on (stars shaped ) heatsink onto T4.
9. By this stage you should have the main component side of the board fully assembled, before moving on to the parts on the other side of the pcb check all your solder joints and connections.
10. Solder in switches sw1 and sw2 then VR1 variable resistor. Then with the supplied standoff pillars mount the led display above the underside of the board making sure to line up the 14 way connector above the 14 holes left on the pcb. Take the left over cut off resistor legs you have and pass them through the holes soldering on the component side of the pcb and the lcd screen side of the display pcb.

POWER SUPPLY.
This unit needs a regulated dc power supply between 12 and 15v. The only difference with using 12, 13.8 or 15 volts is the output power, You will get slightly more output power running the unit from 13.8 or 15v as opposed to 12v. The unit needs a power supply that can deliver 500ma or higher.
You can connect the dc supply by either soldering to the board on the pad's on the top or by soldering the leads through the holes onto the pads on the bottom of the pcb. TAKE CARE TO SOLDER THE POSITIVE LEAD TO THE TERMINAL MARKED +. REVERSE POLARITY OF THE LEADS WILL DAMAGE THE EXCITER. YOU HAVE BEEN WarnED.

RF OUT.
Before turning on the unit YOU MUST connect a 50 ohm load to the rf output connections. The two pads supplied are to enable you to connect a length of 50 ohm coaxial cable to an rf socket or rf amplifier board. The smaller pad is for the inner of the coax ( the core ) and the longer pad below the rf out pad is to connect the outer of the coax ( the braid ). ( SEE DIAGRAM )
We recommend a dummy load is used when tuning up this unit. Or if you do not have access to one at least have an antenna connected to the output. FAILURE TO HAVE A CORRECT 50 OHM LOAD ( dummy load or antenna ) ON THE OUTPUT MAY RESULT IN DAMAGE OF THE OUTPUT TRANSISTOR ( T4 ) . YOU HAVE BEEN WarnED.

IMPORTANT INFORMATION : PLEASE NOTE
Operation of this equipment without an appropriate licence is an offence. Please check your countries laws regarding operation of radio transmitters.
SETUP INSTRUCTIONS.

The setup procedure for the unit once assembled is very brief because the unit is so simplistic but clever in its design. The unit once built will allow 87.5 to 108 mhz operation at 1 watt minimum output power without any adjustment at all, the only adjusting that is done is the removal of component C19.

The setup procedure for the unit once assembled is very brief because the unit is so simplistic but clever in its design. The unit once built will allow 87.5 to 108 mhz operation at 1 watt minimum output power without any adjustment at all, the only adjusting that is done is the removal of component C19.

1. CONNECT YOUR ANTENNA OR DUMMY LOAD TO THE RF OUTPUT OF THE UNIT. (Never connect transmitter without an antenna or load)
2. CONNECT YOUR AUDIO SOURCE TO THE UNIT.
3. CONNECT 12-15V DC MAX TO THE UNIT (Make sure the supply can deliver 500mA minimum and is regulated)
4. SWITCH ON THE UNIT AND SET YOUR FREQUENCY VIA THE LIQUID CRYSTAL DISPLAY.
5. ADJUST VR1 (modulation pot) FOR THE REQUIRED DEVIATION (tx deviation/volume), please note: The coils L1,L4 and L5 are factory set and do not need adjustment or tuning, Please do not adjust them.
6. HAPPY BROADCASTING!

PRE-EMPHASIS

Like all pro exciters this unit incorporates a pre-emphasis facility. If you need to remove or bypass the pre-emphasis you can achieve this by the removal of component C19.