KIT 1187 – 3 Watt FM VCO Amplifier (88-108MHz)

IMPORTANT: Please follow the instructions below carefully to avoid damaging the transmitter. All units are pre-tested - NO returns. If in doubt please contact our Technical Department for assistance BEFORE proceeding because it will be too late after…..

CAUTION: *NEVER operate the transmitter without connecting a suitable antenna or dummy 50 Ohm load to the output otherwise there is a serious danger of destruction of the output stage of the transmitter.*

TECHNICAL SPECIFICATIONS	
Modulation type:	FM VCO
Frequency:	88-108 MHz
Output power:	3 Watts
Power Supply:	15-18V DC /0.4A
Preamplifier	Kit 1052
Power Supply:	Order Code PSU215
PCB:	65x160mm

DESCRIPTION - This linear FM Voltage Controlled Oscillator (VCO) amplifier kit provides the ideal way to extend the range and capabilities of any FM transmitter operating in the 88-108MHz bandwidth. The circuit is based on high frequency transistors that lead to a BFS22A and provides an output power of 3 Watts in the antenna.
You can use this transmitter to drive a linear FM amplifier (kit 1141 or 1179) for even greater power output. It can also be combined with our PLL FM synthesiser kit 1144 to give you a complete high-quality PLL transmitter set-up. See connection diagram supplied. The optional mixer kit 1052 can be used for the audio input stage.

CONNECTIONS - Firstly check that none of the board components have been bent out of position in transit. In particular check the transistors TR3 & TR4 are vertical and their leads are not shorting. Also check that none of the coil turns are touching and are evenly spread. Realign them as necessary.

The connections to and from the PCB are few and simple. Refer to the schematic and connection diagram and proceed as follows.

AF INPUT - the audio input from a mixer or preamplifier (kit 1052 is suitable) should be connected using shielded cable to the point marked AF INPUT. The centre (signal) is connected to the bottom pin (near the AF text) and the outer shield (ground) goes to ground plane. The potentiometer (RV2) provides adjustment of the AF input level for a wide variety of input sources.
ANTENNA - The antenna can be a 50-Ohm Open Dipole, Ground Plane, 5/8 or YAGI. Connect it to the PCB at the point marked RF OUT using 50-Ohm coax cable. The centre conductor of the cable goes to the pin near the text OUT. The shield goes to the ground plane.
POWER SUPPLY - connect a 15-18VDC power supply rated 0.5A minimum (our Order Code PSU215 is suitable) to the two points marked (+) and (-).
PLL – This transmitter can be used with a suitable PLL unit (our Order Code 1144 or similar). Connect using the header pins marked CN1 PLL.
ONBOARD JUMPERS – CN2 sets Trimmer(RV1) or PLL Frequency Adjustment. The later position should be used only if you are using our PLL unit 1144 or similar. CN3 sets Mono or Stereo operation.

ALIGNMENT - To change the transmitting frequency of your transmitter, follow these instructions carefully.

1. Connect an SWR meter (RF Power Meter) between the transmitter output and the antenna or connect a meter at the point marked M1 (pot RV3 can be used to centre the meter needle).
2. Power up the transmitter.
3. Adjust to the desired transmitting frequency using pot RV1 (or the PLL if used).
4. Adjust the variable capacitors CV1 and CV2 so that the SWR meter gives maximum power reading. **TAKE CARE** when adjusting any of the variable capacitors, as they are brittle and will break easily. Repeat this process a few times to fine tune the transmitter.
5. Use the RV2 to adjust the AF modulation to the desired level.

TRANSMITTERS AND THE LAW - It is against the law to transmit a radio signal without an appropriate license or with equipment that is not approved for use in the UK by the Radio Communications Agency (RCA). This transmitter has NOT been approved by the RCA.

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