

MIXER AND AMPLIFIER MX1/4

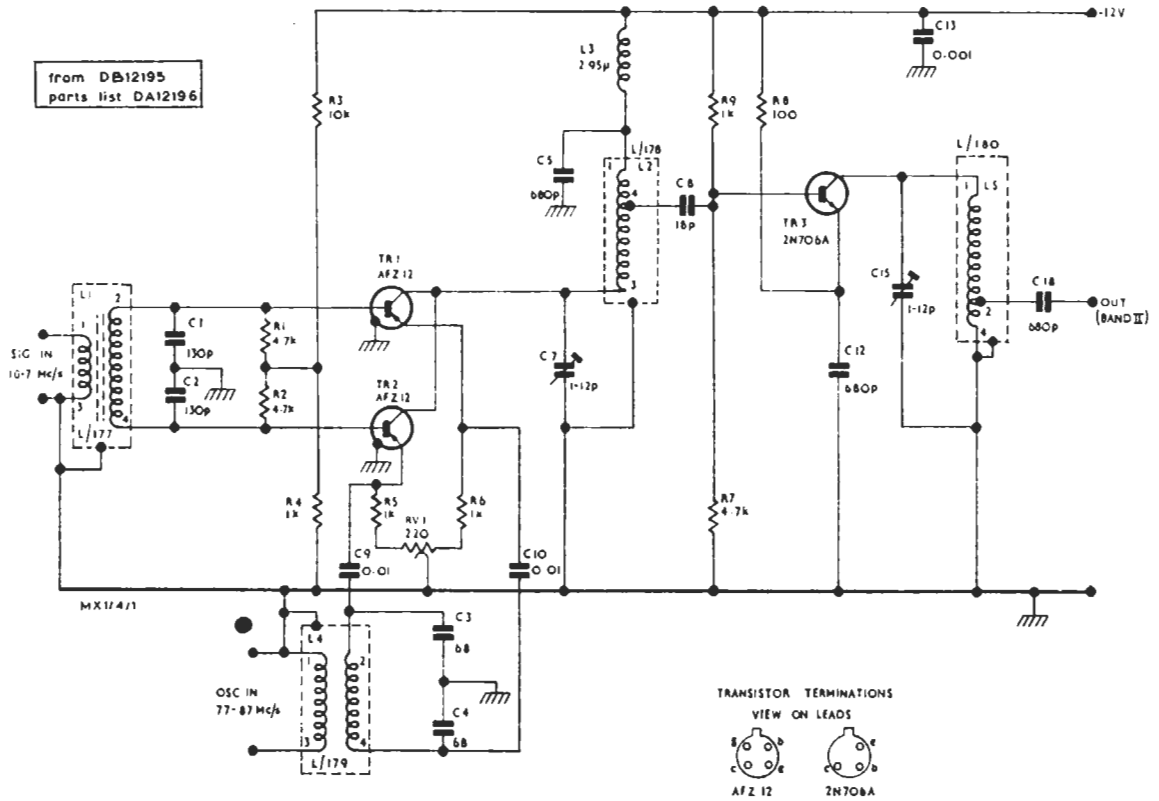


Fig. 1 Circuit of the MX1/4

The MX1/4 is a frequency-changer and amplifier. It accepts a 10.7-MHz frequency-modulated i.f. signal and a sine-wave input in the range 77 to 87 MHz and from them produces an output in Band II. The components are on a printed-wiring board which is mounted inside a copper screening box BX1/4. The power requirements are obtained from an external source.

General Specification

10.7 MHz F.M. Input	6 mV (nominal); must not exceed 10 mV.
Oscillator Input	170 ± 30 mV
Output (Band II)	700 mV (nominal), 650 mV (minimum)
Input and Output Impedances	50 ohms
Power Supply	12 volts d.c.

Circuit Description

A circuit diagram of the mixer is shown in Fig. 1. The 10.7-MHz and oscillator inputs are passed via tuned phase-splitting circuits to the bases and emitters respectively of transistors TR1 and TR2, which are connected in a push-pull frequency-changing circuit. The collector load is tuned by C7 to the wanted output frequency, which is passed to the output amplifier stage TR3. The amount of oscillator-frequency signal passed through the frequency-changer is minimised by adjustment of RV1.