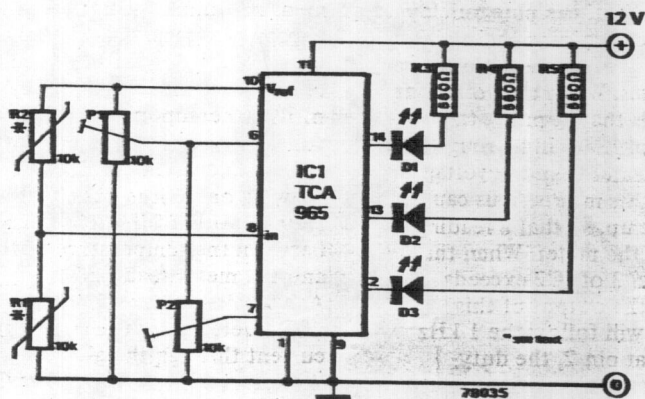


mechanical ingenuity will be required — always bearing in mind the temperatures involved: adhesive tape is useless, and epoxy-type adhesives will be little better, so some form of metal bracket or clamp

is mandatory. Having mounted R1 on the pipe and R2 in free air (on the box in which the circuit is housed, for instance), the circuit can be calibrated as follows. Initially, P2 is set to zero

(wiper to supply common) and P1 is adjusted so that the green LED (D2) just lights. If the pilot burner is now turned off (or R1 removed from the pipe) the red LED (D1) should light within a minute or two. If this is not the case, P1 will have to be readjusted slightly. Once the correct setting of P1 has been found, it is a simple matter to adjust P2. With the main burners on, this preset is turned up until the yellow LED (D3) lights reliably. This adjustment does not influence the setting of P1. The current consumption of the circuit is approximately 25 mA, and any supply voltage between 10 V and 15 V may be used. A very basic supply (transformer, bridge rectifier, electrolytic capacitor) is adequate, since the actual measuring bridge (R1, R2, P1, P2) receives its supply from a stabilised reference voltage output of the IC (pin 10).



2m transmitter

65

This transmitter which operates on the two-meter (144...146 MHz) band provides an output signal of 1 W into 50 Ω. The circuit is driven

by two signals: a modulated 10.7 MHz signal of less than 1 mW and a 10 mW local oscillator signal with a frequency between 133.3 and

135.3 MHz. These are mixed in a double-balanced Schottky mixer. Gain is applied in three stages: the first stage uses a dual-gate MOSFET, the quiescent current of which should be 10 mA. The DC bias voltage on gate 2 of this FET (which determines the gain of the stage) should be set by means of P1 to 4 V. The quiescent currents of T2 and T3 should be 1 mA and 10 mA respectively.

L2 consists of a ferrite bead on the drain of T2. The winding details for the remaining coils are given in the accompanying table. Unless otherwise stated all the coils are air-cored.

When using the transmitter, an extra lowpass filter is needed between the output and the aerial to limit the second and third harmonic signal components to acceptable proportions.

Coil	Internal dia.	Gauge	Turns	Taps
L1a	6 mm	21 SWG (1 mm)	4	tap 1 turn from earthy end
L1b	6 mm	21 SWG	4	
L2	see text			
L3a	6 mm	21 SWG	4	
L3b	6 mm	21 SWG	4	
L4	wound on ferrite bead (0.3 mm)	33 SWG	4	
L5	6 mm	21 SWG	3	
L6	wound on ferrite bead	33 SWG	4	
L7	6 mm	21 SWG	2	
L8	8 mm	21 SWG	2	
L9	8 mm	21 SWG	7	
L10	wound on ferrite bead	33 SWG	4	
L11	6 mm	21 SWG	5	

enamelled copper wire used throughout

