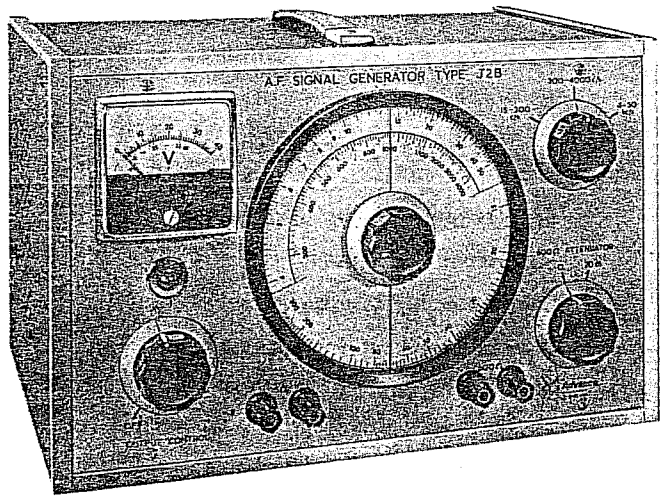
ADVANCE J1B / J2B
5/65



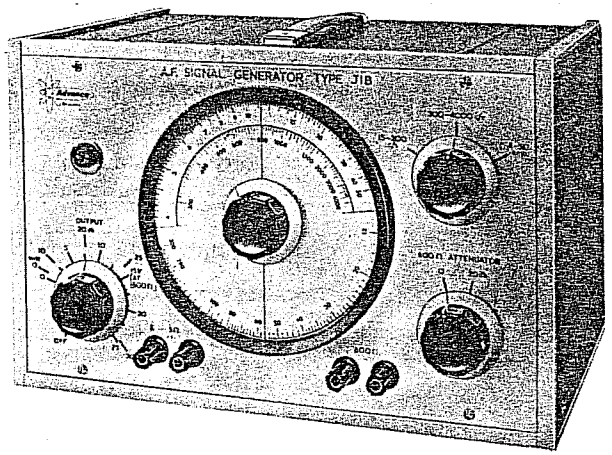


Fig. 1 Low frequency signal generators J1B and J2B

Introduction

Section 1

The J1B and J2B Signal Generators, like their well-established forerunners the J1 and J2, are two similar instruments which provide sinusoidal outputs in the frequency range 15c/s to 50kc/s. Two separate output arrangements with continuous level control are provided on each instrument. One output is of 600Ω impedance and isolated from earth, having a maximum output level of 1W; the alternative output has an impedance of 5Ω connected to earth and with an output level of at least 500 milliwatts.

The J1B version of the instrument uses a calibrated output control to give an indication of output level, while the J2B output level is indicated on a front panel meter.

Each instrument contains a resistance-capacitance Wien bridge oscillator which is connected to the output stage via a buffer amplifier. The inherent stability of the oscillator and the use of feedback circuits contribute to an output which is substantially constant over the whole frequency range. Overall distortion at full output power is less than 2% (34dB down on fundamental).

The J1B and J2B operate from a.c. power supplies of 105 to 125V and 210 to 250V, 40 to 100c/s.

Frequency Ranges	A - 4kc/s to 50kc/s B - 300c/s to 4kc/s C - 15c/s to 300c/s Accuracy ± (2% + 1c/s).
Output	Output into 600Ω 0.1mW to 1W (0.25V to 25V), continuously variable. Accuracy: Model J1B ± 2dB Model J2B ± (1dB + 1.5% F.S.D.) Maximum output into 5Ω greater than 500mW, continuously variable.
Output Impedance	The output impedance approximates to 600Ω over the whole range. Where close accuracy is required the 20dB attenuator should be used.
Attenuator	A 20dB 600Ω attenuator is incorporated. This is a π pad built of close tolerance resistors. When switched in circuit it provides a very accurate output impedance with a maximum output of 10mW (2.5V).

Distortion	Total harmonic and hum content as compared with fundamental, above 100c/s: better than 34dB down (2%) at full output better than 40dB down (1%) at 100mW. There is a slight increase in distortion below 100c/s, but it is still low, down to 15c/s.
Power Supplies	J1B, J2B: 105 to 125V, 210 to 250V, a.c. only, 40 to 100c/s.
Consumption	Approximately 40W.
Dimensions	11 1/8in. wide, 7 5/8in. high, 9 5/8in. deep (28.3 x 19.4 x 24.4 cm).
Weight	20 lb (9.1kg).
Finish	Light blue case and side panels with otter grain finish, medium grey painted frame with light grey front panel.

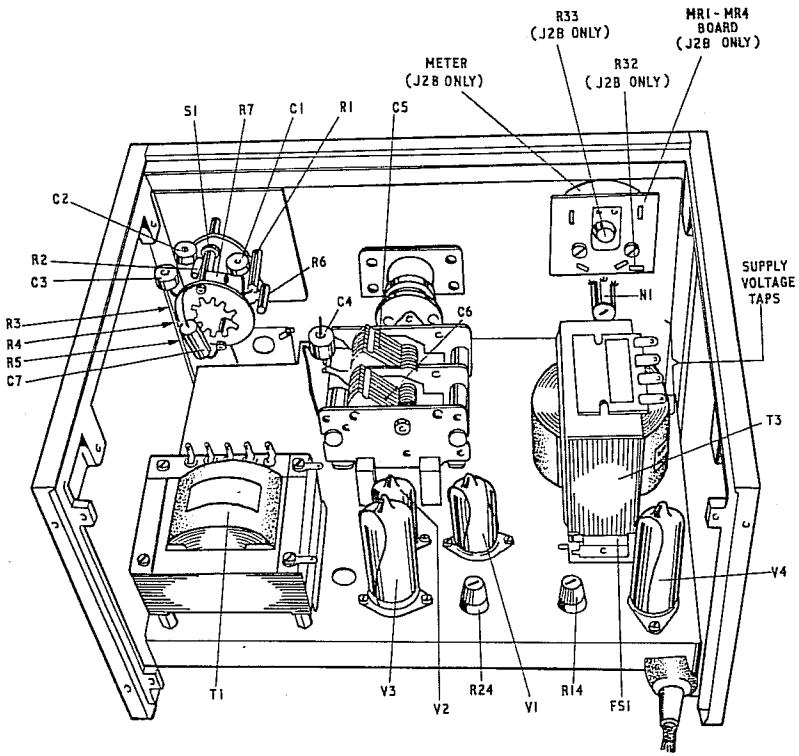


Fig. 3 Component layout - top view

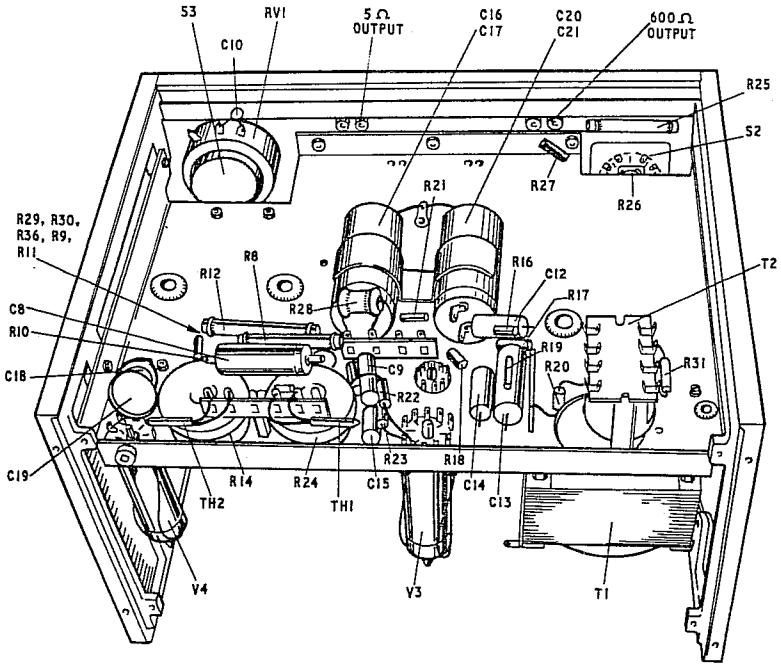
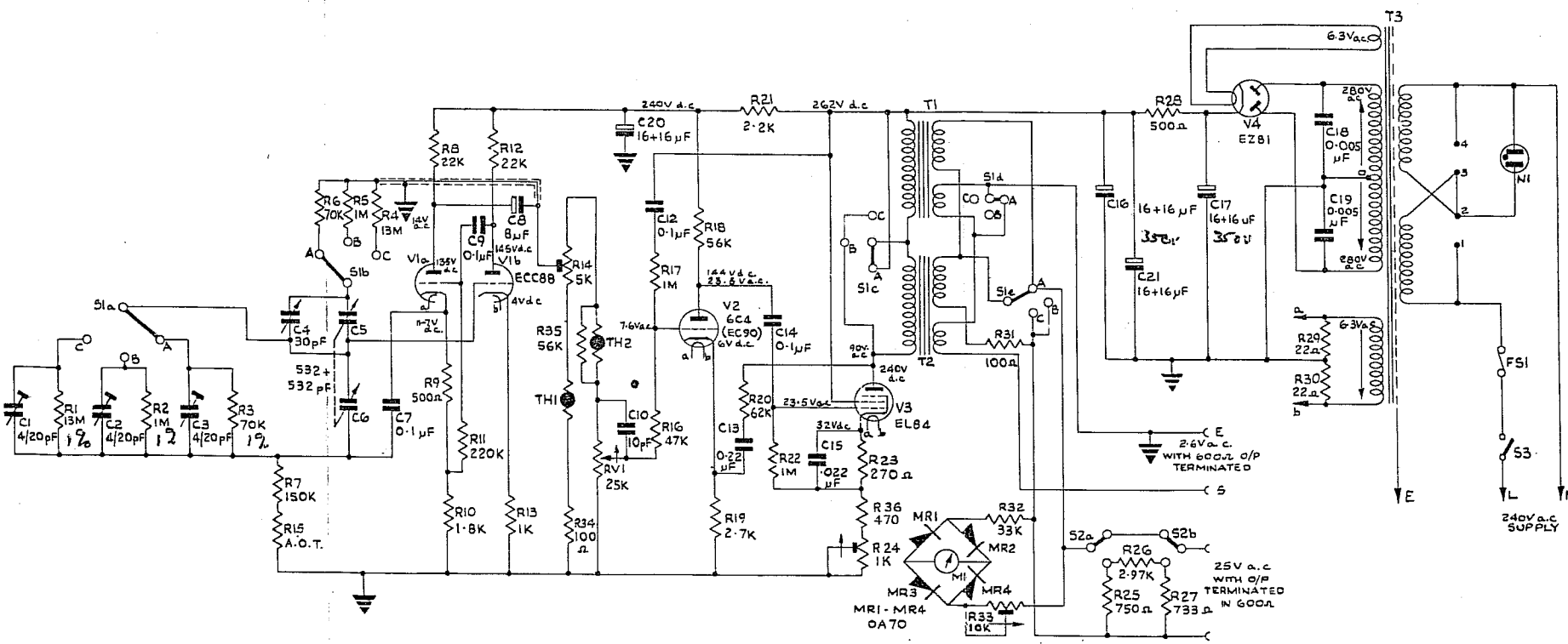


Fig. 4 Component layout - underside view

ES		
	Description	Part No.
	ECC88	4548
	oC4 (EC90)	4549
	EL84	12785
	EZ81	12070
LLANEOUS		
	Fuse 500mA B/Lee L1055	352
	Rectifier Mullard OA70 (J2B only)	342
	Meter 0-40V AC 0-0.89mA DC (J2B only)	A15132
	Neon pilot lamp 100-125V	1165
	Range switch D No. A4876	17267
	Attenuator switch	7702
	Mains switch	
	Output transformer low	MT315
	Output transformer high	MT316
	Mains transformer	MT314B
	Input 105-125V / 210-250V } 50-100c/s	
	ST&C Thermistor 1522/100	6719
	Thermistor A14	7811
	Instruction Manual	17869

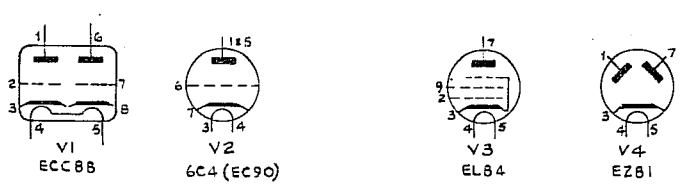


NOTES

1 For J1B NA only, T3 primary winding is for 117V 25-60c/s supplies.

2 Meter M1 used on Sig. Gen. J2B only.

3 All D.C. measurements with 20KΩ per Volt Meter. All A.C. measurements with A.C. Millivolt Meters (Advance Type 77C) with J1B, J2B set to 1Kc/s sinewave 25V output.



M1 - 0-40V A.C. 0·89mA D.C
TH1. STC 1522/100
TH2 A14
RV1 25k linear

Fig. 5 J1B & J2B circuit diagram