

Eddystone

GENERAL-PURPOSE HF/MF

COMMUNICATION RECEIVERS

MODELS 1000 & 1001



550kHz - 30MHz



Manufactured in England by

Eddystone Radio Limited

Member of Marconi Communication Systems Limited
Alvechurch Road, Birmingham B31 3PP, England
Telephone: 021-475 2231
Cables: Eddystone Birmingham Telex: 337081



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Amendment Sheets

Amendment Sheets incorporated on issue of this handbook will be bound immediately following page 4.

AMENDMENT RECORD

Amend No.	Pages subject to change	Amended by	Date
1			
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The manufacturer reserves the right to modify the content of this publication to accommodate modifications, design improvements etc. Amendment Sheets will be incorporated where applicable at date of issue.

Section 1

GENERAL DESCRIPTION AND PERFORMANCE SUMMARY

GENERAL DESCRIPTION

Eddystone Models 1000 and 1001 provide reception facilities for CW, AM and SSB transmissions in the band 550kHz to 30MHz. Five frequency ranges are employed on both receivers but the Model 1001 differs from the Model 1000 in that provision is also made for high-stability (crystal controlled) operation in the band above 1.5MHz. Up to ten crystals can be installed in a plug-in unit which is fitted through an aperture in the front panel.

Both receivers are suitable for general purpose applications and can be powered from any standard 40–60Hz AC supply or from an external 12V battery. Internal circuitry is isolated from the frame/cabinet so that any battery arrangement, including floating supply, can be used with safety. An internal re-chargeable nickel-cadmium battery is fitted as an emergency standby power source and provides up to seven hours' operation in the event of mains failure.

A single conversion circuit arrangement is employed using an intermediate frequency of 455kHz with selectable bandwidth. All normal communication features are provided including manual/AGC switching, standby facility, variable BFO and meter. The input circuit is protected by shunt-connected diodes at the aerial socket.

Two miniature series-connected loudspeakers are fitted internally and connections are provided for a local extension loudspeaker and telephone headset: a low level high impedance audio output is also available.

GENERAL SPECIFICATION

Frequency Coverage	550kHz to 30MHz in five ranges. Model 1001 has provision for ten crystal controlled spot-frequencies in the band 1.5 — 30MHz using Style 'D' crystals.	
Frequency Ranges	Range 1	18.0 — 30MHz
	Range 2	8.5 — 18.0MHz
	Range 3	3.6 — 8.5MHz
	Range 4	1.5 — 3.8MHz
	Range 5	550 — 1500kHz
Intermediate Frequency	455kHz (BFO coverage : 455 ± 3 kHz)	
Reception Modes	A1, A2 and A2H telegraphy. A3, A3A, A3H & A3J telephony with upper sideband or lower sideband selectable in SSB mode.	
Scale Accuracy	1% on all ranges.	
Environmental	0°C to +50°C (—20°C to +70°C storage)	
Aerial Input	75 Ω on Ranges 1—4; 400 Ω on Range 5.	
Power Supplies	DC : : 12V from internal re-chargeable nickel-cadmium battery for short periods of operation, or 12V from external battery of higher capacity. Also available to special order for use with 24V supply in lieu of 12V.	
	Consumption (12V): 38mA quiescent, 230mA at 1-watt output.	
	AC : : 100/130V or 200/260V (40—60Hz). Consumption: 12VA approx.	
Dimensions and Weight	See Page 13	
Semiconductors	The complete circuit employs a total of 14 transistors, 2 integrated circuits and 20 diodes. A full list of types and circuit functions is given in Appendix 'B' on page 47.	

PERFORMANCE SUMMARY

Performance figures quoted in the data are typical only and should not be interpreted as a test specification.

Sensitivity	5 μ V on Ranges 1–4 and 15 μ V on Range 5. (Taken for 15dB S+N/N ratio in 'AM' mode with 4kHz IF B/W, 30% mod. at 1kHz and 50mW output).
Selectivity	WIDE: 10kHz at –6dB, 22kHz at –40dB. NARROW: 4kHz at –6dB, 12kHz at –40dB.
Image Rejection	50dB at 2.0MHz, 40dB at 18.0MHz.
IF Rejection	85dB on Ranges 1–4, 65dB on Range 5.
Stability	Better than 1 part in $10^4/^{\circ}$ C or 3 in $10^5/^{\circ}$ C with crystal-controlled oscillator (1001).
Radiation	Not greater than 400pW.
AGC Characteristic	Less than 12dB change in output for an 80dB increase in input level (taken from 6 μ V at 2MHz on Range 4).
Audio Output	Loudspeaker : 800mW @ 5% dis. (1W max.) Headset : Low/Medium-Z Output. High-Z Output : 5k Ω approx. External Loudspeaker : 8–15 Ω .
Audio Response	Level within 6dB from 300Hz to 6kHz.

CIRCUIT DESCRIPTION

THE RF SECTION

Tunable Stages (TR1, TR2, TR3, TR4 & TR5)

Aerial connections are made either between aerial socket A1 and AE or to socket A2. Input protection at A1 is provided by diode package PC1 which is permanently wired across A1 and earth. When the aerial is connected to A1 the input signal is fed to a signal tuning network L1—L5 selected by RANGE SWITCH S1A. The tuned secondaries are fully insulated from the primaries and returned to the frame/cabinet earth to preclude any danger of the aerial feeder attaining a high potential when operating the receiver with floating circuit earth. Wafer S1B connects the tuned secondaries to the RF Amplifier via C14. Signals applied to aerial socket A2 are fed direct to the RF Amplifier via C151. L7 serves as a 455kHz IF rejector on Range 5.

The RF amplifier comprises TR1 and TR2 in cascode configuration with a delayed AGC line permanently connected to the gate of TR2 to obviate the need for manual gain control in this part of the circuit. Amplified signals at the drain of TR2 are taken via L8—L12 to gate 1 of the dual gate MOSFET used in the Mixer position TR3. Various forms of coupling are employed at L8—L12 to ensure sensibly constant gain from range to range. 455kHz IF output is taken from the Mixer via L22/L23 and SELECTIVITY SWITCH S2 to the IF section.

Local oscillator injection is derived from TR4 with isolation provided by the FET Source Follower TR5. A tuned gate oscillator configuration is employed, with initial operating conditions set by D2 and R28. Damping resistor R22 is provided across the feedback winding of L19 in order to make the output on Range 5 comparable with the other ranges: injection is applied to gate 2 of the Mixer. Potentiometer RV1 provides a FINE TUNE facility by controlling the voltage across variable voltage capacitance diode D1.

All stages TR1—TR5 run from a zenered 11 volt rail which is reduced to 9.1V for TR4 & TR5 by zener D4.

Crystal Oscillator (TR6 & TR7) MODEL 1001 ONLY

The tunable local oscillator TR4/TR5 can be disabled by interrupting the 11V line at S3A to permit operation with crystal controlled local oscillator injection derived from TR6 & TR7.

S3A is one section of the CRYSTAL SELECTOR SWITCH in the plug-in CRYSTAL UNIT at the left hand side of the receiver: the other two sections (S3B & S3C) select up to ten crystals installed in holders within the unit. All unselected crystals are shorted out and grounded to prevent spurious excitation. S3A transfers the 11V supply to TR6 & TR7 when set to any 'CRYSTAL' position.

TR7 functions as a parallel-mode oscillator and is direct-coupled to the emitter follower TR6 which provides injection in parallel with the normal injection feed to gate 2 of the mixer. Diode D3 limits the voltage excursion at the base of TR6 when using crystals of high activity.

IF AMPLIFIER AND DETECTOR/AGC CIRCUITS

455kHz IF Amplifier (TR8, TR9 & PART IC1)

IF o/p from the mixer is taken through a pair of tuned circuits L22/L23 to one of two filters, FL1 or FL2 via S2A. Each filter provides a different bandwidth which is selected by S2B at either the WIDE or NARROW position. The filtered signal is fed to the 1st IF stage and the RF AGC Amplifier, both of which employ transistors in IC1 (transistor package).

The 1st and 2nd IF Amplifiers are choke capacity coupled via a diode attenuator D5/D6 which is part of the IF AGC circuit. The final IF stage is a further transistor from IC1.

Detectors and AGC

AM Detector: The AM Detector D9 is fed from the final IF stage via L24 and is forward biased by the potential across D7 & D8. An emitter follower (using another transistor ex-IC1) passes the recovered audio to the 'AM' position of MODE SWITCH S6A.

CW/SSB Detector: 455kHz input for this stage is provided by the FET isolating stage TR9 which also drives the IF AGC system. A dual gate MOSFET CW/SSB detector is used (TR13) with signal (IF) fed to gate 1 and BFO injection to gate 2. Audio appearing in the drain circuit is filtered and then passes to the 'CW/SSB' position of S6A.

BFO: This stage employs a junction-FET and is activated by S6B which completes the 11V supply to zener D17 to give a 3.3V supply for the oscillator and its associated tuning system. The latter comprises the variable capacitance diode D16 and potentiometer RV2 which serves as a normal BFO PITCH CONTROL.

RF AGC: The RF AGC Amplifier is fed directly from the output of either FL1 or FL2 and drives a pair of diodes D10/D11 in a voltage doubler circuit to provide a controlling voltage for the cascode RF Amplifier. The circuit has a fast attack/decay time constant and is arranged to operate only at high signal levels.

IF AGC: Control of signal level (both manually and with AGC) in the IF part of the receiver circuit is effected by a diode attenuator (D5/D6) between the 1st and 2nd IF stages. The diode current is controlled by junction-FET TR10 to vary the shunting effect of the diodes on the signal path.

Gate voltage for TR10 is applied via one part of the STANDBY SWITCH (S4B) and one part of the MANUAL/AGC SWITCH (S5A). With S4 set to 'ON' and S5 set to 'MANUAL', control voltage is derived from RV3 which provides a normal manual gain control facility. With S5 moved to either of the two 'AGC' positions, controlling voltage is obtained from the voltage doubler D13/D14 which is driven by the final IF Amplifier through TR9 and TR11. The time constant is determined by S5B which introduces a large capacitor (C114) at the gate of TR10 when set to the 'AGC LONG' position.

STANDBY SWITCH section S4A interrupts the 9V supply to both the IF Amplifier and RF AGC circuit to disable the receiver at 'STANDBY'. S4B disconnects the manual and RF AGC circuits from TR10 gate which is returned to a fixed positive potential (R69) during standby periods.

A DC output is taken from D14 via R72 to operate the carrier-level meter when the DIAL/METER SWITCH S7 is set to either 'DIAL' or unmarked centre position.

THE AUDIO SECTION

Audio from the appropriate detector is selected by MODE SWITCH section S6A which is wired to the potentiometer RV5 (AF GAIN) to give an adjustable input for the audio channel.

A low-level output is taken from the top of RV5 to feed JK2 which provides a high-Z ($5k\Omega$) output for recording etc. The audio channel utilises a single integrated circuit IC2 fed from the slider of RV5.

IC2 provides an 8Ω output for the two 4Ω panel-mounted loudspeakers and is also wired to socket SK1 to permit the use of an 8Ω external loudspeaker: the internal loudspeakers are disabled when the external loudspeaker is in use. An output for a telephone headset is provided at JK1 and the circuit is arranged so that both loudspeaker circuits are interrupted when the headset is connected.

POWER SUPPLY UNIT

The receiver can be operated from AC supplies of 100/130V or 200/260V (40–60Hz) and from a 12V internal nickel-cadmium battery. The 3-position SUPPLY SWITCH S8A–D provides supply ON/OFF switching and a CHARGE position at which the battery is charged from the AC supply via the bridge rectifier D22 and meter ME1 shunted by R106. For external DC operation the link fitted to socket SK3 must be removed. (see Fig. 4.2).

AC Working

When operating from an AC supply the mains voltage is stepped down by T1 and rectified by the full-wave bridge rectifier D22 to feed D18 and TR14 which provide +11V and +9V supplies respectively.

Fuses are included in both legs of the AC supply: the DC fuse remains in circuit during AC operation.

DC Working

A fuse and reverse polarity protection diode D21 are included directly at the supply input. The fuse will blow if supply polarity is reversed.

The 12V supply from the battery is zenered by D18 as in AC operation to give a regulated 11V line which feeds all stages except the IF and audio: these are fed at 9V as before via the series transistor regulator TR14.

Battery state can be checked on the panel meter by setting S7 to the 'BATT CHECK' position. This applies to both internal and external supplies. When S8 is at the 'CHARGE' position the meter indicates the rate of charge.

Earthing

Circuit earth (negative supply rail) is isolated from the frame of the receiver to permit operation from supplies which have their **positive** pole at true earth potential: C100A and C147 provide a 'signal' (RF/IF/AF) path between the circuit earth and the frame. Terminals are provided so that the frame and the circuit earth can be commoned when operating from supplies with negative pole earthed.

Section 3

MECHANICAL CONSTRUCTION

General

Model 1000/1001 is a cabinet enclosed equipment suitable for bench mounting. Shock-absorber mounts can be supplied to special order.

Dimensions

See Fig. 3.1 below

Weight (including Battery)

8.2 kg (18 lb).

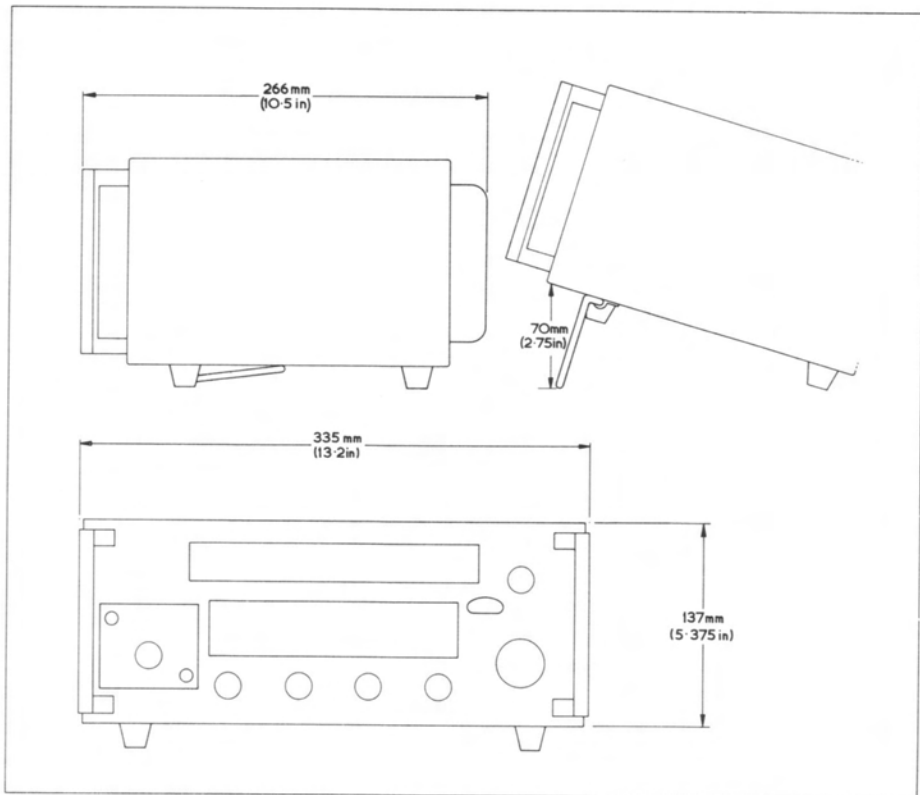


Fig. 3.1 Dimensions of Model 1000/1001 Receiver.

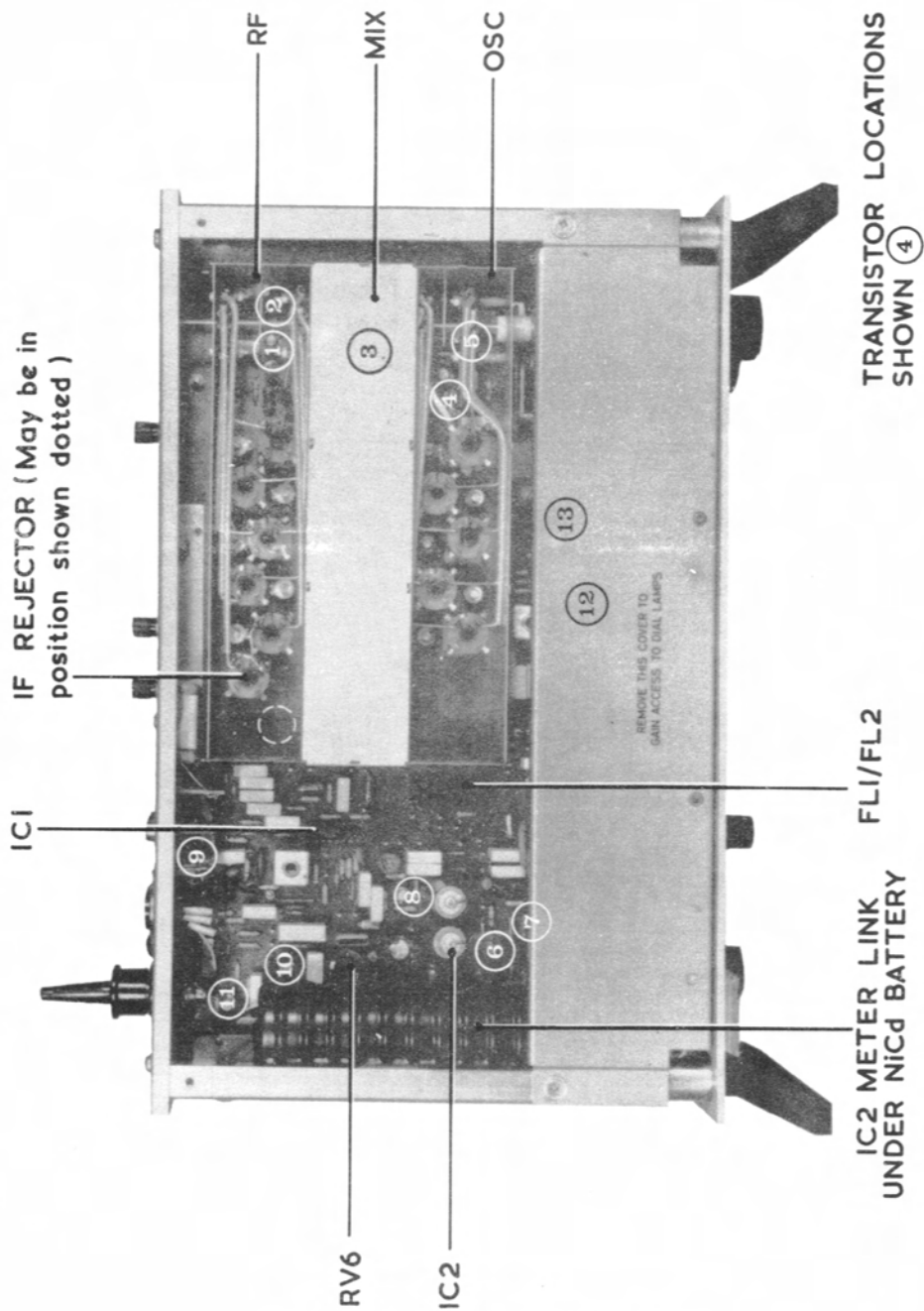


Fig. 3.2 Plan view showing major component location.

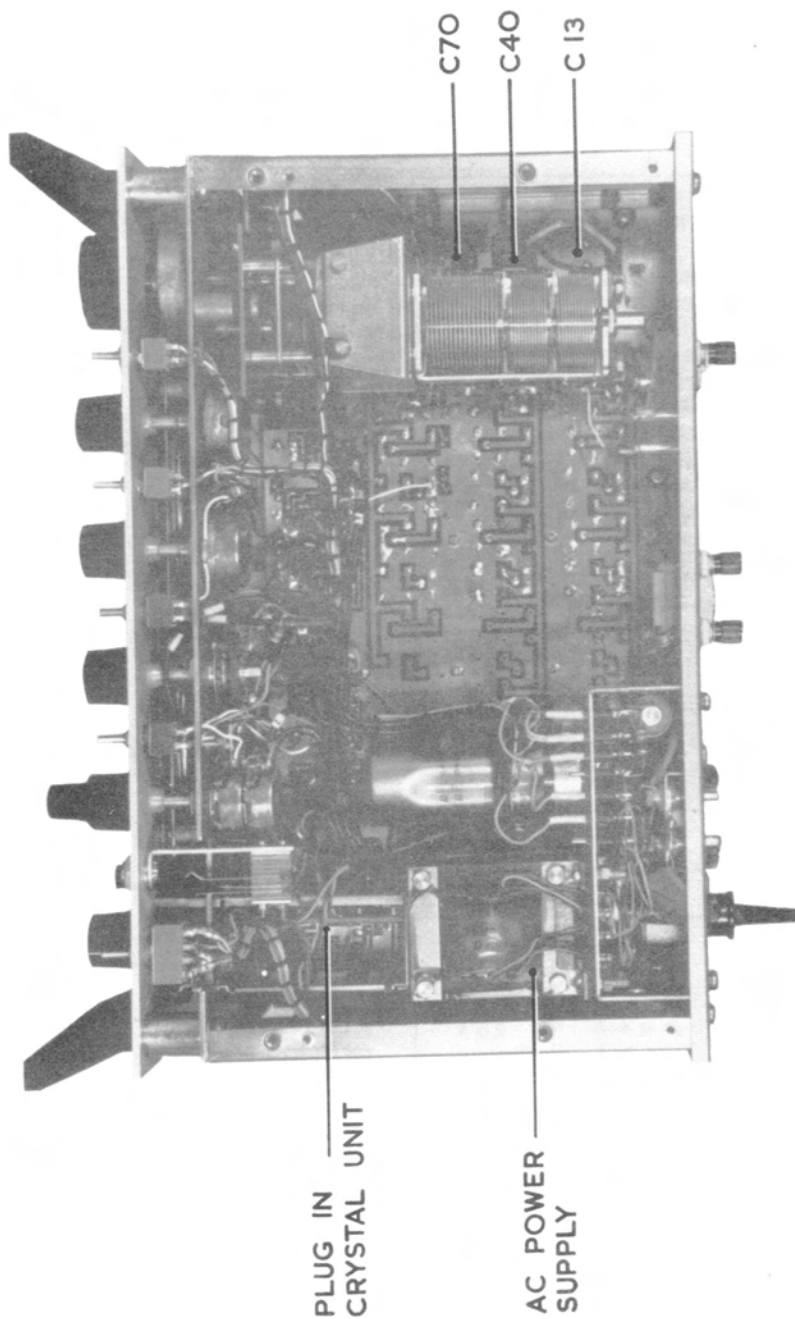


Fig. 3.3 Underside view showing major component location .

INSTALLATION

ACCESSORY KIT (Items supplied with receiver)

1 x AC SUPPLY CONNECTOR (complete with 3-core cable)	D2311/1
1 x DC SUPPLY CONNECTOR (wired with link for AC working)	D3640
1 x SUPPLY LEAD (2000mm of 2-core cable for DC Connector)	8686P
2 x AERIAL PLUGS	6247P
1 x HIGH-Z AUDIO OUTPUT PLUG (white)	6943P
1 x EXTERNAL LOUDSPEAKER PLUG	8687P
1 x SPARE DIAL BULB (12V @ 80mA, wire-ended)	8448P
2 x SPARE FUSES (1 @ 1A + 1 @ 2A, or 2 @ 2A if delivered for 100/130V operation)	1-Amp : 7173P 2-Amp : 6704P
2 x TRIMMING TOOLS (1 off each type)	8333P & 8450P

OPERATING VOLTAGES

AC : : 100/130V or 200/260V (40–60Hz).

DC : : 12V (from internal re-chargeable low-capacity battery, or external battery for long periods of operation).

MAINS VOLTAGE ADJUSTMENT

Receiver is adjusted for 240V operation when dispatched. For other voltages, adjust mains transformer taps by reference to Fig.1 and Table: remove covers for access, two screws each side and four screws in bottom cover.

Voltage	Link	Supply
100V	2–6, 3–7	2 & 3
110V	1–5, 3–7	1 & 3
120V	2–6, 4–8	2 & 4
130V	1–5, 4–8	1 & 4
200V	3–6	2 & 7
210V	3–6	1 & 7
220V	3–5	1 & 7
230V	3–6	1 & 8
240V	4–6	2 & 8
250V	4–6	1 & 8
260V	4–5	1 & 8

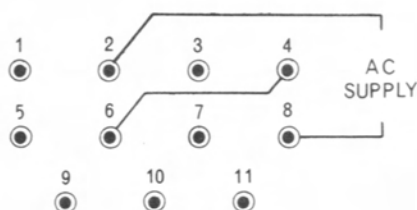


Fig. 4.1 Mains transformer tapings (shown set for 240V operation)

MAINS OPERATION

DC SUPPLY CONNECTOR MUST BE IN POSITION AT REAR, WIRED WITH A LINK AS SHOWN IN FIG. 4.2(a).

FUSE COMPLEMENT

AC : : 2 @ 1A for 200/260V, 2 @ 2A for 100/130V.
DC : : 1 @ 2A (remains in circuit for AC operation).

CIRCUIT EARTH AND FRAME EARTH TERMINALS

These two terminals should be linked with a wire strap to provide a common earth connection when operating receiver from:—

- (1) AC Mains.
- (2) Battery with NEGATIVE pole earthed.
- (3) Battery to which no other connection is made.

The link must be removed to allow circuit earth to float when the receiver is operated from:—

- (1) Battery with POSITIVE pole earthed.
- (2) Battery on float charge with both poles at a potential other than earth.

EXTERNAL CONNECTIONS

AC Connector: LIVE : Brown NEUTRAL : Blue EARTH : Green/Yellow.

DC Connector: This connector is utilised for BATTERY and MAINS operation. Wire as below and mate with DC SUPPLY INPUT at rear.

MAINS OPERATION: Fit link as shown in Fig. 4.2 (a). Connector in Accessory Kit is supplied ready-wired.

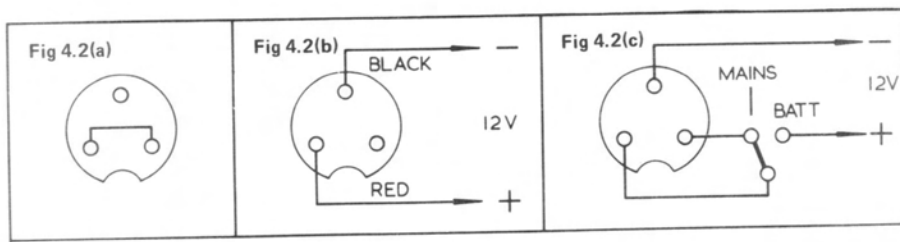


Fig. 4.2 DC Supply Connector viewed on wiring side (Refer to text).

BATTERY OPERATION: With link fitted as in Fig. 4.2(a), internal battery will provide up to seven hours' emergency operation in the event of mains failure. For permanent battery working, re-wire connector as Fig. 4.2(b) and use external 12V battery. Wiring can be arranged as Fig. 4.2(c) to obviate need for changing connector when reverting to mains/internal battery operation.

Aerial Input: Input impedance is nominally 75Ω on Ranges 1–4 and of the order 400Ω on Range 5. Input circuit is protected against high induced aerial EMF's. All types of aerial/feeder can be connected as shown in Fig. 4.3.

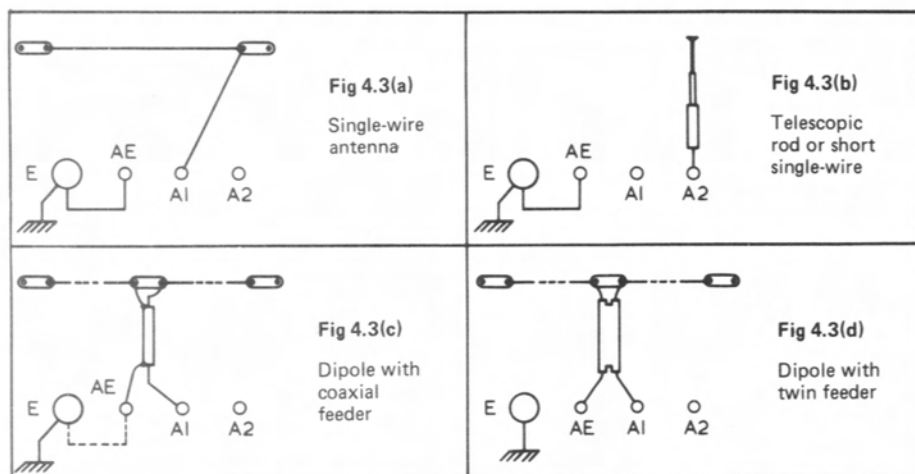


Fig. 4.3 Aerial input connections

Earth: Connect direct local earth to terminal 'E'. Remove E/AE link for Fig. 4.3(d) and in some instances for 4.3(c). Store earth link in A2 socket when not in use.

External Loudspeaker: This output is suitable for use with speaker impedances in the range $8\Omega - 15\Omega$; lower impedances must not be used. External wiring is at +ve DC potential w.r.t. circuit earth and must be insulated from ground. Socket incorporates a switch to interrupt internal loudspeakers when external speaker is in use.

High-Z Audio Output: Low-level audio output from detector suitable for driving a recorder or high power audio amplifier. Connection should be made using screened cable terminated with the plug supplied. Output impedance is of the order $5k\Omega$ and level should be adjusted by use of the gain control on the external unit.

Headset: Connect to 'PHONES' socket on panel. Output is primarily intended for use with telephone headsets of $8\Omega - 600\Omega$ impedance but satisfactory results will be obtained with impedances up to $4,000\Omega$. The internal and external loudspeaker circuits are interrupted when the headset is connected. Headset circuit is returned to frame of receiver for safety when operating with floating circuit earth.

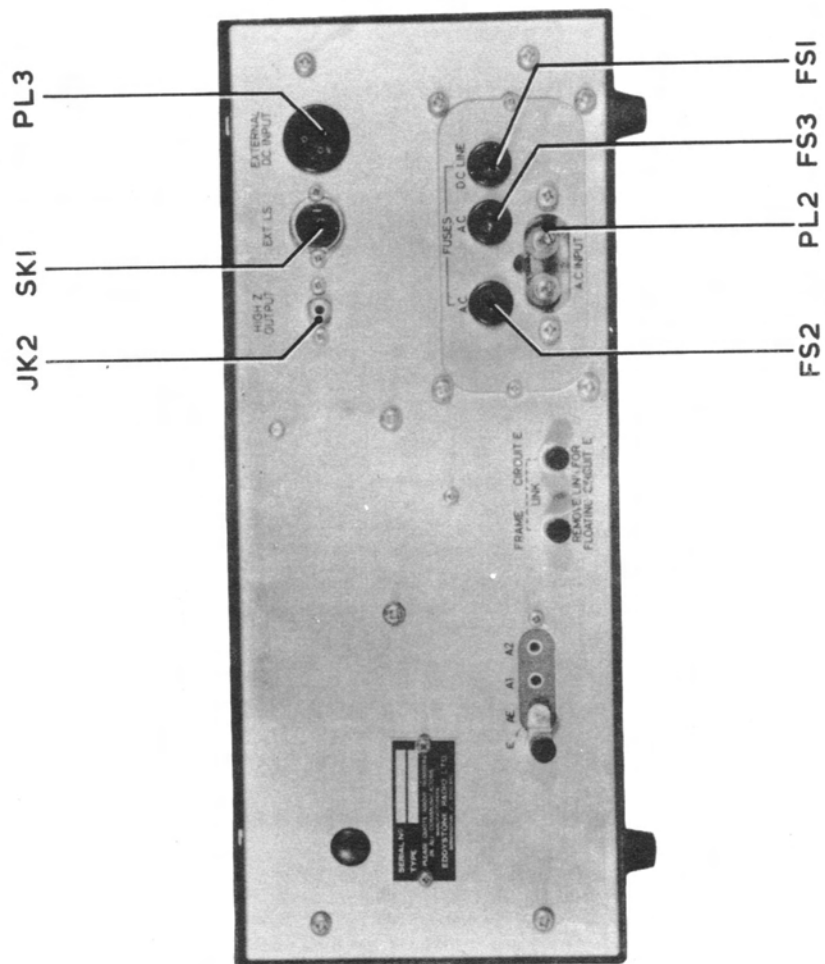


Fig. 4.4 Rear view of receiver showing external connections

OPERATION

CONTROL FUNCTIONS

Tuning Control:

Operates tuning cursor and vernier scale. Accurate dial settings can be recorded by combining readings on logging scale (0–1000), and vernier (0–100). e.g. if cursor lies between 600/700 and vernier reads 56, log '656'.

Fine Tuning Control:

Provides a limited tuning range with slow tuning rate to facilitate adjustment on high frequency ranges. Use of this control is recommended when tuning to single sideband transmissions.

Range Switch:

Range 1 is the highest frequency band. Calibration: 'MHz' on Ranges 1–4, 'kHz' on Range 5.

***Crystal Selector:**

Part of plug-in Crystal Unit. Provides selection of up to ten crystal-controlled local oscillator frequencies for high-stability working on Ranges 1–4.

SET CRYSTAL SELECTOR TO 'NORMAL' POSITION FOR MANUAL TUNING WITH FREE-RUNNING LOCAL OSCILLATOR.

NB: Receiver will be disabled when plug-in Crystal Unit is withdrawn from panel.

Mode Switch:

Two-posn. toggle switch:— 'AM' — 'CW/SSB' Selects the appropriate detector circuit and introduces the BFO when moved to the 'CW/SSB' position.

Selectivity Switch:

Provides choice of IF bandwidth to suit signal mode. 6dB bandwidth is 4kHz at 'NARROW' and 10kHz at 'WIDE'.

(*)Model 1001 only

CONTROL FUNCTIONS (cont'd)

BFO Control: Functional only when MODE SWITCH is set to 'CW/SSB'. Adjust as follows:

'CW' : Set for desired audio beat.
'USB' : Set clockwise from mid-posn.
'LSB' : Set anti-clockwise from mid-posn.

AF Gain Control: Concentric control with red knob. Controls audio output to internal or external loudspeaker and headset. High-Z Audio Output is not affected by this control.

IF Gain Control: Disabled when using AGC.

Manual/AGC Switch: **MANUAL;** IF GAIN operational — AGC circuit disabled. RF AGC continues to operate on strong signals.

AGC SHORT: IF GAIN disabled — AGC decay of the order 0.5 sec. for AM and high-speed CW telegraphy reception.

AGC LONG: Decay time increased to approximately 8 secs for SSB reception.

Standby Switch: Set to 'ON' position to operate receiver. IF Stages are disabled with (ST. BY) switch set to 'ST BY'.

Supply Switch: **CHARGE:** Internal battery charges from DC output of AC power unit: meter indicates charge current (needle should fall in red sector of meter scale).

SUPPLY OFF: All circuits interrupted.

ON: Receiver circuits connected to appropriate supply, i.e. (1) DC output of AC power unit (with internal battery floating for emergency use), or (2) external 12V battery. Internal battery is out of circuit when using external battery.

Dial/Meter Switch: **DIAL:** Dial lights on — meter indicates relative carrier level.

CENTRE: Dial lights off — meter as 'DIAL'.

BATT CHECK: Dial lights off — meter shows state of internal battery (or external battery if receiver is installed with external battery connected). Charge battery if needle lies below red sector of meter scale (see page 27).



Fig. 5.1 Front view of Model 1001 showing panel controls

TUNING INSTRUCTIONS

NB: Refer to page 25 for crystal-controlled operation (Model 1001).

1. Set SUPPLY SWITCH to 'ON'.
2. Check that STANDBY SWITCH (ST. BY.) is set to 'ON'.
3. If operating from internal or external battery, check that the meter reads in the red sector of the scale when DIAL/METER SWITCH is set to 'BATT CHECK' position.
4. Set DIAL/METER SWITCH to 'DIAL' if scale illumination is required. (Prolonged use of dial illumination is not recommended when operating receiver from internal battery.
5. Connect telephones if required (loudspeaker becomes muted).
6. On Model 1001 only, check that CRYSTAL SELECTOR is set to the 'NORMAL' position.
7. Select appropriate RANGE and adjust TUNING to required frequency. FINE TUNING CONTROL should be set to centre position.
8. Set MODE SWITCH to 'AM' for reception of A2, A2H and A3 signals or to 'CW/SSB' for A1 telegraphy and A3A, A3H or A3J telephony.
9. Set SELECTIVITY SWITCH to 'WIDE' for A3 reception, to 'NARROW' for other signal modes. 'NARROW' position can be used for A3 signals when subject to adjacent channel interference.
10. Set MANUAL/AGC SWITCH to required position (IF GAIN CONTROL is disabled at 'AGC' settings).
11. Adjust AF GAIN (and IF GAIN if operational) for a comfortable listening level.
12. A3 telephony signals can now be tuned in the normal manner: for CW and SSB signals (A1, A3J etc.) proceed as follows;—

NB: It is assumed that the MODE SWITCH is set to 'CW/SSB', and the SELECTIVITY SWITCH to 'NARROW'.

CW Reception

- (a) Set BFO CONTROL to an initial setting of approximately 30° to right or left of 12 o'clock position. Direction of off-set is unimportant at this stage.
- (b) Adjust TUNING CONTROL to required transmission, setting for beat note of the order 1000Hz. The FINE TUNING CONTROL can be utilised to permit easier adjustment.
- (c) Re-adjust BFO CONTROL for higher or lower pitch to suit operator's preference.
- (d) In the event of an interfering beat being audible due to the presence of another station on an adjacent channel, re-adjust BFO CONTROL for zero-beat with the interference. The wanted station will remain readable but with higher or lower pitch. In some cases, interference can be reduced by setting the BFO CONTROL to opposite side of centre setting.
- (e) If AGC is to be used when receiving CW transmissions, compare reception in 'AGC SHORT' and 'AGC LONG' positions. Select setting which best suits prevailing conditions and keying speed in use.

SSB Reception

- (a) Set BFO CONTROL to first index mark clockwise or anti-clockwise from 12 o'clock setting. Offset should be clockwise for USB signals, anti-clockwise for LSB.
- (b) Adjust TUNING CONTROL to required transmission. This adjustment should be performed much more slowly than when tuning to a double-sideband signal and final adjustment is best carried out by use of the FINE TUNING CONTROL.
- (c) Inability to obtain clear intelligible speech indicates that the setting of the BFO CONTROL is incorrect. In this event, alter its setting by small increments above and below the initial setting until the signal can be fully resolved by further adjustment of the FINE TUNING CONTROL.

NB: Precise settings for the BFO CONTROL determined in (c) above should be noted for convenience in future operation of the receiver.

- (d) It is recommended that all preliminary tuning adjustments are carried out with the MANUAL/AGC SWITCH at 'MANUAL' and the IF GAIN set at a moderately low level. The 'AGC LONG' setting can be selected on completion of tuning.

CRYSTAL CONTROL FACILITY (MODEL 1001 ONLY)

The plug-in Crystal Unit fitted at the left-hand side of the panel can be equipped with up to ten crystals to provide high-stability local oscillator working at frequencies on Ranges 1—4.

Calculation of Crystal Frequency

CRYSTAL FREQUENCY = SIGNAL FREQUENCY $\pm$ INTERMEDIATE FREQUENCY.

NOTE 1 Intermediate frequency is nominally 455kHz. Exact frequency for each receiver is measured during test and recorded on receiver panel behind front-plate of plug-in Crystal Unit.

NOTE 2 If reception channel is for an 'SSB' signal, the calculated crystal frequency must be adjusted by $\pm$ 1.5kHz: the following rules must be observed:—

Crystal freq. chosen ABOVE signal freq. :	ADD	1.5kHz for USB.
	DEDUCT	1.5kHz for LSB.

*Crystal freq. chosen BELOW signal freq. :	ADD	1.5kHz for LSB
	DEDUCT	1.5kHz for USB.

(*) Setting of BFO CONTROL must be reverse of normal to obtain correct carrier insertion frequency, i.e. set clockwise for LSB and anti-clockwise for USB.

NOTE 3 If calculated crystal frequency is above 20MHz, divide by two or three and use second or third crystal harmonic to furnish the required oscillator injection frequency.

Crystal Specification

Crystal — Inter-Services Style 'D' (International Style 'AA'), for parallel mode oscillator service with load capacity of 30pF. Frequency in kHz. Tolerance 0.002% calibrated at 25°C.

Orders placed with Eddystone Radio Limited can be abbreviated as follows:

Quantity — Crystal(s) for use with Model 1001 Receiver, frequency or frequencies of crystal(s) quoted in kHz.

Procedure for Fitting Crystals

1. Disengage the two pull-to-release buttons and slide the Crystal Unit forward clear of panel.
2. Remove screws and take off cover plate to gain access to crystal sockets.
3. Fit crystals. Sockets are numbered on cover plate to correspond with the ten CRYSTAL SELECTOR switch positions.
4. Record SIGNAL frequencies corresponding to each crystal position on CRYSTAL SELECTOR.
5. Replace cover plate and re-fit Crystal Unit: press retainers to lock unit in position.

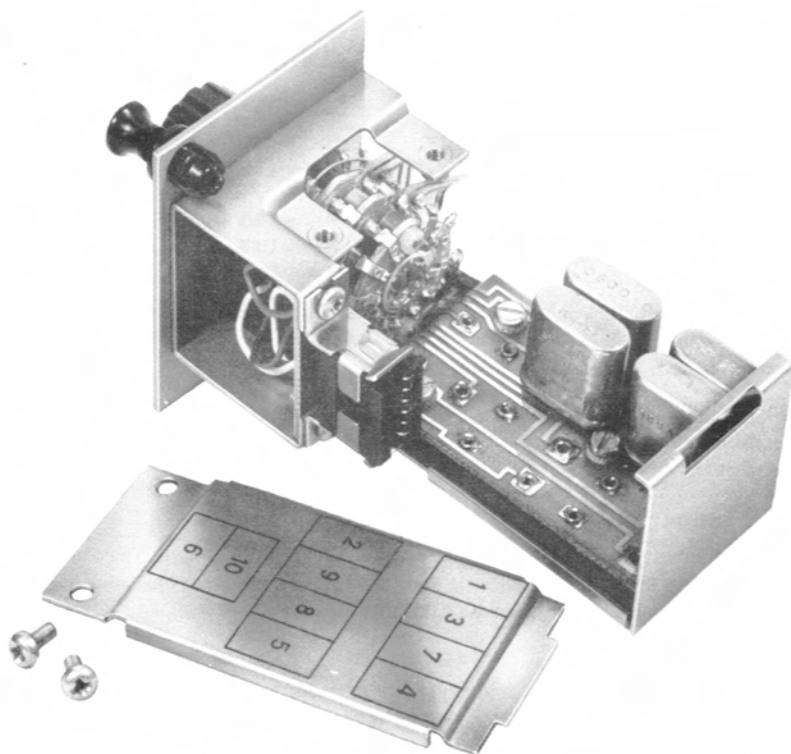


Fig. 5.2 Internal view of plug-in Crystal Unit LP3329

Operation with Crystal Control

1. Locate frequency on CRYSTAL SELECTOR and set CRYSTAL SWITCH to appropriate position.
2. Select correct RANGE and adjust TUNING CONTROL to frequency, peaking for maximum signal strength.
3. All other controls function normally except FINE TUNING CONTROL.

BATTERY CHARGING

The internal battery used in 1000 and 1001 receivers is a nickel-cadmium type, chosen for its extreme tolerance to over-charge and over-discharge: it will require no special attention and will not deteriorate in the manner experienced with normal dry batteries.

Its capacity in a fully charged state is sufficient to provide up to seven hours' continuous operation at normal volume level: a 12-hour charge will restore the battery to full capacity.

When operating the receiver from an AC source, a small current will be drawn from the battery during periods of above-average audio output. Trickle-charging will occur at normal audio output, the average rate being adequate to maintain the battery in a fully charged condition in readiness for emergency use in the event of supply failure.

The internal battery should always be fully DISCHARGED when the receiver is to be operated for a prolonged period from an external battery on a site where a local AC supply is not available. This is the normal storage condition for a battery of this type which will be restored to full capacity on completion of three or four cycles of charge and discharge at normal rate.

To charge battery, connect receiver to AC mains supply and set the SUPPLY SWITCH to 'CHARGE'. Meter will indicate charge current. To check battery voltage, SUPPLY SWITCH must be set to 'ON' position and DIAL/METER SWITCH to 'BATT CHECK'. Readings should lie in red sector of meter scale.

CARRIER LEVEL METER

The panel meter gives relative indication of signal strength except when the DIAL/METER SWITCH is set to 'BATT CHECK'. Meter functions with or without AGC in use and receiver should always be tuned for maximum meter deflection. Meter registers battery state with DIAL/METER SWITCH at 'BATT CHECK', and charge current with SUPPLY SWITCH at 'CHARGE'. In both cases meter should read in red sector of scale.

MAINTENANCE

The 1000/1001 Receivers have been designed for maximum reliability and should require very little in the way of routine maintenance even when used continuously under arduous operating conditions.

This section of the Handbook gives guidance for simple operations such as changing fuses and dial lights, and more detailed instructions on performance testing, re-alignment etc. Appendix 'A' on page 44 contains a comprehensive analysis of voltages to facilitate fault-finding. Spares can be supplied ex-stock for user-servicing and arrangements can be made for equipment to be returned to the manufacturer for specialised attention. The Receiver Type and Serial No. should be quoted in all communications.

FUSE REPLACEMENT

Bulgin Type F.270 quick action glass cartridge fuses (or equivalent 5mm x 20mm fuses) are supplied as spares in the Accessories Kit sent out with the receiver. Part Nos. 1 Amp fuse 7173P, 2 Amp 6704P.

Fuse ratings are as follows:— AC FUSES : : 1A (200/260V)
2A (100/130V)

DC FUSE : : 2A

NB: DC Fuse remains operative when receiver is operated from AC supply.

DIAL LAMP REPLACEMENT

One spare dial bulb is supplied with the receiver and additional spares can be ordered by quoting Part No. 8448P. To fit spares proceed as follows:

1. Unscrew the four screws, 2 on each side, and remove the top outer cover.
2. Remove the two screws which retain the inner cover, lift cover slowly, disengage dial lamp supply connector and then remove cover completely.
3. Unsolder faulty bulb from printed circuit termination and then push the bulb out of retainer (towards centre of cover).
4. Insert new bulb (wire-end first) and solder to printed circuit termination. Examine soldering for possible short-circuit.
5. Reconnect dial lamp supply, apply power to the receiver and check that both bulbs light normally.
6. Replace both covers and tighten screws.

INSTRUCTIONS FOR RE-STRINGING CURSOR DRIVE CORD

A replacement drive cord can be obtained from the manufacturer by quoting Part No. D4709. The cord is supplied complete with eyelets which are spaced 848mm ($33\frac{3}{8}$ in). Procedure for fitting is as follows:—

1. Remove the four screws, 2 on each side, and carefully lift off the outer cover. Remove inner dial light cover.
2. Remove calibrated scale drum for access to guide pulleys on rear drive mounting plate. Proceed as follows:—
 - (a) Set Range Switch to Range 1 for access to interior of scale drum.
 - (b) Locate scale drum locking screws and slacken about $1\frac{1}{2}$ -turns (the drum will rotate due to tension of coil spring at right-hand end).
 - (c) Slacken screw in scale drum spindle collar (adjacent to meter).

- (d) Slide collar off spindle and remove also the steel shim washer which is trapped behind it.
 - (e) Grip helical gear and withdraw spindle through right-hand side plate (support drum and extract coil spring as spindle clears end bearing).
 - (f) Lift drum clear and store with other loose items in readiness for re-assembly.
3. Remove panel for access to vernier dial and flywheel.
- (a) Unsolder leads from loudspeaker and meter.
 - (b) Remove plug-in Crystal Unit (Model 1001 only).
 - (c) Remove all control knobs (set Tuning to full extreme of anti-clockwise travel before removal).
 - (d) Slacken and remove the panel nuts/washers which retain toggle switch and push the switches through panel.
 - (e) Place receiver in face down position resting on blocks so that handles are clear of bench.
 - (f) Remove the screws holding the panel and handles to the sideplates and lift the receiver clear of the panel.
4. Remove vernier dial and flywheel to expose aperture in drive mounting plate for access to cord drum.
5. Re-string cursor drive cord by proceeding as follows:—
- (a) Take off broken cord and remove cursor.
 - (b) Check that drive is set in fully anti-clockwise position and that slot in cord drum lies at 6 o'clock.
 - (c) Trap one eyelet of replacement cord in rear end of cord drum slot.
 - (d) Lay cord over cord drum, winding on approximately $\frac{1}{2}$ -turn with cord leaving pulley towards right-hand side plate.
 - (e) Pass cord under 1st guide pulley, then vertically upwards and over 2nd guide pulley — keep cord in tension.

- (f) Run cord across dial aperture, over 3rd guide pulley, and then downwards under sprung jockey pulley — keep cord in tension.
 - (g) Pass cord back across dial aperture, over 4th guide pulley, over vernier spindle and then bring free end out through aperture in front of cord drum — keep cord in tension.
 - (h) Maintain tension on free end of cord and rotate tuning spindle clockwise to extreme of travel so that just over 5-turns of cord are wound onto cord drum.
 - (i) Grip free end of cord with tweezers or long-nose pliers, pass over cord drum to wind on $\frac{1}{2}$ -turn in clockwise direction, and then trap eyelet in front end of cord drum slot.
 - (j) Temporarily fit control knob and rotate through complete travel to ensure that cord runs smoothly.
6. Re-fit flywheel and vernier dial with Tuning at fully anti-clockwise position (secure vernier with '0' at 12 o'clock).
7. Fit cursor and set to '0' on logging scale: check for smooth operation.
8. Replace front panel by reversing procedure given in (3) above. Check that Crystal Unit fits correctly before finally tightening the four screws which retain the panel.
9. Replace calibrated scale drum by using procedure detailed below.
- (a) Pass scale drum spindle through right-hand bearing and slide in the tension spring removed in 1(e). Locate tail of spring in hole in bearing bracket.
 - (b) Cradle scale drum in left-hand and continue feeding in spindle until it passes through bearing at left-hand end. Slide on the steel shim washer and retaining collar.
 - (c) Push helical gear against bearing surface and secure collar so that gear is retained in this position.

- (d) Insert other tail of tension spring in hole in end of drum. Rotate drum with fingers approximately four complete revolutions to apply tension to spring. Tighten retaining screws through rear of drum with drum set so that Range 1 shows through scale window: ensure that drum is central in window.
- (e) Select all ranges in turn and observe that drum movement is positive in each position. If more positive action is required, increase spring tension by one or possibly two more turns.

10. Check calibration accuracy and replace covers removed in (1).

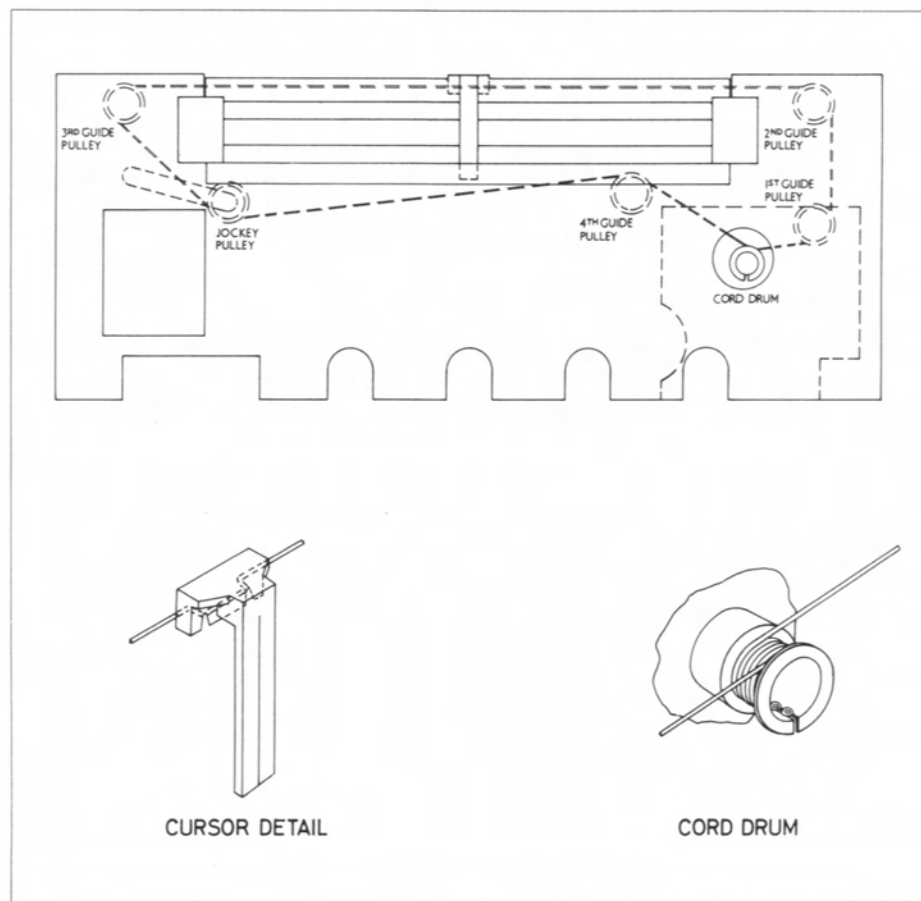


Fig. 6.1 Cording arrangement for Cursor Drive

ACCESSIBILITY FOR SERVICING

Cabinet Removal

1. Place the receiver in the normal position, remove the four screws, two on each side and lift off top cover.
2. Invert the receiver and remove four screws from the base and lift off the bottom cover.

Removal of the large p.c.b. should not be necessary since access can be gained to all parts of the underside by removing the power unit chassis.

Procedure for removing Power Unit

1. Remove the plug-in Crystal Unit to clear space in front of Mains Transformer T1. (Model 1001 only).
2. Unplug the leads from Pins Nos. 71, 72, 73, 75, 76 & 79.
3. Remove the four screws located at the corners of the power unit aperture in the back-plate.
4. Slide unit forward and upward to remove. (Receiver inverted).

NB: When complete removal of power unit is required it is necessary to free Supply Switch from panel and disconnect DC Input lead.

Procedure for setting IC2 quiescent current

If IC2 is changed, RV6 must be adjusted to set the IC2 quiescent current to the correct value: proceed as follows:—

1. Remove the link between Pin Nos. 57 & 58 (see Fig. 3.2 for location).
2. Connect a milliammeter in place of the link with polarity connection as indicated on board.
3. Switch on receiver, set AF GAIN to minimum and then adjust RV6 for a standing current of 10mA.
4. Disconnect meter and replace link.

PERFORMANCE TESTING

WARNING

The 1000/1001 Receivers have provision for operation with floating circuit earth to permit direct connection to DC power supplies which do not have their negative pole connected to earth. Personnel should note, that when the receiver is operated in this manner, there is a possibility that on some installations a dangerous potential may exist between the internal circuitry and the outer frame. Caution must therefore be exercised in handling the set with the covers removed, and special precautions should be taken when connecting test equipment. Wherever possible the receiver should be transferred to an alternative power source which allows it to be operated with the FRAME/CIRCUIT EARTH LINK in position.

Voltage Analysis

A complete list of voltage values for all transistors etc. will be found in Appendix 'A' on page 44.

Test Equipment

The following equipment in the Marconi Instruments range is recommended for performance testing of the Receiver, Model 1000 or 1001.

TF.2002AS SIGNAL GENERATOR

Freq. range: 10kHz — 72MHz.
Int. Calibrator: 10kHz, 100kHz
and 1MHz markers.
Incremental tuning facility

TF.2500 AF POWER METER

Seven power ranges.
Wide impedance range.
Also usable as voltmeter with
range 15mV — 150V.

TF.1101 R—C OSCILLATOR

Freq. range: 20Hz — 200kHz.
Thermistor stabilised.
60dB step attenuator.
Integral o/p level meter.

1. Overall Performance Check

If substandard performance is suspected, withdraw the receiver from service and carry out an overall performance check at the mid-frequency of each range. Proceed as follows:—

(a) Connect 75Ω (400Ω on Range 5) signal generator output to AERIAL INPUT, (A1 socket and Earth with Earth/AE link fitted).

(b) Connect the output meter (matched at 8Ω) to EXT SPKR PLUG. Caution: Loudspeaker circuit is at +ve potential w.r.t. circuit earth — take care to avoid shorting leads.

(c) Set SUPPLY SWITCH to 'ON', STANDBY SWITCH to 'ON' and other controls as follows:—

SELECTIVITY : : 'NARROW'
MODE SWITCH : : 'AM'
MANUAL/AGC : : 'MANUAL'

IF GAIN : : 'MAX'
FINE TUNING : : mid position
AF GAIN, RANGE SWITCH & TUNING : :
Adjust during test
CRYSTAL SELECTOR : : NORMAL
(Model 1001 only)

(d) Tune receiver/generator to frequencies listed below and check sensitivity for 15dB (S+N/N) ratio with output of 50mW (generator modulated 30% at 400Hz).

RANGE 1 : : 24 MHz

RANGE 4 : : 2.1 MHz

RANGE 2 : : 12 MHz

RANGE 5 : : 750 kHz

RANGE 3 : : 5 MHz

(e) Sensitivity figures should be better than $5\mu\text{V}$ on ranges 1—4 and better than $15\mu\text{V}$ on range 5.

(f) If the overall sensitivity is found to be low on some but not all ranges, re-alignment should be carried out as detailed on page 38.

(g) If overall sensitivity is generally low on all ranges, carry out audio and IF tests as detailed in 2 and 3 as follows:—

2. Audio Sensitivity Check

(a) Audio Output

- (i) Connect audio generator to top end of AF GAIN CONTROL.
- (ii) Set AF GAIN to maximum.
- (iii) Connect output meter as for Overall Performance Check.
- (iv) Tune audio generator to 1kHz and check that an output of 50mW is obtained for 4–10mV input.

(b) Audio Response

Response should be level within 6dB over the range 300Hz to 6kHz.

3. IF Sensitivity Checks

(a) Overall IF Sensitivity

- (i) Connect signal generator to stator of C40 (middle section of tuning gang).
- (ii) Connect output meter as for Overall Performance Check.
- (iii) Set receiver controls as follows:—

RANGE SWITCH : : '5'
MANUAL/AGC : : 'MANUAL'
IF GAIN : : 'MAX'
AF GAIN : : 'MAX'
SELECTIVITY : : 'NARROW'
MODE SWITCH : : 'AM'
ST/BY SWITCH : : 'ON'

CRYSTAL SELECTOR : : To
any vacant 'crystal' posn.
to disable local osc.
stage. (Model 1001 only).
Short circuit oscillator
section of tuning gang
on Model 1000.

- (iv) Tune generator to 455kHz (modulated 30% at 400Hz) and adjust attenuator for reading of 50mW with signal at centre of IF passband. Sensitivity should lie in the range 4–8 μ V.
- (v) If sensitivity is below normal, re-align IF circuits as described on page 38.
- (vi) If low sensitivity still persists, carry out stage by stage testing as in (b) on page 37.
- (vii) Check that gain does not change by more than 2dB when the SELECTIVITY SWITCH is moved from 'NARROW' to 'WIDE'.

3. IF Sensitivity Checks (cont'd).

(b) Stage Testing

The following tests will assist in fault location when the IF channel exhibits low overall sensitivity.

NOTE 1 Live generator lead must be blocked to DC with a $0.1\mu\text{F}$ capacitor when carrying out tests below.

NOTE 2 Output meter is connected as in 1(b). Controls should be set as for an overall IF sensitivity check.

NOTE 3 Direct connection to IC1 is facilitated by using the blade of a screwdriver as a probe (outer braid of generator lead can be earthed to coil pack screens).

NOTE 4 When testing from No.38 on PCB, the wide bandwidth and high gain of the amplifier may give rise to errors in measurement unless screening of the generator output lead is complete. Soldered connections are recommended with earthing to adjacent pin No.39.

Connect generator (modulated 30% at 400Hz, tuned to 455kHz) to each input point in turn. Allow 10% deviation in measured result to accommodate transistor spread.

Generator Input Point	Sensitivity for 100mW o/p
IC1 Pin 1	44mV
IC1 Pin 2	1.1mV
IC1 Pin 11	360 μV
PCB Pin 38	50 μV
PCB Pin 23 *	80 μV

(*) Check that generator is tuned to centre of filter response.

RE-ALIGNMENT

General

Close-tolerance components are used in all tuned circuits throughout the receiver and re-alignment is not likely to be required unless coils and/or associated capacitors have been changed. Detailed instructions for re-aligning all pre-set circuits are given below on the assumption that the necessary adjustments will be carried out by skilled technicians with a sound knowledge of the basic procedures involved. A suitable range of test equipment is listed on page 34. Receivers can be returned to the manufacturer if this course of action is preferred.

NOTE: ALL CORES AND TRIMMERS ARE SELF-LOCKING

WARNING Refer to warning on page 34.

Re-alignment of 455kHz IF circuits

1. Carry out operations (i) to (iv) in 3(a) on page 36.
2. Tune generator across the IF passband and set to the centre of filter response.
3. Trim cores in L22, L23 & L24 for maximum reading on output meter.
4. Check that sensitivity is of the order $4-8\mu\text{V}$ for 50mW output.
5. Set SELECTIVITY SWITCH to 'WIDE' and check that the change in sensitivity does not exceed 2dB.
6. Check IF bandwidth in both selectivity positions.

NARROW : : 4kHz at -6dB, 12kHz at -40dB

WIDE : : 10kHz at -6dB, 22kHz at -40dB

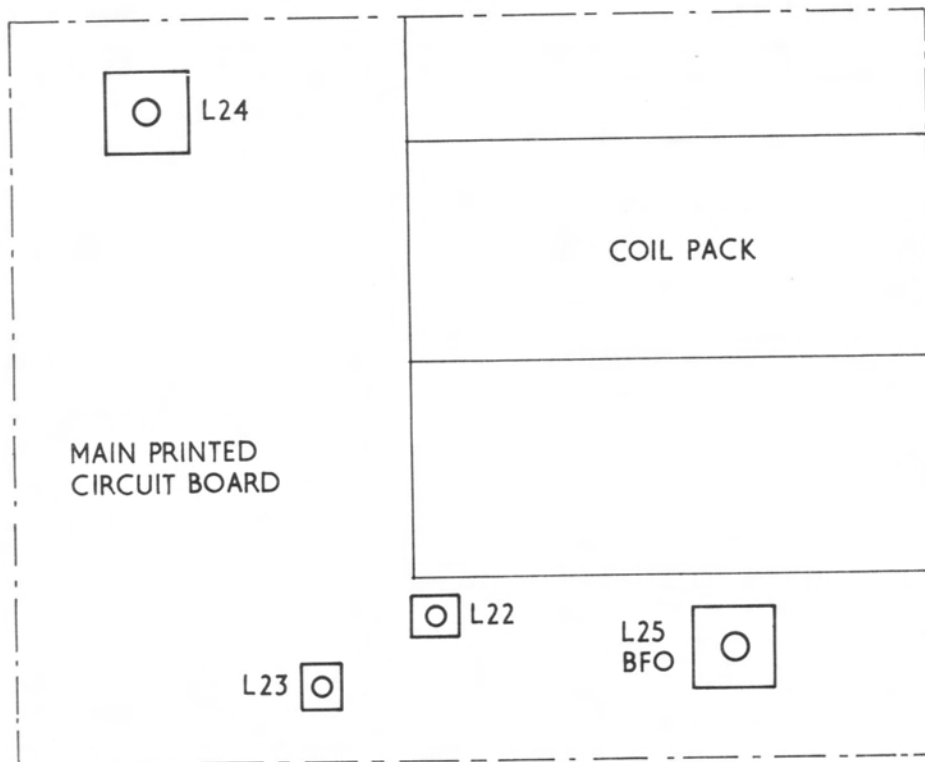


Fig. 6.2. Location of IF and BFO trimming adjustments

Re-alignment of BFO

1. Connect generator set to 455kHz, unmodulated as in Re-alignment of 455kHz IF circuits step 1.
2. Set receiver controls as in 3(a)(iii) on page 36 but with MODE set to 'CW/SSB' and BFO at mid-travel position.
3. Adjust generator output to approximately 40 μ V and tune accurately to IF centre frequency using the carrier-level meter as an indicator.
4. Adjust L25 for zero beat.
5. Check that swing of BFO control is not less than ± 3 kHz.

Front-end re-alignment

1. Re-alignment of the local oscillator circuits

This alignment should only be carried out if scale errors have been noted in excess of 1%. The task should be performed preferably with a signal source equipped with internal scale check facility providing markers at 1MHz, 100kHz and 10kHz: Marconi Instruments signal generator Type TF.2002AS is recommended as a suitable choice.

In the event of this instrument (or one with comparable specification) not being available, the necessary adjustments can be carried out by combined use of any stable standard signal generator with a separate crystal-controlled harmonic generator. The procedure given below assumes use of the TF.2002AS because the alternative method can be lengthy and tedious. Under no circumstances should the re-alignment be attempted using an unchecked signal source.

(a) Connect the signal generator to AERIAL INPUT A1 & Earth with the Earth/AE link fitted.

(b) Set receiver controls as follows:

MANUAL/AGC :: 'MANUAL'	FINE TUNING :: Mid-position
IF GAIN :: 'MAX'	CRYSTAL SELECTOR :: NORMAL
AF GAIN :: As required	(Model 1001 only)
SELECTIVITY :: 'NARROW'	
MODE SWITCH :: 'AM'	
ST/BY SWITCH :: 'ON'	

(c) Modulate the signal generator output 30% at 400Hz and standardise calibration scale at 28MHz.

(d) Select Range 1 on receiver and set cursor accurately to 28MHz.

(e) Trim C61 for maximum signal response using the carrier-level meter as tuning indicator.

(f) Standardise generator at 19MHz and set receiver cursor to 19MHz.

(g) Adjust core in L15 for maximum signal response.

(h) Repeat adjustments of trimmer and core until interaction is nullified.

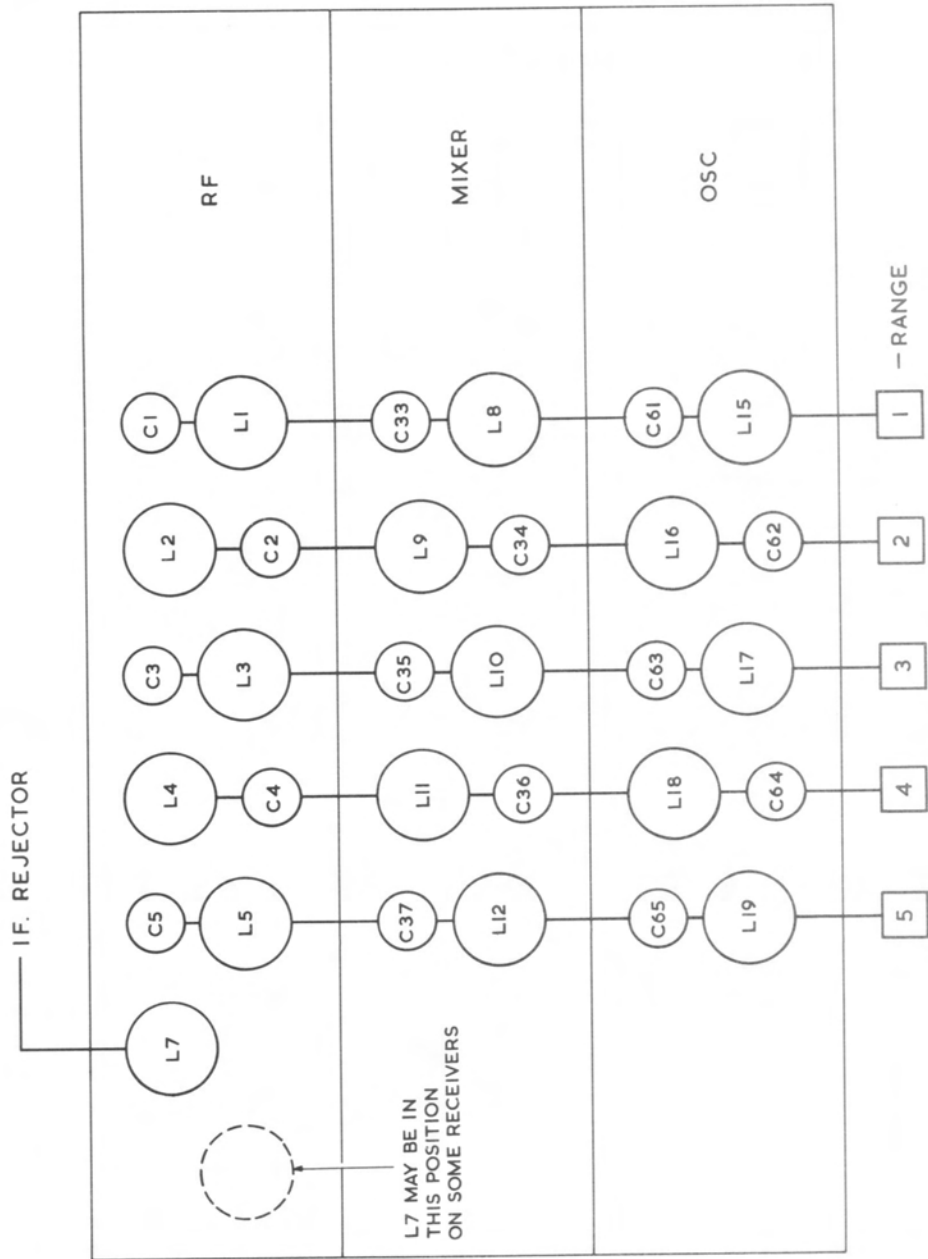


Fig. 6.3 Location of RF, Mixer and Oscillator trimming adjustments

- (i) Select Ranges 2–5 and repeat procedure (d) to (h) adjusting the appropriate trimmers and cores at the frequencies indicated in Table 6.1.

TABLE 6.1 LOCAL OSCILLATOR ALIGNMENT FREQUENCIES AND ADJUSTMENTS

Range	Freq.	Core	Freq.	Trimmer
1	19MHz	L15	28MHz	C61
2	9MHz	L16	16MHz	C62
3	3.8MHz	L17	7.5MHz	C63
4	1.6MHz	L18	3.5MHz	C64
5	600kHz	L19	1300kHz	C65

2. Signal frequency circuits

- (a) Twist tabs and remove cover from mixer section of coil pack.
- (b) Connect the signal generator to AERIAL INPUT socket A1, set modulation to 30% at 400Hz and output level as required.
- (c) Connect output meter (matched to 8Ω) to the EXT SPKR Socket. Caution: loudspeaker circuit is at +ve potential w.r.t. circuit earth – take care to avoid shorting leads.
- (d) Set receiver controls as in 1(b) on page 40.

- (e) Tune receiver/generator to 28MHz and adjust trimmers C1 and C33 for maximum reading on output meter. Local oscillator frequency will pull when adjusting C33 but calibration accuracy can be preserved by 'rocking' tuning during adjustment.
- (f) Tune receiver/generator to 19MHz and adjust cores in L1 & L8 for maximum output: rock tuning as before.
- (g) Repeat adjustments (e) & (f) until interaction is nullified.
- (h) Select Ranges 2–5 in turn and adjust trimmers and cores at the frequencies indicated in Table 6.2. Rock tuning for adjustments marked (*).
- (i) On completion of alignment on each range, reduce generator o/p to 5 μ V (15 μ V on Range 5) and check that the S+N/N ratio is at least 15dB (50mW audio output).

TABLE 6.2 RF/MIXER ALIGNMENT FREQUENCIES AND ADJUSTMENTS

Range	Core Adjustments			Trimmer Adjustments		
	Freq.	RF	Mixer	Freq.	RF	Mixer
1	19MHz	L1	L8*	28MHz	C1	C33*
2	9MHz	L2	L9*	16MHz	C2	C34*
3	3.8MHz	L3	L10	7.5MHz	C3	C35
4	1.6MHz	L4	L11	3.5MHz	C4	C36
5	600kHz	L5	L12	1300kHz	C5	C37

(*) Rock tuning during adjustment

- (j) Replace cover over Mixer section: twist tabs.
- (k) Trim L7 on Range 5 for maximum rejection of 455 kHz signal at aerial input. Slight re-adjustment of L5 may be required after setting L7.

3. Fine Tune

With the controls and generator set as in 2 measure the swing of FINE TUNE control at 19MHz and 28MHz. This should be of the order 10kHz and 30kHz respectively.

APPENDIX 'A'

VOLTAGE ANALYSIS

In the event of the receiver failing to operate normally, voltage analysis should be carried out in the sequence given below. Voltages quoted here were taken with a standard 20,000 Ω /V testmeter (AVO Model 8): 10% variation should be allowed on all readings to cover the usual zener and semiconductor spread. All voltages are positive w.r.t. circuit earth.

1. Check availability of +11V supply at Power Unit termination No.71, and +9V at No.72.

2. Check availability of +11V and +9V supplies at PCB terminations listed below:—

No.64 +11V (Model 1001 only)

Nos. 10 & 62 +11V (CRYSTAL SELECTOR set to 'NORMAL' on Model 1001 only)
 +11V direct to No.10 on Model 1000.

Nos.4, 15, 22, 49 & 53 +11V under all conditions of switching.

No.43 +9V with STANDBY SWITCH 'ON'.

No.50 +9V under all conditions of switching.

3. Check individual stage voltages by reference to Table which follows. Readings should be taken with receiver controls at the settings listed below:—

RANGE SWITCH	: 5	MODE SWITCH	: 'CW/SSB'
TUNING	: 1.5MHz	AF GAIN	: Minimum
IF GAIN	: Maximum	MANUAL/AGC	: 'MANUAL'
BFO	: Centre Position	STANDBY	: 'ON'
CRYSTAL SELECTOR (Model 1001 only)	: 'NORMAL'	DIAL/METER	: Centre Position
FINE TUNE	: Centre Position		

Ref	Emitter/ Source	Base/ Gate (1)	Gate 2	Collector /Drain	Notes
TR1	0.85V	0V	—	2.8V	
TR2	2.8V	1.2V*	—	9.5V	
TR3	0.35V	0V	0.4V**	10.8V	
TR4	0.65V	0V	—	9.2V	
TR5	3.7V	0.8V*	—	9.3V	
†TR6	8.0V	4.2V	—	10.5V	1
†TR7	1.5V	0.9V*	—	4.1V	1
TR8	0.25V	0.8V	—	5.9V	
TR9	1.4V	0V	—	6.0V	
TR10	4.5V	1.6V*	—	10.5V	2
TR11	0.85V	1.4V*	—	3.3V	
TR12	1.1V	0V	—	3.1V	
TR13	1.3V	0V	0.6V*	4.3V	
TR14	9V	10V	—	14V	

NOTES The following notes refer to the table above.

NOTE 1 CRYSTAL SELECTOR at 'crystal' position with crystal fitted.

NOTE 2 Gate voltage of TR10 swings 1.6V to 5.6V for full coverage of IF GAIN.

† TR6 & TR7 fitted on Model 1001 only.

(*) 10V range.

(**) 2.5V range.

Use most convenient range for all other readings.

Integrated Circuits

IC1 : : 14-lead dual-in-line package.

1	8.15V	5	0V	9	5.9V	13	0V
2	1.3V	6	0.4V	10	5.3V	14	4V
3	0.6V	7	12 μ A *	11	8.1V		
4	0V	8	8.2V	12	0.7V		

** IC2 : : 10-lead TO-74 package.

1	0V	4	8.6V	7	3.7V	10	0V
2	4.1V	5	8.6V	8	4V		
3	8.6V	6	6.5V	9	3.2V		

(*) 50 μ A range

(**) RV6 set for 10mA quiescent current.

APPENDIX 'B'

SEMICONDUCTOR COMPLEMENT

Ref	Type	Mfr.	Circuit Function
TR1	UC734B	Solidev	Cascode RF Amplifier
TR2	3N128	RCA	
TR3	40673	RCA	Mixer
TR4	3N128	RCA	Local Oscillator 1. (VFO)
TR5	UC734B	Solidev	Local Osc. 1 Buffer
*TR6	2N4254	Texas	Local Osc. 2 Buffer
*TR7	2N4254	Texas	Local Oscillator 2 (CRYSTAL).
TR8	BC107B	Mullard	2nd 455kHz IF Amplifier
TR9	UC734B	Solidev	CW/SSB Isolator
TR10	UC734B	Solidev	IF AGC Controller
TR11	BC107B	Mullard	IF AGC Amplifier
TR12	UC734B	Solidev	Beat Frequency Oscillator
TR13	40673	RCA	CW/SSB Detector
TR14	2N4921	RCA	Voltage Regulator (9V supply)
IC1	CA3046	RCA	(1) 1st 455kHz IF Amplifier (2) 3rd 455kHz IF Amplifier (3) Emitter Follower (AM Det.) (4) RF AGC Amplifier
IC2	TAA300	Mullard	Main Audio Amplifier
PC1	8X1N4148	Newmarket	Input protection (diode package)
D1	BA112	ITT	Local Oscillator VVC
D2	1S44	Texas	Oscillator Bias Diode
*D3	1S44	Texas	Breakdown Protection
D4	BZY88/C9V1	Mullard	Zener Regulator
D5/6	2 x 1S44	Texas	IF AGC Control Elements
D7/8	2 x 1S44	Texas	AM Detector Bias Diodes
D9	1S44	Texas	AM Detector
D10/11	2 x 1S44	Texas	RF AGC Rectifier
D12	BZY88/C6V8	Mullard	Zener Regulator
D13/14	2 x 1S44	Texas	IF AGC Rectifier
D15			Not fitted
D16	BA112	ITT	BFO Pitch VVC
D17	BZY88/C3V3	Mullard	Zener Regulator
D18	BZY95/C11	Mullard	Zener Regulator (11V supply)
D19			Not fitted
D20	BZY88/C10	Mullard	Zener Regulator (10V)
D21	DD0006	Lucas	Reverse Polarity Protection
D22	0SH01/A-100	Mullard	Supply Rectifier (Bridge)

* TR6, TR7 and D3 are fitted on Model 1001 only.

APPENDIX 'C'

COMPONENT VALUES TOLERANCES AND RATINGS

CAPACITORS (See page 52 for Code/Manufacturers' Ref. Nos. etc.)

Ref	Value	Type	Tol	Wkg V	Cde
C1	4–30pF	Foil Trimmer	—	—	A
C2	4–30pF	Foil Trimmer	—	—	A
C3	4–30pF	Foil Trimmer	—	—	A
C4	4–30pF	Foil Trimmer	—	—	A
C5	4–30pF	Foil Trimmer	—	—	A
C6	—	Ref. not allocated	—	—	—
C7	—	Ref. not allocated	—	—	—
C8	170pF	Polystyrene	5%	125V	C
C9	50pF	Polystyrene	5%	125V	C
C10	2000pF	Polystyrene	2%	125V	C
C11	—	Ref. not allocated	—	—	—
C12	—	Ref. not allocated	—	—	—
C13	12–358pF	Air-spaced Variable	—	—	—
C14	60pF	Tubular Ceramic	10%	750V	G
C15	0.1μF	Polycarbonate	10%	100V	E
C16	0.1μF	Polycarbonate	10%	100V	E
C17	0.1μF	Polycarbonate	10%	100V	E
C18	0.1μF	Polycarbonate	10%	100V	E
C19	2pF	Tubular Ceramic	0.25pF	750V	F
C20	2pF	Tubular Ceramic	0.25pF	750V	F
C21	3pF	Tubular Ceramic	0.25pF	750V	G
C22	—	Ref. not allocated	—	—	—
C23	47pF	Polystyrene	10%	125V	C
C24	—	Ref. not allocated	—	—	—
C25	200pF	Polystyrene	5%	125V	C
C26	50pF	Polystyrene	5%	125V	C
C27	—	Ref. not allocated	—	—	—
C28	—	Ref. not allocated	—	—	—
C29	0.01μF	Metallised Paper	10%	200V	I
C30	—	Ref. not allocated	—	—	—
C31	—	Ref. not allocated	—	—	—
C32	—	Ref. not allocated	—	—	—
C33	4–30pF	Foil Trimmer	—	—	A
C34	4–30pF	Foil Trimmer	—	—	A
C35	4–30pF	Foil Trimmer	—	—	A
C36	4–30pF	Foil Trimmer	—	—	A
C37	4–30pF	Foil Trimmer	—	—	A
C38	—	Ref. not allocated	—	—	—

Ref	Value	Type	Tol	Wkg V	Cde
C39	—	Ref. not allocated	—	—	—
C40	12–358pF	Air-spaced Variable	—	—	—
C41	60pF	Tubular Ceramic	10%	750V	G
C42	0.1μF	Polycarbonate	10%	100V	E
C43	150pF	Polystyrene	2%	125V	C
C44	0.1μF	Polycarbonate	10%	100V	E
C45	0.1μF	Polycarbonate	10%	100V	E
C46	0.1μF	Polycarbonate	10%	100V	E
C47	0.1μF	Polycarbonate	10%	100V	E
C48	0.047μF	Polycarbonate	10%	100V	E
C49	170pF	Polystyrene	5%	125V	C
C50	0.0049μF	Polystyrene	1%	125V	C
C51	39pF	Polystyrene	5%	125V	C
C52	0.003μF	Polystyrene	1%	125V	C
C53	1370pF	Polystyrene	1%	125V	C
C54	—	Ref. not allocated	—	—	—
C55	470pF	Polystyrene	1%	125V	C
C56	—	Ref. not allocated	—	—	—
C57	—	Ref. not allocated	—	—	—
C58	—	Ref. not allocated	—	—	—
C59	—	Ref. not allocated	—	—	—
C60	—	Ref. not allocated	—	—	—
C61	7–35pF	Disk Ceramic Trimmer	—	—	J
C62	7–35pF	Disk Ceramic Trimmer	—	—	J
C63	7–35pF	Disk Ceramic Trimmer	—	—	J
C64	7–35pF	Disk Ceramic Trimmer	—	—	J
C65	7–35pF	Disk Ceramic Trimmer	—	—	J
C66	—	Ref. not allocated	—	—	—
C67	—	Ref. not allocated	—	—	—
C68	15pF	Polystyrene	5%	125V	C
C69	0.01μF	Polycarbonate	10%	100V	E
C70	18–364pF	Air-spaced Variable	—	—	—
C71	68pF	Polystyrene	5%	125V	C
C72	100pF	Polystyrene	5%	125V	C
C73	0.047μF	Plate Ceramic	+80%–20%	30V	K
C74	0.1μVF	Polycarbonate	10%	100V	E
C75	0.01μF	Polycarbonate	10%	100V	E
*C76	70pF	Polystyrene	5%	125V	C
*C77	22μF	Tantalum	20%	16V	L
C78	0.047μF	Plate Ceramic	+80%–20%	30V	K
C79	10μF	Tantalum	20%	16V	L

Ref	Value	Type	Tol	Wkg V	Cde
*C80	22 μ F	Tantalum	20%	16V	L
*C81	0.0047 μ F	Polystyrene	5%	125V	C
*C82	0.001 μ F	Disk Ceramic	+80%—20%	500V	H
*C83	20pF	Tubular Ceramic	10%	750V	G
*C84	60pF	Tubular Ceramic	10%	750V	G
C85	0.0047 μ F	Polystyrene	1%	63V	C
C86	0.0047 μ F	Polystyrene	1%	63V	C
C87	100pF	Polystyrene	5%	125V	C
C88	0.1 μ F	Polycarbonate	10%	100V	E
C89	0.001 μ F	Polycarbonate	10%	100V	E
C90	0.1 μ F	Polycarbonate	10%	100V	E
C91	22 μ F	Tantalum	20%	16V	L
C92	0.001 μ F	Polystyrene	2%	125V	C
C93	0.1 μ F	Polycarbonate	10%	100V	E
C94	0.1 μ F	Polycarbonate	10%	100V	E
C95	0.1 μ F	Polycarbonate	10%	100V	E
C96	0.1 μ F	Polycarbonate	10%	100V	E
C97	0.001 μ F	Polystyrene	2%	125V	C
C98	0.1 μ F	Polycarbonate	10%	100V	E
C99	—	Ref. not allocated	—	—	—
C99A	0.1 μ F	Polyester Film	20%	250V	B
C100	0.1 μ F	Polycarbonate	10%	100V	E
C100A	1 μ F	Polycarbonate	10%	400V	E
C101	0.0022 μ F	Silvered Mica	5%	200V	M
C102	0.001 μ F	Disk Ceramic	+80%—20%	500V	H
C103	0.1 μ F	Polycarbonate	10%	100V	E
C104	200pF	Polystyrene	5%	125V	C
C105	0.047 μ F	Plate Ceramic	+80%—20%	30V	K
C106	0.001 μ F	Disk Ceramic	+80%—20%	500V	H
C107	0.1 μ F	Polycarbonate	10%	100V	E
C108	0.1 μ F	Polycarbonate	10%	100V	E
C109	0.1 μ F	Polycarbonate	10%	100V	E
C110	0.1 μ F	Polycarbonate	10%	100V	E
C111	0.1 μ F	Polycarbonate	10%	100V	E
C112	0.1 μ F	Polycarbonate	10%	100V	E
C113	0.47 μ F	Polycarbonate	10%	100V	E
C114	10 μ F	Tantalum	20%	16V	L
C115	0.47 μ F	Polycarbonate	10%	100V	E
C116	0.1 μ F	Polycarbonate	10%	100V	E
C117	0.005 μ F	Metallised Paper	20%	250V	I
C118	0.1 μ F	Polycarbonate	10%	100V	E
C119	0.1 μ F	Polycarbonate	10%	100V	E

Ref	Value	Type	Tol	Wkg V	Cde
C120	—	Ref. not allocated	—	—	—
C121	—	Ref. not allocated	—	—	—
C122	0.1 μ F	Polycarbonate	10%	100V	E
C123	150pF	Polystyrene	2%	125V	C
C124	0.1 μ F	Polycarbonate	10%	100V	E
C125	250pF	Silvered Mica	5%	350V	M
C125A	390pF	Polystyrene	2%	125V	C
C126	100pF	Polystyrene	5%	125V	C
C127	0.47 μ F	Polycarbonate	10%	100V	E
C128	0.01 μ F	Disk Ceramic	+80%—20%	250V	N
C129	0.001 μ F	Disk Ceramic	+80%—20%	500V	H
C130	22 μ F	Tantalum	20%	16V	L
C131	10 μ F	Tantalum	20%	16V	L
C132	0.1 μ F	Polycarbonate	10%	100V	E
C133	0.01 μ F	Disk Ceramic	+80%—20%	250V	N
C134	0.001 μ F	Disk Ceramic	+80%—20%	500V	H
C135	0.001 μ F	Disk Ceramic	+80%—20%	500V	H
C136	0.022 μ F	Polycarbonate	10%	100V	E
C137	0.022 μ F	Polycarbonate	10%	100V	E
C138	150 μ F	Tubular Electrolytic	+50%—10%	16V	V
C139	470 μ F	Tubular Electrolytic	+50%—10%	25V	U
C140	22 μ F	Tantalum	20%	16V	L
C141	0.047 μ F	Plate Ceramic	+80%—20%	30V	K
C142	470 μ F	Tubular Electrolytic	+50%—10%	25V	U
C143	0.1 μ F	Disk Ceramic	+80%—20%	500V	P
C144	1000 μ F	Tubular Electrolytic	+100%—20%	16V	R
C145	7500 μ F+	Dual Electrolytic	+50%—10%	16V	T
C146	7500 μ F				
C147	1 μ F	Polycarbonate	10%	400V	E
C148	0.005 μ F	Disk Ceramic	+80%—20%	3000V	S
C149	0.005 μ F	Disk Ceramic	+80%—20%	3000V	S
C150	0.005 μ F	Disk Ceramic	+80%—20%	3000V	S
C151	3pF	Tubular Ceramic	0.25pF	750V	G
C152	0.1 μ F	Disk Ceramic	+80%—20%	500V	S

* Components used on Model 1001 only.

SUMMARY OF MANUFACTURERS' REFERENCE NUMBERS ETC – CAPACITORS

Code	Manufacturer	Type	Ref. No.
A	Dau	Foil Dielect. Trimmer	107–34S
B	Mullard	Polyester film	C280AE/P100K
C	GEC	Polystyrene	PF125
D	—	Not allocated	—
E	ITT	Met. Polycarbonate	PMA
F	Lemco	Tub. Ceramic	310S
G	Lemco	Tub. Ceramic	310
H	Erie	Disk Ceramic	K350081/831
I	Erie	Met. Paper	W99
J	Steatite	Disk Cer. Trimmer	7S Triko N1500–02
K	Lemco	Plate Ceramic	1212K
L	Union Carbide	Tantalum	Kemet 'E' Series
M	Matthey	Silvered Mica	C12F
N	Erie	Disk Ceramic	K800011/801
O	—	Not allocated	—
P	Erie	Disk Ceramic	K800011/CD17
Q	Erie	Disk Ceramic	K350081/811
R	Erie	Tubular Electrolytic	211 Series
S	Erie	Disk Ceramic	K350011
T	Mullard	Tub. Electrolytic	072–15752
U	Mullard	Tub. Electrolytic	017–16471
V	Mullard	Tub. Electrolytic	016–15151
W	Erie	Tub. Ceramic	SN1300/YD
X	Erie	Tub. Ceramic	NPO/YD
Y	Mullard	Tub. Electrolytic	016–16101
Z	Mullard	Tub. Electrolytic	015–16229

NOTE: EQUIVALENT TYPES WILL BE FITTED WHERE SPECIFIED COMPONENTS ARE NOT AVAILABLE AT TIME OF MANUFACTURE.

RESISTORS

Ref	Value	Tol	Rtg	Ref	Value	Tol	Rtg
R1	2.2M Ω	5%	0.1W	* R40	47,000 Ω	5%	0.1W
R2	Not used	—	—	R41	220 Ω	5%	0.1W
R3	Not used	—	—	R42	5,600 Ω	5%	0.1W
R4	1.8M Ω	10%	0.1W	R43	8,200 Ω	5%	0.1W
R5	270 Ω	5%	0.1W	R44	27,000 Ω	5%	0.1W
R6	22 Ω	5%	0.1W	R45	3,300 Ω	5%	0.1W
R7	0.1M Ω	5%	0.1W	R46	47,000 Ω	5%	0.1W
R8	4.7M Ω	10%	0.1W	R47	5,600 Ω	5%	0.1W
R8A	1.8M Ω	10%	0.1W	R48	3,300 Ω	5%	0.1W
R9	180 Ω	5%	0.1W	R49	390 Ω	5%	0.1W
R10	2,700 Ω	5%	0.1W	R50	27,000 Ω	5%	0.1W
R11	2,200 Ω	5%	0.1W	R51	5,600 Ω	5%	0.1W
R12	Not used	—	—	R52	2,700 Ω	5%	0.1W
R13	Not used	—	—	R53	390 Ω	5%	0.1W
R14	1M Ω	5%	0.1W	R54	150 Ω	5%	0.1W
R15	4,700 Ω	5%	0.1W	R55	0.47M Ω	5%	0.1W
R16	0.47M Ω	5%	0.1W	R56	1.8M Ω	10%	0.1W
R17	33,000 Ω	5%	0.1W	R57	470 Ω	5%	0.1W
R18	270 Ω	5%	0.1W	R58	1,000 Ω	5%	0.1W
R19	22 Ω	5%	0.1W	R59	1,000 Ω	5%	0.1W
R20	220 Ω	5%	0.1W	R60	4,700 Ω	5%	0.1W
R21	Not used	—	—	R61	33,000 Ω	5%	0.1W
R22	220 Ω	5%	0.1W	R62	47,000 Ω	5%	0.1W
R23	Not used	—	—	R63	330 Ω	5%	0.1W
R24	Not used	—	—	R64	3,300 Ω	5%	0.1W
R25	1M Ω	5%	0.1W	R65	0.22M Ω	5%	0.1W
R26	0.1M Ω	5%	0.1W	R66	47,000 Ω	5%	0.1W
R27	22 Ω	5%	0.1W	R67	22,000 Ω	5%	0.1W
R28	330 Ω	5%	0.1W	R68	1.8M Ω	10%	0.1W
R29	0.22M Ω	5%	0.1W	R69	33,000 Ω	5%	0.1W
R30	100 Ω	5%	0.1W	R70	22,000 Ω	5%	0.1W
R31	270 Ω	5%	0.1W	R71	22,000 Ω	5%	0.1W
R32	820 Ω	5%	0.1W	R72	27,000 Ω	5%	0.1W
* R33	1,000 Ω	5%	0.1W	R73	3,300 Ω	5%	0.1W
* R34	100 Ω	5%	0.1W	R74	390 Ω	5%	0.1W
R35	47 Ω	5%	0.1W	R75	68,000 Ω	5%	0.1W
* R36	4,700 Ω	5%	0.1W	R76	12,000 Ω	5%	0.1W
* R37	150 Ω	5%	0.1W	R77	330 Ω	5%	0.1W
* R38	0.27M Ω	5%	0.1W	R78	4,700 Ω	5%	0.1W
* R39	1,000 Ω	5%	0.1W	R79	15,000 Ω	5%	0.1W

Ref	Value	Tol	Rtg
R80	Not used	—	—
R81	10,000Ω	5%	0.1W
R82	22,000Ω	5%	0.1W
R83	390Ω	5%	0.1W
R84	0.39MΩ	5%	0.1W
R85	1,000Ω	5%	0.1W
R86	22,000Ω	5%	0.1W
R87	0.1MΩ	5%	0.1W
R88	0.22MΩ	5%	0.1W
R89	22,000Ω	5%	0.1W
R90	1,000Ω	5%	0.1W
R91	2,700Ω	5%	0.1W
R92	100Ω	5%	0.1W
R93	330Ω	5%	0.1W
R94	220Ω	5%	0.1W
R95	33,000Ω	5%	0.1W
R96	47Ω	5%	0.1W
R97	8Ωw.w.	5%	2.5W
R98	10Ωw.w.	5%	6W
R99	0.15MΩ	5%	0.1W

Ref	Value	Tol	Rtg
R100	10Ω	10%	0.5W
R101	330Ω	5%	0.1W
R102	5Ωw.w.	5%	2.5W
R103	Not used	—	—
R104	33Ω	10%	0.5W
R105	5Ωw.w.	5%	3.0W
R106	2.2Ωw.w.	5%	3.0W
R107	6,800Ω	5%	0.1W

* Components used on Model 1001 only.

MANUFACTURERS' REFERENCE NUMBERS — RESISTORS

All resistors in this list with the exception of those listed below are MULLARD Type CR25.

R97 WELWYN Type W.21

R98 WELWYN Type W.22

R100 ERIE Type BTT

R102 WELWYN Type W.21

R104 ERIE Type BTT

APPENDIX 'D'

LIST OF SPARES FOR MODEL 1000/1001 RECEIVER

The following list details all major spares applicable for use with the Receiver. Spares should be ordered by quoting the Circuit Ref. (where applicable), the written description given in the list and the Part No. in the right-hand column.

Spares falling in the following categories are not included in this list but will be found in Appendices 'B' and 'C':—

SEMICONDUCTORS CAPACITORS (excluding variables) RESISTORS

The Serial No. of the receiver should be quoted in all communications which should be addressed to:—

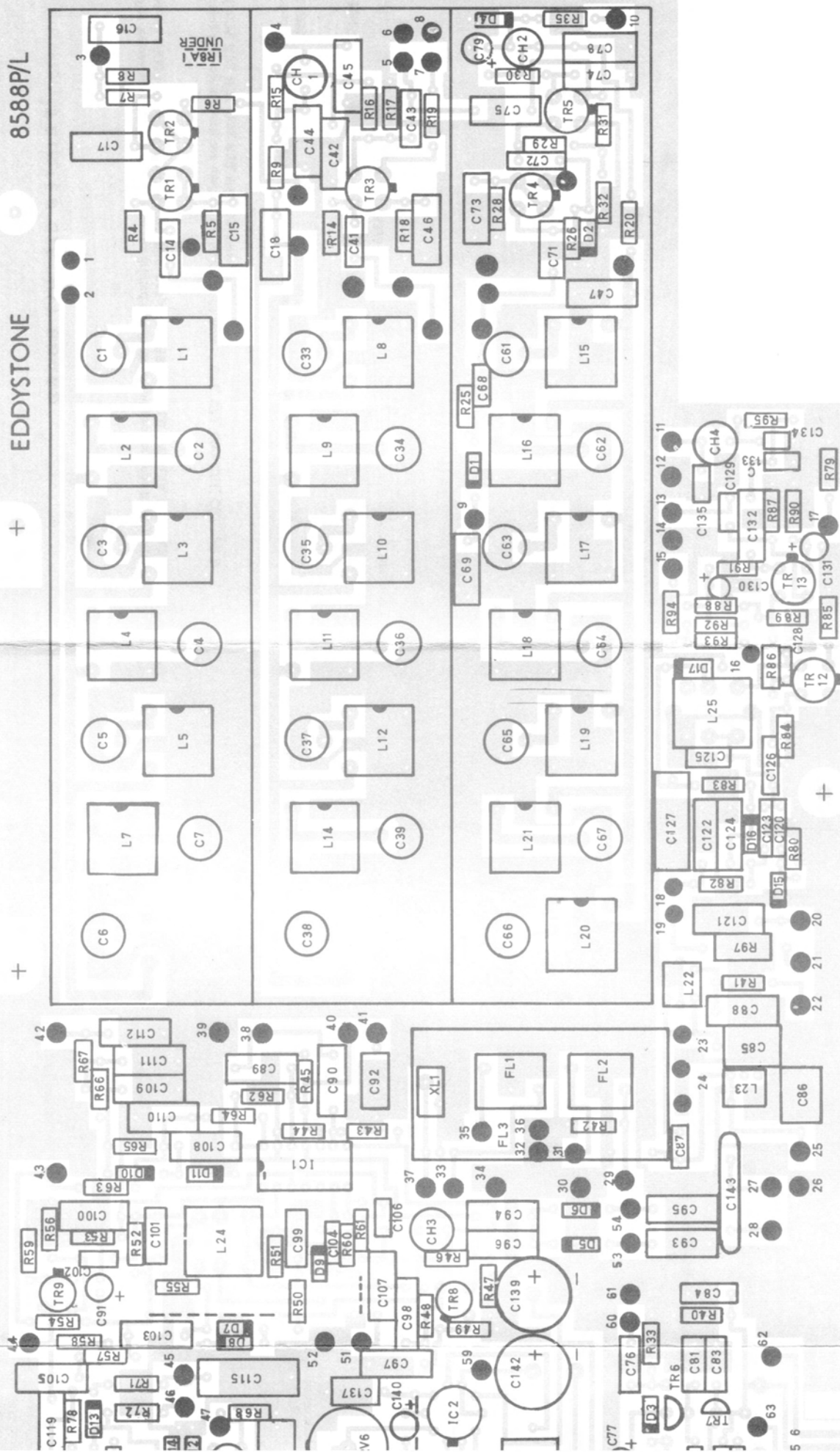
EDDYSTONE RADIO LIMITED, SALES & SERVICE DEPARTMENT,
ALVECHURCH ROAD, BIRMINGHAM B31 3PP, ENGLAND.

Ref	Description	Part No.
	MAJOR SUB-ASSEMBLIES	
	Printed Circuit Board (Model 1000)	LP3338
	Printed Circuit Board (Model 1001)	LP3336
	Power Unit	D4701/1
	Plug-in Crystal Unit (less crystals) (1001 only)	LP3329/1
	SWITCHES	
S1	RANGE SWITCH : : Wafers S1A, B, C, D, E & F Clicker mechanism	8528P D4629
S2	SELECTIVITY SWITCH : : Complete assembly	D4726
S3	CRYSTAL SELECTOR : : Not supplied as a spares item.	
S4	STANDBY SWITCH : : Min. 2-posn toggle	7352P
S5	MANUAL/AGC SWITCH : : Min. 3-posn toggle	8732P
S6	MODE SWITCH : : Min. 2-posn toggle	7352P
S7	DIAL/METER : : Min. biased 3-posn toggle	8733P
S8	SUPPLY SWITCH : : Min. 4-pole 3-posn toggle	8634P

Ref	Description	Part No.
POTENTIOMETERS		
RV1	FINE TUNE : : 25,000 Ω Lin.	8621P
RV2	BFO PITCH : : 10,000 Ω Lin.	8620P
RV3	IF GAIN : : 50,000 Ω	8530P
RV4	Ref. not allocated	—
RV5*	AF GAIN : : 50,000 Ω	—
RV6	IC2 ADJUSTER : : 22,000 Ω pre-set	8734P
	(*) Combined with RV3 (dual-concentric)	
VARIABLE CAPACITORS AND TRIMMERS		
	3-gang Tuning Capacitor (2 x 12-358pF + 1 x 18-364pF)	7357PD
	4—30pF Disk Trimmer	8735P
	7—35pF Disk Trimmer	8468P
PLUGS AND SOCKETS		
PL1	Loudspeaker Plug	8687P
PL2	AC Supply Connector (Chassis mounted)	D2310/2
PL3	DC Supply Connector (Chassis mounting)	7130P
PL4	Dial Light Plug (male portion)	6083P
	Telephone Plug	6567P
SK1	Loudspeaker Socket	8857P
SK2	AC Supply Connector (with 3-core lead)	D2311/1
SK3	DC Supply Connector (with 2-core lead)	D3641
SK4	Dial Light Socket (female portion)	6089P
JK1	Telephone Headset Socket	8736P
JK2	High-Z Audio Output Socket	6941P
FILTERS		
FL1	455kHz Ceramic Filter (Narrow)	8858P
FL2	455kHz Ceramic Filter (Wide)	8859P

Ref	Description	Part Nos.
INDUCTORS		
L1	Range 1 RF Coil	D4630
L2	Range 2 RF Coil	D4578
L3	Range 3 RF Coil	D4579
L4	Range 4 RF Coil	D4631
L5	Range 5 RF Coil	D4632
L7	IF Rejector Coil	D3204
L8	Range 1 Mixer Coil	D4584
L9	Range 2 Mixer Coil	D4585
L10	Range 3 Mixer Coil	D4586
L11	Range 4 Mixer Coil	D4633
L12	Range 5 Mixer Coil	D4634
L15	Range 1 Oscillator Coil	D4635
L16	Range 2 Oscillator Coil	D4592
L17	Range 3 Oscillator Coil	D4636
L18	Range 4 Oscillator Coil	D4637
L19	Range 5 Oscillator Coil	D4638
L22	455kHz IF Bandpass coil (pri)	D4571
L23	455kHz IF Bandpass coil (sec)	D4571
L24	455kHz Detector transformer	D4570
L25	Beat Frequency Osc. coil	D4697
CHOKES		
CH1	100mH	7350P
CH2	4.7mH	7755P
CH3	560mH	8042P
CH4	100mH	7350P
CH5	Mains filter	D2854
CH6	Mains filter	D2854
CH7	Headset filter	D2854
CH8	100mH	7350P
TRANSFORMERS		
T1	Mains Transformer	8527P
DRIVE MECHANISM & ASSOCIATED ITEMS		
	Drive Mechanism (complete with cord drum)	LP3326
	Vernier Dial	D4608
	Drive Cord (complete with eyelets)	D4709
	Cursor	8244/1P
	Flywheel	8469P

Ref	Description	Part Nos.
	Guide Pulleys	6125P
	Jockey Spring	5237P
	Coil Spring (for scale drum)	8355P
	Dial Window	8601P
	Vernier Window	8598P
	Diffusion Strip	8597P
	CONTROL KNOBS	
	Tuning	D4704
	Range Switch	D4706
	Fine Tuning	D4705
	BFO Pitch	D4705
	Selectivity Switch	D4705
	IF Gain	D4707
	AF Gain	D4708
	Crystal Selector	D4705
	(Model 1001 only)	
	FUSES & LAMPS	
	Fuseholder	6372P
	Cartridge Fuse 1-Amp rating	7173P
	Cartridge Fuse 2-Amp rating	6704P
	Scale Lamp (12V @ 80mA, wire-ended)	8448P
	MISCELLANEOUS	
	Panel Handles	8253/1P
	Meter	8619P
	Loudspeakers	8860P
	Flexible coupler	LP3310
	Solid coupler	7353P
	Trimming Tool No. 1	8333P
	Trimming Tool No. 2 Type H.S.1	8450P
	Top Cover	8489P/TOP
	Dial Light Cover (complete with lamps)	D4628
	Bottom Cover	8489P/BTM
	Receiver Support	8602P
	Mounting Plate for 8602P	8603P
	Dial Strips — Range 1	8550P
	Ranges 2 & 3	8551P
	Ranges 4 & 5	8554P
	NiCd. Battery (DEAC 10/500DKZ — DB328)	8863P



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