

**Portrait of an Eddystone  
Model 1570/1 – Gerry  
O’Hara, G8GUH/VE7GUH**

**AM/FM  
Broadcast Receiver**

**Model  
1570  
(Provisional)**



‘Early’ model (1979)

As usual, good things come along when you least expect it – this one came out of the blue in an email one day in February, 2011 from Chris Pettitt, ex-Managing Director of Eddystone, noting that he was thinking of selling his Model 1570/1. Now, this is a model that I had hardly given a second thought to, and, when I set about looking into it, apart from an entry in the Quick Reference Guide (QRG) and a copy of its installation and operating instructions/schematic being posted on the EUG website, this set is hardly mentioned anywhere, receiving only four citations in the EUG Newsletter/Lighthouse index. It did make the status of ‘Featured Receiver’ in Issue 35 of the EUG Newsletter, but the description provided there is almost verbatim out of the 1570 manual – not even



‘Late’ model (1980 - 1983?)

a block diagram was provided, apparently due to the ‘complexity of the circuit’. The ‘Featured Receiver’ article by Ted Moore did note, however, that:

- There are two variants, the 1570/1 having a digital display resolution of 10kHz on FM and 1KHz on AM, and the 1570/2, having an FM resolution of 100kHz;
- The build quality and design are in accord with British Defence Specification 133-L2; and
- First supplies came onto the market in 1979 and by 1980 the 1570 was being supplied to all branches of the UK military as well as to many countries within the NATO Alliance.

The Data Sheets for the 1570 (obtained by courtesy of Alan Ainslie), however, hint at a different market than the defence/military sector Ted notes in the EUG Newsletter, noting:

*“The Eddystone Model 1570 is a solid-state AM/FM broadcast receiver designed to meet the requirements of the more discerning listener who demands a somewhat superior performance to*

*that given by the conventional domestic type of receiver.... The 1570 utilises advanced techniques and components of the type normally found in professional communication receiver equipment...*” – to me, this seems to be aiming the set more at the well-heeled short-wave listener/ radio amateur or non-mission critical/semi-professional monitoring roles.

So, what was the purpose of and market for this particular model and its range of features? It is certainly a cut-above the average domestic AM/FM receiver of the day, and was leaps ahead of the only previous Eddystone models that covered AM and FM: the EB35 made between 1965 and 1980 in Mk I, II and III forms, and even the Model 1002, made between 1972 and 1977. At £600 in 1980, it also cost considerably more than these sets: the EB35 was selling for £55 in 1967 - equivalent to £230 by 1980 using the Retail Price Index (RPI), and the 1002 for £273 in 1972. Allowing for the galloping inflation of the 1970's, the 1002 was comparable in cost to the 1570 in real terms, being equivalent to some £770 in 1980 using the RPI. So, I would say that the 1570 was clearly not aimed at the domestic buyer and it would probably not have been of much interest to well-heeled short-wave listeners or radio amateurs of the day either. The fairly hefty price tag, albeit considerably less-expensive than the contemporary (high stability) professional 1837/1838 series of receivers (with a 1980 price tag of between £2,000 and £2,500), was likely only affordable by semi-professional bodies, marine users (non-approved/reserve) and military/government users looking for a decent-quality and fairly robust general coverage receiver with an added bonus of the FM band. Even so, given that they were not 'high stability' and therefore not really suitable for serious professional communications applications, I suspect most of these sets were used for 'recreational' listening much of the time.

### A 'Rara Avis'?

So, if it was so widely distributed to the military as noted by Ted, where are they all now and how many were actually made? Chris Pettitt himself made a comment on this in Issue 64 of Lighthouse (Christmas, 2000): “...*At work I recently changed offices to something a little larger and decided that it was time to get my old 1570/1 LF/MF/SW/FM set out [the actual set featured here] so that I could listen to the news at lunch time and perhaps do a bit of SWLing. I don't know how many of these were sold but I never see any on the second hand market. Anyway, it is a bit of Eddystone history I can use every day.*”

Eddystone 1570 (3 off)  
working, in need of  
servicing, sold as seen,  
offers please.

In a later issue of Lighthouse (Issue #81, October, 2003), Ted Moore is less than impressed with a clutch of three 1570s he bought from an advert in Lighthouse (Issue #79, June, 2003) – all rather 'tatty' and the “working, in need of servicing” note in the advert was apparently a bit of an understatement, with Ted managing to make only one working set from the three. Interestingly, Ted seems equally unimpressed with the mechanical build-quality of the 1570, noting “*To one brought up on, and used to Eddystone battleship-like front panels this was a travesty of the word 'panel'. It is made of less than 1mm thick aluminium bent at top and bottom to fix on the*

receiver. Eddystone logo and name and model are simply printed on, as with the control functions. At least I expected steel handles but no these are fragile plastic ones and between the three sets there are three broken and three good handles..” However, the set seemed to have redeemed itself in use, with Ted later commenting “I find the more I use it the more I enjoy using it, apart from my usual HF airband stuff I have listened to many QSO’s on 80, 40 and 20 meters. Sensitivity is not lacking and the stability seems to be ok too... Putting it right into an SSB Volmet broadcast and coming back some hours later I find it has hardly deviated from the natural sounding speech. It is a bit of a ‘rara avis’ and a new one for me...”<sup>1</sup>



I am not sure if there were changes to the set’s construction over the production-life of the 1570, or even as to how long the model remained in production (the QRG merely noting ‘c. 1980’), though I would guess at least from 1979 through 1983 given the dates on the various documentation. However, it was not really replaced by another Eddystone model as its market niche had probably vanished. I would note that my set contradicts Ted’s description somewhat: the build-quality and construction techniques observed in my example of the 1570/1 is typical of a low-medium cost semi-professional receiver designed in the late-1970’s and the handles on this one are definitely made from metal and the aluminium front panel (actually this is really trim over a sturdy steel panel) looks fine to me and in proportion/keeping with the design, albeit being



more ‘airframe’ than ‘battleship’ in construction terms – but perfectly adequate for the job and fitting with the contemporary styling of the day (photo, left).

## General Description and Specification

The Data Sheets note that ‘added features’ that could be enjoyed by *the more discerning listener* include such facilities as unambiguous digital readout display of the tuned frequency, LED array indicator for the display of the selected range, wide frequency coverage of long, medium and three short-wave bands (the Data Sheet for the ‘late’ model also notes that it has three short-wave bands in error – it actually has four), plus ‘international’ FM broadcast coverage, an ‘S’ meter for peaking-in on weak reception signals, BFO and Product Detector for CW and SSB reception. An EFFICIENT (emphasized in original text) AFC system works on reception of both FM and AM signals (AFC is an unusual feature other than on FM – at least since the mid-1930’s!).

<sup>1</sup> So did Ted not have a 1570 in his extensive Eddystone collection prior to 2003? – not sure, as in Lighthouse issue #35 (p10) Ted notes he used a 1570/1 “In the 1970’s...” along with an EB35 MkII, to pull in some FM DX while he was on a 41’ Chris Craft boat moored outside Casablanca port in the Mediterranean

There was an 'early model' (1979, with a 'Provisional' Data Sheet dated 1978) and a 'late model' (January, 1980 onwards, with a Data Sheet dated 1979) of the 1570 produced, and the documentation also notes that some variants of the 1570/1 included an internal battery pack. The main difference between the 'early' and 'late' models seems to be:

- The layout of the front panel, with the function switch bank being oriented vertically ('early' model) rather than horizontally ('late' model). Also, there were fewer of these function switches in the 'early' model, with several of these toggling between two functions (eg. wide/narrow selectivity), whereas in the 'late' model the toggle function was superseded by adding more, but interlocking, latched switches; and
- The addition of another HF band, extending the coverage of the 1570 to 30MHz (from 22MHz of the 'early' model).



The documentation I have, apart from the Data Sheets, is all for the 'late' model, so I cannot say whether there were any changes to the circuitry (beyond the function switching arrangements), however, the Data Sheets also note the following changes to the Specification:

- Image rejection (FM) of the 'late' model is 80dB at 90MHz (60dB in 'early' model);
- IF breakthrough (FM) of the 'late' model is 90dB at 90MHz (60db in 'early' model);
- Audio Output is 2.5W (max) into 4ohm; 1W at 1% distortion in the 'late' model, and 3W (max) into 4ohm, 1.5W at 1% distortion in the 'early' model.

Perhaps the FM front end unit was changed to a higher-specification one or better filters were included (or both) and maybe also a change of audio output chip? Both 'early' and 'late' model Data Sheets note that an economy circuit is provided when an internal battery is fitted. The 'late' model Data Sheet notes that the resolution of the digital display is 10KHz for the 1570/1 on FM (1kHz on AM) and 100kHz for the 1570/3 on FM (1kHz on AM). There is no mention of the /2 variant in the Data Sheets or other documentation for this model – maybe that was a typo in the EUG Newsletter? (but maybe not – why would they jump from /1 to /3?). The documentation notes that some versions of the 1570/1 variants were supplied with an internal battery pack (the way the documentation is written it sounds like the 1570/1 variant of the 1570 all had an internal battery pack – but my set does not – however, see below), or maybe the /2 variant had the internal battery? I would be interested to hear from other owners as to whether their 1570/1 has the battery pack/special power supply board or not, or if anyone owns a /2 or /3 variant.

The General Specification (for the 'late' model) is provided below:

Frequency Ranges.

Range	1	14MHz	-	30MHz
	2	8.5MHz	-	18MHz
	3	3.5MHz	-	8.5MHz
	4	1.5MHz	-	3.5MHz
	5	580 kHz	-	1500 kHz
	6	150 kHz	-	350 kHz
	FM	88MHz	-	108MHz

Intermediate Frequencies.

Ranges 1-6	455kHz
FM	10.7MHz

Reception Modes.

A1, A2 and A2H telegraphy, and F3 (VHF/FM).  
 A3, A3A, A3H and A3J telephony with upper and lower sideband use in SSB mode.

Display Resolution.

1570/1	FM	10kHz;	AM	1kHz
1570/3	FM	100kHz;	AM	1kHz

Aerial Input.

Nominal 50-75 $\Omega$  on all ranges.

Power Supplies.

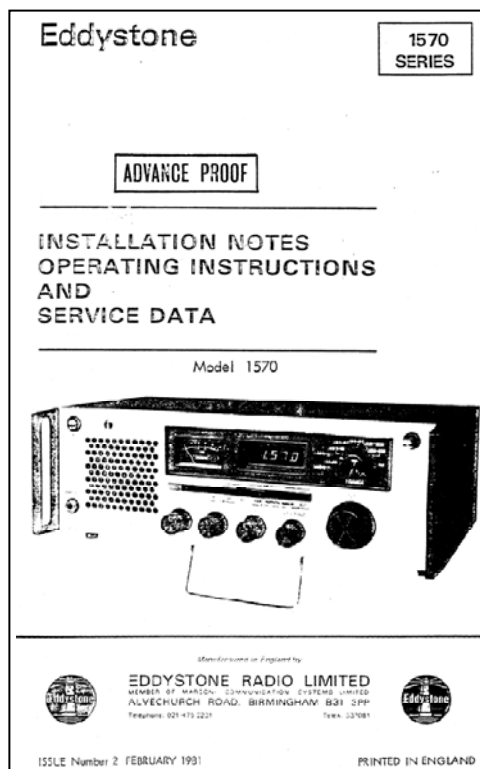
DC	External 12V; Consumption 500mA at 1W output 150mA quiescent.
	With display illuminated, the above consumption figures are increased by approximately 250mA.
AC	100-125V and 200-260V 40-60Hz. Consumption 20VA approx.

Dimensions.

Height	:	132.5mm	Width	:	410mm
Depth	:	330mm	Weight	:	9kg



## Documentation



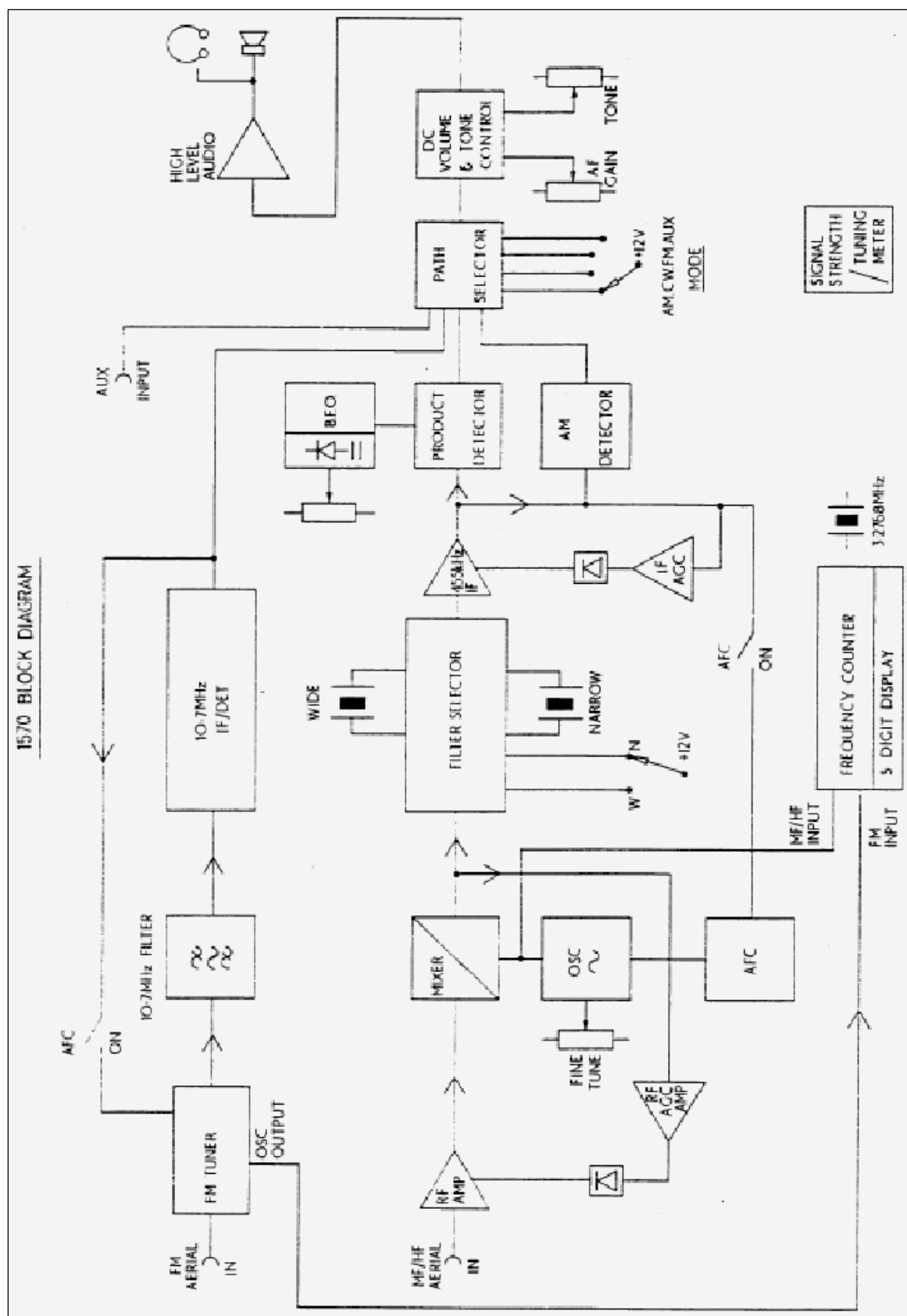
The *Operators Manual* posted to the EUG site (dated April, 1980) is really only the installation and operating instructions for the set. Apart from almost the same introduction and specs that the Data Sheets provide, there is no real technical material in this document apart from copies of the circuit diagram (and the scans of these are not the best). I thought that there must be more information available somewhere, especially given that the Military was purportedly the main client for this model. My first ports of call were Chris Pettitt and Alan Ainslie – both who came up trumps: Chris found an ‘Advance Proof’ of the *Installation Notes, Operating Instructions and Service Data*

Issue 2, dated February, 1981 (but no better-quality schematics), and Alan found a real bonus – an internal Eddystone *Test & Inspection Schedule* for the 1570, dated January, 1980, with the Specification prepared by R Baynton in June, 1980 (and margin notes added in July, 1980), and the Specification approved by Dave Lakin (Chief Engineer) and Dale Harvey (Quality Manager). Alan also found the Data Sheets and an original circuit diagram and scanned it for me (attached to this article). The *Installation Notes, Operating Instructions and Service Data* document represents a complete set of technical notes on the set, including maintenance information, performance testing and full alignment details.

<b>EDDYSTONE RADIO LIMITED</b>			
<b>TEST &amp; INSPECTION SCHEDULE</b>			
<b>COMMUNICATIONS</b>	<b>RECEIVER</b>	<b>1570</b>	<b>SERIES</b>
<b>TS</b>		<b>1145</b>	
First Issued..... <i>June 1980</i> .....			
Specification Prepared by..... <i>R. F. Baynton</i> .....			
<b>SPECIFICATION APPROVED:</b>			
Chief Engineer.....	<i>[Signature]</i>		
Quality Manager.....	<i>[Signature]</i>		
Date.....	<i>June 12th 1980</i>		

## Circuit Description

A fairly comprehensive description of the 1570 circuit is also provided in the *Installation Notes, Operating Instructions and Service Data* document and the block diagram and brief description of the main circuit elements is provided below. The surprise for me was that the set is not synthesized and that the digital display is merely a frequency counter measuring the (free-



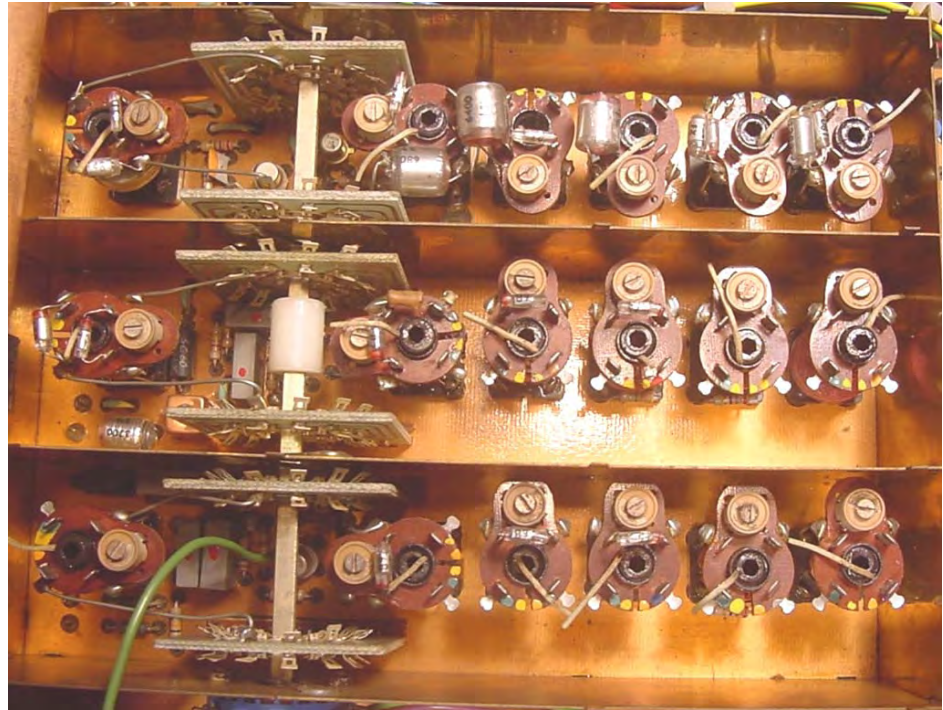
running) local oscillator frequency minus an offset, the value of which depends on the band selected (-455kHz for LF/MF/HF and -10.7MHz for FM). Given the free-running local oscillators, I was also surprised at the very good stability of the set after only a few minutes 'warm-up'.

### RF Stage (AM)

The antenna input is applied either between socket A1 and AE, or to socket A2.

Diode protection is provided across A1 and AE.

Appropriate coils are selected by the range switch and tuned via the ganged tuning



capacitor, the tuned circuit elements located between the antenna and the RF amplifier and between the RF amplifier and mixer stages.

The RF amplifier is a dual-gate MOSFET with the signal applied to gate 1. Delayed AGC is permanently applied to gate 2. Signal from the drain of the RF amplifier is taken via a tuned circuit to gate 1 of the dual-gate MOSFET mixer and the IF output at 455kHz is taken from the drain. Local oscillator injection is applied to gate 2 of the mixer via a source-follower stage. The local oscillator is a single-gate MOSFET in tuned-gate configuration with the feedback winding in the drain circuit. Local oscillator tuning is by a conventional variable capacitor ganged to the antenna and mixer tuned circuits. The local oscillator tracks above the tuned frequency on all ranges. A second output from the source follower is taken via an emitter-follower stage to the digital frequency counter module. Vari-cap diodes are used to effect fine tuning of the local oscillator. A neat circuit arrangement using the FM tuning potentiometer on the tuning gang is used to linearize the degree of fine tuning provided across each band on the AM ranges. Another vari-cap diode provides AFC control of the local oscillator.



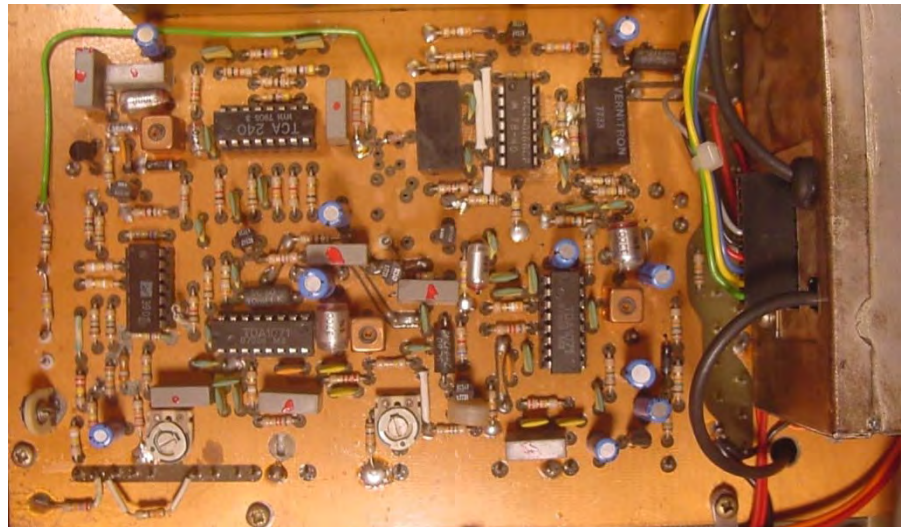
### RF Stage (FM)

The FM tuner is a pre-packaged, self-contained commercial unit manufactured by ASTEC (Model UM 1181). It comprises a dual-gate MOSFET RF amplifier feeding a JFET mixer via a triple-tuned filter to a JFET IF amplifier. The local oscillator of this unit operates at 10.7MHz above the signal frequency and is tuned using a vari-cap diode controlled by a potentiometer ganged to the (AM) tuning capacitor. A transistor amplifier /buffer stage delivers the local oscillator signal to the digital frequency counter module. AFC is also effected by a vari-cap diode in this module.



### IF Stage (AM)

IF amplification at 455kHz and AGC control is undertaken using an integrated circuit (IC). Manual control of the gain is via a variable DC potential applied to this IC. This IC feeds the 455kHz



IF filter circuit, the selection of bandwidth being effected by a DC-controlled 4-pole switch IC. After further amplification, the (AM) signal is detected by an synchronous demodulator (IC). An un-modulated IF signal is fed to the BFO/Product Detector IC via an emitter-follower stage.

### BFO/Product Detector

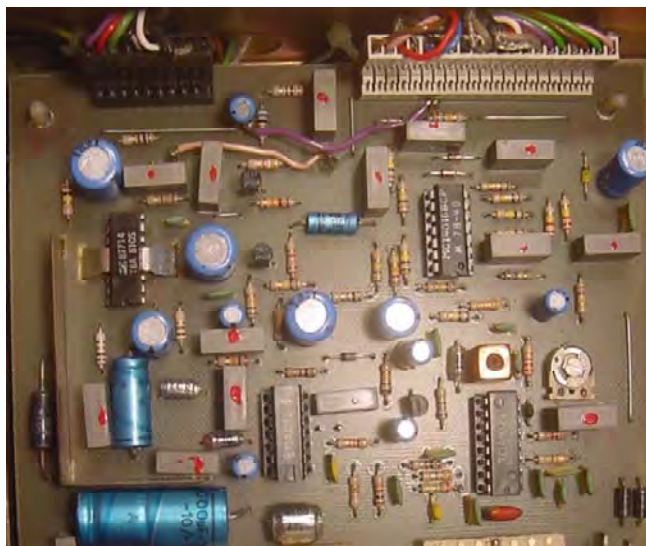
A dual-balanced demodulator IC is used as the Product Detector. BFO injection is from the drain of a JFET operating in a tuned-gate configuration with the feedback winding in the drain circuit. BFO tuning is by vari-cap diode controlled from a DC voltage from the BFO/Tone control.

## AFC

On AM, the 455kHz IF signal is taken via a transistor amplifier to a ceramic resonator to limit frequency response and is then amplified. The DC AFC control voltage is derived from an IC, the magnitude of which is dependant on the discrepancy between the IF signal and frequency of a reference 455kHz-tuned circuit. This voltage is applied to a vari-cap diode across the local oscillator tuned circuit. On FM, the DC voltage derived from the AF output of IC1 is used to control a vari-cap diode in the FM tuner unit. When AFC is switched-out, an adjustable reference voltage is applied to the vari-cap diodes.

## IF Stage (FM)

The 10.7MHz IF signal from the FM tuner is amplified by IC1 and passed through a 10.7MHz ceramic filter. Following FM detection in the same IC, the AF output is filtered and a DC element is used for AFC applied to the FM tuner unit as noted above. An adjustable (pre-set level) mute circuit is also provided via IC1.



## Metering, Audio Amplifier and Switching

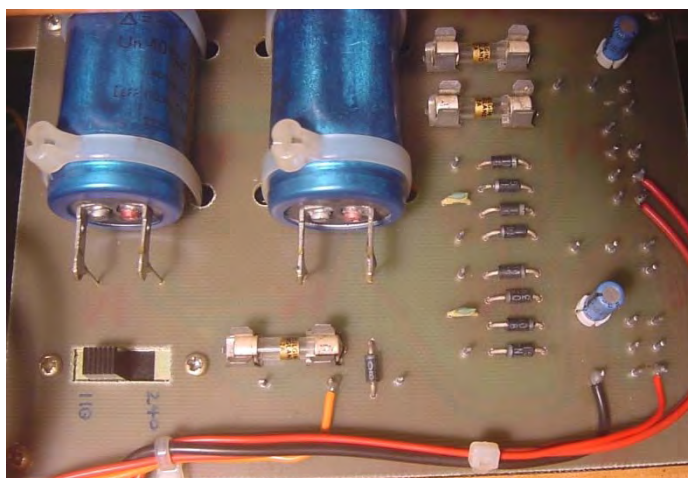
A signal strength meter is provided for AM and this duals as a (centre-null) tuning meter on FM.

The audio circuit uses an IC quad analogue switch to select audio input from one of either the FM demodulator IC, the synchronous AM detector IC, the Product Detector IC or from the Auxiliary AF in/out socket. AF gain and tone control circuits are controlled by DC voltages. The tone control serves as a BFO pitch control when the BFO switch is set to 'on'.

AF amplification is via an IC, with its output feeding the internal and external speaker (DIN) and 'phones (jack) sockets.

## Power Supply

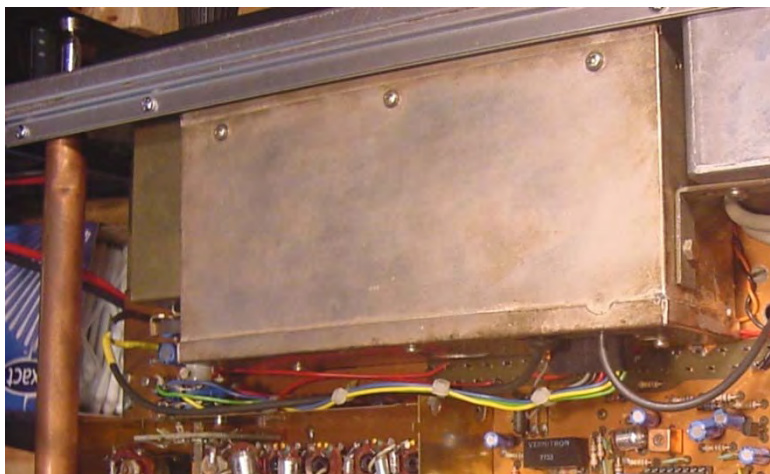
Two secondary windings on the power transformer each drive a



bridge rectifier and a 12v regulator IC. One supply feeds the main receiver circuitry, the other feeds the frequency counter display module only.

### Frequency Display

The local oscillator frequency is measured by a gated counter which is offset by the appropriate IF frequency to provide a count equal to the tuned frequency of the receiver. The reference frequency for the counter is provided by a 3.2768MHz crystal oscillator.



The AM local oscillator signal is fed via an emitter-follower to a pre-scaler IC. The FM local oscillator signal is routed to the pre-scaler via an attenuator and broadband thick film amplifier IC, the combined purpose of which prevents 'spillover' from the pre-scaler to the FM front-end circuitry. The pre-scaler contains an ECL decade divider for the FM oscillator signal (divide by 100) and an STTL decade divider for the AM oscillator signal (divide by 10). Frequencies below 1.5MHz are not pre-scaled. The range selector switch controls the mode of operation of the frequency display module. A diode logic matrix is used to set the appropriate IF offsets. Display is via a time-multiplexed 5-digit common anode 7-segment red LED display (photo, left).



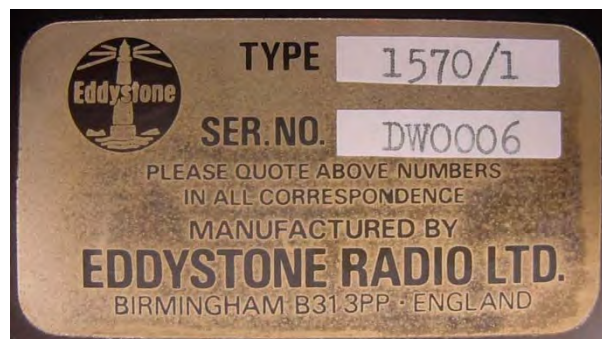
### Construction Details

The set is largely constructed on three main circuit boards (power supply, FM circuitry and AM circuitry) and some smaller boards, including the range indicator, meter illumination, switch board assembly and the frequency counter and display boards. The main receiver boards are mounted on a steel frame chassis with solid steel side-plates and steel front panel. The board interconnects are via multi-way connectors and the display module and display boards are shrouded in a metal box (photo, above right) for effective screening against digital noise. The speaker is enclosed in an Eddystone die-cast box fixed to the front panel. The rear apron sports a Belling-Lee socket for FM reception, along with the usual balanced/unbalanced/ground LF/MF/HF aerial connections. DIN sockets are provided for an external speaker and tape



recorder output. The front panel is fitted with two telescopic aerials: one for FM and one for LF/MF/HF reception. These are sturdy units and are contained within copper tubes in the set.

### Inspection and Cleanup of Serial #DW0006



The set purchased from Chris was couriered by DHL overnight to Vancouver and was very well-packed – lots of bubble wrap and polystyrene. The set gave an appearance of having not been used for a while – generally a little ‘down at heel’ with a dusty front panel and the plastic trims around the twin telescopic antennas loose. Of more concern though was that the set rattled when shaken slightly and there was a ding in the

rear panel under the ground terminal – evidence of poor handling by DHL, confirmed by inspecting the box – it had crush damage on one corner from where it had likely been dropped. I needed to remove the cabinet to inspect the cause of the rattle and to switch the power supply voltage over to 120v operation. To do this, the four screws holding the feet in place must be removed along with two screws in the corners of the rear panel – the chassis and front/rear panel assembly can then be withdrawn from the steel case. This done, an inspection revealed that the smaller (FM) circuit board suspended beneath the main (AM) board on four plastic hangers had parted ways with the hangers and this was carefully re-suspended. The power supply voltage switch was swapped to ‘120v’ and the inside of the set/circuit boards given a spruce-up with a small paintbrush and compressed air jet. The set was then powered-up and worked first time.

I noted that the circuit boards in this set all had the appearance of being pre-production ones – maybe prototypes, with some components not being a perfect fit into the board hole spacing and no silk-screening present on any of them. The power supply board has hand-written labels on it and is of a different appearance than the main circuit boards. The cover for the coilbox on the main circuit board is absent (was there one ever fitted?), but strangest of all, there is a small circuit board fixed to one of the side panels that is not mentioned in any of the documentation (photo, right) – I think it contains D10, D11, TR10 and TR11 (RF delayed AGC amplifier circuit). These observations, along with the Serial ‘#DW0006’ led me to the conclusion this was likely a



development or pre-production model – and how's this for provenance? (in an email from Chris Pettitt):

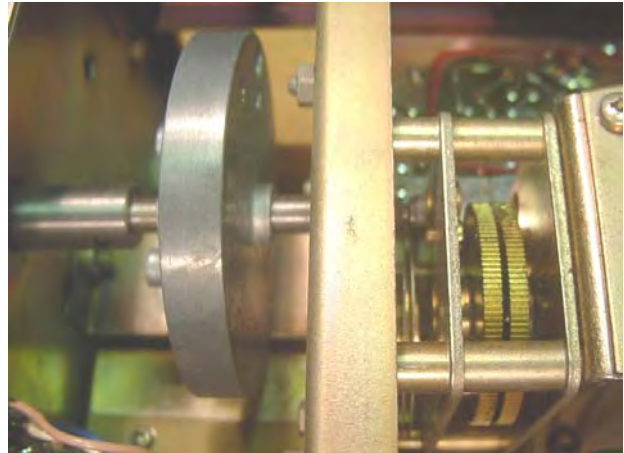
"The 1570/1 I have had from new. Bill Cooke gave it to me when I joined Eddystone as MD in 1984 to use as a SWL/Bcast radio in the house I rented when I first returned to Birmingham. It has been with me ever since. I used it mostly on FM and I think the AFC could do with some adjustment but it works on all bands and both whip aerials are still present. Eventually it became the office receiver wherever I was working...."

Externally, the front panel and case were cleaned using Novus #1 and the knobs (collet fixing) were removed and washed with warm soapy water before cleaning with Novus #1. Apart from a few minor bits of discolouration on the textured black steel case, the set looks almost as-new.

### Observations in Use

I must agree with Ted's point that the receiver grows on you as you use it, although there are a few things I noted on using the receiver for the first time:

- Although the tuning shaft is flywheel-loaded (photo, right), it does not have the silky-smooth feel of earlier Eddystone sets;
- Only having a digital display of frequency is annoying for 'bandcruising' operating (to me at least);
- The S-Meter lights were not working;
- The tuning rate is fixed (and fairly slow) – a two-speed drive would have been a useful addition to the sets features;
- The 'Fine Tuning' control is really a bit 'too fine';
- The filters ('Wide' and 'Narrow') did not seem to change the selectivity by as much as would be expected;
- When tuned to a station and then AFC switched-in, the receiver appeared to de-tune (dip in meter reading slightly).



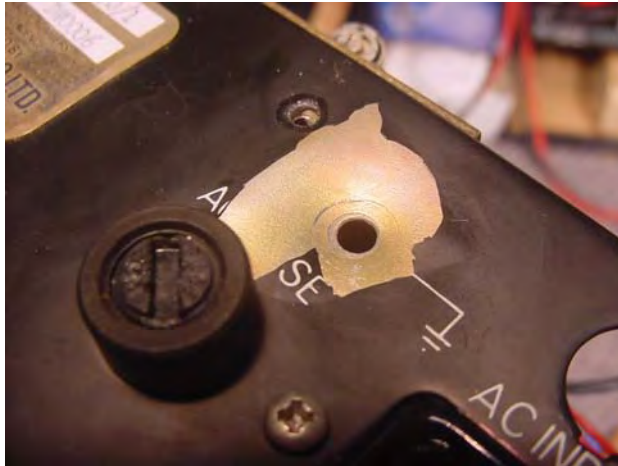
I concluded that the latter two observations were likely due to a slight misalignment of the set – probably of the IF section, that I could try to address sometime. The S-Meter bulbs are accessed by removing the front panel - an easy fix (if you have the right type of bulb to hand).

I also noticed that the chassis side panel on which the two power supply 12v regulator chips are mounted on became quite hot when the set had been on for an hour or so (approaching 60C). I found that switching off the LED display (fed by one of the regulator chips) prevents this, dropping the panel temperature to around 35C, so I concluded that the current draw of the LED display module and its associated Logic/ LSI chips must be sizeable – although the documents



note that the display only increases (DC) power consumption by only 250mA (so maybe there is a fault in this section of this set as I doubt that this would cause the 12v regulator to run that hot). Anyway, I decided that once I was tuned to a station for any length of time it would be good practice to switch off the display (it's easy - there is a front panel button for this).

### Fixing the 'Ding'



small pieces of hardwood strategically located either side of the ding. However, there was still a slight ripple in the steel, so I decided to cover it up and mask the effect by placing a small piece of plastic (actually cut from a credit card) over the remnant ripple and covered that with a piece of paper printed with the labels for the ground connection and AC Fuse – see photos right and below.

The ding in the rear panel detracted from the overall good cosmetics of the receiver (photo, left). On close inspection I noted that the black paint in the ding was flaking-off, along with the labels for the ground connection post and the AC Fuse. I straightened the ding as much as possible by first removing the fuseholder and ground connection, removing the screws on the adjacent chassis cross-brace and then applying pressure using a vice and



### Meter Lights

The meter lights were not working. At first look into the case, it is not intuitive how to change these, so I was pleased to see the subject addressed in the manual Chris sent me. It is necessary

to remove the front panel to gain access to the 'meter illumination board'. This is done quite easily, however, by removing the knobs, the caps from each telescopic antenna and 7 self tapping screws from the top and bottom of the panel. I decided to replace the wire-ended lamps with a high-output LED so I would not have to bother removing this again (at least for this purpose).

### Alignment Checks and Tweaks

The manual Chris sent me also contained re-alignment instructions. I decided to only undertake calibration checks and if needed, only a minimal amount of tweaking as the set was working fine (apart from the AFC quirk mentioned above – which I felt was more of a minor annoyance than an issue worth bothering with at the moment).

### Closure

So, what are my impressions of the 1570/1?

– Well, reasonably good overall, though I would have liked to have seen a dual-speed tuning drive (as I am an avid 'bandcruiser' at heart). The set does remarkably well on its telescopic whip antennae and even better with a few tens of feet of wire connected to it. Its sound quality (on both AM and FM) is very good with an external speaker (and is not bad with its internal speaker for that matter). The selectivity is nothing to write home about but is adequate (but not for serious CW use), however the set is very sensitive and remarkably stable for a non-synthesized or phase-locked circuit. SSB reception quality is very good. Even so, a set such as this would have benefitted from having a calibration oscillator facility fitted as the digital display can give a false impression of accuracy.

The set's heavy reliance on integrated circuits - a total of 12 in the signal circuits (many probably not now available), plus 6 regulator ICs (which are all still readily available) is a detracting feature for me that will someday render the set of *objet d'art* status only, unlike its discrete semiconductor and valve predecessors ... oh, well, that's the price of progress I suppose. Also, if the LED display module packs-up your completely hooped for tuning unless an external or internal counter module is grafted-in somehow.

73

©Gerry O'Hara, G8GUH ([gerryohara@telus.net](mailto:gerryohara@telus.net)), Vancouver, Canada, June, 2011

### Bibliography

- *Model 1570 Operators Manual*, dated April, 1980 (includes notes on 'Internal Battery Version' dated June, 1982)

Range	Core	Frequency	Trimmer	Frequency
1	3/L13	13.7MHz	3/C40	30.3MHz
2	3/L14	8.4MHz	3/C41	18.2MHz
3	3/L15	3.45MHz	3/C42	8.6MHz
4	3/L16	1.45MHz	3/C43	3.55MHz
5	3/L17	545 kHz	3/C44	1510 kHz
6	3/L18	145 kHz	3/C45	355 kHz

Table 5-1

#### Alignment of AM RF and Mixer Circuits

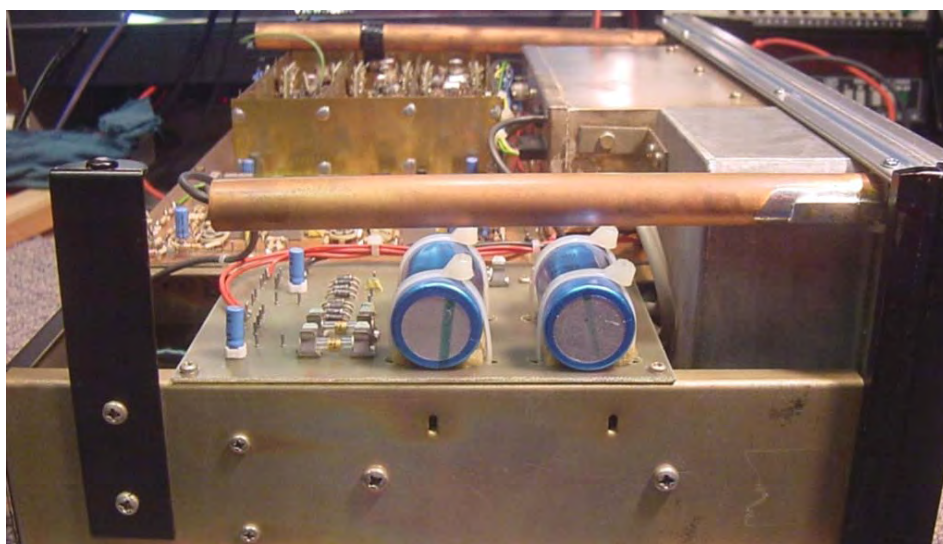
Set the controls as follows:

AFC Switch	to	OFF
BFO Switch	to	OFF
Filter Switch	to	NARROW
Gain Switch	to	MANUAL
IF Gain Control	to	Maximum clockwise
Tone/BFO Control	to	Mid-range
AF Gain Control	to	As required

- *Model 1570 Installation Notes, Operating Instructions and Service Data* Issue 2, dated February, 1981
- *Model 1570 Test & Inspection Schedule*, dated June, 1980
- Model 1570 Data Sheets: 'Early' (1978) and 'Late' (1979) versions

### EUG Newsletter/Lighthouse:

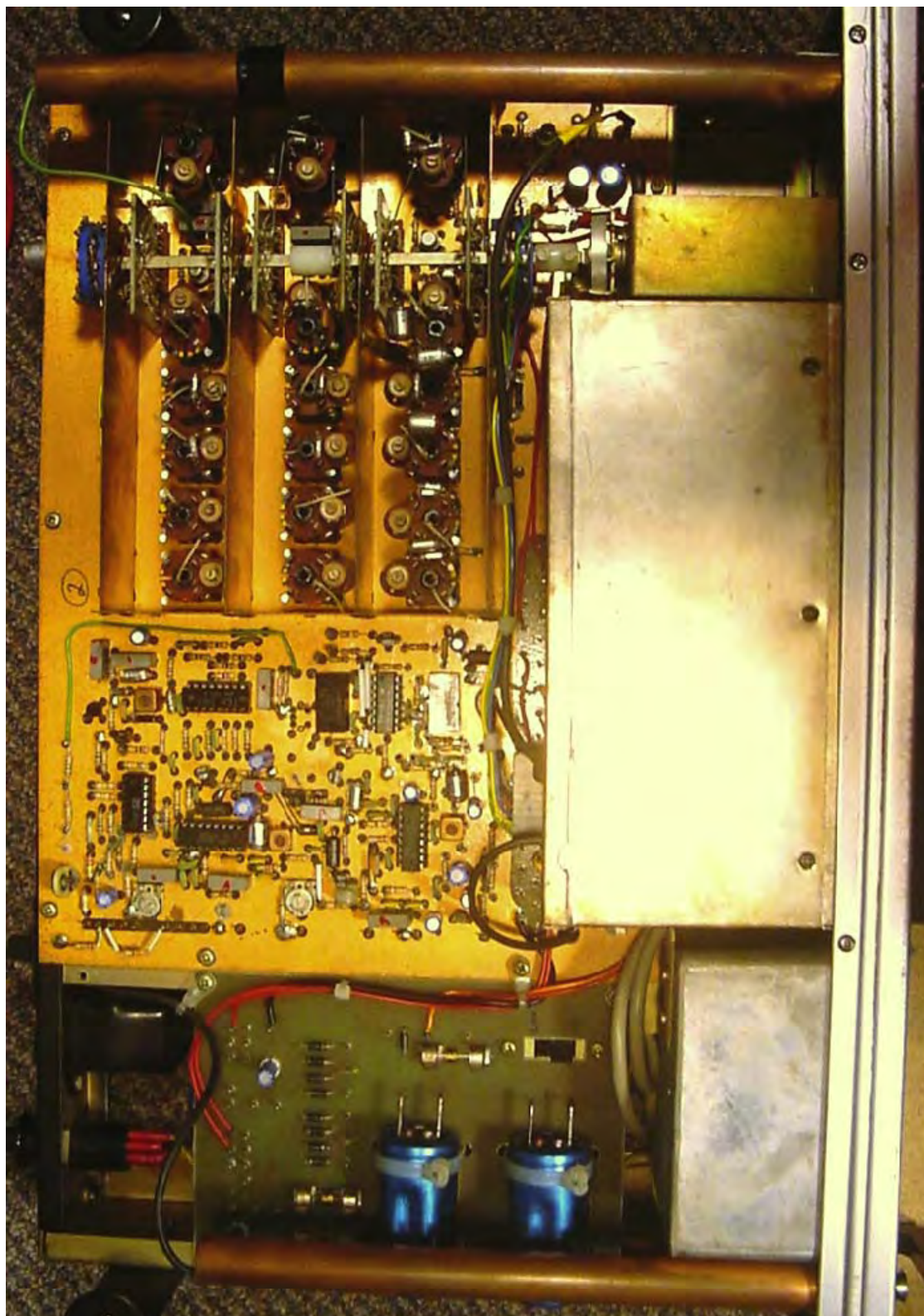
- featured receiver..... 35..... 7
- use in Mediterranean for FM DXing..... 35..... 10
- owned by Chris Pettitt..... 64..... 3
- pcb ..... 20..... 3
- poor sets advertised, acquired (Ted Moore) ..... 81..... 39



Above: End-on view of the power supply board. The chassis side plate below serves as a heat sink for the two 12v voltage regulator chips. Below: main receiver controls and frequency display

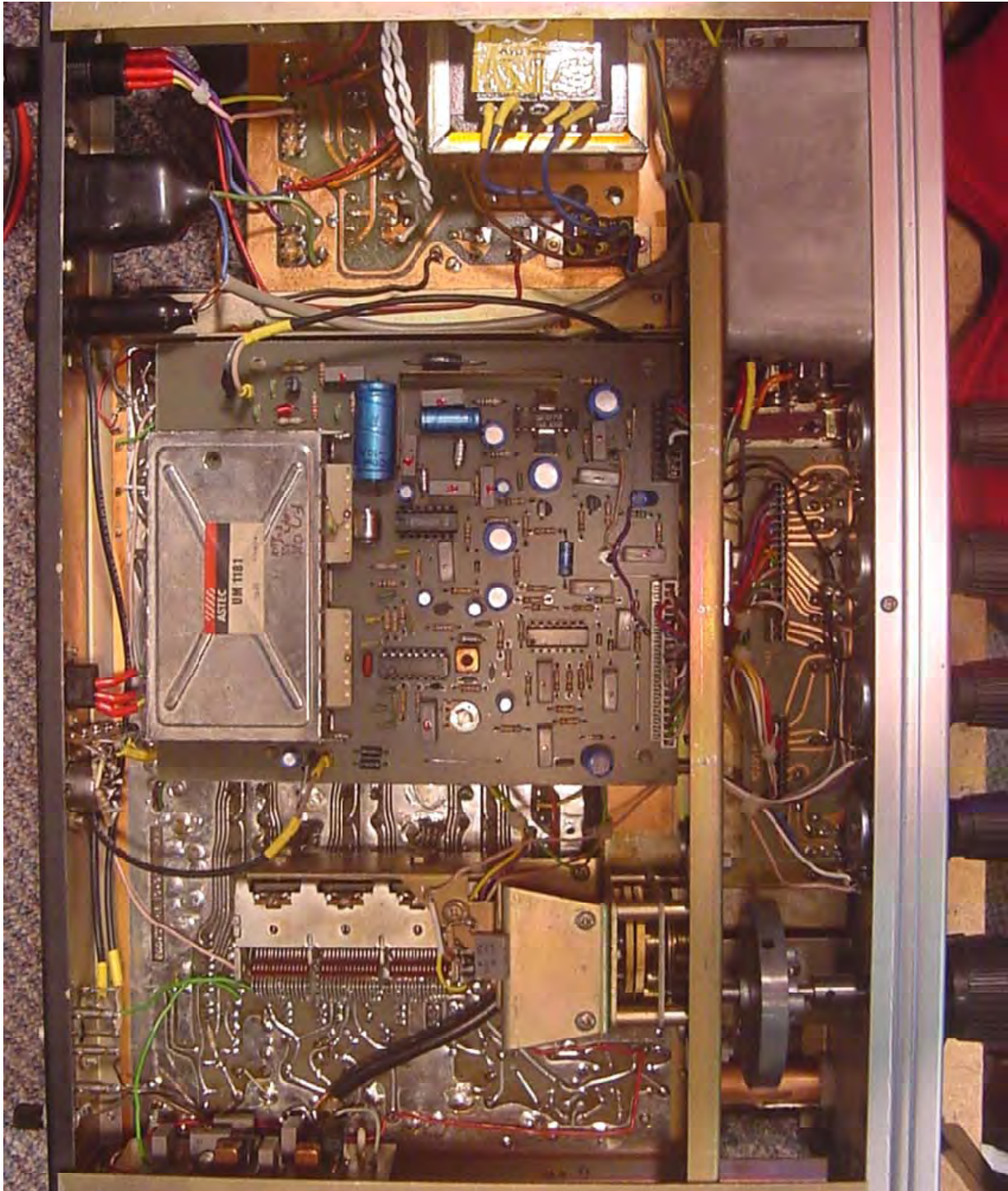






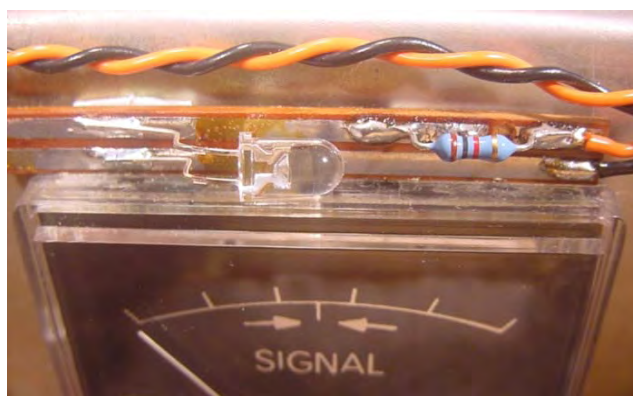
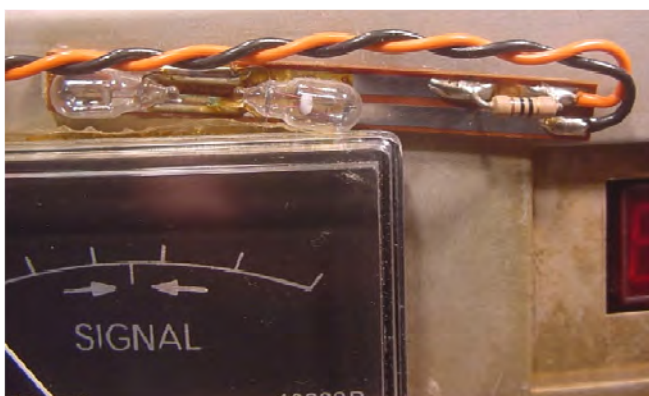
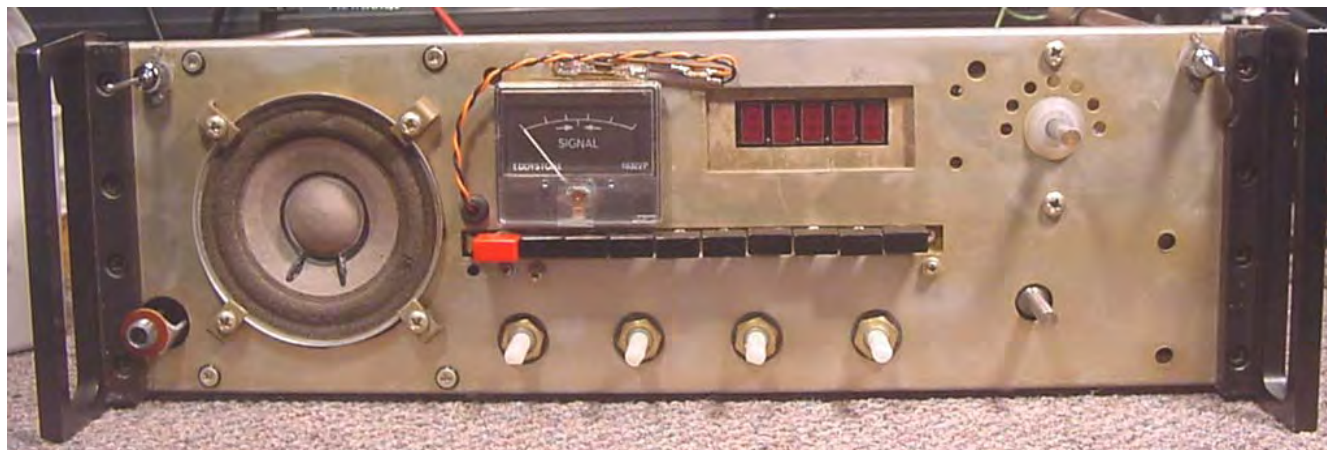
Above: Top view of chassis. The AM receiver board is centre/top, frequency display module (box) to the right, die-case speaker box beneath and power supply board bottom. Note the copper tubes containing the two telescopic antennae (top and bottom of photo)



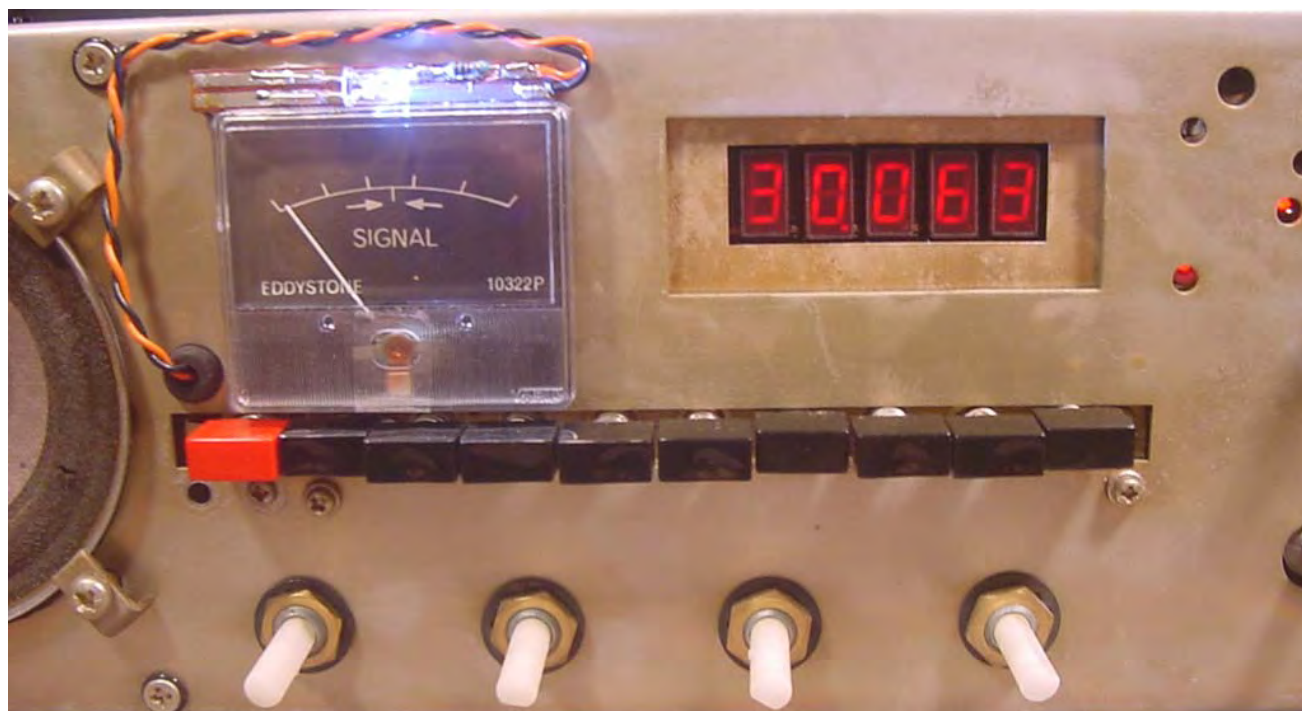


Above: Bottom view of the chassis. The AM tuning gang is in the lower section of the photo (mounted beneath the AM board). The FM tuner (box) is in the centre, mounted on the FM board which is suspended beneath the AM board on four long plastic mounts. The power supply board/power transformer is at the top of the photo and the switch board can be seen immediately behind the front panel. Note the small 'mystery board' (likely the RF stage delayed AGC amplifier) mounted inside the side panel (extreme bottom of photo)

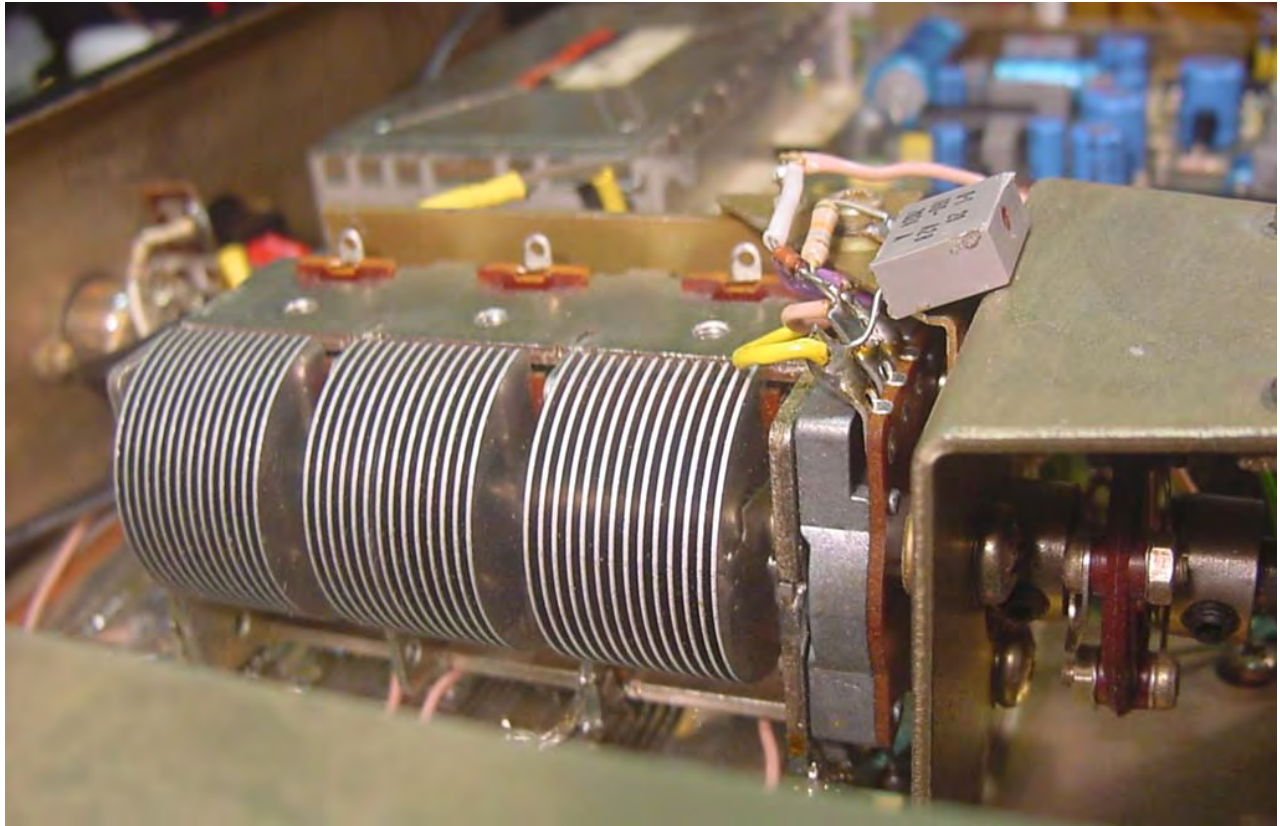




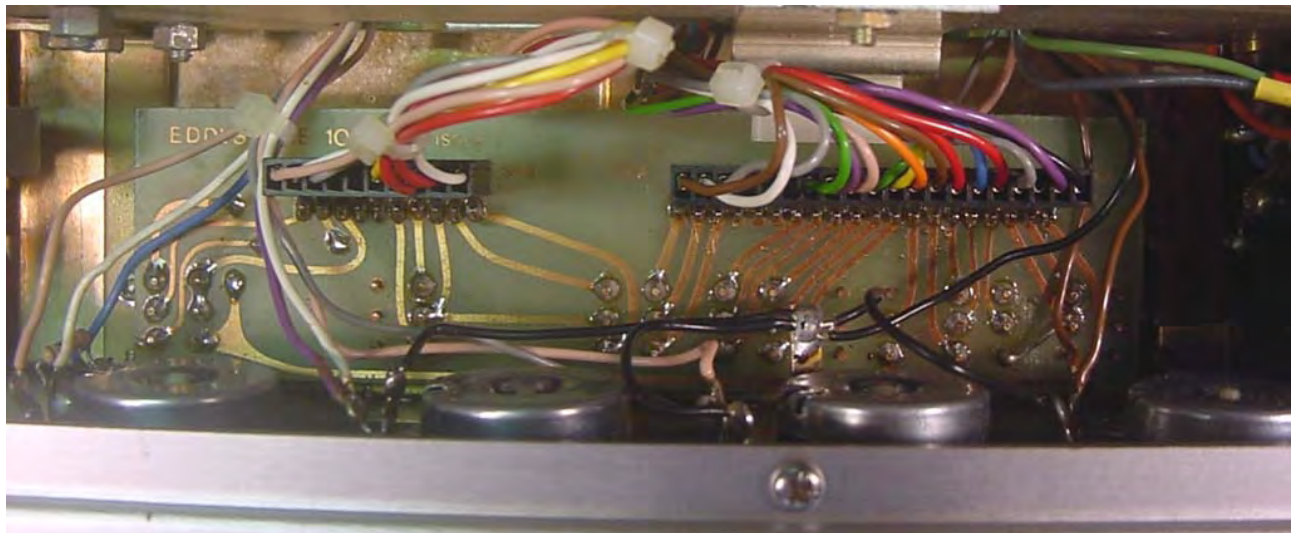
Above: (top) – front panel removed, (left) – the two 12v, 80mA wire-ended bulbs (failed) and 10ohm resistor. Note meter cover held in place with tape, (right) – bulbs replaced with 1kohm resistor and high-output white LED. Meter cover glued in place. Below: LED meter light being tested before re-assembly







Above: The AM tuning variable capacitor gang. Note the potentiometer (cast metal case in front of the variable capacitor) – this is used for FM tuning, adjusting the voltage applied to a vari-cap diode in the FM tuner module. This potentiometer is also used to linearize the fine-tuning control on AM reception. Below: underside of the switch board with potentiometers in foreground (AF Gain, Tone/BFO, IF Gain and Fine Tune)







# Eddystone Radio Limited

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



## AM/FM Broadcast Receiver

**Model  
1570  
(Provisional)**

### GENERAL DESCRIPTION

The Eddystone Model 1570 is a fully solid state AM/FM broadcast receiver designed to meet the requirements of the more discerning listener who demands a somewhat superior reception performance to that given by the conventional domestic type of receiver.

The 1570 utilises advanced techniques and components of the type normally found in professional communication receiver equipment. Added features include such facilities as unambiguous digital readout display of the tuned frequency, LED array indicator for the display of the selected range band, wide frequency range coverage of long, medium and three short-wave bands, plus international FM broadcast coverage and an 'S' meter for peaking-in on weak reception signals.

The receiver is compact, lightweight and elegantly styled in the modern trend. The audio stages can be used independently for an auxilliary input source and provision is made to facilitate tape recorder reproduction. Power for the receiver can either be derived from the AC Mains Supply (100-120V and 200-250V 40-60Hz) or from the optional internal rechargeable battery pack. Provision is also made for connection to an external 12V DC supply of negative earthed polarity.





**Performance**

Frequency Coverage	FM 88 — 108MHz 1 8.5 — 22MHz 2 3.5 — 8.5MHz 3 1.5 — 3.5MHz 4 500 — 1500kHz 5 150 — 350kHz
Sensitivity	FM 5 $\mu$ V for 20dB S/N with 22.5kHz deviation AM 3 $\mu$ V for 12dB S/N CW 2 $\mu$ V for 12dB S/N
Intermediate Frequencies	FM 10.7MHz AM 455kHz
Selectivity	FM 250kHz at — 6dB AM 1. 4kHz at — 6dB; 12kHz at — 40dB 2. 10kHz at — 6dB; 28kHz at — 40dB
Image Rejection	FM 60dB at 90MHz AM 50dB at 2MHz; 25dB at 22MHz
IF Breakthrough	FM 60dB at 90MHz AM 70dB at 2MHz
AGC Performance on AM	Less than 8dB change in output for 80dB increase in input.
AFC	Efficient control range on AM/FM
Audio Output	3 Watts max into 4 $\Omega$ ; 1.5 Watts at 1% distortion
Audio Response	Within 6dB 100Hz-15kHz
Temperature Range	0-40°C
Power Supplies	AC supply 100-120V and 200-250V (40-60Hz). Optional internal rechargeable sealed lead-acid battery. External 12V DC supply (negative earth).
Resolution of Digital Display	FM 10kHz AM 1kHz

**Other Facilities**

Economy circuit for internal battery.	
Tape record output	5 pin standard
Audio input	DIN connector
FM Mute	
Telescopic aerial	For FM use with limited AM use.
Headset	Low/medium impedance

Our equipment is designed generally to meet "British Defence Specification 133 Class L2".

As we are always seeking to improve our products, the information in this document gives only general indications of product capacity, performance and suitability, none of which shall form part of any contract. The information herein is subject to confirmation at the time of ordering.



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Alvechurch Road, Birmingham B31 3PP, England  
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## AM/FM

Model 1570

## General Purpose Receiver

### GENERAL DESCRIPTION

The Eddystone Model 1570 is a low cost, fully solid state AM/FM general purpose receiver. Model variants cover the requirements of both professional and semi-professional users.

The 1570 utilises advanced techniques and components of the type normally found in professional communication receiver equipment. Added features include such facilities as unambiguous digital readout display of the tuned frequency, LED array indicator for the display of the selected range band, wide frequency range coverage of long, medium and three short-wave bands, plus international FM broadcast coverage, an 'S' meter for peaking-in on weak reception signals, BFO and Product Detector for CW and SSB reception. An EFFICIENT AFC system works on reception of both FM and AM signals.

The receiver is compact, lightweight and elegantly styled in the modern trend. The audio stages can be used independently for an auxiliary input source and provision is made to facilitate tape recorder reproduction. Power for the receiver can be derived from the AC Mains Supply (100-120V and 200-250V 40-60Hz). Provision is also made for connection to an external 12V DC supply of negative earthed polarity.



Performance

Frequency Coverage	FM	88	-	108MHz
	1	14	-	30MHz
	2	8.5	-	18MHz
	3	3.5	-	8,5MHz
	4	1.5	-	3.5MHz
	5	550	-	1500 kHz
	6	150	-	350 kHz
Sensitivity	FM	5μV for 30dB S/N with 22.5kHz deviation		
	AM	3μV for 12dB S/N		
	CW	2μV for 12dB S/N		
Intermediate Frequencies	FM	10.7MHz		
	AM	455 kHz		
Selectivity	FM	250 kHz at -6dB		
	AM 1.	4 kHz at -6dB; 12kHz at -40dB		
	2.	10 kHz at -6dB; 28kHz at -40dB		
Image Rejection	FM	80dB at 90MHz		
	AM	50dB at 2MHz; 25dB at 22MHz		
IF Breakthrough	FM	90dB at 90MHz		
	AM	70dB at 2MHz		
AGC Performance on AM	Less than 8dB change in output for 80dB increase in input.			
AFC	Efficient control range on AM/FM.			
BFO Range	± 3kHz.			
Audio Output	2.5 Watts max. into 4Ω; 1 Watt at 1% distortion.			
Audio Response	Within 6dB 100Hz - 12kHz			
Temperature	0-40°C.			
Power Supplies	AC supply 100-120V and 200-250V (40-60Hz). Optional internal rechargeable sealed lead-acid battery. External 12V DC supply (negative earth).			
Resolution of Digital Display	1570/1:	FM	10kHz	AM 1kHz
	1570/3:	FM	100kHz	AM 1kHz
Dimensions	Height:	132.5mm	Width :	410mm
	Depth :	330mm	Weight :	9 kg.

Other Facilities

Economy circuit when internal battery is fitted.

Tape record output ) 5 pin standard  
Audio input ) DIN connector

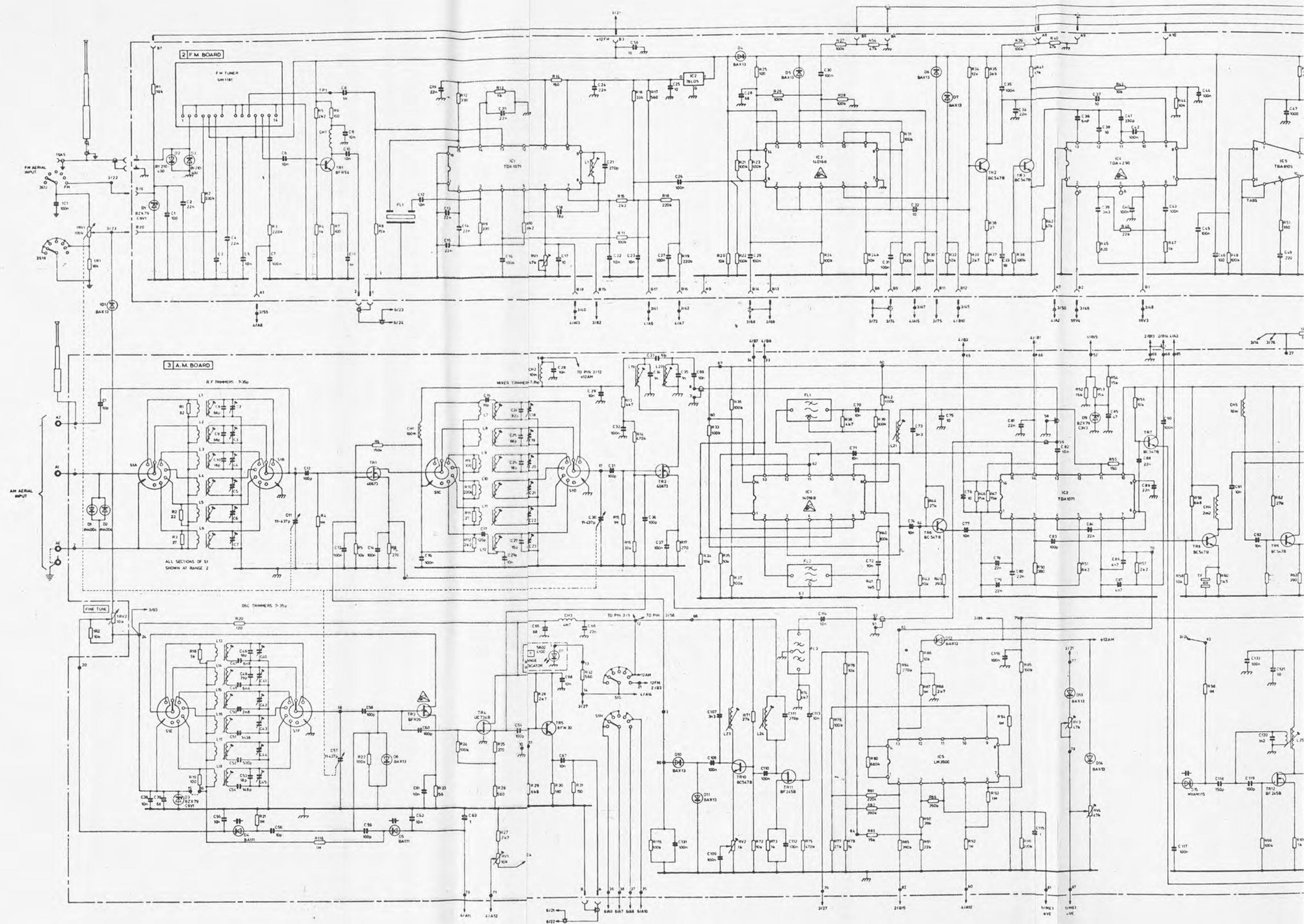
FM Mute

Telescopic aerials ) For FM use with limited AM use.  
Headset ) Low/medium impedance.

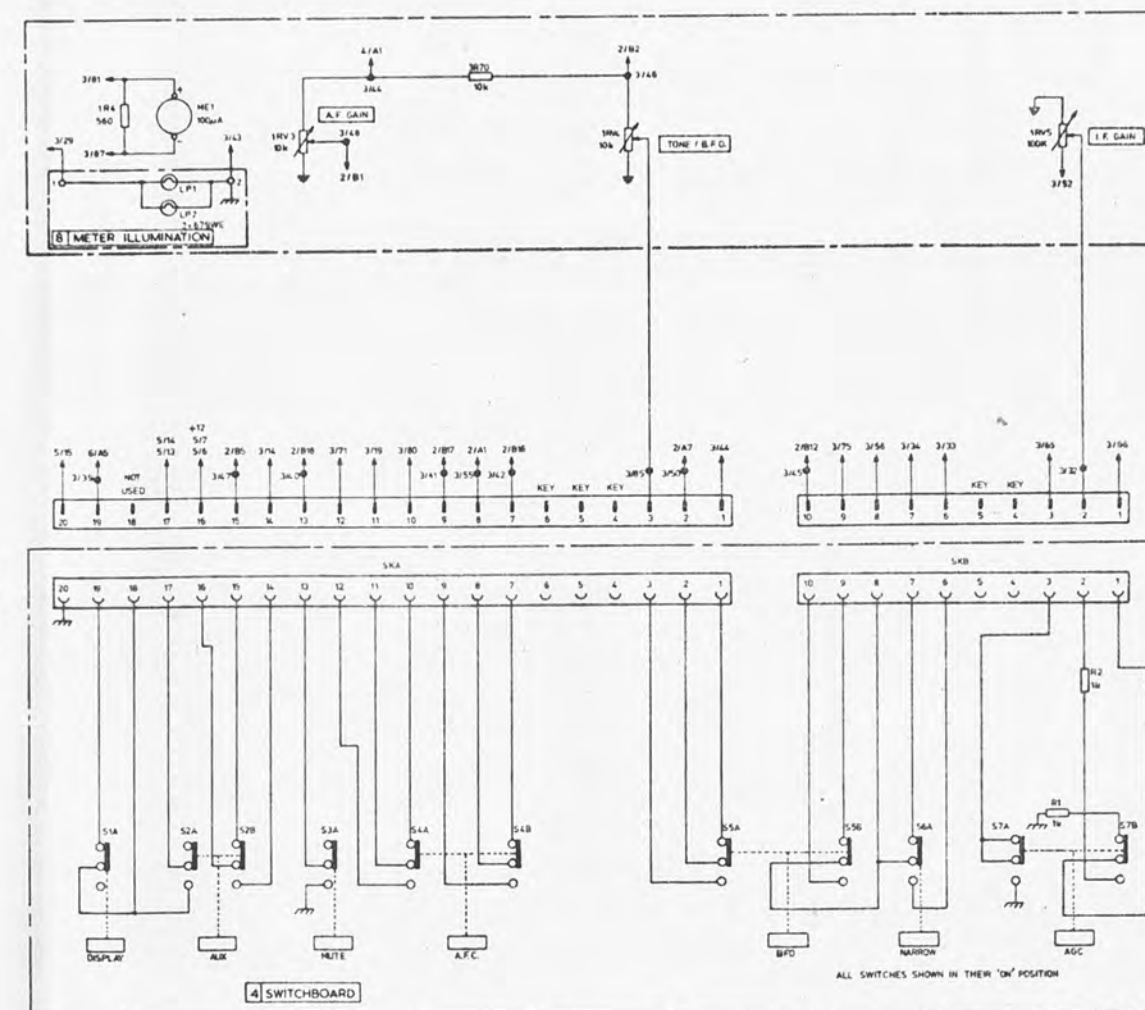
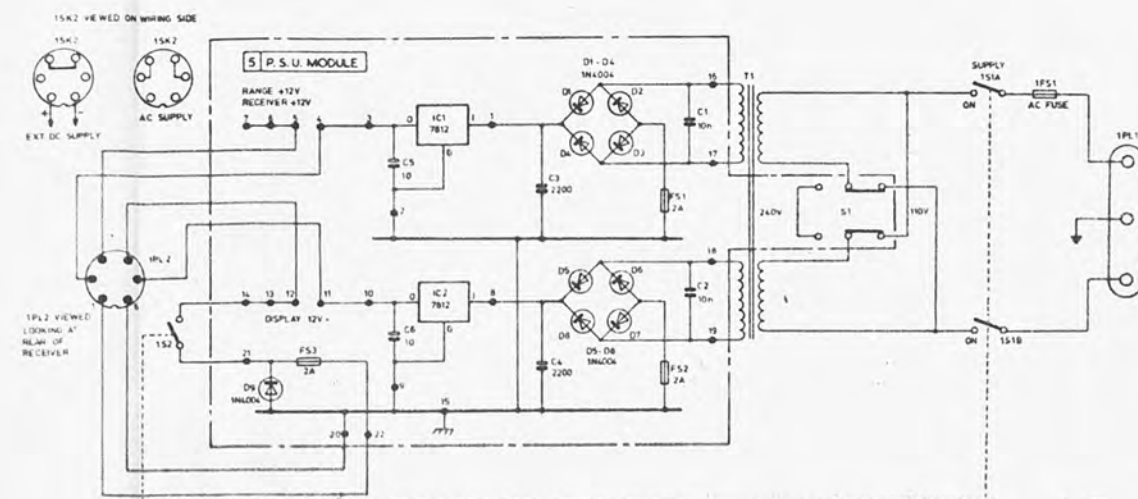
Our equipment is designed generally to meet "British Defence Specification 133 Class L2".

As we are always seeking to improve our products, the information in this document gives only general indications of product capacity, performance and suitability, none of which shall form part of any contract. The information herein is subject to confirmation at the time of ordering.



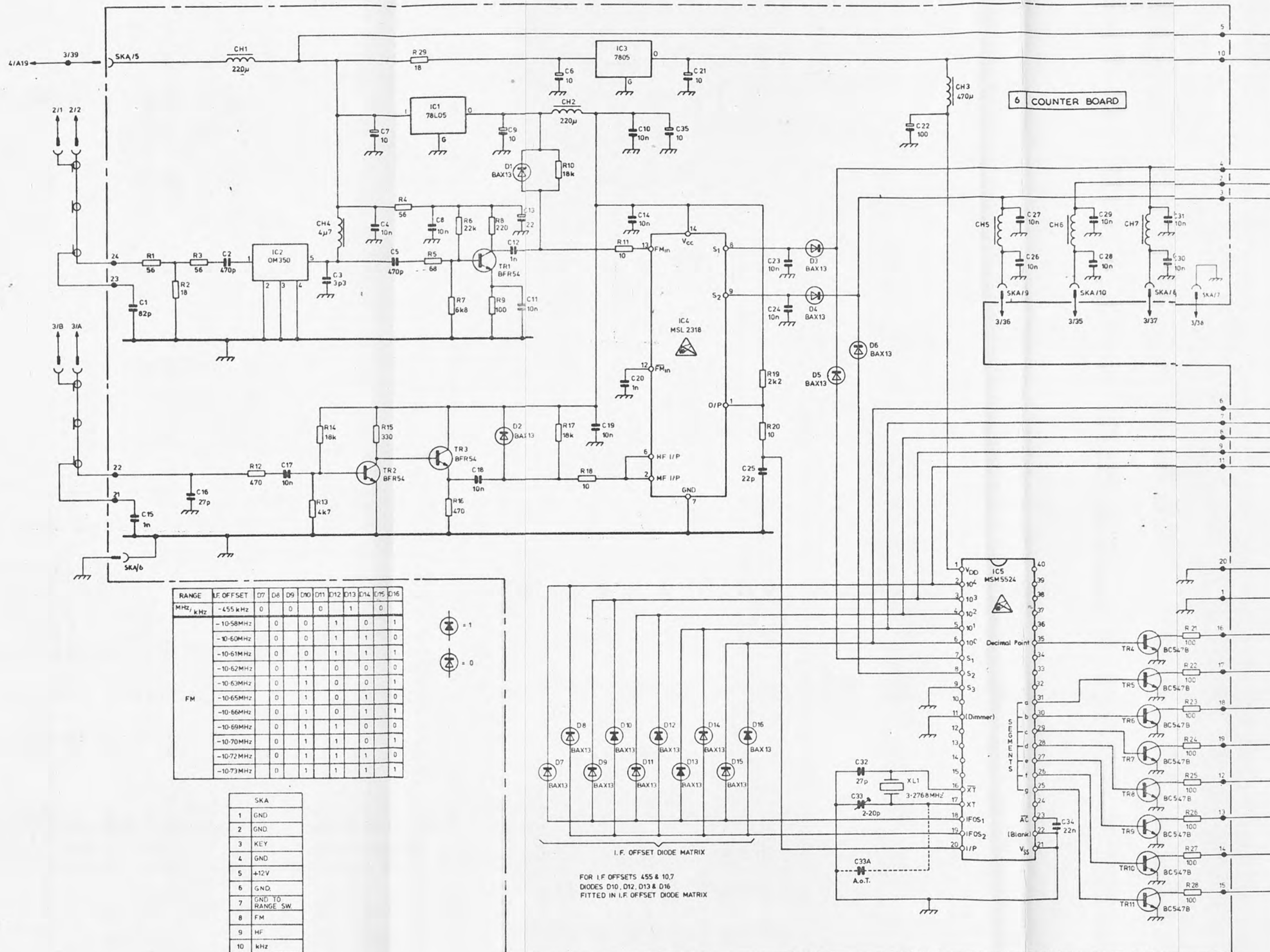




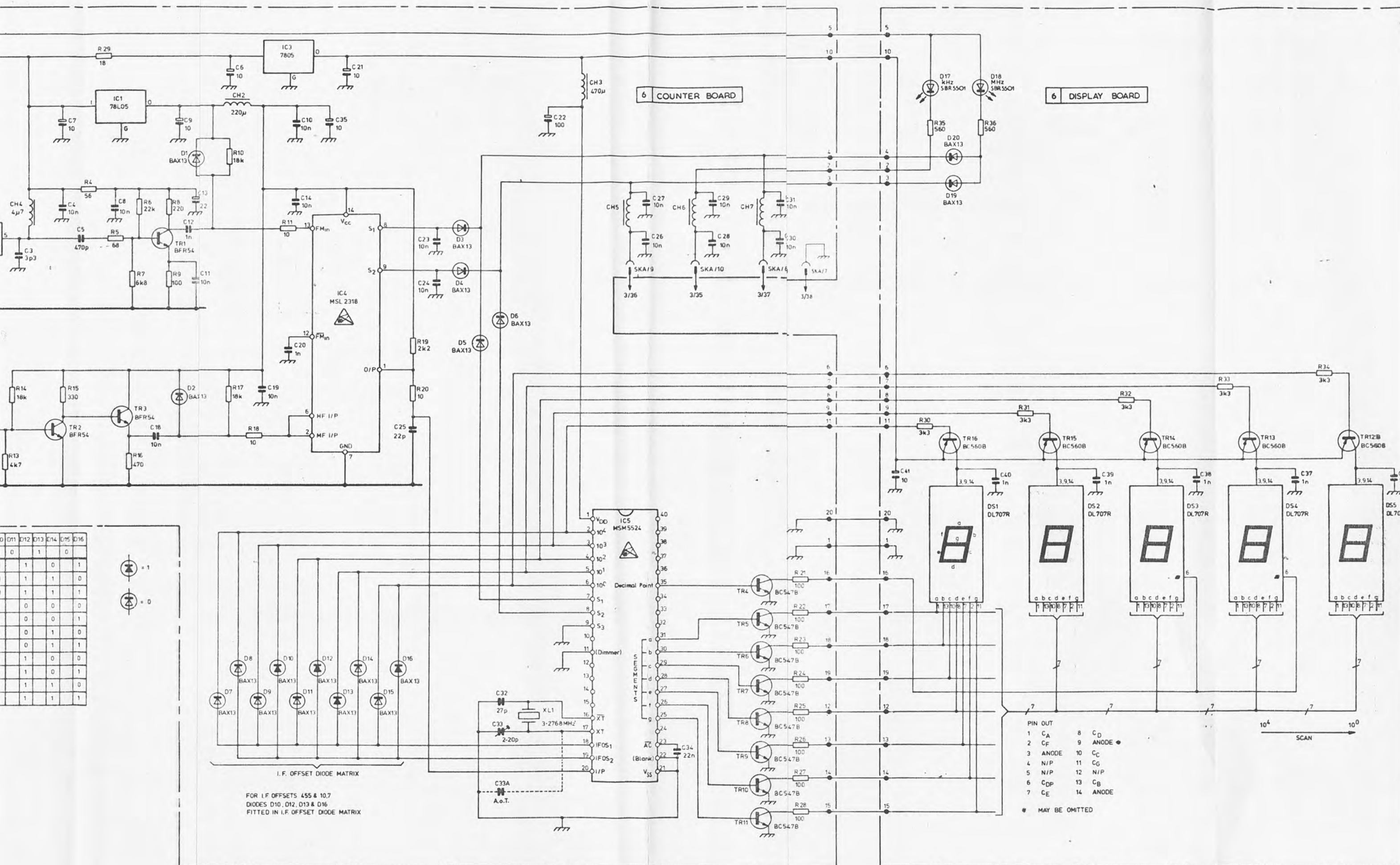


STATIC  
SENSITIVE  
DEVICE

BP1465 ISSUE 1







D1	D2	D3	D4	D5	D6
0	0	1	0	1	0
1	1	0	1	1	1
2	1	1	1	1	1
3	0	0	0	0	0
4	0	0	0	1	0
5	0	1	1	1	1
6	1	0	0	0	0
7	1	0	1	1	0
8	1	1	1	1	1

PIN OUT

1 CA	8 CD
2 CF	9 ANODE *
3 ANODE	10 CC
4 N/P	11 CG
5 N/P	12 N/P
6 CDP	13 CB
7 CE	14 ANODE

\* MAY BE OMITTED

# FREQUENCY DISPLAY MODULE



STATIC SENSITIVE DEVICE

BP1464 ISSU