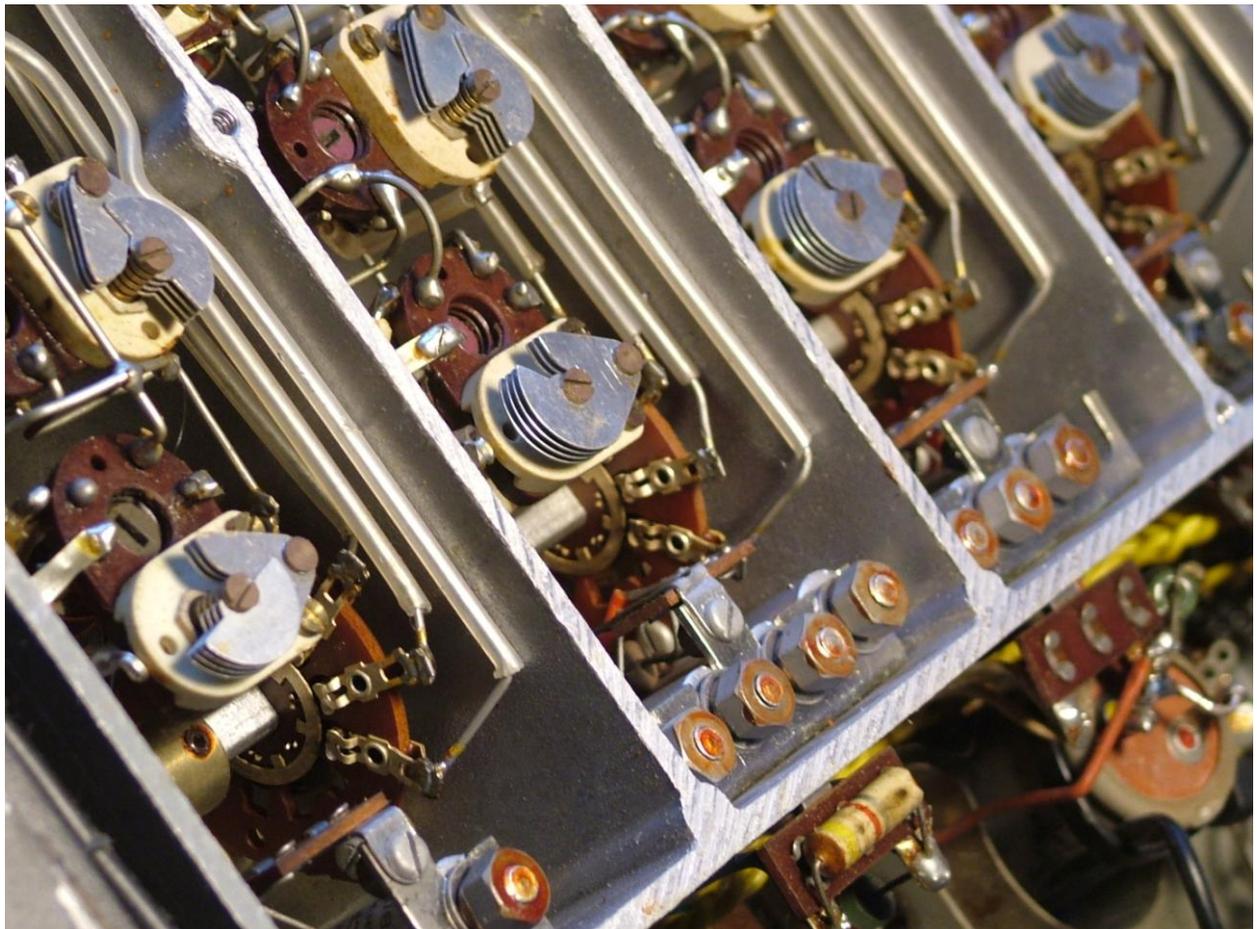


Eddystone S680X communications receiver.

Band change switch



An overview of the band change switch

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*Special note. This information is based on an Eddystone S680X serial No GL1824 with the component identification taken from a circuit diagram with an unspecified issue number from the Eddystone user group website. 8th December 2011

Eddystone S680X communications receiver.

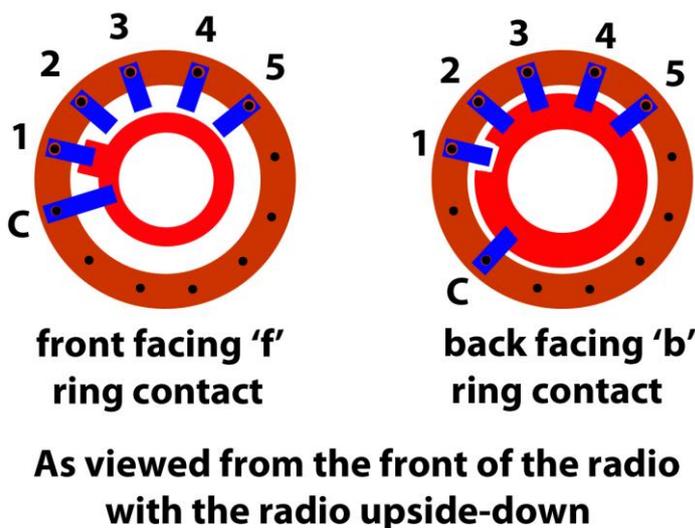
Band change switch

I think that the most daunting thing in the receiver is the band change switch and I figure the sooner I get to grips with it or I should say 'them' the better. At first sight it looks horrendously complicated but when you get in close they're really not at all complicated.

The band change switch comprises of eight identical, five position, double pole wafer switches. Each switch has a different moving ring contact arrangement on either side.

Each wafer switch of course has a side that faces the front of the radio and I'll refer to that as the 'f' side and the side facing the back of the radio I'll refer to as the 'b' side.

The 'f' sides of each of the switches are simple single-pole five-way selector switches and they look like the switch on the left in the image below, it has one closed contact and 4 open contacts. 'C' of course denotes the common contact.



The inner ring is the moving contact on both sides of the switch; they are of course 'ganged' together to move as one but they are insulated from one another.

Terminal 1 of side 'f' is terminal 1 of side 'b' and terminal 2 of side 'f' is terminal 2 of side 'b' and so on. The 'f' and 'b' ring contacts each have their own common terminals.

Remember that in the image above you are seeing the 'b' side of the switch as if you were looking through the 'f' side from the front of the radio.

All eight band change switches are mechanically coupled by a common shaft and they are identical.

The 'b' side of the switch comprises of another five-way switch but this one, instead of selecting one of the five poles, it shorts together each of the four poles that are not selected by the 'f' switch, so it has one open contact position and four closed contacts.

The switch is shown in the number one position i.e. fully anticlockwise, (30Mhz)

All of the eight wafer switches used for band selection are of the same construction.

Eddystone S680X communications receiver

Band change switch. The forward facing contacts

The band change switches select the inductively coupled tuned circuits for four sections of the radio.

- 1) The first R.F. stage.
- 2) The second R.F. stage.
- 3) The frequency changer.
- 4) The Oscillator.

Each of the four sections, are controlled by two of the wafer switches and once you understand the operation of one section you'll see that, in terms of wiring, the switching of all four sections are practically identical.

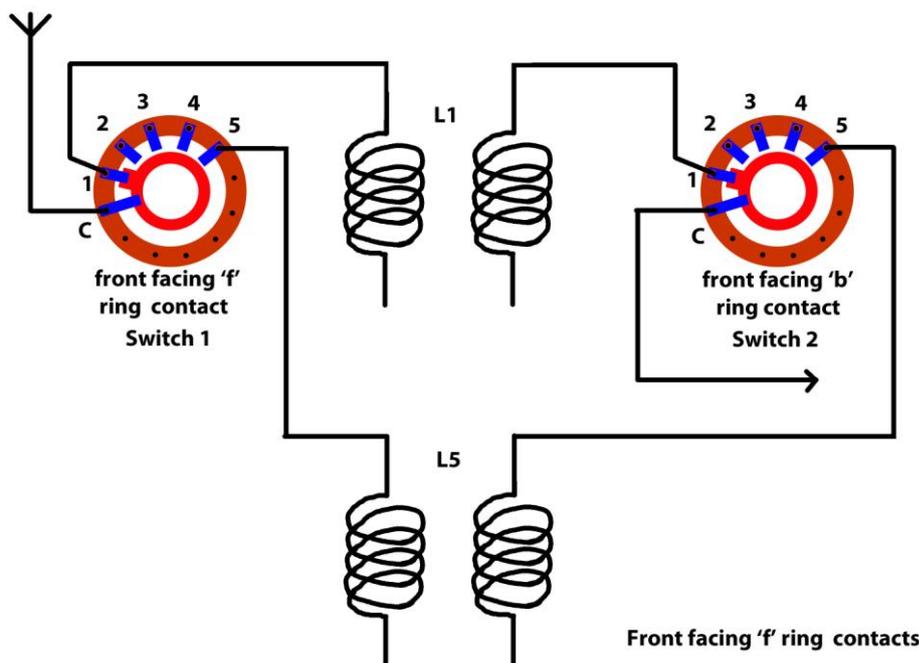
In each section the common terminal of one of the 'f' side contacts of one switch connects to one end of the primary of the chosen coil (tuned circuit).

So, in the first R.F. section the common terminal of the 'f' side of the first switch (shown below on the left) connects to the primary of the chosen tuned circuit.

The common terminal of the 'f' side of the second switch in that section (shown below on the right) connects to one end of the secondary of the chosen tuned circuit.

Only coils L1 and L5 are shown but L2 connects to switch position 2 in each case and L3 connects to position 3 etc.

In each section the coil with the lowest identification number connects to switch position 1 with the next highest being connected to switch position number 2 etc.



Note that in each section the highest frequency's coils are positioned nearest to the wafer switch.

The 30MHz coils are connected to the switch with strip rather than wire.

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Band change switch. The backward facing contacts

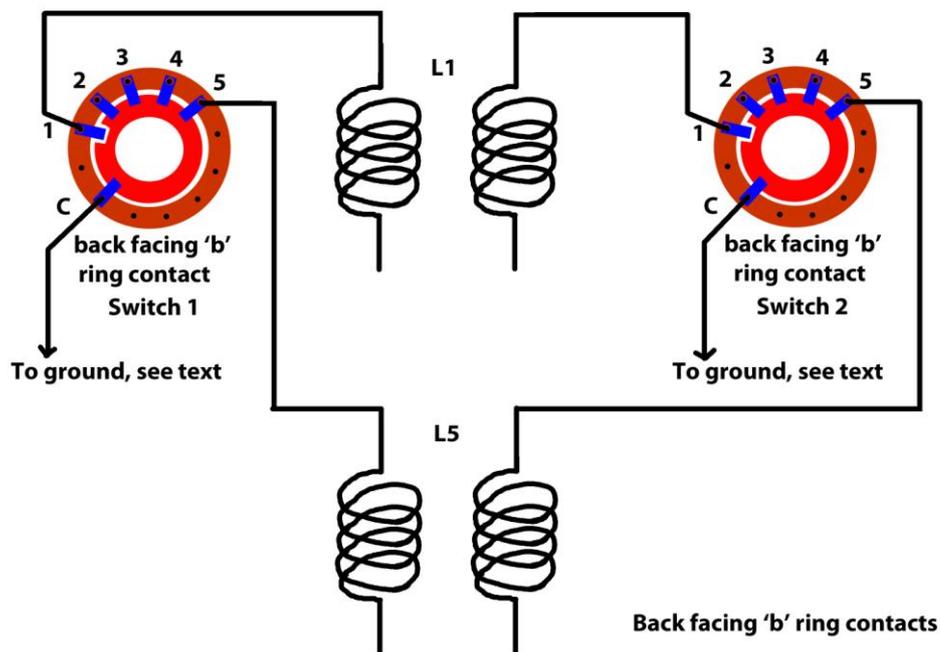
The common contacts of the 'b' sides of all eight band change switches are connected to ground, either directly or via a capacitor. (There's an exception with Switch 1)

The common contact of Switch 1 may be connected to ground via the 'AE'-'A' link on the back of the radio otherwise it's connected to one side of the dipole aerial. See a full circuit diagram of the radio for details.

Whereas both 'f' sides of each switch selects the required coil to be connected into the circuit, both of the 'b' sides of each switch in each section 'de-select' the coils that are chosen by the 'f' side. Any coil that is not 'de-selected' is grounded, either directly or via a capacitor to the chassis.

Again only L1 and L5 are shown but L2 connects to position 2 of the switch etc.

In each tuning section the lowest numbered coil connects to contact 1 of the switch, with the next higher numbered coil connecting to contact 2 and so on.



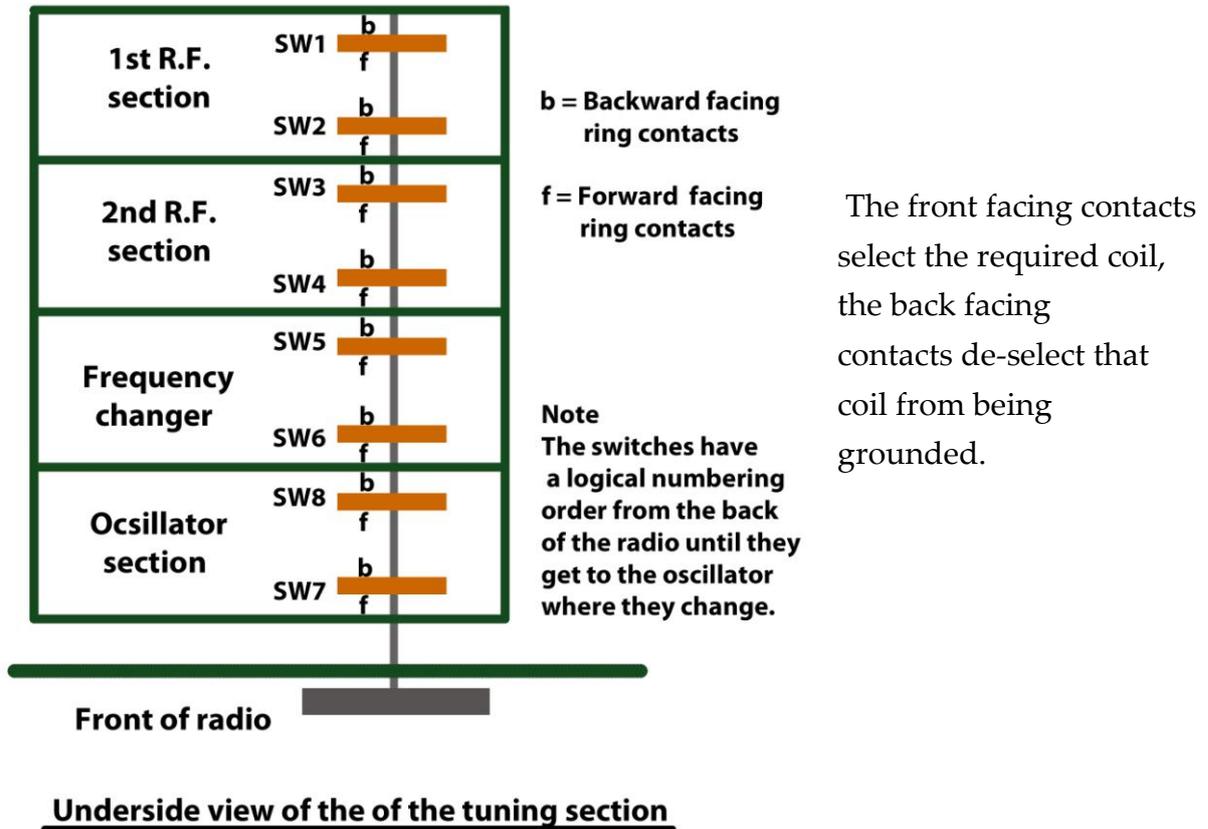
Note that the common terminal 'C' for the 'f' and the 'b' sides of the switch are **not** the same terminal, they are separated by one index position.

So, in a nut shell, the front facing contacts select the required coil, the back facing contacts de-select that coil from being grounded.

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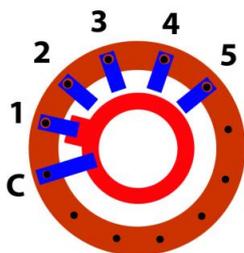
Band change switch.

Under view of the tuning section showing the band change switch locations.

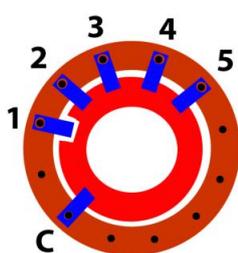


All eight of the wafer switches of the band change are identical.

Switch position 1 = band 1 Switch position 2 = band 2 etc.



**front facing 'f'
ring contact**



**back facing 'b'
ring contact**

**As viewed from the front of the radio
with the radio upside-down**

Band 1	30	to	12.3 MHz
Band 2	12.5	to	5.3 MHz
Band 3	5.7	to	2.5 MHz
Band 4	2.5	to	1.11 MHz
Band 5	1120	to	480 kHz

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