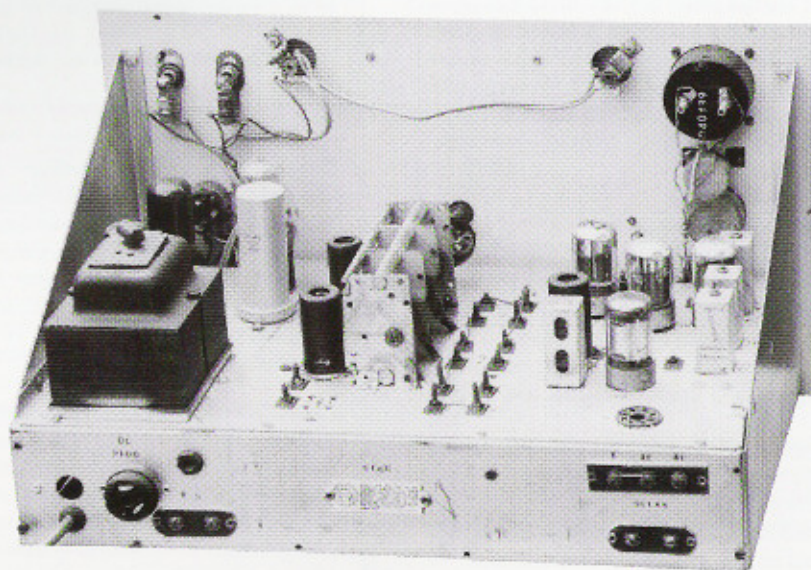


Q-max G5/10X front view. Note slow motion Muirhead dial drive commonly found on laboratory instruments



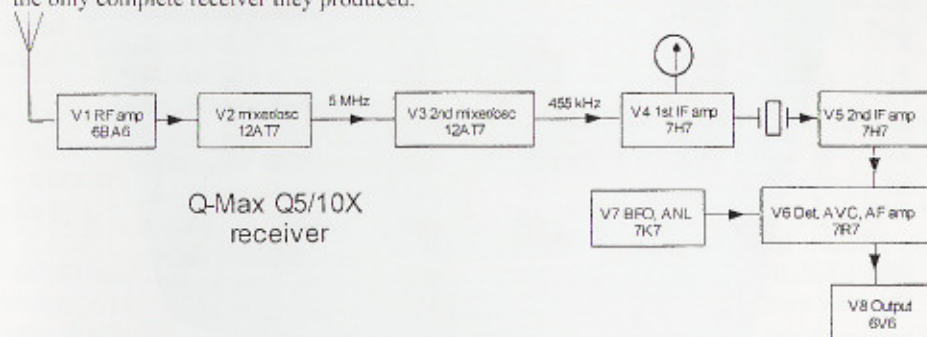
Q-Max G5/10X rear view. Note bizarre array of different valve types

## From my collection. The Q-Max G5/10X communications receiver.

by John R L Walker ZL3IB

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The British firm of Q-Max (Electronics) Ltd. was active from the late 1940s onwards offering a range of radio components, such as coil assemblies etc. for the home constructor. Their G5/10X was a ten valve, amateur bands only, double conversion superhet and, as far as I am aware, was the only complete receiver they produced.



The circuit was unusual and used a low-noise RF pentode stage followed by a twin triode mixer-oscillator which changed the incoming frequency to the first IF at 5 MHz. This was followed by a second twin triode mixer-oscillator which converted this to the second IF at 455kHz feeding a crystal filter providing six degrees of selectivity and thence to a second IF amplifier. From here the signal went to a double diode pentode which served as detector, A VC and first AF amplifier and then to the power amplifier. Another double triode served as BFO and automatic noise limiter. A 150V stabilised HT rail supplies the local oscillators and first IF screen. A crystal calibrator was available as an optional extra.

Mechanically the design of the set is quite robust and features a 50:1 Muirhead planetary reduction drive. However in my opinion the layout and choice of valves is appalling. For example, for reasons unknown the designers elected to use a weird and wonderful mixture of seven and nine-pin miniature valves, uncommon loctal types and octal based valves. Worse still, some evil-minded genius arranged that the six-wafer, six-position, selectivity switch was placed directly under several valve and IF transformer bases thus ensuring that service access to these was a major headache! I have struggled long and hard to get this set to work, let alone back to anything approaching claimed performance.

### Valve Line-up

V1 RF amplifier	6BA6	V6 Det. AVC. AF amp	7R7 (D.D. pentode)
V2 1st mixer	12A 7/ECC81	V7 ANL and BFO	7K7 (double triode)
V3 2nd mixer	12A7/ECC81	V8 Power output stage	6V6
V4 1st IF stage	7H7 (RF pentode)	V9 Rectifier	5Z4
V5 Crystal filter stage	7H7	V10 Stabiliser	VR150

### Specifications

Sensitivity: 1  $\mu$ V provides 1.5W output or better on all bands  
 S/N ratio: 1  $\mu$ V provides a 15dB S/N or better on all bands  
 Ranges: 1.8 - 2.0, 3.5 - 4.0, 7.0 - 7.4, 14.0 - 14.4, 20.95 - 21.5, 28 - 30.0 MHz