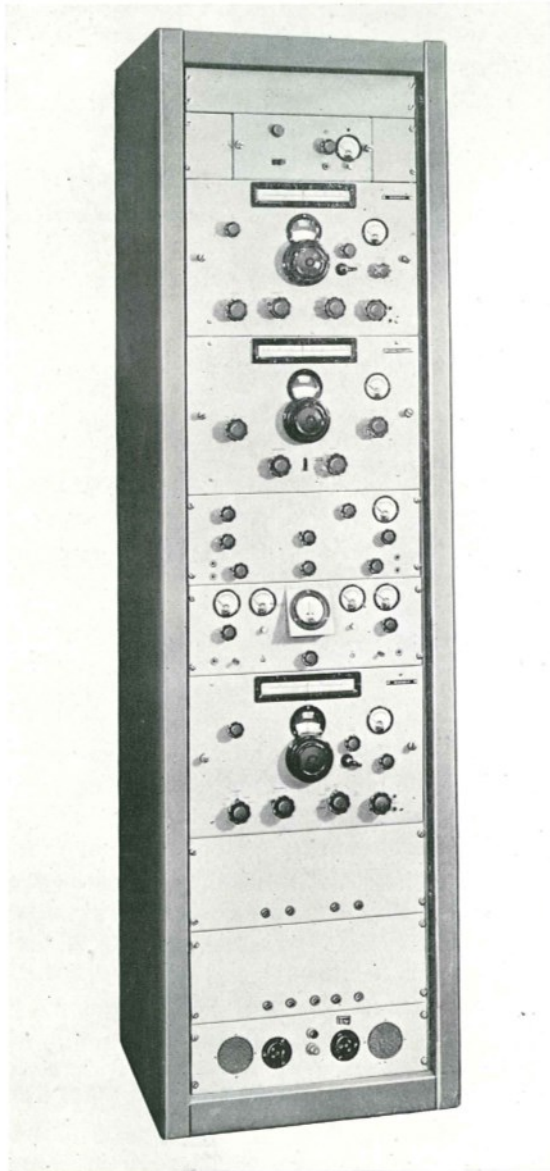




## Double-Diversity Receiving Equipment *Type CRD 150/22A*



5601

THIS EQUIPMENT has been designed in order to provide in one unit the advantages of double-diversity reception and the facilities of telephony, and high-speed telegraph recording.

The equipment is assembled in a completely enclosed cabinet 7 ft high, with a door at the rear. Most of the panels are mounted on runners, a feature which enables each panel to be withdrawn to the fullest extent from the front of the cabinet without switching off. The panels are easily removable from the runners should it be necessary.

A main ON/OFF switch and fuses are fitted, together with a socket providing power for various purposes, such as test apparatus, inspection lamp, etc.

### CIRCUIT

Signals are received on two spaced aerials which are connected to the two receiver inputs. The receivers are of the double frequency change type having a first IF of 1.2 Mc/s to give good image signal protection, and a second IF of 465 kc/s.

The first and second oscillators, which are common to both receivers, together with the beat frequency oscillator, are assembled as one unit. By using the same beat frequency, the same values of intermediate frequency are ensured in both receivers. Automatic frequency control is applied to the common second oscillator by a small motor. This motor is itself controlled by the DC voltage fed back from the AFC discriminator.

**Telephony.** The two 465 kc/s outputs from the two receivers are amplified, detected with combining diodes and the resulting audio signal is then amplified and passed to line.

**Telegraphy.** The two 465 kc/s outputs from the two receivers are changed to 50 kc/s and passed through IF amplifiers where additional

selectivity is provided. The signals are then detected and combined for ON/OFF, or selected by a path selector, limited and then passed through a discriminator for FSK. The DC

signals thus obtained are amplified, limited, filtered to remove noise and again limited to give 30–0–30 mA DC output into an earthed load of 1000  $\Omega$  maximum.

## DATA SUMMARY

**Service:** Double-diversity double-sideband reception of telephony, frequency-shift and ON/OFF high-speed telegraphy. Frequency-shift values of between 400 and 1000 c/s are catered for.

**Frequency range:** 1.5–30 Mc/s in 5 bands.

**Input:** 75  $\Omega$  coaxial feeder.

**Sensitivity:** 0.3 to 0.6  $\mu$ V for 10 db s/n ratio (at bandwidth 1.8 kc/s) according to frequency.

**Noise factor:** Between 4 and 8 db according to frequency.

**Image suppression:**

Greater than 70 db from 1.5 to 9 Mc/s.

Greater than 50 db from 9 to 16.5 Mc/s.

Greater than 25 db from 16.5 to 30 Mc/s.

**Adjacent channel selectivity:**

| Attenuation | Nominal Bandwidth |                      |
|-------------|-------------------|----------------------|
|             | Telephony         | Telegraphy           |
| 3 db        | 6.6 kc/s          | 1.3 kc/s or 0.5 kc/s |

| Attenuation | Nominal Bandwidth |                      |
|-------------|-------------------|----------------------|
|             | Telephony         | Telegraphy           |
| 40 db       | 17.5 kc/s         | 4.4 kc/s or 2.8 kc/s |
| 60 db       | 28 kc/s           | 6.2 kc/s or 1.9 kc/s |

**Outputs:**

Telephony: Combined output of 100 mW into 600  $\Omega$ .

Telegraphy: 2 available simultaneously:

(a) 30–0–30 mA maximum into an earthed load of 1000  $\Omega$ .

(b) Keyed tone, output level +10 dbm maximum.

**Power supply:**

110 and 200–250 V, 50 c/s, AC mains.

**Power consumption:** 600 W approximately.

**Dimensions:**

| Height                               | Width                                | Depth                               | Weight             |
|--------------------------------------|--------------------------------------|-------------------------------------|--------------------|
| 7 ft 0 $\frac{1}{4}$ in.<br>(214 cm) | 1 ft 11 $\frac{1}{2}$ in.<br>(60 cm) | 1 ft 8 $\frac{1}{2}$ in.<br>(52 cm) | 560 lb<br>(254 kg) |

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