



SHF 240-channel Radio Link Equipment

DQ 78 Series

Designed and produced by the Canadian Marconi Company, Montreal, Canada

THIS SERIES comprises wide-band transmitting and receiving equipment capable of carrying, in conjunction with suitable carrier equipment, up to 240 telephone channels or a television signal over a short distance.

It operates in the 5900–8200 Mc/s band, making it suitable for short-haul systems. A version is available to meet low channel capacity requirements which has built-in transistorized carrier equipment for 12 telephone channels and self-contained channel signalling.

Terminal equipment may be connected back-to-back to form repeater stations with full channel dropping facilities.

At the frequencies at which this equipment operates, it is necessary to use waveguide feeders and therefore, in the interests of economy, it is expedient to use horizontally mounted aerials and passive reflectors at the heads of towers.

Data Summary

Frequency range: 5900–8200 Mc/s.
Frequency stability: $\pm 0.05\%$ ($\pm 0.005\%$ can be provided for special requirements).
Temperature range: 0° to $+45^{\circ}\text{C}$.
Channel deviation: 50 kc/s r.m.s.
Power requirements: 105–125 V or 210–240 V 45–65 c/s AC, or 48 or 129 V, DC.
Power consumption: Terminal 375 W.
 Repeater 750 W.

Features

Latest design techniques used, resulting in an economical reliable equipment.
 Maximum flexibility with optimum performance.
 Reliability and ease of maintenance.
 IF repeater with channel dropping and insertion facilities.

EQUIPMENT

Each complete terminal assembly occupies one half of a 7 ft high standard rack. The lower half of the rack may be used for mounting up to 12 channels of transistorized multiplex equipment providing an extremely compact unit.

Transmitter. Comprises a baseband/modulator unit feeding a klystron oscillator, whose output is fed to a common aerial via a waveguide circulator.

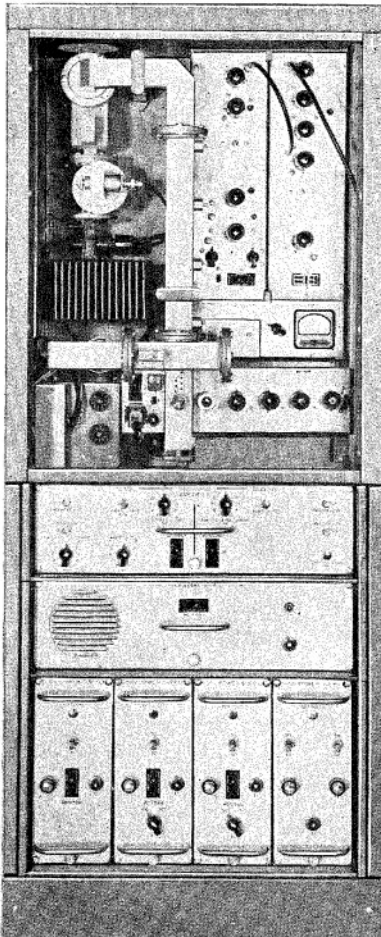
Receiver. The received signal from the waveguide circulator is applied, via a filter, to a low-noise mixer where it is combined with a local oscillator signal produced by a klystron stage. The resulting IF of 70 Mc/s is amplified and fed to a limiter discriminator unit. One discriminator stage feeds the demodulated signal to the baseband amplifier, whilst a second provides a signal to the AFC unit controlling the local oscillator frequency.

Aerials. A number of aerial systems are available but normally one transmitter/receiver pair is duplexed on to one aerial. For twin path or quiescent systems either one or two aerials may be used for each direction of transmission.

TRANSMITTER

Output power: 100 mW, or 1 W.
Modulation input: Traffic, 75 Ω .
Impedance: EOW and Supervisory, 600 Ω .
Modulation input level: -37 dBm, narrow-band version. -45 dBm, wide-band version.
Dimensions:
 Height 92 in. (233 cm)
 Width $20\frac{1}{2}$ in. (52 cm)
 Depth 18 in. (28 cm)

8226



Marconi

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