

Marconi L.F Drive Assembly Type H 1610

The drive is designed to produce a s.s.b signal in the frequency range 40 to 550 kHz with an output of 5 W. The Type H 1610 is intended to drive one or two high power transmitters and is particularly suitable for use in conjunction with the H 1211 Linear Amplifier. The equipment is suitable for use in tropical climates.

FEATURES

Any frequency can be selected by synthesis in the range 40 to 550 kHz, in 10 Hz steps with a stability reflecting that of the 1 MHz Master Oscillator standard.

Incremental steps of 1 Hz can be selected with only a slight additional degradation.

Interlock system that may be coupled to the transmitter.

All units have built-in power supplies and individual circuit breakers.

Circuit

The audio input is connected to a modulator which gives an output centred on a frequency of 10 kHz modulated on the upper sideband in the A3j mode. The output at 100 kHz is fed to a converter where the frequency is changed to the required low frequency output by a process of mixing with frequencies which are locked to the 1 MHz standard. A frequency synthesizer enables the output to be varied between 40 and 550 kHz in steps of 1 Hz with a stability at the 10 Hz steps reflecting that of the 1 MHz standard. The 1 Hz steps are derived from free-running interpolating oscillator within the synthesizer and this can introduce a slight degradation to the overall stability of up to ± 0.03 Hz or ± 0.0025 Hz (depending upon edition).

Two inputs of 1 MHz which differ in phase by 60° are required at a level of 150–230 mW. These two signals are combined in the cabinet in such a way that if either fails the resultant level to the units remains constant.

DATA SUMMARY

Frequency range and stability: 40 to 550 kHz in 10 Hz steps with a stability the same as the Master Oscillator, and 1 Hz steps with the same stability of the Master Oscillator ± 0.03 Hz or ± 0.0025 Hz (depending upon edition of the synthesizer).

Service: s.s.b A3j (suppressed carrier) (c.w on/off, and f.s.k telegraphy plug-in modules are available).

Power output: 5 W into 75 Ω .

Intermodulation products: Better than -45 dB relative to either one of two equal tones at all levels up to 5 W p.e.p.

Harmonics: Not greater than -45 dB relative to 5 W.

Climatic conditions: 0–45°C.

0–90% humidity.

8000 ft maximum operating height.

Audio signal inputs: 300–6000 Hz; $+10$ dBm to -20 dBm into 600 Ω .

Mains requirements: 200–250 V single-phase with $\pm 6\%$ maximum variation; 45–65 Hz a.c.

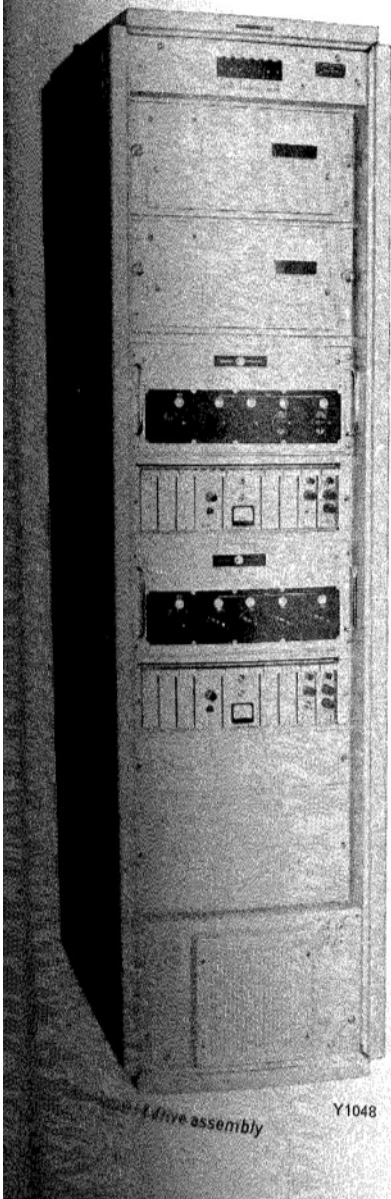
Telegraphy input: 80–80 to 6–0.6 V double current, -80 to -9 V single current.

Power consumption: 500 W for double drive.

Frequency standard input: Two 1 MHz Master Oscillator outputs at 150 mW–230 mW into 75 Ω with a phase relationship of $60^\circ \pm 10^\circ$, or by an internal standard unit Type H 1504–07.

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L.F Drive assembly

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