

MST Transmitting System

MST TRANSMITTERS

THERE are three transmitters in the MST range which use frequency-following self-tuning techniques: the 7½ kW Types H 1101 and H 1103 and the 30 kW Type H 1200. In each of these, untuned wideband amplifying stages are followed by a single tuned stage, which uses a tetrode in the case of the H 1100 Series transmitters and a triode in the case of the H 1200. The tuning and loading circuit of the final stage employs vacuum variable capacitors and switched inductors with a switching system designed to provide wiping contacts and high contact pressures for long-term reliability. By employing the latest techniques in the use of silicon rectifiers and air-cooled transformers, all power components are incorporated within the transmitters. The MST transmitters are compact and can be mounted side by side against a wall, thus saving space and reducing building costs.

With the self-tuning transmitters, frequency changing is initiated from the station control position simply by resetting the decade dials of the synthesizer in the drive equipment. Interlock circuits immediately cause all the sequencing circuits in the transmitter to revert to the first stage of tuning and the drive to deliver an unmodulated signal at the new radiated frequency, at a level 10 dB below that required for full output. The transmitter then proceeds to match the final-stage input circuit, tune and load its output circuit, and set its input attenuator to give the correct output level. When this automatic sequence has been completed the interlock line to the drive causes it to replace the tuning signal with a signal modulated with traffic. The tuning and loading controls on the transmitter remain in operation on traffic to maintain optimum conditions, compensating for changes in aerial impedance caused by varying weather conditions.

The self-tuning transmitters are also provided with full manual control facilities so that they can be tuned manually if required.

The H 1100 Series of 7½ kW transmitters includes two versions, the H 1100 and H 1102, which are manually tuned. Like the self-tuning transmitters they can be used with external drives, but they can also be fitted with a built-in drive unit, Type H 1505, which provides four crystal-controlled spot frequencies and i.s.b, s.s.b, f.s.k, and c.w operation. Since tuning is confined to the final stage this is a particularly easy operation which can be completed in less than 60 seconds.