Paralleling U.H.F Transmitters

The 55/40kW type B 7318 transmitter, and the 40kW and 10kW transmitters using the type B 7309 and B 7315 Amplifiers respectively can each be installed as paralleled sets in order to double the output power and greatly increase reliability.

In order to do this a drive changeover and phasing equipment cabinet type B 7952 is used which ensures automatically that the output signals from the two transmitters remain in phase. The basic oscillators are also positioned in the cabinet which includes automatic changeover equipment to the standby oscillator if the working unit fails.

Phase comparators, operated from signals derived from the output transmission lines, are mounted on the associated combining unit system assemblies. Correction signals are then fed from the phase comparators to the B 7952 cabinet.

U.H.F Paralleling equipment between two B 7311 Drive transmitters

U.H.F Combining Unit System Assembly Type B 8144 Series

The Type B 8144 series of system assemblies is a range of equipments to perform the function of combining vision and sound signals, and also, within the same framework, provide r.f and power monitoring and coaxial switching facilities. In addition, when specified for operation on colour standards, the combining unit also incorporates the low sideband colour subcarrier notch filter.

The diagram shows the facilities available on the standard units. Other facilities can be provided to special order.

Operation

The diplexers have their outputs connected by transmission line to form a complete ring in such a way that the vision input is split in the first and recombined in the second, using the in-phase dividing function. By feeding the sound input to the remaining part of the second diplexer, anti-phase sound signals appear in the ring. By placing sound resonators in suitable positions in the ring, the sound signals are reflected in the correct phase relationship to recombine in the second diplexer and appear at the output. A similar method is used to reflect energy from the colour sub-carrier lower sideband back to the first diplexer, to be dissipated in a dummy load, thus achieving the required specification.

Data summary

Frequency range: 470–850MHz.

Power handling capacity: Up to 50kW peak vision plus 10kW f.m. Sound (versions available for 10/25kW and 40/50kW)

Input and output impedance: 50Ω, with a reflection coefficient of less than 2·5% from 1MHz below, to 5MHz above Vision Carrier frequency.

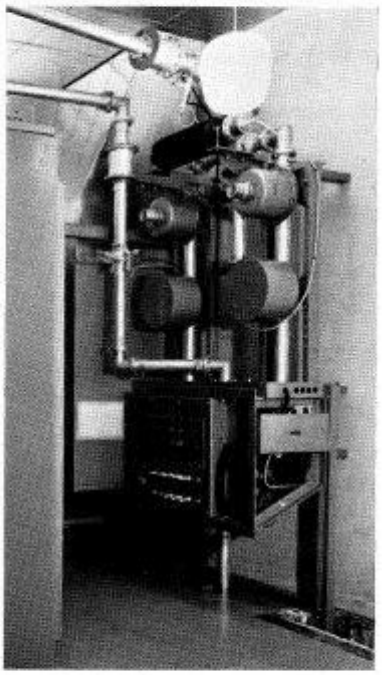
Insertion loss:

Vision input to output:
Less than 0·25dB at Vision Carrier.

Sound input to output:
Less than 0·5dB at Sound Carrier ±50kHz.

Dimensions: Vary according to power handling capacity and layout. For other versions dimensions vary with frequency and facilities required. Precise details can be provided when these are specified.

Connectors: 3⅛in. and 6⅛in. E.I.A standards.



Type B 8144 U.H.F Combining Unit at Varberg, Sweden