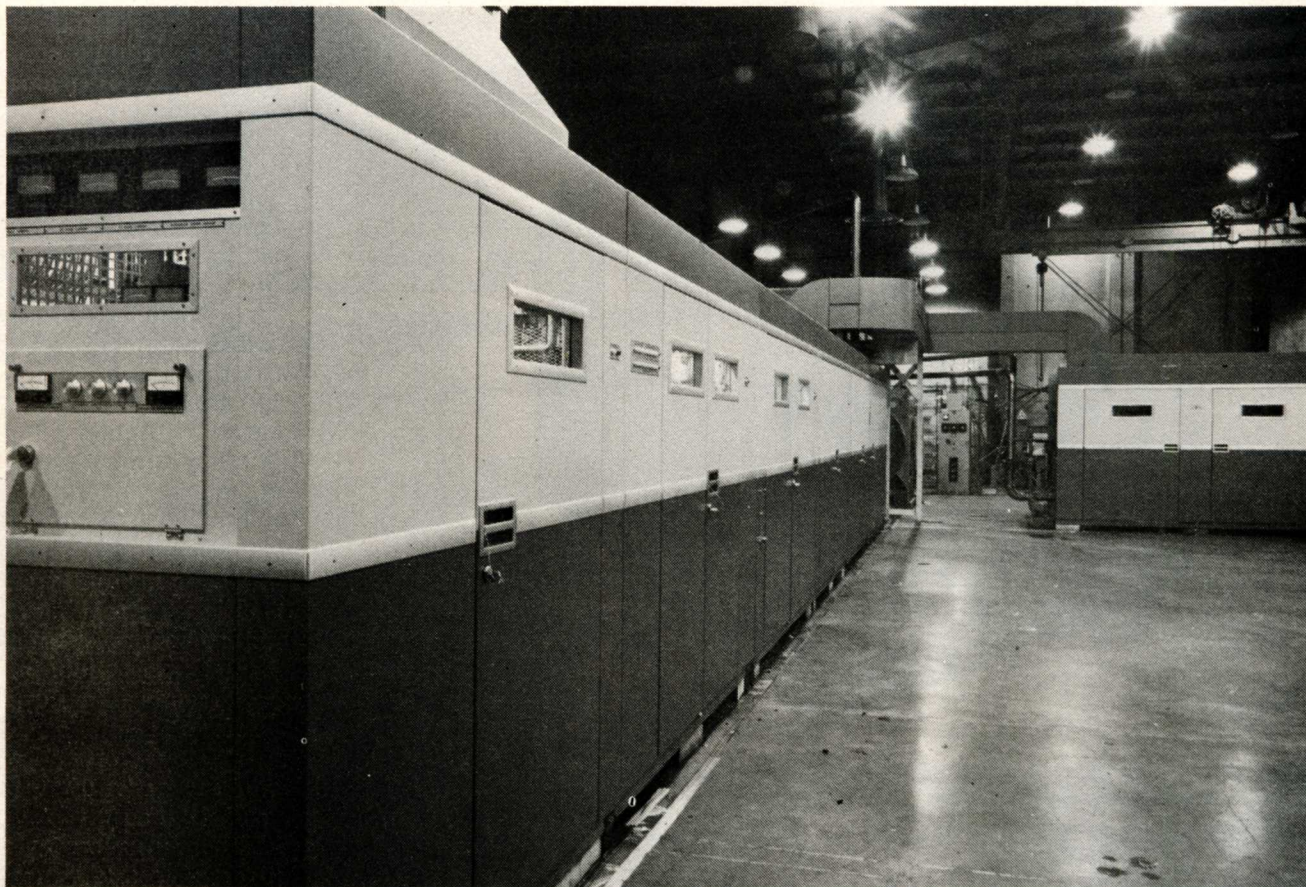


2,000 KW AM MW TRANSMITTER



Type D323C 2,000,000 watt Transmitter

The Type D323C is a high performance medium frequency broadcast transmitter that uses a unique screen and impedance modulation circuit* to achieve extremely reliable, cost-effective operation. Both carrier and peak tubes are operated in Class "C" condition, offering broadcasters very high efficiency while limiting the peak voltage to values consistent with reliable operating conditions.

In order to increase operating flexibility while improving maintenance factors, the D323C is designed in modules of one-half the operating power level. Thus, the transmitter consists of two Type 323C 1,000,000 watt transmitters operating in parallel to achieve a total power output of 2,000,000 watts. The combiner is described in the transmitter combiner section

The first rf amplifier uses a solid-state amplifier to drive the grid of the rf intermediate power amplifier.

The intermediate power amplifier consists of one 4CW25000A tetrode. The fixed power output of this stage is 10,000 watts.

The final power amplifier utilizes two X2159 water cooled tetrodes which have a plate dissipation of 1,250,000 watts each. When used in Continental's high-efficiency screen and impedance modulated circuit*, the maximum plate dissipation per tube is less than 400,000 watts for the carrier tube, and less than 240,000 watts for the peak tube with 100% sinewave modulation. The carrier tube provides the full 1,000,000 watts power output when no modulation is applied.

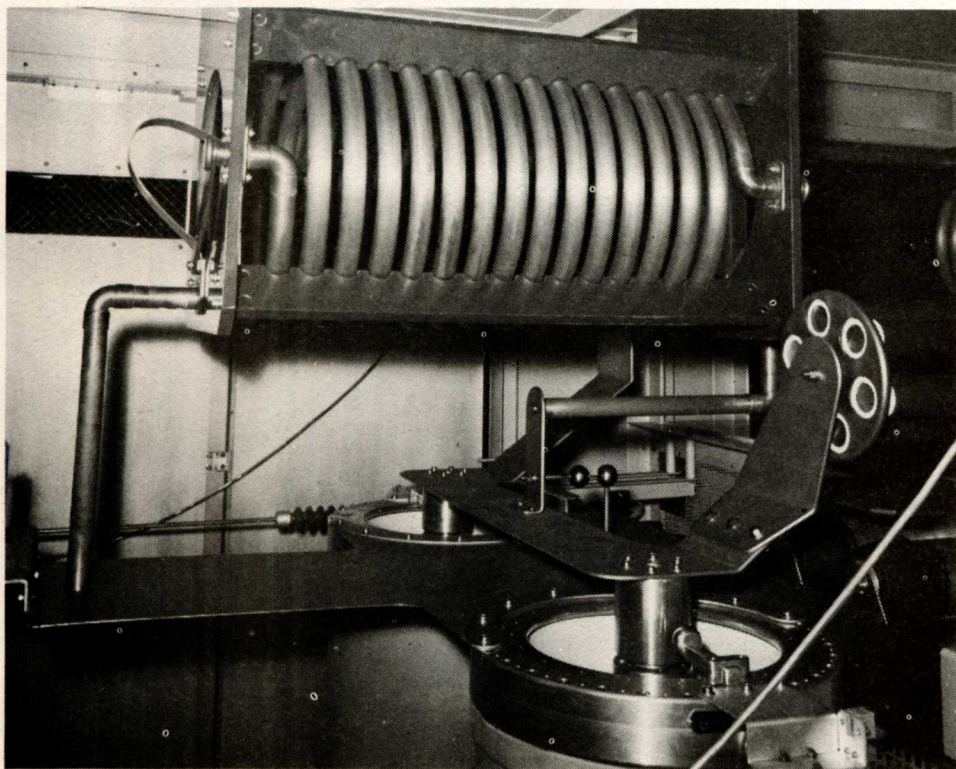
Continental cooperated with EIMAC Division of Varian, Inc., in the development of the X2159 tetrode, and thus has unique experience and first-hand knowledge of the effectiveness of the X2159 in high-power transmitters.

Three 4CW25000A water-cooled tetrodes are used in the cathode follower modulator. When used in this configuration, the 4CW25000A tubes have a very high overload capability and thus assure high reliability.

Continental's unique torodial inductors are used in the carrier and peak tank inductor circuits. This unique design achieves a much higher Q than other types of inductors, and because the coil does not produce an external magnetic field, it can be located in a small compartment within the transmitter. The inductors are

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The transmitter is cooled by a combination of forced air and forced water cooling. Modulator, rf driver, carrier and peak tubes are cooled by a forced water system; the remainder of the transmitter is cooled by a forced air system.



Specifications

Carrier power output to combiner:
1050 kW

Type of emission:
amplitude modulation (A3)

Frequency range:
535 to 1605 kHz

Frequency stability:
 ± 1 part per 10^7 per month

Modulation system:
high efficiency screen and
impedance*

Output impedance:
140 ohms, nominal
(other available)

Audio input impedance:
600 ohms

Audio input level for 100%
modulation at 1 kHz:
+8 dBm (adjustable ± 5 dB or
as required)

Audio frequency response:
 ± 1 dB, 50 to 7,500 Hz
 ± 1.5 dB, 30 to 10,000 Hz

Audio harmonic distortion:
3% or less, 50 to 7,500 Hz,
at 90% modulation

Residual carrier noise:
-60 dB, unweighted
-70 dB, C.C.I.R. weighted

Overall efficiency:
60% or better

*Continental Electronics Mfg. Co. holds the following
patents for the high efficiency screen modulated amplifier:
Canada 764,605; France 1,432,543; UK 1,044,479; USA
3,314,024.

