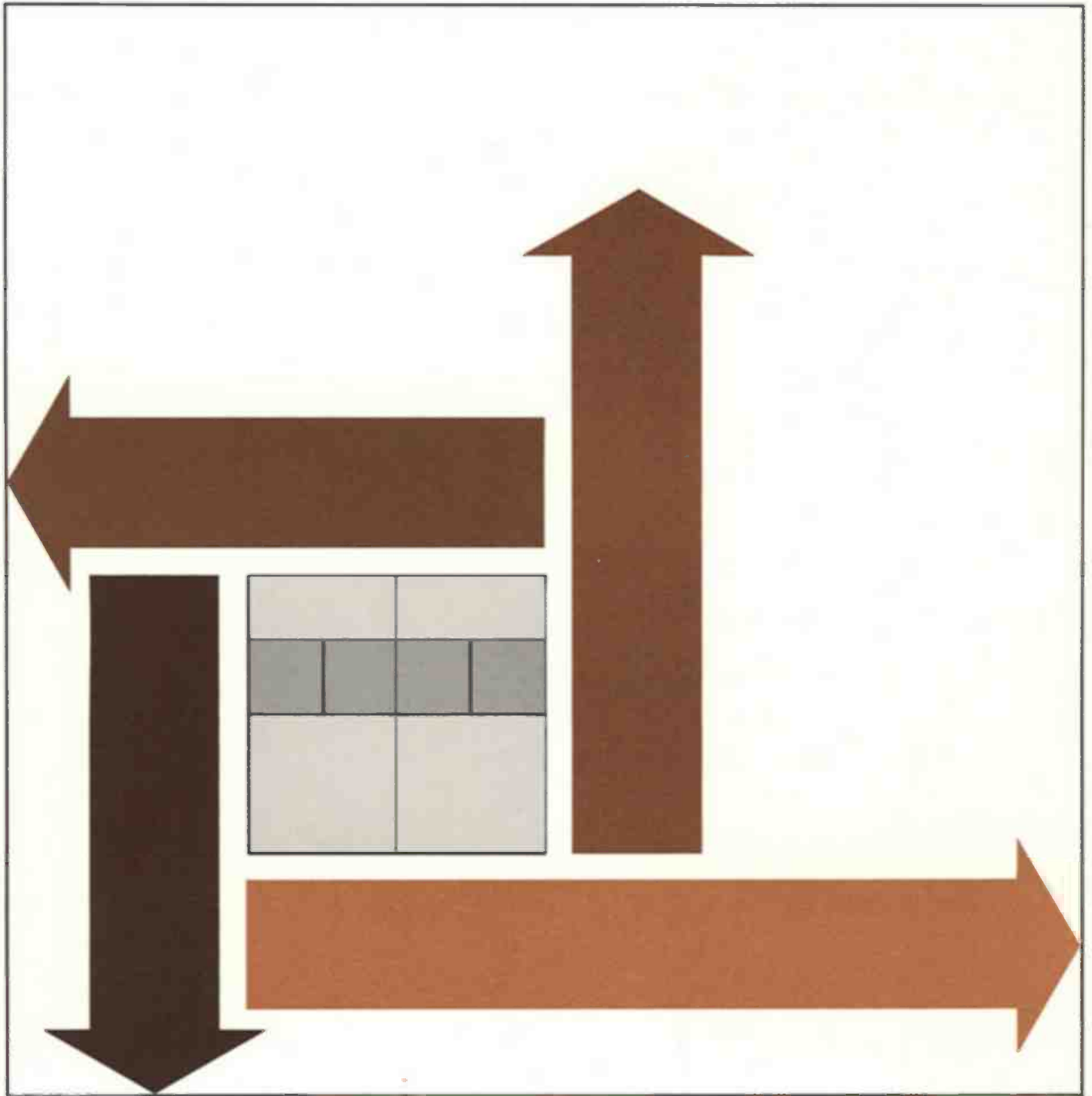


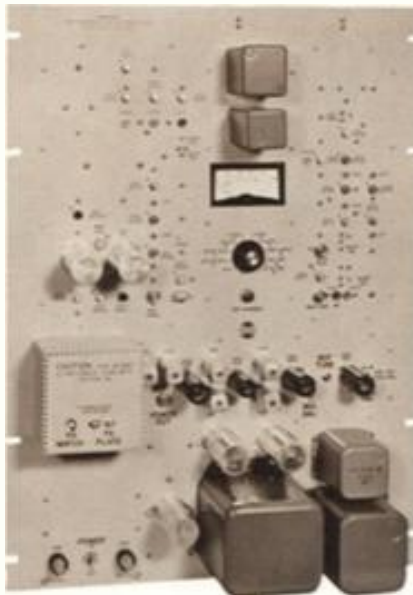
# 5,000 Watt FM Transmitter





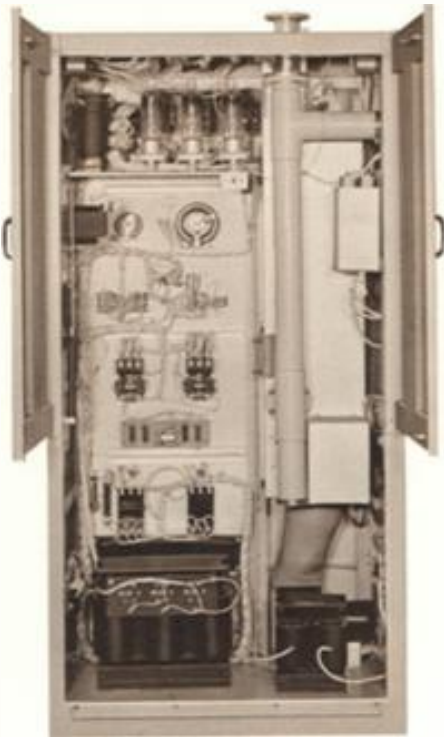
Collins FM transmitters are recognized universally for superior engineering, conservatively-rated components, and precision manufacturing techniques. All of these qualities are reflected in Collins' 5,000-watt 830E-1A FM Transmitters.

*A830-2 Exciter, front view*



The A830-2 Exciter has distinct advantages:

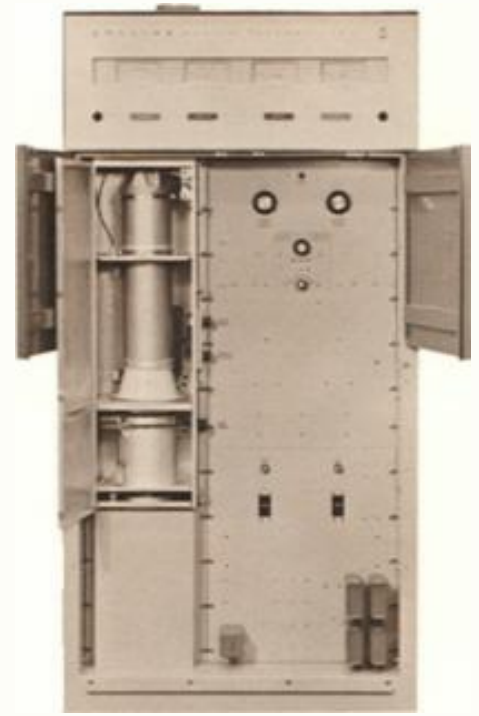
1. It has no frequency multipliers to compound oscillator drift. The unit uses a 14-MHz oscillator instead of the usual lower frequency oscillator. Output frequency is attained by mixing the 14-MHz signal with the output of a crystal oscillator in the 74-MHz to 94-MHz range.
2. Stereo subcarrier and SCA channels are fed directly to the modulator portion of the transmitter along with main channel audio – all on a single, composite signal.
3. The A830-2 Exciter is flexible. It accepts any modulating frequency up to 75,000 Hz, improving performance in any application: monaural, stereophonic or SCA.
4. Vertical panel construction facilitates access to all components, adding to maintenance ease. Plug-in transistors are used throughout except in the high level RF circuits where five tubes are used. A multimeter provides readings on 12 adjustments required for frequency change. Quick access test points simplify maintenance.



*Rear view, panels removed*



*Front view, cavities open*



One cabinet houses the A830-2 Direct FM Exciter and the 250-watt 830B-1A Driver Unit; the other houses the 5,000-watt single stage transmitter. Features of Collins' 830E-1A are:

**Self-Contained.** Every component, including power transformers, harmonic filter and directional coupler, is housed inside the two cabinets. An optional accessory is the Collins 786M-1 Stereo Generator which fits inside the driver unit cabinet. Installation of the 786M-1 is achieved in minutes.

**Simple Operation.** The transmitter is push-button operated, featuring a "step-start" system in which starting sequences are fully automatic. Highly stable RF circuits are tuned and metered from the front panel, and all adjustments can be made while the transmitter is on the air. No tuning or trimming of the harmonic filter is required. The PA stage is easily neutralized and is not critical in adjustment.

**Dependability.** A grounded screen eliminates the screen bypass capacitor and does away with a common source of failure. The driver power supply

uses silicon rectifiers which take little space and generate a minimum of heat. Efficient blowers force air directly on the 4CX250B and 4CX5000A power amplifier tubes. The power supplies are solid state, including the final amplifier plate voltage supply.

**Maintenance Ease.** Vertical panel construction eliminates hidden components and allows rapid inspection and maintenance. Cabinet interlocks minimize danger during circuitry inspection and maintenance. A grounded shorting stick is accessible to discharge capacitors before transmitter servicing.

**Rigid Testing.** In keeping with Collins' high standards, the 830E-1A is tested on the broadcaster's channel under full load conditions prior to shipment.

Contributing to the 830E-1A transmitter's high reliability, efficiency, and lower operating costs is Collins' A830-2 Exciter. This 10-watt, wide band direct FM unit accepts a composite stereo signal directly without using auxiliary modulators for either the stereo or SCA channels.

## Specifications

Frequency Range: 88-108 MHz.  
Power Output: 5,000 watts nominal (Type Accepted for 2,000 - 5,000 watts).  
Carrier Frequency Stability:  $\pm 1,000$  Hz.  
Audio Frequency Response:  $\pm 1$  db, 50-15,000 Hz.  
Distortion: Less than 1%, 50-15,000 Hz.  
FM Noise Level: 65 db below  $\pm 75$  kHz.  
AM Noise Level: -55 db rms.  
Harmonic Attenuation: -80 db.  
Modulation Capability:  $\pm 100$  kHz.  
RF Output Impedance: 50 ohms; SWR not to exceed 2:1.  
Audio Input Level: +10 dbm,  $\pm 2$  db.  
Power Source: 230 v ac nominal, 60 Hz, 3 phase (tapped for 200-250 v in 10 v steps).

Input Power Requirements: 11 kw, 90% power factor.

### Tube Complement:

2 OD3	1 5763
1 6U8	1 2E26
1 12AT7	1 4CX250B
1 6AU6	1 4CX5000A

Temperature Range: 10-45°C.

Altitude: 6,000 ft. (1,828.8 m).

Size: 76" W, 76" H, 27" D (193.04 cm W, 193.04 cm H, 68.58 cm D).

Weight: 1,800 lbs. (816.48 kg).

SPECIFICATIONS SUBJECT TO CHANGE

COMMUNICATION/COMPUTATION/CONTROL



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