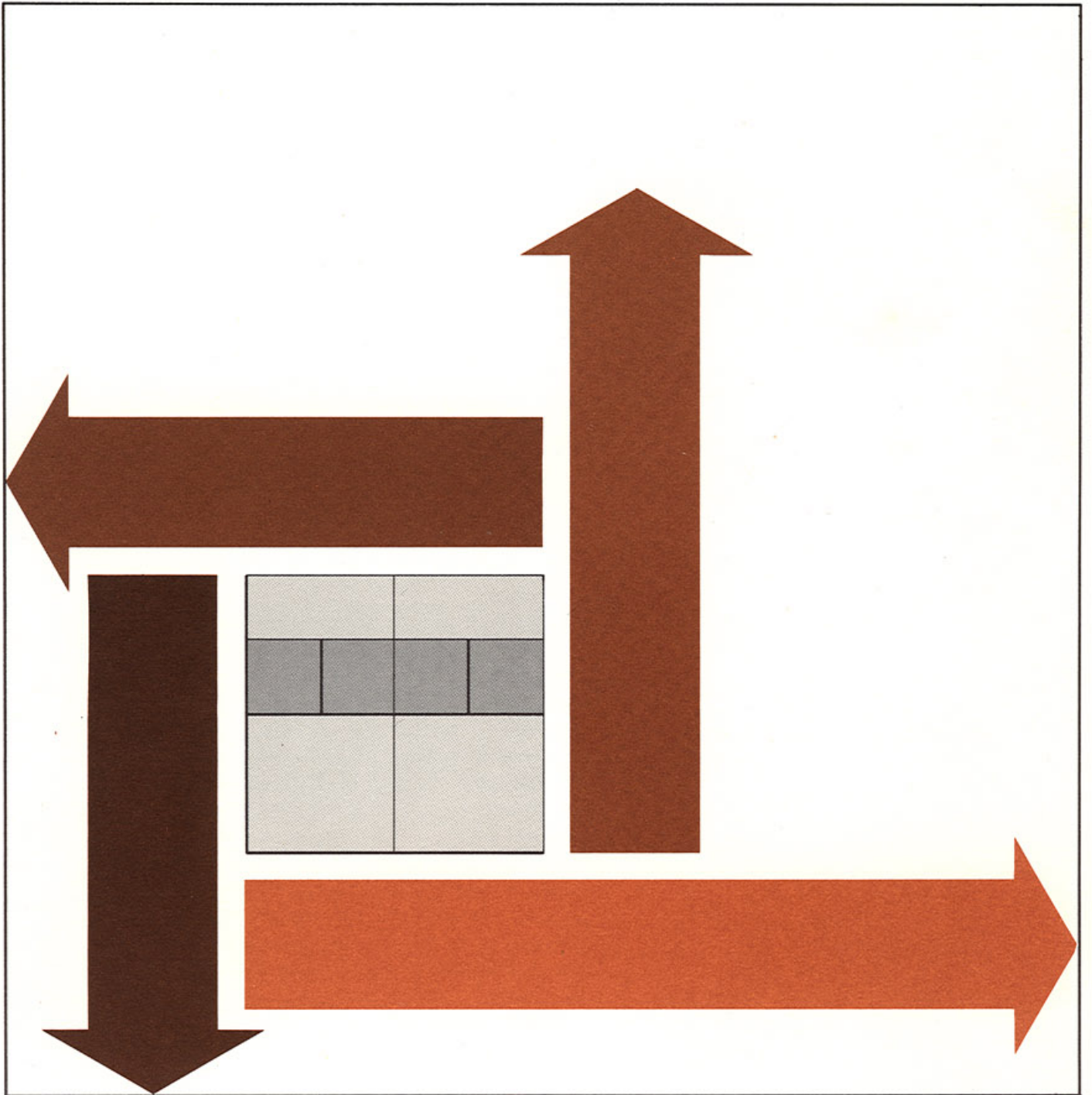


# 10,000 Watt FM Transmitter

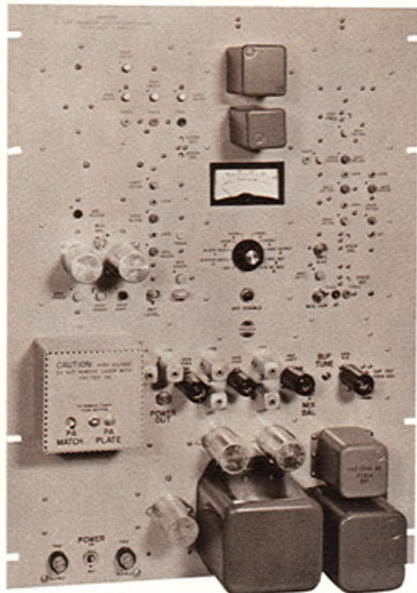




Collins' 10,000-watt 830F-1A FM Transmitter assures the broadcaster of the clean, strong signal needed to make his programming superior in a highly competitive market area. It also assures him of the extended coverage required to build and maintain an audience.

Like all Collins FM transmitters, the two-cabinet 10,000-watt model 830F-1A transmitter is engineered and manufactured to the quality level that is a hallmark at Collins.

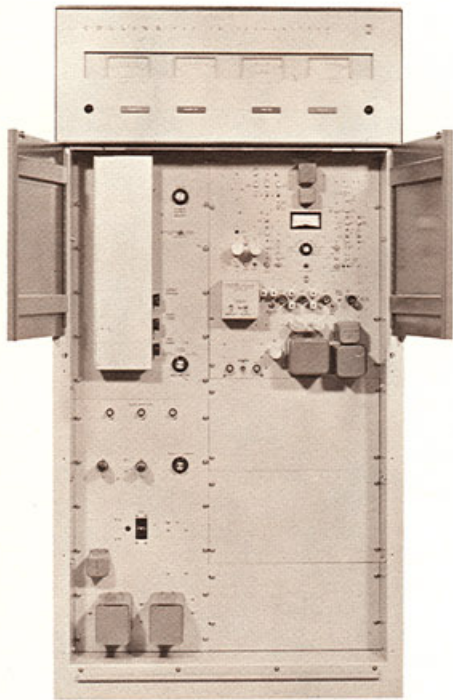
*A830-2 Exciter, front view*



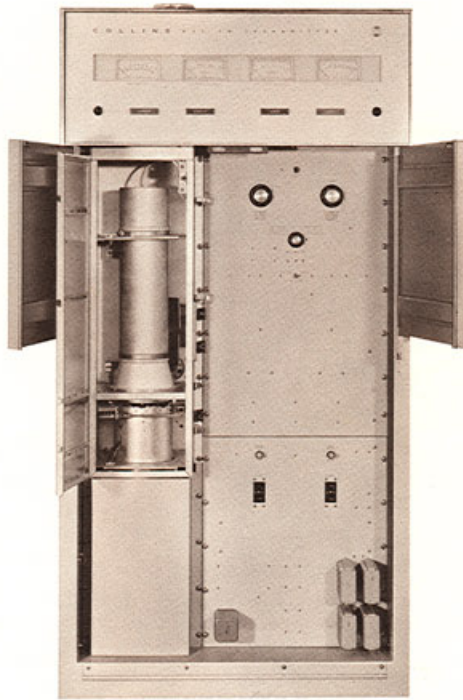
The A830-2 Exciter has distinct advantages:

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.

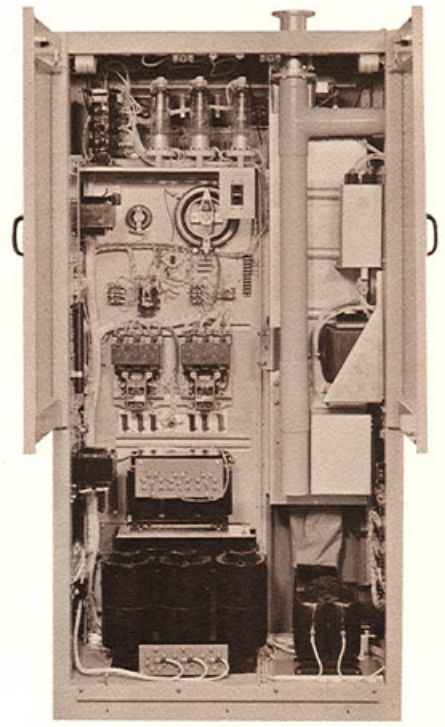




*Driver front view, panel removed*



*PA front view, cavity open*



*PA rear view, panel removed*

Features of the Collins 10-kw FM transmitter are: **Self-Contained.** Every component—including power transformers, harmonic filters and directional coupler—is housed within the two cabinets. An optional feature is the Collins 786M-1 Stereo Generator which mounts in minutes in the 250-watt driver cabinet.

**Ease of Operation.** Pushbutton operated, the transmitter starting sequences are fully automatic by the "step-start" system. RF circuits are tuned and metered at the front panel. All operating 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 noncritical in adjustment.

**Dependability.** The grounded screen eliminates the bypass capacitors, doing away with a common source of failure. The power supplies use solid-state silicon rectifiers which generate little heat and require a minimum of space. Efficient blowers force cooling air directly on the power tubes.

**Maintenance.** All components are easily accessible and may be rapidly inspected. All panels are interlocked for safety; a grounded shorting stick is provided within easy access.

**Rigid Testing.** In keeping with rigid Collins standards, the transmitter is tested under full load conditions on the broadcaster's channel before the unit is shipped.

Contributing to the 830F-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.

For the broadcaster who contemplates a power increase to 20 kilowatts, Collins also manufactures the 830F-2A 1,000-watt driver, required when the additional PA is installed for 20,000-watt operation. While the transmitter is designed for 60-Hz operation, 50-Hz operation is available upon request.

## Specifications

Frequency Range: 88-108 MHz.  
Power Output: 10,000 watts nominal (Type Accepted for 3,000-10,000 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: At least  $-80$  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, (50 Hz optional), 3 phase tapped for 200-250 v in 10 v steps).

Input Power Requirements: 20 kw, 90% power factor.

### Tube Complement:

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

Temperature Range:  $10^{\circ}$ - $45^{\circ}$ C.

Humidity: 0%-95%.

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: 19,000 lbs. (861.8 kg).

SPECIFICATIONS SUBJECT TO CHANGE

COMMUNICATION/COMPUTATION/CONTROL



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