

THE 30FX TRANSMITTER

The 30FX Transmitter has the same CW performance as the 30FXB, since both models employ the 10J Radio Frequency Unit and the 405C Power Unit. It is, however, lower in cost, because of the omission of the high-level modulation equipment and it is furnished in a smaller frame for table mounting.

GENERAL SPECIFICATIONS

POWER OUTPUT—100 watts CW nominal rating.

FREQUENCY RANGE—1500-15,000 kc. (provision for operation on higher and lower frequencies available on special order at a slight additional charge). Coils for any one band furnished with the transmitter. New Isolantite coil forms are standard equipment.

FREQUENCY CONTROL—Direct crystal control with isolation of the crystal oscillator from the power amplifier by buffer stage.

RADIO FREQUENCY TUBES—47 crystal oscillator, 2-46's parallel as buffers, 1-203A or 1-211 tube as power amplifier.

RECTIFIER TUBES—2-866 high voltage rectifiers, 1-5Z3 low voltage rectifier, 1-45 keying rectifier.

KEYING—Grid block in the final amplifier. Provision is made for switching off the crystal oscillator to permit reception on the crystal frequency.

POWER SOURCE—110 volts, 60 cycles, single phase is standard. Provision for other voltages on special order. Special converters and engine generators are available for use when no AC supply is obtainable.

INSTRUMENTS—Four flush type high-grade instruments are provided for reading oscillator and first amplifier plate current, second amplifier grid current, second amplifier plate current and antenna current. All tuning operations and adjustments to the transmitter can be checked by means of these instruments.

ANTENNA TUNING—A 2C pi Section Antenna Matching Network is furnished as standard equipment. This provision makes it possible to connect the 30FX to any available antenna and to accomplish efficient energy transfer with proper attenuation of harmonics. (Arthur A. Collins, "A More Efficient Antenna Coupling System," QST February, 1934).

DIMENSIONS—26½" high, 19" wide, 11½" deep. A table mounting rack is furnished with the transmitter. The panels are of correct dimensions to fit a standard 60" relay rack and the units can be so mounted if it is desired to convert the 30FX Transmitter into a 30FXB.

Net Weight—110 lbs

Shipping Weight—150 lbs.

RADIO FREQUENCY TUBE LINE-UP

The 30FX Transmitter uses the new 10J Radio Frequency Unit. The final amplifier uses either a 203A or a 211 in a straight neutralized amplifier with a split stator tank circuit. Low-loss tank coils, mounted on Isolantite forms, are used in all stages and the oscillator and buffer tank coils are provided with fixed taps which automatically match impedances and provide adequate excitation. The buffer can be operated as a doubler, especially for

14 mc. operation when a 7 mc. crystal is employed. The exacting design of this Unit has made it possible to realize very high efficiency in the final stage due to proper load relations and adequate grid excitation, especially on 14 mc.

FIXED NEUTRALIZATION

All neutralization in the 30FX Transmitter is fixed at the factory so that the user does not have to do any balancing of the various circuits. Shifting from one band to another is merely a matter of changing the plug-in coils and setting the dials to the calibrated position. The entire operation can be performed in a minute's time.

RADIOPHONE OPERATION

As explained above, the 30FX Transmitter has a radio telegraph output in excess of 100 watts, but provision is also made for modulating the Transmitter to obtain a carrier output of 40 watts with a modulation percentage of 100. The type of modulation employed is designated as "class B grid modulation" and it is applied in a very simple manner to this transmitter. The bias is fixed at a specified value and the modulation voltage is applied in series with the bias circuit. Modulation is accomplished by varying the bias voltage at an audio rate and the grid of the final amplifier draws current on modulation peaks. Distortion is prevented by utilizing audio and RF drivers with good regulation. The plate voltage to the final stage is 1250 volts. The rated plate dissipation of 100 watts is not exceeded, and the carrier output is 40 watts with a plate efficiency of 33-1/3%. Instructions furnished with the Transmitter describe a simple method of adjusting for distortionless modulation. Audio fidelity is limited only by that of the speech amplifier used. Either the COLLINS 7C or 7Y amplifier is recommended.

CONSTRUCTIONAL DETAILS

The external dimensions of the 30FX Transmitter have been outlined under GENERAL SPECIFICATIONS. The 10J Unit employs a dull finish aluminum panel. The chassis sub-assembly is of burnished aluminum accurately formed and pierced. Wiring is rigid conductor or laced cable. Coupling condensers are high-grade mica and resistors are of the wire wound vitreous enamel type. Special Cardwell condensers are used for tuning. Inductances are wound on low-loss Isolantite forms.

The power supply chassis is heavily copper-plated steel finished with aluminum duco. Transformers are fully encased and every component is designed for continuous duty under full load. Connections are also provided for the key and standby switch.

GUARANTEE—In common with other COLLINS products, the 30FX Transmitter is unconditionally guaranteed to give complete satisfaction and every purchaser is given individual attention to see that his particular installation is performing at greatest efficiency.

PRICE—ON APPLICATION

—30FX TRANSMITTER—

COLLINS RADIO COMPANY

CEDAR RAPIDS IOWA, U. S. A.



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