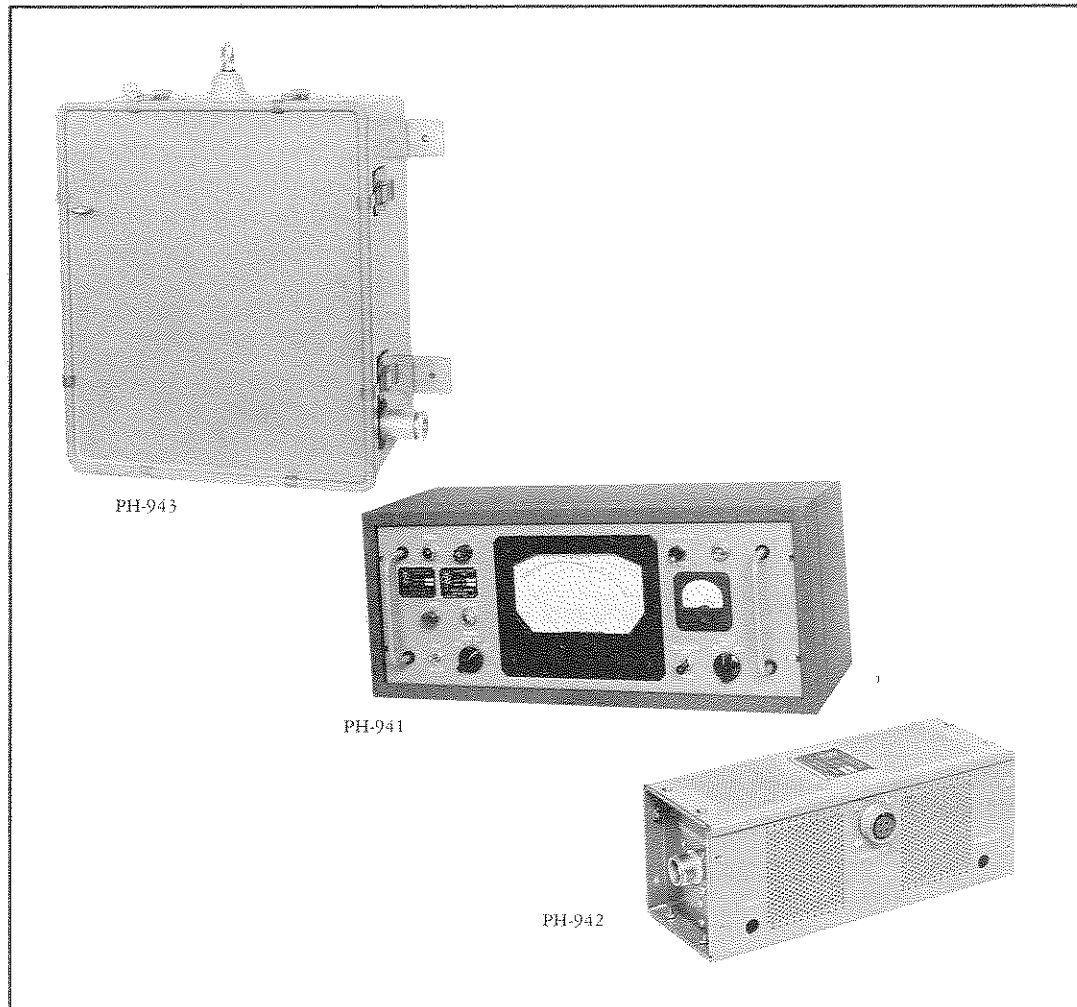


## SALES SERVICE BULLETIN NUMBER 235

Antenna Tuning System  
TMC Model ATS-2 (AN/URA-27)

**NEW**



The TMC Model ATS-2 is a remotely controlled Antenna Tuning System designed to couple the output of any transmitter up to 1000 watts, with an unbalanced output of 50-70 ohms, to a 35 foot whip antenna over the frequency range of 2-30 Mcs.

The ATS-2 features a safety overload system which opens the transmitter interlock circuits when the following conditions occur:

1. When final amplifier exceeds any presettable power output level up to 1 KW.
2. When power exceeds 100 watts with the ATS-2 in the tune position.
3. When the SWR exceeds any presettable value up to 2.5 to 1.

The ATS-2 consists of three (3) units—an RF Tuner, a Control Monitor and a Directional Coupler.

The RF Tuner contains a helical transmission line as the reactance tuning element and its electrical length is adjustable by a motor driven short. This variable reactance matches the antenna reactance for minimum V.S.W.R. The antenna resistance is properly matched by means of a ferrite core tapped auto-transformer. The proper tap is selected by a motor driven selector switch.

The Tuner is housed in a fiberglass weather-proofed box which contains a desiccant to prevent moisture from gathering around the components. The presence of moisture, which is indicated on the front panel of the Control Monitor, is detected by a humidity sensing element in the RF Tuner.

The motors in the RF Tuner are remotely operated from the control monitor. The position of the motor driven short on the helical transmission line as well as the position of the motor driven selector switch are visually displayed at the control monitor. The monitor is equipped with a special meter which simultaneously displays Forward Power, Reflected Power and the V.S.W.R.

The Directional Coupler consists of a precision balanced RF bridge and is calibrated to operate in conjunction with a 50 or 70 ohm coaxial line.

#### TECHNICAL SPECIFICATIONS:

FREQUENCY RANGE:	2 to 30 megacycles.
POWER RATING:	
R. F. TUNER:	1000 watts input continuous at 100% modulation.
CONTROL MONITOR:	Input: 115/230 volts, 50/60 cycles, single phase.
DIRECTIONAL COUPLER:	1000 watts continuous at 100% modulation for V.S.W.R. of less than 2.5.
TRANSMISSION LINE:	50 or 70 ohms.
INPUT IMPEDANCE:	Nominally 50 or 70 ohms unbalanced.
OUTPUT IMPEDANCE:	70 ohm system: Will match a 35 foot whip antenna with a resistance of 2—650 ohms and —J850 to +J750 reactance to obtain a V.S.W.R. of less than 2.5.  50 ohm system: Will match a 35 foot whip antenna with a resistance of 2—500 ohms and —J850 to +J750 reactance to obtain a V.S.W.R. of less than 2.5.
ATTAINABLE STANDING WAVE RATIO:	Better than 2.5 to 1.
DIRECTIVITY OF DIRECTIONAL COUPLER:	Better than 20 db.
EFFICIENCY:	Better than 80% over the 2—30 mc range.

PANEL CONTROLS:  
(CONTROL MONITOR)

POWER Switch  
METER Switch  
REACTANCE Switch  
RESISTANCE Switch  
TUNE/OPERATE Switch  
RESET Switch

SIZE AND WEIGHT:

R. F. TUNER	8¼" x 15¼" x 12"	40 lbs.
CONTROL MONITOR	20½" x 8½" x 9¾"	20 lbs.
DIRECTIONAL COUPLER	3½" x 3½" x 9½"	3 lbs.

COMPONENTS AND  
CONSTRUCTION:

Equipment is manufactured in accordance with JAN/MIL Specifications wherever practicable.

ORDERING INFORMATION:

The Control Monitor is supplied in a cabinet but can be rack-mounted.

TMC MODEL	NOUN	NOMENCLATURE	NOUN
ATS-70-2	Antenna Tuning System		Antenna Coupler Group
ATS-50-2	Antenna Tuning System	AN/URA-27	Antenna Coupler Group
ATS-MCU-2	Control Monitor	C-2995/URA-2	Control Indicator
ATS-70TU-2	RF Tuner		Coupler, Antenna
ATS-50TU-2	RF Tuner	CU-772/URA-27	Coupler, Antenna
ATS-70CU-2	Directional Coupler		Coupler, Directional
ATS-50CU-2	Directional Coupler	CU-773/URA-27	Coupler, Directional

ACCESSORY EQUIPMENT:

Remote Control Cable (Control Monitor to R. F. Tuner).

CA-359-X (X indicates length in feet. Please designate when ordering cable).

A-1486 ANTENNA AND BASE INSULATOR.

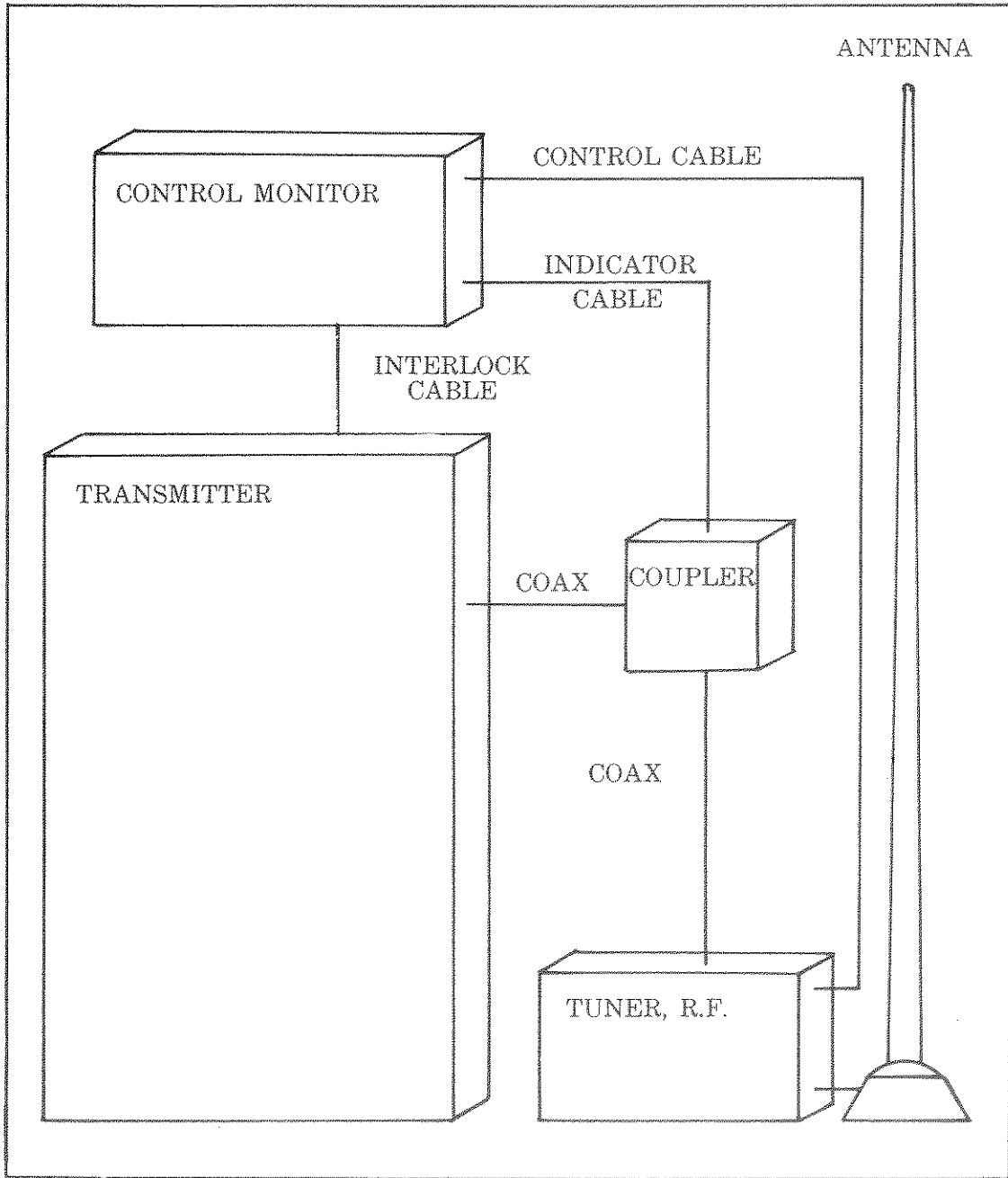
ANTENNA:

Stainless steel	6 section
Extended	35 feet, 7 inches
Collapsed	6 feet, 4 inches
Base OD	1.5 inches
Base ID	1.37 inches
Weight	19 pounds

BASE INSULATOR:

Heavy Duty Compression Rating 10,000 lbs. Brass, chrome plated.

Height: approx. 8 inches Mtg. Stud to fit Antenna ID. The antenna will withstand wind velocities of 60 mph when mounted with supplied base. When guy wires are installed, antenna will withstand velocities in excess of 100 mph.



Block Diagram Model ATS-2 with Transmitter and Antenna

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