

**2203 "Mary Eastman" Monotron—3-in. Electrostatic-Deflection type Signal-Generator Cathode-Ray Test-Pattern Tube**

A pretty girl has joined science in aiding television Servicemen, amateurs, experimenters, and engineers to pioneer in the practice of the television art.

Supplementing, and in some cases supplanting, the purely geometrical test pattern previously used in earlier type 2203 Monotrons. National Union's new "Mary Eastman" pattern tube features a sharp halftone picture of this popular radio vocalist.

'Tis said that this use of a beautiful girl's portrait permits the highly-favored technical effects of transmitting and reproducing the highlights and shadows of a good halftone subject. Also, it makes a more eye-soothing test pattern for amateurs and experimenters to use as a sort of "theme" signal.

Incidentally, Miss Eastman's picture was recently reproduced before an assemblage of 700 television enthusiasts. This single mass viewing from a single tube indicates that a tremendous number of viewers will "televue" her portrait within a brief time.

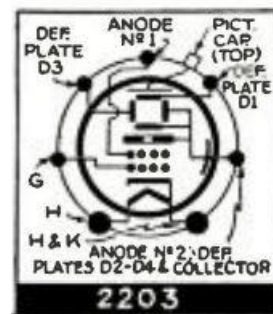
The type 2203 Monotron is basically a 3-in. cathode-ray tube in which the customary fluorescent screen on the inside-end of the bulb has been replaced with an aluminum plate on which is printed the special test pattern or picture (as the case may be). The test pattern may be reproduced in any desired size, depending upon the screen size of the receiving tube.

A pattern tube finds a use in all fields where an experimental television signal is desired which can be obtained at will, especially in locations where modern television transmission is not available. This field includes experimental laboratories, schools, colleges, radio clubs, radio experimenters, radio amateurs, and all others, such as radio set manufacturers, radio

broadcast stations, and trade schools, where the principles employed in modern television are under development and study. With the advent of modern television a pattern-tube signal generator will be found indispensable in servicing television receivers.

The picture detail provided in the geometrical-pattern type 2203 Monotron, if all the detail present is resolved, results in full 300 lines-per-picture area fidelity; for the Mary Eastman pattern 2203, the picture-area fidelity obtained, from a *demonstration* standpoint, is better than 300 lines.

Tentative characteristics—Table XXX.



**2203—TABLE XXX**  
Tentative Characteristics and Ratings

Heater voltage—A.C. or D.C.	2.5 volts
Heater current	2.1 amp.
Overall length	12 ins.
Direct interelectrode capacities:	
Grid to all other electrodes	12 mmf. max.
High-voltage anode No. 2	1,000 volts max.
Focusing electrode Anode No. 1 (adjust for sharpest focus)	400 volts max.
Grid voltage for cut-off	-20 volts approx.
Signal plate voltage	-150 volts max.
Signal plate input power	5 MW/sq. cm. max.
Signal output	0.1 volts
Deflection sensitivity	800 volts 1,000 volts
D <sub>1</sub> & D <sub>2</sub>	.34 .27 mm/v
D <sub>3</sub> & D <sub>4</sub>	.37 .30 mm/v

**Typical Operation:** Heater voltage, 2.5 volts; Anode No. 2 voltage, 900 volts; Anode No. 1 voltage, 285 volts; Grid voltage—adjust to give desired output; Signal plate voltage -70.