

# EQUIPMENT REPORTS

THE CONSUMER'S GUIDE TO NEW AND IMPORTANT HIGH FIDELITY EQUIPMENT



## MARANTZ MODEL 18 RECEIVER

**THE EQUIPMENT:** Marantz model 18, a stereo FM receiver. Dimensions: 18 $\frac{1}{4}$  by 16 by 6 inches. List price: \$695. Manufacturer: Marantz Co., Inc., 37-04 57th Street, Woodside, N. Y. 11377.

**COMMENT:** The model 18 is the first combination chassis (tuner plus preamp plus power amp) from a company long known for its perfectionist-oriented separate components. It is good to report that in making this concession to popular taste, Marantz has yielded nothing in the way of performance or quality. From its responsive controls to its high, clean output power, the model 18 is "genuine Marantz" all the way.

In addition to offering superior performance, the model 18 boasts some unusual features. The most striking of these is its small oscilloscope, set on the front panel between its two adjustment controls and the FM station dial. This scope actually is a multi-purpose indicator. For use on FM (the "audio display" button is not pressed), it shows tuning accuracy. It also shows signal strength, degree of station modulation, the presence of an SCA signal, and multi-path interference related to antenna orientation. The scope is not numerically calibrated but it does provide relative indications from station to station. In addition, if you press the audio display button, the 'scope shows—for whatever program source is chosen on the selector knob (phono, tape, etc.)—mono and stereo indications, degree of channel separation, and out-of-phase stereo conditions.

The FM dial is a generous 8 $\frac{1}{2}$  inches wide, and the station numerals are supplemented with a logging scale. A red stereo indicator lamp comes on whenever you tune to a station broadcasting in stereo. The tuning knob itself actually is the flywheel of the tuning shaft, but handsomely finished and knurled and protruding through an opening on the front panel.

Below the tuning dial there's a row of push-buttons for a second phono input (in addition to the one you can select on the main selector knob), mono conversion, tape monitor, audio display, high blend, low filter, high filter, and muting off. These all are familiar, except for the audio display which we've explained, and the high blend, which when pressed reduces the amount of stereo separation in the high frequencies. This action is designed to reduce a possible source of noise (due to out-of-phase or otherwise faulty stereo

material) but without at the same time rolling off the high-frequency response.

Control knobs cover program selection (phono, FM, tape, aux 1 and 2); channel balance; volume; bass; treble; and speaker selection (off, main, both, remote). The bass and treble controls are dual-concentric friction-coupled types that regulate both channels at once or either channel separately as you choose. The speaker selector, in conjunction with the terminals on the rear, permits connecting two sets of stereo speaker systems and choosing both, either, or none. A stereo headphone jack, to the right of this control, is live regardless of the position of the speaker switch.

The model 18 has the usual tape in and out jacks at the rear, for recording and playback, including the monitor function for three-head decks. In addition, there are two front panel dubbing jacks. These may be used in the same manner as the rear panel jacks, or—if you own two tape recorders—to facilitate copying and editing tapes from one machine to the other, with the control- and tone-shaping features of the model 18 helping if desired. The extra jacks also let you record into two tape machines at once—or in tandem, useful for dubbing long programs without interruption.

In addition to the connections already mentioned, the rear of the set has inputs for 75-ohm or 300-ohm antennas, an unswitched AC outlet, a grounding post, the line cord, and a fuse holder. The model 18 is more than usually well constructed of high grade parts and shows meticulous attention to chassis layout and detailing. The tuner front end is passive—that is, it responds to RF signals but provides no gain. This technique, borrowed from radar, is designed to eliminate overloading without sacrificing high sensitivity. The set's solid-state circuitry terminates in a direct-coupled power amplifier with a speaker-protection circuit built in.

In comparing CBS Labs' test results with the manufacturer's specifications, it is obvious that the model 18 is a conservatively rated unit. For instance, power output vis-à-vis rated distortion measured on our sample were better than claimed. Ditto for the power bandwidth. IM distortion for the 8-ohm load remained under 0.2 per cent to well beyond the unit's rated output of 40 watts. Response, tone, filter, and equalization characteristics all were near perfect. Damping factor was 40, higher than specified; noise level on the phono input was 0.9 microvolts, a jot lower than specified. Tuner sensitivity was right on the nose at 2.8 microvolts. Other tuner characteristics, to the extent that we could determine (allowing for variations in test setups), also verify the manufacturer's specifications. Although Marantz does not favor master antenna systems for its receiver, we connected ours to the model 18—just to see what would happen. Even under what Marantz regards as limited-quality FM reception, we logged 41 stations, 25 of which we considered suitable for long-term listening or off-the-air taping.

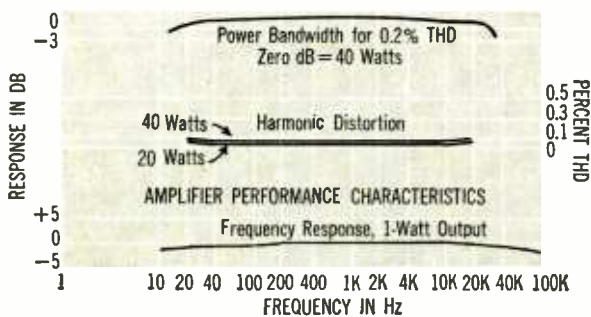
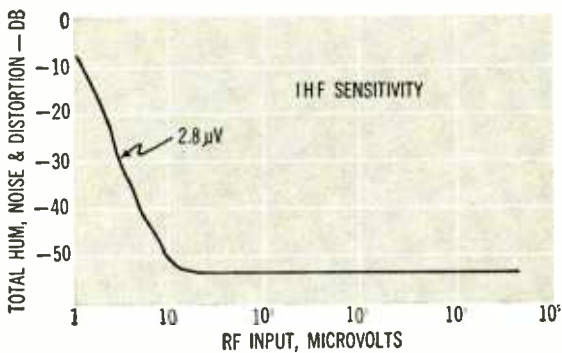
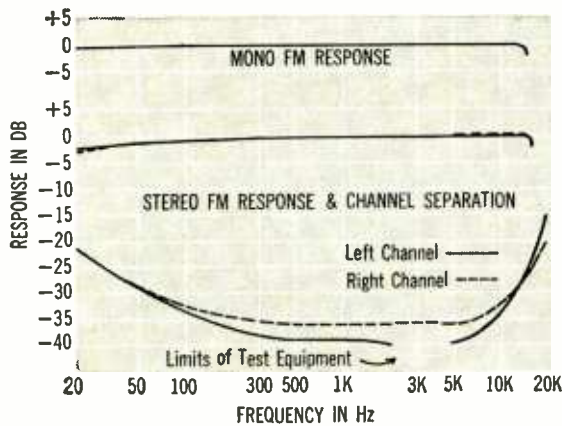
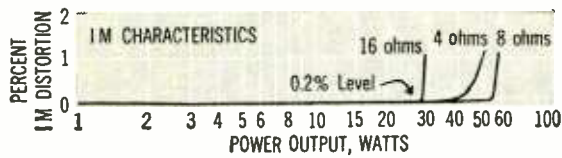
The model 18, in short, shapes up as an outstanding receiver that easily meets its avowed design aim of

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providing performance equivalent to that of separate components of comparable power. It offers first-rate sound, conventional though attractive styling, and a few professional flourishes such as its versatile tape recording facility and the oscilloscope. The set is supplied in a metal cage on four feet. It may be used "as is," installed in a panel cut-out, or fitted into an optional wooden cabinet.

CIRCLE 141 ON READER-SERVICE CARD



Square-wave response to 50 Hz, left, and to 10 kHz.

## Marantz 18 Receiver

### Lab Test Data

Performance characteristic	Measurement
<b>Tuner Section</b>	
IHF sensitivity	2.8 $\mu$ V at 98 MHz; 3.2 $\mu$ V at 90 MHz; 2.9 $\mu$ V at 106 MHz
Frequency response, mono	+0, -0.5 dB, 20 Hz to 15 kHz
THD, mono	0.12% at 400 Hz; 0.28% at 40 Hz; 0.08% at 1 kHz
IM distortion	0.5%
Capture ratio	2.5 dB
S/N ratio	72 dB
Frequency response stereo, l ch	+0, -1.5 dB, 20 Hz to 16.5 kHz
r ch	+0, -1.5 dB, 22 Hz to 16.5 kHz
THD, stereo, l ch	0.34% at 400 Hz; 0.52% at 40 Hz; 0.24% at 1 kHz
r ch	0.28% at 400 Hz; 0.46% at 40 Hz; 0.20% at 1 kHz
Channel separation, either channel	better than 35 dB, 200 Hz to 7.5 kHz better than 25 dB, 35 Hz to 15 kHz
19-kHz pilot suppression	59 dB
38-kHz subcarrier suppression	68 dB

### Amplifier Section

Power output (at 1 kHz into 8-ohm load)	
l ch at clipping	53.5 watts at 0.038% THD
l ch for 0.2% THD	55 watts
r ch at clipping	51 watts at 0.2% THD
r ch for 0.2% THD	51 watts
both chs simultaneously	
l ch at clipping	42.8 watts at 0.046% THD
r ch at clipping	42.8 watts at 0.080% THD
Power bandwidth for constant 0.2% THD	below 20 Hz to 43 kHz
Harmonic distortion	
40 watts output	under 0.062%, 20 Hz to 20 kHz
20 watts output	under 0.048%, 20 Hz to 20 kHz
IM distortion	
4-ohm load	under 0.2% to 41 watts
8-ohm load	under 0.2% to 58 watts
16-ohm load	under 0.2% to 29 watts
Frequency response, 1-watt level	+0, -1 dB, 11 Hz to 45 kHz
RIAA equalization	$\pm$ 1 dB, 20 Hz to 20 kHz
Damping factor	40
Input characteristics	
Phono	Sensitivity 0.6 mV S/N ratio 57 dB*
High level	72 mV 73 dB

\*This figure translates to 0.9  $\mu$ V equivalent noise input, re manufacturer's specification of 1  $\mu$ V.