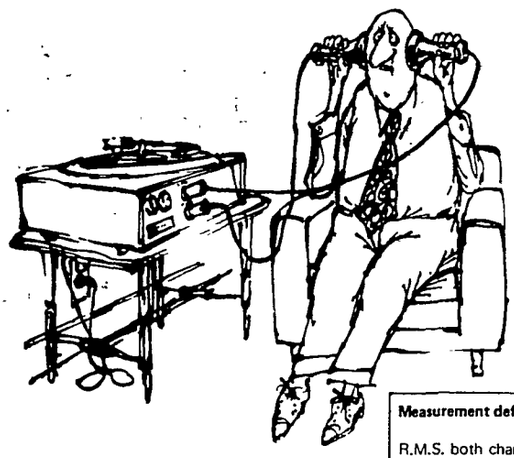


WHAT IS POWER? OR THE 30 WATT LAMP THAT BECAME 400 WATTS

Measurement definition -	Power
R.M.S. both channels into 8 ohms simultaneously for under 0.1% I.M.	30
R.M.S. both channels into 8 ohms simultaneously for under 0.45% I.M.	42
R.M.S. into 8 ohm load each channel.	50
IHF into 8 ohms	60
IHF into 4 ohms	75
IHF into 4 ohms + 1 db.	90
Peak power 8 ohm	135
EIA Power	200

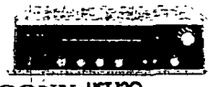
These figures are in watts/channel. Some manufacturers express power as the sum of both channels. In this case, the figures would be doubled. As you can see, the same amplifier could be rated at either 30 or 400 watts!

WES

CEP (SEE PAGE 3) **TESTED AND RECOMMENDED RECEIVERS**

JUST A FEW TO START:

RECEIVER $120



SONY HST-120
FM STEREO FM/AM RECEIVER

- 12 Watts RMS
- Automatic FM mono-stereo program switching with built-in signal light.
- Inputs for ceramic phono cartridge turntable.
- Input and output for tape recorder.
- Outputs for two speaker systems with Speaker Selector Switch.
- FET (Field Effect Transistor) Front-end Tuner.
- All-silicon solid state Amplifier.
- Accommodates SQ 4-channel Decoder/Amplifier.

RECEIVER $225

JVC Hi-Fi VR-5511
AM/FM STEREO RECEIVER

- 48 Watts RMS
- 5-Position SEA
- FM Linear Dial Scale
- Tone Defect Switch
- FET Circuitry
- Built-in FM/AM Antennas
- Dual Element FM Filters
- 4-Channel Ready
- Complete with Wood Case

RECEIVER $170

JVC VR-5505
FM STEREO, FM/AM RECEIVER

- 22 Watts RMS
- FET Front end
- 2.2 uV FM sensitivity
- 4-element mechanical filter
- capture ratio is 2.5 dB
- FM linear dial scale

RECEIVER $260

PIONEER SX-525

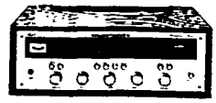
- 40 Watts RMS
- 2.2 uV FM sensitivity
- FET front end on FM
- FM muting to silence noise
- 3 dB capture ratio
- large tuning meter and linear dial scale

RECEIVER $200

PIONEER SX-424
AM/FM STEREO REC.

- 28 Watts RMS
- 2.3 uV FM Sensitivity
- microphone imput
- extra wide bandwidth
- FET FM front end

RECEIVER $300



marantz 2020

- 45 Watts RMS
- 2.0 uV FM sensitivity
- FET FM front end
- FM muting to silence noise between FM stations
- 3 db capture ratio
- Famous Marantz flywheel smooth tuning

Electronics.

Which is Best?

Receivers, Amps, Tuners, Integrated Amps, Power Amps— McIntosh, Marantz, S.A.E., Sony, Sansui, Pioneer, Crown, Kenwood, Fisher, Scott, and Altec. What confusion! We can help you sort it out.

What makes a receiver a good value? What makes one receiver worth two hundred dollars and another worth five hundred dollars? To answer these questions, the WES Component Evaluation Program analyzes the amplifier and tuner selections. The key performance parameters of the amplifier section are power output, distortion, and power bandwidth.

Power Output.

The power output of an amplifier is rated in watts. Although watts are watts, whether they're AC, DC, or British, they can be measured in several ways: RMS, IHF, peak-to-peak, EIA, etcetera. The REAL power of an amplifier is its RMS, or continuous power. The other rating systems can be misleading. IHF power, for example, is a measurement of the RMS peak using a laboratory power supply, not a part of the receiver being tested. It is therefore a rating in excess of what the amplifier can actually deliver. Marantz, Pioneer, JVC, Crown, etc. rate RMS power into an 8 ohm load (most speakers are 8 ohms), with both channels, not just one, in operation.

Distortion.

The power output of an amplifier is not all you need to know. Equally important is the amount of distortion, i.e., the amount of extraneous sound added to the music by the electronics. Obviously, the less the better. Five years ago, one percent distortion was considered acceptable for high fidelity music reproduction. Today, Pioneer and Marantz receivers specify not more than one fifth of one percent harmonic and intermodulation distortion. They characteristically check out at even lower levels which the finest laboratory instruments can barely detect. You hear the music not the electronics reproducing it.

Power Bandwidth.

This is the specification most manufacturers would rather not discuss. The reason is that where any amplifier will deliver its rated power at 1,000 Hz, most amplifiers will not be able to do so at 20 Hz or 20,000 Hz. The reduced power results in poorly defined or even badly distorted bass, a loss of high frequency overtones, and a generally dead sound. Some manufacturers specify even RMS power at 1,000 Hz only; Pioneer & Marantz specify their power ratings across the entire musical bandwidth.

The performance parameters of the tuner section are stereo sensitivity at full limiting, and stereo separation.

Sensitivity at Full Limiting.

You need to know more than just the sensitivity of an FM tuner. The IHF sensitivity is good for only a 30 dB signal-to-noise ratio. NOT a high fidelity performance. The question is, how strong a signal does a receiver need to produce a clear signal?

Stereo Separation.

This means how much separation (left channel versus right channel) you can get from FM broadcast. It is generally measured at 1,000 Hz. A figure of 20 dB is good, 40 dB (Marantz 2020) excellent, and 50 dB, the state of the art.