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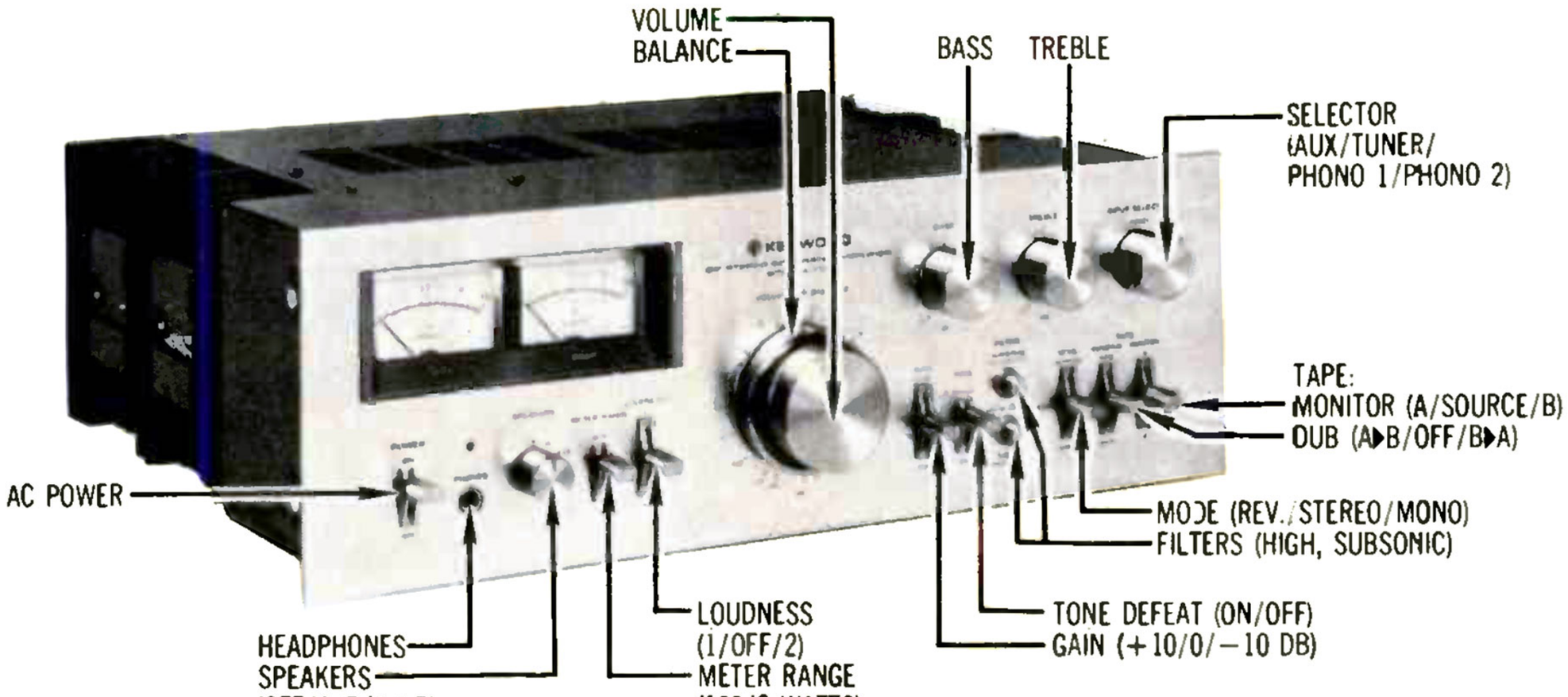
Laboratory data (unless otherwise noted)
supplied by CBS Technology Center

A CONSUMER'S GUIDE **New Equipment Reports**



Kenwood's KA-9100 Is Cool—And More

The Equipment: Kenwood KA-9100 amplifier in metal case. Dimensions: 16 15/16 by 5⅞ inches (front panel), 12⅞ inches deep. Price: $500. Warranty: "limited," two years parts and labor. Manufacturer: Trio Electronics, Japan; U.S. distributor: Kenwood Electronics, Inc., 15777 S. Broadway, Gardena, Calif. 90248.

Comment: If heat be the bane that most crucially shortens the life expectancy of electronic componentry, the Kenwood KA-9100 must aspire to Methuselah-hood. Considering the ample power rating (19½ dBW—90 watts), it stays exceptionally cool in normal operation. The relatively massive heat sinks are mounted externally, keeping the internal temperature low. And in general, the appearance and heft of this amplifier reinforce the impression of quality that it radiates.

The specs of the KA-9100 are tight—0.03% THD at rated output, for example—but lab data taken at CBS Technology Center bear witness that they are met handily. Over most of the range, in fact, the THD is only about one-fifth of the rating and approaches 0.03% only at 20 kHz. The clipping level isn't reached until an extra ½ dB of power is delivered into standard 8-ohm loads. Similarly, IM distortion stays well below its 0.03% rating until substantially more than 19½ dBW is pumped out. In other respects—damping factor, sensitivity, phono overload, and frequency response—Kenwood's claims are met or exceeded. The phono equalization is exceptionally accurate and the low- and high-cut filters are very effective.

This is described as a DC amp, meaning that its stages are direct coupled (using no capacitors) and therefore will amplify signals far beyond the audio band (approaching, at the low end, DC—direct current). Consequently the response of the power amp section is rated as 0 Hz to 100 kHz. The CBS measurements are made through the entire ensemble and confirm Kenwood's alternate spec (−1 dB at 50 kHz) covering this situation. The lab data also suggest the presence of a low-pass filter (18 dB per octave above 70 kHz) to prevent transient or other intermodulation, which can occur with wideband designs under some circumstances. Be that as it may, the design delivers clean sound in the audio band with no detectable side effects.

The KA-9100 sports most of the usual features of an integrated amp and includes several that are less common but nonetheless handy. For example, there is a three-way lever that introduces an additional 10 dB of gain or attenuation into the circuit to improve the level match between various inputs. In the +10 position, the output from a moving-coil cartridge can be boosted to correspond more closely with that of moving-magnet types; the -10 position can calm an overly enthusiastic tape deck or tuner.

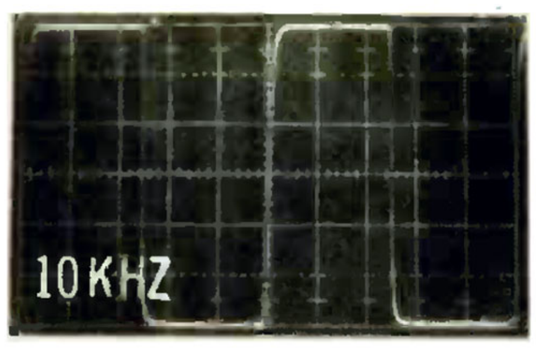
Two loudness contours are provided, each affecting only the bass region. The maximum boost in either case is 10 dB, but it is reached either at 100 or 30 Hz, depending on the switch setting. While we preferred the latter, others might enjoy the extra midbass boost of the former.

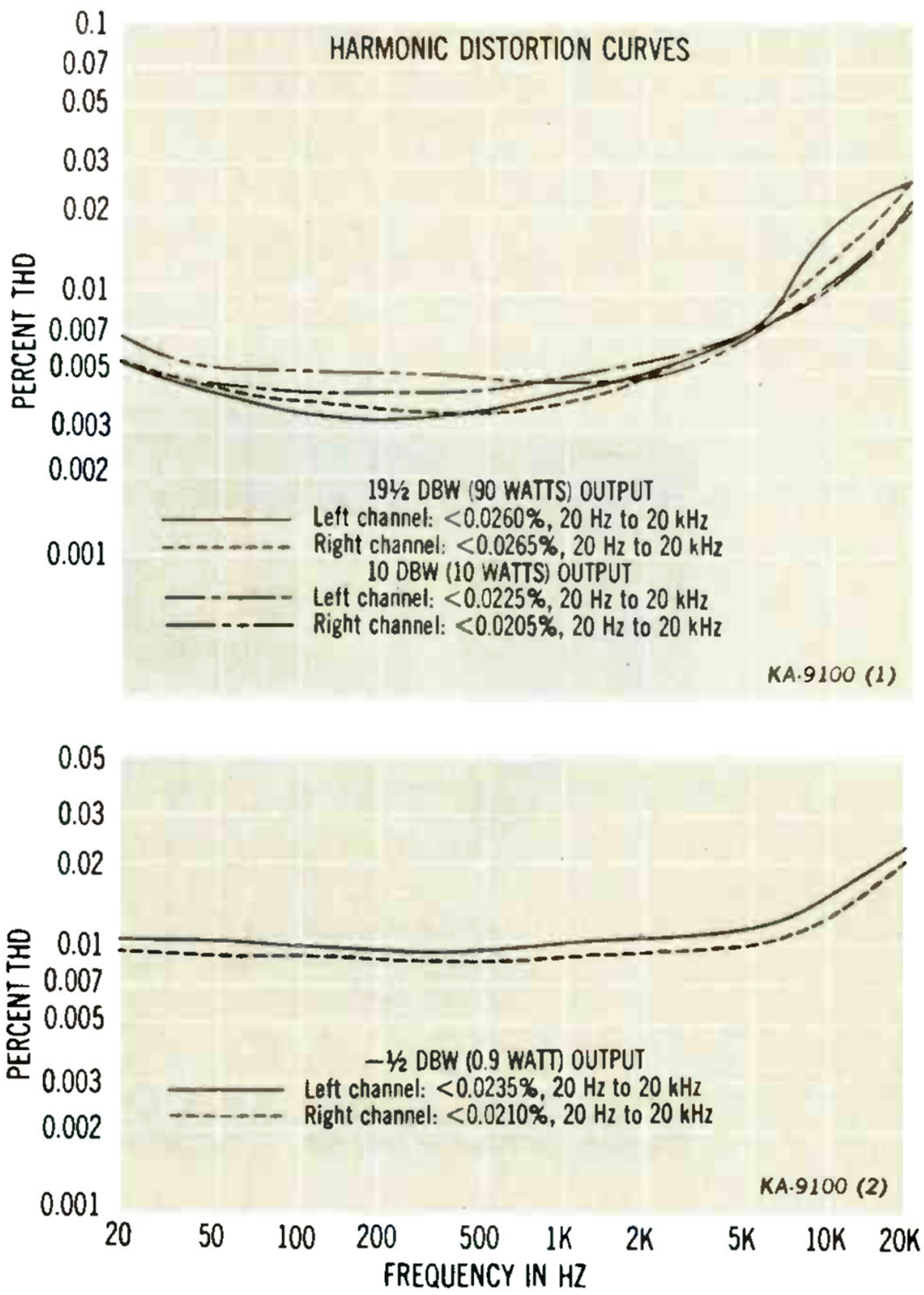
The balance control is concentric with the stepped attenuator volume control (in our opinion an eminently sensible arrangement) and has a well-defined detented center. The tape facilities are very good and allow two-way dubbing—even while the user is listening to another source.

A pair of good-sized meters, calibrated in watts into 8 ohms, monitor the power output. Full-scale indication is either 4¾ dBW (3 watts) or 20 dBW (100 watts), depending on the setting of the METER RANGE switch; in either case, the scale is roughly logarithmic (which is to say, readable over a wide range of output power levels—though with some speakers a third, intermediate, sensitivity setting might have been useful). The ballistics appear well chosen for typical music.

Rather than using removable links between the preamp and power amp sections, Kenwood uses a back-panel slide switch that internally connects or separates them. This arrangement allows the bypassing of external processing equipment with no defeat switch. Though the back panel is not the most accessible spot for this switch, it's an improvement over having to pull cables and insert jumpers; still, it's less convenient than a front-panel accessory on/off switch. Knurled binding posts for two sets of speakers are provided. A DIN connector (as well as the conventional pin-jack array) is provided for one of the tape hookups, and each phono input has its own grounding post—a thoughtful touch. There are three convenience outputs: two switched (rated at 100 watts) and one unswitched (300 watts).

It would be difficult indeed to fault the performance of

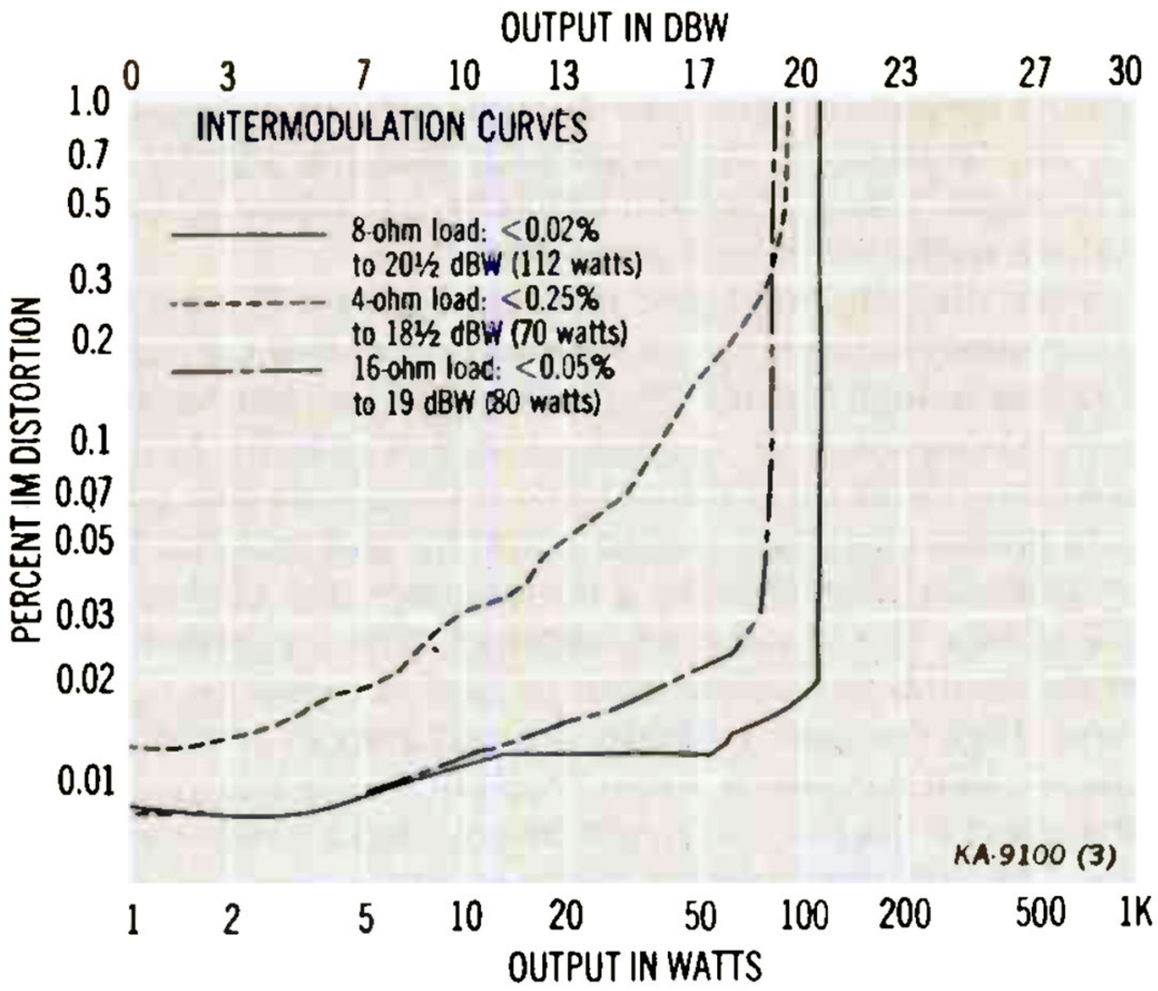




About the dBW . . .

We express output power and noise in terms of dBW—meaning power in dB with a reference (0 dBW) of 1 watt. We repeat herewith the conversion table so that you can use the advantages of dBW in comparing current products with those we have reported on in the past. You can, of course, use the figures in watts that accompany the new dBW figures for these comparisons, but then you lose the ability to compare noise levels for outputs other than rated power and the ability to figure easily the levels to which specific amplifiers will drive specific speakers—as explained in the June 1976 issue.

WATTS	dBW	WATTS	dBW	WATTS	dBW
1.00	0	10.0	10	100	20
1.25	1	12.5	11	125	21
1.6	2	16	12	160	22
2.0	3	20	13	200	23
2.5	4	25	14	250	24
3.2	5	32	15	320	25
4.0	6	40	16	400	26
5.0	7	50	17	500	27
6.3	8	63	18	630	28
8.0	9	80	19	800	29



Kenwood KA-9100 Amplifier Additional Data

Power output at clipping (channels driven simultaneously)

L ch	20¼ dBW (107 watts)
R ch	20¼ dBW (108 watts)

Frequency response	±0 dB, 20 Hz to 40 kHz +0, −3 dB, below 10 Hz to 70 kHz
RIAA equalization	± ½ dB, 20 Hz to 20 kHz

Input characteristics (for rated output at full gain)

	Sensitivity	Noise	S/N ratio
phono 1, 2	2.4 mV	−55½ dBW	75 dB
tuner	160 mV	−77 dBW	96½ dB
aux	160 mV	−77 dBW	96½ dB
tape	160 mV	−77 dBW	96½ dB

Phono overload (clipping point)	300 mV at 1 kHz
Damping factor at 1 kHz	64
High filter	−3 dB at 8 kHz; 12 dB/oct.
Low filter	−3 dB at 21 Hz; 12 dB/oct.

the Kenwood KA-9100. It is very quiet in all modes of operation. The phono preamp has adequate gain for typical cartridges in the normal position (and, again, will accommodate moving-coil models with 10 dB of extra amplification available at the flick of a switch). Even high-output cartridges should mate with the KA-9100 without danger of front-end overload. The fine transient response and tonal balance indicate low cartridge/preamp interaction, and the inner definition of music is exceptionally fine. Stereo imagery is very stable and wide, especially at the higher frequencies. Bass reproduction, though not the forte of this amplifier, is quite good and reasonably tight.

Since we could note no audible degradation stemming from the subsonic filter, we employed it continually in the phono mode. It is very effective in eliminating the unwanted pickup output resulting from record warps, as the output meters confirm. Although the 8-kHz cutoff frequency of the high-cut filter is a well-chosen compromise, we would have liked a choice (say, 5 and 10 kHz), especially since this filter really works. The tone control range of the KA-9100 is modest (about ±7½ dB at 20 kHz in the treble, shelving to about ±9 dB below 100 Hz in the bass) by comparison to some amps but more than adequate for our tastes. Perhaps because of this limited range, the controls strike us as more useful than most at moderate "touchup" settings.

To our way of thinking, the Kenwood KA-9100 provides an extensive combination of features in a compact package. Its power is adequate for most audiophile systems, and it sings with very low distortion. To what extent this can be attributed to Kenwood's DC amplifier circuitry and separate power supplies (one per channel, to prevent what Kenwood calls dynamic crosstalk) is a moot point; suffice it to say that the sonic quality is there.

REPORTS IN PROGRESS

The January issue will feature equipment reports on ten products. Among those in preparation, for that and future issues, are:

Dual C-939 cassette deck
Nakamichi Model 630 tuner/preamp
Ortofon M-20 Super
FL pickup cartridge
Pioneer Spec-4 power amplifier
Acoustic Research AR-15 loudspeaker system
Heath Model AD-1304 Active Audio Processor
Mitsubishi DP-EC1
automated direct-drive turntable
Russound SP-1 switching and patching center