

Kenwood R1000 shortwave receiver

We have modified a Kenwood R1000 shortwave receiver with a DRM mixer which was obtained from Sat. Service Schneider in Germany.

The mixer is a 467 kHz type with crystal option.

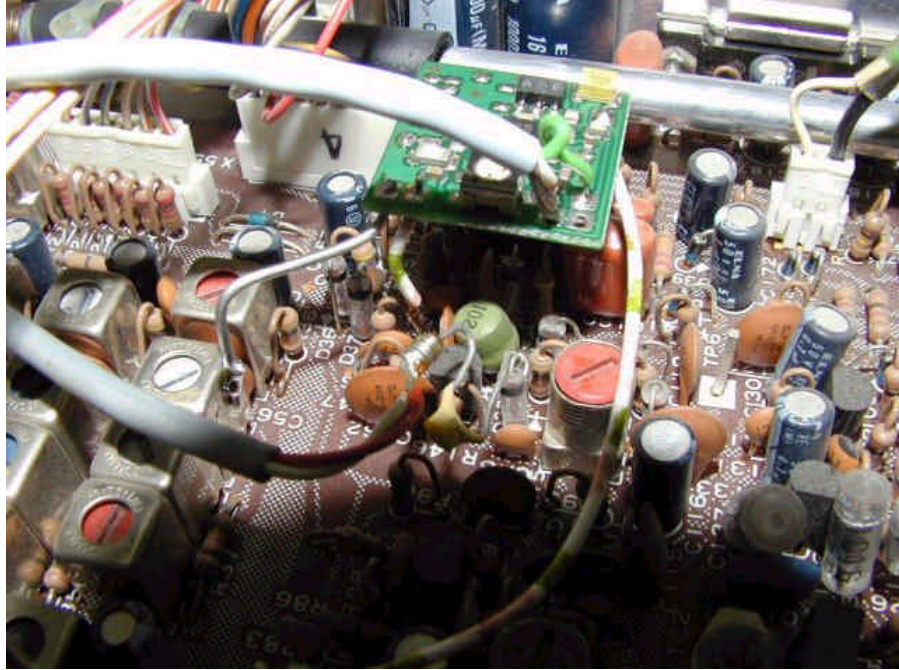
Attached you'll find the Kenwood user manual front page, the specification, the schematic, a picture of the mounting and the output spectrum.

The mixer is connected to the last IF buffer in the Kenwood receiver, on the connection of R148 with the emitter of Q24 (point A). The 'hot' connection of R148 is conveniently the upper wire of the resistor which is mounted vertically. The power connection was made at point B.

We connected the DRM modulator output to the antenna input of the Kenwood with a 40 dB attenuator inserted, and the resulting output spectrum was recorded. I think the spectrum looks quite well and usable.

Editors note: This receiver has yet to be tested and proved with the software, but this document will be updated when it has been tested

Hans Linkels



 **KENWOOD**

**COMMUNICATIONS RECEIVER
NACHRICHTENEMPFÄNGER
RECEPTEUR DE COMMUNICATIONS
RECEPTOR DE COMUNICACIONES**

Model R-1000



**INSTRUCTION MANUAL
BEDIENUNGSANLEITUNG
MODE D'EMPLOI
MANUAL DE INSTRUCCIONES**

SECTION 1. INSTALLATION

R-1000 SPECIFICATIONS

| | |
|--|--|
| Frequency Range | 200 kHz – 30.0 MHz |
| Mode | AM, SSB, CW |
| Sensitivity (10 dB or more S + N/N) | 200 kHz – 2 MHz (Antenna impedance: 1 k Ω) |
| AM (NARROW TONE) | |
| Carrier | 20 μ V |
| SSB | 5 μ V |
| 2 MHz – 30 MHz (Antenna impedance: 50 Ω) | |
| AM (NARROW TONE) | |
| Carrier | 2 μ V |
| SSB | 0.5 μ V |
| Image Rejection | More than 60 dB |
| IF Rejection | More than 70 dB |
| Selectivity | |
| AM (WIDE) | 12 kHz at – 6 dB 25 kHz at – 50 dB |
| AM (NARROW) | 6 kHz at – 6 dB 18 kHz at – 50 dB |
| SSB/CW | 2.7 kHz at – 6 dB 5 kHz at – 60 dB |
| Frequency Stability | \pm 2 kHz max. from 1 to 60 minutes after power on \pm 300 Hz max. in every subsequent 30 minutes |
| Antenna Impedance | Min 200 kHz – 2 MHz: 7 Ω (unbalanced) SWR 2 MHz – 30 MHz: 50 Ω (unbalanced) SWR 2 MHz – 30 MHz: 7 Ω (unbalanced) |
| Audio Output | 1 MW min (8 Ω load, 10% distortion) |
| Audio Load: | |
| Impedance | 4 – 16 Ω , external speaker or headphone |
| Power Consumption | 20W |
| Power Requirements | 100, 120, 220, 240V AC, 50/60 Hz |
| Semiconductors | 14 ICs, 11 FETs, 64 transistors, 72 diodes, 1 display tube |
| Dimensions | W 300 mm (12-3/4 inch) H 115 mm (4-1/2 inch) D 215 mm (8-5/16 inch) |
| Weight | 5.5 kg (12.1 lb) |
| CLOCK SECTION | |
| Type | Quartz |
| Accuracy | \pm 15 seconds max./month |

1.1 GENERAL

To obtain maximum performance from your R-1000 receiver, it is recommended you read Sections 2 and 3 in this manual before attempting to operate the unit.

1.2 ACCESSORIES

The following accessory items are included:

| | |
|--|----------|
| 1. Operating manual | 1 copy |
| 2. AC power cable | 1 piece |
| 3. Wire for antenna | 5m |
| 4. Miniature Speaker plug | 1 piece |
| 5. Fuse (0.7A) for 100/120V operation or fuse (0.4A) for 220/240V operation | 2 pieces |
| 6. Remote connector (7P) | 1 piece |

1.3 OPERATING LOCATION

As with any solid state electronic equipment, the R-1000 should be kept from extremes of heat and humidity. Choose an operating location that is dry and cool and avoid operating the receiver in direct sunlight.

1.4 ANTENNA

• Antenna and Grounding

Installation of antenna and grounding is important for optimum reception of short-wave, broadcast or amateur radio signals. A good outdoor antenna will provide the best results.

The following describes various antenna types and their installation.

NOTE

A simple method is to install the supplied wire antenna as high as possible. It must be extended to its full length for good results.

• Long Wire Antenna

This is the simplest antenna, using about 20 – 1000 feet (10 – 30m) of wire installed between poles, trees or other convenient supports. The antenna wire should be heavy (3-gauge vinyl insulated) stranded wire or 4-gauge copper wire or Copperweld. This type of antenna must be installed horizontally to a length of 50 feet (15m) or more, and be positioned as high as possible. Note that it should be as far away as possible from AC power lines, buildings, trees and other objects.

Fig. 1-1 shows an inverted L antenna. Other antenna types such as sloping, vertical, etc. are also possible. A long-wire antenna, when installed in a open area, is suitable for all-band operation. (See Fig. 1-1)

• Dipole Antenna

This type of antenna is suitable for reception of a specific band. The relation between the overall length "L" and the target frequency is:

$$L(\text{m}) = \frac{143}{F_{\text{MHz}}} \quad R(\text{feet}) = \frac{466}{F_{\text{MHz}}}$$

