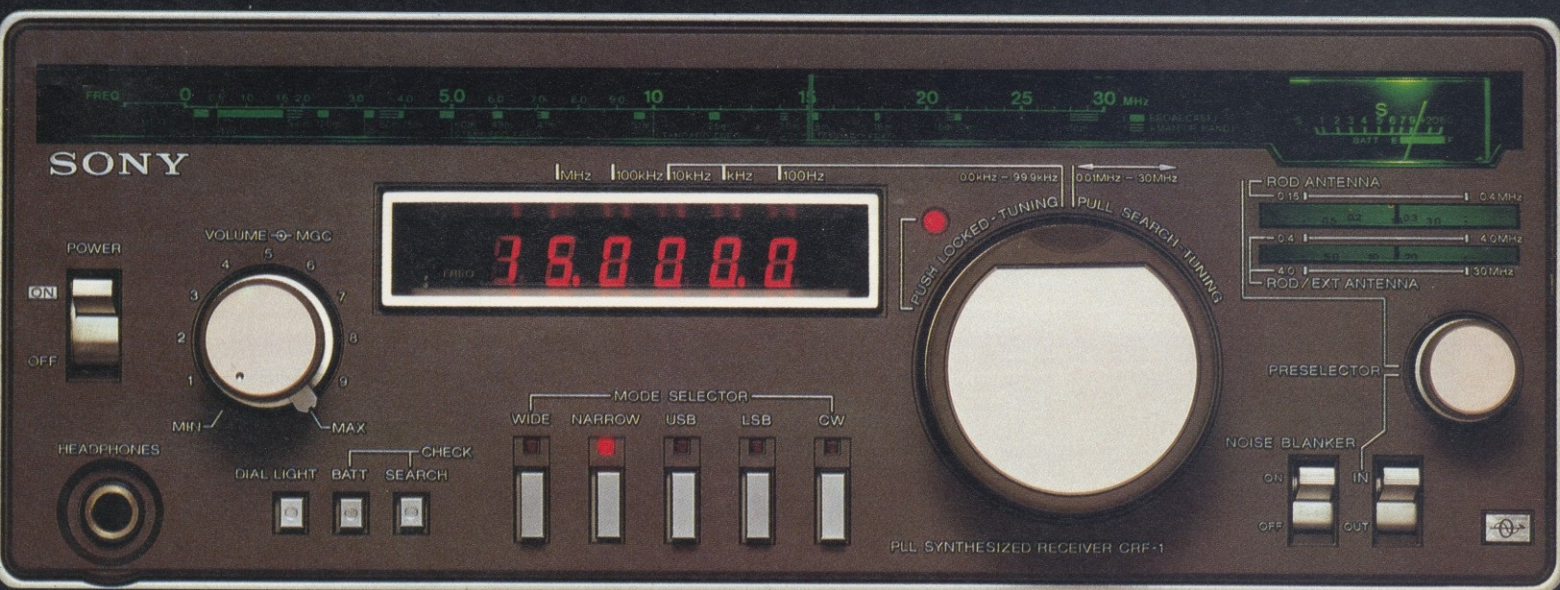


SONY®

PROFESSIONAL QUALITY RECEIVER

CRF-1

The CRF-1, one band receiver, continuously covers all AM broadcasts from 0.01 to 30.00MHz without any selection of bands



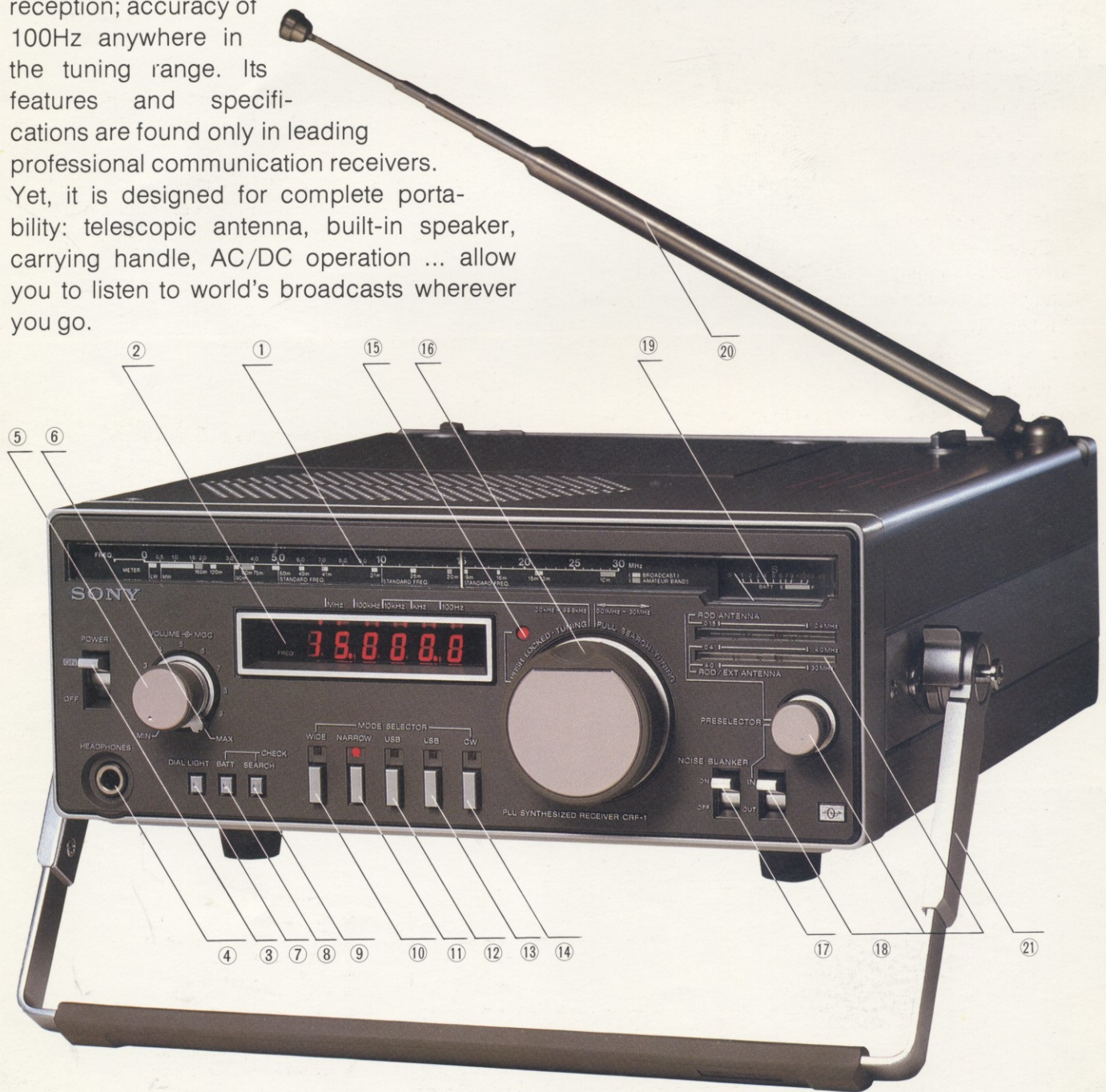
The CRF-1, one-band receiver, continuously covers all AM broadcasts from 10kHz to 30MHz without any selection of bands.

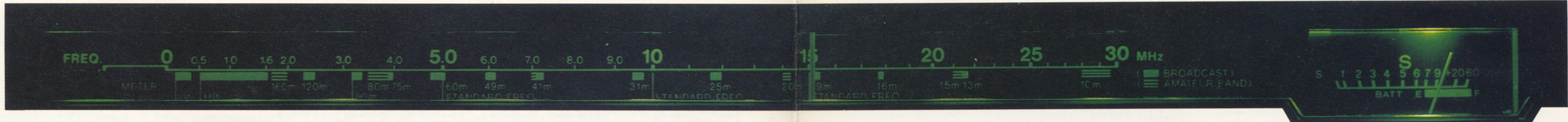
The entire AM broadcast, SSB and CW are covered by one band with the frequency appearing in a six-digit LED display. The dual conversion superheterodyne circuit, PLL synthesizer, band pass filters, noise blanker, etc. contribute to accurate and highly stable reception; accuracy of 100Hz anywhere in the tuning range. Its features and specifications are found only in leading professional communication receivers. Yet, it is designed for complete portability: telescopic antenna, built-in speaker, carrying handle, AC/DC operation ... allow you to listen to world's broadcasts wherever you go.

Features

A Single tuning knob commands the entire frequency spectrum within 100Hz accuracy without any selection of bands

A customerized one-chip LSI (Large Scale Integrated circuit) in the PLL (Phase-locked Loop) synthesizer block makes band selection unnecessary, allowing continuous coverage from 10kHz to 30MHz. The dual conversion superheterodyne circuit and an up-conversion system using a monolithic crystal filter in the 1st IF stage assure accurate tuning. In the 2nd IF, separate filters are provided for AM WIDE, AM NARROW, and SSB in order to satisfy clear tonal quality in AM WIDE and high selectivity in SSB.





Revolutionary tuning system with utmost accuracy and stability

The CRF-1 is designed for precise, yet rapid tuning. In order to realize these two requirements, the linear dial scale and the digital frequency counter are combined in this receiver. You can search a station on dial scale and then fine tune with the digital counter. The tuning knob also has double functions: tune in the desired station or search for a station with the knob pulled out, then tune in the station precisely with the knob pushed in. When pulled out, the tuning knob covers the entire frequency spectrum from 0.01MHz to 30MHz in 8 revolutions. When pushed in, the same knob works as a band spread dial, covering from 0.0kHz to 99.9kHz with a frequency accuracy as precise as 100Hz.

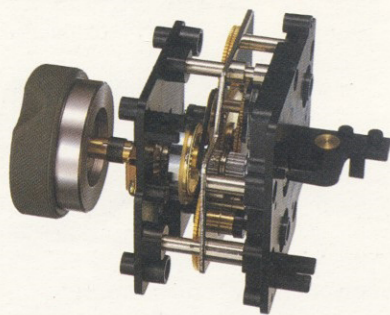


PULL SEARCH-TUNING

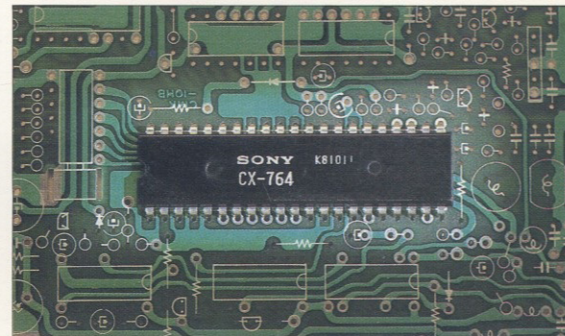


PUSH LOCKED-TUNING

Mechanical tuning block

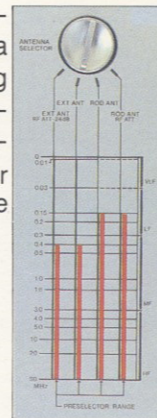


This revolutionary tuning system and high reliability are realized by the development of the one-chip LSI used in the PLL synthesizer block. The LSI commands the 100kHz-step PLL synthesizer, digital frequency display, function control signals, etc. The selection of band pass filters, antenna preselectors, and RF amplifiers are also controlled by this LSI.



Antenna selector

The four-position antenna selector enables optimum matching of the antenna to the signal strength of the station being received. If sound is distorted while receiving a very strong signal, set the selector to EXT ANT RF ATT -26dB or ROD ANT RF ATT depending on the type of antenna being used.



Band pass filters and antenna preselector for reducing interference

For high interference rejection, each component in the RF amplifier is carefully selected. In addition, effective rejection of any possible interference signal prior to the RF stage is realized by band pass filters and antenna preselector. The input signal from external antenna goes through the eight band pass filter blocks to eliminate unwanted signal. The antenna preselector contributes to the tuning and matching of both external and telescopic antennas. The preselector, consisting of a 4-gang variable capacitor and a 2-gang micro tuning coil, tunes the antenna circuit to the optimum and eliminates tracking error.

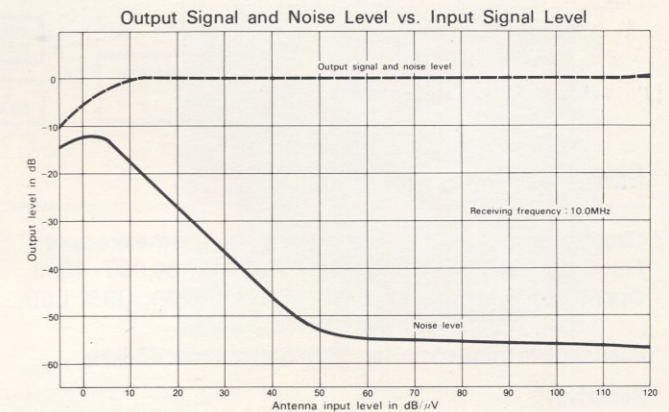
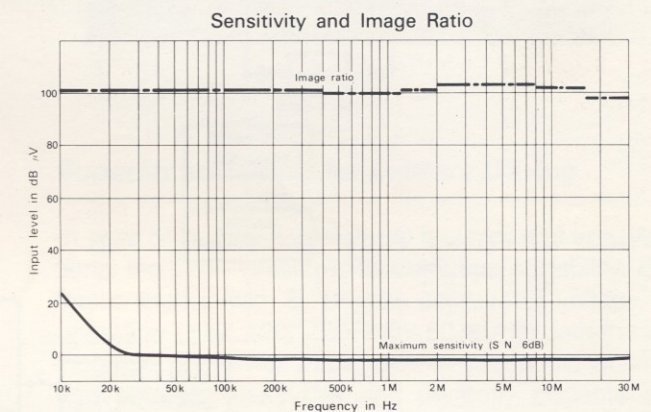


Effective noise blanker

Newly-designed noise blanker circuit with an exclusive filter and double-balanced type noise gate eliminates blanking noise. Its noise threshold level is set high enough to effectively work even on CW and SSB.

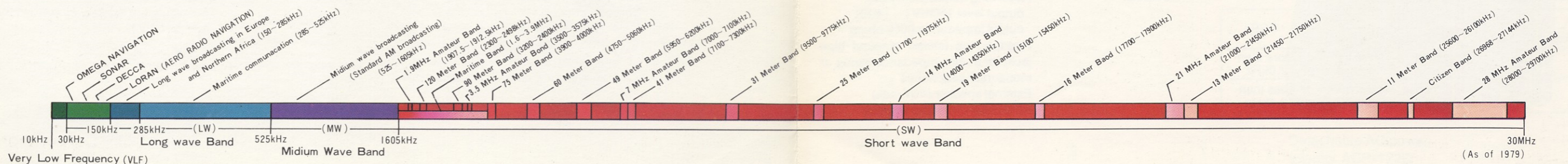
FET RF amplifiers for less interference and higher sensitivity

The RF amplifier stage in the CRF-1 is designed to get the highest performance with the matching antenna preselector block. Each of the four preselector circuits uses its exclusive RF amplifier to realize effective rejection of various types of interferences such as intermodulation, cross modulation, and spurious interference. The FETs adopted in these circuits contribute to high sensitivity.



Antenna: External antenna
 Antenna input impedance: 75 ohms
 Modulation frequency: 400Hz
 Modulation depth: 30%

AF output power: 50mW at 0dB (8 ohms)
 Receiving mode: NARROW
 Power supply: 12V DC



Location and function of controls

① Dial scale

For quick searching of stations, the analog type dial scale is quite useful. After the search tuning on dial scale, use the frequency counter for precise tuning.

② Frequency counter

A digital display of the frequency being received. The tuned frequency is displayed in kHz with the TUNING knob pulled out, and to the 100Hz place with the knob pushed in.

③ Power switch

④ Headphones jack

For listening to monaural sound with 8-ohm headphones.

⑤ Volume control

⑥ Manual gain control [MGC]

⑦ Dial light button

During DC operation, when this button is depressed, the dial scale, signal strength meter, and preselector scale are illuminated. During AC operation, they are illuminated at all times when the power switch is on.

⑧ Battery check button

⑨ Search check button

During locked tuning, press this button to check the frequency of search tuning position without pulling out the tuning knob.

⑩ - ⑭ Mode selector

⑩ WIDE -

For reception under normal condition.

⑪ NARROW

For reception under conditions of noise and interference. A narrower bandwidth permits quieter reception.

⑫ USB

For upper sideband signal reception.

⑬ LSB

For lower sideband signal reception.

⑭ CW

For CW (continuous wave) signal reception.

⑮ Locked tuning indicator

A red indicator showing the reception is stabilized.

⑯ Two-way tuning knob

Pull the knob out and turn to search for station or to adjust the digits to the 100kHz place to match those of a station to be tuned in. Then push the knob in for more precise tuning. The frequency counter will display this tuning position to the 100Hz place, and the red indicator ⑮ will light, showing the reception is stabilized.

⑰ Noise blanker

When impulse noise, such as ignition noise disturbs the reception, set this switch to ON to cut off or reduce the noise.

⑱ Preselector switch, knob and scale

When the switch is set to IN, the preselector circuit will operate and optimum sensitivity will be obtained on the frequency indicated by the pointer on the scale. Turn the preselector knob to set the pointer to the approximate frequency of the station being received.

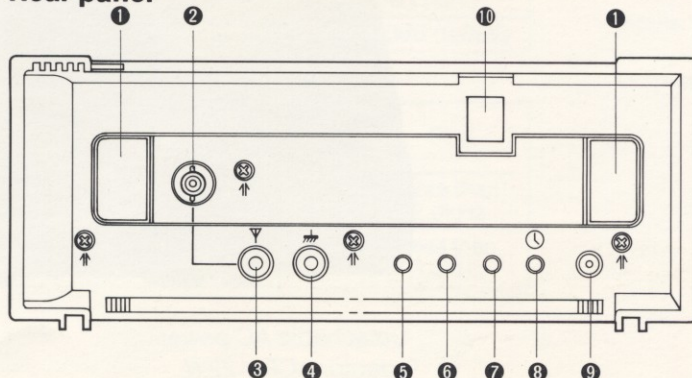
⑲ Signal strength/battery meter

⑳ Telescopic antenna

㉑ Carrying handle

Adjustable at successive angles of 30° step.

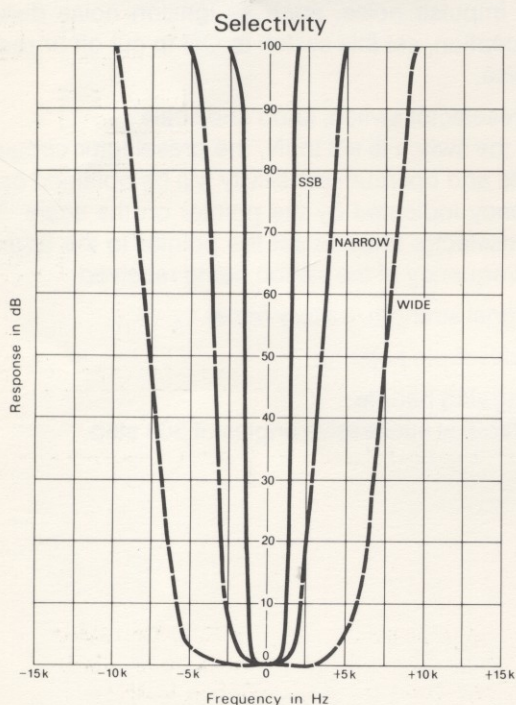
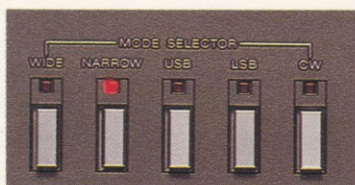
Rear panel



- ① Cord clamps
- ② BNC antenna connector
- ③ External antenna terminal
- ④ Ground terminal
- ⑤ Mute input jack
- ⑥ Recording output jack
- ⑦ External speaker jack
- ⑧ Timer input jack
- ⑨ External power input jack
- ⑩ Cutout for AC power cord

Mode selector for optimum selectivity and frequency response

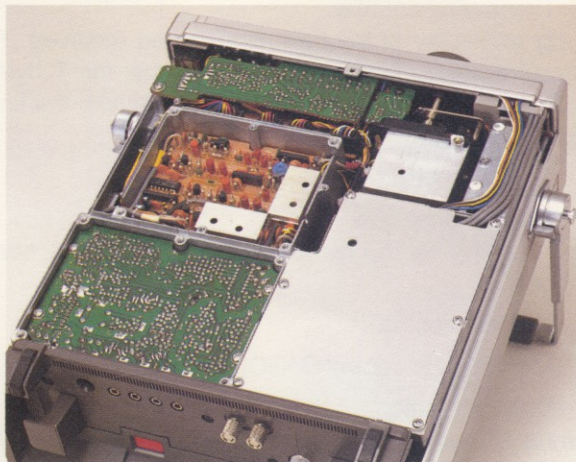
The 2nd IF stage provides separate filters for WIDE, NARROW, and USB/LSB. This way, both selectivity and frequency response are set to the appropriate level according to the characteristics of each mode. At WIDE, more than 10kHz detuning frequency at -6dB bandwidth, and less than 16kHz detuning frequency at -60dB have been realized. At NARROW, the figures are 4.4kHz and 8.0kHz respectively. The appropriate filter is automatically selected by the mode selector for easy and reliable tuning.



Antenna: External antenna
Antenna input impedance: 75 ohms
Modulation frequency: 400Hz
Modulation depth: 30%
AF output power: 50mW at 0dB (8 ohms)
Receiving mode: NARROW
Power supply: 12V DC

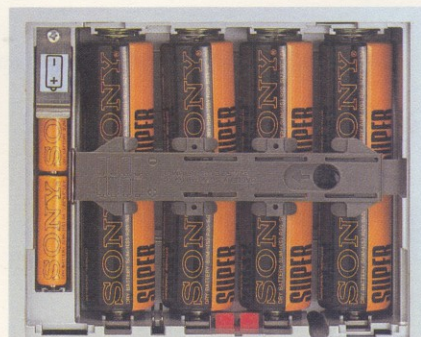
Aluminum diecast monocoque chassis for high reliability

The diecast chassis increases mechanical and electronic reliability and suppresses the generation of internal spurious signals.

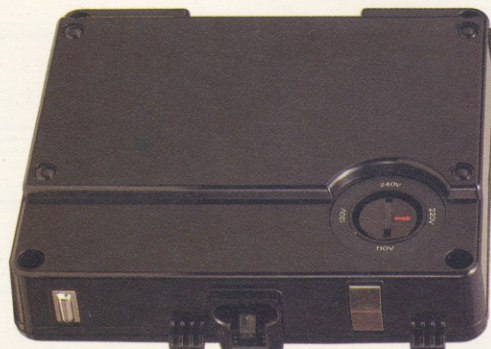


Superior portability for outdoor DX-ing

In spite of its truly professional features and specifications, the CRF-1 restores its complete portability. Battery operation with 8 "D" size cells, multi voltage AC operation (110, 120, 220, 240V, 50/60Hz) with the detachable AC power pack, built-in telescopic antenna and speaker make this unit perfectly portable and available for use anywhere in the world.

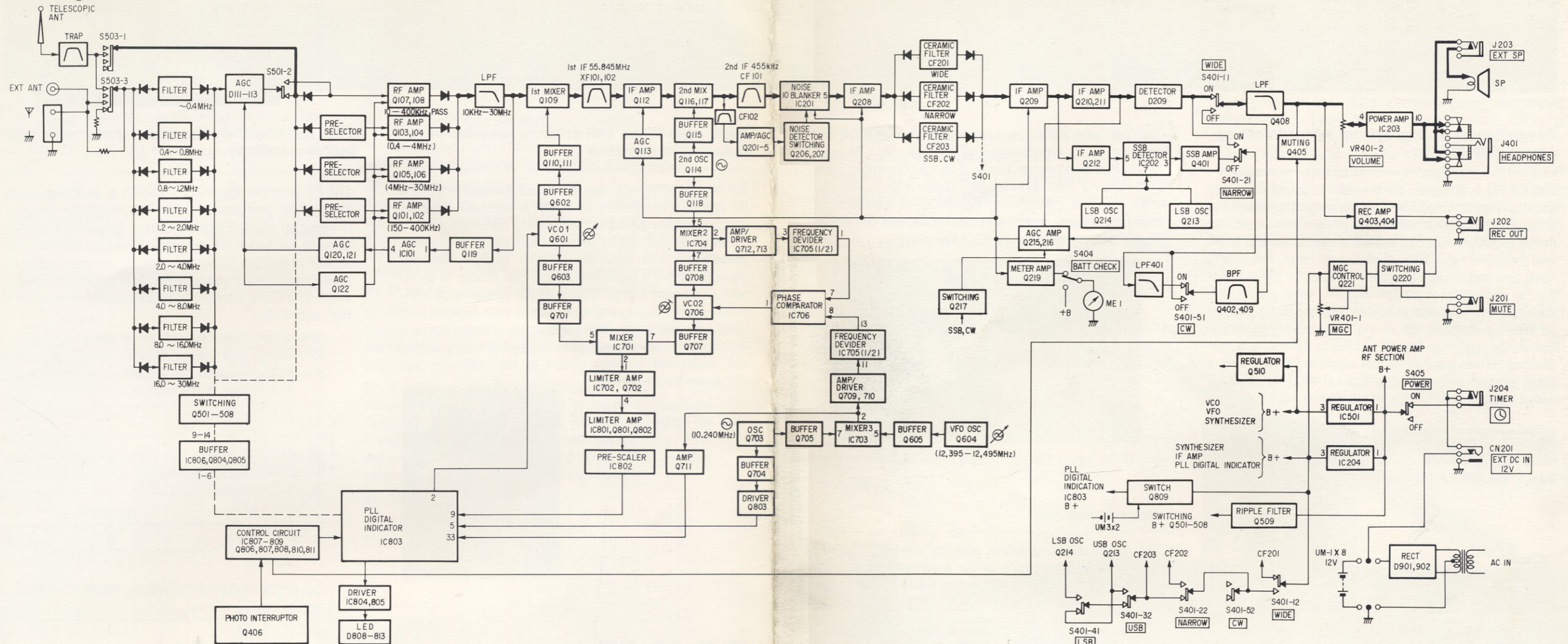


Battery compartment



Detachable AC power adaptor ACP-122W

Block diagram



Specifications

Circuit system: Dual conversion superheterodyne
 Frequency range: AM 10kHz - 30MHz (30,000 - 10m)
 Operating modes: AM (WIDE, NARROW), USB, LSB, CW

Intermediate frequency: 1st: 55.845MHz, 2nd: 455kHz

Sensitivity:

Frequency	AM (NARROW)	SSB
10kHz - 50kHz	30dB (30µV)	20dB (10µV)
50kHz - 30MHz	0dB (1µV)	-10dB (0.3µV)

Selectivity:

Mode	AM		SSB
	WIDE	NARROW	
-6dB	More than 10kHz	More than 4.4kHz	More than 2.0kHz
-60dB	Less than 16kHz	Less than 8.0kHz	Less than 3.4kHz

Image rejection: 1st; 100dB at 10MHz
 2nd; 90dB at 10MHz
 IF rejection: 90dB at 10MHz
 Antennas: Telescopic antenna (150kHz - 30MHz)
 External antenna terminals (10kHz - 30MHz) 50 - 75 ohms, BNC connector and 2P terminal
 Approx. 10cm dia.
 Speaker: 1.2W (at 10% harmonic distortion) at DC operation
 Power output: Timer input (mini jack)
 Mute input (mini jack)
 Recording output (mini jack) output level 150mV (-14dB)
 output impedance 600k ohms
 Headphones (stereo binaural type jack) for 8 ohm impedance stereo or monaural headphones
 External speaker (mini jack)
 Accepts 4 - 16 ohms speaker

Power requirements: Receiver section
 DC 12V, 8 batteries, size "D" (IEC designation R20)
 AC 110/120/220/240V, 50/60Hz with supplied Sony AC power adaptor ACP-122W
 12V car battery with Sony car battery cord, DCC-120 (optional)
 24V car battery with Sony car battery cord, DCC-240 (optional)
 Memory circuit; DC 3V, 2 batteries, size "AA" (IEC designation R6)
 Receiver section
 Approx. 3 total hours of use with Sony Super Batteries SUM-1S (at normal listening level)
 Approx. 6 total hours of use with Eveready Heavy Duty Batteries No.1210

Battery life:

Dimensions: 260 x 100 x 330 mm (W/H/D) (10 1/4 x 4 x 13 1/8") including projecting parts and controls, without carrying handle
 Weight: Approx. 6.6 kg (14 lb 9 oz) including batteries or AC power adaptor
 Supplied accessories: AC power adaptor
 AC power cord
 Battery guard (stored in the battery compartment)

* Design and specifications are subject to change without notice.

Sony Corporation

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