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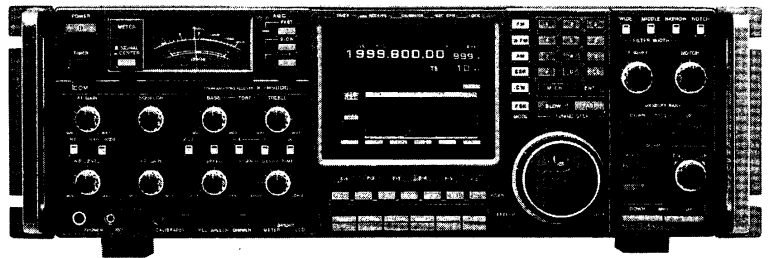
Icom Inc.

COMMUNICATIONS RECEIVER
IC-R9000L

Icom Inc.

INTRODUCTION

Thank you for choosing this new Icom product.

The IC-R9000L is an advanced communications receiver designed for professional, worldwide communications. Equipped with Icom's state-of-the-art LCD monitor, the IC-R9000L includes an advanced multi-functional scanning system, a spectrum scope and an excellent stability oscillator that give you sophisticated measuring capability.

EXPLICIT DEFINITIONS

The following explicit definitions apply to this instruction manual.

WORD	DEFINITION
WARNING	Personal injury, fire hazard or electric shock may occur.
CAUTION	Equipment damage may occur.
NOTE	If disregarded, inconvenience only. No personal injury, risk of fire or electric shock.

IMPORTANT

(1) **READ THIS INSTRUCTION MANUAL CAREFULLY** before attempting operation. If you have any questions regarding the operation of the IC-R9000L, feel free to contact your nearest authorized Icom Dealer or Service Center.

(2) **SAVE THIS INSTRUCTION MANUAL** — This instruction manual contains important safety and operating instructions for the IC-R9000L.

PRECAUTIONS
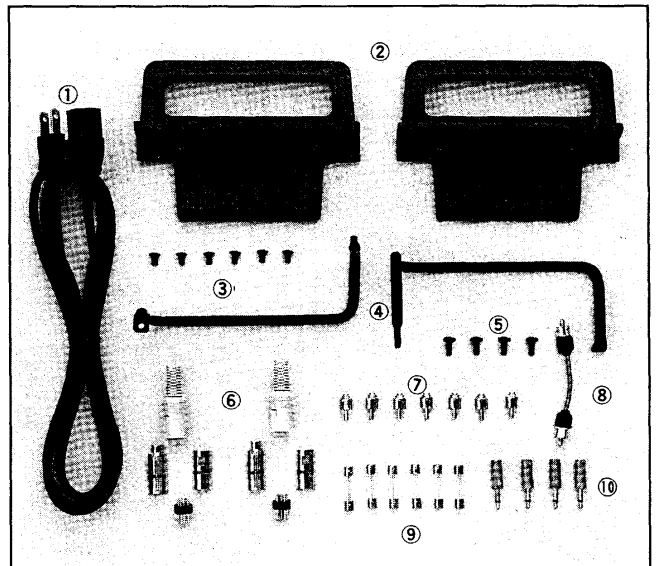
(1) **NEVER** let metal, wire or other objects touch any internal part of the receiver. Risk of electrical shock could occur.

(2) **NEVER** place the receiver within the reach of children or babies at any time.

(3) **NEVER** expose the receiver to rain, snow or any liquid.

(4) **DO NOT** operate the receiver when it is covered by objects which impede heat dispersal.

(5) **AVOID** using the receiver in temperatures below −10°C (+14°F) or over +50°C (+122°F). The receiver may not function properly in extreme temperatures.

(6) **AVOID** placing the receiver in excessively dusty environments and in direct sunlight.

(7) **BE CAREFUL!** The heatsink may become hot when operating the receiver continuously for long periods.

(8) Unplug the AC power cable from the AC outlet and wait a few minutes when opening the receiver cover.

UNPACKING

Accessories included with the IC-R9000:	Qty.
① AC power cable	1
② Rack mounting handles	1 set
③ Screws (for rack mounting handles)	6
④ Rear stands	1 set
⑤ Screws (for rear stands)	4
⑥ DIN plugs (8-pin)	2 sets
⑦ Pin plugs (RCA plugs)	7
⑧ Connection cable	1
⑨ Spare fuses (2 A for fuse holder)	2
(4 A for internal regulator)	2
(0.5 A for ACC socket)	2
⑩ Mini plugs	4

TABLE OF CONTENTS

1 FEATURES

FULL, CONTINUOUS 100 kHz ~ 1999.8 MHz COVERAGE WITH ALL MODES

The IC-R9000L is an all-mode, super wide-band receiver that continuously covers a frequency range of 100 KHz to 1999.8 MHz. Many parts of the world are now accessible. Tune in world news agencies that use FAX and RTTY, aircraft, marine and business contacts, emergency services, government, satellite, amateur, CB (Citizen's Band) and numerous other stations near your home or on the other side of the world.

Some versions do not cover the entire range.

MULTI-FUNCTIONAL LCD MONITOR

Icom's advanced multi-functional LCD monitor is built into the IC-R9000L. Receive frequencies, modes, and additional useful data are displayed for your operating convenience. The LCD monitor has the following outstanding features:

● **SPECTRUM SCOPE FOR VISUAL SIGNAL CONFIRMATION**
At a glance, you can check relative signal strengths of nearby receive frequencies. The span of the spectrum scope can be selected for ±25, ±50 or ±100 kHz according to your needs.

● **MEMORY LIST**
Using the memory list screen, you can see the contents of 10 memory channels at once. Memory channels can be rolled for viewing other memory channels.

● **TERMINAL MONITOR**
This screen allows you to monitor RTTY or packet radio on the LCD monitor. ASCII (RS-232C level) code date from RTTY terminal unit or TNC (Terminal Node Controller) can be monitored.

1000 MEMORY CHANNELS STORING REQUIRED FREQUENCIES

A total of 1000 memory channels store frequencies, mode, filter width and tuning step increments. 1000 memory channels are grouped in 10 memory banks (each 100-digit channel numbers). You can use different memory banks according to station type, frequency ranges, or whatever your preference.

By using the memory list screen, many more convenient functions are provided: up to 8 character notes for your reference; the advanced, super convenient memory editor function easily moves, copies and deletes the memory contents.

SUPER-HIGH FREQUENCY STABILITY

Another Icom achievement is the IC-R9000L's very high frequency stability in the difficult-to-manage GHz range. Frequency stability is ±0.25 ppm* in ranges greater than 30 MHz and ±25 Hz* in ranges less than 30 MHz.

*0°C ~ +50°C; +32°F ~ +122°F

MULTI-SCAN FUNCTIONS

The IC-R9000L has 7 different scan functions. It's the perfect system for searching for desired signals quickly. The scan speed is adjustable to suit your needs, and its speed is unbelievably fast — 13 channels/sec or more.

PROGRAMMED SCAN
Scans between pre-programmed scan edges.
MEMORY SCAN
Scans memory channels.
SELECTED NUMBER MEMORY SCAN
Scans memory channels with the same programmed selected number.
SELECTED MODE MEMORY SCAN
Scans memory channels with the same programmed mode.
PRIORITY SCAN
Monitors specified memory channels.
△F SCAN
Scans around the receiving frequency.

AUTO MEMORY WRITE SCAN
Programs receive frequencies into memory channels during programmed scan.

## SCANNING PAUSE, TIMER AND VSC (Voice Scan Control)

The IC-R9000L provides versatile scan resume functions when a signal is received: the scan cancels, pauses until a signal disappears, pauses for adjustable time, and pauses for the mixed condition of "signal disappears" and "adjustable time."
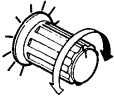
Also, a newly developed audio detecting VSC system allows you to skip inconvenient signals such as signals with no modulation, beat signals, and noise component signals.

ADDITIONAL OUTSTANDING FEATURES

- A wide variety of tuning steps. 10 Hz, 100 Hz, 1 kHz, 5 kHz, 9 kHz, 10 kHz, 12.5 kHz, 20 kHz, 25 kHz and 100 kHz available.
- Automatic dial click functions when more than 5 kHz tuning steps are selected.
- Built-in DDS (Direct Digital Synthesizer) for high-speed scanning with a high C/N (Carrier-to-Noise) ratio.
- Excellent sensitivity for all frequency coverages with a high dynamic range of 103.5 dB*.
  * On 14 MHz band, CW mode, filter narrow.
- Dual clock, 2 kinds of sleep timers and 5 indpendent daily timers.
- An advanced AFC (Auto Frequency Control) for automatic tuning of the center frequency of the receive signal.
- A threshold-adjustable, width-selectable noise blanker.
- Advanced interference rejection circuits, IF shift and notch filter.
- Recording control through a tape recorder with optional frequency recording.
- CI-V control system.
- Rack mounting handles for mounting with a 19-inch rack.

2 CONTROL FUNCTIONS

2-1 FRONT PANEL
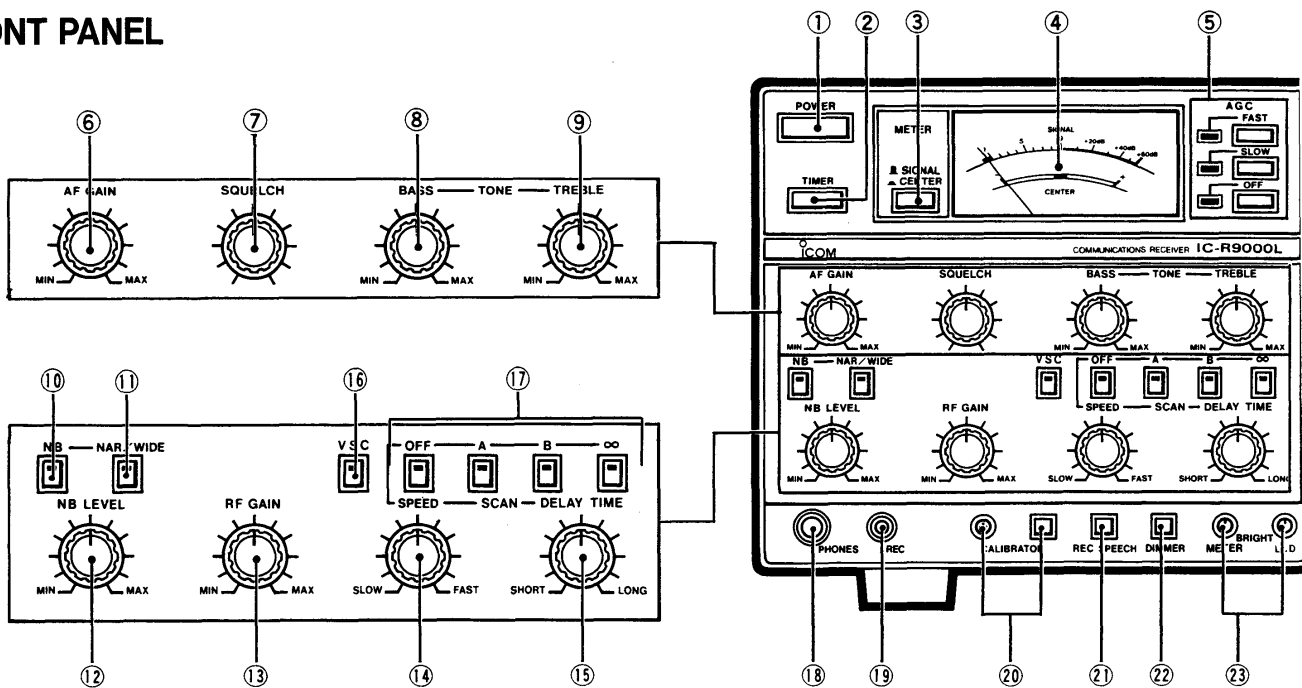
① **POWER SWITCH [POWER]**
Turns ON and OFF main power.

② **TIMER SWITCH [TIMER] (p. 56)**
Activates a timer function.

⬛▬ : Alarm timer or OFF.
▬⬛▬ : Sleep timer or daily timer.

③ **METER SWITCH (p. 36)**
Selects a meter function.

⬛▬ : Signal strength meter.
▬⬛▬ : Center meter (activates in FM or WFM).

④ **MULTI-FUNCTION METER (p. 36)**
Shows the relative signal strength or signal deviation. See ③ METER SWITCHES for selection.

⑤ **AGC SWITCHES (p. 38)**
Select the AGC time constant, slow, fast and OFF.

⑥ **AF GAIN CONTROL [AF GAIN]**
Adjusts audio output level.

⑦ **SQUELCH CONTROL [SQUELCH] (p. 35)**
Adjusts squelch threshold level.
● When [RF GAIN] is rotated counterclockwise the squelch may open except in FM or WFM mode.

SQUELCH

Tight
Loose

⑧ **BASS RESPONSE CONTROL [BASS]**
Adjusts the bass response of the audio output.

⑨ **TREBLE RESPONSE CONTROL [TREBLE]**
Adjusts the treble response of the audio output.

⑩ **NOISE BLANKER SWITCH [NB] (p. 38)**
Activates the noise blanker circuit. Use together with [NB LEVEL].
● Noise blanker deactivates in FM and WFM modes.

⑪ **NOISE BLANKER WIDTH SWITCH [NAR/WIDE] (p. 38)**
Removes wide-type pulse noise known as "woodpecker."
● Turn ON [NB] to use this switch.
● LED goes out : Narrow selected
  LED lights up : Wide selected

⑫ **NOISE BLANKER LEVEL CONTROL [NB LEVEL] (p. 38)**
Adjusts the noise blanker threshold level. Suppresses noise without signal distortion.
● Turn ON [NB] to use this control.

⑬ **RF GAIN CONTROL [RF GAIN] (p. 35)**
Adjusts gain at the RF stage.
● The S-meter needle rises when the control is rotated counterclockwise.
● Only those signals stronger than the level indicated by the needle will be heard.

⑭ **SCAN SPEED CONTROL [SPEED] (pgs. 48 ~ 54)**
Adjusts the scanning speed.

⑮ **SCAN DELAY TIME CONTROL [DELAY TIME] (p. 46)**
Adjusts the time delay between "scan stop" and "scan resume."
● Select scan resume switches [A] or [B] to use this control.

3

⟨24⟩ ⟨25⟩ ⟨26⟩ ⟨27⟩ ⎡ LCD MONITOR (See p. 9)
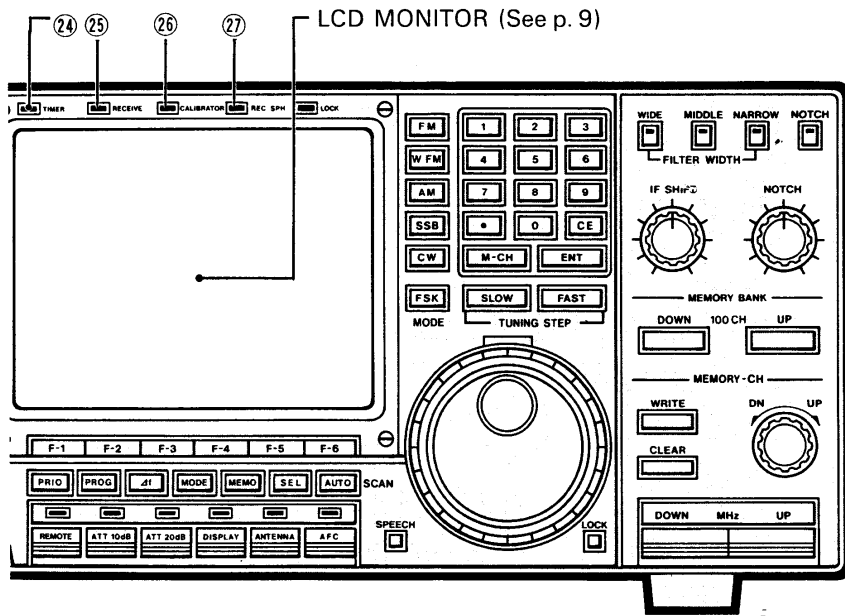
⟨16⟩ **VOICE SCAN CONTROL SWITCH [VSC] (p. 46)**
Restarts a scan after a few seconds when it stops on a signal without voice or audio signals.

⟨17⟩ **SCAN RESUME SWITCHES (p. 46)**
Select the scan resume condition.

|	
[OFF]	Scanning does not resume while a signal is being received. Scanning resumes approx. 3 sec. after a signal disappears.
[A]	Resumes scanning several seconds* after scanning stops. Scanning stops for several seconds* even if the signal disappears.
[B]	Resumes scanning several seconds* after scanning stops. Scanning resumes approx. 3 sec* after the signal disappears.
[∞]	Cancels a scan when a signal is received.

* Time can be adjusted with the [DELAY TIME] control.

⟨18⟩ **HEADPHONES JACK [PHONES]**
Accepts 4 ~ 16 Ω mono or stereo headphones with a standard 1/4 inch plug.

⟨19⟩ **RECORDING JACK [REC] (p. 27)**
Audio output jack for a tape recorder. The fixed audio output level is set for a tape recorder AUX jack.
● Refer to p. 65 Section 12-3 for voice synthesizer information.

⟨20⟩ **CALIBRATOR POT AND SWITCH [CALIBRATOR] (p. 64)**
The calibrator pot adjusts the reference oscillator frequency. Use a screw driver to adjust.

The calibrator switch generates calibration markers every 500 kHz up to 29.500 MHz.

⟨21⟩ **RECORDER SPEECH SWITCH [REC SPEECH] (p. 65)**
Announces the frequency through the [REC], [LINE OUT] and [SPEECH OUT] jacks when scan stops.
● An optional UT-36 VOICE SYNTHESIZER UNIT is needed for this function.
● Refer to p. 65 Section 12-3 for [REC SPEECH] and [LINE MIX] combination.

⟨22⟩ **DIMMER SWITCH [DIMMER]**
Dims the intensity of the LCD monitor, function meter, and all indicators on the front panel.

⟨23⟩ **BRIGHT CONTROLS [METER], [LCD]**
Adjust the following intensities.
[METER] : Meter and indicators
[LCD]   : LCD monitor (Set to the 2 o'clock position)

NOTE: Great intensity will shorten the life of the LCD monitor.

Dark   Bright
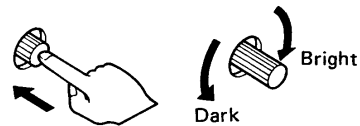
⟨24⟩ **TIMER INDICATOR [TIMER] (p. 56)**
Indicates the [TIMER] switch is ON.

⟨25⟩ **RECEIVE INDICATOR [RECEIVE]**
Indicates the squelch is open.

⟨26⟩ **CALIBRATOR INDICATOR [CALIBRATOR] (p. 64)**
Indicates the [CALIBRATOR] switch is ON.

⟨27⟩ **RECORDER SPEECH INDICATOR [REC SPH] (p. 65)**
Indicates the [REC SPEECH] switch is ON.

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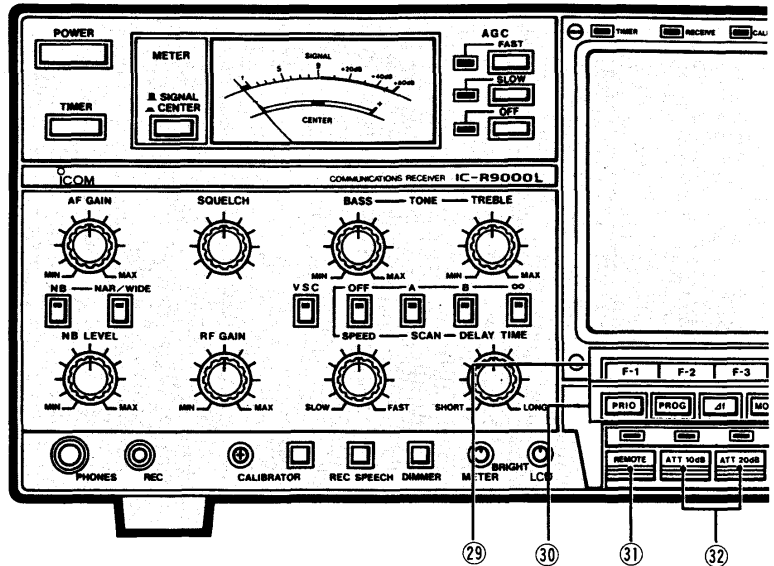
㉘ LOCK INDICATOR [LOCK] (p. 10)
Indicates the [LOCK] switch is ON.

㉙ LCD MULTI-FUNCTION SWITCHES [F-1] ~ [F-6] (pgs. 11 ~ 23)
Select LCD monitor menu functions.

㉚ SCAN SWITCHES

[PRIO]	Starts and stops priority scan.	(p. 49)
[PROG]	Starts and stops programmed scan.	(p. 47)
[△f]	Starts and stops △F scan.	(p. 50)
[MODE]	Starts and stops selected mode memory scan.	(p. 52)
[MEMO]	Starts and stops memory scan.	(p. 51)
[SEL]	Starts and stops selected number memory scan.	(p. 53)
[AUTO]	Starts and stops auto memory write scan.	(p. 54)

㉛ CI-V REMOTE RESET SWITCH [REMOTE] (p. 31)
The indicator above the switch lights up when one of the following CI-V remote commands is received through the [REMOTE] jack on the rear panel:
- AF gain controlling data
- RF gain controlling data
- Squelch level controlling data

The switch resets the above commands and respects the individual controls.

㉜ ATTENUATOR SWITCHES (p. 35)
Select 10 dB, 20 dB or 30 dB RF attenuation to prevent front end overload.
• To select 30 dB attenuation, push both [ATT 10dB] and [ATT 20dB].

㉝ DISPLAY SWITCH [DISPLAY]
Sets the LCD monitor to an external video input.

㉞ ANTENNA SELECTOR SWITCH [ANTENNA] (p. 26)
Allows output of 13.8 V DC (max. 100 mA) from the rear panel [ANT SEL] jack. Use an external antenna selector, preamplifier, etc., with this voltage.

This switch can be used with the rear panel [HF ANT SW] when operating below 30 MHz. See p. 7 ⑥ [HF ANT SW] for more details.

㉟ AUTO FREQUENCY CONTROL SWITCH [AFC] (p. 35)
Turns ON and OFF the AFC function.
• Activates in FM or WFM mode.

㊱ MODE SWITCHES (p. 36)
Select the operating mode.
• WFM mode cannot be selected below 30 MHz.

㊲ KEYBOARD (p. 33)
Sets the operating frequency or memory channel.

Selects a scan group during programmed scan, auto memory write scan or selected number memory scan.

[1] ~ [0]	Enter the operating frequency or memory channel number.
[·]	Sets a MHz digit.
[CE]	Clears entered digits during frequency input.
[M-CH]	Sets the memory channel using the entered number.
[ENT]	Sets the operating frequency using the entered frequency.

Count on us!

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