ICOM

HF/VHF/UHF
ALL MODE TRANSCEIVER

IC-7000

Rugged
MIL-STD 810







Icom Inc.



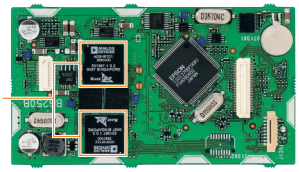
The technical propert
DSP found in our lead
now offers its superio
HF, 50MHz 144MHz a

DSP

First in its class, IF DSP model

IF DSP — First in its class

Digital IF filter, manual notch filter, digital twin PBT and more. The latest digital features are incorporated in this compact radio from two DSP chips that deliver superior processing performance. Of course, those features work on all ham bands, from HF to the 70cm band.



AGC loop performance controlled by DSP

You will never experience AGC pumping from a signal filtered out by the DSP system. The digital IF filter and manual notch filter are inside the AGC loop, so you will not encounter AGC blocking. The AGC time constants are flexibly adjustable from slow, middle, fast (or AGC-off) for each operating mode.



AGC time constant setting

Digital IF filters

All the filters you want at your fingertips! You will never have to purchase *"Optional"* filters as the IC-7000 has adjustable digital filters. You just dial in the width you want and select whether you want a sharp or soft filter shape for SSB and CW modes. Then to pull-in the the weak ones, with a quick turn of the concentric twin PBT knobs, you can either narrow the IF passband, or shift the entire passband to eliminate the QRM.

Mode	Passband width range
SSB	50–500Hz; 50Hz step 600Hz–3.6kHz; 100Hz step
CW	50–500Hz; 50Hz step 600Hz–3.6kHz; 100Hz step
RTTY	50–500Hz; 50Hz step 600Hz–2.7kHz; 100Hz step
AM	200Hz–10kHz; 200Hz step
FM	7/10/15kHz; fixed step
WFM	280kHz; fixed



IF filter setting

2-point MNF (Manual notch filter)

Pull out the weak signals in crowded band conditions with Icom's NEW two-point MNF (manual notch filter). Apply 70 dB of rejection to two signals at once! Notch width is adjustable – wide, medium, and narrow – and an auto-tuning notch filter is available, too.



Manual notch filter

Digital noise reduction

Noise reduction reduces background noise and improves signal-to-noise ratio. The noise reduction level is adjustable in 16 steps. It improves the readability of voice and data signals.

Digital noise blanker

The noise blanker reduces pulse-type noise such as engine ignition and sparking. The NB level and width (blanking duration) are adjustable in 100 steps.



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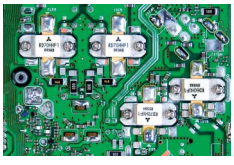
IC-7000

Performance

Basic performance exceeds your expectations

35W output in 70cm band

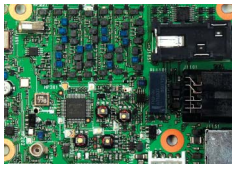
High power MOS-FET amps supply 35W output power on 430/440MHz band as well as 100W on HF/50MHz bands and 50W on 144MHz. It provides stable, high quality output with low IMD and low spurious emissions even during high duty cycle and extended operation.



MOS FET PA units

DDS (Direct digital synthesizer) circuit

Icom's original DDS (Direct digital synthesizer) circuit improves the C/N ratio, providing a clear, clean transmit signal in all bands.



Icom original DDS circuit

High stability crystal unit

The IC-7000 incorporates a high-stability master oscillator, providing 0.5ppm (–0°C to +50°C). A must for data mode operation.

Compact, all in one package

The IC-7000 sheds 20mm ($^{25}/_{32}$ in) of depth compared with the IC-706MKIIG. It's compact body is easy for carrying outdoors or mobile operation.

ties and advantages of IF ding base station models or advantages on mobile and 430/440 MHz bands.



Function

Practical functions and operations

User-friendly key allocation

Eight of the most-used radio functions such as NB, NR, MNF, and ANF are controlled by dedicated function keys grouped around the display for easy visibility. One quick touch turns the function on and off. A longer touch activates adjustment of the function's setting.



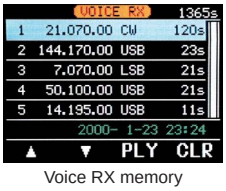
8 direct access buttons



Digital voice recorder (DVR)

Record your callsign, CQ, or other information in 4 transmit playback memories with alphanumeric labels. A total of 90 seconds is available for the four memories. A front panel REC control allows you to record incoming signals for up to 25 minutes (99 channels)*. The DVR makes portable contesting or mini-expeditions a breeze!

* Up to 120 seconds per channel



Voice RX memory

Built-in RTTY demodulator

The RTTY demodulator and decoder are built-in. External units and PC are no longer required for decoding. The twin peak audio filter reduces interfering signals overlapping the tones and the tuning indicator helps you zero-in with accurate tuning.



RTTY decode screen

Remote control microphone, HM-151

The HM-151 has a 10-keypad for quick channel selection. The triple band stacking register memorizes the last three frequencies and modes used on each band. Push the band button once to three times to recall the channel setting. The F-1 and F-2 buttons are programmable as shortcut menus of your often used functions.

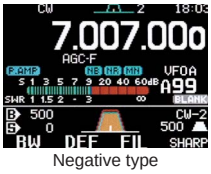


Key illumination

2.5 inch color TFT display

The 2.5 inch color TFT display presents numbers and indicators in bright, concentrated colors for easy recognition. You can choose from 3 background colors and 2 font styles to suit your preference, in addition to a large operating frequency readout. And more, the Video output jack on the rear panel allows you to view a magnified display on an external monitor*.

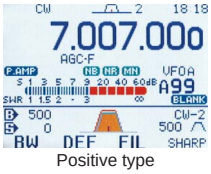
* 3.5(d) mm monaural cable is required for connection.



Negative type



Color type



Positive type

SSB transmit bandwidth adjustable

The SSB transmit bandwidth is selectable from 100, 200, 300, 500Hz at the high-pass edge, and 2500, 2700, 2800, 2900Hz at the low-pass edge respectively. 3 types of high and low combinations can be set in the quick set mode.

2-mode band scope

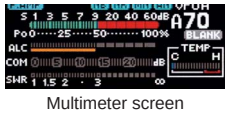
The band scope function lets you watch conditions around the band and visually assists in finding other stations. In center mode the band scope range is centered on the receiving frequency (±10kHz to ±250kHz). In Fixed mode the band scope sweeps a fixed range.



Fixed mode band scope

Multi function meter and SWR graphic display

The IC-7000 displays power level, SWR*, ALC and compression level of the speech compressor. The SWR graphic display* is useful for tuning antennas. The measuring step is selectable from 10/50/100/500kHz steps and the number of measuring steps is adjustable from 3 to 13 steps. (* HF/50MHz band only)

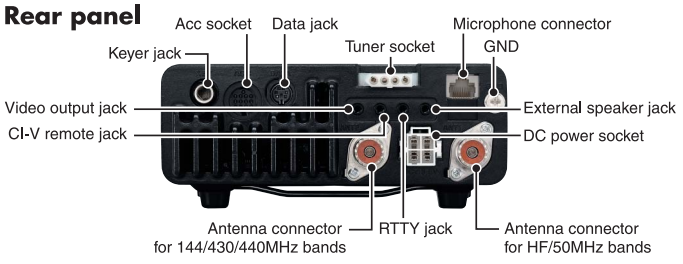


Multimeter screen

Other outstanding features

• Front panel separation with optional 3.5m/5m separation cable • Selectable main dial tension from heavy, light and click • RF speech compressor controlled by the DSP • CW full break-in • CW receive reverse • CW pitch adjustable • Tone squelch in FM mode • 503 memory channels • Built-in voice synthesizer announces operating frequency, mode and signal strength • Duplex mode and automatic repeater function • Transmit monitor • DTMF monitor • 1Hz tuning • VOX • CI-V interface • RIT/ΔTX • RF/SQL knob • Large speaker • Auto TS function • Thermo control silent cooling fan • Noise squelch and S-meter squelch • Preamplifier • Dial lock • 20dB attenuator

Rear panel



SPECIFICATIONS

GENERAL

- Frequency coverage (unit: MHz)*1 :

Receive	0.030–199.999*2	400.000–470.000*2
Transmit	1.800– 1.999	3.500– 3.999
	5.3305, 5.3465, 5.3665, 5.3715, 5.4035*3	
	7.000– 7.300	10.100– 10.150
	14.000– 14.350	18.068– 18.168
	21.000– 21.450	24.890– 24.990
	28.000– 29.700	50.000– 54.000
	144.000–148.000	430.000–450.000

*1 Showing USA version, frequency coverage depends on version.
*2 Some frequency ranges are not guaranteed. *3 USB mode only.

- Mode : USB, LSB, CW, RTTY, AM, FM, WFM (Rx only)
- Number of memory Ch. : 503 (495 regular, 6 scan edges and 2 call)
- Antenna connector : SO-239×2 (for HF/50MHz and 144/430/440MHz bands; 50Ω)
- Temperature range : –10˚C to +60˚C; +14˚F to +140˚F
- Frequency stability : Less than ±0.5ppm (0°C to +50°C; +32°F to +122°F)
- Power supply requirement : 13.8V DC ±15%
- Power consumption (approx.) : Tx Max. power 22.0A; Rx Standby 1.3A; Max. audio 1.6A
- Dimensions (Projections not included) : 167(W)×58(H)×180(D) mm; $6\frac{9}{16}$(W)×$2\frac{9}{32}$(H)×$7\frac{3}{32}$(D) in
- Weight (approx.) : 2.3kg; 5.1lb

All stated specifications are subject to change without notice or obligation.

TRANSMITTER

- Modulation system :
  - SSB: Digital P.S.N. modulation
  - AM: Digital low power modulation
  - FM: Digital phase modulation
- Output power :

	HF/50MHz	144MHz	440MHz
SSB/CW/RTTY/FM	2–100W	2–50W	2–35W
AM	1–40W	2–20W	2–14W

- Spurious emissions : Less than –50dB (HF bands); Less than –60dB (other bands)
- Carrier suppression : More than 50dB
- Unwanted sideband suppression: More than 50dB
- Microphone connector : 8-pin modular jack (600Ω)

RECEIVER

- Intermediate frequencies :
  - SSB, CW, RTTY, AM, FM: 124.487MHz, 455kHz, 16.15kHz
  - WFM: 134.732MHz, 10.70MHz
- Sensitivity (Pre-amp: ON) :

	0.5–1.8MHz	1.8–29.9MHz	50–54MHz	144/440MHz
SSB/CW	–	0.15µV	0.12µV	0.11µV
AM	13µV	2.0µV	1.0µV	1.0µV
FM	–	0.5µV (28–29.7)	0.25µV	0.18µV
WFM	–	–	10.0µV (76–108MHz)	

SSB/CW, AM : 10dB S/N, FM, WFM : 12dB SINAD

- Squelch sensitivity (Pre-amp: ON, threshold):
  - SSB: Less than 5.6µV
  - FM: Less than 0.3µV
- Selectivity (representative value):
  - SSB (BW: 2.4kHz, sharp): More than 2.4kHz/–6dB; Less than 3.6kHz/–60dB
  - CW (BW: 500Hz, sharp): More than 500Hz/–6dB; Less than 900Hz/–60dB
  - RTTY (BW: 350Hz): More than 360Hz/–6dB; Less than 650Hz/–60dB
  - AM (BW: 6kHz): More than 6.0kHz/–6dB; Less than 15.0kHz/–60dB
  - FM (BW: 15kHz): More than 12.0kHz/–6dB; Less than 20.0kHz/–60dB
- Spurious and image rejection ratio : More than 70dB (HF/50MHz bands); More than 65dB (144/440MHz bands) (except 1/2 IF through on 50MHz, IF through on 144MHz)
- AF output power (at 13.8V DC) : More than 2.0W at 10% distortion with an 8Ω load
- EXT SP connector : 2-conductor 3.5 (d) mm ($\frac{1}{8}$″)/8Ω

Applicable U.S. Military Specifications

Standard	MIL 810 F	
	Method	Procedure
Temperature Shock	503.4	I
Vibration	514.5	I
Shock	516.5	I, IV

Also meets equivalent MIL-STD-810-C, -D and -E.

Supplied accessories:

- Hand microphone, HM-151
- Microphone hanger
- Electronic keyer plug
- RTTY key plug
- DC power cable
- ACC cable (13-pin)
- Spare fuses

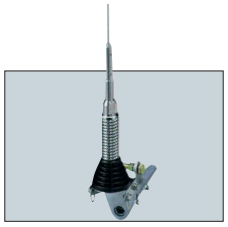
OPTIONS

Some options may not be available in some countries. Please ask your dealer for details.



IC-PW1/IC-PW1EURO
HF+50MHz 1kW
HF LINEAR AMPLIFIER

Covers all HF and 50MHz bands, provides clean, stable 1kW output. Automatic antenna tuner and compact detachable controller are standard. 2 exciter inputs are available. (An optional OPC-599 is required.)



• **AH-2b** ANTENNA ELEMENT
For mobile operation with the AH-4. All bands between 7–54MHz can be matched.



• **AH-4** HF+50MHz AUTOMATIC ANTENNA TUNER
Covers 3.5–54MHz with a 7m (23ft) or longer wire antenna.



• **AT-180** HF+50MHz AUTOMATIC ANTENNA TUNER
Style and size are matched to the IC-7000.



• **SM-20** DESKTOP MICROPHONE
High quality desktop microphone. (An optional OPC-589 is required.)



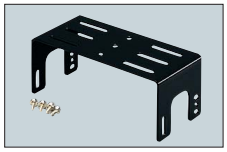
• **HM-151** REMOTE-CONTROL MICROPHONE
Same as supplied. For exclusive use with IC-7000 only.



• **CT-17** CI-V LEVEL CONVERTER
For remote transceiver control using a PC with an RS-232C.



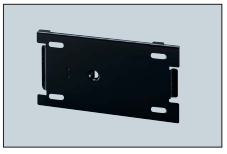
• **SP-10** EXTERNAL SPEAKER
Heavy duty speaker for mobile use.



• **MB-62** MOBILE MOUNTING BRACKET
For mounting the IC-7000 main unit or the AT-180.



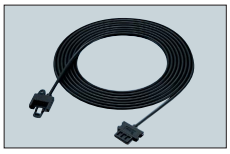
• **MB-65** MOUNTING BASE
For mounting the detached front panel in a vehicle. The MB-105 is required.



• **MB-105** MOBILE MOUNTING BRACKET
For mounting the detached front panel.



• **MB-106** CARRYING HANDLE
Convenient when carrying the transceiver.



• **OPC-1443/OPC-1444** SEPARATION CABLES
OPC-1443: 3.5m (11ft)
OPC-1444: 5m (16ft)



• **OPC-589** MODULAR 8-PIN CABLE ADAPTER
For using a regular 8-pin desktop microphone with IC-7000.



• **OPC-598** ACC 13 PIN LONG CABLE FOR AT-180
(7m; 23ft)



• **OPC-599** CABLE ADAPTER
Converts 13-pin ACC connector to 7-pin + 8-pin ACC connector for connection with IC-PW1/EURO.

• **OPC-742** ACC 13 PIN CABLE ADAPTER
Required when using both AT-180 and a 2 m or 70 cm linear amplifier.

READ ALL INSTRUCTIONS carefully and completely before using the transceiver.

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