

 ICOM



HF/VHF/UHF
ALL MODE TRANSCEIVER

IC-7000



Icom Inc.



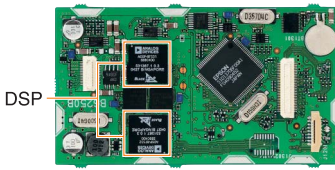
The technical properties of the IC-7000 DSP found in our leading HF transceiver now offers its superior performance in HF, 50MHz 144MHz and 70cm bands.

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.



DSP

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 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



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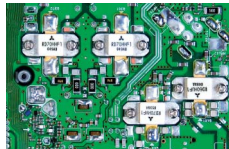
IC-7000

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.

Features and advantages of IF-7000 Fixed 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.

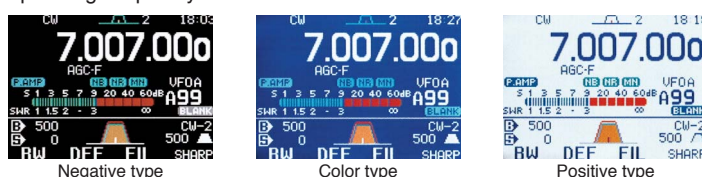


8 direct access buttons



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.



Built-in TV tuner and video output jack

Not only does the display provide radio status, but you can watch analog VHF-TV**1 channels! The video output jack allows you to view a magnified display on a TV or external monitor**2.

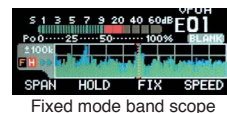
*1 NTSC or PAL. Not available in all versions.

**2 3.5(d) mm monaural cable is required.



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 ($\pm 10\text{kHz}$ to $\pm 250\text{kHz}$). 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.

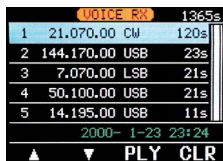


Multimeter screen

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.

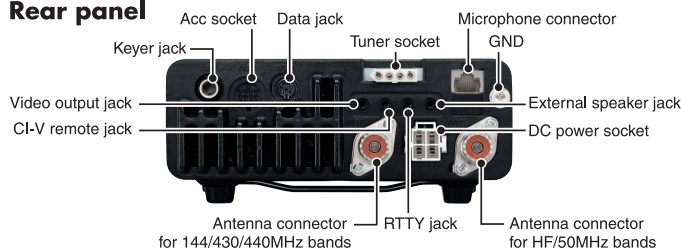


Key illumination

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
- Preampifier
- Dial lock
- 20dB attenuator
- Adjustable SSB transmit bandwidth

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-239x2 (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 : 167(W)×58(H)×180(D) mm;
 (Projections not included) 6⁹/₁₆(W)×2⁹/₃₂(H)×7³/₃₂(D) in
- Weight (approx.) : 2.3kg; 5.1lb

TRANSMITTER

- Modulation system :
 SSB Balanced modulation
 AM Low level modulation
 FM Variable reactance 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) :

| SSB/CW | 0.5-1.8MHz | 1.8-29.9MHz | 50-54MHz | 144/440MHz |
|--------|------------|-----------------|--------------------|------------|
| 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 More than 2.4kHz/-6dB
 (BW: 2.4kHz, sharp) Less than 3.6kHz/-60dB
 CW More than 500Hz/-6dB
 (BW: 500Hz, sharp) Less than 900Hz/-60dB
 RTTY (BW: 350Hz) Less than 360Hz/-6dB
 Less than 650Hz/-60dB
 AM (BW: 6kHz) More than 6.0kHz/-6dB
 More 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 bands)
 More than 65dB (Other bands)
 (except 1/2 IF through on 50MHz, IF through on 144MHz)
- AF output power : More than 2.0W at 10% distortion
 (at 13.8V DC) with an 8Ω load
- EXT SP connector : 2-conductor 3.5 (d) mm (1/8")/8Ω

Supplied accessories:

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

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

OPTIONS



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.)



For mobile operation with the AH-4. All bands between 7-54MHz can be matched.



Covers 3.5-54MHz with a 7m (23ft) or longer wire antenna.



Style and size are matched to the IC-7000.



High quality desktop microphone. (An optional OPC-589 is required.)



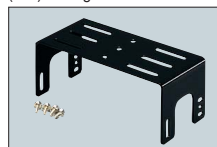
Same as supplied.



For remote transceiver control using a PC with an RS-232C.



Heavy duty speaker for mobile use.



For mounting the IC-7000 main unit or the AT-180.



For mounting the detached front panel. The MB-105 is required.



For mounting the detached front panel.



Convenient when carrying the transceiver.



OPC-1443: 3.5m (11ft)
 OPC-1444: 5m (16ft)



For using a regular 8-pin desktop microphone with IC-7000.



(7m; 23ft)



Converts 13-pin ACC connector to 7-pin + 8-pin ACC connector for connection with IC-PW1/EURO.



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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