

 ICOM

HF/50MHz TRANSCEIVER

IC-7300

Revolutionary

The Real HF Fun Starts Here



The SD card shown in the photo is not included.

IC-7300 – The Innovative HF Transceiver with High Performance Real-Time Spectrum Scope

■ Class Leading Real-Time Spectrum Scope

The IC-7300's real-time spectrum scope is class-leading in resolution, sweep speed and dynamic range. While listening to received audio, you can check the real-time spectrum scope and quickly move to an intended signal. When you first touch the scope screen around the intended signal, the touched part is magnified. A second touch of the scope screen changes the operating frequency and allows you to accurately tune.

■ Real-Time Spectrum Scope Specifications

Scope system	FFT (Fast Fourier Transform)
Sweep speed	Max. 30 frames/second (approx.), Selectable from slow, mid or fast
Span width	5 kHz–1000 kHz
Resolution*	1 pixel minimum (approximately)
Waveform display area (vertical axis)	80 dB
Reference level adjustment	–20 dB to +20 dB
Peak level hold function (Max. hold)	ON/OFF/last 10 seconds
Other functions	<ul style="list-style-type: none"> • Averaging indication • Touch screen operation • VBW (Video Band Width) adjustment

* Number of pixels shown at the 60 dB level, when receiving a signal.

■ High-Resolution Waterfall Function

The combination of the waterfall function and the real-time spectrum scope assists in maximum receive performance of the IC-7300 and increases QSO opportunities without missing weak signals. The waterfall function shows a change of signal strength over a period of time and allows you to find weak signals that may not be apparent on the spectrum scope.



Spectrum scope + Waterfall

■ Audio Scope Function

The audio scope function can be used to observe various AF characteristics such as microphone compressor level, filter width, notch filter width and keying waveform in the CW mode. Either the transmit or receive audio can be displayed on the FFT scope with the waterfall function and the oscilloscope.



FFT scope/Oscilloscope



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RF Direct Sampling System

The IC-7300 employs an RF direct sampling system. RF signals are directly converted to digital data and processed in the FPGA (Field-Programmable Gate Array), making it possible to simplify the circuit construction. This system is a leading technology making an epoch in amateur radio.

New "IP+" Function

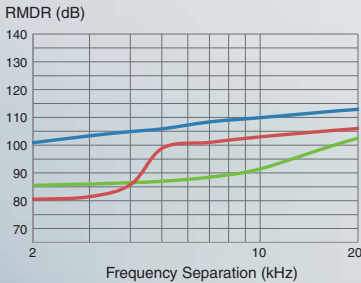
The new "IP+" function improves 3rd order intercept point (IP3) performance. When a weak signal is received adjacent to strong interference, the AD converter is optimized against signal distortion.

Class Leading RMDR and Phase Noise Characteristics

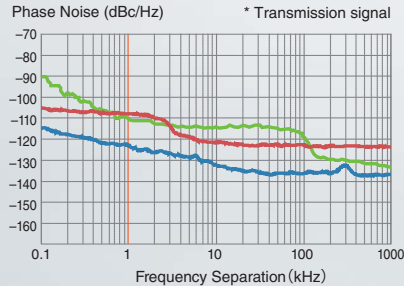
The IC-7300's RMDR is improved to about 100 dB* (typical value) and Phase Noise characteristics are improved about 20 dB (at 2 kHz frequency separation) compared to the IC-7200. The superior Phase Noise characteristics reduce noise components in both receive and transmit signals.

* At 2 kHz frequency separation (received frequency: 14.2 MHz, MODE: CW, IF BW: 500 Hz)

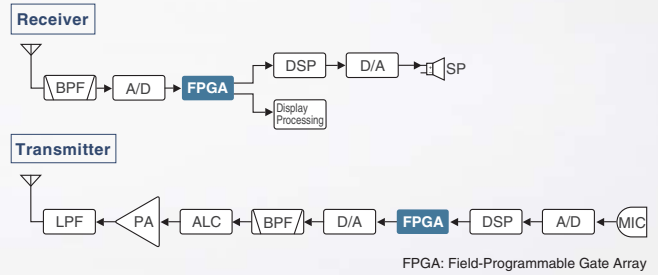
RMDR Characteristics Comparison



Phase Noise Characteristics Comparison*



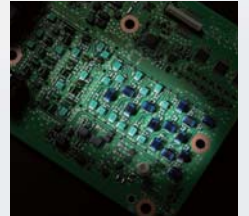
— IC-7300 — IC-7200 — IC-7100



FPGA: Field-Programmable Gate Array

15 Discrete Band-Pass Filters

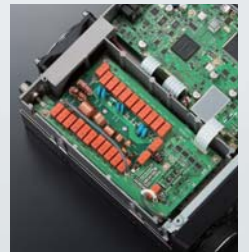
The IC-7300 has 15 discrete RF band-pass filters. The RF signal is only passed through one of the band-pass filters, while any out of range signals are rejected. High Q factor coils are used to minimize the loss in the RF band-pass filters.



Built-In Automatic Antenna Tuner

The antenna tuner memorizes its settings based on your transmit frequency, so that it can rapidly tune when you change operating bands. The Enforced Tuning function* allows a wide range of temporary antennas to be tuned.

* Do not use the Enforced Tuning function except in case of an emergency. Transmission power may be reduced.



Large Touch Screen Color TFT LCD

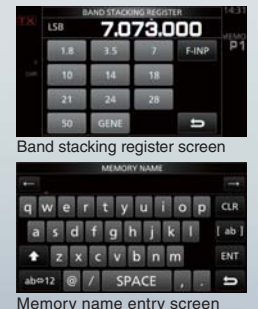
The large 4.3 inch color TFT touch LCD offers intuitive operation. Using the software keypad of the touch screen, you can easily set various functions and edit memory contents.



Touch screen interface



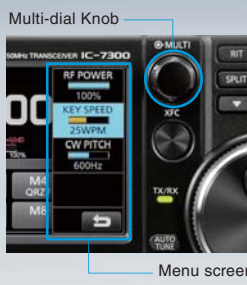
Menu screen



Band stacking register screen
Memory name entry screen

Multi-Dial Knob for Smooth Operation

The combination of the multi-dial knob and the touch screen offers quick and smooth operation. When you push the multi-dial knob, menu items are shown on the right side of the display. You can select an item with a touch of the screen and adjust levels by turning the multi-dial knob.



Menu screen

Superior Sound Quality

To offer superior sound quality, a new speaker unit has been incorporated and is allocated dedicated space in the aluminum die-cast chassis.



Aluminum die-cast chassis



Newly designed speaker unit

SD Memory Card Slot for Saving Data

The IC-7300 can store various content on an SD card such as received and transmitted audio, voice memories, RTTY/CW memories, RTTY decode logs and captured screen images. Personal and firmware update data can also be stored on the SD card for easy setting.

Other features

- New HM-219 hand microphone supplied
- A large and effective cooling fan system
- A multi-function meter
- 101 memory channels (99 regular, 2 scan edges)
- Optional RS-BA1 IP remote control software (the spectrum scope with the waterfall can be observed)
- CW functions: Full break-in, CW reverse, CW auto tuning

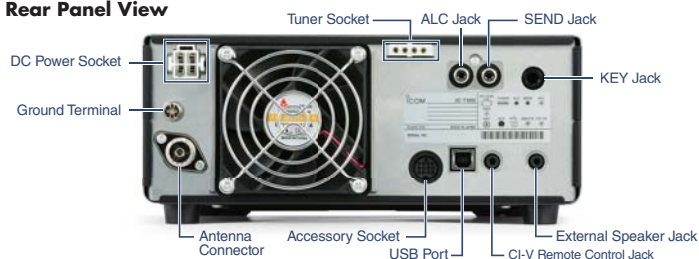
Actual size

SPECIFICATIONS

GENERAL	
Frequency coverage	(Unit: MHz)
Receiver*1	0.030–74.800*3
Transmitter*1	1.800–1.999, 3.500–3.999, 5.255–5.405*2, 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
*1 USA version. Varies according to version. *2 Some frequency bands are not guaranteed. *3 Guaranteed range: 0.500–29.999, 50.000–54.000 MHz.	
Mode	SSB, CW, RTTY, AM, FM
Number of channels	101 (99 regular, 2 scan edges)
Antenna connector	SO-239 (50 Ω)
Power supply requirement	13.8 V DC ±15%
Power consumption	Tx 21 A (at 100 W output power) Rx 0.9 A typical (Standby), 1.25 A (Maximum audio)
Operating temperature range	–10 °C to +60 °C; 14 °F to 140 °F
Frequency stability	Less than ±0.5 ppm (–10°C to +60°C; 14°F to 140°F)
Frequency resolution	1 Hz
Dimensions (projections not included)	240 × 94 × 238 mm; 9.4 × 3.7 × 9.4 in (W × H × D)
Weight (approximately)	4.2 kg; 9.3 lb
TRANSMITTER	
Output power (HF/50 MHz)	SSB/CW/FM/RTTY: 2–100 W, AM: 1–25 W
Modulation system	SSB Digital P.S.N. modulation AM Digital Low power modulation FM Digital Reactance modulation
Spurious emissions	HF bands: Less than –50 dB, 50 MHz band: Less than –63 dB
Carrier suppression	More than 50 dB
Unwanted sideband	More than 50 dB
Microphone impedance	600 Ω
RECEIVER	
Receiver system	Direct Sampling Superheterodyne
Intermediate frequency	36 kHz
Sensitivity*4	0.5–1.8 MHz 1.8–29.999 MHz 28.0–29.7 MHz 50 MHz band
SSB/CW (BW: 2.4 kHz at 10 dB S/N)	– 0.16 μV – 0.13 μV
AM (BW: 6 kHz at 10 dB S/N)	12.6 μV 2.0 μV – 1.0 μV
FM (BW: 15 kHz at 12 dB SINAD)	– – 0.5 μV 0.25 μV
Squelch sensitivity*4 (Threshold)	SSB: Less than 5.6 μV, FM: Less than 0.3 μV
*4 HF: Preamp 1 ON, 50 MHz: Preamp 2 ON	
Selectivity (sharp filter shape)	More than Less than
SSB (BW: 2.4 kHz)	2.4 kHz/–6 dB 3.4 kHz/–40 dB
CW (BW: 500 Hz)	500 Hz/–6 dB 700 Hz/–40 dB
RTTY (BW: 500 Hz)	500 Hz/–6 dB 800 Hz/–40 dB
AM (BW: 6 kHz)	6.0 kHz/–6 dB 10 kHz/–40 dB
FM (BW: 15 kHz)	12.0 kHz/–6 dB 22 kHz/–40 dB
Spurious and image rejection ratio	HF bands: More than 70 dB 50 MHz band: More than 70 dB (Except for ADC Aliasing)
Audio output power	More than 2.5 W (at 10% distortion with an 8 Ω load, 1 kHz)
TUNER	
Frequency range	1.9–50 MHz bands
Matching impedance range	16.7 Ω–150 Ω unbalanced (VSWR better than 1:3)
Tuning accuracy	VSWR 1: 1.5 or less
Tuning time	2–3 seconds (Maximum 15 seconds)

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












Rear Panel View



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OPTIONS

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

<p>PS-126 DC POWER SUPPLY</p>  <p>13.8 V DC, 25 A max. output.</p>	<p>AH-4 HF+50 MHz AUTOMATIC ANTENNA TUNER</p>  <p>Covers 3.5–54 MHz with a 7 m (23 ft) or longer wire antenna.</p>	<p>AH-2b ANTENNA ELEMENT</p>  <p>Covers 7–54 MHz. Use with AH-4.</p>	<p>AH-740 AUTOMATIC TUNING ANTENNA</p>  <p>Covers 2.5–30 MHz (amateur band). OPC-2321 is required.</p>	
<p>HM-219 HAND MICROPHONE</p>  <p>Same as supplied.</p>	<p>AH-710 FOLDED DIPOLE ANTENNA</p>  <p>Covers 1.9–30 MHz bands.</p>	<p>AH-5NV NVIS KIT</p>  <p>Fiberglass mobile mounting antenna element for use with AH-740. Covers 2.2–30 MHz (amateur band) with AH-740.</p>		
<p>EXTERNAL SPEAKERS</p>				
<p>SP-38 High quality audio and matching height</p>  <p>Max. input: 7 W</p>	<p>SP-23 4 audio filters, headphone jack</p>  <p>Max. input: 5 W</p>	<p>SP-33 Wooden box speaker.</p>  <p>Max. input: 5 W</p>	<p>SP-34 4 audio filters; headphone jack</p>  <p>Max. input: 5 W</p>	<p>SP-35 (2 m; 6.6 ft cable)</p> <p>SP-35L (6 m; 19.7 ft cable)</p>  <p>Compact mobile external speaker. Max. input: 7 W</p>
<p>DESKTOP MICROPHONES</p>		<p>IC-PW1 HF+50 MHz 1 kW HF LINEAR AMPLIFIER</p>  <p>OPC-599 is required.</p>		
<p>SM-50 Dynamic desktop microphone</p>  <p>Includes [UP/DOWN] switches and a low cut function.</p>	<p>SM-30 Compact, lightweight electret desktop microphone.</p> 			
<p>MB-118 MOBILE MOUNTING BRACKET</p>  <p>For mounting the radio in a vehicle.</p>	<p>CT-17 CI-V LEVEL CONVERTER</p>  <p>For remote transceiver control from a PC equipped with an RS-232C port.</p>	<p>RS-BA1 IP REMOTE CONTROL SOFTWARE</p> 	<p>RC-28 USB REMOTE ENCODER</p>  <p>For use with RS-BA1.</p>	

- **MB-123** CARRYING HANDLE
- **OPC-420** CONTROL CABLE for connection with AH-4 (10 m)
- **OPC-2321** CONTROL CABLE for connection with AH-740 (6 m)
- **OPC-599** CABLE ADAPTER Converts 13-pin ACC connector to 7-pin + 8-pin ACC connectors.

Supplied accessories: (May differ depending on version)
 • Hand microphone, HM-219 • DC power cable • Fuses • Plugs

Icom Inc.

1-1-32, Kamimimami, Hirano-Ku, Osaka 547-0003, Japan Phone: +81 (06) 6793 5302 Fax: +81 (06) 6793 0013

www.icom.co.jp/world

Count on us!

Your local distributor/dealer:

Icom America Inc.

12421 Willows Road NE,
Kirkland, WA 98034, U.S.A.
Phone: +1 (425) 454-8155
Fax: +1 (425) 454-1509
E-mail: sales@icomamerica.com
URL: <http://www.icomamerica.com>

Icom (Europe) GmbH

Communication Equipment
Auf der Krautweide 24
65812 Bad Soden am Taunus, Germany
Phone: +49 (6196) 76685-0
Fax: +49 (6196) 76685-50
E-mail: info@icomeurope.com
URL: <http://www.icomeurope.com>

Icom France s.a.s.

Zac de la Plaine,
1 Rue Brindejonc des Moulinais, BP 45804,
31505 Toulouse Cedex 5, France
Phone: +33 (5) 61 36 03 03
Fax: +33 (5) 61 36 03 00
E-mail: icom@icom-france.com
URL: <http://www.icom-france.com>

Icom Canada

Glenwood Centre #150-6165
Highway 17A, Delta, B.C.,
V4K 5B8, Canada
Phone: +1 (604) 952-4266
Fax: +1 (604) 952-0090
E-mail: info@icomcanada.com
URL: <http://www.icomcanada.com>

Icom Spain S.L.

Ctra. Rubi, No. 88 "Edificio Can Castanyer"
Bajos A 08174, Sant Cugat del Valles,
Barcelona, Spain
Phone: +34 (93) 590 26 70
Fax: +34 (93) 589 04 46
E-mail: icom@icomspain.com
URL: <http://www.icomspain.com>

Icom (Australia) Pty. Ltd.

Unit 1 / 103 Garden Road,
Clayton, VIC 3168 Australia
Phone: +61 (03) 9549 7500
Fax: +61 (03) 9549 7505
E-mail: sales@icom.net.au
URL: <http://www.icom.net.au>

Icom Brazil

Rua Itororó, 444 Padre Eustáquio
Belo Horizonte MG,
CEP: 30720-450, Brazil
Phone: +55 (31) 3582 8847
Fax: +55 (31) 3582 8987
E-mail: sales@icombrasil.com

Icom (UK) Ltd.

Blacksole House, Altrix Park,
Herne Bay, Kent, CT6 6GZ, U.K.
Phone: +44 (0) 1227 741741
Fax: +44 (0) 1227 741742
E-mail: info@icomuk.co.uk
URL: <http://www.icomuk.co.uk>

Shanghai Icom Ltd.

No.101, Building 9, Caifuxingyuan Park,
No.188 Maoling Road, Chedun Town
Songjiang District, Shanghai, 201611, China
Phone: +86 (021) 6153 2768
Fax: +86 (021) 5765 9987
E-mail: bjicom@bjicom.com
URL: <http://www.bjicom.com>