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, 50.000–54.000MHz.

Mode	SSB, CW, RTTY, AM, FM
Number of channels	101 (99 regular, 2 scan edges)
Antenna connector	SO-239 (50Ω)
Power supply requirement	13.8V DC ±15%
Power consumption Tx	21A (at 100W output power)
Power consumption Rx	0.9A typical (Standby), 1.25A (Maximum audio)
Operating temperature range	–10˚C to +60˚C; 14˚F to 140˚F
Frequency stability	Less than ±0.5ppm (–10˚C to +60˚C; 14˚F to 140˚F)
Frequency resolution	1Hz
Dimensions (W×H×D)	240×94×238mm; 9.45×3.7×9.37in (projections not included)
Weight (approximately)	4.2kg; 9.26lb

TRANSMITTER

Output power (HF/50MHz)		SSB/CW/FM/RTTY: 2–100W, AM: 1–25W
Modulation system	SSB	Digital P.S.N. modulation
	AM	Digital Low power modulation
	FM	Digital Reactance modulation
Spurious emissions		Less than –50dB (HF bands), Less than –63dB (50MHz band)
Carrier suppression		More than 50dB
Unwanted sideband		More than 50dB
Microphone impedance		600Ω

RECEIVER

Receiver system	Direct Sampling Superheterodyne			
Intermediate frequency	36kHz			
Sensitivity*4	0.5– 1.8MHz	1.8– 29.995MHz	28.0– 29.7MHz	50MHz band
SSB/CW (at 10dB S/N)	–	0.16µV	–	0.13µV
AM (at 10dB S/N)	12.6µV	2.0µV	–	1.0µV
FM (at 12dB SINAD)	–	–	0.5µV	0.25µV

*4 HF: Preamp 1 ON, 50MHz: Preamp 2 ON

Squelch sensitivity*4 (Threshold)	SSB: Less than 5.6µV, FM: Less than 0.3µV

*4 HF: Preamp 1 ON, 50MHz: Preamp 2 ON

Selectivity (sharp filter shape)	More than	Less than
SSB (BW: 2.4KHz)	2.4kHz/–6dB	3.4kHz/–40dB
CW (BW: 500Hz)	500Hz/–6dB	700Hz/–40dB
RTTY (BW: 500Hz)	500Hz/–6dB	800Hz/–40dB
AM (BW: 6kHz)	6.0kHz/–6dB	10kHz/–40dB
FM (BW: 15kHz)	12.0kHz/–6dB	22kHz/–40dB

Spurious and image rejection ratio	HF: More than 70dB / 50MHz: More than 70dB (Except for ADC Aliasing)
Audio output power	More than 2.5W (at 10% distortion with an 8Ω load, 1kHz)

TUNER

Frequency range	1.9–50MHz bands
Matching impedance range	16.7Ω–150Ω 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

DC Power Socket
Ground Terminal
Antenna Connector
Accessory Socket
USB Port
CI-V Remote Control Jack
External Speaker Jack
Tuner Socket
ALC Jack
SEND Jack
KEY Jack
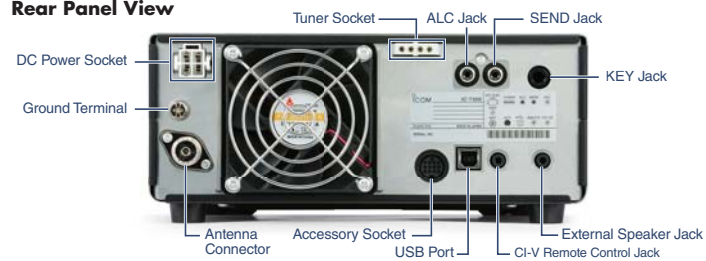
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OPTIONS

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

PS-126 DC POWER SUPPLY
13.8V DC, 25A max. output.

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

AH-2b ANTENNA ELEMENT
Covers 7–54MHz. Use with AH-4.

AH-740 AUTOMATIC TUNING ANTENNA
Covers 2.5–30MHz (amateur band). OPC-2321 is required.

HM-219 HAND MICROPHONE
Same as supplied.

AH-710 FOLDED DIPOLE ANTENNA
Covers 1.9–30MHz bands.

AH-5NV NVIS KIT
Fiberglass mobile mounting antenna element for use with AH-740. Covers 2.2–30MHz (amateur band) with AH-740.

EXTERNAL SPEAKERS

SP-23 4 audio filters; headphone jack Max. input power: 5W

SP-33 Wooden box speaker. Max. input power: 5W

SP-34 4 audio filters; headphone jack Max. input power: 5W

SP-35 (2m; 6.6ft cable)
SP-35L (6m; 19.7ft cable) Compact mobile external speaker. Max. input power: 7W

DESKTOP MICROPHONES

SM-50 Dynamic desktop microphone Includes [UP/DOWN] switches and a low cut function.

SM-30 Compact, lightweight electret desktop microphone.

IC-PW1 HF+50MHz 1kW HF LINEAR AMPLIFIER
OPC-599 is required.

MB-118 MOBILE MOUNTING BRACKET
For mounting the radio in a vehicle.

CT-17 CI-V LEVEL CONVERTER
For remote transceiver control from a PC equipped with an RS-232C port.

RS-BA1 IP REMOTE CONTROL SOFTWARE

RC-28 USB REMOTE ENCODER
For use with RS-BA1.

- **MB-123** CARRYING HANDLE
- **OPC-420** CONTROL CABLE for connection with AH-4 (10m)
- **OPC-2321** CONTROL CABLE for connection with AH-740 (6m)
- **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

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	5kHz–1000kHz
Resolution*	1 pixel minimum (approximately)
Waveform display area (vertical axis)	80dB
Reference level adjustment	–20dB to +20dB
Peak level hold function (Max. hold)	ON/OFF/last 10 seconds
Other functions	• Averaging indication • Touch screen operation • VBW (Video Band Width) adjustment

* Number of pixels shown at the 60dB 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.

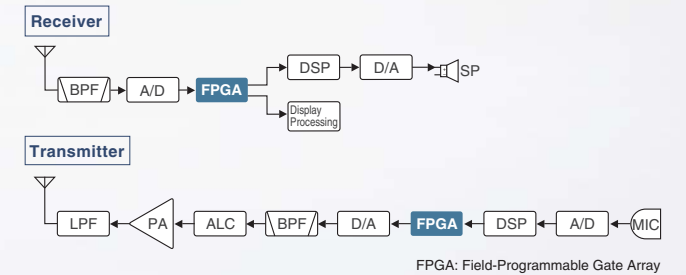Spectrum scope + Waterfall

■ 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

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.

Receiver
BPF / A/D / FPGA → DSP → D/A → SP / Display Processing

Transmitter
LPF ← PA ← ALC ← BPF ← D/A ← FPGA ← DSP ← A/D ← MIC

FPGA: Field-Programmable Gate Array

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 97dB* (typical value) and Phase Noise characteristics are improved about 15dB (at 1 kHz frequency separation) compared to the IC-7200. The superior Phase Noise characteristics reduce noise components in both receive and transmit signals.

* At 1 kHz frequency separation (received frequency: 14.2MHz, MODE: CW, IF BW: 500Hz)

■RMDR Characteristics Comparison
RMDR (dB)

■Phase Noise Characteristics Comparison*
Phase Noise (dBc/Hz)   * Transmission signal

Frequency Separation (kHz)
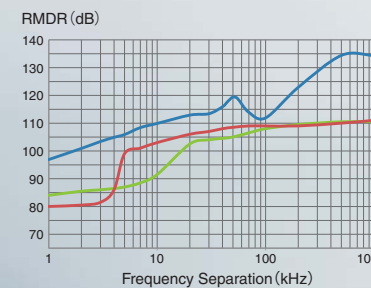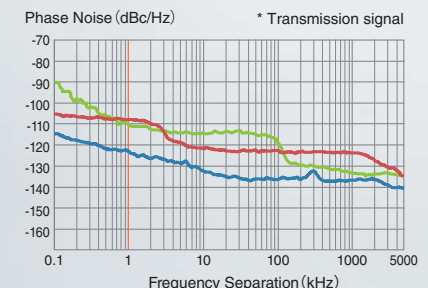
— IC-7300 — IC-7200 — IC-7100

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.
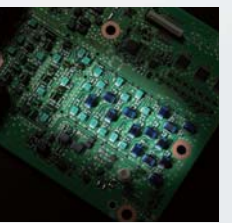
Built-In Automatic Antenna Tuner

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.
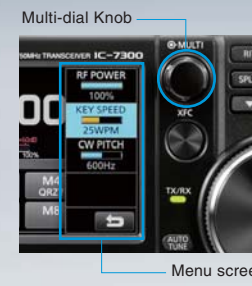
Touch screen interface

Setting screen

Band stacking register screen

Menu 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.
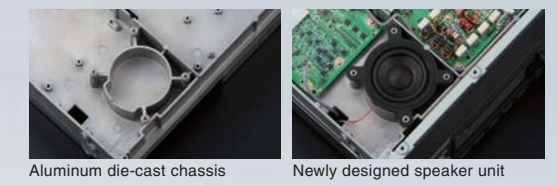
Multi-dial Knob

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

HF/50MHz TRANSCEIVER

IC-7300

Actual size