#### **HF/50MHz TRANSCEIVER**

#### **SPECIFICATIONS**

Tra <sup>1</sup> USA version. Varies a <sup>3</sup> Guaranteed range: 0.1 Mode Number of channels Antenna connector Power supply requireme Power consumption Tx Rx Dperating temperature r Frequency stability	500-29.999	10.100–10.150, 24.890–24.999 version. * <sup>2</sup> Son 50.000–54.00 SSB, CW, RT	3.500–3.999, 5 14.000–14.350, 0, 28.000–29.7 me frequency b 00MHz.	18.068–18.168, 00, 50.000–54.	21.000-21.450,			
*1 USA version. Varies a *3 Guaranteed range: 0.3 Mode Number of channels Antenna connector Power supply requireme Power consumption Tx Rx Operating temperature r Frequency stability	ccording to 500–29.999	10.100–10.150, 24.890–24.99 version. *2 Sol 50.000–54.00 SSB, CW, RT 101 (99 regula	14.000–14.350, 0, 28.000–29.7 me frequency b 00MHz.	18.068–18.168, 00, 50.000–54.	21.000-21.450,			
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<sup>43</sup> Guaranteed range: 0.1 Mode Number of channels Antenna connector Power supply requireme Power consumption Tx Rx Operating temperature r Frequency stability	500-29.999	9, 50.000–54.00 SSB, CW, RT 101 (99 regula	00MHz.	ands are not gi				
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Number of channels Antenna connector Power supply requireme Power consumption Tx Rx Operating temperature r Frequency stability	nt	101 (99 regula						
Antenna connector Power supply requireme Power consumption Tx Rx Operating temperature r Frequency stability	nt		SSB, CW, RTTY, AM, FM					
Power supply requireme Power consumption Tx Rx Operating temperature r Frequency stability	nt	SO-239 (50Ω)	101 (99 regular, 2 scan edges)					
Power consumption Tx Rx Operating temperature r Frequency stability	nt							
Power consumption Rx Operating temperature r Frequency stability		13.8V DC ±15%						
Operating temperature r Frequency stability	Power consumption Rx		21A (at 100W output power)					
Frequency stability			0.9A typical (Standby), 1.25A (Maximum audio)					
	Operating temperature range		-10°C to +60°C; 14°F to 140°F					
Frequency resolution	Frequency stability		Less than ±0.5ppm (-10°C to +60°C; 14°F to 140°F)					
		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/50MH	lz)		RTTY: 2–100W,	AM: 1–25W				
SS	B	Digital P.S.N. modulation						
Modulation system AN	1	Digital Low power modulation						
FN	1	Digital Reactance modulation						
Spurious emissions		Less than -50c	B (HF bands), L	.ess than –63dE	(50MHz band)			
Carrier suppression		More than 50dB						
Unwanted sideband		More than 50dB						
Microphone impedance		600Ω						
RECEIVER								
Receiver system		Direct Sampling						
Intermediate frequency		36kHz 0.5– 1.8MHz	36kHz					
	Sensitivity*4			28.0-29.7MHz				
SSB/CW (at		-	0.16µV	-	0.13µV			
AM (at 10dB		12.6µV	2.0µV	_	1.0µV			
	FM (at 12dB SINAD)		_	0.5µV	0.25µV			
*4 HF: Preamp 1 ON, 50								
Squelch sensitivity*4 (Th			n 5.6µV, FM: Le	ess than 0.3µV				
*4 HF: Preamp 1 ON, 50								
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 reje	ection ratio	HF: More than 70dB 50MHz: More than 70dB (Except for ADC Aliasing)						
Audio output power		More than 2.5	W (at 10% disto	rtion with an 89	2 load, 1kHz)			
TUNER								
Frequency range		1.9–50MHz bands						
Matching impedance range		16.7 $\Omega$ –150 $\Omega$ unbalanced (VSWR better than 1: 3)						
Tuning accuracy		VSWR 1: 1.5 or less						
Tuning time		2-3 seconds (	Maximum 15 se	econds)				



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# IC-7300



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# **HF/50MHz TRANSCEIVER** IC-7300

# Revolutionary

# **The Real HF Fun Starts Here**

## 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	<ul> <li>Averaging indication</li> <li>Touch screen operation</li> <li>VBW (Video Band Width) adjustment</li> </ul>		

\* 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.

## 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



LSB FIL2

Spectrum scope + Waterfall

7.073.00

<1> EDGE HOLD CENT/FIX EXPD/SET

VFO A



**HF/50MHz TRANSCEIVER** 

IC - 7300

## **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

Actual size

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** 15 Discrete Band-Pass Filters

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)



## 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.



#### **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.



## **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.





The IC-7300 has 15 discrete RF bandpass filters. The RF signal is only passed through one of the bandpass 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.

in case of an emergency. Transmission power





may be reduced.

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**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 chass



#### 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

