

 ICOM

144, 430/440, 1200 MHz ALL MODE TRANSCEIVER

# IC-9700

## Visually Seize the VHF/UHF World



The SD card shown in the photo is not supplied.



# High-Speed Real-Time Spectrum Scope, Waterfall Display, and Built-in 1200 MHz! This Supreme VHF/UHF Transceiver Provides a Brand New Experience!



144, 430/440, 1200 MHz ALL MODE TRANSCEIVER

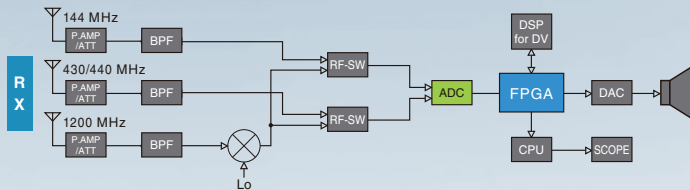
## IC-9700

### 144, 430/440, and 1200 MHz All Mode Transceiver Including Satellite, DV, and DD Modes

The IC-9700 is an all mode Tri-band transceiver, covering 2 m, 70 cm, and 23 cm. In addition to the traditional SSB, AM, FM, CW, and RTTY modes, the transceiver also incorporates D-STAR (Digital Smart Technology for Amateur Radio) DV and DD modes. A full featured Satellite mode is built-in! There are three antenna connectors, one each for 144, 430/440, and 1200 MHz.

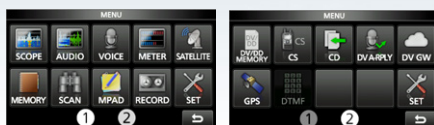
### The Icom's Digital Expertise

RF Direct Sampling, for 144 MHz and 430/440 MHz, is utilized in the IC-9700. For 1200 MHz, the Down Conversion IF Sampling method is adopted. In this system, signals are digitized by the ADC and processed in the FPGA. The signals are processed in the digital domain, thus eliminating distortion and other nonlinear elements seen in the legacy superheterodyne receivers. The outcome is that the signal purity is very high, and clear audio can be generated.



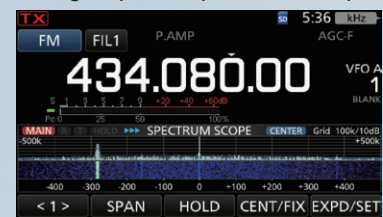
### Intuitive Touch Screen Display

The beautifully designed MENU screens enable you to navigate settings and functions with a simple touch. The expanded menu provides quick access to the Satellite and D-STAR functions. Additionally, a touch on-screen keyboard is available for entering alphanumeric memory channel names.



### Real-Time Spectrum Scope and Waterfall Display

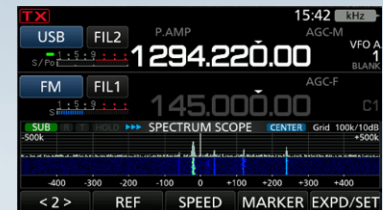
This is the first time for an Icom VHF/UHF transceiver to have a real-time spectrum scope and waterfall display comparable to an HF high tier transceiver. With the high-speed spectrum scope, you can instantly see the operating band condition. With a simple touch of the scope, you can tune the radio to the desired signals frequency. You can also view the receive signal history using the waterfall display.



Example

### Independent Receiver, Full Duplex Operation

The IC-9700 can simultaneously receive on two different bands, and two different modes. For example, you can receive on the 1200 MHz band in the SSB mode while receiving on the 144 MHz band in the FM mode. This function can be a significant advantage when participating in contests or searching for weak signals. Furthermore, the IC-9700 is Full Duplex, which enables you to transmit on the main band while receiving on the sub band.



Example

### Audio Scope Function

Making good use of the Audio Scope function, various audio characteristics, such as microphone compressor level, filter width, and keying waveform in the CW mode can be monitored. Transmit or receive audio can either be displayed on the FFT scope and the oscilloscope.

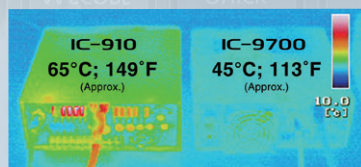




Actual size

## Newly Designed Power Amplifier

The power amplifier outputs stable power with high efficiency (144/430 MHz band: 100/75 watts). The cooling system prevents the PA from overheating, even when operating for a long time. That ensures reliable operation during contests. This amplifier is more energy efficient than previous models.

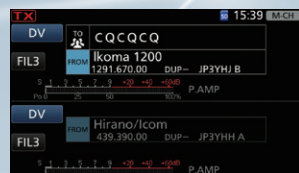


This is a comparison between two transceivers' rear chassis temperatures when continuously transmitting for 15 minutes. The IC-910\* rises to 65 °C while the IC-9700 rises only to 45 °C.

\* Japanese version example when testing at 50 W.

## D-STAR Operation Friendly Functions

The IC-9700 has the D-STAR Repeater (DR) function that has been well received by D-STAR enthusiasts. The DR function can be used on both the Main and Sub bands simultaneously to listen to two separate DV signals. Moreover, by using the DD mode, you can browse the Internet through a repeater station.

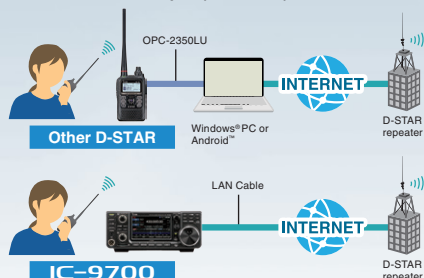


Example

## Built-in DV Gateway Functions

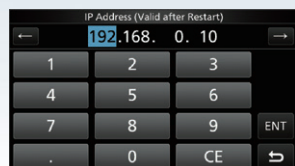
A static IP address can be set to the transceiver. If you set a global IP address to your router, you can use the Terminal mode or Access Point mode without any software applications.

### Connection example (AP mode)



\* These functions can be used only when using through D-STAR G3 repeater.

\* See the instruction manual that comes with the transceiver when operating.



Example

## Almost Identical User Interface to the IC-7300

The layout of the dials and keys, and the menu screens are almost the same as the IC-7300. If you are familiar with the IC-7300, you can operate the IC-9700 without hesitation. The IC-9700 is the perfect side-by-side companion to the IC-7300, enabling operations from HF to the 1200 MHz.



## Comprehensive Menus for Satellite Operation

The IC-9700's Satellite mode makes Satellite operation very easy. Even in the Satellite mode, you can use the high-quality spectrum scope.

### Normal and Reverse Tracking Functions

In addition to the Reverse Tracking function there is also a Normal Tracking function. Both functions simultaneously increase or decrease both the downlink and uplink frequencies in the same steps.

### AFC Function

Automatic Frequency Control follows the frequency change caused by the Doppler effect, thus maintaining a stable receive condition.

### Up to 99 Satellite Memory Channels

The IC-9700 has 99 satellite memory channels that enable you to store both uplink and downlink frequencies and operating mode. By just selecting a satellite memory channel, all of your satellite settings are completed.

### Other functions

- Loud and clear audio
- Compatible with the RS-BA1 Version 2 and CI-V commands
- Built-in server function
- Digital Twin PBT
- CW functions: Full break-in, CW memory keyer, CW reverse, CW auto tuning
- SD card slot
- TX/RX audio recording
- Screen capture...and more.

**SPECIFICATIONS**

GENERAL	
Frequency coverage	<USA/EXP version> 144.000-148.000, 430.000-450.000, 1240.000-1300.000 MHz
Mode	SSB, CW, RTTY, AM, FM, DV, DD
Number of memory channels	107 (99 Simplex + 6 Program scan edges + 2 CALL) × 3 bands, 99 (Satellite), 2500 (DR function)
Antenna connectors	144 MHz SO-239, 430/440, 1200 MHz Type-N
Power supply requirement	13.8 V DC ±15% (Negative ground)
Power consumption	Tx Less than 18 A (High power) Rx 1.2 A typical (Standby), Less than 1.8 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 (W × H × D, projections not included)	240 × 94 × 238 mm, 9.4 × 3.7 × 9.4 in
Weight (approximately)	4.7 kg, 10.4 lb

TRANSMITTER			
Output power	<SSB/CW/RTTY/FM/DV/DD>	<AM>	
	144 MHz	0.5-100 W	0.125-25 W
	430/440 MHz	0.5-75 W	0.125-18.75 W
	1200 MHz	0.1-10 W	0.025-2.5 W
Modulation system	SSB	Digital PSN modulation	
	AM	Digital Low Power modulation	
	FM	Digital Reactance modulation	
	DV/DD	Digital GMSK modulation	
Spurious emissions	<Harmonics>	<Out-of-band emission>	
	144 MHz	Less than -63 dB	Less than -60 dB
	430/440 MHz	Less than -61.8 dB	Less than -60 dB
	1200 MHz	Less than -53 dB	Less than -50 dB
Carrier suppression	More than 50 dB		
Unwanted sideband	More than 50 dB		
Microphone impedance	600 Ω		

RECEIVER			
Receiver system	144, 430/440 MHz RF Direct Sampling 1200 MHz Down Conversion IF Sampling		
Intermediate frequency (1200 MHz band)	311-371 MHz		
Sensitivity (Preamp: ON, Filter: SOFT)			
	SSB/CW (10 dB S/N)	Less than 0.11 μV	
	AM (10 dB S/N)	Less than 1.0 μV	
	FM (12 dB SINAD)	Less than 0.18 μV	
	DV (1% BER) (PN9)	Less than 0.35 μV	
	DD (1% BER) (PN9) (1200 MHz only)	Less than 1.59 μV	
Selectivity (Filter: SHARP)	More than	Less than	
	SSB (BW=2.4 kHz)	2.4 kHz/-3 dB	3.6 kHz/-60 dB
	CW (BW=500 Hz)	500 Hz/-3 dB	700 Hz/-60 dB
	RTTY (BW=500 Hz)	500 Hz/-3 dB	700 Hz/-60 dB
	AM (BW=6 kHz)	6 kHz/-3 dB	15 kHz/-60 dB
	FM (BW=15 kHz)	12 kHz/-6 dB	20 kHz/-60 dB
	DV (12.5 kHz spacing)	-50 dB	-
	DD (300 kHz spacing)	-40 dB	-
Spurious and image rejection ratio	144, 430/440 MHz	1200 MHz	
	SSB/CW	More than 70 dB	More than 50 dB
	AM/FM/DV	More than 60 dB	More than 50 dB
	DD	-	More than 50 dB
Audio output power:	More than 2.0 W (1 kHz, 10% distortion) into an 8 Ω load		

**REAR PANEL**



- A** 144 MHz Antenna Connector
- B** 430/440 MHz Antenna Connector
- C** DC Power Socket
- D** 1200 MHz Antenna Connector
- E** LAN Port
- F** 10 MHz Reference Signal Input
- G** Accessory Socket
- H** Data Jack
- I** USB Type B Port
- J** CI-V Remote Control Jack
- K** KEY Jack
- L** External Speaker Jack MAIN
- M** External Speaker Jack SUB
- N** Ground Terminal

**SUPPLIED ACCESSORIES**

- HM-219 HAND MICROPHONE
- DC power cable

**OPTIONS**



**HM-219**  
Hand microphone with UP/DOWN switches (Same as supplied)



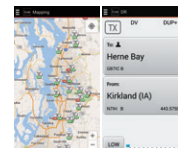
**SM-50**  
Dynamic desktop microphone including [UP/DOWN] switches and a low cut function



**SP-38**  
External speaker with high quality audio, matching height (Maximum input: 7 W)



**RS-BA1 (Version 2)**  
IP remote control software



**RS-MS1A**  
Remote control application for Android™. Download free from Google Play™.

- **SM-30** Compact, lightweight electret desktop microphone
- **SP-41** External speaker with two input lines
- **SP-35** External speaker (2 m, 6.6 ft cable)
- **MB-118** Mobile mounting bracket
- **MB-123** Carrying handle
- **OPC-2350LU** PC/Android™ data cable
- **CS-9700** Programming software
- **RS-MS3A** Terminal/Access point mode application for Android™

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