

 ICOM

Pre-release Information

HF/VHF/UHF TRANSCEIVER

**IC-9100**

430-470MHz  
200-220MHz  
144MHz  
7MHz-50MHz  
Satellite  
D-STAR  
GPS



THE ALL-ROUND  
TRANSCEIVER

# MULTI-BAND, MULTI-MODE ALL IN ONE RADIO

The IC-9100 contains years of advanced Icom technology in a compact, all-in-one HF/VHF/UHF transceiver. This radio covers most ham bands and modes, and provides a wide variety of operating styles. Whether you're working DX QSO, RTTY, D-STAR DV, satellite, or even moonbounce, Icom's years of technological experience is working right along with you. The IC-9100H's double conversion super-heterodyne system with an image rejection mixer reduces intermodulation distortion. Icom's IF DSP technologies offer a host of digital features to guard against QRM and QRN, no matter which band you choose to explore.



HF/VHF/UHF TRANSCEIVER

# IC-9100



## Multi-band, dual independent receiver

The IC-9100 covers 100W on HF, 50MHz and 144MHz, 75W on 430/440MHz bands and 10W on the 1200MHz band.\*1 The radio simultaneously receives two different bands (1. HF/50MHz + VHF/UHF, 2. VHF + UHF, 3. 430/440MHz + 1200MHz) and works as if there are two independent receivers in one radio. For example, you can arrange a 7MHz schedule QSO using a D-STAR repeater on VHF/UHF band, while watching 7MHz band activity using the simple band scope.



▲Simple band scope screen

\*1 Optional UX-9100 1200MHz band unit required.



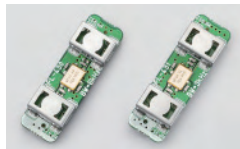
## 32-bit DSP & double conversion superheterodyne

Much like the technology in Icom's high-end HF radios, Icom has used a double conversion superheterodyne system and an image rejection mixer in the IC-9100's HF to 430/440MHz bands. Each main and sub-receiver has a dedicated DSP unit providing flexible digital IF filters, AGC time constant, twin PBT, manual and auto notch filter, noise reduction, noise blanker, etc.



## Optional 1st IF filters for HF/50MHz bands

The IC-9100 comes with a built-in 15kHz 1st IF (roofing) filter and can accept up to two optional filters (3kHz FL-431 and 6kHz FL-430) in front of the 1st IF amplifier stage. The 3kHz filter is especially effective in CW and SSB modes to eliminate overloading caused by strong signals just outside the passband.



▲Optional FL-430 and FL-431



## Optional D-STAR DV mode (Digital Smart Technology for Amateur Radio)

A world first HF digital voice communications for amateur radio! Work D-STAR DV mode in the IC-9100 by adding the optional UT-121 D-STAR module. The DV mode is available in 28MHz and 50MHz bands simplex mode as well as in VHF and UHF bands. 28MHz or 50MHz DX operation using DV mode will give you a new fun. In addition, the D-STAR repeater (DR) mode operation makes it easy to access D-STAR repeaters.



▲Optional UT-121



## USB connector for PC control

Modulator, received audio, RTTY demodulator, DV mode data can also be transferred over the USB cable. By using appropriate 3rd party software, you can control as well as operate many of the digital modes via the single USB connection. Using the CI-V data format, the IC-9100 can be controlled by a PC through a USB or CT-17 level converter.



CI-V remote control jack (left) and USB connector on the rear panel ▲



## GPS position reporting functions

The IC-9100 has a GPS button on the front panel. Your position data is shown on the display and can be sent to other stations in DV mode\*2. When a calling station transmitting GPS data via DV mode is received, the IC-9100 displays the distance and direction to the station. GPS A mode is supported.



▲Direction and distance to RX station

\*2 Optional UT-121 D-STAR unit required. External GPS receiver can be connected via USB or data 1 connectors. Also, position data can be entered manually.



## Satellite mode operation

The satellite mode synchronizes the uplink (transmitting) and downlink (receiving) frequencies and shifts the frequencies in the same tuning step. 20 alphanumeric satellite memory channels store frequencies operating mode and tone settings for quick setting.



▲Satellite mode screen



## Optional CS-9100 programming software

When used with the optional CS-9100 programming software, alphanumeric memory channels, callsigns, filter widths and AGC settings can be easily made from a PC via USB cable connection. Share your memory channels info and radio settings.



## RTTY demodulator and decoder

The built-in RTTY demodulator and decoder allow you to read an RTTY message on the air instantly. No external units or PC required.



## Optional 1200MHz band unit

By installing the optional UX-9100 1200MHz band unit, the IC-9100 extends the coverage to the 1200MHz band. You can also enjoy L/V or L/U mode satellite operation.



▲Optional UX-9100

## And more....

- Built-in automatic antenna tuner for HF and 50MHz bands
- Band edge beep function
- Built-in voice synthesizer announces operating frequency, mode and S-meter level
- Electronic keyer jack on the front panel
- 4 channel CW mode memory keyer
- VSC (Voice Squelch Control) function
- Multi function meter shows signal strength, output power, SWR, ALC and compression level
- Main and sub-receiver external speaker connectors

# SPECIFICATIONS

## GENERAL

- Frequency coverage\*1 : (Unit:MHz)
 

|          |  |                     |
|----------|--|---------------------|
| Receive  | 0.030– 60.000*2                          | 136.000– 174.000*2  |
|          | 420.000–480.000*2                        | 1240.000–1320.000*3 |
| Transmit | 1.800– 1.999                             | 3.500– 3.999        |
|          | 5.3305, 5.3465, 5.3665, 5.3715, 5.4035*4 |                     |
|          | 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     |
|          | 1240.000–1320.000*3                      |                     |
- \*1 Showing USA version. Varies according to version.
- \*2 Some frequency bands are not guaranteed.
- \*3 With UX-9100. \*4 USB only
- Mode : USB, LSB, CW, RTTY, FM, AM\*5, DV (with UT-121)
  - (\*5 Transmit : HF/50MHz only, Cannot receive on 1200MHz band)
- Number of memory : 297 Ch (99 Ch for each HF/50 channels
 

|                                       |
|---------------------------------------|
| MHz, 144MHz, 430/440 MHz band)        |
| 3 call Ch (1 Ch for each band)        |
| 18 carrier edges (6 Ch for each band) |
| 20 satellite memories and             |
| 26 GPS memories                       |
- Power supply requirement : 13.8V DC  $\pm$ 15%
- Operating temp. range : 0°C to +50°C; +32°F to +122°F

- Antenna connector :
 

|            |                                  |
|------------|----------------------------------|
| HF/50MHz   | SO-239 (50 $\Omega$ ) $\times$ 2 |
| 144MHz     | SO-239 (50 $\Omega$ )            |
| 430/440MHz | Type-N (50 $\Omega$ )            |
- Frequency stability : Less than  $\pm$ 0.5ppm (0°C to +50°C)
- Current drain :
 

|          |                 |
|----------|-----------------|
| Transmit | Max. power 24A  |
| Receive  | Max. audio 5.5A |
- Dimensions (W $\times$ H $\times$ D) : 315 $\times$ 116 $\times$ 343 mm; (projections not included) 12 $\frac{1}{2}$  $\times$ 4 $\frac{9}{16}$  $\times$ 13 $\frac{1}{2}$  in
- Weight (approx.) : 11kg; 24.3lb

## TRANSMITTER

- Output power :
 

| SSB/CW/RTTY/FM/DV | HF/50MHz | 144MHz | 430/440MHz |
|-------------------|----------|--------|------------|
| AM                | 2–100W   | 2–100W | 2–75W      |
|                   | 2–25W    | –      | –          |
- Spurious emissions :
 

|                |                   |
|----------------|-------------------|
| 1.8– 29.995MHz | Less than –50dB   |
| 50MHz/144MHz   | Less than –63dB   |
| 430/440MHz     | Less than –61.8dB |
- Carrier suppression : More than 40dB
- Unwanted sideband : More than 55dB suppression

## RECEIVER

- Intermediate frequencies :
 

|            |                  |
|------------|------------------|
| HF/50MHz   | 64.455MHz, 36kHz |
| 144MHz     | 10.850MHz, 36kHz |
| 430/440MHz | 71.250MHz, 36kHz |
  - Sensitivity :
 

|        | 0.5–1.8MHz*1 | 1.8–29.9MHz*1          | 50–54MHz*2   | 144/440MHz   |
|--------|--------------|------------------------|--------------|--------------|
| SSB/CW | –            | 0.20 $\mu$ V           | 0.16 $\mu$ V | 0.11 $\mu$ V |
| AM     | 15.8 $\mu$ V | 2.5 $\mu$ V            | 2.0 $\mu$ V  | 1.4 $\mu$ V  |
| FM     | –            | 0.63 $\mu$ V (28–29.7) | 0.40 $\mu$ V | 0.18 $\mu$ V |
| DV     | –            | 1.26 $\mu$ V (28–29.7) | 0.79 $\mu$ V | 0.35 $\mu$ V |
- SSB/CW, AM : 10dB S/N, FM : 12dB SINAD, DV : 1% BER  
\*1 Preamp1 ON. \*2 Preamp2 ON.
- Selectivity :
 

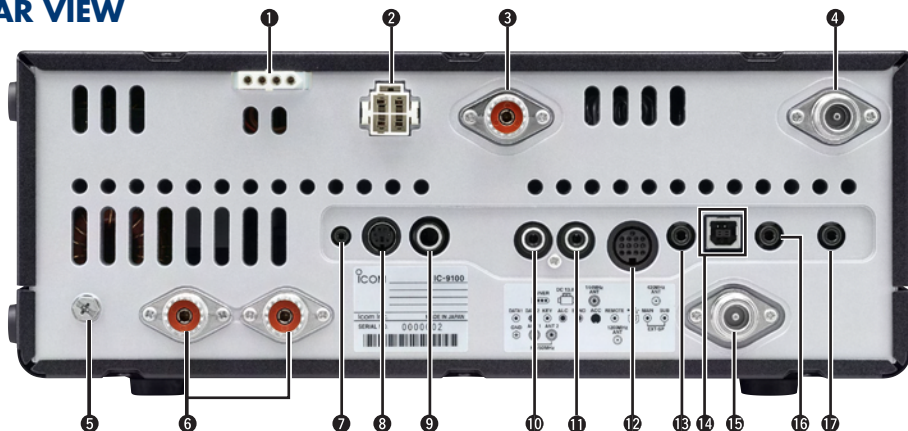
|                      |                 |              |
|----------------------|-----------------|--------------|
| SSB (BW=2.4kHz)      | 2.4kHz/–6dB     | 3.8kHz/–60dB |
| CW (BW=500Hz)        | 500Hz/–6dB      | 900Hz/–60dB  |
| RTTY (BW=350Hz)      | 350Hz/–6dB      | 650Hz/–60dB  |
| AM (BW=6kHz)         | 6.0kHz/–6dB     | 15kHz/–60dB  |
| FM (BW=15kHz)        | 12.0kHz/–6dB    | 20kHz/–60dB  |
| DV (12.5kHz spacing) | More than –50dB |              |
  - Spurious and image rejection ratio:
 

|            |                |
|------------|----------------|
| HF/50MHz   | More than 70dB |
| 144/440MHz | More than 60dB |
  - Audio output : More than 2.0W (8 $\Omega$  load, 10% dist.)

## OPTIONS

- **HM-36** HAND MICROPHONE
- **SM-50** DESKTOP MICROPHONE
- **SP-21** EXTERNAL SPEAKER
- **SP-23** EXTERNAL SPEAKER
- **PS-126** DC POWER SUPPLY (13.8V/25A)
- **OPC-1457** DC POWER CABLE
- **AH-4** HF+50MHz AUTOMATIC ANTENNA TUNER
- **AH-2b** ANTENNA ELEMENT for use with AH-4
- **MB-123** CARRYING HANDLE
- **CT-17** CI-V LEVEL CONVERTER
- **IC-PW1/EURO** HF+50 MHz 1 kW LINEAR AMPLIFIER
- **CS-9100** CLONING SOFTWARE
- **OPC-1529R** DATA COMMUNICATION CABLE
- **UX-9100** 1200MHz BAND UNIT
- **AG-25** 144MHz WEATHERPROOF PREAMPLIFIER
- **AG-35** 430/440MHz WEATHERPROOF PREAMPLIFIER
- **UT-121** D-STAR DIGITAL UNIT
- **FL-430** 6kHz 1st IF FILTER (for HF/50MHz)
- **FL-431** 3kHz 1st IF FILTER (for HF/50MHz)

## REAR VIEW



- 1 Tuner Socket
- 2 DC Power Socket
- 3 144MHz Antenna Connector
- 4 430/440MHz Antenna Connector
- 5 Ground Terminal
- 6 HF/50MHz Antenna Connectors
- 7 Data1 Jack
- 8 Data2 Jack
- 9 Key Jack
- 10 ALC Input Jack
- 11 Send Control Jack
- 12 ACC Socket
- 13 CI-V Remote Control Jack
- 14 USB Connector
- 15 1200MHz Antenna Connector (With optional UX-9100)
- 16 External Speaker Jack (Main)
- 17 External Speaker Jack (Sub-band)

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