

2013 Europe Edition



# HAM RADIO PRODUCTS

All Band Transceivers



Mobile Transceivers



Handheld Transceivers



Base Station Transceivers



Icom's flagship HF transceiver

+40dBm 3rd order intercept point (in the HF bands)

Three hi-spec 1st IF filters (roofing filters)

Two completely independent receiver circuits

Four 32-bit DSP units and 24-bit AD/DA converters

Digital IF filter

200W output power and high-stability transmitter

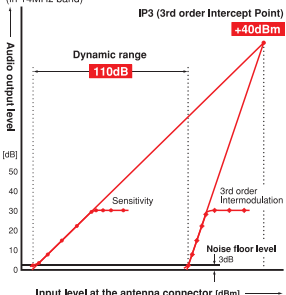


## HF/50MHz TRANSCEIVER IC-7800

### +40dBm IP3 (3rd order Intercept Point)

Icom's considerable analog RF circuit experience combined with cutting-edge digital technology results in an astonishing 110dB receiver dynamic range and a +40dBm IP3 in the HF bands – the first in ham radio! To achieve this superior receiver performance, Icom's engineering team completely re-engineered all of the analog circuitry to match the DSP system.

Dynamic range characteristics (in 14MHz band)



BP F unit



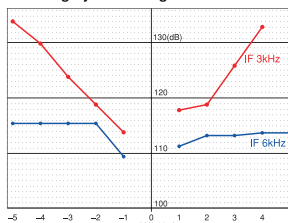
DIGI-SEL unit

### Three Hi-spec 1st IF Filters (Roofing Filter)\*1

In addition to selectable 6kHz and 15kHz roofing filters, the IC-7800 has a 3kHz roofing filter before the 1st IF amplifier. It provides 134dB\*2 (approx.) of blocking dynamic range and allows you to pull out a weak signal while blocking strong adjacent signals. (The FM mode filter is fixed at 15kHz.)

\*1 Icom calls the roofing filters "hi-spec 1st IF filters", because their performance is much better than regular IF filters. \*2 At 14.1MHz receive, with 5kHz separation of interference signal.

Blocking dynamic range characteristics



MODE: CW  
P.AMP: OFF  
Rx BW=500Hz  
Blocking signal freq.=14.100MHz fix  
Blocking signal source=xtal osc  
RX freq.=variable



Hi-spec 1st IF filters (Roofing filters)

### Two Completely Independent Receiver Circuits

Dual receivers allow you to receive on two different bands simultaneously in different modes, without the receivers affecting each other.

### Quad Processing

The IC-7800 incorporates four independent, 32-bit DSP units and 24-bit AD/DA converters. By having four independent DSP units, the radio responds to operator changes in an instant, as each DSP unit is dedicated to a single function. While each receiver has its own dedicated DSP unit, there is a DSP unit for transmit as well as a DSP unit for the spectrum scope.

### Digital IF Filter

Icom's digital IF filters give you performance that is not possible with crystal or mechanical filters. They allow the operator to adjust filter shape (sharp or soft), filter bandwidth, and center frequency characteristics, without missing the action. Multiple filter memories store the most-recently used filter settings for each operating mode.



Filter preset screen

### Ultra High Stability OXCO Unit

The IC-7800 uses the OXCO (Oven Control Crystal Oscillator) unit which is stable to within  $\pm 0.05$ ppm from 0°C to 50°C. This specification means that even on the 50MHz band, frequency error is less than 2.5Hz!

# Base Station Transceivers



## 200W Output Power, Built-in

The power amplifier uses push-pull power MOS-FETs with a 48V DC supply. They provide a powerful 200W of output at 100 percent duty cycle. An effective cooling system maintains internal temperatures within a safe range and prevents thermal runaway.



PA Unit and heat sink

## Real-time Spectrum Scope

With its own dedicated DSP unit, the IC-7800's spectrum scope provides excellent sensitivity and 80dB of dynamic range. This scope rivals many of today's commercial test instruments. The display spans  $\pm 2.5$ kHz to  $\pm 250$ kHz in 7 steps, covering up to 500kHz of spectrum!



Example of spectrum scope centered on the receiving frequency.

Example of fixed spectrum scope range.

## 7-inch Wide Color TFT LCD

An active matrix 7-inch (800x400 pixel) TFT color display was selected for the IC-7800. This large display shows main and sub-band frequencies, settings, and operating parameters, as well as the spectrum scope, S-meter, and RTTY/PSK31 decoded messages. The "virtual" S-meter needle swings smoothly and accurately, just like an analog meter.

## Other Outstanding Features

**[Antenna and receiver]** • 4 antenna connectors with automatic antenna selector • Automatic antenna tuner • Special preamp and mixer circuit optimized for 50MHz band • 3-step manual notch filter • Digital twin PBT eliminates interference from adjacent signals • 16-step noise reduction

**[CW mode]** • DSP-controlled CW keying waveform shaping • Multi-function electronic keyer with adjustable keying speed, dot-dash ratio and paddle polarity • APF selection (soft/sharp)

**[Operation]** • High-quality digital voice memory • Triple band stacking register • Built-in RTTY and PSK31 modulator and demodulator • Message memory for CW, RTTY and PSK31 operations • Twin peak audio filter for RTTY operation • CF memory card for storing customized personal settings • 101 memory channels • AGC control for fine tuning of the AGC time constant • Microphone equalizer and adjustable transmit bandwidth • FFT scope averaging function for PSK and RTTY decode • Screen saver function • 137kHz band operation



**+40dBm 3rd order intercept point (in the HF bands)**

**2nd order intercept point higher than +110dBm**

**Excellent inband IMD specifications**

**Three hi-spec 1st IF filters (roofing filters)**

**7-inch wide color TFT LCD**

**32-bit DSP units and 24-bit AD/DA converters**

**200W output power and high-stability transmitter**

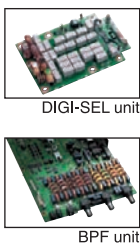
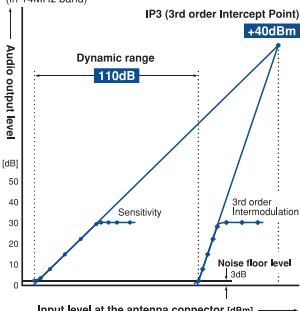


## HF/50MHz TRANSCEIVER IC-7700

### +40dBm IP3 (3rd order Intercept Point) and 110dB Dynamic Range

The IC-7700 employs mechanical relay BPF switching, a digitally tuned pre-selector, and three hi-spec 1st IF filters (roofing filters) in a clean and simple double conversion super-heterodyne design. By balancing the analog and DSP functions, the IC-7700 provides superior sensitivity simultaneously with a superb dynamic range of 110dB, and +40 dBm IP3 (even in USB mode with 2.4kHz filter bandwidth).

Dynamic range characteristics (in 14MHz band)

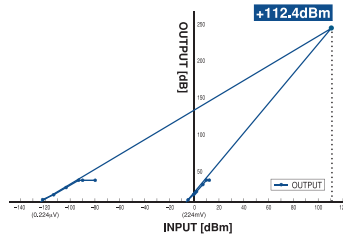


### More than +110dBm IP2 (2nd order intercept point)

An IP2 point of more than +110dBm\* means 2nd order distortion from strong broadcast stations will be completely eliminated. The continuous pursuit of leading analog circuit engineering makes it possible to achieve this leading edge level of performance.

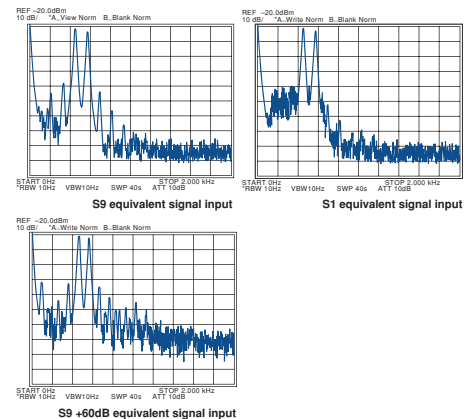
\* The IP2 figure is a typical value.  
\*\* Measurements were made using custom equipment, due to the limits of normal signal generators (SG) and duplexers to +85dBm.

IP2 (2nd order Intercept Point)



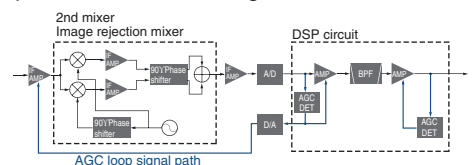
### High Specification Inband IMD

Inband IMD (Intermodulation Distortion) creates undesired spurious signals as a consequence of non-linear processing of multiple signals. All (2nd, 3rd or even higher) orders of IMD performance are superior in the IC-7700. The improvement will be especially evident in CW mode. You'll notice the difference as you copy weak signals without internal distortion or noise.



### Two AGC Loops

The IC-7700 has two AGC loops. The AGC voltages are derived both before and after the digital IF filter in the DSP unit. The first AGC loop prevents the saturation of the 1st IF amplifier from strong signals outside the pass-band filter. The second AGC loop detects the AGC voltage at the digital IF filter output which contains only the desired signal, obtaining full performance from the digital IF filter.



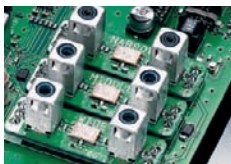
# Base Station Transceivers



## Three Hi-spec 1st IF Filters (Roofing filter)

Now a proven formula, the IC-7700 employs custom three hi-spec 1st IF filters (roofing filters) to achieve approximately 134dB\*1 of blocking dynamic range.

\*1 At 14.1MHz receive, with 5kHz separation of interference signal.



Hi-spec 1st IF filters (Roofing filters)

## 7-inch Wide Color TFT LCD

An active matrix 7-inch (800x400 pixel) TFT color display shows main and sub-band frequencies, settings, and operating parameters, as well as the spectrum scope, S-meter, and RTTY/PSK31 decoded messages in vivid color. The "virtual" S-meter needle swings smoothly and accurately, like an analog meter.

## Real-time Spectrum Scope

With its own dedicated DSP unit, the IC-7700's spectrum scope provides excellent sensitivity and 80dB of dynamic range. The display spans  $\pm 2.5\text{kHz}$  to  $\pm 250\text{kHz}$  in 7 steps, covering up to 500kHz of spectrum!

## USB connectors on the Front Panel

Two USB connectors on the front panel allows you to easily connect a USB keyboard or USB flash drive to save transceiver settings, update firmware, or transfer settings to another IC-7700.



Two USB connectors

## Other Outstanding Features

**[Antenna and receiver]** • 4 antenna connectors with automatic antenna selector • BNC type RX IN/OUT connectors • Automatic antenna tuner • Preamp for 50MHz band • 3-step manual notch filter • Digital twin PBT

eliminates interference from adjacent signals • 16-step noise reduction

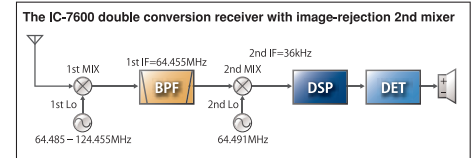
**[CW mode]** • DSP-controlled CW keying waveform shaping • Multi-function electronic keyer with adjustable keying speed, dot-dash ratio and paddle polarity • APF selection (soft/sharp) • Double key jack system

**[Operation]** • Built-in power supply • High quality digital voice memory • Message memory for CW, RTTY and PSK31 • Built-in RTTY and PSK31 modulator and demodulator • Twin peak audio filter for RTTY operation • Triple band stacking register • 101 memory channels • AGC control for fine tuning of the AGC time constant • Microphone equalizer and adjustable transmit bandwidth • FFT scope averaging function for PSK and RTTY decode • Screen saver function





superheterodyne system which has an image rejection mixer for the 2nd mixer stage. When compared to a typical triple conversion system, the double conversion system is more difficult to implement but it dramatically reduces signal distortion and provides a high-linearity RF signal to the DSP processor.



## HF/50MHz TRANSCEIVER IC-7600

+30dBm IP3

Improved inband IMD

5.8 inch ultra-wide viewing angle TFT display

### Dual DSP for Transmitter/Receiver and Spectrum Scope

Two separate 32-bit DSP units power the transmitter/receiver and spectrum scope. These processors give the IC-7600 high

performance comparable to our top-of-the-line IC-7800 and IC-7700, thanks to the combination of dual DSP and our analog RF design expertise.



Dual DSP

### 104dB Dynamic Range and +30dBm IP3 (3rd order Intercept Point)

An astonishing 104dB receiver dynamic range and +30dBm IP3 in the 14MHz band without sacrificing receiver sensitivity is a standard specification be fitting the IC-7600. Even a weak signal adjacent to strong signals is clearly received by the IC-7600.

### Double Conversion Superheterodyne Improves Inband IMD

The IC-7600 employs a double conversion

### Other Features

- 5.8-inch Ultra-wide Viewing Angle TFT Display
- Dual AGC Loops Controlled by DSP
- Three Built-in 1st IF (roofing) Filters, Including 3kHz

**[Antenna and receiver]**

- 2 TX/RX antenna connectors and RX antenna connector
- Automatic antenna tuner
- Auto notch filter and manual notch filter
- Digital twin PBT
- 16-step noise reduction
- Dual watch

**[Transmitter]**

- Tx monitor function
- Tone encoder
- VOX operation
- All mode power control

**[CW mode]**

- CW Waveform controlled by the DSP
- Multi-function electronic keyer with adjustable keying speed, dot-dash ratio and paddle polarity
- APF selection (soft/sharp)
- Double key jack system



superheterodyne design with an image rejection mixer for the 2nd mixer stage is employed in the IC-7410. This receiver design not only reduces the electronic complexity, it greatly reduces the number of internal distortion points from older triple and quadruple conversion receivers.

### +30dBm Class IP3 (3rd order Intercept Point)

In Icom's continuing efforts to create the best receiver, the design of the IC-7410 incorporates the latest in DSP software technology and Icom's analog RF circuit experience for a +30dBm\* (typ.) IP3. The end result, clear reception of weak signals surrounded by QRM from broadcast and neighboring ham stations. \* Typical in 14MHz band. Spacing=100kHz

### Other Features

- Three First IF Filters (3/6/15kHz)
- Digital Twin PBT
- AGC loop management with programmable AGC time constant
- Auto/manual Notch Filter provides more than 70dB attenuation
- Noise Reduction
- Noise Blanker
- RF Speech Compressor
- User programmable tone control
- Three First IF Filters (3/6/15kHz)
- Wide Range of DSP Features
- Built-in voice synthesizer
- User programmable band edge beep
- VSC (Voice Squelch Control) function
- Two preamplifier types: Preamp 1: Improving IMD characteristics, Preamp 2: High gain preamplifier
- 20dB built-in attenuator
- Built-in automatic antenna tuner

## HF/50MHz TRANSCEIVER IC-7410

Faster DSP unit and in-house DSP expertise

Double-conversion superheterodyne

+30dBm class third-order intercept point (IP3)

### Faster DSP Unit and In-house DSP Expertise

Icom brings out the best DSP performance

combining more than ten years of DSP technical know-how and much faster DSP processors. Icom's in-house DSP experts have developed a IC-7400 series replacement that every operator will be proud to own. In addition to the higher speed DSP, the AD/DA converter, AK4620, provides a higher dynamic range and superior S/N ratio.



<DSP unit> ADSP-21369  
Internal clock speed: 333MHz  
32-bit floating point DSP  
Max. performance: 2000MFLOPS

<AD/DA converter> AK4620  
ADC Signal/(Noise+Distortion):100dB  
DAC Dynamic range, S/N: 113dB  
DAC Signal/(Noise+Distortion): 97dB  
DAC Dynamic range, S/N: 115dB

### Double-conversion Superheterodyne

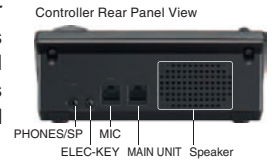
Introduced with the IC-7800, a conversion

# Base Station Transceivers



## Controller Mounted Speaker and Jacks

The unique remote head design is perfect for providing loud, clear audio as well as jacks for an external speaker/headphones as well as a key and microphone.



## HF, 50/70/144/430MHz Multi-band, Multi-mode

The IC-7100 fully covers the HF, 50, 70, 144, 430MHz amateur bands in multiple modes, providing 100W on HF/50MHz bands, 50W on 70/144MHz band and 35W on 430MHz band.

## D-STAR DV Mode (Digital Voice + Data)

The IC-7100 provides D-STAR DV mode digital voice and low speed data communication.

## IDR (D-STAR Repeater) Mode Operation

The DR mode operation makes the D-STAR operation simple and straight forward, even if you are new to D-STAR operation.

## INear Repeater Function

With an external, 3rd party GPS\*, search the internal database based on your location.

\* External GPS receiver or manual data input required.

## Other Features

- Digital Features Controlled by the IF DSP
- DSP Controlled AGC Function Loop
- SD Memory Card Slot for Saving Data
- Easy Vehicle Mounting with Optional MBF-1
- Optional RS-BA1 IP Remote Control Software
- Built-in RTTY Functions
- CW full break-in, CW receive reverse, CW auto tuning
- Optional multi-function microphone, HM-151
- Band scope and SWR graphic display
- RF speech compressor controlled by the DSP
- Voice memory function
- Multi-function Meter
- 495 regular, 4 call, 6 scan edge and 900 DR mode repeater channels
- 4 channels TX voice memories
- $\pm 0.5$ ppm frequency stability
- Auto reply function\*
- Digital callsign squelch and digital code squelch\*
- 12kHz IF output for DRM (Digital Radio Mondiale) receive
- \* D-STAR DV mode only

HF/VHF/UHF ALL MODE TRANSCEIVER

## IC-7100

Intuitive Touch Screen Interface

Controls at Your Fingertips with an Angled Display

HF, 50/70/144/430MHz Multi-band, Multi-mode

## Intuitive Touch Screen Interface

The innovative touch screen interface provides quick and smooth operation for setting and editing various functions and memories.

## One Touch Selection

For example, if you want to change the operating band, tap the frequency on the display. The band keys will be shown to select the operating band. Touching the multi-function meter indicator for 1 second will quickly change the transmit meter functions.



## Straight Forward Operation

Just tap the mode, filter, function etc, you need to change. The touch screen responds naturally, changing your settings.



## Software Keypad

Entering frequency, callsign or editing memory channels has never been this easy. The software keypad on the touch screen allows you to input alphanumeric characters incredibly quickly.



## Touch Screen Control Portal

The radio control head features a large, multi-function, "touch screen" dot-matrix LCD display that is positioned for easy view and operation. The controller is compact in size, making it ideal for limited vehicle or desktop space.

## Resistive Touch Screen

The 48.6x75.9 mm; large resistive touch screen display can be operated while wearing gloves.

IP REMOTE CONTROL SOFTWARE

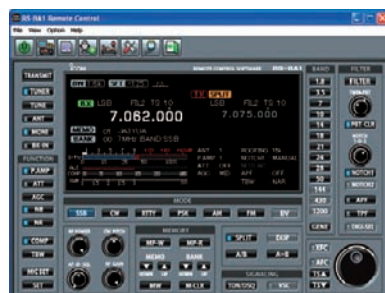
## RS-BA1

## Optional RS-BA1 IP Remote Control Software

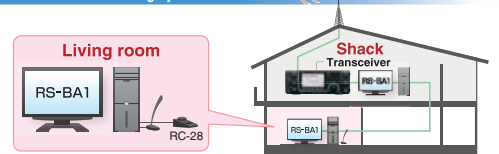
The optional RS-BA1 allows you to use the transceiver from another room using your home network, or even from a remote location over the Internet. The RS-BA1 has low voice latency.



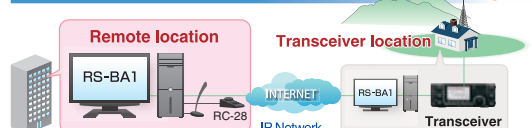
USB REMOTE ENCODER RC-28



IP Remote Control through your Home Network



IP Remote Control over the Internet



# Base Station Transceivers



## HF/50MHz TRANSCEIVER IC-7200

IF DSP

Rugged design for outdoor use

100W output power

### IF DSP

The latest IF DSP technology is employed in the IC-7200. While the IC-7200 is an entry-class transceiver, advanced digital features such as flexible filter width and shape setting, digital noise reduction and auto notch filter are comparable to higher class models.

### Rugged Design for Outdoor Use

The rugged design of the IC-7200 means your enjoyment of this rig is not limited only to your shack. Waterproof protection technologies used in Icom's marine radios are applied to the buttons and knobs on the front panel to provide a basic measure of protection against water intrusion\*. \* IC-7200 is NOT waterproof.

### Other Features

- AGC loop management
- High stability transmitter
- USB connector for PC control
- Digital Twin PBT
- Manual notch filter
- RIT
- VOX
- $\pm 0.5$  ppm frequency stability
- LCD backlight (Hi/Lo/Off)
- CI-V interface
- 201 memory channels
- Built-in 20dB attenuator
- Preamp
- Dial lock
- Auto tuning step function
- 1Hz step tuning
- Band stacking register
- Built-in voice synthesizer
- Quick split
- Front facing speaker



## HF/VHF/UHF TRANSCEIVER IC-7000

IF DSP – First in its class

2-point Manual Notch Filter  
more than 70dB attenuation

2.5-inch color TFT display

### IF DSP – First in Its Class

Digital IF filter, manual notch filter, digital twin PBT, AGC loop management, digital noise reduction and more. The latest digital features are incorporated in this compact radio by two DSP chips that deliver superior processing performance. Of course, those digital features work on all ham bands — HF, 50, 144MHz to the 430MHz band.

### 2-point MNF (Manual notch filter)

Pull out the weak signals in crowded band conditions with Icom's new two-point MNF (manual notch filter). Apply 70 dB of rejection to two signals at once! Notch width is adjustable — wide, middle and narrow — and an auto-tuning notch filter is available, too.

### Other Outstanding Features

- 2.5-inch color TFT display
- 35W output on 430MHz band
- $\pm 0.5$  ppm high stability crystal unit
- 8 direct access buttons for user-friendly operation
- Digital voice recorder for transmit and receive
- Built-in RTTY demodulator
- Remote control microphone, HM-151
- Fixed-mode and center-mode band scope
- Multi-function meter and SWR graphic displays
- Front panel separation with optional separation cable
- Built-in voice synthesizer



## HF TRANSCEIVER IC-718

Simple, straightforward  
operation with keypad

General coverage receive with  
superior performance

Optional DSP capability

### Simple Operation

The IC-718 is equipped with a minimum number of buttons and controls for simple feature selection. The 10-key pad on the front panel allows direct entry of an operating frequency or a memory channel number. The auto tuning step function is activated when turning the dial quickly and helps speed up tuning. The band stacking register is convenient when changing operating bands.

### Front Mounted Loud Speaker

The IC-718 has the speaker mounted on the front panel. With the speaker facing the operator, audio will be heard clearly and directly while operating.

### Optional DSP Capability, UT-106

The optional DSP unit gives you noise reduction and auto notch filter functions for extra receiver performance.

### Other Features

- General coverage receiver
- Built-in electronic keyer
- Built-in microphone compressor
- Combined squelch and RF gain control
- Preamp and attenuator
- 101 memory channels
- CW full break-in
- IF shift interference rejection
- 1Hz tuning
- VOX function for hands-free operation
- Optional automatic antenna tuner
- Digital S/Rf meter





## HF/VHF/UHF TRANSCEIVER

# IC-9100

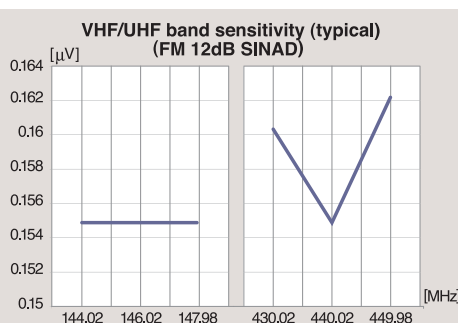
Superb readability in the VHF/UHF band

Ready-to-install 1200MHz band unit

Satellite mode operation

### Superb Readability in the VHF/UHF Band

The IC-9100 provides excellent receiver sensitivity in the VHF/UHF bands, equivalent to the highly-acclaimed previous VHF/UHF dedicated model, the IC-910H. The IF DSP greatly improves intermodulation and noise elimination and offers better readability than the IC-910H.



### Ready-to-install 1200MHz Band Unit

By installing the optional UX-9100 1200MHz band unit, you can be operational on the 1200MHz band immediately. The IC-9100 fully covers the HF/50, 144, 430 and 1200MHz amateur bands in multiple modes.



UX-9100, 1200MHz band unit

### Satellite Mode Operation

The satellite mode synchronizes the uplink (transmitting) and downlink (receiving) frequencies, and tracks the frequencies in the same tuning step. This function matches both normal and reverse mode satellites. Compensation of the Doppler effect can be performed easily. 20 satellite memory channels store frequencies, mode and tone settings for quick set-up.

### Double Conversion Superheterodyne

Icom's basic idea about the best receiver circuit is to reproduce high fidelity audio without internal distortion. Our answer to achieve this goal is to adopt a double conversion superheterodyne system\*. The double conversion system simplifies the electronic circuitry and reduces the number of components which cause internal distortion. The digital signal processing (DSP) technologies and image rejection mixer make it possible to adopt this system.

\* A triple conversion system is used for the 1200MHz band.

### +30dBm Class IP3

Using receiver design techniques introduced in Icom's highest grade HF transceivers, the IC-9100 has an IP3 of +30dBm\* in the HF band. Even a weak signal adjacent to strong signals is clearly received by the IC-9100.

\* Typical in 14MHz band. Spacing=100kHz

### Three First IF Filters (3/6/15kHz) for HF/50MHz Band

The IC-9100 comes with a built-in 15kHz 1st IF filter and can accept up to two optional filters (3kHz FL-431 and 6kHz FL-430). By changing the first IF filter width according to the operating mode, the desired is protected from adjacent inband signals at the later stages for better receiver performance.



1st IF filters (6kHz, 3kHz)

### Other Features

- Optional D-STAR\* DV mode (\* Digital Smart Technology for Amateur Radio)
- Independent dual receivers
- 32-bit floating point DSP & 24-bit AD/DA converters
- AGC loop management
- Digital IF filter
- Digital twin PBT and IF shift
- Noise reduction
- Noise blanker
- RF speech compressor
- Adjustable transmit bandwidth
- HF/50MHz, 144MHz 100W, 430/440MHz 75W
- RTTY demodulator and decoder
- Ample CW functions
- Built-in Antenna Tuner for HF/50MHz band
- Manual notch filter and auto notch filter
- Large, Multi-function LCD
- USB connector for PC control
- Optional CS-9100 programming software
- Optional RS-BA1 IP remote control software



UT-123 D-STAR unit and GPS receiver

**GPS**  
With UT-123



VHF/UHF DUAL BAND TRANSCEIVER  
**IC-E2820**

**D-STAR DV mode plus GPS receiver with optional UT-123**

**Wideband receiver\*1 with diversity receive capability**

**50W output power on 144 and 430MHz bands**

**D-STAR DV Mode + GPS Receiver With Optional UT-123**

The optional UT-123 module provides D-STAR (Digital Smart Technology for Amateur Radio) DV mode operation plus GPS receiver capability. Simultaneously send your current position, own callsign and up to a 20-character message along with your digital voice transmission. When location is provided by a calling station, the transceiver displays the distance and direction to the station.

**Wideband Receiver With Simultaneous Receive Capability**

The transceiver receives 118–549.995 and 810–999.990MHz\*1 with dualwatch receiver capability that allows you to receive two bands simultaneously (including within a single band).

**Other Features**

- The large 93x28 mm (3.66x1.1 in) full dot-matrix display
- Separate controller from main unit
- 50W output on both VHF/UHF bands
- Total of 522 memory channels
- 16 DTMF memory channels
- 50 CTCSS and 104x2 DTCS encoder/decoder\*2
- Diversity receive capability
- ±2.5ppm high frequency stability with TCXO unit
- Green to amber variable display background
- 9600 bps packet terminal, mini-DIN (6-pin) connector
- Max 45 channel/sec. high speed scan capability in programmed scanning mode
- Band scope function

\*1 Receiver range differs depending on version.

\*2 FM mode only.



VHF/UHF DIGITAL TRANSCEIVER  
**ID-E880**

**D-STAR DV mode capability**

**DR (D-STAR repeater) mode for easy setup**

**CS-80/880 free download software**

**D-STAR Repeater List and DR Mode Operation**

The D-STAR repeater list stores up to 300 channels of repeater call signs, frequencies, gateway call signs, duplex direction and offset frequency with channel names of up to 8 characters. The D-STAR repeater (DR) mode operation makes it easier to use a D-STAR repeater.

**GPS Position Reporting Functions**

Your position data is shown on the display and can be sent to other station\*1. In addition, the GPS A mode assists in D-PRS mode operation to send your position information to an APRS server.

**Other Features**

- CS-80/880 free download software
- Total of 1052 memory channels
- 16 DTMF memories
- 50 CTCSS and 104x2 DTCS encoder/decoder\*2
- Wideband receiver\*3
- Detachable controller
- Backlit LCD
- Auto power off and on
- Power save

\*1 3rd party GPS receiver is required.

\*2 FM mode

\*3 Receiver range differs depending on version.



1200MHz DIGITAL TRANSCEIVER  
**ID-1**



**128kbps data and 4.8kbps digital voice communication**

**PC remote control software**

**Wireless Internet access**

**4.8kbps DV (digital voice) Mode and 128kbps\* DD (data) Mode**

The ID-1 has three modes — analog FM, digital voice and data mode operation. The built-in AMBE® vocoder chip provides digitally modulated, clear audio as well as 128kbps wireless data transmission. In DD mode operation, you can use various Internet applications wirelessly by connecting to a PC with Ethernet and USB cables.

\* Maximum speed.

**PC Remote Controller Supplied**

The PC controller software is supplied with the ID-1. When the ID-1 is connected to a PC, most functions of the ID-1 can be controlled from the PC screen. The controller software is convenient for editing memory channels, writing short data messages, and checking received call records, etc.

**Other Features**

- Wireless Internet access\*1
- Digital callsign squelch (DSQL) and digital code squelch (CSQL)
- Short data message in DV mode
- Automatic Frequency Control (AFC) function for FM and DV mode
- S-meter squelch
- Programmed, memory and select mode scan
- Break-in communication
- Enhanced Monitor Request (EMR) function
- Auto repeater function for FM mode\*2
- Stand-by beep

\*1 Within a D-STAR repeater service area.

\*2 Depending on version.

IPX7

GPS

Lightweight & Compact Body

V/V, U/U, V/U Dualwatch

Independent AM/FM Receiver



### Lightweight & Compact Body

The ID-51E has a compact 58x105.4x26.4 mm body, and weighs only 255g (approx.) with battery pack and antenna. In this slim body, the ID-51E contains 5W output power, VHF/UHF dual band, D-STAR and integrated GPS receiver.



### V/V, U/U, V/U Dualwatch

The dualwatch function monitors VHF/VHF, UHF/UHF and VHF/UHF bands simultaneously.\* The audio and squelch levels can be set separately for the main and sub-bands.



V/V, U/U Dualwatch example

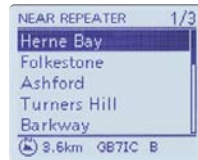
\*DV/DV, AM/AM, FM-N/FM-N and DV/FM-N modes dualwatch not available.

### Independent AM/FM Receiver

FM and AM broadcast stations can be listened to while using the dualwatch function for monitoring ham bands. When a ham band signal is received, the broadcast station is automatically muted.

### Automatic Repeater List-up Function

Using the GPS position information, the automatic repeater list-up function shows the list of nearby D-STAR repeaters from the memory\* and helps you quickly access the nearby D-STAR repeater.



Repeater list example

\*To use the automatic repeater list-up function, the position data of the repeater is required. The ID-51E will be shipped with D-STAR repeater memories preprogrammed, but the position data of some D-STAR repeaters may not be available.

### Integrated GPS Receiver

The integrated GPS receiver provides fast start-up time and accurate position. Your current position and altitude are shown on the display and offers a position reporting function in DV mode. The GPS-A mode assists in easy D-PRS operation.

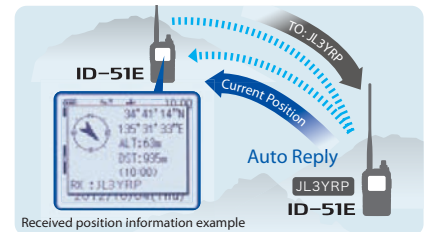


GPS receiver transparent image

### Automatic Reply Function (DV Mode)

When receiving a call addressed to your call sign, the ID-51E can automatically reply your current position information\*. Between ID-51E's communication, replied position information can pop up on the caller's display.

\*Function not available on all D-STAR networks.



Received position information example

### IPX7 Waterproof Construction

The ID-51E has superior IPX7 waterproof protection (1m depth of water for 30 minutes). It can be used in harsh outdoor environments, when hiking, mountain biking, touring and mountain sports.



### Other Features

- 5W output power
- Direct rapid charging
- Long lasting battery pack
- CS-51 cloning software supplied

## VHF/UHF DIGITAL TRANSCEIVER ID-51E

Compact & Lightweight

IPX7 Waterproof

Built-in GPS Receiver

### Lightweight & Compact Body

The ID-31E has a compact 58x95x25.4 mm body, and weighs only 225g (approx.) with battery pack and antenna. It's easy for carrying around all the time anywhere.

### IPX7 Waterproof Construction

The ID-31E provides superior waterproof protection equivalent to IPX7 (1m depth of water for 30 minutes). Ideal for use in harsh outdoor environments.

### Built-in GPS Receiver

The built-in GPS receiver shows your current position and altitude on the display and offers a position reporting function in DV mode. The GPS log function logs your position information

at regular intervals (1 second-60 seconds, depending on the setting) and memorizes this in the microSD card to export to your PC. In addition, the GPS-A mode assists in easy D-PRS mode operation.

### Other Features

- Automatic Repeater List-up Function
- microSD Card Slot
- Full Dot-matrix Display & Directional Keypad
- Automatic speech function announces the received call sign
- Digital code squelch
- Digital call sign squelch
- One touch reply function
- DR (D-STAR Repeater) mode
- Automatic reply function
- Analog FM mode (Wide/Narrow)
- Built-in CTCSS/DTCS encoder and decoder (for analog FM)
- 16 DTMF memory channels (24 digits)
- Squelch release function to monitor a weak signal
- Optional CT-17, CI-V level converter for remote radio control

IPX7

GPS



## UHF DIGITAL TRANSCEIVER ID-31E

# Handheld Transceivers



**DIGITAL**  
**IPX7**  
**GPS**  
 With HM-175GPS

Photo includes optional HM-175GPS.

## VHF/UHF DUAL TRANSCEIVER **IC-E92D**

**D-STAR DV mode capability**

**GPS position reporting function with optional GPS speaker-mic\*1**

**Rugged waterproof protection equivalent to IPX7 rating**

### Rugged Waterproof Protection

The IC-E92D and optional HM-175GPS have superior waterproof protection and is equivalent to IPX7 (1m depth of underwater for 30 minutes), which you can count on in harsh outdoor environments.

### Optional GPS Speaker-microphone

Used with the optional HM-175GPS, the IC-E92D shows your position data on the display and offers automatic position reporting in DV mode. In addition, the GPS-A mode enables easy D-PRS system operation.

### Wideband Receiver with Dualwatch Capability

The IC-E92D has dualwatch receiver capability, allowing you to receive\*2 on two bands simultaneously (including the same band).

### Other Features

- 5 Watts (typical) output
- Total of 1304 memory channels
- Large dot-matrix LCD
- 10 DTMF memories
- 50 CTCSS and 104x2 DTCS encoder/decoder\*3
- External DC power jack (10-16V DC acceptable)
- Simple band scope
- Optional PC remote control capability
- Built-in voice recorder records an incoming call for up to 30-seconds (approx., DV mode)
- Backlit LCD
- Auto power save, power off and power on
- 26 memory banks with selected bank and bank link scanning

\*1 Optional GPS speaker-microphone, HM-175GPS required.

\*2 Receiver range differs from depending on version.

\*3 FM mode

## D-STAR repeater



**ID-RP2C :**  
 Repeater controller

One unit is required for each repeater station and connects up to 4 RF modules. Transfers the received signal to the specified RF module or the Internet gateway server.



**ID-RP2D :**  
 1.2GHz DD mode RF module

The ID-RP2D is the DD mode RF module for 1.2GHz. It provides 128kbps high speed data communication.

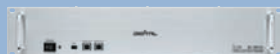


Photo shows ID-RP2V.

**ID-RP2V :** 1.2GHz DV mode RF module  
**ID-RP2000V :** 144MHz DV mode RF module  
**ID-RP4000V :** 430MHz DV mode RF module

These are DV (digital voice) mode RF modules for the respective bands. With a combination of these RF modules, cross band operation with 144/430/1200MHz bands is available.



**RS-RP2C :**  
 Internet gateway software

The Internet gateway (GW) connects the D-STAR repeater station to the Internet and links multiple D-STAR repeater stations via the Internet.

**750mW (typ.) loud audio with a BTL amplifier**

**Powerful 5.5W of output power**

**IP54 and MIL-STD-810 rugged construction**

### 750mW Loud Audio

The IC-V80E uses a BTL (bridged load) amplifier that doubles the audio output. The 36mm large speaker delivers 750mW of loud and intelligible audio\*. Great for noisy environments.

\* Typical value using with internal speaker.

### Other Features

- A total of 207 memory channels
- Built-in CTCSS/DTCS
- Internal VOX function
- Program, memory, skip, priority and tone scans
- Power save function
- BNC type antenna connector
- TOT (time out timer) setting

- 1750Hz tone for European repeater access
- Repeater lockout and busy channel lockout
- PC programmable with optional CS-V80
- Transceiver-to-transceiver cloning with optional OPC-474
- Direct keypad frequency entry
- DTMF autodial memories
- Auto power off
- LCD backlight
- Wide/narrow channel spacing

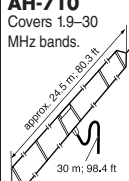
## 144MHz FM TRANSCEIVER **IC-V80E**



# OPTIONS FOR BASE STATION TRANSCEIVERS










MODEL NAME	HAND MICROPHONES				DESKTOP MICROPHONES			EXTERNAL SPEAKERS	
	HM-36	HM-103	HM-151	HM-198	SM-30	SM-50	SM-27	SP-21	SP-23
IC-7800	✓				✓	✓			
IC-7700	✓				✓	✓			
IC-7600	✓				✓	✓			
IC-7410	✓				✓	✓			✓
IC-7100	(Use with OPC-589)	✓	✓	✓	(Use with OPC-589)	(Use with OPC-589)		✓	✓
IC-7200	✓				✓	✓		✓	
IC-7000			✓		(Use with OPC-589)	(Use with OPC-589)	✓	✓	
IC-718	✓				✓	✓	✓	✓	✓
IC-9100	✓				✓	✓	✓	✓	✓






MODEL NAME	EXTERNAL SPEAKERS		DC POWER SUPPLY	ANTENNA ELEMENT	ANTENNA TUNERS		AUTOMATIC TUNING ANTENNA	NVIS KIT	CONTROL CABLE ADAPTER
	SP-33	SP-35	PS-126 13.8V/25A 4-pin type	AH-2B Covers 7–54MHz	AH-4 Covers 3.5–54MHz	AT-180 Covers 1.8–54MHz.	AH-740 Covers 2.5–30MHz. (amateur band) OPC-2321 is required.	AH-5NV Fiberglass antenna element for use with AH-740. Covers 2.2–30MHz (amateur band) with AH-740.	OPC-2321 For use with AH-740
IC-7800	✓								
IC-7700	✓								
IC-7600			✓	✓	✓		(Use with OPC-2321)	✓	✓
IC-7410			✓	✓	✓		(Use with OPC-2321)	✓	✓
IC-7100		✓	✓	✓	✓	✓	(Use with OPC-2321)	✓	✓
IC-7200			✓	✓	✓	✓	(Use with OPC-2321)	✓	✓
IC-7000		✓	✓	✓	✓	✓	(Use with OPC-2321)	✓	✓
IC-718			✓	✓	✓	✓	(Use with OPC-2321)	✓	✓
IC-9100			✓	✓	✓	✓	(Use with OPC-2321)	✓	✓

MODEL NAME	FOLDED DIPOLE ANTENNA	FILTERS			CI-V CONVERTER	HIGH STABILITY CRYSTAL UNIT	DSP UNIT	LINEAR AMPLIFIER	CARRYING HANDLES	HANDLE
	AH-710 Covers 1.9–30 MHz bands. 	FL-430 6kHz 1st IF FILTER (For HF/ 50MHz band)	FL-52A 500Hz/–6dB FL-53A 250Hz/–6dB FL-222 1.8kHz/–6dB FL-257 3.3kHz/–6dB		CT-17	CR-338 Frequency sta- bility: ±0.5ppm	UT-106	IC-PW1EURO	MB-23 MB-106 MB-117 MB-121 MB-123  Photo shows MB-23.	MB-116
IC-7800							✓			
IC-7700							✓			
IC-7600							✓			
IC-7410		✓					(Use with OPC-599)	(Use MB-121)		
IC-7100							(Use with OPC-599)	(Use MB-123)		
IC-7200	✓						(Use with OPC-599)	(Use MB-117)	✓	
IC-7000							(Use with OPC-599)	(Use MB-106)		
IC-718	✓				✓		(Use with OPC-599)	(Use MB-23)		
IC-9100		✓	(Accepts only one filter)				(Use with OPC-599)	(Use MB-123)		

✓ : Applicable    □ : Not applicable










# OPTIONS FOR BASE STATION TRANSCEIVERS








MODEL NAME	MOBILE MOUNTING BRACKETS		MOUNTING BASE	CONTROLLER BRACKETS		SEPARATION CABLES		MIC ADAPTER CABLE	ADAPTER CABLE
	MB-62	MB-118	MBF-1	MB-105A	MBA-1	OPC-1443 3.5m;11.5ft OPC-1444 5.0m;16.4ft	OPC-2253 3.5m;11.5ft OPC-2254 5.0m;16.4ft	OPC-589 8-pin connector microphone to 8-pin modular	OPC-599 13-pin ACC socket to 7-, 8-pin ACC sockets
IC-7800									
IC-7100	✓		(Use with MBA-1)		✓		✓	✓	✓
IC-7200		✓							✓
IC-7000	✓		(Use with MB-105A)	✓		✓		✓	✓
IC-718		✓							✓
IC-9100									✓

MODEL NAME	CLONING SOFTWARE		P. REMOTE CONTROL SOFTWARE	USB REMOTE ENCODER	D-STAR UNIT	DATA CABLES		DC POWER CABLES	1200MHz BAND UNIT
	CS-9100 A USB cable (A-B type) is required for programming.	CS-7100	RS-BA1	RC-28 For use with RS-BA1	UT-121	OPC-1529R Data 1 jack to RS-232C	OPC-2218LU Data 1 jack to USB	OPC-025A 20A cable OPC-1457/R 30A cable OPC-2095 30A cable	UX-9100
IC-7800									
IC-7100		✓	(Possible)	✓		✓	✓	(Use OPC-1457)	
IC-7200			(Possible)	✓				(Use OPC-2095)	
IC-7000			✓	✓				(Use OPC-2095)	
IC-718			✓	✓				(Use OPC-1457)	
IC-9100	✓		(Possible with CT-17)	✓	✓	✓	✓	(Use OPC-1457R)	
			✓	✓		✓	✓	(Use OPC-025A)	✓
								(Use OPC-2095)	

: Applicable       : Not applicable

# OPTIONS FOR MOBILE TRANSCEIVERS










MODEL NAME	HAND MICROPHONES			MOUNTING BASE	EXTERNAL SPEAKER	CONTROLLER	DC POWER CABLES	SEPARATION CABLES	MICROPHONE CABLES
	HM-154 	HM-133/V w/DTMF keypad 	HM-103 	MBF-1 	SP-35 2m cable SP-35L 6m cable 	RC-24 	OPC-347 7.0m OPC-1132A 3.0m 	OPC-1663 3.4m OPC-1712 10cm 	OPC-440A 5.0m: 16.4ft OPC-647 2.5m: 8.2ft 
IC-E2820	✓	✓ (Use HM-133)		✓	✓		✓	✓	✓
ID-E880	✓	✓ (Use HM-133)	✓	✓	✓		✓		✓
ID-1	✓				✓	✓			✓










MODEL NAME	MIC ADAPTER CABLE	DATA CABLES			CLONING CABLES			CLONING SOFTWARE	DIGITAL UNIT
	OPC-589 8-pin connector microphone to 8-pin modular 	OPC-1529R For data com- munication and PC cloning 	OPC-2218LU USB cable 	OPC-474 Between trans- ceivers 	OPC-478 Transceiver to PC RS-232C cable 	OPC-478UC Transceiver to PC USB cable 	CS-2820 CS-80/880* Optional OPC-478, OPC-478UC, OPC-1529R or OPC-2218LU cable required for programming.	UT-123 With GPS receiver 	
IC-E2820	✓	✓	✓	✓	✓	✓	✓ (Use CS-2820)	✓	
ID-E880	✓	✓	✓	✓	✓	✓	✓ (Use CS-80/880)		
ID-1									

\* CS-80/880 is available for free download from: <http://www.icom.co.jp/world/support/index.html>










: Applicable     : Not applicable

# OPTIONS FOR HANDHELD TRANSCEIVERS










MODEL NAME	BATTERY CASES			BATTERY PACKS					DESKTOP CHARGERS
	BP-257 LR6 (AA)×2 cells	BP-263 LR6 (AA)×6 cells	BP-273 LR6 (AA)×3 cells	BP-256 (Li-Ion) 7.4V/1620mAh(min.) 1700mAh(typ.)	BP-264 (Ni-MH) 7.2V/1400mAh	BP-265 (Li-Ion) 7.4V/1900mAh(min.) 2000mAh(typ.)	BP-271 (Li-Ion) 7.4V/1150mAh(min.) 1200mAh(typ.)	BP-272 (Li-Ion) 7.4V/1880mAh(min.) 2000mAh(typ.)	BC-177 Rapid charger Includes AC adapter
ID-51E									
ID-51E			✓				✓	✓	
ID-31E			✓				✓	✓	
IC-E92D	✓			✓					✓
IC-V80E		✓			✓	✓			

MODEL NAME	DESKTOP CHARGERS				AC ADAPTERS			WALL CHARGER	
	BC-191 Rapid charger (For BP-264)	BC-192 Regular charger (For BP-264)	BC-193 Rapid charger (For BP-265)	BC-197 Rapid multi-charger	BC-202 Rapid charger	BC-123S*1 12V/1A	BC-206S BC-147S*2 12V/200mA	BC-157S 12V/6.6A	BC-167S*3 12V/500mA
ID-51E									
ID-51E					✓ (Use with BC-123SE)	✓ (Use with BC-202)	Photo shows BC-147S.		✓
ID-31E					✓ (Use with BC-123SE)	✓ (Use with BC-202)			✓
IC-E92D									✓
IC-V80E	✓ (Use with BC-123SE)	✓ (Use with BC-147SA/SV/206SE)	✓ (Use with BC-123SE)	✓ (Use with BC-157S)		✓ (Use with BC-191 or BC-193)	✓ (Use with BC-192)	✓ (Use with BC-197)	

\*1 BC-123SA for USA, SE for Europe, and SV for Australia versions available. \*2 BC-147SA for USA, SV for Australia version available. BC-206SE for Europe version available.  
\*3 BC-167SA for USA, SD for Europe and SV for Australia version available.

MODEL NAME	CHARGER ADAPTERS		CIGARETTE LIGHTER CABLES			DC POWER CABLES			SPEAKER-MICROPHONES
	AD-120*4 For BP-264	AD-121*4 For BP-265	CP-12L with noise filter	CP-19R with noise filter	CP-23L	OPC-254L/LR	OPC-515L	OPC-656 12-20V DC CABLE	HM-75LS
ID-51E									
ID-51E			✓	✓		✓	✓		✓
ID-31E			✓	✓		✓	✓		✓
IC-E92D			✓	✓	✓ (Use with BC-177)	✓	✓		
IC-V80E	✓ (Use with BC-197)	✓ (Use with BC-197)			✓ (Use with BC-191 or BC-193)		✓ (Use with BC-191, BC-192 or BC-193)	✓ (Use with BC-197)	

\*4 Either AD-120 or AD-121 is supplied with the BC-197, depending on version.

MODEL NAME	SPEAKER-MICROPHONES						EARPHONE-MICROPHONES		
	HM-131	HM-158LA	HM-159LA	HM-174 IPX7	HM-175GPS IPX7 GPS	HM-186LS	HM-153/LA	HM-153LS	HM-166
ID-51E									
ID-51E						✓	✓ (Use HM-153 with OPC-2144)	✓	✓ (Use with OPC-2144)
ID-31E						✓	✓ (Use HM-153 with OPC-2144)	✓	✓ (Use with OPC-2144)
IC-E92D	✓ (Use with OPC-1797)			✓	✓		✓ (Use HM-153 with OPC-1797)		✓ (Use with OPC-1797)
IC-V80E		✓	✓				✓ (Use HM-153LA)		

✓ : Applicable    □ : Not applicable



# OPTIONS FOR HANDHELD TRANSCEIVERS

MODEL NAME	EARPHONE-MICROPHONES	HEADSETS			EARPHONE	PLUG ADAPTERS			
	HM-166LS	HS-94 Earhook type with boom microphone	HS-95 Behind-the-head type	HS-97 Throat microphone type	SP-13	OPC-1797	OPC-2004	OPC-2006LS	OPC-2144
ID-51E	✓	(Use with OPC-2006LS)	(Use with OPC-2006LS)	(Use with OPC-2006LS)	(Use with OPC-2144)			✓	✓
ID-31E	✓	(Use with OPC-2006LS)	(Use with OPC-2006LS)	(Use with OPC-2006LS)	(Use with OPC-2144)			✓	✓
IC-E92D					(Use with OPC-1797)	✓			
IC-V80E		(Use with OPC-2004)	(Use with OPC-2004)	(Use with OPC-2004)			✓		

MODEL NAME	BELT CLIPS			CHARGER BRACKET	CARRYING CASES			SILICONE JACKET CASE	CLONING CABLES
	MB-111 Alligator type	MB-124 Alligator type	MB-127 Alligator type	MB-130	LC-168	LC-178	LC-179	SJ-1 For use with BP-271	OPC-474 Between transceivers
ID-51E			✓				✓	✓	
ID-31E			✓			✓			
IC-E92D	✓				✓				(Use with two OPC-1797s)
IC-V80E		✓		(Use with BC-191/192/193)					✓

MODEL NAME	CLONING CABLES		DATA CABLES		CLONING SOFTWARES	REMOTE CONTROL SOFTWARE	ANTENNA ADAPTER	ANTENNAS	CI-V LEVEL CONVERTER
	OPC-478 Transceiver to PC RS-232C cable	OPC-478UC Transceiver to PC USB cable	OPC-1799 Transceiver to PC RS-232C cable	OPC-2218LU USB type	CS-51*1 CS-31*1 CS-80/880*1 CS-V80 Optional OPC-478, OPC-478UC, OPC-1529R or OPC-2218LU cable required for programming.	RS-92 OPC-1799 cable included	AD-92SMA BNC type antenna connector	FA-B2E FA-S270C	CT-17
ID-51E				✓	(Use CS-51)		✓	(Use FA-S270C)	✓
ID-31E				✓	(Use CS-31)		✓	(Use FA-S270C)	✓
IC-E92D			✓			✓	✓	(Use FA-S270C)	
IC-V80E	✓	✓			(Use CS-V80)		✓	(Use FA-B2E)	

\*1 CS-51, CS-31 and CS-80/880 are available for free download from: <http://www.icom.co.jp/world/support/index.html>

: Applicable
  : Not applicable

# SPECIFICATIONS FOR BASE STATION TRANSCEIVERS

		IC-7800	IC-7700	IC-7600	IC-7410
General	<b>Frequency coverage</b> <small>(Differs according to version)</small>	Tx:137kHz, 1.8, 3.5, 7, 10, 14 18, 21, 24, 28, 50MHz bands Rx:30kHz–60MHz* * Some frequency ranges are not guaranteed.	Tx:1.8, 3.5, 7, 10, 14, 18, 21, 24, 28, 50MHz bands Rx:30kHz–60MHz* * Some frequency ranges are not guaranteed.	Tx:1.8, 3.5, 7, 10, 14, 18, 21, 24, 28, 50MHz bands Rx: 30kHz–60MHz* * Some frequency ranges are not guaranteed.	Tx: 1.8, 3.5, 7, 10, 14, 18, 21, 24, 28, 50MHz bands Rx: 30kHz–60.000MHz* * Some frequency bands are not guaranteed.
	<b>Modes</b>	USB, LSB, CW, RTTY, PSK31, AM, FM	USB, LSB, CW, RTTY, PSK31, AM, FM	USB, LSB, CW, RTTY, PSK31, AM, FM	USB, LSB, CW, RTTY, AM, FM
	<b>Frequency stability</b>	±0.05ppm (0°C to +50°C, after warm up)	±0.05ppm (0°C to +50°C, after warm up)	±0.5ppm (0°C to +50°C, after warm up)	Less than ±0.5ppm (0°C to +50°C)
	<b>Maximum current drain</b>	800VA	800VA	23A at 13.8V DC	23A at 13.8V DC
	<b>Power supply requirement</b>	85–265V AC (Auto sensing)	85–265V AC (Auto sensing)	13.8V DC ±15%	13.8V DC ±15%
	<b>Antenna connector</b>	SO-239 × 4 + BNC × 2 (50Ω)	SO-239 × 4 + BNC (50Ω)	SO-239 × 2 + phono [(RCA) 50Ω]	SO-239 × 2 (50Ω)
	<b>Number of memory channels</b>	101 (99 regular, 2 scan edges)	101 (99 regular, 2 scan edges)	101 (99 regular, 2 scan edges)	101 (99 regular, 2 scan edges)
	<b>Dimensions</b> <small>(W×H×D; Projections are not included)</small>	424×149×435 mm	425×149×437 mm	340×116×279.3 mm	315×116×343 mm
<b>Weight</b> (approx.)	25kg	22.5kg	10.0kg	10.2kg	
Transmitter	<b>Output power</b>	SSB, CW, RTTY, PSK31, FM: 5–200W AM: 5–50W 137kHz (CW): More than –20dBm	SSB, CW, RTTY, PSK31, FM: 5–200W AM: 5–50W	SSB, CW, RTTY, PSK31, FM: 2–100W AM: 1–30W	SSB, CW, RTTY, FM: 2–100W AM: 2–27W
	<b>Spurious emissions</b>	Less than –60dB (HF) Less than –70dB (50MHz)	Less than –60dB (HF) Less than –70dB (50MHz)	Less than –50dB (HF) Less than –63dB (50MHz)	Less than –50dB (HF) Less than –63dB (50MHz)
	<b>Carrier suppression</b>	More than 63dB	More than 63dB	More than 40dB	More than 40dB
	<b>Unwanted sideband</b>	More than 80dB	More than 80dB	More than 55dB	More than 55dB
	<b>Microphone connector</b>	8-pin connector (600Ω)	8-pin connector (600Ω)	8-pin connector (600Ω)	8-pin connector (600Ω)
Receiver	<b>Sensitivity</b> (typical) <small>Preamp ON SSB, CW, RTTY, AM: at 10dB S/N FM, WFM: at 12dB SINAD</small>	SSB, CW, RTTY, PSK31 (2.4kHz): 0.1–1.799MHz 0.5μV 1.8–29.999MHz 0.16μV 50–54MHz 0.13μV AM (6kHz): 0.1–1.799MHz 6.3μV 1.8–29.999MHz 2.0μV 50–54MHz 1.0μV FM (15kHz): 28–29.999MHz 0.5μV 50–54MHz 0.32μV	SSB, CW, RTTY, PSK31 (2.4kHz): 0.1–1.799MHz 0.5μV 1.8–29.999MHz 0.16μV 50–54MHz 0.13μV AM (6kHz): 0.1–1.799MHz 6.3μV 1.8–29.999MHz 2.0μV 50–54MHz 1.0μV FM (15kHz): 28–29.999MHz 0.5μV 50–54MHz 0.32μV	SSB, CW, RTTY (2.4kHz): 1.8–29.995MHz 0.15μV 50–54MHz 0.12μV AM (6kHz): 0.5–1.799MHz 6.3μV 1.8–29.995Hz 2.0μV 50–54MHz 1.6μV FM (15kHz): 28–29.7MHz 0.5μV 50–54MHz 0.3μV	SSB, CW, : 1.8–29.999MHz 0.16μV 50–54MHz 0.13μV AM: 0.5–1.8MHz 12.6μV 1.8–29.999MHz 2.0μV 50–54MHz 1.6μV FM: 28–29.7MHz 0.5μV 50–54MHz 0.32μV
	<b>Selectivity</b>	SSB: 2.4kHz/–3dB (2.4kHz) 3.6kHz/–60dB CW: 500Hz/–3dB (500Hz) 700Hz/–60dB RTTY, PSK31: 360Hz/–6dB (350Hz) 650Hz/–60dB AM: 6.0kHz/–3dB (6kHz) 15kHz/–60dB FM: 12kHz/–6dB (15kHz) 20kHz/–60dB	SSB/RTTY: 2.4kHz/–3dB (2.4kHz) 3.6kHz/–60dB CW: 500Hz/–3dB (500Hz) 700Hz/–60dB AM: 6.0kHz/–3dB (6kHz) 15kHz/–60dB FM: 12kHz/–6dB (15kHz) 20kHz/–60dB	SSB: 2.4kHz/–6dB (2.4kHz) 3.8kHz/–60dB CW: 500Hz/–6dB (500Hz) 900Hz/–60dB RTTY: 350Hz/–6dB (350Hz) 650Hz/–60dB AM: 6.0kHz/–6dB (6kHz) 15kHz/–60dB FM: 12kHz/–6dB (15kHz) 20kHz/–60dB	SSB: 2.4kHz/–6dB (2.4kHz) 3.4kHz/–40dB CW: 500Hz/–6dB (500Hz) 700Hz/–40dB RTTY: 500Hz/–6dB (350Hz) 800Hz/–40dB AM: 6.0kHz/–6dB (6kHz) 10kHz/–40dB FM: 12kHz/–6dB (15kHz) 22kHz/–40dB
	<b>Spurious and image rejection</b> <small>(except IF)</small>	More than 70dB	More than 70dB	More than 70dB* (* Except IF point on 50MHz band)	More than 70dB
	<b>AF power</b> <small>(at 10% distortion with an 8Ω load)</small>	More than 2.6W	More than 2.6W	More than 2.0W	More than 2.0W
	<b>External speaker connector</b>	2-conductor 3.5 (d) mm (1/8")/8Ω (for main and sub bands)	2-conductor 3.5 (d) mm (1/8")/8Ω	2-conductor 3.5 (d) mm (1/8")/8Ω	2-conductor 3.5 (d) mm (1/8")/8Ω

The LCD display may have cosmetic imperfections that appear as small or dark spots. This is not a malfunction or defect, but a normal characteristic of LCD displays.  
**All stated specifications are subject to change without notice or obligation.**

# SPECIFICATIONS FOR BASE STATION TRANSCEIVERS

	IC-7100	IC-7200	IC-7000	IC-718	IC-9100
	Tx: 1.8, 3.5, 7, 10, 14, 18, 21, 24, 28, 50, 70*1, 144, 430MHz bands Rx: 30kHz–199.999, 400–470MHz*2 *1 Depending on version. *2 Some frequency ranges are not guaranteed.	Tx: 1.8, 3.5, 7, 10, 14, 18, 21, 24, 28, 50MHz bands Rx: 30kHz–60.000MHz* * Some frequency ranges are not guaranteed.	Tx: 1.8, 3.5, 7, 10, 14, 18, 21, 24, 28, 50, 144, 430MHz bands Rx: 30kHz–199.999, 400–470MHz* * Some frequency ranges are not guaranteed.	Tx: 1.8, 3.5, 7, 10, 14, 18, 21, 24, 28MHz bands Rx: 30kHz–29.999MHz* * Guaranteed range 0.5–29.999MHz.	Tx: 1.8, 3.5, 7, 10, 14, 18, 21, 24, 28, 50, 144, 430, 1200MHz bands Rx: 30kHz–60MHz*1, 144–146MHz, 430–440MHz, 1240–1300MHz*2 *1 Some frequency ranges are not guaranteed. *2 With optional UX-9100.
	USB, LSB, CW, RTTY, DV, AM, FM, WFM* (*Rx only)	USB, LSB, CW, RTTY, AM	USB, LSB, CW, RTTY, AM, FM, WFM* (*Rx only)	USB, LSB, CW, RTTY, AM	USB, LSB, CW, RTTY (FSK), AM*, FM, DV (with UT-121) * Transmit HF/50MHz only. Cannot receive on 1200MHz band.
	±0.5ppm (0°C to +50°C @ 430MHz)	±0.5ppm (–10°C to +60°C)	±0.5ppm (0°C to +50°C)	Less than ±200Hz (From 1 min. to 60 min. after power ON)	±0.5ppm (0°C to +50°C, after warm up)
	22A at 13.8V DC	22A at 13.8V DC	22A at 13.8V DC	20A at 13.8V DC	24A at 13.8V DC
	13.8V DC ±15%	13.8V DC ±15%	13.8V DC ±15%	13.8V DC ±15%	13.8V DC ±15%
	SO-239 × 2 (for HF/50/70MHz and 144/430MHz bands: 50Ω)	SO-239 (50Ω)	SO-239 × 2 (for HF/50MHz and 144/430MHz bands: 50Ω)	SO-239 (50Ω)	HF/50MHz SO-239 (50Ω) × 2 144MHz SO-239 (50Ω) 430MHz Type-N (50Ω) 1200MHz Type-N (50Ω) (With UX-9100)
	495 regular, 4 call, 6 scan edges, 900 D-STAR repeater channels	201 (199 regular, 2 scan edges)	503 (495 regular, 6 scan edges and 2 call)	101 (99 regular, 2 scan edges)	396* (99 each for HF/50, 144, 430, 1200MHz band) 4 Call* (1 each for band) 24 Scan edges* (6 each for band) 20 satellite * With optional UX-9100.
	Main unit 167×58×225 mm Controller 165×64×78.5 mm	241×84×281 mm	167×58×180 mm	240×95×239 mm	315×116×343 mm
	Main unit 2.3kg Controller 0.5kg	5.5kg	2.3kg	3.8kg	IC-9100 11kg UX-9100 950g
	SSB, CW, RTTY, FM, DV: 1.8–50MHz 2–100W 70MHz 2–50W 144MHz 2–50W 430MHz 2–35W AM: 1.8–50MHz 1–30W 70MHz 1.6–20W	SSB, CW, RTTY: 2–100W AM: 1–25W	SSB, CW, RTTY, FM: 1.8–50MHz 2–100W 144MHz 2–50W 430MHz 2–35W AM: 1.8–50MHz 1–40W 144MHz 2–20W 430MHz 2–14W	SSB, CW, RTTY: 2–100W AM: 2–35W	SSB, CW, RTTY, FM, DV*1: HF/50MHz 2–100W 144MHz 2–100W 430MHz 2–75W 1200MHz*2 1–10W AM: HF/50MHz 2–30W *1 With UT-121. *2 With UX-9100.
	Less than –50dB (HF) Less than –63dB (50MHz) Less than –60dB (70/144/430MHz)	Less than –50dB (HF) Less than –63dB (50MHz)	Less than –50dB (HF) Less than –63dB (50MHz) Less than –60dB (144/430MHz)	Less than –50dB	1.8–29.7MHz Less than –50dB 50, 144MHz Less than –63dB 430MHz Less than –61.8dB 1200MHz Less than –53dB (With UX-9100)
	More than 50dB	More than 50dB	More than 50dB	More than 40dB	More than 40dB
	More than 50dB	More than 50dB	More than 50dB	More than 50dB	More than 55dB
	8-pin modular (600Ω)	8-pin connector (600Ω)	8-pin modular (600Ω)	8-pin connector (600Ω)	8-pin connector (600Ω)
	SSB, CW: 1.8–29.999MHz 0.15μV 50–54MHz 0.12μV 70MHz 0.15μV 144/430MHz 0.11μV AM: 0.5–1.8MHz 13μV 1.8–29.999MHz 2.0μV 50/70/144/430MHz 1.0μV FM: 28–29.7MHz 0.5μV 50/70MHz 0.25μV 144/430MHz 0.18μV DV: 28–29.7MHz 1.0μV 50/70MHz 0.63μV 144/430MHz 0.35μV WFM: 76–108MHz 10μV	SSB, CW: 1.8–29.999MHz 0.16μV 50–54MHz 0.13μV AM: 0.5–1.8MHz 13μV 1.8–29.995MHz 2.0μV 50–54MHz 1.0μV	SSB, CW: 1.8–29.999MHz 0.15μV 50–54MHz 0.12μV 144/430MHz 0.11μV AM: 0.5–1.8MHz 13μV 1.8–29.999MHz 2.0μV 50–54MHz 1.0μV 144/430MHz 1.0μV FM: 28–29.7MHz 0.5μV 50–54MHz 0.25μV 144/430MHz 0.18μV WFM: 76–108MHz 10μV	SSB, CW, RTTY: 1.8–29.999MHz 0.16μV AM: 0.5–1.799MHz 13μV 1.8–29.999MHz 2.0μV	SSB, CW: 1.8–29.999MHz 0.16μV 50–54MHz 0.13μV 144/430MHz 0.11μV 1200MHz 0.11μV*1 AM: 0.5–1.8MHz 12.6μV 1.8–29.999MHz 2.0μV 50–54MHz 1.6μV 144/430MHz 1.4μV FM: 28–29.7MHz 0.5μV 50–54MHz 0.32μV 144/430MHz 0.18μV 1200MHz 0.18μV*1 DV*2: 28–29.7MHz 1.0μV 50–54MHz 0.63μV 144/430MHz 0.35μV 1200MHz 0.35μV*1 *1 With UX-9100. *2 With UT-121.
	SSB: 2.4kHz/–6dB (2.4kHz) 3.4kHz/–40dB CW: 500Hz/–6dB (500Hz) 700Hz/–40dB RTTY: 500Hz/–6dB (500Hz) 800Hz/–40dB AM: 6.0kHz/–6dB (6kHz) 10kHz/–40dB FM: 12kHz/–6dB (15kHz) 22kHz/–40dB DV: –50dB (12.5kHz)	SSB: 2.4kHz/–6dB (2.4kHz) 3.6kHz/–60dB CW: 500Hz/–6dB (500Hz) 900Hz/–60dB RTTY: 360Hz/–6dB (350Hz) 650Hz/–60dB AM: 6.0kHz/–6dB (6kHz) 15kHz/–60dB	SSB: 2.4kHz/–6dB (2.4kHz) 3.6kHz/–60dB CW: 500Hz/–6dB (500Hz) 900Hz/–60dB RTTY: 360Hz/–6dB (350Hz) 650Hz/–60dB AM: 6.0kHz/–6dB (6kHz) 15kHz/–60dB FM: 12kHz/–6dB (15kHz) 20kHz/–60dB	SSB, CW, RTTY: 2.1kHz/–6dB 4.5kHz/–60dB AM: 6.0kHz/–6dB 20kHz/–40dB	SSB: 2.4kHz/–6dB (2.4kHz) 3.4kHz/–40dB CW: 500Hz/–6dB (500Hz) 700Hz/–40dB RTTY: 500Hz/–6dB (500Hz) 800Hz/–40dB AM: 6.0kHz/–6dB (6kHz) 10.0kHz/–40dB FM: 12kHz/–6dB (15kHz) 22kHz/–40dB DV (With UT-121): –50dB (12.5kHz spacing) 1200MHz (With UX-9100) SSB, CW 2.3kHz/–6dB FM 15.0kHz/–6dB
	More than 70dB (HF/50/70MHz) More than 65dB (144/430MHz) (expect 1/2 IF through on 50/70MHz, IF through on 144MHz)	More than 70dB* (* Except 1/2 IF point on 50MHz band)	More than 70dB (HF) More than 65dB (other bands; except 1/2 IF point on 50MHz, IF point 144MHz band)	More than 70dB (1.8–29.999MHz)	HF/50MHz More than 70dB 144, 430MHz More than 60dB 1200MHz More than 50dB (With UX-9100)
	More than 2.0W	More than 2.0W	More than 2.0W	More than 2.0W	More than 2.0W
	2-conductor 3.5 (d) mm (1/8")/8Ω	2-conductor 3.5 (d) mm (1/8")/8Ω	2-conductor 3.5 (d) mm (1/8")/8Ω	2-conductor 3.5 (d) mm (1/8")/8Ω	2-conductor 3.5 (d) mm (1/8")/8Ω × 2 (for main and sub bands)

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# SPECIFICATIONS FOR MOBILE & HANDHELD TRANSCEIVERS

	IC-E2820	ID-E880	ID-1	ID-51E	ID-31E	IC-E92D	IC-V80E
<b>Frequency coverage</b> <small>(Differs according to version)</small>	Europe-1 version Tx 144-146, 430-440MHz Rx (L) 118-549.995*1 (R) 118-173.995, 375-549.995, 810-999.990MHz*1 Europe-2 version Tx 144-146, 430-440MHz Rx (L) 144-146, 430-440MHz (R) 144-146, 430-440MHz	Europe version Tx 144-146, 430-440MHz Rx 118-173.995, 230-549.995, 810-999.990MHz*1 Europe-1 version Tx/Rx 144-146, 430-440MHz	1240-1300MHz	Europe version Tx 144-146, 430-440MHz Rx (A/B) 144-146, 430-440MHz (BC) 0.52-1.71, 76.0-108.0MHz UK version Tx 144-146, 430-440MHz Rx (A) 137-174, 380-479MHz*1 (B) 108-174, 380-479MHz*1 (BC) 0.52-1.71, 76.0-108.0MHz	Europe version Tx/Rx 430-440MHz UK version TX 430-440MHz RX 400-479MHz*2	Europe version Tx (A/B) 144-146, 430-440MHz Rx (A) 0.495-999.990MHz*1 (B) 118-174, 350-470MHz*1	EUR, UK versions Tx/Rx 144-146MHz
<b>Mode</b>	FM, FM-N, DV (UT-123 required), AM (receive only)	FM, FM-N, DV, AM (receive only)	FM, DV, DD	FM, FM-N, DV AM (receive only) WFM (receive only)	FM, FM-N, DV	FM, FM-N, DV, AM (receive only) WFM (receive only)	FM, FM-N
<b>Max. current drain</b>	VHF 13A UHF 13A	VHF 11.5A UHF 12.5A	7A	2.5A	2.5A	VHF 1.8A typ UHF 2.1A typ (at 7.4V DC)	1.4A (at 7.2V DC)
<b>Dimensions</b> <small>(WxHxD; Proj. not included)</small>	Main unit: 150x40x187.7 mm Controller: 150x58x31.5 mm	Main + Controller: 150x40x199.2 mm Controller: 122x40x29.7 mm	Main unit: 141x40x165.8 mm Controller: 150x50x49.5 mm	58x105.4x26.4 mm	58x95x25.4 mm	59x112x34.2 mm	58x112x30 mm
<b>Weight</b> <small>(approx.)</small>	Main unit: 1.5kg Controller: 210g (With OPC-1712)	1.3kg (without microphone, cable and bracket)	Main unit: 1.2kg Controller: 220g	255g with antenna and BP-271	225g with antenna and BP-271	325g with antenna and BP-256	360g with antenna and BP-264
<b>Output power</b> <small>(typical values)</small>	High: 50W Mid: 15W (approx.) Low: 5W (approx.) (at 13.8V DC)	High: 50W Mid: 15W (approx.) Low: 5W (approx.) (at 13.8V DC)	High: 10W Low: 1W (approx.) (at 13.8V DC)	High: 5W Mid: 2.5W Low2: 1.0W Low1: 0.5W S-Low: 0.1W (at 7.4V DC)	High: 5W Mid: 2.5W Low: 0.5W S-Low: 0.1W (at 7.4V DC)	High: 5W Mid: 2.5W Low: 0.5W S-Low: 0.1W (at 7.4V DC)	High: 5.5W Mid: 2.5W Low: 0.5W (at 7.2V DC)
<b>Sensitivity</b> <small>(FM: at 12dB SINAD DV, DD: at BER 1%)</small>	DV Less than 0.35µV (with UT-123) FM Less than 0.18µV (144, 430 MHz bands)	DV Less than 0.35µV FM Less than 0.18µV (144, 430 MHz bands)	DV Less than 0.35µV DD Less than 1.58µV FM Less than 0.18µV	DV Less than 0.28µV FM, FM-N Less than 0.18µV	DV Less than 0.28µV FM, FM-N Less than 0.18µV	DV 0.22µV typ. FM 0.14µV/0.16µV typ. (144/430 MHz bands)	0.14µV typ.
<b>Audio output power</b> <small>(at 10% distortion)</small>	2.4W (at 8Ω)	2.0W (at 8Ω)	2.0W (at 8Ω)	400mW (INT SP, 16Ω) 200mW (EXT SP, 8Ω)	400mW (INT SP, 16Ω) 200mW (EXT SP, 8Ω)	200mW (at 8Ω)	750mW typ. (INT SP, 16Ω) 450mW typ. (EXT SP, 8Ω)

\*1 Guaranteed range 144-146 and 430-440MHz. \*2 Guaranteed range 430-440MHz.

(L) means left side receiver, (R) means right side receiver, (A) means VFO A receiver, (B) means VFO B receiver, (BC) means broadcast radio.

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## Applicable U.S. Military Specifications

Icom makes rugged products that have been tested to and passed the MIL-STD requirements and strict environmental standards for shock (MIL-810C, D, E and F) and vibration (MIL-810C, D, E and F).



This logo indicates that model is a digital capable transceiver compatible with the D-STAR DD or DV mode in this brochure.



This logo indicates that model has superior waterproof protection against water intrusion. (1m depth underwater for 30 minutes.)

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