



HF/50MHz ALL MODE TRANSCEIVER

# IC-7410

The Best Balance of Technology,  
Performance and Fun!



# The Best Balance of Technology, Performance and Fun!

## HF/50MHz ALL MODE TRANSCEIVER **IC-7410**



### 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-746PRO/7400 series replacement that every operator will be proud to own. In addition to the higher speed DSP, the AD/DA converter, AK4620B, 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> AK4620B  
ADC Signal/(Noise+Distortion) : 100dB  
ADC Dynamic range, S/N : 113dB  
DAC Signal/(Noise+Distortion) : 97dB  
DAC Dynamic range, S/N : 115dB

### Double-conversion superheterodyne

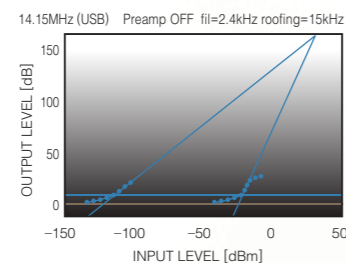
Introduced with the IC-7800, a double conversion superheterodyne design, with an image rejection mixer for the 2nd mixer stage is employed in the IC-7410. This receiver design not only reduces the electronic complexity, it greatly reduces the number of internal distortion points from older triple and quadruple conversion receivers.

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

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\* IP3, rivaling the IC-7600. The end result, clear reception of weak signals surrounded by QRM from broadcast and neighboring ham stations.

\* In 14MHz band.

#### Dynamic range characteristics



### Three first IF filters (3/6/15kHz)

The IC-7410 accommodates three 1st IF filters with the 15kHz, 1st IF filter supplied, while the 3kHz FL-431 and 6kHz FL-430 are optional for better receiver performance by protecting the desired signal from nearby strong signals. (Fixed for 15kHz in FM mode.)



Optional 1st IF filters (6kHz, 3kHz)

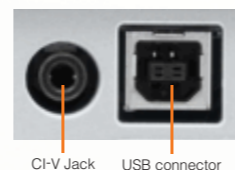
### Large, multi-function LCD

The display increases in width from the IC-746PRO/7400 series. The large multi-function LCD shows frequency, 9-character channel name, channel number, multi-functional meter (includes S-meter, RF output, SWR, ALC and COMP level). The dot-matrix portion of the LCD shows the following items:

- Channel name
- Band scope
- Memory keyer contents
- Function key assignment
- RTTY decoder screen
- Graphical SWR scale

### USB connector for PC control

The IC-7410 has a standard type B USB connector and can be connected to a PC. Modulation input, audio output, RTTY demodulator output and CI-V command can be controlled via the USB cable. Also, the conventional CI-V remote control jack is built in to the IC-7410.



CI-V Jack USB connector

### RTTY demodulator and decoder

The built-in RTTY demodulator and decoder allow you to instantly read an RTTY message on the display. No external units or PC required. The built-in tuning indicator visually helps in critical tuning.

### Simple band scope

The built-in simple band scope shows the band condition at a glance and is handy for searching for active stations.

### Wide range of DSP features

Using the latest algorithms, the digital features give flexibility and speed needed for working in tough RF conditions.

- Digital IF filter allows you to choose filter width and shape factor
- Digital Twin PBT eliminates interference by changing the IF bandwidth and/or shifting the IF frequency
- AGC loop management with programmable AGC time constant
- Auto/manual Notch Filter provides more than 70dB attenuation and eliminates unwanted beat tones
- Noise Reduction can enhance the receiver's signal-to-noise ratio
- Noise Blanker reduces interference from pulse-type noise
- RF Speech Compressor increases average talk power, improving signal strength and readability
- User programmable tone control: microphone equalizer, SSB transmit passband width, receive HPF/LPF and receive audio equalizer

### Ample CW functions

- All of the following CW capabilities are included in the IC-7410:
- Large CW pitch knob and independent BK-IN (break-in) delay knob
- CW wave form controlled by the DSP
- 4 keyer channels with 70 characters of transmit memory per channel
- Multi-function electronic keyer with adjustable keying speed from 6-48 wpm, dot-dash ratio from 1:1:2.8 to 1:1:4.5 and paddle polarity
- Bug keyer and full break-in function
- Continuously adjustable CW pitch control from 300-900Hz
- Double key jacks (Front and rear panels) • CW reverse

### High frequency stability

A high stability TCXO crystal oscillator provides  $\pm 0.5$ ppm of high frequency stability over a wide temperature range (0°C to +50°C). This allows for a long steady operating time in digital modes.

### Large heat sink

When compared to the IC-746PRO series, the IC-7410's large heat sink improves heat dissipation. Even during long hours of heavy-duty cycle operation, the IC-7410 provides stable output power.



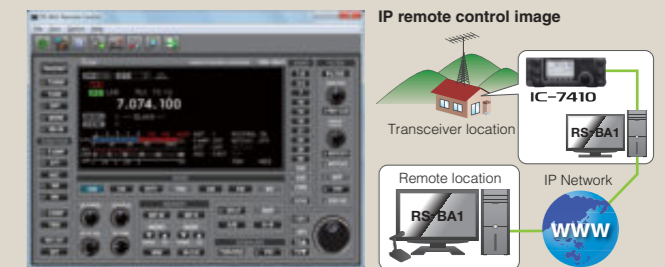
IC-7410 chassis

### Other 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
- CTCSS tone encoder and decoder
- Triple band stacking register
- Quick split and frequency lock functions
- RIT and  $\Delta$ Tx variable up to  $\pm 9.999$ kHz
- SSB/CW synchronous tuning
- 1Hz pitch tuning and display
- $\pm 0.5$ ppm of high frequency stability
- Program, memory, select memory, mode select and  $\Delta$ f scans
- Automatic tuning steps
- AH-4 control circuit
- Large independent MIC/RF power and Notch knobs

### Optional RS-BA1 IP remote control software

The optional RS-BA1 allows you to use the IC-7410 from another room using your home network or even from a remote location over the Internet.



### Rear Panel View



## SPECIFICATIONS

### GENERAL

- Frequency coverage :
  - USA version
    - Rx 0.030-60.000MHz\*
    - Tx 1.800-1.999MHz 3.500- 3.999MHz
    - 5.255-5.405MHz\* 7.000- 7.300MHz
    - 10.100-10.150MHz 14.000-14.350MHz
    - 18.068-18.168MHz 21.000-21.450MHz
    - 24.890-24.990MHz 28.000-29.700MHz
    - 50.000-54.000MHz
  - Europe, Europe-01 version
    - Rx 0.030-60.000MHz\*
    - Tx 1.810-1.999MHz 3.500- 3.800MHz
    - 7.000-7.100MHz (Europe)
    - 7.000-7.200MHz (Europe-01)
    - 10.100-10.150MHz 14.000-14.350MHz
    - 18.068-18.168MHz 21.000-21.450MHz
    - 24.890-24.990MHz 28.000-29.700MHz
    - 50.000-52.000MHz

\* Some frequency bands are not guaranteed.

- Mode : USB, LSB, CW, RTTY, AM, FM
- Number of memory Ch. : 101 (99 regular, 2 scan edges)
- Antenna connector : SO-239x2 (50Ω)
- Temperature range : 0°C to +50°C; +32°F to +122°F
- Frequency stability : Less than ±0.5ppm (0°C to 50°C; +32°F to +122°F)
- Power supply requirement : 13.8V DC ±15% (negative ground)
- Current drain (at 13.8V DC):
  - Tx Max. power 23A
  - Rx Stand-by 2.2A
  - Max. audio 3.0A
- Dimensions (W×H×D) : 315×116×343 mm; (projections not included) 12.4×4.57×13.5 in
- Weight (approx.) : 10.2kg; 22.4lb

### TRANSMITTER

- Output power :
  - SSB, CW, RTTY, FM 2-100W
  - AM 2-27W
- Modulation system :
  - SSB Digital PSN modulation
  - AM Digital low power modulation
  - FM Digital phase modulation
- Spurious emission : Less than -50dB (HF bands) Less than -63dB (50MHz band)
- Carrier suppression : More than 40dB
- Unwanted sideband suppression : More than 55dB
- Microphone connector : 8-pin connector (600Ω)

### RECEIVER

- Receive system : Double conversion superheterodyne
- Intermediate frequencies : 1st 64.455MHz 2nd 36kHz
- Sensitivity (typical) :
 

	0.5-1.8MHz	1.8-29.9MHz	50-54MHz
SSB/CW	—	0.16μV <sup>*1</sup>	0.13μV <sup>*2</sup>
AM	12.6μV <sup>*1</sup>	2.0μV <sup>*1</sup>	1.6μV <sup>*2</sup>
FM	—	0.5μV <sup>*3</sup>	0.32μV <sup>*3</sup>

10dB S/N for SSB, CW, RTTY and AM, 12dB SINAD for FM  
<sup>\*1</sup> Pre-amp 1 ON, <sup>\*2</sup> Pre-amp 2 ON, <sup>\*3</sup> 28-29.7MHz.
- Squelch sensitivity (Pre-amp : ON) :
  - SSB Less than 5.6μV
  - FM Less than 0.3μV
- Selectivity :
  - SSB More than 2.4kHz / -6dB
  - (BW : 2.4kHz, sharp) Less than 3.4kHz / -40dB

- CW (BW : 500Hz, sharp) More than 500Hz / -6dB
- RTTY (BW : 350Hz, sharp) Less than 700Hz / -40dB
- AM (BW : 6kHz) More than 800Hz / -40dB More than 6.0kHz / 6dB
- FM (BW : 15kHz) Less than 10.0kHz / -40dB More than 12.0kHz / -6dB Less than 22.0kHz / -40dB More than 70dB
- Spurious and image rejection ratio : More than 2.0W at 10% distortion with an 8Ω load
- AF output power (at 13.8V DC) : ±9.999kHz
- RIT variable range : 3-conductor 6.35 (d) mm (1/4")
- PHONES connector : 2-conductor 3.5 (d) mm (1/8")/8Ω
- EXT SP connector : 2-conductor 3.5 (d) mm (1/8")/8Ω

### ANTENNA TUNER

- Matching impedance range:
  - HF bands 16.7-150Ω unbalanced<sup>\*1</sup>
  - 50MHz band 20-125Ω unbalanced<sup>\*2</sup>
  - <sup>\*1</sup> Less than VSWR 1:3 ; <sup>\*2</sup> Less than VSWR 1:2.5
- Minimum operating power :
  - HF bands 8W
  - 50MHz band 15W
- Tuning accuracy : VSWR 1:1.5 or less (SWR after the motor has stopped)
- Insertion loss (after tuning) :
  - 1.8 MHz band 1.2dB or less
  - 3.5-50MHz bands 1.0dB or less

- Supplied accessories :
- Hand microphone
  - DC power cable
  - Spare fuses
  - CW key plug

All stated specifications are subject to change without notice or obligation.

## OPTIONS

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



**IC-PW1/IC-PW1EURO** HF+50MHz 1kW LINEAR AMPLIFIER  
Covers all HF and 50MHz bands, provides clean, stable 1kW output. Automatic antenna tuner and compact detachable controller are standard. 2 exciter inputs are available.



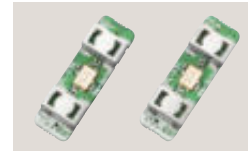
**AH-4** HF+50MHz AUTOMATIC ANTENNA TUNER  
Covers 3.5-54MHz with a 7m (23 ft) or longer wire antenna.



**AH-2b** ANTENNA ELEMENT  
A 2.5m long antenna element for mobile operation with the AH-4. All amateur bands between 7-54 MHz can be matched.



**PS-126** DC POWER SUPPLY  
13.8V DC, 25A max. with 4-pin type connector.



**FL-430** 6kHz 1st IF FILTER  
**FL-431** 3kHz 1st IF FILTER  
1st IF filters for better receiver performance.



**SM-50** DESKTOP MICROPHONE  
Unidirectional, electret microphone for base station operation. [UP/DOWN] switches and low cut function are available.



**SM-30** DESKTOP MICROPHONE  
Compact, lightweight electret microphone. Low cut function is available.  
**SM-20** is also available.



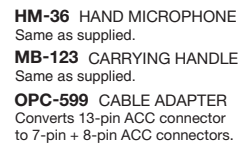
**SP-21** EXTERNAL SPEAKER  
Input impedance: 8Ω  
Max. input power: 5W



**SP-23** EXTERNAL SPEAKER  
4 audio filters; headphone jack.  
Input impedance: 8Ω  
Max. input power: 5W



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



**HM-36** HAND MICROPHONE  
Same as supplied.  
**MB-123** CARRYING HANDLE  
Same as supplied.  
**OPC-599** CABLE ADAPTER  
Converts 13-pin ACC connector to 7-pin + 8-pin ACC connectors.  
**RS-BA1** IP REMOTE CONTROL SOFTWARE  
For IP remote transceiver control from a PC.

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