



HF/50MHz ALL MODE TRANSCEIVER

IC-7410

The Best Balance of Technology,
Performance and Fun!



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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

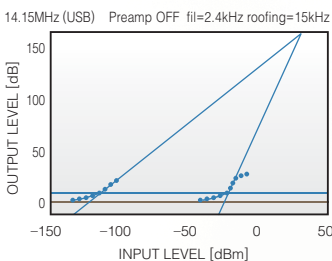
Introduced with the IC-7800, a double conversion superheterodyne design, with an image rejection mixer for the 2nd mixer stage is employed in the IC-7410. This receiver design not only reduces the electronic complexity, it greatly reduces the number of internal distortion points from older triple and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

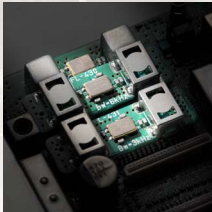
* In 14MHz band.

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)

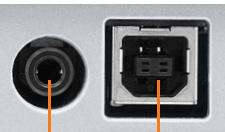
Large, multi-function LCD

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 ± 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.



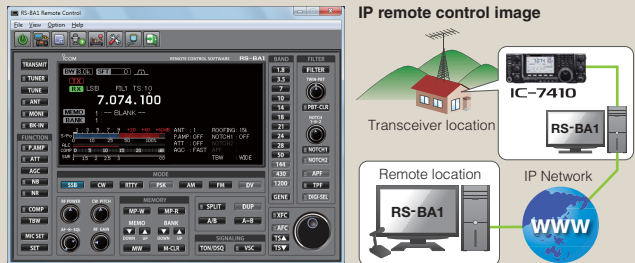
IC-7410 chassis

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 Δ Tx variable up to ± 9.999 kHz • SSB/CW synchronous tuning
- 1Hz pitch tuning and display • ± 0.5 ppm of high frequency stability
- Program, memory, select memory, mode select and Δ 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 ^{*1}	0.13μV ^{*2}
AM	12.6μV ^{*1}	2.0μV ^{*1}	1.6μV ^{*2}
FM	—	0.5μV ^{*3}	0.32μV ^{*3}

10dB S/N for SSB, CW, RTTY and AM, 12dB SINAD for FM
^{*1} Pre-amp 1 ON, ^{*2} Pre-amp 2 ON, ^{*3} 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) Less than 500Hz / –6dB
- Less than 800Hz / –40dB
- More than 6.0kHz / –6dB
- 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 (1/8")
- PHONES connector : 2-conductor 3.5 (d) mm (1/8")/8Ω
- EXT SP connector

ANTENNA TUNER

- Matching impedance range:
 - HF bands 16.7–150Ω unbalanced^{*1}
 - 50MHz band 20–125Ω unbalanced^{*2}
 - ^{*1} Less than VSWR 1:3 ; ^{*2} 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.



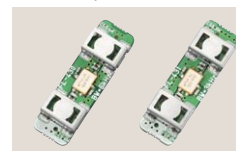
AH-4 HF+50MHz AUTOMATIC ANTENNA TUNER
Covers 3.5–54MHz with a 7m (23 ft) or longer wire antenna.



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.



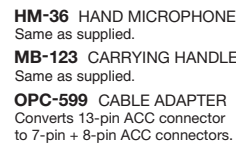
SP-21 EXTERNAL SPEAKER
Input impedance: 8Ω
Max. input power: 5W



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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Icom Inc. 1-1-32, Kami-minami, Hirano-ku, Osaka 547-0003, Japan Phone: +81 (06) 6793 5302 Fax: +81 (06) 6793 0013

www.icom.co.jp/world

Count on us!

Icom America Inc.

2380 116th Avenue NE,
Bellevue, WA 98004, U.S.A.
Phone : +1 (425) 454-8155
Fax : +1 (425) 454-1509
E-mail : sales@icomamerica.com
URL : <http://www.icomamerica.com>

Icom Canada

Glenwood Centre #150-6165 Highway 17,
Delta, B.C., V4K 5B8, Canada
Phone : +1 (604) 952-4266
Fax : +1 (604) 952-0090
E-mail : info@icomcanada.com
URL : <http://www.icomcanada.com>

Icom (Australia) Pty. Ltd.

Unit 1 / 103 Garden Road,
Clayton, VIC 3168 Australia
Phone : +61 (03) 9549 7500
Fax : +61 (03) 9549 7505
E-mail : sales@icom.net.au
URL : <http://www.icom.net.au>

Icom New Zealand

146A Harris Road, East Tamaki,
Auckland, New Zealand
Phone : +64 (09) 274 4062
Fax : +64 (09) 274 4708
E-mail : inquiries@icom.co.nz
URL : <http://www.icom.co.nz>

Icom (Europe) GmbH

Communication Equipment
Auf der Krautweide 24
65812 Bad Soden am Taunus, Germany
Phone : +49 (6196) 76685-0
Fax : +49 (6196) 76685-50
E-mail : info@icomeurope.com
URL : <http://www.icomeurope.com>

Icom Spain S.L.

Ctra. Rubi, No. 88 "Edificio Can Castanyer"
Bajos A 08174, Sant Cugat del Valles,
Barcelona, Spain
Phone : +34 (93) 590 26 70
Fax : +34 (93) 589 04 46
E-mail : icom@icomspain.com
URL : <http://www.icomspain.com>

Icom (UK) Ltd.

Blacksole House, Altira Park,
Heme Bay, Kent, CT6 6GZ, U.K.
Phone : +44 (01227) 741741
Fax : +44 (01227) 741742
E-mail : info@icomuk.co.uk
URL : <http://www.icomuk.co.uk>

Icom France s.a.s.

Zac de la Plaine,
1 Rue Brindejonc des Moulinais, BP 45804,
31505 Toulouse Cedex 5, France
Phone : +33 (5) 61 36 03 03
Fax : +33 (5) 61 36 03 00
E-mail : icom@icom-france.com
URL : <http://www.icom-france.com>

Icom Polska

81-850 Sopot, ul. 3 Maja 54, Poland
Phone : +48 (58) 550 7135
Fax : +48 (58) 551 0484
E-mail : icompolska@icompolska.com.pl
URL : <http://www.icompolska.com.pl>

Asia Icom Inc.

6F No. 68, Sec. 1 Cheng-Teh Road,
Taipei, Taiwan, R.O.C.
Phone : +886 (02) 2559 1899
Fax : +886 (02) 2559 1874
E-mail : sales@asia-icom.com
URL : <http://www.asia-icom.com>

Your local distributor/dealer: