ICOM

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
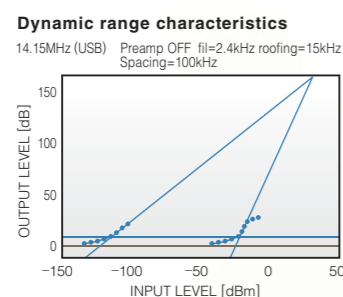DAC Dynamic range, S/N : 115dB

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.
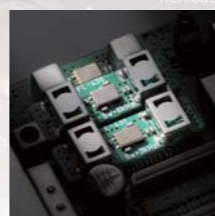
+30dBm class third-order intercept point

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* IP3. The end result, clear reception of weak signals surrounded by QRM from broadcast and neighboring ham stations.
* Typical in 14MHz band.

Dynamic range characteristics
14.15MHz (USB) Preamp OFF fil=2.4kHz roofing=15kHz Spacing=100kHz

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 ±0.5ppm of high frequency stability over a wide temperature range (0℃ to + 50℃). 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.
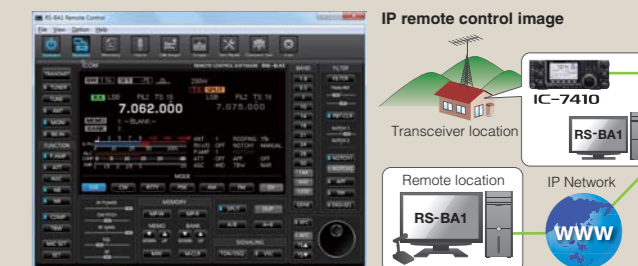
IC-7410 chassis

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 ⊿Tx variable up to ±9.999kHz • SSB/CW synchronous tuning
- 1Hz pitch tuning and display • ±0.5ppm of high frequency stability
- Program, memory, select memory, mode select and ⊿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.

IP remote control image

Transceiver location   IC-7410   RS-BA1
Remote location   IP Network
RS-BA1   WWW

• Rear Panel View

HF/50MHz ALL MODE TRANSCEIVER

IC-7410

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-239×2 (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*[1]*[3]	0.32µV*[2]

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

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
- Spare fuses
- DC power cable
- 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.

AH-740 AUTOMATIC TUNING ANTENNA
Covers 2.5–30MHz (amateur band). OPC-2321 control cable is required.

AH-5NV NVIS KIT
Fiberglass mobile mounting antenna element for use with AH-740. Covers 2.2–30MHz (amateur band)

SM-50 DESKTOP MICROPHONE
Unidirectional, electret microphone for base station operation. [UP/DOWN] switches and low cut function are available.
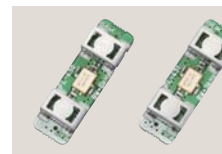
SM-30 DESKTOP MICROPHONE
Compact, lightweight electret microphone. Low cut function is available.

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

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

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.
CT-17 CI-V LEVEL CONVERTER
For external transceiver control using a PC equipped with an RS-232C port.
RS-BA1 IP REMOTE CONTROL SOFTWARE
For IP remote transceiver control from a PC.
RC-28 USB REMOTE ENCODER
For use with RS-BA1 software.

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