ICOM

HF/50/144MHz ALL MODE TRANSCEIVER

IC-7400

Icom Inc.

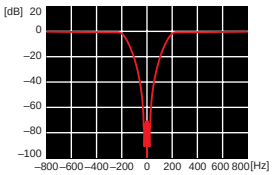
Digital Twin PBT

Only Icom brings you Twin Passband tuning! Tailor your IF passband with the Twin PBT by electronically shifting the upper and lower IF passbands. Depending on the use of the concentric knobs, you can either narrow the IF passband, or shift the entire passband to eliminate interfering signals.

Manual Notch Filter

Interference management is not a problem with the Manual Notch filter. With it's incredible 70dB attenuation, the manual notch can eliminate a wide variety of QRM. The Automatic Notch Filter can track two or more interfering signals like Heterodynes and "Key uppers"!

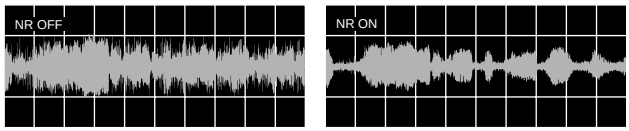
Manual Notch Characteristics



Digital Noise Reduction

By digitally manipulating the incoming signal, the DSP is able to reduce various types of noise and enhances the receive signal components. Providing an outstanding signal to noise ratio to give clean, clear audio.

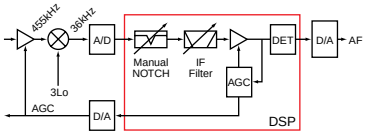
Comparison of receive signal speaker output



AGC Loop Management

Another first in this class of transceiver, the IC-7400 incorporates a multiple AGC loop management system, which uses the DSP filtering to remove unwanted signals from the AGC control. This means, if an unwanted signal is removed using the DSP, the AGC will not be affected. In other words, "No more pumping of the AGC!"

Also, the AGC is independently controllable for mode and the time settings. (Off, 0.1-6.0 or 8.0 sec.)



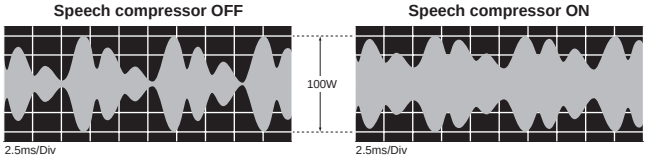
Microphone Equalizer

Bring Hi-Fidelity to the amateur airwaves. The Microphone Equalizer will change your RST from "59" to "Great Audio" and "Nice Signal". Adjust your audio for Bass and Treble characteristics to total 121 levels for all voice operation. The transmit filter width in SSB mode is selectable from 2.8/2.4/2.2kHz.The Rx tone control is also an equalizer for the received audio. As with the transmit audio, select the amount of Bass and Treble you need for the audio clarity you want.

Digital RF Speech Compressor

Need more punch in your signal; the Icom Digital RF Speech Compressor gives you all you need without fuss and noise. Great for breaking through QRM.

Speech compressor OFF **Speech compressor ON**



HF + 50MHz + 144MHz All Band Coverage

Covering all HF bands as well as 50MHz and 144MHz, the IC-7400 all mode transceiver also includes a general coverage receiver from 0.03–60MHz* and 144–146MHz with full IF DSP capability.

* Some frequency bands are not guaranteed.

Continuous Duty at 100W

The bipolar 2SC2694's are used to provide a clean 100 watts of output power for SSB, CW, RTTY and FM modes. (40W in AM). The die-case aluminum chassis and the variable speed cooling fan enables the IC-7400 to transmit full power all the time*; the perfect companion for those digital mode contests.

* On a 50Ω load at room temperature.

32-bit DSP Techn
Even Higher – To

Icom has taken the DSP technology IC-756PRO series, and created a whole ne IC-7400 incorporates the 32-bit DSP feat the most flexible signal enhancing, and i ever offered in this type of radio. So follo the latest features now available in the IC

Starting with the 32-bit DSP processor and 24-bit AD/DA converter, Icom enables the ham radio operator to create the listening environment that best suites the current band and operating conditions.

All Mode Digital Modulation and Demodulation

Let's start with the modulation and demodulation of the signals. For signal purity and clarity, an all mode digital PSN (Phase Shift Network) system has been incorporated into the DSP system. For transmit, this greatly reduces the intermodulation distortion, producing the highest quality transmit audio. While the PSN separates the signal from noise by phasing out noise and other unwanted signals.

IF Filter Shapes

Next is the IF filters. You will never have to purchase optional filters, with over 51 different filter widths, just dial in the width you want. Then select whether you want a sharp or soft filter shape for SSB and CW modes. For the Digital operators, your digital filters are separate from the SSB filters.

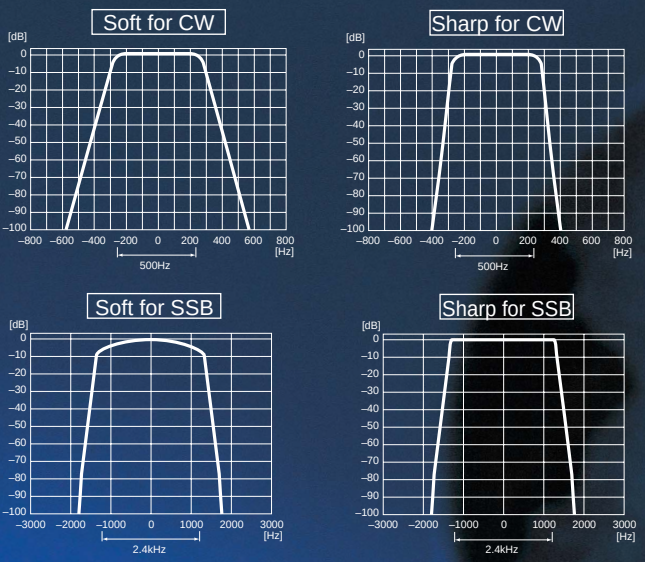
HF/50/144MHz ALL MODE TRANSCEIVER

IC-7400

nology Takes You o 144MHz !

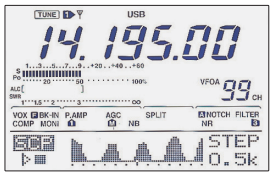
y introduced in the ew radio category. The ures to create some of nterference reduction w along as we describe C-7400.

DSP
32-bit Floating Point DSP
Digital Signal Processor
24-bit AD/DA Converter



Mode	Passband width range	
	50–500Hz	600–3600Hz
SSB	10 types; 50Hz step	31 types; 100Hz step
CW	10 types; 50Hz step	

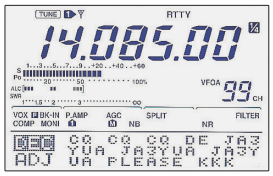
Large, Multi-function LCD



The large multi-function LCD displays frequency, 9-character channel name, channel number, multi functional meter (includes S-meter, RF output, SWR and ALC level) and other operating status. The dot-matrix portion of the LCD shows the following items:

• Channel name • Function key assignment • Band Scope • RTTY decoder screen • Memory keyer contents • Graphical SWR scale

RTTY Demodulator and Decoder



The built-in RTTY demodulator and decoder reads baudot RTTY signals on the screen without turning on your PC or other gear. The RTTY tuning indicator helps critical tuning. The Twin Peak filter removes interfering QRM giving you a more accurate decoded message.

Ample CW Functions

Multi function electronic keyer, variable dot/dash ratio (2.8:1 to 4.5:1) and key speed (6-60 WPM), paddle polarity, bug key etc. CW pitch is adjustable (300 to 900Hz). Full break-in capability. Double key jacks – one each for front and rear panel.

Memory Keyer

4 channel memory keyer stores up to 50 characters with serial contest number auto-counter, morse cut number and auto repeat function. In addition, a user supplied external keypad* controls the memory keyer from your finger tips.

* Not supplied by Icom.

Built-in Antenna Tuner

The internal antenna tuner matches the HF and 50MHz bands automatically. After operating on a band for the first time, the tuner memorizes the selected antenna and preset point providing for very high speed tuning. 2 antenna connectors for HF and 50MHz bands and 1 for 144MHz band is equipped on the IC-7400.

SSB/CW Synchronous Tuning

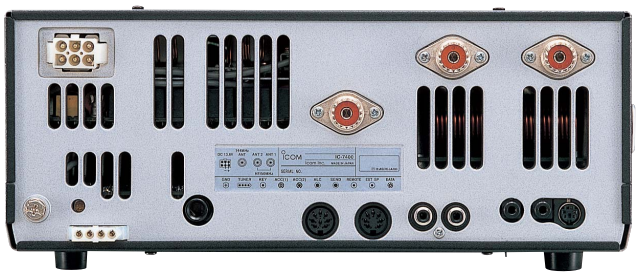
You no longer have to worry about losing a CW signal while tuning with SSB mode. With the SSB/CW synchronous tuning, the frequency automatically shifts when you change modes.

Voice Squelch Control (VSC) function

The Voice Squelch Control function opens the squelch only when receiving a modulated voice signal.

Other Outstanding Features

• Triple band stacking register • 2 types of preamplifier (Regular and Higain) for HF and 50MHz bands, 1 for 144MHz band • 20dB RF attenuator • Level adjustable noise blanker (101 steps) • BPF function below 500Hz band width in SSB mode • 1/4 speed dial tuning function for SSB-data, CW and RTTY modes • 108 selectable DTCS and 50 selectable CTCSS with encoder/decoder • 1750Hz tone encoder • Optional high stability crystal unit, CR-338 • Up to 10 memo-pads temporarily store frequencies and modes • Quick split function with split lock function • ± 9.99kHz RIT and ⊿TX • Band edge beep • CI-V capability for PC control • VOX • Program, memory, select memory and ⊿F scans • IF transmit audio monitor (SSB mode only; AF transmit audio monitor for the other modes) • 102 memory channels • 9600bps data terminal • AH-4 control circuits • Auto TS function • Optional voice synthesizer unit, UT-102 announces the operating frequency, mode and S-meter level • 1Hz tuning and indication



HF/50/144MHz ALL MODE TRANSCEIVER

IC-7400

SPECIFICATIONS

GENERAL

- Frequency coverage (unit: MHz) :

Receive	0.030– 60.000*	144.000–146.000	
Transmit	1.800– 1.999*	3.400– 4.099*	
	6.900– 7.499*	9.900– 10.499*	
	13.900– 14.499*	17.900– 18.499*	
	20.900– 21.499*	24.400– 25.099*	
	28.000– 29.999*	50.000– 54.000*	
	144.000–146.000		

* Some freq. bands are not guaranteed.
* Covered frequencies depend on version.

- Mode : USB, LSB, CW, RTTY, AM, FM
- Number of memory Ch. : 102 (99 regular, 2 scan edges and 1 call)
- Antenna connector : SO-239×3 (2 for HF/50MHz and 1 for 144MHz bands; 50Ω)
- Temperature range : –10˚C to +60˚C; +14˚F to +140˚F
- Frequency stability :
  Less than ±7ppm from 1 min. to 60 min. after power ON. After that, rate of stability change is less than ±1ppm at 25°C (+77°F). Temperature fluctuations (0°C to +50°C; +32°F to +122°F) less than ±5ppm.
- Frequency resolution : 1Hz
- Power supply requirement: 13.8V DC ±15%
- Power consumption : Tx Max. power 23A
  Rx Standby 2.2A
  Max. audio 3.0A
- Dimensions (projections not included) : 287(W)×120(H)×316.5(D) mm
- Weight (approx.) : 9.0kg
- ACC 1 connector : 8-pin DIN connector
- ACC 2 connector : 7-pin DIN connector
- CI-V connector : 2-conductor 3.5 (d) mm (⅛″)
- DATA connector : Mini DIN 6-pin

TRANSMITTER

- Output power (continuously adjustable) : SSB, CW, RTTY, FM 5–100W
  AM 5–40W
- Modulation system : SSB PSN modulation
  AM Low power modulation
  FM Phase modulation
- Spurious emission : Less than –50dB (HF bands)
  Less than –60dB (50/144MHz band)
- Carrier suppression : More than 40dB
- Unwanted sideband suppression:
  More than 55dB
- ⊿TX variable range : ±9.99kHz
- Microphone connector : 8-pin connector (600Ω)
- ELE-KEY connector : 3-conductor 6.35(d) mm (¼″)
- KEY connector : 3-conductor 6.35(d) mm (¼″)
- SEND connector : Phono (RCA)
- ALC connector : Phono (RCA)

RECEIVER

- Receive system : Triple conversion superheterodyne system
- Intermediate frequencies: 1st 64.455MHz
  2nd 455kHz
  3rd 36kHz
- Sensitivity (typical) :

Frequency Range (MHz)	SSB, CW, RTTY (at 2.4kHz BW)	AM (at 6kHz BW)	FM (at 15kHz BW)
0.50–1.799	—	13μV	—
1.80–27.99	0.16μV*1	2μV*1	—
28.0–29.99	0.16μV*1	2μV*1	0.5μV*1
50.0 –54.0	0.13μV*2	1μV*2	0.25μV*2
144.0–146.0	0.11μV*3	1μV*3	0.18μV*3

10dB S/N for SSB, CW, RTTY and AM, 12dB SINAD for FM
*1Preamp 1 is ON, *2Preamp 2 is ON, *3Preamp is ON

- Squelch sensitivity (Preamp: OFF):
  SSB, CW, RTTY Less than 5.6μV
  FM Less than 1μV
- Selectivity (representative value):
  SSB (BW: 2.4kHz) More than 2.4kHz/–6dB
  Less than 3.2kHz/–40dB
  Less than 3.6kHz/–60dB
  Less than 4.3kHz/–80dB
  CW (BW: 500Hz) More than 500Hz/–6dB
  Less than 700Hz/–60dB
  RTTY (BW: 350Hz) More than 360Hz/–6dB
  Less than 650Hz/–60dB
  AM (BW: 6kHz) More than 6.0kHz/–6dB
  Less than 15.0kHz/–60dB
  FM (BW: 15kHz) More than 12.0kHz/–6dB
  Less than 20.0kHz/–60dB
- Spurious and image rejection ratio : More than 70dB (HF/50MHz)
  More than 60dB (144MHz)
  (except IF through on 50MHz)
- AF output power (at 13.8V DC) : More than 2.0W at 10% distortion with an 8Ω load
- RIT variable range : ±9.99kHz
- PHONES connector : 3 conductor 6.35 (d) mm (¼″)
- EXT SP connector : 2 conductor 3.5 (d) mm (⅛″)/8Ω

ANTENNA TUNER

- Matching impedance range :16.7–150Ω unbalanced*1 (HF bands)
  20–125Ω unbalanced*2 (50MHz band)
  *1Less than VSWR 3:1; *2Less than VSWR 2.5:1
- Min. operating input power: 8W (HF bands)
  15W (50MHz band)
- Tuning accuracy : VSWR 1.5:1 or less
- Insertion loss : Less than 1.0dB (after tuning)

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

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

OPTIONS

IC-PW1/EURO 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.

SP-20 EXTERNAL SPEAKER
4 audio filters; headphone jack; can connect to 2 transceivers.
Input impedance: 8Ω
Max. input power: 5W

SP-21 EXTERNAL SPEAKER
Style and size are matched to the IC-7400.
Input impedance: 8Ω
Max. input power: 5W

PS-125 DC POWER SUPPLY
Style and size are matched to the IC-7400.
13.8V DC, 25A max.

SM-20 DESKTOP MICROPHONE
Unidirectional, electret microphone for base station operation. [UP/DOWN] switches and a low cut function are available.

CT-17 CI-V LEVEL CONVERTER
For remote transceiver control using a personal computer equipped with an RS-232C port. You can change frequencies, operating mode, etc.

UT-102 VOICE SYNTHESIZER UNIT
Announces operating frequency and mode.

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

CR-338 HIGH STABILITY CRYSTAL UNIT
POC type crystal for improved frequency stability.
Frequency stability: ±0.5 ppm

HM-36 HAND MICROPHONE
Same as that supplied.

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

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