HF/50/144MHz ALL MODE TRANSCEIVER

ICOM

IC-7400

Digital Signal Processor

Icom Inc.
**Digital Twin PBT**

ICOM now brings you Twin Passband tuning! Tailor your IF passband with the PBT by electronically shifting the upper and lower IF passbands. Depending on the use of the concentrator keys, 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 its 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!"

**Digital Noise Reduction**

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

**AGC Loop Management**

Another first in this class of transceivers, the IC-7400 incorporates a multipe AGC loop management system, which uses the DSP filtering to remove unwanted signals from the AGC control. This means, if an unwanted signal is received 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, 5.1-6.0 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 give the best suited transmit and receive 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.

**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 0.03-50MHz* and 144-146MHz with full IF DSP capability.

* Some frequency bands are not guaranteed.

**Continuous Duty at 100W**

The bipolar 2SC2844’s are used to provide a clean 100 watts of output power for SSB, CW, RTTY and FM modes. (40W in AM). The die-cast 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 50W load at room temperature.

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**32-bit DSP Technology Takes You Even Higher – To 144MHz!**

Icom has taken the DSP technology recently introduced in the IC-756PROII, and created a whole new radio category. The IC-7400 incorporates the 32-bit DSP features to create some of the most flexible signal enhancing, and interference reduction ever offered in this type of radio. So follow along as we describe the latest features now available in the IC-7400.

**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.**

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HF/50/144MHz ALL MODE TRANSCEIVER

IC-7400

SPECIFICATIONS

GENERAL
• Frequency coverage (unit: MHz):
  Transmit: 1.800 - 1.999
  3.400 - 4.099
  6.900 - 7.499
  9.000 - 10.499
  13.900 - 14.499
  17.000 - 18.499
  20.900 - 21.499
  24.200 - 25.099
  28.000 - 29.999
  50.000 - 52.000
  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)
• Temperature range: -10°C to +60°C; +14°F to +140°F
• Frequency stability: Less than ±5ppm from 1 min. to 60 min. after power ON.
  After that, frequency stability is less than ±1ppm at 5°C to +25°C (+77°F to +77°F). Temperature fluctuations (0°C to +5°C, ±3°F to ±12°F) less than ±5ppm.
• Power supply requirement: 13.8V DC ± 15%
• Frequency resolution: 1Hz
• Power consumption: 22A (HF bands), 24A (50MHz band)

ANTENNA TUNER
• Matching impedance: 50Ω (50MHz band)
• Spurious and image rejection ratio: More than 60dB (144MHz band)
• AF output power: More than 2.0W at 10% distortion with an 8Ω load
• RIT variable range: ±9.99kHz

RECEIVER
• Receive system: Triple Conversion Superheterodyne system
• Intermediate frequencies: 1st 64.455MHz
  2nd 45.5MHz
  3rd 38MHz
• Sensitivity (typical):
  Frequency Range (MHz)  SSB, CW, RTTY  AM  FM
  0.10-1.799  0.30-2.279  0.50-4.500
  0.15µV* 2  0.5µV* 2  0.16µV* 2
  1.15µV* 2  0.5µV* 2
  144.0-146.0  1.11µV* 2
  0.11µV* 2

TRANSMITTER
• Output power: SSB, CW, RTTY, FM 5~100W
  (continuously adjustable) 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 (50/141MHz band)
• Carrier suppression: Unwanted sidetone suppression: More than 55dB
• ATX variable range: ±9.99kHz
• Microphone connector: 8-pin Din connector
• ELE-KEY connector: 3-conductor 6.35mm (1/4")
• KEY connector: 3-conductor 6.35mm (1/4")
• SEND connector: Phone (RCA)
• ALC connector: Phone (RCA)

CONVERTER
• Input impedance: 8Ω
• TX variable range: ±9.99kHz
• AF output power: More than 2.0W at 10% distortion with an 8Ω load

SYNTHESIZER UNIT
• Frequency stability:
  10dB S/N for SSB, CW, RTTY and AM, 12dB SINAD for FM
• Modulation system: SSB PSN modulation

CRYSTAL UNIT
• Frequency stability:
  60dB (50/144MHz band)
• Spurious emission: Less than 4.099* 52.000*
  Less than 1.800* 29.999* 50.000* 60.000* 144.000
• Unwanted sideband suppression: More than 360Hz/60dB (at 6kHz BW) (at 15kHz BW)
• Unwanted sideband suppression: More than 360Hz/60dB (at 6kHz BW) (at 15kHz BW)
• Unwanted sideband suppression: More than 360Hz/60dB (at 6kHz BW) (at 15kHz BW)
• Unwanted sideband suppression: More than 360Hz/60dB (at 6kHz BW) (at 15kHz BW)

Squelch sensitivity (Preamp OFF):
  SSB, CW, RTTY: Less than 5.6µV
  FM: Less than 1µV
• Frequency stability:
  SSB (BW: 2.4kHz) More than 2.4kHz/6dB
  Less than 3.2kHz/40dB
  Less than 3.2kHz/40dB
  Less than 3.2kHz/40dB

Sensitivity (representative values):
  SSB (BW: 2.4kHz) More than 2.4kHz/6dB
  Less than 3.2kHz/40dB
  Less than 3.2kHz/40dB
  Less than 3.2kHz/40dB

ACCESSORIES
• Hand microphone: 10dB S/N for SSB, CW, RTTY and AM, 12dB SINAD for FM
• Headphone jack: Phone (RCA)
• UT-102 VOICE SYNTHESIZER UNIT:
  Announces operating frequency and mode.
• CT-17 GI LEVEL CONVERTER:
  For remote control using a personal computer equipped with an RS-232C port. You can change frequencies, operating mode, etc.
• SP-10 EXTERNAL SPEAKER:
  Input impedance: 8Ω Max. input power: 5W

OPTIONS
• IC-PW1 HF/50MHz 1W LINEAR AMPLIFIER
  Covers all HF and 50MHz bands, provides clean, stable 1W output. Automatic antenna tuner and compact detachable controller are standard. 2 exciters inputs are available. (Not available for EU countries.)
• IC-PLL 13.8V DC POWER SUPPLY
  Style and size are matched to the IC-7400.
  13.8V DC, 25A max.
• SM-20 DESKTOP MICROPHONE
  Unidirectional, electret microphone with balance plug. [UP/DOWN] switches and a low cut filter are available.
• PS-12S DC POWER SUPPLY
  Style and size are matched to the IC-7400.
• PS-21 EXTERNAL SPEAKER:
  Style and size are matched to the IC-7400.
  Input impedance: 8Ω Max. input power: 5W

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