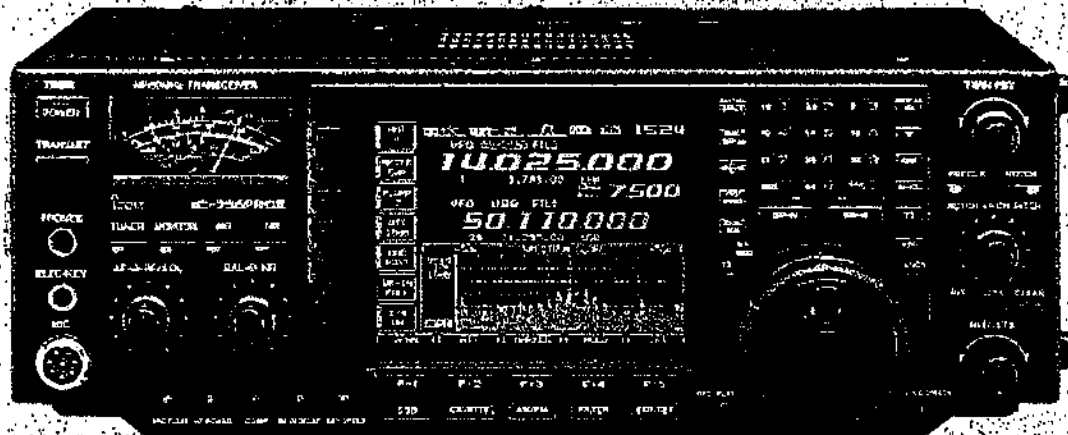


# ICOM

# NEW PRODUCT INFORMATION

HF/50MHz ALL MODE TRANSCEIVER

## IC-756PROII



The IC-756PRO has achieved a fantastic reputation among HAM enthusiasts – offering 32-bit floating-point DSP, 24-bit AD/DA converter, large 4.9 inch color TFT display, twin PBT, dual-watch function and more. Now, Icom proudly announces the debut of the IC-756PROII. This new HF/50MHz all mode transceiver is the successor to the IC-756PRO, featuring selectable IF filter shape characteristics, improved 3rd IMD characteristics, one touch digital voice memory and more. The IC-756PROII uses not only our latest digital technology, but also our superior experience in analog technology.

### SELLING POINTS

- Sharp and soft IF filter shape are independently selectable for SSB and CW
- Improved 3rd IMD characteristics and wide dynamic range
- One-touch record/play switch on the front panel
- Digital voice memory with external control capability
- Extended 1/4 tuning step function and BPF function for SSB-D mode
- 32-bit floating-point DSP and 24-bit AD/DA converter
- Variable level setting noise blanker
- SSB/CW synchronous tuning
- 4.9-inch color TFT LCD

## FEATURES

### Sharp and soft IF filter shape are independently selectable for SSB and CW

Sharp and soft IF filter shapes for SSB and CW have become part of the DSP unit programming. You can change the filter shape to pick up desired signals, while listening the signals.

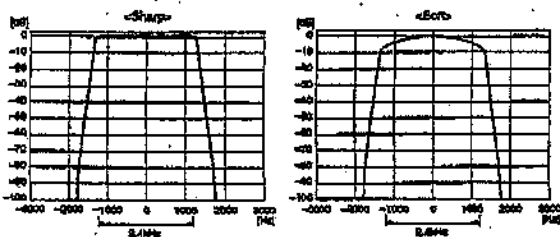
#### **SSB sharp filter; for selectivity and audio quality**

The ideal filter shape factor and flatness in the receive bandwidth, that only the DSP can achieve. This setting eliminates adjacent signals that are out of the intended bandwidth, and reproduces the signal in the bandwidth with high fidelity. Suitable for ragchew and placing importance on the receive audio quality.

#### **SSB soft filter; improves the clarity of weak signals**

This filter has a rounded filter shape. It keeps down the band noise in high and low frequencies, and improves the signal-to-noise ratio. This setting makes it easy to distinguish very weak signals, even in low noise level, especially in the 50MHz band. This filter also has sharp skirt characteristics the same as the SSB sharp filter

IF filter passband characteristics for SSB



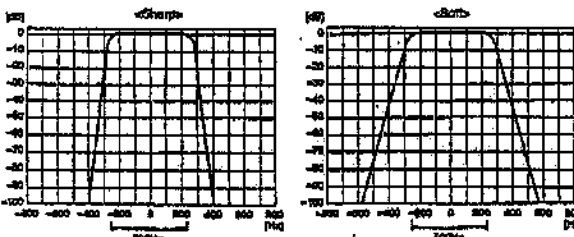
#### **CW sharp filter; ultimate sharpness**

The ideal 'sharp' filter shape factor, only digital technology can bring you. This setting is suitable for picking up weak DX signals in crowded band conditions. The signal quality, not seen with analog filters, can be clearly recognized.

#### **CW soft filter; broadens the filter skirts**

This filter improves the audio quality at the edge of the filter skirt. It sounds similar to an analog filter, sacrificing the selectivity. This setting is useful when you run pileups in contests or in DX peditions.

IF filter passband characteristics for CW



### Improved receiver characteristics and wide dynamic range

A 4-element system is employed for the receive mixer circuits. We refined all of the electronic components which are used from the RF stage to the Mixer stage. As a result, superior 3rd IMD characteristics is obtained as is maximized dynamic range, while generating little distortion against strong signals. We also optimized the balance of each stage's level sharing and AGC. In conclusion, receive performance is the best ever from the HF low bands to the 50MHz band, a truly top class transceiver.

### Digital voice memories

A total of 8 memories, 4 each for transmit and receive are built-in. A total 90 seconds of storage space allows you to divide for 4 transmit memories, 15 seconds of storage space for each 4 receive memories, 1 of 4 receive memory specially has the record/play switch on the front panel. You can use the memory with one touch regardless of display contents. This receive memory can continuously record for 30 minutes and calls up last 15 seconds. Of course, record and playback audio quality is remarkably high.

### External control for voice memory and memory keyer

Transmit voice memories and 4 memory keyer messages can be controlled from a simple external switch box through the microphone connector. This function helps your contest competitiveness.

### Extended functions for SSB-Data mode

For various digital data communications, 1/4 function is extended to the SSB-D mode as well as CW and RTTY modes. Dial control is reduced to a 1/4 step of normal tuning. More accurate tuning is provided for PSK31, etc. In addition, the BPF function is also available for less than 500Hz bandwidth on SSB and SSB-D mode setting. This filter setting is very steep like a CW filter.

### 32-bit floating-point DSP and 24-bit AD/DA converter

By adopting the 32-bit floating-point DSP and 24-bit AD/DA converter, the digital capabilities are maximized. This makes it possible to work a lot of digital features. In practice, the AD/DA converter realizes surprisingly wide dynamic range. A range that you could never imagine in the analog processor era. It provides clean and clear transmit, and crystal clear audio reception.

### Variable level setting noise blanker

A newly designed noise blanker effectively works against pulse type noises. The noise blanker level is variable up to 100 steps on the front display.

### SSB/CW synchronous tuning

On 50MHz band operation where SSB and CW modes are not separated in the band planning, this function is very practical. When you find a CW signal on SSB mode operation, you can change to CW mode while keeping track of the signal by fixing the carrier.

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## FEATURES

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### 4.9-inch TFT color LCD

A large, 4.9-inch TFT color LCD provides a variety of information at a glance with a wide viewing angle. 8 colors and 7 types of fonts can be selected at your preference. Dual frequencies, memory frequency, channel name, IF filter passband width, Time, RTTY tuning indicator and various status information are indicated on the upper side of the screen. Real-time spectrum scope, voice memory, memory keyer contents, decoded RTTY signal, memory list, etc. are indicated on the lower side. The lower side screen space can be widened.

### Memory keyer

4 memory keyer messages are memorized for often-used CW sentences. Serial contest number can be counted automatically. Each memory has up to 54 character capability. Ø19 cut number function is included.

### AGC loop operation

Digital IF filter and manual notch are included in the AGC loop controlled by the DSP unit. It basically rejects blocking by extremely strong adjacent signals out of filter pass bands. Therefore, you will never suffer from blocking of the AGC gain. In addition, the AGC constants are flexibly adjustable for each operating mode.

### Digital modulation and demodulation for all modes

Digital modulation and demodulation by DSP works well for all modes including RTTY decoding. The DSPN allows clear and high quality SSB transmit, with superior carrier suppression and unwanted sideband rejection ratio.

### High frequency stability

A high stability POC unit is adapted to the PLL unit, allowing  $\pm 0.5$ ppm of highly stable operation. This ensures stable operation even during the RTTY and SSTV operation.

### Manual control capability for digital notch

Manual notch filter attenuates to more than 70dB. Extremely strong interfering beat can be cut off without sacrificing AGC.

### Dual watch function

Dual watch allows you to receive 2 signals on the same band simultaneously. This function is convenient for monitoring a DX station while operating on another frequency.

### Built-in RTTY demodulator

The Baudot RTTY demodulator and decoder is built-in. External units and PC are no longer required for the RTTY decoding. Twin audio filter, using the DSP unit reduces interfering signals overlapping the tones. The built-in tuning indicator, located at the top of the LCD, can visually recognize the tuning condition.

### Digital Twin PBT

The digital twin PBT, using the DSP unit, narrows the passband width to efficiently reduce interfering signals by 50Hz step. IF passband width, IF shift width and IF shift direction are indicated on the LCD display for easy recognition.

### 100W output with full duty cycle

Powerful bipolar transistors are employed in the PA unit providing excellent signal quality and low IMD characteristics. 100W full duty cycle operation is achieved for reliable operation.

### Microphone equalizer

A total of 121 frequency characteristics can be set with the built-in microphone audio equalizer, according to operating style and microphone characteristics.

### Other outstanding features

- Easy to see analog S/R/F meter over white back
- Auto antenna tuner covers both HF and 50MHz band.
- Dual antenna system, including internal antenna tuner and RX antenna terminal
- 30kHz-60MHz general coverage receiver
- 2 pre-amplifier levels
- 3 selectable levels of RF attenuation from 8, 12 and 18dB
- Default CW mode is selectable from USB and LSB.
- Built-in CTCSS tone encoder
- VOX standard
- All mode power control
- Triple band stacking register
- Multi-function electronic keyer
- Two key jacks
- Memo pad (5/10 Ch)
- Variety of scans; program, memory, select memory, and  $\Delta f$  scan
- Digital meter indicates relative output power, SWR, ALC level and compression level
- Dial lock
- Band edge alarm
- Built-in AH-4 control circuit
- CI-V capability for PC control
- One-touch RTT/ATx clear function

## SPECIFICATIONS

Specifications described below are target values. They may be subject to change.  
DO NOT incorporate this information in your advertisements until it has been confirmed.

### ■ GENERAL

- Frequency coverage :
 

Rx	0.030-60.000MHz**	
Tx	1.800-1.999MHz**	3.500-3.999MHz**
	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**
- \*guaranteed 0.5-29.995MHz and 50.0-54.0MHz only
- \*\*depending on version
- Mode : USB, LSB, CW, RTTY, AM, FM
- No. of memory channels : 101 (89 regular, 2 scan edges)
- Frequency resolution : 1Hz
- Frequency stability :
 

Less than $\pm 0.5$ ppm (from 1min. after power ON at 0°C to +50°C)
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- Power supply requirement: 13.8V DC  $\pm 15\%$
- Current drain (at 13.8V DC):
 

Transmit	max. power	23A
Receive	Stand-by	3.0A typ.
	max. audio	3.5A typ.
- Temperature range : -10°C to +50°C ; +14°F to +122°F
- Antenna connector : SO-239x2 and phono (for HF and 50MHz; 50 $\Omega$ )
- Dimensions (WxHxD) : 340x111x285mm (projections not included) 13 3/8x4 3/8x11 1/2in
- Weight (approx.) : 9.6kg; 21lb 2oz
- CI-V connector : 2-conductor 3.5 (d) mm (1/8")
- ACC 1 connector : 8-pin DIN
- ACC 2 connector : 7-pin DIN

### ■ TRANSMITTER

- Modulation system :
 

SSB	PSN modulation
AM	Low power modulation
FM	Phase modulation
- Output power :
 

SSB, CW, FM, RTTY	5-100W
AM	5-40W
- Spurious emissions : Less than -50dB (HF bands)  
Less than -60dB (50MHz band)
- Carrier suppression : More than 40dB
- Unwanted sideband : More than 55dB
- $\Delta$ TX variable range :  $\pm 9.999$ kHz
- Microphone connector : 8-pin connector (600 $\Omega$ )
- ELE-KEY connector : 3-conductor 6.35 (d) mm (1/4")
- KEY connector : 3-conductor 6.35 (d) mm (1/4")
- SEND connector : Phono (RCA)
- ALC connector : Phono (RCA)

### ■ RECEIVER

- Sensitivity (typical) :
 

SSB, CW, RTTY	0.18 $\mu$ V** (1.8-29.990MHz)
(at 10dB S/N)	0.13 $\mu$ V** (50-54MHz)
AM	13 $\mu$ V (0.5-1.799MHz)
(at 10dB S/N)	2.0 $\mu$ V** (1.8-29.990MHz)
	1.0 $\mu$ V** (50-54MHz)
FM	0.5 $\mu$ V** (28-29.990MHz)
(at 12dB SINAD)	0.32 $\mu$ V** (50-54MHz)
- \*\*Pre-amp-1 ON \*\*Pre-amp-2 ON
- SQL sensitivity (threshold; pre-amp OFF):
 

SSB, CW, RTTY	Less than 5.6 $\mu$ V
FM	Less than 1.0 $\mu$ V
- Selectivity :
 

SSB, RTTY (BW: 2.4kHz)	More than 2.4kHz/-6dB
	Less than 3.6kHz/-60dB
CW (BW: 500Hz)	More than 500Hz/-6dB
	Less than 700Hz/-60dB
AM (BW: 6kHz)	More than 6.0kHz/-6dB
	Less than 15.0kHz/-60dB
FM (BW: 15kHz)	More than 12kHz/-6dB
	Less than 20kHz/-50dB
- Spurious and image rejection response ratio:
 

More than 70dB*
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- \*except IF through on 50MHz band
- Audio output power : More than 2.0W at 10% distortion with an 8 $\Omega$  load (at 13.8V DC)
- RIT variable range :  $\pm 9.999$ kHz
- PHONES connector : 3-conductor 6.35 (d) mm (1/4")
- EXT SP connector : 2-conductor 3.5 (d) mm (1/8") / 8  $\Omega$

### ■ ANTENNA TUNER

- Matching impedance range:
 

HF bands	16.7 to 150 $\Omega$ unbalanced**
50MHz band	20 to 125 $\Omega$ unbalanced**
- \*\*Less than VSWR 3:1  
\*\*Less than VSWR 2.5:1
- Minimum operation input power:
 

8W
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- Tuning accuracy : VSWR 1.5:1 or less
- Insertion loss : Less than 1.0 dB