ICOM

HF ALL BAND TRANSCEIVER

IC-781

Icom Inc.

THIS IS YOUR DREAM RIG. THE SKY'S THE LIMIT.

IC-781 is the world's most advanced HF transceiver — the first with a built-in CRT (cathode ray tube) DISPLAY. IC-781 works all bands on all modes. It's an amateur's dream rig — the top of the line.

The SPECTRUM SCOPE, TWIN PASSBAND TUNING, and DDS (Direct Digital Synthesizer) are unique to the market. You can work the world with its 105dB DYNAMIC RANGE and 150W OUTPUT POWER.

We are grateful to many amateurs throughout the years for their suggestions. ICOM's successful DXpeditions have also contributed to the development of IC-781. IC-781 is the choice of amateurs the world over.

HF ALL BAND TRANSCEIVER 〈SSB·CW·RTTY·AM·FM〉

IC-781


SPLIT
DATA
LOCK
SPECTRUM SCOPE
HOLD
MENU
FILTERS
WIDE
NAR
CW 250Hz
APF
NOTCH
TWIN PBT
APF
NOTCH
+Δf
CLEAR
ΔTX
RIT
BALANCE
A-ΔTX/RIT
M-CH
ENT
DUAL WATCH
VFO/MEMO
TS
M-WRITE
M-CLEAR
B-ΔTX/RIT
MEMORY-CH
M→VFO
DOWN
UP
F-3
F-4
F-5
F-6
RTTY
AM
FM
DATA
ATT20dB
MARKER
MONITOR
TONE
SPEECH
LOCK

WHAT A BREAKTHROUGH:

MULTI-FUNCTIONAL CRT DISPLAY

The multi-functional 5-inch CRT displays the frequencies of VFO A and VFO B, the contents of the MEMORY, 2 MENU SCREENS, 15 OPERATIONAL SCREENS, and packet and AMTOR data.

The CRT also displays the contents of 99 memory channels, 2 programmed scan edge frequencies, and a note of up to 10 characters per channel.

The soft orange display and fine resolution of 94 letters, numbers, punctuation marks, and symbols makes reading easy.

DUAL WATCH

What is so special about the IC-781 Dual Watch system? Dual Watch simultaneously monitors 2 frequencies — using 2 PLL circuits. Because each frequency is separately derived, you are assured that each frequency is precisely accurate! Ideal for contests, traffic handling, DX chasing and net control work.

SEPARATE CONTROL FOR "A" SECTION AND "B" SECTION RIT/ ΔTX

RIT (receiver incremental tuning) and ΔTX (transmitter incremental tuning) for each frequency display section can be separately controlled. Especially useful when operating duplex and dual watch.

SPECTRUM SCOPE

The CRT's advanced SPECTRUM SCOPE displays the relative strengths of signals around a center frequency. The span can be set to 50kHz, 100kHz and 200kHz. Ideal for monitoring band conditions in an instant.

The SPECTRUM SCOPE's specifications are superb. Its dynamic range is 60dB, and its sensitivity is −10dBm. A logarithm amplifier is built-in.

BAND STACKING REGISTER

Enables you to store an amateur frequency, switch bands, and return to the stored frequency. Especially convenient when switching bands during contests, and for quick monitoring of propagation conditions on other bands.

99 MEMORY CHANNELS

Each of the 99 memory channels stores an operating frequency, IF filter and DATA switch settings, a Selected Memory Scan number and a note of up to 10 characters. Roll the Memory List screen to view the channels. 2 additional memory channels are provided for storing PROGRAMMED SCAN frequencies.

10Hz STEP TUNING

IC-781 derives frequencies digitally. Each frequency step is 10Hz, making tuning as smooth as if using an analog VFO. Push the [TS] switch on the front panel to change to a frequency step of 1kHz. RIT and ΔTX are adjustable in 10Hz steps.

SCANNING FUNCTIONS

IC-781 has many scanning functions: Programmed Scan, Fine Programmed Scan, ΔF Scan, Fine ΔF Scan, Memory Scan, and a Selected Memory Channel Scan. A Fine Scan slowly tunes through a signal, and tunes rapidly through frequencies without signals. A great convenience for hands-free operation.

GENERAL COVERAGE RECEIVER

IC-781's receiver section covers 0.10000 to 29.99999MHz on all modes. Great for listening to shortwave broadcasts, marine and coastal stations, etc.

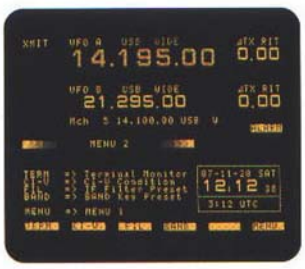
HIGH PERFORMANCE FILTERS

The high shape factor of the 9 filters provides excellent selectivity characteristics. The 455kHz and 9MHz filters can be used separately or in tandem. Filters can be conveniently preset for each operating mode on the CRT DISPLAY IF FILTER PRESET screen.

MENU 1

Calls up the Scan Operation screen, the Memory List screen, the Spectrum Scope and the Clock and Timer screen.

MENU 2



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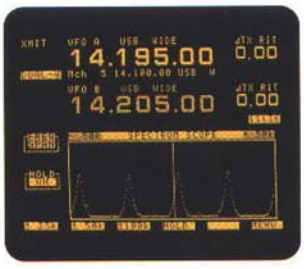
Dual Watch screen



Displays VFO A and VFO B frequencies used during Dual Watch. Shown here with the Spectrum Scope in operation.

Spectrum Scope screen

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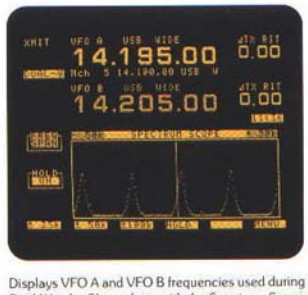

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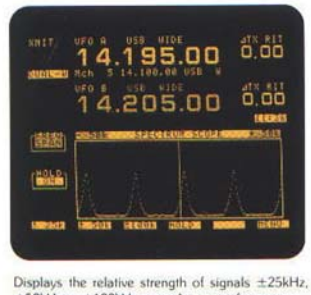

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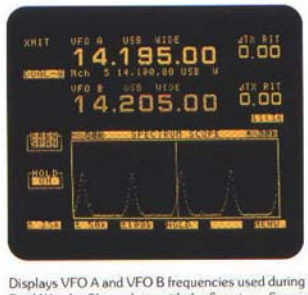

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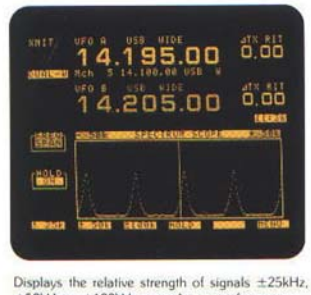

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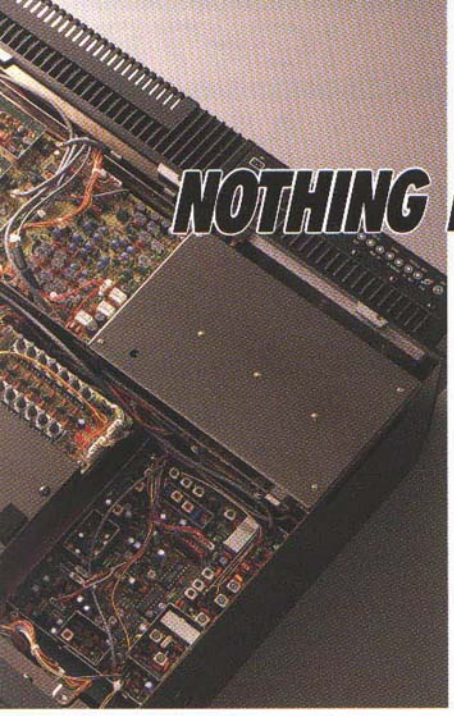
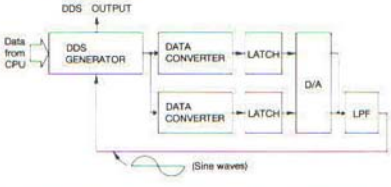


NOTHING ELSE COMES CLOSE.

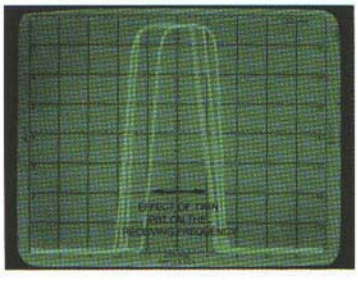
DDS BLOCK DIAGRAM



TWIN PASSBAND TUNING

Selects sections of the 455kHz and 9MHz IF filters separately or in tandem for clear reception of a signal in heavy interference. Use both filters to shift the IF. Useful for DX pileups, contests, nets, and other crowded band conditions.

TWIN PBT CHARACTERISTICS



NOISE BLANKER

Built-in noise-trigger noise blanker attenuates pulse-type noise caused by engine ignition sparks, etc. Ideal for city operation.

Maximum 15msec. blank-width attenuates long pulse width noise such as the "woodpecker" and the key clicks of strong CW signals.

BUILT-IN PREAMPLIFIER AND ATTENUATORS

Turn on the receiver preamplifier to boost a signal by 10dB. Especially useful during poor band conditions. If your antenna provides insufficient gain, you need this preamplifier! Use the 10, 20 and 30dB attenuators to prevent front end overloaded.

CW PITCH CONTROL

Adjust the audio pitch of any CW signal without changing the operating frequency.

MULTI-FUNCTION KEYBOARD FOR YOUR CONVENIENCE

The keyboard on the front panel makes it easy to change the operating frequency, to switch bands, and to call up memory channels. You can get to any frequency fast! Very handy when working a contest and handling traffic.

TRANSMIT FREQUENCY CHECK SWITCH [XFC]

When operating duplex, push [XFC] on the front panel to monitor the transmit frequency. Ideal for crossband contacts.

PACKET AND AMTOR OPERATIONS

Packet and AMTOR are the newest modes in amateur radio; IC-781 has a built-in DATA switch that automatically inhibits the microphone input line.

BUILT-IN TONE ENCODER FOR 10 METER REPEATERS

You will have no problem accessing a 10 meter repeater with IC-781 since a programmable tone encoder with 38 tone frequencies is built-in.

CUSTOM-DESIGNED POWER SUPPLY FOR STABLE OPERATION

IC-781's switching regulator power supply is lightweight and compact. You are assured of stable power when operating continuously for a long time — even on RTTY and SSTV!

ALL MODE TRANSMITTER

IC-781 transmits all modes: AM, CW, RTTY and SSB (USB/LSB). The built-in tone encoder makes 28MHz FM repeater access easy.

CONVENIENT PANEL LAYOUT FOR EASY OPERATION

Measuring 425mm(W) × 149mm(H) × 411mm(D), IC-781 is not much larger than any high-quality rig on the market. Centered on the 5 inch CRT display, the front panel is laid out for convenient operating. Letters and numbers are printed large for easy reading. Easy access to all switches and controls. Easy viewing of all LEDs.

RF SPEECH COMPRESSOR

The built-in RF speech compressor boosts the relative output power of your SSB signal. Compressor adjustment is conveniently located on the front panel. Ideal for pileups, contests, etc.

ALL STANDARD FUNCTIONS ARE BUILT-IN

- Automatic Gain Control (AGC) circuit
- S-meter squelch indicator (all modes)
- FM noise squelch
- Variable tone control for transmitting and receiving
- CRT display intensity control
- Connectors on the rear panel for external data communications equipment
- Calibration markers every 25kHz
- Vox control (Gain/Anti-vox/Delay)

HF ALL BAND TRANSCEIVER

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SPECIFICATIONS

GENERAL

- Frequency coverage
  - Receive : 0.1~30.0MHz
  - Transmit : 160-m band 1.8~2.0MHz
    80-m band 3.5~4.0MHz
    40-m band 7.0~7.3MHz
    30-m band 10.1~10.15MHz
    20-m band 14.0~14.35MHz
    17-m band 18.068~18.168MHz
    15-m band 21.0~21.45MHz
    12-m band 24.89~24.99MHz
    10-m band 28.0~29.7MHz
- Modes : A3J(SSB), A1(CW), F3(FM), F1(RTTY), A3(AM)
- Frequency step : 10Hz (With [TS] OFF)
  1kHz (With [TS] ON)
- Antenna impedance (With [TUNER] OFF) : 50Ω unbalanced
- Power supply requirement: 100~120V AC (U.S.A. version)
  220~240V AC (Australia, Europe, France versions)
- Power consumption
  - Receiving max. audio : 150VA
  - standby : 140VA
  - Transmitting max. : 760VA
  - min. : 325VA
- Usable temperature range : −10°C~+60°C (+14°F~+140°F)
- Frequency stability : ±15Hz (−10°C~+60°C; +14°F~+140°F)
- Dimensions : 425(W) × 149(H) × 411(D)mm
  16.7(W) × 5.9(H) × 16.2(D)in.
- Weight : 23kg (50.7lbs.)

TRANSMITTER

- Max. output power
  - SSB : 150W PEP
  - CW, RTTY, FM : 150W
  - AM : 75W
- Modulation
  - SSB : Balanced modulation
  - FM, RTTY : Reactance modulation
  - AM : Low level modulation
- Max. frequency deviation : ±5kHz
- RTTY shift width : 170Hz, 425Hz, 850Hz selectable
- Spurious emissions : Less than −60dB
- Carrier suppression : Less than −40dB
- Unwanted sideband : Less than −55dB (with 1kHz modulation)
- Microphone impedance : 600Ω

RECEIVER

- Receiving system
  - SSB, CW, RTTY, AM : Quadruple-conversion superheterodyne
  - FM : Triple-conversion superheterodyne

Intermediate frequencies

	SSB	CW, RTTY	AM	FM
1st	46.5115	46.5106	46.5100	46.5100
2nd	9.0115	9.0106	9.0100	9.0100
3rd	0.4550	0.4550	0.4550	0.4550
4th	10.6950	10.6950	10.6950	——

Unit: MHz

- Sensitivity ([PREAMP] ON)
  - SSB, CW, RTTY (for 10dB S/N) : 0.1~0.5MHz Less than 0.5μV
    0.5~1.8MHz Less than 1.0μV
    1.8~30MHz Less than 0.16μV
  - AM (for 10dB S/N) : 0.1~0.5MHz Less than 3.2μV
    0.5~1.8MHz Less than 6.3μV
    1.8~30MHz Less than 1.0μV
  - FM (for 12dB SINAD) : 28~30MHz Less than 0.23μV
- FM squelch sensitivity : 28~30MHz Less than 0.23μV
- Selectivity
  - SSB, CW-W, RTTY-W, : More than 2.4kHz/−6dB
    AM-N : Less than 3.8kHz/−60dB
  - CW-N, RTTY-N : More than 500Hz/−6dB
    (With [CW250Hz] OFF) : Less than 1.0kHz/−60dB
  - CW-N, RTTY-N : More than 250Hz/−6dB
    (With [CW250Hz] ON) : Less than 800Hz/−60dB
  - AM-W : More than 6.0kHz/−6dB
    Less than 15.0kHz/−60dB
  - FM : More than 15.0kHz/−6dB
    Less than 30.0kHz/−50dB
- Spurious and image rejection ratio
  - Image : Less than −80dB
  - IF : Less than −70dB
- Audio output : More than 2.6W at 10% distortion with an 8Ω load
- Notch filter attenuation : More than 45dB
- RIT variable range : ±9.99kHz

ANTENNA TUNER

- Output matching range : 16.7~150Ω unbalanced
- Minimum input power : 15W
- Auto tuning accuracy : VSWR less than 1.2:1
- Insertion loss : Less than 0.5dB (after tuning)

CRT DISPLAY

- Output level
  - Composite video signal : 1Vp-p
  - Video components : 0.7Vp-p positive
  - Synchronous components : 0.3Vp-p negative
- Output impedance : 75Ω
- Horizontal frequency : 15.75kHz
- Vertical frequency : 60Hz

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

OPTIONS

- **IC-4KL** 1kW HF LINEAR AMPLIFIER
- **IC-2KL** 500W HF LINEAR AMPLIFIER
- **IC-AT500** 500W AUTOMATIC ANTENNA TUNER
- **SP-20** EXTERNAL SPEAKER WITH AUDIO FILTERS (8Ω, 5W)
- **SM-6** DESKTOP MICROPHONE
- **SM-8** DESKTOP MICROPHONE
- **SM-20** DESKTOP MICROPHONE
- **HM-12** HAND MICROPHONE (Up/down switches included)

- **UT-36** VOICE SYNTHESIZER UNIT
- **CT-16** SATELLITE INTERFACE UNIT
- **CT-17** CI-V LEVEL CONVERTER
- **EX-627** HF AUTOMATIC ANTENNA SELECTOR
- **FL-232** RTTY/CW NARROW FILTER (9.0106MHz, 350Hz/−6dB)

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Count on us!

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