

VHF AIR BAND TRANSCEIVER

IC-A220 (TSO version)



Icom is pleased to introduce the IC-A220 TSO version. The IC-A220 TSO version can be installed in the cockpit of a general aviation (Part 23) aircraft. The IC-A220 TSO version is also accepted as an ETSO radio under the TSO/ETSO reciprocal acceptance policy of September 2015.*

The IC-A220 has been designed with a high visibility OLED (Organic Light Emitting Diode) display and offers straight-forward operation and installation compatibility with other brands.

** Part 23 general aviation class; Normal, utility, acrobatic and commuter category airplanes*

For more details, please see the Environmental Qualification Form on www.icomamerica.com.

MAJOR SELLING POINTS

- **FAA TSO (Technical Standard Order) Certification**
- **High Visibility OLED Display**
- **Large Switch Buttons**
- **Auto Squelch and Quick Squelch Adjust**
- **Auto Dimmer and External Dimmer Control**
- **D-SUB 25 pin Connector**

NEW FEATURES

FAA TSO certification

The IC-A220 TSO version meets RTCA DO-160G requirements for use in strict environments. This version of the IC-A220 can be used as a TSO authorized airworthy VHF transceiver. The IC-A220 TSO version is also accepted as an ETSO (European Technical Standard Order) radio under the TSO/ETSO reciprocal acceptance policy of September 2015.

* The IC-A220 TSO version can only be serviced by Icom America Inc. All repairs or adjustment must be performed by Icom America as per the TSO approval requirements.

Auto squelch function

The squelch sensitivity is automatically adjusted in accordance with the noise level to eliminate annoying background noise and unwanted signals.

Quick squelch adjust

The auto and manual squelch including squelch level can be quickly accessed with the Volume knob. The squelch test function temporarily opens the squelch and allows you to monitor signals.

Auto dimmer

The auto dimmer function sets display and key backlighting brightness. The IC-A220 employs a higher sensitivity light sensor than the IC-A210, and covers wider illumination range.

External dimmer control

By connecting to an external dimmer control system on the aircraft, the IC-A220's dimmer function can be linked with the aircraft dimmer level. The external dimmer control can be used on either 13.8 V or 27.5 V electrical systems.

Configuration menu

To improve operability, menu items are divided into two modes, a settings menu and a configuration menu. Seldom-changed settings can be set in the configuration menu, while normal settings can be made in the settings menu.

9 Volts power supply operation in an emergency

As the TSO specifications require, the radio continues to work with the reduced power supply voltage.

Functions Comparison between TSO and Non-TSO Versions

	IC-A220	IC-A220	IC-A210
	TSO version	Non-TSO version	
OLED	Pure white color	Pure white color	White color
Key backlighting	Pure white color	Pure white color	Yellow green color
TSO certification	Yes	N/A	N/A
Auto squelch	Yes	Yes	N/A
Quick squelch adjust	Yes	Yes	N/A
Auto dimmer	Yes (Improved)	Yes (Improved)	Yes
External dimmer control	Yes	Yes	N/A
TOT (Time-out-timer)	35 seconds (as TSO requirements)	20–240 seconds	20–240 seconds
Configuration menu	Yes	Yes	N/A
9V power supply operation	Yes	N/A	N/A
Memory channels	20	20	10
History memory channels	20	20	10
Group memory channels	5 groups × 10 channels	5 groups × 10 channels	20 groups × 10 channels
Weather channel	10	10	10
GPS memory channels	N/A	10	10
GPS memory	N/A	Yes	Yes
Dial lock and panel lock	N/A	Yes	Yes
Weight	1.2 kg	1.0 kg	1.0 kg
Rear panel connector	D-SUB 25 pin	D-SUB 25 pin	Card edge type
Programming software (Option)	N/A	Yes (CS-A220)	Yes (CS-A210)
PS-80 (Option)	N/A	Yes	Yes
MB-53 (Option)	N/A	Yes	Yes
MBA-3 (Option)	N/A	Yes	N/A

NEW FEATURES

Memory channels

Often used memory channels and history memory channels are increased from 10 channels to 20 channels respectively. Group memory channels are reorganized into efficient 5 groups, 50 channels in total.

D-SUB 25 pin connector

To install the IC-A220 to the supplied mounting bracket, a D-SUB 25 pin connector is supplied with the IC-A220. Supplied socket contact pins are MIL-Spec M39029/63-368 compliant, commonly used in the avionics industry to improve installation work efficiency and compatibility.



Rear panel view

Note about options

As the IC-A220 TSO version is designed for installation in an aircraft, the TSO version cannot use options that are originally available with the IC-A220 Non-TSO version.

Deleted functions

- GPS memory function deleted
- Dial lock and panel lock function deleted
- PC programming function deleted

RETAINED FEATURES

High visibility OLED (Organic Light Emitting Diode) display

The IC-A220 employs an OLED for the display, providing wider viewing angle, higher contrast and faster response time than a conventional LCD.



Wide viewing angle

High visibility

The OLED emits light from organic materials, so a display backlight is not required. It provides an extremely high contrast and a very wide viewing angle of almost 180 degrees. In addition, the OLED display is set close to the front panel. Well layed out characters help to identify important information like operating frequencies.



4-level gray scale example

Improved readability

The IC-A220's display has a wide active area, so operating frequencies' characters can be maximized in the display, while operating status can be shown on both top and bottom. The IC-A220's OLED can display 4-level gray scale from darker gray to bright white and increases readability. This gradation is used, for example, in showing selected items in the settings menu.



Display comparison with a competing product (IC-A220 is below)
Its flip-flop key is large and prominent.

Large switch buttons

The IC-A220 has large switch buttons on the front panel. The most frequently used FLIP-FLOP (Frequency exchange) switch button is designed two-times larger than competing products and is easily pushed with positive operating feeling. All switch buttons and knobs are illuminated with pure-white backlighting which are the same color as the OLED display and further provide sophisticated design at the same time.

Other features

- Voice activated intercom function
- Dualwatch and priority watch functions
- One touch access to 121.5 MHz emergency frequency
- Both 13.8 V and 27.5 V systems compatible
- Side tone function for monitoring your voice with a headset
- ANL (Automatic noise limiter) function reduces pulse type noise
- 8.33 kHz channel spacing

SPECIFICATIONS

Specifications described below are target values.

GENERAL	
Frequency coverage	
Tx/Rx 25 kHz spacing	118.000–136.975 MHz
8.33 kHz spacing	118.000–136.992 MHz
Rx Weather channel	161.650–163.275 MHz
Channel spacing	8.33 kHz/25 kHz
Mode	AM (6K00A3E, 5K60A3E)
Frequency stability	±5 ppm
Operating temperature	–20°C to +55°C; –4°F to +131°F
Antenna impedance	50 Ω
Number of memory channels	20 regular memory channels 50 group memory channels 20 history memory channels 10 weather memory channels
Power supply requirement	13.8 V/27.5 V DC (Negative ground)
Dimensions (W×H×D, Projections not included)	160×34×271 mm; 6.3×1.34×10.67 in
Weight	1.2 kg; 2.65 lb ±10%
Certification	TSO-C128a, TSO-C169a
TRANSMITTER	
Output power	8 W (Carrier power)
Spurious emission	–60 dBc
Modulation limiting	70% (Maximum 98%)
Microphone impedance	600 Ω
RECEIVER	
Intermediate frequencies	38.85 MHz/450 kHz (1st/2nd)
Sensitivity AM (6 dB S/N)	Less than 2 μV
FM (12 dB SINAD)	Less than 1.4 μV
Selectivity 25 kHz spacing	±3 kHz/±22 kHz (6 dB/60 dB)
8.33 kHz spacing	±2.778 kHz/±7.37 kHz (6 dB/60 dB)
Spurious response	More than 74 dBμ
Audio output power	
External SP	5 W with a 4 Ω load
Headphone	60 mW with a 500 Ω load

Measurements made in accordance with RTCA DO-186B at a normal temperature.

Applicable U.S. Military Specifications

Standard	MIL 810 G	
	Method	Procedure
Low Pressure	500.5	I, II
High Temperature	501.5	I, II
Low Temperature	502.5	I, II
Temperature Shock	503.5	I-C
Solar Radiation	505.5	I
Humidity	507.5	II
Vibration	514.6	I
Shock	516.6	I

Also meets equivalent MIL-STD-810-C, -D, -E and -F.

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