

SILVER SHADOW

COMPLETE USER MANUAL

Installation | operation | radio profiles | spectrum | recording | licensing | updates

v0.29.82

Expanded public edition | 27 September 2026

IMPORTANT

This complete manual covers all regular features of Silver Shadow v0.29.82. It is based on the original extended user manual and the approved display changes in this release.

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Document information

Software	Silver Shadow 0.29.82
Edition	Expanded public edition
Platform	Windows 10 / 11 x64
Radio support	Icom IC-7300 / IC-7300MK2: verified baseline; IC-7600: core controls; IC-7610: MAIN/SUB core and MAIN scope. Dual scope and other models are profile-dependent.
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1. About Silver Shadow

Silver Shadow is a standalone Windows control console for supported Icom CI-V transceivers. It communicates through the selected USB/serial COM port and combines frequency, bands, presets, status, meters, spectrum, recording and transmit functions in one interface.

- Direct CI-V control through the selected radio profile.
- Large frequency display, VFO and adjustable STEP.
- Band and channel grid, including the 11-metre channels and 27.555 USB preset.
- Mode and FIL1/FIL2/FIL3 readback on supported models.
- Live S-meter and TX meters when the radio supplies those values.
- Spectrum and waterfall on applicable profiles.
- Momentary PTT, PTT HOLD, tuner/TUNE and TX TIMEOUT.
- Regular Icom Auto Roger with T1-T8 memories, Auto SQL and Twin PBT where supported.
- QSO Recorder with local WAV recording, timer, browser and audio indicator.

Version 0.29.82 adds an improved responsive layout, Smart Scan, clearer Tools categories and an MK2 Display shortcut. Capabilities vary by model; read the model matrix before connecting a new transceiver.

2. Platform, support and boundaries

Silver Shadow runs on 64-bit Windows 10 and Windows 11. It opens the selected Windows COM port directly for the Icom CI-V connection. The optional local phone interface is provided by the Windows computer running Silver Shadow; it is not a standalone Android or iOS application.

- Windows 10/11 x64: supported.
- macOS and Linux: no native edition.
- Android/iOS: no native app; limited control can be available through the optional local browser interface.
- Radio connection: direct serial CI-V via a Windows COM port.
- Icom LAN or RS-BA1: not a standard substitute for the supported COM-port connection.
- Third-party COM splitters: not guaranteed; test any custom setup separately.

Normally only one application can open a serial COM port exclusively. Close conflicting CAT applications or use Silver Shadow's local External Apps Hub with compatible Hamlib NET rigctl programmes. The hub is not a general virtual COM-port splitter.

Capability varies by radio model. The IC-7300 and IC-7300MK2 are the physically verified baseline. IC-7600 core controls are verified but modern PC spectrum streaming is not supported; IC-7610 MAIN/SUB core controls and MAIN scope have been tested. Check profile status for other radios.

3. Installation and first start

Obtain the portable Silver Shadow package only from the official website or a secure support link. This update's public filename is SilverShadow_Portable_v0.29.82.zip. The ZIP contains the Windows application and its public documents.

- Create a permanent folder for Silver Shadow, for example C:\SilverShadow.
- Extract the entire ZIP; do not launch the executable directly from within an archive viewer.
- Open SilverShadow.exe. On first use, the licensing screen may ask for your activation information.
- Select the correct transceiver profile and connect the radio after the official driver and COM port are available.
- Select the correct Windows capture device separately if you wish to use QSO Recorder.

Windows SmartScreen or security software may scrutinise a newly released application. Verify the source and filename; do not disable Windows security globally.

To update from v0.29.80, close Silver Shadow, ensure transmitting has stopped and consider keeping the previous working executable as a temporary fallback. Extract the new package to the intended installation folder. User preferences and licensing information are normally stored per Windows account; create your own backup before major system changes.

Software download and activation are separate steps. If a personal download link expires, ask support for a replacement link instead of buying a second licence.

4. Licence, activation and moving to another PC

One Silver Shadow licence activates one computer. The licence is bound to a pseudonymous/hashed Device ID.

At startup Silver Shadow checks licence status online when the server is reachable. A recently valid local

activation may continue through a temporary internet outage; an explicitly refused, reset or disabled server-

side licence does not receive that fallback.

- Separate keys are required for simultaneous use on additional computers.
- Use **TOOLS > DEACTIVATE LICENSE** before moving the same licence to your own replacement PC.
- After successful deactivation Silver Shadow closes; activate the same key on the replacement computer.
- Never publish a complete key in screenshots, forums or public support messages.
- **LICENSE INFO** shows the version, edition, masked key and part of the Device ID. Founders / Early Access

The

Founders line includes the agreed Early Access/beta updates, V1.0 and V1.x according to the current terms on

the website.

5. Radio profiles and model matrix

The selected profile determines CI-V address, baud rate, available bands and model-specific functions. Select the exact radio model before connecting.

IC-7300 - 94h - 115200 - direct scope - T1-T8 - 160M-4M - PHYSICALLY VERIFIED IC-7300MK2 - B6h - 115200 - direct scope - T1-T8 - 160M-4M - PHYSICALLY VERIFIED IC-7600 - 7Ah - 19200 - core control PHYSICALLY VERIFIED - no PC scope/waterfall IC-7610 - 98h - 115200 - core MAIN+SUB PHYSICALLY VERIFIED - MAIN scope verified - dual scope pending IC-705 / IC-7100 / IC-7700 / IC-7760 / IC-7800 / IC-7850/7851 / IC-9700 - built-in Early Access profiles.

Early Access does not mean absent. The profile is built in, but not every model-specific function has been confirmed on real hardware. Always test RX first and then TX at safe power.

6. Preparing USB / CI-V

Use the official Icom/USB driver for the exact radio model when Windows requires it. Use a reliable shielded

USB data cable; a charge-only cable will not work. Power the radio on and check Device Manager > Ports (COM

& LPT) for the assigned COM number.

- Close other CAT software holding the same COM port.
- Start Silver Shadow and select the correct radio profile first.
- Select the COM port and click CONNECT.
- Silver Shadow automatically uses the CI-V address and baud rate defined by the selected profile; normal

users do

not manually enter those values.

- Use TEST RADIO / AUTO-DETECT if you need to verify that a port belongs to a supported Icom profile. USB

stability

For unexplained dropouts, test another USB port and data cable before changing many radio settings. Direct

scope traffic is much heavier than simple frequency/status polling.

7. IC-7300 / IC-7300MK2 verified baseline

For the original IC-7300, the settings below remain the verified Silver Shadow baseline for direct CI-V control and high-speed scope traffic. "Unlink from [REMOTE]" keeps the USB CI-V path independent from the REMOTE connection. IC-7300 setting Recommended value CI-V Address 94h CI-V Transceive ON CI-V USB Port Unlink from [REMOTE] CI-V USB Baud Rate 115200 CI-V USB Echo Back OFF USB Serial Function CI-V USB SEND OFF unless intentionally used USB Keying (CW/RTTY) OFF unless intentionally required IC-7300MK2 verification The IC-7300MK2 profile (CI-V B6h / 115200) has been approved on real hardware. Use

the official Icom settings and documentation for the MK2 itself; do not assume every menu label is identical to

the original IC-7300.

The radio remains authoritative Before TX always confirm frequency, mode, filter, power, antenna/SWR and the

physical radio. Software status is an aid, not transmitting authority or a safety device.

Recommended Radio Setup - new in v0.29.80

For a detected IC-7300, Silver Shadow can safely check recommended settings. The workflow is: fresh read -> compare -> backup -> confirm -> write only differing values -> readback verify. Unread values are never written blindly. Personal audio/EQ/memory settings are left untouched.

8. Main window and responsive layout

v0.29.82

The main window keeps essential radio controls reachable on different laptop sizes. Frequency, bands, channels and presets are on the left. The wider spectrum panel displays scope and waterfall. The right column contains the meters and direct controls.

- Top of the right panel: meters, standard Icom Auto Roger/T1-T8, Roger Delay and TUNER/TUNE/TOOLS.
- Next: volume bar, RX/mode/filter/ATT/NB/AGC, and the larger PTT and PTT HOLD buttons.
- Bottom: a separately framed radio connection section with COM port, connect/disconnect and model selector.
- SCAN changes to STOP while the scanner is running.
- MK2 DISPLAY opens the additional spectrum window on supported profiles.
- Language selection and advanced settings are now under TOOLS.

On compact screens, the meter area becomes more compact and settings can scroll when required. PTT and connection controls remain accessible. Version 0.29.82 has been checked on 14-inch and 17-inch laptops in the developer's setup. Available workspace depends on both resolution and Windows scaling.

A compact AUDIO indicator next to REC follows the received audio; click it to open the corresponding audio scope.

9. Connecting, auto-detect and reconnect

Select the correct COM port and Icom profile and click CONNECT. Silver Shadow opens the port with profile

values and verifies radio response. After a successful connection, frequency, mode, filter and status follow the

radio live.

- Turn the physical VFO first and confirm the large frequency display follows.
- Then test a safe preset in RX.
- Use TEST RADIO / AUTO-DETECT when the model or port is uncertain.
- Existing reconnect logic performs a controlled recovery after unexpected serial errors; also avoid parallel

software on the same COM port.

- Do not interpret a temporary scope status as a COM disconnect when other radio controls are still live.

handles the expected tuner/TX scope pause separately. RX first Always test an Early Access profile fully in RX.

Confirm VFO, mode, filter and meters before trying any TX function.

10. VFO, STEP and manual tuning

The software VFO can be operated with mouse interaction and the mouse wheel. STEP selects the tuning

increment; manual tuning is not hard-clamped to the preset grid even though presets remain band-oriented.

- Click STEP to cycle the normal Silver Shadow increments.
- The VHF/UHF Early Access layer can temporarily use dedicated 5/6.25/10/12.5/25 kHz steps on

IC-705/7100/9700. A

normal STEP click leaves that override.

- Band/preset changes set a start/preset frequency; VFO tuning can then continue freely. STEP

Increment 1 Hz 1 Hz 10 Hz 10 Hz 100 Hz 100 Hz 1 kHz 1

kHz 5 kHz 5 kHz 10 kHz 10 kHz

11. Bands, presets, 11m and activity

The available band buttons depend on the selected radio profile. The band and preset grid offers direct tuning and the 40 standard 11-metre channel positions where applicable. A separate shortcut selects 27.555 USB.

- Green indicates detected RF activity in the channel grid.
- Cyan marks the current frequency and red highlights a selected active position.
- ACT adjusts activity sensitivity, and NEXT ACTIVE advances to the next detected position.
- SCAN starts Smart Scan; the same button shows STOP while scanning.
- Tools provides scan settings and Active Only.

Example bands in the general profile layout (individual radios may differ):

160 m: 1.810-2.000 MHz | 80 m: 3.500-3.800 MHz | 60 m: 5.3515-5.3665 MHz
 40 m: 7.000-7.200 MHz | 30 m: 10.100-10.150 MHz | 20 m: 14.000-14.350 MHz
 17 m: 18.068-18.168 MHz | 15 m: 21.000-21.450 MHz | 12 m: 24.890-24.990 MHz
 11 m: 26.950-27.600 MHz | 10 m: 28.000-29.700 MHz | 6 m: 50.000-52.000 MHz
 4 m: 70.000-70.500 MHz | 2 m: 144.000-146.000 MHz
 70 cm: 430.000-440.000 MHz | 23 cm: 1240.000-1300.000 MHz

These are software presets, not legal band plans or permission to transmit. The operator must check local allocations and power limits. A radio profile cannot add hardware capabilities outside the transceiver's supported range.

12. Mode and FIL1/FIL2/FIL3

- Click the mode display to select a supported mode.
- Click FIL1/FIL2/FIL3 to cycle FIL1 -> FIL2 -> FIL3 -> FIL1.
- After a filter change Silver Shadow reads the radio again, so displayed filter status should follow the radio.
- Not every model supports every mode/filter combination in exactly the same way. Test a new profile in RX

first.

Mode Meaning LSB Lower Sideband USB Upper Sideband AM

Amplitude Modulation CW CW RTTY RTTY FM FM CW-R CW Reverse RTTY-

R RTTY Reverse

13. Meters and Radio Engine v4

Radio Engine v4 centralises control and confirmed readback without slowing normal user actions. VFO/STEP,

MODE/FIL, PTT/PTT HOLD, tuner/TUNE and meter state use controlled engine paths. The S-meter keeps a fast

polling path while background readbacks are spaced by a de-duplicating scheduler.

A real IC-7300 CI-V recording showed many simultaneous background readback bursts before v4. With the v4

scheduler the measured automatic readback response in the test improved to about 98.5% without slowing the

scope or PTT fail-safe.

- S-meter: fast attack, calmer decay and peak hold where supported by the selected style.
- Icom anchors: S0 = 0%, S9 = 60%, S9+60 dB = 100% on the Silver Shadow scale.
- Meter styles: SS HUD, DIGITAL, ANALOG, SS NEXUS and SS DEPTH 3D.
- TX: PWR, SWR and ALC where the radio supplies these values.
- PTT/RX fail-safe has priority over background polling.
- The software meter never replaces radio protection or an external instrument.

14. Scope, waterfall and Scope Pro

Scope displays spectrum samples supplied by radio profiles with supported CI-V spectrum streaming. Waterfall stores consecutive measurements and uses the chosen colour and speed settings.

- Select an appropriate span and zoom. Strong zoom magnifies the available samples; it does not create new measurement points.
- Higher waterfall display speeds now use smoother image interpolation. This improves visual continuity but does not increase real frequency resolution.
- Adjust level, speed and averaging for current conditions.
- If spectrum streaming stalls, a manual scope restart is available under Tools.
- Radio profiles without supported PC spectrum streaming continue to offer applicable CI-V control but do not offer a PC waterfall.

MK2 Display is an additional window, not another connection to the transceiver. The main scope maintains its own controls and settings. The tested IC-7610 profile supports MAIN scope; additional dual-scope behaviour must be verified separately per model.

15. Twin PBT

On supported direct-scope profiles Silver Shadow reads PBT1, PBT2 and selected IF filter width from the radio.

PBT positions are displayed as the actual raw 0-255 values; centre is 128. The scope overlay shows the relative

overlap of both PBT settings.

- Turn the physical TWIN PBT controls: PBT1/PBT2 should follow live.
- Drag the Twin PBT overlay to control PBT1/PBT2 from Silver Shadow.
- Double-click the overlay or choose TOOLS > TWIN PBT • CENTER 128/128 to centre both exactly.
- Selected IF filter width is shown as reported/selected by the radio.
- Silver Shadow deliberately does not invent an undocumented raw-to-Hz conversion for PBT.
- Twin PBT is primarily relevant in SSB/CW/RTTY/AM-type modes and is not presented as meaningless FM

control.

Physically confirmed Twin PBT telemetry and control have been tested live on the reference IC-7300.

16. Auto SQL

AUTO SQL is intended for FM. It does not use a guessed S-unit threshold; it uses the squelch OPEN/CLOSED

status reported by the Icom radio itself through CI-V. Silver Shadow can therefore calibrate around the radio's

real squelch closing point.

- OFF disables automatic calibration.
- LOW, NORMAL and HIGH select increasing margin above the detected closing point.
- Start AUTO SQL on a quiet FM channel where possible. If clear reception is present during sampling, the

function

waits rather than learning the station as noise.

- A manual SQL slider movement always wins and disables AUTO SQL immediately.
- Leaving FM automatically turns AUTO SQL off; an old FM calibration is not carried into SSB/AM. Physically

confirmed AUTO SQL LOW/NORMAL/HIGH has been tested on the reference IC-7300 in FM using the real radio

squelch status.

17. Radio audio and TX/RX controls

Public Icom audio controls are grouped under TOOLS > Audio. Depending on radio capabilities, these include TX and RX control levels, supported DSP/EQ settings, and the Windows capture source used for recording.

- TX Audio shows settings the connected transceiver exposes through supported CI-V commands.
- RX/Receive groups reception-related RF, SQL, NR and NB controls.
- Radio levels use the existing Radio Engine; no second serial connection is created.
- Select the Icom USB receive-audio source for local recordings.
- The AUDIO bar beside REC indicates activity from the selected capture stream.

Only adjust MIC, COMP, PWR and MON when they are supported by your radio profile, and verify the resulting settings on the transceiver. The radio's physical microphone and the Windows recording stream are separate systems. The application does not convert the radio into a general-purpose sound card.

18. PTT, PTT HOLD and TX TIMEOUT

The large PTT area is momentary: mouse button held = TX, released = RX. The separate PTT HOLD area is a

toggle: one click latches TX, the next returns to RX. Actual radio TX status remains authoritative for the UI.

- On normal disconnect/exit after Silver Shadow commanded TX, the application attempts RX before closing

the

COM port.

- TX TIMEOUT can be OFF, 30, 60, 120 or 180 seconds and forces RX if a Silver Shadow-commanded TX state

persists

too long.

- Voice Memory has its own playback/timeout handling and is not treated as an ordinary PTT cycle.
- If TX behaviour is unexpected, restore RX immediately, disable PTT HOLD/AUTO and resolve the cause

before

transmitting again.

19. Tuner, TUNE and TX/Tuner scope resume

TUNER toggles the internal tuner state where supported. TUNE starts an Icom tune cycle. Tuner state is read

back after control.

- Use TUNE only with a suitable antenna or dummy load and safe power.
- During TX the scope waveform stream can pause. With the tuner enabled the IC-7300 can keep that pause

longer.

-

treats this as an expected scope pause: CI-V/COM remains live, the last good scope image is held and recovery is not falsely presented as a COM failure.

- When RX returns the scope is gently re-armed until the first confirmed complete sweep arrives.
- A real band/span change cancels this grace logic immediately and returns control to the normal Radio

Engine v4

metadata handshake. Physically confirmed The previously visible 5-6 second orange/wait condition after TX

with AUTO TUNER enabled has been corrected on the IC-7300 without resetting COM.

20. Auto Roger and T1-T8 Voice Memory

Regular Icom Auto Roger uses the selected T1-T8 Voice Memory slots stored on the connected transceiver. It is part of normal radio and memory controls. The radio plays its own programmed memory when the current profile supports the command route.

- Select a T1-T8 memory and first use TEST on an appropriate test frequency or dummy load.
- AUTO enables or disables automatic memory operation.
- ROGER DELAY adds a configurable software delay. At 0 ms no extra software delay is applied, although radio switching still takes finite time.
- Memory requests must not overlap uncontrolled with a previous playback operation.
- TX start is confirmed before continuing automatic playback logic.
- Profiles without verified T1-T8 support must not be treated as fully compatible.

Depending on your Icom model and Voice Memory workflow, an SD card or correctly prepared files on the radio may be needed. The user is responsible for the content and rights of their own stored audio.

QSO recordings operate independently of the transceiver's stored memories. If receive audio is configured, a QSO Recorder recording can continue while regular radio memory operations are in progress. Test the workflow at safe, low power first.

21. QSO Recorder and received audio

QSO Recorder creates local WAV files of the received radio signal using an available Icom/Windows recording source selected by the operator. It is a normal feature of the public Silver Shadow release.

- Click REC to start or stop. The timer shows elapsed time.
- Where available, filenames contain date, time, frequency, mode and radio model.
- Auto Level can raise the level of a quiet saved recording; it cannot undo clipping already present in the source.
- The final report includes duration, peak level, dBFS, applied gain and any clips.
- The compact AUDIO bar beside REC shows receive activity. Click it to open the audio scope with waveform and spectrum from the same receive stream.
- The recordings browser can play, stop, delete and refresh WAV recordings.
- Capture-device selection is remembered where the operating system permits it.

Capture guard: REC will not start without a connected radio. Audio capture stops when the radio disconnects; it does not silently switch to another Windows input. Check that the selected source contains actual RX audio. Keep peaks strong but below clipping.

22. TOOLS, External Apps Hub and diagnostics

TOOLS groups advanced features by topic, keeping the main window uncluttered. Exact options depend on the active transceiver profile.

- Radio and connection: COM ports, automatic identification, radio profile, recommended settings and External Apps Hub.
- Scanner and channels: Smart Scan, channels 1-40, scan settings and Active Only.
- Spectrum and displays: scope/waterfall settings, averaging/peak, MK2 Display and scope restart.
- Audio and recordings: TX Audio, RX/Receive, supported Icom DSP/EQ, capture selection and QSO Recorder.
- General settings: language, accent colour and saved preferences.
- Diagnostics and updates: radio/capability diagnostics, CI-V Recorder, Replay/Radio Simulator and update check.

EXTERNAL APPS HUB: a local Hamlib NET rigctl interface can pass commands from other applications to Silver Shadow. Silver Shadow remains the owner of the physical COM port. The hub normally listens on localhost (127.0.0.1), default port 4532. External CAT-PTT/TX is OFF by default for safety; only enable it after checking the third-party application and its PTT handling.

If another application does not behave as expected, provide its name, version, radio model and error message to support. Not every external programme has been fully verified with every transceiver.

23. CI-V Recorder, Replay and Radio Simulator

The CI-V Recorder is intended for diagnostics and development. It writes complete received and transmitted CI-

V frames, including scope traffic, with UTC timestamps to a local .ssrec file. A separate writer thread minimises

impact on the main UI.

- The header includes Silver Shadow version, radio model, CI-V address, baud rate and start time.
- The recording does not contain the complete Silver Shadow licence key.
- Silver Shadow does not upload .ssrec files automatically; they remain local until the user chooses to share

them.

- CI-V REPLAY / RADIO SIM can load an .ssrec with the real radio disconnected.
- Replay speeds: 0.5x, 1x, 2x and 4x.
- RX frames are fed through the same normal Silver Shadow parser used for live radio traffic. Writes to a real

radio

are blocked while replay is active.

- Replay is for model analysis and reproducible regression testing; final TX/hardware verification still requires a

real radio. Tester network A tester with an IC-705, IC-7610, IC-7300MK2 or IC-9700 can record a short real-radio

session. This enables targeted analysis without every radio being physically present at the development station.

24. VHF/UHF Early Access controls

For profiles with native VHF/UHF support (IC-705, IC-7100 and IC-9700) an extra VHF/UHF • REPEATER menu

can appear. The IC-7300 does not show these controls. In they remain Early Access and require real-hardware confirmation.

- Use the radio itself as final confirmation of duplex direction, offset and tone.
- Check regional repeater band plans and transmitting privileges before TX.
- A normal STEP click can leave the dedicated VHF/UHF step override and return to the normal Silver Shadow

STEP

cycle. Function Choices Duplex SIMPLEX / DUP- / DUP+ Tuning step

5 / 6.25 / 10 / 12.5 / 25 kHz Offset 0.600 / 1.600 / 7.600 MHz or custom kHz CTCSS mode OFF /

TONE / TSQ L CTCSS frequency Standard tone list + custom Scan PROGRAM SCAN / MEMORY

SCAN / STOP Hardware status These controls are present in the software but have not yet been physically

verified by Silver Shadow on an IC-705/7100/9700.

25. Phone Remote on the local network

Phone Remote is a simple browser remote hosted by Silver Shadow on the Windows PC. It is intended for a

trusted local network and is neither a native Android/iOS app nor a direct network connection to the Icom

radio.

- Open TOOLS > PHONE REMOTE and turn it ON.
- Silver Shadow displays a local http address and PIN.
- Open that address on a phone/tablet on the same LAN and enter the PIN.
- The browser session expires after 30 minutes; use LOGOUT to end it manually.
- Available data includes status, frequency/mode/filter, S-meter, 11m grid, 27.555 USB, Auto Roger, T1-T8 and

TX

meters.

- PTT is not offered in the current browser remote.
- Do not forward the remote port directly to the internet and do not publish the PIN.

26. Language, colours and saved settings

From v0.29.82, language selection is under TOOLS > General Settings > Language. Dutch and English provide the same transceiver functions and use the same saved radio profiles.

General Settings also offers the overall accent colour. Frequency colour and waterfall settings, where available, are separate controls.

Settings are stored per Windows user under %LOCALAPPDATA%\SilverShadow\settings.ini. Consider backing up this file before reinstalling Windows or substantially changing your configuration. Do not edit it while Silver Shadow is running.

The interface responds to window dimensions. The 14-inch and 17-inch display update removes an unnecessary scrollbar when the meter controls already fit inside their panel. Scrolling remains available when the window is smaller.

27. Updates and version management

After successful licence validation, Silver Shadow checks for a higher release when the main window is shown.

The update chain uses version, secure download URL and SHA256 integrity information from the server.

- When a higher version is available Silver Shadow asks whether you want to open the download.
- The running EXE is not silently replaced. Disconnect/close the radio before placing a new EXE.
- Keep the previous working release as rollback until the new version is tested on your station.
- Read both “What’s New” and the fully updated manual with every release. The manual follows the release

follows the fixed Silver Shadow policy: complete NL and EN manuals are updated; the changelog is only one chapter.

28. Troubleshooting

For problems, first check the actual radio connection, selected transceiver profile and Windows COM port. Note the precise error before changing settings.

- No COM port: install the official Icom USB driver, check the data cable and open Windows Device Manager.
- COM port already in use: close another CAT application that has opened the same port exclusively.
- No response: verify radio power, CI-V address, baud rate, profile and COM selection; try Auto Detect.
- Wrong mode or filter: select the required value again and verify readback from the radio.
- Empty scope / Waiting: confirm the selected transceiver actually supports PC spectrum streaming; try a manual scope restart.
- Scope pauses during menu or TUNE: close the transceiver's menu or tuner operation and verify the scope resumes.
- Waterfall too busy or coarse: adjust level, speed or span. Heavy zoom can enlarge the original spectrum sample points.
- Unnecessary scrollbar on a large display: verify Windows scaling and restart the application after changing resolution.
- Smart Scan stalls: check channel selection, Active Only, activity threshold and whether TX or manual tuning has stopped scanning.
- PTT remains active: use RX / release PTT HOLD, check TX TIMEOUT and safely disconnect if necessary.
- Auto Roger does not play: first verify a suitable T1-T8 slot, Roger Delay and the transceiver's own setup.
- QSO Recorder is silent: verify radio connection and that the selected Icom audio-capture device carries actual received audio.
- Audio is distorted: lower source recording levels in Windows/Icom settings and check the clip indicator.
- External Apps Hub cannot connect: verify localhost 127.0.0.1, port 4532, Hub status and NET rigctl settings in the third-party application.
- External application PTT is refused: external CAT-PTT/TX is intentionally OFF by default.
- Recommended settings read is incomplete: incomplete radio readback deliberately prevents blind writes.
- Licence needs reactivation: check connectivity and activated-device count; contact support to move or reset activation.

For reproducible faults, report the software and Windows versions, radio model, COM port, exact action and, if requested, a diagnostic report or short CI-V recording. Never publish a complete licence key or remote PIN.

29. Safe test procedure

Test new versions in a safe station configuration first. After any substantial update, check the visible interface as well as actual transceiver control.

- Consider backing up your working portable application and settings.
- Connect the transceiver to a suitable antenna or dummy load at a safe test power.
- Confirm the official Icom driver, correct COM port, CI-V address and baud rate.
- After connecting, test RX only first: frequency, mode, filter and VFO/STEP.
- Check band and preset selection, all channel tiles and SCAN/STOP.
- Test the S-meter, TX meters and scope on a radio profile with supported spectrum streaming.
- Test ACT, NEXT ACTIVE, Auto SQL, Twin PBT and P.AMP only when supported by the current profile.
- Test TUNER/TUNE with an appropriate load and confirm the scope resumes after finishing.
- Test momentary PTT and PTT HOLD separately; ensure the radio returns to RX correctly each time.
- Check Icom Auto Roger/T1-T8 with TEST first, then the automatic setting.
- Create a short QSO Recorder WAV file and review the saved recording and final report.
- Test External Apps Hub first with external TX disabled, then check the client status.
- Use Recommended Radio Setup only after complete readback, a backup, explicit approval and verification.
- Check all controls and the right-panel border on both 14-inch and 17-inch displays at normal Windows scaling.
- Confirm that larger screens do not show an unnecessary white scrollbar; on compact windows verify scrolling remains available when required.

The operator remains responsible for frequency allocation, transmit power and safe operation. If unexpected transmission occurs, immediately return the radio to RX before further testing.

30. What's new in v0.29.82

Changes since v0.29.80:

- Improved layout on both smaller and larger laptops, including a fully framed right-hand control panel.
- Radio connection has a clearly separated bottom section with more space for COM, model selection and connection status.
- Smart Scan with SCAN/STOP, channel selection and Active Only. Scanning is intended to stop safely during TX, manual tuning or loss of connection.
- Grouped TOOLS menu; language selection has moved off the main screen.
- Central public TX and RX radio audio controls and supported Icom DSP/EQ under Tools > Audio.
- Additional MK2 Display shortcut on the main screen.
- Manual scope restart and smoother image rendering at higher waterfall display speeds. Interpolation does not generate new spectrum samples.
- The meter area adapts to different screen dimensions; unnecessary vertical scrollbars disappear when controls fit.

Carried forward from v0.29.80: central Radio Engine, supported CI-V profiles, QSO Recorder, regular Icom Auto Roger and T1-T8 memory, tuner/TUNE, diagnostics, Replay and External Apps Hub.

Before updating, confirm the radio connection, recording source and licence. Advanced capabilities still depend on physical testing for the particular radio model.

31. Support, references and final notes

Silver Shadow is independent software. For transceiver-specific settings and safety, also consult the official Icom operating manual, CI-V command reference and USB driver for your exact model. Brand and model names belong to their respective owners; no official affiliation is implied unless explicitly stated.

- When contacting support, provide the Silver Shadow version, Windows version, selected radio profile and COM port.
- Explain what you did immediately before the issue and whether it occurs during reception, transmission or a particular setting.
- For CI-V/scope issues, support may request EXPORT DIAGNOSTICS or a short .ssrec recording.
- Share licensing information only with official support. Never publicly post a full licence key or local remote PIN.

Support: qsl.silvershadow@gmail.com

Website: www.silvershadowradio.com

Licence: one licence per computer unless specifically agreed otherwise.

Platform: Windows 10 and Windows 11 x64.

Hardware status for this release: IC-7300 and IC-7300MK2 are the fully tested baseline. IC-7600 core control is physically verified without modern PC waterfall streaming. IC-7610 MAIN/SUB core control and MAIN scope have been tested; further dual-scope support is separate. Other radio profiles may be available as Early Access without every feature having been physically verified.

SUPPLEMENT: DISPLAY LAYOUT

This supplement accompanies the complete Silver Shadow user manual for version 0.29.82.

1. Automatic scaling

Silver Shadow adjusts the main screen to the available width and height of the Windows application window to keep controls accessible on compact displays.

- Maximize the application window to make the most of the available screen space.
- The layout depends on display resolution, Windows scaling and window dimensions.

2. Screen & Layout

Open Tools > General Settings > Screen & Layout to select Automatic or another available display profile.

- Compact S, PWR, SWR and ALC meters appear when vertical space is limited.
- Standard Icom Auto Roger, T1-T8, PTT and radio connection controls remain accessible.

3. VFO and mouse wheel

The mouse wheel over the VFO adjusts frequency without scrolling the entire application window.

- Check your selected STEP setting before tuning with the mouse wheel.

4. Help with display issues

If any controls remain out of view, send Silver Shadow support your screen resolution, Windows display scaling, selected layout and a screenshot.

- Get updates from the official Silver Shadow website and use your existing licence on the same computer.