

Flex Skimmer Bridge User Manual

Main Window Overview

The Flex Skimmer Bridge main window provides configuration, control, and real-time DX spot information. Use the areas described below to connect to your Flex radio, manage the skimmer, and monitor incoming spots.

The screenshot shows the Flex Skimmer Bridge application window. It features a dark theme with a top status bar, a settings panel, a startup options section, a control bar with buttons, a DX spots table, and a debug log at the bottom. Red circles with numbers 1 through 7 point to specific areas: 1 points to the settings panel, 2 points to the status bar, 3 points to the startup options, 4 points to the control buttons, 5 points to the DX spots table, 6 points to the debug log, and 7 points to the 'Tune Selected' and 'Clear' buttons.

1 Connection and radio settings

2 Flex :4992 | Slice A | DAX IQ 1 | Skimmer 7301 | Pitch 700 Hz

3 Startup options

4 Start Bridge Stop Save Copy Hide Debug

5 DX spots from CW Skimmer

6 Debug log

7 Tune Selected Clear Single-click selects, double-click tunes Flex to spot

Time	Frequency	Call	dB	WPM	Text
21:24:46Z	14.038500	K3CBK	20	15	CQ 2124Z
21:24:06Z	14.035000	K5IRH	32	22	DE 2124Z
21:23:46Z	14.045000	HK3W	12	17	DE 2123Z
21:23:27Z	14.037000	W1AW/7	24	22	CQ 2123Z
21:22:32Z	14.031300	KN6JHT	15	23	CQ 2122Z

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14:22:36 Slice A: handle=0, RF=14.038500 MHz, pan=0x40000000, dax_iq=0
14:22:36 SKIMMER >> SKIMMER/LO_FREQ 14038500 (Flex 14.038500 MHz, offset 0 Hz)
14:22:36 SKIMMER: Command supported only in the SoftRock mode
14:23:36 SKIMMER: de SKIMMER 2026-05-24 21:22Z CwSkimmer >
14:23:05 SKIMMER: DX de +#: 14037.0 W1AW/7 25 dB 22 WPM DE
14:23:27 SKIMMER: DX de +#: 14037.0 W1AW/7 24 dB 22 WPM CQ
14:23:31 SKIMMER: DX de +#: 14045.0 HK3W 12 dB 17 WPM
14:23:46 SKIMMER: DX de +#: 14045.0 HK3W 12 dB 17 WPM DE
14:24:06 SKIMMER: DX de +#: 14035.0 K5IRH 32 dB 22 WPM DE
14:24:46 SKIMMER: DX de +#: 14038.5 K3CBK 20 dB 15 WPM CQ
```

#	Area	Description
1	Connection and radio settings	Configure connection details to your Flex radio and the CW Skimmer.
2	Status summary line	Shows current connection and configuration summary (Flex, Slice, DAX IQ, Skimmer port, Pitch).
3	Startup options	Control automatic launch of CW Skimmer and whether it closes when the bridge exits.
4	Main control buttons	Start or stop the bridge, and save, copy, or hide debug output.
5	DX spots panel	Live DX spots received from CW Skimmer. Single-click selects; double-click tunes Flex to the spot.
6	Debug log panel	Real-time log of communication between Flex Skimmer Bridge and CW Skimmer.
7	Tune Selected / Clear controls	Tune the selected spot in the list, or clear all spots.

Note: Times shown in the DX spots list are UTC.

Connection and Radio Settings

This section configures how the Flex Skimmer Bridge connects to your radio and CW Skimmer.

The screenshot shows the 'Flex Skimmer Bridge' application window. At the top, a status bar displays 'Flex :4992 | Slice A | DAX IQ 1 | Skimmer 7301 | Pitch 700 Hz'. Below this, the 'Connection and radio settings' section contains nine numbered fields: 1. Flex IP (text input), 2. Flex API Port (spin box set to 4992), 3. Target Slice (dropdown menu set to 'A'), 4. DAX IQ Channel (spin box set to 1), 5. Telnet Login (text input), 6. Skimmer Telnet Port (spin box set to 7301), 7. CW Pitch Hz (spin box set to 700), 8. Accuracy Window Hz (spin box set to 2000), and 9. CW Skimmer EXE (text input showing 'C:\Program Files (x86)\Afreed\CwSkimmer\CwSkimmer.exe'). Below the settings is the 'Startup options' section with two checked checkboxes: 'Launch CW Skimmer' and 'Close Skimmer on exit'. At the bottom are five buttons: 'Start Bridge', 'Stop', 'Save', 'Copy', and 'Hide Debug'.

- 1 Flex IP** – The IP address of your Flex radio.
- 2 Flex API Port** – The TCP port used by the Flex API. Default is 4992.
- 3 Target Slice** – The slice (A, B, C, or D) that will be used for CW Skimmer.
- 4 DAX IQ Channel** – The DAX IQ channel number to stream I/Q audio from.
- 5 Telnet Login** – (If required) The login name for the radio Telnet interface.
- 6 Skimmer Telnet Port** – The TCP port where CW Skimmer's Telnet server listens. Default is 7301.
- 7 CW Pitch Hz** – The Morse code pitch (in Hz) that CW Skimmer should decode.
- 8 Accuracy Window Hz** – The frequency window (in Hz) around the tuned frequency used by CW Skimmer.
- 9 CW Skimmer EXE** – Full path to the CW Skimmer executable.



Status line

The line at the top of the window summarizes the active radio connection, selected slice, DAX IQ channel, Skimmer port, and pitch.

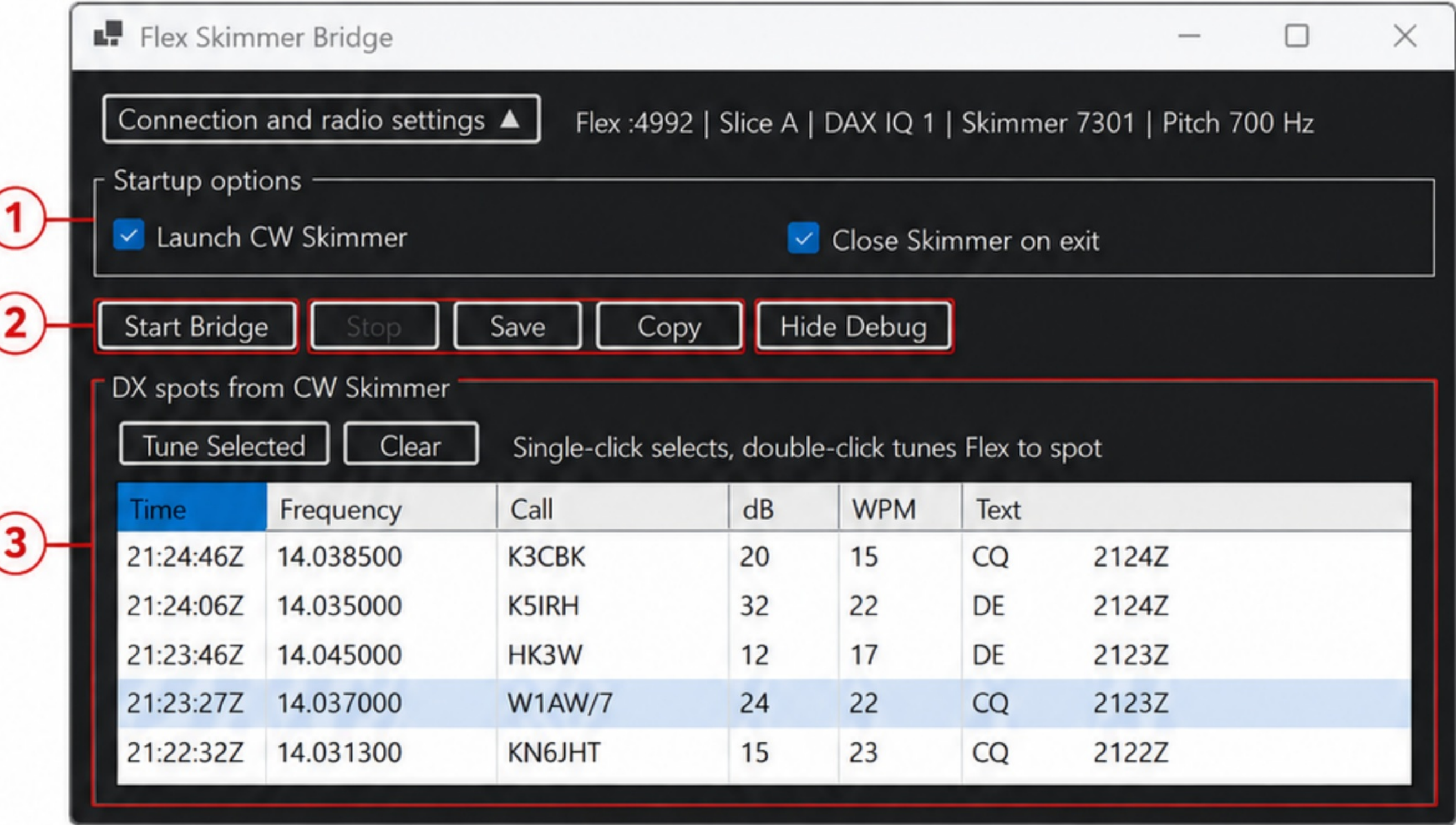


Tip

After making any changes to the settings above, click **Save** to store them.

Operating the Bridge

Once configured, the Flex Skimmer Bridge runs in the background, streaming CW spots from CW Skimmer and tuning your Flex Radio to those spots. The controls below are the primary operational tools.



Operating Workflow

1. Start SmartSDR, Flex DAX, and CW Skimmer.
2. Confirm the connection settings. Ensure the bridge is pointing to the correct Flex IP, DAX IQ channel, and Skimmer Telnet port.
3. Click **Start Bridge**. The bridge connects and begins receiving spots from CW Skimmer.
4. Watch the status line and DX spots list. You'll see activity in the debug area and new spots appearing in the list.
5. Select a spot and either double-click it or click **Tune Selected** to tune the radio.
6. Use **Hide Debug** for a cleaner screen while the bridge continues running.
7. Use **Stop** to end the session. The connection stops and (if enabled) CW Skimmer will close.

Main Controls Explained

- | | |
|---------------------|---|
| Start Bridge | Connects to Flex and CW Skimmer and begins streaming spots. |
| Stop | Stops the bridge connection and terminates the session. |
| Save | Saves the current configuration settings for the bridge. |
| Copy | Copies the current debug report to the clipboard for easy sharing or support. |
| Hide Debug | Hides the debug panel to provide a cleaner view while the bridge continues running in the background. |
-
- | | |
|----------------------|--|
| Tune Selected | Tunes the radio to the highlighted spot in the list. |
| Clear | Clears all entries from the DX spots list. |

Flex Skimmer Bridge User Manual

DX Spots, UTC Time, Debug Log, and ADI Output

This page describes the DX spots table, the debug log, and how tuned/selected spots are exported to an ADI file when the application closes. All DX spot times are shown in UTC with a Z suffix. The ADI export uses UTC for QSO_DATE and TIME_ON.

DX spots from CW Skimmer

Tune Selected

Clear

Single-click selects, double-click tunes Flex to spot

Time	Frequency	Call	dB	WPM	Text
21:24:46Z	14.038500	K3CBK	20	15	CQ 2124Z
21:24:06Z	14.035000	K5IRH	32	22	DE 2124Z
21:23:46Z	14.045000	HK3W	12	17	DE 2123Z
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14:22:36 SKIMMER: Command supported only in the SoftRock mode

14:22:36 SKIMMER: de SKIMMER 2026-05-24 21:22Z CwSkimmer >

14:23:05 SKIMMER: DX de -#: 14037.0 W1AW/7 25 dB 22 WPM DE

14:23:27 SKIMMER: DX de -#: 14037.0 W1AW/7 24 dB 22 WPM CQ

14:23:31 SKIMMER: DX de -#: 14045.0 HK3W 12 dB 17 WPM DE

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14:24:06 SKIMMER: DX de -#: 14035.0 K5IRH 32 dB 22 WPM DE

14:24:46 SKIMMER: DX de -#: 14038.5 K3CBK 20 dB 15 WPM CQ

1 DX Spots Table

Each row is a decoded station heard by the CW Skimmer.

Time (UTC) The time the spot was decoded, shown in UTC with a Z suffix (e.g., 21:24:46Z).

Frequency The received frequency in MHz.

Call The decoded callsign.

dB Signal strength estimate in dB.

WPM Estimated words per minute.

Text The decoded message text as reported by the Skimmer.

All spot times are shown in UTC with a Z suffix. When the application closes, the ADI file export uses UTC for QSO_DATE and TIME_ON.

2 Debug Log

The debug log records connection events, Skimmer messages, and troubleshooting information.

Use it to verify the connection, review Skimmer traffic, and identify any warnings or errors.

ADI File Output

Tuned/selected spot entries are exported to an ADI file when the application closes.

The export uses UTC for QSO_DATE and TIME_ON.

Example filename: FlexSkimmerBridge_2026-05-24_2124Z.adl

Quick Testing Checklist

- Verify radio connection.
- Confirm DAX IQ channel.
- Confirm spots appear.
- Test Tune Selected.
- Review the debug log for warnings or errors.

Flex CAT and Per-Slice Requirements

Flex Skimmer Bridge coordinates SmartSDR CAT, Flex DAX, and CW Skimmer so your slices and Skimmer windows stay in sync. Some required setup is performed in SmartSDR CAT and CW Skimmer—not in the bridge. This page explains what must be running and the per-slice settings you should verify.

What must be running

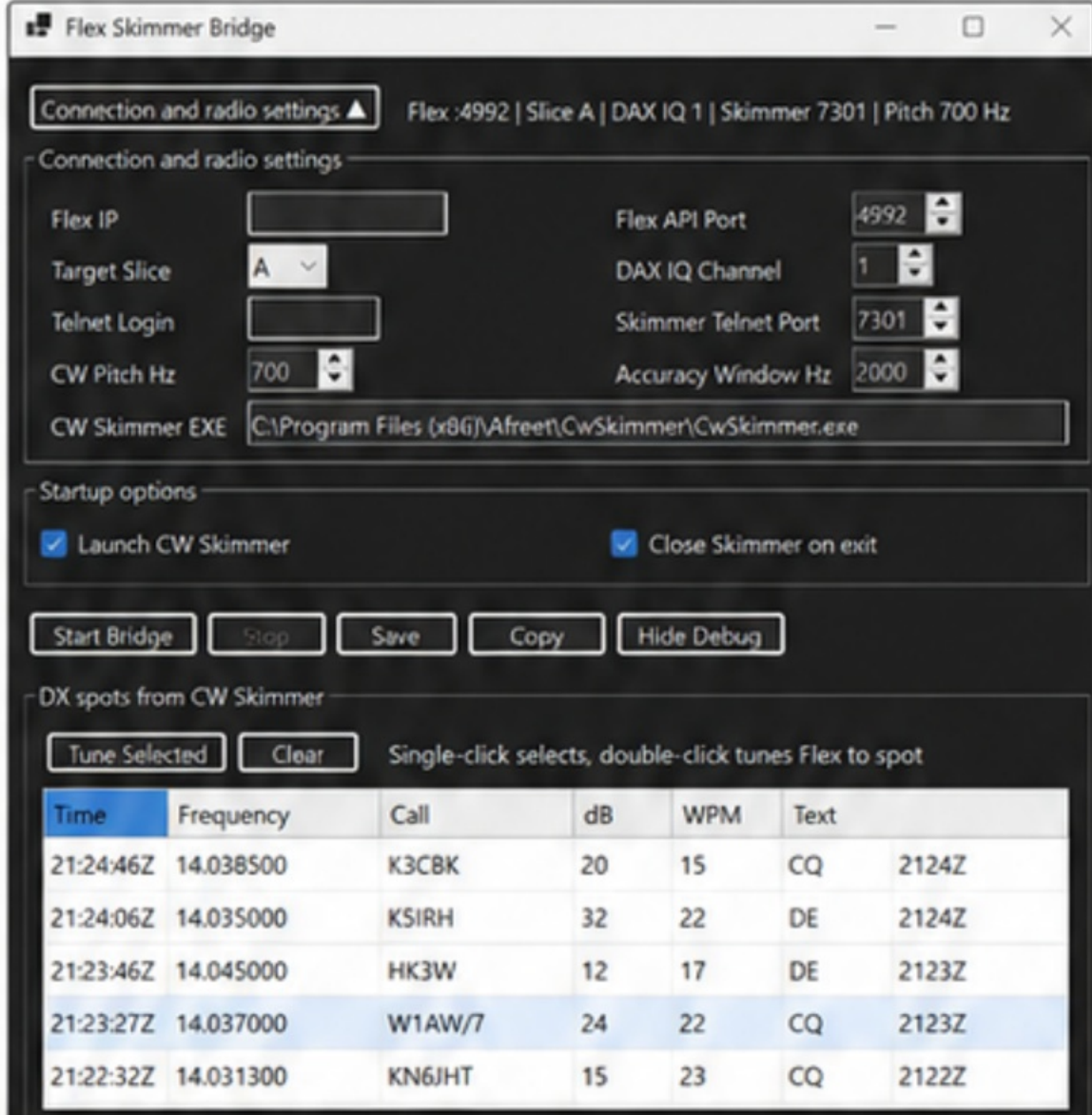
- **SmartSDR** – Flex radio client controlling the transceiver.
- **SmartSDR CAT** – Provides CAT and slice information to CW Skimmer and the bridge.
- **Flex DAX** – Delivers IQ audio channels (one per DAX IQ channel) to CW Skimmer.
- **CW Skimmer** – Decodes CW and exports spots.
- **Flex Skimmer Bridge** – Connects the components and forwards spots to SmartSDR CAT.

Per-slice requirements

- Each slice used with CW Skimmer should use the desired slice selection in the bridge.
- The matching DAX IQ channel must be selected for the slice being monitored.
- If multiple slices are monitored with multiple CW Skimmer windows, each slice should use its own DAX IQ channel.
- SmartSDR CAT should be configured appropriately for the slice or CW Skimmer window being used.
- CW Skimmer CAT/control settings are configured in CW Skimmer / SmartSDR CAT rather than in the bridge.

Important notes

- The bridge works with the current SoftRock-IF operating setup.
- The bridge can tune the radio from a selected DX spot.
- Spot times and ADI export use UTC.
- Save preserves current settings.



Flex Skimmer Bridge

Flex :4992 | Slice A | DAX IQ 1 | Skimmer 7301 | Pitch 700 Hz

Connection and radio settings

Flex IP: Flex API Port: 4992

Target Slice: A DAX IQ Channel: 1

Telnet Login: Skimmer Telnet Port: 7301

CW Pitch Hz: 700 Accuracy Window Hz: 2000

CW Skimmer EXE: C:\Program Files (x86)\Afreer\CWskimmer\CwSkimmer.exe

Startup options

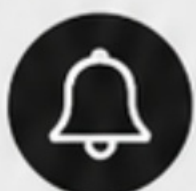
☒ Launch CW Skimmer ☒ Close Skimmer on exit

Start Bridge Stop Save Copy Hide Debug

DX spots from CW Skimmer

Tune Selected Clear Single-click selects, double-click tunes Flex to spot

Time	Frequency	Call	dB	WPM	Text
21:24:46Z	14.038500	K3CBK	20	15	CQ 2124Z
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21:22:32Z	14.031300	KN6JHT	15	23	CQ 2122Z



Reminder

CAT ports and CW Skimmer control settings should be verified for each slice when moving the setup to another computer.

CW Skimmer Settings

Radio and Audio tabs for the proven SoftRock-IF / DAX IQ setup

Use these CW Skimmer settings as the starting point. Match the DAX IQ channel to the slice/panadapter chosen in Flex Skimmer Bridge.

Settings

Radio | Audio | CAT | Misc. | Operator | Network | Calls

Hardware Type

- ☐ 3-kHz Radio
- ☐ SoftRock
- ☒ SoftRock-IF (1)
- ☐ SDR-IQ
- ☐ QS1R
- ☐ Mercury
- ☐ Perseus

LO Frequency, Hz

144990 (3)

CW Pitch, Hz

700 (4)

Audio IF, Hz

0

Sampling Rate

- ☒ 48 kHz (2)
- ☐ 96 kHz
- ☐ 192 kHz

OK Cancel

Settings

Radio | Audio | CAT | Misc. | Operator | Network | Calls

Soundcard Driver

- ☒ MME (1)
- ☐ WDM

Signal I/O Device

03 DAX IQ 1 (FlexRadio DAX) (2)

Audio I/O Device

01 Speakers (Realtek(R) Audio)

Audio Volume

100%

Channels

- ☒ Left/Right = I / Q (3)
- ☐ Left/Right = Q / I

Shift Right Channel Data by

- ☐ sample (4)
- ☒ 0 samples
- ☐ +1 sample

OK Cancel

Radio tab

- 1 Hardware Type: select SoftRock-IF.
- 2 Sampling Rate: select 48 kHz.
- 3 LO Frequency: use the Flex/DAX IQ center reference for the selected slice.
- 4 CW Pitch: 700 Hz unless you intentionally use a different station standard.

Audio tab

- 1 Soundcard Driver: MME is the working baseline.
- 2 Signal I/O Device: choose the FlexRadio DAX IQ channel for the selected slice.
- 3 Channel: the left/right I/Q order must match the working radio setup.
- 4 Shift Right Channel Data: set to 0 samples.

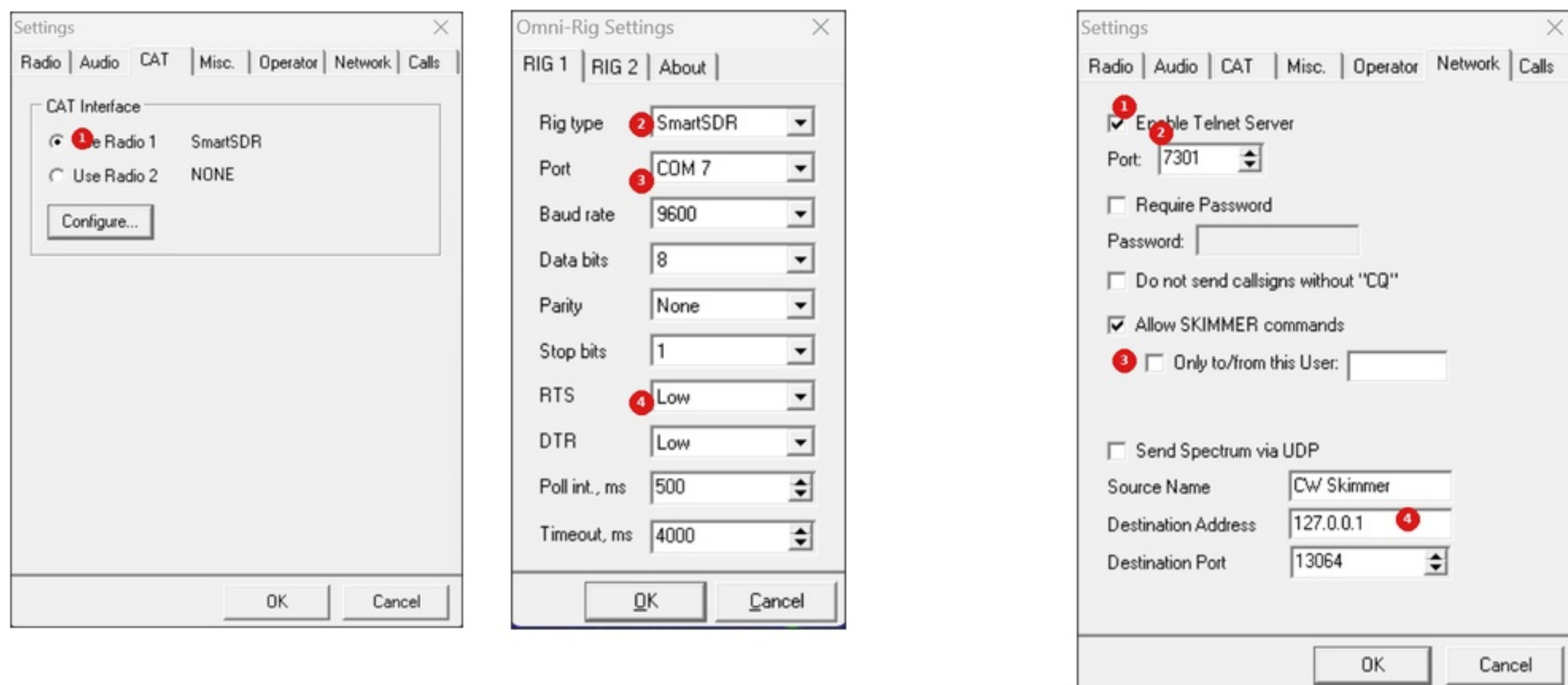
Important

Use DAX IQ for the Skimmer waterfall. For multi-slice operation, give each slice its own DAX IQ channel and its own CW Skimmer instance.

CW Skimmer Settings

CAT, OmniRig, and Telnet control

These settings are configured inside CW Skimmer and SmartSDR CAT. Flex Skimmer Bridge connects the pieces; it does not replace the CAT setup.



CAT / OmniRig

- 1 CAT tab: use Radio 1.
- 2 OmniRig Rig type: SmartSDR.
- 3 Port: select the SmartSDR CAT COM port for that slice.
- 4 RTS: Low. Do not use Handshake.

Telnet

- 1 Enable Telnet Server.
- 2 Port: 7301 unless you intentionally changed it.
- 3 Allow SKIMMER commands so the bridge can read and coordinate the session.
- 4 Destination Address: 127.0.0.1 for local bridge operation.

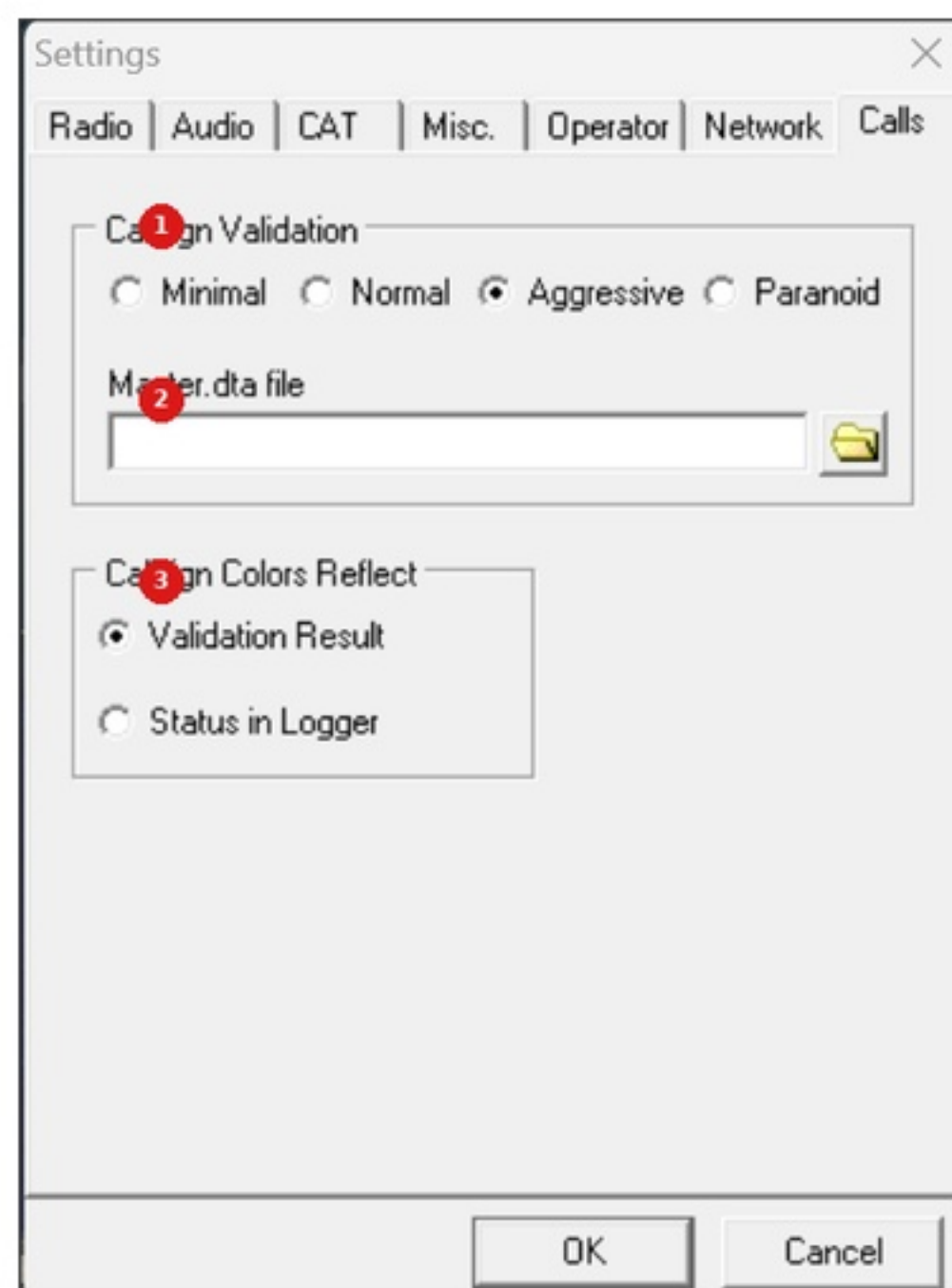
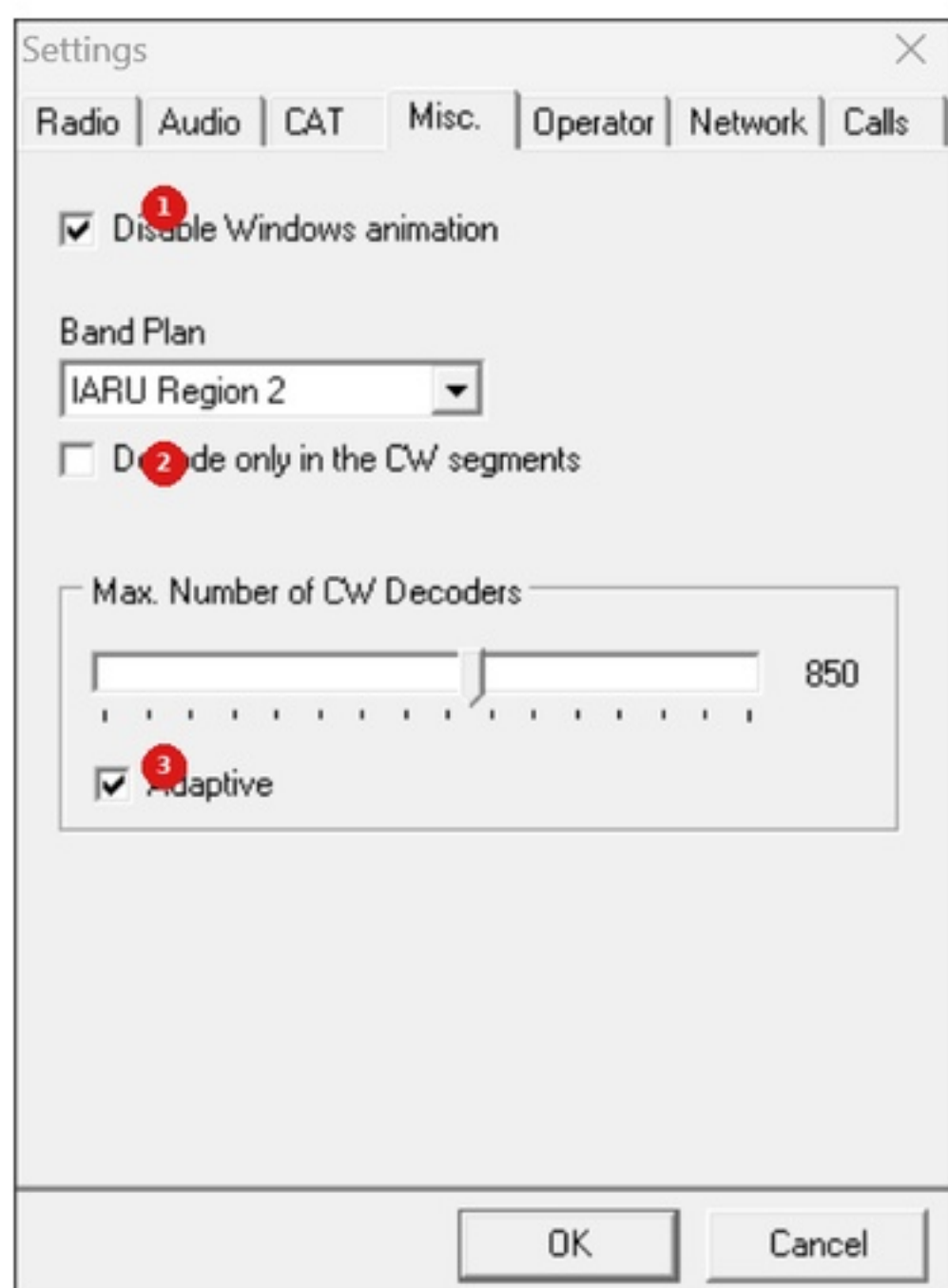
Per-slice requirement

Each slice / CW Skimmer window should use the desired slice in the bridge, a matching DAX IQ channel, and the SmartSDR CAT port assigned for that slice or CW Skimmer window.

CW Skimmer Settings

DX spots, calls, UTC times, and ADI export

The bridge watches Skimmer spots and selected or tuned entries. Spot list times and ADI export times are UTC.



Misc. tab

- 1 Disable window animation for a simpler and steadier display.
- 2 Band Plan: use the appropriate HF region / CW segment setting for your operation.
- 3 Adaptive decoding can remain enabled.

Calls tab

- 1 Choose the Callsign Validation preference you want to use.
- 2 Master.dta file: browse to it if your setup uses one.
- 3 Validation Result callsign colors can remain enabled.

Operating checklist

- Start SmartSDR, SmartSDR CAT, Flex DAX, and CW Skimmer before relying on the bridge.
- Use the selected Flex slice / VFO as the operating truth. The bridge logs and reacts to Skimmer information, but the Flex slice remains the station reference.
- Spot list display times are UTC, and ADI export uses UTC QSO_DATE and TIME_ON for selected or tuned spot entries.
- CAT ports and CW Skimmer radio / audio / telnet settings are configured in SmartSDR CAT and CW Skimmer, not primarily in the bridge.

Setup ownership

Flex Skimmer Bridge reads and coordinates the running setup. The actual CAT and CW Skimmer settings live in SmartSDR CAT and CW Skimmer.