



USER GUIDE

GNC255 COM / NAV Radio Panel

Operating instructions for the RHSimTech replica Garmin GNC255-style COM/NAV radio — tuning, OBS course mode, FUNC settings, and dual-radio COM1/COM2 setup.

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Hand-built avionics for X-Plane & MSFS

SIMTECH GNC255v2

A replica Garmin GNC255-style COM/NAV radio for X-Plane / MSFS. This guide covers day-to-day operation once the panel is wired up and connected to SimLink.

SECTION 01

Display Layout

The display shows two stacked rows:

- **COM row** — Active frequency on the left, Standby frequency on the right
- **NAV row** — Active frequency on the left, Standby frequency on the right, with ident/course info alongside

Below the frequencies, the unit shows the active navaid name, country, and (when tuned to a VOR/ILS) OBS course and CDI deflection.

SECTION 02

Basic Controls

CONTROL	FUNCTION
Dual concentric knob (inner)	Fine-tune the selected radio (kHz / 0.1° OBS step)
Dual concentric knob (outer)	Coarse-tune the selected radio (MHz / 1° OBS step)
COM/NAV swap button	Flip-flops Active and Standby frequency for the selected radio
CN button	Toggles whether the knobs are controlling COM or NAV
OBS button	Switches the knobs into OBS (course) adjust mode
FUNC button	Cycles through secondary functions (see Section 5)
Volume pots (COM/NAV)	Physical analog pots, read on startup and on demand

The unit boots in **COM tuning mode** by default. Press **CN** to swap to NAV, and again to return to COM.

SECTION 03

Tuning a Frequency

1. Press **CN** until the radio you want is selected.
2. Turn the **outer knob** for MHz digits.
3. Turn the **inner knob** for kHz digits.
4. Press the **swap button** to move it from Standby into Active.

This matches real-world GNC255 behaviour: you always tune on the Standby side, then swap it active when ready.

SECTION 04

OBS / Course Mode

Press **OBS** to put the knobs into course-select mode for the NAV radio:

- **Inner knob** — adjusts course in 1° steps
- **Outer knob** — adjusts course in larger steps for quick movement
- The CDI needle and TO/FROM flag on the display update live as the simulator's nav radio responds

Press **OBS** again to return to normal COM/NAV tuning.

SECTION 05

FUNC Button — Secondary Settings

Repeated presses of **FUNC** cycle through three modes. While in one of these modes, the knobs temporarily control that setting instead of frequency:

FUNC MODE	WHAT THE KNOBS DO
1 — Display Contrast	Inner/outer knob both raise or lower display contrast (0–255)
2 — Database Region	Inner knob steps through navdata database/region index
3 — COM1/COM2 Select	Inner/outer knob switches the unit's identity between COM/NAV 1 and COM/NAV 2

The unit automatically returns to normal tuning mode a few seconds after you stop turning the knob in FUNC mode 2 (database select), so you don't need to press FUNC again to get back to tuning.

SECTION 06

Setting COM1 vs COM2

If you're running two GNC255 panels side-by-side (one for COM/NAV1, one for COM/NAV2), each unit needs to know which radio it represents:

1. Press **FUNC** repeatedly until you reach **FUNC mode 3** — the display shows **COM/NAV : 1** or **COM/NAV : 2**.
2. Turn either knob (inner or outer, either direction) to switch the value between **1** and **2**.
3. The display will prompt **"RESTART APP IF CHANGED"** — power-cycle the panel (or restart SimLink/the sim) for the new identity to take effect.

Saved automatically — this setting is stored in the unit's memory, so it's remembered after power-off. You only need to set it once per physical unit, not every session.

There's no dedicated "swap" or "ID" button for this — it's tucked inside the FUNC cycle precisely because it's a one-time setup step, not something you'd change in normal flight.

SECTION 07

Backlight

Backlight brightness is saved automatically, so it's remembered after a power cycle. The simulator/SimLink can also push a backlight level automatically (e.g. tied to the aircraft's panel dimmer), which will override the manual setting while connected.

SECTION 08

Startup Behaviour

When power is applied:

1. The unit boots and initializes the display.
2. It waits for the handshake from SimLink (****INIT****) before going "live."
3. Once the handshake completes, it reports its volume pot positions back to SimLink and begins receiving live frequency/nav data.
4. If SimLink isn't running or the COM port isn't connected, the unit will sit at its last-known/default display state until a connection is made.

Tip: if the display looks "stuck" or frequencies aren't updating, check that SimLink is running and pointed at the correct COM port for this panel before assuming a hardware fault.

SECTION 09

Troubleshooting Quick Reference

SYMPTOM	LIKELY CAUSE
Display blank	Check power and display connection
Frequencies don't move with sim	SimLink not connected, or wrong COM port assigned
Knob does nothing	Confirm CN/OBS/FUNC mode — knob behaviour depends on current mode
Backlight resets after power-up but is dim/bright	Normal — last saved level is restored automatically a moment after boot

Covers the current SimTech GNC255v2 build.
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