



STICKY WEATHER

Technical Documentation - V57

Hardware: Seeed Studio reTerminal Sticky (ESP32-S3 16MB) | Author: Angel Esteban - La Rioja, Spain

Web Flasher: <https://estebangel-crypto.github.io/sticky-weather/>

1. Overview

Sticky Weather turns reTerminal Sticky into a minimalist e-ink weather station. Shows current temp, feels-like, humidity, wind, 4-day forecast with icons, indoor SHT40 temp/hum, time/date and battery. Key: ultra-low power, deep-sleep and wake every 60 minutes.

2. How it Works V57

2.1 Lifecycle

- 1. Wake-up:** Timer every 60 min or physical button (EXT1).
- 2. Data decision:** If <60min since last update and not long UP press, reuse RTC data (no WiFi).
- 3. WiFi + NTP:** Connect stored SSID, sync via pool.ntp.org CET-1CEST, fetch weather via Open-Meteo.
- 4. Sensors:** Battery I2C 0x55 reg 0x2C SOC, only read on WiFi update or button (V57 optimization saved 18% in 15h). SHT40 via Wire1.
- 5. Drawing:** Seeed_GFX e-paper, dibujar() with large central icon.
- 6. Awake loop 3 min:** UP short refresh, UP long force WiFi update, DOWN long config mode, AI refresh.
- 7. Sleep:** Moon icon, powerOff, enable wakeup sources + 60min timer, deep_sleep_start().

2.2 Battery Management

Low threshold 10%, shows low battery screen and sleeps 60 min. Recovery 15%. Saved in RTC_DATA_ATTR to persist.

2.3 Config Portal

If no valid config or DOWN at boot: Creates AP 'Sticky-Tiempo', WebServer 80 + DNSServer captive portal, saves to Preferences.

2.4 Hardware

PWR pins 45,46,47,42, BTN_AI 4, BTN_UP 5, BTN_DOWN 6, SDA 1, SCL 0.

3. Web Flasher & Usage

GitHub Pages /docs with esp-web-tools 10. UP short refresh, UP long update now, DOWN long reconfigure.

Made in La Rioja with ♥ - Angel Esteban 2026