GS4 User Manual

Technical Specifications & Dashboard

Autonomous Web Server for Industrial Embroidery

1. Introduction to the GS4 System

The GS4 is industrial-grade hardware designed to act as an autonomous web server for embroidery machines. Its main objective is to eliminate bottlenecks between the design department and the production floor, enabling wireless design management.

- **Total Wireless Management:** Access your design library via local Wi-Fi. No cables or interruptions.
- **Cross-Platform Compatibility:** Responsive web interface optimized for Android, iOS, Windows, and Linux.
- **Industrial Protocols:** Native support for WebDAV and TCP/IP, allowing seamless integration into existing network ecosystems.

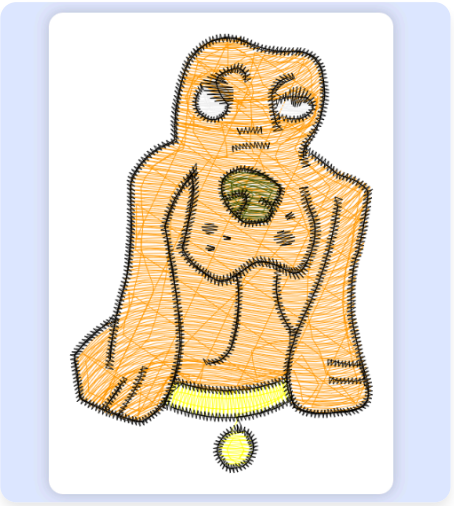
2. Technical Specifications

Precision engineering focused on 24/7 stability and data security.

- **Protocol** WebDAV 2.0 / TCP/IP v6
- **System** Autonomous (No PC Host required)
- **Connectivity** High-Gain Wi-Fi
- **Storage** Up to 512GB via USB 3.2
- **Security** SSL/TLS Connections

3. Design Management & Formats

The GS4 decodes and analyzes embroidery files in real time without needing desktop embroidery software.



Supported Formats

- **Tajima (.DST):** Automatic jump detection, thread trims, and multi-layer support.
- **Brother (.PES):** Full decoding of color blocks and control parameters.

Rendering & Simulation Engine

The board integrates a 2D rendering engine that generates visual representations of stitches and color sequences. Both on the physical device and through the web Dashboard, you can run a **step-by-step simulation** to validate design integrity before sending it to production.

4. Hardware & Physical Buttons

The GS4 features industrial-grade tactile switches.

- **Local Control:** 4 physical buttons to navigate designs, pause/resume machine loading, and access settings.
- **Durability:** Switches engineered for over 5 million actuation cycles.
- **Haptic Feedback:** Hardware debounce of 5ms, ideal for high electrical noise environments.
- **OLED Display:** Shows the active file, progress percentage, network connection, and USB port status.

5. Networking & WebDAV

The GS4 is not just a USB bridge; it's a true Network Attached Storage (NAS) server based on the WebDAV protocol.

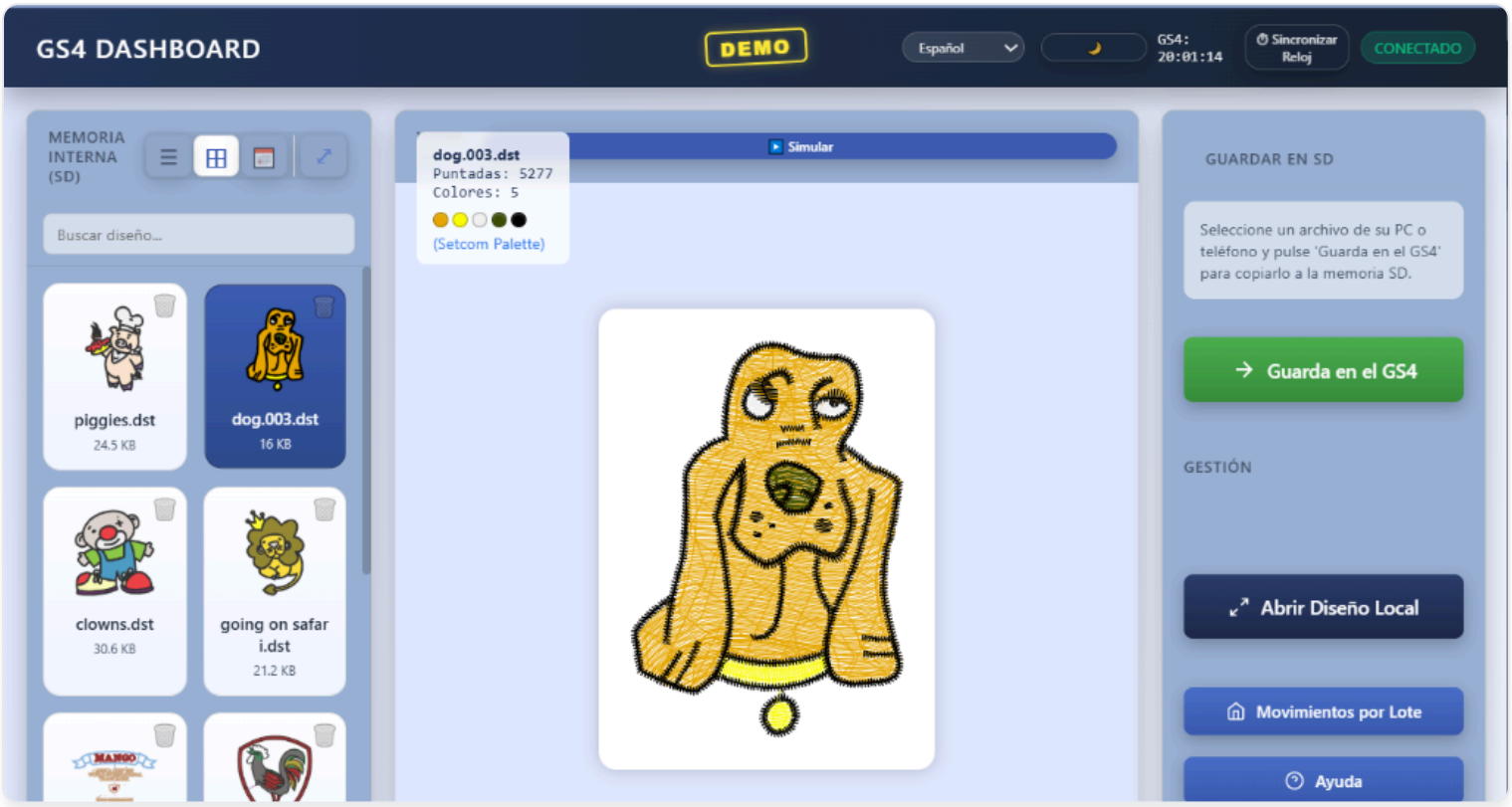
Network Drive Mounting

You can mount the GS4 on Windows as a network drive letter (e.g., `Z: Drive`). This enables you to:

- Drag and drop multiple `.dst` files directly to the machine from Windows File Explorer or macOS Finder.
- Mass delete or rename files effortlessly.
- The embroidery machine reads the memory almost instantly, as it emulates a flawless FAT32 file system via the USB port.

6. GS4 Web Dashboard (1/2)

The GS4 Web Dashboard is the internal application hosted within the device. By accessing the GS4's IP from any web browser (Chrome, Safari, Edge), you gain absolute control over the device's memory.



Memory Explorer & Views

The left panel displays all files stored in the virtual SD/USB memory. You can view them in three modes:

- **List Mode:** Fast and lightweight, perfect for thousands of designs.
- **Grid Mode:** Displays a pre-rendered icon of the design for instant visual identification.
- **Calendar Mode:** Groups designs by the date they were uploaded.

7. GS4 Web Dashboard (2/2)

Direct Wireless Transmission

To bypass the need for physical USB thumb drives entirely, the Dashboard offers Management features:

- **Open Local Design:** Select a design from your PC. The Dashboard will open it, render it in the 2D viewer, and calculate its color palette.
- **Transmit to Machine (Save to SD):** Pressing this button sends the previewed design via Wi-Fi and permanently injects it into the GS4's memory.

Clock Synchronization

FAT32 systems (required by older embroidery machines) do not track time natively. The Dashboard features a **"⏱ Sync Clock"** button that sends your PC's current date and time to the GS4 board, ensuring all files saved thereafter have accurate temporal metadata.

Batch Management & Monitoring

The right sidebar of the Dashboard provides access to the "Batch Movements" history. This allows you to track how many times a design was sent to embroidery and continuously monitor the integrity of the transmitted data.