



GlowDigit PDF Signer

Enterprise Digital Signature Application - C# Edition

1. Introduction

Welcome to the **GlowDigit PDF Signer** (C# Edition). GlowDigit PDF Signer is a robust, desktop-based digital signature utility designed for enterprises, procurement teams, finance departments, and government organizations. The application simplifies the process of applying cryptographically secure, legally compliant digital signatures to PDF documents in bulk.

By leveraging native Windows cryptographic APIs, the application provides industry-leading support for physical USB smart card tokens (DSC), PFX/P12 files, and Windows Certificate Stores, offering a significantly faster, smaller, and more integrated experience than legacy alternatives.

Business Benefits

- **Legally Compliant:** Fully complies with international digital signature regulations (including the Information Technology Act in India, eIDAS in the EU, and ESIGN in the US).
- **Automated Efficiency:** Processes hundreds of documents simultaneously in batch folder mode, saving hours of manual effort.
- **Zero Security Risks:** Operates entirely offline on local computers. Your files never leave your system, guaranteeing absolute privacy and security.
- **Consistent Branding:** Customize signature appearance with official logos, handwritten signatures, validity overlays, and custom reason codes.

2. System Requirements

Please ensure your workstation meets the following minimum requirements before installing GlowDigit PDF Signer:

Component	Minimum Requirement
Operating System	Windows 7 Service Pack 1, Windows 8.1, Windows 10, or Windows 11 (64-bit recommended)
Runtime Environment	.NET 8.0 Desktop Runtime or later (Included in self-contained installer packages)
Hardware Interface	USB Port (required for physical USB Tokens/Smart Cards)
USB Token Drivers	Vendor-specific CSP drivers (e.g., HyperPKI Driver for HYP2003, ePass2003 Token Manager)
PDF Viewer	Adobe Acrobat Reader or any PDF-compliant viewer (required to verify signatures)

Supported Certificates

GlowDigit PDF Signer supports a wide range of standard digital certificates:

- **Smart Cards & USB Tokens:** Class 2 and Class 3 Digital Signature Certificates (DSC) hosted on USB cryptographic tokens such as HYP2003, ePass2003, Feitian, and others.
- **Soft Certificates:** Personal Information Exchange files (`.pfx` or `.p12` format) containing a valid private key and certificate chain.
- **Windows Store:** Certificates directly installed in the Windows Personal (My) Certificate Store.

3. Installation Guide

GlowDigit PDF Signer is packaged as a standard Windows Installer or a self-contained ZIP archive.

Step-by-Step Installation

1. Download the latest installer package (`GlowDigit_PDF_Signer_Setup.exe`) from the downloads section.
2. Double-click the installer to launch the setup wizard.
3. Follow the on-screen instructions: select the installation directory, choose whether to create a desktop shortcut, and click **Install**.
4. Once the installation completes, check "Launch GlowDigit PDF Signer" and click **Finish**.

Smart Card Driver Prerequisite

If you plan to use a physical USB token (like ePass2003 or HYP2003), make sure to install the drivers supplied by your Certificate Authority (CA) before running the signer. Without these drivers, Windows will not recognize the smart card reader interface.

4. Getting Started

When you first open GlowDigit PDF Signer, the main dashboard will be presented. The layout is structured logically into four numbered sections corresponding to the signing workflow:

1. **Source PDF Files:** Select a single file or a folder containing multiple PDFs.
2. **Destination Folder:** Select where the signed PDFs should be saved.
3. **Digital Certificate:** Select the certificate source (USB Token or PFX file) and view certificate details.
4. **Operations:** Customize the signature appearance, share the files, or apply the signature.

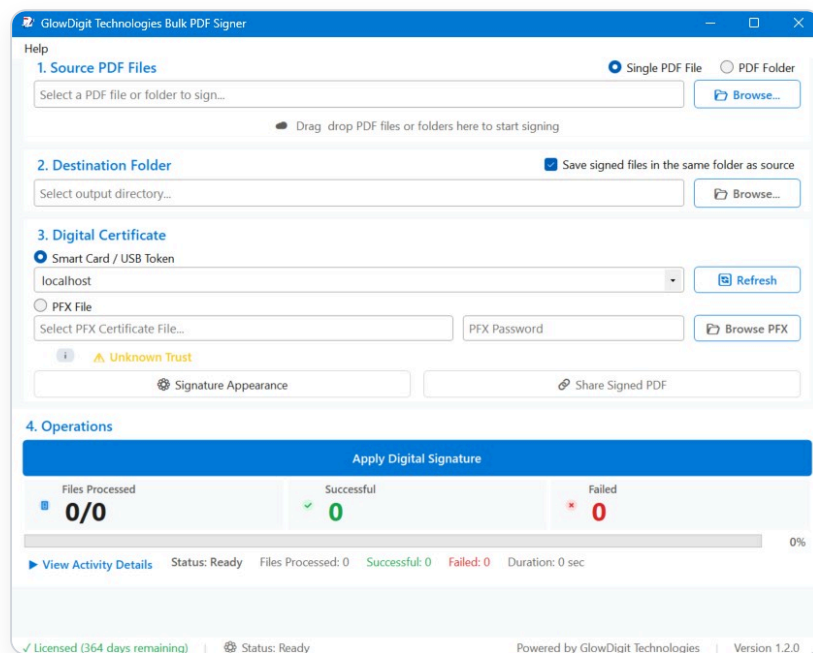


Figure 4.1: GlowDigit PDF Signer Main Dashboard

Selecting PDF Files

To prepare your documents for signing:

- Select **Single PDF File** to sign one document, then click **Browse...** to select the file, or drag and drop a PDF file anywhere into the dotted "Drag & Drop" panel.
- Select **PDF Folder** to enable batch signing. Click **Browse...** to select the folder containing your PDFs, or drag and drop a folder into the drag-and-drop panel.

5. Selecting Certificates

GlowDigit PDF Signer integrates natively with Windows security providers. Select your certificate source in Section 3:

USB Token / Smart Card Workflow

1. Insert your USB Cryptographic Token (e.g., HYP2003) into your computer's USB port.
2. Select **Smart Card / USB Token** in Section 3.
3. Click **Refresh**. The application will scan the Windows certificate store and list all available signatures in the dropdown menu.
4. Select your certificate from the dropdown list. The application will automatically detect the USB token hardware (e.g., displaying "Valid (HYP2003 USB Token)" and show its details in the green verification card below).

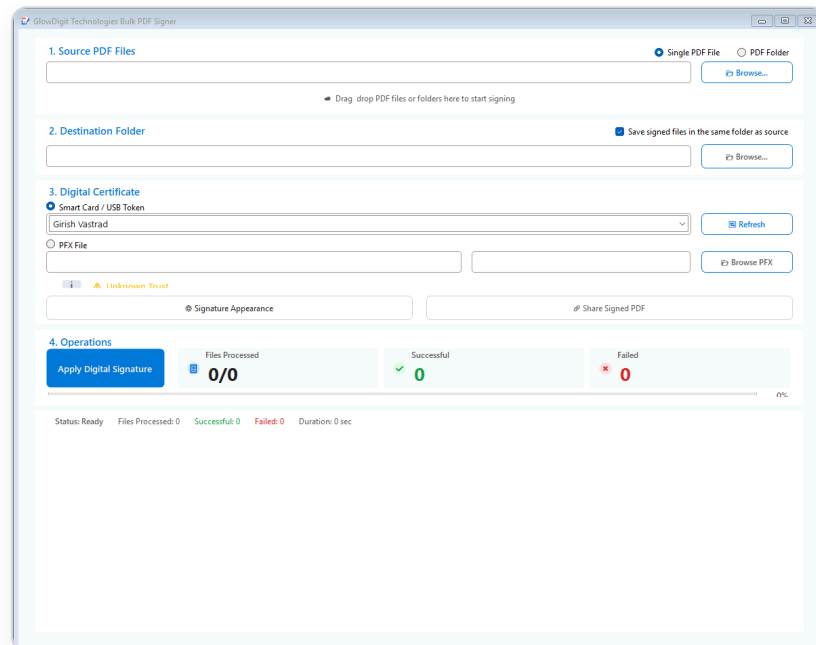


Figure 5.1: USB Token detected with active validity status

PFX Certificate Workflow

1. Select the **PFX File** radio option in Section 3.
2. Click **Browse PFX** to choose your `.pfx` or `.p12` certificate file.
3. Enter the corresponding certificate password in the text field. The application will immediately validate the credentials and display the certificate owner details.

6. Signature Appearance Customization

GlowDigit PDF Signer gives you complete control over how your signature is rendered on the document. Click the **Signature Appearance** button in the main window to open the settings dialog.

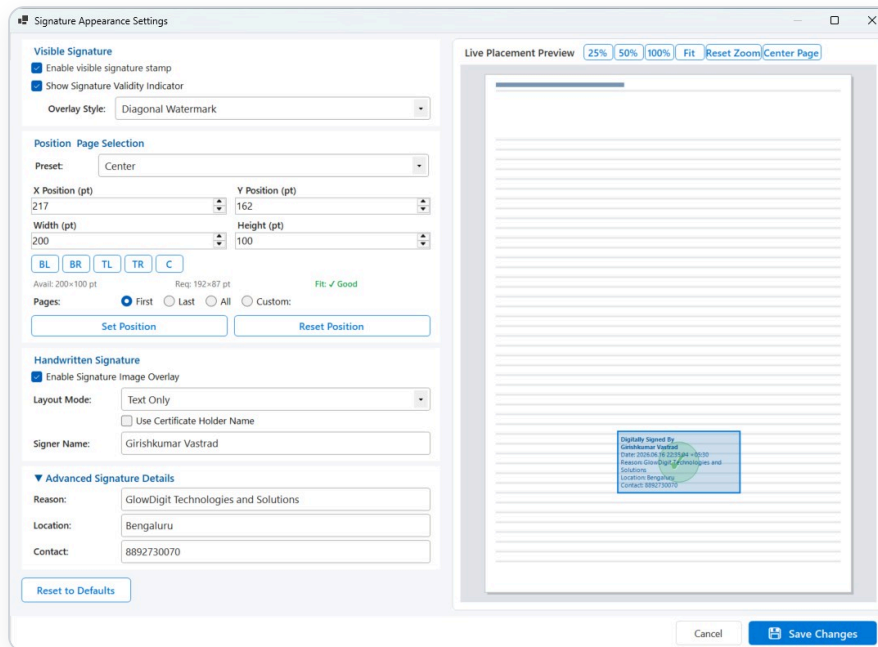


Figure 6.1: Signature Appearance Settings and Layout Designer

Appearance Capabilities

- **Validity Overlays:** Add validity overlays colored green for valid, red for invalid, and amber for expired/unknown signatures.
- **Placement:** Choose a preset position or enter exact X/Y coordinates in points. You can also **drag the signature box** in the preview pane to manually position it.
- **Page Selection:** Select whether to sign the First page, Last page, All pages, or enter a custom page range (e.g., 1, 3, 5).

7. Bulk Signing & Share Dashboard

Once configured, click the primary **Apply Digital Signature** button to initiate the signing process.

Execution States

During signing, the application displays execution statistics in a 3-card grid (Processed, Successful, Failed), updates the progress bar, and logs detailed execution messages in the Activity Log.

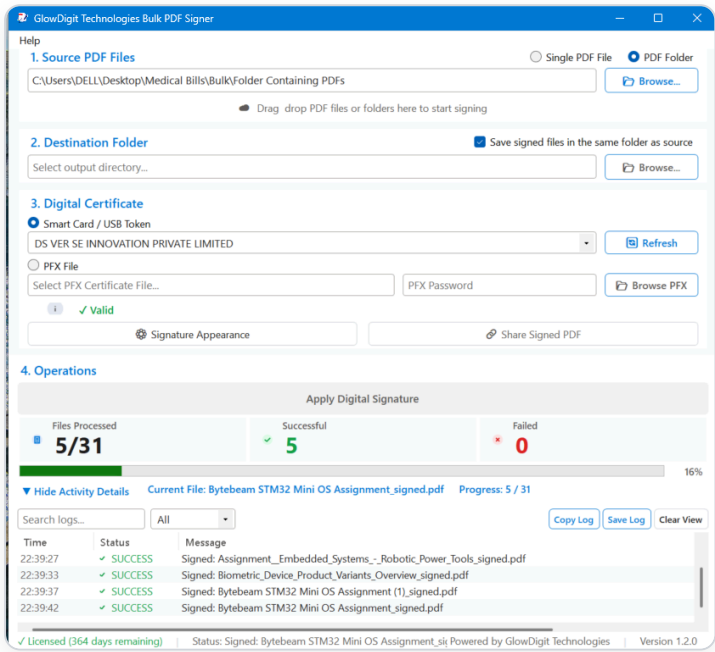


Figure 7.1: Bulk signing progress dashboard

Upon signing a single document, a prompt will offer to open the **Sharing Dashboard** (or click **Share Signed PDF**). This features two tabs:

- **WhatsApp Sharing:** Copies the signed file to your clipboard and redirects to WhatsApp Web/Desktop. Press **Ctrl + V** to paste and send.
- **Email (SMTP) Dispatch:** Configures SMTP server settings to automatically email the signed PDF.

8. Certificate Providers & Troubleshooting

Supported Certificate Providers

Compatible with all major licensed certifying authorities (CAs) and cryptographic tokens:

- **Cryptographic Tokens:** ePass2003, HyperPKI (HYP2003), Watchdata, Proxkey, SafeNet eToken.
- **Indian Certifying Authorities:** eMudhra, VSign, Capricorn, Pantasign, Sify, NSDL.
- **Global CAs:** DigiCert, GlobalSign, Sectigo, Entrust.

Troubleshooting Guide

1. "No Certificates Found" in Smart Card Dropdown

Solution: Install the token driver manager from the CD-ROM drive created when inserting the token. Open Windows Certificate Manager (press Win + R, type `certmgr.msc`) and check under Personal → Certificates to verify your certificate.

2. "The file is currently open in another application" Error

Solution: Close all open instances of the PDF file in Adobe Reader, web browsers, or email clients, and click **Apply Digital Signature** again.

3. Adobe Reader shows "Signature Validity is UNKNOWN"

Solution: In Adobe Reader, navigate to **Edit** → **Preferences** → **Signatures** → **Verification** → **More....** Check the option **Validating Signatures using Windows Integration**.

9. FAQ & Security Notes

Frequently Asked Questions

Q: Can I remove the border from the visible signature?

A: No. According to the PDF specification, digital signatures must have a bounding border area to be selectable and interactive. GlowDigit PDF Signer uses the thinnest possible border (1 pt) as the minimum.

Q: Does the application send my PDF files to a server?

A: No. The application does all cryptographic hashing, layout calculations, and PDF modifications entirely offline on your local computer. No document data is ever sent over the network.

Q: Can I sign multiple pages in the same PDF?

A: Yes. Under the Signature Appearance settings, you can configure the page range. Choosing "All Pages" will apply the signature to every single page of the document.

Security Notes

- **SHA-256 Detached Signing:** Signatures are applied as detached Cryptographic Message Syntax (CMS) envelopes, ensuring that any tampering with the PDF after signing will instantly invalidate the signature.
- **TSA Timestamping:** If an active internet connection is available, the signer automatically queries trusted Time Stamping Authorities to embed a cryptographically verified timestamp.

10. Licensing & Support

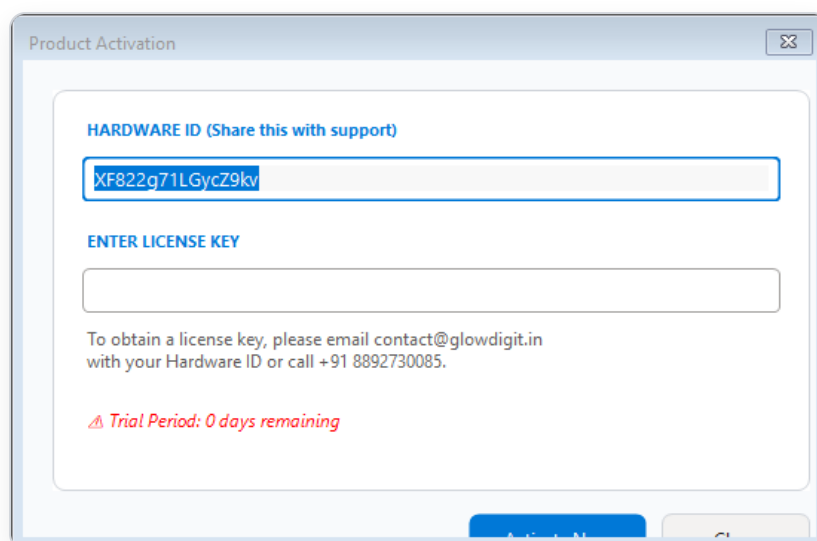


Figure 10.1: Product activation and licensing manager

License Activation

GlowDigit PDF Signer comes with a free 10-day trial. To unlock the full permanent license:

1. Click **Help** → **Activate License** from the menu bar.
2. Copy the 16-character **Hardware ID** generated for your computer.
3. Email this Hardware ID to `contact.glowdigit@gmail.com` to purchase a key.
4. Enter your received 20-character License Key and click **Activate Now**.

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