

Electronic Shop Management System

Complete Application Feature Documentation

Application Name: Electronic Shop Management System (VoltOS)

Version: 2.0.3

Platform: Android (Mobile) · Windows (Desktop)

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1. Executive Summary

The **Electronic Shop Management System** (branded as **VoltOS**) is a cross-platform mobile and desktop retail management application built with Flutter. It is engineered to streamline every facet of an

electronics retail operation – from product inventory and daily sales to technician service dispatching, AMC contract lifecycle management, and multi-branch analytics.

The application enforces a strict **role-based micro-management** framework, ensuring every employee operates exclusively within their designated workflow. Key priorities include transparent field operations via OTP-verified task completion, GST-compliant invoicing with professional PDF generation, and full multi-language support across English, Hindi, and Gujarati.

2. User Roles & Access Control

The system implements a **strict four-tier role hierarchy**. Each role delivers a completely tailored user interface and capabilities.

Role	Access Level	Primary Interface
OWNER	Unrestricted – Full System Administrator	Owner Dashboard with full side-drawer navigation
MANAGER	Broad Operational Control	Manager Dashboard with operational navigation (restricted from system-level settings)
TECHNICIAN	Task-Only, Field Operations	Dedicated Technician Dashboard showing only assigned tasks
SALESPERSON	Sales Only	Salesperson Dashboard limited to catalog browsing, and checkout

Role Capabilities Summary

Feature	Owner	Manager	Technician	Salesperson
Full Dashboard & Analytics	✓	✓	✗	✗
Inventory Management	✓	✓	✗	View Only
Employee Management	✓	Limited	✗	✗
Branch Management	✓	✗	✗	✗
Direct Task Assignment	✓	✓	✗	✗
AMC Management	✓	✓	✗	✗
Sales	✓	✓	✗	✓
Billing	✓	✓	✗	✗
Task Completion	✗	✗	✓	✗

3. Authentication & Employee Onboarding

3.1 Owner / Manager Login

- Standard **email and password** authentication.
- **Forgot Password** flow with OTP-based verification via registered mobile number.
- Secure token management: JWT access tokens + refresh token rotation.
- Persistent session via **Flutter Secure Storage**.

3.2 Owner Registration (Two-Step)

1. **Step 1 – Business Details:** Business name, personal name, email, phone number, and password.
2. **Step 2 – Branch Setup:** Branch address, city, and initial configuration.

3.3 Employee Login – QR Code + OTP System

This is the secure, physical-presence-enforced login mechanism for field employees (Technicians, Salespersons):

Flow:

1. Owner/Manager opens the **Employee screen** and taps the QR icon on an employee's card.
2. The app generates a unique **6-digit OTP**, sends it to the backend, and displays both the **QR Code** and the OTP on screen.
3. The employee opens the app on their own device and navigates to the **Employee Login Scanner** screen.
4. The employee **scans the QR code** shown on the owner's device.
5. The employee enters the **6-digit OTP** displayed on the owner's screen.
6. On successful validation, the employee receives a JWT session tied to their role.

Security Properties:

- OTP is **single-use** and **session-scoped** – expires immediately after use.
- Physical co-presence of owner and employee is mandatory.
- Employees (Technician / Salesperson) **cannot** log in via standard email/password.

3.4 Splash Screen & Session Management

- Animated splash screen checks for an existing valid session.
- Auto-routes the user to their role-appropriate dashboard or the login screen.

- **Maintenance Screen:** Displays a configurable maintenance message if the backend is undergoing maintenance.
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4. Dashboard & Command Center

4.1 Owner / Manager Dashboard

The central hub for all operational monitoring and quick-action triggers.

Real-Time KPI Metrics (Top Section):

- **Monthly Revenue:** Gross revenue for the current month.
- **Net Profit:** Profit margin highlighted in green.
- **Task Completion Ratio:** Completed / Total tasks displayed.
- **GST Setup Prompt:** A session-level smart dialog prompts the Owner/Manager to configure their GST number if it has not been set. Options: "Set Up Now" → Settings, "Ask Me Later", or "Don't Ask Again" (persisted via SharedPreferences).

Service Reminders Panel (Dual-Mode):

- **Today's Reminders** tab: Scrollable list of customers whose services are due today.
- **AMC Reminders** tab: List of AMC contracts approaching their expiry date, with colour-coded "Days Remaining".

Employee Task Feed:

- Live scrollable task list filterable by: **All, In Progress, Completed**.
- Each task shows: Employee Name, Customer Name, Service Name, Address, Status Badge, and quick-action menus.
- Quick actions from dashboard: Regenerate OTP, Switch Technician, Share WhatsApp message.

Branch Switch (Owner Only):

- Tap the **dropdown arrow** in the AppBar → modal bottom sheet lists all registered branches.
- Each branch shows: Name, Address, Subscription Type badge, and a warning if the subscription ends within 7 days.
- Selecting a branch instantly re-fetches all dashboard data for that branch context.
- Branches with a **Mobile-Only (M)** subscription are disabled on the Windows Desktop app.

Drawer Navigation (Owner / Manager):

Item	Destination
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Item	Destination
Dashboard	Main Dashboard
Inventory	Product & Stock Management
Employee	Employee Registry & QR Login
Service	Service Plans Management
Customer	Customer Database
Sales	Point-of-Sale / Billing
Bills	Bill History & PDF Generator
Product Category	Category Management
Direct Service	Quick Task Assignment
AMC	Annual Maintenance Contracts
Branch	Multi-Branch Management
Analytics	Business Analytics & Reports

4.2 Technician Dashboard

A focused, distraction-free interface showing only tasks assigned to the logged-in technician:

- Customer contact info, product details, issue description, and service address.
- One-tap **Complete Task** action requiring OTP input from the customer.
- Task status updates sync in real-time with the central office.

4.3 Salesperson Dashboard

- Quick entry point to the Product Catalog for browsing and adding items to the cart.
- Access to the Checkout flow.
- No access to settings, analytics, or employee management.

5. Inventory & Product Management

5.1 Product Category Management

- Create, view, and manage product categories (e.g., Air Conditioners, Refrigerators, TVs, Spare Parts).

- Categories are branch-specific and used to organize the inventory screen.

5.2 Product Catalogue

Products are catalogued with the following detailed attributes:

Field	Description
Company / Brand Name	Manufacturer name (e.g., Samsung, LG)
Model Name & Number	Product identifier
Category	Linked product category
Purchase Price	Cost price (internal)
Selling Price	Retail selling price
GST Percentage	Default GST rate for billing
HSN Code	Tax compliance code for invoicing
Warranty Duration	Product warranty period
Product Features	Custom feature notes
Color Variants	Individual stock tracked per color

5.3 Color Variant & Stock Tracking

- Each product supports **multiple color variants**.
- Stock quantity is individually tracked **per color**.
- The inventory screen displays **color dot indicators** with the corresponding quantity next to each color.
- A **search bar** enables quick product lookup by name or brand.
- **Product Update Lock:** A settings toggle ([Allow Product Update](#)) must be enabled before product details can be edited, preventing accidental changes.

5.4 Automated Stock Deductions

Stock is automatically decremented from the branch inventory in two scenarios:

1. **Sale Completed:** When a product is checked out through the billing screen, quantities per color are deducted.
 2. **Spare Part Used:** When a technician logs a used spare part during field task completion, the corresponding item is deducted from inventory.
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6. Sales, Billing & Invoicing

6.1 Point of Sale (POS) Flow

Step 1 – Product Selection:

- Browse the product catalog filtered by category.
- Add one or multiple products to the billing cart simultaneously.

Step 2 – Billing Configuration (per product):

- **Color & Quantity Selection:** Adjust quantities per color variant with real-time stock validation. Cannot exceed available stock.
- **Service Plan Selection:** Optionally attach an add-on service plan (from the Services module) with visible price, service count, and validity period.
- **GST Configuration:** Pre-filled from the product's default GST but editable per sale. Validated to not exceed 100%.
- **Discount:** Apply a flat rupee (₹) discount. Validated to not exceed the product subtotal.
- **Live Price Summary:** Real-time calculation of $\text{Product Price} \times \text{Quantity} + \text{GST} - \text{Discount} + \text{Service} = \text{Total}$.

Step 3 – Customer & Tax Details:

- Select an existing customer or add a new one on-the-fly.
- Enter Customer GSTIN (optional, for B2B billing).
- **GST Location Logic:**
 - **Intrastate:** CGST + SGST applied automatically.
 - **Interstate (Outside Delivery):** IGST applied. Toggle "Outside Delivery" and enter the Place of Supply state.
- Sequential invoice number auto-generated: format `PREFIX-BRANCH-YEAR-SEQUENCE` (e.g., `RAJE-MUM26-0042`).

Step 4 – PDF Generation:

- Professional tax invoice compiled with:
 - Business name, address, GSTIN
 - Customer details and GSTIN
 - Sequential bill number
 - HSN code table with product breakdown
 - Tax split (CGST/SGST or IGST)
 - Grand Total
 - Optional **brand watermark** overlay on the PDF background (toggleable in Settings)
- PDF saved locally and can be opened, shared via WhatsApp, email, or system share sheet.

6.2 Bill History & Management

- **Bill PDF List Screen:** Paginated list of all historical bills for the active branch, with pull-to-refresh and infinite scroll pagination.
- Each bill card shows: Customer Name, Bill Number, Bill Date, Customer Phone, and Grand Total.
- **Re-generate PDF:** Tap the PDF icon to regenerate the bill PDF. Previously entered business details (customer GSTIN, place of supply) are cached via SharedPreferences and auto-filled on re-generation.
- **Bill Cancellation:** Tap any bill card → bottom sheet shows individual sale line items. Select specific items to cancel and provide a cancellation reason. Only CONFIRMED (non-cancelled) items can be selected.

6.3 AMC Invoice Generation

- Generate a formal AMC contract invoice directly from the AMC List screen.
 - Auto-populates AMC details: product name, coverage type, validity dates, and invoice amount.
 - Supports outside delivery / interstate GST for AMC bills.
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7. Task & Service Management

7.1 Service Plans (Service Module)

- Define reusable service plan templates used in billing (e.g., "2-Year Extended Warranty").
- Each service plan has: Name, Price, Service Count, and Validity Period (months).
- Service plans are attached to product sales during billing and tracked under the customer's purchase history.

7.2 Direct Task Assignment

Used for ad-hoc, one-off customer service calls (not tied to a sales transaction):

Assignment Flow:

1. Manager opens **Direct Service Assign Screen**.
2. Selects or creates a customer (with multiple phone numbers and address support).
3. **Active AMC Check:** System automatically checks if the customer has an active AMC contract. If yes, a warning dialog prompts the manager to either:
 - Assign it as a **Regular Direct Task** (billable), or
 - Route it to the **AMC Module** as a covered service.

4. Enter Service Name, price, product details (optional – product ID is not required for direct tasks), and select a Technician.
5. System generates a unique **6-digit OTP** and opens the **WhatsApp share sheet** pre-filled with service details and the OTP.

7.3 OTP-Verified Task Completion

This protocol prevents fraudulent task completion reports:

Step	Actor	Action
1	System	Task registered; unique 6-digit OTP generated
2	System	OTP sent to customer via WhatsApp share sheet
3	Technician	Travels to customer location, performs the repair
4	Technician	Requests OTP verbally from the customer
5	Technician	Inputs OTP in the Task Completion Screen
6	System	Validates OTP; changes task status to COMPLETED if correct
7	Technician	Logs spare parts used during the repair

7.4 Spare Parts Usage During Task Completion

During the task completion flow (after OTP validation), technicians:

- Log any spare parts consumed (e.g., compressors, PCBs, remote controls).
- System automatically deducts logged parts from branch inventory.
- Parts list is appended to the customer's service history for transparent future invoicing.

7.5 Employee Tasks Screen (Manager View)

A full task management screen accessible by Owner/Manager with the following capabilities:

Filtering:

- By Status: All / In Progress (Pending) / Completed
- By Employee: Filter tasks by a specific technician
- By Date Range: Custom start and end date filter

Per-Task Actions (3-dot menu):

- **Regenerate OTP:** Re-issues a new OTP for incomplete tasks. Requires confirmation dialog. New OTP dispatched via WhatsApp.

- **Switch Technician:** Reassign a pending task to a different technician. New OTP issued automatically.
- **Cancel Task:** Cancel an incomplete task with confirmation.
- **Message (Completed tasks):** Re-share the completion message via WhatsApp.

Task Card Details:

- Employee Name, Status Badge (Pending / Completed / Cancelled)
- Service Name, Task Price, Product Name (with Coverage Type if AMC)
- Customer Name, Address, Phone
- **LAST SERVICE** badge: Red badge shown on tasks that are the final service of an AMC contract, alerting the manager.
- AMC Coverage Type indicator (e.g., **AMC (Comprehensive)** or **AMC (Service-Only)**)

8. Annual Maintenance Contract (AMC)

8.1 AMC Creation

Managers/Owners create AMC contracts via a two-step wizard:

Step 1 – Customer Selection:

- Search existing customers or register a new one on-the-spot.

Step 2 – Contract Configuration:

Field	Description
AMC Name	Internal contract reference name
Product Name	External product registered under AMC
Brand & Model Number	Product identifiers
Serial Number	Unique device identifier
Coverage Type	Comprehensive (labor + parts) or Service-Only (labor only; parts billed separately)
Service Limit	Fixed number of service visits (e.g., 4/year) or Unlimited Services toggle
Base Price	Contract base price
GST Percentage	Tax rate for auto-calculating the final invoice amount
Invoice Amount	Auto-calculated: Base Price + GST%

Field	Description
Start Date	Contract commencement date
Expiry Date	Contract end date

8.2 AMC List & Status Management

- **Status Filters:** All / Active / Expired / Cancelled.
- **Search Bar:** Search by customer name, AMC name, or product.
- Each AMC card displays: AMC Name, Customer Name, Product Info (brand, model, serial), Coverage Type, Expiry Date, Invoice Amount, and Services Used counter.
- **Services Used Counter:** Displays as **Used / Limit** (e.g., 2 / 4) or just **Used: 2** for unlimited contracts.

8.3 AMC Operations (Bottom Sheet)

Tapping an AMC card opens an options sheet with:

Option	Description
Assign Task	(Unlimited AMC only) Assign a covered service task to a technician. Task price is locked to ₹0.00 since labor is prepaid.
Generate Bill	Generate a formal AMC invoice PDF with GST compliance
Update AMC	Edit contract details via slide-up bottom sheet
Renew AMC	Extend expired contract with updated terms and new dates
Cancel AMC	Cancel the contract with confirmation dialog

Note: For AMCs with a fixed service limit, tasks must be assigned from the **Service Reminders screen** which manages the service count enforcement.

8.4 AMC Service Count Enforcement

- Each completed AMC task increments the customer's **Services Used** counter.
- The system prevents assigning new tasks once the service limit is reached.
- The **"LAST SERVICE"** badge is displayed prominently on the final service task card to alert the manager.

8.5 AMC Renewal

- Available for all AMC statuses (including expired and cancelled).
 - Renewal screen allows updating: coverage type, service limits, base price, GST, and new start/expiry dates.
 - Renewal creates a new active contract period while preserving history.
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9. Service Reminders & CRM

9.1 Service Reminders Screen

A dedicated screen for proactive service scheduling accessible from the drawer.

Time Period Filters:

- **Today** – Due today
- **This Month** – Due this month
- **This Year** – Due this year
- **All** – All pending reminders
- **AMC Reminders** – AMC contracts expiring soon (separate view)

Search:

- Searchable by customer name (minimum 3 characters triggers API search).
- AMC Reminders mode: Client-side search filtering.

Reminder Card Details:

- Customer Name, Phone Number, Service Name, Service Number
- Customer Address
- Due Date (highlighted in primary color)
- **LAST SERVICE badge** (red): Indicates this is the final service in the customer's plan

Assign from Reminder:

- "Assign" button on each reminder card.
- **Older Services Pending Check:** Before assigning a service that is flagged as "Last Service," the system checks if earlier services for the same product/plan are pending. If found, it shows a warning dialog listing the pending services and asks for confirmation to proceed anyway.

9.2 AMC Reminders (Dashboard Integration)

- Shown as a tab on the main dashboard service reminders panel.
 - Colour-coded urgency system (red/orange/green) based on days until AMC expiry.
 - Quick navigation to the AMC list from the dashboard.
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10. Customer Management

10.1 Customer Database

- Centralized customer registry with full profile management.
- **Search:** Real-time search by name or phone number.
- Support for **multiple phone numbers** per customer (family contacts, office lines, etc.).
- Customer address stored with optional address map link (URL).

10.2 Add / Edit Customer

- Customer Name (required)
- Multiple Phone Numbers (dynamic add/remove)
- Address

10.3 Customer History Screen

A comprehensive interaction timeline accessible by tapping any customer:

Section	Contents
Product Purchases	Sale date, items bought, salesperson, quantities, grand total
Service History	Chronological repair list, assigned technician, parts replaced, service fees, task OTP status
AMC Records	Past and present contracts, validity status, coverage type, services used vs. limit

Diagnostic Aid: Field technicians can open the Customer History screen on-site to review past issues and repair notes, enabling faster troubleshooting for recurring failures.

11. Employee Management

11.1 Employee Registry

- Full employee list with role, phone number, address, and active/inactive status.
- **Subscription Limit Enforcement:** Owners can only have a set number of **active** employees based on their branch subscription tier. Attempts to activate beyond the limit show a clear error message.

11.2 Add Employee

- Name, Role (MANAGER / TECHNICIAN / SALESPERSON), Phone, and Address.
- Employee is created with inactive status by default.

11.3 Employee Activation / Deactivation

- **Owner Only:** Can activate or deactivate any employee.
- **Manager:** Manages Technicians and Salespersons only; cannot manage other Managers.
- Confirmation dialog before changing status.
- **Bulk Activation Bottom Sheet:** If all employees are inactive, a bottom sheet allows the Owner to select and activate multiple employees at once (up to the subscription limit).

11.4 QR Login Generation

- Tap the QR icon on any employee card.
- System generates a unique OTP for that employee's session.
- Displays:
 - Employee QR code (encodes employee ID)
 - Employee name and role
 - 6-digit OTP in large, readable format
 - Prompt: "Enter this code on the employee's device"
- Retry option if OTP generation fails.

11.5 Desktop Layout (Windows)

On Windows, the Employee screen uses a **split-panel layout**:

- Left panel: Searchable employee list.
 - Right panel: Embedded Add Employee form (no navigation required).
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12. Branch Management

12.1 Branch Overview

- View all registered branches under the Owner's account.
- Each branch shows: Branch Name, Address, Subscription Type, Subscription End Date.
- **Subscription Expiry Warning:** A "Your subscription will end on [date]" warning appears on any branch expiring within 7 days.

12.2 Add Branch

- Branch Name and Branch Address.
- New branch is auto-linked to the Owner's account.

12.3 Branch Switching (Owner Dashboard)

- Owner can switch the active branch directly from the dashboard via long-press on the profile icon or tapping the dropdown arrow.
 - Dashboard data (reminders, tasks, analytics) re-fetches automatically for the selected branch.
 - **Subscription-Type Gate:** Mobile-only subscription branches cannot be selected on the Windows Desktop app.
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13. Analytics & Reporting

13.1 Analytics Screen

A dedicated analytics overview screen showing business performance metrics for the active branch.

Section 1 – Sales Trend Chart:

- Visual chart (line/bar) of sales performance over time.
- Configurable time window: 1 month, 3 months, 6 months, 12 months.
- Each period selection triggers an independent API call for accurate data.
- Error banner displayed if the sales trend API fails.

Section 2 – Profit Report Card:

- Gross Revenue and Net Profit for the selected period.
- Configurable months filter: independent API call per selection.
- Error banner for API failures.

Section 3 – Employee Collection Card:

- Breakdown of task-based revenue collected by each employee.
- Custom date range picker (start date → end date).
- Refreshed independently on date range change.

13.2 Dashboard KPI Preview

A preview of the profit report is also embedded in the main dashboard AppBar area, displaying the current month's revenue and profit at a glance without navigating to the full analytics screen.

14. Settings & Configuration

14.1 Profile Settings

Setting	Who	Description
Business Name	Owner	Display name cascaded to PDF invoices
Business Address	Owner	Cascaded to PDF invoices
Business GSTIN	Owner / Manager	15-character GST number with strict format validation. Updates cascade to all future invoice PDFs.

GST Number Validation Rules:

- Exactly 15 characters.
- Positions 1-2: 2-digit state code.
- Positions 3-7: 5 uppercase letters (PAN prefix).
- Positions 8-11: 4 digits (PAN year + entity sequence).
- Position 12: 1 uppercase letter.
- Position 13: 1 digit.
- Position 14: Always 'Z'.
- Position 15: 1 alphanumeric character.

14.2 App Settings

Setting	Description
Language	Switch app language: English, Hindi (हिंदी), Gujarati (ગુજરાતી). Persisted across restarts.
Theme	Toggle Light Mode / Dark Mode. Persisted across restarts.
PDF Watermark	Enable / Disable brand watermark overlay on invoice PDFs.
Allow Product Update	Toggle to enable/disable editing of existing product details. Shows a confirmation warning before enabling.

14.3 Legal & Support

Option	Description
Help & Support	Bottom sheet with direct Call and Email links to support team
Privacy Policy	In-app WebView displaying the hosted Privacy Policy page
Terms of Service	In-app WebView displaying the hosted Terms of Service page
App Version	Displays current app version number
Feedback	Opens email client pre-filled with feedback subject line

14.4 Account Actions

Action	Who	Description
Logout	All roles	Confirmation dialog → clears session and navigates to Login
Request Account Deletion	Owner Only	Navigates to the Account Deletion screen to submit a GDPR-compliant data deletion request

15. Localization Support

The application features full end-to-end localization.

Language	Code	Script
English (US)	en_US	Latin
Hindi	hi_IN	Devanagari (हिंदी)
Gujarati	gu_IN	Gujarati (ગુજરાતી)

Implementation:

- All UI labels, error messages, button prompts, dialog text, and navigation titles are stored in localization string files per language.
- Language is persisted to device `SharedPreferences` and loaded on app startup.
- Changing language in Settings triggers a full UI rebuild without restarting the app.
- Scope: Covers all user-facing screens including Dashboards, Billing, Tasks, AMC, Employee, and Settings.

16. Platform Compatibility

16.1 Android (Mobile)

The primary platform for field workers.

Feature	Detail
Camera QR Scanning	Mobile Scanner library for employee login
WhatsApp Sharing	Native share sheet integration for OTP and task notifications
Push Notifications	Firebase Cloud Messaging (FCM)
Crash Reporting	Firebase Crashlytics
Local Notifications	Flutter Local Notifications for reminders
PDF Storage	Saved to device storage via <code>path_provider</code>
Permission Handling	Camera, Storage permissions via <code>permission_handler</code>

16.2 Windows (Desktop)

Native Windows compilation designed for shop back-office operation.

Feature	Detail
Desktop Installer	Windows <code>.exe</code> installer for store deployment
Split-Panel Layouts	Inventory and Employee screens use responsive split-panel UI on desktop
Camera QR (Windows)	<code>camera_windows</code> package for QR scanning on Windows
Mobile-Only Branch Gate	Branches with 'M' subscription type are disabled for desktop app users
Scrollbar Visibility	Desktop layouts include always-visible scrollbars for long lists
No FAB on Desktop	Floating Action Buttons hidden where split-panel forms are available

17. Notifications & Communication

17.1 Firebase Cloud Messaging (FCM)

- Background and foreground push notification support on Android.
- Used for service reminders, task updates, and operational alerts.

17.2 WhatsApp Integration

WhatsApp share sheets are triggered at key workflow moments:

Trigger	Content
Task Assignment	Customer name, service details, technician name, unique OTP
OTP Regeneration	Updated OTP for the existing task
Technician Switch	New technician name and updated OTP
Task Completion	Summary of completed service

17.3 Email Integration

- In-app `mailto:` URI launch for feedback and support contact.
 - Customer email used in billing-related communications.
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18. Security & Compliance

18.1 Authentication Security

Mechanism	Description
JWT Tokens	Short-lived access tokens + refresh token rotation
Secure Storage	Tokens stored in <code>flutter_secure_storage</code> (encrypted)
OTP Single-Use	Task and employee login OTPs are consumed immediately on use
Role Guards	All API routes protected by backend role-based middleware

18.2 GST Compliance

- GST number validated with full 15-character format enforcement.
- Automatic CGST/SGST vs. IGST selection based on delivery location.
- HSN code support per product for compliant invoice tables.
- Sequential invoice numbering with business prefix and fiscal year.

18.3 Data Compliance

- **Account Deletion Request:** Owners can submit a formal account and branch data deletion request, accessible from the Settings screen.
- **Privacy Policy & Terms of Service:** Embedded in-app web views for legal transparency.

18.4 Subscription Enforcement

- Subscription status is checked on every app session start.
 - Subscription-blocked dialogs are shown when an active subscription is required to perform an action (task assignment, OTP generation, employee activation, etc.).
 - **Subscription End Date Warning:** Branch-level warning shown 7 days before expiry.
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19. Complete Application Flow

19.1 Owner Onboarding Flow

App Launch → Splash Screen → Not Authenticated
→ Register Screen (Step 1: Business Details)
→ Register Screen (Step 2: Branch Setup)
→ Owner Dashboard

19.2 Daily Operations – Sales Flow

Owner/Manager/Salesperson Dashboard
→ Drawer → Sales
→ Browse Product Catalog (filter by category, search)
→ Add to Cart (select colors, quantities)
→ Billing Screen (configure GST%, discount, attach service plan)
→ Customer Details Screen (select/add customer, enter GSTIN)
→ Outside Delivery? → Select State for IGST
→ Confirm Bill → Auto-generate sequential invoice number
→ Generate PDF → View / Share via WhatsApp / Email

19.3 Task Assignment & Completion Flow

Manager Dashboard
→ Drawer → Direct Service / Service Reminders → Assign
→ Select Customer (existing or new)
→ AMC Check → Route to Direct Task or AMC Module
→ Enter Service Details → Select Technician

→ System generates 6-digit OTP
→ WhatsApp share sheet opens → Send OTP to customer
|
└─ Technician receives task notification
→ Technician App → Task Dashboard → View assigned task
→ Travel to customer site → Perform repair
→ Request OTP from customer → Enter OTP in app
→ System validates OTP → Task marked COMPLETED
→ Log spare parts used → Inventory auto-deducted
→ Parts added to customer's service history

19.4 AMC Lifecycle Flow

Manager Dashboard → Drawer → AMC
→ AMC List Screen (filter: Active / Expired / Cancelled)
→ Create AMC:
Step 1: Select/Add Customer
Step 2: Configure Contract (product, coverage, limit, price, dates)
→ AMC Created → Invoice amount auto-calculated
|
└─ When service is due → Service Reminders shows reminder
→ Manager assigns task from reminder (for limited AMC)
OR Manager taps "Assign Task" from AMC card (unlimited AMC)
→ Task created with ₹0.00 price (labor covered)
→ Services Used counter increments on completion
→ LAST SERVICE badge appears on final visit
|
└─ AMC Expires → Renew AMC → New contract period
OR Cancel AMC → Archived in Cancelled filter

19.5 Employee Login Flow (Mobile)

Employee Opens App
→ Employee Login Scanner Screen
→ Owner/Manager generates QR for the employee
→ Employee scans QR code → Employee ID captured
→ Employee enters 6-digit OTP from owner's screen
→ Backend validates OTP (single-use, session-scoped)
→ Employee JWT issued → Role-based dashboard shown:
TECHNICIAN → Technician Dashboard
SALESPERSON → Salesperson Dashboard

19.6 Analytics Review Flow

Owner/Manager Dashboard → Drawer → Analytics

→ Analytics Overview Screen (branch-scoped)

└─ Sales Trend Chart → Select period (1/3/6/12 months) → Chart refreshes

└─ Profit Report Card → Select period → Revenue & Profit refreshes

└─ Employee Collection Card → Select date range → Collection breakdown refreshes

Electronic Shop Management System – Complete Feature Documentation v2.0.3

Based on full codebase analysis – July 2026