

PulseCafe Enterprise User Manual & Standard Operating Procedures (Official English Edition)

Comprehensive Operations Manual for Smart Voice AI Cafe POS, Interactive Multi-Round Floor Plans, Kitchen KDS, and Thai Revenue 3-Series Tax Compliance

APPLICATION SYSTEM

PulseCafe Smart Voice AI Cafe POS & Multi-Terminal Platform

MAIN TECH PLATFORM

<https://nova-pulse-ai.com> (NovaPulse AI Suite)

SECURITY ARCHITECTURE

Local-First Native IndexedDB Vault, Dual PIN & LINE Telemetry

RELEASE DATE

October 2026 (Official Release)

OFFICIAL WEB PORTAL

<https://cafe.nova-pulse-ai.com>

TECHNOLOGY PROVIDER

Powered by BarisTalk Voice AI & NovaPulse AI Platform

DOCUMENT VERSION

Version 2.27.56 (Enterprise Multi-Terminal Edition)

COMPLIANCE STANDARD

Revenue Code Sec. 86/4, 86/5 & Local-First Offline Standard

PulseCafe Operational User Manual & SOP Guide

Smart Voice AI Cafe POS, Interactive Multi-Round Floor Plans, Kitchen KDS & Thai Revenue 3-Series Engine

Version: v2.27.56 (Enterprise Multi-Terminal Edition)

Brand Ecosystem: NovaPulse AI Suite (<https://nova-pulse-ai.com> | <https://cafe.nova-pulse-ai.com>)

Official Hotline Support: 080-846-4657 | LINE Official @963thms | Email support@nova-pulse-ai.com

Official Video Demos: [YouTube Shorts](#) | [TikTok Channel](#)

⚡ 1-Page Quick-Start Cheat Sheet

For Store Owners & Admins: Launch in 3 Simple Steps

1. **Register Cafe Workspace** ([/register](#) & [/login](#)): Enter your commercial brand name, 13-digit Tax ID, and select your tax regime (VAT Registered vs. Non-VAT). Receive an instant 14-day Free Trial with isolated multi-tenant cloud storage—no credit card required.
2. **Configure Menu Catalog & Floor Plan** ([/pos?demo=true](#) & [/settings](#)): Upload coffee, tea, bakery, and food items. Set base prices, categories, and 3-tier modifiers (sweetness, milk alternatives, add-ons) or import hundreds of items via Excel/CSV in 5 minutes. Layout your interactive tables (Indoor AC, Garden Terrace, Espresso Bar).
3. **Deploy Frontline Cashiers & Remote Pairing (2D QR Pairing)**: Authorize new cashier tablets remotely in 1 second via 2D QR Code or 6-digit PIN over LINE without exposing master credentials, and connect your **LINE Official Account / Notify** for automated end-of-day Z-Reports and real-time voided order alerts.

For Frontline Baristas & Cashiers: Ring Up in 3 Fast Steps

4. **Access POS Terminal** ([/pos](#)): Tap your name and enter your assigned 4-digit PIN to open your shift.
5. **Order Intake (Voice AI or Touch Grid)**:
 - 🎤 **Hands-Free Voice AI**: Tap the microphone icon or press Spacebar and speak natural orders (e.g., "2 Iced Americano 50% sweet, 1 Hot Latte with oat milk for Table 3"). Gemini AI extracts items into the tab in 0.8 seconds.
 - 👉 **Touch Screen Selection**: Tap product cards and configure modifiers on the visual pop-up dialog, with prominent Special Kitchen Notes & Allergy Alerts.
8. **Collect Payment & Issue Receipt**: Tap "Checkout". Select Cash (automated change calculation), Dynamic PromptPay QR (exact satang), or snap a client's business card to issue a Full Tax Invoice ([INV-](#)) in 3 seconds.

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1. Platform Overview & Zero-Friction Architecture

PulseCafe is an enterprise Cloud POS platform built specifically for specialty cafes, roasters, tea bars, and restaurants within the **NovaPulse AI Suite** (<https://cafe.nova-pulse-ai.com>):

- **Speech-to-Cart Speed:** Natural voice ordering in Thai and English processes 3x faster than traditional touch registers without touching screens with wet hands.
- **100% Offline Resilience (Local-First):** Native browser IndexedDB vaults cache menus, active tabs, and transaction queues locally, ensuring continuous operations during internet outages.
- **Zero Hardware Lock-In (BYOD):** Operates on standard iPads, Android tablets, touch laptops, and smartphones—saving ฿35,000+ per counter terminal.

```
[1. Guest Places Order] → [2. Spoken BarisTalk AI 0.8s] → [3. Table Floor Plan / Multi-Round]
    → [4. Route to Bar & Kitchen KDS] → [5. Dynamic PromptPay QR / AI Card OCR 3s]
    → [6. Print ABB-/INV- Receipt] → [7. Automated LINE Z-Report to Owner]
```

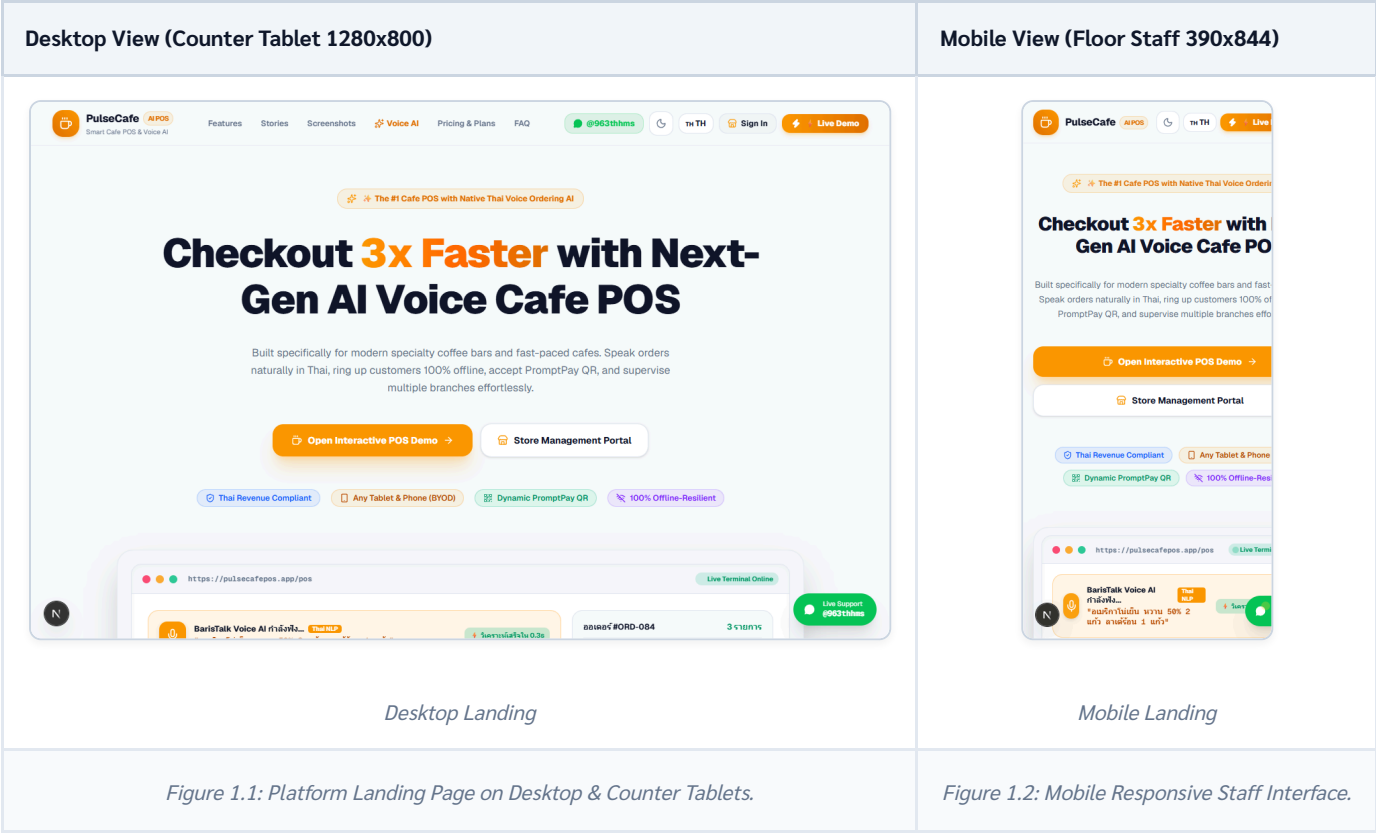


Figure 1.1: Platform Landing Page on Desktop & Counter Tablets.

Figure 1.2: Mobile Responsive Staff Interface.

2. How to Register a New Cafe Workspace & Multi-Branch Expansion

2.1 Principles & Rationale

Launching a modern cafe requires zero friction. Store operators can deploy a cloud workspace autonomously in 2 minutes without credit cards or long-term contracts. Upon registration, stores receive an immediate 14-day Free Trial with fully partitioned multi-tenant cloud storage.

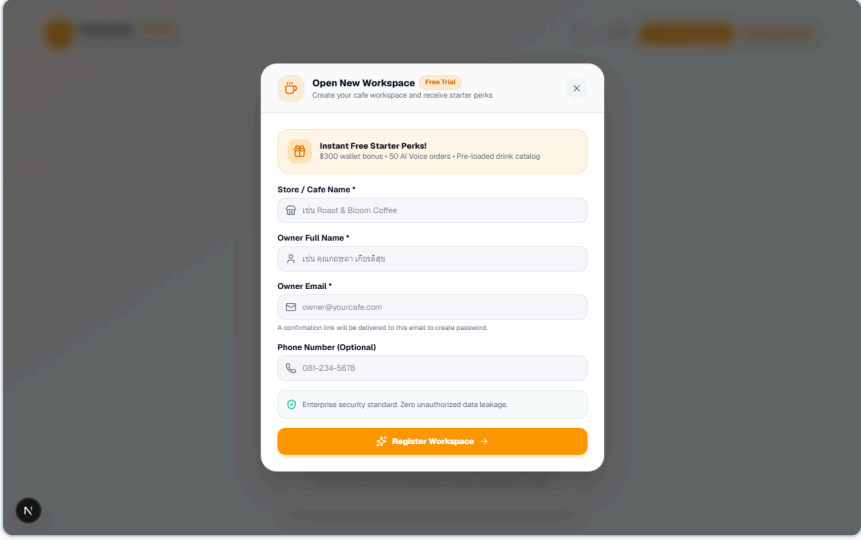
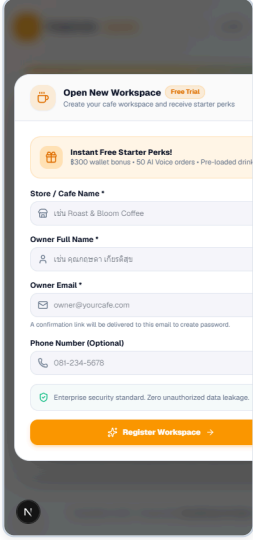
2.2 Field Dictionary: Merchant Onboarding

Field Name	Data Type	Requirement	Purpose & System Impact
Store Name	Text (3-100 chars)	Required	Commercial cafe brand name rendered on receipt headers and customer displays.
Owner Name	Text (2-100 chars)	Required	Primary administrator name holding Master Admin privileges.
Business Email	Email Address	Required	Corporate email address for activation tokens and daily Z-reports.
Phone Number	Phone (10 digits)	Required	10-digit mobile contact number for account recovery and LINE security pairing.

2.3 Step-by-Step SOP: Merchant Registration

29. Navigate to `/login?register=true` or click "Sign In" on the landing page.

- 30. Complete the 4 core fields: **Store Name**, **Owner Name**, **Business Email**, and **Phone Number**.
- 31. Click **"Register & Launch Workspace"**.
- 32. Check your email inbox and click the cryptographic activation link to set your password and launch your store.

Registration on Desktop	Registration on Mobile
 Register Desktop	 Register Mobile
Figure 2.1: Store Workspace Registration Form (Desktop).	Figure 2.2: Mobile Store Registration Form.

2.4 Multi-Branch Expansion & Zero-Friction Baseline Auto-Seeding

As your cafe business grows, adding new branches (e.g., Branch 00002, 00003) is completely automated in the cloud:

33. Interactive Branch Provisioning:

- Navigate to **"System Settings"** → **"Store & Branch Profile"** tab → click **"[+ Add Branch]"**.
- Input the 5-digit branch code (e.g., **00002** , **00003**), branch display name, physical address, contact telephone, and local branch PromptPay identifier.
- Click **"Save & Create Branch"** to commit the store branch to the cloud database.

37. Zero Cold-Start Automated Seeding Pipeline:

- To ensure the newly created branch is immediately operational without tedious manual setup, the system automatically initializes:
- **Main Dining Zone:** Creates default dining zone **"Main Dining"** .
- **10 Clean Tables:** Seeds 10 available tables (**AVAILABLE**): **A1 - A4** (4 seats), **B1 - B3** (2 seats), and **BAR1 - BAR3** (single bar seats) with pristine empty rounds **[]** , free from test orders or legacy demo data.
- **Branch Cashier Account:** Provisions **"Cashier 1"** (role **CASHIER** , default PIN **1111**) so frontline staff can begin selling immediately.
- **Catalog Inheritance:** Automatically inherits master menu products, categories, and modifier hierarchies.

43. Branch Cache Isolation:

- Switching branches via the top header bar flushes local client memory and pulls fresh branch state from the cloud, preventing any cross-branch table or order data bleed.

3. How to Login & Staff Authentication Lifecycle

3.1 3-Tier Security Hierarchy

45. **Master Admin Login (Owner / GM):** Authenticates via corporate email/password or **LINE Login** to manage menu catalogs, branch pricing, tax configurations, and financial ledgers.
46. **Cashier Screen-to-PIN:** Frontline terminal operators access the POS counter via a fast **4-digit numeric PIN**, preventing staff access to financial accounting records.
47. **Lock Terminal:** When baristas step away from the counter, tapping "*Lock Terminal*" locks the screen requiring PIN re-entry.

3.2 Step-by-Step Staff Authentication

48. Navigate to `/login`.
49. **For Owners/Managers:** Sign in using master email and password, or tap [ **Sign in with LINE**].
50. **For Frontline Cashiers:** On `/pos`, select your staff profile and enter your 4-digit PIN to open the register.

3.3 Remote Terminal Authorization via 2D QR Pairing & 6-Digit Code

Principle & Rationale: When deploying new counter tablets or secondary cashier devices, frontline staff should never be given administrative passwords. PulseCafe generates a **Dynamic 2D QR Code paired with an ephemeral 6-digit PIN (e.g. 842-190)**, allowing managers to authorize tablets remotely in 1 second. Authorized devices immediately lock into **Quick PIN Mode**, enforcing shift accountability.

3-Step Remote Pairing Workflow:

51. At Counter Terminal:

- On `/login`, expand [**Request Remote Terminal Pairing (PIN)**].
- The screen renders an oversized **2D Barcode (QR Code 112×112px)** and dynamic **6-digit Code** (e.g. **842-190**).
- Cashiers can tap the green button [ **Copy Pairing Code + Link for LINE**] to forward the request to the manager.

55. Manager Remote Approval (1-Second Action):

- **Method 1:** Scan the terminal QR Code using a mobile smartphone camera.
- **Method 2:** Tap the received link via LINE (e.g. `/login?pair=842190`) and approve.
- **Method 3:** Enter the 6 digits in POS settings under [ **Authorize POS Terminal**].

59. Automated Security Lock:

- The cashier terminal unlocks in 1 second, immediately prompting for the cashier's 4-digit PIN to begin counter service safely.

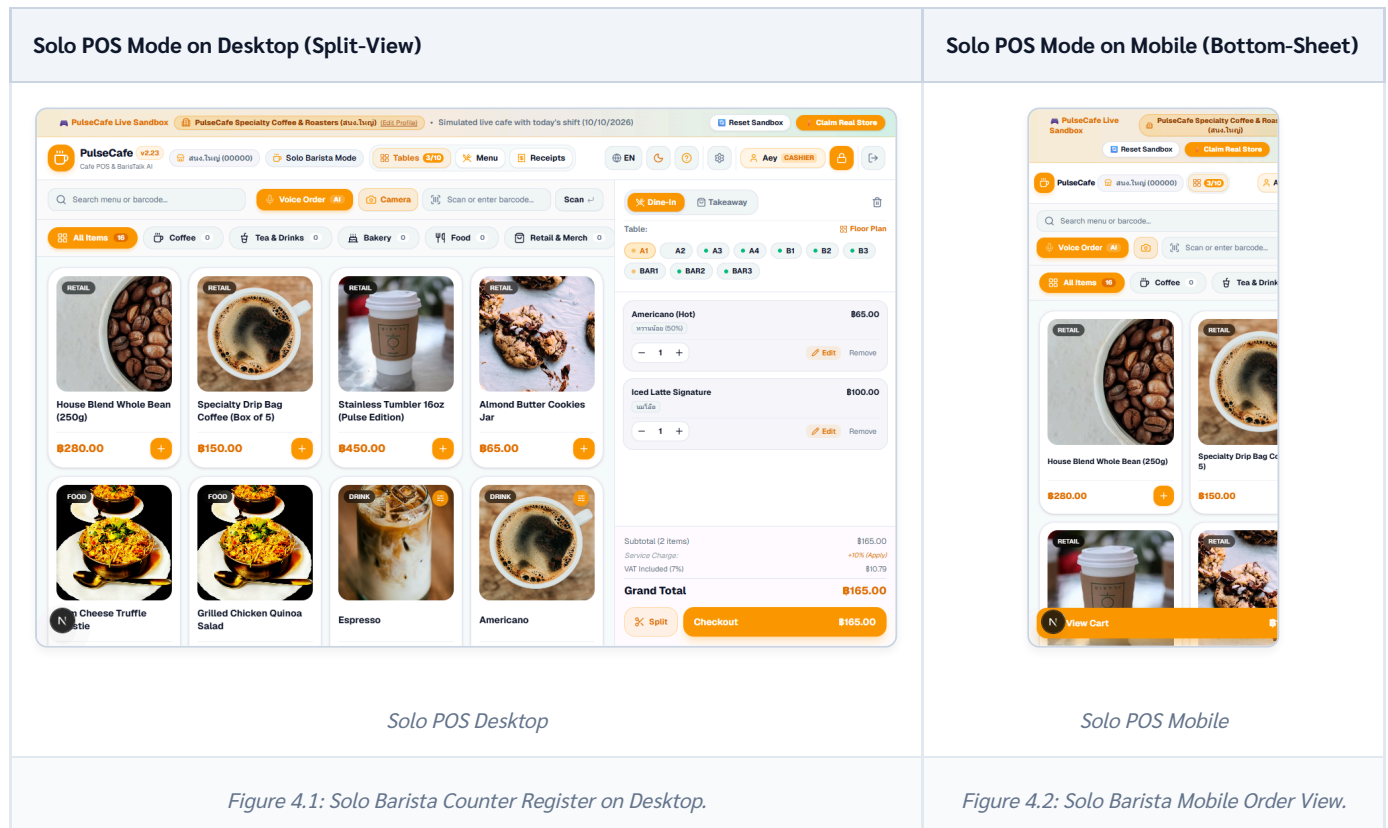
4. Solo Barista POS Counter Mode

4.1 Principles & Rationale

Solo Barista Mode is designed for **Single-Operator High-Throughput Ergonomics**, enabling one barista to take orders, prepare drinks, and complete payments in under 5 seconds. The viewport presents a split-pane layout: a visual product catalog on the left and a reactive cart summary panel on the right with automated 7% VAT computation.

4.2 Field Dictionary: POS Register Controls

Control Element	Type	Requirement	Purpose & Operational Impact
Category Tabs	Filter Selector	Required	Filters catalog: All Items, Specialty Coffee, Tea & Drinks, Bakery, Food.
Search & Barcode	Input Text	Optional	Instant search across English/Thai titles and SKU barcodes.
Product Cards	Action Button	Required	Single-touch item selection with Best Seller status badges.
Voice AI Microphone	Action Icon	Optional	Triggers BarisTalk continuous speech-to-cart listener.
Cart Summary Panel	Data Panel	Required	Itemizes selected drinks, quantity steppers, applied modifiers, subtotal, and grand total.
Checkout CTA	Action Button	Required	Displays exact grand total, launching the payment settlement dialog.



5. Restaurant Team Mode & Interactive Floor Plan

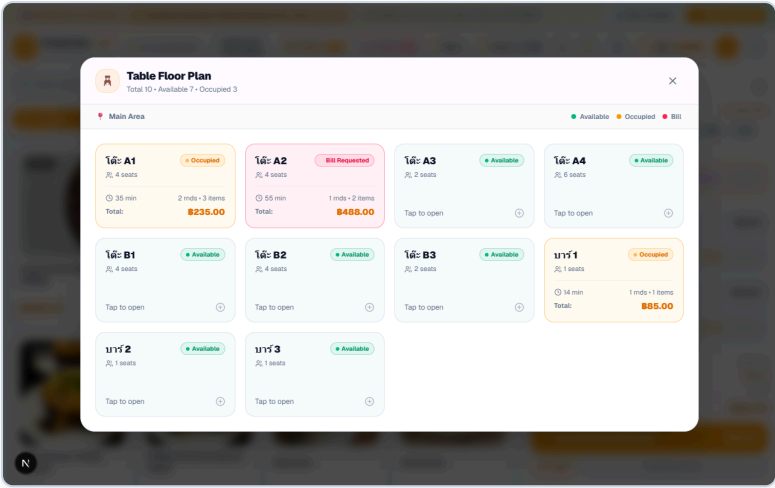
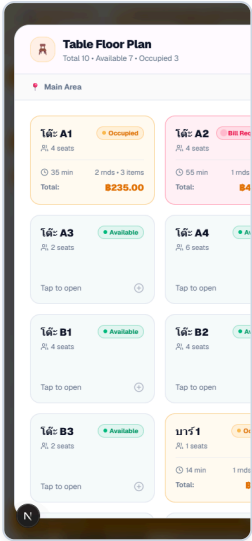
5.1 Principles & Rationale

The Interactive Floor Plan manages dining table state machines in real time:

-  **Available:** Ready to seat new dining guests.
-  **Occupied / In-Service:** Active tab open with multi-round orders and elapsed occupancy stopwatch.
-  **Billing:** Guests requested the check; items locked against modifications.

5.2 Field Dictionary: Table Plan Elements

Table Element	Type	Purpose & System Impact
Table Number (Table ID)	Identifier	Table designation (e.g., T-01 , T-02 , GARDEN-1 , BAR-1).
Seat Capacity	Number	Chair count allocated to the dining table.
Elapsed Timer	Stopwatch	Elapsed duration since table seating (e.g., 28 mins).
Round Badge	Counter	Active ordering round sequence (e.g., Round 2).
Add Items (+ Round)	Action Button	Opens catalog to append additional rounds to the active table tab.
Relocate Table	Action Button	Seamlessly transfers all orders from current table to another available table.
Check Bill	Action Button	Pulls all rounds into the checkout window for final settlement.

Interactive Floor Plan on Desktop	Interactive Floor Plan on Mobile
 <i>Table Plan Desktop</i>	 <i>Table Plan Mobile</i>
<i>Figure 5.1: Floor Plan & Table Round Management on Desktop.</i>	<i>Figure 5.2: Floor Plan & Table Round Management on Mobile.</i>

5.3 Starting a New Order: Dine-In vs. Takeaway Guardrails

To prevent cashier confusion—such as accidentally binding a takeaway ticket to an in-use table or forgetting table assignment during rush hours—PulseCafe (v2.27.27) incorporates an **Interactive Start New Order Flow** inside the empty Cart Panel:

54. 🍷 Takeaway (Unbound Table with Auto-Queue):

- Click or tap the orange **"Takeaway"** card in the cart panel.
- Immediately unbinds all table associations and **completely hides table selector chips** to eliminate operator mistakes.
- Displays an informative amber banner: 🍷 **Takeaway • No Table Bound • Auto Queue (#001-#999)**.
- Order tickets and kitchen/bar prep chits print with prominent queue numbers for customer pickup calling.

59. 🍴 Dine-In (Table-Bound Tab):

- Click or tap the blue **"Dine-In"** card.
- Launches inline **Quick Table Selector chips** (**A1** , **A2** , **B1** , **B2** , **VIP1** , **BAR1** , etc.) right inside the empty cart view.
- Cashiers select the target table before ringing up food or drink items.
- The cart header displays a persistent, high-contrast table badge (e.g., **[table]: Table [A1]**) alongside top switcher chips for quick table adjustment.

5.4 Takeaway Packaging Policies & Custom Surcharges (Dine-In to Pack-to-Go)

When dining guests request containers for leftovers or wish to order to-go items while seated, PulseCafe (v2.27.28) provides tenant-configurable packaging policies:

74. Admin Configuration (System Config Modal):

- Navigate to **System Configuration → Service & Packaging** tab.

- **Toggle Switch:** Enable or disable takeaway packaging fee.
- **Custom Surcharges:** Select presets (฿5 , ฿10 , ฿15 , ฿20) or specify custom THB per container based on packaging cost.
- **Free Packaging Policy (฿0):** Turning the toggle off treats all containers as complimentary with zero bill surcharge.
- Click **Save Settings to NeonDB** to persist policies into PostgreSQL immediately.

30. Cashier & Waiter SOP (On-Table Packaging Lifecycle):

- **Leftovers / Convert Dish to Pack-to-Go:**
- Tap the  (SlidersHorizontal) action button next to the ordered dish in the table rounds list.
- Select Tab 6:  **PACKAGING** .
- Button dynamically adapts: displays **ห่อกลับบ้าน (+฿15)** or **ห่อกลับบ้าน (ฟรี)** according to store policy.
- Tapping updates the bill total dynamically and dispatches a green  **ห่อกลับบ้าน** notification to Kitchen Display (KDS) screens and prep slips.
- **Ordering New To-Go Items to Active Table:**
- Tap item in POS → In Modifier Modal, select the quick chip **[Pack to-go / ใส่กล่องกลับบ้าน]** or **[Paper cup / Ice separate]** .
- **Separate Bill for Takeaway:**
- Switch cart header to  **Takeaway** → Ring up items and check out immediately with daily queue sequence number (**#001-#999**), leaving the seated dining table tab open undisturbed.

5.6 Special Kitchen Notes & Allergy Alerts

Principle & Rationale: Food safety is critical for dining venues. Guests suffering from dairy, peanut, gluten, or seafood allergies can experience severe reactions if baristas or line cooks miss subtle handwritten tickets. PulseCafe features **High-Contrast Allergy Warning Badges** displayed boldly across cashier registers, Kitchen Display Screens (KDS), and thermal receipts.

Order Intake & Allergen Tagging SOP:

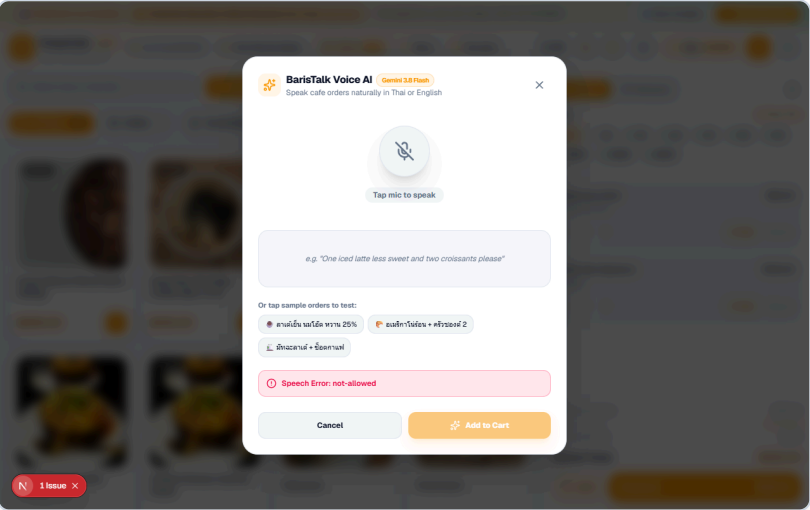
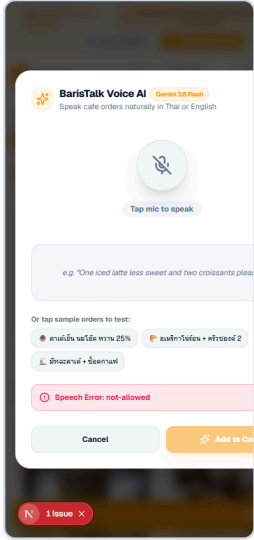
30. In the item modifier dialog or within the active cart item, locate **[ Special Notes / Kitchen Instructions]** .
31. Select one-click allergen presets:
 -  **[ Peanut / Nut Allergy]**
 -  **[ Dairy-Free / Cow Milk Allergy]**
 -  **[ Gluten-Free / Wheat Allergy]**
 -  **[ Seafood Allergy]**
 - Or type bespoke preparation requests (e.g., "No artificial sweeteners", "Extra hot steam", "Ice separated").
37. Confirming flags the cart item with a vivid red badge **[ Allergy: ...]** .
38. Once dispatched to the kitchen, the KDS displays a pulsing red outline and thermal tickets print clear bordered warning boxes to prevent cross-contamination 100%.

6. BarisTalk Voice AI Hands-Free Ordering

6.1 Principles & Rationale

BarisTalk Voice AI combines Web Speech API with **Google Gemini 3.8 Flash** using **In-Context Catalog Extraction**:

- Resolves items, temperatures, sweetness levels, milk substitutions, and quantities into clean JSON within **0.3 - 0.8 seconds**.
- Baristas take orders hands-free while steaming milk or grinding coffee beans.

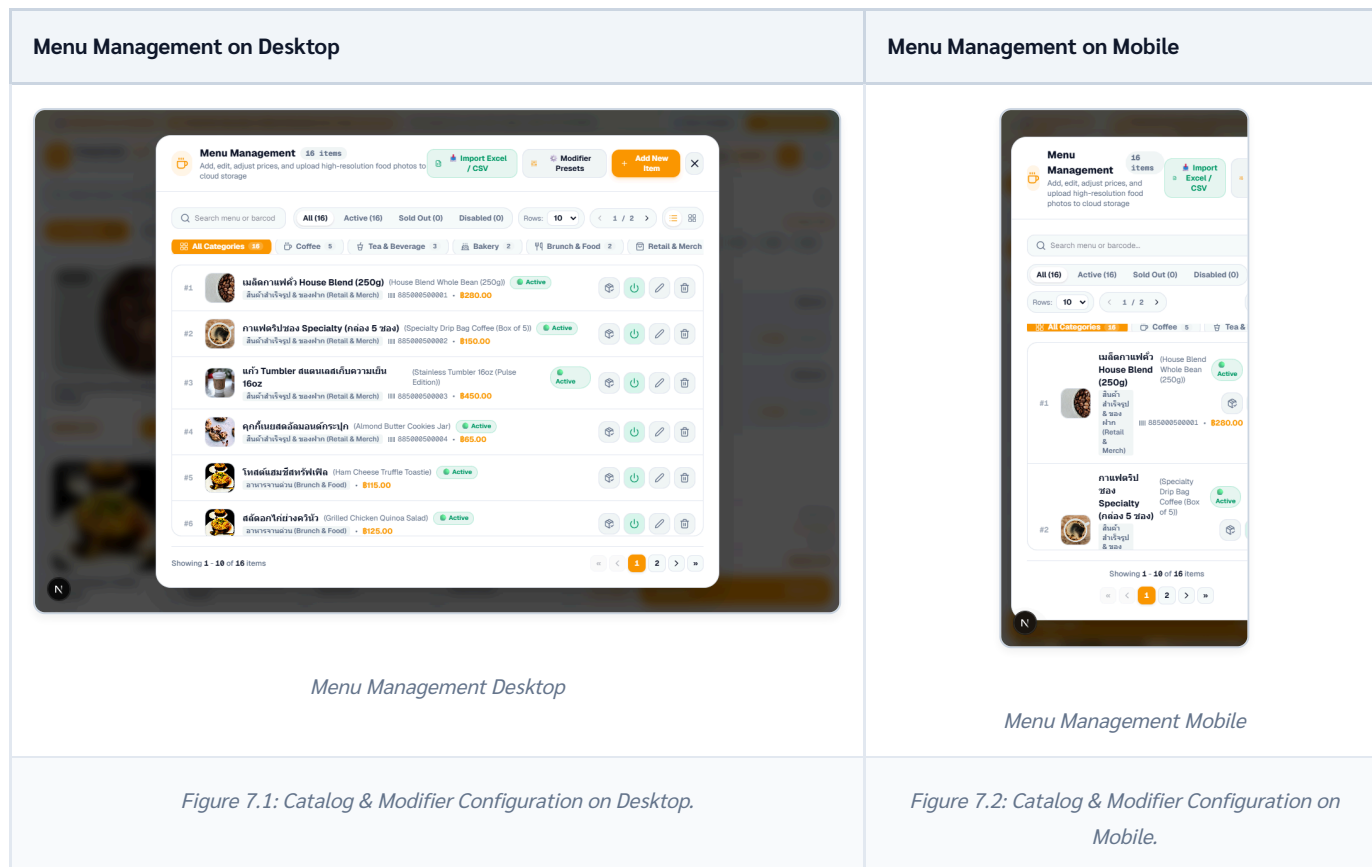
Voice AI Dialog on Desktop	Voice AI Dialog on Mobile
 Voice AI Desktop	 Voice AI Mobile
Figure 6.1: BarisTalk Voice AI Speech Modal on Desktop.	Figure 6.2: BarisTalk Voice AI Speech Modal on Mobile.

7. Menu Catalog Management, Pricing & Modifiers

7.1 Principles & Rationale

The catalog architecture implements a **3-Tier Modifier Hierarchy**:

01. **System Defaults:** Temperature (Hot/Iced/Frappe), Sweetness (0%, 25%, 50%, 100%).
02. **Category Presets:** Roasting profiles and milk alternatives (Oat, Almond, Soy).
03. **Item Overrides:** Custom add-ons specific to individual specialty recipes.



7.3 86'd Out-of-Stock Lifecycle & Eyeball Modifier Toggle

Principle & Rationale: In high-velocity service, deleting menu items when ingredients run dry causes recipe loss and damages sales analytics. PulseCafe provides **1-Tap 86'd Out-of-Stock toggles** and **Modifier Eyeball  visibility controls**:

14. 86'd Item Master Toggle:

- In Menu Management, switch the item state to [**86'd / Out of Stock**] .
- The item immediately blurs and displays an [**Out of Stock**] badge on cashier terminals, preventing kitchen preparation failures.
- When ingredients arrive, 1 tap instantly reactivates the item.

18. Modifier Eyeball Toggle (Sub-Option Isolation):

- If Oat Milk runs out while Latte remains available, open Latte Modifiers and tap the  (**Eye icon**) next to Oat Milk.
- It is immediately hidden from the ordering dialog while whole milk and almond milk remain available.

7.4 Batch Menu Import via Excel / CSV (UTF-8 BOM Template & Bulk Photo Matching)

Principle & Rationale: Launching a cafe with 50-200 menu items by manual typing is cumbersome. PulseCafe delivers a **Batch Menu Import Engine** designed to open cleanly in Microsoft Windows Excel without Thai or special character corruption:

4-Step Import SOP:

11. Open [ **Menu Management**] → Tap [ **Import Excel / CSV**] .

12. Click [ **Download Sample CSV Template**] :

- Encoded in **UTF-8 with BOM (\uFEFF)** to open natively in Windows Excel without garbled text.

- Required columns: `category_id` , `name_th` , `name_en` , `price` , `cost` , `barcode` , `modifier_preset` , `image_filename` , `description_th` .

15. Automated Batch Photo Matching:

- Tap [ **Select Multiple Product Photos**] and pick all image files in your folder.
- The system matches photo filenames with the `image_filename` column and converts them into optimized WebP images (600x600px) directly in browser memory, saving 90% upload bandwidth.

18. Live Preview & Commit:

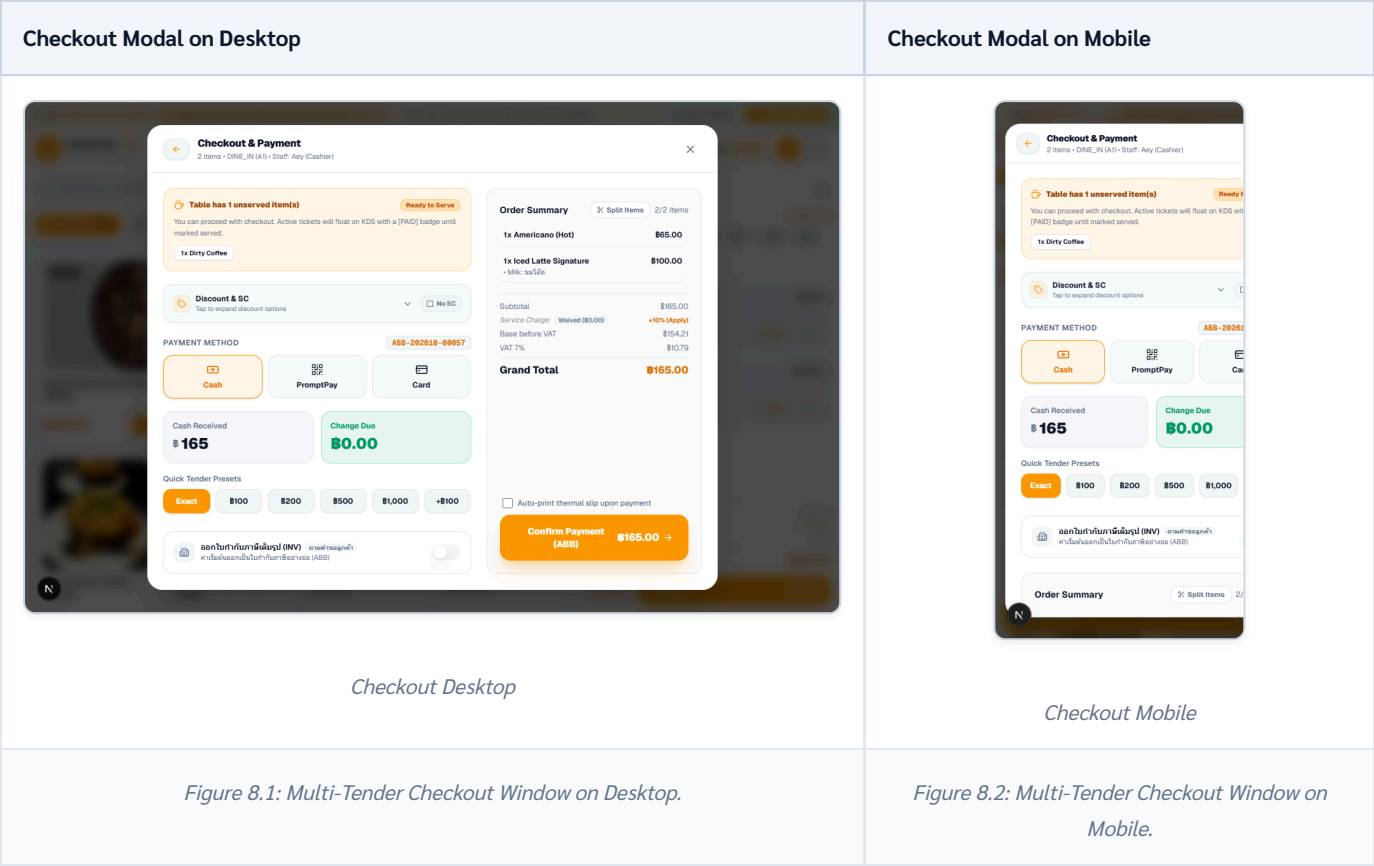
- Review the validation preview table with green [**Ready to Import**] indicators.
 - Click [**✓ Confirm & Import ... Items**] to populate the POS counter in under 3 seconds.
-

8. Checkout, Payment Gateways & Dynamic PromptPay

8.1 Principles & Rationale

The checkout engine facilitates multi-tender settlements:

- **Cash:** Automated change calculation with quick-cash denomination buttons.
- **Dynamic PromptPay QR:** EMVCo QR code generated with exact amounts to eliminate manual customer entry errors.
- **Card / Bank Transfer:** Logs transaction reference IDs with automated slip attachment.
- **Service Charge Checkbox:** Interactive one-tap toggle (☒ apply / ☐ waive) with dedicated numeric price column (+฿{amount} in amber or ฿0.00 in gray), eliminating cashier confusion prior to payment confirmation.
- **Dynamic Cash Tender Synchronization:** Default tendered cash automatically re-synchronizes with real-time grand total changes (e.g. toggling Service Charge or discounts), preventing ghost change calculations while safely preserving explicit customer cash inputs.

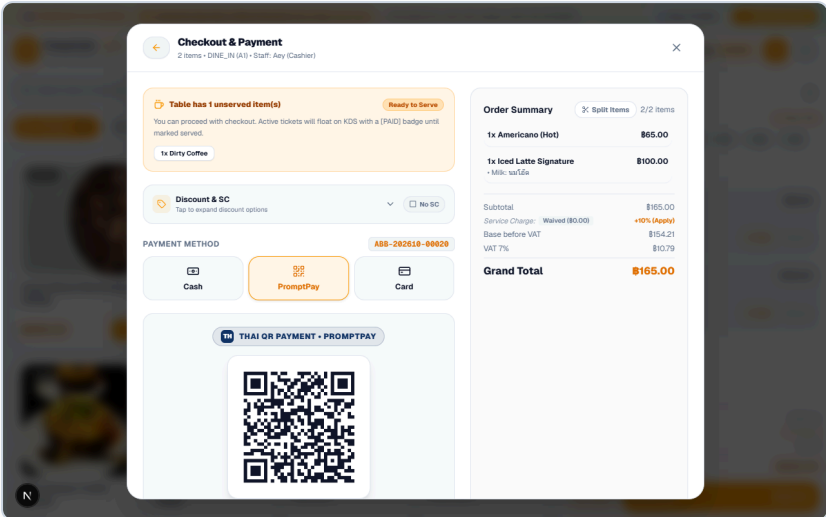
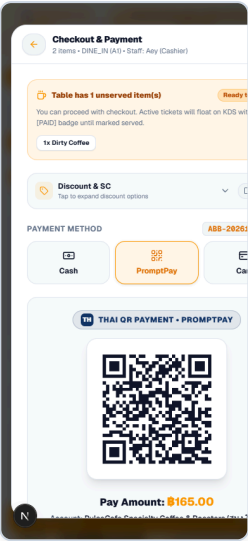


9. Bank Slip Verification & Gemini AI Audit

9.1 Principles & Rationale

Uploaded transfer slips stream directly to Cloudflare R2 Object Storage. **Google Gemini Flash AI** validates transfer authenticity within 1 second:

- Extracts receiving account name, bank code, and exact amount.
- Verifies transaction reference ID against history to catch duplicate reused slips.
- Operates at just **\$0.002 per verification**.

Slip Verification on Desktop	Slip Verification on Mobile
 Slip Audit Desktop	 Slip Audit Mobile
Figure 9.1: Bank Slip AI Audit Verification on Desktop.	Figure 9.2: Bank Slip AI Audit Verification on Mobile.

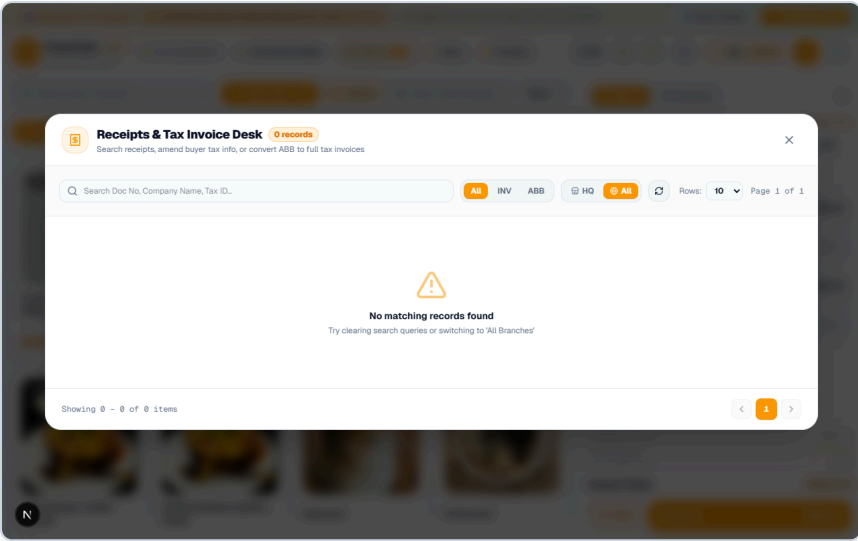
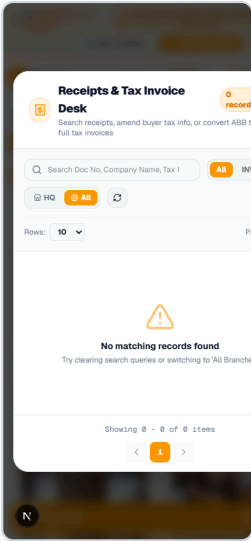
10. Thai Revenue 3-Series Tax Engine

10.1 Principles & Rationale

Complies with Thai Revenue Department tax document regulations:

29. **ABB-** : Simplified Tax Receipt issued to standard retail patrons.
30. **INV-** : Full Commercial Tax Invoice issued to corporate entities.
31. **BILL-** : Guest Folio for pre-payment inspection.

Features **3-Second AI Business Card OCR**: cashiers snap a photo of the client's business card, and Gemini AI extracts the 13-digit Tax ID, company name, and address automatically.

Tax Invoice & Ledger on Desktop	Tax Invoice & Ledger on Mobile
 <i>Tax Invoice Desktop</i>	 <i>Tax Invoice Mobile</i>
<i>Figure 10.1: Master Order History & Tax Invoice Generator on Desktop.</i>	<i>Figure 10.2: Mobile Tax Invoice Generator.</i>

11. Kitchen Display System (KDS), Dispatch Modes & Ticket Lifecycle

11.1 Principles & Rationale

The Kitchen Display System operates via event routing, dispatching ticket items to assigned preparation stations:

- **Barista Station:** Specialty coffee, iced beverages, and teas.
- **Kitchen Station:** Hot meals, bakery, and grilled toasts.
- Elapsed timers transition from green to yellow to red if tickets wait over 10 minutes to prevent forgotten orders.

11.2 3 Kitchen Dispatch Modes

PulseCafe supports 3 distinct kitchen preparation workflows to match any cafe or restaurant footprint:

35. 🗒️ **KDS Only (100% Paperless):** Orders immediately appear on kitchen/bar tablets with zero paper slip waste. Ideal for high-speed specialty coffee bars seeking cost savings on thermal paper rolls.
 36. ⚡ **Hybrid Mode (Default):** Orders appear on KDS display tablets simultaneously with automatic thermal slip printing. Designed for full-service dining where servers attach paper slips to food trays.
 37. 🖨️ **Print Only (Traditional Thermal Slips):** Automatically prints kitchen preparation slips upon order confirmation **without requiring any kitchen tablet or screen touch interactions whatsoever.**
- **Cashier Decoupled Operations:** Item charges are committed to the table tab immediately upon sending to kitchen. Cashiers can calculate, print guest checks, and checkout tables immediately without waiting for any kitchen tablet confirmations. When payment is complete, the table is automatically reset to available.

11.3 Kitchen Order Ticket Status Lifecycle & Station-Split Tickets

On the KDS screen, every order ticket progresses through sequential lifecycle states with automatic station decomposition:

1. Station-Split Ticket Decomposition

When a dining table orders both drinks and food (e.g. Table B1 orders 1x Americano and 3x Spaghetti), KDS splits the order into **two independent station tickets**:

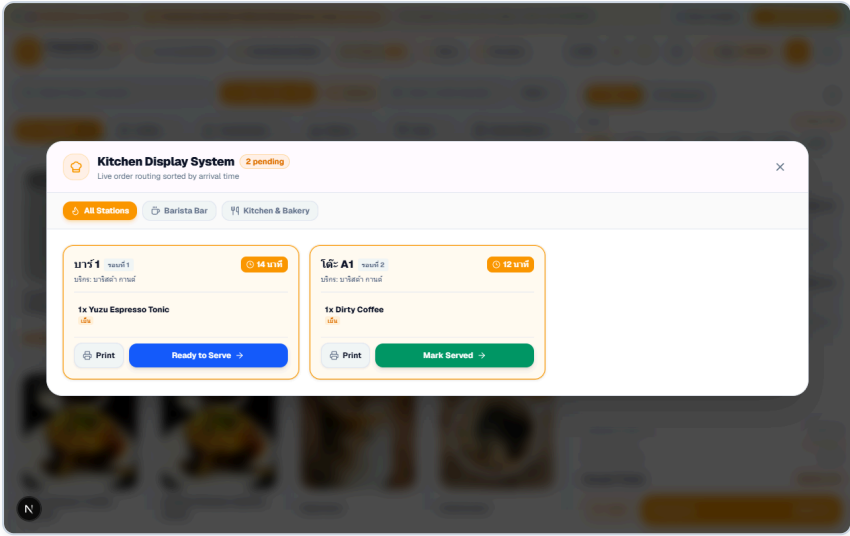
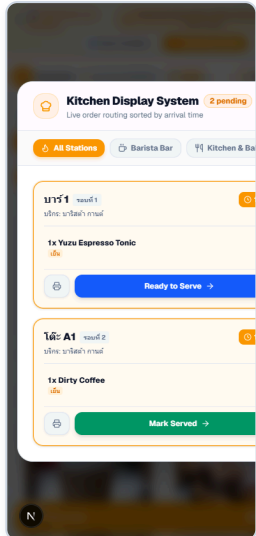
- [ **Barista Station**] : Displays exclusively drink items (**1x Americano**).
- [ **Kitchen & Bakery**] : Displays exclusively food and bakery items (**3x Spaghetti**).

2. Independent Station Lifecycles

-  **PENDING (Waiting):**
 - Bar Station: Orange button "Start Drinks" (Takeaway: "Start Drinks / Accept Queue")
 - Kitchen Station: Orange button "Start Cooking" (Takeaway: "Start Cooking / Accept Queue")
 - Advances station ticket to **COOKING** .
-  **COOKING (In Preparation):**
 - Bar Station: Blue button "Drinks Ready"
 - Kitchen Station: Blue button "Food Ready"
 - Advances station ticket to **READY** .
-  **READY (Plated / Ready to Serve):**
 - Green button "Mark Served" (Takeaway: "Handed Over (Dismiss)")
- **Decoupled Ticket Dismissal:** When baristas mark drinks served, only the Bar ticket disappears from the KDS screen. **The Kitchen food ticket for that same table remains active for chefs until food is prepared and plated.** The overall table round transitions to **SERVED** only when both stations complete all respective items.

3. Station Tabs & Live Job Counter Badges

-  **All Stations** : Displays all active station tickets with a detailed breakdown badge (e.g., **2 pending (1 bar, 1 kitchen)**).
-  **Barista Bar** : Filters exclusively to beverage tickets, with a live pending bar jobs counter.
-  **Kitchen & Bakery** : Filters exclusively to food & bakery tickets, with a live pending kitchen jobs counter.
- **Station-Targeted Print Slip Buttons:** Print buttons explicitly identify their destination station — [ **Bar Slip**] (cyan tone) and [ **Kitchen Slip**] (amber tone) — along with hardware routing tooltips (LAN IP or Default USB), eliminating ambiguity when operating from the aggregate  **All Stations** view.

Kitchen KDS on Desktop	Kitchen KDS on Mobile
 KDS Desktop	 KDS Mobile
Figure 11.1: Barista & Kitchen Display Terminal on Desktop.	Figure 11.2: Kitchen Display Terminal on Mobile.

11.4 Thermal Printer & Hardware Station Setup

PulseCafe supports all standard ESC/POS thermal printers (Epson, Xprinter, Rongta, Star Micronics, etc.) with zero hardware lock-in across three independent stations:

- 56. **Customer Receipt Printer:** Prints simplified **ABB-** slips or full tax invoices **INV-** upon checkout completion.
- 57. **Bar Slip Printer:** Dispatches tickets for beverages (coffee, tea, smoothies) to the barista station.
- 58. **Kitchen Slip Printer:** Dispatches hot kitchen tickets for meals, toasts, and baked goods.

Two Standard Connection Modes:

-  **Direct (USB) (**BROWSER_DEFAULT**):**
 - **Meaning & Mechanics:** Routes print jobs directly to the **Default Printer** configured in the host operating system (Windows, Android, iPadOS) of the cashier terminal.
 - **Covers 3 Hardware Types:**
 - 52. Standard thermal receipt printers connected via USB cable to the cashier PC.
 - 53. Portable wireless receipt printers paired via Bluetooth to the cashier tablet.
 - 54. All-in-One touch POS terminals with built-in integrated thermal printers (e.g., Sunmi, iMin).
 - **Advantages:** Quickest and simplest setup with zero router or static IP configuration required.
-  **LAN IP (**NETWORK_IP**):**
 - **Ideal for:** Thermal printers cabled via Ethernet to store routers or Wi-Fi printers located remotely (e.g., in back-of-house kitchen or mezzanine bar).
 - **Mechanics:** Streams print jobs directly via standard **ESC/POS Raw Socket (Default Port 9100)**, e.g., **192.168.1.101:9100** . All staff tablets and mobile phones in the store can print to the shared printer simultaneously without requiring a dedicated host computer.

Shared Single Printer Setup for Bar & Kitchen:

When a cafe or bistro operates with only one physical thermal printer for both beverage and kitchen orders:

59. **Configure Identical IP & Port:** Enter the exact same IP and Port for both Bar and Kitchen stations (e.g., **192.168.1.1:9100** in both fields).
70. **Enable Both Stations:** Ensure checkboxes for both ☒ **Bar Slip** and ☒ **Kitchen Slip** are checked.
71. **Match Paper Width:** Set identical paper width for both stations (e.g., **80 mm**).
72. **Dual Auto-Cut Behavior (✂):** When an order contains both drinks and food, PulseCafe prints the beverage ticket first, fires an ESC/POS paper cut command, and immediately prints the kitchen food ticket followed by a second cut command. This produces two distinct, physically separated tickets from one printer so baristas and chefs each receive their dedicated slip.

Critical Station Toggle Guidance:

- If the dispatch mode is set to **Print Only (Slip Only)** but ☐ **Kitchen Slip** is unchecked → **The kitchen receives nothing (no KDS screen and no thermal paper)**. Kitchen staff will have no indication of pending food items. If your venue has a food kitchen, always ensure the Kitchen Slip station is checked!
- To automatically dispense paper tickets the moment servers tap "Send to Kitchen", ensure ☒ **Auto-Print on Send** is enabled.

Cashier Receipt Auto-Print Configuration (Auto-Print on Checkout):

- **Toggle ☒ **Auto-Print on Checkout** in Customer Receipt Printer Card:**
- **High-Turnover Takeaway / Kiosk Operations:** Enable this setting to immediately dispense receipt slips containing queue numbers (#Queue No.) to patrons upon payment completion, eliminating redundant cashier taps and saving 2–3 seconds per transaction.
- **Dine-In Cafes / Specialty Coffee Bars:** Keep disabled to minimize thermal paper waste and reduce carbon footprint (especially when patrons pay via PromptPay/QR and decline paper slips). Cashiers can print on-demand via [ **Print Slip**] anytime requested.

Offline Resilience:

- Even during external internet dropouts or temporary cloud database disconnections, thermal printing via both **Direct (USB)** and **LAN IP** operates at 100% capacity as long as the local store Wi-Fi/LAN router remains active, ensuring zero disruption to frontline service.

12. Shift Closure Z-Reports & Real-Time LINE Telemetry

12.1 Automated Daily Z-Reports

At close of business, clicking "**Close Shift (Z-Report)**":

- Locks daily sales transactions against modifications.
- Aggregates key metrics: Gross Revenue, Drink Count, Cash on Hand, QR Collections, and Void Totals.
- Automatically dispatches a formatted 1-page summary to the cafe owner's **LINE Official Account / Notify**.

12.2 Real-Time Anti-Theft Void Alerts

- Whenever a cashier voids an item or opens the cash drawer without a transaction, an instant security alert fires to the owner's mobile phone detailing staff name, bill ID, and cancellation reason.
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13. LINE In-Browser Chat & Staff POS Chat Desk

13.1 Dual-Mode Browser Authentication

- **On Desktop Browsers:** Patrons open the chat drawer → scan the displayed QR Code with their mobile LINE app → authenticate with zero passwords to begin chatting.
- **On Mobile Browsers:** Tapping "Log in with LINE" switches directly to the LINE mobile app (1-Tap App-Switch) and redirects back seamlessly to the chat session.
- **In-App LIFF Browser:** Guests accessing links from the store's LINE Official Account authenticate automatically via 0-Click single sign-on.

13.2 Counter POS Staff Chat Desk

- **Eliminate Personal Phones on Counter:** Frontline cashiers and baristas no longer need personal smartphones on the bar. POS terminals display a reactive  **Customer Chat** badge on the top header.
 - **Instant Order & Customer Context:** Opening the chat desk reveals the customer's LINE display profile alongside their active table number, live round items, and running subtotal. Staff can dispatch preparation updates or electronic receipt links directly into the customer's LINE chat in a single tap.
-

14. Interactive Client Sandbox & Live Receipt Preview

14.1 Principles & Rationale

Prospective cafe operators evaluating POS software can experience genuine counter operations (speech-to-cart ordering, modifier customization, table floor plans, multi-round kitchen orders, and full checkout) directly from the landing page:

- 38. **Zero-Friction PLG Onboarding:** Instant test drive with no account creation, email capture, or credit card required.
- 39. **Zero Cloud Database Bloat:** Simulations run entirely inside client browser storage, preventing test records from contaminating production tenant databases.
- 30. **Living Relative Timestamps:** Dates and timestamps adapt dynamically to today's local date, keeping receipts and telemetry realistic.

14.2 Store Concept Personalization & Monospace Receipt Preview

- 31. Navigate to `/pos?demo=true` and tap  **Store: ... (Change Name/Concept)**] on the top banner.
- 32. 1-Click Business Concept Presets:
 -  **PulseCraft Cafe & Specialty Roaster** (Speed-bar espresso cafe)
 -  **Pulse Bistro & Casual Dining** (Full-service restaurant with floor plan)
 -  **Pulse Artisan Bakery & Pastry** (Bakery counter with takeaway sweets)
- 36. Enter your own store name, 13-digit Tax ID, and address.

37. **Live Monospace Receipt Preview:** Visualizes a monospace thermal receipt formatted with today's live timestamp.

38. Tap [✓ Save Store & Begin Demo] to apply changes to the POS register and printed receipts immediately.

39. **Returning Demo Continuity & 1-Click Clean Reset:**

- Returning visits recognize previous custom demo setups in local browser storage.
 - Tap [🔄 Reset Demo Data] on the top banner to flush cached tables and orders back to a pristine clean state instantly.
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15. Frontline Fields & Buttons Dictionary

Category	Button / Control	Operational Purpose for Frontline Staff
Solo Barista	[⚡ 1-Sec Quick]	Instant rush-hour checkout bypassing modal for rapid takeaway queues.
	[💵 Checkout]	Launches payment tender modal (Cash, PromptPay QR, AI Business Card).
	[📱 PromptPay]	Renders dynamic EMVCo QR code with exact satang for customer mobile scanning.
	[💰 Cash]	Cash tender with automated change calculation and \$100, \$500, \$1,000 shortcuts.
Floor Plan	[🪑 Open Table]	Opens an empty table, setting party size and seating zone.
	[🔍 Send Kitchen]	Dispatches food and drinks to KDS screens and thermal slip printers.
	[🔄 Move/Merge]	Relocates tables or merges multiple tabs into a single consolidated invoice.
	[💰 Settle Tab]	Closes dining table and opens checkout with 10% service charge & 7% VAT.
Tax & Documents	ABB-	Abbreviated Tax Invoice for retail counter customers (no customer Tax ID required).
	INV-	Full Tax Invoice for corporate clients with name, address, and 13-digit Tax ID.
	BILL-	Cash Receipt for non-VAT registered retail establishments.
	[📷 Card OCR]	Snaps corporate business card; AI extracts name, Tax ID, and address in 3 seconds.
Catalog Mgmt	[86'd / Sold Out]	Master toggle marking items out-of-stock without deleting recipes or analytics.
	👁️ (Eyeball icon)	Hides specific modifier options (e.g. Oat Milk dry) while keeping base item active.
	[📄 Import Excel]	Batch imports hundreds of menu items and prices via Excel/CSV in 5 minutes.
Hardware	80mm / 58mm	Thermal paper width: 80mm standard counter or 58mm compact portable.
	Auto-Cut ✂️	Executes automatic paper cutter command upon ticket completion.
	[🖨️ Test Print]	Prints 1 sample ticket to verify raw socket connection and print head alignment.
Sandbox Banner	[🏠 Store: ...]	Opens store concept customization dialog and live receipt preview.
	[🔄 Reset Demo]	Flushes all cached demo tables and orders back to clean baseline state.

16. Thai Revenue Code & Legal Tax Compliance

- 12. **Revenue Code Sec. 86/4 (Full Tax Invoice):** Compliant formatting including merchant tax ID, customer corporate name, 13-digit tax ID, sequential invoice serial, tax base, and 7% VAT.
 - 13. **Revenue Code Sec. 86/5 (Abbreviated Tax Invoice):** Unbroken sequential serial numbering issued via authorized electronic cash registers.
 - 14. **5-Year Statutory Audit Retention:** Local-First storage paired with automated cloud backup guarantees 5-year compliance records for Revenue Department audits.
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17. Frequently Asked Questions (FAQ) & Official Support Hotline

? Frontline Troubleshooting & FAQ:

- **Q: Customer requests to waive Service Charge?**

👉 In the cart panel next to **Service Charge (10%)**, tap **[Waive]**. It immediately zeroes out to ฿0.00.

- **Q: Manager is offsite: How to authorize new cashier terminals?**

👉 Use **2D QR Pairing**: Staff displays the 2D QR Code & 6-digit PIN on the pairing screen and sends it to the manager via LINE. Manager scans QR or types PIN to approve remotely in 1 second without sharing master passwords.

- **Q: Thermal receipt paper jam or customer requested duplicate?**

👉 On the order completion screen, tap **[🖨️ Print Copy]**. The system imprints **[สำเนา / COPY]** on the receipt header per tax regulations.

- **Q: What happens if cafe internet or Wi-Fi drops?**

👉 100% Uninterrupted! Native IndexedDB stores active tabs and transactions locally. All records auto-sync to NeonDB once connection is restored.

- **Q: How to switch staff shifts quickly?**

👉 Tap the staff badge at top-right, enter your 4-digit PIN, and shift switches in 1 second without logging out.

- **Q: How to reset sandbox demo data back to clean state?**

👉 On the top Sandbox banner, tap **[🔄 Reset Demo Data]** to flush cached tables and orders back to a pristine clean state instantly.

📞 Official Support & Helpdesk:

- **Hotline Support:** **080-846-4657** (Mon-Sat 08:30 – 18:00 ICT)
 - **LINE Official Account:** **@963thhms** (<https://line.me/R/ti/p/@963thhms>)
 - **Email Support:** **support@nova-pulse-ai.com**
 - **Parent Platform:** **<https://nova-pulse-ai.com>** | **POS Web Portal:** **<https://cafe.nova-pulse-ai.com>**
 - **Video Demos & Tutorials:** [YouTube Official](#) | [TikTok Official](#)
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