

Mr Bubbles Express — QR Code Label Printing Spec (Driver Dashboard)

When a driver taps **Accept Order**, the app must generate and print QR labels for each bag. Labels are scanned at shop intake and delivery to maintain chain-of-custody.

1) Recommended Hardware

- 58mm/80mm Bluetooth Thermal Printer (ESC/POS compatible).
- Enterprise: Brother QL820NWB or Zebra ZQ/ZD series (Bluetooth/WiFi, iOS/Android SDKs).
- Label sizes: 50×30mm (bag tags), 57×40mm receipt, 62×29mm (Brother).

2) QR Payload

Format:

mbx://bag?v=1&oid={order_id}&bid={bag_index}&bc={bag_count}&cid={customer_id}&ts={iso8601}&sig={hmac}

Fields:

- order_id e.g., MBX-2025-0001729
- bag_index 1..N, bag_count N
- sig HMAC-SHA256(server secret) over (order_id|bag_index|ts)
- or short URL: <https://bubblesxpress.com/t/{token}>

3) API Endpoints

POST /driver/order/{id}/accept { bag_count } → returns label payloads

POST /driver/order/{id}/print_labels { format:'escpos'|'pdf'|'png', bag_count }

GET /order/{id}/labels (reprint)

POST /scan/intake { payload, scanner_id, location_id }

POST /scan/deliver { payload, driver_id, gps }

4) Driver Flow

- 1) Accept → prompt 'How many bags?' (default 1).
- 2) Generate N payloads and render printable labels.
- 3) Connect to paired Bluetooth printer and print.
- 4) Reprint button available.
- 5) Scan at shop intake and at delivery.

5) Label Layout (50×30mm)

Left: QR (approx 28mm). Right: text block

Mr Bubbles Express

Order: MBX-2025-0001729

Bag: 1 of 3

Customer: John D.

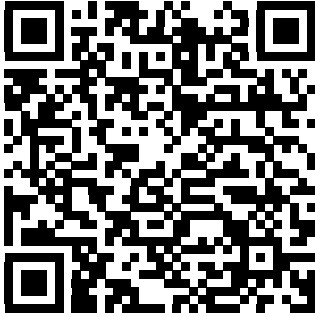
Address: 5 Greenhills, Drogheda

Service: Wash/Dry/Fold

Date: 2025-10-11 23:50

Sample QR (payload):

mbx://bag?v=1&oid=MBX-2025-0001729&bid=1&bc=3&cid=CUST-102&ts=2025-10-11T23:50:00Z



6) ESC/POS Pseudocode

```
printer.connectBluetooth()
printer.qr(payload, size=8, ec='M')
printer.textln('Mr Bubbles Express')
printer.textln('Order: MBX-2025-0001729')
printer.textln('Bag: 1 of 3')
printer.textln('Customer: John D.')
printer.textln('5 Greenhills, Drogheda')
printer.textln('Service: Wash/Dry/Fold')
printer.textln('Date: 2025-10-11 23:50')
printer.cut()
```

7) Error Handling

- If printer disconnected, show 'Reconnect printer' and allow retry.
- If QR fails to print, allow Reprint (max 3 times), log label ids.
- If bags count changes, invalidate old labels and regenerate new ones.