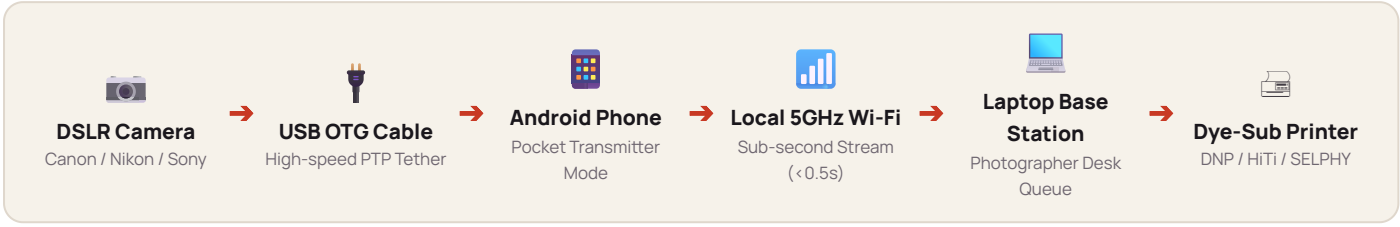
ROVING PHOTOGRAPHER SYSTEM ARCHITECTURE

Wired DSLR to Pocket Android Wireless Bridge

How to tether any Canon, Nikon, or Sony DSLR via USB OTG to a pocket Android phone and stream roving guest photos wirelessly in real time to the laptop base station for review and on-demand printing.



📦 Required Hardware Checklist

- **1. DSLR / Mirrorless Body:** Canon EOS (Rebel, 60D, 70D, 80D, 5D, R-series), Nikon (D3000, D5000, D7000, Z-series), or Sony Alpha (A6000, A7-series in PC Remote).
- **2. USB OTG Cable or Adapter:** USB-C to Camera Mini-USB/Micro-USB or USB-C. Ensure the *Host/OTG* side plugs into the Android phone.
- **3. Android Phone (Transmitter):** Any phone running Android 7.0 or newer with USB OTG. Free standalone **Roving DSLR Bridge v1.1.1+** app (`roving-dslr-bridge-android.apk` — zero license fee, no booth code needed).
- **4. Base Station (Laptop or Tablet):** Windows 10/11 or macOS running **photobooth4u Desktop (v1.1.55+)**, or an Android tablet running the **photobooth4u Offline App (v1.1.70+)**.
- **5. Built-in Booth Wi-Fi or Router:** Turn on **"Make this laptop/tablet the booth Wi-Fi"** in **Setup → Share & start**, or use a 5GHz router / OS Mobile Hotspot. **100% offline**: no internet needed.

Why This Pipeline Beats Wi-Fi SD & Cam Apps

- **Native Physical Shutter Polling:** The phone's background helper detects the exact millisecond you press the camera shutter button on the body. No touchscreen tapping needed.
- **Sub-Second Beaming (<500ms):** USB transfer into phone memory happens at 480 Mbps; local Wi-Fi transmission to laptop takes only ~300ms.
- **Pocket Mode & Haptic Buzz:** Screen dims to 5% brightness and ignores pocket touch friction; the phone vibrates in your pocket to confirm successful delivery.
- **Offline Disk Queue & Auto-Retry:** Shoot rapid bursts or walk beyond Wi-Fi range without losing shots. Photos queue safely on phone storage and auto-upload in order when Wi-Fi reconnects.

Camera Menu Configuration (Set Before Connecting)

Brand	Dial & Focus Mode	Image Quality / Format	Required Camera Menu Settings
Canon EOS Rebel, 60D-90D, 5D, R-series	**M**, **Av**, **Tv**, or **P** Single-point One-Shot AF	**JPEG (Large / Fine)** RAW + JPEG also supported (JPEG is automatically selected)	• Turn **Wi-Fi / Bluetooth OFF** in camera settings. • Ensure camera mode dial is NOT set to Movie/Video. • Insert an SD card with free space.
Nikon DSLR / Z D3200-D7500, D610-D850, Z5/6/7	**M**, **A**, **S**, or **P** AF-S (Single Servo)	**JPEG Fine or Normal** Bridge fetches camera memory buffer & SDRAM object	• Turn **Airplane mode ON** (or disable SnapBridge Wi-Fi). • In USB settings, select **MTP/PTP** if asked. • Close in-camera menus before tethering.
Sony Alpha A6000-A6700, A7 II / III / IV, A7R	**M**, **A**, or **S** AF-S or Manual Focus (MF)	**File Format: JPEG** Set JPEG Quality to Fine	• **USB Connection: PC Remote** (Setup › USB). • **Still Img. Save Dest.: PC + Camera** (Setup › USB). • **Release w/o Card: Enable**. • Turn off Smartphone Connection / Imaging Edge.

OPERATOR STEP-BY-STEP INSTRUCTIONS

Android Bridge App & Pocket Mode Setup

Step-by-step pairing to your laptop base station, physical shutter confirmation, and battery-saving pocket mode.

1 Install & Launch Standalone Bridge

Install the dedicated **Roving DSLR Bridge** app on the photographer's Android phone:

- **Scan & Install:** Scan the download QR on `/downloads/#roving-bridge` for `roving-dslr-bridge-android.apk` (v1.1.1+), or launch it straight from the **photobooth4u Android app** (App Drawer, Extras dock, Camera setup, or Photographer Desk).
- Tap the downloaded APK on the phone and choose **Install**, then open **"📷 Roving DSLR Bridge"**.
- Opens directly to the bridge transmitter—**no rental code, no kiosk lock, no license fees!**

> **Zero extra license fee:** Dedicated standalone app installs cleanly beside any other apps.

2 Instant 1-Second Camera QR Pairing

Connect your phone to the base station laptop via local Wi-Fi with zero typing:

- Ensure the phone is on the same Wi-Fi or hotspot as the laptop.
- On the laptop, open **Photographer Desk** (the pairing QR appears on screen).
- In the phone app, tap the red button: **"📷 Scan QR Code on Laptop"**.
- Point phone camera at the laptop screen. It auto-configures, tests the connection, and flashes: `✅ Connected! Base station ready.`
- *(Optional manual entry: paste or type the URL and tap "Save & Test Connection").*

3 Plug in DSLR via USB OTG

Connect the USB OTG cable from the phone's charging port to the camera's digital USB port:

- Turn on your camera body.
- If Android shows a popup asking *"Open Roving DSLR Bridge when this USB device is connected?"*, check **"Always allow"** and tap **OK**.
- The Camera Status Card immediately updates from `● WAITING` to `● READY` with camera model and battery percentage.
- Tap **"Test Shutter"** to verify camera firing and transmission.

4 Engage Pocket Lock Mode

Before slipping the phone into your pocket or belt holster:

- Tap the dark button: **"🔒 Pocket Mode"**.
- The screen displays a black lock screen and dims to minimum brightness (0.05) to conserve phone battery all night.
- All accidental touch inputs in your pocket are safely blocked.
- **Shutter remains 100% LIVE**: the background helper keeps polling your camera's shutter button continuously.
- **To Unlock:** Tap the unlock button **3 times** to return to UI.

Shooting the Crowd: Real-Time Feedback Loop



1. Frame & Click

Approach event guests and press your camera shutter button normally. Camera focuses and snaps the photo.



2. Pocket Haptic Buzz

Within ~0.5s, the phone vibrates in your pocket with a crisp haptic pulse. You know with 100% certainty the photo reached the laptop!



3. Queued at Desk

Photo lands instantly in the Photographer Desk queue at the base station, ready for review and printing.

Android Bridge UI & Controls Quick Reference (v1.1.1)

● READY / ● DISCONNECTED
Live USB shutter status + benchmark timer (`Last photo sent 480ms`).

📷 SENT PHOTOS GALLERY
Tap the card or button for a 3-column grid with `✓` / `✗` badges and fullscreen preview (timestamp & MB).

💻 QUEUE · 📖 GUIDE · ✨ UPDATES
Open base station queue (`<url>/photos`) in browser, view this PDF, or run **Check Online** for APK updates.

LAPTOP BASE STATION OPERATOR WORKFLOW

Photographer Desk Queue & On-Demand Printing

How incoming roving photos land in the Photographer Desk queue, how to review and apply custom event frames, and how to print on demand without disrupting the main photobooth.

💻 Accessing the Photographer Desk

The Photographer Desk is the command center at your base station laptop:

- In the desktop booth app, look for the floating camera button (`deskFab`) at the top or open the side menu and click **Photographer Desk**.
- **Unseen Photo Badge:** When the roving photographer snaps photos in the crowd, a red counter badge (e.g. `[ 3 ]`) appears on the icon and a toast banner pops up: *"📷 Roving photo queued in Photographer desk (3 waiting)"*.
- Click the button to open the Photographer Desk overlay.

✓ Why Photos Are Queued (Not Auto-Printed)

Unlike fixed kiosk booths that auto-print immediately, roving crowd photography requires quality control:

- **Zero Paper Waste:** If a guest blinked, turned away, or if you took test shots while walking, unwanted photos will never be printed.
- **No Printer Bottlenecks:** Dye-sub printers print at ~12 seconds per 4x6 print. Queuing prevents long print spooler queues.
- **Guest Selection:** When guests come to the booth to claim their roving picture, the operator selects their favorite shot and prints it in 1 click.

Review, Frame, and Print in 3 Easy Steps

Step 1: Inspect Thumbnail

New photos appear in chronological order in the Photographer Desk grid. Click any thumbnail to expand high-resolution preview.

Step 2: Pick the Photoman Template

Choose a **Photoman template**: Solo (one big print), any built-in layout, or one of your own uploaded frames, for example a 2-photo 4R frame. It never changes the booth's layout. Turn on ⚡ **Auto-frame** to frame each new shot (or each pair) by itself. The photographer can also do all of this from a phone.

Step 3: Print On Demand

Click **"Print"**. The app composites your custom event frame, overlay graphics, and branding, then sends it to the dye-sub spooler.

🖨 Dye-Sub, Instax & Tablet Printing

Silent printing on Windows/macOS & **Android Tablet Direct Printing**:

- **DNP & HiTi Dye-Sub:** DS-RX1HS, DS620A, DS40, QW410 (Windows/Mac + direct USB on Android) and HiTi P525L/P510S/P720L with 2×6 strips, **XL strips**, 4×6, or 6×8.
- **Canon SELPHY & Epson:** CP1300/CP1500 & Epson L8050/L805/L3210 borderless via Wi-Fi or USB.
- **Instax & Thermal: Fujifilm Instax Link Wide** and 58/80 mm Bluetooth thermal receipt rolls.

📲 Instant Local QR Sharing & Print Requests

Guests get photos on their phones with zero internet:

- Uploaded shots and solo prints appear in a dedicated **Solo Photos** tab on the local gallery (port `47777`) with badges and direct save buttons.
- Display the **QR Sharing Screen** on an iPad or tablet at your table, or turn on **Let guests ask for a print from their phone** (queued in **Print requests**).

💡 Pro Operator Tip: Two Roving Photographers on One Laptop

You can connect **multiple roving photographers** simultaneously to the same base station! Each photographer simply points their phone bridge to the same laptop URL (`http://<laptop-ip>:47777`). Both streams merge seamlessly into the single Photographer Desk queue with individual timestamps.

FIELD OPERATIONS & RELIABILITY GUIDE

Pro Techniques, Wi-Fi Range & Troubleshooting

Field-tested solutions for venue interference, battery optimization, rapid shooting, and common operator mistakes.

🔋 Battery & Rig Ergonomics

- **Cable Management:** Use a 0.5-meter coiled USB cable. Wrap it once around your camera neck strap so accidental tugs pull against the strap, not your camera's USB port.
- **Phone Battery Life:** In **Pocket Lock Mode**, screen brightness drops to 5%, yielding **6–8 hours** of continuous shooting on a single charge.
- **Camera Battery:** Camera internal battery powers the sensor and shutter. Bring 2 spare camera batteries for a 4-hour event.
- **Phone Holster:** Carry the phone in a running armband or front pocket with the USB port facing upwards for free cable movement.

📶 Built-In Booth Wi-Fi & 5GHz Range

- **1-Switch Built-In Booth Wi-Fi:** Turn on **"Make this laptop/tablet the booth Wi-Fi"** in **Setup → Share & start** (Windows, Mac & Android) to host your own offline network without any external router.
- **Dedicated 5GHz Router:** In crowded ballrooms, a pocket router (GL.iNet GL-MT3000 or TP-Link AC750) elevated on a light stand gives 40+ meter 5GHz range.
- **OS Mobile Hotspot:** Windows 10/11 or macOS 5GHz *Mobile Hotspot* also connects the roving phone directly.
- **100% Offline:** No internet or SIM card required. All photo streaming stays on local LAN.

Field Troubleshooting Matrix

Symptom	Probable Cause	Exact Remediation Step
"No DSLR Connected" Phone stays on WAITING	• OTG cable plugged in backwards. • Camera menu open. • Sony USB not in PC Remote.	1. Unplug the USB cable. Ensure the **Host/OTG** end is in the phone. 2. Turn camera power switch off, wait 3 seconds, turn on. 3. On Sony, verify: *Menu › USB Connection › PC Remote*. 4. On Canon, close all menus; dial must be on P/Av/Tv/M.
"Could not reach laptop" Save & Test fails (Red ❌)	• Phone and laptop on different Wi-Fi. • Windows Defender Firewall blocking. • Wrong IP address entered.	1. Verify phone and laptop Wi-Fi network names (SSID) match exactly. 2. In phone app, tap **" 📷 Scan QR Code"** and point at laptop Photographer Desk. 3. On laptop, set your Wi-Fi network profile to **Private Network**. 4. Test URL in phone Chrome browser: `http://<laptop-ip>:47777/hello`.
"Camera saved a RAW photo" Shutter clicked but transfer failed	Camera image quality set to RAW only (CR2, CR3, NEF, ARW).	1. Open camera menu and change **Image Quality to JPEG** (or RAW+JPEG). 2. The bridge extracts the high-resolution JPEG for instant printing. 3. For maximum speed, set JPEG size to **Medium (approx. 4MB–6MB)**.
Haptic buzz didn't fire Photo took >3s to appear	Weak Wi-Fi signal at far edge of venue or heavy channel interference.	1. Move 5–10 steps closer to the booth or elevate your Wi-Fi router. 2. The app saves the full-resolution JPEG in its offline disk queue and automatically re-uploads in order as soon as Wi-Fi signal recovers (or tap **Retry Now** anytime). No photos are lost.

Event-Day Pre-Flight Checklist (Print & Keep in Camera Bag)

Roving Photographer Rig:

- [ ] DSLR camera battery charged + 1 spare in pocket.
- [ ] Camera set to M or Av mode, JPEG Fine (or RAW+JPEG).
- [ ] Speedlight flash fresh batteries installed.
- [ ] USB OTG cable tested and wrapped to camera strap.
- [ ] Phone bridge app connected: green `● READY` confirmed.
- [ ] Pocket Lock Mode engaged before walking the floor.

Base Station Laptop & Printer:

- [ ] Laptop on 5GHz Wi-Fi or pocket hotspot.
- [ ] photobooth4u app running with Photographer Desk open.
- [ ] Event overlay frame & branding verified.
- [ ] Dye-sub photo printer loaded with fresh roll/ribbon.
- [ ] Test shot taken on camera: confirmed haptic buzz & desk badge.
- [ ] Test print executed from Photographer Desk in <15 seconds.