# RF & High-Frequency PCB Capabilities Sheet

Free Engineering Review & No-Obligation Quote | No MOQ (1 pc Prototype) | 5-7 Day Prototype Turnaround

HF PCB PRO | Shenzhen In-House High-Frequency PCB Facility | https://hfpcbpro.com | sales2@xcepcb.com

## 1. Core Fabrication & Process Capabilities

In-house Shenzhen production capabilities for 2-layer and multilayer Rogers, PTFE, Taconic, F4B, and Rogers + FR-4 hybrid builds. Exact stack-up and tolerances are confirmed during free engineering review.

| Capability Feature | In-House Production Range & Conditions |
|---|---|
| **Layer Count** | 1 to 32 layers (2-layer RF boards, multilayer PTFE, and Rogers + FR-4 hybrid structures). |
| **Stocked High-Frequency Laminates** | Rogers RO4350B, RO4003C, RO3003, RT/duroid 5880, RO3006/3010, RT/duroid 6002/6035HTC, Taconic, and Wang Ling F4B. |
| **Impedance Control Tolerance** | Standard: +/-5 Ohm below 50 Ohm; +/-10% at 50 Ohm and above. Tighter +/-3.5 Ohm achievable on selected stack-ups after review. Coupon + TDR verification supported. |
| **Inner-Layer Line / Space** | 3/3 mil at 1/3 oz copper; 4/4.3 mil at 1 oz copper. |
| **Outer-Layer Line / Space** | 3.5/3.5 mil at 1/3 oz copper using pattern-plating process. |
| **Mechanical Drilling** | Minimum 0.15 mm drill diameter for boards up to 1.6 mm thick (subject to material & aspect-ratio review). |
| **Vias & Back Drilling** | Blind and buried vias, resin-filled vias, via-in-pad, and controlled-depth back drilling (residual stub <=10 mil; depth tolerance +/-0.1 mm). |
| **PTFE Sequential Lamination** | Up to 2 sequential lamination cycles with dedicated computer-controlled vacuum lamination press. |
| **Thermal & Mechanical Options** | Dense thermal via arrays, heavy copper, metal backing / aluminum base bonding, embedded copper coins, controlled-depth cavity milling. |
| **Surface Finishes** | ENIG, ENEPIG, Immersion Silver, OSP, Electroplated Gold, and hard gold edge fingers. |
| **Order Volume & MOQ** | No MOQ - 1 pc engineering prototype supported, scaling seamlessly to low- and mid-volume recurring production. |
| **Typical Prototype Turnaround** | 5 to 7 working days for standard 2-layer and multilayer Rogers prototypes (confirmed per stack-up and stock). |

## 2. In-House Equipment Highlights (Shenzhen Facility)

- Vacuum Lamination Press with Digital Temperature & Pressure Control for repeatable Rogers and hybrid multilayer bonding.
- Yellow-Room Cleanroom 6-Axis Robotic Panel Handling to reduce contamination and handling distortion on thin PTFE laminates.
- Automated Horizontal Wet-Process & Precision Etching Line for consistent RF trace geometry and impedance stability.
- Non-Contact Automated Vacuum Laminate Loader to protect copper-clad high-frequency substrates prior to imaging.

## 3. What to Send for a Free Engineering Review & Quote

- Gerber RS-274X or ODB++ fabrication files and NC drill files (or preliminary stack-up drawing for early DFM feedback).
- Target Rogers/PTFE material grade, dielectric thickness, copper weight, quantity (from 1 pc), and target impedance lines.

- Send files directly to sales2@xcepcb.com or upload at https://hfpcbpro.com/rogers-pcb-manufacturing/ (typical reply within 1 working day).