

1 Inch  
1 cm  
1 mm

# Fabrication Notes Stackup

Designed for CircuitHub Std Fab: 4-Layer, 0.6mm

Order	Name	Matrl	Dscrpt	Dielec	Thk(mm)	CuWgt(oz)
1:	Top	Copper	Signal	0.035	1oz	
		2116	Prepreg	4.5	0.12	
2:	Route2	Copper	Ground	0.035	1oz	
		FR4	Core	4.6	0.23	
3:	Route15	Copper	Pwr/Gnd	0.035	1oz	
		2116	Prepreg	4.5	0.12	
4:	Bottom	Copper	Sig/Gnd	0.035	1oz	

## Impedance Control

50Ω for Ultra Wideband RF [5~8 GHz]  
- Controlled traces run from U2-S2-{U7-A1,-A2,-S4-A3}  
- UWB traces are priority signals

50Ω for Ultra Wideband XTal [38.4 MHz]  
- Controlled traces run from U2-X4-{C3, C4}

50Ω for Bluetooth RF [2.4 GHz]  
- Controlled traces run from U1-L7-L8-A4

All modeled as Coplanar waveguide.  
SaturnPCB Calculator Configuration:  
Conductor Width = 0.22 mm (8.7 mil)  
Conductor Height = 0.12 mm (4.7 mil)  
Conductor Gap = 0.15 mm (5.9 mil)  
Er = 4.5  
[W/H=1.836 < 2, √]  
Modeled Z = 49.94 Ω

## Panelization

Any OK.  
OK to leave mouse bite tabs any edge.  
Designated tab areas are suggestions  
only, and have no parts or traces.

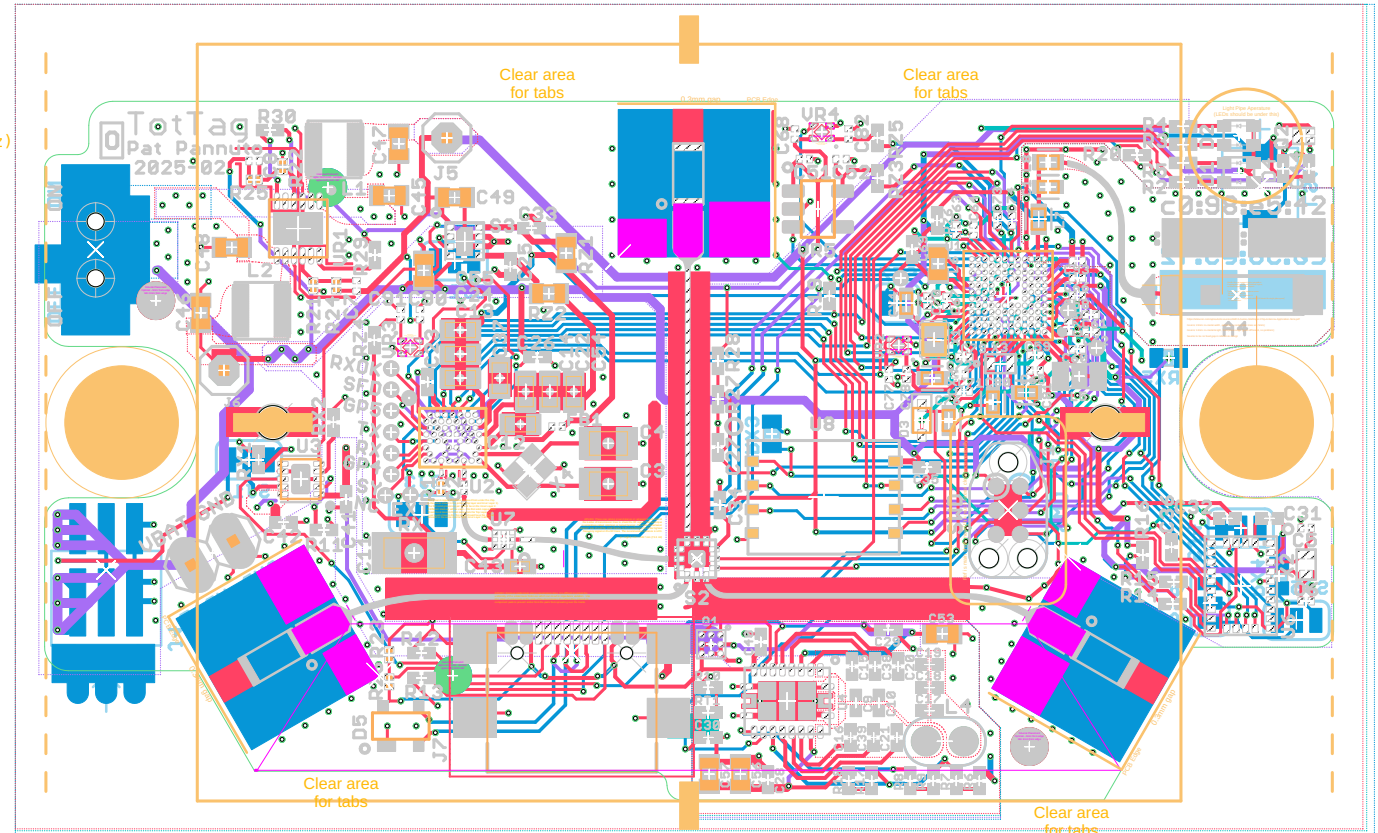
## BGAs and vias

Parts U1 and U2 are BGAs with  
4mm micro vias in pads.  
Okay to plug any/all vias in design.

XXX IGNORE FOR REV-K+ ; UNUSED XXX

One 90Ω differential pair USB PHY  
- Routed as edge-coupled external  
- Conductor Width = 6 mil  
- Conductor Spacing = 12 mil  
- Conductor Height = 4.725 mil [0.12mm]  
- Er=4.5  
- Modeled Zdiff ≈ 90.05 Ω

XXX IGNORE FOR REV-K ; UNUSED XXX



Clear area  
for tabs