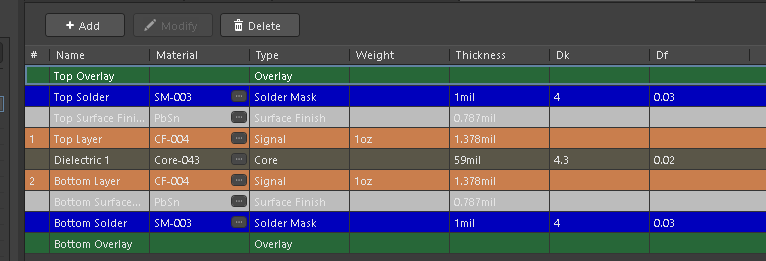
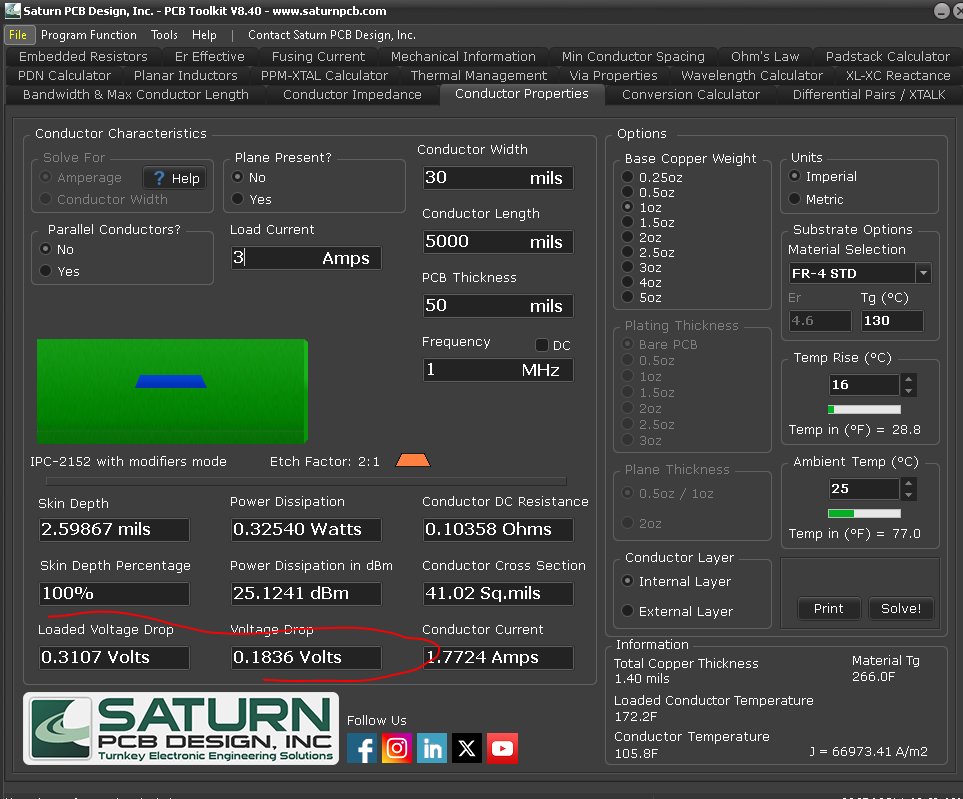
PCB GUIDELINES:

USE THIS STACKUP:



|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | VOLATGE (V) | CURRENT (A) | ALL LAYERS | TO KEEP V DROPS < 0.15V, 10 DEG ABOVE AMBIENT |
| VSYS | 7.4 | 2.66063473 | 50 MILS | <3 INCHES |
| V3V3 | 3.3 | 0.8 | 25 MILS | <6 INCHES |
| V4V0 | 4 | 2.2 | 35 MILS | <3 INCHES |
| V5V0 | 5 | 1 | 25 MILS | <6 INCHES |

· Download Saturn PCB Toolkit and don’t exceed 0.1 V voltage drop. Keep ambient temperature at 25 °C and max temperature rise at 10 °C.



· Keep W = 2H for 50 Ω USB (DP, DN) traces. Use 3W spacing for loose coupling.

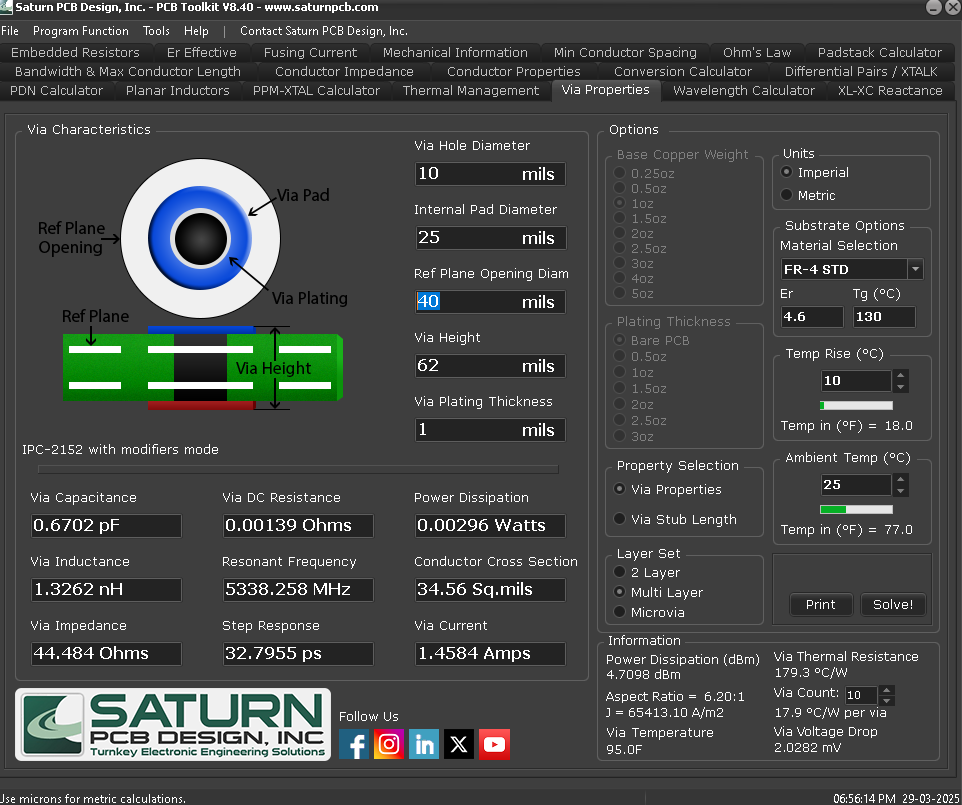
· Keep other signals at >2W spacing from I2C lines.

· Place the crystal close to the MCU with >20 mil clearance from other traces.

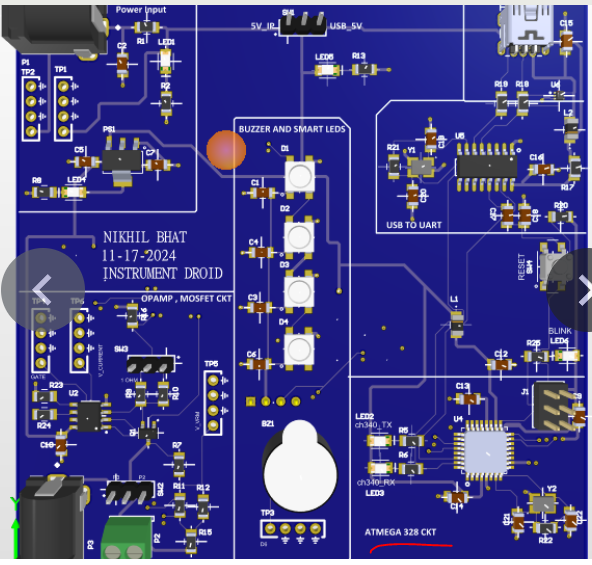
· Place decoupling capacitors (decaps) as close as possible to the power pins.

· Maintain a continuous return path for all high-speed traces. Use reference vias for every layer transition.

· Use 10–25 mil vias (each can carry ~1.4 A for your stackup). Use multiple vias (at least 2–3) for power transitions.



·Add silkscreen for all connectors. Label pin numbers or signal names — shorthand is okay.



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