

## H- Use the 20H Rule to Minimize Plane Coupling:

It is important to inset the signal traces and power planes from the edges of the ground plane by as great a distance as possible. A commonly used rule of thumb is that the ground plane should extend twenty times the height (H) of the signal traces or power plane over the ground plane. In other words, the traces and power planes are inset by 20H from the edges of the ground plane.

This is called the 20H rule.

Also, where possible, the ground plane should be uninterrupted and should extend to the edges of the PCB.

We can call this the Ground Plane Extension rule.

It is important that the reasons for applying the 20H and the Ground Plane Extension rules - and the practical limitations of doing so - are clearly understood.

Currents flowing through - and voltages across - signal traces and power planes and their associated return paths generate electromagnetic (EM) fields. In a PCB with a well designed, extensive, uninterrupted ground plane most of the EM field is shorted out into the ground plane.

At the edges of a PCB however, the gap between signal traces and power planes and their associated return paths acts like an antenna radiating electromagnetic energy out from the edges of the PCB.

**Note :but this can cause a routing problem due to reduction in PCB available area.**

