

(a)

Conducted and Radiated EMI Sources

- produce the other source of EMI in another portion of board.
- { complicated coupling }

Noise Source: -

- Amplified Noise
- Spurious harmonics
- Switching noise
- power bus ringing
- unideal clocks
- other induced/coupled signal that originates from radiated EMI.

Sources of radiated EMI.

- cavity resonances in board
- Standing waves on unterminated transmission lines
- Other source of conducted EMI that induces signal in radiating element/cavity.

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(b) Digital part is very noisy. During switching, digital comp. draw large, fast current spikes from its supply. These have high noise immunity.

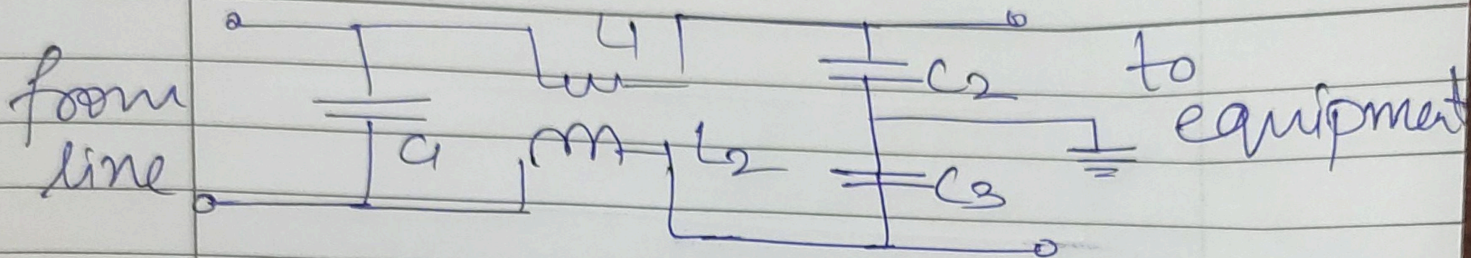
Analog part is very vulnerable to noise.

So if we keep their digital and analog ground same, there will be high probability that noise from digital circuit affects analog circuit, so it becomes a mixed signal.

This ^{is the} issue with keeping analog and digital ground same and hence it is essential to separate analog from digital circuitry.

(c)

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Coupling path:-

- common ground impedance
- common mode radiated field to cable
- differential mode — " —
- crosstalk
- conductive path via power line.

To Avoid EMI

- Use shield over cables
- Application of filters for any interference
- conventional grounding of PCB and cabinet
- Sustaining separation betⁿ cables of different signal levels.
- Prevent victim equipment from receiving undesired radiation.