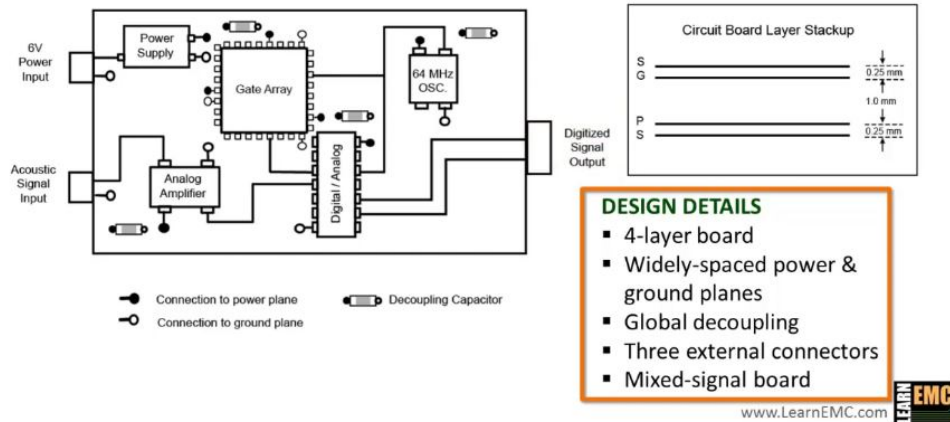
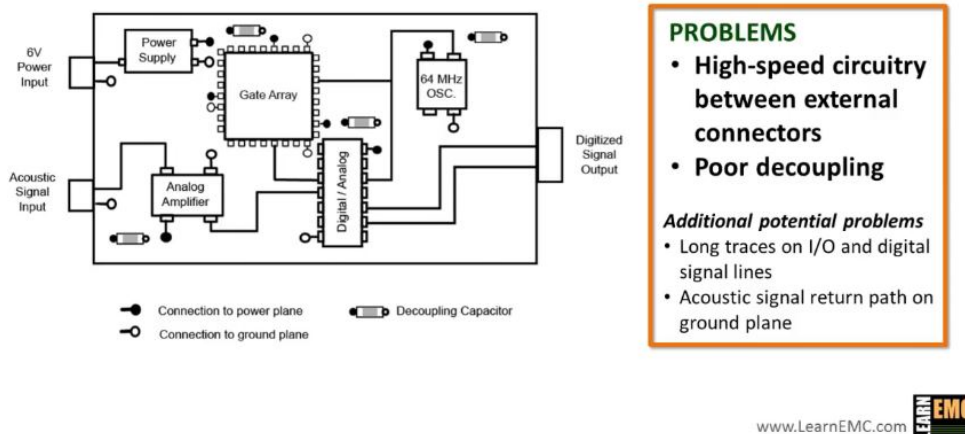


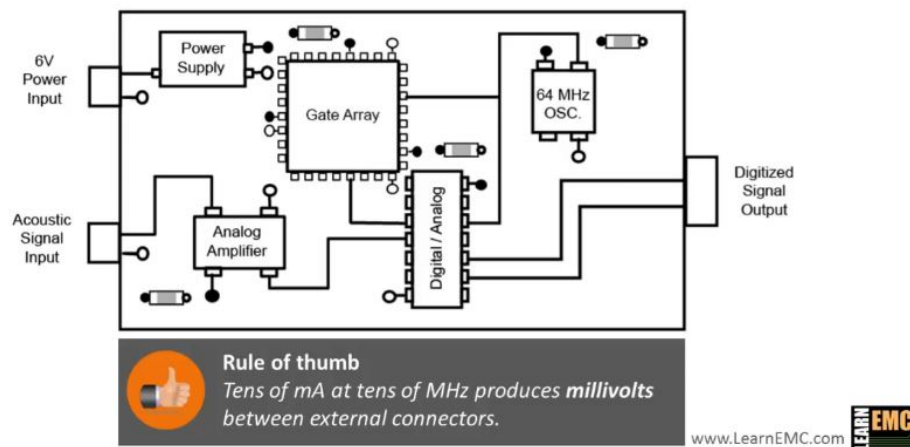
Circuit Board Layout for EMC: Example 1



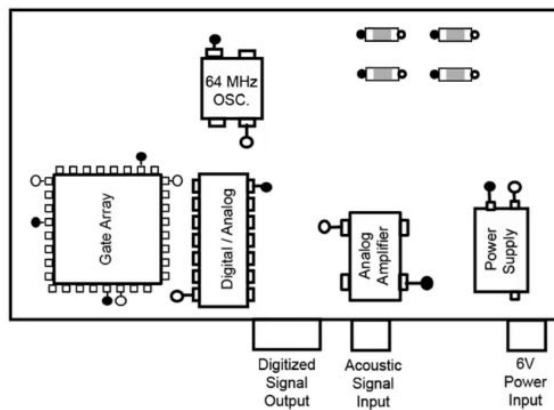
Circuit Board Layout for EMC: Example 1



Problem: High-speed circuitry between connectors



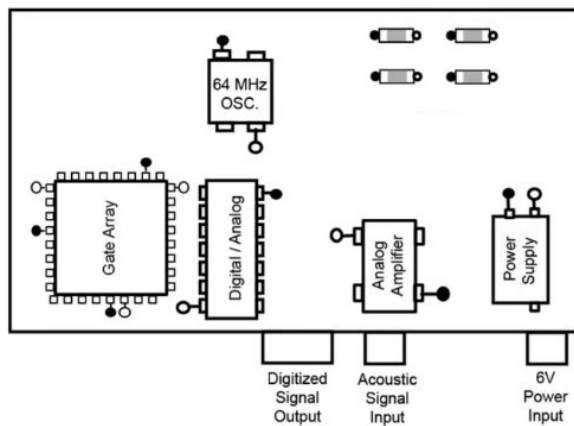
Problem: High-speed circuitry between connectors



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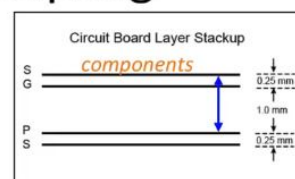
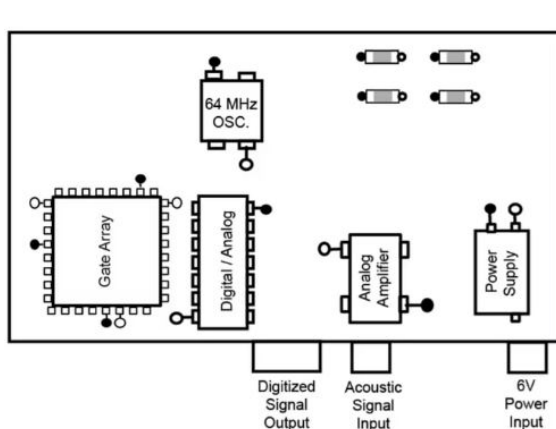
Problem: Poor decoupling



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Problem: Poor decoupling



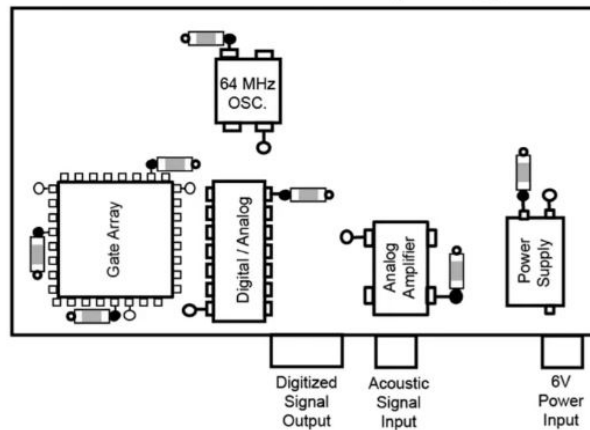
LOCAL DECOUPLING (4-layer boards)

- If the **power** plane is farther from components than the ground plane, place decoupling capacitors at all **power** pins of devices (share via).
- If the **ground** plane is most distant from components, place capacitors at all **ground** pins of devices (share via).

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Local decoupling

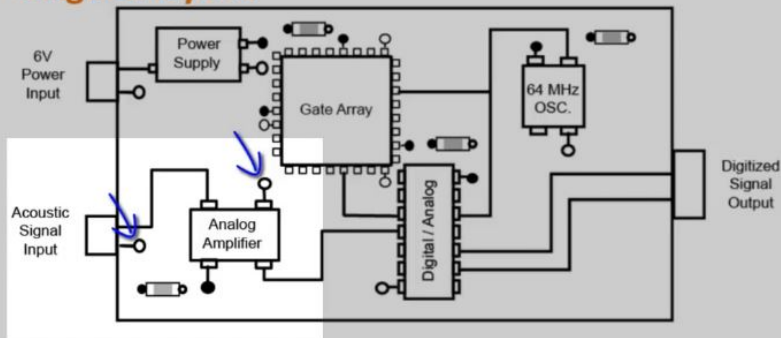


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Problem: Acoustic signal return path

Original layout

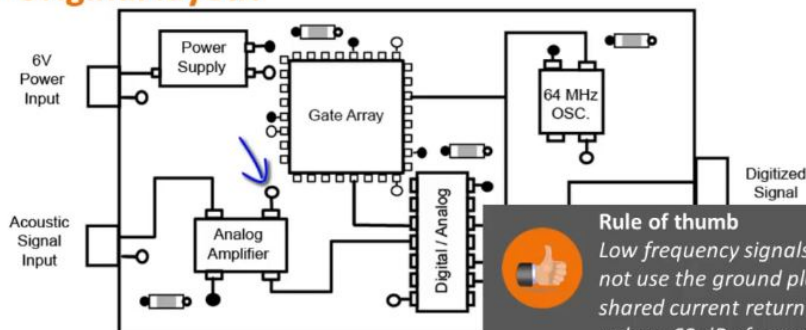


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Problem: Acoustic signal return path

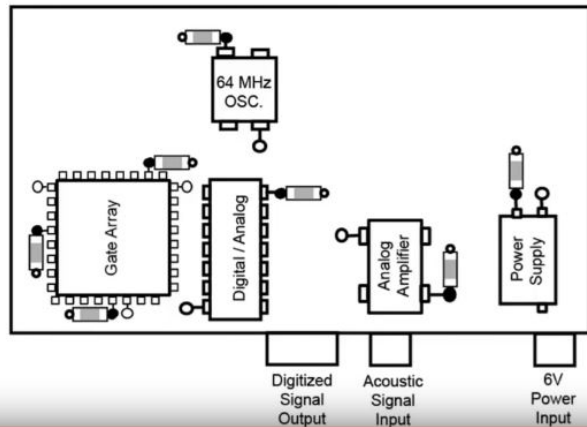
Original layout



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New arrangement

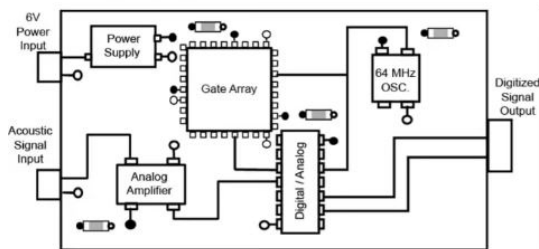


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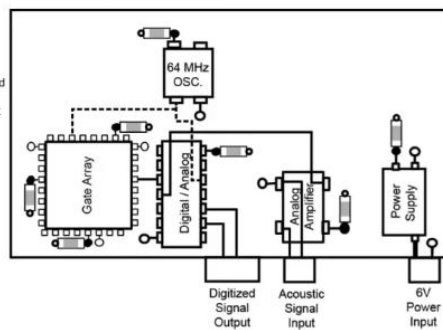


Summary

Original layout



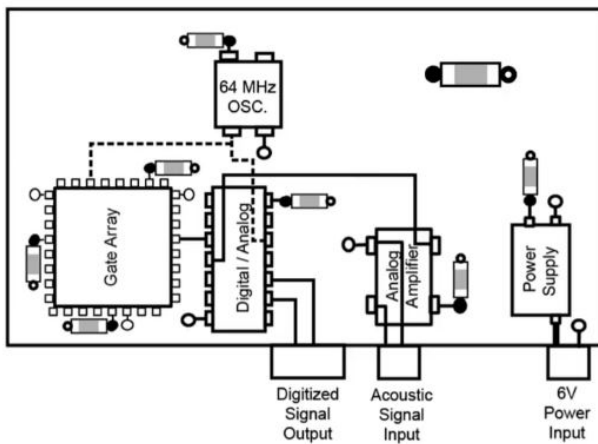
New layout



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New Layout



Possibly Needed

- Cable shield for digitized signal output
- Bulk decoupling
- Return path for the amplified acoustic signal

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