A Wireless Local Area Network
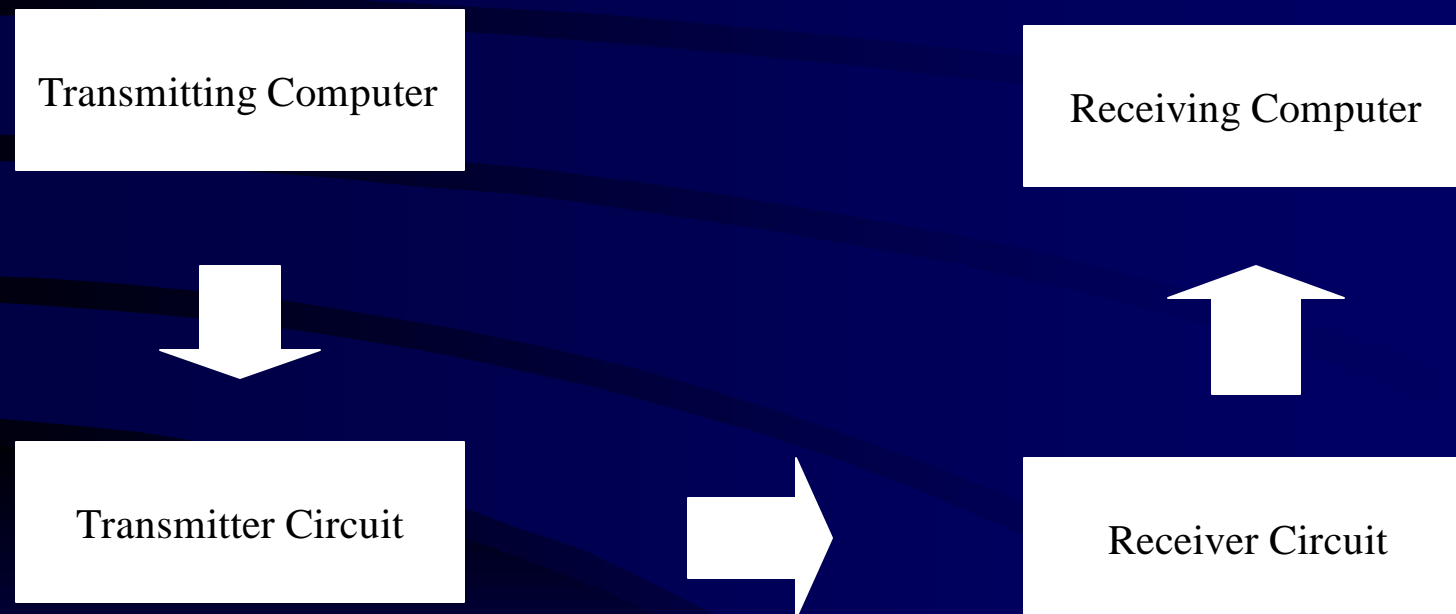
by

Raymond Woodward

Outline

- Overall Operation of the Wireless LAN

- Transmitter Design

- Receiver Design

- Comments and Questions

System Level Diagram of the Wireless Local Area Network

Transmitting Computer

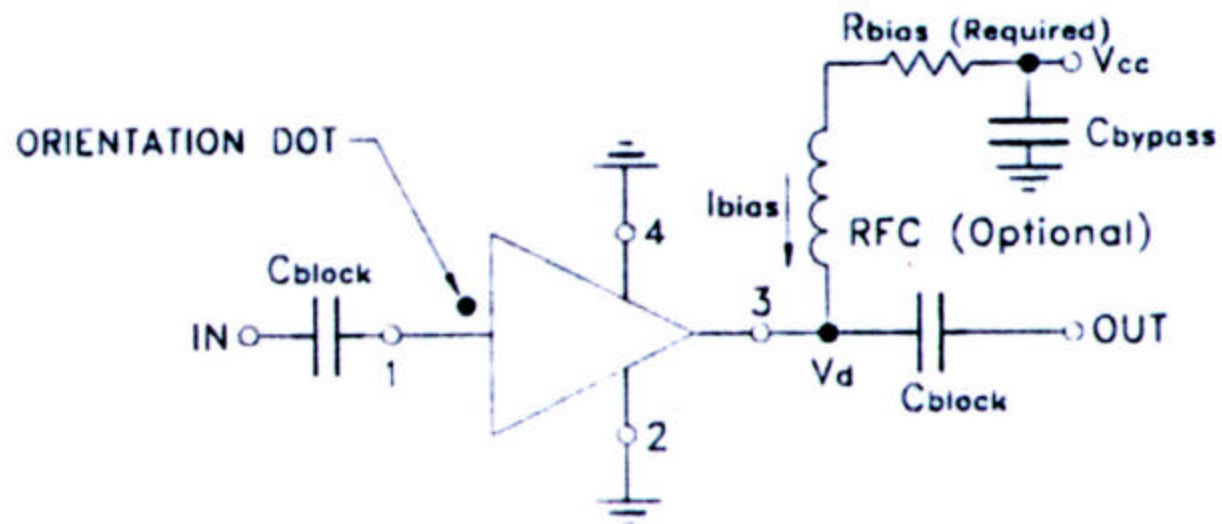Receiving Computer

Transmitter Circuit

Receiver Circuit

Transmitter Design

- Software Interface
  - Serial Communications Program
- D/A Converter
  - High Speed Op Amp Provides Modulation Voltages
- Agilent ES3000-A Signal Generator
  - FSK Modulation Produced by the External Input
- Transmitting Antenna
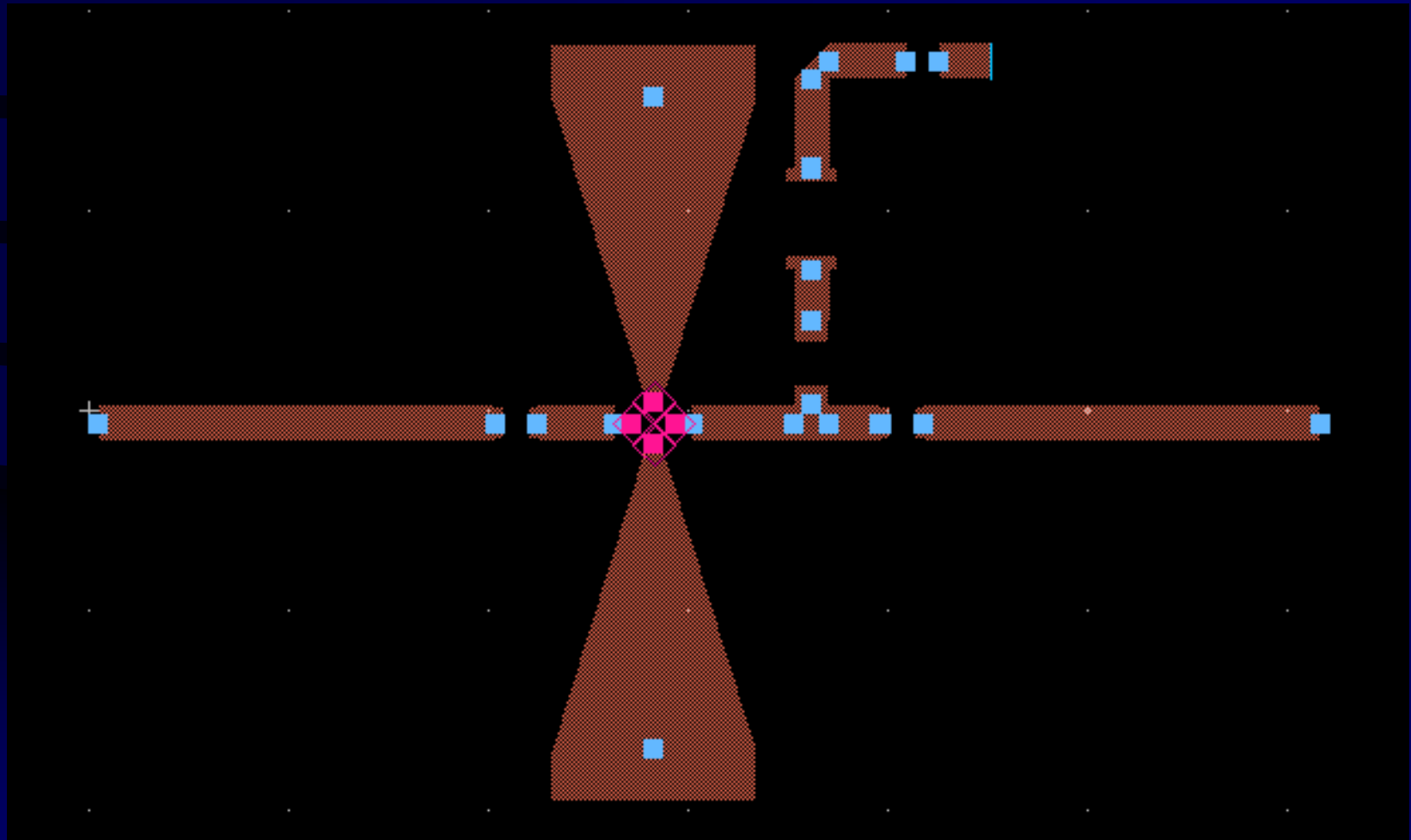 - Matched Monopole with Reflective Ground Plane

Receiver Design

- Receiving Biconical Antenna
- Amplifier
- Power Splitter
- Coupled Line Filters
- Detector Circuits
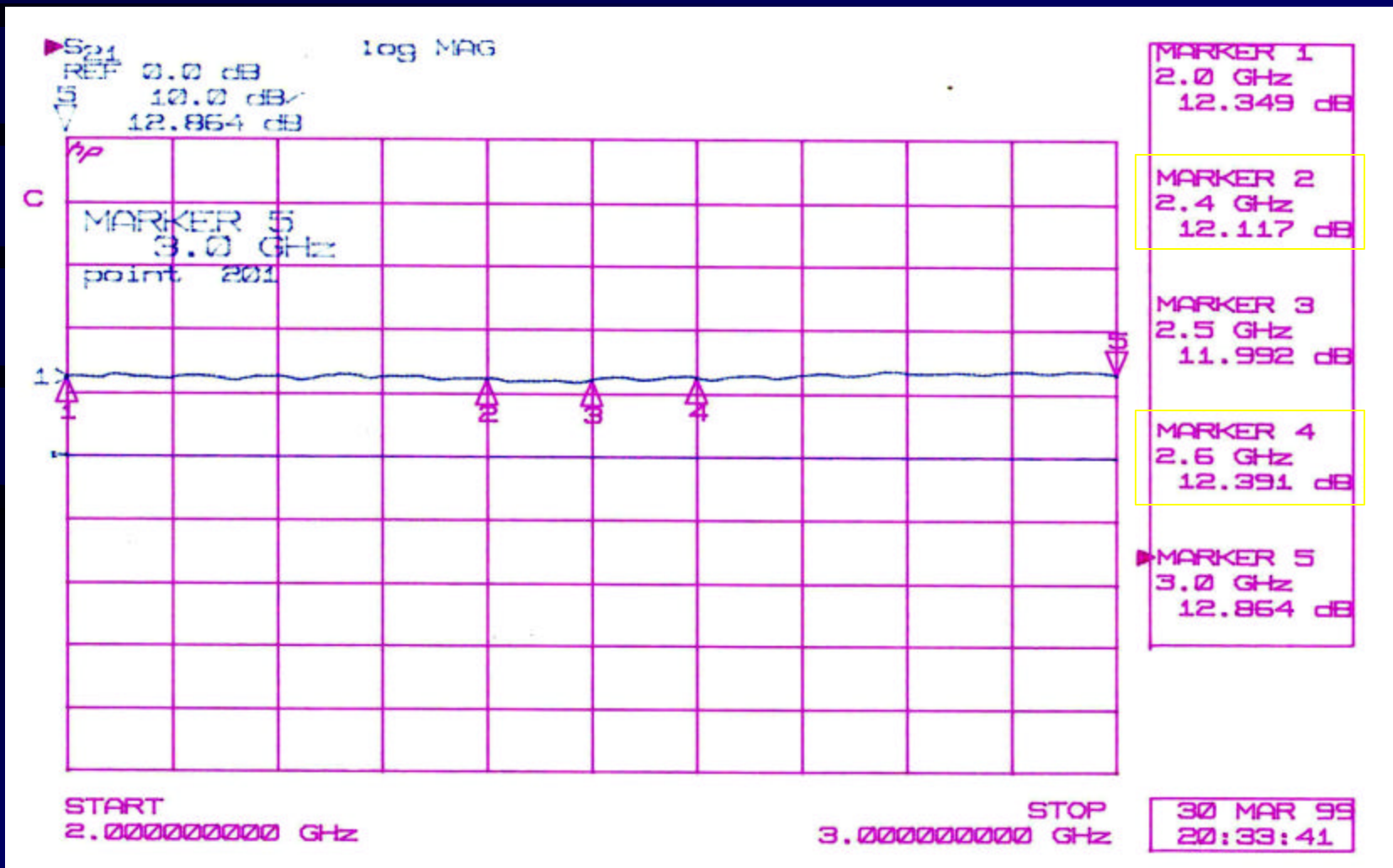- A/D Converter
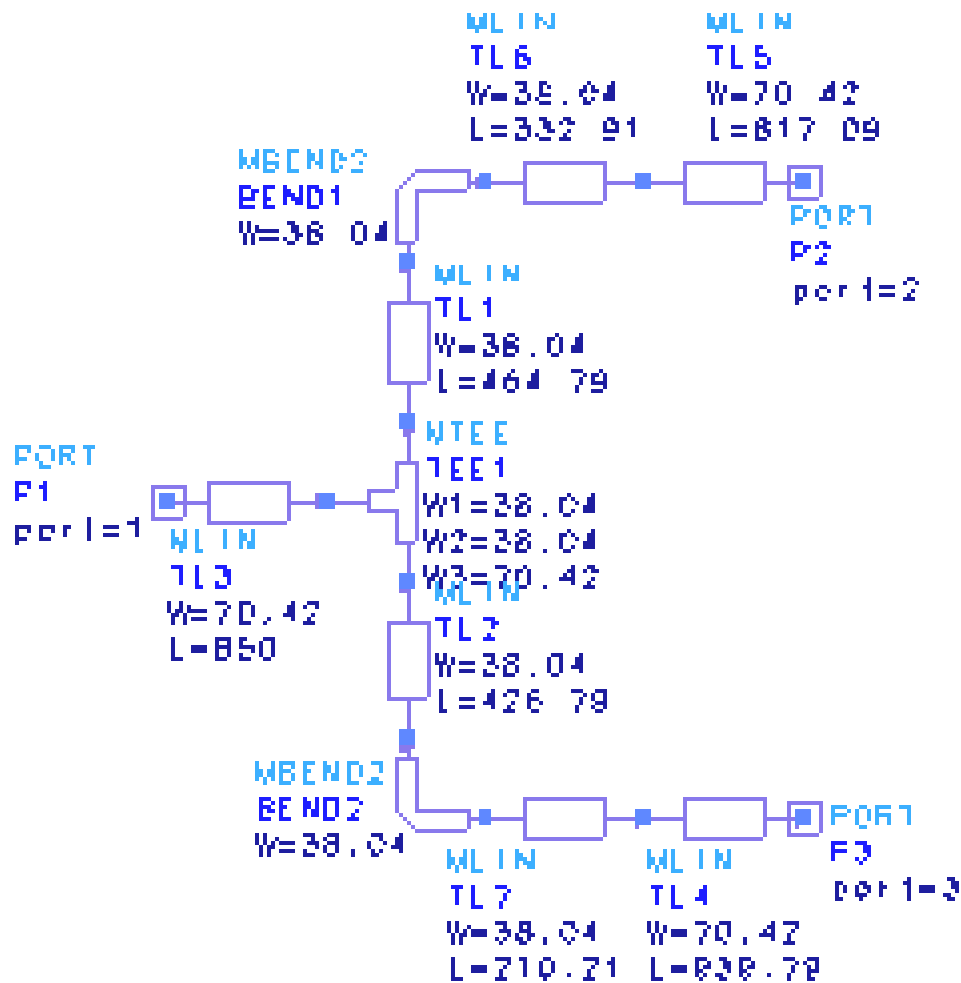- Serial Communications Software Interface
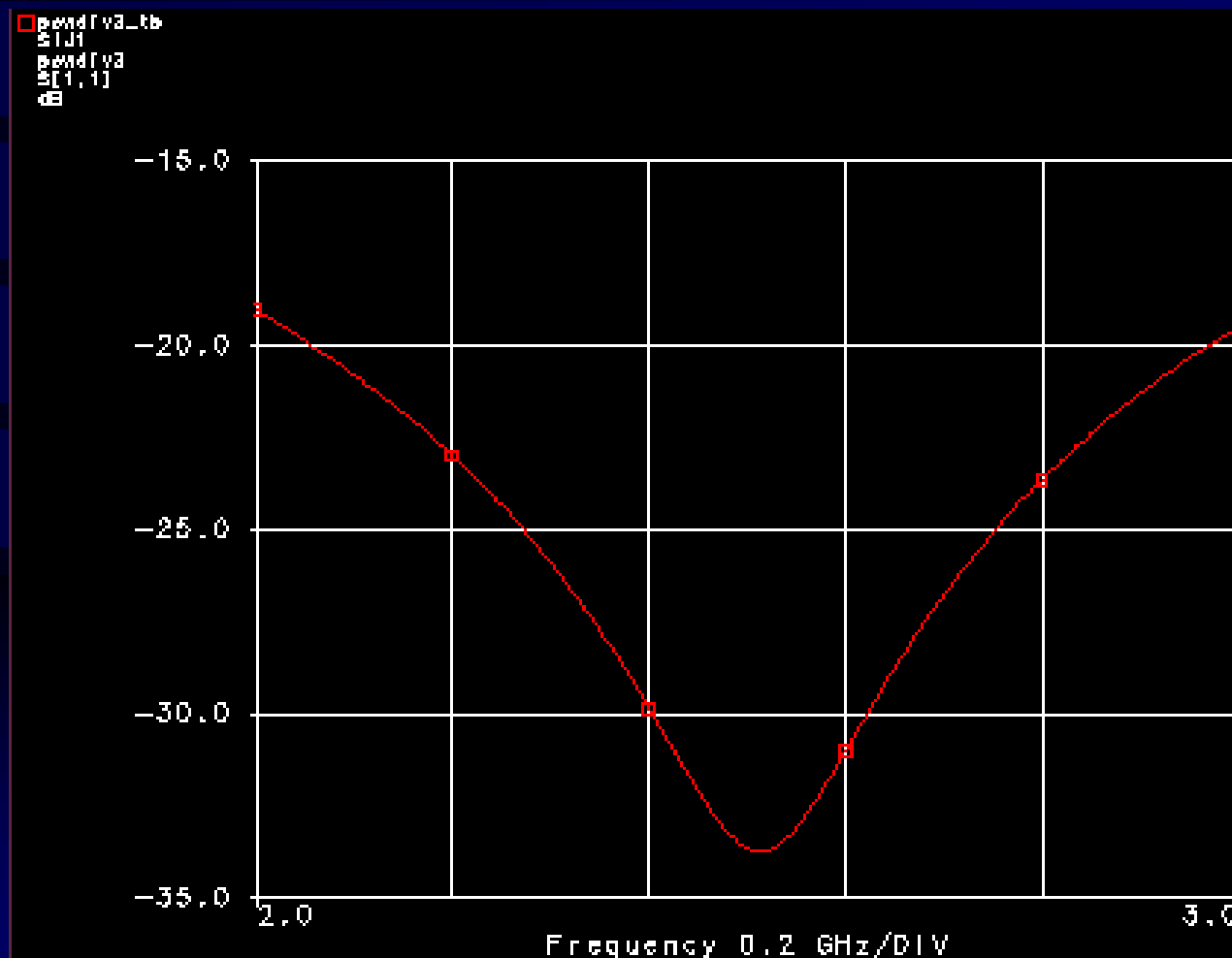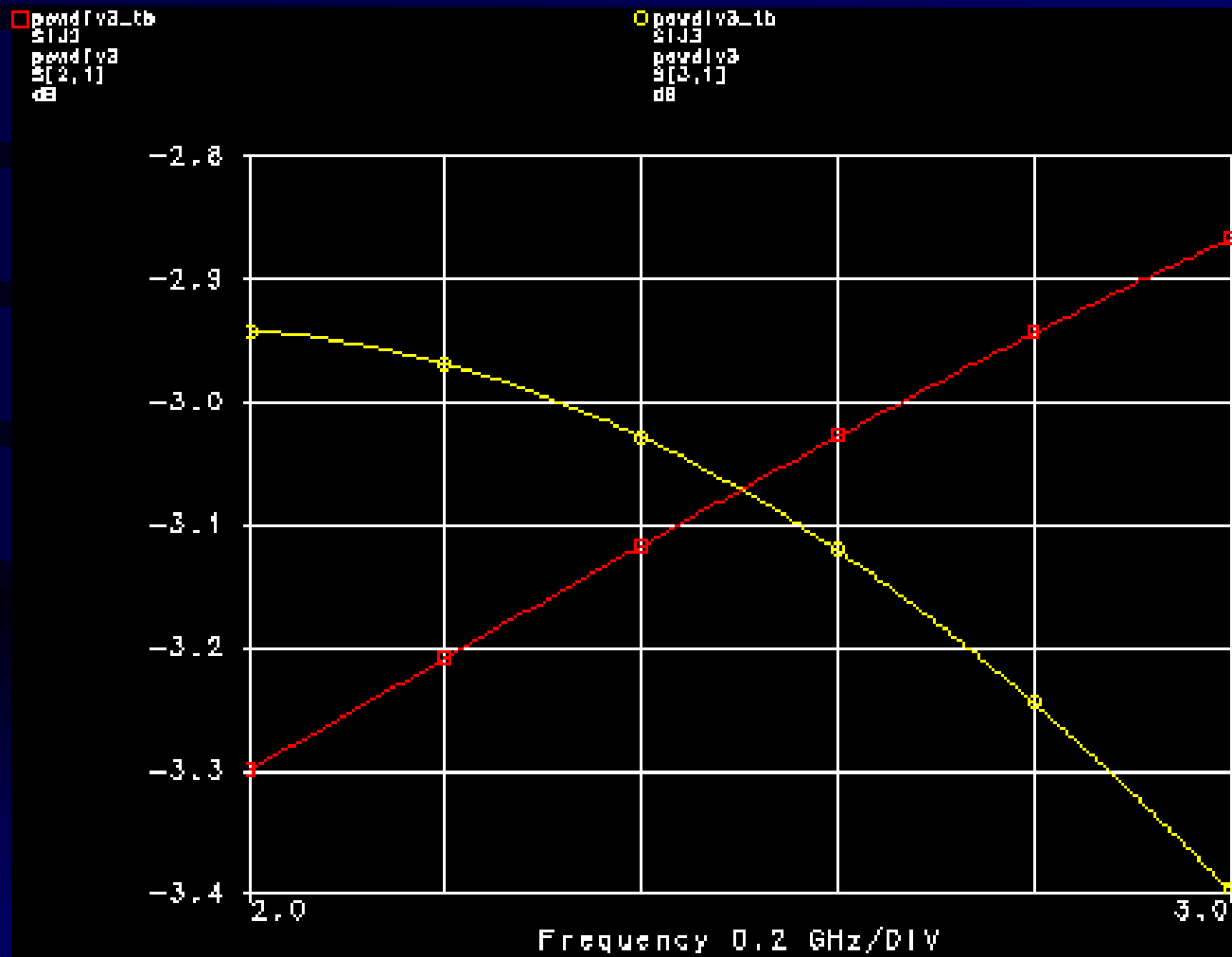
Amplifier Schematic

Amplifier Layout

Amplifier Test Results
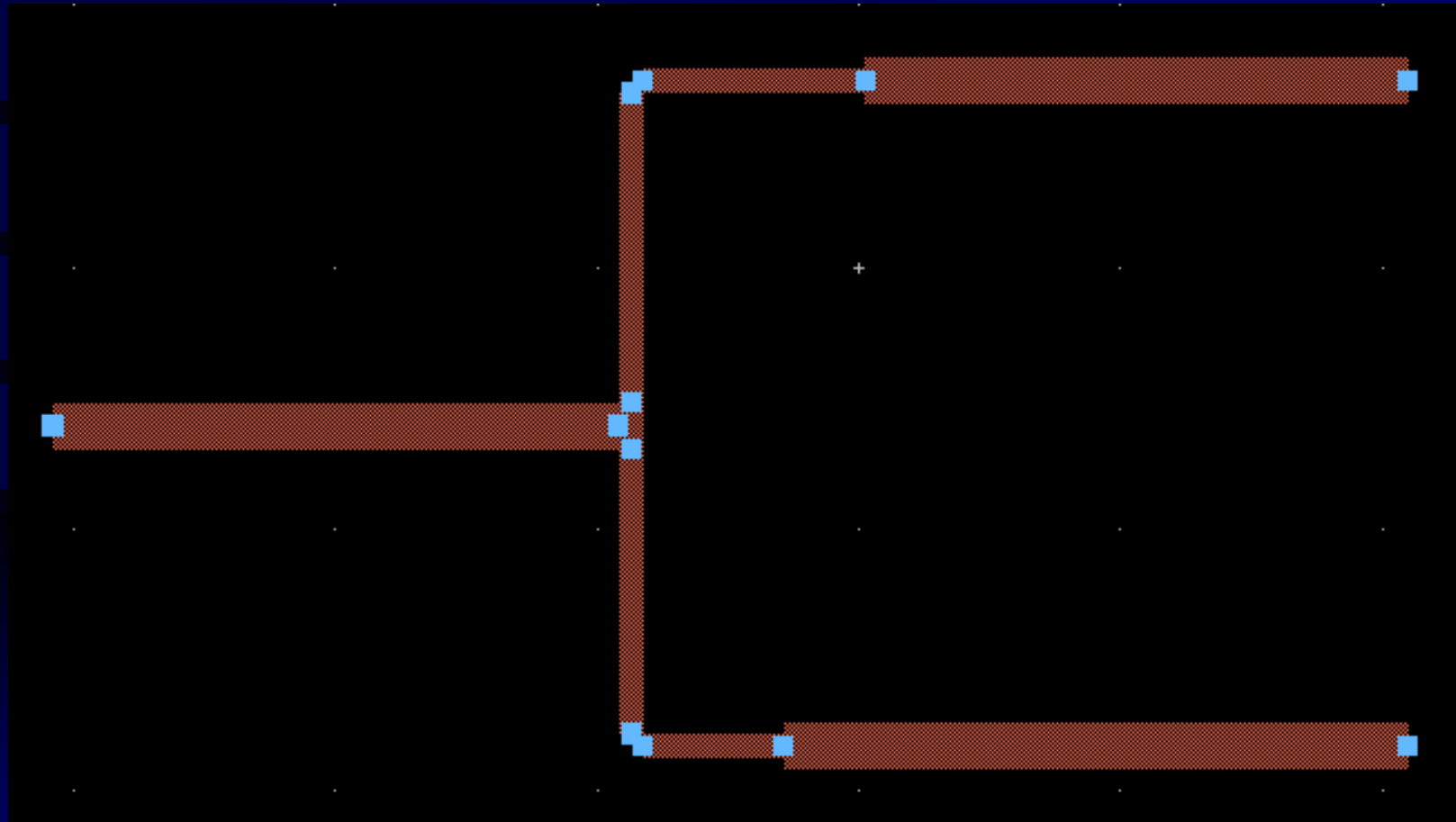
Power Splitter Schematic

Power Splitter Simulation for S_{11}

Power Splitter Simulations for S_{21} and S_{31}

Power Splitter Layout

Power Splitter Test Results