# TAPR FHSS Radio Project Status

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# FHSS Radio Status

- **Focus has been on Digital Processor board:**
  - **Most functions, parameters, status are controlled by VLSI devices with registers.**
  - **Need CPU operational to test almost anything.**
- **RF board: high-criticality area is initially the VCO's - testing looks good.**

# VCO Status

- **Two VCO's used, alternate each 10 milliseconds.**
  - Current settling time is ~ 6 milliseconds.
  - Leaves margin in timing.
  - Matches model developed.
- **Spectrum of VCO looks good.**
- **Most significant sideband is VCO reference frequency.**
  - about -60 dBc.

# VCO Spectrum (not hopping)



10 dB/div

20 kHz. / div
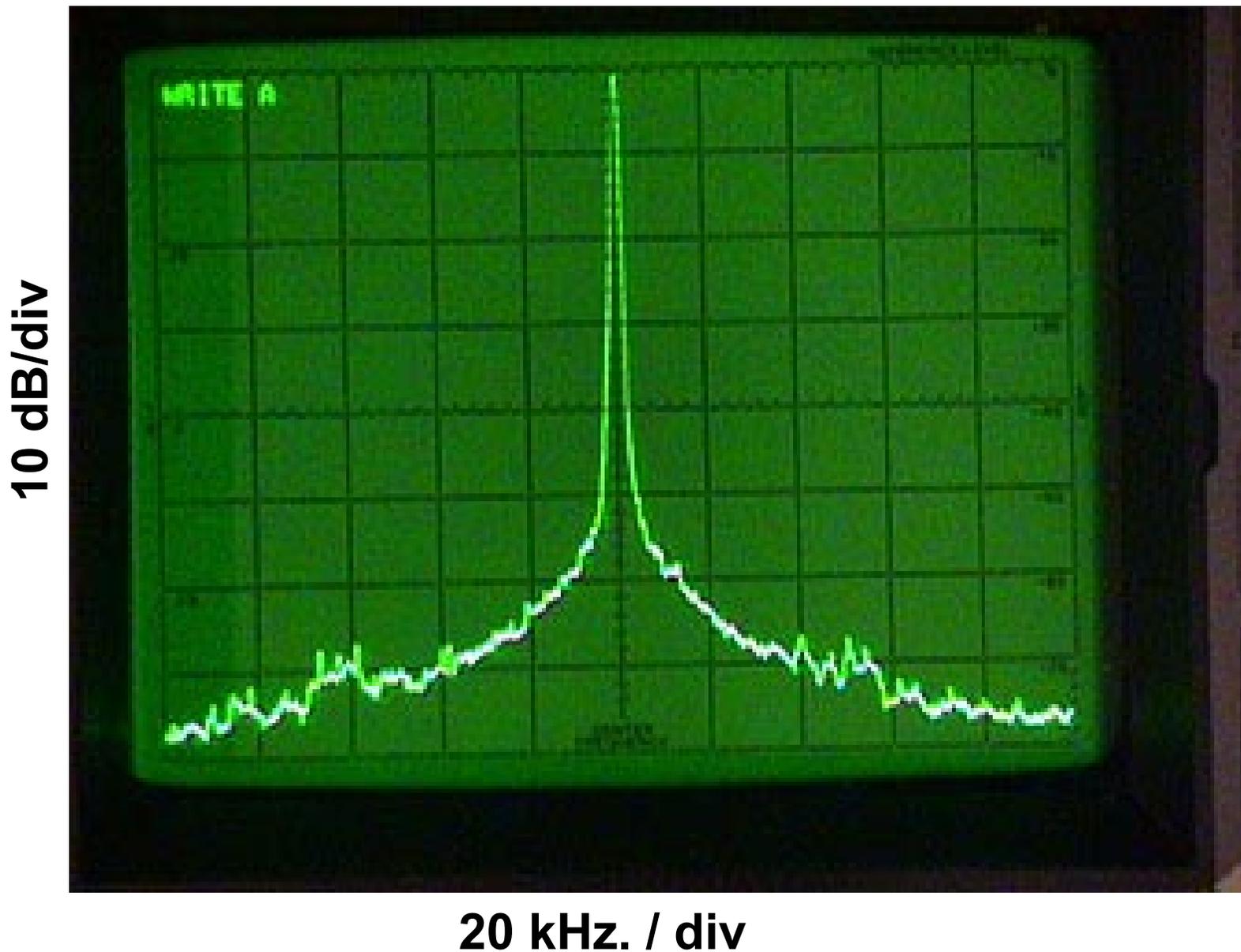
# Processor / Digital Board (Rev 2)
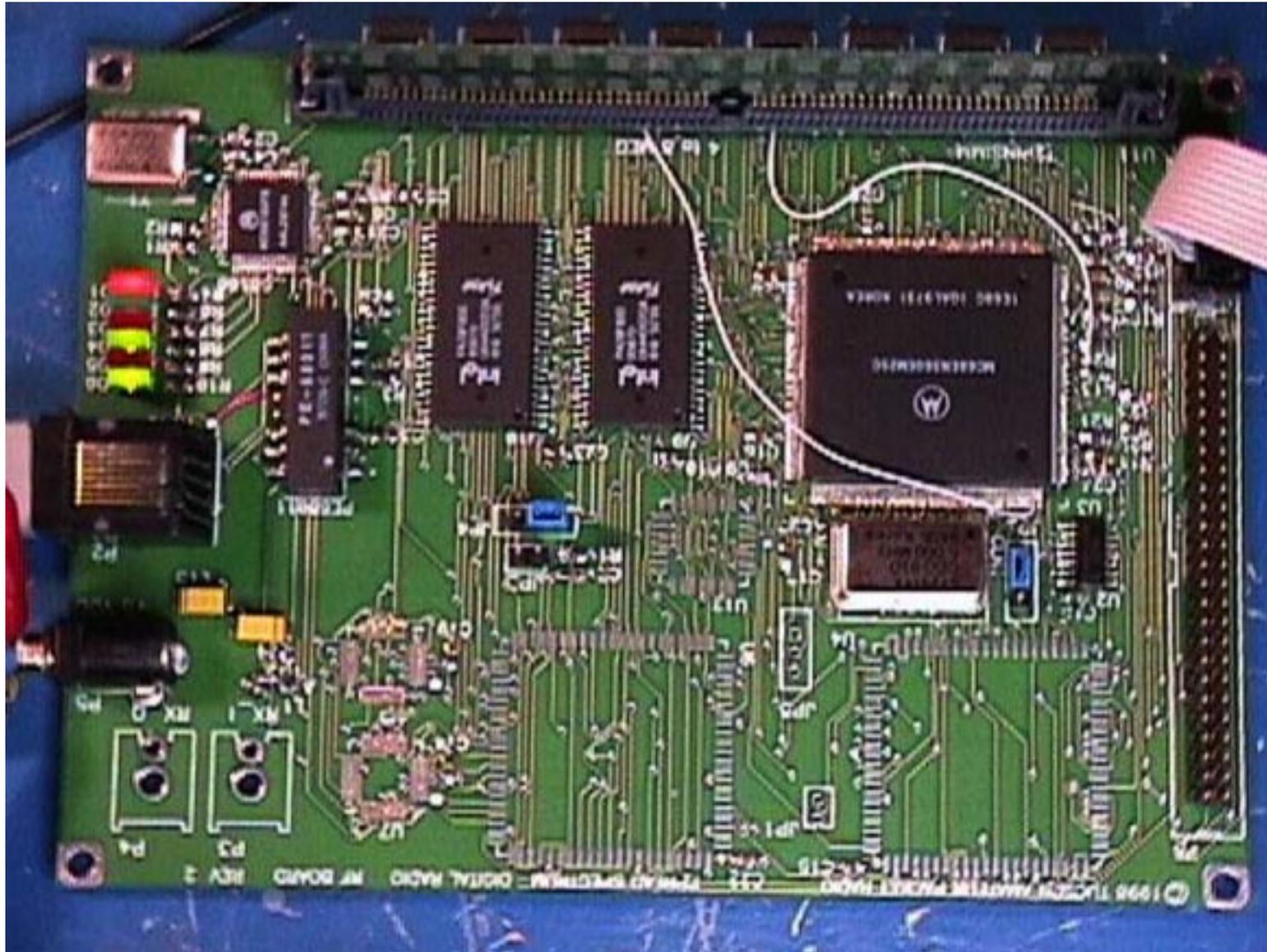
# RF Board (Rev 1)
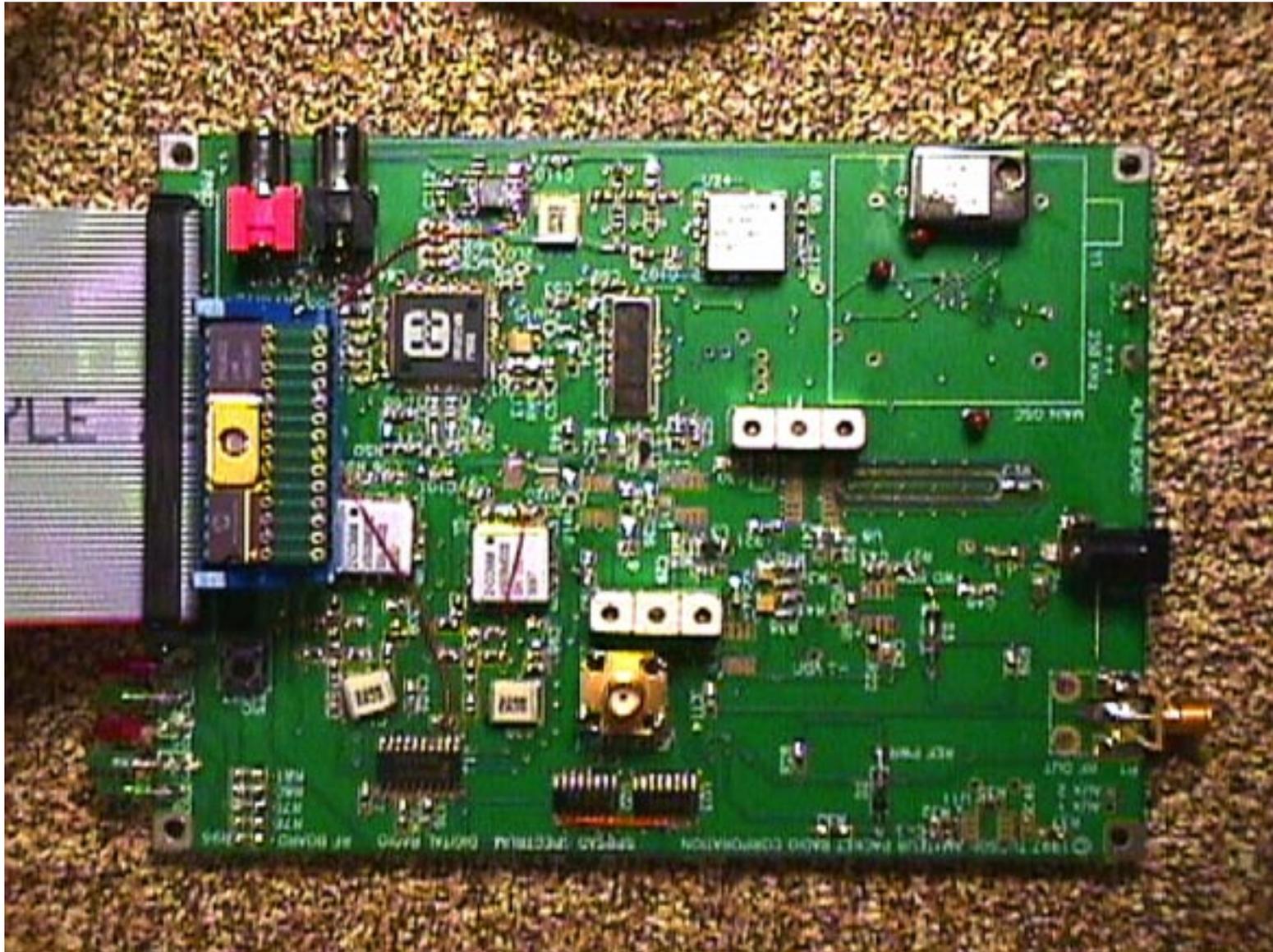
# RF + Digital Board Connected
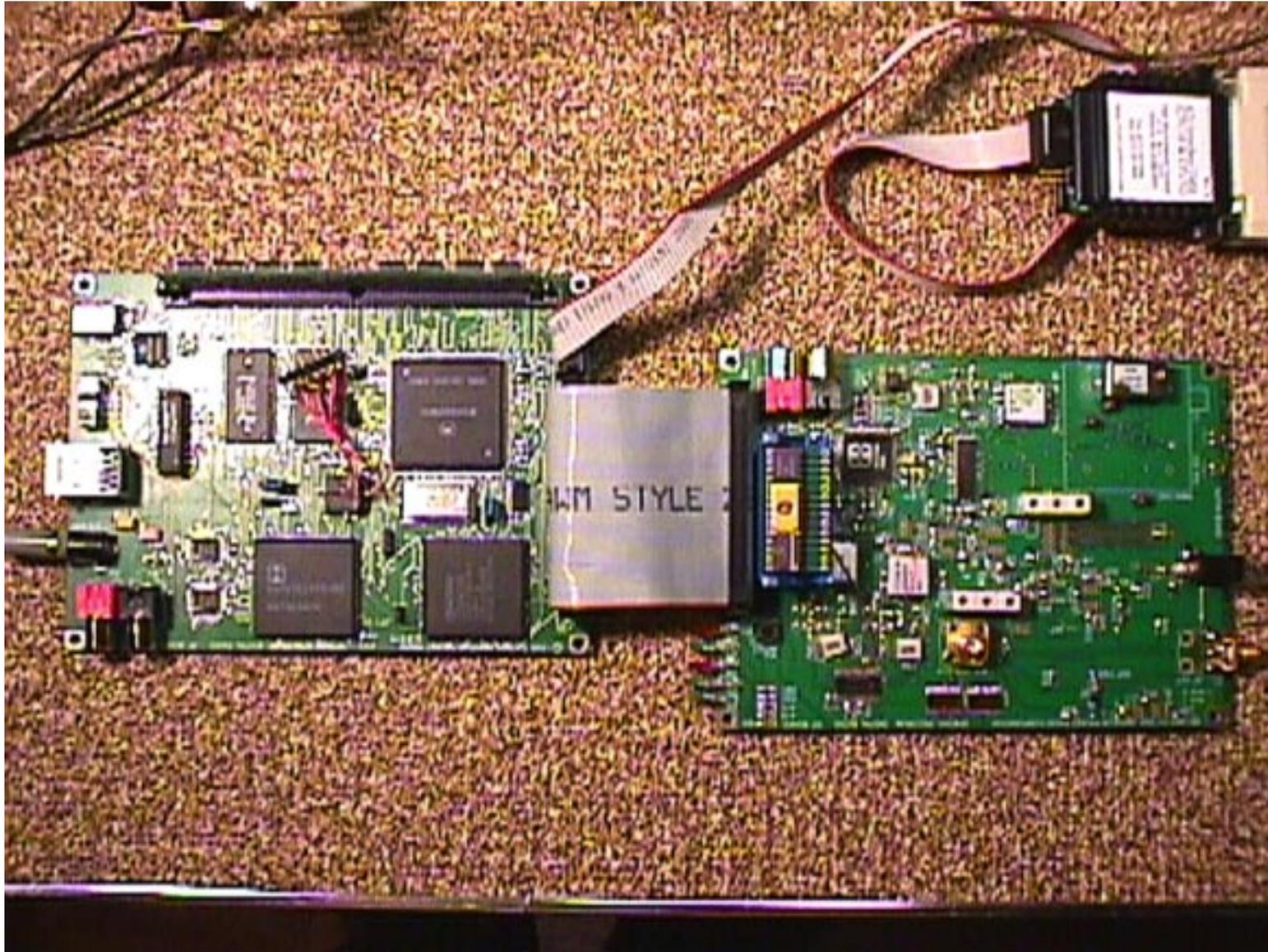
# Testing the Digital Board

# Software Status

- **Ported XINU to TAPR board (currently running from DRAM).**
  - **Pre-emptive, prioritized, multi-tasking kernel.**
  - **Next effort is to move it to FLASH**
- **Ported Comer TCP/IP stack to TAPR board.**
  - **Re-written Ethernet and Serial device drivers, Timer driver, Initialization code.**
  - **Gateway router functionality + host interface.**
- **SNMP code ported to TAPR board (but not tested).**

# Software Status - 2

- **Local console and Ethernet (10-base-T) interfaces are functional.**
  - **Can 'PING' in either direction (received, or console can initiate).**
- **VLSI device register test code written - implemented as UDP daemon.**
  - **Is a server to a client on a Win95 / NT host which provides graphical change/display of VLSI device contents.**

# Toolset

- **Development to date has used SDSI compiler / assembler / linker / debugger.**
  - **Very powerful graphical debug capability through BDM interface.**
- **Software being ported to GNU environment.**
  - **GNU non-graphical debugger (BDM)**
  - **GNU compiler, linker, assembler**
- **Non-BDM Ethernet loader in development.**

# To Be Developed

- **HTTP 0.9 daemon for initial configuration provisioning:**
  - MAC address
  - IP address
  - Subnet mask
  - Default Gateway,etc.
- **The radio code itself !**