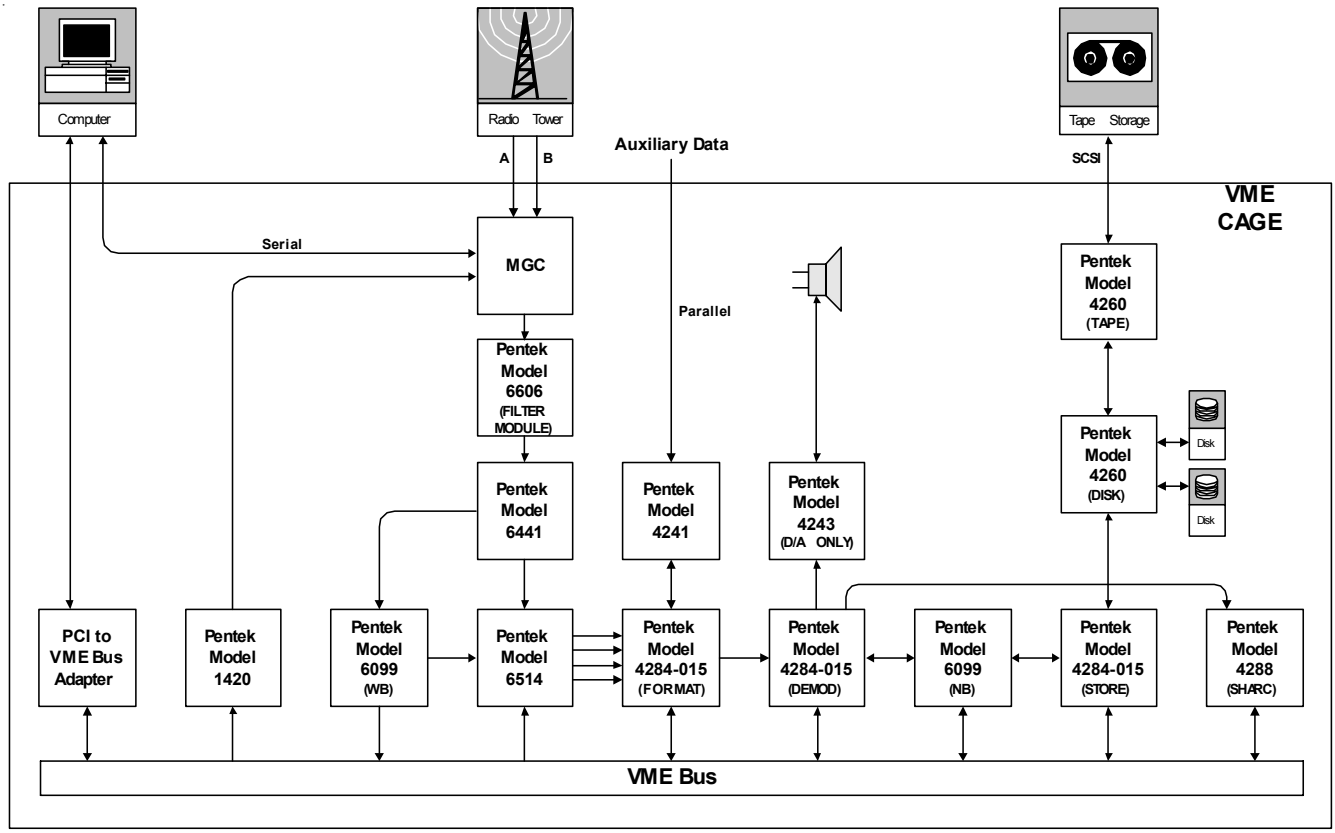
System 3521

Wideband and Narrowband Acquisition System

DSPCon's System 3521 is a wideband/narrowband acquisition system that is designed to burst-capture two wideband channels, and/or to perform long-term archiving of any combination of its narrowband channels up to a maximum of sixteen channels.

The System 3521 allows the user to configure for wideband and/or narrowband capture or for narrowband tuning with full control over decimation rates and tuning frequencies. In addition, it offers the end user a variety of ways to real-time process and post-process the input signal.

System Block Diagram



Hardware

Pentek Model 6606 Filter Module
Pentek Model 6441
Pentek Model 6514
Two Pentek Model 6099
Pentek Model 1420
Pentek Model 4241
Three Pentek Model 4284-015
Pentek Model 4288
Two Pentek Model 4260
Pentek Model 4243

System 3521

Features

- Wideband burst acquisition
- Real-time narrowband acquisition
- Real-time and/or post processing by PC, multiple SHARC or multiple DSPs
- Real-time recording to disk and/or tape
- Data playback to SHARC and/or Demodulator
- Dubbing to host for optical disk storage
- Interface to MatLab
- Real-time demodulators

System 3521 integrates DSPCon's software radios. To learn more about demodulators for AM, FM, USB, and LSB signals, contact us.

The Host Computer

The host computer, an IBM-compatible PC running Microsoft Windows XP, runs the system's software. From this station, the operator controls all system functions.

The host computer controls all of the tests and is responsible for analyzing all of the data, starting up all target boards that involve any specific test, and for monitoring the process of the operation.
A sample screen capture is at right.

How System 3521 Works

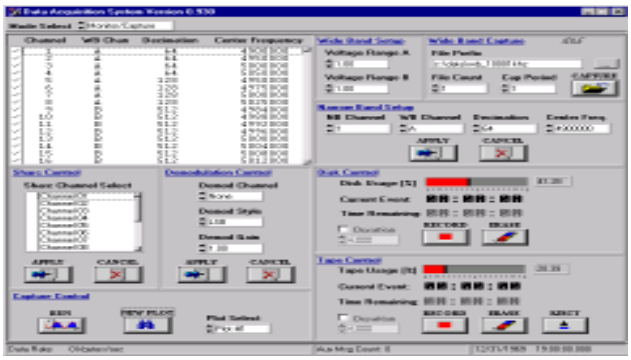
System 3521 accepts two gain-compensated, wideband channels and bust-captures a 32-Msample snapshot of the raw, wideband signal. The captured signal can be sent to the host computer, via a PCI to VMEbus adapter, for analysis by MatLab.

The system filters and decimates the wideband channels to 16 narrowband channels with user-configurable, individually set center frequencies. The 16 channels are obtainable through four unique narrowband widths.

The system merges narrowband data with time data that is presented in a digital parallel format with a strobe. As the time data is archived it is placed in a header block of the narrowband data.

Time-stamped, narrowband data is directed by the system to the tape drive, to the hard disks and to a Pentek Model 4288 SHARC processor. The disk and tape drives are driven by DSPs equipped with SCSI interfaces.

A processor demodulates the narrowband channels and sends the demodulated data to a speaker for operator listening. Demodulation is available for AM, FM, USB, and LSB signals.



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