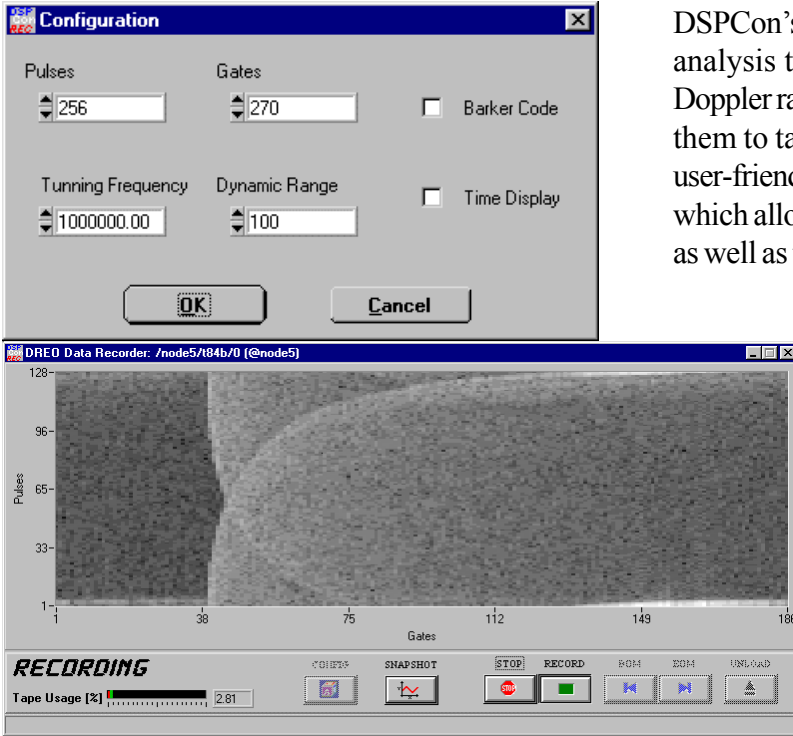


# System 3311

## Pulse Doppler Radar Recorder System

DSPCon's System 3311 is a powerful digital recording and analysis tool designed to capture two channels of pulse Doppler radar data, down convert the signals and then record them to tape. In addition, this system is equipped with a user-friendly Graphical User Interface (GUI--screens at left), which allows operator control of the recording mechanism, as well as the ability to view the radar signal in real time.



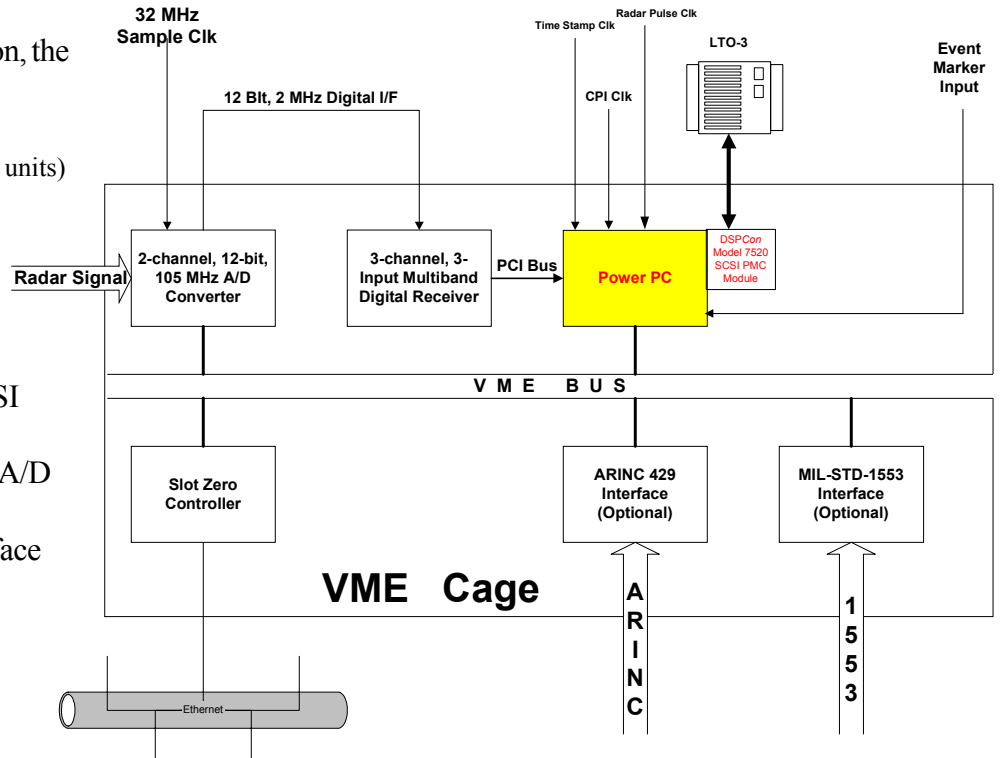
**Graphical User Interface allows the operator to view the pulse Doppler radar data in real-time.**

### Hardware

For a typical (2 channel) installation, the rack contains:

- One VME chassis (houses 4 DSP units)
- LTO-3 Tape Drive
- Tape
- One Slot 0 Controller (Windows XP or Vista)
- One Power PC
- One DSPCon Model 7520 SCSI PMC Module
- One Digital Drop Receiver with A/D
- Optional ARINC 429 Interface
- Optional MIL-STD-1553 Interface

### System Block Diagram



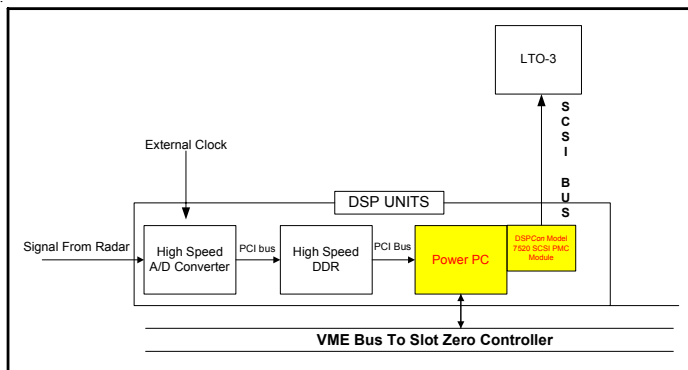
# System 3311

## The DSP Unit

The Digital Signal Processing unit is responsible for:

- Digitizing the analog data
- Performing any necessary data processing
- Recording the data to tape

A block diagram of the DSP unit is below



## The Host Computer

System 3311 is delivered with a host computer, which is an IBM-compatible PC running Microsoft Windows XP or Vista. It runs the system's graphical user interface software, which allows the operator to control all system functions directly from the PC. The host computer communicates with the DSP unit via an Ethernet network using TCP/IP.

## Data Flow

DSPCon's System 3311 takes a signal from the Pulse Doppler Radar's IF output and sends it to a 14-bit analog-to-digital (A/D) converter. These analog signals can be sampled at up to 105 MHz. The digital signal is passed down through the ribbon cable to a multiband digital receiver MIX module that accepts 14-bit digitized data at sampling rates up to 250 MHz. It contains two narrowband receivers and one wideband receiver, which performs frequency down-conversion (i.e., translation to baseband), low-pass filtering and decimation of the sampled output.

After digitization, a DSPCon Power PC digital signal processor (DSP) reads each sample of the signal and performs all necessary data processing. The digital signal is then passed through the PCI Bus to the SCSI Controller, which stores it on a tape drive. In addition, the DSP can periodically send a number of snapshots of the signal to the host computer for graphical display.



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