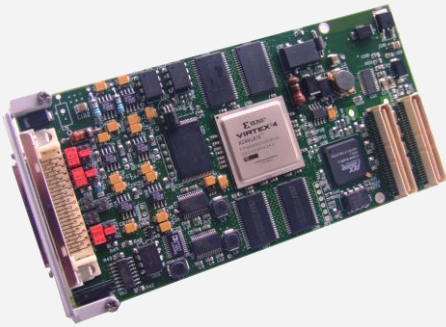


HPx-150

PMC Radar Acquisition



Features

- PMC Radar Acquisition Card for VME and cPCI processor cards
- Analogue or digital video input
- Trigger input
- ACP/ARP or parallel azimuth (for use with external synchro to digital module)
- Up to 50 MHz sample rate
- Programmable mixing
- High-speed DMA transfers
- Expandable processing in FPGA
- Supported under Windows and Linux
- Processing library (SPx library)
- Dynamic Thresholding
- Clutter suppression
- Test pattern generator
- Integrated into SPx software for Radar Scan conversion and Radar Recording



The HPx-150 is a highly cost-effective PMC-based radar acquisition card that captures and processes radar video signals. When used with the SPx radar processing library it is possible to build VME or cPCI radar distribution servers and integrated display solutions rapidly and cost-effectively.

The SPx signal processing library is an extensible toolkit of radar-specific functions that can be linked together to form a processing chain. Using this library, radar video can be processed to remove clutter, interference and enhance gain prior to network distribution and scan-conversion. Custom functions are easily incorporated into the processing chain.

Radar Capture

The HPx-150 interfaces to an analogue radar signal, which is sampled at up to a 50 MHz sample rate using high-precision analogue to digital converter at 10 bits resolution. The 10 bits is reduced to 8 bits through a programmable look-up-table (LUT), prior on-board processing. The captured video can be optionally down-sampled (highest-wins) to reduce the data rate before transfer across the PCI bus using high-speed DMA. On the host computer, the compatible SPx driver for Windows or Linux (other operating systems supported on request) is coupled into the SPx processing library to provide a full complement of radar processing functions.

The powerful on-board Virtex-4 FPGA provides data processing and control and offers capability for expanding the data processing functions for customised applications.

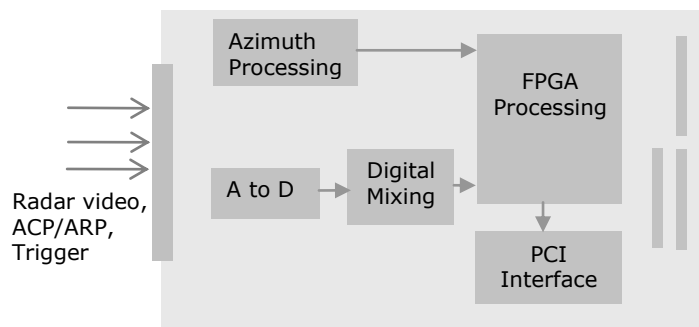
SPx Signal Processing

The optional SPx signal processing library is an extensible toolkit of radar-specific functions that can be linked together to form a processing chain. Using this library, radar video can be processed to remove clutter, interference and enhance gain prior to network distribution or scan-conversion. Custom functions are easily incorporated into the processing chain.

SPx Distribution and Scan Conversion

The captured video may be compressed, distributed or displayed with the optional SPx library software. A complete server application, optionally incorporating radar recording and scenario generation, is built from just a few function calls into the SPx library.

For integrated display solutions, the SPx scan-converter is easily connected to HPx-100 driver to provide real-time radar video updates in Windows or Linux/X11.



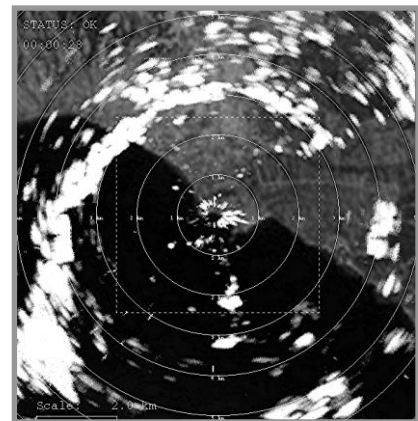
HPx-150 Radar Acquisition Card Specification

Architecture

Form factor:	PMC (PCI Mezzanine Connector)
Interface:	PCI Bus, 32-bit, 33/66 MHz
Programming:	C/C++ software library
Control:	Programming API or servers
Platform:	Windows (XP/Vista), Linux/X11R6 For other OSs consult factory
Processor:	x86

Functional

Radar Inputs:	2 x Analogue (0 to 5v), 75 Ohms. 2 x RS422 digital input bits + clock Programmable mix of analogue and digital inputs using LUT
Trigger:	RS422 or discrete up to 30 volts
Test:	Built-in test generator
Output:	Radar returns onto PCI bus
Radar Capture:	Programmable range zero trigger Programmable return length up to 64k Staggered prfs supported 10-bit A-to-D.
Azimuth Coding:	ACP/ARP RS422 or discrete signal up to 18v Up to 32768 ACPs per ARP Parallel azimuth (12 bits) and clock (Can be used with external synchro to digital conversion)



Connectors

Radar Input:	Front panel connector (50w MDR)
PCI	Standard PMC interface

Processing with SPx Library

Correlation	Range and azimuth correlation
Gain Control	Gain/level adjustment STC, FTC controls
Clutter	Clutter suppression Interference suppression
Processing Area	Sector and Range blanking

Performance

Sample Frequency:	Programmable up to 50 MHz
Maximum input BW:	25 MHz
PRF:	0 to 10 kHz
Samples per return:	Up to 64k
Returns per scan:	Up to 10k
Data transfer rate:	25 Mbytes/sec
Scan Rates:	1 to 120 RPM

Environmental

Cooling:	Forced air cooling
Temperature:	0 to 55C

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