



SPx Radar Scan Conversion

Features

- Software radar scan-conversion
- Flexible radar input options
- PPI, B-Scan and A-Scan displays
- Up to 256 levels of smooth fade
- Radars up to 120 rpm
- High-precision, sub-pixel accuracy
- Multiple windows
- Multiple radars in a window
- Multiple colours
- Uses GPU processing capability
- Range and azimuth correlation
- Processing library
 - Dynamic Thresholding
 - Filtering
 - FTC, STC
 - Clutter suppression
 - Interference suppression
 - Scan to scan integration
- Test pattern generator
- Continuous zoom and centering
- Real-time updates
- Time-based or sweep-based fading
- C/C++ library
- Cost effective
- Easy integration into application
- Highly configurable
- Full API for presentation control
- Display resolutions up to 2k x 2k
- Part of an integrated product family
- Windows + X11 Windows support
- Optional radar recording

SPx-Scan, a component of Cambridge Pixel's SPx radar processing family, is a COTS software component providing a high-performance, cost-effective radar scan-conversion capability.

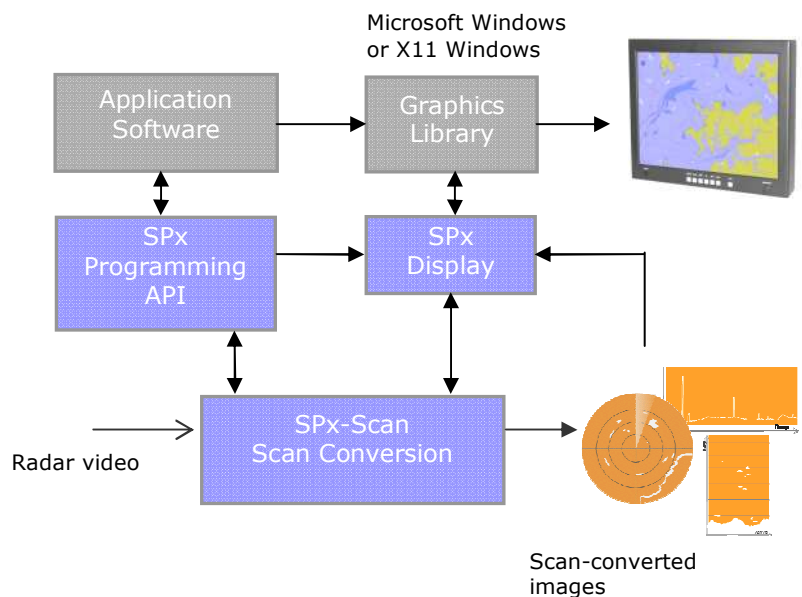
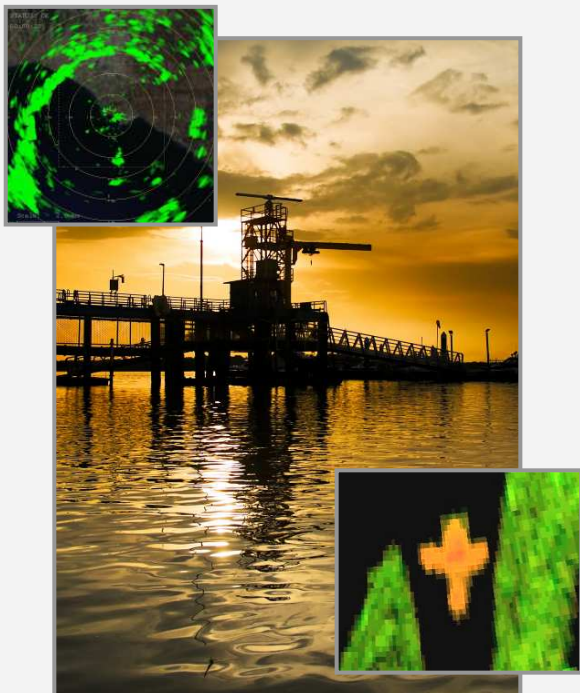
Interfacing to hardware or network streams, SPx-Scan accepts polar format radar video and converts into a number of possible display formats including PPI (Plan Position Indicator) and A-Scan. SPx-Scan is a self-contained software module that can be targeted for a range of processing and display platforms, allowing radar imagery to be cost-effectively incorporated into a complex multi-layer graphics applications.

SPx-Scan operates on incoming radar video to create real-time updating images. These images are either available to application software to incorporate in displays as a bitmap layer, or else can be rendered directly onto the display with minimal cooperation from, and impact on, the application software. This ease of integration is a key feature of SPx-Scan.

Supporting either client-server based configurations, in which the scan-converter and the display are on different machines, or local applications where a single processor handles both, SPx-Scan is a highly flexible and configurable set of software components. From a Windows-based laptop through to a multi-computer Linux/X-Windows client-server configuration, SPx-Scan provides a single cross-platform solution for cost-effective radar video processing and display.

SPx-Scan provides an Application Programming Interface (API) to control the processing and presentation of the radar video. A small number of calls from the application software to the module are used to set-up and dynamically configure the operation. Changes to window size, scale or display presentation are effected in real-time, to help ensure that the radar component of the display stays synchronised to changes in the remaining graphics layers. Updates to the contents of the scan-converted bitmaps can be reported to the application software at a programmable rate and through one of a number of software event mechanisms, or else SPx-Scan can directly update the screen itself to semi-transparently blend the radar video with the graphics. Either way, SPx-Scan supports real-time sector-based updates of the radar display or else lower frequency (quadrant or scans) as needed.

Optional recording capabilities are available in the compatible SPx-Record module that records the polar radar video to support, for example, incident recording or training applications.



SPx-Scan Summary Specification

Architecture

Architecture:	Client-server or integrated
Programming:	C/C++ software library
Control:	Programming API
Platform:	Windows (XP/Vista), Linux/X11R6. For other OSs consult factory
Processor:	x86.

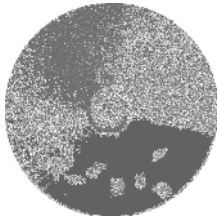
Functional

Inputs:	Network-based radar video (compressed or uncompressed video) Test pattern generator Scenario generator Radar interface card Radar replay from file.
Output:	Direct screen updates with automatic blending or bitmaps delivered to application software Sector-based, real-time updates
Performance:	1k x 1k PPI, 30 rpm, 8% processor load (3 GHz, P4 processor) 1k x 256 A-Scan, 30 Hz update, 8% processor load (3 GHz, P4 processor)
Compression:	Optional record/replay modules in SPx product family
Processing:	Peak-picking, smoothing, sub-sampling, thresholding, gain control. Optional scan-to-scan integration, FTC, STC, offset adjustment. Dynamic Thresholding, clutter processing modules.

Display Presentation

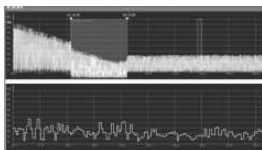
Display type:	PPI, B-Scan, A/R-Scan
Scan conversion rate:	Up to 120 rpm
Number of displays:	Up to 16 scan-conversion displays.
Window sizes:	Programmable from 32 x 32 to 2048 x 2048.
Persistence:	Programmable radar persistence with sweep, real-time or overwrite mode (new data replaces old).
Display format:	

PPI:



Programmable range and center (continuously variable)
Supports moving radar platform
Programmable radar colour and decay rate
Update in sectors (programmable size)
Real-time fading
Multiple radars in a window
256 levels of smooth fade
Programmable radar colour

A-Scan:



Amplitude versus range display
Programmable display format
Data reduction modes
High speed, continuous updates
Programmable zoom and view

SPx from Cambridge Pixel

SPx is a set of interoperable software components for radar processing, distribution and display. Other modules in the SPx family include radar compression, network distribution, radar processing and scan-conversion. Contact us for more information on the whole product family.

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