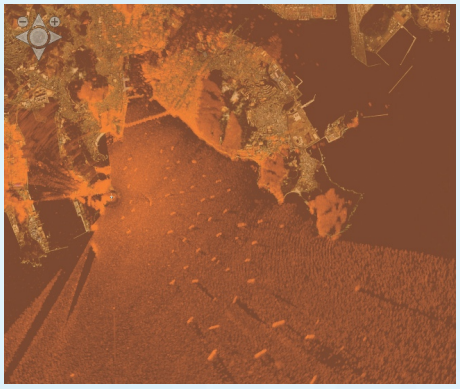
CAMBRIDGE PIXEL
SENSOR PROCESSING & DISPLAY SOLUTIONS

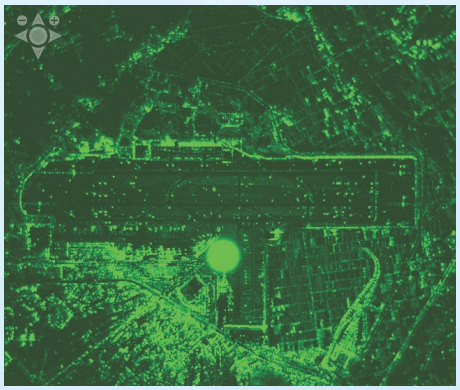
CP-16-120-03, V2.1

DATA SHEET

SPx-Scan

Radar Scan Conversion





Features:

- Software radar scan-conversion
- Flexible radar input options
- PPI or B-Scan
- Radars up to 240rpm
- High-precision, sub-pixel accuracy
- Multiple screen support
- Multiple windows on screen
- Multiple radars in a window
- Configurable radar colour and brightness
- Range and azimuth correlation
- Optional Processing library
  - Dynamic CFAR Thresholding
  - Filtering
  - Clutter suppression
  - Interference suppression
  - Scan to scan integration
- Test pattern generator
- Continuous zoom and centering
- Trail retention on zoom
- Real-time updates
- Time-based or sweep-based fading
- C/C++ library or .NET interface
- Highly configurable
- Full API for presentation control
- Windows + Linux X11 support

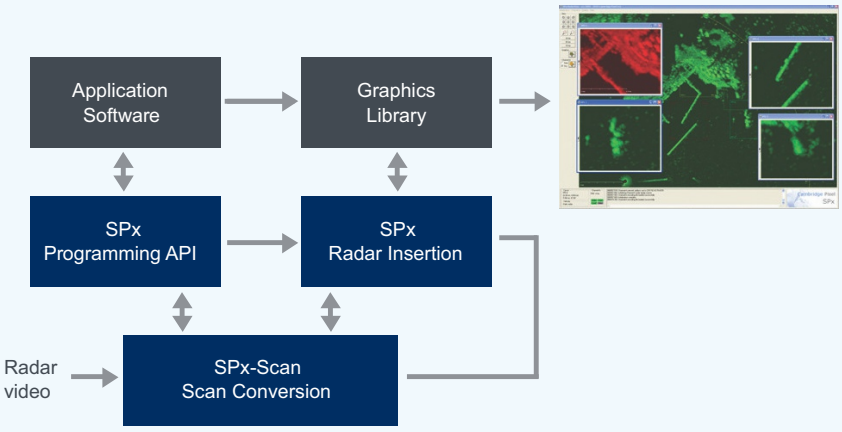
SPx-Scan, Cambridge Pixel's software-based radar scan converter, provides a field-proven, high quality radar display solution. Designed to work with Windows and Linux/X11, the scan converter simplifies the integration of radar into an existing graphics application, supporting full multi-layered display presentations.

Interfacing to hardware or network sources of radar video, SPx-Scan accepts polar format video and converts into PPI (Plan Position Indicator) and B-Scan. The scan converter 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 application under Windows or Linux.

SPx-Scan processes incoming radar video to create real-time images that update with the radar sweep. These images are either available to application software to incorporate in displays as a bitmap layer, or else the images can be rendered directly onto the display with minimal cooperation from, and impact on, the application software. SPx-Scan allows legacy applications to be very easily upgraded with a software rendered radar display, preserving the existing graphics architecture for maps and symbology. Cambridge Pixel's Radar Insertion technology allows the real-time radar image to be cleverly inserted into the output window of the client application. The ability to work with standard graphics from Windows or X11 is a key feature of SPx-Scan.

SPx-Scan is a highly flexible and configurable software component. From a Windows-based laptop through to a multi-computer Linux/X-Windows client-server configuration, the software provides a single cross-platform solution for cost-effective radar video processing and display for military and commercial radar applications.

To control the display processing an Application Programming Interface (API) is provided. A small number of calls from the application software to the module are used to set-up and dynamically configure the display processing. 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.



SPx-Scan Specifications

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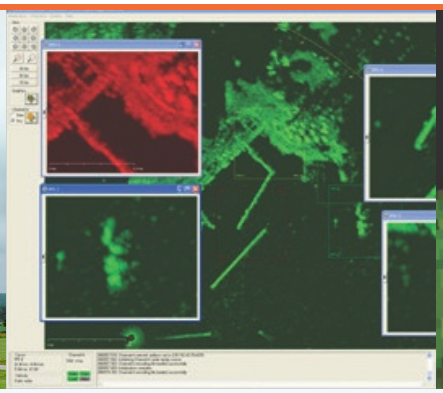
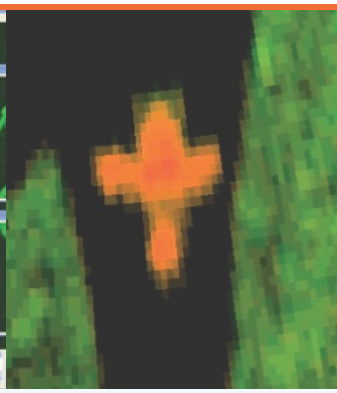

Architecture

Architecture	C++ class library for adding into application Radar Display Coprocess (RDC) for running scan conversion in separate process
Programming:	C/C++ software library. .NET option for Windows (through RDC)
Control:	Programming API
Platform:	Windows 10, Linux/X11R6. Processor: x86
Graphics:	Standard nVidia/ATI graphics card required. Uses standard Windows or X11 graphics libraries to handle display composition.

Functional

Inputs:	Network-based radar video (compressed or uncompressed) Radar interface card (HPx family) Test pattern generator Scenario generator Radar replay from file.
Radar Update:	Up to 50Hz
Trail History:	Retention of trail history on scale change
Performance:	Minimal CPU load on modern CPU/GPU units
Output:	Direct screen updates with automatic blending (underlays/overlays) with application graphics or bitmaps delivered to application software. Sector-based, real-time updates
Graphics:	Input graphical layers can be provided by graphics libraries (Win32, GDI, GDI+, Xlib Java) or by third party application toolkits (Intermaphics, ILOG etc)
Sweep line:	Optional sweep line display

Display Presentation

Display type:	PPI, B-Scan including parallax compensation
Scan conversion rate:	Up to 240 rpm
Screens:	Multiple screens using standard Windows/Linux graphics cards
Number of displays:	Up to 16 scan-conversion displays in one or separate windows.
Colour:	Full RGB colour and brightness control of each radar layer
Window sizes:	Programmable up to full screen
Persistence:	Programmable radar persistence with sweep, real-time or overwrite mode (new data replaces old).

Ordering Information

Description	Part Number
SPx Client Scan Conversion (HPx family Input) runtime license (PPI or B-Scan view)	110-550
SPx Client Scan Conversion (Network Input) runtime license (PPI or B-Scan View)	110-540

Note that an SPx Development license is needed to build applications using the SPx library or RDC. The above items relate to runtime licenses that are required for deployed systems.

For more information, please contact:

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