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.

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.

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 scan
- 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 Specifications

#### 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 (XP/Vista/7), 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 un compressed). Radar interface card (HPx family). Test pattern 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 (underlay/overlay) 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, Q3D, G3D+, Java-Java) or by third party application toolkits (Intermap, 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
<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPx Client Scan Conversion (HPx family Input)</td>
<td>110-550</td>
</tr>
<tr>
<td>runtime license (PPI or B-Scan View)</td>
<td></td>
</tr>
<tr>
<td>SPx Client Scan Conversion (Network Input)</td>
<td>110-540</td>
</tr>
<tr>
<td>runtime license (PPI or B-Scan View)</td>
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</tbody>
</table>

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.