



**RUSSELL
TECHNOLOGIES INC.**

Integrated PC-based Radar for Military Security and Surveillance Applications, Commercial Vessels and Leisure Yachts



RTI INTEG RADAR XIR3000

RUNTIME-RECONFIGURABLE DIGITAL RADAR SIGNAL PROCESSING SYSTEM
HI-SPEED USB RADAR INTEGRATION TECHNOLOGY FOR ELECTRONIC CHART SYSTEMS/
REMOTE CONTROL RADAR APPLICATIONS AT LOW COST - HIGH PERFORMANCE

NAVIGATION ✕ SURVEILLANCE ✕ REMOTE CONTROL RADAR

- Backward compatible with previous technology
- Leading new video processor
- HI-SPEED USB bus
- 100mhz sample rate
- Connect to any PC
- High configuration flexibility
- Compatible with most transceivers
- SDK for rapid custom development
- Total radar image control
- ARPA tracking optional

The revolutionary new design of the IntegRadar XIR3000 represents a powerful development resource for radar integration with electronic chart systems, remote control radar applications and many other applications.

Compatible with most transceivers, it offers rapid custom development of radar image overlay functionality to ECS and ECDIS providers for navigation, surveillance and remote control radar applications.

Capable of receiving any combination of input signals, the open connectivity of the XIR3000 permits a high degree of configuration flexibility required for transceiver connections where more than one signal is combined on a single conductor.

As a slave, the XIR3000 requires only azimuth information, heading marker, trigger and video signals from the transceiver.

IntegRadar Configuration Options:

- Radar Processor Board (RPB) only without enclosure (XIR3000A).
- To avoid distance limitation, RTI offers Ethernet-TCP/IP in addition to standard HI-SPEED USB with the server version of the XIR3000 by adding a single board computer within the enclosure (XIR3000C).
- The ability to use the XIR3000C as a radar master with the RTI Antenna Control Module makes this an extremely powerful system.

The Economic Advantage

Adding radar functionality to an electronic chart system improves the competitive position, sales, and profitability. The RTI IntegRadar reduces time, cost, and risk of

delivering radar functionality to the market. It improves product value proposition, making electronic chart systems more attractive to the customer base. It aids in realizing incremental profits from system upgrade sales, enlarging market segment, and increased new customer sales while avoiding the loss of existing customers to faster moving competitors.

The IntegRadar XIR3000 is a production tool that empowers ECS, ECDIS and Remote Radar Providers to stay ahead of industry advancements by developing new features and functionality quickly and easily.

The OEM Advantage

Displaying a vessel's real time movement on an electronic chart, in combination with matching radar imagery, makes navigation safer and easier. The result, displayed on a single display, is an at-a-glance understanding of current navigational safety aspects and the surface traffic situation.

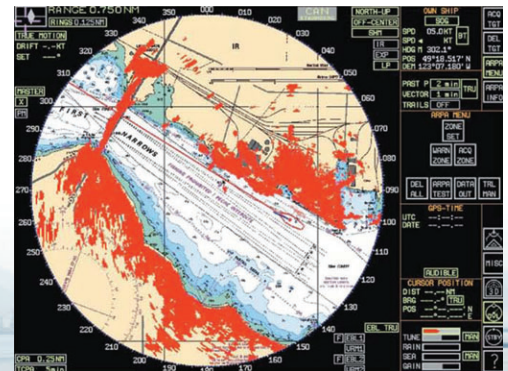
Radar image overlay greatly improves interpretation of radar information in unknown harbor approaches.

Using these radar integration tools leads to clear, easy-to-read presentations resulting in reduced stress for navigation officers and better navigation decisions.

The IntegRadar SDK Advantage

The RTI IntegRadar Software Developers Kit (SDK) provides flexible radar image generation, offering control of scale, heading and centering display parameters. The IntegRadar software routines also achieve superior clutter suppression, allowing weak but real targets to be bloomed on the electronic chart display or for remote control radar applications.

One of many OEM implementations of radar image overlay using IntegRadar technology





IntegRadar XIR3000B for Slave Operations

The RTI SDK is an innovative programmers' productivity tool. It is compatible with Microsoft Windows 2000, NT, XP and XP embedded and meets industry standards for software technology including TCP/IP and HI-SPEED USB communications.

The SDK Includes:

- 1) Header (include) files
2) RTI DLL and LIB files
3) Sample radar viewer (RadarSample)
4) MS VC++ sample source and workspace files
5) RTI sample radar data playback files
6) A programmer's manual explaining how to use the available features that include:
- Radar initialization and current antenna orientation
- Radar control:
- Range control by sample rate
- Gain control
- Rain and sea clutter suppression
- Tuning adjustment (master mode only)
- Echo expansion
- Pulse length control (master mode only)
- Interference rejection
- Display customizing functions:
- North-up, Ship's head-up
- Choice of 1, 2, 3, 4, or 8 bit display
- Size control
- User defined plot
- Center/off-center modes
- Radar image shape control
- Record/playback of all radar related data
- Sector blanking
7) Provides master radar control when used in conjunction with the RTI Antenna Control Module (ACM)
8) ARPA functionality optional

The RTI Radar Processor Advantage

The RTI radar interface unit conditions and digitizes radar video signals and converts the radar echo data into digital radials, also compressing the image for TCP/IP transmission over an Ethernet connection via the XIR3000C system.

The RTI radar interfaces to existing X, S, or C-band radar system, matching connection specifications for all popular radars and many less common makes.

The RTI XIR3000 radar interface technology is:

- Proven in over 1000 similar installations
- Compatible with most radar specifications
- Able to connect to desktop or laptop computers
- Ethernet (XIR3000C) and HI-SPEED USB compatible
- Able to offer trigger offset
- Provide sector blanking for up to 180 sectors

Three configurations offered:

- Stand-alone digital radar processor board (XIR3000A) for slave radar operations
- Stand-alone black box (XIR3000B) for slave radar operations
- Digital radar processor board in enclosure with CPU for both slave and master operation (XIR3000C)

Together

The RTI radar electronic interface and SDK combination provides RTI Radar technology the industry's easiest-to-use radar integration development tool including:

- Full radar source data digitization and processing
- Up to 8192 samples/radial for special applications
- Up to 8192 radials/image (360 degrees) for special applications
- 100 MHz sample rate standard; higher sample rates are optional
- XIR3000 normal dynamic range is 90 dB with an additional 70 dB in master mode with ACM
- Real-time radar data display
- Ethernet networking with TCP/IP (XIR3000C)
- Multi-client support with TCP/IP
- HI-SPEED USB
- Full radar control at remote sites
- No slot requirement on host PC
- Desktop or Laptop full master control capability

Physical Characteristics - RTI Electronics

Weight: 405g (14.3 oz) - XIR3000B
1200g (38.4 oz) - XIR3000C
Input: 9 - 36V DC (115/220V w/ adapter) - XIR3000B
12V DC (115/220V w/ adapter) - XIR3000C
Power: < 5.5W (XIR3000B)
< 50W (XIR3000C)
Rugged Construction - Small

If your product would benefit from the addition of industry-leading radar/chart/master control integration, call or write for more information about the IntegRadar XIR3000 product line and other quality RTI products.

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