



**RUSSELL
TECHNOLOGIES INC.**

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



RTI INTEG RADAR XIR3000C MASTER RADAR SYSTEM

PC-BASED DIGITAL RADAR SIGNAL PROCESSING TECHNOLOGY

LOCAL AND REMOTE CONTROL RADAR APPLICATIONS α LOW COST - HIGH PERFORMANCE

NAVIGATION α SURVEILLANCE α REMOTE CONTROL RADAR

- Leading edge technology
- New video processor
- HI-SPEED USB bus and TCP/IP
- 100 mhz sample rate
- High configuration flexibility
- Compatible with most transceivers
- SDK for integration into oem operational software
- Total radar image control
- Total radar image recording and playback capabilities

The revolutionary new design of the PC-based XIR3000C and Antenna Control Module (ACM) represents a powerful development resource for radar integration for surveillance, local and remote radar control and many other applications.

Compatible with most radar transceivers on the market from 2 to 60 kW, it offers rapid custom development of radar functionality for standalone master radar control or custom operation with OEM ECS and ECDIS for navigation, surveillance and remote control radar applications.

Capable of receiving any combination of input signals, the open connectivity of the XIR3000C permits a high degree of configuration flexibility required for transceiver connections where more than one signal is combined on a single conductor.

The Antenna Control Module mounts internally within the radar transceiver to provide for improved processing capability.

The interface to the transceiver is via two CAT5 cables plus ship or ground power input.

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 XIR3000C enclosure.

The implementation architecture is a client/server implementation with active/passive clients. The active client has full radar control while the passive client has full access to all radar information and data via the network.

The ability to use the XIR3000C as a radar master with the RTI Antenna Control Module makes this an extremely powerful system for a multitude of applications including unmanned marine surface vessels.

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.



XIR3000C System with 4KW 24" Radome Transceiver



IntegRadar XIR3000C with built-in ACM

The Master 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.

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 IntegRadar Radar Processor Advantage

The system 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.

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 technology is:

- Proven in over 1000 similar installations
- Compatible with most radar specifications
- Able to connect to desktop or laptop computers
- Ethernet and HI-SPEED USB compatible
- Able to offer trigger offset
- Provide sector blanking for up to 180 sectors
- Able to provide Master radar control with RTI Antenna Control Module (ACM)
- Able to provides PC-based master radar solution for 2 to 25 kw Radar Transceivers
- Able to provide ARPA functionality (optional)
- Able to provide AIS functionality (optional)

Together

The master radar electronic interfaces and SDK combination provides RTI IntegRadar 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
- Real-time radar data display
- Ethernet network implementation with TCP/IP Multi-client support
- 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: 1600g (56.0 oz) - XIR3000C
Input: 12V or 24V DC (115/220V w/ adapter)
Power: < 25W (XIR3000C)
Rugged Construction
Power Consumption (System) : 4kW - 60W
25kW - 150W

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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