



**RUSSELL  
TECHNOLOGIES INC.**

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



## REMOTE CONTROL SURVEILLANCE RADAR SYSTEMS

**Russell Technologies Inc.** (RTI) is pleased to provide a PC-based low cost, high performance, locally controlled or remotely controlled radar system for tracking and monitoring of wide marine areas or local confined critical marine infrastructures or areas. This radar system has evolved over many years of development for use in commercial & military applications. It has now been refined in collaboration with a number of organizations to provide a **highly capable remote control surveillance radar system**.

These refinements include:

- Radar underlay of geo-referenced TIFF maps, if required.
- Inclusion of specific boundaries for automatic bird detection & tracking at geo-referenced location
- 4096 scan lines per rotation
- Higher resolution imagery
- Remote control of radar up to 20km
- Sector blanking of up to 180 sectors
- Removal of non-moving radar imagery
- Saving of track targets to file for post processing purposes

This PC based radar system **can be used with many different radar manufacturers'** transceivers from 2 to 60kw S-band & X-band radar transceiver systems.



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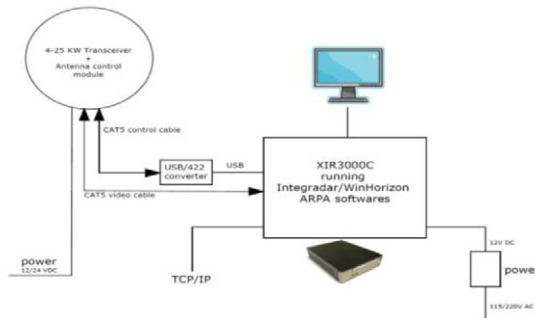


The radar system has:

- Leading new video processor
- HI-SPEED USB bus
- 100 Mhz sample rate
- Connect to any PC
- High configuration flexibility
- Compatible with most transceivers
- SDK for rapid custom development and turn-key solution into existing operational software
- Total radar image control
- ARPA tracking and recording
- Radar imagery recording & playback
- Full radar control & software

The radar interface technology can be interfaced to existing radar as a slave and only requires azimuth information, heading marker, trigger and video signals from the transceiver. This provides for the same overall radar capability with the exception of full radar control.

A typical RTI PC-based radar solution is shown in the diagram on the next page. This configuration can use a radar transceiver from most leading radar manufacturers and be integrated with RTI radar technology.



**RTI PC-BASED RADAR SOLUTION**

The RTI radar technology can be packaged and easily flown to remote locations as the small size & weight of the system makes it extremely portable & robust for all your remote site needs. It can also be mounted, powered and operational on 24/7 basis with the use of backup batteries and turbine for trickle charging of the batteries for continual operations. Shown on the previous page is a typical radar installation with a small lightweight radar mounting tower, a small portable wind turbine & tower, water tight battery/computer enclosure & wireless radio link for remote control and operation of your site from the comfort of a warm & dry control area.

**Self-Contained Remote Controllable Radar Site  
Additional Capability - The RTI Radar SDK Advantage**

RTI's Radar Software Developers Kit (SDK) provides for flexible radar image generation, offering control of scale, heading & centering display parameters. The RTI Radar software routines also achieve superior clutter suppression, allowing weak but real targets to be bloomed on the 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. A programmer's manual is provided that explains, in detail, how to use the available features that include all capabilities that are provided on a normal master radar system plus other RTI specialized capabilities such as sector blanking, removal of non-moving radar imagery, etc.

**The RTI Radar Processor Advantage**

The RTI radar interface unit conditions and digitizes radar video signals and converts the radar echo 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°) for special applications
- 100 MHz sample rate standard; higher sample rates are optional
- 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

**Radar Transceiver Specification**

The radar specifications are dependent on radar transceiver power selected by the customer and length of open array radar antenna.