



The xir3000arch plugin for RTI .REC files

If you have data recorded as folders of ".REC" files by [Russell Technologies Inc.](#) software (e.g. WinHorizon, IntegRadar, RadarSample) you can read them into radR using the xir3000arch plugin (formerly called *xenexarch*). You do not need any RTI hardware or software to use this plugin, which is available in both the linux and Windows versions of radR.

New: as of 13 June 2012:

- a script for batch conversion of .REC file folders into blipmovies is [here](#)

New: as of 24 Oct. 2011:

- there appears to be a bug in how sample ranges are stored by RTI software in the most recent version (RLC_4) of .REC files; details and a temporary workaround are [here](#).

New: as of 4 Nov. 2010:

- a bug in support for .REC file type RLC_3 is fixed.
- default archive start date/time and antenna rotation speed can be set by GUI and saved for each archive.

Overview

This plugin treats a folder of .REC files as an archive with a single run of scans. Using the "From: | xir300arch | Choose file..." menu button in the player window, you can select a .REC file which will be taken as the first file in the run; remaining files with larger sequence numbers (**assumed to be 8 digits**, for now) form the rest of the run.

Data are assumed to be 8 bits, and must be in the RT_RLC_2, RT_RLC_3, or RT_RLC_4 formats. Scans consist of 1024 pulses of 506 samples each in RT_RLC_2 format, but can contain up to 4096 pulses in the other formats. If a scan contains pulses with different maximum ranges, the data from pulses with the finer resolution are coarsened (by averaging) appropriately, and filled with zero out to the maximum range for the scan. (I don't know whether that ever happens, but the file format doesn't rule it out). radR's scan

conversion understands data size, and so the 8-bit data values will span the full range of colour palettes.

Providing timestamps and sweep duration for pre-RT_RLC_4 archives

If scan timestamps (e.g. from the UTC sensor field) are not available in the .REC files, they will be guessed from the filename if possible, or a fixed starting time will be chosen, and scans will be assumed to follow at regular intervals determined by the radar's rotation speed. The plugin menu provides controls for choosing starting timestamp and antenna rotation speed:

xir3000arch_controls_menu.png

The date can be typed in directly in the DD-MMM-YYYY HH:MM:SS format.

*An unregistered change will turn the box yellow. **Enter** registers the change. An error will turn the box red. **Esc** reverts to the last value. Instead, you can "dial" forward or backward in time using keyboard up/down arrows or the mousewheel while the text cursor or mouse is positioned over any portion of the date or time. Dialing affects the component under the mouse and those of larger size. e.g. dialing the hour field will not change minutes or seconds, but can change day, month, and so on.*

These controls do not affect the currently open archive; close (choose "None" from the *Player | From:* menu) and re-open the archive if you want to apply the current control values to it. If you wish to permanently save the timestamp and antenna rotation information for an archive, choose the *Save start time and sweep duration...* entry from the plugin menu:

xir3000arch_plugin_menu (1).png

This will save the settings in a file called `_metadata.R` in the same folder as your `.REC` files

Underlays for SDK sample data

Underlay files for the three sample datasets provided in the RTI Software Development Kit are provided below (they are screenshots from maps.google.com) The corresponding `.geom.R` files describe the geometry of these files relative to the data archives, and should be downloaded with them and stored in the same folder. The underlay plugin can be used to load these files into the plot window. You will need to both load the underlay image and enable the underlay plugin. To actually see the underlay under the radar data, you will need to use one of the "semitrans" palettes for cold samples. All palettes are interpolated gradients in red, green, blue, and alpha. Also, the sample data are assumed to come from a t-bar (open array) antenna mounted in standard (horizontal) position.

Note: the DEMO `.REC` archive was recorded on a moving vessel, and the underlay plugin is not currently capable of tracking motion of the radar, so the data will shift across the map as you scan through it. The other two `.REC` archives are from fixed locations.

Data recorded with older RIB hardware

For files recorded using the older RTI RIB hardware, you can manually change which DSP program the current archive is treated as coming from using the entries on the `xir300arch` plugin menu. This simply changes the meaning of the `.REC` file's range indexes, and will cause a screen update to show the data at the new scale.

TODO:

- ~~DONE: GUI support for setting antenna RPM and start date/time for non-timestamped archives~~
- GUI support for selecting what NMEA data items to carry over from the `.REC` archive into a blipmovie
- you tell me...