

R²S²

(Radio Reconnaissance SIGINT Suite) With SignalTrap Professional Software



System Configuration

Basic R²S² configuration::

- Laptop with SignalTrap software and license*
- HIDRAH[®] V3 with data cable and accessories
- Rohde & Schwarz Spectrum Analyzer with data cable
- Four AOR AR8200s **
- No loss one to four BNC port RF splitter
- Flexmaster[®] Antenna
- Associated power and data cables

*RRT's SignalTrap software fully integrates with Falcon View mapping software (government provided)

** One AOR AR8600 can be substituted for two AOR AR8200s, as pictured.

Overview

The R²S² is a fully integrated system consistent with contemporary standards of Signals Intelligence equipment. The pictured configuration is of a laptop running RRT Inc's receiver and system control software, SignalTrap, as well as Falcon View mapping software, as the main operator interface, managing all peripheral system equipment. Further, the R²S² configuration shown includes an AOR AR8600, two AOR AR8200s, a Rohde & Schwarz spectrum analyzer, and a HIDRAH[®] V3. All the necessary power and computer interface cabling is also provided with the system, allowing the user to set up out of the box and begin operations.

The Radio Reconnaissance SIGINT Suite is a turn-key solution for low level RF signals collection originated by single channel push to talk systems. The design of the R²S² system is such that all the storage capabilities of the receivers can be accessed and manipulated through the laptop interface allowing for smooth RF signals collection and data catalog development and management than in the past..

SignalTrap Software

Overview

The SignalTrap Software allows for user interface and combination of the capabilities of the spectrum analyzer, HIDRAH, and an additional three (3) AOR receivers, to function as one SIGINT collection and analysis platform. The software displays and replicates the storage and search capabilities of the AOR devices in a user friendly spreadsheet format. All collected Signal Related Information (SRI) including audio is saved and can be easily sorted through using standard SQL queries.

The screenshot displays the SignalTrap Professional Edition interface. It features a top menu bar (File, Edit, View, Map, Overlay, Tools, Options, Favorites, Help) and a toolbar with various icons. The main window is divided into several panes:

- Map:** A topographic map showing terrain, roads, and various landmarks like 'Dunavant', 'Hemp', and 'Palmyre Corner'. A yellow dot on the map indicates the current location, with a 'SignalPod' icon nearby.
- Search Pod Controls:** A central window titled 'SignalTrap Search Pod' containing settings for 'Analyzer', 'Scan Banks', 'Search Banks', and 'Mission'. It includes fields for 'Start', 'Center', 'Step', 'Ref Level', 'Threshold', and 'Abbr'. There are also buttons for 'Scan', 'Srch', 'Vfo', 'Up', 'Down', and 'Pass'.
- Receiver Log:** A table titled 'Handoff Receiver Log' showing a list of received signals. The table has columns for 'Audio', 'Src', 'Frequency', 'Step', 'Mode', 'Level', 'Acquired', 'Dropped', 'GPS', 'MORS', 'Heading', 'RDF LOB', 'Mag LOB', 'Tag', 'Comment', and 'Mission ID'.
- Handoff Receiver Log Table:**

Audio	Src	Frequency	Step	Mode	Level	Acquired	Dropped	GPS	MORS	Heading	RDF LOB	Mag LOB	Tag	Comment	Mission ID
BIOSSEARCH	145.02500	12.50	NFM	100.0	79.0	10/20/2009 18:06:23	10/20/2009 18:06:34	✓	180TH424251456	10	-1	-1	✓		090910_screenshots
BIOSSEARCH	144.86250	12.50	NFM	100.0	100.0	10/20/2009 18:06:23	10/20/2009 18:06:34	✓	180TH424251456	10	-1	-1	✓		090910_screenshots
BIOSSEARCH	144.80000	12.50	NFM	100.0	81.0	10/20/2009 18:06:23	10/20/2009 18:06:34	✓	180TH424251456	10	-1	-1	✓		090910_screenshots
BIOSSEARCH	144.47500	12.50	NFM	100.0	72.0	10/20/2009 18:06:23	10/20/2009 18:06:34	✓	180TH424251456	10	-1	-1	✓		090910_screenshots
BIOSSEARCH	153.48500	100.00	NFM	125.0	81.0	10/20/2009 18:06:23	10/20/2009 18:06:34	✓	180TH424251456	10	-1	-1	✓		090910_screenshots
BIOSSEARCH	162.25000	5.00	NFM	116.0	73.0	10/20/2009 18:06:23	10/20/2009 18:06:34	✓	180TH424251456	10	-1	-1	✓		090910_screenshots
BIOSSEARCH	162.25000	12.50	NFM	102.0	66.0	10/20/2009 18:05:33	10/20/2009 18:05:44	✓	180TH424251456	10	-1	-1	✓		090910_screenshots
BIOSSEARCH	162.25000	12.50	NFM	102.0	77.0	10/20/2009 18:05:33	10/20/2009 18:05:44	✓	180TH424251456	10	-1	-1	✓		090910_screenshots
BIOSSEARCH	162.25000	12.50	NFM	106.0	72.0	10/20/2009 18:05:33	10/20/2009 18:05:44	✓	180TH424251456	10	-1	-1	✓		090910_screenshots
MASTER-R2	145.48500	25.00	NFM	97.0	73.0	10/20/2009 18:05:33	10/20/2009 18:05:43	✓	180TH424251420	0	156	156	✓		090910_screenshots
MASTER-R3	145.48500	25.00	NFM	91.0	81.0	10/20/2009 18:05:33	10/20/2009 18:05:43	✓	180TH424251443	4	150	150	✓		090910_screenshots
MASTER-R2	145.48500	25.00	NFM	101.0	85.0	10/20/2009 18:04:40	10/20/2009 18:04:51	✓	180TH424251420	0	178	178	✓		090910_screenshots

This window displays detailed information for a specific signal entry:

- Source: MASTER01
- Freq: 162.55
- Acquired: 09/10/2009 14:55:12
- Dropped: 09/10/2009 14:56:53
- Zone: 18 Hemi: N
- 4251421 North 274248 East
- Sig Level: 39
- LOB: 43

Navigation buttons (Next, Prev, Cntr, Play) are visible at the bottom of the window.

SignalTrap Professional Edition

File View Power Control Audio Control Themes Help

Receiver Scan Banks Search Banks Mission ZEROIZE Config System Properties

Handoff Receiver Log

Audio	Src	Frequency	Step	Mode	Level	Acquired	Dropped	GPS	Latitude	Longitude	Heading	RDF LOB	Mag LOB	Tag	Comment	Mission ID
✓	MASTER-R2	145.75000	100.00	NFM	79.0	10/20/2009 18:06:23	10/20/2009 18:06:34	✓	38.12515	-077.83949	359	189	188	✓		
✓	MASTER-R3	145.75000	100.00	WFM	100.0	10/20/2009 18:06:23	10/20/2009 18:06:34	✓	38.12515	-077.83949	357	-1	-1	✓		
✓	CALI-R1	145.75000	5.00	NFM	81.0	10/20/2009 18:06:23	10/20/2009 18:06:34	✓	38.12721	-077.83963	149	-1	-1	✓		
✓	KENTUCKY-R1	145.75000	25.00	NFM	72.0	10/20/2009 18:06:23	10/20/2009 18:06:34	✓	38.12173	-077.84026	1	304	305	✓		
✓	NEWJERSEY-R1	145.75000	0.05	NFM	73.0	10/20/2009 18:06:23	10/20/2009 18:06:34	✓	38.12318	-077.84390	359	111	110	✓		
✓	CALI-R1	145.75000	5.00	NFM	66.0	10/20/2009 18:05:33	10/20/2009 18:05:44	✓	38.12721	-077.83963	149	-1	-1	✓		
✓	KENTUCKY-R1	145.75000	25.00	NFM	77.0	10/20/2009 18:05:33	10/20/2009 18:05:44	✓	38.12172	-077.84028	1	339	340	✓		
✓	NEWJERSEY-R1	145.75000	0.05	NFM	72.0	10/20/2009 18:05:33	10/20/2009 18:05:44	✓	38.12318	-077.84390	359	92	91	✓		
✓	MASTER-R2	145.75000	100.00	NFM	73.0	10/20/2009 18:05:33	10/20/2009 18:05:43	✓	38.12516	-077.83949	359	212	211	✓		
✓	MASTER-R3	145.75000	100.00	WFM	97.0	10/20/2009 18:05:33	10/20/2009 18:05:43	✓	38.12516	-077.83949	359	-1	-1	✓		
✓	MASTER-R3	145.75000	100.00	WFM	96.0	10/20/2009 18:04:40	10/20/2009 18:04:51	✓	38.12516	-077.83948	359	-1	-1	✓		
✓	MASTER-R2	145.75000	100.00	NFM	85.0	10/20/2009 18:04:40	10/20/2009 18:04:51	✓	38.12516	-077.83948	359	217	216	✓		
✓	CALI-R1	145.75000	5.00	NFM	84.0	10/20/2009 18:04:40	10/20/2009 18:04:51	✓	38.12721	-077.83963	149	-1	-1	✓		
✓	KENTUCKY-R1	145.75000	25.00	NFM	89.0	10/20/2009 18:04:40	10/20/2009 18:04:51	✓	38.12172	-077.84028	1	10	11	✓		
✓	NEWJERSEY-R1	145.75000	0.05	NFM	81.0	10/20/2009 18:04:40	10/20/2009 18:04:51	✓	38.12317	-077.84391	359	90	89	✓		

Date: 10/20/2009 18:07:11 Lat: 38° 7.507' Lon: -078° 50.368'