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Make ideas real

R&S PR200 and CEPTOR
The Newest Tool for Spectrum Managers

History

Rohde & Schwarz has been a staple in the handheld community for greater than 10-years and has a robust installed base of PR100 Portable Monitoring Receivers being used by Department of Defense (DoD) Spectrum Managers. Even with the success of the PR100, Rohde & Schwarz understands the need for a more streamlined workflow and intuitive user interface (UI) for Spectrum Monitoring and Management. A Spectrum Manager needs to have one tool that is able to monitor, detect, and deconflict the real-time electromagnetic spectrum including direction finding on signals of interest. The system must import frequency lists from defined databases, record segmented measurements, and analyze measurements to present post processing results. For this reason, Rohde & Schwarz embarked on a significant development effort to bring all of the capabilities under one cohesive interface. The result is an optimized software suite called "CEPTOR."

PR200 Overview

A high-performance portable monitoring receiver such as the PR200 can effectively help identify undesired sources of signals in the shortest possible time and greatly reduce the effort required to locate it.

PR200 with HE400 Directional Antenna and remote control app

The PR200 is a perfect balance of RF performance, speed, SWaP and usability that addresses the challenges in spectrum monitoring and interference hunting. The PR200 includes a broad range of tools and functions to handle tasks such as interference hunting, geolocation of transmitters of interest, resolving frequency conflicts on-site and more.

For investigating an undesired source of emission, signal searching over wide frequency ranges, signals analysis, direction finding and more, the PR200 is one of the most sophisticated portable tools to have on-site.

PR200 Key Facts

- Detect, analyze and locate RF signals from 8 kHz to 8 GHz (extendable up to 18 GHz)
- Frequency and time domain analysis up to 40 MHz
- 40 GHz/s scan speed
- High RF performance optimized for use in dense spectrum environments thanks to sub-octave preselection and automatic overload protection
- Intuitive operation with application-oriented user interface
- Built in GNSS
- Quick disconnect cables for both data and RF connectors
- Low SWaP and extended battery life

CEPTOR Overview

Rohde & Schwarz developed a user centric software tool to give a spectrum manager both online and offline operational understanding of the electromagnetic spectrum. This tool allows the Spectrum Manager to import frequency database information directly into the software and compare realtime results and database information to present any discrepancies to the operator.

CEPTOR GUI displaying realtime EME results

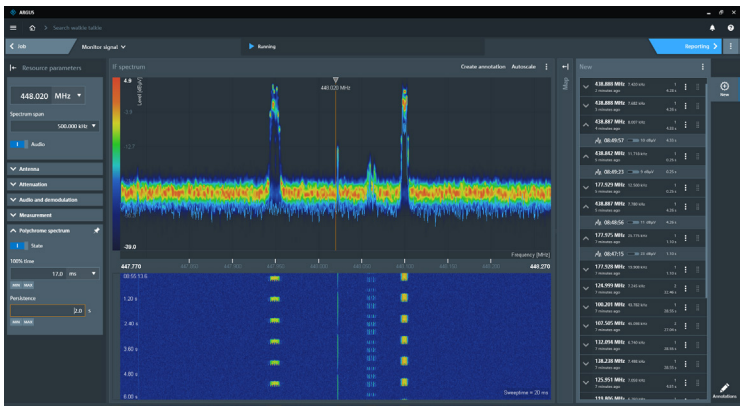
For offline analysis, the operator can setup segmented scan ranges rather than scanning the entire range of the receiver, which significantly improves the information recorded and increases probability of intercept within desired scan ranges. This information, once analyzed, can show the operator the spectrum occupancy of all scanned frequency ranges over time. Along with spectral information, geolocation of received signal for coverage measurements of any frequency in the defined scan ranges is recorded.

While many of these functions exists in both GOTS and COTS software, the real power of CEPTOR is that all of these capabilities are under “one roof” that significantly cuts down on the number of resources required for a Spectrum Managers job, and more importantly, time for a user to become effective with the software. Due to the ease of use, a Spectrum Manager could become proficient in less than a day of training.

CEPTOR Key Facts

The CEPTOR software is broken down into three main applications:

- **Search and Observe**
  - automatic signals detection (frequency and bandwidth) with a software defined dynamic threshold
  - fast spectrum search
  - creating of new frequency lists for “greenfielding” type applications among others
  - analog audio demodulation and polychrome display
  - direction finding
- **Collect Data**
  - creation of segmented scan with defined start/stop frequency and resolution
  - individual scan range files
  - results can be viewed in realtime while measurements are being taken
- **Calculate Spectrum Usage**
  - spectrum occupancy/density display
  - replaying of spectral data
  - time and geo-stamped data for coverage calculations



Search and Observe GUI displaying realtime EME, detection and polychrome results

For more information, please contact your local R&S representative.