Agilent E3238S Wideband Direction Finding and Mapping Software - Option WDF

Product Overview

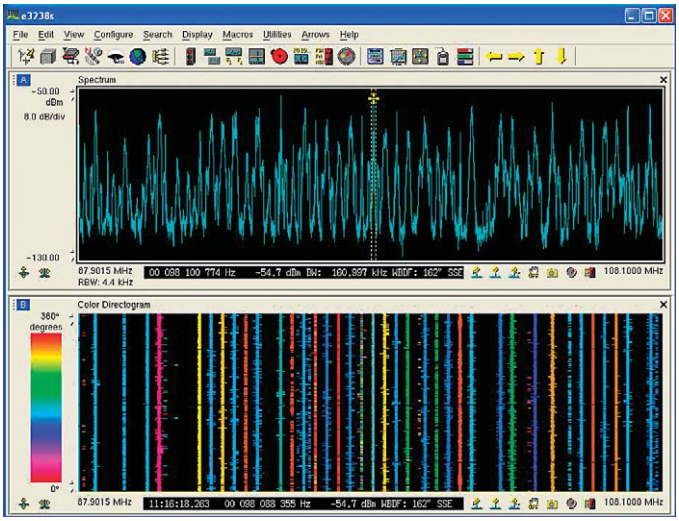
Integrated Wideband Search, Collection, Direction Finding, and Mapping

Key Features

- High speed integrated wideband search, collection and wideband direction finding from 20 - 3000 MHz
- * Equivalent to thousands of simultaneous parallel narrowband direction finding systems
- Allows search and collection processes to be qualified by direction-of-interest
- * DF caching allows E3238S collection system to go back in time and precisely re-compute direction on short-duration signals of interest
- Intuitive new displays show signal directions by azimuth, color, or tactical polar display
- Integrated mapping facility plots emitter lines-of-bearing on GeoTIFF maps
- Industry standard KML output provides tactical DF overlays for popular GIS systems such as Google Earth
- Variety of wideband DF subsystems from **TCI International, Inc.** provide solutions for mobile, fixed-site and temporary site applications

Product Summary

The E3238S Wideband Direction Finding software (Option WDF) extends the capability of the E3238S Signal Search and Collection System with **integrated real-time wideband direction finding and mapping.**



Spectrogram display with color-coded direction

Agilent Technologies

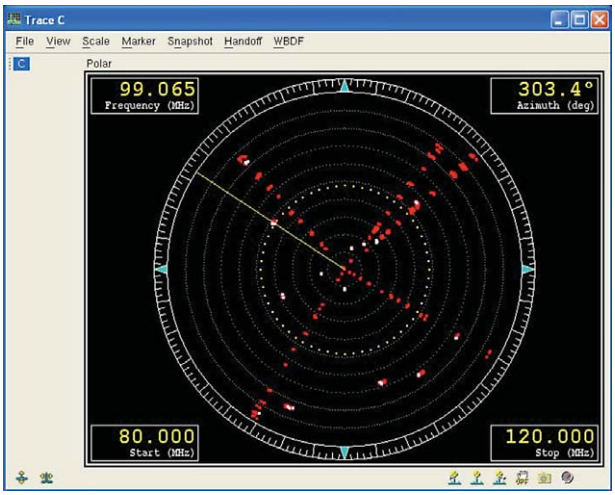
Unlike traditional narrowband direction finding (DF) systems, the E3238S ***wideband*** DF capability provides simultaneous realtime direction information for each and every signal within the E3238S search range. This is comparable to having thousands of parallel narrowband DF subsystems which can be simultaneously tasked to determine direction on all detected energy within the search range. This allows the search process to be qualified by direction - providing search and collection of signals only from directions of interest. This is an essential capability for the identification and location of some low probability of intercept signals, such as frequency agile signals.

The integrated wideband direction data is propagated throughout the E3238S energy and signal database and alarm systems, and is integrated into new spectrum and mapping displays. The new displays include a spectrogram color-coded by direction, as well as a novel polar display which provides a tactical view of signals by direction.

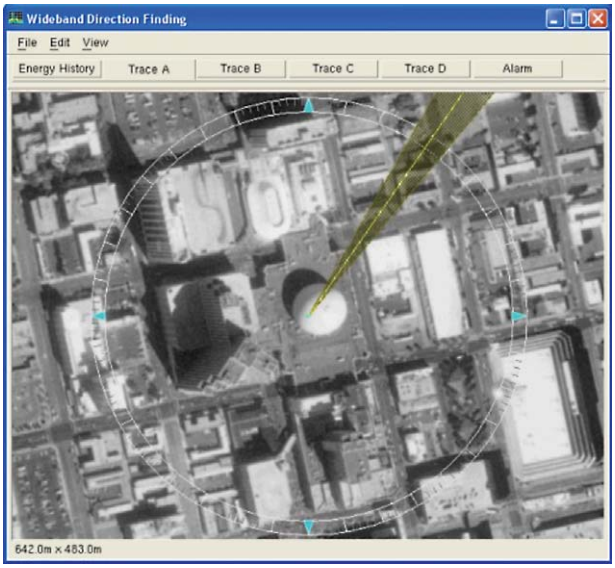
Mapping Facility

The new integrated mapping facility links to the E3238S displays and energy/signal database, allowing signals of interest to be instantly located on a map. An integrated internal mapping facility displays the maps within the E3238S user interface using readily accessible map data from the U.S. Geological Survey (in GeoTIFF format).

The KML output provides tactical DF overlays for third party Geographic Information Systems (GIS) such as Google Earth. Multiple Agilent E3238S WDF systems provide multiple DF overlays allowing signal location by crossing lines of bearing. In addition, an API is available for customer-specific mapping packages.



Tactical Polar Wideband Direction Display



Internal GeoTIFF Mapping Facility

E3238S link to Google Earth

Supported Wideband DF Systems

TCI Model 903 SLIC System

TCI International, Inc. is an Agilent Technologies Channel Partner. TCI has integrated their DF First technology with Agilent's E3238S Signal Search and Collection System. This solution - the **Model 903 Signal Location, Intercept and Collection (SLIC)** system - integrates best-in-class signal intercept, classification, collection, and wideband direction finding. The TCI 903 SLIC provides a unique, high performance solution for strategic and tactical comprehensive SIGINT or COMINT operations for the 20 to 3000 MHz frequency range.

The Model 903 SLIC DF RF chain uses two 20 MHz-wide channels connected to the unique TCI 20-3000 MHz DF and monitoring antenna array. The basic system configuration is comprised of an antenna, the TCI DF processor, the Agilent E3238S, the Agilent WDF Option, and a display.

TCI Wideband DF Antenna Systems

The TCI DF antenna consists of a 9-element circular array and an omni-directional bicone for monitoring and DF reference. The antenna system also includes a separate GPS antenna for location and time reference. Mobile versions of the antenna contain fluxgate compasses to provide antenna orientation data to the DF system.

Processor in Rugged Enclosure for Mobile Application

Model 641 Antenna Mounted on Vehicular Mast

Model 641 Antenna Mounted on Fixed Tower

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LXI

www.lxistandard.org
LXI is the LAN-based successor to GPIB, providing faster, more efficient connectivity. Agilent is a founding member of the LXI consortium.

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