

Summitek Instruments

OASIS II Spectrum Management Utility

Product Description



PRODUCT OVERVIEW

OASIS Spectrum Management software provides easy to use tools and utilities essential to maintaining a high quality of service in wireless communications networks. This hardware independent solution allows you to use the RF instrumentation you already own or purchase the hardware solution best suited to your application and budget.

Additionally, OASIS reduces costs by minimizing the labor necessary to accurately gather and analyze the RF environment and its impact on your network.

OASIS consists of a core module (Measurement & Analysis) with several options to create a solution tailored to your needs.

OASIS II Measurement & Analysis

Features

- Easy to learn and use operator interface
 - » Common user interface regardless of the receiver being used
 - » Confusing instrument controls and setup eliminated
 - » Complex measurement tasks made simpler
- Remote monitoring
- Record and log data over time
- Replay data and view the events as if you were there in real time
- View multiple bands “simultaneously”
- 2D/3D display mode
- Create, save and recall emission masks (limit thresholds)
- Identify emitters by ITU spectrum allocations
- Generate reports in HTML format
- Control up to four receivers

Compatible Instruments

The frequency range, measurement performance, and data acquisition rates are dependent upon the characteristics of the RF instrumentation. Currently available instrument drivers are as listed below. If you plan to use an instrument not on the list, please contact Summitek Instruments.

- Adventest Series Spectrum Analyzer*
 - Agilent ESA Series Spectrum Analyzer*
 - Agilent PSA Series Spectrum Analyzer*
 - HP 859x Series Spectrum Analyzer*
 - ICOM R-8500 Receiver
 - National Instruments – NI-5660
 - Anritsu MS2711(A,B,D), S332D, MT8220A, MT8212B and MS2721A Spectrum Analyzers
 - Rohde & Schwarz FSP* & FSH Series Spectrum Analyzer
 - Will’tek 9101 & 9102 Series Spectrum Analyzers
 - Tektronix YBT-250
- Other instruments available on request

* GPIB (IEEE-488.2) is supported in OASIS using VISA. Summitek Instruments recommends National Instruments GPIB adaptors.

OASIS Options

OPTION – FCC DATABASE AND MAPPING SOFTWARE

Features

- Identify emitters by license information
- View emitter location on the map
- Enhance the power of Smart DF with map information OASIS – Measurement & Analysis

OPTION – EMITTER MANAGER

Features

- Build your own database of emitters
- Import your own database
- Add emitters to an existing database
- Generate a list of all nearby emitters
- View emitters on a map
- Compare measured data to database

OPTION – INTERFERENCE TOOLS (REQUIRES EMITTER MANAGER OPTION)

Features

- IM analysis tool
- Event correlator

Measurement and Analysis Capabilities

The tables below highlight various application tasks that are effectively addressed by OASIS teamed with a spectrum analyzer.

Measurement & Analysis Product

APPLICATION	OASIS VALUE ADDED	SIGNIFICANCE
Determine Emission Compliance	<p>Ability to create an emission mask:</p> <ul style="list-style-type: none"> • From data • Import channel plan or create using OASIS tools 	<p>Quickly identify emitters violating your spectrum rights</p> <p>Characterize the quality of your transmitters (frequency, bandwidth, power)</p> <p>See cases of potential adjacent channel interference.</p>
Identify Intermittent Offending Emitters	<p>Create a baseline of the RF environment</p> <p>Log data (unattended monitoring) using Peak Hold</p> <p>Review alarm history data for mask breaks</p> <p>Use Jump to Break feature to find the time(s) offending transmitter is on the air</p> <p>Replay the log data and see the transmission as if you were there in real time</p> <p>Use knowledge gained to know when to try to locate the transmitter</p> <p>Smart DF to the source</p>	<p>Remote monitoring minimizes the time in the field and the associated labor cost</p> <p>Smart DF provides a more efficient means to locating transmitters.</p>
Characterize the local RF environment	<p>Collect and store data over time</p> <p>Create a mask from data</p> <p>Move marker to a peak in the data to get the ITU Regulatory Rules information for that portion of the spectrum</p>	<p>Establishes a baseline for future comparison.</p> <p>ITU rules help identify who might own the emitter, if you don't have a database of licenses. Also provides bandwidth information.</p> <p>Baseline data can also be used to evaluate suitability of the site for a new wireless service.</p>

Identify Changes in the Local RF Environment	Log data and recall previously generated mask to compare RF environment then and now	The presence of new emitters may explain the cause of problems and the data can be used to update the baseline. Evaluate changes in noise floor.
Remote Monitoring of Site	Data can be logged and queried over network connections	Offers a convenient and cost effective means to continuously evaluate RF performance.
Assess Spectrum Utilization	Measure percent channel occupancy in real time or process logged data	Useful for assessing how efficiently spectrum is being used.
Evaluate Adjacent Channel Characteristics	Import a channel plan or recall an emission mask Log spectral activity over time Review alarm history to identify adjacent channel emission mask breaks	Provides a means to assess adjacent channel activity that might cause interference.

Measurement & Analysis Product with FCC Database and Mapping

APPLICATION	OASIS VALUE ADDED	SIGNIFICANCE
Determine the license information for emissions at the site	Placing a marker on a measured emission allows the user to read the license data filed with the FCC or the ITU information when there is no license	A fully integrated solution for quickly identifying your RF neighbors.
Where is the emitter located?	Provides the FCC license information and geographic location	Shows the operator the proximal location for emitters arriving at the site.
Find the location of an unlicensed transmission	Map software with Smart DF	Smart DF utility draws vectors on the map in the direction of maximum received signal. Data taken at various locations provides a point of intersection indicating the probable location of the emitter.

Measurement & Analysis Product with Emitter Manager

APPLICATION	OASIS VALUE ADDED	SIGNIFICANCE
Generate a database of all emitters in the area	From measured data, ITU Regulatory Rules are used to name emitters for future reference	ITU information can be used to associate a transmission with a specific license owner.
Import a database	Provides the utility to import a user database and incorporate it with the entire OASIS functionality	User's can import proprietary site information or a database of emitters for their region.
Access the emitter characteristics, license holders, etc for emitters present at the site	OASIS generates a list of all emitters within an operator specified radius of the site.	This list can be used by the Interference Identifier module to calculate what emitters are potential interference threats.
Determine license compliance	<ul style="list-style-type: none"> • Verify that there is a license corresponding to a measured emission • Compare measured power to expected power based on license information and distance to emitter 	Regulatory agencies can use this to verify license compliance. Wireless service providers can use this information to identify potential interference threats.
View the locations of nearby emitters	Mapping tool with a database of emitters that includes geographic location can be used to create a map of the emitters.	Provides a convenient visual of where the nearby emitters are located that are radiating energy that is being received at your site.

Measurement & Analysis with Emitter Manager and Interference Tools

APPLICATION	OASIS VALUE ADDED	SIGNIFICANCE
Identify emitters that can cause IM interference in your band	Calculates what emitters and combination of two emitters can create IM products that land in the user-defined band to be protected.	Saves wasted time by identifying only those emitters that represent a threat and ranks them by level of threat based on ERP, proximal location, and IM order.
Identify emitters that can cause adjacent channel interference	Using the database created by the manage emitter module, identifies emitters that are nearby in frequency and high in power as potential threats.	Focuses the user on the characteristics of adjacent transmitters so that they can be closely monitored.