

# CSI - Carrier & Signal Inspector



## GET into IFoIP TECHNOLOGY

### Main Functions

- Signal Detection
- Carrier visualization
- Processing
- Remote full blind analysis with remote IN-SNEC® CSA

### Main Features

- Real time visualization
- Automatic carriers detection
- Both analog & digital parameters measurement capacity
- Spectrum decomposition
- With L-band converter (option), 1.2GHz of bandwidth coverage
- Remote display
- Optional QoS module :
  - ◆ BPSK, QPSK, DQPSK, 8PSK, D8PSK, 16PSK, 16 QAM modulations
  - ◆ FEC recognition
  - ◆ Bit error rate
  - ◆ Carrier under carrier process
  - ◆ Constellation visualization

### Main Benefits

- Very high flexible architecture
- Easily extensible and adaptative software
- Very compact and simple solution; Easily transportable
- High reliability
- Very high speed multitasking
- Very easy and intuitive GUI
- More capabilities with IN-SNEC® CSA
- High maintainability
- Same hardware for IN-SNEC® CSI, CSA, CSM and CGL

Be the fastest and "smarter", to visualize, analyze, monitor and locate the multitude of signals conveyed by communications satellite transponders or by the HF communications. To be successful in solving these complex tasks Zodiac Data Systems provides extensive solutions based on our unique company's integrated hardware architecture, using "state-of-the-art" digital signal processing techniques.

Zodiac Data Systems comprehensive toolbox is composed of Carrier & Signal Inspector (CSI) to visualize up to 1.2GHz spectrum bandwidth and also detect the carriers. Combined with the Carrier & Signal Monitoring (CSM), spectrum monitoring rules can be defined to alert the user of any QoS damage or the appearance of interference. Each unknown carrier can be characterized with our blind Carrier & Signal Analyzer (CSA) and simultaneously can quickly and accurately locate the interference transmitter's position with the Compact GeoLocation (CGL).

#### CSI - Carrier & Signal Inspector

The CSI is a real time solution displaying up to 1.2 GHz spectrum with the capability to detect the carriers and to display the noise level. Associated with a QoS option the CSI monitors carriers and display in real time the carrier parameters, constellation and the occurrence of carrier under carrier.

#### CSM - Carrier & Signal Monitoring

The CSM is an all-inclusive spectrum monitoring solution, providing powerful intuitive GUI to survey and to improve the QoS of satellite communications. In order to deliver the best QoS and fast reactivity, the CSM detects and reports all intrusions in real time, sends alarms and executes user defined actions automatically. The CSM can also analyse a complete satellite transponder or an HF terrestrial band at a very high speed.

#### CSA - Carrier & Signal Analyzer

The CSA is a high performance full blind analysis solution with the ability to characterize each carrier in the spectrum. Open to customer's applications, the CSA integrates plugins, customized databases and open development environment. In case of carrier under carrier the CSA processes the separation and analysis of the main and the hidden signal.

#### CGL - Compact GeoLocation

The CGL is a 'state of the art' design, oriented towards ease of operation. The GUI greatly simplifies the complete process with its capability to locate transmitters in "one click". Coupling the CSM capabilities to detect interferences with the autonomous and full automated CGL fast results and accurate positions of interferers are delivered.

## ZODIAC DATA SYSTEMS

AEROSAFETY & TECHNOLOGY  
Telemetry & Telecommunications



## Technical specifications

### Signal Processing

#### Data acquisition

Modulations BPSK, QPSK, DQPSK, 8PSK  
D8PSK, 16 PSK, 16 QAM

Data display Graphic User Interface

Execution in background mode

### Carrier Detection

Measurement > 100 carriers /s

Blind signal analysis

Automatic carrier detection

Carrier under carrier detection (QoS)

Constellation (QoS)

### Signal Analysis

#### Measurements

##### RF parameters

Pi Input Power  
Fc Carrier Frequency  
BW3dB 3dB bandwidth  
BW Total bandwidth  
NO Noise level  
C Signal level

##### QoS parameters (in option)

Eb/NO Bit energy to noise density ratio

##### Digital parameters

Modulation  
Constellation  
Baud rate

### Software tools

Spectrum sweeping capability

Multiband capability

Remote client

# CSI

## Carrier & Signal Inspector

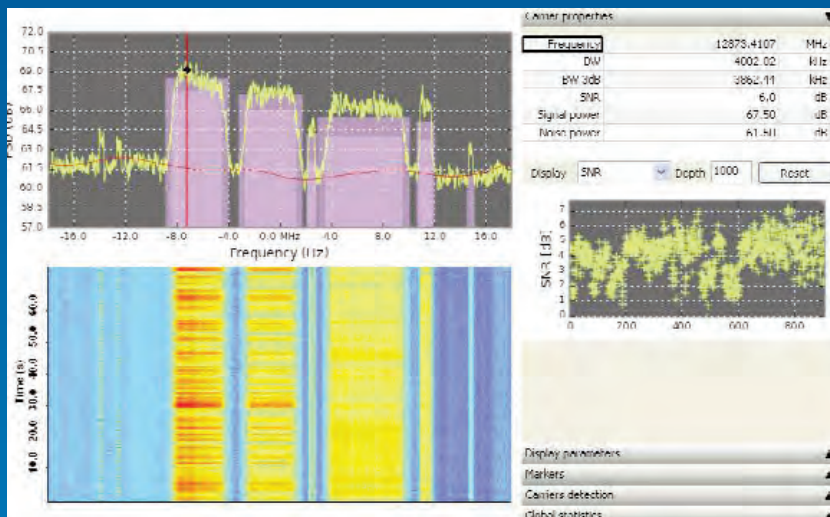
## SOFTWARE FEATURES

### GUI

Context sensitive pop-up menus

Multi windows :

- ▶ Spectrum analyzer
- ▶ Spectrogram visualization
- ▶ Properties and parameters display,
- ▶ Global bandwidth statistic



## Configuration

Software licenses :

- ▶ Signal Acquisition & Processing (TCP/IP interface)
- ▶ Signal Analysis (GUI) (Hypermon)

## XML-RPC interface

- ▶ CSI configurations
- ▶ SDSP operations

## HARDWARE FEATURES

Refer to the IF over IP data sheet

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