

CSM - Carrier & Signal Monitoring



IN-SNEC®

GET into IFoIP TECHNOLOGY

Main Functions

- Signal Acquisition and Processing
- Carrier Monitoring
- Interference Detection
- Carrier under Carrier Analysis

Main Features

- IF / RF input
- Front end processing
- Both analog & digital parameters measurement capacity
- Fast measurements
 - ◆ RF > 100 carriers/s
 - ◆ QoS > 50 carriers/s
 - ◆ Blind mode > 30 carriers/mn
- Software based on standard Pentium PC server
- BPSK, QPSK, DQPSK, 8PSK, D8PSK, 16PSK, 16 QAM modulations
- Automatic and dynamic generation of the initial databases

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
- High maintainability
- Same hardware for IN-SNEC® CSI, CSA, CSM and CGL

Be the fastest and "smartest", 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 1.2 GHz 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

**ZODIAC
AEROSPACE** 

Technical specifications

Signal Processing

Data acquisition

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

Data display Graphic User Interface

Databases Satellite database
Transmitter database
Monitoring plan database

Interference Detection

Measurements up to 30 carriers /mn

Blind signal analysis

Automatic carrier detection

Carrier under carrier detection (QoS)

Carrier Monitoring

Data supervision

Analysis
Alarms : Carrier power, Frequency, BW, NO,
SNR, Modulation, Symbol rate, Code
Immediate visualization of conformity

Data reporting Log-file, history, task, link budget

Data management automatic set-up,
recording into databases

Measurements

RF parameters

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

QoS parameters up to 50 carriers /s

C/NO Carrier to Noise density ratio
C/N Carrier to Noise ratio
Eb/NO Bit energy to noise density ratio

Digital parameters

Modulation; Constellation
Baud rate

Calibration On request (PFD calculated)

CSM

Carrier & Signal Monitoring

SOFTWARE FEATURES

GUI

Context sensitive pop-up menus

Multi windows :

- ▶ Spectrum analyzer
- ▶ Sonogram analyzer

One click from start to results

- ▶ Instantaneous frequency
- ▶ Constellation



Configuration

Linux (FC3, ...) or Windows (XP, 2000, ..) operating system

Software licenses :

- ▶ Signal Acquisition & Processing (TCP/IP interface)
- ▶ Carrier Monitoring (GUI)
- ▶ Interference detection

HARDWARE FEATURES

Refer to the IF over IP data sheet

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