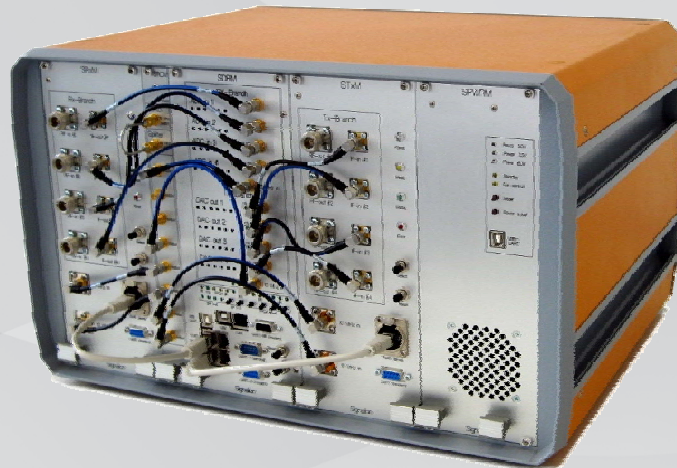




HaLo 430

Hardware In The Loop MIMO Prototyping & Monitoring Platform



4x4 MIMO Signal Generation & MIMO-Signal Analysis in a Single System

MIMO Signal Generator

HaLo 430 is a phase coherent 4 channel arbitrary waveform generator. Signals can be easily generated with MATLAB and transmitted via HaLo.430.

MIMO Signal Analysis

HaLo 430 is a phase coherent 4 channel signal recorder. Signals can be easily recorded and down-converted with HaLo430. The baseband signal can then be analyzed with MATLAB.

HaLo 430 Applications

System Prototyping

Use HaLo 430 to set-up demonstrations of MIMO radio technology, to verify theoretical simulations in realistic environments, and to conduct proof-of-concept trials without to do complex real-time-implementations yourself.

Channel Measurement

HaLo 430 offers simple means to measure instantaneous 4x4 MIMO channel characteristics. Complex channel evaluation, statistics and parameter estimation can be done using MATLAB..

Student Lab Course

Due to its simplicity HaLo430 has proven to be an outstanding tool for student lab courses. Benefit from Signalion's example data base and enhance you lectures with hands-on experience.

SAVE TIME !

SAVE COST!

IMPROVE QUALITY!



The HaLo-Principle



Seamless MATLAB/Simulink integration offers plug'n play operation

Principle:

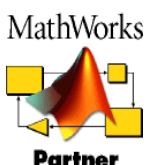
HaLo 430 is completely controlled via MATLAB. Arbitrary MIMO-signals can be simulated in MATLAB and transmitted via HaLo 430. Such signal bursts are periodically transmitted until transmission is stopped (via MATLAB). Captures of the received signals can be triggered by the user or automatically within a defined interval. A synchronization between the transmitter and receiver is possible. Furthermore, complex analysis of the received signal (spectrum, decoding, statistics, ect.) can be done by the user using MATLAB functionality. HaLo 430 can be integrated into complex wireless system simulations within MATLAB. The export of the signals is also possible via standard MATLAB functions.

Connectivity:

HaLo offers Plug & Play interconnection to any PC via USB 2.0 with any Windows-PC.

Application Programming Interface (API):

An 'easy to use' API enables seamless integration of the hardware into your simulation environment just by means of two simple functions (`halo_transmit`, `halo_receive`). Beside MATLAB/Simulink, C is supported as well by the API.



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HaLo 430 Data Sheet

Configuration:

- HaLo430 comprises 4 transmit & 4 receive channels in one box
- HaLo 430 can also be purchased as a two separate boxes (one as transmitter and one as receiver)

Features:

- RF Frequency Bands:
 - ISM-band 2400 -2500 MHz
 - UMTS-band I: 1920-1980 MHz (Tx), 2110-2170 MHz (Rx)
 - UMTS-band VII: Tx 2500-2570 MHz (Tx), 2620-2690 MHz (Rx)
- Signal Bandwidth: up to 20MHz
- Sampling Rates: 5,10,8,12.5,20,40 MHz
- Internal Memory: up to 2^{27} Samples (26.8435sec@5MHz)

Interfaces:

- RF: 4 Independent Rx/Tx connector N-type (female)
- Frequency Reference: 10 MHz external /internal reference
- Data: USB port

PC Specification:

- The recommended minimum PC (not supplied) specification for running the Halo software package is shown below:
- Processor: Intel
- Operating System: Windows™ XP Professional
- Memory: 2048 MB
- USB 2.0

Environment & SAFTEY

- Voltage Range: 90 to 250V AC, Nominal Power consumption: 450 VA,
- AC Frequency range: 50 – 60 Hz
- Dimensions (HWD): 26,5cm x 49 cm x 40 cm
- Operating Temperature range: 0oC to 40oC
- Storage Temperature range: -40oC to +70oC
- Humidity: 10% to 90% RH (non-condensing)



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