



Chameleon  
For residential,  
regional and  
national networks

Any video from any source  
to any device.



Connecting past,  
present and future.

[wisigroup.com](http://wisigroup.com)

## Overview

# The unique headend concept

## Solutions



### Channel processing

Headends for city network and cable network operators.



### RF overlay

Solutions for video services in GPON and active ethernet networks.



### Residential sector

Headend for residential complexes, hotels and hospitals.



Chameleon

# The software-based headend platform

This headend platform has been specially created for changeover from analogue to the digital world and features unparalleled adaptability.

In order to best meet the needs of our customers, we have designed the products in the Chameleon product line to be affordable and multi-functional, ensuring that each device is suitable for all types of processing. The Chameleon product line fulfils the functionality requirements of all types of installations.

These installations are easy to expand, both in terms of their size by adding additional units, and in terms of their functionality by adding software options. The software functionality can be modified at any time without needing to modify the hardware. We offer a configuration tool that helps you to select the required software options and suggests software packages for the most common setups.

## At a glance

---

- ✓ Headend for residential, regional and national networks
- ✓ Functionality can be adapted via software
- ✓ Regeneration new service information
- ✓ Web user interface and SNMP
- ✓ MPEG encoding
- ✓ ASI input and output
- ✓ SDI input and output
- ✓ Encryption
- ✓ Decryption
- ✓ Audio/video decoding
- ✓ Common interface
- ✓ Multi standard DTV tuner
- ✓ Multi standard DTV and analogue modulator
- ✓ IPTV input and output
- ✓ SRT input and output



## Benefits and functions

# All benefits and functions at a glance

### Benefits

<p>A proven platform</p>	<p>The Chameleon platform has been improved through the years and is now a reliable system that enables users to concentrate on their goals and achieve their desired results.</p>
<p>Managing all your installations</p>	<p>The Chameleon web user interface is designed to easily enable configuration and management of systems from a single device with an IP connection. This makes it easy to remotely monitor important systems.</p>
<p>Only pay for what you actually need</p>	<p>The flexibility of the Chameleon modules enable them to be upgraded and their functions to be changed over time. This is performed by ordering new software options, so that your system can grow alongside you.</p>

## Functions



### Software-based

All of the software functionality of the Chameleon products can be modified and upgraded at any time without needing to modify the hardware.



### 30-day software test version

In order to demonstrate to you as our customer how versatile our product is, we provide a 30-day test version of all software functions with the purchase of every Chameleon..



### Easy-to-use web interface

The user-friendly embedded web UI enables you to easily manage, monitor and change the functions of your system from anywhere with an IP connection.



### Low power consumption

Our products are designed to use as little electricity as possible. The typical power consumption of one of our Chameleon modules is 15 W.



### High density

Each Chameleon can process up to 1.2 Gbit/s. A basic unit with 10 Chameleon modules can therefore process immense quantities of audio and video streams.



### SUA included with your purchase

In order to give our Chameleon users the opportunity to upgrade to additional functions, each Chameleon purchase includes a 1-year Support Update Agreement.

## Overview

# The Chameleon modules

The Chameleon product line consists of three hardware modules, a series of different basic units and power supply options and a comprehensive catalogue of software options.

The Chameleon hardware modules are designed for flexibility, performance and energy efficiency. The modules have the same form factor in order to suit the various available housing options.



## Chameleon Processor

The GNHWUW3 processor is designed to process all digital input and output transmission formats.

- ✓ Individual hardware digital TV processor
- ✓ Supports all global standards
- ✓ Very low power consumption
- ✓ Multiple housing options
- ✓ Includes multi-tuner inputs
- ✓ IP inputs and outputs for SRT
- ✓ MPEG decoding of HD and SD content



## Chameleon Encoder

The GNHWENC2x Encoder is an HD/SD MPEG-4 encoder with IP outputs.

- ✓ HD/SD MPEG-4 (AVC, H.264) and HD/SD MPEG-2 video encoding
- ✓ GNHWENC2H: Up to four HDMI inputs per module
- ✓ GNHWENC2S: Up to four HD/SD-SDI or A/V analogue inputs per module
- ✓ Professional multiplexer integrated
- ✓ SPTS and MPTS streaming (CBR or VBR)
- ✓ Supports PSI/SI processing
- ✓ Integrated into the Chameleon system management
- ✓ IP inputs and outputs for SRT

## Overview

# The basic units

The Chameleon modules can be used in three different basic units. For professional applications, the GN50 with redundant power supply unit and integrated controller and switch is recommended. For standard applications in a 19" rack installation, the GN40 housing is

recommended. With the GN20 B/R, you can install one or two Chameleons in a 1 HE, 19" housing. The GN20 R contains two redundant power supply units.



## GN50

The Chameleon GN 50 W 0230 is a 19" 3 HE basic unit for up to ten Chameleon modules.

### Features

3 HE basic unit for up to ten Chameleon modules

Integrated ethernet switch

1 power supply, optional redundant power supply

Interchangeable fan unit



## GN20 B/R

Chameleon base unit, 230 V AC,  
19", 1 HE, for 2 modules



## GN40

Chameleon base unit, 230 V AC,  
19", 4 HE, for 10 modules

### Features

1 HE basic unit for up to two  
Chameleon modules

Installed fan

Installed power supply

GN20R equipped with a redundant power supply unit

### Features

3 HE basic unit for up to ten  
Chameleon modules

Integrated power supply and  
power supply cable

Supplemental 1 HE fan unit for cooling

Optional redundant power supply unit

## Chameleon

# Software options

The Chameleon modules use software options to activate their functionality. When you purchase your Chameleon hardware, you can use the WISI Configurator to find out which software options you need. If you need to add functions or change them later on, you can simply order new software options.

Software packages	
GN TRANS	DVB receiver with QAM/COFDM modulator (GNDCI, GNSYMUX, GNDCMOD, GNDTMOD)
GN IRD	DVB receiver with VSB modulator (GNDCI, GNDVMOD. GNDOL is not included)
GN GATE	IP streamer (GNDCI, GNSYMUX, GNSTR)
GN DEDGE	Edge QAM/COFDM (GNDCMOD, GNDTMOD, GNDCI, GNSTR, GNSYMUX)
GN VEDGE	Edge VSB (GNDVMOD, GNDCI, GNSTR. GNDOL is not included)
GN ALL	Almost all functionality. Lacks Dolby, NTSC stereo sound, N+1 redundancy, SDI input, PLP processing, BISS descrambling, AES-128 scrambling, Samsung LYNK scrambling and LG Pro:Idiom scrambling (GNQCMOD, GNDTMOD, GNDMOD, GNDVMOD, GNDISMOD, GNOCTFM, GNDASI, GNSSDI, GNHSDI, GNSTR, GNSTREC, GNSYMUX, GNSYSMG, GNDCI, GNSCR, GNRED)
Inputs and outputs	
GN DCMOD	Two DVB-C or J.83 Annex A/B/C modulator outputs
GN QCMOD	Four DVB-C or J.83 Annex A/B/C modulator outputs
GN DTMOD	Two DVB-T modulator outputs
GN DMOD	One DTMB modulator output
GN DVMOD	Two analogue TV modulator outputs
GN ISMOD	One ISDB-T modulator output
GN OCTFM	Eight FM radio modulator outputs
GN ASI	One ASI input/output
GN DASI	Two ASI inputs/outputs
GN SSDI	One SDI output
GN DSDI	Two SDI outputs
GN HSDI	One HD-SDI output
GN SSDMOD	One SDI input to one analogue TV modulator output

GN DSDMOD	Two SDI inputs to two analogue TV modulator outputs
<b>MPEG Transport Streaming processing</b>	
GN SYMUX	Remultiplexing of services and system wide DVB PSI/SI table sharing
GN T2MIDE	One T2-MI de-encapsulator capable of extracting two PLPs
GN DT2MIDE	Two T2-MI de-encapsulators capable of extracting two PLPs each
GN DT2MIPL	Adds capability to extract two additional PLPs
GN QT2MIPL	Adds capability to extract four additional PLPs
<b>MPEG Transport Streaming processing</b>	
GN OT2MIPL	Adds capability to extract eight additional PLPs
GN XT2MIPL	Adds capability to extract sixteen additional PLPs
<b>Audio processing</b>	
GN DOL	<b>Decoding of two Dolby Digital (AC-3) audio</b>
GN BTS	<b>One MTS+SAP (BTSC) audio modulation for PAL-M and NTSC</b>
GN FMADV	GN FMADV decoding of HE-AAC or HE-AACv2 audio for FM modulation
<b>IP streaming</b>	
GN SRT	Reception or transmission of one SRT stream
GN STR	20 MPTS/SPTS IPTV inputs and outputs
GN STR X	Extension for GNSTR. Provides an additional 108 MPTS/SPTS
GN STREC	20 MPTS/SPTS IPTV inputs and outputs with FEC
<b>Encryption and decryption</b>	
GN DCI	Two CAM descramblers
GN BISS	BISS and BISS2 descrambling for 8 services
GN SCR / GN SCR X	Simulcrypt CSA/BISS scrambler for 32 services / Extension for additional 96 services.
GN AES / GN AES X	Simulcrypt AES-128 (BISS2) scrambler for 32 services / Extension for additional 96 services.
GN LYNK / GN LYNK X	Simulcrypt Samsung LYNK scrambler for 32 services / Extension for additional 96 services.
GN PISCR8/16/24	LG Pro:Idiom scrambler for 8/16/24 services
<b>Redundancy</b>	
GN RED	IP input signal redundancy
GN NRED	N+1 module redundancy

To see all available software options, please visit:

 [katalog.wisi.de](https://www.katalog.wisi.de)

## Chameleon Packages

With its comprehensive array of available software options, the Chameleon platform can meet almost any requirement. To make it easier for you to search for the software you need, we have created packages for all common configurations.

### Packages

---

#### DVB receiver and modulator

GN TRANS

The Chameleon receiver package enables you to receive, decrypt and remux DVB signals and modulate them in QAM or DVB-T.

---

#### DVB receiver with VSB RF outputs

GN IRD

The DVB receiver with analogue modulators enables analogue signals to be supplied within your cable network. This is perfect for distribution to legacy TVs.

---

#### IP streamer

GN GATE

This package is suitable for any high-quality IP streaming solution. Satellite or terrestrial transmissions as input and IP as output. Remultiplexing and decryption are included.

---

## Packages

### Edge VSB

GN VEDGE

The Chameleon receiver package enables you to receive, decrypt and remux DVB signals and modulate them in QAM or DVB-T.

### Edge QAM/COFDM

GN DEDGE

If you use IP as your source and need to convert it into QAM or COFDM, the Edge QAM/COFDM package is perfect for you.



## Application examples

# Compact installation

### Perfect for smaller networks and hubs

Despite the space-saving design of the system, with two Chameleon processor modules assembled in a GN20B or GN20R basic unit (with redundant power supply), this variant offers an extremely wide range of processing options.

The input multi-tuner reception is included with the hardware purchase as standard. A variety of processing functions and output formats can be enabled by adding software options.

For the IP output, more than 500 TV programmes can be played via IP. Numerous digital and analogue outputs are available, such as QAM, DVB-T, VSB, FM, etc. Decryption, multiplexing and encryption are just some of the processing options.

### Application features

---

- ✓ Compact 1 HE 19" solution with redundant power supply (optional) and low energy consumption, typically <35 W
  - ✓ Software can be expanded for almost any input and output format
  - ✓ Simple setup and maintenance via the web UI
  - ✓ Support Update Agreement (SUA) for the first year is included
-



## Products used

Modules	<ul style="list-style-type: none"> <li>· Chameleon Encoder</li> <li>· Chameleon Processor</li> </ul>
Basic unit	<ul style="list-style-type: none"> <li>· GN20 B/R (redundant power supply)</li> </ul>
Software option examples	<ul style="list-style-type: none"> <li>· Decryption</li> <li>· Multiplexing</li> <li>· IP streaming</li> <li>· Digital RF output</li> <li>· Analogue VSB RF output</li> <li>· FM output</li> <li>· Encryption (LG Pro:Idiom, Samsung LYNK, AES 128, DVB-CSA)</li> </ul>

## Application examples

# Encryption in hospitality systems

### DVB-CSA, AES 128, Samsung LYNK or LG Pro:Idiom encryption

The GN50 W0230 Chameleon basic unit is the perfect choice for small to large hotel facilities. It can include up to ten Chameleon processor modules and can be configured for any format required in residential or hotel facilities.

The available software options include Samsung LYNK, Philips V-Secure and LG Pro:Idiom, all three special encryption systems for the hotel industry. Other applicable software options include DVB-CSA and AES encryption. Fully equipped, the GN50 W chassis can process more than 10 Gbit/s. For baseband video and audio processing, the Chameleon encoder module is a dedicated HD or SD-MPEG-2/4 encoder and provides high-quality encoding of A/V, HDMI, SDI or HD-SDI signal sources.

### Application features

---

- ✓ Compact 3 RU 19" cabinet with hot-swap fans and redundant power supply (optional)
  - ✓ Software upgradable to virtually any input or output format
  - ✓ Integrated high-performance IP switch
  - ✓ First year Support Update Agreement (SUA) included
  - ✓ Easily expandable
-



Products used

Modules	<ul style="list-style-type: none"> <li>· Chameleon Encoder</li> <li>· Chameleon Processor</li> </ul>
Basic unit	<ul style="list-style-type: none"> <li>· GN50</li> </ul>
Software option examples	<ul style="list-style-type: none"> <li>· Decryption</li> <li>· Multiplexing</li> <li>· IP streaming</li> <li>· Digital RF output</li> <li>· Analogue VSB RF output</li> <li>· FM output</li> <li>· Encryption (LG Pro:Idiom, Samsung LYNK, AES 128, DVB-CSA)</li> </ul>

## Application examples

# City Carrier Gateway and Edge solutions

### 100 TV programmes for urban households

Fully equipped, the GN50 basic unit can provide extremely high density and provide nearly 10 Gbit/s of video and audio content streaming as well as up to 40 QAM channels in a single chassis. Multiplexing, decryption and encryption are part of the system. Redundancy circuits and a redundant power supply for IP inputs, n+1 redundancy and power supply are optionally available. Older analogue VSB modulators are also available as alternatives thanks to the optimised MPEG decoding and the directly digitally generated VBS signals with exceptional signal quality. All HF reception inputs such as the DVB-S/S2 satellite reception are included in the system as standard.

### Application features

---

- ✓ Compact 3 RU 19" cabinet with hot-swap fans and redundant power supply (optional)
  - ✓ Integrated high-performance IP switch
  - ✓ Setup and maintenance via web UI
  - ✓ Software upgradable to virtually any input or output format
  - ✓ First year Support Update Agreement (SUA) included
-



Products used

Modules	<ul style="list-style-type: none"> <li>· Up to ten Chameleon processors</li> </ul>
Basic unit	<ul style="list-style-type: none"> <li>· GN50</li> </ul>
Software option examples	<ul style="list-style-type: none"> <li>· Decryption</li> <li>· Multiplexing</li> <li>· IP streaming</li> <li>· Digital RF output</li> <li>· Analogue VSB RF output</li> <li>· FM output</li> <li>· Encryption (AES 128, DVB-CSA)</li> </ul>

WISI tools

# Application support

We provide a variety of tools that enable you to get the best out of your WISI products. These tools provide you with easy access to support such as forums, FAQs and help for configuring your installations.

They are available for all Chameleon customers at no extra cost.



---

## WISI Configurator

Software selection

---

The WISI Configurator is an online tool that supports you in selecting and ordering the ideal software options for your particular installation.

[configurator.wisi.de](http://configurator.wisi.de)

---



## WISI Connect

Register for manuals and firmware updates

WISI Connect is our support website, where you can register and manage your devices, download software, read FAQs and submit support tickets.

[wisiconnect.tv](http://wisiconnect.tv)

## WISI Control

Monitor and manage your Bluetooth-capable devices

The web UI for the Chameleon is designed to simplify configuration and management. To enable the software options you have purchased, load the authorisation file you have downloaded from the WISI Connect Portal and apply the appropriate settings.

Your Chameleon IP

Chameleon

# Reference project

Serbia Broadband: Decentralisation of video distribution



## Customer

Serbia Broadband (SBB) has gained a reputation for innovation in the Balkans. This progressive Serbian media company has developed a wide range of multimedia services over the last ten years from its headquarters in Belgrade. With an unsurpassed coverage across the entire region via cable and DTH, the company has gained a reputation for supplying attractive content that is available on all devices and all formats for the markets in question.

## Application

SBB has equipped 24 regional headends with the Chameleon system for Edge QAM and PAL.

“ The Chameleon system from WISI provides us with flexibility and a wide range of different input signals. It is easy to operate and configure. ”

Srdjan Djurdjevic, Director R&D, SBB





For almost a century, WISI has been one of the global pioneers in the field of reception and distribution technology. Over the course of our time as a system provider in the product areas of CATV technique, reception and distribution technology, mobile communication and high frequency connectors, we have learned not only to stay on the cutting edge of technological development, but also to always be ready to transform visions into new, high-quality products. Converging media, new multimedia content and broadband services require intelligent transportation pathways for their distribution. This is our business. As a developer and technology supplier for the key communication sectors, we are therefore committed to innovation both now and in the future.

