



**Any Video from  
Any Source to  
Any Device**

FOR RESIDENTIAL, REGIONAL AND NATIONAL NETWORKS



## CHAMELEON A Single Hardware Multi Software Headend



### Solutions with **CHAMELEON**



#### **CHANNEL PROCESSING**

Headends for residential, regional and national networks.



#### **RF OVERLAY**

Solutions for video services in GPON and Active Ethernet networks.



#### **HOUSING INDUSTRY**

Headends for housing complexes, hotels and hospitals.

# CHAMELEON

## a Software-Based Headend Platform

The CHAMELEON headend platform is designed with all current and future applications in mind.

It is superbly suited for the transition from the analog to the digital environment, and has a unique flexibility that allows you to change functionality by the click of a button.

To meet our customers' needs, we have made the products in the CHAMELEON product line both affordable and multifunctional, which means that each unit is capable of all different kinds of processing.

The CHAMELEON product line covers the functionality needs for all types of installations. These can easily be extended, in size by adding more units, and in functionality by adding software options. The software functionality can be modified and upgraded at any time, without changing the hardware.

We provide a configuration tool to help you select the software options you need, and offer software packages for the most common setups.

### CHAMELEON Features

- ✓ Headend processor for residential, regional and national networks
- ✓ Customizable functionality via software
- ✓ Regeneration of Service Information
- ✓ Web User Interface and SNMP
- ✓ MPEG Encoding and MPEG Transcoding
- ✓ ASI input and output
- ✓ SDI input and output
- ✓ Audio/video decoding
- ✓ Common Interface
- ✓ Multi-standard DTV tuner
- ✓ Multi-standard DTV and Analog modulator
- ✓ IPTV input and output

# CHAMELEON Benefits & Features



## A WELL-PROVEN PLATFORM

The CHAMELEON platform has been developed and enhanced since 2010 and is today a very stable system.

A well tested and proven platform enables you to focus on your tasks and deliver the results you want.



## MANAGE ALL YOUR INSTALLATIONS ON THE GO

With our embedded web interface you can manage and monitor all your installations from any device that has an IP connection.

The web UI of the CHAMELEON is structured to simplify configuration and management. This makes it easy to keep an eye on particularly important installations wherever you are.



## ONLY PAY FOR WHAT YOU REALLY NEED

The CHAMELEON modules use software options to activate functionality. You can easily add new functionalities, or change the functionalities of existing installations by ordering new software options at any time.

This gives you incredible flexibility and the possibility for your CHAMELEON system to grow with you.



### HIGH DENSITY

Each CHAMELEON is capable of processing up to 1,2 Gbit/s. A base unit with 10 CHAMELEON modules can thus process immense amounts of audio and video streams.



### SOFTWARE-BASED

All the software functionality of CHAMELEON products can be modified and upgraded at any time, without changing the hardware.



### SUA INCLUDED IN PURCHASE

To allow our CHAMELEON users to upgrade for added functionality, a 1 year Support Update Agreement is included in each purchase of a CHAMELEON.



### 30-DAY SOFTWARE TRIAL

To prove to you as a customer how versatile the product is, we provide each CHAMELEON with a 30-day trial of all released software functionality.



### EASY-TO-USE WEB INTERFACE

You can easily manage, monitor and modify functionality anywhere that you have an IP connection through the easy-to-use embedded web UI.



### LOW POWER CONSUMPTION

Our products are designed to consume as little power as possible. The typical power consumption of our CHAMELEON modules is 15W.

# CHAMELEON Modules

The CHAMELEON product range consists of two hardware modules, a number of different chassi and powering options and an extensive catalogue of software options. The CHAMELEON hardware modules are designed with flexibility, performance and energy efficiency in mind. The modules have the same form factor to fit the different available chassi options.

## CHAMELEON Processor



The GNHWUW3 processor handles all digital input and output transmission formats and includes MPEG decoding of HD and SD content.

- ✓ Single hardware digital-TV processor
- ✓ Supports all global standards
- ✓ Very low power consumption
- ✓ Several chassi options
- ✓ Multituner inputs included

## CHAMELEON Encoder



The GNHWENC2X encoder is an HD/SD MPEG-4 encoder providing IP outputs.

- ✓ HD/SD MPEG-4 (AVC, H.264) and HD/SD MPEG-2 video encoding
- ✓ GNHWENC2H supports up to 4 HDMI inputs per module
- ✓ GNHWENC2S supports up to 4 HD/SD-SDI or AVV analog inputs per module
- ✓ Professional multiplexer integrated
- ✓ SPTS and MPTS streaming (CBR or VBR)
- ✓ Supports PSI/SI processing
- ✓ Integrated into the CHAMELEON Systemmanagement

# CHAMELEON Base Units

The CHAMELEON modules can be mounted in four different subracks. In high profile professional applications, the GN50 with redundant power supply and integrated GigE switch is recommended. For standard applications in 19" rack mounting, the GN40 chassis is recommended. The GN20 B/R allows you to install one or two CHAMELEONs in a 1 HU, 19" chassis. GN20 R includes dual redundant power supplies. For wall mount of one or two CHAMELEON modules, the GN01 can be used.

### GN20 B/R



#### FEATURES

1 U subrack for up to 2 CHAMELEON modules

Integrated fan and PSU

Single or dual power supplies

### GN40



#### FEATURES

3 U subrack for up to 10 CHAMELEON modules

Integrated PSU and power supply harness

Accompanied with a 1 U fan subrack

### GN50



#### FEATURES

3 U professional subrack for up to 10 CHAMELEON modules

Integrated Ethernet switch

Single PSU, optional redundant powering

Replacable fan bay

# CHAMELEON Software Options

The CHAMELEON modules use software options to activate functionality. When you buy your CHAMELEON hardware, you can use the WISI Configurator to find out which software options you need. If you need to add or change functionality later on, you can easily order new software options.

## SOFTWARE PACKAGES

<b>GN TRANS</b>	DVB Receiver with QAM/COFDM Modulator (GNDCI, GNSYMUX, GNDCMOD, GNDTMOD)
<b>GN IRD</b>	DVB Receiver with VSB Modulator (GNDCI, GNDVMOD. GNDOL is not included)
<b>GN GATE</b>	IP Streamer (GNDCI, GNSYMUX, GNSTR)
<b>GN DEDGE</b>	Edge QAM/COFDM (GNDCMOD, GNDTMOD, GNDCI, GNSTR, GNSYMUX)
<b>GN VEDGE</b>	Edge VSB (GNDVMOD, GNDCI, GNSTR. GNDOL is not included)
<b>GN ALL</b>	Almost all functionality. Lacks Dolby, NTSC stereo sound, N+1 redundancy, SDI input, PLP processing, BISS descrambling, AES-128 scrambling, Samsung LYNK scrambling and Pro:Idiom scrambling (GNQCMOD, GNDTMOD, GNDMOD, GNDVMOD, GNDISMOD, GNOCTFM, GNDASI, GNDSDI, GNHSDI, GNSTR, GNSTREC, GNSYMUX, GNSYSMG, GNDCI, GNSCR, GNRED)

## INPUTS & OUTPUTS

<b>GN DCMOD</b>	Two DVB-C or J.83 Annex A/B/C modulator outputs
<b>GN QCMOD</b>	Four DVB-C or J.83 Annex A/B/C modulator outputs
<b>GN DTMOD</b>	Two DVB-T modulator outputs
<b>GN DMOD</b>	One DTMB modulator output
<b>GN DVMOD</b>	Two Analog TV modulator outputs
<b>GN ISMOD</b>	One ISDB-T modulator output
<b>GN OCTFM</b>	Eight FM radio modulator outputs
<b>GN ASI</b>	One ASI input/output
<b>GN DASI</b>	Two ASI inputs/outputs
<b>GN SSDI</b>	One SDI output
<b>GN DSDI</b>	Two SDI outputs
<b>GN HSDI</b>	One HD-SDI output
<b>GN SSDMOD</b>	One SDI input to one Analog TV modulator output
<b>GN DSDMOD</b>	Two SDI inputs to two Analog TV modulator outputs

## MPEG TRANSPRT STREAM PROCESSING

<b>GN SYMUX</b>	Remultiplexing of services and system wide DVB PSI/SI table sharing
<b>GN T2MIDE</b>	One T2-MI de-encapsulator capable of extracting 2 PLPs
<b>GN DT2MIDE</b>	Two T2-MI de-encapsulators capable of extracting 2 PLPs each
<b>GN DT2MIPL</b>	Adds capability to extract two additional PLPs
<b>GN QT2MIPL</b>	Adds capability to extract four additional PLPs

## MPEG TRANSPRT STREAM PROCESSING

<b>GN OT2MIPL</b>	Adds capability to extract eight additional PLPs
<b>GN XT2MIPL</b>	Adds capability to extract sixteen additional PLPs

## 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

## IP STREAMING

<b>GN STR</b>	20 MPTS/SPTS IPTV inputs and outputs
<b>GN STR X</b>	Extension for GNSTR. Gives an additional 108 MPTS/SPTS
<b>GN STREC</b>	20 MPTS/SPTS IPTV inputs and outputs with FEC

## SCRAMBLING & DESCRAMBLING

<b>GN DCI</b>	Two CAM descramblers
<b>GN BISS</b>	BISS descrambling for 8 services
<b>GN SCR / GN SCR X</b>	Simulcrypt CSA/BISS scrambler for 32 services. / Extension for add. 96 sevice.
<b>GN AES / GN AES X</b>	Simulcrypt AES-128 scrambler for 32 services. / Extension for add. 96 sevice.
<b>GN LYNK / GN LYNK X</b>	Simulcrypt Samsung LYNK scrambler for 32 services / Extension for add. 96 sevice.
<b>GN PISCR8/16/24</b>	Pro:Idiom scrambler for 8/16/24 services

## REDUNDANCY

<b>GN RED</b>	IP input signal redundancy
<b>GN NRED</b>	N+1 module redundancy

To view all available software options, please visit [katalog.wisi.de](http://katalog.wisi.de)



# CHAMELEON Packages

The CHAMELEON platform has the ability to do almost everything with the extensive number of software options available! To make it easier to pinpoint the software you need, we have created packages for all of the most common set-ups.



## DVB RECEIVER & MODULATOR

With the CHAMELEON Receiver package you will be able to receive DVB transmissions, decrypt, remux and modulate into QAM or DVB-T.



## DVB RECEIVER WITH VSB RF OUTPUTS

The DVB Receiver with analog modulators makes it possible to deliver analog signals into your cable network. Perfect for legacy TV distribution.



## IP STREAMER

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 as part of the package.



## EDGE QAM/COFDM

When using IP as source and you need to convert to QAM or COFDM, the Edge QAM/COFDM package is perfect for you.



## EDGE VSB

When using IP as source and you need to convert to legacy analogue VSB format this package allows for highest quality VSB modulation.

# CHAMELEON Application Examples

## Perfect Solution for Smaller Networks and Hubs

### Compact Installation

Despite the small form factor in GN20 B and GN20 R (redundant powering), together with two CHAMELEON processors, the CHAMELEON chassi provides tremendous processing capabilities.

Multituner is always included, and by adding software options different outputs and processing can be achieved.

For IP output, more than 500 TV programs can be streamed. Outputs in QAM, DVB-T, VSB RF, FM etc. are available. Decryption, multiplexing and encryption are only a few of the processing options.

#### Application Features

- ✓ Compact 1U 19" cabinet with redundant power supply (optional) and low energy consumption, typical system consumption <50 W
- ✓ Software upgradable to virtually any input or output format
- ✓ Easy setup and maintenance via web-UI
- ✓ First year Support Update Agreement (SUA) included

### Products Used

#### MODULES

- CHAMELEON Processor

#### BASE UNIT

- GN20 B or GN20 R (redundant power)

#### EXAMPLES OF SOFTWARE OPTIONS

- Descrambling
- Multiplexing
- IP Streaming
- Scrambling
- Digital RF output
- Analog VSB RF output
- FM output



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

### Encryption in Hospitality Systems

The CHAMELEON chassi GN50 W0230 is the perfect choice for small to large hospitality installations.

It hosts ten CHAMELEON Processor modules and can be configured for basically any format required in a hospitality environment.

Available software options include Samsung LYNK and Pro:Idiom, which are both dedicated hospitality encryption systems. Other applicable software options are DVB-CSA and AES Scrambling.

Fully equipped, the GN50 W chassi can process more than 10 Gbit/s.

For baseband video and audio, the CHAMELEON Encoder module is a dedicated HD or dual SD MPEG-4 encoder, and provides high-quality encoding from AV, HDMI, SDI or HD-SDI.

#### Application Features

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

### Products Used

#### MODULES

- CHAMELEON Encoder
- CHAMELEON Processor

#### BASE UNIT

- GN50

#### EXAMPLES OF SOFTWARE OPTIONS

- Descrambling
- Multiplexing
- IP Streaming
- Digital RF output
- Analog VSB RF output
- FM output
- Scrambling (Pro:Idiom, Samsung LYNK, AES 128, DVB-CSA)



## 100 TV Programs to City Households

### City Carrier Gateway and Edge Solutions

Fully equipped, the GN50 chassis can provide very high density and generate close to 10 Gbit/s of streaming, as well as up to 40 QAM channels in one chassis.

Multiplexing, descrambling, and encryption are part of the system. Redundancy schedules for IP inputs, n+1 redundancy and powering are available options.

Even legacy VSB RF can be offered through the advanced MPEG Decoding, and digitally generated VSB signals provide outstanding quality. All digital RF inputs are part of the system by default.

#### Application Features

- ✓ Compact 3U 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

- Up to 10 CHAMELEON Processors

#### BASE UNIT

- GN50

#### EXAMPLES OF SOFTWARE OPTIONS

- Descrambling
- Multiplexing
- IP Streaming
- Digital RF output
- Analog VSB RF output
- FM output
- Scrambling (AES 128, DVB-CSA)



# CHAMELEON Support



The WISI Configurator is an online tool to help you select and order the optimal software options for your particular installation.

Once an order has been processed, the entitlement file containing the licences for the software options will be available for download at the WISI Connect portal.

In order to gain access to the WISI Configurator you need to register as a customer. You can do this at the WISI Configurator website.

The WISI Connect portal is a repository for information about your CHAMELEONS. All your registered products will be listed, and you can add textual information such as installation site or the function for each CHAMELEON. Product documentation, release notes and all released firmware versions are available for download from the portal. The FAQ and Forum gives additional help, and allows you to share questions and information with other CHAMELEON users.

At the portal you can also download the entitlement file enabling your purchased software options.

Your CHAMELEON is configured and managed via WISI Control, the web UI. Each CHAMELEON contains an embedded web server, and no proprietary control software is needed. To connect to the UI of any CHAMELEON, simply start a browser on your computer and type the IP address of the CHAMELEON in the address field.

The web UI of the CHAMELEON is structured to simplify configuration and management. To unlock your previously purchased software options, upload the entitlement file that you downloaded from the WISI Connect portal and create your desired settings.

# CHAMELEON Reference Case

## Serbia Broadband: Decentralization of Video Distribution

### CUSTOMER

Serbia Broadband (SBB) has developed a reputation for innovation in the Balkans. This progressive Serbian media company has, over the last ten years, developed a wide range of multimedia services from its headquarters in Belgrade. With unmatched reach via cable and DTH across the region, the company has established a reputation for providing attractive content, available on all devices and in all formats in their respective markets.

### APPLICATION

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

**SBB**

“ WISI’s CHAMELEON system provides us with flexibility and a variety of different input signals. It is easy to use and configure. ”

**Srdjan Djurdjevic, Director R&D, SBB**





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