

# CHAMELEON

# CHAMELEON

## IPTV Input/Output

|                                |                              |
|--------------------------------|------------------------------|
| Input bit rate                 | < 800 Mbit/s                 |
| Output bit rate                | < 800 Mbit/s                 |
| Connector                      | RJ45 / SGMII                 |
| Output protocol                | UDP Multicast / Unicast, RTP |
| IPTV TS input format/capacity  | CBR, 20 TS (MPTS or SPTS)    |
| IPTV TS output format/capacity | VBR, 20 TS (MPTS or SPTS)    |
| Time stamp & de-jitter         | CBR, 4 MPTS<br>Yes           |

## PSI/SI and remultiplexing

Remultiplexer with multiple inputs from tuners, IP and ASI. Multiple TS outputs to modulators, IP and ASI.

PSI/SI analysis and regeneration. PID dropping and PID remapping.

## SDI / HD-SDI output

|                   |                        |
|-------------------|------------------------|
| Connector         | BNC                    |
| Compliance SDI-SD | SMPTE 259M, SMPTE 272M |
| Compliance SDI-HD | SMPTE 292M, SMPTE 299M |

## Control and Management

Graphical User Interface for easy set up of complex systems. Simple handling of remultiplexing from any input.

Each Chameleon contains an embedded web server for management and control. Standard web browsers (Explorer, Mozilla etc.) are supported.

SNMP supporting all control and settings.  
SNMP monitoring  
Telnet CLI

## ASI Input / Output

ASI bit rate Max 270 Mbit/s

Max payload bit rates:

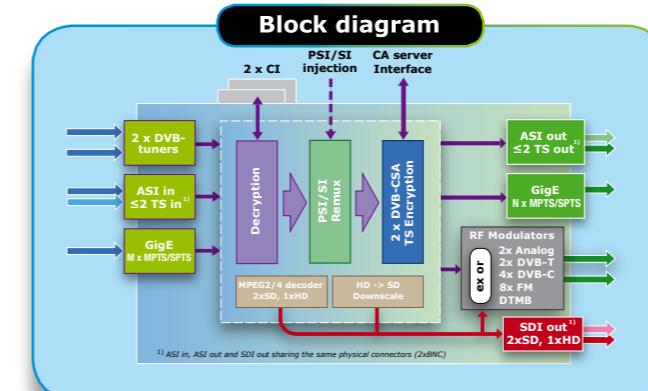
|                |            |
|----------------|------------|
| Input          | 200 Mbit/s |
| Output         | 200 Mbit/s |
| PCR restamping | Yes        |

## DVB\_SCA scrambler / Simulcrypt interface

|                |                                  |
|----------------|----------------------------------|
| Interface      | IP                               |
| DVB compliance | DVB-SimulCrypt (ETSI TS 101 197) |

## CHAMELEON - SINGLE HARDWARE HEAD END

The CHAMELEON product line is the first ever to cover almost every need for Cable-TV and SMATV distribution with only one hardware.



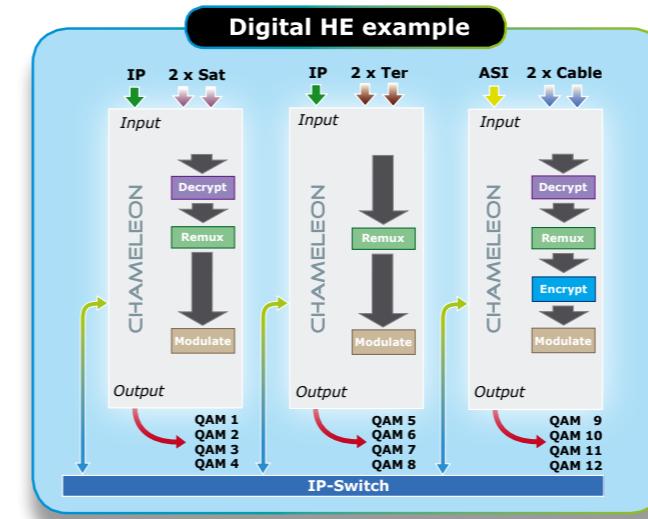
The different inputs and outputs are defined by software options and all software options can be updated at any time.

The CHAMELEON includes a dual DVB-S/S2/T/C receiver, furthermore it includes decoding of MPEG-2 and MPEG-4 video formats as well as it supports MPEG, AAC HE and AC-3 audio decoding.

Remultiplexing is just a mouse click away.

## CHAMELEON products

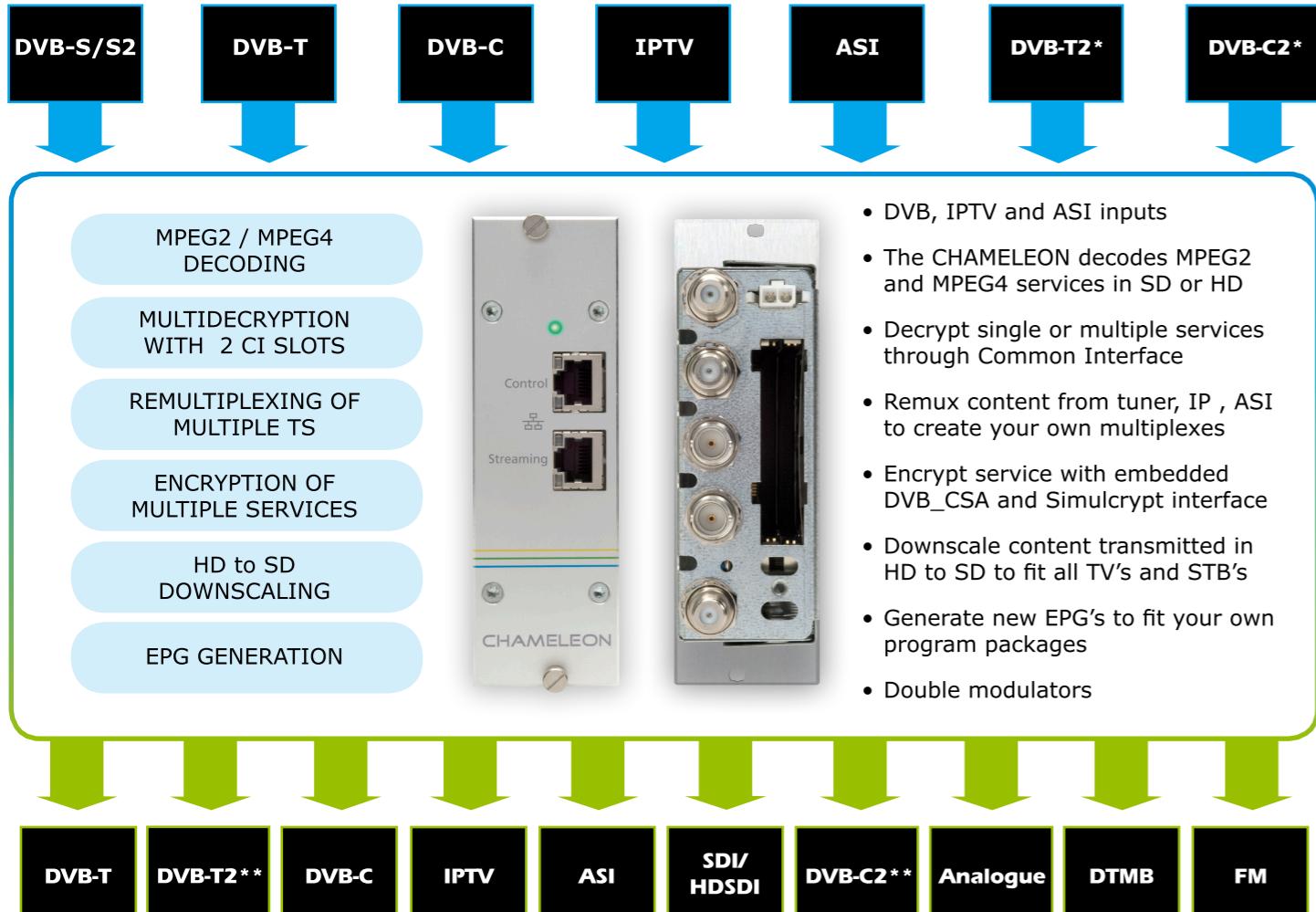
Receiver DVB-S/S2/T/C, single/double Transmodulator to COFDM, single/double Transmodulator to QAM, single/double DVB-C, DVB-T modulators, single/double Analogue VSB RF-modulator, single/double Edge QAM, single/double Edge COFDM, single/double MPEG2/MPEG4 SD decoder, single/double MPEG4 HD decoder CI decryption, single/double Remultiplexer multiple TS DVB\_CSA Scrambler, single/double IP streamer ASI streamer SDI generator, 2 SD/1 HD



All Chameleon "products" use the same HW, SW options defines functionality.



# CHAMELEON



\*) Future hardware option, \*\*) Future software option

**Connectors and Interfaces**

|                       |                                |
|-----------------------|--------------------------------|
| IPTV In/Out connector | RJ45 and SGMII (GigE)          |
| Control connector     | RJ45 (10/100)                  |
| RF input connector    | F female, 75 Ω                 |
| RF output connector   | F female, 75 Ω                 |
| ASI input connector   | BNC, 75 Ω                      |
| ASI output connector  | BNC, 75 Ω                      |
| SDI/HD-SDI connector  | BNC, 75 Ω, shared with ASI     |
| CAM connector         | 2 x PCMCIA (5 VDC)             |
| LED Indicator lights  | Power on (green) / Error (red) |

**Miscellaneous**

|                       |                                     |
|-----------------------|-------------------------------------|
| Power supply          | 12 VDC nom. (9-14 VDC)              |
| Power consumption     | Typ. 16 W<br>(excl. LNB, CAM load)  |
| Dimensions            | 230x105x40 mm<br>(excl. connectors) |
| Weight                | Approx. 600 g                       |
| Controller            | Embedded web server, SNMP           |
| Operating temperature | -20 to +50 °C,<br>non-condensing    |
| Product grading       | IEC6728-5, grade 1                  |

**DVB-S / S2 Satellite Receivers**

|                    |   |
|--------------------|---|
| Input frequency    | 950 – 2150 MHz                            |
| Input level        | -65 to -25 dBm , 49 to 84 dBµV            |
| Spectral inversion | Yes, selectable                           |
| LNB voltage        | Auto, Off or 13/18V, programmable         |
| 22kHz to LNB       | Auto, On or Off, programmable             |
| DVB compliance     | DVB-S (EN 300 421)<br>DVB-S2 (EN 302 307) |
| DiseqC             | V1.2                                      |
| Baudrate           | 1.5 – 45 Mbaud, DVBS/S2                   |

**DVB-C cable receiver / DVB-T Terrestrial receiver**

|                     |  |
|---------------------|--|
| Input frequency     | 42-1006 MHz                              |
| Input level (DVB-T) | 39 to 79 dBµV <sup>1)</sup>              |
| Input level (DVB-C) | 49 to 79 dBµV <sup>2)</sup>              |
| Bandwidth (DVB-T)   | 6/7/8 MHz                                |
| Bandwidth (DVB-C)   | 8 MHz                                    |
| DVB compliance      | DVB-T (EN 300 744)<br>DVB-C (EN 300 429) |

<sup>1)</sup> QEF reception with test signal :8K, 64 QAM, 1/4 guard interval, 2/3 FEC<sup>2)</sup> QEF reception with test signal :64 QAM, C/N 26dB**MPEG Decoder – Audio / Video**

|                   |  |
|-------------------|--|
| Supported formats | MPEG2 MP@ML, MPEG2 MP@HL,<br>up to MPEG4 H.264 AVC, HiP, level 4           |
| Output video      | MPEG 1 layer II, AAC HE (Audio)  |
| Output audio      | SDI, HD-SDI, audio embedded  |
| Aspect Ratio      | Stereo, Mono or Dual Sound   |
| Teletext          | Letterbox, Pan/Scan, or conversion<br>combined (14:9) programmable,<br>WSS |
|                   | Subtitling Teletext or DVB subtitling                                      |

**DVB-T Modulation**

|                     |  |
|---------------------|--|
| COFDM mode          | 2k, 8k   |
| Guard interval      | 1/4, 1/8, 1/16, 1/32                           |
| FEC                 | 1/2, 2/3, 3/4, 5/6, 7/8                        |
| MER                 | > 40 dB, typ 43 dB                             |
| DVB compliance      | DVB-T (EN 300 744)                             |
| Max output bit rate | 32 Mbit/s                                      |
| Output frequency    | 51 – 1006 MHz<br>(centre frequency)            |
| Max output level    | 102 dBµV nominal (51-858 MHz)<br>(1 channel) * |
| Spur. suppression   | > 60 dBc (51-858 MHz)                          |

**VSB – AM Modulation**

|                      |  |
|----------------------|--|
| Standards            | PAL B/G, D/K, I,<br>SECAM D/K, B/G, L          |
| Sound                | Mono, NICAM stereo,<br>A2 or A2* stereo        |
| Modulation video     | VSB AM, neg. or pos.                           |
| Modulation mono      | Audio FM or AM                                 |
| Output frequency     | 47 – 862 MHz                                   |
| Max output level     | 108 dBµV nominal (1 channel)                   |
| Video S/N (weighted) | > 60 dB  |
| C/N, broadband       | > 70 dB (65 dB typical<br>at adjacent channel) |
| NICAM standards      | NICAM 728 (EN 300 163)                         |
| Spur. suppression    | > 60 dBc (47-862 MHz)                          |

**DVB-C Modulation**

|                        |   |
|------------------------|---|
| QAM modes              | 16, 32, 64, 128 and 256 QAM                         |
| Symbol rate            | 4 – 7.2 Mbaud/s                                     |
| MER                    | > 43 dB for 256-QAM, typ 45 dB                      |
| DVB-C compliance       | DVB-C (EN 300 429)                                  |
| Output frequency       | 51 – 1006 MHz<br>(centre frequency)                 |
| Max output level       | 105 dBµV nominal (51-858 MHz)<br>(1 channel) * , ** |
| Spur. suppression      | > 60 dBc (51-858 MHz)                               |
| Number of QAM carriers | 1,2,3 or 4 within a band of 40 MHz                  |

\*) Two active channels decreases max output level by 3dB