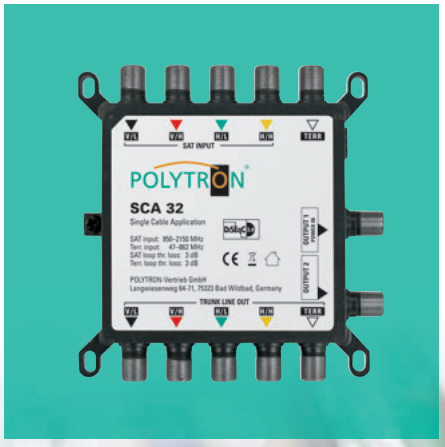
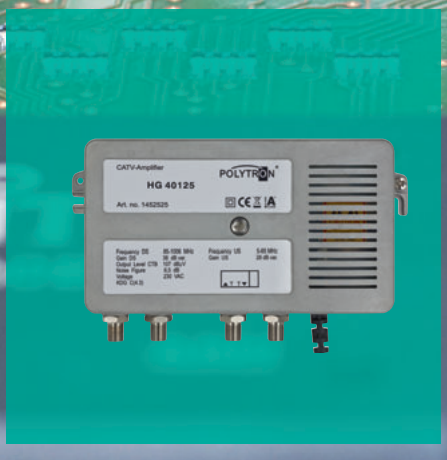
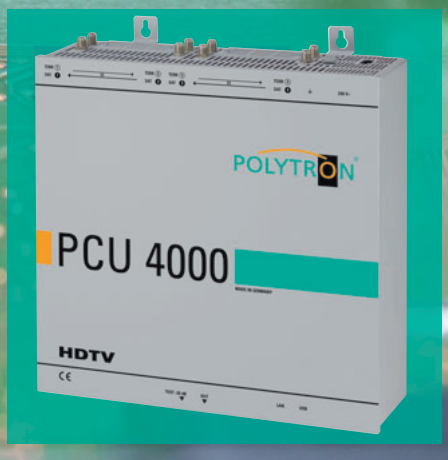
POLYTRON®

Broadband Systems

Product overview







Made in Germany

Why POLYTRON?

Wide experience: For 50 years POLYTRON develops and produces high-class products for signal processing. We are specialists in MATV, SMATV and CATV technology.

Products made in Germany: We manufacture our highly reliable products in our ultra-modern production location in Bad Wildbad – this is truly "made in Germany"!

Individual service: Do you want individual service? We take this for granted!
POLYTRON supports you anytime discovering the suitable products for your application.

We offer a **wide range of products:** HF amplifiers (CATV, SMATV and terrestrial), passive CATV components, headends, single-cable solutions, multiswitches, optical devices and much more.

Trust in us – we surely have got the suitable products for you!

Sincerely yours,
the POLYTRON team

50 YEARS
1966 – 2016

POLYTRON®

POLYTRON's performance spectrum

Hospitality

TV distribution for small hotels or guest houses.

Entertainment and TV equipment for holiday resorts.

Entertainment and TV equipment for luxury hotels.

Mobile TV providing

Entertainment and TV equipment for luxury busses.

Entertainment and TV equipment for yachts and cruise ships.

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Amplifiers

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Optical Node

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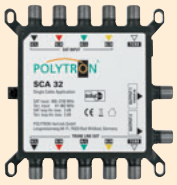
Single cable solution

NEW: SCA 32



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Headends

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Modular headends

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HDMI ➡ DVB-C / DVB-C +IP
HDMI ➡ DVB-T / DVB-T +IP
HDMI ➡ DVB-S

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Multiswitches

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Receiver powered multiswitches
Upgrading of multiswitch systems

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Optical SAT distribution

Satellite signal distribution via fibre cable

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CATV amplifiers – made in Germany

POLYTRON amplifiers convince with reliable electrical values and long durability. The class A screening compliance is a standard feature and completes the POLYTRON amplifiers quality concept.

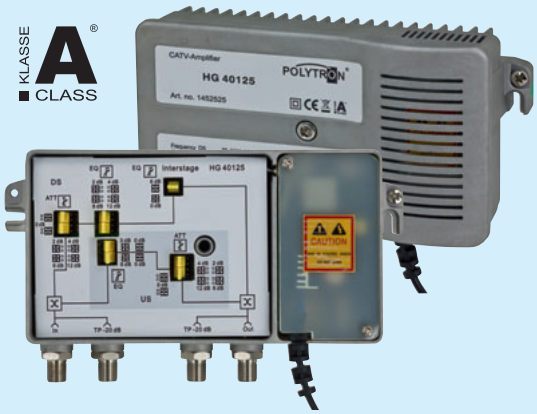
Whether small apartment houses or large distribution networks – POLYTRON offers the perfect amplifier series for every situation.

Amplifier for small and medium sized home systems

5–1006 MHz

1 GHz amplifiers

The HG amplifier series provides home distribution amplifiers with a frequency range of up to 1 GHz in best POLYTRON quality. Reliable components underpin the concept of quality and guarantee a long service life. The use in multipurpose services cable networks is supported by the integrated return path. With its reliable electrical values the HG series complies with the demands of the German cable operator KDG.



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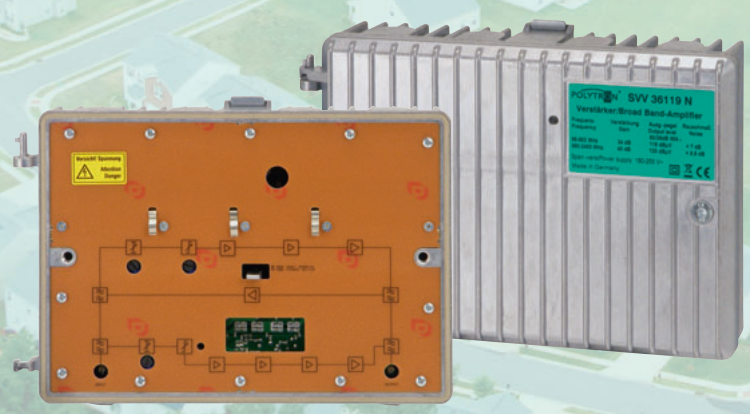
Super broadband amplifiers

The professional amplifiers of the SVV series are equipped with an amplifier block for the range of up to 862 MHz and from 950 to 2400 MHz.

4–862 MHz, 950–2400 MHz

KLASSE A CLASS



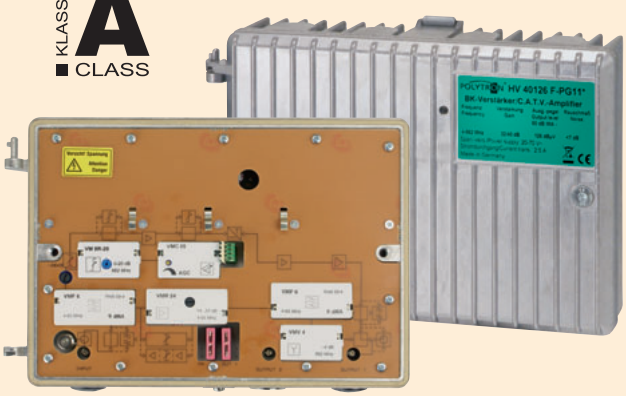
Made in Germany

Amplifiers for full service networks

The HV broadband amplifier series is for the expansion of **full service networks.**
The amplifiers are designed to complete both current and especially future tasks in such networks, as with the currently available plug-in modules a very wide range of requirements can be covered and subsequently adjusted without problems only with a few base types.

4–862 MHz

KLASSE A CLASS

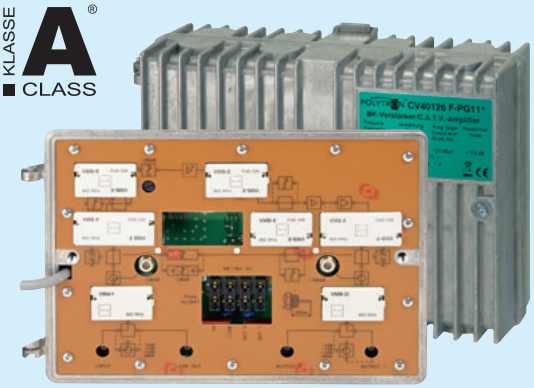


Amplifiers for large networks with high channel concentration

The CV series contains line-amplifiers for the installation of large distribution systems with a high channel concentration. Amplifiers can be configured at customer's option. As the forward and return path are variable, the amplifiers can be adapted to every specific situation. The CV-amplifiers are absolutely compatible for future alignment.

4–862 MHz

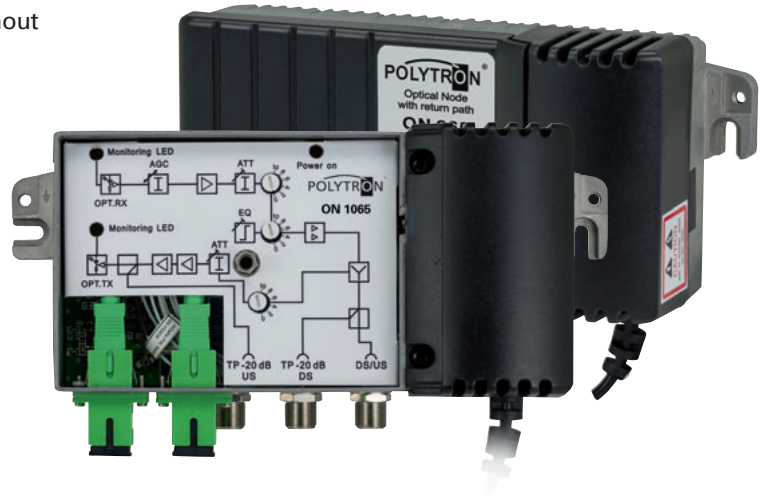
KLASSE A CLASS



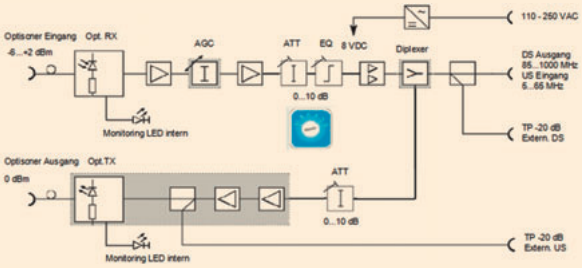
Optical Node

The POLYTRON optical node convinces as a reliable component to build hybrid fibre coax networks. The optical node is available with integrated 65 MHz return path and without return path.

- *excellent linearity*
- *outstanding return loss*
- *extreme flatness*
- *lower power consumption*



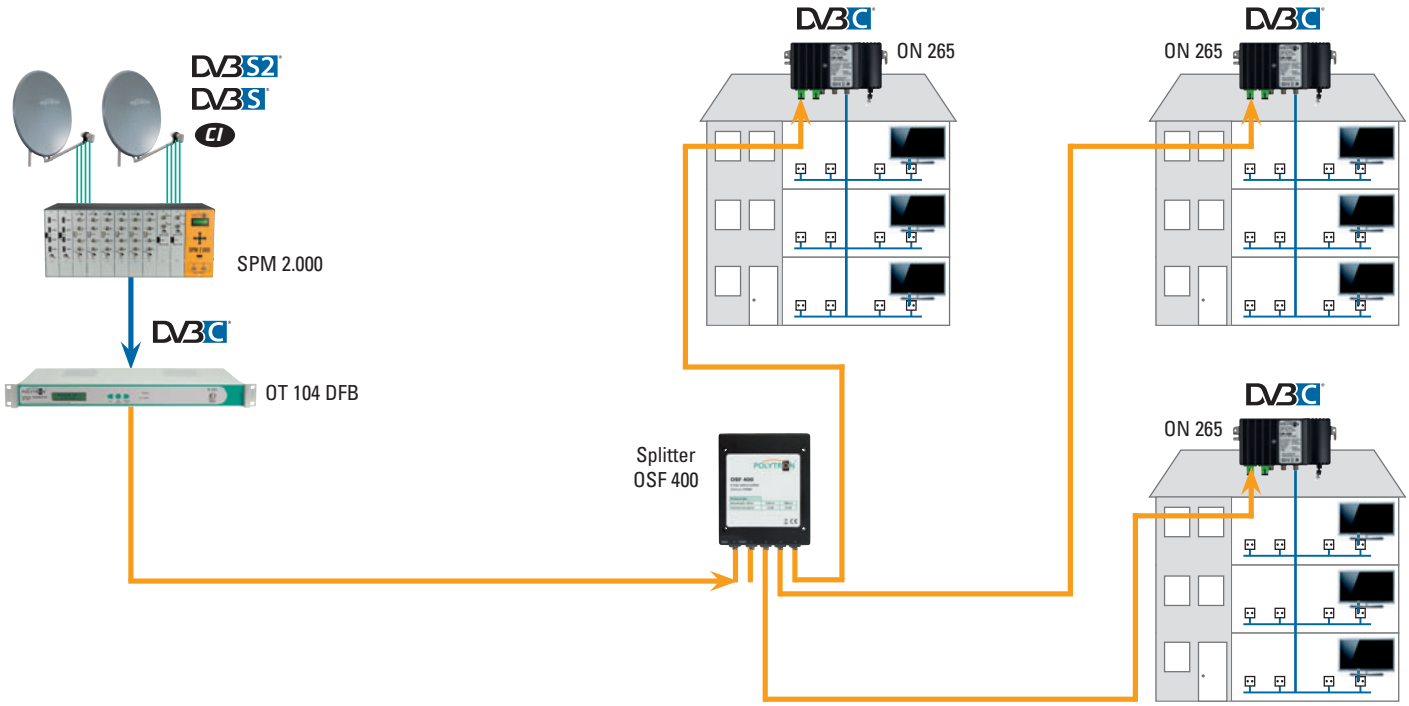
ON 1065



Optical transmitter

POLYTRON's optical transmitters are designed to build optical distribution systems. The optical transmitters operate with a distributed feedback laser. The transmitters are the ideal supplement to POLYTRON's optical nodes.

- *DFB-laser, wavelength 1310 nm (± 10)*
- *modulation: direct light intensity modulation*
- *optical connectors: FC-ACP / FC-SCP*
- *graphical LC display*



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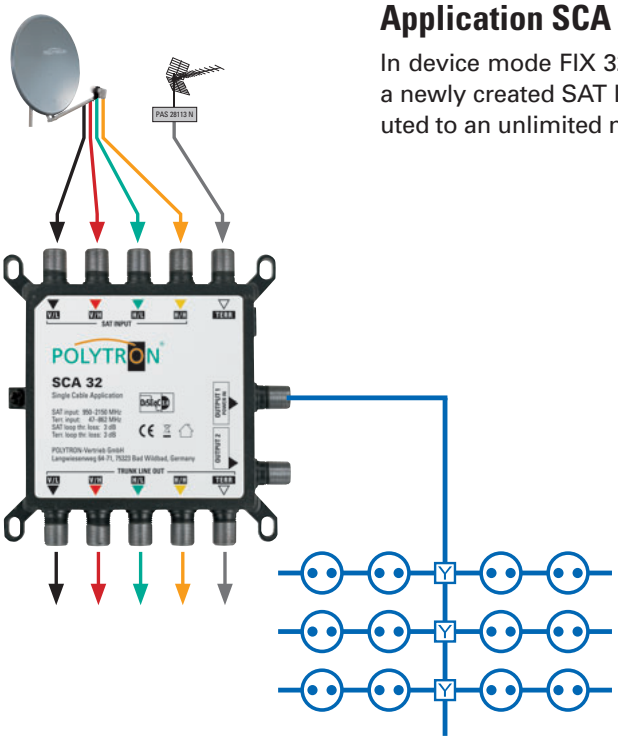
Ultra compact single cable solution for 2 applications

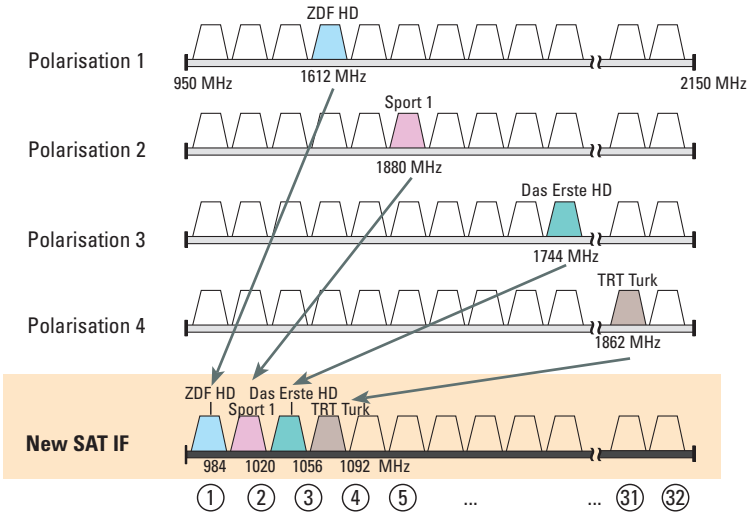
POLYTRON's SCA 32 is a single cable solution with different applications.
The device can be used as a headend solution (SCA 32 fix) with 32 selected and fixed transponders. The transponders can be distributed to an unlimited number of subscribers.

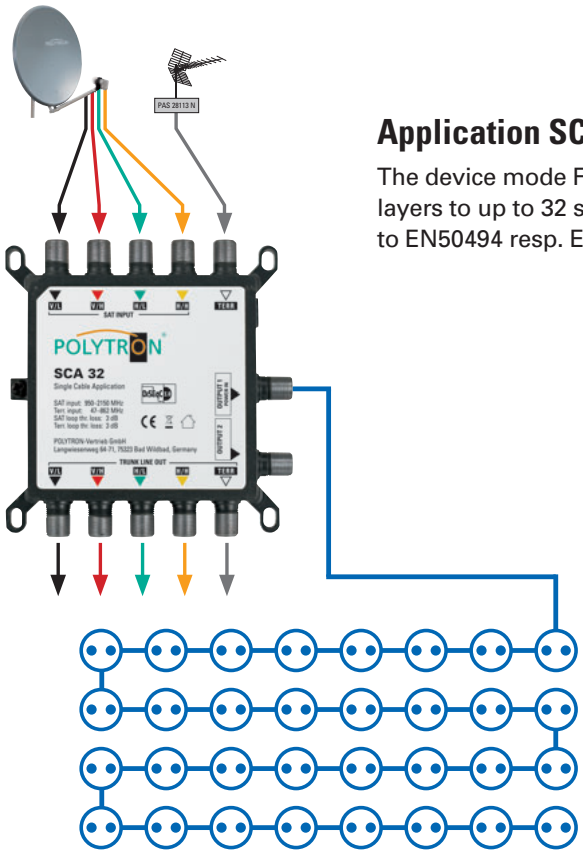
The other application is a dynamic single cable solution (SCA 32 flex) with full satellite reception for 32 direct access points resp. subscribers.



Application SCA 32 Fix

In device mode FIX 32 transponders are directly allocated to a newly created SAT IF layer. The new IF layer can be distributed to an unlimited number of subscribers.





Application SCA 32 Flex

The device mode FLEX provides direct access to 4 SAT IF layers to up to 32 subscribers. Communication is according to EN50494 resp. EN50607.

Compact headends

POLYTRON's compact headends are a clever solution for the processing of digital input signals. The series contains devices with 4, 8, 12 and 16 channels as well as DVB-S/S2, DVB-T/T2 and DVB-C reception. Depending on the model the transmodulation to the output signal is DVB-C, DVB-T or DVB-S.
The "smaller" compact headends with 4 tuners feature built-in CI slots, which allow central decryption of encrypted programmes.

Choose

4 Inputs
CI slots

8, 12 or 16 inputs
Flexible input matrix

PCU series CI

DVB S2 MPEG 4 / DVB S / DVB T2 / DVB T / DVB C → PCU 4111 → DVB T

DVB S2 MPEG 4 / DVB S / DVB T2 / DVB T / DVB C → PCU 4121 → DVB C

DVB S2 MPEG 4 / DVB S / DVB T2 / DVB T / DVB C → PCU 4141 → DVB S

QAM series

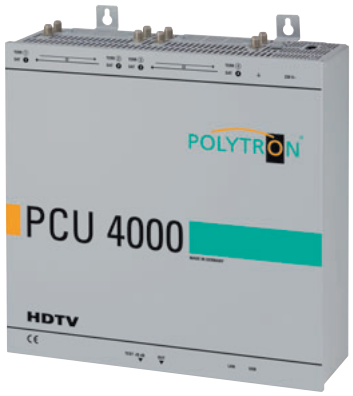
DVB S2 / DVB S → QAM 8 EM → DVB C

DVB S2 / DVB S → QAM 12 EM → DVB C

DVB S2 / DVB S → QAM 16 EM → DVB C

4x CI

DUAL MODULATOR



8x DVB-S/S2 ➡ DVB-C

QAM 8 EM

12x DVB-S/S2 ➡ DVB-C

QAM 12 EM

16x DVB-S/S2 ➡ DVB-C

QAM 16 EM

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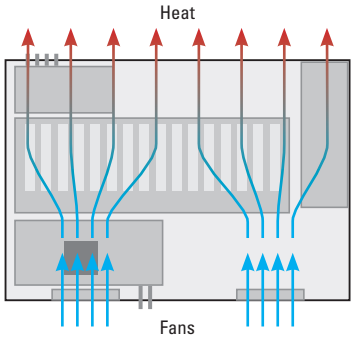
Made in Germany compact headends

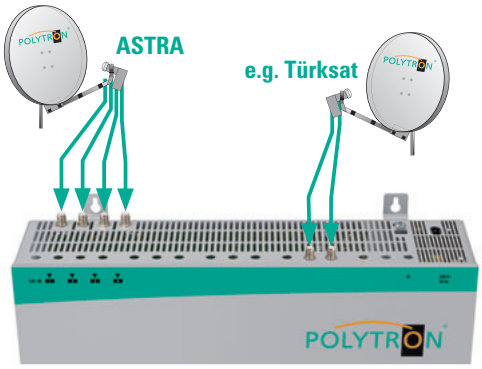
Valuable components, modern production processes and the 48 h stress test of each device guarantee high reliability of the compact technology.

Made in Germany

Long-Life Management

The efficient cooling design with automatic temperature control and the power supply unit with a large cushion maximize the durability of the compact headends.



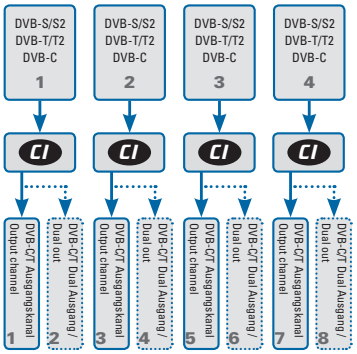


Flexible input matrix (QAM)

Fast an easy installation with the built-in input switch board.
Even more flexibility with bypassing the switch board for single tuners.

Dual modulators (PCU, QAM 8 EM)

The output channels can be splitted into two channels to feed in the whole bandwidth into the distribution network.



Ex. PCU: 8 available output channels.

Flexible input selection (PCU)

Innovative triple tuners allow to select the type of input signals freely and independently.

CI slots (PCU)

Four CI slots allow central decryption of programmes.

Service Cut off

Unwanted programmes can be removed (not QAM 16).

Flexible output modulation (PCU)

The PCU headends' output signal can be switched from DVB-C to DVB-T (and vice versa) with a firmware update.

Model with SAT output modulation (PCU 4141)

Die PCU 4141 features DVB-S output modulation. The signal can be distributed directly or with multiswitches into the SAT IF distribution system.

PC programming and LAN control

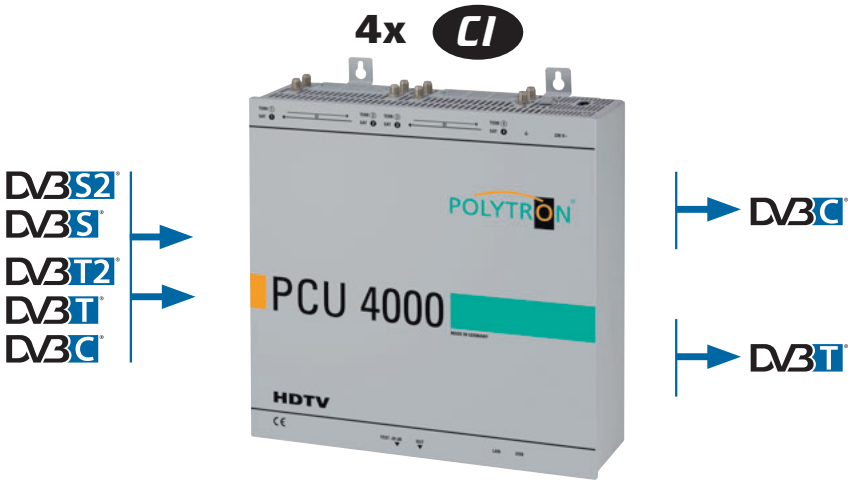
The administration of the devices can be done with the PC software directly or via LAN – flexible and reliable.

Versatile processing options

- LCN allocation
- NIT creation
- PIN protection

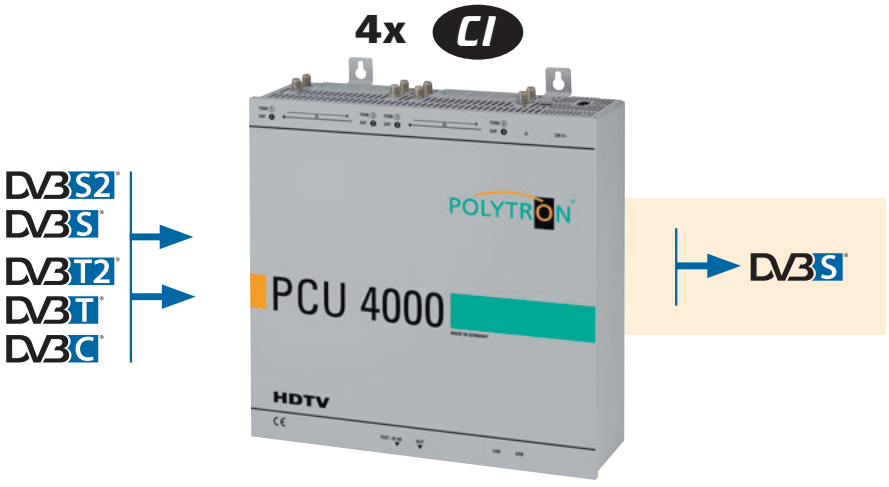
PCU 4111 / PCU 4121

- Compact design
- Triple tuners
- Processing of 4 input signals
- Input signals selectable DVB-S(2), DVB-T(2), DVB-C
- Features mixed reception
- 4 CI slots for central decryption
- Output options: DVB-C (QAM), DVB-T (COFDM)
  – switchable via firmware update
- Usage of common receivers
- Made in Germany



PCU 4141

- Compact design
- Triple tuners
- Processing of 4 input signals
- Input signals selectable DVB-S(2), DVB-T(2), DVB-C
- Features mixed reception
- 4 CI slots for central decryption
- Output option: DVB-S
- Output to a multiswitch system or direct
- Made in Germany



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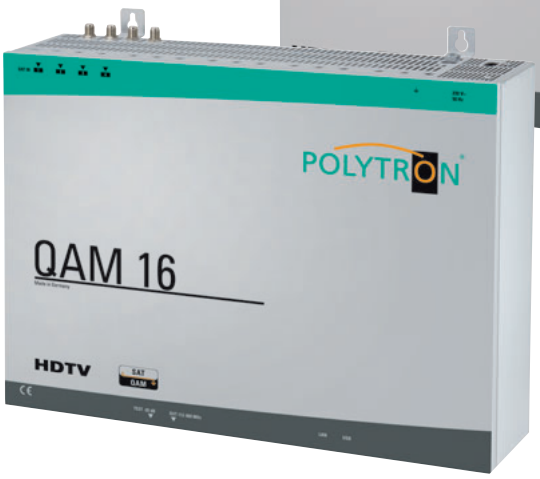
QAM 8 EM, QAM 12 EM, QAM 16

- Compact design
- DVB-S/S2 in DVB-C processing
- Built-in 4IN input switch-board
- Easy PC programming
- allows administration via LAN
- Made in Germany

QAM 8 EM

QAM 12 EM

QAM 16 EM



Headends in comparison

Typ / Type	Eingangssignal Input signal	Ausgangssignal Output signal	Anzahl Eingänge Number of inputs	Verteilmatrix Switch board	Tuneranzahl Number of tuners	Ausgangskanäle Output channels	CI	LAN	TS-Processing	NIT / LCN
DVB S2 / DVB S → DVB C										
QAM 8 EM	DVB-S/S2	DVB-C	4	✓	8	8 + 4	-	optional	✓	✓
QAM 12	DVB-S/S2	DVB-C	12	-	12	12	-	optional	✓	✓
QAM 12 EM	DVB-S/S2	DVB-C	4	✓	12	12	-	optional	✓	✓
QAM 16 EM	DVB-S/S2	DVB-C	4	✓	16	16	-	✓	-	-
DVB S2 / DVB S / DVB T2 / DVB T / DVB C → DVB C / DVB T / DVB S										
PCU 4111	DVB-S(S2) DVB-T(T2) DVB-C	DVB-C (umschaltbar auf DVB-T)	4	-	4	4+4	4	✓	✓	✓
PCU 4121	DVB-S(S2) DVB-T(T2) DVB-C	DVB-T (umschaltbar auf DVB-C)	4	-	4	4+4	4	✓	✓	✓
PCU 4141	DVB-S(S2) DVB-T(T2) DVB-C	DVB-S	4	-	4	4	4	✓	✓	✓

Versatile due to modular design

POLYTRON's SPM headend series manages a wide variety of input and output formats and meets the diverse requirements for an individual community system.
The thorough production and the usage of high-class components makes POLYTRON's headends extremely durable and failure-safe. The design optimized for low power consumption causes a low energy consumption and increases the profitability of the investment in the face of many years continuous operation.

Made in Germany

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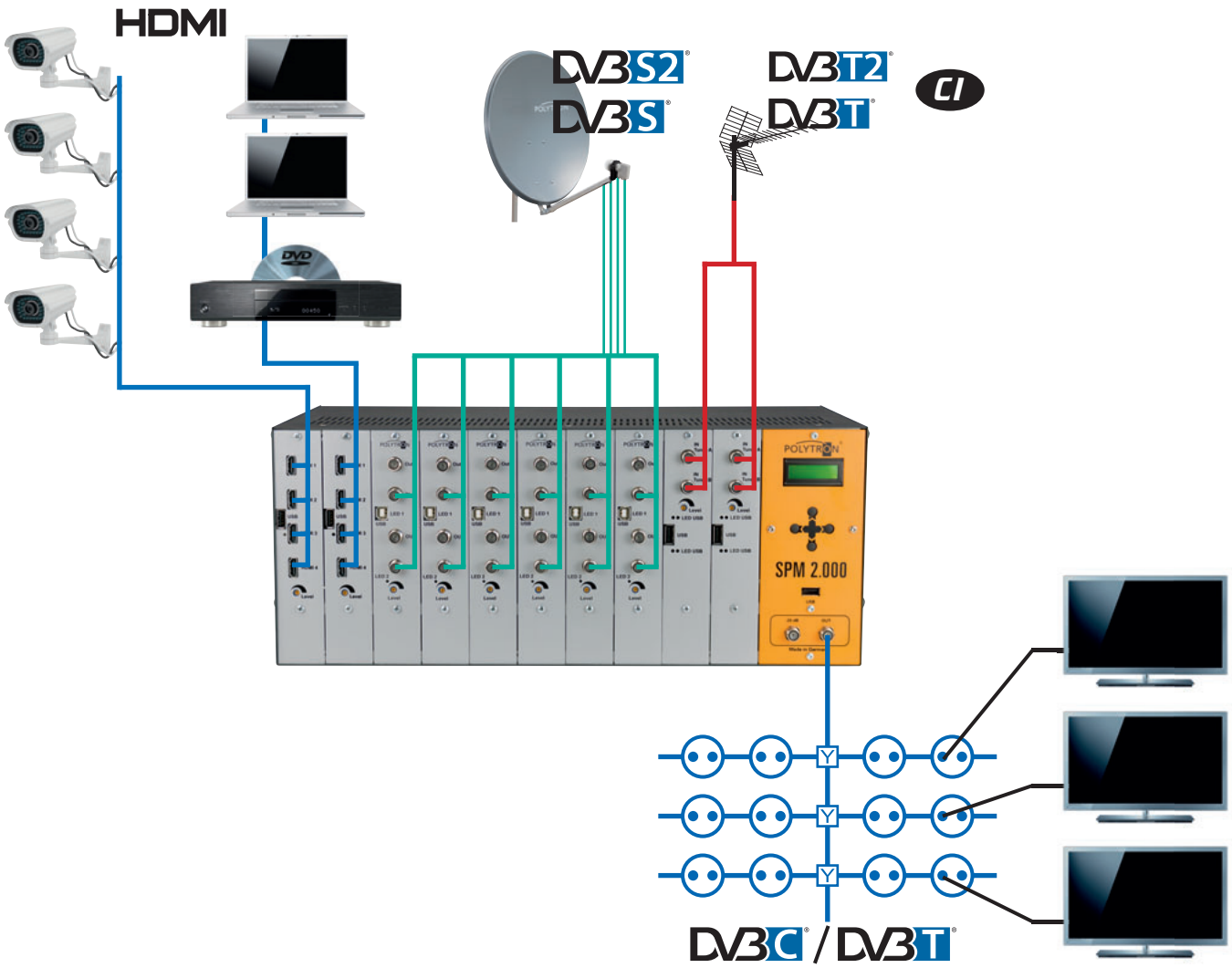
Application



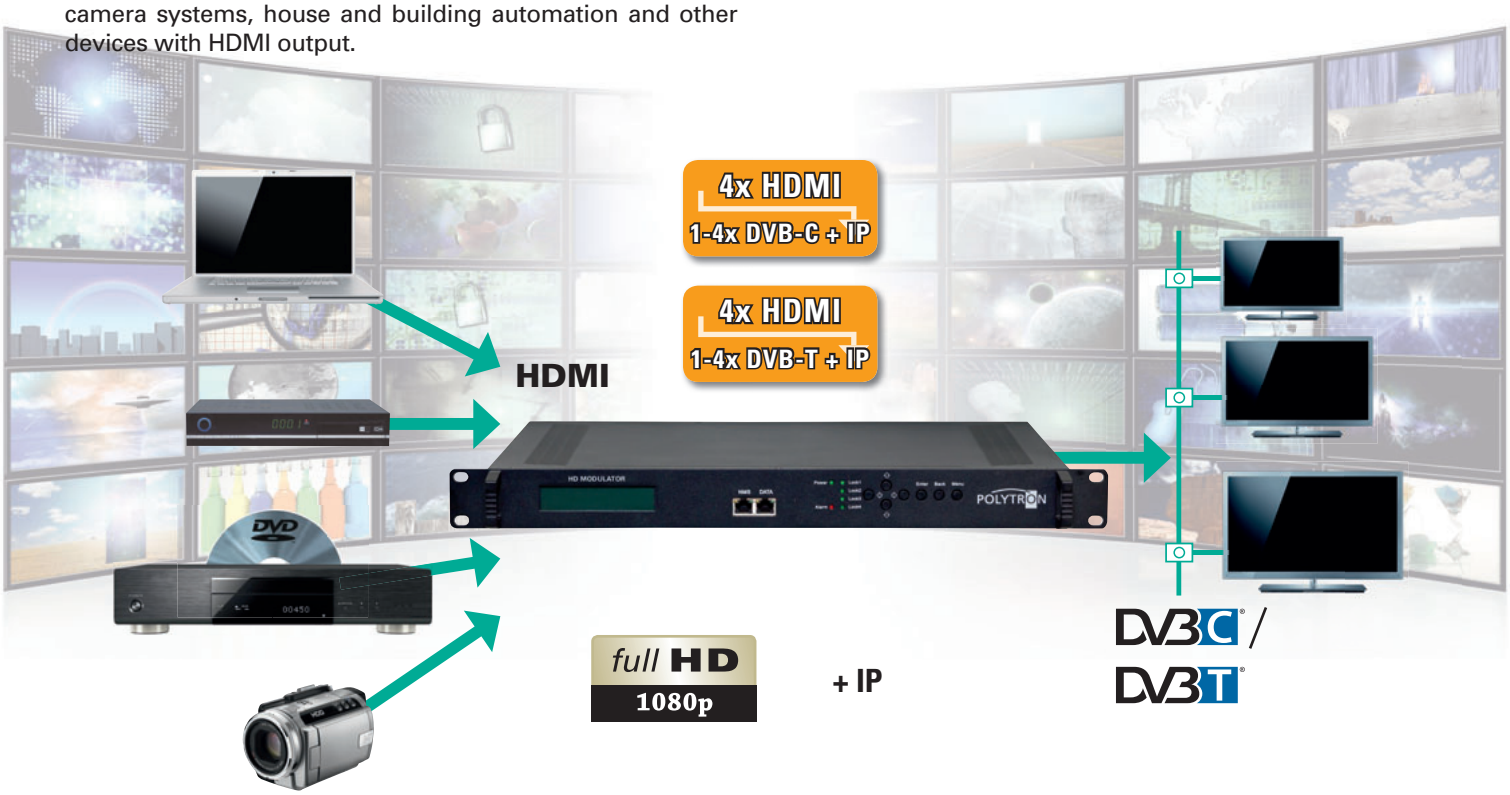
4x resp. 8x HDMI ➡ DVB-C / DVB-T

One resp. two HDMI quad modules in the base unit SPM 200 convert 4 resp. 8 HDMI signals into DVB-C or DVB-T.

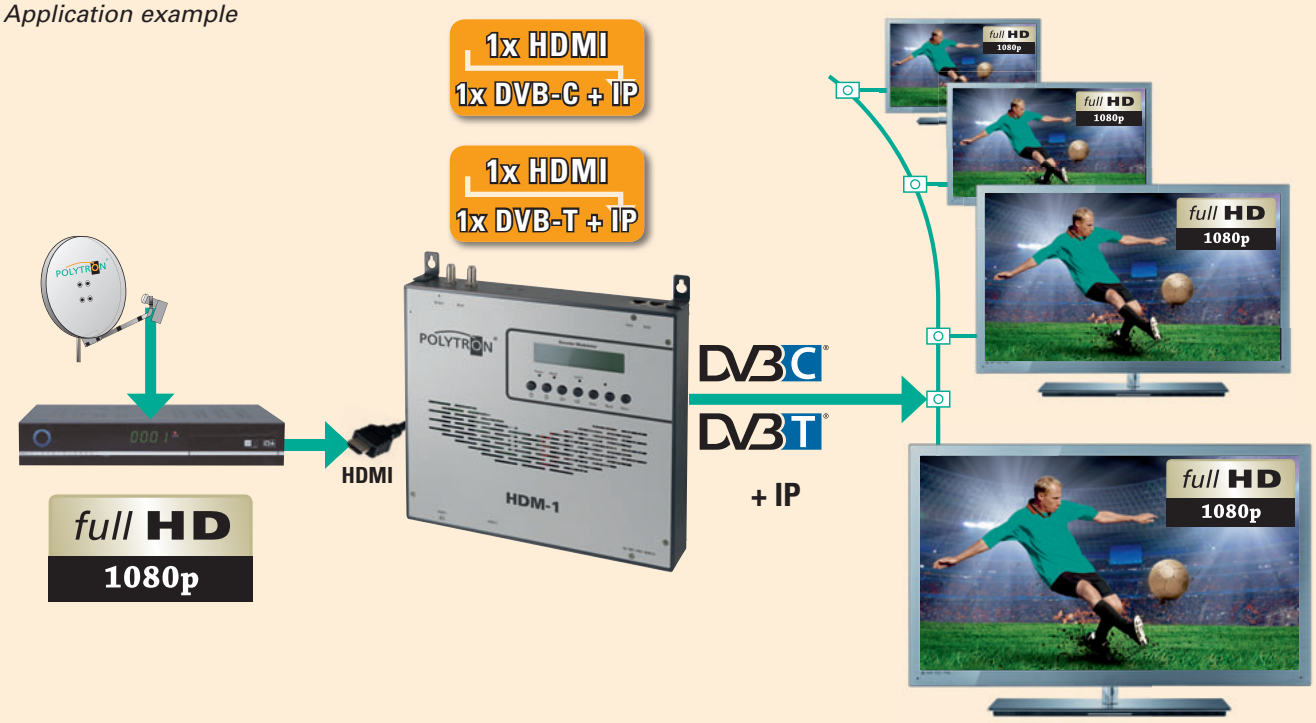
HDMI signal distribution via coax cable or multiswitch systems

POLYTRON's HDM series modulators convert HDMI video signals into DVB-T HD (COFDM), DVB-C HD (QAM), DVB-S or IP signals. The output signals can be fed directly into a coaxial or SAT distribution system so that all TVs receive the signal and the video signal can be received alongside the existing TV programmes.
All HDMI devices can be connected to the HDM modulators, e.g. DVD players, satellite and HDTV receivers, HDMI computer outputs, media players, smartphones and tablets, DC-CCTV camera systems, house and building automation and other devices with HDMI output.

Some HDM series modulators feature an IP HD stream output that can be used in parallel with the DVB signal. This means that the input signal can be fed into different networks, e.g. LAN or Wi-Fi for PCs, smartphones and tablets.
The A/V modulators convert A/V signals into DVB-C resp. DVB-T.



Application example



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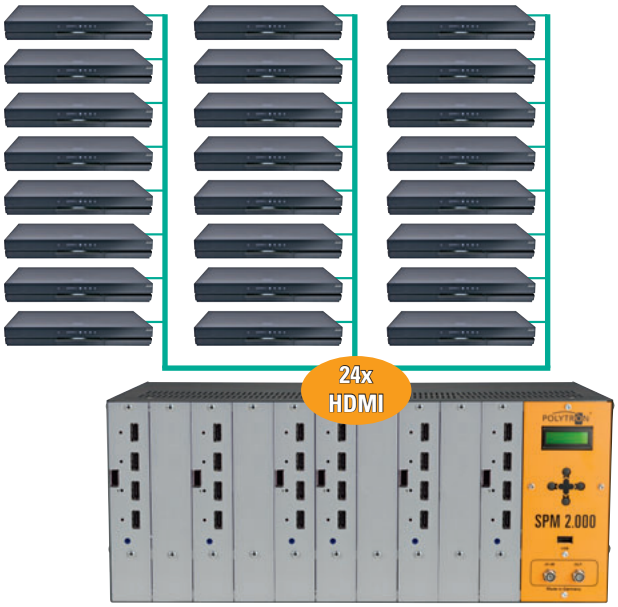
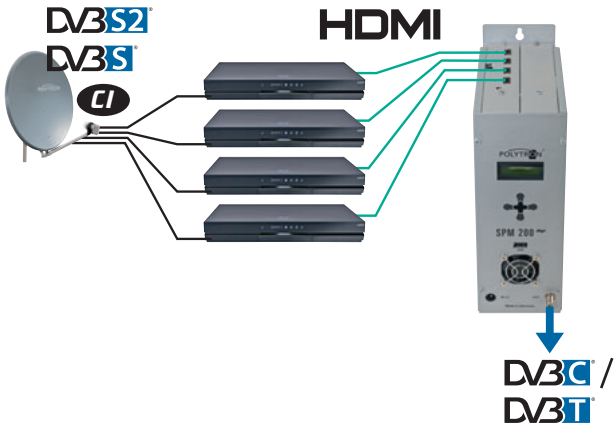
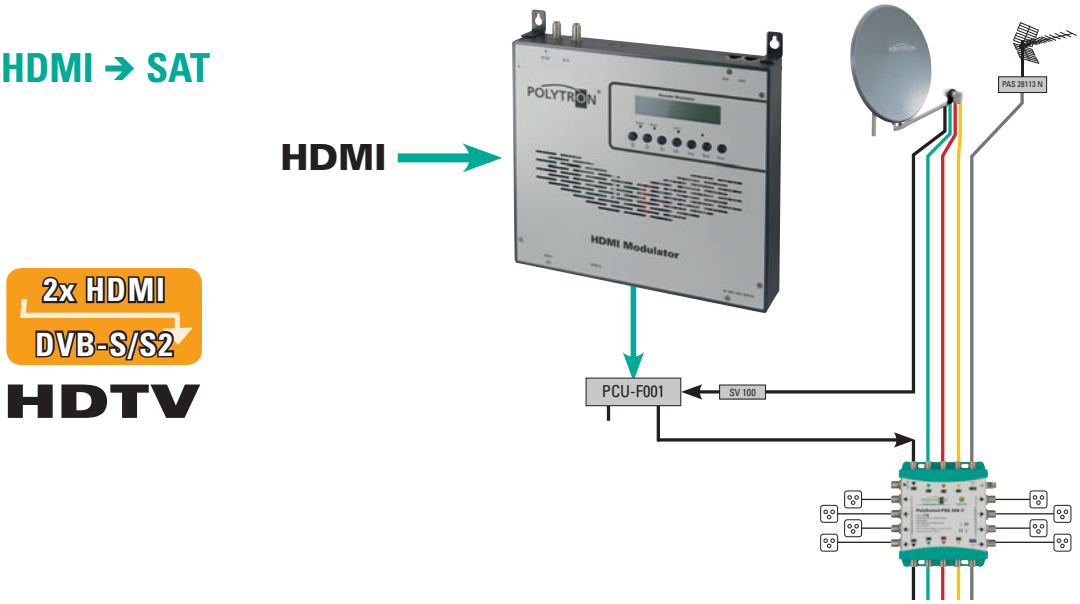
Further applications





Eingang Input	Ausgang Output	Typ Type	IP-Stream IP stream	MER	ASI	19"-Montage 19" rack mount	PC-Programmierung PC programming	Art. Nr Art. no.
1 x HDMI	1 x DVB-C / DVB-T	HDM 1 ULS	-	≥ 42	-	-	-	5741641
1 x HDMI	1 x DVB-C	HDM 1 C	✓	≥ 42	-	-	✓	5741650
2 x HDMI	bis zu / up to 2 x DVB-C	HDM 2 C01	✓	≥ 42	✓	✓	✓	5741652
4 x HDMI	bis zu / up to 4 x DVB-C	HDM 4 C	✓	≥ 42	✓	✓	✓	5741654
1 x HDMI	1 x DVB-T	HDM 1 T	✓	≥ 42	-	-	✓	5741640
2 x HDMI	bis zu / up to 2 x DVB-T	HDM 2 T01	✓	≥ 42	✓	✓	✓	5741659
4 x HDMI	bis zu / up to 4 x DVB-T	HDM 4 T	✓	≥ 42	✓	✓	✓	5741644
4 x HDMI	2 x DVB-C / DVB-T	SPM 200 HDMI4	-	≥ 38	-	-	-	5529072
8 x HDMI	4 x DVB-C / DVB-T	SPM 200 HDMI8	-	≥ 38	-	-	-	5529073
24 x HDMI	12 x DVB-C / DVB-T	SPM 2.000 HDMI24	-	≥ 38	-	✓	✓	5525221

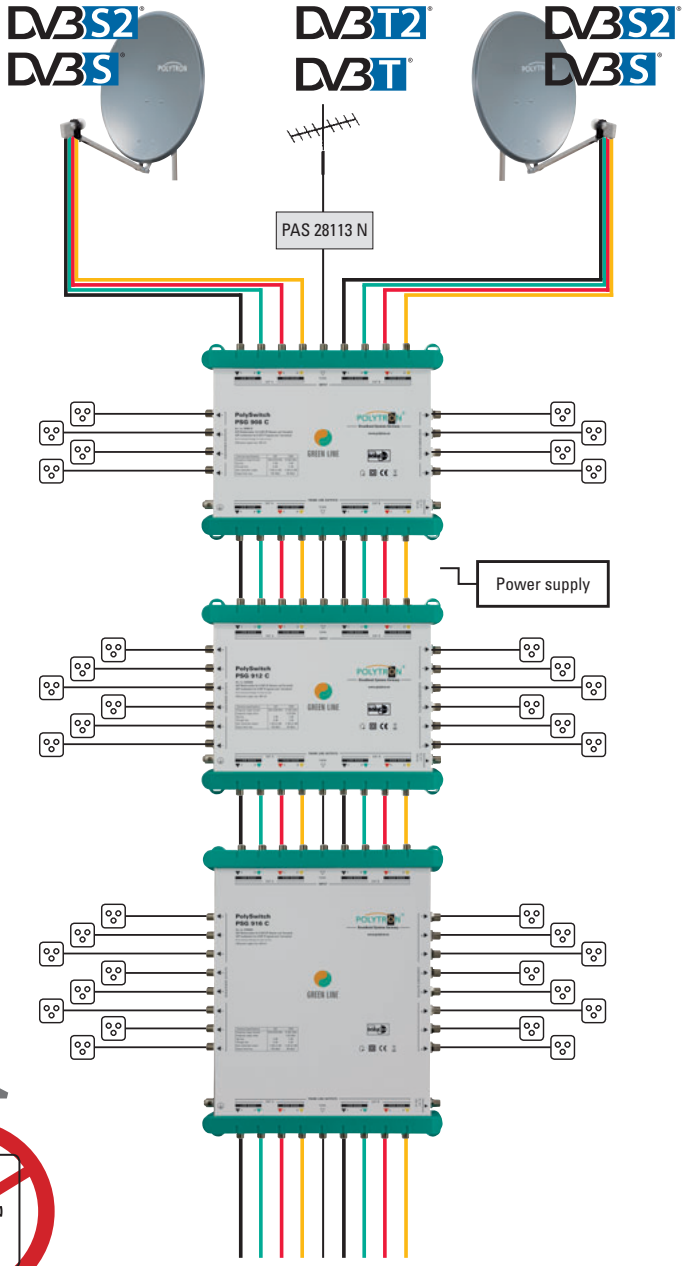
HDMI ➔ SAT

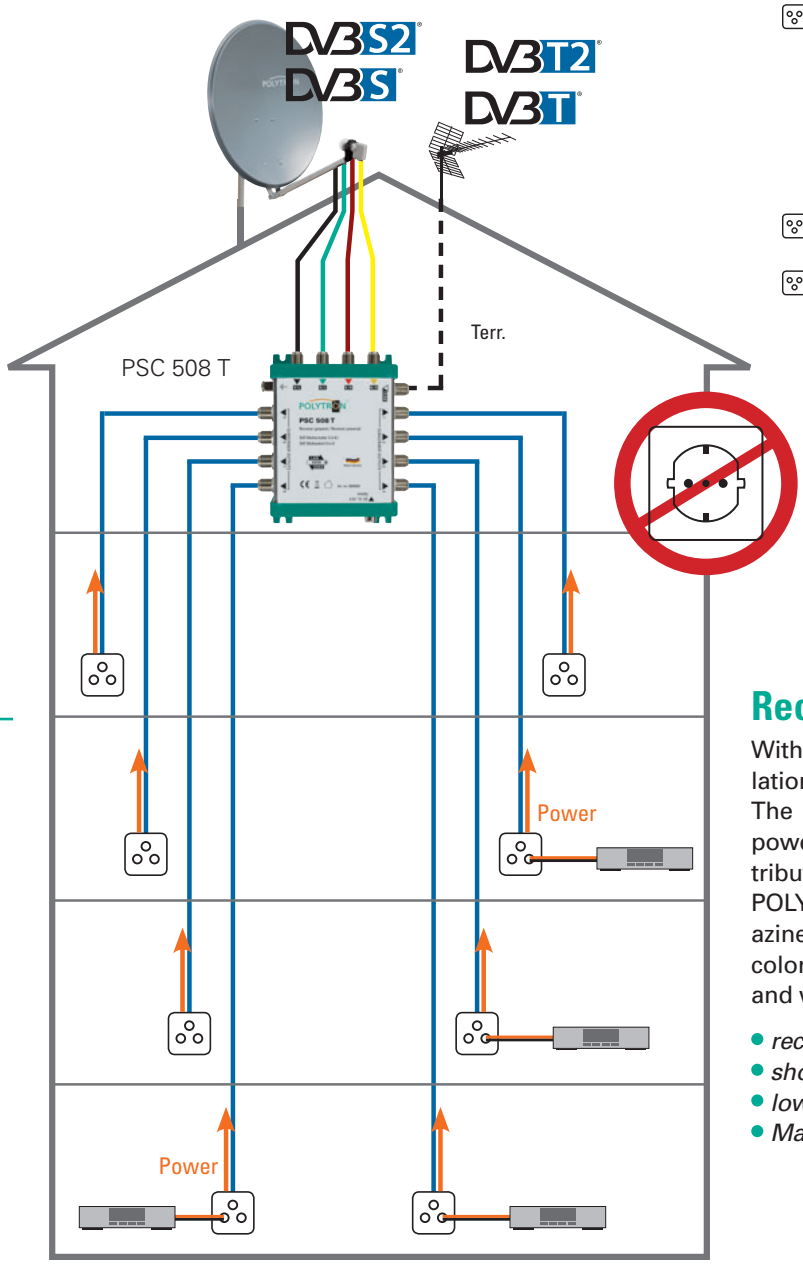


Eingang Input	Ausgang Output	Typ Type	IP-Stream IP stream	MER	ASI	19"-Montage 19" rack mount	PC-Programmierung PC programming	Art. Nr Art. no.
1x HDMI	1x DVB-S	HDM 1 SL	-	≥ 38	-	-	✓	5741636
2x HDMI	1x DVB-S	HDM 2 S01	✓	≥ 40	-	-	✓	5741658

Efficient installation-friendly multiswitches

- Coloured marks on the devices facilitate the assignment of the conection cables.
- Largely sized gaps between the connectors allow comfortable and fast installation of the cables.
- Installation-friendly long hole mounts allow more flexibility to the wall installation.





Receiver powered multiswitches

With receiver powered multiswitches the choice of the installation place is free and independent of mains connections. The multiswitches itself as well as the connected LNB are powered by the receivers resp. TV sets connected to the distribution network.
POLYTRON's multiswitches convinced in a leading trade magazine comparison test with excellent reception characteristics, color coded, accessible ports and LAN over coax functionality and were awarded with the best price performance seal.

- *receiver powered*
- *short-circuit proof*
- *low power consumption*
- *Made in Germany*

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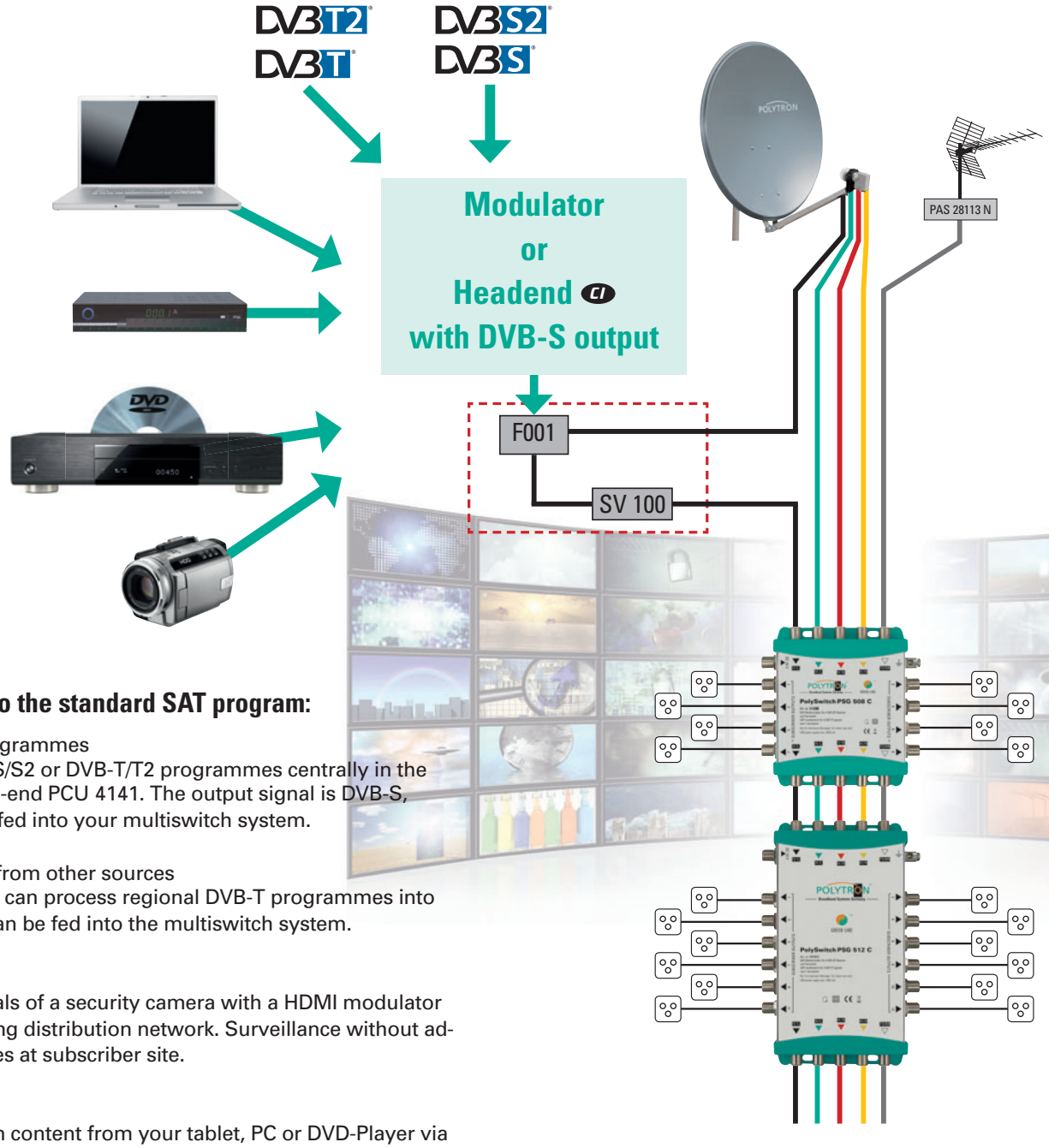
Tuning for your multiswitch system!

Feed decrypted programmes with a compact headend or signals from an external HDMI source directly into your multiswitch distribution – with POLYTRON's innovative components!

The SAT band pass filter F001 allows to feed external SAT signals into your multiswitch system.

EWS 01



Add content to the standard SAT program:

- encrypted programmes
  Decode DVB-S/S2 or DVB-T/T2 programmes centrally in the compact head-end PCU 4141. The output signal is DVB-S, which can be fed into your multiswitch system.

- Programmes from other sources
  The PCU 4141 can process regional DVB-T programmes into DVB-S wich can be fed into the multiswitch system.

- Surveillance
  Feed the signals of a security camera with a HDMI modulator into the existing distribution network. Surveillance without additional devices at subscriber site.

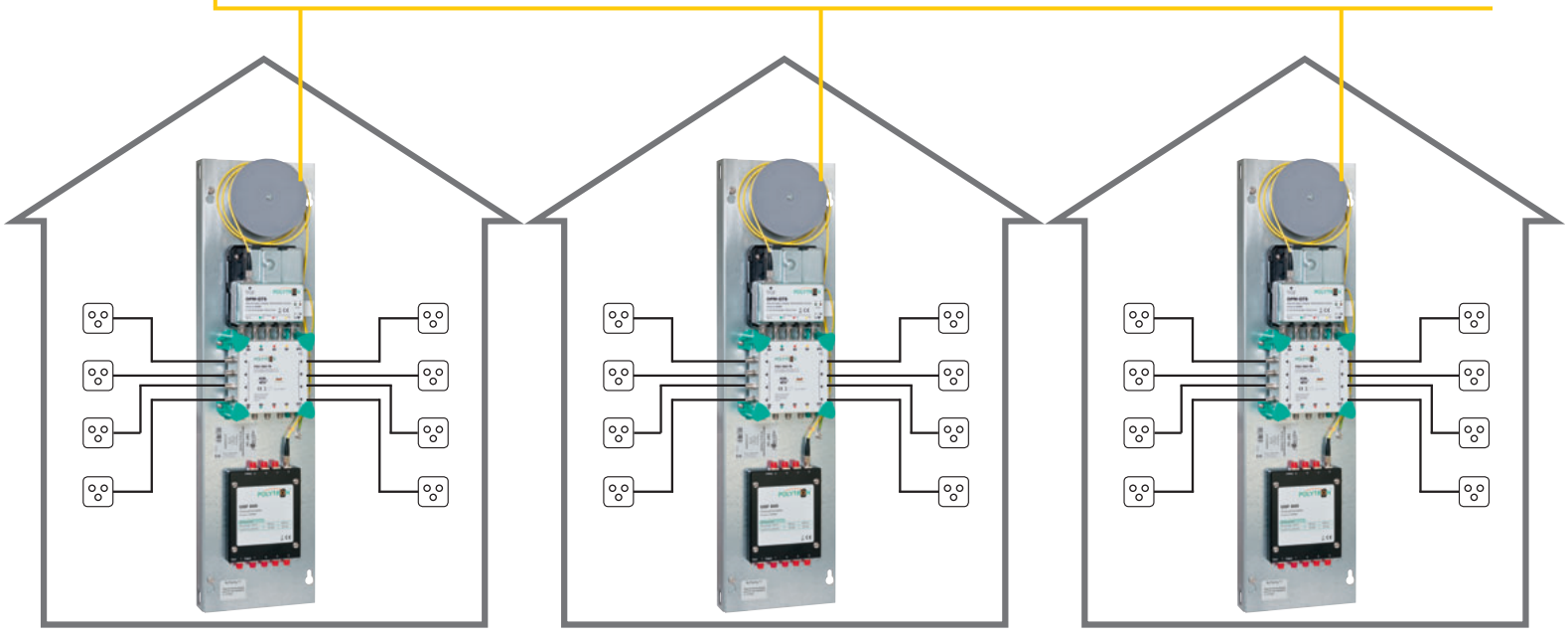
- Info-Channels
  Distribute own content from your tablet, PC or DVD-Player via your multiswitch system with a POLYTRON modulator.

Customized mounting units

Besides the base product portfolio POLYTRON offers customized mounting units which facilitate the realization of projects and optimize the installation.

Example

Our experts would like to support you with planning and help you whith the best usage of POLYTRON's optical products.



OMP – ex factory assembled mounting unit

Get in touch with us

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Arbeitsgemeinschaft Satellitenempfang e.V. sat

GAK Gesellschaft für Antennen und Kommunikationssysteme e.V.

QUACERT ISO certified

Quality made in Germany

Development and production in Bad Wildbad, Germany

Automated mounting of SMD units

Automated soldering

Quality control of all products

...made in Germany!

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All data without guarantee. Subject to change. Errors excepted.