BLANKOM ANTENNENTECHNIK GmbH

Professional Headend Solutions

B-LINE HIGH QUALITY SYSTEM

HIGH QUALITY SYSTEM

- **NEW modules for processing of 8PSK/QPSK, COFDM, QAM, ASI, Analog TV and Audio/Video signals**
- **Modular Headend system featuring Hot Swap technology and automatic power supply redundancy**
- **Frequency agile inputs and outputs**
- **Support of Single- and Multi-Service-Decryption via Common Interface (CI)**
- **Various Transport stream processing features**
- **Outstanding signal values for best picture quality and stability**
  - **Output level of 116 dBµV**
  - **Signal to Noise ratio (S/N) max. ≥67 dB**
  - **Modulation Error Rate (MER) ≥45 dB**
- **Extrem low phase noise for any modulation types**
- **Flexible local and remote configuration & SNMP monitoring**

...Selling Signals

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Professional Headend Solutions

AMB 307 COFDM Modulator
ASI ⇨ DVB-T (COFDM)

The new **AMB 307** COFDM Modulator is excellent for modulation of any ASI Transport stream into COFDM (DVB-T). This unit is perfect for digital terrestrial signal (COFDM) delivery and ideally applicable for broadcast, cable-TV and broadband playout.

The **AMB 307** provides various features like PSI-/SI processing, NIT generation, PID filtering with table processing and continuous zero stuffing and features excellent quality and performance.

The **AMB 307** can be accessed and configured locally and remotely via the unique central control unit HCB 200 and also features SNMP monitoring optionally.

- **Modulation of one ASI-TS into COFDM (DVB-T)**
- **PSI-/SI processing with NIT generation**
- **PID filtering with table processing**
- **Supports continuous zero stuffing**
- **Easy and flexible local and remote control/SNMP**

HIGH QUALITY SYSTEM

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DCS

ASI Input	
Level range	200...880 mV_{pp}
Data rate	270 Mbps
Connector	BNC socket
Impedance	75 Ω
ASI-Polarity	regular/inverted
ASI Output	
Level	800 mV_{pp} (±10%)
Data rate	270 Mbps
Connector	BNC socket
Impedance	75 Ω
ASI-Polarity	regular
ASI Signal processing	
Data rate	0.625...213 Mbps
ASI Transmission mode Input Output	 continuous, burst burst
TS Transmission mode Input/Output	 188, 204 Byte
DVB-T Parameter	
IFFT size	2k, 8k

Guard Intervals	1/4, 1/8, 1/16, 1/32
Constellations	1/2, 2/3, 3/4, 5/6, 7/8
Hierarch. Modulation	QPSK, 16QAM, 64QAM
Modulation Error rate (MER)	≥43 dB
Spurious frequency distance	≥60 dB
C/N (> 25 MHz distance from channel-center) BW = 5 MHz BW = 8 MHz	 typ. 80 dB typ. 78 dB
RF Output	
Output frequency range	45...862 MHz
Tuning grid	10 kHz
Max. output level	115 dBµV
Level adjustment range	0 ... 31,5 dB (0.5 dB steps)
Channel allocation	adjacent channel ability
Connector	F socket
Impedance	75 Ω
Phase noise	1 kHz; Typ. -92 dBc/Hz 10 kHz; Typ. -101 dBc/Hz 100 kHz; Typ. -108 dBc/Hz

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RCB 199 High Qualitiy Frequency Converter RF ⇨ RF

The **RCB 199** is a high qualitiy frequency converter for transparent conversion of all analog and digital modulation formats. It provides a flexible and reliable modular headend solution for any cable-TV, broadband and broadcast application and ensures optimal output performance and video quality.

The unit encompasses highest frequency stability, agility, and bandwidth adaption while the additional repeater option allows a single wave conversion especially for incoming terrestrial or catv signals at lowest levels.

The **RCB 199** can be accessed and configured locally and remotely via the unique central control unit HCB 200 and also features SNMP monitoring optionally.

- **Conversion of any analog and digital modulation within the RF frequency range**
- **Extrem low phase noise for any modulation types**
- **Frequency agile input and ouput (45...862 MHz)**
- **Repeater for analog TV, DVB-C, DVB-T & DAB**
- **Switchable bandwidth 7 & 8 MHz, 6 MHz optionally**
- **Easy and flexible local and remote control/SNMP**

HIGH QUALITY SYSTEM

RF Input	
Frequency level	45...862 MHz
Decomposition frequency input	1 kHz
Input frequency range	typ. 40...106 dBµV
Impedance	75 Ω
nominal operation-level for extraneous noise interference strenght AM RSB low distortion COFDM low distortion	 75 dBµV 70 dBµV
Connector	F socket
Noise figure	≤10 dB
RF Output	
Output frequency range	45...862 MHz
Tunig grid for output frequency (tied to input frequency)	0,5 MHz
max. Output level AM RSB QAM COFDM	 116 dBµV 116 dBµV 115 dBµV
Level Adjustment range	0...31,5 dB (0,5 dB steps)
Channel allocation	adjuacent channel ability

Connector	F socket
Impedance	75 Ω
Return loss (output attenuator ≥ 3 dB)	≥18 dB 45 MHz - 1,5 dB/Octave
Operating parameter	
Voltage/Current	12 V (±0,2 V)/0,8 A

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SDB 907 Satellite Receiver/Decoder DVB-S/-S2 ⇨ CI ⇨ ASI-TS & AV

The new **SDB 907** is a modular type Satellite Receiver/Decoder. The unit receives one 8PSK/QPSK Satellite Transponder and enables demodulation into ASI-TS and decoding into one analog Audio/Video signal. The unit is equipped with a Common-Interface slot for decryption of encrypted services (Single or Multi-Service-Decryption).

The **SDB 907** is ideally suited for cable-TV, broadcast and broadband applications and provides a flexible, space efficient and reliable solution ensuring high quality and performance.

The **SDB 907** can be accessed and configured locally and remotely via the unique central control unit HCB 200 and also features SNMP monitoring optionally.

- **Demodulation of one 8PSK/QPSK Transponder into ASI**
- **Decoding of one MPEG-2 program into Audio/Video (PAL, SECAM, NTSC)**
- **Common Interface for CA-Modules enables Single and Multi-Service-Decryption (Option CKB 105)**
- **Integration of VPS-, WSS- and Teletext information**
- **Optional features**
  - **Test Lines (Option CKB 101)**
  - **Subtitles (Option CKB 102)**
  - **ASI-TS output (Option CKB 105)**
- **Easy local and remote control & configuration/SNMP**

SAT-IF Input		
Frequency range	950...2150 MHz (1 MHz steps)	
AFC range	±5 MHz (±3 @ SR<10 MSps)	
AGC Level range	42...82 dBµV	
Connector/Impedance	F socket, 75 Ω	
Demodulator/Decoder		
	DVB-S	DVB-S2
Modulation	QPSK	QPSK / 8PSK
Symbol rate	1...45 Msps	5...36 Msps / 5...30 MSps
Code rate	Viterbi: 1/2, 2/3, 3/4, 5/6, 7/8	LDPC: 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 / 3/5, 2/3, 3/4, 5/6, 8/9, 9/10
Roll off	35 %	20, 25, 35 %
ASI Output		
Data rate	270 Mbps	
Polarity	regular/inverted	
Mode	burst, continuous	
TS Data rate	acc. Symbol rate & coding	
TS Mode	188 Bytes	
Output voltage	800 mV_{pp} ±10%	
Connector, Impedance	BNC socket, 75 Ω	
Decryption Interface		
Common Interface	PCMCIA-Slot acc. EN 50221	
Operating voltage	5 V	
Multi-Service-Decryption	max. 21 services	
Video Output		
Output voltage	1 V_{pp}	
Connector, impedance	BNC socket, 75 Ω	
Audio Output		
Nominal level (@ digital -6 dBFS)	6 dBu	
Output	balanced/ungrounded	
Connector	Audio socket according to DIN 45326 / IEC 130-9-20	
Operating parameter		
Voltage / Current (without CAM)	12 V (±0,2 V)/500 mA	

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ATB 191 Agile ASI-TV Transmodulator ASI-TS ⇨ analog-TV & A/V

The new **ATB 191** is a modular type ASI to analog-TV Transmodulator and converts a selected program from the received ASI transport stream into an analog-TV program (PAL, SECAM, NTSC).
This digital to analog-TV processing unit is a perfect solution for cable TV operators, private operators and broadband operators who want to process and transmit digital received programs via ASI as an analog-TV program (PAL, SECAM, NTSC).
The **ATB 191** can be accessed and configured locally and remotely via the unique central control unit HCB 200 and also features SNMP monitoring optionally.

- **Frequency agile analog-TV output 45...862 MHz**
- **High output level of max. 116 dBµV**
- **Conversion of one program from ASI-TS into a free selectable RF frequency (PAL, SECAM, NTSC)**
- **Optional features**
  - **Test Lines (Option CKB 101)**
  - **Subtitles (Option CKB 102)**
- **Additional A/V output, BISS decryption, IF loop (options)**
- **Easy & flexible local and remote control/SNMP**

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ASI Input	
Level range	200...880 mV_{pp}
Data rate	270 Mbps
Connector	BNC socket
Impedance	75 Ω
ASI Polarity	regular/inverted
ASI Output	
Level	800 mV_{pp} (±10 %)
Data rate	270 Mbps
Connector	BNC socket
Impedance	75 Ω
ASI Polarity	regular
ASI Signal processing	
Data rate	0.625...78 Mbps
ASI-Transmission mode Input Output	 continuous, burst burst
TS-ransmission mode Input/Output	 188, 204 Byte
TV Output	
TV Standard	B/G, D/K
Sound procedure	FM-two carrier procedure
Sound carrier frequency	B/G 5,5/5,742 D/K 1 6,5/6,25 D/K 2 6,5/5,742 above the picture carrier
Sound mode	Mono/Stereo/Dual/ Auto (VPS controlled)
Sound deviation 1 mono carrier	30/50 kHz
Sound deviation 2 mono carrier	30 kHz
Sound deviation dual tone	30 kHz
Output frequency range	45...862 MHz
Tuning grid	10 kHz
Output level	max. 116 dBµV
Level adjusting range	0...31.5 dB (0.5 dB steps)
Channel allocation	adjacent channel ability
Connector	F socket
Impedance	75 Ω
Return loss	≥18 dB 45 MHz - 1.5 dB/Octave
Audio output*	0.7 V_{eff} @ 10 kΩ
Connector*	MCX socket
Video output*	1 V_{pp} @ 75 Ω
Connector*	MCX socket
Operating parameter	
Voltage/current	12 V (±0.2 V)/700 mA
Physical information	
Weight	1300 g
Delivery Content	
1 x BUS connector 3 x MCX-BNC cable*	

*only 9848.08

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AMB 406 QAM Modulator
ASI ⇨ QAM/RF

The **AMB 406** QAM Modulator ist the perfect solution for modulation of any ASI transport stream into a high quality QAM/RF channel. This module allows cable operators to deliver high performance digital cable-TV channels throughout their networks.

The **AMB 406** offers various features like PSI and SI processing with NIT generation, PID filtering with table processing and continuous zero stuffing and provides outstanding signal and video quality.

The **AMB 406** can be accessed and configured locally and remotely via the unique central control unit HCB 200 and also features SNMP monitoring optionally.

- **Modulation of any ASI-TS into QAM/RF (45...862 MHz)**
- **Supports QAM standards DVB-C, ITU J. 83 Annex A,B,C**
- **Features PSI-/SI processing with NIT generation**
- **Allows PID filtering with table processing for ideal bandwidth utilization**
- **Excellent signal performance**
  (MER ≥45 dB / Output level max. ≥116 dBµV)
- **Easy & flexible local and remote control and configuration/SNMP**

ASI Input	
Level range	200...880 mV_{pp}
System clock	270 Mbps
Connector	BNC socket
Impedance	75 Ω
ASI-Polarity	regular/inverted
ASI Output	
Level	800 mV_{pp} (±10 %)
System clock	270 Mbps
Connector	BNC socket
Impedance	75 Ω
ASI-Polarity	regular
ASI Signal processing	
Data rate	0.625...213 Mbps
ASI-Transmission mode Input Output	 continuous, burst burst
TS-Transmission mode Input / Output	 188, 204 Byte
QAM Modulator	
Symbol rate	1.0...7.2 MSps
QAM Modulation	ITU-T J.83 Annex A, B, C, DVB-C
Modulation Error rate (MER)	≥45 dB
Test signals	according adjusted symbol rate and QAM constellation
Measurment signal	unmod. carrier (signal level)
Shoulder attenuation	≥58 dB

RF Output	
Output frequency range	45...862 MHz
Tuning grid	125 kHz
Max. output level	116 dBµV
Phase noise	1 kHz; Typ. -92 dBc/Hz 10 kHz; Typ. -101 dBc/Hz 100 kHz; Typ. -108 dBc/Hz
Level adjustment range	0...31.5 dB (0.5 dB steps)
Channel allocation	adjacent channel ability
Connector	F socket
Impedance	75 Ω
Return loss	≥18 dB 45 MHz - 1.5 dB/Octave
Operating parameter	
Voltage/current	12 V (±0.2 V)/650 mA

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STB 016 SAT-TV Transmodulator 8PSK/QPSK ⇨ QAM/RF

The **STB 016** is a modular type 8PSK/QPSK to QAM Transmodulator and an ideal unit for any cable or broadband operator who want to transmit high quality digital signals in SDTV or HDTV via their network.
The **STB 016** offers various features like PSI-/SI processing with NIT generation, PID filtering with table processing and continuous zero stuffing and provides outstanding signal and video quality.
The **STB 016** can be accessed and configured locally and remotely via the unique central control unit HCB 200 and also features SNMP monitoring optionally.

- **Transmodulation of one 8PSK/QPSK into QAM/RF (QAM standards DVB-C, ITU J. 83 Annex A,B,C)**
- **Features PSI-/SI processing with NIT generation and PID filtering with table processing**
- **Excellent signal performance (MER ≥45 dB / Output level ≥116 dBµV)**
- **Easy & flexible local and remote control/SNMP**

SAT-IF Input		
Frequency range	950...2150 MHz (1 MHz steps)	
AFC range	±5 MHz (±3 @ SR<10 MSps)	
AGC Level range	42...82 dBµV	
Connector/Impedance	F socket, 75 Ω	
Demodulator/Decoder		
	DVB-S	DVB-S2
Modulation	QPSK	QPSK 8PSK
Symbol rate	1...45 Msps	1...34 Msps 1...28,9 MSps
Code rate	Viterbi	LDPC
	1/2, 2/3, 3/4, 5/6, 7/8	1/4, 1/3, 2/5, 1/2, 3/5, 2/3 3/4, 4/5, 5/6, 8/9, 9/10 3/5, 2/3, 3/4, 5/6, 8/9, 9/10
Roll off	35 %	20, 25, 35 %

QAM Modulator	
Symbol rate	1,0...7,2 MSps
QAM Modulation	ITU-T J.83 Annex A,B,C, DVB-C
Modulation error rate (MER)	≥45 dB
Test signals	according adjusted symbol rate and QAM constellation
Measurement signal	unmod. carrier (Signal level)
Shoulder attenuation	≥58 dB
RF Output	
Output frequency range	45...862 MHz
Tuning grid	125 kHz
Max. output level	116 dBµV
Phase noise	1 kHz; Typ. -92 dBc/Hz 10 kHz; Typ. -101 dBc/Hz 100 kHz; Typ. -108 dBc/Hz
Level adjustment range	0...31.5 dB (0.5 dB steps)
Channel allocation	adjacent cannel ability
Connector/Impedance	F socket/75 Ω
Return loss	≥18 dB 45 MHz -1.5 dB/Octave
Operating parameter	
Voltage/Current	12 V (±0,2 V)/900 mA

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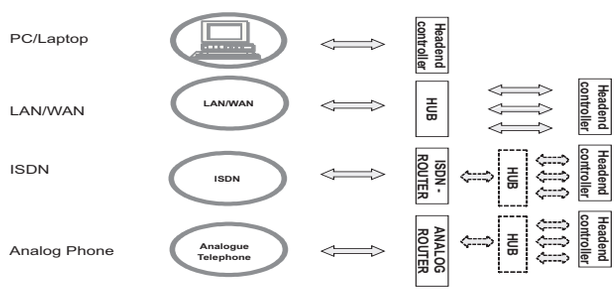
Unique headend management and flexible installation

Flexible management

B-LINE series can be easily adjusted, managed and controlled via the central control unit (HCB100/200 Headend Controller). All settings can be done locally or remotely without additional software.

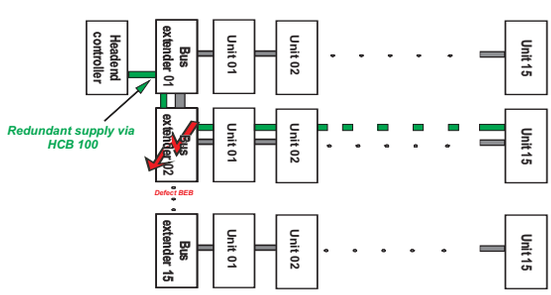


HCB 100/200 / Headend Controller

- Central control unit for entire headend system
- Contains a power supply unit, operating front panel keypads and display, WEB - Server & data interfaces
- Automatic power supply redundancy
- Management locally via front panel keypads or with PC/Laptop via the Ethernet Interface
- IP - based remote operation/management via integrated WEB - Server
- SNMP function optional available

Save & efficient power supply

B-LINE series will be supplied by the headend controller and via the power supply unit (Bus-Extender/BEB 100). An automatic power supply redundancy layout is implemented.



Automatic power supply redundancy layout

BEB 100/200 / Bus Extender & Power Supply

- BUS extension & power supply module
- Addressing and current supply of one line
- Automatic power supply redundancy in connection with Headend Controller (HCB 100/200)
- 100% power supply redundancy by usage of two BEB 100/200 possible
- Operating status can be called via the Headend Controller (HCB 100/200)

Flexible and stable mounting

The modular **B-LINE** concept is convenient for various and space efficient installation & mounting like direct wall or into 19" cabinets mounting.

BSR 008 is a 19" subrack for max. 8 modules.

MSR 016 is a 19" subrack for max. 16 modules (front & rear plug-ins).

BSR 008 / 19" - Subrack

- BSR 008 subrack can contain max. 8 modules
- Sufficient for 19" cabinets or direct wall mounting

MSR 016 / 19" - Subrack

- Professional subrack for max. 16 modules (front & rear plug-ins)
- Fits into any 19" cabinet
- Professional, stable and robust design

HIGH QUALITY SYSTEM

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