

Challenge Series

Satellite High Speed DVB-S2 Demodulator

SDD-TS / SDD-IP / SDD-DV



CCM, VCM, ACM Functionality

The satellite high speed DVB-S2 demodulator SDD allows demodulation of DVB-S and DVB-S2 signals.

The SDD-TS device can be used for receiving digital video broadcast contribution or distribution signals as MPEG transport streams. Among other applications it is suitable for video reception sites, monitoring facilities or program exchange points

The SDD-IP demodulator provides a platform for receiving IP/Ethernet data over DVB-S2 satellite connections. The device is the corresponding demodulator unit to the DVB-S2 IP modem SK-IP and supports low overhead Generic Stream Encapsulation. In combination with the integrated support of OptiACM and VideoACM the demodulator provides adaptive or variable FEC- and modulation setting for point-to-point or point-to-multipoint applications.

The SDD-DV device combines both operation types in a single device.

The demodulator has two L-Band inputs in the range from 950 to 2150 MHz or alternatively one L-Band input and one VHF-band input in the range from 50 to 180 MHz, with one input being selected. On L-Band inputs LNBS can be powered directly.

Operating and control – easy integration into your system

The configuration of the demodulator can be controlled via the front panel keys or remotely via RS232, RS422/485 and TCP/IP (over Ethernet). For the remote control either addressable packet based commands, a HTTP web browser interface or SNMP can be used. Detailed monitoring of system parameters is possible.

Key features

- DVB-S/S2 demodulator for digital TV satellite signals (SDD-TS / SDD-DV)
- DVB-S2 demodulator for IP/Ethernet data reception (SDD-IP / SDD-DV)
- QPSK demodulation (DVB-S)
- QPSK / 8PSK / 16APSK / 32APSK demodulation (DVB-S2)
- Normal and short FEC frames, pilots on or off (DVB-S2)
- Physical layer framing (PL descrambling with codes 0 to 262141) according to DVB-S2 standard
- Symbol rates from 60 ksps to 60 Msps
- OptiACM (SDD-IP / SDD-DV) and VideoACM (SDD-TS / SDD-DV) system for optimized bandwidth usage and extended weather insensitivity.
- Gigabit Ethernet data interface
- 2 ASI Output Interfaces (SDD-TS / SDD-DV)
- 6 ASI Output Interfaces for up to 6 Multiple Transport Streams (Option MT6) (SDD-TS / SDD-DV)
- Generic Stream Encapsulation (GSE)
- Network layer 2 or layer 3 operation
- Remote control through RS232, RS422/485 (2-wire or 4-wire) interfaces, TCP/IP over Ethernet, Web browser interface, SNMP (MIBs are provided)
- Summary alarm output (dual change over switch contacts)
- Operating temperature range 0°C to 50°C (32°F to 122°F)
- CE compliant
- **3 years warranty**

Challenge Series

Satellite High Speed DVB-S2 IP Demodulator

SDD-TS / SDD-IP / SDD-DV

Demodulator Type:	SDD-TS / SDD-IP /SDD-DV	
Signal Inputs :	SDD-xx-L75: 2x L-Band input (950..2150 MHz); SDD-xx-Vx/L75: 1x VHF-Band input (50..180 MHz) 1x L-Band input (950..2150 MHz)	
	VHF Band Input	L-Band Inputs
Input Characteristics:	Frequency: 50..180 MHz Impedance: 50 Ω or 75 Ω Return Loss: >18 dB Input Power: -60 dBm -15 dBm (total aggregate power) IF-Connector: BNC female	Frequency: 950..2150 MHz Impedance: 75 Ω Return Loss: >13 dB Input Power: -70 dBm ... -20 dBm (total aggregate power) IF-Connector: F female LNB DC-Feed: 13.5V or 18 V (450mA) switchable, 22 kHz tone on/off, short circuit protected
Symbol Rate:	Max. Range: 60 ksps ... 60 Msps (QPSK, 8PSK) 60 ksps ... 45 Msps (16APSK) 60 ksps ... 40 Msps (32APSK) Step size: 1 sps	
Demodulation / Decoding DVB-S2:	Outer BCH Code: FEC-Frames nldpc = 64800 (normal FEC Frame) nldpc = 16200 (short FEC Frame) Inner LDPC Code: QPSK 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 8PSK 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 16APSK 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 32APSK 3/4, 4/5, 5/6, 8/9, 9/10 Demodulator auto detection: Modulation- and FEC-type, pilots on/off are automatically detected Physical Layer Scrambling: N = 0 ... 262141 all according ETSI EN 302307	
Demodulation / Decoding DVB-S:	Outer Reed Solomon Code: 188/204, T=8 Convolutional Interleaving: Depth I=12 Inner Code: QPSK 1/2, 2/3, 3/4, 5/6, 6/7, 7/8 (Convolutional K=7) automatically selected all according ETSI EN 300421 (SDD-TS only)	
OptiACM:	CCM / VCM / ACM functionality for point-to-point and point-to-multipoint links	
Signal Spectrum Mask:	$\alpha = 0.35, 0.25, 0.20$ according ETSI EN 302307, 301210, 302307 $\alpha = 0.15, 0.10, 0.05$ (compatible)	
Data Interfaces:	1x Ethernet (RJ-45, 10/100/1000 Mbps auto sensing) 2x ASI (BNC female 75 Ω; SDD-TS and SDD-DV only)	
Data Rate:	up to 178 Mbps	
Network Operation:	Layer 2 (Ethernet frame reception) or Layer 3 (IP packet reception), IPv4 and IPv6 dual stack	
Data Encapsulation:	Generic Stream Encapsulation (GSE) according TS 102606 (SDD-IP and SDD-DV only)	
Transport Stream Output:	2x ASI (BNC female 75 Ω) (SDD-TS and SDD-DV only) Supporting Single Transport Stream Operation or 1 Multiple Transport Stream Operation (Dual Output) 1x RTP/UDP IP over Ethernet according to IETF RFC 2250 With Option MT6 (SDD-TS and SDD-DV only): Processing of 6 Multiple Transport Streams Support of Null Packet Reinsertion according to ETSI EN 302 307 Annex G.3 6x ASI (BNC female 75 Ω) Outputs, can be assigned arbitrarily Up to 6x RTP/UDP IP over Ethernet according to IETF RFC 2250	
Transport Stream Frame Size:	188 bytes (SDD-TS and SDD-DV only)	
Transport Stream Security: (Option BI)	BISS-E Descrambler, compliant to EBU Tech 3292 rev.2 Supports single or multi program transport stream in BISS Modes 0, 1 and E BISS Mode 0: no descrambling, MPEG transport stream is transferred untouched BISS Mode 1: MPEG transport stream is descrambled using 48-bit Clear Session Word BISS Mode E: MPEG transport stream is descrambled using 64-bit Encrypted Session Word and 56-bit Injected Identifier Max. input rate for Session Words: 1 time per 10 seconds 10 times per 5 minutes	
DVB-S2 Baseband Frame Output: (Option BBO)	Instead of Transport Stream over ASI (SDD-TS and SDD-DV only) RTP/UDP IP over Ethernet, Jumbo Frames over GbE (SDD-IP and SDD-DV only)	

Specifications continued next page

Monitoring and Control Interface:	Protocol: SNMP
	Connection: UDP over Ethernet (10/100 Mbps, auto sensing), IPv4, IPv6, connector RJ-45
	Protocol: HTTP (web browser interface)
	Connection: TCP/IP over Ethernet (10/100 Mbps, auto sensing), IPv4, IPv6, connector RJ-45
	Protocol: Multipoint
	Connection: RS232 or RS422/RS485 (configurable), connector DSUB09 female or TCP/IP over Ethernet (10/100 Mbps, auto sensing), IPv4, IPv6, connector RJ-45
Alarm Interface:	Alarm: two potential free contacts (DPDT), Connector DSUB09
Temperature Range:	0°C ... 50°C operating -30°C ... 80°C storage
Relative Humidity:	<95% non condensing
User Interface:	LCD-Display 2 x 40 characters, 4 cursor keys, 2 function keys
Mains Power Input:	100 ... 240 V AC nominal, 90...264 V AC max, 50...60 Hz
Mains Power Consumption:	Typ: 35 VA / 25 W
Mains Power Input Connector:	IEC C14
Mains Fuse:	2 x 2 A time-lag fuse
Dimension and Weight:	483 x 44 x 470 mm ³ (WxHxD), 1 RU (19") approx. 5.5 kg

Specifications are subject to change



Trade Mark of the DVB Digital Video
Broadcasting Project

Order Information: SDD-[Device Type]-[Input Band Input Imp]-[Options]

Device Types:

TS DVB-S/S2 Transport Stream Demodulator
IP DVB-S2 IP Demodulator
DV DaVid Technology Demodulator (switchable combination of TS and IP)

Possible Options are:

BBO Baseband Frame Output
BI BISS Decryption
MT6 Support of 6 Multiple Transport Stream Outputs

Cannot be combined with:

-
MT6
BI

Only available for:

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SDD-TS
SDD-TS, SDD-DV

Examples:

SDD-TS-L75 DVB-S/S2 TS Demodulator with L-Band Input 75 Ω
SDD-IP-L75 DVB-S2 IP Demodulator with L-Band Input 75 Ω
SDD-IP-V75/L75 DVB-S2 IP Demodulator with VHF-Band and L-Band Input
SDD-DV-V50/L75-BBO DVB-S2 DaVid Demodulator with VHF-Band 50 Ω and L-Band Input 75 Ω, Baseband Frame Output option