

QPSK Satellite Modulator



- **DVB-compliant to ETS 300 421**
- **Symbol rate 1-45 MS/s, IF (50-180 Mhz)**
- **For MCPC and SCPC applications**
- **Standard symbol rates supported**
- **Serial DVB/ASI and parallel DVB/SPI (ECL/LVDS) input interfaces**
- **LCD display for local control and status monitoring**
- **RS 485/RS 232 remote control interface**
- **19-inch rack mounting, 2U height**

This version is suitable for MCPC (Multi Channel Per Carrier) and SCPC (Single Channel Per Carrier) operations over a range of transponder bandwidths. It offers performance exceeding the DVB specification, and supports variable symbol rates and variable IFs.

Serial (DVB/ASI) and Parallel (DBV/SPI) input transport stream interfaces, an RS485/RS232 interface for remote monitoring and control, hard-wired contact closures for alarming, and an L-band (monitoring) output all add to the high operational flexibility.

The input MPEG2 transport streams are subjected to energy dispersal, scrambling, Reed Solomon coding,

These Philips high-performance QPSK modulators are fully DVB-compliant, and already operational worldwide in satellite up-link applications. As self-contained, stand-alone units, they can operate completely independently within the Digital Video Distribution system. At the same time, they are ideally suited to remote control and monitoring by system software, and easy to use in redundant configurations in association with IF switching (e.g. by using contact closures).

DVS3545 High-performance QPSK Modulator

convolutional interleaving and convolutional coding in accordance with DVB specification ETS 300 421. Provision is also made for 8PSK or 16QAM modulation schemes offering highly efficient bandwidth utilization.

A direct-entry 10-key numerical pad and LCD display make local operation easy, and remote operation is equally simple. Using the serial (DVB/ASI) interface, modulators can be located up to 100 metres from the associated compression system. Through an optional optical link, this distance can be increased up to 20 km.

The modulators are designed as 2U-height units for standard 19-inch rack mounting.



SPECIFICATIONS

- Silent carrier for uplink saturation measurements
- Pseudo-Random Bit Sequence generated if no input signal, and for testing
- Monitoring of all internal parameters
- Hard-wired alarm relay outputs
- Energy dispersal according to IESS 309
- (204, 188 T=8) Reed Solomon outer error code mapped on MPEG2 transport packets
- Forney-type convolutional interleaving (I=12)
- K=7 convolutional inner code with puncture rates 1/2, 2/3, 3/4, 5/6, 7/8 (QPSK), 2/3, 5/6, 8/9 (8PSK), 3/4, 7/8 (16QAM)
- Square root raised cosine transmit filtering with roll-off 35% (DVB standard) or 26% for higher bandwidth
- Ovenized internal 10 MHz reference

Symbol rates and useful bit rates

Philips QPSK Modulators for MCPC as well as SCPC applications.

MCPC and SCPC

Type number	Symbol Rate
DVS 3545-01	1-45 MS/s

The useful bitrates acceptable by the the modulator at its input depend on the Symbol rate and the innercode rates selected:

Examples:

Bandwidth (MHz)	Symbol rate (MS/s)	Inner code rate/Useful bit rate (Mbits/s)				
		1/2	2/3	3/4	5/6	7/8
1.2	1	0.92	1.22	1.38	1.53	1.61
7.2	6	5.52	7.37	8.29	9.21	9.67
18	15	13.82	18.43	20.73	23.03	24.19
36	30	27.64	36.86	41.47	46.07	48.38
54	45	41.47	55.29	62.20	69.11	72.57

Output interface

The modulators have a variable IF output interface. Also an L-Band output is available.

Type number	IF Frequency	L-Band output
DVS 3545-01	50-140 MHz	Yes

General

Width	19"
Height	88.9 mm (1RU)
Depth	465 mm
Weight	13.5 kg
Power Supply	90-130 Vac/ 180-260 Vac
Power consumption	50 VA
Approval	CE marking, BZT
Ambient temperature	0..40°C

Environmental spec

EMC/ESD	EN 60950 low volt EN 550 22 EN 50082-1
Safety	EN 60950

Connectors

Serial input (DVB/ASI)	BNC (75Ohm)
Parallel input (DVB)	25 Pole DIN

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