

ODG200

TRANSMIT

Open DVB Gateway



The ODG200 with its integrated DVB-S/S2 GSE / ULE / MPE encapsulator / modulator combines an IP encapsulator, supporting state-of-the-art encapsulations such as GSE or ULE, and a fully DVB-S/S2 compliant modulator, benefitting from new DVB-S2 modulation types and more robust and efficient coding techniques such as BCH. ProACM™ operation mode enables highest bandwidth efficiencies in ACM operation mode as well as an open ACM feedback interface supported by a growing range of low-cost DVB-S2 receivers.

Applications

The ODG200 is an encapsulator and traffic shaper that combines real time traffic shaping functionalities with robust and efficient *Flex:DVB* IP encapsulation software by gcs, as well as a high-quality, wide-output range DVB-S/S2 modulator. This high integration level allows for easy installation of the ODG200 as a single component at the hub side of a DVB enabled IP network.

Through its modular and extensible design, the ODG200 is ideal for seamless integration into most existing IP networks including a DVB link. Regardless if an existing modulation scheme should be upgraded to a more efficient / robust one supporting VCM / ACM, or IP trunking services should be upgraded to support IPv6 and GSE, ODG200 is the perfect choice. The optional *Flex:RPC* interface provides access to all device capabilities and is an ideal software extension for operators having extended integration or instrumentation demands.

A direct BB-Frame interface to the modulator gives the ODG200 full control over modulation and coding parameters on a per-frame basis, which allows for optimum operation in VCM/ACM mode, together with the included ProACM™ controller, which implements an open and extensible ACM feedback interface, supported by a growing population of third-party DVB-S2 receivers. The ProACM™ controller monitors the signal reception conditions at the remote sites of the network and selects either automatically or based on operator constraints the most efficient modulation and coding parameters for each BB-Frame. The satellite link budget is therefore always utilized at its maximum extent.

Traffic shaping policy is applied to the dedicated data input interface of the ODG200, consisting of a hierarchical, priority-based token bucket shaper, allowing shaping of traffic on a per-user or groups of users basis. Different traffic classes can be managed by the shaping algorithm, such as constant bit-rates (CBR), variable bit-rates (VBR), and best effort (BE), allowing for an adaptive, equal, or weighted bandwidth distribution.

Although the ODG200 meets highest production quality standards, local redundancy for fast and seamless switch-over is supported through Virtual Router Redundancy Protocol (VRRP), as the integration density of the ODG200 also introduces a single point of failure (SPOF).

Key features

- ▶ Constant Coding and Modulation (CCM), Variable Coding and Modulation (VCM), and Adaptive Coding and Modulation (ACM) operation modes
- ▶ ProACM™ support
- ▶ Carrier ID support
- ▶ DVB-S and DVB-S2 compliant (EN 301 421, EN 302 307)
- ▶ Wide L-Band output range from 950 – 2150MHz
 - Available output options: 70/140 MHz, ASI only
- ▶ QPSK / 8PSK / 16APSK / 32APSK modulation
- ▶ 60 ksps up to 60 Msps output rates
- ▶ Support for MPE, ULE, and GSE encapsulation (MPE section packing, ULE / GSE extensions) based on gcs technology (*Flex:DVB* IP encapsulator)
- ▶ Full IPv4 / IPv4 multicast / IPv6 support
- ▶ Adaptive traffic shaping and policing
- ▶ Automated interfacing with remote receivers supporting ProACM™
- ▶ Unique *Flex:Conf* component graphically displays device configuration at the user interface
- ▶ Management and configuration
 - LCD front panel
 - Operator console
 - Web interface
- ▶ Monitoring
 - SNMP
 - Dual change over switch contacts alarm output
- ▶ *Flex:RPC* interface
 - For extended integration/instrumentation demands
 - Provides access to all device capabilities

Specification

DVB-S/S2 Input Characteristics

- ▶ IF Output Frequency: 950 to 2150 MHz
- ▶ Frequency Resolution: 1 Hz
- ▶ IF Output Characteristics
 - Impedance: 50 Ω
 - Return Loss: >20 dB
 - Output Power: -30 dBm to 0 dBm, 0.1 dB steps
 - Accuracy: ± 0.5 dB
 - Stability: ± 0.5 dB
 - Output Power muted: < -85 dBm
- ▶ IF Monitoring Output
 - Impedance: 50 Ω
 - Return Loss: >20 dB
 - Output Power: -20 dB of IF Output
- ▶ Spurious Outputs (signal related)
 - < -60 dBc / 4 kHz (modulated carrier)
 - < -60 dBc (unmodulated carrier, in band)
 - < -45 dBc (unmodulated carrier, out of band)
- ▶ Phase Noise
 - 10 Hz: -60 dBc/Hz, 100 Hz: -75 dBc/Hz, 1 kHz: -85 dBc/Hz, 10 kHz: -87 dBc/Hz, 100 kHz: -97 dBc/Hz, 1 MHz: -115 dBc/Hz
- ▶ Frequency Stability: ± 5 x 10⁻⁸ (-30°C to 60°C), aging: ± 1 x 10⁻⁹ per day, ± 1 x 10⁻⁷ per year
- ▶ Symbol Rate: Up to 60 Msps (depending on order code); Step size: 1 sps
- ▶ Clock Stability: ± 5 x 10⁻⁸ (-30°C to 60°C), aging: ± 1 x 10⁻⁹ per day, ± 1 x 10⁻⁷ per year
- ▶ Data Rate: 3 kbps - 267 Mbps (depending on order code)
- ▶ Encoding in DVB-S
 - Outer Coding: Reed Solomon (188/204, T=8)
 - Convolutional Interleaving: Depth I =12
 - Inner Coding (depending on order code):
 - QPSK: 1/2, 2/3, 3/4, 5/6, 6/7, 7/8 (Convolutional K=7)
 - 8PSK: 2/3, 5/6, 8/9 (Pragmatic Trellis)

- ▶ Modulation/Encoding in DVB-S2
 - Outer Coding: FEC-Frames n_{ldpc}= 64800, 16200
 - Inner Coding (LDPC) (depending on order code):
 - QPSK: 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9
 - 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
- ▶ Signal Spectrum Mask: α = 0.35, 0.25, 0.20

Interfaces

- ▶ Power: IEC-60320-C14 style Connector
- ▶ IF Output: 2x SMA female
- ▶ Control network: 10/100/1000MBit/s, RJ-45
- ▶ Data network: 10/100/1000MBit/s, RJ-45
- ▶ Local control & management
 - 2x USB2.0, VGA, LCD / operation keys
- ▶ Alarm: Dual change over switch contacts, DSUB-9 (F)

Physical, Power, Environment

- ▶ Power
 - Supply
 - 100 to 240 V AC with 50 to 60 Hz
 - optional 48V supply available
 - Current
 - <0.8 A (RMS) at 230 V AC
 - <1.3 A (RMS) at 115 V AC
 - Consumption: < 50 Watt
 - Connector: 2P+E (single phase)
- ▶ Temperature Ranges
 - Operational: 0° to 40° C / 32° to 104° F
 - Storage: 0° to 70° C / 32° to 158° F
- ▶ Dimensions
 - 1RU, width 19", rack-mountable
 - 482 x 365 x 44 mm
- ▶ Weight: 4.6 kg
- ▶ Compliance: Fully EMC compliant, CE label

Ordering Options

ODG200- {Modulation} - {CCM/ACM} - {Symbolrate} - {Encapsulations}			
			[U] (MPE/ULE), [G] (MPE/ULE/GSE)
			[15] (Low, <=15Msps), [30] (Medium, <=30Msps), [45] (High, <=45Msps), [60] (Full)
		[C] (CCM), [A] (CCM/VCM/ACM, including ProACM controller)	
	[B] (Basic: DVB-S: BPSK/QPSK, DVB-S2: QPSK/8PSK)		
	[E] (Enhanced: DVB-S: BPSK/QPSK/8PSK/16QAM, DVB-S2: QPSK/8PSK/16APSK/32APSK)		
	[A] (ASI out only, without modulator, MPE/ULE only, no GSE)		

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Product category: Transmit



Zertifikat Nr. 20 100 92004065

Related Products: **BSR200** – Broadband Satellite Receiver | **QMS200** – Quality Monitoring System