



Features

DVB-S (ETS 300 421)

Compliant baseband transmitter for Satellite Modem Termination Systems (SMTS)

- The MVD modulator cores can be delivered with an Intermediate Frequency output or a RF output when using Analog Devices or Maxim RF DACs (see separate datasheet, available on request)
- Drop-in module for Spartan-6™, Virtex-6™, Artix-7™, Kintex-7™ and Virtex-7™ FPGAs
- Single clock (up to 150 MHz)
- Robust SPI input (discarding incorrect input packets)
- PCR re-stamping
- Supports programmable symbol rates
- Programmable 1/2, 2/3, 3/4, 5/6 and 7/8 punctured FEC
- Baseband or Intermediate frequency output for complex DAC (2 x 16 bits)
- Single / multi channel
- Fully synthesizable RTL VHDL design (not delivered) for easy customization
- Design delivered as Netlist
- MER > 40dB

Applications

DVB-S may be used in applications related to satellite transmission.

Description

The MVD DVB-S core is a drop-in module that includes the following functions :

- Input data framer from DVB-SPI source (MPEG-TS flow)
- DVB-S modulator (Energy dispersal, Reed-Solomon encoder, interleaver, convolutional encoder and puncturing)
- RRC filter
- Flexible Digital Up Converter
- Modulator for IF output
- Output for complex DAC (2x16bits)

Companion cores

- ASI receiver core
- DVB remultiplexer core
- Serial Interface for CPU configuration
- I2C Slave Interface core



Resource Utilization

The core configuration may be set by conditional synthesis. Typical configuration with CPU interface.

	Slices	LUTs	BRAMs (18k)	Mults/DSP48	BUFG	Deliverables :
Series-6	1280	4660	3	16	2	- Datasheet
Series-7	1270	4630	3	16	2	- Netlist for core generation

Ordering information and related cores

Parameters	Designation
Fixed	MVD_DVBS_FIXED_NET
GPIO programmable	MVD_DVBS_GPIO_NET
CPU programmable	MVD_DVBS_CPU_NET

VHDL source code : can be delivered as an option under NDA and other specific clauses

Complementary cores : DVB-S for AD9789 DAC, Upconverter for AD9739 DAC or MAX5881 DAC, contact us.

For a multi-channel application, we recommend to use the AD9739 DAC or the MAX5881 DAC.

Related cores : Cable Modulator J83B, DVB-C, DVB-T/H, DVB Remultiplexer and/or ASI Receiver cores
contact us at info_cores@mvd-fpga.com

Documentation and support : Datasheet. In addition MVD can provide on site or remote coaching.



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