



Features

ITU-T J.83 Annex A/C, DVB-C (ETS 300 429)
 Compliant baseband transmitter for Cable Modem Termination Systems (CMTS)

- 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 Virtex-6™, Virtex-5™, Spartan-6™ and Spartan™-3/E/A FPGAs
- Single clock (up to 140 MHz+ for Spartan-3/6™, 180 MHz+ for Virtex-5/6™)
- Robust SPI input (discarding incorrect input packets)
- PCR re-stamping
- Supports programmable symbol rates
- Programmable 16, 32, 64, 128 and 256 QAM Symbol Mapping
- Complex baseband outputs (2 x 8 bits)
- Single / multi channel
- Fully synthesizable RTL VHDL design (not delivered) for easy customization
- Design delivered as Netlist
- MER > 42dB

Applications

DVB-C may be used in applications related to cable transmission, typically at the cable head end.

Description

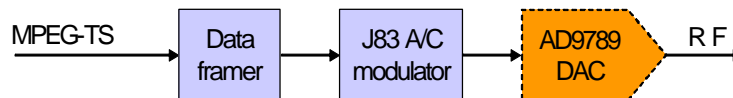
The MVD DVB-C core is a drop-in module that includes the following functions :

- Input data framer from DVB-SPI source (MPEG-TS flow)
- J83AC modulator (Energy dispersal, Reed-Solomon encoder, interleaver, QAM symbol mapper)
- Output for complex DAC (2 x 8 bits)

Companion cores

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

Complete application fits into 3S50A and/or 3S100E depending on selected options



Resource Utilization

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

	Slices	BRAMs (18k)	Mults/DSP48	BUFG	Deliverables : - Datasheet - Netlist for core generation
Spartan3/E/A	1 200	2	1	2	
Spartan 6	400	2	1	2	
Virtex 5	500	2	1	2	
Virtex 6	400	2	1	2	

(values may vary depending on implementation options)

Ordering information and related cores

Parameters	Designation
Fixed	MVD_DVBC_J83AC_AD9789_FIXED_NET
GPIO programmable	MVD_DVBC_J83AC_AD9789_GPIO_NET
CPU programmable	MVD_DVBC_J83AC_AD9789_CPU_NET

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

Complementary cores : DVB-C for IF output, Upconverter for AD9739 DAC or MAX5881 DAC, contact us.
For a multi-channel application, we recommend to use the AD9789 for 4 adjacent channels, or we recommend to use the AD9739 DAC or the MAX5881 DAC for more than 4 channels, or for non adjacent channels.

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

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