DVB Remultiplexer N-to-M Core V3.2

Product Brief (June 2019 – rev B)
Turbo Extend Version

Features

- **Drop-in module for Kintex™-7, Virtex-6, and Spartan™-6 FPGAs**
- **N SPI input / M SPI output (N and M from 1 to 8)**
- **Adapt one or several MPTS/SPTS stream into one or several MPTS by filtering and multiplexing complete services**
- **SFN MIP table insertion independent for each output (for DVB-T core control) (optional)**
- **Management of PSI/SI tables (automatic tables generator) according to ETS300468 and ISO 13818-1.**
- **Configurable via an RS232 link or I²C link**
- **Service filtering and insertion of custom NIT**
- **Full PCR re-stamping**
- **Master/Slave control of input/output mux flows**
- **Statistical service bandwidth estimation per input**
- **Maximize output payload bandwidth thanks to smoothing FIFO.**
- **Common output Smoothing FIFO can be implemented as block RAM, external Synchronous SRAM memory or external DDR3 (same memory than program memory)**
- **Size of the output smoothing FIFO is configurable and common for all output channels.**
- **Full synthesizable RTL design (not delivered) for easy customization**
- **Netlist version available for ISE 14 and later versions**
- **CPU Interface to control MVD Modulator CORE**

Applications

The MVD DVB Remultiplexer allows to adapt and multiplex transmodulator bandwidth from several sources as DVB-S towards one or several modulator as DVB-T, IP-TV or J83 A/B/C.

Description

The MVD DVB remultiplexer core analyses each MPTS/SPTS stream input and gives access to the followings informations and statistics:

- **Incoming TS Stream features (TS_ID, Version, Tables, ...)**
- **Incoming/ Payload/ Outcoming rates**
- **Program List and bandwidth for each program.**
- **Program Information (Names)**

Then, it filters user selected programs and regenerates PSI/SI tables such as PAT, SDT, NIT (according to programmed mode), PMTs, EITs (according to configuration).

TOT, TDT are filtered and generated thanks to the UTC70 input port.
Not filtered PMT programs and others PID which do not correspond to any program or PSI/SI tables are passed through.

EIT and PMTs are re-generated according to the modifications to apply to the output stream.

BAT and RST are filtered. CAT and related PIDs are filtered according to the configuration of the remultiplexer.

The DVB Remultiplexer core allows the filtering of programs of DVB MPEG TS flows compliant with the standards :

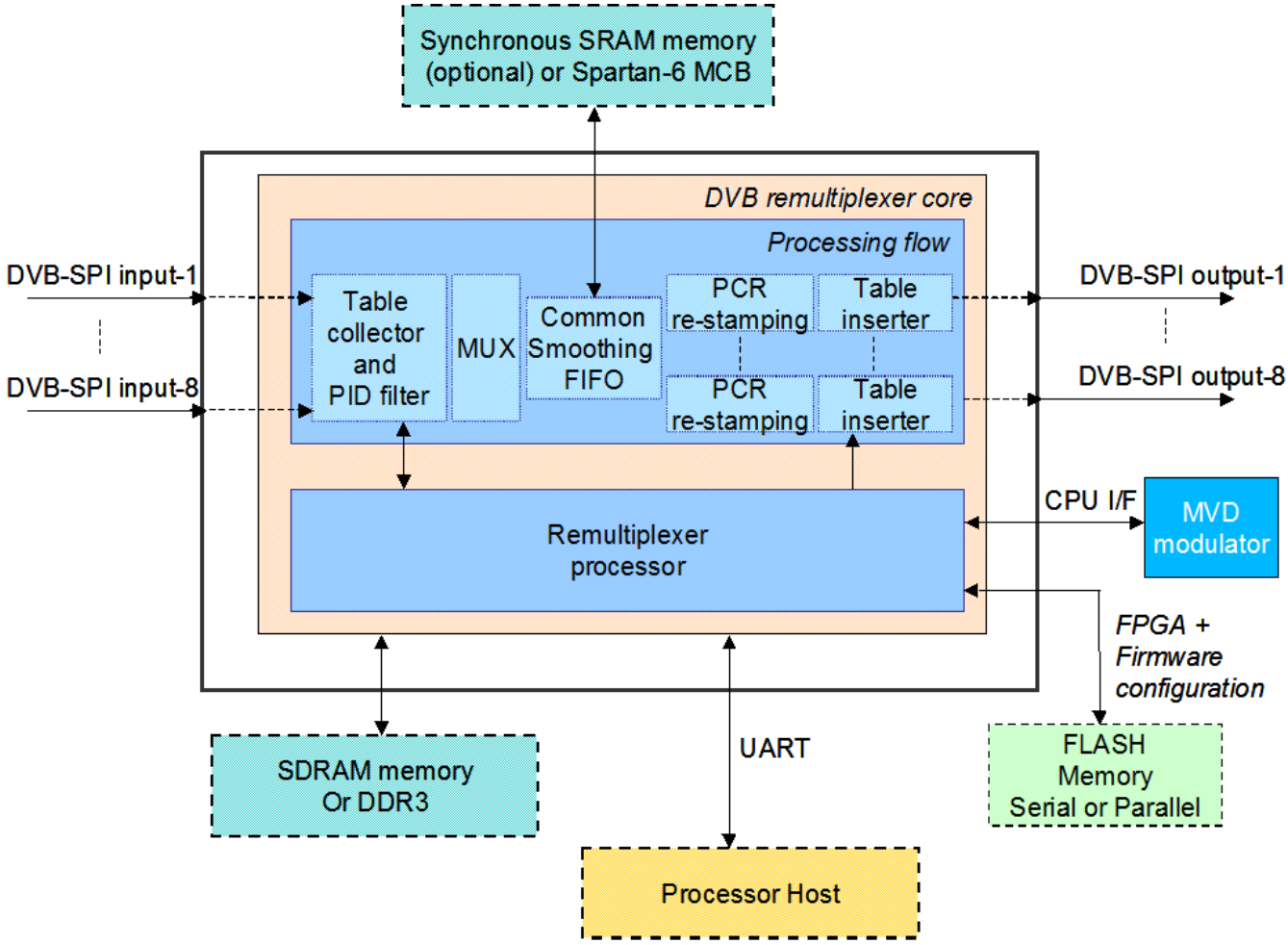
- **UIT-T H222 (02/00) / ISO13818-1**
- **ETSI EN 300 468 v1.8.1 (2008-7)**

Ordering information and related cores

FIFO type	Designation
BRAM	**MVD_DVB_REMUXN-M_BRAM_TE_NET**
SSRAM	**MVD_DVB_REMUXN-M_BRAM_TE_NET**
DDR*	**MVD_DVB_REMUXN-M_BRAM_TE_NET**

*Spartan-6 only
Where N = number of input (1 to 8) and M = Number of output (1 to 8).
N and M Values must be defined at the order.

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


Synchronous SRAM memory
(optional) or Spartan-6 MCB
DVB remultiplexer core
Processing flow
DVB-SPI input-1
DVB-SPI input-8
Table collector and PID filter
MUX
Common Smoothing FIFO
PCR re-stamping
Table inserter
PCR re-stamping
Table inserter
DVB-SPI output-1
DVB-SPI output-8
Remultiplexer processor
CPU I/F
MVD modulator
FPGA + Firmware configuration
SDRAM memory
Or DDR3
UART
FLASH Memory
Serial or Parallel
Processor Host