**Key Features**

- Full support of DVB CSA 3 Descrambling specification
- Flow-through architecture
- Up to 4 different transport streams
- APB 3.0 interface for programming
- About 100 K cells

**Overview**

The CSA 3 descrambler IP core is hardware implementation of DVB Common Scrambling Algorithm version 3. It was designed to remove protection from scrambled broadcast data by flow-through decryption of transport stream. It has simple custom interface for data with flow control and APB 3.0 slave interface (backward compatible with APB 2.0) for set keys.

The CSA 3 descrambler IP core was designed for handled up to four different transport streams with even and odd keys for each TS. Handling of one 128-bit data word takes about 78 clock cycles [i.e. about 5 clock cycles per 1 byte].

**Block Diagram**

![CSA 3 Descrambler Block Diagram](image-url)
CSA 3 Descrambler
IP core

Benefits
• Easy to integrate with standard APB interface and simple flow-through data interface
• High performance – 5 cycle per byte
• Handling up to 4 different transport streams, even and odd keys for each

Application
• DVB set-top-boxes with conditional access support and multiple tuners
• Personal video recorders
• Conditional Access Modules
• Broadcast equipment

Standard Deliverables
• RTL Source code
• Verification environment
• SDC for synthesis and STA
• Documentation
  ■ User Guide
  ■ Integration manual

Delivery Options
• APB control Interface can be removed
• Number of channels can be changed
• Any modifications are possible on request

Related IP
• Transport Stream Demultiplexer
• AES Crypto Core
• DES Crypto Core
• CSA 2.1 Descrambler

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