



***ATE100  
DVB ASI to  
Ethernet  
Converter***

# ATE100

- Conversion of DVB transport streams from ASI to Ethernet •
  - Routing of parts of the transport streams at PID level •
    - Configurable PID renumbering •
      - SNMP •



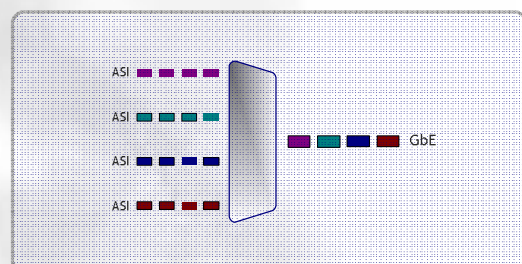
## ITNM Systems ATE100 DVB ASI to Ethernet Converter

### Network architecture of digital television

Digital television distribution systems make use of several connection interfaces. ASI (Asynchronous Serial Interface) is commonly used. However, Ethernet is coming up. In recently delivered digital television systems integration of existing external equipment can demand for conversion from ASI to Ethernet. Although an increasing number of multiplexers are equipped with both types of interfaces, the amount of free ports could be limited. In such cases it is an advantage to use a separate converter, especially if this device is capable of addressing the incoming data specifically. ITNM Systems develops solutions to optimize platforms for digital television systems in that way too.

### ATE100 ASI to Ethernet Converter

The ATE100 is a converter for DVB transport streams from ASI to Ethernet. Besides that, it has flexible routing capabilities from multiple inputs.



ATE100: From DVB ASI to DVB IP

# ATE100

## ATE100 Product description

### The solution

The ATE100 is a combination of a converter from ASI to Ethernet and a transport stream router. It can simply be added to a multiplex system for digital television.

### Basics

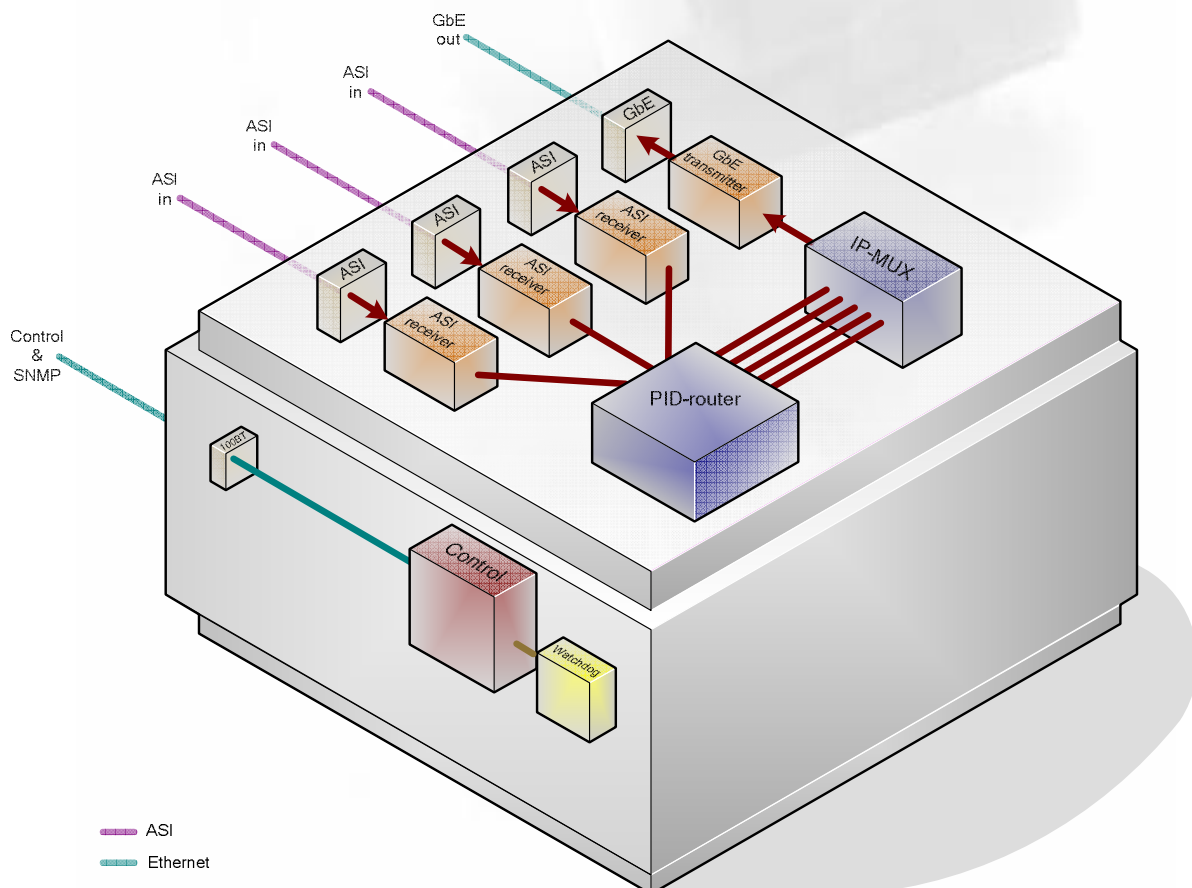
DVB signals are connected to one or more ASI inputs. The incoming 270 Mbit/sec signal is equalized and processed by the ASI receiver. A network operator defined PID-mapping table serves as configuration data for the router.

Multi Program Transport Streams (MPTS) can be converted to Single Program Transport Streams (SPTS), by which the content of a transport stream can be made selectively available for other equipment.

After that, conversion takes place to the DVB over IP protocol. The data is prepared to send out over Gigabit Ethernet through an electrical or optional optical port.

### Schematic overview

The drawing below shows an overview of the internal construction.



Schematic overview ATE100

# ATE100

## ATE100 Product description

### Functionality

The system is also capable of routing the incoming transport streams or parts out of that. Per PID type (Packet Identifier) the signal can be routed to an IP stream. It can also be done per range of PIDs. Thus, several PIDs can be routed to one IP stream independently from which ASI input port they are coming from. Besides that, incoming PIDs can be renumbered for the IP stream.

### Selection

By routing, a selection can be made on - for example - programme level or type of data (audio, video, teletext, DVB SI of other) for further processing by external equipment. All the data is still available by means of one Gigabit Ethernet connection, but can be made accessible in an individual way for other equipment by means of selective addressing.

### SNMP

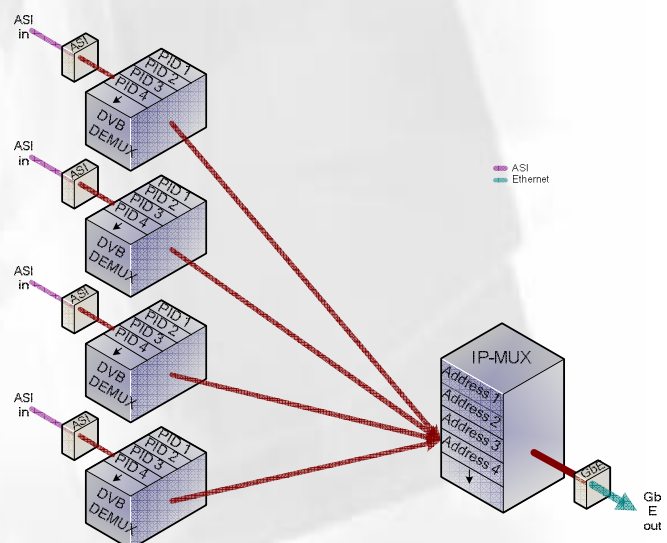
An SNMP-generator - suitable to display the status of the system - is standard.

### Examples

The following drawings show some examples of how routing can be configured. However, the possibilities are not limited to these examples.

### Routing to a single address

In this case all PIDs from all ASI inputs are routed to one single IP address.



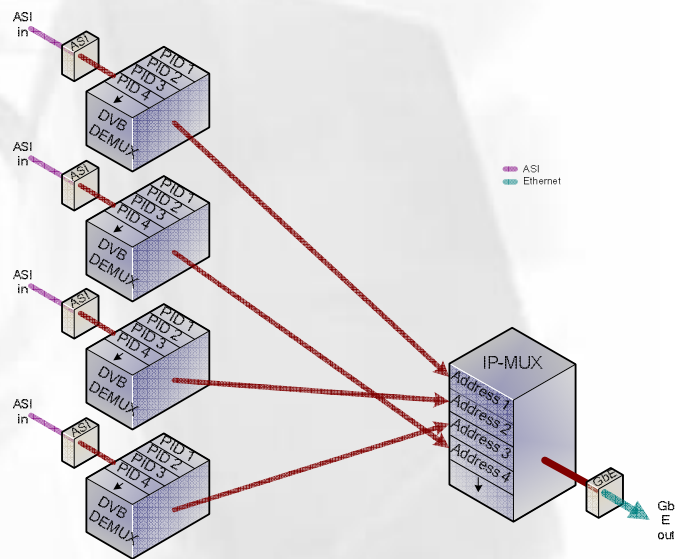
ATE100 routing to a single address

# ATE100

## ATE100 Product description

### Routing to different IP addresses

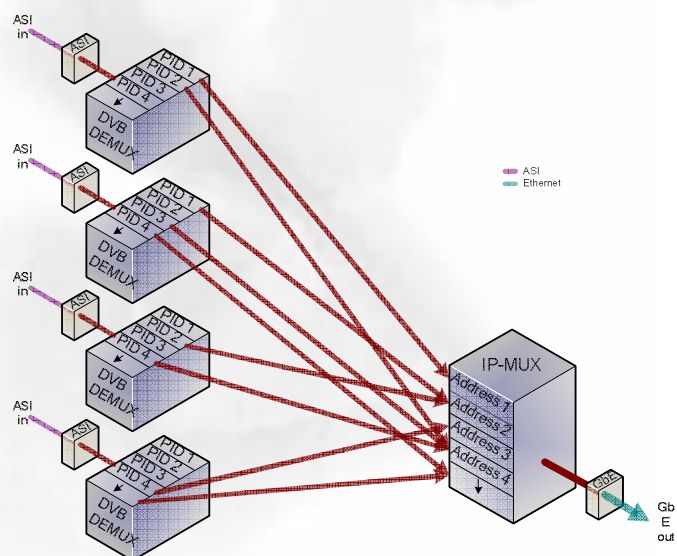
All PIDs coming from separated ASI inputs are put through to selective IP addresses, to be separately available for external equipment.



ATE100 routing to different addresses

### Routing at PID level

Several IP streams can be composed at individual PID level, independently from which ASI input port the data is coming from. An MPTS becomes several SPTS. PIDs can be renumbered while doing that.



ATE100 routing at individual PID-level to different addresses

# ATE100

## ATE100 Networks

### Integration in networks

The ATE100 is applicable in several kinds of network architecture for digital television.

### Implementation

Normally the system is placed at the location where centralised processing of digital radio and television services is performed; the head-end or digital play-out centre.

### Connections

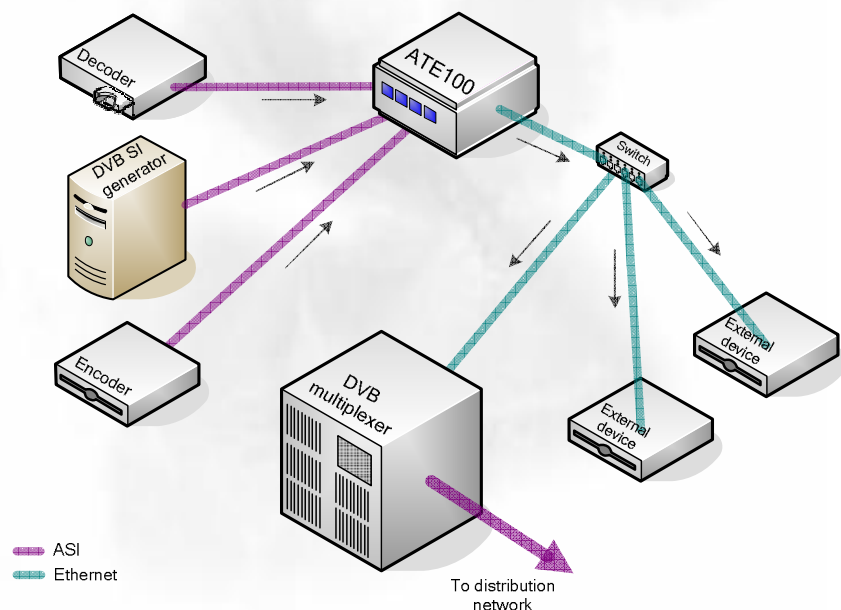
Input for the system is up to eight ASI ports. The output is one electrical Ethernet port. An additional optical Ethernet port is optional. Communications with the ATE100 for maintenance and SNMP is done by common Ethernet.

### Application in the multiplexer centre

Instead of direct coupling, ASI signals are first converted to IP over Ethernet. After that, the signals are selectively accessible by the multiplexer and other external equipment.

### Example

The drawing below shows an example of implementation of the ATE100 in a network design.



ATE100 in a multiplexer configuration

# ATE100

## ATE100 Specifications

### Capacity

- Up to 8 ASI input ports
- Up to 8192 different PIDs per transport stream

### Functionality

- Conversion of DVB transport streams from ASI to Ethernet
- Conversion from MPTS to SPTS
- Routing of parts of the transport streams at individual PID level
- Configurable PID renumbering
- SNMP generator
- Electrical Gigabit Ethernet output

### Options

- Optical Gigabit Ethernet output
- Redundant design
- User specific demands

ITNM Systems reserves the right to change the specifications.

# ATE100

## ATE100 Foundation

### Foundation

The foundation of the ATE100 is a Supermicro industrial server controlled by Linux operation system. The power supply and hard disk can be swapped from the outside. A watchdog circuit is monitoring the availability continuously. Communications for maintenance and SNMP can be done by means of common Ethernet. The foundation can optionally be equipped with redundant power supplies and ditto hard disks. The amount of ASI-inputs will be limited up to four ASI-inputs in that case. Delivery based on a HP Proliant server is also an option.



Front and rear panel of the industrial server

### Standard configuration

Industrial server  
 Watchdog circuit  
 Swappable power supply and hard disk  
 No keyboard or mouse needed to start up  
 Mains 230 V 50 Hz (other available on request)  
 Used power 150-250 W\*  
 Colours beige and black  
 Dimensions (width x depth x height):  
 1 RU = 438 x 681 x 43 mm

### Environmental conditions:

Temperature range storage 0 - 50 °C  
 Temperature range operating 10 - 35 °C  
 Humidity 8%-90% non-condensing

### Safety and EMC:

CE compliant (EN 60950/IEC 60950)

### Connections:

1 x MPTS input (ASI)  
 1 x MPTS output (10/100/1000Base-T)  
 1 x Control/SNMP (10/100/1000Base-T)

### Connection options:

4/8 x MPTS inputs (ASI)  
 2 x MPTS output (1000 Base-SX)

\* Dependent on the configuration.

ITNM Systems reserves the right to change the specifications of the configuration.



# ATE100

## ATE100 Management

### Purpose

Besides powerful and advanced functionality and cost-effective design durability of a part in a digital television broadcast system is of course of vital importance. A service level agreement is the appropriated means for a user defined improved or continuous availability.

### Service level agreement

A service level agreement covers preventive as well as corrective maintenance of the whole system as well as possible bugs in the applications. The standard rate is 7 % of the installed base per year. The standard coverage in the Netherlands implies a maximum response time of one hour during seven days a week between 9 o'clock in the morning and 11 o'clock in the evening. The response time at the location is four hours maximum. Spare material can be included on customer's demand as part of the delivery.

### Contact

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