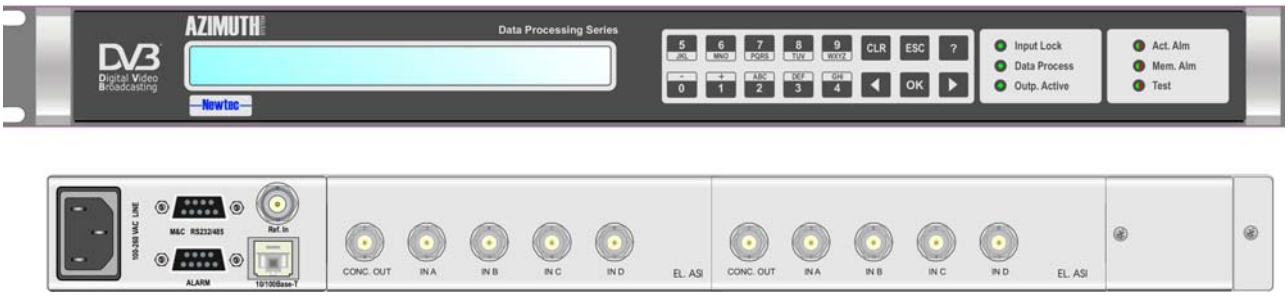


• DESCRIPTION

As a successor of the NTC/2187, the NTC/2137 has now been fully integrated into the Azimuth series. This implies that the Concentrator and Deconcentrator have exactly the same features and specifications than the NTC/2187, and additionally have an Ethernet 10 Base-T connection with SNMP agent and MIB library.
The NTC/2137 ASI–DVB Transport Stream Concentrator/ Deconcentrator is a stand-alone unit that can be configured (hardware configuration) according to specific DVB Concentrator Deconcentrator needs :

General :
All monitor and control parameters are available locally on the front panel (LCD display & keyboard) and remotely via a RS485/232 interface and the 10 base-T Ethernet interface.
A summary alarm control output (dual contact closures) is available for station alarm monitoring and redundancy switching.
Each output can be descrambled with a 6-byte (48-bit) key.

Concentrator :
Equipped with 1 or 2 (*1) NTC/3454/AC boards.
When configured as Concentrator with one NTC/3454/AC board, up to 4 transport streams can be concentrated. With two boards cascaded internally, up to 8 DVB/MPEG Transport Streams can be concentrated (*1). Alternatively, the two concentrator boards can be used as independent units, giving a 2x4 dual concentrator .(*1)
The Concentrator output can be fed directly into a DVB satellite modulator (NTC/2180 or NTC/2177 series) or into a standard DVB/SDH adaptor. The Concentrator output transport rate is adapted to a user-programmable value.
As an additional protection against piracy, each input can be scrambled with a 48-bit key.

Deconcentrator :
Equipped with 1 or 2 NTC/3454/AD boards
When configured as Deconcentrator, with one NTC/3454/AD, up to 4 transport streams can be extracted from the concentrated T.S.
With two boards (*1), up to 8 transport streams can be extracted. A 2 x4 dual deconcentrator can also be made. (*1)
Each of the concentrated channels can be configured to one of the following outputs:
- Transport stream with specified channel number
- Concentrated ASI stream (copy of input stream)
- Off

Concentrator + Deconcentrator
NTC/3454/AC + NTC/3454/AD. In this configuration, the device offers a 4 to 1 Concentrator and a 1 to 4 Deconcentrator into one Azimuth chassis or as separate units.

Hardware Configuration
NTC/2137.NA : Chassis Hardware + 1 or 2 Concentrator and/or Deconcentrator Boards :
- NTC/3454/AC : Concentrator board
- NTC/3454/AD : Deconcentrator board

Optical ASI interfaces are available as hardware options (*1)) for the Concentrator and Deconcentrator boards.
See data sheet NTC/3454/Ax datasheet for details.

Example configuration : 4-input Concentrator
NTC/2137.NA + 1x NTC/3454/AC

• APPLICATIONS

Unlike the customary MPEG multiplexing, a 100% end-to-end transparency can be guaranteed for the transport streams with this solution: there is no alteration or translation of PID, no alteration of PCR accuracy, etc..
It is therefore ideal to transport several ASI signals into one carrier (less Bandwidth and less power needed) and in a fully transparent way. This is required in e.g. SFN networks, where no data alterations to the terrestrial transmitters are allowed.

• FEATURES

- Concentrates up to 8 DVB Transport Streams into a single digital stream for efficient and fully transparent transmission via satellite or fiber
- Each transport stream can be scrambled independently
- Allows optimization of feeder links to DVB-T Transmitters (SFN) or Cable head-ends
- Combined Transport rate up to 160 Mbps
- Internal Transport Rate Adaptation
- Low overhead ~ 2 %
- No expensive MPEG multiplexing needed
- Fully transparent : no PID translation, no PCR jitter added
- Auto-adapts to input Transport Packet format
- TS scrambling/descrambling
- Compatible with standard DVB/SDH adaptors for transport over fiber
- Compliant to EN 50083-9 : *Interfaces for CATV/SMATV head-ends and similar Professional Equipment for DVB / MPEG2 transport streams.*
- Local & remote M&C access to all menus through a
  * web interface (Http protocol)
  * RS-485/RS-232 (RMCP v2 protocol)
  * 10/100 Base-T Ethernet port (RMCP v2 protocol)
- 50 or 75 Ohm IF output selectable
- User-programmable menu structure
- Action Keys (group of commands under single button)
- Real-time clock for alarm occurrence logging
- Internal test-generator and detector (PRBS counter)
- Very compact: 1Ru (height :4.4 cm !)
- highly reliable Newtec design
- CE label
- Dynamic build-up of alarm menu
- Diagnostics generator

• DATA SUMMARY

ASI INPUTS (conform EN 50083-9)
connector : BNC female / 75 Ohm
sensitivity : 200 mVpp
max input : 880 mVpp
return loss : > 17 dB (22-270 MHz)
ASI OUTPUTS (conform EN 50083-9)
connector : BNC female / 75 Ohm
level : 800 mVpp ± 10%
EXT. 10 MHz REF. (optionnel, NTC/3462/Ax)
connector : BNC female / 50-75 Ohm
level : sine 1.0 Vpp ± 6 dB
return loss : > 13 dB (9-31 MHz)

MONITOR & CONTROL INTERFACES :
a) protocol : RMCP
connector : 9 pin sub-D female
electrical : RS-485 / RS-232
b) protocol : RMCP over TCP-IP
connector : RJ-45
electrical : Ethernet 10 base-T +MIB/SNMP

ALARM INTERFACE
connector : 9 pin sub-D female
electrical : switch-over contact

MECHANICAL
1U 19" sub rack,
height 4.4 cm x depth 45 cm, weight 4 kg

POWER SUPPLY
90-130/180-260V, 40VA, 47-63Hz

TEMPERATURE
operational : 0 to 40 °C
storage : -40 to 70 ° C

Control - Concentrator

Output framing : 188-byte, 204 byte
Output Rate : 4 – 160 Mbps, step 1 bps
Mux input : ON/OFF (per input)
Scrambling mode : ON/OFF (per input)
Scrambling key : 6 byte (per input)
Reference clock : internal / external

Monitoring - Concentrator

Alarms on all inputs
All control parameters
Ext. reference alarm
Approx. Input Rate Margin (Mbps)
Buffer Overflow alarm

Control - Deconcentrator

Output select (per output) : any TS, Concentrator or OFF
Reference clock : internal / external (optional)
Scrambling mode : ON/OFF (per output)
Scrambling key : 6 byte (per output)

Monitoring - Concentrator

Input signal Alarms
All control parameters

• PERFORMANCE

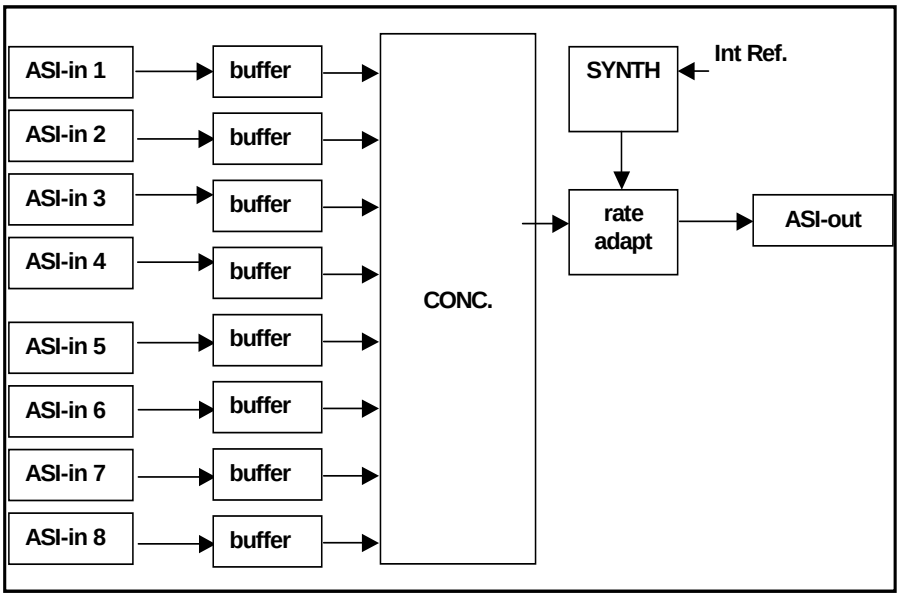
CONCENTRATOR MODE

ASI Baud rate IN : 270 Mbaud ± 100 ppm
ASI Baud rate OUT : 270 Mbaud
accuracy (internal ref.) : ± 20 ppm
accuracy (external ref.) : same as external ref.
ASI Transport Rate OUT
range : 4 – 160 Mbps
resolution : 1 bps
accuracy (internal ref) : ± 20 ppm
accuracy (external ref) : external ref. ± 10^{-11}
ASI Transport Rate IN
total transport rate : 4 – 156 Mbit/s
Transport packet format
input (automatic) : 188, 204-RS, 204-noRS
output (selectable) : 188, 204-noRS
Transport packet timing ("Byte" timing corresponds to DVB "Burst" timing and means bytes are spread)
input (automatic) : byte timing, packet timing
output (fixed) : byte timing
Overhead
TranspRateOUT / TranspRateIN < 1.03

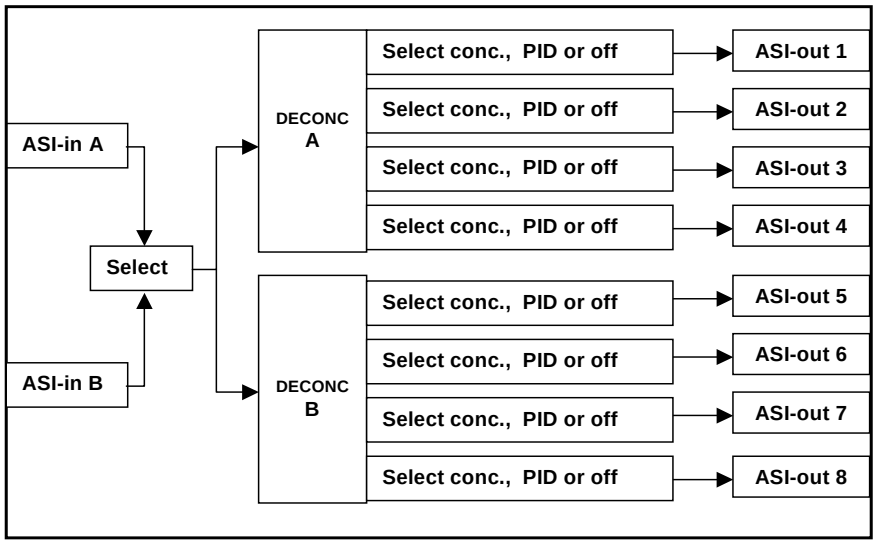
DECONCENTRATOR MODE

ASI Baud rate IN : 270 Mbaud ± 100 ppm
ASI Baud rate OUT : see Concentrator mode
ASI Transport Rate OUT
range : 0 – 156 Mbps
accuracy : follows input
ASI Transport Rate IN
total transport rate : 4 – 160 Mbit/s
Transport packet format
input (automatic) : 188, 204-RS, 204-noRS
output (selectable) : 188, 204-noRS
Transport packet timing ("Byte" timing corresponds to DVB "Burst" timing and means bytes are spread)
input (automatic) : byte timing, packet timing
output (fixed) : packet timing

- **BLOCK DIAGRAM**



NTC/2137 Maximum CONC. Configuration



NTC/2137 Maximum DECONC. Configuration

- **TECHNICAL LITERATURE & REFERENCES (ALSO AVAILABLE ON OUR WEBSITE)**

Other related products:

AZIMUTH	Product families
AZIMUTH	Data Processor Family
NTC/2130/BISS	BISS Scrambler
NTC/2130/RA	Automatic Rate Adapter
NTC/2130/IC	DVB – TELCO interface converter
NTC/2132	TELCO – SDH interface converter
NTC/2277	DVB-S2 IF-band modulator
NTC/2280	DVB-S2 L-band modulator / frequency converter
NTC/2263	DVB-S2 demodulator
NTC/2163	DVB-S demodulator

Technical publications:

ASI Concentration & Deconcentration : A solution for simultaneous and transparent delivery of…

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