DESCRIPTION

The rate adapter is the answer to every clocking problem or difference between an MPEG encoder and a Newtec modulator.
In practice, it will stuff the difference of packets between the encoder or multiplexer output data rate and the modulator output data rate.
Although the DVB standard specifies that the data clock needs to be generated by the encoder or multiplexer, there are situations where a this rate adapter solves a dead-end situation. (see Applications)
The interface module has 2 ASI inputs which can be selected either manually or automatically (integrated redundancy switching) and one SPI input.

All Control and Monitoring parameters are available locally on the front panel (LCD display & keyboard) and remotely through a web interface (HTTP) or through the RS-485/232 port or through the 10/100 Base-T Ethernet port. The last two use the RMCPv2 protocol. There is optionally an SNMP + MIB agent.

APPLICATIONS

The major application of the Automatic Rate Adapter is to solve a situation where there is an accidental or a voluntarily forced difference between the encoder output data rate and the modulator transmission rate.
A first possible usage is the instability or even the absence of the encoder data clock output. The Automatic Rate Adapter will ignore the incoming clock and re-stamp the transport stream to the modulator user data rate set.
A second situation is where the user wants to maintain a fixed occupied satellite bandwidth, while the incoming data rate can be variable.
A third possible example is where the signal is already stuffed by an MPEG multiplexer, and where the multiplexer output rate is higher than the modulator input rate. The rate adapter will recognize the incoming stuffing data packets and reduce (or augment) the transmission output rate to the value set.
More generally, it is widely used as a tool of convenience, where the (DSNG or Fly-away) operator doesn't need to worry any longer about the data rate settings of the base band equipment.
The Automatic Rate Adapter module can either work as a stand-alone unit, or can be combined with e.g. a modulator module, or a Concentrator module. Even two Rate Adapter modules can be installed in one Azimuth chassis where space is restricted.

FEATURES

- Coax-ASI Input/Output and SPI input
- Two selectable ASI inputs (auto or manual)
- ASI coax output
- Optional ASI optical inputs/outputs
- Fully DVB compliant
- Local & remote M&C access to all menus through a
    * web interface (Http protocol)
    * RS-485/RS-232 (RMCPv2 protocol)
    * 10/100Base-T Ethernet port (RMCPv2 + SNMP/MIB)
- User programmable menu structure
- Action Keys (group of commands under 1 button)
- Real-time clock for alarm occurrence logging
- Internal test-generator, PRBS counter
- Dynamic build up of alarm menus
- Very compact: 1 RU (height: 4,4 cm !)
- Highly reliable Newtec design
- Low cost
- CE label
- Diagnostics generator

• VERSIONS & OPTIONS

1. Base Band Data interface Output modules :

The interchangeable Base Band data interface modules provide a wide range of input interfaces via coaxial and/or sub-D connectors. Optical inputs and outputs are also available.

- NTC/3453.BA.Ax: DVB ASI/SPI/Serial-LVDS interface card
    Hardware option: optical ASI in/out plug-in NTC/3453.x.x.A
    Firmware options:
      * Automatic rate adapter: NTC/3453.x.xB

2. 10 MHz Reference Board (optional) :

In case one needs a 10 MHz reference input and/or output, the following options are available:
- NTC/3462/AB.A: 10   MHz   OCXO   reference   Oscillator (normal use)
- NTC/3462.AA.A: 10 MHz OCXO High Stability Ref. Oscillator (recommended only with carriers < 1MHz)

3. SNMP agent and MIB library (optional) :

Needed whenever the unit needs to be controlled over Ethernet via NMS.

NTC/2131.xx.xB

• DATA SUMMARY

ASI INPUTS (EN 50083-9) :
188 or 204-byte mode
connector	: BNC female @ 75W
return loss	: > 17 dB (22-270 MHz)
sensitivity	: 200 mVpp
max. input	: 880 mVpp
max. data rate	: 250 Mb/s

ASI OUTPUTS (EN 50083-9) :
188 byte mode
connector	: BNC female @ 75W
level	: 800 mVpp ± 10%

MONITOR & CONTROL INTERFACES :

a)   protocol : Http (via webbrowser)
      connector: RJ-45
      electrical: Ethernet 10 base-T
b)   protocol : RMCP version 2 only
      connector: 9 pin sub-D female
      electrical: RS-485   /   RS-232
c)   protocol : RMCP version 2 only over
          TCP-IP or UDP, SNMP
      connector: RJ-45
      electrical: Ethernet 10 base-T

ALARM INTERFACE :
connector	: 9 pin sub-D (F)
electrical	: switch-over contact

MECHANICAL :
1U   19" rack
 4.4 cm high   x   55 cm deep,
weight 3 kg

POWER SUPPLY :
90-130/180-260V, 60VA, 47-63Hz

TEMPERATURE :
|	
operational	: 0 to 40 deg C

Monitoring

All monitoring and alarm information are accessible via the front panel, 10Base-T connection (HTML or SEMS), or via RS232/485.

Configuration help:
The AZIMUTH series provides a nearly non-exhaustive number of configuration possibilities. A web-based configuration tool will easily guide you through your selection criteria. Alternatively, Newtec's sales and support team are at your full disposal for any additional information you might need. (See last page for coordinates)

- ## BLOCK DIAGRAM (A MAXIMUM OF 2 INTERFACE BOARDS CAN BE INSTALLED PER CHASSIS)
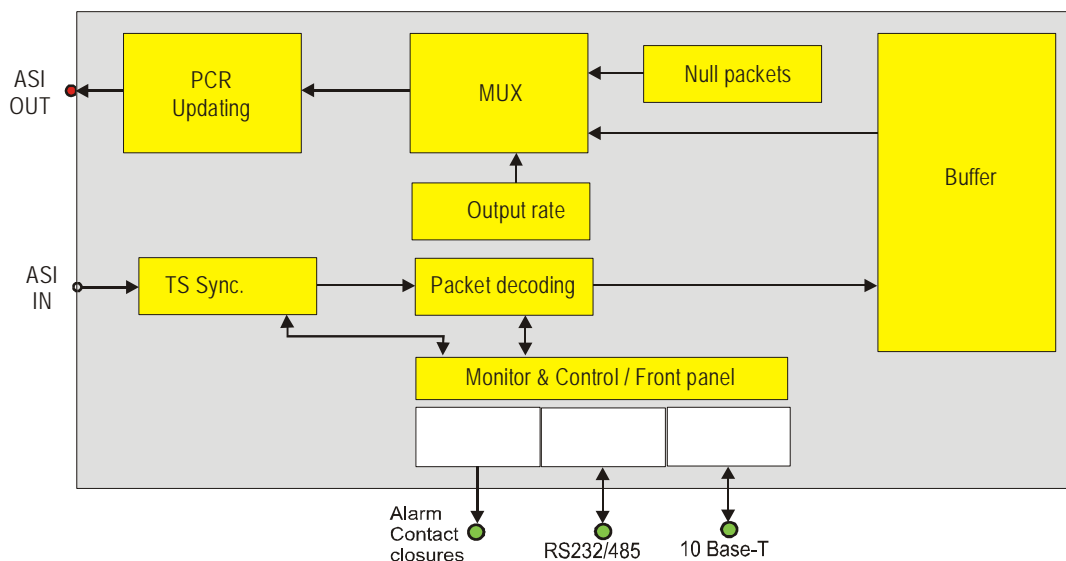
- ## TECHNICAL LITERATURE & REFERENCES (ALSO AVAILABLE ON OUR WEBSITE)

Other related products

AZIMUTH	Product families
NTC/2130/xx	Data Processor Family
NTC/2130/BISS	BISS Scrambler
NTC/2130/IC	Interface converter ASI-SPI
NTC/2280/xx	L-band DVB-S2 Modulator / Up converter
NTC/2277/xx	IF output DVB-S2 Modulator

Technical publications

Newtec News Feb. 2001   Adaptive vs. fixed ASI data rate: Why and How?