

# Newtec AZ820

## AZIMUTH SERIES

# AZ820

## ASI/SPI to G.703 Converter

### Azimuth Product Family

#### Description

The Newtec AZ820 is an interface adapter designed to take an MPEG transport stream over an ASI interface and convert it into a transport stream over a G.703 interface, or the other way around. This conversion enables the transmission of transport streams over E1, E2, E3, T1, T2, T3/DS3 digital carriers.

For example, the AZ820 converter is ideal for Digital Terrestrial and Mobile TV transmission networks when video/data signals have to be carried over fixed or microwave links between the hub and each remote broadcasting site.

In its default configuration the AZ820 performs the ASI to G703 conversion. On the input side, the data converter allows automatic or manual selection between two DVB-ASI-coax inputs or a DVB-SPI input. One of the Electrical ASI interfaces can be optionally replaced by an optical interface.

The rate of the input signal is adapted by adding null packets in order to match the rate of the digital carrier. Program Clock references (PRC) are restamped accordingly.

At the output, the signal rate can be slaved either to an internal clock, or to an external G.703 output clock. Optionally, a secondary G.703 interface with a specific data rate can be installed, giving the possibility to switch from one rate to another.

Optionally, the AZ820 can be configured to perform G.703 to ASI conversion.

If the MPEG signal needs to be transported without any modification, such as for the distribution of signals in a Single Frequency Network (SFN), a special transparent mode can be activated. This guarantees that the transport stream at the ASI output of the G.703-ASI converter is bit-by-bit identical to the original input of the ASI-G.703 converter. In addition, when in transparent mode, we do not restamp the PCR value, nor delete incoming null packets.

The AZ820 is easy to operate and monitor. All control and monitoring parameters are available locally on the front panel and remotely through a web interface. It is also possible to control or monitor the AZ820 via RMCP or SNMP.



#### Key features

- Rate adaption (for MPEG transport stream)
- Transparent mode
- Two selectable ASI inputs
- ASI Byte and Burst mode compatible
- Optical ASI interface (optional)
- G.703 interface: E1, T2, E2, E3 or T3 (DS3) rates
- Secondary G.703 interface
- Adaptive equalizer on G.703 interfaces
- SNMP

#### Main advantages

- Flexible conversion between broadcast and telco standard
- Solution for Single Frequency Networks
- Very compact
- Easy integration with remote M&C systems

#### Applications

- Transmission of MPEG signals over leased lines
- Digital Terrestrial TV networks
- Mobile TV networks

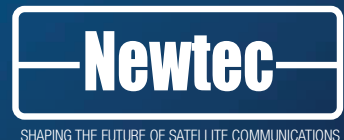
#### Related products

AZ110 Broadcast Satellite Modulator  
AZ910 DSNG and Contribution Demodulator  
AZ120 Telco Satellite Modulator  
AZ920 Telco Satellite Demodulator

AZ840 BISS scrambler  
AZ850 Rate Adapter  
AZ860 Concentrator - Deconcentrator

#### Related Documents

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## Interfaces

### ASI Electrical inputs

- Connector: BNC (F), 75 ohms
- Return loss (22-270 MHz): 17 dB
- Coupling: transformer
- Sensitivity: 200 mVpp
- Max input: 880 mVpp
- Interface rate: 270 MBaud  $\pm$  100 ppm
- TS packet formats: 188 or 204-byte
- Packet timing (burstiness): compliant to DVB burst & byte mode

### ASI Electrical outputs

- Connector: BNC (F), 75 ohms
- Coupling: transformer
- Level: 800 mVpp  $\pm$  10%
- Rise time: < 1.2 ns
- Interface rate: as per DVB-A010 Rev1

### ASI Optical input (optional)

- Connector: SC
- fiber: 1300 nm multimode 62.5/125 mm
- Received power: -27dBm to -14 dBm

### ASI Optical output (optional)

- Connector: SC
- Fiber: 1300 nm multimode 62.5/125 mm
- Transmit power: -19dBm to -14 dBm
- Wavelength: 1270 nm <  $\lambda$  < 1380 nm

### SPI Input/output

- Connector: 25 pin sub-D (F)
- Level: LVDS
- Interface rate: 0-18 Mbit/s

### G.703 Input:

- Rates: 2.048 ; 6.312 ; 8.448; 34.368 ; 44.736 Mbit/s
- Connector: BNC (F)
- Impedance: 75 ohms

### G.703 Output :

- Rates: 2.048 ; 6.312 ; 8.448; 34.368 ; 44.736 Mbit/s
- Connector: BNC (F)
- Impedance: 75 ohms
- Line coding: Fully compliant with ITU-T G.703 HDB3 for E1,E2 and E3 B3ZS for T3/DS3
- Clock stability (with internal reference)
  - 2,048 Mbit/s  $\pm$  50 ppm
  - 6,312 & 8,448 Mbit/s  $\pm$  30 ppm
  - 34,368 & 44,736 Mbit/s  $\pm$  20 ppm

### External 10.0 MHz reference (optional) :

- Input level: -3 dBm up to +7 dBm
- Output level: +7 dBm
- Connector: BNC (F) - 50 ohms

## Functionality

### Rate adapter (ASI to G703)

- Transport rate input
  - Range: 0-216 Mbit/s
- Packet buffer: 1024 packets max
- Transport rate output
  - Resolution: 1 Hz
  - Accuracy: 100 ppm

## Internal Reference frequency

- High Stability (optional)
  - Stability  $\pm 5 \times 10^{-8}$  over 0°C to 70°C
  - Ageing:  $\pm 15$  ppb/day  $\pm 300$  ppb/year
- Very High Stability (optional)
  - Stability  $\pm 2 \times 10^{-9}$  over 0°C to 65°C
  - Ageing:  $\pm 0.5$  ppb/day  $\pm 500$  ppb/10 year

## Generic

### Monitor and control interfaces

- Web based GUI
- Diagnostics report, alarm log
- RMCP over TCP-IP/UDP and RS232/RS485
- SNMP v2c

### Alarm interface

- Electrical dual contact closure alarm contacts
- Connector 9-pin sub-D (F)
- Logical interface and general device alarm

## Physical

- 1RU, width: 19", depth 51 cm, 6 kg
- Power supply: 90-130 & 180-260 Vac, 105 VA, 47-63 Hz
- Temperature
  - Operational: 0°C to 40°C
  - Storage: -40 to +70°C
- Humidity: 5% to 85% non-condensing
- CE label

## Ordering information

AZ820 ASI/SPI - G.703 CONVERTER		Order n°
<b>Default configuration</b>		
ASI/SPI - G.703 converter, SNMP Conversion: ASI/SPI to G.703 ASI interfaces: Electrical G.703 Interface Data rate: 2,048 Mbit/s		AZ820
<b>Configuration options</b>		
Category Max. 1 option per category		
Conversion	ASI/SPI to G.703	Default
	G.703 to ASI/SPI	DA-02
ASI interfaces	Electrical	Default
	Electrical + Optical	DG-02
G.703 Interface Data rate	2,048 Mbit/s (E1)	Default
	6,312 Mbit/s (T2)	DB-02
	8,448 Mbit/s (E2)	DB-03
	34,368 Mbit/s (E3)	DB-04
	44,736 Mbit/s (T3/DS3)	DB-05
<b>Additional options</b>		
Category Max. 1 option per category		
Secondary G.703 Interface Data rate	2,048 Mbit/s (E1)	DE-01
	6,312 Mbit/s (T2)	DE-02
	8,448 Mbit/s (E2)	DE-03
	34,368 Mbit/s (E3)	DE-04
	44,736 Mbit/s (T3/DS3)	DE-05
10MHz reference In/Out	High stability	GR-01
	Very high stability	GR-02
<b>Services</b>		
Category		
Assistance	Care Pack Basic	GA-06
	Care Pack Extended	GA-07

Contact your sales representative for details (sales@newtec.eu)