DESCRIPTION

The BISS-E Scrambler is the ultimate solution for reliable and interoperable protection of contribution exchanges.

Part of the Azimuth Data Processor family, this unit is equipped with the DVB interface and the BISS software option. The main advantage of BISS is its simplicity, its flexibility and its free access to both every manufacturer and user.

It is further designed to be compliant to BISS-E (Basic Interoperable Scrambling System) as specified by EBU-Tech 3292 rev.1., and as a replacement of the proprietary RAS system.

This device scrambles the ASI transport stream when the unit is configured in Operational Mode 1 or Mode E, with a Session Word (SW). This Session Word will be valid for the whole transmission period. This suits particularly to contribution exchanges.

In mode 0, there is no scrambling. The BISS-E Scrambler is transparent.

In mode 1, the signal is scrambled by a Session Word entered in clear (12 hexadecimal digits). After a Session Word is entered on the front panel, it is hidden from the front panel display.

In mode E, the operator inserts a DES Encrypted Session Word (ESW, 16 hexadecimal digits). Once inserted, the ESW cannot be read back.

The (Encrypted) Session Words could also be inserted via the Remote interface (RS485/RS232). The encryption key is a Buried ID or an Injected ID, as selected by the operator.

The scrambler automatically updates or adds SI tables according to the mode of operation. In modes 1 and E, the output rate is adapted and incoming PCR time stamps are updated.

The interface module has 2 ASI inputs which can be selected either manually or automatically (integrated redundancy switching).

APPLICATIONS

The BISS Scrambler is mainly designed for SCPC contribution and DSNG transmissions where both flexibility and security are primordial. It is further free of any smart card system or licensing system, as most of the IRD's have the BISS de-scrambler readily integrated.

This stand-alone BISS scrambler is an economic solution for broadcast systems where a BISS scrambler is not integrated into the encoder, or where multiple scrambling is needed.

The 3 operating modes offer enough flexibility to have either single point to point transmissions (usually mode 1) or for point to multipoint transmission ,where some receiving parties need to continue receiving a specific transmission ,while others are not allowed as from a certain period of time. In those cases, the Mode E is a flexible and secure solution.

The BISS scrambler can either work as a stand-alone unit, or the BISS scrambler module can be integrated in the chassis with e.g. a modulator module, or a concentrator module, or even 2 BISS scramblers in one chassis.

FEATURES

- Compliant to BISS Standard-Mode 0, 1& E
  EBU-Tech 3292rev.1 To be published
- Mode 0 - signal in clear
- Mode 1 Clear Session Words
- Mode E Encrypted Session Words
- 5 user-defined Injected IDentifiers (i.e. secret keys)
- Buried IDentifier to address the unit individually (i.e. a "Serial Number")
- Up to 10 Buried IDentifier changes allowed
- 1 Scrambler
- 1 Program in 1 Transport Stream
- Coax-ASI Input/Output
- Support for one SNMP alarm trap
- 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:
      * BISS 0,1 & E scrambler NTC/3453.x.xC

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   : 54 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 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
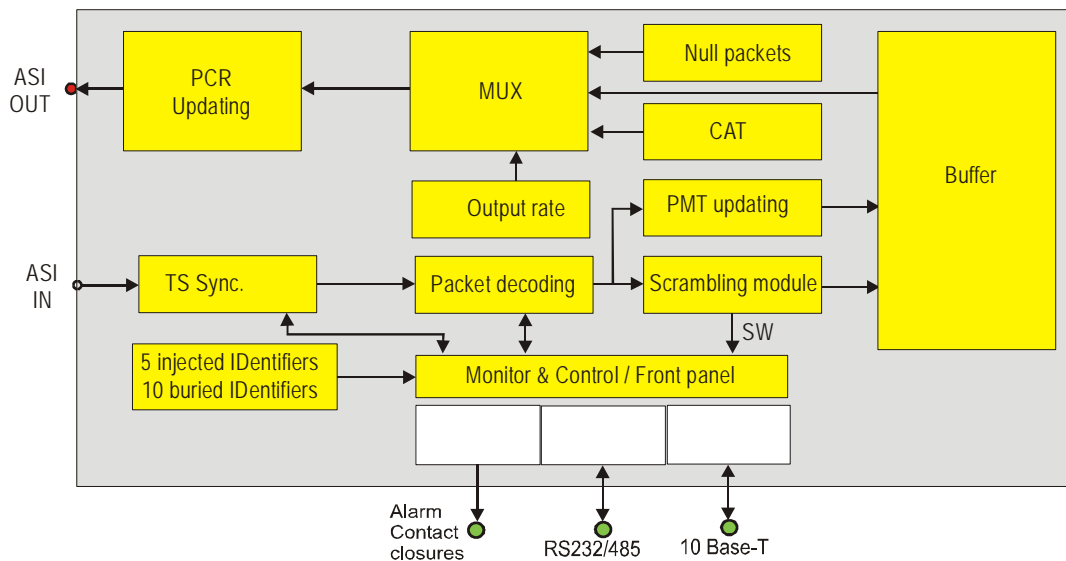
- ## TECHNICAL LITERATURE & REFERENCES (ALSO AVAILABLE ON OUR WEBSITE)

Other related products

AZIMUTH	Product families
NTC/2130/xx	Data Processor Family
NTC/2280/xx	L-band DVB-S2 Modulator / Up converter
NTC/2277/xx	IF output DVB-S2 Modulator

Technical publications

Newtec News July 2002	BISS 1&E scrambler finally freely available