

Digital Video Interfacing Products

AT720USB

DVB-C (QAM-B, 8VSB) Input
Receiver & Recorder & TS Player
DVB-ASI & DVB-SPI outputs



Standard Features

- **High Speed USB 2.0.**
- Windows XP, Vista, Win 7 (64bit) Drivers + SDK.
- Linux Drivers & sample application.
- Accompanied by DVSStaion3, Alitronika's Integrated TS Player, Recorder & Real Time Quick Analyser Software.
- Supports DVB Standards **A1010Rev1** and **EN50083**.

Input

- **DVB-CATV Compliant QAM-B & 8-VSB Receptions.**

- Input Frequency Range: 54 MHz to 864 MHz.
- Channel Bandwidth: 6 MHz.
- Integrated RF Loop Through output.
- Sync, Error & Code Violation Detection.
- Support for Time Stamping, PID filtering.
- Supports 188 /204 byte Packet Sizes.

Output

- **Two** DVB-ASI and **One** DVB-SPI outputs.
- Programmable Output Bit Rate.
- Null Packet Insertion by hardware.
- Selectable Burst size mode & continuous mode TS output.

Application

Targeted for Digital Video Professionals, Sophisticated End Users and OEMs the AT720USB is an ideal solution for A number of applications such as:

- Development Tools.
- DVB to IP or IP to DVB Gateway.
- Transport Stream Recording.
- Transport Stream Playing.
- Transport Stream Analysing
- Transport Stream Monitoring.
- Video on Demand Server.
- Transport Stream Test Generator.
- DVB-C to DVB-ASI & DVB-SPI converter hence replacing an IRD.
- Software Based decoding
- DVB-C TS for Tans-modulation into DVB-S or DVB-T/H.
- PC TV using Alitronika's Direct Show compatible BDA Drivers.

RF Input Specifications

On Board Buffer: 16Mbytes
RF Tuner Connector: 75 Ohms Female RCA Type.
RF Loop Through: 75 Ohms Female RCA Type.
Input Frequency Range: 54 MHz to 864 MHz.
Input Level: -15dBmV to +15dBmV (QAM-B) and -80dBmV to 0dBmV (8-VSB).
Channel Bandwidth: 6 MHz.
Standards: ETS 300-429/ITU-T J83 Annex B **USA**
Modulation Modes: 8VSB/64 QAM/256 QAM.

Output Specifications

Serial Connectors: 75 Ohms BNC
Parallel Connectors: 25-pin sub-D
DVB-ASI Output Bit Rate: 0 to 214 Mbit/s
DVB-SPI Output Bit Rate: 0 to 108 Mbit/s
Bit Rate Stability: +/- 25ppm
DVB-ASI Output Clock: 270 MHz
DVB-ASI Output Signal level: 1.0Vp-p nominal
DVB-SPI Output Clock: 0 to 13.5 MHz
DVB-SPI Output Level: LVDS
Power Consumption: 5 Watts
Size WxLxH: 170mmx210mmx65mm

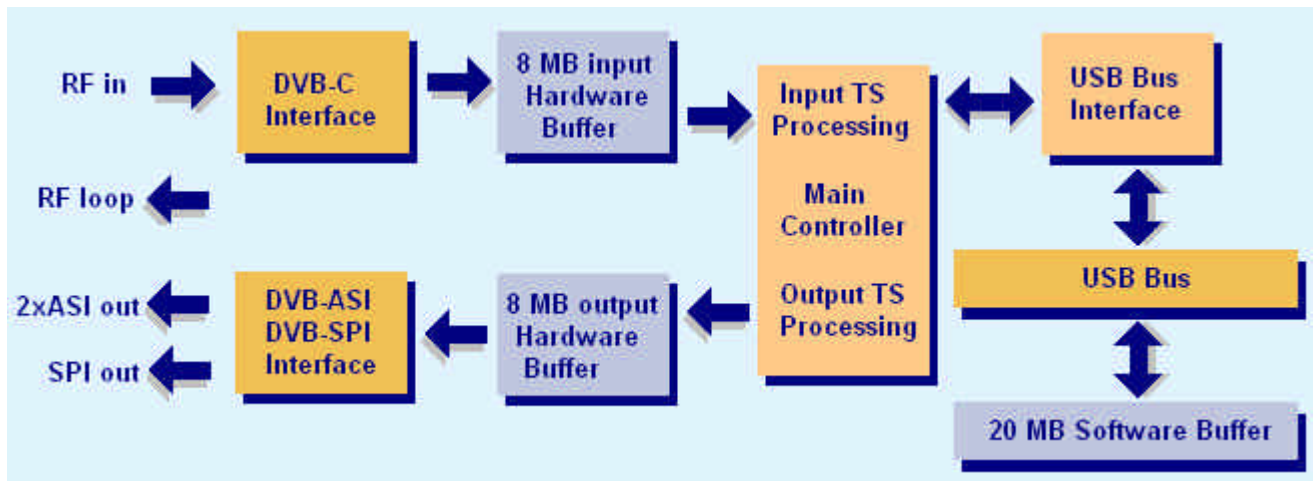
1 GENERAL DESCRIPTION

A member of Alitronika's state of art digital video interfacing products.

The AT720USB is a USB based interface device suitable for Recording, Playing and Analyzing of DVB-ASI Transport Streams.

2 BLOCK DIAGRAM

FIG4 illustrates the block diagram of the AT720USB device. The device communicates with the PC via the USB interface device. On the input side, the RF signal is demodulated and then de-coded before entering the PC via the main controller and the USB bus as Full TS files. On the output side, the MPEG-II transport streams enter the device via the PCI interface device. The AT720USB then transmits the transport streams according to the settings provided by the application software. The data is 8b/10b encoded for DVB-ASI signals before it is serialized and transmitted via the BNC output connectors.



3 EXTERNAL INTERFACES

The external interfaces for the AT720USB are shown. There are 2 Female 75 Ohms RCA type connectors for the RF input & Loop Through, 2 BNC connectors for the DVB-ASI outputs and two 25-pin D-type connectors for DVB-SPI outputs (LVDS & LVTTTL), as well as USB and DC power inlet connectors. The Unit is supplied with power supply and USB2.0 cable.



The LED in the back of the unit function as follows:

OFF = Power is off/ device not activated

Flashing (Red) = Play /Record not activated – Error condition

ON (Green) = Normal operational condition

In Record mode this LED indicates that a Carrier has been detected and the device has locked to incoming TS.

In Play mode this LED indicates that the output section has valid TS (normal operating conditions).

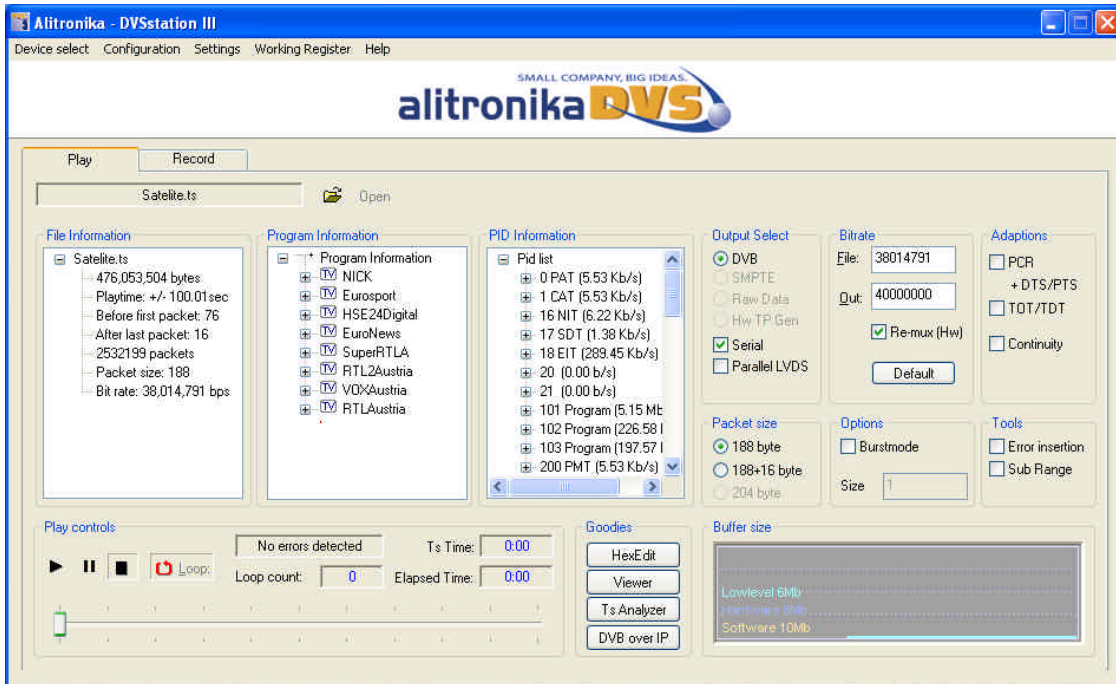
4 APPLICATION

Targeted for digital video professionals, sophisticated end users and OEMs the AT720USB is an ideal solution for a number of applications such as, development tools, universal interface for MPEG-II Transport Stream Playing and Recording, video on demand server, transport stream test generator, high speed serial data link, software based MPEGII decoders & encoders and many other applications.

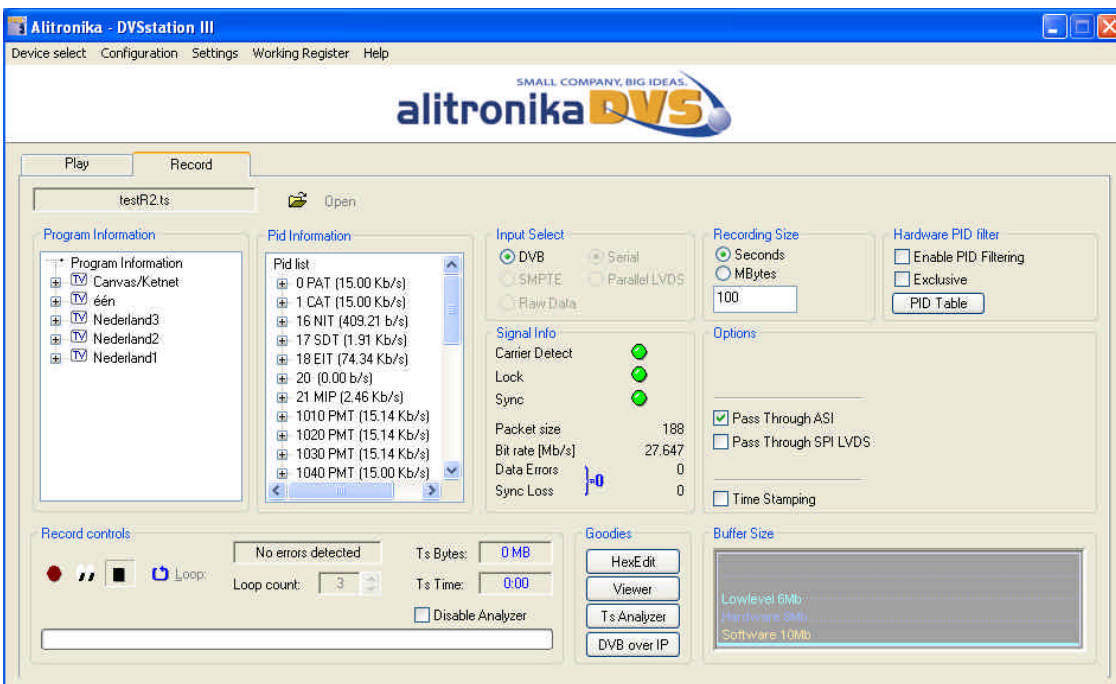
5 Software Application, DVStation3

5.1 – DVStation3: All of Alitronika devices are supported by DVStation3, Alitronika's **FREE** Transport Stream Player, Recorder, Analyser & converter application software. Please refer to DVStation3 specification and User Manual on our website for more information about DVStation3. Even better please download it from our website & try it out. It works in DEMO mode without any Alitronika devices.

Play Screen



Record Screen



RF Tuner Settings ATSC-VSB 8

The screenshot shows the Alitronika DVSstation III software interface. A "Tuner Settings" dialog box is open, displaying the following information:

- Settings:**
 - Frequency [Mhz]: 500
 - Modulation: VSB 8
- Status:**
 - Signal Lock:
 - QAM sync lock:
 - TS lock:
 - Carrier SNR: 29.3 dB
 - Modulation: VSB 8
 - Bit errors: Correctable: 0, Uncorrectable: 0

The background interface shows a "Record" tab with a file named "testR2.ts". The "Program Information" pane lists several channels, and the "Pid Information" pane shows a list of PIDs with their respective data rates. The "Record controls" section indicates "No errors detected" and shows a loop count of 3. The "Buffer Size" section shows a total of 10Mb, with 6Mb in hardware and 4Mb in software.

RF Tuner Settings QAM256

The screenshot shows the Alitronika DVSstation III software interface. A "Tuner Settings" dialog box is open, displaying the following information:

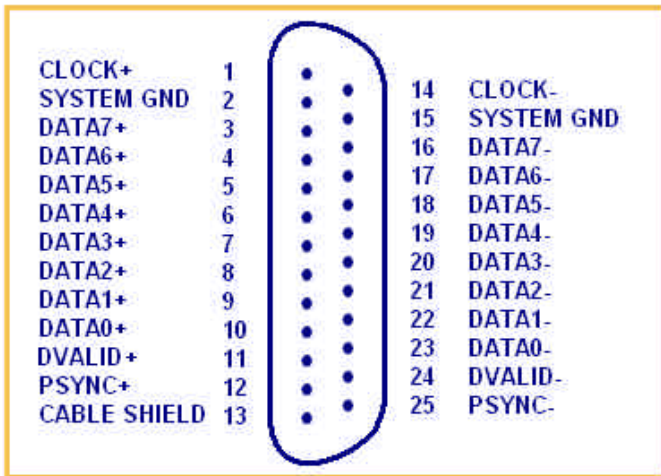
- Settings:**
 - Frequency [Mhz]: 500
 - Modulation: QAM 256
- Status:**
 - Signal Lock:
 - QAM sync lock:
 - TS lock:
 - Carrier SNR: 27.6 dB
 - Modulation: QAM 256
 - Bit errors: Correctable: 1028, Uncorrectable: 0

The background interface shows the same "Record" tab with "testR2.ts". The "Pid Information" pane now shows a different list of PIDs, including "8191 Stuffing (24.47 Mb/s)". The "Record controls" section shows "No errors detected" and a loop count of 3. The "Buffer Size" section remains the same, showing 10Mb total (6Mb hardware, 4Mb software).

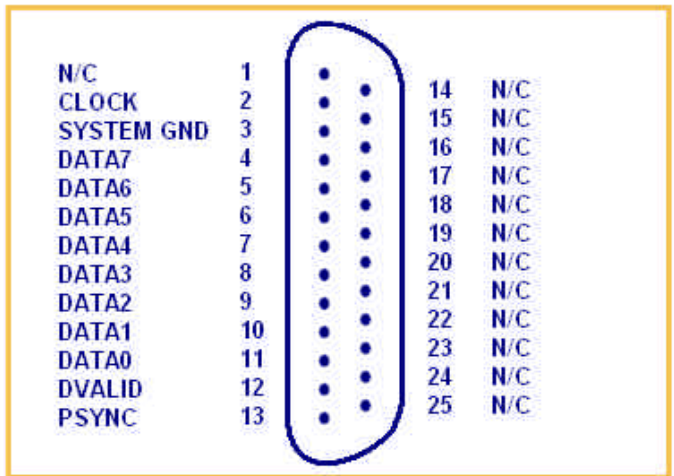
SPI connector Pin outs

Parallel (DVB-SPI) Pinouts

For Alitronika's devices which support DVB-ASI input/output (LVDS and/or LVTTTL/LVCMOS)



Standard DVB-SPI input/output Pinout



LVTTTL/LVCMOS output Pinout



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