

## Digital Video Interfacing Products

# AT660PCI

**DVB-S2/S (QPSK) Satellite Receiver & Recorder & TS Player**  
DVB-ASI & DVB-SPI outputs



## Standard Features

- **PCI 2.2**, 32 bit, 33/66MHz 3.3V.
- Bus Master DMA, Scatter /Gather Interface Protocol.
- 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

#### - **Satellite DVB-S2/S Compliant QPSK Reception.**

- Input Frequency Range: 950 MHz to 2150 MHz.
- Symbol Rate: 2 Mbaud to 45 Mbaud.
- Channel Bitrate: 190Mbit/s
- 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.

## Application

*Targeted for Digital Video Professionals, Sophisticated End Users and OEMs the AT660PCI 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-S to DVB-ASI & DVB-SPI converter hence replacing an IRD.
- Software Based decoding
- DVB-S TS for Tans-modulation into DVB-C or DVB-T/H

## RF Input Specifications

**Input Frequency Range:** 950 MHz to 2150 MHz.

**Input Symbol Rate:** 2 Mbaud to 45 Mbaud.

**Maximum Symbol Rate:**

- QPSK/LDPC/BCH: 45MSPS
- 8PSK/LDPC/BCH: 30MSPS
- DVB: 2-45MSPS

**DisEqc:** DisEqC 2.X

**Standards:** DVB-S2/S & Direct TV

**Demodulation Standard:**

- DVB-S2
- DVB/DSS compliant.

**Modulation Method:**

- DVB-S:QPSK,
- DVB-S2: QPSK, 8PSK, 16APSK & 32APSK.

**Supported Code Rate:**

- QPSK:1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10.
- 8PSK:3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10.
- 16APSK:2/3, 3/4, 4/5, 5/6, 8/9, 9/10.
- 32APSK:3/4, 4/5, 5/6, 8/9, 9/10.

## Output Specifications

**On Board Buffer:** 16Mbytes

**RF Tuner Connectors:** 75 Ohms F Type.

**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

**Size WxL:** 175mmx107

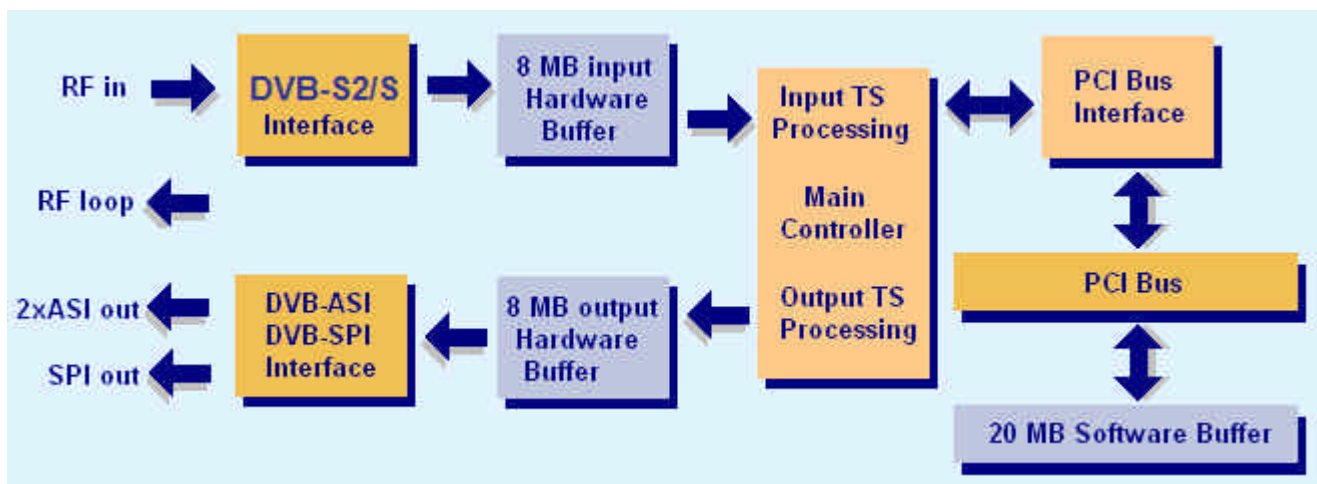
## 1 GENERAL DESCRIPTION

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

The AT660PCI is a PCI based interface device suitable for Recording, Playing and Analyzing of DVB Transport Streams.

## 2 BLOCK DIAGRAM

**FIG4** illustrates the block diagram of the AT660PCI device. The device communicates with the PC via the PCI 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 PCI bus as Full TS files. On the output side, the MPEG-II transport streams enter the device via the PCI interface device. The AT660PCI 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 AT660PCI are shown. There are 2 Female 75 Ohms F type connectors for the RF input & Loop Through, 2 BNC connectors for the DVB-ASI outputs and a box header (seen in blue in the picture) for DVB-SPI output.

The Unit is supplied with a flat cable/D-type/ bracket combination for access to the DVB-SPI port.



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).

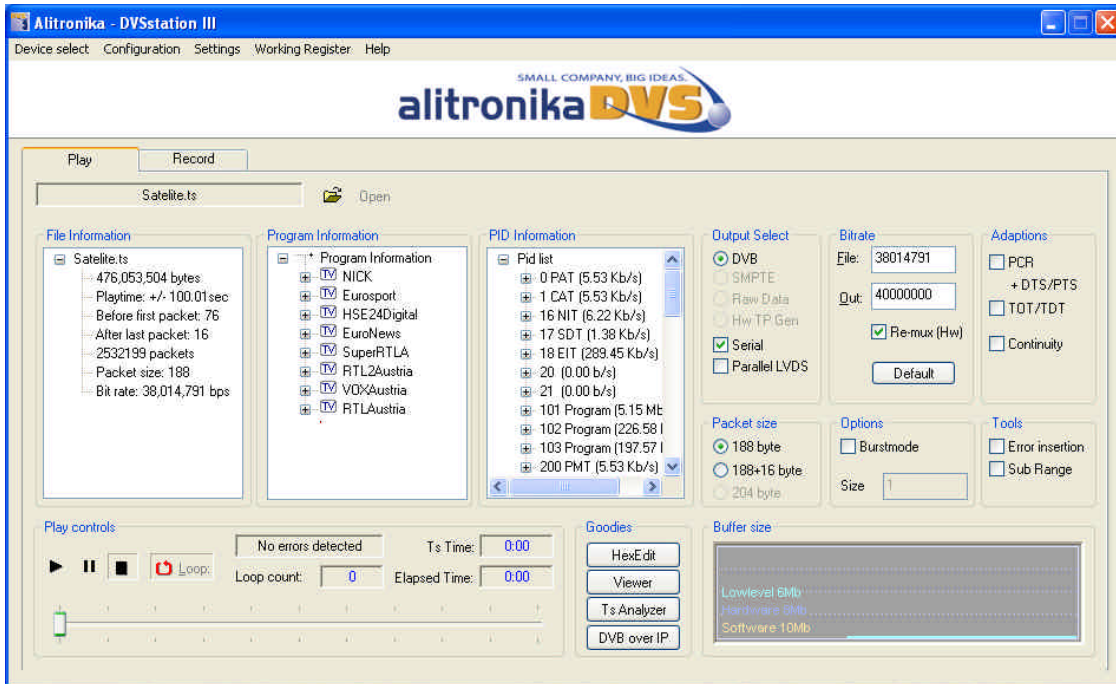
## 4 APPLICATION

Targeted for digital video professionals, sophisticated end users and OEMs the AT660PCI 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.

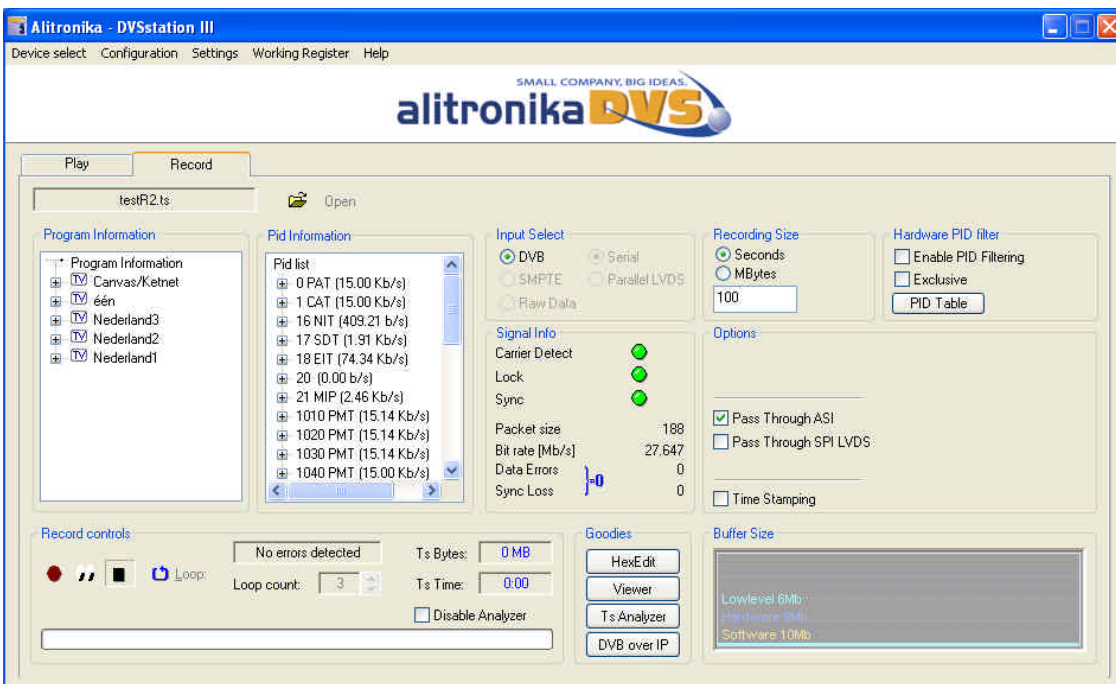
## 5 Software Application, DVStation3

**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

The screenshot shows the 'RF Tuner Settings' window in Alitronika DVSStation III. The window title is 'Alitronika - DVSStation III' and the menu bar includes 'Device select', 'Configuration', 'Settings', 'Working Register', and 'Help'. The main content area is titled 'Tuner Settings' and contains several sections:

- Satellite S/S2 Tuner:** LNB (selected)
- Settings:** Frequency (GHz) set to 11, Symb. Rate (MSymb/s) set to 22.5, and Polarity set to Vertical.
- Lock Status:** Carrier, Sync, and Lock are all indicated by green checkmarks.
- Modulation Status:** Mode is DVB-S2, Inversion is OFF, Constellation is 32APSK, BER is 0, FEC is 3/4, Filter Rolloff is 35%, Pilots (DVB-S2) is OFF, and Long Frame (DVB-S2) is ON.
- Signal Strength:** -39 dBm, with a green progress bar.
- SNR:** 46.5 dB, with a green progress bar.
- Constellation:** A diagram showing a 32APSK constellation with 32 red dots. Below it, Signal to noise (SNR / MER) is 46.50 dB and Error vector magnitude (EVM) is 0.47%. There is a checkbox for 'Enable Constellation' which is checked.
- Apply:** A button at the bottom center.
- DVB over IP:** A button at the bottom right.

## LNB Settings

The screenshot shows the 'LNB Settings' window in Alitronika DVSStation III. The window title is 'Alitronika - DVSStation III' and the menu bar includes 'Device select', 'Configuration', 'Settings', 'Working Register', and 'Help'. The main content area is titled 'LNB Settings' and contains several sections:

- Play / Record:** A tabbed interface with 'Record' selected. Below it, 'testR2.ts' is shown with an 'Open' button.
- alitronika DVS:** The company logo is displayed at the top.
- Tuner Settings:** A sub-window titled 'Tuner Settings' is open, showing 'Satellite Tuning' and 'LNB' settings. It includes a dropdown for 'LNB 1' set to 'Default', 'Input Frequency Range' (Low: 10, Switch point: 11, High: 12 GHz), 'Local Oscillator Frequencies' (Low: 10, High: 10 GHz), and 'LNB Power' (ON and Ext. Voltage (long cable) checkboxes).
- Hardware PID filter:** A section with checkboxes for 'Enable PID Filtering' and 'Exclusive', and a 'PID Table' button.
- Through ASI / Through SPI LVDS:** A section with checkboxes for 'Through ASI' and 'Through SPI LVDS'.
- Stamping:** A section with a 'Stamping' checkbox.
- Size:** A section with a 'Size' dropdown menu.
- Save:** A button at the bottom center of the LNB Settings sub-window.

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