

## Digital Video Interfacing Products

# AT660USB

**DVB-S2/S (QPSK) Satellite 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

- **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.

### 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 AT660USB 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 Connector:** 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

**Power Consumption:** 5 Watts

**Size WxLxH:** 170mmx210mmx65mm

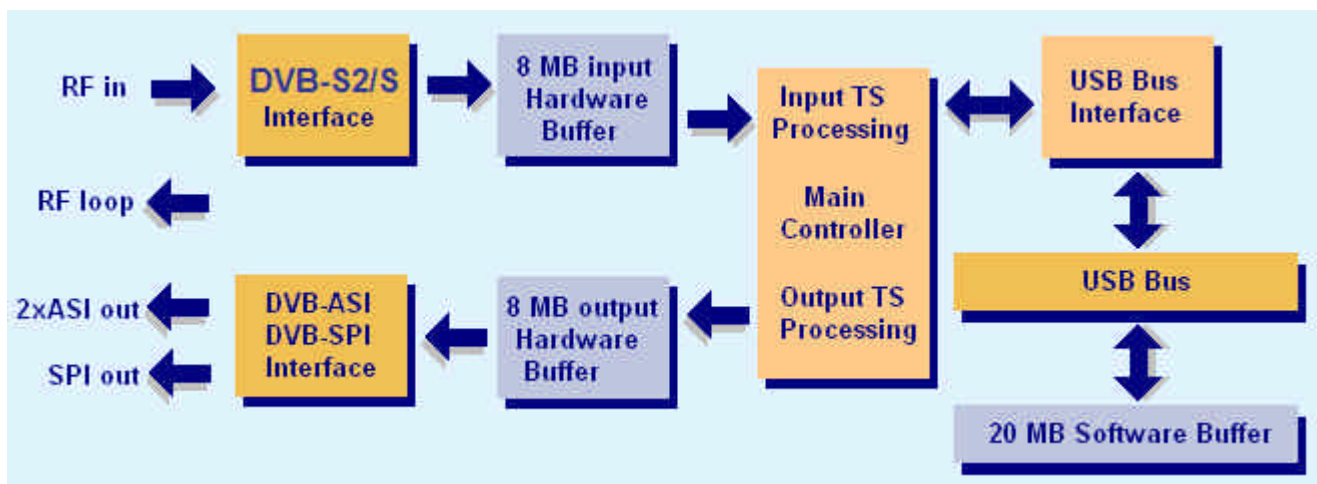
## 1 GENERAL DESCRIPTION

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

The AT660USB is a USB based interface device suitable for Recording, Playing and Analyzing of DVB Transport Streams.

## 2 BLOCK DIAGRAM

**FIG4** illustrates the block diagram of the AT660USB 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 AT660USB 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 AT660USB are shown. There are 2 Female 75 Ohms Female F 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).

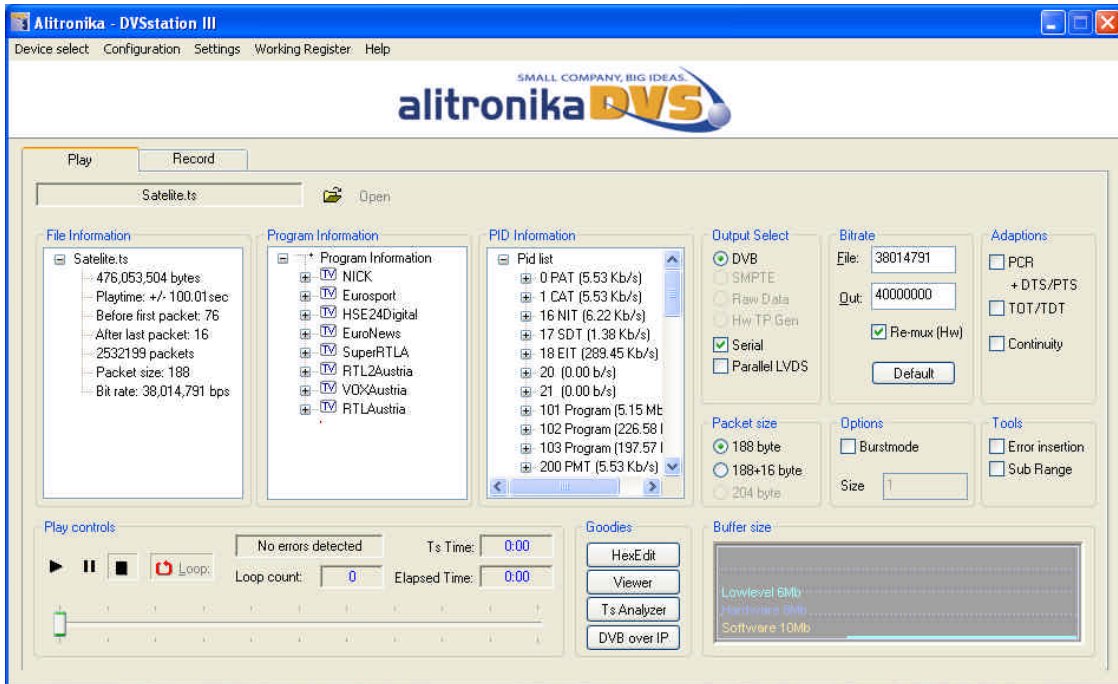
## 4 APPLICATION

Targeted for digital video professionals, sophisticated end users and OEMs the AT660USB 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.

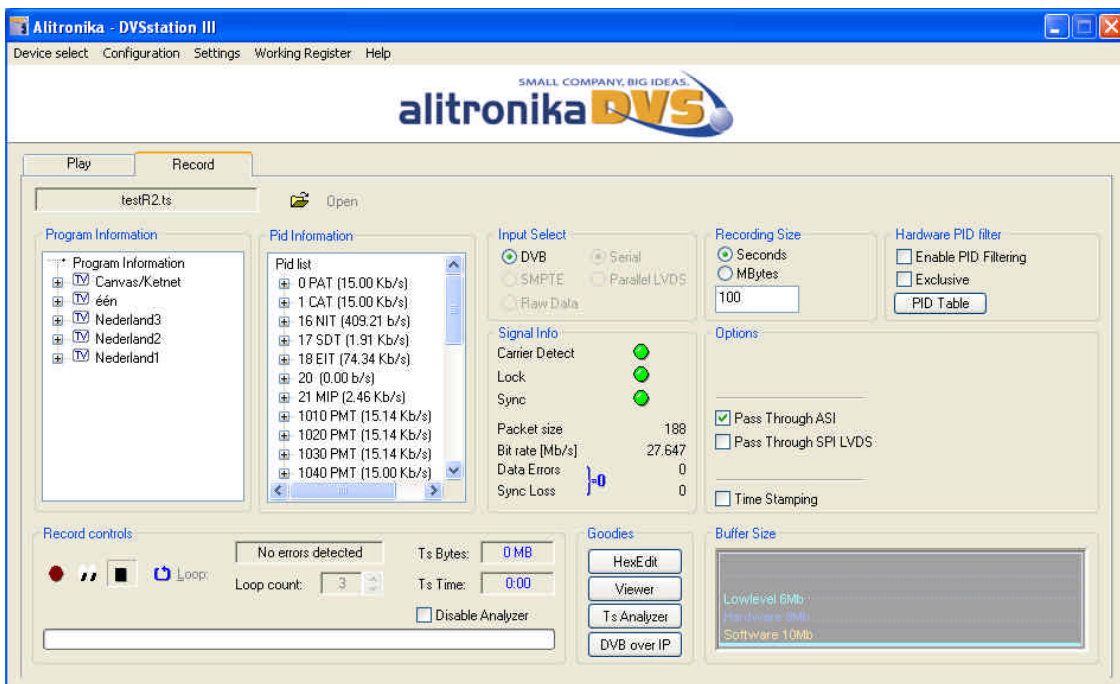
## 5 Software Application, DVStation3

**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.

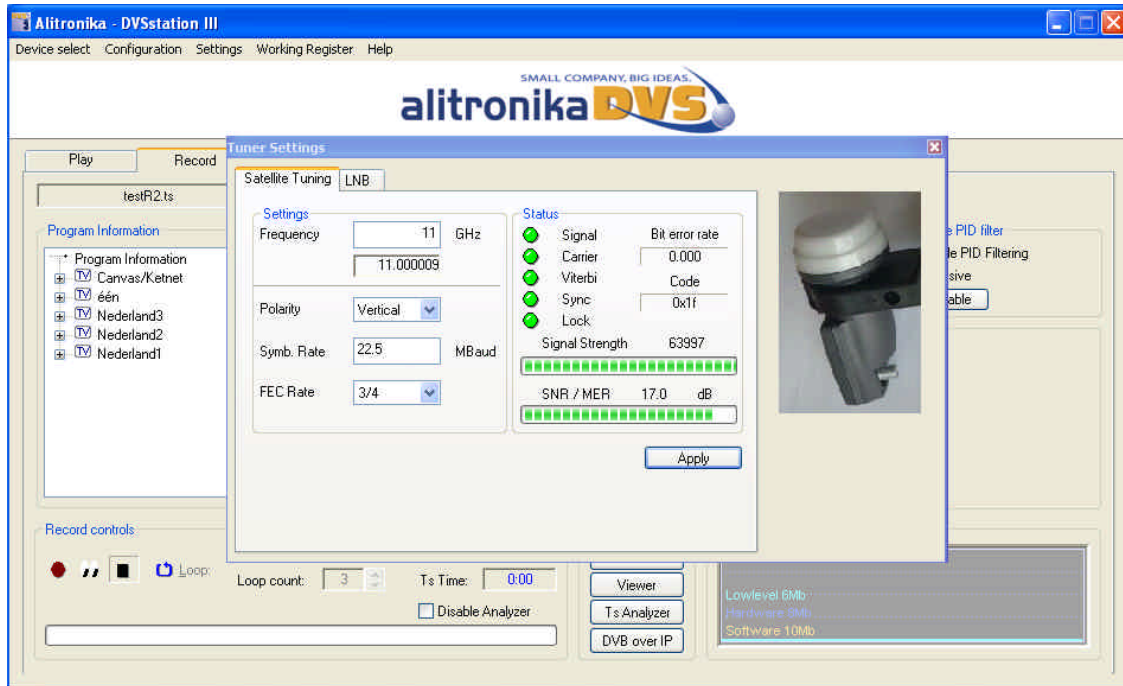
### Play Screen



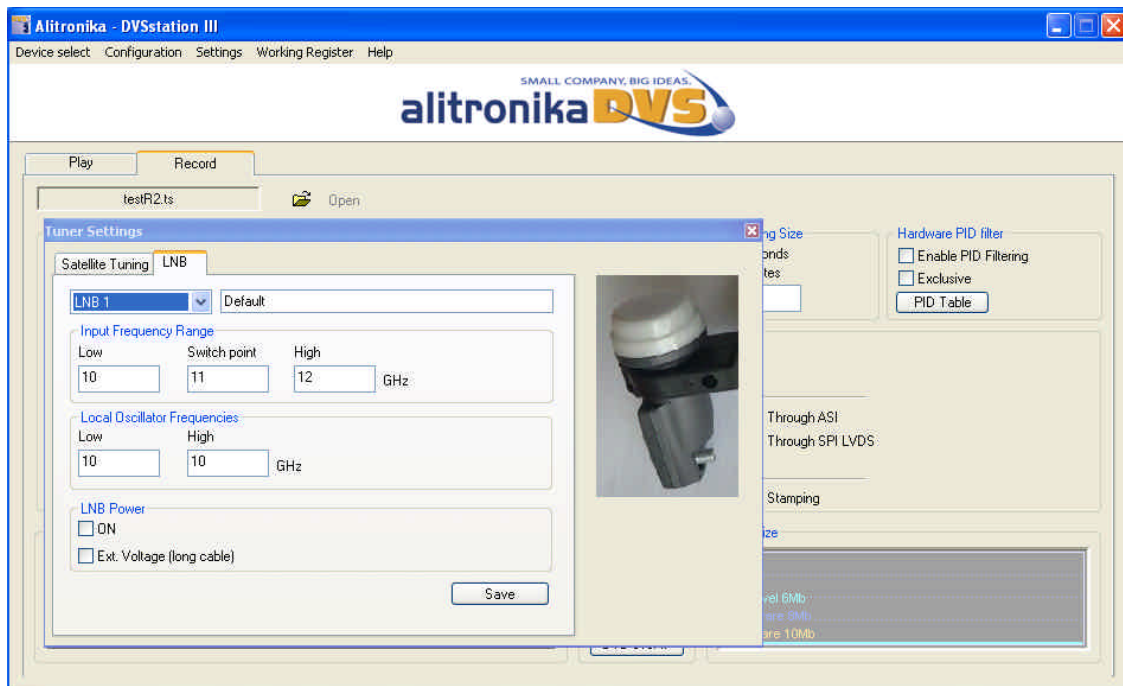
### Record Screen



## RF Tuner Settings



## LNB Settings





## SPI connector Pin outs

### Parallel ( DVB-SPI) Pinouts

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

CLOCK+	1		14	CLOCK-
SYSTEM GND	2		15	SYSTEM GND
DATA7+	3		16	DATA7-
DATA6+	4		17	DATA6-
DATA5+	5		18	DATA5-
DATA4+	6		19	DATA4-
DATA3+	7		20	DATA3-
DATA2+	8		21	DATA2-
DATA1+	9		22	DATA1-
DATA0+	10		23	DATA0-
DVALID+	11		24	DVALID-
PSYNC+	12		25	PSYNC-
CABLE SHIELD	13			

Standard DVB-SPI input/output Pinout

N/C	1		14	N/C
CLOCK	2		15	N/C
SYSTEM GND	3		16	N/C
DATA7	4		17	N/C
DATA6	5		18	N/C
DATA5	6		19	N/C
DATA4	7		20	N/C
DATA3	8		21	N/C
DATA2	9		22	N/C
DATA1	10		23	N/C
DATA0	11		24	N/C
DVALID	12		25	N/C
PSYNC	13			

LVTTTL/LVCMOS output Pinout



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