Digital Video Interfacing Products
i Modulate On My Own !
AT3900USB

DVB-S2/S & DVB-DSNG Modulator
VHF & UHF Up-Converter
RF & IF Outputs
DVB-ASI Input & Output

Standard Features

QPSK Modulator & UHF Up-converter, supports DVB-S2/S/DSNG.
- **Re-Mux function to reduce bitrate for trans-modulation.**
- **On board Compact Flash Memory to play Transport Streams without a need for an external source.**
- **Stand alone operation. No PC needed. Modulation of TS files from On Board CF or External DVB-ASI source.**
- High Speed **USB 2.0**.
- Windows XP, Vista, Win 7 (64bit) Drivers + SDK.
- Linux Drivers & sample application.
- Accompanied by DVSStaion4, Alitronika's Integrated TS Player, Recorder & Real Time Quick Analyser Software.
- Supports DVB According to Standard **A1010 Rev1** & **EN50083**.
- Modulation of Transport Stream files from Harddisk.
- Modulation of TS from the ASI input.
- All modulation processes are done by hardware so that there is no CPU load & there is no need for an expensive high performance PC.
- TPS flags to indicate TS contains MPE-FEC and/or Time slicing.
- Bitrates: up to 72.57 Mbit/S, DVB-S & 200.385 Mbit/S for DVB-S2.
- Symbol rates: up to 45Msymboles/s.
- Supports Burst or continuous modes, 188 and 204 packet sizes.
Inputs:
  DVB-ASI input.
Outputs:
  RF and IF (I & Q) Output.
  DVB-ASI output for monitoring the modulated TS file.

Application

Targeted for Digital Video Professionals, Sophisticated End Users and OEMs, the AT3900USB is an ideal solution for a number of applications such as:

- Development Tools for DVB-S2/S or DVB-DSNG Receiver R&D.
- IP to DVB Gateway.
- DVB-S2/S Transport Stream Generation.
- Stand alone QPSK signal generator for Test & Validation.
- Demonstration and Trade Shows.
- DVB-S2/S output for OEM product.

IF & RF Specifications

- **DVB modes:** DVB-S, DVB-S2 and DVB-DSNG.
- **Spectral modes:** inverted and non-inverted.
DVB-S:
- **Alpha rolloff:** 0.35.
- **Modulation Modes:** QPSK.
- **FEC Code Rates:** 1/2, 2/3, 3/4, 5/6 and 7/8.
- **Symbol rate:** up to 45 MSymbols/s.
- **Bitrate:** up to 72.574 MBit/s.
DVB-S2:
- **Alpha rolloff:** 0.20, 0.25 and 0.35.
- **Modulation Modes:** QPSK, 8SPK, 16APSK and 32APSK.
- **FEC Code Rates:** 1/4,1/3,2/5,1/2,3/5,2/3,3/4,4/5,5/6,8/9 & 9/10.
- **Symbol rate:** up to 45 MSymbols/s.
- **Bitrate:** up to 200.385 MBit/s.
DVB-DSNG:
- **Alpha rolloff:** 0.20, 0.25 and 0.35.
- **Modulation Modes:** 8SPK and QAM16.

Specifications

- **On Board Buffer:** 16Mbytes.
- **IF & RF Connectors:** 75 Ohms BNC/F-type.
- **IF Output Frequency:** 49-51 or 99-101MHz adjustable in 1Hz steps.
- **IF Output level:** -10dBm @ 75Ohms.
- **RF O/P Frequency:** 950MHz to 2150MHz.
- **RF Output power:** -10dBm to -45dBm.
- **DVB-ASI I/O Connectors:** 75 Ohms BNC.
- **DVB-ASI Signal level:** 1.0Vp-p nominal.
- **DVB-ASI Output Clock:** 270 MHz.
- **DVB-ASI Input return loss:** 15dB.
- **DVB-ASI Output Bit Rate:** As IF bitrate.
- **Power Consumption:** 5 Watts.
- **Size WxLxH:** 212mm**x**200mm**x**32mm.

1 GENERAL DESCRIPTION

A member of Alitronika's state of art digital video interfacing products.
The AT3900USB is a USB based interface device, with stand alone mode suitable for DVB-S2/S Transport Stream Generation and IF as well as full range VHF & UHF IF up conversion.

2 BLOCK DIAGRAM

The figure below illustrates the block diagram of the AT3900USB device. The device communicates with the PC via the USB interface device. The AT3900USB is capable of modulating a DVB-S2/S TS from the Harddisk of the PC or from the incoming DVB-ASI input. The modulated DVB-S2/S is available on both IF and RF outputs as well as DVB-ASI output (for monitoring). The modulation options, output frequencies and all other setting are done with the help of DVSStation4.
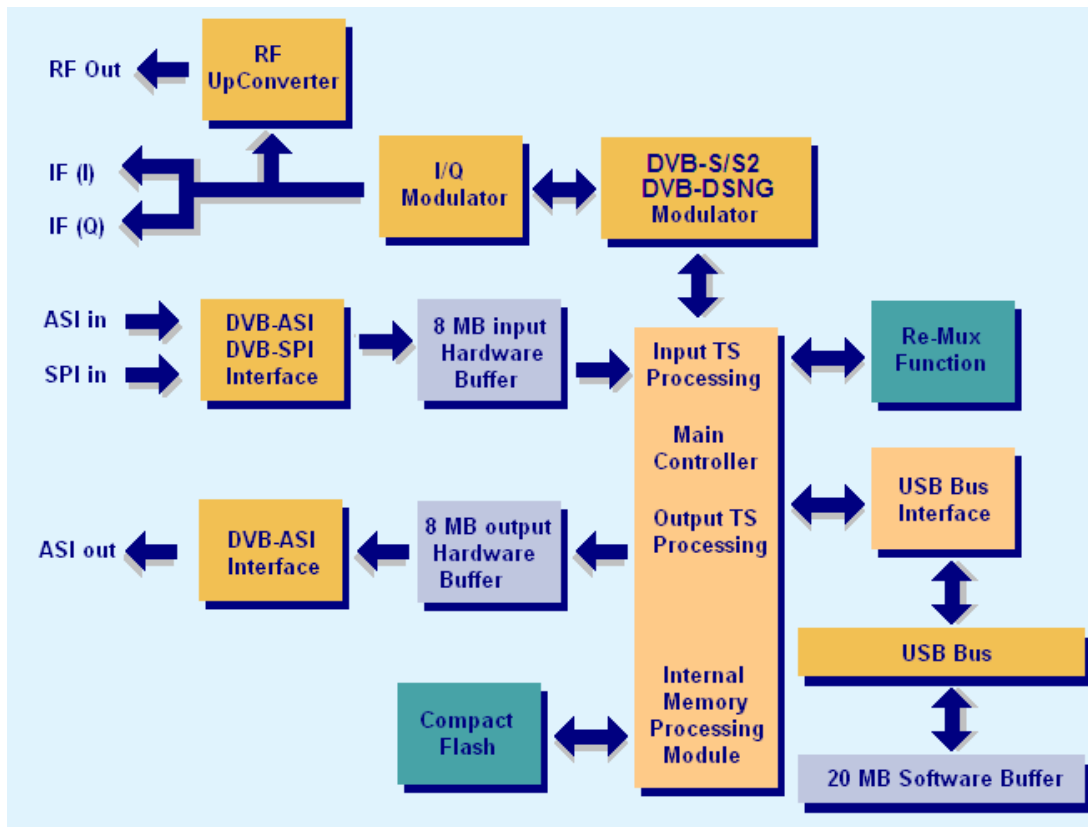
3 EXTERNAL INTERFACES

The external interfaces for the AT3900USB are shown. There are 4 BNC connectors for the IF (I), IF (Q) and DVB-ASI I/O, an F-type connector for RF Output and a 9-pin D-type connector for RS232. The three LEDs in front of the unit function as follows:

Power - Top LED   Power LED   **ON** = Power is on
                                         OFF = Power is off
Status1 - Middle LED   Play/ Record LED   **ON**   = Device is Playing/Recording TS
                                         Flashing = Play /Record not activated
In Record mode this LED indicates that a Carrier has been detected.
In Play mode this LED indicates that the output section has valid TS.
Status2 - Bottom LED LOCK LED   **ON** = Device is locked to TS
                                         Flashing = No lock has been achieved
In Record mode this LED indicates that the device has locked into incoming TS.
In Play mode this LED indicates that the output section has locked into outgoing TS.

4 APPLICATION

Targeted for digital video professionals, sophisticated end users and OEMs the AT3900USB 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, DVSStation4

5.1 – DVSStation4: Alitronika devices are supported by DVSStation3/4, Alitronika's **FREE** Transport Stream Player, Recorder, Analyser & converter application software. Please refer to DVSStation4 specification and User Manual on our website for more information about DVSStation4. Even better please download it from our website & try it out. It works in DEMO mode without any Alitronika devices.

Play Screen

Record Screen

Modulation Settings DVB-S2/S
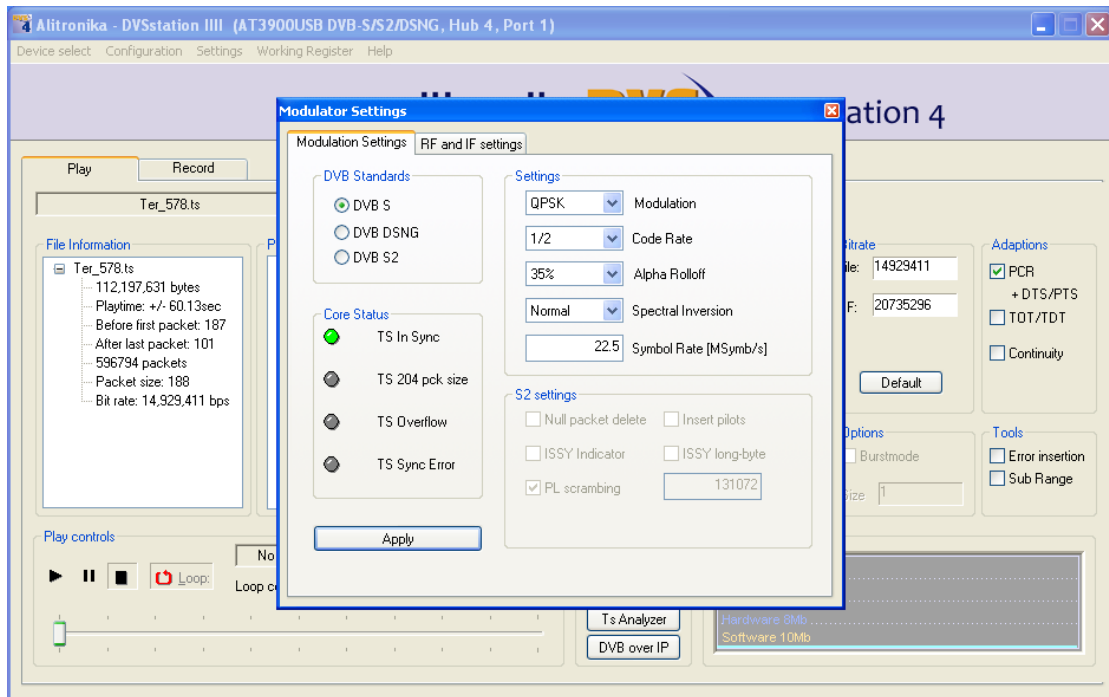
RF Settings
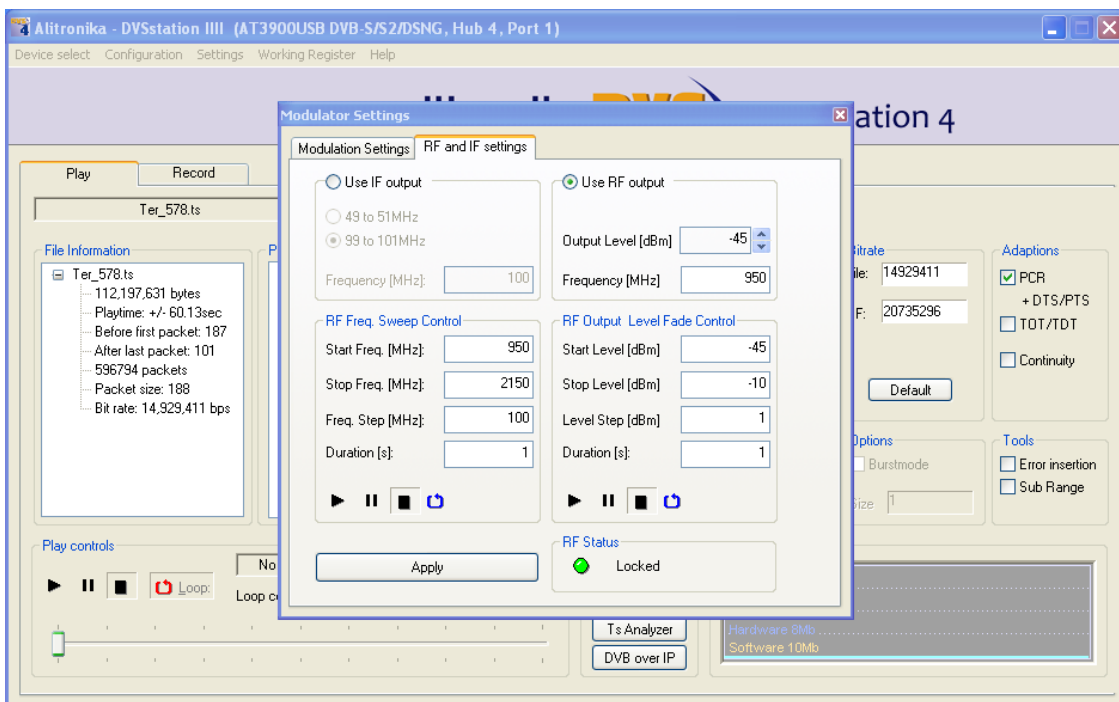
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