Digital Video Interfacing Products

i Modulate On My Own !

AT3780USB

DVB-T/H/C, ATSC & ISDB-T Modulator

VHF & UHF Up-Converter
RF & IF Outputs
DVB-ASI Input & Output

Standard Features

Combined COFDM, QAM & ATSC Modulator with VHF & UHF Up-converter, supports DVB-T/H/C, QAM-A/B/C, ATSC and ISDB-T.
- 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 and there is no need for an expensive high performance PC.
- TPS flags to indicate TS contains MPE-FEC and/or Time slicing.
- Bitrates from 4.98 MB/s to 31.67 MB/s. for DVB-T/H, from 14 MB/s to 65 MB/s. for DVB-C, from 10.76 MBaud to 19.30 MBaud for ATSC and from 416KB/s to 16.85/MB/s for ISDB-T.
- Supports Burst or continuous modes, 188 and 204 packet sizes.

Inputs:
DVB-ASI, (optional) DVB-SPI input.
Outputs:
RF and IF (I&Q) Outputs.
DVB-ASI output for monitoring the modulated TS file.

Application

Targeted for Digital Video Professionals, Sophisticated End Users and OEMs, the AT3780USB is an ideal solution for a number of applications such as:

- Development Tools for DVB-T/H or DVB-C QAM A/B/C Receiver R&D.
- IP to DVB Gateway.
- DVB-T/H/C & ATCS 8-VSB Transport Stream Generation.
- Stand alone COFDM (Terrestrial), QAM (Cable TV), ATSC 8-VSB & ISDB-T signal generator for Test & Validation.
- Demonstration and Trade Shows.
- DVB-T/H/C & ATSC output for OEM product.

IF & RF Specifications

- FEC Code Rates: 1/2, 2/3, 3/4,5/6, 7/8.
- Spectral Inversion: Both inverted and non-inverted.

DVB-T/H Spec.
- Channel Bandwidth: 5MHz, 6MHz, 7MHz, 8MHz.
- COFDM Spectrum: 2k,4k and 8k carriers non-hierarchical.
- Standards: COFDM according EN 300 744.
- Modulation Modes: QPSK, 16QAM and 64QAM.
- Guard Interval Modes: 1/32, 1/16, 1/8 and 1/4.

DVB-C Spec.
- Channel Bandwidth: 6MHz, 8MHz.
- Standards: QAM according EN 300 744.
- Modulation Modes: 16QAM, 32QAM, 64QAM, 128QAM, 256QAM.

ATSC 8-VSB Spec.
- Channel Bandwidth: 6MHz.
- Standards: A/53 8-VSB.

ISDB-T Spec.
- Channel Bandwidth: 6MHz.
- Standards: ARIB STD-B31.

Specifications

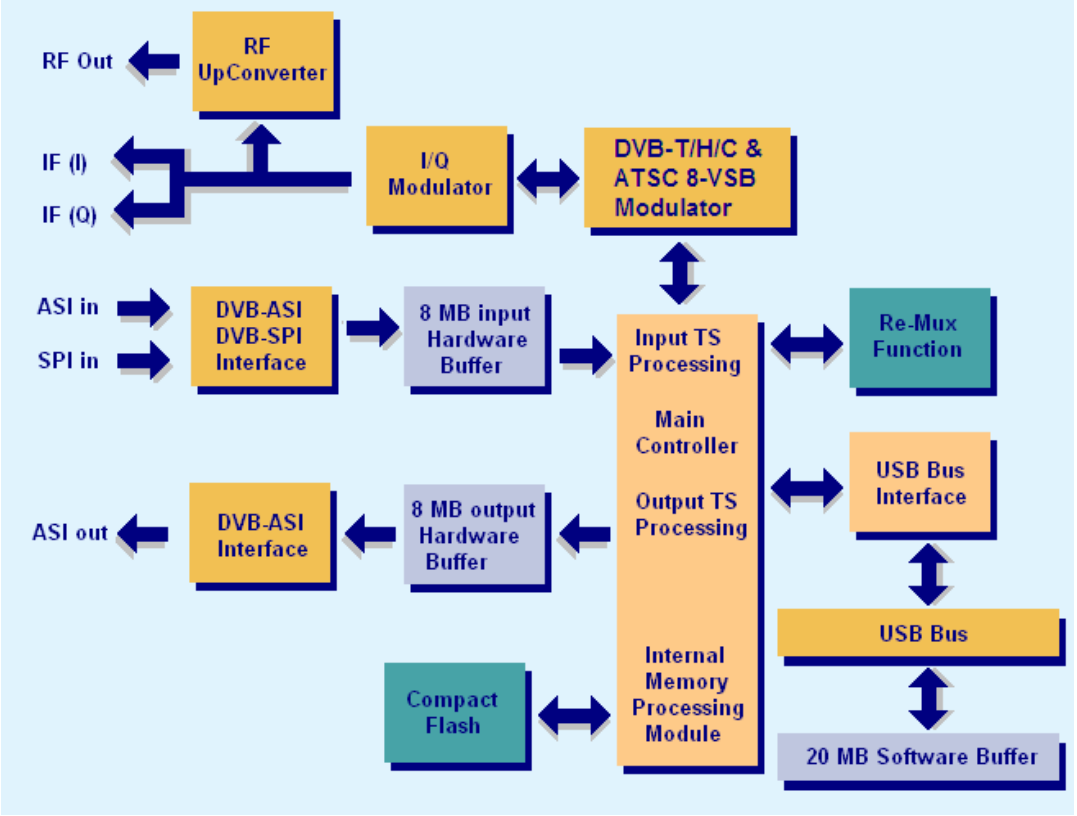
- On Board Buffer: 16Mbytes.
- IF & RF Connectors: 75 Ohms BNC/F-type.
- IF Output Frequency: 35/37 or 69/71MHz adjustable in 1Hz steps.
- IF Output level: 0dBm @ 75Ohms.
- RF O/P Frequency: 50MHz to 1000MHz.
- RF Output power: +2dBm to -35dBm.
- DVB-ASI I/O Connectors: 75 Ohms BNC.
- DVB-ASI Signal level: 1.0Vp-p nominal.
- DVB-ASI Output Clock: 270 MHz.
- DVB-ASI Input return loss: 15dB.
- DVB-ASI Output Bit Rate: 0 to 214 Mbit/s.
- 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 AT3780USB is a PCI based interface device suitable for DVB-T/H/C & ATSC 8-VSB 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 AT3780USB device. The device communicates with the PC via the USB interface device. The AT3780USB is capable of modulating a DVB-T/H/C or ATSC 8-VSB TS from the Harddisk of the PC or from the incoming DVB-ASI inputs. The modulated DVB-T/H/C or ATSC 8-VSB are 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 AT3780USB 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.

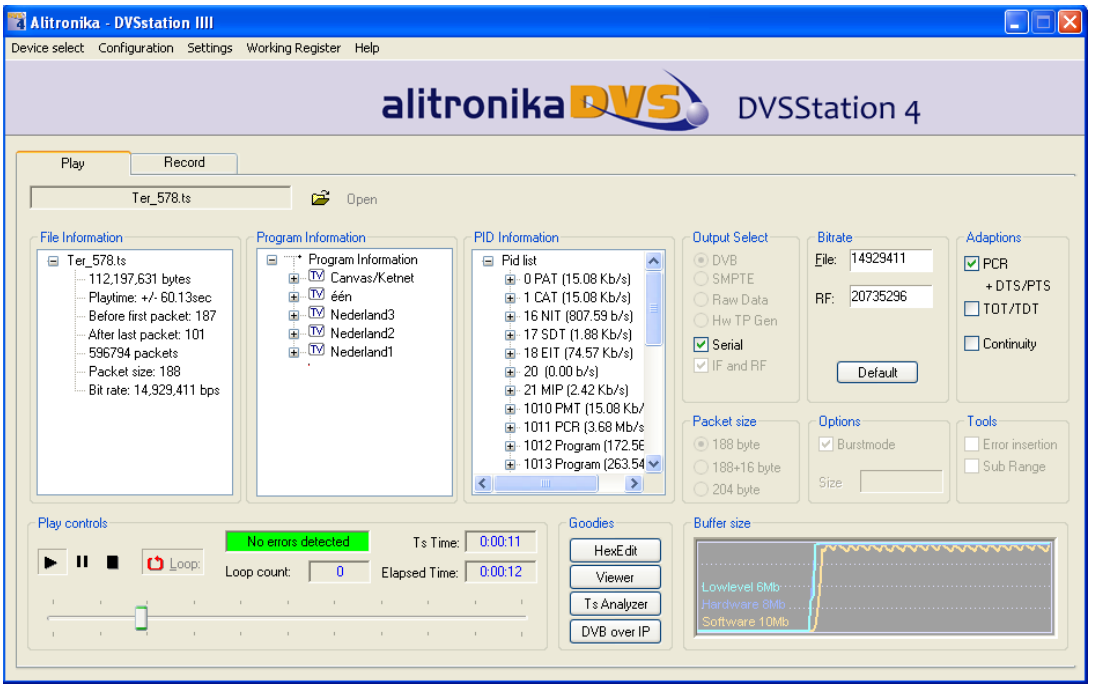
4 APPLICATION

Targeted for digital video professionals, sophisticated end users and OEMs the AT3780USB 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.

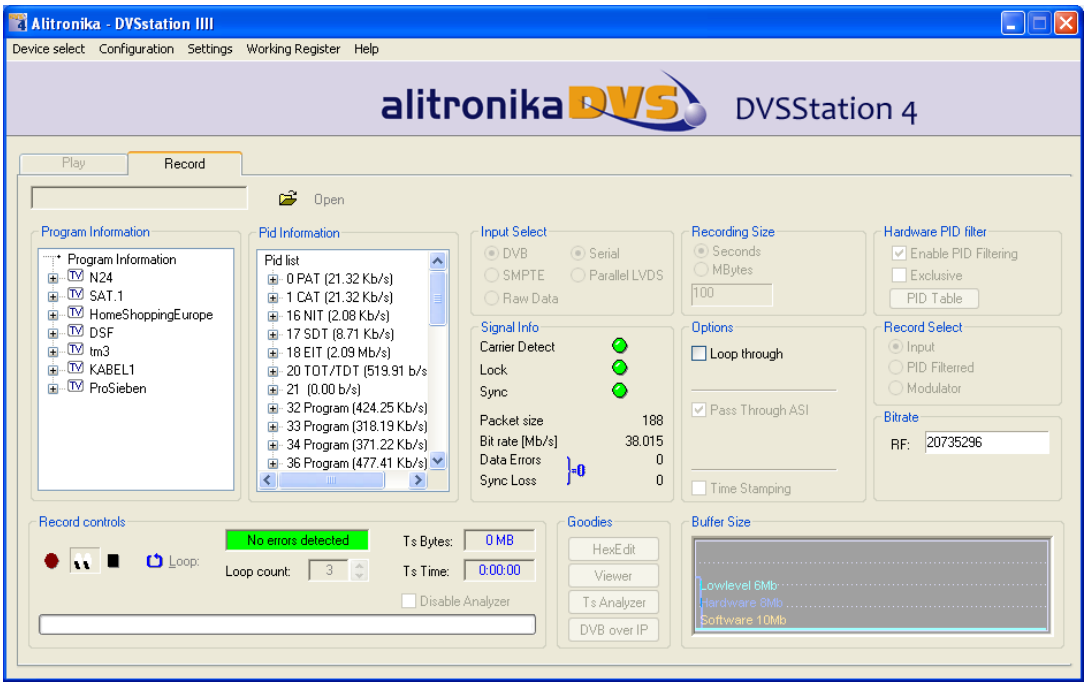
5 Software Application, DVSStation4

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.

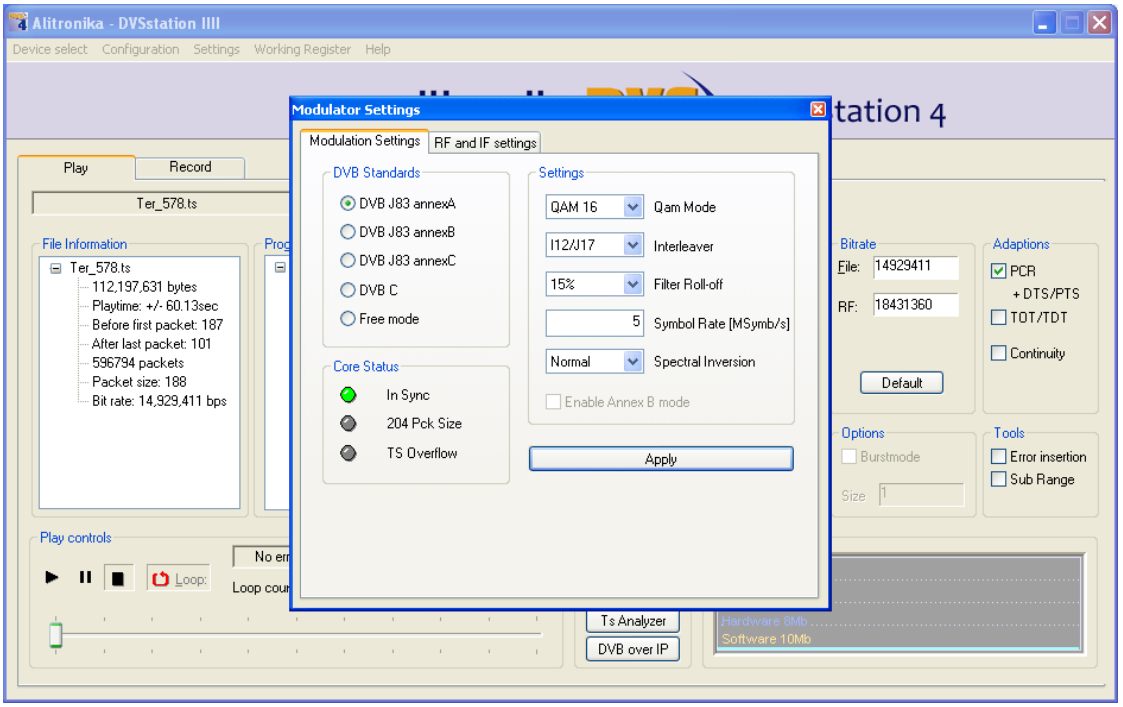
Play Screen



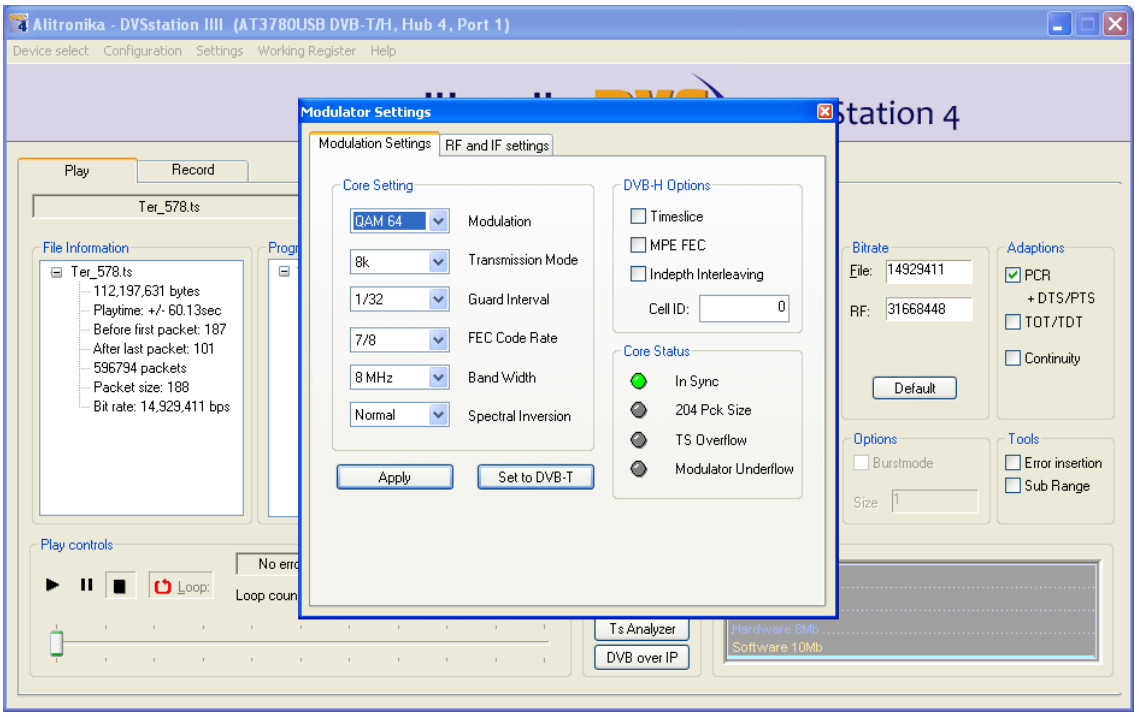
Record Screen



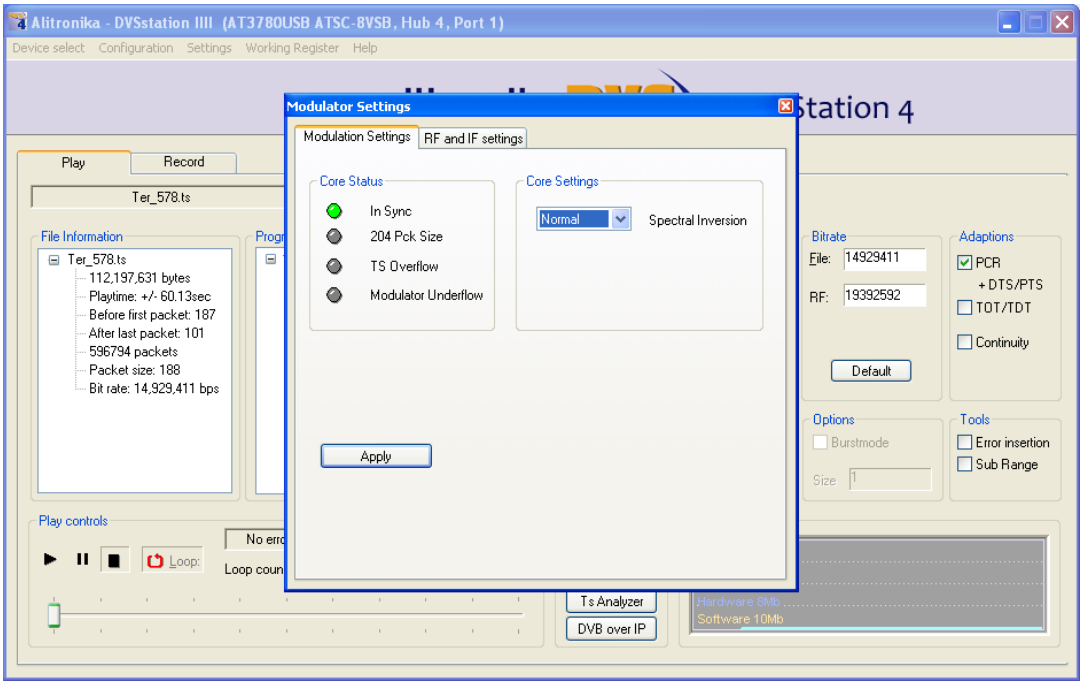
Modulation Settings DVB-C



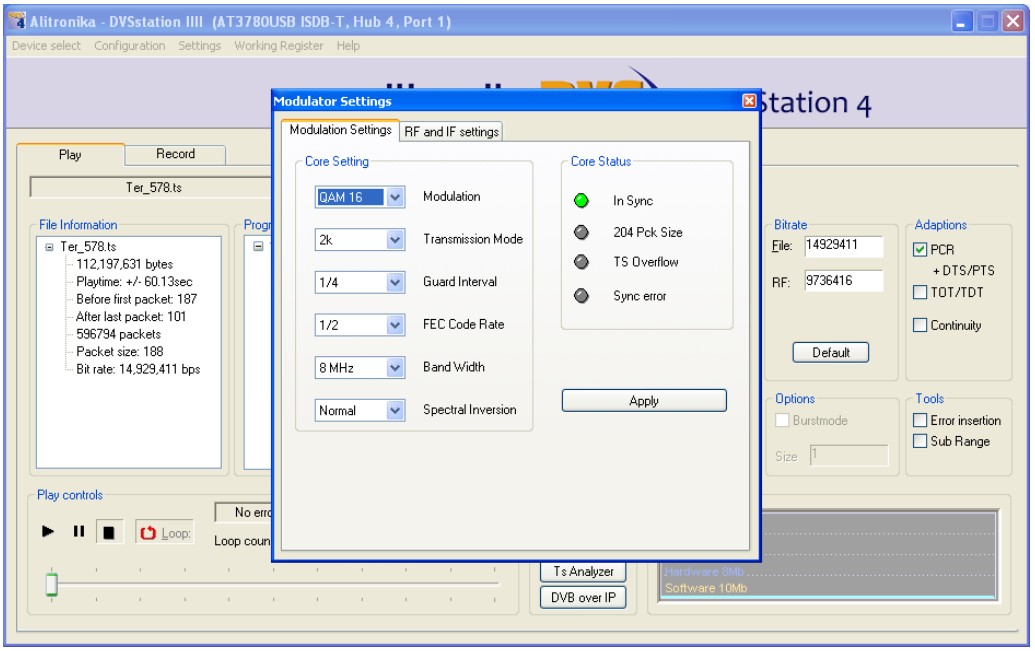
Modulation Settings DVB-T/H



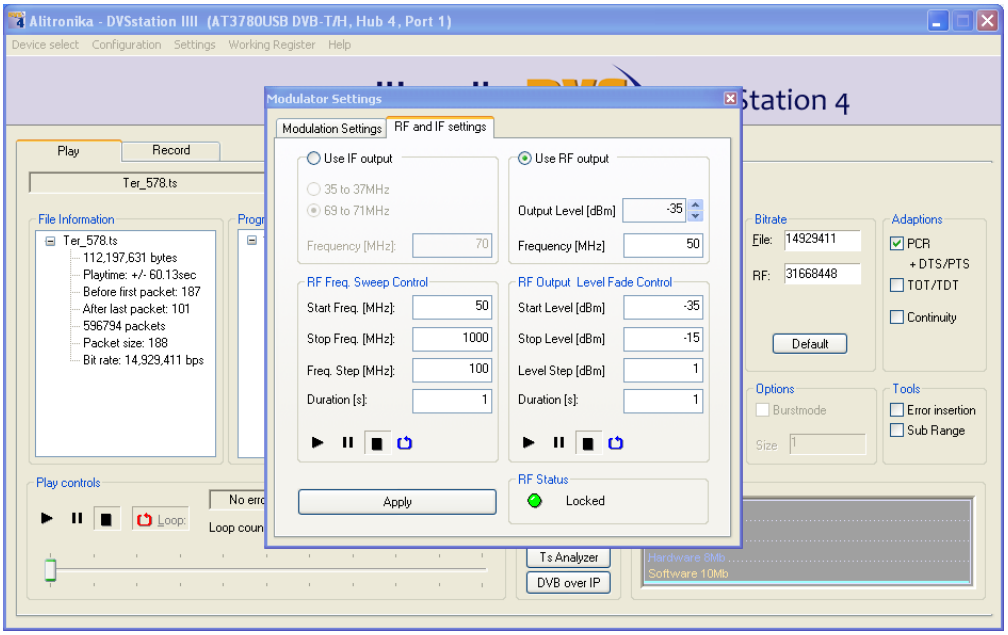
Modulation Settings ATSC



Modulation Settings ISDB-T



RF Settings



AT3780

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