Digital Video Interfacing Products

AT780PCI

Multi-standard DVB-T2/T/C 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
- DVB-T2/T/C Compliant COFDM Reception.
- Input Frequency Range:
 - High Band: 434.0 MHz to 858.0 MHz. Mid Band: 149.5 MHz to 426.0 MHz. Low Band: 50.5 MHz to 142.5 MHz.
- Modulation Modes: DVB-T/T2: QPSK, 16QAM, 64QAM
- Modulation Modes: DVB-C: 64QAM, 128QAM, 256QAM
- Guard Interval: DVB-T/T2: 1/4, 1/8, 1/16, 1/32
- Supports hierarchical & non-hierarchical modes.
- Supports 188, 204 Transport Packet Sizes.

Output

- Programmable Output Bit Rate.
- Null Packet Insertion by hardware.
- Selectable Burst size mode & continuous mode TS output.

RF Input Specifications

On Board Buffer: 16Mbytes RF Tuner Connectors: 75 Ohms IEC Type Input Frequency Range: 50.5 MHz to 858.0 MHz. Channel Bandwidth: 6, 7 & 8 MHz. RF Sensitivity: -80dBm. COFDM Spectrum: 2k & 8k carriers non-hierarchical and hierarchical. Standards: DVB-T2, DVB-T, DVB-C compliant. Modulation Modes: DVB-T/T2: QPSK, 16 & 64QAM Modulation Modes: DVB-C: 64, 128 & 256QAM Guard Interval Modes: 1/4, 1/8, 1/16 & 1/32

Application

Targeted for Digital Video Professionals, Sophisticated End Users and OEMs the AT780PCI 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.

Output Specifications

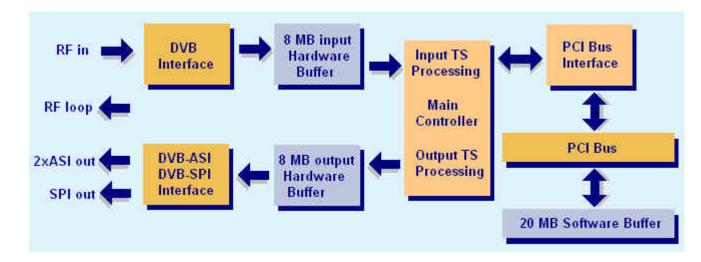
Serial Connectors: 75 Ohms BNC Parallel Connectors: 25-pin sub-D DVB-ASI Output Bit Rate: 0 to 214 Mbit/s DVB-SPI Output Bit Rate: 0 to 108 Mbit/s Bit Rate Stability: +/- 25ppm DVB-ASI Output Clock: 270 MHz DVB-ASI Output Clock: 270 MHz DVB-SPI Output Clock: 0 to 13.5 MHz DVB-SPI Output Level: LVDS Size WxL: 175mmx107

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

The AT780PCI 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 AT780PCI 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 AT780PCI 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 AT780PCI are shown. There are two75 Ohms IEC 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 AT780PCI 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, DVSStation3

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

Play F	Record	alit				
Satelit	e.ts	🗳 Open				
File Information Satellite.ts 476,053,504 b Playtime: +/- 11 Before first pac After last pack 2532199 pack Packet size: 11 Bit rate: 38,014	00.01sec ket:76 et:16 ets 88	Program Information Trogram Information DNICK DN	PID Information PId list 0 PAT (5.53 Kb/s) 1 CAT (5.53 Kb/s) 1 TAT (5.53 Kb/s) 1 16 NIT (6.22 Kb/s) 1 8 EIT (289.45 Kb/s) 2 0 (0.00 b/s) 2 0 (0.00 b/s) 2 1 00 Program (15.15 Mb 1 102 Program (197.57 I 2 200 PMT (5.53 Kb/s)	Output Select ● DVB SMPTE Raw Data Hw TP Gen ♥ Serial Parallel LVDS Packet size ● 188 byte ○ 189+16 byte ○ 204 byte	Bitrate File: 38014791 Qut: 40000000 ✓ Re-mux (Hw) Default Options Burstmode Size 1	Adaptions PCR + DTS/PTS TOT/TDT Continuity Tools Error insertion Sub Range
Play controls	Loop: Loo	No errors detected Ts Tim op count: 0 Elapsed Time	HexEdit	Buffer size Lowvievel 6Mb Handware 6Mb Softwore 10Mb	-	

Play Screen

Record Screen

Alitronika - DVSstation III evice select Configuration Settings Working R	agister Help		
	alitronika	DAMPANY, BIG IDEAS.	
Play Record	Open		
Program Information Pid Info • Program Information • Pid isto • Molecanvas/Ketnet • 0 F • Molecanvas/Ketnet • 0 10	Contraction (Contraction)	Serial Parallel LVDS Parallel LVDS	
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Record controls Record controls No errors Loop count	letected Ts Bytes: 0 MB	Goodies HexEdit Viewer DVB over IP	Mb

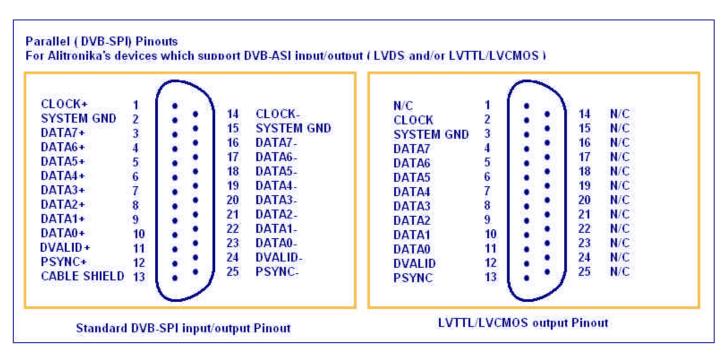
litronika - DVSstation III	uner Settings		
ce select. Configuration. Settl	DVB T2 Tuner		-
Play Record	Setting: Frequency [MHz] 500 Bandwidth 8 Mhz	Select PLP 0 Apply	
	Status	PLP Status	
Program Information	Carrier	ID 0	Hardware PID filter
 Program Information M Canvas/Ketnet M één M Nederland3 	Lock Sync	Type COMMON	Esclusive
	Bit error rate	Payload GFPS	PID Table
	L1 Modulation RSVD12	Modulation QPSK	
	L1 Code Rate RSVD3	Code Rate RSVD2	
	L1 FEC RSVD3	FEC LDPC16K	
	Guard interval 1/128		LVDS
	Transmission mode 32K	RF Status	
Record controls	Pilot pattern PP7	Frequency [MHz] 500.001	
	PARP NONE	Inversion Off	
🔴 📢 🔳 🖒 Loop	Cell ID 0	SNR/MER [dB] 23.87	
	Network ID 0	EVM [%] 6.41	
	System ID 0		

RF Tuner Settings DVB-T2

RF Tuner Settings DVB-T

Alitronika - DVSstation III T vice selact: Configuration - Setti	Uner Settings Terrestrial Tuner Settings Frequency [Mhz]	500	VHF 174 to 230 Mhz		
Play Record Program Information	Bandwidth BN Status Signal Carrier	ihz 💌		20	Hardware PID filter
** Program Information	Puncture Data Data Bit error rate Frequency Modulation Guard interval Hierarchy Transmission mode HP code rate LP code rate Decoder SNR (dB)	0 500.001 Mhz QAM 64 1/32 None 8k 7/8 1/2 251	Constellation Quality Signal to noise (SNR / MER) 25.27 dB Error vector magnitude (EVM) 5.45 %	ugh ASI ugh SPI LVDS	Enable PID Filtering Exclusive PID Table
Record controls	Loop count 3	Ts Time:			

SPI connector Pin outs







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