Digital Video Interfacing Products

AT2780USB

DVB-T/H/C & ATSC Modulator IF and RF (VHF & UHF) Output DVB-ASI & DVB-SPI Inputs

Standard Features

DVB-T/H/C Modulator with VHF & UHF Up converter. - 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 According to Standard A1010 Rev1 & EN50083.
- Modulation of Transport Stream files from Harddisk.
- Modulation of TS from the ASI or SPI inputs.
- 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 and from 14 $\,$
- MB/s to 65 MB/s. for DVB-C.
- Supports Burst or continuous modes, 188 and 204 packet sizes.
- Inputs:
 - DVB-ASI input. DVB-SPI input.
- **Outputs:**
- RF and IF Output.

DVB-ASI output for monitoring the modulated TS file.

Application

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Targeted for Digital Video Professionals, Sophisticated End Users and OEMs, the AT2780USB 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-Transport Stream Generation.
- Stand alone DVB-T/H/C signal generator for Test & Validation.
- Demonstration and Trade Shows.
- DVB-T/H/C 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.

Specifications

- On Board Buffer: 16Mbytes
- IF & RF Connector: 75 Ohms BNC.
- **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.
- DVB-SPI Connector: 25-pin sub-D.
- DVB-SPI Input 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 AT2780USB is a PCI based interface device suitable for DVB-T/H/C 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 AT2780USB device. The device communicates with the PC via the USB interface device. The AT2780USB is capable of modulating a DVB-T/H/C TS from the harddisk of the PC or from the incoming DVB-ASI/SPI inputs. The modulated DVB-T/H/C 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 DVSStation3.



3 EXTERNAL INTERFACES

The external interfaces for the AT2780USB are shown. There are 4 BNC connectors for the RF, IF, DVB-ASI I/O and a 25-pin D-type connector for DVB-SPI input (LVDS). The LED on the unit function as follows: **OFF** = Power is off/ device not activated **Flashing** (Red) = Modulation not activated – Error condition **ON** (Green) = Normal operational condition



4 APPLICATION

Targeted for digital video professionals, sophisticated end users and OEMs the AT2780USB 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.

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Modulation Settings DVB-C

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Modulation Settings DVB-T/H

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Modulation Settings ATSC

Alitronika - DVSstation III		
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RF Settings

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After last packet: 101 596795 packets	RF Freq. Sweep Control		RF Output Level Fade Control			Continuity
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— Bit rate: 14,929,411 bps	Stop Freq. [MHz]	1000	Stop Level [dBm]	2		
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Loop I	Apply		O Locked		2	
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SPI connector Pin outs







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