

# HDTV 998 – ATSC/NTSC RF Output Card

## Specifications Document Ver 2.1 10/22/04

**Driver:** Device7021.sys

**Location:** C:\WINNT\System32\Drivers\

**DLL:** Board973.dll

**Location:** C:\program files\Sencore\DTV\_NTSC\_S-Video\

**FPGA Code:** XilinxR1.dat

**Location:** C:\program files\Sencore\DTV\_NTSC\_S-Video\

**Registry:** HKLM\System\CurrentControlSet\Services\Device7021

### **DTV RF Output:**

Output Frequency:	UHF channel 14 through 21 (Selectable)
Output connector:	“F” connector
Output impedance:	75 ohm
Output power level:	-25 dbm +/- 2db
MER (SNR):	> 27 db
Modulation type:	8 level VSB trellis for ATSC Terrestrial Broadcast
Audio/Video modes:	All modes modulated as carried in
MPEG transport stream	

### **NTSC RF Output:**

Output Frequency:	VHF channel 3 through 13 (Selectable.)
Output connector:	“F” connector
Output impedance:	75 ohm
Output power level:	+22 dbmV +/- 2db
Audio mode:	Mono
Video mode:	Letterbox, cropped or full-screen. (API selectable)

### **System Specs:**

RF output synchronization:	< 20 mSec.
----------------------------	------------

### **Pseudo-Seamless Splicing:**

PCR accuracy	< 500ns
PTS/DTS accuracy	< 1/90khz
TS Packet continuity	Per ISO/IEC 13818-1 2.4.3.3
Table Versions continuity	Per ISO/IEC 13818-1 2.4.4

### **Minimum Encoding Restrictions for playback on consumer HDTV equipment:**

TS File Multiplex Rate	19.392658 Mbps +/- 54 bps (ATSC)
Video Encoding	One of 18 ATSC Formats (per ATSC A/53b)
Audio Encoding	AC-3 (per ATSC A52)
PSI / PSIP	<p>A valid set of ATSC PSIP and MPEG-2 PSI (PAT and PMT) tables must be present in the stream for some consumer decoders that rely on PSIP information to acquire and tune to the channel. PID assignments in PAT, PMT, and TVCT service location descriptors should be consistent. TVCT should contain at least one valid virtual channel entry.</p>

### **Encoding Restrictions for Seamless Play-listing (in addition to above):**

Lead in/out black frames	No restriction
Fade-in/out	No restriction
TS Encoding	1080i
Maximum Programs	1 Program containing 1 Video and 1 Audio service
Program PID definitions	PMT PID: 16 (0x010) PCR PID 17 (0x011) Video PID: 17 (0x011) Audio PID: 20 (0x014)
TS clip start	Closed GOP
TS clip end	No restriction
PSI / PSIP	<p>Tables Placeholders for minimal set of ATSC PSIP/PSI tables must be present. PSIP/PSI should be multiplexed at the PID location and maximum repetition interval given below:</p> <p>PAT PID: 0 (0x00), 100ms PMT PID: 16 (0x10), 400ms MGT PID: 8187 (0x1FFB), 150ms TVCT PID: 8187 (0x1FFB), 400ms STT PID: 8187 (0x1FFB), 1000ms RTT PID: 8187 (0x1FFB), 60s EIT-0 PID: 8144 (0x1FD0), 500ms EIT-1 PID: 8145 (0x1FD1), 500ms EIT-2 PID: 8146 (0x1FD2), 500ms EIT-3 PID: 8147 (0x1FD3), 500ms</p>

The PSIP and PSI sections will be replaced by the seamless process to ensure consistency of the broadcast stream.

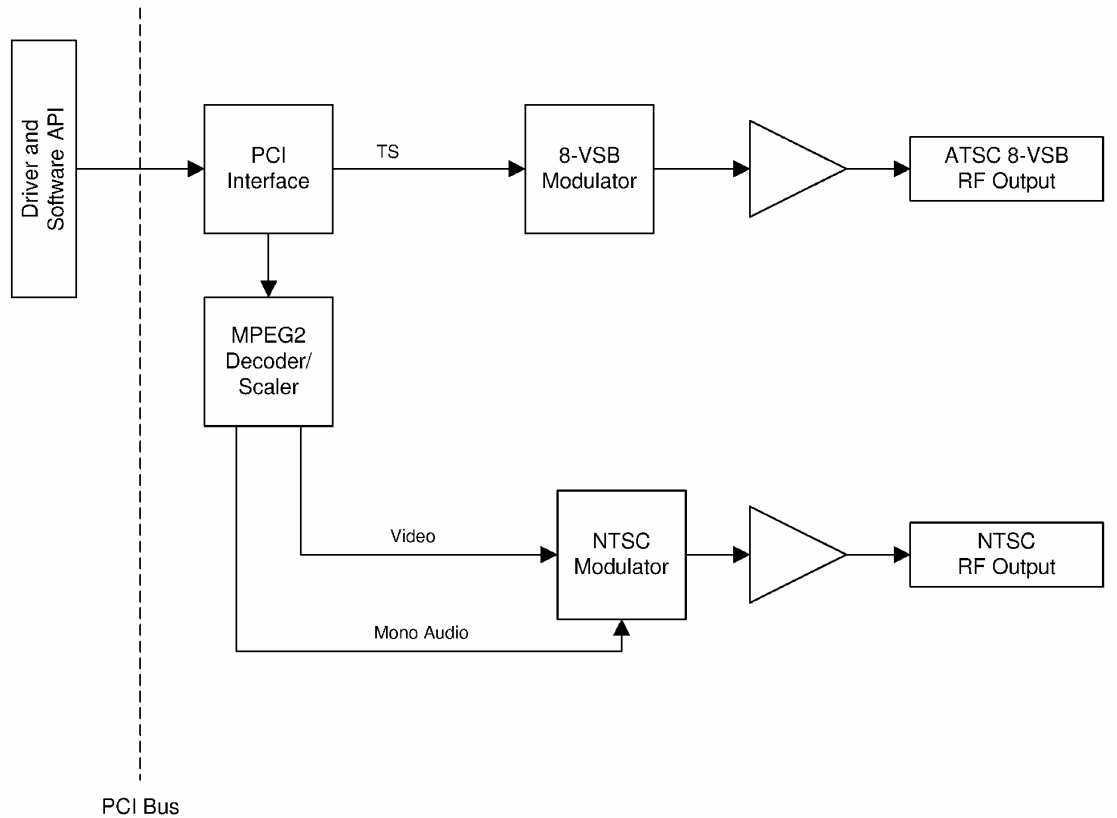
### **General:**

O/S Compatibility:	Win NT / Win 2000
Product form factor:	Single-slot, Universal PCI bus card
PCI Compliance:	PCI 2.2, PCI-X 2.0
Size:	Approx. 6" x 4" x 3/4" (Length x height x clearance)
Weight:	~ 6 ounces
Power consumption:	Less than 10W
Operating Temperature:	10 to 40 degrees C (50 to 104 degrees F)

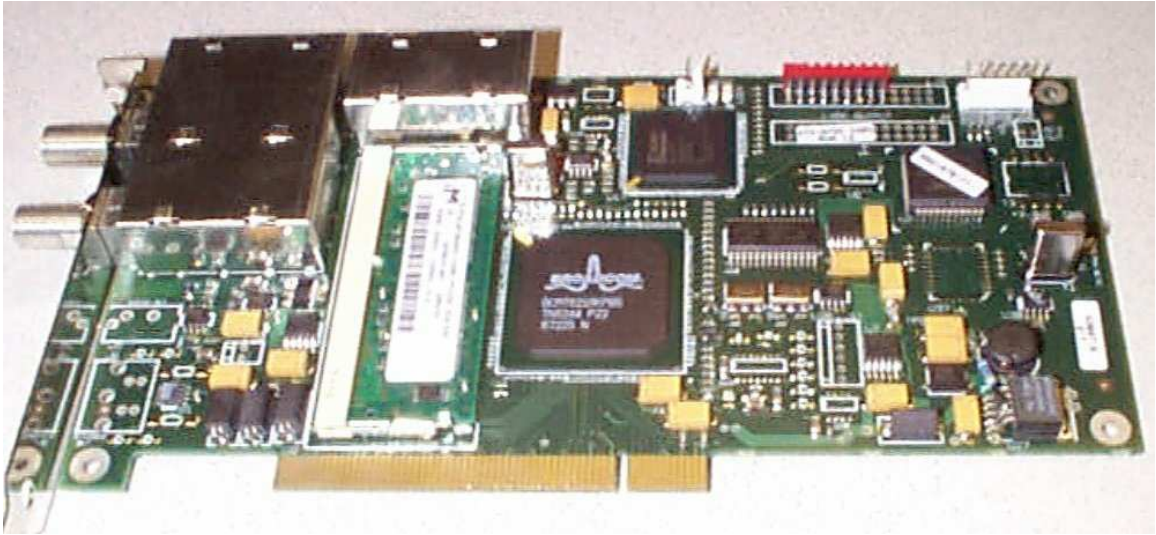
Humidity: Less 95% (non-condensing)

### **Minimum System Requirements:**

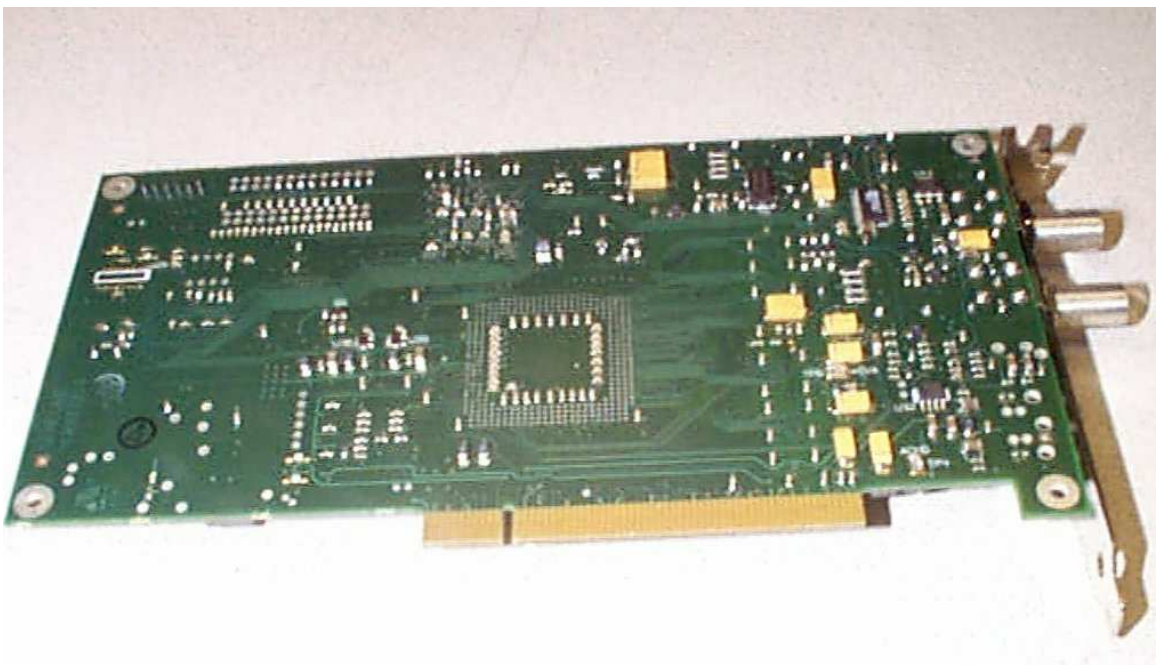
Processor: 500 MHz Pentium 3  
Memory: 128MB  
Disk Drive Speed: 7200RPM



**OEM NTSC/ATSC PCI Output Card - Block Diagram**



**Figure 1 Front Side of Card**



**Figure 2 Back Side of Card**