# DTV INVESTIGATOR

## TMS 1780 Terrestrial Monitoring System

## Monitor 8VSB signal, Transport Stream, and Video in one complete unit!



### 8VSB MONITORING

-Tune to all VHF/UHF channels

-RF system view for quick verification of ATSC parameters

-Comprehensive Modulation parameters view including MER and EVM

-Constellation and eye diagram displays

·Powerful multipath view including equalizer loading

·User configurable thresholds and alarms

·User configurable 8VSB error checking and data logging

### VIDEO AND AUDIO DECODING

-The DTV Investigator decodes video on the LCD screen, supporting all 18 ATSC formats with on-screen closed caption. In the case of multi-program Transport Stream, the user can select which program to monitor in real time.

-The DTV Investigator monitors audio channels activities and provides AC-3 output as well as decoded audio.

### RECORD TRANSPORT STREAM

-Trigger on error a recording of a faulty transport stream

-Playback to itself the Transport Stream for later analysis
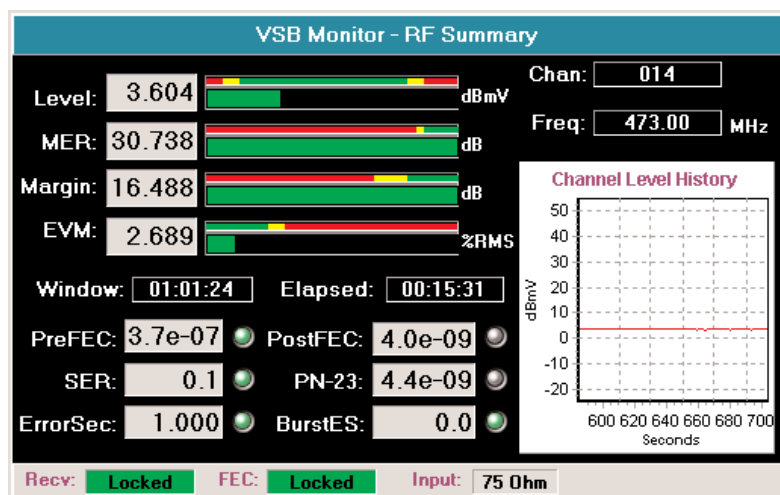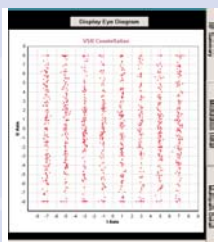
### TRANSPORT STREAM MONITORING

-Monitor Transport Stream from demodulated 8VSB or from SMPTE310M input

-Check for Transport Stream errors

-Monitor in real time video and audio buffers

-Monitor in real time PID bandwidth usage

-Display PSIP information

-Monitor PSIP timing

-User configurable MPEG-2 error checking and data logging

# SENCORE

## VSB MONITORING

The DTV Investigator can tune to any UHF/VHF channel and monitor all the 8VSB parameters needed to qualify the RF reception. It provides alarms, logging and display of Level, MER, EVM, Constellation display, Eye diagram and much more.





## TRANSPORT MONITORING

The DTV investigator monitors and logs Transport Stream error including PCR's, Sync errors, continuity error. The Transport Stream is either demodulated from the 8VSB input for off air monitoring or is present on the SMPTE310M input. This monitoring allow quick detection of Transport Stream errors insuring quick troubleshooting and assurance that your broadcast signal meets specs.
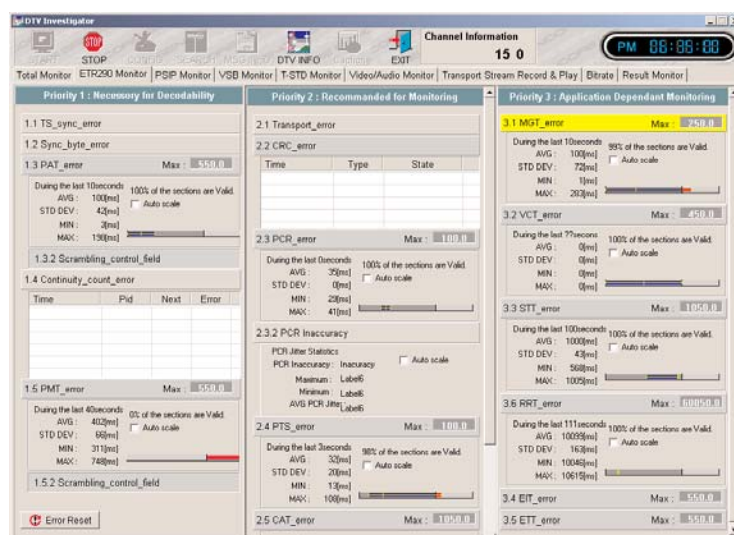


## BITRATE MONITORING

The DTV investigator monitors the bitrates of each PID present in the stream. A graphic representation makes it easy to see if video or audio are present and at the correct bitrate. The DTV investigator also provides a bitrate histogram of a selected PID for long term monitoring of the bitrate. This feature provides information on the bitrate variations that can be used for opportunistic data insertion.
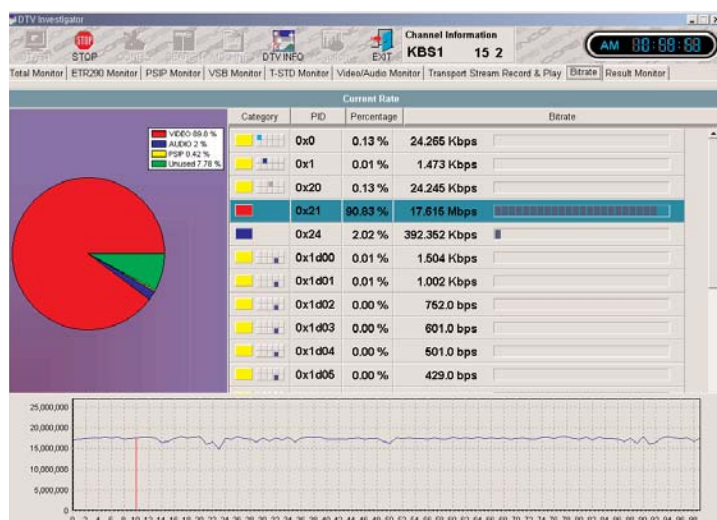
## PSIP MONITORING

The DTV Investigator monitors and displays all ATSC PSIP allowing the user to verify presence, content, and repetition rate. This key feature will ensure that all ATSC decoders can tune properly to the channel being monitored.
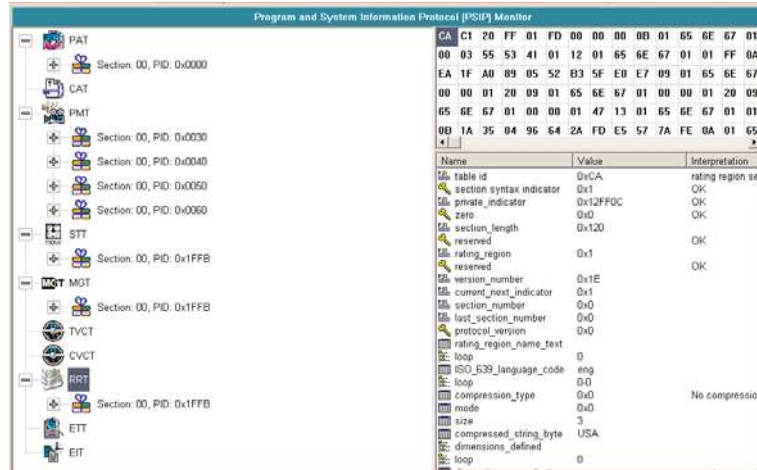


## VIDEO AND AUDIO MONITORING

The DTV Investigator monitors video and audio in real time through a software decoder. The video is displayed and each audio channel (Up to 6 channels) is monitored with a view graph on the unit LCD. The DTV Investigator also provides downconverted NTSC output, as well as decoded stereo audio and optical AC-3 digital audio. The AC-3 output can be connected to a standard receiver for 5.1 audio monitoring. This feature provides you with confidence that your signal is on the air and allows transport stream errors to be tied to the video/audio.
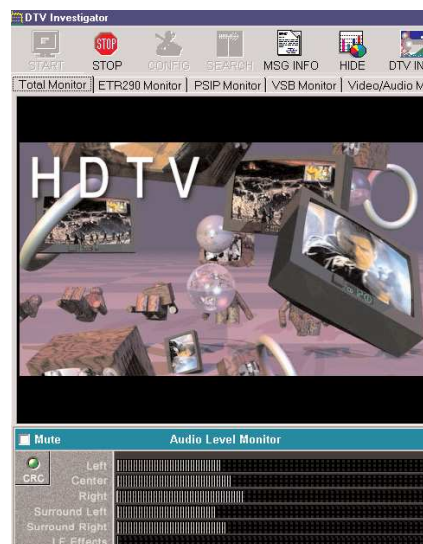


## TS STREAM SAVE AND PLAY

The DTV Investigator can record a live transport stream for later analysis. The recording can be done manually as a snap shot or triggered on a specific error. This feature will allow the user to study an error long after it is gone or send the faulty transport stream to a manufacturer for further analysis.

## LOGS AND ERROR DATABASE

When an error occurs either in the RF domain or in the transport stream, the DTV Investigator will record the conditions including time, date and a description of the problem found. This creates a database of all errors that can be saved, searched and reviewed to help the user determine the type of problems that the DTV channel is experiencing.

# Specifications

## 8VSB SPECS:

### 8VSB Input::

-Tune to VHF/UHF channels 2 to 69 (50 to 860 MHz)

-RF input  switchable- 50 Ohms or 75 Ohms

-RF Level input -30 to +50 dBmV

### RF Tests:

-Levels:  Range:  -30 to +50 dBmV

       Resolution:  0.1 dB

       Accuracy:  +/- 1dB, +/-0.5dB (typ)

-MER:    Range: 15 to 32 dB (measured from constellation)

-EVM:    Range: 2.3 to 16.5 %rms

-BER tests: PRE FEC, SER, Error Sec

-Modulation Displays:

       8VSB constellation diagram

       8VSB eye diagram

-Echo Profile:

       Delay Range: -2.3 to +40 uS

       Echo Level: 0 to -30 dBc

## TRANSPORT STREAM  SPECS:

### TS Input::

-SMPTE310M 75 Ohms BNC 800mV at 19.392658Mbits/s

-Demodulated output from the 8VSB input.

### Transport Stream tests:

| | |
|---|---|
| -TS_sync_error | -Transport_error |
| -Synch_byte_error | -CRC_error |
| -PAT_error | -PCR repetition error |
| -Scrambling_control field | -PCR Inaccuracy-- |
| Continuaty_count_error | -PTS_error |
| -PMT_error | -CAT error |

## PSIP Table Errors and Repetition Rates

| | | |
|---|---|---|
| -PAT | -MGT | -RRT |
| -PMT | -STT | -ETT |
| -TVCT | -EIT | |

### Video and Audio Header Display:

-Picture and audio PES header

-Picture size

-Aspect Ratio

-Frame Rate

-Audio Sampling Freq

## VIDEO AND AUDIO SPECS:

-On screen decoding VGA, NTSC output in back of the unit.

-Stereo analog audio output- Digital AC-3 or PCM on Optical toslink.

## TS RECORDING:

-20GB of Hard drive for recording TS providing over 2 hours of recording

## CONTROL SPECIFICATION:

-Front panel display with keypad and local UI

-SNMP protocol

## GENERAL SPECIFICATIONS:

·Line Power: 100-240 Vac, 50-60 Hz

·CPU: Pentium III 500 or more, 128M Ram

·OS: Windows 2000

-Display VGA or TFT LCD Monitor (1024x768)

-Keypad and touch mouse control

-Other: LAN, Sound Card, CD-ROM drive, external mouse port

-Size: 17" x 19" x 8.5"

-Weight:: 51 pounds