



SOLUTIONS FOR ALL YOUR APPLICATIONS

Stock No.  
**3726**  
**USER MANUAL**

# MTSA-PRO

Status	Date	Document No.	Issue No.	Author
ACTIVE	June 13, 2014	651236500 A	1	BM

800-523-6049  
[www.blondertongue.com](http://www.blondertongue.com)

We recommend that you write the following information in the spaces provided below.

Purchase Location Name:	
Purchase Location Telephone Number:	
MTSA-PRO Serial Number:	

The information contained herein is subject to change without notice. Revisions may be issued to advise of such changes and/or additions.

Correspondence regarding this publication should be addressed directly to:

Blonder Tongue Laboratories, Inc.

One Jake Brown Road

Old Bridge, NJ 08857

Document Number: 651236500A

Printed in the United States of America.

All product names, trade names, or corporate names mentioned in this document are acknowledged to be the proprietary property of the registered owners.

This product incorporates copyright protection technology that is protected by U.S. patents and other intellectual property rights. Reverse engineering or disassembly is prohibited.

# Table of Contents

<b>SECTION 1 – GENERAL &amp; SAFETY INSTRUCTIONS.....</b>	<b>4</b>
<b>SECTION 2 – PRODUCT SUMMARY .....</b>	<b>6</b>
2.1 REVISION HISTORY & REASON.....	6
2.2 PRODUCT APPLICATION & DESCRIPTION .....	6
2.3 PRODUCT SPECIFICATION .....	7
<b>SECTION 3 – PACKAGING AND DRIVERS .....</b>	<b>8</b>
3.1 SOFTWARE INSTALLATION .....	11
3.2 DRIVE INSTALLATION .....	11
<b>SECTION 4 – SOFTWARE.....</b>	<b>15</b>
4.1 CONTROL WINDOW .....	16
4.1A INPUT TAB.....	16
4.1B TS-INPUT WINDOW .....	17
4.1C RF-IN INPUT WINDOW .....	18
4.1D OUTPUT TAB.....	18
4.1E MODE TAB.....	18
4.1F OPTION TAB .....	19
4.1G SETTINGS POP-UP WINDOW - GENERAL TAB.....	19
4.1H SETTINGS POPUP WINDOW - RECORD TAB .....	20
4.1I SETTINGS POPUP WINDOW - INFO TAB .....	21
4.2 ANALYSIS WINDOW - SERVICES TAB .....	22
4.3 ANALYSIS WINDOW - PID TAB.....	23
4.4 ANALYSIS WINDOW - TABLE TAB .....	23
4.5 ANALYSIS WINDOW - SERVICE VIEW TAB.....	25
4.6 ANALYSIS WINDOW- 'BIT RATE' TAB .....	26
4.7 ANALYSIS WINDOW- 'TR 101 290' TAB.....	26
4.8 ANALYSIS WINDOW- 'TABLE HISTORY' TAB.....	27
4.9 SYSTEM MESSAGE AND TR 101 290 SUMMARY WINDOW .....	28
4.9 SYSTEM MESSAGE AND TR 101 290 SUMMARY WINDOW .....	29

## Section 1 — General & Safety Instructions



The STOP sign symbol is intended to alert you to the presence of REQUIRED operating and maintenance (servicing) instructions that if not followed, may result in product failure or destruction.



The YIELD sign symbol is intended to alert you to the presence of RECOMMENDED operating and maintenance (servicing) instructions.



The LIGHTNING flash symbol is intended to alert you to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock.

**TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER FROM THIS UNIT.  
NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

**WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE**

### NOTE TO CATV SYSTEM INSTALLER

This reminder is provided to call the CATV System Installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

## Safety Instructions

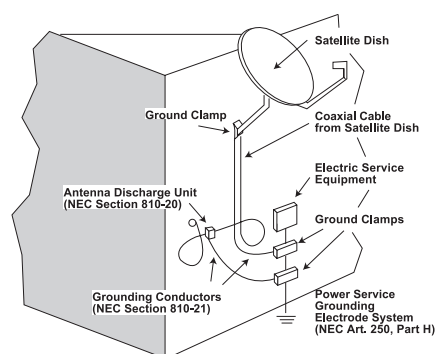


**YOU SHOULD ALWAYS FOLLOW THESE INSTRUCTIONS TO HELP ENSURE  
AGAINST INJURY TO YOURSELF AND DAMAGE TO YOUR EQUIPMENT.**

- Read all safety and operating instructions before you operate the unit.
- Retain all safety and operating instructions for future reference.
- Heed all warnings on the unit and in the safety and operating instructions.
- Follow all installation, operating, and use instructions.
- Unplug the unit from the AC power outlet before cleaning. Use only a damp cloth for cleaning the exterior of the unit.
- Do not use accessories or attachments not recommended by Blonder Tongue, as they may cause hazards, and will void the warranty.
- Do not operate the unit in high-humidity areas, or expose it to water or moisture.
- Do not place the unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious personal injury and damage to the unit. Install the unit only in a mounting rack designed for 19" rack-mounted equipment.

## Safety Instructions - continued

- Do not block or cover slots and openings in the unit. These are provided for ventilation and protection from overheating. Never place the unit near or over a radiator or heat register. Do not place the unit in an enclosure such as a cabinet without proper ventilation. Do not mount equipment in the rack space directly above or below the unit.
- Operate the unit using only the type of power source indicated on the marking label. Unplug the unit power cord by gripping the plug, not the cord.
- The unit is equipped with a three-wire ground-type plug. This plug will fit only into a ground-type power outlet. If you are unable to insert the plug into the outlet, contact an electrician to replace the outlet. Do not defeat the safety purpose of the ground-type plug.
- Route power supply cords so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the unit.
- Be sure that the outdoor components of the antenna system are grounded in accordance with local, federal, and National Electrical Code (NEC) requirements. Pay special attention to NEC Sections 810 and 820. See the example shown in the following diagram:



- We strongly recommend using an outlet that contains surge suppression or ground fault protection. For added protection during a lightning storm, or when the unit is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the lines between the unit and the antenna. This will prevent damage caused by lightning or power line surges.
- Do not locate the antenna near overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing the antenna, take extreme care to avoid touching such power lines or circuits, as contact with them can be fatal.
- Do not overload wall outlets or extension cords, as this can result in a risk of fire or electrical shock.
- Never insert objects of any kind into the unit through openings, as the objects may touch dangerous voltage points or short out parts. This could cause fire or electrical shock.
- Do not attempt to service the unit yourself, as opening or removing covers may expose you to dangerous voltage and will void the warranty. Refer all servicing to authorized service personnel.
- Unplug the unit from the wall outlet and refer servicing to authorized service personnel whenever the following occurs:
  - ☐ The power supply cord or plug is damaged;
  - ☐ Liquid has been spilled, or objects have fallen into the unit;
  - ☐ The unit has been exposed to rain or water;
  - ☐ The unit has been dropped or the chassis has been damaged;
  - ☐ The unit exhibits a distinct change in performance.
- When replacement parts are required, ensure that the service technician uses replacement parts specified by Blonder Tongue. Unauthorized substitutions may damage the unit or cause electrical shock or fire, and will void the warranty.
- Upon completion of any service or repair to the unit, ask the service technician to perform safety checks to ensure that the unit is in proper operating condition.

### Returning Product for Repair (or Credit)

**A Return Material Authorization (RMA) Number is required on all products returned to Blonder Tongue, regardless if the product is being returned for repair or credit.** Before returning product, please contact the Blonder Tongue Service Department at 1-800-523-6049, Ext. 4256 or visit our website: [www.blondertongue.com](http://www.blondertongue.com) for further information.

## Section 2 — Product Summary

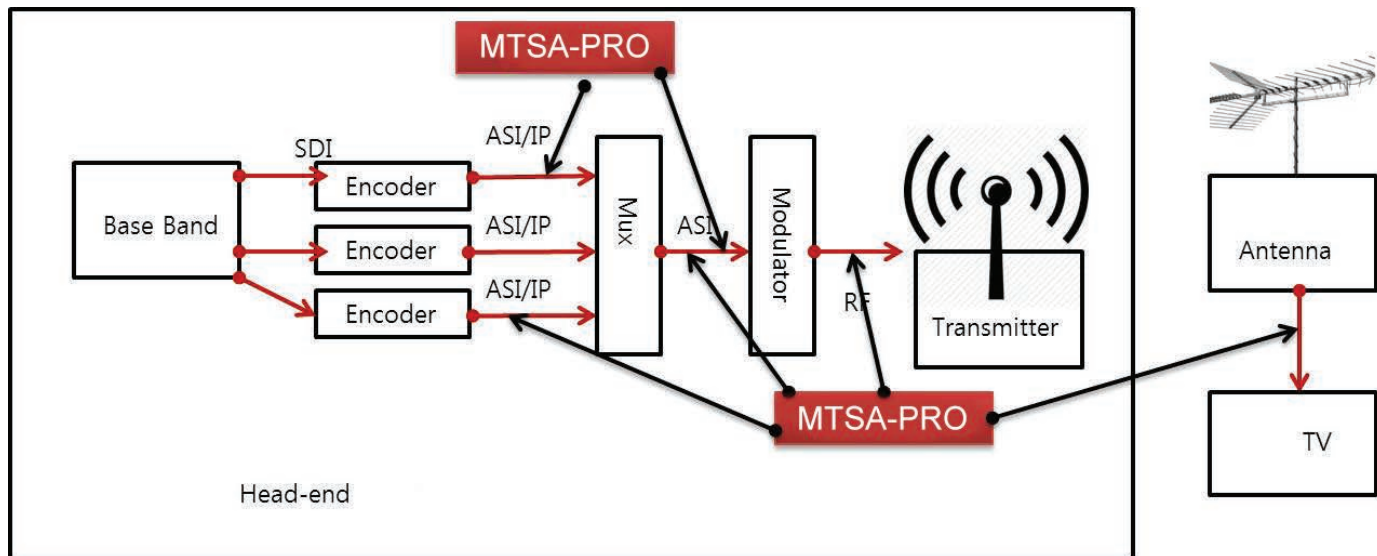
### 2.1 Revision History & Reason

This is the first issue of this Instruction Manual.

### 2.2 Product Application & Description

#### Application:

The MTSA-PRO is designed to analyze MPEG transport stream in real time/off line bases, Hardware and Software as in a package. The Hardware interlocks with the PC via USB cable to maximize its utilization as a mobile analyzer. Furthermore, it supports TS file output through ASI and real time input can be re-transmitted via ASI.



#### Features:

- Real time analysis via RF/ASI/IP input and TS file
- Single DVB-ASI input and single DVB-ASI output adapter for USB (half duplex)
- MPEG TS analysis and capture
- USB 2.0, bus powered, no power supply required
- ATSC and OpenCable DTV standards compliant
- ETSI TR 101 290 Priority with real-time 3-stage error monitoring reporting and error logging.
- Diagnostic and verification of MPEG designs
- PCR & PTS analysis, arrive time graphing, measurement display and jitter analysis
- Triggered recording
- Data rate analysis
- Table and packet views
- SI/PSI & PSIP view and interval analysis
- CAS view: ECM and EMM repetition rate and update time
- PES header analysis
- Real-time A/V decoding

## 2.3 Product Specification

### Input

<b>ASI/SMPTE-310M</b>  <b>Connectors:</b> <b>Standard:</b> <b>Bitrate:</b> <b>Mode:</b>	1x BNC; 75Ω DVB-ASI 0~108Mbps (in 1bps step) 188/204 bytes packet mode
<b>RF Demod</b>  <b>Connector:</b> <b>Freq Range:</b> <b>Level Min:</b>	8VSB, QAM64B, QAM256B 1xF 75Ω 57-1000 MHz -15 dBmV QAM256B -20 dBmV QAM64B -30 dBmV 8VSB

### Output

<b>ASI/SMPTE-310M</b>  <b>Connectors:</b> <b>Standard:</b> <b>Bitrate:</b> <b>Mode:</b>	1x BNC; 75Ω DVB-ASI SMPTE-310M 0~108Mbps (in 1bps step) 188/204 bytes packet mode
--	--

### General

<b>Dimensions (W x D x H):</b>	6.06" x 3.89" x 1.12" (154mm x 100mm x 29mm)
<b>Weight:</b>	0.5 lbs. (227g)
<b>Power:</b>	USB 2.0 powered; no power supply required
<b>OS Supported:</b>	Windows 7

### Software

<b>TS Input:</b> <b>TS Out:</b> <b>Analysis Mode:</b> <b>7 analysis Window Tab:</b>	ASI, SMPTE-310M, File, IP (UDP/TS or UDP/RTP/TS), RF 0~108Mbps (in 1bps step) 188/204 bytes packet mode Service, PID, Table, Service View, Bit-rate, TR 101 290, Table History
--	--

**Recommended System Requirements:** CPU better than Intel Core i3; more than 2 GB RAM; Windows 7

Section 3 — PACKAGING AND DRIVERS  
3 MTSA-PRO System Package

---



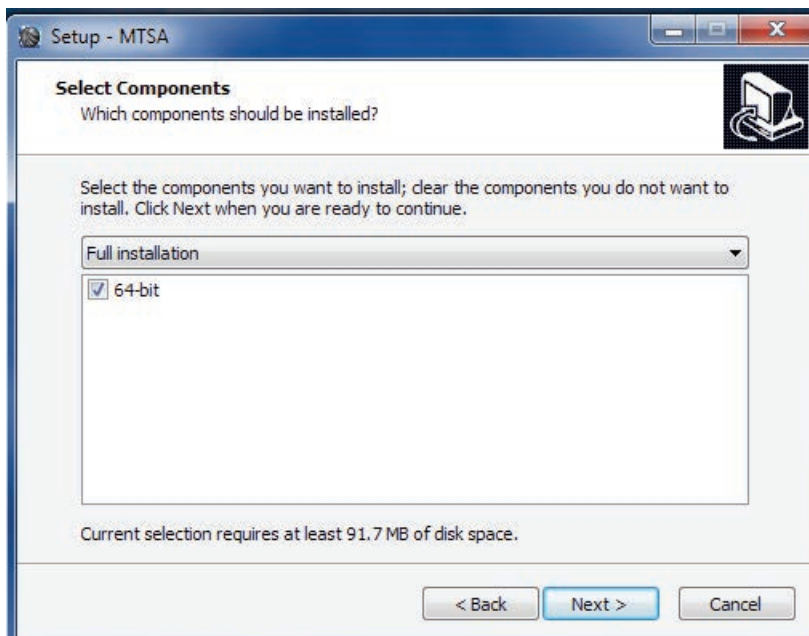
USB Conection

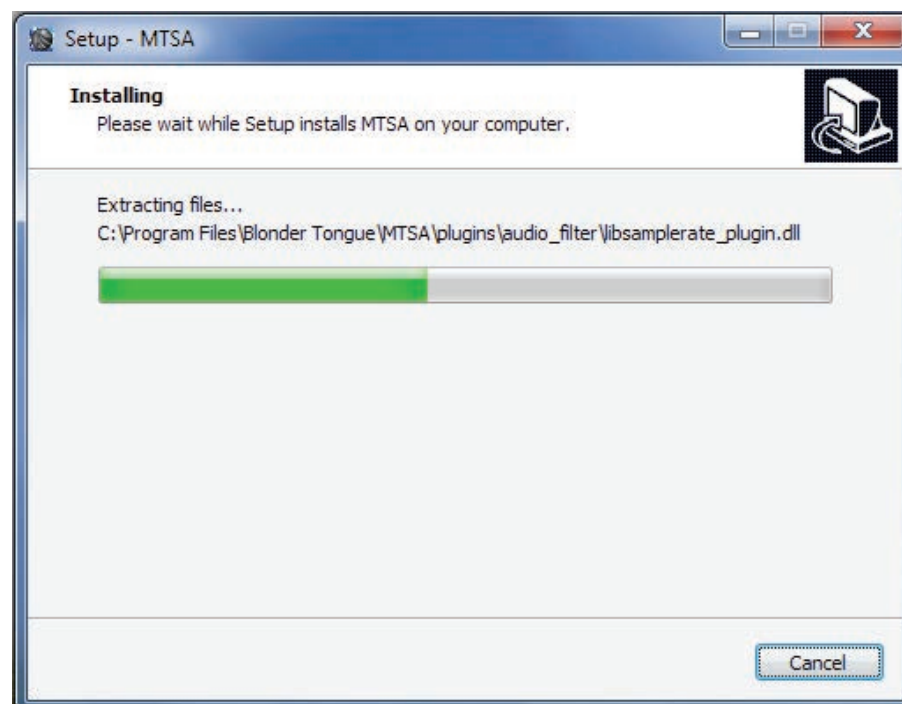
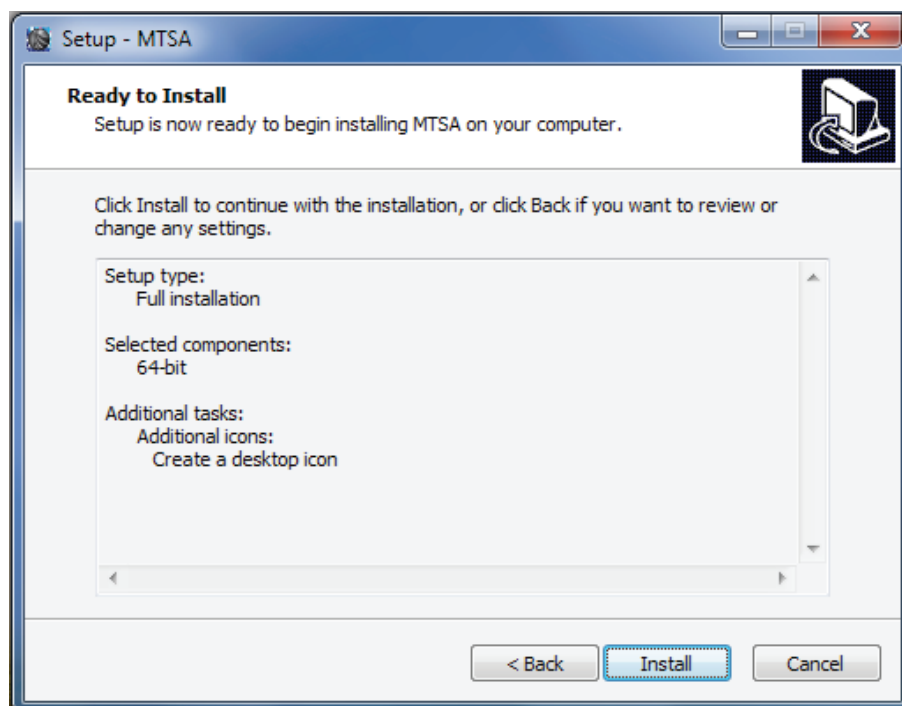




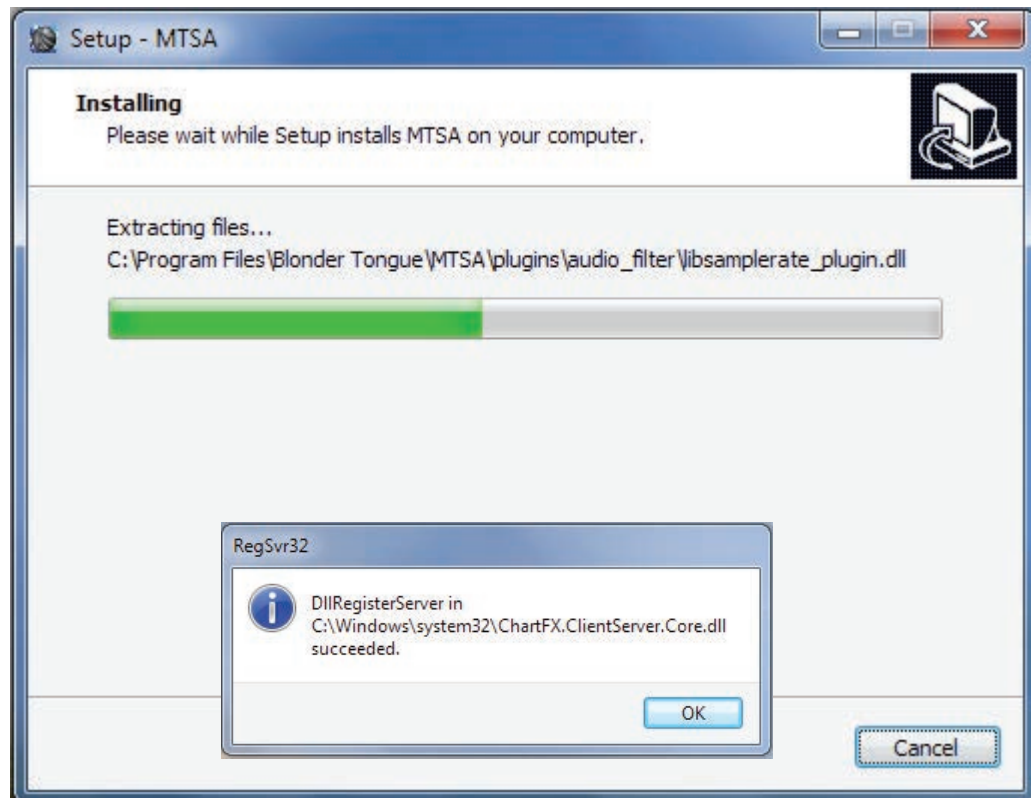
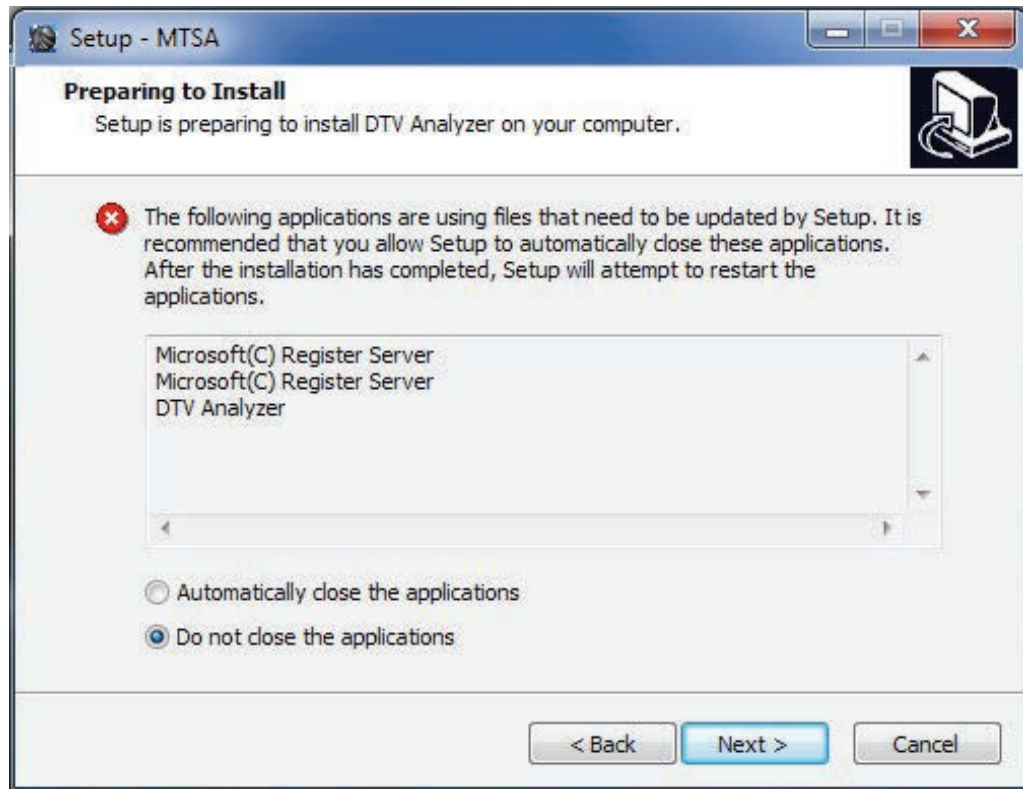
### 3.1 Software installation

- Software installation must be run with Administrator privilege for Windows 7 or above.
- Disconnect the USB cable from the MTSA-PRO before installation.
- Get & run the setup file from the BT website.
- Press 'Next' to begin installation.

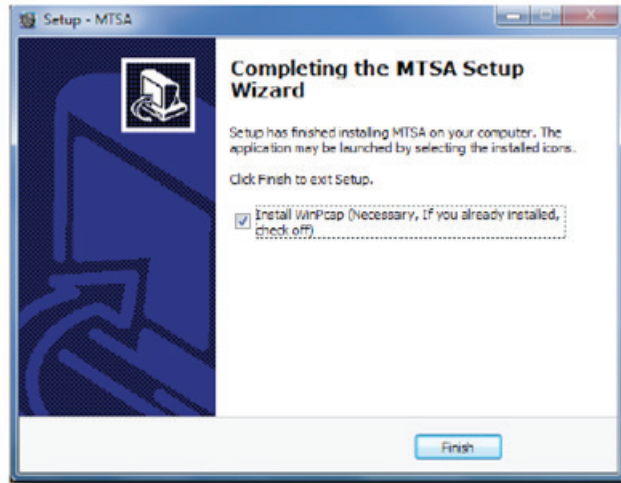




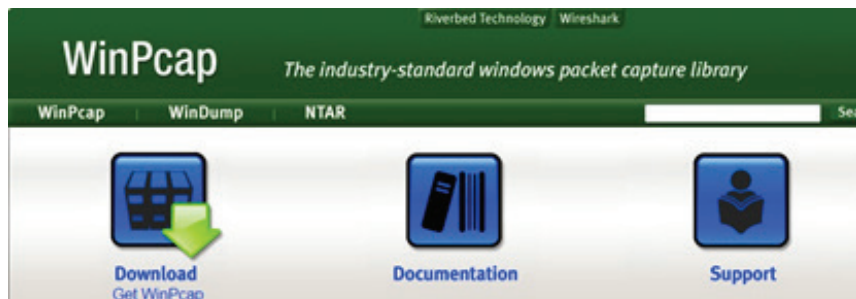
If you see below messages, please select 'Do not close the application'



On the “Completing the MTSA Setup Wizard” screen shown below un-select the “Install WinPcap” check box, and then click “Finish”.



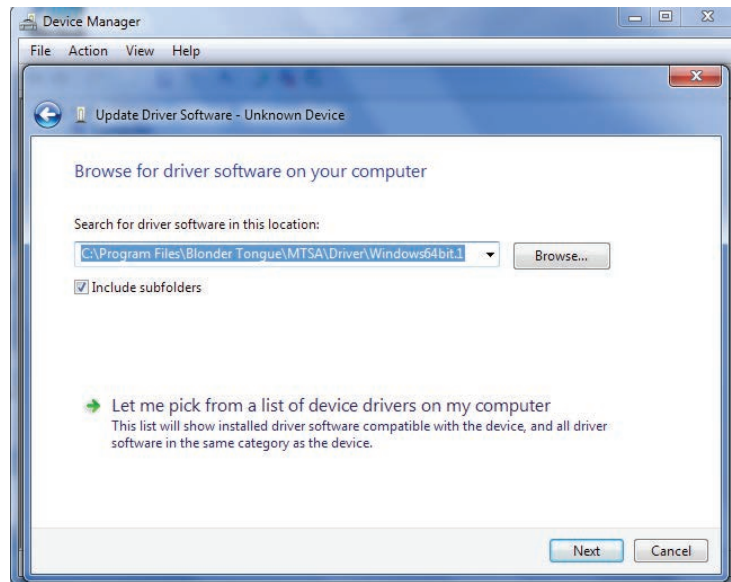
The MTSA-PRO software requires a WinPcap driver. If this particular driver is not presently installed on your machine it will have to be downloaded. Check by viewing the file folders under Program Files or search for “WinPcap”. If a download is required go to [www.WinPcap.org](http://www.WinPcap.org)



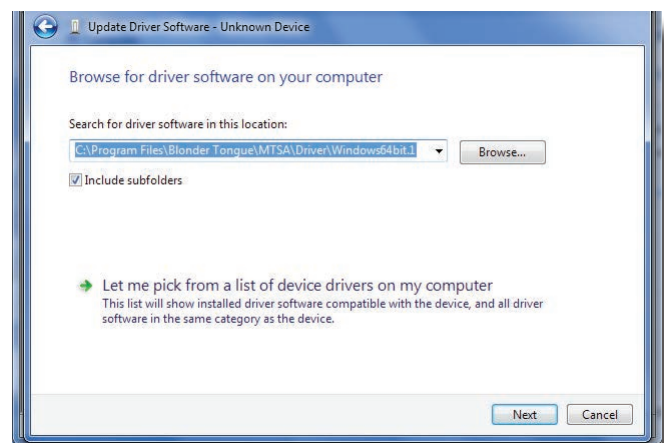
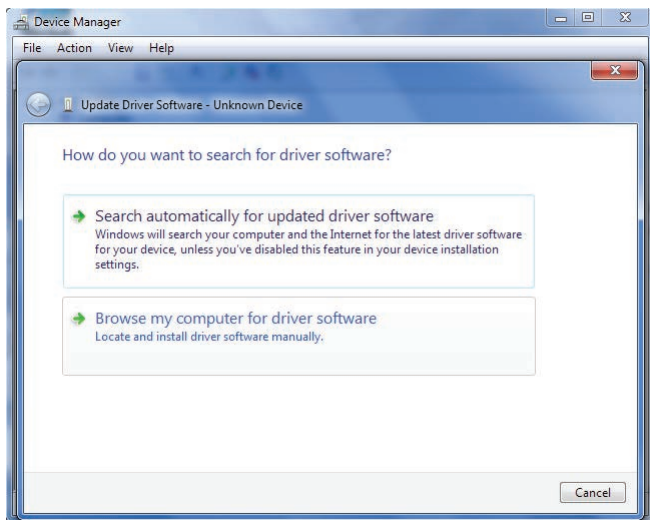
After the software installation has completed, the Driver will automatically start its installation when the hardware is connected. If not, see Section '3.2 Driver Installation'

## 3.2 Driver Installation

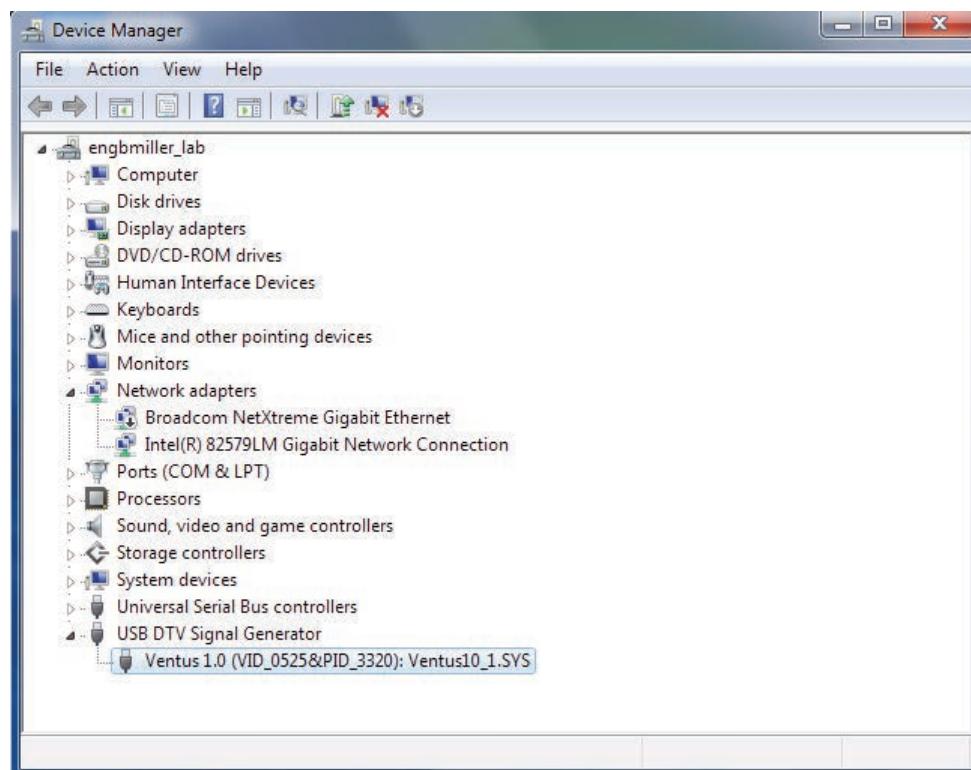
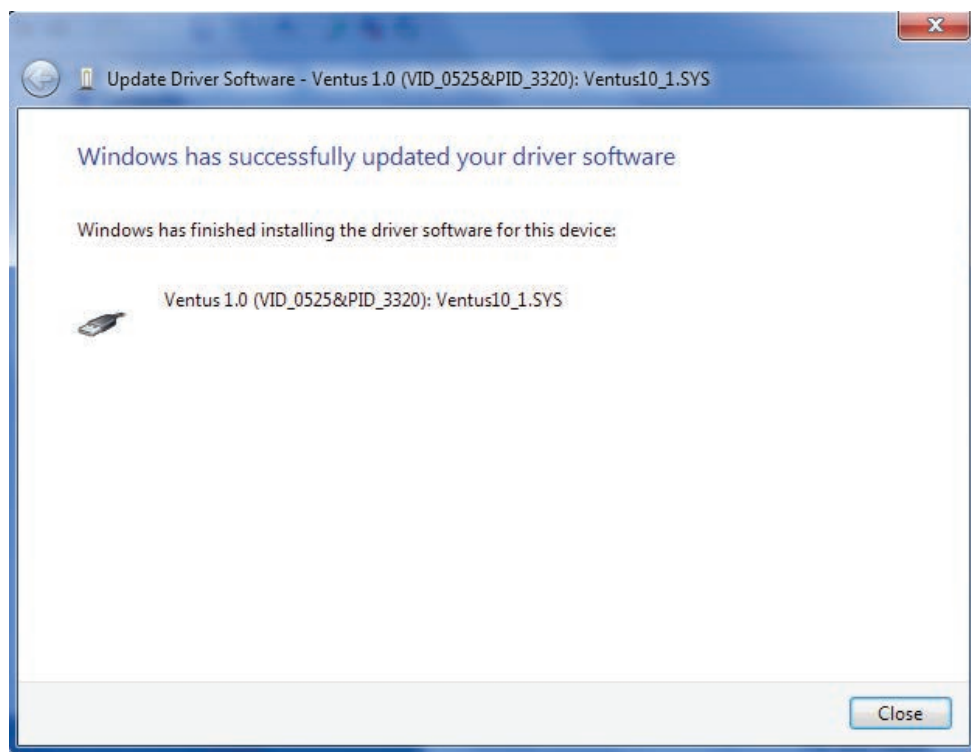
Right click on the 'Unknown device' in Device manager and then click Update Driver Software.



Select 'Browse my computer for driver software' then select either c:\Program Files\Blonder Tongue\MTSA\Driver\Windows32bit.1 or Windows64bit.1" based on your Window's OS. Click on 'Next'.





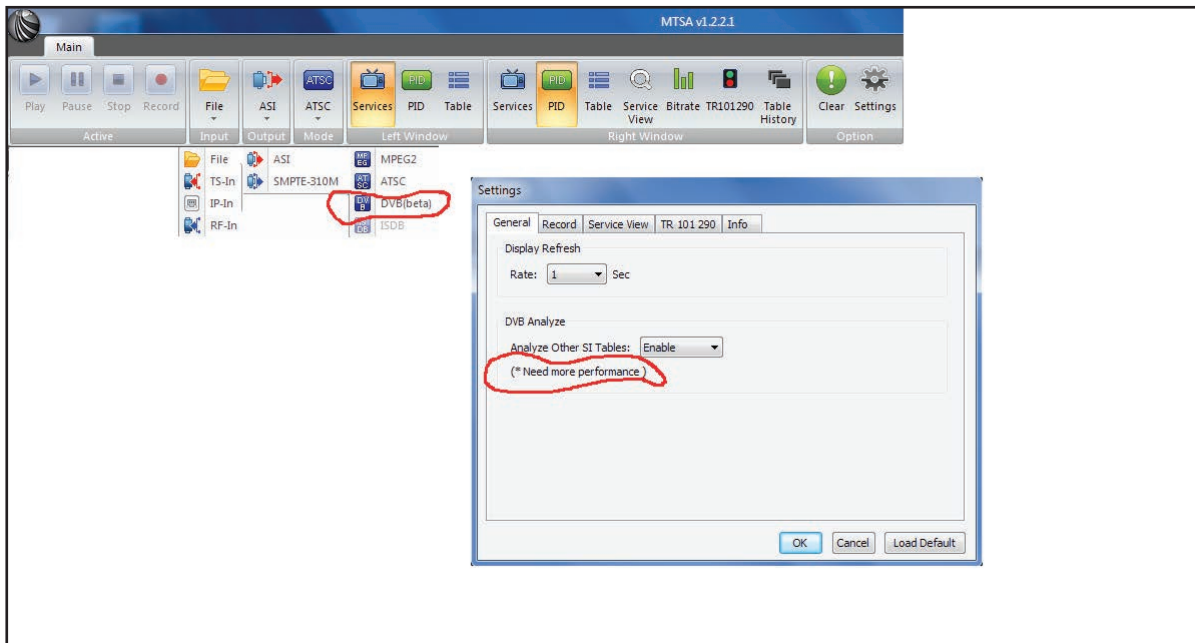


## Section 4 — SOFTWARE

### 4 MTSA-PRO Software

#### 4.1 Control Window

The Control Window shows settings and status. Additional controls are accessed by clicking on the tabs; Active, Input, Output, Mode, Left/Right Window, and Option. The user should be aware that the Input, Output, Mode, and Option are only active when the system is NOT running.



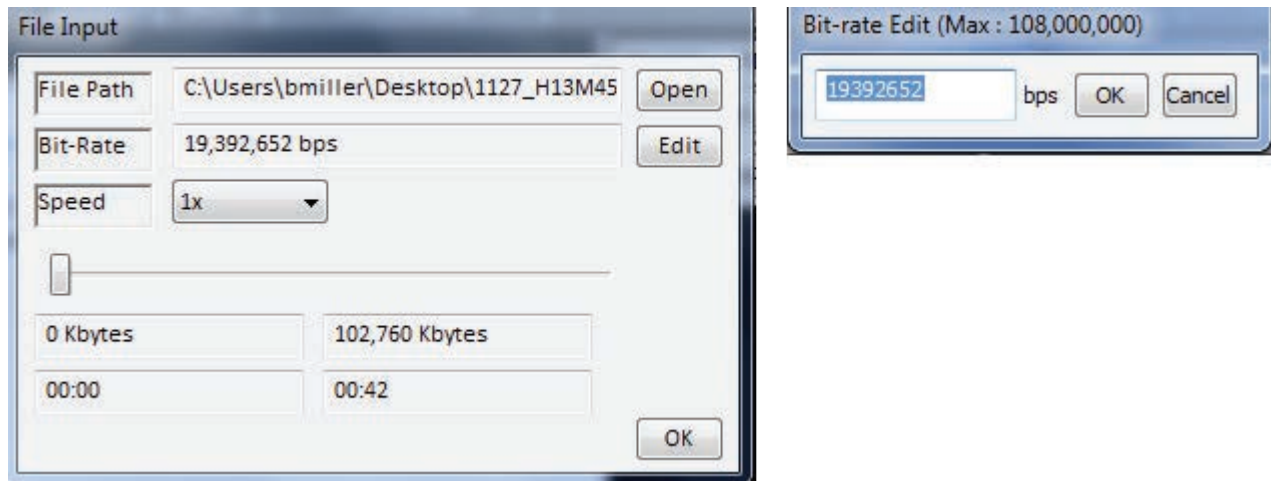
This tab controls the start and stop of the analyzer. Selections are Play, Pause, Stop and Record.

- Pause is active in the file analysis mode.
- Record is active while analysis is in progress. You can start/stop during the analysis at any time.

## 4.1A Input Tab

The Input tab is where the input port is selected. Click on the down arrow to choose the desired interface.

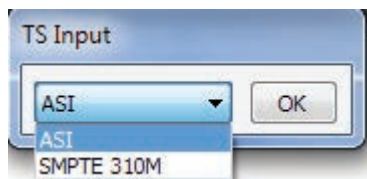
You can select input port and detailed settings. File, TS-In, IP-In, and RF-In can be selected and each option comes with pop-up window for detailed settings.



A media file can be played through the unit for analysis and concurrently sent to the ASI output.

- Select a file with 'Open' button. Typical file extensions are .ts, .tp and .trp.
- The bit rate is calculated automatically after selecting the file. The rate can be modified with 'Edit' button if necessary.
- The user can select between two speeds; 1x and Max analysis modes. The 1x mode is the standard setting for stream analysis and an active ASI output. The 'Max' mode enables high speed analysis. In this mode the Data output through Media Player and ASI output port are NOT available.
- You can select the Analysis starting point by adjusting the navigation bar.

## 4.1B TS-Input window



The TS Input can be ASI or SMPTE 310M. SMPTE-310M is a protocol standard that provides for transmitting 19.39 Mbps transport streams between transmission devices such as multiplexers and 8- and 16-VSB excitors in a headend or station origination facility.



The IP Input window is used to setup the address and protocol to receive an IP stream.

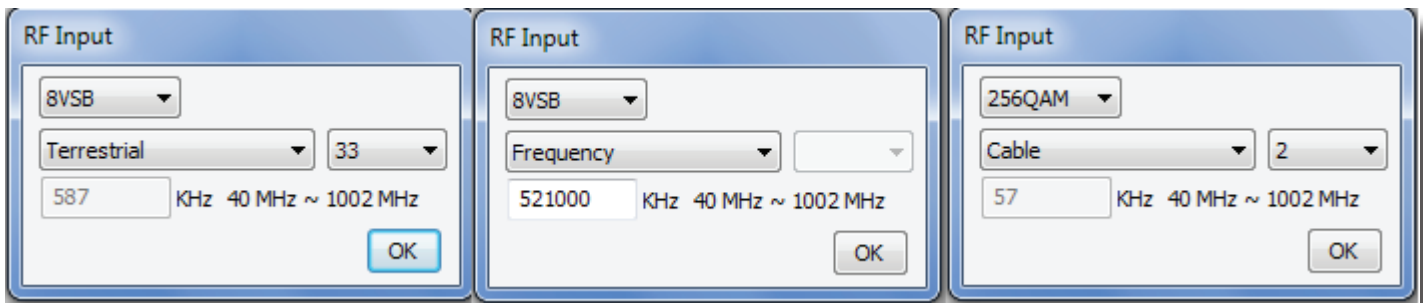
- Adapter: Select your computer's network adapter.
- Protocol: options are UDP and RTP.
- IP Addr: IP address of the destination.
- Port Number: IP port of the destination.



#### 4.1C RF-In Input Window

The RF input selection sets up the RF mode and parameters for the receiver.

- Modulation type can be 8VSB, 64QAM or 256QAM
- Input tuning can be in frequency or RF channel number. Terrestrial or Cable selections only accept channel numbers.



## 4.1D Output Tab

The Output tab allows the user to select between ASI or SMPTE-310M. An internal re-mux feature is activated for SMPTE-310M with an ASI or RF input.



## 4.1E Mode Tab

The user selects the Broadcasting standard for table decoding. Options are MPEG2, ATSC and DVB.

- The MPEG2 PSI tables are common to both ATSC and DVB. They include PAT, PMT, NIT and CAT.
- ATSC adds the extended PSIP tables, MGT, VCT, STT, etc. These tables contain virtual channel numbers and names.
- DVB is the European version of extended tables. They include NIT, SDT, EIT, TDT, etc. A software update for DVB mode is required before DVBit is fully operational.



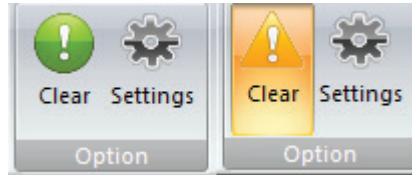
- Left Window Tab & Right Window Tab

The selections in the Left/Right Window results in the same action as clicking on the tabs in the corresponding window.



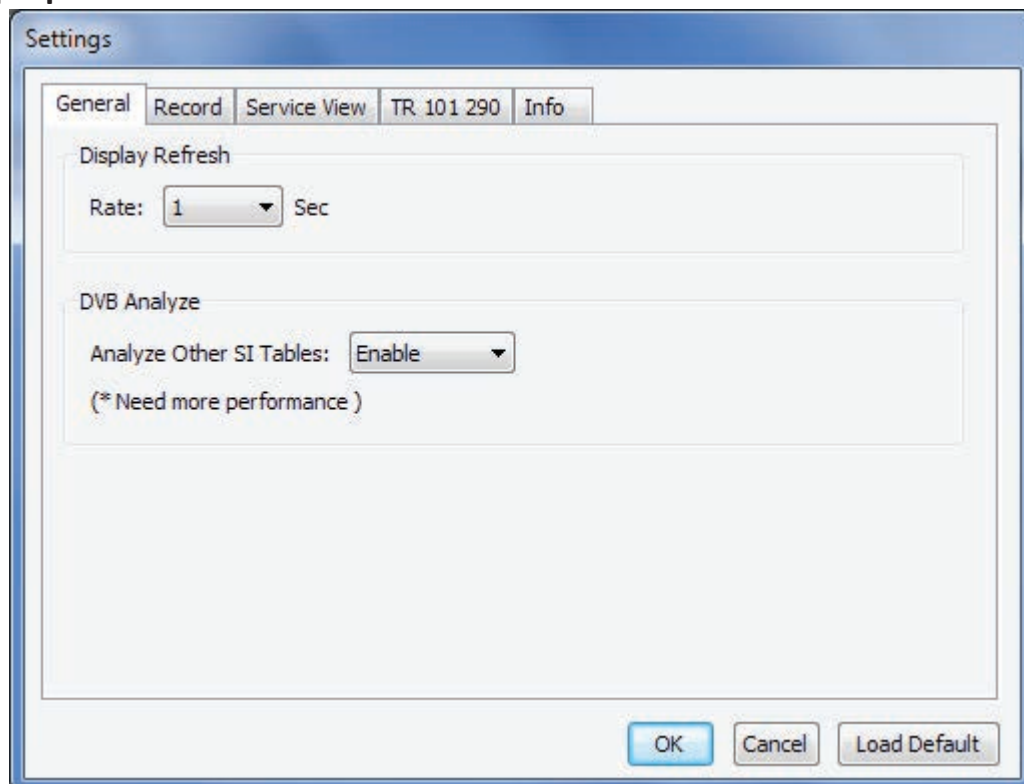
### 4.1F Option Tab

- The Option Tab is comprised of the Clear and Settings buttons
- Clear cancels outstanding alarms and clears the associated alarm status. The color of this button changes from green to yellow with exclamation mark when an alarm is triggered.



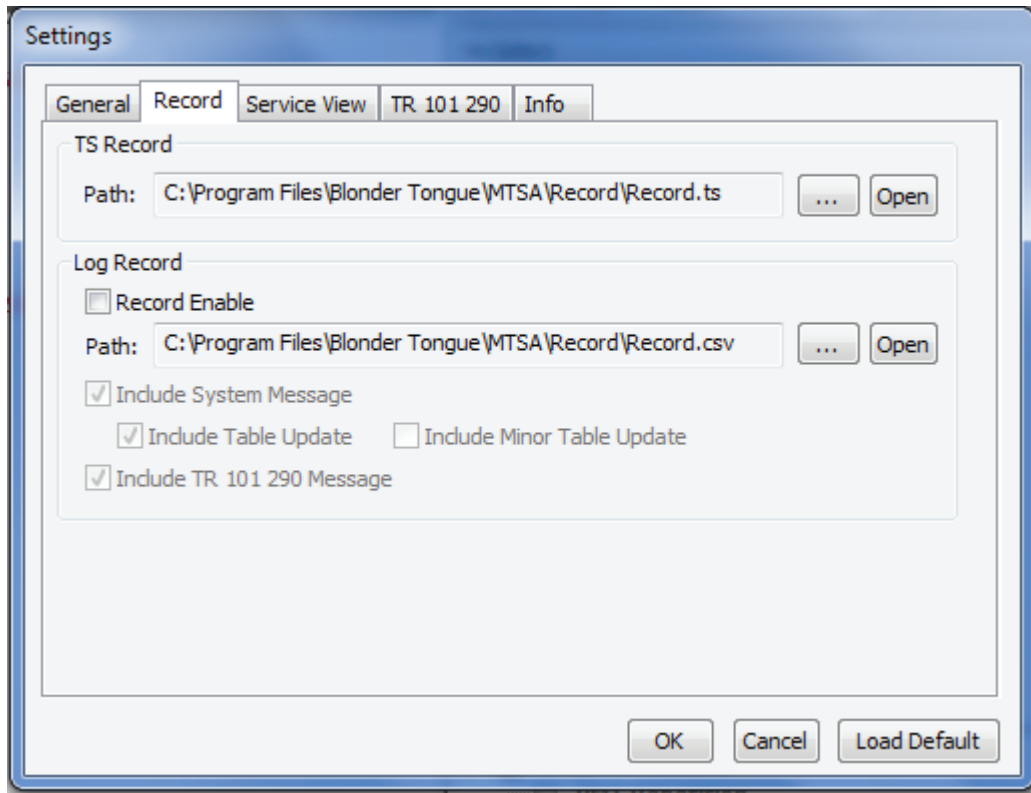
Clicking the Settings button brings up a pop-up window with 5 tabs. Press OK to save settings, 'Cancel to abort changes and Load Default to re-initialize settings to factory default.

### 4.1G Settings Pop-up window – General Tab



The General tab allows the user to set the GUI update rate. The default is 1 sec. The DVB Analyze option needs a software update before it is fully operational.

## 4.1H Settings Popup Window– Record Tab

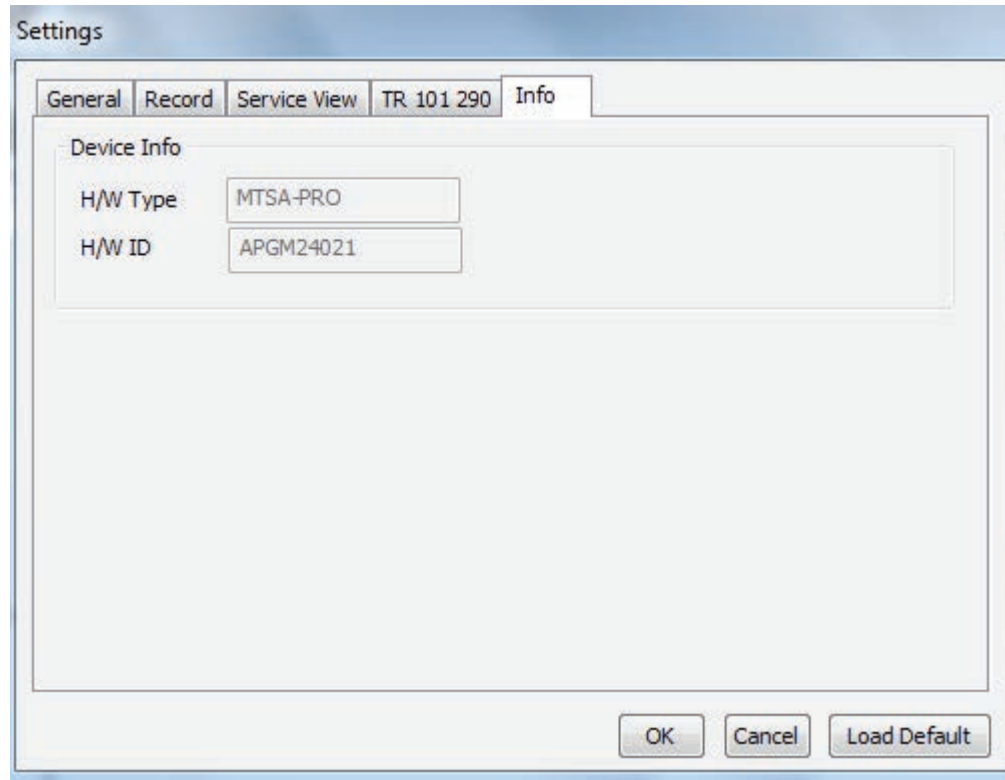


The Record tab facilitates recording streams and logging of system and table messages. Press the Record/Stop button in the Active tab to start/stop recording.

- Set the path and file name for recording the transport stream by pressing the ... button.
- Press Open to view the file path in TS Record. The date and time is appended to the file name.
- Check the Record Enable box to save log data in Log Record. The Log file is saved in '\*.csv' format.
- Set the path and file name for the log file by pressing the ... button.
- Press Open to view the file path in Log Record. The date and time are appended to the file name.
- The date and time of the log data is appended be added to the actual file name
- Check the Include System Message box in Log Record to save system operation messages in the log data file.
- Check Include Table Update box in Log Record to save table update messages.
- Check Include Minor Table Update in Log Record to save frequently updated table messages. Frequently updated table messages includes STT, EIT, STT in ATSC mode.
- Check Include TR 101 290 Message box in Log Record to save TR 101 290 error messages to the log file.

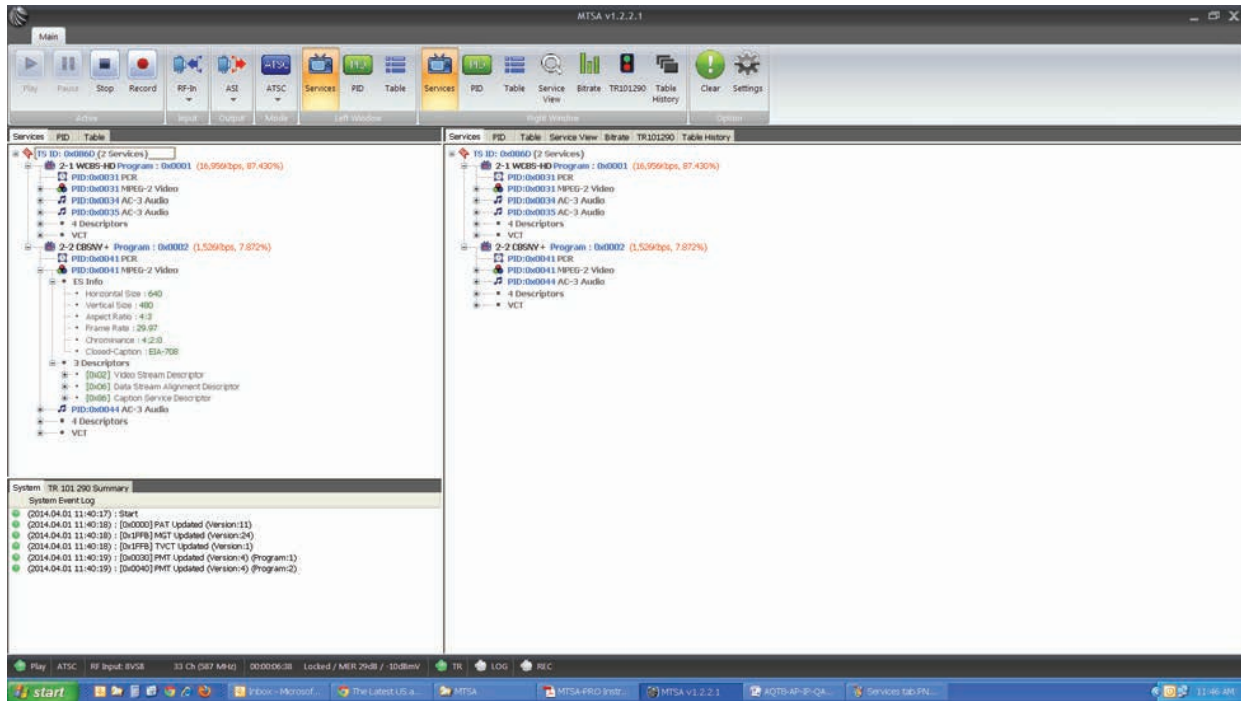
## 4.1l Settings Popup Window – Info Tab>

This is a read only tab which displays the HW type and serial number.

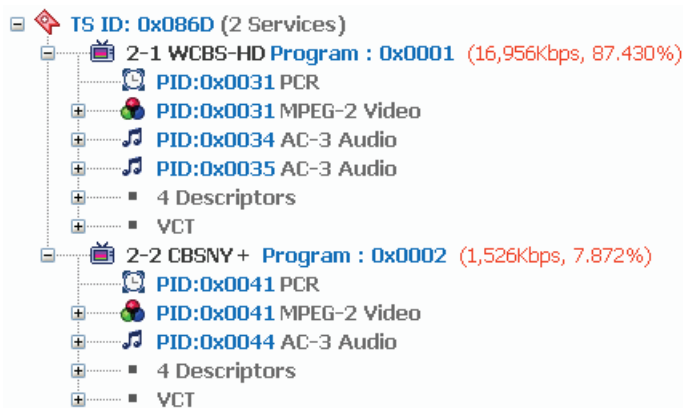


## 4.2 Analysis Window – Services Tab

The Service tab displays the analysis of the service components in a tree structure format. Double click on the node or click on +/- to expand or minimize the display. The TSID and number of services are shown at the top. For each service, the Service name, Program Number, bit rate and occupancy information is shown along with the configuration information in sub-node.

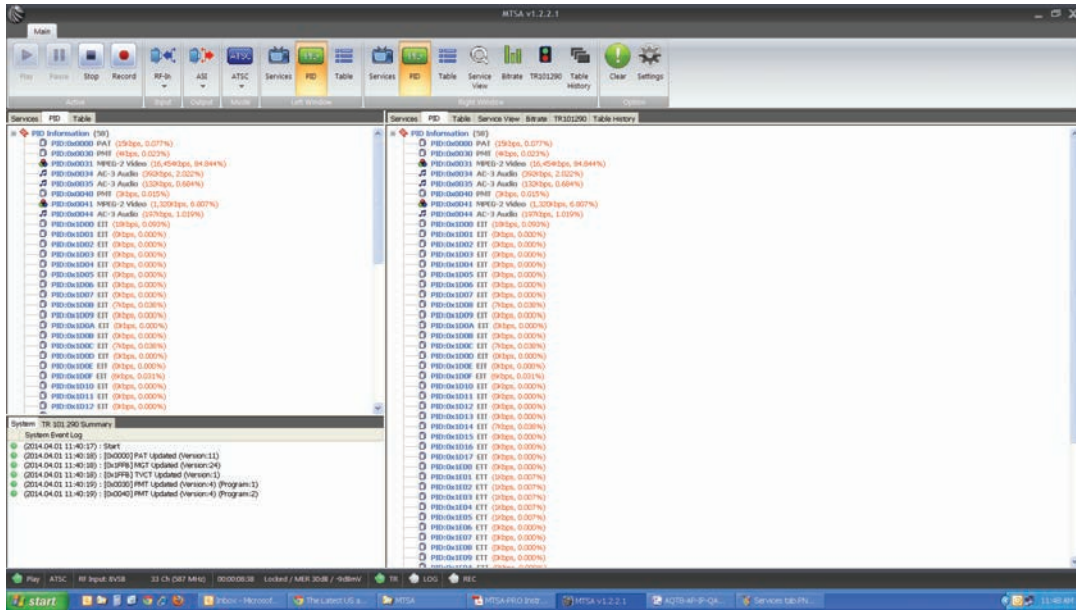


The component of each program lists the PID and properties along with the ES Info and Descriptor in the sub-node. The ES info shows component information analysis inside the ES (elementary Stream) data and Descriptor shows contents included in PMT information table.



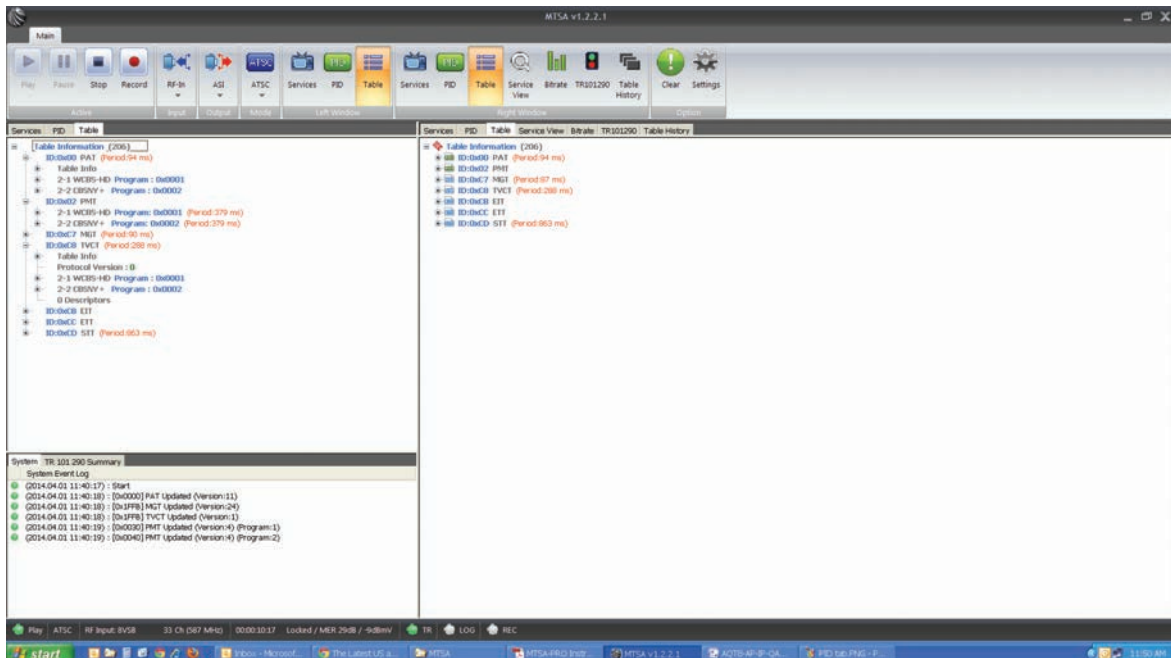
## 4.3 Analysis Window – PID Tab

The PID tab lists all the PIDs in the service along with its service type, bit rate and occupancy.



## 4.4 Analysis Window– Table Tab

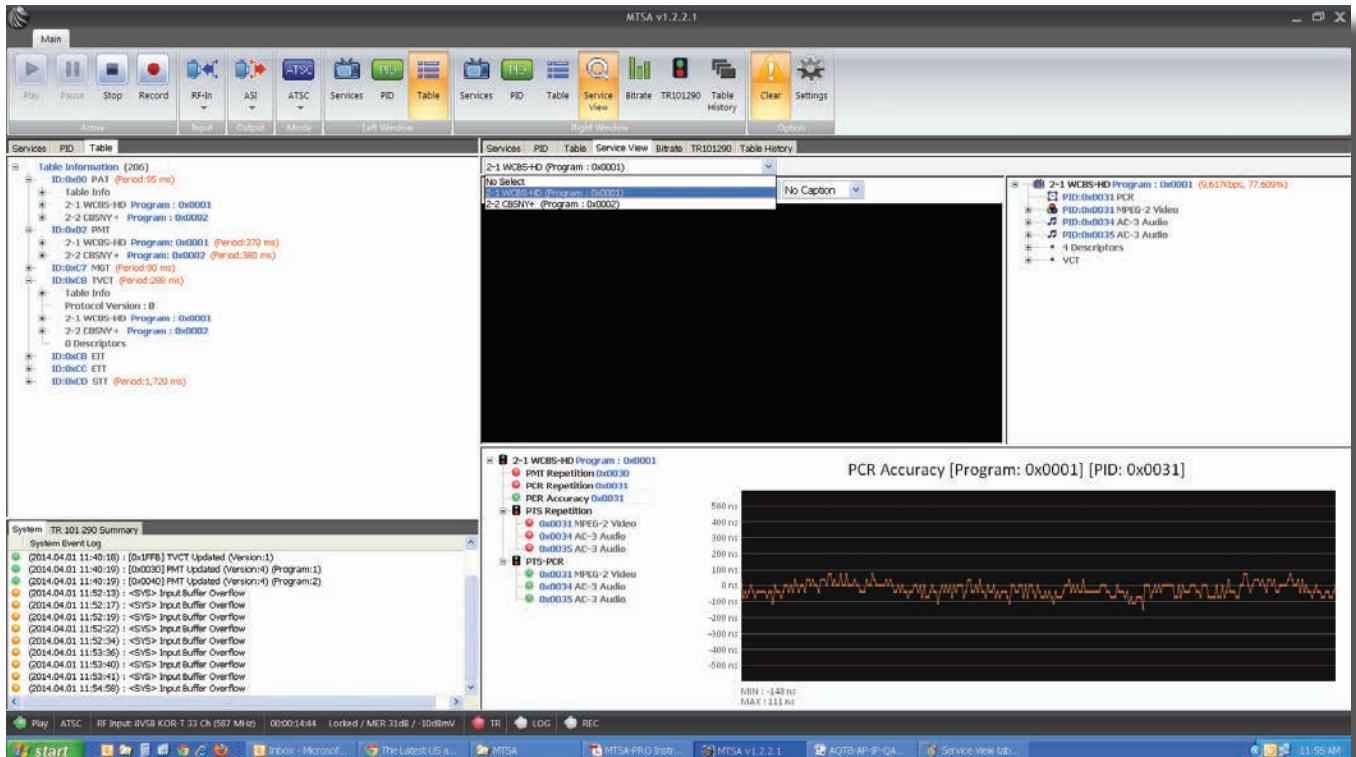
The Table tab shows the MPEG tables in a tree structure indexed by Table ID. Double click on the node or click on +/- to expand or minimize the display.



## 4.5 Analysis Window – Service View Tab

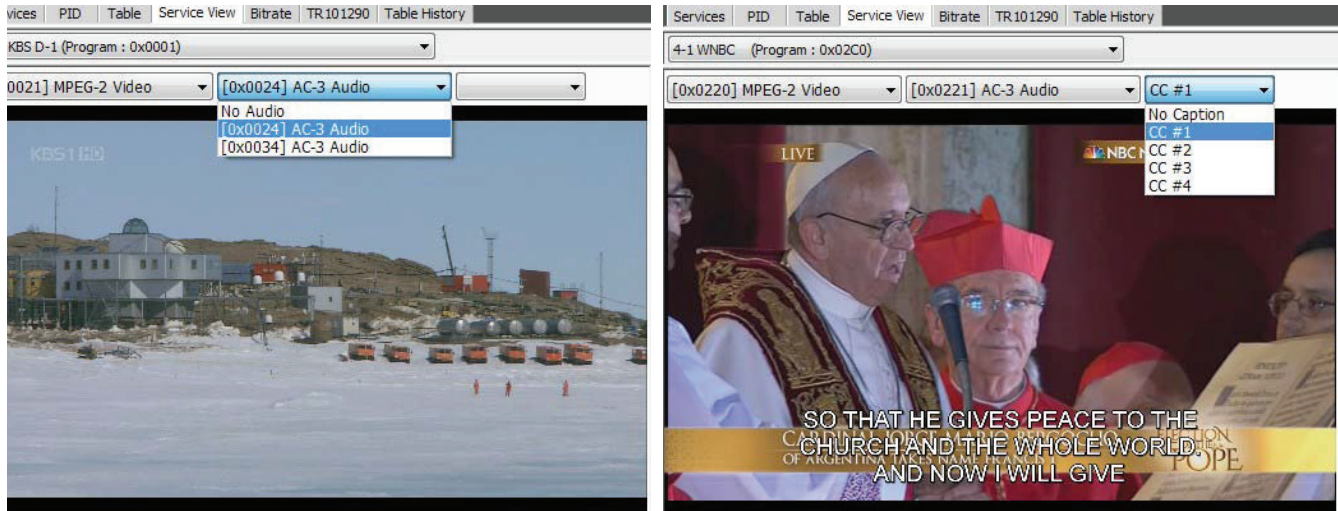
The Service View shows service timing errors with a Media Player for playing a selected program.

During the Analysis operation, the drop-box menu selection is inactive until a program is detected. If Auto Select Program has been selected in Settings-Service View tab, the first program detected is specified as the program and begins playing automatically.

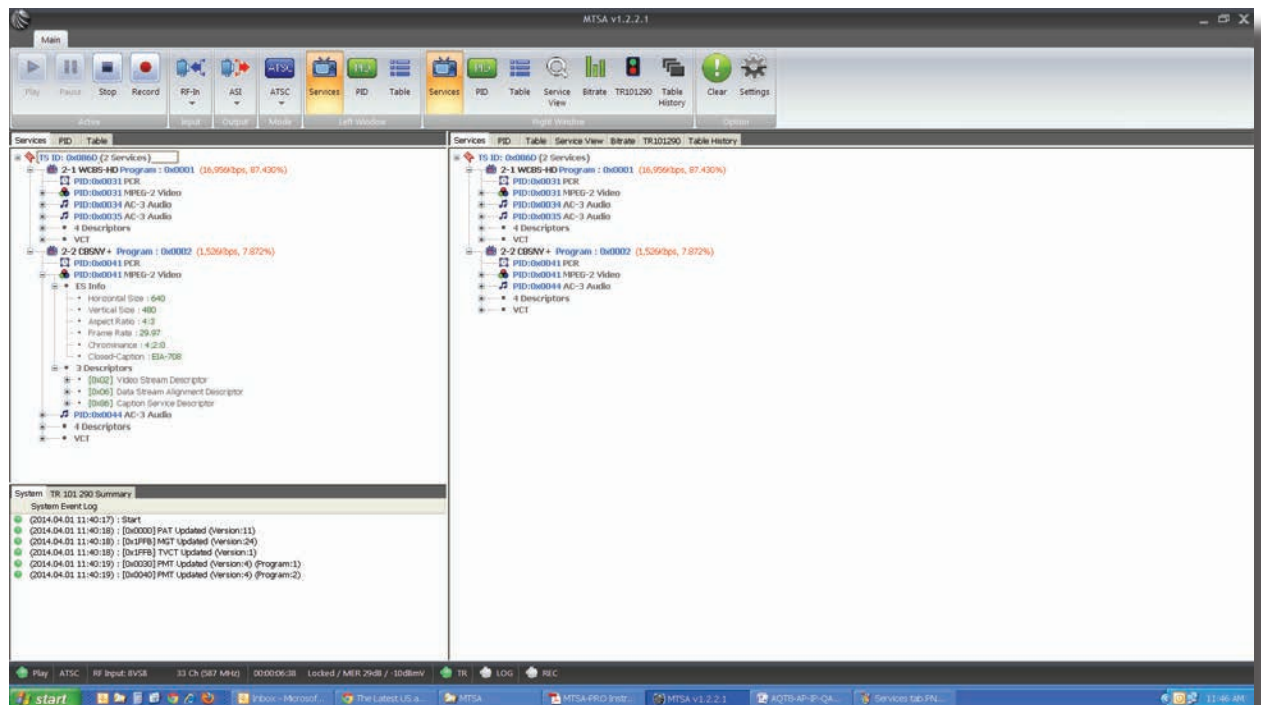




Once a program is specified the Media player is activated. The Media player is not supported in Max Speed of File Input mode. Three drop box menus right above the Media Player screen are activated after the program has been specified. The user can select Video, Audio and Sub-title.

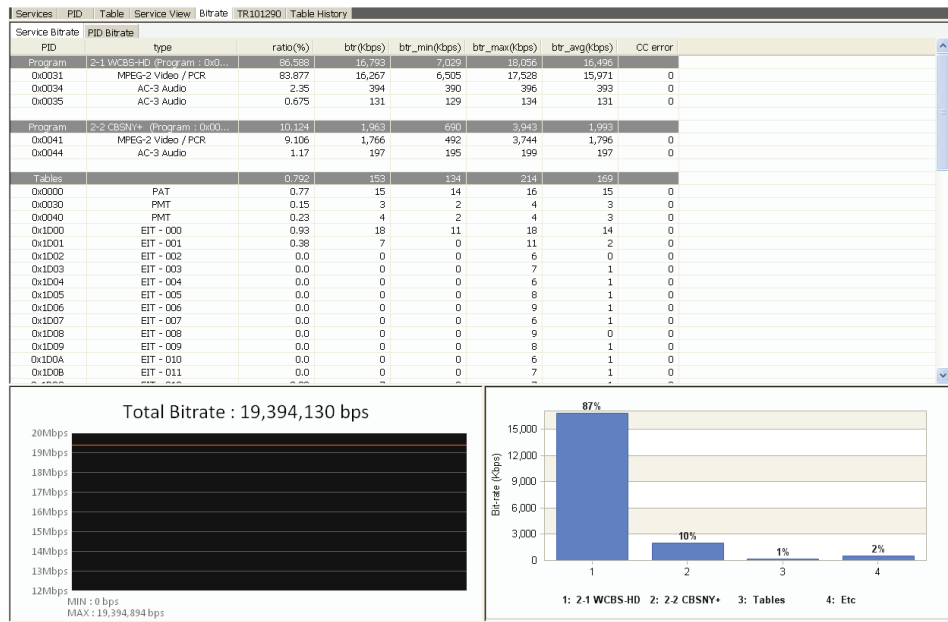


The configuration tree on the right shows the components of the program. This is the same configuration as the Service tab.



## 4.6 Analysis Result Window – ‘Bit-Rate’ Tab

The Bit-rate tab shows a breakdown of the elementary streams contained within the transport stream. Rates are listed in tabular and graphic formats. Two sub-tabs are present to organize the data by Service or PID.

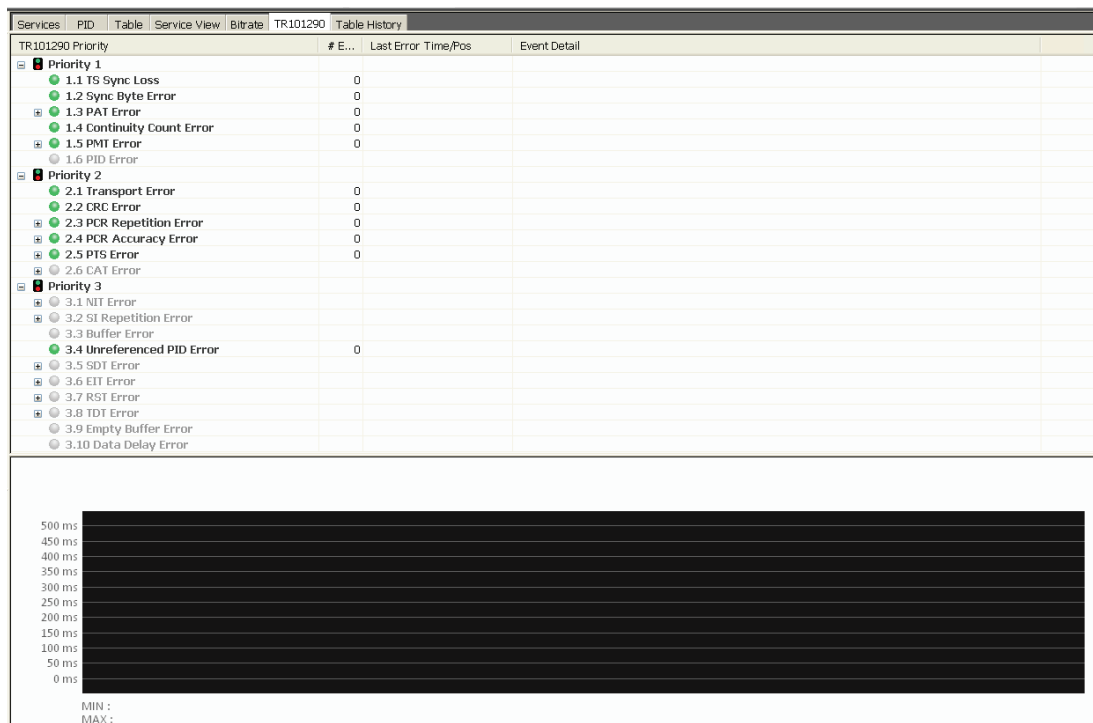


## 4.7 Analysis Result Window – ‘TR 101 290’ Tab

The System message and TR 101 290 summary window is divided into System and TR 101 290 Summary tabs.

The MTSA-Pro calculates PMT Repetition, PCR Repetition, PCR Accuracy, PTS Repetition plus PCR-PTS value. PCR-PTS indicates the difference in its value compare to PCR input value right before PTS.

- Icon color key: Gray: (Not analyzed), Green (normal), Red (error). Selecting an item on the left side table activates the graphing function.



## 4.8 Analysis Result Window– Table History Tab;

The Table History tab shows the current and past table data.

The screenshot displays the MTSA-PRO interface with the 'Table History' tab selected. The 'Table' list on the left shows various tables, with 'PMT' (Program Map Table) highlighted. The right pane shows the 'PMT - Transport Stream Program Map ...' details, including parameters like Table ID, Section Syntax Indicator, and Section Length. The bottom pane shows the hex and ASCII data for the selected table, with the current data highlighted in blue.

Table	Full Name
PAT	Program Association Table
PMT	Program Map Table
MGT	Master Guide Table
TVCT	Terrestrial Virtual Channel Table
EIT	Event Information Table
ETT	Extended Text Table
STT	System Time Table

Parameter	Hex	Value	Bits	Description
PMT - Transport Stream Program Map ...				
Section Header	0x02	2	64	PMT Information
Table ID	0x02	2	8	
Section Syntax Indicator	0x01	1	1	
'0'	0x00	0	1	
Reserved	0x03	3	2	
Section Length	0x00A2	162	12	
Program Number	0x0001	1	16	
Reserved	0x03	3	2	
Version Number	0x04	4	5	
Current Next Indicator	0x01	1	1	Current
Section Number	0x00	0	8	
Last Section Number	0x00	0	8	
Reserved	0x07	7	3	
PCR PID	0x0031	49	13	
Reserved	0x0F	15	4	
Program Info Descriptor Length	0x001D	29	12	
Registration Descriptor	0x05	5	48	
Smoothing Buffer Descriptor	0x10	16	64	
Component Name Descriptor	0xA3	163	96	
Redistribution Control Descriptor	0xAA	170	24	
ES Info	0x02	2	224	MPEG-2 Video
ES Info	0x81	129	368	AC-3 Audio
ES Info	0x81	129	368	AC-3 Audio

Addr...	Hex	ASCII
00000	02 B0 A2 00 01 C9 00 00 E0 31 F0 1D 05 04 47 41	.....1.... GA
00010	39 34 10 06 C0 BD 5B C0 08 00 A3 0A 01 65 6E 67	94....[..... eng
00020	01 00 00 02 48 44 AA 01 FF 02 E0 31 F0 17 02 03	....HD.....1....
00030	22 44 5F 06 01 02 86 0D E2 65 6E 67 7E 3F FF 65	"D_..... eng. ?. e
00040	6E 67 C1 7F FF 81 E0 34 F0 29 05 04 41 43 2D 33	ng.....4)... AC-3
00050	A3 0F 01 65 6E 67 01 00 00 07 61 75 64 69 6F 2D	... eng... audi o-
00060	30 81 0A 08 38 0F FF 0F 01 BF 65 6E 67 0A 04 65	0... 8..... eng. e

- When a specific information table has been clicked, the history is displayed in decoded and byte formats.
- Current table data is displayed in blue while the history is gray.

The screenshot shows the MTSA-PRO interface with the 'Table History' tab selected. The 'Table' list on the left shows various tables, with 'AIT' (Application Information Table) highlighted. The right pane shows the 'AIT - Application Information Table' details, including parameters like Table ID, Section Syntax Indicator, and Section Length. The bottom pane shows the hex and ASCII data for the selected table, with the current data highlighted in blue.

Table	Full Name
PAT	Program Association Table
PMT	Program Map Table
AIT	Application Information Table
MGT	Master Guide Table
TVCT	Terrestrial Virtual Channel Table
RRT	Rating Region Table
EIT	Event Information Table
ETT	Extended Text Table
STT	System Time Table

Parameter	Hex	Value	Bits	Description
AIT - Application Information Table				
Section Header	0x02	2	64	AIT Information
Table ID	0x02	2	8	
Section Syntax Indicator	0x01	1	1	
'0'	0x00	0	1	
Reserved	0x03	3	2	
Section Length	0x00A2	162	12	
Program Number	0x0001	1	16	
Reserved	0x03	3	2	
Version Number	0x04	4	5	
Current Next Indicator	0x01	1	1	Current
Section Number	0x00	0	8	
Last Section Number	0x00	0	8	
Reserved	0x07	7	3	
PCR PID	0x0031	49	13	
Reserved	0x0F	15	4	
Program Info Descriptor Length	0x001D	29	12	
Registration Descriptor	0x05	5	48	
Smoothing Buffer Descriptor	0x10	16	64	
Component Name Descriptor	0xA3	163	96	
Redistribution Control Descriptor	0xAA	170	24	
ES Info	0x02	2	224	MPEG-2 Video
ES Info	0x81	129	368	AC-3 Audio
ES Info	0x81	129	368	AC-3 Audio

Addr...	Hex	ASCII
00000	02 B0 A2 00 01 C9 00 00 E0 31 F0 1D 05 04 47 41	.....1.... GA
00010	39 34 10 06 C0 BD 5B C0 08 00 A3 0A 01 65 6E 67	94....[..... eng
00020	01 00 00 02 48 44 AA 01 FF 02 E0 31 F0 17 02 03	....HD.....1....
00030	22 44 5F 06 01 02 86 0D E2 65 6E 67 7E 3F FF 65	"D_..... eng. ?. e
00040	6E 67 C1 7F FF 81 E0 34 F0 29 05 04 41 43 2D 33	ng.....4)... AC-3
00050	A3 0F 01 65 6E 67 01 00 00 07 61 75 64 69 6F 2D	... eng... audi o-
00060	30 81 0A 08 38 0F FF 0F 01 BF 65 6E 67 0A 04 65	0... 8..... eng. e

Selecting a parameter in the decoded section results in highlighted byte data.

The screenshot displays the MTSA-PRO software interface, which is divided into several panes. The top pane shows a list of services and tables. The middle-left pane shows the selected table (PMT) and its parameters. The middle-right pane shows the decoded data for the selected parameter (Program Number). The bottom pane shows the raw byte data in hexadecimal and ASCII format.

**Services and Tables:**

Table	Full Name
PAT	Program Association Table
PMT	Program Map Table
MGT	Master Guide Table
TVCT	Terrestrial Virtual Channel Table
EIT	Event Information Table
ETT	Extended Text Table
STT	System Time Table

**Table History:**

- [PID:0x0030] Program : 0x0001
  - [Current] Version : 04
    - Section : 000 (1/1)
- [PID:0x0040] Program : 0x0002
  - [Current] Version : 04
    - Section : 000 (1/1)

**Parameter List:**

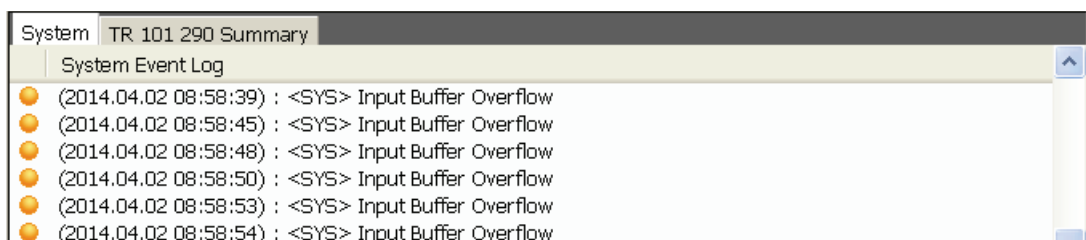
Parameter	Hex	Value	Bits	Description
Section Header	0x02	2	64	PMT Information
Table ID	0x02	2	8	
Section Syntax Indicator	0x01	1	1	
'0'	0x00	0	1	
Reserved	0x03	3	2	
Section Length	0x00A2	162	12	
Program Number	0x0001	1	16	
Reserved	0x03	3	2	
Version Number	0x04	4	5	
Current Next Indicator	0x01	1	1	Current
Section Number	0x00	0	8	
Last Section Number	0x00	0	8	
Reserved	0x07	7	3	
PCR PID	0x0031	49	13	
Reserved	0x0F	15	4	
Program Info Descriptor Length	0x001D	29	12	
Registration Descriptor	0x05	5	48	
Smoothing Buffer Descriptor	0x10	16	64	
Component Name Descriptor	0xA3	163	96	
Redistribution Control Descriptor	0xAA	170	24	
ES Info	0x02	2	224	MPEG-2 Video
ES Info	0x81	129	368	AC-3 Audio
ES Info	0x81	129	368	AC-3 Audio

**Decoded Data (Address 00000 to 000A0):**

Addr...	Hex	ASCII
00000	02 B0 A2 00 01 C9 00 00 E0 31 F0 1D 05 04 47 41	.....1.... GA
00010	39 34 10 06 C0 BD 5B C0 08 00 A3 0A 01 65 6E 67	94....[..... eng
00020	01 00 00 02 48 44 AA 01 FF 02 E0 31 F0 17 02 03	....HD....1....
00030	22 44 5F 06 01 02 86 0D E2 65 6E 67 7E 3F FF 65	"D_....eng.?. e
00040	6E 67 C1 7F FF 81 E0 34 F0 29 05 04 41 43 2D 33	ng....4.)... AC-3
00050	A3 0F 01 65 6E 67 01 00 00 07 61 75 64 69 6F 2D	...eng....audi o-
00060	30 81 0A 08 38 0F FF 0F 01 BF 65 6E 67 0A 04 65	0...8....eng.. e
00070	6E 67 00 81 E0 35 F0 29 05 04 41 43 2D 33 A3 0F	ng...5.)... AC-3..
00080	01 65 6E 67 01 00 00 07 61 75 64 69 6F 2D 31 81	..eng....audi o-1.
00090	0A 08 20 03 FF 2F 01 BF 73 70 61 0A 04 73 70 61	... /... spa... spa
000A0	00 03 14 50 01	... P.

## 4.9 System Message and TR 101 290 Summary Window

The System message and TR 101 290 summary window is divided into System and TR 101 290 Summary tabs.



<'System' Tab >

System shows color-coded operational messages. Operational and stop messages (Green) information table refresh messages (Green), and internal operation warning messages (Orange).

Selecting a parameter in the decoded section results in highlighted byte data.

















	Description	Reason
<Warning> PCR prediction failed	The system cannot carry out PCR data related analysis on input data	Input data
<Warning> [PID] "Name" Update failed	Abnormal data detected during the 'update' process after the table data collection	Input data
<Warning> [PID] "Name" PACKET COLLECTING FAILED	Information table packet collection failure	Input data
<Warning> Clean Unknown PIDs	Deleting any unknown PIDs from the memory when there is too many types of PID	Input data
<Warning> Media Player Packet Loss Occur	Packet Loss occurred during its data transfer to the Media Player while Media Player is in its operation at 'Service View'	PC calculation overflow
<SYS> Input Buffer Overflow	Data not processed. Omitted.	PC calculation overflow

<'TR 101 290 Summary' Tab> TR 101 290 error detection results are presented in a summarized format. For further information see. 'analysis window – TR101290'

TR101290 Priority	# E...	Last Error Time/Pos	Event Detail
<b>Priority 1</b>			
1.1 TS Sync Loss	0		
1.2 Sync Byte Error	0		
1.3 PAT Error	1	2014.05.06 - 13:38:52	PAT Repetition Error [1045 ms]
1.4 Continuity Count Error	124	2014.05.06 - 13:38:57	TS Continuity Counter Error [PID:0x1D16 (15)->(1)]
1.5 PMT Error	2	2014.05.06 - 13:38:53	PMT Repetition Error [Program:0x0001, 1519 ms]
1.6 PID Error			
<b>Priority 2</b>			
2.1 Transport Error	4616	2014.05.06 - 13:38:52	TS Error Indicator Error [PID:0x0031]
2.2 CRC Error	0		
2.3 PCR Repetition Error	7	2014.05.06 - 13:38:52	PCR Repetition Error [Program:0x0001, PCR PID:0x0031, 67 ms]
2.4 PCR Accuracy Error	6	2014.05.06 - 13:38:52	PCR Accuracy Error [Program:0x0001, PCR PID:0x0031, -1455110579 ns]
2.5 PTS Error	5	2014.05.06 - 13:38:52	PTS Repetition Error [Program:0x0001, PID:0x0034, 1280 ms]
2.6 CAT Error			
<b>Priority 3</b>			
3.1 NIT Error			
3.2 SI Repetition Error			
3.3 Buffer Error			
3.4 Unreferenced PID Error	6	2014.05.06 - 13:38:51	Unreferenced PID Error [PID: 0x0825]
3.5 SDT Error			
3.6 EIT Error			
3.7 RST Error			
3.8 TDT Error			
3.9 Empty Buffer Error			
3.10 Data Delay Error			

## 4.10 Operation Status Window

Operation status window shows the summary of overall operation information. Various operating status is shown below.  
Various operating status is shown below.

	Stop	ATSC	FILE Input(1x): \\1127_H13M45_CH2-1_The Bold and the Beautiful.trp	00:00 / 00:42	19,392 Kbps		TR		LOG		REC
	Stop	ATSC	IP Input: udp:\\127.0.0.1:5000	00:00:00:00	0 Kbps		TR		LOG		REC
	Stop	ATSC	TS Input: ASI	00:00:00:00	0 Kbps		TR		LOG		REC
	Play	ATSC	RF Input: 8VSB KOR-T 33 Ch (587 MHz)	00:00:07:59	Locked / MER 32dB / 5dBmV		TR		LOG		REC

Summarized information will be shown in following sequence.

- ① Operation status (Play, Stop, Pause , -current operating status)
- ② Analysis mode (MPEG-2, ATSC, DVB and ISDB)
- ③ Input configuration (input port configuration information)
- ④ Analysis processing time and input status (File/TS/IP input status shows its Bit-rate, whereas RF input shows quality of RF status - Lock, MER (modulation error ratio), RSSI (received signal strength indicator).
- ⑤ TR 101 290 error detection status (Gray – operation disabled, Green- normal , Red –error)
- ⑥ LOG record status (Grey –recording disabled , Green – recording )
- ⑦ TS Recording Status (Grey - recording disabled, Green – recording) (file size and recording time is shown during recording status)



# Extended Warranty Program

## STANDARD TERMS & CONDITIONS OF THE EXTENDED WARRANTY

### A. THE EXTENDED WARRANTY AGREEMENT (EWA)

If during the period following the expiration of the Blonder Tongue Manufacturers' Standard Warranty ( Copy Included) the products which constitute the subject matter of the extended warranty, manifest any manufacturing or similar such defects then Blonder Tongue shall at its option repair or replace the product. It is emphasized that the extended warranty is in effect an extension of the Blonder Tongue Warranty and covers the items stipulated in Paragraph B to the exclusion of the terms in Paragraph C of this agreement. Eligibility to purchase EW is limited to 90 days following initial shipment on selected products of sufficient value.

The product/products included in this extended warranty agreement are listed in the invoice that accompanies the EWA. Term of the extension will be \_\_\_\_\_ year(s). Purchase Order is required for extended warranty coverage.

### B. WHAT IS COVERED?

1. If a product has been determined to have failed, which falls within the Terms & Conditions of this EWA, Blonder Tongue Inc. may at its sole discretion repair, modify or replace its component parts that are defective at 100% coverage for parts and labor.
2. A loaner unit may be available on request; PO required.
3. Product is manufactured by Blonder Tongue.
4. Extended warranty period is up to and not to exceed 24 months and sold in increments of 12 months. Order # 9981 for 1 year and #9982 for 2 year extensions.
5. Return of repair or replaced product shipping costs for ground shipments.
6. Firmware upgrades at no charge with automatic notification.

### C. WHAT IS NOT COVERED?

1. The warranty does not cover any defects caused by foreign objects /connection errors .
2. Use other than by the customer at the declared address appearing in this document.
3. Failure by the end user to comply with the manufacturers' instructions for installation, maintenance or use.
4. The use of accessories which have not been approved by Blonder Tongue.
5. The application and/or use of any incorrect or abnormal electrical supply to the product.
6. Any defect in wiring or electrical connections which does not form part of the product at the time of the original purchase.
7. Neglect, misuse, or willful abuse of the product.
8. Any repairs or attempted repairs of the product by any person other than Blonder Tongue Service Department.
9. Any modification of the product by any person other than Blonder Tongue Service Department.
10. Fire, flood, war, civil disturbance, industrial action, acts of God or any other causes beyond the reasonable control of Blonder Tongue.
11. Any defect caused by lightning strike or power surges.
12. Shipping costs to return products to Blonder Tongue for warranty service.
13. Blonder Tongue will not in any circumstances be liable for any consequential loss or damages suffered by the customer whether directly or indirectly related defect in the product to the extent permissible by law.
14. Repairs may not be effected without prior authorization from Blonder Tongue Laboratories.

### D. GENERAL

1. The customer shall notify Blonder Tongue Laboratories in writing within ten days of any change of his or her address.
2. Customer must provide original ***purchase receipt*** and ***serial number*** to initiate extended warranty coverage.
3. The fee paid for the warranty is not refundable under any circumstances unless cancelled within seven days of purchase.
4. The customer shall take all reasonable precautions to maintain the product is maintained in good working order.
5. The warranty contract ceases to exist if the product is replaced or a credit is given to the customer. Any monies paid for the warranty contract are forfeited and not refundable. This is only applicable when the product is out of the manufacturer's warranty.
6. The extended warranty period as stated on the Extended Warranty Agreement shall be the governing period notwithstanding any additional supplier warranty on specific components.
7. The warranty shall in no way effect the terms and conditions of the sale agreement in terms of which the customer bought the product.
8. The extended warranty is limited to the terms and conditions herein contained
9. No agreement, varying, adding to, amended, deleting, or cancelling this warranty shall be effective unless given in writing (email is acceptable) and signed by or on behalf of both parties.
10. The cost of the extended warranty is 8% of the purchase price for a 1 or 2 year extension beyond the Blonder Tongue standard warranty. e.g. A product price of \$1000 will be \$80 for the 1<sup>st</sup> year (12 mos) and additional \$80 for 2 year (24 mos) extension for a total of \$160.
11. Warranty product return postage paid to: Blonder Tongue Laboratories, Inc.

Attn: Warranty Service Dept.  
1 Jake Brown Road  
Old Bridge, NJ 08857

**Contact Blonder Tongue at 800-523-6049 ext. 555 to order extended warranty service.**

# Limited Warranty

Seller will at its sole option, either repair or replace (with a new or factory reconditioned product, as Seller may determine) any product manufactured or sold (or in the case of software, licensed) by Seller which is defective in materials or workmanship or fails to meet the applicable specifications that are in effect on the date of shipment or such other specifications as may have been expressly agreed upon in writing: (i) for a period of three (3) years from the date of original purchase for all stock hardware products (other than those specifically referenced herein below having a shorter warranty period); (ii) for a period of one (1) year from the date of original purchase, with respect to all MegaPort™, IPTV products, test equipment and fiber optics receivers, transmitters, couplers and integrated receiver/distribution amplifiers; (iii) for a period of one (1) year from the date of original purchase (or such shorter period of time as may be set forth in the license agreement specific to the particular software being licensed from Seller) with respect to all software products licensed from Seller (other than Core Product Software) that is (a) developed for a specific function or application, (b) complimentary to and does not function without the Core Product Software, and (c) listed with a specific model number and stock number in Seller's Price List ("**Non-Core Software**"); (iv) for a period of ninety (90) days from the date of original purchase, with respect to non-serialized products and accessories, such as parts, sub-assemblies, splitters and all other products sold by Seller (other than Core Product Software and Refurbished/Closeout Products) not otherwise referred to in clauses (i) through (iii) above. The warranty period for computer programs in machine-readable form included in a hardware product, which are essential for the functionality thereof as specifically stated in the published product specifications ("**Core Product Software**") will be coincident with the warranty period of the applicable hardware product within which such Core Product Software is installed.

Software patches, bug fixes, updates or workarounds do not extend the original warranty period of any Core Product Software or Non-Core Software.

Notwithstanding anything herein to the contrary,

(i) Seller's sole obligation for software that when properly installed and used does not substantially conform to the published specifications in effect when the software is first shipped by Seller, is to use commercially reasonable efforts to correct any reproducible material non-conformity (as determined by Seller in its sole discretion) by providing the customer with: (a) telephone or e-mail access to report non-conformance so that Seller can verify reproducibility, (b) a software patch or bug fix, if available or a workaround to bypass the issue if available, and (c) where applicable, replacement or damaged or defective external media, such as CD-ROM disk, on which the software was originally delivered;

(ii) Seller does not warrant that the use of any software will be uninterrupted, error-free, free of security vulnerabilities or that the software will meet the customer's particular requirements; and the customer's sole and exclusive remedy for breach of this warranty is, at Seller's option, to receive (a) suitably modified software, or part thereof, or (b) comparable replacement software or part thereof;

(iii) Seller retains all right, title and interest in and to and ownership of all software (including all Core Product Software and Non-Core Software) including any and all enhancements, modifications and updates to the same; and

(iv) in some cases, the warranty on certain proprietary sub-assembly modules manufactured by third-party vendors and contained in Seller's products, third party software installed in certain of Seller's products, and on certain private-label products manufactured by third-parties for resale by Seller, will be of shorter duration or otherwise more limited than the standard Seller limited warranty. In such cases, Seller's warranty with respect to such third-party proprietary sub-assembly modules, third-party software and private-label products will be limited to the duration and other terms of such third-party vendor's warranty, if any. In addition, certain products, that are not manufactured by Seller, but are resold by Seller, may carry the original OEM warranty for such products, if any. The limited warranty set forth above does not apply to any product sold by Seller, which at the time of sale constituted a Refurbished/Closeout Product, the limited warranty for which is provided in the following paragraph.

Seller will at its sole option, either repair or replace (with a new or factory-reconditioned product, as Seller may determine) any product sold by Seller which at the time of sale constituted a refurbished or closeout item ("**Refurbished/Closeout Product**"), which is defective in materials or workmanship or fails to meet the applicable specifications that are in effect on the date of shipment of that product or fails to meet such other specifications as may have been expressly agreed upon in writing between the parties, for a period of ninety (90) days from the date of original purchase. Notwithstanding the foregoing, in some cases the warranty on certain proprietary sub-assembly modules manufactured by third-party vendors and contained in Seller products, third party software installed in certain of Seller's products, and on certain private-label products manufactured by third-parties for resale by Seller will be of shorter duration or otherwise more limited than Seller limited warranty for Refurbished/Closeout Products. In such cases, Seller's warranty for Refurbished/Closeout Products constituting such third party proprietary sub-assembly modules, third party software, and private-label products will be limited to the duration and other terms of such third-party vendor's warranty, if any. In addition, notwithstanding the foregoing, (i) certain Refurbished/Closeout Products that are not manufactured (but are resold) by Seller, may carry the original OEM warranty for such products, if any, which may be longer or shorter than Seller's limited warranty for Refurbished/Closeout Products. All sales of Refurbished/Closeout Products are final.

To obtain service under this warranty, the defective product, together with a copy of the sales receipt, serial number if applicable, or other satisfactory proof of purchase and a brief description of the defect, must be shipped freight prepaid to Seller at the following address: One Jake Brown Road, Old Bridge, New Jersey 08857.

This warranty does not cover failure of performance or damage resulting from (i) use or installation other than in strict accordance with manufacturer's written instructions, (ii) disassembly or repair by someone other than the manufacturer or a manufacturer-authorized repair center, (iii) misuse, misapplication or abuse, (iv) alteration, (v) exposure to unusual physical or electrical stress, abuse or accident or forces or exposure beyond normal use within specified operational or environmental parameters set forth in applicable product specifications, (vi) lack of reasonable care or (vii) wind, ice, snow, rain, lightning, or any other weather conditions or acts of God.

OTHER THAN THE WARRANTIES SET FORTH ABOVE, SELLER MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND, EXPRESS OR IMPLIED, AS TO THE CONDITION, DESCRIPTION, FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR AS TO ANY OTHER MATTER, AND SUCH WARRANTIES SET FORTH ABOVE SUPERSEDE ANY ORAL OR WRITTEN WARRANTIES OR REPRESENTATIONS MADE OR IMPLIED BY SELLER OR BY ANY OF SELLER'S EMPLOYEES OR REPRESENTATIVES, OR IN ANY OF SELLER'S BROCHURES MANUALS, CATALOGS, LITERATURE OR OTHER MATERIALS. IN ALL CASES, BUYER'S SOLE AND EXCLUSIVE REMEDY AND SELLER'S SOLE OBLIGATION FOR ANY BREACH OF THE WARRANTIES CONTAINED HEREIN SHALL BE LIMITED TO THE REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT F.O.B. SHIPPING POINT, AS SELLER IN ITS SOLE DISCRETION SHALL DETERMINE. SELLER SHALL IN NO EVENT AND UNDER NO CIRCUMSTANCES BE LIABLE OR RESPONSIBLE FOR ANY CONSEQUENTIAL, INDIRECT, INCIDENTAL, PUNITIVE, DIRECT OR SPECIAL DAMAGES BASED UPON BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT TORT LIABILITY OR OTHERWISE OR ANY OTHER LEGAL THEORY, ARISING DIRECTLY OR INDIRECTLY FROM THE SALE, USE, INSTALLATION OR FAILURE OF ANY PRODUCT ACQUIRED BY BUYER FROM SELLER.

All claims for shortages, defects, and non-conforming goods must be made by the customer in writing within five (5) days of receipt of merchandise, which writing shall state with particularity all material facts concerning the claim then known to the customer. Upon any such claim, the customer shall hold the goods complained of intact and duly protected, for a period of up to sixty (60) days. Upon the request of Seller, the customer shall ship such allegedly non-conforming or defective goods, freight prepaid to Seller for examination by Seller's inspection department and verification of the defect. Seller, at its option, will either repair, replace or issue a credit for products determined to be defective. Seller's liability and responsibility for defective products is specifically limited to the defective item or to credit towards the original billing. All such replacements by Seller shall be made free of charge f.o.b. the delivery point called for in the original order. Products for which replacement has been made under the provisions of this clause shall become the property of Seller. Under no circumstances are products to be returned to Seller without Seller's prior written authorization. Seller reserves the right to scrap any unauthorized returns on a no-credit basis. Any actions for breach of a contract of sale between Seller and a customer must be commenced by the customer within thirteen (13) months after the cause of action has accrued. A copy of Seller's standard terms and conditions of sale, including the limited warranty, is available from Seller upon request. Copies of the limited warranties covering third-party proprietary sub-assembly modules and private-label products manufactured by third-parties may also be available from Seller on request. (Rev 0713)



One Jake Brown Road  
Old Bridge, NJ 08857-1000 USA  
732-679-4000 • Fax 732-679-4353  
[www.blondertongue.com](http://www.blondertongue.com)