ANYWAVE


# MSP

# Multi-Stream Processor

# User Manual

Version 1.6

TSP-EAS-1

May 10, 2017

# Copyright Notice

Copyright © Anywave Communication Technologies, Inc. 2015, All rights reserved.
No part of this publication may be reproduced, translated, transcribed, stored in a retrieval system, or transmitted into any form or by any means, without the express written permission of Anywave Communication Technologies, Inc.

# Disclaimer

Information provided by Anywave Communication Technologies is believed to be accurate and complete; however, no liability can be assumed for its use. The information contained in this publication is subject to change without notice.

Anywave Communication Technologies Inc.
300 Knightsbridge Parkway, Suite 150, Lincolnshire, IL 60069
Tel: +1 (847) 415-2258
Fax: +1 (847) 415-2112
http://www.anywavecom.com/en/

# Contents

# 1 Product Appearance

## 1.1 Front Panel


LCD:

40×2 LCD with power saving backlight

6 Buttons:

Left, Right, Up, Down, OK, ESC

6 LEDs:

IN1: When illuminated, CVBS IN1 or SDI IN1 is connected. When flashing, EAS is triggered.

IN2: When illuminated, CVBS IN2 or SDI IN2 is connected. When flashing, EAS is triggered.

IN3: When illuminated, CVBS IN3 or SDI IN3 is connected. When flashing, EAS is triggered.

IN4: When illuminated, CVBS IN4 or SDI IN4 is connected. When flashing, EAS is triggered.

STAT: Constant on indicates no PSIP data detected when under dynamic PSIP mode. Flashing indicates PSIP overflow.

ERR: Constant on indicates there is no ASI input detected. Flashing indicates the output TS overflow.

1 RJ45 connector:

PSIP: RJ45 port for remote control of Dynamic PSIP module and PSIP service data ingestion.

## 1.2 Back Panel

| | |
|---|---|
| SDI IN 1: | Serial digital interface input #1 |
| SDI IN 2: | Serial digital interface input #2 |
| SDI IN 3: | Serial digital interface input #3 |
| SDI IN 4: | Serial digital interface input #4 |
| CVBS 1: | Composite video and stereo audio input #1 |
| CVBS 2: | Composite video and stereo audio input #2 |
| CVBS 3: | Composite video and stereo audio input #3 |
| CVBS 4: | Composite video and stereo audio input #4 |
| SDI OUT 1: | Serial digital interface output #1 |
| SDI OUT 2: | Serial digital interface output #2 |
| SDI OUT 3: | Serial digital interface output #3 |
| SDI OUT 4: | Serial digital interface output #4 |
| EAS IN: | Composite video and stereo audio input for EAS signal |
| EAS LOOP OUT: | Loop out of EAS IN |
| EAS CTRL IN: | EAS trigger control input |
| EAS CTRL OUT: | Loop out of EAS CTRL IN |
| ASI IN 1: | ASI input #1 |
| ASI IN 2: | ASI input #2 |
| ASI IN 3: | ASI input #3 |
| ASI IN 4: | ASI input #4 |
| ASI OUT 1: | ASI output #1 |
| ASI OUT 2: | ASI output #2, repeated output of ASI OUT 1 |
| REMOTE: | RJ45 port for remote management |

# 2 Operation Specifications

- Environment
  - Operating Temperature: -10 ~ 50 ºC
  - Operating Humidity: ≤ 95%
  - Atmospheric Pressure: 86 kPa ~ 106 kPa
- Power Supply
  - Voltage: 88 ~ 264 VAC
  - Frequency: 50 / 60 Hz
- Inputs/Outputs
  - CVBS IN 1/2/3/4 Composite video(yellow) and stereo audio(white and red)
    - Connector: RCA female
    - Impedance: 75 Ω
    - Location: Back Panel
  - SDI IN 1/2/3/4 HD/SD Serial digital interface for uncompressed digital video/audio
    - Connector: BNC female
    - Impedance: 75 Ω
    - Location: Back Panel
  - SDI OUT 1/2/3/4 Serial digital interface for uncompressed digital video/audio
    - Connector: BNC female
    - Impedance: 75 Ω
    - Location: Back Panel
  - EAS IN Composite video/audio for EAS input
    - Connector: RCA female
    - Impedance: 75 Ω
    - Location: Back Panel
  - EAS OUT (loop out of EAS IN )
    - Connector: RCA female
    - Impedance: 75 Ω
    - Location: Back Panel
  - EAS CTRL IN EAS trigger control
    - Connector: 6-pin slot
    - Voltage: 5 VDC
    - Location: Back Panel
  - EAS CTRL OUT (loop out of EAS CTRL IN)
    - Connector: 6-pin slot
    - Location: Back Panel
  - ASI IN 1/2/3/4
    - Connector: BNC female
    - Impedance: 75 Ω
    - Level: See Table 1

- Location: Back Panel

■ ASI OUT 1/2

- Connector: BNC female
- Impedance: 75 Ω
- Location: Back Panel

Table 1 ASI Input Specifications

| No | Content | Unit | Value |
|---|---|---|---|
| 1 | Input Level | mv | ≥ 200 |
| 2 | Positive Transition (20%~80%) | ps | ≤ 1200 |
| 3 | Negative Transition (20%~80%) | ps | ≤ 1200 |
| 4 | Deterministic Jitter | % | ≤ 10 |
| 5 | Random Jitter | % | ≤ 8 |

Note

1) The electrical interface characteristics are measured under normal conditions. Values may vary.
2) Operating in abnormal conditions may result in damage to the equipment. Long operating hours in severe environments may reduce the reliability of the entire system, which may cause permanent damage to equipment. Make sure all electrical interface characteristics and environmental parameters are within the defined range listed above before operating this equipment.

# 3 Menu

## 3.1 Initialization

Connect the power supply of the unit and then turn on the MSP via the power switch located on the rear panel. The initialization process takes about 10 seconds to finish for the main unit and about 30 seconds to finish for the (optional) dynamic PSIP module.

The MSP incorporates a Dynamic PSIP Generator and Inserter, has 4 HD/SD SDI inputs, converts and switches 4 CVBS inputs into 4 SDI outputs, supports 4 ASI inputs into an onboard Multiplexor with program cherry-picking into 2 ASI outputs, and manages EAS control signals and switching. The module provides manual switching between the 4 incoming SDI inputs and 4 converted SDI signals from CVBS sources, with automatic EAS switching of EAS signal, which overrides all manual settings when an EAS trigger occurs.

The first step after turning on the unit is to confirm the desired input source (for video/audio, ASI in, PSIP etc.). Please see Table 2~5 below for details.

## 3.2 Query Mode

Query mode is a mode which displays parameters and status of the MSP. There are five pages in query mode. Press the "Right" or "Left" button to switch between different pages which are shown in Table 2 through 6 below.

Note: The settings shown in the tables below are for illustration purposes only and may be different from those in actual use.

Table 2 First Page in Query Mode

| ASIIN1 | ASIIN2 | ASIIN3 | ASIIN4 |
|---|---|---|---|
| 19.390/4 | 10.000/2 | N/A | N/A |

Table 3 Second Page in Query Mode

| ASIOUT1 | ASIOUT2 | PSIP | STATUS |
|---|---|---|---|
| 4.600/2 | 4.600/2 | Dynamic | OK |

Table 4 Third Page in Query Mode

| CVBS1 | CVBS2 | CVBS3 | CVBS4 |
|---|---|---|---|
| OK | ERR | OK | ERR |

Table 5 Fourth Page in Query Mode

| SDIIN1 | SDIIN2 | SDIIN3 | SDIIN4 |
|---|---|---|---|
| OK | ERR | OK | ERR |

Table 6 Fifth Page in Query Mode

| SDIOUT1 | SDOUT2 | SDIOUT3 | SDIOUT4 | SOURCE |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| OK | ERR | OK | ERR | CVBS |

Note:

1) The “ASIIN” in **Error! Reference source not found.** shows the status of the ASI input. If no TS is etected and locked in the ASI input, the status shows “N/A”, if TS is detected and locked in the ASI input, the status will alternate between the TS actual rate(Mb/s) and the number of programs in the TS.

2) The “ASIOUT” in **Error! Reference source not found.**3 shows the status of the ASI output. If no TS s present in the ASI output, the status shows “N/A”, if TS is present in the ASI output, the status will alternate between the TS’s payload rate(Mb/s) and the number of programs in the TS.

3) The “PSIP” in Table 3 shows where the PSIP data comes from, “Static” means using the MUX’s built in static PSIP, “Dynamic” means PSIP data comes from the Dynamic PSIP module, “Disable” means PSIP insertion is disabled. “STATUS” only takes effect when the PSIP data source is “Dynamic”, “OK” means the PSIP data is detected and inserted by MUX, “ERR” means no PSIP data detected

The "CVBS" status in

| ASIOUT1 | ASIOUT2 | PSIP | STATUS |
|---|---|---|---|
| 4.600/2 | 4.600/2 | Dynamic | OK |

4) Table 4 indicates if the composite video signal is detected at the corresponding CVBS input. “OK” means signal detected, “ERR” means no signal detected.

The "SDIIN" status in

| ASIOUT1 | ASIOUT2 | PSIP | STATUS |
|---|---|---|---|
| 4.600/2 | 4.600/2 | Dynamic | OK |

5) Table 45 indicates if signal is detected at the corresponding SDI input. “OK” means signal detected, “ERR” means no signal detected.

6) The “SDIOUT” status in Table 6 indicates if the particular SDI output is active. “OK” means active, “ERR” means inactive

7) The “SOURCE” in Table 6 shows where the SDI output signal source comes from, “CVBS” means it’s converted from CVBS input, “SDI” means it’s from SDI input, “EAS” means it’s from EAS signal

## 3.3 User Menu

In Control mode, the user may modify configuration settings of the MSP. There are two levels of control, the User Menu and the Advanced Menu. To enter the User Menu, press ***both*** the "Left" and "Right" buttons ***at the same time*** while in query mode. The User Menu in control mode is shown below in Table 7. In the next section we will present the Advanced Menu.

Table 7 Main Menu

| Welcome to setting interface! | | | |
|---|---|---|---|
| *MUX_IN | MUX_OUT | SDI_OUT | CONFIG |

The Main User Menu consists of 5 sub-menus: MUX_IN, MUX_OUT, SDI_OUT, CONFIG and PSIP.

Once at the main menu, press the "Left" or "Right" buttons to move the cursor and navigate to the desired sub-menu. Once the cursor is positioned just above the desired sub-menu, press the "OK" button to enter the target sub-menu. When in the corresponding sub-menu, press "Left" or "Right" button to move the cursor to the target parameter and then press the "Up" or "Down" buttons to select different options from the drop-down boxes. Once you have selected the desired option, ***press the "OK" button to apply and save, or press the "ESC" button to skip the changes and return to the upper menu.***

All the parameters of sub-menus are shown in Tables 8 through Table 13 respectively.

Table 8 MUX_IN Menu

| | *ASI_IN1 | ASI_IN2 | ASI_IN3 | ASI_in4 |
|---|---|---|---|---|

Press “OK” to enter ASI_IN sub-menu

Table 9 ASI_IN sub-menu

| | *Channel | Sht_name | Maj_num | Min_num |
|---|---|---|---|---|
| Default | 1 | AW-TV1 | 005 | 001 |
| Options | 1 | AW-TV1 | 005 | 001 |
| | 2 | AT-TV2 | 005 | 002 |
| | … | … | … | … |

Note:

1) The MUX_IN menu provides ASI input stream status only. The ASI_IN sub-menu displays the program information found in the particular ASI input. “Channel” displays the program number, use the “Up” or “Down” buttons to browse the entire program list. “Sht_name” displays the short name, “Maj_num” displays the major channel number, and “Min_num” displays the minor channel number. This status information is only available when valid PSIP information is present in the ASI input TS.

2) If there is no TS detected and locked on a particular ASI input, ASI_IN sub menu will show “NULL”

Table 10 MUX_OUT Menu

| | CTRL | PSIP_BW | TS_RATE | PROGRAM |
|---|---|---|---|---|
| Default | Static | 500kb | 19.390Mb | (see PROGRAM sub-menu) |
| Options | Static | | | |
| | Dynamic | | | |
| | Disable | | | |

Note:

1) The CTRL parameter sets the PSIP source, option “Static” means insert PSIP using MUX’s built-in static PSIP, “Dynamic” means insert PSIP from Dynamic PSIP module, “Disable” means disable PSIP insertion.
2) PSIP_BW parameter specifies the PSIP overhead bandwidth in output TS.
3) TS_RATE parameter specifies the output TS rate.

Table 11 PROGRAM Sub-Menu

| | Channel | Sht_Name | Maj_Num | Min_Num |
|---|---|---|---|---|
| Default | 1 | AW-TV1 | 05 | 001 |
| Options | 1 | AW-TV1 | 05 | 001 |
| | 2 | AW_TV2 | 05 | 002 |
| | … | … | … | … |

Note:

1) The PROGRAM Sub menu specifies the static PSIP information of the output TS, these settings only take effect when “CTRL” is set to “Static”.
2) Move cursor to “Channel” and press “UP” or “DOWN” button to browse program list.
3) Move cursor to “Sht_Name”, “Maj_Num” and “Min_Num” and then press “UP” or “DOWN” to select the desired alpha-numeric character.

Table 12 SDI_OUT Menu

| | *SOURCE1 | SOURCE2 | SOURCE3 | SOURCE4 |
|---|---|---|---|---|
| Default Value | AUTO | AUTO | AUTO | AUTO |
| Options/Values | AUTO | AUTO | AUTO | AUTO |
| | CVBS | CVBS | CVBS | CVBS |
| | SDI | SDI | SDI | SDI |
| | EAS | EAS | EAS | EAS |

Note:

1) "SOURCE#" selects where the source of each SDI_OUT comes from, they can be configured separately.

2) If select option “AUTO”, MSP will first search signals from CVBS input and convert to SDI output, if no signal detected, MSP will then search signals from SDI input and convert to SDI output.
3) If select option “CVBS”, MSP will always search signals from CVBS input and ignore signal from SDI input.
4) If select option “SDI”, MSP will always search signal from SDI input and ignore signal from SDI input.
5) When EAS signal is triggered, SDI output will switch to EAS signal as source.
6) If select option “EAS”, SDI output will always use EAS signal as the source of SDI output.

Table 13 CONFIG Menu

| | IP | GATEWAY | MASK | UPGRADE | VER |
|---|---|---|---|---|---|
| Default | 192.168.001.190 | 192.168.001.001 | 255.255.255.000 | NO | |
| Options | ***.***.***.*** | ***.***.***.*** | ***.***.***.*** | NO | |
| | | | | YES | |
| | | | | | |

Note:

1) "IP", "GATEWAY", and "MASK" are used to establish a valid Ethernet connection for remote control via the REMOTE RJ45 located on the rear panel. The MSP has a control GUI program that is running on Windows PC. Simply by connecting the PC to MSP and invoke the control program, you can configure the MSP remotely.
2) "UPGRADE" is a reserved mode to perform an upgrade of the code inside the MSP unit.
3) “VER” shows the information of MSP’s current version.

## 3.4 Advanced Menu

To enter the Advanced Menu, first enter the User Menu by pressing both the ***"Left" and "Right"*** buttons at the same time to arrive at the menu shown below.

Table 14 User Menu

| Welcome to setting interface! | | | |
|---|---|---|---|
| *MUX_IN | MUX_OUT | SDI_OUT | CONFIG |

Then, press both the ***"Up" and "Down"*** buttons at the same to enter Advanced Menu, as shown below.

Table 15 Advanced User Menu

| Welcome to advanced interface! | | | | | |
|---|---|---|---|---|---|
| *SN | PSIP | | | | |

Table 16 shows the corresponding sub-menus.

Table 16 SN Menu

| | SN | PSIP_KEY | MAC |
|---|---|---|---|
| Default | 9999999999999 | FFFFFFFF | 999999999999 |

Note:

1) "SN" shows the serial number of this unit.
2) "PSIP_KEY", MSP needs a valid KEY to enable static PSIP feature, please contact Anywave to obtain a valid KEY.
3) “MAC” shows the mac address of the RJ45 management port.

Table 17 PSIP Menu

| | IP | GATEWAY | MASK |
|---|---|---|---|
| Default | 192.168.225.191 | 192.168.225.001 | 255.255.255.000 |
| Options | ***.***.***.*** | ***.***.***.*** | ***.***.***.*** |
| | | | |

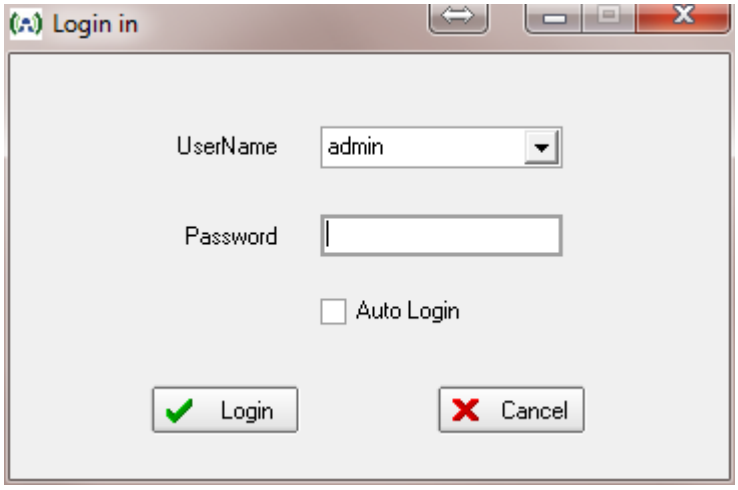
Note:

4) MSP takes dynamic PSIP data from dynamic PSIP module via the internal Ethernet port, those settings are only for debug purpose.
5) DO NOT change the values in PSIP Menu.

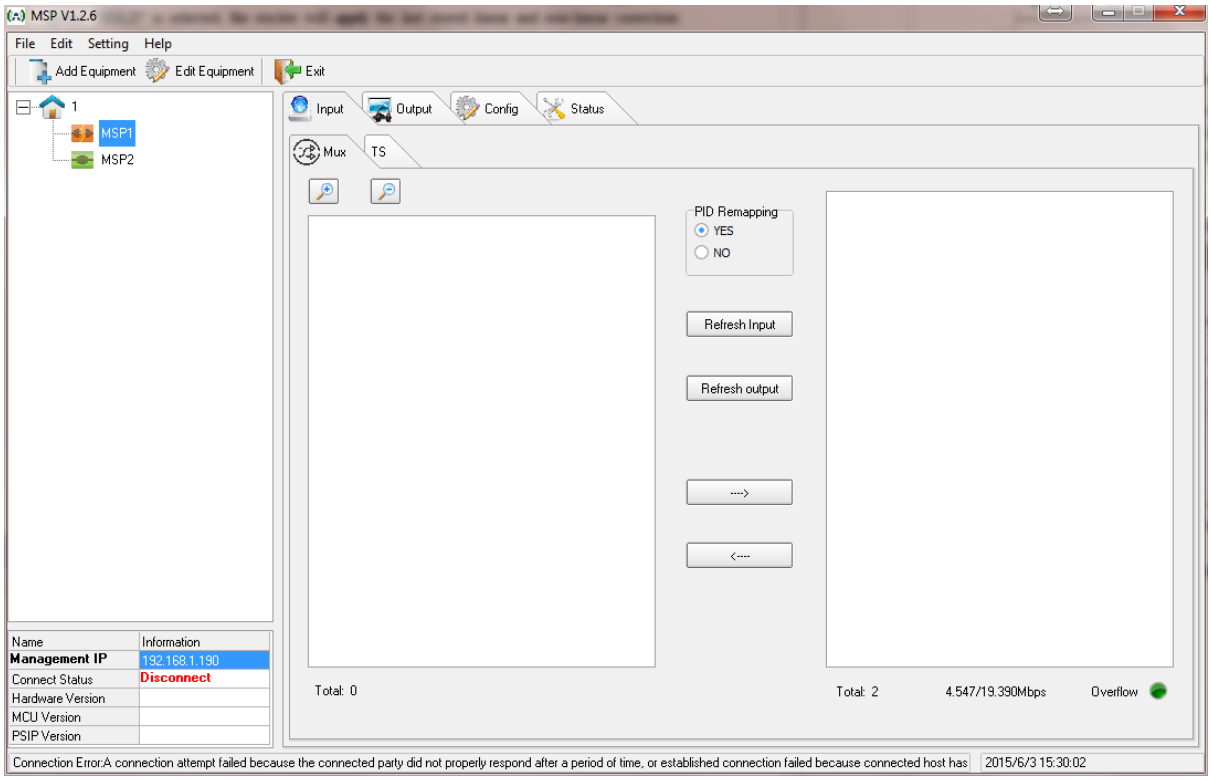
## 3.4 Management GUI Software

The MSP uses a Management software interface to accommodate remote control and monitoring via the rear port REMOTE RJ-45 connection. Once you network the MSP with your PC and login to the interface, you can configuration and monitor the status of the MSP via the Management software. The Management software can configure multiple units within the same program, the default IP of the MSP is 192.168.1.190.

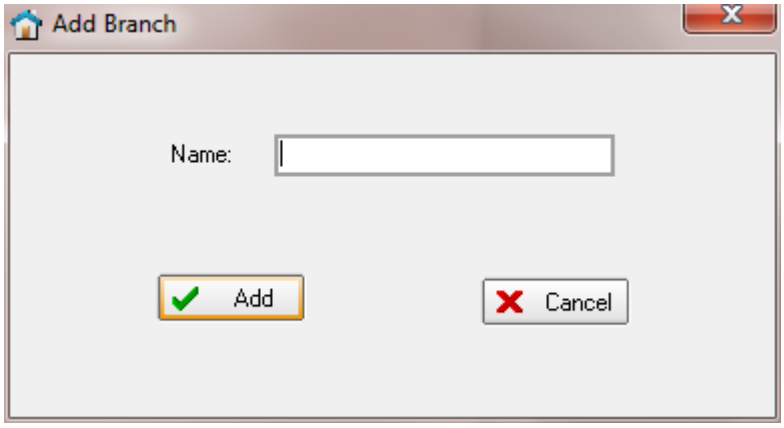
Click the executable “msp_GUI Vx.x.x.exe” to launch the program (Note this executable is only Windows compatible), you will see the login window.



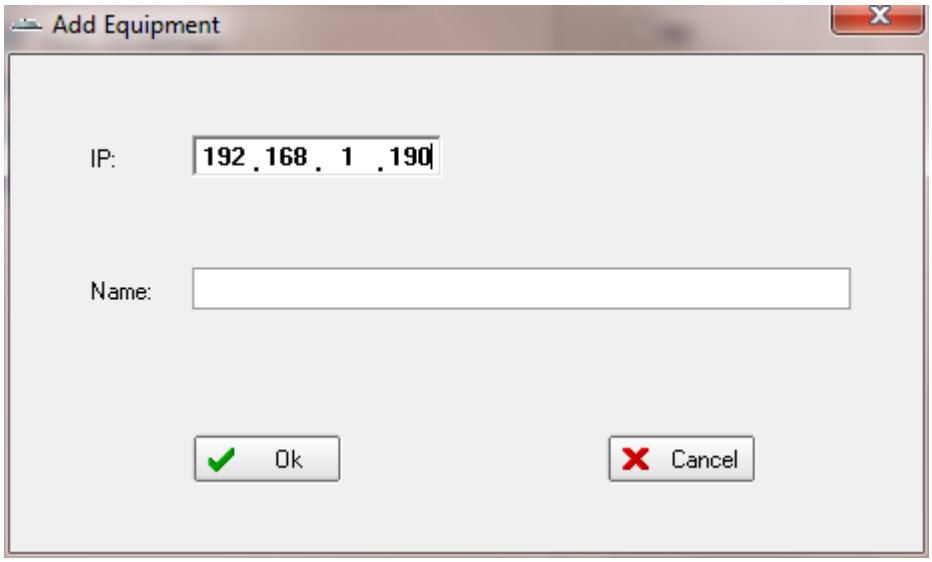

Enter UserName: admin and Password: admin and click “Login” to enter the main screen




Click “Edit” -> “Add Branch” to add a Branch




Click the branch you created and click “Edit” -> “Add Equipment” to add a MSP

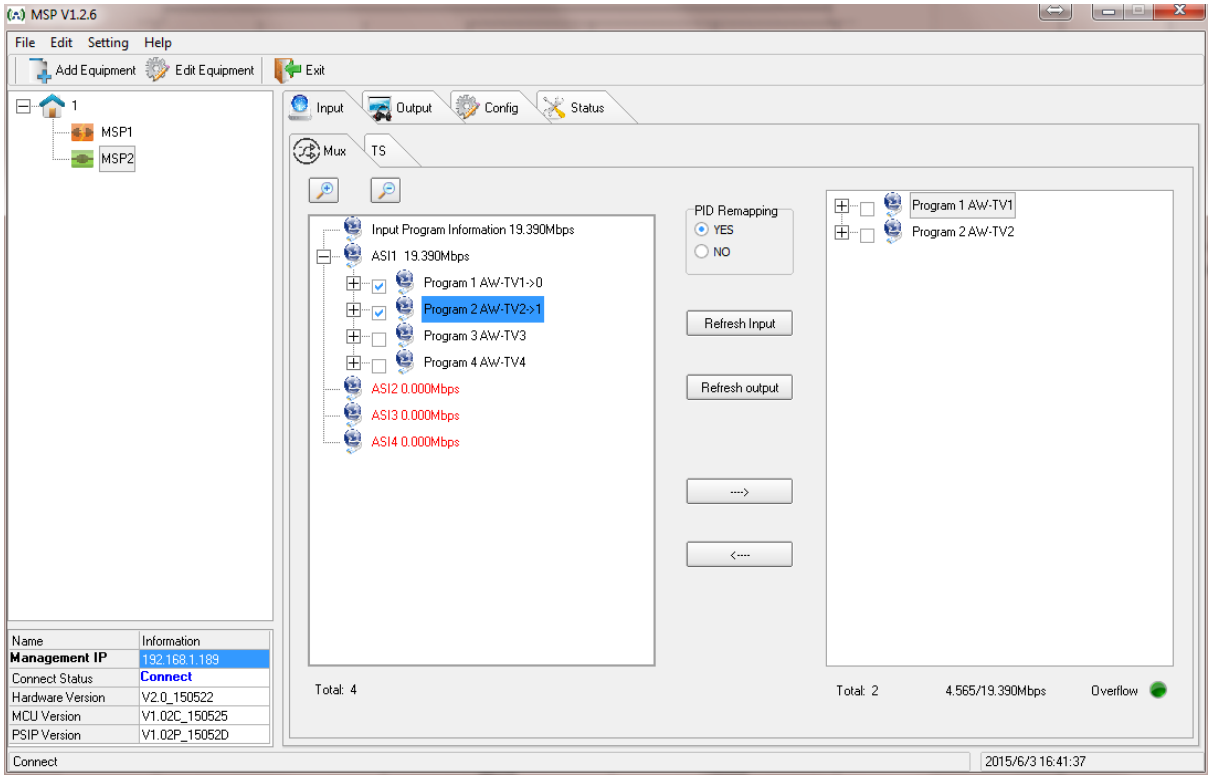



Click on the MSP name created to start configuration and view the status of this particular MSP.

There are 4 tabs across the left top of the window:

- Input: Configure the multiplexor, select programs, change PID, edit static PSIP, etc.
- Output: Configure the TS rate, PSIP source, and source of SDI output
- Config: Change the network settings
- Status: View the status of the MSP

## Input

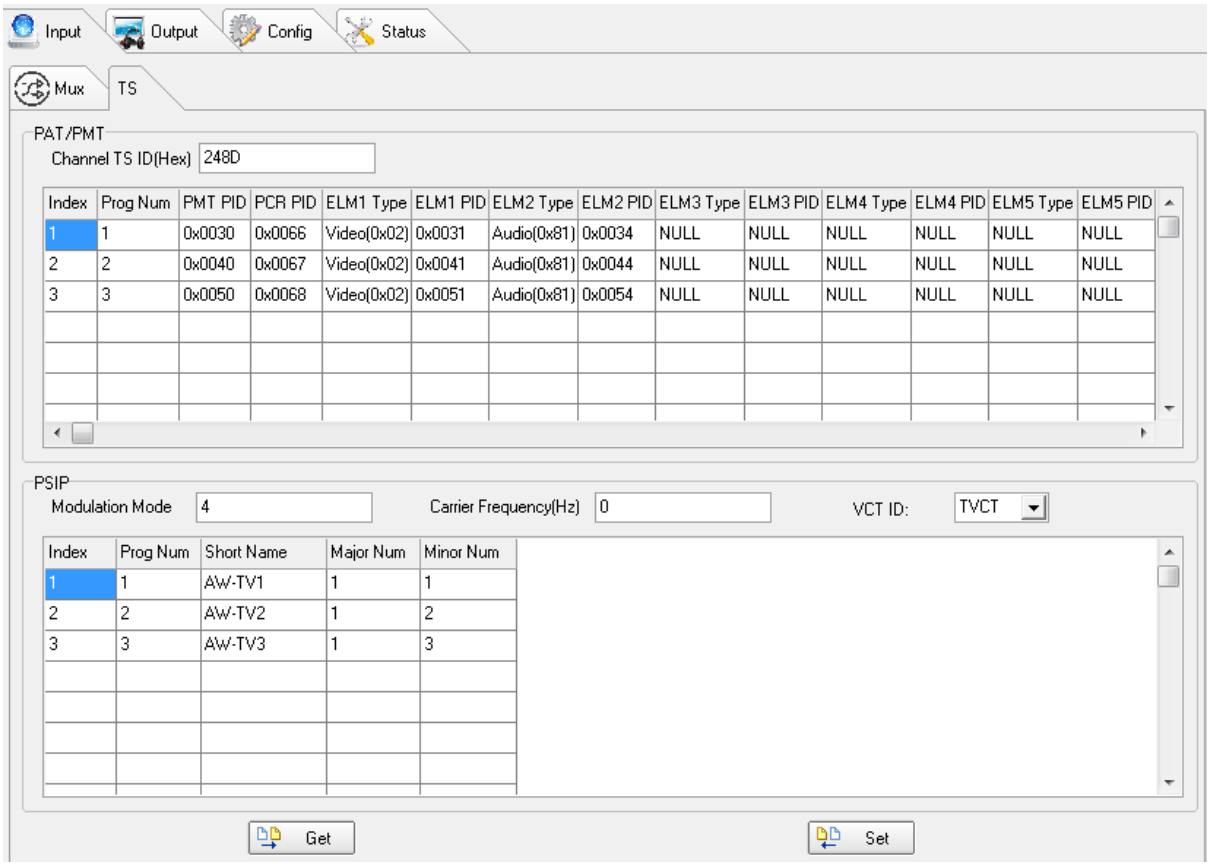


There are 2 sub-tabs under Input: MUX and TS.

- MUX
  After any of the 4 ASI inputs are connected and a valid TS is present, you can choose (cherry pick) which programs are to be multiplexed into the output ASI TS, MSP supports up to 8 programs to be selected into the output ASI TS.
  - "PID Remapping"
    Choose if to do PID remapping during multiplexing, default value is YES
  - "Refresh Input"
    Click to refresh the ASI input status, click this button when ASI input connection change.
  - "Refresh output"
    Click to refresh the ASI output status
  - "---→"
    You can expand the treeview to browse the programs of the 4 ASI inputs (the left window), check the boxes of the programs you want multiplexed into the output ASI TS, and then click this right arrow button to add these programs into the output TS.
  - "←----"
    Check the boxes of the programs in the left window and click this left arrow button to remove them from output TS.

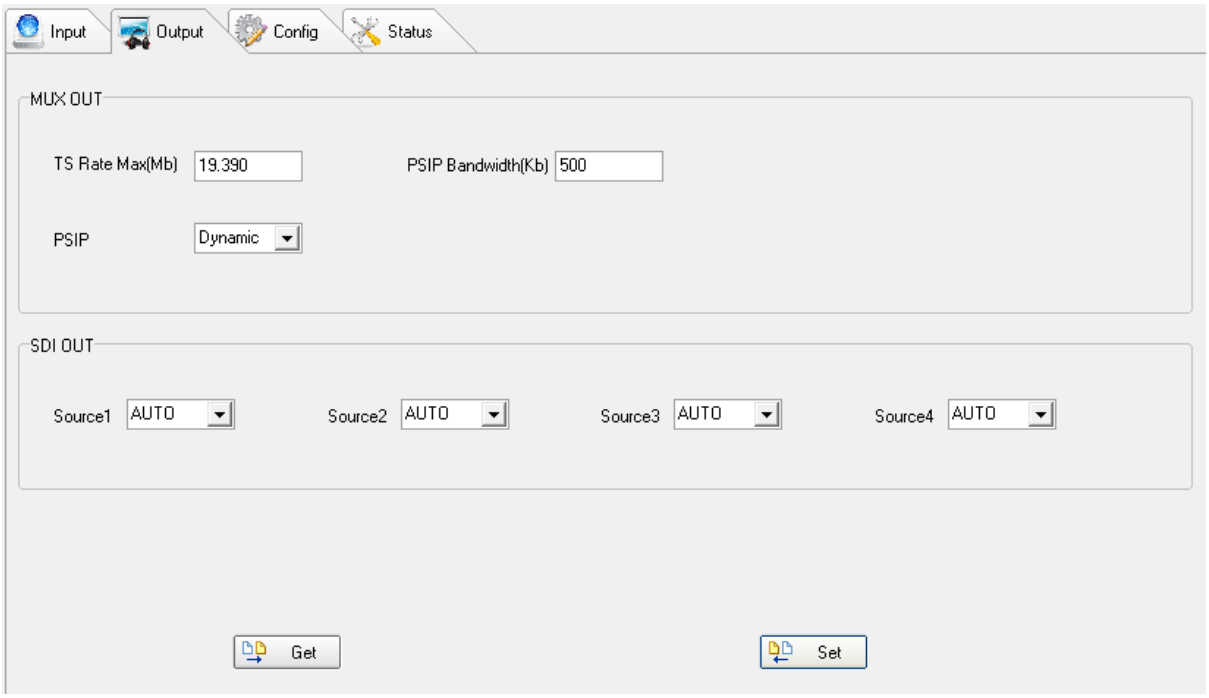
On the bottom of the right window, you can see how many programs have been selected for the output TS multiplex, and the payload/TS rate of output TS. Also there is a TS output overflow indicator.

- TS




  - In “PAT/PMT” table, you can define the program_number (Prog Num), PCR_PID, and element_PID (ELM PID) by double clicking the entry of each stream.
    - Either hex (start with 0x) or decimal are allowed for entering of PIDs.
    - When PCR PID share the same PID as the element_PID, PCR PID could not be modified.
    - element_TYPE (ELM Type) could not be modified.
    - User could modify the element stream PID (ELM PID) of the corresponding element TYPE (ELM Type), the allowed range for ELM PID is 1 ~ 0x1ff0.
  - “PSIP” table is only valid when you select PSIP source as “Static” in “Output” tab
  - In “PSIP” table, you can define the Modulation Mode value, Carrier Frequency, VCT ID (TVCT or CVCT). You can also edit short_name (Short Name), major_channel_num (Major Num) and minor_channel_num (Minor Num) for each of the programs
  - “Set” → Click “Set” to save the setting to MSP
  - “Get” → Click “Get” to get MSP’s current setting

## Output



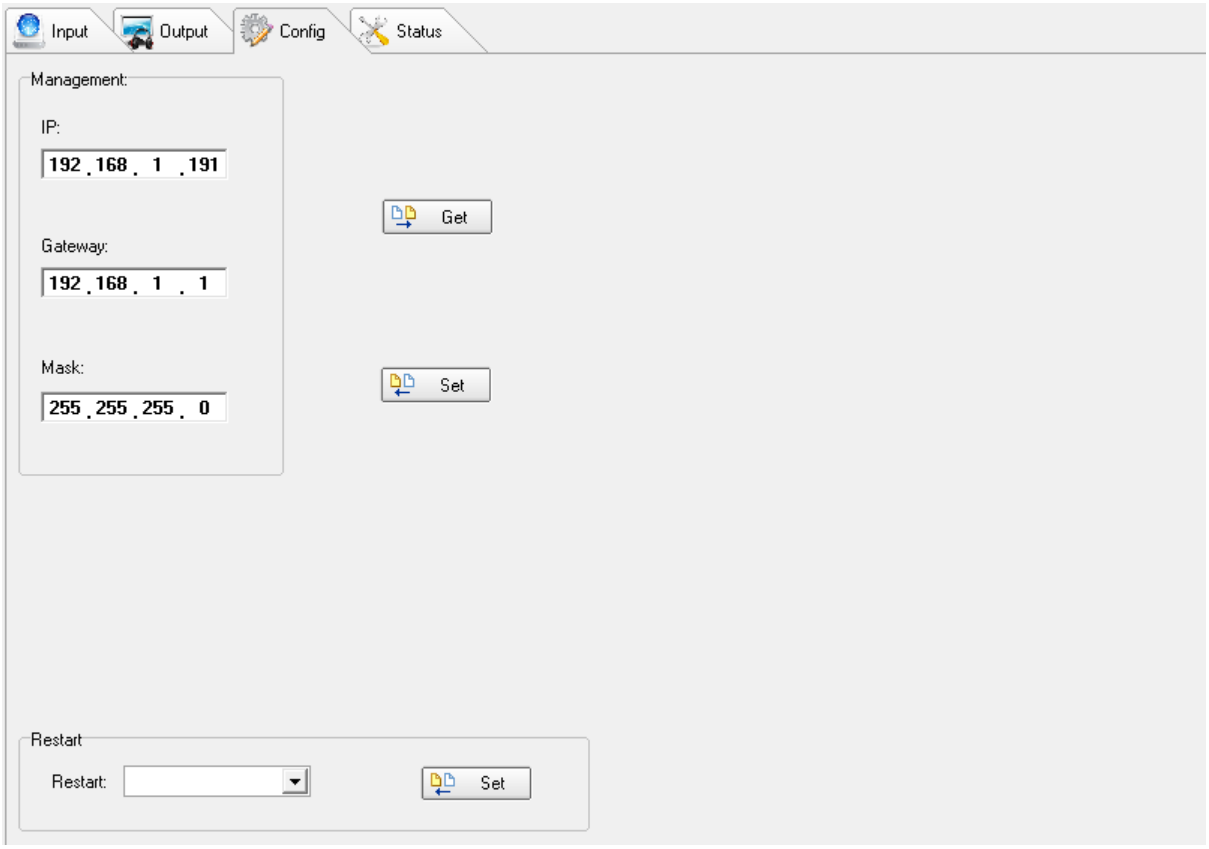

- "TS Rate Max(Mb)"
  Specify the output TS rate in Mbps
- "PSIP Bandwidth(Kb)"
  Specify the Dynamic PSIP overhead in Kbps
- "PSIP" → Select the PSIP source
  - Static: use the MUX's built-in static PSIP insertion
  - Dynamic: use the dynamic PSIP module as the PSIP source for PSIP insertion
  - Disable: disable the PSIP insertion
- "Source" → Select where the source of each SDI output comes from
  - If select option "AUTO", MSP will first search signals from CVBS input and convert to SDI output, if no signal detected, MSP will then search signals from SDI input and connect

to SDI output.

- If select option “CVBS”, MSP will always search signals from CVBS input and ignore signals from SDI input.
- If select option “SDI”, MSP will always search signal from SDI input and ignore signals from SDI input.
- When EAS signal is triggered, SDI output will switch to EAS signal as source.
- If select option “EAS”, SDI output will always use EAS signal as the source of SDI output.

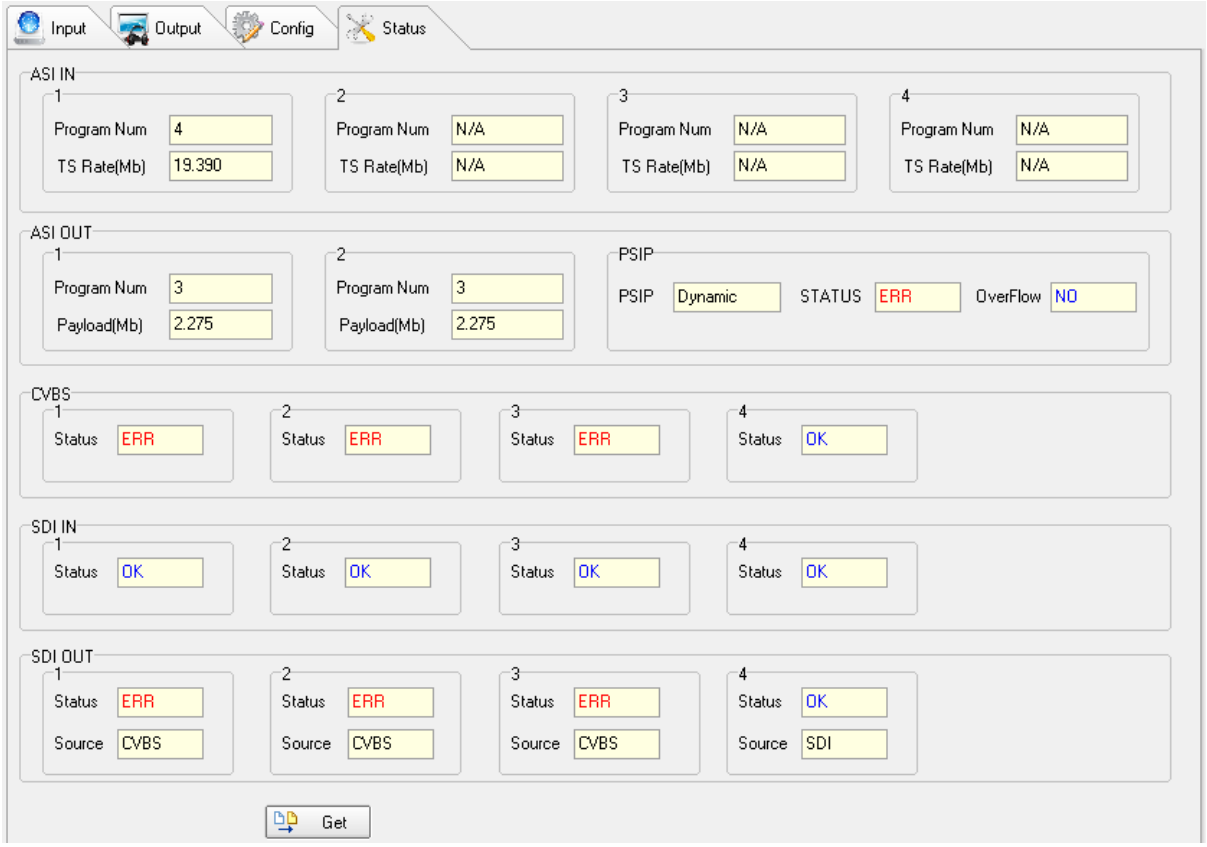
- “Set” → Click “Set” to save the setting to MSP
- “Get” → Click “Get” to get MSP’s current setting

**Config**




- “Management” → Configure the network setting of the “REMOTE” RJ45 port.
- “Slave” → Debug only, configure the internal network port for dynamic PSIP insertion, (Warning: DO NOT change these settings)
- “Set” → Click “Set” to save the setting to MSP
- “Get” → Click “Get” to get MSP’s current setting
- “Restart” → Select “YES” from the pull down menu and click “Set” to restart MSP

## Status




- "Get" → Click "Get" to refresh MSP's current status
- ASI IN
  - "Program Num" → Displays the number of programs of the particular ASI input.
  - "TS Rate (Mb)" → Displays the TS rate in Mb for the particular ASI input.
- AIS OUT
  - "Program Num" → Displays the number of programs in the ASI output.
  - "Payload (Mb)" → Displays the payload data rate in MB in ASI output.

- PSIP
  - "PSIP" → Displays the PSIP insertion source.
  - "STATUS" → Displays if MUX receives the PSIP data from dynamic PSIP module, valid only when PSIP source is Dynamic.
  - "Overflow" → Displays if the received PSIP data rate exceeds the PSIP bandwidth, valid only when PSIP source is Dynamic.
  -
- CVBS
  - "Status" → Displays if MSP detects the signal on particular CVBS input interface.
- SDI IN
  - "Status" → Displays if MSP detects the signal on particular SDI input interface.
- SDI OUT
  - "Status" → Displays if there are output signals on particular SDI out interface.
  - "Source" → Displays where the signal source of SDI output comes from.

# 4 Connection

## 4.1 Connect the MSP

- Don’t turn On or Off the exciter when the transmitter is running. The correct order is:
  - Connect REMOTE and PSIP to network with RJ45 port.
  - Turn on the MSP.
  - After initialization is finished, connect the input with corresponding signal source.
  - Connect EAS input and EAS control IN to EAS generator.
  - Connect ASI output to target devices.

## 4.2 Connect and activate the EAS

- EAS video/audio should be connected to MSP’s EAS IN CVBS ports.
- EAS activation is controlled by the 6-pin contact closure slot (EAS CTRL IN) in the back panel


From the left to right:
1st and 2nd pins are N/A
3rd pin should be provided with an external 12 volt DC power supply
4th and 5th pin are the short pin which should be connected to EAS generator.
6th pin should be connected to ground of the 12V power supply.

When 12V external DC power is provided and 4th and 5th pins are short, EAS will be activated.

# 5 Troubleshooting

## 5.1 ASI Input

- ASI Input ERROR
  - Alarm message
    - LCD: ASIIN# N/A
    - LED_ ERR: Constant ON
  - Cause: Input signal to ASI input is lost or has invalid format.
  - Solution: Check the stream to make sure input signal has valid format.

## 5.2 CVBS Input

- CVBS Input ERROR
  - Alarm message
    - LCD: CVBS# ERR
  - Cause: Input signal to CVBS input is lost or has invalid format.
  - Solution: Check the corresponding input composite signal to make sure input signal has valid format.

## 5.3 SDI Input

- SDI Input ERROR
  - Alarm message
    - LCD: SDIIN# ERR
  - Cause: Input signal to SDI input is lost or has invalid format.
  - Solution: Check the corresponding SDI input to make sure input signal has valid format.

## 5.4 SDI Output

- SDI Output ERROR
  - Alarm message
    - LCD: SDIOUT# ERR
    - LED_IN#: OFF
  - Cause: There is no input signal detected from either CVBS or SDI
  - Solution: Check the corresponding SDI input to make sure input signal has valid format, if input signal is Ok, make sure SOURCE is selected correctly.

## 5.5 ASI Output

- ASI Output ERROR
  - Alarm message

- LCD: ASIOUT# N/A
- Cause: There is not valid TS in ASI input, or user has not selected a program to be muxed into the ASI output
- Solution: Check stream of ASI input, and make sure programs are selected correctly in the control GUI.

➢ ASI Output Overflow
- Alarm message
  - GUI: Overflow RED
- Cause: Payload exceeds the total TS rate.
- Solution: Check the selection of programs to be multiplexed, reduce the number of programs selected.

## 5.5 DPSIP

➢ DPSIP ERROR
- Alarm message
  - LCD: PSIP STATUS ERR
  - LED_STAT ON
- Cause: MUX didn't detect the input Dynamic PSIP data.
- Solution: Check the configuration of PSIP Generator, reboot Dynamic PSIP module if needed.

➢ DPSIP Overflow
- Alarm message
  - LED_STAT: FLASHING
  - GUI: Overflow YES
- Cause: Dynamic PSIP data rate exceeds bandwidth set for PSIP data.
- Solution: Check the PSIP Generator's output data rate, set PSIP bandwidth greater than data rate reported by PSIP Generator.

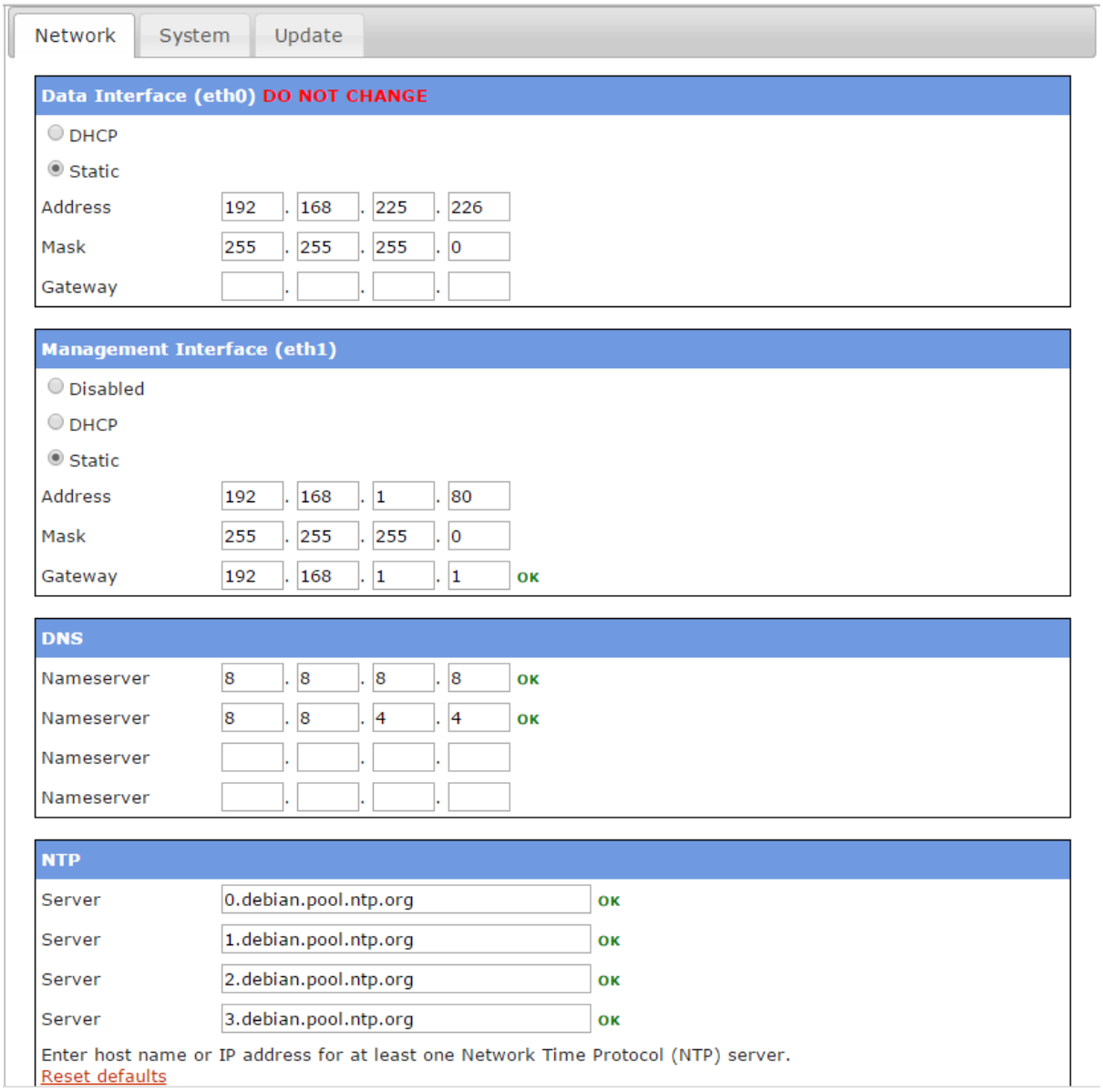
# 6 Dynamic PSIP module (optional)

MSP provides an optional Dynamic PSIP module, it's configured separately to the MSP. It is accessible via the front PSIP RJ-45 port. The default IP address for Dynamic PSIP module is 192.168.1.80.

Network a computer configured with static IP address 192.168.1.x to the PSIP RJ45 front panel port, launching a web browser and entering the PSIP module's IP address (192.168.1.80) will bring up following page.


## 6.1 Network

Click "Network" to enter network setup page.

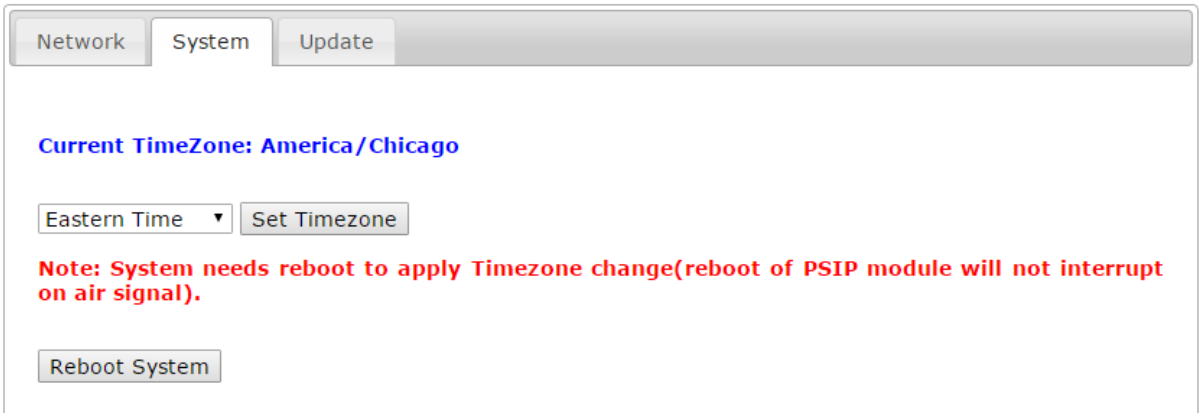



Note:

1. Network Interface (eth0) is used to configure the communication interface to MSP, DO NOT change this setting.
2. Network Interface (eth1) is the management interface for Dynamic PSIP module, please change this setting accordingly with your network setting and hit “Apply Changes” on the bottom of the page to submit the change. Please remember the setting of eth1 otherwise you will lose connection to the Dynamic PSIP module.
3. There is no need to change DNS/NTP setting, but please make sure the Dynamic PSIP module is connected correctly to the internet since it needs access to the internet for PSIP service data ingestion and network timing update (through RTC enclosed).

## 6.2 System

Click “Set Timezone” to set the correct time zone to the DPSIP module, click “System” if you need to reboot Dynamic PSIP module.

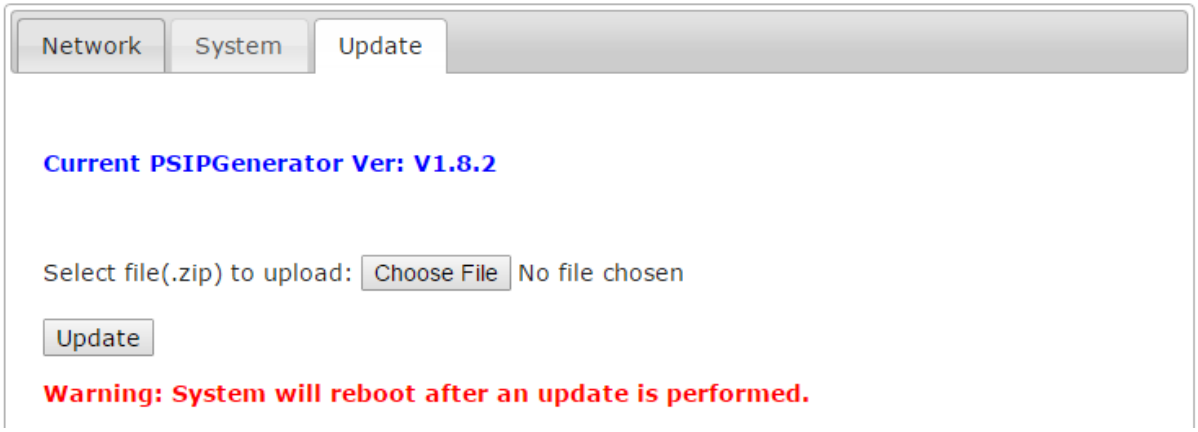



Note:

1. If you are using Anywave txt format as the ingest service data of the PSIP generator, you must set the correct time zone to the DPSIP module, since Anywave txt is using local time. Other formats are using UTC time so correct time zone is not a must.

## 6.3 Update

Click “Update” to update PSIP Generator on the Dynamic PSIP module.

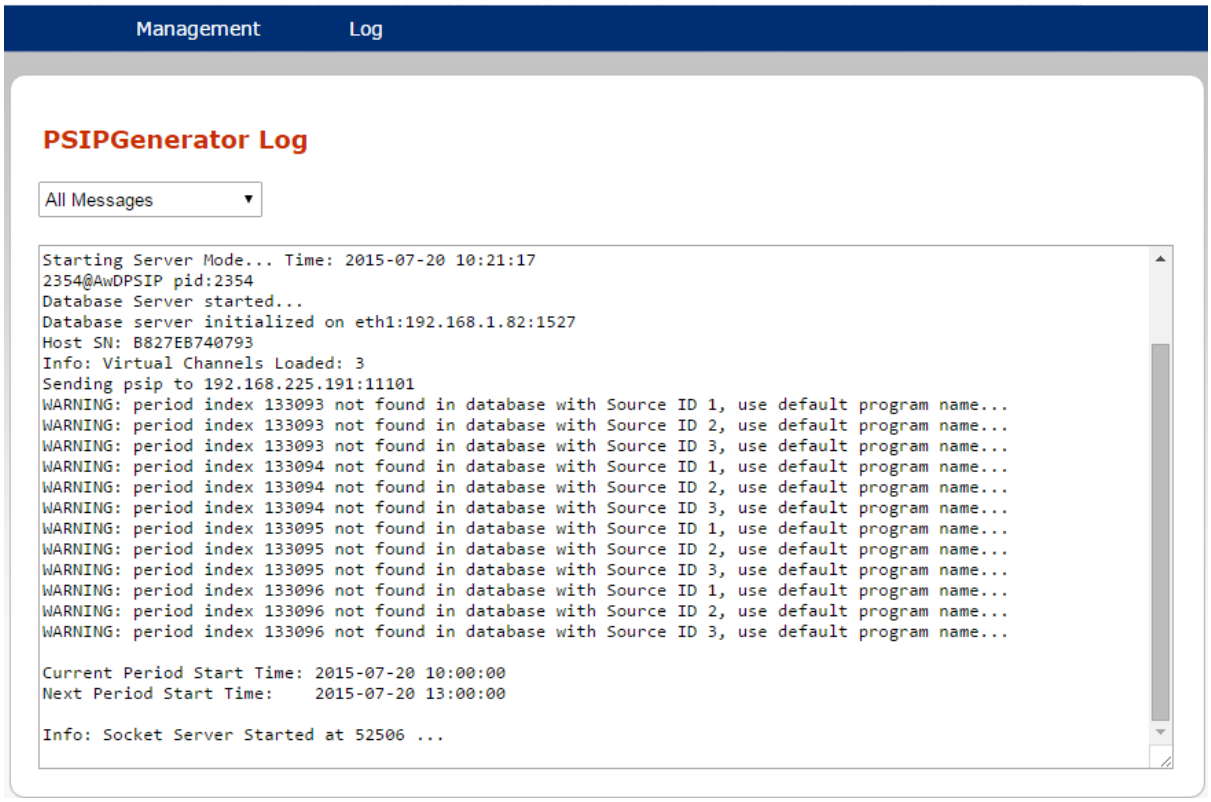



Note:

1. Please only update with the original update file Anywave provided.

## 6.4 Log

Click “Log” to view the application log of PSIP generator.




## 6.5 PSIP Generator

After Network is properly setup and connection to the Dynamic PSIP Module is acquired, you can use PSIP Client software to configure the PSIP Generator. Please refer to Anywave PSIP Client User Manual for the configuration of the PSIP Generator.

Anywave Communication Technologies Inc.
300 Knightsbridge Parkway, Suite 150, Lincolnshire, IL 60069
Tel: (847) 415-2258
Fax: (847) 415-2112
Email: sales_us@anywavecom.com
http://www.anywavecom.com/en/