

ANYWAVE COMMUNICATION TECHNOLOGIES

# PSIP Client User Manual

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PSIP Client for PSIP Generator

2018/12/18



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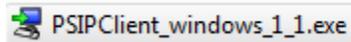
## 1 Overview

Anywave PSIP Generator is a dynamic PSIP generator in accordance with ATSC A/65 standard which can be seamlessly embedded with Anywave MPEG2 encoders, to generate dynamic PSIP tables including MGT, TVCT, STT, EIT, ETT, RRT; which can describe 12 hours of events(TV programs) with parental guideline(rating information) system enabled.

It allows the LPTV operator to build a customized program guide using a simple spreadsheet (or txt format) with automatic daily update through FTP server.

## 2 Installation

Anywave PSIP Client software is the control client of PSIP Generator, which allows user to configure it remotely from PC. A windows installation package is provided:

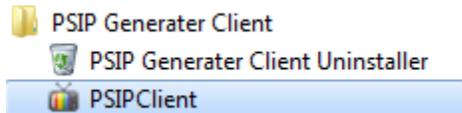


Please follow the instruction to finish the installation, the default installation path will be "C:\PSIP Client", please make sure that you have the write permission in the installation path otherwise the software will fail at initiation.

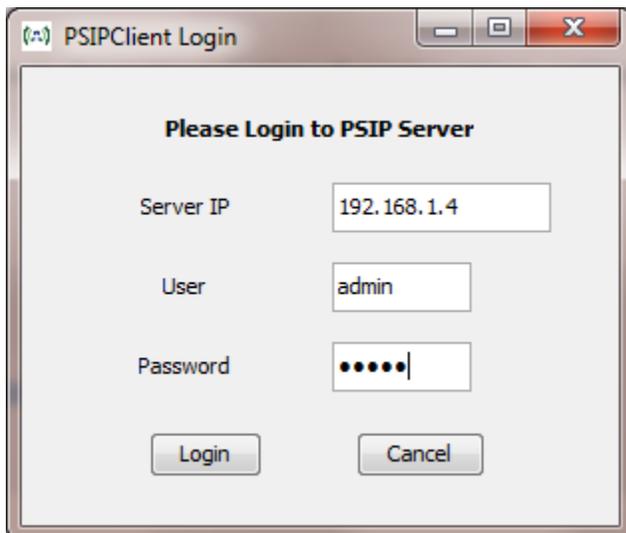
## 3 Usage

### 3.1 Login

Invoke the program from Start -> All Programs ->PSIP Generator Client -> PSIP Client,

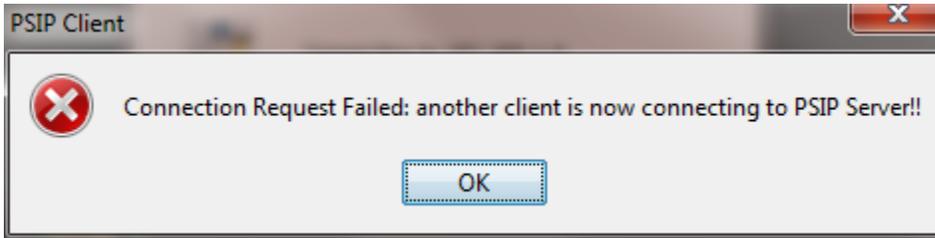


A login window will appear:



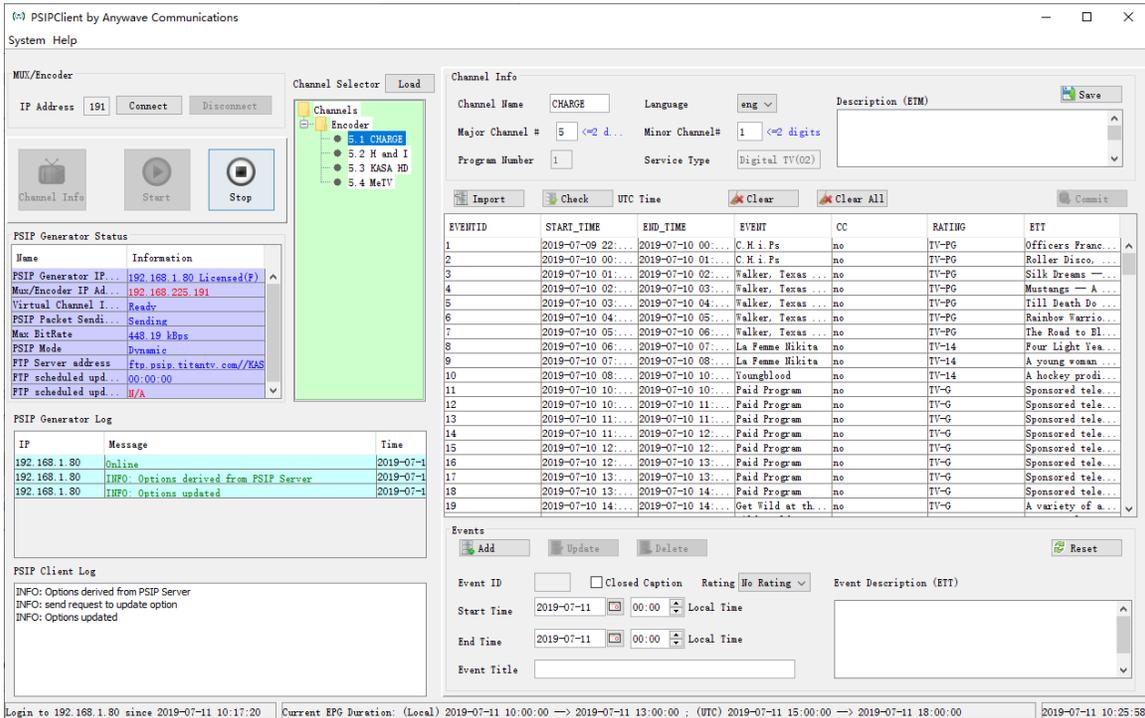
Please enter the encoder’s IP address as the Server IP, and default user/password will be “admin”/“admin”, then click “Login”

Please notice that only 1 connection to PSIP Server is allowed at a time, if you try multiple login, an error message will prompt the user that the connection failed.

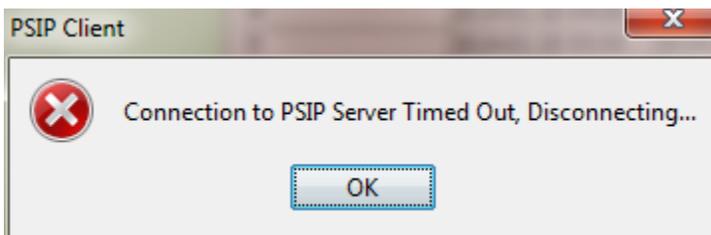


### 3.2 Control and Configuration

The main window will be displayed after user has a successful login:

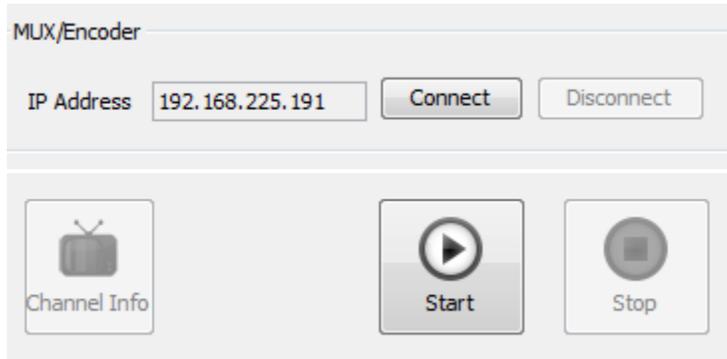


The default connection timeout will be ~10 minutes, if user doesn’t have any activities during this time, the connection to PSIP Server will be closed.



### 3.2.1 Control Panel

Control Panel is used to control the PSIP Generator to derive Chanel Information from Encoder/MUX, and start/stop sending PSIP tables.



**IP Address:** MUX’s IP address to send PSIP packets to, change this IP address in Option field. Note for Anywave’s i-series encoder this IP address should always be 127.0.0.1

**Connect:** Connect to MUX, only when PSIP Generator is connecting MUX, it can get the channel information from MUX

**Disconnect:** Disconnect to MUX, please disconnect to MUX after channel information is derived from MUX

**Channel Info:** Derive channel information from MUX; this button is available when PSIP Generator is connecting. If user changed the channel setting of encoder, user must update the PSIP Generator’s channel info with this button again.

**Start:** Start to send PSIP tables

**Stop:** Stop to send PSIP tables

### 3.2.2 Status Panel

This panel will display the general current status of PSIP Generator:

PSIP Generator Status	
Name	Information
PSIP Generator IP Address	192.168.1.81 Licensed(F)
Mux/Encoder IP Adress	192.168.225.191
Virtual Channel Info status	Ready
PSIP Packet Sending status	Stopped
Max BitRate	0.00 kBps
PSIP Mode	Dynamic
FTP Server address	ftp1.tmstv.com///
FTP scheduled update time #1	12:00:00
FTP scheduled update time #2	00:01:00

Max BitRate must be less than the encoder’s bandwidth setting for PSIP tables.

PSIP Generator must have valid license key to work, when valid license key is present,

- Licensed(F) ----- Licensed with automatic FTP service data ingestion feature
- Licensed(M) ----- Licensed with manual service data ingestion feature
- Not Licensed ----- No valid license

### 3.2.3 Log Panel

This panel will display the Log from PSIP Generator:

IP	Message	Time
192.168.1.4	Online	2014-01-21 10:26:41
192.168.1.4	INFO: Options derived from PSIP Server	2014-01-21 10:26:41

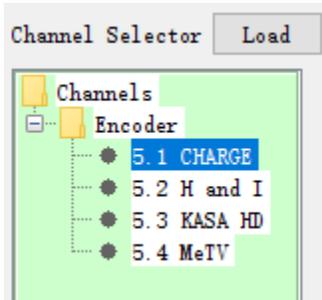
And the Log of PSIP Client itself:

INFO: Options derived from PSIP Server
--

### 3.2.4 Channel Selector

Channel selector allows user to choose which channel to edit the channel information and program events.

Channel selector will be available only when PSIP Generator derived channel information from encoder/MUX.

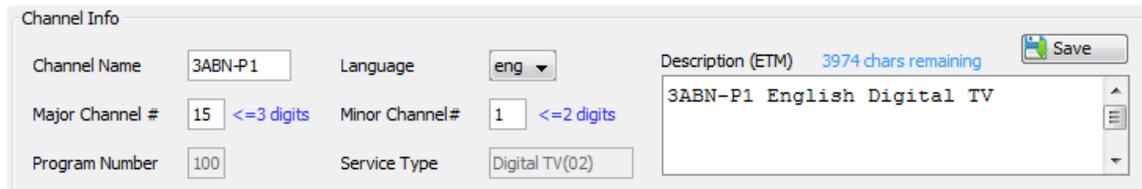


Click on the channel name (channel short name) to choose which channel you want to edit.

**Load:** Normally PSIP generator can get channel information (TSID, PID, etc.) from Anywave’s encoder/mux. User can also load channel info manually from a configuration file by clicking “Load” button. Please refer to section 4 for the definition of the channel info configuration file. Load channel info will stop sending PSIP packets and clear all the current channel info.

### 3.2.5 Channel Edit Panel

User can edit the information of the selected channel here:



After changes are made, please click “Save” to save the changes to database, then user must click “Commit” to commit the changes to the PSIP tables.



### 3.2.6 Program Events (Program Guide) Edit Panel

User can edit the program events of the selected channel here:

The screenshot displays the PSIP Client User Manual interface. At the top, there is a toolbar with buttons for 'Import', 'Check', 'UTC Time', 'Clear', 'Clear All', and 'Commit'. Below the toolbar is a table with the following columns: EVENTID, START\_TIME, END\_TIME, EVENT, CC, RATING, and ETT. The first row is highlighted in blue and contains the following data: 1, 2016-06-20 06:00..., 2016-06-20 07:00..., test event, yes, No Rating, and test event. Below the table is a section titled 'Events' with buttons for 'Add', 'Update', 'Delete', and 'Reset'. The 'Events' section contains a form for editing an event. The form includes fields for 'Event ID' (1), 'Closed Caption' (checked), 'Rating' (No Rating), 'Event Description (ETT)' (test event), 'Start Time' (2016-06-20 01:00 Local Time), 'End Time' (2016-06-20 02:00 Local Time), and 'Event Title' (test event). The 'Event Description (ETT)' field has a character count of 3990.

EVENTID	START_TIME	END_TIME	EVENT	CC	RATING	ETT
1	2016-06-20 06:00...	2016-06-20 07:00...	test event	yes	No Rating	test event

Events

Add Update Delete Reset

Event ID: 1  Closed Caption Rating: No Rating Event Description (ETT): test event (3990 chars remaining)

Start Time: 2016-06-20 01:00 Local Time

End Time: 2016-06-20 02:00 Local Time

Event Title: test event

**Import:** Import the program events from file, supported format are \*.txt/\*.xls/\*.xlsx; import program events will replace all the current event data, please refer to chapter 4 for details for program events file.

**Check:** Consistency check of program events of current channel

**Clear:** Clear program events of current channel

**Clear All:** Clear program events of all channels

**Commit:** Commit changes made to channel info and program events to PSIP tables

Click on any row of program events to start editing of this particular event.

EVENTID	START_TIME	END_TIME	EVENT	CC	RATING	ETT
1	2016-06-20 06:00...	2016-06-20 07:00...	test event	yes	No Rating	test event

Events

Event ID: 
 Closed Caption
 Rating:

Start Time:   Local Time

End Time:   Local Time

Event Title:

Event Description (ETT):  3990 chars remaining

**Add:** Add the event with the event information in current editor

**Update:** Update the selected event

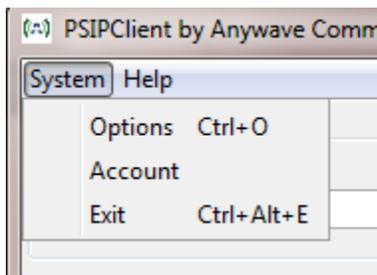
**Delete:** Delete the selected event

**Reset:** Reset the editor

NOTE: Time displayed in Events table are UTC time, in the Events edit panel are local time.

### 3.3 Options and Settings

Enter the option configuration by click System->Options



Option setting window will appear:

The screenshot shows the 'Options' dialog box with the following sections:

- General Setting:** Includes checkboxes for 'Static PSIP', and input fields for Station Name (AW-CH), Station Index (5), MUX IP (192.168.225.191), VCT Mode (TVCT), Default Program Name (efault program), Listen Port (51101), Send Port (11101), PMCP # (10), License Key, and ID (B827EBF261C4). It also has fields for Short Name Prefix, Major Channel Num, MUX/Encoder IP, Terrestrial/Cable VCT, and MUX/Encoder Listen Port.
- Packet Interval Control:** A table of cycle times:
 

GPS UTC Offset	16	Second
MGT Cycle Time	110	(50~150) millisecond
SIT Cycle Time	900	(100~1000) millisecond
TVCT Cycle Time	200	(100~400) millisecond
RRT Cycle Time	55000	(1000~60000) millisecond
EIT0 Cycle Time	400	(100~500) millisecond
EIT1 Cycle Time	3000	(500~3000) millisecond
EITK Cycle Time	20000	(1000~60000) millisecond
EIT Cycle Time	30000	(1000~60000) millisecond
- FTP update control:** Includes a checked 'Enable FTP update' checkbox, a 'Test' button, and fields for FTP Address (ftp.psip.titantv.com), Port (21), Directory (/KASA1), User Name (KASA1), Password (masked), PSIP Data Source (Anywave), and two Update Time fields (both set to 00:00).

**Restore:** Restore the default setting

**OK:** Confirm change of settings

**Cancel:** Cancel change of settings

### 3.3.1 General Settings

This is a close-up of the 'General Setting' section from the previous screenshot. It shows the 'Static PSIP' checkbox and various input fields for station and MUX information, including Station Name (AW-CH), Station Index (5), MUX IP (192.168.225.191), VCT Mode (TVCT), Default Program Name (efault program), Listen Port (51101), Send Port (11101), PMCP # (10), License Key, and ID (B827EBF261C4).

**Static PSIP:** Check to send static PSIP tables (MGT/TVCT) only, need to restart sending PSIP tables after change this.

- Station Name:** Default Station Name Prefix
- Station Index:** Default Major Channel Number
- MUX IP:** This field should always be 127.0.0.1
- VCT Mode:** Choose Terrestrial or Cable VCT mode
- Default Program Name:** If no program event data can be found in database for current required
- Listen Port:** This field should always be 55555
- Send Port:** This field should always be 11101
- PMCP:** Number of PMCP files to download from FTP
- License Key:** When valid license key is present, "Licensed" will be displayed and text field will not be editable, please contact Anywave to acquire valid license key.

### 3.3.2 Packet Interval Control

Do not change these settings.

### 3.3.3 Automatic FTP Update Control

FTP update control

Enable FTP update    Check to enable FTP daily update for program events   

FTP Address  Port  Directory  full path to directory or file

User Name  Password  PSIP Data Source  Anywave .txt format

Update Time #1  FTP daily update Time #1

Update Time #2  FTP daily update Time #2

Automatic FTP update allows automatic events update twice a day.

- Enable FTP update:** Check to enable automatic FTP update
- Test:** Check the FTP setting by connecting and updating FTP data immediately
- FTP Address:** FTP address
- User Name:** FTP login user name:
- Password:** FTP login password
- Directory:** Path on remote FTP for the events data file or directory, please refer to chapter 5 for event data file format. User must use absolute path on the FTP (see appendix I on how to get absolute path on FTP server)

**PSIP Data Source:** supported PSIP data service are Anywave(.txt), Anywave\_xls(excel), PMCP(.xml), Tribune. Please refer to chapter 5 for service data format

**Update Time #1:** FTP daily update Time #1

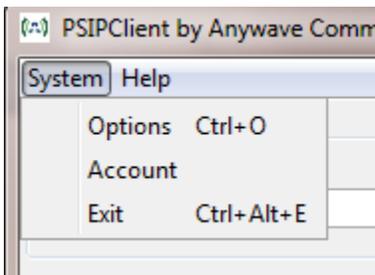
**Update Time #2:** FTP daily update Time #2, set it same to #1 if user wants only 1 daily update

After set FTP update, please have a trial (like set an update time few minutes later than current time) to make sure the FTP setting are correct. A successful FTP update will displayed in PSIP Generator Log as follows:

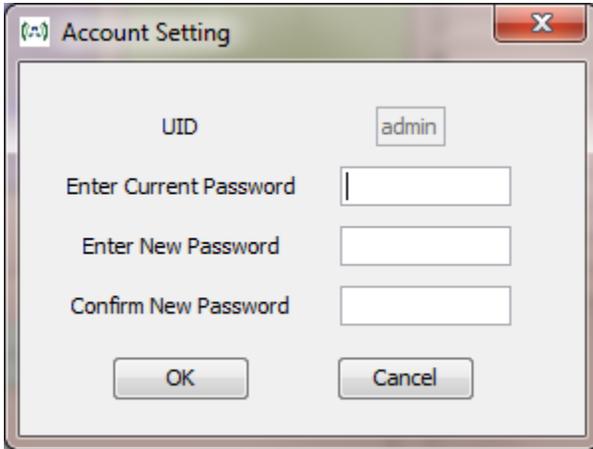
PSIP Generator Log		
IP	Message	Time
192.168.1.4	Online	2014-01-21 14:41:39
192.168.1.4	INFO: Options derived from PSIP Server	2014-01-21 14:41:40
192.168.1.4	INFO: Options updated	2014-01-21 14:41:57
192.168.1.4	INFO: Options updated	2014-01-21 14:43:20
192.168.1.4	INFO: FTP update committed to Program Events Info	2014-01-21 14:43:54

### 3.4 Account and Login Password

Enter the account setting by click System->Account



Account setting window will appear:



Enter current password and new password, and then click OK to confirm the change.

#### 4 Virtual Channel Info File Format

User can manually create a Virtual Channel Info File and let PSIP generator to import channel info from this file instead of MUX.

Please follow following format to create the Virtual Channel Info file, file must be in text format and saved to a file with suffix of “.vcconfig”.

```

1.0 //version
2 //channel_count
//channel_name,,major_channel_number,,minor_channel_number,,modulation_mode,,channel_TSID,,program_number,,ETM,,service_type,,language,,PCR_PID(if digital)
//channel description
//number of stream in this channel
//stream_type,PID,language
3ABN-P1,,15,,1,,0x04,,0x0001,,0x0064,,0x02,,eng,,0x078
3ABN-P1 English Digital TV
2
0x02,,0x078,,eng
0x81,,0x082,,eng
3ABN-P2,,15,,2,,0x04,,0x0001,,0x00C8,,0x02,,spa,,0x0DC
3ABN-P2 Espanol Digital TV
2
0x02,,0x0DC,,spa
0x81,,0x0E6,,spa

```

## 5 Program Events (Program Guide) File Format

Import program events file will clean and overwrite all current events information in the database.

Current supported formats are Anywave simple text (\*.txt), Anywave excel (\*.xls/\*.xlsx), PMCP (\*.xml) and Tribune, please ask Anywave if you need the template or support other format.

### 5.1 Anywave TXT format

An example of txt format events file looks like follows:

```
//events must cover current EIT period and at least next 3 EIT periods (12 hours)
//Channel_name||Date||start_time||length||program_name||closed_caption||rating||E
TT_info(optional)
CH1|2014-01-20|00:00|01:00|s1 program1|yes|TV-PG|s1 ett program1
CH1|2014-01-20|01:00|02:00|s1 program2|yes|TV-P|s1 ett program2
CH1|2014-01-20|03:00|01:00|s1 program3|yes|TV-14|s1 ett program3

CH2|2014-01-20|00:00|01:00|s2 program1|yes|TV-PG|s2 ett program1
CH2|2014-01-20|01:00|02:00|s2 program2|yes|TV-PG|s2 ett program2
CH2|2014-01-20|03:00|01:00|s2 program3|yes|TV-PG|s2 ett program3
```

Texts after “//” are the comments

Single line with number 1 and 2 indicates the channel number which in accordance with encoders channel number (program number).

Contents after line with number only and the next black line are the events info of this particular channel.

Each line in the events info section is one event and its information, separated by delimiter “|”, which includes (note all date and time are in local time):

- Channel:** Channel name, user must make sure this channel name presents in the channel list otherwise no data will be loaded
- Date:** Date of the event, in format yyyy-mm-dd
- start\_time:** Start time of the event, in format hh:mm
- length:** Length of the event, in format hh:mm
- program\_name:** Event program name
- closed\_caption:** Events contains closed\_caption, yes/no
- rating:** Rating for parental control, available ratings are No Rating/TV-G/TV-PG/TV-14/TV-MA/TV-Y/TV-Y7
- ETT\_info:** Event extended text (optional)

## 5.2 Anywave XLS/XLSX format

An example of excel format event file looks like follows:

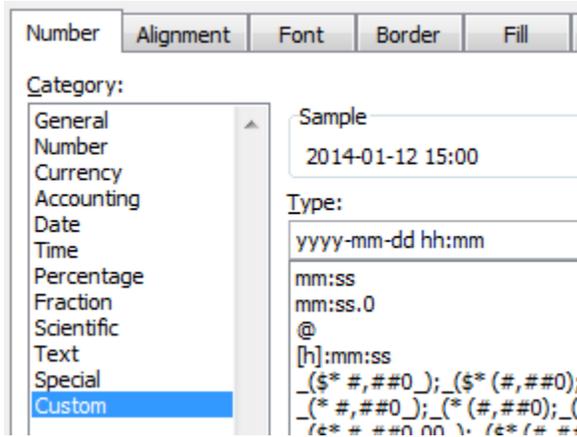
	A	B	C	D	E	F	G
1	Start Time	End Time	Length	Program	CC	Rating	Program Description
2	2014-01-17 00:00	2014-01-17 00:30	00:30	Anywave DTV01 program1	yes	No Rating	Anywave DTV01 extend text program1
3	2014-01-17 00:30	2014-01-17 02:00	01:30	Anywave DTV01 program2	yes	TV-G	Anywave DTV01 extend text program2
4	2014-01-17 02:00	2014-01-17 03:00	01:00	Anywave DTV01 program3	yes	TV-PG	Anywave DTV01 extend text program3
5	2014-01-17 03:00	2014-01-17 04:00	01:00	Anywave DTV01 program4	yes	TV-14	Anywave DTV01 extend text program4
6	2014-01-17 04:00	2014-01-17 05:00	01:00	Anywave DTV01 program5	yes	TV-MA	Anywave DTV01 extend text program5
7	2014-01-17 05:00	2014-01-17 06:00	01:00	Anywave DTV01 program6	yes	TV-Y	Anywave DTV01 extend text program6
8	2014-01-17 06:00	2014-01-17 09:00	03:00	Anywave DTV01 program7	yes	TV-Y7	Anywave DTV01 extend text program7

Sheet name (AW-CH1, AW-CH2...) will be the channel short\_name, do not use extra sheet name other than short\_name.

Row 1 is the description for each column; do not put program guide info in this row.

Starting from Row 2 is the event information, event information are located at column A ~ G

**Column A:** Event start time, please use format cell to format the cells in this column, see below. The available format type are: “yyyy-mm-dd hh:mm”, “m/d/yyyy h:mm”, “m/d/yyyy h:mm AM/PM”, etc.



- Column B:** Event end Time, please format this cell as in Column A
- Column C:** Event length equals to Column B – Column A, please format this cell to “hh:mm”
- Column D:** Event program name
- Column E:** Closed caption info, yes/no
- Column F:** Rating for parental control, available ratings are No Rating/TV-G/TV-PG/TV-14/TV-MA/TV-Y/TV-Y7
- Column G:** Event extended text (optional)

### 5.3 PMCP

Compatible with ATSC A/76 PMCP format.

NOTE:

Default number PMCP files to download from FTP is 10, this number can be modified from the general setting in 3.3.1

### 5.4 Tribune

Compatible with Tribune TV Schedule Data Specification Version 5.4.

## Appendix I

Sometimes the login path is not set as the root path of the FTP server that the service provider gives, user will have to manually get the absolute path on the FTP server in order to let PSIP Generator find the correct path to access PSIP data.

To get the absolute path on FTP:

1. Open a windows command prompt, type “ftp” followed by FTP address,

```
C:\Users\Anywave01>ftp 192.168.2.100
Connected to 192.168.2.100.
220 Welcome to Anywave Communication FTP service.
User (192.168.2.100:(none)): ftpuser
331 Please specify the password.
Password:
230 Login successful.
ftp>
```

2. Type “pwd” and press enter

```
ftp> pwd
257 "/upload/PSIP"
ftp>
```

3. “/upload/PSIP” here is the absolute path on the FTP server



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