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AnySight20X Headend Manual V1.0

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Functions and Applicabilities

1. Functions

This manual is mainly introducing how to configure the headend system, which includes the network structure, the multicast server configuration, the VOD server configuration and the network server configuration.

2. Applicabilities

This manual is mainly for the related developing engineers, design engineers, technical support engineers, sales managers of IP R&D Center and end users.

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1. Preface

1.1 Background

1.2 Product information

Name: IP STB

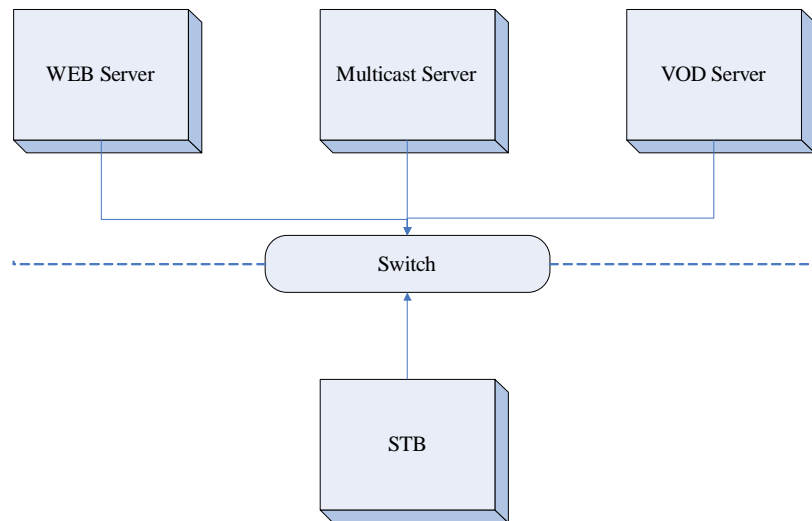
Model: AnySight20x

1.3 Technical terms and abbreviations

Terms/Abbreviations	Full name	Description
DTV	Digital Television	
VOD	Video On Demand	
AOD	Audio On Demand	
EPG	Electronic Program Guide	

1.4 Reference

2. STB network structure



PIC 2-1

PIC2-1 shows subscribers a simple structure between end user STB and head end system connection. The main business and functionality are decided by the head end system. The STB can only realise the functionalities realised by the head end system. Therefore, each server shown in PIC2-1 is not independent. There are also more servers than the three shown in PIC2-1. The head end system is always being developed rapidly.

3. Multicast server configuration

PC can be used as a server if there is no special requirements. However, softwares need to be installed on the PC as multicast server players. There are currently three most popular multicast server players, VLC, VLS, and Winsend. How to use them is shown below.

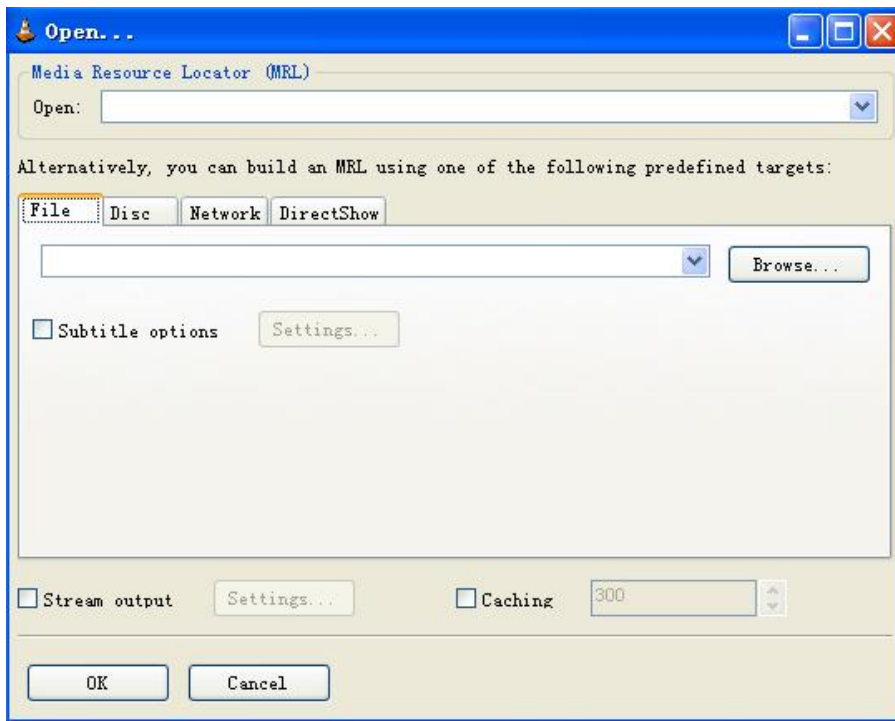
3.1 VLC multicast server configuration

- (1) Installing VLC player and open it like PIC3.1-1.



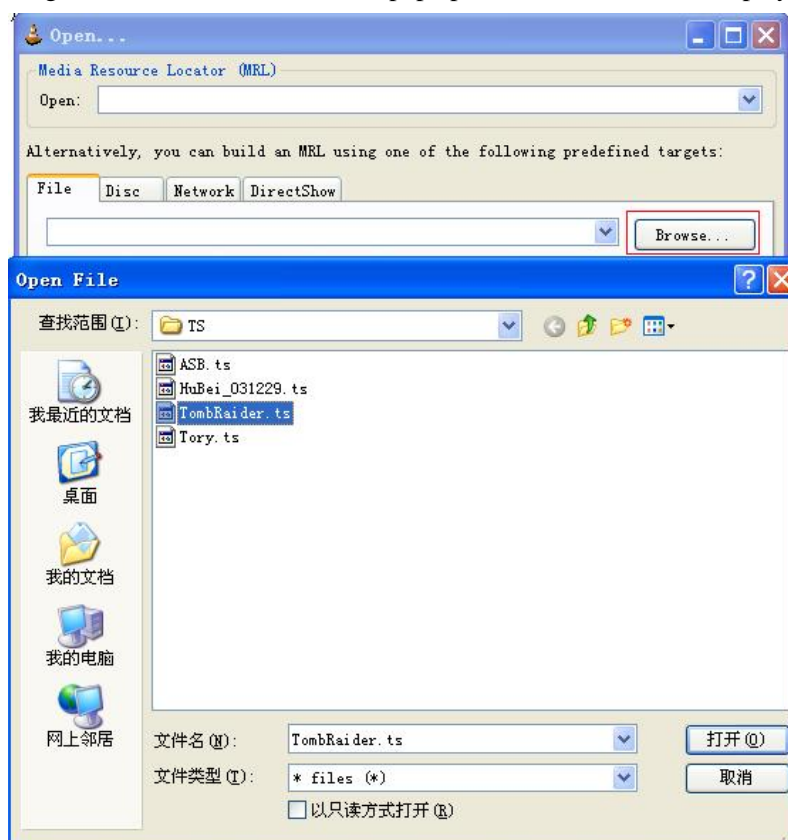
PIC3.1-1

- (2) Clicking "File → Open File..." or "⌘+O" to enter the program configuration page like PIC3.1-2.



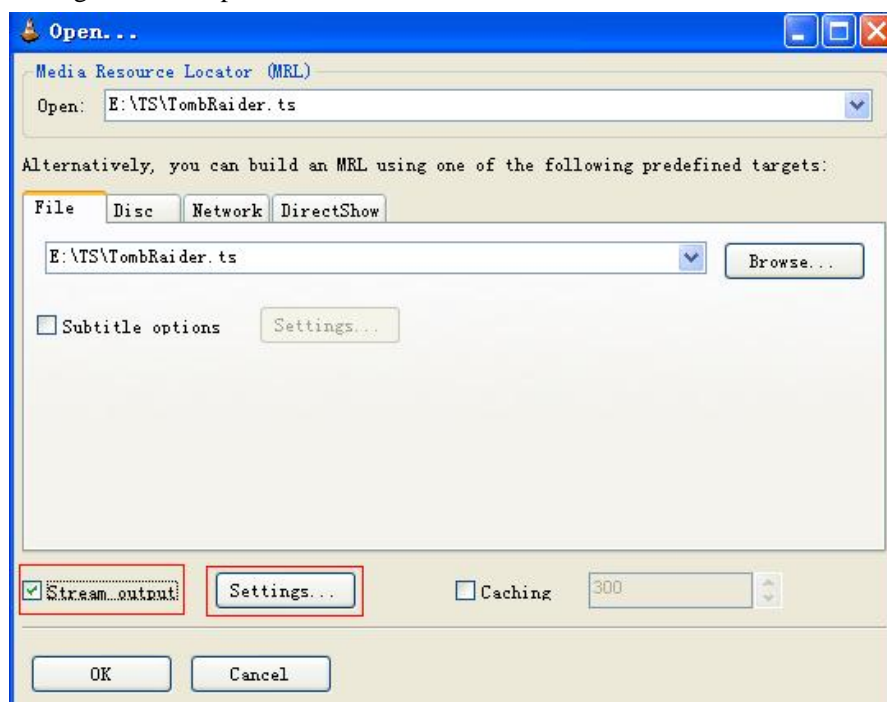
PIC3.1-2

- (3) Clicking“Browser...”, a file list will pop up, choose the stream to be played as PIC3.3-3.



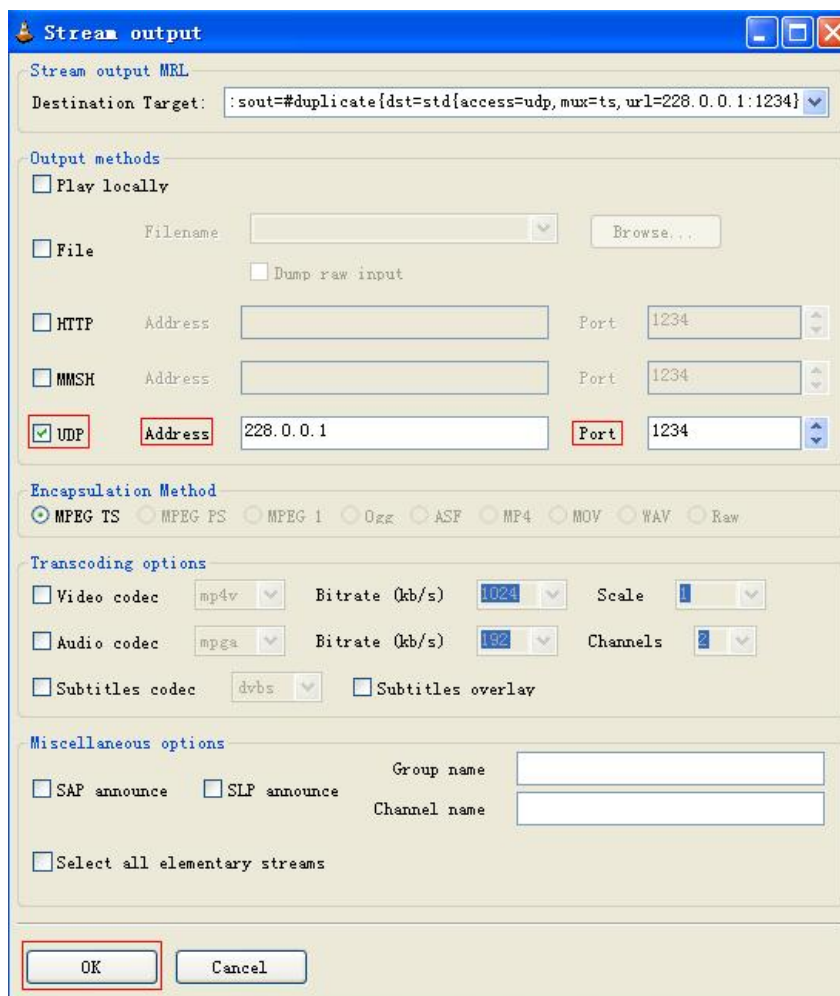
PIC3.3-3

- (4) Clicking“Stream output”as PIC3.4-4.



PIC3.4-4

- (5) Clicking“Setting...”, then click“UDP”and configure the address and port as PIC3.1-5.



PIC3.1-5

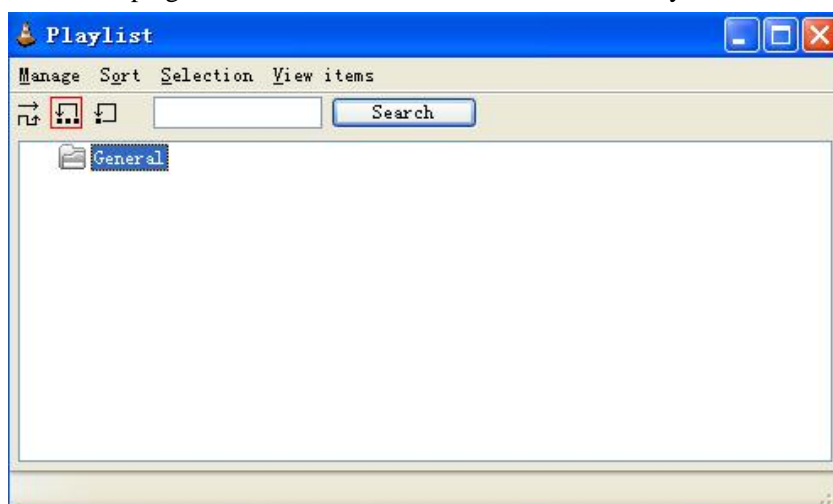
Warning: The IP address of the multicast address should be between 224.0.0.0 and 239.255.255.254.

- (6) Clicking“OK”and back to PIC2.2-2, click “OK” to finish the configuration of VLC player as PIC3.1-6.




PIC3.1-6

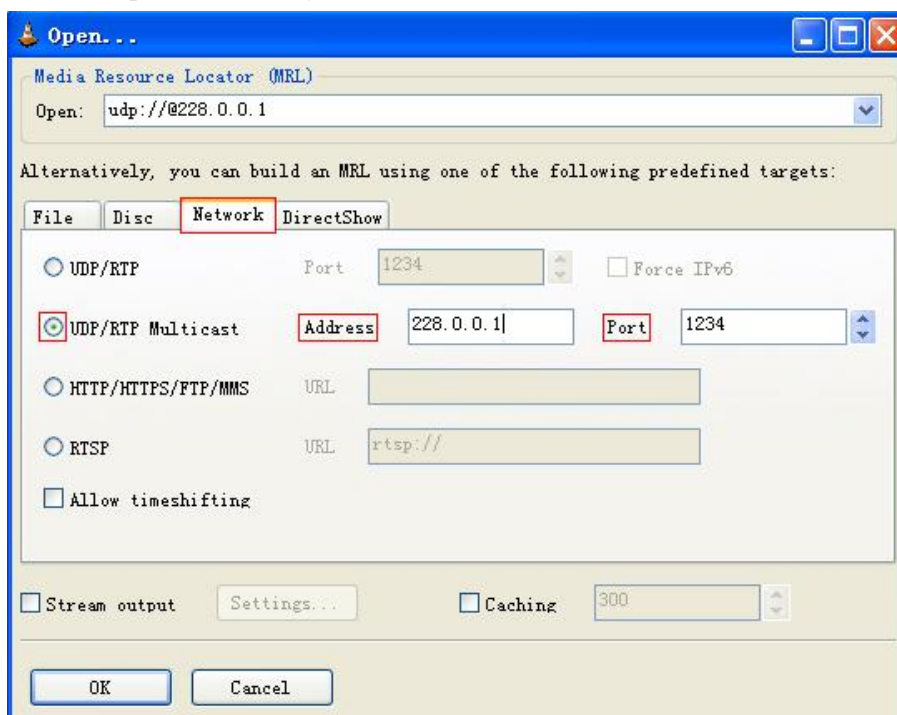
- (7) When looping of the multicast is needed, click “View Playlist...” or “” as PIC3.1-7.



PIC3.1-7

Then click “” to finish looping.

- (8) After the configuration, end users may check whether the setting is correct by opening the player, entering PIC2.1-2, click “Network” and enter PIC3.1-8. Click “UDP/RTP Multicast”, then configure address and port as what they were before, click “OK” to finish and start the multicast.



PIC3.1-8

3.2 VLS Multicast Server Configuration

- (1) To install VLS, the default installation path is C:\Program Files\Vls. The directory contains two important files: vls.cfg (the configuration file) and vls.exe (the program).
- (2) To configure the vls.cfg that includes the multicast file declaration, the multicast channel declaration, the multicast parameter setting, the multicast service self-start, when only all the four have been configured correctly, the multicasting can then be realized.

a) Multicast file Declaration - Streams sources declaration

Add the files to be multicast.

Format:

```
BEGIN "program_number"
    Name      = "program_name"
    Type      = "type"
    FileName  = "path"
    Device    = "device"
END
```

Of which:

- 2 program_number is the user-defined program order number, if there are several programs, please note that the program_number should be different;
- 2 program_name is user-defined program name;
- 2 Formats include Mpeg1-PS, Mpeg2-PS, Mpeg2-TS, or DVD,
- 2 Path is the absolute path for multicast files, if the type is DVD, the path can be left blank.
- 2 Device is DVD-ROM or the absolute path or the relative path of DVD files stored in the local hard disk;

Example:

```
BEGIN "1"      # MPEG2 stream stored in E:\TS\Tory
    Name      = "Tory"
    FileName  = "E:\TS\Tory"
    Type      = "Mpeg2-TS"
END
```

Please note that the format should be identical or there will be error.

b) Multicast Channel (outputs) declaration - Define the channel name and type

Format: ChannelName = "Type"

Example:

```
multicast1    = "network"
```

c) Multicast parameters configuration- Define the multicast address, period and port etc.

Format:

```
BEGIN "multicast_name"                # multicast name
    Type      = "multicast"
    TTL       = "number"                # Time To Live
    DstHost   = "multicast_ip"          # multicast ip address
```

```

        DstPort = "port"                                # destination port
    END

```

Example:

```

BEGIN "multicast1"
    Type      = "multicast"
    TTL       = "255"
    DstHost   = "228.0.0.1"
    DstPort   = "1234"
END

```

d) Multicast Commands Automatic Launch on Startup
Format:

```

commandnumber = "start program_name multicast_name local1 --loop"

```

Example:

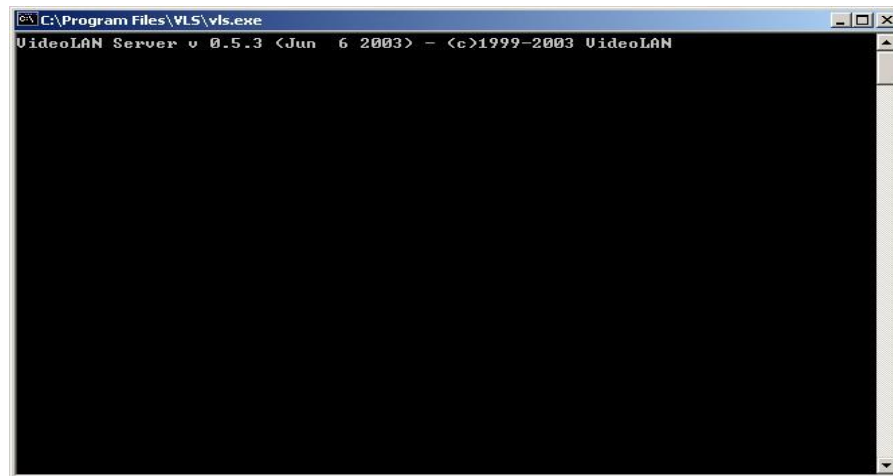
```

command1 = "start Tory multicast1 local1 --loop"

```

(3) Starting VLS

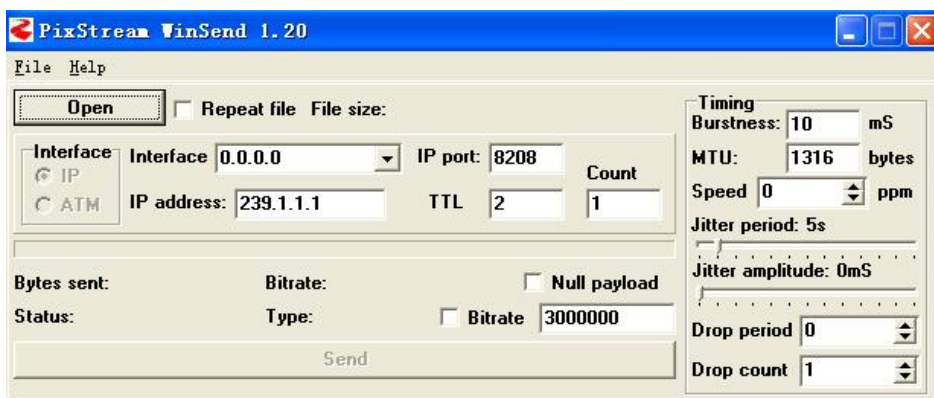
Execute C:\Program Files\VLS\vls.exe, and if it works properly, the screen will be displayed as below:



PICT 3.2-1

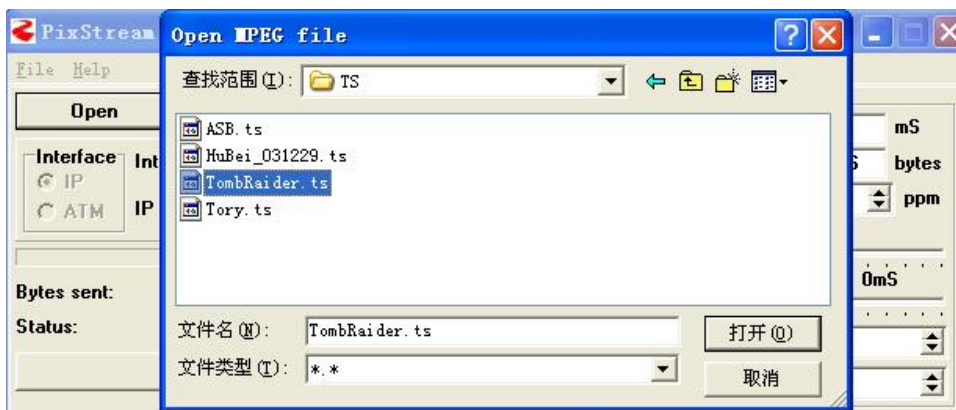
3.3 WinSend Multicast Server Configuration

- (1) To execute the WinSend.exe as displayed in the following:



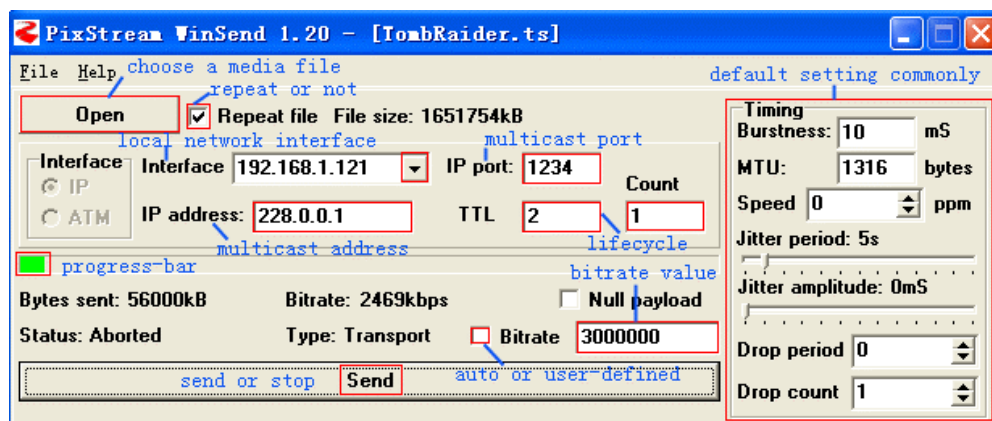
PICT 3.3-1

- (2) To select the “Open” button, and the directory list will pop up. Choose the multicast stream as below:



PICT 3.3-2

- (3) If the ‘Repeat file’ on the right of the ‘Open’ button is clicked, the selected multicast stream will be played repeatedly;
- (4) Select the IP address from the ‘Interface’ pulldown menu, showing which ethernet card will be used to transport the the multicast data;
- (5) Input the selected multicast stream address and port number in the ‘IP address’ and ‘IP port’;
- (6) The WinSend multicast is configured successfully after the above-mentioned procedures, and at the same time, the subscriber can modify other parameters, the functions of which are as below:



PICT 3.3-3

4 VOD Server Configuration

The VOD servers that ANYSIGHT20X supports are: RTSP server, OVS server, BitBand Server, Kasenna Server, NCUBe Server and Entone Server. The details are as below in Table 4.1. For more information, please refer to the related documents or request technical support from our engineers.

Model	VOD Server
AnySight200L	BITBAND
AnySight200	Standard RTSP
AnySight202	Standard RTSP
AnySight202A	OVS

Table 4.1

5 EPG Server Configuration

EPG liked webpages can be browsed through the Web Server, this document describes in details how to configure the web server and realise the EPG function through the web server. Currently there are many types of web servers, and this document is based on Apache server. The other types of servers can also be deployed as the EPG server and the configuration are almost the same.

5.1 Apache Server Setup

- (1) To install Apache, the default is C:\Program Files\Apache Group;
- (2) To modify the configuration file, that is, modify the httpd.conf (C:\Program Files\Apache Group\Apache2\conf\httpd.conf):
 - a. To modify the ServerName value as the server's IP address, for example: 192.168.1.121:80.
 - b. To modify the DocumentRoot value, and set it as the webpage path like "E:/html".
 - c. To modify the DirectoryIndex value, and set it as the default webpage, like "index.htm", so when the subscriber visits '<http://192.168.1.121/>' and it will go to the index.htm in 'html' directory, and that's optional function.

5.2 EPG Configuration

5.2.1 Accessing EPG

After the installation of Apache, the zipped EPG package (available upon request) can be unzipped to the access path of the installation destination directory, for example, the above-mentioned access path is E:/html, and assuming that the EPG pages are stored in the EPG folder, then it will go to 'index.htm', which is the first page when the '<http://192.168.1.121/EPG/>' is accessed.

5.2.2 EPG multicast list configuration

EPG multicast list is stored in '...EPG/javascript/media.js' and in order to make sure the program can be played, please double check whether the multicast_addr and multicast_desp in the media.js are consistent with the configuration of the multicast server, that is, the multicast_addr is the multicast address for multicast server and the multicast_desp is the program description for the corresponding multicast address (in order to make the list looked nicely, try to control the length of

the program description)

Example 1:

The multicast programs configured on the current server:

1. address: igmp://228.0.0.1:1234; Description: TombRaider
2. address: igmp://228.0.0.2:1234; Description: ASB
3. address: igmp://228.0.0.3:1234; Description: Friend_MTV

so the 'multicast_addr' and 'multicast_desp' should be provided as below;

```
var multicast_addr = new defArray("igmp://228.0.0.1:1234",  
                                  "igmp://228.0.0.2:1234",  
                                  "igmp://228.0.0.3:1234"  
                                  );  
var multicast_desp = new defArray("TombRaider",  
                                  "ASB",  
                                  "Friend_MTV"  
                                  );
```

Example 2;

If you want to delete a certain program, for example, the second program, you can just delete the second item in the 'multicast_addr' and 'multicast_desp'. Then the new 'multicast_addr' and 'multicast_desp' will be as below:

```
var multicast_addr = new defArray("igmp://228.0.0.1:1234",  
                                  "igmp://228.0.0.3:1234"  
                                  );  
var multicast_desp = new defArray("TombRaider",  
                                  "Friend_MTV"  
                                  );
```

Example 3:

If you want to add a certain program, assuming the address is 'igmp://228.0.0.9:1234', and the description is 'Troy', the new 'multicast_addr' and 'multicast_desp' will be as below:

```
var multicast_addr = new defArray("igmp://228.0.0.1:1234",  
                                  "igmp://228.0.0.2:1234",  
                                  "igmp://228.0.0.3:1234",  
                                  "igmp://228.0.0.9:1234"  
                                  );  
var multicast_desp = new defArray("TombRaider",  
                                  "ASB",
```

```
        "Friend_MTV",  
        "Tory"  
    );
```

You can also add the program to a certain place, for the last example, you can add the program to the second place, the new 'multicast_addr' and 'multicast_desp' will be as below:

```
var multicast_addr = new defArray("igmp://228.0.0.1:1234",  
    "igmp://228.0.0.9:1234",  
    "igmp://228.0.0.2:1234",  
    "igmp://228.0.0.3:1234"  
    );  
var multicast_desp = new defArray("TombRaider",  
    "Tory",  
    "ASB",  
    "Friend_MTV"  
    );
```

Notice: From the above three examples, please note that the address and description should be identical to the corresponding information in the 'multicast_addr' and 'multicast_desp'. If there is discrepancy happening, the program to be played will not be identical to the description.

In the zipped EPG file, the multicast addresses supported can reach up to 21 addresses on one list, and when the address number of the multicast list is larger than 21, these address numbers will not be displayed on the screen. More pages can be added to display more multicast addresses.

5.2.3 EPG MP3 list configuration

MP3 list is stored in '...EPG/javascript/music.js', and in order to make sure the audio can be played, please double check whether the MP3_url, music_file and music_description in the music.js are consistent with the configuration of the multicast server. The MP3_url is the address where MP3 files are stored, the music_file is the MP3 filename (space is not allowed for the filename), and the music_description is the description of the MP3.

```
For example: var MP3_URL = "192.168.1.101/ EPG/MP3/";  
var music_file = new defArray("ACommamour.MP3",  
    "allafigaro.MP3",  
    "CancionTriste-JesseCook.MP3"  
    );  
var music_description = new defArray("A Comm amour",  
    "allafigaro",  
    "Cancion_Triste-Jesse_Cook"  
    );
```

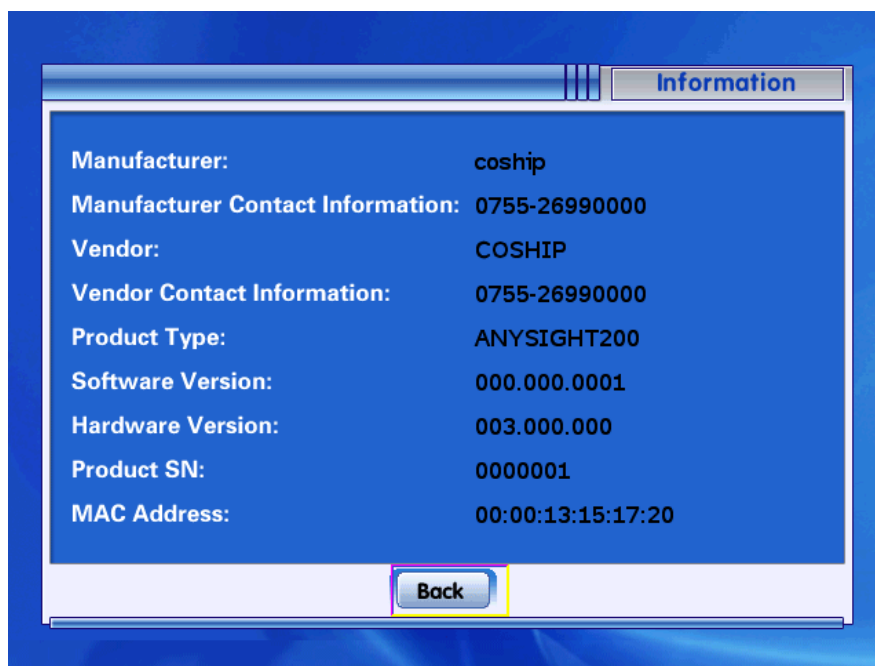
MP3_URL is the the '192.168.1.101/EPG/MP3/' directory where the ACommamour.MP3, allafigaro.MP3, CancionTriste-JesseCook.MP3 store.

The usage of 'music_file' and 'music_description' is the same with the 'multicast_addr' and 'multicast_desp'.

In the zipped EPG file, the MP3 addresses supported can reach up to 34 addresses, on one list and when the address number of the MP3 addresses is larger than 34, the larger ones will not be displayed on the screen. More pages can be added to display more music addresses.

6 Upgrade Server Configuration

Upgrade Server works through the Web Server similar to EPG Sever, and needs to configure the upgrade packet. As the example below, the network path is '<http://192.168.1.121/>', physics path is '<E:/html/>', so you only need to put the upgrade packet under '<E:/html/>'. If your upgrade packet is *.rar or *.zip, please decompress it to a folder at first, you will get *.cfg and *.dat files. For example: If *.cfg and *.dat files is under '<E:/html/upg/>', the upgrade address must be '<http://192.168.1.121/upg/>', please restart the STB, it will change the flag automatically and enter EPG Homepage if it detects a new version, but the upgrade operation doesn't finish, you must restart the STB again, and it will start upgrade automatically. You can enter SysInfo page to see 'Software Version' value and check the upgrade successfully or unsuccessfully (please consult 《AnySight20X Manual V1.0》 to enter SysInfo page) as pic6-1. Please consult 《IPSTB HTTP Upgrade Manual》 if you want know more.



Pic 6-1