

HDL[®]

User manual

Digital Background Music Player



SB-Z-AUDIO

buspro

www.hdlautomation.com

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Version	Date	Description
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INDEX

1. Overview.....	1
1.1 General Information.....	1
1.1.1 Description.....	1
1.1.2 Mounting.....	1
1.2 Description of functions.....	1
1.3 Device Description.....	2
1.4 Tips.....	3
2. Safety Precautions.....	3
3. Technical Data.....	4
4. Installation.....	6
4.1 Wiring.....	6
4.2 HDL Bus Pro Description.....	7
4.3 Commissioning.....	7
5. Software Configuration.....	8
5.1 Basic Information.....	8
5.1.1 Changing the ID.....	8
5.1.2 Changing the IP and IP MAC address.....	8
5.2 Music Settings.....	8
5.2.1 Accessing the SD Card.....	9
5.2.2 Selecting a playlist from the SD card.....	9
5.3 Function selection and radio settings.....	10
5.3.1 Functions.....	10
5.3.2 FM Channel List.....	11
5.3.3 Audio Broadcast Setup.....	11
5.4 Language synthesis.....	15
5.5 FTP Settings.....	15
5.5.1 Introduction.....	15
5.5.2 Playing music from a PC.....	16
5.6 Setting a button target.....	19
5.7 LCD Panel Control.....	20
5.8 Universal Switch Control.....	21
6. Note.....	25

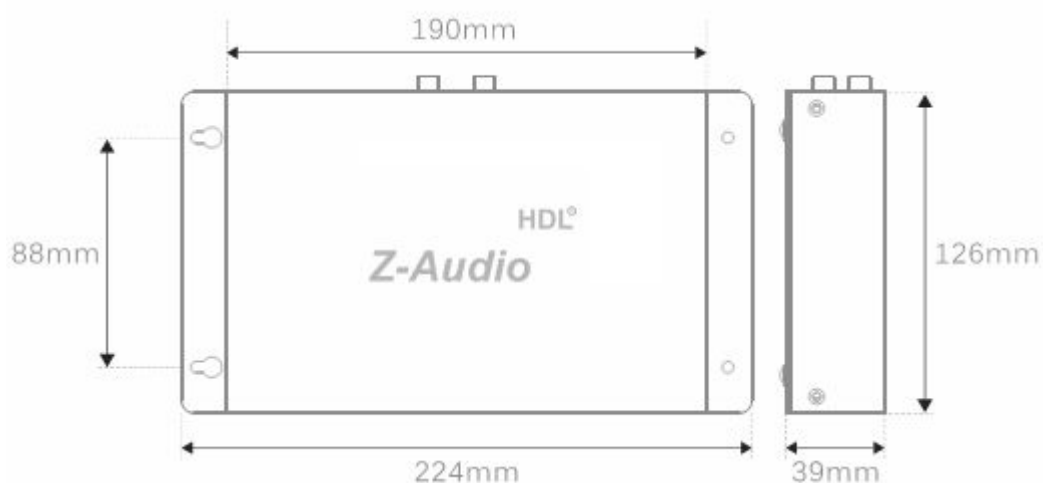
1. Overview

1.1 General Information

1.1.1 Description

The SB-Z-AUDIO is a multi-functional audio system which supports multiple music sources. In combination with the i-Life app or a HDL DLP, the module can be fully controlled and integrated with security systems and SMS modules.

1.1.2 Mounting

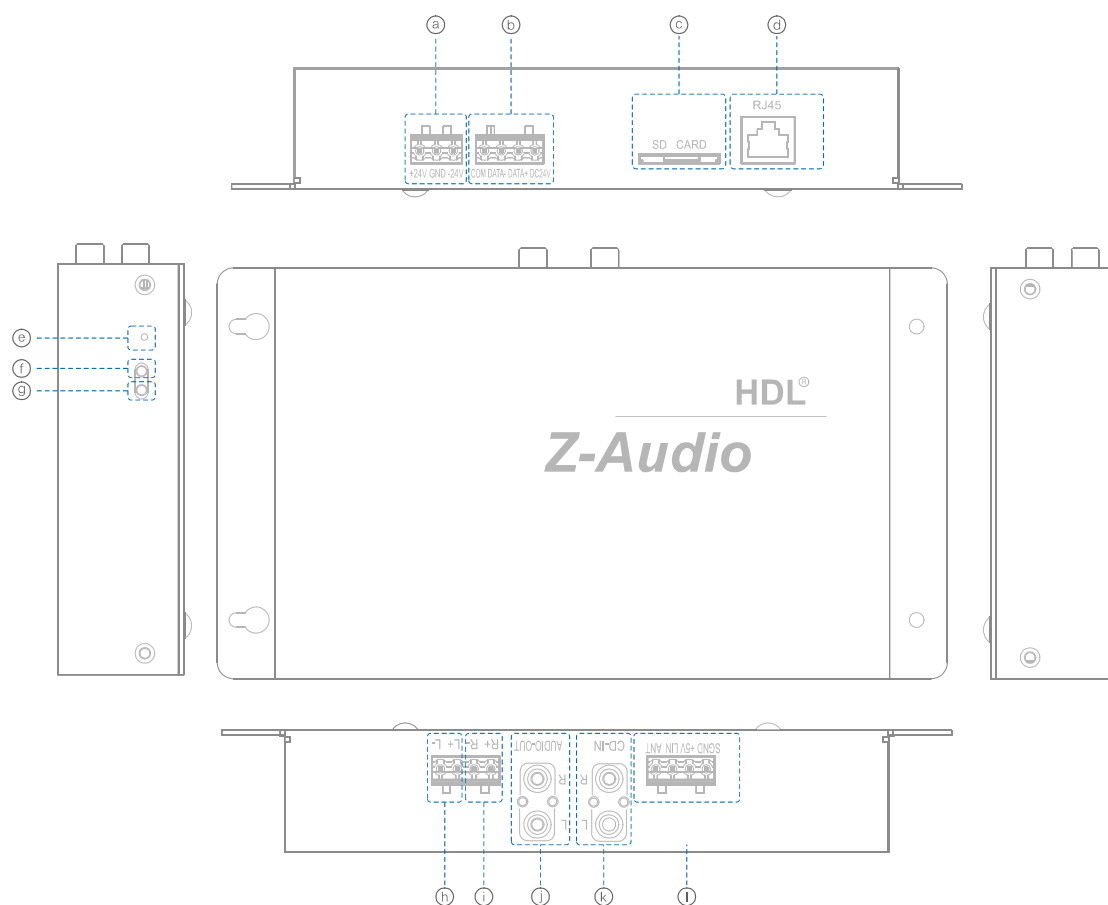


- Screw fixing
- DB Box installation

1.2 Description of functions

- External input
- Internal SD Card
- FM Radio
- FTP Server
- Voice prompts
- HDL Buspro communication

1.3 Device Description



- a. +24V、GND、-24V : Power Supply
- b.GND、DATA-、DATA+、DC24V : HDL Buspro
- c.SD CARD
- d. RJ45
- e. Upgrade and Reset hold
- f. LED: Green LED will flicker when reset or when system is upgraded
- g. Working signal LED:Green LED will flicker when operational
- h.Left channel(with amplifier),Connect to 8Ω Speaker
- i. Right channel(with amplifier),Connect to 8Ω Speaker
- j. AUDIO-OUT: Audio Output Port (No amplifier)
- k. CD-IN: Audio Input Port
- l.SGND、5V、LIN、ANT
 - SGND、5V : 5V Power output port
 - LIN : Stand-by
 - ANT : FM Antenna

1.4 Tips

- 1、 LED flickers every 1.5s when working normally, the LED also flickers every 0.1s when a playlist is being uploaded.
- 2、 If the module cannot be found using the software, and the LED does not blink every 1.5 seconds, reset the IP. By default the module IP is 192.168.10.250, the IP of a connected PC should be set as 192.168.10.*
- 3、 The SD card must use the FAT 32 file system.
- 4、 After the IP of the module has been modified it will immediately restart, a user should wait at least 5 seconds before using the module after a restart has occurred.
- 5、 Any audio files that a user wishes to play must be in mp3 format, the name of an audio file cannot exceed 21 characters, and its name cannot exceed 25 characters.
- 6、 When using a SD card a maximum of 47 playlists are supported, with each playlist supporting 999 songs. The FTP server supports 48 playlists, with each playlist supporting 999 songs.
- 7、 If a voice file is to be played it must have a numerical prefix, as an example the voice file for a locking door would be '001lock.mp3'.
- 8、 The SD card must be inserted into the module regardless of which audio source is to be used.

2. Safety Precautions

- Do not exceed 0.2Nm of torque when attaching the module.
- Ensure the module is well ventilated.
- Keep the module away from all liquids and corrosive gases.

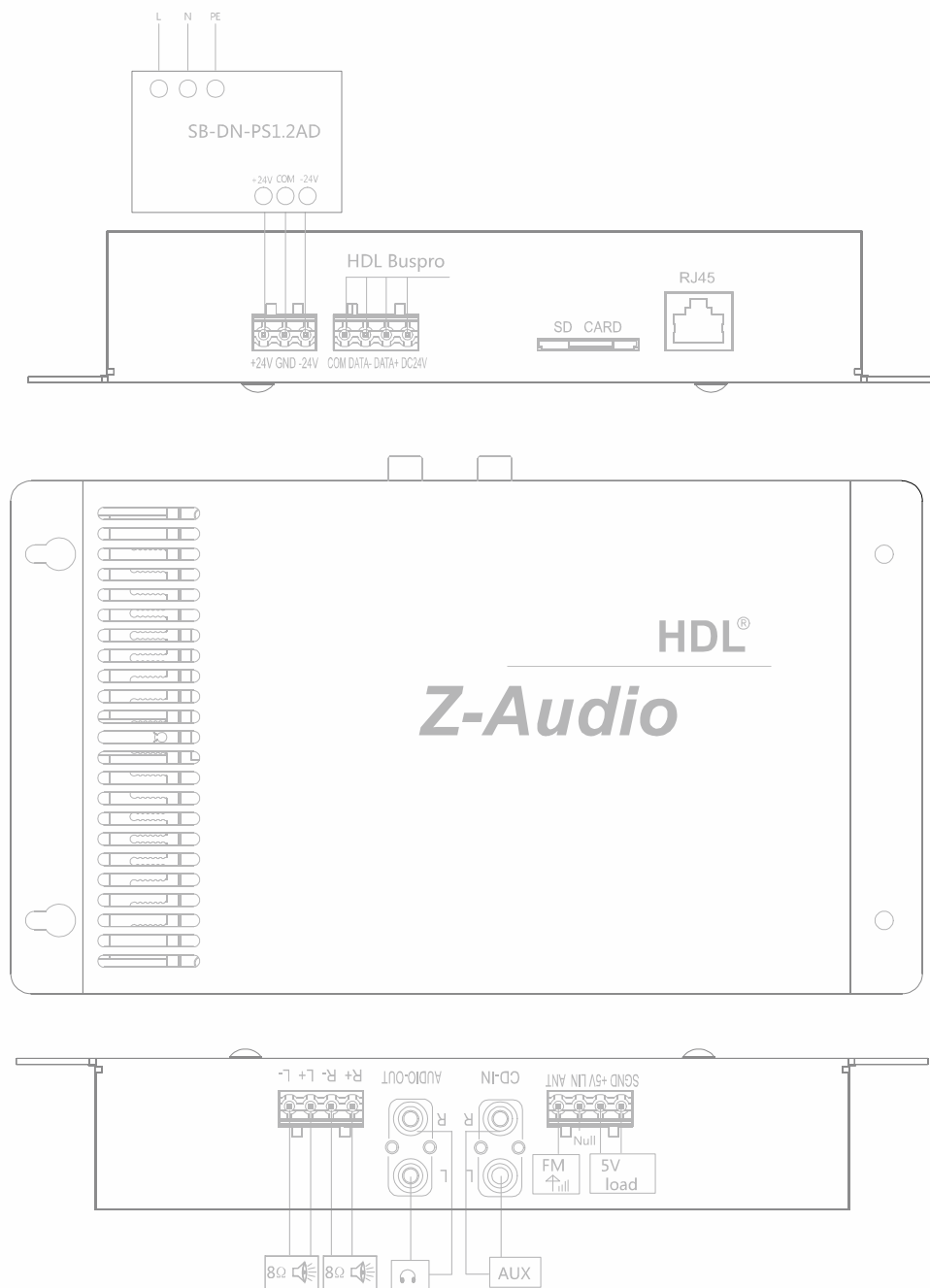
3. Technical Data

Electric Parameters :	
Working voltage	DC±24V
Static Power	1.6W
Audio input voltage	0.7VPP
Input resistance	50KΩ
Output resistance	RL=8Ω; RR=8Ω
Output power	20W×2
Harmonic distortion	<0.05%
SNR	97dB
Frequency range	22Hz~20KHz
File name length	≤25 bytes
Music Format	MP3
SD card capacity	≤8G
Communication protocol	HDL Buspro, FTP, UDP
Signal interface	RJ45, SD card, HDL-BUS, RCA Audio, Audio output, DC power input

Environmental Conditions	
Working temperature	0°C~45°C
Working relative humidity	Up to 90%
Storage temperature	-20°C~+60°C
Storage relative humidity	Up to 93%
Approved	
CE	
RoHS	
Production Information	
Dimensions	224×126×39 (mm)
Weight	1266(g)
Housing material	Steel
Installation	Screw fix /DB Box installation
Protection degree	IP20

4. Installation

4.1 Wiring



4.2 HDL Bus Pro Description

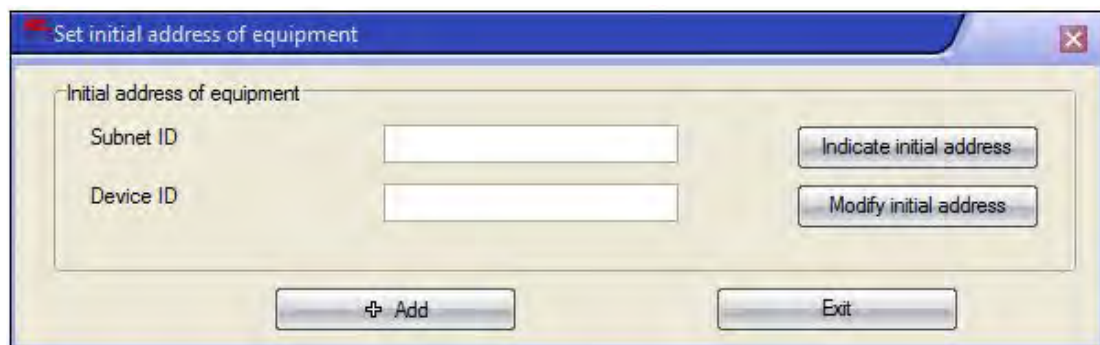
Connector Information

buspro	
DC24V	Red
COM	Black
DATA -	White
DATA +	Yellow

4.3 Commissioning

Method One:

- a. Run the HDL-BUS Pro Setup tool.
- b. On the module long press the “programming button” for three seconds until the LED turns red.
- c. Using the software, click “Address management”, and then select “Modify address”, the window below will then be displayed.



- d) Click on “Indicate initial address”, and the current subnet/device ID of the device will then be displayed. To modify the address, fill in the new address, and click the “Modify initial address” then click the “+Add” button. The device will now be added to the “ON-line devices list”.

Method Two:

- a) Run the HDL-BUS Pro Setup tool.
- b) Search for online devices by clicking the search tab, a new window will then appear. Click the ‘fast search’ tab to search for online devices. If the “Add all” tab is clicked all devices found will be added to the “ON-line devices” list.

5. Software Configuration

5.1 Basic Information

5.1.1 Changing the ID

It's recommended to connect it via RJ45 and set the subnet ID difference from the Gateway (typically the SB-DN-1IP or HDL-MBUS01IP.431).

5.1.2 Changing the IP and IP MAC address

It is recommended that the default IP and the IP MAC address are changed, to avoid possible conflicts or errors.

- Default IP: 192.168.10.250
- Default MAC: H-D-L-85-85-85



The screenshot shows a 'Network parameter' configuration window. It contains the following fields and values:

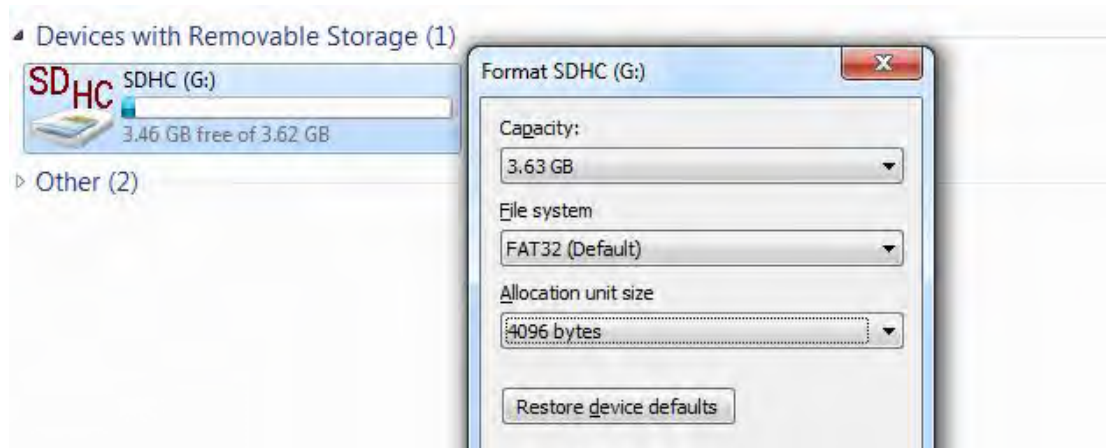
IP:	192.168.10.182	Port:	6000			
Route IP:	192.168.10.1					
IP MAC:	H	D	L	1	8	2
SubNet Mask:	255.255.255.0					

A 'Save' button is located at the bottom right of the window.

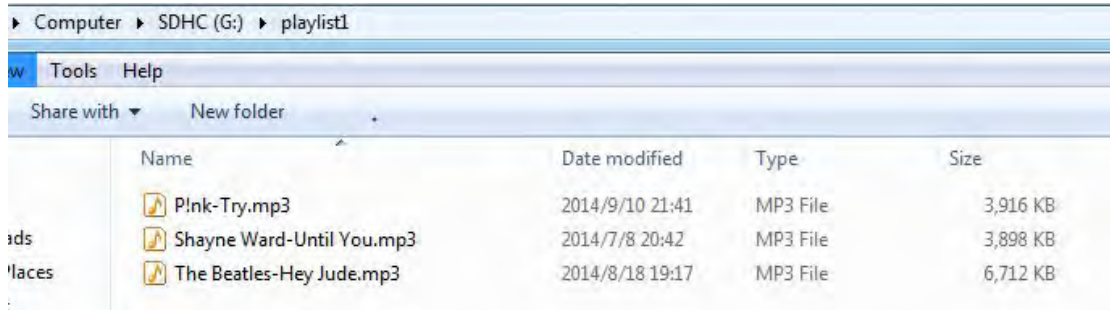
5.2 Music Settings

Preparation:

- 1- Connect the SD card to a PC, right click and select the file system as FAT32.



- 2- Create a folder or folders on the SD card and import some songs to them, the audio format must be MP3 with a folder name less than 21 characters long, and a song name of less than 25 characters.



- 3- Power off the Z-Audio and insert the SD card.

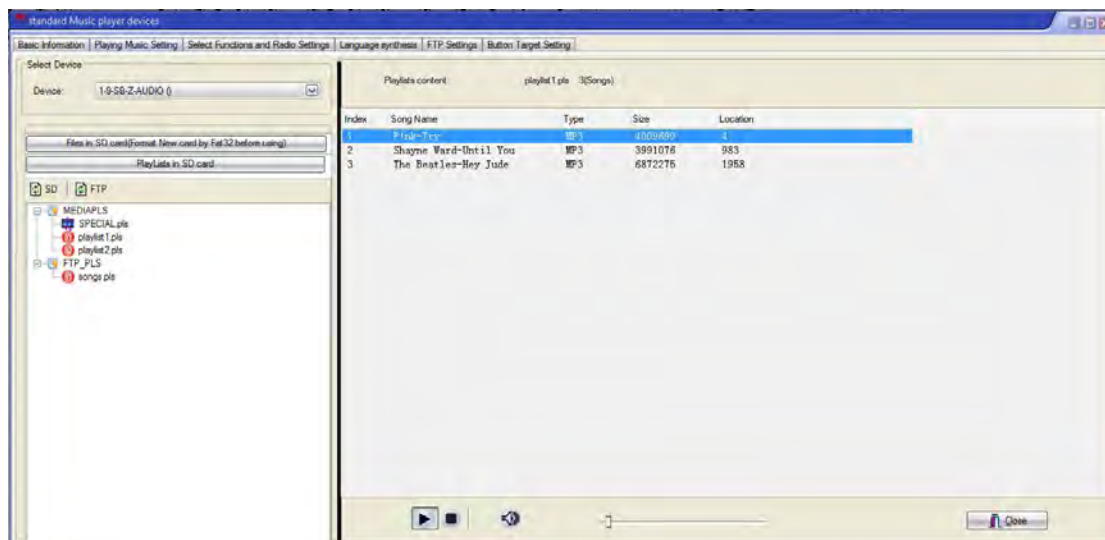
5.2.1 Accessing the SD Card

Files on the SD card can be checked by using the HDL BUS Pro setup tool:



5.2.2 Selecting a playlist from the SD card

Using the HDL BUS Pro setup tool, click on the 'Playlist in SD Card' tab. When a playlist is selected, its content will be displayed on the right hand side of the screen. If a song is selected then it can be played, stopped, and the volume adjusted using the controls on the bottom of the panel.



5.3 Function selection and radio settings

5.3.1 Functions

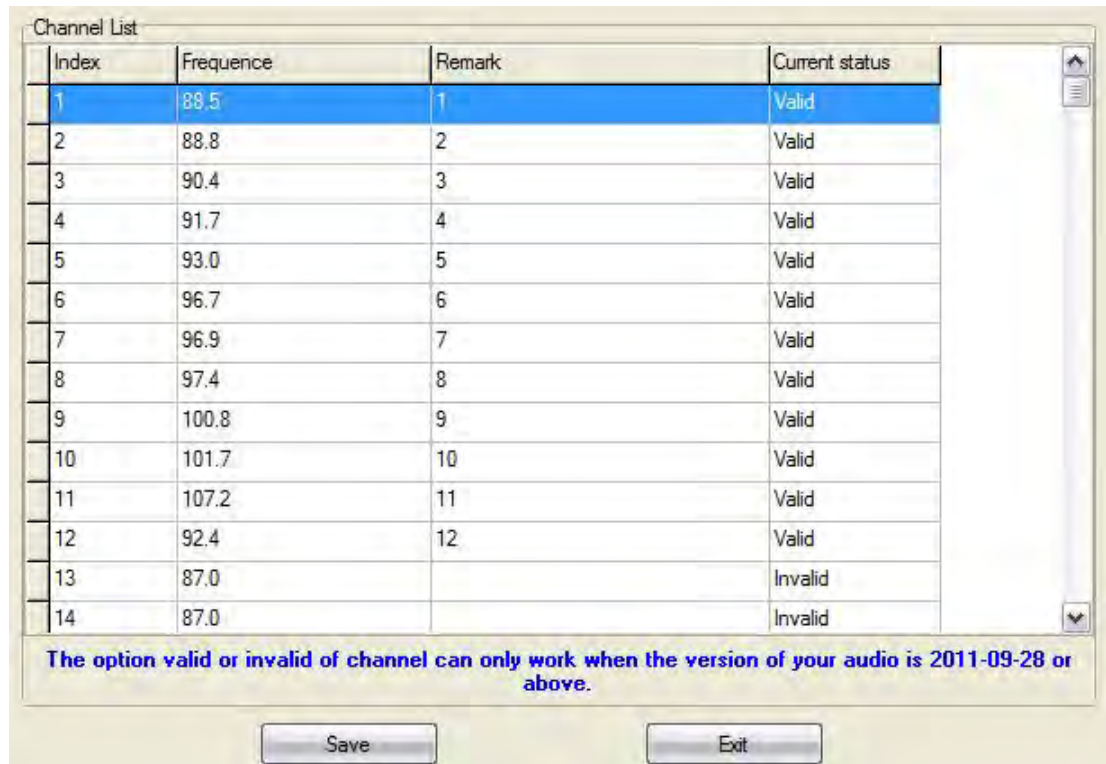
The following audio sources can be played and controlled from the DLP and i-Life interface.

- SD card
- FTP Server
- FM radio
- External audio input.



5.3.2 FM Channel List

The FM channel list supports 25 preset frequencies, for a channel to be used it must be changed from the default 'Invalid' to 'Valid'.

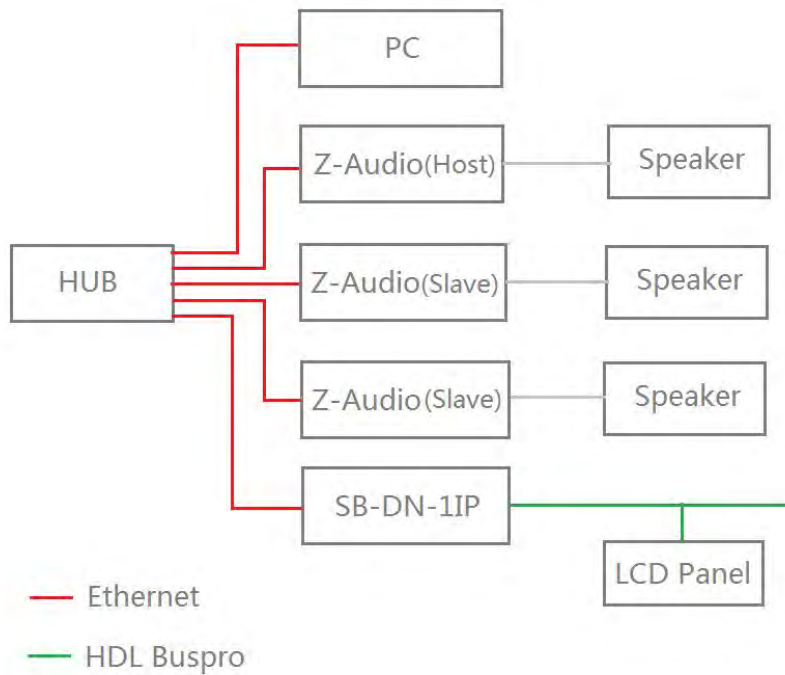


5.3.3 Audio Broadcast Setup

The 'Broadcast' function or 'party mode' as it is alternatively known, enables multiple Z-Audio modules to play the same songs simultaneously.

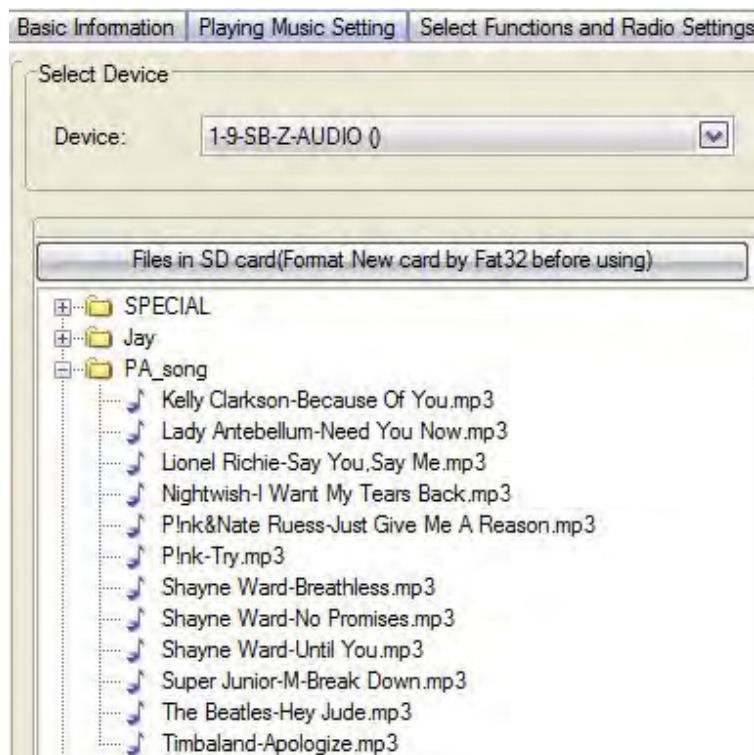
If the HDL-BUS setup tool is opened, one Z-Audio module can be set as the master module causing the remaining Z-Audio modules to be relegated to slave modules. If a DLP panel then activates the 'party mode' (the party mode can be enabled or disabled by double pressing the top right hand button of the DLP), the master Z-Audio module will then stream its data simultaneously via an Ethernet connection to all Z-Audio slave modules.

Note: supported music source of party mode: SD Card, FTP(NAS-HDD) and radio.



a) Create a folder named 'PA_**' in the SD card

Create a folder named 'PA_**' (The '**' can be a single character or multiple characters) in the SD card, place your chosen songs into the folder and then insert the SD Card into the master Z-Audio module.



b) Configuring a Z-Audio module as a master module

Network parameter

IP: Port:

Route IP:

IP MAC:

SubNet Mask:

Take the above Z-Audio as a master module.

Broadcast Setting

Broadcast Enable

Mode: Host Slave Host and slave

Volume synchronization

Group No.1: Group No.2:

Group No.3: Group No.4:

- Broadcast mode

- Host: act as the master Z-Audio, to synchronize its audio stream to other slave ones;
- Slave: act as the slave Z-Audio, to play the same audio which received from the host;
- Host and slave: act as the master Z-Audio and slave Z-Audio.

- Volume synchronization

Enable this function, the master Z-Audio can synchronize the volume to the slave ones.

To then enable the 'broadcast function', the mode must be set as 'host' and the volume synchronization tick box must be checked.

Four groups are available, however only the first is able to act as the host/master under host mode. If another Z-Audio module has the same number (e.g. 1) in its four groups, then it can synchronize with the host/master modules music library.

c) Configuring the Z-Audio slave modules

Take below Z-Audio module as a slave module.

Network parameter

IP: 192.168.10.183 Port: 6000

Route IP: 192.168.10.1

IP MAC: H D L 1 8 3

SubNet Mask: 255.255.255.0

Save

To then enable the module to receive commands from the master, the 'slave' mode must be selected, and if the 'volume synchronization' tick box is checked, then it can synchronize the volume of the master one.

Four groups are available, and all act as slave ones under slave mode. Set anyone group e.g. Group1 the same number as the host one's first group number(here it's 1), it can then synchronize with the host/master modules music library.

Broadcast Setting

Broadcast Enable

Mode: Host Slave Host and slave

Volume synchronization

Group No.1: 1 Group No.2: 2

Group No.3: 3 Group No.4: 4

Save

d) Setting the master Z-Audio module as the music control target

To set the master Z-Audio module as the music control target, the subnet ID and the device ID must be entered.

Basic information of device

Subnet ID: 1 Model: HDL-MPL8.48-FH

Device ID: 8

Remark:

Set music zone address

Music page status: Enable Disable

Audio Mode: Zaudio

SubNet ID: 1

Device ID: 9

Zone NO.(1-24): 1

Save

e) For a LCD panel to display the music page, the 'Music Page' tick box must be checked.



5.4 Language synthesis

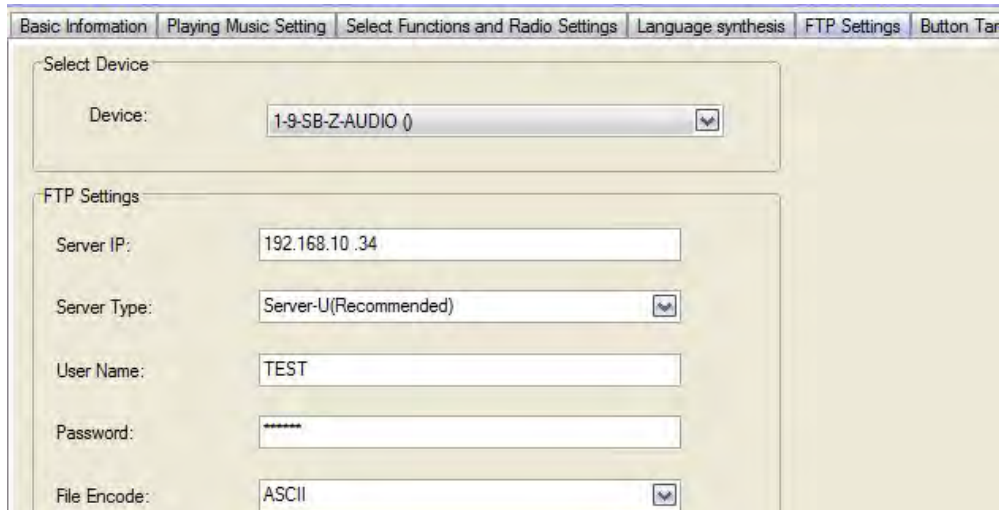
Language synthesis function has been canceled.

5.5 FTP Settings

5.5.1 Introduction

If a user wishes to play audio from a FTP source via a FTP server, a SD card must be placed into the module's SD card slot. It is recommended that to select corresponding server type and file encode parameters according to different FTP servers. These parameters should be set in the HDL Bus setup tool.

No.	Server Name	Server Type	File Encode
1	Ms-dos	IIS	ASCII
2	unix	Server-U	UTF-8
3	HomeFtpServer	Server-U	ASCII
4	FileZilla Server	Server-U	ASCII
5	Server-U	Server-U	UTF-8



The screenshot displays the 'FTP Settings' configuration window. At the top, there are tabs for 'Basic Information', 'Playing Music Setting', 'Select Functions and Radio Settings', 'Language synthesis', 'FTP Settings', and 'Button Tan'. The 'FTP Settings' tab is active. Below the tabs, there are two main sections: 'Select Device' and 'FTP Settings'. In the 'Select Device' section, the 'Device:' dropdown menu is set to '1-9-SB-Z-AUDIO ()'. The 'FTP Settings' section contains several input fields: 'Server IP:' with the value '192.168.10.34', 'Server Type:' with a dropdown menu set to 'Server-U(Recommended)', 'User Name:' with the value 'TEST', 'Password:' with a masked field of asterisks, and 'File Encode:' with a dropdown menu set to 'ASCII'.

- Server IP: set the IP address of server, PC or NAS.
- Server type: select the server type according to the FTP server you used
- User name: input the user name of your account which created in FTP server
- Password: input the password of your account which created in FTP server

Note:

To play music from a FTP audio source, the Z-Audio IP should be in the same network as the FTP audio source.

5.5.2 Playing music from a PC

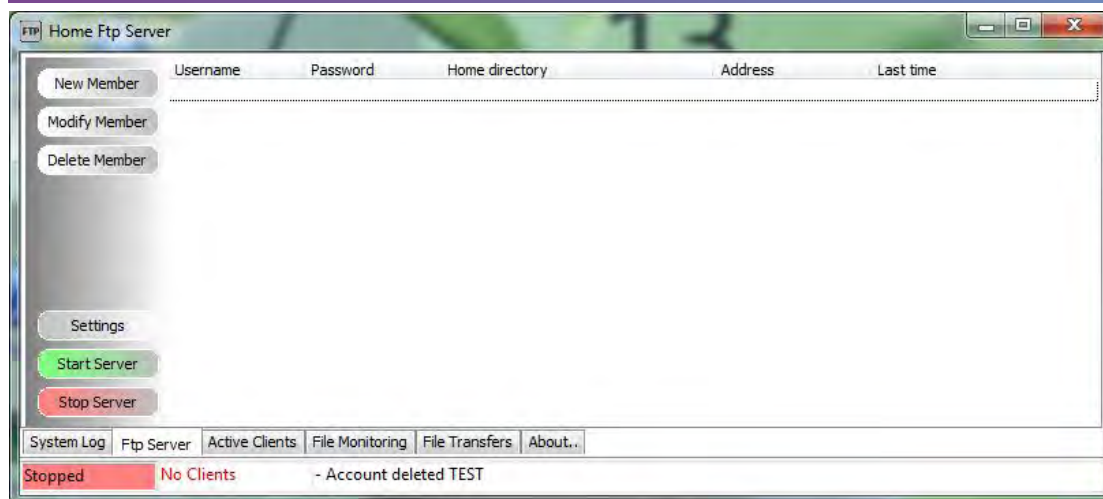
If a user wishes to play music from a PC, the PC should have the FTP server software installed.

An example video using a HomeFTP server can be downloaded by following the link below:

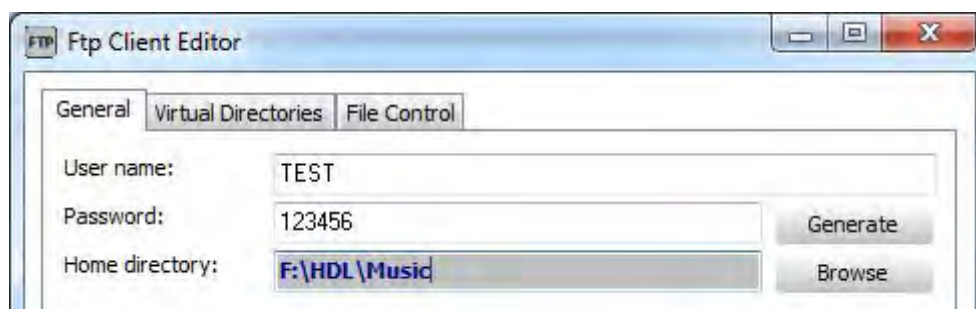
https://www.dropbox.com/sh/kcw380yhui8a827/AABtSTke2IKLMrSxo7QN8jQ_a?dl=0

In order to configure the FTP server, the below steps must be followed:

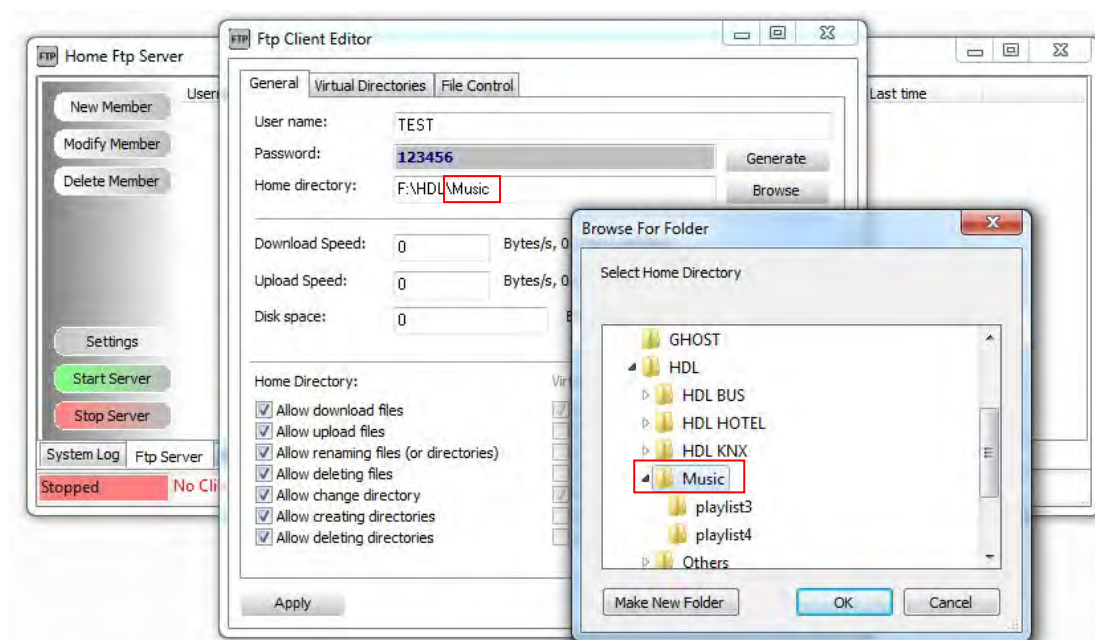
- a) Open the Home FTP Server software, and when prompted click 'New Member'.



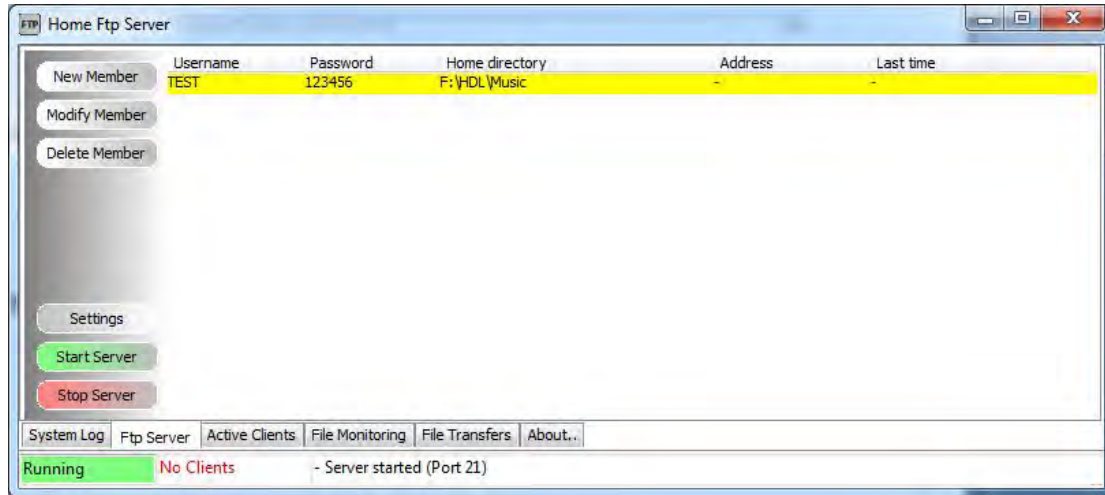
- b) Set your user name and password, in the example below the user name is TEST, and the password is 123456.



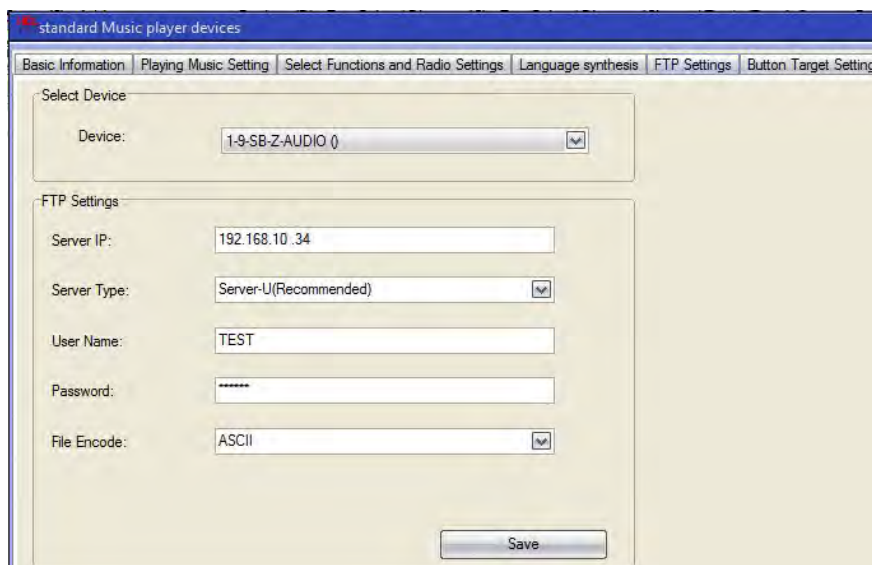
- c) To access the music folders, click on the 'Browse' tab. A file explorer window will then appear, selecting the 'Music' folder will cause any included playlists (have PM3 songs inside) to be displayed. Then your home directory will end at 'Music', and click 'OK'.



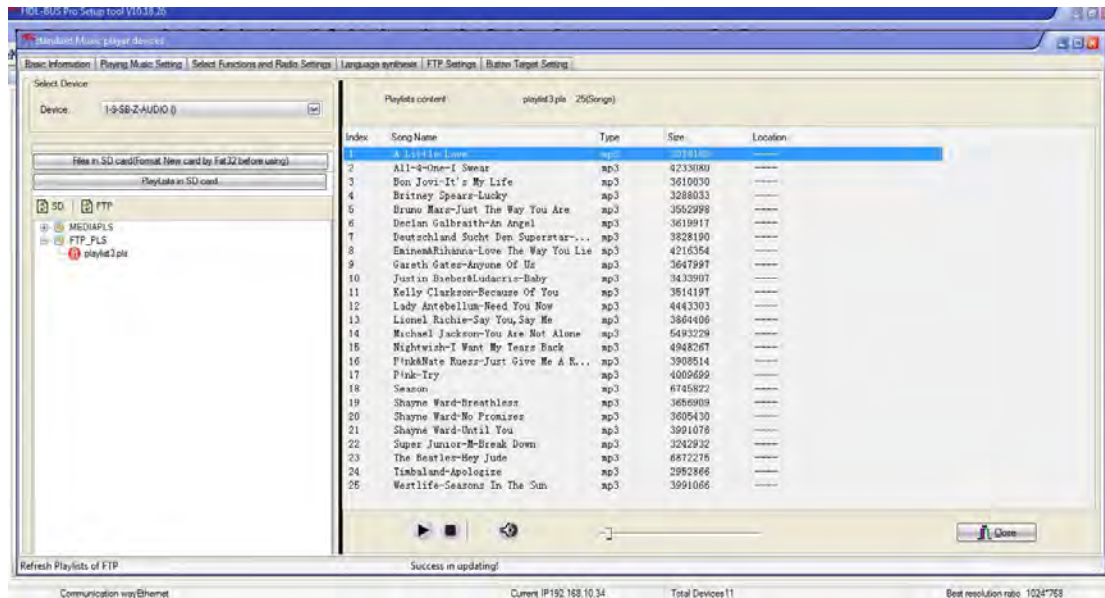
- d) After setting the home directory, a user should click on the 'Apply' tab, this will then exit the 'Ftp Client Editor' interface, and return to the main interface. The newly created account and its home directory will now be displayed. To start the server click on the 'Start Server' tab, this will then cause the bottom left status indicator to change from RED (stopped) to GREEN (Running).



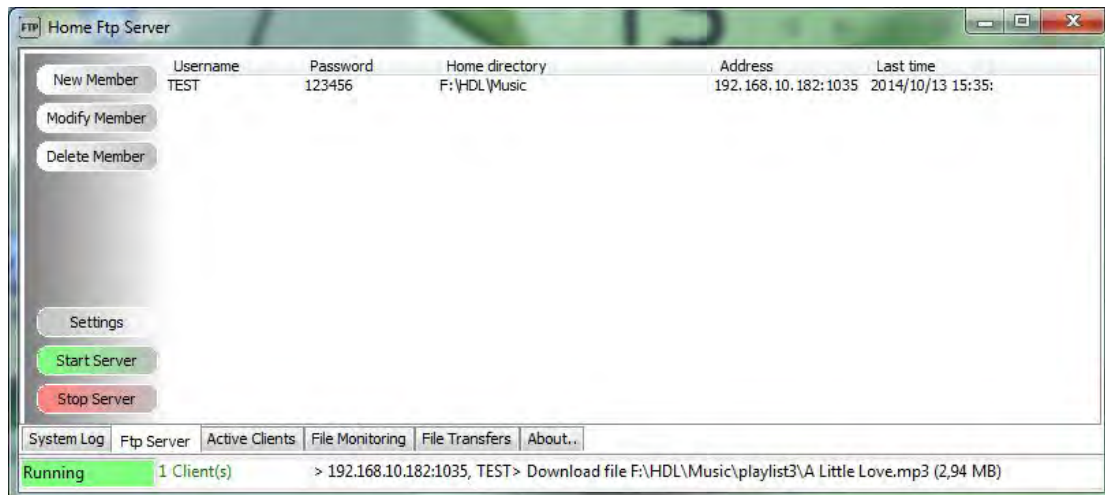
- e) For the FTP server to be kept running, a user should go to the music player, and select the 'FTP Settings' tab. They should then ensure that the server IP is the same as that of the PC on which the FTP server software is running. For HomeFtpServer, the server type is Server-U, the file encoding is ASCII; and the User Name and Password are same as that of the FTP server. If all the information is correct, a user should then click on the 'Save' tab.



- f) To refresh the playlists, open the 'Playing Music Setting' page, and turn to the 'Playlist in SD Card' tab, click the FTP icon to refresh. When the program finishes updating the playlists, 'Success in updating' will be displayed on the bottom of the window. The Z-AUDIO module can now play music from a PC.



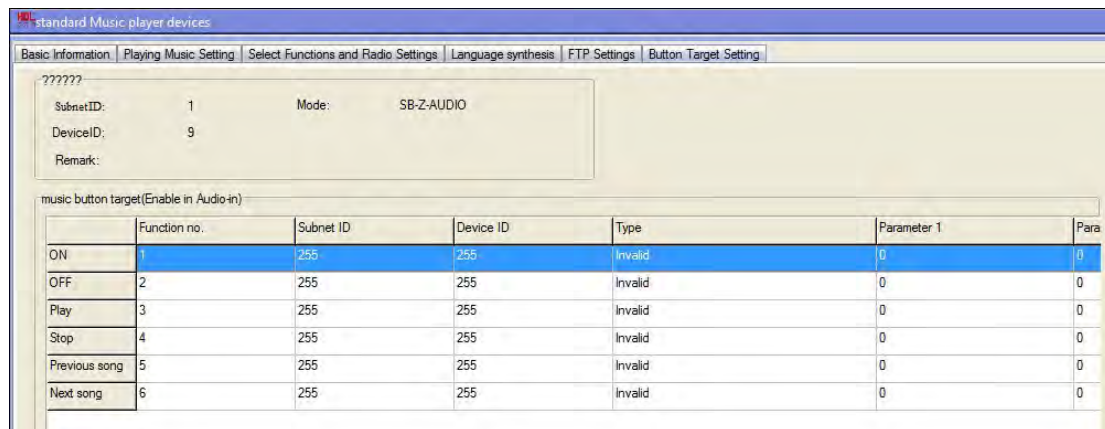
The Home FTP server will now show '1 Client(s)', and the information of the music currently being played will be displayed at the bottom of the window.



5.6 Setting a button target

The buttons can be set to trigger targets while 'Audio-in' source is being played, the targets that can be set in this state are ON, OFF, Play, Stop, Previous song, and Next

song.

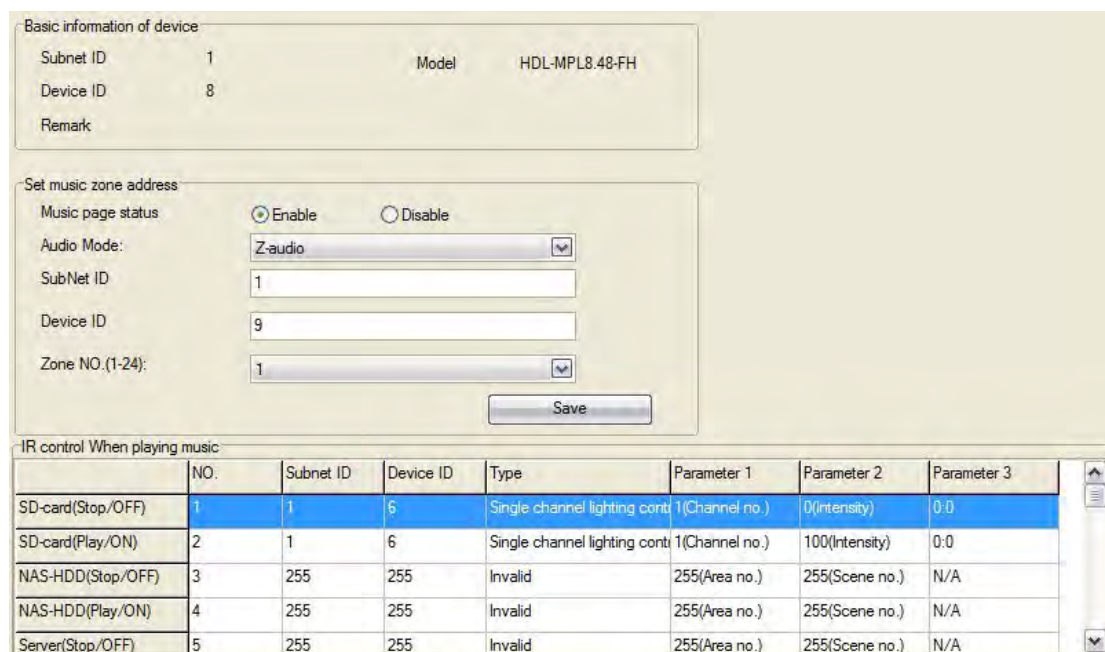


5.7 LCD Panel Control

To enable LCD panel control, a user should follow the below steps:

- Open the LCD panel's Music page
- Enable the Music page status
- Select 'Z-Audio' for the Audio mode.
- Enter the Subnet/Device ID of the music player, and the Zone No. for current music player.

One LCD panel can control up to 24 Zones.



Some targets can be trigger when control the music player from LCD panel. From above screen shot, when play SD Card music, it will turn on the lighting, when stop SD Card music, it will turn off the lighting.



The buttons on the DLP panel have distinct functions when used to control music.

- The first button when short pressed is used to select the SD-CARD, NAS-HDD, RADIO, or AUDIO-IN. When long pressed it enters into the audio settings page this is where the ZONE, SONG, TONE, PLAY LIST, PLAY MODE, and PARTY mode can be selected.
- The second button serves to control both play and pause.
- The third and fourth buttons are able to select the previous playlist or the next playlist.
- The fifth and sixth buttons are able to select the previous song or the next song.
- The seventh and eighth buttons are able to decrease or increase the volume.

5.8 Universal Switch Control

Universal switches can be used to control music, however three commands need to be set to play one song.

- First: Select music source
- Second: Select a playlist
- Third: Select a song in the playlist to play

UV Switch list for Z-AUDIO:

No.	UV Switch No.	Function
1	1-149	ON: Select a song in playlist(song No.1-149) OFF: select a song to stop
2	150-200	ON: Select a playlist(playlist No.0-50) OFF: Do nothing
3	201	ON: Play OFF: Stop
4	202	ON: Stop All OFF: Do nothing
5	203	Change a playlist ON: Next OFF: Pre
6	204	Change a song ON: Next OFF: Pre
7	205	Control Audio voice ON: UP OFF: DOWN
8	206	TREBLE ON: UP OFF: DOWN
9	207	BASS ON: UP OFF: DOWN
10	208	ON: Play music on SD-Card
11	209	ON: Play music on FTP server
12	210	ON: Radio
13	211	ON: Audio-in
14	215	Voice 63(Min)
15	216	Voice 55
16	217	Voice 47
17	218	Voice 39
18	219	Voice 28

19	220	Voice 20
20	221	Voice 15
21	222	Voice 10
22	223	Voice 5
23	224	Voice 0(Max)
24	225	Play One
25	226	Repeat One
26	227	Order Play
27	228	Repeat All

Common rules when using the universal switch

To enable voice playback:

- 1 : Send universal switch 208, ON (Select Audio source)
- 2 : Send universal switch 150, ON (Select List)
- 3 : Send universal switch 1-149, ON (Select the number that at front of song)

To disable voice playback:

- 1 : Send universal switch 1-149, OFF (Select Song)

To play an audio file from a SD card:

- 1 : Send universal switch 208, ON (Select Audio source)
- 2 : Send universal switch 151 ~ 200 , ON (Select1 ~ 50 play list)
- 3 : Send universal switch 1 ~ 149, ON (Select a song to Play)

To stop playing an audio file from a SD card:

- 1 : Send universal switch 208, ON (Select Audio source)
- 2 : Send universal switch 151 ~ 200, ON (Select1 ~ 50 play list)
- 3 : Send universal switch 1 ~ 149, OFF (Select a song to stop)

To play an audio file from a FTP source:

- 1 : Send universal switch 209, ON (Select Audio source)
- 2 : Send universal switch 151 ~ 200 , ON (Select 1 ~ 50 play list)
- 3 : Send universal switch 1 ~ 149, ON (Select a song to Play)

To stop playing an audio file from a FTP source:

- 1 : Send universal switch 209, ON (Select Audio source)
- 2 : Send universal switch 151 ~ 200 , ON (Select 1 ~ 50 play list)
- 3 : Send universal switch 1 ~ 149, OFF (Select a song to Stop)

To enable the RADIO to be played:

- 1 : Send universal switch 210, ON (Select Audio source)
- 2 : Send universal switch 201, ON (play)

To disable the RADIO being played:

- 1 : Send universal switch 210, ON (Select Audio source)
- 2 : Send universal switch 201, OFF (Stop)

To play a file from an AUDIO-IN source:

- 1 : Send universal switch 211, ON (Select Audio source)
- 2 : Send universal switch 201, ON (play)

To stop playing a file from an AUDIO-IN source:

- 1 : Send universal switch 211, ON (Select Audio source)
- 2 : Send universal switch 201, OFF (Stop)

