

HotelTV

Client Software Update

REV A0.10

2014 October

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1. Revision History

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11 Oct 2011	Bora Tunçer	A0.1	Initial creation
24 Jan 2012	Bora Tunçer	A0.2	Adding bootloader update via console
22 Mar 2012	Erdoğan Bulut	A0.3	Structure Changed
29 Mar 2012	Gökem Giray	A0.4	Structure Changed
24 Apr 2013	Uğur Daltaban	A0.5	Adding MB70/ MB90 / MB95 Update
17 May 2013	Uğur Daltaban	A0.6	Minor Changes
18 July 2013	Uğur Daltaban	A0.7	Minor Changes
31 Oct 2013	Bora Tunçer	A0.8	Naming changed
06 Agu 2014	Uğur Daltaban	A0.9	Minor Changes
08 Oct 2014	Jale Demir	A0.10	Revision

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4. Introduction

4.1. Purpose

This document describes the client software update process of MB33, MB36, MB70, MB90 and MB95 model TVs which are used in HotelTV, HotelTV2 and HotelTV2newUI projects.

The following sections describe the environment usage model:

- “4 – Introduction” describes the goal and the scope of this document
- “5 – Structure” gives basic info about system
- “6 -- Part I” describes main steps of updating MB33 and MB36 model TVs
- “7 – Part II” describes main steps of updating MB70 model TVs
- “8 -- Part III” describes main steps of updating MB90 and MB95 model TVs

4.2. Scope

This document intends to be a reference manual for installation of HotelTV / Phantom client releases and explains each step of HotelTV client release setup process with examples. This document is shared and applicable for the development all VESTEL sites.

4.3. Abbreviations

- | | |
|---------------|--|
| • STB | Set top box |
| • IIS | Internet Information Services |
| • NFS | Network File System |
| • ISO | International Organization for Standardization |
| • PMS | Property Management System |
| • SQL | Structured Query Language |
| • IPTV | Internet Protocol Television |
| • DVB | Digital Video Broadcasting |
| • VOD | Video On Demand |
| • CI | Common Interface |
| • FTP | File Transfer Protocol |
| • USB | Universal Serial Bus |

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5. Structure

In this document we will focus on TVs and detail update procedures for analog software and IPTV software. MB36 and MB33 TVs contain two different cards, one for analog operations and one for IPTV operation. So we will explain how to update both cards.

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6. MB33 / MB36 Update

This part explains the software update procedures for MB33 and MB36 model TVs. There are 2 different types of updating these TVs; which are **Analog Software Update** and **IP Software Update**.

6.1. Analog Software Update

Before starting software update operation it is mandatory to get correct configuration parameters of TV. Each version of firmware for analog card must be released according to panel type and panel size of TV because of the timings of LCD panel. So you should first enter into “Service Settings” menu by pressing “Menu + 4725” on remote keyboard and select “Product Info” from the menu.

The data written is “Pcf” variable defines the firmware type of analog card. You should request correct firmware according to this variable.

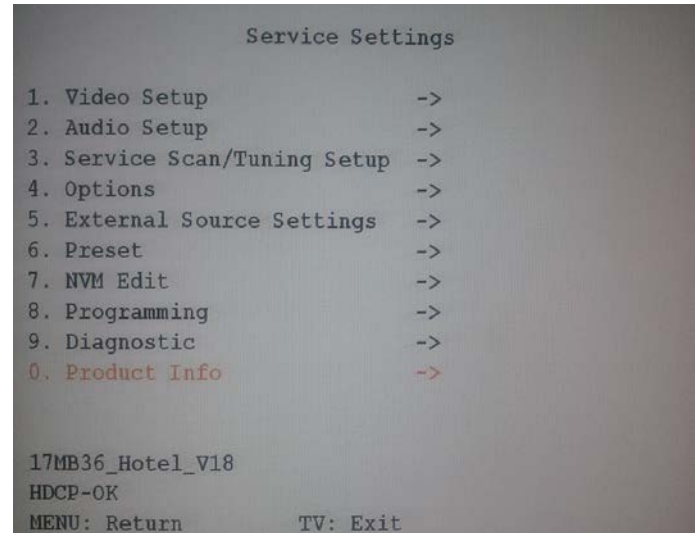


Figure 6-1: Service Settings Menu

Update procedure must be with extreme caution, only correct firmware which will be specially designed to work with TV (for given PCF data) must be written to analog card. The LVDS timings are different for different panel sizes and panel types.

!!! Writing different firmware may cause unwanted effects and may brick your TV !!!

This part of document describes the usage of third party software which does not belong to VESTEL. Every step must be performed with high caution. VESTEL, ZORLU shall have no liability for the accuracy or correctness of the content of this document and any damages caused in any way to your computer systems or target TVs.

6.1.1. Connections

The programming tool contains 3 parts, DB07 card, USB cable for connecting programmer card to PC and special SCART cable for connecting programmer card to TV. Connect USB cable to PC and SCART cable to SCART1 interface of TV.

6.1.2. Update Details

Figure 6.2 displays programmer software interface. We will first press “Connect” button for establishing connection between PC and TV. If you receive “Can’t find device type” message, you should control connections and cables. (Also restarting TV may help). You’ll receive a popup window displaying device type upon successful connection.

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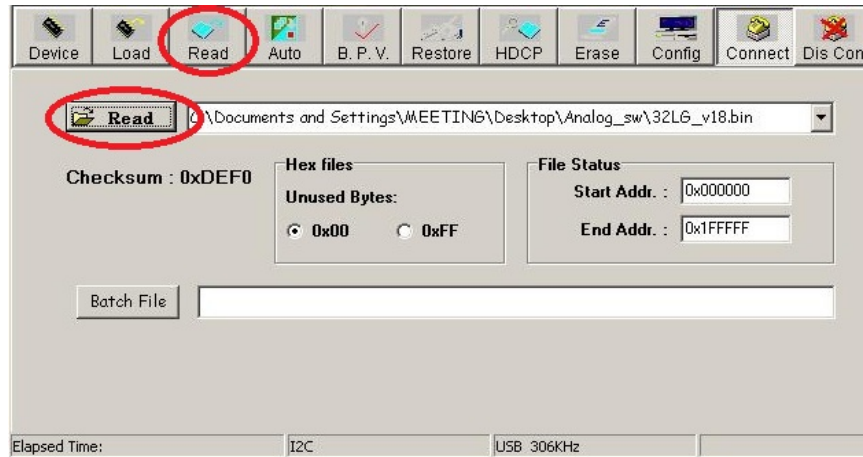


Figure 6-2 : Programming Tool

First step is to read the firmware image so we will press “Read” button on top menu and select the necessary firmware as shown in Figure 6.2. Next step we will choose basic configuration parameters for analog software update procedure so we press “Auto” button and open configuration menu. Then we will unselect following items in menu;

- Re-Connect
- Blank
- Verify

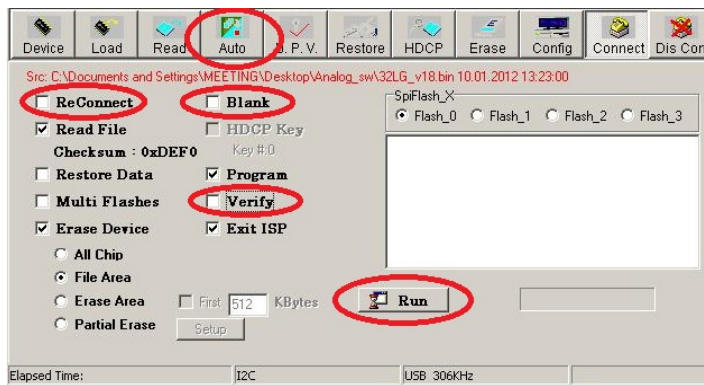


Figure 6-3 : Update Operation

Now we are ready to perform update operation, we will press “Run” button and the update operation will start. During update operation you’ll see current progress on the bar and after seeing “Pass” message on window, press “Disconnect” button and restart the TV.

6.2. IP Software Update

There are two different client releases for TV and STB hardware and all of them named as “version_X.YY.Z.zip”, major release numbers represented by X and minor release numbers represented by Y.

Following sections describes how to setup HotelTV client releases on TVs/STBs by using USB update or Ethernet update.

6.2.1. USB Update

This section explains how to perform update operation by using USB which is very easy to perform and highly recommended to recover problematic situations. Basically system has two stages, writing “USB update images” to and USB stick (min. 512MB) and rebooting TVs / STBs with using this USB stick. The USB update image is designed specifically to perform update operation and contains actual release images in side.

The USB update image is in EXT3 format, so we should not format USB disk by windows formats such as FAT32, NTFS, etc.

There are two different ways to prepare USB update image based on your operating system; using windows tools or using Linux. You are free to choose one of them.

Writing Images Using Linux

Naturally preparing an USB is easy in Linux by using its own console tools. You can follow listed steps bellow;

1. Extract “version_X.YY.Z.zip” file and get “version_X.YY.Z.ext3” file.
2. Plug USB stick to your host PC and learn its mount point (as an example /dev/sdb1)
3. Write image to USB by using a simple “cat” command shown bellow

```
root@bora-laptop:/USBUPGRADE# cat version_1.10.0.ext3 > /dev/sdb1
```

Figure 6-4: Image writing command in Linux

Writing Images Using Windows

In order to prepare “Update USB” under Windows we need to use “ImageWriter” application. You can download this application from our FTP servers and perform following steps to prepare update USB.

1. Download the latest version of ImageWriter and run ImageWriter.exe
2. Select “version_X.YY.Z.zip” or “version_X.YY.Z.ext3” file.
3. Select USB Device drive
4. Start writing update image to USB stick

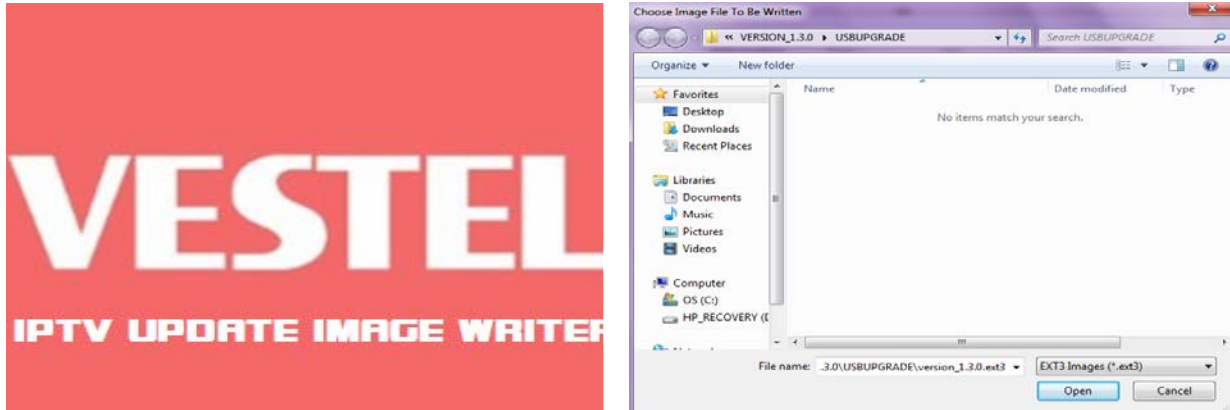


Figure 6-5: Image writer for windows

Compatible Operating Systems: ImageWriter executable is compatible with the following operation systems

- Windows Server 2003 & Windows Server 2008
- Windows XP SP1, SP2, SP3
- Windows 7

Updating TVs/STBs

Update operation is simple task that consist of two steps, plugging update USB into TV/STB and restarting it. During update operation, an image will be displayed on TV screen which will show the progress and the notification image at the end of update. (Figure 6.6) Basically you can follow following stages;

- Plugging Update USB
- Update Operation
- Removing USB Disk and restarting TV/STB

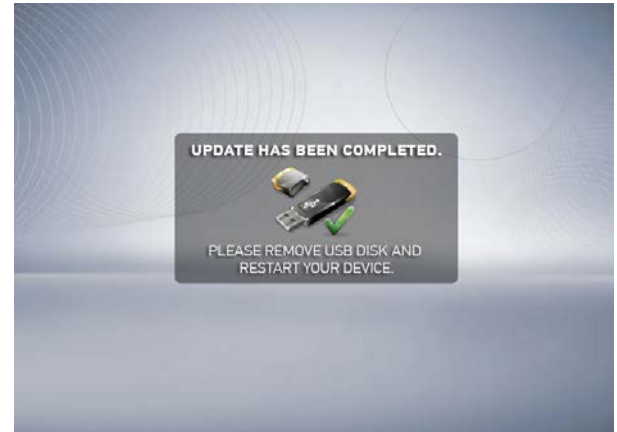


Figure 6-6: Update images

6.2.2. Ethernet Update

Log in to “HotelTV Admin Tool” and choose “Administration” menu, you will see the list of TVs which are free to invoke several operations. Choose the TV(s) that you want to update and press next button, then you’ll get the flowing screen (Figure 6.7). This page allows you to operate different instructions on TV(s).



Figure 6-7: TV Management screen on Administration menu

6.2.3. Console Update

We expect USB update or Ethernet update will work without any error but sometimes there may be situations that these updates may fail. This section describes how to perform software update over console using serial cables. HotelTV1 works with MB33 and MB36 series TVs and each model has different hardware connection for serial cabling. We can understand TV model by looking the location of the Ethernet port; on MB33 model TVs Ethernet port is located on side and on MB36 model TVs Ethernet port located on back of TV.

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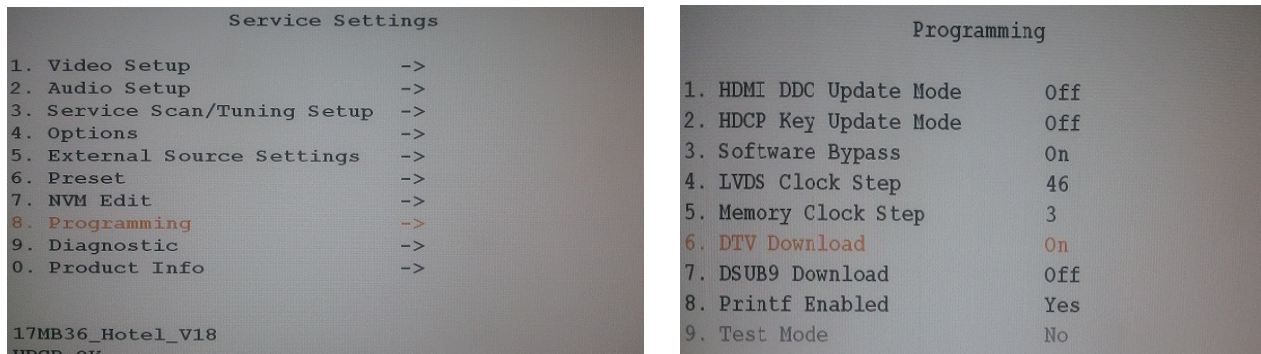


Figure 6-8: Secret service menu

By default console output will be closed for debugging, we will have no output even if we connect serial cable to TV. So we have to enter service menu and open console output for debugging. As seen in Figure 6.8 you should first enter in service menu and select “8. Programming” then under this menu you should select “6. DTV Download” and set “On”.

Now TV is ready to debug over serial cable, we will open a terminal program on PC and connect with following settings. (You can use your favorite program, Kermit, Putty, Teraterm, etc ...)

```
115200 baudrate
No parity
No hw control
No flow control
```

Figure 6-9: Terminal settings

When we establish connection to TV then we will get lots of debug logs, the key is to catch boot sequence in bootloader stage in order to write different banks of flash memory through bootloader console. So we will keep terminal program open and restart the TV, quickly press menu+4725, then 8-6 and set open. And press any key on terminal program in PC. This combination will bring us in following bootloader console:

```
Vestel>
```

Figure 6-10: Bootloader console

Next thing is to give “loadb” command on bootloader console and send the kernel image through your favorite terminal program using Kermit protocol. At the end on console it will display the location of kernel image in memory banks. We will use this address while copying kernel image from ram to flash.

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The source address of “cp.b” command which is highlighted with red color in Figure 6.11 below indicates the start address of the kernel image in memory which we transmitted through terminal program using Kermit protocol.

```
Vestel> loadb

## Send the image file “vmlinux.ub” file for kernel via terminal program

Vestel> protect off 1:10-60
Vestel> erase 1:10-60
Vestel> cp.b 0x84000000 0xa0040000 $filesize
Vestel> protect on 1:10-60
```

Figure 6-11: Kernel update commands on bootloader

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7. MB70 Update

This part explains the software update procedures for MB70 model TVs. There are 2 different types of updating a MB70 TV; which are **USB update** and **FTP Update**.

7.1. USB Update

This part includes USB Update for MB70 model TVs and we will detail how to perform standby micro update, bootloader update, application update and full update. In order to perform update operations please follow necessary instructions listed on each section respectively.

7.1.1. Standby Micro Update

“Standby micro update” has to be performed information within provider.

1. Copy “stdby_micro_usb_update.hex” file to root directory of your USB memory
2. Press “MENU” button on the remote control of your TV, then type “7935”, and then, set the option “Hotel Mode” to “OFF” in the menu page
3. Press “MENU” button on the remote control of your TV, then type “4725” end in the menu page and choose the option “Perform USB Operations”

7.1.2. Bootloader Update

“Bootloader update” has to be performed information within provider. **It is mandatory to perform “application update” or “full update” after performing “bootloader update”.**

1. Copy “cfe-VSTL.bin” and “sysinit.txt” files to the root directory of USB memory
2. Plug your USB memory to TV, restart your TV without un-plugging USB memory
3. Press stand by button of your TV, then wait for approximately 30 seconds

7.1.3. Application Update

1. Copy all files indicated lateral (Figure 7.1) to the root directory of USB memory
2. Plug your USB memory to TV, restart your TV without un-plugging USB memory
3. Press standby button of your TV and then wait for approximately 1 minute

```
autorun.sh  
squashfs.img  
sysinit.txt  
vmlinuz-initrd-VSTL  
vmlinuz-VSTL
```

Figure 7-1: Application Update

7.1.4. Full Update

1. Copy all files indicated lateral (Figure 7.2) to the root directory of USB memory
2. Plug your USB memory to TV, restart your TV without un-plugging USB memory
3. Press standby button of your TV and then wait for approximately 1 minute

```
autorun.sh
default_settings.img
squashfs.img
sysinit.txt
vmlinuz-initrd-VSTL
vmlinuz-VSTL
bti_p.dat
toros_hwprofile.bin
toros_swprofile.bin
toros_langprofile.bin
```

Figure 7-2: Full Update

7.2. FTP Update

This part includes FTP Update for MB70 model TVs and we will detail how create a new FTP User on Windows, to create a FTP server in IIS, copying files to exact folders and performing FTP update. In order to perform update operations please follow necessary instructions listed on each section respectively.

7.2.1. Creating a New FTP User

A new username and password could be defined on windows to log on FTP Server or you could use a valid username and password for FTP. To create a new user on Windows go to Computer Management and follow steps on below picture (Figure 7.3)

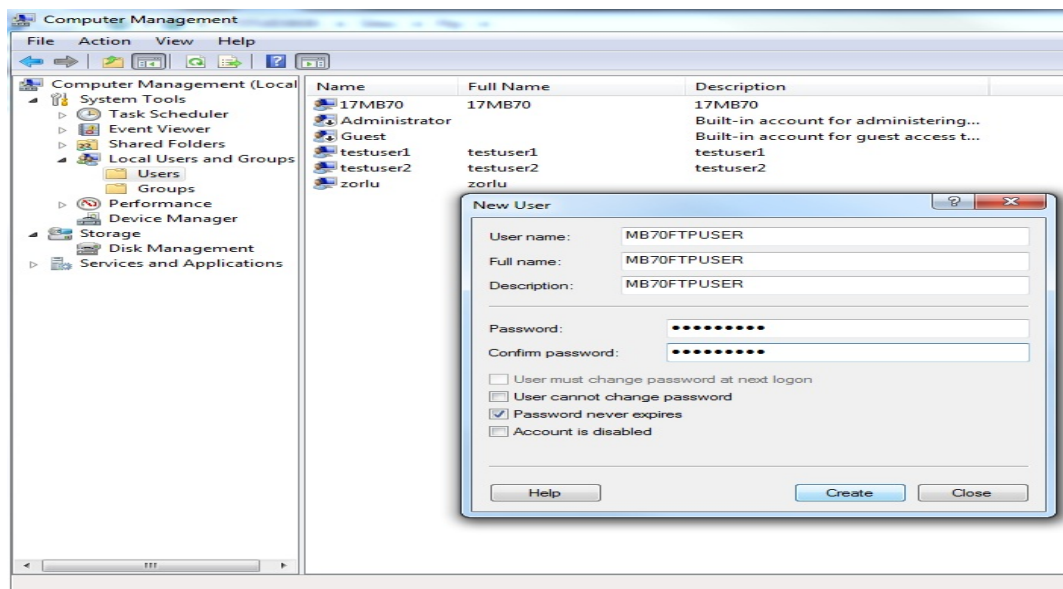


Figure 7-3: Creating a new ftp user

We should deselect 'User must change password at next logon' and select 'Password

neverexpires' for a static password.

7.2.2. Creating FTP Server on IIS

We should be sure that FTP features is turned on while installing IIS ('Control Panel-> Programs or Features -> Turn windows Features On or Off' and select all FTP Features under IIS to use FTP Features of IIS). You could run IIS Manager and perform following steps shown in Figure 7.4 and Figure 7.5 below.

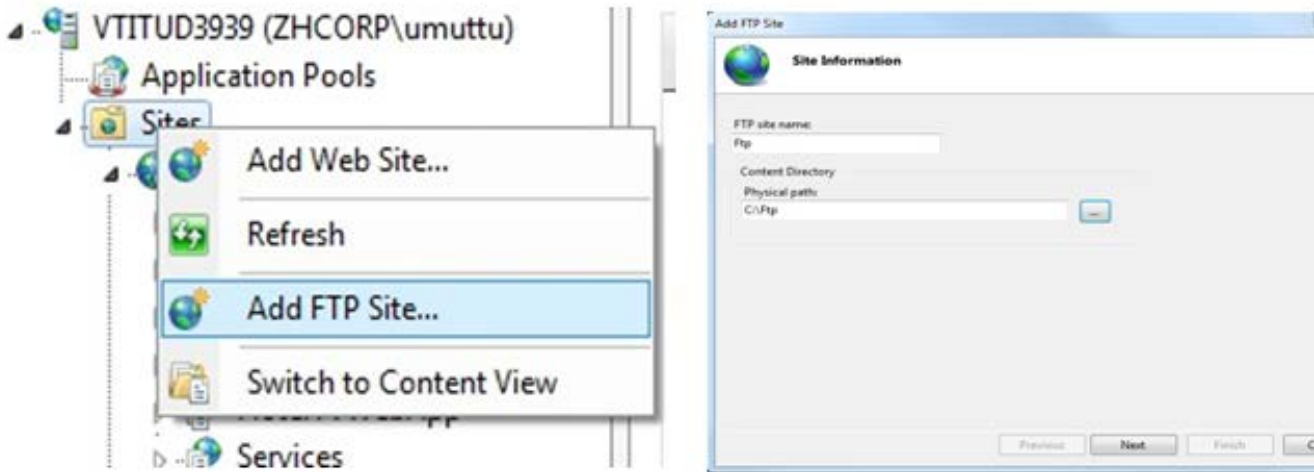


Figure 7-4: Adding a new FTP site

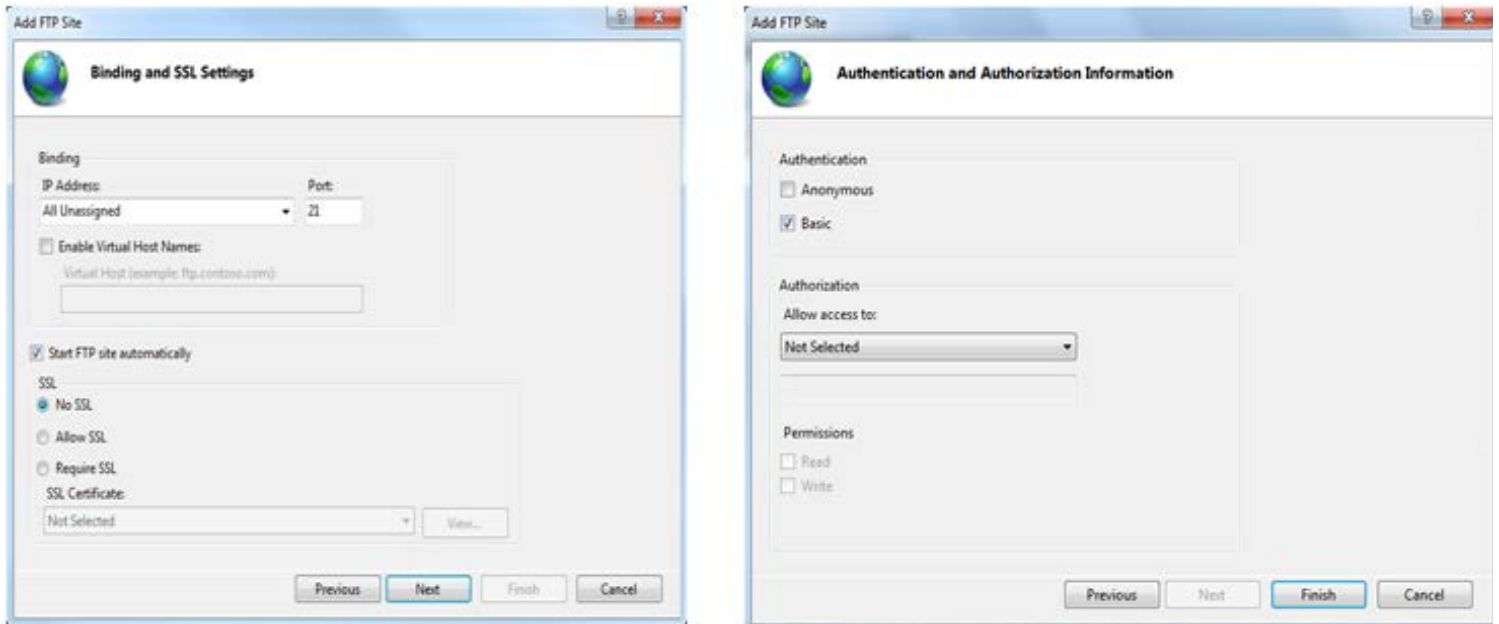


Figure 7-5: Bindings and FTP Authentication

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After performing these steps , FTP Server will be ready to use. You could test ftp server browsing url : <ftp://<SERVERIP>:<PORT>> (If port is default port (21) , you should not write <PORT>) In order to set username and password you should follow steps listed below.

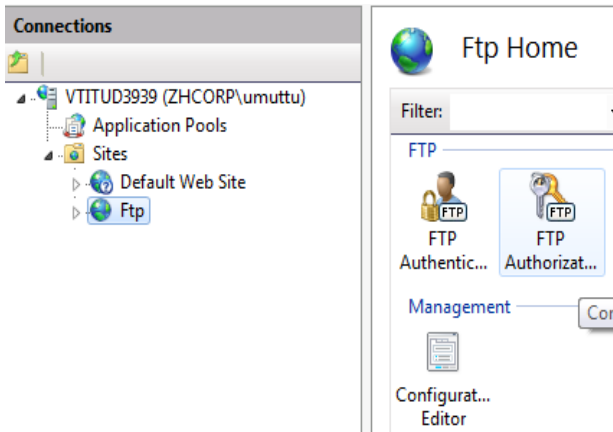


Figure 7-7: FTP Authorization Settings

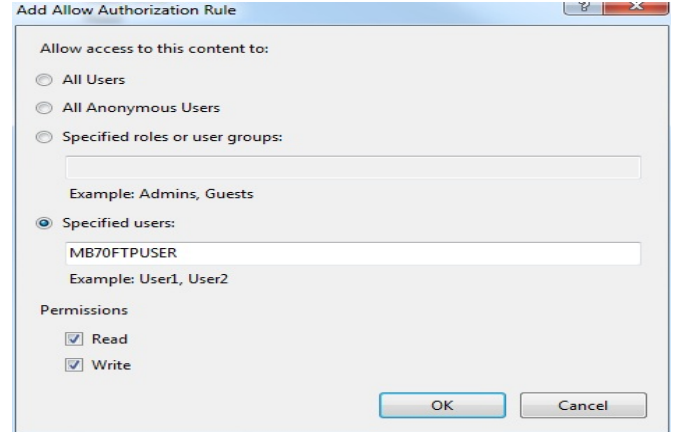


Figure 7-6: Authorization for Specific User

7.2.3. Copying Files

First of all the TVs should be configure to download files from the given FTP. You could use Bootcaster or define FTP settings in profile files. If you choose to use bootcaster for delivering boot parameters to TV then please refer to "DOC000000XXX.Vestel_SDK.doc" in order to learn how to bootcaster works. Other case in order to set FTP credentials we should create a new profile file and apply to TVs via USB.

Inside the base folder there should be 3 sub-folders. These folder names come from DCF file body and name. In order TV to correctly read the files, directory names should strictly be same as in DCF file.

First; sub-folders are named with DCF file. Considering MB70, below path is possible. In DCF folder there should be a file named "**ping.me**". This file is checked for server connection availability. It could be a small file for server connection test. It should exist inside DCF folder. "**ping.me**" must be a dummy file, it cannot include any information.

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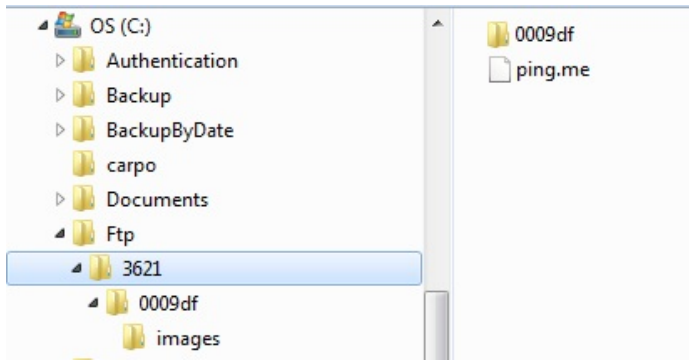


Figure 7-9: First subfolder on FTP

/3621/0009df

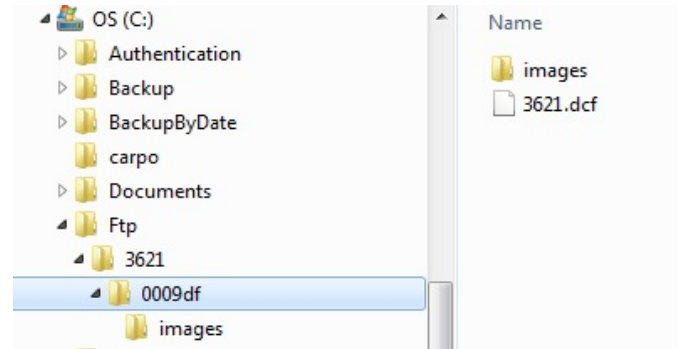


Figure 7-8: Second subfolder on FTP

Second; there must exist a sub folder named with OUI number of the product. Again considering MB70 it should be **0009df**. In OUI folder we should have our DCF file. For this document it is 3621.dcf (DCF_OF_PRODUCT.dcf) Third sub-folder is the one where download images exists.

/3621/0009df/images

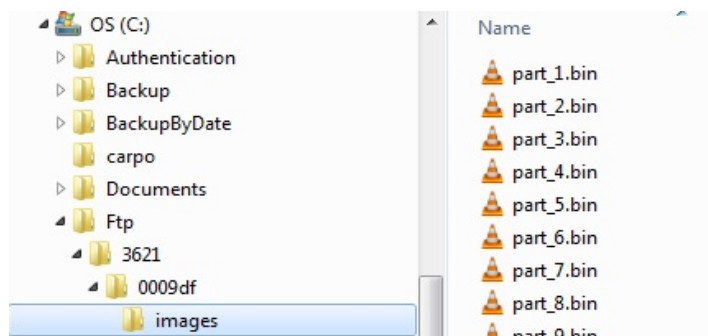


Figure 7-10: Third subfolder on FTP

Shortly first folder contains ping.me, second folder contains DCF file, third folder contains all release images. **All the required release images and DCF file will be provided by Vestek.**

7.2.4. Performing FTP Update

In order to implement update via FTP, one of the following two methods may be preferred :

- Remote Interface :** It is simple to start FTP update after this steps. You should go to service menu of TV and choose 'Force Software Update' on 'Remote Interface'.
- Admin Panel :** Please go to room page and choose 'details' of room which you want to update. Click 'Update Software' in order to perform FTP Update.

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8. MB90 / MB95 Update

This part explains the software update procedures for MB90 and MB95 model TVs. There are 3 different ways of updating a MB90 / MB95 TV; which are **Bootloader Update**, **USB Update** and **FTP Update**

8.1. Bootloader Update

This part includes bootloader update for MB90 and MB95 model TVs. “Bootloader update” has to be performed information within provider. **It is mandatory to perform “full update” after performing “bootloader update”.**

TV needs to be connected by serial cable and needs to be controlled with “ISP Tool” program. You should check from Windows Device Manager in order to see if the port(COM Port) is

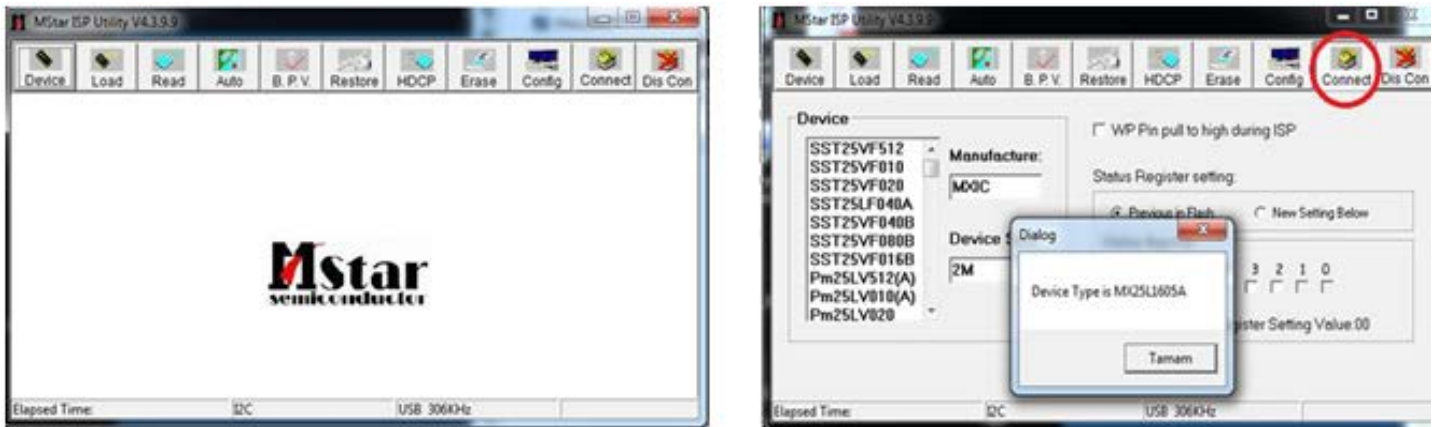


Figure 8-1: Opening ISP Tool and Finding Device

Open ISP tool and press connect button, if connection is successful, dialog window will appear (shown in Figure 8.2). Then, press read button to define sw directory and select mboot.bin file;

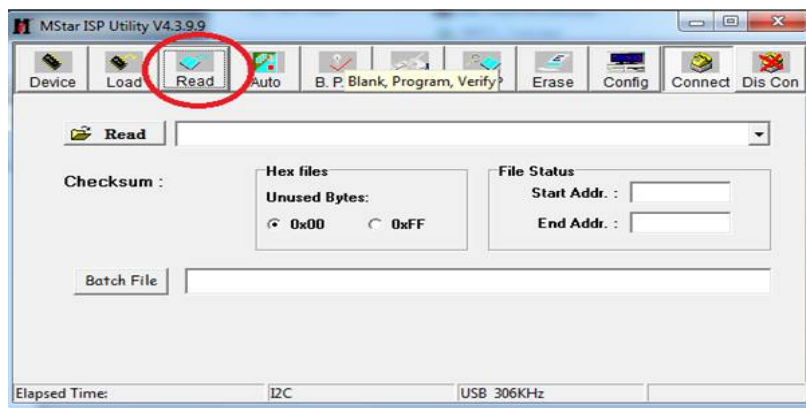


Figure 8-2: Read Button

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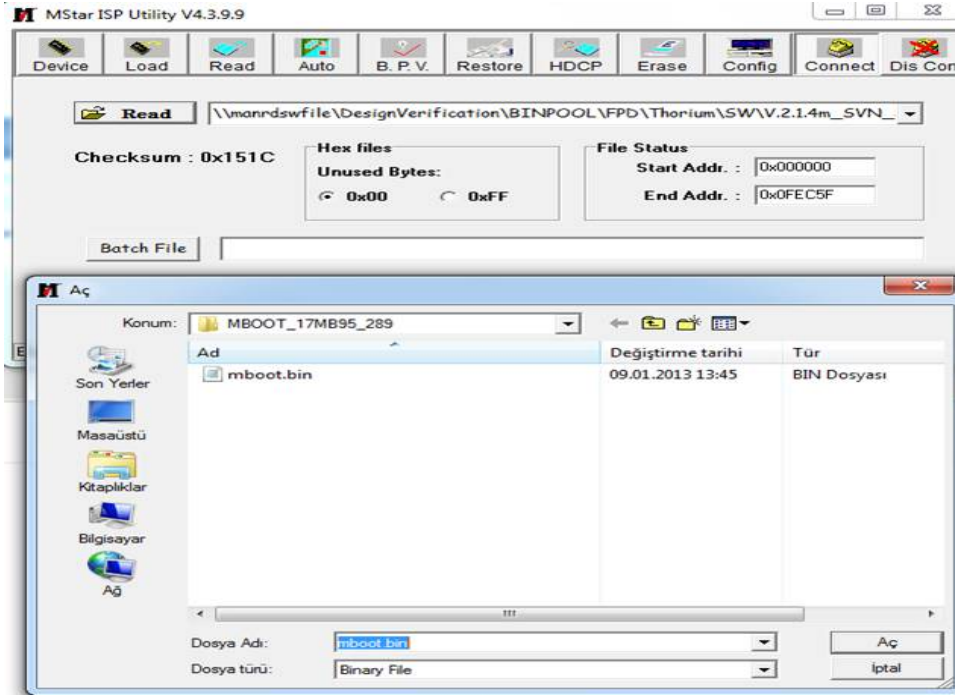


Figure 8-3: Select Boot File

Then you need to connect USB Stick to TV, which consist (mb90_en.bin,mboot.bin, usb_auto_update_A1.txt). Press auto button and configuration must be same with Figure 8.4, then press run button.

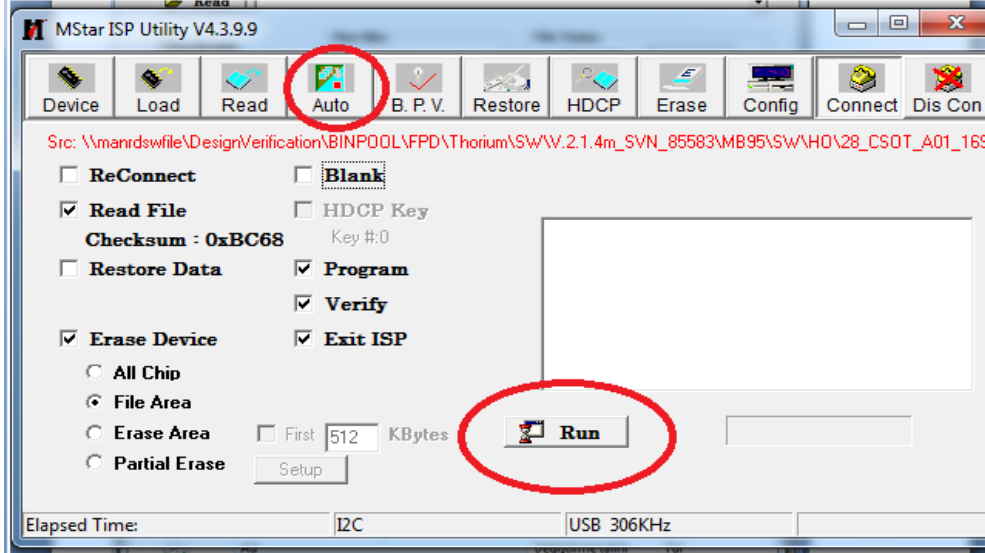


Figure 8-4: Running Bootloader

After screen pressing "Run" button following screen should appear update operation will start.

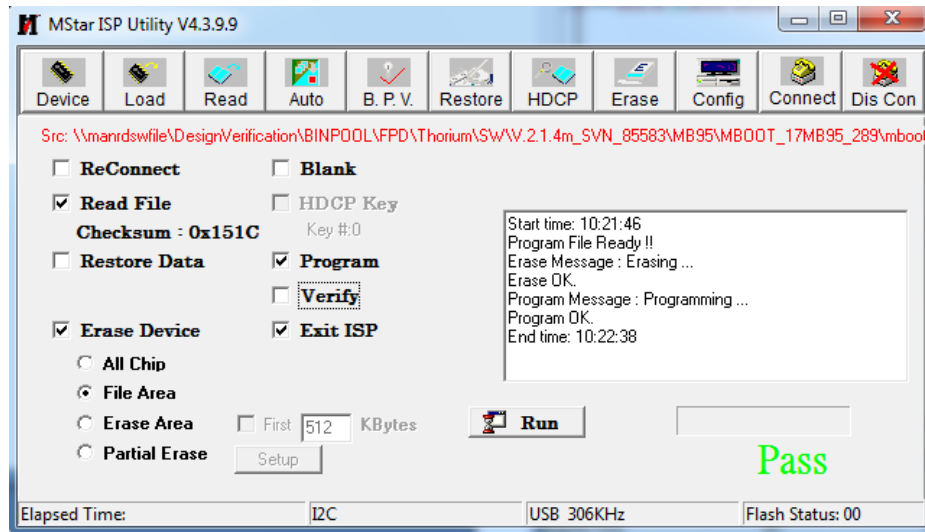


Figure 8-5: Installation Successful

Tv will open successful. **After these operations, “full update” need to be performed.**

8.2. USB Update

1. Copy all files indicated lateral (Figure 8.6) to the root directory of USB memory
2. Plug your USB memory to TV, power off and start pressing the Remote Controller's OK button continuously. At the same time, Power on again. Please keep pressing OK button for approximately 5 seconds more.
3. When you leave pressing OK button, you should see the front LED of TV blinking fastly, then wait for approximately 1 minute.
4. The language screen must be appear after successful install.

```
usb_auto_update_A1.txt  
mb90_en.bin  
mboot_spi.bin (if exists)  
PANEL INFO.txt (if exists)
```

Figure 8-6: USB Update

8.3. *FTP Update*

Updating MB90 / MB95 model TVs via FTP has the same logic as MB70 model TVs. Proper file placement is referred on **7.2.3 Copying Files**. Installation a FTP server is referred on **7.2.1. Creating a New FTP User** and **7.2.2. Creating FTP Server on IIS**. **All the required files will be provided by Vestek.**

In order to implement update via FTP, one of the following two methods may be preferred :

- a) **Remote Interface :** It is simple to start FTP update after this steps. You should go to service menu of TV and choose 'Force Software Update' on 'Remote Interface'.
- b) **Admin Panel :** Please go to room page and choose 'details' of room which you want to update. Click 'Update Software' in order to perform FTP Update.

Appendix A: Known Installation Problems

“Can’t find device type” message during MB33 / MB36 Analog SW Update

There could be several reasons for this error. Best solution is to control the connections and cable to see if they are connected correctly and working. Then TV restart will solve the problem.