# ZBA Inc.

# Bluetooth Media System Operators Manual




ZBA Inc
94 Old Camplain Road
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**Disclaimer:**

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired

**Fcc Warning:**

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) The device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

Changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Radio Frequency Exposure statement, This product has been evaluated under FCC Bulletin OET 65C and found compliant to the requirement asset as set forth in CFR 47 section 2.1091 and 15.247(i) addressing RF Exposure from radio frequency device. The redialed output power of this product is far below the FCC radio frequency exposure limits.

# TABLE of Figures





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# 1 Features

1.1 Simple installation requires only power to operate
1.2 Supports communications to a wide variety of devices such as:
  a. Mobile phones,
  b. PDAs,
  c. Laptops,
  d. Any Bluetooth enabled device that has FTP and OPP profile support
1.3 Supports high speed point-to-multipoint operation:
  a. Up to a total of 28 devices simultaneously.
  b. Up to 100 K Bytes/sec to each device.
1.4 User friendly interface
  a. A web based interface allows a variety of controls including:
    i. Content updates,
    ii. Changes to the transmission configuration/parameters and
    iii. Review of transmission statistics.
  b. A USB memory stick interface for off-line content updates
    i. Simply plug a pre-formatted USB memory stick with the content update into the system
  c. Optional configuration control using WiFi (802.11), GPRS, (wireless interface accessories must be purchased separately)
1.5 Highly flexible customer friendly configuration management
  a. Ad launchers can be configured with multiple files stored in groups
  b. For each document of a groups the user can
    i. set the time range of transmission
    ii. Set the priority (order in which files are transmitted)
  c. the number of times an advertisement is sent,
  d. the interval between transmissions,
  e. if the same advertisement is sent to the same receiving device
  f. Time interval between sending different advertisements to the same device.
  g. Maintains a log of BT addresses that accept and reject a specific advertisement.
1.6 Powerful Statistical Data
  a. The Media System provides a USB interface that can be used to retrieve statistical information on the performance of the system.



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**Figure 1.1- Top View of the ZBA Bluetooth Media System**

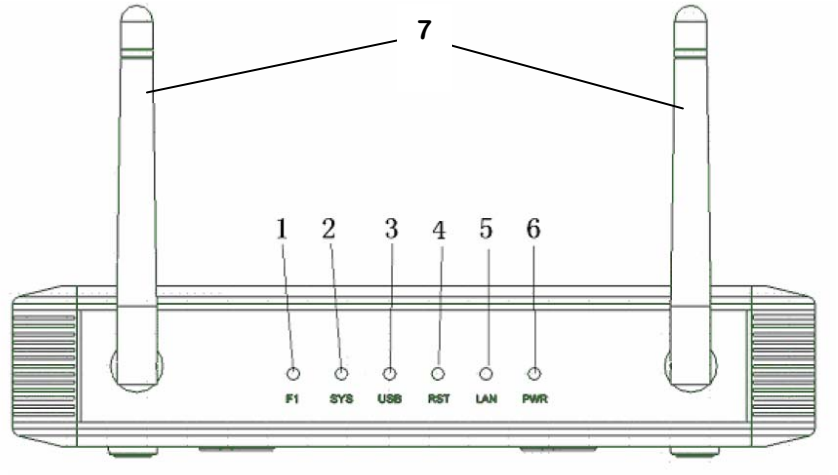


**Figure 1.2- Front View of the ZBA Bluetooth Media System**

1) Functional indicator
2) System indicator
3) USB Memory Stick update indicator
4) System Reset indicator
5) Network Activity indicator
6) Power indicator
7) 2.4 GHZ antennae with 180 degrees of rotation and a 90 degree elbow.



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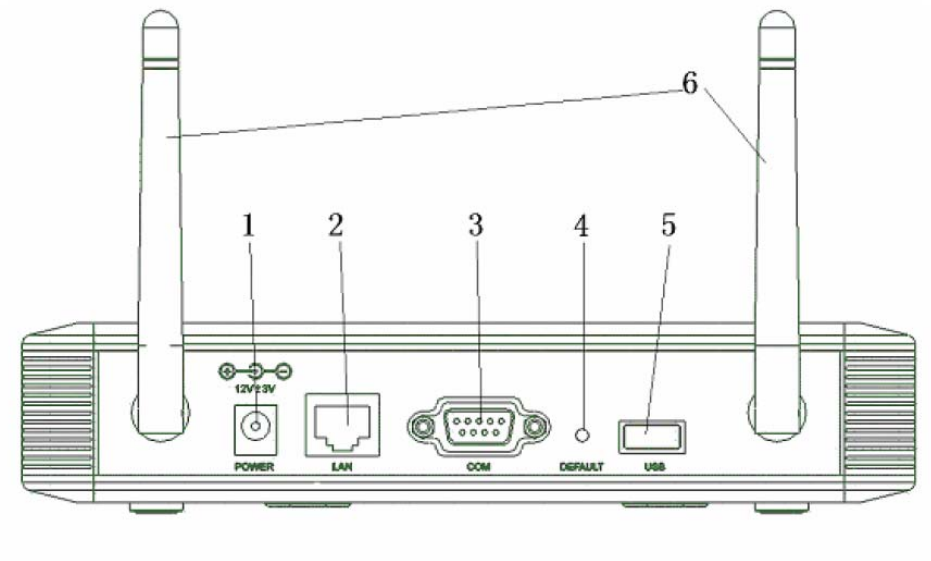


**Figure 1.3 - Rear View of the ZBA Bluetooth Media System**

Figure 2.3 shows the back of the Bluetooth Media system

1) Power Connector which is a 12V DC center positive DC power jack
2) Connector for a Cat5e Ethernet cable
3) DB9 male connector for use with an external GPRS adapter
4) System Reset button
5) USB Type A female connector
6) 2.4 GHZ antennae with 180 degrees of rotation and a 90 degree elbow.

The dimensions of the Media System are 1.5 x 5.5 x 3.5 inches.

# 2 Technical specifications

## 2.1 Overview:

1) Supports Point-to-multipoint with up to 28 mobile devices may simultaneously receive a transmission.
2) The transmission speed can be up to 100 K Bytes/s.
3) Supports various file formats, such as;
   a. Static graphic images, such as .jpeg
   b. .wmv video files
   c. 3GP animation,
   d. txt,



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e. MP3 audio files, etc.

4) Content may be updated via the following methods
   a. Off-line via USB memory stick interface
   b. FTP network
   c. Web update
   d. Optional wireless accessories are required for the following.
      i. 802.11
      ii. GPRS
      iii. CDMA and 3G, etc.
5) Support of T-base 10 10M/100M network
6) Authentication support, account management
7) Bluetooth 2.1 compliant
8) Embedded Linux operating system
9) 200 MIPS high-performance processor
10) Up to 2GB of non-volatile storage memory
11) 128MB Program Flash

## 2.2 Bluetooth specification

1) Class 1 Bluetooth module with 4 external antenna
2) Bluetooth 2.1 Compliant
3) Frequency range: 2.402 G ~ 2.480GHz
4) Bluetooth Profiles supported:
   a. Object Push Profile
   b. File Transport Profile
5) The Media System can seamlessly connect to a variety of devices such as mobile phones, PDAs, PCs that also support the following Bluetooth profiles:
   a. Object Push Profile
   b. File Transfer Profile
6) Supports Bluetooth protocol stack link management, link control, L2CAP, SDP, RFCOMM, OBEX

# 3 Configuration settings

## 3.1 Definition of the terms:

This equipment is defined as the Bluetooth Media System. To control the media system, the devices is typically connected to a PC via a TCP/IP connection.

1. Bluetooth Master: Bluetooth device that can initiate a new connection



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2. Bluetooth Slave: Bluetooth device that can only answer a master that has initiated a new connection.

3. Bluetooth Profiles: Wireless interface specifications for Bluetooth-based communication between devices. In order to use Bluetooth technology, a device must be compatible with the subset of Bluetooth profiles necessary to use the desired services. The following profiles are supported by the Media System: a) FTP File Transfer Protocol b) OBEX Object Exchange

4. TCP/IP: A hierarchy of internet communication protocols named for two of the most important protocols in it: the Transmission Control Protocol (TCP) and the Internet Protocol (IP), which were the first two networking protocols defined in this standard.

5. Cat 5e cable: It's an enhanced version of Cat 5 that adds specifications for far end crosstalk. It was formally defined in 2001 as the TIA/EIA-568-B standard, which no longer recognizes the original Cat 5 specification.

## 3.2 GETTING STARTED with your Bluetooth Media System

1. Connect the Media System's network interface cable (CAT5) to an Ethernet connection that will route to the internet. This is typically a router or switch.
2. Apply power to the Media System (12VDC Center Positive 1 Amp)
3. After a power–on reset sequence, the power indicator LED will remain steady RED.
4. The Bluetooth indicator LED (3rd from left) will blink once indicating that the Bluetooth devices in the Media System have been started. After a few seconds the Bluetooth activity indicator LED will flash multiple times indicating that the Bluetooth devices are ready to commence discovery of potential slave devices.
5. Testing your Bluetooth Media System connections
   a. Testing the Media System connection to the PC
      **i.** If you are connecting the Media System directly to a PC then you will need a CAT5e **cross-over** cable.
      **ii.** If you are connecting the Media System to the PC via a router or an Ethernet switch then a standard CAT5e cable is needed.
      **iii.** The default IP address of the Bluetooth Media System is **192.168.1.111** (note: the IP address may be changed).



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iv. You can use the “ping” command from the MS-DOS prompt to test the connectivity between the PC and the Media System. Figure3.1 shows the results of a properly connected Media System.

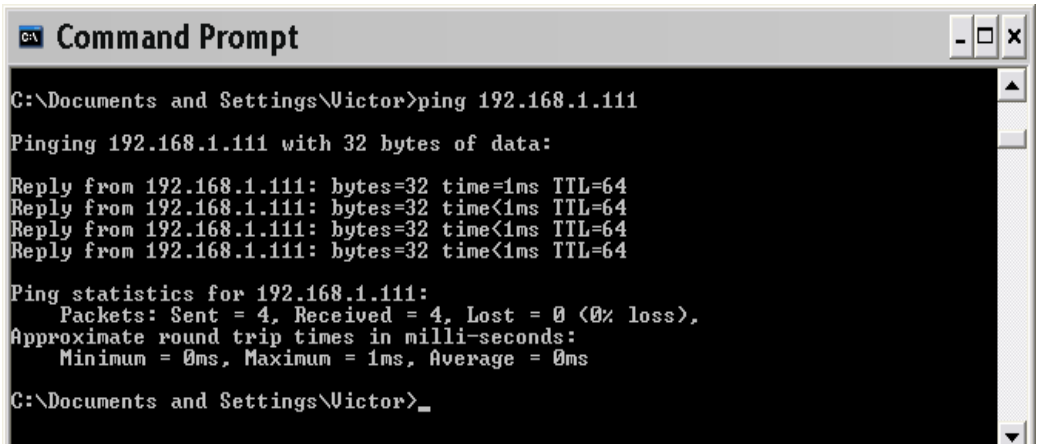


**Figure 3.3.1- Ping command from MS-DOS prompt.**

v. If the “ping” command fails, please check the cable connections.

b. Launching the Bluetooth Media System

i. Open your IE browser and, in the address bar, enter the IP address of your Media System (such as http://192.168.1.111). Then hit the "Enter" key. A window will appear as shown in Figure 3.2.

ii. An alternative method to launch the Media System is to run the **BTADConfig.exe** program. This program will detect any Media System that is connected and, by simply highlighting one of the discovered systems, you can double click on the system of interest and the program will automatically launch Internet Explorer and bring you to the logon screen.

iii. Enter the user name and password. (The default user name: **admin**; default password: **admin**).



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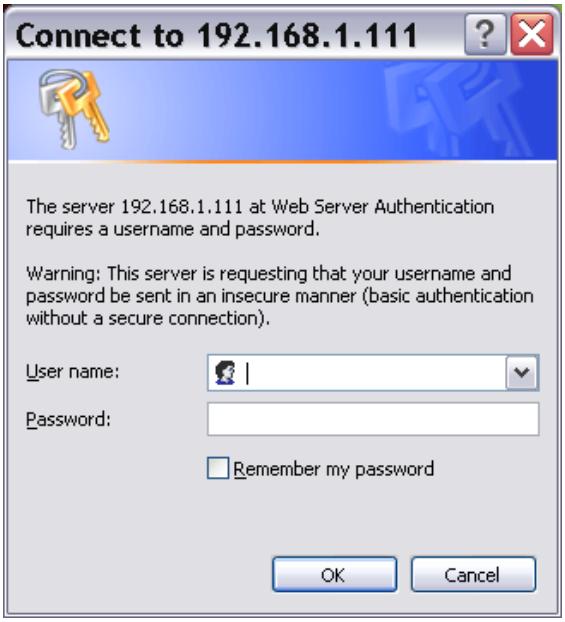


Figure 3.3.2 - Logon Screen

# 4 Configuration status

## 4.1 Main configuration screen

Upon successful connection to the Bluetooth Media System, the status screen as shown below will appear.



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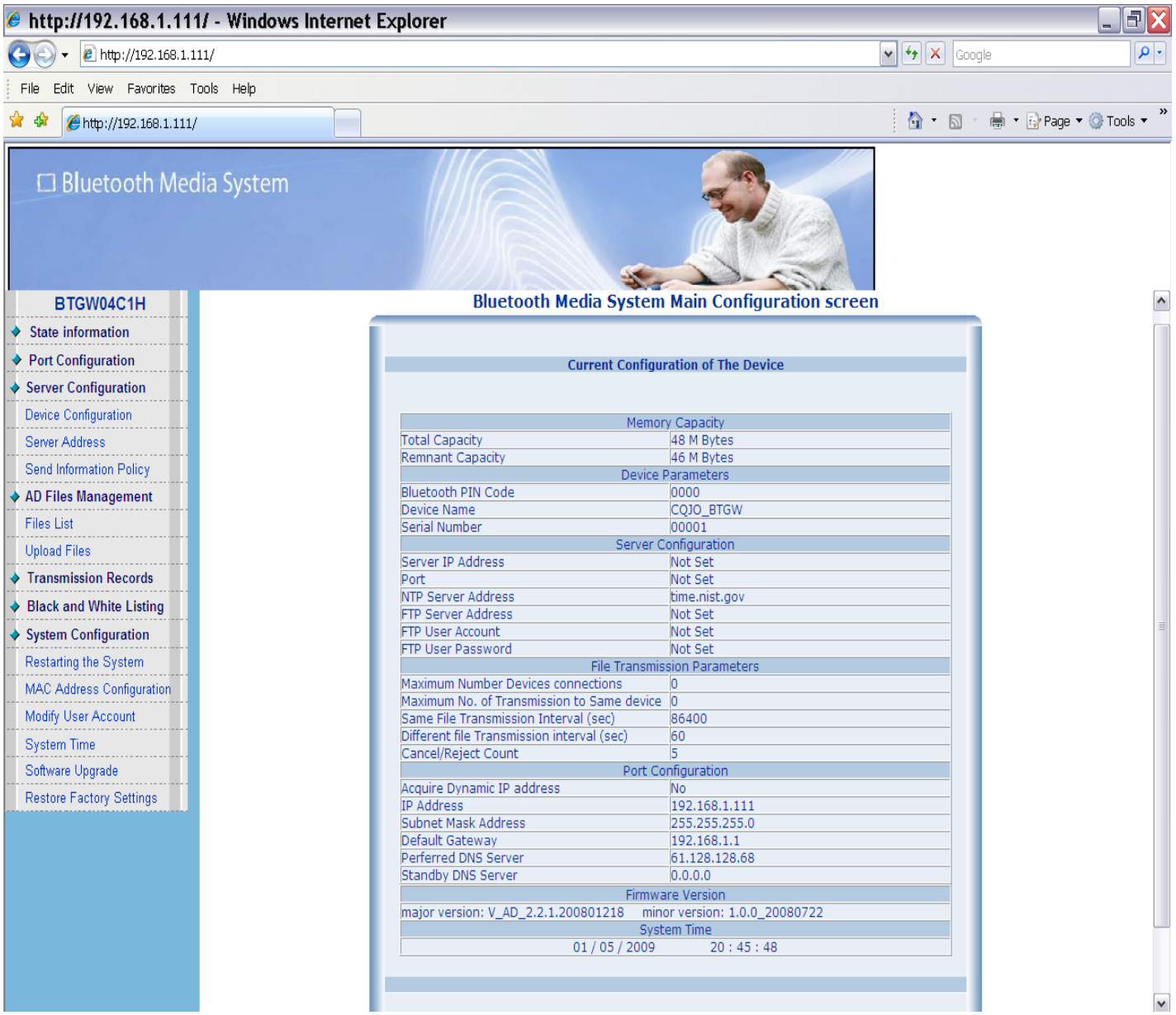


**Figure 4.4.1 - Main Configuration and Operation Menu**

The Bluetooth Media System has the following default parameter values:

(1) Bluetooth PIN Code(password): **0000**,
(2) Bluetooth Media System Name: **CQJO_BTGW**. This name is also the default Bluetooth equipment name.
(3) Server configuration parameters:
    a. Server IP address: There is no default address set.



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b. Port: The default port is not set.
c. NTP (Network Time Protocol) server address: **time.nist.gov.** The Bluetooth Media System will automatically synchronize with the NTP server to retrieve time information.
d. FTP server address: The current configuration of the server address, user name, and password information is shown here. The default address is not set.
e. FTP user account (for launching FTP server account): The default is not set.
f. FTP user passwords: The default is not set.

(4) Information Transmission Parameters: By convention, the value 0 for a parameter is used throughout the Media System to indicate the absence of a limit other than the inherent physical limits of the device.

a. Maximum number device connections: The maximum number of Bluetooth connections current at the same time. The value can be from 0 to 28. The default value of 0 is used to set the maximum 28.
b. Maximum number of transmissions to the same device: This is the total number of files that can be sent to the same receiving equipment in the specified time interval (typically one day). The default value of 0 for this parameter is used to allow the Media System to send an unlimited number of files to the same device.
c. Same file transmission interval: This is the time in which it is valid to send a previously sent document to the same receiving device. The default is set to 86,400 seconds (24 hours).
d. Different file transmission interval: This is the minimum amount of time that another (different) file may be sent to the same receiving device. The default is set to 60 seconds.
e. Cancel/reject count: The number of times in a particular time interval (i.e. one day), the Bluetooth Media System will prompt the same device to receive an advertisement once the receiving Bluetooth device has cancelled or rejected the initial request. This count includes all files whether or not they’re different.

(5) Port configuration parameters: This parameter displays the current network configuration parameters.
a. Acquire Dynamic IP Address: The default setting is **not** to get a dynamic IP address.
b. IP Address: The default setting is **192.168.1.111**
c. Subnet Mask Address: The default setting is **255.255.255.0**



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d. Default Gateway: The default for Bluetooth Media System is set to **192.168.1.1**
e. Preferred DNS Server: The default setting for **61.128.128.68**
f. Standby DNS Server: The default is set to **0.0.0.0**

## 4.2 Port Configuration

Figure 4.2 below shows the port configuration menu. These parameters may be modified to facilitate the appropriate interface to the host system network interface.

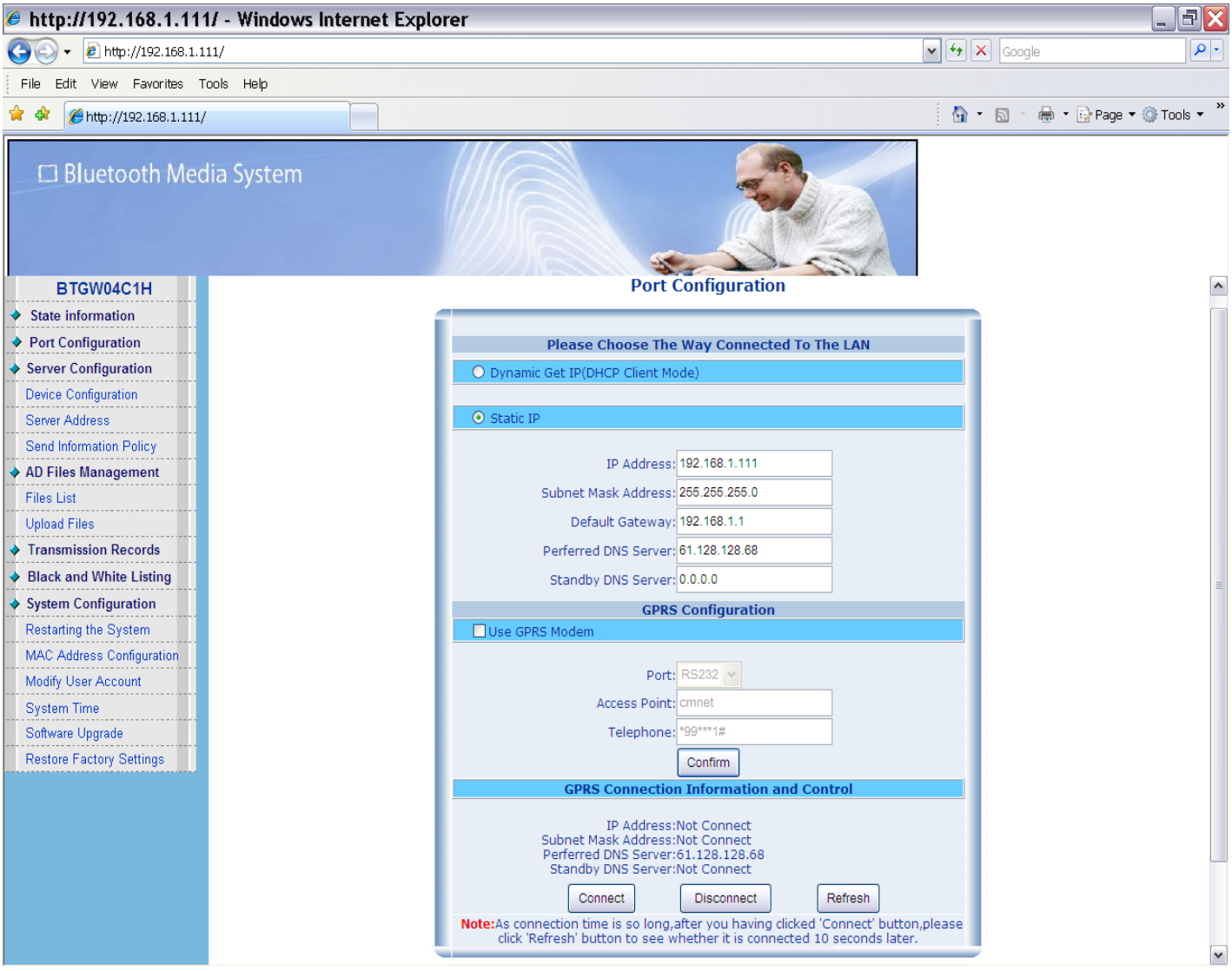


**Figure 4.4.2 - Port IP configuration**



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1. The Bluetooth Media System supports both dynamic and static IP addressing. The dynamic address will automatically configure its network interface from a DHCP server with access to IP addresses.
   a. To use the automatic IP address configuration mode, simply check the "automatic access to IP (DHCP Client form)" option.
   b. To use the fixed IP address configuration mode, simply check the "fixed IP (Static IP)" option. In additional you will need to set-up the IP address, subnet mask, default Bluetooth advertising machine and a DNS server address as well as other information.
2. Once the set-up parameters have been enters click the enter button then it is necessary to **restart** the Bluetooth Media System (see System Configuration chapter) to make the new configuration take effect. You can also set other parameters prior to restarting the Media System.

## 4.3 Server Configuration

### 4.3.1 Device Serial Number Configuration

From the Main Configuration Screen, by clicking on the Server Configuration and then the Device Configuration sub-menu, the Serial Number will appear as is shown below in the screen in Figure 4.3.

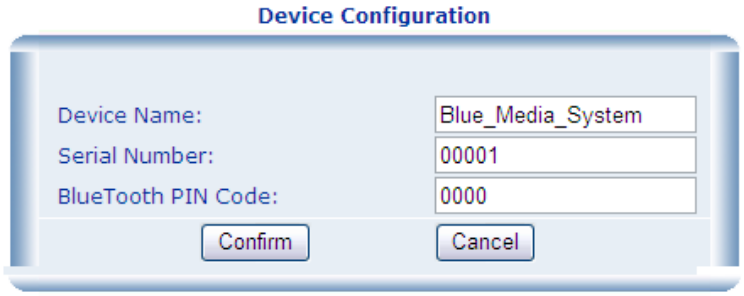


**Figure 4.4.3 - Device Configuration Dialog Box**

a. Device Name: The name of the Bluetooth Media System is displayed as shown above. In this case, the default name has been changed to **Blue_Media_System**. The default setting is CQJO_BTGW. This



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name is also the default Bluetooth device name. As illustrated in Figure 4.3, the name may be modified per the users' requirements.

b. Serial Number: The default setting for the Bluetooth Media System Serial Number is **00001**. The SN may be modified per the users requirements.

c. PIN Code: When the phone requires a secure authentication, password of the Media System and the phone must match. The default is set to **0000**.

### 4.3.2 Server Address Settings

From the Main Configuration Screen clicking on the Server Configuration and then the Server Address sub-menu will display the screen shown in Figure 4.4 below.

a. FTP Server Address: This is the address of the FTP server used to automatically update content as well as server address, FTP accounts, passwords and other information.

b. NTP Server Address: This address is set up to automatically provide the system time for the server when not running in standalone mode. Time sensitive content is then sent based this time. The default is **time.nist.gov**. In standalone mode, the system clock is set manually.

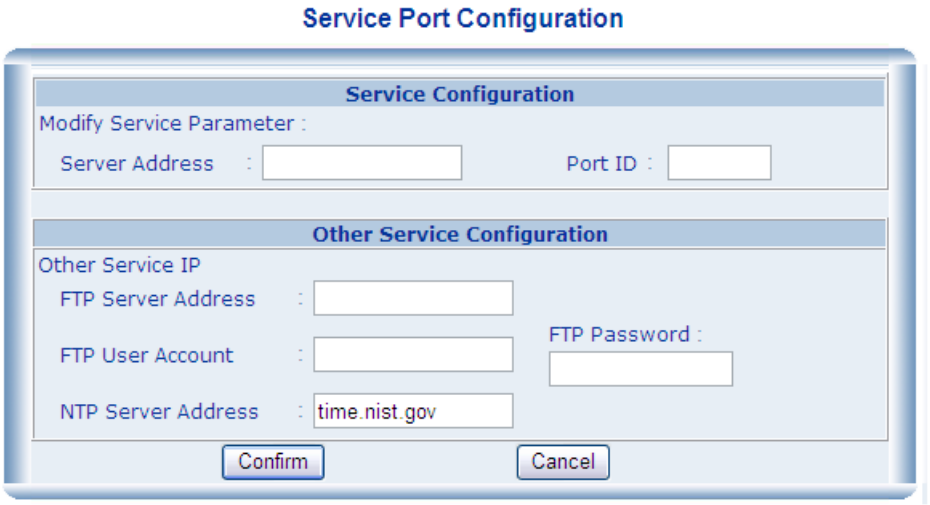


**Figure 4.4.4 - Server Port Configuration**



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### 4.3.3 Send Information Policy (Transmission Configuration Set-up)

From the Main Configuration Screen clicking on the Server Configuration and then the Send Information Policy sub-menu will cause the screen shown in Figure 4.5 below to appear.

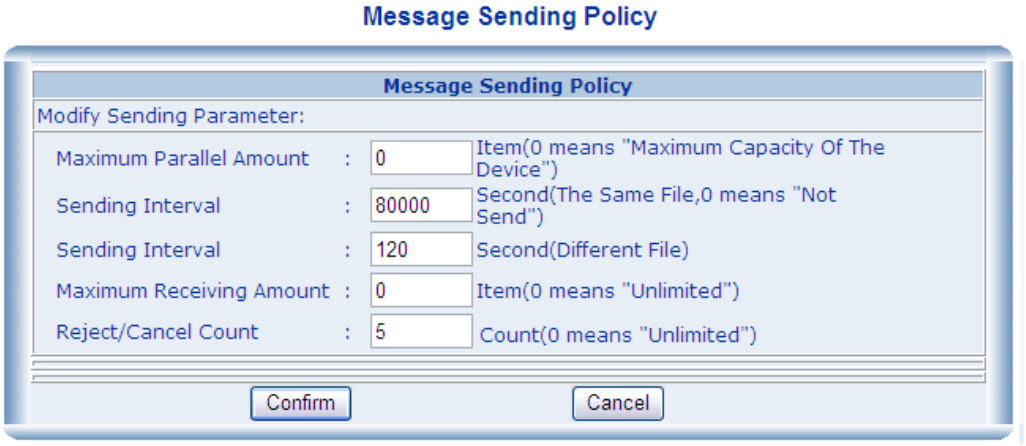


**Figure 4.4.5 - Message Sending Policy Dialog Box**

The items in the listing in Figure 4.5 above are defined as follows.

1. Maximum Parallel Amount: This is the number of Bluetooth devices that the Media System can connect to at any one time. The number can vary between 0-28. Note that if the parameter is set to 0, this is equivalent to setting the maximum number of slave devices to 28. The maximum available connections is the number of Bluetooth radios times seven (7). For a system with four radios, the maximum number of connections is 28 and for a one radio system the maximum is seven.
2. Sending Interval: The first of these Sending Interval parameters is the same file/same device transmission time interval. This is the setting of the time interval after which the same content is sent to the same Bluetooth device. The default setting is 86,400 seconds (24 Hours). If the parameter is set to 0, the same document will never be sent to the same Bluetooth device.
3. Sending Interval: The second of these Sending Interval parameters is the different file/same device transmission time interval. This is the setting of the time interval after which different content is sent to the same Bluetooth device. The default setting is 60 seconds.



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4. Maximum Receiving Amount: This parameter will set the maximum number of files sent to any specific Bluetooth device in any one day. The default setting is **0** which corresponds to an unlimited amount.
5. Reject/Cancel Count: This is the minimum number of times a Bluetooth device will be allowed to cancel or refuse to receive a message in the same interval as set in item #2 above before no more files are sent to that device during that same interval. The default setting is **5**.

Once all of the above parameters have been set-up then the Bluetooth Media System needs to be restarted for the new configuration parameter values to take effect. As always you can wait until you have completed the entire set-up configuration before restarting the Bluetooth Media System. (See the System Configuration section for the restart procedure).

## 4.4 AD Files Management

### 4.4.1 Files List


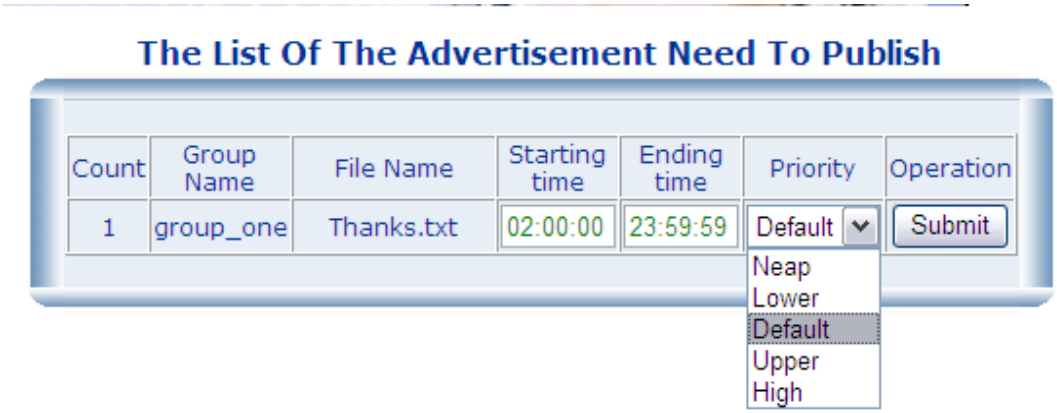




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**Figure 4.4.6 - List of Content Files**

The items shown in Figure 4.6 above are a listing of the current files in the Media System that can be transmitted during a particular advertisement campaign.

The files can be broken up into as many different groups as needed (see section 6 for a discussion on content management). In the example above we only show one group. That group contains only one file called Thanks.txt. Each of the files in this section may be assigned a starting and ending time. The time slot as show in the example indicates that the beginning time in which this specific file may be transmitted is 2AM and the end time is Midnight. If there are other files in the same group that share the same time slot then the files may be prioritized. The priority is related to the order in which the files will be transmitted from the Bluetooth Media System.

### 4.4.2 Transmission Records

a. From the Main Configuration Screen clicking on the Transmission Records and then the Device List sub-menu will display the screen shown in Figure 4.7.


**Figure 4.4.7 - Discoverable Bluetooth addresses in the local neighborhood**

The headings in Figure 4.7 above are defined as follows.

1. Count: The number of active discoverable Bluetooth devices. (In this example, only one individual device is shown.)
2. Bluetooth Address: The respective active **Bluetooth address** of the slave devices in the neighborhood.
3. RSSI: The relative Return Signal Strength Indicator in db.
4. Class of Device:



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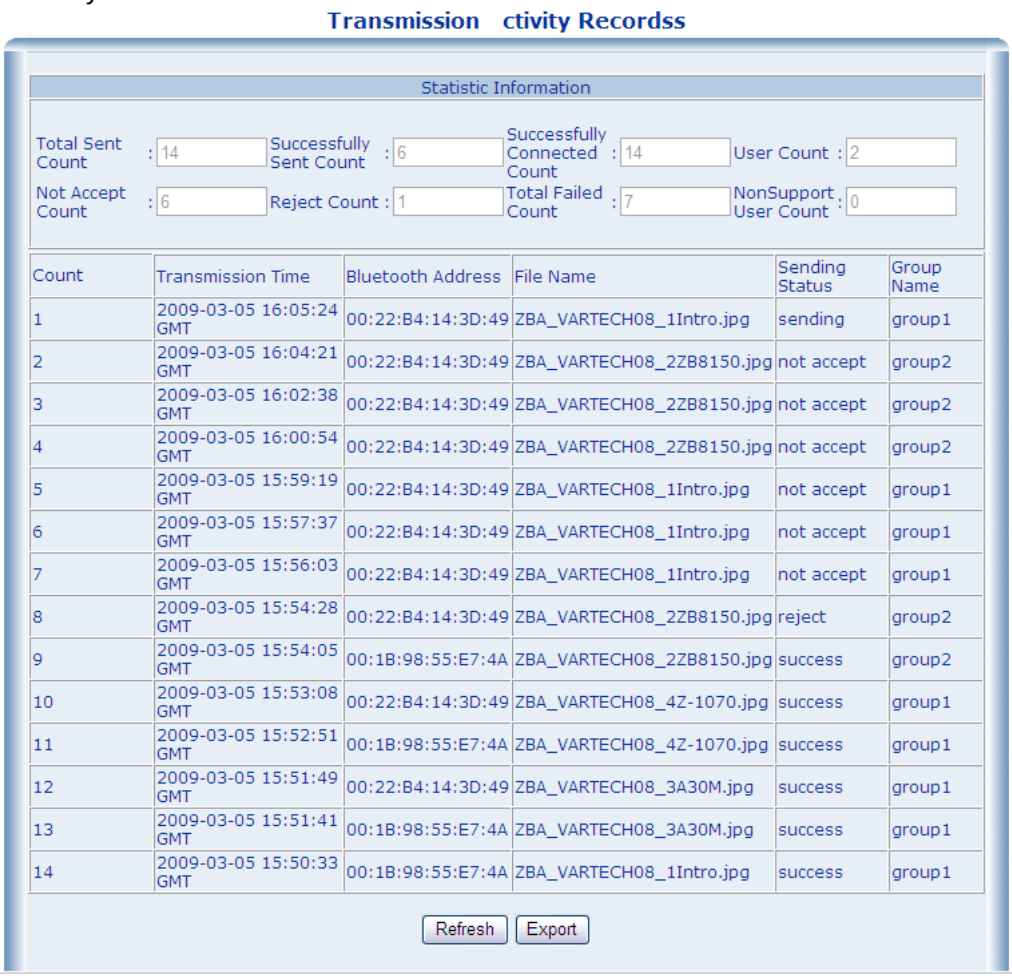
5. Name: The friendly name of the device typically set by the user/owner.

Clicking the refresh button at the bottom of the window updates the information in real-time.

### 4.4.3 Transmission information records

Figure 4.8 is a listing of the transmission activity of the media system.




| Count | Transmission Time | Bluetooth Address | File Name | Sending Status | Group Name |
|---|---|---|---|---|---|
| 1 | 2009-03-05 16:05:24 GMT | 00:22:B4:14:3D:49 | ZBA_VARTECH08_1Intro.jpg | sending | group1 |
| 2 | 2009-03-05 16:04:21 GMT | 00:22:B4:14:3D:49 | ZBA_VARTECH08_2ZB8150.jpg | not accept | group2 |
| 3 | 2009-03-05 16:02:38 GMT | 00:22:B4:14:3D:49 | ZBA_VARTECH08_2ZB8150.jpg | not accept | group2 |
| 4 | 2009-03-05 16:00:54 GMT | 00:22:B4:14:3D:49 | ZBA_VARTECH08_2ZB8150.jpg | not accept | group2 |
| 5 | 2009-03-05 15:59:19 GMT | 00:22:B4:14:3D:49 | ZBA_VARTECH08_1Intro.jpg | not accept | group1 |
| 6 | 2009-03-05 15:57:37 GMT | 00:22:B4:14:3D:49 | ZBA_VARTECH08_1Intro.jpg | not accept | group1 |
| 7 | 2009-03-05 15:56:03 GMT | 00:22:B4:14:3D:49 | ZBA_VARTECH08_1Intro.jpg | not accept | group1 |
| 8 | 2009-03-05 15:54:28 GMT | 00:22:B4:14:3D:49 | ZBA_VARTECH08_2ZB8150.jpg | reject | group2 |
| 9 | 2009-03-05 15:54:05 GMT | 00:1B:98:55:E7:4A | ZBA_VARTECH08_2ZB8150.jpg | success | group2 |
| 10 | 2009-03-05 15:53:08 GMT | 00:22:B4:14:3D:49 | ZBA_VARTECH08_4Z-1070.jpg | success | group1 |
| 11 | 2009-03-05 15:52:51 GMT | 00:1B:98:55:E7:4A | ZBA_VARTECH08_4Z-1070.jpg | success | group1 |
| 12 | 2009-03-05 15:51:49 GMT | 00:22:B4:14:3D:49 | ZBA_VARTECH08_3A30M.jpg | success | group1 |
| 13 | 2009-03-05 15:51:41 GMT | 00:1B:98:55:E7:4A | ZBA_VARTECH08_3A30M.jpg | success | group1 |
| 14 | 2009-03-05 15:50:33 GMT | 00:1B:98:55:E7:4A | ZBA_VARTECH08_1Intro.jpg | success | group1 |

**Figure 4.4.8 - Media System Activity Log**

Figure 4.8 shows the following Statistics

1. **Total Sent Count**: Total number of messages sent.
2. **Successfully Sent Count**: Total number of messages successfully transmitted.



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3. **Successful Connected Count**: Total number of successful Bluetooth Connections.
4. **User Count**: Total number of different Bluetooth devices connected.
5. **Not Accept Count** : Total number of ads that were not accepted
6. **Reject Count**: Total number of transmissions that were specifically rejected by the slave device.
7. **Total Failed Count**: Total number of devices with which the Media System was able to connect for which there was no response back after a specific time-out period.
8. **Nonsupport User Count**: Total number of Bluetooth connections to devices that do not support the Bluetooth File Transfer or Object Push Protocol.

Note: The log can hold up to 2,000 instances of transmissions. If you wish to log information beyond that value then you will need to run a separate program to keep track of the activity.

9. The headings in Figure 4.8 are defined as follows:
   a. **Sequence ID**: The send sequence # beginning with the last first.
   b. **Sending Time**: The time of the transmission.
   c. **Bluetooth Address**: The Bluetooth slave device address.
   d. **File Name**: The name of the transmitted file.
   e. **Sending State**: The status of the transmission with values defined as follows.
      1) **Success** - This means that the advertisement file was successfully transmitted to a slave device, i.e. either a mobile phone or any other Bluetooth enabled device.
      2) **Interrupt** - This describes a condition where the slave device was initially in range but before the user could accept the file the mobile device became out of range and the Bluetooth Media System lost the connection.
      3) **Nonsupport** – This corresponds to a situation where the Bluetooth Media System found a slave device connected but the slave device does not have the required support for one of the required Bluetooth profiles.
      4) **Non-acceptance** – This is a condition where the Bluetooth media System has made a successful connection but the user has failed to respond and the media system has subsequently dropped the connection. (Certain phones like the Mitsubishi model # 368 is configured to automatically send a non-acceptance response)
      5) **Reject** - This is a situation where the Media System successfully connected and asked for permission to transfer a file. The response from the user was to not receive the ad.
      6) **Fail** – The transfer was not accepted but not for any of the above reasons.



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f. **The File Group Name**: The name of the group or subdirectory of the **adfile** folder in which the ad resides.

### 4.4.4 Clear transmission records

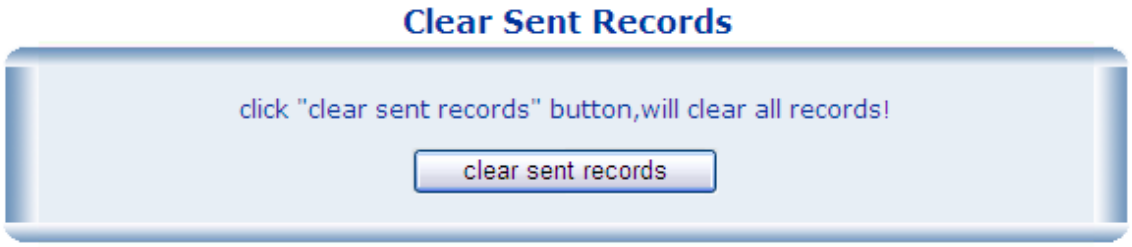


Figure 4.4.9 - Clear Records

Figure 4.9 shows the screen that will allow the user to clear the transmission records that are stored in the Media System. Please **EXERCISE CAUTION** when using this function since deleting the records cannot be undone.

## 4.5 Black and White listing

The Bluetooth Media System has the capability to white and black list specific slave devices. The effect of adding a slave device Bluetooth ID to the Black list will prevent that particular device from receiving any content. Of course, an ID entered on the white list will have the opposite effect.

As shown in Figure 4.10 below, the White List Dialog Box allows you to add and/or edit the Bluetooth addresses of specific slave devices. Only one is shown in this figure.

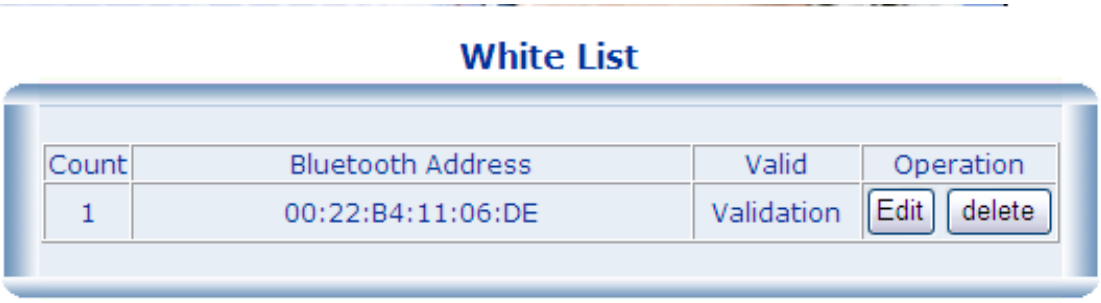


Figure 4.4.10 - White List



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The same functionality is supported for the Black List. As shown in Figure 4.11 below, the Black List Dialog Box allows you to add and/or edit the Bluetooth addresses of specific slave devices. Again, only one is shown in the figure.

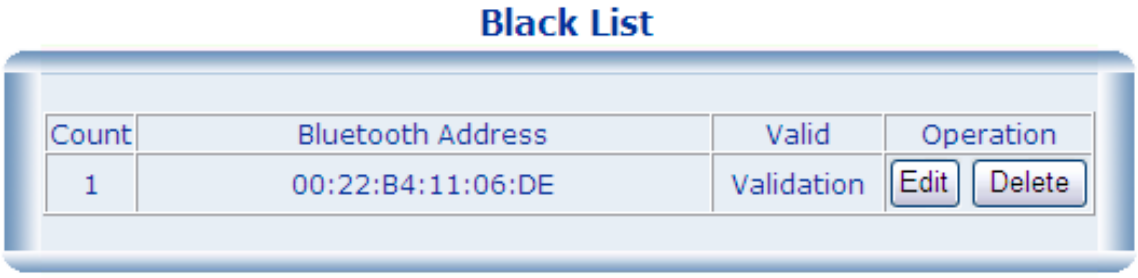


**Figure 4.4.11 - Black List**

Of course, any Bluetooth slave device logged in the sent records can be added to the White or Black Lists. Referring back to Figure 4.7, the Bluetooth devices can be added to either of these lists directly from that menu.

## 4.6 System Configuration

### 4.6.1 Restarting the System

1. As shown in Figure 4.12 below the "restart" sub-menu will force the system to restart thereby establishing all of the parameter changes that have been previously made in any of the preceding menus.


**Figure 4.4.12 - Restarting the System**

REMEMBER: For the new parameters of the Bluetooth Media System to take effect, it is necessary to restart the system.



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### 4.6.2 MAC Address Configuration

Figure 4.13 below shows the current MAC address of the system. This address may **not** be changed.

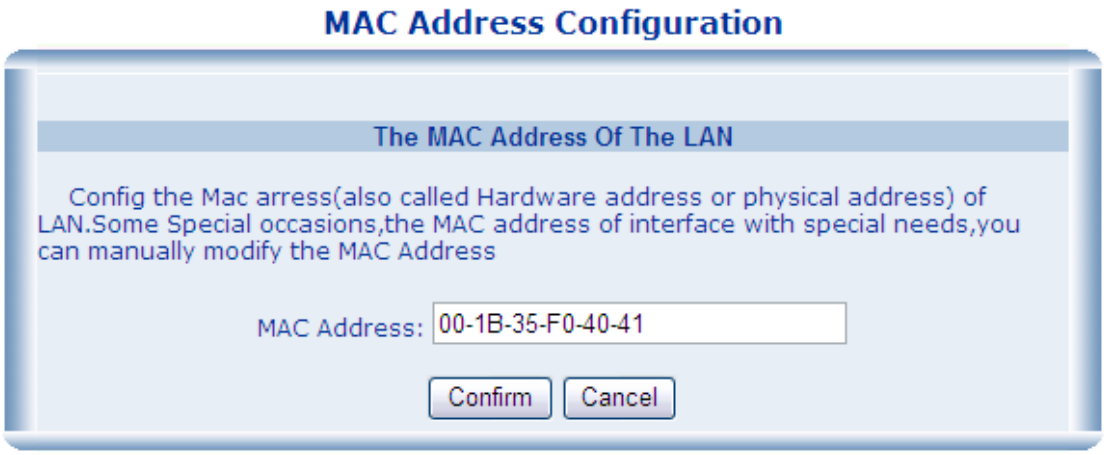


**Figure 4.4.13 - MAC Address of the LAN**

### 4.6.3 Modify User Account

Figure 4.14 below shows the dialog box that is used to modify the log-on user name and log-on password

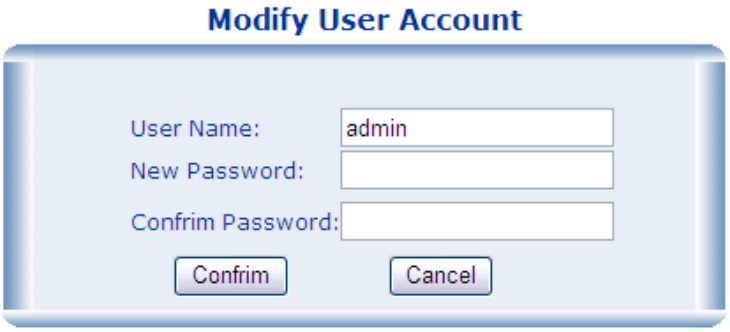


**Figure 4.4.14 - Modification of the User Name and Password.**



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### 4.6.4 System Time

The window depicted in Figure 4.15 below is used to manually modify the system time.

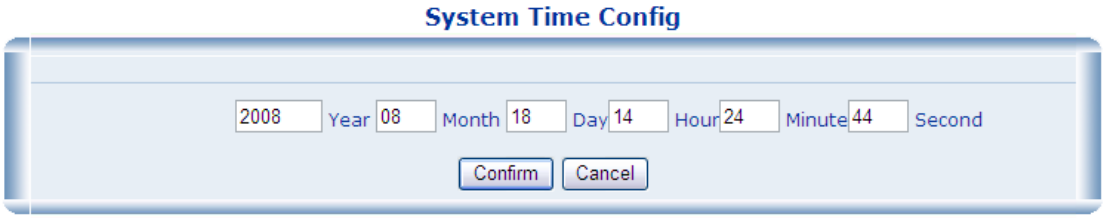


Figure 4.4.15 - System Time Dialog Box

### 1..1 Software Upgrade

Figure 4.16 illustrates the sub-menu that allows the user to upgrade the device firmware.


Figure 4.4.16 - Software Upgrade Window



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### 4.6.5 Restore Factory Settings

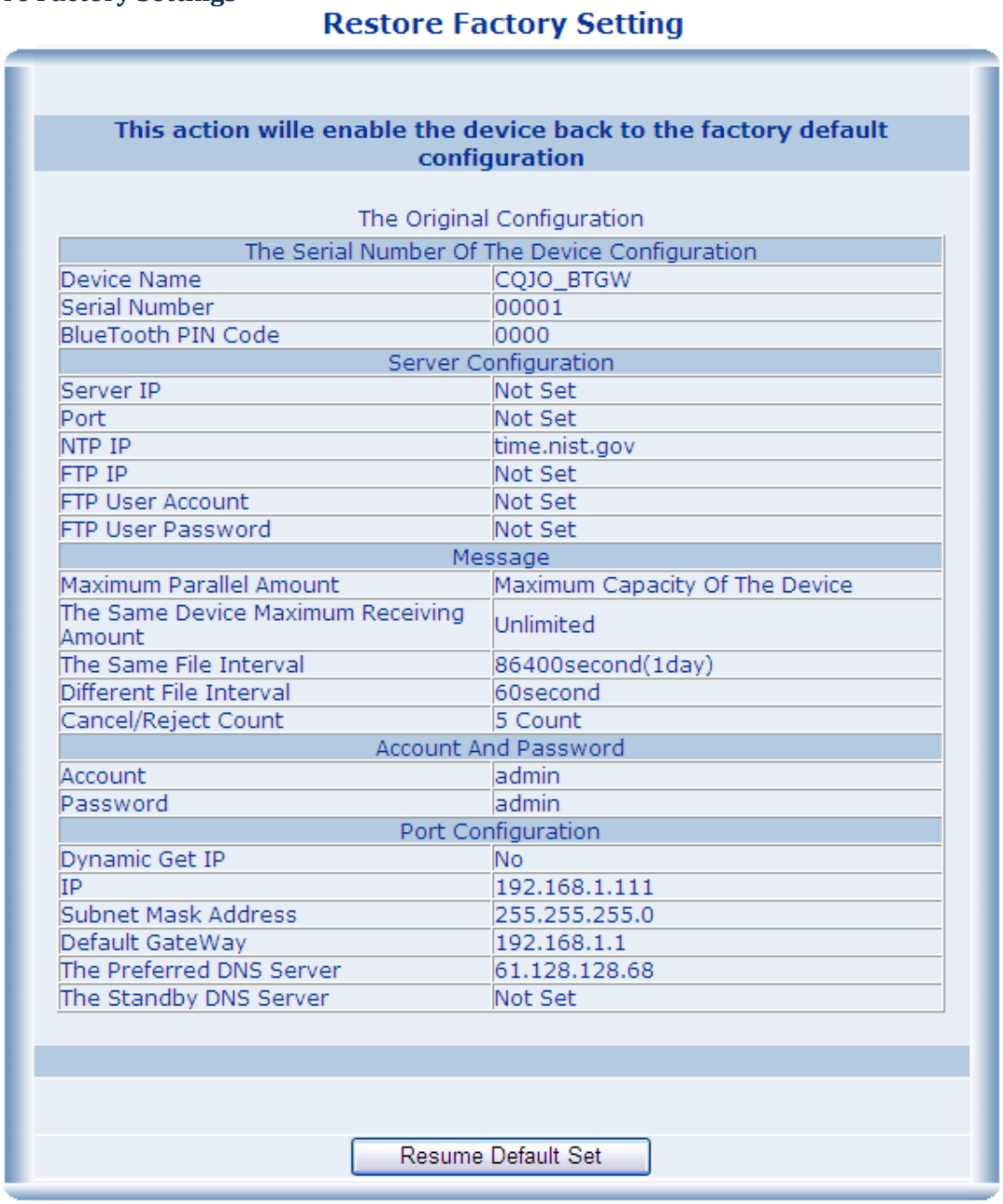


**Figure 4.4.17 - Resetting the Default Factory Parameters**

The table in Figure 4.17 lists the default factory settings. Please **Exercise Caution** when executing this command as all previously set parameter values will be lost.



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# 5 Connecting to the Media System

## 5.1 Configuration utility

ZBA provides a PC utility program that will make it easy for the user to locate one or multiple BTMedia systems on a network. Simply running the following program which can be found in the Downloads section at www.Bluetootmediasystem.com under the name "BT ADfile Configuration Utility".

By running BTADConfig.exe you will see the following in figure 5.1.

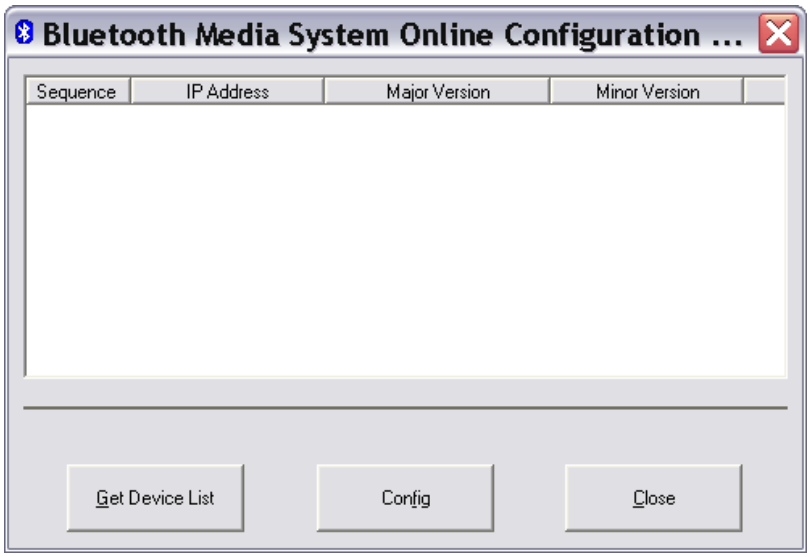


**Figure 5.5.1 Configuration Program Device utility**

By clicking on the **Get Device List** the program will return the following shown in Figure 5.2 which can include multiple Bluetooth Media Systems. By highlighting the appropriate system and clicking on the "Config" button the program will launch an IE7 session and commence the logon process for that particular media system as described above.



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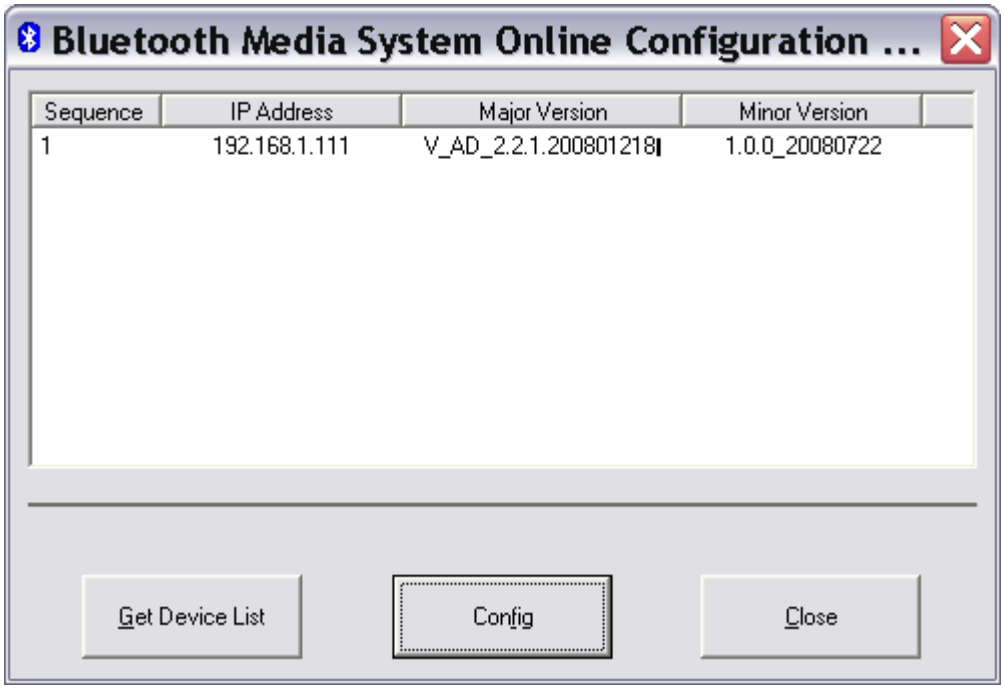


**Figure 5.5.2 Configuration Program Device utility after it finds an active BT Media System**

# 6 Content Management

The Bluetooth Media System can operate without the use of a PC. To operate as a standalone device the content must be added to the system and of course routinely updated. The following section of the user manual will show the proper procedure to update the advertising or file content for the system.

## 6.1 USB Content Update Procedure for Stand Alone Operation

The Bluetooth Media System also has a USB memory stick interface. The system allows the user to build a set of advertising files on their PC and then upload this information via the memory stick to the Bluetooth Media System. Figure 6.1 shown below has three different advertisement files currently located in two different groups. Two files are .jpg and the other file is a text file.



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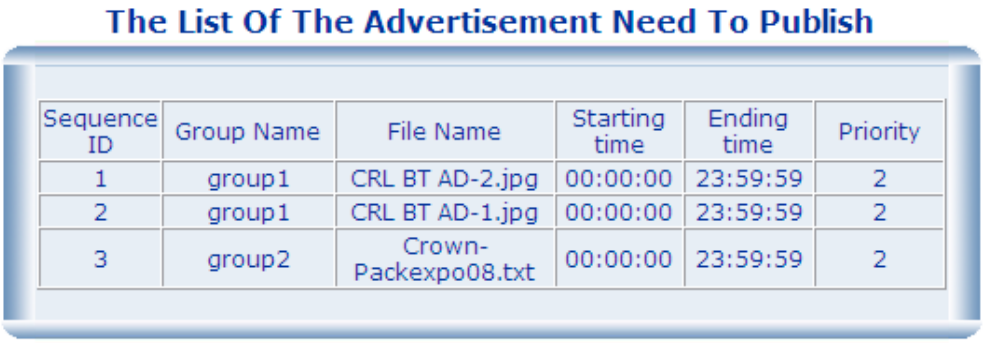

The List Of The Advertisement Need To Publish

| Sequence ID | Group Name | File Name | Starting time | Ending time | Priority |
|---|---|---|---|---|---|
| 1 | group1 | CRL BT AD-2.jpg | 00:00:00 | 23:59:59 | 2 |
| 2 | group1 | CRL BT AD-1.jpg | 00:00:00 | 23:59:59 | 2 |
| 3 | group2 | Crown-Packexpo08.txt | 00:00:00 | 23:59:59 | 2 |

**Figure 6.6.1 - List of Files Currently Available in the Media System**

## 6.2 The specification for the content

The Media System can store in non-volatile Flash RAM up to 2GB of content information. Therefore each individual advertisement can theoretically be large. However, keep in mind that the size of a file dictates the amount of time it takes to download it to the prospective client. While transmission speeds of the ZBA Media System are quite fast, the attention span of a prospective client may indeed be quite short. The files in the example above were approximately 30 KB in size.



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The following image shown in Figure 6.2 is taken from a Samsung SMART phone as it would be displayed to the user. The resolution of the image is quite good and the download time could be measured in just a few seconds.


**Figure 6.6.2 - Example of an Advertisement Sent to a Smart Phone**

## 6.3 Procedure for Uploading Advertising Content when the Media System is Operating as a Standalone Device

1) In the Root Directory of a USB memory stick, create a folder called “adfiles”.
2) Open the “adfiles” folder and create some sub-folders. For example, group1 and group2.



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3) Place the files you want to transmit in either of the two folders under the "adfiles" folder; the group 1 and group 2 folders in this example.
4) Run the **BTADFileManager.exe** executable file and the following screen will appear.

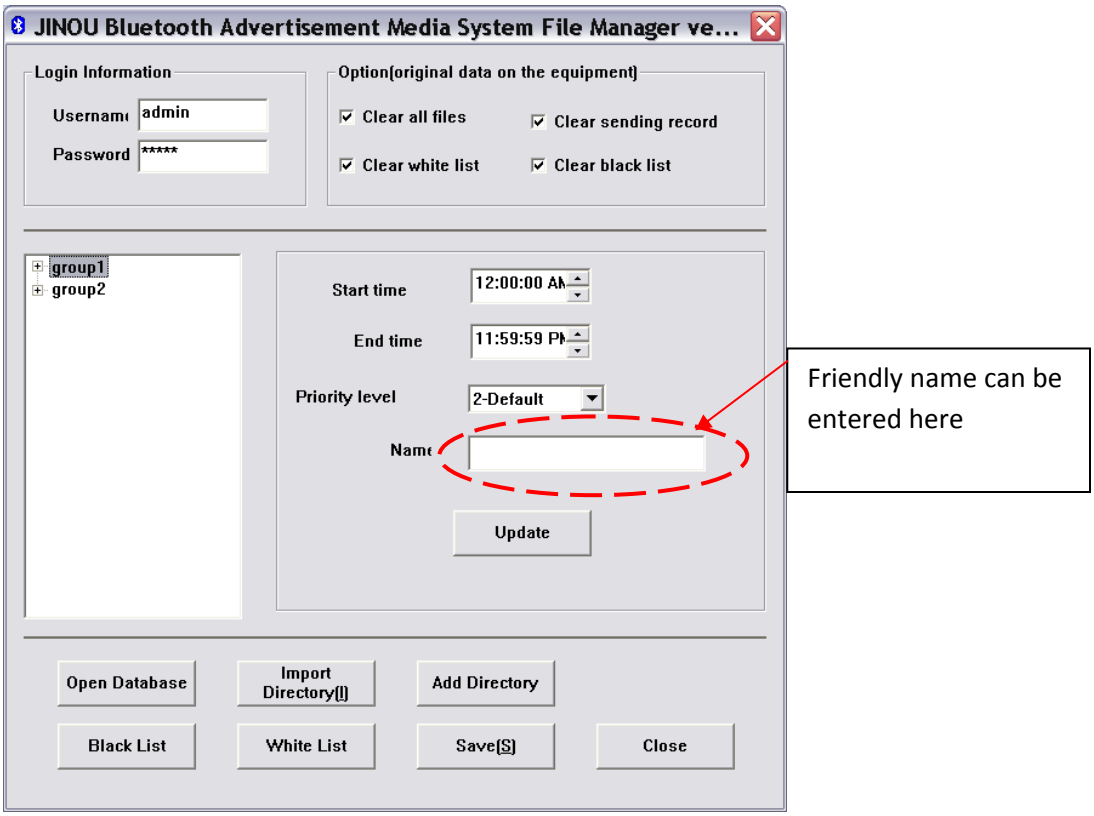


**Figure 6.6.3 - Advertising Media Content Update Program**

5) The next step is to import the appropriate directory. In the example shown here, it's the folder named "adfiles" from the root directory of the memory stick.
6) At this point you can click on the individual files and enter a friendly name.
7) Then click SAVE (S) and the program will ask you to save a file called **update.db**. **It is important that you save this file to the root directory of the memory stick!**
8) At this point it is safe to stop and remove the memory stick from the PC.
9) Close the file manager.
10) Simply plug memory stick into the Bluetooth Media System.



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1. The CPU in the Media System will detect the presence of the USB memory stick and look for the appropriate update files.
2. The updated files will then be copied to the flash memory of the Media System. The system is ready to attract customers.

## 6.4 Procedure for Uploading Advertising Content when the Media System is Accessible using an Ethernet Connection.

1) In the Root Directory c:\, create a folder called “adfiles”.
2) This is a optional step: Open the “adfiles” folder and create some sub-folders. For example group1 and group2.
3) Place the files you want to transmit in either of the two folders under the “adfiles” folder; the group 1 and group 2 folders in this example.
4) Run the BTADFileManager.exe file and the screen as shown in Figure 6.3 will appear.
5) The next step is to import the appropriate directory. In the example shown here, it’s the folder named “adfiles” from the root directory (c:\).
6) At this point you can click on the individual files and enter a friendly name.
7) Then click SAVE (S) and the program will ask you to save a file called **update.db**. It is important that you save this file to the root directory.
8) Go to **“My computer”** and enter the following in the search bar
    a. FTP://192.168.1.111
    b. The logon screen depicted in Figure 7.4 will appear. Logon using your password.



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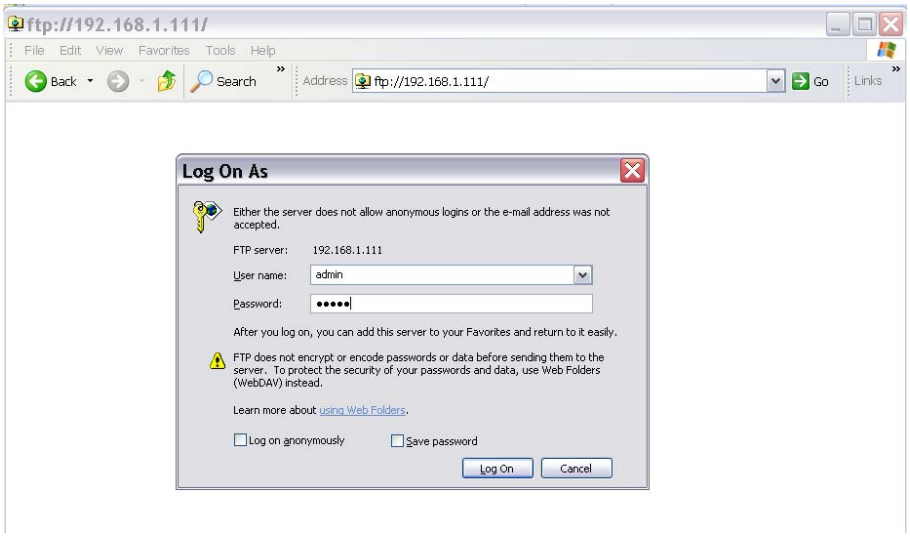


**Figure 6.6.4 - FTP Logon Window**

9) Copy the following files to the root ftp://192.168.1.111/ directory

   a. The key file.
   b. The adfiles folder.
   c. The update.db file.

Figure 6.5 illustrates how the ftp page will appear after this step is completed.

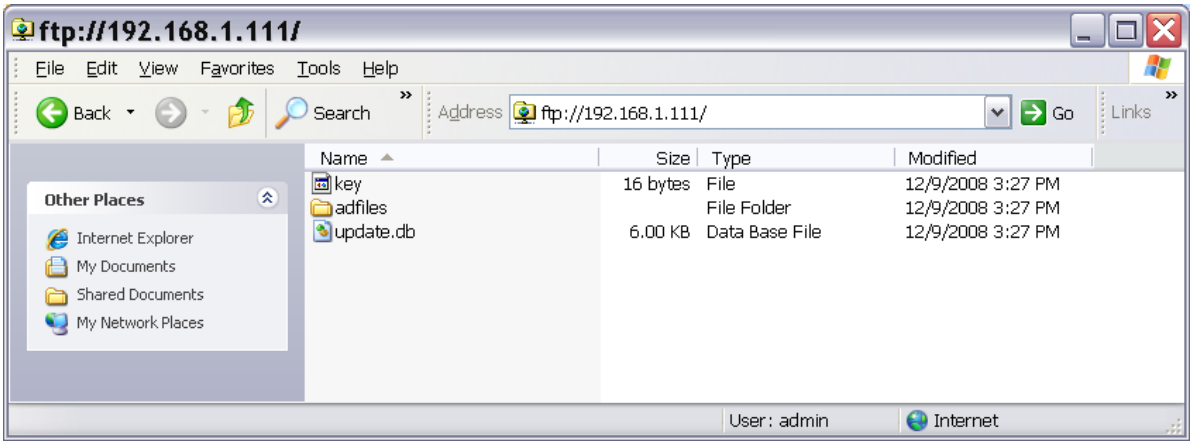


**Figure 6.6.5 - FTP Page after Files have been copied**



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10) Then go to the Internet Browser enter
    a. 192.168.1.111
    b. Click on AD Files Management
        i. Upload files
        ii. Then click on **Upload Finished**
        iii. Then click on File List to check that the files have been uploaded properly


**Figure 6.6.6 - Advertising Media Update Window**

11) The ZBA Bluetooth Media System is now ready to transmit files.



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# 7 Reporting Statistics

The ZBA Bluetooth Media System comes with a powerful statistical tool that will allow you to evaluate the performance of your advertisement campaign. The file name is **BTADSendHistory.exe** and the following is example of how the tool reports the information to the user. Shown in the figure 7.1 below is listing of the performance of the device when it was tested for two short periods of time.

To retrieve the data refer to figure 4.8

1) Click on the EXPORT dialog box
2) The BTMS will generate a file called
   a. **sendhistory[2009-03-05][20-08-23][GMT].db**
3) **This file will be located at the FTP site**
   a. **In this Example the location is ftp://192.168.1.111/**
4) **It is suggested that you copy this file to a working directory**
5) **The run the file BTADSendHistory.exe**
6) **Click File→ OPEN to access the data,**
7) **An example is shown below in Figure 7.1**



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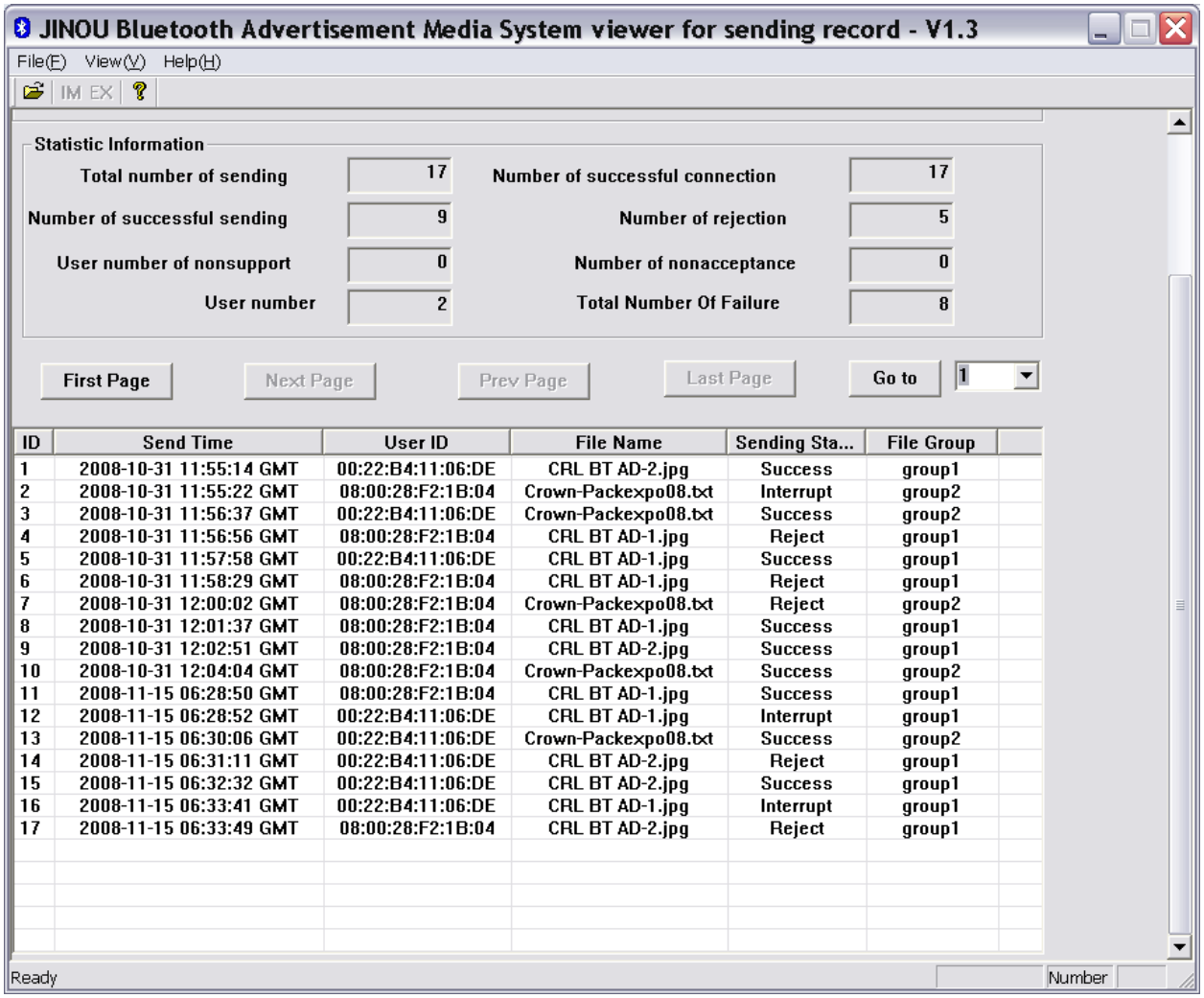


**Figure 7.7.1 Screen Shot of the Advertising Statistics Window**

The Above program will allow you to sort on various parameters such as files that have been accepted or files that have been rejected etc.

Once the statistics have been loaded into the above program then the data can then be exported to either a Test file or an Excel format file. This is accomplished by going to file → export (or hitting CTRL-E) which is shown in figure 7.2



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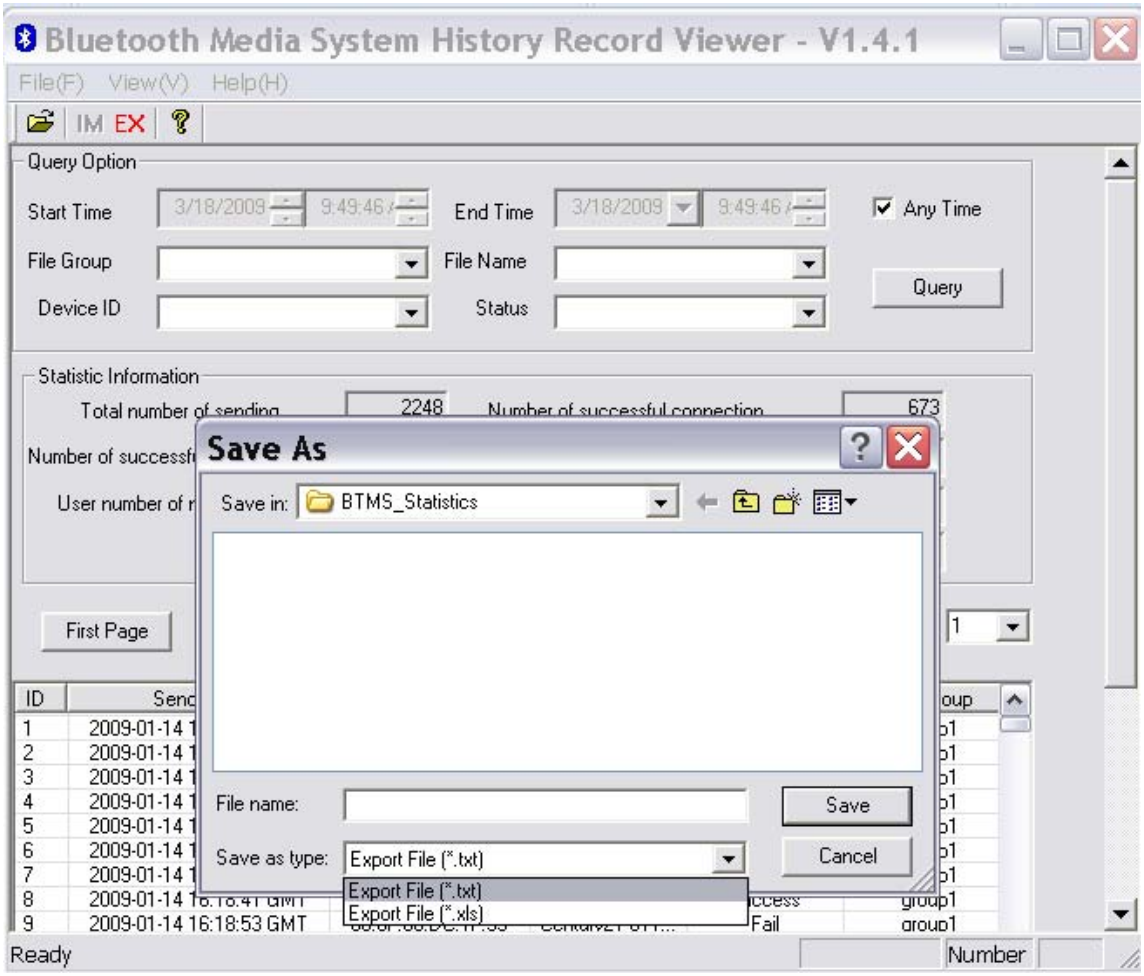


**Figure 7.2 BT history file exporting data to a .txt or .xls file**



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