crWebBB Billboard / RDS Posting

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Special thanks to:

All those who have offered insights and suggestions for enhancement of this product.

Table of Contents

Welcome to crWebBB

Part

I

crWebBB provides the means to send "**Now Playing**" information to either your web site or an RDS/RBDS encoder - or both. Supported host audio systems include XStudio, DCS, and Maestro (v3.0 and above).

Information sent can be composed from a variety of sources, including an integrated music database, a database providing a means to send "alternate" messages for non-music content, or Maestro (if it is the host audio system).

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1.1   Introduction

crWebBB is designed to capture XStudio, DCS or Maestro system information pertaining to what's playing on the air right now and send it to a web site and/or to an RDS/RBDS encoder.

Capture Start Play Information

The serial data stream or TCPIP data stream, whichever is available from the audio delivery system, is used to capture the information. Connection to the host DCS or Maestro is made either with a direct serial connection or via our rcServer product, which makes the direct connection to the host machine and then "relays" the data to other applications using TCPIP. For XStudio, a TCPIP connection is used.

Decide What to Post

Once the identity (cart number) of the item that is playing is known, several methods can be used to determine what kind of information, if any, will be "posted" for further processing by an external application, with the end result being this information appears on a web site in the form of a "What's Playing Now" billboard and/or is sent to an RDS encoder. Methods include direct information (from Maestro), cart number lookup from the audio system's inventory, a music database contained within crWebBB (and imported from your music scheduling system), and "**alternate messages**" that are matched to a particular cart category.

For instance, when the application detects the start of play of, say, cart number M100, it can determine what audio type (or "category") this cart falls into - music, promo, jingle, commercial (or whatever else you care to define) - and then determine what kind of information to make available for a web billboard. In the case of a song, the information would a "slug line", song title and song artist. In the case of a commercial, it could be an "alternate message" that the user has created (3 lines worth) that instead says something like "listen to our radio station for the latest in what's happening at the stores". In the case of a promo, it could be something like "Join our morning crew at the auditorium this Thursday for the big giveaway".

Alternate Messages = Maximum Flexibility

Each audio type (or "category") may have as many alternate messages as desired. Each may have a start date and end date. Messages in a given category are rotated equally among those valid for a given date, with items not valid for a given date being skipped. If desired, you could even define messages that are linked to one specific cart number only - a way to have a message that is specific to one advertiser, for instance.

This scheme extends the possibilities beyond just posting information to the web that relates to a given song title and artist. With crWebBB, you can be creative about information to appear on your web site or RDS encoder for all of the non-music content!

> For more detailed information on how crWebBB decides what information, if any, to post to a web site or send to an RDS encoder, see the Posting Decision Tree topic.

1.2   Key features

crWebBB is a flexible tool for gathering and sending information about what is currently playing on an XStudio, DCS, or Maestro system.

- Use crWebBB with XStudio, DCS, or Maestro (v3.0 and above).

- Recognizes and uses Maestro's Song Title, Artist, Category information (if enabled in Maestro).

- Embedded music database that can be used for full song title and artist posting, including utilities to import the data, "proper-case" the information and export the data to text or html files.

- Embedded alternate messages database that can be used to send custom messages for non-music content, by user-defined cart categories. Multiple custom messages can be created for each category and rotated, including start and end date sensitivity.

- For web posting, messages can be written to a target file and sent to the web site via FTP or simply written to a target file and processed by an external handler application.

- Two billboard message types can be used, including a user-defined text billboard. The user-defined content layout is completely customizable by the end-user and may be used in combination with the standard text type or in lieu of it.

- RDS/RBDS messages can be sent directly to the encoder via a serial connection or, for select encoder models, TCPIP connection.

- Software-controlled RDS "block mode" messaging.

- Billboard posting and RDS messages can optionally be limited to music only. Text posting types are controlled individually, as is RDS messaging.

- User-selectable appearance of the application (skins).

1.3   What's New in crWebBB

This section documents changes and enhancements to crWebBB by version number and date. For information on less-recent changes and enhancements, see the Revision History topic.

Version 2.4.2.300 - 10/06/2014

1. **Enhancement**. Logging of RDS messages sent to an RDS encoder now include all text sent to the encoder rather than just of the message content that would appear in RDS-enabled receivers. Logging the entire text string sent to the encoder assists in troubleshooting encoder communications problems. Note that the "Last Sent RDS Message" information panel on the main display continues to include just the text that would be seen on RDS-enabled receivers.

2. **Fix**. When RDS was enabled and the Audemat-Aztec Silver RDS encoder was selected, data was not being sent to the encoder. This encoder also appears to require a delay between PS Text & Text sends - review the RDS Advanced Options topic for further information.

3. **Fix**. When RDS functionality was enabled and sending Dynamic PS text *only*, the "Last Sent RDS Message" information on the main dialog was not being updated. This information is now updated for all RDS text send options.

Version 2.4.0.290 - 03/28/2014

1. **Enhancement**. crWebBB now detects Windows 8 and Windows Server 2012 operating systems and adjusts its display accordingly.

2. **Enhancement**. The crWebBB manual, supplied in PDF format, has been optimized for duplex printing.

3. **Fix**. If for some reason crWebBB sent empty text to the RDS module and block mode was enabled, a "list index out of bounds" error would occur. Additional checking of of the data arriving in the RDS module is now done to ensure this error does not occur.

4. **Fix**. With certain displays and skins, the appearance of section identifiers in the Preferences dialog was incorrect. The visual appearance of these identifiers is now consistent with or without skinning of crWebBB.

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Installation

Part

II
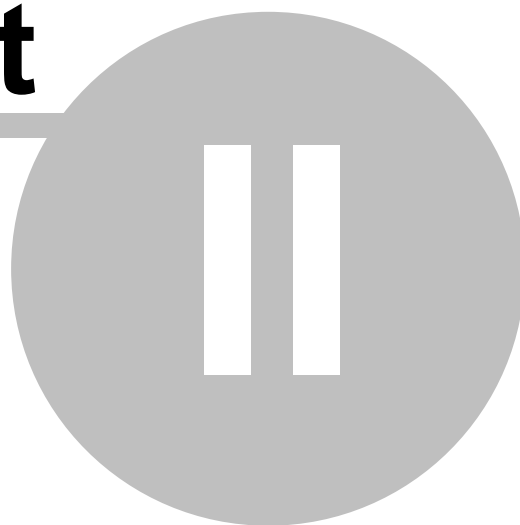
In order to use crWebBB successfully, certain hardware and Windows operating system requirements must be met. You must also install the crWebBB software on the PC, using an installation program.

This section documents the system requirements for crWebBB and covers the process of installing, updating and removing the crWebBB software.

2.1   System Requirements

Certain minimum hardware requirements must be met to use crWebBB, both on the PC on which you will be running the application, and the DCS machine which will be used for audio playback.

Application PC

The user needs a PC that running Microsoft Windows™ 2000, Windows XP, Windows 7 or Windows 8. crWebBB requires at least:

- 64MB RAM (Windows 2000), 128MB RAM (Windows XP), 512MB RAM (Windows 7, Windows 8), with 128MB, 256MB and 1GB recommended as minimums, respectively.

- 15MB free disk space (for this application only) and sufficient available disk space to accommodate your music database (if imported) and the alternate messages database.

- A LAN connection for reading XStudio, DCS or Maestro inventory information, if used.

- A working and available serial port for connection to the host audio machine or TCPIP installed for connection to an rcServer host or XStudio.

- A 2nd working and available serial port for connection to an RDS/RBDS encoder (if using the feature).

Host XStudio Unit

Nothing special needs to be done with XStudio in order to use crWebBB to post messages to the web or send data to an RDS encoder. crWebBB obtains play information via TCPIP, so there are no physical connections to be made, nor is there any need to enable the data stream from XStudio as it is always available.

Host DCS or Maestro Unit

In order to use crWebBB, you must have a DCS unit (DOS) or Maestro unit available that you can connect to via a serial cable. The unit must have an available serial port for remote control purposes. For information on how to set up DCS or Maestro to use the serial data, see the sections on Setting Up DCS or Setting Up Maestro, respectively.

Additional Hardware Needed

One or two "null modem" serial cables for connecting to the host audio machine and/or an RDS/RBDS encoder. For information on wiring the serial data connection to the host audio machine, see the section on Serial Interface. For information on connecting to an RDS/RBDS encoder, review the encoder documentation for specifics on wiring the cable.

2.2 Upgrading from Previous Versions

> ⚠️ If you are upgrading from the initial release of crWebBB, your registration key will no longer be valid. You will need to obtain an updated registration key.

The registration for versions 2.0.x.x and up has been changed and you will need to obtain an updated key. See the instructions for registering crWebBB in the topic Registering crWebBB.

2.3 Installing, Updating or Removing crWebBB

The crWebBB installation program provides step-by-step instructions on every screen displayed during the installation. Follow the instructions on each screen to install crWebBB.

Before you install

1. Close all other programs, including any anti-virus programs.

2. If you are installing on Windows 2000, Windows XP, Windows Vista, Windows 7 or Windows 8, log on to your computer with administrator privileges.

> ⚠️ You must have administrator privileges to perform an installation or a software update when running on any of the supported Windows operating systems.

Installing crWebBB

crWebBB is distributed as a downloadable installation program. The latest version of the software is always available on our web site on the crWebBB product home page and the general downloads page.

1. After you have downloaded the installation program to your computer, locate the setup program, **crWebBBSetup.exe**, in the folder to which you downloaded the file. [**Double-click**] on the setup program to begin installation.

2. Follow the instructions on each screen to install the software.

Updating crWebBB

1. If you have downloaded or otherwise received a revision for crWebBB, the process for updating the software is virtually identical to the initial installation. However, the installation dialogs may be a bit different. When updating, you are not typically given an opportunity to select the target folder for installation, as that choice has already been made in a previous installation.

2. You may be prompted that an old version of crWebBB has been found and that it must be uninstalled (removed) before continuing with the update. If you see this prompt when updating crWebBB, you should answer "Yes" to remove the old version, and if prompted to confirm the removal of the old version, again answer "Yes".

3. On occasion, updating crWebBB may require some additional tasks be performed during the update. Such tasks might include validating and/or updating your registration and making adjustments to your preferences settings. If these tasks are needed, you will be prompted for any input required and notified if the update task could not be completed

successfully.

> You must have administrator privileges to perform an installation or a software update when running on any of the supported Windows operating systems.

To Uninstall crWebBB

To remove crWebBB from your PC, select the Control Panel applet Add/Remove Programs. Select crWebBB and click on the [**Remove**] button. Follow the prompts to uninstall the software.

> Only files originally installed are removed. Event log files and your preferences files are not removed. See the List of Files topic for more information on files that are installed or created by crWebBB.

Notes for Novell Netware Users

1. Inventory files can be located on all versions of a Novell Netware server. The logged-on user must have the appropriate user rights for the volumes and folders used.

2. The latest Microsoft operating systems, starting with Vista, do not include a Netware client. This means that you cannot directly access a Novell Netware server with a PC running these operating systems. A possible workaround is to implement usage of Microsoft's Gateway Services for Netware, available on Windows 2000 Server. However, using Gateway Services for Netware may negatively affect performance.

Configuration & Preferences

Part

III
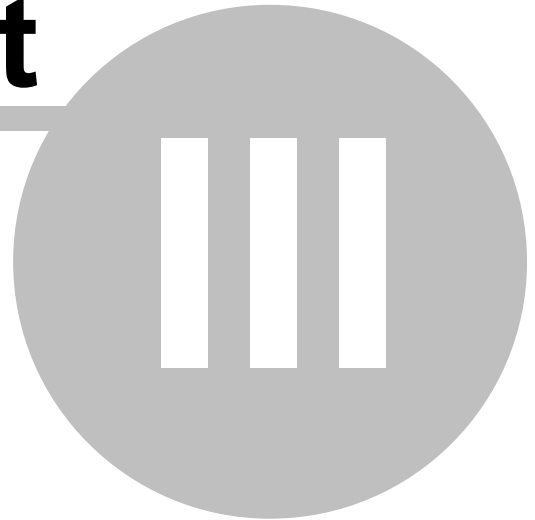
In order to use crWebBB, you must set several user preferences. These preferences dictate how the program gets information from an XStudio, DCS or Maestro unit and how the information is processed and subsequently "posted" to a web site or sent to an RDS/RBDS encoder.

To get started, select the menu item **Edit | Preferences** from the main dialog menu.

> The preferences dialog can be password protected, and if so, you will be asked to enter a password before being allowed to change any settings.

The preferences dialog consists of a navigation tree used to select of groups of related settings that appear in a panel and buttons to access help, save the settings and exit the dialog.
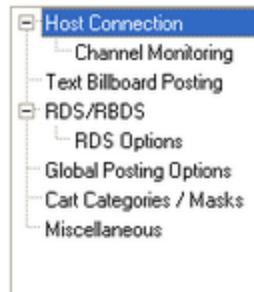
Preferences Navigation Tree

To select the group of options you wish to work with, click on the appropriate item in the tree. Settings associated with the item will appear in a panel to the right of the tree.

3.1   Host Connection

To access host connection settings, select the "*Host Connection*" item in the navigation tree, located at the left side of the display. On this page, you tell crWebBB how you will communicate with the host XStudio, DCS or Maestro unit. There are two options - direct to the host by serial cable connection; and TCPIP. If using TCPIP with DCS or Maestro, you will be using our rcServer product to relay serial data from the host audio system over TCPIP.

> For XStudio, use the TCPIP option and set the port values to the same values as those XStudio is using. Set the IP address to the PC on which XStudio is running.
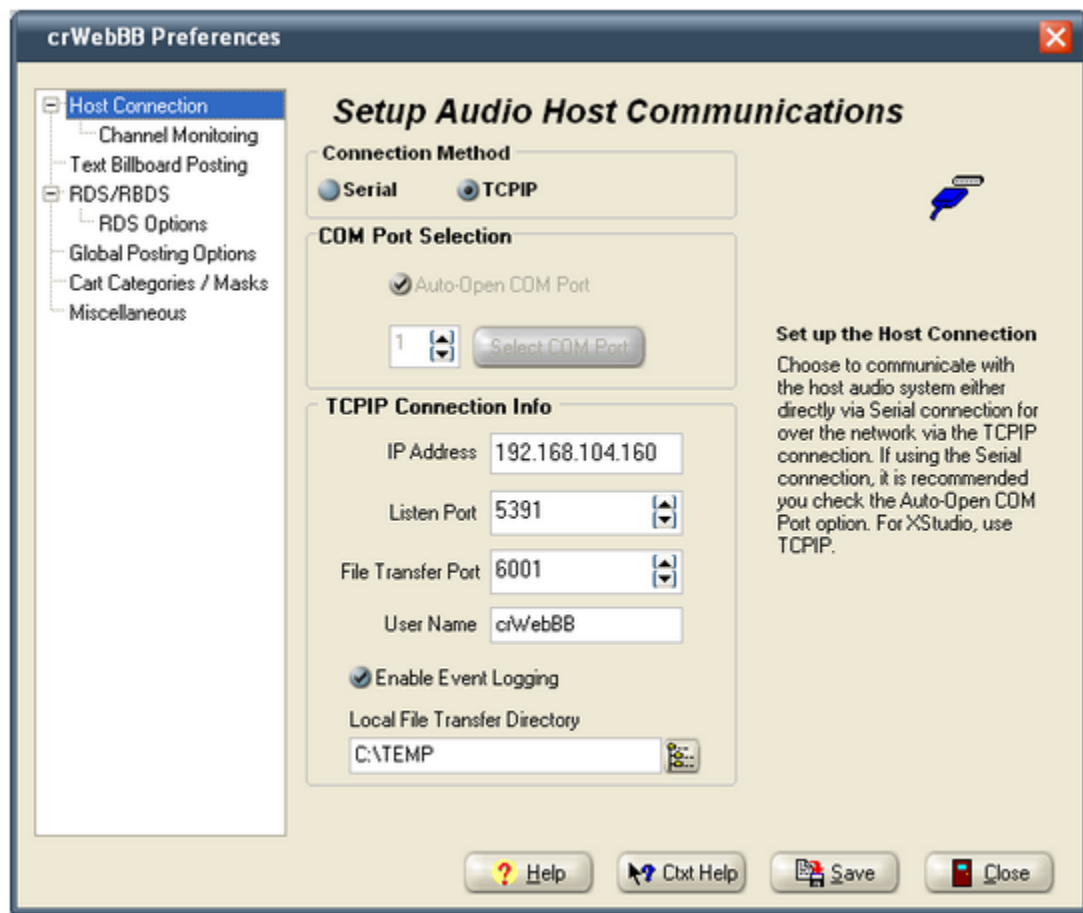
Connection Method

Select the method of communication between crWebBB and the host audio system. As the connection method changes, different groups of properties are enabled, depending on the connection type.

Serial Communications

To enable serial communications, select the **Serial** radio button in the Connection Method box. Properties specific to a serial connection are listed below. Required settings are noted with a check mark in the **REQ** column.

Property	*REQ*	*Description*
Auto-Open COM Port		Check the **Auto-Open COM Port** item (recommended) to have crWebBB automatically open communications with the host system on program startup. If not checked, you will need to manually open the COM port when crWebBB has started.
COM Port Number	✓	Select the COM port you will use, either directly in the port field or by clicking on the [**Select COM Port**] button, which will display a list of available COM ports.

If you are using serial communications directly to the host audio machine, no further settings are required on this page.

TCPIP Communications

To enable TCPIP communications, select the **TCPIP** radio button in the Connection Method box. Properties specific to a TCPIP connection are listed below. Required settings are noted with a check mark in the **REQ** column.

> If you are using XStudio as the on-air delivery system, the IP address and port numbers assigned here are the same values as used in the XStudio Preferences dialog for communicating with the audio engine.

Property	*REQ*	*Description*
IP Address	✓	Enter the host system's IP address. If the host system is running on the same PC as crWebBB, enter **127.0.0.1**.
Listen Port	✓	The port number on which crWebBB will receive status data from the host audio system.
File Transfer Port	✓	The port number on which crWebBB will receive files, if using rcServer.
User Name		This field is optional and is set as a default to "**crWebBB**".
Enable Event Logging		This check box is unchecked by default and would normally be used only for TCPIP communications trouble-shooting.
Local File Transfer Directory		You must set a local path for files that will be delivered to the PC from rcServer. Ensure that the logged-in user has write privileges if you're running any of the Windows NT family operating systems.

3.1.1   Host Channel Monitoring

To access host channel monitoring settings, select the "*Host Channel Monitoring*" item in the navigation tree, located at the left side of the display. In this area, you select the host audio output channels to monitor for posting.
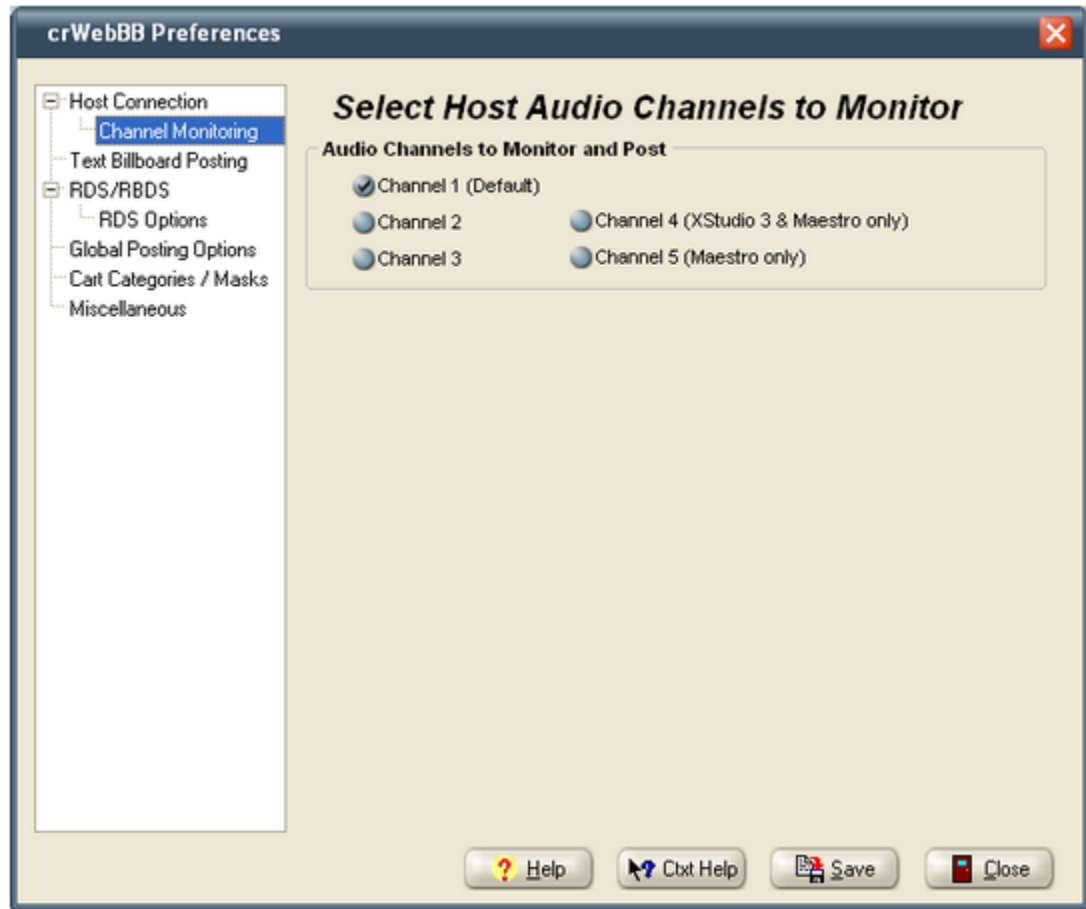
You can choose which of the audio channels on the host XStudio, DCS or Maestro unit to monitor and post information from. Typically, only channel 1 would be used as it would be viewed as the "on-air" channel. If desired, though, you can also monitor other channels. Channel 4 is available on XStudio or Maestro, channel 5 is available on Maestro units only (if so equipped).

> For Maestro units with more than 3 available audio channels, only the first 3 channels are supported for remote serial data on earlier Maestro versions. If you have more than 3 audio channels, channels 4 and up cannot be monitored. If you are using later version of Maestro, channels 4 & 5 can be monitored, if available.
>
> For XStudio, channel 4 is available for monitoring beginning with version 3.0.

To monitor a channel, check the channel number item. To ignore data from a particular channel, uncheck the channel number.

3.2   Text Billboard Posting

To access text billboard posting settings, select the "***Text Billboard Posting***" item in the navigation tree, located at the left side of the display.This page allows you to select the text posting types, whether to automatically FTP messages to your web site and options for each posting type.
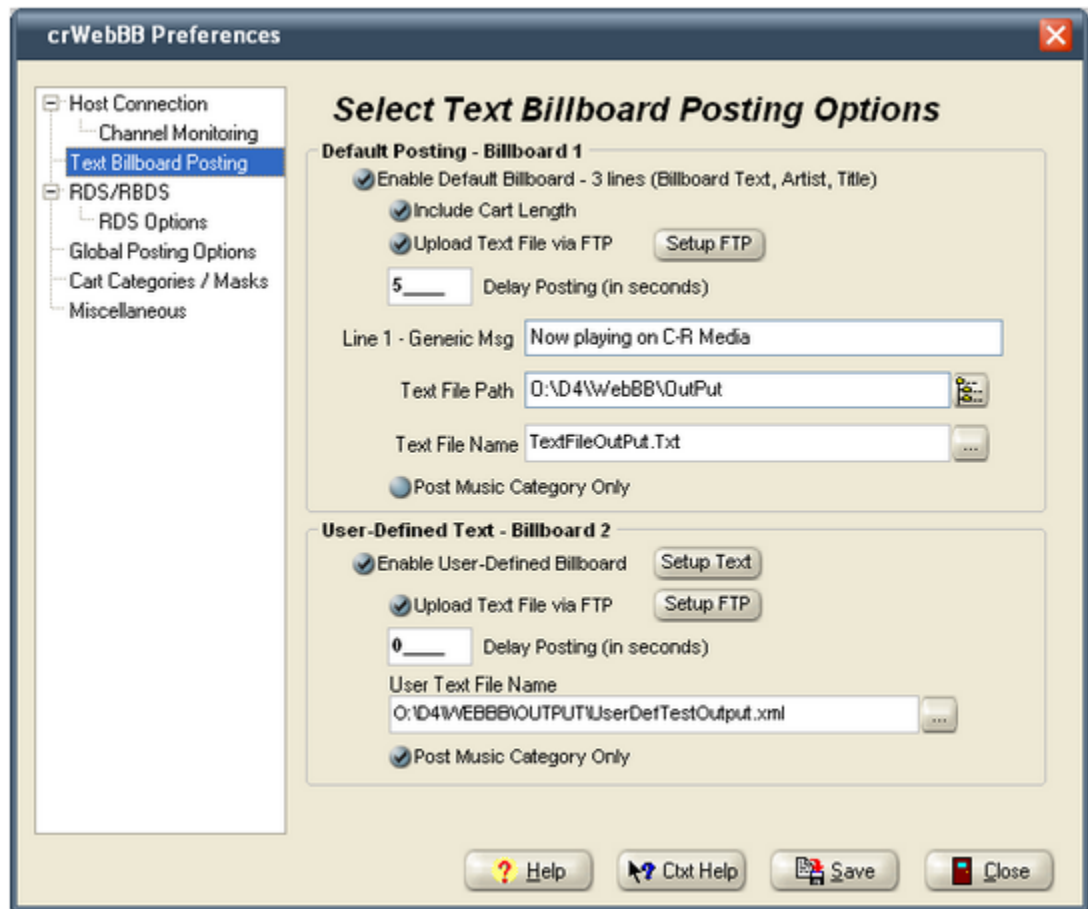
Two types of text files can be posted - a fixed-format "standard" file and a user-defined layout. Either or both can be enabled for posting and different FTP sites can be used if uploading the text file.

Default Posting - Billboard 1

This group of properties controls if and how the standard billboard text is posted. The standard text file is a fixed format and cannot be changed by the user. The text file format is:

```
Line 1 |
Line 2 |
Line 3 |
*Audio Length* (optional)|
```

Note the use of the "pipe character" (**|**) at the end of each line. Discussions with ISP's indicate this method makes it easier for them to use the posted information. The pipe character is automatically appended to each line of content when a billboard message is posted. For music, the posted information on each line is as follows:

Line #	Line Content
Line 1	The **Line 1 - Generic Msg** text. Typically, this would be a slug line for the station.
Line 2	The song Artist
Line 3	The song Title
Line 4	**Optional**. If "Include Cart Length" is checked, the length of the audio, as reported by the host system, is included in the output file.

> For alternate messages, the contents posted are the Line 1, Line 2 and Line 3 contents of the selected alternate message.

You can optionally upload the text file to an FTP location. Check the "**Upload Text File via FTP**" item to enable this feature. You must also setup your FTP connection. Click on the [**Setup FTP**] button to open the FTP setup dialog.

When posting the billboard file to a web site, you can also have crWebBB delay the posting if you need to synchronize the posted information with a web stream. The default value for "**Delay Posting**" is zero, meaning no delay. Delay values are in seconds.

If you want to limit information posted to include only music data (as defined in your music category), check the item "**Post Music Category Only**". This setting applies only to this posting method - to limit RDS messages to music content only, refer to the RDS Options topic.

User-Defined Text - Billboard 2

As it implies, using this posting type allows the user to control the format of the text file, which provides complete layout flexibility. You can combine any text of your choosing and place the Song Title, Artist, Item Length and line breaks (Carriage Return, Line Feed) anywhere in the layout. There is no requirement to use any of the variable information - Song Title, etc - and you can use more than once instance of the variable information within the text layout if desired. A separate alternate messages format is used.

A custom dialog is used to simplify creating the layout. Click on the [**Setup Text**] button to display the dialog and edit the layouts for both the standard Song Title, Artist, etc., and Alternate Messages.
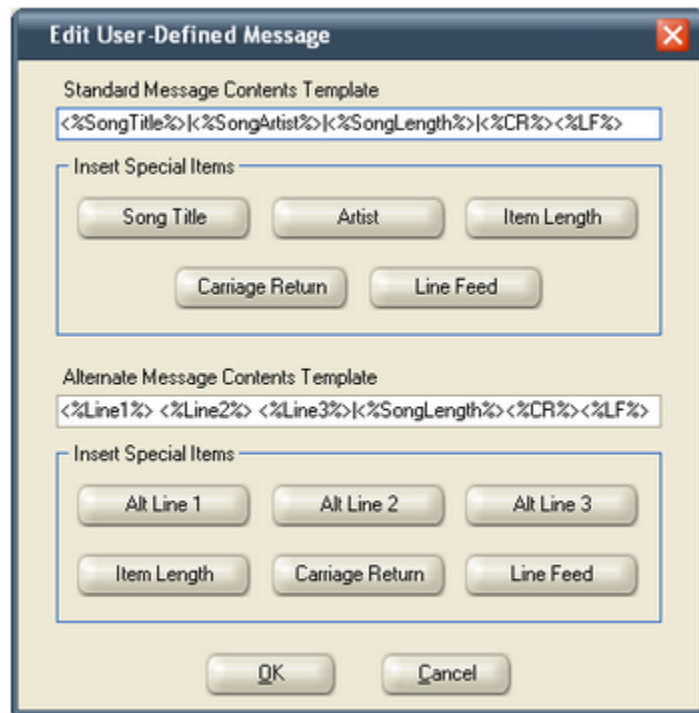
As shown in the sample dialog, the variable information is represented in the layout in the format **<% variable%>**. While you can manually type these values, it is recommended you use the buttons associated with each message type layout to insert them. Using the buttons will reduce the possibility of error.

You can construct completely different layouts for the standard Song Title, Artist, etc message and the Alternate Message. The appropriate variable items are provided for each.

> When using the Carriage Return and Line Feed variables, you must place them immediately adjacent to one another (no spaces or characters between them) in order to produce a multi-line text file as viewed in a Windows operating system.

When you have completed layout settings, click on the [**OK**] button to save them. Clicking on the [**Cancel**] button discards any changes you have made to the layouts.

You can optionally upload the user-defined text file to an FTP location. Check the "**Upload Text File via FTP**" item to enable this feature. You must also setup your FTP connection. Click on the [**Setup FTP**] button to open the FTP setup dialog.

When posting the user-defined billboard file to a web site, you can also have crWebBB delay the posting if you need to synchronize the posted information with a web stream. The default value for "**Delay Posting**" is zero, meaning no delay. Delay values are in seconds.

If you want to limit information posted to include only music data (as defined in your music category), check the item "**Post Music Category Only**". This setting applies only to this posting method - to limit RDS messages to music content only, refer to the RDS Options topic.

Special Notes on Using Billboard Types

As there is more than one type of billboard that can be posted and you can choose to use one of the types or both types simultaneously, there some some points to keep in mind when configuring your text billboard posting scheme.

1. If you choose to use both posting types, keep in mind the "standard" message is always processed before the user-defined message. This means that if you choose to delay the standard text file post, the user-defined post will also be delayed as least as long as the standard message even if its "Delay Posting" value is zero. Items for posting are queued and processed in a first-in, first-out way, with the standard message processed first.

2. If you are using both posting types, the as-run data is generated based on the "standard" text message. If you are using only the user-defined message type, the as-run data is generated based on user-defined message.

3. Each posting type must have a unique output file name.

4. When using the user-defined posting type, only the text and variables you enter in the layout dialog is used.

3.2.1 Text Posting FTP Setup

In order to successfully post a text file to an FTP site, you need to tell crWebBB where to post the file, along with any user name and password information. The FTP setup dialog appears similar to the example shown.
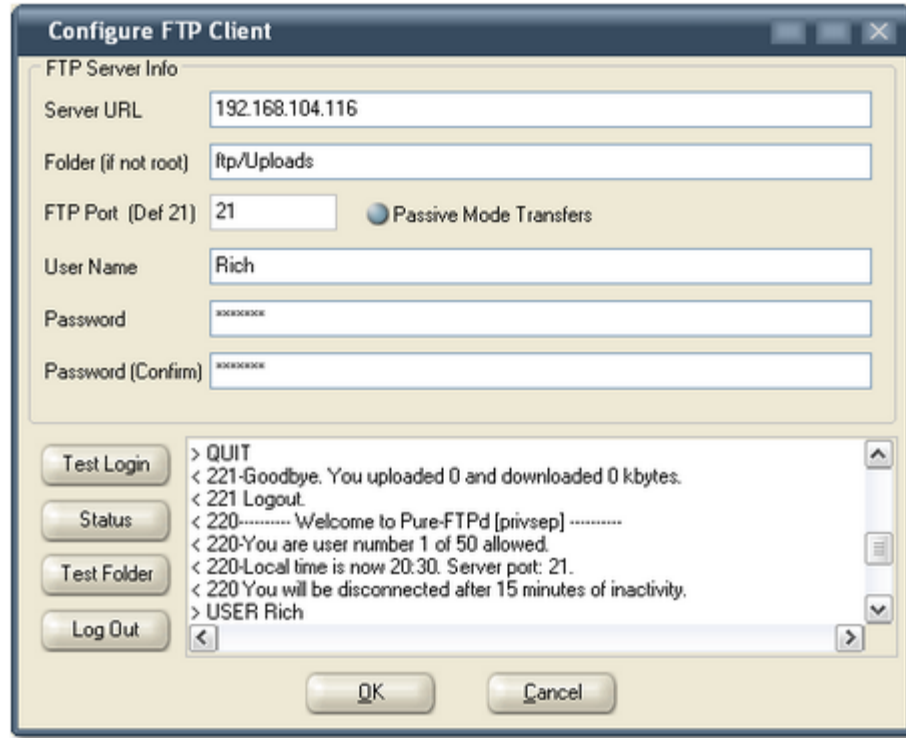
Some of the properties shown may not be required for your FTP setup. The table below lists those properties which are required and those which may be optional, depending on the FTP server set-up at the receiving site.

Property	*REQ*	*Description*
Server URL	✓	Enter the address of the server in this field. Typically, the value is entered in the format ***xxx.xxx.xxx.xxx***.
Folder	✓	If the target folder on the FTP server is something other than the root folder, enter the folder name in this field. Note that when separating folder levels, the typical separator in this case is a forward-slash (*I*) rather than the conventional backslash character.
FTP Port	✓	The default FTP port is **21**. If your FTP server uses a different port, enter the port number in this field.
Passive Mode Transfers		If passive mode file transfer is required for file uploads, ensure this item is checked.
User Name		If a user name is required to login to the FTP site, enter the user name to be used for the site login in this field.
Password		If a password is required for login to the FTP site, enter it

Property	*REQ*	*Description*
		in this field. You must also re-type the password in the Password (Reconfirm) field below. The two entered values must match in order to test the FTP connection and to leave the setup dialog.
Password (Confirm)		Enter the same value as you entered in the Password field to confirm your entry. The two must match exactly.

Testing the FTP Connection

Once you have entered the information, you can use the dialog to test your connection. Click on the [**Test Login**] button to test the connection. An attempt will be made to login to the host FTP server. The status window displays the results of the test.

Once successfully logged in, you can test your folder settings by clicking on the [**Test Folder**] button. An attempt will be made to select that folder on the host FTP site. Again, the status window will display the results of the test.

If you have logged in to the FTP server for testing purposes, log out of the server by clicking on the [**Log Out**] button.

> crWebBB automatically logs out from the FTP site after every file transfer during normal operations.

When you have completed entering the needed information and optionally testing the connection, click on the [**OK**] to close the dialog and keep the settings. Clicking on the [**Cancel**] button discards any changes made and retains original values, if any.

3.3 RDS/RBDS Setup

To access RDS settings, select the "***RDS/RBDS Setup***" item in the navigation tree, located at the left side of the display. This page provides the means to enable and setup RDS/RBDS encoding, if desired. Be sure to review the documentation supplied with your RDS encoder for specifics on acceptable baud rate, etc.

> **RDS** (Radio Data System) and **RBDS** (Radio Broadcast Data System) are, for purposes of this documentation, treated as equivalent. Over time, differences between the two standards have been reconciled and minimized.
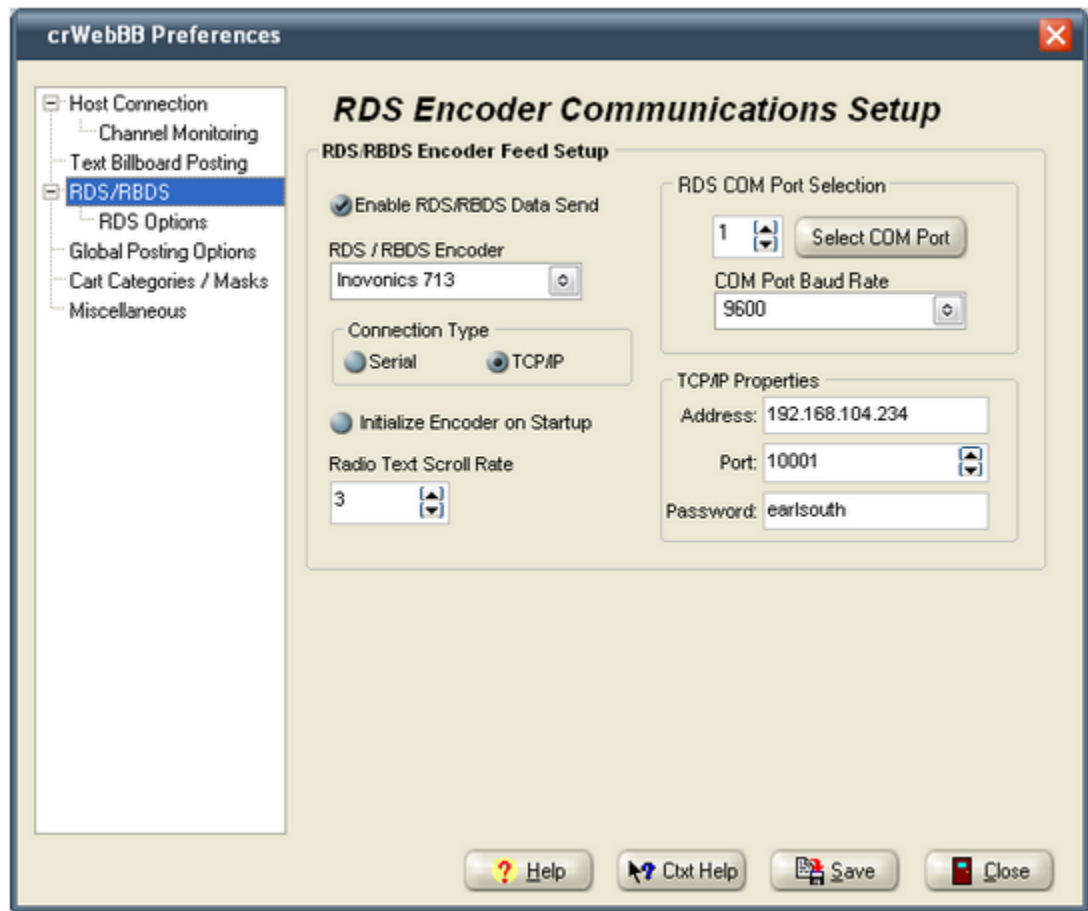
Enable RDS/RBDS Data Send

If you check this item, information will be sent to the RDS encoder. The default is **unchecked** (disabled). If you enable data send to the encoder, you must select the appropriate items for each of the groups on this page to ensure proper operation.

RDS/RBDS Encoder

Select the brand and model of the RDS encoder you are using. The main purpose of this setting is to know what initialization string needs to be sent to the encoder, if the option is enabled, and along with the required format of messages sent to the encoder. The type of encoder selected also dictates the range of text scrolling speeds, baud rates you can select, whether or not the **Text Send Options** group

box is enabled, and whether or not the Connection Type property is enabled.

Connection Type

If an encoder that supports both serial and TCPIP communications is selected, you can choose how you want to communicate with the encoder. If the selected encoder does not support TCPIP communications, this option is disabled.

Initialize Encoder on Startup

Some encoders reject text information sent to the RT field ("TEXT=") as a default when powered up. If this item is checked, an initialization string is sent to the encoder to override this default setting right after communications with the encoder are established. If unchecked, no initialization string is sent.

> ⚠️ The initialization string sent when this item is checked is not the same as some encoder's "**INIT**" or "**RESET**" commands, which set the encoder to factory defaults or reset the encoder as though the unit had been powered off and on. Instead, crWebBB sends commands that ensure RT information will be accepted by the encoder and in some cases, sets a default text speed.

Radio Text Scroll Rate

The radio text scroll rate determines the speed of the text scrolling. When an encoder is selected for the first time, the default (manufacturer recommended) speed is set. Various encoders use different ranges of values for this field, so you can expect that the available speed ranges will change as you select different encoders.

RDS COM Port Selection

Here, select the COM port on the host PC that you will be using to send data (messages) to the RDS encoder. You can use the spin controls to change the setting or use the [**Select COM Port**] button, which will display a list of available ports.

> ⚠️ If you are using a COM port to communication with the host audio system, the RDS port used must be different. If you attempt to save your preferences and the same port is selected for both tasks, you will be prompted to correct the problem.

COM Port Baud Rate

Select the baud rate you wish to use from the available list. Typically, you would select the highest available rate that is supported by your encoder. The baud rate selected here must match the encoder's current baud rate setting or communications will fail.

No settings are made available for other serial communications parameters. The three most common you will find referenced in the encoder documentation, and crWebBB's setting for them, include:

> **DataBits** - set to **8**
>
> **Parity** - set to **None**
>
> **StopBits** - set to **1**

TCPIP Properties

If the selected encoder supports TCPIP communications, the TCPIP property group is enabled for data entry. If the selected encoder does not support TCPIP communications, these properties are disabled. Here are the available TCPIP properties and their usage:

Property	Description
IP Address	The TCPIP address of the host RDS encoder, typically entered as *xxx.xxx.xxx.xxx*.
IP Port	The TCPIP port being used for the host RDS encoder for standard ASCII messages.
IP Password	If the host RDS encoder is password-protected, enter the password in this field. The password is displayed and stored as plain text. Typically, the host encoder allows only one connection to the selected port, so security is not a big issue. The password is sent to the host encoder only if prompted by the encoder.

General RDS/RBDS notes:

1. There is a limit to the number of characters that a given encoder will accept as the message, typically 60-65 characters, with 64 characters being the most popular limit.

2. When sending information about a song, the song title and artist are combined, separated by a space, and truncated to the maximum number of characters the encoder will accept. If the Prepend Station ID option is enabled, the ID, song title and artist are combined, each separated by a space and truncated to the maximum number of characters the encoder will accept.

3. When posting an alternate message to the encoder, the **FIRST TWO LINES ONLY** of the alternate message are placed together separated by a space, then truncated to the maximum number of characters the selected RDS/RBDS encoder allows.

4. Typically, the name of the encoder field used for messages is "RT". You can check your encoder documentation for information on the specific length allowed.

5. If an encoder does not support dynamic PS and you wish to send messages to the PS field, you must enable the Software Block Mode option. The Inovonics Model 711 is an example of such an encoder.

3.3.1 RDS Options

To access RDS options, select the "***RDS Options***" item in the navigation tree, located at the left side of the display. On this page, you can specify whether crWebBB sends Text (RT) data, Dynamic PS (PS) data or both, depending on whether the selected encoder supports the option. You can enable crWebBB's internal software "block mode", prepend a standard ID to message and limit sent messages to music only.
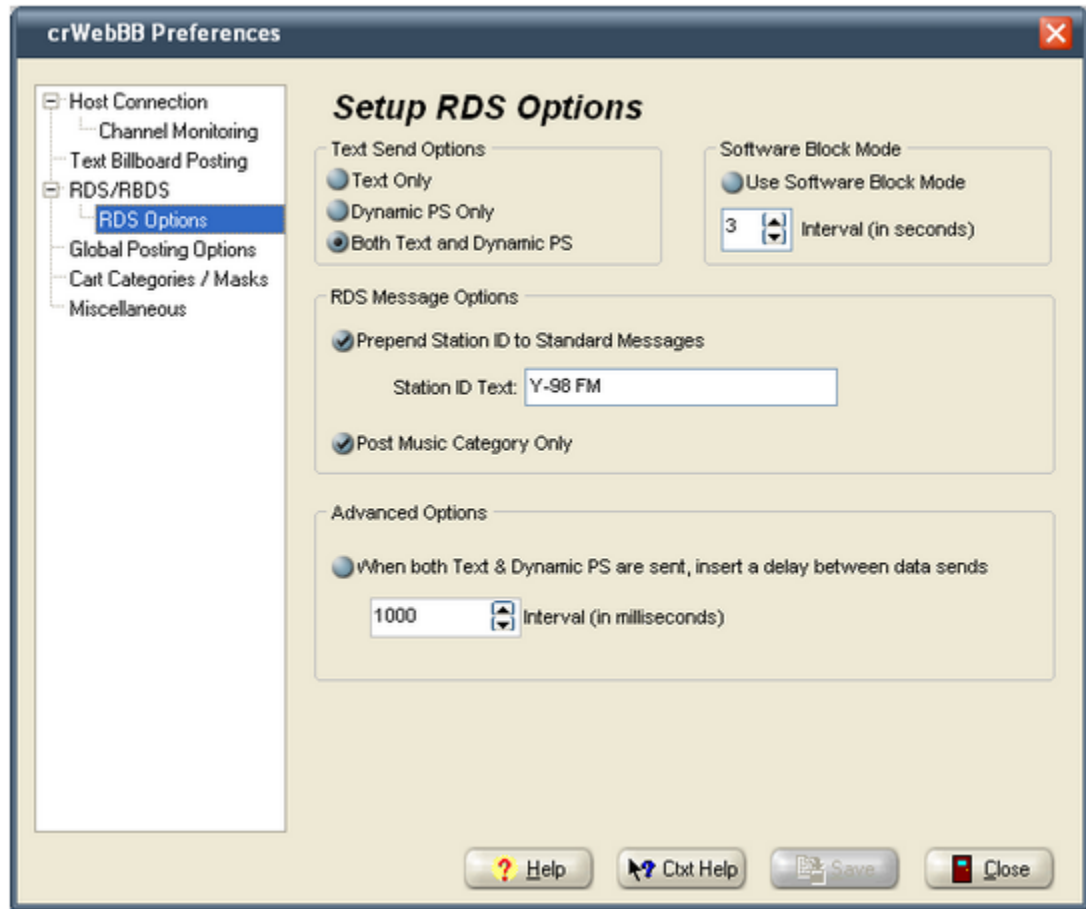
Text Send Options

Most current-generation encoders support dynamic **PS Text** as well as the standard **Radio Text**. If you have selected an encoder that supports this feature, you can choose whether to send the text information to the Radio Text field only, the Dynamic PS field only, or both fields. Those encoders that do not support Dynamic PS text are set to the Text Only option.

Software Block Mode

This set of options provides the means to force crWebBB to break up RDS messages into blocks of 8-character words and send the word blocks in rotation at the interval specified by the user, in seconds. The word blocks are centered and are sent in a circular fashion - the first block, followed by the second block after the Interval (in seconds) has elapsed, and so on, until the block containing that last text of the message is sent. Then, the first block is sent again and cycle is repeated until either a new RDS message is posted or the elapsed time from the start of sending blocks for a message exceeds the length of the audio with which the message is associated (a time-out). If a time-out occurs, the Station

ID, if any is assigned, is sent to ensure that what appears on an RDS receiver is not old information.

RDS Message Options

You can choose to insert a fixed set of text in front of a standard song title and artist RDS message with this set of options. For instance, it may be desirable to ensure your station's slug line appears consistently in either the PS or RT fields on receivers.

Enable this feature by checking the "**Prepend Station ID to Standard Messages**" checkbox. The "**Station ID**" field is where your station call letters or slug line is entered – you may enter a maximum of 16 characters, but be aware the width limit for most RDS encoders' PS field content is 8 characters.

> If your RDS encoder does not support dynamic (scrolling) PS or if you are not using the application software block mode, only the first 8 characters of the Station ID field will appear in the PS display on the receiver.
>
> Be aware that this text counts towards the 64-character limit of the Radio Text field. If you use the maximum number of characters in the Station ID field, it's more probable that when it is combined with a long song title and artist, the Radio Text 64-character limit is exceeded.

The "**Station ID**" field contents is also used if you have Software Block Mode enabled and a time-out occurs - the length of time crWebBB has been sending blocks of a message exceeds the length of the audio.

> If enabled, the Station ID text is pre-pended to standard music (song title and artist) messages only. This setting does not affect alternate messages that may be sent to the encoder.

If you want to limit information sent to the encoder to include only music data (as defined in your music category), check the item "**Post Music Category Only**". This setting applies only to RDS messages - to limit text billboard messages to music content only, refer to the Text Billboard Posting topic.

Advanced Options

In some situations when both RadioText and Dynamic PS is sent, the RDS encoder may have trouble processing both messages from crWebBB when they are sent back-to-back immediately, which is the default behavior. Most often, one or the other (RadioText or Dynamic PS) seems to "get lost" and the RDS encoder does not update properly. If this occurs, you can check the item "**When both Text and Dynamic PS are sent, insert a delay between data sends**". crWebBB will then wait the number of milliseconds you've designated in the "**Interval (in milliseconds)**" field before sending the second data packet to the encoder.

> The symptom of "lost PS text" has been noted specifically on the **Inovonics 730** and the **Audemat-Aztec Silver** encoders when the option to send both Dynamic PS and Radio Text is enabled and the crWebBB option to use software block mode is off (not checked). It is recommended that if you are using one of these encoders, you enable the delay and set the delay interval to at least 500 (milliseconds).

The default delay is 1000 (1000 milliseconds = 1 second). The minimum value accepted is 50, the maximum value is 5000 (5 seconds).

3.4   Global Posting Options

To access global posting options, select the "*Global Posting Options*" item in the navigation tree, located at the left side of the display. This group of properties applies to all posting methods.
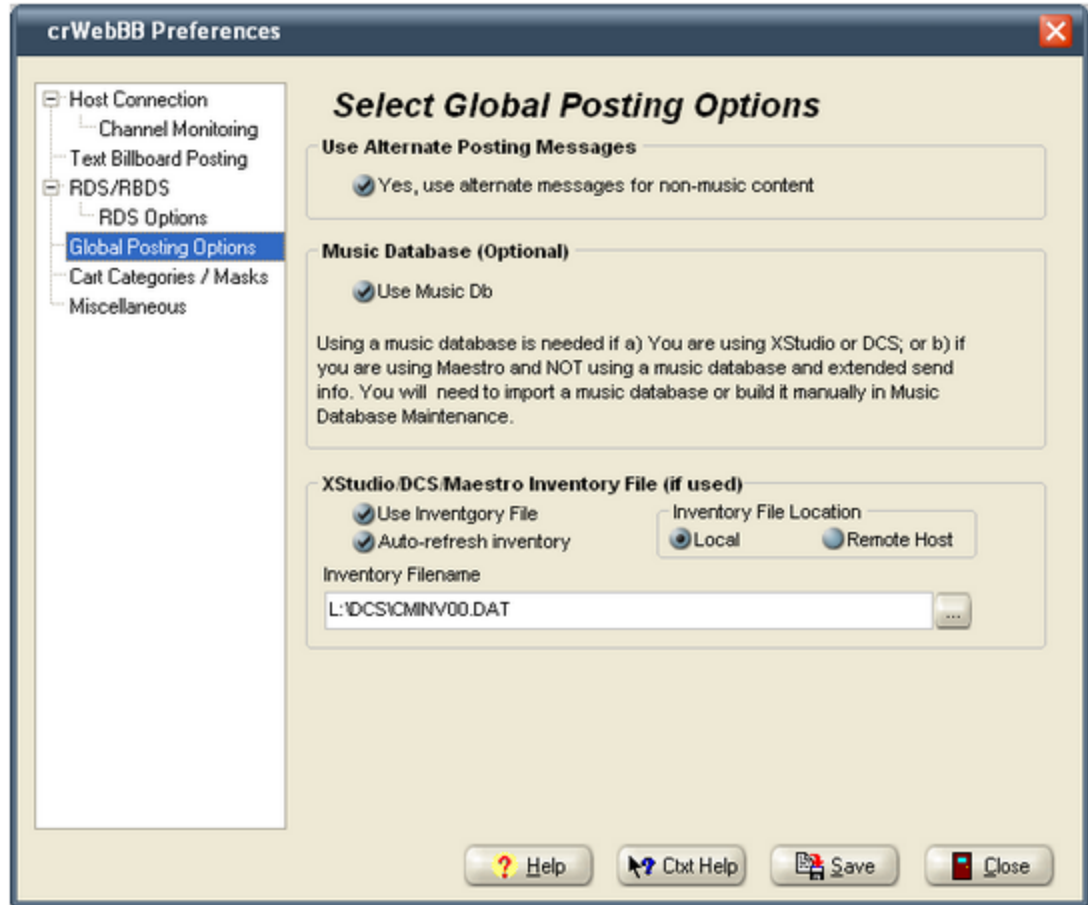
Use Alternate Posting Messages

If you select (check) alternate messages, all non-music carts will have user-defined messages posted. These messages are tied to the defined category, which can be either the audio types as defined in Maestro or user-defined categories that are based on cart masks. See the section Cart Categories & Alternate Messages for more information on defining masks and associated messages.

Use Music Database

Use of crWebBB's internal music database is optional. If you are using Maestro with the SendAllInfoToRemote option enabled, it is not necessary and, in fact, will not be used even if enabled. If you are using a DCS unit as the host machine, it is highly recommend that you use the internal music database as otherwise, the "now playing" information posted would be the cart description from the inventory. To use the music database, place a checkmark in the "**Use Music Db**" checkbox. See the section on Music Database Maintenance for information on importing and maintaining crWebBB's internal music database.

Selector™, MusicMaster and POWERGOLD music scheduling systems are supported for import.

XStudio/DCS/Maestro Inventory File

If you choose to use an XStudio, DCS or Maestro inventory file as the basis for cart lookups and posting of information, you set the option by checking the "**Use Inventory File**" checkbox, optionally setting the auto-refresh of inventory, and selecting the inventory filename to use. It is important that the inventory file used matches the machine to which crWebBB is connected so that only inventory that the host machine is playing will be available to crWebBB for use in cart lookups.

If you are going to use **rcServer** as the host for relaying serial data to crWebBB, you can select the **Remote Host** inventory option and the inventory data will be transferred to your PC automatically as it changes. See the topic Host Connection, which provides the means to set the local folder for receiving the inventory information.

3.5 Cart Categories, Alternate Messages

To access cart category and alternate message options, select the "*Cart Categories / Masks*" item in the navigation tree, located at the left side of the display. The cart category and masks page relates to audio categories you wish to define.

If you are using Maestro, the category names should match the cart categories you have defined in Maestro, particularly if you have enabled the SendAllInfoToRemote option in Maestro. For each category name, you can define one or more cart masks (cart numbers to be included in the category) and one or more messages for the category.

> ⚠️ If you are using Maestro and have the **SendAllInfoToRemote** option enabled, it is not necessary to enter cart masks that are associated with a category, as Maestro will include the category in information it sends to crWebBB.

There are three distinct sets of related data presented - the cart category names, a list of cart masks linked to the category, and a set of alternate messages that are linked to the defined category. The category names and associated cart masks are stored in a database table. The category messages are stored in a separate database table, which is linked to the category table.

Category Names

Add, edit and delete category names using the navigator bar below the list of categories. A category

name can be up to 25 characters in length. You can have as many category definitions as you wish. The "*** Unknown ***" category is created by default and is used when a category lookup is done and no match is found.

> If you are using DCS and crWebBB's music database to post music information, you must have a category named "**Music**", along with associated music cart number masks.

Cart Masks

A cart number mask is a representation of a group of cart numbers that you wish to be included in the display. It is called a "mask" because you can include a wildcard in any character position to define groups of carts - a letter or number is valid in its position in the mask. The mask character used is the question mark (?). Each cart mask must be **four** (4) characters in length.

Examples of valid cart masks include:

Mask	Meaning
C???	Carts beginning with the letter "C" and any 2nd, 3rd and 4th character will be included.
PR??	Carts with the first two characters of "PR" and any 3rd and 4th character will be included.
Z?A?	Carts with a first character of "Z", any 2nd character, a third character of "A" and any 4th character will be included.
?R??	Carts with any first character, a second character of "R" and any 3rd and 4th characters will be included.
AB##	Carts with a first character of "A", a second character of "B" and any numeric value (0..9) for characters 3 and 4 will be included.

> The maximum allowed number of cart masks per defined cart category is **50**.

Category Messages

Each defined cart category can have one or more custom messages assigned to it. There is no limit, other than available disk space, to the number messages you can create for a cart category. Each category message has 6 fields of information - a description, three lines of text used for the message, a start date and an end date. When a new message is created, the default start date for the message is today's date and the default end date is 12/31/2999.

To add, edit, or delete a category message, use the navigator bar adjacent to the description list.

> **Hint** Float your mouse over the navigator controls for information on each button's usage.

RDS/RBDS Posting of Alternate Messages

Of special note for those using RDS/RBDS features - there is a limit to the number of characters that a given encoder will accept as the message, typically 60-65 characters. When posting an alternate message to the encoder, the **first two lines ONLY** of the alternate message are placed together separated by a space, then truncated to the maximum number of characters the selected RDS/RBDS encoder allows.

Typically, the name of the encoder field used for messages is "**RT**" (Radio Text). You can check your encoder documentation for information on the specific length allowed.

3.6   Miscellaneous Options

To access miscellaneous options, select the "*Miscellaneous Options*" item in the navigation tree, located at the left side of the display.This page contains maintenance and security options.
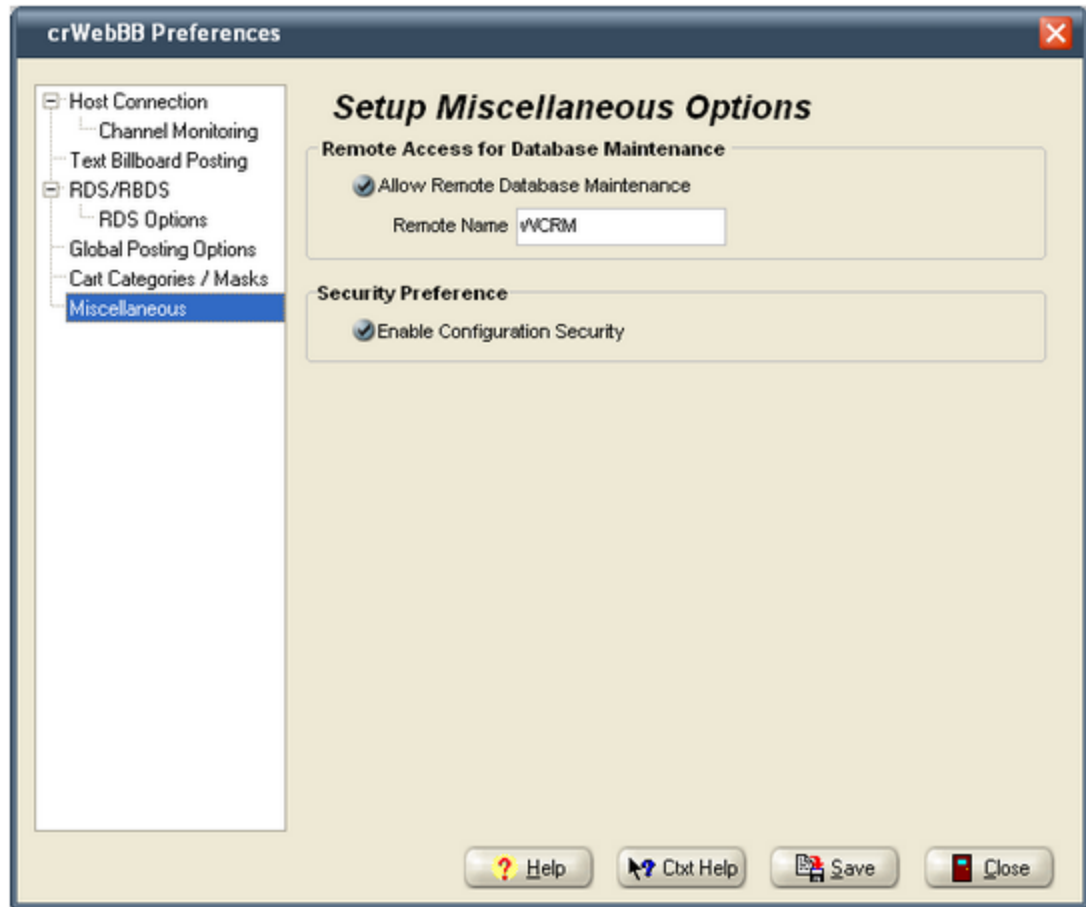
Remote Access for Database Maintenance

If the computer running crWebBB is not easily accessible or you don't want it disturbed, maintenance that might generally be done by staff people to update music title and artist information, cart categories or alternate messages for cart categories can be done from another computer.

As a default, crWebBB does not allow this access. To enable remote access, check the "**Allow Remote Database Maintenance**" item in the Remote Access group. Optionally, you can assign a Remote Name by which to identify this instance of crWebBB.

> ⚠ You must restart crWebBB after enabling or disabling this feature for the changes to take effect.

Once this feature is enabled, use the crWebBB Database Client, available as part of the crWebBB Utility Pack or as a separate download from our website.

Security Preference

You can optionally password-protect the Preferences area. If you check this item, a dialog appears, asking you for a password and confirmation of the password.
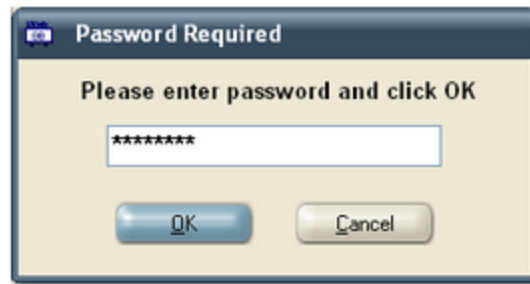
The password information is encrypted and stored on disk. In the future, each time Preferences is launched, the correct password must be entered in order to access Preferences. To remove password protection, uncheck this item.

3.7 Setting Up the Host Audio Machine

crWebBB can be used with XStudio, DCS, or Maestro. There is a minimal amount of setup required for each of the host systems, and this section outlines the particulars for each of the host systems.

> While DCS and Maestro support serial-only connections for obtaining information, you can convert the serial data to TCPIP using our *rcServer* product. *rcServer* is a serial to TCPIP converter supporting multiple TCPIP connections and can help you fulfill a need to send play information from these systems via TCPIP. For additional information on *rcServer*, visit our web site.

3.7.1 Setting Up XStudio

There is nothing special that needs to be done to set up XStudio for use with crWebBB as you will be using TCPIP to communicate with the XStudio audio engine (XEngine). There are no physical connections to be made, nor is there any need to enable the data stream from XStudio as it is always available.

See the topic on Port Setup for details on how to configure crWebBB for use with XStudio.

3.7.2 Setting Up DCS for Serial Communications

There are a few steps you must take to ensure that DCS' remote control feature is enabled. See the hardware requirements section of this application for further information on what's needed on the PC from which you will be running this application. These instructions presume a working knowledge of DCS and configuring DCS. If you are unsure of what to do, consult your DCS documentation or contact your DCS support staff.

Once all hardware requirements are met, including proper serial port cable connections, ensure that the DCS unit is set up in the following way:

1. The host DCS must be running in **Control Room** mode (CR). DCS allows serial communications and control in CR mode only.

2. Use **CMCF** (DCS' configuration editor) to open and potentially edit your **CR.CFG** configuration file to ensure DCS' remote control functionality is enabled.

   In the **DCS Equipment** section of the configuration file, select the menu item **Remote Control** and make sure that the serial control protocol version is set to **v1.4** and that the **Control Channel Initial State for Serial Channel** is "**Enabled**". Be sure to save your changes, if any, before exiting CMCF.

3. You must tell DCS which serial port you are going to use for remote control communications. This is accomplished by setting a file name in the root directory of the DCS unit boot drive (C:\).

   You should find a file named **_REMOT_1.OFF** or **_REMOT_2.OFF** in the boot directory. One of these files needs to be renamed to **_REMOT_x.ON**, where the "**x**" value represents the COM port number to use. Typically, you'd use COM2: for serial control, as COM1: is normally used for an audio switcher, if present. DCS reacts to the presence of this file at startup and enables the COM port hardware on the DCS unit. The file has no contents, it is the file name that causes DCS to take action.

> ⚠️ Only one COM port can be enabled on DCS for remote control. If both **_REMOT_1.ON** and **_REMOT_2.ON** exist, DCS will end up using the COM port for the file name last detected. Be sure that if both files exist, one is named .OFF to avoid unintended results.

Once all of these settings are confirmed, you would launch DCS as normal, ensuring you use the command-line: **DCSCR**.

3.7.3 Setting Up Maestro for Serial Communications

There are a few steps required to set up Maestro to enable remote control features. These instructions presume a working knowledge of Maestro and configuring Maestro. If you are unsure of what to do, consult your Maestro documentation or contact your Maestro support staff.

> ⚠️ You must be running Maestro v3.x or greater to use remote control features. Earlier versions of Maestro do not support serial control.

Remote Control Setup (Serial)

You must set up the Maestro work station that you will be using with this application to enable serial control. To do this, follow the steps outlined below:

1. Launch the Maestro configuration program, select the **WorkStation** tab and select the Maestro workstation that you will be connecting to.

2. Click on the **Modify** button and select the **External Controls** tab.

3. If the serial port to which you want to use is not listed, click on the **Add** button to add the port.

4. Set the **Port Type** to **Remote Control/FlexKey**.

5. Set the **Port Number** to the appropriate COM port (typically COM1 or COM2).

6. Set the **Baud Rate** to 2400.

7. The ID field appears to be unnecessary, so it can be left blank.

8. Make sure the **FlexKey** checkbox is de-selected (not checked).

9. **Save** and exit the Maestro configuration.

Maestro should now be configured to send and receive serial control data.

> ⚠️ You must have a proper serial port cable connection between Maestro and the machine running this application.

Enabling the "SendAllInfoToRemote" Option in Maestro

There is a registry setting in Maestro 3 that enables or disables extended cart information. If enabled, the information sent by Maestro (out the serial port) when a cart starts playing includes additional information - the cart category defined in Maestro, length to AUX mark, title, artist. To turn the feature on, find and change the following registry key to the value "**1**" (turn on):

HKEY_LOCAL_MACHINE\Software\CCC\Maestro\3.0\General\SendAllInfoToRemote = 1

When restarted, Maestro will now send the additional cart information when the audio starts playing.

> ⚠️ If the **SendAllInfoToRemote** option is not enabled, play information for Maestro will be processed in the same way as it is for DCS, as the data is the same.

3.7.4 DCS/Maestro Serial Interface

The ability to control DCS or Maestro from a remote host is achieved through a RS-232 serial connection and the protocol described below. The serial connection is to be a 2400 baud, 8 data bit, no parity, full-duplex connection. The DCS serial connection is via the IBM AT standard 9 pin connection with the serial port configured as DTE equipment. In order to communicate with another IBM AT serial port, a modem pair may be used for long distances or for distances estimated to be up to 500 feet, a null modem wired direct connection cable may be used. The pin connections are described below:

DCS/Maestro Side		Host Side
1 Carrier Detect (Not used)		1 Carrier Detect
2 Receive Data	<--	3 Transmit Data
3 Transmit Data	-->	2 Receive Data
4 Data Terminal Ready	-->	6 Data Set Ready
5 Signal Ground	----	5 Signal Ground
6 Data Set Ready	<--	4 Data Term Ready
7 Request To Send (Not used)		8 Clear To Send
8 Clear To Send (Not used)		7 Request To Send
9 Ring Indicator (Not used)		9 Ring Indicator

The DCS or Maestro will use the Data Set Ready signal (host's Data Terminal Ready) as a 'power-on' signal from the host and likewise, DCS or Maestro will provide Data Terminal Ready to the host to indicate that it is powered-on and ready.

Using crWebBB

Part

IV

To use crWebBB effectively, you must:

1. Properly configure the application (using Preferences).

2. Establish communications between the program and host DCS or Maestro unit. If you need help with this item, see the sections on Setting Up DCS or Setting Up Maestro in this document or consult your audio delivery system documentation.

3. Ensure that you have database information for cart categories and alternate messages, if the alternate message feature is enabled.

4. Ensure that you have either implemented Maestro's option to send song title and artist information to remote control applications (see Setting Up Maestro) or that you have imported your music database into crWebBB. See the section on Importing Music in this document for more information.

> crWebBB generates the billboard information, writes it to a text file, and optionally, uploads the text file to a remote location via FTP. It does not process the text in any way except to insert the appropriate title and artist information or alternate text into the text templates. If you do not use the FTP upload method to send the file to your web site, you will need to implement another method. Most commonly, a watcher daemon is used to watch the local text file output directory and, on finding an updated file, copying the file to the web site, where it is incorporated into your site's "Now Playing" display.

Following proper setup, it's a matter of launching crWebBB and letting it run 7x24. Little, if any, interaction with the program is required, other than the occasional check to be sure everything is still running.
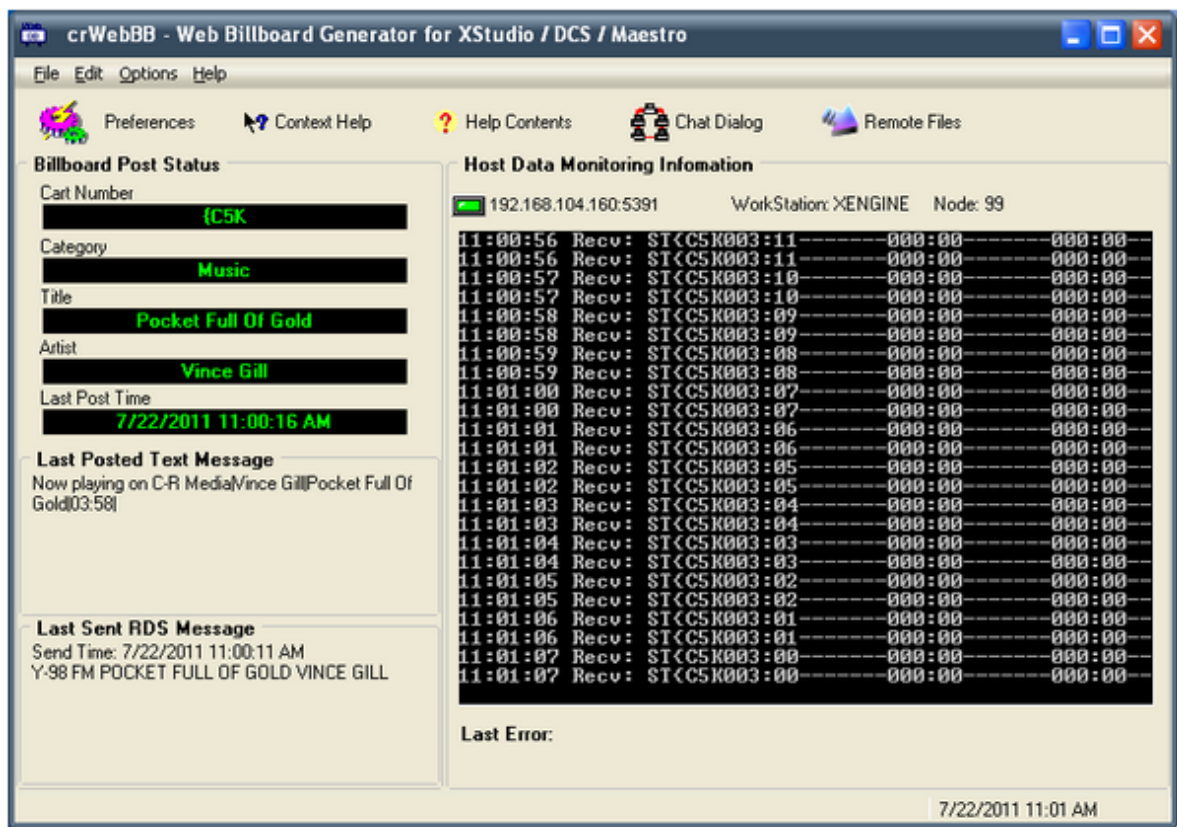
The main display provides several bits of useful information and you should be able to tell from glancing at the screen periodically that everything is running correctly. The main display is informational only. Any maintenance of the system is done from the **Edit** menu item, then selecting either Preferences or Music Database Maintenance .

> **Hint**
>
> You can change the visual appearance of the application - just select the main menu item "**Options**". The default is a skinned appearance. You can select a skin from the menu item "**Options | Select Skin**". The example dialogs used in this document are the default skin.

4.1   Using Alternate Messages

The use of Alternate Messages is optional and is enabled or disabled in the Preferences | Global Posting Options property group.

Alternate Message content is maintained within crWebBB in the Preferences | Cart Categories, Alternate Messages property group. The purpose of Alternate Messages is to provide a means to post information tied to non-music elements that are played on the air. For instance, you may wish to post something like "Join our morning crew at the auditorium this Thursday for the big giveaway" every time a station promo plays, rather than leaving the previous song title up on your web site.

To implement the use of alternate messaging, you must define cart "categories", cart numbers that will be included in the category, and one or more alternate messages for the category.

Each audio type (or "category") may have as many alternate messages as desired. Each may have a start date and end date. Messages in a given category are rotated equally among those valid for a

given date, with items not valid for a given date being skipped. If more than one alternate message exists with valid dates, the oldest - the one least recently posted - is used. If desired, you could even define messages that are linked to one specific cart number only - a way to have a message that's specific to one advertiser, for instance.

> ⚠️ When using a cart number to find the correct category, the category list is searched alphabetically by category name. If you happen to have a cart number that fits into two categories, based on cart masks, it will always be associated with category found first alphabetically. If the category information comes from a Maestro unit with the SendAllInfoToRemote option enabled, this is not an issue, as Maestro provides the category name.

Message Text

The text of the messages is comprised of three lines of information that you enter. You may enter text on any one or all three of the lines, although the recommended practice would be to use the lines in order - 1, 2, and 3. How these lines of text are used varies between a message posted (or sent) to a web site and an RDS message:

1. **Web Site** - All three lines of information are sent, exactly as entered, separated by a "PIPE" character (**|**) for Billboard 1. For the user-defined Billboard 2, you have complete control over which lines of information are sent.

2. **RDS** - The first two lines only of the alternate message are placed together separated by a space, then truncated to the maximum number of characters the selected RDS encoder allows. The number of allowed characters is typically 60-65.

Special Cart Categories

When crWebBB is installed and the database tables initially created, a category named "*** Unknown ***" is created. It is used as a "fall-through" category. If a cart category cannot be found or there are no messages valid for a given cart category, the application tries to find a valid message in the "*** Unknown ***" category. If you do not wish this fall-back action, create no messages for the category.

A cart category that must be created if you are not using Maestro's **SendAllInfoToRemote** option is named "**Music**". You must also make sure that you define cart masks that match your music cart numbering scheme. The Music category is special, in that if you don't have it, you will not be able to use the music database in crWebBB. Much of the decision-tree relating to what content to post is based on whether or not a given cart number is a music cart or not. When the database tables are initially created, the "Music" category is created for you, although no cart masks or messages are assigned. For additional information on how crWebBB decides what to post, see the topic Posting Decision Tree in the appendices.

4.2   Music Database Maintenance

Use of crWebBB's music database is optional and is useful when using Maestro with the "**SendAllInfoToRemote**" option disabled or when using DCS or XStudio as the host machine. The music database provides a means to post "now playing" information that includes the full song title and full artist name, something not available directly from DCS or XStudio.

You can manually enter the music information or import the information, including cart number, song title and artist, from your music scheduling system. The content is stored within a database table that crWebBB maintains.

Select **Edit | Music Database Maintenance** (or the [**Ctrl-M**] keyboard shortcut) from the main menu. A dialog similar to the one shown here will be displayed.
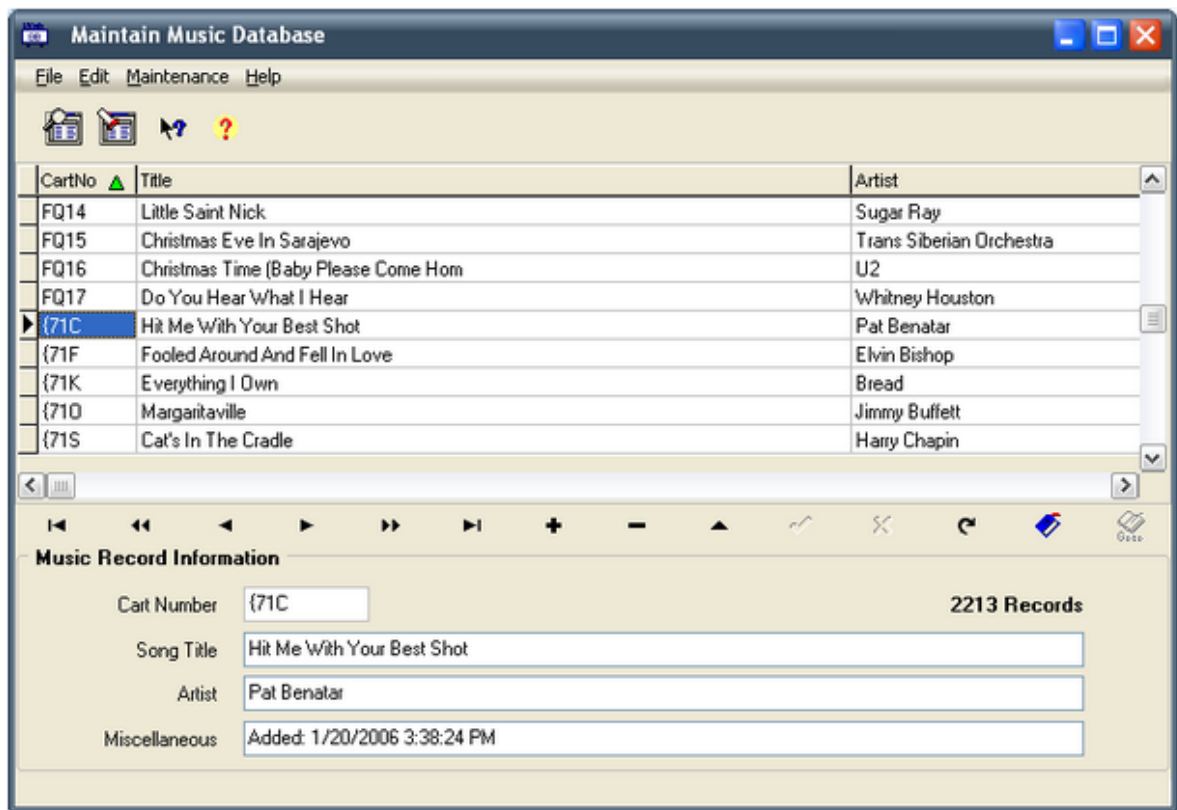
Navigating the Database

The database display is implemented as a table with a corresponding record display. You can navigate the database using the navigation toolbar, located between the table and the individual record display. Standard keyboard keystrokes, including the arrow keys and page keys, also navigate the table. You can search for songs using the [**Search**] and [**Locate**] buttons at the top of the display. The table order can be sorted by clicking on the column heading.

Importing Music

Music content can be imported from Selector™, POWERGOLD or Music Master. For specifics on the import process, see the topic Importing Music Information. For information on exporting your music library from a specific music scheduling system, see the topic Exporting Data from your Music

Scheduling System. Basic information on exporting from each supported system is provided.

Automatically Updating Music Data

You can have crWebBB automatically update your music data as it is changed and exported from your music scheduling system. When music is manually imported successfully, you are presented with the option to enable auto-update of changed source music data. For more information on auto-update of music data, see the topic Setup Auto-Update Music Data.

Manually Adding, Editing or Deleting Records

You can easily add, edit or delete records. Use the navigation buttons to select the operation, then type the text (if adding or editing) in the appropriate "cell" of the table or the appropriate field of the record panel. If editing or adding, be sure to click on the "**Post Changes to Current Record**" button when you have completed your entry. When deleting a record, you are prompted to confirm the deletion.

Proper-Case the Music Records

Many times, the imported music information will have been entered in capital letters. For instance, a song title may appear as "THE WAY WE WERE" rather than the more visually attractive "The Way We Were". crWebBB provides a database maintenance function to "clean up" the data, making the first letter of each word in the song title and artist name fields capitalized and all other letters of the word in lower case. Select the menu item **Maintenance | Proper-Case Music**. You are prompted to confirm your action as it makes permanent changes to the crWebBB music table data. Your original data (within the music scheduling system and the exported file) is unchanged.

> **Warning**: The process is not perfect. There are a myriad number of possibilities in the proper case of artist names, for instance. The algorithm that determines capitalization of a word cannot, and does not, consider all of the possibilities. It is intended as a starting point that will take care of the majority of the words. You should look through the music after running this utility to proof the results.

You can also force the song title and artist fields to be all UPPERCASE. Select the menu item **Maintenance | Uppercase Music**. You'll be prompted to confirm your action. The process sweeps the music database table, converting all song titles and artists to all uppercase letters.

Music Table Fields

Each song record contains the following fields:

Field Name	Purpose
Cart Number	The cart number is used as the "lookup" value to find a matching record - the song title and artist - when a cart starts playing. This number must match the DCS or Maestro cart number assigned to the song.
Title	The song title. The field contents are used when posting "now playing" information.
Artist	The song's artist. The field contents are used when posting "now playing" information.
Miscellaneous	This field is for miscellaneous information and is not used for anything other than reference. When music is imported, the date and time the record was

added or updated is placed in this field.

4.2.1 Exporting Data from your Music Scheduling System

In order to be able to import music information with crWebBB, you must export the information from your music scheduling system to a format that crWebBB can understand.

In the cases of Selector and MusicMaster, the exported data will be a specially formatted text file. For POWERGOLD, the exported data is in binary format.

> **Hint**   If you have used Maestro at one time or another and have exported music for use by that system, the instructions and resulting output file for the popular music scheduling systems are nearly identical. Music exports created for Maestro can be imported without modification.

4.2.1.1 Exporting MusicMaster

The Windows version of MusicMaster has an export design editor that you can use to create customized exports for your music library. The design editor includes a feature for importing pre-made export designs. Rather than having you build the needed export design manually, we've provided a design template you can import, greatly simplifying the process.

The design template file is named "**MusicMaster_CCC_MS2ASC.xml**" and is placed in the folder (directory) where our application is installed. Locate this file and follow the steps outlined below.

> If you are using the DOS version of MusicMaster, refer to the the MusicMaster DOS Export topic for details on exporting your music library instead of these instructions.

Steps to Load and Use the Export Design

1. Copy the *MusicMaster_CCC_MS2ASC.xml* file to your MMWin folder.

2. In the MMWin folder, find and open **MMExportDesignEditor.exe**.

3. Select your database and click **Open**.

4. Switch the *Design Type* to **Library Export** via the drop-down list.

5. Click **New**. Do not name or adjust the settings on the following screen - just click **OK**.

6. Click **File | Import**, select the *MusicMaster_CCC_MS2ASC.xml* file and click **Open**.

7. Click **File | Save**, then **File | Exit**.

8. In MusicMaster, open the station data and go to **Dataset | Library | Export**. Here, you'll see the **New CCC MS2ASC** export design. Select it, check the categories you wish to export, set your path and file name (we've set them initially to a default value) and click **OK** to export the file.

MusicMaster_CCC_MS2ASC.xml Layout

The sample export design template we've provided contains the following:

```xml
XMLOptions version="1.0" created="2013-10-30T13:47:55" updated="2013-10-30T13:47:56">
  <XDF>
    <properties>
      <version>101</version>
      <name>New CCC MS2ASC</name>
      <design_type>200</design_type>
      <output_type>1</output_type>
      <page_count>3</page_count>
    </properties>
    <design>
      <properties>
        <design_version>101</design_version>
        <output_type>1</output_type>
        <output_path>R:\DCS\aStation</output_path>
        <output_file>LIBRARY.ASC</output_file>
      </properties>
    </design>
    <pages>
      <page1>
        <properties>
          <name>Song</name>
          <user_name></user_name>
          <element_type>220</element_type>
          <field_count>40</field_count>
        </properties>
        <field1>
          <name>Fixed Text</name>
          <item_id>-10105</item_id>
          <data_type>0</data_type>
          <properties>
            <len>1</len>
            <text>@</text>
          </properties>
        </field1>
        <field2>
          <name>Maestro #</name>
          <item_id>112</item_id>
          <data_type>1</data_type>
          <properties>
            <comment>DSC #</comment>
          </properties>
        </field2>
        <field3>
          <name>Spacer</name>
          <item_id>-10102</item_id>
          <data_type>0</data_type>
          <properties>
            <len>2</len>
          </properties>
        </field3>
        <field4>
          <name>Artist</name>
          <item_id>101</item_id>
          <data_type>1</data_type>
          <properties>
            <len>35</len>
            <comment>Artist</comment>
          </properties>
        </field4>
        <field5>
          <name>Spacer</name>
          <item_id>-10102</item_id>
          <data_type>0</data_type>
          <properties>
            <len>2</len>
          </properties>
        </field5>
        <field6>
          <name>Title</name>
```

```
      <item_id>102</item_id>
      <data_type>1</data_type>
      <properties>
        <len>35</len>
        <comment>Title</comment>
      </properties>
    </field6>
    <field7>
      <name>Spacer</name>
      <item_id>-10102</item_id>
      <data_type>0</data_type>
      <properties>
      </properties>
    </field7>
    <field8>
      <name>Line Break</name>
      <item_id>-10103</item_id>
      <data_type>0</data_type>
      <properties>
      </properties>
    </field8>
    <field9>
      <name>Run Time</name>
      <item_id>12</item_id>
      <data_type>13</data_type>
      <properties>
        <comment>Run Time</comment>
      </properties>
    </field9>
    <field10>
      <name>Fixed Text</name>
      <item_id>-10105</item_id>
      <data_type>0</data_type>
      <properties>
        <len>3</len>
        <text>.00</text>
      </properties>
    </field10>
    <field11>
      <name>Intro</name>
      <item_id>105</item_id>
      <data_type>1</data_type>
      <properties>
        <len>2</len>
        <comment>Intro</comment>
      </properties>
    </field11>
    <field12>
      <name>Spacer</name>
      <item_id>-10102</item_id>
      <data_type>0</data_type>
      <properties>
      </properties>
    </field12>
    <field13>
      <name>Ending</name>
      <item_id>106</item_id>
      <data_type>1</data_type>
      <properties>
        <len>2</len>
        <comment>Ending</comment>
      </properties>
    </field13>
    <field14>
      <name>Category</name>
      <item_id>3</item_id>
      <data_type>99</data_type>
      <properties>
        <comment>Category</comment>
      </properties>
    </field14>
    <field15>
      <name>Spacer</name>
      <item_id>-10102</item_id>
      <data_type>0</data_type>
```

```
      <properties>
        <len>15</len>
      </properties>
    </field15>
    <field16>
      <name>Gender</name>
      <item_id>108</item_id>
      <data_type>34</data_type>
      <properties>
        <len>2</len>
        <comment>Demographics</comment>
      </properties>
    </field16>
    <field17>
      <name>Power</name>
      <item_id>110</item_id>
      <data_type>31</data_type>
      <properties>
        <len>3</len>
        <comment>Sound</comment>
      </properties>
    </field17>
    <field18>
      <name>Spacer</name>
      <item_id>-10102</item_id>
      <data_type>0</data_type>
      <properties>
        <len>14</len>
      </properties>
    </field18>
    <field19>
      <name>Fixed Text</name>
      <item_id>-10105</item_id>
      <data_type>0</data_type>
      <properties>
        <text>M12345678901N12345678901</text>
      </properties>
    </field19>
    <field20>
      <name>Spacer</name>
      <item_id>-10102</item_id>
      <data_type>0</data_type>
      <properties>
        <len>2</len>
      </properties>
    </field20>
    <field21>
      <name>Fixed Text</name>
      <item_id>-10105</item_id>
      <data_type>0</data_type>
      <properties>
        <len>1</len>
        <text>.</text>
      </properties>
    </field21>
    <field22>
      <name>Line Break</name>
      <item_id>-10103</item_id>
      <data_type>0</data_type>
      <properties>
      </properties>
    </field22>
    <field23>
      <name>Fixed Text</name>
      <item_id>-10105</item_id>
      <data_type>0</data_type>
      <properties>
        <text>M12345678901N12345678901</text>
      </properties>
    </field23>
    <field24>
      <name>Fixed Text</name>
      <item_id>-10105</item_id>
      <data_type>0</data_type>
      <properties>
```

```
            <text>M12345678901N12345678901</text>
          </properties>
      </field24>
      <field25>
        <name>Fixed Text</name>
        <item_id>-10105</item_id>
        <data_type>0</data_type>
        <properties>
          <text>M12345678901N12345678901</text>
        </properties>
      </field25>
      <field26>
        <name>Spacer</name>
        <item_id>-10102</item_id>
        <data_type>0</data_type>
        <properties>
          <len>7</len>
        </properties>
      </field26>
      <field27>
        <name>Fixed Text</name>
        <item_id>-10105</item_id>
        <data_type>0</data_type>
        <properties>
          <len>1</len>
          <text>.</text>
        </properties>
      </field27>
      <field28>
        <name>Line Break</name>
        <item_id>-10103</item_id>
        <data_type>0</data_type>
        <properties>
        </properties>
      </field28>
      <field29>
        <name>Fixed Text</name>
        <item_id>-10105</item_id>
        <data_type>0</data_type>
        <properties>
          <text>M12345678901N12345678901</text>
        </properties>
      </field29>
      <field30>
        <name>Fixed Text</name>
        <item_id>-10105</item_id>
        <data_type>0</data_type>
        <properties>
          <text>M12345678901N12345678901</text>
        </properties>
      </field30>
      <field31>
        <name>Fixed Text</name>
        <item_id>-10105</item_id>
        <data_type>0</data_type>
        <properties>
          <len>24</len>
          <text>M12345678901N12345678901</text>
        </properties>
      </field31>
      <field32>
        <name>Spacer</name>
        <item_id>-10102</item_id>
        <data_type>0</data_type>
        <properties>
          <len>7</len>
        </properties>
      </field32>
      <field33>
        <name>Fixed Text</name>
        <item_id>-10105</item_id>
        <data_type>0</data_type>
        <properties>
          <len>1</len>
          <text>.</text>
```

```
        </properties>
      </field33>
      <field34>
        <name>Line Break</name>
        <item_id>-10103</item_id>
        <data_type>0</data_type>
        <properties>
        </properties>
      </field34>
      <field35>
        <name>Spacer</name>
        <item_id>-10102</item_id>
        <data_type>0</data_type>
        <properties>
          <len>79</len>
        </properties>
      </field35>
      <field36>
        <name>Fixed Text</name>
        <item_id>-10105</item_id>
        <data_type>0</data_type>
        <properties>
          <len>1</len>
          <text>.</text>
        </properties>
      </field36>
      <field37>
        <name>Line Break</name>
        <item_id>-10103</item_id>
        <data_type>0</data_type>
        <properties>
        </properties>
      </field37>
      <field38>
        <name>Spacer</name>
        <item_id>-10102</item_id>
        <data_type>0</data_type>
        <properties>
          <len>79</len>
        </properties>
      </field38>
      <field39>
        <name>Fixed Text</name>
        <item_id>-10105</item_id>
        <data_type>0</data_type>
        <properties>
          <len>1</len>
          <text>.</text>
        </properties>
      </field39>
      <field40>
        <name>Line Break</name>
        <item_id>-10103</item_id>
        <data_type>0</data_type>
        <properties>
        </properties>
      </field40>
    </page1>
    <page2>
      <properties>
        <name>File Header</name>
        <user_name></user_name>
        <element_type>201</element_type>
        <field_count>0</field_count>
      </properties>
    </page2>
    <page3>
      <properties><name>File Footer</name>
      <user_name></user_name>
      <element_type>211</element_type>
      <field_count>0</field_count>
      </properties>
    </page3>
  </pages>
</XDF>
```

```
</XMLOptions>
```

4.2.1.1.1 MusicMaster DOS Export

Users of MusicMaster's original DOS program need to generate a file named **LIBRARY.ASC** with the MusicMaster **MS2ASC** utility. The resulting LIBRARY.ASC file will then need to be copied to a location where crWebBB can retrieve it for import. MS2ASC.EXE uses a file that the user creates and saves as MS2ASC.DEF. This is the same layout used to create a MAESTRO.MDB file. If you have created this file for Maestro, you can use it for crWebBB as well.

MS2ASC.DEF Layout

The typical MS2ASC file contains the following information -- notes in **[ ]** are for your information and are not part of the file.

```
I:\DCS\[Path that you want the LIBRARY.ASC file exported to]
99,@    ["99," allows you to enter custom text, in this case we're starting the file with "@
1,1,4  [Cart number, start with the first character in the field and use 4 characters]
99      ["99" is a single blank space]
99
2       [Artist Name with no limit to the number of characters]
99
99
3       [Song Title]
99
98      [Carriage Return/Line Feed]
22      [Runtime (mm:ss)]
99,.0   [the following two lines will add ".00" to the end of the Runtime]
99,0
5,1,2   [Intro Time]
99
6,1,2   [Ending Type]
30      [Category Letter Code]
31      [Category File Number]
32      [Complete File Number]
99
99
99
99
99
8,2     [Gender Codes]
10      [Power Codes]
7       [Sound Codes]
77,1,7 [Theme Code 7 (?) beginning with the first though 7th character]
78,1,7 [Theme Code 8 (?) beginning with the first though 7th character]
99,M12345678901N12345678901  .  [Note: after the last 1 there are two spaces and a period]
98
99,M12345678901N12345678901
99,M12345678901N12345678901
99,M12345678901N12345678901         . [Note: after the last 1 there are 7 spaces and a period
98
99,M12345678901N12345678901
99,M12345678901N12345678901
99,M12345678901N12345678901         . [Note: after the last 1 there are 7 spaces and a period
98
99,    [Custom Text in this case is 79 blank spaces followed by a period ( see below)]
98
99,                                                             .
```

MusicMaster Song Field ID Numbers

For convenience, here's a list of published field numbers used by MusicMaster. You may wish to double-check your MusicMaster documentation to see if there are any recent changes.

ID	Field Description	Length
0	Sound Code or Gender Code Translation	See Notes
1	Cart Number	5
2	Artist Name	35
3	Song Title	35
4	Album Title	64
5	Intro Time	8
6	Ending Type	4
7	Sound Codes	5
8	Gender Codes	5
9	Tempo Codes	3
10	Power Codes	3
11	Like Score	2
12	Burn Score	2
13	Match Field	3
14	Harmonic Song Keys	2
15	First Non-Blank Artist Keyword	6
16	Title TWord	6
17	Disc Number	8
18	Mark Status	1
19	Composer Name	64
20	Publishing Company	64
21	Arranger Name	64
22	Runtime (mm:ss)	5
23	Daypart Codes	7
24	Add Date (mm-dd-yyyy)	10
25	Test Date (mm-dd-yyyy)	10
26	Last Move Date (mm-dd-yyyy)	10
27	Last Move Category	1
28	Plays In Category	5
29	Index Number	6
30	Category Letter Code	1

ID	Field Description	Length
31	Category File Number (ffff)	4
32	Complete File Number (c/ffff)	6
33	Simulcast Pointer	6
34	Plays in Library	5
35	Content Flags	8
36	Notes Field	10
37	License Codes	10
38	Record Company	10
39	Record Order Number	10
40	Artist Keyword 1	6
41	Artist Keyword 2	6
42	Artist Keyword 3	6
43	Artist Keyword 4	6
44	Artist Keyword 5	6
50	Air Date (mm-dd-yyyy) (Music Logs Only)	10
51	Air Time (hh:mm:ss 24hr Clock) (Music Logs Only)	8
52	Weekday Code (1-7 Sunday = 1) (Music Logs Only)	1
53	Weekday Text Name (Music Logs Only)	3
54	Running in Seconds	4
55	Runtime (No Leading Zero)	5
56	Packet Status (X of Y)	8
57	Packet Status (PN)	2
58	Category/File Number/Packet (c/ffffPN)	8
60	Chart Position – This Week	2
61	Chart Position – Last Week	2
62	Chart Position – Two Weeks Ago	2
63	Total Weeks on Chart	2
64	Peak Chart Position	2
65	Weeks at Peak Position	2
66	Chart Peak Date (mm-dd-yyyy)	10
67	Year End Ranking	4

ID	Field Description	Length
68	Chart Debut Date (mm-dd-yyyy)	10
69	Chart Note	8
70	Playlist Rotation	8
71	Theme Code 1	32
72	Theme Code 2	32
73	Theme Code 3	32
74	Theme Code 4	32
75	Theme Code 5	32
76	Theme Code 6	32
77	Theme Code 7	32
78	Theme Code 8	32
79	First Non-Blank Theme Code	32
80	Fixed Trivia Line	64
81	Rotating Trivia Line 1	64
82	Rotating Trivia Line 2	64
83	Rotating Trivia Line 3	64
84	Rotating Trivia Line 4	64
86	Rotating Trivia Line 1 – Kill Date (mm-dd-yyyy)	10
87	Rotating Trivia Line 2 – Kill Date (mm-dd-yyyy)	10
88	Rotating Trivia Line 3 – Kill Date (mm-dd-yyyy)	10
89	Rotating Trivia Line 4 – Kill Date (mm-dd-yyyy)	10
90	Active Trivia Line	64
91	Memo	See Notes
98	Carriage Return/Line Feed	2
99	Blank Space or Custom Text	See Notes
101	Song Rest In Hours	4
102	Auto Move 1 – Date (mm-dd-yyyy)	10
103	Auto Move 2 – Date (mm-dd-yyyy)	10
104	Auto Move 3 – Date (mm-dd-yyyy)	10
105	Auto Move 4 – Date (mm-dd-yyyy)	10
106	Auto Move 1 – Category	1

ID	Field Description	Length
107	Auto Move 2 – Category	1
108	Auto Move 3 – Category	1
109	Auto Move 4 – Category	1
110	Move History 1 – Date (mm-dd-yyyy)	10
111	Move History 1 – Category	1
112	Move History 2 – Date (mm-dd-yyyy)	10
113	Move History 2 – Category	1
114	Move History 3 – Date (mm-dd-yyyy)	10
115	Move History 3 – Category	1

Notes

1. **Sound And Gender Code Translation Fields**. A Sound and Gender Code Translation Field can be used to specify a particular CD changer or DAT tape machine. This option converts certain Sound Codes or Gender Codes to text using the following format:

   0,[LENGTH],[FIELD][CODE][TEXT],[FIELD][CODE][TEXT], etc...

   The output will be left justified in a field of [LENGTH] spaces. [FIELD] should be "S" for Sound Code or "G" for Gender Code. [CODE] is the actual Sound or Gender Code (A..Z) to translate. The output will contain [TEXT] whenever [Code] appears in the specified [FIELD]. If a song contains more that one of the specified codes, the output will contain the first match found. For example, consider this Sound and Gender translation Field:

   "0, 5, SACD1, SBCD2, GXCART1, GYCART2"

   If the song contains Sound Code A, the output becomes "CD1." If the song contains Sound Code B, the output is "CS2." If the song contains Gender Code X, the output is "Cart1." If the song contains Gender Code Y, the output is "CART2." If the song doesn't contain any of these codes, the output file will contain five blank spaces.

2. **Blank Space or Custom Text File Format**.

99	A single blank space will be output
99,[CUSTOM TEXT]	The Custom Text will be output exactly as entered

3. **Standard Music Fields**. When specifying a field other than 0 or 99, use the following format in the configuration file to specify only a portion of the field:

   [FIELD ID NUMBER],[FIRST CHARACTER],[LENGTH]

   [FIRST CHARACTER] and [LENGTH] are optional. If you include them, separate them with a comma. For example: Use "2" to output the entire Artist Name, "3,1,15" to output only the first 15 characters of the Song Title, or "50,7,4" to output only characters 7-10 of the Air Date (which is the year, since the Air Date uses the MM-DD-YYYY format).

4.2.1.2 Exporting POWERGOLD

Exporting POWERGOLD information for use by crWebBB is straightforward. If you are using POWERGOLD 2000 or later, follow these steps:

1. From the POWERGOLD 2000 main menu choose **File | Database | Export | To POWERGOLD DOS v7 Song.Dat File**.

2. Click [**OK**] at the message that pops up.

3. In the "**Select Export Directory**" box, browse to the place where you want the Song.Dat file to be created and click [**OK**].

If you are using the DOS version of POWERGOLD, copy the SONG.DAT file located in your POWERGOLD directory to a location that crWebBB can read the file from. Then, import the file as the section on importing music describes.

4.2.1.3 Exporting Selector

Selector™ is a registered trademark of Radio Computing Systems, Inc.

Note: These instructions are a reprint of the Computer Concepts Corporation documentation published on their web site, dated 9/14/2000. Sections that apply specifically to Maestro operations have been removed.

Export Setup

The following steps should be taken to successfully export your Selector Database to update your music inventory:

1. From Selector's main menu choose "**Report Generator**".

2. Create a new report (example: **Billboard**)

3. In Song Design Format, Press [**F7**] for the "Punctuation" Screen.

4. Set up **'@'** in byte 1 on line 1, then set up '**.**' in byte 80 on lines 2-6.

Example Selector™ Song Punctuation Display

Punctuation	Line	Column	Length	Font
@	1	1	1	A
.	2	80	1	A
.	3	80	2	A
.	4	80	1	A
.	5	80	1	A
.	6	80	1	A

Note: Font for all parameters must be **A**.

Save your screen. **Select Song Design Format** and set up the following:

Line	Col	Length	Description
1	2	4	Cart Number **
1	8	37	Artist
1	45	48	Title
2	1	7	Length of Song (MM:SS.T)
2	8	4	Intro
2	12	2	Ending
2	14	1	Category
2	15	15	Category Name
2	30	2	Role
2	32	1	Mood
2	35	5	Sound Code
2	40	7	Hook In
2	47	7	Hook Out
2	55	24	Monday Dayparting
3	1	24	Tuesday Dayparting
3	25	24	Wednesday Dayparting
3	49	24	Thursday Dayparting
4	1	24	Friday Dayparting
4	25	24	Saturday Dayparting
4	49	24	Sunday Dayparting
5	1	76	Song Notes Line #1
6	1	76	Song Notes Line #2

Note: Cart Number comes from the field chosen by the user to store the 4-digit XStudio, DCS, or Maestro cart number in, such as cart number or media number. Users may wish to use Media and retain the CD and Track Numbers in their original Fields.

To Export the Selector.Dat File

1. Go to #8 off the main screen of Selector to report generator and values in the generator.

2. Choose the report you created.

3. Press [**F5**], and **Select All**.

4. Press [**F9**] and #2 to send file to the **Print File Manage**r.

5. Press [**F9**] again and select **Jump to Print File Manager**.

6. With your Report Name highlighted at the top of the screen, press [**F4**]. Now you will see a gray bar toward the bottom of the screen. This is where you will type your path – an example is: **R:\DCS\KCCC\Selector.dat**

7. Press [**F2**] to copy the report.

The file you create stays in the Print File Manager until they are deleted. For maintenance purposes you should delete the older files with each export.

Update the Selector.dat file whenever you add songs into Selector.

4.2.2   Importing Music Information

To import your music database, you first need to export the music information from your music scheduling system. Supported music scheduling systems include Selector™, Music Master and POWERGOLD (others may be added in the future). If you are using Maestro and have already exported the music data for use within Maestro, you can use the same file. See the section on Exporting Data from your Music Scheduling System for more information on setting up and executing the export.

To import the music data you've exported from your music scheduling system, select the menu item **File | Import**. A dialog will be displayed for you to select the music system from which you will be importing.
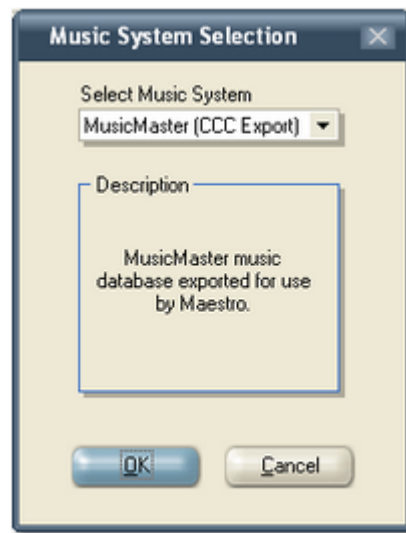
On certain combinations of Windows 2000 and graphics cards, it has been observed that the import operation fails with an error when an import type is selected and the [**OK**] button pressed. If this happens, temporarily disable the application skinning (crWebBB main menu **Options**, uncheck the item **Skinned Appearance**) and run the import again.

Next, a file dialog is displayed to select the data file you exported from your music scheduling system. Navigate to the folder where it's stored, select the file and click on the [**OK**] button. You will also be given the option to append (add) the imported music to the existing music records, if desired.

During the music import process, a status window appears, displaying the import progress. If some records cannot be imported or some other failure occurs, a message indicating the last error will appear. The import process can be quite lengthy, so be patient!

Some music databases may have some duplicate cart numbers. This occurs if cart numbers are erroneously assigned or sometimes, where a cart number is re-used when a song is taken out of the play rotation. Duplicate cart number handling is different when appending records to existing data versus the imported data replacing all existing music data.

1) **Appending Records**. If duplicate carts are found, each instance of the duplicate updates the music record. The effect is that the information of the

last duplicate found in the source data becomes the content of the music record.

2) **Inserting Records**. If duplicate carts are found, only the first record encountered during the import is placed in the database. All others are discarded.

You can find a record of duplicates after the import process has run and you've gotten a failure message. Select **Help | View Database Log** from the main menu.

At the end of the import process, you will offered the option of enabling auto-update of the music data using the current settings. If you answer 'Yes' to the prompt, auto-update will be enabled and each time the source music data file is changed, crWebBB will automatically update the music table with the new music information. See the topic Setup Auto-Update Music Data for information on changing auto-update settings.

After the import is complete, you'll be able to see how many songs were imported by looking at the record display, which shows the total number of songs in the database.

4.2.3   Exporting Music Information from crWebBB

Exporting information from the crWebBB music table is straightforward. Select the menu item **File | Export Data**. A dialog appears, similar to the one shown here, allowing you to set up specifics of the export.
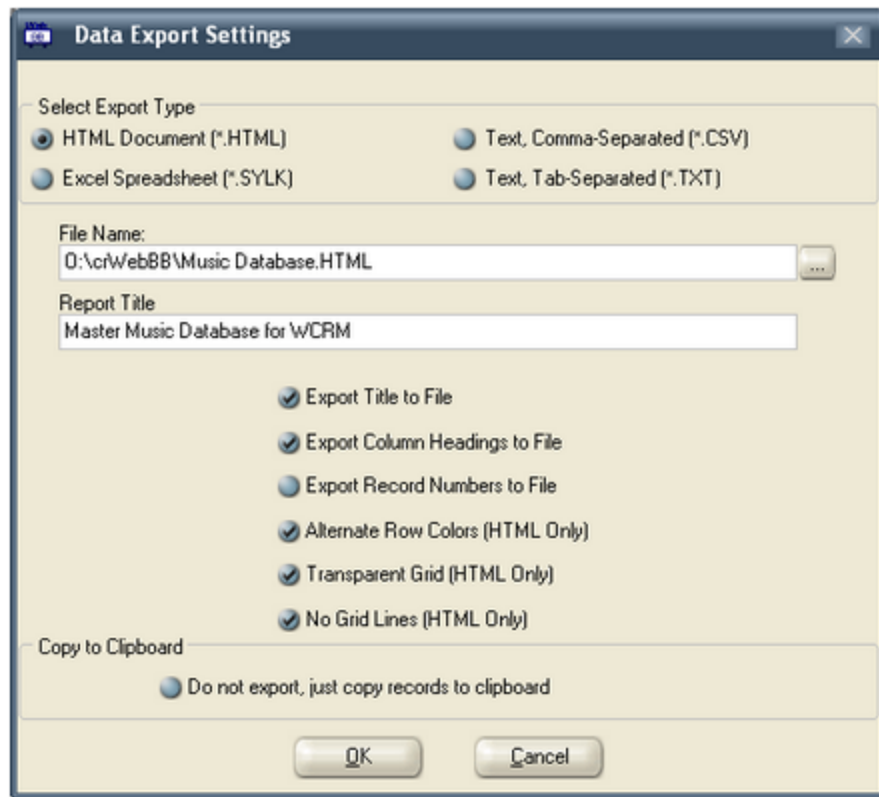
You have a fair amount of control over the exported information, allowing for the export of different types of files that might be used for different purposes. Below is an explanation of the various options and their purpose:

Select Export Type

There four (4) export formats available. Select the type that meets your needs.

1. **HTML** - the music data will be exported as a browser-ready web content file. You can control several visual aspects of the data by selecting among the various options available in the **Export Options** section.

2. **SYLK** - this data file is typically used when you want to open the resulting file in a spreadsheet.

3. **CSV** - a comma-separated text file is created. This is the most common format used for import by other software programs. Each field in the database table is separated with a comma. Field contents are wrapped in quotes.

4. **TXT** - a tab-separated text file is generated. Each field in the database table is separated with a [**TAB**] character.

File Name

Here, you enter the path and file name for the exported file. You can use the adjacent button to navigate to the folder location you wish to use.

Report Title

The report title is a text field where you enter text that identifies the report. You can choose whether or not to include the report title in the Options section of the dialog.

Export Options

Some of the options are available only when exporting to an HTML file and are noted in their description.

1. **Export Title** - if this option is checked, the Report Title you entered will be exported to the output file.

2. **Export Column Headings** - if this option is checked, the names of the fields will be exported to the output file as column headers. Generally, users enable (check) this option.

3. **Export Record Numbers** - if checked, a number 1 through X (the last record) is added to the exported data as the first column of the data.

4. **Alternate Row Colors** (HTML Only) - if checked, the resulting HTML output file is displayed in a browser with every other row of the data displayed in a different color.

5. **Transparent Grid** (HTML Only) - if checked, the resulting HTML output file is displayed with a transparent background.

6. **No Grid Lines** (HTML Only) - if checked the resulting HTML output file is displayed without borders around the table or cells in the table.

Copy to Clipboard

If this option is checked, no exported data is written to a file. Instead, the data is copied to the Windows clipboard, where in turn, you can paste the information into a document of your choosing.

4.2.4   Setup Auto-Update Music Data

Music data can be imported into the crWebBB music data table at any time. However, a more convenient way to handle updated music information is to enable the auto-update feature. When enabled, crWebBB will monitor the music source file for changes and when a change is detected, automatically refresh the crWebBB music data table, thus reducing the effort required to keep things in sync with your music scheduling system.

When music is manually imported in crWebBB, a prompt appears after the successful import, offering to enable auto-update using the current settings. If you answer "Yes", auto-update will be enabled.

Using the Auto-Update Setup Dialog

Sometimes changes need to be made in the way music data is updated. For instance, if you change music scheduling systems, the music export file name (the import source file name) may change. You might also want to disable auto-update.To modify auto-update settings, select the Music Maintenance Dialog menu item [**Utilities**] to display the utility menu, then select the item **Setup Music Auto-Update** to display the auto-update configuration dialog.
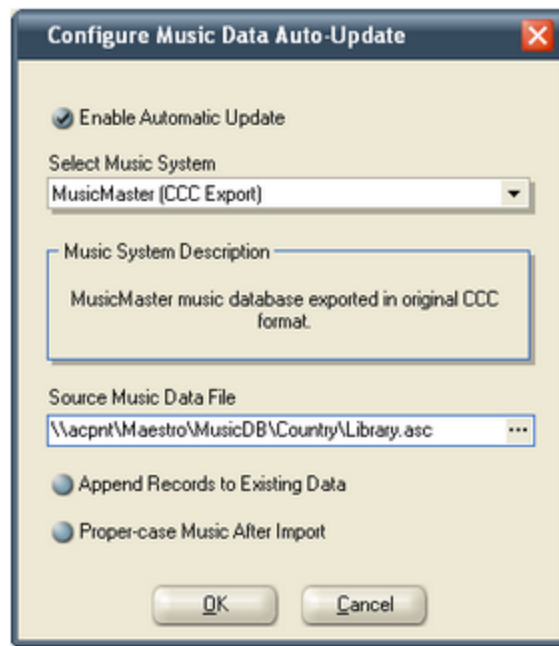
Music Auto-Update Configuration Dialog

Music Auto-Update Properties

Items with a check mark in the **REQ** column require user entry, while unchecked items have default values which can optionally be changed.

Property	*REQ*	*Description*
Enable Automatic Update	✓	If checked, automatic updates are enabled. The default is unchecked (automatic updates disabled).
Select Music System	✓	Select the music system producing the music data file from the drop down list.

Property	REQ	Description
Source Music Data File	✓	The fully-qualified file name of the source music data file that crWebBB will monitor and use for automatic updates.
Append Records to Existing Data		Default = unchecked. If checked, when music data is imported, existing music records in the table are retained. New records are added, changed records are updated. Using this option retains any songs that might be in the music table but do not exist in the music update file.
Proper-case Music after Import		Default = unchecked. If checked, when music data import is complete, all records in the master music table are checked and proper-cased. The first letter of each word in the song title and artist name fields will be capitalized and all other letters of the word in lower case.

When finished editing properties, click on the [**OK**] button to save the new settings. Settings are verified before being saved and you will be prompted if there is a problem with settings; things like a missing file name or no music system has been selected. To discard changes, click on the [**Cancel**] button.

Troubleshooting

Part V

crWebBB has been designed to be as trouble-free as possible and has been thoroughly tested. However, not every usage scenario can be anticipated. This section is intended as a starting point diagnosing and solving problems, but should not be viewed as an all-encompassing source of problem resolution.

If the difficulty you're experiencing is not covered here, contact the dealer who provided you with crWebBB first. Alternatively, you can contact dcsTools.com - see the topic on technical support.

Application Bugs or Errors

Bugs and errors generally fall into one of two categories - a bug, which is the application not doing something as you might have predicted it would, or; an error, which is the failure of the application to run or perform a specific task altogether.

If you find a bug, report it. Every effort is made to ensure crWebBB performs as expected, but there may be circumstances that were not predicted in the development of the software. See the section on Technical Support for information on reporting a bug.

If you encounter an error, you will get an error message indicating a severe failure and crWebBB may terminate. Provisions are made to "catch" such errors and log the error information to a file in the crWebBB application directory. The filename is **crWebBB.Elf**. Again, report any application errors you encounter. You may be asked to send the appropriate log file for analysis. For a complete list of log files maintained by crWebBB, see the List of Files topic.

5.1 Problems Loading Inventory Files

Two types of inventory files can be used with crWebBB. Refer to the appropriate section for troubleshooting details.

Local Inventory Files

If crWebBB can not find an inventory file, an error message will be displayed. The cause of the problem is that crWebBB did not find the file where you indicated it was in your user configuration or that you have mapped directory locations using UNC conventions and there's a problem with the UNC address.

To prevent erroneous directory locations, use the directory picker button in the crWebBB preferences form to select the directory from a list of available drives and directories. If you can't see the directory you want, either you do not have rights to access the directory, or you're not logged into the server that has the directory location you want.

crWebBB will work with UNC directory names, but may fail to find the file if you've not logged in to the server on which the file is located. crWebBB will not automatically log you in. It is recommended that you use mapped drives for your connections to DCS or Maestro inventory files when using crWebBB.

> ⚠️ Make sure that you have "**Local**" selected in the Inventory File Location group box if you wish to retrieve inventory files from a local disk, either on the host PC or on a network drive.

Remote Inventory Files

If you have "**Remote Host**" selected in the Inventory File Location group box of Preferences, make sure that you also have selected "TCPIP" as the Connection Method under the Port Setup tab of Preferences, and that you have properly set up the items in the TCPIP Connection Info area of Preferences.

In particular, ensure that you have selected a valid "**Local File Transfer Directory**" folder – this the folder in which inbound inventory data files are stored by crWebBB. If no folder is set, the application does not know where to put the received file. Also ensure that you have read and write privileges in the selected folder.

> Remote Inventory Files can be used with **rcServer only**. XStudio does not support remote transfer of inventory files.

5.2   Serial Communications Problems

The largest area of difficulty in getting crWebBB up and running relates to serial communications problems - the application is getting no information from the host DCS or Maestro system.

Serial Trouble Shooting Steps

Here are some basic troubleshooting steps you can take to correct the problem:

1. Check to be sure that you have a working cable connected between the crWebBB machine and the DCS or Maestro unit. This cable must be configured as a **null-modem cable**. See the section on serial interface for details on wiring pin-outs for the serial cable.

2. Ensure that you have selected a valid, working serial port on the PC on which crWebBB is running. There should be no other devices using the same port. A common example would be an internal modem using the same port number as a serial port that appears on the exterior of the PC, but is not enabled. You may also have inadvertently chosen the modem port instead of the available serial port on two-port machines. Use the [**Select COM Port**] button in the crWebBB preferences display to select a port. This dialog interrogates the PC and returns only valid ports.

3. Ensure that the serial port you've selected on the DCS or Maestro unit is a valid, working port.

4. Check the host DCS or Maestro configuration to be sure you've set up the machine properly for serial communications. See the section on Setting Up DCS for more information, or consult your DCS manual. For Maestro, see the section on Setting Up Maestro or consult your Maestro manual.

5. If you have performed all of the above steps and communications are still not happening, it's time to experiment. Perform these steps one at a time, then test, then the next, etc., to isolate the problem.

    a) Try changing which serial port is used, if possible, on the PC that's running crWebBB.

    b) Try changing which serial port is used on the host audio system machine.

    c) Try to locate a known-to-be working serial cable configured as a null modem cable and substitute it for the cable you have been using.

5.3   TCPIP Communications Problems

If you have selected a Connection Method of "TCPIP" in Preferences and are not receiving data from the host XStudio, DCS, or Maestro unit, check the following:

1. In order to use TCPIP communications in crWebBB with DCS or Maestro, you must have rcServer installed and running. rcServer is an application that communicates directly with a host DCS or Maestro unit with a serial data connection, then makes that data available to other client applications on TCPIP.

2. Ensure that you are using the correct IP address for the host rcServer or XStudio systems. If you are unsure of the address, go to the PC running either rcServer or XStudio and check the IP address.

⚠️ Be sure not use leading zeroes in the octets when entering the IP address. This will result in a connection error on some operating systems. Correct: 192.168.12.1 Incorrect: 192.168.**0**12.**00**1

3. Ensure that you are using the correct listen and file transfer ports. You can look at the rcServer or XStudio system to determine the ports that are being used for communications and file transfer.

4. It may be that your operating system firewall (or an installed third-party firewall) is blocking the ports you wish to use.

5.4 Trouble with Saving Files

If you are unable to save inventory files - or any other files, for that matter - here are some things to check.

1. *Available Disk Space*. One reason you may have trouble saving files is a lack of free disk space on the target drive. Check to confirm you have enough space on your hard drive to accommodate the file you are trying to save.

2. *User Rights*. In order to save files, you must have the appropriate privileges in the folder in which you wish to save the file. If you can see the folder and are sure there is enough available disk space, check with your administrator to be sure you have privileges to save files in the target folder.

5.5 Using Vista, Windows 7 & 8

With the introduction of Windows Vista and subsequently the release of Windows 7 and Windows 8, Microsoft added a significant amount of additional security to these operating systems.

Generally referred to as UAC (User Account Control), the sum of these changes dramatically affect named users who might be categorized as "standard" or "general" users. Areas that previously had been quite open, allowing these users to modify, create and delete items like files and registry entries are now protected as default. Users with standard rights and privileges on these systems are now as a default prevented from making changes in such areas as the Program Files folder, the Windows folder and in the Windows registry area known as *HKEY_LOCAL_MACHINE*.

In addition, Microsoft published numerous guidelines and usage information regarding these changes. Some of the guidelines would cause applications who require the end-user to be able to modify preference settings, etc., to place files in several locations on the PC. While these changes do enhance the overall security of the operating system, having files and information for a specific application spread all over the system in places not intuitive or easy to find creates a significant support burden for the application vendor.

Over the years, we have chosen to try to keep all of our application's files, including those that store preferences, files containing run-time information like exception logging and activity detail, and small database files, in one location for ease in troubleshooting and housekeeping.

For these reasons, our applications are generally placed in a folder other than the Microsoft-recommended Program Files folder. As a default, these other folders historically have been "wide open" in the sense that any user could read, write and modify files.

However, depending on how tightly-secured a system is when running Vista, Windows 7 or Windows 8, issues may arise that relate to user rights. The following points may assist you in locating problems with crWebBB when running one of these operating systems and the user reporting issues does not have administrative privileges.

1. Make sure that user having trouble with crWebBB has read, write, modify and delete privileges in the folder in which crWebBB is installed. These privileges might be assigned to

an individual user but more commonly are assigned to a user group of which the user is a member.

2. If you are placing files in a location other than the crWebBB folder, file locations that are set up in the Preferences area, ensure that the named user has read, write, modify and delete privileges in that folder location.

3. One way that some issues can be overcome is to modify any crWebBB shortcuts to cause the application to be run under administrator privileges. [**Right-Click**] on the shortcut and select the menu item "*Run as Administrator*". A negative of this approach is that the end-user will more than likely have to enter an administrative password, which defeats the concept of administrative security as you'd have to provide the user with the password.

Another approach some people use is to disable UAC. While this action more or less returns user accounts to the sort of status they had in previous versions of Windows, this too defeats the idea of enhanced operating system security.

> In order to extend additional privileges to a user or user group, either in the file system or registry, you need be be logged on to the operating system as an administrator.

5.6 Viewing Performance Information

crWebBB creates a number of files that provide information about the program's activities. All are referred to as "log files". You can view any of the log files by selecting the menu item **Help | Application Logs** and then selecting the particular log file you wish to view. See the List of Files topic for more information.

When you select a log file to view, a dialog similar to the one shown below is displayed. You can save the log file contents off to a different file if desired. [**Right-Click**] on the log text and select the menu item **Save Log File As..**. You'll be prompted for a folder location and file name. Note that you can also refresh the log file from disk from this same menu.
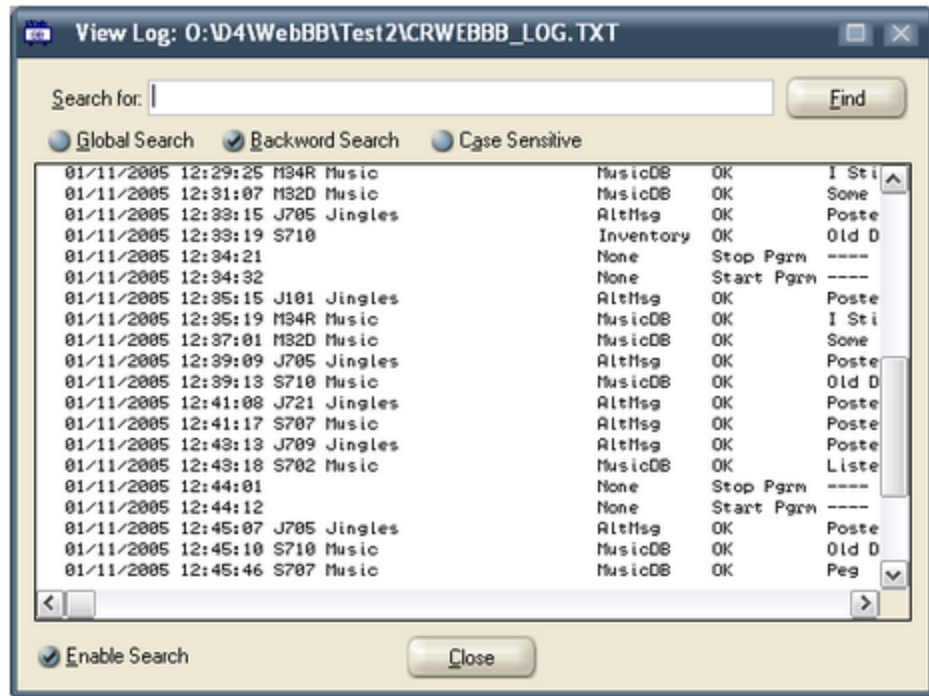
This example log file is the posting log, a history of what information was posted. The cart number, category, message source and other information are a part of this file.

Contacting dcsTools.com

Part VI

If you need to contact dcsTools.com, you can do so using one of the following methods. We are here to help, so do not hesitate to communicate with us when needed.

Mailing Address

C-R Media
8494 Saratoga Lane
Eden Prairie, MN 55347
USA

Telephone Information

Sales and Technical Support can be reached from 9:00 AM to 5:00 PM, U.S Central Time.

Voice: 952-949-9450

FAX: 952-949-9448

Email Information

To contact us via email, use our on-line contact form. If you wish to use a standard email client, send correspondence to: rich@c-rmedia.com.

Technical Support

To contact technical support for our products, use the telephone numbers or email information provided above. You can also send an on-line product-specific email.

Web Site

Visit our web site for information on product updates and other products we offer.

http://www.dcsTools.com

Appendices

Part VII

7.1   Registration

crWebBB requires a valid registration code to enable full use of the product. If you have purchased crWebBB, you should have received a registration code or instructions on how to obtain your registration code with your installation materials. The registration code contains the product serial number and is unique to each PC on which crWebBB is installed.

If crWebBB is not registered, you will be able to run the software for a limited period of time each time you launch the application, but it will close once that time has expired.

Register crWebBB

Enter registration information by selecting the **Help | Register** menu item from the main display. A dialog similar to the following will appear.

Enter the company name and/or call letters in the "Licensed To" field. Then, enter the code you were supplied with in the "Registration Code" field. If you received the registration code electronically, you may use standard Windows cut and paste methods to paste the code in the field. After entering the information, click on the [Save] button to save the information.

After you have completed registration initially, if you re-display this dialog, your registration specifics will be displayed in the **Registration Information** panel. Your serial number an license information is also displayed in the About dialog, accessed from the main display's **Help | About** menu item.

> ⚠ If you wish to change your company name and/or call letters at a later date, you will need to re-enter the registration code. **Do NOT save the registration information without a valid registration code entered!**

Generating the machine ID for registration

To generate a machine ID for registration, select the main display menu item **Help | Generate Machine ID for Registration**. A dialog will be displayed containing the machine name and ID.
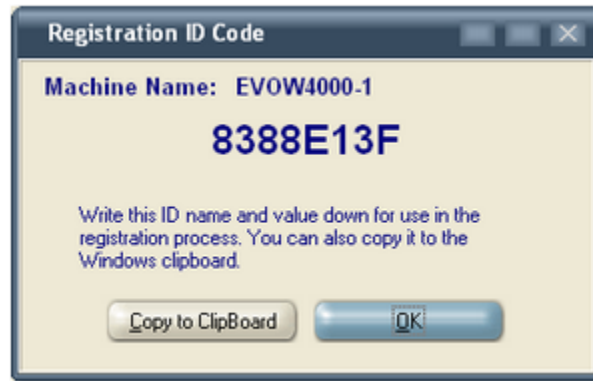
Both the machine name and its ID are needed for registration. You can copy the name and ID to the Windows clipboard and then paste it in an email, if desired.

7.2   List of Files

When crWebBB is installed, a number of files are placed on your computer. As crWebBB is used, other files are generated by the program. Below is a table of files, their locations, and usage.

> The **_AppDir_** location is the drive and folder location where crWebBB was installed.

File	Location	Usage
_Sample_AltMsg_XML_Format.txt	*AppDir*	A sample user-defined text file layout for alternate messages that produces an XML file.
_Sample_StdMsg_XML_Format.txt	*AppDir*	A sample user-defined text file layout for standard messages that produces an XML file.
*yyyymmdd*_crWebBB_Log.Txt	*AppDir*	A daily log file created by the program that contains billboard content posting information. The daily log is kept for 31 days and is useful in seeing what information was actually posted and when. See the Posting Log File Layout topic for more information on the file structure.
crServerEvents.log	*AppDir*	A log file created by the program that provides information on database-specific activities. It is useful in trouble shooting.
crWebBB.exe	*AppDir*	The main program file.
crWebBB.chm	*AppDir*	The main application help file.
crWebBB.ini	*AppDir*	Preferences file that contains user-defined preferences and settings.
crWebBB.ELF	*AppDir*	A log file of serious program errors, generated by the program if a serious error occurs. It is useful for trouble shooting.
crWebBBAppInfo.txt	*AppDir*	A log file, created by the program, of program activity. It is useful in trouble shooting.
FFAlias.SC$	*AppDir*	Used by the built-in database engine to determine data file locations. This file is installed with the application and should not be removed.
ffsAlias.ff2 ffsInfo.ff2, ffsTran.cfg	*AppDir*	Database engine configuration files. These files are created and maintained automatically by the application.

FTP_Log.txt	*AppDir*	A log file created by crWebBB containing FTP upload activity information.
MusicMaster_CCC_MS2ASC.xml	*AppDir*	MusicMaster (Windows version) song export design template. Used in MusicMaster to export the music library for subsequent import in crWebBB.
RDS_Log.txt	*AppDir*	A log file created by crWebBB that contains information about information sent to an RDS encoder, if RDS send is enabled.

Database Files

CartCat.ff2	*AppDir***Data** directory	Database table containing the cart category names and associated cart masks.
Messages.ff2	*AppDir***Data** directory	Database table containing alternate message content for all defined cart categories.
Music.ff2	*AppDir***Data** directory	Database table containing music library records.
ffsTran.cfg	*AppDir***Data** directory	Database engine transaction file. This file is created and maintained by the application.

7.3   Posting Decision Tree

Depending on the host audio unit, XStudio, DCS or Maestro, and the features you have enabled in crWebBB, different paths will be taken by the program to determine which, if any, content for a given cart's start of play will be posted.

Here's a general description of how crWebBB decides if and what information to post:

If the host system is Maestro and the "SendAllInfoToRemote" option is enabled

If the cart is music and you have the "Use Music DB" option enabled, a lookup of the song is attempted in the music database. If found, the Title and Artist information in the database is used. Otherwise, the song Title and Artist information provided by Maestro is used.

If you do not have the music database enabled and the cart is music, the song Title and Artist information provided by Maestro is used.

If the cart is non-music and alternate messaging is enabled, then the cart category provided by Maestro is used to look up available alternate messages and the least recently used message valid for the day is used. If the category cannot be found, then an attempt to use a valid message from the "* Unknown *" category is made. If no valid messages from this category are found, nothing is posted.

If the cart is non-music and alternate messaging is not enabled, the information from Maestro is used.

> **Hint** **Posting music information only**. There are two methods you can use to limit posting to music content only:
>
> a) Check the item "**Post Music Category Only**" for each of the text posting types and RDS properties; or
>
> b) Place a check in the "**Use Alternate Messages**" check box in Preferences and make sure there are no alternate messages that are valid in any cart category. The effect will be that crWebBB will fail to find the category or any messages, and will also fail to find any messages for the default "*** Unknown ***" category. As a result, nothing will be posted for non-music carts. The failure will be logged in the posting log.

For more information on the "SendAllInfoToRemote" option for Maestro, see the section on Setting Up Maestro.

If the host system is DCS, XStudio or is Maestro with the "SendAllInfoToRemote" option disabled

The cart number supplied by the host unit is used to try to find a cart category for the cart, using the cart masks you've defined for each cart category.

If a category is found, the category is "Music", and you've elected to use crWebBB's music database, the song Title and Artist are looked up in the music database. If found, the information is posted. If not found and you have valid messages (alternate) for the music category, then a valid alternate message is used. Otherwise, no information is posted.

If a category is found, the category is "Music", you have not elected to use the music database, and you have alternate messaging enabled, a valid alternate message for the music category is used. If no message is found, then an attempt is made to use a valid message from the "* Unknown *" category. If no valid messages are found, nothing is posted.

If a category is found, the cart is non-music and alternate messaging is enabled, then the cart category is used to look up available alternate messages and the least recently used message valid for the day is used. If the category cannot be found, then an attempt to use a valid message from the "* Unknown *" category is made. If no valid messages from this category are found, nothing is posted.

If a category is found, the cart is non-music, and alternate messaging is not enabled, no message is posted.

If a category is not found and inventory use is enabled, the cart description from the inventory is used. If the cart is not found in the inventory, no message is posted.

If all tests listed above fail, no message is posted.

> **Hint**
>
> **Posting music information only**. There are two methods you can use to limit posting to music content only:
>
> a) Check the item "**Post Music Category Only**" for each of the text posting types and RDS properties; or
>
> b) In Preferences, do the following: a) turn off the "**Use Alternate Messages**" option; b) turn off the "**Use DCS Inventory File**" option; and c) make sure you have the "**Use Music DB**" option checked. Make sure you have a cart category named "**Music**" with the appropriate cart masks. Also make sure that you have your song titles and artists in the music database, either by importing them or manually entering them.

7.4 Posting Log File Layout

The log file that contains information about posted messages has a structured layout for both readability and to enable users to use the log for other purposes - reporting, for instance. The posting log file naming convention is:

"**yyyymmdd_crWebBB_Log.txt**"

The files are located in the application directory (the folder where you installed crWebBB). There is a file for each day – as an example, the posting log for January 20, 2007 would be named "20070120_crWebBB_Log.txt".

The posting log files are kept for 31 days before being deleted, providing a rolling 31-day history of posting activity.

Posting Log File Structure

Each field in the structure always has one space character appended to the end of the field, for readability when viewing in a text editor. Therefore, the useable data in each field is the listed field length minus 1.

Start Pos	Field	Length	Usage
1	Date	11	The date of posting, in **mm/dd/yyyy** format, plus a pad character.
12	Time	13	The time of posting, in **hh:mm:ss.zzz** format, plus a pad character.
25	Cart Number	5	The 4-digiit cart number for which the information was posted, plus a pad character.
30	Category	26	The name of the cart category for the message, plus a pad character.
56	Source	11	The source is the information source used to generate the message. See the list of documented sources below.
67	Status	11	The status of the posting. Typically, it would either be "**OK**" or "**Fail**", but there are others with special meanings. See the list of documented status types below.
78	Title	71	If the cart is a music cart, the song title is listed here. If the information was retrieved from an inventory file, the text is the inventory cart description.
149	Artist	71	If the cart is a music cart, the artist is listed here. If an alternate message was used, the message

description from the messages table is used. If this item could not be posted, the status will be reported as a failure and the error text is placed in this field.

Posting Sources

These are the potential values for the Source field in the posting table, along with their meaning.

Source Values	Meaning
None	No source of information was available or source information is not applicable. For instance, "None" is used at program startup and shutdown to provide information in the posting file about program starts and stops.
AltMsg	The posted information was taken from the Alternate Messages table.
Maestro	The posted information was provided directly by Maestro. This would be the case if Maestro's "SendAllInfoToRemote" option is enabled.
Inventory	The posted information was obtained from a DCS or Maestro inventory file. The cart description was used.
MusicDB	A song's title and artist information was taken from crWebBB's music database.

Status Values

These are the potential values for the Status field in the posting table, along with their meaning.

Status Values	Meaning
OK	The message was posted successfully.
Failed	The message could not be posted. The Artist field will contain the error text.
Start Pgrm	The program was started at the date and time of the record.
Stop Pgrm	The program was shut down at the date and time of the record.

7.5   Command-Line Switches

crWebBB provides for the use of a minimal number of command-line switches that can be implemented as needed. These switches can be entered in any order and are not case-sensitive. To add a command-line switch, modify the crWebBB shortcut. Add the switch (as documented below), separating each switch with a space

An example command-line switch would look like: **C:\dcsTools\crWebBB\crWeBB.exe /debug**

Available Command-Line Switches

Switch	Usage
/Debug	This command-line switch enables additional tracking of information during application execution.

You must have a space between the end of the executable (program) name and the first command-line switch, along with a space separating each command-line switch.

7.6   Revision History

This topic contains historical information on changes, enhancements and corrections to crWebBB by version number and date. For the most recent changes and enhancements, see the What's New topic.

Version 2.3.3.280 - 08/01/2012

1. **Enhancement**. An option to automatically update changed music data has been added. On completion of a manual import of music data, a prompt to enable auto-update appears. If answered "yes", future exports of music data from the music scheduling system are automatically imported. Update settings can also be maintained in the Music Maintenance dialog. See the topic on Configuring Music Auto-Update for more information.

2. **Enhancement**. A new RDS option has been added that allows you to insert a delay between RadioText and Dynamic PS message sends to the encoder. See the topic RDS Options for more information.

Version 2.3.2.260 - 07/22/2011

1. **Enhancement**. Posting can now be limited to music content only. Each posting type is controlled independently with a preference setting.

2. **Enhancement**. The preferences dialog has been redesigned to place items in logical groups. A property navigation tree has been introduced, replacing the original tabular layout as the means of selecting related groups of properties.

3. **Enhancement**. Music data import has been optimized to improve import speed.

4. **Change**. Users are now always prompted to confirm shutting down crWebBB to avoid inadvertent exit of the program.

5. **Fix**. On certain PC's, an AV would occur when attempting to import music into an empty music table and crWebBB was skinned.

Version 2.3.1.240 - 04/08/2011

1. **Enhancement**. The maximum size of the user-defined text message template has been increased to 1024 characters to support user-defined XML files.

Version 2.3.0.235 - 03/03/2011

1. **Enhancement**. If using TCPIP to communicate with the host audio system, crWebBB will try to re-connect automatically if for some reason the TCP connection is dropped. On disconnect, a disconnect notice is displayed notifying users that crWebBB will be trying to re-connect.

2. **Enhancement**. RDS messages can be sent via TCPIP for selected encoders (Inovonics 713 and 730). Preferences items have been added for the host encoder IP address, port and password (if needed). When selecting a supported encoder, you can choose whether the communication method will be serial or TCPIP. For those encoders that are not supported via TCPIP, these options are disabled.

3. **Enhancement**. If using TCPIP to communicate with an RDS encoder and the connection is dropped for some reason, crWebBB will try to re-connect automatically. While disconnected, a disconnect notice displays periodically along with entries in the "last error" window.

4. **Enhancement**. Support for the Audemat-Aztec Silver RDS encoder has been added.

5. **Enhancement**. RDS messages sent are added to the main display's "last sent" information only after having been successfully sent. This prevents the last sent information from being updated if

for some reason the serial or TCPIP data send to the encoder fails.

6. **Enhancement**. RDS errors are now displayed in the "last error" window on the main display.

7. **Enhancement**. crWebBB is now aware of multiple monitor host systems and properly saves and restores its position on the correct monitor. Previously, the main display was always centered on the monitor.

8. **Enhancement**. Pop-up dialogs, including FTP Status, TCPIP Status Messages, IP Messaging and File Transfer, are multi-monitor aware. The dialog's monitor number and position are saved and restored.

9. **Change**. Application information logging has been changed to include more information about the host environment and activity as a default. Extended logging is still available as a command-line switch.

10. **Change**. A new installation program is now used that reduces the installer "footprint" and is simpler to use. When the new installation program is run and the previous crWebBB installer is detected, it is uninstalled (after user confirmation), removing files that are no longer needed.

11. **Fix**. When crWebBB is used with XStudio, the host audio engine work station ID was not being displayed. It is now properly identified and displayed.

12. **Fix**. A bug in the preferences dialog where supported serial baud rates were not being properly updated when the user changed the encoder selection has been fixed.

Version 2.2.2.215 - 12/05/2009

1. **Enhancement**. Operating system detection has been updated to include the latest Microsoft products, including Windows 7 and Server 2008 R2.

2. **Change**. The documentation for setting up a host DCS or Maestro has been updated.

3. **Fix**. RDS posting for the recently-added Inovonics 720 & 730 encoders was failing with an "unknown encoder" error.

4. **Fix**. A small memory leak leak that occurred in the host system communications module once during an application run has been eliminated.

Version 2.2.1.210 - 10/05/2009

1. **Enhancement**. A new user-defined text billboard type has been added. The content layout is completely customizable by the end-user and may be used in combination with the standard text type or in lieu of it. The user-defined text file may uploaded via FTP using a separate FTP configuration.

2. **Enhancement**. Support for the PIRA32 and Inovonics 720 and 730 (serial only) RDS encoders has been added.

Version 2.2.0.200 - 05/06/2009

1. **Enhancement**. The text billboard and FTP upload functionality has been completely rewritten to use a threaded approach. Text billboards are now queued for writing to file and uploading. Posting can be delayed if synchronization with a web audio stream is needed. This change provides significant improvement in reliability of uploads, including multiple retries if the first connection attempt fails. crWebBB now always logs out from the host FTP site following an upload, eliminating "time-out" errors that could occur when the user selected a persistent connection and too much time elapsed between uploads.

2. **Enhancement**. The general appearance of crWebBB has been improved, particularly when

the host operating system is Windows XP and application skinning is not used.

Version 2.1.4.195 - 04/24/2007

1. **Enhancement**. The option to control the type of FTP file transfer has been added. Users can now select file transfer types of either passive or active. The default is active, which has been been the only transfer mode used up to this version.

2. **Fix**. Handling of extended play start data from Maestro has been revised in order to deal properly with a situation where Maestro returns a blank cart category. If a blank category is detected, processing of the play start message is now handled as though extended information was **not** sent.

3. **Change**. The help documentation has been updated to work with Windows Vista. Vista does not as a default support the traditional help file (*.HLP). The help documentation is now supplied as a compiled HTML file (*.CHM).

> ⚠ Microsoft Security Update 896358 not only fixes a vulnerability in HTML Help, it prevents HTML Help files from execution if the CHM file is installed on a network drive. CHM files installed locally continue to work.
>
> **Symptoms**: When you open a CHM file from a UNC path or from a network drive even if the network drive is mapped to a drive letter, the HTML Help viewer opens and instead of displaying the topic, it displays an error message "Action canceled" in the topic pane.
>
> **Solutions**: Install the application on a local drive to avoid this problem. Alternatively, there are some registry changes that can be made manually to re-enable using CHM help files from a network drive. A free HTML Help Registration Utility is available at the EC Software web site.

Version 2.1.2.193 - 10/06/2006

1. **Enhancement**. Support for the Audemat-Aztec FMB80 (Burk RDS Master) encoder and older firmware Audemat-Aztec FMB80 encoders has been added.

2. **Enhancement**. The RDS prepend text field has been lengthened to 16 characters maximum. Note this field "counts" towards the 64-character maximum length of the RadioText field.

3. **Fix**. When Preferences was opened, the selected RDS encoder's default baud rate was set rather than the saved baud rate settings.

4. **Fix**. RDS block mode data send time-outs were updated both PS and RadioText fields instead of only the user-selected fields.

Version 2.1.1.189 - 01/24/2006

1. **Enhancement**. The option to send RDS text messages in "Software Block Mode" has been added. When enabled, crWebBB breaks the RDS message into 8-character blocks of words and sends each block to the RDS encoder at a user-specified interval, in seconds (1-59 seconds is the allowed range).

2. **Enhancement**. The option to force an automatic logout after each FTP transfer has been added. If enabled, the application will logout from the host FTP site after it completes the transfer of a billboard file. Note that the effect is the application will have to login to the host FTP site each time a file transfer is required, causing a slightly longer time span in uploading files.

3. **Enhancement**. Support for processing audio channels 4 & 5 (Maestro only) has been added.

4. **Enhancement**. The application's "up-time" (time elapsed since the launch of the program) is displayed in the About dialog in the "crWebBB Application Info" section.

5. **Fix**. The application no longer processes cart play start information when the host audio machine channel number is not recognized by crWebBB.

Version 2.0.5.180 - 12/05/2005

1. **Enhancement**. Support for the Inovonics 713 encoder has been added.

2. **Enhancement**. The option to prepend text to RDS messages has been added. When enabled, extra text defined by the user is placed in front of the song title and artist. Alternate messages are not affected.

Version 2.0.3.178 - 11/28/2005

1. **Enhancement**. The option to include the cart length (audio length) in the posted text file has been added. The default is to not include the cart length information. The option can be enabled in Preferences.

2. **Enhancement**. The "as-run" text log is now a daily log, with 31 days' worth of logs kept on-line. The naming convention for the files is "yyyymmdd_crWebBB_Log.txt". The data format has also been modified slightly - for details, refer to the Posting Log File Layout topic.

3. **Enhancement**. The application and RDS event logs size are now auto-maintained.

Version 2.0.2.174 - 2/4/2005

1. **Enhancement**. Added support for remote maintenance of database, including music, cart masks and alternate messages. A client application is now available that can be used to connect to the main application to perform database maintenance.

Version 2.0.1.173 - 1/28/2005

1. **Fix**. Channel monitoring settings were not being honored correctly. All channel activity was being posted, instead of just the selected channels.

Version 2.0.0.172 - 1/19/2005

1. **Update**. The on-line help system has been updated to include information on all new features.

Version 2.0.0.171 - 1/10/2005

1. **Enhancement**. Messages targeted for the web can now be sent by crWebBB directly to the site via FTP.

2. **Enhancement**. RDS/RBDS message posting has been enhanced to support additional encoders. You can now send messages to the dynamic PS field if the selected encoder supports the feature in firmware.

3. **Enhancement**. Users can now control the general appearance of the application by choosing to "skin" the display. A limited number of skins are available to choose from. Users may also disable this option, which results in the standard Windows display of the application.

4. **Change**. Registration is now unique to each PC on which crWebBB is installed. If upgrading from a previous version, you will need to obtain a new registration key.

Version 1.1.0.163 - 3/22/2004

1. **Enhancement**. Support for exporting music database information has been added. Users can now export displayed music data to several different file types, including CSV (comma-separated), HTML and SYLK.

2. **Enhancement**. The music database maintenance dialog has been improved to allow users to select the database fields to display and to change column titles.

Version 1.1.0.160 - 1/13/2004

1. **Enhancement**. Support for a TCPIP connection to a host rcServer has been added. crWebBB now supports either a direct serial connection to the host DCS or Maestro unit or a TCPIP connection, which allows multiple concurrent connections to the host audio delivery system.

2. **Enhancement**. Basic support for sending information to an RDS/RBDS encoder has been added. Data is sent at a user-selected baud rate on a user-selected COM port. Note that if a serial connection is also used for communications with the host audio system, two COM ports must be available to crWebBB in order to use the RDS/RBDS posting feature.

3. **Enhancement**. The About display has been revised to provide more information about the application's current status. Information may be saved to a text file for trouble shooting.

4. **Enhancement**. Support for importing MusicMaster song data has been added. Consult the Help file for information on preparing the song data for use with crWebBB.

5. **Enhancement**. The user interface in the music database area has been enhanced to display current sort indexes of the music database.

6. **Enhancement**. An option to convert the music data's Title and Artist fields to all capital letters has been added.

Version 1.1.0.150 - 7/13/2002

1. Initial release of crWebBB.

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Index

- K -

- L -

- M -

- O -

- P -

- R -

- S -

- T -