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SAM BROADCASTER

User Guide

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SAM Broadcaster – Overview

This is the user guide for SAM Broadcaster, the flagship online radio station solution which includes professional quality sound, built-in streaming, web integration, advanced media library management, automation as well as real-time statistics.

This guide will enable to you install, configure and manage your station with SAM broadcaster but please remember that not all features are applicable to each version of SAM Broadcaster.

This document is broken down in to four parts, Pre-installation which discusses the checks and considerations you should make before you install SAM Broadcaster, Installation which takes you through the various installation configurations options and changes available. The Post-Installation section gives an insight into the various features available and how to broadcast with SAM Broadcaster. The final section includes the document annexes which cover items like the quick-start guide and other reference information.

Pre-Installation

This section deals with the choices available and the decisions you should make before installing SAM Broadcaster. This will help to ensure that you have the correct hardware to install onto, the correct operating system, the right version of SAM Broadcaster as well as ensuring you make the right database choice. All of these will help reduce the chance of anything going wrong when you have installed SAM Broadcaster.

SAM Broadcaster Versions

SAM Broadcaster is available in a number of different versions and you should take advantage of the 14-day free trial to ensure you purchase the correct version for your requirements.

SAM Broadcaster Studio

Although SAM Broadcaster was designed with the hobbyist broadcaster in mind, many professional and semi-professional terrestrial radio stations have found that the features contained within SAM Broadcaster, suit their needs when it comes to broadcasting their existing, terrestrial stream. SAM Broadcaster Studio is designed for these stations where the End User Licensing Agreement (EULA) permits the streaming of a traditional, radio signal. This is also the only version licensed for Low-Power FM (LPFM) stations.

SAM Broadcaster Pro

SAM Broadcaster Pro contains all of the features of SAM Broadcaster Studio but this is not licensed to stream a terrestrial feed. If you wish to be able to stream to any streaming service provider and therefore any of the commonly available streaming formats but without streaming a traditional station then this is the version you should use.

SAM Broadcaster Live-DJ

SAM Broadcaster Live-DJ is included with any SAM VIBE package and is designed to facilitate live streaming through SAM VIBE.

SAM Broadcaster Lite

SAM Broadcaster Lite is included with each Cheapest Stream package and is not covered in this document however, there is a lot of commonality between this version and the other versions and a lot of what is covered in this guide is also relevant to SAM Broadcaster Lite. SAM Broadcaster Lite can only use the Firebird database and is restricted to a maximum of 5000 tracks.

Comparison Matrix

A complete comparison of the features of the different versions is available at:

<http://spacial.com/sam-broadcaster>

Minimum system requirements

Operating system: Windows XP, Vista, Windows 7, Windows 8
CPU: 1 GHz
Memory: 1 GB
Disk space: 100 MB
Sound card: Optional
Internet: You will need a solid Internet connection

Optimum system requirements

Operating system: Windows 7 or Windows 8
CPU: 2 GHz
Memory: 2 GB
Disk space: 100 MB + enough space for all the music files
Internet: 2mbps connection or greater

Sound card: Any high quality sound device; we recommend internal sound devices instead of externally connected USB devices

TIP: Avoid running other tasks or processes simultaneously with SAM, including automated anti-virus scans. These could hinder SAM Broadcaster's real-time performance.

When you install SAM Broadcaster, your firewall may request that you authorize SAM to open a port. If it does, make sure to allow it.

For best results, avoid using external or network-connected drives for storing music.

Database Selection

The database selection is critical to your future plans. You should give consideration to the number of tracks you plan to start with, as well as the number of tracks you believe you might have in the future. Different databases operate at slightly different speeds and the larger your music collection, the faster you would want your database to work.

Firebird

The SAM Broadcaster installer includes the Firebird installation file and this option is ideal for users who don't want to go through the hassle of installing a separate database server.

However, there are a few trade-offs. Firebird is slightly slower than the other two available options and as such, it might not be the best choice if your music library already contains, or you expect it to contain more than 20,000 tracks. Also, while there's no problem integrating Firebird with dynamic PHP, ASP, or other Web languages, many developers don't have experience working with Firebird. If web integration is high on your list of priorities then you might be wise to consider one of the other two options available.

MySQL

Power users should consider using this database which means you would have to download and install MySQL separately, and before you install SAM Broadcaster.

Installing MySQL is quite simple and worth the effort. It's fast and used for most open-source languages like PHP. The community edition of MySQL is free.

The only drawback is that it's a fairly large download.

Microsoft SQL Server

If you want to develop in Microsoft technologies like ASP and .NET and you're already familiar with administering Microsoft SQL Server then this database could be your ideal solution. You should ensure that Microsoft SQL Server is already installed on your computer prior to installing SAM Broadcaster.

That said, it can be expensive and is also a large download if you don't have an installation CD. Luckily, there's a free version that could work out nicely for smaller radio stations:

<http://www.microsoft.com/en-us/download/details.aspx?id=1695>

Don't forget to select the MSI Installer that applies to your operating system (either 32-bit or 64-bit).

Installation

When you have decided on the version of SAM Broadcaster you require, ensured your hardware and operating system are suitable and are ready to enter the world of Internet Radio Broadcasting, simply download the version of SAM Broadcaster you require and run the installation file. Follow the instructions, read and accept the End User Licensing Agreement (EULA) and complete the installation process.

When the installation process has been completed, run SAM Broadcaster to finish the installation process.

Completing the Installation of SAM Broadcaster with Firebird

Firebird is included with two of the three installation options available with SAM Broadcaster. You should select the 64-bit version of Firebird if you are running a 64-bit version of the Windows operating system otherwise select the 32-bit version.

During the SAM Broadcaster set-up:

- Select the Firebird database
- Don't change the program's default database settings
- Select a sound playback and recording device
- Enter your registration key, if available

Completing the Installation of SAM Broadcaster with MySQL

Before you start, make sure MySQL is installed on your computer. You can download the latest release of MySQL from:

<http://www.mysql.com>

Don't forget to select the MSI Installer that is applicable to your operating system (either 32-bit or 64-bit).

When installing MySQL, don't change the program's defaults, except when it asks to specify a root password which you should remember. You can simply click "next" the rest of the time.

After you have downloaded and installed SAM Broadcaster, run SAM Broadcaster to complete the installation process.

During the SAM Broadcaster set-up:

- Select the MySQL database
- Change the default database settings and enter your root password from earlier
- Select a sound playback and recording device
- Enter your registration key, if available

Completing the Installation of SAM Broadcaster with Microsoft SQL Server

Ensure Microsoft SQL Server or Microsoft SQL Server Express is already installed on your computer prior to installing SAM Broadcaster.

- Use the administration tools to create a database called "SAMDB"
- Create a user login that can access the database and create and modify tables

After you have downloaded and installed SAM Broadcaster, run SAM Broadcaster to complete the installation process.

- Select the Microsoft SQL Server database
- Change the default database settings and enter your username and password from earlier
- Select a sound playback and recording device
- Enter your registration key, if available

Post-Installation

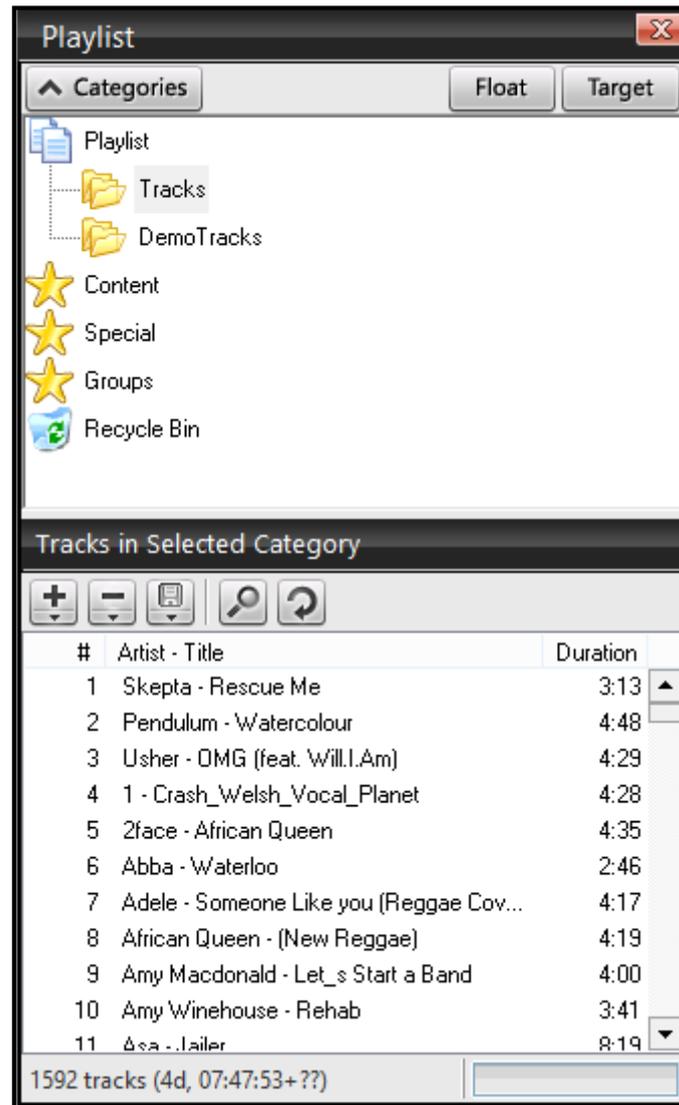
One of the first tasks you might wish to complete is adding your music so it can be played by SAM Broadcaster. This is obviously a vital component of most radio stations and luckily, with SAM Broadcaster, it is also one of the easiest tasks to accomplish.

Adding Music

Adding music is the most vital part of using this software. It's also one of the easiest tasks.

There are two ways to add music. For starters, open SAM Broadcaster and follow these steps:

- Click on "Desktop A" from the toolbar.
- In the "Playlist" window, click on "Tracks" the content of which will be seen in the "Tracks in selected category" window, immediately below.
- One way to add music is to click on the plus sign ("+") to browse your documents, then locate and select music files.
- Another way to add music is to drag files from Windows Explorer and drop them directly into the "Tracks in selected category" window.



There's a down arrow next to the plus sign ("+"), which lets you add a directory (so you can place all your media files in a specific directory) or add a playlist (so you can import existing M3U, PLS, or ASX files).

To create a playlist, simply drag your tracks from the "Tracks in selected category" window and drop them into the "Queue" window. To select more than one track at a time, hold down "Shift" or "Ctrl."

You can also right-click on a category name or on any track within that category to add those songs to a playlist you'd like to create.

Introduction to Clockwheel Rotation

Clockwheel rotation controls when songs are played to avoid randomly selected tracks and repetition.

Create Categories

The first step consists of organizing your music into specific categories. For example, a Top 40 station might use the categories "Golden Oldies," "Current Hits," and "New Music."

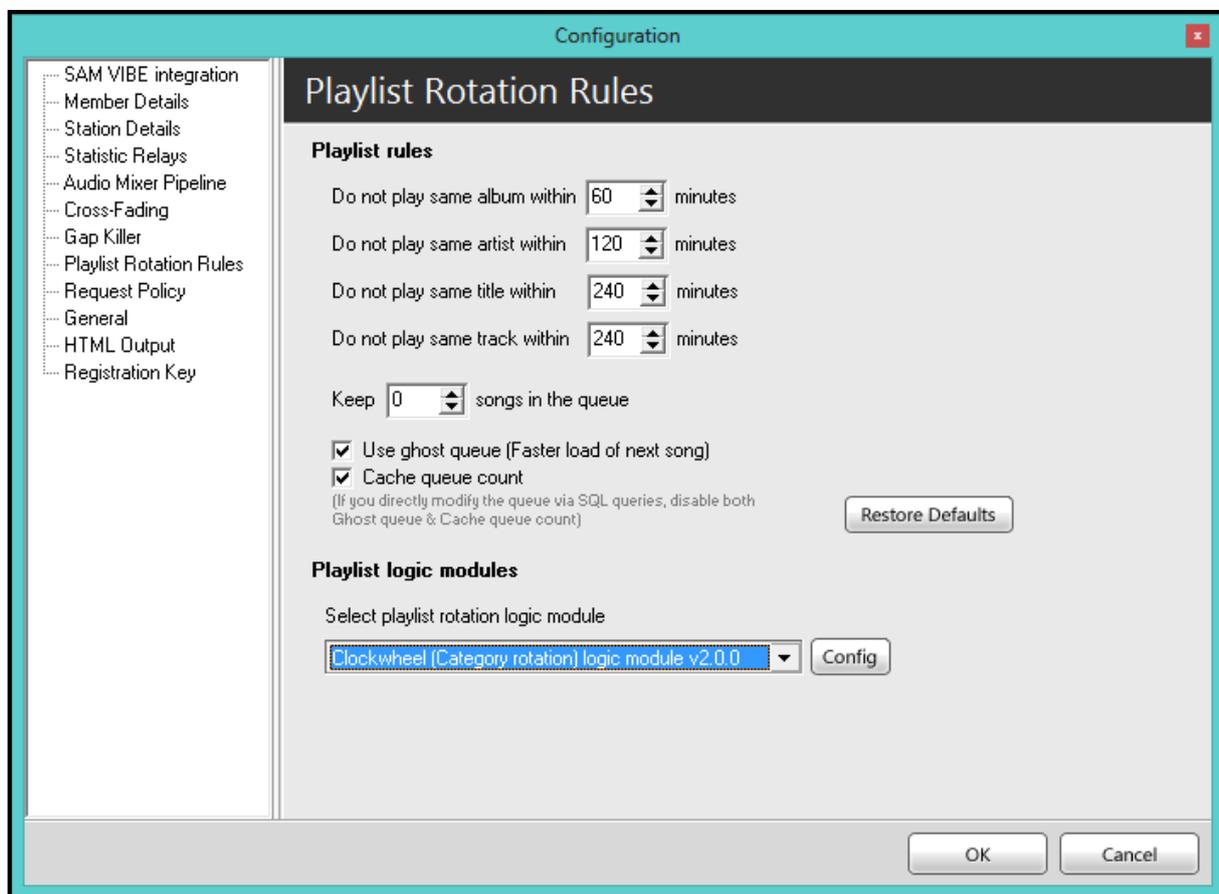
To create new categories, follow these steps:

- Click on the "Categories" window on Desktop A
- Right-click on "Playlists"
- Select "New"
- Type a category name

Add music to these categories by dragging and dropping music files from Windows Explorer, from your "Queue," or even from other categories.

Configure Playlist Rules

Next, you need to configure playlist rules. To do this, click on "Config" in your toolbar, then select "Playlist rotation rules." In this window, you can decide how often an album, artist, title, or track should play. Note that more than one track can have the same title (e.g. "Believe" by Elton John vs. "Believe" by Cher).



To configure your playlist rules settings properly, make sure all the songs in your playlist contain valid song information. Also make sure these rules match your library's size. For example, if you set a rule to 1,000 hours, your library must have at least 1,000 hours or more of music.

You can also configure the number of songs you want to have in your queue. If ever there are fewer songs than the number specified in this rule, SAM Broadcaster will automatically add another song to your queue.

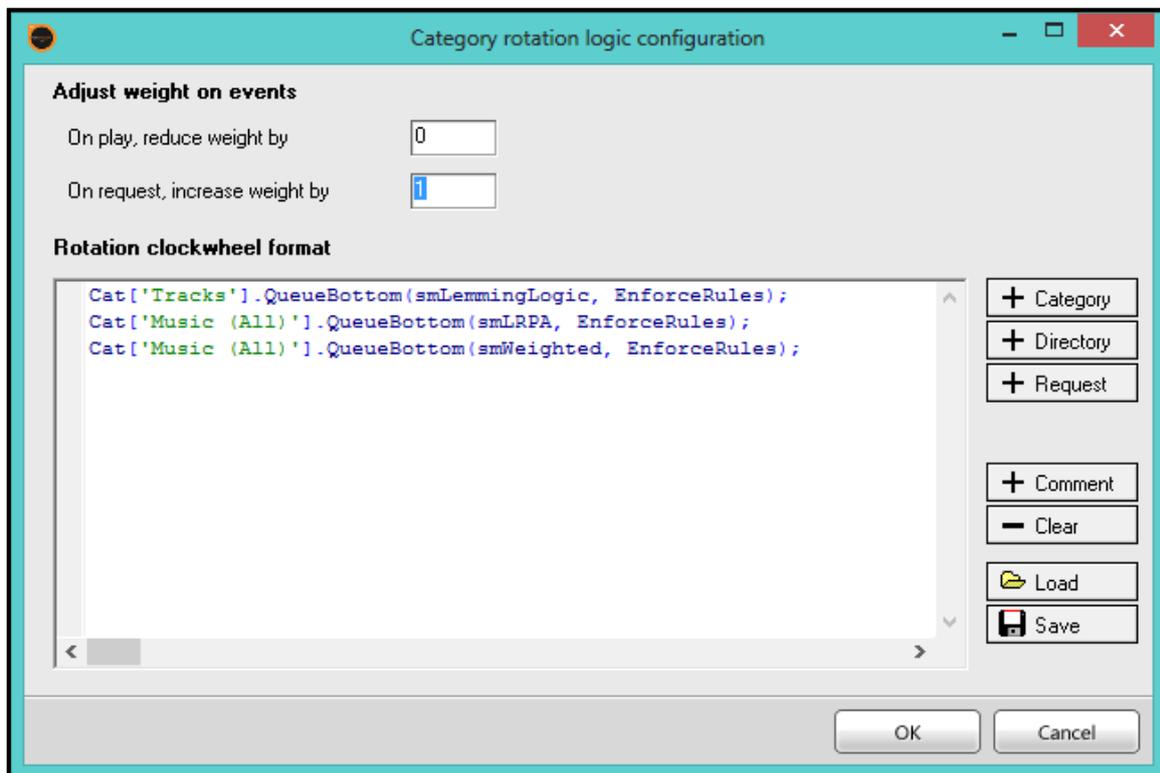
We recommend leaving "Use ghost queue..." checked since it will cache the next song into its memory, so SAM Broadcaster will load the next song faster.

Leaving "Cache queue count" checked will improve SAM Broadcaster's performance by avoiding a database query each time the queue is empty. We recommend unchecking it only if you change the SAM Broadcaster queue using external scripts and database queries.

Under "Playlist logic module," you'll find a selection of 3 built-in logic modules. We recommend the default "Clockwheel (Category Rotation) logic module" because it makes it easy to specify your station's format when you select songs from categories in a certain order. The "Weighted Playlist rotation logic module" assigns each song a "weight," which increases each time the song is requested, meaning popular songs will play more often than unpopular ones. The "Web scripting based logic module" will contact a website each time you want to use a song. So if you know PHP, ASP, or any other Web script, you can manage SAM Broadcaster's playlist rotation logic according to your own script.

Build your Clockwheel

In the "Playlist rotation rules" window, select "Clockwheel Category Rotation logic module" and click "Config". The "Category rotation logic configuration" window will appear. From here, you can format your clockwheel.



Here is what the buttons on the right do:

Button	Action
+ Category	Select a song from a category rule
+ Directory	Select a song from a directory rule
+ Request	Select a pending request and move it to the queue
+ Comment	Add a comment or description to the clockwheel that provides more information
- Clear	Empty the clockwheel

Load	Load a clockwheel format from a file
Save	Save the current clockwheel format to a file

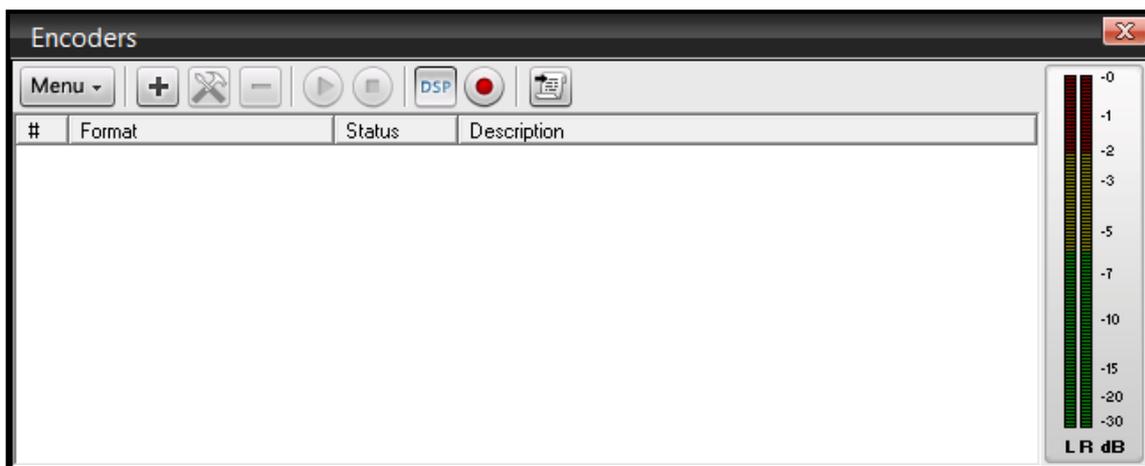
When you set your clockwheel, it will select a track from a specific category using the rules you configured. Once selected, it will go to the next clockwheel entry and repeat the process until all songs have been played. Then it will start over again.

Here's an example of how to set a simple clockwheel:

- Click on "- Clear."
- Click on "+ Category," and the "Select category" window will pop up. On the left side of the window, select the "Tracks" category.
- On the right side of the window, choose a "Selection method," which will determine what logic to employ when selecting a track.
- For example, "Least recently played song" will select the song that hasn't been played for the longest time.
- For this exercise, leave "Enforce playlist rotation rules" checked and select "Lemming Rules (random logic)," then click "OK."
- Your clockwheel script will look like this: `Cat['Tracks'].QueueBottom(smLemmingLogic, EnforceRules);` Click "OK" to save this configuration.
- With this configuration, SAM Broadcaster will only select a song from the "Tracks" category each time it requires a song for rotation.

TIP: We recommend using "NoRules" if you select items like "Station ID," where the rules are too strict. You should also apply a balanced mix of logic methods to spread out the rotation across your music library.

Configuring Encoders



How to Set Up Your Windows Media (WMA) Encoder

The WMA encoder is popular because any computer operating system from Windows XP or higher will come equipped with a Windows Media Player. WMA also works nicely with Microsoft Silverlight.

Before you start, you must retrieve server details from your SpacialNet account. For the sake of example, let's say you've signed up for a Windows Media hosting account through SpacialNet.

- Log into SpacialNet
- Under "Hosting" in the left menu, click on "Stream hosting"
- Click on "View" next to your account
- Either leave this page open or copy it so you can use it when setting up your WMA encoder

To set up your WMA encoder, open SAM Broadcaster and follow these steps:

- Click on "Desktop B" in the toolbar
- In the "Encoders" window, click the plus sign ("+") to add a new encoder
- Select "WMA (v9 advanced [ROBUST])"
- Click "OK"

The WMA (v9 advanced [ROBUST]) encoder window will then appear.

In the "Profile" tab:

- Select the streaming profile that applies to you
 - To avoid a failed connection, select a profile that will stream at a bitrate that's less than or equal to what you signed up for on SpacialNet. For example, if you signed up for a 64 kbps stream, your profile must stream at 64 kbps or lower
 - Make sure your bandwidth can support your streaming bitrate. The combined bitrate of all your streams should never exceed 80% of the value of the upload speed reported by speedtest.net

In the "Stream Options" tab:

- Check "Auto start encoder after" if you want the encoder to start automatically each time you launch SAM Broadcaster. If you check this option, make sure to specify how many seconds you want to elapse before the encoder starts
- Select "Use PULL distribution" if you're experienced with setting up routers, and "Use PUSH distribution" if you're not
- Under "Media server host/IP," fill in your server details. Your server IP should be something like `wm6.spacialnet.com`
- Under "Publishing Point," use the same "Alias" you provided on your SpacialNet account
- Leave the space under "Template publishing point" blank
- Type in your username and password under "Authentication"
- Check "Auto reconnect encoder after" under "Error recovery" so SAM Broadcaster can recover from network errors

In the "Scripting" tab:

- Note that the default settings will ensure compatibility with AudioRealm players
- You can also fill in the details to customize how your metadata shows up in your stream

In the "Stream Archive" tab:

- Check "Save stream to file" if you want to save a copy of your stream to your local hard drive

Once you've configured all your settings, click "OK" to close the WMA (v9 advanced [ROBUST]) encoder window.

How to Set Up Your MP3 Encoder

MP3 is one of the oldest streaming formats, which means it's compatible with most players on most software, sound devices, and browsers. Its low-bitrate sound quality isn't as good as, say, AAC format, but MP3 is very popular.

Before you start, you must retrieve your server details from your SpacialNet account. For the sake of example, let's say you've signed up for a SHOUTcast hosting account through SpacialNet.

- Log into SpacialNet.
- Under "Hosting" in the left menu, click on "Stream hosting"
- Click on "View" next to your account.
- Either leave this page open or copy it so you can use it when setting up your MP3 encoder.

To set up your MP3 encoder, open SAM Broadcaster and follow these steps:

- Click on "Desktop B" in the toolbar.
- In the "Encoders" window, click the plus sign ("+") to add a new encoder.
- Select "MP3 (LAME_ENC)."
- Click "OK."

The MP3 (LAME) encoder window will then appear.

In the "Converter" tab:

- Set your "Bitrate" under "Setting." The bitrate is the amount of bandwidth used by a single stream. The higher the bitrate, the better the sound quality. However, a higher bitrate also costs more and will require more bandwidth. For a good cost/quality ratio, we recommend 64 kbps
 - To avoid having your streaming service suspended, select a profile that will stream at a bitrate that's less than or equal to what you signed up for on SpacialNet. For example, if you signed up for a 64 kbps stream, your profile must stream at 64 kbps or lower
 - Make sure your bandwidth can support your streaming bitrate. The combined bitrate of all your streams should never exceed 80% of the value of the upload speed reported by speedtest.net
- Set your "Mode" under "Setting." For bitrates higher than 48 kbps, select "Stereo." For bitrates lower than 48 kbps, select "Mono"
 - Select "Joint stereo" for optimized stereo compression
 - Select "Dual channel" if you have different audio content (for example, in different languages) on each channel
- There are several "Sampling rate" options to choose from. Selecting "Auto" means the encoder will automatically select the best sampling rate for your chosen bitrate
- Under "General options," check "Auto start encoder after" if you want the encoder to start automatically each time you launch SAM Broadcaster. If you check this option, make sure to specify how many seconds you want to elapse before the encoder starts
- Under "General options," leave "Auto reconnect encoder after" checked so SAM Broadcaster can recover from network errors
- Under "General options," leave "Allow scripts in stream" unchecked, since modern players don't use this feature

In the "Server Details" tab:

- Select the server you want to send your MP3 file stream to. You have the choice between SHOUTcast (versions 1 and 2), Live365, IceCast, or no server
- We recommend selecting the "SHOUTcast" server to reach a broader audience
- If you select "No server," the encoder will archive your audio content without streaming it.
- Fill in your server and radio station details
 - Your "Server IP" should be something like sc6.spacialnet.com
 - You can find your "Server Port" in your SpacialNet account details
 - Use your SpacialNet password
 - In "Station Details," write your radio station's name, select a genre from the drop-down menu, and provide your website's URL
 - The "AIM," "ICQ," and "IRC Channel" fields are optional
 - We recommend checking "List on public station listing" to include your station in SHOUTcast directory
 - You may leave "Enable title streaming" checked to stream song information
 - We recommend keeping the "Caption template" default setting ("\$combine\$")
- If you select SHOUTcast 2, you will have to provide a valid SID

In the "Stream Archive" tab:

- Check "Save stream to file" if you want to save a copy of your stream to your local hard drive.

Once you've configured all your settings, click "OK" to close the MP3 (LAME) encoder window.

How to Set Up Your AAC Encoder

There are many advantages to setting up an AAC encoder. For one, it has the best sound quality at a lower bitrate, so it will save on streaming costs. It's also supported by Flash, Microsoft Silverlight, and a wide range of mobile devices, giving your listeners different options for tuning in.

Before you start, you must retrieve server details from your SpacialNet account. For the sake of example, let's say you've signed up for a SHOUTcast hosting account through SpacialNet.

- Log into SpacialNet
- Under "Hosting" in the left menu, click on "Stream hosting"
- Click on "View" next to your account.
- Either leave this page open or copy it so you can use it when setting up your AAC encoder

To set up your AAC encoder, open SAM Broadcaster and follow these steps:

- Click on "Desktop B" in the toolbar
- In the "Encoders" window, click the plus sign ("+") to add a new encoder
- Select "aacPlusV2"
- Click "OK"

The aacPlusV2 encoder window will then appear.

In the "Converter" tab:

- Under "Output format settings," select your bitrate using the drop-down menu under "Format"
- Selecting an AAC bitrate with "Parametric stereo" provides the best low bitrate/sound quality ratio

- To avoid having your streaming service suspended, select a profile that will stream at a bitrate that's less than or equal to what you signed up for on SpacialNet. For example, if you signed up for a 64 kbps stream, your profile must stream at 64 kbps or lower
- Make sure your bandwidth can support your streaming bitrate. The combined bitrate of all your streams should never exceed 80% of the value of the upload speed reported by speedtest.net
- Under "General options," check "Auto start encoder after" if you want the encoder to start automatically each time you launch SAM Broadcaster. If you check this option, make sure to specify how many seconds you want to elapse before the encoder starts
- Under "General options," leave "Auto reconnect encoder after" checked so SAM Broadcaster can recover from network errors
- Under "General options" leave "Allow scripts in stream" unchecked, since modern players don't use this feature.

In the "Server Details" tab:

- Select the server you want to send your AAC file stream to. You have the choice between SHOUTcast (versions 1 and 2), Live365, IceCast, or no server
- We recommend selecting the "SHOUTcast" server to reach a broader audience
- If you select "No server," the encoder will archive your audio content without streaming it
- Fill in your server and radio station details:
 - Your "Server IP" should be something like sc6.spacialnet.com
 - You can find your "Server Port" in your SpacialNet account details
 - Use your SpacialNet password
 - In "Station Details," write your radio station's name, select a genre from the drop-down menu, and provide your website's URL
 - The "AIM," "ICQ," and "IRC Channel" fields are optional
 - We recommend checking "List on public station listing" to include your station in SHOUTcast directory
 - You may leave "Enable title streaming" checked to stream song information
 - We recommend keeping the "Caption template" default setting ("\$combine\$")
- If you select SHOUTcast 2, you will have to provide a valid SID

In the "Stream Archive" tab:

- Check "Save stream to file" if you want to save a copy of your stream to your local hard drive

Once you've configured all your settings, click "OK" to close the aacPlusV2 encoder window.

Configuring Statistics Relays



How to Set Up Your Windows Media Statistic Relays

Setting up a statistic relay for Windows Media (WMA) will let you know how many listeners you have on the WMA server at any given time.

Before you start, you must retrieve server details from your SpacialNet account.

- Log into SpacialNet
- Under "Hosting" in the left menu, click on "Stream hosting." Click on "View" next to your account
- Either leave this page open or copy it so you can use it when setting up your WMA statistic relay

To set up statistic relays for WMA, open SAM Broadcaster and follow these steps:

- Click on "Desktop B" in the toolbar
- In the "Statistic Relays" window, click the plus sign ("+") to add a new relay
- Select "MediaPoint Manager statistic relay" from the list
- Click "OK"

The WMA "MediaPoint Manager" server details window will appear. In it, enter the following details:

- In the "Host" field, type your DNS name or IP address, in this case, "wm1.spacialnet.com"
- In the "MPM Port" field, type 8008
- In the "Username" field, type your SpacialNet username
- In the "Password" field, type your SpacialNet or WMA password
- In the "Alias" field, click on the dropdown menu to select from the list of aliases. Select the alias you want to grab your statistic from
- To select the "Color on graph," click on the color box, and a color selection window will appear. In it, select the color you want to use to represent this particular statistic on your relays graph
- We recommend leaving "Private statistic relay" unchecked, since "Public" relays get listed on AudioRealm.com
- Click "OK"

Your WMA statistic relay is now configured and functional.

How to Set Up SHOUTcast Statistic Relays

Setting up a statistic relay for SHOUTcast will let you know how many listeners you have on the SHOUTcast server at any given time.

Before you start, you must retrieve server details from your SpacialNet account.

- Log into SpacialNet
- Under "Hosting" in the left menu, click on "Stream hosting"
- Click on "View" next to your account
- Either leave this page open or copy it so you can use it when setting up your SHOUTcast statistic relay

To set up statistic relays for SHOUTcast, open SAM Broadcaster and follow these steps:

- Click on "Desktop B" in the toolbar
- In the "Statistic Relays" window, click the plus sign ("+") to add a new relay
- Select "SHOUTcast statistic relay" from the list
- Click "OK"

The SHOUTcast server details window will appear. In it, enter the following details:

- In the "Host" field, type your DNS name or IP address, for example, "sc6.spacialnet.com" if your stream hosting account is with SpacialNet
- In the "Port" field, type "80" for SHOUTcast 2.0 hosting
 - Otherwise, type the port number indicated in your SpacialNet account
- In the "Password" field, type the password from your stream hosting account
- Leave the SID field at zero if you are using SHOUTcast 1.0, otherwise enter the SID as indicated in your stream hosting account
- To select the "Color on graph," click on the color box, and a color selection window will appear. In it, select the color you want to use to represent this particular statistic on your relays graph
- We recommend leaving "Private statistic relay" unchecked, since "Public" relays get listed on AudioRealm.com
- Click "OK"

Your SHOUTcast statistic relay is now configured.

How to Set Up SHOUTcast 2.0 Statistic Relays

Setting up a statistic relay for SHOUTcast 2.0 will let you know how many listeners you have on the SHOUTcast server at any given time.

Before you start, you must retrieve server details from your SpacialNet account.

- Log into SpacialNet
- Under "Hosting" in the left menu, click on "Stream hosting"
- Click on "View" next to your account
- Either leave this page open or copy it so you can use it when setting up your SHOUTcast 2.0 statistic relay

To set up statistic relays for SHOUTcast 2.0, open SAM Broadcaster and follow these steps:

- Click on "Desktop B" in the toolbar

- In the "Statistic Relays" window, click the plus sign ("+") to add a new relay
- Select "SHOUTcast statistic relay" from the list
- Click "OK"

The SHOUTcast 2.0 server details window will appear. In it, enter the following details:

- In the "Host" field, type your DNS name or IP address, for example, "sc6.spacialnet.com" if your stream hosting account is with SpacialNet
- In the "Port" field, type "80" for SHOUTcast 2.0 hosting
 - Otherwise, type the port number indicated in your SpacialNet account
- In the "Password" field, type the password from your stream hosting account
- Enter the SID as indicated in your stream hosting account
- To select the "Color on graph," click on the color box, and a color selection window will appear. In it, select the color you want to use to represent this particular statistic on your relays graph
- We recommend leaving "Private statistic relay" unchecked, since "Public" relays are listed on AudioRealm.com
- Click "OK"

Your SHOUTcast 2.0 statistic relay is now configured.

SAM Broadcaster - Tips & Tricks

How to Organize and Schedule Music

The way you organize and schedule your music can really make your station stand out. There's an 80s mix, and then there's your 80s mix. Here, we'll cover the technical aspects of creating your mix.

First, we recommend reading the following sections of this document:

- How to Add Music
- How to Use Smart Categories
- Introduction to Clockwheel Rotation
- Pre-Installation

You need to decide what your station is all about, and how often you plan to play certain tracks, artists, jingles, and promos.

Organize your Music

Start by creating categories in SAM Broadcaster that make sense to you. We recommend category names that point to a common attribute, like "Top 40," "Trance," or "Ambient."

Format Your Station

Now you have to decide how you're going to arrange your music.

For the sake of example, let's set up a Top 40 station. The idea is to play the latest hits more frequently than older music:

80s Hits
Top 40
90s Hits
Station ID
Top 40

00s Hits
Top 40
Oldies
Station ID

To do this, set up your schedule's logic as follows (read the "Introduction to Clockwheel Rotation" section for more information):

80s Hits [Least Recently Played Artist]
Top 40 [Weighted]
90s Hits [Least Recently Played Artist]
Station ID [Random, NoRules]

Top 40 [Weighted]
00s Hits [Least Recently Played Artist]
Top40 [Random]
Oldies [Least Recently Played Artist]
Station ID [Random, NoRules]

In this example, Top 40 songs are "Weighted," which means they're prioritized over other tracks so they're played more frequently. This kind of logic will evenly distribute your Top 40 tunes.

You'll also note that we marked that last Top 40 track as "Random" to avoid having tracks play in the same order each time (this sort of thing comes up with "Weighted" rotations).

We marked songs from the '80s, '90s, and '00s as "Least Recently Played Artists" to ensure a good musical balance.

We used "Random" logic for station identification because we only have a few files in this category. In addition, when there are only a few items in any given category, it's important to disable separation rules. If you don't, SAM Broadcaster will not select Station IDs because it won't be able to find any that don't break separation rules.

This is part of the "clockwheel rotation" process. You can create many clockwheels and save them to file. Use the Event Scheduler to create a new clockwheel for different parts of the day or week.

How to Use Smart Categories

SAM Broadcaster has a set of default categories under "Content" and "Special" in the "Playlist" window. We call them "Smart Categories" because they group tracks based on a common feature.

When you right-click on a track, select "Song Info." In this window, under the "Info" tab and near the bottom, you'll notice that the file has a "Type." Here are the different types SAM Broadcaster can attribute to media files (you can also change the file type manually in this window):

Attribute	Type	Attribute	Type
S	Normal Song	N	Syndicated News
I	Station ID	V	Interviews
P	Promo	X	Sound FX
J	Jingle	C	Unknown Content
A	Advertisement	?	Unknown

So, for example, under Content > Music > Music (All), all the tracks found in this smart category should be marked as Type "S" to indicate that they're all "Normal songs".

You'll find other smart categories under "Special," also in "Playlist." These include "Weighted Rotation", "Overlay", "Song Rights", and "Play Limit".

The categories under "Groups" in "Playlist" are read-only files. You also can't drag new items into these categories. However, they're ideal for locating tracks from a specific artist, title, year, genre, or album.

Smart Editing

What makes the smart categories so clever is their ability to edit data to match a category. For example, if you drag and drop a normal music file into the "Sound FX" category, it will automatically change that song's setting to Type "X". In other words, you won't have to change the song's type in the "Song Info" window manually. You can even drag and drop multiple files into a smart category and change their settings in one quick motion. This applies to all smart categories except "Groups."

After you edit media files in "Song Info," hit F5 to refresh your smart categories.

Troubleshooting

Players Are Stuck

If your players freeze or won't play a track when you load it onto the deck, your sound device may be improperly configured.

To fix this, click on "Config" in the toolbar and select "Audio Mixer Pipeline". Then follow these steps:

- Click the "Air Out" button, and an "Audio Settings" window will pop up
- Under "Air output settings," select the proper "Output driver" from the drop-down menu
 - This is usually "DirectSound" output
 - Even if this option is already selected as a default setting, select it manually from the drop-down menu
- Also under "Air output settings," select the proper "Output device" from the drop-down menu
 - Even if this option is already selected as a default setting, select it manually from the drop-down menu
- Click the "Apply now" button followed by "OK"

TIP: When using a USB device, always plug it into the same USB port before starting your computer. This will allow your device driver details to remain consistent.

How to Find a Track

Finding a track is one of SAM DJ's simplest functions.

To find a track, follow these steps:

- Click on any window that contains tracks (e.g. Playlist, Tracks in selected category, Queue, History, etc)

- Then either click on the search button (the magnifying glass icon) or simply start typing the artist's name or track title
- The search window will pop up right away and display matching results as you type

You can customize some of the search options to generate more specific results. For example, you can check "Artist" to match your query to the artist field only.

Once you've located a given track, you can perform a number of tasks:

- Right-click the track and select "Song info" to edit the metadata
- Right-click the track and select "Remove" to delete it from your media library
- Drag and drop the track into a queue or playlist category
- Drag tracks into player decks

Alternatively, you can find a track by clicking on the "Groups" category in the "Playlist" window. From here, select the group you want to use to narrow down your search, for example, "By Artist (A to Z)". You can then see all the tracks available in that selection.

Annex A – Keyboard Shortcuts

SAM Broadcaster has an array of shortcut keys to make your job easier when broadcasting:

Global Shortcut Keys

These shortcuts work anywhere within SAM Broadcaster

Shortcut	Action
Ctrl+H	Hide SAM Broadcaster
F1	Start playback (Hold down [Shift] to fade in the stopped song)
F2	Pause playback (Hold down [Shift] to do a fadeout pause)
F3	Stop playback
F4	Skip to next track (Hold down [Shift] to do a fadeout)
F5	View desktop A
F6	View desktop B
F7	View desktop C
F11	Press to talk (Voice FX)
F12	Mute studio
Shift+F11	Locks VoiceFX for talking. Pressing F11 or Shift+F11 again unlocks the VoiceFX
Ctrl+B	Back up the song database
Ctrl+1	DJ mode: Auto
Ctrl+2	DJ mode: Queue
Ctrl+3	DJ mode: Manual

Window Specific Shortcut Keys

Deck Window

Shortcut	Action
Shift+Play	Fade to Play
Shift+Pause	Fade to Pause
Shift+Stop	Fade to Stop
Shift+Next	Fade to Next

Playlist Window

Shortcut	Action
Ins	Add a new category
Del	Delete selected category
Ctrl+F	Open song search dialog
Begin Typing	Open song search dialog
F10	Refresh information

Annex A – Keyboard Shortcuts (continued)

Tracks in Selected Categories Window

Shortcut	Action
Enter	Add selected songs to bottom of queue list
Ctrl+Enter	Add selected songs to top of queue list
Ctrl+O	Add files
Ctrl+D	Add directory
Ctrl+U	Add URL
Ctrl+L	Add Playlist
Del	Remove selected song(s)
Shift+Del	Crop
Ctrl+Del	Clear category
Ctrl+F	Song search dialog
Begin Typing	Song search dialog
Ctrl+R	Shuffle
F10	Refresh
Ctrl+A	Select all
Ctrl+I	Invert selection
Alt+3	Song information editor

Queue Window

Shortcut	Action
Enter	Play next (double mouse click also has this function)
Ctrl+N	Choose next
Ctrl+O	Add files
Ctrl+D	Add directory
Ctrl+U	Add URL
Ctrl+L	Add playlist
Ctrl+M	Opens the soundcard recording configuration
Del	Remove selected song(s)
Shift+Del	Crop
Ctrl+Del	Clear Queue
Ctrl+S	Save queue to file
Ctrl+F	Song search dialog
Begin Typing	Song search dialog
Ctrl+R	Shuffle
F10	Refresh
Ctrl+A	Select all
Ctrl+I	Invert selection
Alt+3	Song information editor
Ctrl+Shift+Del	Remove a song completely from the database

Annex A – Keyboard Shortcuts (continued)

History Window

Shortcut	Action
Enter	Add selected song(s) to bottom of queue
Ctrl+Enter	Add selected song(s) to top of queue
Ctrl+F	Song search dialog
Begin Typing	Song search dialog
Alt+3	Song information editor
F10	Refresh

Request Window

Shortcut	Action
Enter	Add selected request(s) to bottom of queue
Ctrl+Enter	Add selected request(s) to top of queue
Del	Ignore (remove) selected request(s)
Ctrl+Del	Ignore all requests (Clear)
Alt+3	Song information editor
F10	Refresh

Voice FX Window

Shortcut	Action
Shift+F11	Locks VoiceFX for talking. Pressing F11 or Shift+F11 again unlocks the VoiceFX
F11	Press to talk button. Turns on Mic power if needed

PAL IDE Window

Shortcut	Action
F1	Load PAL reference guide
Ctrl+O	Open new PAL script
Ctrl+S	Save current PAL script
F9	Run
F8	Run line-by-line
Ctrl+F9	Compile
Ctrl+F2	Program reset

spacial.™



Website: spacial.com
Email: support@spacial.com
Support: support.spacial.com

USA:
Spacial Audio Solutions, LLC
15303 Ventura Blvd.,
Suite 1500
Sherman Oaks, CA 91403-3137
USA

SOUTH AFRICA:
107 Haymeadow Crescent
Block 1, Boardwalk Office Park
Pretoria, Gauteng. 0043
South Africa

CANADA:
1440, Sainte-Catherine West
Suite 1200
Montreal, QC H3G 1R8
Canada

MAURITIUS:
8th Floor Business Centre
Bramer House
Cybercity, Ebène
Mauritius

<http://spacial.com>

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