

OVERVIEW

This feature provides music or tone to a station or line that is held by a station with Line Hold or Consultation Hold and the speech path is released.

The system has a total of fifteen sources controlled by the Media server. The system administrator may select from these fifteen Music on hold (MOH) WAV files, and quiet tone.

The Selection of MOH depends on the station to hear it and is selected in the following units.

Type of Party on Hold	MOH Selection Per
IPedge/VIPedge	System
SIP Trunk, / ISDN CO/ ISDN Trunk via FXO gateway (Incoming)	DID Number
SIP Trunk, ISDN CO/ ISDN Trunk via FXO gateway (Outgoing)	Outgoing Line Group

The music sources will “loop” continuously. Whenever the music is requested to start, it will start at the beginning of the file.

IPedge systems with R1.5.1 and later software have the option to start the music at a random position instead of the beginning. The file will play to the end then “loop” to the beginning of the file. Random start is not available on VIPedge systems.

The following table shows the Music number assignment. The same number is used for Back Ground Music (BGM) selection.

Music Number	Source
1 through 15	Music (WAV file on Media Server)
Quiet Tone	Media Server

Note: VIPedge System characteristics:

- BGM is available on IPedge systems only
- MOH files are uploaded to the cloud (45M max.)
- Random start is not available on VIPedge systems
- Music is not backed up on the server - users must keep local backup copies

Important! Music On Hold file names must be alpha-numeric characters only. Do not include special characters (examples -, _, &). Only letters and numbers can be used in the MOH file names.

Music/Messages On Hold

This feature provides music or a tone to a station or line that is held by a station with Line Hold or Consultation Hold and the speech path is released.

The Media Server has a total of fifteen (15) music sources plus Quiet Tone. The system administrator selects from these 15 internal WAV files on the IPedge/VIPedge system music sources, and quiet tone. Administrators may upload their own WAV files to the system.

IPedge systems with 1.5.1 or later software have the "Random" option for Music on Hold (MOH) that allows callers, when placed on hold to start listening from a different location within the recorded music on hold file every time they are put on hold, rather than always starting at the beginning. IPedge default to always starting at the beginning. This selection can be chosen when uploading the MOH file. Starting at the beginning allows the recording to begin with "thank you for waiting." Random, similar to the continuous loop, allows the recording to contain a series of messages, and callers can hear different parts of the messages when they are put on hold at different times. The file will play to the end, then "loop" to the beginning of the file.

Random start is not available on VIPedge systems.

Important! Music On Hold file names must be alpha-numeric characters only. Do not include special characters (examples -, _, &). Only letters and numbers can be used in the MOH file names.

Music on hold

MOH provides audio to a person while they are on hold. MOH may also be provided to calls transferred by voice mail (Messaging) and calls waiting in queue in the optional ACD service.

PROGRAMMING

Login to Enterprise Manager for your system.

Select Station MOH Source

1. Click on **System > System Data**.
2. Select the Server from the dropdown.
3. Select the Station MOH source (Silent Tone, or 1-15).
4. Click on **Save** icon or for multi-node IPedge systems select **Apply To** in order to assign the parameter to multiple servers.

Note: Each server will require its own MOH files.

Assign Auto Camp On to an OLG

1. Click on **Trunk > Trunk Groups**.
2. Check the OLG to be programmed.
3. Click on **Edit** icon.
4. Select Show Advance Configuration.
5. Assign the MOH Source for this OLG. Default is Music 1.
6. Click on **Save** icon.

Assign Auto Camp On to a DID.

1. Click on **Trunk > Trunk Groups**.
2. Check the DID to be programmed.
3. Click on **Edit** icon.
4. Assign the MOH Source for this DID. Default is Music 1.
5. Click on **Save** icon.

Music on Hold File Upload

Login to Enterprise Manager.

1. Select **Application > Webmin**. Select the server.
2. Select **IPedge > Upload/Download MOH Files**.
3. Select the **Upload to server tab**.
4. Enter path names or browse to the file for each MOH file you want to upload.
5. Click on the **Upload** button.

Music on hold File Formats

The audio files may be named anything (as long as they end with .wav). Supported audio wav files are shown in the table below.

Digitizing Method	Sampling Rate (kHz)	Resolution (Bits)	Bit Rate (Kbps)
OKI ADPCM	6	4	24
OKI ADPCM	8	4	32
G.711 PCM A-law and mu-law	6	8	48
(Sheet 1 of 2)			

Digitizing Method	Sampling Rate (kHz)	Resolution (Bits)	Bit Rate (Kbps)
G.711 PCM A-law and mu-law	8	8	64
Linear PCM	8	16	128
Linear PCM	11	8	88
GSM 6.10 full rate (Microsoft format)	8	value ignored	13
G.726 bit exact	8	2	16
G.726 bit exact	8	4	32
(Sheet 2 of 2)			

MOH COMPATIBLE WAV

The Media Server (MS) is specified to handle up to 15 MOH audio WAV files so more could be created by adding WAV files to its MOH number directory. For example; /usr/gemini/ms/moh/15.

The audio files may have any name, provided the MOH filename extension is **.wav**

IPedge systems with R1.5.1 and later software have the option to start the music at a random position instead of the beginning. The file will play to the end then "loop" to the beginning of the file. The start at beginning or random start is controlled by the file name. The file name for random start is case sensitive. The 'R' in Random must be upper case. The next five letters (andom) must be lower case. Examples are shown below

- A file named **xxxxxx.wav** will always start at the beginning of the file.
- A file named **Randomxxxxxx.wav** will start at a random point in the file.

Random start is not available on VIPedge systems.

Important! Music On Hold file names must be alpha-numeric characters only. Do not include special characters (examples -, _, &). Only letters and numbers can be used in the MOH file names.

CONVERT MP3 TO WAV

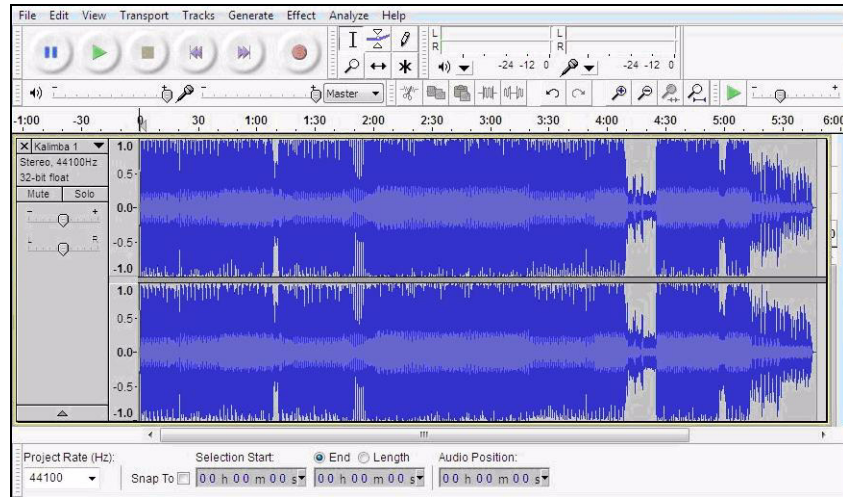
An MP3 file may be converted to a compatible WAV file for use as a MOH source. One method is by using a free, open source program called Audacity® available here: <http://code.google.com/p/audacity/>

Audacity is a trademark of Dominic Mazzoni.

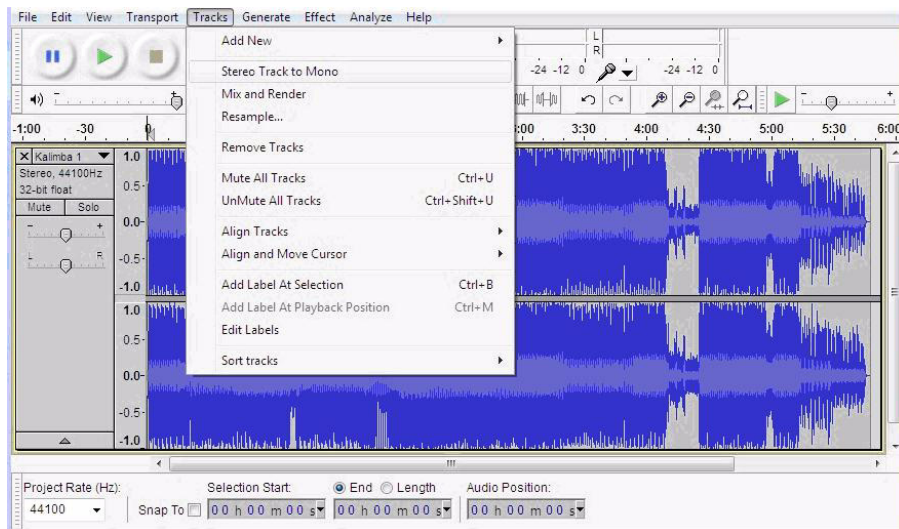
Note: Run the MP3 to WAC conversions on an administration PC, not the IPedge server.

The following procedure shows the MP3 to WAV conversion using Audacity.

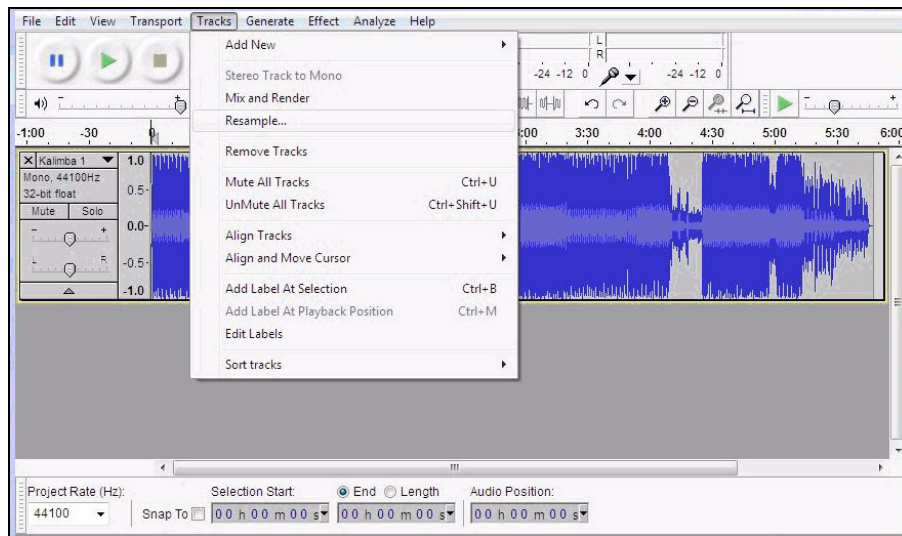
1. After installation, open the MP3 file for conversion in Audacity:



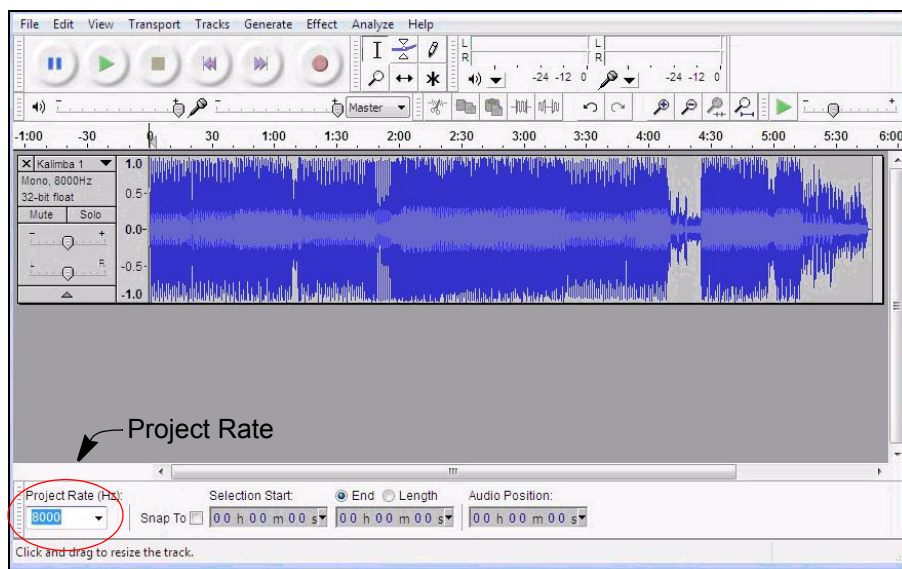
2. Nearly every MP3 file will be in stereo (as shown.) Convert the file from stereo to mono: click on the wave editor and select **Tracks > Stereo Track to Mono**.



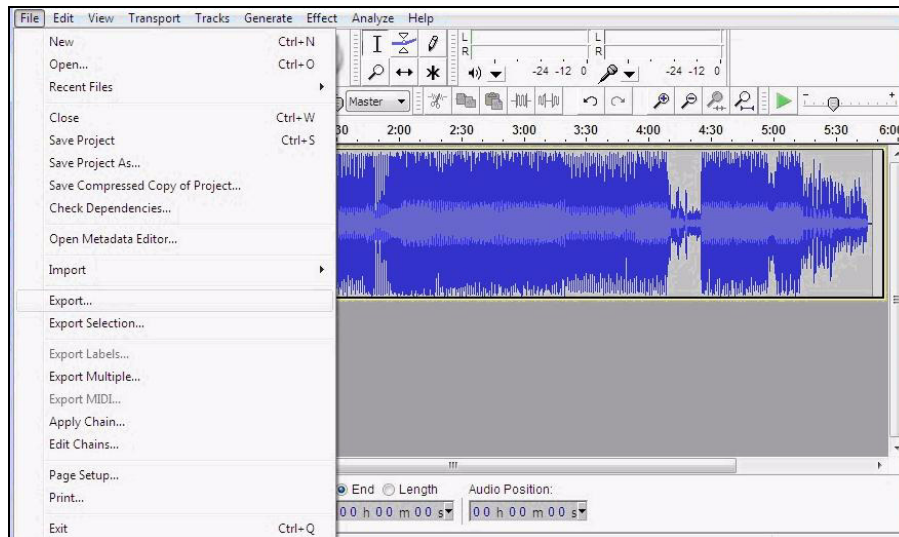
3. Resample the file: select **Tracks > Resample**. Set select **8000** from the dropdown.



4. In the lower left toolbar, change the Project Rate to **8000 Hz**:



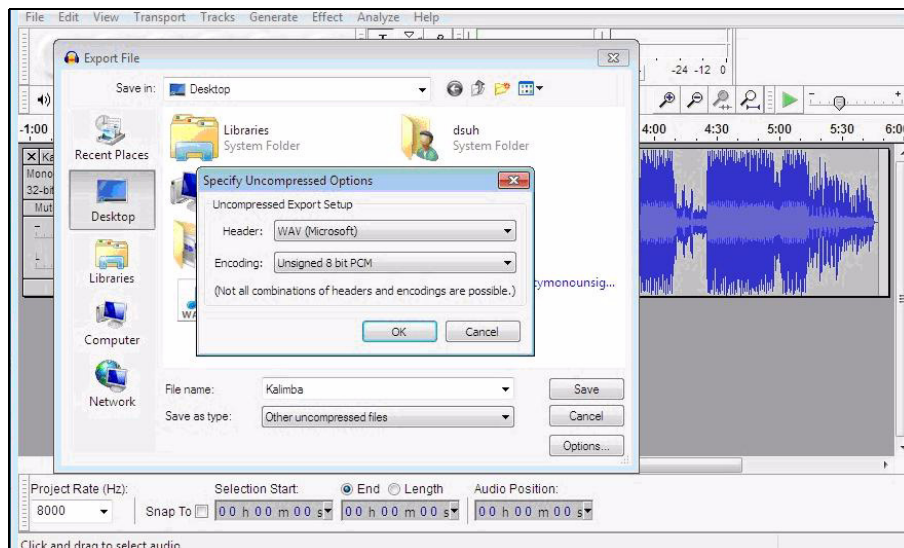
5. Select **File > Export** to save the file.



6. In the Export dialog enter the name for the file in the File name field.

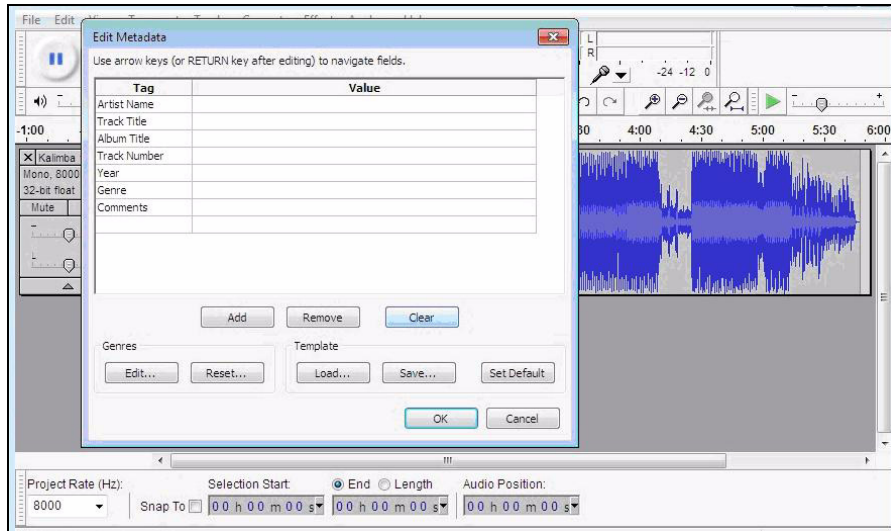
7. In the Save as type field select **Other uncompressed files** then click **Options**.

- For R1.2 and later systems select
 - Header: WAV (Microsoft)
 - Encoding: **Signed 16 bit PCM**.
- For R1.1.2 (and earlier) systems:
 - Header: **WAV (Microsoft)**
 - Encoding: **Unsigned 8 bit PCM**



8. Click **Save**.

9. In the last dialog box, click **Clear**, then **OK**.



Adjusting MOH Volume

Use Audacity to adjust the volume using the **Effect > Amplify** function after the MOH file is loaded into the Audacity application.

UPLOAD WAV TO IPedge/ VIPedge

Upload the WAV file to the IPedge or VIPedge server using Webmin.

1. Login to Enterprise Manager. Select **Application > Webmin**.
2. Select the server or customer.

3. In Webmin select **IPedge > Upload/Download MOH Files**.

TOSHIBA

Upload and Download Music On Hold Files

Login: Advanced

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 - Program Update RPMS
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Upload to server | Download from server

This page allows you to upload one or more MOH (Music On Hold) files from the PC hosting the IPedge Enterprise Manager application. For a list of supported audio .wav file format, please refer to the Feature Description documentation under the Music on Hold section.

Upload files to server

Files to upload	MOH 1	MOH 2	MOH 3	MOH 4	MOH 5	MOH 6	MOH 7	MOH 8	MOH 9	MOH 10	MOH 11	MOH 12	MOH 13	MOH 14	MOH 15
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	<input type="button" value="Browse..."/>	<input type="button" value="Browse..."/>	<input type="button" value="Browse..."/>	<input type="button" value="Browse..."/>	<input type="button" value="Browse..."/>	<input type="button" value="Browse..."/>	<input type="button" value="Browse..."/>	<input type="button" value="Browse..."/>	<input type="button" value="Browse..."/>	<input type="button" value="Browse..."/>	<input type="button" value="Browse..."/>	<input type="button" value="Browse..."/>	<input type="button" value="Browse..."/>	<input type="button" value="Browse..."/>	<input type="button" value="Browse..."/>

Reset MOH to Factory Defaults

WARNING: Resetting MOH will replace all MOH Music files with Factory Default Music files.

4. Click on the **Browse** button next to the MOH number for this file.
5. Select the WAV file converted in Audacity.
6. Click on the **Upload** button.

Important! Music On Hold file names must be alpha-numeric characters only. Do not include special characters (examples -, _, &). Only letters and numbers can be used in the MOH file names.

BACKUP

The Music on hold files are not part of the System Backup. Toshiba recommends that you maintain a backup of the MOH files that were uploaded to the IPedge/VIPedge server in a secure location.

CAPACITY

The number of stations and circuits hearing each MOH is up to the number specified by media Server Generic. However, the number hearing MOH simultaneously decreases by using other MOH, BGM, or paging.

AVAILABILITY

See table below for MOH availability.

Station/Line	Descriptions
IPT	Applied for both holding party and held party
Soft IPT	Applied for both holding party and held party
IP Attendant	Applied for holding party Applied for held party if attendant is talking to the remote node party
SIP Compliant Station	Applied for both holding party and held party
SLT (via FXS Gateway)	Applied for both holding party and held party
Paging Device (via FXS Gateway)	Applied for held party
SIP trunk	Applied for held party
IPedge Net	Applied for held party
ISDN Trunk (via FXO Gateway)	Applied for held party
T1 Trunk (via FXO Gateway)	Applied for held party

**RESTRICTION/
CAPABILITIES**

The music source is Media Server only. MOH, BGM and paging hunt for an available Media Server resource.

If a call is placed on hold and no media resource is available, no tone or music is played.

External devices cannot connect as a music source. Only files on the Media Server may be a music-on-hold source.

Hold Tone is provided from the system in which the call is held.

Note: Music files played in systems using G.729 are highly compressed. Toshiba recommends selecting music with a slow to moderate tempo and limited tone range.

All audio filenames must have the **.wav** file extension.

IPedge systems with R1.5.1 and later software have the option to start the music at a random position instead of the beginning. The file will play to the end then "loop" to the beginning of the file. The start at beginning or random start is controlled by the file name.

HARDWARE

No additional hardware is necessary for this feature.

FEATURE INTERACTION

Audible Tone	<p>By setting the Music on hold feature, Quiet Tone is provided automatically when Consultation Hold or Line Hold is invoked.</p> <p>If the administrator sets Quiet Tone as MOH, then it is provided automatically when Consultation Hold or Line Hold is invoked. If the administrator sets other music sources as MOH, then the user does not hear Quiet Tone but hears music.</p>
Backup	<p>The Music on hold files are not part of the System Backup. Toshiba recommends keeping a local backup copy of all MOH files uploaded to the IPedge/VIPedge server.</p>
Basic Survivability	<p>Survivability, and the interaction with MOH, in this section refers only to IPedge systems. If the party with a call on hold switch over to another IPedge server, it cannot retrieve the held call because it belongs to the new server. When switchover is caused by the network, the call is transferred if the Consultation hold party goes switchover.</p> <p>If the network causes the held call to be disconnected and the held party goes switchover when the held party detects link down then MOH is stopped. When the holding party is connected via IPedge, the held call is disconnected and the held party goes switchover when the server held party goes down and MOH is stopped.</p> <p>The held party disconnects immediately and goes switchover if media resource is exhausted and the held party does not hear MOH.</p> <p>Holding a call during Speech Path Survivability is not supported.</p>
Call Park Orbits	<p>The Held party hears MOH while the call is parked.</p>
Call Transfer Immediate Ring Transfer	<p>After a successful Transfer, the Transferred party hears Ring Back Tone or MOH, per the setting. The Transferred party hears either external or internal hold tone per the setting of MOH relating to the line type of Transferred party.</p>
Call Transfer With Camp On	<p>After Call Transfer with Camp On is established, the Transferred party hears Ring Back Tone or MOH, per the setting. If set to MOH, the Transferred party hears hold tone, per the setting of MOH relating to the line type of the Transferred party.</p>
Conference Split/Join/Drop	<p>By setting the Music on hold feature, only one party will hear MOH. When a third party joins the conference then the conference is heard.</p>

Consultation Hold	The party held by the Consultation Hold feature may hear Music on hold.
Direct Inward Dialing (DID)	The music source may be specified per the DID number.
Direct Inward Termination (DIT)	If the gateway may convert from DIT termination to DID termination the system may specify MOH per DID number.
Exclusive Hold	An Exclusive hold party hears MOH when the Exclusive Hold feature is invoked.
Line Hold	The Held party hears MOH if Line Hold feature is invoked.
Outgoing Call	The music source may be specified per the OLG number.
PC Attendant	<p>While Attendant is in Attended mode, Attendant cannot be held by stations in the local node. However, Attendant may be held by stations in the remote node. If Attendant is held, then the behavior is the same as IPT.</p> <p>While Attendant is in Position Busy or Position Busy Pending mode, the behavior is the same as IPT.</p>
Prime DN, Phantom DN, Group CO, and Pooled Line Buttons	When talking by using a line button, MOH may be heard by the held party if Line Hold or Consultation Hold is invoked.
Private Networking Over IPedge Net	<p>When an extension station holds the incoming call from an IPedge line (Line Hold, Exclusive Hold, Consultation Hold, Call Park), the music-on-hold source is at the node where the extension station holding the call belongs.</p> <p>For a call connected via IPedge Net and terminated by dial-in from an incoming gateway, the MOH source is specified by the incoming gateway. When the terminating node holds this call, the specified music-on-hold source is used. The information on this music-on-hold is not transferred when the call is transferred to another node.</p> <p>When a station makes an outgoing call through IPedge, if it is obvious that the far end is an external party, the music-on-hold source defined as a default per the OLG at the originating node is used. If the type of far end is ambiguous or other than external parties, the music-on-hold source defined as system default at the holding node is used.</p> <p>When no music-on-hold source is specified, the call is not a dial-in call or the call is connected via a non-IPedge Net, the default music-on-hold is used.</p>

Recall Treatment	When a call is not attended for a certain period, it recalls the station which handled the call last. If MOH was heard at the beginning, it will continue to be heard.
SIP Trunking	A Music source may be specified per each DID number.
Universal Call Distribution (UCD)	The originator calling UCD overflow destination hears MOH if the destination is busy. The type of MOH depends on the programming per the line of overflow destination.