



# IP Office - Job Aid

## Music on Hold

### **Summary**

This document covers how music on hold works on the IP Office and the sources from which music on hold can be provided.

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# IP Office Music on Hold (MOH)

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## Introduction

The IP Office can provide music on hold (MOH) in one of two ways:

- **Internal MOH:**  
During a reboot, the IP Office downloads a .wav file called holdmusic.wav from Manager. Note: Internal music on hold is not supported by the IP401.
- **External MOH:**  
Connect an audio source to the 3.5mm audio port on the back of the IP Office control unit.
  - If an internal MOH file has been downloaded, the IP Office will not recognize any external MOH input until it is rebooted without the internal MOH file.

This document looks at various aspects of these two MOH options.

- **Note:** You must ensure that any MOH source you use complies with copyright, performing rights and other local and national legal requirements.

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## Checking Music on Hold

The IP Office has a default system short code that allows you to listen to a system's current music on hold.

1. At an idle extension, dial **\*34**.
2. You will hear the system's music on hold.

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## External Music on Hold

The Audio port of the IP Office control unit is a standard 3.5mm audio jack socket. It accepts input using standard 3.5mm audio stereo or mono jack plugs.

- **? Can I connect a personal music player**  
Yes if it has an auto-repeat mode. Simply connect the headphone sockets to the IP Office audio port. Note however that these devices are not normally designed for continuous 24/7 operation.
- **? What device should I use**  
We recommend that you use a dedicated hold music device. These are available from most telecommunications installers and distributors.
- **? Can I Use Internal Music on Hold as well**  
No, the IP Office only allows one music on hold source. If it downloads an internal music on hold file it will ignore any input from the Audio port. To remove the internal music on hold file, you must delete 'holdmusic.wav' found in the Manager program folder and reboot the IP Office.

The IP Office audio port accepts a maximum 200mV RSM input and provides an impedance of 10kΩ per channel.

## Internal Music on Hold

The IP Office supports internal music on hold by using a .wav audio file that it downloads during a reboot. Note: Internal music on hold is not supported by the IP401.

The preferred<sup>1</sup> .wav file properties are:

- PCM, 8kHz 16-bit, mono.
- Maximum length 30 seconds.
- **? How do I get a suitable .wav file**  
There are many suppliers of music on hold files. Though many of these require a single payment they are then free of copyright and public performance issues. Do an internet search on MOH and 'wav'.
- **? How do I check and change my .wav files**  
Use Windows Sound Recorder to check and change the .wav files properties. Select Start | Programs | Accessories | Entertainment | Sound Recorder.
  - Open your .wav file and then select **File | Properties** to view its properties. Use **Convert Now** to change the properties to those required by IP Office.
  - If the file is too long, you can use the slider and the Edit | Delete After Current Position option to shorten the file.
  - Use **Save as** and rename the file as **holdmusic.wav**.
- **? How do I download the file to the IP Office**  
Use the following process:
  - Copy the .wav file to the IP Office Manager folder (c:\Program Files\Avaya\IP Office\Manager) and name it holdmusic.wav.
  - Select View | TFTP Log and arrange the windows so that you can see it and Manager at the same time.
  - Use File | Advanced | Reboot to send a reboot command to the IP Office. You will be asked for the system password.
  - During the reboot, in the TFTP Log you should see a request for holdmusic.wav and the file then being downloaded.
  - Following the reboot you should be able to test the music on hold by dialing \*34 at an extension.
- **! I do all the above but the file isn't downloaded**  
If running Manager over a WAN link, a RAS connection or from different LAN domain, then the default TFTP request for the music on hold file during reboot won't work. See "Internal MOH and Remote Maintenance".

### Notes:

1. *The IP Office will accept .wav files in other formats and then attempt a suitable conversion. However the results and range of formats that it will convert cannot be guaranteed. Additionally, higher quality audio .wav files will have larger file sizes that lengthen the reboot time whilst losing the extra quality after conversion.*

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## Internal MOH and Remote Maintenance

During its reboot the IP Office sends a broadcast TFTP request for the `holdmusic.wav` file.

Since it is a broadcast request it won't be forwarded by any network routers. Also because the IP Office is rebooting, any existing WAN or RAS connection is broken until the reboot is complete.

There are two possible resolutions (apart from using external music on hold).

- **If the Manager PC is on a LAN connection to the IP Office:**  
In the IP Office configuration, set the TFTP Server Address on the System form to the IP Address of the PC running Manager.
- **Run a Second TFTP Server on the Same LAN as the IP Office:**  
Using a second TFTP server with a copy of ***holdmusic.wav*** file in its file directory and on the same LAN as the IP Office, ensures that the file is available to the IP Office during its reboot.
  - **Use Manager:**  
Install a second copy of Manager on the IP Office's local LAN and set this copy of Manager to run permanently. Whilst remote maintainers may frown upon this, we always recommend that Manager is installed somewhere on the IP Office local LAN to support local maintenance when remote connection is not working.
  - **Use another TFTP Server Program:**  
Any TFTP server can be used to provide the ***holdmusic.wav*** file. We have tested operation with **TFTP32** (<http://tftp32.jounin.net> - disable its DHCP after install) and **TFTP Server 2000** (<http://support.avaya.com>).

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