



A U D I O

Service Bulletin

Title: **Using TFTP to Upcode CM16a Firmware**
Bulletin #: CM160005 Issue Date: July 24, 2002
Models Affected: CM16a Bulletin Revision: B

Description:

The firmware of a CM16a Amplifier Network Monitor unit can be upgraded while the unit is running on a network or locally at the unit itself, using the TFTP utility that is built into Microsoft Windows NT, 2000 and XP operating systems (OS). This help document is based on these OSs. The QSCControl System Manager application contains the latest CM16a firmware version as of the application's release. For instructions on determining the version of the firmware file that you have, go to step 5 of the following Procedure. After obtaining the latest file, complete the procedure below to upgrade the firmware in a CM16a unit.

Instructions:

Tools and materials required:

- A computer (PC) with the following minimum requirements:
 - Network Card: 10/100BASE-T (and Ethernet Card Media Coupler for UTP cable if using a laptop computer)
 - Network Configuration: TCP/IP host
 - Operating System: Windows NT-4 (SP-6), Windows 2000 (SP-2) or XP
- An RJ-45 terminated CAT-5 UTP network cable: standard type for network connection or crossover type for node-to-node connection
- TFTP utility (this should be included in the OSs listed above)
- QSCControl System Manager application or the most current CM16a firmware file
- The IP address and subnet mask numbers of the CM16a units needing upcoding

Procedure:

1. Power up the devices needed for this procedure (PC, CM16a unit(s) and other QSCControl network devices).
2. Connect the PC to the QSCControl network via a standard UTP CAT-5 network cable or connect the PC to a single CM16a unit directly using a crossover network cable (local programming).
3. Start an instance of MS-DOS. To do this, click Start, point to Programs, then Accessories and click Command Prompt or click Start then Run... and type *command*. You should see a window like that in Figure 1.
4. In order to confirm that the computer is communicating with the CM16a(s), type:

ping xxx.xxx.xxx.xxx

where **xxx.xxx.xxx.xxx** is the IP address of a CM16a unit. Then press ENTER. For example, if a CM16a's IP address is 10.10.4.66, then the command would look like Figure 2.

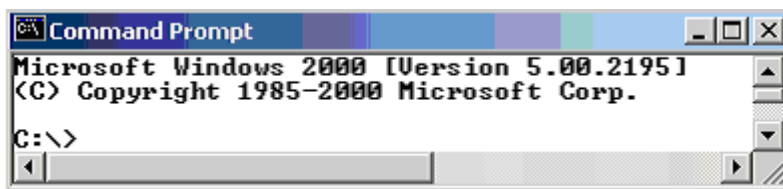


Figure 1. Command Prompt.

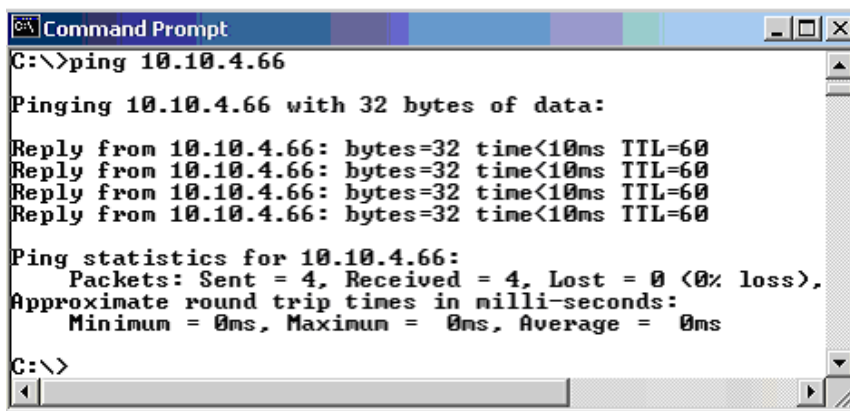


Figure 2. Pinging a CM16a.

If the command line “times out”, then check that the command line was entered correctly, that the IP address of the unit is exact and that the computer is linked to the CM16a or network. If the ping command continues to “time out”, contact QSC Technical Services.

5. Locate the firmware file and determine the version. The default path where the file is located is:

“c:\Program Files\QSC Audio\QSCControl\QSCControl Help”.

In MS-DOS, type:

cd “c:\Program Files\QSC Audio\QSCControl\QSCControl Help”

and press ENTER to change directories (Figure 3). Modify the path if your drive letter is different. If the firmware file is located elsewhere, simply substitute the default path for the path where the file can be found.

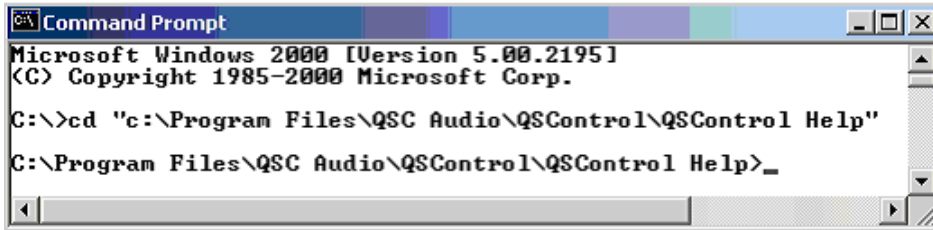


Figure 3. Changing the directory.

and verify that there is an X in the Open Read-only checkbox. If OK is selected as in Figure 4, press ENTER. Otherwise, press the TAB key until OK is selected and then press ENTER. The firmware file will appear and look similar to Figure 5. Three lines down (according to the current firmware file as of the date of this bulletin) you will see some text that reads, “CM16A–APPCODE–VERSION:” followed by the firmware version. If you are unsure whether you have the most recent firmware file, write down the version number and contact QSC Technical Services (see contact information at the end of this document).

*NOTE: CM16a firmware files released prior to version 2.3.0 use the following file name convention: **cm16axxx.hex**, where **xxx** is the three digits of the firmware version.*

6. The firmware file that will be used in the next step has an **.s** or **.hex** extension. If the file name of the firmware is known, skip this step. Otherwise, search the QSCControl help directory in order to identify the file name and extension the firmware file has. The entire file name is needed for the TFTP command. The firmware file in the following example will be **cm16af flash.s**.

7. Next, type:

**tftp xxx.xxx.xxx.xxx put
FIRMWAREFILE cm16a**

where **xxx.xxx.xxx.xxx** is the IP address of the unit being upcoded and **FIRMWAREFILE** is the file being used, then press ENTER.

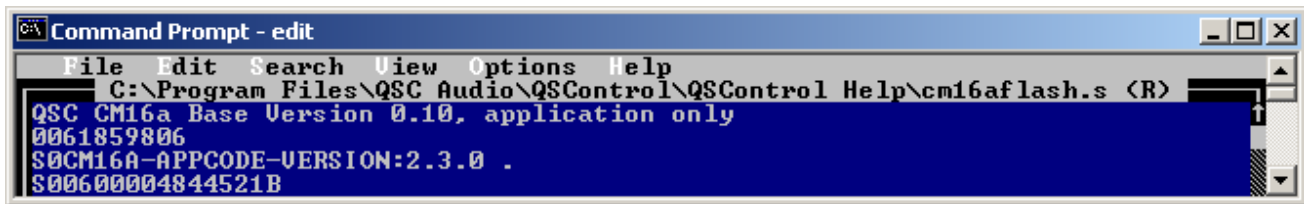
To determine the firmware version, type:

edit.

A menu bar will appear. Press ALT+F, and then press O to open a file in the directory above. Press the TAB key once to place the cursor in the Files box. Use the arrow keys to select the correct file. Then press ALT+R



Figure 4. Opening the firmware file within MS-DOS.



```
Command Prompt - edit
File Edit Search View Options Help
C:\Program Files\QSC Audio\QSCControl\QSCControl Help\cm16af flash.s <R>
QSC CM16a Base Version 0.10, application only
0061859806
S0CM16A-APPCODE-VERSION:2.3.0 .
S00600004844521B
```

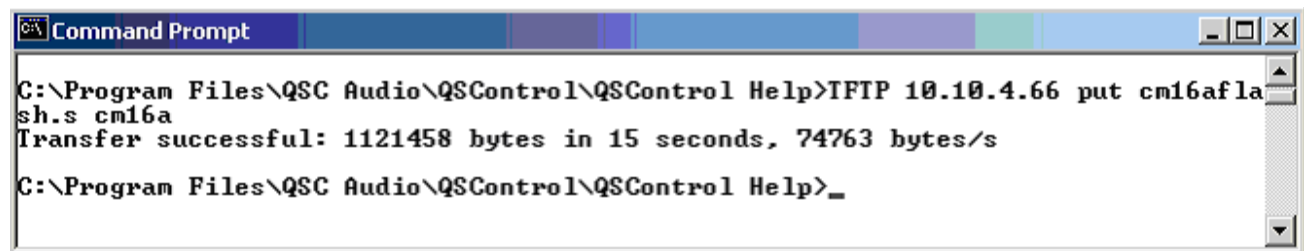
Figure 5. The CM16a firmware version.

For example, the CM16a unit with an IP address of 10.10.4.66 along with the firmware file from above will be used in the following command:

tftp 10.10.4.66 put cm16af flash.s cm16a

After about 20 seconds, the CM16a should reboot and come back on-line successfully. The MS-DOS screen will return a result like that in Figure 6.

- Repeat step 7 for the remainder of the units.



```
Command Prompt
C:\Program Files\QSC Audio\QSCControl\QSCControl Help>TFTP 10.10.4.66 put cm16af
flash.s cm16a
Transfer successful: 1121458 bytes in 15 seconds, 74763 bytes/s
C:\Program Files\QSC Audio\QSCControl\QSCControl Help>_
```

Figure 6. The TFTP command line.

Contact information

If you need any further information regarding this service procedure, please contact QSC Technical Services at the addresses or numbers below. You can also order CM16a parts; to expedite processing please use the correct part number when ordering.

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