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# Technical Bulletin

**Document #:** ETB0036  
**Models:** MA40E  
**Status:** INFORMATIVE

**Revision:** 1.00

**Release Date:** 09/09/19  
**Applicable Serial #:** ALL  
**Recipients:** ALL

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## MA40E FIRMWARE UPDATE V1.7

**Models affected:** MA40E

**Explanation:** New firmware update v1.7

**Build history:**

**V1.7**

Fixed an issue whereby the WebSockets TCP port was not following the HTTP port, under certain conditions, when the HTTP port was changed from the default setting of 80.

**V1.6**

Fix an issue whereby the iOS WebKit CSS3 engine caused corruption of toggles on the web UI, under certain circumstances.

**V1.5**

Fix an issue whereby networks carrying a lot of multicast UDP packets, could effect a denial-of-service issue on regular network traffic.

Fix an issue whereby the DC protect status was not reflected on the web page header, when the page was loaded or refreshed, only if the fault occurred while a page was being viewed.

Fix issue whereby the Speaker EQ enablement query command, always returned enabled, even if Speaker EQ was disabled.

**V1.4**

Fix an issue whereby the Labels could not be edited using Safari browser on macOS or iOS. Also allow the ENTER key to be used to login after entering a PIN.

**V1.3**

Revised DSP software to improve noise performance on some units.

Ensure NVM Reset occurs before FLASH driver mounts the filesystem, otherwise FLASH contents may become inconsistent after an erasure.

**V1.2**

Ensure Serial command <SY,R/> correctly performs a factory reset of the non-volatile settings, as occasionally, this was not getting written through

## V1.1

Ensure DSP is held in mute during APD, and only brought out of mute after the amplifier has stabilised. This prevents transients from erroneously triggering DC protect.

## V1.0

Initial Production Release

### Procedure:

To Update the MA40E unit:

1. Download the firmware update utility for the desired firmware version, from the MA40E product page on the Cloud Electronics website.
2. The MA40E unit should be connected to an Ethernet TCP/IP network, such that it is accessible from a Windows laptop or PC.

New units, in factory state, or unit which are still set to use DHCP-assigned IP addresses, can be connected directly to the Ethernet port of a laptop / PC, and will use Link-local addressing, as long as the laptop or PC has been set to use DHCP. They may also be connected to an existing network with DHCP support, where they will automatically be assigned a suitable address.

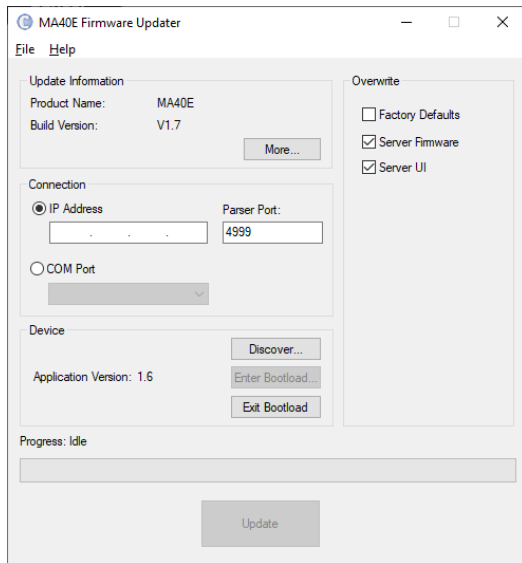
Units which have a STATIC IP, will require the IP address and Subnet mask of the laptop/PC to be setup manually, to reflect a different address on the same subnet, so that network communication can take place between the unit and the laptop/PC.

It is recommended that firmware update is always performed on a lightly-loaded network, for the best performance.

**NOTE:** The MA40E unit, can also be upgraded via its RS232 serial port, using the same Firmware Updater Utility described in this document. Please see the section at the end of this document, for more details.

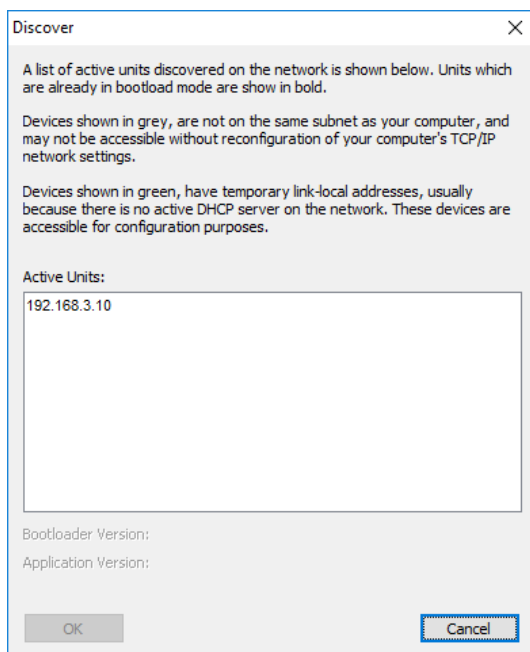
3. The MA40E unit, should be switched on, and be running normally, either in or out of APD state.
4. Run the Firmware Updater Utility .EXE file.

After the splash screen has disappeared, the main firmware update screen will be shown. Version information for the updater will be shown at the top-left of the main window, and details for the firmware build, can be found by clicking the "More..." button:



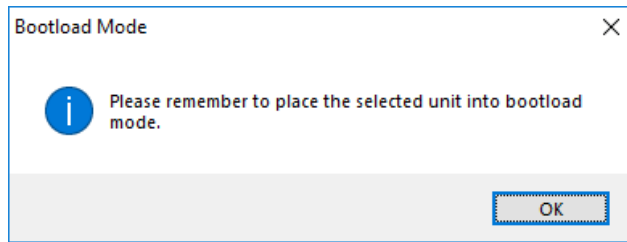
5. Click the “Discover...” button to locate the unit you wish to upgrade.

The discovery dialog will appear, and will list the MA40E units found on the network:



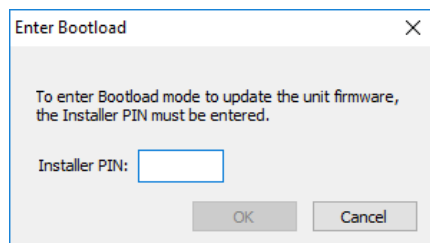
6. If there are multiple entries in the list, identify the unit you wish to update, by double-clicking on it (or selecting it, and pressing the “OK” button)

A dialog box will appear, with a reminder that the unit will need to be put into bootloader mode, before the actual firmware update can take place:

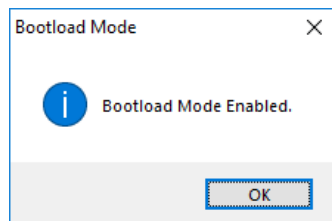


On return to the main application window, the "IP Address" field will be populated with the IP address chosen from the Discover dialog, and the "Enter Bootload..." button should now be enabled.

7. Click on the "Enter Bootload" button, and a dialog box will appear, prompting for the Installer PIN, to unlock the bootloader.



Enter the Installer PIN, and click the "OK" button. After a brief wait, a message should appear, indicating that the unit has entered Bootload mode:



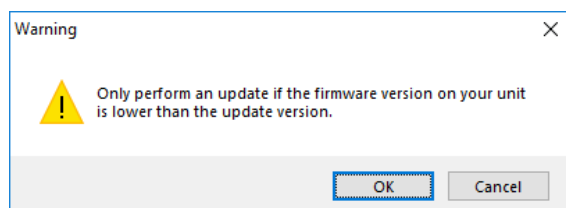
Click on "OK" to dismiss the message. After a further wait, the Enter Bootload dialog box will close, and you will be returned to the main application window. The "Enter Bootload..." button will now be disabled, and the "Exit Bootload" and "Update" buttons should be enabled.

8. During the firmware update procedure, there is the option to return the unit to factory default settings. This can be achieved by checking the "Factory Defaults" checkbox, at the top-right of the main application window.

The "Server Firmware" and "Server UI" checkboxes, should always remain checked.

9. To start the update procedure, click the "Update" button.

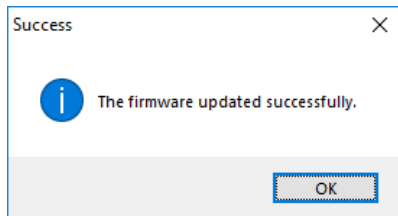
A warning message will appear:



This is the last opportunity to cancel the update. Clicking on the "OK" button, will start the update process.

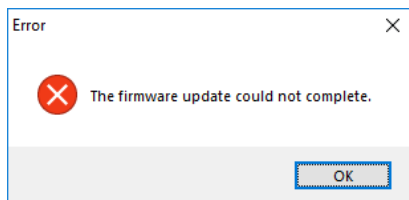
10. The update consists of 3 stages: Server Application, Server UI, and Factory Defaults. A Progress bar will be updated, to indicate progress through the update.

At the end of a successful update operation, the unit should reboot into application mode, and run normally. Additionally, a message will appear in the updater application:



Clicking "OK" will return to the main application window, from where the process can be repeated, if required, for another unit.

If the firmware update fails for any reason, the following message will be displayed:



At this point, the unit will remain in bootloader mode.

If the update process failed right at the beginning, before any actual changes were made, then it should be possible to return the unit to normal operation, by clicking the "Exit Bootload" button on the main application window.

If any changes were made to the unit by the firmware update process, then the unit will not allow a return to normal operation, and will remain in bootloader mode, until a successful firmware update is complete. The firmware update process, as described in this document, should be repeated.

If the network to which the unit is connected, is carrying a lot of network traffic, then this may impair the ability to carry out a firmware update. If the firmware update process seems unnecessarily slow, or prone to repeated failure, it is recommended that the unit is removed from the main network, and placed on an isolated network, to minimise unnecessary traffic.

### Using an RS232 serial connection to upgrade the firmware

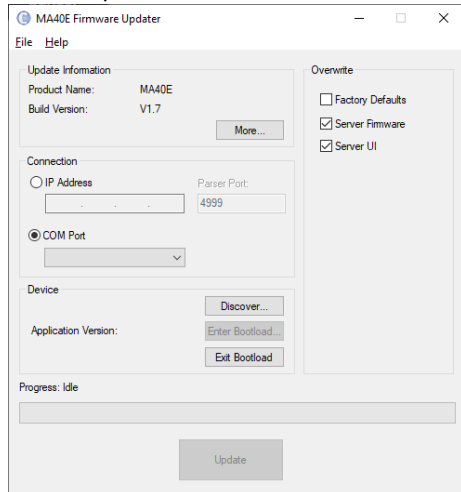
If a network connection is not available, or cannot be configured correctly, then an RS232 serial connection may be used to upgrade the firmware, via a COM port on the laptop/PC. This method will require a USB serial port adaptor, as most modern computers no-longer feature a hardware COM port. It will also require an RS232 cable compatible with the 3-pin connector on the rear panel of the MA40E unit, which has a pinout as follows:

PIN	LABEL	FUNCTION
1	0V	Ground
2	RX	Data from MA40E to laptop/PC
3	TX	Data from laptop/PC to MA40E

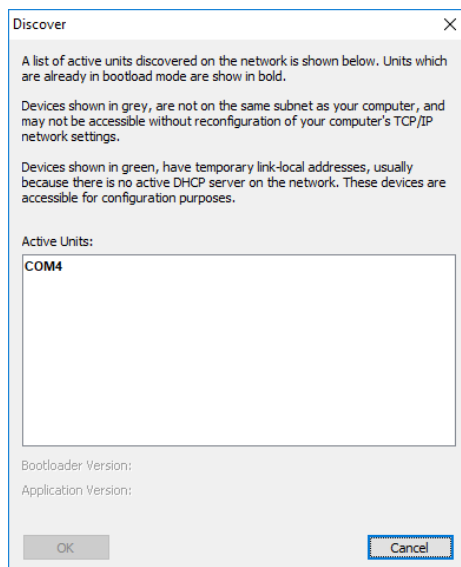
**Note:** The MA40E unit is a DCE (Data Communications Equipment) device, and as such, the RS232 connector pins are labelled from the perspective of the connected laptop/PC. Hence, "RX" is data to be received by the laptop/PC, and "TX" is data transmitted from the laptop/PC.

Once the USB serial port adapter is connected to, and recognised by, the laptop/PC, and the cable is correctly connected to the MA40E unit, the Firmware Updater Utility .EXE can be run.

After the splash screen has disappeared, and the main application window appears, the connection method should be changed from "IP Address" to "COM Port", via the radio group, located at the centre-left of the window, as shown:



The process for upgrading the firmware, given above, can now be followed from Step 5 onwards. Upon clicking the "Discover..." button, instead of IP addresses being shown, a list of COM ports, on which MA40E units have been detected, will be shown, after a few seconds. If there are a lot of COM ports on the laptop/PC, then this process may take a while to scan them:



Alternatively, if the COM port to be used is known in advance, the drop-down list next to the COM Port radio button, can be used to pre-select the desired port, and the "Discover..." button need not be clicked.

Note that the bootloader firmware installed on the MA40E unit, will give priority to whichever transport, Ethernet or RS232, that provides data first, and ignoring all communications on the other transport. For this reason, the MA40E unit, should not be connected to Ethernet during an attempt to update the firmware via RS232 – the Ethernet cable should be temporarily unplugged.