



MOVING IMAGE TECHNOLOGIES INC

Technical Note R000244: IRC-28C Firmware Update Procedure (and workaround) Ver. 2023.05.04

The IRC-28C IR emitter panel can have its firmware updated through the LAN network port.

Important: There was a change that occurred in June 2020 that created a compatibility issue between the firmware versions of the IRC-28C Emitter and the CCR-100 reader. In order for the IRC-28C to be compatible with both the older CCRs as well as newer ones, The IRC firmware should be **v200601** or a larger number (newer date). For more information about this change, see MiT Tech Note R000242.

Updating Firmware on MiT IRC-28C Emitter Panel

Updating the firmware is usually quite easy, by simply connecting to the LAN network port from a PC. Navigate to the Firmware Update page in the web UI (see Figure 1), press “Browse,” then navigate to the folder containing the update firmware file, select it, and then click the “update” button.

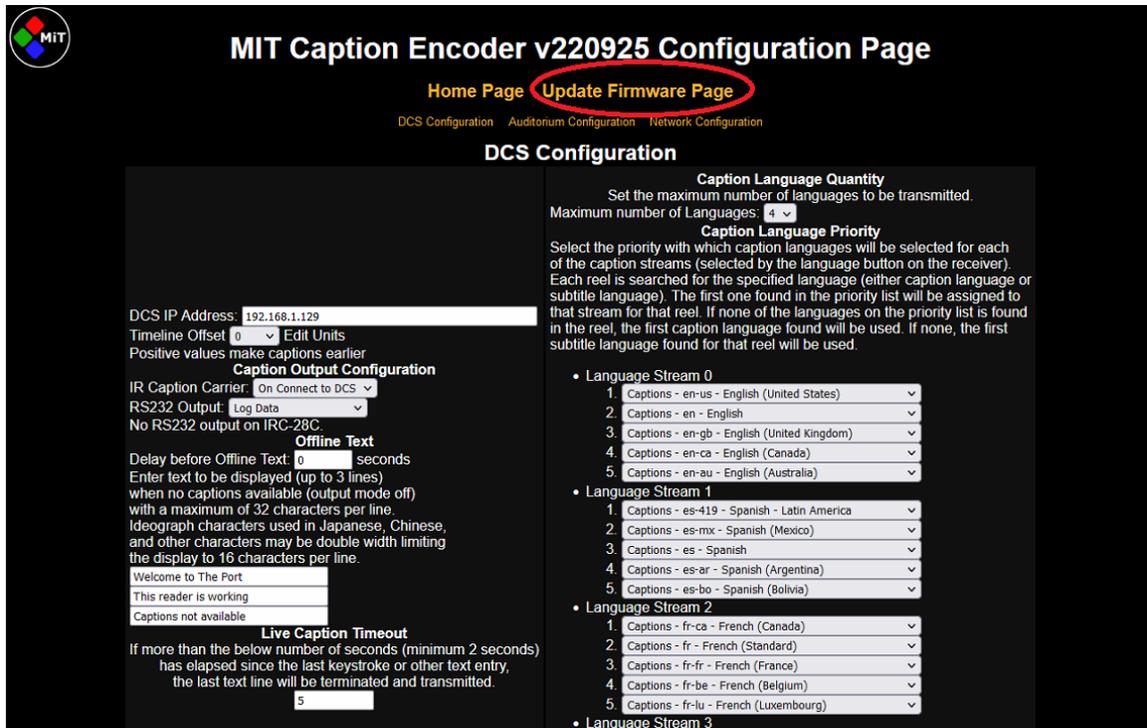


Figure 1:

Update Failure Workaround Instructions

Occasionally there may be a problem installing an update on the IRC-28 when attempting to upgrade firmware version 180222 or earlier to the current release. The remainder of this document addresses workaround procedures in case of problems installing the update.

The failure mode is that after uploading the code file and initiating the update procedure, the web UI does not respond and the update does not “take”. Use the following procedure when experiencing a failure like this. The fix consists of:

- Disabling the “reboot on lease terminate” option if you are currently running FW version 150715 or earlier
- Recording the configuration settings of the unit
- Resetting the unit to its factory default condition
- Restoring the configuration settings of the unit

Each of these items is discussed in its own section below.

1 – Disable “reboot on lease terminate” option, if applicable

If you are running an IRC firmware version from 101223 to 150715 and trying to install an update, you may experience a failure of the update because the device may reboot during the update process. In these cases you should go to the Configuration page and turn off the "reboot on lease terminate" option, and try the update again (see Figure 2). If this is not applicable because your unit is already on version 150715 or later, or it fails for other reasons, proceed to the next step.

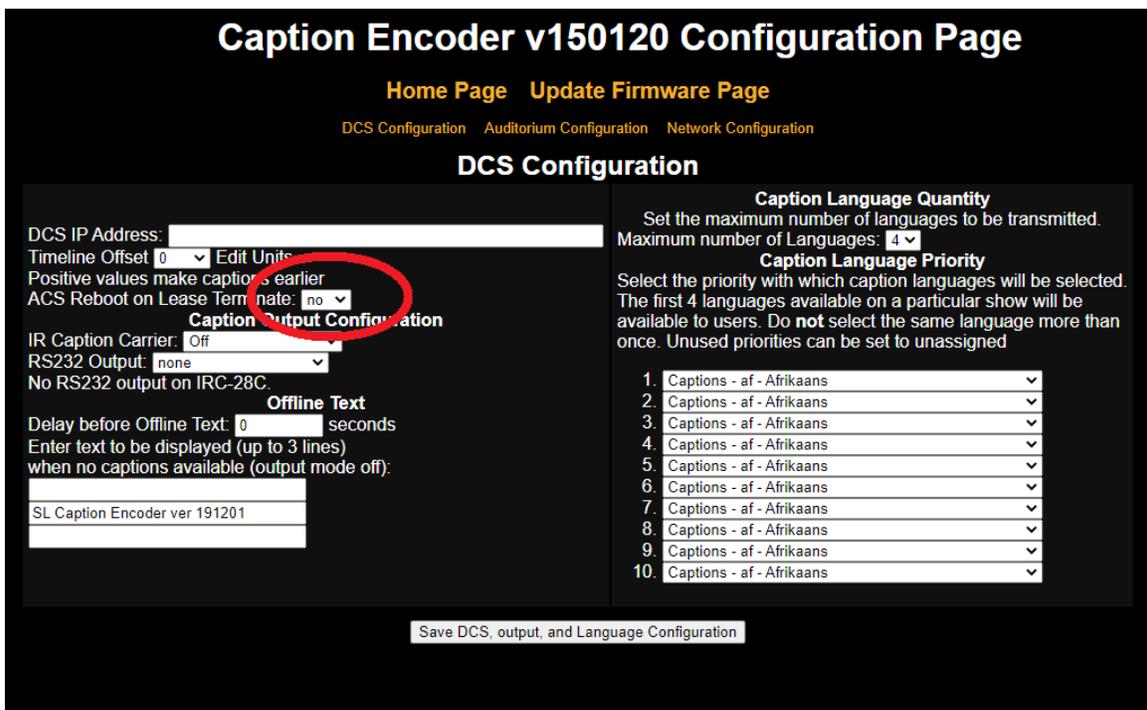


Figure 2: Disable Reboot on Lease Terminate

2 – Recording Settings

The IRC-28C's software does not have the ability to download its configuration settings as a file and upload them again later, meaning that you will have to note the settings manually. Taking screenshots using Windows Snipping Tool is a quick and easy way to do this. You will need to note or record the settings from the three configuration pages: DCS (Digital Cinema Server) Configuration, Auditorium Configuration, and Network Configuration. (links highlighted below in Figure 3, and the other configuration pages shown in Figs 4, and 5).



MIT Caption Encoder v220925 Configuration Page

[Home Page](#) [Update Firmware Page](#)
[DCS Configuration](#) [Auditorium Configuration](#) [Network Configuration](#)

DCS Configuration

DCS IP Address:

Timeline Offset: [Edit Units](#)
 Positive values make captions earlier

Caption Output Configuration

IR Caption Carrier:

RS232 Output:

No RS232 output on IRC-28C.

Offline Text

Delay before Offline Text: seconds
 Enter text to be displayed (up to 3 lines) when no captions available (output mode off) with a maximum of 32 characters per line. Ideograph characters used in Japanese, Chinese, and other characters may be double width limiting the display to 16 characters per line.

Live Caption Timeout

If more than the below number of seconds (minimum 2 seconds) has elapsed since the last keystroke or other text entry, the last text line will be terminated and transmitted.

Caption Language Quantity

Set the maximum number of languages to be transmitted.
 Maximum number of Languages:

Caption Language Priority

Select the priority with which caption languages will be selected for each of the caption streams (selected by the language button on the receiver). Each reel is searched for the specified language (either caption language or subtitle language). The first one found in the priority list will be assigned to that stream for that reel. If none of the languages on the priority list is found in the reel, the first caption language found will be used. If none, the first subtitle language found for that reel will be used.

- Language Stream 0
 1.
 2.
 3.
 4.
 5.
- Language Stream 1
 1.
 2.
 3.
 4.
 5.
- Language Stream 2
 1.
 2.
 3.
 4.
 5.
- Language Stream 3

Figure 3: DCS Configuration

Caption Encoder v180222 Configuration Page

[Home Page](#) [Update Firmware Page](#)
[DCS Configuration](#) [Auditorium Configuration](#) [Network Configuration](#)

Auditorium Data

Theater Name:

Theater Number:

Screen Number:

AES Source:

ProcessorType:

HI System:

VI-N System:

Comments:

Figure 4: Auditorium Configuration

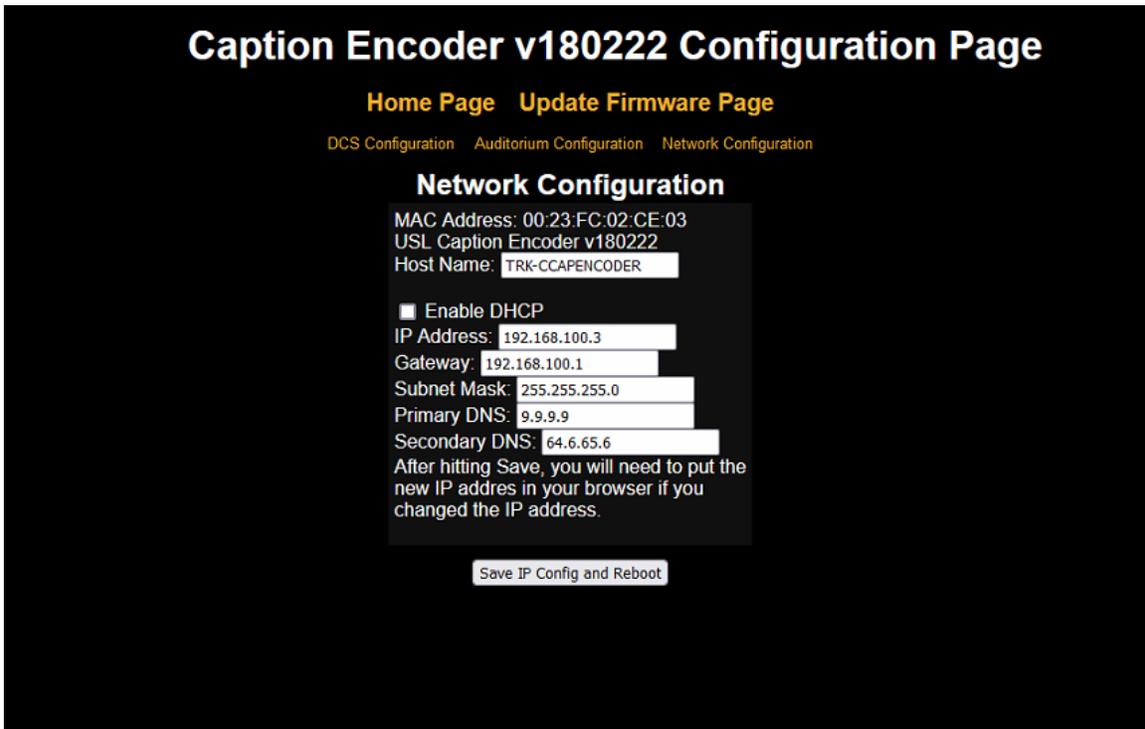


Figure 5: Network Configuration

3 – Resetting the Unit

Loosen the four screws holding the protective outer cover on the front of the unit (one of them is highlighted in white in Figure 6), and gently remove the cover. It isn't necessary to remove the screws completely. Be careful not to touch the exposed infrared diodes while the cover is off (See Figure 6).

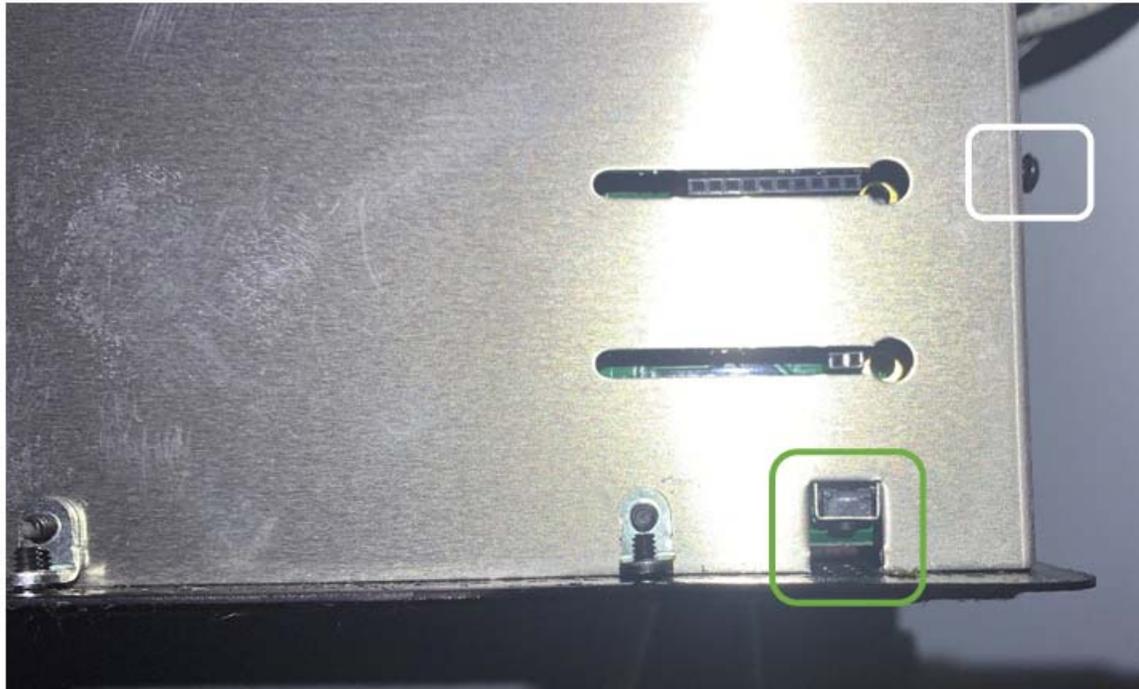


Figure 6

Unplug the network cable and the green Phoenix connector from the rear of the unit. This will remove power from the unit. Then, using a small flathead screwdriver, gently insert it below the reset button (circled in green in Figure 6). Depress the button and keep it held in. With the button depressed, reinsert the Phoenix connector to power up the unit. Keep the reset button pushed down for 30 seconds, then release (see Figure 7). Be gentle with the screwdriver so as to avoid damaging the switch.

Once the unit has booted successfully (look for flashing lights on the network interface card after reinserting the Ethernet cable), you can replace the outer cover and tighten the screws.



Figure 7: Reset Switch

On more recent models of the IRC the reset button may be accessed with a paper clip, toothpick, or a similar tool through one of the perforation holes in the bottom of the chassis. Once you've seen where the reset switch is, you may be able to avoid removing the front cover when upgrading future units. Having a bright light will help you see the switch through the holes.

4 – Reconfiguring the Unit

As you have now “nuked” your IRC-28C to its factory default settings, it will have reverted to its factory default IP address. This is 169.254.1.1, with a subnet mask of 255.255.0.0. In order to be able to communicate with it you will need to change the IP address of the NIC in your computer (or add another) to one in the 169.254.X.X subnet. If you had changed the login ID and password, this will also have reverted to the factory defaults of “admin” and “ultra.”

5 – Updating the Firmware

Now you are ready to try updating the firmware again. From the main Configuration page, select Update Firmware Page. Go to the firmware update page in the web UI, press “Browse,” navigate to the folder containing the update firmware code file, select it, and then push the “update” button. This time the firmware should update and the unit will automatically reboot. If the update was successful, it will be confirmed by the USL/QSC logo and branding on the web UI replaced with MiT (see Figure 8).

Note: The company logo is saved in the cache of the browser you're using. If the version number changes after the update, but the company logo remains USL or QSC, you should clear the cache on your browser and reload the web page.

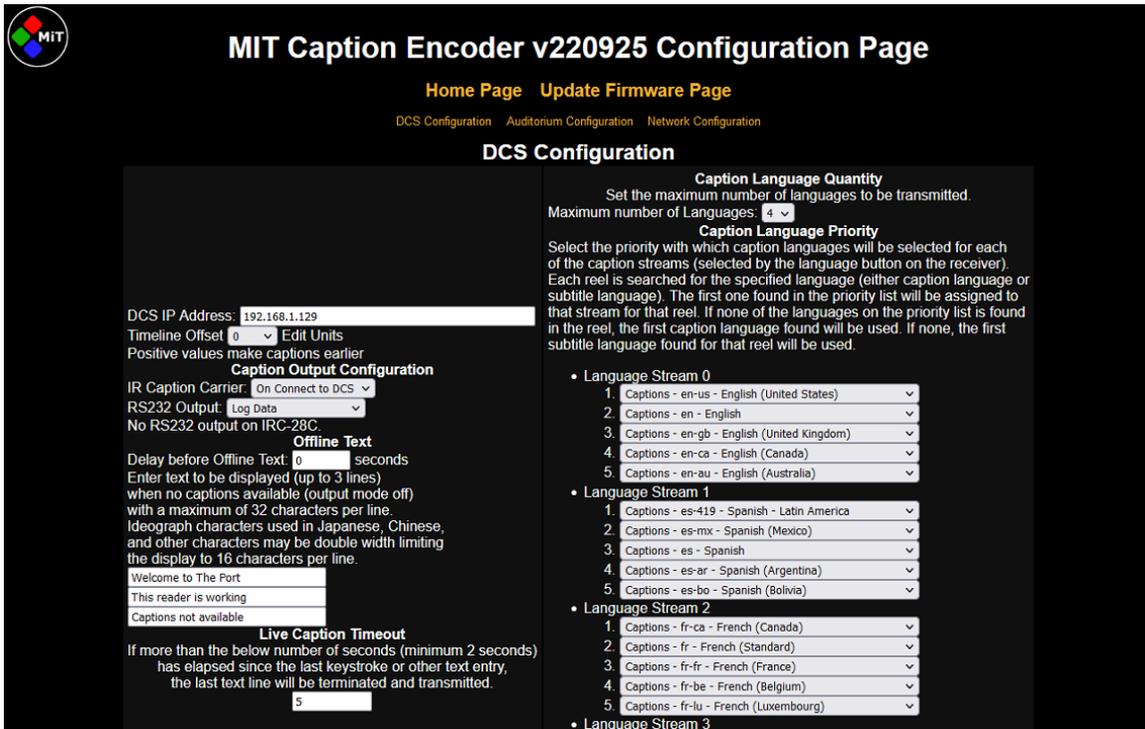


Figure 8:

6 – Restoring Your Settings

Using your screenshots or notes, re-enter the settings on the three configuration screens. We suggest starting with the network configuration, and then rebooting the unit before doing the other two pages, to confirm that you have restored connectivity on the unit's original IP address before the reset.

This concludes the update workaround procedure.

Note: New firmware versions for these products may be downloaded from the following URL. You should check it periodically for new versions.

<http://www.movingimagetech.com/product/closed-captioning-listening-devices/>

This document was written May 3, 2023; by Leo Enticknap.