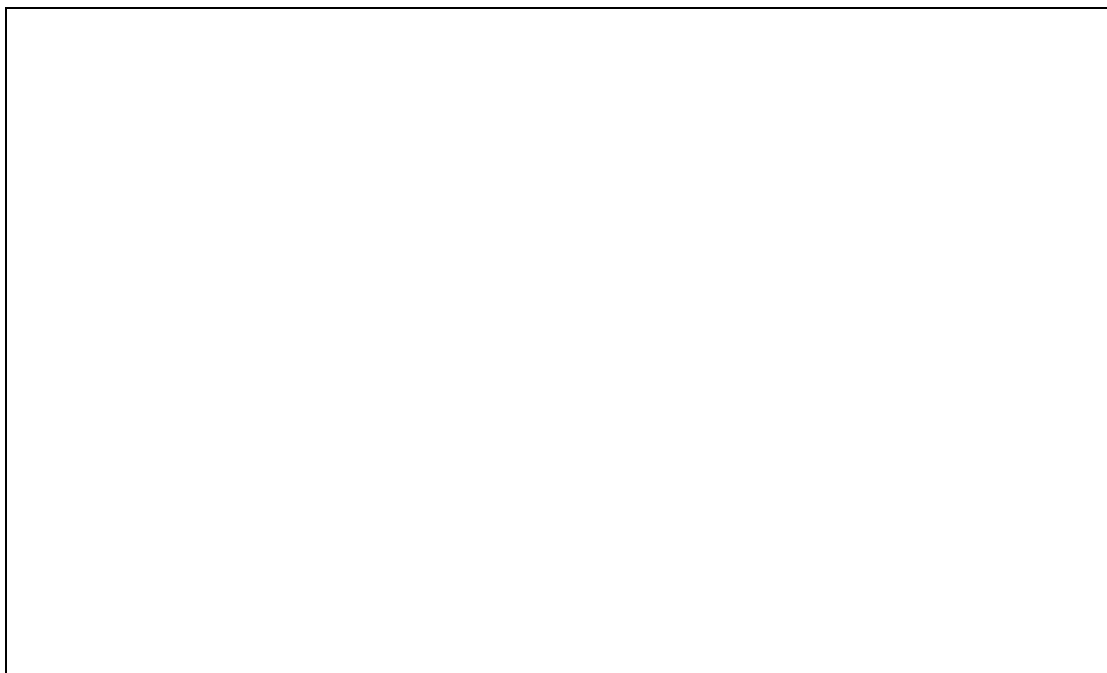# Allegiant® LTC 8900 Software Upgrade Instructions

Instructions for Use

LTC 8900 Series

BOSCH
Security Systems

LTC 8900 System Software Upgrade Procedure

Note: A basic understanding of PCs and Windows operating systems is required to upgrade the firmware of various LTC 8900 system components.

General Information & Source Information for Upgrade Materials:

Software files are available from the Bosch web page to upgrade old versions of Allegiant LTC 8900 CPU firmware and/or LTC 8059/00 Master Control Software supplied on the LTC 8900 series PC. Files are also available for upgrading the operating system firmware used in LTC 8900 series Data Receiver modules found in LTC 8902 & LTC 8903 video matrix bays. In some cases, software "patch" files may be available to upgrade a specific component of the PC based Master Control Software.

The primary link to Allegiant Software Update web page is: http://www2.boschsecurity.us/allegiant/

From this starting point, you can navigate into various subdirectories containing software for many Allegiant related components. If you only need copies of the latest CPU and Data Receiver firmware, these are found in the "Allegiant_Firmware" subdirectory. Different generations of CPU and Data Receiver hardware exist. You only need to download the firmware that is associated with your version. For CPU modules having "two 8-position dip switches", download the file named "8900_8.xx.mot", where xx represents the latest version number. For Data Receiver modules, download the files shown in a format similar to "8902_8.xxx.mot" and "8903_8.xx.mot". For CPU and Data Receiver modules having "three 8-position dip switches", download the file named "86-88-89_10.xx.yy.zz.mot", where "xx.yy.zz" represents the version number. Note that for the latest generation of CPU and Data Receiver modules, this single file is used in all CPU and Data Receiver modules for LTC 8900, LTC 8800 and LTC 8600 series Allegiant systems.

CPU and Data Receiver firmware is transferred from a PC into the Allegiant CPU using a "Downloader" utility program. The Downloader program must be downloaded and installed on the PC before it is possible to upgrade the firmware of CPU or Data Receiver modules. The latest version of this utility can be found in the "Allegiant_Downloader" subdirectory.

The latest version of LTC 8059/00 Master Control Software is found in the "Allegiant_PC_Software" subdirectory. If upgrading both the MCS and firmware, you only need to download the latest LTC 8059 Master Control Software since it includes CPU and Data Receiver firmware, plus the Downloader utility program.

An Allegiant "Console" serial cable is needed to connect between a serial port of your PC and each of the matrix bays being upgraded. ("Console" cables are supplied with Allegiant PC based software packages.) If a "Console" cable is not available, one will need to be purchased (part number LTC 8506/00) or fabricated per the table below:

9-Pin Male (CONSOLE)	Allegiant Designation	9-Pin Female (PC Side)
1	GND	None
2	Receive Data	3
3	Transmit Data	2
4	CTS	1
5	RTS	8
6	GND	None
7	GND	5
8	GND	None
9	GND	None
		(pins 4 & 6 jumped together)
		(pins 1 & 7 jumped together)

Proceed to the flowchart on the next page to determine which instruction page to follow.

LTC 8900 Software
Upgrade Flowchart

Download/copy
files to PC

Upgrade
LTC 8059
PC
configuration
Software?

NO

YES

Complete
configuration
program
update?

NO

YES

Follow
procedure
"A2"

Follow
procedure
"A1"

Copy update files
to appropriate PC
folder

Un-install / install
LTC 8059 Master
Control Software

Upgrade CPU
firmware?

NO

YES

Firmware and
Master Control
Software compatible?
(See note 1)

YES

NO

Note 1 - Master Control Software and CPU
firmware compatibility table can be found on
the Allegiant Software Updates web site.
Go to www.boschsecurity.com

Copy/download
latest firmware
files to PC

Does system
use LTC 8901
Redundant
CPU?

YES

Minimize system
downtime?

NO

YES

Follow
procedure
"B1"

NO

Follow
procedure
"B2"

Follow
procedure
"B3"

Upgrade CPU
without system
operating

Upgrade CPUs
without system
operating

Upgrade each
CPU while system
remains operating

Firmware and
Master Control
Software compatible?
(See note 1)

YES

NO

Upgrade matrix
video bays?

YES

Follow
procedure "C1"

Copy/download
firmware files to
PC

NO

Upgrade Data
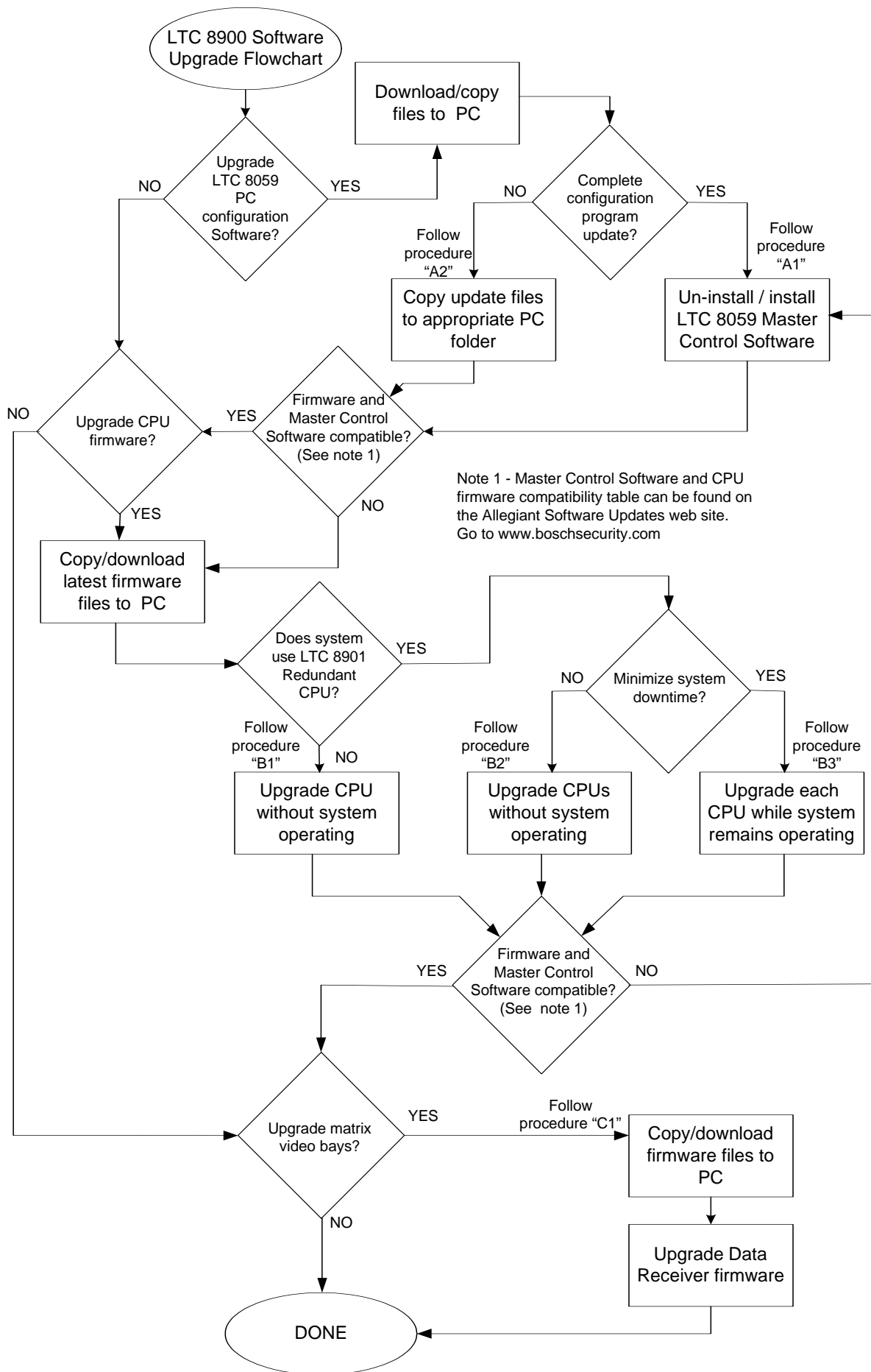Receiver firmware

DONE

Figure 1 – Flowchart for Upgrading LTC 8900 System

A1. -- Complete upgrade of Allegiant LTC 8059/00 Master Control Software program

Items needed: LTC 8059/00 Master Control Software package; Console cable to Allegiant CPU is optional.

Note: No disruption of system "keyboard" operations will occur during this procedure.

1. Verify that you are logged into Windows as a user that has Administrator level access. Make sure that the new Master Control Software file has been copied onto the PC and placed in a convenient temporary location.

2. If not already connected, connect your PC to the LTC 8900 CPU using Allegiant Console cable. Run your existing version of the Allegiant Master Control Software, go on-line, and Upload all configuration tables. (Using the main menu 'Transfer + Upload' option will simplify this effort.) Next, save this Allegiant configuration file on your PC. Remember the file name for when you need to load up the same file later after the Master Control Software has been updated.

3. Exit all Allegiant PC based software programs and any other programs that may cause interference.

4. If you have a very old version of Master Control Software, enter the Windows-Start-Programs menu and run the 'Uninstall' software program found in your existing LTC 8059 software folder. Use Windows Control Panel 'Add/Remove Programs' to uninstall more recent versions of Master Control Software.

    Note: Uninstalling the Allegiant software does not delete user configuration files. The files will remain in their original location. For now, leave these files alone. Once the new Master Control Software version has been installed, you can move them to the new folder location.

5. IMPORTANT: After the uninstall action is completed, use Windows Explorer to locate the old directory location (see default paths below). If the original path was NOT the one shown for recent releases below, rename the old folder to C:\LTC 8059 Old", or something similar. This will prevent old program support files from being inadvertently referenced by the newer version after it is installed.

    Default Directory for old releases: C:\LTC 8059

    Default Directory for recent releases: C:\Program Files\Bosch Security Systems\Allegiant MCS

6. Begin upgrade by running the install program of the new version of Allegiant software.

7. If prompted at the end of installation, select the option to reboot the PC. The Master Control Software upgrade is complete. If applicable, don't forget to remove the CD from the drive.

8. If the original Master Control Software path was NOT the one shown above for recent releases, use Explorer to navigate to the original location and locate your ".alg" configuration files. Move your configuration files from the old path to the equivalent folder found in the new path. You can then delete the old folder.

9. If you know that the new version of Master Control Software will be compatible with the existing version of firmware in the Allegiant CPU, you can skip this paragraph. If the version is not compatible, you will need to upgrade the CPU firmware before you will be able to communicate with the CPU. Refer to flowchart for appropriate procedure to follow.

10. To "test run" the updated software, connect Console cable and run the Master Control Software from the Windows Start menu. Log-in as an 'Installer' level user. At this point, you can either start a new configuration by loading the DEFAULT.ALG file or load a previously stored configuration file. Assuming the PC is connected to the Allegiant CPU using an Allegiant Console cable, you should go on-line and Download or Upload a table to verify operation.

A2. -- Partial upgrade of Allegiant LTC 8059/00 Master Control Software program

Items needed: Appropriate Master Control Software "patch" files; Console cable to Allegiant CPU is optional.

Note: *No disruption of system "keyboard" operations will occur during this procedure.*

1. Verify that you are logged into Windows as a user that has Administrator level access. Make sure that the new Master Control Software file has been copied onto the PC and placed in a convenient temporary location.

2. If not already connected, connect your PC to the LTC 8900 CPU using Allegiant Console cable. Run your existing version of the Allegiant Master Control Software, go on-line, and Upload all configuration tables. (Using the main menu 'Transfer + Upload' option will simplify this effort.) Next, save this Allegiant configuration file on your PC. Remember the file name for when you need to load up the same file later after the Master Control Software has been updated.

3. Exit all Allegiant PC based software programs and any other programs that may cause interference.

4. The files listed below are the typical replacement files associated with a partial software upgrade. They will be replacing older files with the same name. Using Windows Explorer, navigate to the existing directory (see default paths below) and change the extension name of the original ".exe" file(s) being updated to ".old". Copy the upgrade file(s) to the same directory.

Allegiant File Name	**Default Directory for old releases**
Alleg.exe, AllegHW.exe, Super.exe	C:\LTC 8059\BIN\ALLEG

Allegiant File Name	**Default Directory for more recent releases**
Alleg.exe, AllegHW.exe, Super.exe	C:\Program Files\Bosch Security Systems\Allegiant MCS\BIN\ALLEG

5. After the files have been copied into the directories, the upgrade is complete.

6. If you know that the new version of Master Control Software will be compatible with the existing version of firmware in the Allegiant CPU, you can skip this paragraph. If the version is not compatible, you will need to upgrade the CPU firmware before you will be able to communicate with the CPU. Refer to flowchart for appropriate procedure to follow.

7. To "test run" the updated software, connect Console cable and run the Master Control Software from the Windows Start menu. Log-in as an 'Installer' level user. At this point, you can either start a new configuration by loading the DEFAULT.ALG file or load a previously stored configuration file. Assuming the PC is connected to the Allegiant CPU using an Allegiant Console cable, you should go on-line and Download or Upload a table to verify operation.

B1. Upgrade procedure for LTC 8904 series Allegiant CPUs

Items needed: Windows PC, appropriate CPU firmware (i.e., ".mot" file), Allegiant Downloader utility, Console cable.

Note: This section describes the procedure to upgrade the firmware of a LTC 8904 series CPU. To do this upgrade, it will be necessary to remove the CPU from service while the upgrade is being done. **No system operations will be available during the actual upgrade portion of this procedure for a period of 10-20 minutes.**

1. Connect an Allegiant "Console" serial cable between your PC and the 9-pin **"Controller"** port located on the back of the LTC 8904 CPU. **You can not use the CPU's "Console" interface port to do this upgrade.**

2. IMPORTANT: When Allegiant CPU firmware is updated, the user configuration data in the Allegiant system is cleared. If you wish to save this data, use the LTC 8059 Master Control Software program to retrieve and store the data to disk before beginning the upgrade process. To ensure revision compatibility, you should use the version of the LTC 8059/00 Master Control Software that was originally used to configure the system.

    Run the Master Control Software and log-in as 'Installer' (i.e., default password = 1). Configure the program's Transfer--Communication settings to at least 57,600 baud and select the appropriate PC com port number. Go "on-line". Upload all existing tables/sequences from existing CPU. (Using the main menu 'Transfer + Upload' option will simplify this effort.) Save this configuration information using a new file name so it may be re-loaded later. Exit the Master Control Software.

3. If not already available on the PC, download the Allegiant firmware Downloader utility program from the Bosch Allegiant Software Upgrades web site to a temporary location on your PC hard drive. Run the program to install it on the PC.

4. If not already available, download the appropriate CPU firmware file from the Bosch Allegiant Software Upgrades web site and save it in a convenient folder.

5. Run the Allegiant firmware Downloader utility program. Use "Browse" button to navigate and select the desired Allegiant firmware file. Select the appropriate COM Port number using the drop down box.

6. Click the Download button to being the update procedure.

    IF A PROBLEM occurs due to a power interruption, loose cable, or other download error, the Allegiant CPU may become non-responsive. You should cycle the AC power to the CPU and try the download again. If the upgrade process was interrupted after the actual data transfer had started, the CPU may no longer have an operating system. If this situation occurs, it will be necessary to 'force' the CPU back into a Bootloader mode and try again.

    To force the Bootloader mode, remove AC power from the Allegiant CPU unit. Remove the screws holding the enclosure top cover, then slide the cover back short distance off the enclosure to allow access inside the front of the unit. The right side of the unit will contain 2 PCB modules. The top module is the CPU.

    Locate the 8-position dip switch labeled "S1" (or "S100" on older version CPUs) found near the front edge of the CPU PCB. Place dip switch 5 into the ON position, then slide cover back in place (to prevent the chance of electric shock). Restore the AC power to the CPU and retry the download process. If the download is successful, wait until the CPU has completed its initialization cycle (i.e., may take up to 2 minutes), then remove AC power. Slide switch 5 to OFF position, then re-attach cover. Restore AC power.

7. After the upgrade has been completed, click the Close button on the Downloader utility to exit the program. The CPU's front panel "CPU Activity" LED will blink on and off at a steady rate for up to 2 minutes after the firmware transfer has completed. Once the LED begins to blink randomly, the CPU will be fully operational.

8. Verify basic system operation by confirming that the on-screen clock is functioning.

9. If you know that the new version of CPU firmware will be compatible with your existing version of Master Control Software, you can skip this paragraph. If the version is not compatible, you will need to upgrade the Master Control Software before you will be able to communicate with the CPU. Refer to procedure A1.

10. OPTIONAL: If desired, you can verify that your Master Control Software is compatible. Run the Master Control Software from the Windows Start menu. Log-in as an 'Installer' level user. At this point, you can either start a new configuration by loading the DEFAULT.ALG file or load a previously stored configuration file. Assuming

the PC is connected to the Allegiant CPU using an Allegiant Console cable, you should go on-line and Download or Upload a table to verify operation.

B2. Upgrade procedure for LTC 8901 CPU when it CAN be removed from service
(Applies only to LTC 8901 series CPUs used in redundant system configurations.)

Items needed: Windows PC, appropriate CPU firmware (i.e., ".mot" file), Allegiant Downloader utility, Console cable.

Note: This section describes the procedure when it is possible to completely remove the LTC 8901 series CPU from service while the upgrade is being done. ***No system operations will be available during the upgrade portion of this procedure for a period of 10-20 minutes.***

1.   It is assumed that Allegiant "Console" serial cables are properly connected between the LTC 8900 PC and the Allegiant CPU. If there is any doubt, verify that the cable from the **"Primary Controller"** port located on the back of the LTC 8901 CPU is connected to PC Com port 3 (or port 1 on older PCs), and the cable from the "Backup Controller" is connected to PC Com port 4 (or port 2 on older PCs).. **You can not use the CPU's "Console" interface port to do this upgrade.**

2.   IMPORTANT: When Allegiant CPU firmware is updated, the user configuration data in the Allegiant system is cleared. If you wish to save this data, use the LTC 8059 Master Control Software program to retrieve and store the data to disk before beginning the upgrade process.

    If not currently operating, run the Master Control Software and log-in as 'Installer' (i.e., default password = 1). Configure the program's Transfer--Communication settings to at least 57,600 baud and select the appropriate PC com port number. Go "on-line". Upload all existing tables/sequences from existing CPU. (Using the main menu 'Transfer + Upload' option will simplify this effort.) Save this configuration information using a new file name so it may be re-loaded later.

3.   Exit the Master Control Software and any other Allegiant related programs.

4.   If not already available on the PC, download the Allegiant firmware Downloader utility program from the Bosch Allegiant Software Upgrades web site to a temporary location on your PC hard drive. Run the program to install it on the PC.

5.   If not already available, download the appropriate CPU firmware file from the Bosch Allegiant Software Upgrades web site and save it in a convenient folder.

6.   Run the Allegiant firmware Downloader utility program. Use "Browse" button to navigate and select the desired Allegiant firmware file. The Backup CPU will be upgraded first, so select Com port 4 (or port 21 on older PCs) using the drop down box.

    Click the Download button to being the update procedure. This will upgrade the Backup CPU module (approximately 10-20 minutes required).

    After the transfer has completed, the front panel "CPU Activity" LED associated with the CPU that has just completed the upgrade process will blink on and off at a steady rate for up to 2 minutes. After that, the LED should begin to blink randomly indicating that the upgraded CPU is now fully operational. Do not proceed until you verify that the upgraded CPU has entered this state.

    IF A PROBLEM occurs due to a power interruption, loose cable, or other download error, the Allegiant CPU may become non-responsive. You should cycle the AC power to the CPU and try the download again. If the upgrade process was interrupted after the actual data transfer had started, the CPU may no longer have an operating system. If this situation occurs, it will be necessary to 'force' the CPU back into a Bootloader mode and try again.

    To force the Bootloader mode, remove AC power from the Allegiant CPU unit. Remove the screws holding the enclosure top cover, then slide the cover back short distance off the enclosure to allow access inside the front of the unit. The right side of the unit will contain 3 PCB modules. The top module is the Primary CPU, the middle module is a relay board, and the bottom module is the Backup CPU.

    Locate the 8-position dip switch labeled "S1" (or "S100" on older version CPUs) found near the front edge of the CPU PCB that is no longer responding. (In order to access the lower Backup CPU module, you may need to partially remove the front panel by removing the screws located at the side.) Place dip switch 5 into the ON position, then slide cover back in place (to prevent the chance of electric shock). Restore the AC power to the CPU and retry the download process. If the download is successful, wait until the CPU has completed its initialization cycle (i.e., may take up to 2 minutes), then remove AC power. Slide switch 5 to OFF position, then re-attach cover. Restore AC power.

7. Select Com port 3 (or port 1 on older PCs) using the drop down box on the Downloader utility.

    Click the Download button to being the update procedure. This will upgrade the Primary CPU module (apx. 10-20 minutes required).

    If a problem occurs during the download, refer to the section found in item 6 above.

    After the transfer has completed, the front panel "CPU Activity" LED associated with the CPU that has just completed the upgrade process will blink on and off at a steady rate for up to 2 minutes. After that, the LED should begin to blink randomly indicating that the upgraded CPU is now fully operational. Do not proceed until you verify that the upgraded CPU has entered this state.

8. After the upgrade has been completed, click the Close button on the Downloader utility to exit the program.

9. Verify basic system operation by confirming that the on-screen clock is functioning.

10. If you know that the new version of CPU firmware will be compatible with your existing version of Master Control Software, you can skip this paragraph. If the version is not compatible, you will need to upgrade the Master Control Software before you will be able to communicate with the CPU. Refer to procedure A1, but return here when it is time to go on-line.

11. Run the Master Control Software from the Windows Start menu. Log-in as an 'Installer' level user. At this point, you can either start a new configuration by loading the DEFAULT.ALG file or load a previously stored configuration file. If using a new configuration, enter the Transfer – Communication menu and set the Primary CPU settings to use Com port 3 (or Com 1 for old PCs). The Backup CPU should be set to Com port 4 (or Com 2 for old PCs). Click the button to go on-line, then wait a few seconds until the Supervisor screen appears. Configure the desired settings in the Supervisor screen when prompted. Use of the Primary CPU with Mirroring enabled is recommended. The upgrade is complete.

B3. -- Upgrade procedure for LTC 8901 CPU when it CANNOT be removed from service.
(Applies only to LTC 8901 series CPUs used in redundant system configurations.)

Items needed: Windows PC, appropriate CPU firmware (i.e., ".mot" file), Allegiant Downloader utility, Console cable.

Note: This section describes the procedure when it is NOT possible to remove the LTC 8901 series CPU from service while the upgrade is being done. ***Only minimal disruption of system "keyboard" operations will occur during this procedure.***

1. It is assumed that Allegiant "Console" serial cables are properly connected between the LTC 8900 PC and the Allegiant CPU. If there is any doubt, verify that the cable from the **"Primary Controller"** port located on the back of the LTC 8901 CPU is connected to PC Com port 3 (or port 1 on older PCs), and the cable from the "Backup Controller" is connected to PC Com port 4 (or port 2 on older PCs). **You can not use the CPU's "Console" interface port to do this upgrade.**

2. If not currently operating, run the Master Control Software, log-in as 'Installer' (i.e., default password = 1), and go "on-line". Upload all existing tables/sequences from existing CPU. (Using the main menu 'Transfer + Upload' option will simplify this effort.) Save this configuration information using a new file name so it may be re-loaded later.

3. Using the 'System Supervisor' software, verify that the Primary CPU is being used to operate the system. Change if necessary. Leave Mirroring set to OFF.

4. Exit the Master Control Software and any other Allegiant related programs.

5. If not already available on the PC, download the Allegiant firmware Downloader utility program from the Bosch Allegiant Software Upgrades web site to a temporary location on your PC hard drive. Run the program to install it on the PC.

6. If not already available, download the appropriate CPU firmware file from the Bosch Allegiant Software Upgrades web site and save it in a convenient folder.

7. Run the Allegiant firmware Downloader utility program. Use "Browse" button to navigate and select the desired Allegiant firmware file. The Backup CPU will be upgraded first, so select Com port 4 (or port 2 on older PCs) using the drop down box.

    Click the Download button to being the update procedure. This will upgrade the Backup CPU module (approximately 10-20 minutes required).

    After the transfer has completed, the front panel "CPU Activity" LED associated with the CPU that has just completed the upgrade process will blink on and off at a steady rate for up to 2 minutes. After that, the LED should begin to blink randomly indicating that the upgraded CPU is now fully operational. Do not proceed until you verify that the upgraded CPU has entered this state.

    IF A PROBLEM occurs due to a power interruption, loose cable, or other download error, the Allegiant CPU may become non-responsive when you try the download again. If the upgrade process was interrupted after the actual data transfer had started, the CPU may no longer have an operating system. If this situation occurs, it will be necessary to 'force' the CPU back into a Bootloader mode and try again.

    NOTE: THESE ACTIONS WILL TEMPORARILY REMOVE THE CPU FROM SERVICE FOR A SHORT PERIOD OF TIME. To force the Bootloader mode, remove AC power from the Allegiant CPU unit. Remove the screws holding the enclosure top cover, then slide the cover back short distance off the enclosure to allow access inside the front of the unit. The right side of the unit will contain 3 PCB modules. The top module is the Primary CPU, the middle module is a relay board, and the bottom module is the Backup CPU.

    Locate the 8-position dip switch labeled "S1" (or "S100" on older version CPUs) found near the front edge of the CPU PCB that is no longer responding. (In order to access the lower Backup CPU module, you may need to partially remove the front panel by removing the screws located at the side.) Place dip switch 5 into the ON position, then slide cover back in place (to prevent the chance of electric shock). Restore the AC power to the CPU and retry the download process. If the download is successful, wait until the CPU has completed its initialization cycle (i.e., may take up to 2 minutes), then remove AC power. Slide switch 5 to OFF position, then re-attach cover. Restore AC power.

8. Click the Close button on the Downloader utility to exit the program.

9.   If you know that the new version of CPU firmware will be compatible with your existing version of Master Control Software, you can skip this paragraph. If the version is not compatible, you will need to upgrade the Master Control Software before you will be able to communicate with the CPU. Refer to procedure A1, but return here when it is time to go on-line.

10. Run the Master Control Software program. Log-in as an 'Installer' level user. Load up previously saved configuration file. Enter "Transfer" "Communication" setup menu and configure the Primary Controller section for Com port 4 (or Com port 2 on older systems). Ensure that the port for the Backup Controller section is set to "None".

Go on-line. (This should establish communication only with the Backup CPU, i.e., no Supervisor program will appear.) Once on-line, download all tables/sequences into Backup CPU. (Using the main menu 'Transfer + Download' option will simplify this effort.) Also, you can set the Backup CPU's time and data via the main menu On-line + Auto Set + Date time option.

NOTE: The above action will program the upgraded CPU with your user configuration settings such as camera titles, user priorities, alarm responses, etc., but it does not affect the default settings associated with camera selections, keyboard assignments, and Sequences. For instance, all system monitors will be displaying camera 1, the keyboards will be controlling monitor numbers that correspond to their keyboard port number (i.e, keyboard connected to keyboard port 1 will be controlling monitor 1, keyboard 2 will be controlling monitor 2, etc.), and no sequences will be loaded/running.

OPTIONAL: The real time status settings of the CPU currently operating the system can be copied over to the upgraded CPU using the "Allegiant LTC 8900 Status Update Utility" program. Status settings that can be copied include Camera-to-monitor status, Keyboard-to-monitor status, Keyboard log-in status, and Time/Date. Download the file from the Bosch Allegiant Software Upgrades web site and copy it to a convenient location on the LTC 8900 PC. Run the program to install it on the LTC 8900 PC.
After the software is installed, follow these steps:
   a) Temporary close the Master Control Software.
   b) Run the LTC 8900 Status Update utility.
   c) Select the Com Port of the CPU currently operating the system. (Typically, this would be Com Port 3 if the Backup CPU was recently upgraded/replaced.)
   d) Select the Com Port of the CPU recently upgraded or replaced. (Typically, this would be Com Port 4 if the Backup CPU was recently upgraded/replaced.)
   e) Unselect any Settings that do not need to be copied.
   f) Click "Start Transfer" button. Depending upon the detected baud rate, the process will require 1-3 minutes.
   g) If interested, data received from the CPU currently operating the system is logged to a text file named "ParsedDataFile.txt" found in the root C:\ directory.

11. **NOTE: System operation will be slightly disrupted while the next two items are being done, so complete these actions quickly.** Also, as soon the Backup CPU begins to operate the system, system status conditions will change to their default conditions as noted above.

   a) Change the position of the switch located on the front panel of the LTC 8901 series CPU to the **Back-up CPU** position. This will switch the system keyboards and all external accessory devices and interfaces over to the Backup CPU.

   b) Remove the LAN cable from the LTC 8944 Primary LAN Switch channel 1 and let it dangle. Remove the LAN cable connected to the LTC 8945 Backup LAN Switch channel 1 and place it into the Primary LAN Switch channel 1.

Video switching functions will now operate using the Backup CPU. Any necessary operations/changes to bring the system back to the desired status condition can be made immediately.

12. Exit the Master Control Software.

13. Run the Downloader utility program. Use "Browse" button to navigate and select the desired Allegiant firmware file.   It should be the same name as previously selected when the Backup CPU was upgraded. Select Com port 3 (or port 1 on older PCs) using the drop down box on the Downloader utility.

Click the Download button to being the update procedure. This will upgrade the Primary CPU module (apx. 10-20 minutes required).

If a problem occurs during the download, refer to the information found in section 7 above.

After the transfer has completed, the front panel "CPU Activity" LED associated with the CPU that has just completed the upgrade process will blink on and off at a steady rate for up to 2 minutes. After that, the LED should begin to blink randomly indicating that the upgraded CPU is now fully operational. Do not proceed until you verify that the upgraded CPU has entered this state.

14. After the upgrade has been completed, click the Close button on the Downloader utility to exit the program.

15. Run the Master Control Software from the Windows Start menu. Log-in as an 'Installer' level user. At this point, you can either start a new configuration by loading the DEFAULT.ALG file or load a previously stored configuration file. If using a new configuration, enter the Transfer – Communication menu and set the Primary CPU settings to use Com port 3 (or Com 1 for old PCs). The Backup CPU should be set to Com port 4 (or Com 2 for old PCs). DO NOT GO ON-LINE YET.

16. **NOTE: System operation will be slightly disrupted while the next two items are being done, so complete these actions quickly.**

    a) Restore the previously changed LTC 8944 and LTC 8945 LAN Switch cables back to their original channel 1 configurations.   In other words, the LAN cable currently connected to port 1 of the LTC 8944 Primary LAN Switch should be removed and placed in its original position at port 1 of the LTC 8945 Backup LAN Switch. The LAN cable left dangling earlier in this procedure should be inserted back into port 1 of the LTC 8944 Primary LAN Switch.

    b) Restore LTC 8901 series CPU front panel switch to center position (AUTO setting).

    c) Click the button to go on-line, then wait a few seconds until the Supervisor screen appears. Select the **Backup CPU and enable Mirroring**. A few minutes may be required, but eventually the status and configuration settings of the Backup CPU to be transferred into the Primary CPU. Wait until Mirroring is finished, then switch system operation back over to the Primary CPU using the Supervisor software.

17. The upgrade is complete.

18. Verify basic system operation by confirming that the on-screen clock is functioning and by switching a few cameras on a monitor.

C1. Upgrade procedure for LTC 8902 and LTC 8903 Matrix Bays using Download program

Items needed: Windows PC, appropriate LTC 8902 and/or LTC 8903 Data Receiver firmware (i.e., ".mot" file), Allegiant Downloader utility, Console cable.

*Note: This section describes the procedure to upgrade the operating software of the Data Receiver modules installed inside LTC 8902 and LTC 8903 video matrix bays. **During the upgrade process, any video signals associated with the bay being upgraded will be unavailable.***

1. If not already available on the PC, download the Allegiant firmware Downloader utility program from the Bosch Allegiant Software Upgrades web site to a temporary location on your PC hard drive. Run the program to install it on the PC.

2. If not already available, download the appropriate Data Receiver firmware file(s) from the Bosch Allegiant Software Upgrades web site and save in a convenient folder.

3. Connect the "Console" cable to an available **serial** port of your PC. The other end of the cable will be connected to the "CONSOLE" port of each individual LTC 8900 series bay that requires updating of its Data Receiver module. To minimize the chance of upgrading a bay with the incorrect type of firmware, it is strongly recommended to upgrade all bays of one type before upgrading bays of the other type.

4. Run the Allegiant firmware Downloader utility program. Use "Browse" button to navigate and select the desired Allegiant firmware file. IMPORTANT: Make sure you select the correct file based on the type of matrix bay/Data Receiver module being upgraded. Select the appropriate Com port number using the drop down box.

5. Click the Download button to being the update procedure. This will upgrade the Data Receiver module in the bay (approximately 5-10 minutes required).

    After the transfer has completed, the Data Receiver should automatically become operational within 2 minutes.

    IF PROBLEM occurs due to a power interruption, loose cable, or other download error, the Data Receiver module may become non-responsive. You should cycle the AC power to the bay and try the download again. If the upgrade process was interrupted after the actual data transfer had started, the Data Receiver module may no longer have an operating system. If this situation occurs, it will be necessary to 'force' the Data Receiver module back into a Bootloader mode and try again.

    To force the Bootloader mode, remove AC power from the bay. Remove the front panel to the bay and locate the Data Receiver module in the slot right next to the Power Supply module. Locate the 8-position dip switch labeled "S1" (or "S100" on older version CPUs) found near the front edge of the module. Place dip switch 5 into the ON position, restore the AC power to the bay and retry the download process. If the download is successful, wait 2 minutes until the Data Receiver has completed its initialization cycle, then remove AC power. Slide switch 5 to OFF position, then re-attach front panel. Restore AC power.

6. Remove the serial cable and place it on the next bay to be upgraded. Repeat the above step for each bay that is being upgraded.

7. After the upgrade has been completed, click the Close button on the Downloader utility to exit the program.

8. Verify operation of the bays that have been upgraded. This can be done by switching a few cameras to monitors that are associated with the bays that have been upgraded.