VIII. Ps2 Dealer Loader & Programming

Programming Locomotives & DCS Components Using DCS & DCS Software

Locomotives equipped with Proto-Sound 2.0 and 3.0 and the components of the M.T.H. DCS Digital Command System can be reprogrammed with new sounds or software features available via download from the M.T.H. and Proto-Sound 2.0 websites. The following instructions detail how such downloads function and what tools are required to complete the process.

If desired, most M.T.H. Authorized Service Centers can perform the reprogramming for consumers. A service charge may be applicable. See your local service center for more details.

Below is a table outlining the items needed for specific functions that can be performed with the M.T.H. Consumer Loader. You will need the following items (All functions require a PC or laptop running at least Windows XP):

Function	Required Items
Load Engine Sound File	TIU, Engine, Transformer, USB Cable (Rev L TIU only) or USB-Serial adapter or DB-9 serial cable
Load Engine Flash Code (Chain Files)	TIU, PS3.0-equipped HO Diesel, PS3.0-equipped O Gauge Engine, USB Cable (Rev L TIU only) or USB-Serial adapter or DB-9 serial cable
Load TIU Firmware	TIU, Transformer, USB Cable (Rev L TIU only) or USB-Serial adapter or DB-9 serial cable, 1/8” STEREO mini-to-mini audio cable. If using a Rev L TIU and a USB Cable you don’t need the transformer
Remote Firmware	TIU, Remote, USB Cable (Rev L TIU only) or USB-Serial adapter or DB-9 serial cable, 4-wire phone handset cord (goes between the TIU and the Remote)
DCS Commander Firmware	DCS Commander, USB to serial adapter or DB-9 serial cable, AC or DC Transformer

GETTING STARTED

To download new sound files onto any Proto-Sound 2.0 or later equipped locomotive, or to load a new software revision into your DCS system or DCS Commander, you will need the following items:

1. DCS Consumer Loader Software (Version 2.30 - available from www.protosound2.com)

2. A Transformer or power supply (12-22 VAC or VDC 1.5A) to power the DCS Track Interface Unit (TIU).

3. DCS Track Interface Unit (TIU)

4. A personal computer (running at least Windows XP) with an available com or USB port.

5. A standard Db9 male-to-female serial PC cable, a standard USB Cable, or adapter cable (USB to serial) depending on the computer and TIU.

6. A standard 4-pair telephone handset cord (ie: Radio Shack part # 279-306).

7. A 1/8" Stereo Mini-to-Mini Cable (M.T.H. Part # 50-1009).

DOWNLOADING THE SOFTWARE

1. First, download the DCS Service Loader Program from the "More Technician Only Information" area.

To download the DCS Loader:

A. Click on the appropriate link to download the latest DCS Loader.
B. Choose 32-Bit, 64-Bit w/o .NET, or 64-Bit w/.NET
   If you are not sure which version you need, read page 4 or see the DCS News article dated August 19, 2011, *"Determining Your Pc's Version of .NET Before Installing the DCS Consumer Loader (Version 2.30)"*
C. Choose the location in your computer to save the file. The file should be saved where it can be easily found, like the Desktop.

2. Next, download the latest version of DCS Software from www.protosound2.com

To download Version 4.20 or later:

A. Download "Version 4.20" by choosing "Download NOW!".
B. Complete the required fields and follow the onscreen prompts.
C. When prompted click on the file name and choose the location on your computer to save the file. The file should be saved where it can be easily found, like the Desktop.

MTH DCS Loader version 2.3

What's new:

- Loads Engine Flash Code (DSP Firmware, FPGA, CV Data) also referred to as “Chain Files”. This is the zip file that allows existing MTH HO PS3 engines to be updated to run expanded DCC
- Two versions – one for 32-bit 'PC's, one for 64 bit PC's. .NET Framework 2.0 or higher is required for 32-bit PC's and .NET 3.5 or higher is required for 64-bit PC's.
- Removed the Get Sound File From Engine icon. Previsouly this function of the Loader allowed users to retrieve a copy of the sound file from their engines. This proved to be very time consuming for customers. All of the latest sound files can be obtained from our website at www.mthtrains.com
- The Loader now remembers the last folder you explored to. This is especially handy if you keep all your MTH files in the same folder (for example, the MY MTH Files folder that gets created when you install the Loader program
- Improves the sound file and chain file loading by automatically adjusting the data rate for files that contain more than 50% zeros. The progress sub-bar will turn yellow to indicate a temporary data rate adjustment. Previously the Loader would try at the highest data rate, determine that an error occurred in the data transfer, then try the whole sector over again. In essence, the Loader is now much, much faster

Installation Instructions:

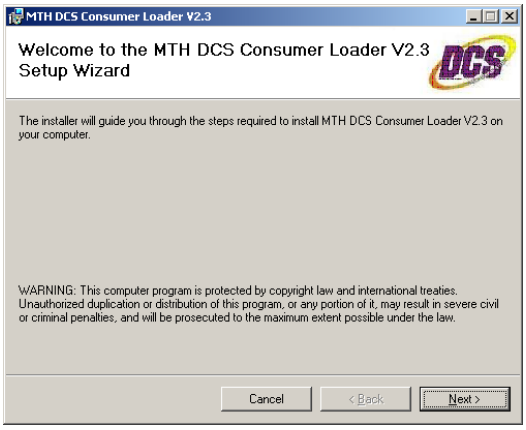
The MTH DCS Loader program can operate under a 32-bit or 64-bit Windows environment. There are three download links; one for each type of operating system. One for a 32 bit Windows, one for 64 bit Windows without .NET, and one for 64 bit Windows with .NET. Select the correct one for your operating system. If you are unsure whether you have a 32-bit or 64-bit PC go here - http://support.microsoft.com/kb/827218. Also, if you are unsure of which version .NET you have installed you can go here to learn how to check - http://support.microsoft.com/kb/318785. For those users that run Windows XP you will want to look at HKEY_LOCAL_MACHINE->SOFTWARE->MICROSOFT->NET FRAMEWORK SETUP in your registry. The link doesn't show exactly where it's located on an XP PC but it will likely be in the same spot for Vista and Windows 7 as well.
If you have a 64-bit PC and have .NET 3.5 or higher then you do not need to update your .NET Framework. The Loader will run on your PC.
If you have a 32-bit PC and have .NET 2.0 or higher then you do not need to update your .NET Framework. The Loader will run on your PC.
The 32-bit version comes pre-bundled with .NET 2.0 as part of the self-extracting executable download so for you 32-bit users you likely don't need to check anything. However, for you 64-bit users, please do check as this could mean the difference between a 1MB download and a 200MB download.
Once you have determined which version your Operating System is running under (32-bit or 64-bit) then you can select the correct download link.

32-bit

1. Download and Save the self-extracting executable to a location on your PC where you can easily find it

2. Run the exe and note that the default folder that your unzip program will want to send those files to will be a TEMP folder. If you do not want the files to go to your TEMP folder then select “Browse…” and select an appropriate place to unzip the files. A folder on your Desktop or in you're My MTH Files folder perhaps

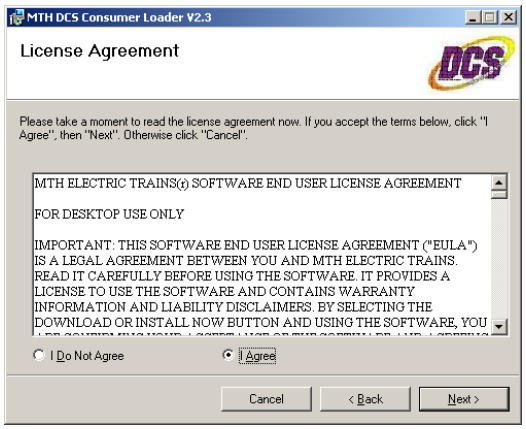
3. Once you have the files unzipped you will see 5 files (remember, the 32-bit version also has .NET 2.0 bundled along with it). If you already have confirmed you have .NET 2.0 or higher then just double-click on the setup.exe file and follow the on-screen installation instructions



64-bit

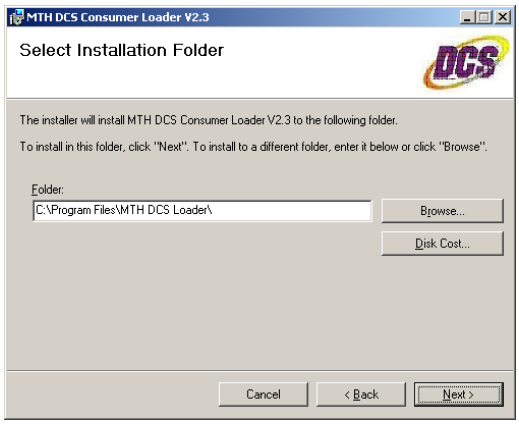
1. For 64-bit users the installation will be very similar to the 32-bit. Once you have verified your version of .NET installed on your PC you will then want to select either the 64-bit download with or without .NET

2. Download and Save the self-extracting executable to a location on your PC where you can easily find it



3. Run the exe and note that the default folder that your unzip program will want to send those files to will be a TEMP folder. If you do not want the files to go to your TEMP folder then select “Browse…” and select an appropriate place to unzip the files. A folder on your Desktop or in your My MTH Files folder perhaps

4. If you’ve downloaded the 64 Bit without .NET you will see just two files. If you’ve downloaded the 64 Bit with .NET you will see two files and a folder, the folder contains the .NET 3.5 install files. If you have already confirmed you have .NET 3.5 or higher then just double-click on the setup.exe file and follow the on-screen installation instructions. If you do not have .NET 3.5 or higher already installed then the Loader program, during its installation, will direct you to go to Microsoft to get at least version 3.5. Once you have 3.5 or higher installed then re-run the Loader installation



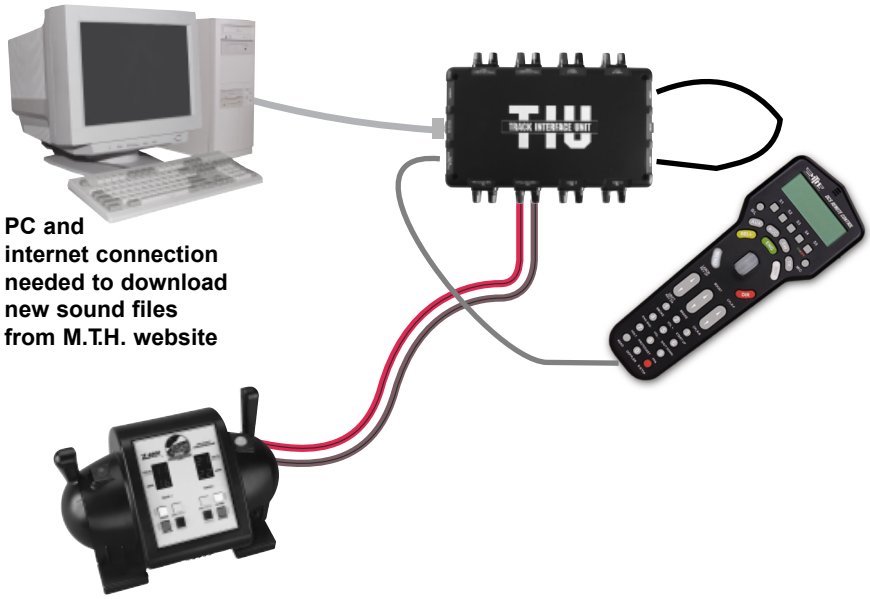
A note about .NET Framework

The reason for all the .NET stuff is that it's required to run some Windows applications. The Loader program is one of them. .NET requires being build upon previous versions. That is to say, you can't just install .NET3.5 without already having installed .NET 2.0 and then .NET 3.0. The good news is that most Windows 7 PC's come pre-loaded with .NET 4.0 and many Vista PC's came pre-loaded with .NET 3.0.

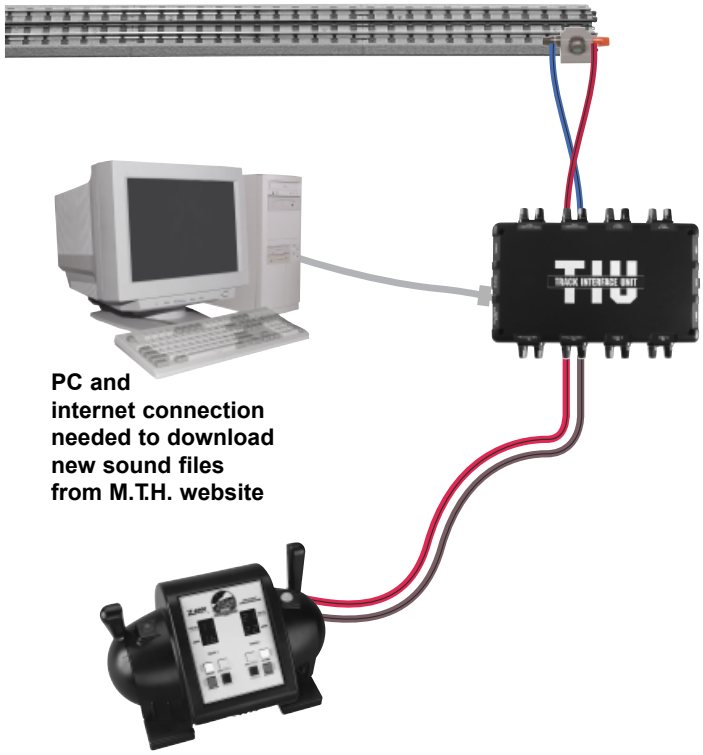
Because .NET requires that the older versions be present on your PC the download can be rather large (about 200MB). So, for you Windows Vista users that haven't updated your PC in quite a while you likely still have .NET 3.0 installed. This is fine as long as long as your PC is 32-bit. However, if it's 64-bit then you will need to download the 64 Bit Loader with .NET.

For further questions please contact MTH Service.

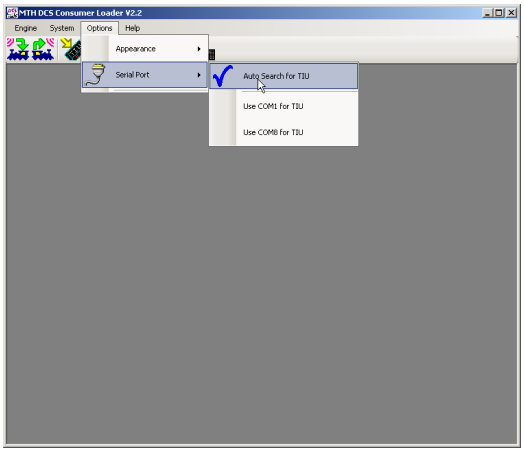
Set-up for Loading the Latest Version of DCS Software

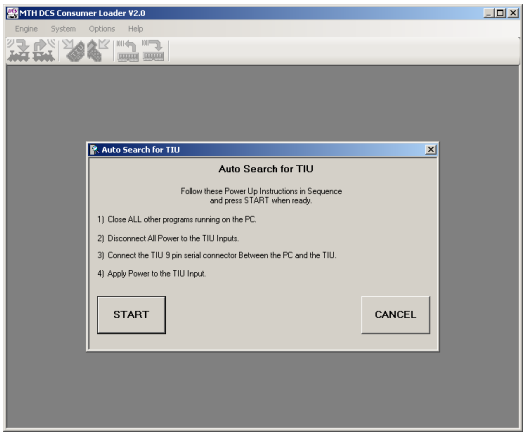


Set-up for Loading Sound Files into Engines



USING THE DCS LOADER TO REPROGRAM DCS, LOCOMOTIVES & THE DCS COMMANDER





Setting up your Com port

1. Double-click the MTH Loader icon

2. Connect your TIU to your PC via a DB-9 serial cable or USB to serial adapter or USB cable (TIU Rev L only).

3. Apply power to your TIU

4. Click on **Options**

5. Select **Serial Port**

6. Select **Auto Search for TIU**
   a. The Loader program will now go out and look for a TIU on the available Com ports on your PC. Once it finds the TIU it will lock on to the serial port and use it until you tell it to change to another Com port. The Loader program will remember the Com port even after you shut the program down

7. You have now successfully set up the Com port for your Loader.

NOTE:
If your computer is unable to find the TIU, see DCS News Article *"Windows 8 USB Drivers for DCS Loader Program"* - March 26, 2013. If your computer only has USB ports you need to install the drivers. These Drivers will work with Windows Vista and 7 also.

Cable Connection Cautions

A. Ensure the 4 conductors in the bottom of the Remote are all parallel and NOT touching one another. If they do touch when you hold down the power button after setup step 3, your remote will power on, and will not load.

B. Ensure the 4 conductors in the bottom of the TIU Remote Input are all parallel and NOT touching one another. If they do touch when you hold down the power button after setup step 3, your remote will power on, and will not load.

Loading TIU Code

1. Click on the TIU icon or select **System** ->**Send Code to the TIU.**

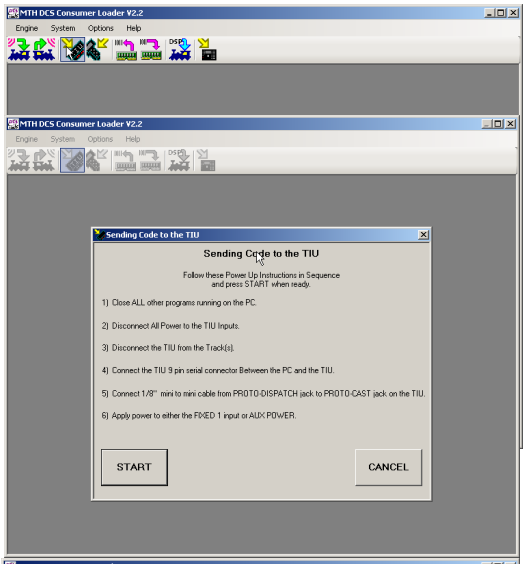
   HINT *If you're not sure of an icon's function, just roll your cursor over one of them and a dialog box will appear telling you what the icon does.*

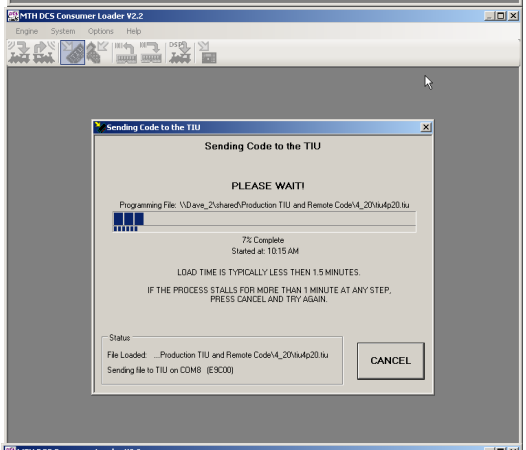
2. Follow the on-screen instructions in the Loader program.

3. Should you experience a failure the Loader program will allow you to Retry or Cancel. Pressing Retry will force the Loader to attempt to reconnect and reload.

4. If, after several retries, you cannot successfully load TIU code then try the following:

   a. Reset power to the TIU and close and re-start the Loader program.
   b. Repeat steps 1 and 2 above.
   c. Contact MTH Service for further assistance.





Loading Remote Code

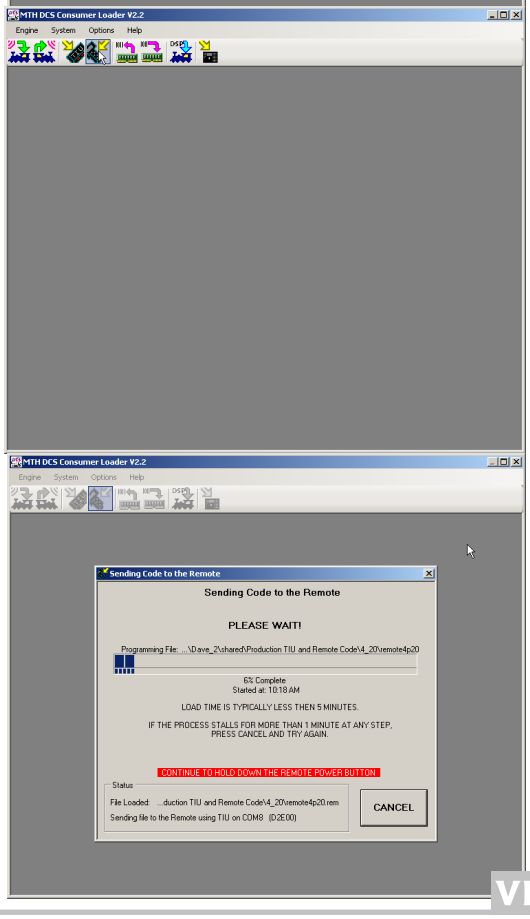
1. Click on the Remote icon or select **System** -> **Send Code to the Remote.**

2. Follow the on-screen instructions in the Loader program.

3. Should you experience a failure the Loader program will allow you to Retry or Cancel. Pressing Retry will force the Loader to attempt to reconnect and reload.

4. If, after several retries, you cannot successfully load Remote code then try the following:

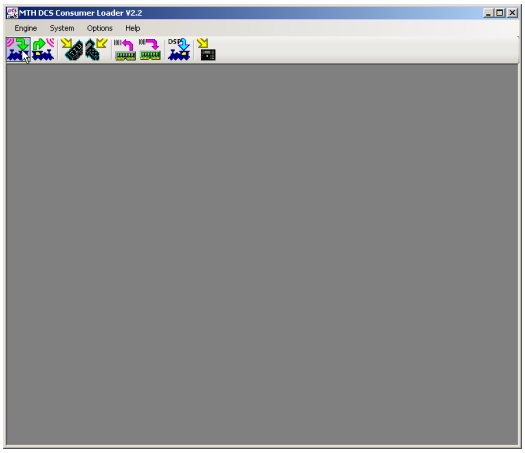
   a. Reset power to the TIU and close and re-start the Loader program.
   b. Release the power button on the Remote.
   c. Unplug and re-plug the DCS Remote tether at both the Remote and TIU.
   d. Repeat steps 1 and 2.
   e. Try a different Remote tether cable.
   Remember This MUST be a 4-wire cable!
   f. Contact MTH Service for further assistance.



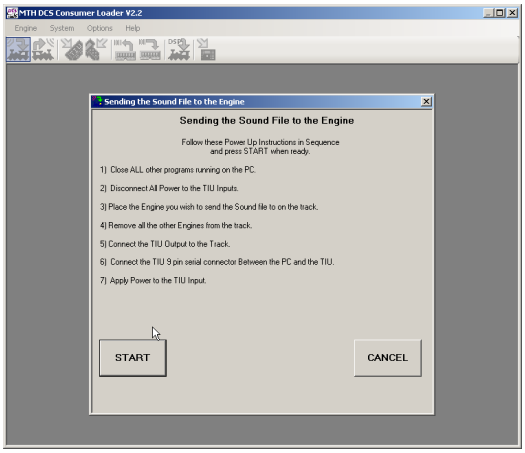
Sending Sound Files to an Engine

Note If you are attempting to load a PS3.0-equipped HO Diesel or PS3.0-equipped Steam or Diesel engine you must have version 4.20 or higher DCS code loaded into your TIU.

1. Click on the Send Sound File to Engine icon or select **Engine** -> **Send Sound File to the Engine**

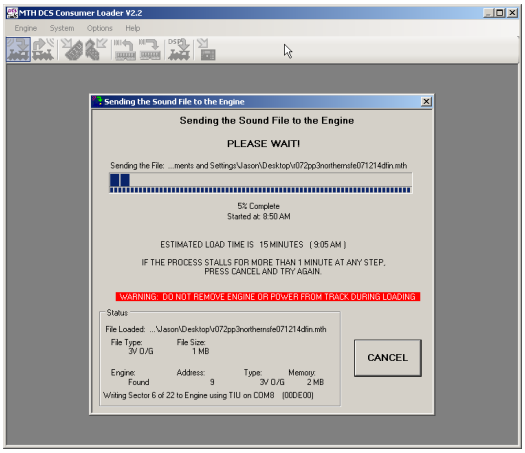


2. Follow the on-screen instructions in the Loader program



3. If, during the Sound File transfer, the Loader sees an error it will attempt to retry the sector of memory it was previously loading. Should it fail again the Loader will prompt you to hit Retry or Cancel. Hitting Retry will force the Loader to re-attempt loading from that failed sector of memory

4. If you get continuous errors during the Sound File loading, remove power to the TIU/Engine, Hit Cancel on the Loader and then restore power to the engine and restart the Loader program

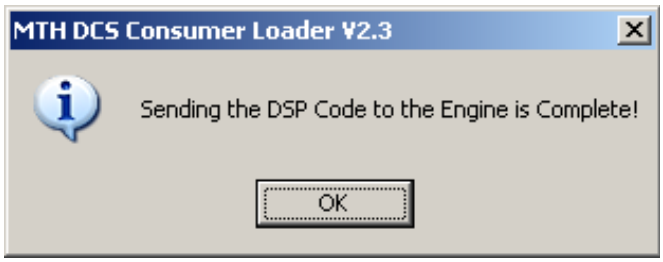


HINT *If you keep getting errors after performing Step 4, it is recommended to have the engine clip leaded to the TIU output, if possible. Otherwise, connect a short section of track directly to the output of the TIU. You want to minimize the chance for DCS signal interference from other items that may be on your layout (track powered switches/accessories, track powered rolling stock, etc.).*

For those users with Rev L TIU's you may actually find that an extra 15 feet of wire between the output of the TIU and the track will help with communications.

Loading Engine Flash Code or “Chain Files”

MTH's Loader version 2.3 now allows you to load Engine Flash Code files into a Proto-Sound 3.0 engine right over the rails using a TIU running version 4.20 or later. There is one exception to this and that is the HO steam engines that contain the earlier version of Proto-Sound 3.0. These steam engines have different hardware that doesn't support over-the-rail loading of the code files.

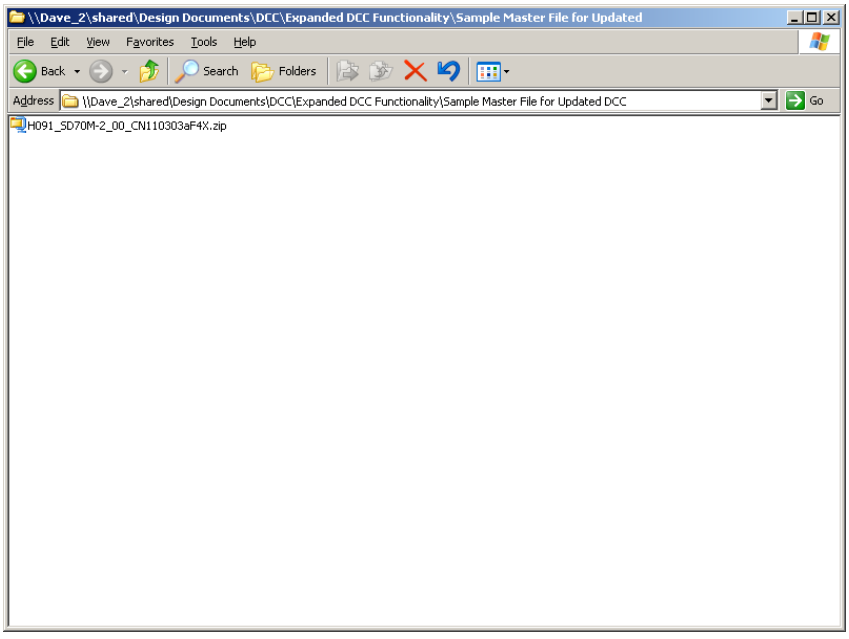


What Is Engine Flash Code (Chain Files)?

These are a series of files that are put into a zip format. Inside this zip file are multiple files and one text file that tell the Loader what filenames to load. The Engine Flash Code are bundled into Chain Files along with the sound file (.mth) on the website.

Most PS3.0 engines on the website will have both the .mth and the .zip files associated with them. That is, when you search for a particular item number and click on the link for the sound file you are getting the sound file and the chain files all in one zip file. If a particular engine doesn't have a chain file or that engine doesn't accept chain files then you will only see the .mth sound file. For example, the HO K-4 is not capable of accepting new chain files; it can only accept a sound file. Therefore, you will only see an .mth sound file for that engine on the MTH website.

Below is an example of what would be downloaded for a CN HO SD70M-2:



What Is Needed To Load Chain Files?

In order to load Chain Files you need the following items:

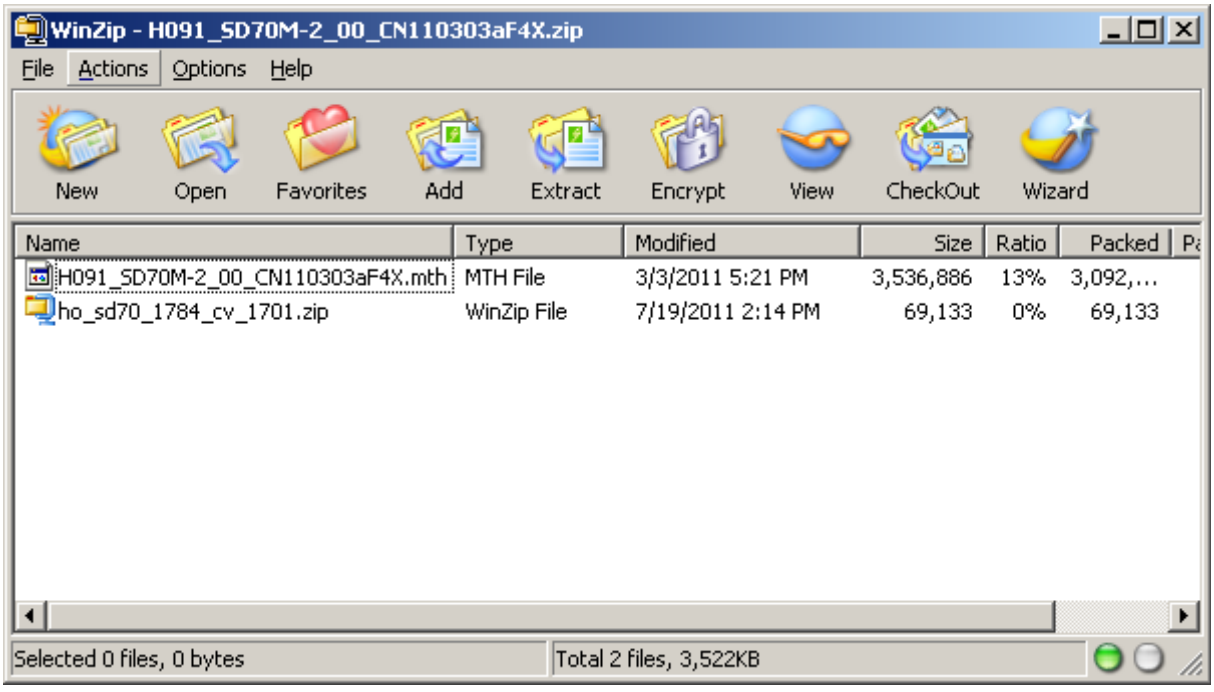
- TIU running version 4.20 or later
- PC with Loader 2.3
- Serial cable or a USB to serial adapter or a USB cable (USB cable can be used with Rev L TIU only)
- Proto-Sound 3.0-equipped engine (all HO Diesels and the new PS3.0 O Diesel and O Steam as well as the new PS3.0 HO Steam engines in both 2 rail and 3 rail)
- An unzip utility like Winzip

Which Engines Can I Load the Chain Files Into?

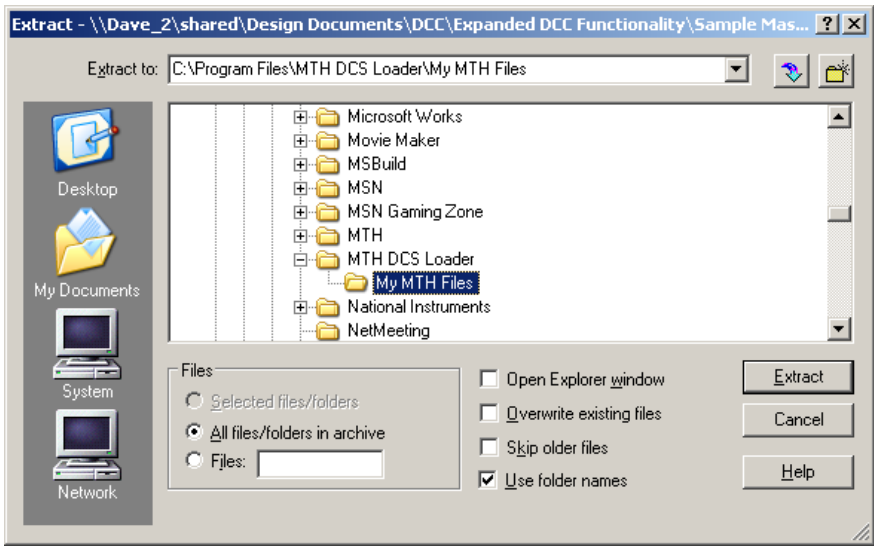
You can load the Chain Files into most PS3.0-equipped engines, be it O Gauge or HO. There is one exception and that is the earlier HO Steam engines. As noted earlier, if there is no Chain File that came along with your sound file then that engine doesn't accept the Chain Files. An example of this is the HO K-4. If you attempt to load the Chain Files into an engine that won't accept them you will receive the following error message from the Loader:

How Do You Save Chain Files To Be Loaded?

Once you download the main zip file from the MTH website you then need to unzip the file using Winzip or any unzipping utility. Once you do that you will see the following:



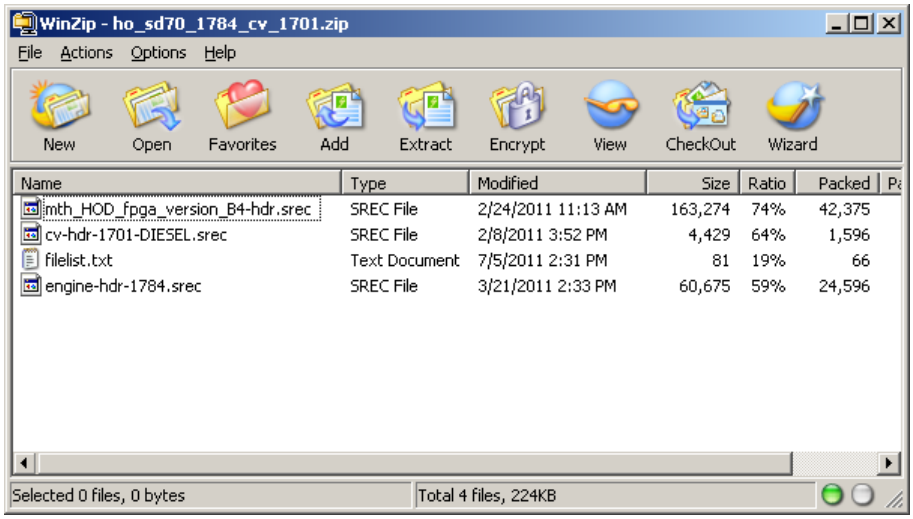
The first file you see in the list is the .mth file. That's your sound file. The second file you see in the list is another zip file. This is your Chain File. You DO NOT need to unzip that file. Simply extract the sound file (.mth) and the Chain File (.zip) to a folder of your choosing as shown below (it's recommended that you use the My MTH Files folder that is created when you install the MTH DCS Loader program):



You now have your sound file (.mth) and your Chain File (.zip) all in one location. If you wanted to take it a step further you could create a folder for each engine type you have files for, that's completely up to you.

What Are In The Chain Files?

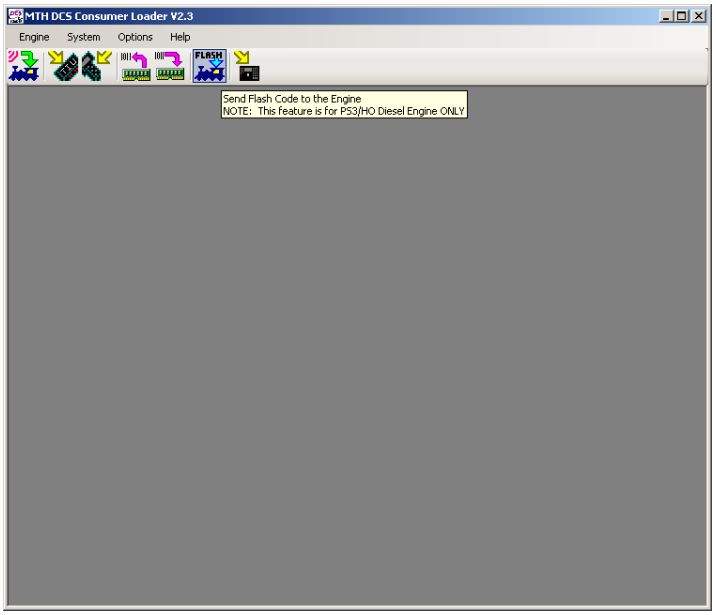
The Chain Files contain three or four files that have an .srec extension. This extension is used by the electronics inside the PS3.0 engine. The last file is a .txt file and that contains the filenames of the Chain Files to be loaded. The Loader looks at this .txt file to determine what must be loaded. However, when you load the files into the engine you only need to find the .zip file that contains the aforementioned files since the Loader takes care of all the work. You just point to the .zip file and the Loader does the rest. Below is an example from an HO SD70 Chain File .zip. Again, you DO NOT need to unzip the Chain File, just point the Loader to the .zip file and the Loader will do the rest:

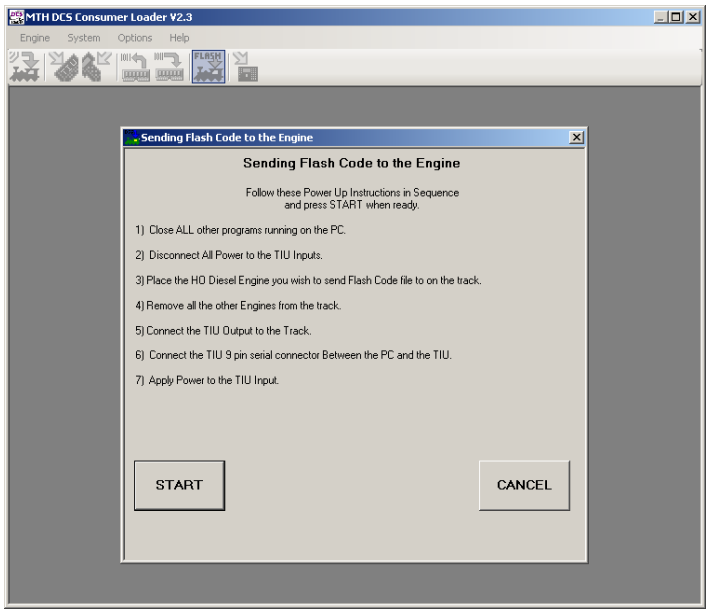


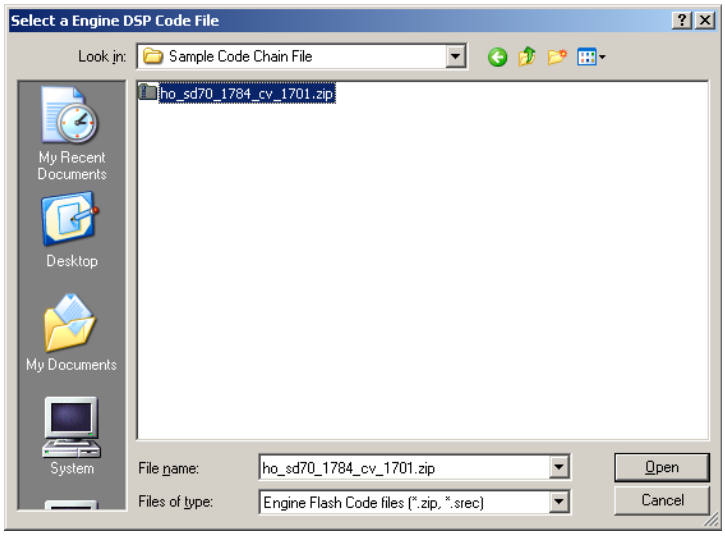
MTH's Loader version 2.3 now allows you to load chain files into a Proto-Sound 3.0 engine right over the rails using a TIU running version 4.20 or later. There is one exception to this and that is the HO steam engines that contain the earlier version of Proto-Sound 3.0. These steam engines have different hardware that doesn't support over-the-rail loading of the code files.

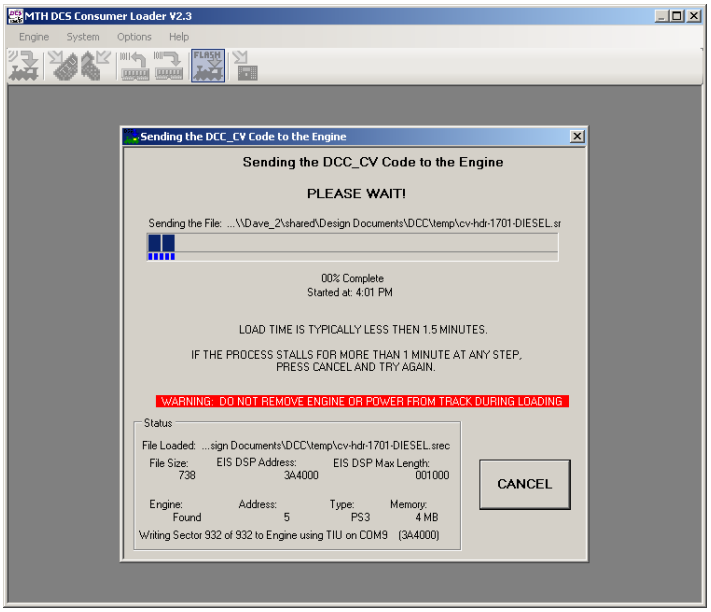
Loading Instructions for Chain Files

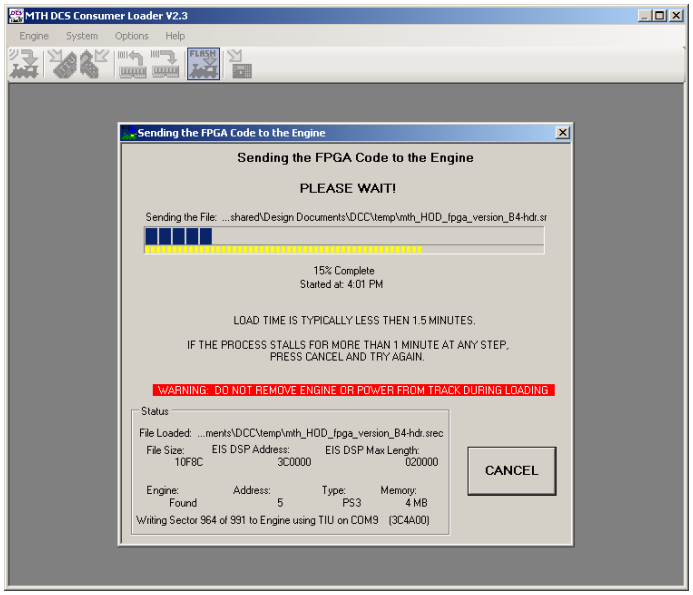
Below are a series of screen shots showing you step by step how to load a chain file into an MTH PS3.0-equipped engine (except current PS3.0 HO Steam Engines)

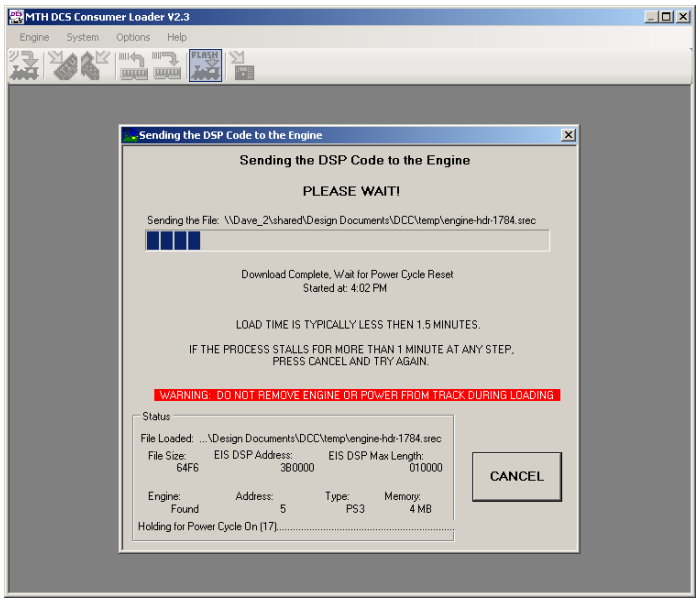


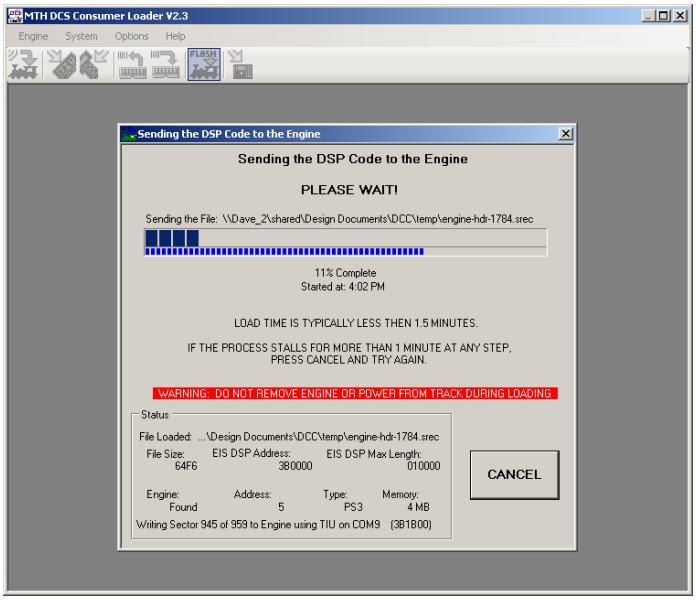


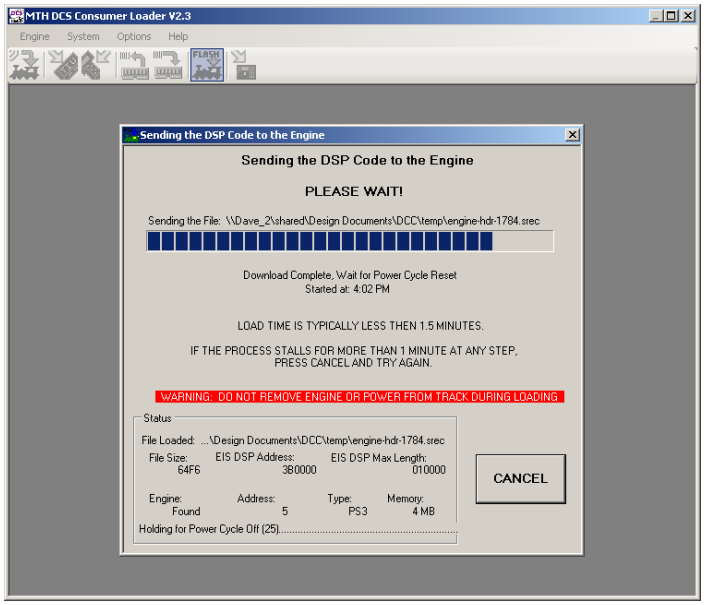





MTH DCS Consumer Loader V2.3
Engine System Options Help
Sending the FPGA Code to the Engine
Sending the FPGA Code to the Engine
PLEASE WAIT!
Sending the File: ...shared\Design Documents\DCC\temp\mth_HOD_fpga_version_B4-hdr.sr
15% Complete
Started at: 4:01 PM
LOAD TIME IS TYPICALLY LESS THEN 1.5 MINUTES.
IF THE PROCESS STALLS FOR MORE THAN 1 MINUTE AT ANY STEP,
PRESS CANCEL AND TRY AGAIN.
WARNING: DO NOT REMOVE ENGINE OR POWER FROM TRACK DURING LOADING
Status
File Loaded: ...ments\DCC\temp\mth_HOD_fpga_version_B4-hdr.srec
File Size: 10F8C
EIS DSP Address: 3C0000
EIS DSP Max Length: 020000
Engine: Found
Address: 5
Type: PS3
Memory: 4 MB
Writing Sector 964 of 991 to Engine using TIU on COM9 (3C4A00)
CANCEL

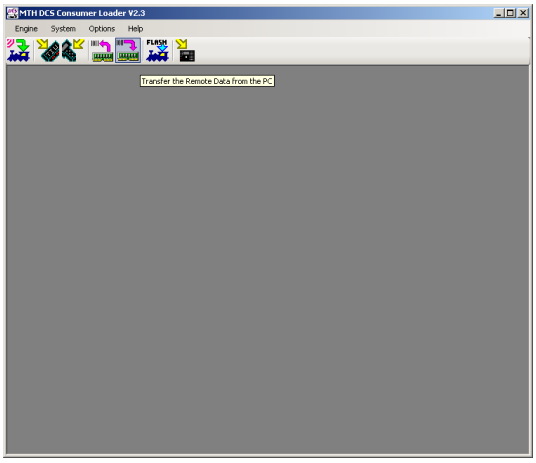

MTH DCS Consumer Loader V2.3
Engine System Options Help
Sending the DSP Code to the Engine
Sending the DSP Code to the Engine
PLEASE WAIT!
Sending the File: \\Dave_2\shared\Design Documents\DCC\temp\engine-hdr-1784.srec
Download Complete, Wait for Power Cycle Reset
Started at: 4:02 PM
LOAD TIME IS TYPICALLY LESS THEN 1.5 MINUTES.
IF THE PROCESS STALLS FOR MORE THAN 1 MINUTE AT ANY STEP,
PRESS CANCEL AND TRY AGAIN.
WARNING: DO NOT REMOVE ENGINE OR POWER FROM TRACK DURING LOADING
Status
File Loaded: ...\Design Documents\DCC\temp\engine-hdr-1784.srec
File Size: 64F6
EIS DSP Address: 3B0000
EIS DSP Max Length: 010000
Engine: Found
Address: 5
Type: PS3
Memory: 4 MB
Holding for Power Cycle On (17).....
CANCEL


MTH DCS Consumer Loader V2.3
Engine System Options Help
Sending the DSP Code to the Engine
Sending the DSP Code to the Engine
PLEASE WAIT!
Sending the File: \\Dave_2\shared\Design Documents\DCC\temp\engine-hdr-1784.srec
11% Complete
Started at: 4:02 PM
LOAD TIME IS TYPICALLY LESS THEN 1.5 MINUTES.
IF THE PROCESS STALLS FOR MORE THAN 1 MINUTE AT ANY STEP,
PRESS CANCEL AND TRY AGAIN.
WARNING: DO NOT REMOVE ENGINE OR POWER FROM TRACK DURING LOADING
Status
File Loaded: ...\Design Documents\DCC\temp\engine-hdr-1784.srec
File Size: 64F6
EIS DSP Address: 3B0000
EIS DSP Max Length: 010000
Engine: Found
Address: 5
Type: PS3
Memory: 4 MB
Writing Sector 945 of 959 to Engine using TIU on COM9 (3B1B00)
CANCEL

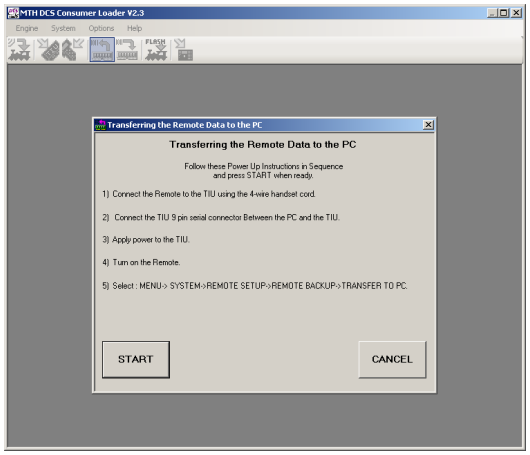

MTH DCS Consumer Loader V2.3
Engine System Options Help
Sending the DSP Code to the Engine
Sending the DSP Code to the Engine
PLEASE WAIT!
Sending the File: \\Dave_2\shared\Design Documents\DCC\temp\engine-hdr-1784.srec
Download Complete, Wait for Power Cycle Reset
Started at: 4:02 PM
LOAD TIME IS TYPICALLY LESS THEN 1.5 MINUTES.
IF THE PROCESS STALLS FOR MORE THAN 1 MINUTE AT ANY STEP,
PRESS CANCEL AND TRY AGAIN.
WARNING: DO NOT REMOVE ENGINE OR POWER FROM TRACK DURING LOADING
Status
File Loaded: ...\Design Documents\DCC\temp\engine-hdr-1784.srec
File Size: 64F6
EIS DSP Address: 3B0000
EIS DSP Max Length: 010000
Engine: Found
Address: 5
Type: PS3
Memory: 4 MB
Holding for Power Cycle Off (25).....
CANCEL

Transferring Remote Data to PC (Cloning)

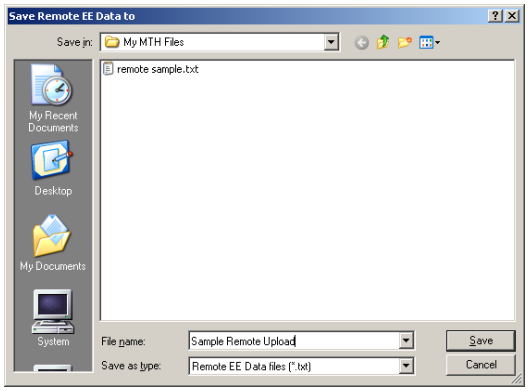
1. Click on the Transfer Remote Data to PC icon or select **System** -> **Transfer Remote Data to PC**



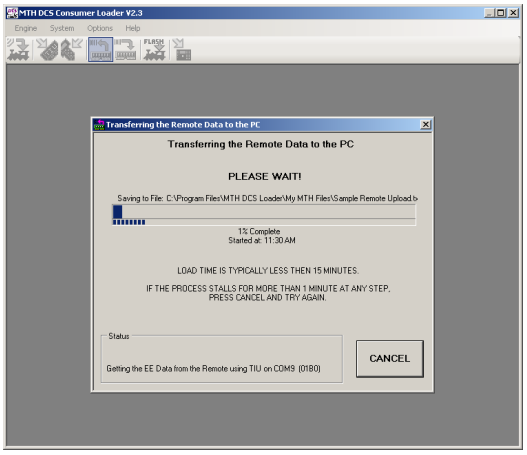
2. Follow the on-screen instructions in the Loader program



3. When prompted by the Loader, you will need to give your remote file a name and a location to save it on your PC. The files are saved as ".txt".

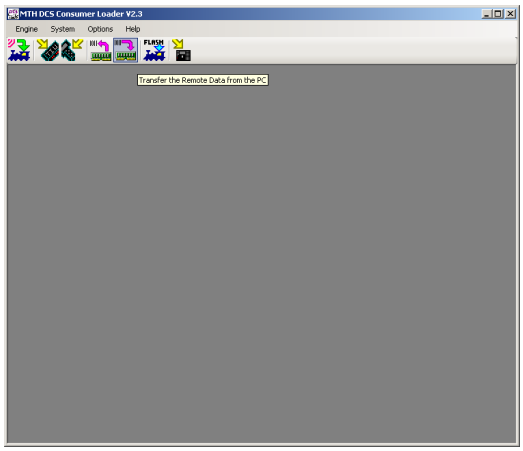


4. The Remote LCD and the Loader will indicate that the process has been complete

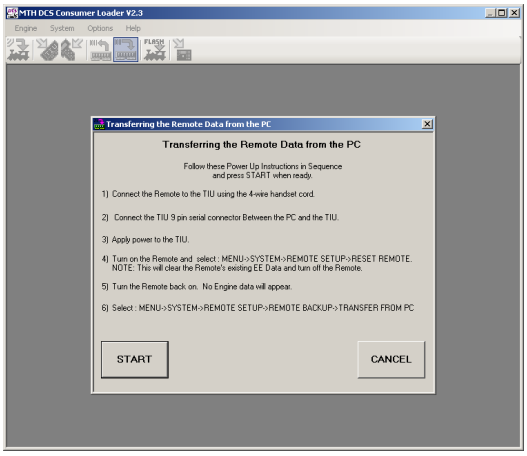


Transferring Remote Data From PC (Cloning)

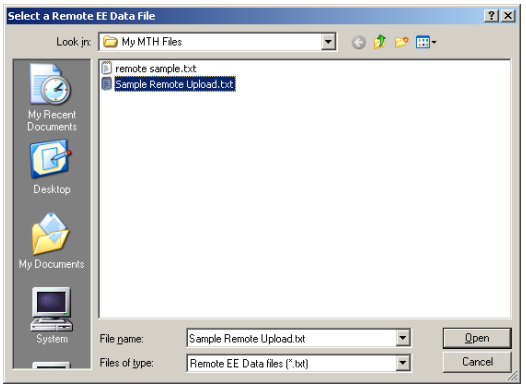
1. Click on the Transfer Remote Data From PC icon or select **System** -> **Transfer Remote Data From PC.**



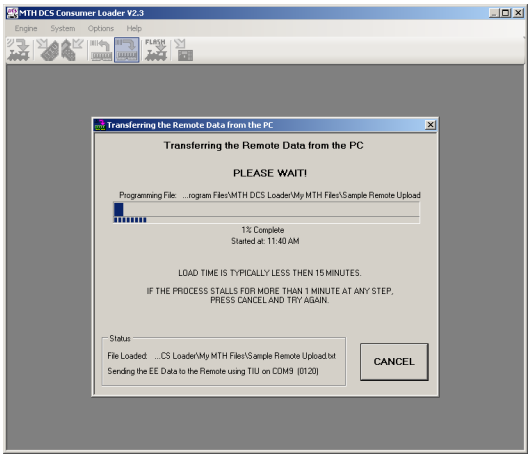
2. Follow the on-screen instructions in the Loader program.



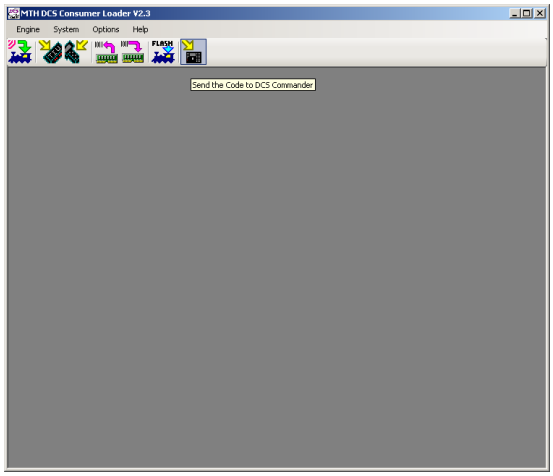
3. When prompted by the Loader, you will need to retrieve your remote file on your PC. The Remote Clone files end with ".txt".



4. When the remote has been loaded with the clone file it will shut off.



Loading DCS Commander Firmware

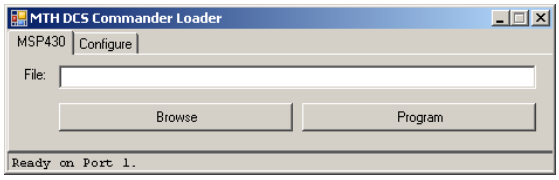


1. Download the DCS Commander firmware from MTH's website.

2. Connect your DB-9 Serial Cable or USB to Serial adapter to the PC and the DB-9 serial port on the back of the DCS Commander.

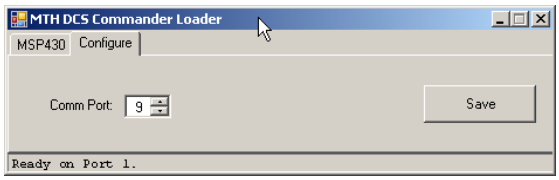
3. Connect your AC or DC supply to the Input voltage jack (either the barrel jack for a brick or the terminal jack for a conventional supply).

   A. NOTE The LCD on your DCS Commander should be blank at this time.

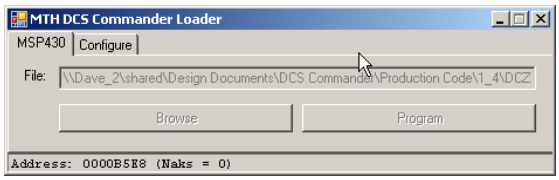


4. Click on the Load DCS Commander Code Icon or select **System** -> **Send Code to the DCS Commander.**

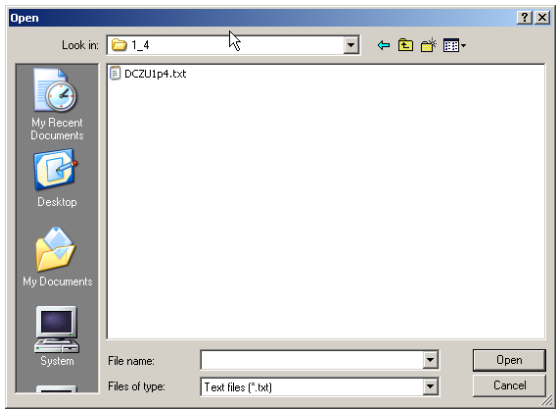
5. Click on the DCS Commander icon in the toolbar.



6. Click on the Configure tab and select the Com port you have your DCS Commander connected to.



7. Click Save. The Loader will remember this the next time you need to update you DCS Commander or if you are doing multiple upgrades.



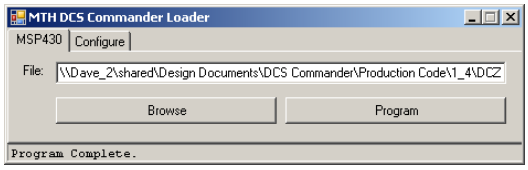
8. Click on the Program tab on the Loader.

9. Click on Browse and find the code file you downloaded from MTH's website (it's a .txt file).

10. Click OK.

Contact MTH Service if problems persist.

Loading DCS Commander Firmware (cont'd)

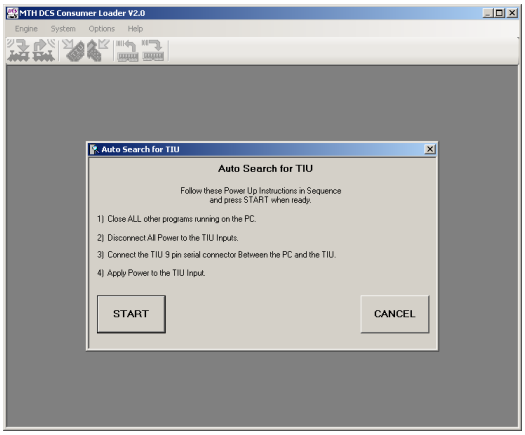


11. Now click Program on the Loader and the Loader program will begin sending the code file to your DCS Commander.

12. Once completed the DCS Commander will reset itself and display the code revision currently installed.

13. Remove the serial cable and turn off and remove your power supply connection.

Options



1. Click on **Options->Appearance.**

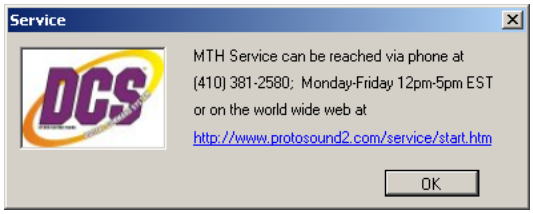
2. You can select to have Large or Small icons. By default the icons are set to Large.

3. Click on **Options->Serial Port.**

4. Here you can set the Loader to Auto-Search for a TIU or force it to a particular Com port.

*Note The Com ports listed under **Serial Port** are what the Loader views in your Device Manager in Windows. That is, only those Com ports that exist on your PC are the ones displayed.*

Help



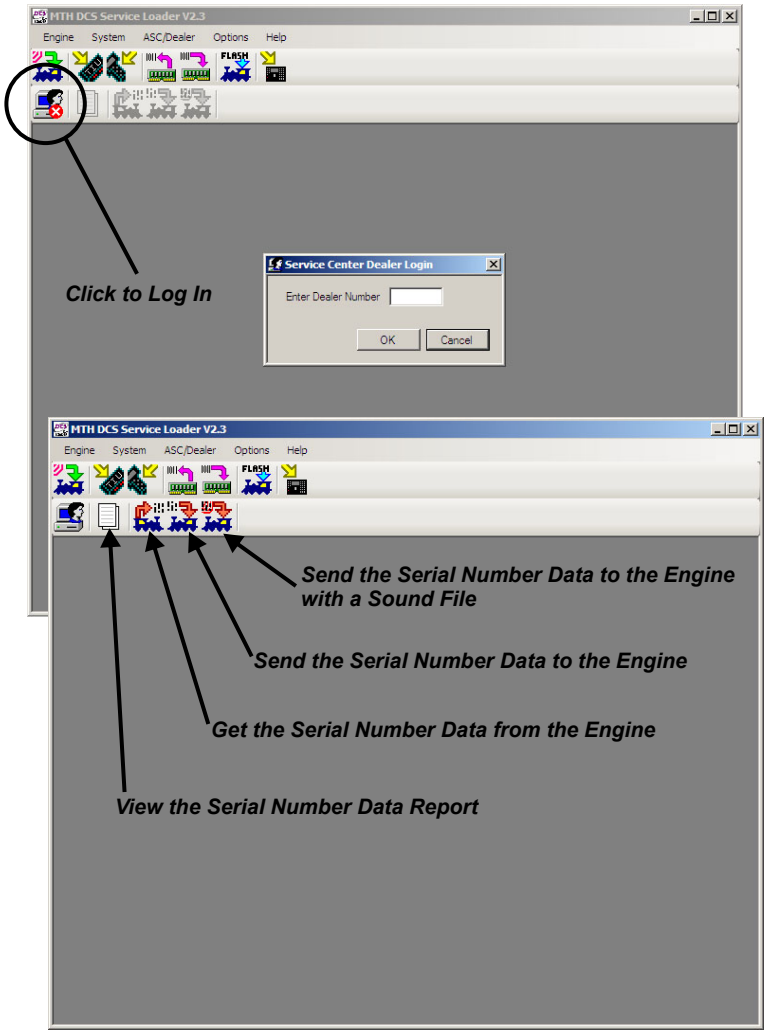
1. Click on **Help->Service** for MTH Service phone and e-mail support.

2. Click on **Help->About** for the revision number of the Loader.

Using The DCS Service Loader to create a Serial Number (SN) file, Readback SN, or Load SN with Sound File

A. Login

1. Use the Login Icon to activate the SN features of the DCS Service Loader. This feature is available only to Service Center Technicians. Use your Service Account number to login. This should be the same number (96xxxx) you used when installing the DCS Service Loader.
2. Once logged in the associated SN file icons become available.

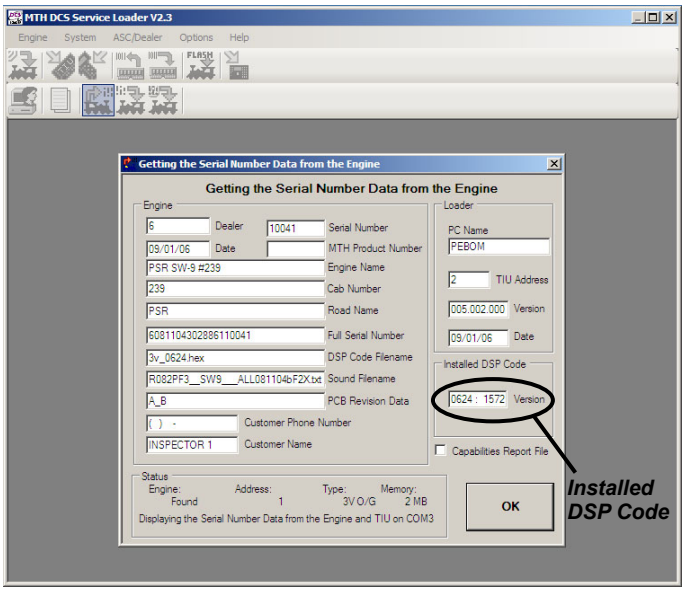


B. View SN Data Report

1. To view a list of serial numbers you have loaded into PS2 and PS3 engines click on the sheet of paper icon.
2. This can be helpful to determine if this was an engine you serviced previously and replaced the board.

C. Get the SN Data from the Engine

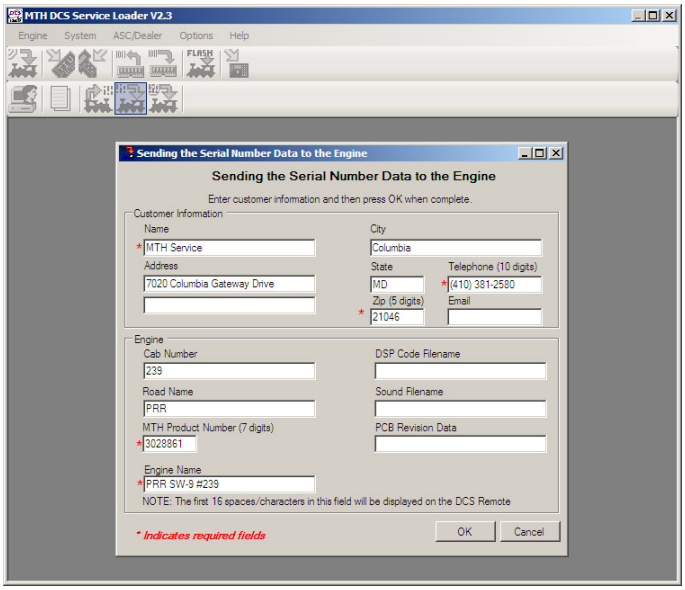
1. This feature of the loader is useful to determine the Installed DSP Code in PS2 and PS3 equipped engines.
2. Follow the instructions on the screen. In some cases, you may need to pause a few seconds after apply power to the TIU/engine before clicking the Start button. If that does not work apply power to the TIU/engine before clicking icon.
3. For a list of DSP Codes, see the DSP Code chart that follows. PS2 equipped locomotives must have the proper DSP to operate Pantographs for example. Without the proper DSP code, the Operating pantographs will not work. Use this feature to determine if the board has the correct code.



Example of SN Date From MTH Engine From Factory

D. Send SN Data to Engine

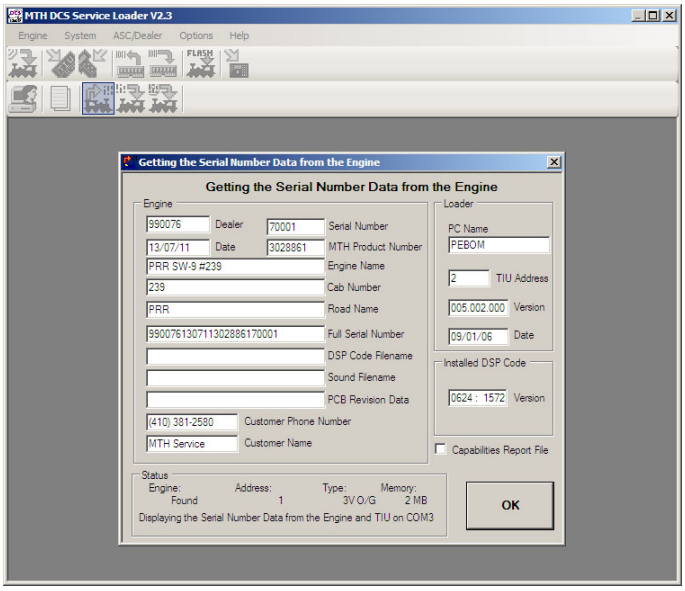
1. Use this feature to add the SN file. Specifically, the name that appears in the DCS Remote when the engine is added into DCS System.
2. Follow the instructions after clicking on the icon. Fill out the “Customer Information” and “Engine” information. The mandatory fields marked with an * must be filled in.
3. Press Ok and the serial number will be created and loaded into the engine.



IMPORTANT: See Engine Format Sheet (page 23) for more details on creating the Engine Name

E. Send SN Data to Engine with Sound file

1. Follow the instructions to load the SN file and Sound File at one time instead of entering each separately.



SN Data From Engine Loaded with Service Loader Program

MTH Loader Error Messages

<<Download Sound File to Engine>>

MsgBox "Failed Setup Step #6B" - Quality < 95
- Check for good power connections at the ps2 board and the pick up rollers
- If upgrading a engine with a constant voltage board make sure you have the supplied coil installed in series with the power wire going from the chassis to the constant voltage board
- If it is a 3v board check the signal transformer on the power board for cold solder joints

MsgBox "Battery Voltage is not sufficent to allow the Loading process to continue" - Outside Raw battery voltage limits
- Check battery with a load for proper voltage
- Check for loose connection to battery

MsgBox "Failed Step #9B" - Other battery / parameter update fail
- Same as above check battery

MsgBox "Failed Setup Step #12" - Failed the engine type VS file type match(3v/5v)
- Wrong sound set download correct sound set off of the website

MsgBox "Failed Setup Step #15" - Failed sector erase
- Do the same checks as error 6b

MsgBox "Failed Sending File Data" - Failed while sending file data
- Make sure that power is still applied to engine
- Retry download sequence

MsgBox "Battery Voltage is NOT within Range - Parameter Update Failed" - Outside Raw battery voltage limits
- Check battery

MsgBox "Failed Step #21" - Other battery / parameter update fail
- Check Battery

<<Upload Sound File from Engine>>

MsgBox "Failed Setup Step #8B" - Quality < 95
- Check for good power connections at the ps2 board and the pick up rollers
- If upgrading a engine with a constant voltage board make sure you have the supplied coil installed in series with the power wire going from the chassis to the constant voltage board
- If it is a 3v board check the signal transformer on the power board for cold solder joints

MsgBox "Failed Converting to .MTH format" - Bad .mth to txt conversion
- Retry upload sequence

MsgBox "Failed Writing File" - Failed to write received file to PC
- Retry upload sequence

<<Add Serial Number Only>>

MsgBox "Failed Setup Step #6B" - Quality < 95
- Check for good power connections at the ps2 board and the pick up rollers
- If upgrading a engine with a constant voltage board make sure you have the supplied coil installed in series with the power wire going from the chassis to the constant voltage board
- If it is a 3v board check the signal transformer on the power board for cold solder joints

<<Read Back SN Info>>

MsgBox "Failed Setup Step #6B" - Quality < 95
- Check for good power connections at the ps2 board and the pick up rollers
- If upgrading a engine with a constant voltage board make sure you have the supplied coil installed in series with the power wire going from the chassis to the constant voltage board
- If it is a 3v board check the signal transformer on the power board for cold solder joints

* If you receive any error messages other than the ones listed above try uploading/downloading the file/serial again. If you receive the same error message a second time call the MTH Service Department at (410) 381-2580 with the error message you have received and we will try to troubleshoot the problem with you over the phone.

Engine Name Format

XXX YYYYYY #ZZZZ

X= 3 Character Road Name (See Below for Abbreviations)
Y= Engine Type
Diesel/Electric – Use the engine type (ie. F40PH, SD40-2, BB-3)
Steam – Use either the engine type or the wheel arrangement (ie. Y6B or 2-8-8-2)
NOTE Sometimes the steam wheel arrangement will result in more than 16 characters, in cases like that use the engine type instead. (ie. B&O 2-8-8-2 #7320 is 17 characters in length, so use either B&O Y6B #7320 or B&O 2882 #7320)
Z= Engine Cab Number

Example – CSX F40PH #9993 or B&O Y6B #7320

(Remember; the DCS Remote will only display 16 characters which includes spaces)

ACL	Atlantic Coast Line	CZP	California Zephyr	NH_	New Haven
AK_	Alaska	D&H	Delaware and Hudson	NJT	New Jersey Transit
AFT	American Freedom Train	DMI	Duluth Missabe Iron Range	NKP	Nickel Plate
AKS	AK Steel	DRG	Denver Rio Grande	NP_	Northern Pacific
AMT	Amtrak	EL_	Erie Lackawanna	NS_	Norfolk Southern
AOE	Orient Express	EMD	Electro Motive Division	NYC	New York Central
AR_	American Railroad	ERE	Erie	NYT	New York City Transit
ARS	Armco Steel	FR_	FRISCO	O&N	Ontario & Northland
A&C	Arizona and California	FEC	Florida East Coast	PC_	Penn Central
B&M	Boston and Maine	GBW	Green Bay Western	PRR	Pennsylvania
B&O	Baltimore and Ohio	GMO	Gulf Mobile & Ohio	PRC	Pittsburgh Railway Company
BAR	Bangor and Aroostook	GN_	Great Northern	PWV	Pittsburgh & West Virginia
BT_	Baltimore Transit	GS_	Golden Spike	RDG	Reading, Reading Lines
BN_	Burlington Northern	GTW	Grand Trunk Western	RIS	Rock Island
BNS	Burlington Northern Santa Fe Merger	HCL	Hillcrest Lumber	RL_	Rutland
BUR	Burlington	IC_	Illinois Central	SEP	SEPTA
C&A	Chicago & Alton	IVE	Ives Railway Lines	SCL	Seaboard Coast Lines
C&O	Chesapeake and Ohio	JC_	Jersey Central	SEA	Seaboard
CAF	Conrail American Freedom	JD_	John Deere	SF_	Santa Fe
CAL	Cal Train	L&N	Louisville and Nashville	SOO	Soo Lines
CAT	Caterpillar	LIR	Long Island	SOU	Southern
CBQ	Chicago, Burlington & Quincy	LKW	Lackawanna	SP_	Southern Pacific
CHI	Chicago	LV_	Lehigh Valley	T&P	Texas & Pacific
CHR	Christmas	MCD	McDonalds	UP_	Union Pacific
CHS	Chessie	MET	Metra	USP	United States Postal Service
CIR	Circus	MKT	Missouri, Kansas & Texas (Katy Lines)	VIR	Virginian
CNT	Canadian National	MLW	Milwaukee Road	VT_	Virginia & Truckee
CNR	Canadian National Railways	MON	Monon Line	WAB	Wabash
CNW	Chicago North Western	MP_	Missouri Pacific	WAR	Western & Atlantic RR
CP_	Canadian Pacific	MSK	Maersk	WC_	Wisconsin Central
CPR	Central Pacific Railroad	MSL	Minneapolis & St. Louis	WM_	Western Maryland
CR_	Conrail	MTH	MTH Lines	WP_	Western Pacific
CSF	City of San Francisco	N&W	Norfolk and Western	WST	Westinghouse
CSX	Chessie Systems Expressways	NAS	NASA	WVP	West Virginia Pulp & Paper

DSP Flash Code Chart

O GAUGE

5 Volt

	CODE	BOARD	Info
5v Rom	0714	5v ROM	Anything not listed below
Articulated Steam	0322	5v Flash	Double chuff sound
Trolly/Subway	0314	5v Flash	Station Stop Announcements
GG-1	0921	5v Flash	Operating Pantographs

3 Volt

3v Rom	0624	3v ROM	Anything not listed below
Coors Silver Bullet	1013	3v Flash	Coors car operation
EP-3,5/P2 Box Cab/P5a	0603	3v Flash	Operating Steam & Pantographs
Alco S-2, RS-11, VO-1000	0125	3v Flash	Single heater (small) smoke unit
GG-1, Little Joe, EF-2, FF-1	1105	3v Flash	Operating Steam & Pantographs
A-5, H-3, 4-4-0, 0-6-0 USRA	1210	3v Flash	Single heater (small) smoke unit
UP9000 4-12-2	0c05	3v Flash	Six Chuff
Triplex, "J", G-5, Yellowstone, etc.	0908	3v Flash	Quillable Whistle w/standard smoke unit
Camelback	0115	3v Flash	Quillable Whistle w/small smoke unit
AEM7, ALP-44	0917	3v Flash	Di-directional Ditch Lights

G GAUGE

Triplex	0715	3v flash (modified for G gauge)	Smoking whistle
GG-1	1105	3v flash	Operating Pantographs w/ standard smoke unit

HO GAUGE

K-4	Tender	e918 (E506)	*Micron Board (**Spansion board)	Version 1 HO PS3 Steam tender
Triplex	Tender	eb27 (E508)	*Micron Board (**Spansion board)	Version 1 HO PS3 Steam tender
Gs-4/6	Tender	e410 (E411)	*Micron Board (**Spansion board)	Version 1 HO PS3 Steam tender
L3/L4 Mohawk	Tender	E610 (E611)	*Micron Board (**Spansion board)	Version 1 HO PS3 Steam tender
Mikado	Tender	E926 (E927)	*Micron Board (**Spansion board)	Version 1 HO PS3 Steam tender
N&W J	Tender	(E202)	(**Spansion board)	Version 1 HO PS3 Steam tender
UP 9000	Tender	(E304)	(**Spansion board)	Version 1 HO PS3 Steam tender
Challenger	Tender	(E511)	(**Spansion board)	Version 1 HO PS3 Steam tender
Dreyfuss Hudson	Tender	(E604)	(**Spansion board)	Version 1 HO PS3 Steam tender
Berkshire	Tender	(EA19)	(**Spansion board)	Version 1 HO PS3 Steam tender
CabForward	Tender	(E315)	(**Spansion board)	Version 1 HO PS3 Steam tender
Big Boy	Tender	(E407)	(**Spansion board)	Version 1 HO PS3 Steam tender

* Micron 8Mb Flash Memory IC, Identified by its "MT" part number.

** Spansion 8Mb Flash Memory IC, Identified by its AMD symbol and "AM" part number