HCS12 LEDs					Power PC LEDs					
LED1 – CAN_COMMS	LED2 – HEARTBT	LED3 – IDLE	LED4 – IRQ	LED5 – SRVC	LED8 – W/S COMMS	LED9 – HEARTBT	LED10 – IDLE	LED11 – IRQ	LED12 – SRVC	Description/Solution
0	2 s	1	0	0	1	1	1	1	1	The HCS12 is in main code, but was not able to load the Xilinx image. This would indicate that both the primary and backup Xilinx images are missing/corrupted. In this case, the installer program can't download new code, since the Power PC isn't running. Code will have to be downloaded serially through J39 (instructions for this are not in this document).
0	2 s	1	0	0	0	0.4 s	0	0	0	The power PC is in Boot Loader mode. This indicates one of the following: • Both the primary and backup copies of boot code are missing or corrupted. - Code will have to be downloaded serially through J39 (instructions for this are not in this document). • A jumper is present on J51 near the reset button.

5.2 What to do if the GMCE is Stuck in Boot Mode

By far, the most common problem observed is when the board is "stuck" in boot mode, meaning that the board is not able to download its main code. Note that some of the troubleshooting can be omitted by finding out whether or not there is a valid IP connection.

To test the IP connection, go to a command prompt (This is outside of service shell. You can find the command prompt by going to Start→ Run… and then type "command" in the box that comes up). At the prompt, type "ping 192.168.100.193" This is the equivalent of the workstation asking the GMCE "Are you there?" You'll get one of two responses:

If the GMCE can *not* "hear" the workstation, you'll get this:

```
C:\>ping 192.168.100.193

Pinging 192.168.100.193 with 32 bytes of data:
```

```
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.100.193:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

If you get the above, go to the Section 5.2.1 below: "Can't Ping the GMCE."

If the GMCE *can* "hear" the workstation, you'll get this:

```
C:\>ping 192.168.100.193

Pinging 192.168.100.193 with 32 bytes of data:

Reply from 192.168.100.193: bytes=32 time<1ms TTL=255
Reply from 192.168.100.193: bytes=32 time<1ms TTL=255
Reply from 192.168.100.193: bytes=32 time<1ms TTL=255
Reply from 192.168.100.193: bytes=32 time<1ms TTL=255

Ping statistics for 192.168.100.193:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

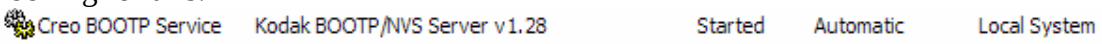
If you get the above, go to Section 5.2.2 below: "The GMCE Responds to Pinging."

5.2.1 Can't Ping the GMCE

In this case, the GMCE has a lower level problem and there are several things that can go wrong. Check the following:

- The Link LED on J42 should be on solid green.
  If not, there may be a problem with the cable connection from the GMCE to the workstation. If the cable is connected, try a different cable. If there's still no response, the GMCE may have a linking problem. Replace the board.

- Check the CreoBootp.ini file (in C:\Creo\Firmware) under the [GMCEX] heading (where X is the Logical unit number of the GMCE (usually 0 – See the footer at the bottom of page 7 for more information)). Confirm the following:
  - ACTIVE should =Yes
  - The IP address you tried to ping should match the address listed for IPADDR_CO

- Check that the bootp service is running on the workstation
  Go to Control Panel → Administrative Tools → Services and scroll through the list looking for this:
  

  If it is missing, or not started, run the GMCE installer.

- In Windows XP, check that the Windows Firewall is disabled. If it is enabled, it must have rules established that would allow the BOOTP message packets to travel to/from the GMCE firmware. This is discussed in the GMCE Core Firmware release notes.

- Go to the diagnostic monitor prompt through the USB port on the GMCE and check that "net bootp" is on. This is a firmware "switch" that keeps the GMCE from requesting network configuration information from the bootp server. Type "prm all" at the command prompt, and look for the bootp line:
  ```
  net          BootpStartup[1] True              False
  ```
  You only care that the next thing after "BootpStartup[1]" is "True" (don't worry

about the “False” later in the line). If it doesn’t, or you’re in any doubt, type “net bootp on.”

5.2.2 The GMCE Responds to Pinging

In this case, the communication is working, but the main code is still not downloading. There are only a few things to check here.

- Perform the last step of the previous section (turning net bootp on). If this is off, you might still be able to ping the board (using defaults programmed into firmware), but the GMCE won’t be able to ask the bootp server for its main code.
- Check the GMCE monitor prompt upon boot-up. If you get the warning below, check that the bootp service is running on the workstation, and check the Windows XP firewall settings as explained in the previous section.

```
|=========================================================================|
|                        !!! Attention !!!                                |
|-------------------------------------------------------------------------|
|                                                                         |
|                     BOOTP Server Does Not Respond !                     |
|                                                                         |
|       NVS Parameters And Product Firmware Will Not Be Available !       |
|                                                                         |
|=========================================================================|
```

- Go to the diagnostic monitor prompt through the USB port on the GMCE and check that “gmce boot” is on. This is a firmware “switch” that keeps the GMCE from requesting the product specific main code. Type “gmce boot” at the command prompt. You should get this:

```
GbootENG>> gmce boot
GMCE Boot of Main code is enabled
*** Command Complete
```

  If you don’t, type “gmce boot on.”

- Check the CreoBootp.ini file (in C:\Creo\Firmware) under the [GMCEX] heading (where X is the Logical unit number of the GMCE (usually 0 – See the footer on page 7)). Confirm the following:
  - FWFILE_GMCE should be set to the filename of the main code you want to download from the workstation. Check that the file exists in the directory indicated by BIN_PATH_GMCE (usually C:\Creo\Firmware).
  - While you’re in the .ini file, it’s a good idea to do the same thing you did for FWFILE_GMCE for NVSFILE_GMCE. This will confirm that you don’t have NVS file problems later.

5.3 USB Diagnostic Prompt Latency

There is a known (to us) problem where after a GMCE board is reset, the diagnostic monitor prompt (accessed through USB) doesn’t come up right away. Often there is a delay of about 30 seconds or so. This is a problem with Windows being slow to detect the disconnection of the USB interface when the board resets. Since this is a Windows problem, the only solution for it is to simply wait until Windows realizes what happens and brings the USB interface back online.

<END>