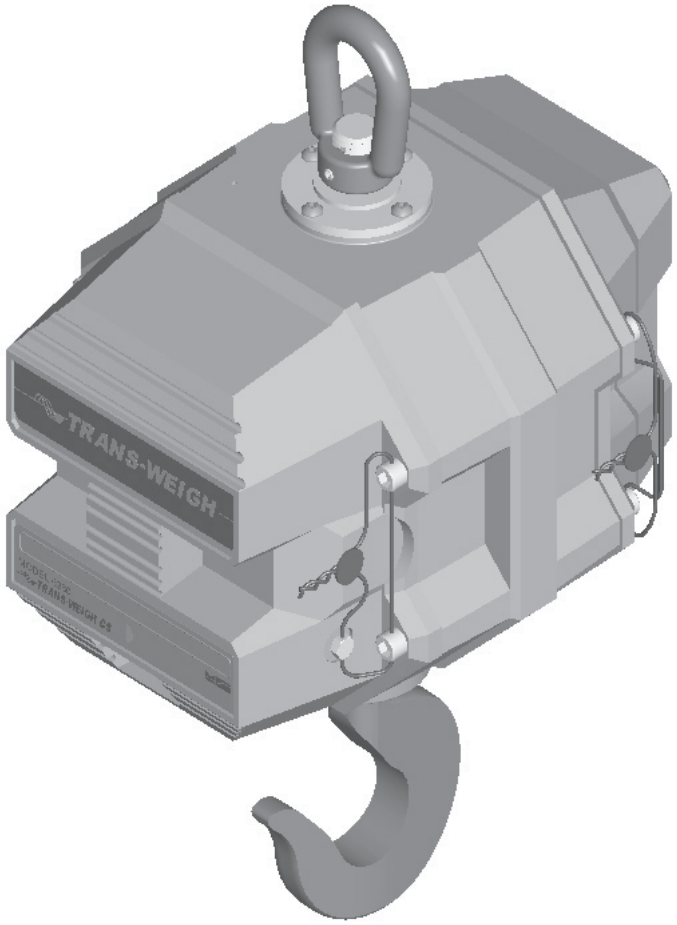
MSI6260cs

RF Digital Crane Scale

Software Upgrade Guide



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1 Introduction.

This procedure describes how to perform software upgrades within the MSI-6260CS Crane Scales. The MSI-6260CS Crane Scale is controlled by an embedded MSI-9000 CellScale.

All scale functions & operating parameters are stored within the MSI-9000.

The MSI-9000 CellScale operates as most processor based equipment do with a boot-loader and an application. Dependent upon original version to current version upgrade, it will be required to install both the boot-loader and application software into the 9000CS. These units will require the **FULL** upgrade procedure.

In the remaining cases where the original boot loader is the same version, then only the application software upgrade is needed and **step 5** can skipped in its entirety.

Refer to the chart below to determine upgrade requirements. Additional variables to upgrade requirements include modem version (2400 or 2450) and in rare cases of some older systems, possible hardware upgrades.

MSI-9000 CellScale Software Chart

Boot-Loader Version	Application Version	2400 Modem Compatibility	2450 Modem Compatibility
2-15	2-23 thru 2-32	Yes	No
3-01	3-33 thru 3-37	Yes	No
3-02	3-38 thru 3-43	Yes	No
3-02	5-01 thru Current	No	Yes

If your scale has a software version not listed, contact MSI.

2 Equipment requirements.

2.1 PC with terminal program as described within and RS-232 serial port with Std. DB-9 connection or adapters. Reference full version of **MSI-9000 CellScale User's Guide** for specific details on connections.

2.2 1 ea. 501705-0001 serial communication cable.

2.3 Variable DC power supply, min. output: 13VDC @ .25A.

2.4 Applicable upgrade software in .hex format. Contact MSI as these files can be easily sent via E-Mail attachments.

3 Accessing the MSI-6260CS Terminal Menu

3.1 Set the terminal program to emulate an ASCII terminal.

3.2 Set the terminal programs port protocol to 9600 Baud, no parity, 8 data bits and 1 stop bit.

3.3 Disable flow control in the terminal program.

3.4 Connect scale to variable supply, set to 12.5 VDC, turn scale **ON**.

3.4 Connect the 6260CS comport to the PC serial port with the 501705-0001 serial cable.

3.5 From PC, press ENTER. Main Cell Scale Manu will appear.

```
---------- MSI 9000 - CellScale ----------
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12:01:26                    01/05/08

(1)  Channels/Calibration
(2)  Communications
(3)  Display
(4)  Feature Locks/Passwords
(5)  Product IDs
(6)  Set Points
(7)  System
(8)  About...

Enter choice :
```

4 Accessing Boot Loader

4.1 Select (**7**) **System**.

```
***** System *****

(1)  Clock
(2)  Initializations
(3)  LED Management
(4)  Switch Functions
(5)  System Power
(6)  Display Device: 9300
(7)  RF Modem Installed: Yes
(8)  Load New Application Software
(ESC)  Exit
```

4.2 Select (**8**) **Load New Application Software**.

```
Ready to load new application!

Are you sure??
Type  YES  to complete this action.
Type  NO   to abort this action.
```

4.3 The CellScale will prompt if you are sure. Type **YES** and press **Enter**.

```
MSI Boot Loader Version 3.02 action.

(1)          Update Application
(2)          Change Baud Rate
(ESC)        Start  Application

Enter Command :
```

5 Updating the boot loader.

5.1 Press (**1**) to **Update Application**.

```
Enter Command : 1
                Send (Upload) the file:
```

5.2 Using the terminal program, send the **3-02 RE-BOOT** file.
Note: File must be sent as raw ASCII. Do not use Kermit, X-Modem, Z- Modem or any other protocol.

5.3 After the file is sent, the re-boot loader program will display the following message.

```
Upload complete

Erasing sector 1 of 7
Erasing sector 2 of 7
Erasing sector 3 of 7
Erasing sector 4 of 7
Erasing sector 5 of 7
Erasing sector 6 of 7
Erasing sector 7 of 7
Erase Complete

Programming sector 1 of 7....
Programming sector 2 of 7
Programming sector 3 of 7
Programming sector 4 of 7
Programming sector 5 of 7
Programming sector 6 of 7
Programming sector 7 of 7
Programming Complete

MSI Boot Loader Version 2.15

(1)          Update Application
(2)          Change Baud Rate
(ESC)        Start  Application

Enter Command :
```

5.4 Press (**ESC)** to **Start Application** (i.e. the reboot loader program).

```
MSI Re-BootLoader Version 3.02

(1)          Update Main BootLoader
(2)          Change Baud Rate
(ESC)        Start Main BootLoader

Enter Command : 1

                Send (Upload) the file :
```

5.5 Press (**1**) to **Update Main Bootloader**.

```
MSI Re-BootLoader Version 3.02

(1)        Update Main BootLoader
(2)        Change Baud Rate
(ESC)      Start Main BootLoader

Enter Command : 1

           Send (Upload) the file :
```

5.6 Using the terminal program, send the **3-02 Boot file**.
Note: File must be sent as raw ASCII. Do not use Kermit, X-Modem, Z- Modem or any other protocol.

5.7 After the file is sent, the re-boot loader program will display the following message.

```
Upload complete

Erasing sector 10
Erase Complete

Programming sector 10....
Programming Complete

MSI Re-BootLoader Version 3.02

(1)        Update Main BootLoader
(2)        Change Baud Rate
(ESC)      Start Main BootLoader

Enter Command :
```

5.8 Press (**ESC)** to **Start Main Bootloader**.

```
MSI Boot Loader Version 3.02

(1)        Update Application
(2)        Change Baud Rate
(ESC)      Start  Application

Enter Command :
```

6 Updating the Application

6.1 Press (**2**) to **Change Baud Rate**. Changing baud rate will expedite the file transfer time.

```
Baud Change menu

(1)      9600   Baud
(2)      19200  Baud
(3)      38400  Baud
(4)      57600  Baud
(5)      115200 Baud
(ESC)    Exit

Choose a baud rate, then change your terminal's baud rate.

If you encounter problems, reset your terminal to 9600 Baud and re-start.

Choose now :
```

6.2 Press (**4**) to select **57600 Baud** rate.

```
Choose now : þ){p0óêdúãî){p0óêdúãî){p0óêdúãî){p0óêdúãî){p0óêdú
ãî){p0óêdúãî){p0óêdúãî){p0óêdúãî){p0óêdúãî){p0óêdúãî){p0óêdú
```

6.3 Change terminal program protocol to match (i.e. 57600, N, 8, 1).

```
When you can read this, press any key.
When you can read this, press any key.
When you can read this, press any key.
```

6.4 Press (**ANYKEY**). **ENTER** is fine.

```
MSI Boot Loader Version 3.02

(1)      Update Application
(2)      Change Baud Rate
(ESC)    Start  Application
```

6.5 Press (**1**) to **Update Application** software.

```
MSI Boot Loader Version 3.02

(1)      Update Application
(2)      Change Baud Rate
(ESC)    Start  Application

Enter Command : 1

         Send (Upload) the file:
```

6.6 Using the terminal program send the **X-YZ Application** file.
Note: File must be sent as raw ASCII. Do not use Kermit, X-Modem, Z-Modem or any other protocol.

6.7 After the file is sent, the boot loader program will display the following message.

```
Upload complete

Erasing sector 1 of 7
Erasing sector 2 of 7
Erasing sector 3 of 7
Erasing sector 4 of 7
Erasing sector 5 of 7
Erasing sector 6 of 7
Erasing sector 7 of 7
Erase Complete

Programming sector 1 of 7.....
Programming sector 2 of 7.....
Programming sector 3 of 7.....
Programming sector 4 of 7.....
Programming sector 5 of 7.....
Programming sector 6 of 7.....
Programming sector 7 of 7.....
Programming Complete

MSI Boot Loader Version 3.02

(1)     Update Application
(2)     Change Baud Rate
(ESC)   Start  Application

Enter Command :
```

6.8 Press (**2**) to **Change Baud Rate**.

```
Baud Change menu

(1)     9600  Baud
(2)     19200  Baud
(3)     38400  Baud
(4)     57600  Baud
(5)     115200 Baud
(ESC)   Exit

Choose a baud rate, then change your terminal's baud rate.

If you encounter problems, reset your terminal to 9600 Baud and re-start.

Choose now :
```

6.9 Press (**1**) for **9600 Baud**.

```
Choose now : ñàààààààààààààààààààààààààààààààààààààààààààààààààààà
àààààààààààààààààààààààààààààààààààààààààààààààààààààààààààà
àààààààààààààààààààààààààààààààààààààààààààààààààààààààààààà
```

6.10 Change terminal program protocol to match (i.e. 9600, N, 8, 1).

```
When you can read this, press any key.
When you can read this, press any key.
When you can read this, press any key.
When you can read this, press any key.
```

6.11 Press (**ANY KEY**). **Enter** is fine.

```
MSI Boot Loader Version 3.02

(1)          Update Application
(2)          Change Baud Rate
(ESC)        Start  Application
```

6.12 Press **ESC** to **Start Application**. Upon pressing **ESC**, allow a few moments for the Cell Scale to display the following message.

```
CellScale will be in Host Mode in 5 seconds.
To enter Terminal Access Mode, type MSI9MSI9

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12:01:26                    01/05/08

(1)  Channels/Calibration
(2)  Communications
(3)  Display
(4)  Feature Locks/Passwords
(5)  Product IDs
(6)  Set Points
(7)  System
(8)  About...

Enter choice :
```

NOTE: If main menu does not appear after 15 seconds, type MSI9MSI9.

7 Update Verification

7.1 Confirm that the Cell Scale program has been updated by accessing the Cell Scale application code. Select (**8**) **About**.

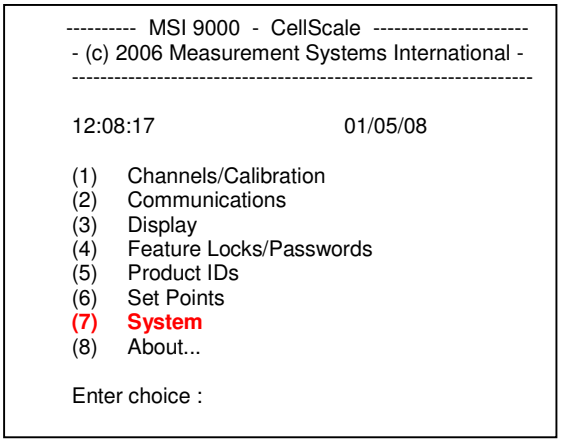
```
***** About *****

This hardware has not been registered!

(*)  Standard Mode: Industry

Software built:          05/14/08 at 14:56:11
Version number:          X-YZ

ARC: 0, Rom:9 Ram:
1 0 0 1 0 0 1 0 1
```

7.2 Confirm that the software version is the latest version that you downloaded. **Version number X-YZ**.

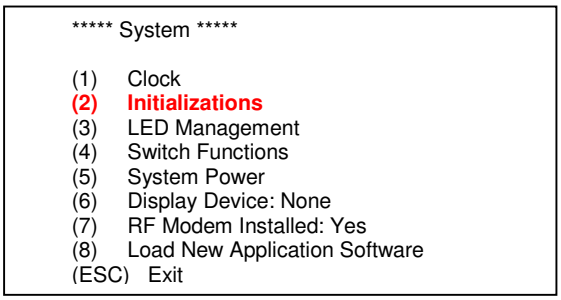
Press **ESC** to return to Main Menu.

8 Master Re-set.

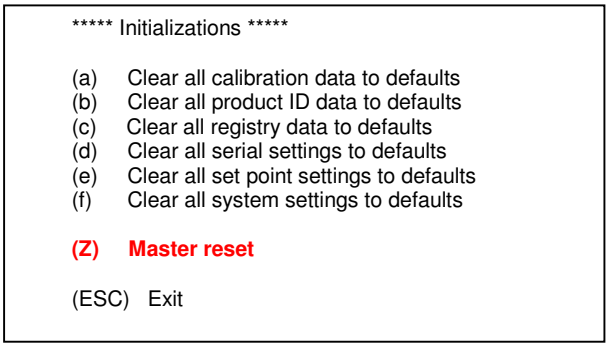
8.1 Perform Master Re-Set.



8.2 Select (**7**) **System**.



8.3 Select (**2**) **Initializations**.



8.4 Select (**Z**) **Master reset**.

```
Reset ALL cellscale data.  No exceptions!

Are you sure??
Type  YES  to complete this action.
Type  NO   to abort    this action.
```

8.5 Type **YES.** After a few moments, the main menu will appear.

```
---------- MSI 9000 - CellScale ----------
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------------------------------------------------------------

12:00:11                    01/05/08

(1)  Channels/Calibration
(2)  Communications
(3)  Display
(4)  Feature Locks/Passwords
(5)  Product IDs
(6)  Set Points
(7)  System
(8)  About...


Enter choice :
```

NOTE: If main menu does not appear after 15 seconds, type MSI9MSI9.

Software upgrade is now complete.

9 Configure the MSI-9000 CellScale for operation as an MSI-6260CS.

9.1 Select (**7**) **System.**

```
---------- MSI 9000 - CellScale ----------
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------------------------------------------------------------

12:00:11                    01/05/08

(1)  Channels/Calibration
(2)  Communications
(3)  Display
(4)  Feature Locks/Passwords
(5)  Product IDs
(6)  Set Points
(7)  System
(8)  About...


Enter choice :
```

9.3 Select (**3**) **LED Management**

```
***** System *****

(1)   Clock
(2)   Initializations
(3)   LED Management
(4)   Switch Functions
(5)   System Power
(6)   Display Device: 9300
(7)   RF Modem Installed: Yes
(8)   Load New Application Software
(ESC)  Exit
```

9.4 Select (**1**), then (**2**), then (**3**), ..., thru (**7**).

```
***** LED Management *****

(1)   LED COMM1:              Enabled
(2)   LED COMM2:              Enabled
(3)   LED SP1:                Enabled
(4)   LED SP2:                Enabled
(5)   LED SP3:                Enabled
(6)   LED RF:                 Enabled
(7)   LED POWER:              Bright
(8)   LED POWER DWELL:        10
(ESC)  Exit
```

Note that all "Enabled" change to "Disabled", and "Bright" changes to "Dim".

9.5 Select (**ESC**) **Exit.**

```
***** LED Management *****

(1)   LED COMM1:       Disabled
(2)   LED COMM2:       Disabled
(3)   LED SP1:         Disabled
(4)   LED SP2:         Disabled
(5)   LED SP3:         Disabled
(6)   LED RF:          Disabled
(7)   LED POWER:           Dim
(8)   LED POWER DWELL:     10
(ESC)  Exit
```

9.6 Select (**5**) **System Power.**

```
***** System *****

(1)   Clock
(2)   Initializations
(3)   LED Management
(4)   Switch Functions
(5)   System Power
(6)   Display Device: 9300
(7)   RF Modem Installed: Yes
(8)   Load New Application Software
(ESC)  Exit
```

9.7 **12V SLA Battery calibration**.

NOTE: This must be performed only if scale is 12V SLA battery operated. For alternative power sources, refer to full version of MSI-9000 CellScale User's Guide for proper System Power settings.

9.8 Select (**1**) **Hard-wired (Type A): AC or DC.**

```
***** System Power *****

(1)   Hard-wired (Type A):  AC or DC


(5)   Shutdown with:              switch only
(6)   Re-start with:              switch only
(7)   Auto Shutdown:              Disabled
(8)   Shutdown Now!
(9)   Battery Calibration
(ESC) Exit

      Current Power Level:  100 %
      RAM backup battery is OK
```

9.8 Select (**9**) **Battery Calibration**. **Note change to 12V SLA.**

```
***** System Power *****

(1)   Battery  (Type 1):  12V    Sealed Lead Acid
(2)   Check battery every:        30    seconds
(3)   Send warning at:            10 %  Power Level
(4)   Shutdown at:                1 %   Power Level
(5)   Shutdown with:              switch only
(6)   Re-start with:              switch only
(7)   Auto Shutdown:              Disabled
(8)   Shutdown Now!
(9)   Battery Calibration
(ESC) Exit

      Current Power Level:  110 %
      RAM backup battery is OK
```

9.10 Select (**1**) Hard-wired (Type A): AC or DC

```
***** Battery Calibration *****

      Cut off voltage ADC count setting is: 3
(1)   Hard-wired (Type A):  AC or DC
(2)   Data Backup from ROM
(Y)   Save Current Calibrated Value To ROM.
(ESC) Exit


      Please Set Calibration Voltage at: 9.88  V
      Raw A/D counts: 187
```

9.11 Set input voltage to 10.8VDC. Press (**Y**) to save value to ROM.
Note change to 12V SLA.

```
***** Battery Calibration *****

      Cut off voltage ADC count setting is: 89
(1)   Battery  (Type 1):  12V     Sealed Lead Acid
(2)   Data Backup from ROM
(Y)   Save Current Calibrated Value To ROM.
(ESC) Exit


      Please Set Calibration Voltage at: 10.80 V
      Raw A/D counts: 89
```

Note that after pressing (**Y**), the scale turned off. Increase input voltage to **12.5VDC** and turn scale **ON**.

10 Data Back-Up.

10.1 Select (**1**) **Channels/Calibration**.

```
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16:57:52                    01/05/08

(1)  Channels/Calibration
(2)  Communications
(3)  Display
(4)  Feature Locks/Passwords
(5)  Product IDs
(6)  Set Points
(7)  System
(8)  About...

Enter choice :
```

10.2 Select (**2**) **Data backup**.

```
***** Channel Setup *****

(1)   Channel Calibration
(2)   Data backup
(3)   Filter (software)
(4)   Channel Scanlist functions
(5)   Motion Compensation
(6)   Motion Detection
(7)   Tare
(8)   Total
(9)   Units Lock
(a)   Zero
(b)   Standard Mode: Industry
(c)   4 to 20mA
(d)   Temperature Sensor Installed: No
(ESC) Exit
```

10.3 Select (**b**) **Backup data NOW!**

```
***** Data Backup *****

(1)   Backup data after every cal:                Yes
(2)   Restore from ROM every power up:      No
(3)   Restore from ROM including Slave and Math loadcells:  Enabled
(b)   Backup data NOW!
(r)   Retrieve backup data NOW!
(ESC)  Exit
```

10.4 Select (**y**) **Store current data to ROM NOW!**

```
***** Data Backup to ROM *****

(y)   Store current data to ROM NOW!
(ESC)  Exit

Calibration data in long term storage
 will be over-written.

Only take this action if your scale is
currently calibrated and operating
normally.

Improper use of this action may result
 in the need to fully re-calibrate your
 system.

Press (y)   to take this action.
Press (ESC) to exit without changes.
```

10.5 Menu will indicate, Please Wait… momentarily and then revert to Main Menu.

Procedure is now complete. Scale must be calibrated, reference the MSI-6260CS Cal. Procedure.

Notes on terminal programs

There are several terminal programs available for every platform. Below are some notes on terminal programs that are used regularly at MSI for communicating with CellScale products.

TeraTermPro

Get from downloads.com or MSI can e-mail “ttermp23.zip”
After installing, start the program Start -> Programs -> TeraTermPro
Select “serial” and COM1 or whichever port being used (DO NOT SELECT TCP/IP) Hit OK
Set-up Serial port
- Port: COM1
- Baud Rate: 9600
- Data: 8 bits
- Parity: none
- Stop: 1 bit
- Flow Control: none

Hit OK May need to hit space bar to refresh display.

HyperTerminal

Comes with Windows Start -> Programs -> Accessories -> Communications -> HyperTerminal -> Hyperterm.exe
Name connection CSCom1 (any name is fine)
Under connect using:
- Direct to Com1 DO NOT TYPE PHONE NUMBER IN!
- Hit OK

Port Settings
- Baud Rate: 9600
- Data: 8 bits
- Parity: none
- Stop: 1 bit
- Flow Control: Hardware
- Hit OK

May need to press space bar to refresh the display When done, save session as you named it earlier and an icon will be created so you will not have to go through set-up in the future.

ProComm Plus

After installed: Programs Procomm Plus
Data Terminal Set-up – set-up bar is at the bottom of the screen. To change, click on the appropriate parameter and set to the following:
- Port: Direct connect-Com1
- Baud: 9600
- Parity-Data bits-Stop bits: N-8-1
- Hit 'r' key to refresh

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