

<b>FCO</b>	<b>Field Change Order</b> <i>Proprietary and Confidential</i>			<b>Product</b> <b>M22</b>
<b>FCO No.</b> FCR000059	<b>Issue Date</b> 30-Nov-2011	<b>Rev.</b> <b>A</b>	<b>Rev. Date</b> 30-Nov-2011	<b>Technical Audit:</b> Nir Pialkov
<b>Page</b> 1 of 22	<b>FCO Title</b> <b>M22 Software Upgrade from V1.5 to V 2.0</b>			

## Purpose

The purpose of this document is to describe the procedure for **upgrading** the M22 system software from V1.5 to the new revision SW V2.0.

## Background

We produced the new software that will improve the functionality and serviceability of M22 systems. The Upgrade is for systems series 003 only.

All new M22 systems coming out from production having series number **004** will have the new hardware and software already installed.

**NOTE:** The New GUI software is Version 2.0.  
The new Controller software is Version 2.0.

## SW Rev 2.0 New Features and Functions:

- 1. Water level sensor is replaced with a pressure sensor** - avoids long process of level sensor calibration, saving service time and effort and avoids level sensor calibration intermittent E232 issues in the field. The pressure sensor does not require the use of the water level sensor jig calibration tool P/N TA-1056020, therefore reducing special tools needed for service.
- 2. Disabled USB 2.0 BIOS configuration** - avoids the loss of communication with the PC issue which caused frozen screen and forcing the customer to turn off the system.
- 3. Eliminated reading module's micro-switch** – the purpose of this switch was to indicate if the PC module is properly connected to the base module. The change will avoid false E238 errors. When having a real issue, PC module is not in the correct position, resulting in no power to the PC module, and therefore the PC unit can't turn on, indicating that the PC needs to be closed properly.
- 4. Thermal Flag in the service diagnostic Cooling Screen** - the new revision will display the correct value: **OK** is indicated as Green. **Not OK** is indicated as Red. The indication is for service engineer only and was not activated by previous SW versions.
- 5. Enabling the IPL calibration device** – the new software version supports the use of a calibration device for the IPL treatment head, which may be connected to the system, in the same connector location as the Nd:YAG calibration tool. There is no change in the calibration requirement timing. The IPL Calibration Device is not included in this FCO.
- 6. Addition of Portuguese language to GUI** – set the preferred language in the User Preferences | Language Preference screens. On each of the Language Preference screens, the Defaults button will remain in English and when pressed, will change each language back to English. More information regarding language preferences is found in Appendix C of this document.
- 7. System notifies the user with on-screen message when IPL LG temperature exceeds the maximum limit.** The following message is displayed: *“Tip temperature is above 50°C/122°F Please wait several minutes for the tip to cool”*. User has the option to press **OK** , or **Ignore** after the message is displayed.
- 8. Reading HP type in service screen.** This was added because the system was not identifying the replacement of the handpiece in certain situations, causing incorrect handpiece readings and supplying incorrect TEC voltage values in service mode only. See Appendix B of this document.
- 9. Add Nd:YAG Lumenis presets for 2X4 mm spot size:**  
A new Treatment area” section was added to the Nd:Yag-VL Lumenis presets screen, including the options “Large” and “Small”. The User selects the “Large” option to receive the presets for 6 mm spot size, and the “small” option to receive 2x4 mm presets.

**Introduction**

**Below are the main steps for performing the Upgrade to software Rev. 2.0 (P/N FCR000059):**

1. Upgrade the system with new upgrade software (P/N SW-1091271)
2. Install the new controller software V 2.0

**Note! Before upgrading the system software, perform system backup user presets according to Appendix A of this document.**

**Required Tools**

- PC
- USB “Disk-on-Key” (local purchase)
- USB keyboard (local purchase)

**Estimated Implementation Time:**

- 1 hour

The M22 upgrade can be ordered via the usual channels using P/N FCR000059.  
 The upgrade contains:

<b>P/N</b>	<b>FCR000059</b>	<b>M22 1.5 to 2.0 Upgrade</b>	
<b>#</b>	<b>Description</b>	<b>Part Number</b>	<b>QTY</b>
1	<b>FCR Instructions</b>	<b>PBFC00059</b>	1
2	<b>M22 Software Upgrade to 2.0</b>	<b>SW-1091271</b>	1
3	<b>System DSP SW Version 2.0</b>	<b>SP-1047552</b>	1

---

## PROCEDURE

### 1. Upgrading the System for GUI SW 2.0 Revision

#### Required Tools

- USB “Disk-on-Key”
- PC

#### **GUI and Operating System Software Installation**

The GUI and Operating System software are located on the Compact Flash (CF) memory attached to the industrial computer module. Software upgrade installation is performed when updating the software with a newer version. The software is shipped to the FSE on a DVD CD-ROM, which should be copied to a USB “Disk-on-Key”.

1. Turn on the system; the *Login* screen appears (see Figure 1).



**Figure 1**

2. Login as Service; (**1111**); the *Select Mode* screen appears (see Figure 2).



**Figure 2**

3. Take the USB Disk-On-Key with the software to be installed and insert it into its connection port at the back of the system (see Figure 3).



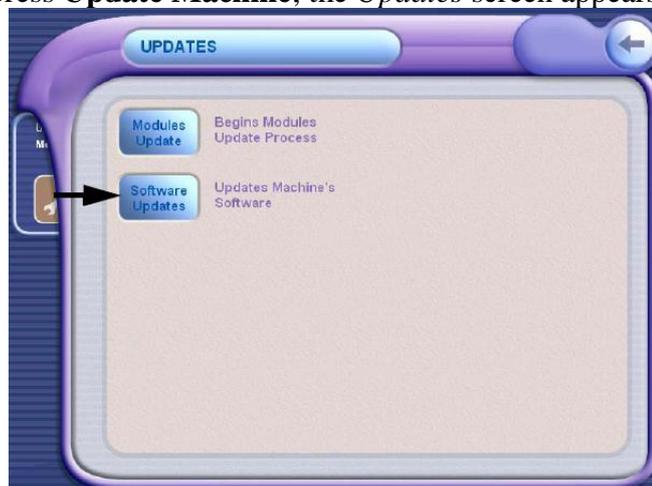
**Figure 3 USB Port**

4. Press **Utility**; the *Utility* screen appears (see Figure 4).



**Figure 4**

5. In the Utility screen, press **Update Machine**; the *Updates* screen appears (see Figure 5).



**Figure 5**

6. In the Update screen, select **Software Update**; the *Software Upgraded* screen appears and start automatically to upgrade the system with the new software 2.0 Revision (see Figure 6).



**Figure 6**

**Note! Please wait until the software process bar is completed.**

7. When software installation is complete, the Software Upgraded Screen disappears and system Desktop Screen appears, indicating that the software Upgrade is complete. No “*Successful Installation*” message appears.
8. Disconnect the USB Disk-On-Key.
9. Turn off the system and then back on again. Verify in the *Select Mode* screen that the new software revision was installed: Rev. 2.0.0.5 (see Figure 7).



**Figure 7**

## 2. System Flash DSP Installation Ver. 2.0

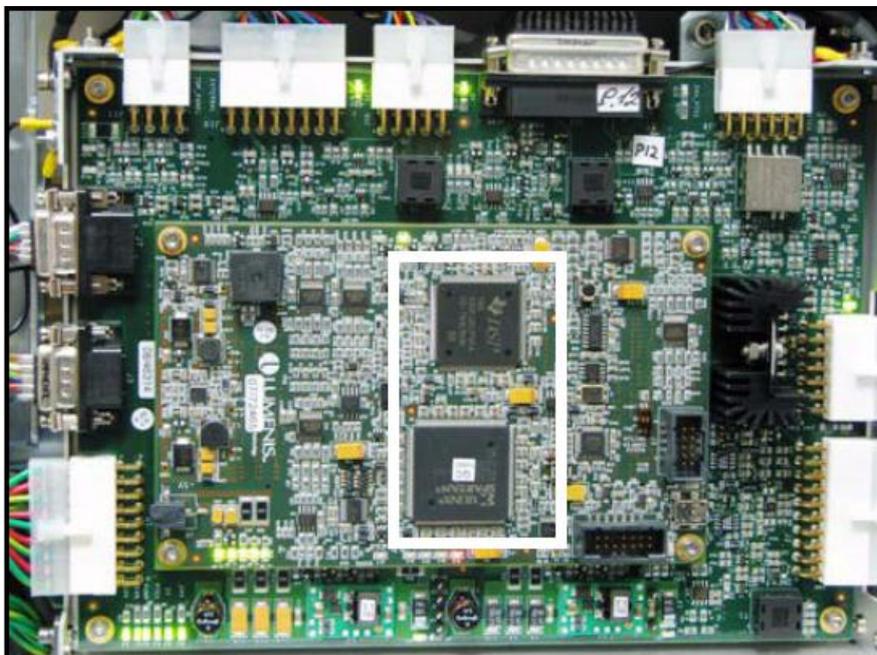
The DSP software is shipped on CD media. Installing the software requires having the software available on a USB "Disk-on-Key" device. Lumenis will deliver the software CD to the FSE, and the FSE should copy the software to the disk-on-key device.



**Figure 8: DSP Software Files 2.0**

**Note** This software installation does not require the removal of any system covers.

The software resides in the flash-memory card on the upper side of the controller board located on the back side of the system, inside the interface module (see Figure 9):



**Figure 9: Flash-DSP and FPGA SW on Controller Board**

**Installation Procedure**

1. Press the **Start** button on the system's console; the system starts its initialization process, until the *Login* screen appears (see Figure 10).



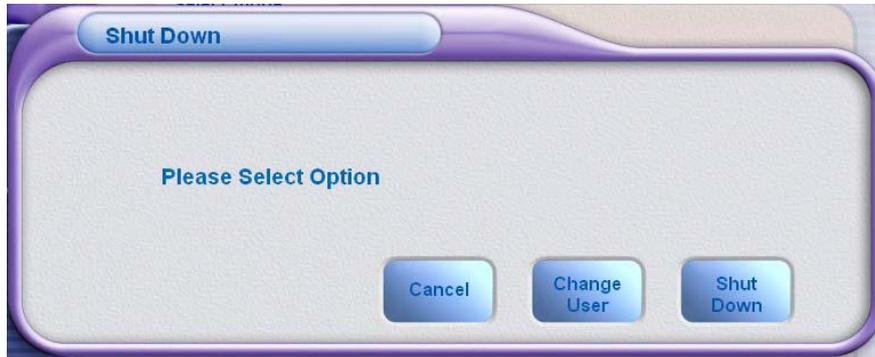
**Figure 10: Login Screen**

2. In the *Login* screen, type the password **1111** by touching the numbered buttons on the screen and then touch **OK**; the *Select Mode* screen appears (see Figure 11).



**Figure 11: Select Mode Screen**

3. In the Select Mode screen, press the  icon in the upper right-hand corner of the screen; the *Shut Down* screen appears (see Figure 12).



**Figure 12: Shut Down Screen**

4. Press **Shut Down**. The *M22 Desktop* screen appears (see Figure 13).



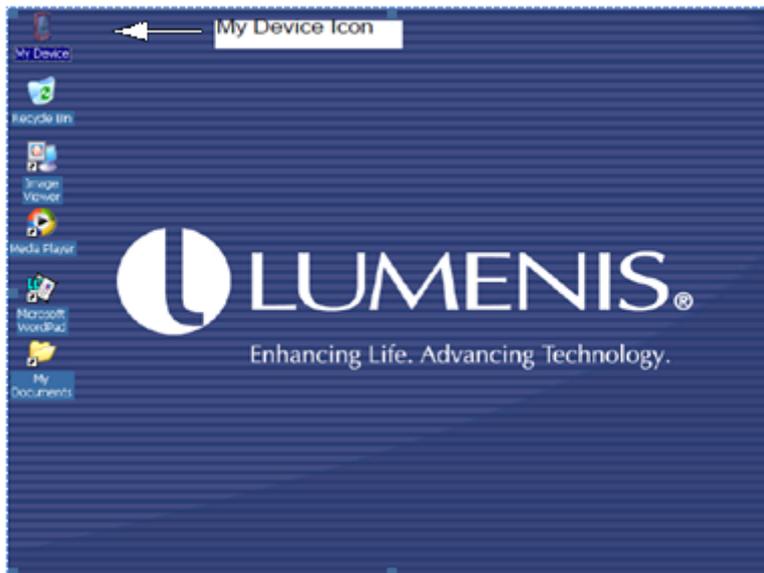
**Figure 13: M22 Desktop Screen**

5. Take the USB with all the software files to be installed and insert it into its connection port at the back of the system (see Figure 14).



**Figure 14: USB Port**

6. In the Desktop screen, press the **My Device** icon (see Figure 15).



**Figure 15: My Device Icon**

7. Verify that the USB Disk icon appears on the screen, and double-touch the USB Disk icon (see Figure 16).

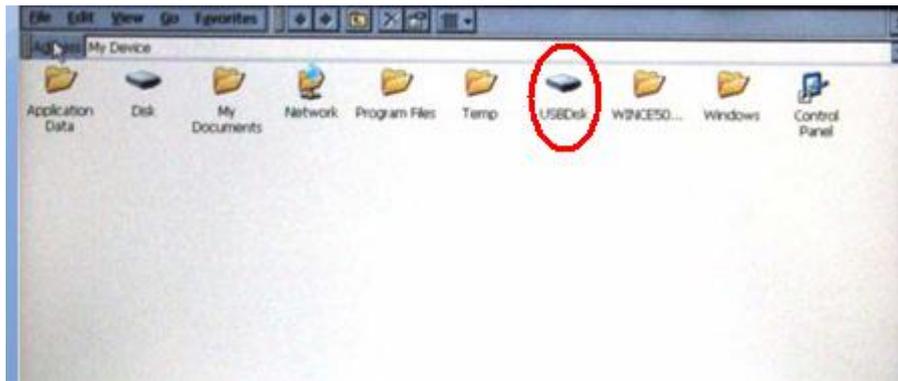


Figure 16: USBDisk Icon

8. Double-touch the FlashWriter icon to open it (see Figure 17).

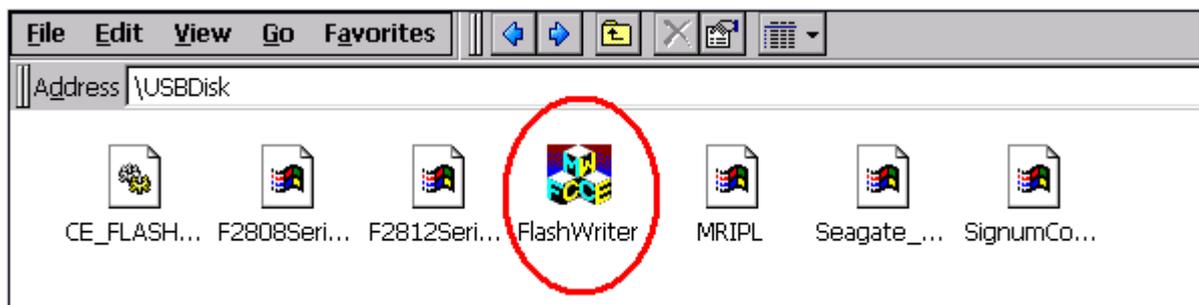


Figure 17: DSP Folder

9. The FlashWriter Screen appears (see Figure 18).

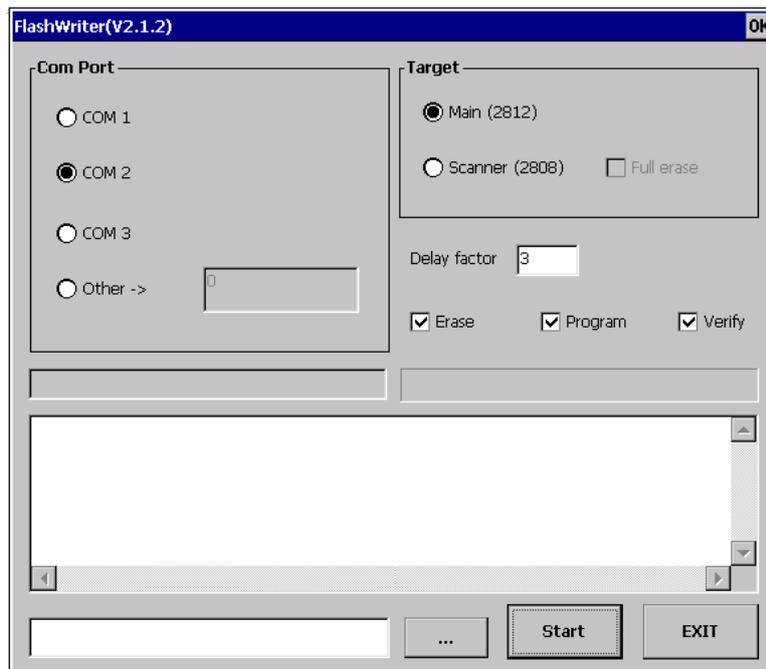
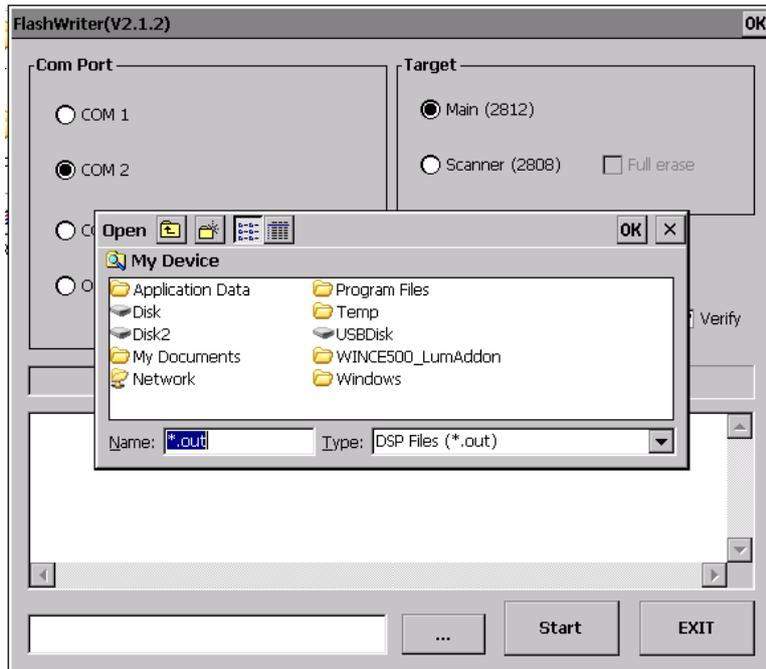


Figure 18: FlashWriter Screen

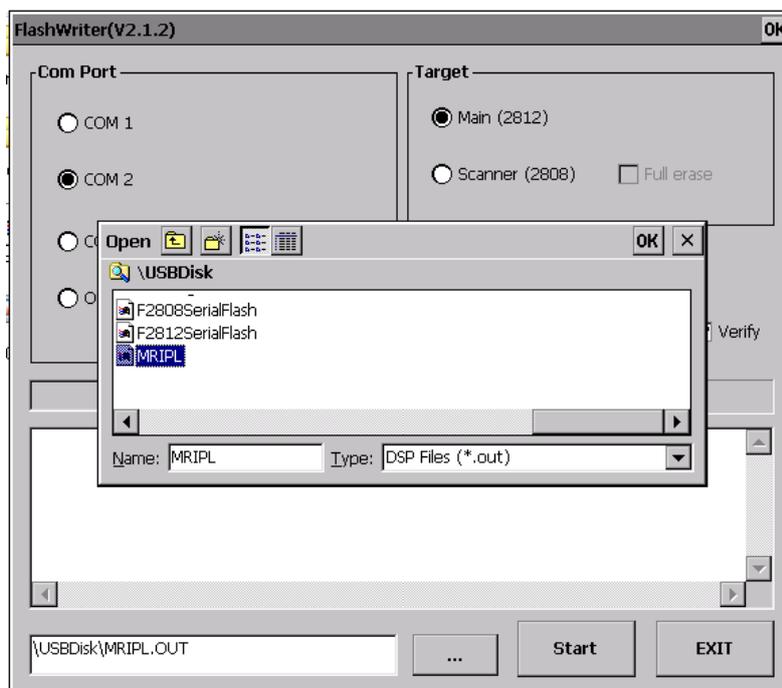
10. Make sure that **COM2** and **Main**, **Erase**, **Program**, and **Verify** checkboxes are selected.

11. Press the  **Browse** button and browse to open the *My Device* folder (see Figure 19).



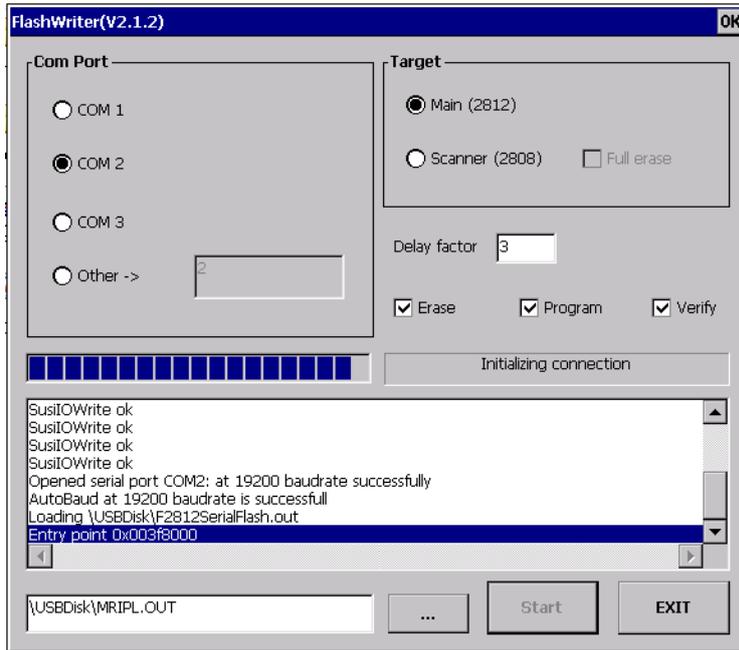
**Figure 19: My Device Folder**

12. Double-touch to select **USBDisk\MRIPL.OUT** file (see Figure 20).



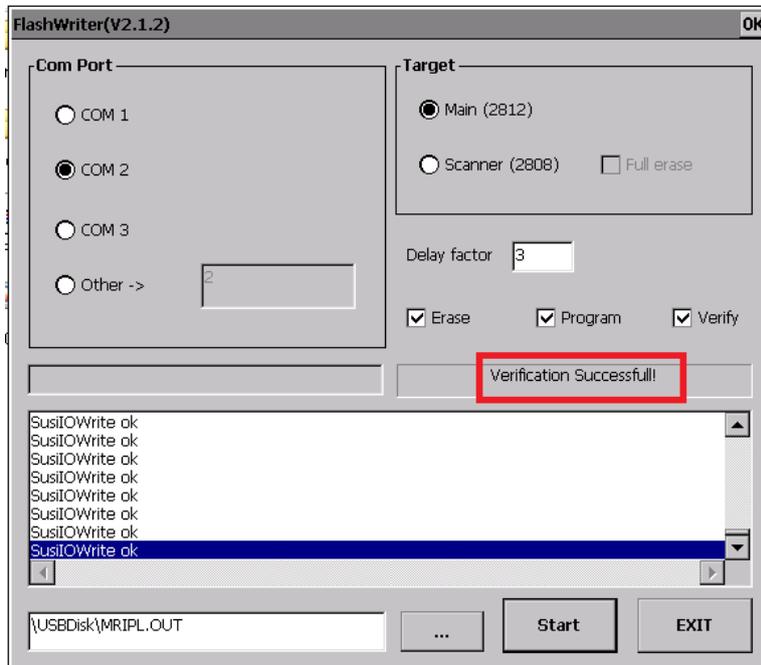
**Figure 20: Select USBDisk\MRIPL.OUT File**

13. Press **Start**. The progress bar runs, executing the Initializing Connection, Erasing Flash, and Programming Flash tasks. This may take several minutes to complete (see Figure 21).



**Figure 21: Flash Burning Progress Bar**

14. When the flash installation is complete, a “*Verification Successful*” message appears (see Figure 22), and a beep is heard.



**Figure 22: Verification Successful**

15. Disconnect the USB, and press **Exit** to return to the *My Device* screen.

## Post Upgrade Procedures

After completing the software procedures, verify that the controller revision is 2.0.0.3 and the GUI software is 2.0.0.5.

1. Turn on the system and go to the Service screen.
2. Verify that the controller software and the system serial number is correct (see Figure 23).

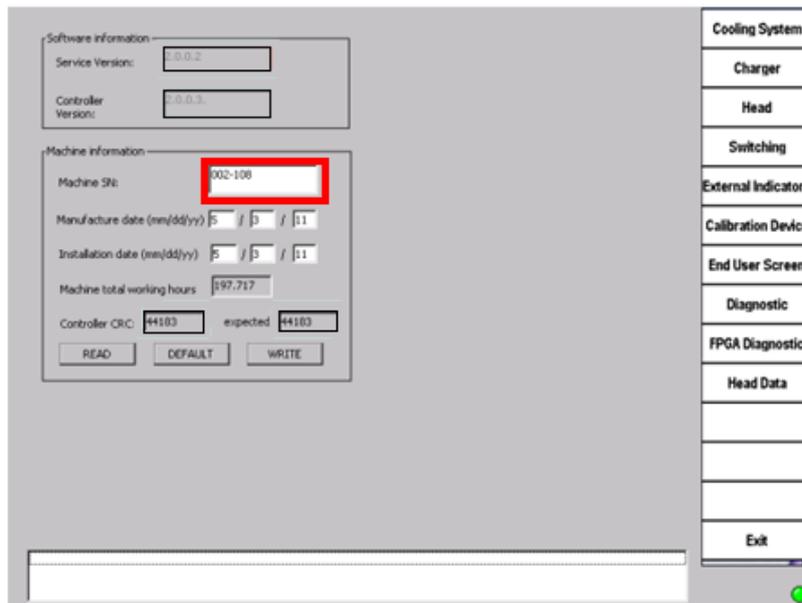


Figure 23

## GUI Verification

1. Turn off the system and turn it back on.
2. Verify that the Select Mode screen identifies the connected handpiece and the version displayed is V2.0.0.5 (see Figure 24).



Figure 24

## Final Calibration and Testing

**NOTE:** Before performing calibration, verify that the **GAIN = 1, OFFSET=0** for each calibration screen.

1. Perform system voltages and temperatures calibration (Use M22 service Manual and TN-1069540 for performing Setting up and performing the System Calibration).
2. Run the System Diagnostic screen and verify that there are no errors.
3. Perform Energy Calibration and Test; (use M22 service Manual for performing Universal Head IPL and Nd:YAG calibration).

## Appendix A: System Preset Backup

Use this utility to perform routine backups of the Lumenis and proprietary presets that can be exported to removable storage devices.

It is important to backup the presets periodically. If it ever occurs that the presets database becomes corrupted for any reason, restoring it from the backed-up USB flash drive (disk-on-key) will be quick and easy.

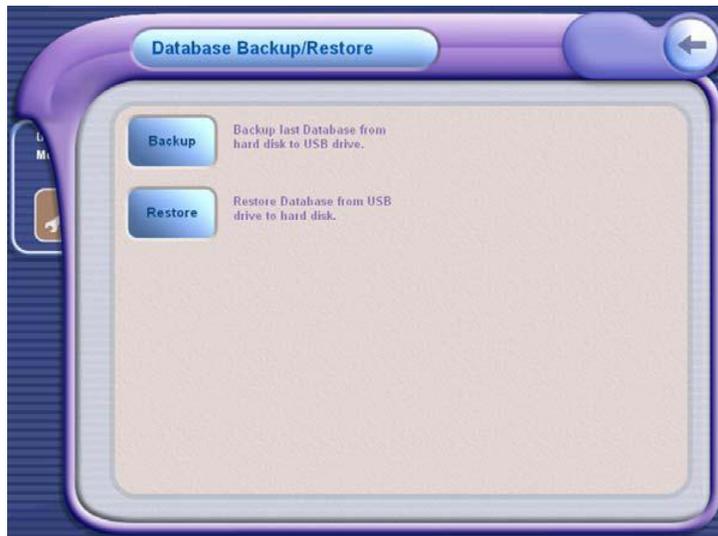
Do the following:

1. Insert a blank USB flash drive into the USB receptacle on the system's rear panel (Figure 1).



**Figure 1**

2. From the Utility screen, press the **Backup** button and follow the on-screen instructions.



**Figure 2**

3. To restore from the flash drive, press the **Restore** button and follow the on-screen instructions.

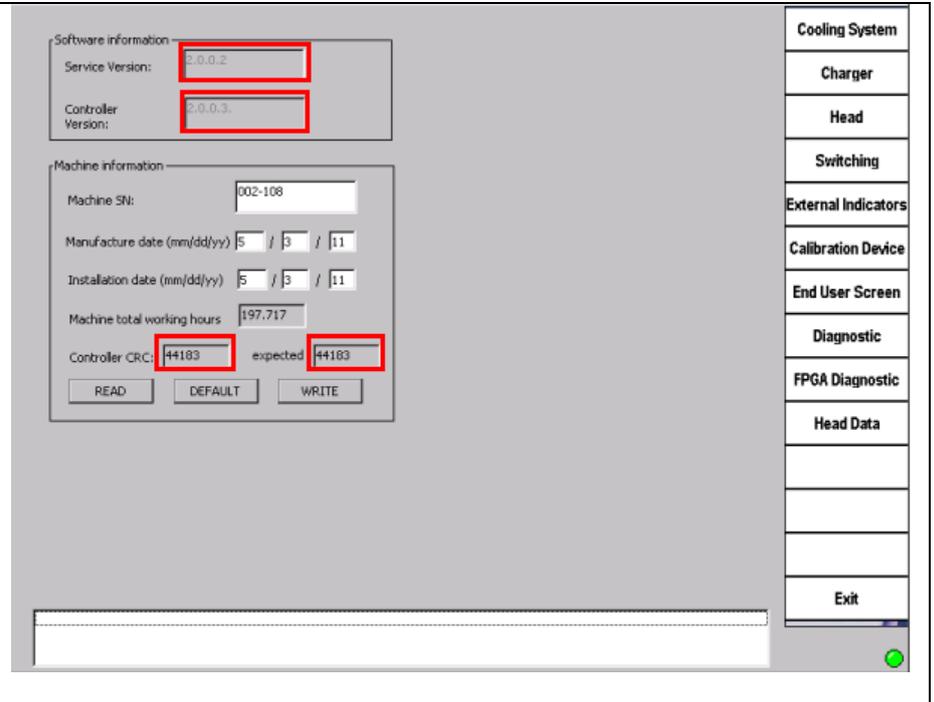
## Appendix B: M22 New Screens

### Main Service Screen

The Main service screen includes the following:

- Software revision information:
  - Service revision 2.0.0.2
  - Controller version 2.0.0.3
- Controller CRC:44183
- Expected CRC value: 44183

If the software was not correctly burned, the expected CRC value will not be equal to the Controller CRC value. In this case, burn the required software revision.

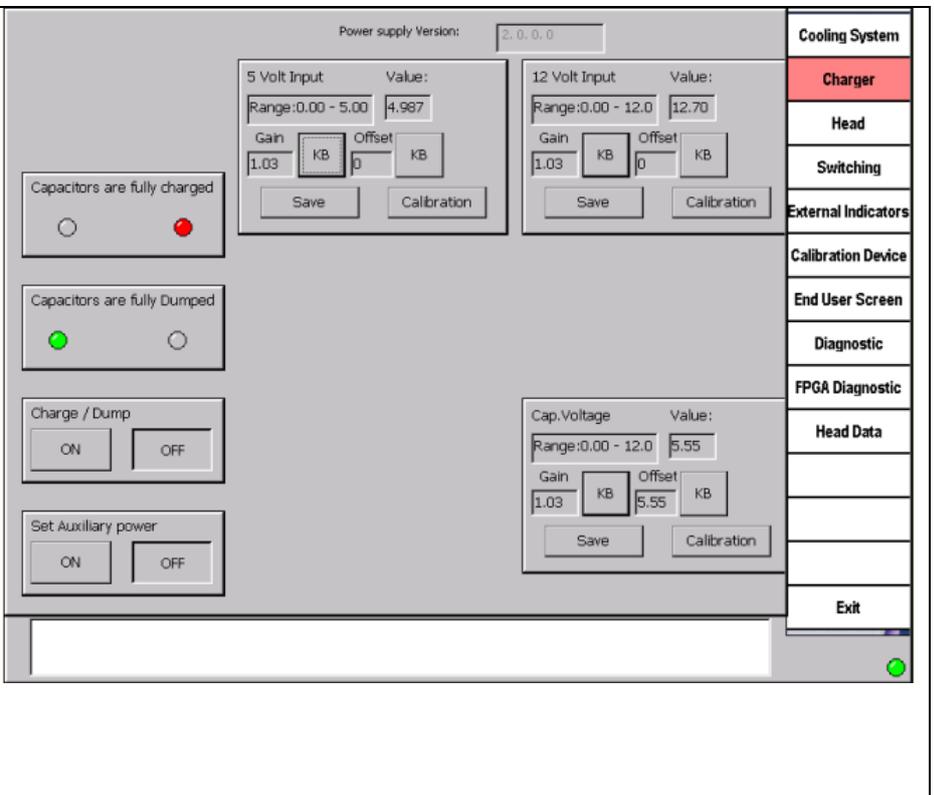


### Charger Screen

A stable auxiliary 24 VAC can be activated via the Charger screen. This auxiliary voltage is required for activating future system modules.

The 2 auxiliary settings are:

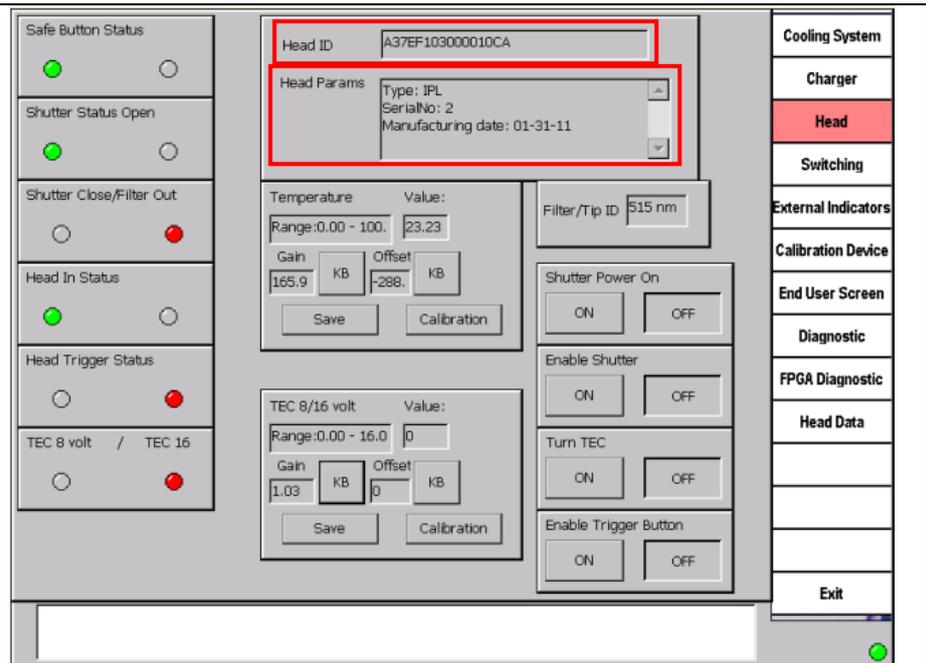
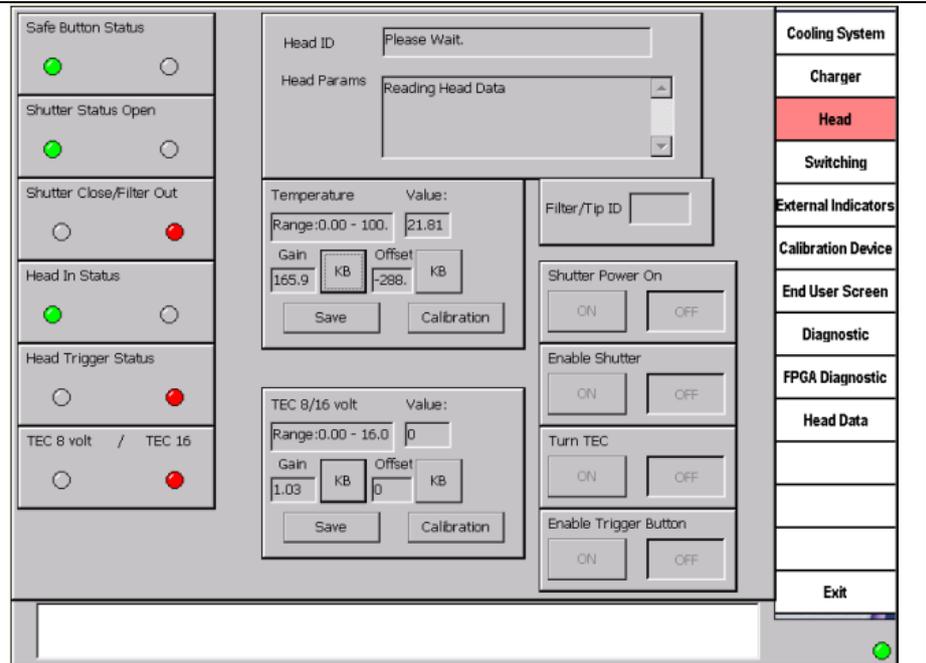
- OFF- working with Modules that need the capacitor bank (IPL ND YAG)
- ON – enables output of 24VAC to the 52-pin connector to allow connecting optional Module. The module will be assembled between the base and the PC unit. In this setting, the capacitors voltage value displayed on the screen is not taken into account.



**Head Screen**

When the Head screen is selected, the system first reads the connected handpiece to identify which handpiece is being used. This is done in order to prevent the supply of incorrect voltage and to prevent burning incorrect parameters.

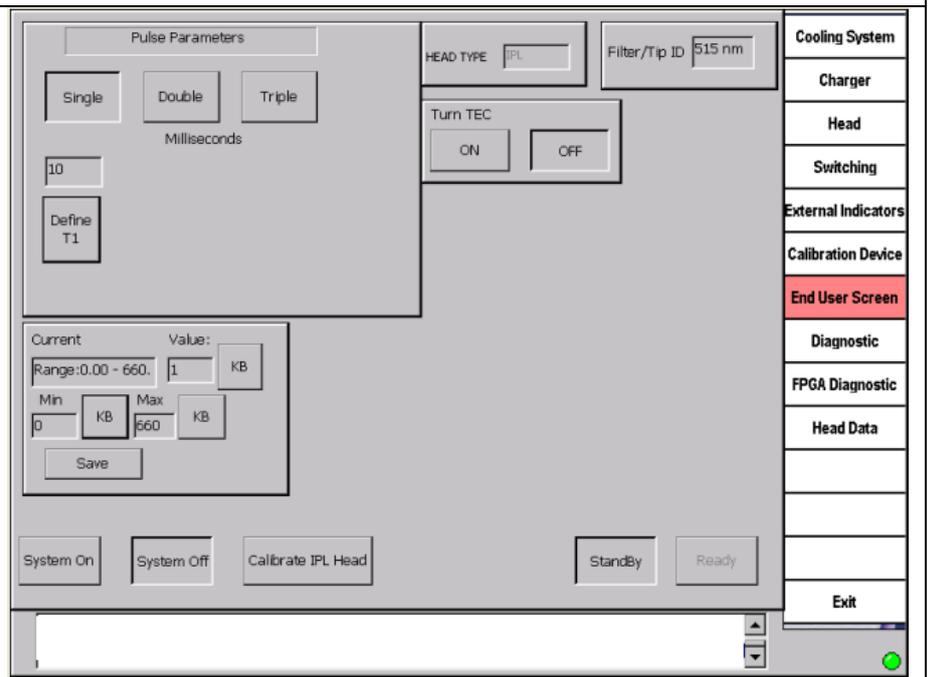
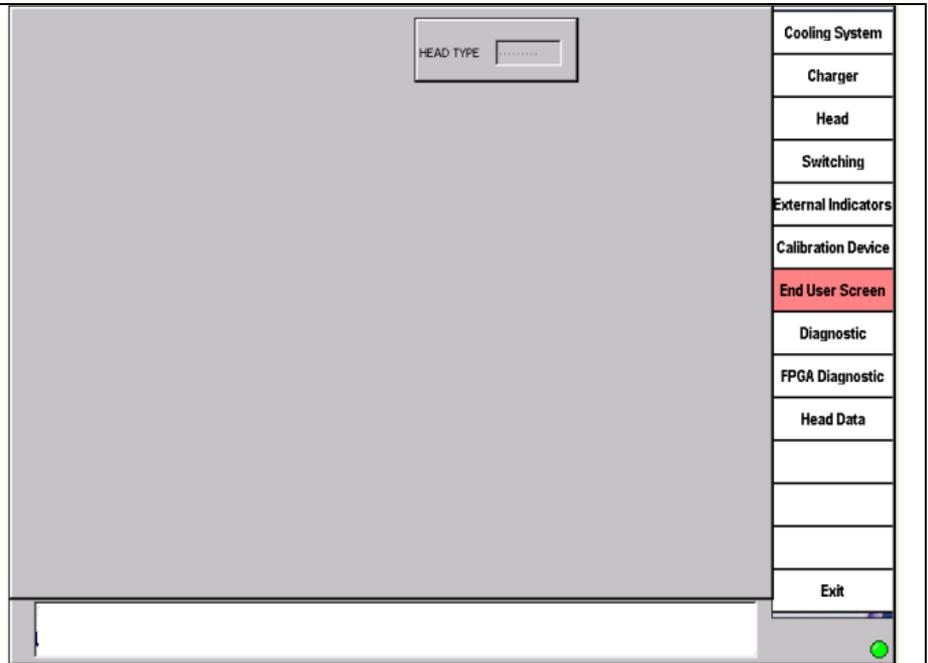
- After selecting the Head screen, the message “Please wait, reading head data” appears.
- When reading the handpiece is completed, the Head ID, Head Parameters and type is displayed.



**End User Screen**

When the End User screen is selected, the system first reads the connected handpiece to identify which handpiece is being used. This is done in order to prevent the supply of incorrect voltage and to prevent burning incorrect parameters.

1. After selecting the End User screen, a series of dots will appear in the Head Type field box.
2. When reading the handpiece is completed, the Head Type and Filter Tip ID is displayed.



**Head Data Screen**

After selecting the Head Data screen, press Search to scan all ID values. The software locates all the ID devices and displays all the IDs in the drop-down box. The FSE/CE can then select the ID device; the software will display all the relevant parameters for that device.

**Search Results:**

ID: **A37EF103000010CA** [Search]

**General:** Type: **0** Serial Number: [ ]  
 Manufacture date(mm dd yy): **9 / 22 / 11**

**Installation:** Version: **1** Installation Date: **9 / 22 / 11**  
 Machine SN: [ ]  installed

**Warranty:** Version: **1** warranty Shots: **30000** Life expend. shots: **100000**  
 Warranty expired: **9 / 22 / 12** Days in warranty: **365**

**Calibration:** Version: **1** Calb date: **9 / 22 / 11** Calb pulses: **0**  
 Factor1: **1** Factor2: **0** Factor3: **0** Factor4: **0**

**Dynamic data:** Version: **1** Total Shots: **0** Total Energy: **0**  
 Shots from Last: **0** Energy from calibration: **0**

**Counters:** Version: **0** RF counter: **0** Counter2: **0**  
 Counter3: **0** TotalTime: **0**

**Manufacture:** Version: **0**  
 Catalog: [ ]

**Navigation Sidebar:** Cooling System, Charger, Head, Switching, External Indicators, Calibration Device, End User Screen, Diagnostic, FPGA Diagnostic, **Head Data**, Exit

**Search Results:**

ID: **A37EF103000010CA** [Search]

**General:** Type: **3PL Head** Serial Number: **2**  
 Manufacture date(mm dd yy): **1 / 31 / 11**

**Installation:** Version: **1** Installation Date: **9 / 14 / 11**  
 Machine SN: **002-108**  installed

**Warranty:** Version: **1** warranty Shots: **30000** Life expend. shots: **100000**  
 Warranty expired: **1 / 31 / 12** Days in warranty: **365**

**Calibration:** Version: **1** Calb date: **2 / 2 / 11** Calb pulses: **0**  
 Factor1: **0.8907** Factor2: **0** Factor3: **1** Factor4: **0**

**Dynamic data:** Version: **1** Total Shots: **9901** Total Energy: **235962**  
 Shots from last: **12** Energy from calibration: **60**

**Counters:** Version: **1** RF counter: **0** Counter2: **0**  
 Counter3: **0** TotalTime: **0**

**Manufacture:** Version: **0**  
 Catalog: **SA-1026350**

**Navigation Sidebar:** Cooling System, Charger, Head, Switching, External Indicators, Calibration Device, End User Screen, Diagnostic, FPGA Diagnostic, **Head Data**, Exit

## APPENDIX C: Setting the Language Preference

Refer to Figures 1 – 4:

1. In the Utility screen, press **User Preferences** (see Figure 1).
2. In the *User Preferences* screen, press **Language Preferences** (see Figure 2).
3. In the *Language Preferences* screen, select the language preferred in the GUI and press **Save** (see Figure 3).
4. To go back to the default language English, press the **Defaults** button (see Figure 4).



Figure 1

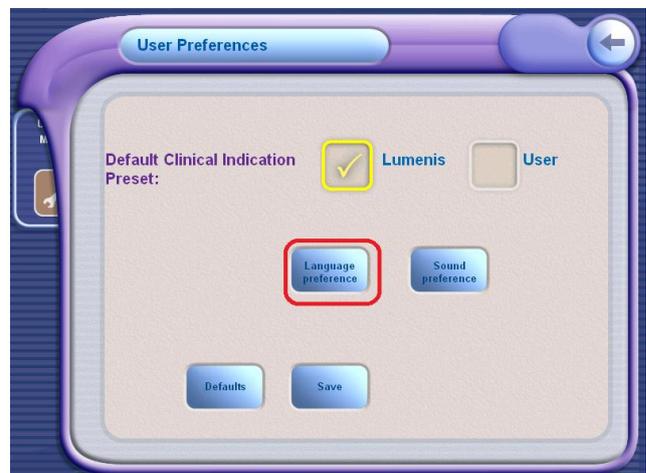


Figure 2

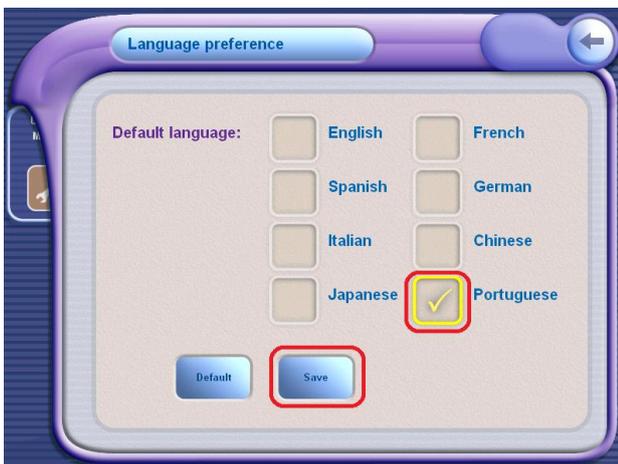


Figure 3



Figure 4