CLEAR + BRILLIANT™
Laser System
Service Manual

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Model/Type Reference: CLEAR + BRILLIANT Laser System Includes: CB-CONSOLE, CB-CONSOLE-SC, CB-CONSOLE-ROW, CB-HANDPIECE, CB-HP-1927, CB-HP-1440, CB-TIP and CB-CART

Ratings:

The treatment tip is Type BF Applied Part, Class 1

100 – 240 VAC, 50 / 60Hz, 2 – 1A

Output: Max. Power (average) = 2.5 W (Laser, 1440 ±20 nm)

Output: Max. Power (average) = 0.9 W (Laser, 1927 ±20 nm)

PLEASE READ THE MOST RECENT VERSION OF THE SOLTA MEDICAL CLEAR + BRILLIANT LASER SYSTEM OPERATOR MANUAL (P/N P009341-03) IN ITS ENTIRETY PRIOR TO USE. PLEASE CONTACT SOLTA CUSTOMER SERVICE AT 510-782-2286 OR YOUR LOCAL AUTHORIZED DISTRIBUTOR OF SOLTA MEDICAL PRODUCTS IF YOU HAVE ANY QUESTIONS.

CAUTION: Federal law restricts this device to sale by or on the order of a physician.

Table of Contents

1.0 CLEAR + BRILLIANT Laser System Overview

CLEAR + BRILLIANT is a non-ablative laser designed for use in dermatological procedures. This device is part of the family of Solta Medical products utilizing the Fractional Photothermolysis principle. This device consists of a Console and a base handpiece (1440 nm) with the option of purchasing additional add-on handpieces. Currently, the Perméa (1927 nm) handpiece is available.

The 1440 nm handpiece is an infrared diode laser with a wavelength of 1440 ±20 nm. The laser coagulates the epidermis and dermis with up to 0.4 mm depth of penetration.

The 1927 nm handpiece is an infrared diode laser with a wavelength of 1927±20 nm. The laser coagulates the epidermis and dermis with up to 0.17 mm depth of penetration.

The solid-state design of CLEAR + BRILLIANT is designed with limited maintenance and minimal utilities requirements. The output of the laser is focused into the skin using lenses contained within the handpiece. Computer controlled motors within the handpiece and the software system architecture direct the laser system to deliver focused spots and an evenly spaced treatment pattern. These advanced features allow for precisely controlled delivery of the fractional laser treatment.

This manual is intended to help you get the most from your system as you make CLEAR + BRILLIANT an integral part of the treatments you provide. It is our intention that this information assists the operator in successful use of this product. If you have additional questions, please do not hesitate to contact your local Solta Customer Service representative.

1.1 Indications for use

The CLEAR + BRILLIANT Laser System is indicated for use in dermatological procedures requiring the coagulation of soft tissue, as well as for general skin resurfacing procedures.

1.2 Technical Specifications

Laser: Fractional Diode
Spot Size: Fixed at 140 microns

	C+B HANDPIECE 1440 nm		**Perméa** 1927 nm	
Energy Level	**Depth**	**Coverage**	**Depth**	**Coverage**
Low	280 µm	2%	170 µm	2.50%
Medium	340 µm	3.50%	170 µm	3.75%
High	390 µm	4.50%	170 µm	5%

2.0 Features of the CLEAR + BRILLIANT Laser System

The CLEAR + BRILLIANT Laser System has a laser source in the handpiece. The console is electrically connected to the facility power source. Laser energy produced by the unit is delivered to the tissue through the handpiece. Contact with the tissue is maintained by removable, disposable contact treatment tips which attach to the handpiece.

Refer to the CLEAR + BRILLIANT® Laser System Operator Manual For 1440 nm and Perméa™ (1927 nm) Handpieces, for device overview and operation.

The features of CLEAR + BRILLIANT are described below.

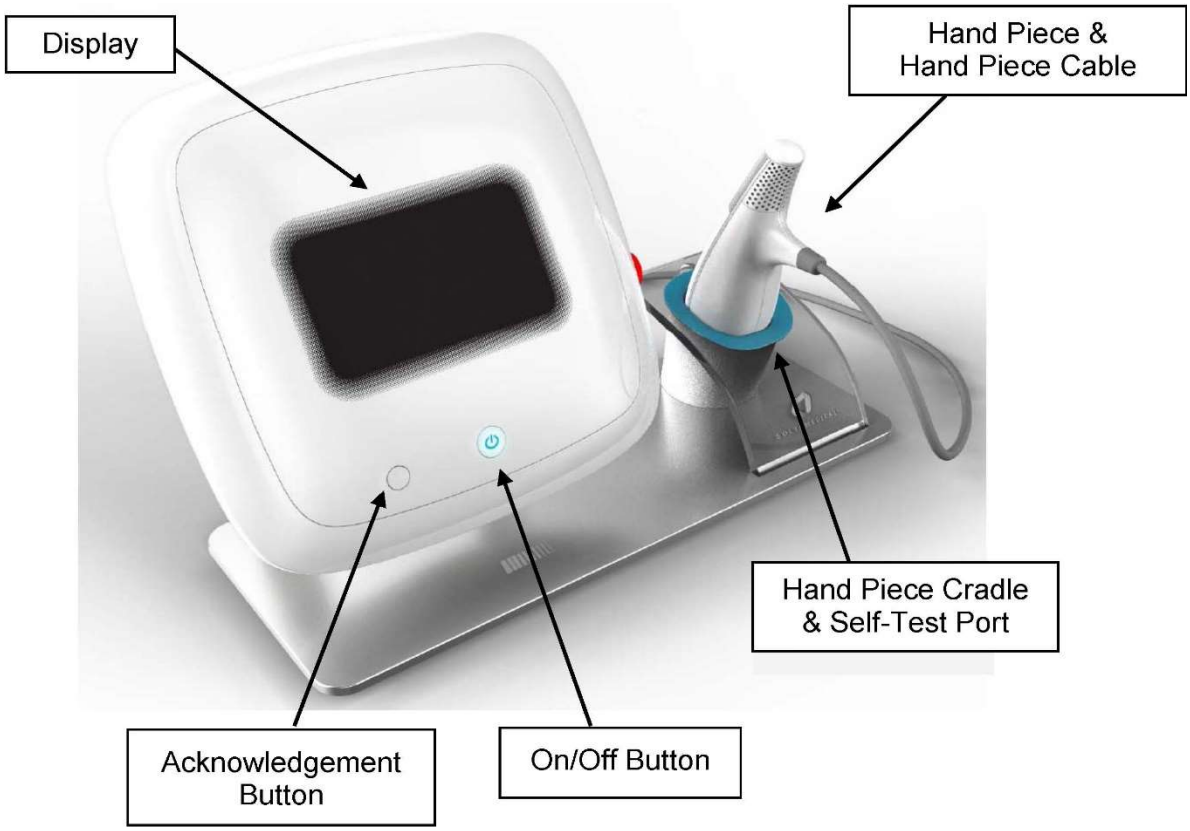
2.1 Front View of the CLEAR + BRILLIANT Laser System Console

The features of the CLEAR + BRILLIANT Laser System console include:

- **On / Off Button:** Turns the laser system on and off. The device should always remain in the Off position when not in use to avoid unauthorized use by untrained personnel and the possibility of injury or fire.
- **Display:** The display serves as the information interface for CLEAR + BRILLIANT. It displays the information associated with the operating conditions, including: Laser On / Off, system status, progress and completion of the self-test, step-by-step instructions for treatment procedures, general messages and error messages.
- **Handpiece and Handpiece Cable:** The cable connects the handpiece to the display. Ensure that there are no kinks in the cable. If a handpiece is connected to the display, insure the laser head is always resting in the cradle when not in use.

- **ATTENTION!** THE CONSOLE MUST BE TURNED OFF PRIOR TO CHANGING FROM ONE HANDPIECE TO THE OTHER AND THEN TURNED ON ONCE DESIRED HANDPIECE IS PROPERLY CONNECTED TO THE CONSOLE. FAILURE TO DO THIS WILL RESULT IN IRREPARABLE DAMAGE TO THE HANDPIECE.

- **Handpiece Cradle and Self-Test Port:** The handpiece (laser) should always be resting in the cradle when not in use. The cradle also serves as the self-test port during initialization of the system. The laser self-test procedure is automatically controlled by the software.
- Ensure the console is placed on a flat and steady surface to prevent movement or tipping.

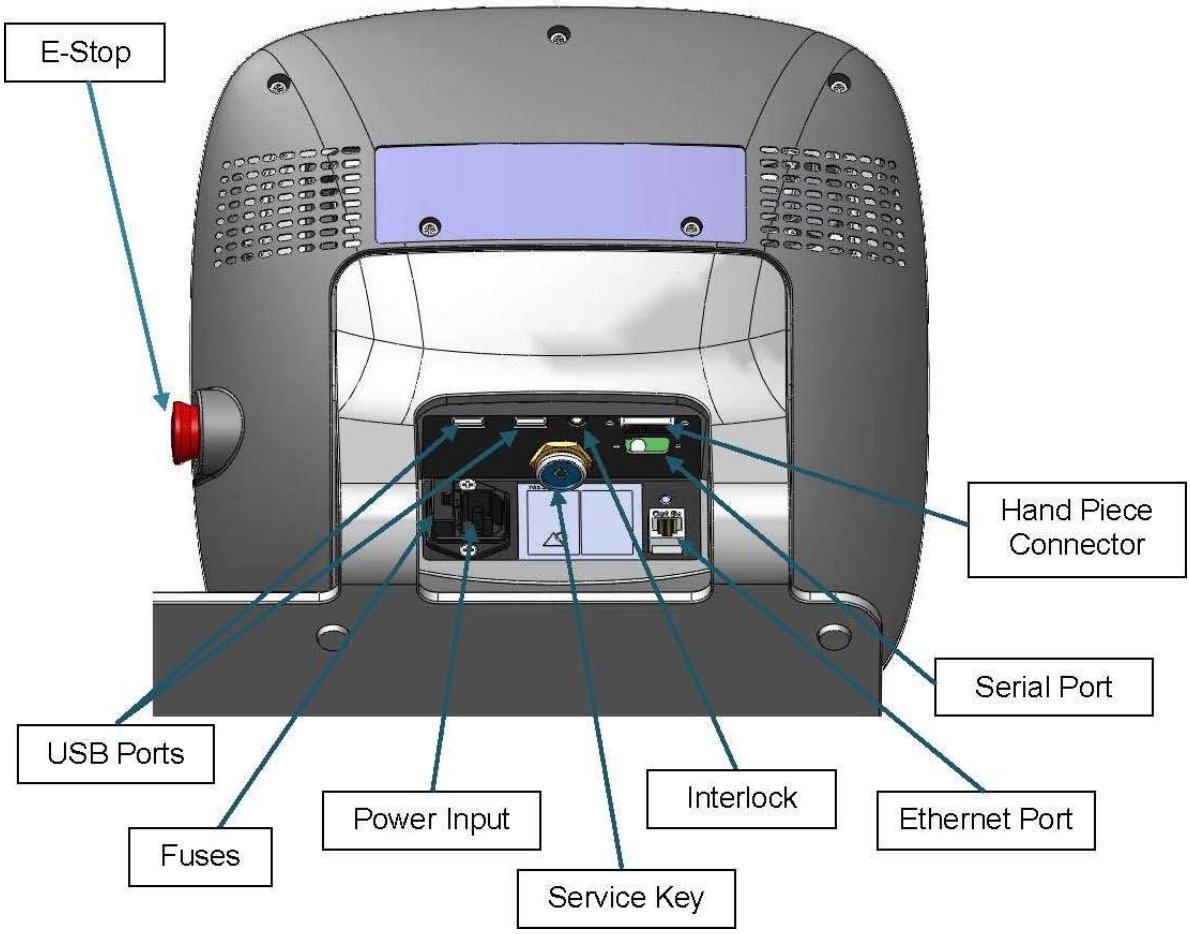


2.2 Back View of the System Console

The back view of the system includes:

- **Power Input:** A power cord connects the system to the electrical outlet. The power input on the back of the console is a standard IEC60320 type C14 male connector (within the U.S.), or a hospital grade, grounded power cord.
- **E-Stop Button:** Located on the right side of the console (if viewing from the front). Press this button during an emergency to stop the laser treatment beam. To restart, twist the button and release it from the latched OFF position.
- **Service Key:** Provides service access to the system. For service use only.
- **Interlock:** Access to the remote door interlock is through this plug and socket. The system is delivered with this plug shorted internally. Do not connect other power supplies to this interlock.
- **Serial Port:** For service and maintenance use only.
- **Handpiece Connector:** The handpiece connector connects the handpiece and handpiece cable to the system console. The cable plugs into the connector. Optionally the Handpiece Extension Cable can plug into this connector so that the connection and be more easily accessed when interchanging the 1440 and 1927 handpieces. NOTE: the green dot on the handpiece connector or extension cable must be visible to the user (i.e. facing away from the rear of the C+B console) when connecting to the rear of the console. Failure to properly align the handpiece or extension cable can result in damage to the handpiece.
- **USB and Ethernet Ports:** For external communication and maintenance purposes.

- **Fuse:** To remove and/or install the replaceable fuse in the back panel of the system console, press on the center tab to release the fuse enclosure, pull up gently and replace the fuse. Place the new fuse back into the pocket until is snaps into place.



2.3 Handpiece with Treatment Tip

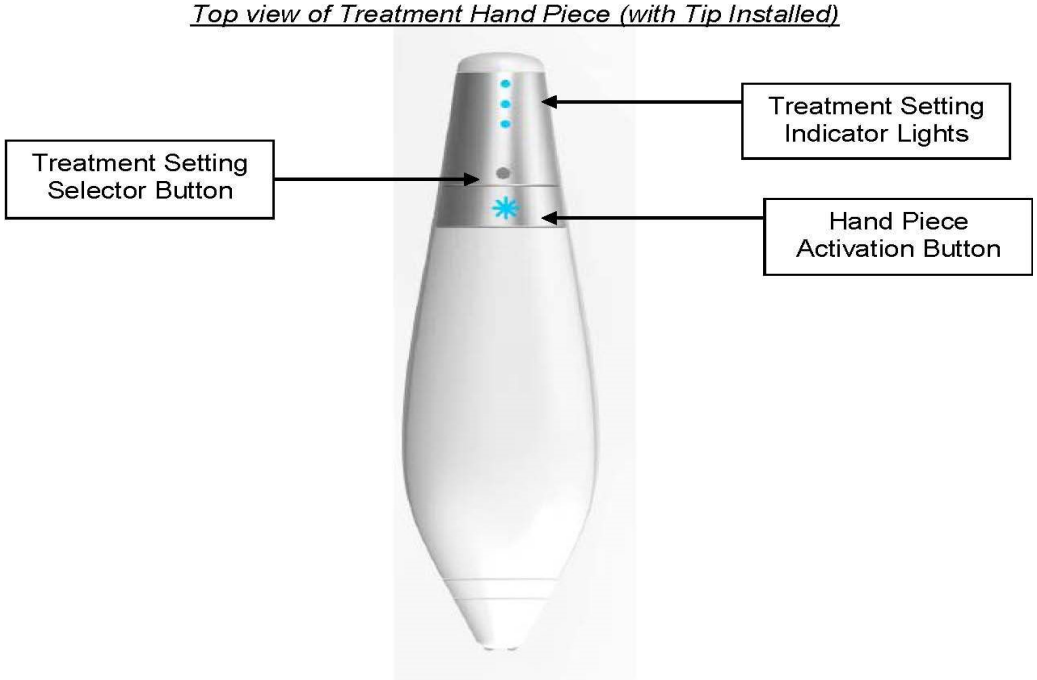
The handpiece delivers the laser energy to the surface of the skin through the laser aperture, only if the required treatment tip is in place. The activation and selector buttons (for low, medium, or high treatment settings) and light indicators can be found on the top side of the handpiece.

ATTENTION! THE CONSOLE MUST BE TURNED OFF PRIOR TO CHANGING FROM ONE HANDPIECE TO THE OTHER AND THEN TURNED ON ONCE DESIRED HANDPIECE IS PROPERLY CONNECTED TO THE CONSOLE. FAILURE TO DO THIS WILL RESULT IN IRREPARABLE DAMAGE TO THE HANDPIECE.

The handpiece should always be resting in the handpiece cradle when not in use.

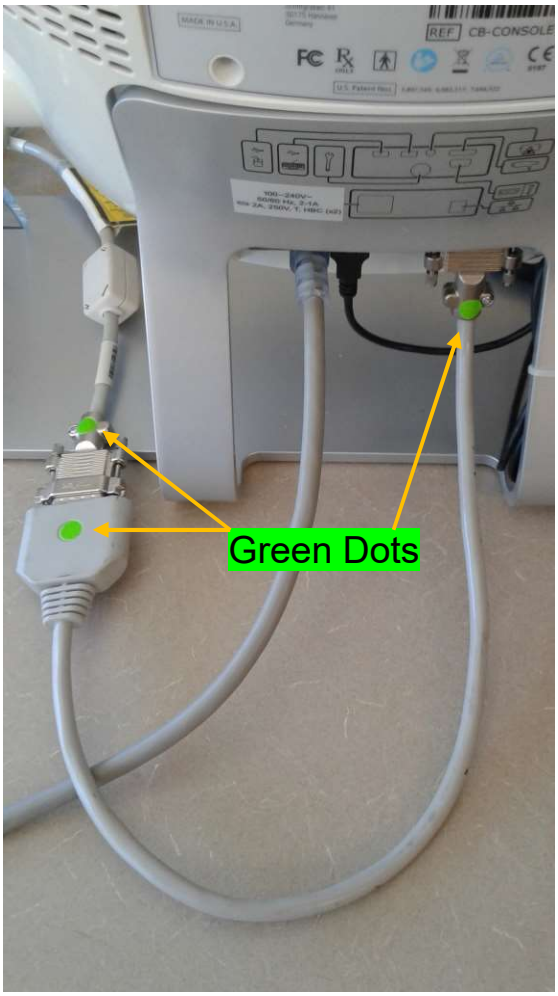
Side view of Treatment Hand Piece (with Tip Installed)

Top view of Treatment Hand Piece (with Tip Installed)



2.4 System with Extender Cable

The handpiece connector connects the handpiece and handpiece cable to the system console. The cable plugs into the connector. Optionally the Handpiece Extension Cable (PN 44863, Cable, Assembly, Handpiece, Extension, C+B) can plug into this connector so that the connection and be more easily accessed when interchanging the 1440 and 1927 handpieces.



NOTE: the green dot on the handpiece connector or extension cable must be visible to the user (i.e. facing away from the rear of the C+B console) when connecting to the rear of the console. Also, the green dots on the handpiece extension cable and handpiece connector must align. Failure to properly align the handpiece or extension cable can result in damage to the handpiece. Damage typically results in "treatment tip not detected" message and requires replacement of the HP controller PCBA (Section 5.16) and recalibration (Section 6.0).

NOTE: The C+B system MUST be turned off and wait 30 seconds to allow residual power to dissipate when switching between the 1440 and 1927 handpieces. Failure to turn off power before swapping handpieces can result in damage to the handpiece. Damage typically results in E129 message and requires laser recalibration (Section 6.0).

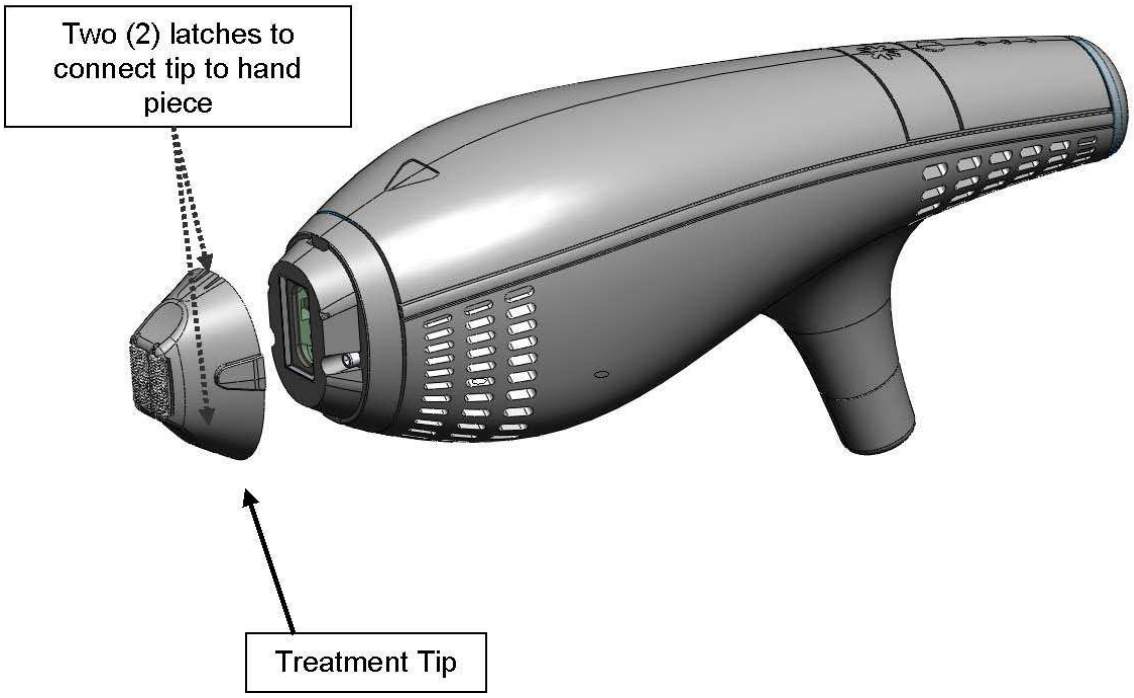
2.5 Treatment Tip

A disposable treatment tip attaches to the distal portion of the handpiece and MUST be in place prior to any treatment. The system detects contact between the tip and the skin and translates handpiece motion into velocity information.

The treatment tips are biocompatible in accordance with ISO 10993 for contact with skin.

The treatment tip will latch mechanically and magnetically when properly positioned and will remain latched throughout treatment, with appropriate handling.

Each treatment tip will have a tip life of one treatment. Treatment tips are disposable.


Two (2) latches to connect tip to hand piece
Treatment Tip

3.0 Computer Interface and Software installation

This section of the service manual contains instructions on interfacing a computer using a terminal program to the system. In addition, the system operates certain software and firmware versions that may have to be installed in the event of a service work order. The method of installation will vary and is described within this section.

3.1 Tera Term

Our recommendation to connect to the system using the serial port is with Tera Term version 4.69. Other Terminal programs can be used but there will be a requirement to read through a large number of lines. The physical connection is made with a Null modem cable.

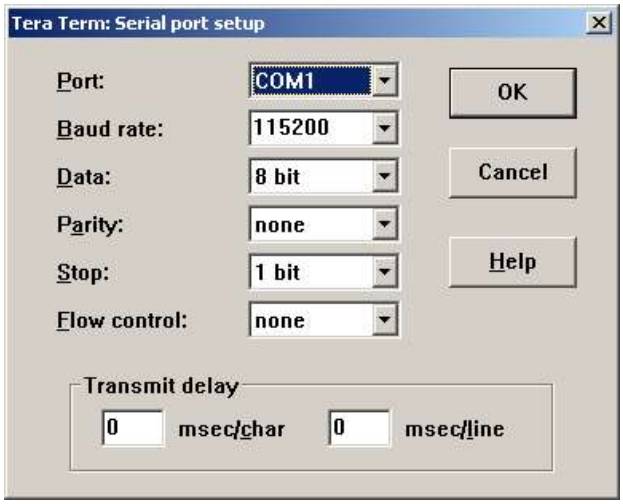
3.2 How to Setup the Connection

3.2.1 Initiate the program

3.2.2 Select "**setup**" in the Menu at the top.

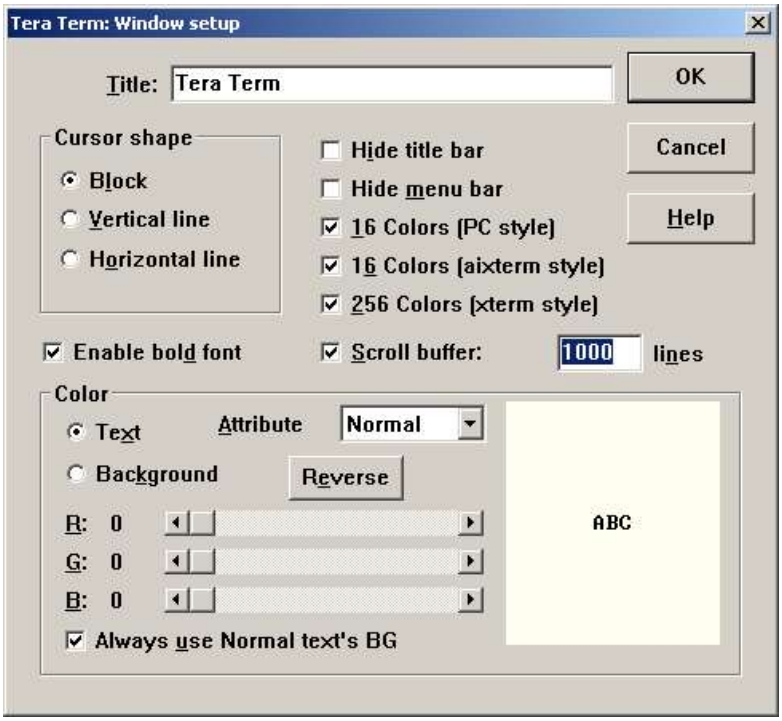
3.2.3 Select "serial port".

3.2.4 Select the Com port which corresponds to your computer connection and enter the following settings.



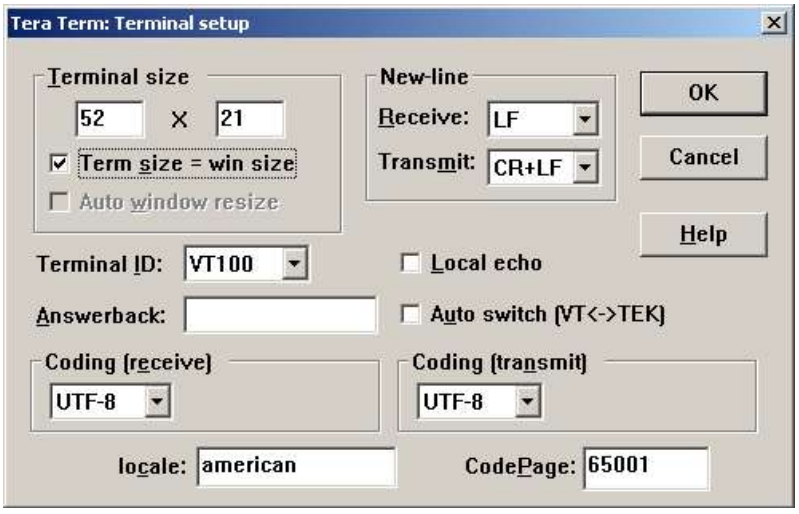
3.2.5 Select “setup”, then “window”.

3.2.6 Enter the following settings.



3.2.7 Select “setup”, then “terminal”.

3.2.8 Then enter the following settings.



3.2.9 Tera Term is ready for communication with the Clear & Brilliant.

3.3 Software Upgrades using a USB Memory Stick.

3.3.1 Obtain a USB memory stick with currently released software upgrade files from Solta Medical. Format the memory stick using file system FAT32.

3.3.2 Load the software files onto the memory stick and insert into one of the two USB ports of the system.

3.3.3 Turn the system on and allow the system to boot up and present the following message:

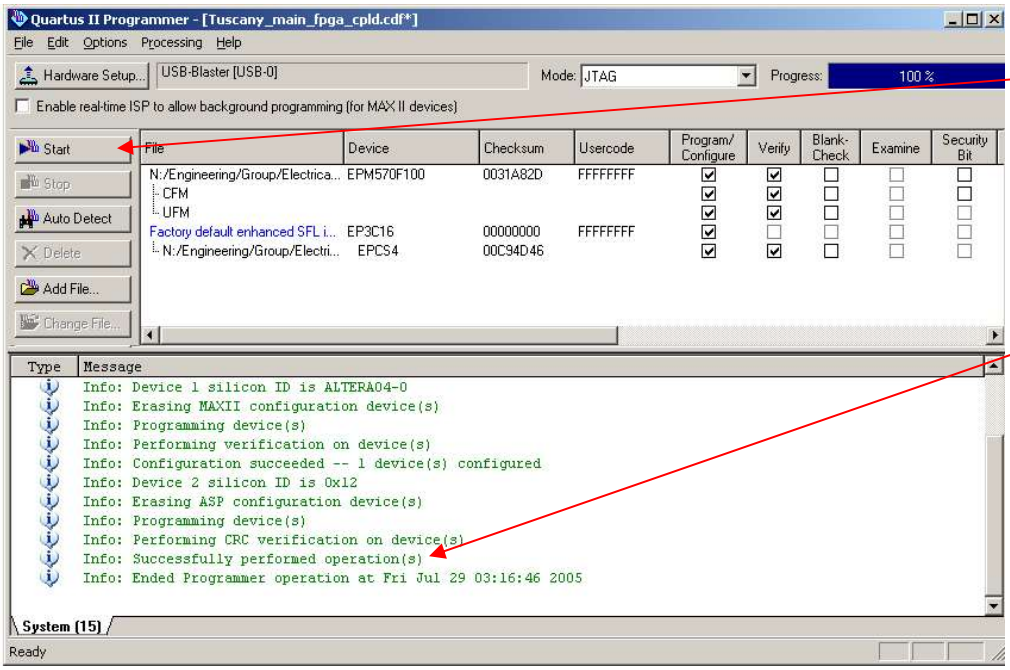
Press console activation button to begin system upgrade

3.3.4 Select the Activation button on the Handpiece and allow several minutes for the software files to install. Firmware files may be included with the set and will be installed in series.

3.4 Firmware Programming Using the Altera Byte Blaster; CPLD and FPGA.

3.4.1 Installing the CPLD is performed with the Quartus II Programmer and USB Byte Blaster made by Altera.

3.4.2 Begin with launching the Quartus II software and load the released versions of firmware. Refer to Solta Product Support department for the correct version.



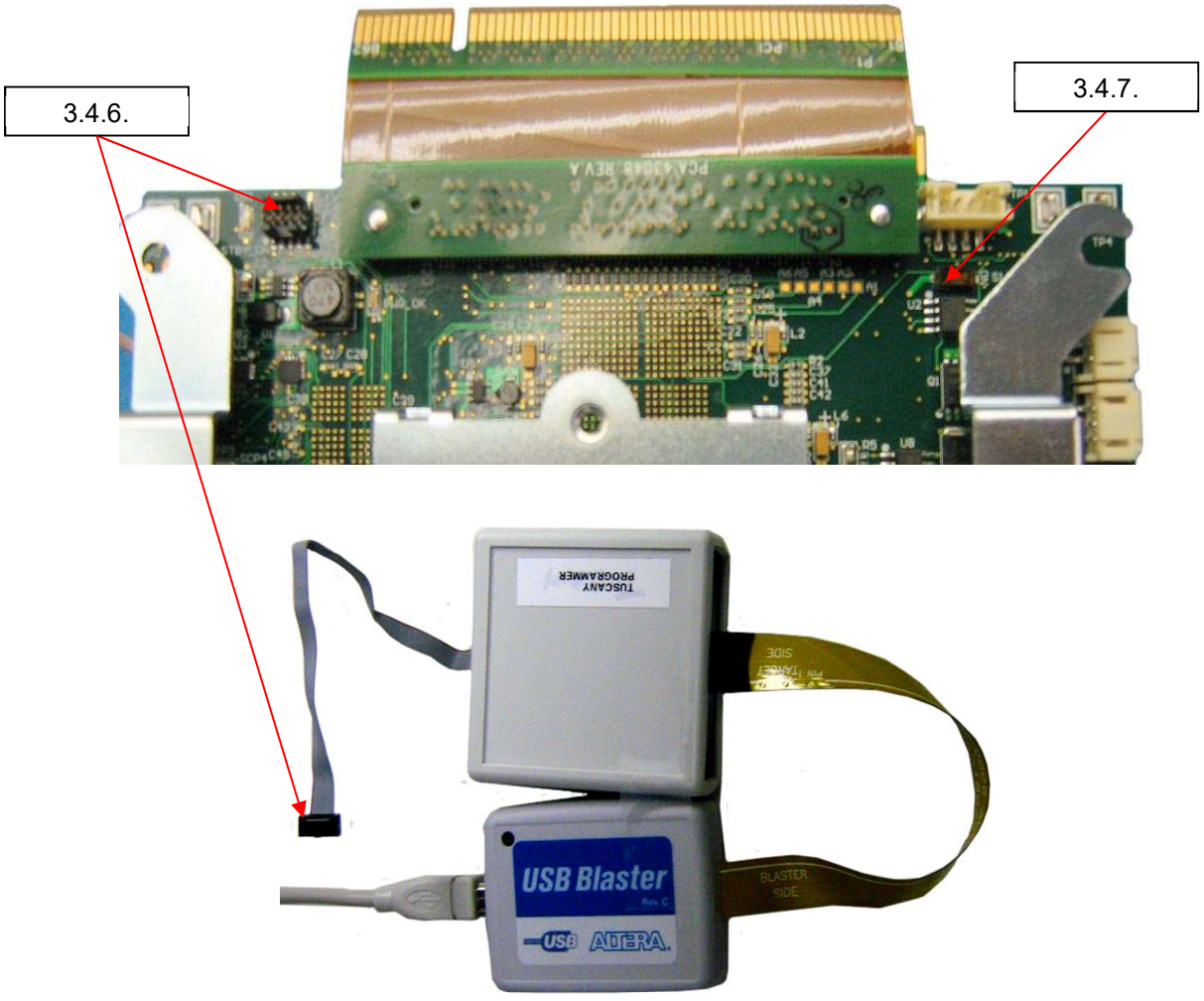
3.4.3 Setup the correct hardware component; USB Blaster.

3.4.4 Select the appropriate check marks as seen in the picture above.

3.4.5 Open the system's console to expose the back panel. See instructions in the assembly section for guidance on opening the system.

3.4.6 Connect USB Blaster JTAG cable to J12.

3.4.7 Switch S1 to ON (slide switch from inside to outside toward edge of system).



3.4.8 Turn on the power to the system

3.4.9 Click Start on the programmer.

3.4.10 Wait for the message, “Successfully performed operation”.

3.4.11 Turn off power to the system.

3.4.12 Disconnect test cables.

3.4.13 Switch S1 to OFF (slide switch from outside to inside toward center of system).

3.4.14 After programming, confirm device passes Power On Self-Test (POST) and perform Power Verification, Mouse Simulation (section 8.0)

3.5 Programming the FPGA of the Handpiece.

3.5.1 Launch the Quartus II programmer and load the files as in section 3.4.

3.5.2 Connect Handpiece cable to Handpiece.

3.5.3 Connect USB Blaster JTAG cable to Handpiece board J4. Note: an additional adapter (P/N: 11595) is required to connect between the JTAG cable and J4 on the Handpiece board.

3.5.4 Turn on Power to the System and Handpiece.

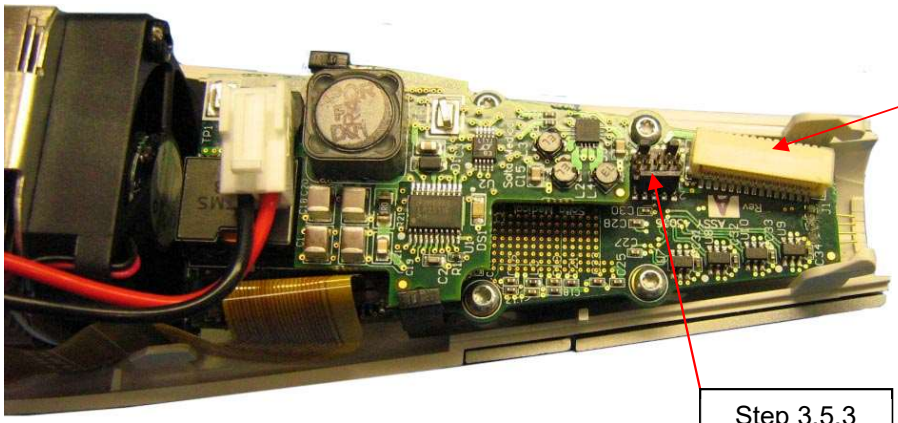
3.5.5 Click Start on the programmer.

3.5.6 Wait for the message, “Successfully performed operation”.

3.5.7 Turn off power to the system.

3.5.8 Disconnect test cable.

3.5.9 After programming, confirm device passes Power On Self-Test (POST) and perform Power Verification, Mouse Simulation (section 8.0)



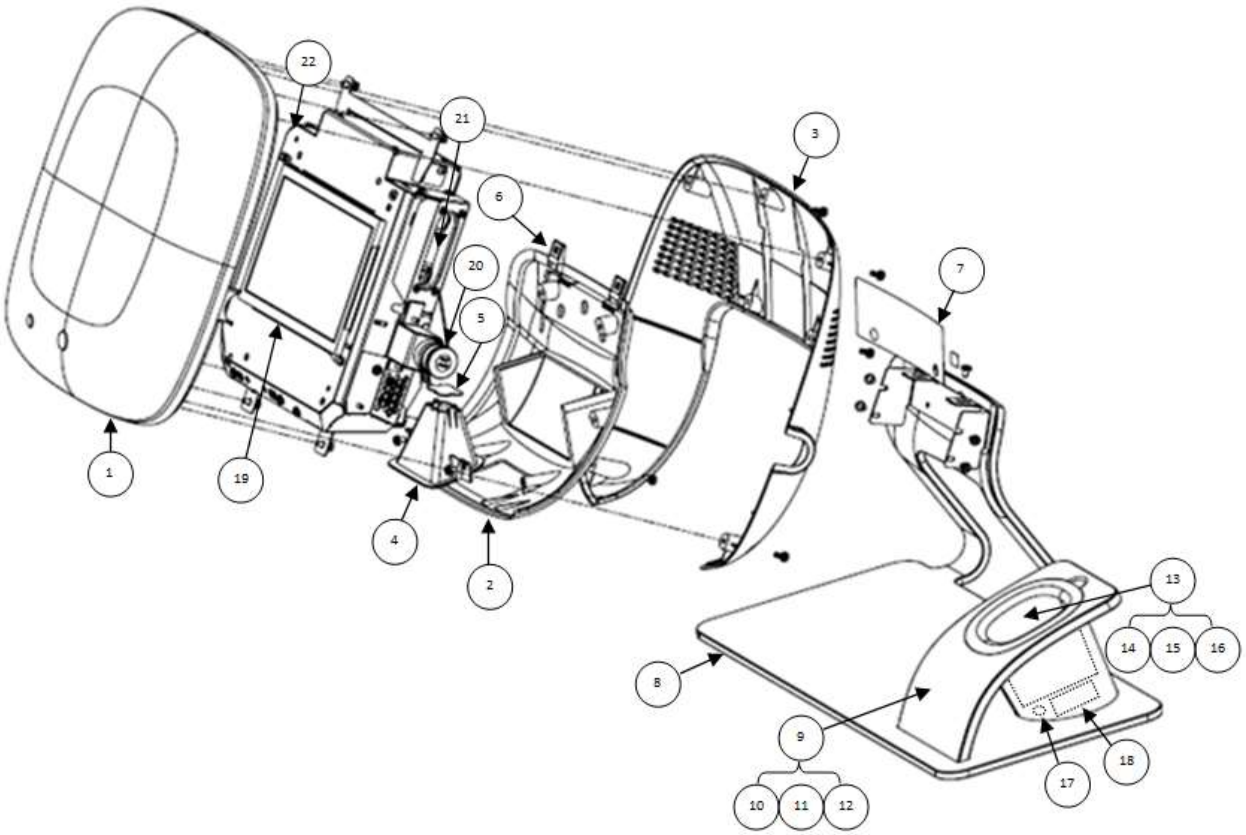
Step 3.5.2

Step 3.5.3

4.0 Assemblies

4.1 CONSOLE – Mechanical and Parts List. Version 1.0 and Version 1.5

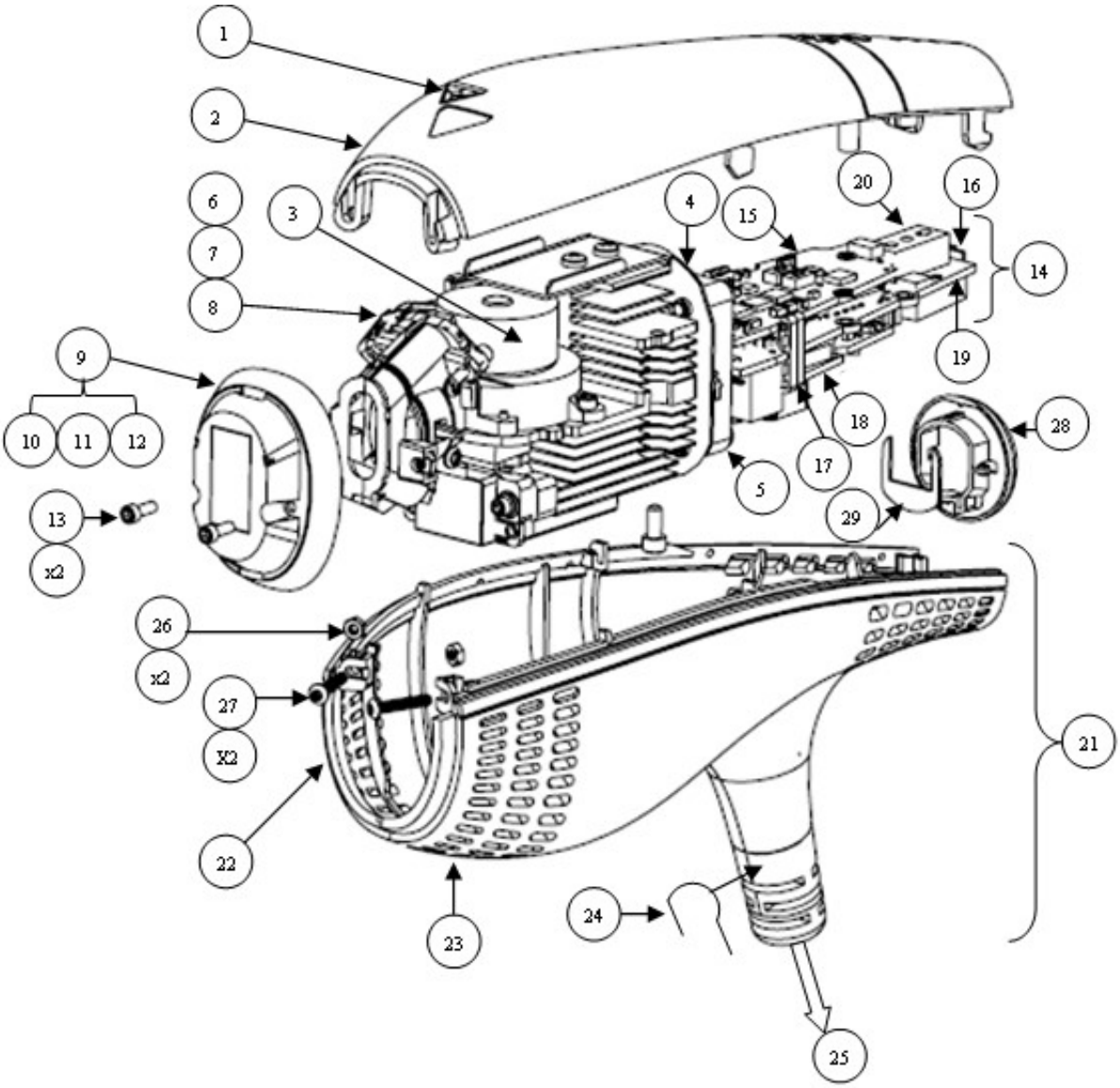
The Version 1.0 console will have a s/n that begins with BC and the Version 1.5 console will have a s/n that begins with FC.



CB-CONSOLE Version 1.0 and Version 1.5. All Parts are universal to both consoles unless otherwise noted.				
Qty	**P/N**	**Description**	**Find**	**Notes**
1	43025-S	PCA, MINI ATX MOTHERBOARD, 1.6GHZ, KONTRON		V 1.0 Console
1	P011876-01	PCA, MINI ATX MOTHER BD, 2GB MEM,1.8 GHZ,ANT COMP.		V 1.5 Console
1	43028	PCA, FRONT PANEL BUTTONS		
1	P010607-01	PCA, MAIN CONTROLLER, CONSOLE		V 1.0 Console
1	P011798-01	PCA, MAIN CONTROLLER, CONSOLE, C+B, 1.5		V 1.5 Console
2	44046	FUSE, AC INPUT, 250V IEC, SLO-BLO, HIGH-HBC (rev R and up CB-CONSOLE)		
1	43033	POWER SUPPLY, 12VDC, LAMDA		V 1.0 Console
1	P011910-01	POWER SUPPLY, AC/DC CONVERTER 12V, 65W		V 1.5 Console
1	P012151-01	INSULATION SHEET, POWER SUPPLY, CLEAR AND BRILLIAN		V 1.5 Console
1	43034	CABLE, FLAT FLEX CABLE, VIDEO, LVDS TO TTL		V 1.0 Console
1	P012497-01	CABLE, FLAT FLEX, VIDEO LVDS TO TTL, C+B 1.5		V 1.5 Console
1	43045	CABLE, POWER, AC MAINS		V 1.0 Console
1	P011935-01	CABLE ASSEMBLY, POWER AC MAINS		V 1.5 Console
1	43046	CABLE, MAIN CONTROLLER TO FRONT PANEL		
1	43048	PCA, FLEX CONN., PCI, MOTHERBOARD TO CONTROLLER		

1	43049	CABLE, LINE OUT TO AUDIO AMP		
1	43053	CABLE, USB, INTERNAL		V 1.0 Console
1	P011925-01	CABLE ASSEMBLY, USB INTERNAL		V 1.5 Console
1	43063	DISPLAY, TFT-LCD	19	V 1.0 Console
1	P013360-01	FRU, REPLACEMENT LCD, C+B 1.5	19	V 1.5 Console
1	43064	SPEAKER, 8 OHM, 2W, 86DB, 70X30.5MM	21	V 1.0 Console
1	P011895-01	CABLE ASSEMBLY, w/ SPEAKER	21	V 1.5 Console
1	43068	CABLE, POWER, AC, MAINS, *(EMO button included)*	20	V 1.0 Console
1	P011935-01	CABLE ASSEMBLY, POWER AC MAINS	20	V 1.5 Console
1	P010424-01	C5E-350MHZ, Molded, BK, 1ft		
1	P012498-01	PROGRAMMED COMPACT FLASH C+B 1.0		V 1.0 Console
1	P012417-02	CF CARD, 8GB, PROGRAMMED, C+B 1.5		V 1.5 Console
1	43108	FAN, ASSY, 12VDC CHASSIS	22	V 1.0 Console
1	P011908-01	FAN ASSEMBLY, 12V, SPEED CONTROL	22	V 1.5 Console
1	43115	PCA, DAUGHTERBOARD, VIDEO, LVDS TO TTL		V 1.0 Console
1	43116	PCA, VIDEO LVDS TO TTL		V 1.0 Console
1	P012716-01	PCA, DISPLAY ADAPTOR C + B 1.5		V 1.5 Console
1	10458	ASSY, IBUTTON, MONETARY, PROGRAMMED		
1	P011493-01	ASSY, BEZEL, FRONT, CONSOLE	1	
1	43006	BEZEL, REAR, LOWER, CONSOLE	2	
1	43110	HOUSING, IMAGE ENGINE, SHROUD	4	V 1.0 Console
1	43184	IE WINDOW, CONSOLE	5	V 1.0 Console
1	P011825-01	HOUSING, LOWER VENTILATION, CLEAR AND BRILLIANT	4	V 1.5 Console
2	94809A100	SPEED CLIP *(McMaster-Carr p/n)*	6	
1	43005	BEZEL, REAR, COVER, CONSOLE	3	
1	P009340-01	LABEL, CLEAR & BRILLANT Laser System	7	
1	10430	ASSY, BASE WITH HOLSTER *(Complete Base Assembly)*	8	
1	43015	BEAM DUMP, HANDPIECE HOLSTER	18	
1	43017	RING MAGNET, .5OD x .125	17	
1	10401	ASSY, LINER AND WINDOW	13	
1	43017	MAGNET, HANDPIECE CRADLE	14	
1	43149	WINDOW, BEAM DUMP	15	
	Loctite 3321	ADHESIVE, MEDICAL DEVICE *(LOCTITE 3321)*	16	
1	10400	ASSY, REST, SUPPORT SLEEVE	9	
1	43014	SUPPORT SLEEVE	10	
1	43013	REST, CLEAR, HP HOLSTER	11	
	Loctite 4013	INSTANT ADHESIVE *(LOCTITE 4013)*	12	
1	43310	CABLE, AC POWER, EXTERNAL, WITH FERRITE, DOMESTIC		
1	43312	CABLE, AC POWER, EXTERNAL, WITH FERRITE, AUSTRALIA		
1	43322	CABLE, AC POWER, EXTERNAL, WITH FERRITE, EUROPE		
1	43313	CABLE, AC POWER, EXTERNAL, WITH FERRITE, JAPAN		
1	43311	CABLE, AC POWER, EXTERNAL, WITH FERRITE, SING, HK, U.K.		
1	43161	CHASSIS, BOTTOM		V 1.0 Console
1	P011786-04	HOUSING, INTERNAL FRONT, CLEAR AND BRILLIANT 1.5		V 1.5 Console
1	P011790-02	CHASSIS, REAR, CLEAR AND BRILLIANT		V 1.5 Console
	11512	USB Drive, Programmed, C+B SW Update 5.4.		V 1.0 Console

4.2 HANDPIECE – Mechanical and Parts List



CB-HANDPIECE or CB-HP-1440			
Qty	**P/N**	**Description**	**Find**
1	P08259-01	FRU, C+B 1440 HANDPIECE SNOUT	9, 10 11, 1
2	03-00538	Screw, Socket Cap, 2-56 X 1/4", STNLS	13
1	10402	ASSY, LOWER HOUSINGS AND CABLE	21
1	42994	OUTER HOUSING, HANDPIECE, LOWER, LEFT	22
1	42995	OUTER HOUSING, HANDPIECE, LOWER, RIGHT	23
1	43145	WIREFORM, LOWER HOUSING ATTACHMENT	24
1	43047	CABLE, HANDPIECE COMMUNICATIONS, MAIN	25
2	43207	NUT, 2-56, 5/32W X 1/16H, UNDERSIZED HEX, 18-8 SS	26
2	43151	SCREW, 2-56 X .50, BHSC, SS	27
1	10384	ASSY, INNER HOUSING AND HEAT SINK, 1440 nm	3
1	42982	HEATSINK, ALUMINUM EXTRUDED, FAN BRACKET	4
1	43140	FAN ASY, HANDPIECE, 35X35X10MM	5
1	43056	PCA, MOUSE PCB	6
1	43052-S	LENS, MOUSE, SMALL FORM FACTOR	7
1	43044	CABLE, MOUSE PCB	8
		WIRE, 16 AWG, DIODE POWER (black and red)	
2	43334	CONNECTOR, TERMINAL, 16-20 AWG CRIMP, NON-GENDER	
1	43331	CONNECTOR, HOUSING, 2 POS, 0.156" PITCH	
1	P013078-01	ASSY, MAIN, DAUGHTER, DC BOARDS (*See Note*)	14
1	43039	PCA, DAUGHTERBOARD, HANDPIECE	15
1	43035	PCA, MAIN, HANDPIECE CONTROLLER	19
1	P012217-01	PCA, Treat LED Board (*needs to be soldered to p/n 43035*)	16
1	43090	PCA, DC DAUGHTERBOARD, HANDPIECE	18
2	43226	SUPPORT, PCB, HP	17
1	43246	SUPPORT, SWITCH, HP-PCB (*attached to p/n 43039*)	20
1	40662	Tape, Kapton (*needs to be placed on p/n 43039 before assembly*)	
1	43261	BRACKET, GROUND SHIELD	
1	10398	ASSY, OUTER UPPER HOUSING	2
1	43323	LABEL, LASER APERTURE SMALL, ENGLISH AND FRENCH	1
1	42993	LIGHT CAP, REAR, HANDPIECE	28
1	43256	LIGHT BAFFLE, REAR LIGHT CAP	29
1	P012198-02	FIRMWARE, FPGA, HP, C+B, VERSION D002	

Note: P/N 43085 needs to be ordered with and soldered to P/N 43035 of assembly

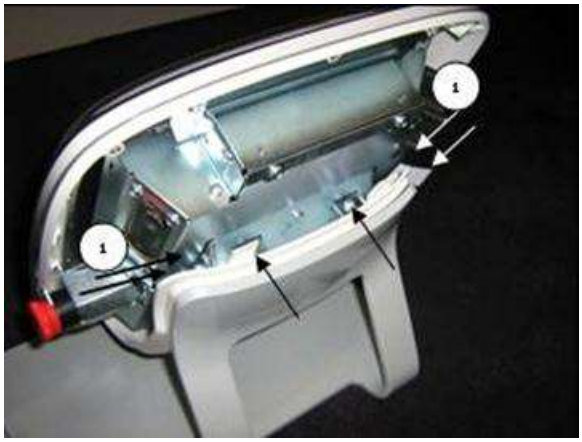
Note: For CB-1927 part list see appendix C. Refer to the above handpiece drawing for part locations.

5.0 Replaceable Assemblies

5.1 CB-CONSOLE - Covers

5.1.1 **Rear Bezel (43005)** - Remove the qty. 7 screws as seen below. The two screws circled below are different lengths and must be placed back in same location during the reassembly process.

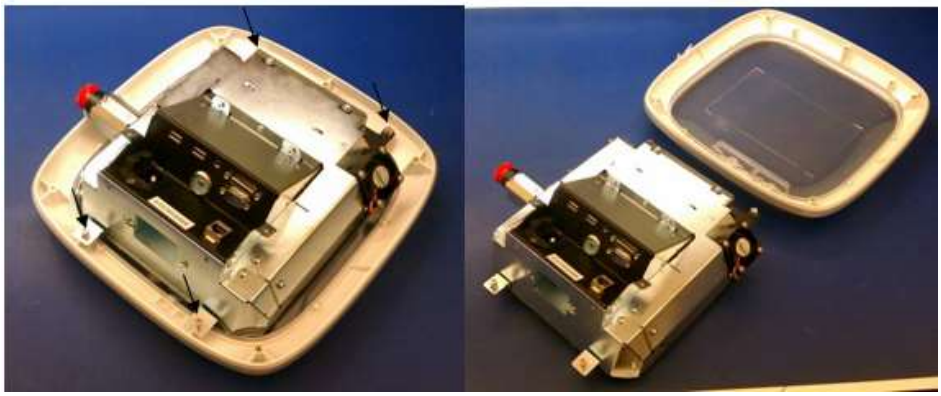
5.1.2 **Rear Bezel Lower (43006)** – Remove the console from the base assembly by removing the following screws. Note that the upper two screws labeled as (1) do not need to be fully removed. This will ease in reassembly.



5.1.2.1 Place console on a clean surface as to not damage the front bezel.

5.1.2.2 Remove the qty 4 screws securing the lower bezel to the console.

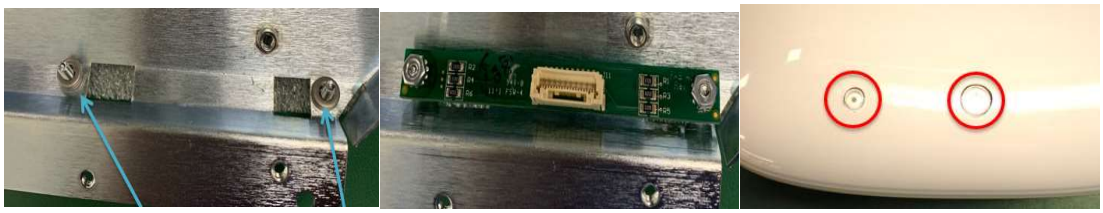

5.1.3 **Front Bezel (P011493-01)** – Remove the qty 4 screws followed by removing front bezel.



5.1.4 For reassembly reverse the above steps.

5.1.5 On Version 1.5 Console, when reassembling a check of the functionality of the Front Panel Button Assembly must be done to ensure the buttons are properly engaging and not getting stuck.

5.1.5.1 When the Front Bezel is connected to the front housing and before further reassembly is done test the Power and Acknowledge buttons to verify that the bezel buttons properly engage with the front panel PCA. A distinct clicking sound will indicate the buttons are working properly. If adjustment is needed the depth of the front panel PCA can be adjusted by alternating the thickness of the washer holding it.



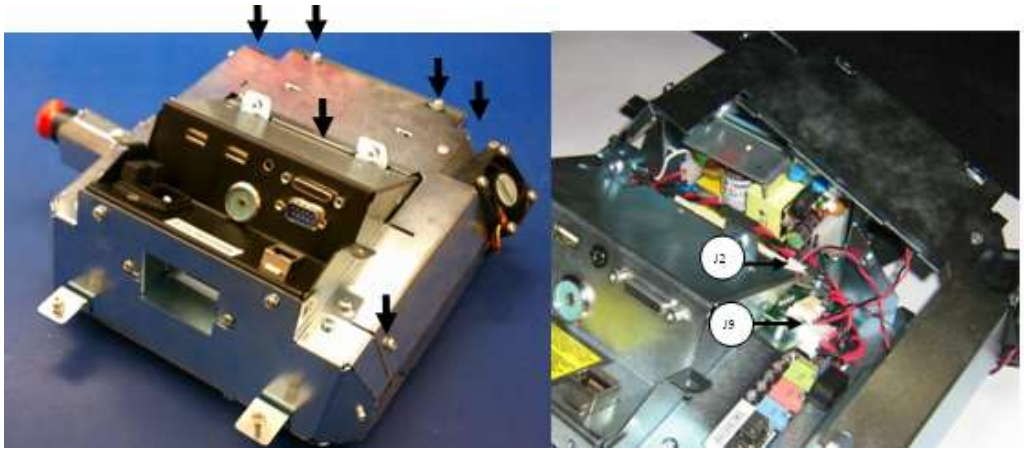
5.1.6 After reassembly, confirm device passes Power On Self-Test (POST)

5.2 LCD (43063) Version 1.0

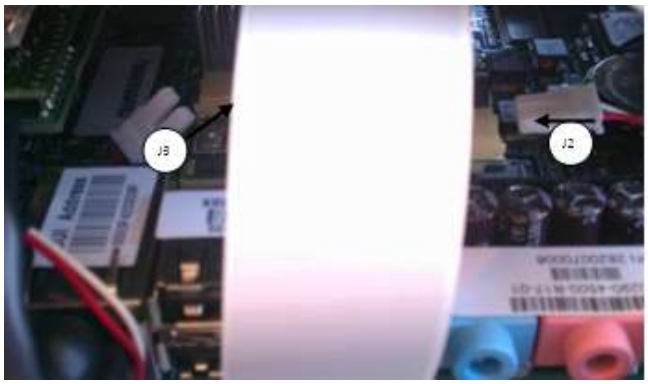
5.2.1 Follow above Cover removal process.

5.2.2 Remove the qty. 6 screws shown below securing the Chassis Service Panel (43011).

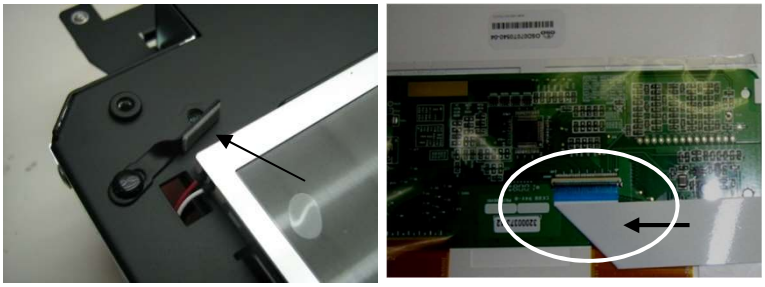
5.2.3 Disconnect both the fan (J2) and speaker (J9) connectors from the Main Controller board (43030) and remove the panel.



5.2.4 Disconnect the power leads from both J2 and J3 of VIDEO LVDS TO TTL BRD (43116).



5.2.5 Peel back the LCD brackets to access the back of the LCD and remove the flex cable (43034) from the panel. Then remove and replace LCD.



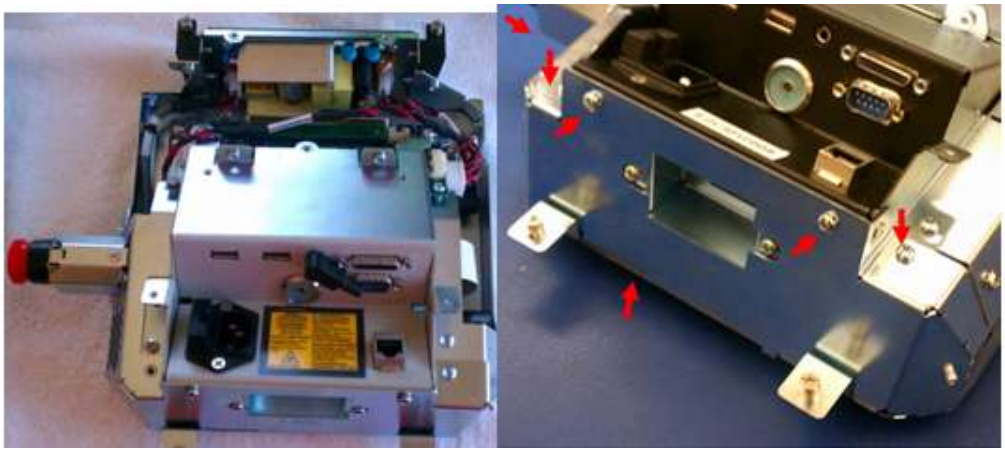
5.2.6 If flex cable (43034) is being replaced, ensure that it is oriented with the blue tab up, and the 45-degree fold as shown.

5.2.7 Reverse the above steps for reassembly. Note: Double sided tape may need to be reapplied to the LCD brackets prior to reassembly.

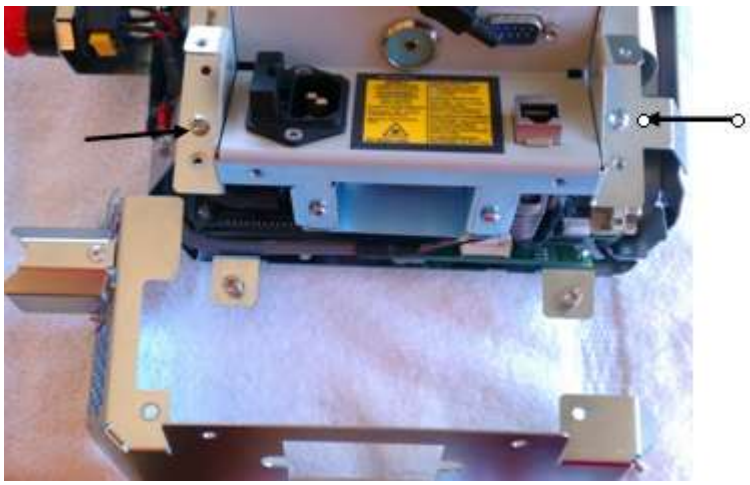
5.2.8 After reassembly, confirm device passes Power On Self-Test (POST)

5.3 Internal Access Version 1.0

5.3.1 Follow the cover removal process, followed by the first two steps in the LCD removal process. The assembly should resemble the below.



5.3.2 Remove the qty 6 screws shown above securing the Chassis Bottom (43161).



5.3.3 Remove the qty 2 screws shown above.

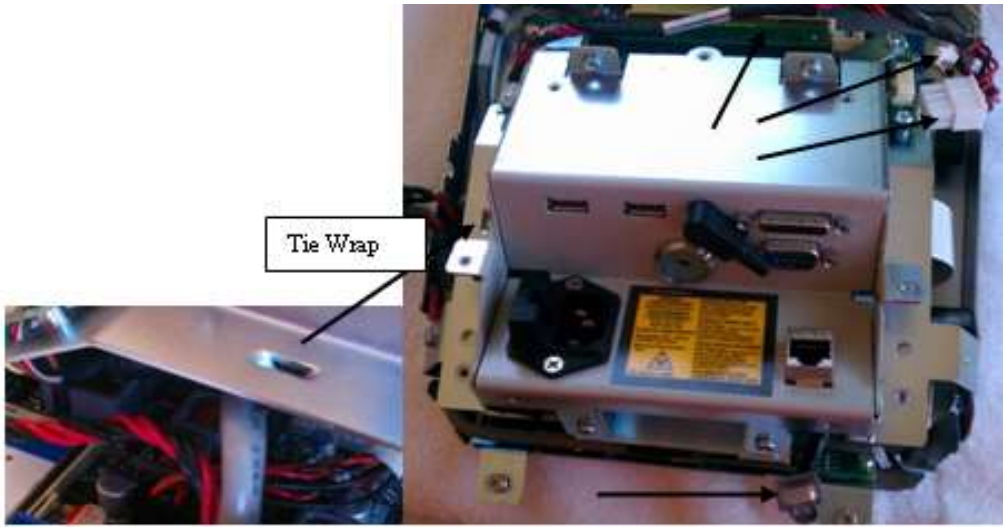
5.3.4 Disconnect the following connections

5.3.4.1 J8, J10 on Main Controller Board (P010607-01)

5.3.4.2 PCA Flex cable (43048) from Mother Board (43025-S)

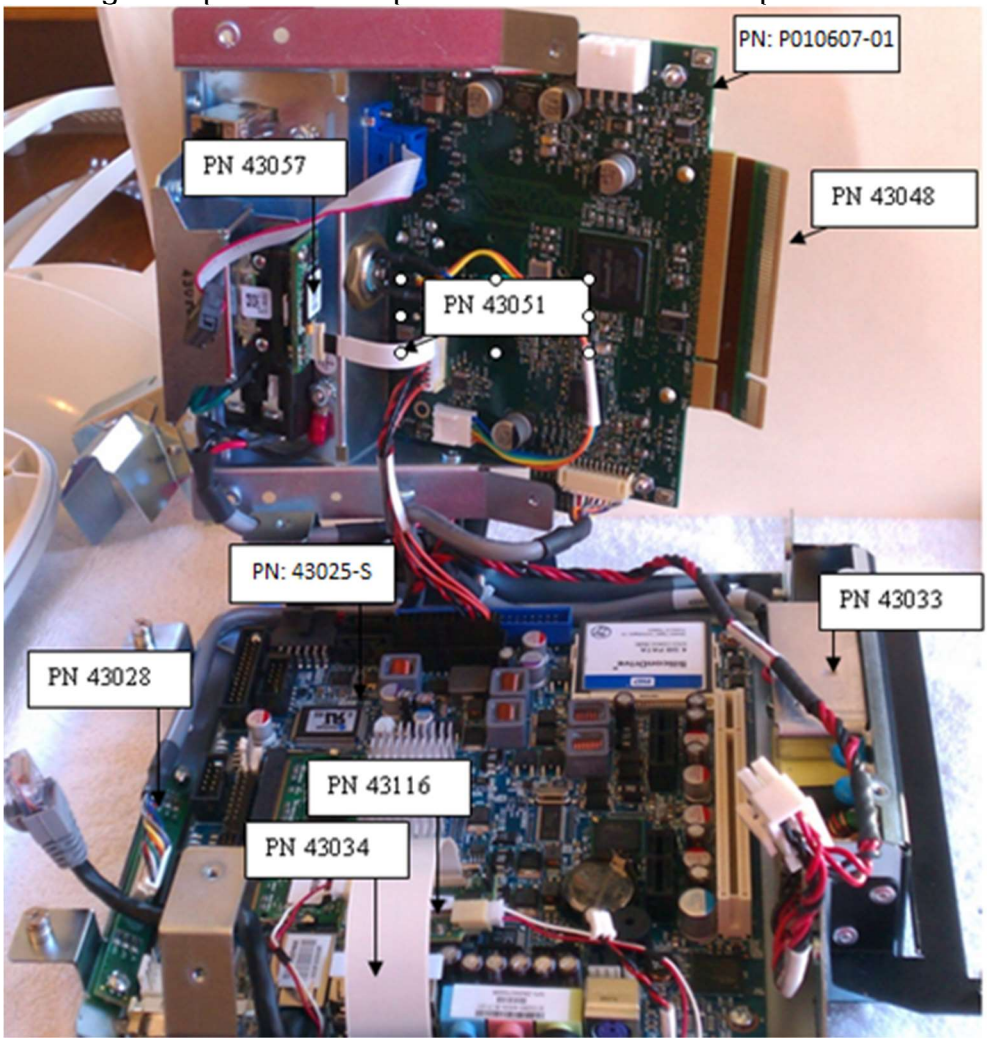
5.3.4.3 RJ45 connector (P010424-01)

5.3.4.4 Cut tie wrap (09-02772)



5.3.5 Rotate assembly up and disconnect serial cable (43316) from J7 on Motherboard.

5.3.6 You should see an accessible assembly that resembles the below allowing for repair and/or replacement of internal components.



5.4 Main Controller (P010607-01) Version 1.0

5.4.1 Follow the internal access process.

5.4.2 Disconnect cable connections J5, J7, J11 and J14 and remove PCA flex cable from main controller board.

5.4.3 Remove the 4 screws securing the board to the chassis rear and remove main controller board.

5.4.3.1 I-Button (10458) is also accessible.

5.4.3.2 Standoffs will be used on replacement board.

5.4.4 Reverse the process for reassembly.

5.4.5 After reassembly, confirm device passes Power On Self-Test (POST) and perform Power Verification, Mouse Simulation (section 8.0)

5.5 Front Panel Buttons Board. (43028) Version 1.0

5.5.1 Follow the internal access process.

5.5.2 Disconnect J11 from front panel button board.

5.5.3 Remove the 2 screws securing the board to the front chassis.

5.5.4 Reverse the steps for reassembly.

5.5.5 After reassembly, confirm device passes Power On Self-Test (POST)

5.6 Video Board. (43116) Version 1.0

5.6.1 Follow the internal access process.

5.6.2 Disconnect the power leads from both J2 and J3 of board.

5.6.3 Disconnect flat ribbon cable (43034). Note: Connector's securing characteristics resemble that of the camera flex cable's connector.

5.6.4 Remove/replace the board.

5.6.4.1 Verify jumper (J4) set 2-3 on replacement board (white dot pin1). Note: Connector on bottom of board (43116) is not keyed allowing for lateral movement as board is plugged into J25 of motherboard. See below illustration. Improper installation can cause display issues.

5.6.5 Reverse the steps for reassembly.

5.6.6 After reassembly, confirm device passes Power On Self-Test (POST)

5.7 Motherboard (43025-S) Version 1.0

5.7.1 Follow the internal access process.

5.7.2 Disconnect video board (43116) from J25 of Motherboard.

5.7.2.1 Refer to video board replacement for proper reconnection of board.

5.7.3 Disconnect J19, J36 and audio plug from Motherboard.

5.7.4 Remove the 4 screws securing the motherboard to the front chassis.

5.7.5 Remove/replace motherboard. Note: Replacement motherboard needs BIOS pre-loaded prior to installation.

5.7.6 Reverse the steps for reassembly.

5.7.7 After reassembly, confirm device passes Power On Self-Test (POST) and perform Power Verification, Mouse Simulation (section 8.0)

5.8 Power Supply (43033) Version 1.0

5.8.1 Follow motherboard process.

5.8.2 Once motherboard is removed, remove the power supply connections along with the 4 mounting screws.

5.8.3 Remove/replace power supply. See picture for correct orientation.

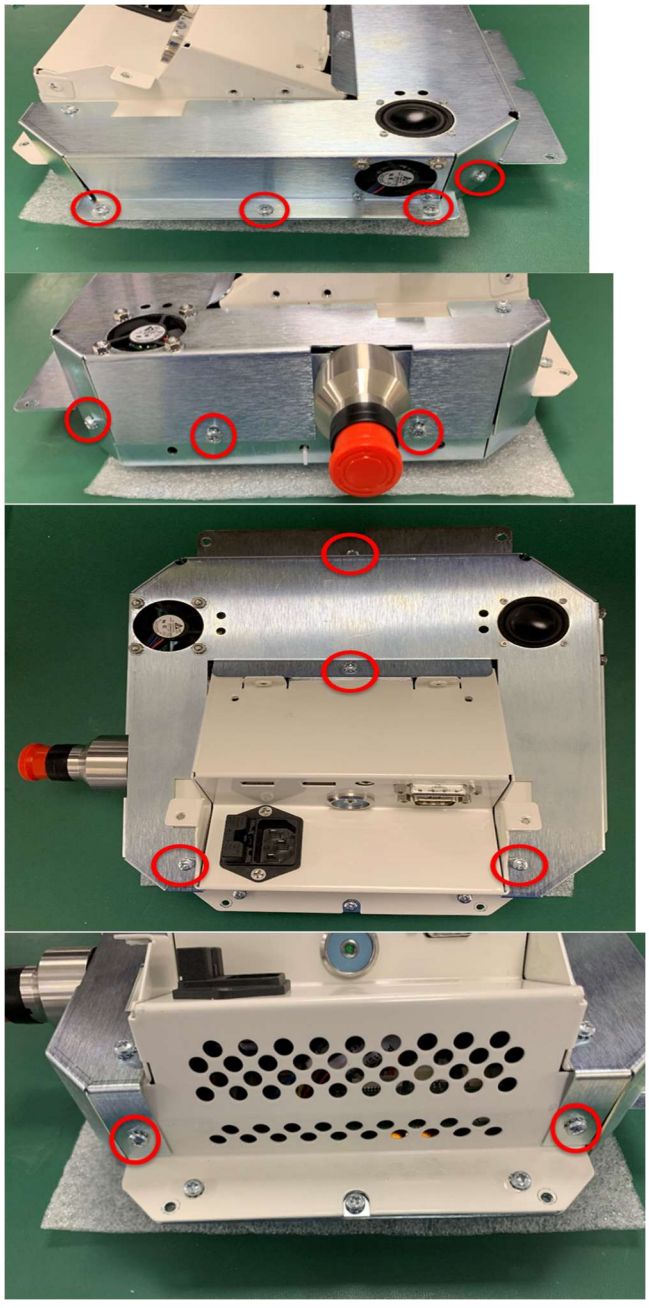
5.8.4 Reverse the steps for reassembly.

5.8.5 After reassembly, confirm device passes Power On Self-Test (POST) and perform Power Verification, Mouse Simulation (section 8.0).

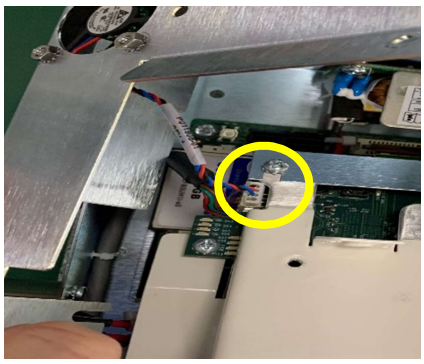
5.9 Internal Access – Version 1.5

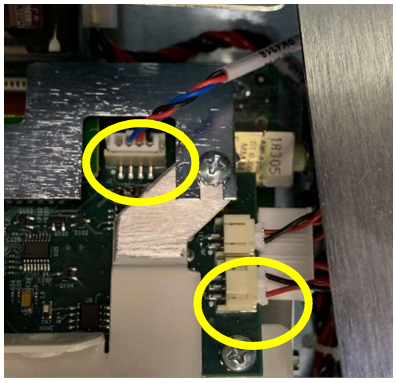
5.9.1 Follow the Cover removal process in section 5.1.

5.9.2 Remove the qty 13 screws securing the Rear housing internal (P011787-04).

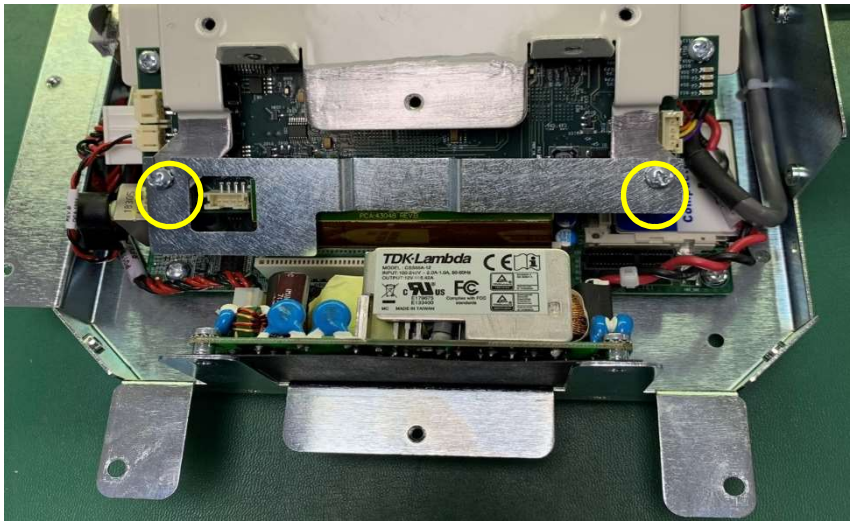


5.9.3 Disconnect Fan connection at J16 on the E-Stop side and Fan connection at J2 along with speaker connector J9 from the main board (P011798-01).

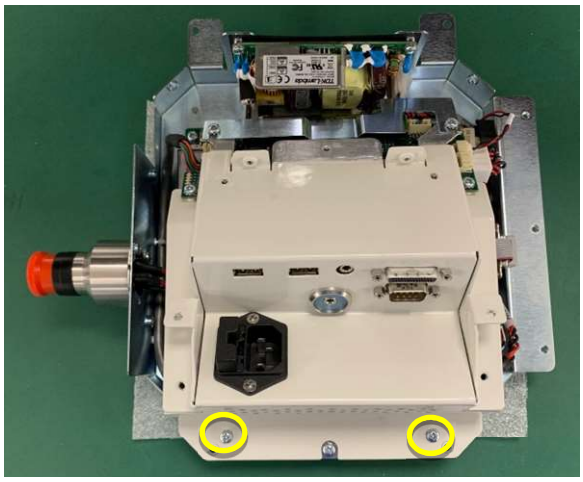




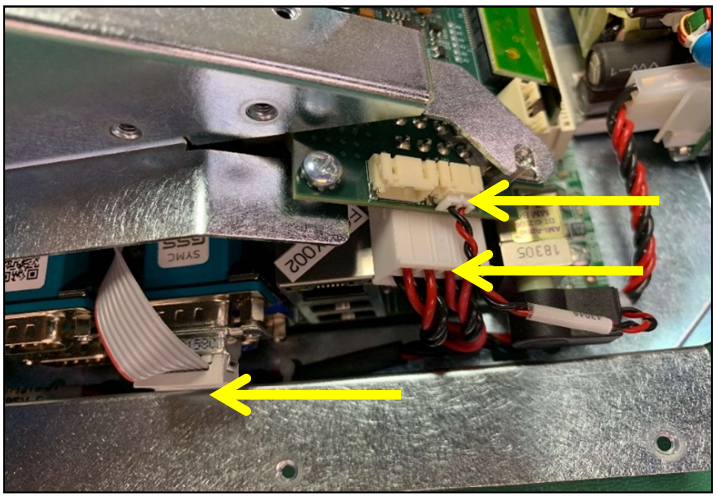
5.9.4 Remove the Flex connector bracket held on by 2 screws.



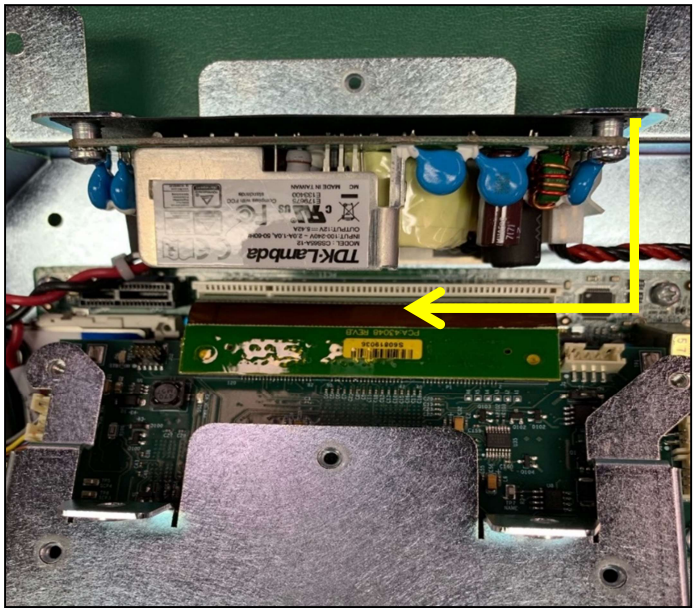
5.9.5 Remove the 2 screws holding the rear chassis to the front housing, once you remove these screws the 2 pieces will be loose. You will need to hold the Rear Chassis while doing the next steps.



5.9.6 Disconnect Audio cable from J8 on the Main PCB, disconnect Power cable J10 on Main PCB, disconnect serial cable coming from Main PCB.

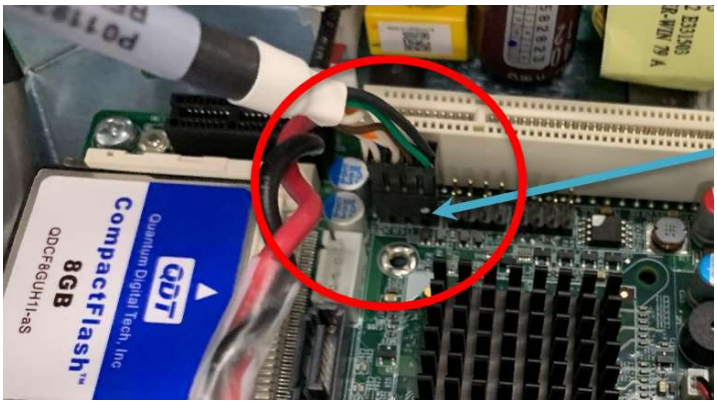


5.9.7 Disconnect the PCI cable between the Main PCB and the Mother board.

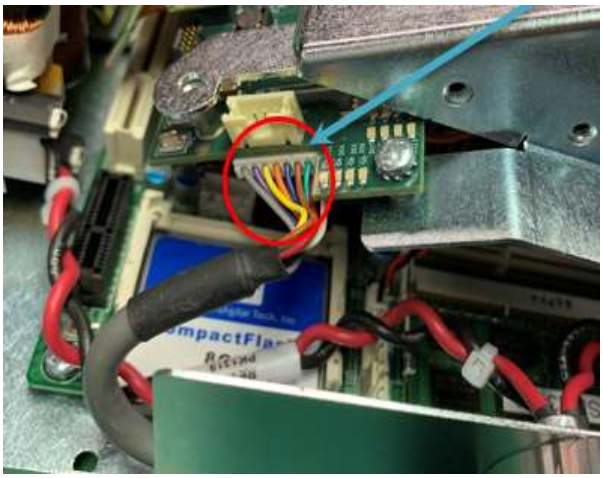


5.9.8 Slowly lift the Rear Chassis up. This will give you access to other connections on the Mother board.

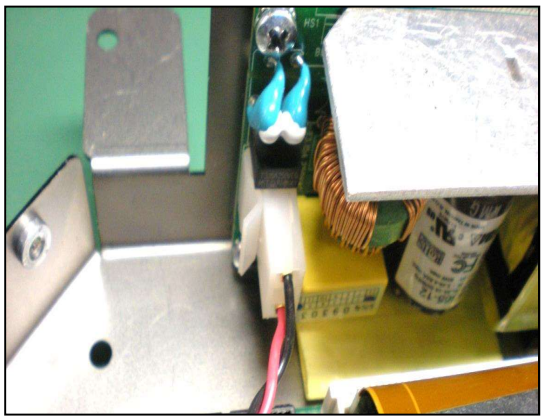
5.9.9 Disconnect the USB cable from USB2 on the Mother Board. Be sure to note the White Dot on the cable, this faces out as shown in the picture below.



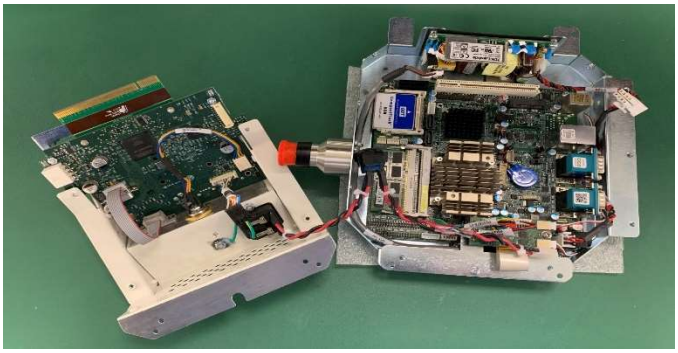
5.9.10 Disconnect the rainbow colored Main Controller cable from the Main Controller Board.



5.9.11 Disconnect the AC power cable from the Power Supply.



5.9.12 You should now be able to separate the two pieces and lay them on the bench side by side for access to replacing all parts.



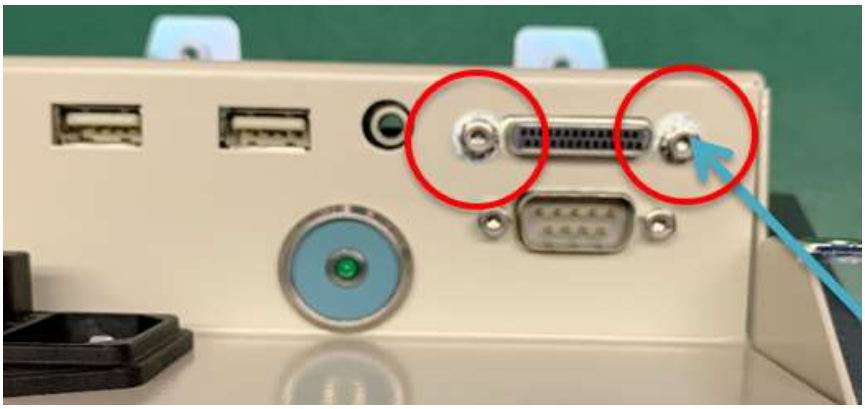
5.9.13 Reverse these steps for reassembly.

5.9.14 After reassembly, confirm device passes Power On Self-Test (POST) and perform Power Verification, Mouse Simulation (section 8.0).

5.10 Main Controller Board (P011798-01) Version 1.5

5.10.1 Disconnect cable connections to the main controller board.

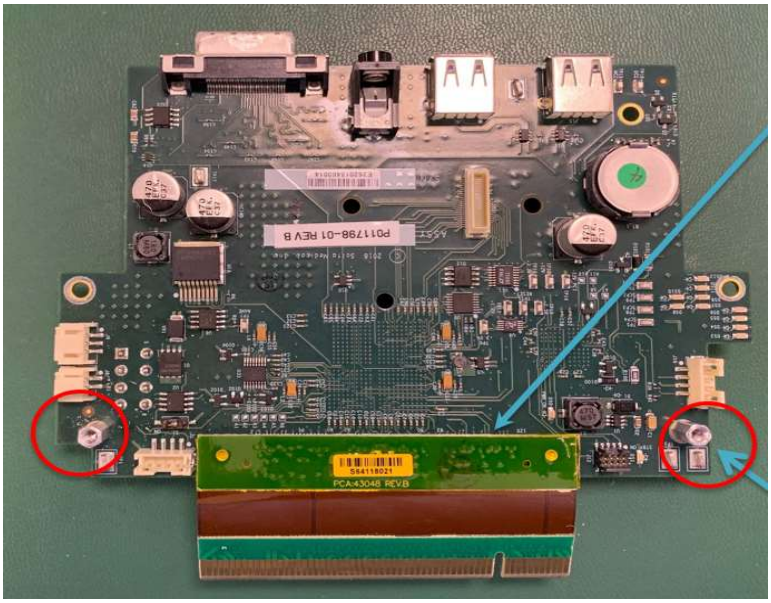
5.10.2 Disconnect the 2 Jack screws holding the Main Controller board to the Chassis. Note: Keep the 2 Jack screws and 2 lock washers for reassembly. The Lock washers help to ensure a good ground connection for the Main controller board.



5.10.3 Flip the Rear Chassis over and remove the 2 screws shown.

5.10.4 Flip the Chassis back over and you should be able to remove the Main controller board.

5.10.5 Remove the PCI ribbon cable connector and the 2 Jack screws and nuts from the old PCB and attach to the replacement Main Controller board.

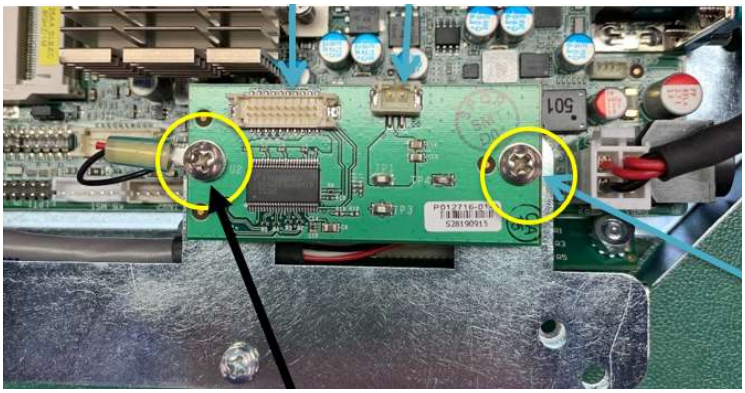


5.10.6 Reverse these steps to install the replacement Main Controller board. Then Reverse the steps in Section 5.9 and 5.1 to reassemble the system.

5.10.7 After reassembly, confirm device passes Power On Self-Test (POST) and perform Power Verification, Mouse Simulation (section 8.0).

5.11 Display Board (P012716-01) Version 1.5

5.11.1 Disconnect Backlight power cable from J6 and LVDS cable from J1 on Display Board, then remove the 2 screws securing the Display Board, making note of the ground cable attached to one side.



5.11.2 Disconnect the ribbon cable from the underside of the Display Board.

5.11.3 Connect the replacement Display board and reverse the steps to install the Display Board. Then Reverse steps 5.9 and 5.1 for reassembly.

5.11.4 After reassembly, confirm device passes Power On Self-Test (POST) and perform Power Verification, Mouse Simulation (section 8.0).

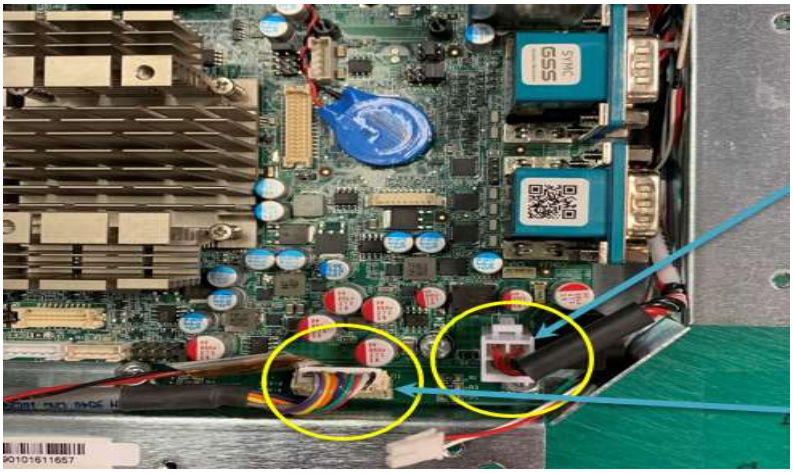
5.11.5 If replacing the Mother Board proceed to step 5.12 for instructions on removal and replacement.

5.12 Mother Board (P011876-01) or Compact Flash (P012417-02) Version 1.5

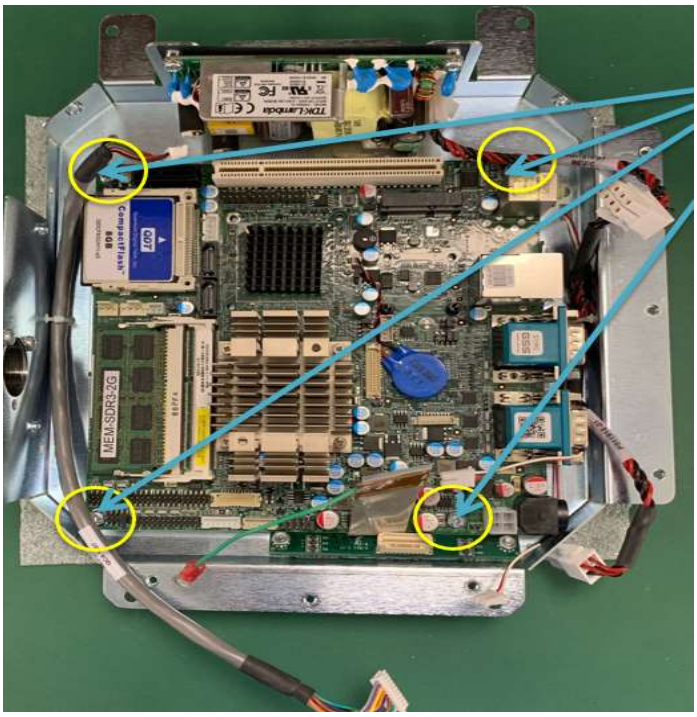
5.12.1 This section will describe how to replace the Mother Board and/or Compact Flash card. The Mother Board needs to be removed to remove and replace the Compact Flash card.

5.12.2 Follow Section 5.1, 5.9 and section 5.11.

5.12.3 Disconnect cable connections on the Mother Board



5.12.4 Remove the 4 screws holding the Mother Board in the Front Housing.



5.12.5 With the Mother Board removed the Compact Flash card can be replaced.

5.12.6 The Mother Board can now be replaced. Reverse these steps to install the Mother Board. Then Reverse Section 5.11 and 5.9 and 5.1 for complete reassembly.

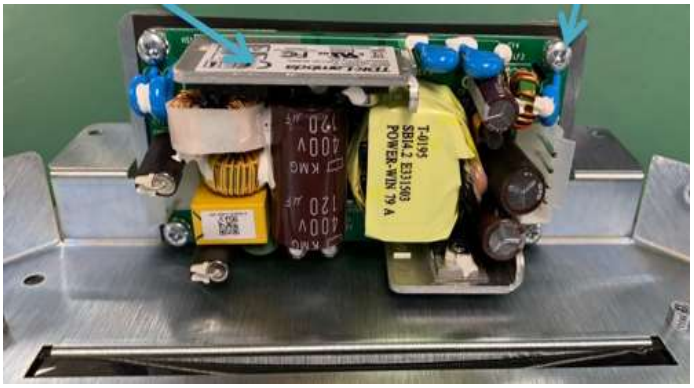
5.12.7 After reassembly, confirm device passes Power On Self-Test (POST) and perform Power Verification, Mouse Simulation (section 8.0).

5.13 Power Supply (P011910-01) Version 1.5

5.13.1 Complete steps 5.1, 5.9, 5.11 and 5.12

5.13.2 Once the Mother Board is removed, disconnect the connections and remove the 4 mounting screws.

5.13.3 Remove and Replace the Power Supply. See photo below for correct orientation.



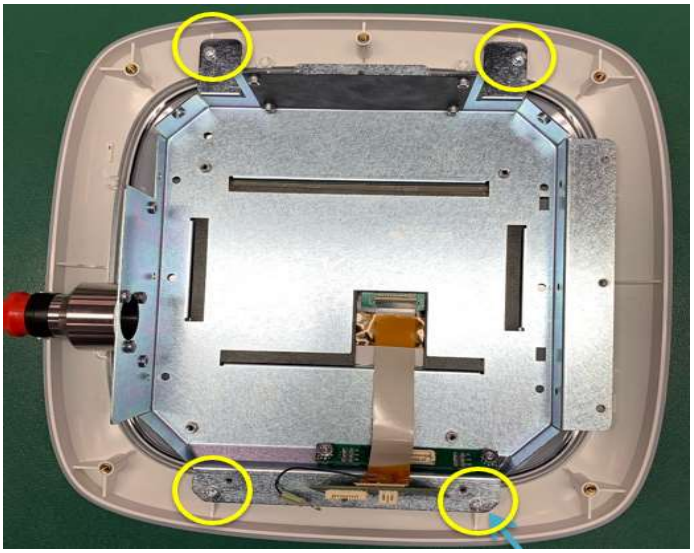
5.13.4 Reverse these steps for reassembly. Then reverse section 5.12, 5.11, 5.9 and 5.1.

5.13.5 After reassembly, confirm device passes Power On Self-Test (POST) and perform Power Verification, Mouse Simulation (section 8.0).

5.14 LCD (P013360-01 FRU) Version 1.5

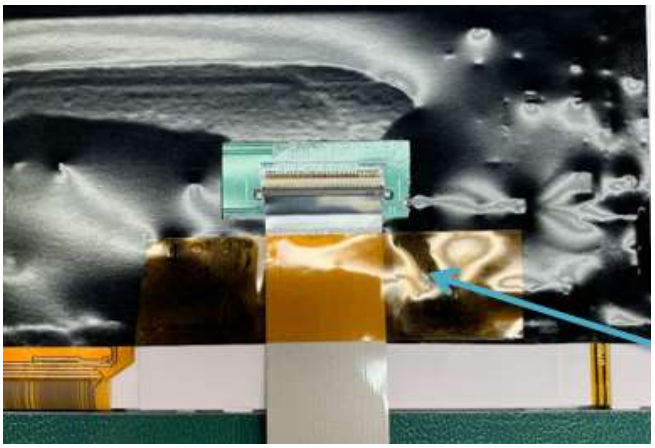
5.14.1 Follow Section 5.1, 5.9, 5.11 and 5.12.

5.14.2 Remove the 4 screws holding the Front Housing to the Front Bezel. Save the 4 screws for reassembly later.



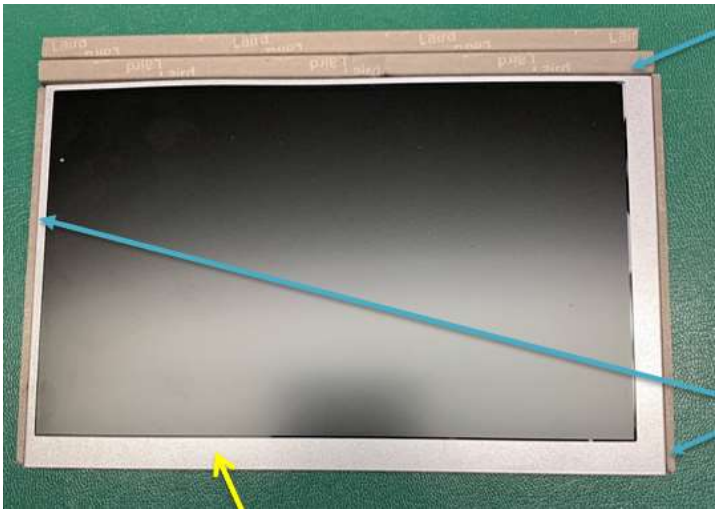
5.14.3 Pry the LCD away from the Front Housing using a flat blade screw driver. It is secured with pressure sensitive adhesive tape. Remove the excess pad and tape material on the front housing.

5.14.4 Remove the Video ribbon cable from the back of the old LCD and attach to the back of the new LCD making sure the cable is plugged in straight. Replace the Kapton tape to keep the video cable secure to the back of the LCD.

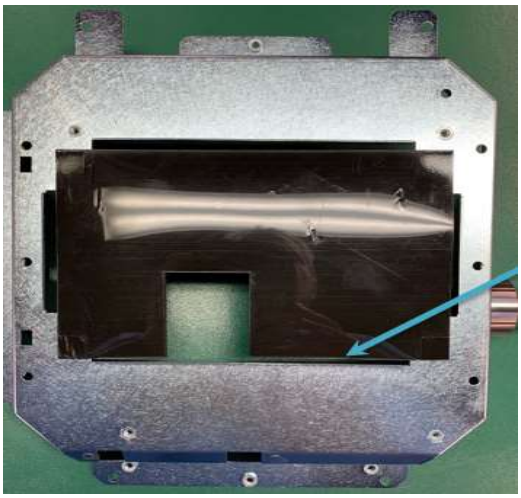


5.14.5 The replacement LCD Field Replaceable Unit (FRU) P/N P013360-01 should include 2 strips of EMI conductive foam P012703-01 (5mm x 5mm) and 2 strips of EMI conductive foam P012467-01 (3mm x 2mm) already attached. (See picture below) and a new Display Pad P011792-02.

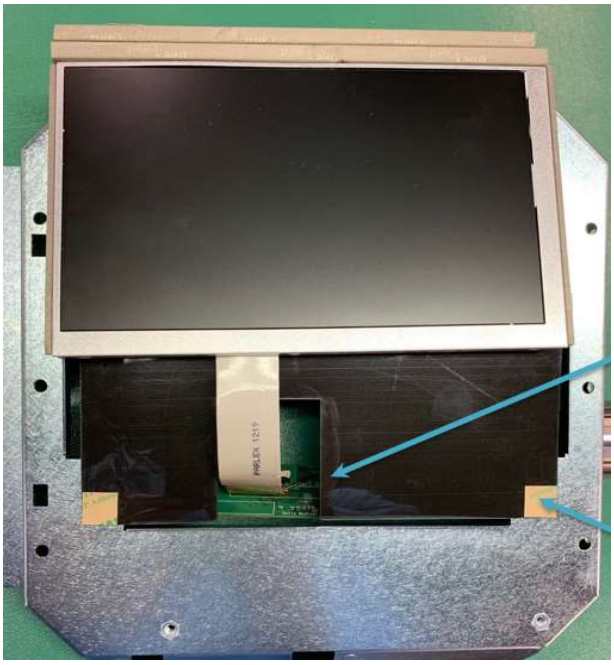
5.14.6 Remove the adhesive backing from the 5mm strips and affix to the top of the LCD as shown below. Remove the adhesive backing from the 2mm strips and affix one to each side of the LCD as shown below.



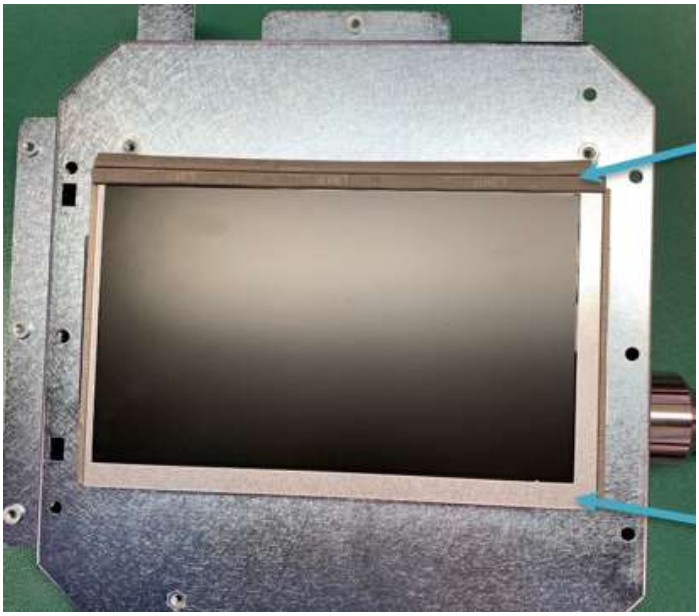
5.14.7 Remove the tape backing from the back side of the Display Pad and affix to the Front Housing.



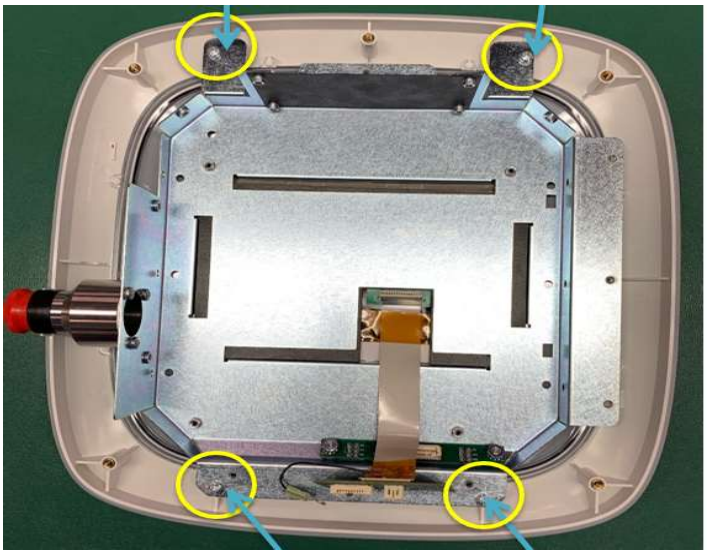
5.14.8 Carefully feed the Video cable through the front Housing and remove the 4 tape backing tabs from the front of the Display Pad.



5.14.9 Carefully ease the LCD down and affix to the Display pad at all 4 corners. Verify that the tape is in contact with all 4 corners.



5.14.10 Place the Front Housing with LCD attached into the Front Bezel and tighten down with the 4 screws removed in step 5.14.3.



5.14.11 Press both the power and Acknowledge buttons to verify that the Bezel buttons properly engage with the front panel PCA. A distinct clicking sound will indicate that the buttons are working properly with any interference.

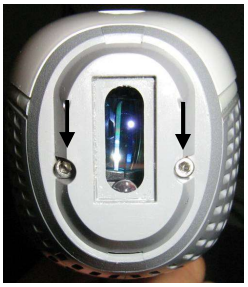
5.14.12 Reverse steps 5.12, 5.11, 5.9 and 5.1.

5.14.13 After reassembly, confirm device passes Power On Self-Test (POST) and perform Power Verification, Mouse Simulation (section 8.0).

5.15 HANDPIECE – Covers

5.15.1 **Snout Assembly (10403) –** Remove the tip to access the qty 2 screws securing the snout to the HP inner housing.

5.15.1.1 Snout window (02-04949) is adhered to snout with G-S Hypo Cement (09-03015).

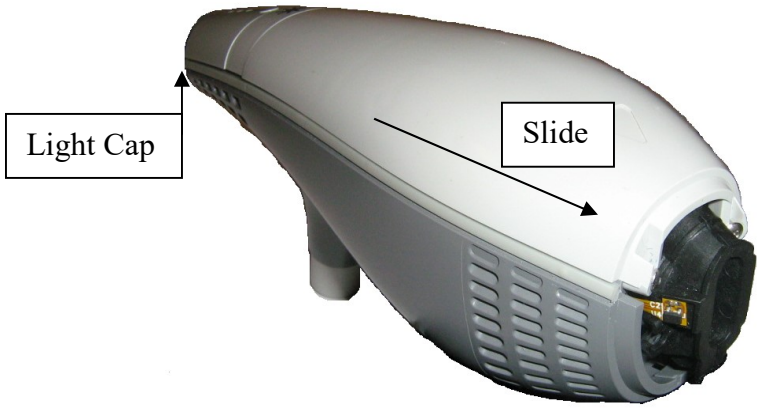


5.15.2 **Outer Lower Housing (Right – 42995, Left – 42994) –** Remove the qty 2 screws securing the lower housing to the inner housing.

5.15.2.1 Hold lower housing of HP in one hand orienting the front facing you.

5.15.2.2 Grab the upper housing with the other hand and slide towards to.

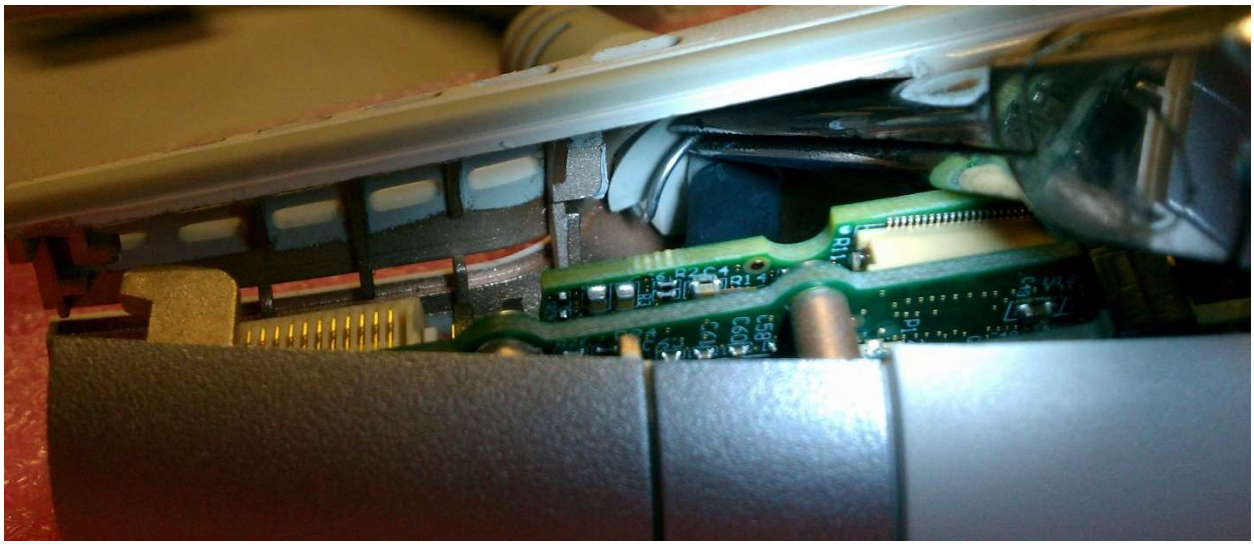
5.15.2.3 Remove the light cap (42993) and baffle (43256) from rear of HP by sliding up.



5.15.2.4 Slide lower housing down, slightly separating the lower from the upper housings enough to access the wire form lower housing attachment (43145).

5.15.2.5 Carefully remove the wire form with a long pair of needle nose pliers.

5.15.2.6 Using a dental pick or equivalent tool, carefully separate the right and left lower housing.



5.15.3 Upper Housing Assembly (10398)

5.15.3.1 If tie wraps are present securing the HP com cable (43047) to grounding bracket (43261), cut tie wraps and disconnect HP from HP controller Board.

5.15.3.2 Remove the qty 4 screws securing the board assembly (P013078-01) to upper housing.

5.15.3.3 Remove the qty 2 screws securing the inner laser assembly (10384) to the upper housing

5.15.3.4 Remove both assemblies from upper housing.

5.15.3.5 Replace/repair housings.

5.15.3.6 Reverse steps for reassembly.

5.15.4 After reassembly, confirm device passes Power On Self-Test (POST) and Pattern Preview Test (Section 6.0)

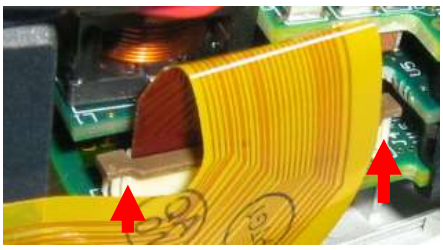
5.16 PCB BOARD ASSEMBLY

5.16.1 Follow the Handpiece Cover process for snout and lower housing removal.

5.16.2 If tie wraps are present securing the HP com cable (43047) to grounding bracket (43261), cut tie wraps and disconnect HP from HP controller Board.

5.16.3 Disconnect laser diode plug.

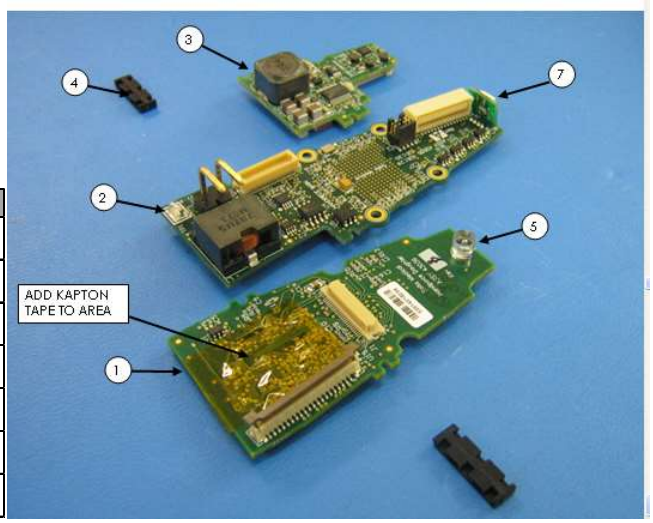
5.16.4 Disconnect flex cable (42997) from daughter board (43039) by carefully disengaging the connectors lock.



5.16.5 Remove the qty 4 screws securing the board assembly (P013078-01) to upper housing and remove board assembly.

5.16.6 Assembly can now be disassembled for repair/replacement.

Item	Part #	Description
1	43039	PCA, HANDPIECE DAUGHTER
2	43035	PCA, MAIN, HANDPIECE CONTROLLER
3	43090	PCA, HANDPIECE DC DAUGHTER
4	43226	SUPPORT, PCB, HP
5	43246	SUPPORT, SWITCH, HP-PCB
6	40662	TAPE, KAPTON, 3/4IN WIDE
7	P012217-01	PCA, TREAT LED BOARD (Soldered On)



5.16.7 Reverse the steps for reassembly.

5.16.8 After reassembly, confirm device passes Power On Self-Test (POST). Perform Laser Calibration (section 7.0) and Power Verification, Mouse Simulation (section 8.0)

5.17 INNER HOUSING AND HEAT SINK– *Laser assembly*

5.17.1 Follow the lower housing and snout process to access the internal assembly.

5.17.2 Disconnect laser diode plug.

5.17.3 Disconnect flex cable (42997) from daughter board (43039) by carefully disengaging the connectors lock.

5.17.4 Remove the qty 2 screws that secure the assembly to the upper housing.

5.17.5 Replace the assembly with new assembly (10384). Note: At this moment laser diode cannot be replaced as in-house process is required to ensure proper lens alignment.

5.17.6 Reverse steps for reassembly.

5.17.7 After reassembly, confirm device passes Power On Self-Test (POST). Perform Laser Calibration (section 7.0) and Power Verification, Mouse Simulation (section 8.0)

5.18 FAN

5.18.1 Follow assembly (10384) process.

5.18.2 With laser assembly removed fan (43140) can be disconnected, removed and replaced.

5.18.3 Reverse the steps for reassembly.

5.18.4 After reassembly, confirm device passes Power On Self-Test (POST) and Pattern Preview Test (Section 6.0)

6.0 Pattern Preview Test

It is important for the user to become familiar with the system's visual and audible feedback indicators. For this purpose, Solta Medical provides "burn paper" with each box of CLEAR + BRILLIANT tips for the user to produce a pattern preview test. For this test, the user performs a pass of the handpiece onto the burn paper – just use one of the four quadrants on the burn paper to perform the test, to minimize waste. The burn paper can be used up to four times – one quadrant for each tip tested. You can see the pattern of the laser through the clear laminate on the burn paper. If you desire, you can peel back the top film of the burn paper to reveal a clearer view of the laser pattern.

When energy is delivered to the paper, a pattern of microscopic thermal zones shows up on the paper in the same way it would be delivered to the skin. The user can understand the visual cues from the indicator light and become familiarized with the audible tones as they relate to handpiece speed.

If lines do not appear on the burn paper after the Pattern Preview Test, further evaluation of the console or handpiece will be required.

Performing Pattern Preview Test

Burn paper before test

Burn paper after test

7.0 Laser Calibration

7.1 Connect the Handpiece to the console to be used to test the handpiece.

7.2 Connect the USB Keyboard and Mouse to the test console.

7.3 Connect TeraTerm from your laptop to the serial communication port.

7.4 Power on the system.

7.5 Wait for the Welcome Screen.

7.6 Insert the Service Key in the Back Panel.

7.7 Press the Acknowledge Button. The Clear + Brilliant Logo should appear.

7.8 Left click on the mouse button.

7.9 The Service Screen should appear.

7.10 Use the Mouse to select the Laser Calibration tab on the console screen.

7.11 Carefully place the Handpiece in line with the Power Meter Sensor by holding it in your hand 3cm from the power sensor. As an alternative place the handpiece in POWER CALIBRATION C&B FIXTURE ASSY P011729-01

Note: Make sure the sensor's calibration sticker is current before use.

7.12 Set the laser power meter settings as follows:

1435 λ 3 W

7.13 Zero the Meter.

7.14 Use the Mouse to select the Start / Stop Button on the console screen.

7.15 When the screen prompts for a value enter the power level from the power meter into the console.

7.16 Press OK to continue.

7.17 When the screen prompts, enter the power meter value a second time.

7.18 Use the Mouse to select "Done" to exit.

7.19 Power cycle unit and allow the system test to perform the calibration check.

8.0 Power Verification; Mouse Simulation

Purpose is to qualify the system for proper operation after installation, service, or annual preventative maintenance. The service engineer requires a keyboard and mouse connected to the system and a laser power meter.

Note: Make sure the power meter's calibration sticker is current before use.

8.1 Power on the system.

8.2 Wait for the Welcome Screen.

8.3 Insert the Service Key in the Back Panel.

8.4 Press the Acknowledge Button. The Clear + Brilliant Logo should appear.

8.5 Left click on the mouse button.

8.6 The Service Screen should appear.

8.7 Use the Mouse to select the Mouse Simulation tab on the console screen.

8.8 Carefully place the Handpiece in line with the Power Meter Sensor by holding it in your hand 3cm from the power sensor. As an alternative place the handpiece in POWER CALIBRATION C&B FIXTURE ASSY P011729-01

8.9 Set the laser power meter settings as follows:

1435 λ 3 W

8.10 Zero the Meter.

8.11 Use the Mouse to select the velocity setting and enter the Hand Speed value which corresponds with the table below.

8.12 Use the Mouse to check the box labeled Simulation armed.

8.13 Exit the Service Menu.

8.14 Press the Acknowledge button and scan a Service barcode.

8.15 Enter Treat mode, select the appropriate Treatment Level, and activate the Handpiece.

8.16 The System will immediately begin to fire, take a reading from the power meter.

8.17 Record a measurement for each Treatment Level setting.

8.18 Evaluate the Pass or Fail results.

8.19 Power off the System.

LASER POWER – 1440 nm Handpiece, tolerance range +/- 20%

Treatment Level	Hand Speed (cm/s)	Expected Power (W)	Minimum (W)	Maximum (W)	Actual Reading (W)	Pass / Fail
Low	**8**	**1.60**	**1.28**	**1.92**		
Med	**8**	**2.24**	**1.79**	**2.69**		
High	**6**	**2.15**	**1.72**	**2.58**		
Low	**2**	**0.42**	**0.33**	**0.50**		
Med	**2**	**0.58**	**0.47**	**0.70**		
High	**2**	**0.68**	**0.55**	**0.82**		

LASER POWER – 1927 nm Handpiece, tolerance range +/- 20%

Treatment Level	Hand Speed (cm/s)	Expected Power (W)	Minimum (W)	Maximum (W)	Actual Reading (W)	Pass/Fail
Low	8.0	0.68	0.54	0.82		
Med.	5.9	0.73	0.58	0.88		
High	4.3	0.73	0.58	0.88		
Low	2	0.18	0.14	0.22		
Med.	2	0.25	0.20	0.30		
High	2	0.33	0.26	0.40		

9.0 Error Codes and Troubleshooting

9.1 Error code list

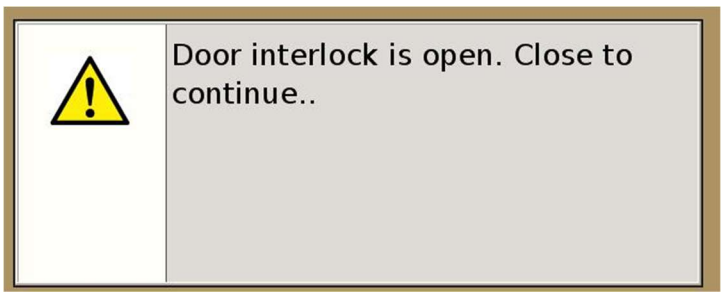
Error Code	Error Name	Error Meaning
100	HandPieceCalibrationInfoError,	Handpiece calibration info bad or missing
101	CollimatorCalibrationInfoError,	Collimator calibration info bad or missing
102	SelfTestTaskCreationError,	Cannot create self-test subtask
103	NoFpgaDriver,	Bad or missing FPGA driver
104	FpgaAccessFailed,	FPGA access failed
105	ConsoleHandPieceCommoPatternFailed,	Console/Handpiece commo pattern failed
106	BadOrMissingOneWireDriver,	Bad or missing one-wire driver
107	NoConsoleSecurityChip,	No Console Security Chip
108	InvalidBoardIdChip,	Invalid board ID chip
109	BadOrMissingStepperController,	Bad or missing stepper controller
110	CannotReserveStepperController,	Can't reserve stepper controller
111	L1HomingFailed,	L1 Homing failed
112	L3HomingFailed,	L3 Homing failed
113	CannotReleaseStepperController,	Can't release stepper controller
114	BadOrMissingSpinnerController,	Bad or missing spinner controller
115	TimedoutReachingMotorSpeed,	Timed out reaching motor speed
116	InvalidMotorEncoderCount,	Invalid motor encoder count
117	ErrorStoppingMotor,	Error stopping motor
118	ErrorSettingMotorSpeed,	Error setting motor speed
119	ErrorResettingTracking,	Error resetting tracking system
120	RecoveryFailedMouseReset,	Recovery failed: mouse reset
121	CannotReadFPGA,	Error Reading FPGA
122	InvalidTrackingID,	Invalid Tracking System ID
123	ErrorReadingTracking,	Error reading tracking system
124	ADCInternalTestFail,	ADC internal test failed
125	CurrentControlTestFail,	Current control system test failed
126	EnergyControlTestFail,	Energy control system test failed
127	SafetyCutoffTestFail,	Safety cutoff system test failed
128	LaserSelfTestFailCurrent,	Laser self-test failed current control
129	LaserSelfTestFailEnergy,	Laser self-test failed energy control
130	LaserSelfTestFailSafety,	Laser self-test failed safety check
131	SysmanInitFailedGetOwnMsgQ,	Sysman init failed: get own message queue
132	SysmanInitFailedGetTreatMsgQ,	Sysman init failed to get treatment message queue
133	SysmanInitFailedGetESMsgQ,	Sysman init failed to get ESMan message queue

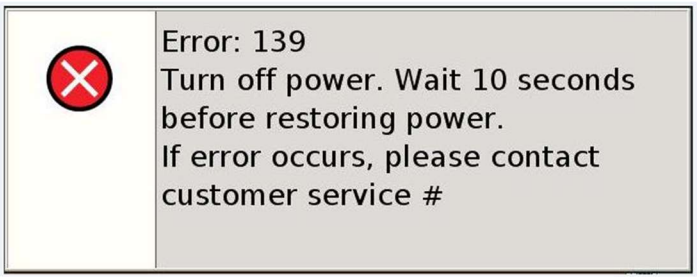
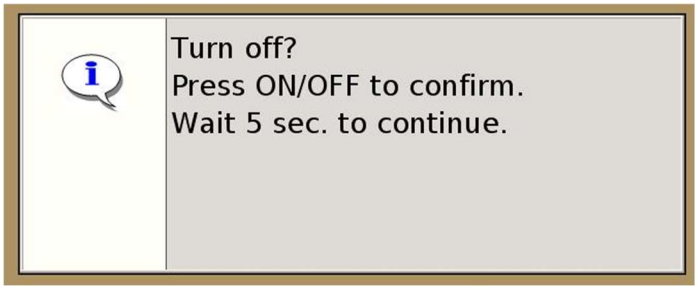
Error Code	Error Name	Error Meaning
134	SysmanInitFailedGetSelfTestMsgQ,	Sysman init failed to get self-test message queue
135	SysmanInitFailedNoMotherboadID,	Sysman init failed to find motherboard ID ROM
136	SysmanInitErrorSetESManager,	Sysman init: error setting up ES manager service
137	HandswitchIsBad,	Handswitch has failed
138	ErrorSavingToFile,	Error saving to file
139	InterlockOpenDuringSelfTest,	Interlock open
140	LaserTooHot,	Laser too hot
141	LaserOverCurrent,	Laser over current alarm
142	LaserBackReflect,	Laser back reflect alarm
143	LaserOverPowerAlarm,	Laser over power alarm
144	LaserOverPowerWarning,	Laser more than 20% over power
145	LaserUnderPowerWarning,	Laser more than 20% under power
146	LaserUnderPowerAlarm,	Laser under power alarm
147	InvalidCompatibilityCode,	Invalid Hardware/software compatibility code
148	InvalidBoardTypeCode,	Invalid Controller board type code
149	InvalidHandpieceTypeCode,	Invalid Handpiece type code
150	SWAssertion,	Assertion failed
151	SWFault,	Software failure
152	HandPieceMissing,	Connect handpiece
153	EnergyCalibrationTableMissing,	Energy calibration table missing
154	HealthMonReceivedMessage	Health monitor received a message
155	IntrusionAlarm,	Intrusion alarm detected
156	HeaterTestFailed,	Heater Self-Test Failed
157	ShutterTestFailed,	Shutter Self-Test Failed
158	LaserSWRFault,	Laser RF reflection error
159	EnergyTableConversionFailed,	energy table adjustment for handpiece loss failed
160	LaserAccessError,	Laser Access Error
161	ShutterFailure,	Shutter Failed
162	UnrecoverableOneWireFailure,	Unrecoverable error from one-wire bus
163	LaserHeadNotConnected,	No continuity to laser head module
164	HandpieceUnconnected,	handpiece not connected when it ought to be
165	HandpieceCommError,	handpiece communication error
166	PickoffsUnconnected,	pickoffs unconnected
167	LaserHeadCommError,	laserhead comm error
168	UnexpectedHandpieceConnection,	handpiece unexpectedly connected
169	DriverStatusBad,	Status of required driver is bad

Error Code	Error Name	Error Meaning
170	InvalidTreatmentParameter,	Invalid treatment parameter in treatment screen
171	SwitchWavelengthFailed,	Error switching laser wavelength
172	SetEsManFireFacetsPartialFailed,	Set esManFireFacetsPartial failed
173	MainBoardMemoryChipError,	Main board memory chip setup failure
174	MotorAccessError,	Error accessing motor driver
175	SetCurrentFailure,	Set Current call failed
176	GetTemperatureFailure,	Calculate laser temperature failed
177	CalibrationTemperatureUnstable,	Temperature unstable during calibration
178	CannotAdjustLaserCurrent,	Cannot adjust laser current during calibration
179	PhotodiodeAccessError,	Cannot access photodiode during calibration
180	PhotodiodeAdjustmentFailed,	Photodiode adjustment failed
181	SysmanInitLogFilterFail,	Sysman init failed to set log filter level

9.2 On Screen Error Messages

	*SmartCard must remain inside the card Reader for the first 2 minutes after treatment activation.*
	*Remove SmartCard from Reader and re-insert into Reader verifying proper card orientation and that light on top of Reader turns green.*
	*It is safe to remove SmartCard from the Reader.*
	*The Reader cannot read SmartCard properly. Re-insert SmartCard and verify proper insertion by ensuring green light on top of the Reader is lit. Also, verify that SmartCard matches the handpiece attached to the console.*

	*The wrong card might have been inserted for the connected handpiece. Verify card matches connected handpiece. Insert correct card into reader.*
	*All treatment credits have been used up. Insert a SmartCard with available treatment credits.*
	*Handpiece temperature must not exceed 40°C. This message will disappear once handpiece temperature is below 40°C. Treatment should continue uninterrupted.*
	*If you wish to cancel a treatment, proceed to press blue button on the console. If you reach this message in error, press any button on the handpiece to return to stand-by mode.*
	*If treatment is complete, proceed to press blue button on the console. If you reach this message in error, press any button on the handpiece to return to stand-by mode.*
	*The door interlock is a safety feature located on the back of the console. It must be properly engaged to activate laser. Verify door interlock is in proper position. If it is not, push door interlock until it is properly seated in system.*

	*Turn the system off and restart after 10 seconds. If the system is still not functioning, please contact Customer Service. This message not specific to Error: 139. This is just one example for various Error codes.*
	*If you'd like to power system OFF, press the ON/OFF button to proceed.* *If you reach this message in error, wait 5 seconds to return to idle mode.*

9.3 Troubleshooting

Issue	Troubleshooting steps
Handpiece Skipping, Tracking or Not Firing	Fogging can interfere with the Permea 1927 tracking, and cause skipping, tracking or not firing issues. This can be caused by evaporated water from the skin condensing on the tip or water vapor within the tip interfering with the optical tracking mechanism of the laser. Corrective Actions: 1. Have patient hold a handheld fan – use the fan ahead of the tracking of the HP and close to the skin. 2. Stretch the skin while treating if possible for smoother tracking. 3. Clean any condensation off the skin on a regular basis. 4. Make sure the skin is dry prior to treatment. 5. Clean handpiece lens.
Remove Tip and place HP in cradle to start self-test	Confirm the handpiece was connected to the system properly. If the handpiece is connected properly, the magnetic sensor on the handpiece may be tripped. • Attach a tip to the handpiece and restart the system. When the system prompts the user to remove the tip, remove the tip and the system may recognize the change and continue with the calibration check. If the above action does not resolve the issue, the handpiece will need to be replaced or repaired. This can only be done in the service depot.
Error 128	Ensure that the HP is fully seated in the calibration port. If the interlock key was not installed, power off system and reinstall interlock and power on. if the error is persistent then a replacement HP will be necessary

Issue	Troubleshooting steps
Error 129	If you remove a HP with the Power On it that could affect the calibration data (Energy table) which is stored in the hand piece on the U5 (1wire EEROM memory). This table is constructed during the calibration process. The table can be corrupted, forcing the handpiece to default back to the factory settings. Most likely it can be recovered by performing the HP calibration process. Another case, hot swapping can cause damage to U5 mentioned at which point the board needs to be replaced as we do not have a process in place to replace just the chip. HP will hang up during service calibration.
Error 146	Use SW upgrade stick to reload the SW. The FPGA has been corrupted and will require the SW to be reloaded. If the SW has been reloaded and the system has been rebooted and the error persists then the HP will need to be replaced.
Error 164	Check that the HP is connected to the system, if connected power down the system and check the pins of the HP. Bent or damaged pins will cause the system to not sense the HP being electrically connected. New HP will be necessary if pins are found to be damaged.

Issue	Troubleshooting steps
The customer has either 40 minutes OR 800 sq cm coverage, not both. If the customer feels they are missing credits, they need to do the following:	1. Verify the correct card is being used with the correct Handpiece. (Permea - Blue HP / 1440 - White HP) Perméa card displays the word Permea under the word Brilliant on the card. 2. Please be sure to install the card when the system asks for it. Then please be sure to remove the card when the system advises user its ok to do so. (preferably it's best not to keep the card inserted in the reader) 3. Record the date / time / # of credits on card s/n XXXXX. 4. Record the # of credits on the card before they press the blue button, again after they press the blue button (the card will decrement at the beginning of the treatment after pressing the blue Awk button) and record again after the treatment is complete. Please be aware 1. If the customer accidentally presses the blue Awk button twice while initiating the treatment, the system can use 2 credits, 2. If the customer shuts down or restarts the system during a treatment they will use a 2nd credit to restart the treatment. 3. If the customer presses the blue Ack button during initialization of the credit card, a credit can be decremented. Please note, the system allows the customer to cancel out of a treatment within the first 2 minutes after initialization. (press the star on the HP to deactivate it, press the blue Ack button on the console and a message will come up asking if you want to cancel the treatment, answer yes and the credit will be re-applied to the card for future use.)
HP or smartcard not recognized	Before turning system ON, the handpiece, SmartCard reader, and the power cord must be properly attached to the back of the console. The console will not recognize the handpiece or the SmartCard reader if they are connected after the system is powered on.

10.0 CLEAR + BRILLIANT Laser System Specifications

10.1 Technical Specifications-1440nm Handpiece

	Invisible Laser Radiation
IEC 60825 Classification	Class 3R
Wavelength	1440 ±20 nm; min:1420 max:1460
Maximum Power (average)	2.5 W
Maximum Pulse Energy	9 mJ
Maximum Pulse width	< 5 ms
Pulse Repetition Rate	< 400 Hz

10.2 Technical Specifications-1927nm Handpiece

	Invisible Laser Radiation
IEC 60825 Classification	Class 3R
Wavelength	1927 ±20 nm; min:1907 max:1947
Maximum Power (average)	0.9 W
Maximum Pulse Energy	5 mJ
Maximum Pulse width	5 ms
Pulse Repetition Rate	< 150 Hz

10.3 Console

Dimensions / in	17.62w x 12.47h x 8.03d
(/cm)	44.76w x 31.67h x 20.4d
Weight	~ 15 lbs

10.4 Operating Conditions

Maximum Recommended Ambient Air Temperature for Treatment	30°C / 86°F
Operating Temperature Range	15 to 30°C, 59 to 86°F
Humidity	30 – 75% Non-condensing
Altitude	< 10000 feet / 3075 meters

10.5 Shipping and Storage (Non-Operational)

Temperature Range	-15 to 45°C, 5 to 113°F
Humidity	30 – 75% Non-condensing
Altitude	< 45000 feet / 13846 meters

10.6 Compatible Delivery Devices

Only use original CLEAR + BRILLIANT Disposable Tips. Contact Solta Customer Service or your local authorized distributor of Solta Medical products for more information.

10.7 Electromagnetic Compatibility and Immunity

This guidance and manufacturer's declaration information pertain to the CLEAR + BRILLIANT

Special precautions concerning electromagnetic compatibility (EMC) must be taken for all medical electrical equipment.

All medical electrical equipment must be installed and put into service in accordance with the EMC information provided in this document.

Portable and mobile RF communications equipment can affect the behavior of medical electrical equipment.

The CLEAR + BRILLIANT Laser System is intended to be used in a Professional healthcare facility environment (e.g.; single physician medical office or outpatient clinical facility). It does not include areas where there are sources of intense electromagnetic disturbances, such as a RF shielded room of magnetic resonance imaging, or in operating rooms near active HF surgical equipment.

It is essential the CLEAR + BRILLIANT Laser System not deliver an excessive amount of energy to the patient per the selected treatment setting. Placing the system in areas where intense electromagnetic disturbances could be present may result in excessive energy delivered to the patient, or unexpected changes in treatment levels that could lead to possible burns to the patient.

The CLEAR + BRILLIANT complies with applicable and required standards for electromagnetic interference:

- The CLEAR + BRILLIANT does not normally affect nearby equipment and devices.
- The CLEAR + BRILLIANT is not normally affected by nearby equipment and devices.
- It is not safe to operate the CLEAR + BRILLIANT in the presence of high-frequency medical equipment.
- It is good practice to avoid using the CLEAR + BRILLIANT and in close proximity to other equipment.

Guidance and manufacturer's declaration – electromagnetic emissions		
The CLEAR + BRILLIANT is intended for use in the electromagnetic environment specified below. The customer or user of the CLEAR + BRILLIANT should assure that it is used in such an environment.		
Emissions test	**Compliance**	**Electromagnetic environment - guidance**
RF Emissions CISPR 11	Class A Group 1	The CLEAR + BRILLIANT Laser System uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF Emissions CISPR 11	Class A Group 1	The CLEAR + BRILLIANT system is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network which supplies buildings used for domestic purposes. **WARNING**: This equipment/system is intended for use by healthcare professionals only. This equipment/system may cause radio interference or may disrupt the operation of nearby equipment. It may be necessary to take mitigation measures, such as re-orienting or relocating the CLEAR + BRILLIANT Laser System or shielding the location.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations / flicker IEC 61000-3-3	Complies	
NOTE 1: The Emission characteristics of this equipment make is suitable for the use in industrial areas and hospitals (CISPR 11 class A). If it is used in a residential/domestic environment (for which CISPR 11 class B is normally required) this equipment might not offer adequate protection to radio-frequency communication services. The user might need to take mitigation measures, such as relocating or re-orienting the equipment. NOTE 2: There were no test level or compliance deviations to IEC 60601-1-2, 4th edition.		

Guidance and manufacturer's declaration – electromagnetic immunity			
The CLEAR + BRILLIANT is intended for use in the electromagnetic environment specified below. The customer or user of the CLEAR + BRILLIANT should assure that it is used in such an environment.			
Immunity test	**IEC 60601 test level**	**Compliance level**	**Electromagnetic environment - guidance**
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air	±8 kV contact ±2 kV, ±4 kV, ± 8kV, ±15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient / burst IEC 61000-4-4	± 2 kV on AC mains lines ± 1 kV for signal input / output lines, 100kHz	± 2 kV on AC mains lines ± 1 kV for signal input / output lines, 100kHz	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±0.5 kV, ±1 kV line to line ±0.5 kV, ±1 kV, ±2 kV line to ground	±0.5 kV, ±1 kV line to line ±0.5 kV, ±1 kV, ±2 kV line to ground	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and	0% UT; 0.5 cycle at	0% UT; 0.5 cycle at	Mains power quality should be that of a typical commercial or hospital environment. If

voltage variations on power supply input lines IEC 61000-4-11	0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0% UT; 1 cycle and 70% UT; 25/30 cycles Single phase: at 0°	0°, 45°, 90°, 135°, 180°, 225°, 270° and 315° 0% UT; 1 cycle and 70% UT; 25/30 cycles Single phase: at 0°	the user of the CLEAR + BRILLIANT requires continued operation during power mains interruptions, it is recommended that the CLEAR + BRILLIANT be powered from an uninterruptible power supply or a battery.
Power frequency (50/ 60Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE 1: U_T is the a.c. mains voltage prior to application of the test level. NOTE 2: There were no test level or compliance deviation to IEC 60601-1-2, 4th edition			

Guidance and manufacturer's declaration – electromagnetic immunity (continued)

The CLEAR + BRILLIANT is intended for use in the electromagnetic environment specified below. The customer or user of the CLEAR + BRILLIANT should assure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment - guidance
Conducted RF IEC 61000-4-6	3 V_{rms} 150 kHz to 80 MHz	3 V_{rms}	**Warning**: Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the CLEAR + BRILLIANT Laser System, including cables specified by Solta. Otherwise, degradation of the performance of this equipment could result.
Radiated RF IEC 61000-4-3	3 V / m 80 MHz to 2,7 GHz	3 V / m	
NOTE: There were no test level or compliance deviations to IEC 60601-1-2, 4th edition.			

GUIDANCE AND MANUFACTURER'S DECLARATION – ELECTROMAGNETIC IMMUNITY

The CLEAR + BRILLIANT Laser System is intended for use in the electromagnetic environment specified below. The customer or the user of the CLEAR + BRILLIANT Laser System should assure that it is used in such an environment.

IMMUNITY Test	IEC 60601-1-2 test level	Compliance level	Electromagnetic environment - guidance
Proximity field from RF wireless communications equipment IEC 61000-4-3	See table 9 in IEC 60601-1-2, 4th Edition	See table 9 in IEC 60601-1-2, 4th Edition	
NOTE: There were no test level or compliance deviations to IEC 60601-1-2, 4th edition.			

Table 9: IEC 60601-1-2, 4th Ed, - Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communication equipment.						
Test frequency (MHz)	Band [a] (MHz)	Service [a]	Modulation [b]	Maximum Power (W)	Distance (m)	Immunity Test Level (V/m)
385	380-390	TETRA 400	Pulse modulation [b] 18 Hz	1.8	0.3	27
450	430-470	GMRS 460, FRS 460	FM [c] ± 5 kHz deviation 1 kHz sine	2	0.3	28
710	704-787	LTE Band 13, 17	Pulse modulation [b] 217 Hz	0.2	0.3	9
745						
780						
810	800-960	GSM 800/900 TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation [b] 18 Hz	2	0.3	28
870						
930						
1,720	1700-1990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS	Pulse modulation [b] 217 Hz	2	0.3	28
1,845						
1,970						
2,450	2400-2570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation [b] 217 Hz	2	0.3	28
5,240	5100-5800	WLAN 802.11 a/n	Pulse modulation [b] 217 Hz	0.2	0.3	9
5,500						
5,785						

Note: if necessary to achieve the IMMUNITY TEST LEVEL, the distance between the transmitting antenna and the CLEAR + BRILLIANT may be reduced to 1 m. The test distance is permitted by IEC 61000-4-3.

[a] For some services, only the uplink frequencies are included.

[b] The carrier shall be modulated using a 50% duty cycle square wave signal.

[c] As an alternative to FM modulation, 50% pulse modulation at 18 Hz may be used because while it does not represent actual modulation, it would be worst case.

10.8 Regulatory Compliance

10.8.1 Laser Safety and Electrical Product Safety Standards

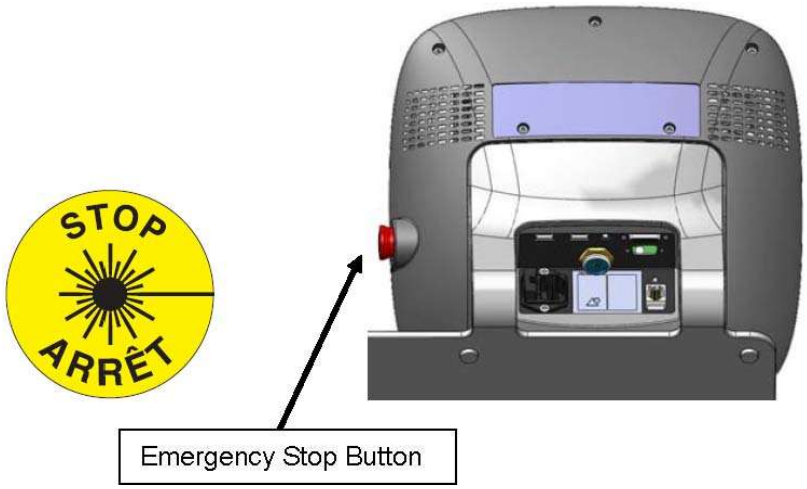
CLEAR + BRILLIANT meets applicable electrical and laser safety standards (per IEC 60601 series and IEC 60825-1) for a Class 3R laser.

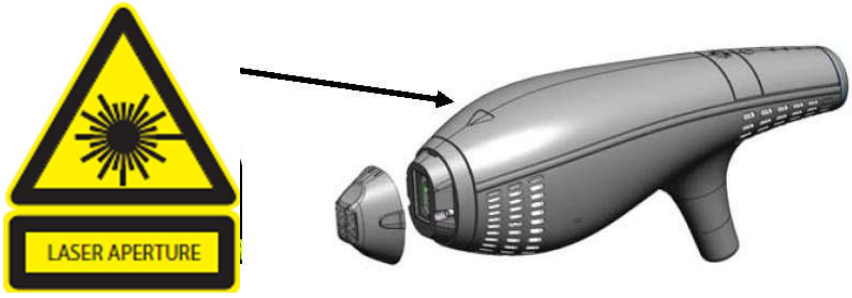
	The CLEAR + BRILLIANT Laser System contains a Class 3R laser, according to IEC/EN 60825-1:2007 standards. The treatment provider and associated staff must take precautions to prevent direct exposure of laser energy to the eyes.

11.0 Labeling

The CLEAR + BRILLIANT Laser System bears the required manufacturing warning labels.

The location, positioning and formatting of labels are subject to change.

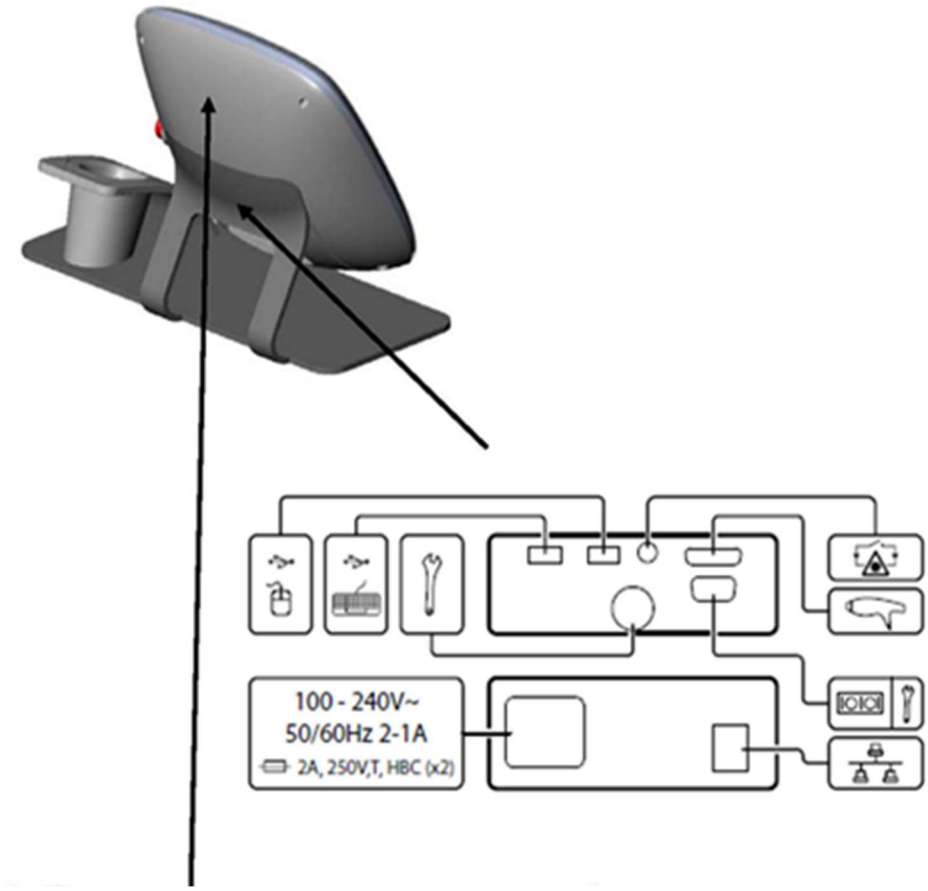


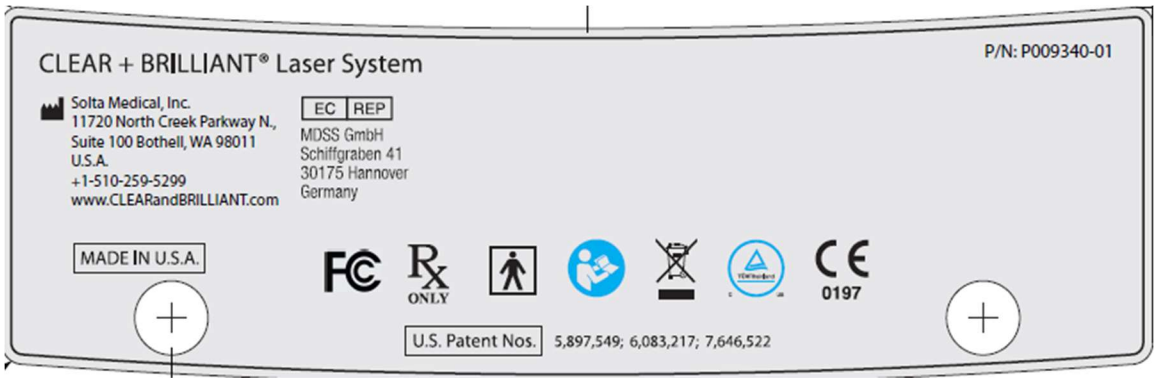


Labels on Handpieces

Regulatory Compliance Labels

The location, positioning and formatting of labels are subject to change

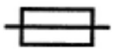

100 - 240V~
50/60Hz 2-1A
2A, 250V,T, HBC (x2)


CLEAR + BRILLIANT® Laser System
P/N: P009340-01
Solta Medical, Inc.
11720 North Creek Parkway N.,
Suite 100 Bothell, WA 98011
U.S.A.
+1-510-259-5299
www.CLEARandBRILLIANT.com
EC REP
MDSS GmbH
Schiffgraben 41
30175 Hannover
Germany
MADE IN U.S.A.
Rx ONLY
CE
0197
U.S. Patent Nos.
5,897,549; 6,083,217; 7,646,522

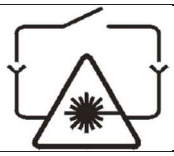
12.0 Labeling Symbols

BS EN ISO 15223-1: 2012 Medical devices—Symbols to be used with medical device labels, labeling and information to be supplied. Part 1: General requirements			
Symbol	**Symbol Ref.**	Symbol Title	Additional Information
	5.1.1	Manufacturer	The date of manufacture, as well as the name and address of the manufacturer, can be combined in one symbol. Additional reference ISO 7000-3082.
	5.1.2	Authorized representative in the European Community	
	5.1.3	Date of manufacture	This symbol can be filled or unfilled. If filled, the date of manufacture as well as the name and address of the manufacturer can be combined in one symbol. Additional reference ISO 7000-2497.
	5.1.5	Batch code	Synonyms for “batch code” are “lot number” and “batch number.” Additional reference ISO 7000-2492.
	5.1.6	Catalogue number	Synonyms for “catalogue number” are “reference number” and “reorder number.” Additional reference ISO 7000-2493.
	5.1.7	Serial number	Additional reference ISO 7000-2498.
	5.2.8	Do not use if package is damaged	This symbol may also mean “Do not use if the product sterile barrier system or its packaging is compromised.” Additional reference ISO 7000-2506.
	5.3.1	Fragile, handle with care	Additional reference ISO 7000-0621.
	5.3.4	Keep dry	Additional reference ISO 7000-0626.
	5.3.7	Temperature limit	Additional reference ISO 7000-0632.
	5.3.8	Humidity limitation	Additional reference ISO 7000-2620
	5.4.2	Do not re-use	Synonyms for “Do not re-use” are “single use” and “use only once.” Additional reference ISO 7000-1051.
	5.4.3	Consult instructions for use	Synonym for “Consult instructions for use” is “Consult operating instructions.” Additional reference ISO 7000-1641.

BS EN 50419:2006 Marking of electrical and electronic equipment in accordance with Article 11(2) of Directive 2002/96/EC		
Symbol	Symbol Title	Additional Information
	WEEE wheeled bin	This product contains electrical and electronic components that may contain materials which, if disposed with general waste, could be damaging to the environment. Residents of the European Union must follow specific disposal or recycling instructions for this product. Residents outside the European Union must dispose or recycle this product in accordance with local laws or regulations that apply.

IEC TR 60878 Ed. 3.0 b:2015 **Graphical symbols for electrical equipment in medical practice**			
Symbol	**Symbol Ref.**	Symbol Title	Additional Information
	ISO 7010-W001 (2011-06)	General warning sign	To signify a general warning. *Note - This safety sign cannot be used on its own and requires a supplementary sign to give further information about the hazard.* *IEC TR 60878 note: On medical equipment, this safety sign shall only be used if there is no other safety sign for the corresponding hazard. If possible, the hazard or the appropriate precaution should be indicated.*
	6197	Emergency Laser Stop	The laser emergency stop button turns off (de-energizes) the laser in emergency situations
	5152	Laser Aperture	Laser Aperture, avoid exposure. Invisible laser radiation
	ISO 7010-M002 (2011-06)	Refer to instruction manual/booklet	To signify that the instruction manual/booklet must be read.
	5334	Type BF applied part	To identify a type BF part complying with IEC 60601-1. Additional reference IEC 60417-5334 (2002-10) *Note 1 – B = Body.* *Note 2 – F = Floating applied part.*
	5016	Fuse	To identify fuse (fuse boxes) or their location Additional reference IEC 60417-5016 (2002-10).

IEC TR 60878 Ed. 3.0 b:2015 Graphical symbols for electrical equipment in medical practice			
Symbol	**Symbol Ref.**	Symbol Title	Additional Information
	5032	Alternating current	To indicate on the rating plate that the equipment is suitable for alternating current only; to identify relevant terminals. Additional reference IEC 60417-5032 (2002-10).
	5140	Non-ionizing electromagnetic radiation	To indicate generally elevated, potentially hazardous, levels of non-ionizing radiation, or to indicate equipment or systems, e.g. in the medical electrical area that include RF transmitters or that intentionally apply RF electromagnetic energy for diagnosis or treatment. Additional reference IEC 60417-
	ISO 7000-2794 (2011-06)	Packaging unit	To indicate the number of pieces in the package. Additional reference ISO 7000-2794 (2009-02) *Note – A number is inserted in the symbol to indicate the number of parts in the package.*
	ISO 7000-2403 (2011-06)	Stacking limit by number	To indicate that the items shall not be vertically stacked beyond the specified number, either because of the nature of the transport packaging or because of the nature of the items themselves.
	5850	Serial Interface	Communication Connectors (These ports are used in case a system error has occurred. This port is utilized by qualified Service Technicians Only) Do not insert any cable or wires to any of the service ports as this may potentially cause damage to the equipment
	5988	Computer network	**For Service Use Only.** To identify the computer network itself or to indicate the connecting terminals of the computer network.
	5990 and Universal serial bus (USB) symbol	USB Mouse connection port	This port is used for system updates/upgrades.
	5991 and Universal serial bus (USB) symbol	USB Keyboard connection port	This port is used for system configuration and operation. The keyboard provides access to the system configuration screen. Customers can adjust the system volume and choose preferred language and time zone. During operation, the card reader is connected to this port.

Other Marks and Symbols		
Symbol	Symbol Description	Additional Information
	On/Off (push/push)	Based on IEC 60417-5009 (2002-10) Stand-By Symbol
	European Conformity mark Notified Body: TUV Rheinland (0197)	The product conforms to European Medical Directive 93/42/EEC and meets applicable health, safety and environmental requirements. If the mark is accompanied by a number, conformity is verified by the indicated notified body.
	TUV Rheinland classification mark	TUV Rheinland of North America classification mark that indicates compliance with both U.S. and Canadian National Standards.
	For U.S. Only: Caution: Federal (U.S.) law restricts this device to sale by or on the order of a physician or licensed health care professional.	USA Code of Federal Regulations 21 CFR Part 801 § 801.109(b)(1)
	The Federal Communications Commission (FCC) Declaration of Conformity mark	For U.S. Only: This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: 1. This device may not cause harmful interference and, 2. This device must accept any interference received, including interference that may cause undesired operation.
	MADE IN USA	Country of origin symbol
	Important information (software symbol)	Important information. Please read and follow instructions
	System Fault (software symbol)	System Fault. Discontinue treatment and reboot system. If the system is still not functioning, contact Customer Service.
	Handpiece Connector	Attach the handpiece to this connector
	Remote Interlock Connector	Laser safety interlock can be used to automatically disable the laser if the door is opened during the procedure.
	Treatment Card	The treatment card is required for treatment validation and system activation.

Other Marks and Symbols		
Symbol	Symbol Description	Additional Information
	Service Key (For Service Technicians Only)	Based on ISO 7000:0717 (2004-01)
	Clear + Brilliant Product Logo	Clear + Brilliant Registered Trademark
	Clear + Brilliant Perméa Product Logo	Clear + Brilliant Registered Trademark
	Clear + Brilliant Laser System	Clear + Brilliant (registered trademark) product name

13.0 Shipping, Installation and Set-Up Requirements

13.1 Shipping

The CLEAR + BRILLIANT Laser System will be shipped in a specially designed container. When the shipment is received, inspect the exterior container for damage. If there is exterior damage, DO NOT ACCEPT OR UNPACK THE SYSTEM. Contact Solta Product Support or your local authorized distributor of Solta Medical products and the shipping company immediately.

Store the system indoors and at a temperature similar to the temperature of the facility in which it is to be installed.

13.2 Space Requirements

The dimensions of CLEAR + BRILLIANT are listed in the specifications above. Allow adequate space for ventilation (at least a 12-inch perimeter all around the laser system console) to prevent overheating.

13.3 Environmental

The temperature in the laser room should ideally remain between 65º to 80º F, (18 – 27°C) both for comfort and for optimum operation of the laser. Individuals receiving treatment may feel more discomfort if the temperature of the room is excessively high. A maximum ambient operating temperature of 86°F / 30ºC is allowed.

13.4 Electrical

CLEAR + BRILLIANT contains a universal, medical grade, power-factor corrected power supply. The line voltage and power switch amperage requirements are given in the specifications section of the manual. Solta recommends a dedicated circuit for the laser system. Place the power cord where it cannot become a hazard, for example by being tripped over or having sharp objects dropped on it.

The worst-case current draw is anticipated to be: 2A (steady state) at 250V line voltage.

Appendix A: Part numbers and replacement parts

Single use packs (1 tip and single use Smartcard or 1 tip without Smartcard) are available for service use or for replacement at customer sites. The single use pack is compatible with both 1440 and 1927 handpieces.

P/N	Description
CB-Console	CLEAR + BRILLIANT CONSOLE
CB-Console-R	CLEAR + BRILLIANT CONSOLE (refurbished)
CB-HP-1440	CLEAR + BRILLIANT 1440 HANDPIECE
CB-HP-1440-R	CLEAR + BRILLIANT 1440 HANDPIECE (refurbished)
CB-HP-1927	CLEAR + BRILLIANT 1927 HANDPIECE
CB-HP-1927-R	CLEAR + BRILLIANT 1927 HANDPIECE (refurbished)
CB-TIP-SC	TIP CLEAR + BRILLIANT, (12 pack, 1440 HP)
CB-TIP-SCP	TIP CLEAR + BRILLIANT, PERMEA (12 pack, 1927 HP)
CB-BURNPAPER	CLEAR + BRILLIANT BURN PAPER (10 pack)
10549	ASSY, TIP, 12MM ROLLER, IN POUCH
11434	KIT, CB TIP AND SMARTCARD, 1 CREDIT
44863	CABLE, ASSEMBLY, HANDPIECE EXTENSION, C+B
P008259-01	FRU, C+B 1440 HANDPIECE SNOUT
P008267-01	FRU, C+B 1927 HANDPIECE SNOUT
P012104-01	HANDPIECE EXTENSION CABLE, 3M, C+B
P012109-01	ASSY, HANDPIECE ADAPTER, 3M TO MOLEX, C+B

Please review the C+B operators manual, p/n P009341-03 for more detailed information on installation and use of the C+B system.

Appendix B: Clear + Brilliant Latching Extension Cable and Adapter Installation Procedure with Completion Form

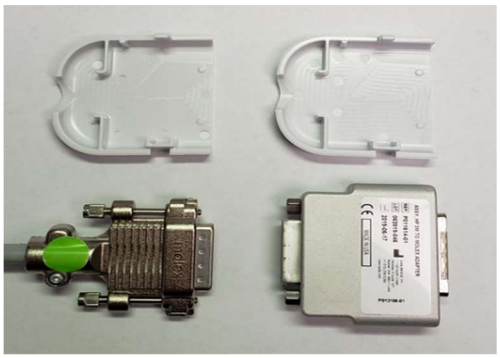
Latching Extension Cable and Adapter Installation Procedure for Clear + Brilliant

This procedure is to guide users of the Clear + Brilliant® system through installing the latching extension cable and associated handpiece adapter which will help prevent improper connection techniques.

The Clear + Brilliant® system can be updated by following these steps:

1. Ensure the system is powered OFF, then remove the power cord from the system. Unfasten the connector screws to disconnect and remove the previous extension cable or handpiece connection from the system.

2. Select the desired handpiece to attach to the adapter and covers. Ensure the handpiece is operationally and cosmetically functional before installing the adapter and covers.

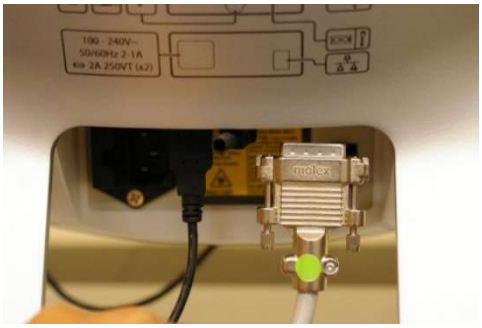


3. Align the matching connecting ports of the handpiece and adapter. Tighten the handpiece connector screws to the adapter making sure to tighten the screws evenly to assure the adapter goes on straight. If the screws do not easily and completely fasten, check to ensure proper connection of the mating connection ports.

4. Conceal the handpiece connector by placing the two plastic covers over the connector. Firmly press the two covers together. The covers will appropriately fit when the handpiece connector screws are completely fastened.

5. Connect the handpiece adapter to the latching extension cable by pressing the latch to reveal the connector. Hold the latch down and insert the connector. Release the latch when the connector has been fully inserted.

6. Attach the other end of the extension cable to the back of the console and tighten the screws evenly, alternating between each screw until the connector is completely tightened to the console. It is important the connector is attached correctly. If the screws do not tighten all the way, the connector could be attached in reverse.



7. Connect the power cord to the system before turning system ON.

8. Turn the unit ON and verify that the unit powers up normally with no error messages. Instructions will appear on the screen to guide the operation of the system.

   If the system self-test is unsuccessful, check the handpiece window for visible damage or debris. If there is no visible damage or debris, try again. If the system fails to pass the system self-test, it will not allow further treatment. Contact Solta Medical® Product Support to schedule service.

9. Repeat the handpiece adapter installation procedure for all additional handpieces.

10. Complete the Extension Cable Installation Completion Form and return it to Solta Medical® Product Support.

Contact Solta Product Support department with any questions or to schedule service.
T: 1.877.782.2286 or 510.259.5299 option 2 (FAX: 510-373-7153)
productsupport@solta.com for United States Customers
ThermPSI@solta.com for customers outside the USA

Clear + Brilliant Extension Cable Installation Completion Form

Purpose: Document the Installation of the Latching C+B Extension Cable

Type of Update: Accessory Installation

Form must be returned to:

Solta Medical Product Support

Fax: 510-373-7153 or scan and email to productsupport@solta.com

For customers outside the USA email to ThermPSI@solta.com

Account/Dr. Name: _____Phone No:_____

Installation Performed by: _____Date: _____

Clear + Brilliant System Serial Number (located on rear of console): _____

Clear + Brilliant Handpiece Serial Number (located on Handpiece cable/cord): _____

Clear + Brilliant Handpiece Serial Number (if applicable): _____

Clear + Brilliant Handpiece Serial Number (if applicable): _____

Appendix C: 1927 nm Handpiece

Level			Part Number	Qty	UOM	Description	Field Replaceable	Note
1			P012489-01	1	ea	ASSY, HANDPIECE, C+B 1927NM 4th Edition		
	2		03-00538	2	ea	SCREW, SOCKET CAP, 2-56 X 1/4", STNLS	X	
	2		03-00587	2	ea	SCREW, SOCKET CAP, 4-40 X .250, STNLS		
	2		10518	1	ea	ASSY, INNER HOUSING AND HEAT SINK, 1927		
		3	02-04951	1	ea	Filter, KG%, 1.0mm thick		
		3	02-05176-05	1	ea	LENS, 8MM FL, 7.6 DIA., E48R-8.988MM RAD.		
		3	02-05177	1	ea	LENS, 1.8MM FL, 2 DIA, E48R		
		3	03-01271	4	ea	SCREW, SOCKET HEAD CAP, 2-56 X 3/8", STNLS		
		3	03-01273	4	ea	Screw, Socket Cap, 2-56 X 3/16", STNLS		
		3	03-02809	2	ea	Screw, Soc Hd Cap,#0-80 x .13, SST 18-8		
		3	10513	1	ea	ASSY, BEAM SAMPLER, 1927 LASER		
		3	10514	1	ea	ASSY, L3 WITH SLEEVE		
		3	09-00709	0	ea	Epoxy, 5 Minute		
		3	42574	1	ea	Nut, Hex, 2-56 x 3-16 W x 1/16 H, Black-Oxide, 18-8 SS	X	
		3	42733	3	ea	SCREW, PAN HD, M1.7 X 2MM		
		3	42776	1	ea	SPACER, MOUSE, FUMO3, KOVAR		
		3	42983	1	ea	INNER HOUSING, LOWER		
		3	42984	1	ea	INNER HOUSING, UPPER		
		3	43056	1	ea	PCA, MOUSE PCB		
		3	P011964-01	1	ea	AXICON, 11 SECTOR, ENHANCED AU		
		3	43098	1	ea	TIN, THERMAL INTERFACE, LASER		
		3	43102	1	ea	SCREW, 1-32 x 3/16 SLF TP		
		3	43103	4	ea	WASHER, FLAT, 5/32 OD X 0.08 ID, 0.01 - 0.020 THK, SS		
		3	43106	2	ea	SCREW, 2-28 X 0.25, TORX, PAN HD		
		3	43139	1	ea	BRACKET, MOUNT, HALL SENSOR		
		3	43141	1	ea	MOTOR, MABUCHI		
		3	43242	1	ea	BRACKET, PCA		
		3	42982	1	ea	HEATSINK, ALUMINUM EXTRUDED, COPPER LASER MOUNT, FAN BRACKET	x	Use 43905 for replacement bracket
		3	42996	1	ea	PCA, HANDPIECE FLEX, 1100-2200NM	X	
		3	43140	1	ea	FAN ASY, HANDPIECE, 35X35X10MM	X	
		3	10516	1	ea	ASSY, DIODE LASER, TERMINATED,1927 LASER		
		3	43052-S	1	ea	LENS, MOUSE, SMALL FORM FACTOR		
		3	41025	2	ea	Washer, Lock, #2		
		3	41026	2	ea	Washer, Flat, #2		
		3	05-05041	1	ea	Photodiode, InGaAs, 1.0mm, TO-18		
	2		11413	1	ea	ASSY, OUTER UPPER HOUSING	X	
		3	P010969-01	1	ea	OUTER HOUSING, HANDPIECE, UPPER		

Level			Part Number	Qty	UOM	Description	Field Replaceable	Note
		3	42989	1	ea	BUTTON, ACTIVATION, HANDPIECE		
		3	42990	1	ea	BUTTON, SETTING, HANDPIECE		
		3	42991	1	ea	LIGHT PIPE, SETTING INDICATIONS, HANDPIECE		
		3	42992	1	ea	LIGHT PIPE, POWER INDICATOR, HANDPIECE		
	2		10402	1	ea	ASSY, LOWER HOUSINGS AND CABLE		
		3	42994	1	ea	OUTER HOUSING, HANDPIECE, LOWER, LEFT	X	
		3	42995	1	ea	OUTER HOUSING, HANDPIECE, LOWER, RIGHT	X	
		3	43145	1	ea	WIREFORM, LOWER HOUSING ATTACHMENT	X	
		3	43047	1	ea	CABLE, HANDPIECE COMMUNICATIONS, MAIN	X	
	2		P008267-01	1	ea	FRU, C+B 1927 HANDPIECE SNOUT	X	
		3	P011012-01	1	ea	SNOUT,HANDPIECE	X	
		3	43272	1	ea	WINDOW, PYREX, 20X10X1P5, 1930NM	X	
		3	09-04168	0.1	ea	Adhesive, ACRYLIC, UV, LOCTITE 3321	X	
	2		P013078-01	1	ea	ASSY, MAIN, DAUGHTER, DC BOARDS, C+B HANDPIECE		
		3	43035	1	ea	PCA, Main, Handpiece Controller	X	Needs to have FPGA loaded by technician after installation. Also, p/n P012217-01 (LED treat brd., should be ordered and replaced with Main brd. OR desoldered from original Main brd)
		3	43039	1	ea	PCA, HANDPIECE DAUGHTER	X	
		3	43202	1	ea	SHIELD, LIGHT PIPE, MAIN PCA	X	
		3	P012217-01	1	ea	PCA, Treat LED Board	X	
		3	43090	1	ea	PCA, HANDPIECE DC DAUGHTER	X	
		3	43226	2	ea	SUPPORT, PCB, HP	X	
		3	43246	1	ea	SUPPORT, SWITCH, HP-PCB		
	2		42993	1	ea	LIGHT CAP, REAR, HANDPIECE	X	
	2		43106	4	ea	SCREW, 2-28 X 0.25, TORX, PAN HD	X	
	2		43151	2	ea	SCREW, 2-56 X .50, BHSC, SS	X	
	2		43207	2	ea	NUT, 2-56, 5/32W X 1/16H, UNDERSIZED HEX, 18-8 SS	X	
	2		43256	1	ea	LIGHT BAFFLE, REAR LIGHT CAP	X	
	2		43261	1	ea	BRACKET, GROUND, SHIELD	X	
	2		43044	1	ea	CABLE, MOUSE PCB		
	2		P012198-02	1	ea	FIRMWARE, FPGA, HP, C+B, VERSION D002		
	2		43323	1	ea	LABEL, LASER APERTURE SMALL, ENGLISH AND FRENCH	X	
	2		43362	2	ea	WASHER, FLAT, #2, .089 ID, .149 OD; .016 THK		
	2		40662	0	ea	Tape, Kapton, 3/4" Wide, roll	X	
	2		09-02772	1	ea	TIE, CABLE, 2.8IN, NATURAL		
	2		43809	0	ea	ADHESIVE, LOCTITE 380 (BLACK MAX)		