Transport Ultrasound Calibration Procedure

Tools and Equipment Required

- All Ultrasound Applicators for the unit being serviced.
- Ohmic Instruments UPM DT 10 or UPM DT 100 Ultrasound Power Meter, set to "Watts".
- Degassed Water.

Ultrasound Applicator Calibration Procedures

1. Perform the following on all Ultrasound Applicators for the unit being serviced at least annually.
2. With the system on, press the Clinical Resources button once.
3. Simultaneously press and hold the Treatment Time Decrease and Intensity Decrease buttons for approximately 2 seconds. The calibration procedures screen should display.
4. Press the Down Arrow button until US Applicator Calibration is highlighted.
5. Press the Enter button (Toggle button below folder button).
6. Place the Ultrasound Applicator being calibrated into the Ohmic Instruments UPM DT 100 or DT Ultrasound Power Meter and set meter to "Watts".
7. Follow the instructions on the LCD Display.
8. When calibration is complete, follow the test procedures

Ultrasound Applicator Identification Test

1. Without Ultrasound Applicator installed, turn unit on.
2. View the Ultrasound channel in the lower right corner of screen. It should read “Unplugged”.
3. Connect Ultrasound Applicator into Applicator receptacle. Watch Applicator LED while connecting to system. The LED should flash Green five times.
4. Look at the Ultrasound channel. It should read Available.
5. Highlight Ultrasound. Press the Enter button.
6. Highlight Warming. Press the Enter button until ‘On’ is displayed beside Warming.
7. Press the Back button. Turn System Off and back On with Main Power Switch. After system boots, view the Ultrasound channel, warming should be visible.

If unit operates as described in steps 2, 4, and 7, unit passed test.
If "No Cal.", displays in Ultrasound channel.
1. Applicator not calibrated or needs recalibration.
2. Possible bad Applicator. Retest with known good Applicator.

Unplugged displays after ten seconds of Applicator being connected to System.
1. Possible bad applicator. Retest with known good Applicator.
2. Possible bad internal connection at Ultrasound Board.
3. Possible bad Ultrasound Board.
4. Possible bad Control Board.

Ultrasound Applicator Output Test Procedures

1. Set up Ohmic Instruments DT 100 or UPM DT 10 Ultrasound Power Meter per Operator's Instructions and fill test reservoir with Degassed Water.
2. Place an Applicator into the Power Meter retainer. Make certain the Sound Head is completely submerged in the degassed water and centered directly over the Stainless Steel Cone.
3. Zero or Tare meter.
4. Highlight Ultrasound. Press the Enter button.
5. Highlight Duty Cycle. Press the Enter button. Highlight Continuous and press the Enter button.
6. Highlight Display. Press the Enter button until Watts displays.
7. Press START button.
8. Increase Intensity until the appropriate Watts is displayed (see chart BELOW)

APPLICATOR OUTPUT SPECIFICATIONS		
APPLICATOR SIZE	**POWER SETTINGS (WATTS)**	**OUTPUT RANGE**
1 cm^2	1*	0.8 - 1.2
	2*	1.6 - 2.4
2 cm^2	1	0.8 - 1.2
	2	1.6 - 2.4
	4	3.2 - 4.8
5 cm^2	1	0.8 - 1.2
	2	1.6 - 2.4
	5	4.0 - 6.0
	10	8.0 - 12.0
10 cm^2	1	0.8 - 1.2
	5	4.0 - 6.0
	10	8.0 - 12.0
	15**	12.0 - 18.0
	20**	16.0 - 24.0

*3.3 MHz ONLY **1.0 MHz ONLY

9. Compare Power Meter readings chart to all settings for the respective Applicator being tested.
10. Press Frequency button until 3.3 MHz is displayed within the Frequency icon. Repeat test and compare readings to chart (above).

The Applicator LED should constantly illuminate green during the Applicator Output tests.

Ultrasound Duty Cycle Test Procedures

This test is performed using only the 5 cm² Intelect Transport Combo Applicator.

1. Set up Ohmic Instruments DT 100 or UPM DT 10 Ultrasound Power Meter per Operator's Instructions and fill test reservoir with Degassed Water.
2. Place the 5 cm² Applicator into the Power Meter retainer. Make certain the Sound Head is completely submerged in the degassed water and centered directly over the Stainless Steel Cone.
3. Zero or Tare meter.
4. Highlight Ultrasound on system. Press the Enter button.
5. Highlight Duty Cycle. Highlight Continuous and press the Enter button.
6. Highlight Display. Press the Enter button until Watts appears beside Display.
7. Press START button.
8. Increase Intensity until the appropriate Watts is displayed.
9. Compare Power Meter reading to chart below.
10. Press the STOP button.
11. Highlight Duty Cycle and press the Enter button. Highlight the next level of Duty Cycle and repeat steps 6 through 10. Repeat for remaining Duty Cycle levels.
12. Highlight Frequency. Press the Enter button until 3.3 MHz is displayed beside Frequency. Repeat steps 4 through 11.

DUTY CYCLE SPECIFICATIONS		
APPLICATOR SIZE	**DUTY CYCLE**	**OUTPUT RANGE**
1 cm^2 at 2.7 Watts Continuous	10%	0.2 – 0.3
	20%	0.4 – 0.7
	50%	1.1 – 1.6
2 cm^2 at 5.4 Watts Continuous	10%	0.2 – 0.3
	20%	0.9 – 1.3
	50%	2.2 – 3.2
5 cm^2 at 12 Watts Continuous	10%	1.0 – 1.4
	20%	1.9 – 2.9
	50%	4.8 – 7.2
10 cm^2 20 Watts Continuous Operating at 1 MHz	10%	1.6 – 2.4
	20%	3.2 – 4.8
	50%	8.0 – 12.0
10 cm^2 10 Watts Continuous Operating at 3.3 MHz	10%	0.8 – 1.2
	20%	1.6 – 2.4
	50%	4.0 – 6.0