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NOTICE:

Read this page before using your system

ThoughtStream not a medical device, and therefore is not intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of disease.

ThoughtStream User's Guide and Reference

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Introduction

The ThoughtStream Performance Feedback System precisely and accurately measures minute changes in the conductivity of your skin. The technology is based on basic principles of human physiology. Changes in your skin resistance directly correspond to changes in your stress or relaxation level as reflected through your thoughts, feelings and moods. Every thought, mood and action you undertake is directly reflected in changes in perspiration, muscle tension, pulse rate, respiration, body temperature, blood pressure, etc. These changes are usually so subtle that you are not consciously aware of them. The term biofeedback has come into popular use to describe the assistance of a device to help amplify and show you these changes as they are taking place.

Biofeedback can tell you a great deal about the influences that affect the way you feel and react to situations. It is a powerful way for you to acquire more control over your life. You can learn to become more relaxed, to release stress with greater ease, and to be able to exercise greater control over the influences that affect the way you feel and react to situations. In short, a tool to help you maintain a peak level of performance in our busy, stress-filled lives.

How it works

ThoughtStream measures changes in the electrical conductivity of your skin. When skin moisture increases conductivity goes down; moist skin conducts electricity better than dry skin. As you relax, your skin moisture content decreases—a highly accurate reflection of changes in your

physiology. This information is translated into audio and visual signals which provides the biofeedback reading.

You'll enjoy using ThoughtStream because of the immediate and positive reinforcement you will receive. It's like riding a bicycle: it's a tool to efficiently get you from one place to another in less time and with less effort, but you are responsible for doing the work. ThoughtStream works with you to more quickly and easily help you calm your mind and release tension. When you start to master this you'll see how much better you feel about every aspect of your life.

Because using ThoughtStream is an active process—you receive immediate feedback about subtle changes that you normally would not be aware of—you will soon learn to recognize states of relaxation and stress more easily. You become more familiar with the kinds of mental activities that affect these levels. In short: ThoughtStream is a tool for self awareness and self-modification.

ThoughtStream is a particularly valuable addition to many relaxation and personal growth training programs. We are sure you will get many years of benefit from this device. Please write to us with any comments or improvements you would like to see. We are constantly striving to make our products better and easier to use. We wish you many years of fruitful results.

Be sure to visit our support site and Forums for additional information, and to share your experiences with others:

www.mindplacesupport.com

SECTION I

ThoughtStream Operation

This section tells you everything you need to know about using the ThoughtStream USB Performance Feedback System. If you want to try ThoughtStream right away, you can jump to the Quick Start Instructions on the back cover. The followings sections provide all the information you need to get the most out of ThoughtStream.

Your ThoughtStream system should include the following items:

1. Control console
2. Sensor
3. Headphones
4. USB Cable
5. User's Guide and Reference

Battery installation

ThoughtStream operates on three standard AA batteries. Slide open the battery compartment cover on the back of the unit. Install the batteries according to the polarity symbols (+ and -) marked on the inside of the compartment.

Never leave weak or dead batteries in the unit as they can leak chemicals that can damage the unit. Keep an extra set of fresh batteries handy.

Low battery display: When the batteries are low, the LEDs will flash red for 10 seconds and then turn off.

Preparing ThoughtStream for use

ThoughtStream has two control dials, a START/STOP button, an ON/OFF switch, and three inputs: one for the sensors, one for the headphones, and one for the USB port (optional).

Using the sensors

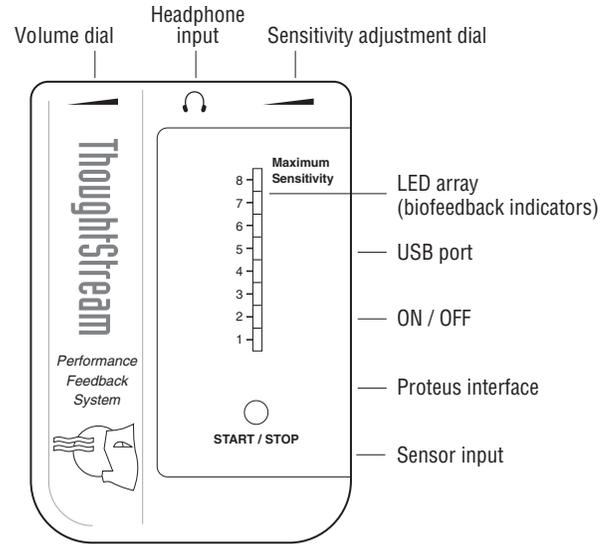
Your hands should be clean and dry before putting on the sensors. Place the band on with the metal contacts facing toward the palm of your hand. Adjust the strap, it should fit snugly, but not so tight that it becomes uncomfortable. Keep the contacts clean and dry at all times. For best performance you should occasionally clean them with denatured alcohol on a cotton swab.

Operating ThoughtStream

Once you've installed the batteries and connected the probes and headphones, you can get started by following these easy steps.

Before starting, sit down and get comfortable. Allow three to five minutes before you start your session. This gives your body time to settle down a bit.

1. Put on your headphones
2. Place the sensor on your hand
3. Turn on the unit
4. Adjust volume



Calibration sequence

When you turn on the unit, during the first second one green light will be lit indicating which one of eight sensitivity levels the unit is set to. The LED array then begins to display a distinctive rhythmic light and sound sequence for 10 seconds. The unit is automatically adjusting itself. Because your relative skin resistance varies from session to session, ThoughtStream USB automatically readjusts itself each time you start. This ensures accurate results with every use. (See Feedback and skin resistance: a relative measure, page 11.)

Once the lights change to solid red, and you hear a steady tone through the headphones you are beginning your session. As you become more relaxed the lights will gradually change in color from red to orange to yellow to green and the tone will become lower. When you have reached all green the unit will automatically recalibrate itself to the next sensitivity level. (See pages 10–15 for more information.)

Manual sensitivity level adjustment

When the unit is first turned on the current sensitivity level is indicated for one second as a single green light.

To adjust the level:

Press the START/STOP button once within 10 seconds of turning the unit on. You will again see one green light displayed.

Set the level by adjusting the top right-hand dial.

After setting the new sensitivity level, press the START/STOP button a second time to start your session.

The sensitivity level may also be manually adjusted during a session. Press the START/STOP button two times to enter the sensitivity level adjustment mode, then follow the steps outlined above.

Ending a session

Before you remove the probe press the START/STOP button. Now you will see the eight lights are blinking about once per second. It is a display of the lowest level of relaxation you attained during that session. You will also notice one light blinking alternately. This indicates the lowest sensitivity level reached. You can now go to the chart on page 13 to see

what percentage of change you attained.

If you are keeping track of your progress with ThoughtStream USB, you'll want to note the deepest level of relaxation achieved in each session.

NOTE: Initially it's best to keep the sensitivity level at 8, the easiest, until you become familiar with the unit.

Auto Shut-Off feature

There are three instances in which ThoughtStream USB will automatically shut itself off:

1. If there is an error indication for more than 10 seconds. (This can occur if the sensors lose contact with your skin or the wire pulls loose from ThoughtStream USB,)
2. If, while you are in the sensitivity adjust mode, you don't do anything for one minute.
3. The battery is low.

Feedback options

Choosing lights and/or sound

ThoughtStream USB gives you the advantage of simultaneous visual and auditory feedback. You can use ThoughtStream USB with either the visual or the auditory feedback independently.

The feedback method you choose is a matter of preference. It also depends on what you do during a session. For example, some are more comfortable doing relaxation-type exercises with their eyes closed. On the other hand, if you are using a breathing exercise or meditation to enhance

relaxation, you might prefer to watch the LEDs without listening to the auditory feedback.

Error message

If the lights begin to blink all red then all orange, all yellow, all green and back to all red this means that the sensor connection is incomplete. To correct this, press the START/STOP button, adjust the probe strap and restart your session.

Factors that can alter your skin resistance and your readings

Certain factors can affect readings because ThoughtStream USB works by detecting subtle changes in your skin's electrical resistance.

- **Sensor pressure** - Find a comfortable resting position for your hands before you begin. Varying the pressure of the sensors against your skin will provide false readings; therefore, avoid adjusting the sensors once a session has started. Moving your hand around will also cause fluctuations in the readings.

Other factors that will provide inaccurate readings:

- Being involved in a light activity such as walking, then sitting down and immediately beginning a session. (Sit down and wait five minutes to allow your body time to settle down.)
- Coming inside from cold or hot weather and immediately beginning a session. (Allow your body time to completely adjust to the surroundings.)
- Starting a session immediately following a large meal (Wait one-half hour.)

- Starting a session immediately following physical exercise. (Wait at least 15 minutes.)
- The time of day you use ThoughtStream USB.
- Whether you smoke or have recently ingested caffeine, alcohol, or other drugs.

SECTION II

Sensitivity Adjustment

ThoughtStream USB contains eight sensitivity levels. This allows a beginner to start at the top level, 8 and progressively work down to the lower levels as one becomes more skilled at relaxing. The levels are configured as a percent of change in the skin's electrical conductivity. Changes in your skin's electrical conductivity correlate with your relative feelings of tension or relaxation.

Level 8 is set to measure a 20% change over the entire range from red to orange to yellow to green. Most people should be able to master this level with relative ease. However level 1 is configured to measure a 700% change. It would take considerable skill to master this level and the majority of people will never need to use level 1 to attain the results they desire.

Note: Everyone has their own unique response potential. For some, sensitivity levels 7 or 8 will provide the same relaxation benefits that levels 2 or 3 provide for others.

Automatic sensitivity level adjustment

ThoughtStream USB will automatically move between levels; it conveniently adjusts itself to your particular physiology without your having to do anything. Let's assume you begin at level 8, the easiest level. Then after five or ten minutes you have successfully moved the display from all red to all green. After a brief pause ThoughtStream USB senses that you have gone as far as you can go and moves you down one level in difficulty to level 7. The process will repeat itself

until you are no longer able to surpass the level (lights all green).

Once you have finished your session ThoughtStream USB saves the last level of difficulty you were able to attain in memory. The next time you turn on your unit it will begin from that level. To change this, simply follow manual level adjustment instructions (page 6).

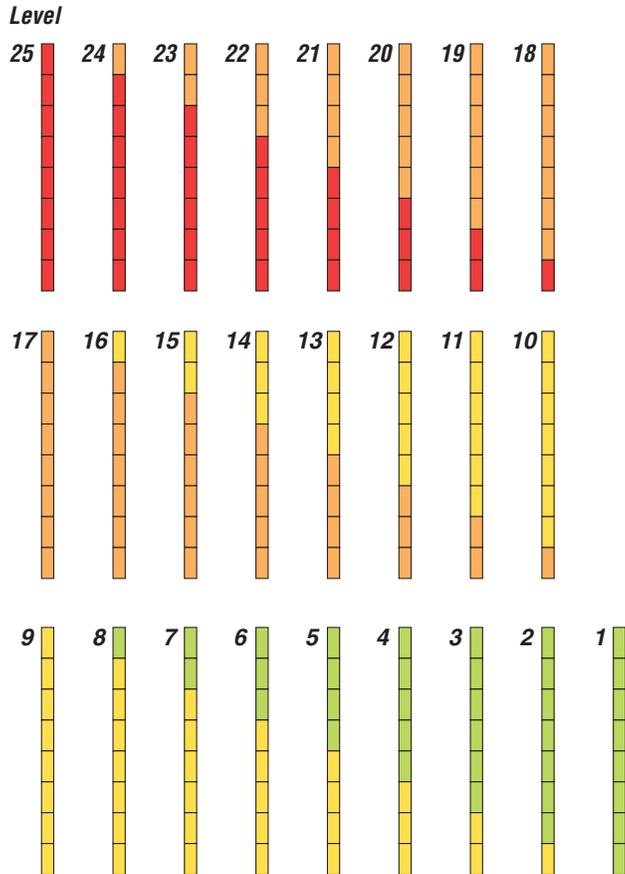
How to read the LED array during a session

The array consists of an 8 segment row of LEDs that are capable of displaying different colors at different times: red, orange, yellow, or green. Your descent into relaxation is reflected by gradually "descending" colors. Red will change to orange, orange to yellow, and finally yellow to green. The table on page 8 graphically depicts how the LEDs move through 25 distinct increments.

Feedback and skin resistance: a relative measure

Because your skin resistance is not a constant—it varies from day to day and from moment to moment—ThoughtStream USB must set a zero value when you begin a session. ThoughtStream USB always assigns this starting point a full bank of red LEDs, regardless of whether you begin a session in a relaxed or stressed state. In other words, the changes in stress or relaxation level, as reflected in the feedback are not absolute values. All red does not mean that you are necessarily feeling stressed just as all green does not mean you are necessarily in a relaxed state. All changes noted by ThoughtStream USB are relative to your stress or relaxation level at the moment you started the session.

The LED's changing colors



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Percent of change in skin resistance

<i>LED increment</i>	<i>Sensitivity level</i>							
	8	7	6	5	4	3	2	1
25	0	0	0	0	0	0	0	0
24	0.2	0.4	0.6	1.1	1.8	3.0	5.0	8.2
23	0.6	1.0	1.7	2.9	4.8	8.0	13	22
22	1.1	1.8	3.0	5.1	8.3	14	23	38
21	1.6	2.7	4.5	7.6	13	21	35	58
20	2.2	3.6	6	10	17	28	46	77
19	2.9	4.8	8	13	22	37	61	100
18	3.6	6	9.9	17	27	46	76	125
17	4.3	7.1	12	20	33	55	91	150
16	5.1	8.4	14	24	39	65	105	180
15	5.9	9.7	16	27	45	75	125	205
14	6.7	11	19	31	51	86	140	235
13	7.6	13	21	35	58	97	160	265
12	8.5	14	23	39	64	110	180	295
11	9.4	16	26	43	72	120	200	330
10	10	17	29	48	79	130	220	360
9	11	19	31	52	86	140	240	395
8	12	20	34	57	94	155	260	430
7	13	22	37	61	100	170	280	465
6	14	24	40	66	110	185	305	505
5	16	26	43	71	120	200	325	545
4	17	27	46	77	125	210	350	580
3	18	29	49	82	135	225	375	620
2	19	31	52	87	145	240	395	660
1	20	33	55	92	155	255	420	700

13

For instance, you may be in a very relaxed state when you start a session. It may be difficult to produce shifts in the feedback during that session, even with sensitivity level 8. However, you have accomplished the goal of being very relaxed. At another time, you may be very tense after driving through bad traffic. The simple act of sitting down with the intention of relaxing may take you into the green zone in a minute or two. However, you may still be far more tense than the previous session. You will be able to subjectively judge where you are in relation to previous sessions as you become more adept at recognizing your internal states.

Understanding how automatic sensitivity level adjustment operates

As you reach the end of a level (all green) ThoughtStream USB continues to monitor your progress even though you see and hear no change in activity. If, after a short pause it senses that you are able to go further, the display will shift in color as it moves down to the next lower level. Getting this level to turn all green requires you to relax more deeply than the previous level.

Why does it start in the middle of the next level?

When a new sensitivity setting is activated, the display does not go back to all red, which would indicate a 0% change; it drops to the percent of change you would have reached had you started at the lower level in the first place.

Think of the display as a meter showing numbers instead of colors to illustrate percent of change in electrical conductivity of your skin. At level 8, all red indicates 0%, or no change has taken place. One half-yellow and one-half orange (LED increment 13) would indicate a 7.6% change. The end of

the scale, all green at level 8 indicates a 20% change.

The scale at level 7 (all lights green) represents a 33% change. A change of approximately 20% is indicated by one green and seven yellow lights. (LED increment 8).

The scale at level 6 (all lights green) is 55%. To attain approximately a 20% change at this level the indicator would show three yellow and five orange lights (LED increment 14). As you move progressively down each level, each light represents a higher percentage of change.

We supply a convenient chart on page 13 which you can refer to each time you use ThoughtStream USB.

Moving up the scale

Now let's assume you started at level 6 and you are having difficulty making any of the lights change, in other words you are stuck at all red. The system is capable of switching to a more sensitive level (in this case level 7) in about five minutes. If at some point during the session, however, the you were able to change the display a few increments then this feature is deactivated for the rest of the session.

SECTION III

ThoughtStream Relaxation Exercises

Consistency. As with any self-improvement tool, establishing a consistent practice schedule will help speed you toward your goal. Give yourself some time to do the exercises, positive results will be yours with a little practice and patience.

You can start with as little as ten minutes per day, and over time work up to 20 to 30 minutes or more per day. The key to maximum effectiveness is regular use. Make a commitment to do it every day and make it a part of your routine. For many, setting aside a specific daily time helps establish this consistency. You will notice subtle but cumulative results over a period of several weeks.

Take it easy! Fortunately, ThoughtStream USB is easy to use and never requires “hard” or forced effort. In fact, such an effort would create the opposite desired effect! Go easy on yourself and you will progress. Sit back, relax, and enjoy!

With regular use you will notice that you are more aware of how you are feeling and reacting, and that you can quickly access deeply relaxed states.

Here are some simple, effective exercises to try.

EXERCISE I

Attention on deep breathing

Take a few moments right now to pay attention to your breathing pattern. When you are under stress you will tend to breathe from your chest in shallow, rapid breaths. By simply paying attention you may immediately notice that your breathing becomes deeper and more relaxed. Reduction of psychological stress is enhanced when you learn how to breathe in a way that promotes relaxation.

As you read this try the following exercise: Start right now by breathing deeply from your diaphragm. One way to know that you are doing this correctly is to place your hand on your belly; it should move up and down with each breath you take. You want there to be as little movement as possible in your chest.

Now inhale slowly through your nose. Take at least five seconds to do this. Count to yourself, 1 . . . 2 . . . 3 . . . 4 . . . 5, and then hold that breath for one second before releasing it. Now exhale slowly and silently on the count of five 5 . . . 4 . . . 3 . . . 2 . . . 1. Allow your mouth to open slightly to let your breath out. Allow one second after the release and begin again. How does that feel?

Continue this exercise for the duration of your session. In fact, it is a great exercise to practice at any time. It is especially useful during stressful situations while going about your daily routine: while driving, talking to a business associate, or dealing with your family.

When training with ThoughtStream USB, find a quiet place with few as distractions as possible. It may help to use the audio output alone (eyes closed) when you are starting out.

Continue for at least ten minutes if possible.

Your focus naturally tends to be on the cause of your stress. Simply move your focus slightly by giving some attention to your breathing pattern; you will find your stress immediately goes down. Practice is the key! The more you practice this exercise while using ThoughtStream USB the faster you will find yourself becoming deeply relaxed with each session. You will find breathing for relaxation becomes a part of your daily activities. Something as simple as this will give you a sense of greater control over many of the common stress-filled situations in your life.

EXERCISE II

Body Awareness/Tension Release

People hold tension in different parts of their body. You can observe this in yourself and others very easily. Notice that some people clench their jaws; others hold tension in their hands by clenching their fists. Some people hold it in their legs while others keep tension in their back, neck or shoulders. But the most common place to see and feel tension is above and between the eyebrows.

Start by practicing your breath awareness exercise. Pay full attention to your body one area at a time. Start at the top of your head. What do you feel? Is there some tightness there? Try letting it go. Now move down to your forehead and your eyes. Do you notice any tension there? If so, just imagine that you are like ice cream in the warm sun. Feel that tension melt away; just let it go...

Next, move down to your jaw. Pay attention to the back of your jaw. Pay attention to your teeth. Is your jaw clenched together? Allow your mouth to relax and open ever so

slightly, release any tension you feel there. Take as long as you need to accomplish this, you are not in any hurry. Next is your tongue. Allow it to just relax.

Move down to your neck and shoulder area. Allow your shoulders to drop ever so comfortably to your sides. Make slow circles with your neck. Let your chin just about touch your chest as you move your head first clockwise a few times and then counter-clockwise. Extend your neck first over one shoulder then behind your head, then over the other shoulder, and then back over your chest. Do that for a minute or two until you can really feel the tension leaving this part of your body. Give it time; there is no need to rush.

Now, go back for a moment to your head. Are you still relaxed there? Let your entire upper area melt just a little bit more than before. Take those long leisurely deep breaths before moving on.

Go to your arms and hands; feel the tension going down your arms, through your hands, and out your fingertips. Feel your hands and fingers getting warmer. It feels good, doesn't it?

Now move to your chest. Does it feel tight? Just let it go; let it melt away. Stay with each of these areas until you feel you have made a little progress. You will get better and better at this with each day that you practice this technique. Move on to your lower back. Feel it get warm. Feel the tension leaving it. At the same time feel your whole upper body become a little bit more relaxed with each breath. You're melting . . . Tension is going away.

Now move to your hips, groin and trunk. Let this area feel warm and relaxed as if it is flowing with radiant energy.

Move down now to your upper legs, then to your lower legs. Pay attention to your calf muscles; allow them to relax. Now move down to your feet. Release any remnants of tension that remain there. Feel your feet and toes tingle with warm radiant energy. Doesn't that feel wonderful?

Go back to your breathing and just remain in this state of deep relaxation for as long as you like. Let the thoughts that enter your mind drift by like clouds in a warm peaceful summer sky. Watch their randomness and enjoy. Allow your eyes to close now and drift away . . .

EXERCISE III

Visualization Immersion/ Guided Imagery

This is similar to daydreaming except you are actively involved in the imagery. This exercise uses the right side of your brain, your creative, intuitive side. You can take anywhere from five minutes to as long as you like with this. Do the following:

Imagine you are outside in a peaceful, pleasant setting. It can be in a park, on a boat, in the forest; it's your choice. For our example imagine that you are at the ocean. Try practicing this as you are reading.

Start by hearing and seeing the waves. It is a pleasant day. Feel the warm, comfortable sun on your body. Look up at the sky and see the large, white puffy clouds drift slowly by.

Can you feel the gentle warm breeze on your face? It feels good . . .

Smell the air blowing off the sea. Doesn't it smell clean and fresh?

Now feel the warm, soft sand between your toes. Listen to the ocean. Can you hear the seagulls as they call to each other? Can you feel the breeze? Does it smell wonderful? Immerse yourself in it; you deserve it.

Look down the beach; first in one direction and then in the other. You are alone, safe, peaceful. You feel good; you feel calm.

What is your breathing pattern like now? How relaxed are you?

Keep going by taking yourself deeper and deeper into the exercise. Watch the sun set, go for a walk, feel the water lap up on your feet. Just have fun.

There are a number of excellent tape and compact disc recordings on the market with the kinds of exercises we detail here. Please call us or your dealer if you have trouble locating any.

Additional hints:

- It is okay to move around a little during the session, but avoid sudden or jerky hand movements. They can cause false readings.
- Make sure the sensor is strapped on snugly, but not too tight. It should feel comfortable without feeling restrictive.
- Wear loose fitting clothing, or if this is not possible, loosen up your belt or tie, and take off your shoes.
- Sit comfortably in an upright position, support your back with the back of a chair or a pillow to supplement it. Do not slouch. A slouched position can cause more stress and cause you to nap; you do not want to

nap during your session. Remember, the purpose is to learn conscious relaxation. If you find yourself regularly falling asleep while using ThoughtStream USB perhaps it would be good idea for you to try to get more sleep at night or try doing your session at a different time of the day.

Charting your progress

Keeping a practice log is a great way to chart your progress with ThoughtStream USB. It's easy to do, and we suggest that you try it for at least the first two or three weeks of training.* For the most consistent data, try to keep your sessions the same length.

Step 1: The calibration session

Make copies of the Progress Log in the back of the guide. Enter the date, time, and sensitivity level you are using. Now run your session. You may find it helpful to use a timer to keep the session lengths the same.

Do something very relaxing during the session such as listening to a nature-sounds disc. Or try one of the relaxation exercises outlined in Section 3. After 15 or 20 minutes, press the START/STOP key and notice the color pattern being flashed on the display. This is the deepest relaxation level achieved during that session.

Compare the color pattern to The LED's color chart on page 12, and note the LED increment (between 1 and 25). Then refer to the chart on page 13 to find the percent of change in skin resistance. Read down the sensitivity level column, and then read across to whatever your LED increment is. Let's say the LEDs were all yellow—that's LED increment 9. At sensitivity level 6, that's a change of 31%.

Once you begin training, the goal is to slowly increase the difficulty of your sessions — increase the percent of change — while maintaining your ability to reach all green in about the same amount of time.

* Notice the way that the percent of change varies over time. Although it can show large changes from day to day, the trend should be clear over the course of time.

Questions and Answers

What if my hands are cold or hot or sweaty? Will that affect ThoughtStream USB's readings?

These could affect the readings, since temperature and perspiration affect your skin resistance. It's best to be sure your hands are dry and let them assume their normal temperature before starting. See page 4, 6.

Every time I turn on the unit, all the LEDs flash red.

When ThoughtStream USB's batteries are low, it signals you with this flashing sequence. Replace the batteries. (See Battery installation, page 3.)

Sometimes after I've begun a session, the LEDs stop their descent and begin flashing. The tones sound like the initial calibration sequence.

You are receiving an error indication, usually caused when the sensors lose contact with your skin. After an error indication, you have to press the START/STOP button and begin again. (See Using the probes, page 4.)

Is there any advantage to using one type of feedback over another? Visual or auditory? Is using both better?

Which method you choose is a matter of personal preference. Sometimes the audio feedback alone is more convenient if you are doing a visualization type session, where visual awareness might be a distraction. Experiment with the different feedback options to find out what is most effective for you. (See Feedback options, page 9.)

Does it matter which hand I put the sensor on?

No; but it is best to remain consistent.

