UTIMS A1
High-Intensity Focused Ultrasound

Medical device
- Main body: Simple & Smart design
- Transducer: Super thin. 6 types
- Screen: LCD touch
WHAT IS HIFU?

**ULTRASOUND:**
Ultrasound is an oscillating sound pressure wave with a frequency greater than the upper limit of the human hearing range. Ultrasound is thus not separated from ‘normal’ (audible) sound based on differences in physical properties, only the fact that humans cannot hear it. Although this limit varies from person to person, it is approximately 20 kilohertz (20,000 hertz) in healthy, young adults. Ultrasound devices operate with frequencies from 20 KHz up to several gigahertz. Ultrasound is used in many different fields. Nowadays, Ultrasound is mainly used for skin lifting/Removing adipose tissue/cancer treatment. The Ultrasonic wave effects are as below: Mechanical Effect. Cavitation Effect. Thermal Effect (Ultrasonic wave is transferred to the tissues and absorbed whereas the energy is turned to the heat).

- Technology Evolution from Lasers:

**HIGH-INTENSITY FOCUSED ULTRASOUND (HIFU):**
HIFU is a highly precise medical procedure that applies high-intensity focused ultrasound energy to locally heat and destroy diseased or damaged tissue through ablation. Ultrasound beams are focused on diseased tissue, and due to the significant energy deposition at the focus, temperature within the tissue can rise to levels from 65°C to 85°C, destroying the diseased tissue by coagulation necrosis. Higher temperature levels are typically avoided to prevent boiling of liquids inside the tissue.

**HIFU TREATMENT MECHANISM:**
HIFU is delivered into SMAS (Superficial Muscular Aponeurosis System), fascia, deep dermis and subcutaneous fibrous tissue and generates the temperature increased. When the temperature grows more than 47°C (the threshold of protein denaturation), the coagulation zone is generated. The zone is filled out by the tissue/muscle surrounded and in this moment, the skin muscle gets elastic and the wrinkle is tightened.
STRENGTHS OF UTIMS A1:

➤ HIGH ACCURACY & STABLE TRANSDUCERS (HAST):
Korust’s Transducer is distinguished by its stability and shape compared to competitors. The heat lesion is shaped like an egg and more focused, which is why UTIMS A1 is able to deliver the safer and better treatment result. Especially, when the heat lesion is long length shaped vertically, it may cause the burn accident around the eyes. We have successfully produced more effective HIFU transducers for the first time in south korea since Korust could overcome technical issues in terms of ceramic manufacturing process. This technique is own by Korust and Korust’s patent and it delivers the safer treatment and superior quality.

1. Stable focal points (heat lesion) and maximizing the treatment outcomes.
2. Short vertical line heat lesion and safer treatment.
3. Damage reduction in the deep skin and safe treatment with the high strength.

• Transducer test on the phantom:

[Image: Competitor’s Heat Lesion-Phantom. UTIMS A1’s Heat Lesion-Phantom - Short vertical line and stable egg shaped focal point.]

➤ HIGH FREQUENCY TRANSDUCER:
High Frequency delivers high energy and delicate heat lesion in HIFU. Therefore, it is a safer and effective idea that the high frequency should be used for the low depth (low skin layer). However, only few companies could success commercialization in the world. UTIMS A1 provides 10 MHz, 1.5mm depth transducer and 6 types of transducers in total.

• Narrowing in on Usability:

[Image: Standard tip Narrow tip]

- Reduce time of delivery.
- Easier coupling.
- Less time per line delivery.
- No need to shorten lines.
- Improved positioning visualization.

➤ TRANSDUCER HEAT LESION VALUATION SYSTEM (THLVS):
HIFU devices are very dangerous and hard to control. Especially, the excessive energy use of it, the unstable heat lesion cause the side effects such as the burn accident. Therefore, the most important technique of HIFU system is the measurement & evaluation of HIFU Energy. THLVS is the HIFU system developed by Korust cooperated with an university in South Korea. THLVS is the device which can evaluate the safety of transducers and developed by HIFU professional researchers group for 10 years. Also, the main component of this system called ‘Phantom’ is produced by Korust with the strict quality control.

2. 3 steps Preliminary inspection.
3. Safer therapy : Transducers with 100% lot test.
4. HIFU Test Phantom : Self-developed, manufacturing

➤ SAFETY STRENGTH:
1. Non-toxic heatless film.
2. Individual control of transducer. Precise position control.
3. The improved transducer movement.

➤ COMPACT & WEIGHT REDUCTION:
1. The most compact size (simple design).
2. Compact & weight reduction through the Integrated Modular.

➤ USABILITY STRENGTH:
1. Super easy to use hand piece:
- Thinner transducer and hand piece.
- Sophisticated design for minimalizing of cable interference during the treatment.
- Double switches (left-handed friendly).
- Comfortable with transducer desorption.
- 6 types of transducers (A various range of depths & frequency, treatment areas).
2. 30mm treatment area.
3. Time saver : Using a large output transducer. Simple user interface.
SPECIFICATION

- Energy Type: High Intensity Focused Ultrasound
- Rated Voltage: AC 90~264V, 50/60Hz
- Power Consumption: 80~150 VA
- Power: 0.1 ~ 2.0 J (0.05 step)
- Spacing: 1.0 ~ 5.0 mm
- Treat Energy: Less than 2.0 J

UNIT CONTROL

TRANSUDER

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TROLLEY (optional)