

About KORUST

KORea Ultra Sound Technology Co., Ltd

KORUST is the company oriented development of medical devices for human respect, corporate social responsibility, moral obligation rather than just for the pursuit of profit by producing, always seeks to realize value creation towards competitiveness through continuous technology development and new technology driven.

KORUST keeps developing innovative products with domestic academic basic research, commercialization of HIFU technology and assessment techniques based on the ultrasonic generator, ultrasonic ceramic transducer, High-intensity focused ultrasound technology, focused shock wave technology commercialization in the field of therapeutic ultrasound.

**KORUST is a HIFU specialized company
that aims to be the world's best**



KORUST (KORea Ultra Sound Technology Co., Ltd)

ADD. B-#716, 717, 718, Keumkang pentarium IT tower, 282,
Hagui-ro, Dongan-gu, Anyang-si, Gyeonggi-do, 14056, Korea
Tel. +82-31-337-5959 Fax. +82-31-337-5960

Sales. Sales@korust.com Service. Service@korust.com

WWW.UTIMS.CO.KR | WWW.KORUST.COM

Ver.1.3



(+82)1833-5960



Ministry of Food and
Drug Safety



approved

The actual product may vary from size and standard shown in the catalog. (For Overseas Customer only.)

HIFU skin lifting
and body contouring

UTIMS



UTIMS

Non-Invasive,
Eyebrow Lifting, Face Lifting
& Body Contouring System

Application

- HIFU (High Intensity Focused Ultrasound)
- Face & Body Tightening
- More effective and safer by Centerless Technology
- 12 Types of various transducers & 10MHz Frequency
- The newest “Pen type” transducer for eyebag & buccal fat removal
- U-LINK Remote repair & support service system



Main body
Simple & Smart design

Hand piece
Thinner & curved line
Very comfortable to handle
Double switches for left-handed

Transducer
Super thin

LCD with touch screen



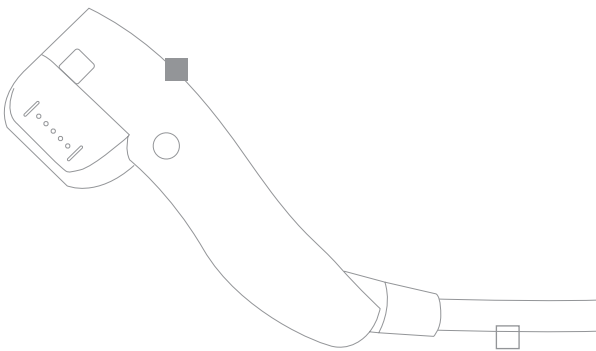
Transducer for Face
- Handpiece Integrated type
- Pen type



Transducer for Body
- Handpiece Detachable type



What is HIFU?

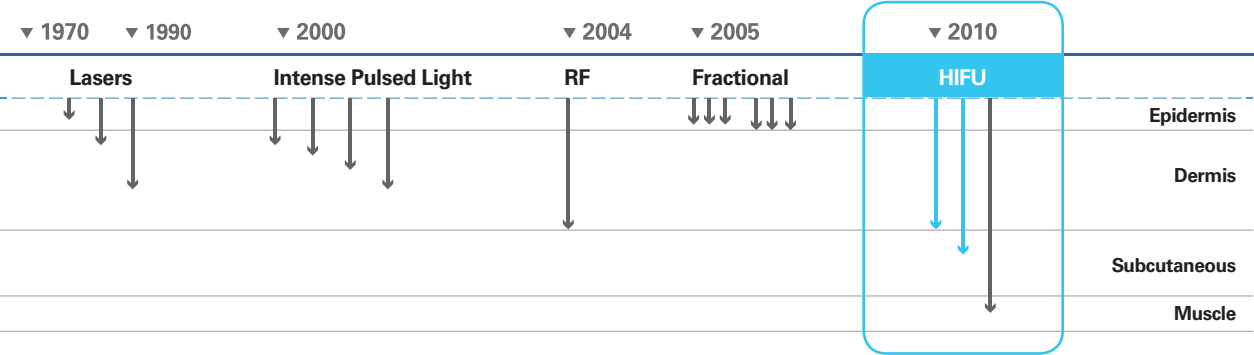


Ultrasound

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. Now days, Ultrasound is mainly used for skin lifting / removing adipose tissue / cancer treatment. The Ultrasonic wave effects are as below.

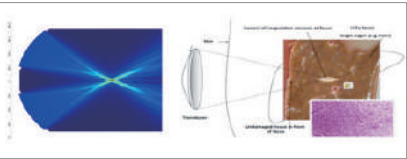
- 1) Mechanical Effect
- 2) Cavitation Effect
- 3) Thermal Effect : Ultrasonic wave is transferred to the tissues and absorbed whereas the energy is turned to the heat.

Technology Evolution from Lasers



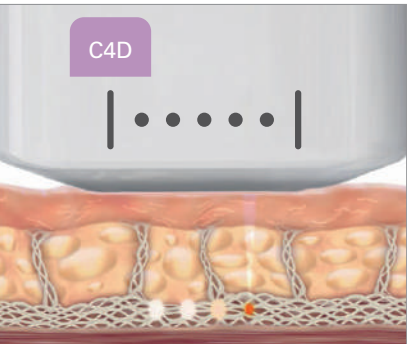
High-Intensity Focused Ultrasound (HIFU)

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° 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, cial 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

1) High Accuracy & Stable Transducers (HAST)

KORUST's Transducer is distinguished by its stability and heat lesion shape compared to competitors. When the heat lesion is long oval shape, it may cause the burn accident around the eyes. However, the heat lesion of KORUST's Transducer is shaped like an egg and more focused, which is why UTIMS is able to deliver the safer and better treatment result. This technique is a patent owned by KORUST.

- Stable egg shaped focal points(heat lesion) maximizing the treatment outcomes
- Short vertical line heat lesion enabling safer treatment
- Damage reduction in the low skin

Transducer test on the phantom by Korust



Competitor's Heat Lesion-Phantom



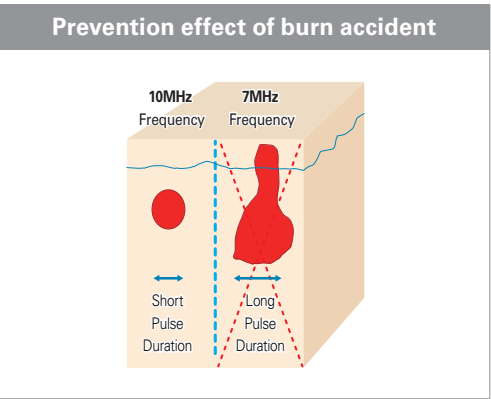
KORUST's Heat Lesion-Phantom

Short vertical line and stable egg shaped focal point

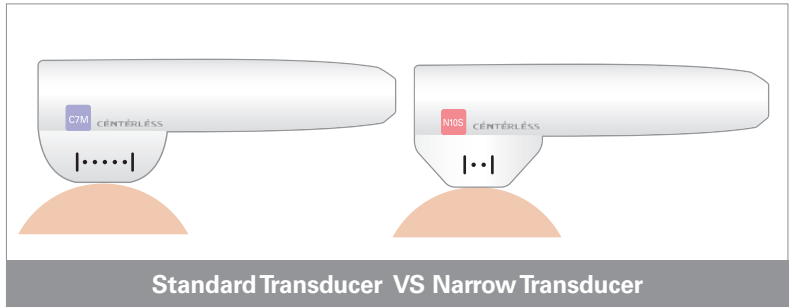
2) High Frequency Transducer

UTIMS provides 10 MHz, 1.5mm depth transducer and 12 types of transducers in total.

High Frequency(10MHz) 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.



3) Narrowing in on Usability

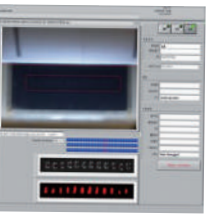


- Improved positioning visualization
- Complete skin adhesion for small area treatment → prevention of burn accidents
- Less time per line delivery

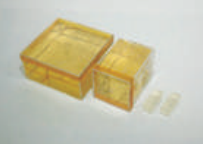
4) Transducer Heat Lesion Valuation System (THLVS)

HIFU devices can be very dangerous especially when excessive energy is used. For example, the unstable heat lesion can cause the side effects such as the burn accident. However, the most important technique of UTIMS is the measurement & evaluation of HIFU Energy. THLVS is a system specially 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.

- 1) Safer therapy : Transducers with 100% lot test
- 2) HIFU Test Phantom : Self-developed, manufacturing
- 3) Heat Lesion Simulation
- 4) 3 steps of preliminary inspection



HIFU lesion analyzer



Phantom

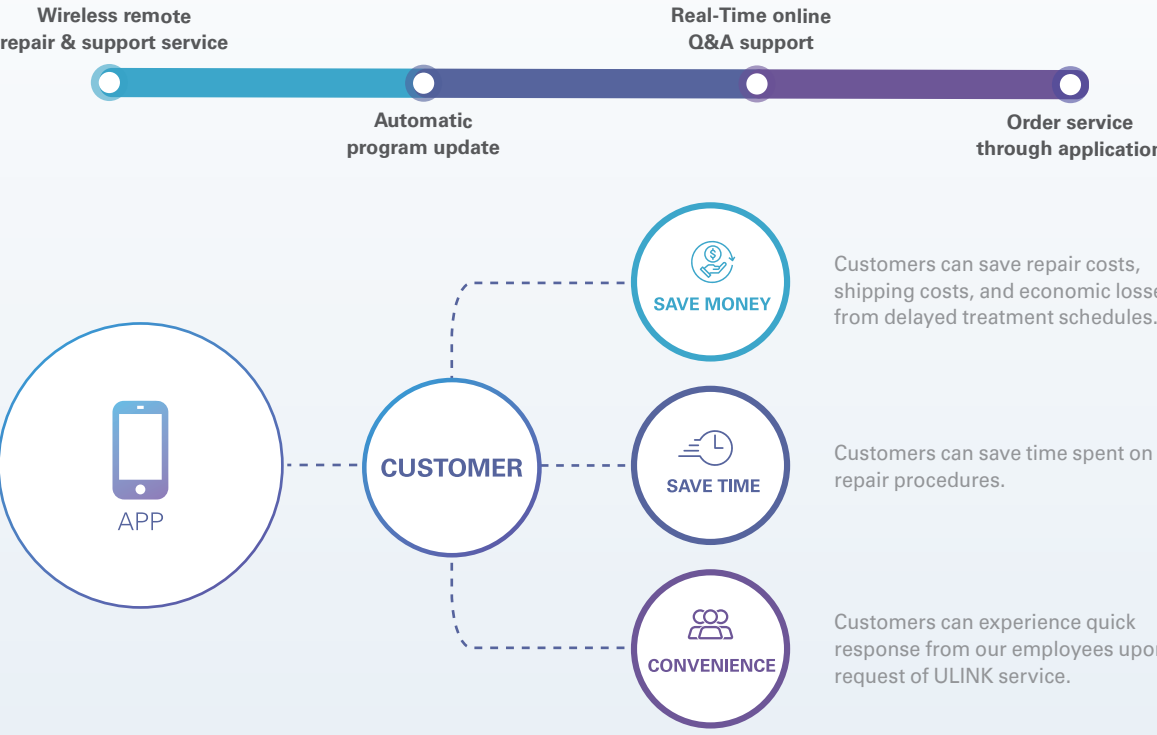
5) CENTERLESS HIFU (Patent owned by KORUST)

- 1) Stable focal points(heat lesion) and maximizing the treatment outcomes
- 2) Reduced side effects, such as pain and burns
- 3) Safer treatment



U-LINK WE STAY CLOSE REAL-TIME MONITORING SYSTEM

U-LINK is a smart network service system that can provide the best management service which customers have never experienced before.



➤ Specification

- Energy Type : High Intensity Focused Ultrasound
 - Rated Voltage : AC 100~240V, 50/60Hz
 - Power Consumption : 80~150 VA
- Intensity : 0.1 ~ 2.0 J (Maximum ~4.0J)
 - Spacing : 1.0 ~ 5.0mm

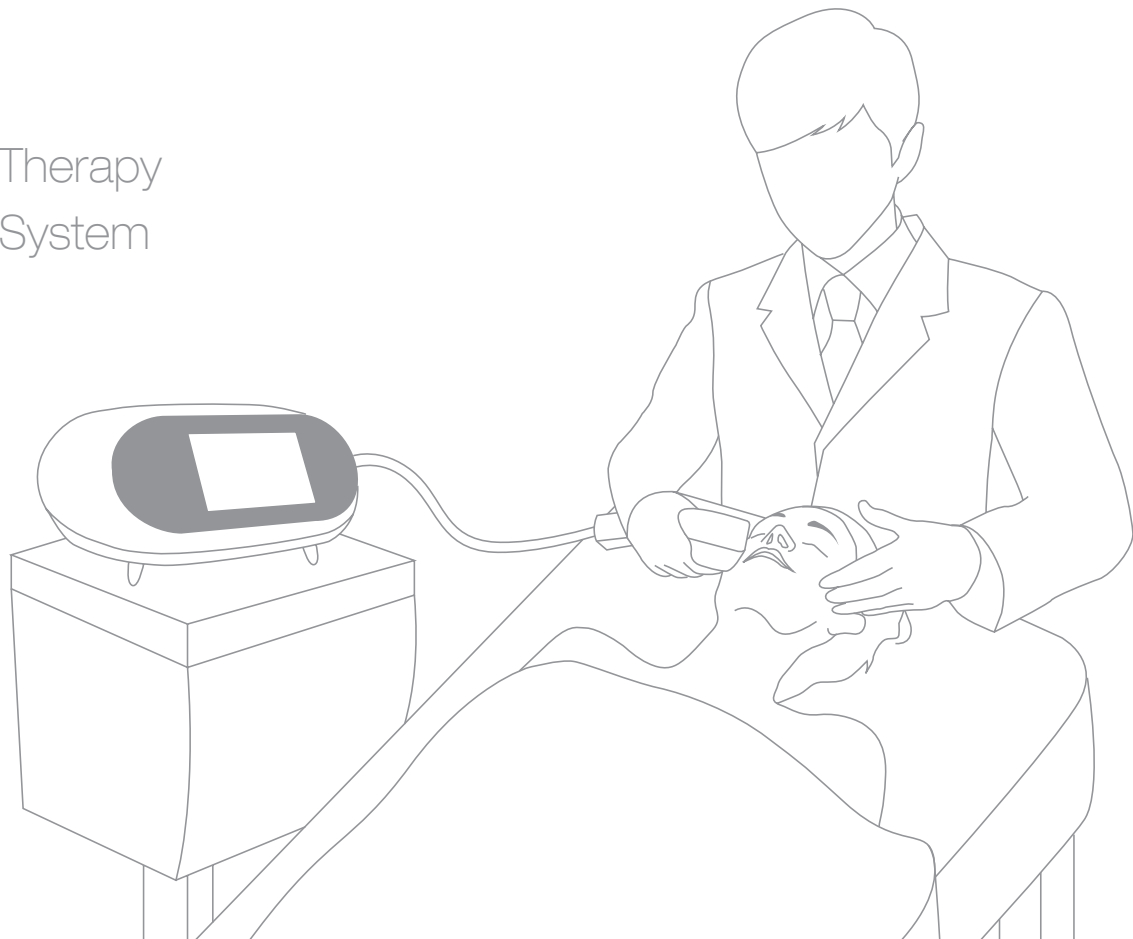
➤ Transducers

Division	C10S	N10S	P10S	C7M	N7M	P7M	C7D	C4D	P4D	C3N	C3C	C3F
Frequency	10MHz (±20%)			7MHz (±20%)			4MHz (±20%)			3MHz (±20%)		
Length(mm) (1.0 step)	5.0~30	5.0~15	N/A	5.0~30	5.0~15	N/A	5.0~30		N/A	5.0~30		
Depth(mm)	1.2~1.8			2.4~3.6			3.6~5.4			8.0	13.0	18.0

➤ Dimension

Division	Control Unit (Main body)	Transducer for Face	Transducer for Body	Trolley (optional)
Size (mm)	D/412, W/366, H/190	D/200, W/28, H/73 (Handpiece Integrated type) D/20, W/25, H/150 (Pen type)	D/92, W/52, H/88	D/420, W/380, W/800

UTIMS is
Ultrasonic Therapy
In Medical System



Testimonials on UTIMS



Dr. Artur Markowski / Pomorskie Centrum Medycyny Estetycznej

"A large number of transducers allow for a comprehensive approach to various patients. In addition, Centerless transducers guarantee heat lesion which is more concentrated with a spherical shape, which results in increased safety, less pain and more effective effects of the treatment."



Dr. Elżbieta Zdanowska / Medeztetic

"My favorite treatment is the one using narrow transducers dedicated to the eye area (lower and upper eyelids, so-called crow's feet, temple area and skin above the eyebrows). Not only they provide high precision and safety of the treatment, but also they give immediate effects, which emphasize the eyes, giving a younger look."



Dr. Elżbieta Baczevska-Staszak / Centrum Medycyny Estetycznej Baczevska

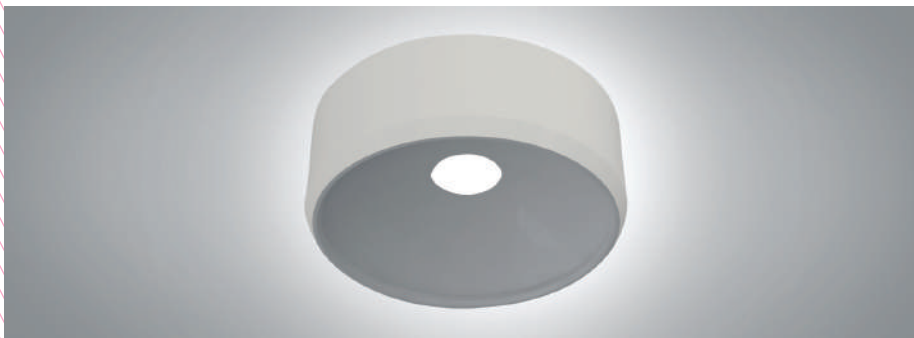
"UTIMS is precise, safe, and virtually not painful during the procedure. For me, the patient's comfort during the procedure is very important. Thanks to the breakthrough technology of Centerless transducers in this device, the procedure is basically painless. The patient feels a thermal effect during the procedure, but there is no need for anesthesia or painkiller before the procedure."

CENTERLESS HIFU

CENTERLESS! INTERFERELESS! PAINLESS!

Features of CENTERLESS HIFU

CENTERLESS HIFU is a new and innovative HIFU system using a special concave-type piezoelectric ceramic with a hole at the center. A tube is inserted through the hole to prevent generation of ultrasound at the center of the ceramic.



Enhanced safety & performance

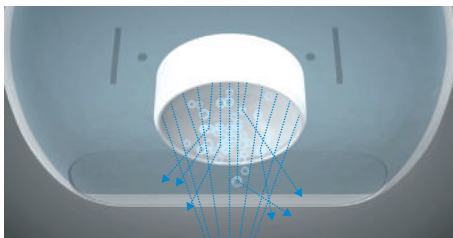
Enhanced stability

Reduced side effects

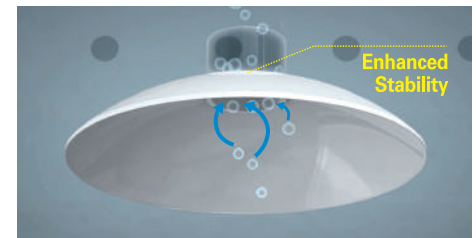
Enhanced Stability

As the ultrasound passes through the water in the transducer, microbubbles are formed (Cavitation effect). Due to the concave shape of the piezoelectric ceramic, these microbubbles gather at the surface of the ceramic, which interferes the transmission of ultrasonic energy. CENTERLESS HIFU discharges the microbubbles, caused by cavitation effect, through the hole at the center to the rear of the ceramic, which in turn allows total energy generated by the piezoelectric ceramic to be focused within the skin, and thereby improve the safety of ultrasonic energy.

Limitations of current transducer



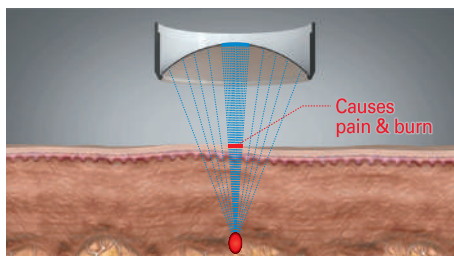
CENTERLESS HIFU transducer



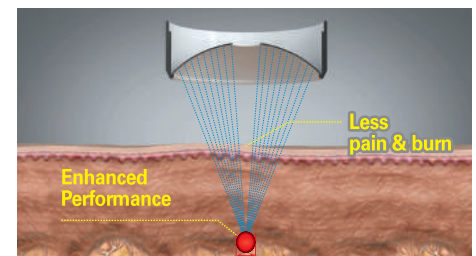
Enhanced Safety and Performance

Most of the products lower the ultrasonic energy in order to reduce side effects. However, lowering the energy reduces the size of the heat lesion accordingly, and hence this will result in deterioration in performance of the transducer. CENTERLESS HIFU fundamentally resolves the problem of creating excessive heat on the skin surface caused by concentration of ultrasonic energy at the center of piezoelectric. According to experimental results, it has shown to reduce side effects as well as improving the performance of the heat lesion by more than 50%.

Limitations of current transducer







CENTERLESS HIFU transducer

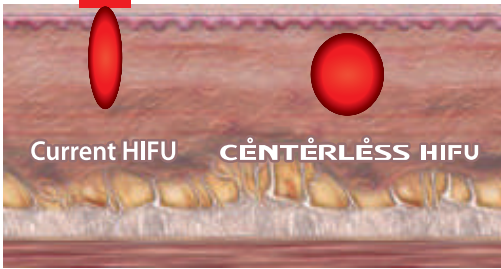


UTIMS is CENTERLESS

KORUST has successfully produced more effective CENTERLESS HIFU transducers. The heat lesion is more focused and shaped like an egg, and hence, CENTERLESS HIFU is able to deliver a safer and better treatment results

- Stable focal points(heat lesion) and maximizing the treatment outcomes
- Reduced side effects, such as pain and burns
- Safer treatment





	Low Intensity HIFU	High Intensity HIFU
Current HIFU heat lesions		 Heat lesion grows in vertical direction ► Higher risk of burn
CENTERLESS HIFU heat lesions		 Heat lesion grows in horizontal direction



Causes pain & burn

Current HIFU CENTERLESS HIFU

CENTERLESS HIFU Transducers

 Standard Type C4D C7M C7D C10S	 Narrow Type N7M N10S	 Pen Type P4D P7M P10S	 Body Type C3N C3C C3F
Depth 1.2~5.4mm Frequency 4MHz, 7MHz 10MHz Treat line 5.0~30mm Spacing 1.0~5.0mm	Depth 1.2~3.6mm Frequency 7MHz, 10MHz Treat line 5.0~15mm Spacing 1.0~5.0mm	Depth 1.2~5.4mm Frequency 4MHz, 7MHz 10MHz Treat line N/A Spacing N/A	Depth 8.0mm, 13.0mm, 18.0mm Frequency 3MHz Treat line 5.0~30mm Spacing 1.0~5.0mm