The Chronicle of Aesthetic Medicine Devices

QUADESSY : The Evolution and New Paradigm of Hybrid RF Based MNRF

Kibum Kim(Senior Executive Director, Korean Association for Laser, Dermatology, And Trichology)



Dr. Kim is a leading early adopter in Korea's aesthetic medicine field. His drive to stay at the forefront of innovation stems from a strong commitment to research and genuine curiosity about new devices. Rather than simply introducing the latest technologies, he has continuously sought ways to maximize patient satisfaction, building extensive experience across a wide range of aesthetic devices. Aesthetic medicine practitioners carefully consider each device before selecting and incorporating it into their practices, as device choice can substantially affect both clinical operations and patient satisfaction.
<The Chronicle of Aesthetic Medicine Devices> follows Dr. Kim's journey of adopting and integrating aesthetic devices into clinical practice. Through this series, he hopes to offer practical guidance to practitioners considering the introduction of new devices.

The Result of Technological Evolution and Integration

The paradigm of aesthetic medicine has changed dramatically over the past decade. Whereas the focus once centered on narrow goals such as "lifting" or "rejuvenation" the core competitiveness of energy based devices (EBDs) now lies in reducing pain, minimizing downtime, and enabling combination treatments. Patients seek a faster return to daily life, while physicians seek safer and more predictable outcomes. For aesthetic medical device companies, developing technologies that meet these needs is essential to remaining competitive in the global market.

The merger between CLASSYS and Ilooda was more than a corporate transaction; it brought together complementary strengths to create a new treatment platform. Ilooda had long helped pioneer the microneedling radiofrequency (MNRF) market through its SECRET RF series, while CLASSYS had established a strong presence in the global HIFU market through its ULTRAFORMER series, known as SHURINK in Korea. By combining the technological capabilities and networks of both companies, it became possible to develop a highly refined next-generation device rather than merely expand the product lineup. The result is QUADESSY.



QUADESSY. Courtesy of CLASSYS.

What Made the QUADESSY Launch Event Special

On July 13, 2025, QUADESSY made its striking debut through a distinctive concept built around a "cinematic four act structure." From the visualization of technology and the central role of the user experience to the brand's climax and a message completed through empathy, the event went beyond a simple product introduction to embody the brand's philosophy and sensibility. Although it differed from the conventional product presentation format, it proved remarkably effective and memorable. Attendees experienced it not as a typical briefing, but as a cohesive sequence that left a lasting impression. MNRF is a highly effective treatment modality, but procedural pain has always been a concern for patients. Even with topical anesthesia, the sharp pain caused by needle insertion can be a significant barrier. For physicians, there is also the burden of closely monitoring each patient's facial expressions throughout the procedure. The solution presented by QUADESSY was Hybrid RF. Before the needles are inserted, four noninvasive electrodes gently warm the skin surface. Patients find this process comfortable, while the skin's electrical resistance is simultaneously reduced. It is similar to evenly warming frozen ground before digging. Once the needle are inserted and RF energy is delivered, the energy can be distributed more deeply and uniformly throughout the dermis. This reduces the risk of localized epidermal overheating and crust formation seen with conventional approaches, while promoting collagen remodeling at the intended depth.



A novel MNRF concept featuring four noninvasive electrodes positioned around the central needle RF. Courtesy of CLASSYS

High skin resistance → Excessive voltage increase → Sharp rise in power(W=V×I) → Localized overheating, crusting, rarely burns

Low skin resistance → Lower voltage → Insufficient power delivery → Reduced treatment efficacy

Changes in voltage and power according to skin resistance (impedance), and their impact on treatment outcomes

Hybrid RF achieves a simple yet clinically meaningful goal: maintaining efficacy while reducing discomfort.

Energy Cruise Control

Power Control, Not Current Control

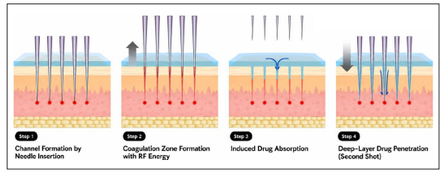
In MNRF procedures, the goal is simple: to generate consistent thermal energy at the needle tip within the dermis, thereby inducing collagen remodeling and achieving the intended clinical outcome. In real world practice, however, the same device settings can produce different results depending on the patient and treatment area.

The reason is skin impedance (Ω). Skin impedance varies according to factors such as skin thickness, water content, and tissue density. Most conventional MNRF devices use a constant-current system, in which the preset current (A) remains fixed while the voltage (V) changes according to tissue conditions. This creates a fundamental limitation: even with identical device settings, treatment may become either excessively intense or insufficient, depending on the skin condition. This inconsistency is what practitioners often describe as poor reproducibility. QUADESSY's Energy Cruise Control (ECC) takes a different approach. Rather than keeping the current constant, it focuses on maintaining consistent power delivery. ECC continuously detects skin impedance in real time and adjusts both voltage and current accordingly. When impedance increases, it reduces the current to prevent excessive energy delivery; when impedance decreases, it supplements the current to ensure sufficient power output. As a result, the final power delivered to the skin (W) is maintained at a more consistent level.

This can be compared to driving on a road with repeated uphill and downhill sections. A conventional constant-current system is like keeping the accelerator fixed in one position: the vehicle may accelerate excessively on a downhill slope, while lacking sufficient power to maintain the desired speed uphill.

In contrast, ECC functions like cruise control, detecting changes in the road conditions in real time and maintaining a consistent speed. This allows the driver to reach the destination more safely and within a more predictable timeframe. Clinically, ECC offers three key advantages. First, it enhances safety by reducing hot spots and crust formation, thereby substantially lowering the risk of unintended burns. Second, it improves consistency by enabling more uniform thermal stimulation regardless of skin type or treatment area. Third, it enhances reproducibility, because the actual delivered energy more closely matches the physician's selected parameters, treatment protocols can be standardized more reliably. QUADESSY's ECC is not simply an electrical circuit control technology. It is a system designed to stabilize the variable of skin impedance, producing the predictable clinical outcomes that practitioners have consistently sought.

In summary, treatment outcomes can vary even when the same patient is treated using the same settings, because skin thickness, water content, and impedance differ across individuals and treatment areas. Conventional devices do not adequately compensate for these differences, allowing them to directly affect the treatment result. When skin impedance is high, voltage may rise excessively, creating hot spots; when impedance is low, insufficient thermal energy may be delivered, reducing treatment efficacy. Through ECC, QUADESSY continuously monitors the skin's electrical condition and automatically adjusts voltage and current to deliver consistent power to the tissue. Similar to a vehicle that automatically detects uphill and downhill conditions to maintain a constant speed, ECC helps physicians achieve results more closely aligned with their intended settings while allowing patients to experience more consistent treatment outcomes regardless of skin type.



Quadfusion for maximizing skin booster delivery. Courtesy of CLASSYS.

Double Depth Needling

Addressing Pores at Two Levels Simultaneously

Pore treatment is a common challenge in aesthetic medicine. Simply tightening the pore opening has its limitations, as pores may gradually enlarge again when sebaceous gland activity remains high. QUADESSY addresses this challenge through double depth needling. This approach delivers sequential treatment to both superficial and deeper tissue layers at the same location. At the superficial level, it helps contract the pore opening, allowing patients to notice an immediate visible improvement. At the deeper level, it promotes extracellular matrix (ECM) remodeling around the sebaceous glands, supporting more sustained results. As a result, patients may experience both an immediate impression of reduced pore size and an improvement that is maintained over time. More than a simple technical upgrade, double depth needling is designed to address a practical unmet need in clinical pore treatment.

Quad Fusion

A more Effective Delivery Method for Skin Boosters

Skin boosters have recently become one of the areas of greatest interest among patients. With the emergence of various regenerative agents, including PN, PDRN, and PDLLA, the challenge is how to deliver these materials consistently and effectively into the skin. Conventional injections can be associated with pain, uneven product distribution, and bruising. QUADESSY addresses these limitations through its Quadfusion drug delivery system. Needle insertion creates microchannels; RF coagulation stabilizes these channels; negative pressure generated during needle withdrawal promotes product uptake; and pressure during reinsertion helps deliver the product into deeper tissue layers. As a result, the agent is distributed more evenly throughout the dermis rather than remaining superficially beneath the epidermis, supporting longer lasting effects. Through Quadfusion, QUADESSY expands its role beyond microneedling RF treatment to a platform for regenerative treatment and skin booster delivery.



Before and after treatment with QUADESSY, demonstrating improvements in pore appearance and skin texture. Courtesy of CLASSYS.

Where Technology Meets Clinical Practice

QUADESSY represents the culmination of CLASSYS's merger with Ilooda and the integration of their technologies, built upon the legacy of Ilooda's SECRET RF platform. Hybrid RF reduces pain, ECC enhances safety, double-depth needling optimizes pore treatment, and Quad Fusion expands its application to skin booster delivery. It is a device that responds technologically to key needs voiced in clinical practice "Patients should experience less pain", "Results should be stable and consistent", and "The therapeutic spectrum should be broader" This is why QUADESSY cannot be regarded as a simple upgrade.

This issue has focused on the development background and core technologies of QUADESSY. In the next issue, we will take a closer look at its clinical significance through practical case applications and specific treatment protocols.

(To be continued in the next issue)