What's Really Behind Your Ultrasound Probe Failure?

4 solutions for addressing a common failure with ultrasound probes

A checklist to ensure thorough, sustainable repairs for ultrasound probes

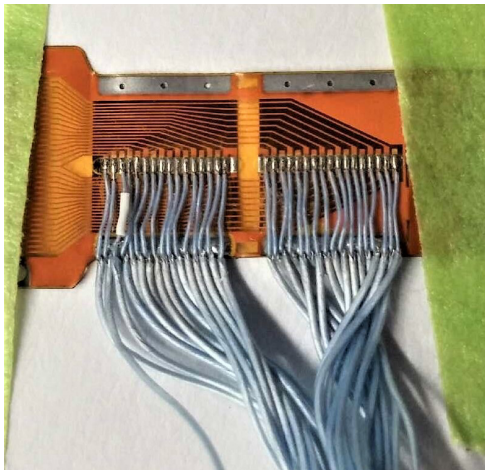
While it's pretty clear when your ultrasound system is not working accurately, it's not always clear why. To get a full understanding of the problem, you need to do more than kick the tires. By opening the hood, so to speak, and taking a closer look, performing some troubleshooting, and running some diagnostics, you may often find the problem is not what you first thought.

With a history of restoring ultrasound probe performance for over 30 years, our data shows that many probe QC failures are related to the cable, especially on cardiac probes. The challenge for the third-party repair industry and healthcare facilities is identifying cost effective solutions for this common problem.

1. Probes are typically considered accessory devices even though they are a separate Class 2 medical device and so OEM's do not sell replacement parts to anyone. The only option, through an OEM, is to purchase a replacement probe, and this option is neither cost effective nor budget-friendly. Replacement probes, purchased on exchange, can range from $2,000 to over $40,000…just to address a small cut to the cable sheathing or an intermittent, noisy cable.

2. A common solution for suppliers of replacement/exchange probes or economy-based repair providers, is to harvest used cables from defective probes. The difficulty with this solution is that you don't truly know what you're getting? A cable is designed to only flex x-number of times before degrading. How worn is the cable on your last exchanged probe? The supplier is betting on the lifecycle of that cable lasting longer than their warranty period. Is that something you're willing to risk, based on the cost of an exchange probe?

3. Another solution, often performed by third-party repair providers, is to splice and patch individual wires within the cable assembly. When individual wires are repaired, the results can often lead to latent failures quickly, as in many cases multiple wires are compromised yet only one is reviewed or repaired during a standard repair procedure. This approach can lead to further repairs, additional costs, and avoidable downtime that can be easily prevented with a holistic repair process.



Cables on ultrasound probes can contain anywhere from 6 to well over 200 individual wires of varying gauges and complexities. Most of the wires within the cable of an ultrasound probe are classified as micro-coaxial, and can be as fine as 48-guage (thinner than a human hair). Some designs use stranded-core, and others use solid-core. Items to be considered when repairing wiring in an ultrasound probe are length, outside diameter, inside diameter, jacket material, dielectric type, solid or stranded core, magnetic permeability, shielded or unshielded, capacitance, inductance, and resistance. It's not easy.

4. As an FDA-registered manufacturer of ultrasound probes, Innovatus has unparalleled expertise to test, classify, and design an entire cable harness. We continue to repair probes for several OEMs based upon our deep understanding of the full device and track-record for sustainable results. As a result, we are able to deliver sustainable repairs and performance that can renew the product's lifecycle at a fraction of the cost of exchanging the probe.

Here's how Innovatus Imaging can help you optimize your probe operations:

- *Proprietary testing methods* fully identify failures with cables, electronics, flex-circuits, and more, enabling us to deliver accurate, timely solutions.
- *Proprietary test fixturing* enables us to stress test the various components within your probe, such as flex circuits and wiring harnesses to ensure continued performance.
- By having the ability to *repair the entire cable harness* and the *entire flex circuit* instead of just one wire failure or isolated area, we're able to refresh your probe's life cycle, ensuring continued operations, and maximizing ROI.
- Innovatus has over *80-different wiring harness solutions* and our expertise covers more than 450 models of ultrasound probes.
- In-house engineering, internal machine shops, and manufacturing operations give us the ability to quickly fabricate the wiring and cable harness components and assemblies needed for your repair,ensuring we can do virtually any repair in a timely and affordable manner. Repair, retest, review, and return your device in about 10-15 days **(or in as fast as 2-3)**

Visit InnovatusImaging.com to learn more about our capabilities, and to discover what industry-leading technology can do for you, your patients, and your bottom line.

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