

What's Really Behind Your MRI Coil Failure?

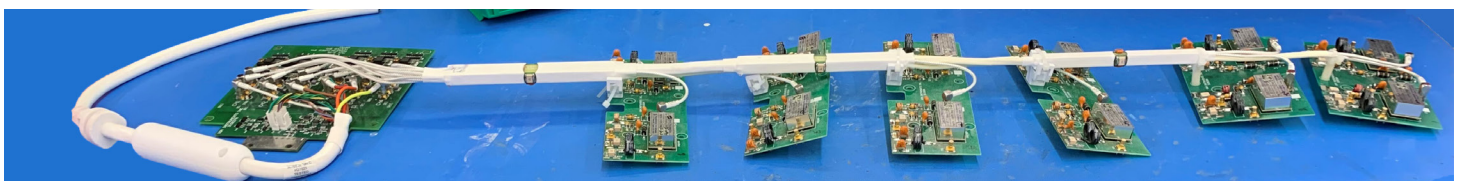
4 solutions for addressing a common failure with MRI coils

A checklist to ensure thorough, sustainable repairs for MRI coils

While it's pretty clear when your MRI 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.

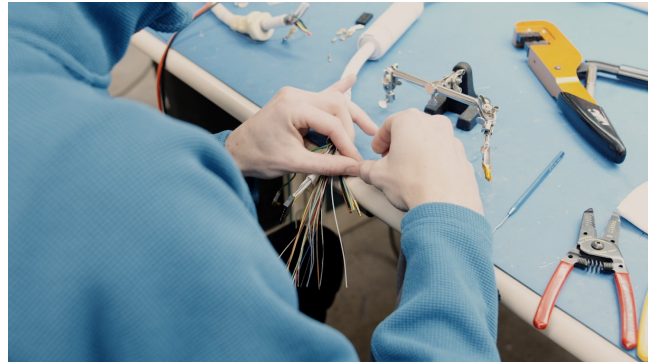
With a history of restoring MRI coil performance for over 30 years, our data shows that more than 25% of coil QC failures are related to the cable. The challenge for the third-party repair industry and healthcare facilities is identifying cost effective solutions for this common problem.

1. One solution is to purchase a replacement cable from the OEM, which is not cost effective and not always a viable solution. Replacement cable assemblies are not available for all coil models and for those that are, costs can range from \$5,000 to over \$20,000...just for one cable, and many coil models utilize several cables.
2. A common solution for suppliers of replacement/exchange coils, is to harvest used cables from defective coils. 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 coil? 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 exchange coils?
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 MRI coils can contain anywhere from 2 to well over 40 individual wires of varying gauges and complexities. Some wires are RG-58 coaxial, some are mini-coaxial, and yet others are non-coaxial. Some wires are stranded-core, and others are solid-core. Wire gauges can be as fine as 30-gauge and all of this variety within a single wiring harness. Items to be considered when repairing each wire within a cable are length, outside diameter, inside diameter, jacket material, dielectric type, solid or stranded core, magnetic permeability, capacitance, inductance, and resistance. It's not easy.

4. As an FDA-registered manufacturer of ultrasound probes, and with a strong heritage in MRI coil manufacturing, Innovatus has unparalleled expertise to test an entire cable harness, identify problems accurately, and repair the full harness vs. one wire at a time. We continue to repair coils 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 coil or replacing just the cable.



Here's how Innovatus Imaging can help you optimize your coil 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 coil, 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 coil's life cycle, ensuring continued operations, and maximizing ROI.
- Our expertise covers more than *1,000 models of coils* and associated cables.
- 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 5-7 days **(or in as fast as 2)**

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[innovatusimaging.com](https://www.innovatusimaging.com) | 844-687-5100
info@innovatusimaging.com

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