

Case Studies: Precision Test & Measurement Solutions

When our customers went to other low-cost calibration and repair providers to get their equipment calibrated or repaired, they came back to us for cost-effective high quality calibration and repair services.

Avoiding the Risk of Endangering Lives: Radio Communications Calibration Services for a Defense Contractor

The Challenge

For many years, NSCA and Tra-Cal performed calibrations of spectrum analyzers and watt meters for a defense contractor that makes truck radio communications systems for the military.

Then, the supervisor in charge of sourcing calibration providers decided that the defense contractor would start using a cheaper service provider. He found a mobile lab that was cheaper, faster, and performed all their calibrations on-site.

The Solution

NSCA and Tra-Cal helped educate the defense contractor on what to look for in a calibration service by providing them with the manufacturer's procedures, standard times, and equipment requirements for calibration. The defense contractor found out that the cheaper service provider was performing a 2-4 hour calibration in only 15 minutes. In addition, they used a 2 GHz generator, when a 26.5 GHz generator was required to calibrate the 26.5 GHz spectrum analyzer. Similarly, the 10,000 watt meter was tested in only 5 minutes. The service provider used a 0 dB signal in and a power meter and sensor on the other side to measure whether a signal went through. Instead of checking 120 to 150 test points to ensure complete functionality of equipment, the low-cost provider just does a self-test or the minimum test points. This does not properly measure the 10,000 watts, let alone 5,000 watts, 1,000 watts, or even 5 watts of the 10,000 watt elements.

The faster, low-cost providers are not always the best option. In this case, these spectrum analyzers and watt meters may not function properly, which could endanger our military troops that rely on radio communication for their safety.



Radio Communications Calibration



They used a 2 GHz generator, when a 26.5 GHz generator was required to calibrate the 26.5 GHz spectrum analyzer.



Contact Us Today for Your Test and Measurement Solution Needs.

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Our lab is ISO/IEC 17025:2005 Accredited by the Laboratory Accreditation Bureau, ANSI Z540.1 & .3 accredited, MILSTD 45662 compliant, and ISO 9001 compliant. All Equipment is returned with a NIST-Traceable certification.

 **LABORATORY**
ACCREDITATION
BUREAU a division of **AS9**

Risk of Endangering Lives: Navy Ship Antennas Calibration Services for a Defense Contractor

The Challenge

A defense contractor that makes navy ship antennas used a low-cost calibration service that had a fancy-looking mobile lab. The lab routinely comes on-site to perform all of their calibration services. One of the units the defense contractor had calibrated was a permeability meter. The calibration was performed and they provided a nice-looking sticker and calibration certificate. The permeability meter measures the mu factor of metal, the thickness and conductivity of the metal, in the antenna to determine how the antenna will transmit. The antenna may be used to transmit between the naval base and the ground troops. This communication is important for the troops' safety.



Antenna Calibration

The Solution

Nine years later, the defense contractor sent the permeability meter to us. We told them that the unit needed to be sent to the manufacturer because there is only one manufacturer of these permeability meters. The manufacturer's procedures and tools are all proprietary, making it impossible for any other service provider to calibrate the unit. We received a letter from the manufacturer confirming that the unit could not be calibrated by any other provider and stating that the unit was so far out of specification that it likely has been out of specification for 4 to 5 years.

The low-cost providers are not always the best option. In this case, these out-of-specification permeability meters could have endangered our troops on the front line by preventing communication with the base.

Saving Time and Money: Test and Measurement Equipment Repair Services

The Challenge

One of NSCA and Tra-Cal customers shared that prior to coming to us they sent their multimeters and micrometers to a low-cost calibration provider. Any time the units needed a replacement 9 volt battery or new \$1 fuse, the provider would send them a repair quote, charge a repair fee, and have the unit out of commission for 2 weeks.

The Solution

At NSCA and Tra-Cal, we don't charge a fee to replace 9 volt batteries or \$1 fuses or to make minor adjustments. This is part of our standard calibration service, which minimizes the amount of time the units are out of commission and saves the customer time and money.



Multimeter Repair

These out-of-specification permeability meters could have endangered our troops on the front line by preventing communication with the base.



At NSCA and Tra-Cal, we don't charge a fee to replace 9 volt batteries or \$1 fuses or to make minor adjustments.



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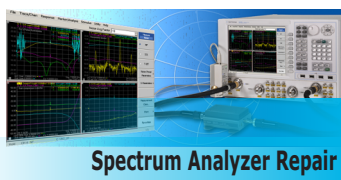


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Losing Time and Wasting Money: Calibration and Repair Services

The Challenge

NSCA and Tra-Cal has a customer that uses a low-cost calibration and repair provider that claims that they can calibrate and repair any equipment, including spectrum analyzers, network analyzers, and generators, for \$79 each. The customer shared that the provider does not take responsibility for equipment breakage issues. Instead, they told the customer the cost for the repair would be two to three times our standard cost for repairs.



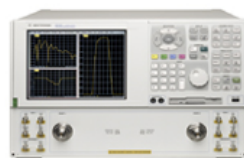
The customer received special permission to send the spectrum analyzer to us for repair and saved \$4,000!

The Solution

In one instance, the low-cost provider said they could not repair the company's spectrum analyzer for their standard \$79 rate and instead proposed a \$6,000 repair fee. The customer's engineer contacted NSCA and Tra-Cal to determine what a reasonable repair price would be. Our quote to the customer was \$2,000 for the same repair. The customer received special permission to send the spectrum analyzer to us for repair and saved \$4,000!

The Challenge

In another instance, the customer sent a network analyzer to their low-cost provider for calibration, knowing that there was a problem with the unit. The provider could not find the problem and calibrated the unit.



The Solution

The customer's engineer sent the network analyzer to us and we were able correctly diagnose the problem. However, the customer's supervisor instructed the engineer to send the network analyzer back to their low-cost provider for the \$79 repair, but this time he was to tell the provider that a problem was identified. This time the low-cost provider found the problem and quoted the customer \$3,000 for the repair. Knowing that this price was extremely high, the engineer asked NSCA and Tra-Cal to show him, his supervisor, and the low-cost provider how to repair the network analyzer. We demonstrated that the only problem was that metal filings had accumulated in the cables. The cables were cleaned out and this fixed the problem. NSCA and Tra-Cal's customer's total cost to repair the network analyzer was \$85, saving the customer over \$2,900!

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These examples demonstrate how customers lose time and waste money by using low-cost, unreliable calibration and repair providers. In contrast, NSCA and Tra-Cal provides expert services at reasonable prices.



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