

Press Release

Contact: Pamela Ballieu, Marketing Specialist
(816) 444-1111, Ext. 2505
Email: pballieu@ditmco.com

For Immediate Release

DIT-MCO Delivers First Production Fiber Optic Tester *Boeing-Mesa uses integrated electrical/fiber test system on F/A-18 Hornet*

KANSAS CITY – DIT-MCO International has delivered its new Fiber Optic Tester to the Boeing Company in Mesa, AZ. The integrated electrical/fiber optic test system will be used to ensure the integrity of both electrical and fiber optic sub-assemblies on the first production model F/A-18 Hornets.

According to Jim Stone, DIT-MCO Program Manager, aerospace manufacturers are mixing fiber and electrical lines in the same cable, primarily for non-flight-critical systems, such as weapons control, and video.

DIT-MCO's Fiber Optic Tester:

- Features an expandable fiber optic chassis with bi-directional ports to allow loss measurements in both directions.
- Uses DIT-MCO's proprietary TestExecutive® software to control and record loss measurements. Programmers and technicians use the same interface and instructions to set up test parameters for a fiber test as for an electrical test.
- Allows launch conditions for the light signal transmission to be set according to customer specifications.

DIT-MCO engineers designed the tester with bi-directional components because it simplifies the fiber testing process and saves time. "Technicians can measure attenuation, or loss, across the fiber without physically changing the cable connection," says Stone.

In addition to its functionality, the Fiber Optic Tester may be added to any DIT-MCO Series 2500 test system. "A field retrofit with the fiber tester can be accomplished easily in a day, so there is a minimal cost and effort to upgrade to fiber testing," says Stone.

Fiber Optic Tester Demonstrates DIT-MCO Expertise

The fiber tester emits a very high frequency light signal, which is transmitted over the fiber under test to a receiver. The light signal is converted into an electrical signal, and the

analyzer uses DIT-MCO's Standard Measurement Unit (SMU) to measure the loss of light power across the fiber. This power loss – called attenuation – is expressed in decibels (dBs).

“A fiber optic system is designed with a maximum ‘power budget’, and the sum of all of the losses must be less than this maximum budget,” Stone explains. “We’re generally looking for power losses of less than 1 dB per fiber. With all the variables that impact the fiber, such as dirt, improper termination of connectors, pinched fibers, you can lose a lot of power quickly.”

Testing a fiber optic assembly presents different challenges than electrical systems:

- Testing a fiber optic assembly measures the loss of light power across a fiber, while electrical testing measures resistance, capacitance, di-electric breakdown, and often other characteristics.
- The glass threads are highly susceptible to dirt, nicks, and precise centering of their microscopic cross-sections.
- Fiber optic cables are prone to breaking if they are bent – unlike their electrical counterparts, which often are draped across fixtures and pulled into tight spaces.

As with electrical testing, fiber tests are concerned with precision of a pathway from one point to another and error detection. Thus, fiber testing builds on DIT-MCO's technical expertise leadership in introducing new technology and establishing the testing standard in many companies.

DIT-MCO's participation in the emerging fiber optic test specialty spans more than 10 years. It launched its own R&D effort six years ago when Director of Engineering Ralph Taylor began working with a customer's internal task force to develop a fiber tester for aircraft. In addition, the company has been actively involved in the industry standard-setting movement within SAE (Society of Automotive Engineers).

About DIT-MCO – DIT-MCO International Corporation, a worldwide leader in high voltage cable/harness test systems, has 50 years experience in the manufacture of automatic test equipment for interconnect verification. Engineering, quality control/quality assurance, manufacturing, and test personnel around the world use DIT-MCO systems. These testers are used in the aerospace (military and commercial), telecommunications and transit/rail industries. Headquartered in Kansas City, Missouri, DIT-MCO has sales and service offices in the US and UK, plus authorized agents and distributors in 17 other countries.