

# Automated LAN Cable Testing

Keysight Technologies and  
Beta LaserMike

Achieve fast, reliable and repeatable testing  
of Cat 5e, Cat 6/6A and Cat 7 LAN cables



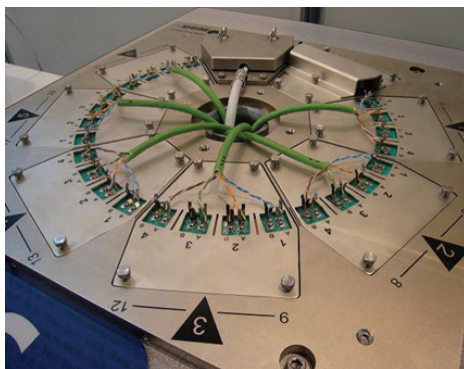
The integrity of LAN cables is critical to the overall performance and reliability of advanced data networks. The ability to test multi-twisted pair cables efficiently and repeatably is essential to ensure rapid deployment and turn-on of high-performance data networks.

The DCM 3S-XLD automatic LAN cable test system from Beta LaserMike provides fast, reliable and repeatable testing of 4-pair to 28-pair LAN cables up to 1 GHz. The system can test up to seven 4-pair unshielded (UTP) or shielded (STP) cables connected at one time, as well as a one-step, 6 around 1, 28-pair alien crosstalk testing capability. The alien crosstalk test is fully compliant with the TIA568-C.2 requirement for Cat 6A cables. The 4-pair ISTP fixture enables the testing of individually shielded twisted pairs, ISTP and S/STP (screened shielded twisted pair), at up to 1 GHz.

The Beta LaserMike DCM 3S-XLD uses a Keysight 4263B LCR meter to measure all of the low-frequency parameters and a Keysight E5061B ENA Series network analyzer for all of the high-frequency measurements. S-parameter calibration reference standards are fully integrated into the measurement system and checked automatically in seconds. The DCM 3S-XLD utilizes RF de-embedding to ensure that measurement accuracies are provided at the point of connection to the test fixtures.

- LAN cable testing for Cat 5e, Cat 6/6A, and Cat 7 cables
- Test 4-pair to 28-pair LAN cables up to 1 GHz
- 28-pair platform tests alien crosstalk in minutes
- Test seven 4-pair cables in one operation
- Uses Keysight LCR meter for LF and Keysight network analyzer for HF measurements
- Solid-state switching for time-saving, single-connection for HF and LF testing
- Simple, easy-to-use software for automated testing
- Achieve reliable, repeatable and fast LAN cable testing

## Automated LAN Cable Testing



The measurement software includes a variety of easily selected test report options including simple pass/fail summaries, extensive graphical analysis, and detailed discrete value reports.

The system allows rapid testing of LAN cables. A proprietary solid-state switching system is used to connect the measurement instruments to the cables-under-test giving increased speed and greater reliability. The use of balanced switching with only two

baluns allows very fast, automatic, full two-port S-parameter calibration. In addition, each UTP test fixture includes insulation displacement clips that save time by automatically stripping the conductor insulation.

With just one cable connection to test all the low-and high-frequency measurement parameters, eliminating the need for multiple cable hookups, typical test time for a 4-pair cable is only 90 seconds.

The Beta LaserMike DCM 3S-XLD can measure or calculate all of the critical parameters required to characterize a LAN cable including: return loss, insertion loss, near and far end crosstalk, propagation delay, Alien Crosstalk, input impedance, attenuation to crosstalk, power sum, propagation delay skew, characteristic impedance and others. All parameters are measured or calculated in accordance with ASTM D4566 and IEC 61150. An option to measure transverse conversion loss/transverse conversion transfer loss (TCL/TCTL) is available either as a standalone or system solution.

With the Beta LaserMike DCM 3S-XLD equipped with Keysight's instruments you can achieve fast, reliable and repeatable testing of multi-pair Cat 5e, Cat 6/6A and Cat 7 LAN cables.

### System Components

#### Keysight Technologies

E5061B	ENA Series network analyzer
4263B	LCR meter

#### Beta LaserMike

DCM 3S-XLD	Automatic cable test system
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To learn how this solution can address your specific needs please contact

Keysight's solutions partner,  
Beta LaserMike

[www.keysight.com/find/betalasermike](http://www.keysight.com/find/betalasermike)

**BETA LaserMike**  
DCM Cable Testing Solutions

Keysight & Solutions Partners  
Extending our solutions to meet your needs

Keysight and its Solutions Partners work together to help customers meet their unique challenges, in design, manufacturing, installation or support. To learn more about the program, our partners and solutions go to

[www.keysight.com/find/solutionspartner](http://www.keysight.com/find/solutionspartner)

Beta LaserMike is a global organization committed to the innovation, design, and service of precision measurement and control systems for a broad scope of industrial applications. The company's DCM LAN Cable Test Solutions provide advanced systems for factory and laboratory testing of LAN/Data cables ranging from bench-top solutions to fully integrated, solid-state switching systems providing complete turn-key cable test solutions

[www.betalasermike.com/dcm](http://www.betalasermike.com/dcm)

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