FIBER OPTIC PATCHCord PRODUCTION
Tools & Equipment for Inspection, Tuning, Measurement and Cleaning

- Tools & Accessories
- Preparation & Polishing Tools
- Inspection & Tuning
- Measurement Equipment
- Cleaning Tools
Fiber Optic Test & Measurement
We offer a complete range of fiber optic test and measurement equipment for determining characteristics of both connectors and fibers alike. This includes determination of connector properties via interferometry, the eccentricity between core and ferrule, the insertion and return loss as well as the light distribution (also known as encircled flux).

Properties of fibers consist of measurement of the index of refraction, the chromatic dispersion, the eccentricity of the core within the fiber and the determination of cleave angles. For fiber optic sensing applications AMS Technologies provides Brillouin scattering sensors, Raman sensors and fiber bragg grating technologies. The complete range of test equipment is completed by an assortment of optical switches for use at several positions of the set-up.

Fiber Optic Service & Maintenance
Fiber optic networks are very susceptible to environmental influences. Contamination and mechanical stress arising from improper handling of fiber cables and connectors can harm the transmission properties enormously. Therefore, operators of optical transmission in carrier, enterprise or data center environments need to pay special attention to the proper maintenance of the optical layer.

AMS Technologies partners with well-known companies providing fiber inspection tools and handheld testers to troubleshoot the fiber optic infrastructure. In cases of contamination or damage, we help our customers with dedicated fiber optic cleaning tools and accessories to maintain the highest service level possible.

Fiber Optic Cleaning Tools
The cleaning tools available from AMS Technologies clean the endface with a dedicated microfiber tissue. This material removes all contaminations and secures them. The antistatic concept prevents static load which could bring new contamination after the cleaning. Unlike traditional cleaning concepts this method does not degrade optical return loss. Products include cleaning tools for the end-faces and ferrules of fiber optic connectors, as well as for the end-faces of plugged connectors through an adapter.
Fiber Optic Tools & Consumables
We offer the full range of must have tools for field or production. High-quality fiber optic tool kits for terminations in the field as well as in the lab. We also stock a comprehensive range of crimp tools and dies for all connector types.

- Fiber Optic Strippers
- Fiber Optic Kevlar® Cutters
- Universal Crimpers
- Fiber Optic Scribes
- Heat curing epoxy
- Kimwipes

Connectors & Adapters
The easy assembling and handling of the connectors together with a low insertion loss and a high return loss makes them to the ideal choice for your applications. The connectors are available for a large range of standard fibers in different ferrule styles.

- ST
- SC SX
- SC DX
- FC LIGHT
- FC STANDARD
- MTRJ
- DIN PC
- LC
- SMA 905
- Other Connectors
Polishing Films
Long life cycle polishing film for optical connector end faces. Used for the final polishing process it ensures a surface without scratches and best optical characteristics. New material and design formulation minimizes scratches and contamination.

- Offers smooth polishing with minimum scratches
- No binder contamination on the optical fiber during polishing
- Durable polishing rate compared to existing polishing films and offers

Diamond Lapping Film
Designed for fiber optic connector epoxy removal, refining and polishing. This product is manufactured with a thick coating for high performance durability. Available in discs, sheets, and rolls in grades of 0.5, 1, 3, 5, 6, 9, and 15 micron, with or without PSA backing.

Silicon Carbide Lapping Film
Available in discs, sheets, and rolls in grades of 1, 3, 5, 9, 15, and 30 micron, with or without PSA backing.

Aluminum Oxide Lapping Film
Available in discs, sheets, and rolls in grades of 0.3, 0.5, 1, 3, 5, 9, 12, 15, 30, 40, and 60 micron, with or without PSA backing.

Silicon Dioxide Lapping Film
Used as the final step in fiber optic connector polishing. Available in discs, sheets, and rolls, with or without PSA backing.
**Curing Oven**

This oven was specifically designed with the MT connectors in mind, although it will cure just about any connector on the market today, including your custom applications. You can put them in this system and walk away. It will alarm you when they are cured. With the stable temperature and process controller and alarm, you will never over cure your connectors.

The Nanometer NTI curing oven series for epoxy curing of fiber optic connectors are available with 32, 64 position single block versions or a 64 position 2x32 port version. The NTI provides a high accurate and stable temperature over a long time range.

**Excellent thermal stability**

Accurate control of the temperature (+/- 3°C) provides consistent and repeatable performance. Large area thermal block helps to provide stability in curing all types of epoxies.

- Units available in 32, 64 and 2x32 port versions, and 24 pos. for MT
- Temperature accuracy 0.5%, stability 1%
- The built-in cable holder allows easy cable management for users

**Ferrule Protrusion Measurement Device**

Nanometer Technologies has developed two devices for batch measuring the ferrule protrusion of PC style connectors. These products will save your company time and money by quickly identifying connectors with different ferrule lengths. This is essential to mass connection polishing as multi-length ferrules can cause imperfections or connectors not to be polished at all. The PMI-1 and PMI-2 are designed for quick and easy use.

Whether you're in the field or in the laboratory, the PMI series will help reduce mistakes that can be costly down the road. This product was developed to help customers maintain a high quality consistent polish. The PMI-1 is designed to batch measure the ferrule protrusion on 2.5mm PC style connectors while the PMI-2 batch measures 1.25mm PC style connectors. These two products will save you time and money by quickly identifying connectors with different ferrule lengths.
OpTek Laser Cleave

LaserCleave™ from OpTek Systems is a compact, production-ready platform for non-contact, optical fiber cutting and is designed to maximize productivity in optical connector and component manufacture.

The base model of the laser cleave product family is designed to cut fiber and epoxy on a single fiber connector ferrule prior to conventional polishing.

The single fiber ferrule models are designed to minimize the number of polishing steps required to finish the connector by cutting close to the ferrule face, with a profile that prevents unnecessary damage to the polishing films.

For single fiber ferrules with low to moderate epoxy bead size the LaserCleave-SSP produces and end that can be polished in a single step with finishing film.

The range will also accommodate multi-fiber ferrules such as the MT, plus free fibers, ribbon and stubs.

Ferrule

Optimised for cutting through fiber and epoxy close to mechanical constraints such as ferrules with protrusion lengths of less than 40µm.

- High throughput
- Improved yields
- Reduction in polishing costs
- Fast return on investment
- Accurate and reproducible
- High first pass yields
- No chips or core cracks
- No scratches or hackle

The LaserCleave™ range of machines provides to following platforms:

- LaserCleave™-SP Single fiber connector cleaving prior to finishing
- LaserCleave™-SSP Simplex cleave for single step polish
- LaserCleave™-MT Multi-fiber connector cleaving prior to finishing
- LaserCleave™-LT Ribbon cleave for LightTurn connector
- LaserCleave™-LTS Ribbon strip and cleave for LightTurn connector
- LaserCleave™-BF Cleaving free fiber ends
- LaserCleave™-STB Cleaving ferrule mounted fiber stubs
ASR-24 Automated Fiber Stub Removal

ASR is an automatic stub removal process exclusively from Nanometer Technologies, 24 at a time in under 45 seconds.

Until now, all fiber stub removal has been done by hand, each connector had to have the fiber stub ground down one by one. Now you can remove the fiber stub from up to 24 connectors in 45 seconds or less, this is a serious decrease in time and labor for this process. Not only will it remove the fiber stubs and epoxy, it will help streamline and shorten your polishing processes on your polisher. Any polisher. You can be sure all the connectors are the same length when put into your polisher for polishing.

This system takes less than 45 seconds to remove 24 connectors fiber stubs. With MT’s and MTP’s some of these connectors can have up to 72 fibers in one connector. It removes the fibers on 8 of these connectors seamlessly while controlling the length of each connector. Very important when polishing multiple at a time in a polisher. This system alone can save you time and money in your polishing process. At the same time you can remove the large epoxy beads that are inherent in an MT connector.

- Remove 24 fiber stubs at time
- Utilizes touchscreen technology for easy use
- Programmable RPM Ramp Generator for controlling motor speed
- Available for 2.5mm and 1.25mm ferrules
- Takes less than 45 seconds to remove 24 fiber stubs (minus load time)
Polishing Machine ACP24

With the ACP24 you can now automate polishing times, pressure, & motor speeds for each step. Complete polishing procedures are stored inside of the ACP24 to save time and ensure repeatability. Create, save, and recall custom polishing procedures for custom jobs. Polishing Procedures can be saved to a computer for easy back up or for transfering to another ACP24.

The MCP/ACP24 line of polishers are the only units available that polish in a figure 8 motion as well as being able to polish 4-96 connectors at a time. Not only does the ACP have programmable and stored processes that make polishing a breeze, it has ASR built into this system.

Some of the fixtures for this system, LC duplex, can hold 48 connectors. Our NEW multimode MT fixture holds 24 MT ferrules. It will remove these fiber stubs in less than 45 seconds, in the same fixture you are polishing in. This feature alone has proven to shorten your termination times 3x over. The ACP24 is designed to meet or exceed Telcordia and IEC specs in Radius, Fiber height, Apex offset and Back reflection.

The ACP24 utilizes NANOMETERs’ patented figure 8 polishing pattern that’s found in all NANOMETERs mass connector polisher (MCP) line of polishers and is compatible with all MCP24 polishing fixtures.

- Create, save, and recall custom polishing procedures
- Polishing Procedures can be saved to a computer
- Touch screen interface for easy use, water & chemical proof

ASR
Automated Fiber Stub Removal

Automate fiber stub removal with the ASR system, available only from Nanometer Technologies. This is the only automated fiber stub removal on the market today. The ASR is integrated with the ACP 24 and includes built-in pre-programmed processes.

- Save time and money by removing multiple fiber stubs at once
- No more removing stubs one at a time by hand
- Works with existing Nanometer Tech Fixture Plates
- Patent Pending
**Centroc GP & Centroc 1000**

Excentricity is the core parameter in order to achieve low loss between optical connectors. Excentricity can be measured on the ferrule directly or on the fiber in the ferrule. Proper measurement of eccentricity allows connectors to be matched in order to align eccentricities on both and thus minimize the connection loss. Various measurement systems for achieving optimal quality control are available from AMS Technologies.

The Centroc1000 is an easy to use, automated instrument designed for quality control of fiber optic connector ferrules. It measures fully automated the hole eccentricity and outer cylindricity of the ferrule. The system can be used for quality control by ferrule manufacturers or for incoming inspection by cable assembly houses. Typical usages of Centroc1000 are pass/fail inspection, presorting the quality of the ferrules and preliminary measurement for key position for making tuned connectors.

- Fast fully automated concentricity/ eccentricity measurement
- The tuning function rotates the ferrule to a preliminary key position
- Mounts are available for most standard ferrules
- Ideal to presorting ferrules or for the quality control
- Easy reporting and statistics calculation from the database

The Centroc GP™ is a special designed auto-focus microscope with a camera and a precision adapter for ~ 2.50 mm or 1.25 mm ferrules to measure geometrical parameters of fiber optic connectors. The unit is primarily designed to measure assembled connectors on cables and laser pigtails. The optional feature for the passive PM alignment offers a precise solution for different types of PM fibers and connectors.

- Fast concentricity/eccentricity measurement with pass/fail criteria for tuning
- Qualification of reference grade and tuning reference connectors
- Easy reporting and statistics calculation from the database
- Includes a ferrule roundness error measurement
- Passive keying panda fiber/connectors (optional)

Data Included in Test Results:
- Product Identification, Operator and Unit Identification
- Ferrule Quality Classification
- Statistics of the Measurement Results
FVA Scopes
The new FVA digital fiber microscope is a unique device that fully automates the inspection process, significantly reducing inspection time and simplifying workflow. The FVA microscope is used to inspect the polished surface of fiber optic connectors, and its high-resolution results are ideally suited for post-polish inspection of high quality end faces. It also detects scratches that technicians may miss, delivering the level of sensitivity long sought in the industry. The FVA is powered by a 12V adapter (included) and a PC via USB 2.0.

FiberChekPRO™ is an advanced application that determines the acceptability of optical fiber end faces through automated inspection and analysis. It identifies and characterizes defects and contamination and determines their location relative to the fiber core. It then provides a Pass or Fail result according to a pre-configured failure criteria setting.

- Fully-automated inspection system:
  - Quickly and consistently focuses and centers fiber end face
  - Locates and counts defects and scratches
  - Evaluates against Pass/Fail criteria
  - Adjustable, scalable automation settings

FVD Scopes
The FVD-series digital fiber microscope is used to inspect the polished surface or cleaved ends of fiber optic connectors. This high-resolution bench-top inspection microscope is ideally suited for post-polish inspection of high-quality end faces and can repeatedly detect scratches that may be missed by human technicians, delivering the level of sensitivity long sought in the industry. FiberChekPRO™ determines the acceptability of optical fiber end faces through automated inspection and analysis.

- Determines acceptability of fiber end faces by utilizing an advanced automated inspection and analysis software
- Ensures consistent results by removing human subjectivity from fiber inspection and grading
- Identifies and characterizes each defect and contamination particle, and determines their location relative to the fiber core
- Archives results and images as HTML or PDF formats and generates integrated reports
P5000i Fiber Microscope

The P5000i makes it fast and easy to certify that every connection in your network is clear and optimized. This intelligent fiber microscope removes the guesswork from fiber inspection and provides reliable and objective PASS/FAIL analysis of the fibers that connect customers to your network and to the best user experience possible.

The P5000i fiber microscope also enables PASS/FAIL analysis using many JDSU test solutions that users already rely on for essential network testing. Easily connect to a T-BERD®/MTS 2000/4000/6000, HST-3000 or laptop/PC via USB without the need for any additional adapters.

- Inspect and certify fiber end face quality at the push of a button, making your technicians instant fiber experts
- Use an intelligent fiber microscope to certify fiber performance and deliver the results to an existing JDSU test platforms

Applications
- Ensure physical layer performance by guaranteeing fiber connectivity meets industry standards
- Instantly capture, analyze, and grade fiber end face images and obtain a PASS/FAIL result according to pre-configured criteria setting
- Standardize fiber inspection, analysis, and grading process throughout fiber network

Key Features
- Repeatable Pass/Fail analysis eliminates subjective guesswork from the measurement process
- User-selectable acceptance profiles allow certification to any acceptance criteria
- Includes FiberChekPRO™ software for analysis and reporting with PC/laptop
- Automatic Image Centering ensures the fiber in always on the center of the screen
- Dual-Magnification switching allows easy toggling between low & high magnifications in both live and analysis views

FiberChekPRO™ software for analysis and reporting

FiberCheckPro is an advanced software application for evaluation. It identifies and characterises damage and contamination, recording this with reference to size and location relative to the fiber core. The software determines a “Pass/ Fail” result in accordance with the IEC-61300-3-35 standard. FiberCheckPro is preprogrammed with IEC standards for single mode and multimode connectors.
AFIS

The Nanometer AFIS is an automated fiber optic connector inspection system, and allows to qualify the polished ferrules without to remove it from the polishing fixture. The connector image is directly imported to the AFIS Software which is automatically detecting epoxy rings, pits and scratches and gives pass / fail results to the industry standards. Custom analyses criteria could be add anytime.

- Inspects connectors without to removing it from the polishing fixture
- Accommodates Seiko Giken, SI, Domaille and Nanometer Technologies fixtures
- The AFIS could be adjusted to other fixtures as well
- 10-12 sec. inspection time per connector, 24 connectors in around 5 minutes
- Inspects up to 60 connectors at one time
- Results including image are stored to a database automatically

AFIS jr+

The AFIS systems are Machine Vision Fiber-Optic connector analysis Systems that will detect fiber defects such as scratches, pits and epoxy rings automatically. The AFIS JR Plus is our Multi Fiber Unit that is designed to simplify the testing of multi fiber connectors. It will "Automatically"test 4-12-24-72 fiber MT ferrules and assembled MTP connectors with only one step.

This system will generate reports that show details and images of individual inspections as well as a complete customer summary. Our statistical data can be exported to provide compatibility with other applications as well. Not only does this system greatly decrease the inspection time but it will supply you with the statistical information needed to control your process and improve yields and production quality, while eliminating human subjectivity.

- Inspects all connector types like FC, SC, ST, LC, MT-RJ and all MT-types up to 72 fibers
- Two 72 fiber MT-Connectors could be checked at one time without human intervention
- The provided inspection software detects defects which are smaller than one micron
- Detailed quality report could be given to each connector
- Results including image are stored to a database automatically
AIM-2020: Fully automated interferometric system for analyzing multifiber connectors

The AIM-2020 has been developed to meet the increasing demand on endface scanning for MT, MPO and MPX connectors. With its state of the art optics and vision components it allows for unprecedented accuracy in measuring critical parameters like fiber height, core dip, fiber radius and endface angle. The patented True Angle™ connector mounts with integral aperture plate allow easy insertion at highest repeatability. Added features like automatic angle change and automatic NIST calibration in combination with fast scanning speed allow for high throughput with minimum operator intervention as demanded in today’s volume production.

- High resolution, high speed camera
- Custom high resolution Michelson interferometric objective
- NIST traceable standards for magnification, fiber height, and polish angle
- Field Of View ‐ 3200 micron
- Resolution over FOV ‐ 1.4 microns
- Analyze up to 72 fibers in one scan
- Standard scan in under 10 seconds
- Measure core dip accurately

CC6000: Automated Interferometer

The Norland Connect-Chek® CC6000 automatically and precisely measures radius of curvature, apex offset of polish, and fiber undercut or protrusion on any PC or APC single fiber connector.

The breakthrough technology used in the CC6000 is unlike any other system on the market today and now allows interferometric connector analysis to be affordable to all users. This compact interferometer attaches to a PC or laptop through a standard USB port and uses the exclusive CC6000 software to control the interferometer and measure the connectors. No custom boards, or complicated configurations are required. Simply install the software, plug in the CC6000 and run. Our user-friendly software allows anyone with minimal experience to accurately measure the 3D end face geometry of a fiber optic connector. The CC6000 is designed for both the factory or the field to provide the crucial quality information needed to assure the long-term performance of your fiber optic connectors.

The Norland Connect-Chek® CC6000 is the next generation of interferometric technology for fiber optic testing. This new system uses proprietary software that enables it to evaluate the key parameters without the need for costly phase-shifting devices. The CC6000 uses our unique Tilted Phase Analysis (TPA) in which the connector is held at a slight tilted angle to produce circular fringes across the fiber. This provides all the information needed to measure the connector. After a simple calibration to measure the tilt, the advanced algorithms enable our CC6000 to calculate the spherical radius of curvature, spherical fiber height, and apex offset for the connector. An added advantage of TPA is that any small angle is suitable, so no mechanical adjustments are ever required.
**MAP-200 + mORL**

The mORL-A1 is a powerful, compact Insertion Loss and Return Loss meter for use with the JDSU advanced MAP-200 platform. One, single-slot module contains up to 4 sources (1310, 1490, 1550, 1625 nm), integrated power meter and optional 2x2 optical switch for automated bidirectional testing.

Unlike the historically popular JDSU RX3000 meter, the mORL-A1 return loss measurement is based on time domain technology and is often referred to as “mandrel-free.” Mandrel-free technology dramatically reduces test time by relieving the users from making slow, difficult, manual terminations during both the set-up and execution of return loss measurements.

The mORL-A1 has been designed to exceed the measurement performance provided by our industry-standard RX3000 with 80 dB of return loss dynamic range, insertion loss display resolution of 0.001 dB, and measurement times as low as 6 s for two wavelengths. In addition, the mandrel-free technology also enables measuring the patch cord length.

The PCT (Passive Component and Connector Test) Application software provides user interfaces for both R&D and manufacturing and combines the mORL-A1 with all the necessary peripherals to speed and simplify workflow.

- Mandrel-free return loss measurements on fiber-optic patchcords as short as 70 cm
- Fast, compact solution with 1310, 1490, 1550 and 1625 nm laser and optional bidirectional option in a single slot
- Measures ORL on terminated bulkheads
- MM IL, IL & RL Modules with integrated EF conditions are available

**Optical Long-term Measurement**

Extend your JDSU MAP-200 solution with OLM Software (Optical Long-term Measurement) to get an environmental testing solution for fiber optic patch chords, connectors and components.

Typically the devices run through several tests. One of these is long-term monitoring in a climatic chamber. During this testing the components have to pass through several temperature and humidity cycles over a defined period of time. Changes in Insertion Loss or Return loss along with climatic conditions have to be recorded. This can now be done with the new software application OLM developed by SSS-IT GmbH in cooperation with AMS Technologies AG.

The combination of OLM and the industry proven mORL / PCT module from JDSU for IL & ORL testing enables environmental testing for your MAP-200 solution.

The JDSU MAP-200 (Modular Application Platform) with the mORL module is used in productions all over the world for Insertion Loss and Optical Return Loss measurements. When controlled with PCT (Passive Component and Connector Test) application it forms a turn key solution for high volume production, including database management, report and label generation. The powerful MAP-200 product family offers a high degree of flexibility by combining multimode or singlemode modules. Different switch modules will upgrade the solution to batch processing station, where the number of channels can go up to 50. and higher with external switch.

Now JDSU MAP-200 can be upgraded to a full environmental test system by using the optional OLM software. The OLM application is running on a separate PC, it can remote control the MAP-200 device and monitor the optical and environmental measurements from everywhere in your LAN or via direct connection.
Clean Blast
The JDSU Bench-top CleanBlast systems include a base unit and a handset connected to a 5-ft umbilical for reaching various application areas. Precision cleaning tips are available for both male (patch cord) and female (bulkhead) connectors for various connector types, including SC, LC, FC, ST, E2000, MPO, MPX, MT, and SMA. All models include an input port for a separate probe microscope for fiber inspection capabilities, and a video output for connecting to an external monitor or to a mounted liquid crystal display (LCD). Digital systems feature an additional universal serial bus (USB) output for viewing the fiber image on a PC/laptop.

- Provides rapid, controlled, and repeatable cleaning and removal of contamination from fiber end faces
- Uses a precise non-contact air-solvent-air mixture/sequence to blast and remove contamination particles
- Cleans faster, more effectively, and more economically per clean than conventional methods
- Offers a comprehensive selection of precision cleaning tips and adapters

Reel + Card Cleaner
The second generation of reel cleaner allows perfect cleaning of fiber optic connectors. The special designed tissue takes away any dirt on the endface of a fiber optic connector without spreading it on the surface.

Card cleaners use a card with 12 cleaning positions. Each position can be reused. Due to its compact design the card cleaners fits in every pocket and makes it a tool that should be with every fiber optic workplace in the lab, in production and in the field 1.25 and 2.5 mm

- Efficient and easy to use
- Delivers consistently high quality cleaning performance
- Lightweight and safe to use
- Anti-static resin is used
- Low running costs
- Perfect cleaning

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WHAT CAN WE DO FOR YOU?

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