NSI-MI Technologies

NSI MI

AMETEK®

- Satellite
- Automotive
- Wireless
- Radome
- Radar Cross Section
- General Antenna
- RF Scene Generators™
- Precision Positioning

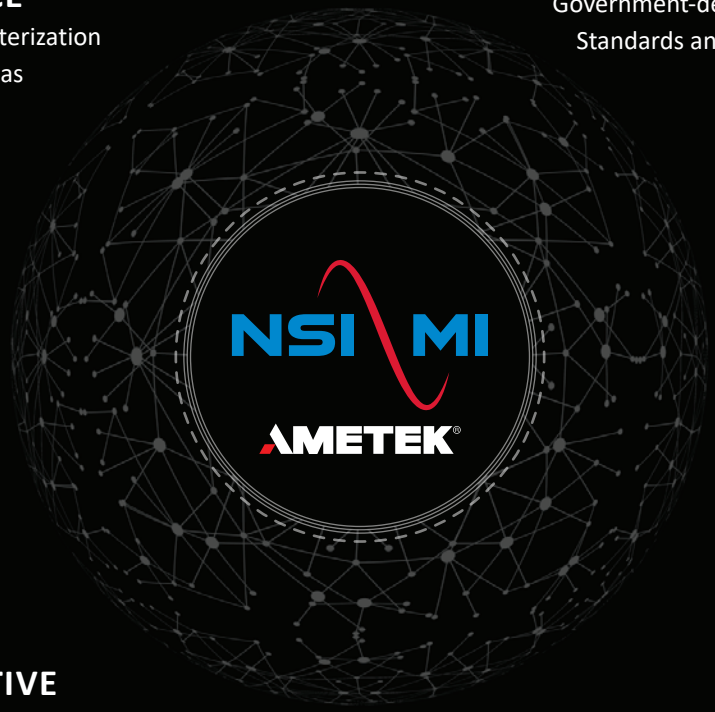
When RF testing matters, Test with Confidence™

AEROSPACE

Radome Characterization
In Flight Antennas
Weather Radar

RESEARCH & ACADEMIA

Government-developed Programs
Standards and Compliance Labs
R & D Facilities
Radio Astronomy



SATELLITE

Payload Testing
Ground Station Products
Integrated System Testing
Link Performance

DEFENSE

Radar Characterization
Radar Cross Section (RCS)
Target Scene Generation
Active Array Performance

AUTOMOTIVE

Integrated Antenna Characterization
Radio, Wireless, Satellite & GPS Link Testing
Full-scale Vehicle Testing

WIRELESS

Base Station Antenna Characterization
User Equipment Testing
Free Space Characterization
5G mmWave Applications

WORLDWIDE FOOTPRINT

Offices throughout United States and Europe
Global coverage of fully trained solutions partners
See our full listing of partners at www.nsi-mi.com

TEST SERVICES

6 Fully Equipped In-House Test Facilities
Compact Range, Near-Field & Far-Field Configurations
Antenna and Radome Characterization

CUSTOMER SERVICE

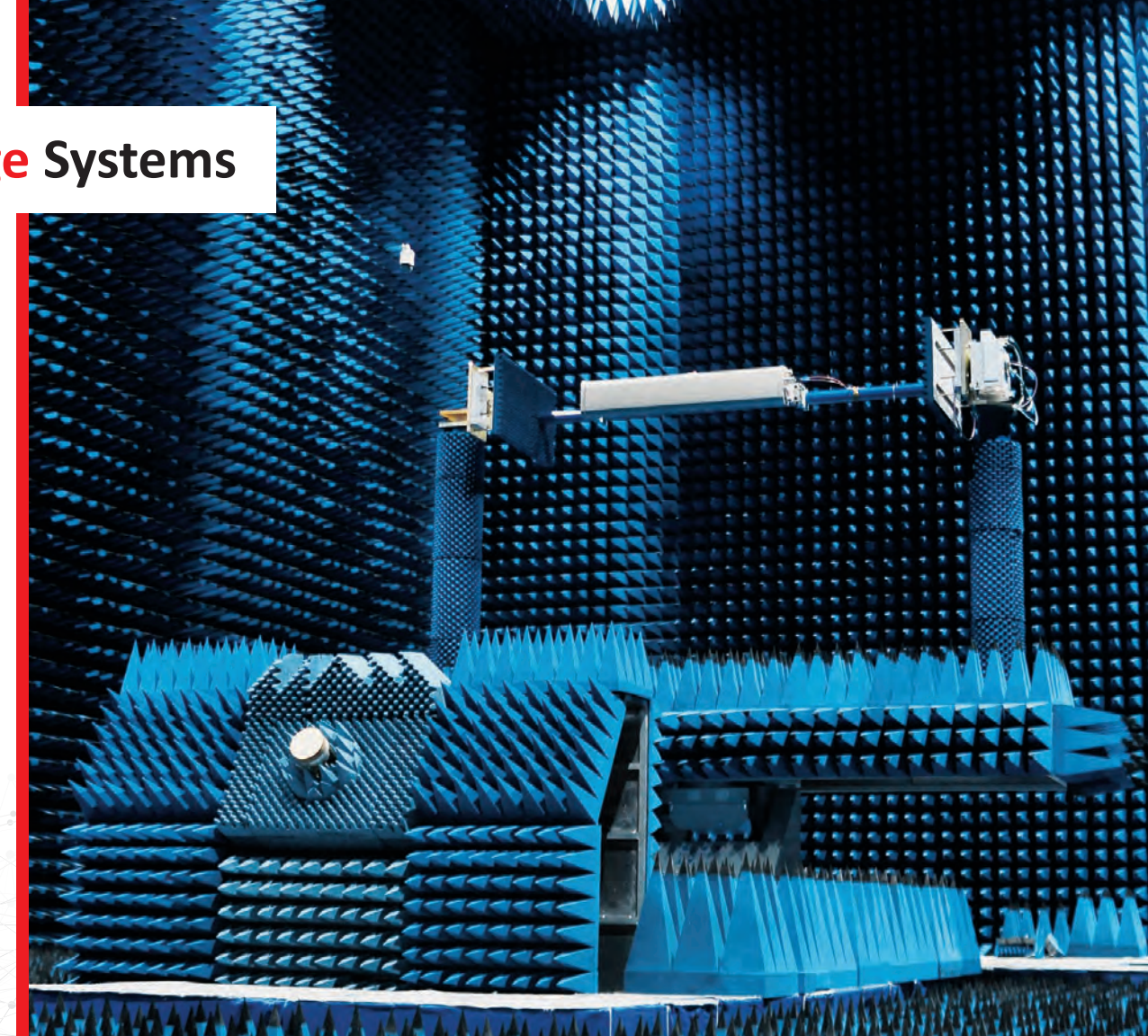
End-to-end global support
Present in 6 continents and 21 time zones
Supporting more than 1500 systems and 300 customers

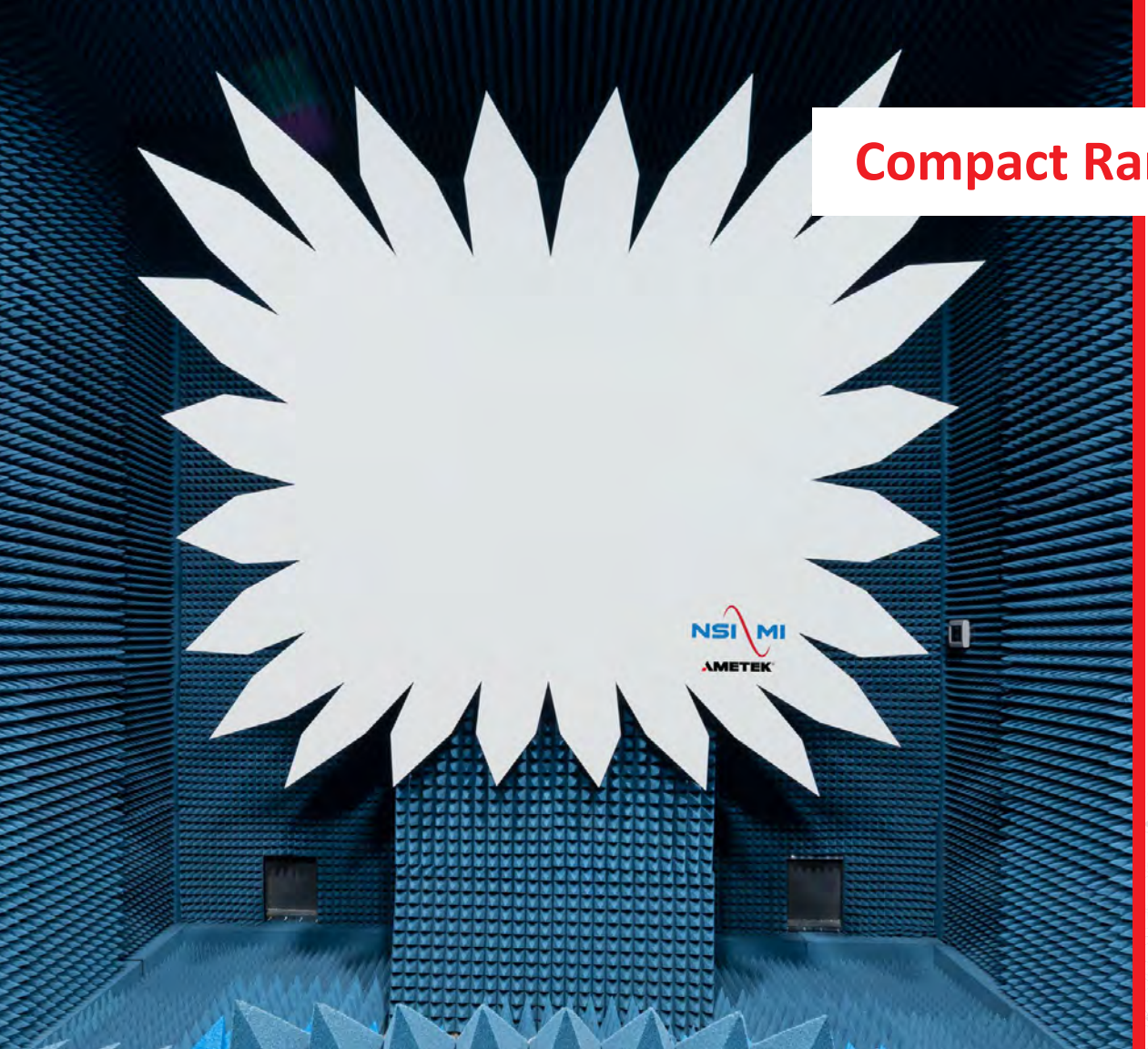
CERTIFICATIONS/ACCREDITATIONS

ISO 9001:2015 Accredited
A2LA Accredited
DDTC Registered
JOSCAR Registered

Compact Range Systems

Compact Range Systems are ideal for testing a wide variety of RF equipment and antennas measuring amplitude and phase patterns from L-band to mmWave bands. Compact Range Systems offer users the advantages of an indoor far-field configuration, with the convenience of environmental and security control. The ability to control temperature, eliminate wind deflections, avoid the elements as well as reduce maintenance costs are all advantages of this product.





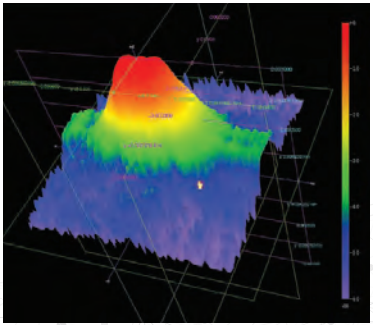
Compact Range Reflectors

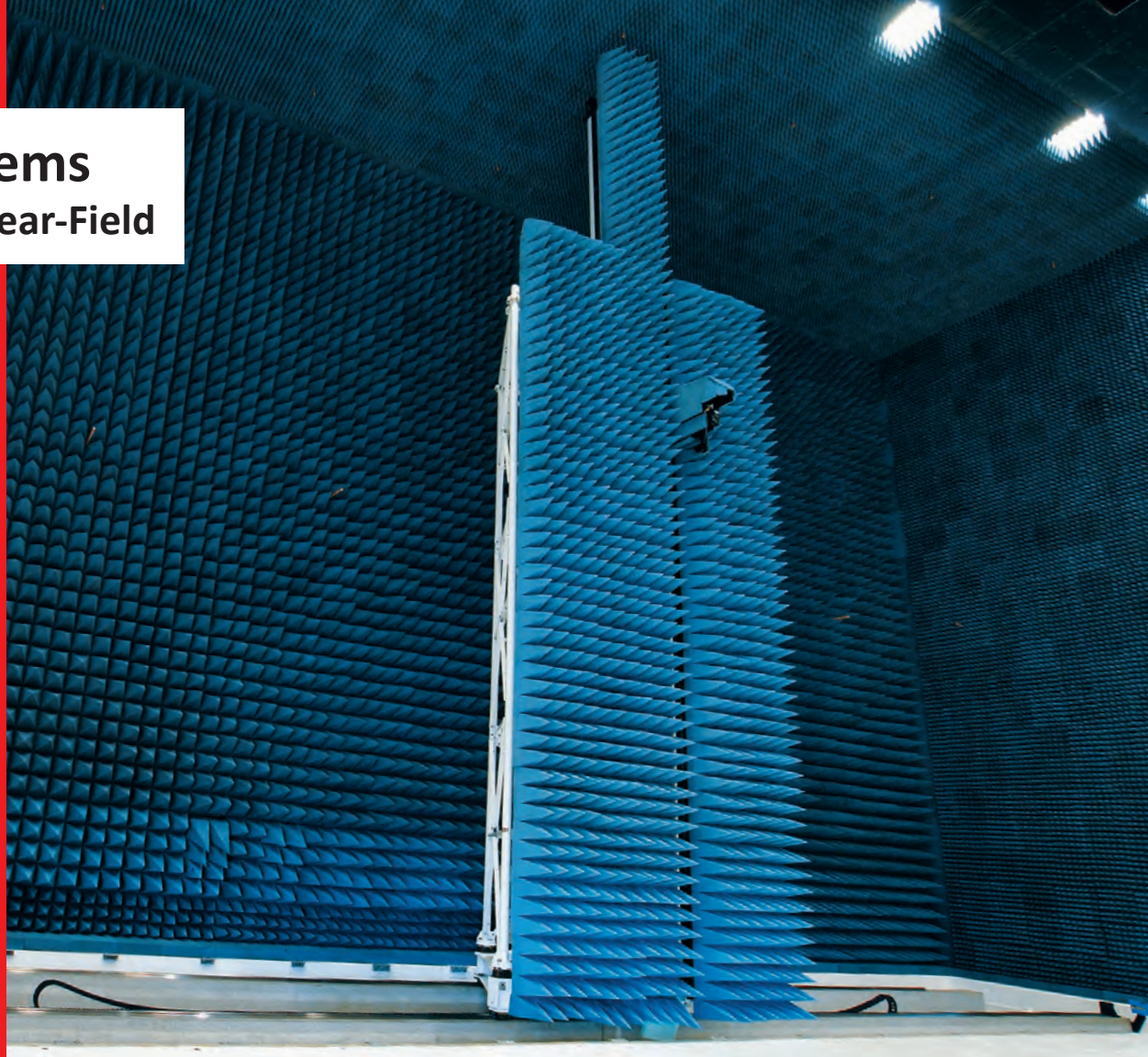
NSI-MI Technologies designs and manufactures more Compact Range Reflector-Based Systems than all other providers combined. Whether rolled-edge or serrated-edge, each compact range reflector is made to exacting standards for optimum illumination and uniformity. The reflector's main body is the structural back bone of the composite assembly and provides the structural integrity to reduce weight. All reflectors have a life expectancy exceeding 20 years.

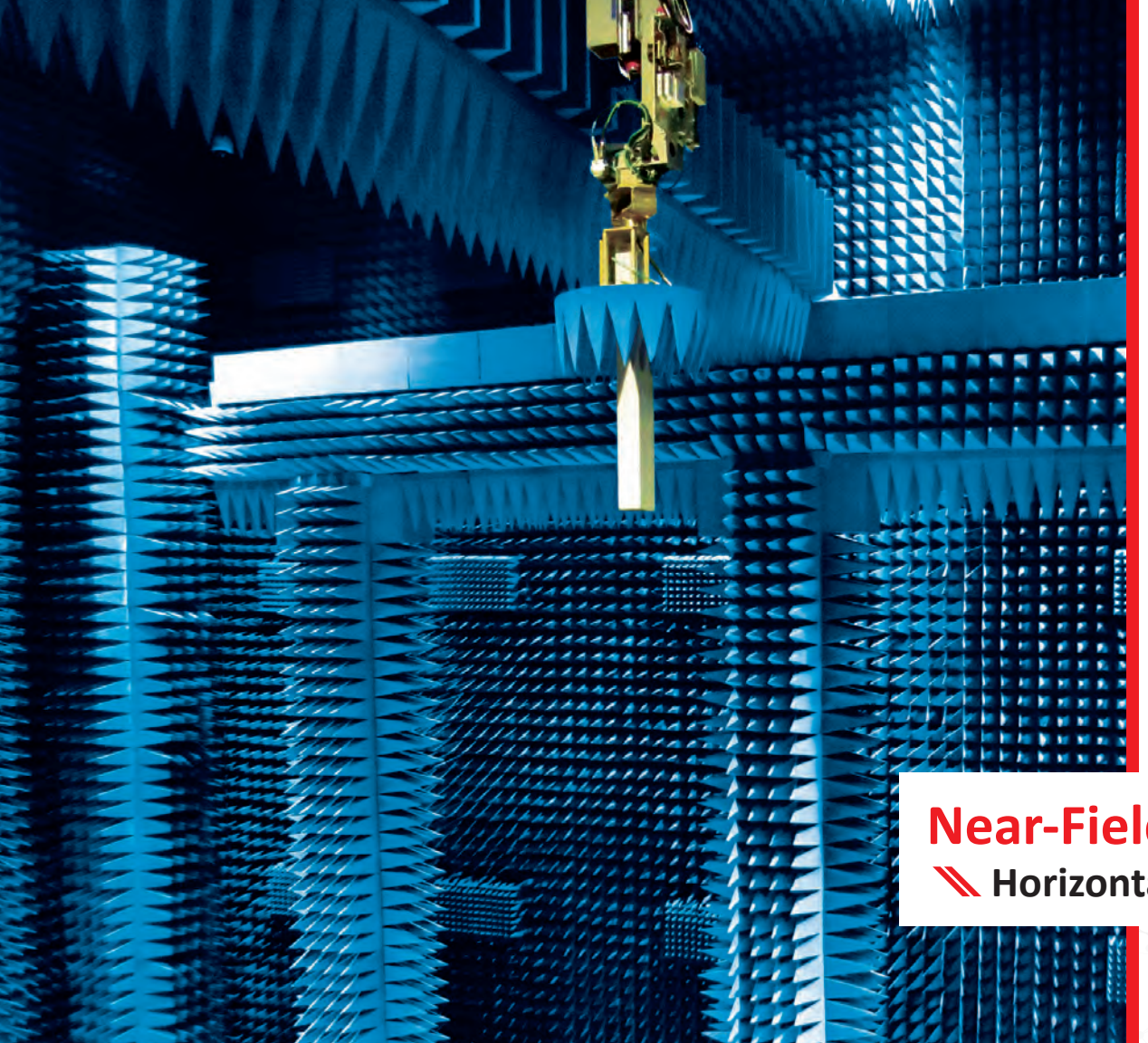
Near-Field Systems

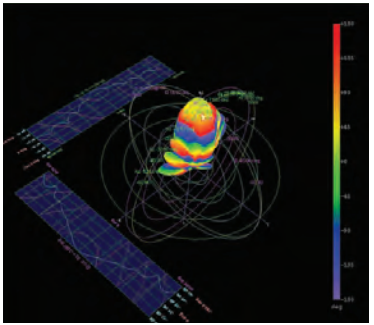
Vertical Planar Near-Field

NSI-MI's Vertical Planar Near-Field Systems range in size from portable XY positioners, ideal for measuring high frequencies with small aperture antennas, to very large precision XY positioners, used for testing satellite and radar antennas.









Horizontal Planar Near-Field Systems incorporate a next generation precision closed-loop servo drive system and a highly engineered structure. These systems are ideal for large aperture antennas, larger arrays and reflector antennas that require a zenith orientation for testing.

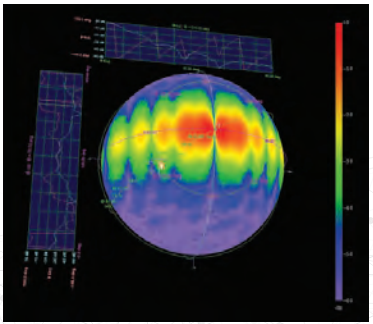
Near-Field Systems

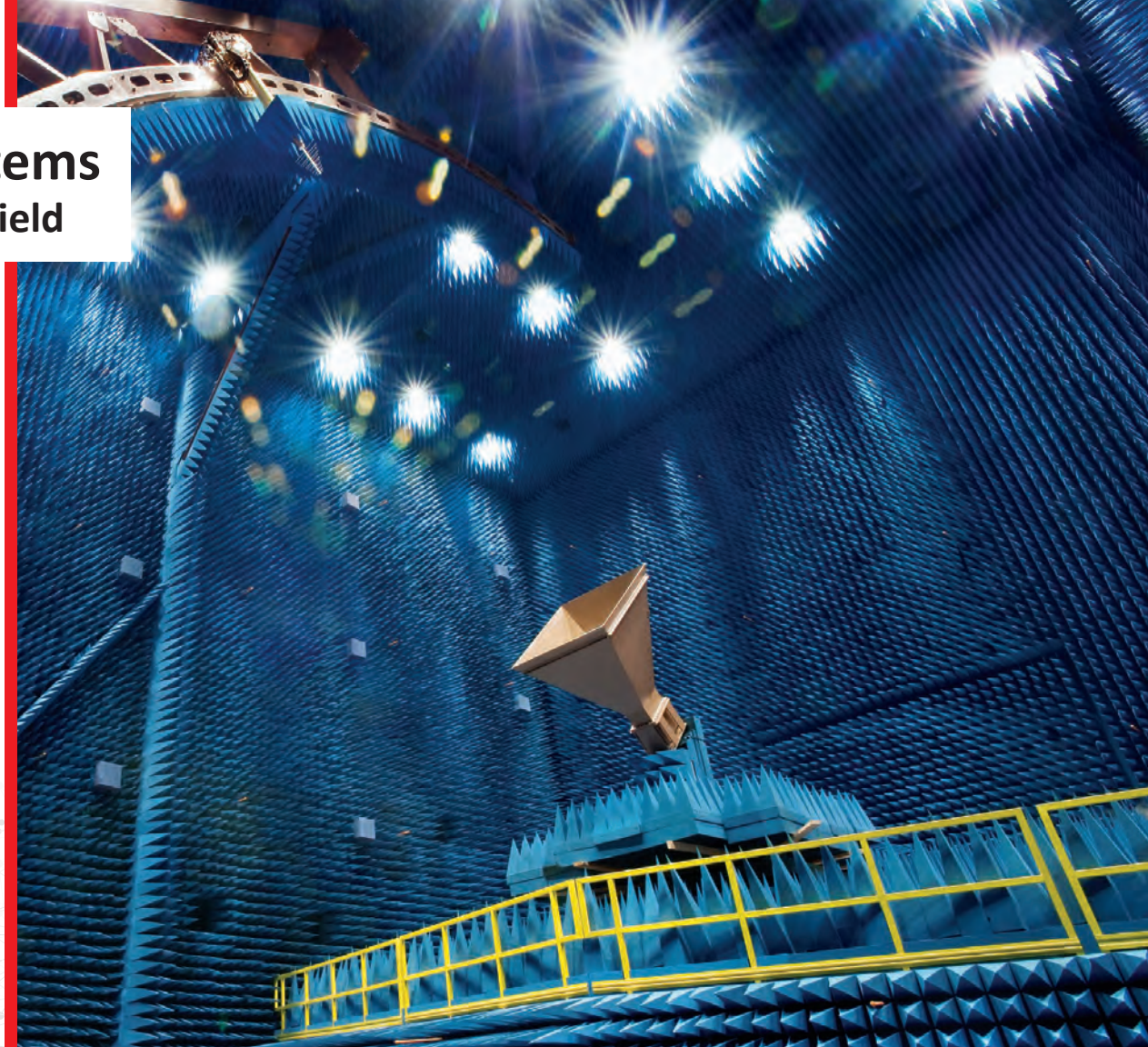
Horizontal Planar Near-Field

Near-Field Systems

Spherical Near-Field

The spherical configuration provides the most comprehensive set of measurement results for characterizing an antenna. NSI-MI offers a large variety of Spherical Near-Field Antenna Measurement Systems of various sizes and configurations: Roll over Azimuth Systems, Swing Arm over Azimuth Systems, Stationary AUT Systems, and Arch over Azimuth.





Near-Field Systems

Robotic Antenna Measurement Systems

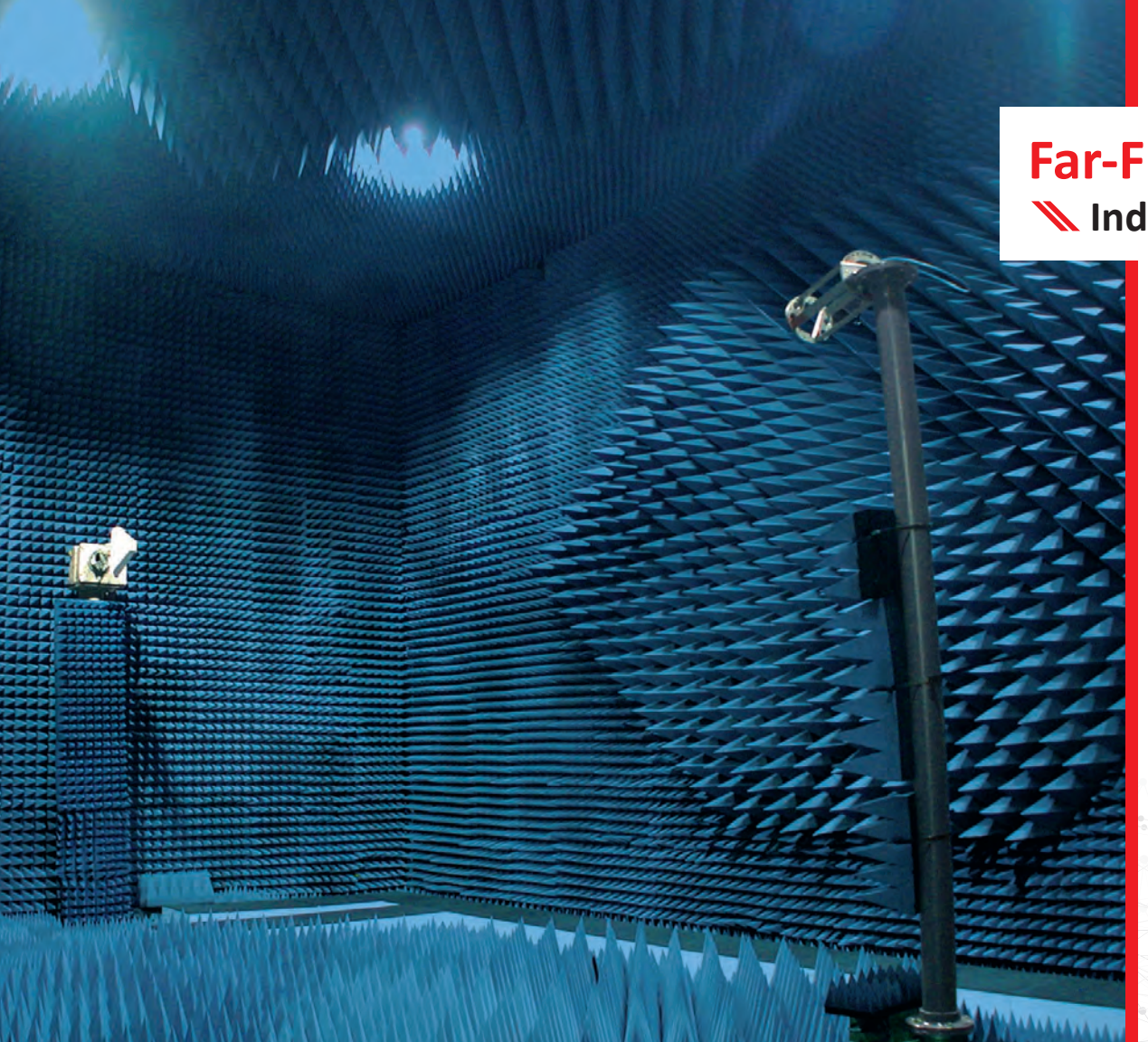
Capable of measuring in planar, cylindrical and spherical near-field geometries, the Robotic Antenna Measurement System is ideal for characterizing high, medium and low gain antennas.

The system uses a 6-axis precision robotic arm that acts as Y-axis for PNF & CNF and Theta-axis for SNF acquisitions. It also incorporates a small, 500 mm (19.7 in.) diameter, rotary positioner that is used as a Phi-axis for CNF and SNF acquisitions. This positioner can support AUT loads of up to 4,500 kg (10,000 lb). Lastly, the Robotic Antenna Measurement System also uses a precision linear translation positioner that is used as an X-axis for PNF acquisition and robot repositioning.

Far-Field Systems

Outdoor Far-Field

In an Outdoor Far-Field Range configuration, the test antenna is installed on the test positioner located on a tower, roof or platform outside the instrumentation control room. The receiver front end (local oscillator) is usually located at the base of the test positioner, with the mixer connected directly to the test antenna port. This configuration requires only a single RF path through the positioner, greatly simplifying system design. Use of the remote front end also minimizes local oscillator power loss to the mixer and maximum system sensitivity.



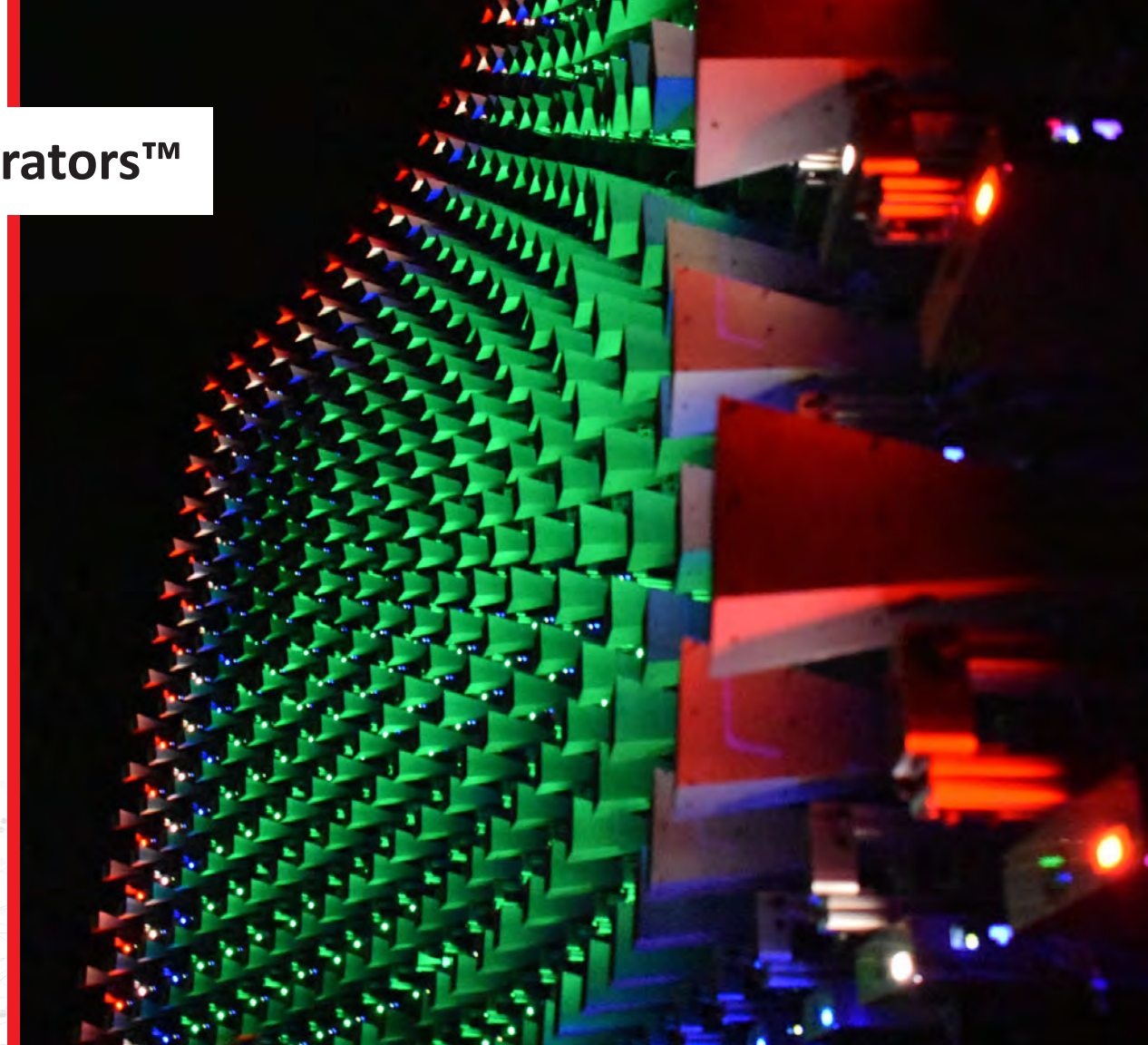
Far-Field Systems

Indoor Far-Field

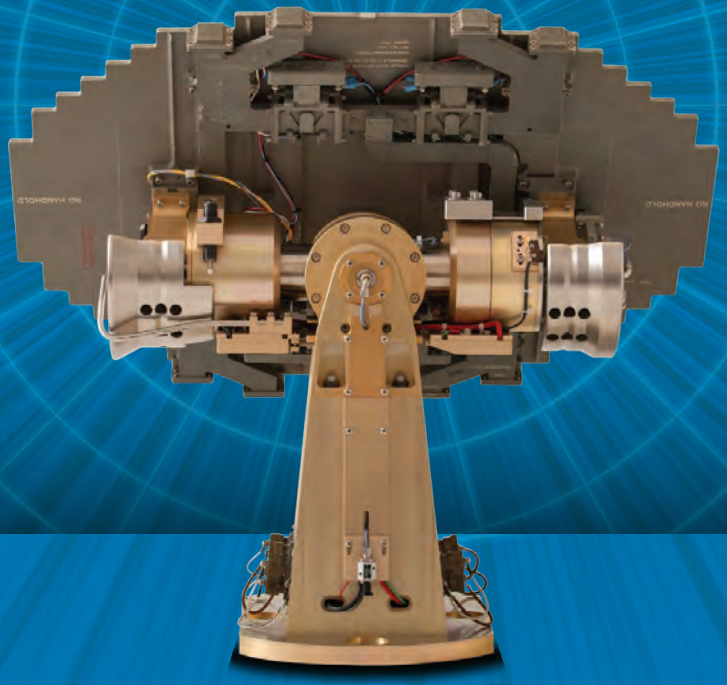
An Indoor Far-Field Anechoic Chamber has the same basic design criteria as an outdoor range except that the surfaces of the room are covered with RF absorbing material. Testing indoors offers many advantages over conventional outdoor ranges including improved security, avoiding unwanted surveillance and improved productivity due to less time lost because of weather and other environmentally related factors.

RF Scene Generators™

NSI-MI Technologies designs and manufactures specialized motion simulation systems to precisely simulate the movement of physical entities for use in virtual reality trainers and testers and for physical testing needs. We specialize in the areas of aerospace and defense; enabling simulation for missiles, decoys and more.



Pointing and Tracking Systems



Pointing and Tracking Systems are designed to control the line of sight of an ever increasing array of sensors, weapons and other payloads of all sizes used in scientific, military and commercial endeavors.

NSI-MI has developed state-of-the-art technologies for the exact alignment of the lines of sights utilizing a combination of mechanical products, optics control electronics and software algorithms.

Standard Systems

If accelerated delivery schedules or budget constraints are driving purchasing decisions for an RF measurement testing solution, NSI-MI offers economical, pre-engineered systems suitable for most applications and testing needs. Our turnkey solutions are designed for straightforward assembly, in either an anechoic chamber or open facility, depending on the type of system and test application.

Planar Near-Field Measurement Systems

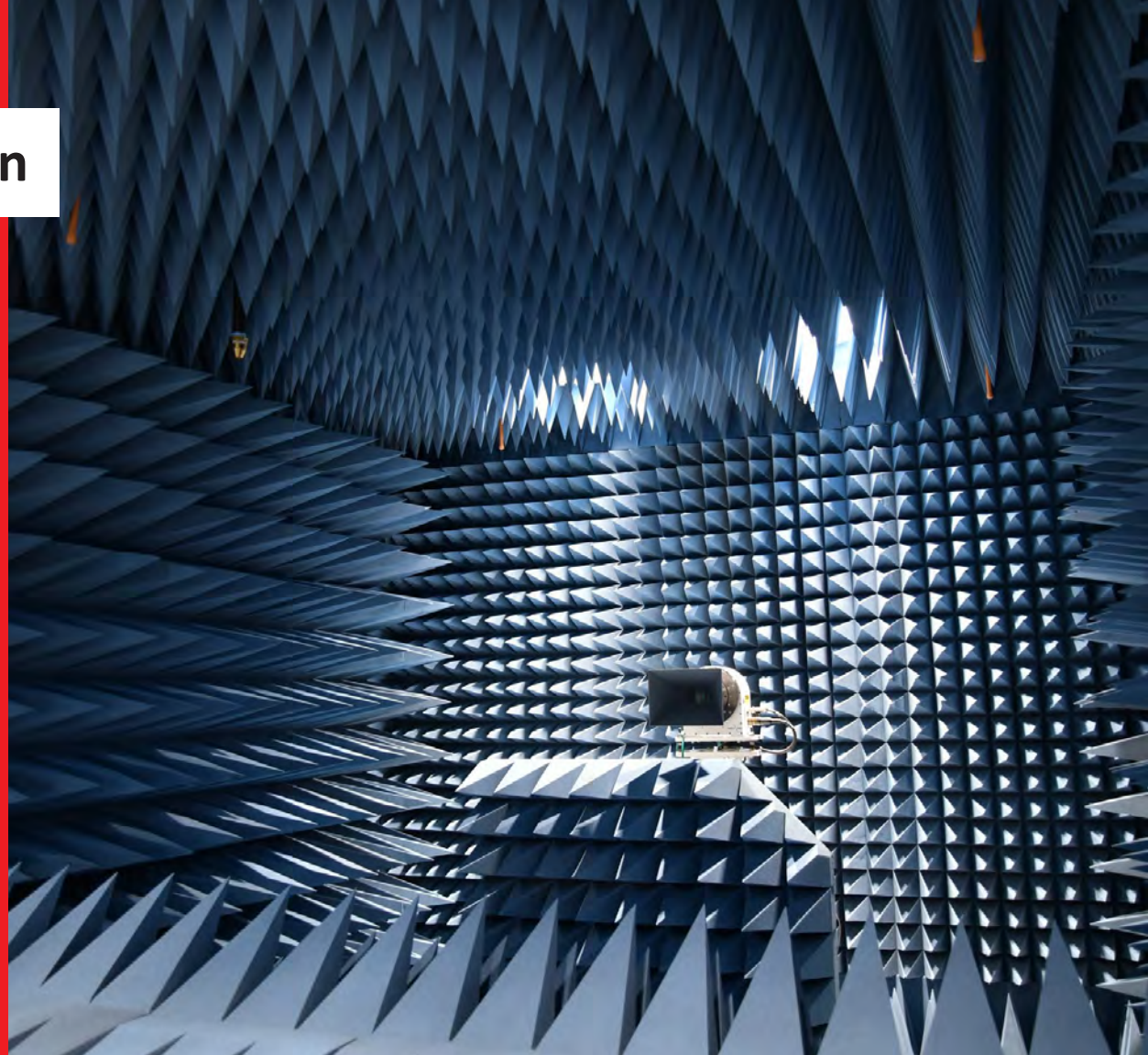
Spherical Near-Field Measurement Systems

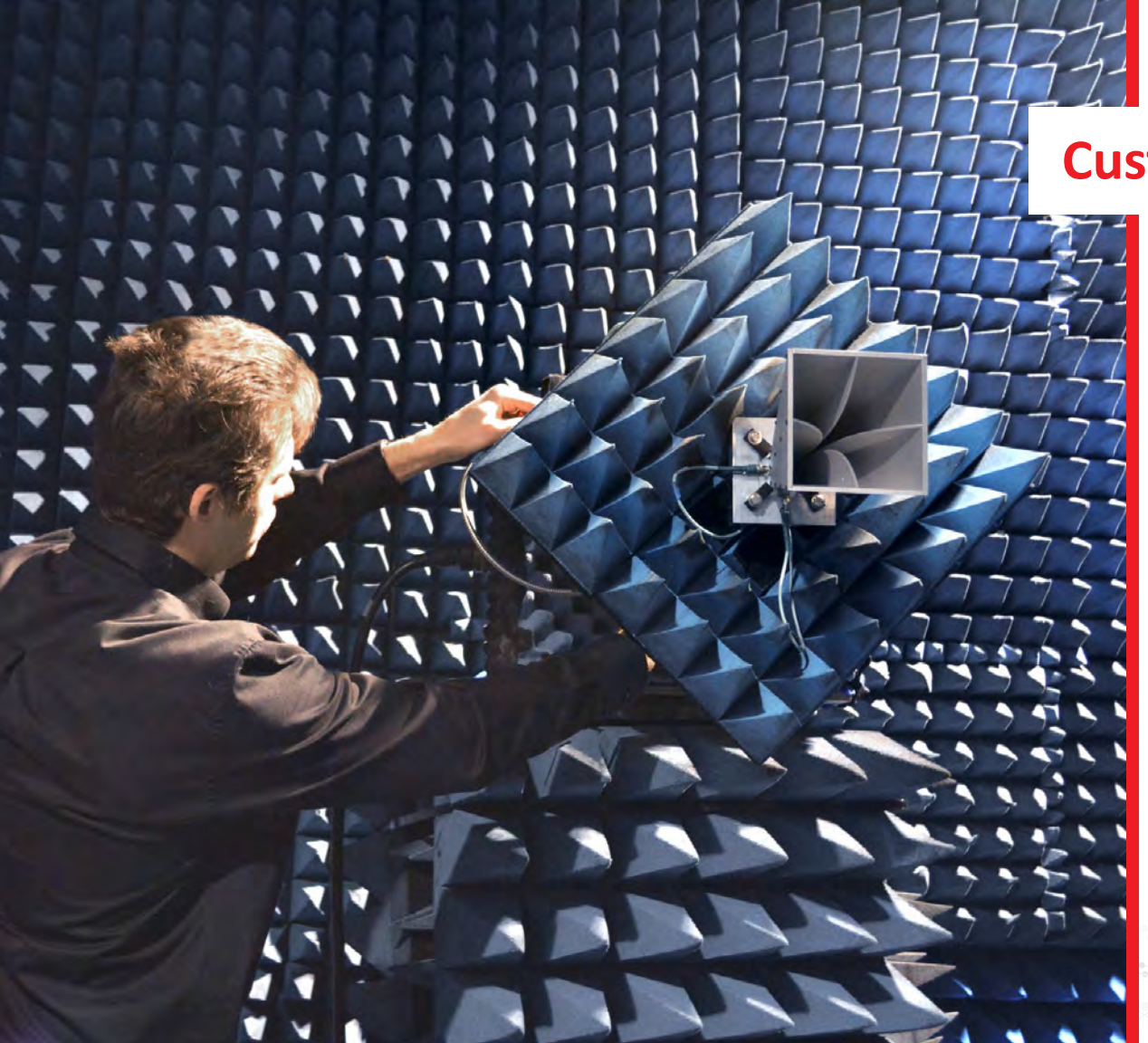
Spherical Near-Field Systems for mmWave antennas

Portable Compact Range Measurement Systems

Chamber Design

Precision and accuracy of EMC and RF measurement systems can be affected by their environment. For indoor ranges, an anechoic chamber must be designed, implemented and constructed with system and measurement requirements in mind. NSI-MI brings over 50 years of combined expertise for chamber construction management. Expert design, execution, and the perfect combination of range and system selections are the recipe for an optimum test facility; whether it is antenna measurements, radar cross section, hardware in loop or electromagnetic compatibility.





Customer Support

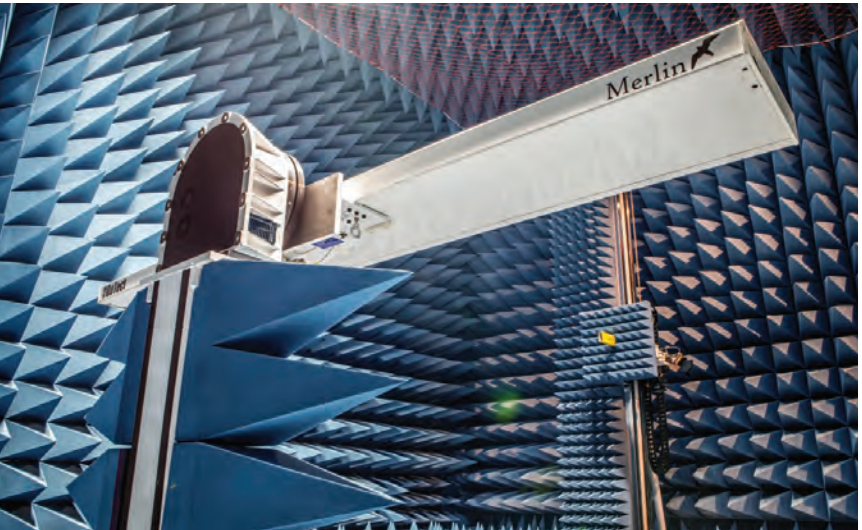
NSI-MI Technologies' Customer Support services leverage years of engineering knowledge and experience in antenna, radome, and RCS measurements. There are a multitude of ways to access these services in order to make incremental improvements to your range efficiency. Whether you are seeking short-term or more permanent support, NSI-MI has the service to address your needs.

- Maintenance Plans
- Software Support
- Precision Alignment Services
- Range Probing Services
- Equipment Refurbishment
- Range Relocation
- Training & Mentoring Programs
- Range Assessment

Test Services

Experience unparalleled precision and accuracy with Antenna Test Services by NSI-MI Technologies. Our world-class testing facilities are designed to cater to the needs of commercial, government, and academic sectors. Backed by industry-leading ranges and a team of expert engineers, we are equipped to handle even the most unique test requirements.

Rest assured, our A2LA accredited facilities and NIST traceable equipment guarantee reliable results every time. Whether it's characterizing antennas, radomes, or other RF devices, our measurement capabilities ensure that your products are accurately and consistently evaluated. For unmatched quality and assurance in antenna testing, Test with Confidence at NSI-MI.



Advanced Antenna Solutions

NSI-MI Technologies has an extensive history in the development of innovative antennas for precision antenna test and measurement applications, as well as other wireless applications. Our antennas are designed and manufactured in-house by our talented staff of antenna design engineers with decades of experience. Our antenna products and services fulfill the needs of numerous markets, including the defense, aerospace, automotive, satellite communications, and wireless industries.

Standard Gain Horn Assemblies

Standard Gain Horns

Waveguide Probes

Dual Polarized Probes

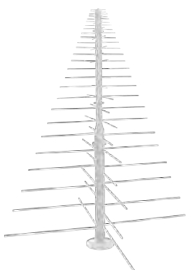
Quad Ridge Horn Antennas

Broadband Ridged Probes

Dual Polarized Feeds

Linear Polarized Feeds

Log Periodic Antennas



Dual Polarized Log Periodic Antennas

Broadband Horn Antennas

Focused and Aligned Parabolic Reflectors and Waveguide Feeds

Mechanical Products

NSI-MI Technologies' mechanical expertise has enabled us to design and manufacture complex structures, including single-axis and multi-axis positioning products. Our mechanical products are used in various test and measurement, pointing/tracking, and other general purpose single/multiple payload positioning applications.

Azimuth Positioners

Azimuth-over-Elevation-over-Azimuth Positioners

Feed Positioners

Horizontal Slides

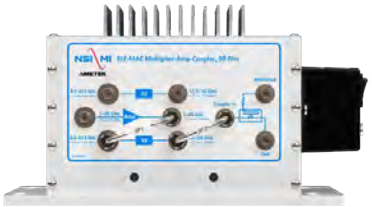
XY Positioners

RF Instrumentation

NSI-MI Technologies' electronic products are designed for fast and accurate data acquisition and reporting. Our knowledge and expertise enables us to configure RF subsystems to be compatible with a wide variety of instruments, software, positioners, optics and antennas.

RF Multiplexers

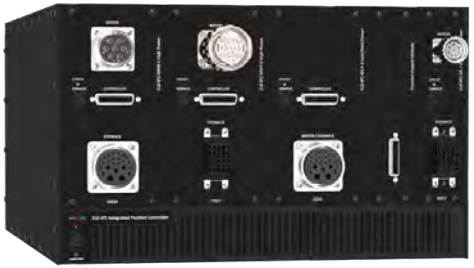
Remote Mixers



Multiplier-Amplifier-Couplers

Frequency Multipliers

Vector Field Analyzer™



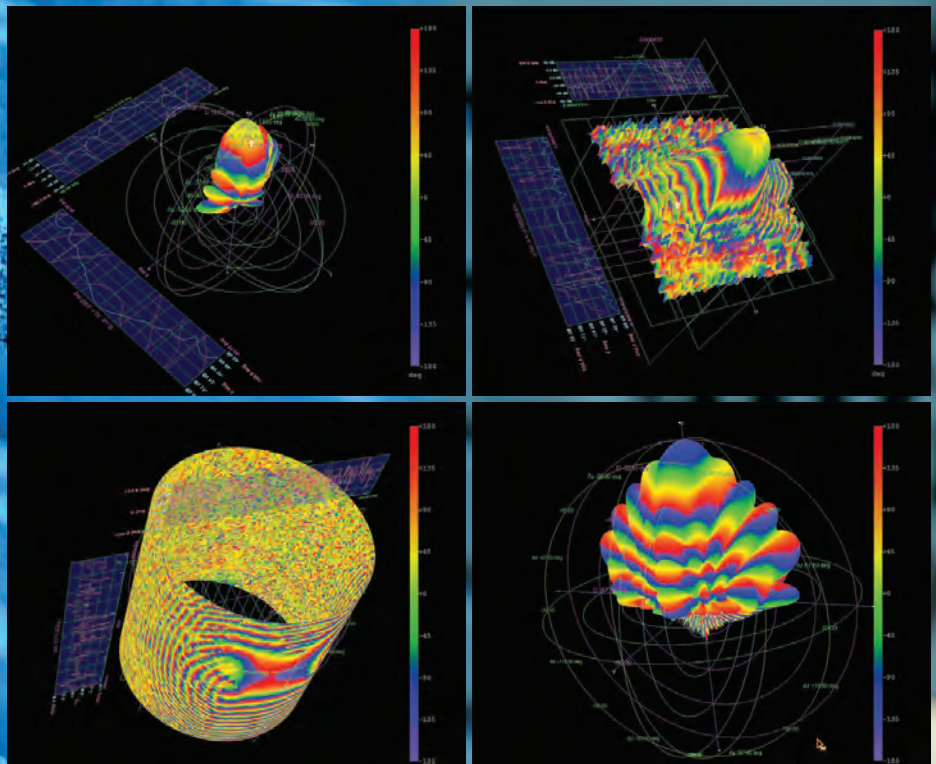
Positioner Controllers

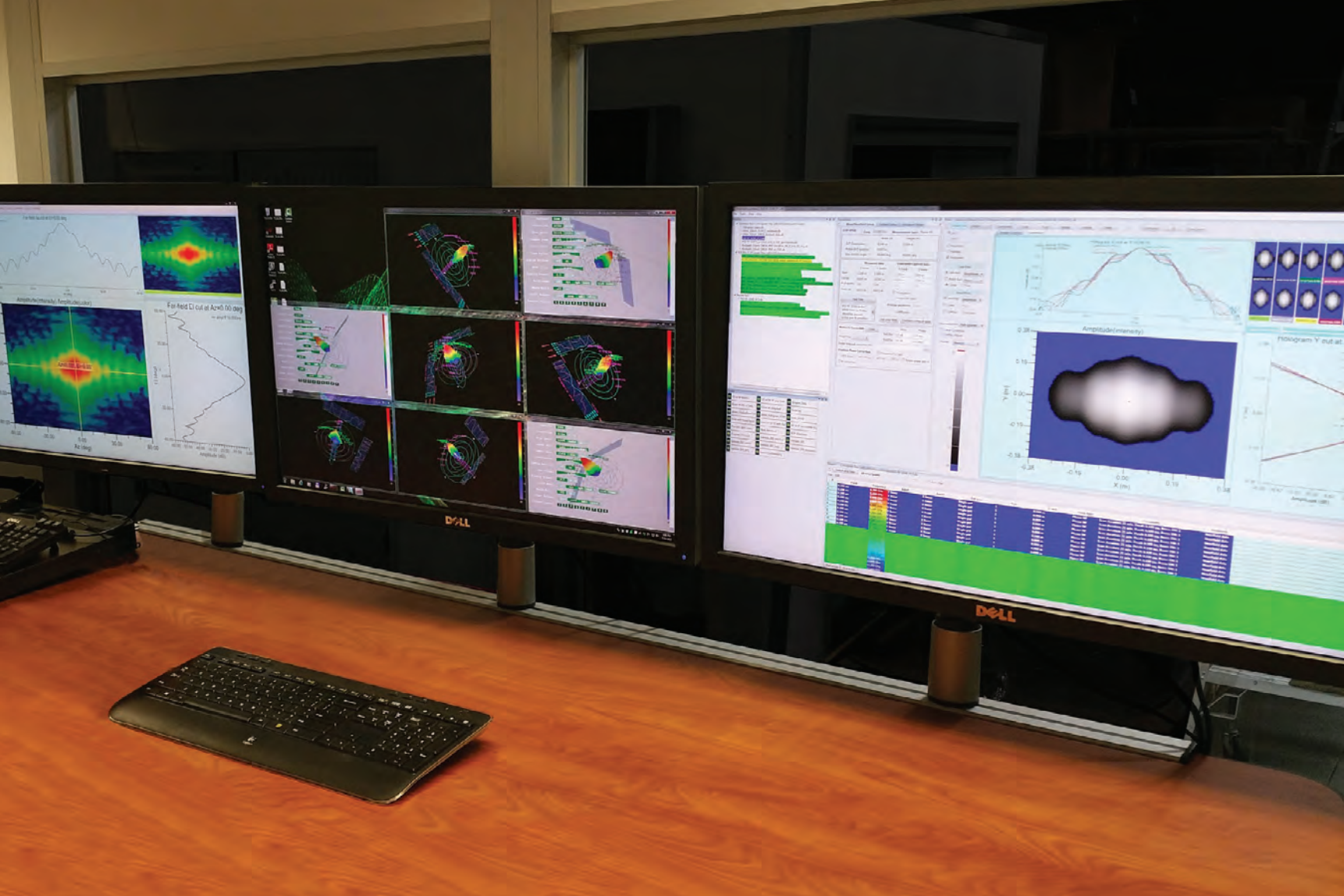
Signal Sources

Vector Measurement Controllers

Software Products

Dedicated to solving the unique challenges of microwave range operation and management, NSI-MI provides the most sophisticated software for measuring and analyzing antenna patterns. Our software is compatible with nearly all measurement equipment in the industry and is regularly updated to support new motion controllers and RF equipment. The intuitive user interface, extensive scripting capability and broad data management functions give power and flexibility to solve the toughest measurement challenges.




DELL
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