



Environmental Drift Compensation Module

Real-Time Environmental Variance
Correction for Manufacturing Test Systems

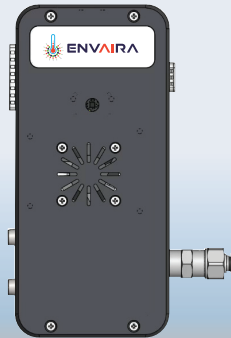
Product Overview

The Environmental Drift Compensation Module is a real-time edge solution designed to compensate for environmental variations such as temperature and ambient pressure that impact the accuracy and repeatability of leak tests and other manufacturing test results.

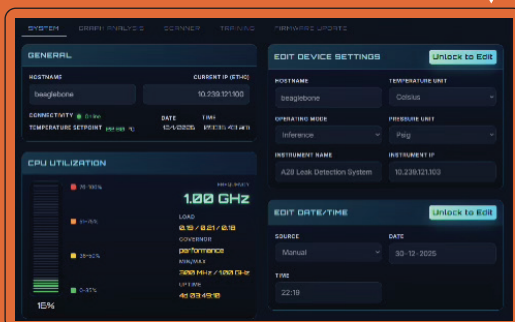
By continuously learning and correcting for environmental drift at the point of test execution, the module ensures consistent decision-making, reduces false rejects and improves overall test integrity without altering existing test limits or workflows

Key Benefits:

- First Time Yield Increase
- Rework & Scrap reduction
- False output minimization
- Smarter environmental compensation for your assembly



Leak Controller



Smarter environmental compensation for your assembly

Key Problem Addressed

Manufacturing test systems are inherently sensitive to environmental conditions. Variations in temperature and atmospheric pressure can introduce measurement drift, resulting in:

- False failures and false passes
- Increased rework and scrap
- Manual parameter tuning and operator dependency
- Delayed detection of process instability

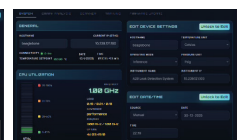
Traditional approaches rely on static limits or post-analysis, which are insufficient for dynamic shop-floor environments.



Graph Analysis



Scanner System dashboard



Training

Other features

Core Capabilities



- **Real-Time Environmental Compensation**
Dynamically adjusts for environmental variation during each test cycle.



- **Edge-Based Intelligence**
Runs directly at the test station for millisecond-level response times.



- **Test-System Agnostic Design**
Interfaces with existing manufacturing test equipment without modifying core test logic.



- **False Reject Reduction**
Minimizes unnecessary rework caused by environmental drift rather than actual defects.



- **Consistent Quality Decisions**
Maintains measurement integrity across shifts, seasons and factory conditions.

System Characteristics

Inputs

- Test result data from manufacturing test systems
- Environmental parameters (e.g., temperature, ambient pressure)

Outputs

- Environmentally compensated test values
- Drift indicators for diagnostics and analysis

Processing

- Continuous learning based on stable reference conditions
- Real-time inference synchronized with test execution

Deployment Architecture



Leak Testing



Precision measurement processes sensitive to ambient conditions



High-volume manufacturing lines requiring stable test decisions

Benefits to Manufacturing Operations

- Reduced scrap and rework costs
- Improved test reliability and repeatability
- Lower operator intervention and manual adjustments
- Faster root-cause identification for environmental effects
- Scalable deployment across multiple test stations

Integration & Scalability

- Designed as an add-on module—no replacement of existing systems
- Supports phased deployment (pilot line plant scale)
- Expandable to additional environmental or process parameters

Summary

The Environmental Drift Compensation Module enables manufacturers to separate true product defects from environmental noise, ensuring that test decisions remain accurate, stable, and trustworthy—regardless of changing shop-floor conditions.

It is a practical, edge-based approach to improving quality assurance without disrupting existing manufacturing infrastructure.



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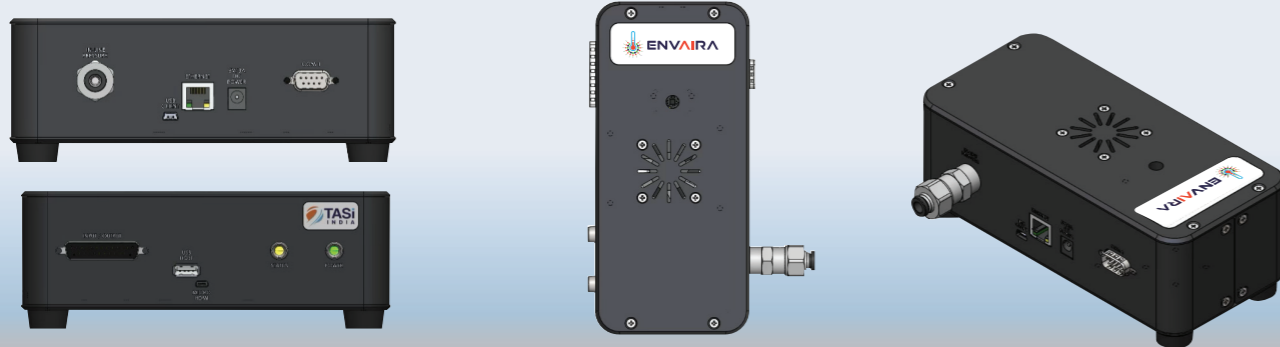
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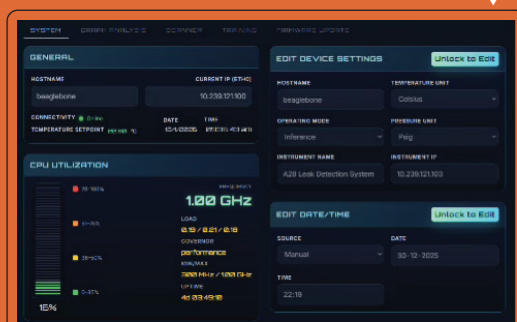
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ENVAIRA
Environmental Drift Compensation solution



Smarter environmental compensation for your assembly