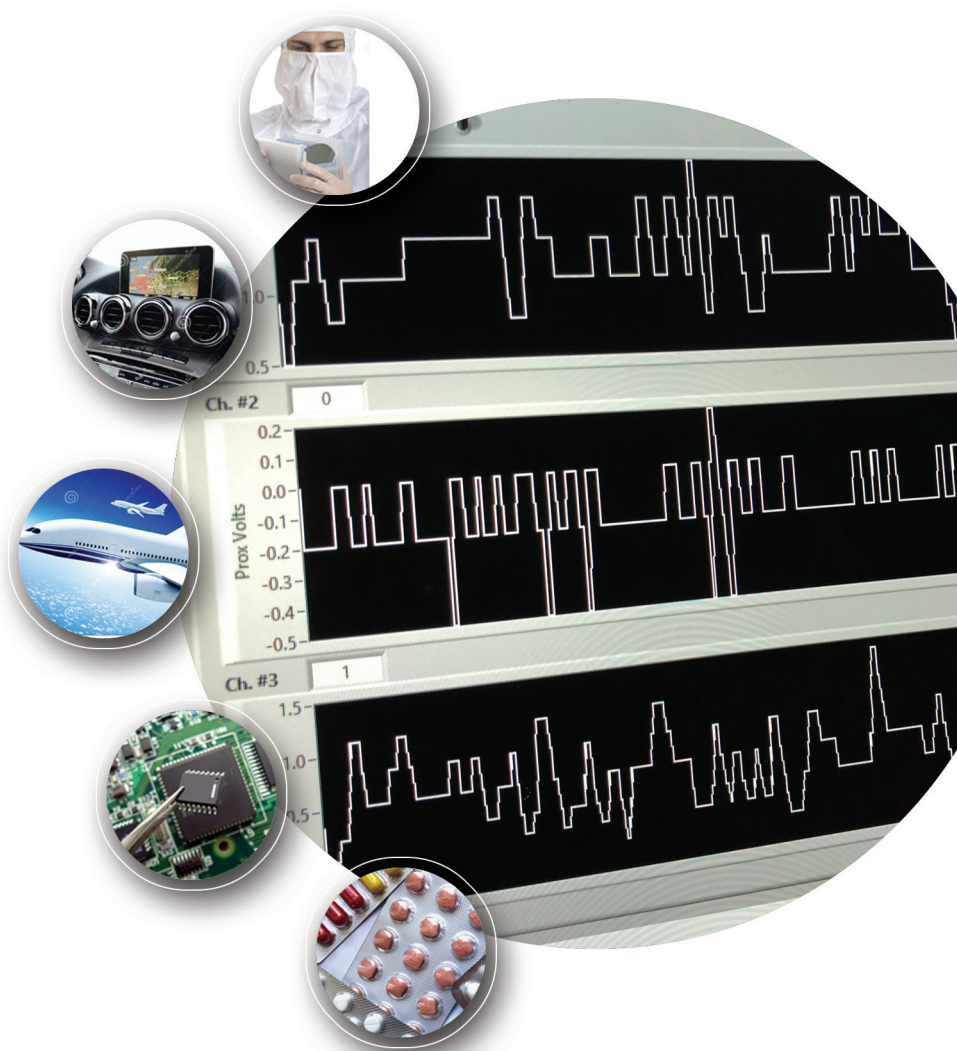


# Process Monitoring

FOR CLEANROOMS, ESD SENSITIVE  
WORK AREAS & CRITICAL  
MANUFACTURING ENVIRONMENTS

Ionization Solutions

WWW.SIMCO-ION.COM



**SIMCO ION**<sup>TM</sup>  
An ITW Company

# Monitoring Static Charge in High Tech Manufacturing

A successful approach to solving the static charge problem involves three easy steps: monitoring sensitive work areas, analyzing the results, and implementing any required control procedures. Simco-Ion is the only company that offers a complete portfolio of products that address these steps.

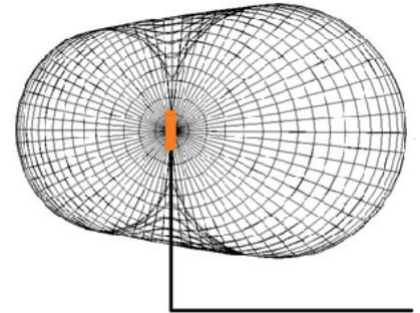
Auditing production areas and equipment, existing Electrostatic Discharge (ESD) programs and personnel provide the first glimpse of what is truly happening in a facility. From there, continuous monitoring and

analysis using any of the full range of NOVX™ monitors, instruments, and the highly effective NOVX control and analysis software allows focus to remain on sensitive work areas and products, no matter how often they change.

Complementing the monitoring activity, our wide range of ionization products controls static charge and is capable of meeting design requirements any process, tool, product or facility.



Propriety Calibrator Reader Program Reading in Real-Time Mode



Minipulse's MPA Series Antenna and Reception Pattern

## Continuous Monitoring

At Simco-Ion we continue to leverage our extensive knowledge of Electrostatic Charge (ESC)/ Electrostatic Discharge (ESD) for cleanroom and non-cleanroom applications. We offer the most cost-effective way to **monitor, analyze and control** the environment including ESC/ESD, field sensing and ionizer balance with decay testing, body voltage, ground monitoring and particle detection. Continuous process monitoring is critical to the efficiency and productivity of various manufacturing environments with direct tool or facility interface to provide an automatic shut down if a monitored parameter is approaching an out of range level. Your products and productivity can be compromised by a number of electrostatic conditions including ESC/ESD grounding (equipment and personnel), temperature, particles and others. The Simco-Ion continuous monitoring equipment can provide direct feedback for factory/process control and historical data collection and reporting.



Critical Environment 5802i (balance  $\pm 3V$ ) NOVX System for Closed-loop Feedback (balance  $\pm 1V$ )



In-tool 5822i (balance  $\pm 3V$ ) NOVX System for Closed-loop Feedback (balance  $\pm 1V$ )



New Critical Environment 5832 (balance  $\pm 3V$ ) Antenna Only or NOVX System for (balance  $\pm 1V$ )



NOVX System for Ionizer Monitoring with MiniPulse ESD Event Detector

Evolution of NOVX System Integrated with Simco-Ion Ionizing Blower

## Typical applications where continuous monitoring improve productivity:

- Semiconductor Wafer Fab
- IC Assembly & Testing
- Aerospace
- Automotive
- Communication/  
Networking
- Medical Device Mfg
- Flat Panel Mfg
- Hard Disk Drive Mfg
- Wrist-straps
- Heel-straps/Shoes/  
Flooring
- Seating
- Packaged Materials
- Workstations
- Process Equipment
- IC Handlers
- Ionization

## Ionization for Each Step of the Process

### Tool and Process Monitoring

The **NOVX Series 7000 Process Monitor** is a microprocessor-based instrument with data collection, statistical process control, and direct tool communication. Process capabilities include options for field charge detection, passive ionizer balance control, active balance monitoring and automatic decay testing, MiniPulse for ESD detection, operator/ground monitoring and particle counter interface.

The **NOVX MiniPulse ESD Event Monitor** is a cost-effective, small footprint, embeddable monitor for critical processes to warn of product damage risks by ESD. Its features include monitoring ESD events using proprietary circuitry and user adjustable threshold level, by using a variety of antenna configurations to detect ESD and reject noise.

The **NOVX Series 3352 (passive), Series 3362 (active)**, provide multi-fan, closed-loop, real-time ionizer monitoring and remote voltage sensing. This well proven and cost-effective technology allow the flexibility to control multiple ionizers required at a workstation or within a process tool. Both ionizer controllers offer data output to report alarm condition as a standalone or can be interfaced with Simco-Ion ionizers.

**Critical Environment Ionizing Blowers** with NOVX feedback sensor directs  $\leq \pm 1V$  balanced ionized air to control areas inside the equipment:

- Overhead coverage, Model 5810i
- Benchtop coverage, Model 5802i
- In-tool applications, Model 5822i
- The new smaller in size Model 5832 for benchtop coverage, can have options with a remote sensor or NOVX feedback control, to deliver precisely balanced and directed ionized air to target.

**Model 4612 Extreme Temperature Ionizer** is selected for operations providing  $\leq \pm 10V$  balance in extreme environments from 122°F to 302°F (-50°C to +150°C). The 4612 Ionizer, along with 4062e Controller and 550 Extreme Temperature Antenna uses the closed-loop control to ensure the ionizer's output is being balanced at the product location itself. The NOVX 3362 with its standard antenna can replace 550 Antenna to monitor and allow active feedback and control in extreme temperatures.



NOVX Series 7000 Process Monitor



NOVX MiniPulse ESD Event Monitor



NOVX Series 3352, 3362  
Multi-channel Voltage Detection



Models 5802i, 5810i, 5822i, 5832 Critical  
Environment Ionizing Blowers



Model 4612 Extreme High Temp Ionizer

## Accessories and Ancillary Products

The NOVX product line offers many accessories and ancillary products designed for use with our complete line of ESC/ESD monitoring, ionization and process environment monitoring and control solutions. Plug-in accessories, such as sensors for proximity voltage detection and ionizer monitoring, antennas for Minipulse ESD event monitoring, are matched with products for specific test and monitoring requirements.

## Applications Engineering

Technical assistance can include specific tool evaluations, detailed manufacturing process analysis and research or manufacturing facility assessments. Formal reports based upon investigations are comprehensive and include advanced analysis methods to provide clients with the maximum usefulness in managing electrostatic issues in their process or facility. All measurements and evaluation methods are conducted with calibrated equipment and adhere to standards, advisories, guidelines and methods as appropriate.

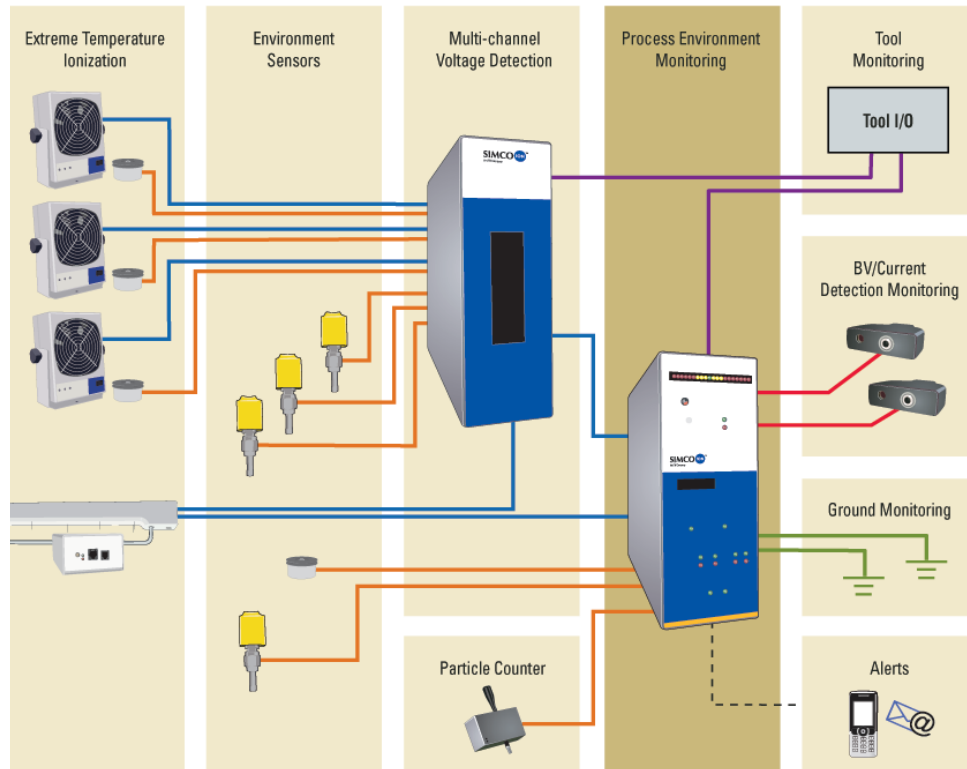


Diagram of the NOVX Product Line Smart Manufacturing



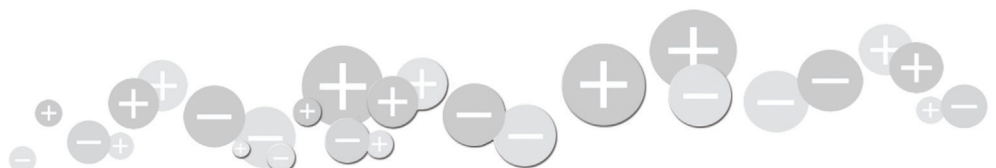
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