1. Atmospheric Electric Field
- Normally, there is a fair weather electric field of about 100-200 V/m at ground level.
- Storms can generate fields of many thousands V/m.
- Other natural phenomena that generate strong electric fields are:
  - Dust storms and dust devils
  - Volcanic eruptions
  - Forest fires

Electric field sensors monitoring current atmospheric fields

2. Industrial Equipment
Monitoring of electric fields inside industrial equipment can detect precursors to ESD discharges and provide warning to operators during:
- Integrated circuit production
- Electronic device packaging
- Printed circuit board assembly

Sensor mounted inside PCB assembly machines

3. Remote Thermal Detection
Thermal plumes rising from ground level can lift charge and produce electric fields. Measurements of these electric fields from distance of the order of 1 km can help supersonic pilots find thermals.

Tucson, AZ Flight path July 2, 2008

4. Work Area Monitoring
Manual assembly and handling of static sensitive devices is performed in ESD controlled areas. Static dissipative floors and work surfaces, wrist or foot straps, special hand tools, and static dissipative clothing are all used in order to prevent damage. Nevertheless, safety equipment failures still occur.

An electric field sensor mounted above the work area or over nearby walkways can be operated analogous to a "smoke detector" and sound an alarm if a threshold electric field is exceeded.

Long-term industrial monitoring can provide measurements for SPC (statistical process control) programs.

Clean rooms are also sensitive to excessive electric fields. Static charge can contribute to the lifting and suspension of dust particles.

Charged person data – concrete floor; sensor 10.5 feet above floor; Voltages measured: 100, 200, 300, 400, 500, 500 volts. At each voltage setting, subject walked at 6 R, 3 F, and directly under the sensor. Initial 200 V/m field due to suspended dust particles generated by sweeping the floor.