



**RDL TECHNOLOGIES**

**RDL10500 / DATASHEET**

# **EMS - ONLINE LIVE ESD MONITORING SYSTEM**

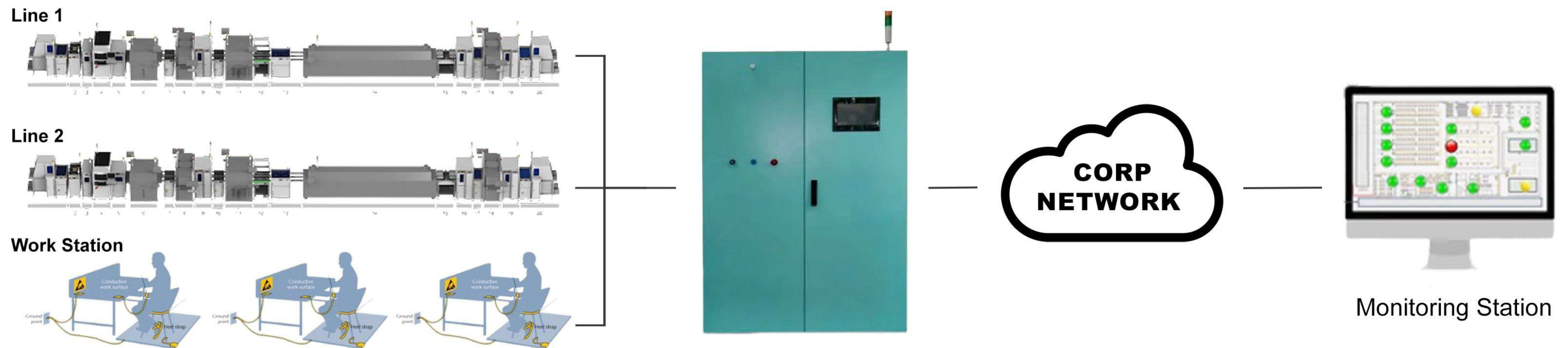
**ANSI/ESD S20.20-2021, ANSI/ESD  
S20.20-2014/IEC 61340-5-1**







Online Live ESD Monitoring System, a good tool to measure the effectiveness of an ESD compliance and its efficacy in improving yield, provides 100% monitoring for both the operator and the work surface. This unit provides continuous monitoring of user wearing a wrist strap and also functions to ensure the grounding integrity of ESD protected work surfaces. This device will continuously monitor the user until the wrist strap or work surface becomes disfunctional or unsafe according to accepted industry standards (S20.20-2014/IEC 61340-5-1), at which point the monitor will issue an audible signal notifying the user of a problem. The ESD Online Continuous Monitoring System also verifies whether an outlet ground is good or bad.



## FEATURES

- Alerting with Fault Location.
- Accurate Earth resistance measurement.
- Bonding & Grounding Connectivity status.
- Electrical grounding history with fault Prediction.
- When outage of Primary ground connection it automatically select Alternate Ground Source.
- Grounding System Maintenance Alert.
- Supporting for wide range of communication protocol – MODBUS TCP / RTU, JSON, MQTT, FTP.
- Real Time status available on Network.
- Visual and audio signals for the failure.
- Modular Design and extendibility.
- Ease to configure and maintain of the complete setup.
- Centralized Data storage on SQL server.





### Why Live ESD Monitoring System is Required?

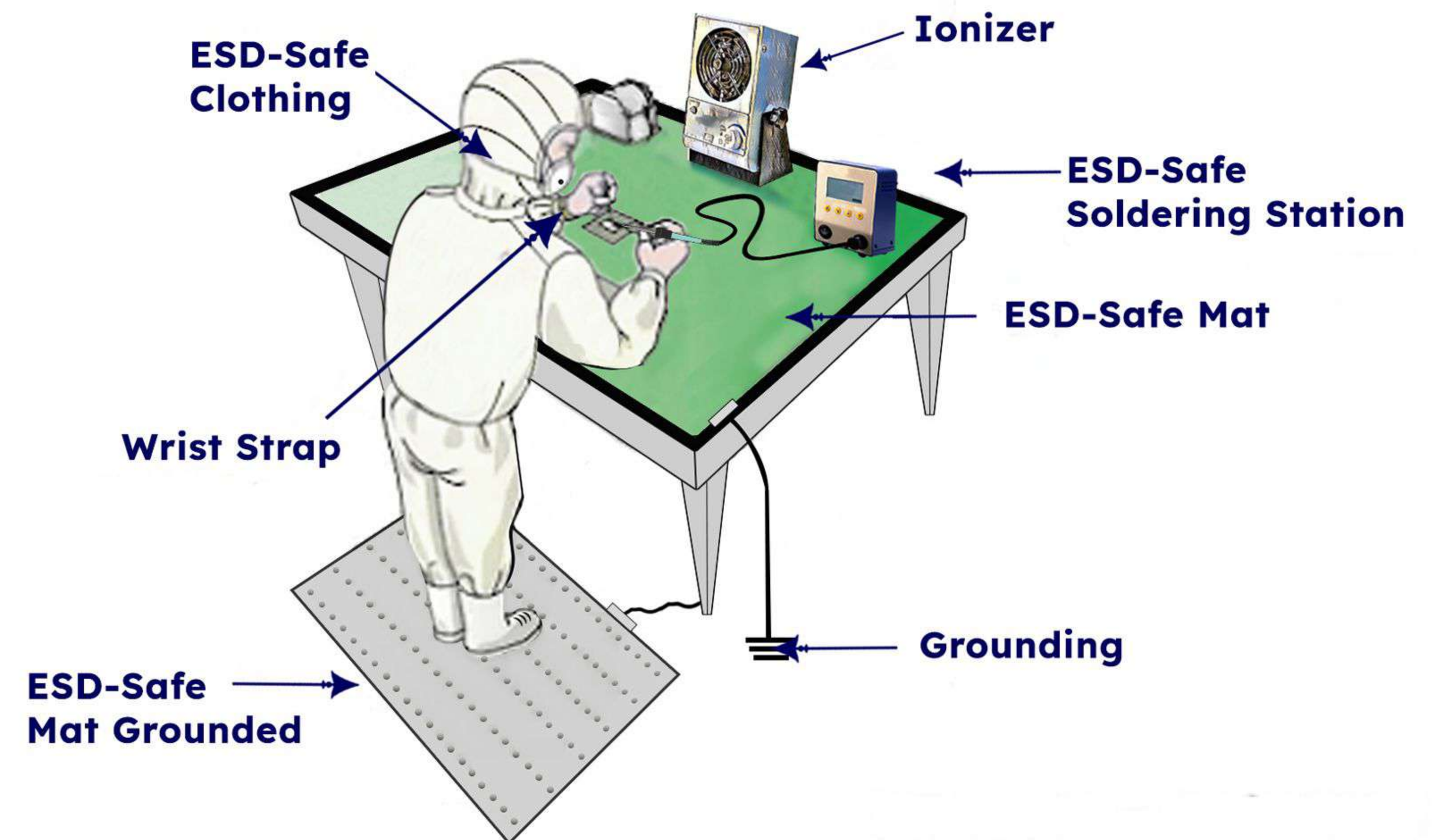
Equipment, furniture, clothing, and other common items in today's workplace can store thousands of volts in electrostatic charge. But only 25 electrostatic volts are required to permanently harm an integrated circuit (IC's). The expenses can be devastating when SMT businesses fail to take into account the risk because they are unable to see them.

In the article, The "Real" Cost of ESD Damage it is noted that ESD losses are between half a billion to five billion dollars every year! While businesses continue to overlook these technical issues in order to cut spending, the problem continues to worsen. It is possible that if the topic were better understood, the risks would not be overlooked every year during the budget review.

### ESD & Semi Conductor Devices

- ESD, or Electrostatic Discharge, is a sudden surge of electricity between two electrically charged objects. Contact, an electrical short or dielectric breakdown is the typical cause. During these natural occurrences, electrical currents can travel to the ground.
- A current can travel between the PN junctions on integrated circuits to reach ground.

- This current flow will burn holes visible to the naked eye in an integrated circuit, with evidence of heat damage to the surrounding area.
- It is repeated discharge events that will degrade internal equipment components over time. While there is not a way to completely prevent these occurrences there are ways to reduce the risk of damage.







### ANSI/ESD S20.20 Control Program

The ANSI/ESD S20.20 has become the industry standard in every high-tech industry, from telecommunications and aerospace to automotive and electronics. Any business can use it to ensure that working environments are protected from charges of 100v or more.

Implementing an ESD control program is vital for businesses that need to reduce or eliminate component failures and increase the quality of their products.

### An ESD program offers the following benefits:

- Increases ESD awareness throughout the organization.
- Improves the standard to which all processes are held.
- Saves money.
- Reduces failures and necessary.
- Ensures you're working at the same standard as others in your industry.
- Offers proof to potential clients of your quality.
- Increases your marketability.

### ESD controls include:

- **Wrist straps:** this ensures that seated or standing personnel are connected to the grounding system when handling sensitive items.
- **Footwear:** any standing personnel should wear footwear connected to a flooring system.
- **Garments:** clothing should have continuity from one sleeve to the other and should meet resistance requirements.
- **Flooring:** epoxy-based flooring is common for large concrete areas, grounded through copper strips. A post-installation test should always be performed. The threshold for ESD control flooring is one Megaohm.
- **Shelving, seating, and soldering and desoldering tools** should all be grounded, even if ESD mats are used.
- **ESD protected areas:** areas should have well-defined boundaries. Where this is not possible, ionizers should be used to ground / neutralize ESD.
- **Other considerations:**
  - Surface resistivity meters.
  - Grounded worksurfaces.
  - Packaging.
  - Marking.
  - Gloves (Decay of charge to less than 10% of the initial value within 2 seconds is required).
  - Conveyor systems.
  - Ensuring that all nonessential personal items are outside ESD areas.





DESCRIPTION	SPECIFICATION
Product Name	: Electrical Grounding and ESD Safety Monitoring System.
Make	: RDL
Model	: RDL10500
Measuring Range	: 0-100mV and 0-20 mA
Accuracy	: +/- 0.5%
Isolated Line Field Current (0.5 ohm to 5 Ohm Earth Resistance)	: Min : 3.7mA @ 0.5 Ohm Max : 4mA @ 5 Ohm
Isolated Line Field Voltage with Earth 0.5 Ohm to 5 Ohm Resistance	: Min : 2.6mV @ 0.5 Ohm Max : 18.6mV @ 5 Ohm
MAX Energy	: Less than 1 micro Joules
Internal DC Power Supply	: 24V
Response Time	: 100 microSec
No channel	: 100
HMI with Touch Screen	: 14 inch
Communication Protocol	: Modbus TCP, MODBUS RTU, JSON, MQTT FTP & SFTP
Communication Interface	: Ethernet 10/100 Mbps, RS485, WiFi, GPRS / 4G
Power Supply	: 110/240v 50/60Hz 4Amps





Note:

1. Unless otherwise specified, all parameters in this datasheet were measured at 25°C and 75% humidity.
2. All index testing procedures in this datasheet are based on our company's corporate standards.
3. We can offer product customization; please contact the sales team directly for more information.
4. Specifications are subject to change without prior notice:
5. For additional information on Product please refer to [www.rdltech.in](http://www.rdltech.in)
5. Buy online @ [www.researchdesignlab.com](http://www.researchdesignlab.com)

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