

Secure Connectivity Enables Semiconductor Automation

Future-proof Connectivity for the Evolving Semiconductor Industry

MOXA

The Evolving Landscape in the Semiconductor Industry

Internal Challenges

Changing locations – Operations must be identical across global enterprise

Changing conditions – Larger facilities, more devices, enhanced network performance requirements

Changing technologies – autonomous operations, Artificial Intelligence, digital twins

External Challenges

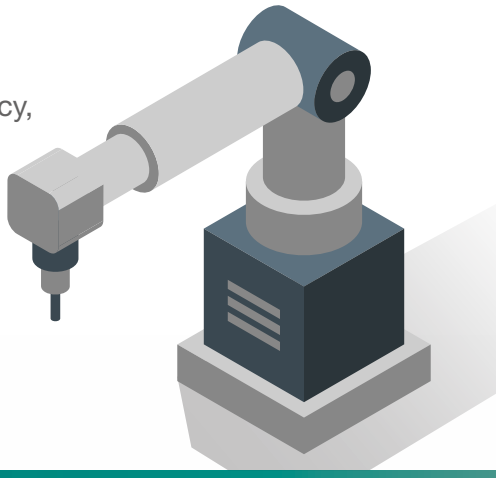
Evolving cyberthreats – As semiconductor systems become more interconnected, cyber threats affect both IT and OT

Evolving supply chain – Risks associated with more diverse suppliers with potential quality issues

Evolving market demands – Fast deployment and adjustments absorb market fluctuations in chip demand

Moxa Provides Solutions to Semiconductor Industry Challenges

Prepared for Today



› Availability

From wired and wireless connectivity to high bandwidth, advanced redundancy, and roaming capabilities for industrial networks.

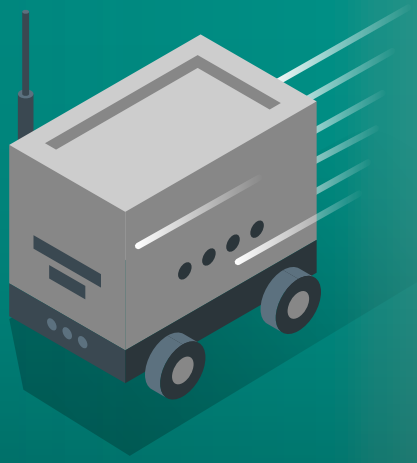
› Visibility

Full visibility of wired and wireless devices throughout the fab and across the enterprise globally

› Interoperability

Multiple protocols and edge computing fulfill OT/IT data convergence

Protected for the Future



› Cybersecurity

Strengthen cybersecurity in OT networks and comply with SEMI E187 and IEC 62443

› Future-proof Network

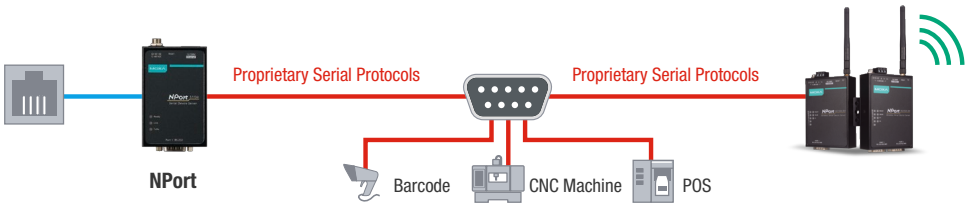
Resilient and expandable infrastructure that seamlessly evolves with new technologies to support growing operational demands

Moxa Easy 3

For Connectivity Solutions

Serial-to-Ethernet 1

Moxa is the global leader in serial device servers that have been connecting Semiconductor serial devices to Ethernet or Wi-Fi networks for decades.



Need to Extend Ethernet Connection?

Moxa offers **industrial media converters** that provide copper-to-fiber, Gigabit-speed extensions in harsh conditions.

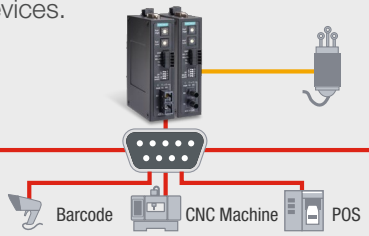
Serial-to-USB

UPort series of USB-to-serial converters and hubs provide reliable and high-performance communication.



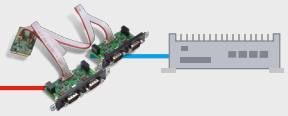
Serial-to-Fiber

Industrial-grade serial-to-fiber optic converters provide an easy and reliable way to connect serial devices.



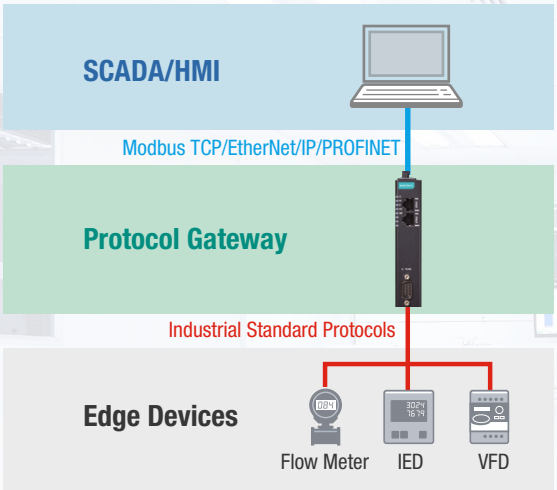
Serial-to-IPC

Multiport serial boards offer a wide array of slot variations to connect your IPCs with serial devices.



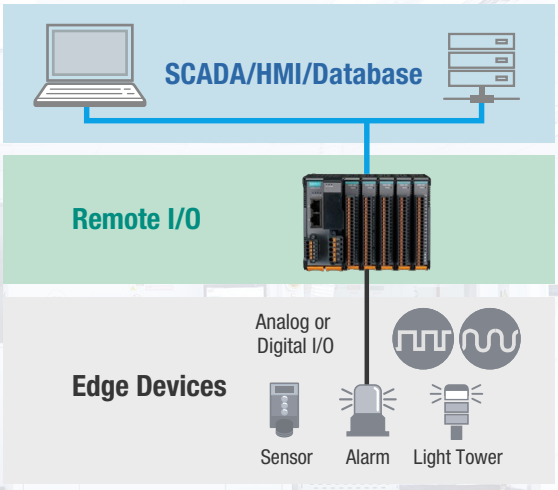
Protocol Conversion 2

Our fieldbus-to-Ethernet protocol gateways connect and convert your edge communication.



I/O-to-Ethernet 3

We offer a series of remote I/Os that retrieve your I/O data and send to SCADA, HMI or a database.



We Are in Your Corner –
With Real-Time and Seamless Connectivity

Wafer Fabrication Equipment



Challenges

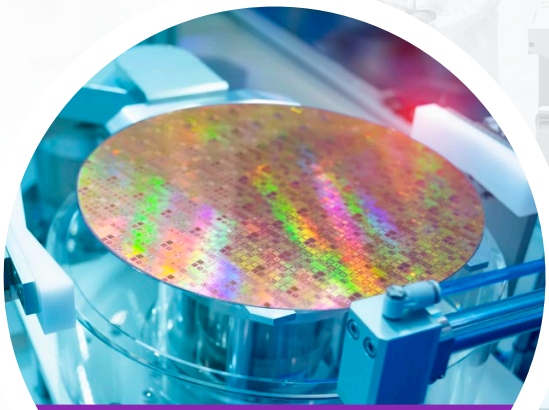
Delivery of equipment data and commands must be stable and deterministic:

- Mission-critical tasks include creating plasma ionizing gases and sputtering metals
- Small deviations can cascade into huge problems, repeatability is vital
- Tiny changes are disastrous to yields because processes are tightly interlocked

Solution

Trusted leader of copy-exact Serial connectivity, minimal latency enables identical operations across sites

Serial to Ethernet Experts



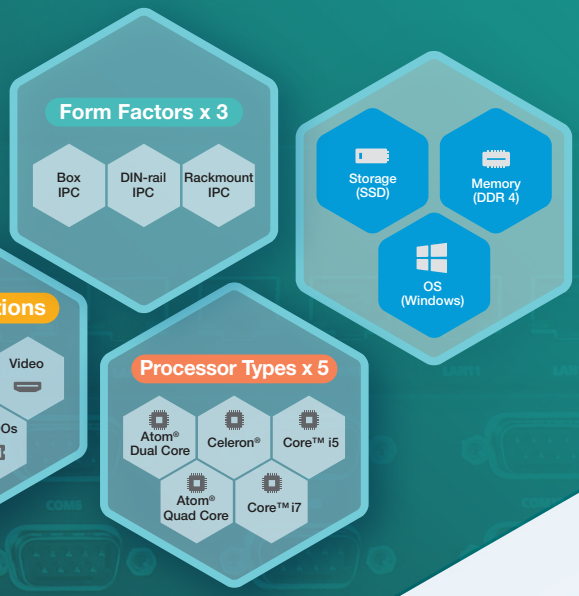
Copy-Exact WFE
Tool Commitment

BXP/DRP/RKP Series

Intel®/Atom®/Core™/Celeron® Powered Industrial Computers

Boost industrial automation processes with adaptable x86 industrial computers that support Semiconductor manufacturing and packaging system requirements.



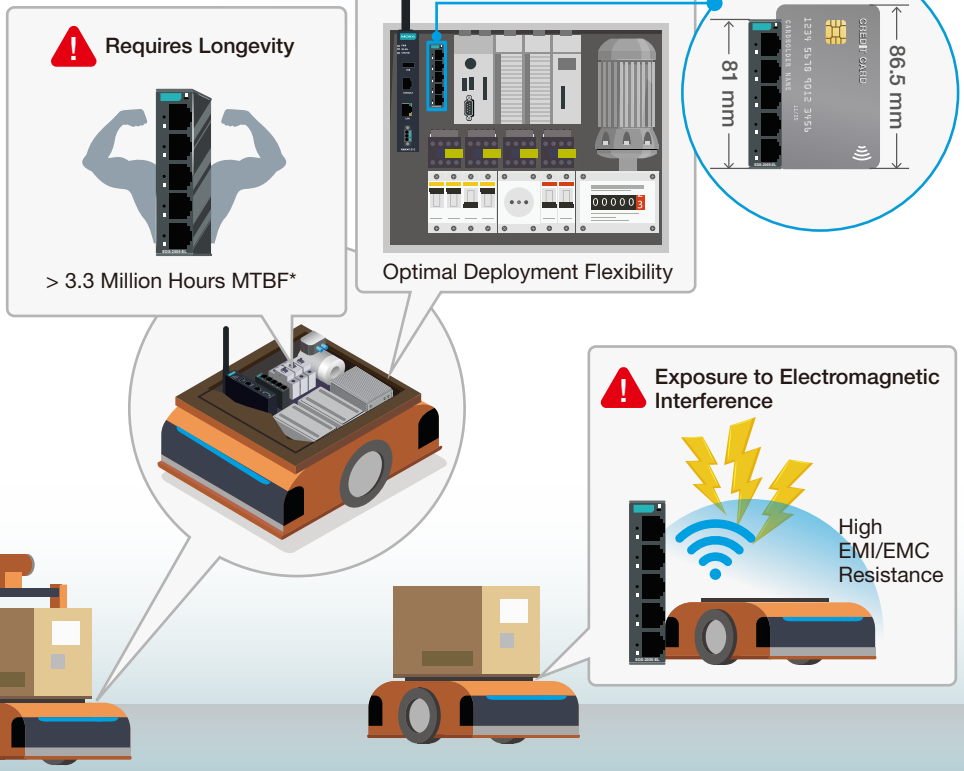


75 Standard Models

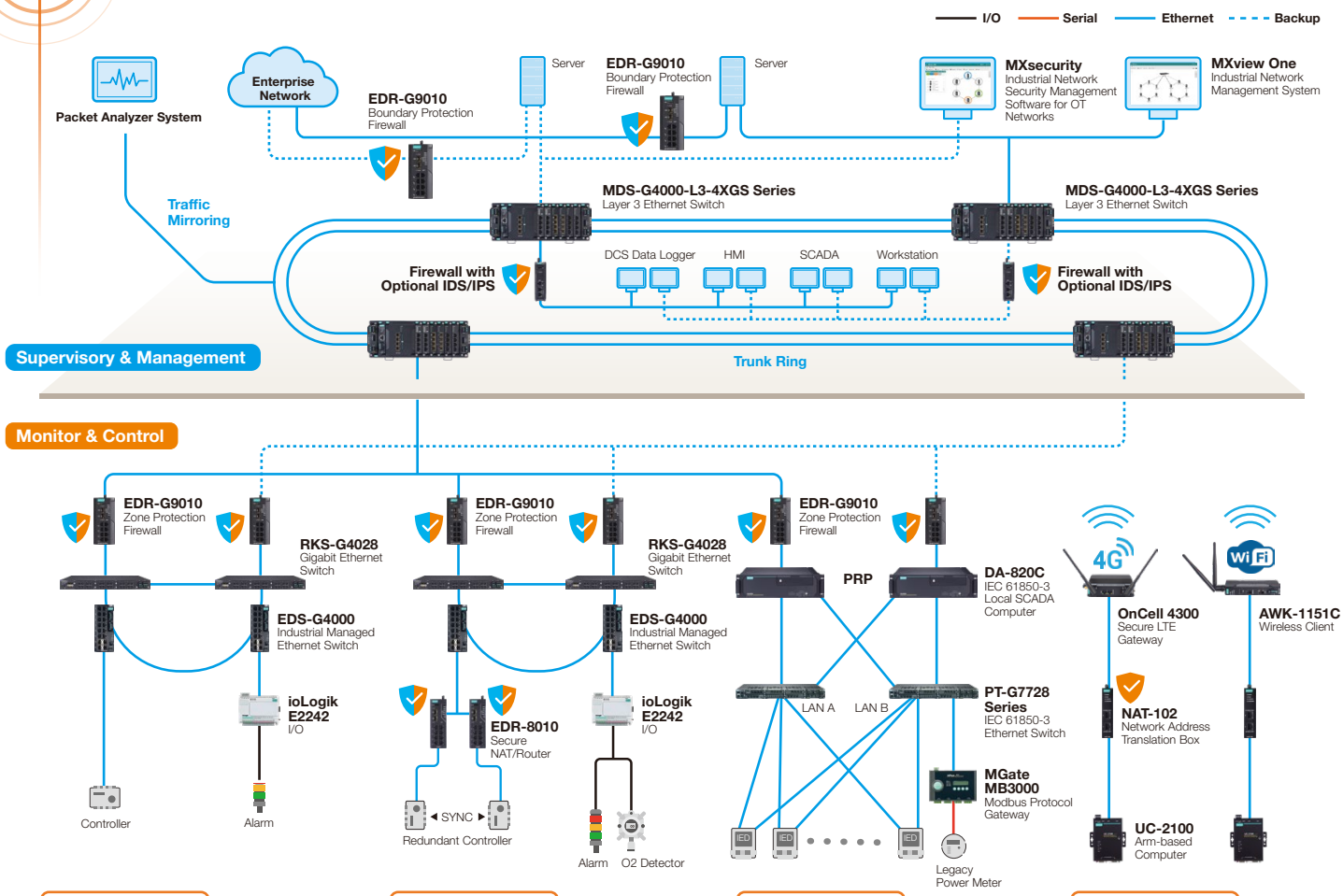
EDS-2000/G2000-EL Series

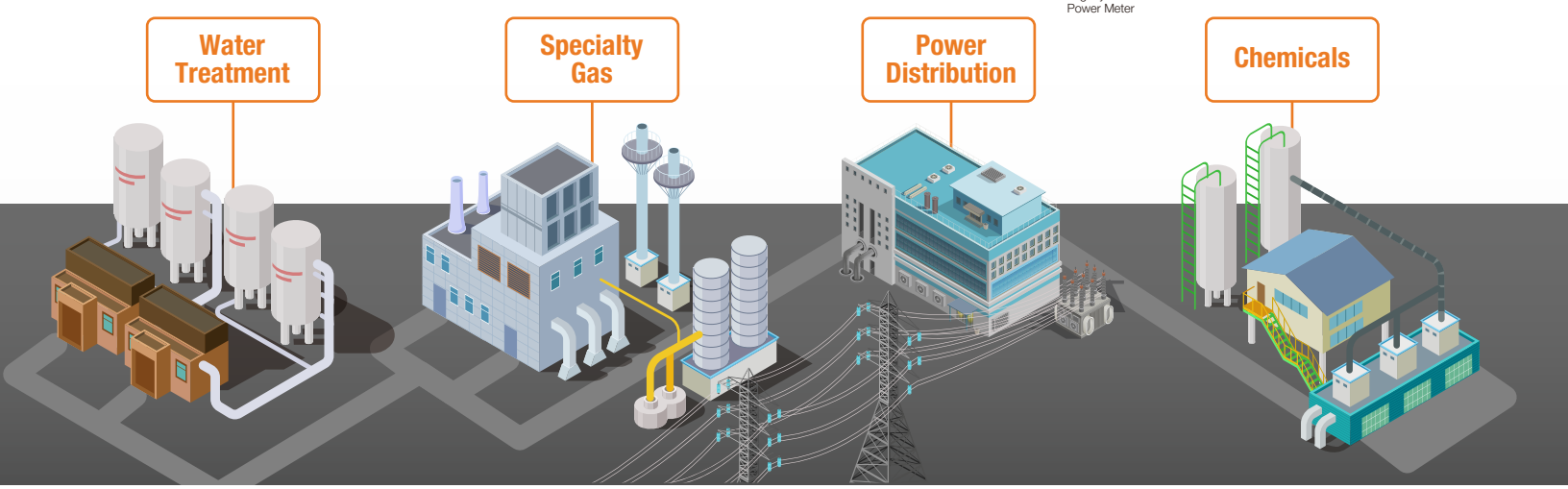
5/8 Port Unmanaged Switches

A compact ethernet switch that is ideal for any Semiconductor application where space and simplicity matters, like material handling AGVs.



Facility Monitoring Control Systems (FMCS)





Challenges

Difficulty monitoring all the resources required to produce wafers:

- Ensure precise mix of specialty gases, water and chemicals
- Transmitting and aggregating data in real-time at the edge to the control room
- Delays and losses of FMCS data is devastating to production

Solution

A resilient network ensures timely delivery of data, enabling stringent quality control

Moxa Leading Semiconductor Products

1 Industrial Edge Connectivity



Serial Device Server
NPort-6000 Series



Protocol Gateway
MGate-MB3000 Series



Controllers & I/O
ioThinx 4500 Series



Ethernet Remote I/O
ioLogik-E2200 Series

2 Industrial Networking



Unmanaged Switch
EDS-G2000 Series



Managed Switch
SDS-3016 Series



Network Management Software
MXview One

3 Cybersecurity



IEC-62443 Switch
EDS-4000/G4000 Series



Secure Router
EDR-G9010 Series



Industrial NAT Device
NAT-102 Series



Network Security Management Software
MXSecurity

4 Industrial Computing



Box Computer
BXP-A100 Series



Din-Rail Computer
DRP-A100 Series



Rackmount Computer
RKP-A110 Series

5 Industrial Wireless



5G Cellular Gateway
CCG-1510



Wireless AP/Bridge/Client
AWK-3252A



Wireless Client
AWK-1151C

Your Trusted Partner in Automation

Moxa is a leading provider of edge connectivity, industrial computing, and network infrastructure solutions for enabling connectivity for the Industrial Internet of Things (IIoT). With over 35 years of industry experience, Moxa has connected more than 100 million devices worldwide and has a distribution and service network that reaches customers in more than 70 countries. Moxa delivers lasting business value by empowering industries with reliable networks and sincere service.

Moxa Americas

Toll Free: 1-888-MOXA-USA
Call: +1-714-528-6777
Email: usa@moxa.com

www.moxa.com

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