

Features:

- 8 Gigabit RJ45 ports for fast network connections.
- Layer 3 Industrial Managed Switch
- 8 × Gigabit RJ45 Ethernet Ports
- 4 × 10G SFP+ Fiber Uplink Ports
- IPv4/IPv6 Static Routing Support
- Supports OSPF, RIP and VRRP Routing
- ERPS Ring Protection with <50ms Recovery
- Dual 12-54V DC Redundant Power Input
- Wide Operating Temperature -40 to +85°C
- Rugged Metal Housing with DIN Rail Mount
- Advanced Security Features: ACL, SNMPv3, 802.1X



As a leading provider of network equipment for Industrial Communication, ITTelecom understands the importance of providing stability and safety that can adapt to your business' needs, whether in the Safe City, Traffic, Mining, industrial automatic, Power or energy. The ITT-ISW-L3-8G4S+ meet EMC industrial level 4 requirements. The product supports wide power input voltage range of 12-54V DC redundant power with reverse polarity protection and wide operating temperature range of -40 to the +85°C.

The switches can be easily installed on a DIN rail as well as in distribution boxes. Each product has passed a 100% burn-in test to ensure its quality high-reliability transmission. supports SSHv2, TLS and SSL protocols to provide strong protection against advanced threats. It includes a range of cybersecurity features such as DHCP Snooping, IP Source Guard, ARP Inspection Protection, 802.1x port-based and MAC-based network access control, RADIUS and TACACS+ user accounts management, SNMPv3 authentication, and so on to complement it as an all-security solution.

Support 4 Ports 1G/2.5G/10G SFP+ Uplink, provides greater bandwidth and powerful processing capacity. It offers a maximum 40Gbps uplink bandwidth through the Four 10Gbps SFP+ ports. In addition, the administrator can flexibly choose the suitable (1.25G/2.5G/10G) SFP/SFP+ transceiver according to the transmission distance or the transmission speed required to extend the network efficiently.

Highlights

ITTelecom ITT-ISW-L3-8G4S+ L3 Industrial Managed Switch, featuring 8-10/100/1000BASE-T ports with 4-1G/2.5G/10GBASE-X fiber ports uplink, with rugged metal case, can be installed in any difficult environment. It provides user-friendly yet advanced IPv6/IPv4 management interfaces, abundant L2/L4 switching functions, Layer 3 OSPFv2 dynamic routing capability, and advanced ITU-T G.8032 ERPS Ring technology to improve the rapid self-recovery capability. It is able to operate reliably, stably and quietly in the temperature range from -30 to 75 degrees C.

Key features include:

- Layer 3 static routing (IPv4 and IPv6) for interVLAN local routing
- Layer 3 routing, RIP v1/V2, OSPF V1/V2, VRRP
- L2/L3/L4 access control lists (ACLs) for granular network access control including 802.1x port authentication
- Advanced QoS (Quality of Service) for traffic prioritization including port-based, 802.1p and L2/L3/L4 DSCP-based
- STP, RSTP, MSTP, and ERPS ring network protocols are designed for building high reliability and maintaining network stability.
- IGMP Snooping and Querier for multicast optimization
- Dynamic ARP for increased security targeting a class of Man in the Middle attack
- Rate limiting and priority queuing for better bandwidth allocation
- Port mirroring for network monitoring
- Energy Efficient Ethernet (IEEE 802.3az) for maximum power savings
- SNMP v1, v2c, V3 and RMON remote monitoring

Build a future-proof network :

- Solid performance with non-blocking architecture, 16K MAC addresses, 100 shared (ingress) ACLs and 512 Multicast groups
- Comprehensive IPv6 supporting management, QoS, ACL and routing, ensuring investment protection and a smooth migration to IPv6-based network
- 4 Dedicated SFP+s, not only providing fiber uplinks, but also uplink redundancy and failover, improving reliability and availability for the network

Redundant Ring, Fast Recovery for Critical Network Applications

- The ITT-ISW-L3-8G4S+ supports redundant ring technology and features strong, rapid self-recovery capability to prevent interruptions and external intrusions. It incorporates advanced ITU-T G.8032 ERPS (Ethernet Ring Protection Switching) technology, Spanning Tree Protocol (802.1s MSTP), and redundant power input system into customer's industrial automation network to enhance system reliability and uptime in harsh factory environments. In a certain simple Ring network, the recovery time of data link can be as fast as 50ms.

Quality and Reliability

- Low power consumption, fanless, high-strength metal casing.
- Contact Discharge 8KV DC; Air Discharge 15KV DC
- -30 to 75 degrees operating temperature
- Industrial design with dual power input
- Rack mounting installation
- CE, FCC, RoHS,CB.
- The user-friendly panel can show the device status through the LED indicator of PWR, Link.

Easy operation and maintenance

- Web management, CLI command line (Console, Telnet), SNMP (V1/V2).
- HTTPS, and SSHV1/V2.
- RMON, system log, LLDP, and port traffic statistics.
- CPU monitoring, memory monitoring, Ping test, and cable diagnose.

Hardware at a Glance

FRONT				REAR	SIDE
Model Name	Form-Factor	10/100/1000Base-T RJ45 ports	1G/2.5G/10GBASE-X Fiber SFP+ Ports	Power Supply	Fans
ITT-ISW-L3-8G4S+	DIN Rail Mounting	8	4	Dual power input DC 12~54V	Fanless

Software at a Glance

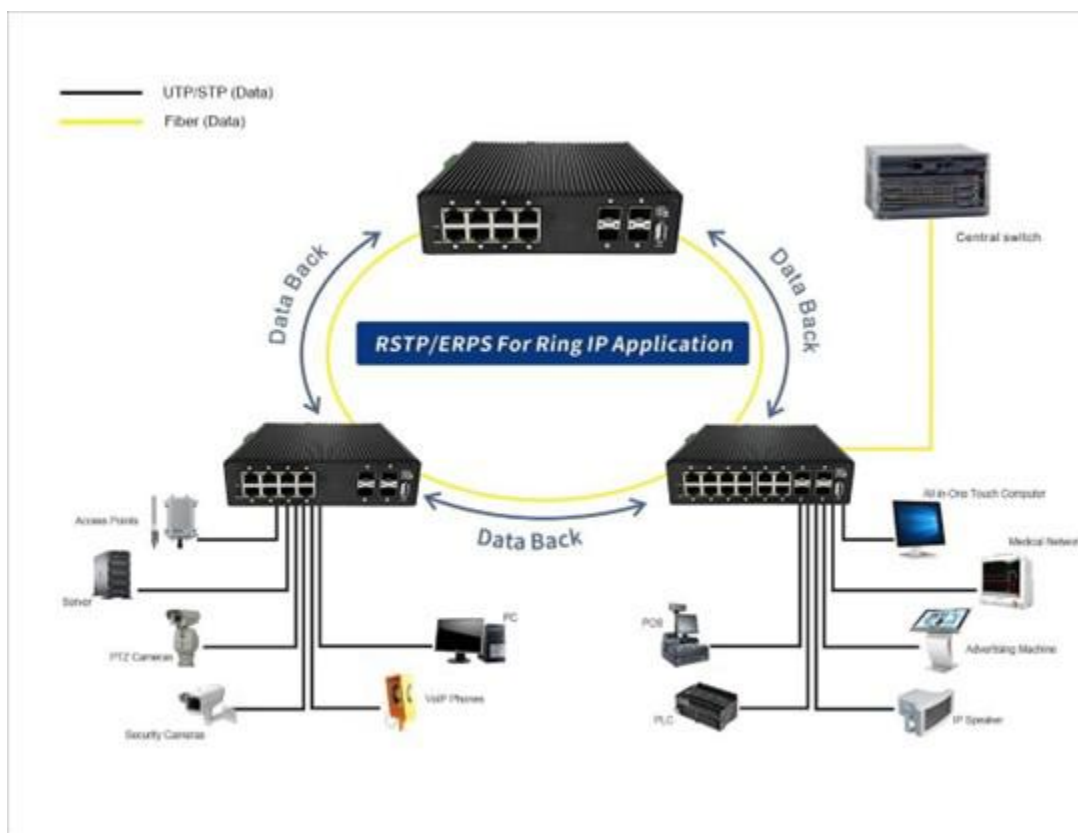
LAYER 2+ / LAYER 3 LITE FEATURES							
Management	IPv4/IPv6 ACL and QoS	IPv4/IPv6 Multicast Filtering	G.8032 ERPS STP/RSTP/MSTP	IEEE (802.3az) Energy Efficient Ethernet	VLANs	Convergence	IPv4 & IPv6 Static Routing RIP/OSPF/VRRP
Web Browser- based GUI(HTTP/HTTPS), PC-Based Smart Control Center Utility (SCC) , RMON, SNMP	L2, L3, L4, ingress	IGMP and MLD Snooping	Yes	Yes	Static Dynamic, Voice, MAC, Protocol- based	LLDP-MED, RADIUS, 802.1X	Yes

Performance at a Glance

Model Name	Chip	Packet buffer	Fabric	Switch Throughput	MAC Address Table	Jumbo Frame	Latency (Max Connection Speed)
ITT-IRSW-16GE4S	Realtek	4.2MB	64Gbps	35.72Mpps line-rate	8K MAC	9216 bytes	1G Copper: <3.35μs 1G Fiber: <3.1μs

Target Application

Network Convergence



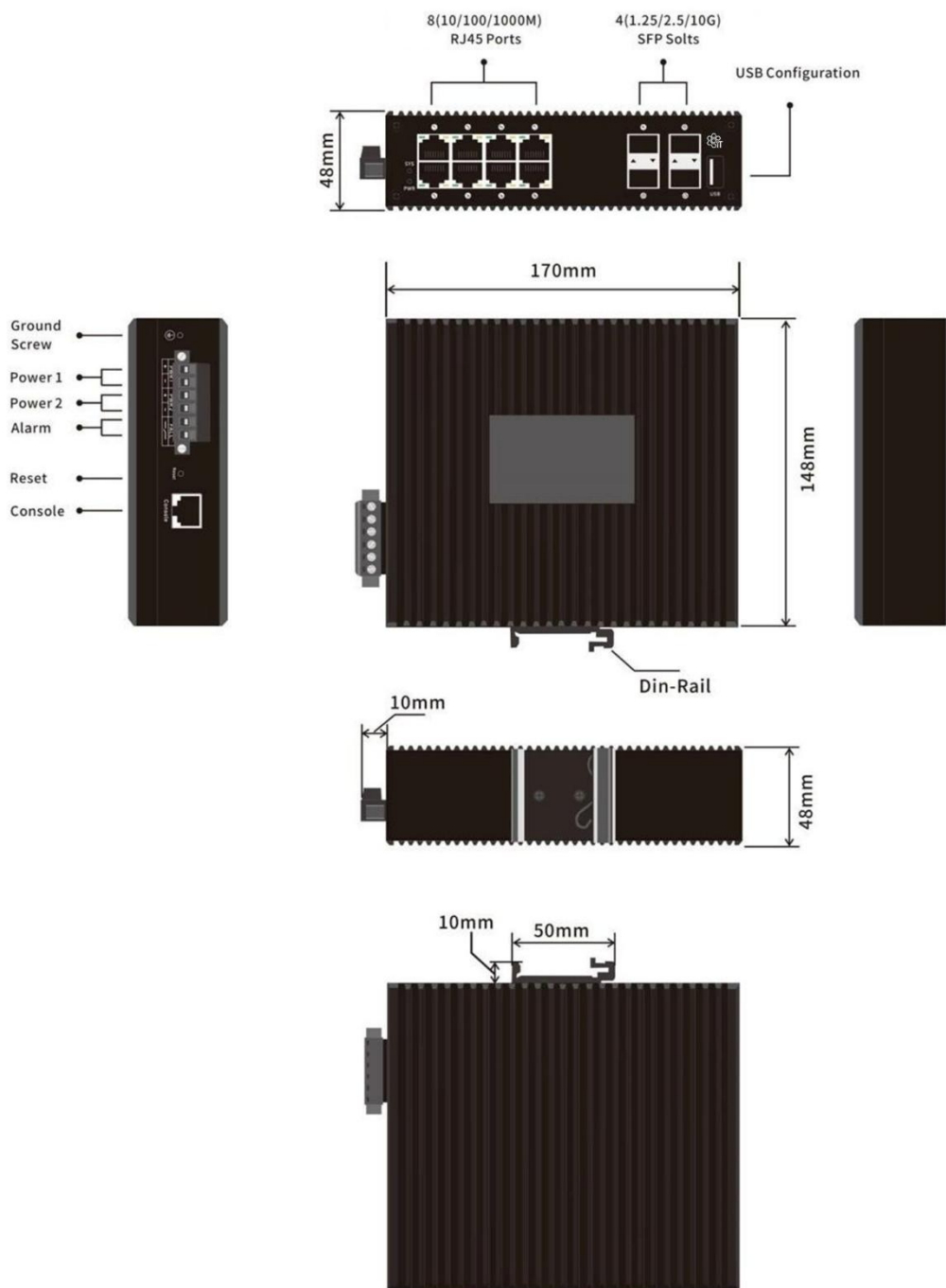
Across industries such as Industrial Parks, Power, Utilities, and Energy, there is a notable surge in the adoption of IoT devices like VoIP phones, IP security cameras, video-over-IP endpoints, proximity sensors, LED lighting, and secure access door locks. The increasing density of these devices necessitates robust and stable industrial network switches to ensure consistent network performance. In environments where devices are deployed in close proximity, maintaining seamless connectivity becomes crucial to avoid network interruptions. Moreover, outdoor and harsh environments demand industrial-grade network switches with exceptional durability and adaptability to withstand extreme conditions. These switches are designed to deliver reliable performance, ensuring uninterrupted operation in challenging scenarios such as temperature fluctuations, exposure to dust, and moisture. With the growing complexity of industrial networks,

choosing high-quality industrial-grade switches has become essential to support the expanding IoT ecosystem and meet the demands of modern industry applications.

The new 12-port managed industrial switch support dense deployments of these modern high-stability IoT devices. They offer powerful Layer 2 features for IPv4 and IPv6 with enhanced performance and a focus on usability within Industrial environments:

- Provide 8-10/100/1000M gigabit ethernet ports
- 4 dedicated 1G/2.5G/10G SFP+ fiber ports for aggregation to the network core
- Layer 3 static routing (IPv4 and IPv6) for interVLAN local routing
- Layer 3 RIPv1、v2, OSPFv1、v2, VRRP for multiple routing
- IGMP Snooping, IGMP Querier and IGMP Fast Leave for multicast optimization
- ERPS(G.8032) STP/FSTP/MSTP for Ring network and Link protection
- Include VLANs, ACLs, DiffServ, LACP, MVR and DHCP
- Easy-to-use Web browser-based management GUI — No need for an IT expert
- Excellent features such as fast response, resisting vibration, enduring dust, adapting for the hard environment, etc.
- Provide 16-10/100/1000M ethernet network ports
- 4-1Gb RJ45/SFP combo ports for aggregation to the network core
- Dual power input --- the risk of network outages due to power supply failure is significantly reduced.
- Wide Operating Temperature Range of -30 to 75℃
- Contact Discharge 8KV DC; Air Discharge 15KV DC
- High strength aluminum alloy shell,IP40 Industrial design
- Excellent features such as fast response, resisting vibration, enduring dust, adapting for the hard environment, etc.
- Plug and play, No configuration required --- simplifies the installation process • Limited Lifetime* Warranty, Tech support

Structure Diagrams



Technical Specifications	ITT-ISW-L3-8G4S+
10M/100M/1G RJ-45 copper ports	8
1G/2.5G/10G SFP+ (fiber) ports	4

Console Port (For config)	Yes
USB port (for config file upload/backup & firm-ware updates)	Yes

Performance Specification

L2 Services - VLANs	ITT-ISW-L3-8G4S+
IEEE 802.1Q VLAN tagging	Yes
QinQ VLAN tagging	Yes
IP-based VLANs	Yes
MAC-based VLANs	Yes
Protocol-based VLAN	Yes
Voice VLAN	Yes
VLAN mapping	Yes

L2 Services - Availability	
Broadcast, multicast, unknown unicast storm control	Yes
IEEE 802.3ad - LAGs (LACP)	Yes
IEEE 802.3x (full duplex and flow control)	Yes
IEEE 802.1D Spanning Tree Protocol	Yes
IEEE 802.1w Rapid Spanning Tree Protocol	Yes
IEEE 802.1s Multiple Spanning Tree Protocol	Yes
ITU-TG.8032 ERPS	Yes, Recovery time < 50ms

L2 Services - Multicast Filtering	
IGMP snooping (v1, v2 and v3)	Yes
MLD snooping support (v1 and v2)	Yes
IGMP snooping querier (v2)	Yes
MLD snooping querier (v1)	Yes

Multicast VLAN Registration (MVR)	Yes
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L3 Services - DHCP

DHCP client	Yes
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DHCP snooping	Yes
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DHCP Server	Yes
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L3 Services - Routing

IPv4 static routing	Yes
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IPv6 static routing	Yes
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VLAN routing	Yes
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RIP V1/V2	Yes
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OSPF V2	Yes
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Number of IP VLAN interfaces(routed VLANs)	15
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Policy routing	Yes
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VRRP	Yes
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Link Aggregation

ITT-ISW-L3-8G4S+

IEEE 802.3ad - LAGs (LACP)	Yes
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Manual LAG	Yes
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# of LAGs / # of members in each LAG	8 LAGs with max 8 members in each LAG
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Network Monitoring and Discovery Services

802.1ab LLDP	Yes
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SNMP	v1, v2c, v3
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RMON group 1,2,3,9	Yes
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Network Security

IEEE 802.1x	Yes
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RADIUS accounting	Yes
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Access Control Lists (ACLs)	Yes
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IP-based ACLs (IPv4 and IPv6)	L2 / L3 / L4
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MAC-based ACLs	Yes
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TCP/UDP-based ACLs	Yes
Control MAC # static entries	48
Port-based security by locked MAC addresses	Yes
Dynamic ARP inspection	Yes
Broadcast, unicast, multicast DoS protection	Yes
DoS attacks prevention	Yes
Network storm protection, DoS	Yes
Broadcast, unicast, multicast DoS protection	Yes
DoS attacks prevention	Yes
Quality of Service (QoS)	
Port-based rate limiting	Yes ingress and egress
Port-based QoS	Yes
Support for IPv6 fields	Yes
DiffServ QoS	Yes ingress
IEEE 802.1p COS	Yes
Destination MAC and IP	Yes
IPv4 and v6 DSCP	Yes
TCP/UDP-based	Yes
Weighted Round Robin (WRR)	Yes
Strict priority queue technology	Yes

IEEE Network Protocols

ITT-ISW-L3-8G4S+

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|--|---|
| • IEEE 802.3 Ethernet | • IEEE 802.3x Full-Duplex Flow Control |
| • IEEE 802.3u 100BASE-T | • IEEE 802.1Q VLAN Tagging |
| • IEEE 802.3ab 1000BASE-T | • IEEE 802.1AB LLDP with ANSI/TIA-1057 (LLDP-MED) |
| • IEEE 802.3z 1000BASE-SX/LX | • IEEE 802.1p Class of Service |
| • IEEE 802.3bz 2.5G BASE-X | • IEEE 802.1D Spanning Tree (STP) |
| • IEEE 802.3ae 10G BASE-X | • IEEE 802.1s Multiple Spanning Tree (MSTP) |
| • IEEE 802.3az Energy Efficient Ethernet (EEE) | • IEEE 802.1w Rapid Spanning Tree (RSTP) |
| • IEEE 802.3ad Trunking (LACP) | • IEEE 802.1x RADIUS Network Access Control |

Management, Monitoring & Troubleshooting

Password management	Yes
Admin access control via RADIUS and TACACS+	Yes
IPv6 management	Yes
SNMP v1/v2c/v3	Yes
RMON group 1,2,3,9	Yes
Port mirroring	Yes ingress and egress
Many-to-one port mirroring	Yes
Cable test utility	Yes
TLS/HTTPS Web-based access (version)	Yes (v1.2)
File transfers (uploads, downloads)	TFTP / HTTP
HTTP upload/download (firmware)	Yes
Syslog (RFC 3164)	Yes
USB port for firmware and config upload/ download	Yes
LEDs	Yes
Per port	Speed, Link, Activity
Per device	Power, system

Physical Specifications

Dimensions	170 x 148 x 48 mm (6.69 x 5.83 x 1.89 in)
Weight	1.2 kg (2.65 lb)
Power Requirements	AC100~260V 50/60Hz (Dual power input)
Max power (worst case, all ports used, line-rate traffic) (Watts)	19W
Idle power consumption (all ports link-down standby) (Watts)	12W
Fan	Fanless

Environmental Specifications ITT-ISW-L3-8G4S+

Operating

Operating Temperature	-40° to 85°C (-40° to 185°F)
Humidity	95% maximum relative humidity (RH), non-condensing
Altitude	10,000 ft (3,000 m) maximum

Storage

Storage Temperature	-40° to 85°C (-40° to 185°F)
Humidity (relative)	95% maximum relative humidity, non-condensing
Altitude	10,000 ft (3,000 m) maximum

Executive Standard & Protection

Lightning Protection

IEC61000-4-3 (RS)	10V/m (80~1000MHz)
FCC Part 15/CISPR22 (EN55022)	Class B
IEC61000-6-2	Common Industrial Standard
IEC61000-4-9 (Pulsed magnet field)	1000A/m
IEC61000-4-10 (Damped oscillation)	30A/m, 1MHz
IEC61000-4-12/18 (Shockwave)	CM 2.5kV, DM 1kV
IEC61000-4-4(EFT)	Power cable:±4kV, Data cable: ±2kV
IEC61000-4-16(Common-mode transmission)	30V, 300V, 1s

IEC61000-4-2 (ESD)	±8kV contact discharge, ±15kV air discharge
IEC61000-4-6 (Radio frequency transmission)	10V(150kHz~80MHz)
IEC61000-4-8 (Power frequency magnetic field)	100A/m, 1000A/m, 1s-3s
IEC61000-4-5 (Surge): Power cable	CM±4kV/ DM±2kV, Data cable: ±4kV

Mechanical Properties

IEC60068-2-6	Anti Vibration
IEC60068-2-32	Free Fall
IEC60068-2-27	Anti Shock