

Nokia 7250 IXR-e and IXR-e2 series Interconnect Routers

Release 25

The Nokia 7250 Interconnect Router (IXR)-e and IXR-e2 series¹ is designed for demarcation, branch office connectivity, access, and aggregation and is ideal for IP anyhaul applications, including 4G/5G mobile backhaul, fronthaul and enterprise applications for telecommunication providers, AI and cloud providers, and mission-critical enterprise environments.

Overview

The Nokia 7250 IXR-e and IXR-e2 series offer a wide range of high-speed, high-density, fixed-connector platforms, precise timing-and-synchronization capabilities, and feature-rich IP routing in a compact 1RU form factor.

Distinguished by capacity and optical-interface capabilities, the 7250 IXR-e and IXR-e2 series scale from 44 Gb/s up to 800 Gb/s, and support a wide range of connector speeds and optics—including 400G QSFP-DD, 100G QSFP28, 25/10G SFP28/SFP+ and 10/1G SFP+/SFP—as well as flexible optical breakout options. They also support pluggable Digital Coherent Optics (DCO) 100ZR/400ZR+ and pluggable Line Systems (QSFP-LS).

Ready for growth

Support for 400GE and 100GE high-speed uplinks—including multiple 400GE and 100GE connectors in the same system—along with 25GE, 10GE, and 1GE interfaces enables a cost-effective networking architecture for both access and aggregation layers.



7250 IXR-e2



7250 IXR-e2c



7250 IXR-e2n



7250 IXR-e 2QSFP28 8SFP28 24SFP+



7250 IXR-e 14SFP+ 4RJ45



7250 IXR-ec

¹ The 7250 IXR-e and IXR-e2 series is part of the [7250 IXR family](#). Additional data sheets are available for other variants in the product family.

5G mobile and telco-cloud infrastructures are moving toward 25GE interfaces. The Nokia 7250 IXR-e and IXR-e2 series feature native 25GE ports that support 1GE, 10GE, and 25GE transceivers. This allows seamless migration from 1GE to 10GE to 25GE speeds without the need to replace the router, thanks to support for GE SFPs in all SFP+ cages.

Compact and power saving

All 7250 IXR-e and IXR-e2 series variants are compact, 1RU devices that support extended temperature range (ETR) operation, making them ideal for outside cabinet applications. All interfaces and power supplies are front accessible. The 7250 IXR-e2 has a front-to-back airflow configuration, while the ETSI 300 mm compliant variants (7250 IXR-e, IXR-e2c, and IXR-ec) have a side-to-side airflow configuration. Fan filters (available on the 7250 IXR-e and IXR-ec) and redundant fan options increase system lifetime and reduce maintenance costs.

Superior design integration ensures that the 7250 IXR-e and IXR-e2 series consume significantly less power than comparable competing products. This power-efficiency design will provide substantial benefits for large-scale 5G deployments. The 7250 IXR-e2 offers high-performance capabilities, including over 1 Tb/s of interface aggregation and 800 Gb/s throughput. The 7250 IXR-e2n offers feature-rich layer 2, layer 3, MPLS, SRv6, and OAM capabilities, with flexible licensing, and is passively cooled for low power consumption.

Differentiated services support

The Nokia 7250 IXR-e and IXR-e2 series supports low-latency applications while providing a large buffer memory for delay-tolerant applications. Very granular per-service and per-forwarding class policing and queuing features support differentiated quality of service (QoS), making the 7250 IXR-e and IXR-e2 series ideal for any-G aggregation and fixed-mobile network convergence.

To meet the timing and synchronization requirements of 5G networks, the 7250 IXR-e and IXR-e2 series support the G.8273.2 specification for Class C clock noise generation. Additionally, the 7250 IXR-e2 and 7250 IXR-e2c variants offer enhanced capabilities with a Class D clock.

Automation

To simplify and automate network operations, the Nokia 7250 IXR-e and IXR-e2 series enables model-driven network management features through the Nokia Service Router Operating System (SR OS). It is managed by the Nokia Network Services Platform (NSP), which offers a rich set of service management features that automate end-to-end service provisioning and operations, administration and maintenance (OAM) to enhance end-user experience and reduce operating costs.

Standards-based software-defined networking (SDN) interfaces enable best-path computation to be offloaded to path computation elements (PCEs) such as the NSP. The 7250 IXR-e and IXR-e2 series operate as path computation clients (PCCs) collecting and reporting per-link and per-service delay, jitter and loss metrics together with port utilization levels for efficient path computation.

Technical specifications

Table 1. Nokia 7250 IXR-e2 series specifications

Feature	7250 IXR-e2 (2 variants)	7250 IXR-e2c (2 variants)	7250 IXR-e2n (3 variants)
System throughput: Full duplex IMIX traffic	800 Gb/s	100 Gb/s	44 Gb/s
Connectors	<ul style="list-style-type: none"> • 2 x 400G QSFP-DD • 2 x 100G QSFP28 • 24 x 25/10/1G SFP28/SFP+/SFP 	<ul style="list-style-type: none"> • 2x 100G QSFP28 • 12 x 25/10/1G SFP28/SFP+/SFP 	<ul style="list-style-type: none"> • 4 x 10/1G SFP+/SFP • 4 x 1G SFP
Optical breakouts	<ul style="list-style-type: none"> • 4 x 100G, 2x100G, 4x25G, 4 x 10G (on QSFP-DD connectors) • 4x25G, 4 x 10G (on QSFP28 connectors) 	<ul style="list-style-type: none"> • 4x25G, 4 x 10G (on QSFP28 connectors) 	—
Control interfaces	Console, management, USB, 1 PPS out, SD slot, alarm input/output		Console, management, USB, SD slot
Satellite mode option	NA	NA	NA
Timing and synchronization	<ul style="list-style-type: none"> • Includes Stratum 3E oscillator ITU-T Synchronous Ethernet (SyncE) ITU-T G.8262.1 (eEEEC) • IEEE 1588v2 <ul style="list-style-type: none"> – Boundary clock – Slave clock – Grandmaster clock – Profile: ITU-T G.8275.1 – Profile: ITU-T G.8275.2 with PTS and APTS – Profile ITU-T G.8265.1 – Profile IEEE 1588-2008 – Ethernet encapsulation – UDP/IPv4 encapsulation – ITU-T G.8273.2 Class D³ • Integrated dual-band GNSS receiver <ul style="list-style-type: none"> – PRTC-B capable (GPS/Galileo) • RFC 5905 Network Time Protocol (NTP) • Pulse-per-second (1PPS) output timing 	<ul style="list-style-type: none"> • Includes Stratum 3E oscillator ITU-T Synchronous Ethernet (SyncE) ITU-T G.8262.1 (eEEEC) • IEEE 1588v2 <ul style="list-style-type: none"> – Boundary clock – Slave clock – Profile: ITU-T G.8275.1 – Profile: ITU-T G.8275.2 with PTS – Profile ITU-T G.8265.1 – Profile IEEE 1588-2008 – Ethernet encapsulation – UDP/IPv4 encapsulation – ITU-T G.8273.2 Class D³ – RFC 5905 Network Time Protocol (NTP) • Pulse-per-second (1PPS) output timing 	<p>On redundant power variants:²</p> <ul style="list-style-type: none"> • Includes Stratum 3E oscillator • ITU-T Synchronous Ethernet (SyncE) ITU-T G.8262.1 (eEEEC) • IEEE 1588v2 <ul style="list-style-type: none"> – Boundary clock – Slave clock – Profile: ITU-T G.8275.1 – Profile: ITU-T G.8275.2 with PTS – Profile ITU-T G.8265.1 – Profile IEEE 1588-2008 – Ethernet encapsulation – UDP/IPv4 encapsulation – ITU-T G.8273.2 Class D³ – RFC 5905 Network Time Protocol (NTP)

² Available in a future release. Contact Nokia for details.

³ Contact Nokia for implementation details.

Feature	7250 IXR-e2 (2 variants)	7250 IXR-e2c (2 variants)	7250 IXR-e2n (3 variants)
Indicators	<ul style="list-style-type: none"> Management, per port (link and activity) LED GNSS, PS1, PS2, System (Stat), Fan LED 	<ul style="list-style-type: none"> Management, per port (link and activity) LED PS1, PS2, System (Stat), Fan LED 	<p>Redundant power variants:²</p> <ul style="list-style-type: none"> Management, per port (link and activity) LED System (Stat), Power Supply (PS) LED <p>Non-redundant power variant:</p> <ul style="list-style-type: none"> Management, USB, per port (link and activity) LED System (Stat) LED
Memory buffer size	2 GB	1 GB	—
Hardware redundancy	Power supplies, cooling fans N+1		Power (optional)
Dimensions	<ul style="list-style-type: none"> Height: 1RU, 4.5 cm (1.75 in) Depth: 25.0 cm (10.0 in) Width: 43.8 cm (17.25 in) Rack-mountable in a 48.2-cm rack, 30-cm depth (standard 19-in equipment rack, 12-in depth) 	<ul style="list-style-type: none"> Height: 1RU, 4.5 cm (1.75 in) Depth: 21.1cm (8.3 in) Width: 43.8 cm (17.25 in) Rack-mountable in a 48.2-cm rack, 30-cm depth (standard 19-in equipment rack, 12-in depth) ETSI 300-mm compliant 	<p>7250 IXR-e2n</p> <ul style="list-style-type: none"> Height: 1RU, 4.5 cm (1.75 in) Depth: 23.9 cm (9.41 in) Width: 21.5 cm (8.46 in) <p>7250 IXR-e2n (Redundant power)²</p> <ul style="list-style-type: none"> Height: 1RU, 4.5 cm (1.75 in) Depth: 23.98 cm (9.44 in) Width: 29.21 cm (11.5 in) Rack-mountable with extension ears ETSI 300-mm compliant
Power supply options	Two feeds: Modular AC or DC power supplies	Two feeds: AC or DC inputs	Future ²
Power requirements	<ul style="list-style-type: none"> AC input (rated): 110 V to 220 V, DC input (rated): -48 V to -60 V 	<ul style="list-style-type: none"> AC input (rated): 110 V to 220 V DC input (rated): -48 V to -60 V 	<ul style="list-style-type: none"> AC input (rated): 110 V to 220 V DC input (rated): -48 V to -60 V
Conformal coating	Optional	—	—
PCB enhanced plating (PEP)	—	Supported	—
Cooling	<ul style="list-style-type: none"> Internal non-replaceable fans Front-to-back airflow Optional filter add-on 	<ul style="list-style-type: none"> Internal non-replaceable fans Replaceable filter Right-to-left airflow 	<ul style="list-style-type: none"> Passive cooling
Normal operating temperature range	-40°C to +65°C (-40°F to +149°F) sustained		
Shipping and storage temperature	-40°C to +70°C (-40°F to +158°F)		
Normal humidity	5% to 95%, non-condensing		

Table 2. Nokia 7250 IXR-e series specifications

Feature	7250 IXR-e 2QSFP28 8SFP28 24SFP+ (4 variants)	7250 IXR-e 14SFP+ 4RJ45 (4 variants)	7250 IXR-ec (4 variants)
System throughput: Full duplex IMIX traffic	300 Gb/s	120 Gb/s	64 Gb/s
Connectors	<ul style="list-style-type: none"> • 2 x 100G QSFP28 • 8 x 25/10/G SFP28/SFP+/SFP⁴ • 24 x 10/1G SFP+/SFP 	<ul style="list-style-type: none"> • 14 x 10/1G SFP+/SFP • 4 x 100/1000 Mb/s RJ45 	<ul style="list-style-type: none"> • 6 x 10/1G SFP+/SFP • 20 x 1G SFP • 4 x 100/1000 Mb/s RJ45
Optical breakouts	<ul style="list-style-type: none"> • 4x25G, 4 x 10G (on QSFP28 connectors) 	—	—
Control interfaces	Console, management, USB (except IXR-ec), 1 PPS out, SD slot, alarm input/output (except IXR-e)		
Satellite mode option	Supported	NA	NA
Timing and synchronization	<ul style="list-style-type: none"> • Includes Stratum 3E oscillator • ITU-T Synchronous Ethernet (SyncE) ITU-T G.8262.1 (eEEC) • IEEE 1588v2 <ul style="list-style-type: none"> – Boundary clock – Slave clock (GNSS variant) – Grandmaster clock (GNSS variant) – Profile: ITU-T G.8275.1 – Profile: ITU-T G.8275.2 with PTS and APTS (GNSS variant) – Profile ITU-T G.8265.1 – Profile IEEE 1588-2008 (GNSS variant) – Ethernet encapsulation – UDP/IPv4 encapsulation – UDP/IPv6 encapsulation (GNSS variant) – ITU-T G.8273.2 Class C⁵ • RFC 5905 Network Time Protocol (NTP) • Pulse-per-second (1PPS) output timing • Support for GNSS SFP • PTP Profile interworking (GNSS variant) • Integrated GNSS receiver, GPS supported (GNSS variant) 	<ul style="list-style-type: none"> • Includes Stratum 3E oscillator • ITU-T Synchronous Ethernet (SyncE) ITU-T G.8262.1 (eEEC) • IEEE 1588v2 <ul style="list-style-type: none"> – Boundary clock – Profile: ITU-T G.8275.1 – Profile: ITU-T G.8265.1 – Ethernet encapsulation – UDP/IPv4 encapsulation • ITU-T G.8273.2 Class C⁵ • RFC 5905 Network Time Protocol (NTP) • Pulse-per-second (1PPS) output timing • Support for GNSS SFP 	
Indicators	<ul style="list-style-type: none"> • Management, power status (1 & 2) LEDs • Per port link and activity status LEDs • System (Stat), fan, remote management (LOC) status LEDs 		<ul style="list-style-type: none"> • Power status (Batt A and Batt B) LEDs • Per port link and activity status LEDs • System (Stat), fan status LEDs
Memory buffer size	3 GB	1 GB	1 GB
Hardware redundancy	Power supplies, cooling fans N+1		
Dimensions	<ul style="list-style-type: none"> • Height: 1RU, 4.5 cm (1.75 in) • Depth: 25.4 cm (10.0 in) • Width: 43.8 cm (17.25 in) • Rack-mountable in a 48.2-cm rack, 30-cm depth (standard 19-in equipment rack, 12-in depth) • ETSI 300-mm compliant 		<ul style="list-style-type: none"> • Height: 1RU, 4.5 cm (1.75 in) • Depth: DC variant 23.5cm (9.3 in) AC variant 25.4cm (10.0 in) • Width: 43.8 cm (17.25 in) • Rack-mountable in a 48.2-cm rack, 30-cm depth (standard 19-in equipment rack, 12-in depth) • ETSI 300-mm compliant

⁴ SFP28 interface support is a future software deliverable. Contact Nokia for details.

⁵ Contact Nokia for implementation details.

Feature	7250 IXR-e 2QSFP28 8SFP28 24SFP+ (4 variants)	7250 IXR-e 14SFP+ 4RJ45 (4 variants)	7250 IXR-ec (4 variants)
Power supply options	Two feeds: Modular AC or DC power supplies Supports concurrent use of AC and DC power supplies		Two feeds: AC or DC inputs
Power requirements	<ul style="list-style-type: none"> AC input (rated): 100 V to 220 V DC input (rated): 24 V / -48 V 		<ul style="list-style-type: none"> AC input (rated): 100 V to 220 V DC input (rated): -48 V to -60 V
Conformal coating	Supported on 2 variants	Supported on 2 variants	Supported on 2 variants
PCB enhanced plating (PEP)	—	—	—
Cooling		<ul style="list-style-type: none"> Internal non-replaceable fans Replaceable filter Right-to-left airflow 	
Normal operating temperature range	-40°C to +65°C (-40°F to +149°F) sustained		
Shipping and storage temperature	-40°C to +70°C (-40°F to +158°F)		
Normal humidity	5% to 95%, non-condensing		

Software features

The Nokia 7250 IXR-e and IXR-e2 series supports, but is not limited to, the following features.

Services

- Point-to-point Ethernet pseudowires/virtual leased line (VLL)
- Ethernet Virtual Private Network (EVPN)
 - Virtual Private Wire Service (EVPN-VPWS)
 - Virtual Private LAN Services (EVPN-VPLS): IPv4 and IPv6 support, including Virtual Router Redundancy Protocol (VRRP)
 - Multihoming with single active or active/active modes
 - Virtual eXtensible LAN (VXLAN) tunnel termination in VPLS and Routed-VPLS⁶
- Multipoint Ethernet VPN services with VPLS based on Targeted Label Distribution Protocol (T-LDP) and Border Gateway Protocol (BGP)
- Routed-VPLS services with Internet Enhances Services (IES)/IP-VPN IPv4 and IPv6
- Ingress and egress VLAN manipulation for L2 services

- IP VPN Virtual Private Routed Network (VPRN), Inter-Autonomous System (Inter-AS) Option A, B, and C
- IPv6 VPN Provider Edge (6VPE)
- EVPN Interface-less IPv4 and IPv6 prefix routes (EVPN-IFL)
- MPLS (including SR-MPLS) to SRv6 interworking GW⁶

Network protocols

- Segment Routing MPLS (SR-MPLS)
 - Intermediate System-to-Intermediate System (SR-ISIS) and Open Shortest Path First (SR-OSPF)
 - Traffic engineering (SR-TE) IPv4, IPv6
- Segment Routing IPv6 (SRv6)⁶
 - SRv6 IS-IS shortest path tunnel support in MT=0 and MT=2
- Flexible Algorithms
 - Admin-group include/exclude, IGP/TE/Latency metric
- MPLS label edge router (LER) and label switching router (LSR) functions
 - LDP
 - Resource Reservation Protocol with traffic engineering (RSVP-TE)

⁶ Supported on Nokia 7250 IXR-e2, IXR-e2n and IXR-e2c variants

- BGP Labeled Unicast (LU) (RFC 3107) route tunnels
- IP routing
 - Dual-stack Interior Gateway Protocol (IGP)
 - Multi-topology, multi-instance IS-IS
 - Multi-instance OSPF
 - Multiprotocol BGP (MP-BGP)
 - BGP-LU support in edge, area border router (ABR) and autonomous system boundary router (ASBR) roles
 - Usage-triggered download of BGP label routes to Label - Forwarding Information Base (L-FIB)
 - Accumulated IGP (AIGP) metric for BGP
 - BGP monitoring protocol (BMP)
 - BGP route-reflector for EVPN and IP-VPN with VPNv4 and VPNv6 address families (AFs)
 - BGP confederations
 - IGP and BGP shortcuts
- Layer 3 Multicast - base routing
 - Internet Group Management Protocol (IGMP)
 - Protocol Independent Multicast – Sparse Mode (PIM-SM), Source Specific Multicast (SSM)
 - Multicast Listener Discovery (MLD)
 - Multicast Source Discovery Protocol (MSDP)
- Layer 3 Multicast – VPRN
 - Next-generation multicast VPNs (NG-MVPN)
 - SSM with multicast LDPv4 (mLDPv4)
 - IGMP/MLD
 - IGMP/MLD on Routed VPLS Interface
- Layer 2 Multicast
 - IGMP/MLD snooping
- IP-GRE tunnel support⁷

SDN

- SR-TE LSPs, RSVP-TE LSPs
 - PCC initialized, PCC controlled
 - PCC initialized, PCE computed
 - PCC initialized, PCE controlled
- SR-TE LSPs: PCE initialized, PCE controlled
- SR policy: BGP and static
- Topology discovery: BGP-Link State (BGP-LS IPv4 and IPv6)
- Telemetry: streaming interface statistics, service delay and jitter metrics
- Netflow/cflowd

Load balancing and resiliency

- Segment routing topology independent loop-free alternate (TI-LFA) and remote loop-free alternate (rLFA) in both SR-MPLS and SRv6⁷
- LDP LFA and rLFA
- IEEE 802.1.AX Link Aggregation Group (LAG) and multi-chassis (MC) LAG
- Pseudowire and LSP redundancy
- IP, SRv6⁷, and MPLS load balancing by equal-cost multipath (ECMP)
- Weighted LAG hash
- VRRP
- Ethernet Ring Protection Switching ITU-T G.8032v2
- Configurable polynomial and hash seed shift
- Entropy label (RFC 6790)
- RSVP-TE Fast Reroute (FRR)
- BGP Edge and Core Prefix Independent Convergence (BGP PIC)

Platform

- Ethernet IEEE 802.1Q (VLAN) and 802.1ad (QinQ) with 9K jumbo frames

⁷ Supported on Nokia 7250 IXR-e2, IXR-e2n and IXR-e2c variants

- Detailed forwarded and discarded counters for service access points (SAPs) and network interfaces in addition to port-based statistics: per Virtual Output Queue (VoQ) packet and byte counters
- High-scale, per-policer, detailed counters on a per-state basis
- VLAN range-based SAPs
- Dynamic Host Configuration Protocol (DHCP server for IPv4 IES, VPNv4)
- DHCP relay, IPv4 and IPV6, IES, IP-VPN, EVPN-VPLS
- Accounting records

QoS and traffic management

- Hierarchical QoS (H-QoS)
 - Hierarchical egress schedulers and shapers per forwarding class, SAP, network interface, port or LAG
 - Port sub-rate
- Intelligent packet classification, including media access control (MAC), IPv4, IPv6 match-criteria-based classification
- Granular rate enforcement with up to 32 policers per SAP/VLAN, including broadcast, unicast, multicast and unknown policers
- Hierarchical policing for aggregate rate enforcement
- Strict priority, weighted fair queuing schedulers
- Congestion management via weighted random early discard (WRED)
- Egress marking or re-marking

System management

- Simple Network Management Protocol (SNMP)
- Model-driven (MD) management interfaces
 - NETCONF
 - MD CLI
 - Remote Procedure Call (gRPC)
- Comprehensive management with Nokia NSP

Operations, administration and maintenance

- IEEE 802.1ag, ITU-T Y.1731: Ethernet Connectivity Fault Management (CFM) for both fault detection and performance monitoring, including delay, jitter and loss tests
- Ethernet bandwidth notification (ETH-BN) with egress rate adjustment
- IEEE 802.3ah: Ethernet in the First Mile (EFM)
- ITU-T Y.1564 Service Activation Test
- Bidirectional Forwarding Detection (BFD) IPv4, IPv6
- Micro-BFD - per member link
- Hardware based sBFD⁸
- Link Layer Discovery Protocols (LLDP) (IEEE 802.3AB-2005)
- Two-Way Active Measurement Protocol (TWAMP), TWAMP Light/STAMP for base and flex-algo topologies
- A full suite of MPLS OAM tools, including LSP and virtual circuit connectivity verification (VCCV) ping
- Service assurance agent
- Mirroring with slicing support
 - Port
 - VLAN
 - Filter output: MAC, IPv4/IPv6 filters
 - Local/remote
- Port and VLAN loopback with MAC-swap
- Configuration rollback
- Zero Touch Provisioning (ZTP) capable

Security

- Remote Authentication Dial-In User Service (RADIUS), Terminal Access Controller Access Control System Plus (TACACS+), and comprehensive control-plane protection capabilities
- Distributed CPU Protection (DCP)
- MAC-, IPv4- and IPv6-based access control lists and criteria-based classifiers
- Secure Shell (SSH)
- MACsec (Nokia 7250 IXR-e small)
- SR OS Secure Boot
- IP unicast RPF (uRPF)

⁸ Supported on Nokia 7250 IXR-e2 and IXR-e2c variants

Standards compliance⁹

Environmental specifications

- ATIS-0600015.03
- ATT-TP-76200
- ETSI EN 300 019-2-1; Storage Tests, Class 1.2
- ETSI EN 300 019-2-2; Transportation Tests, Class 2.3
- ETSI EN 300 019-2-3; Operational Tests, Class 3.2
- ETSI EN 300 753 Acoustic Noise Class 3.2
- GR-3108
- GR-63-CORE
- VZ.TPR.9305
- VZ-TPR-9205

Safety

- AS/NZS 62368.1
- IEC/EN 60825-1
- IEC/EN 60825-2
- IEC/EN/UL/CSA 62368-1
- IEC 60529 IP20

Electromagnetic compatibility

- AS/NZS CISPR 32 Class A
- BSMI CNS15936 Class A
- BT GS-7
- EN 55032 Class A
- EN 301 489-1
- EN 301 489-19
- EN 55035
- ETSI EN 300 132-1
- ETSI EN 300 132-2
- ETSI EN 300 386
- ETSI ES 201 468
- FCC Part 15 Class A

- FTZ 1 TR9 (Deutsche Telekom)
- GR-1089-CORE
- ICES-003 Class A
- IEC CISPR 35
- IEC CISPR 32 Class A
- IEC/EN 61000-3-2 AC Current Harmonics
- IEC/EN 61000-3-3 AC Voltage Fluctuations
- IEC/EN 61000-6-2, 6-4
- IEC/EN 61000-4-2 ESD
- IEC/EN 61000-4-3 Radiated Immunity
- IEC/EN 61000-4-4 EFT
- IEC/EN 61000-4-5 Surge
- IEC/EN 61000-4-6 Conducted Immunity
- IEC/EN 61000-4-11 Voltage Interruptions
- ITU-T K.20
- KCC Korea-Emissions & Immunity (in accordance KS C 9832 and KS C 9835)
- VCCI Class A

Railway

- AREMA¹⁰
- EN 50121-4¹¹
- IEC 62236-4¹¹

Power utility substations¹¹

- IEC 61850-3
- IEEE 1613 / 1613.1

Directives, regional approvals and certifications

- DIRECTIVE 2011/65/EU Restriction of the use of certain Hazardous Substances in Electrical and Electronic Equipment (Recast) Directive (RoHS2)
- DIRECTIVE 2012/19/EU Waste Electrical and Electronic Equipment (WEEE)
- DIRECTIVE 2014/30/EU Electromagnetic Compatibility (EMC)
- DIRECTIVE 2014/35/EU Low Voltage Directive (LVD)

⁹ System design intent is according to the listed standards. Certifications vary on different variants. Refer to product documentation for detailed compliance status.

¹⁰ Applicable to 7250 IXR-ec variant

¹¹ Applicable to 7250 IXR-e2, 7250 IXR-e2c, 7250 IXR-ec variants



- MEF CE 3.0 certified
- NEBS Level 3
 - Australia: RCM Mark
 - China RoHS: CRoHS
 - Europe: CE Mark
 - Japan: VCCI Mark
 - South Korea: KC Mark
 - Taiwan: BSMI Mark
 - United Kingdom: UKCA Mark

Other certifications

- MEF CE 3.0 certified

About Nokia

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As a B2B technology innovation leader, we are pioneering networks that sense, think and act by leveraging our work across mobile, fixed and cloud networks. In addition, we create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs, which is celebrating 100 years of innovation.

With truly open architectures that seamlessly integrate into any ecosystem, our high-performance networks create new opportunities for monetization and scale. Service providers, enterprises and partners worldwide trust Nokia to deliver secure, reliable and sustainable networks today – and work with us to create the digital services and applications of the future.

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