ACX7020 CLOUD METRO ROUTERS DATASHEET

Product Overview

Operators are finding opportunities and facing challenges to support new and complex services and applications with 5G, IoT, and cloud—all while keeping experience-first networking in mind. The ACX7000 family platforms can help operators thrive. The ACX7020 is fixed, 100 Gbps, 1-U (23.5 cm deep) multiservice routers are powered by Junos OS Evolved and Paragon Automation. It provides 1GbE to 25GbE port flexibility and delivers exceptional TCO, investment protection, and multiservice support for service provider, enterprise, and wholesale use cases. Its compact footprint and precision timing support make the ACX7020 ideal for 4G/5G mobile network deployments.

Product Description

The Juniper Networks® ACX7000 family of cloud metro routers is designed to help operators achieve their capital, operational, and user experience goals. Part of the Juniper Networks ACX7000 family of routers, the ACX7020, delivers exceptional TCO and investment protection. It also supports Juniper® Cloud Metro for 5G, Internet of Things (IoT), and cloud applications. This router is ideal for service provider, enterprise, and cable and residential use cases requiring an industrial-rated, highly flexible, compact, multiservice platform.

ACX7000 Family Overview

ACX7000 routers are purpose-built for the IP service fabric underlay of a Juniper Cloud Metro. They leverage the industry's fastest chipset, provide a unique balance of system design, and set new benchmarks for sustainable, high-performance platforms.

Managed by Junos® OS Evolved and Juniper Paragon™ Automation Portfolio, ACX7000 routers are embedded with Paragon Active Assurance and with Zero Trust security built in, enabling operators to deliver highly differentiated customer experiences. They are available in environmentally industrial-rated, fixed, fixed plus modular, and fully modular designs. These energy- and footprint-efficient multiservice routers support high-precision timing technologies and are engineered for service provider, enterprise, residential (including PON with the Juniper Unified PON Solution), IoT, and 4G/5G mobile applications.

Figure 1. Juniper Networks ACX7000 family—engineered for the IP service fabric of a Juniper Cloud Metro

Individually, ACX7000 platforms bring leading-edge performance, scale, and capability to any deployment. Building a comprehensive Juniper Cloud Metro architecture consisting of multiple ACX7000 family platforms lets you realize a new dimension of end-to-end operational capability, performance, and simplicity. Forming the foundation of an IP service fabric underlay, the ACX7000 family shares innovative features that elevate operations and enable the core characteristics of a cloud metro. For a complete picture of the capabilities of the ACX7000 family investment, be sure to read the ACX7000 Family of Cloud Metro Routers Datasheet.

Product Offering

ACX7020, from the ACX7000 family, is a compact, fixed, 1-U (23.5 cm deep), high-performance multiservice router.

Designed for cloud metro deployments in industrial temperature environments, it incorporates integrated fans (N+1 redundancy) for side-to-side airflow. It comes with 2x fixed AC or dual input DC power supplies. Cost-effective and efficient thermal design, which includes optional conformal coating, enables the usage of high-power SFP28 and SFP+ transceivers on all supporting ports. It incorporates precision-timing capabilities, including advanced Class C timing for low-latency 5G services and EMI/RFI shield with the optional conformal coating for best-in-class network experience. It supports next-generation protocols, including segment routing, SRv6, MPLS, and Ethernet VPN (EVPN), as well as any overlay, underlay, or service. The AXC7020 delivers service-assured network slicing, network intelligence, and Juniper Paragon Automation for network efficiency and operational simplicity.

ACX7020 is an industrial-rated (I-Temp) multiservice router. Next-generation silicon delivers 100 Gbps of throughput, a comprehensive feature set, and the scale needed to support today and tomorrow's performance and bandwidth requirements. The ACX7020 router's fixed ports include four multi-rate (SFP28) ports (each configurable as 1GbE, 10GbE, and 25GbE) and 16 multi-rate (SFP+) ports (each configurable as 1GbE or 10GbE) enabling operators to perform today's most common upgrades on a port-by-port basis. The four SFP28 ports can be used as 25GbE uplinks are available to support scale.

Features and Benefits

The cloud metro ready ACX7020 is engineered for sustainability. It addresses the challenges of evolving service requirements and relentless traffic growth imposed by 4G/5G, IoT, and cloud applications, turning them into opportunities for operators to thrive.

Table 1: ACX7020 Features and Benefits

Feature	Benefits
Junos OS Evolved and Embedded Active Assurance	Managed by Junos OS Evolved, Juniper Paragon Active Assurance Test Agents are embedded into all ACX7000 platforms enabling automated monitoring, diagnosis, remediation, and optimization of service delivery, service performance, and differentiated user experience.
Rugged and Efficient Design	Environmentally industrial-rated (-40 °C to +65 °C), and compact footprint (1 U, 23.5 cm deep, 19 in. rack) supports a variety of deployments. Efficient range (65 W typical*, 220 W max) with side-to-side airflow. NOTE: Typical power consumption measured at 25° C ambient with 50% load on all ports
Build-As-You-Grow Operational Simplicity	Two-post, fixed rack mounting, 20 multi-rate ports support native port-by-port 1GbE, 10GbE, and 25GbE configuration and migration. As service demand grows, ACX7020 routers support usage of high-density 25GbE transceivers on all supporting ports.
Next-Gen Capabilities	Next-gen capabilities include leading protocols such as segment routing, SRv6, MPLS, EVPN, advanced programmability, leading network slicing, telemetry, and support for any overlay, underlay, or service.

Feature	Benefits
Zero-Trust Security	Enhanced security capabilities include secure boot, integrated tamper-proof design, and trust anchor with DevID, enabling device attestation and enhanced security through a unique cryptographic digital identity.
Cloud Metro-Ready	ACX7020 offer deep buffering for end-to-end service assurance, precision timing capabilities such as Synchronous Ethernet, Precision Time Protocol (PTP), and advanced Class C timing for latency-optimized 5G service experiences, as well as EMI/RFI shield, optional conformal coating . An ideal choice for cloud metro, enterprise, and residential use cases, ACX7020 also support the Juniper Unified PON Solution, IoT, and 4G/5G mobile applications.

Figure 2. Juniper Networks ACX7020—engineered for Metro CSR, CE, small WAN edge access of a Juniper Cloud Metro

Table 2. Built-In Interface Options

Model	1GbE/10GbE SFP+	25GbE SFP-28
ACX7020	16	4

Table 3. Maximum Port Capacity Supported Per Port Speed

Native Port Speeds (Up to)	ACX7020
25GbE	4
10GbE	20
1GbE	20

Feature Matrix

A key differentiator and operator benefit of the ACX7000 family of cloud metro routers is that all platforms in the portfolio share the same feature set with a few limited, hardware-driven exceptions. Refer to the ACX7000 Family of Cloud Metro Routers Datasheet and Table 2 below for a list of ACX7000 family features and platform-specific exceptions.

Specifications

This section lists basic specifications for the ACX7020 line of routers. For further details, please refer to the hardware installation manuals at www.juniper.net/techpubs.

Specification	ACX7020
ASIC throughput	100 Gbps
CPU	Intel 4C
Memory	RAM: 16GB DDR4
Chassis type	Fixed
Dimensions (W x H x D)	17.36 x 1.72 x 9.25 in (44.9 x 4.37 x 23.5 cm)
Weight (lb/kg) fully configured	9.8 lb (4.45 kg)
Power (DC)	-24 VDC through -60 VDC
Power (AC)	110 VAC to 240 VAC
Typical power draw(without optics)*	65 W @ 25° C
Maximum power draw(without optics)*	220 W

Specification	ACX7020
Operating temperature	-40° C to +65° C GR3108-class-2
Cooling	2+1 fans, side-to-side airflow
Humidity	5% to 90% RH (noncondensing) operating
Interfaces	16x 1GbE/10GbE, 4x /25GbE SFP28
Synchronization interfaces	• 1 x PPS-OUT, 1 x 10M IN, 1 x10M OUT

*Exact power consumption is subject to operating conditions and unit-to-unit variations.

	ACX7020
EMC / Immunity / Network Equipment Building System (NEBS)/ Energy Efficiency	
BSMI CNS 13438 and NCC C6357 Taiwan Radiated and Conducted Emissions (at 10 meter)	Yes
IPC 1752 form filled and complete for all ordered AVL parts & Full Material Declaration	Yes
Material Safety Datasheet (MSDS) of batteries (if applicable)	Yes
California Proposition 65	Yes
EU Restriction of Hazardous Substances (RoHS II) Directive 2011/65/EU and 2015/863	Yes
Directive 2012/19/EU (WEEE) Waste Electrical and Electronic Equipment – Design for easy disassembly and recycling	Yes
Regulation (EC) No 1907/2006 (REACH) Chemical Substances – the Registration, Evaluation, Authorization and Restriction of Chemicals including POPs and PFAS	Yes
SCIP (Substance of Concern in Products) database – EU Waste Framework Directive	Yes
TSCA - Toxic Substances Control Act	Yes
Reg. 278/2009/EC applies for external power adapter on products classified as Class B per EN 55022	Yes
JIG 101-A, JIG 101-B Joint Industry Guide – Japanese Material Composition Declaration	Yes
Taiwan RoHS	Yes
CAITEC SJ/T11364-2014 Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products (China RoHS)	Yes
IEC 62368-1 2nd and 3rd Edition CB scheme all country deviation.	Yes
IEC 60255-21-1 Vibration Class 1	Yes
IEC 60255-21-2 Shock and bump Class 1	Yes
IEC 60255-21-3 Seismic Class 1	Yes
GR 63 issue 5	Yes
ETSI Storage EN 300 019 2.1 class 1.2	Yes
ETSI Transportation EN 300 019 class 2.3	Yes
ESTI Operation EN 300-019 class 3.2	Yes
EN50121-1:2006 and EN50121-4:2006 Railway EMC	Yes
EN61000-4-16 Mains Frequency voltage disturbance	Yes
EN 61000-6-1 Part 6-1: Generic standards - Immunity standard for residential, commercial and light-industrial environments	Yes
EN 61000-6-3 Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments	Yes
• FCC 47 CFR Part 15	Yes
• ICES-003 / ICES-GEN	Yes
• BS EN 55032	Yes
• BS EN 55035	Yes
• EN 300 386 V1.6.1	Yes
• EN 300 386 V2.2.1	Yes
• BS EN 300 386	Yes
• EN 55032	Yes
• CISPR 32	Yes

	ACX7020
• EN 55035	Yes
• CISPR 35	Yes
• IEC/EN 61000 Series	Yes
• IEC/EN 61000-3-2	Yes
• IEC/EN 61000-3-3	Yes
• BS EN 61000 Series	Yes
• AS/NZS CISPR 32	Yes
• VCCI-CISPR 32	Yes
• BSMI CNS 15936	Yes
• KS C 9835 (Old KN 35)	Yes
• KS C 9832 (Old KN 32)	Yes
EN 300 386 V1.6.1 (2012-09) Electromagnetic compatibility and Radio spectrum Matters (ERM); Telecommunication network equipment; Electromagnetic Compatibility (EMC) requirements	Yes
EN 300 386 V2.1.1 (2016-07) Telecommunication network equipment; Electromagnetic Compatibility (EMC) requirements; Harmonized Standard covering the essential requirements of the Directive 2014/30/EU	Yes
EN 55032:2012 (CISPR 32:2012) Electromagnetic compatibility of multimedia equipment – Emission requirements	Yes
EN 55024:2010 (CISPR 24:2010) Information technology equipment – Immunity characteristics – Limits and methods of measurement	Yes
EN 55035 (CISPR 35:2016) Electromagnetic compatibility of multimedia equipment – Immunity requirements (Notes: EN55035 will replace EN55024, it has not yet been added to the OJ and cannot be used by manufacturers – it is expected to enter into force within the next year with a transition period until 2017)	Yes
IEC/EN 61000 Immunity Test	Yes
BSMI CNS 13438 Taiwan Radiated and Conducted Emissions (at 10 Meter)	Yes
KN32 Korea Radiated Emission and Conducted Emissions (at 10 Meter)	Yes
KN35 Korea Radiated Immunity Characteristics	Yes
KN61000 Korea Immunity Test	Yes
AS/NZS CISPR 32:2015 Australia/New Zealand Radiated and Conducted Emissions	Yes
FCC 47 CFR Part 15 USA Radiated and Conducted Emissions	Yes
IC ICES-003 Canada Radiated and Conducted Emissions	Yes
VCCI-CISPR 32:2016 Japanese Radiated and Conducted Emissions	Yes
TEC/SD/DD/EMC-221/05/OCT-16 (Supersedes No. TEC/EMI/TEL-001/01/FEB-09) India EMC standard	Yes
NEBS GR-1089-Core Issue 7 EMC and Electrical Safety for Network Telecommunications Equipment	Yes

Ordering Information

Product	Description
Hardware	
ACX7020-AC	ACX7020 1 RU high, 235mm deep; 16xSFP+ (1/10G), 4xSFP28 (1/10/25G) ; Operating Range –40C to 65C; Redundant AC Power Supplies & Fans; Advanced timing
ACX7020-DC	ACX7020 1 RU high, 235mm deep; 16xSFP+ (1/10G), 4xSFP28 (1/10/25G) ; Operating Range –40C to 65C; Redundant DC Power source & Fans; Advanced timing
ACX7020-AC-C	ACX7020 1 RU high, 235mm deep; 16xSFP+ (1/10G), 4xSFP28 (1/10/25G) ; Operating Range –40C to 65C; Redundant AC Power Supplies & Fans; Advanced timing; Conformal coating
ACX7020-DC-C	ACX7020 1 RU high, 235mm deep; 16xSFP+ (1/10G), 4xSFP28 (1/10/25G) ; Operating Range –40C to 65C; Redundant DC Power source & Fans; Advanced timing; Conformal coating

Common ACX7000 Family Software License

A recurring cloud metro theme highlights the many benefits operators experience by designing their brownfield or greenfield IP service fabric around the ACX7000 family portfolio. Benefits include common features and protocols, synchronized software updates, leading-edge performance and sustainability, network as a sensor (Active Assurance), embedded Zero Trust security, secure zero touch provisioning (sZTP), Junos OS Evolved, Juniper Paragon Automation, and more. The application of common software license options across the entire portfolio is another example of operator convenience, flexibility, and simplicity. Refer to Table 3 in the ACX7000 Family of Cloud Metro Routers Datasheet for a complete list of build-as-you-grow software license options.

Optics and Transceivers

The ACX7000 family supports varying port speeds with different transceiver options of direct attach copper (DAC) and active optical cable (AOC). The most recent information on supported optics can be found at https://apps.juniper.net/home/.

Juniper Networks Service and Support

Juniper Networks is the leader in performance-enabling services that are designed to accelerate, extend, and optimize your high-performance network. Our services allow you to maximize operational efficiency while reducing costs and minimizing risk, achieving a faster time to value for your network. Juniper Networks ensures operational excellence by optimizing the network to maintain required levels of performance, reliability, and availability. For more details, please visit https://www.juniper.net/us/en/products.html.

About Juniper Networks

Juniper Networks believes that connectivity is not the same as experiencing a great connection. Juniper's AI-Native Networking Platform is built from the ground up to leverage AI to deliver the best and most secure user experiences from the edge to the data center and cloud. Additional information can be found at Juniper Networks (www.juniper.net) or connect with Juniper on [X](X) (Twitter), LinkedIn, and Facebook.

Statement of Product Direction

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