SBC 5400

Designed for communications service providers and large enterprises, the SBC 5400 is a powerful, compact and purpose-built SBC for the multimedia communications of today and tomorrow. With the ability to scale from 2GB to 10GB of multimedia traffic, the Ribbon SBC 5400 provides all of the features you need in an SBC today—robust network security, sophisticated routing and policy management, overload controls, SIP normalization—plus the features you'll need tomorrow, such as IPv4-IPv6 interworking, multi-modal communication, built-in media transcoding, and assured performance and scale under heavy traffic. As a key component of Ribbon's award-winning SBC Core platform family, the SBC 5400 meets all of the security, scalability, availability, and management requirements of service providers and large enterprises.

System Capabilities

Sessions
- 75,000 simultaneous sessions
- Up to 40,000 transcoded sessions
- Up to 32,000 H.323 sessions
- RTCP sessions scale 1:1 with RTP sessions
- Up to 32,000 recording sessions
- 20,000 Trunk groups
- 2000 VLANs

Call Set-Up
- Call setup maximum rate: 700 cps
- Call latency= 30ms (@ 450 cps, 90% fall into this category)

Registrations
- Maximum new registrations/sec: 1,250
- Maximum refreshes/sec: 5,000
- Total registered end point support: 600,000; up to 600,000 NAT'd end points
- Maximum surrogate registrations: 256,000

Encryption
- Maximum number of TLS sessions: 375,000
- TLS setup rate: 500/sec
- IPsec (IKE) setup rate: 150/sec
- Maximum # SRTP call legs: 150,000

Media Services
- Transcoding G.711, G.726, G.729A/B, G.723, iLBC, G.722, G.722.1, AMR-NB, AMR-WB, EVRC/EVRC0, EVRCB/ EVRCB0, Opus, SILK, EVS, Linear PCM (16 bits)
- Codec pass through

- G.711 fallback for fax and modem calls
- T.38 version 0/3 to G.711 interworking (transcoding)
- VAD, Silence Suppression, Dynamic Jitter Buffer, Fax/ Modem Detection, DTMF/Tone Relay/RFC2833/RFC4733 interworking
- NAT/NAPT on media
- Message Session Relay Protocol (MSRP) - MSRP B2BUA and MSRP-CEMA
- DTMF Trigger Detection and Notification
- Generic audio codec relay
- Tones & Announcements
- Local Ring Back Tone (LRBT) support with centralized PSX Policy Server
- RTP inactivity monitoring
- Supported video codecs: H.264 AVC, H.264 SVC, H.263+, H.261, VP8
- Support up to 4 simultaneous SIPREC recordings per session
- T.140 Text over Internet Protocol (ToIP) to/from Baudot interworking for TTY/TDD (Telecommunications Device for the Deaf) equipment support

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Redundancy
- 1:1 redundant systems for service availability
- 1:1 redundant management/control ports
- 1:1 redundant media ports

Management Capabilities
- Graphical based wizards for ease of configuration
- Secure embedded web-based management GUI
- Ribbon CLI
- Centralized support by Ribbon Insight EMS
- REST API
- SNMP V2/V3 status and statistics
- Local logging of events, alarms, traps, and call traces
- Ribbon DSI Level 0 support for storing CDRs, RADIUS accounting records
- Live Software Update (LSWU)
- Real time streaming of RTCP statistics for Ribbon Analytics
- APIs for call notification event and call termination

Signaling
- Back to Back User Agent (B2BUA)
- SIP, SIP-I/SIP-T, SIP/H.323, Ribbon gateway to gateway protocol
- SIP protocol normalization/protocol repair, SIP message manipulation (SMM)
- NAT/NAPT on signaling
- Binary floor control protocol (BFCP), Far-end camera control (FECC)
- SIP over WebSocket

Security
- Session aware firewall, topology hiding
- Line rate DoS/ DDoS and rogue RTP protection
- Line rate malformed packet protection
- TLS, IPSec (IKE v1/v2, ESP tunnel/transport mode) for signaling encryption
- Secure RTP/RTCP for media encryption
- Support for STIR/SHAKEN Caller ID Authentication and Verification

Protocol Support
- IPv4, IPv6, IPv4/IPv6 interworking
- SSH, SRTP
- SNMP, NETCONF, RESTCONF
- HTTP/HTTPS
- RTP/RTCP
- UDP, TCP
- DNS, ENUM
- WebRTC
- DTLS - SRTP
- ICE - STUN

Routing/Policy
- Embedded policy/routing engine
- Centralized support with Ribbon PSX using DIAMETER+
- Screening, blocking, routing, presentation, call type filters
- Route prioritization
- Leading digit routing, International routing, URI-based routing
- Digit/parameter manipulation
- E911 support, Priority Call handling
- Survivable service for SIP clients when primary SIP Registrar is unavailable
- Routing based on Active Directory lookup
- Call forking

Certifications
- Microsoft Teams Direct Routing including media bypass and Local Media Optimization (LMO)
- BroadSoft BroadWorks Platform
- Joint Interoperability Test Command (JITC)
- Federal Information Processing Standard (FIPS) 140-2

Quality of Service (QoS)
- Bandwidth managementCall admission control (CAC) per trunk group, per zone
- Per call statistics
- TOS/ COS packet marking

Packet Network Time Source
- Network Time Protocol (NTP) per RFC-1708

Configuration	AC Low Line (W) Minimum: 90 Vrms Nominal: 100-120 Vrms Maximum: 140 Vrms		AC High Line (W) Minimum: 180 Vrms Nominal: 200-240 Vrms Maximum: 264 Vrms		DC (W) Minimum: 40 Vdc Nominal: 48 Vdc Maximum: 60 Vdc	
	Amps	Watts	Amps	Watts	Amps	Watts
SBC 5400 - No DSP Cards	5.7	512	2.9	516	12.6	502
SBC 5400 +1 DSP20	5.9	533	3.0	537	13.0	520
SBC 5400 +1 DSP25	6.4	576	3.2	582	14.0	559
SBC 5400 +2 DSP25	7.2	644	3.6	647	14.9	594
SBC 5400 +3 DSP25	7.8	702	3.9	702	17.0	678
SBC 5400 +4 DSP25	8.5	761	4.2	763	17.3	692

Table 1.Estimated Power Consumption (all power measurements taken with fans running high)

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Hardware Specifications

Front Panel
- Status Indicators Front Panel LEDs:
    - Power
    - Status
    - Active/Standby
    - Major/Minor Alarm
    - Locator

Rear Panel
- Management Ports: Four 1GB/100Mbps Ethernet RJ-45 Ports
- Media Ports, choice of:
    - Four 1 Gbps Ethernet fiber or copper via SFP
    - Two 10 Gbps Ethernet fiber ports
- High Availability Ports: Two 1 Gbps Ethernet multimode fiber via SFP
- Single Field Service port with RJ45 connector
- Locator LED
- Single serial craft DB9 port

Memory
- 32 Gbytes

DSP Expansion
- Four modular DSP slots for DSP25 cards

Chassis
- 2U, rack mount
- Inches: 17.5" Wide x 3.5" High x 21" Deep
- Centimeters: 44.5 Wide x 8.8 High x 53.3 Deep
- Optional mounting brackets for 19" or 23" rack

Chassis Mounting Options:
- 19" or 23" Adjustable Brackets

Storage
- 512 Gbytes of Solid State Drive (SSD) storage

AC Power Option
- RMS Input Voltage
- Minimum 90 VAC

- Nominal 100-240 VAC
- Maximum 264 VAC
- RMS Current
- 5.6A
- Input Frequency
- Minimum 47 Hz
- Nominal 50/60 Hz
- Maximum 63 Hz

DC Power Option
- Peak Consumption: 17.3 A

Operating Altitude
- 6,000 Feet
- 1,800 Meters

Heat Dissipation
- Fully-Populated Maximum:
    - 1000 Watts
    - 3410 BTU per Hour
- Replaceable Filter

Weight Maximum Fully Populated
- 50 lbs. (22.68 kg)

Environmental
- 5 to 40° C Operating -5 to 55° C Short Term
- 5 to 90% Non-Condensing Operating Humidity

Regulatory Compliance

Central Office Standards
- DC Systems – SR-3580 NEBS Level 3
    - GR-1089-CORE
    - GR-63-CORE
- AC Systems – SR-3580 NEBS Level 3
    - GR-1089-CORE
    - GR-63-CORE

About Ribbon

Ribbon Communications (Nasdaq: RBBN) delivers communications software, IP and optical networking solutions to service providers, enterprises and critical infrastructure sectors globally. We engage deeply with our customers, helping them modernize their networks for improved competitive positioning and business outcomes in today's smart, always-on and data-hungry world. Our innovative, end-to-end solutions portfolio delivers unparalleled scale, performance, and agility, including core to edge software-centric solutions, cloud-native offers, leading-edge security and analytics tools, along with IP and optical networking solutions for 5G. We maintain a keen focus on our commitments to Environmental, Social and Governance (ESG) matters, offering an annual Sustainability Report to our stakeholders. To learn more about Ribbon, please visit rbbn.com.

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