

SILVER SPRING GEN5 NETWORK NIC 5



Leading utilities and cities have delivered breakthroughs in operational efficiency, customer service and environmental sustainability by relying on Silver Spring's secure, reliable two-way connectivity to critical infrastructure. The Silver Spring GenTM5 network technology extends the benefits of multi-application networking to a broad range of performance-intensive services.

ADAPTIVE COMMUNICATIONS FOR DEMANDING APPLICATIONS

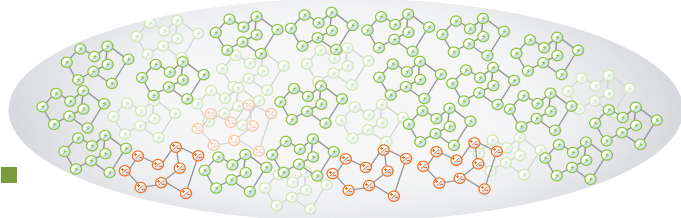
The Silver Spring Networks Network Interface Card (NIC) 5 delivers proven, self-forming, self-healing network capabilities to devices requiring high data throughput and low latency response. The adaptive gear-shifting capabilities of NIC 5 dynamically optimize data rates to maximize speed or to extend range as needed by the environment. NIC 5 also enables distributed intelligence within the network to support innovative applications and services.



Dynamically optimized for:

Power = ■

Performance = ■



The NIC 5 delivers optimal overall system performance across multiple applications and diverse environments.

INTEGRATION AND DEPLOYMENT SCENARIOS

Smart grid – The high performance and dynamically adaptive range of the NIC 5 serve the requirements of the most demanding networked devices across multiple applications. Utilities benefit from new services with intensive data throughput requirements such as real-time metering or itemized billing using load disaggregation, as well as the flexibility to cost effectively reach devices in challenging terrain.

Smart city – As cities extend their applications and services, the NIC 5 provides the performance headroom for deployments with stringent data rate and latency requirements. The NIC 5 uses distributed intelligence to deploy monitoring and control systems with peer-to-peer collaboration for rapid response.

FEATURES

Gen5-based networking technology with performance optimization

- » Up to 2.4 Mbps data speeds
- » 10 ms latency
- » Dynamic optimization for range and performance
- » Open standards-based two-way communications and interfaces
- » IPv6; IEEE 802.15.4g, Wi-SUN compliant; DLMS/COSEM
- » Integrated, open standards-based security
- » Public key-based authentication and AES-256 encryption
- » FIPS 140-2 level 3 compliant hardware-based cryptographic coprocessor
- » Comprehensive system compatibility
- » Interoperable with previous generations of the Silver Spring platform and network infrastructure
- » Dynamic network discovery, self-configuration and self-healing
- » Critical infrastructure application support
- » Over-the-air upgrades and meter programming
- » Alarm detection and system notifications

KEY BENEFITS

The NIC 5 offers open standards-based IPv6 communications with proven, multi-layer security, while delivering the performance required for the most demanding combinations of critical-infrastructure applications.

Expanded opportunity for performance-intensive, multi-application services

With the NIC 5's support for data rates up to 2.4Mbps, 10 ms latency, and distributed intelligence, cities and utilities can roll out new services and engaging applications to increase revenue and customer satisfaction.

Comprehensive and cost-effective coverage of diverse territory

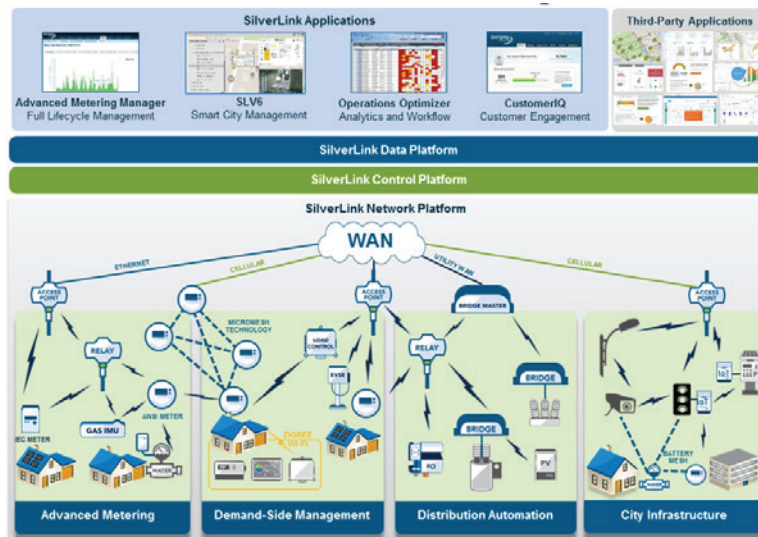
By dynamically adapting data rates to optimize delivery over long ranges in the most challenging environments, and maximizing speed when possible, NIC 5 delivers cost-effective coverage while maximizing system performance. Gen5 also includes a dual-band mesh capability that nearly doubles network capacity as devices can transmit and receive on the 900 MHz and 2.4 GHz bands simultaneously.

Risk mitigation through proven, multi-layer security

Two-way communications remain protected from the increasingly hostile threat environment by building on Silver Spring's proven, multi-layer security with built-in controls from the application to device layers.

Rapid time-to-value with flexible integration

The NIC 5 offers standard interfaces as well as robust APIs for maximum flexibility. The Silver Spring Partner Program accelerates the visibility and adoption of joint solutions across cities and utilities worldwide.



The multi-application performance of the NIC 5 delivers secure, reliable services for cities and utilities.

About Silver Spring Networks

Silver Spring Networks enables the Internet of Important Things™ by reliably and securely connecting things that matter. Cities, utilities, and companies on five continents use the company's cost-effective, high-performance IoT network and data platform to operate more efficiently, get greener, and enable innovative services that can improve the lives of millions of people. With more than 24.9 million devices delivered, Silver Spring provides a proven standards-based platform safeguarded with military grade security. Silver Spring Networks' customers include Baltimore Gas & Electric, CitiPower & Powercor, ComEd, Consolidated Edison, CPS Energy, Florida Power & Light, Pacific Gas & Electric, Pepco Holdings, and Singapore Power. Silver Spring has also deployed networks in Smart Cities including Copenhagen, Glasgow, Paris, Providence, and Stockholm. To learn more, visit www.ssn.com. Rev. 12/6/2016

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Silver Spring
NETWORKS

www.silverspringnet.com

SPECIFICATIONS

Gen 5 Product Family – General	
PLATFORM	RAM AND FLASH: 8/8 MB; 16/16MB OR 32/32 MB OPTIONS
NAN COMMUNICATIONS	Frequency: 902 – 928 MHz, 2400-2483.5 MHz Data rates: 6.25-2.4 Mbps Spread spectrum: FHSS Adaptive gear shifting: FSK, O-QPSK, OFDM Transmitter output: Up to 1 W
HAN COMMUNICATIONS	Frequency: 2400-2483.5 MHz Protocols: IEEE 802.15.4, ZigBee Smart Energy Profile 1.1 Data rates: 250 kbps Transmitter output: 10 to 23 dBm (10 to 200 mW)1
PROTOCOLS/SECURITY	Addressing: IPv6 Encryption: Advanced Encryption Standard (AES-128 or AES-256) Security: Secure Hash Algorithm 256-bit (SHA-256) and RSA-1024 or ECC-256 Key storage: Secure NVRAM with tamper detection and key erasure
ENVIRONMENTAL	Operating temperature: -40°C to +85°C (-40°F to +185°F) Humidity: 0% to 95%, non-condensing
MEMORY	8 MB/8 MB Flash/RAM » Options for 16MB /16MB or 32MB/32MB

Gen 5 Product Family – North America	
RADIO	Frequency: 902 – 928 MHz, 2400-2483.5 MHz Approvals: FCC 15.247, Industry Canada RSS-247
INTERFACES	Meter: ANSI C12.18/C12.19, Serial

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SPECIFICATIONS Continued

Gen 5 Product Family – Australia and Asia Pacific	
RADIO	Frequency: 915 – 928 MHz, 2400-2483.5 MHz Approvals: ANATEL
INTERFACES	ANSI C12.18/C12.19, Serial, DLMS-COSEM

Gen 5 Product Family – Brazil	
RADIO	Frequency: 902 – 907.5 MHz, 915 – 928 MHz, 2400-2483.5 MHz Approvals: ANATEL
INTERFACES	ANSI C12.18/C12.19, Serial, DLMS-COSEM

Gen 5 Product Family – European Union	
RADIO	Frequency: 870-875.6 MHz, 2400 – 2483.5 MHz Approvals: ERC/REC 70-03 Annex 2c, ETSI EN 303 204-2, ETSI EN 300 328, ETSI EN 301 489, EN 60950-1
INTERFACES	Meter: ANSI C12.18/C12.19, Serial, DLMS-COSEM

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