

Nodegrid Net Services Router TM

Modular x86 Appliance with Software-Defined Networking (SDN), Network Function Virtualization (NFV), & Out-of-Band (OOB) Technologies

Benefits

- **Software Defined Networking & Network Function Virtualization**
- **Modular Platform** for the Edge, Cloud, Colocation, Data Center, & DevOps
- **Quick Deployment** with ZTP, automation, RESTful
- **Encrypted Data Transit** with SSL, IPsec, WireGuard VPN technologies
- **Consistent Services & Policies** with centralized management
- **Separation of Control Plane & Data Plane**
- **Run Multiple Functions Concurrently on a Single Device**
- **Reduce Operational Costs** by keeping configuration current via ZTP automation
- **Reduce Downtime** with alerting, automation & cellular failover

Features

- **Modular Open Platform Appliance** with SDN, NFV & Docker capabilities
- **Networking** with Layer 2 switching, Layer 3 routing, QoS, MPLS, client/server VPN, multi-site IPsec
- **Vendor-Neutral Gen 3 Out-of-Band** for Serial & USB consoles / IPMI / WebUI / Power Management
- **An Assortment of Interface Cards**
- **Firewall** IP packet & security filtering
- **Centralized Configuration & Automation** via Zero-Touch-Provisioning (ZTP)
- **5G/4G/LTE Cellular Modem** with dual SIM for failover/on-demand
- **Wi-Fi AP** (Hotspot or Client)
- **Compute Server Card** for additional processing capabilities
- **Fine Grain Security** Policy-based via AD/LDAP
- **Data logging (sessions), Environment Monitoring, Event Notification & Alarms**
- **Modern x86_64bit Linux Kernel** for fast security patching & widespread software availability
- **Nodegrid Clustering Feature** for 360° view, central management, natural search & clustering
- **Modular Design** with 5 slots providing connectivity for 8-80 devices



Nodegrid Net Services Router TM (NSR) is a modular open platform appliance designed for Software-Defined Networking (SDN), Out-of-Band (OOB) management, DevOps, SD-WAN, remote/branch offices, retail locations, and Network Function Virtualization (NFV) capabilities. **NSR is optimized to perform various network functions** including switching, routing, security, WAN acceleration, provide secure OOB remote access, run Docker applications, and control IT devices at the edge of the network, and within Converged Infrastructure (CI) environments.

NSR has modular services cards for networking, OOB serial and USB, 5G/4G/LTE cellular, Wi-Fi, compute and storage.

It also has the latest generation of networking switch backplane for SDN, an assortment of modular services cards, a multi-core Intel CPU for concurrent NFV's and Nodegrid 64-bit Linux OS – a combination that enables flexible interfaces, dependable non-blocking network capabilities, an ever-evolving open platform and lightning-fast response times.

Future-proof your investment as your business evolves.

NSR addresses modern infrastructure challenges

Modern network infrastructure needs to be versatile to keep up with the growth of the industry. Scalability, more than ever, is at the center of business needs. Is your infrastructure scalable?

Enterprises face challenges in their cloud transformation because traditional networks were not built for the Cloud. Networking teams typically spend a long time during evaluation, especially when numerous appliances are required (for Networking, OOB, Failover, Firewall, IPsec). Deploying multiple appliances, setting consistent configurations and adding network functions on new branches is time consuming. NSR addresses all these needs.



16-Port GbE ETH



8-Port ETH PoE +



16-Port GbE ETH SFP



16-Port Serial (Switchable)



8-Port Ethernet SFP +



16-Port Serial



16 Port USB Serial



USB OCP Debug



M2 Cellular /Wi-Fi/ SATA



Storage



x86 Intel Compute Card

Technical Specifications

Accessibility

- Multiple Routing Tables
- Wi-Fi Hotspot
- 2X SFP+ 2 Gbit Ethernet Ports
- Failover to 5G/4G/LTE Modem
- Console Port

Managed Power Devices

Vendor-neutral PDU support

Managed IPMI Devices

OpenBMC, HP iLO, Dell iDRAC, Supermicro/Quanta IPMI, IPMI 2.0 compatible devices, Cisco CIMC/UCS, IBM IMM, Oracle ILOM, EMC/NetApp Storage IPMI

Sensors

Support for a wide range of USB sensors

Networking

- IPv4/IPv6 Support
- Embedded Layer 2 switching, Layer 3 routing, BGP, OSPF, RIP, QoS, MPLS, MSTP, VLAN, DHCP (Client & Server)

Port Access

- Direct access by port name, TCP port, device name & IPv4/IPv6
- High performance port login: <1 sec on SSH, <3 sec on Telnet
- 1,000 simultaneous sessions
- Port sharing, port custom field support, port icon configuration, port search
- Device clustering across multiple Nodegrid units
- Device URL TM bookmarks, Fire Trail TM secure tunnels
- Break-over SSH support
- Power Management Integration within user's session
- HTML5 viewer(NoJava) for IPMI Sol & KVM,WEB,Console, Virtual Media support

Access Protocols

HTTPS, SSHv2; optional HTTP, Telnet & SSHv1

Power Specifications

- Dual AC 100-240 VAC, 50/60 Hz
- Power Consumption 90W typical

Operating System

Built-in 64-bit Nodegrid OS

Warranty

2-Year Limited Warranty

CPU & Storage

- Intel x86_64 multi-core (4 & 8 core options available)
- 8GB of DDR4 DRAM (Upgradable) (See add on SKU's)
- 32GB FLASH (mSATA SSD) (Upgradable) (See add on SKU's)

Device View Options

Tree, Table, Geo Map, Node & WEB Interface with search

Interface

- 2X SFP+ Ethernet
- 2X Gigabit Ethernet
- 1X Console on RJ45
- 1X USB 3.0
- 2X USB 2.0
- 1X HDMI

Physical

- Front-Rear mounting brackets
- Size(LXWXH):438X332X43mm(17.2X13.1X1.7in),1U
- Weight: 4.9 kg (10.8 lb), depending on options
- Air Exhaust or Air Intake Fans (Swappable)

Data Logging & Notifications

- Local port buffering: 20 MB per port
- Local, NFS, syslog, offline data logging
- Time stamp & rotation for data logging
- Event destination: email, syslog, local, syslog, email, ZPE Cloud, Splunk & more
- Notification: syslog, email, ZPE Cloud, Splunk & more

System Management

- Extensible, automated control based on actionable real-time data
- Web GUI management portal, web console, Command Line Interface (CLI), Linux root shell, SNMP, RESTful API
- Zero Touch Provisioning(ZTP)via LAN/DHCP,WAN/ZPE Cloud, USB for configuration & firmware updates
- Multiple & customizable user levels of access
- Auto-discovery via networks can & custom probes
- SNMPv1, v2 & SNMPv3-v1IPv4/IPv6 with MD5,SHA-224, SHA-256, SHA-384, SHA-512, DES, AES-192, AES-256
- Orchestration Integration & Automation:Puppet,Chef, Ansible, RESTful, ZPE Cloud & a Cluster feature
- File sharing via FTP,NFS,SSHFS,Windows Sharing, web file browser, ZPE Cloud
- Remote Procedure Call (RPC,gRPC)
- NetFlow, LLDP, APIs

Security

- Hardened device with BIOS protection,TPM 2.0, UEFI Secure Boot, Self-Encrypted Disk (SED), Signed OS, Geofencing
- X.509 SSH certificate support, 4096-bit encryption keys
- Selectable cryptographic protocols for SSH & HTTPS (TLSv1.3,TLSv1.2, TLSv1.1, TLSv1)
- Selectable cypher suite levels: high, medium, low, custom
- Local, AD/LDAP, RADIUS, TACACS+, Kerberos authentication
- SAML 2.0 support via Duo, Okta, Ping Identity, ADFS
- Two-Factor Authentication with RSA & DUO
- Local, backup-user authentication support
- User-access lists per port
- Group/role-based authorization: AD/LDAP, RADIUS, TACACS+ & SAML 2.0
- Fine Grain port access, power access, appliance privilege
- IP packet & security filtering, IP forwarding support
- SSL VPN (Client & Server), IPsec, Firewall
- MD5/SHA System configuration checksum
- System event logging to file, syslog, email, ZPE Cloud, Splunk & more
- Custom security with secure default settings
- Strong password enforcement
- Network Function Virtualization (NFV)

Environmental

Operation: 0 to 45° C (32 to 113° F), 5-95% RH, non-cond.
Storage: -20 to 67° C (-4 to 153° F), 10-90% RH, non-cond.



Ordering Information

Channel SKU	Description	CPU	Memory	Power
ZPE-NSR-48-SAC	ZPE Systems Nodegrid Net SR - Modular chassis. 4-Core Intel CPU, Backplane Switch, 8GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Single AC Power supply & cord included. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	4 Cores	8GB	Single AC
ZPE-NSR-48-DAC	ZPE Systems Nodegrid Net SR - Modular chassis. 4-Core Intel CPU, Backplane Switch, 8GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Dual AC Power supply & cord included. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	4 Cores	8GB	Dual AC
ZPE-NSR-48-DDC	ZPE Systems Nodegrid Net SR - Modular chassis. 4-Core Intel CPU, Backplane Switch, 8GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Dual DC Power supply & cord included. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	4 Cores	8GB	Dual DC
ZPE-NSR-48-SAC-POE	ZPE Systems Nodegrid Net SR - Modular chassis. 4-Core Intel CPU, Backplane Switch, 8GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Single AC Power supply with 160W PoE Power. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	4 Cores	8GB	Single AC-POE
ZPE-NSR-48-SDC-POE	ZPE Systems Nodegrid Net SR - Modular chassis. 4-Core Intel CPU, Backplane Switch, 8GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Single DC Power supply with 160W PoE Power. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	4 Cores	8GB	Single DC-POE
ZPE-NSR-88-DAC (NSR-TOPI-DAC)	ZPE Systems Nodegrid Net SR - Modular chassis. 8-Core Intel CPU, Backplane Switch, 8GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Dual AC Power supply & cord included. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	8 Cores	8GB	Dual AC
ZPE-NSR-88-DDC (NSR-TOPI-DDC)	ZPE Systems Nodegrid Net SR - Modular chassis. 4-Core Intel CPU, Backplane Switch, 8GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Dual DC Power supply & cord included. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	8 Cores	8GB	Dual DC
ZPE-NSR-88-SAC-POE (NSR-TOPI-SAC-POE)	ZPE Systems Nodegrid Net SR - Modular chassis. 8-Core Intel CPU, Backplane Switch, 8GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Single AC Power supply with 160W PoE Power. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	8 Cores	8GB	Single AC-POE
ZPE-NSR-88-SDC-POE (NSR-TOPI-SDC-DAC)	ZPE Systems Nodegrid Net SR - Modular chassis. 8-Core Intel CPU, Backplane Switch, 8GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Single DC Power supply with 160W PoE Power. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	8 Cores	8GB	Single DC-POE
ZPE-NSR-816-SAC	ZPE Systems Nodegrid Net SR - Modular chassis. 8-core Intel CPU, Backplane Switch, 16GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Single AC Power supply & cord included. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	8 Cores	16GB	Single AC
ZPE-NSR-816-DAC	ZPE Systems Nodegrid Net SR - Modular chassis. 8-core Intel CPU, Backplane Switch, 16GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Dual AC Power supply & cord included. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	8 Cores	16GB	Dual AC
ZPE-NSR-816-DDC	ZPE Systems Nodegrid Net SR - Modular chassis. 8-core Intel CPU, Backplane Switch, 16GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Dual DC Power supply & cord included. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	8 Cores	16GB	Dual DC

Ordering Information

Channel SKU	Description	CPU	Memory	Power
ZPE-NSR-832-SAC	ZPE Systems Nodegrid Net SR - Modular chassis. 8-core Intel CPU, Backplane Switch, 32GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Single AC Power supply & cord included. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	8 Cores	32GB	Single AC
ZPE-NSR-832-DAC	ZPE Systems Nodegrid Net SR - Modular chassis. 8-core Intel CPU, Backplane Switch, 32GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Dual AC Power supply & cord included. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	8 Cores	32GB	Dual AC
ZPE-NSR-832-DDC	ZPE Systems Nodegrid Net SR - Modular chassis. 8-core Intel CPU, Backplane Switch, 32GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Dual DC Power supply & cord included. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	8 Cores	32GB	Dual DC
ZPE-NSR-832-SAC-POE	ZPE Systems Nodegrid Net SR - Modular chassis. 8-core Intel CPU, Backplane Switch, 32GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Single AC Power supply with 160W PoE Power. AC power cord included. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	8 Cores	32GB	Single AC-POE
ZPE-NSR-832-SDC-POE	ZPE Systems Nodegrid Net SR - Modular chassis. 8-core Intel CPU, Backplane Switch, 32GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Single DC Power supply with 160W PoE Power. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	8 Cores	32GB	Single DC-POE
ZPE-NSR-864-DAC	ZPE Systems Nodegrid Net SR - Modular chassis. 8-core Intel CPU, Backplane Switch, 64GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Dual AC Power supply & cord included. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	8 Cores	64GB	Dual AC
ZPE-NSR-864-DDC	ZPE Systems Nodegrid Net SR - Modular chassis. 8-core Intel CPU, Backplane Switch, 64GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Dual DC Power supply included. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	8 Cores	64GB	Dual DC
ZPE-NSR-864-SAC-POE	ZPE Systems Nodegrid Net SR - Modular chassis. 8-core Intel CPU, Backplane Switch, 64GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Single DC Power supply with 160W PoE Power. AC power cord included. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	8 Cores	64GB	Single DC-POE
ZPE-NSR-864-SDC-POE	ZPE Systems Nodegrid Net SR - Modular chassis. 8-core Intel CPU, Backplane Switch, 64GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Single DC Power supply with 160W PoE Power. AC power cord included. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	8 Cores	64GB	Single DC-POE

Nodegrid Net SR Lite

Nodegrid Net Services Router Lite (NSR Lite) is a modular open-platform appliance offering the same capabilities for Out-of-Band (OOB) management, DevOps, OOB-I-WAN (SD-WAN) as the NSR models. The NSR Lite utilises a shared network switching plane to provide connectivity to connected end devices. It is optimised to provide an Automation Infrastructure for remote/branch offices, retail and IoT applications, in which the NSR Lite directly provides access and management to all connected IT and OT devices.

Channel SKU	Description	CPU	Memory	Power
ZPE-NSR-48L-DAC	ZPE Systems Nodegrid Net SR Lite - Modular chassis. 4-core Intel CPU, No dedicated Backplane Switch, 8GB DDR4, 32GB MSATA, 5 Slots, 2 SFP+, 4X USB, 2X GbE, 1X HDMI, 1X console. Dual AC Power supply & cord included. Order NSR Expansion Card separately. Includes Standard 2-Year Support, HW warranty, & 90-day ZPECloud.com subscription.	4 Cores	8GB	Dual AC

Expansion Cards

Channel SKU	Description	Specifications	Picture
ZPE-NSR-8ETH-POE-EXPN	ZPE Systems Nodegrid Net SR Expansion Card - 8-Port 1G w/ POE Ethernet	Networking <ul style="list-style-type: none"> IPv4/IPv6 Support Embedded Layer 2 switching Interface <ul style="list-style-type: none"> 8 Gigabit Ethernet (10/100/1000) PoE+ 	 8-Port ETH PoE +
ZPE-NSR-16SRL-EXPN	ZPE Systems Nodegrid Net SR Expansion Card - 16-Port RJ45 Serial Rolled (Cisco)	Interface <ul style="list-style-type: none"> 16 RS-232 serial ports on RJ45 @ 230,400 bps max/port Cisco Pinout 	 16-Port Serial
ZPE-NSR-16S-EXPN	ZPE Systems Nodegrid Net SR Expansion Card - 16x Serial Switchable (Cisco/Legacy) RJ45	Interface <ul style="list-style-type: none"> 16 RS-232 serial ports on RJ45 @ 230,400 bps max/port Cisco and Legacy Pinout, software switchable 	 16-Port Serial (Switchable)
ZPE-NSR-16ETH-EXP	ZPE Systems Nodegrid Net SR Expansion Card - 16-Port 1G Ethernet	Networking <ul style="list-style-type: none"> IPv4/IPv6 Support Embedded Layer 2 switching Interface <ul style="list-style-type: none"> 16 Gigabit Ethernet (10/100/1000) 	 16-Port GbE ETH
ZPE-NSR-16USB-EXPN	ZPE Systems Nodegrid Net SR Expansion Card - 16-Port USB Type A	Interface <ul style="list-style-type: none"> 16 USB serial ports on USB-A @921,600 bps max/port ports can be used for other features, including Sensors, Storage, Wifi, Bluetooth, ZigBee Adapters 	 16-Port USB Serial
ZPE-NSR-16OCP-EXPN	ZPE Systems Nodegrid Net SR Expansion Card - 16-Port OCP USB Type A (USB empty storage)	Interface <ul style="list-style-type: none"> 16 x OCP USB on USB-A port provides serial connection, storage and debug access for OCP Servers Requires OCP USB cables 	 USB OCP Debug

Expansion Cards – Continued

Channel SKU	Description	Specifications	Picture
ZPE-NSR-16SFP-EXPN	ZPE Systems Nodegrid Net SR Expansion Card - 16-Port 1G SFP	Networking <ul style="list-style-type: none"> • IPv4/IPv6 Support • Embedded Layer 2 switching Interface <ul style="list-style-type: none"> • 16 SFP Gigabit Ethernet (10/100/1000) 	 <p>16-Port GbE ETH SFP</p>
ZPE-NSR-8SFP-EXPN	ZPE Systems Nodegrid Net SR Expansion Card - 8-Port 10G SFP	Networking <ul style="list-style-type: none"> • IPv4/IPv6 Support • Embedded Layer 2 switching Interface <ul style="list-style-type: none"> • 8 SFP 10G Ethernet (10/100/1000/10000) 	 <p>8-Port Ethernet SFP+</p>
ZPE-NSR-COMP-EXPN	ZPE Systems Nodegrid Net SR Compute Module - 4-core, 8GB DDR4, 32GB SATA	CPU & Storage <ul style="list-style-type: none"> • Intel x86_64 multi-core (4 core) • 8GB of DDR4 DRAM (Upgradable) • 32GB SATA storage Interface <ul style="list-style-type: none"> • 2 x 10GB Ethernet, connection to backbone switch • 1 x Gigabit Ethernet, connection at front • 1 x Console on RJ45 • 1 x USB 3.0 • 1 x VGA 	 <p>x86 Intel Compute Card</p>
ZPE-NSR-COMP1-EXPN	ZPE Systems Nodegrid Net SR Compute Module - 8-core, 8GB DDR4, 32GB SATA	CPU & Storage <ul style="list-style-type: none"> • Intel x86_64 multi-core (8 core) • 8GB of DDR4 DRAM (Upgradable) • 32GB SATA storage Interface <ul style="list-style-type: none"> • 2 x 10GB Ethernet, connection to backbone switch • 1 x Gigabit Ethernet, connection at front • 1 x Console on RJ45 • 1 x USB 3.0 • 1 x VGA 	
ZPE-NSR-COMP3-EXPN	ZPE Systems Nodegrid Net SR Compute Module - 8-core, 32GB DDR4, 240GB SATA	CPU & Storage <ul style="list-style-type: none"> • Intel x86_64 multi-core (8 core) • 32GB of DDR4 DRAM (Upgradable) • 240GB SATA storage Interface <ul style="list-style-type: none"> • 2 x 10GB Ethernet, connection to backbone switch • 1 x Gigabit Ethernet, connection at front • 1 x Console on RJ45 • 1 x USB 3.0 • 1 x VGA 	
ZPE-NSR-S512G	ZPE Systems Nodegrid Net SR Storage Module w/ 512GB 2.5" Storage	Storage <ul style="list-style-type: none"> • 512GB 2.5" SATA SSD 	 <p>Storage Card</p>
ZPE-NSR-S1024G	ZPE Systems Nodegrid Net SR Storage Module w/ 1TB 2.5" Storage	Storage <ul style="list-style-type: none"> • 1TB 2.5" SATA SSD 	

Expansion Cards - Continued

Channel SKU	Description	Specifications	Picture
ZPE-NSR-M2-4G	ZPE Systems Nodegrid Net SR Expansion Card - M.2 Card w/ Single 4G LTE (CAT 12) Module	4G/LTE Modem: <ul style="list-style-type: none"> • Uses a Sierra Wireless EM7565 • AT&T and Verizon certified • Dual-SIM support • Default Bandwidth: 60Mhz • Max Throughput (down/up): LTE: 600 Mbps/150 Mbps, UMTS: 42 Mbps/5.76 Mbps • Global support for 4G (LTE) and 3G (UMTS) • GNSS support (GPS, GLONASS, BeiDou, Galileo, QZSS) • Regulatory Approval: GCF, RED, PTCRB, FCC, IC, NCC, JATE/TELEC 	 <p>M2 Cellular /Wi-Fi/ SATA</p>
ZPE-NSR-M2-5G	ZPE Systems Nodegrid Net SR Expansion Card - M.2 Card w/ Single 5G LTE (CAT 20) Module	5G Modem: <ul style="list-style-type: none"> • Uses a Telit FN990A40/A28 • Global support for 5G/4G (LTE) and 3G (UMTS) • Dual-SIM support • Max Throughput (down/up): 5G: 3.4 Gbps/550 Mbps, LTE: 1.6 Gbps/211 Mbps, UMTS: 42 Mbps/11 Mbps • GNSS support (GPS, GLONASS, BeiDou, Galileo,) • Regulatory Approval: GCF, RED, PTCRB, FCC, IC, NCC, JATE/TELEC, RCM, KC • Support for private 5G 	
ZPE-NSR-M2-4G-WiFi	ZPE Systems Nodegrid Net SR Expansion Card - M.2 Card w/ Dual 4G LTE (CAT 12) Modules	4G/LTE Modem: <ul style="list-style-type: none"> • Uses a Sierra Wireless EM7565 • AT&T and Verizon certified • Dual-SIM support • Default Bandwidth: 60Mhz • Max Throughput (down/up): LTE: 600 Mbps/150 Mbps, UMTS: 42 Mbps/5.76 Mbps • Global support for 4G (LTE) and 3G (UMTS) • GNSS support (GPS, GLONASS, BeiDou, Galileo, QZSS) • Regulatory Approval: GCF, RED, PTCRB, FCC, IC, NCC, JATE/TELEC Wifi Module: <ul style="list-style-type: none"> • Wifi 5 Module • 802.11ac/a/b/g/n Dual-Band • Supported Bands: 2.412GHz-2.484GHz, 5.150GHz-5.850GHz • (Subject to local regulations) 	

Expansion Cards – Continued

Channel SKU	Description	Specifications	Picture
ZPE-NSR-M2-5G-WIFI	ZPE Systems Nodegrid Net SR Expansion Card - M.2 w/ Dual 5G LTE (CAT 20) Modules	<p>5G Modem:</p> <ul style="list-style-type: none"> • Uses a Telit FN990A40/A28 • Global support for 5G/4G (LTE) and 3G (UMTS) • Dual-SIM support • Max Throughput (down/up): 5G: 3.4 Gbps/550 Mbps, LTE: 1.6 Gbps/211 Mbps, UMTS: 42 Mbps/11 Mbps • GNSS support (GPS, GLONASS, BeiDou, Galileo,) • Regulatory Approval: GCF, RED, PTCRB, FCC, IC, NCC, JATE/TELEC, RCM, KC • Support for private 5G <p>Wifi Module:</p> <ul style="list-style-type: none"> • Wifi 5 Module • 802.11ac/a/b/g/n Dual-Band • Supported Bands: 2.412GHz-2.484GHz, 5.150GHz-5.850GHz • (Subject to local regulations) 	 <p>M2 Cellular /Wi-Fi/ SATA</p>
ZPE-NSR-M2-4G5G	ZPE Systems Nodegrid Net SR Expansion Card - M.2 Card w/ 1X 4G LTE (CAT12) & 1X 5G LTE (CAT 20) Modules	<p>4G/LTE Modem:</p> <ul style="list-style-type: none"> • Uses a Sierra Wireless EM7565 • AT&T and Verizon certified • Dual-SIM support • Default Bandwidth: 60Mhz • Max Throughput (down/up): LTE: 600 Mbps/150 Mbps, UMTS: 42 Mbps/5.76 Mbps • Global support for 4G (LTE) and 3G (UMTS) • GNSS support (GPS, GLONASS, BeiDou, Galileo, QZSS) • Regulatory Approval: GCF, RED, PTCRB, FCC, IC, NCC, JATE/TELEC 	
ZPE-NSR-M2-4G-128G	ZPE Systems Nodegrid Net SR Expansion Card - M.2 Card w/ 1X 4G LTE (CAT12) & 1X 128GB SSD Modules	<p>4G/LTE Modem:</p> <ul style="list-style-type: none"> • Uses a Sierra Wireless EM7565 • AT&T and Verizon certified • Dual-SIM support • Default Bandwidth: 60Mhz • Max Throughput (down/up): LTE: 600 Mbps/150 Mbps, UMTS: 42 Mbps/5.76 Mbps • Global support for 4G (LTE) and 3G (UMTS) • GNSS support (GPS, GLONASS, BeiDou, Galileo, QZSS) • Regulatory Approval: GCF, RED, PTCRB, FCC, IC, NCC, JATE/TELEC <p>Storage</p> <ul style="list-style-type: none"> • 128GB mSATA storage 	
ZPE-NSR-M2-EXPN	ZPE Systems Nodegrid Net SR Expansion Card - 2X Blank M.2 Slots (Key B)	Blank M2 Expansion card	

Accessories

Channel SKU	Description	Specifications
ZPE-NSR-COVER	ZPE Systems Nodegrid Net SR – Expansion Slot Cover Plate	Blank Cover for unused slot
ZPE-NSR-FAN-OUT	ZPE Systems Nodegrid Net SR. Replacement Fan, Exhaust (air out) (default option on NSR)	Replacement Fan
ZPE-NSR-FAN-IN	ZPE Systems Nodegrid Net SR. Replacement Fan, Intake (air in)	Replacement Fan

Support

Channel SKU	Description
ZPE-NSR-BASE-ALL-EW1G	ZPE Systems Nodegrid Net SR. 1Y 24X7 Gold Upgrade Support
ZPE-NSR-BASE-ALL-EW2G	ZPE Systems Nodegrid Net SR. 2Y 24X7 Gold Upgrade Support
ZPE-NSR-BASE-ALL-EW3G	ZPE Systems Nodegrid Net SR. 3Y 24X7 Gold Upgrade Support



NOTE: If you need more storage or other combinations please contact ZPE Sales: sales@zpesystems.com



Anatel: 01127-22-14117



FCC ID: 2ARCQ-EM7565
IC: 24339-EM7565



FCC ID: N7NEM91
IC: 2417C-EM91

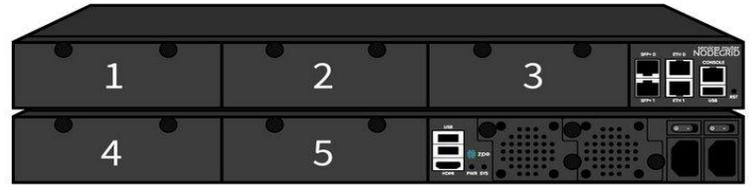


FCC ID: RYK-WNFQ262ACNIBT
IC: 6158A-FQ262ACNIBT



Nodegrid Net SR

Module Compatibility Chart



Expansion Card	Part Number	Slot 1	Slot 2	Slot 3	Slot 4	Slot 5
16-Port Serial	ZPE-NSR-16SRL-EXPN	✓	✓	✓	✓	✓
16-port Serial (Switchable)	ZPE-NSR-16S-EXPN	✓	✓	✓	✓	✓
16-port OCP	ZPE-NSR-16OCP-EXPN	✓	✓	✓	✓	✓
16-Port USB	ZPE-NSR-16USB-EXPN	✓	✓	✓	✓	✓
16-Port GbE Ethernet	ZPE-NSR-16ETH-EXPN	✓	✓	✓	<i>*Isolated</i>	<i>*Isolated</i>
16-Port GbE Ethernet SFP	ZPE-NSR-16SFP-EXPN	✓	✓	✓	<i>*Isolated</i>	<i>*Isolated</i>
8-Port SFP+	ZPE-NSR-8SFP-EXPN	✓	✓	✓	<i>*Isolated</i>	<i>*Isolated</i>
8-Port POE+	ZPE-NSR-8ETH-POE-EXPN	✓	✓	✓	<i>*Isolated</i>	<i>*Isolated</i>
M.2 Expansion	ZPE-NSR-M2-4G	✓	✓	✓	✓	✓
	ZPE-NSR-M2-5G	✓	✓	✓	✓	✓
	ZPE-NSR-M2-4G-4G	✓	✓	✓	✓	✓
	ZPE-NSR-M2-4G-W5	✓	✓	✓	✓	✓
	ZPE-NSR-M2-5G-W5	✓	✓	✓	✓	✓
	ZPE-NSR-M2-4G-5G	✓	✓	✓	✓	✓
	ZPE-NSR-M2-4G-128GB				✓	✓
	Compute	ZPE-NSR-COMP-EXPN	✓	✓	✓	<i>*Isolated</i>
Storage	ZPE-NSR-S512G				✓	✓
	ZPE-NSR-S1024G				✓	✓

**Isolated – The card will work as a standalone card, without an internal network connection*