

WDR-3124A Series

Industrial 802.11n/HSPA wireless routers



Features and Benefits

- Universal GSM/GPRS/HSPA cellular communications
- 2.4-GHz/5-GHz dual-band 300 Mbps Wi-Fi communication
- Built-in 4-port Gigabit Ethernet switch
- Industrial design with dual power inputs and built-in DI/DO support
- Cellular link redundancy with dual SIM
- GuaranLink for reliable cellular connectivity
- Antenna and power isolation design to protect against interference

Certifications



Introduction

The WDR-3124A industrial wireless router combines 802.11n and cellular technologies to provide flexible wireless network connectivity. The WDR-3124A comes with a built-in antenna and power isolation suitable for any harsh industrial environment. With DIN-rail mounting, wide operating temperature range models, and IP30 housing, the WDR-3124A is a convenient yet reliable solution for any industrial wireless application.

WLAN and Cellular Connectivity

- High-speed wireless connectivity with up to 300 Mbps data rate
- WLAN AP/Client-Router operation mode support
- Universal cellular band support for GSM/GPRS/HSPA connectivity

Effective Isolation and Redundancy Design

- Dual power inputs for power redundancy
- Dual-SIM support for cellular connection redundancy
- Antenna isolation for protection against radio interference
- Power isolation for power source insulation protection

Specifications

Cellular Interface

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|-----------------------------|--|
| Cellular Standards | GSM, GPRS, EDGE, UMTS, HSPA |
| Band Options | UMTS/HSPA 800 MHz / 850 MHz / 900 MHz / 1900 MHz / 2100 MHz Universal quad-band GSM/GPRS/EDGE 850 MHz / 900 MHz / 1800 MHz / 1900 MHz |
| HSPA Data Rates | 14.4 Mbps DL, 5.76 Mbps UL |
| EDGE Data Rates | 237 kbps DL, 237 kbps UL |
| GPRS Data Rates | 85.6 kbps DL, 85.6 kbps UL |
| No. of SIMs | 2 |
| SIM Control Voltage | 3 V |
| Cellular Antenna Connectors | 1 SMA female |

WLAN Interface

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| WLAN Standards | 802.11a/b/g/n 802.11i Wireless Security |
| Spread Spectrum | DSSS, OFDM |
| Modulation Type | 802.11b: CCK @ 11/5.5 Mbps 802.11b: DQPSK @ 2 Mbps 802.11b: DBPSK @ 1 Mbps 802.11a/g: 64QAM @ 54/48 Mbps 802.11a/g: 16QAM @ 36/24 Mbps 802.11a/g: QPSK @ 18/12 Mbps 802.11a/g: BPSK @ 9/6 Mbps 802.11n: 64QAM @ 300 Mbps to BPSK @ 6.5 Mbps |
| Frequency Band for EU (20 MHz operating channels) | 2.142 to 2.472 GHz (13 channels) 5.180 to 5.240 GHz (4 channels) |
| Frequency Band for US (20 MHz operating channels) | 2.412 to 2.462 GHz (11 channels) 5.180 to 5.240 GHz (4 channels) 5.745 to 5.825 GHz (5 channels) |
| Wireless Security | WEP encryption (64-bit and 128-bit) WPA/WPA2-Enterprise (IEEE 802.1X/RADIUS, TKIP, AES) WPA/WPA2-Personal SSID broadcast enable/disable |
| Transmission Rate | 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps 802.11n HT20: 6.5 to 150 Mbps (MCS0 to MCS7) 802.11n HT40: 150 to 300 Mbps (MCS8 to MCS15) |
| Transmitter Power for 802.11a | 20±1.5 dBm @ 6 to 24 Mbps 19±1.5 dBm @ 36 Mbps 16±1.5 dBm @ 48 Mbps 15±1.5 dBm @ 54 Mbps |
| Transmitter Power for 802.11b | 23±1.5 dBm @ 1 Mbps 20±1.5 dBm @ 5 Mbps 19±1.5 dBm @ 11 Mbps |
| Transmitter Power for 802.11g | 20±1.5 dBm @ 6 to 24 Mbps 19±1.5 dBm @ 36 Mbps 18±1.5 dBm @ 48 Mbps 17±1.5 dBm @ 54 Mbps |
| Transmitter Power for 802.11n (2.4 GHz) | 20±1.5 dBm @ MCS0/8 20 MHz 20±1.5 dBm @ MCS0/8 40 MHz 16±1.5 dBm @ MCS7/15 20 MHz 16±1.5 dBm @ MCS7/15 40 MHz |
| Transmitter Power for 802.11n (5 GHz) | 19±1.5 dBm @ MCS0/8 20 MHz 18±1.5 dBm @ MCS0/8 40 MHz 14±1.5 dBm @ MCS7/15 20 MHz 14±1.5 dBm @ MCS7/15 40 MHz |
| Receiver Sensitivity for 802.11a | -92 dBm @ 6 Mbps -89 dBm @ 9 Mbps -85 dBm @ 12 Mbps -82 dBm @ 18 Mbps -80 dBm @ 24 Mbps -76 dBm @ 36 Mbps -74 dBm @ 48 Mbps -72 dBm @ 54 Mbps |
| Receiver Sensitivity for 802.11b | -90 dBm @ 1 Mbps -88 dBm @ 2 Mbps -86 dBm @ 5.5 Mbps -84 dBm @ 11 Mbps |
| Receiver Sensitivity for 802.11g | -85 dBm @ 6 Mbps |

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| | -84 dBm @ 9 Mbps -83 dBm @ 12 Mbps -82 dBm @ 18 Mbps -80 dBm @ 24 Mbps -76 dBm @ 36 Mbps -70 dBm @ 48 Mbps -70 dBm @ 54 Mbps |
| Receiver Sensitivity for 802.11n (2.4 GHz) | -70 dBm @ MCS7 20 MHz -68 dBm @ MCS15 20 MHz -65 dBm @ MCS7 40 MHz -63 dBm @ MCS15 40 MHz |
| Receiver Sensitivity for 802.11n (5 GHz) | -70 dBm @ MCS7 20 MHz -67 dBm @ MCS15 20 MHz -68 dBm @ MCS7 40 MHz -66 dBm @ MCS15 40 MHz |
| WLAN Antenna Connector | 2 RP-SMA female |
| GPS Interface | |
| GPS Antenna Connector | 1 SMA female |
| Ethernet Interface | |
| 10/100/1000BaseT(X) Ports (RJ45 connector) | 4 |
| Standards | IEEE 802.3 for 10BaseT IEEE 802.3ab for 1000BaseT(X) IEEE 802.3u for 100BaseT(X) |
| Total Port Count | 4 |
| LED Interface | |
| LED Indicators | PWR1, PWR2, STATUS, FAULT, CELLULAR SIGNAL, WIFI SIGNAL, WLAN, SIM1, SIM2, 2G, 3G, GPS |
| Input/Output Interface | |
| Alarm Contact Channels | 1, Relay output with current carrying capacity of 1 A @ 24 VDC |
| Buttons | Reset button |
| Digital Input Channels | 2 |
| Digital Inputs | +13 to +30 V for state 1 3 to -30 V for state 0 |
| Ethernet Software Features | |
| Management | ARP, DDNS, DHCP Client, DNS, HTTP, SMTP, SNMPv1/v2c/v3, TCP/IP, Telnet, UDP, Web Console, Wireless Search Utility, Serial Console, Telnet Console, Remote SMS Control, OnCell Central Manager, GuaranLink |
| Security | HTTPS, IPsec, SSH |
| Time Management | SNTP |
| Routing | NAT, Port forwarding |
| Firewall | Filter: MAC, IP protocol, port-based |
| IPsec VPN | |
| Authentication | MD5 and SHA (SHA-256) PSK/X.509/RSA |
| Concurrent VPN Tunnels | Max. 5 IPsec VPN tunnels |

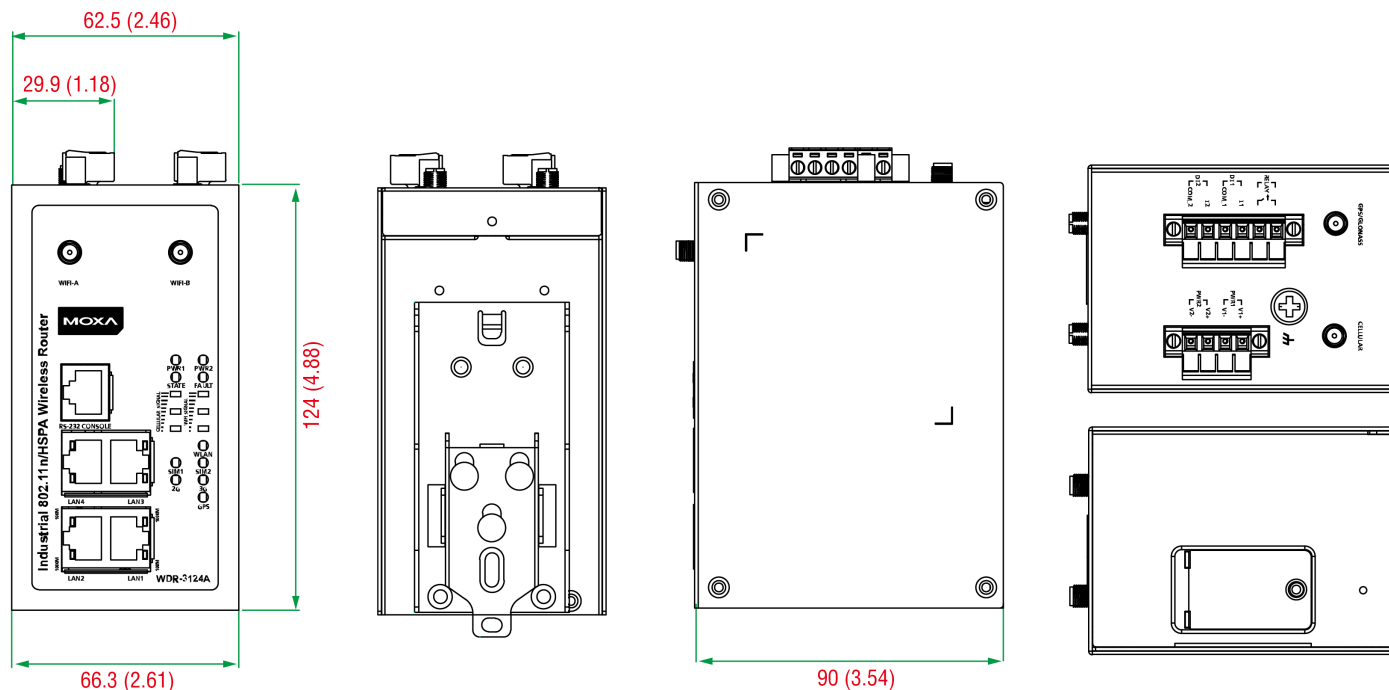
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| Protocols | IPsec |
| Encryption | DES, 3DES, AES, MD5, SHA-1, DH2, DH5 |
| Physical Characteristics | |
| Housing | Aluminum |
| IP Rating | IP30 |
| Dimensions | 66.3 x 124 x 90 mm (2.61 x 4.88 x 3.54 in) |
| Weight | 1,280 g (2.82 lb) |
| Environmental Limits | |
| Operating Temperature | Standard Models: 0 to 55°C (32 to 131°F) Wide Temp. Models: -30 to 70°C (-22 to 158°F) |
| Storage Temperature (package included) | -40 to 85°C (-40 to 185°F) |
| Ambient Relative Humidity | 5 to 95% (non-condensing) |
| Power Parameters | |
| Power Connector | Terminal block |
| Input Voltage | Redundant dual inputs, 12 to 48 VDC |
| Input Current | 0.7 A @ 12 VDC, 0.2 A @ 48 VDC |
| Reverse Polarity Protection | Supported |
| Standards and Certifications | |
| Safety | EN 60950-1, UL 60950-1 |
| EMC | EN 61000-6-2/-6-4 |
| EMI | CISPR 32, FCC Part 15B Class A |
| EMS | IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF |
| Radio Frequency | EN 301 489-1, EN 301 489-7, EN 301 511, EN 301 908, EN 300 328, EN 301 893, FCC ID SLE-WAPN005 |
| MTBF | |
| Time | 382,851 hrs |
| Standards | Telcordia SR332 |
| Warranty | |
| Warranty Period | 5 years |
| Details | See www.moxa.com/warranty |
| Package Contents | |
| Device | 1 x WDR-3124A Series wireless router ¹ |
| Installation Kit | 1 x DIN-rail kit |

1. An activated SIM card (not included) must be provided by a third party Cellular Service Provider.

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| Antenna | 2 x 2.4/5 GHz antenna, 1 x UMTS/HSPA |
| Documentation | 1 x quick installation guide 1 x warranty card |

Dimensions

Unit: mm (inch)



Front View

Rear View

Left Side View

Top and Bottom Views

Ordering Information

| Model Name | Cellular Standard | Wi-Fi Standard | Wi-Fi Band | Operating Temp. |
|----------------|-------------------|----------------|------------|-----------------|
| WDR-3124A-US | UMTS/HSPA | 802.11n | US | 0 to 55°C |
| WDR-3124A-US-T | UMTS/HSPA | 802.11n | US | -30 to 70°C |
| WDR-3124A-EU | UMTS/HSPA | 802.11n | Europe | 0 to 55°C |
| WDR-3124A-EU-T | UMTS/HSPA | 802.11n | Europe | -30 to 70°C |

Accessories (sold separately)

Antennas

| | |
|------------------------|--|
| ANT-WCDMA-ANF-00 | GSM/GPRS/EDGE/UMTS/HSPA, omni-directional outdoor antenna, 0 dBi |
| ANT-WCDMA-ASM-1.5 | GSM/GPRS/EDGE/UMTS/HSPA, omni-directional rubber duck antenna, 1.5 dBi |
| ANT-WCDMA-AHSM-04-2.5m | GSM/GPRS/EDGE/UMTS/HSPA, omni-directional magnetic base antenna, 4 dBi |
| ANT-LTE-ASM-02 | GPRS/EDGE/UMTS/HSPA/LTE, omni-directional rubber duck antenna, 2 dBi |
| ANT-LTE-ANF-04 | GSM/GPRS/EDGE/UMTS/HSPA/LTE, omni-directional outdoor antenna, 4 dBi, IP66 |
| ANT-LTEUS-ASM-01 | GSM/GPRS/EDGE/UMTS/HSPA/LTE, omni-directional rubber duck antenna, 1 dBi |

Wireless Antenna Cables

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|-------------------|---|
| A-CRF-RMNM-L1-300 | N-type (male) to RP SMA (male), LMR-195 Lite cable, 3 m |
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| A-CRF-SMSF-R3-100 | Cellular magnetic-base SMA connector with 1-meter RF cable |
| A-CRF-RMNM-L1-900 | N-type (male) to RP SMA (male), LMR-195 Lite cable, 9 m |
| CRF-N0117SA-3M | N-type (male) to RP SMA (male), CFD200 cable, 3 m |
| A-CRF-RMNM-L1-600 | N-type (male) to RP SMA (male), LMR-195 Lite cable, 6 m |
| CRF-SMA(M)/N(M)-300 | N-type (male) to SMA (male), CFD200 cable, 3 m |

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