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

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

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

	-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

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

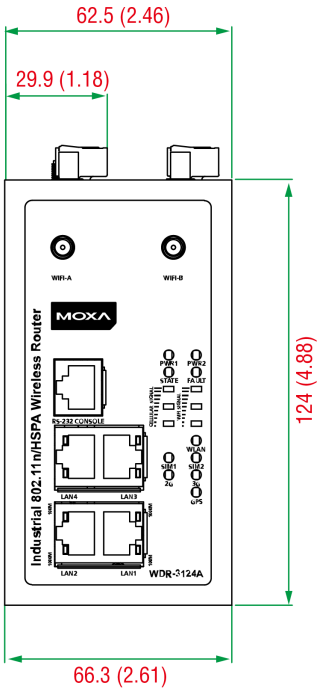
Device	1 x WDR-3124A Series wireless router[1]
Installation Kit	1 x DIN-rail kit

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

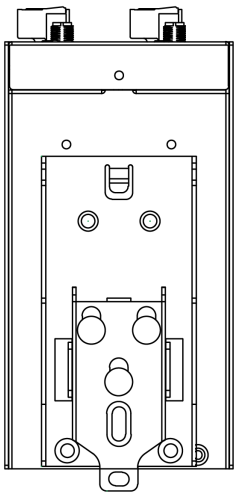
Antenna	2 x 2.4/5 GHz antenna, 1 x UMTS/HSPA
Documentation	1 x quick installation guide 1 x warranty card

Dimensions

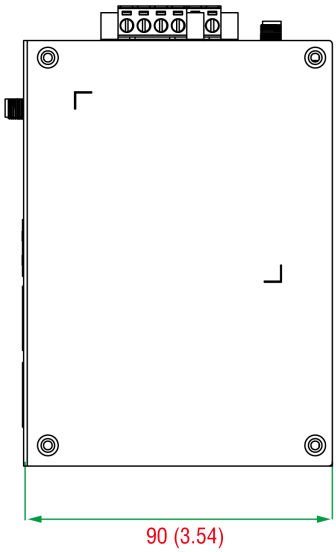
Unit: mm (inch)



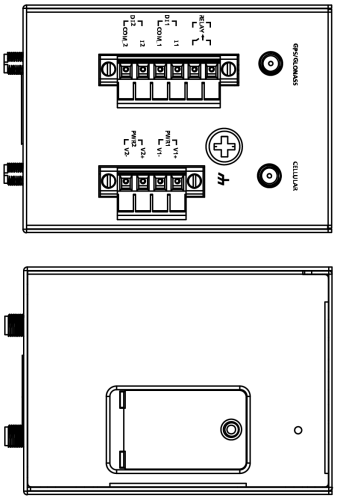
Front View



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

A-CRF-RMNM-L1-300	N-type (male) to RP SMA (male), LMR-195 Lite cable, 3 m

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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