NR7101

5G New Radio Outdoor Router

The Zyxel NR7101 5G New Radio Outdoor Router supports the latest 5G NR technology and at the same time remaining full compatibility with 4G/3G networks. This makes NR7101 the best choice for operators who are looking for 5G NR FWA solutions to deliver high-capacity, premium broadband services with high-speed connectivity, enhanced network security and deployment flexibility.

Benefits

Lightning-fast internet connectivity

The Zyxel NR7101 has 5G NR DL speeds higher than 5 Gbps* and 4G LTE DL speeds of up to 2 Gbps*. The wide spectrum bandwidth accelerates internet speeds and reduces network latency for premium and time-sensitive connectivity services.

Strengthen your competitive edge with Fixed Wireless Access (FWA)

Deploying NR7101 as part of FWA allows you to extend your 5G service coverage into subscribers' homes and workplaces without extra wire infrastructure. This secures the TCOs and increases business revenue by supporting a larger number of subscribers with a premium fixed-grade connection.

- 3GPP Rel. 15 5G NR, up to 5 Gbps/650 Mbps (DL/UL) with the support of NSA & SA mode

- DL 4x4 MIMO, 6 built-in high-gain 4G/5G antennas of up to 10 dBi per element

- Standard 802.3af/at Gigabit PoE

- Bridge and router modes, IPv4/IPv6 dual stack

- Remote management via TR-069 (TR-181 and TR-143 speed test) HTTP/web GUI and FTP

- Hardened IP68-certified enclosure with industrial-grade components

- Zyxel mobile apps (iOS and Android)

- Remote firmware upgrade

Remote management and upgrade

Through the LTE radio interface, NR7101 supports TR-069, remote GUI and FTP to be fully configurable. Firmware Over-The-Air (FOTA) support enables remote firmware upgrades and troubleshooting, through events triggered by the operators.

Easy installation and SA/NSA dual-mode compliant

The Zyxel NR7101 is equipped with a flexible wall or pole mounting kit, integrated IEEE 802.3af/at Power over Ethernet (PoE) support and dedicated WiFi AP with mobile apps content graphics for eNB/gNB alignment. NR7101 is also interoperable with both Standalone (SA) and Non-Standalone (NSA) deployments.
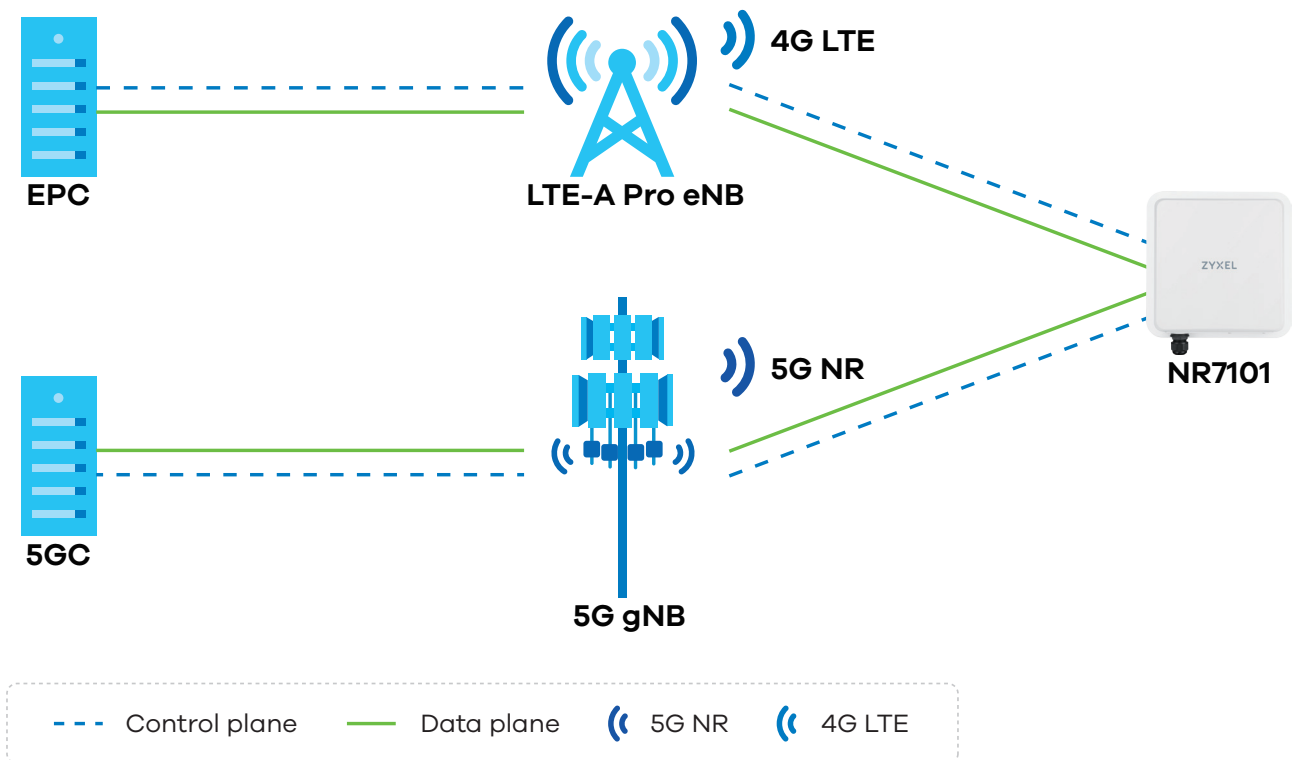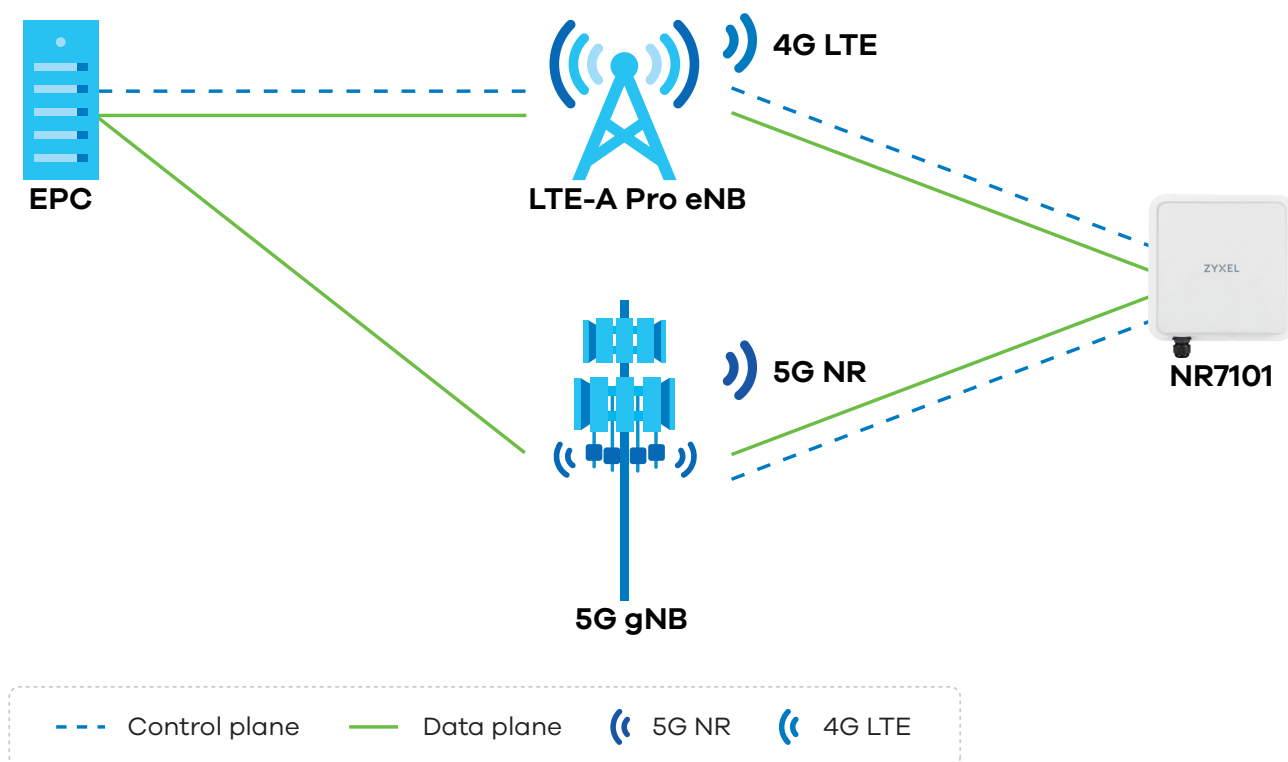
Environmental durability

With IP68-compliant K.21 6 KV/300 A lightning protection, the Zyxel NR7101 guarantees high-quality connections, a longer device life despite the weather and natural challenges. The NR7101 can operate within a wide range of temperature and humidity, which supports your service deployed in wide territorial scopes.

Zyxel 5G New Radio Outdoor Router SA architecture

EPC — LTE-A Pro eNB — 4G LTE — NR7101

5GC — 5G gNB — 5G NR

- - - Control plane ——— Data plane ((5G NR ((4G LTE

Zyxel 5G New Radio Outdoor Router NSA architecture

EPC — **LTE-A Pro eNB** — **4G LTE** — **5G NR** — **5G gNB** — **NR7101**

Legend:
- - - - Control plane
───── Data plane
((5G NR
((4G LTE

Specifications

System specifications

IP networking
- Supports IPv4/IPv6 dual stack (NDP IPv6)
- DHCP server
- ICMP supported
- Virtual Private Network (VPN) pass-through
- Multiple APNs with VLAN mapping

NAT
- Supports NAT/NAPT
- Supports DMZ
- Supports port-forwarding/triggering
- Supports ALG
- Supports NAT disable/enable

Routing
- Supports bridge or router modes
- Supports dynamic DNS for first APN
- Supports remote management under bridge mode
- Static/dynamic routing settings, RIP 1 & 2

IP firewall
- Firewall can be enabled or disabled via GUI
- DoS attack prevention
- Supports SPI
- Application-level firewall
- Filters LAN MAC address
- Filters LAN IP address
- Filters URLs

Management
- Supports local/remote device management and firmware upgrade via TR-069 and web GUI
- APN management
- PIN/PUK management
- MQTT management
- Network selection
- Network preference
- Operating frequency band selection
- Supports UPNP IGD
- Support mobile apps (iOS and Android)
- TR-069 management with TR-181 data model

Hardware specifications

5G NR interface
- 3GPP Release 15 standard-compliant
- Supports both NSA and SA modes
- Supports frequencies: n1/n3/n5/n7/ n8/n20/n28/n41/n77/n78/n38/n40
- DL 4×4 MIMO: n1/n3/n7/ n38/n40/n41/ n77/n78
- Data rates:
  - 5G SA: DL 4.2 Gbps; UL 900 Mbps*
  - 5G NSA: DL 5 Gbps; UL 650 Mbps*
- Supports DL modulation QPSK, 16-QAM, 64-QAM and 256-QAM
- Supports UL modulation QPSK, 16-QAM, 64-QAM and 256-QAM
- Output power:
  - Class 2 (26 dBm) for n41/n77/n78
  - Class 3 (23 dBm) for n1/n3/n5/n7/ n8/n20/n28/n38/n40

4G LTE interface
- 3GPP UE Category 20 standard-compliant
- Supports frequencies:
  - LTE-FDD: B1/B3/B5/B7/B8/B18/B19/B20/B26/B28/B32
  - LTE-TDD: B34/B38 /B39/B40/B41/B42
- DL 4×4 MIMO:
  - LTE-FDD: B1/B3/B7
  - LTE-TDD: B38/B40/B41/B42
- Peak data rates: DL 2.0 Gbps; UL 200 Mbps
- Supports DL modulation QPSK, 16-QAM, 64-QAM and 256-QAM
- Supports UL modulation QPSK, 16-QAM, 64-QAM and 256-QAM
- Output power class 3 (23 dBm) for FDD/TDD bands

5G/4G antennas
- 6 embedded directional antennas
- Ultra-high band:
  - Up to 10 dBi peak gain
- High band and middle band:
  - Up to 8 dBi peak gain
- Low band:
  - Up to 5 dBi peak gain

Power specifications
- Standard 802.3af/at Power over Ethernet
- Power consumption at PoE: < 16 W (est.)

WiFi AP features (ODU)**
- 802.11 n/g/b, 2.4 GHz, N300**
- Hidden SSID
- MAC address filtering
- 2 embedded antennas
- For local management purpose only

Hardware interface
- One GbE RJ-45 PoE LAN port
- LEDs:
  - Power status
  - Internet status
  - WiFi status
- Two 3FF format Micro SIM card slots (redundant)
- One WiFi on/off button
- One reset to default button

Power consumption
- Power consumption at PoE: < 16 W (est.)

Physical specifications
- Item dimensions (WxDxH): 255 x 256 x 58 mm (9.99" x 10.03" x 2.28")
- Item weight: 1143 g (21 lb.)
- Packing dimensions (WxDxH): 280 x 420 x 108 mm (11.02" x 16.53" x 4.25")
- Packing weight: 2818 g (61 lb.)

Environment specification

Operating environment
- Temperature: -40°C to 60°C (- 40°F to 140°F)
- Humidity: 5% to 95% (non-condensing)

Storage environment
- Temperature: -40°C to 65°C (-40°F to 149°F)
- Humidity: 5% to 95% (non-condensing)

Ingress Protection rating
- IP68

Lightning protection
- K.21 enhanced mode, 6 KV

Wind load testing
- GR 487 issue 4 (2013) standard-compliant
- Level 16 wind force
- Wind speeds 53.6 m/sec (~ 193 km/h)

Certification
- CE
- WEEE (Waste Electrical and Electronic Equipment) Directive certification
- RoHS (Restriction of Hazardous Substances) Directive certification
- HSF (Hazardous Substance Free)
- European Parliament and Council Directive 94/62/EC of 20 December 1994 on packaging and packaging waste
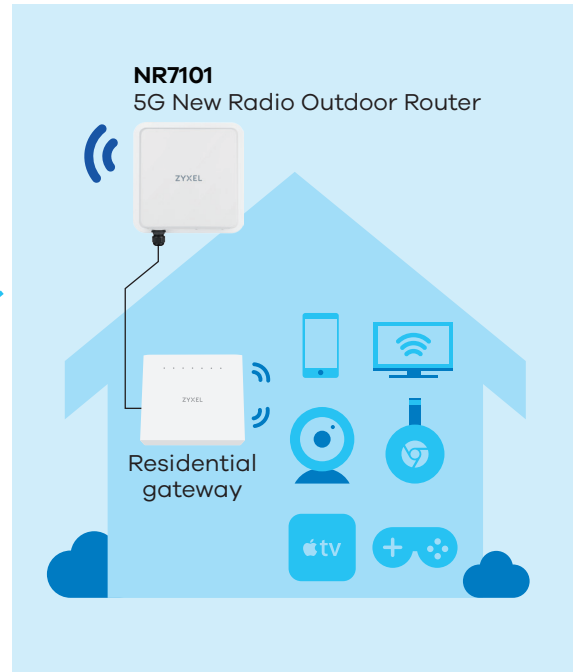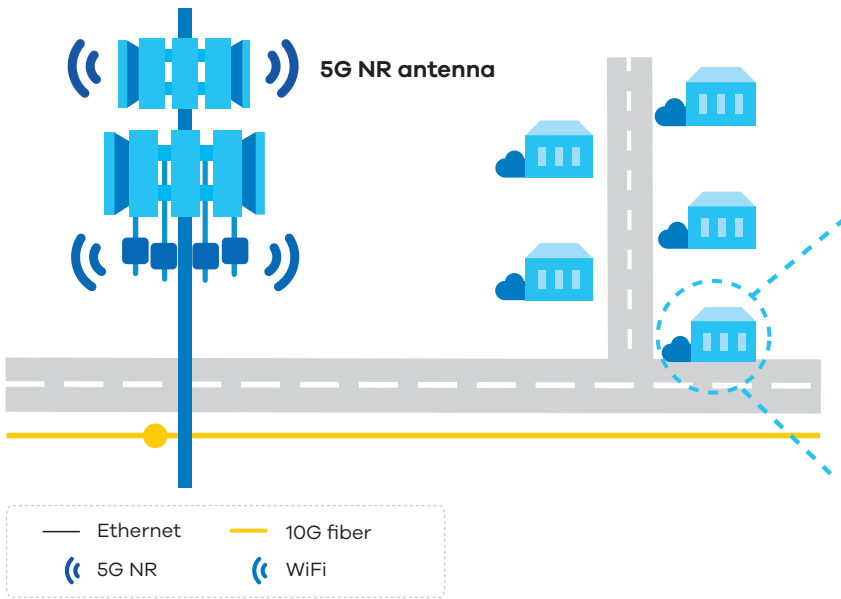
Package contents
- Standard 802.3af/at Power over Ethernet (PoE) injector
- 1.8 M Ethernet cable 8P8C
- Quick Start Guide
- Warranty card
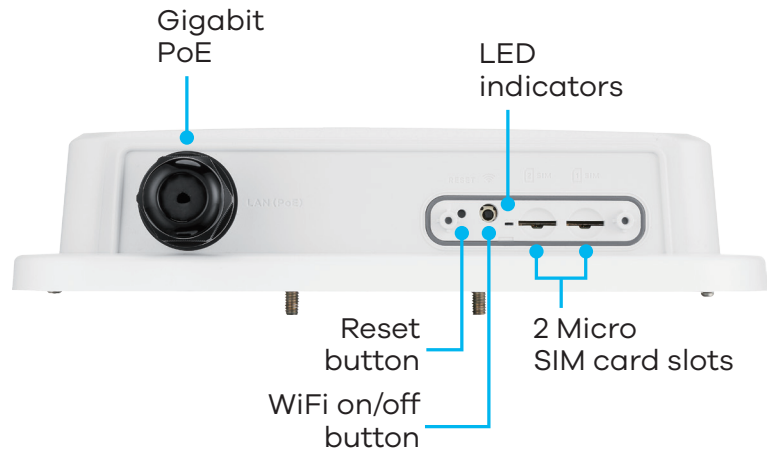- DoC and safety warning
- Wall/pole mounting kit

* The maximum data rate is a theoretical value. The actual data rate depends on the operator.
** WiFi interface is used for local management purposes only.

FWA application diagram for 5G New Radio Outdoor Router

5G NR antenna

NR7101
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Residential gateway

——— Ethernet	——— 10G fiber
(5G NR	(WiFi

Interface description

Gigabit PoE

LED indicators

Reset button

WiFi on/off button

2 Micro SIM card slots

ZYXEL

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COMMUNICATIONS

09/09/20

Datasheet NR7101