NOKIA

4.5G Pro AirScale RRH 4T4R B40 160W AZNA

Bridge to 5G with unlimited capacity, major cost savings and protected investments

Deliver 1 Gbps throughput using 100 MHz of spectrum, 4X4 MIMO and 256QAM. Install with “One click Book Mounting”.

Up to 30 percent greater area of high throughput than previous high capacity 4-pipe radio, using more than 30 percent higher transmit power. Save costs with 50 percent higher power efficiency, 40 percent smaller size, and 35 percent lower weight. Save even more using a single unit for two sectors on a site.

Unlimited capacity to meet any demand

An integral component of the new AirScale Radio Access, Nokia AirScale Base Station provides operators with a smooth and flexible journey towards 5G and cloud connectivity. AirScale Base Stations support all radio technologies (GSM, WCDMA, FDD LTE, TDD LTE, LTE-A Pro and are 5G-ready) and network architectures (Distributed RAN, Centralized RAN and Cloud RAN).

AirScale Base Stations offer 10 Gbps throughput per system module, which handles baseband processing and control and includes front haul and backhaul interfaces. More capacity can be implemented by chaining together an unlimited number of system modules. Furthermore, AirScale Base Stations can take advantage of additional baseband processing power available from Cloud RAN for unlimited scalability.

Nokia 4.5G Pro AirScale RRH 4T4R offers an industry-leading 160 W of maximum transmit power, complemented with multiple antenna technology software on the baseband to deliver 2X2 MIMO, 4X2 MIMO or 4X4 MIMO. The result is a straightforward solution for increasing capacity whenever needed.

Nokia AirScale RRH 4T4R also supports 4 Receive Uplink Interference Rejection Combining (IRC), a significant advancement over the Maximum Ratio Combining (MRC) protocol. Using 4 Receive IRC, uplink capacity can be increased by more than 30 percent over 4 Receive MRC. Even more, the support of 4 Receive Uplink CoMP (Coordinated multipoint) delivers up to 15 percent better cell edge compared to 4 Receive IRC. This allows capacity and coverage to be improved even in high load/interference scenarios.

Moreover, the AirScale RRH 4T4R supports 100 MHz bandwidth (when required) to deliver exceptional user throughput. This bandwidth combined with 256QAM and 4X4 MIMO can deliver more than 1 Gbps of throughput per site. The Nokia AirScale RRH 4T4R, together with Nokia AirScale baseband and integrated transport enhanced with Advanced Antenna System, gives unprecedented capacity and coverage. The result is a highly cost-effective, scalable and future-proof investment.

Greater cost saving

Using Nokia AirScale RRH 4T4R, an operator can launch mobile broadband services rapidly and cost-effectively. As subscriber penetration increases and capacity demand grows, the AirScale RRH 4T4R site can be easily re-configured with software upgrades or hardware additions to support:

- Higher transmit modes
- Higher average sector throughput
- Better cell edge performance

The unmatched capability of up to two sectors in a single radio gives even more cost savings. In addition, the operator can save incremental costs in installation and maintenance of extra radios and tower space. Nokia AirScale RRH 4T4R offers multiple configurations including:

- 2X2 MIMO 2 sectors
- 2X2 MIMO 3 carriers on one sector and 2 carriers on second sector
- 4X4 MIMO, 4 carriers, 256QAM one sector

Flexibility in configuration also means flexibility in upgrade paths.

For example, one upgrade path can be:

Step 1 – Two radios for three sectors, 2X2 MIMO configuration

Step 2 – Add a third radio for three sectors, 4X4 MIMO configuration

This flexible upgrade process ensures cost-effective scalability of both coverage and capacity as required – making it easy for operators to match the rate of subscriber penetration while keeping total cost of ownership low.

With the highest transmit power in its category, capable of delivering 4X4 MIMO and up to 100 MHz of spectrum, Nokia AirScale RRH 4T4R delivers an enhanced user experience at reduced cost with:

- Up to 40 percent less space and 35 percent lower weight compared to Nokia's previous TD-LTE 4-pipe radio
- 50 percent more power efficient than Nokia's previous industry-leading TD-LTE 4-pipe radio

Protects investments

The 4.5G Pro AirScale RRH 4T4R is designed to meet the requirements of the 5G network life cycle requirements and beyond. Thanks to the most advanced processors, software technology experience and the right expertise, this radio can deliver TD-LTE-Advanced Pro (3GPP change Release 13). The AirScale RRH 4T4R, complemented with our latest baseband, offers a complete base station solution that is software upgradeable to 5G.

The Nokia 4.5G Pro AirScale RRH 4T4R is the next generation of the Flexi Base Station platform that has been deployed in hundreds of networks, giving the highest mean time between failure (MTBF) of up to 350,000 hours – assuring the best quality, reliability and availability.

Description	AirScale RRH 4T4R Specification*
LTE Band Support	3GPP Band40, 2300 to 2400 MHz
Antenna Configuration	4T4R
Power Output	4*40 W
Bandwidth Support	IBW 100 MHz, OBW 80 MHz,
MIMO	4X4 MIMO; 4X2 MIMO; 2X2 MIMO using single RRH
Modulation	DL/UL: QPSK, 16-QAM, 64-QAM DL: 256-QAM
Dimensions (mm) Height x width x depth	336 X 300 X 120
Weight	<14 kg
Volume	12 liters
Transmission interface	3* 9.8G with IQC and up/down sampling
SFP Supporting Type	Single-Mode, Multi-Mode, BiDi
Fiber length	At least 40 km/Single-Mode, BiDi
Temperature	-40^{0}C~+55^{0}C
Dust and waterproof rating	IP65
Input Power	-48V DC (range: -40V~-57V)
Cooling	Natural convection cooling
Mounting	Wall/pole/tower/book mount, RAS compatibility
Power consumption	375 W @74.3% duty cycle
Unit Efficiency	41%

*Specification subject to change

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