



5G Integrated Small Cell

Last Updated: May 16, 2024

The Integrated Small Cell (ISC) in many ways is a size, power, and cost-optimized version of the larger, traditional, all-in-one base stations. Integrated small cells are mostly used in densely populated urban areas, where coverage near the macro edges and providing enough capacity to high numbers of mobile users can be challenging. These “infill” small cells can be deployed on buildings and street lights and fixtures as well as on traditional cell towers. This smaller version gNode B allows for cost efficient deployment.

Integrated small cells are also a key technology for enabling private 5G enterprise and industrial networks, where 5G low latency features support manufacturing and factory automation and the 5G CBRS and industrial spectrum supports reliable connections in healthcare, retail, hospitality, aviation, and maritime use cases.

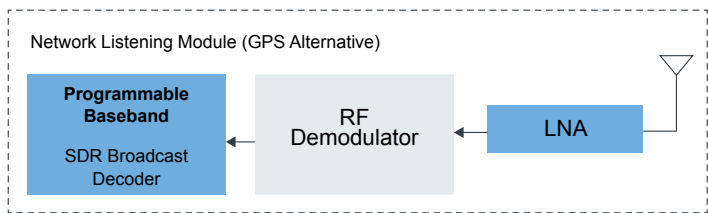
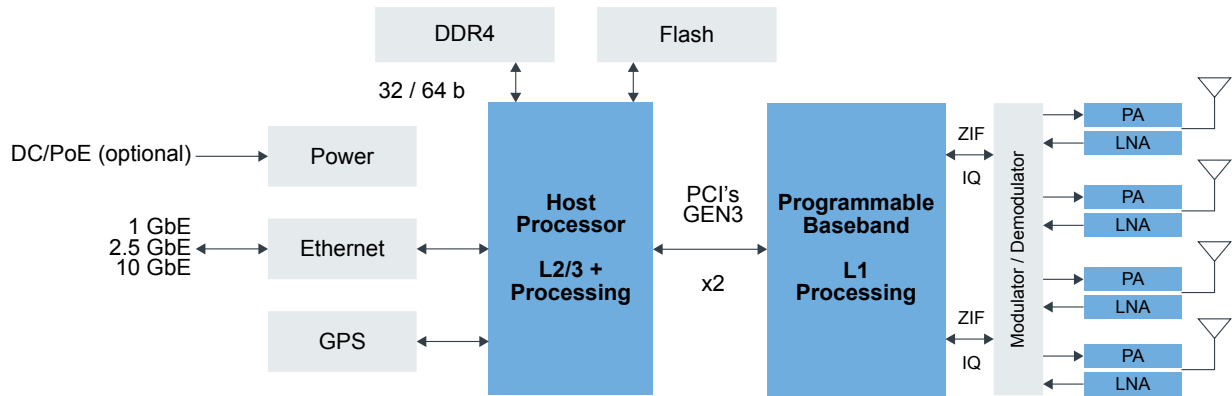
NXP’s Integrated Small Cell solutions resolve two major issues:

- Broad coverage, good spatial diversity and high performance with a choice of FR1 (sub 6 GHz) ecosystem radio solutions: up to 4 transmit, 4 receive antenna configurations, TDD and FDD support, higher power class support and 100 MHz channel bandwidth.
- Cost effective mmWave configurations for world-wide bands, high performance EIRP options, proven multigigabit throughput.

NXP’s Integrated Small Cell offers:

Software defined radio (SDR), that allows to choose optimized software algorithm for the ISC used cases and brings feature flexibility. Open RF interface optimized for price, power and performance for both sub 6 Ghz and mmWave applications. Network grade products, that supports physical robustness and product longevity guarantees.

4T4R Sub-6 GHz ISC Block Diagram



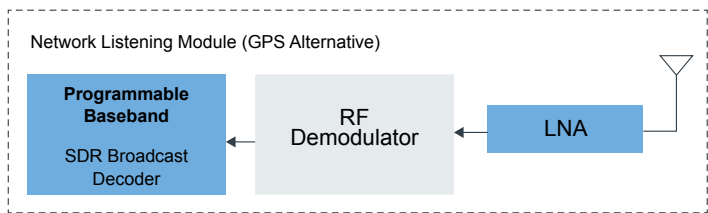
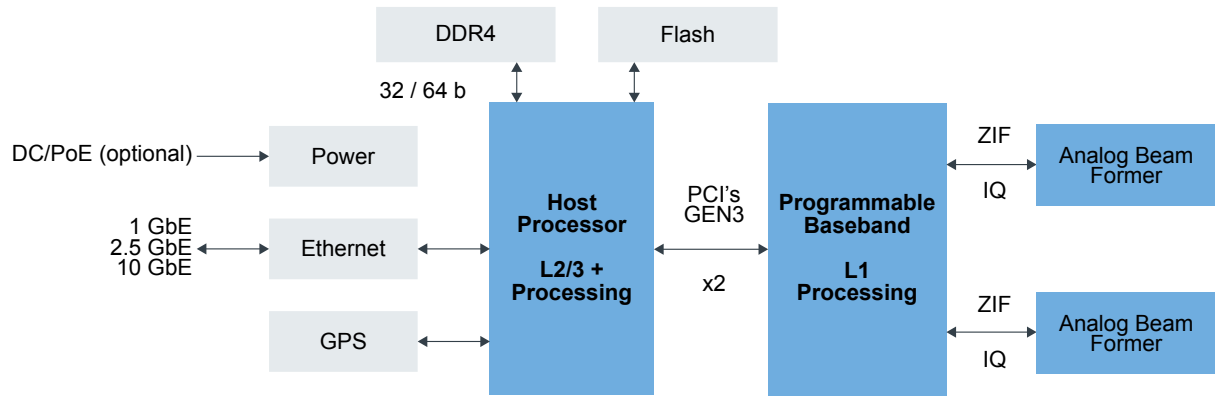
■ NXP Technology ■ Non NXP Technology □ Optional Technology

Recommended Products for 4T4R Sub-6 GHz ISC

LNA	<ul style="list-style-type: none"> • Active Antenna Systems: Active Antenna Systems
PA	<ul style="list-style-type: none"> • Active Antenna Systems: Active Antenna Systems
Host-Processor	<ul style="list-style-type: none"> • LS1043A: Layerscape® 1043A and 1023A Processors • LS1046A: Layerscape® 1046A and 1026A Processors • LX2160A: Layerscape® LX2160A, LX2120A, LX2080A Processors
Host-Processor	<ul style="list-style-type: none"> • LS1043A: Layerscape® 1043A and 1023A Processors • LS1046A: Layerscape® 1046A and 1026A Processors

	<ul style="list-style-type: none"> • LX2160A: Layerscape® LX2160A, LX2120A, LX2080A Processors
Programmable Baseband L1 Processing	<ul style="list-style-type: none"> • LA12xx: Layerscape® Access LA12xx Programmable Baseband Processor
Programmable Baseband L1 Processing	<ul style="list-style-type: none"> • LA12xx: Layerscape® Access LA12xx Programmable Baseband Processor
Programmable Baseband SDR Broadcast Decoder	<ul style="list-style-type: none"> • LA9310: Layerscape® Access LA9310 Programmable Baseband Processor
Programmable Baseband SDR Broadcast Decoder	<ul style="list-style-type: none"> • LA9310: Layerscape® Access LA9310 Programmable Baseband Processor

mmWave ISC Block Diagram



■ NXP Technology ■ Non NXP Technology □ Optional Technology

Recommended Products for mmWave ISC

Host-Processor	<ul style="list-style-type: none"> • LS1043A: Layerscape® 1043A and 1023A Processors • LS1046A: Layerscape® 1046A and 1026A Processors • LX2160A: Layerscape® LX2160A, LX2120A, LX2080A Processors
Host-Processor	<ul style="list-style-type: none"> • LS1043A: Layerscape® 1043A and 1023A Processors • LS1046A: Layerscape® 1046A and 1026A Processors • LX2160A: Layerscape® LX2160A, LX2120A, LX2080A Processors
Programmable Baseband L1 Processing	<ul style="list-style-type: none"> • LA12xx: Layerscape® Access LA12xx Programmable Baseband Processor

Programmable Baseband L1 Processing	<ul style="list-style-type: none"> • LA12xx: Layerscape® Access LA12xx Programmable Baseband Processor
Analog Beam Former	<ul style="list-style-type: none"> • MMW9012K: 26.5 GHz–29.5 GHz 4-Channel Dual-Polarized Analog Beamforming Integrated Circuit • MMW9014K: 24.25 GHz–27.5 GHz 4-Channel Dual-Polarized Analog Beamforming Integrated Circuit
LNA	<ul style="list-style-type: none"> • Active Antenna Systems: Active Antenna Systems
PA	<ul style="list-style-type: none"> • Active Antenna Systems: Active Antenna Systems
LNA	<ul style="list-style-type: none"> • Active Antenna Systems: Active Antenna Systems
Programmable Baseband SDR Broadcast Decoder	<ul style="list-style-type: none"> • LA9310: Layerscape® Access LA9310 Programmable Baseband Processor
Programmable Baseband SDR Broadcast Decoder	<ul style="list-style-type: none"> • LA9310: Layerscape® Access LA9310 Programmable Baseband Processor

View our complete solution for [5G Integrated Small Cell](#).

Note: The information on this document is subject to change without notice.

www.nxp.com

NXP and the NXP logo are trademarks of NXP B.V. All other product or service names are the property of their respective owners. The related technology may be protected by any or all of patents, copyrights, designs and trade secrets. All rights reserved. © 2024 NXP B.V.