

MicroTCA Solutions for Wireless Networks

There is growing demand for private broadband cellular networks from governments, defense, military and search and rescue organisations, institutions involved in public safety and disaster relief, and industries with remote and distributed facilities, such as oil and gas exploration.

These organisations are specifying systems that work with commercial networks and equipment, so they can lower costs by using standard devices (smart phones, tablets) and existing infrastructure to access their private networks.



The concept of a network-in-a-box (NIB) based on the 4G LTE or 3G wireless standard has emerged as a viable solution. This would allow private network owners to use commercially-available devices and SIM cards and leverage the industry-wide knowledge of these kinds of networks for set-up and modification.

The Evolved Packet Core (EPC) of a NIB can communicate with the EPC of commercial networks, providing access to roaming, voice and data services with users outside the private network.

N.A.T. Solution

N.A.T. has developed a NIB solution for Massive MIMO (MMIMO) networks and scalable phased antenna arrays, including multi-antenna transmission remote radio heads (RRH), that provides RF to baseband processing functionality in a compact, flexible system.

The N.A.T. NIB solution consists of the NAMC-SDR and NAMC-ODSP modules, which can be integrated into a range of N.A.T. system enclosures to provide a complete BTS infrastructure solution in-a-box.

It supports standard and proprietary wave forms, standard and custom firmware, is simple to configure and supports the OpenAirInterface software stack. It is ideal for a wide range of applications, including search and rescue and lawful intercept.

NAMC-ODSP-W

The N.A.T. [NAMC-ODSP-W](#) intelligent baseband processing board is a AdvancedMC module (AMC) that provides four RF channels combined with DSP, FPGA and ARM based processing, and a comprehensive range of software including a Linux operating system, L2/L3 stack, virtualized core network software and software defined radio PHY firmware.



Aimed at LTE, LTE Advanced and 5G systems using MIMO technologies, the NAMC-ODSP-W enables private network operators to implement base station (BTS) functionality from RF to Layer 3 on a compact module.

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A variant of the NAMC-ODSP-W offers a dual SFP connector to the front panel to enable a CPRI link to external RF, allowing the module to be used in conjunction with remote radio modules such as the N.A.T. [NAMC-SDR](#) or third party RRH solutions.

NAMC-SDR

The NAMC-SDR is an interface card for software defined radio (SDR) that enables wireless operators to realize up to three times the effective bandwidth on the optical link in a BTS thanks to IDT's IQ compression technology, integrated in collaboration with Fraunhofer Heinrich Hertz Institute (HHI).



The NAMC-SDR can easily scale up to dozens of antennas on the access link, providing higher data rates by advanced beamforming techniques.

Complete Solution

The NAMC-SDR and NAMC-ODSP can be integrated with other N.A.T. system products to provide a complete BTS solution in-a-box:

Native Mini



Native C2



Native R2



For more information about N.A.T. solutions for wireless networks, please [contact us](#).

Solutions for Wireless Networks

MMIMO Remote radio heads and network-in-a-box from RF to base band processing

Key features

- standard and proprietary wave forms
- for MIMO and scalable phased antenna arrays
- simple configuration
- custom and standard firmware
- OpenAirInterface support, incl. UHD driver
- support for search & rescue and lawful interception applications