

# Node-H

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#### Deployment specialist brings 5G to market

##### Carrier-grade RAN solutions for rapid deployment

Node-H has a proven track record of wide-scale deployments at senior operators, and works closely with end-to-end eco-system vendors so that operators can source complete or disaggregated solutions for their Radio Access Network.

Node-H carrier-grade software powers this standalone, fully-integrated, low-cost Askey 5G Enterprise Small Cell, which operates in the widely-used n78 frequency band, and is also available in n77, n41 and n48.

Node-H brings deep technical know-how to solving real-world issues which has allowed carriers worldwide to deploy millions of cells based on Node-H software.

By working closely with technology partners, Node-H supports end-to-end and disaggregated solutions with different gateways and management systems.

Node-H's LTE and UMTS software suites are widely deployed at operators. This complements the 5G offering to provide a full portfolio of RAN technologies.

The Node-H Askey 5G Enterprise Small Cell brings turnkey disaggregated cells to public mobile operator uses cases. It also provides the foundation to rapidly address Private 5G networks in vertical markets such as Enterprise real-estate, Industry 4.0 or Campus networks.



The 5G Software Suite supports Centralized Unit (CU) and Distributed Unit (DU), with a clear Control-Plane (CP) and User Plane (UP) split that can be configured in various ways to build 5G RAN technology for small cells.

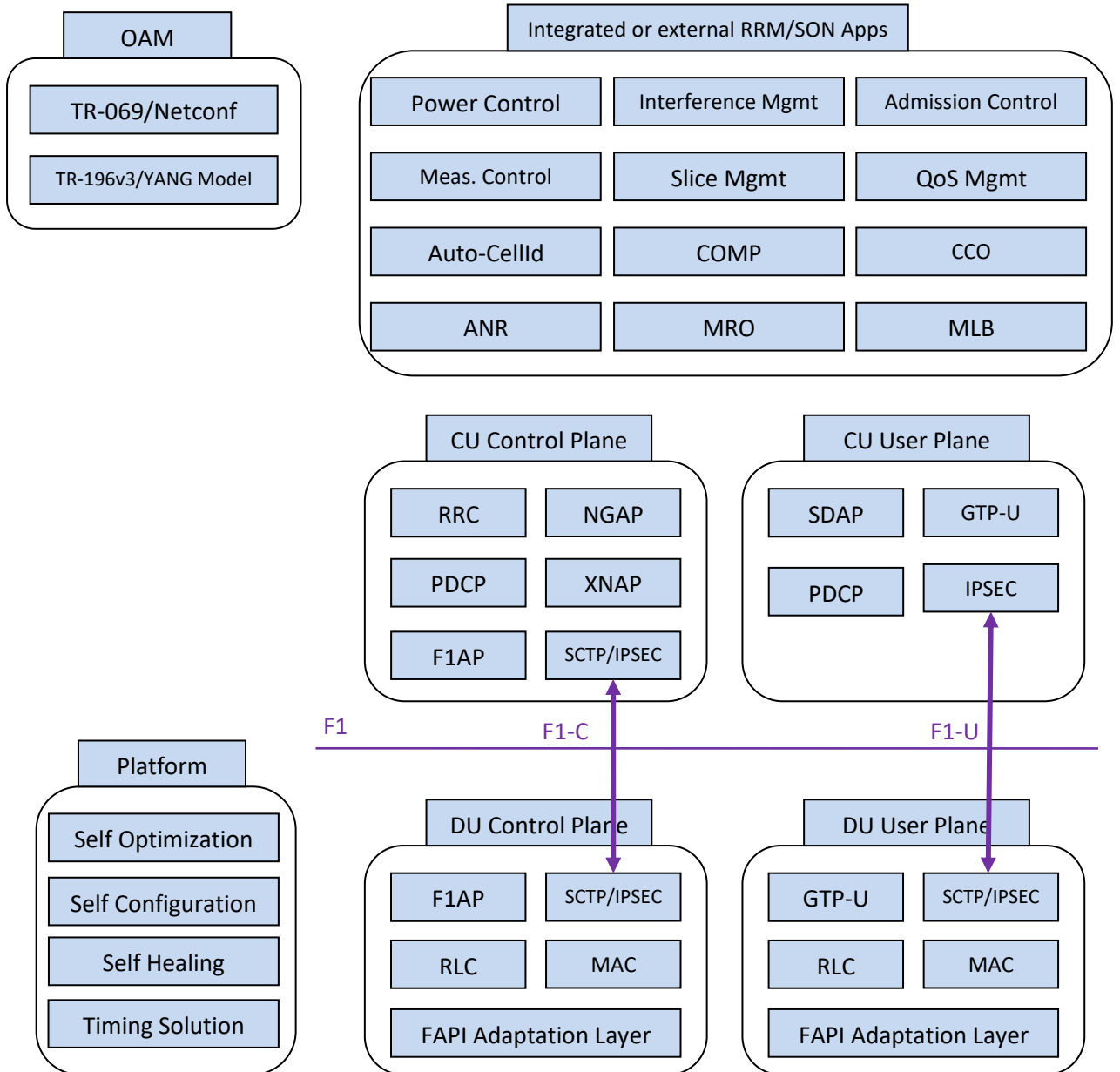
Node-H software follows the standards-based 3GPP architecture, as well as O-RAN and Small Cells Forum defined interfaces, to support interoperability with other vendors. Node-H has focused much effort on interoperability, having integrated Node-H based cells with infrastructure from all of the major network equipment vendors, and received the Chairman's Award from the Small Cell Forum for work on Interoperability.

##### Choose Node-H because...

Node-H has a uniquely experienced team of specialists who cover all of the major technologies required to implement complete RAN solutions.

Node-H integrates its system software, including a comprehensive security solution, management software, SON and RRM, scheduler and L2/L3 protocols, with Askey's hardware design to deliver a ready-to-deploy solution with the lowest TCO.

# gNB 5G Application



The standalone 5G cell software is fully integrated on a secure Linux platform. The cell can be directly connected to the 5G core.



## Features

SA Architecture	The Node-H Askey 5G Standalone Small Cell supports the Option 2 – NR Standalone architecture
Carrier Bandwidth	Up to 100MHz.
Flexible Numerology	0, 1 or 2.
Power Management	Cell automatically selects power level based on surrounding cells and configuration, including 5G CCO.
Voice Calls and Quality of Service	5G VoNR in accordance with 5QI.
SON/RRM/Interference Management	Integrated SON/RRM for standalone product supporting AutoCell-Id, ANR, Admission control, Interference Mgmt., CCO, MRO, MLB, with self-config, optimization and healing.
Mobility	Measurements allow the cell to support 5G inter and intra Cell handovers.
Network slicing	Multiple slices with network resource isolation.
Operations and Maintenance	The solution implements the SCF defined 5G ‘TR-196v3’, transitioning to O-RAN management over A1 and E2 protocols and service models over Netconf/YANG as this becomes available.
Security	Trusted platform fully secure start-up and code-signing. Ciphering with hardware acceleration, Signaling integrity checking. IPSEC uses hardware acceleration, IKE v2 key management, AES, certificate-based security.
Timing Solution	The timing solution support GNSS and PTP. Synchronized cells can provide time-sync for other cells in the same sub-net.

## Protocol compliance

### 3GPP Standards (rel16)

TS 38.300 5G; NR; Overall Description; Stage-2  
 TS 38.321 5G; NR; Medium Access Control (MAC)  
 TS 38.322 5G; NR; Radio Link Control (RLC)  
 TS 38.323 5G; NR; Packet Data Convergence Protocol (PDCP)  
 TS 38.331 5G; NR; Radio Resource Control (RRC)  
 TS 38.401 5G; NG-RAN; Architecture Description  
 TS 38.413 5G; NG RAN; NG Application Protocol (NGAP)  
 TS 38.423 5G; NG RAN; Xn Application Protocol (XnAP)  
 TS 38.425 5G; NG RAN; NR User Plane Protocol  
 TS 38.473 5G; NG RAN; F1 Application Protocol (F1AP)  
 TS 38.474 5G; NG RAN; F1 Data Transport  
 TS 37.324 5G; NR; Service Data Adaptation Protocol (SDAP)

### Small Cell Forum, O-RAN, IETF

SCF 222 5G FAPI  
 SCF 223 P19 RF Control  
 SCF 224 Network Monitor Mode  
 SCF 225 5G nFAPI  
 SCF 5G ‘TR-196v3’ Management  
 O-RAN-WG1-O-RAN Architecture Description  
 O-RAN A1 interface: Application Protocol Version  
 O-RAN Near-RT RIC Architecture  
 O-RAN Near-RT RIC E2 Application Protocol  
 IPv4/V6 – IETF RFC 791/2460  
 UDP – IETF RFC 768  
 SCTP – IETF RFC 4960

## Hardware

Askey Model	SCI2100
Standard	3GPP 5G Rel 16 Standalone mode
Frequency Bands	n78/n77/n41/n48
Bandwidth	100MHz
Antenna	Internal 2x2 MIMO
TX Power	24 dBm per port
Supported Users	32 UEs
Synchronization	GPS, PTP
Backhaul	2.5G WAN
Power Consumption	< 36W
Power Input	DC 12V
Dimension	230x230x60mm
Weight	< 1.5kg
IP Rating	IP30
Installation	Stand/Wall mount

