Node-H Askey 5G Enterprise Small Cell

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 operators can source complete or disaggregated solutions for their RAN.

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, as well as a version supporting n78/n48/n77.

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.
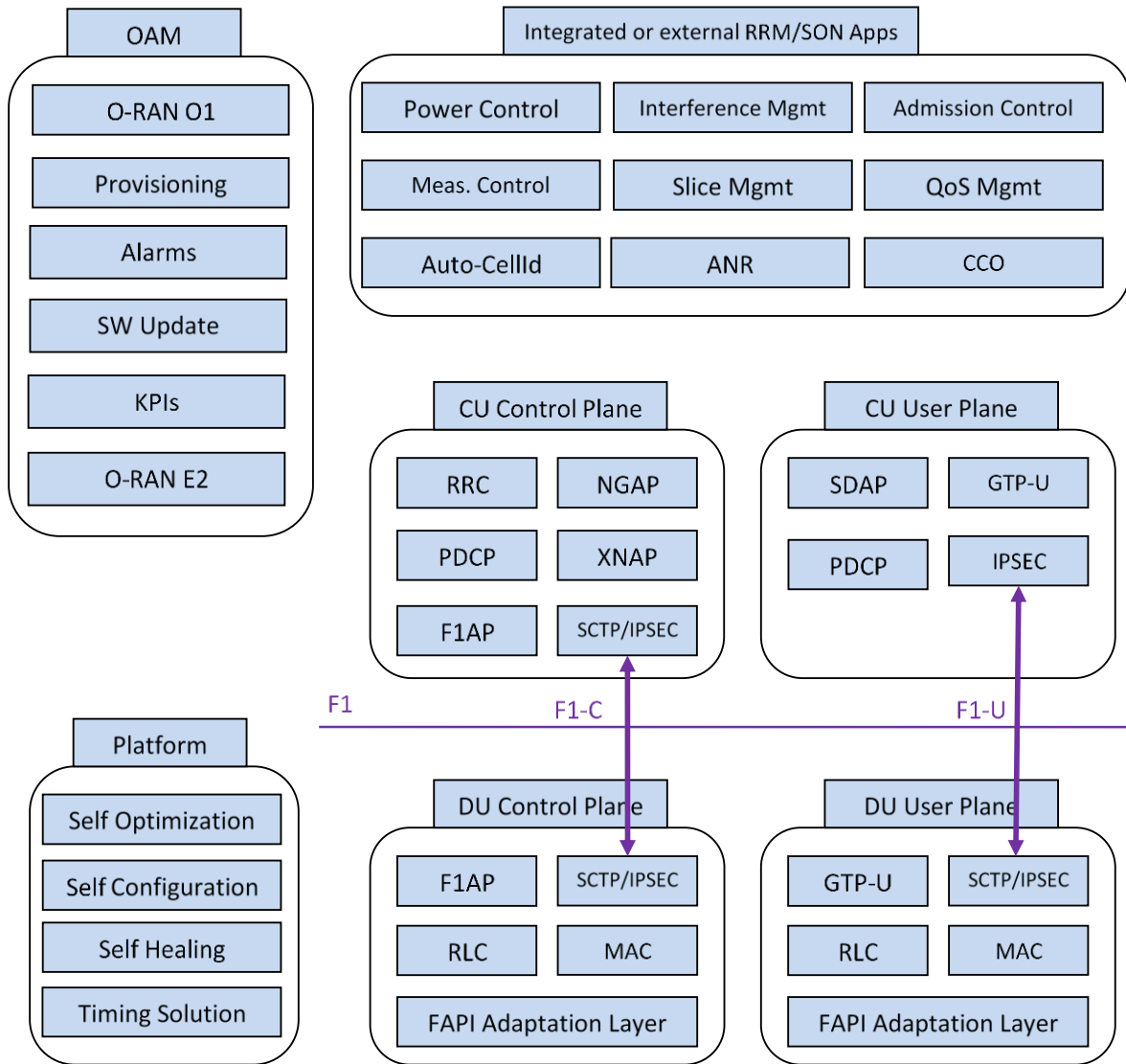
Node-H software follows the standards-based 3GPP architecture, as well as O-RAN and Small Cells Forum defined interfaces, to support interoperability with other vendors. Node-H has focused much effort on interoperability, having integrated Node-H based cells with infrastructure from all of the major 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

OAM
O-RAN O1
Provisioning
Alarms
SW Update
KPIs
O-RAN E2

Integrated or external RRM/SON Apps		
Power Control	Interference Mgmt	Admission Control
Meas. Control	Slice Mgmt	QoS Mgmt
Auto-CellId	ANR	CCO

CU Control Plane	
RRC	NGAP
PDCP	XNAP
F1AP	SCTP/IPSEC

CU User Plane	
SDAP	GTP-U
PDCP	IPSEC

F1   F1-C   F1-U

Platform
Self Optimization
Self Configuration
Self Healing
Timing Solution

DU Control Plane	
F1AP	SCTP/IPSEC
RLC	MAC
FAPI Adaptation Layer	

DU User Plane	
GTP-U	SCTP/IPSEC
RLC	MAC
FAPI Adaptation Layer	

Features

SA Architecture	The Node-H Askey 5G Standalone Small Cell supports the Option 2 – NR Standalone architecture
Carrier Bandwidth	Up to 100MHz.
Power Management	Configurable up to 27dBm in steps of 0.1dBm.
Voice Calls and Quality of Service	5G VoNR in accordance with 5QI. Comprehensive 5QI support in UL and DL and association with vLAN configuration for end-to-end QoS.
Interference Management	Automatic interference management, ANR for establishing neighbor lists, Admission control.
Mobility	Measurements allow the cell to support 5G inter and intra Cell handovers, core based NG and cell-based Xn handovers are supported.
Network slicing	Multiple slices with network resource isolation.
Operations and Maintenance	Management of the cell is via the O-RAN O1 service models using Netconf/YANG in accordance with the relevant O-RAN specifications. E2 is also supported for research projects. Built-in O-RAN WebGUI including Live Stats.
Security	The security of the platform is assured using the relevant O-RAN specification through the O1 interface. Ciphering with hardware acceleration, Signaling integrity checking. IPSEC uses hardware acceleration, IKE v2 key management, AES, certificate-based security.
Timing Solution	The timing solution supports GNSS and PTP.
3GPP Release	The 3GPP message support corresponds to the 3GPP Release 16 specifications.

Protocol compliance

3GPP Standards (rel16)	Small Cell Forum, O-RAN, IETF
TS 38.300 5G; NR; Overall Description; Stage-2	SCF 222 5G FAPI
TS 38.321 5G; NR; Medium Access Control (MAC)	SCF 223 P19 RF Control
TS 38.322 5G; NR; Radio Link Control (RLC)	SCF 224 Network Monitor Mode
TS 38.323 5G; NR; Packet Data Convergence Protocol (PDCP)	SCF 225 5G nFAPI
TS 38.331 5G; NR; Radio Resource Control (RRC)	O-RAN-WG1-O-RAN Architecture Description
TS 38.401 5G; NG-RAN; Architecture Description	O-RAN A1 interface: Application Protocol Version
TS 38.413 5G; NG RAN; NG Application Protocol (NGAP)	O-RAN Near-RT RIC Architecture
TS 38.423 5G; NG RAN; Xn Application Protocol (XnAP)	O-RAN Near-RT RIC E2 Application Protocol
TS 38.425 5G; NG RAN; NR User Plane Protocol	IPv4/V6 – IETF RFC 791/2460
TS 38.473 5G; NG RAN; F1 Application Protocol (F1AP)	UDP – IETF RFC 768
TS 38.474 5G; NG RAN; F1 Data Transport	SCTP – IETF RFC 4960
TS 37.324 5G; NR; Service Data Adaptation Protocol (SDAP)	

Hardware

General
SCE2120/SC2110/both
- Band
  N48 (3.55 – 3.7GHz)
  N77 (3.55 – 4.2GHz)
  N78 (3.55 – 3.8GHz)
  N78 (3.3 – 3.8GHz)
- Bandwidth
  N48: 20/30/40MHz
  N77: 40/50/60/70/80/90/
          100MHz
  N78: 20/30/40/50/60/70/80/
          90/100MHz
- Max. TX Power
  N48: EIRP < 30dBm
  N77/N78: 24dBm
- Antenna
  Internal/External 2x2 MIMO

- LED
  1 LED
- Backhaul
  10G SFP+/2.5G WAN
- Power Supply
  DC 12V/POE++
  (support 802.3bt)
- Power Consumption
  < 40W
- Active Users
  64
- Data Rates
  Up to 800Mbps DL
  Up to 400Mbps UL
- Slot combinations
  Range from Heavy DL to
  Heavy UL

- Installation
  Wall/Ceiling/Pole mount
- IP Grade
  IP50

Dimensions
- W250 x H250 x D65mm

Weight
- < 2.5KGS

Environmental
- Operating Temperature
  -5°C ~ 50°C
- Operating Humidity
  90% maximum, non-condensing

Product specifications are subject to change