
7.2 Fronthaul Demo



Architecture

- n78 (3.7GHz), 100 MHz BW, TDD 2.5ms, DDDSU
- 2x2 MIMO
- 730 Mbits/sec Downlink and 50 Mbits/sec Uplink



Quectel RM 500Q-GL



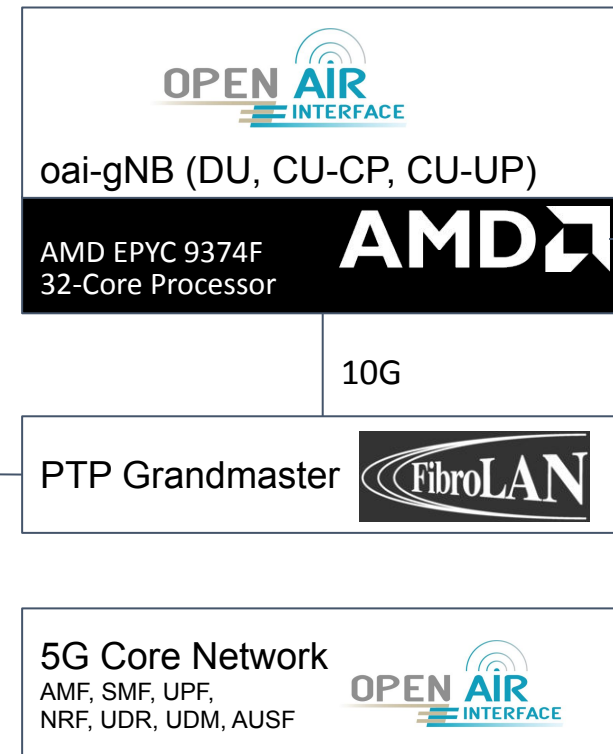
Pixel 5



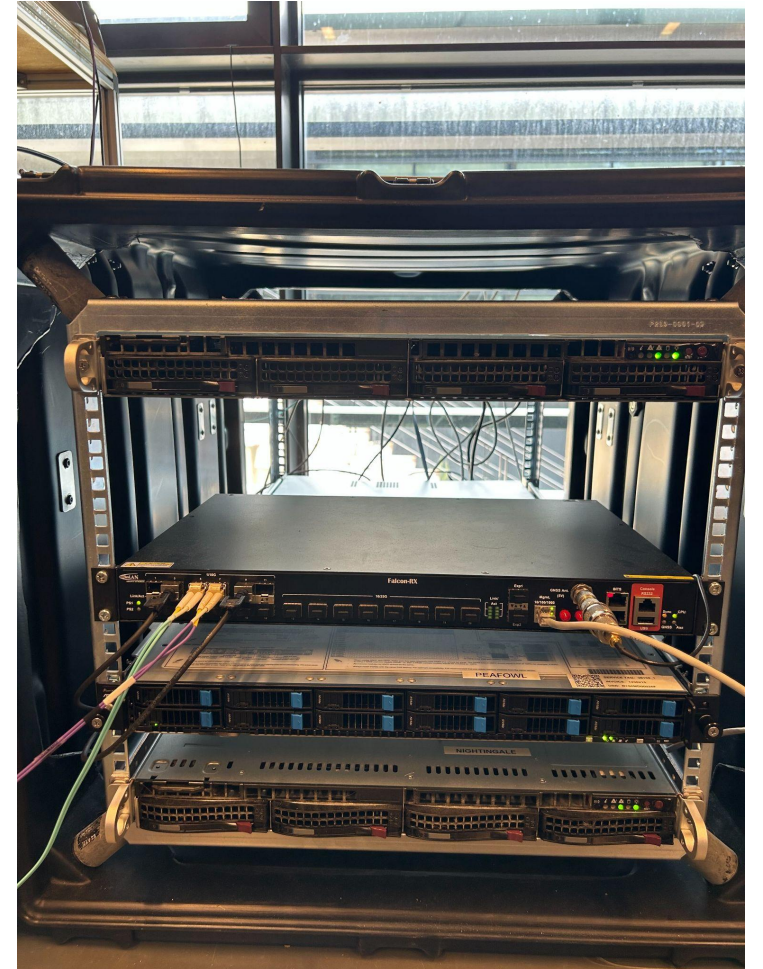
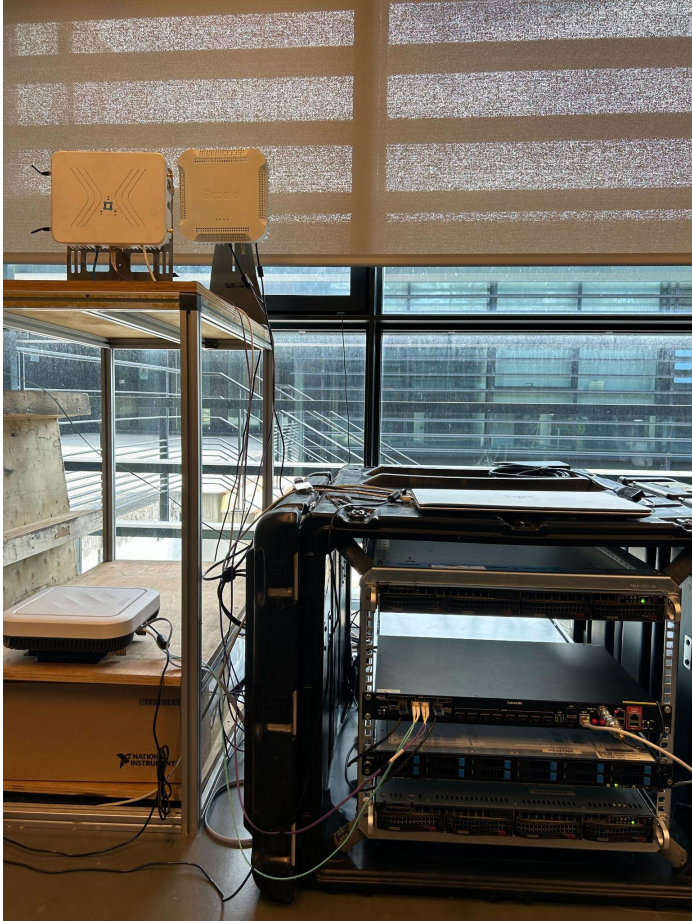
O-RU LITEON
(FF-RFI07814)

C/U/S Plane

O-RAN 7.2
10G



Setup Picture



Local Cloud Deployment of 5G Core Network

The screenshot displays the Red Hat OpenShift Container Platform interface. The top navigation bar includes the Red Hat logo and 'OpenShift Container Platform'. The left sidebar contains navigation options: Developer, +Add, Topology (selected), Observe, Search, Builds, Helm, Project, ConfigMaps, and Secrets. The main content area shows a deployment topology for project 'oai5g'. The interface includes filters for 'Display options', 'Filter by resource', and 'Name'. The topology consists of ten service icons arranged in two rows of five. Each icon is labeled with a service name and includes a 'D' (Deployment) and 'HR' (Horizontal Pod Autoscaler) icon. The services shown are: oai-udr, oai-amf2, oai-nrf, oai-smf, ims, mysql, oai-udm, oai-ausf, oai-spgwu-tiny, and oai-tr_server. At the bottom of the interface, there are search and zoom controls.

Hardware Details (gNB Machine)

Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Address sizes: 52 bits physical, 57 bits virtual
Byte Order: Little Endian
CPU(s): 32
On-line CPU(s) list: 0-31
Vendor ID: AuthenticAMD
Model name: AMD EPYC 9374F 32-Core Processor
CPU family: 25
Model: 17
Thread(s) per core: 1
Core(s) per socket: 32
Socket(s): 1
Stepping: 1
Frequency boost: enabled
CPU max MHz: 4304.9312
CPU min MHz: 1500.0000
BogoMIPS: 7688.66

Memory: 125G (DDR5)

```
ethtool -i enp193s0f1
```

```
driver: ice  
version: 5.15.0-1038-realtime  
firmware-version: 4.00 0x8001184e  
1.3236.0  
expansion-rom-version:  
bus-info: 0000:c1:00.1  
supports-statistics: yes  
supports-test: yes  
supports-eeprom-access: yes  
supports-register-dump: yes  
supports-priv-flags: yes
```

Demo Videos (Quectel RM500Q-GL)

```
OAI-gNB (DU/CU-CP/CU-UP)
surecom@peafowl:~/deno/openairInterface5g/cnake_targets/ran_build/build$ sudo LD_LIBRARY_PATH=/usr/local
/lib:/usr/local/lib/x86_64-linux-gnu ./nr-softmodem -o ~/demo/oran-demo.conf --sa --reorder-thread-dtsab
le 1 --thread-pool 10,11,12,13,14,15,16,17 -q --MACRLCs.[0].ul_max_mcs 21 --MACRLCs.[0].dl_max_mcs 27

User Equipment
user@user:~/ue-scripts$ sudo ./test-script.sh

Monitoring Status of the gNB
1[ 0.0%] 9[ 0.0%] 17[ 0.0%] 25[ 1.3%]
2[ 0.0%] 10[ 0.0%] 18[ 0.0%] 26[ 3.3%]
3[ 0.0%] 11[ 0.0%] 19[ 0.0%] 27[ 0.0%]
4[ 0.0%] 12[ 0.0%] 20[ 0.0%] 28[ 0.0%]
5[ 0.0%] 13[ 0.0%] 21[ 0.0%] 29[ 0.0%]
6[ 0.0%] 14[ 0.0%] 22[ 0.0%] 30[ 4.7%]
7[ 0.0%] 15[ 0.0%] 23[ 0.0%] 31[ 8.0%]
8[ 0.0%] 16[ 0.0%] 24[ 0.0%] 32[ 2.0%]
Mem[|||||] 24.8G/126G Tasks: 42, 62 thr; 1 running
Swp[ ] 0K/8.00G Load average: 0.19 0.56 1.62
Uptime: 6 days, 23:30:08
Load: 0.19
Avg[ ] 0.6%
```

```
PID USER PRI NI VIRT RES SHR S CPUX MEMK TIME+ Command
1625 root 20 0 29460 48236 20780 S 0.0 0.0 0:31.44 /usr/lib/snapd/snapd
F1 help F2 setup F3 search F4 list F5 tree F6 sort by F7 filter F8 filter F9 kill F10 quit
```

Demo Videos (Quectel RM500Q-GL)

