CIG

5G Small Cell Platform Briefing

VERSION 1

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Introduction

O-RAN Alliance has defined the reference distributed architecture to enable next generation RAN infrastructure, consisting of DU and RU. CIG has developed a series of hardware platform specially targeted for 5G small cell deployment for indoor 5G coverage and capacity enhancement. The platform is fully programmable based on general purpose ARM Processor and FPGA. The 3-tier architecture is adopted to carry out the gNB functionality, i.e. SC-60 O-DU, SC-70x O-RU and SC-640 O-Bridge. The number of each component can be flexibly configured to meet various application demands.
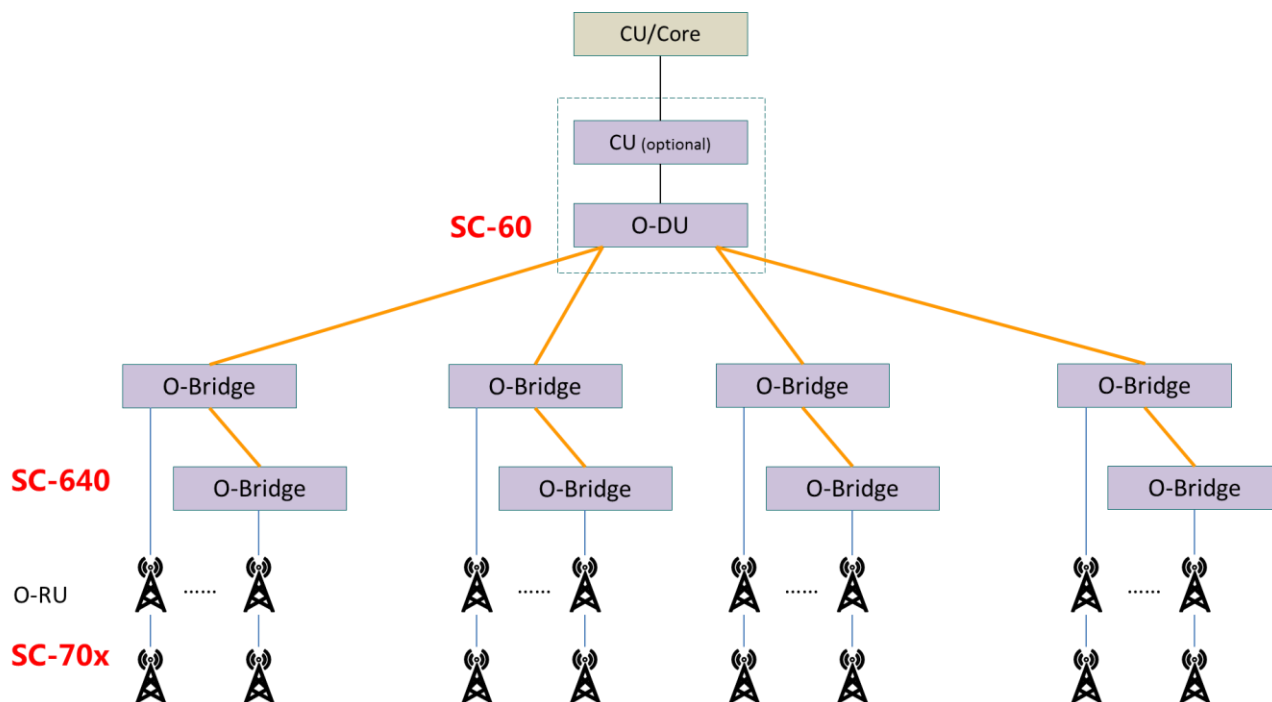
O-DU SC-60

The O-DU is the center of the platform. Partial or all 5G air interface functions can be implemented within the O-DU, including L1, L2 and L3, according to the networking requirements.

- 3GPP and O-RAN compliant
- 5G evolvable, LTE compatible
- Cost effective high performance 16-core NXP ARM Processor and FPGA
- 3rd party software integration
- Flexible capacity with configurable processing modules
- Flexible functions with optional CU accommodation and various low layer split
- High speed interfaces, including multiple 25GbE and multiple 10GbE
- Rich clock input and output, including GPS, SyncE and IEEE 1588 v2
- Compact, easy for installation and maintenance

O-RU SC-70x

The O-RU carries out the transmission and reception of radio frequency signals. According to the functional split at the fronthaul interface, it can also implement partial functions of the NR physical layer.

- 3GPP and O-RAN compliant
- 100MHz processing bandwidth, with multiple sub6G band options
- High performance 4T4R radio, using high efficiency none linear PA with DPD
- eCPRI over 10GbE Ethernet
- SyncE + IEEE 1588 v2 based timing
- Fully programmable with FPGA and SDR radio transceivers
- Ceiling, rail and wall mounting, easy for installation and maintenance

O-Bridge SC-640

The O-Bridge implements converging of multiple remote O-RUs. It expands the interface capability of the O-DU and supplies power to O-RU through hybrid fiber or PoE.

- 3GPP and O-RAN compliant
- High speed interfaces, including multiple 25GbE and multiple 10GbE
- Multiple cells support with flexible cell combination
- Cascading support
- SyncE + IEEE 1588 v2 based timing
- Hybrid fiber or PoE output
- Compact, easy for installation and maintenance

Contact Information

CIG Shanghai Co., Ltd.
5/F, Building 8, 2388 ChenHang Road
Shanghai, China 201114
Tel: +86-21-8023 3300
Email: sales_5G@cigtech.com
www.cigtech.com