

Product Brief

Product Summary

The PC802 Small Cell Development Board (PC802SCB) is a flexible 5G NR/LTE development platform for evaluating the PC802 for different small cell use cases. The board includes a SD card with boot and demo software, and three month trial of Picocom 5G NR binary software.

The PC802SCB supports the following small cell architecture configurations as defined by 3GPP, O-RAN Alliance and Small Cell Forum, as detailed on page 3:

- ◆ Split 2 Distributed unit (gNB-DU)
- ◆ Split 6 Radio Unit (S-RU)
- ◆ Split 7.2 Radio Unit (O-RU)

The PC802SCB includes an on-board NXP Network Processing Unit (NPU) to provide appropriate stack, network, and management layer processing. The PC802SCB also includes ADI 4T4R RFIC.

The board dimensions are 203.2mm x 195.6 mm.

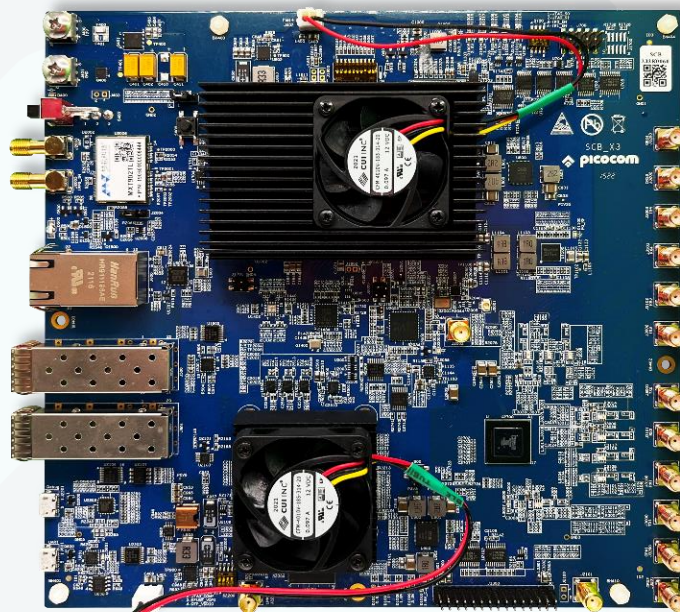
The board includes 12V cable, heat sinks, fan cable assembly and standoff posts.

Key Features

- ◆ PC802 SoC Silicon subsystem
 - ◆ 2GB 32-bit interface LPDDR4 SDRAM
- ◆ NPU NXP LS1046A subsystem
 - ◆ LS1046AXN8Q1A without encryption
- ◆ ADI ADRV9029BBCZ 4T4R RFIC subsystem
- ◆ 625MHz to 3.5GHz TX/RX frequency range
- ◆ Synchronisation and clocking functions using on-board GNSS receiver or IEEE 1588
- ◆ Debug boot mode support

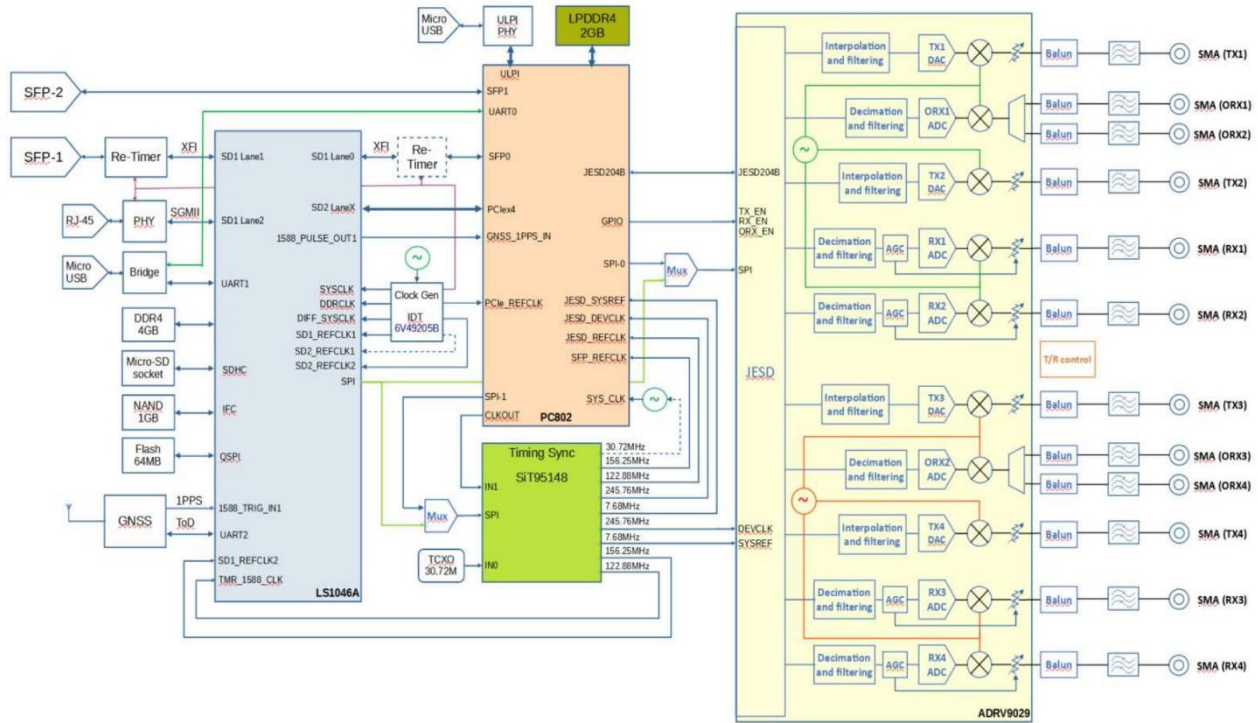
Key External Interfaces

- ◆ SFP1 cage for 10GE SFP+ optical LC interface for split 2 and 6 use cases
- ◆ SFP2 cage for SFP28 optical LC 10/25GE interface for O-RAN open fronthaul eCPRI
- ◆ GNSS Antenna port
- ◆ FR1 RF ports to test equipment or external RFFE
 - ◆ 4 TX and 4 RX SMA
 - ◆ 4 observation paths ORX SMA
- ◆ RFFE control interface (30-pin header)
- ◆ Test and Debug ports including
 - ◆ 1G Ethernet NPU debug port (RJ45)
 - ◆ Micro USB UltraSoC debug port
 - ◆ Micro USB console port to PC802 UART and NPU



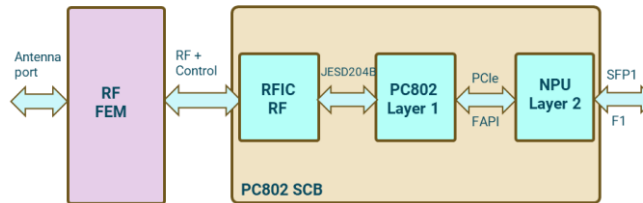


Small Cell Board Architecture

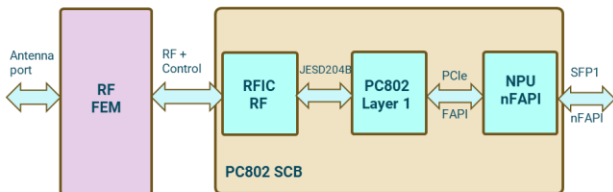


Use Case Diagrams

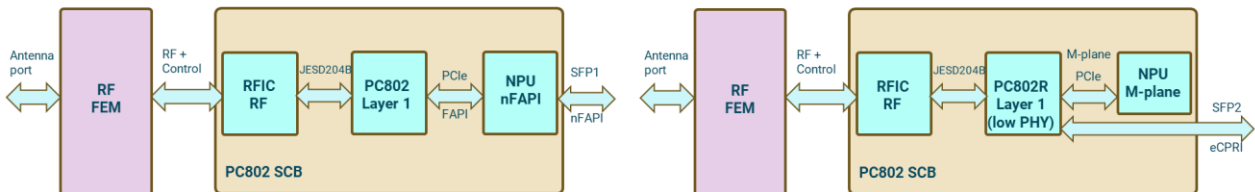
Small Cell use case – Split 2 Distributed unit (gNB-DU)



Small Cell use case – Split 6 Radio Unit (S-RU)



Small Cell use case – Split 7.2 Radio Unit (O-RU)





Software

Software included in the PC802SCB as shipped and on the Picocom Extranet is follows:

- ◆ SD card with boot code and demo software release
- ◆ Three month trial of the latest 5G NR PHY binary software (including test mode) for use cases:
 - ◆ Small Cell (NR PHY BIN – full PHY)
 - ◆ O-RU (NR RU BIN - low PHY)
- ◆ Latest PCOMware release including Board Support Package (BSP), bootloader and probe debug tool

Design Files and Documentation

The PC802SCB comes complete with the following documentation and design files:

Title	Part number	Description
PC802 Small Cell Development Board Datasheet	PC-002965-DS	Describes the PC802SCB use cases, hardware features, interfaces and pinout
PC802 Small Cell Development Board Quick Start Guide	Printout in box	Describes what is in the box and how to get started
PC802 Small Cell Development Board User Guide	PC-003556-AN	Describes hardware and software setup details for the PC802SCB
PC802 SCB Schematic	PC-001061-TC	Schematic of PC802SCB
EDA CAD files	PC-003177-DC	CAD files for PC802SCB
IBIS models for high speed interfaces	Licensed on request	
Gerber	Available on request	

Additional Software and Tools Supported

The PC802SCB compatible with the following Picocom PHY software, which are separately licensed complete with support and roadmap:

- ◆ 5G NR PHY binary or source code
- ◆ 5G NR RU PHY binary or source code
- ◆ LTE PHY binary or source code
- ◆ LTE RU PHY binary or source code

For access to demo software, please contact Picocom support. PC802SCB is also compatible with the Ceva Software Development Tools and Andes AndeSight Software Development Tool to support customers with debug and source code development. Please contact Ceva and Andes directly.

Further Information

Other PC802 board-level products include:

- ◆ PC802 Evaluation Board
- ◆ ORANIC Reference Design Board - PHY and NIC for O-DU (4 x PC802)

Please contact your local Picocom contact for any additional information on PC802 silicon, platforms, tools or software products.

Ordering Information

Part number	Product Name/Description	Details
PC802SCB-1	PC802 Small Cell Development Board (low band 625MHz-3.5GHz)	Engineering samples quantities

The Export Control Classification Number (ECCN) is 5A991.b.4

Important Information: Picocom takes great care in publishing materials and makes every effort to provide accurate information. This document outlines a product under development that is subject to change at any time. As a work in progress cannot be totally current, Picocom cannot guarantee their accuracy or completeness. Errors and omissions may occur. Please ensure you have the latest information version available. If in doubt, contact Picocom – info@picocom.com