DATASHEET

Spirent TestCenter eCPRI Device Emulation

Overview

eCPRI (Enhanced Common Public Radio Interface) is a packet based fronthaul interface developed by the CPRI forum. It defines a protocol for the transfer of user data, real-time control data and other eCPRI services between eREC (eCPRI Radio Equipment Control) and eRE (eCPRI Radio Equipment).

The eCPRI specification supports 5G and enables increased efficiency in order to meet the needs foreseen for 5G Mobile Networks. In contrast to CPRI, the eCPRI specification supports more flexibility in the positioning of the functional split inside the Physical Layer of the cellular base station.

eCPRI enables efficient and flexible radio data transmission via a packet based fronthaul transport network. eCPRI defines a protocol layer which provides various—mainly User Plane data specific - services to the upper layers of the protocol stack.

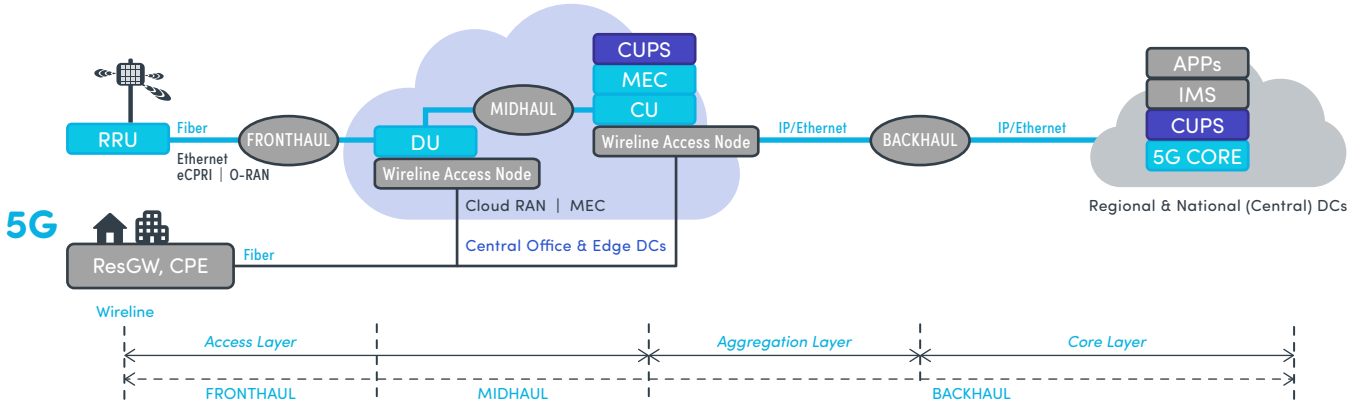
eCPRI Benefits

- Increased bandwidth efficiency with the potential to reduce fronthaul bandwidth requirements by tenfold, and the ability to scale flexibly according to user plane traffic
- Functional split inside BBU (baseband unit) physical layer provides greater flexibility and reliability. It keeps most of the functionality in the BBU, which helps reduce the number of radio equipment on the tower, and allows faster introduction of advanced network features without the radio equipment changing
- Ensuring future evolution by encourage utilization of Ethernet and IP technologies

eCPRI Device Emulation

Spirent TestCenter can emulate both eCPRI eREC (Radio Equipment Control) and the eCPRI eRE (Radio Equipment) and simulate the following eCPRI service:

- Remote Memory Access message (Type-4)
- Delay measurement message (Type-5)
- Remote Reset message (Type-6)



SPIRENT TESTCENTER ECPRI DEVICE EMULATION

Features & Benefits

- Ability to emulate both RRU and DU with user and control plane messages
- Ability to emulate hundreds RRU or DU devices per STC test port
- Support all eCPRI message types (Type 0 - 7)
- Support sending eCPRI messages over Ethernet, IPv4/ UDP, or IPv6/UDP
- Support sending eCPRI user plane messages at 10/25/50/100G line rate
- Support eCPRI message concatenation
- User configurable eCPRI common header, PC ID, sequence ID, app header (payload size is auto calculated)
- Support for following eCPRI services: One-way delay measurement, Remote Reset, Remote Memory Access
- Support delay measurement with Request/Request with Follow up, Remote request, Remote request with Follow up (delay measurement to the accuracy of 1µs)
- Facilitate multiple measurement tests and calculates min, max and average delay.
- Simulate failures with user configurable success rate for the Remote memory access message
- Respond to incoming eCPRI messages from DUT with user defined conditions and messages
- Capture and decode eCPRI messages

Technical Specifications

Standard	Description
eCPRI Specification V1.2 [eCPRI_v_1_2_w_06_25]	
eCPRI Packet generation	• eCPRI message types [Type 0 – Type 7] • eCPRI over Ethernet, Ethernet – VLAN, IPV4- UDP, and IPV6-UDP • eCPRI message concatenation
Auto Frame Response*	• User defined filters on eCPRI header fields for packet matching • User configurable eCPRI response PDU for incoming eCPRI messages Auto-Frame response is supported on FX and MX series hardware modules.
eCPRI Control and User data messages	• IQ Data • Bit Sequence • Real Time Control Data • Generic Data Transfer
Remote Memory Access	• Message types: – Read request – Write request – Read response – Write response – Write no response • User configurable success rate for simulates success and failure responses • Pre-defined Health indicators to validate requests and response messages
One-way delay measurement	• Action types: – Request – Request with Follow-up – Remote-Request – Remote request with follow-up • One-way delay measurements • Bulk message support to calculate minimum delay, maximum delay, and average delay • Pre-defined health indicators to validate the request and response messages
Remote Reset	• Message types: – Remote Reset Request – Reset indication • Pre-defined health indicators to validate the request and response messages
Wireshark decoder	Wireshark decoder for all eCPRI message types

Ordering Information

Product Number	Description
BPK-1364	ECPRI (Enhanced Common Public Radio Interface) Base Package