8.24 130G Single Port Tunable Coherent AnyRate Transponder – 1 client (130SCA1)

8.24.1 Overview

The 130SCA1 is a two-slot wide 100G Add/Drop Optical Transponder card supported in the 1830 PSS-32. The 130SCA1 card offers improved transmission performance through a configurable Soft Decision Forward Error Correction (SDFEC) line interface.

> **i** **Note:** The TL1 interface is not supported on the 130SCA1 card.

Card mnemonic

The following table specifies the card mnemonic:

Table 8-17   130SCA1 card mnemonic

130	Represents the maximum total line carrier rate (130 Gb/s)
S	Single tunable line port (L1) supporting 100G of transport capacity
C	Coherent; this card features a coherent transceiver on the line interface.
A	Anyrate; in R8.2, the 130SCA1 supports either a 100GbE client or an OTU4 client.
1	1 client port (C1)

> **i** **Note:** Although the card is known as a "100G" card, the actual line rate is either 130 Gb/s (when SDFEC is provisioned) or 112 Gb/s (when AFEC is provisioned).
>
> The behavior of the utilized LEDs is described in, 13.9 "Common LEDs of WDM cards" (p. 1582).

8.24.2 Physical design

The 130SCA1 optical transponder is a two-slot wide, full-height card. It supports one CFP pluggable module on the client interface, and one OTU4 line interface (non-pluggable).

8.24.3 130SCA1 features

The 130SCA1 supports the following features:

- Support for 100 GbE client signal type (100GBASE-LR4 and 100GBASE-SR10 applications, depending on the CFP pluggable used)
- Configurable option for Soft-Decision FEC (SDFEC) or hard-decision FEC (AFEC) on the DWDM line interface
- Analog (OCH layer) and Digital (PCS layer, RMON statistics) performance monitoring
- Regeneration operation mode
- OPSB client side protection implementing O-SNCP
- Standard Loopback capabilities for testing purposes
- Full Line interface wavelength tunability (88 channels) and WaveTracker support

- Supports a test signal generator.

In the current release, the following additional features are supported on 130SCA1 card:

- Support on PSS-8, PSS-16II and PSS-32 shelves
- Supports OTU4 client

  The following CFP pluggable modules are supported on the client interface port of the 130SCA1 when the client port is provisioned to OTU4:
  - c113g4cd (100GBASE-LR4, dual rate 100GbE/OTU4)
 - AUTO, USER

  The OTU4 client interface on the 130SCA1 card supports the following PM groups:
  - DW
  - LanePwrs
  - OPR
  - OPT
- Supports interworking with 112SCA1/112SNA1 and 260SCX2 cards with OTU4 and 100GbE clients
- Supports OSNCP interworking through the OPSB card in networks with 112SNA1 and 130SCA1 cards

8.24.4   130SCA1 front view

The following figure illustrates a front view of the faceplate of the 130SCA1:
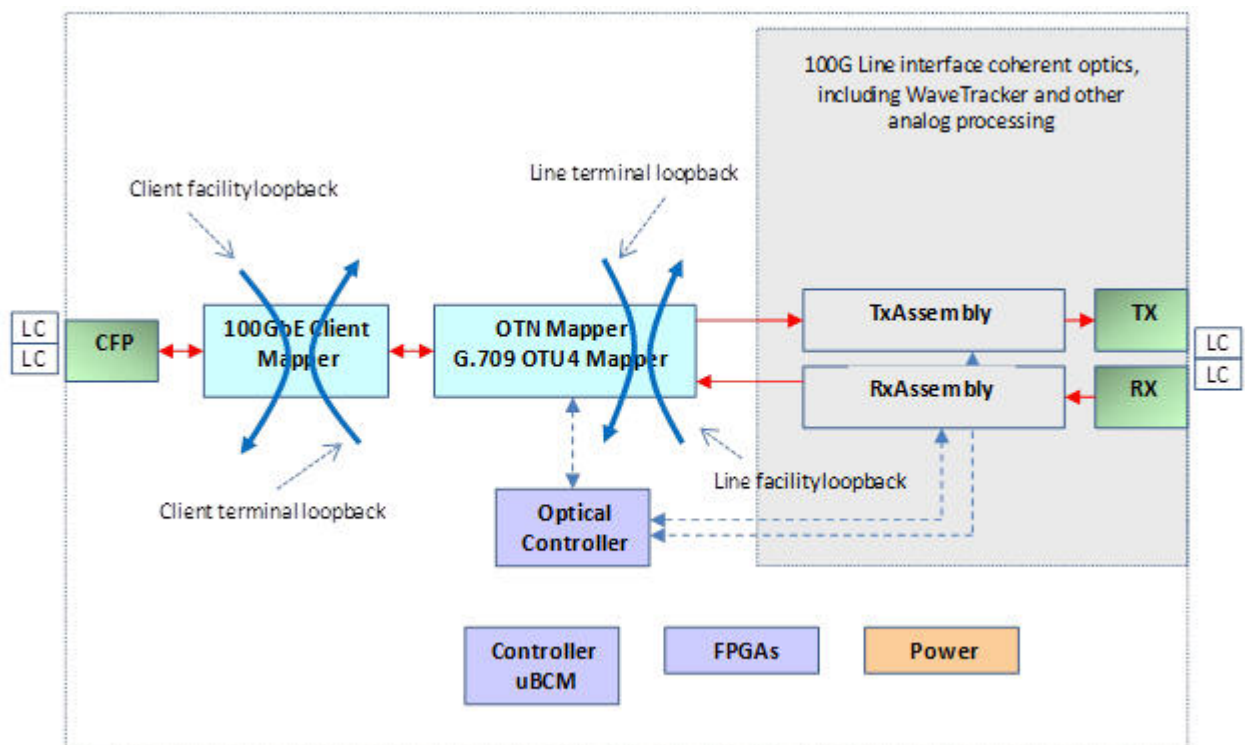
Figure 8-88   130SCA1 faceplate
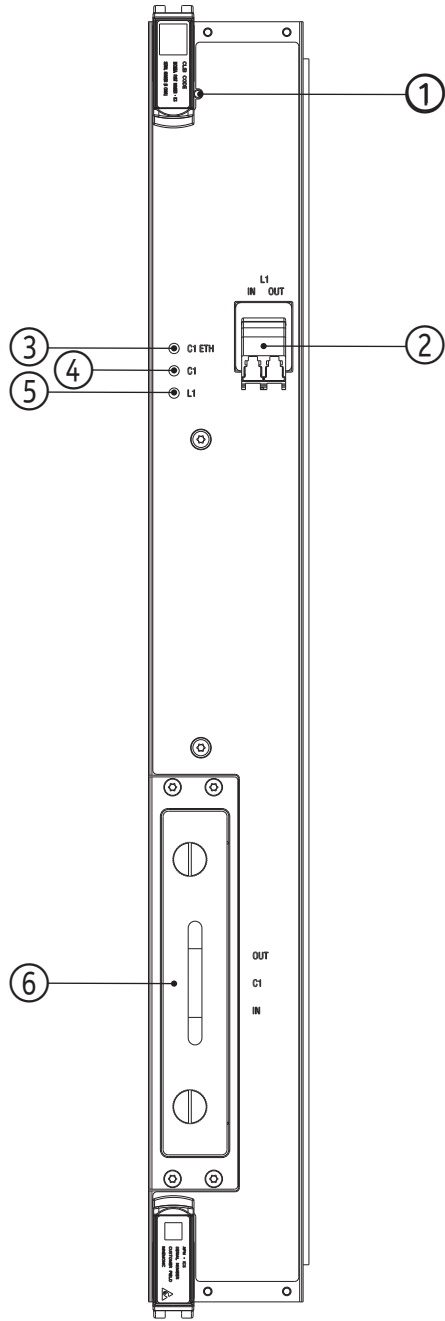
Legend:

1	Card "Status" LED

2	"L1" interface
3	"C1 ETH" LED (unused)
4	"C1" port status LED
5	"L1" port status interface
6	"C1" interface (CFP pluggable)

8.24.5 130SCA1 functional description

The following illustration shows a block diagram with a CFP:

Figure 8-89 130SCA1 OT block diagram

Line interface

The 130SCA1 has a tunable coherent non-pluggable optical interface. The line bit rate is OTU4 (129.280281 Gb/s ± 20 ppm) when provisioned for SD-FEC mode, and OTU4 (111.8099736 Gb/s ± 20 ppm) when provisioned for AFEC mode. Refer to 8.42.4 "100G/200G transmitter specifications" (p. 1194) and 8.42.5 "100G/200G receiver specifications" (p. 1195) for 130SCA1 line interface specifications.

Client interface

The 130SCA1 supports either a 100GbE client or an OTU4 on the client interface (C1).

Table 8-18   130SCA1 client signal type

Client signal type	Operating bit rate	Standard
100 GbE LAN	103.125 Gb/s	100 GbE (IEEE802.3e)
OTU4	111.809 Gb/s	ITU-T G.709

Loopbacks

The 130SCA1 supports facility and terminal loopbacks on the client interfaces.

8.24.6   Protection

The following protection configuration is supported:

• OSNCP (OPSB)

8.24.7   Visual Indications

For information about the LEDs on the front panel, see 13.9 "Common LEDs of WDM cards" (p. 1582).

8.24.8   Location

For information about the applicable shelves and slot ranges, refer to "Shelf slot ranges" (p. 1487).

> **i** **Note:** To ensure sufficient thermal management, the 130SCA1 cards require the high-power fan (FAN32H) to be used in the 1830 PSS-32 shelf.