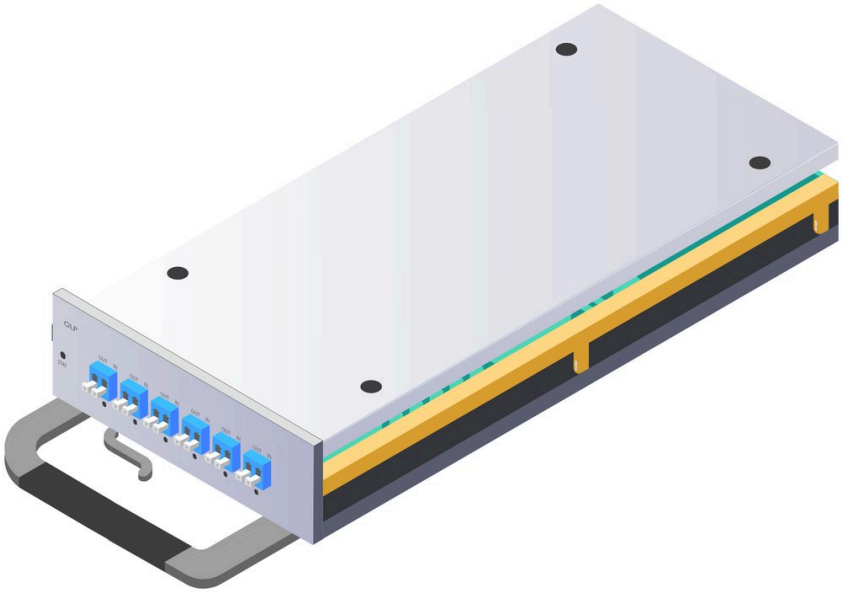
nex·gen

OTN SYSTEMS DCI PLATFORMS

Optical Line Protection Card for DCI Chassis

The Optical Protection Card assists a wavelength-division system with optical-layer 1+1 protection, monitoring the working and backup route signal status in real time. If the optical signal is interrupted or degrades, it automatically switches between the working and backup routes so the system's optical signal recovers within milliseconds - entirely at the optical layer, with no dependency on higher-layer service protection.



HIGHLIGHTS

1+1 optical protection

Bidirectional protection of a duplex fibre pair: the transmit signal is split onto the main and backup routes, and each end independently selects the better received signal (single-end switching, no signalling between ends).

Fast, pure-optical switching

Switching time <5ms, entirely at the optical layer - no dependency on higher-layer protocols.

1 or 2 protection groups

Supports 1 or 2 groups of optical protection modules on a single 1-slot card, selectable by application scenario.

Wide protection scenarios

Optical line 1+1 protection (OLP), optical multiplex section protection (OMSP), and optical channel protection (OCHP).

Real-time power monitoring

Continuous monitoring of working and backup route optical power, ±0.5dBm accuracy above -25dBm.

High isolation

>50dB isolation between paths for reliable route discrimination.

FUNCTIONAL STRUCTURE

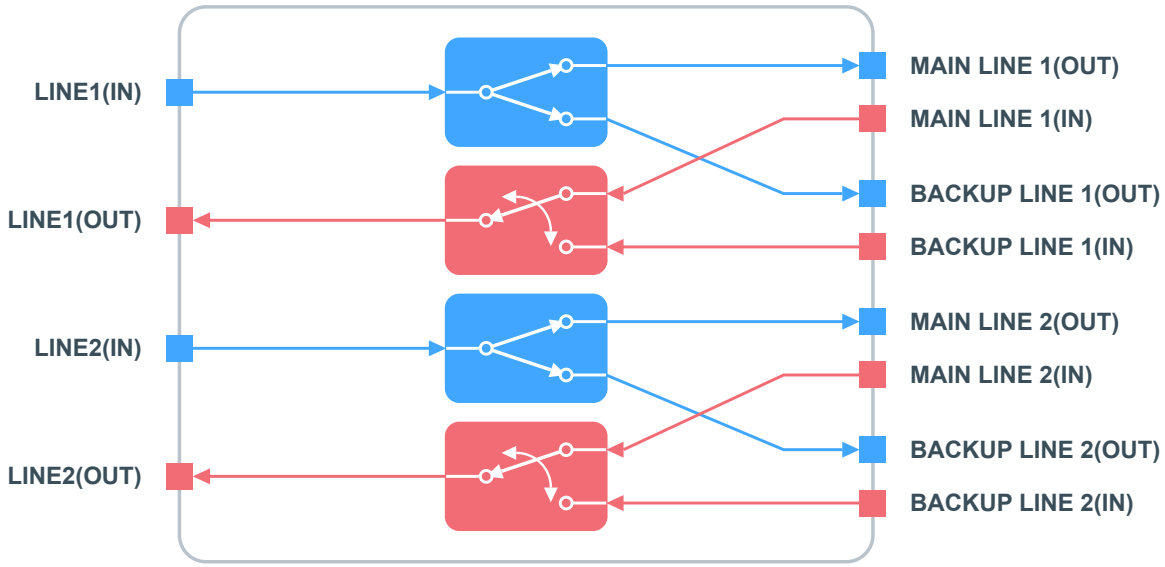
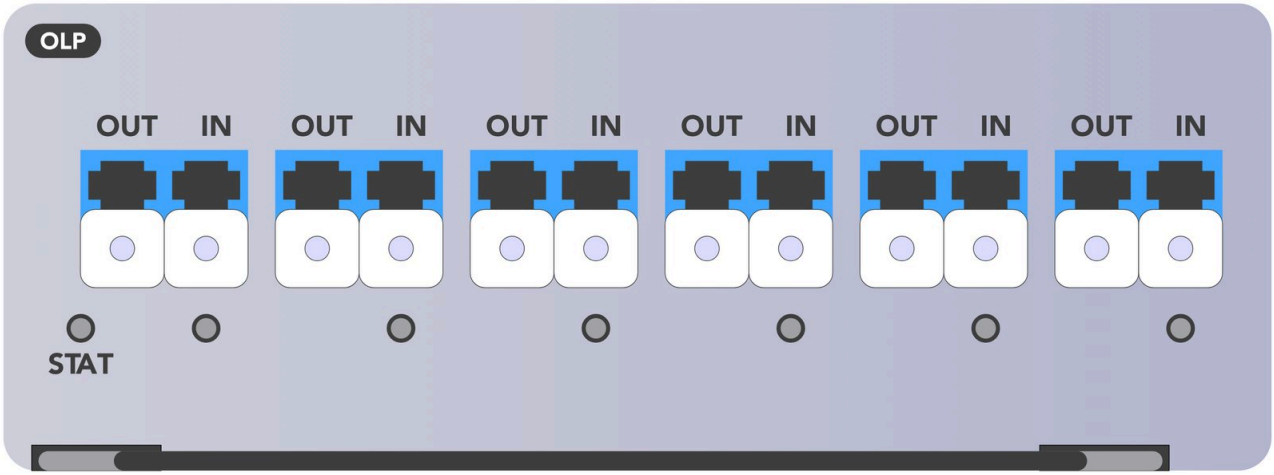


Diagram shows the 2-group configuration (LINE1 and LINE2), each with its own MAIN and BACKUP route switching; the 1-group variant populates only the LINE1 pair.

FRONT PANEL



FORMAT

CARD FOR DCI CHASSIS 1 SLOT

SPECIFICATIONS

Function	1+1 protection of optical signals, dual-transmit selective reception, single-end switching
Direction	Bidirectional, each protection group protects a duplex fibre pair (TX and RX) over the main and backup routes. Single-ended switching: each end selects its receive path independently, with no signalling between ends.
Slots Occupied	1
Integration	1 or 2 groups of optical protection modules (selectable by application scenario)
Working Wavelength Range	1528–1568nm
Insertion Loss	Transmitting end ≤4dB, receiving end ≤1.5dB
Switching Time	<5ms (pure optical switching time)
Input Optical Power	-25dBm to +21dBm
Optical Power Detection Accuracy	±0.5dBm (at -25dBm or above)
Polarization Dependent Loss	≤0.1dB
Isolation	>50dB
Return Loss	>45dB
Switching Cycles	$>10^7$
Switching Conditions	Relative power difference and absolute power value
Switching Mode	Locking, forced switching, manual switching and automatic switching supported
Reliability	Power-off/power-on lockout, hot swap and master control failure do not affect protection switching

ORDERING INFORMATION

NAME	Optical Line Protection Card for DCI Chassis
DESCRIPTION	1+1 optical layer protection card, 1 slot, 1 or 2 independent protection groups, each protecting a duplex fibre pair (bidirectional). Dual-transmit selective reception, single-end switching, <5ms pure optical switching time; 1528-1568nm; insertion loss ≤4dB (TX)/≤1.5dB (RX); input optical power -25 to +21dBm; isolation >50dB. Supports optical line 1+1 (OLP), optical multiplex section (OMSP) and optical channel (OCHP) protection scenarios.
PART NUMBER	DCI-OLP- **{Groups}** -1S

{Groups}	1 or 2, required - number of independent optical protection groups populated on the card