

# NXT

## Submarine Line Terminal Equipment for Long-Haul Submarine Cable Systems



### A high-Performance Submarine Line Terminal Equipment Allowing Significant Capacity Increases for Repeatered Cable Systems

The NXT is a high-performance Submarine Line Terminal Equipment (SLTE) specifically designed for long repeatered submarine links with submerged repeaters. In the 40G per wavelength channel configuration it offers capacities up to 320 x 10G per fiber. The main application of the NXT is in adding capacity to existing submarine systems, where it produces significant increases to the original design capacity. It can be used also as the terminals for new systems.

The NXT uses a variety of technologies to maximize capacity. 10, 20 and 40G line rates have been deployed and phase modulation, coupled with high-gain Forward Error Correction (FEC) and adaptive control schemes, is used to overcome the challenges posed by some existing systems. 100G is on the horizon and its performance over long links will be enabled by a combination of techniques. The multi-level data available in a DSP-based coherent receiver make soft-decision FEC possible – it is already available on our terrestrial product where it adds around 2 dB of coding gain.

In addition we plan to use coding/formatting to combat the non-linear effects that become significant on long-span systems, particularly those that do not use the latest fibre types.

Monitoring of either existing repeaters with a command-response supervisory system or those containing a high-loss optical reflector or passive loop-back is a single-circuit-pack option. The NXT can be deployed in parallel with existing equipment, which minimizes the expense and disruption of replacing equipment and migrating traffic. Xtera has worked with its customers to develop procedures for connecting the NXT into existing operational systems rapidly and with minimal disruption.

To achieve even greater capacity increases, the NXT can be deployed to replace existing equipment. The addition of capacity above the original design target, and the ability to add new types of traffic, allows significant investment return on the submerged parts of a repeatered system and new capacity to be accessed more quickly.



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### NXT Features and Benefits

- Line rates of 20 Gb/s and 40 Gb/s for upgrading previous-generation existing systems
- 100 Gb/s soon with performance over long links enabled by coherent technology and soft-decision FEC
- Monitoring of existing repeaters with passive or active supervisory system
- Reliable procedures for upgrading existing cable systems rapidly and with minimal disruption

### Specifications

Channel plan	1530.3 nm to 1567.13 nm	Interface cards	Tunable muxponders
Configuration	Up to 80 channels	Client interfaces	2.5G clear channel 10 GbE LAN & WAN PHY OC-192/STM-64/OTU-2/2e OC-768/STM-256/OTU-3
Reach	Up to 13,000 km	LME / Repeater monitoring	Active Supervisory Processor for command-response repeaters and Passive Supervisory Processor for High-Loss-Loop-Back (HLLB) repeaters.
Fiber type support	ITU-T G.652, G.653, G.654, G.655 and G.656	Rack dimensions	7"(H) x 26"(W) x 11"(D) 2200(H) x 600(W) x 300(D) mm <sup>3</sup>
System performance	BER < 10 <sup>-15</sup>	Footprint	320 Gb/s per rack for 40G configurations
Laser safety classification	Class 1M	Input power voltage	-40 to -60 VDC
Supervisory channel	2 Mb/s and 10BaseT overhead channel carried in the FEC overhead	Power consumption	< 1400 W per rack
EMS	GUI based management, Netcool <sup>®</sup> interface	Compliance	GR-63-CORE (NEBS), Zone 4 seismic, ETS 3 0-019-1
NM interface	TL1, SNMP	EMI/EMC	FCC Part 15, Class A, EN50082-1, EN61000-4
Craft interface	Java-based GUI with both local and remote access	Optical safety	21CFR1040.10, 21CFR1040.11, IEC60825-1, IEC60825-2
Performance monitoring	Standard 15-min & 24-hr PM parameters: B1 and J0 SDH/SONET (client) & FEC-derived statistics (line), optical power measurements	Office alarms and controls	Up to 8 inputs and 8 outputs per rack

#### Americas

**Corporate Headquarters**  
Xtera Communications - USA  
500 W. Bethany Drive, Suite 100  
Allen, TX 75013  
USA  
T +1 972 649 5000  
F +1 972 747 0344

#### Europe

**EMEA (UK)**  
Xtera Communications - UK  
Bates House, Church Road  
Harold Wood, Romford  
Essex RM3 0SD  
UK  
T +44 (0) 1708 335 400  
F +44 (0) 1708 335 425

#### Asia

**Taiwan**  
Xtera Communications - Taiwan  
4F, No.102  
Guangfu S.Road  
Da-an District  
Taipei 10612  
Taiwan  
T +886 (0)2 6636 0550  
F +886 (0)2 8772 2262

E info@xtera.com  
www.xtera.com



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