



Customer

BharatNet (by Govt. of India)

Challenge

Customer needs an efficient solution that can

- Work efficiently in rural areas
- Easily introduce new services
- Upgrade to new technologies
- Scale to higher capacities

Solution

- TJ1400-OLT is a cost effective, small form factor GPON solution supporting multiple service interfaces and technologies
- TJ2100N is a solar powered, versatile ONT product customized for rural deployment
- TejNMS ensures remote management of the network from a central location

Results

- Around 70,000 TJ2100N ONT and 2600 TJ1400OLT deployments in phase 1 of BharatNet project
- Awarded “Best Performing Equipment Supply Partner” award for BharatNet Project
- Selected for phase-2 of the Bharatnet project



Tejas Networks Builds One of World’s Largest GPON Based Greenfield Broadband Networks in India

BharatNet – The Backbone of Digital India

The National Optical Fiber Network (NOFN or BharatNet) is one of Government of India’s most ambitious projects with a mission to deliver broadband services on optical fiber to over 250,000 gram panchayats (village offices) in the country and will serve as the backbone of Digital India. Once the current project is fully commissioned, it is estimated that every rural household in the country will have access to a high-speed Internet highway that will deliver a variety of applications such as telemedicine, e-education, online banking, e-commerce and e-governance services with the potential to transform India’s rural economy.

Challenges Faced

BharatNet aims at delivering broadband services on optical fiber to over 250,000 gram panchayats across India. Indian rural areas are characterized by challenging terrains, sparse population, interrupted power supply and prolonged payback periods. So, BharatNet needs an efficient solution that can handle these complexities along with capabilities to easily introduce new services, upgrade to new technologies or scale to higher capacities.

Tejas Networks Solution

Tejas Networks is one of the leading suppliers of GPON based optical access equipment for this project which includes TJ1400 OLT (Optical Line Terminal) and TJ2100N ONT (Optical Network Terminal) platforms.

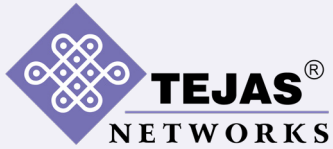
- TJ1400-OLT is one of the densest GPON realizations in the market today in a small form factor with myriad service interfaces and multiple technology options for cost-effective traffic backhaul.
- TJ2100N is a versatile ONT product that is available in ruggedized, portable enclosures for remote installation in rural areas and can also be solar powered in power constrained environments.
- GPON network as a whole can be monitored and centrally managed through a network management system. The network operator can configure and bring up a service within minutes, sitting hundreds of kilometers away, without having to visit the gram panchayat for day-to-day operational activities.
- Tejas GPON solution is not only useful for providing broadband connectivity but can also launch a “Wi-Fi hotspot” in the neighborhood thus significantly improving mobile coverage in rural India.
- TJ-1400 OLT, located at the block office will connect over fiber to multiple TJ2100N ONTs located at the gram panchayats.

Why Tejas Networks

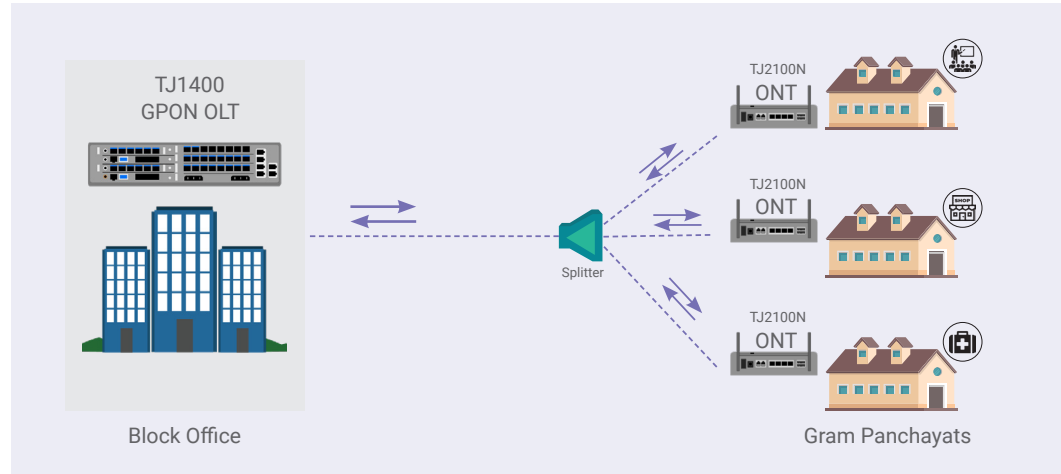
After evaluation of multiple alternatives, the customer selected Tejas’ GPON product family as the best fit.

The key features of the solution are:

Flexible, Scalable Backhaul: Tejas GPON solution uses a programmable Software-defined Hardware to work across legacy, current and upcoming technologies and interfaces.



“Tejas Networks is one of the most promising telecom product companies in India and the manner in which they have supported the rollout of this project has been outstanding and we hope to see this company achieve greater heights in the days to come.”
-Smt. Aruna Sundararajan,
 Secretary DoT and
 Chairman Telecom
 Commission



Comprehensive OAMP Functions: Tejas GPON product supports advanced fault, alarm and performance management complemented by a powerful visual interface for alarm notifications, fault localization and SLA reporting developed using modern web technologies.

Multilevel Protection and QoS: Tejas GPON solution supports multi-level protection for fiber cuts, splitter damage, ONT and OLT port failures in milliseconds. It has advanced bandwidth management features to assure the highest quality of service to delay/jitter sensitive real-time video/voice/data applications.

Carrier-class Management: Tejas GPON is available as a fully managed, end-to-end solution for FTTH/FTTB services with a

complete range of end-user ONT devices. These devices come with a diverse set of customer ports such as Fast Ethernet, Gigabit Ethernet, POTS, RF Video and WiFi (802.11n) to address multiple deployment scenarios in the access.

Solar Powered: TJ2100N can be solar powered and is available for installation in remote areas with erratic power supply in easily portable, ruggedized enclosures with batteries, solar panels and charging units.

Future Ready Products: TJ1400-OLT can be upgraded to advanced, emerging, high-capacity NG-PON1/TWDM PON technologies through a simple software upgrade. This will enable TJ1400-OLT to be used for emerging applications beyond home broadband including high-speed

business connectivity (> 10 Gbps) and 4G/5G mobile backhaul. TJ 1400-OLT also supports emerging protocols such as OTN for high-speed transport applications.

Circuit Emulation: TJ1400-OLT supports circuit emulation, a technology to carry legacy voice traffic over the new data network. This provides flexibility to the service provider to build both data and voice on the same network.

Environmental impact: TJ1400 OLT is designed with many power saving features to lower the carbon footprint of the product. TJ1400 is designed using new generation FPGAs for reducing static power, and clock enable/gating logic to reduce dynamic power in FPGAs.

Results

TJ1400-OLT solution enable roll out of new broadband backhaul services at 50% lower costs compared to competing approaches like IP Routing. Around 70,000 of our TJ2100N ONT and 2600 of our TJ1400 OLT have been deployed successfully completing phase 1 of BharatNet project. Tejas Networks is recognized as the “Best Performing Equipment Supply Partner” for BharatNet Phase 1 by the Central Government of India. Tejas Networks is selected as a supplier for ongoing phase -2 of BharatNet.



Software Enabled Transformation

Plot No 25, JP Software Park,
 Electronics City Phase 1, Hosur Road, Bengaluru, Karnataka 560100, India.
www.tejasnetworks.com | +91 80417 94600

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