

Moroccan Single-Fiber Bidirectional Smart Model 2025



AI Overview

The Moroccan Single-Fiber Bidirectional Smart Model 2025 integrates advanced single-fiber bidirectional communication with smart grid and digital infrastructure to enhance connectivity, energy efficiency, and network resilience.

Technical Overview

The model leverages Digital Subcarrier Multiplexing (DSCM) technology to enable single-fiber, single-laser bidirectional (BiDi) links, allowing simultaneous upstream and downstream communication over a single optical fiber . In this setup, Point-to-Multipoint (P2MP) networks connect a central HUB to multiple LEAF nodes, with careful power optimization to mitigate reflections and noise that can affect performance . The system can operate in full-capacity mode, where all digital subcarriers (DSCs) are active, or half-capacity mode, using interleaving to avoid spectral overlap and interference . Experimental setups demonstrate that this architecture supports high-speed data transmission with coherent real-time DSCM-based transceivers, achieving robust performance even in complex network topologies .

Application in Morocco's Smart Infrastructure



Article Content

Experimental and comparative study on optimal Active and Reactive ...

To bridge this gap, this study aims to design and experimentally validate an optimal EMS capable of determining the

ANRT Mandates Fiber Optic Network Sharing Among Telecom

Morocco's National Telecommunications Regulatory Agency (ANRT) issued a groundbreaking decision on March 4, requiring

Recent Advances in Bidirectional Converters and Regenerative

This review presents recent progress in bidirectional converters and regenerative braking systems (RBSs), highlighting

Morocco 1.2GW Solar Procurement Boosts Smart Meter Imports

Exporters supplying bidirectional smart meters or SCADA data acquisition terminals to Morocco — particularly those

Inside UM6P's Smart Health Care City: A New Model for Moroccan

Inside UM6P's Smart Health Care City: A New Model for Moroccan Hospital Medicine For the Rhamna province, historically starved

Single-Fiber Bidirectional Transmission using 400G ...

In this paper, which is an invited follow-up of a tutorial given at ECOC 2023, we first present an overview of this

Maroc Telecom, Inwi Launch Uni Fiber and Uni Tower to Boost FTTH

Maroc Telecom and Inwi announce the effective establishment of the joint ventures Uni Fiber and Uni Tower to

Experimental demonstration of 100 Gb/s single-fiber bidirectional ...

We experimentally demonstrate 100 Gb/s bidirectional transmission over 40 km using a multi-wavelength bidirectional optical sub

Single-Fiber Single-Wavelength Bidirectional Digital Subcarrier Point ...

Request PDF | On Sep 28, 2025, P. Torres-Ferrera and others published Single-Fiber Single-Wavelength Bidirectional Digital

TRANSFORMATION OF THE MOROCCAN ECONOMY

Morocco has emerged as one of Africa's success stories, achieving significant progress in economic transformation and the green

Press releases | The National Telecommunications Regulatory

Data for the first quarter of 2026 confirms continuing growth in Morocco's telecommunications sector. The ANRT has

Single-Fiber Single-Wavelength Bidirectional Digital ...

In this work, we explore the value proposition of using DSCM in P2MP single-fiber networks. In this scenario, the interplay between

From renewable integration to digital transformation: A systematic ...

In response, the study introduces five foundational pillars as a strategic lens to guide national implementation. These

Single-Fiber Bidirectional Transmission using 400G Coherent Digital ...

We experimentally evaluate the Rayleigh Back-Scattering power penalty in a single-fiber single-wavelength bidirectional link using

Morocco's Role in the Global Electro-Mobility Revolution

Morocco is emerging as a significant player in the global transition towards electro-mobility, driven by its various strategic

Maroc Telecom and Inwi Partner to Drive Morocco's Digital ...

Through this partnership, Maroc Telecom and Inwi not only aim to enhance digital accessibility for Moroccan citizens

A comprehensive review of Vehicle-to-Grid V2G technology: Technical ...

Using bidirectional charging, akin to BEVs, SOFC cars may smoothly interact with the power grid . Natural gas

Smart City Morocco: A Roadmap for Resilient ...

From May 21 to 23, Morocco hosted Smart City Morocco RoadShow & Expo 2025/2030, a pivotal event in the journey toward smart,

Maroc Telecom and Inwi Partner to Expand Fibre Optic

Rabat, The Gulf Observer: Maroc Telecom (IAM) and Inwi (Wana Corporate) have signed

Experimental demonstration of 100 Gb/s single-fiber bidirectional ...

We successfully demonstrated a single-fiber bidirectional transmission of 100 Gb/s (2 × 50 Gb/s PAM4 in each

Morocco Introduces Next-Generation Bidirectional Speed Cameras in

Until 2025, fixed speed cameras in Morocco monitored only one direction of traffic, leaving blind spots exploited by reckless drivers.

Morocco to Invest \$8 Billion for 85% 5G Coverage by 2030

The Moroccan government has announced plans to invest MAD 80 billion (\$8 billion) to deploy 5G technology across the country,

Smart metering for renewable energy integration: Evaluation of ...

This study examines the contribution of smart meters to the integration of renewable energies through deployment data

Alstom will supply 18 Avelia Horizon trains for Morocco's high-speed ...

28 March 2025 – Alstom, a global leader in smart and sustainable mobility, has signed a contract with the Moroccan National

Morocco 1.2GW Solar Procurement Boosts Smart Meter Imports

Event Overview On April 27, 2026, the Moroccan Ministry of Energy Transition and Sustainable Development

Adaptive E-Learning Model based on Artificial Intelligence (AI) for ...

Adaptive E-Learning Model based on Artificial Intelligence (AI) for Boosting Moroccan Students' Performance Authors

Optimal active and reactive energy management for a smart microgrid ...

Experimentally validating the proposed AR-EMS involves implementing and testing the system in a real-world smart

Single-Fiber Single-Wavelength Bidirectional Digital Subcarrier Point ...

We experimentally observe bidirectional transmission of two same wavelength coherent channels on a single fiber.

Contact Us

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