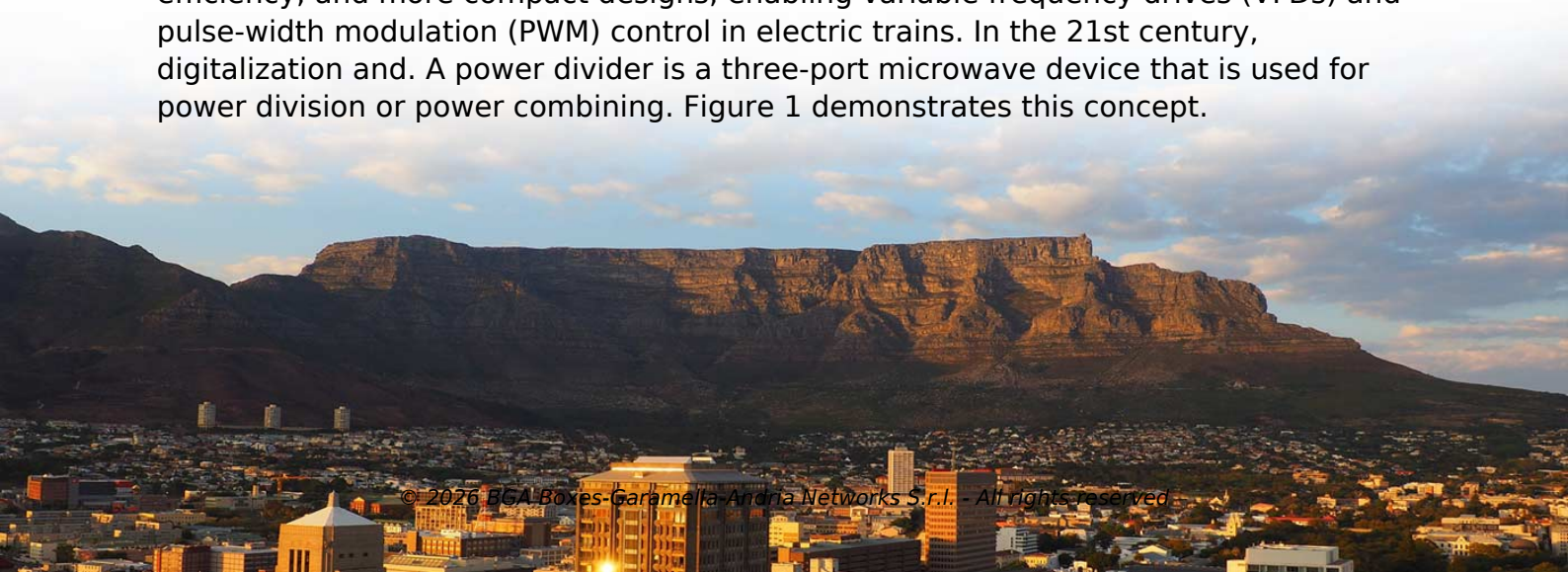
New type of optical power divider for rail transit

Overview

In 2025, the shift is toward wide-bandgap semiconductors such as Silicon Carbide (SiC) and Gallium Nitride (GaN), offering unprecedented power density, thermal efficiency, and switching speeds. SAXONBURG, PA, September 26, 2025 (GLOBE NEWSWIRE) – Coherent Corp. (NYSE: COHR), a global leader in photonics, today announced major upgrades to its Multi-Rail technology platform, delivering greater efficiency, scale, and speed for the next era of optical transport networks. At the heart of the. Prysmian have developed new cable designs and materials to provide the latest in chemical and mechanical resistance, fire resistance, EMC behaviour and enhanced transmission capacity. We offer medium and low-voltage power cables, communication cables (also with optical fibre), and control and. Splitters are passive optical devices that divide or combine optical signals, and they come in various types, including power splitters, uneven splitters, and wavelength-division multiplexing (WDM) splitters. At the heart of the platform is a new Dynamic Gain Equalizer (DGE) that combines C and L bands. By the 1990s, Insulated Gate Bipolar Transistors (IGBTs) revolutionized traction systems with faster switching, higher efficiency, and more compact designs, enabling variable frequency drives (VFDs) and pulse-width modulation (PWM) control in electric trains. In the 21st century, digitalization and. A power divider is a three-port microwave device that is used for power division or power combining. Figure 1 demonstrates this concept.



Article Content

Combined Optical Sensor and Capacitor Voltage Divider Arrangement for ...

The integration in a capacitor voltage divider of an optical sensor, based on a double electro-optic crystals and on a standard single mode fiber arrangement, has been proposed as a way

Coherent Unveils Next-Generation Multi-Rail

Coherent announced major upgrades to its Multi-Rail technology platform, delivering greater efficiency, scale, and speed for the next era of optical

Optically Multiplexed Systems: Wavelength Division Multiplexing

1. Introduction Since its advent in the mid-1960s, optical technologies and components have been changing the landscape of communication as such. The constant push for higher data rates ensured

Coherent Unveils Multi-Rail Technology for Optical

This unique product doubles the transmission bandwidth while cutting footprint by 20%, enabling hyperscale operators to grow capacity without

Advances in Inductively Coupled Power Transfer Technology for Rail Transit

raditional power supply method for moving electric railway vehicles is based on type power contact collection technology. This sometimes cannot meet the requirements of modern rail tra nsportation. A

Power optimization of 1:2 and 1:4 photonic crystal based optical power ...

Similarly, optical power combiners are essential for signal aggregation, upstream transmission, and balanced network design. In this article, we propose the design of two power

Microstrip and CPW Power Divider Design

To design various types of power dividers at 3 GHz and simulate the performance using ADS. The different types of power dividers are T-junction,

A hierarchical coordinated control strategy based on multi ...

The start and stop process of urban rail transit trains and the access of distributed energy sources to rail transit ER lead to serious uctuations of DC bus power, so it is necessary to route energy between

Research on New Rail Transit Power Supply System

The new type of rail transit represented by trams and monorails is suitable for the demand of the project of the rail transit, and the traction power

Optical Splitters Demystified: The Silent Heroes

explains how optical splitters enable FTTH, their types (FBT vs. PLC), key ratios, and how they integrate with LINK-PP optical modules for a

(PDF) Design and optimization of optical power splitters

This paper aims to study the design, simulation, and optimization of low-loss Y-branch passive optical splitters up to 64 output ports for

Railroad Power Electronics Trends in 2025 ebook

In 2025, the shift is toward wide-bandgap semiconductors such as Silicon Carbide (SiC) and Gallium Nitride (GaN), offering unprecedented power density, thermal efficiency, and switching speeds.

A divide-by-3 planar power divider with >30 dB isolation

A new three-way planar power divider, based on recombinant structure and multisection impedance transformers achieving equal division ratio and high isolation is presented. The new

A power-distribution-ratio real-time tunable power divider based on ...

Both simulation and measurement results prove that the proposed plasmonic power divider can adjust and control the power distribution ratio in a real time manner in the range of 4.5–6

8-way high-power high-efficiency power divider/combiner

8-way high-power high-efficiency power divider/combiner Correspondence Meiling Li, Key Laboratory of Specialty Fiber Optics and Optical Access Networks, School of Communication &

Sustainable and smart rail transit based on advanced self-powered ...

As rail transit continues to develop, expanding railway networks increase the demand for sustainable energy supply and intelligent infrastructure management. In recent years, advanced rail

Design and optimization of optical power splitters for optical access ...

This paper aims to study the design, simulation, and optimization of low-loss Y-branch passive optical splitters up to 64 output ports for telecommunication applications. For a waveguide

Synthesis Design of Unequal Filtering Power Divider With Ultra-Wide ...

In this study, two novel topologies are proposed to synthesize a class of unequal power dividers with ultra-wide matching bandwidth, good filtering performance, and large isolation

Research on New Rail Transit Power Supply System Scheme

This paper introduces the external power supply, medium-voltage loop network and traction power supply of new type of rail transit project. Through the comparison of technical schemes, the selection

Design and optimization of optical power splitters for optical access ...

The main challenges in the design of Y-branch optical splitters are the asymmetric split-ting ratio, (non-uniformity of splitting power), and the large size of the splitter structure. These parameters define the

Wideband n-Way filtering power dividers with good isolation and ...

In this paper, we proposed a new design methodology for wideband n -way filtering power divider with good in-band isolation and arbitrary power ratios. The operation mechanism has been

Design ideas: Ten best ways to split a voltage rail

There are a number of reasons why an engineer would want to “split” a voltage rail in their design. Sometimes parts of the circuit, like a sensor or an

Application of Optical Splitters in Modern Optical Networks

Each type serves specific applications, enabling efficient use of optical infrastructure. Let''s explore the functionality, applications, and advantages of power splitters, uneven splitters, and WDM splitters in

A new 3-way power divider with various output power

A new type of 3-way power divider which has various output power ratios is presented. This power divider without any internal resistors has

All About RF Power Splitters

RF power splitters play a crucial role in distributing RF signals efficiently and accurately across various electronic systems. Whether used in telecommunications, radar systems, or test and

Optically Transparent Microwave Wilkinson Power Divider With ...

Here, we experimentally demonstrate a high-performance optically transparent eight-channel Wilkinson power divider by heterogeneously integrated low-loss metal mesh and high-loss

Cable Solutions for Railway | Prysmian

Prysmian have developed new cable designs and materials to provide the latest in chemical and mechanical resistance, fire resistance, EMC behaviour and

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