

USB Ethernet Controlled High Isolation SP4T Absorptive Switch 500 MHz to 50 GHz, 2.4mm



PE71S5022

Features

- Ultra-Wideband SPDT PIN Diode Switch
- 500 MHz to 43.5 GHz
- 50 Ohm Absorptive Design
- Insertion Loss: 4 dB typ
- Isolation: 53 dB typ
- Maximum RF input Power: +23 dBm
- Bias Voltage: +5Vdc
- USB 2.0 Interface and Ethernet (IPv4)
- Field Replaceable Female 2.92mm output
- Operational Temperature Range -40°C to +85°C
- Downloadable User Manual and Software
- USB and Ethernet cables included

Applications

- Test & Measurement
- 5G Communication
- Military Electronic Systems
- Wireless Infrastructure
- Fiber Optics
- Research & Development

Description

The PE71S5022 is a Single Pole Double Throw (SPDT) USB/Ethernet RF Switch Module designed to cover a wide frequency range from 500 MHz to 43.5 GHz with excellent 53 dB typical isolation and 4 dB typical low insertion loss. The switch requires a +5Vdc bias voltage through USB, and has maximum input power handling of up to +23 dBm. The module supports both USB 2.0 and LAN (Ethernet) interfaces, allowing seamless control from a host PC or networked system. The rugged and compact package supports field replaceable 2.92mm female RF connectors. The SPDT switch can be controlled through an intuitive GUI (downloadable user manual), as well as with system design software such as LabVIEW. The robust construction and wide frequency range make it well-suited for bench-top test and measurement environments, as well as integration into radar and communication systems.

The RF Switch Module includes a USB 2.0 A extension cable and IPv4 Ethernet cable for flexible connectivity. Its advanced internal switching architecture ensures low signal distortion and high isolation between channels, providing consistent and reliable performance across the entire operating frequency range.

Electrical Specifications

Description	Min	Typ	Max	Unit
Frequency Range	0.5		43.5	GHz
Insertion Loss			5.2	dB
Isolation	45			dB
Input VSWR			2.8:1	
Output VSWR			2.8:1	

Mechanical Specifications

Size

Length	3.54 in [89.92 mm]
Width/Dia.	1.14 in [28.96 mm]
Height	0.97 in [24.64 mm]
Weight	0.05 lbs [22.68 g]
Housing Material and Plating	Aluminum, Nickel

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Environmental Specifications By Design

Temperature

Operating Range

-40 to +85 deg C

Storage Range

-50 to +105 deg C

Humidity

100% RH at 35°C, 95%RH at 40°C?

Shock

20G for 11msec half sine wave, 3 axis both directions?

Vibration

25g RMS (15 degrees 2KHz) endurance, 1 hour per axis?

Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

- Values at 25 °C, sea level

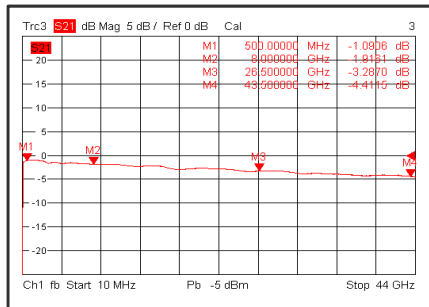
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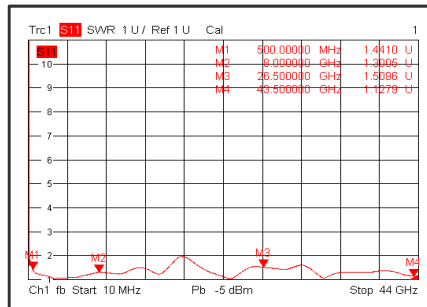


Typical Performance Data

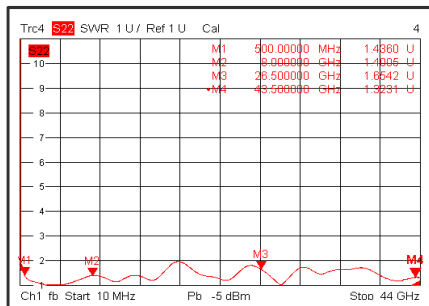
Insertion Loss @+25°C



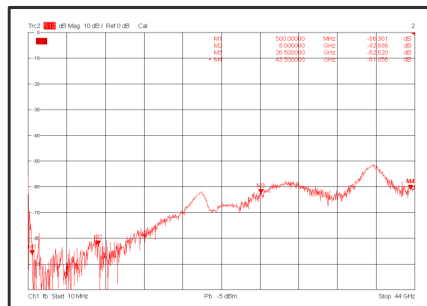
Input VSWR @+25°C



Output VSWR @+25°C



Isolation @+25°C

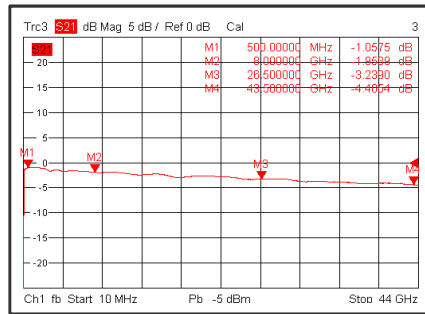


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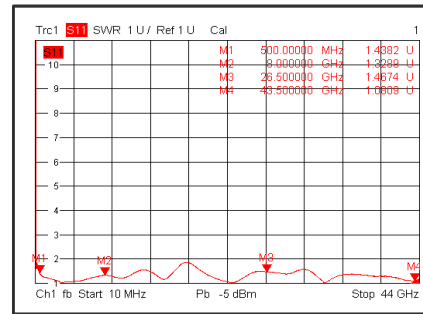
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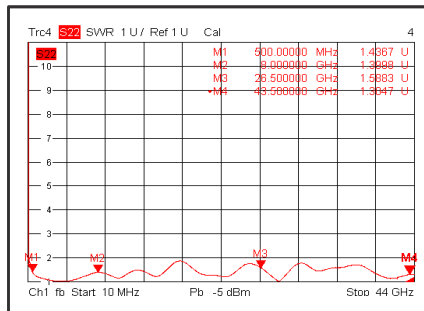
Insertion Loss @-40°C



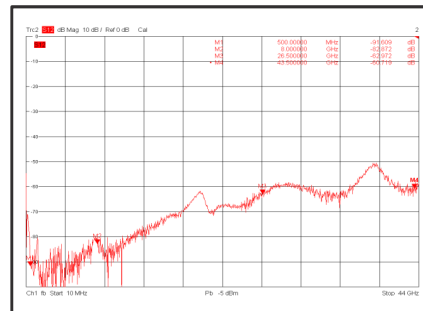
Input VSWR @-40°C



Output VSWR @-40°C



Isolation @-40°C

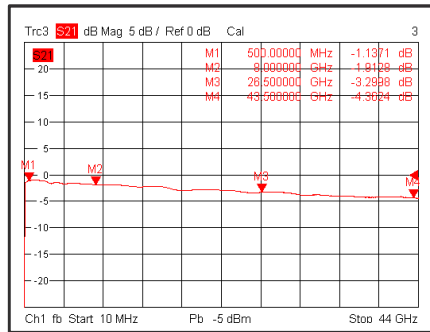


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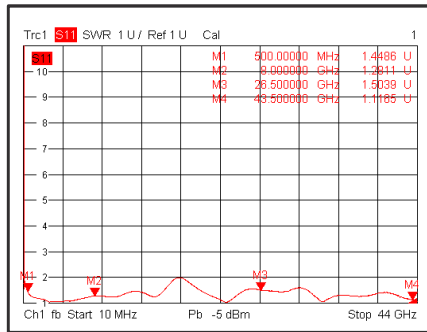


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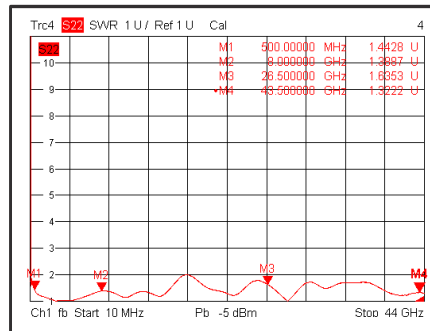
Insertion Loss @+85°C



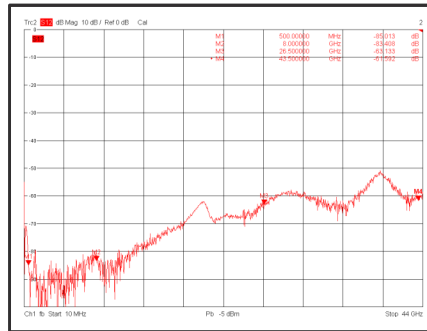
Input VSWR @+85°C



Output VSWR @+85°C



Isolation @+85°C

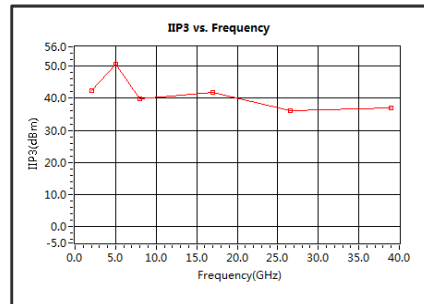


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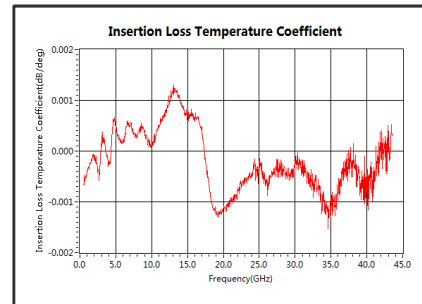


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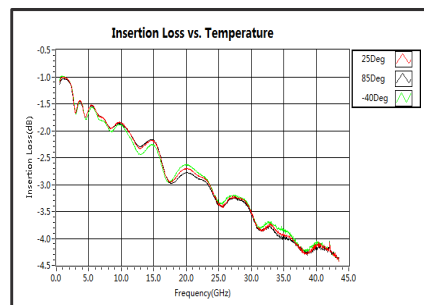
IIP3



Insertion Loss Temperature Coefficient



Insertion Loss vs. Temperature



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Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [USB Ethernet Controlled High Isolation SPDT Absorptive Switch 500 MHz to 43.5 GHz, 2.92mm PE71S5022](https://www.pasternack.com/absorptive-spdt-pin-diode-switch-43.5-ghz-2.92mm-pe71s5022-p.aspx)

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