

EQ3-40 Equalizer (40 Gb/s)

DEVICE OVERVIEW

General Description

The EQ3-40 passive equalizer is an ideal solution for compensating for low pass filtering effects in RF/microwave and high speed digital systems. This equalizer provides positive slope from DC to 40 GHz with a DC attenuation value of 3 dB and a 50-ohm match maintained over the entire operating range.



[Download s-parameters here](#)

Features

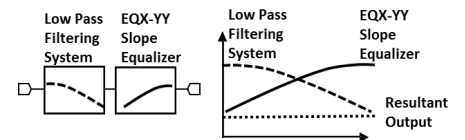
- 40 Gb/s Equalizer
- Matched 50 Ohm Impedance on Input and Output Ports

Applications

- Digital Communications
- Signal Integrity

Functional Block

Diagram



Part Ordering Options

| Part Number | Description | Connectors | Green Status | Product Lifecycle | Export Classification |
|-------------|---------------------|-----------------|--------------|-------------------|-----------------------|
| EQ3-40 | Equalizer (40 Gb/s) | <u>Standard</u> | Non-RoHS | Released | EAR99 |

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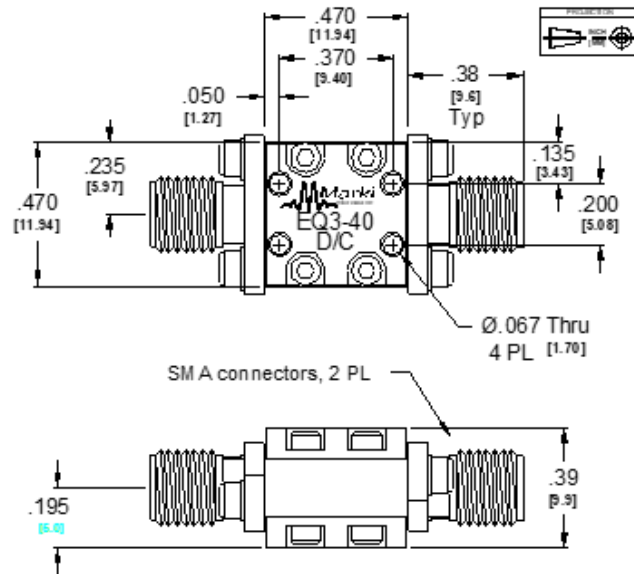
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Revision History



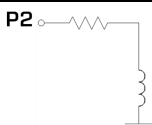
| Revision Code | Revision Date | Comment |
|---------------|---------------|---------------------------|
| - | 2023-05-18 | Datasheet Initial Release |

Port Configuration and Functions

Port Diagram



Port Functions

| Port | Function | Connector Type | Description | Equivalent Circuit for Package |
|--------|--------------|----------------|---|--|
| GND | Ground | - | Ground provided through metal housing and outer coax conductor. | GND  |
| Port 1 | Input/Output | - | Port 1 is DC connected to ground through a resistor. DC block is required if voltage present |  |
| Port 2 | Input/Output | - | Port 2 is DC connected to ground through a resistor. DC block is required if voltage present. |  |

Specifications

Package Information

| Parameter | Details | Rating |
|------------|---------|------------------|
| Weight | - | 9g |
| Dimensions | - | 11.94 x 11.94 mm |

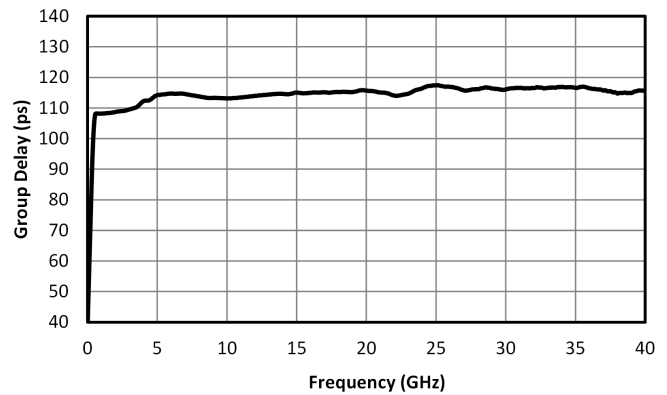
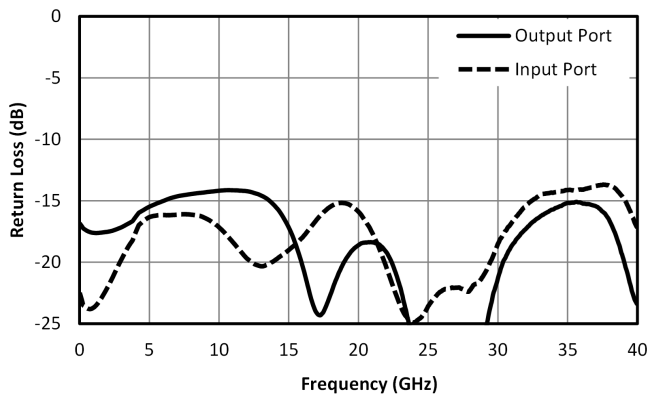
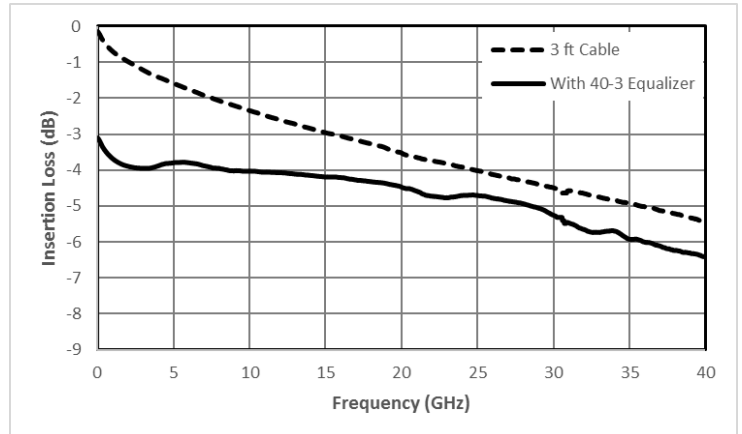
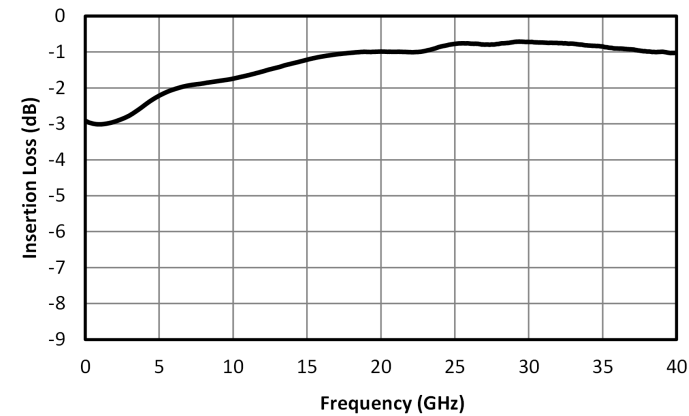
Electrical Specifications

Specifications guaranteed from -55 to +100°C, measured in a 50Ω system.

| Parameter | Test Conditions | Minimum Frequency (GHz) | Maximum Frequency (GHz) | Min | Typ | Max | Unit |
|--------------------------------|-----------------|-------------------------|-------------------------|-----|-----|------|------|
| Insertion Loss | - | 0.01 | 0.01 | - | 3 | - | dB |
| Insertion Loss | - | 15 | 15 | - | 1.2 | - | dB |
| Insertion Loss | - | 40 | 40 | - | 1 | - | dB |
| Return Loss | - | 0 | 40 | - | 15 | - | dB |
| Risetime/Falltime ¹ | - | 0 | 40 | - | 11 | - | ps |
| VSWR (Output) | - | 0 | 40 | - | 1.3 | - | - |
| Output Return Loss | - | 0 | 39 | - | 15 | - | dB |
| Total Input Power | - | 0 | 40 | - | - | 0.25 | W |
| VSWR (Input) | - | 0 | 40 | - | 1.3 | - | - |
| Weight | - | 0 | 40 | - | 9 | - | g |

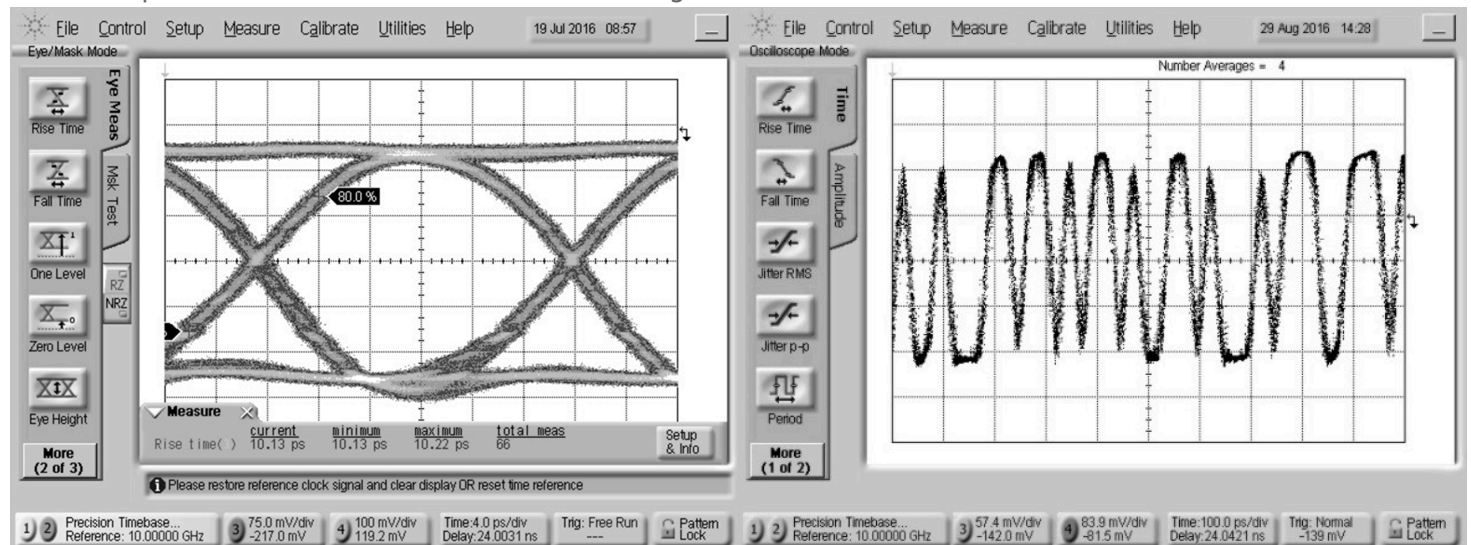
^[1] Specified as 20%/80%. Amplitude- and phase-matched pairs available; contact factory.

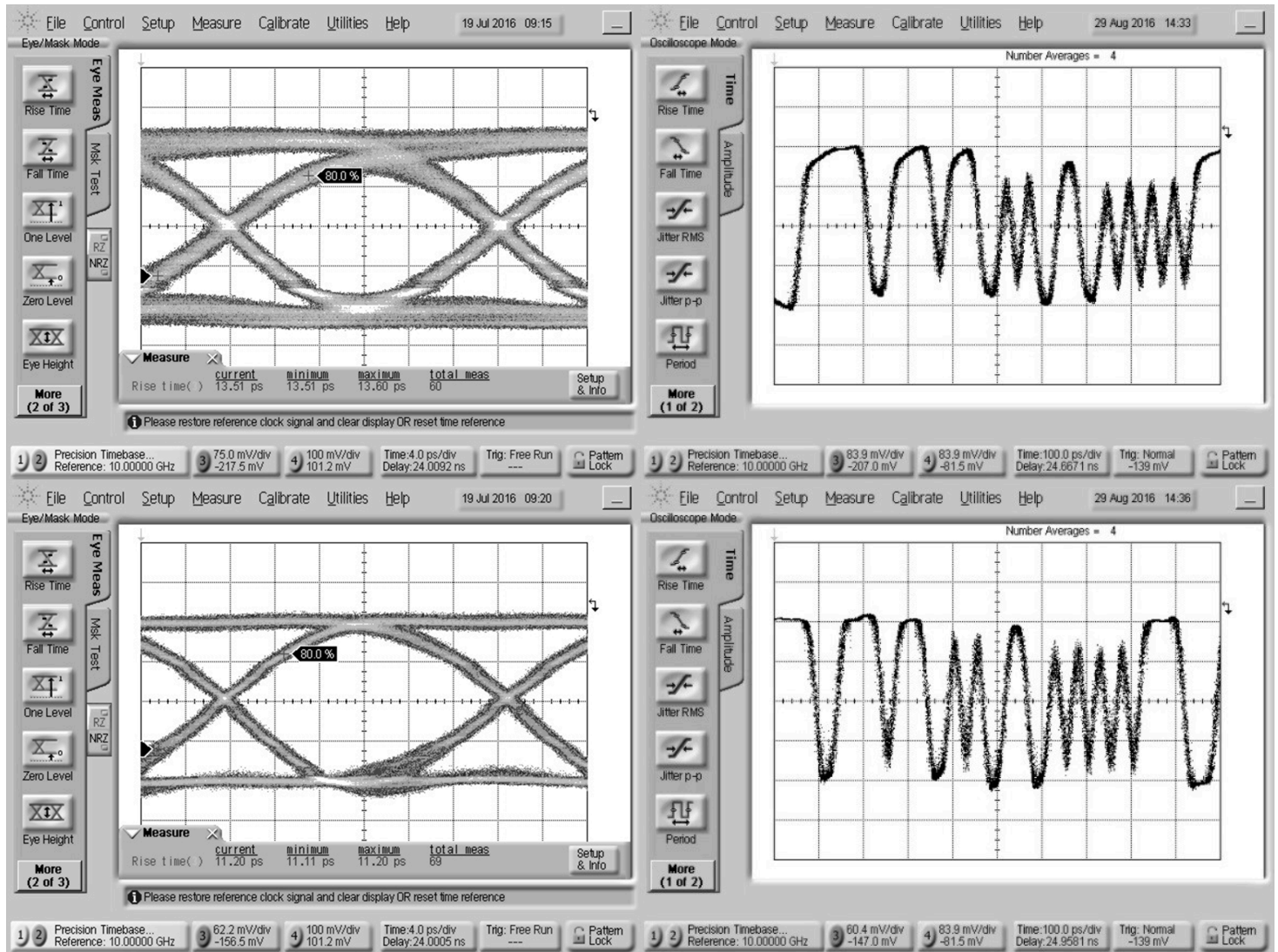
Typical Performance



Time Domain Performance Plots

Oscilloscope measurements of the EQ3-40 with a 40 Gb/s PRBS pattern. Bit pattern is measured with a 2^7-1 PRBS input. Eye diagrams are taken with a $2^{31}-1$ PRBS input. Input data pattern figure is uncorrelated with the other patterns due to the additional cable length.

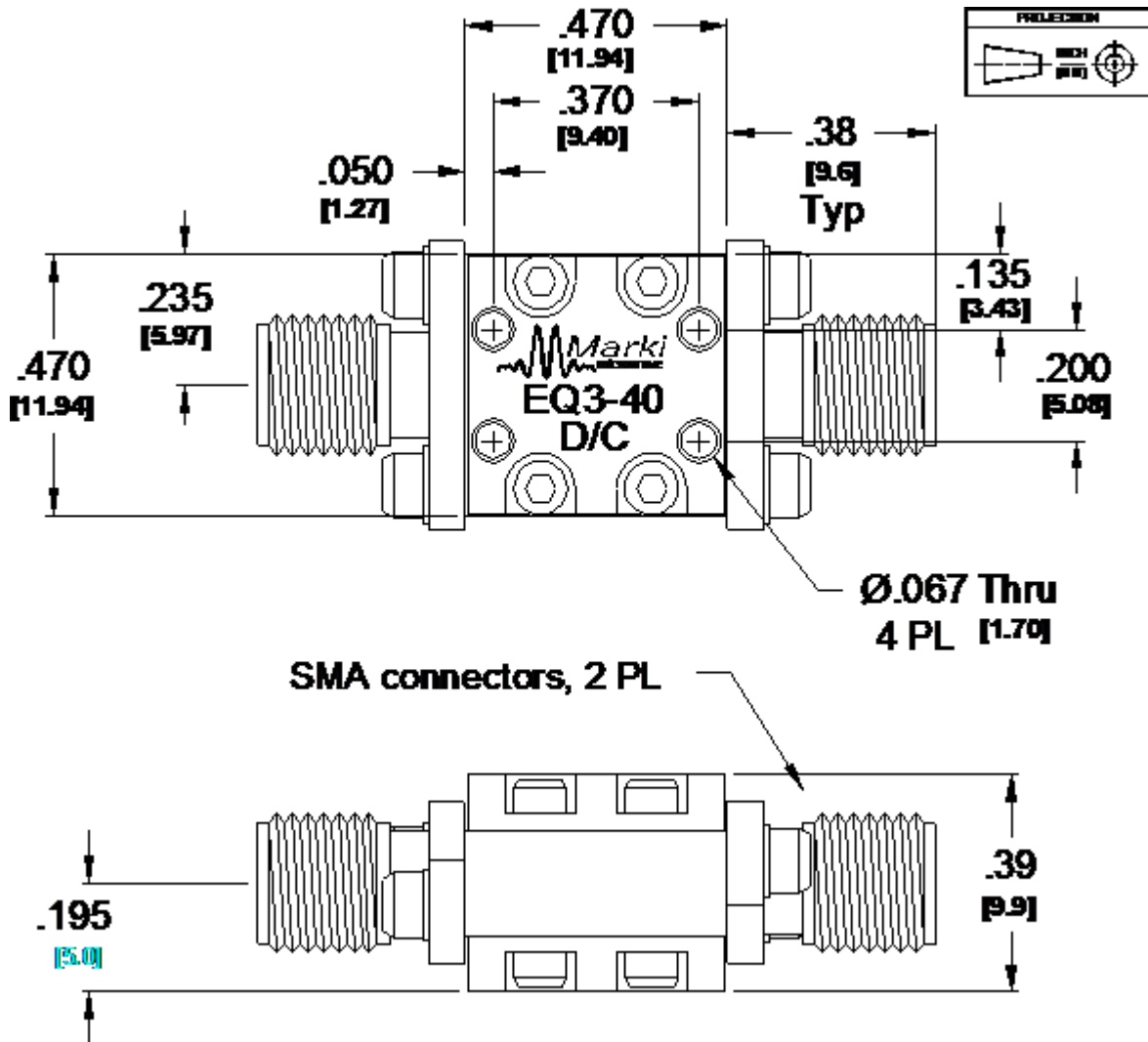




Mechanical Data

Outline Drawing

Download : [Outline 2D Drawing](#) | [Outline 3D Drawing](#) | [Outline 3D STP](#)



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