

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.

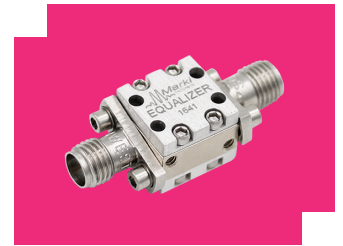
[Download s-parameters here](#)

Features

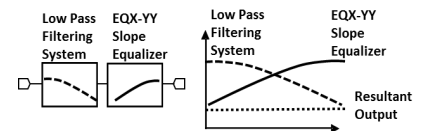
- 40 Gb/s Equalizer
- Matched 50 Ohm Impedance on Input and Output Ports

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

Table Of Contents

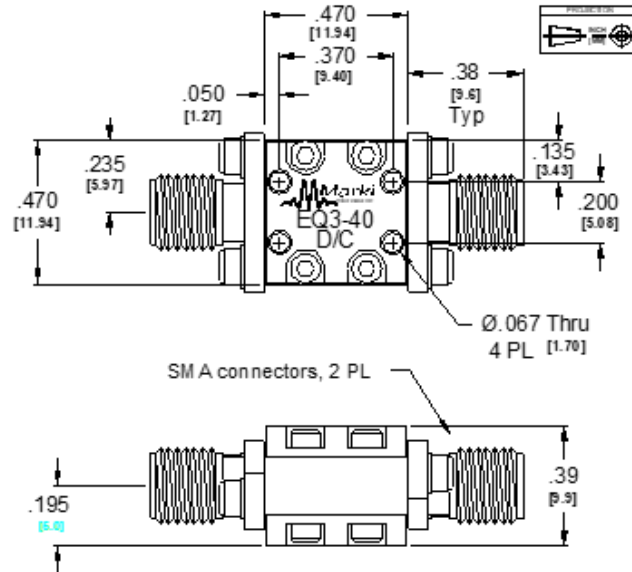
- **Device Overview**
 - General Description
 - Features
 - Applications
 - Functional Block Diagram
- **Port Configuration and Functions**
 - Port Diagram
 - Port Functions
- **Revision History**
- **Specifications**
 - Absolute Maximum Ratings
 - Package Information
 - Electrical Specifications
 - Typical Performance
 - Time Domain Performance Plots
- **Mechanical Data**
 - Outline Drawing

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	DC Equivalent Circuit
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	P1 
Port 2	Input/Output	-	Port 2 is DC connected to ground through a resistor. DC block is required if voltage present.	P2 

Specifications

Absolute Maximum Ratings

Parameter	Maximum Rating	Unit
RF Power Handling	0.25	W

Package Information

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

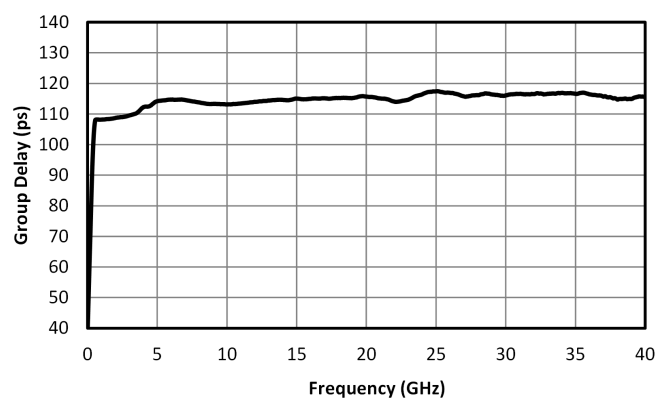
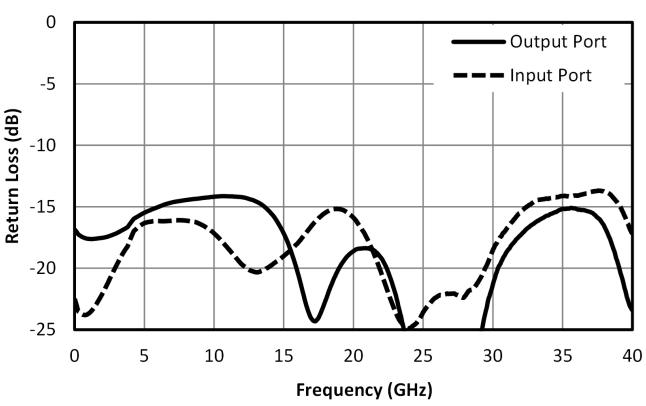
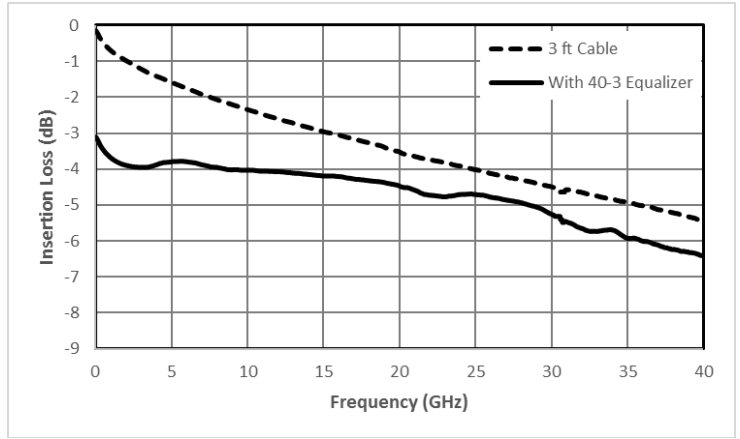
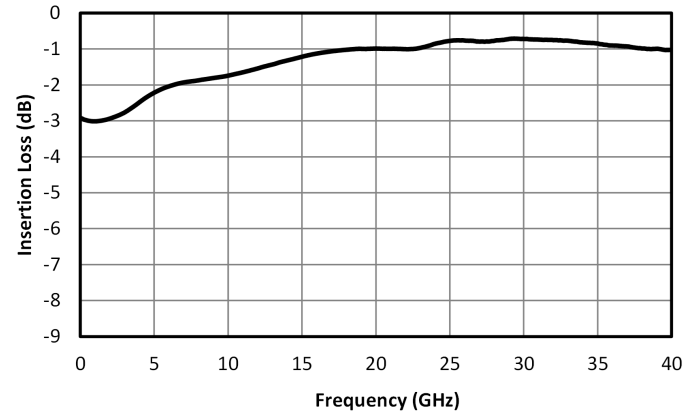
Electrical Specifications

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	-	15	15	-	1.2	-	dB
Insertion Loss	-	40	40	-	1	-	dB
Insertion Loss at DC	-	0	0	-	3	-	dB
Risetime/Falltime ¹	-	0	40	-	11	-	ps
Return Loss	-	0	40	-	18	-	dB

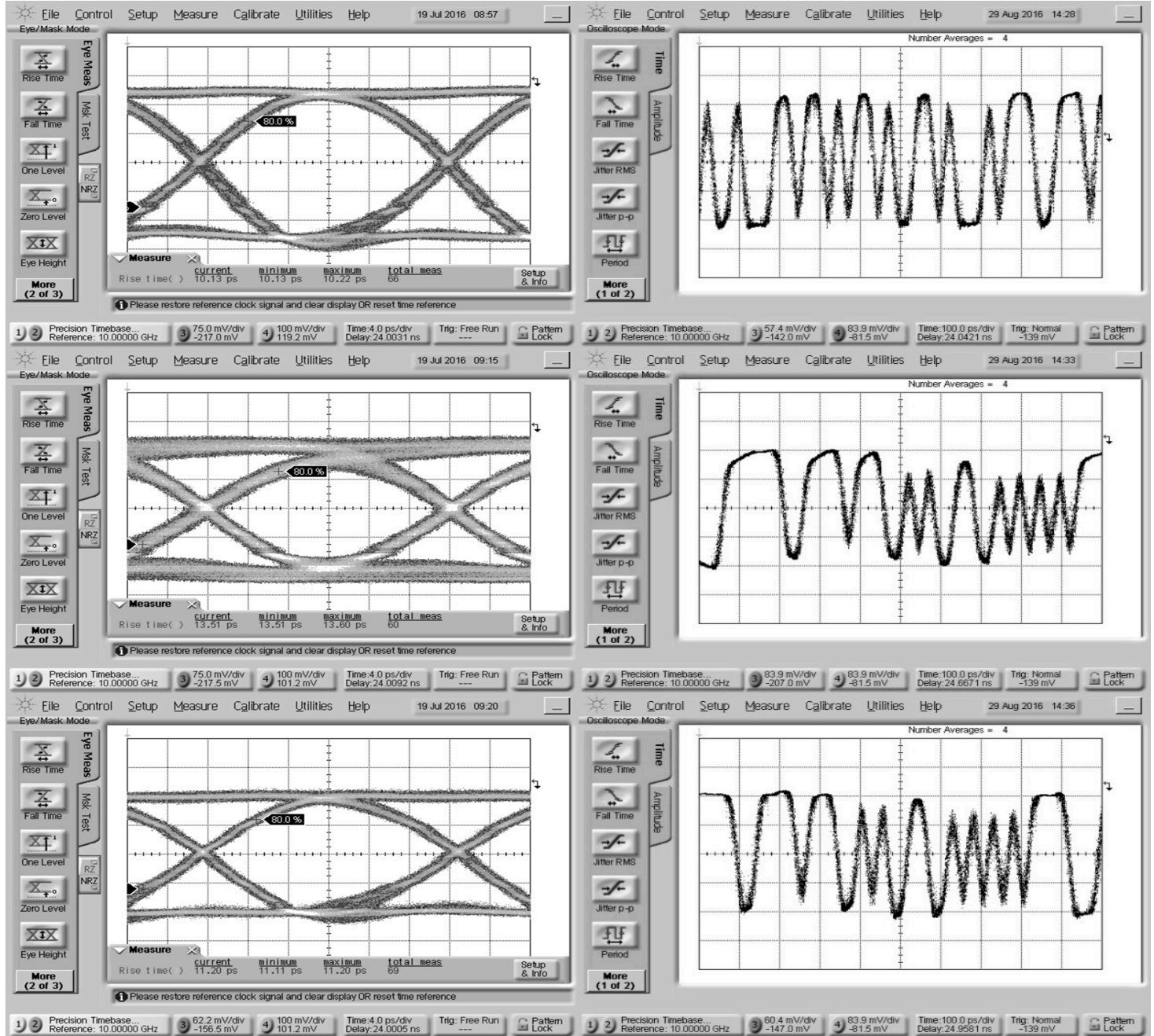
^[1] Specified as 20%/80%. Amplitude- and phase-matched pairs available; contact factory.

Typical Performance



Time Domain Performance Plots

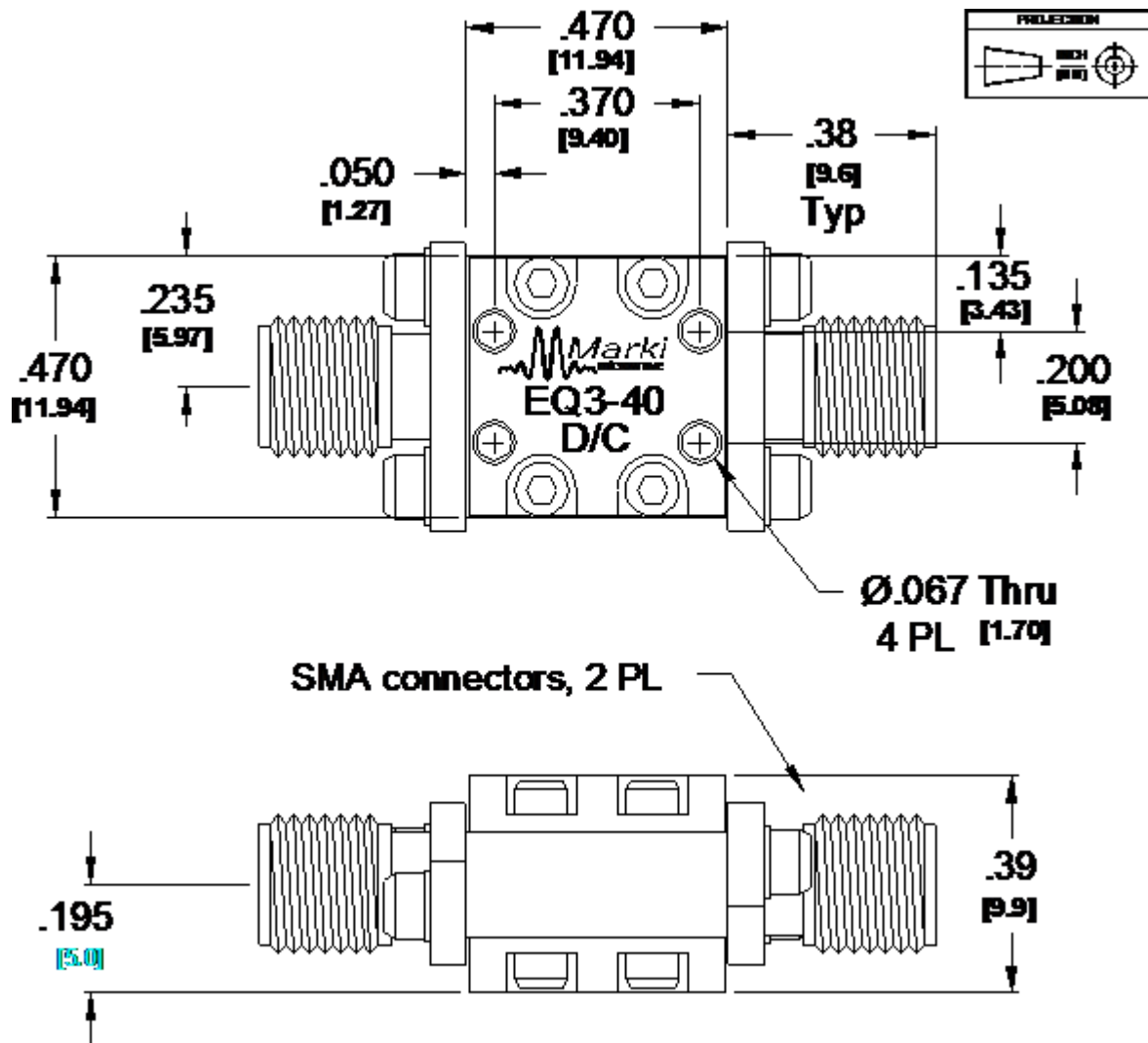
Oscilloscope measurements of the EQ3-40 with a 40 Gb/s PRBS pattern. Bit pattern is measured with a 2^7-1 PRBS input. Eye diagrams are taken with a $2^{31}-1$ PRBS input. Input data pattern figure is uncorrelated with the other patterns due to the additional cable length.



Mechanical Data

Outline Drawing

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



DISCLAIMER

MARKI MICROWAVE, LLC., ("MARKI") PROVIDES TECHNICAL SPECIFICATIONS AND DATA (INCLUDING DATASHEETS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, AND OTHER INFORMATION AND RESOURCES "AS IS" AND WITH ALL FAULTS. MARKI DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT.

These resources are intended for developers skilled in the art designing with Marki products. You are solely responsible for (1) selecting the appropriate products for your application, (2) designing, validating, and testing your application, and (3) ensuring your application meets applicable standards and other requirements. Marki makes no guarantee regarding the suitability of its products for any particular purpose, nor does Marki assume any liability whatsoever arising out of your use or application of any Marki product.

Marki grants you permission to use these resources only for development of an application that uses Marki products. Other reproduction or use of these resources is strictly prohibited. No license is granted to any other Marki intellectual property or to any third-party intellectual property. Marki reserves the right to make changes to the product(s) or information contained herein without notice.

MARKI MICROWAVE and T3 MIXER are trademarks or registered trademarks of Marki Microwave, LLC. All other trademarks used are the property of their respective owners.

© 2023, Marki Microwave, LLC