

EQ6-40 Equalizer (40 Gb/s)

DEVICE OVERVIEW

General Description

The EQ6-40 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 6 dB and a 50-ohm match maintained over the entire operating range.

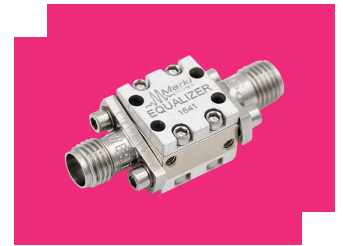
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Features

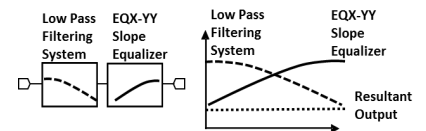
- 40 Gb/s Equalizer
- Matched 50 Ohm Impedance on Input and Output Ports

Applications

- Digital Communications
- Signal Integrity



Functional Block Diagram



Part Ordering Options

Part Number	Description	Connectors	Green Status	Product Lifecycle	Export Classification
EQ6-40	Equalizer (40 Gb/s)	<u>Standard</u>	Non-RoHS	Released	EAR99

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
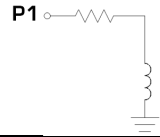
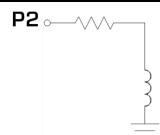
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Revision History

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

Port Configuration and Functions

Port Functions

Port	Function	Connector Type	Description	DC Equivalent Circuit
Pad	Ground	-	Ground is provided through metal housing and outer coax conductor.	GND 
Port 1	Input/Output	2.92F	Port 1 is DC connected to ground through a resistor. DC block is required if voltage present.	P1 
Port 2	Input/Output	2.92F	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

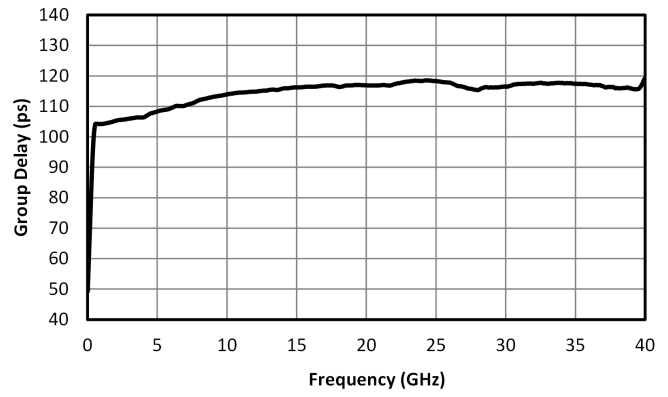
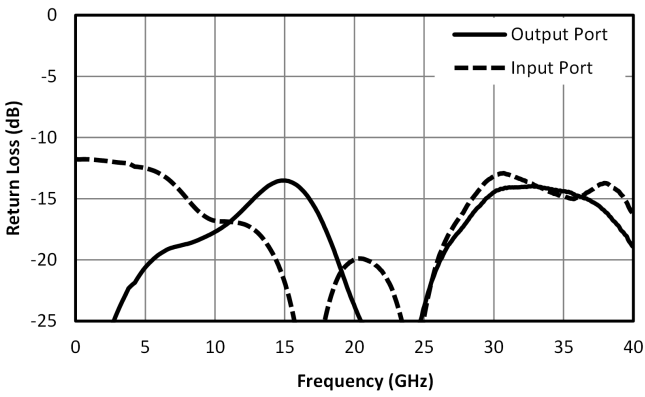
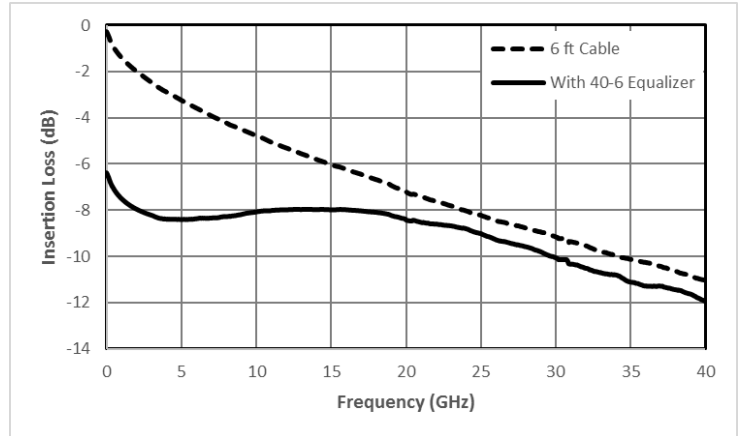
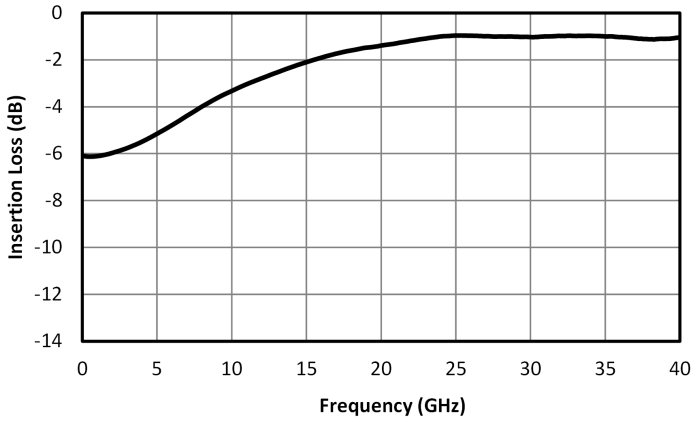
Electrical Specifications

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	-	2	-	dB
Insertion Loss	-	40	40	-	1	-	dB
Insertion Loss at DC	-	0	0	-	6	-	dB
Return Loss	-	0	40	-	18	-	dB
Risetime/Falltime ¹	-	0	40	-	11	-	ps

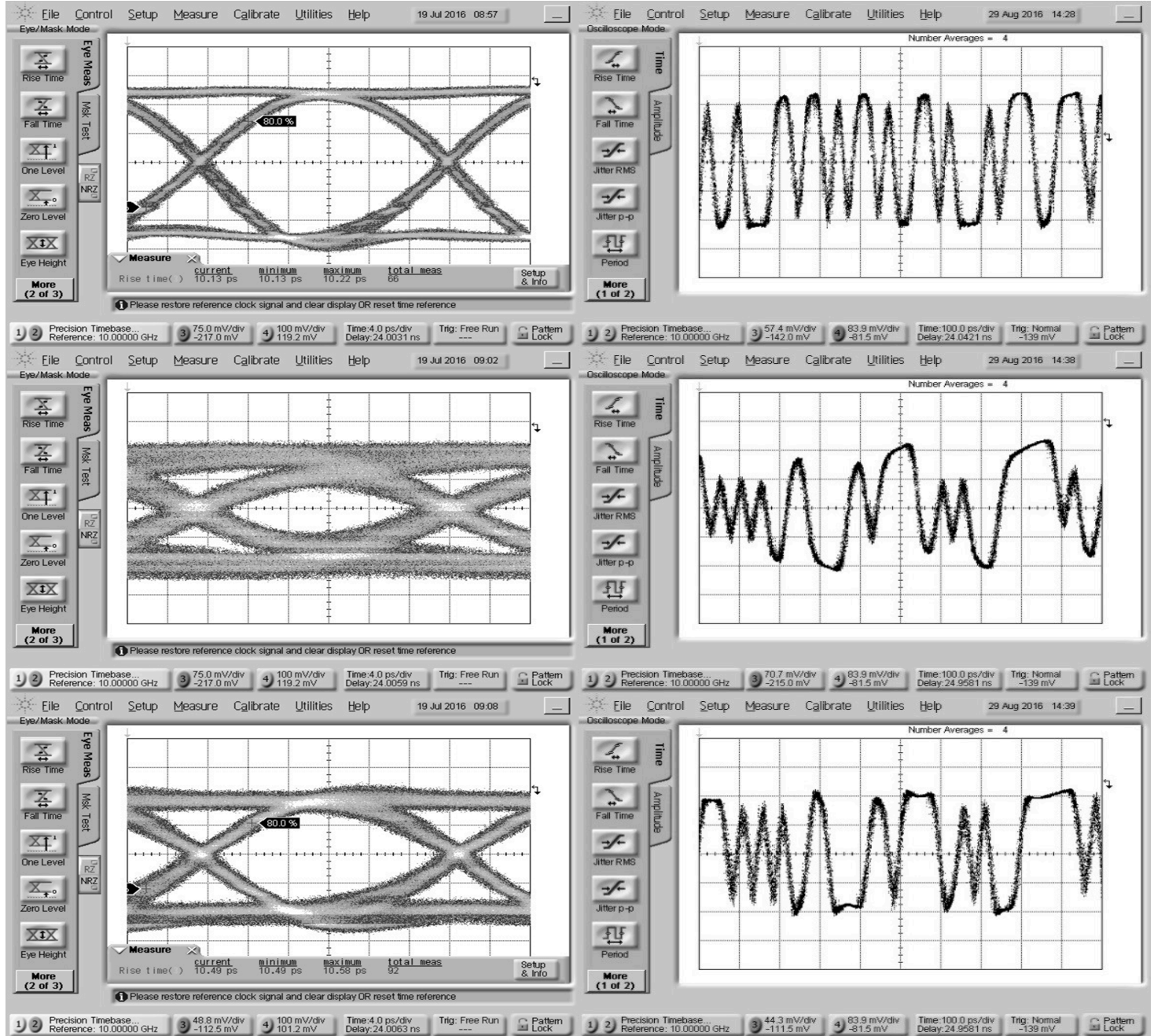
^[1] Specified as 20%/80%.

Typical Performance Plots



Time Domain Performance Plots

Oscilloscope measurements of the EQ6-40 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. The "Input Data Pattern" figure is uncorrelated with the other patterns due to the additional cable length.



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