Gain Equalizer

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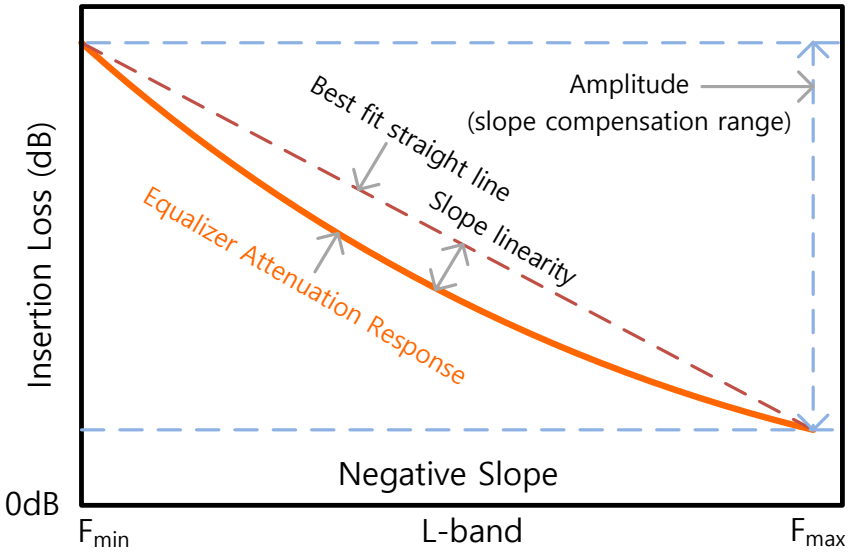
❖ Description

The gain equalizer is a passive RF device used in broadband RF systems such as SATCOM to compensate for frequency-dependent gain reduction caused by cables or amplifiers. The Polaris L-band gain equalizer is designed so that insertion loss decreases as frequency increases and is used to flatten the frequency response of the system.



❖ Applications

- SATCOM ground systems
- Satellite gateway / Earth station equipment
- Broadband RF amplifier systems
- RF test and measurement systems
- DAS (Distributed Antenna Systems)
- RF transceiver

❖ Features

- Available in various L-band frequency ranges
- Good slope linearity
- Low insertion loss at Fmax
- Slope compensation range from 1 to 10 dB
- SMA input/output connectors

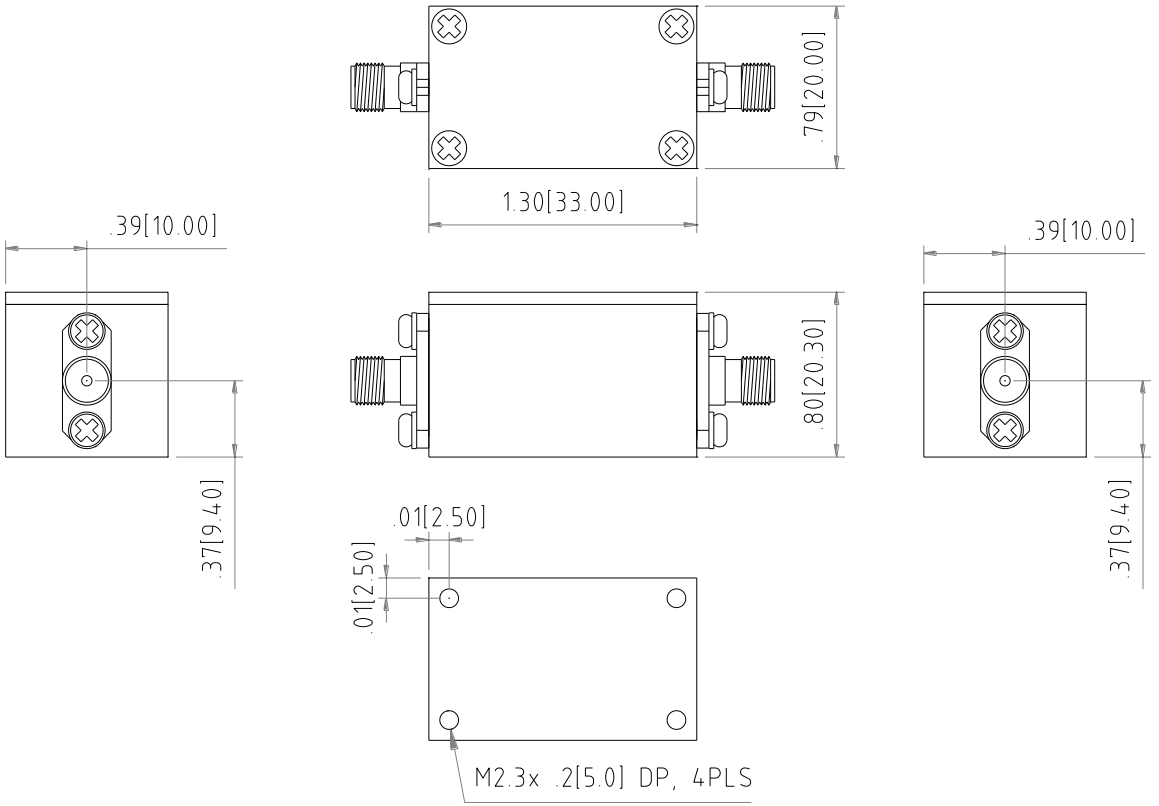
❖ Specifications

Parameters	Specifications
Operating Frequency Range	L1: 950 MHz to 1,450 MHz, L2: 950 MHz to 1,525 MHz L3: 950 MHz to 1,750 MHz, L4: 950 MHz to 1,825 MHz L5: 950 MHz to 1,950 MHz, L6: 950 MHz to 2,150 MHz
Response Shape	Negative slope, insertion loss decreases with increasing frequency.
Amplitude (Slope Compensation Range)	1 dB to 10 dB
Amplitude Accuracy	±0.2 dB typ., ±0.5 dB max
Insertion Loss at F_{max}*	1.5 dB typ., 2.0 dB max. at 5 dB amplitude over 950-1450 MHz 2.5 dB typ., 3.0 dB max. at 5 dB amplitude over 950-2000 MHz 2.5 dB typ., 3.0 dB max. at 10 dB amplitude over 950-1450 MHz 2.5 dB typ., 3.0 dB max. at 10 dB amplitude over 950-2000 MHz
Slope Linearity*	±0.5 dB typ., ±0.75 dB max. at 5 dB amplitude over 950-1450 MHz ±0.5 dB typ., ±0.75 dB max. at 5 dB amplitude over 950-2000 MHz ±0.75 dB typ., ±1.0 dB max. at 10 dB amplitude over 950-1450 MHz ±0.75 dB typ., ±1.0 dB max. at 10 dB amplitude over 950-2000 MHz
Input/Output Return Loss*	14 dB typ., 12 dB max. at 5 dB amplitude over 950-1450 MHz 14 dB typ., 11 dB max. at 5 dB amplitude over 950-2000 MHz 14 dB typ., 11 dB max. at 10 dB amplitude over 950-1450 MHz 14 dB typ., 11 dB max. at 10 dB amplitude over 950-2000 MHz
Impedance	50 Ω
Input / Output RF Connectors	SMA (Receptacle or Plug)
Size (L x W x H) (mm)	1.30"[33] x .79"[20] x .80"[20.3]

* Contact the factory for specifications at other amplitudes and operating frequency ranges.

❖ Outline Drawing

Dimensions shown in brackets [ ] are in millimeters.



❖ Ordering information

- Model Number: PNE-ww-xxx-yy

  - ww: Frequency Range

    L1: 950 MHz to 1,450 MHz, L2: 950 MHz to 1,525 MHz

    L3: 950 MHz to 1,750 MHz, L4: 950 MHz to 1,825 MHz

    L5: 950 MHz to 1,950 MHz, L6: 950 MHz to 2,150 MHz

  - xxx: Amplitude (Slope Compensation Range)

    dB value (Insertion Loss at F_{max} – Insertion Loss at F_{min})

  - yy: Input / Output SMA connector type

    R: Receptacle

    P: Plug

- Examples

PNE-L1-7R5-RR

L1: 950 MHz to 1,450 MHz

7R5: 7.5 dB

RR: Receptacle / Receptacle

PNE-L6-010-PR

L6: 950 MHz to 2,150 MHz

010: 10 dB

PR: Plug / Receptacle