



Nuhertz Technology's Filter Design Software: Filter Free

- ◆ **Filter Free is the shareware version of Filter Solutions and Filter Light. Filter Free is limited to 3rd order or lower low and high pass filters, 2nd order or lower band pass and band stop filters, and 10 tap or lower FIR filters, and does not include most of the advanced design capabilities of Filter Solutions and Filter Light.**
- ◆ **See www.filter-solutions.com for more information.**
- ◆ **We can use the software to design simple passive filter.**

Sequence 1-Input the requirement

- ◆ Filter Type/Filter Class/Order/fc/Implementation/Frequency Scale/Graph Limits/Source Res/Load Res

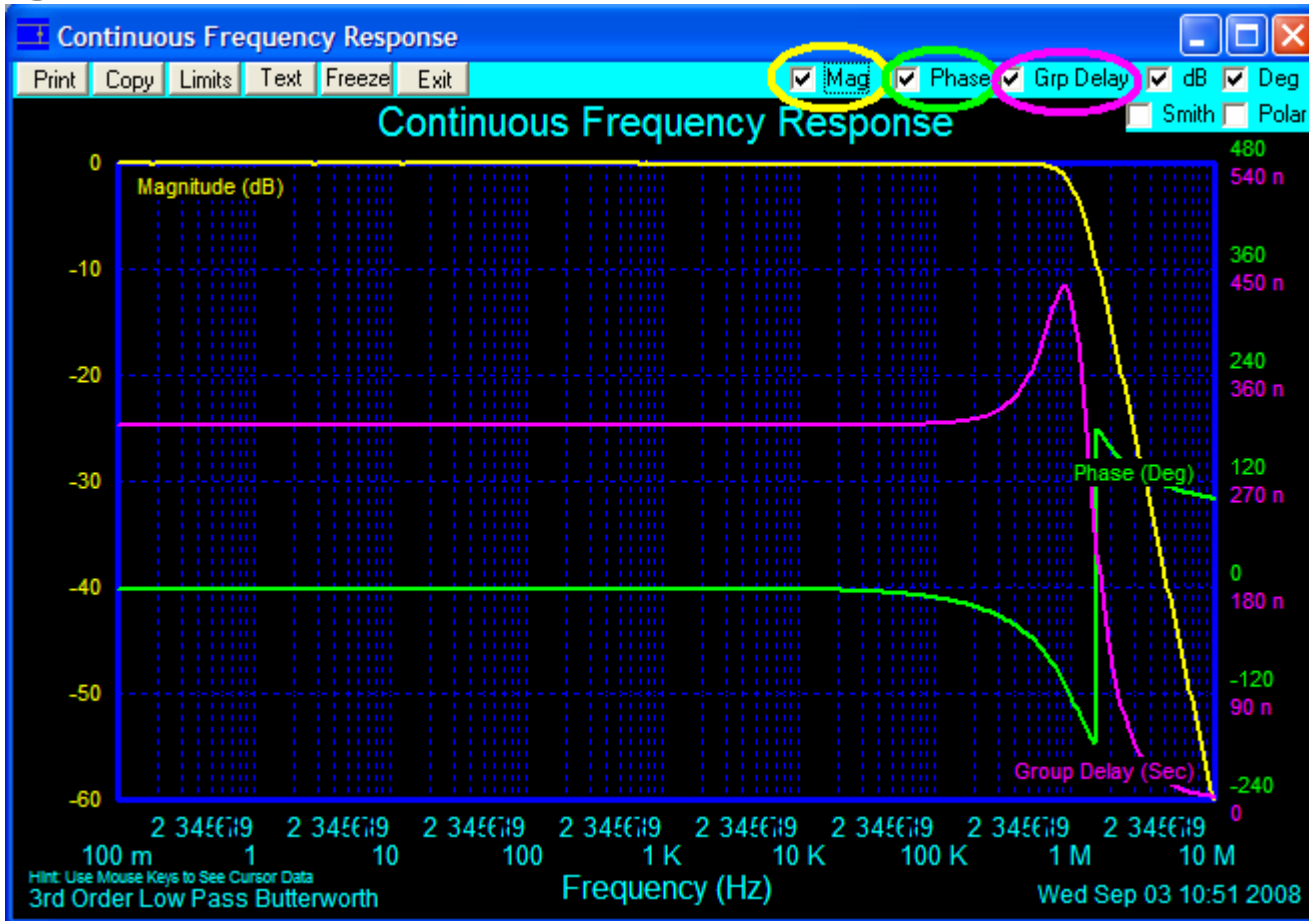
The screenshot shows the 'Filter Free 2007' software interface by Nuhertz Technologies, LLC. The interface is divided into several sections with various controls:

- Filter Type (1):** A list of filter types including Gaussian, Bessel, Butterworth (selected), Legendre, Chebyshev I, Chebyshev II, Hourglass, Elliptic, Raised Cos, Matched, and Delay.
- Filter Class (2):** Radio buttons for Low Pass (selected), Band Pass, High Pass, and Band Stop.
- Filter Attributes (3):** Includes a 'Set Order' button, a text field for 'Order' (value: 3), and a 'Pass Band Freq' field (value: 1000000).
- Implementation (5):** Radio buttons for Passive (selected), Tx Line, Active, Sw Cap, and Digital.
- Freq Scale (6):** Radio buttons for Rad/Sec, Hertz, and Log (selected).
- Graph Limits (7):** Fields for 'Min Freq' (0.1), 'Max Freq' (10000000), 'Min Time' (0), and 'Max Time' (10).
- Passive Design (9):** Includes 'Ideal Filter Response' options: 'Transfer Function' (Time Response selected), 'Pole Zero Plots' (Frequency Response selected), and 'Reflection Coefficient' (Incr source Bias).
- Circuit Parameters (8):** Includes 'Current Source' (1), 'Voltage Source' (1), '1st Ele Shunt' (checked), '1st Ele Series' (checked), and 'Min Inductors' (unchecked). 'Source Res' and 'Load Res' are also indicated.
- Synthesize Filter (10):** A large button at the bottom right.

Yellow numbers 1 through 10 are handwritten on the image, pointing to these specific features. The Nuhertz logo and website URL (www.nuhertz.com) are visible at the bottom.

Sequence 2-Frequency Response

◆ Yellow: Magnitude Response; Green: Phase Response



Sequence 3-Synthesize Filter

Filter Free 2007 Nuhertz Technologies, LLC

File Data Upgrade Options Window Help

Filter Type

- Gaussian
- Bessel
- Butterworth
- Legendre
- Chebyshev I
- Chebyshev II
- Hourglass
- Elliptic
- Raised Cos
- Matched
- Delay

Filter Attributes

Set Order Standard Pass Band Atten

3 Order

1000000 Pass Band Freq

Add Stop Band Zeros

Implementation

- Passive
- Tx Line
- Active
- Sw Cap
- Digital

Passive Design

Ideal Filter Response

- Transfer Function
- Time Response
- Pole Zero Plots
- Frequency Response
- Reflection Coefficient
- Incl Source Bias

Circuit Parameters

- Current Source 1 Source Res
- Voltage Source 1 Load Res
- 1st Ele Shunt
- 1st Ele Series
- Min Inductors

Filter Class

- Low Pass
- Band Pass
- High Pass
- Band Stop

Freq Scale

- Rad/Sec
- Hertz
- Log

Graph Limits

0.1 1000000 0 10

Min Freq Max Freq Min Time Max Time

Synthesize Filter

Nuhertz

www.nuhertz.com

Result

