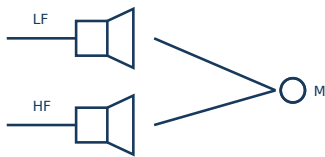


Driver matching, phase and delay

Worksheet · 20 tasks

Name: _____ Datum / Date: _____ Klasse / Class: _____

- 01** A woofer gives 88 dB and a tweeter 92 dB at the same operating point and reference. What level correction is an initial estimate?



Concept diagram; values are in the task.

Method · units · working · check result

- 02** A $4\ \Omega$ driver is measured at 2.83 V. What is electrical power for a purely resistive substitute?

Method · units · working · check result

Name: _____ Datum / Date: _____ Klasse / Class: _____

03 How do you ideally convert 90 dB at 2.83 V/1 m with 4 Ω to 1 W/1 m?

Method · units · working · check result

04 Sound speed 343 m/s, frequency 1 kHz. Find wavelength.

Method · units · working · check result



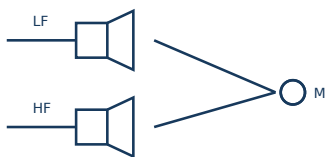
Worksheet · 20 tasks

Name: _____ Datum / Date: _____ Klasse / Class: _____

07 Calculate the same delay-induced phase difference at 3 kHz.

Method · units · working · check result

08 Two equally strong coherent signals of pressure ratio 1 are in phase. Find sum level relative to one signal.



Concept diagram; values are in the task.

Method · units · working · check result

Name: _____ Datum / Date: _____ Klasse / Class: _____

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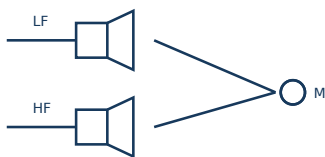
Worksheet · 20 tasks

Name: _____ Datum / Date: _____ Klasse / Class: _____

- 11** LR4 crossover: both branches have pressure ratio 0.5 but differ by 90° . How far below target 1 is the sum?

Method · units · working · check result

- 12** One branch reaches the microphone 0.2 ms earlier. Which branch should be delayed for time alignment?



Concept diagram; values are in the task.

Method · units · working · check result

Name: _____ Datum / Date: _____ Klasse / Class: _____

13 Why does polarity inversion not replace a fixed time delay across all frequencies?

Method · units · working · check result

14 Driver centres are 17 cm apart. At what frequency does this equal one wavelength, $c = 343$ m/s?

Method · units · working · check result

Name: _____ Datum / Date: _____ Klasse / Class: _____

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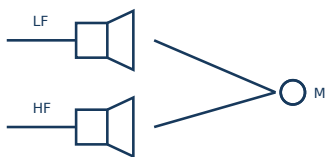
Worksheet · 20 tasks

Name: _____ Datum / Date: _____ Klasse / Class: _____

19 Why must separately measured driver phases not be arbitrarily reset to zero when predicting their sum?

Method · units · working · check result

20 Put a two-way design workflow in order: level, driver data, branches, sum, angles and loading.



Concept diagram; values are in the task.

Method · units · working · check result