KLIPPEL ANALYZER SYSTEM

Report

Object: **LPM T/S for 32Hz < fs < 64Hz @ Sp2 for "Woofer" with Laser**

Comment:

Operation: **LPM T/S for 16Hz < fs < 32Hz串**

Comment: Measures linear parameters (Thiele & Small parameter) of Subwoofers.
Driver connected to SPEAKER 2 channel.
(SP2 = current sensitive channel at DA, High Current Sensitivity is default for SP2 at KA3)

Stimulus recommendation:
- for DUTs with resonance frequency fs <= 32 Hz
- LPM reference frequency should be <= 1/2 * fs
- A resolution of 1/30 octave is recommended for T/S parameter determination (1/31 oct. doubles the measurement time!)
- Fmax should be between 20 * fs and 100 * fs
- Adjust voltage and averaging if a low SNR warning get displayed!

Database: **M15**

Table Linear Parameters

Name	Value	Unit	Comment
Electrical Parameters			
Re	6.64	Ohm	electrical voice coil resistance at DC
Le	1.934	mH	frequency independent part of voice coil inductance
L2	9.541	mH	para-inductance of voice coil
R2	6.25	Ohm	electrical resistance due to eddy current losses
Cmes	1331.21	µF	electrical capacitance representing moving mass
Lces	30.78	mH	electrical inductance representing driver compliance
Res	26.71	Ohm	resistance due to mechanical losses
fs	24.9	Hz	driver resonance frequency
Mechanical Parameters			
(using laser)			
Mms	503.817	g	mechanical mass of driver diaphragm assembly including air load and voice coil
Mmd (Sd)	479.234	g	mechanical mass of voice coil and diaphragm without air load
Rms	14.171	kg/s	mechanical resistance of total-driver losses

Cms	0.081	mm/N	mechanical compliance of driver suspension
Kms	12.30	N/mm	mechanical stiffness of driver suspension
Bl	19.454	N/A	force factor (Bl product)
Lambda s	0.000		suspension creep factor
Loss factors			
Qtp	1.151		total Q-factor considering all losses
Qms	5.555		mechanical Q-factor of driver in free air considering Rms only
Qes	1.382		electrical Q-factor of driver in free air considering Re only
Qts	1.107		total Q-factor considering Re and Rms only
Other Parameters			
Vas	69.8902	l	equivalent air volume of suspension
n0	0.075	%	reference efficiency (2 pi-radiation using Re)
Lm	80.76	dB	characteristic sound pressure level (at 1 m for 1 W @ Re)
Lnom	81.56	dB	nominal sensitivity (SPL at 1 m for 1 W @ Zn)
rmse Z	10.66	%	root-mean-square fitting error of driver impedance Z(f)
rmse Hx	6.67	%	root-mean-square fitting error of transfer function Hx(f)
Series resistor	0.00	Ohm	resistance of series resistor
Sd	779.31	cm^2	diaphragm area

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Disclaimer: *Measurement results (data, parameters, curves, PASS/FAIL decisions) depend on the measurement methods and the setup made by the user. The measurement methods are described in the KLIPPEL product specifications, papers and user manuals. KLIPPEL is not liable for any damage caused by misinterpretation of results.*

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