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Subject: Re: Announcements

Posted by [Chris R](#) on Thu, 06 Nov 2003 18:00:01 GMT

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OK. I keep forgetting this is html. Trying again...I give up. If anybody want's a copy, I'll email it.crichmon@eng.fm.intel.com./mech\_res.pl Usage: ./mech\_res.pl Zmax Fs Qms./mech\_res.pl 100 32 10.4! mechanical reactance (32 Hz, Qms: 10.4) C5: 9 0 517.4uF L5: 9 0 47.8mH R5: 9 0 104.0And the code and comments:#!/usr/intel/bin/perl -w# Copyright (c) 2003 Chris E. Richmond All rights reserved# This program is free software; you can readily redistribute it# and/or modify it under the terms of the GNU General Public License# as published by the Free Software Foundation; either version 1, or# at your option) any later version. You can receive a copy of this# license by writing Free Software Foundation, Inc., 675 Mass Ave.,# Cambridge, MA 02139, USA#=====

=====# Create mechanical parameters for Spice model for woofers.# Input: Zmax and Fs, output equivalent L, C, and R, where their# values are defined thusly:## About making a virtual circuit that models mechanical resonance, the idea is to find# parallel L,C and R that acts as the mechanical resonator does. R will be set by Zmax,# so that one is easy. Then, the values of C and L will be the same at resonance, and# since Q is the ratio of reactive impedance to resistive impedance, you will find a the# value of inductor and capacitor with reactances equal to Zmax / Qms at Fr. Wayne Parham## C5# ----||-----# | R5 |# -----VV-----# | |# ----(((((((-----# L5#=====

=====#if ( @ARGV != 3 ) { die "\n Usage: \$0 Zmax Fs Qms\n\n"; }\$Zmax = \$ARGV[0]; \$Fs = \$ARGV[1];\$Qms = \$ARGV[2];\$Pi = 3.141; # constant\$Q\_ratio = \$Zmax/\$Qms;\$L = (\$Q\_ratio / (2 \* \$Pi \* \$Fs)) \* 1000;\$C = 1000000 \* ( 1 / ( 2 \* \$Pi \* \$Q\_ratio \* \$Fs ));#! mechanical reactance (40Hz, Q=6.56)# C5 9 0 400uF# L5 9 0 40mH# R5 9 0 65.6print "\n! mechanical reactance (\$Fs Hz, Qms:

version:=====10 input "Zmax"; R20 input "Fs"; F30 input "Qms"; Q40 Pi = 3.141592653550 Z = R/Q60 L = (Z / (2 \* Pi \* F)) \* 100070 C = (1 / (2 \* Pi \* Z \* F)) \* 100000080 print "Reactance = " reactance90 print "Capacitor is " C " uF."100 print "Inductor is " L " mH."110 print "Resistor is " R " ohms."=====