

(A5.3.2)

input noise are
Center frequencies
values of R_p , L_p ,
each band, then
weights starting at
the noise.

is example, loaded
specified by the
 $R_s = 1.13k\Omega$ and
the A5.1 shows a
for this example.

phono cartridge
the audio band,
was noiseless,
the preamp noise
of the system is
ratio (re 2mV
preamp current

TABLE A5.1 Summary of Calculations

f Range (Hz)	25 - 50	50 - 100	100 - 200	200 - 400	400 - 800	800 - 1.6k	1.6k - 3.2k	3.2k - 6.4k	6.4k - 12.8k	12.8k - 20k
f Center (Hz)	37.5	75	150	300	600	1200	2400	4800	9600	16.4k
fBW (Hz)	25	50	100	200	400	800	1600	3200	6400	7.2k
$Q = \frac{\omega L_s}{R_s}$	0.156	0.313	0.625	1.25	2.5	5	10	20	40	68.4
Q^2	0.0244	0.098	0.391	1.56	6.25	25	100	400	1600	4678.6
$1 + Q^2$	1.0244	1.098	1.391	2.56	7.25	26	101	401	1601	4679.6
$\frac{1 + Q^2}{Q^2}$	42	11.24	3.56	1.64	1.16	1.04	1.01	1.0	1.0	1.0
$R_p (\Omega)$	1.16k	1.24k	1.57k	2.9k	8.2k	29.4k	114k	454k	1.8M	5.29M
$L_p (H)$	31.5	8.43	2.67	1.23	0.87	0.78	0.76	0.75	0.75	0.75
$R_p R_A (\Omega)$	1.13k	1.21k	1.52k	2.74k	7k	18.1k	32.9k	42.6k	45.8k	46.6k
$X_L (\Omega)$	7.42k	3.97k	2.52k	2.32k	3.28k	5.88k	11.45k	22.6k	45.2k	77.2k
$X_C (\Omega)$	17M	8.48M	4.24M	2.12M	1.06M	0.53M	0.265M	0.133M	66.3k	38.8k
$R_e(Z) (\Omega)$	1.11k	1.11k	1.11k	1.15k	1.26k	1.73k	3.86k	12.4k	41.5k	34k
$ Z (\Omega)$	1.12k	1.15k	1.3k	1.77k	2.97k	5.59k	11.7k	24.4k	43.6k	40.1k
$e_{nz} (nV/\sqrt{Hz})$	4.1	4.1	4.1	4.1	4.3	5.1	7.3	14	26	23
$V_N (nV)$	20.5	29	41	58	86	144.2	292	792	2080	1952
$V_N^2 (nV^2)$	420.3	840.5	1681	3362	7396	20.8k	85.3k	627.7k	4.33M	3.81M
A^2	63.04	31.6	10	3.17	1.59	0.89	0.45	0.159	0.05	0.025
$A^2 V_N^2 (nV^2)$	26.5k	26.6k	16.8k	10.7k	11.8k	18.5k	38.1k	99.7k	216.3k	95.2k

$$(\Sigma V_N^2)^{1/2} = 2.98 \mu V \text{ unequalized noise.}$$

$$(\Sigma |A_n|^2 V_N^2)^{1/2} = 0.75 \mu V \text{ RIAA equalized noise.}$$