

# Appendix – A

## Details of parameters used in simulation

For simulation purpose and for creating a virtual anechoic chamber, the variables and constants are valued as following-

### Air field

For the entire circle as well as virtual air field the assumed value of the variables are -

Relative permeability,  $\mu_r = 1$

Relative permittivity,  $\epsilon_r = 1$

Electrical Conductivity,  $\sigma = 0$  S/m

Ratio of specific heats,  $\gamma = 1.4$

Refractive index (real part),  $n = 1$

Refractive index (imaginary part),  $k_i = 0$

### Material

For the constructing material of the target object the assumed values of the variables and constants are as follow –

Relative permeability,  $\mu_r = 1$

Relative permittivity,  $\epsilon_r = 1$

Electrical Conductivity,  $\sigma = 3.774 \times 10^7$  S/m

Heat capacity at constant pressure,  $C_p = 900$  J/(kg.K)

Thermal conductivity,  $k = 238 \text{ W/(m.K)}$

Coefficient of thermal expansion,  $\alpha = 23 \times 10^{-6} \text{ 1/K}$

Density,  $\rho = 2700 \text{ kg/m}^3$

Young's modulus,  $E = 70 \times 10^9 \text{ Pa}$

Poisson's ratio,  $\nu = 0.33$