```matlab
% ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
% bounding Function Definition
% creates the upper and lower bound for variables in
% the array. most of these are arguments passed from the main_live_script.
% The exception being type.
% ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
% Parameters
% parameters: currently four parameters: type, quantity, diameter, and power
% all others: see radar_optimization function for other parameters
% ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
% Return
% lb: matrix of minimim values for each parameter in the x matrix
% ub: matrix of maximim values for each parameter in the x matrix
% ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

 function [lb,ub ] = bounding(num_parameters,num_styles,min_diameter, ...
        max_diameter,min_power,max_power,min_quantity,max_quantity, ...
        min_t_styles,min_r_styles)

    % If/Else statement: removes the possibility of a monostatic array if
    % they are not permitted in the arguments.
    % lower and upper are set based on these rules to constrain the x
    % matrix appropriately
    % if allow_monostatic = "T" then type follows the following rules
    % Transmitters: 0 < t < 1
    % Monostatic:   1 < t < 2
    % Receivers:    2 < t < 3
    % if allow_monostatic = "F" then type follows the following rules
    % Transmitters: 0 < t < 1.5
    % Receivers:    1.5 < t < 3

    if strcmp(include_monostatic,"T")
        upper = 2;
        lower = 1;
    else
        upper = 1.5;
        lower = 1.5;
    end

    % Lower and upper bounds for the parameters in the matrix
    % initialized to 0
    lb = zeros(1, num_parameters*num_styles);
    ub = zeros(1, num_parameters*num_styles);

    % For loop to add lower and upper values to each item in the lb
    % and ub list
    for i = 1:num_styles

        % Setting values for Type columns
        step = num_parameters-1;
        % Transmitters are controlled on upper bound starting from left
        % to right.
```