Reviewer #4:

Thank you for your suggestions, they are of great help to us. Next I will respond to each point and revise accordingly.

Comments 1:

The literature review overlooks previous research on THz Fresnel lenses. A brief search revealed references [1] through [4], which should be acknowledged in the introduction.

It would also be useful to compare the performance of the proposed lens with other existing designs.

Although there are commercially available lenses [1], the manuscript's novelty could be questioned. However, the fact that the current work includes data transmission distinguishes it from the existing literature.

Response：

We have reconfirmed that there is indeed research on Fresnel lenses in the terahertz band, which was an oversight on our part. Of the four references you provided, reference 1 shows a commercially available terahertz Fresnel lens product with an aperture of 15 cm, which is not effective with small apertures in practical systems over medium to long distances. Reference 2 could not be opened. Reference 3 and 4 discuss the spectral properties of Fresnel lenses and the performance of small aperture Fresnel lenses, respectively. The strengths of our study are the aperture at the decimeter level and the practical verification of terahertz wireless transmission systems.

Comments 2:

How was the lens optimization performed? Did you use a brute-force search over the parameter space, or an optimization algorithm such as particle swarm optimization or gradient descent? Also, which parameter did you specifically optimize?

Response：

We use the geometric optics method for optimization, the main optimization parameters are the cone coefficient, tooth width (frequency) and depth. The optimization algorithm is the damped least squares method.

Comments 3:

In Figure 3, please specify which line represents the absorption coefficient and which one shows the refractive index.

For Figure 6, can you clarify the parameters of the convex and Fresnel lenses used in generating the plot? This will help provide context for comparing with the Fresnel lens.

In Figure 8, the inset of (a) needs to be clarified in the figure caption.

Response：

The remaining suggestions have been modified in the corresponding positions.