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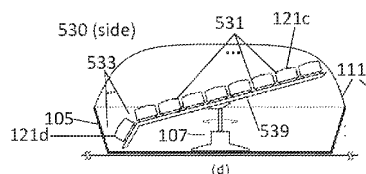
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(54) Title: IMPROVED GAIN ROLL-OFF FOR HYBRID MECHANICAL-LENS ANTENNA PHASED ARRAYS

Figure 5



(57) Abstract: A hybrid mechanical-lens array antenna is described that can be configured with different orientations and arrangements of the plurality of lenses within the array to control and enhance the performance at different regions of scan. This can include the addition of a secondary array (a skirt) at a large tilt angle, tilting the primary array, tilting the individual lenses within the primary array, or any combination. These design choices, when holding the number of lens modules (and, therefore, cost and power consumption) constant, have the effect of changing the system height, reducing the boresight gain and increasing the gain at scan, with each option showing different trades of height and scan and boresight performance.

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