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Abstract:A horn-to-horn power transmission system at Terahertz frequencies has been designed and tested. Power is generated at microwave frequencies and then frequency multiplied to the band 799-938 GHz. The resultant signal is radiated by a diagonal horn and redirected by two identical elliptical mirrors to another diagonal horn located far away. Useful design equations have been derived for the proposed system. The concept has been proven by careful measurements and utilized for the local oscillator injection in the Atacama Large Millimeter Array (ALMA) Band-10 receiver.
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