Abstracts

A cryogenic K-band ground terminal for NASA'S direct-data-distribution space experiment

R.R. Romanofsky, J.D. Warner, S.A. Alterovitz, L. Covey, A. Smith, P. Newman and K.G. Duh. "A cryogenic K-band ground terminal for NASA'S direct-data-distribution space experiment." 2000 Transactions on Microwave Theory and Techniques 48.7 (Jul. 2000, Part II [T-MTT] (Special Issue on Microwave and Communication Applications at Low Temperature)): 1216-1220.

A K-band receiver terminal has been designed for /spl ap/77-K operation to support the NASA Glenn Research Center's direct-data-distribution (D/sup 3/) spare experiment. The D/sup 2/ experiment involves a 256-element phased-array antenna, aboard the Space Shuttle, transmitting dual 622-Mb/s beams to the ground terminal. The beams are left- and right-hand-side circularly polarized for isolation. The terminal consists of a Cassegrain reflector antenna with a corrugated feed horn, a six-pole YBa/sub 2/Cu/sub 3/O/sub 7/(-/spl delta/) microstrip bandpass filter, a three-stage InP high electron-mobility transistor monolithic-microwave integrated-circuit amplifier, and a 1-W at 80-K Stirling cycle cryocooler.

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