Abstracts

A Space-Qualified Low-Noise 22 GHz Receiver with High Phase Stability for VLBI-Measurements

P. Piironen, J. Mallat and A. Raisanen. "A Space-Qualified Low-Noise 22 GHz Receiver with High Phase Stability for VLBI-Measurements." 1994 MTT-S International Microwave Symposium Digest 94.2 (1994 Vol. II [MWSYM]): 1089-1092.

A space-qualified low-noise 22 GHz receiver for the international space-VLBI mission Radioastron has been constructed. The microwave electronics has been realized by using thermally matched microstrip structures. The most important properties of the receiver are phase stability, sensitivity and reliability. Phase stabilities of better than 0.13°/°C and 0.2°/°C for the receiver and the LNA units were measured, respectively. The measured receiver noise temperature with a cooled HEMT LNA is less than 100 K. The reliability requirement of 0.97 for three years mission is also fulfilled.

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