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A Q-Band Test-Source for UAV-Based Radiation Pattern Measurements

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In the last years, the Unmanned Aerial Vehicles (UAVs) produced significant innovations in in-situ antenna measurements. UAV-mounted radio-frequency generators have been initially exploited at low frequencies to characterize the radiation pattern of receiving antennas and arrays (e.g. HF radars, VHF radio telescopes), and up to the X-band for radar characterization. Within the Italian Large-Scale Polarization Explorer (LSPE) project, a UAV-mounted test source operating in the Q-band has been recently developed for the in-situ validation of the Strip instrument, which consists in a ground-based cluster of coherent polarimeters for polarization measurements of the microwave sky on large angular scales. The developed Q-band test-source is hereby presented. So far, tests of the UAV system have been performed in both laboratory environment and operative conditions.

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