

# **A CRYOGENICALLY COOLED, SEVEN BEAM, 21 CM WAVELENGTH RECEIVER FRONT END FOR THE ARECIBO RADIO TELESCOPE**

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A 7-beam receiver, using a cryogenically cooled front end for maximum sensitivity, has been developed by the Commonwealth Scientific and Industrial Research Organisation's (CSIRO) Australia Telescope National Facility (ATNF) Engineering and Development Group and is almost wholly fabricated using the facilities of the ATNF and Australian industry. This new receiver system was recently installed in an antenna situated in Puerto Rico. This paper highlights various design and construction details of the front end, and reports the results of laboratory and telescope testing of the front end cryogenic and electronic systems. This paper also describes measures to minimise self-generated electromagnetic interference (EMI) and shield the receiver from high power radar in close proximity to its location in the receiver room of the Gregorian dome.