

Development of broadband radar - Initial results -

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A new design is developed for fast, wide band instrumentation radar that operate at 15.75 GHz. With this new design, the back scattered radar cross section can be measured over a bandwidth of 80 MHz in less than several microseconds according to the distance to the target. In this report, the design concepts and procedures for the construction and calibration are presented. In addition, the signal processing algorithm and data acquisition procedures are presented. To demonstrate the accuracy and applicability of the new radar, back scatter measurements of certain points and distributed targets are compared with their analytical radar cross section.