QUARTERLY REPORT NO. 15
FOR
ANALOG-TO-DIGITAL CONVERTER
CONTRACT NO. N00014-87-C-0314
1 October 1991—31 December 1991

ARPA Order Number: 7356
Program Code Number: 7220
Amount of Contract: $3,152,507
Name of Contractor: Texas Instruments Incorporated
13500 N. Central Expressway
P.O. Box 655936, M.S. 105
Dallas, Texas 75265
Effective Date of Contract: 30 March 1987
Contract Expiration Date: 30 May 1992
Contract Number: N00014-87-C-0314
Program Manager: W.R. Wisseman
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Short Title of Work: GaAs A-to-D Converter

17 January 1992

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authors and should not be interpreted as necessarily representing the
official policy, either expressed or implied, of the Defense Advanced
Research Projects Agency or the United States Government.
I. SUMMARY

A. Brief Program Definition
   This is a research and development program to design and fabricate both a GaAs high sampling rate A/D converter and a high-resolution GaAs A/D converter.

B. ADC Program Overview
   The 12-bit ADC design has been completed and the photomask ordered. Processing is scheduled to start in January 1991. A no-cost extension of this contract to 31 August 1992 has been requested to complete processing and characterization of the 12-bit ADC.

II. PROGRESS REPORT

A. Process Development
   The process traveler has been generated for the new 12-bit ADC design and starting material has been received.

B. Circuit Design/Testing
   The 12-bit ADC design has been completed along with a timing generator required for testing the ADC. These designs have been integrated with the necessary Nikon stepper alignment marks and process monitors and photomasks have been ordered. Figure 1 illustrates the chip layout. In addition to the 12-bit ADC and timing circuits, the 5-bit ADC previously processed and characterized has been included as a large process monitor. Two test circuits designed by TI have also been included on the chip. The final die size is 370 x 380 mil². Processing of the 12-bit ADC is scheduled to start in January 1992 with approximately 6 months anticipated to be required to complete processing.

C. Personnel Assignments
   There have been no changes in personnel.
Figure 1. 12-bit ADC chip layout.

III. PLANS FOR NEXT QUARTER

Fabricate 12-bit ADC in the TI GaAs pilot line.

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