MICROWAVE RECEIVERS

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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MICROWAVE RECEIVERS

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Foreword

THE tremendous research and development effort that went into the development of radar and related techniques during World War II resulted not only in hundreds of radar sets for military (and some for possible peacetime) use but also in a great body of information and new techniques in the electronics and high-frequency fields. Because this basic material may be of great value to science and engineering, it seemed most important to publish it as soon as security permitted.

The Radiation Laboratory of MIT, which operated under the supervision of the National Defense Research Committee, undertook the great task of preparing these volumes. The work described herein, however, is the collective result of work done at many laboratories, Army, Navy, university, and industrial, both in this country and in England, Canada, and other Dominions.

The Radiation Laboratory, once its proposals were approved and finances provided by the Office of Scientific Research and Development, chose Louis N. Ridenour as Editor-in-Chief to lead and direct the entire project. An editorial staff was then selected of those best qualified for this type of task. Finally the authors for the various volumes or chapters or sections were chosen from among those experts who were intimately familiar with the various fields, and who were able and willing to write the summaries of them. This entire staff agreed to remain at work at MIT for six months or more after the work of the Radiation Laboratory was complete. These volumes stand as a monument to this group.

These volumes serve as a memorial to the unnamed hundreds and thousands of other scientists, engineers, and others who actually carried on the research, development, and engineering work the results of which are herein described. There were so many involved in this work and they worked so closely together even though often in widely separated laboratories that it is impossible to name or even to know those who contributed to a particular idea or development. Only certain ones who wrote reports or articles have even been mentioned. But to all those who contributed in any way to this great cooperative development enterprise, both in this country and in England, these volumes are dedicated.

L. A. DUBRIDGE.

Preface

THE receivers and circuits treated in this volume have sprung almost entirely from radar techniques. It is felt, however, that many of the features are applicable in other services where high sensitivity and excellent transient behavior are required. An attempt has been made to reach a sufficiently fundamental standpoint in the presentation to permit such use in allied fields.

The long and uninterrupted record of unstinting cooperation on the part of other laboratories and organizations, both industrial and government, has continued throughout the preparation of this book. Particular thanks are due to the Raytheon Manufacturing Company for the use of illustrative material for Chap. 13 and to the Hazeltine Corporation for the use of reports on which some of the discussion of Chap. 20 is based.

Entire credit for whatever coherence exists between this book and the others of the series as well as much of the credit for any internal coherence must go to the Technical Coordination Group.

S. N. VAN VOORHIS.

CAMBRIDGE, MASS.,
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