

# CONTENTS

Page

## Acknowledgements

vi

## 1 Introduction

- 1.1 Background
- 1.2 Philosophy
- 1.3 Structure

UNIVERSIDAD NACIONAL DEL ESTREMO  
FACULTAD DE INGENIERIA  
CENTRO DE MEDICINA  
BIBLIOTECA

## 2 Performance Tests for Imaging Machines

- 2.1 Introduction
- 2.2 Measurement accuracy
- 2.3 Total system sensitivity
- 2.4 Dynamic range
- 2.5 Registration
- 2.6 Geometric distortion
- 2.7 Hardcopy
- 2.8 M-mode equipment
- 2.9 Additional notes
- 2.10 Frequency of checks

3 096

4  
4  
16  
18  
23  
27  
27  
28  
29  
30

## 3 Test Equipment for Imaging Machines

- 3.1 Introduction
- 3.2 Perspex blocks
- 3.3 AIUM 100 mm test object
- 3.4 Tissue - mimicking phantoms
- 3.5 Delay line and rotating arm device
- 3.6 ASIST

32  
32  
32  
33  
34  
34

## 4 Performance Tests for Doppler Machines

- 4.1 Introduction
- 4.2 Doppler instrumentation — basic system blocks
- 4.3 Simple first line tests
- 4.4 Specialised performance tests
- 4.5 Frequency of checks

37  
37  
38  
38  
39

## 5 Test Equipment for Doppler Machines

- 5.1 Introduction
- 5.2 Flow rigs

40  
40

## 6 Performance Tests for Therapy Machines

- 6.1 Introduction
- 6.2 Performance checks

43  
43

## 7 Test Equipment for Therapy Machines

- 7.1 Introduction
- 7.2 Radiation pressure and its measurement
- 7.3 Plotting tank
- 7.4 Hydrophones

48  
48  
49  
49

## 8 Index of Suppliers

53