



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

O.111

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

SPECIFICATIONS FOR MEASURING EQUIPMENT

FREQUENCY SHIFT MEASURING EQUIPMENT FOR USE ON CARRIER CHANNELS

ITU-T Recommendation O.111

(Extract from the *Blue Book*)

0.111-1988

NOTES

1 ITU-T Recommendation O.111 was published in Fascicle IV.4 of the *Blue Book*. This file is an extract from the *Blue Book*. While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

2 In this Recommendation, the expression “Administration” is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

© ITU 1988, 1993

All rights reserved. No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the ITU.

Recommendation O.111

FREQUENCY SHIFT MEASURING EQUIPMENT FOR USE ON CARRIER CHANNELS

(Geneva, 1972; amended at Melbourne, 1988)

1 General

The equipment described below is compatible with the measuring method described in Annex A to this Recommendation.

2 Principle of operation

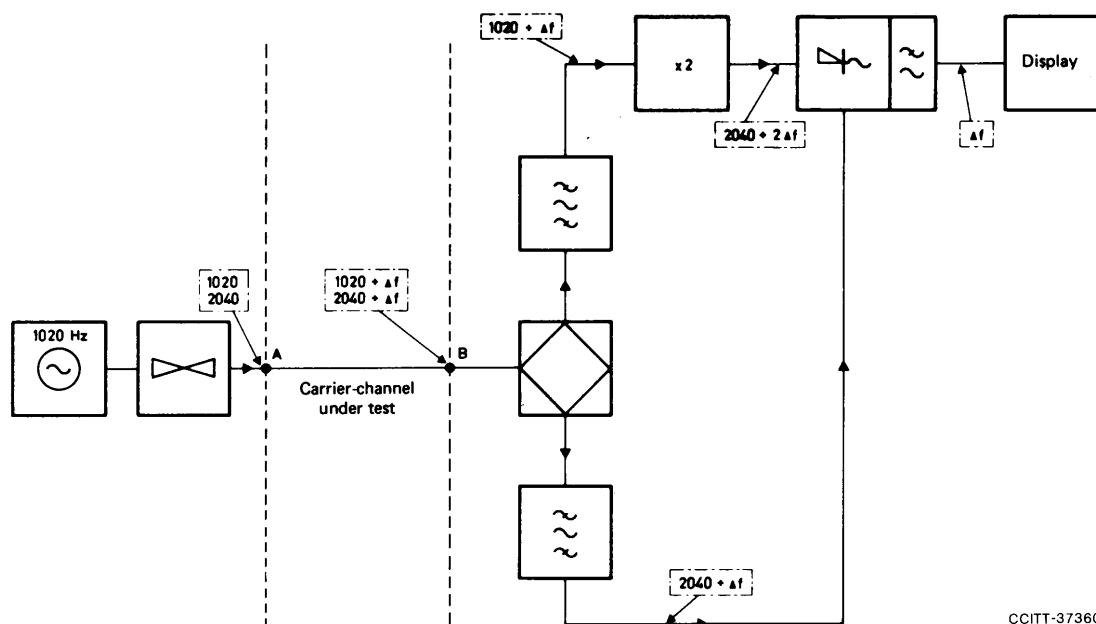
The instrument shall be capable of measuring the error in the reconstituted frequency of a carrier channel in the following modes:

Test 1: Measurement of frequency shift $A \rightarrow B$ (Δ Hz): transmitting from A and measuring at B (see Figure 1/O.111)

The sinusoidal test frequencies having a 2 : 1 harmonic relationship are transmitted simultaneously from A. At B these two test signals, each shifted in frequency by an amount Δ Hz, are modulated together in such a way as to detect Δ , the frequency shift in the AB direction.

Test 2: Measurement of loop frequency shift ($\Delta + \Delta'$ Hz) transmitting and measuring at A with the channels looped at B (see Figure 2/O.111)

This test is carried out in a similar manner to Test 1 and the loop frequency shift ($\Delta + \Delta'$ Hz) is detected.



CCITT-37360
d01-sc

FIGURE 1/O.111

Measurement of frequency shift on a carrier channel A→B,
transmitting from A and measuring at B