



EDC 6 (5323) P3
IEC 62908-13-10: 2016

DRAFT TANZANIA STANDARD

(Draft for comments only)

Touch and interactive displays - Part 13-10: Reliability test methods of touch displays - Environmental durability test methods

TANZANIA BUREAU OF STANDARDS

Draft for stakeholders' comments only

1 National Foreword

This draft Tanzania Standard is being prepared by the Communication Equipment Technical Committee, under the supervision of the Electrotechnical divisional standards committee (EDC)

This draft Tanzania Standard is an adoption of the International Standard **IEC 62908-13-10** *Touch and interactive displays - Part 13-10: Reliability test methods of touch displays - Environmental durability test methods*, Which has been prepared by the International Electrotechnical Commission.

2 Terminology and conventions

Some terminologies and certain conventions are not identical with those used in Tanzania standards; attention is drawn especially to the following: -

- a) The comma has been used as a decimal marker for metric dimensions. In Tanzania Standards, it is current practice to use “full point” on the baseline as the decimal marker.
- b) Where the words “International Standard(s)” appear, referring to this standard they should read “Tanzania Standard(s)”.

Draft for stakeholders' comments only

INTERNATIONAL STANDARD



**Touch and interactive displays –
Part 13-10: Reliability test methods of touch displays – Environmental
durability test methods**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 31.120

ISBN 978-2-8322-3795-3

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

FOREWORD	4
INTRODUCTION	6
1 Scope	7
2 Normative references	7
3 Terms, definitions and abbreviated terms	8
3.1 Terms and definitions	8
3.2 Abbreviated terms	8
4 Device under test (DUT)	8
4.1 General	8
4.2 Preparation of the DUT	8
4.3 Setup of touch display modules	8
4.4 Setup of touch sensor modules	8
4.5 Setup of test pattern cells	9
4.5.1 General	9
4.5.2 Test pattern cells for capacitive detection sensors	9
4.6 Number of duplicates and reference touch display module	9
5 Standard ambient conditions	10
6 Environmental test conditions	10
6.1 General	10
6.1.1 Standard environmental conditions	10
6.1.2 Recovery conditions	10
6.1.3 Operational control points for temperature and humidity	10
6.1.4 Operational fluctuations of temperature and humidity	10
6.2 Stressed environmental conditions during operation (performed after completion of the environmental durability test in the operational state)	10
6.2.1 Purpose	10
6.2.2 Test conditions	10
6.3 Stressed storage/transport conditions (performed after completion of the environmental durability test in the non-operational state)	12
6.3.1 Purpose	12
6.3.2 Test conditions	12
7 Environmental test methods.....	13
7.1 General	13
7.2 Test procedure	14
7.3 Electrical test	14
7.3.1 Touch display module	14
7.3.2 Touch sensor module	14
7.3.3 Test pattern cell	14
7.4 Touch function test	14
7.5 Optical performance test	14
Annex A (normative) Structure of touch display module	15
Bibliography	16
Figure 1 – Example setup of test pattern cell	9
Figure 2 – Example of applied pulse wave for the test	9
Figure A.1 – Touch panel module structure	15

Table 1 – Examples of the stressed environmental durability test conditions for use during the operational state..... 12

Table 2 – Examples of the environmental durability test conditions for use in the non-operational state 13

Draft for stakeholders' comments only

INTERNATIONAL ELECTROTECHNICAL COMMISSION

TOUCH AND INTERACTIVE DISPLAYS –

Part 13-10: Reliability test methods of touch displays –
Environmental durability test methods

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62908–13–10 has been prepared by IEC technical committee TC 110: Electronic display devices.

The text of this International Standard is based on the following documents:

CDV	Report on voting
110/748/CDV	110/790A/RVC

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62908 series, published under the general title *Touch and interactive displays*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This part of IEC 62908 was developed in response to the demand for standardization of the test methods for the endurance of touch displays.

The touch display is one of the most important interfaces between a user and a display. Various technologies for touch displays have been developed, and it is expected that touch display technology will make rapid progress in the future. This document is especially effective for capacitive and resistive touch displays.

Durability is one of the most important aspects of touch display modules. Touch displays connected to display modules are used under a variety of environmental conditions, including indoor/outdoor, hot/cold, dry/humid, for long periods of time and may be subjected to severe environmental stress.

This document describes standardized test methods to evaluate the durability of touch displays subjected to environmental stresses. It is valid for research and development, quality assurance, and comparison of devices when making purchasing decisions.

Draft for stakeholders' comments only

TOUCH AND INTERACTIVE DISPLAYS –

Part 13-10: Reliability test methods of touch displays – Environmental durability test methods

1 Scope

This part of IEC 62908 specifies the methods for testing the environmental durability of touch display modules, touch sensor modules and test pattern cells, and can be used for devices at the production level, the prototype level or the trial model level when they are exposed to environmental stress.

This document is applicable for touch displays that use capacitive or resistive detection sensors. It may also be applicable to other types of sensors as well as to touch display modules with both flat and flexible displays.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-1:2013, *Environmental testing – Part 1: General and guidance*

IEC 60068-2-1, *Environmental testing – Part 2-1: Tests – Test A: Cold*

IEC 60068-2-2, *Environmental testing – Part 2-2: Tests – Test B: Dry heat*

IEC 60068-2-14, *Environmental testing – Part 2-14: Tests – Test N: Change of temperature*

IEC 60068-2-30, *Environmental testing – Part 2: Tests – Test Db: Damp heat, cyclic (12 + 12 h cycle)*

IEC 60068-2-78, *Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state*

IEC 61747-30-1:2012, *Liquid crystal display devices – Part 30-1: Measuring methods for liquid crystal display modules – Transmissive type*

IEC 62908-1-2¹, *Touch and interactive displays – Part 1-2: Generic – Terminology and letter symbols*

IEC 62908-12-10², *Touch and interactive displays – Part 12-10: Measurement methods of touch displays – Touch and electrical performance*

¹

²