IEC TR 63071

Edition 1.0 2016-12

TECHNICAL REPORT

colour inside

Power supplying scheme for wearable systems and equipment



IEC TR 63071:2016-12(en)



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IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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Power supplying scheme for wearable systems and equipment

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 29.200

ISBN 978-2-8322-3685-7

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CONTENTS

FOREWORD 3
INTRODUCTION 5
1 Scope 6
2 Normative references 6
3 Terms and definitions 6
4 System model 6
4.1 General 6
4.2 Existing model 6
4.3 System models of wearable devices 7
4.3.1 Wearable devices 7
4.3.2 Charging and connections 8
4.3.3 Generator utilizing physical activity of organism 8
5 Use case 9
5.1 General 9
5.2 Use case examples 9
5.2.1 Generator in shoes 9
5.2.2 Animal tracking 9
6 Interface 10
7 Measurement method 10
Bibliography 12

Figure 1 – Solar cell with a secondary battery wristwatch 7
Figure 2 – Generator with secondary battery 7
Figure 3 – Generator in shoe 9
Figure 4 – Animal use 10

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POWER SUPPLYING SCHEME FOR WEARABLE SYSTEMS AND EQUIPMENT

FOREWORD

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IEC TR 63071, which is a Technical Report, has been prepared by IEC technical committee 100: Audio, video and multimedia systems and equipment.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
100/2751/DTR	100/2816/RVC

Full information on the voting for the approval of this technical report 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.

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

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INTRODUCTION

Wearable devices are being introduced into the market, but each device employs its own power charging method and power source device. Wearable devices are used to support human life and health. The duration and life of the power source, as well as easy charging and replacing of a power source, is a crucial factor for wearable devices that are primarily powered by batteries. A power generator is one solution for this power duration or life, since it provides power generated by user activities and/or also from environmental sources. Also, connectivity and compatibility of power and data transmission is important.

This Technical Report does not specify the power generating or energy harvesting methods and devices themselves, but focuses on interoperability and measurement methods of power-suppling devices and systems.

POWER SUPPLYING SCHEME FOR WEARABLE SYSTEMS AND EQUIPMENT

1 Scope

This document provides models and frameworks for the power-supplying scheme for wearable systems and equipment. This document does not specify power generating or energy harvesting methods and the devices themselves.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
energy harvest
technique to obtain energy from surroundings such as electric power from the activity of organisms

3.2
kinetic generator
generator that utilizes kinetic energy to generate electric power

4 System model

4.1 General

The power-supplying system for audio, video and multimedia systems and equipment can be applicable to wearable systems and equipment. Among them, the power supplying systems of energy harvesting devices or systems are suitable for the wearable devices because they generate energy.

Energy-harvesting devices or systems have already been used in various pieces of equipment such as electronic wrist watches. The existing model is described in 4.2.

4.2 Existing model

A major existing model of wearable equipment and power supply is the electronic wristwatch. Power supply methods for electronic wristwatches include:

- primary batteries,
- secondary batteries,
- solar cells with secondary batteries,