

INTERNATIONAL STANDARD

**Dynamic modules –
Part 4-1: Software and hardware interface – 1 × 9 wavelength selective switch**



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IEC Central Office
3, rue de Varembe
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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INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 33.180.20

ISBN 978-2-8322-3199-9

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CONTENTS

FOREWORD.....	3
INTRODUCTION.....	5
1 Scope.....	6
2 Normative references.....	6
3 Terms, definitions and abbreviations	6
3.1 Terms and definitions	6
3.2 Abbreviations	6
4 Basic configuration of WSS interface.....	7
5 Software interface	8
6 Hardware interface – Electrical connector	11
Annex A (informative) Hardware interface details.....	12
Annex B (informative) DPRAM memory map details and timing charts.....	14
Bibliography	30
Figure 1 – Basic configuration of WSS interface	7
Figure B.1 – DPRAM READ CYCLE timing	25
Figure B.2 – DPRAM WRITE CYCLE timing.....	26
Figure B.3 – POWER ON timing	26
Figure B.4 – START timing.....	27
Figure B.5 – MASTER RESET timing	27
Figure B.6 – SOFT RESET timing	28
Figure B.7 – DPRAM BUSY timing	28
Figure B.8 – ALARM timing	29
Table 1 – Software interface	9
Table 2 – DPRAM memory map	10
Table A.1 – Connector form	12
Table A.2 – Pin assignment	12
Table A.3 – Supply voltages and currents.....	13
Table A.4 – Low voltage TTL thresholds	13
Table A.5 – Power consumption	13
Table B.1 – DPRAM memory map specification A	14
Table B.2 – DPRAM memory map specification B	15
Table B.3 – Signal time specification.....	24

INTERNATIONAL ELECTROTECHNICAL COMMISSION

DYNAMIC MODULES –

Part 4-1: Software and hardware interface –
1 x 9 wavelength selective switch

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The text of this standard is based on the following documents:

CDV	Report on voting
86C/1304/CDV	86C/1346/RVC

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

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

A list of all parts in the IEC 62343 series, published under the general title *Dynamic modules*, can be found on the IEC website.

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

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

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INTRODUCTION

A wavelength selective switch (WSS) is a dynamic module, which is mainly used in a reconfigurable optical add drop multiplexer (ROADM) system to switch all wavelength signals to their respective required output port in dense wavelength division multiplexing (DWDM) networks. The WSS module has one input port and a plurality of output ports (i.e. $1 \times N$ WSS) and can be used reversely, such as N input ports and one output port, depending on its application. It is electrically controlled with software, which directs each wavelength signal among an input DWDM signal from one input port to the required output port for each wavelength signal.

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DYNAMIC MODULES –

Part 4-1: Software and hardware interface – 1 x 9 wavelength selective switch

1 Scope

This part of IEC 62343 describes and provides specifications for a software and hardware interface for the 1 x 9 wavelength selective switch.

These switches can be controlled by resident firmware with this interface. This standard addresses the configuration and function to control a WSS. This interface is intended to enable a user or host to retrieve the switch status and/or adjust relevant switch and attenuation settings.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050-731, *International Electrotechnical Vocabulary – Chapter 731: Optical fibre communication* (available at <http://www.electropedia.org>)

IEC 62343, *Dynamic modules - General and guidance*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-731 and IEC 62343, as well as the following apply.

3.1.1

wavelength selective switch

WSS

dynamic module with one or more input ports and one or more output ports, which is mainly used in a reconfigurable optical add drop multiplexer (ROADM) system to switch each wavelength signal on each input port independently to its required output port in DWDM network.

Note 1 to entry: It is electrically controlled with software.

Note 2 to entry: It can be used inverted, exchanging input and output ports.

Note 3 to entry: Each wavelength signal can be independently attenuated.

3.2 Abbreviations

For the purposes of this document, the following abbreviations apply.

DWDM dense wavelength division multiplexing

WSS wavelength selective switch