

NOTICE

This information applies to the Bit Analyzer Series

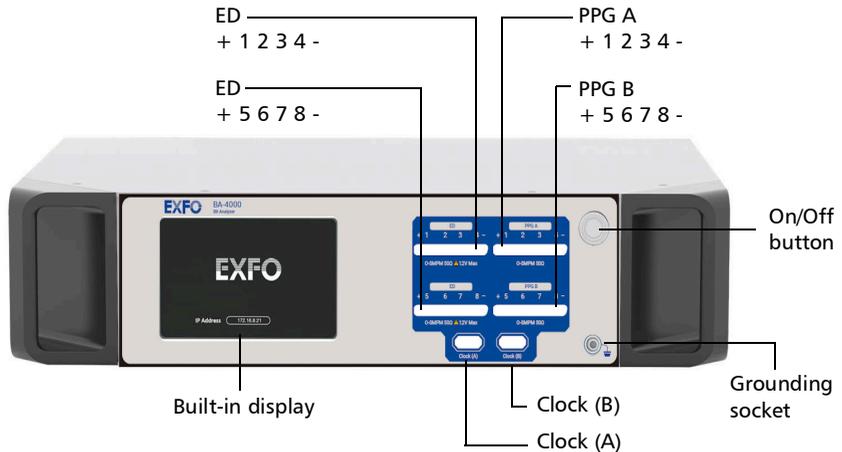
Important Information

Note: Before getting started with the EXFO Bit Analyzer Series, first read the important safety information provided in this notice. For additional information, refer to the Bit Analyzer Series user guide available at www.exfo.com.

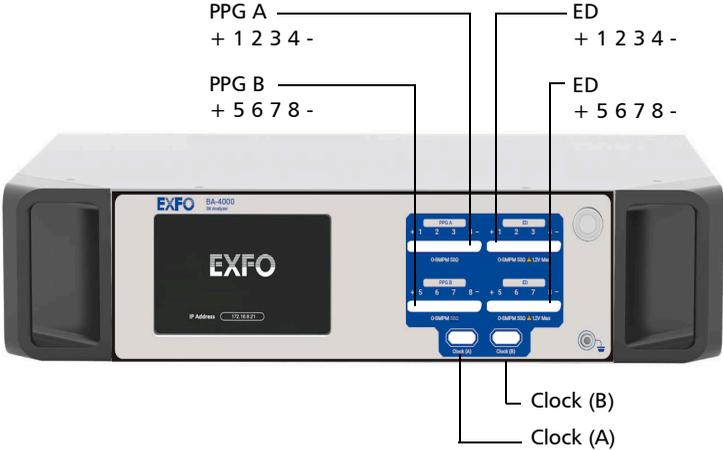
Overview

The Bit Analyzer Series is designed for lab and manufacturing testing of electrical 100G/400G bit error rate (BER). The Bit Analyzer Series includes the following models shown as examples for connector locations:

- BA-4000-8-56-PAM-FEC8-FGC8 front view



➤ BA-4000-8-28-NRZ front view



➤ Bit Analyzer Series back view



Note: For compliance to EMC requirements in industrial locations, a ferrite (Würth Elektronik P/N 74271131 or equivalent) must be placed on the Ethernet cable, near the Ethernet port on your instrument.

► Testing Ports

Port Labelled	Description	Supported Signal(s)
ED + 1 2 3 4 -	Electrical input: Error Detector	O-SMPM 50Ω 1.2V Max
PPG A + 1 2 3 4 -	Electrical output: Pulse Pattern Generator A	O-SMPM 50Ω
ED + 5 6 7 8 -	Electrical input: Error Detector	O-SMPM 50Ω 1.2V Max
PPG B + 5 6 7 8 -	Electrical output: Pulse Pattern Generator B	O-SMPM 50Ω
Clock (A)	Clock output: SMA	The generated clock frequency is based on the symbol rate and the selected clock ratio.
Clock (B)	Clock output: SMA	The generated clock frequency is based on the symbol rate and the selected clock ratio.

Grounding The Unit

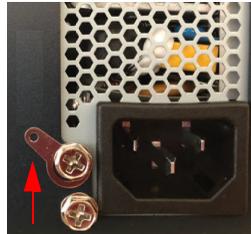


CAUTION

Electrostatic Discharge (ESD) Sensitive Equipment: Electronic equipment can be damaged by static electrical discharge. To minimize the risk of damage, dissipate static electricity by touching a grounded unpainted metal object before handling the product.

One of the following grounding methods can be used to protect the unit against electrostatic discharge (ESD) or poor grounding.

- Use a wire and the grounding lug provided at the rear of the unit. Connect the wire to the unit and the other end to the grounding wire of the work bench.
- Use an alligator clip grounding wire (supplied). Connect the wire to the front unit grounding socket and the other end to the grounding wire of the work bench.
- Use a button-type grounding wire (supplied). Connect the wire the front unit grounding socket and the other end to the anti-static mat on the work bench.



Regulatory Information

USA Electromagnetic Interference Regulatory Statement

Electronic test and measurement equipment is exempt from FCC part 15, subpart B compliance in the United States of America. However, EXFO Inc. makes reasonable efforts to ensure compliance to the applicable standards.

The limits set by these standards are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the user documentation, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Canada Electromagnetic Interference Regulatory Statement

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference.

Cet équipement génère, utilise et peut émettre de l'énergie radio-fréquence et, s'il n'est pas installé et utilisé conformément à la documentation de l'utilisateur, il peut occasionner une interférence néfaste aux communications radio. L'utilisation de cet équipement dans une zone résidentielle est susceptible d'occasionner une interférence néfaste.

Caution: This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.

Attention : Cet appareil n'est pas destiné à être utilisé dans des environnements résidentiels et peut ne pas assurer la protection adéquate à la réception radioélectrique dans ce type d'environnements.

This is a class A, group 1 product.

Ceci est un produit de classe A, groupe 1.

- Class A equipment: Equipment that is, by virtue of its characteristics, highly unlikely to be used in a residential environment, including a home business shall be classified as class A and shall comply with the class A limits specified in the applicable ICES standard. Characteristics considered in this assessment include price, marketing and advertising methodology, the degree to which the functional design inhibits applications suitable to residential environments, or any combination of features that would effectively preclude the use of such equipment in a residential environment.

Classe A : Matériel qui, en raison de ses caractéristiques, ne sera fort probablement pas utilisé dans un milieu domiciliaire ni par des entreprises établies à domicile. Parmi les caractéristiques considérées dans cette évaluation, il y a le prix, les méthodes de commercialisation et de publicité, la mesure dans laquelle les fonctions de l'appareil font qu'il ne se prête pas à des applications convenant au milieu domiciliaire ou toute combinaison de ces caractéristiques qui aurait pour conséquence d'en prévenir effectivement l'utilisation à domicile. Utilisé également pour indiquer les limites d'émission correspondantes qui s'appliquent à un tel matériel.

- Class B equipment: Equipment that cannot be classified as Class A shall comply with the Class B limits specified in the applicable ICES standard.

Classe B : Matériel qui ne peut pas être inclus dans la classe A. Utilisé également pour indiquer les limites d'émission correspondantes qui s'appliquent à un tel matériel.

- Group 1 equipment: group 1 contains all equipment which is not classified as group 2 equipment, and includes equipment such as laboratory and scientific equipment, industrial process, measurement and control equipment.

Group 2 equipment: group 2 contains all ISM RF equipment in which radio-frequency energy in the frequency range 9 kHz to 400 GHz is intentionally generated and used or only used locally, in the form of electromagnetic radiation, inductive and/or capacitive coupling, for the treatment of material for inspection/analysis purposes, or for transfer of electromagnetic energy.

Appareils du groupe 1 : le groupe 1 réunit tous les appareils compris dans le domaine d'application de la présente Norme, qui ne sont pas classés comme étant des appareils du groupe 2. Le groupe 1 inclut les appareils scientifiques et de laboratoire, les processus industriels, appareils de mesure ou de contrôle.

Appareils du groupe 2 : le groupe 2 réunit tous les appareils ISM à fréquences radioélectriques dans lesquels de l'énergie à fréquences radioélectriques dans la plage de fréquences comprises entre 9 kHz et 400 GHz est produite et utilisée volontairement ou uniquement utilisée localement sous forme de rayonnement électromagnétique, de couplage inductif et/ou capacitif, pour le traitement de la matière, à des fins d'examen ou d'analyse ou pour le transfert d'énergie électromagnétique.

Supplier's Declaration of Conformity (SDoC)

The SDoC for your product is as follows:

CAN ICES-001 (A) / NMB-001 (A)

EU and UK Electromagnetic Compatibility Regulatory Statement

Warning: This is a class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures. Your product is suitable for use in industrial electromagnetic environments.

Simplified EU and UK Declaration of Conformity

The full text of the declaration of conformity is available at the following Internet address: www.exfo.com/en/resources/legal-documentation.

EU Economic Operator

EXFO Solutions SAS
2, rue Jacqueline Auriol,
Saint-Jacques-de-la-Lande,
35091 Rennes Cedex 9
FRANCE

General Safety Information



WARNING

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.



WARNING

Use only accessories designed for your unit and approved by EXFO. For a complete list of accessories available for your unit, refer to its technical specifications or contact EXFO.



IMPORTANT

Refer to the documentation provided by the manufacturers of any accessories used with your EXFO product. It may contain environmental and/or operating conditions limiting their use.



IMPORTANT

When you see the following symbol on your unit , make sure that you refer to the instructions provided in your user documentation. Ensure that you understand and meet the required conditions before using your product.



IMPORTANT

Other safety instructions relevant for your product are located throughout this documentation, depending on the action to perform. Make sure to read them carefully when they apply to your situation.



CAUTION

The use of voltages higher than those indicated on the label affixed to your unit may damage the unit.

Other Safety Symbols on Your Unit

One or more of the following symbols may also appear on your unit.

Symbol	Meaning
	Alternating current
	The unit is equipped with an earth (ground) terminal.
	On/off (Power)

Your unit uses an international safety standard three-wire power cable. This cable serves as a ground when connected to an appropriate AC power outlet.



WARNING

- If you need to ensure that the unit is completely turned off, disconnect the power cable.
- Use only the certified power cord that is suitably rated for the country where the unit is used.
- Replacing detachable MAINS supply cords by inadequately RATED cords may result in overheating of the cord and create a risk of fire.



WARNING

- Use this unit indoors only.
- Do not remove unit covers during operation.
- Operation of any electrical instrument around flammable gases or fumes constitutes a major safety hazard.
- To avoid electrical shock, do not operate the unit if any part of the outer surface (covers, panels, etc.) is damaged.
- Only authorized personnel should carry out adjustments, maintenance or repair of opened units under voltage. A person qualified in first aid must also be present. Do not replace any components of the Bit Analyzer Series while the power cable is connected.
- Unless otherwise specified, all interfaces are intended for connection to ES1 circuits only.
- Capacitors inside the unit may be charged even if the unit has been disconnected from its electrical supply.



CAUTION

Position the unit so that the air can circulate freely around it.

Equipment Ratings

Equipment Ratings	
Temperature	
▶ Operation	0 °C to 40 °C (32 °F to 104 °F)
▶ Storage	-40 °C to 70 °C (-40 °F to 158 °F)
Relative humidity ^a	10 % to 95 % non-condensing
Maximum operation altitude	3000 m (9842 ft)
Pollution degree	2
Overvoltage category	II
Measurement category	Not rated for measurement categories II, III, or IV
Input power ^b	100 - 240 V ~ ; 47 - 63 Hz; 1 A

- a. Measured in 0 °C to 31 °C (32 °F to 87.8 °F) range, decreasing linearly to 50 % at 40 °C (104 °F).
 b. Not exceeding ± 10 % of the nominal voltage.

General Maintenance

To help ensure long, trouble-free operation:

- Keep the unit free of dust.
- Clean the unit casing and front panel with a cloth slightly dampened with water.
- Store unit at room temperature in a clean and dry area. Keep the unit out of direct sunlight.
- Avoid high humidity or significant temperature fluctuations.
- Avoid unnecessary shocks and vibrations.
- If any liquids are spilled on or into the unit, turn off the power immediately, disconnect from any external power source, and let the unit dry completely.

Recycling and Disposal



This symbol on the product means that you should recycle or dispose of your product (including electric and electronic accessories) properly, in accordance with local regulations. Do not dispose of it in ordinary garbage receptacles.

For complete recycling/disposal information, visit the EXFO Web site at www.exfo.com/recycle.

Contacting the Technical Support Group

To obtain after-sales service or technical support for this product, contact EXFO at one of the following numbers. The Technical Support Group is available to take your calls from Monday to Friday, 8:00 a.m. to 7:00 p.m. (Eastern Time in North America).

Technical Support Group

400 Godin Avenue
Quebec (Quebec) G1M 2K2
CANADA

1 866 683-0155 (USA and Canada)
Tel.: 1 418 683-5498
Fax: 1 418 683-9224
support@exfo.com

For detailed information about technical support, and for a list of other worldwide locations, visit the EXFO Web site at www.exfo.com.

If you have comments or suggestions about this user documentation, you can send them to customer.feedback.manual@exfo.com.

To accelerate the process, please have information such as the name and the serial number (see the product identification label), as well as a description of your problem, close at hand.

CHINESE REGULATION ON RESTRICTION OF HAZARDOUS SUBSTANCES (RoHS) 中国关于有害物质限制的规定						
NAMES AND CONTENTS OF THE TOXIC OR HAZARDOUS SUBSTANCES OR ELEMENTS CONTAINED IN THIS EXFO PRODUCT 包含在本 EXFO 产品中的有毒有害物质或元素的名称及含量						
Part Name 部件名称	Lead 铅 (Pb)	Mercury 汞 (Hg)	Cadmium 镉 (Cd)	Hexavalent Chromium 六价铬 (Cr(VI))	Polybrominated biphenyls 多溴联苯 (PBB)	Polybrominated diphenyl ethers 多溴二苯醚 (PBDE)
Enclosure 外壳	O	O	O	O	O	O
Electronic and electrical sub-assembly 电子和电气组件	X	O	X	O	X	X
Optical sub-assembly ^a 光学组件 ^a	X	O	O	O	O	O
Mechanical sub-assembly ^a 机械组件 ^a	O	O	O	O	O	O
<p>Note: 注:</p> <p>This table is prepared in accordance with the provisions of SJ/T 11364. 本表依据 SJ/T 11364 的规定编制。</p> <p>O: Indicates that said hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572. O: 表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 标准规定的限量要求以下。</p> <p>X: indicates that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572. Due to the limitations in current technologies, parts with the “X” mark cannot eliminate hazardous substances. X: 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 标准规定的限量要求。</p> <p>标记“X”的部件，皆因全球技术发展水平限制而无法实现有害物质的替代。</p> <p>a. If applicable. 如果适用。</p>						

MARKING REQUIREMENTS
标注要求

Product 产品	Environmental protection use period (years) 环境保护使用期限 (年)	Logo 标志
This EXFO product 本 EXFO 产品	10	
Battery ^a 电池	5	

a. If applicable.
如果适用。