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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 5095.2303-2021

**Electromechanical components for electronic equipment - Basic testing procedures and
measuring methods - Part 23-3: Screening and filtering tests - Test 23c: Shielding
effectiveness of connectors and accessories - Line injection method**

Issued on: March 9, 2021

Implemented on: October 1, 2021

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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Foreword

GB/T 5095 "Basic test procedures and measurement methods for electromechanical components for electronic equipment" is divided into several parts according to the test methods.

Part 23 of GB/T 5095 is shielding and filtering test. The parts that have been released or planned to be released are as follows.

---Part 23-3. Shielding and Filtering Test Test 23c. The shielding effect line injection method of connectors and accessories;

---Part 23-4. Shielding and filtering test test 23d. reflection of transmission line in the time

domain;

--- Part 23-7. Shielding and Filtering Test Test 23g. The effective transfer impedance of the connector.

This part is part 23-3 of GB/T 5095.

This section was drafted in accordance with the rules given in GB/T 1.1-2009.

The translation method used in this part is equivalent to the IEC 60512-23-3.2018 "Test and Measurement of Connectors for Electrical and Electronic Equipment No.

Part 23-3. Shielding and Filtering Test Test 23c. Line Injection Method for Shielding Effect of Connectors and Accessories".

The Chinese documents that have a consistent correspondence with the international documents cited in this section are as follows.

---GB/T 4210-2015 Electrotechnical terminology electromechanical components for electronic equipment (IEC 60050-581.2008, IDT);

---GB/T 5095.1-1997 Basic test procedures and measurement methods for electromechanical components for electronic equipment Part 1. General (IEC 60512-1.1994, IDT);

---GB/T 31723.406-2015 Metal Communication Cable Test Method Part 4-6. Electromagnetic Compatibility Surface Transfer Impedance

Line injection method (IEC 62153-4-6.2006, IDT).

This section has made the following editorial changes.

---The standard name is composed of "Connector Test and Measurement for Electrical and Electronic Equipment Part 23-3. Shielding and Filtering Test Test

23c. The Shielding Effect Line Injection Method for Connectors and Accessories is revised to the Basic Test Procedures and Measurements for Electromechanical Components for Electronic Equipment

Measurement Method Part 23-3. Shielding and Filtering Test Test 23c. Shielding Effect Line Injection Method for Connectors and Accessories";

--- Delete "Note 2" and "Note 4" in "1 Scope".

1 Scope

This part of GB/T 5095 specifies the measurement of shielded connectors or shielded accessories and terminated shielded cables without providing overall shielding

The standard test method for the shielding effect of the connector.

Note 1. According to the geometry of the connector, in fact, it is not always possible to achieve continuous complete shielding.

This test method is suitable for shielded connectors and connector accessories with shielding capabilities, and can test the following connectors with different structures.

- Circular connector;
- Rectangular connector;
- Printed board connector;
- Connector shielding accessories.

Note 2. For the definition of accessories, see IEC 61881-24-10. Shielded accessories, that is, accessories that provide shielding functions for unshielded connectors, which can provide electrical continuity

Appropriate shielding shell, inter-matching connector device, also can be the metal mounting surface of the free-end cable connector shell and the fixed-end connector shell

The shielding layer between the shielded cables. A cable shield clamp is provided on the shell of the free end connector.

The principle of this test method is to use the inherent shielding characteristics of the connector/accessory/cable assembly, and its surface transfer impedance can be expressed as shielding

The ratio of the longitudinal voltage in the layer to the current on the surface of the housing.

The test method is based on two impedance-matched circuits, and the test principle is shown in Figure 1. The connector under test is incorporated in the secondary circuit

The injection line that activates the electromagnetic field impedance matching in loop 01 is arranged in parallel on the surface of the test sample.

This test method is also suitable for measuring the shielding of connectors equipped with triaxial contacts, twisted-pair shielded cables, and connectors used in data bus systems.

Description.

Z01 --- primary loop characteristic impedance; P1 --- primary loop power;

Z02 --- secondary loop characteristic impedance; P2f --- secondary loop remote power;

L --- length of coupling section; P2n --- near-end power of secondary loop.

Figure 1 Principle of line injection method