

**Description**

The Model 4200-MTRX-X Triax Cable connects the installed Source-Measurement Unit (SMU) in the Model 4200-SCS (Semiconductor Characterization System) to the device under test (DUT).

Model 4200-MTRX-X (Figure 1) consists of standard triax cable terminated with a miniature male triax connector on one end and a standard 3-slot male triax connector on the other end.

The miniature triax connector mates to the FORCE connector on the 4210-SMU or 4200-SMU installed in the system. The standard triax connector connects to the test fixture or probe station holding the DUT.

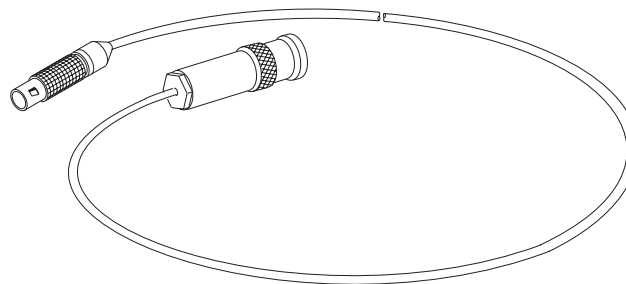
**CAUTION**     **The Model 4200-MTRX Triax Cable is intended for connection only to an SMU that does not have a PreAmp installed. NEVER make connection to any miniature triax connector on an SMU if a PreAmp is installed. Otherwise, damage to the SMU and/or the DUT, and/or corrupt data may occur.**

The 4200-MTRX-X is available in three lengths. The -X in the model number represents the cable length in meters, as listed in Table 1.

*Table 1*  
**Cable lengths**

<b>Model no.</b>	<b>Cable length</b>
4200-MTRX-1	1 meter
4200-MTRX-2	2 meters
4200-MTRX-3	3 meters

*Figure 1*  
**Model 4200-MTRX-X cable**



**Electrical specifications**

Electrical Impedance: 50 Ω

Frequency Range: 0 - 4GHz

Working Voltage:

    Inner Shield to Outer Shield: 250 VDC

    Ctr. Conductor to Outer Shield: 250 VDC

    Ctr. Conductor to Inner Shield: <100V

Insulation Resistance: 1 × 10<sup>13</sup> Ω Minimum

Operating Environment: 0°- 50° C , up to 70% RH @ ≤ 35°C

Center Conductor Resistance: <0.1 Ω/ft

# Safety Precautions

This product is intended for use by qualified personnel who recognize shock hazards and are familiar with the safety precautions required to avoid possible injury. Read the operating information carefully before using the product.

## General Definitions

The types of product users are:

**Responsible body** is the individual or group responsible for the use and maintenance of equipment, and for ensuring that operators are adequately trained.

**Operators** use the product for its intended function. They must be trained in electrical safety procedures and proper use of the instrument. They must be protected from electric shock and from contact with hazardous live circuits.

**Maintenance personnel** perform routine procedures on the product to keep it operating; for example, setting the line voltage or replacing consumable materials. Maintenance procedures are described in the manual. The procedures explicitly state whether the operator may perform them. Otherwise, procedures should be performed only by service personnel.

**Service personnel** are trained to work on live circuits, and perform safe installations and repairs of products. Only properly trained service personnel may perform installation and service procedures.



This symbol on an instrument indicates that the user should refer to the operating instructions located in the manual.



This symbol on an instrument shows that it can source or measure 1000 volts or more, including the combined effect of normal and common mode voltages. Use standard safety precautions to avoid personal contact with these voltages.

The **WARNING** heading explains dangers that might result in personal injury or death. Always read the associated information very carefully before performing the indicated procedure.

The **CAUTION** heading explains hazards that could damage the instrument. Such damage may invalidate the warranty.

## Operation

Exercise extreme caution when a shock hazard may be present. Lethal voltage may be present on cable connector jacks or test fixtures. The American National Standards Institute (ANSI) states that a shock hazard exists when voltage levels greater than 30V RMS, 42.4V peak, or 60VDC are present. **A good safety practice is to expect that hazardous voltage is present in any unknown circuit before measuring.**

For maximum safety, do not touch the product, test cables, or any other instruments while power is applied to the circuit under test. ALWAYS remove power from the entire test system and discharge any capacitors before: connecting or disconnecting cables or jumpers, installing or removing switching cards, or making internal changes, such as installing or removing jumpers.

Do not touch any object that could provide a current path to either the common side of the circuit under test or to the power line (earth) ground. Always make measurements with dry hands while standing on a dry, insulated surface capable of withstanding the voltage being measured.

Do not exceed the maximum signal levels of the instruments and accessories, as defined in the specifications and operating information, and as shown on the instrument or test fixture panels, or switching card.

Chassis connections must only be used as shield connections for measuring circuits, NOT as safety earth ground connections.

If using a test fixture, keep the lid closed while power is applied to the device under test. Safe operation requires the use of a lid interlock.

Instrumentation and accessories shall not be connected to humans.

## Maintenance and Service

Inspect the connecting cables, test leads, and jumpers for possible wear, cracks, or breaks before each use. Before performing any maintenance, disconnect the line cord and all test cables.

## Cleaning

Keep the connections free of contaminants (such as dirt, oil, etc.) in order to maintain maximum insulation resistance. If the connections become contaminated, clean them thoroughly with methanol and allow them to dry completely before use.