



Compact EGC Outdoor Amplifier Type 93451

Installation and Setup Instructions

Application

The Compact EGC Outdoor Amplifier type 93451 has one active output and is used in trunk and distribution applications. The unit can be monitored via the compact transponder and the ROSA Element Management System. All equalizers and pads are electronic and can be set with the handheld terminal type 91200. The plug-in filters in the reverse path allow flexible choice of frequency range for both forward and reverse path.

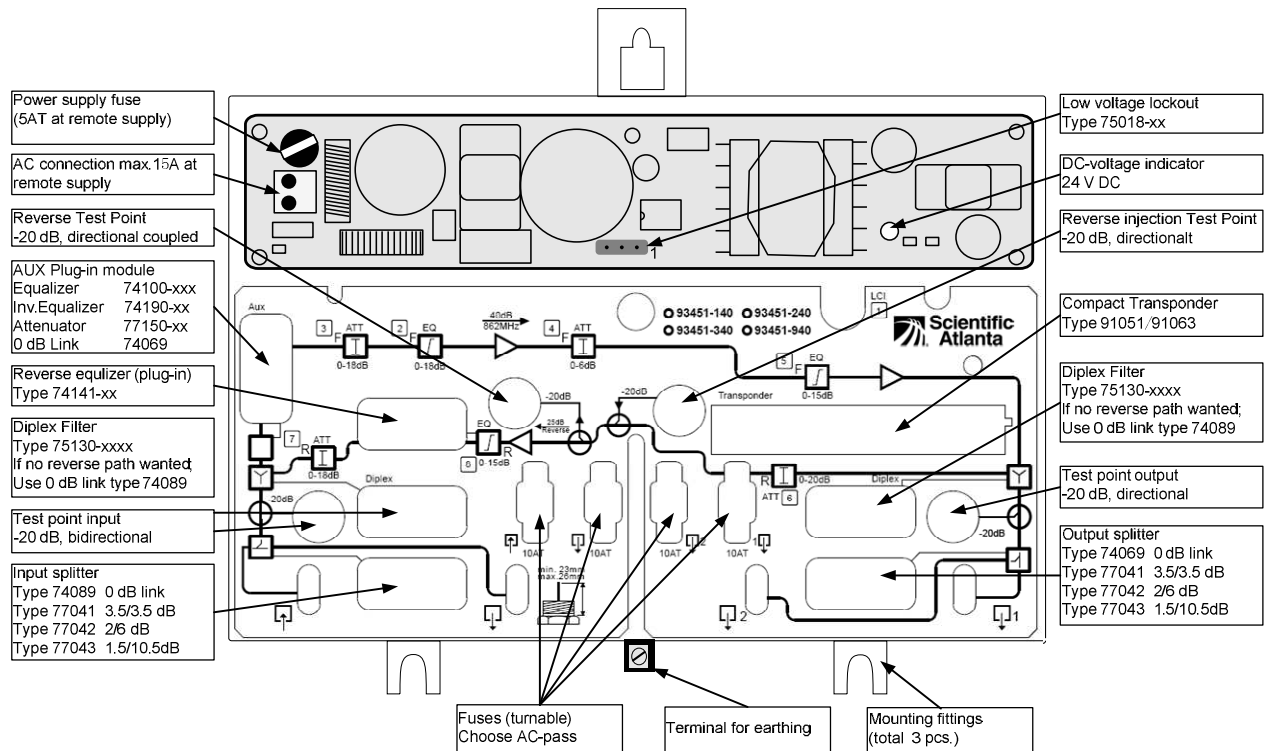


Figure 1 - Overview

Important Safety Instructions

Follow Instructions and Heed Warnings

Follow all operating and use instructions. Pay attention to all warnings and cautions in the operating instructions, as well as those that are affixed to this equipment.

Terminology

The terms defined below are used in this document. The definitions given are based on those found in safety standards.

Service Personnel - The term *service personnel* applies to trained and qualified individuals who are allowed to install, replace, or service electrical equipment. The service personnel are expected to use their experience and technical skills to avoid possible injury to themselves and others due to hazards that exist in service and restricted access areas.

User and Operator - The terms *user* and *operator* apply to persons other than service personnel.

Ground(ing) and Earth(ing) - The terms *ground(ing)* and *earth(ing)* are synonymous. This document uses *ground(ing)* for clarity, but it can be interpreted as having the same meaning as *earth(ing)*.

Electric Shock Hazard

This equipment meets applicable safety standards.



WARNING:

Avoid electric shock! Opening or removing the equipment cover may expose you to dangerous voltages. Refer all servicing to qualified service personnel only.

Electric shock can cause personal injury or even death. Avoid direct contact with dangerous voltages at all times.

Know the following safety warnings and guidelines:

- Only qualified service personnel are allowed to perform equipment installation or replacement.
- Only qualified service personnel are allowed to remove equipment covers and access any of the components inside the chassis.

Equipment Placement



WARNING:

Avoid personal injury and damage to this equipment. An unstable mounting surface may cause this equipment to fall.

To protect against equipment damage or injury to personnel, comply with the following:

- Install this equipment in a restricted access location (access restricted to service personnel).
- Make sure the mounting surface or rack is stable and can support the size and weight of this equipment.

Continued on next page

Important Safety Instructions, continued

Pedestal, Service Closet, Equipment Room or Underground Vault Installation



WARNING:

Avoid the possibility of personal injury. Ensure proper handling/lifting techniques are employed when working in confined spaces with heavy equipment.

- Ensure this equipment is securely fastened to the mounting surface or rack where necessary to protect against damage due to any disturbance and subsequent fall.
- Ensure the mounting surface or rack is appropriately anchored according to manufacturer's specifications.
- Ensure the installation site meets the ventilation requirements given in the equipment's data sheet to avoid the possibility of equipment overheating.
- Ensure the installation site and operating environment is compatible with the equipment's International Protection (IP) rating specified in the equipment's data sheet.

Connecting to Utility AC Power

Important: If this equipment is a Class I equipment, it must be grounded.

- If this equipment plugs into an outlet, the outlet must be near this equipment, and must be easily accessible.
- Connect this equipment only to the power sources that are identified on the equipment-rating label, which is normally located close to the power inlet connector(s).
- This equipment may have two power sources. Be sure to disconnect all power sources before working on this equipment.
- If this equipment **does not** have a main power switch, the power cord connector serves as the disconnect device.
- Always pull on the plug or the connector to disconnect a cable. Never pull on the cable itself.

AC Power Shunts

AC power shunts may be provided with this equipment.

Important: The power shunts (where provided) must be removed before installing modules into a powered housing. With the shunts removed, power surge to the components and RF-connectors is reduced.



CAUTION:

RF connectors and housing seizure assemblies can be damaged if shunts are not removed from the equipment before installing or removing modules from the housing.

Continued on next page

Important Safety Instructions, continued

Grounding (Utility AC Powered Equipment in Pedestals, Service Closets, etc.)

This section provides instructions for verifying that the equipment is properly grounded.

Safety Plugs (USA Only)

This equipment is equipped with either a 2-terminal (polarized) safety plug. The wide blade or the third terminal is provided for safety. Do not defeat the safety purpose of the grounding-type or polarized safety plug.

To properly ground this equipment, follow these safety guidelines:

- **Polarized Plug** - For a 2-terminal plug (a polarized plug with one wide blade and one narrow blade), insert the plug into a polarized mains, 2-terminal outlet in which one socket is wider than the other.

Note: If this plug cannot be fully inserted into the outlet, try reversing the plug. If the plug still fails to fit, contact an electrician to replace the obsolete 2-terminal outlet.

Grounding Terminal


If this equipment is equipped with an external grounding terminal, attach one end of an AWG18 wire (or larger, it should be green with yellow strip if insulated wire used) or bare CU wire to the grounding terminal; then, attach the other end of the wire to a ground, such as a grounded equipment rack.

Safety Plugs (European Union)

- **Class II Mains Powered Equipment** - Provided with a 2-terminal AC inlet that may be connected by a 2-terminal power cord to the mains supply outlet. No connection to the protective ground is required as this class of equipment is provided with double or reinforced and/or supplementary insulation in addition to the basic insulation provided in Class I equipment.

Note: Class II equipment, which is subject to EN 50083-1, is provided with a chassis mounted equipotential bonding terminal. See the section titled **Equipotential Bonding** for connection instructions.

Equipotential Bonding

If this equipment is equipped with an external chassis terminal marked with the IEC 60417-5020 chassis icon () , the installer should refer to CENELEC standard EN 50083-1 or IEC standard IEC 60728-11 for correct equipotential bonding connection instructions.

General Servicing Precautions



WARNING:

Avoid electric shock! Opening or removing this equipment's cover may expose you to dangerous voltages.

Continued on next page

Important Safety Instructions, continued

CAUTION:

These servicing precautions are for the guidance of qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

Be aware of the following general precautions and guidelines:

- **Servicing** - Servicing is required when this equipment has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into this equipment, this equipment has been exposed to rain or moisture, does not operate normally, or has been dropped.
- **Wristwatch and Jewelry** - For personal safety and to avoid damage of this equipment during service and repair, do not wear electrically conducting objects such as a wristwatch or jewelry.
- **Lightning** - Do not work on this equipment, or connect or disconnect cables, during periods of lightning.
- **Labels** - Do not remove any warning labels. Replace damaged or illegible warning labels with new ones.
- **Covers** - Do not open the cover of this equipment and attempt service unless instructed to do so in the instructions. Refer all servicing to qualified service personnel only.
- **Moisture** - Do not allow moisture to enter this equipment.
- **Cleaning** - Use a damp cloth for cleaning.
- **Safety Checks** - After service, assemble this equipment and perform safety checks to ensure it is safe to use before putting it back into operation.

Electrostatic Discharge

Electrostatic discharge (ESD) results from the static electricity buildup on the human body and other objects. This static discharge can degrade components and cause failures.

Take the following precautions against electrostatic discharge:

- Use an anti-static bench mat and a wrist strap or ankle strap designed to safely ground ESD potentials through a resistive element.
- Keep components in their anti-static packaging until installed.
- Avoid touching electronic components when installing a module.

Fuse Replacement

To replace a fuse, comply with the following:

- Disconnect the power before changing fuses.
- Identify and clear the condition that caused the original fuse failure.
- Always use a fuse of the correct type and rating. The correct type and rating are indicated on this equipment.

Mounting Instruction

Mounting

The unit is mounted perpendicularly with the cable inlet at the bottom in order to secure natural ventilation during operation. Use three 5 mm mounting hardware appropriate to the nature of the material that the unit is being mounted to. The lid of the outdoor housing is close by 4 bolts. To ensure a proper seal, tighten the bolts in sequence 1, 2, 3, 4... as shown below. Use a 13 mm wrench for screw on lid and torque to 8 Nm.

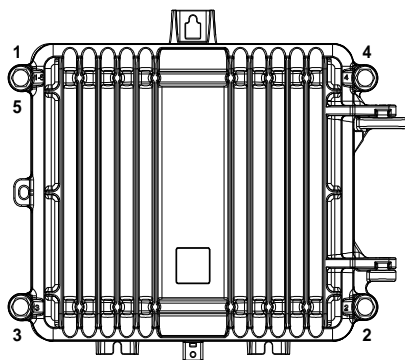


Figure 2 - Mounting Sequence

Required Tools and Hardware

You need the following tools and hardware for mounting the unit.

You need . . .	To . . .
5 mm mounting hardware	Mount the unit
13 mm wrench	Tighten the screw on the lid
3 mm screwdriver (Number 0)	Clamp the inner conductor
5 mm Screwdriver	Clamp the PE conductor
18AWG Grounding wire	Protective Earth (PE) connection to the PE terminal

Torque Specifications

The following table provides the torque specifications.

Fastener	Torque Specification
Screw on the lid	Tighten from 7 Nm to 8 Nm (62 in-lb to 71 in-lb)
RF output port connector	Tighten from 5 Nm to 6 Nm (44 in-lb to 53 in-lb)
Mains input port gland	Tighten from 4 Nm to 6 Nm (35 in-lb to 53 in-lb)
RF input port connector	Tighten from 5 Nm to 6 Nm (44 in-lb to 53 in-lb)
PE terminal	Tighten from 2 Nm to 2.5 Nm (17 in-lb to 22 in-lb)

Continued on next page

Mounting Instruction, continued

To Grounding the Amplifier

There is a PE terminal for PE GND connection to the chassis. You need to connect PE GND wire (AWG 18 or large) or bare CU wire (AWG 18 or large) to this terminal on the unit. If insulated PE GND wire used, it shall be Green with yellow stripe and use provided wire gauge and torque.



CAUTION!

There is Electric shock hazard, if PE GND may remove during servicing unit. Always keep PE GND connected to the Chassis.

If the unit is network powered, please connect unit to the equipotential bonding bar or frame before connecting power. Disconnect power to the unit before removing unit from the equipotential bonding bar or frame.

Power Supply

Network Supply 24 to 65 V AC

The unit can be supplied with 24 to 65 V AC either via coaxial cables (maximum 8 A) or directly to the AC input (maximum 15 A). In this case, the network AC supply apparatus shall be certified to provide basic insulation between the utility mains supply and the network AC supply voltage in accordance with an applicable safety standard such as IEC 60065, IEC 600950-1 or equivalent and local electrical regulations.

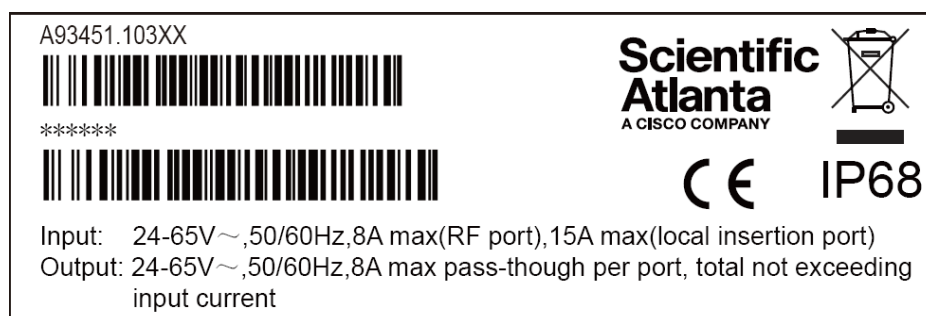


Figure 3 - Power Rating Label

AC Pass

On delivery, the ports are provided with insulating fuses. Desired AC pass is obtained by turning the fuse holder after connecting the cable or before disconnecting, to prevent damage of cable connectors.



CAUTION!

Permanent excess of maximum remote current implies a risk of damage.

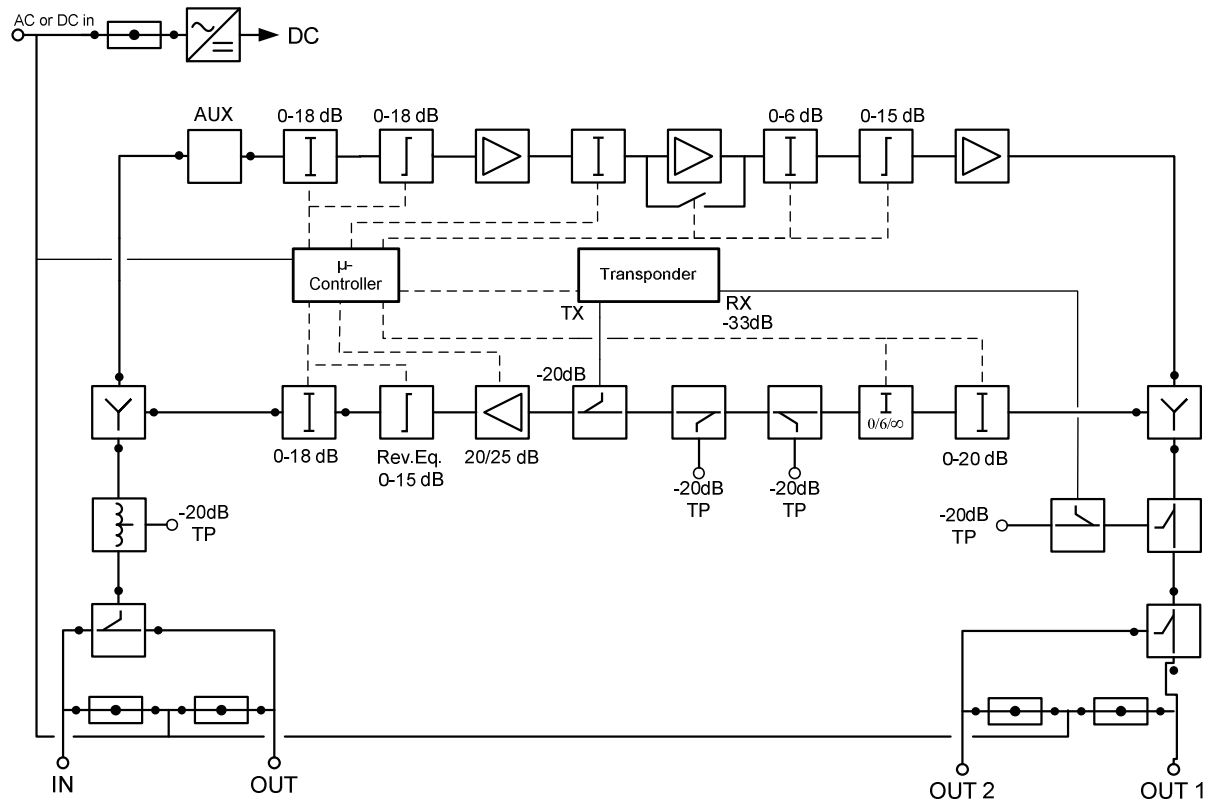
Low Voltage Lockout

For all coax line powered power supplies a low voltage switch type 75018-xx can be delivered that switches off the power supply if the voltage drops below the rated value (24 V or 35 V) thus, the network is not damaged due to increased current consumption.

Continued on next page

Mounting Instruction, continued

Block Diagram



Plug-in Units

The following plug-in units are necessary.

Output splitter

If an asymmetric splitter (bridger) is used, the largest attenuation at the output 2 (OUT 2) is obtained. If only a signal at output 1 (OUT 1) is requested, link type 74069 is used.

Diplex filter

Two diplex filters type 75130 with the required split frequency. Use two links type 74089 if the reverse path not is used.

Reverse path

With active reverse path, an equalizer type 74141-xx is placed in the plug-in field for reverse path equalizer. Please note that the test point and signal injection point of the reverse path are referring to the input of the reverse path.

Compact Transponder type 91051 or 91063

With this transponder it is possible to monitor the unit's output level, temperature and power supply. Furthermore the built-in reverse path switch can be controlled.

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Mounting Instruction, continued









Setting up the Unit

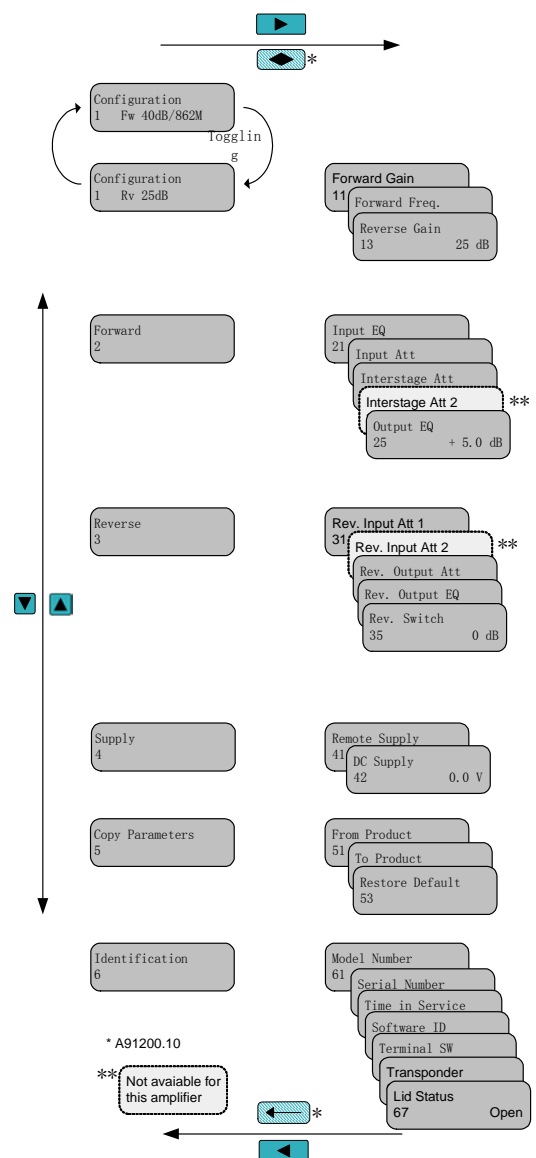
The hand held terminal type 91200 is used to set up the unit. Use the menu structure below to navigate through the different menus.

Please Notice

This unit can only be setup with a handheld terminal type A91200.11 or with a handheld terminal type A91200.10 containing the necessary driver for the unit. New drivers can be installed by means of download kit A91210.10.

Use the following buttons:

 or  *	Is used to navigate to the submenus and to open a menu for editing. The value can then be changed. Additionally, the button can be used to reject a value entered by the keypad.
 or  *	Is used to navigate to the root menus and to delete wrong digits when a menu is open for editing. Additionally, the button can be used to reject a value entered by the keypad.
	All numbers, "." and "/" are used to enter values. The numbers can also be used as short cuts.
	Is used to navigate through menus at the same level and to select the settings in some menus. Additionally, these buttons can be used to fine-tune some values.
 or  *	Is used to confirm a setting or a change.
In the menu "Copy Parameters," the setting of an amplifier can be saved (menu 51) and downloaded to another amplifier (menu 52).	



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Mounting Instruction, continued

ROSA Element Management System

Monitoring of the unit requires the installation of the transponder type 91051 or 91063 in the unit. The transponder will communicate back to the headend by means of the reverse path. The transponder signal is received at the test point at output. The level measured by the transponder will be attenuated by approximate 33 dB relative to the output signal at output. The transponder transmitter level is adjusted to the same level as the other reverse signals. The level from the transponder will be attenuated by approximate 20 dB at the reverse path since it is inserted with a 20 dB coupler.

With a transponder it is possible to monitor and control different parameters in the unit. The built-in reverse path switch can be controlled in order to locate ingress noise in the reverse path - This can be useful in the search for errors in larger networks.

Programming of a Compact Transponder type 91051 or 91063 is done by using the Handheld Terminal 91200.

Fuses

Fuse type	Description	P/N
T5AH250V	5AT, for 24 to 65 V	1005109
T10AL250V	10 AT, for input/output port	A38016

Notes: All fuses must be replaced by a similar type.

Support Telephone Numbers

This table lists the Technical Support and Customer Service numbers for your area.

Region	Centers	Telephone and Fax Numbers
North America	Cisco™ Services Atlanta, Georgia United States	For <i>Technical Support</i> , call: <ul style="list-style-type: none"> ■ Toll-free: 1-800-722-2009 ■ Local: 678-277-1120 (Press 2 at the prompt) For <i>Customer Service</i> or to request an RMA number, call: <ul style="list-style-type: none"> ■ Toll-free: 1-800-722-2009 ■ Local: 678-277-1120 (Press 3 at the prompt) ■ Fax: 770-236-5477
Europe, Middle East, Africa	Belgium	For <i>Technical Support</i> , call: <ul style="list-style-type: none"> ■ Telephone: 32-56-445-197 or 32-56-445-155 ■ Fax: 32-56-445-053 For <i>Customer Service</i> or to request an RMA number, call: <ul style="list-style-type: none"> ■ Telephone: 32-56-445-133 or 32-56-445-118 ■ Fax: 32-56-445-051
Japan	Japan	<ul style="list-style-type: none"> ■ Telephone: 81-3-5908-2153 or +81-3-5908-2154 ■ Fax: 81-3-5908-2155
Korea	Korea	<ul style="list-style-type: none"> ■ Telephone: 82-2-3429-8800 ■ Fax: 82-2-3452-9748
China (mainland)	China	<ul style="list-style-type: none"> ■ Telephone: 86-21-2401-4433 ■ Fax: 86-21-2401-4455
All other Asia-Pacific countries & Australia	Hong Kong	<ul style="list-style-type: none"> ■ Telephone: 852-2588-4746 ■ Fax: 852-2588-3139
Brazil	Brazil	For <i>Technical Support</i> , call: <ul style="list-style-type: none"> ■ Telephone: 55-11-3845-9154 ext 230 ■ Fax: 55-11-3845-2514 For <i>Customer Service</i> or to request an RMA number, call: <ul style="list-style-type: none"> ■ Telephone: 55-11-3845-9154, ext 109 ■ Fax: 55-11-3845-2514 ■ E-mail: luiz.fattinger@sciatl.com
Mexico, Central America, Caribbean	Mexico	For <i>Technical Support</i> , call: <ul style="list-style-type: none"> ■ Telephone: 52-3515152599 ■ Fax: 52-3515152599 For <i>Customer Service</i> or to request an RMA number, call: <ul style="list-style-type: none"> ■ Telephone: 52-55-50-81-8425 ■ Fax: 52-55-52-61-0893 ■ E-mail: karla.lugo@sciatl.com
All other Latin America countries	Argentina	For <i>Technical Support</i> , call: <ul style="list-style-type: none"> ■ Telephone: 54-23-20-403340 ext 109 ■ Fax: 54-23-20-403340 ext 103 For <i>Customer Service</i> or to request an RMA number, call: <ul style="list-style-type: none"> ■ Telephone: 770-236-5662 ■ Fax: 770-236-5888



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