



# **Cisco Compact Dual Output EGC Amplifier A93270**

## Installation and Operation Guide

# For Your Safety

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## Explanation of Warning and Caution Icons



**Avoid personal injury and product damage! Do not proceed beyond any symbol until you fully understand the indicated conditions.**

The following warning and caution icons alert you to important information about the safe operation of this product:



**You may find this symbol in the document that accompanies this product. This symbol indicates important operating or maintenance instructions.**



**You may find this symbol affixed to the product. This symbol indicates a live terminal where a dangerous voltage may be present; the tip of the flash points to the terminal device.**



**You may find this symbol affixed to the product. This symbol indicates a protective ground terminal.**



**You may find this symbol affixed to the product. This symbol indicates a chassis terminal (normally used for equipotential bonding).**



**You may find this symbol affixed to the product. This symbol warns of a potentially hot surface.**



**You may find this symbol affixed to the product and in this document. This symbol indicates an infrared laser that transmits intensity-modulated light and emits invisible laser radiation or an LED that transmits intensity-modulated light.**

## Important

Please read this entire guide. If this guide provides installation or operation instructions, give particular attention to all safety statements included in this guide.

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# Notices

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# Important Safety Instructions

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## Read and Retain Instructions

Carefully read all safety and operating instructions before operating this equipment, and retain them for future reference.

## 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!**

**To reduce risk of electric shock, perform only the instructions that are included in the operating instructions. 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. The protective ground connection, where provided, is essential to safe operation and must be verified before connecting the power supply.

Know the following safety warnings and guidelines:

- **Dangerous Voltages**
  - Only qualified service personnel are allowed to perform equipment installation or replacement.
  - Only qualified service personnel are allowed to remove chassis covers and access any of the components inside the chassis.
- **Grounding**
  - Do not violate the protective grounding by using an extension cable, power cable, or autotransformer without a protective ground conductor.
  - Take care to maintain the protective grounding of this equipment during service or repair and to re-establish the protective grounding before putting this equipment back into operation.

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# Important Safety Instructions, Continued

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## Installation Site

When selecting the installation site, comply with the following:

- **Protective Ground** - The protective ground lead of the building's electrical installation should comply with national and local requirements.
- **Environmental Condition** - The installation site should be dry, clean, and ventilated. Do not use this equipment where it could be at risk of contact with water. Ensure that this equipment is operated in an environment that meets the requirements as stated in this equipment's technical specifications, which may be found on this equipment's data sheet.

## Installation Requirements



**WARNING:**

**Allow only qualified service personnel to install this equipment. The installation must conform to all local codes and regulations.**

## 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.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other equipment (including amplifiers) that produce heat.
- Place this equipment close enough to a mains AC outlet to accommodate the length of this equipment's power cord.
- Route all power cords so that people cannot walk on, place objects on, or lean objects against them. This may pinch or damage the power cords. Pay particular attention to power cords at plugs, outlets, and the points where the power cords exit this equipment.
- Use only with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with this equipment.
- Make sure the mounting surface or rack is stable and can support the size and weight of this equipment.
- The mounting surface or rack should be appropriately anchored according to manufacturer's specifications. 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.

## Ventilation

This equipment has openings for ventilation to protect it from overheating. To ensure equipment reliability and safe operation, do not block or cover any of the ventilation openings. Install the equipment in accordance with the manufacturer's instructions.

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*Continued on next page*

# Important Safety Instructions, Continued

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## Rack Mounting Safety Precautions

### Mechanical Loading

Make sure that the rack is placed on a stable surface. If the rack has stabilizing devices, install these stabilizing devices before mounting any equipment in the rack.



#### **WARNING:**

**Avoid personal injury and damage to this equipment. Mounting this equipment in the rack should be such that a hazardous condition is not caused due to uneven mechanical loading.**

### Reduced Airflow

When mounting this equipment in the rack, do not obstruct the cooling airflow through the rack. Be sure to mount the blanking plates to cover unused rack space. Additional components such as combiners and net strips should be mounted at the back of the rack, so that the free airflow is not restricted.



#### **CAUTION:**

**Installation of this equipment in a rack should be such that the amount of airflow required for safe operation of this equipment is not compromised.**

### Elevated Operating Ambient Temperature

Only install this equipment in a humidity- and temperature-controlled environment that meets the requirements given in this equipment's technical specifications.



#### **CAUTION:**

**If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient temperature. Therefore, install this equipment in an environment compatible with the manufacturer's maximum rated ambient temperature.**

## Handling Precautions

When moving a cart that contains this equipment, check for any of the following possible hazards:



#### **WARNING:**

**Avoid personal injury and damage to this equipment! Move any equipment and cart combination with care. Quick stops, excessive force, and uneven surfaces may cause this equipment and cart to overturn.**

- Use caution when moving this equipment/cart combination to avoid injury from tip-over.

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## Important Safety Instructions, Continued

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- If the cart does not move easily, this condition may indicate obstructions or cables that may need to be disconnected before moving this equipment to another location.
- Avoid quick stops and starts when moving the cart.
- Check for uneven floor surfaces such as cracks or cables and cords.

### Grounding

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

#### Safety Plugs (USA Only)

This equipment is equipped with either a 3-terminal (grounding-type) safety plug or 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:

- **Grounding-Type Plug** - For a 3-terminal plug (one terminal on this plug is a protective grounding pin), insert the plug into a grounded mains, 3-terminal outlet.  
**Note:** This plug fits only one way. If this plug cannot be fully inserted into the outlet, contact an electrician to replace the obsolete 3-terminal outlet.
- **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 18-gauge wire (or larger) 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 I Mains Powered Equipment** – Provided with a 3-terminal AC inlet and requires connection to a 3-terminal mains supply outlet via a 3-terminal power cord for proper connection to the protective ground.  
**Note:** The equipotential bonding terminal provided on some equipment is not designed to function as a protective ground connection.
- **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.

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
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# Important Safety Instructions, Continued

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## 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.

## 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 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.
- Unplug this equipment when unused for long periods of time.

## Connection to -48 V DC/-60 V DC Power Sources

If this equipment is DC-powered, refer to the specific installation instructions in this manual or in companion manuals in this series for information on connecting this equipment to nominal -48 V DC/-60 V DC power sources.

## Circuit Overload

Know the effects of circuit overloading before connecting this equipment to the power supply.



### CAUTION:

**Consider the connection of this equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring. Refer to the information on the equipment-rating label when addressing this concern.**

## General Servicing Precautions



### WARNING:

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

Be aware of the following general precautions and guidelines:

- **Servicing** - Refer all servicing to qualified service personnel. 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.

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## Important Safety Instructions, Continued

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- **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.

### Batteries

This product may contain batteries. Special instructions apply regarding the safe use and disposal of batteries:

Safety

- Insert batteries correctly. There may be a risk of explosion if the batteries are incorrectly inserted.
- Do not attempt to recharge 'disposable' or 'non-reusable' batteries.
- Please follow instructions provided for charging 'rechargeable' batteries.
- Replace batteries with the same or equivalent type recommended by manufacturer.
- Do not expose batteries to temperatures above 100°C (212°F).

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## Important Safety Instructions, Continued

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### Disposal

- The batteries may contain substances that could be harmful to the environment
- Recycle or dispose of batteries in accordance with the battery manufacturer's instructions and local/national disposal and recycling regulations.



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- The batteries may contain perchlorate, a known hazardous substance, so special handling and disposal of this product might be necessary. For more information about perchlorate and best management practices for perchlorate-containing substance, see [www.dtsc.ca.gov/hazardouswaste/perchlorate](http://www.dtsc.ca.gov/hazardouswaste/perchlorate).

### Electromagnetic Compatibility Regulatory Requirements

This equipment meets applicable electromagnetic compatibility (EMC) regulatory requirements. EMC performance is dependent upon the use of correctly shielded cables of good quality for all external connections, except the power source, when installing this equipment.

- Ensure compliance with cable/connector specifications and associated installation instructions where given elsewhere in this manual.

Otherwise, comply with the following good practices:

- Multi-conductor cables should be of single-braided, shielded type and have conductive connector bodies and backshells with cable clamps that are conductively bonded to the backshell and capable of making 360° connection to the cable shielding. Exceptions from this general rule will be clearly stated in the connector description for the excepted connector in question.
- Ethernet cables should be of single-shielded or double-shielded type.
- Coaxial cables should be of the double-braided shielded type.

### EMC

Where this equipment is subject to USA FCC and/or Industry Canada rules, the following statements apply:

#### FCC Statement for Class A Equipment

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this 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 instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case users will be required to correct the interference at their own expense.

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## Important Safety Instructions, Continued

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### **Industry Canada – Industrie Canadienne Statement**

This apparatus complies with Canadian ICES-003.

Cet appareil est conforme à la norme NMB-003 du Canada.

### **CENELEC/CISPR Statement with Respect to Class A Information Technology Equipment**

This is a Class A equipment. In a domestic environment this equipment may cause radio interference in which case the user may be required to take adequate measures.

### **Modifications**

This equipment has been designed and tested to comply with applicable safety, laser safety, and EMC regulations, codes, and standards to ensure safe operation in its intended environment.

Do not make modifications to this equipment. Any changes or modifications could void the user's authority to operate this equipment.

Modifications have the potential to degrade the level of protection built into this equipment, putting people and property at risk of injury or damage. Those persons making any modifications expose themselves to the penalties arising from proven non-compliance with regulatory requirements and to civil litigation for compensation in respect of consequential damages or injury.

### **Accessories**

Use only attachments or accessories specified by the manufacturer.

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# Preface

## About This Guide

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### Introduction

This guide describes how to operate, install and configure the Compact Dual Output EGC Amplifier A93270.

### Qualified Personnel

Only appropriately qualified and skilled personnel should attempt to install, operate, maintain, and service this equipment.



**WARNING:**

**Allow only qualified and skilled personnel to install, operate, maintain and service this equipment. Otherwise, personal injury or equipment damage may occur.**

### Who Should Read This Guide

This guide is intended for personnel who are responsible for installing, setting up, monitoring, and maintaining this product.

### In This Guide

This guide is divided into the following chapters.

Topic	See Page
Chapter 1: General Information	1-1
Chapter 2: Installation	2-1
Chapter 3: Operation	3-1
Chapter 4: Customer Information	4-1

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# Chapter 1

## General Information

### Overview

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#### Introduction

This chapter describes general information about the amplifier.

#### In This Chapter

This chapter contains the following topics.

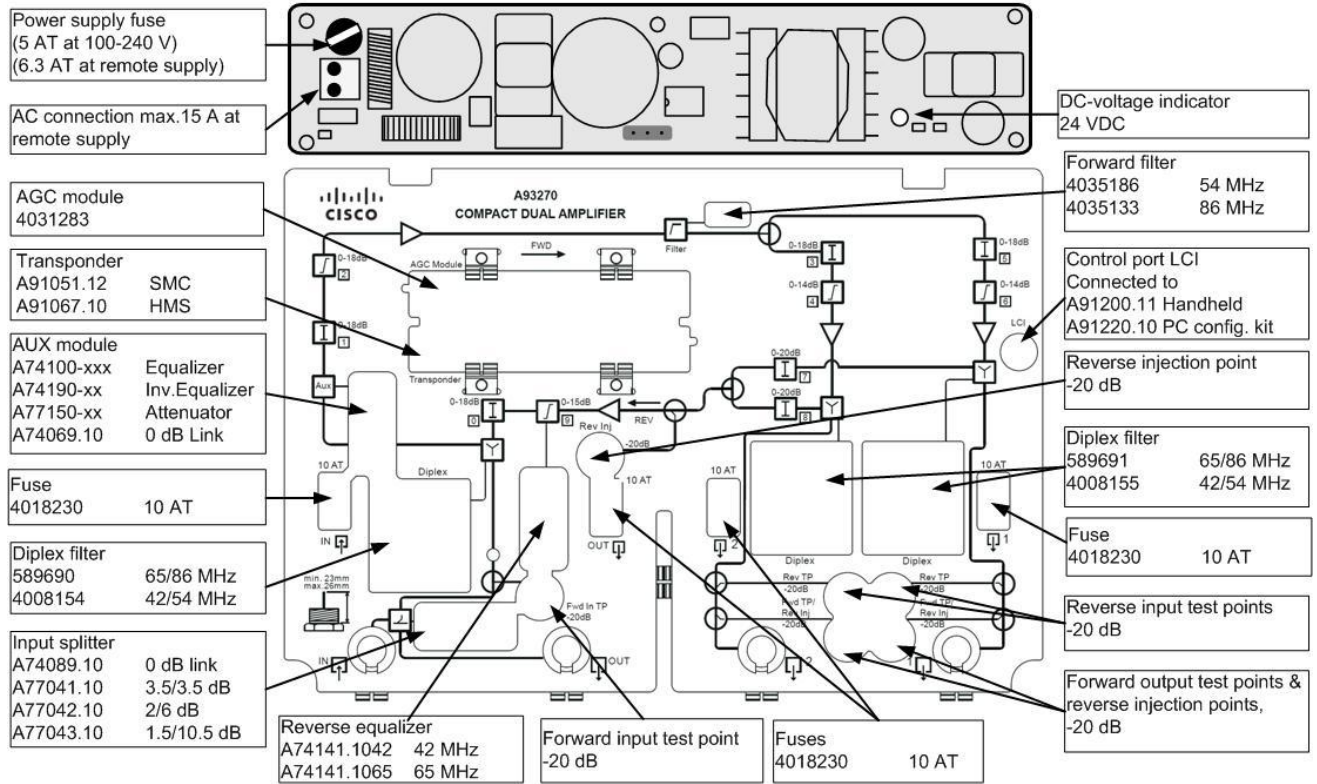
Topic	See Page
Overview Diagram	1-2
Power Supply	1-3
Plug-in Modules	1-5
Power Saving Modes	1-6

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# Overview Diagram

## Overview Diagram

The following illustration is the block diagram of the amplifier.



# Power Supply

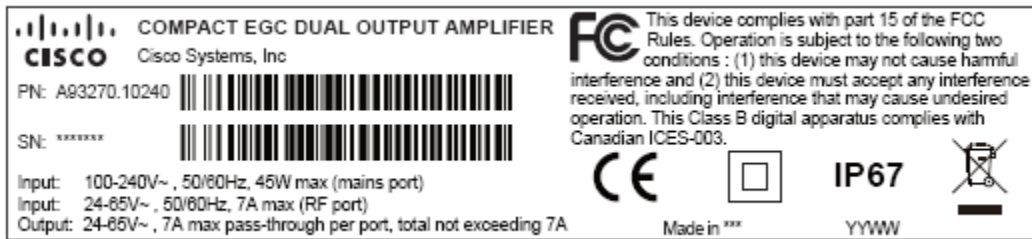
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## Power Supply

### For Products Rated 100-240 VAC Supply

When the amplifier is delivered with a 100-240 VAC power supply for mains supply, the correct voltage is labeled on the side of the amplifier.

The amplifier has factory mounted mains cable and plugs, which according to approval provisions may not be altered. The power unit is double insulated, and supplies only this single amplifier.



### Rating labels for 100-240 V AC power supply

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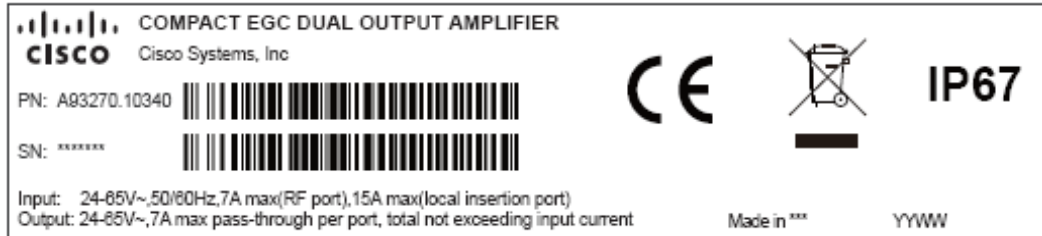
## Power Supply, Continued

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### For Products Rated 24-65 V AC

The amplifier is delivered with a 24-65 V AC power supply for remote supply. The correct voltage is labeled on the side of the amplifier.

The amplifier can be supplied with 24-65 VAC via coaxial cables to the RF ports (max. 8 A), or directly to the local AC power port (max. 15 A).



### Rating label for 24-65 V AC power supply

When feeding the amplifier via the local AC power port, follow the guidelines below to comply with the EMC regulations described in the **Important Safety Instructions** section, on page vi.

- A RF-adaptor must be installed at the local AC power port. Mount the RF-adaptor with a torque referring to the **Torque Specifications** section, on page 2-2.
- The power cord used between the power supply and the RF-adaptor must be shielded. The terminal pin of the power cord is especially positioned to directly connect the inner conductor of the RF-adaptor. Trim the pin with a wire cutter if needed.

The following picture shows an example of the RF-adaptor:



**CAUTION:**  
Permanently exceeding the maximum remote current draw may result in damage to the amplifier.

### Fuses

Fuse 5 AT, for 230 VAC	560852
Fuse 6.3 AT, for 24 to 65 VAC	1006647
Fuse 10 AT, for input/output port	4018230

**Note:** All fuses must be replaced by a similar type.

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# Plug-in Modules

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## Modules

The amplifier is equipped with different plug-in locations for the input splitter, diplex filter, equalizer, attenuator, and transponder.

### Input Splitter

Insert an input splitter, type A77041 through A77043. If an asymmetric splitter (bridge) is used, the largest attenuation at the output (OUT) is obtained. If only a signal at input (IN) is requested, jumper type A74089.10 is used.

Splitter	IN	OUT
A77041.10	3.5 dB	3.5 dB
A77042.10	6.0 dB	2.0 dB
A77043.10	10.5 dB	1.0 dB
A74089.10	0 dB	N/A

### AUX Equalizer/Attenuator

Insert an equalizer or attenuator to adjust the amplifiers for impairments in the cable network, if required. The equalizer type is A74100.10xxx, inverse equalizer type is A74190.10xxx, and attenuator type is A77150.100xx. If no equalization /attenuation is requested, 0 dB link, type A74069.10 is inserted.

### Diplex Filters

The following filters can be selected depending on the required frequency split.

Frequency split	Input	Output 1	Output 2
42/54 MHz	4008154	4008155	4008155
65/87 MHz	589690	589691	589691

### AGC Module (optional)

AGC module 4031283 can be installed to monitor and control the output level of the amplifier. The AGC module also provides downstream Auto Alignment, and has three LEDs to indicate its status. Refer to *AGC Module Mounting Instruction*, part number 4036171 for more information about installing the AGC module, and Chapter 3 on page 3-1 of this document for more information about operating the AGC module.

### Reverse Equalizer

Place an equalizer, type A74141.1042 (42 MHz) or A74141.1065 (65 MHz) in the plug-in slot for the reverse path equalizer, to select the desired reverse tilt frequency.

### SMC Transponder (A91051) or HMS Transponder (A91067)

Use the transponder, type A91051 or A91067, to monitor the amplifier output level, temperature and power supply, etc., via ROSA network management system.

# Power Saving Modes

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## Power Saving

The amplifier provides two options for reducing power consumption:

- **Power Saving On:** If the amplifier is running at an output level below 109 dB $\mu$ V, select this mode to reduce the power consumption of the output gain blocks, while maintaining good distortion performance.
- **Single Output Mode:** If only one active output is needed, this mode can be selected, and Port 1 will be powered down.

See the following table for power reductions of two power saving modes.

<b>Conditions</b>	<b>Power reduction (W)</b>
Power saving on	3 (per port)
Single output mode	10

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# Chapter 2 Installation

## Overview

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### Introduction

This chapter describes the requirements and procedures for mounting the amplifier.

### Qualified Personnel

Only appropriately qualified and skilled personnel should attempt to install, operate, maintain, and service this equipment.

 **WARNING:**

**Allow only qualified and skilled personnel to install, operate, maintain and service this equipment. Otherwise, personnel injury or equipment damage may occur.**

### In This Chapter

This chapter contains the following topics.

Topic	See Page
Tools and Accessories	2-2
Site Requirements	2-3
Housing Dimensions	2-4
Mounting the Amplifier	2-5

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## Tools and Accessories

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### Required Tools and Hardware

Before you start the installation, make sure you have the following tools and equipment to connect and configure the amplifier.

<b>You need a...</b>	<b>To...</b>
5 mm Allen wrench	Tighten the screws on the lid
3 mm flat-tip screwdriver	Clamp the inner conductor and PE conductor
M5 screws	Mount the amplifier
Ø 1.0 mm grounding wire	Connect Protective Earth (PE) to the PE terminal

### Torque Specifications

The following table provides the torque specifications.

<b>Fastener</b>	<b>Torque Specification</b>
Screw on the lid	Tighten from 6.5 Nm to 7 Nm (58 in-lb to 62 in-lb)
RF input/output 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 (18 in-lb to 22 in-lb)

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# Site Requirements

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## Introduction

Before you install the amplifier, make sure the installation site meets the requirements discussed in this section.

## Qualified Personnel

Only appropriately qualified and skilled personnel should attempt to install, operate, maintain, and service this equipment.



**WARNING:**

**Allow only qualified and skilled personnel to install, operate, maintain, and service this equipment. Otherwise, personal injury or equipment damage may occur.**

## Operating Temperature Requirements

The external operating temperature range is  $-40$  to  $+55^{\circ}\text{C}$  ( $-40$  to  $+131^{\circ}\text{F}$ ). Before you install, make sure the environment is within the range specified.



**WARNING:**

**Avoid damage to the amplifier. Operating the amplifier above the maximum operating temperature specified will result in damage to the product.**

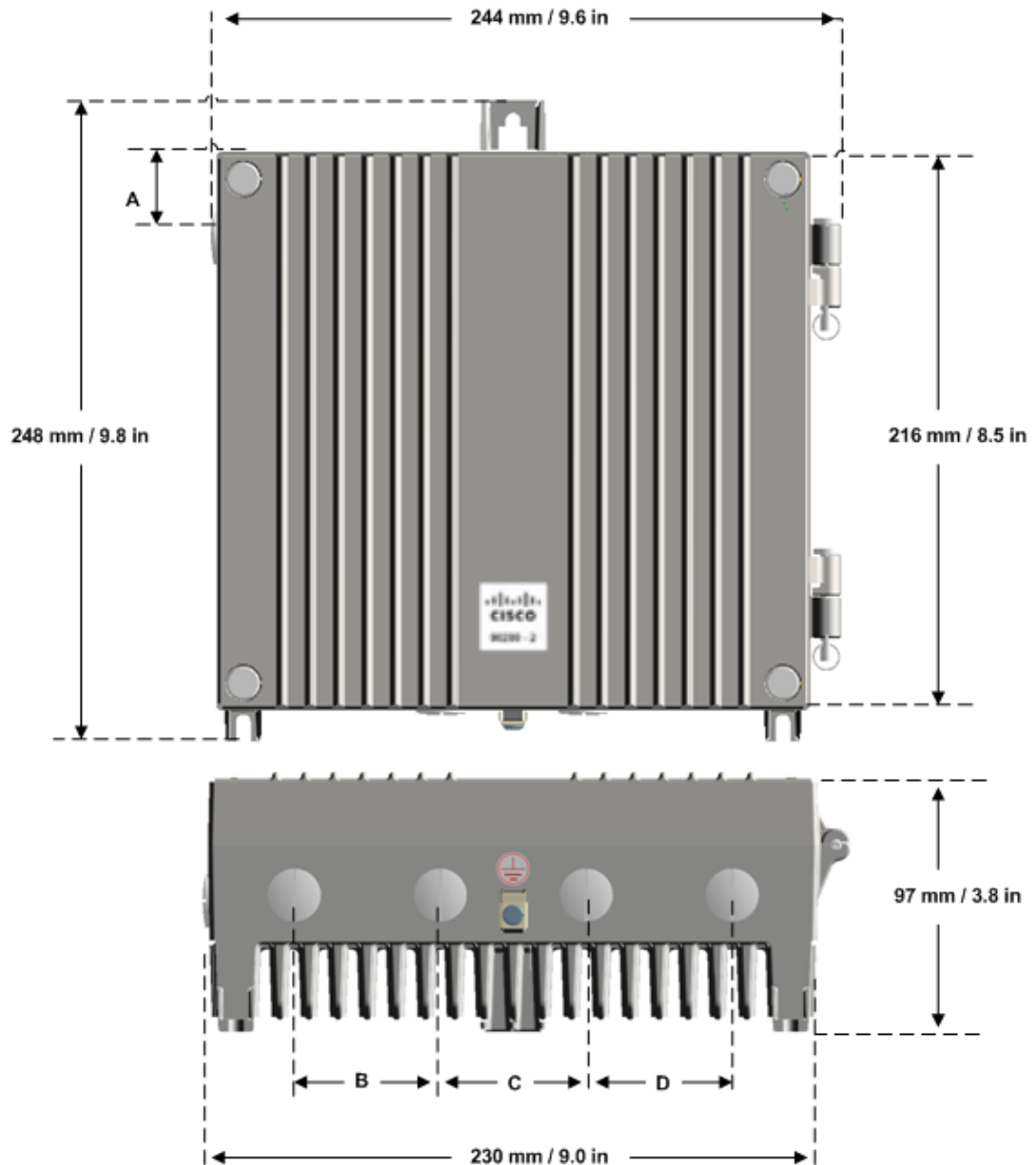
## Housing Dimensions

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The following illustrations show the dimensions, in millimeters and inches, of the amplifier A93280.

Use these measurements to calculate clearance before installing the amplifier and its accessories. Letters A-D represent some useful distance specs between ports and housing edges.

A = 34 mm / 1.3 in.; B = C = D = 55 mm / 2.2 in.



## Mounting the Amplifier

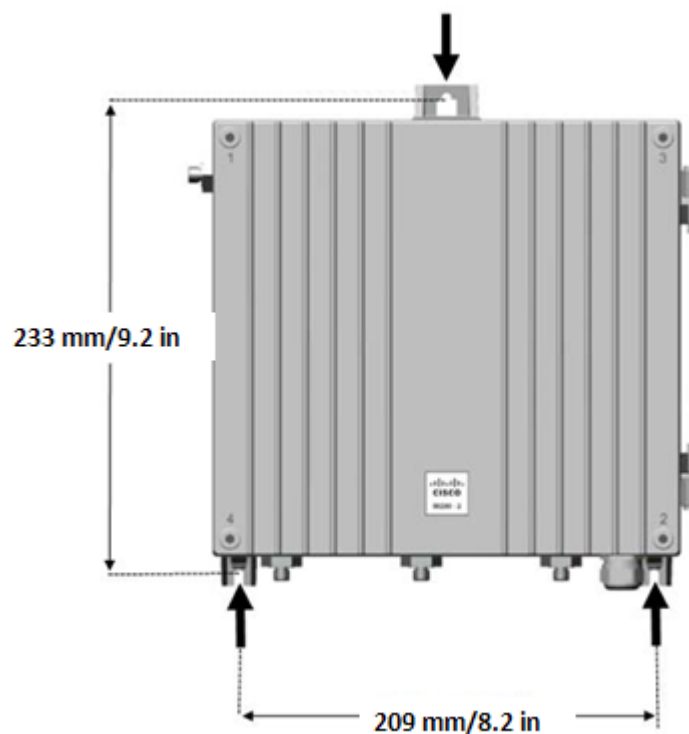
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### To Mount the Amplifier

The amplifier should be *mounted vertically* with the cable input underneath, to secure the best possible operating temperature conditions. Use a 5 mm Allen wrench to tighten the screws on the lid from 6.5 to 7 Nm (58 in-lb to 62 in-lb).

The following illustration shows the arrows that indicate the mounting bolt positions.

1. Mounting screw size is M5.
2. The distance between the top screw and the bottom screws, and the distance between the two bottom screws are shown in the following figure.



### CAUTION!

Be aware of the size and weight of the amplifier when mounting. Ensure that the mounting location has a stable flat surface, and can safely support the amplifier's maximum weight. Use the appropriate type of screws and screwdrivers, depending on the mounting method.

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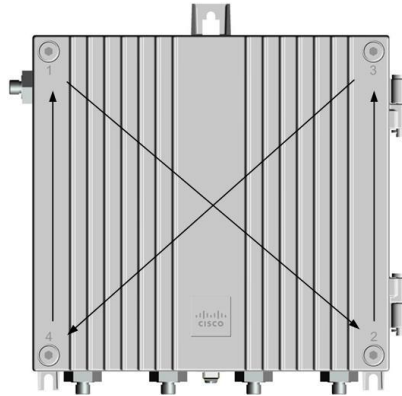


## Mounting the Amplifier, Continued

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### To Open and Tighten the Housing

Use a 5 mm Allen wrench to tighten or loosen the closure bolts. To ensure a proper seal, tighten or loosen the bolts in sequence 1, 2, 3, and 4 as shown in the following diagram.



The pin length of the PG 11 cable connector at input and output is shown on the cover plate of the amplifier. If needed, trim the connector with a wire cutter.

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# Chapter 3 Operation

## Overview

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### Introduction

This section describes the procedures for setting up and operating the amplifier.

The amplifier can be set up using a computer with an LCI software kit, or a handheld terminal.



**WARNING:**

**This product should be operated by qualified personnel only. Non-authorized personnel are not allowed in the site area, otherwise physical injury or equipment damage may occur.**

### In This Chapter

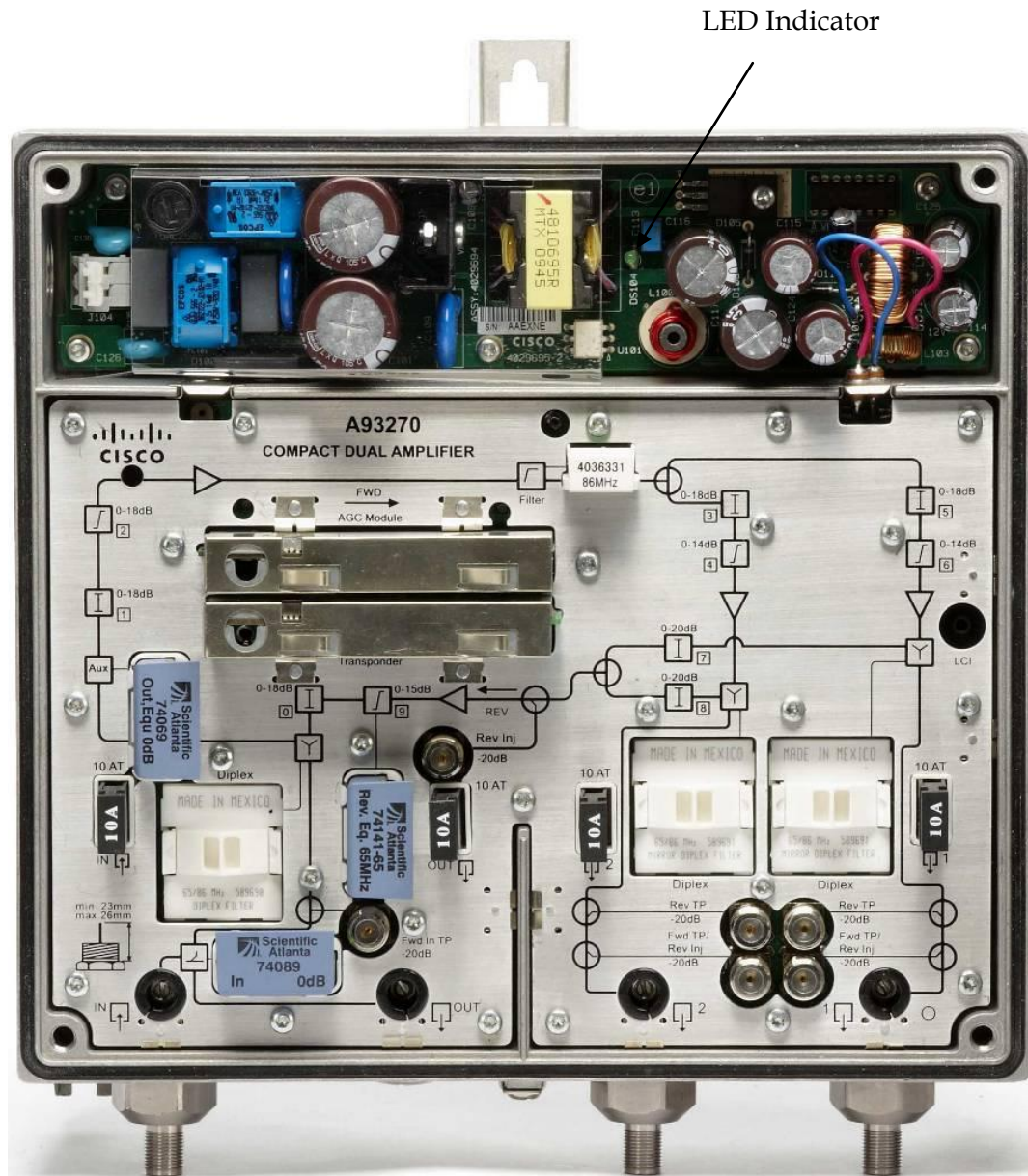
This chapter contains the following topics.

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---

## Starting Up the Amplifier

When the amplifier is powered up, the green LED on the power supply board will be illuminated to indicate that the power is on, as illustrated below. In case the LED is flashing, a short circuit may have occurred in the power supply.



## Setting Up with a Computer

---

The amplifier can be set up using a computer with an LCI software kit, or a handheld terminal.

Before setting up with a computer, ensure that the LCI software kit has been installed on your computer. For detailed information about the software installation and requirements, see *LCI Software Installation Instructions*, part number 4033113.

### Operation

To set up the amplifier via the LCI software, you must connect the amplifier either to a USB port with an LCI-USB cable or to a serial port. Follow the steps below to set up the amplifier:

1. Start the LCI software.

**Result:** An **LCI Detect Configuration** window appears.

**Note:** If you use a serial port on the computer, type the desired serial port name into the **COM Port** box such as COM1.

2. Click **Amplifier Products**, and then Click **Start** to find the amplifier.

**Result:** A **Refresh** dialog box appears.

3. Click **OK** to finish.
4. Double-click the amplifier in the left tree to display the amplifier configuration window.

---

*Continued on next page*

## Setting Up with a Computer, Continued

**Result:** A configuration window displays all settings of the amplifier, as illustrated below.

The screenshot shows a configuration window titled "Chas01. Node0000 A93270d 93270 LCI". The window is divided into several sections:

- Alarms:** Summary Status (Normal), Communication Status (Normal), Tamper Switch (Composed).
- Status:** Time In Service (4 days), System Up Time (0 hours), Remote Supply (Not\_Connected), Transponder Status (Mounted), Craft Port Status (Connected), AGC Module Status (Mounted), AMP Temperature (41 deg-C), AGC Temperature (46 deg-C), DC12V (12.2 VDC), DC24V (24.4 VDC).
- Forward Path:** Forward Output ATT 1 (4.5 dB), Forward Output ATT 2 (4.0 dB), Forward Output EQ 1 (4.5 dB), Forward Output EQ 2 (4.0 dB), Forward Input ATT (2.0 dB), Forward Input EQ (5.5 dB), Forward Power Saving 1 (ON), Forward Power Saving 2 (ON), Forward Active Path 1 (ON), Forward Active Path 2 (ON), Forward Bandwidth (1GHz MHz).
- Reverse Path:** Reverse Path Gain (20dB), Reverse Input ATT 1 (6.0 dB), Reverse Input ATT 2 (6.5 dB), Reverse Output ATT (2.0 dB), Reverse Output EQ (6.5 dB), Reverse Switch 1 (-6dB), Reverse Switch 2 (-6dB).
- AGC Status:** AGC AA OutOfRange (OK), AGC AA Timeout (OK), AGC EQ Status (ERROR), AGC EQ High End (OK), AGC EQ Low End (OK), AGC High Freq High Level (OK), AGC High Freq Low Level (ERROR), AGC Low Freq High Level (OK), AGC Low Freq Low Level (ERROR), AGC ATT High End (OK), AGC ATT Low End (OK), Active High Pilot (main), Active Low Pilot (main).
- AGC Frequency:** Overband Tilt (0.0 dB), AGC Freq. Number (10), AGC Current Freq. Index (0), AGC Freq. Level 0 (0.0 dBuV), AGC Freq. Level 1 (0.0 dBuV), AGC Freq. Level 2 (0.0 dBuV), AGC Freq. Level 3 (0.0 dBuV), AGC Freq. Level 4 (0.0 dBuV), AGC Freq. Level 5 (0.0 dBuV), AGC Freq. Level 6 (0.0 dBuV), AGC Freq. Level 7 (0.0 dBuV), AGC Freq. Level 8 (0.0 dBuV), AGC Freq. Level 9 (0.0 dBuV), Active High Freq. (100.0000 MHz), Active High Level (0.0 dBuV), Active Low Freq. (60.0000 MHz), Active Low Level (0.0 dBuV).
- AGC Configuration:** AGC Mode Setting (AGC), AGC High Pilot MeasFreq. (100.0000 MHz), High Pilot MeasFreq Level (95.0 dBuV), AGC BkHigh Pilot MeasFreq. (50.0000 MHz), BkHigh Pilot MeasFreq Level (90.0 dBuV), AGC Low Pilot MeasFreq. (60.0000 MHz), Low Pilot MeasFreq Level (101.0 dBuV), AGC BkLow Pilot MeasFreq. (500.0000 MHz), BkLow Pilot MeasFreq Level (110.0 dBuV), Cable Temp (AUTO degC), Cascade Number (9), AGC Freq. 0 (100.0000 MHz), AGC Freq. 1 (200.0000 MHz), AGC Freq. 2 (300.0000 MHz), AGC Freq. 3 (400.0000 MHz), AGC Freq. 4 (500.0000 MHz), AGC Freq. 5 (600.0000 MHz), AGC Freq. 6 (700.0000 MHz), AGC Freq. 7 (800.0000 MHz), AGC Freq. 8 (900.0000 MHz), AGC Freq. 9 (1000.0000 MHz).
- Identification:** Product Type (DualAMP), Serial Number (123456), Software ID (DEA\_1.03.12), Product Year (2009), Product Month (12), Product Day (26), PCBA Part Number (4029498), PCBA Revision Number (A), AGC Product Type (AgcModule), AGC Serial Number (123456), AGC Software ID (AGCM1.01.03).
- Properties:** Devtype Revision (0.04), Name (Node0000), Graphic, Service Name, Symbol, Device Location, Alias, Notify Set A, Notify Set B, M&C-Scan (On-Scan), Maintenance Mode (Normal), Poll Counter (1178), Script, Comm Alarm Threshold (1 %), Comm Quality, Address (0), Port (COM2), Generic Name (93270 LCI), Description (93270 LCI EGC Compact Dual Output Amp).

**Note:** "AGCFactorySettings" and "AGC\_Configuration" categories are only available when the AGC module is mounted. Otherwise, this column is blank.

5. Double-click the parameter you want to set up in the configuration window.

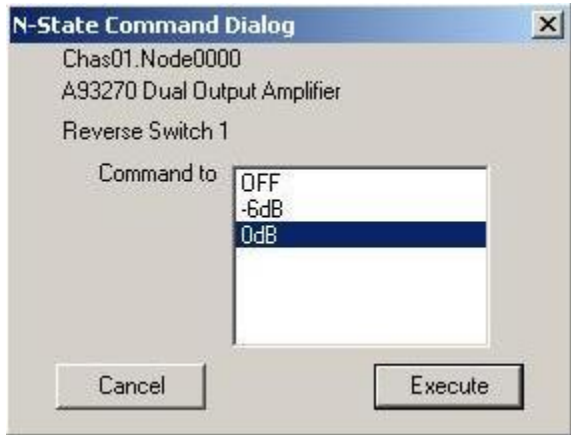
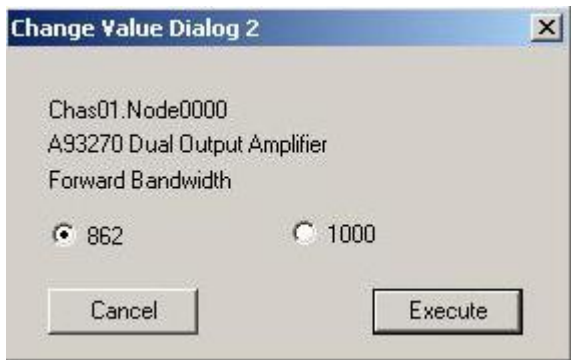
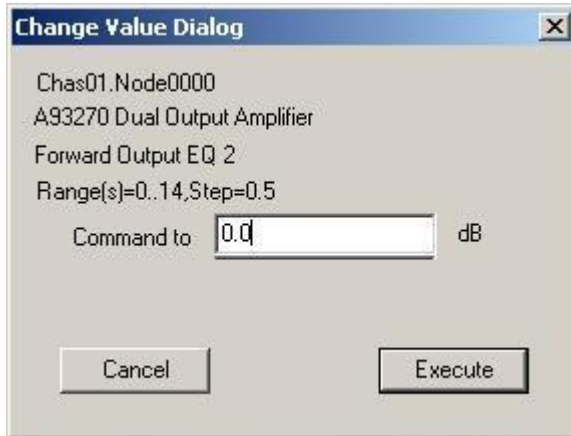
**Result:** A dialog box appears.

*Continued on next page*

## Setting Up with a Computer, Continued

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6. Either type a value in the text box, select the desired option button, or select the desired value in the dialog box, as illustrated below.



7. Click **Execute** to validate the change.

**Result:** The change is effective right away.

---

*Continued on next page*

## Setting Up with a Computer, Continued

---

All parameters of the amplifier are listed in the window on page 3-4. The following table lists the parameters that are configurable via the LCI software.

Category	Adjustable Item	Notes
Forward Path	Forward Output ATT 1	0 to 18 dB
	Forward Output ATT 2	0 to 18 dB (4 to 14 dB when the AGC is mounted)
	Forward Output EQ 1	0 to 14 dB
	Forward Output EQ 2	0 to 14 dB (4 to 10 dB when the AGC is mounted)
	Forward Input ATT	0 to 18 dB
	Forward Input EQ	0 to 18 dB
	Forward Power Saving 1	Off or On
	Forward Power Saving 2	Off or On
	Forward Active Path 1	Off or On
	Forward Bandwidth	862 MHz or 1 GHz
	Reverse Path	Reverse Path Gain
Reverse Input ATT 1		0 to 20 dB
Reverse Input ATT 2		0 to 20 dB
Reverse Output ATT		0 to 18 dB
Reverse Output EQ		0 to 15 dB
Reverse Switch 1		0 dB, -6 dB, or Off
Reverse Switch 2		0 dB, -6 dB, or Off

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*Continued on next page*

## Setting Up with a Computer, Continued

---

The following table lists the parameters that are configurable when the AGC module is mounted.

Category	Adjustable Item	Notes
AGC Configuration	AGC Mode Setting	Standby, AA, FGain, or AGC
	AGC High Pilot MeasFreq.	47 to 1002 MHz
	High Pilot MeasFreq Level	85 to 120 dB $\mu$ V
	AGC BkHigh Pilot MeasFreq.	47 to 1002 MHz
	BkHigh Pilot MeasFreq Level	85 to 120 dB $\mu$ V
	AGC Low Pilot MeasFreq.	47 to 1002 MHz
	Low Pilot MeasFreq Level	85 to 120 dB $\mu$ V
	AGC BkLow Pilot MeasFreq.	47 to 1002 MHz
	BkLow Pilot MeasFreq Level	85 to 120 dB $\mu$ V
	Cable Temp	-20, -10, 0, 10, 20, 30, 40, 50, 60 or AUTO degC
	Cascade Number	1 to 10
	AGC Freq. 0	47 to 1002 MHz
	AGC Freq. 1	47 to 1002 MHz
	AGC Freq. 2	47 to 1002 MHz
	AGC Freq. 3	47 to 1002 MHz
	AGC Freq. 4	47 to 1002 MHz
	AGC Freq. 5	47 to 1002 MHz
	AGC Freq. 6	47 to 1002 MHz
	AGC Freq. 7	47 to 1002 MHz
	AGC Freq. 8	47 to 1002 MHz
AGC Freq. 9	47 to 1002 MHz	






---



# Setting Up with a Handheld Terminal

## Keypads

The amplifier can be set up using a handheld terminal, type **A91200.10**. The following table lists the terminal keypads and their definitions.

	Navigate to the submenus to open a menu for editing. The value can then be changed. The button can also be used to reject a value entered by the keypad.
	Navigate to the root menus to delete wrong digits when a menu is open for editing. The button can also 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.
	Navigate through menus at the same level to select the settings in some menus. These buttons can also be used to fine-tune some values.
	Confirm a setting or a change.

For detailed information, see *Operation Instructions Handheld Programming Terminal, type 91200*, part number A541365.

## Shortcuts

The menu item numbers can be used as shortcuts. To enter a menu, press the item number. For example, if you want to enter the submenu "Reverse Mode" press number keys **3** and **1** continuously. This key sequence displays the "Reverse Mode" menu. See *Menu Structures and Operations* on page 3-9 to determine the number for a required menu.

Ten shortcuts are specifically designed to help the user directly enter seven menus to set parameters, which are indicated on the cover:

- Press and hold "0" on the keypad to set reverse output ATT directly.
- Press and hold "1" on the keypad to set forward input ATT directly.
- Press and hold "2" on the keypad to set forward input EQ directly.
- Press and hold "3" on the keypad to set forward output ATT2 directly.
- Press and hold "4" on the keypad to set forward output EQ2 directly.
- Press and hold "5" on the keypad to set forward output ATT1 directly.
- Press and hold "6" on the keypad to set forward output EQ1 directly.
- Press and hold "7" on the keypad to set reverse input ATT1 directly.

*Continued on next page*

## Setting Up with a Handheld Terminal, Continued

- Press and hold “8” on the keypad to set reverse input ATT2 directly.
- Press and hold “9” on the keypad to set reverse output EQ directly.

### Menu Structures and Operations

The number before each menu name is the menu item number.

Menus and Descriptions			
1 General	Submenu1	Submenu2	Actions
	11 Fwd Config	111 Fwd ActivePath	Read-write Select an active path: Both Paths or Path2 Only
		112 Fwd Bandwidth	Read-write Select 862 MHz or 1 GHz
	12 Rev Config	121 Rev Gain	Read-write Select 20 dB or 25 dB
	13 Mounted Modules	131 Transponder	Read-only Mounted or Not Mounted
		132 AGC Module	Read-only Mounted or Not Mounted
	14 Power Supply	141 Remote Supply	Read-only
		142 24 VDC	Read-only
		143 12 VDC	Read-only
	15 Temperature	-	Read-only 1°C step

2 Forward	Submenu1	Submenu2	Actions
	21 Fwd Input Att	-	Read-write Set Fwd input attenuation 0-18 dB, Unit in 0.1 dB, 0.5 dB step
	22 Fwd Input EQ	-	Read-write Set Fwd input EQ 0-18 dB, unit in 0.1 dB, 0.5 dB step
	23 Fwd Output1	231 Fwd Output Att1	Read-write Set Fwd output attenuation1 0-18 dB, unit in 0.1 dB, 0.5 dB step
		232 Fwd Output EQ1	Read-write Set Fwd output EQ1 0-18 dB, unit in 0.1 dB, 0.5 dB step
		233 Power Saving1	Read-write Select ON or OFF
	24 Fwd Output2	241 Fwd Output Att2	Set Fwd output attenuation2 Depending on the AGC module
		242 Fwd Output EQ2	Set Fwd output EQ2 Depending on the AGC module
		243 Power Saving2	Read-write Select ON or OFF

Continued on next page

## Setting Up with a Handheld Terminal, Continued

### Menu Structures and Operations, continued

3 Reverse	Submenu1	Submenu2	Actions
	31 Rev Input1	311 Rev Input Att1	Read-write Set Rev input attenuation1 0-18 dB, unit in 0.1 dB, 0.5 dB step
		312 Rev Switch1	Read-write Set Rev switch1 to 0 dB, -6 dB or off
	32 Rev Input2	321 Rev Input Att2	Read-write Set Rev input attenuation2 0-18 dB, unit in 0.1 dB, 0.5 dB step
		322 Rev Switch2	Read-write Set Rev switch2 to 0 dB, -6 dB or off
	33 Rev Output ATT	-	Read-write Set Rev output attenuation 0-15 dB, unit in 0.1 dB, 0.5 dB step
	34 Rev Output EQ	-	Read-write Set Rev output EQ 0-15 dB, unit in 0.1 dB, 0.5 dB step

4 Copy Parameters	Submenu1	Submenu2	Actions
	41 From Product	411 Setting 1	Nine amplifier settings can be configured. If a setting position is available, it displays Empty; If not available, it displays nothing. Copy the parameters from one product and store those parameters into a handheld EEPROM. (Parameters for both AGC module and Amplifier) Select Abort or Execute
		412 Setting 2	
		413 Setting 3	
		414 Setting 4	
		415 Setting 5	
		416 Setting 6	
		417 Setting 7	
		418 Setting 8	
		419 Setting 9	
	42 To Product	421 Setting 1	Select and copy a setting to product. If no valid setting exists, you cannot enter the menu and No Data displays. Restore the parameters from a Handheld EEPROM to a product. (Parameters for both AGC module and Amplifier) Select Abort, Execute, AMP, AMP+AGC, or Not Exist
		422 Setting 2	
		423 Setting 3	
		424 Setting 4	
		425 Setting 5	
		426 Setting 6	
		427 Setting 7	
		428 Setting 8	
	429 Setting 9		
	43 Restore Default	-	Restore the default configuration to a product. (Parameters for both AGC module and amplifier) Select Abort, AMP, AGC, or AMP+AGC

Continued on next page

## Setting Up with a Handheld Terminal, Continued

### Menu Structures and Operations, continued

5 Identification	Submenu1	Submenu2	Actions
	51 Model No	-	Read-only Displays product model number
	52 Serial No	-	Read-only Displays product serial number
	53 Time in Service	-	Read-only Displays service time, Unit in days
	54 Software ID	-	Read-only Displays amplifier software ID
	55 Terminal SW ID	-	Read-only Displays handheld software ID
	56 Product Date	-	Read-only Displays product date of amplifier
	57 HW Version	-	Read-only Displays hardware version of amplifier

6 TP Module	Submenu1	Submenu2	Actions
	61 TP SW ID	-	Read-only Displays SMC or HMS
	62 MAC ADDR	-	Read-only (only when using HMS)
	63 IP ADDR	-	Read-write (only when using HMS) Set IP address
	64 MASTER RESET	-	Read-write Select YES or NO
	65 FREQ	651 STATUS	Read-only
		652 FREQ SCAN	Read-write (only when using HMS) Select YES or NO
		653 BAUDRATE	Read-write (only when using SMC) Select 9600, 19200 or 38400
		654 TX FREQ	Read-write
		655 RX FREQ	Read-write
		656 TX LEVEL	Read-write
		657 RX LEVEL	Read-only (only when using HMS)

**Note:** This menu is only accessible when a transponder is mounted. Same with existing menu in handheld through LCI interface on transponder.

7 AGC Module	Submenu1	Submenu2	Actions
	71 Pilot Settings	711 Pilot Hi Freq	Read-write Pilot High Frequency, Unit in MHz
		712 Pilot Hi Level	Read-write Pilot High Level, Unit in 0.1 dB $\mu$ V
		713 Pilot Lo Freq	Read-write Pilot Low Frequency, Unit in MHz
		714 Pilot Lo Level	Read-write Pilot Low Level, Unit in 0.1 dB $\mu$ V

*Continued on next page*

## Setting Up with a Handheld Terminal, Continued

### Menu Structures and Operations, continued

7 AGC Module	Submenu1	Submenu2	Actions
	72 Bk Pilot Settings	721 Bk PilotHi Freq	Read-write Backup Pilot High Frequency, Unit in MHz
		722 Bk PilotHi Level	Read-write Backup Pilot High Level, Unit in 0.1 dB $\mu$ V
		723 BkPilot Lo Freq	Read-write Backup Pilot Low Frequency, Unit in MHz
		724 BkPilotLo Level	Read-write Backup Pilot Low Level, Unit in 0.1 dB $\mu$ V
	73 MISC Settings	731 Cable Temp	Read-write -20, -10, 0, 10, 20, 30, 40, 50, 60 or AUTO
	74 Function	-	Read-write AA/AGC/ FixGain /Standby/ ! AA/! AGC/! FixGain /! Standby In case of alarms, flashing “!” in “! AA/! AGC/! FGain/! Standby”
	75 Alarm	-	Read-only Normal / AA Time Out / AA OutRange / AGC OutRange / PltLevOutRng
	76 Measurement	761 Hi Pilot SlT	Read-only Main/Backup
		762 Lo Pilot SlT	Read-only Main/Backup
		763 Active Hi Freq	Read-only Frequency unit in MHz
		764 Active Hi Level	Read-only Level unit in 0.1 dBuV
		765 Active Lo Freq	Read-only Frequency unit in MHz
		766 Active Lo Level	Read-only Level unit in 0.1 dBuV
77 Identification	771 Model Number	Read-only Displays AGC model number	
	772 Serial Number	Read-only Displays AGC serial number	
	773 Software ID	Read-only Displays AGC software ID	
<b>Note:</b> This menu is only accessible when the AGC Module is mounted.			

# ROSA Element Management System

---

## ROSA Element Management System

To monitor the amplifier, a transponder must be installed in the amplifier. This transponder will communicate back to the headend through the reverse path. The transponder signal is received at the test point at output. See *Overview Diagram* on page 1-2.

The level measured by the transponder will be attenuated by approximately 40 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 approximately 20 dB at the reverse path since it is inserted with a 30 dB coupler.

Use a handheld terminal which contains the necessary driver for the unit to set up a transponder. New drivers can be installed by means of downloading the kit A91210.10.



Manage your network with ROSA and TNCS open standards element management. Get faster mean-time-to-repair, increased uptime, and management that evolves as you provision your networks. US toll-free 1-800-722-2009. EMEA +32 56 445 445. [www.scientificatlanta.com/ROSA](http://www.scientificatlanta.com/ROSA)

# Setting Up Transponders

## HMS Transponder

Use an HMS transponder to set up the parameters that are highlighted in the following illustration.

SACNSASDINGY06 932001 hms93270 93270 HMS

SACNSASDINGY06 932001 hms93270 93270 HMS Details  
93270 HMS EGC Compact Dual Output Amp

**DCPowerTableProp**

Value	State	Enable	HHI	HI	LO	LOLO	Deadband	
DC24V	24.4	Nominal	Hex 0F	26.0	25.0	23.0	22.0	0.5
DC12V	12.3	Nominal	Hex 0F	14.0	13.0	11.0	10.0	0.5

**LinePowerTableProp**

Value	State	Enable	HHI	HI	LO	LOLO	Deadband	
Line Power Voltage 1	0	AlarmLOLO-major	Hex 0F	108	99	40	35	5

**TemperatureTableProp**

Value	State	Enable	HHI	HI	LO	LOLO	Deadband	
Amplifier Temperature	66	Nominal	Hex 0F	90	85	-15	-40	2

**AGCTemperatureTableProp**

Value	State	Enable	HHI	HI	LO	LOLO	Deadband	
AGC Temperature	49	Nominal	Hex 0F	90	85	-15	-40	2

**PropertiesTable**

Value	State	Enable	HHI	HI	LO	LOLO	Deadband	
Transponder Receive Level	-2.6	Nominal	Hex 0F	20.0	15.0	-20.0	-25.0	0.5

**Alarms**

- Summary Status: Alarm
- Communication Status: Normal
- Tamper Switch: Comprised
- AGC Out Of Range: Normal
- AGC Pilot Out Of Range: Alarms
- AGC AA Out Of Range: Normal
- AGC AA Timeout: Normal
- AGC EQ Alarm: Alarms

**Status**

- Craft Port Status: Connected
- AGC Module: Mounted
- TP Module: Mounted
- Remote Supply: Disconnected
- Uptime: 0 hours
- Time In Service: 3 days
- Active High Pilot: Main
- Active Low Pilot: Main

**AGC Frequency**

- AGC OverbandTilt: 0.0 dB
- AGC Freq Number: 10
- AGC Current Freq. Index: 0
- AGC Freq Level 0: 0.0 dBuV
- AGC Freq Level 1: 0.0 dBuV
- AGC Freq Level 2: 0.0 dBuV
- AGC Freq Level 3: 0.0 dBuV
- AGC Freq Level 4: 0.0 dBuV
- AGC Freq Level 5: 0.0 dBuV
- AGC Freq Level 6: 0.0 dBuV
- AGC Freq Level 7: 0.0 dBuV
- AGC Freq Level 8: 76.8 dBuV
- AGC Freq Level 9: 0.0 dBuV
- Active High Freq: 100.0000 MHz
- Active High Level: 0.0 dBuV
- Active Low Freq: 60.0000 MHz
- Active Low Level: 0.0 dBuV

**AGC Configuration**

- AGC Mode Setting: AGC
- Cable Temp: AUTO degC
- Cascade Number: 9
- AGC Freq 0: 100.0000 MHz
- AGC Freq 1: 200.0000 MHz
- AGC Freq 2: 300.0000 MHz
- AGC Freq 3: 400.0000 MHz
- AGC Freq 4: 500.0000 MHz
- AGC Freq 5: 600.0000 MHz
- AGC Freq 6: 700.0000 MHz
- AGC Freq 7: 800.0000 MHz
- AGC Freq 8: 900.0000 MHz
- AGC Freq 9: 1000.0000 MHz
- AGC High Freq: 100.0000 MHz
- AGC High Freq Level: 95.0 dBuV
- AGC Bk High Freq: 50.0000 MHz
- AGC Bk High Freq Level: 90.0 dBuV
- AGC Low Freq: 60.0000 MHz
- AGC Low Freq Level: 101.0 dBuV
- AGC Bk Low Freq: 500.0000 MHz
- AGC Bk Low Freq Level: 110.0 dBuV

**Identification**

- Product Type: DualAMP
- Serial Number: 123456
- Software ID: DEA\_1.03.11
- Product Date: 20091228
- Hardware Version: 4029496A
- AGC Product Type: AgcModule
- AGC Serial Number: 123456
- AGC Software ID: AGCM1.01.01

**Properties**

- Devtype Revision: 0.04
- Name: 932001

**Graphic**

**Service Name**

**Symbol**

**Device Location**

**Alias**

**Notify Set A**

**Notify Set B**

**M&C-Scan** On-Scan

**Maintenance Mode** Normal

**RPC Port Number** None

**Poll Counter** 120

**Script**

**Comm Alarm Threshold** 1

**Comm Quality** 100 %

**Port** tmp1

**Address** 00-1a-c3-f6-60-aa

**Generic Name** 93270 HMS

**Description** 93270 HMS EGC Compact Dual Output Amp

**Configuration**

- Poll Timeout** 500 ms
- Poll Attempts** 3

**modem**

- Modem Receiver Port: 1 on Master TMP.
- Modem Received Level: 22.4 dBmV

**Forward Path**

- Forward Output ATT 1: 5.0 dB
- Forward Output ATT 2: 5.5 dB
- Forward Output EQ 1: 6.0 dB
- Forward Output EQ 2: 6.5 dB
- Forward Input ATT: 8.0 dB
- Forward Input EQ: 8.5 dB
- Forward Power Saving 1: ON
- Forward Power Saving 2: ON
- Forward Active Path 1: ON
- Forward Active Path 2: ON
- Forward Bandwidth: 1GHz

**Reverse Path**

- Reverse Path Gain: 20dB
- Reverse Input ATT 1: 4.0 dB
- Reverse Input ATT 2: 4.5 dB
- Reverse Output ATT: 7.0 dB
- Reverse Output EQ: 7.5 dB
- Reverse Switch 1: OFF
- Reverse Switch 2: OFF

Continued on next page

# Setting Up Transponders, Continued

## SMC Transponder

Use a SMC transponder to set up the parameters that are highlighted in the following illustration.



**CAUTION:**  
 The SMC transponder can only be recognized by the amplifier when it is set to IEP mode. To change the mode, connect a handheld, part number A91200.11 to the LCI interface of the transponder. For detailed information, see *Compact Transponder 91051 Mounting Instructions*, part number 744610. The USB - LCI interface, part number A91220.10 can't be used on the LCI port of the SMC transponder.

**SACNSASDINGY06 932001 93270 93270 SMC Details**  
 93270 SMC EGC Compact Dual Output Amp

	Present Value	Present Status	Parameters				Units	
			Nominal Value	Minor-Alarm Low-Limit	Minor-Alarm High-Limit	Major-Alarm Low-Limit		Major-Alarm High-Limit
Transponder Receive Level	58.0	Low	60.0	5.0	85.0	15.0	95.0	dBuV
AMP Temperature	65	Normal	75	-15	85	-40	90	deg-C
DC12V	12.2	Normal	12.0	11.0	13.0	10.0	14.0	VDC
DC24V	24.4	Normal	24.0	23.0	25.0	22.0	26.0	VDC
AGC Temperature	36	Low	75	-15	85	-40	90	deg-C

**Alarms**  
 Summary Status: Alarm  
 Communication Status: Normal  
 Tamper Switch: Disarmed

**Status**  
 Craft Port Status: Connected  
 AGC Module Status: Mounted  
 Transponder Status: Mounted  
 Remote Supply: Not\_Connected  
 Time in Service: 3 days  
 System Up Time: 0 hours

**Transponder Settings**  
 Unique ID: 00 1a c3 ff 72 d0  
 Type Number: 38  
 Software Revision: 1.6  
 Tx Frequency: 9.00 MHz  
 Rx Frequency: 95.00 MHz  
 Tx Level: 84.0 dBuV  
 Communication Speed: 38.4 kbps  
 Temperature: 36 deg-C

**Forward Path**  
 Forward Output ATT 1: 5.0 dB  
 Forward Output ATT 2: 5.5 dB  
 Forward Output E0 1: 6.0 dB  
 Forward Output E0 2: 6.5 dB  
 Forward Input ATT: 8.0 dB  
 Forward Input E0: 8.5 dB  
 Forward Power Saving 1: ON  
 Forward Power Saving 2: ON  
 Forward Active Path 1: ON  
 Forward Active Path 2: ON  
 Forward Bandwidth: 1GHz MHz

**Reverse Path**  
 Reverse Path Gain: 20dB  
 Reverse Input ATT 1: 4.0 dB  
 Reverse Input ATT 2: 4.5 dB  
 Reverse Output ATT: 7.0 dB  
 Reverse Output E0: 7.5 dB  
 Reverse Switch 1: OFF  
 Reverse Switch 2: OFF

**AGC Status**  
 AGC AA OutOfRange: OK  
 AGC AA Timeout: OK  
 AGC EQ Status: Alarm  
 AGC EQ High End: OK  
 AGC EQ Low End: OK  
 AGC High Freq High Level: OK  
 AGC High Freq Low Level: Alarm  
 AGC Low Freq High Level: OK  
 AGC Low Freq Low Level: Alarm  
 AGC ATT High End: OK  
 AGC ATT Low End: OK  
 Active High Pilot: main  
 Active Low Pilot: main

**AGC Frequency**  
 Overband Tilt: 0.0 dB  
 AGC Freq. Number: 10  
 AGC Current Freq. Index: 0  
 AGC Freq. Level 0: 0.0 dBuV  
 AGC Freq. Level 1: 0.0 dBuV  
 AGC Freq. Level 2: 0.0 dBuV  
 AGC Freq. Level 3: 0.0 dBuV  
 AGC Freq. Level 4: 0.0 dBuV  
 AGC Freq. Level 5: 0.0 dBuV  
 AGC Freq. Level 6: 0.0 dBuV  
 AGC Freq. Level 7: 0.0 dBuV  
 AGC Freq. Level 8: 83.5 dBuV  
 AGC Freq. Level 9: 0.0 dBuV  
 Active High Freq: 100.0000 MHz  
 Active High Level: 0.0 dBuV  
 Active Low Freq: 60.0000 MHz  
 Active Low Level: 0.0 dBuV

**AGC Configuration**  
 AGC Mode Setting: AGC  
 AGC High Pilot MeasFreq: 100.0000 MHz  
 High Pilot MeasFreq Level: 95.0 dBuV  
 AGC BHigh Pilot MeasFreq: 50.0000 MHz  
 BHigh Pilot MeasFreq Level: 90.0 dBuV  
 AGC Low Pilot MeasFreq: 60.0000 MHz  
 Low Pilot MeasFreq Level: 101.0 dBuV  
 AGC BkLow Pilot MeasFreq: 500.0000 MHz  
 BkLow Pilot MeasFreq Level: 110.0 dBuV  
 Cable Temp: AUTO degC  
 Cascade Number: 9  
 AGC Freq. 0: 100.0000 MHz  
 AGC Freq. 1: 200.0000 MHz  
 AGC Freq. 2: 300.0000 MHz  
 AGC Freq. 3: 400.0000 MHz  
 AGC Freq. 4: 500.0000 MHz  
 AGC Freq. 5: 600.0000 MHz  
 AGC Freq. 6: 700.0000 MHz  
 AGC Freq. 7: 800.0000 MHz  
 AGC Freq. 8: 900.0000 MHz  
 AGC Freq. 9: 1000.0000 MHz

**Identification**  
 Product Type: DualAMP  
 Serial Number: 123456  
 Software ID: DEA\_1.03.11  
 Product Year: 2009  
 Product Month: 12  
 Product Day: 28  
 PCBA Part Number: 4029490  
 PCBA Revision Number: A  
 AGC Product Type: AgcModule  
 AGC Serial Number: 123456  
 AGC Software ID: AGCM1.01.01

**Properties**  
 Devtype Revision: 0.04  
 Name: 932001  
**Graphic**  
**Service Name**  
**Symbol**  
**Device Location**  
**Alias**  
**Notify Set A**  
**Notify Set B**  
**M&C-Scan**: On\_Scan  
**Maintenance Mode**: Normal  
**RPC Port Number**: None  
**Script**  
**Comm Alarm Threshold**: 1  
 Comm Quality: 100 %  
**Port tmp1**  
**Address**: 9995  
 Generic Name: 93270 SMC  
**Description**: 93270 SMC EGC Compact Dual Output Amp



## Starting Up with the AGC Module

---

The following sections are applicable to the amplifier with the AGC module mounted. The LEDs on the AGC module provide indication of the status of the module when it is mounted.

When the amplifier is powered up, the three LED indicators with different colors flash in sequence, for around 50 seconds, during the initialization of the AGC module as well as the amplifier. Then the AGC module will read the configurations, such as pilot settings and AGC function setting, from the amplifier, and start to run the configured function. By default the AGC module is set to Standby mode, when the green LED indicator is flashing slowly.

Before installing the AGC module, if the values of the AGC attenuator and equalizer of the amplifier are less than 4 dB, these values will be set automatically to 4 dB after the AGC module is plugged in. On the other hand, if such values are no less than 4 dB, they will be kept. These values are shown on the handheld display or in the ROSA Element Management system.

### Description of LED Indications

The following table lists LED status and description.

LED Status	Description
Red	Warning: out of AGC range
Red, fast flashing	Warning: auto alignment is out of range
Red, slow flashing	Warning: auto alignment is timed out
Green	The AGC module is in AGC mode
Green, fast flashing	Auto alignment is in progress
Green, slow flashing	The AGC module is in Standby mode
Yellow	The AGC module is in Fixed Gain mode
Yellow, fast flashing	Level out of range is detected
Yellow, slow flashing	NA
All of the three LED indicators are on	Communication with the amplifier failed

**Note:** To avoid the warnings of auto alignment being overlooked, the failure status of auto alignment is not cleared unless the user manually changes the AGC module to other functions or runs another auto alignment.

---

## Setting Up the AGC Module

When the AGC module is plugged into the amplifier, it reads out the settings, including pilot settings and function settings from the amplifier, and starts to run the configured function.

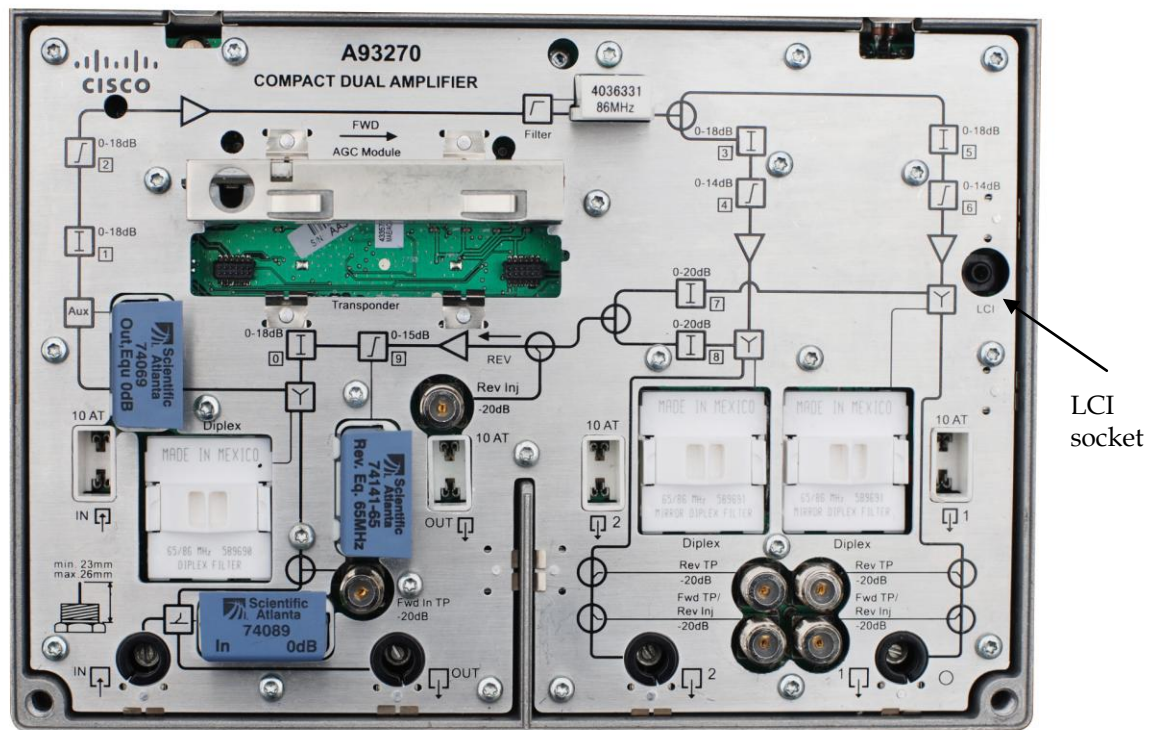
**CAUTION:**

**When a SMC transponder will be installed, make sure its mode is set to IEP, before configuring the AGC module. Refer to page 3-15 for details.**

### Setting Up the AGC Module with a Handheld Terminal

The following steps provide instructions on setting up the AGC module with a handheld terminal. Before using the AGC module to monitor and control the output signals of the amplifier, check the Pilot settings to make sure that they have been set to the desired settings.








1. Connect Terminal A91200 to the amplifier by plugging the connector of the terminal into the “LCI” socket, as illustrated below. The display on the terminal shows the status of the AGC module.







*Continued on next page*

## Setting Up the AGC Module, Continued

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2. Press  to navigate to menu "7 AGC Module" and press  to open the submenu. Go to "71 Pilot Settings" in the submenu by pressing  again.
3. Press  to enter the submenu "711 Pilot Hi Freq" and press  to change the value of pilot high frequency. The menu title "711 Pilot Hi Freq" will be flashing when the value can be changed. Use the number keys to enter the desired value and press  to confirm.
4. Go to "712 Pilot Hi Level" and repeat step 3 to set up pilot high level.
5. Press  to return to submenu "71 Pilot Settings" and repeat steps 3 and 4, to set up pilot low frequency and level.

**Note:** Frequency and level have configurable ranges. Refer to page 3-7 for details. Value input out of the specified range will not be effective, and an "Out of Range" display will appear.

1. Before using auto alignment function, the cable temperature also has to be set up. Go to submenu "731 Cable Temp" under "73 MISC Settings" and press  and   to select the desired value. Press  to confirm. When the auto alignment is completed, the temperature returns to 20°C by default.

# Functions of the AGC Module

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## Standby

If no function is required, the AGC module is set to Standby mode to reduce power consumption. The standby mode is running in a cycle of 2 minutes between monitoring and sleeping. In monitoring status, the AGC module detects the levels of 4 pilots and the selected frequencies and sends the information back to the handheld or the ROSA Element Management system. In sleeping status, the microprocessor in AGC module continues communicating with the amplifier.

## Auto Alignment

The auto alignment function adjusts input attenuator and equalizer to get the desired output level and tilt, according to the pilot levels set up as per page 3-17.

When auto alignment function is selected, if the differences between the detected pilot levels and the set pilot levels are less than  $\pm 1$  dB, the auto alignment function is completed, and the AGC module goes back to Standby mode. Otherwise the auto alignment continues until one of the following occurs:

- The differences are less than  $\pm 1$  dB;
- Auto alignment is timed out. After 2 minutes of auto alignment, a time-out alarm is activated, either shown on the LED indicators, the handheld, or in the ROSA Element Management system. Refer to page 3-16 for the descriptions of LED indicators. Meanwhile, the current input attenuator and equalizer values remain, and the AGC module goes into Standby mode.
- No input attenuator/equalizer can be adjusted. In this case, an alarm is activated, either shown on the LED indicators, the handheld, or in the ROSA Element Management system. Refer to page 3-16 for the descriptions of LED indicators. Meanwhile, the current input equalizer value remains, but the input attenuator value is set to its maximum, and the AGC module goes into Standby mode.

In auto alignment function, when all the high or low pilots and their backup pilots drop out, the current input equalizer value remains, while the input attenuator value is set to its maximum, and the AGC module goes into Standby mode.

During an auto alignment, the user cannot switch the AGC module to other functions, or change the values of attenuator or equalizer, until the auto alignment is completed, when both values are updated in the handheld or ROSA Element Management system. And if the AGC module is pulled out of the amplifier during the auto alignment, the input attenuator and equalizer values are saved.

**Note:** Special attention is required when using auto alignment function, which is available for input attenuator/equalizer only. So before running auto alignment function to set the input attenuator/equalizer automatically, make sure to set the inter-stage attenuator/equalizer to desired value manually first.

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*Continued on next page*

## Functions of the AGC Module, Continued

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### AGC

The AGC function continuously adjusts inter-stage attenuators and equalizers up to  $\pm 4$  dB, to keep the output level and tilt of the amplifier constant. This function runs in a cycle of 6 minutes to save power. During each AGC tuning session, the AGC module monitors 4 pilot levels and 10 selected frequencies, and when the amplifier detects that the adjusting values of attenuator and equalizer are out of the  $\pm 4$  dB range, an alarm will be activated on the LED indicators or ROSA Element Management system. Refer to page 3-16 for the descriptions of LED indicators. After each tuning task is completed, the AGC module goes to sleeping status for the rest of the cycle.

In AGC function, when all the high or low pilots and their backup pilots drop out, the values of inter-stage attenuator and equalizer are set back to those in effect before the AGC function is performed. The AGC module stays in AGC mode, monitoring the pilot levels and the 10 selected frequencies, in a cycle the same as in Standby mode. However, the amplifier doesn't adjust the inter-stage attenuator and equalizer, until the level of any of the 4 pilots goes back to its detected level range from 85 to 120 dBuV.

If the user switches the AGC function to Standby mode, or pulls the AGC module out of the amplifier, the current values of inter-stage attenuator and equalizer remain. If a new AGC module is installed into the amplifier, the values of inter-stage attenuator and equalizer are set back to those in effect before the AGC function is performed, and the AGC module continues with the AGC function.

### Fixed Gain

The fixed gain function sets the amplifier to its nominal gain, and monitors the 4 pilot frequencies and the 10 selected frequencies, in a cycle the same as in Standby mode.

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# Using Temperature Back-off Feature

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## Introduction of Temperature Back-off Feature

The temperature back-off feature is used to off-set the attenuator and equalizer when the amplifier is auto aligned at a non-room temperature, to allow the AGC module working as at room temperature. This feature is used in auto alignment function only, and is turned off when the auto alignment is completed.

### Notes:

- 45 dB cable loss at 1 GHz is used to simulate the network variation over temperature (Reference: CommScope RG6).
- Room temperature is defined as 20°C.

## Using Temperature Back-off Feature

To use the temperature back-off feature, set up the desired value in submenu “731 Cable Temp” as per instructions on page 3-18.

There are two ways to determine the temperature compensation needed.

1. When the amplifier’s environmental temperature is very **different** from the cable’s environmental temperature, the user should enter the cable’s estimated environmental temperature manually, by selecting from the available values in the submenu, including -20°C, -10°C, 0°C, 10°C, 20°C, 30°C, 40°C, 50°C, and 60°C. If 20°C is selected, the temperature compensation function is turned off.
2. When the amplifier’s environmental temperature is about the **same** as the cable’s environmental temperature, the user can select AUTO in the submenu, and a sensor inside the amplifier will measure and calculate the temperature automatically.

# Chapter 4

## Customer Support Information

### Overview

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#### Introduction

This chapter contains information on obtaining product support.

#### Obtaining Product Support

<b>IF...</b>	<b>THEN...</b>
you have general questions about this product	contact your distributor or sales agent for product information or refer to product data sheets on <a href="http://www.cisco.com">www.cisco.com</a> .
you have technical questions about this product	call the nearest Technical Service center.
you have customer service questions about this product	call the nearest Customer Service center.

#### In This Chapter

This chapter contains the following topics.

<b>Topic</b>	<b>See Page</b>
Support Telephone Numbers	4-2

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# Support Telephone Numbers

## 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"> <li>■ Toll-free: 1-800-722-2009</li> <li>■ Local: 678-277-1120 (Press 2 at the prompt)</li> </ul> For <i>Customer Service</i> , call: <ul style="list-style-type: none"> <li>■ Toll-free: 1-800-722-2009</li> <li>■ Local: 678-277-1120 (Press 3 at the prompt)</li> <li>■ Fax: 770-236-5477</li> <li>■ E-mail: customer-service@cisco.com</li> </ul>
Europe, Middle East, Africa	Belgium	For <i>Technical Support</i> , call: <ul style="list-style-type: none"> <li>■ Telephone: 32-56-445-197 or 32-56-445-155</li> <li>■ Fax: 32-56-445-061</li> </ul> For <i>Customer Service</i> , call: <ul style="list-style-type: none"> <li>■ Telephone: 32-56-445-444</li> <li>■ Fax: 32-56-445-051</li> <li>■ E-mail: service-elc@cisco.com</li> </ul>
Japan	Japan	<ul style="list-style-type: none"> <li>■ Telephone: 81-3-5908-2153 or +81-3-5908-2154</li> <li>■ Fax: 81-3-5908-2155</li> </ul>
Korea	Korea	<ul style="list-style-type: none"> <li>■ Telephone: 82-2-3429-8800</li> <li>■ Fax: 82-2-3452-9748</li> <li>■ E-mail: songk@cisco.com</li> </ul>
China (mainland)	China	<ul style="list-style-type: none"> <li>■ Telephone: 86-400-8108886</li> <li>Press 4 at the prompt</li> <li>■ E-mail: gca-lsc-sa@cisco.com</li> </ul>
All other Asia-Pacific countries & Australia	Hong Kong	<ul style="list-style-type: none"> <li>■ Telephone: 852-2588-4746</li> <li>■ Fax: 852-2588-3139</li> <li>■ E-mail: support.apr@sciati.com</li> </ul>
Brazil	Brazil	<ul style="list-style-type: none"> <li>■ Telephone: 11-55-08-9999</li> <li>■ Fax: 11-55-08-9998</li> <li>■ E-mail: fattin@cisco.com or ecavalhe@cisco.com</li> </ul>
Mexico, Central America, Caribbean	Mexico	For <i>Technical Support</i> , call: <ul style="list-style-type: none"> <li>■ Telephone: 52-3515152599</li> <li>■ Fax: 52-3515152599</li> </ul> For <i>Customer Service</i> , call: <ul style="list-style-type: none"> <li>■ Telephone: 52-55-50-81-8425</li> <li>■ Fax: 52-55-52-61-0893</li> </ul>
All other Latin America countries	Argentina	For <i>Technical Support</i> , call: <ul style="list-style-type: none"> <li>■ Telephone: 54-23-20-403340 ext 109</li> <li>■ Fax: 54-23-20-403340 ext 103</li> </ul> For <i>Customer Service</i> , call: <ul style="list-style-type: none"> <li>■ Telephone: 770-236-5662</li> <li>■ Fax: 770-236-5888</li> <li>■ E-mail: keillov@cisco.com</li> </ul>







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