# Compact Single Output EGC Amplifier A93280

Installation and Operation Guide

# For Your Safety

## 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.

# Notices

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# Contents

# Important Safety Instructions

## 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.

*Continued on next page*

### 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.

*Continued on next page*

### 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.

*Continued on next page*

- 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.

*Continued on next page*

### 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.

*Continued on next page*

- **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).

*Continued on next page*

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.


- 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.

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

This apparatus complies with Canadian ICES-003.
Cet appareil est confome 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.

# Preface

## About This Guide

### Introduction

This guide describes how to operate, install, and configure the Compact Single Output EGC Amplifier A93280.

### 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.

# Chapter 1
# General Information

## Overview

### Introduction

This chapter describes general information about the amplifier.

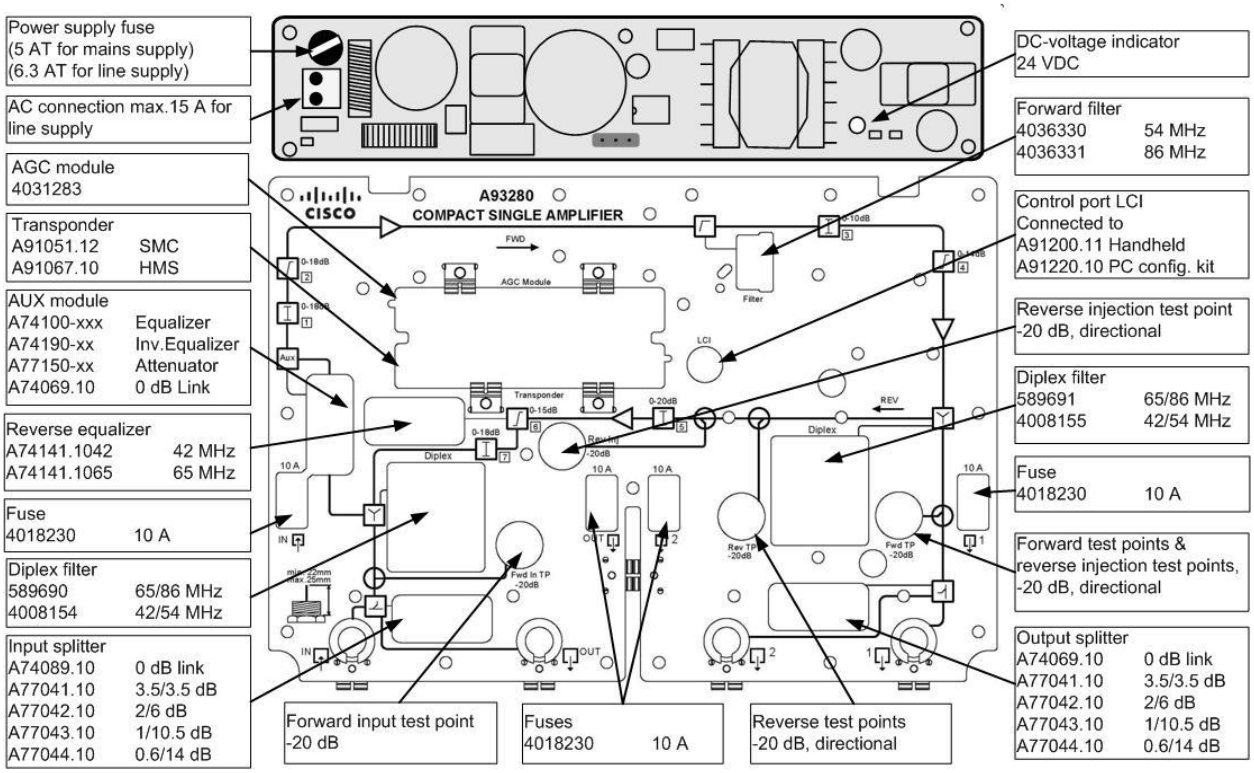
### In This Chapter

This chapter contains the following topics.

# Overview Diagram

## Overview Diagram

The following illustration is the block diagram of the amplifier.

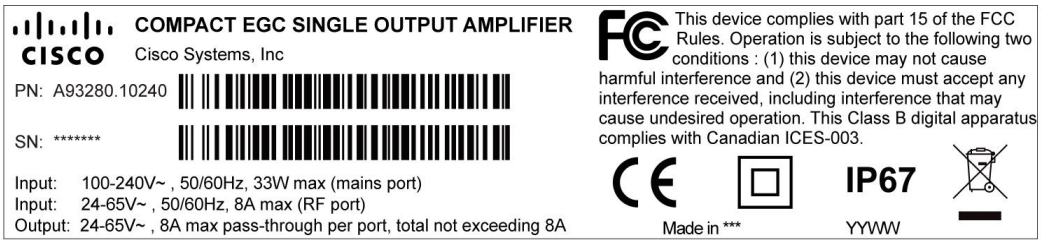


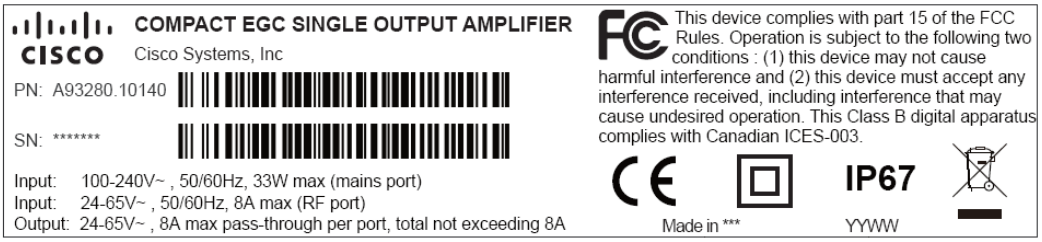
## Power Supply

### For Products Rated 100-240 VAC

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 VAC power supply**

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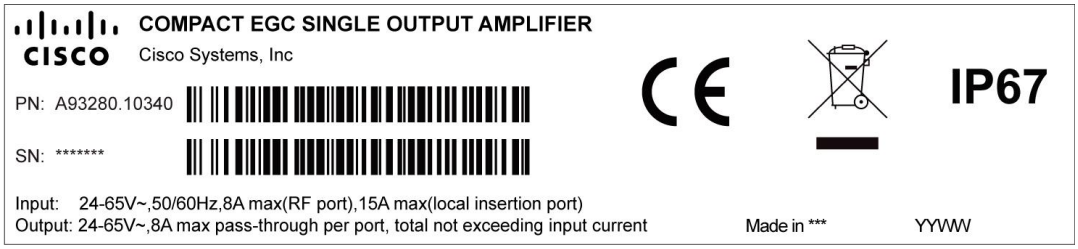
**For Products Rated 24-65 VAC**

The amplifier is delivered with a 24-65 VAC 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 (max. 7A), or directly to the AC input (max. 15A).




**Rating label for 24-65 VAC power supply**

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

## Fuses

| | |
|---|---|
| Fuse 5 AT, for 100 - 240 VAC | 560852 |
| Fuse 6.3 AT, for 24 - 65 VAC | 1006647 |
| Fuse 10A, for input/output port | 4018230 |

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

# Plug-in Modules

## Modules

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

### Input Splitter/Output Splitter

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

| Splitter | IN | OUT | OUT 1 | OUT 2 |
|---|---|---|---|---|
| A77041.10 | 3.5 dB | 3.5 dB | 3.5 dB | 3.5 dB |
| A77042.10 | 6.0 dB | 2.0 dB | 2.0 dB | 6.0 dB |
| A77043.10 | 10.5 dB | 1.0 dB | 1.0 dB | 10.5 dB |
| A74069.10 | N/A | N/A | 0 dB | N/A |
| A74089.10 | 0 dB | N/A | N/A | 0 dB |

### 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 should be used.

### Diplex Filters

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

| Frequency split | Input | Output |
|---|---|---|
| 42/54 MHz | 4008154 | 4008155 |
| 65/87 MHz | 589690 | 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. For more information about installing the AGC module, see ***Compact Automatic Gain Control Module for Compact EGC Amplifier Mounting Instruction***, part number 4036171. For more information about operating the AGC module, see Chapter 3 of this document.

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

# Power Saving Modes

## Power Saving

The amplifier provides two modes for reducing power consumption:

- Power Saving On: When the amplifier is set to the power saving mode, the power consumption will be reduced by approximately 2 W.
- Low Gain Mode: In addition, when the forward gain of the amplifier is lower than 32 dB, the amplifier will be set to the low gain mode, with an additional 3 W of power consumption reduced.

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

| Conditions | Power reduction (W) |
|---|---|
| Power Saving On | 2 |
| Low Gain Mode | 3 |

# Chapter 2
# Installation

## Overview

### 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.

# Tools and Accessories

## Required Tools and Hardware

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

| You need a… | To… |
|---|---|
| 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.

| Fastener | Torque Specification |
|---|---|
| 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) |

# Site Requirements

## 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°C (–40 to +131°F). Before you install, make sure the environment is within the range specified.

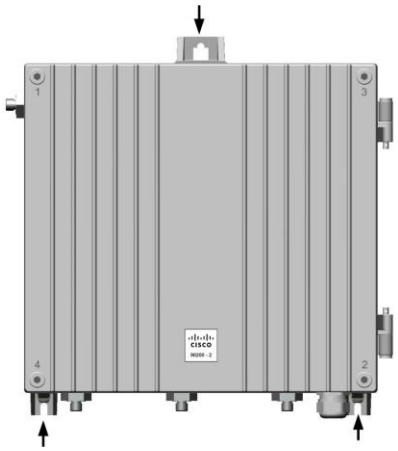
> ⚠ **WARNING:**
>
> **Avoid damage to the amplifier. Operating the amplifier above the maximum operating temperature specified will result in damage to the product.**

# Mounting the Amplifier

## 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.

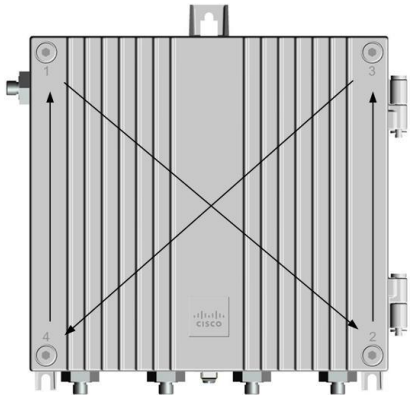


**⚠ CAUTION!**

**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.**

## 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.

# Chapter 3
# Operation

## Overview

### 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.

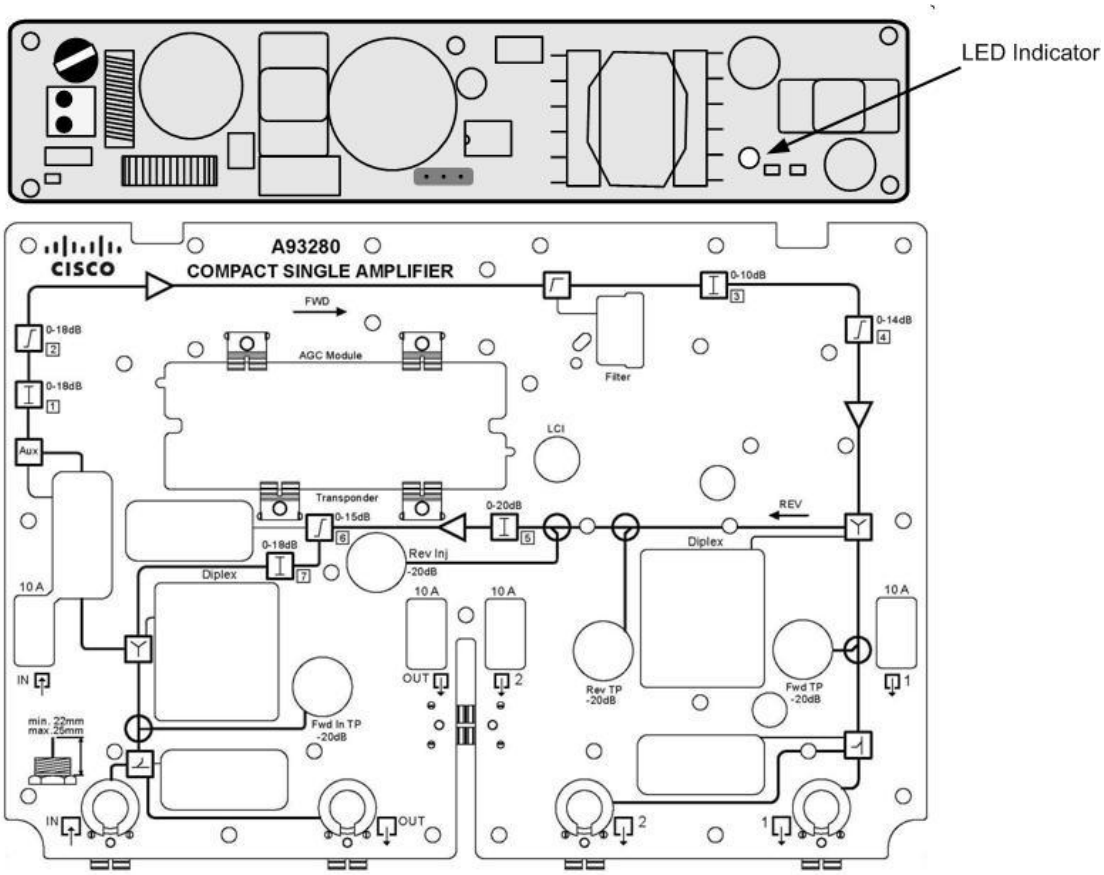
> ⚠ **WARNING:**
>
> **This product should be operated by qualified personnel only. Non-authorized personnel are not allowed in the site area, otherwise physical injury or equipment damage may occur.**

### In This Chapter

This chapter contains the following topics.

## Starting Up the Amplifier

When the amplifier is powered up, the green LED on the power supply board illuminates 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 the Amplifier 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 **Node Products,** and then Click **Start** to find the amplifier.

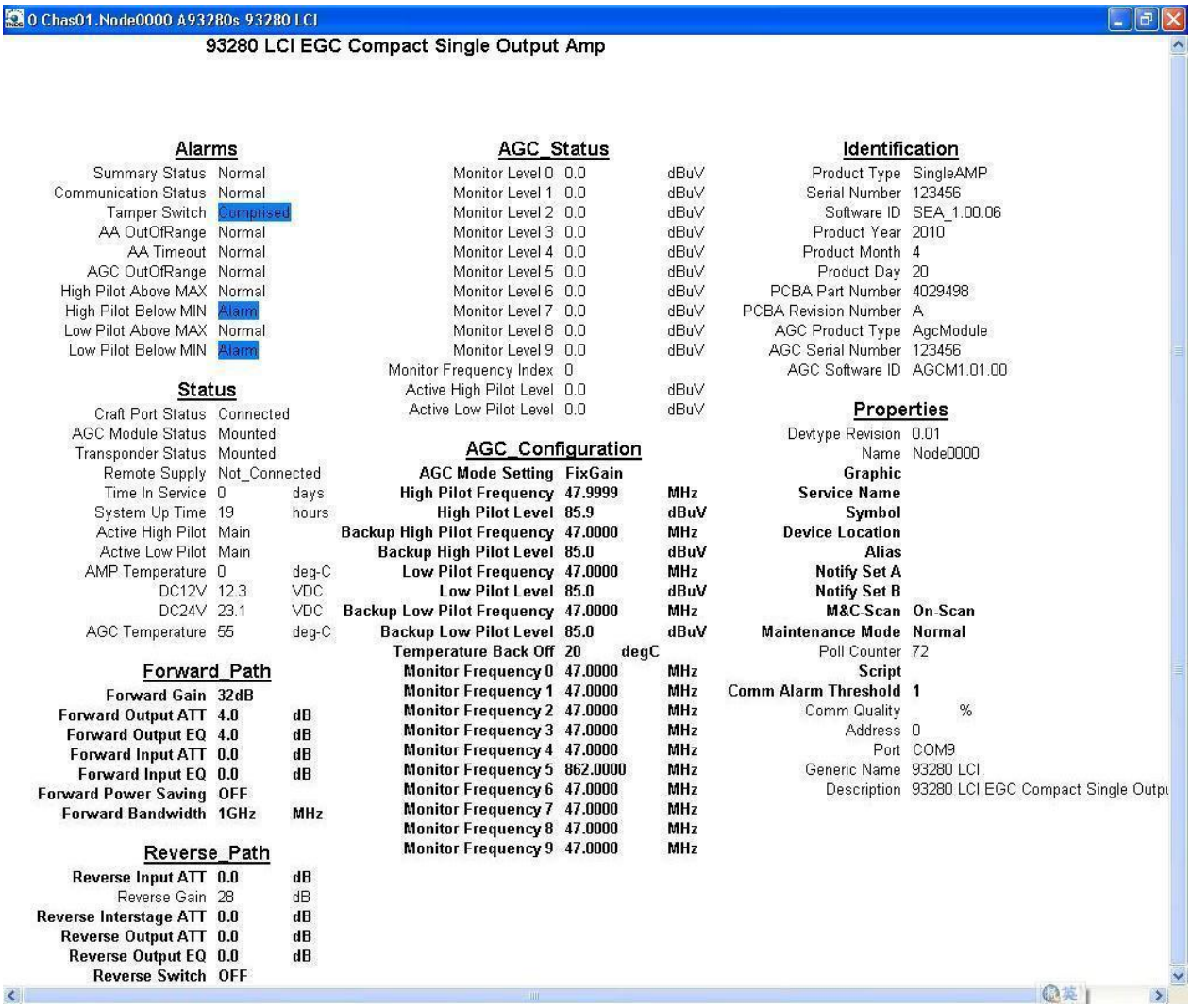
   **Result:** A **Refresh** dialog box appears.

3. Click **OK** to finish.

4. Double-click the amplifier in the left tree to display the amplifier configuration window.

*Continued on next page*

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



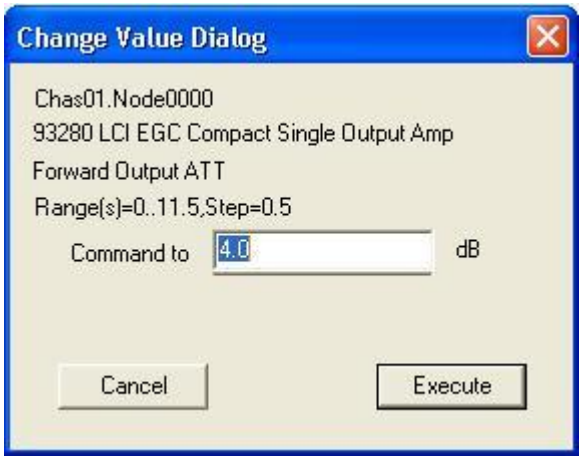

**Note**: "AGC_Status" and "AGC_Configuration" categories are only available when the AGC module is mounted. Otherwise, this column is blank.

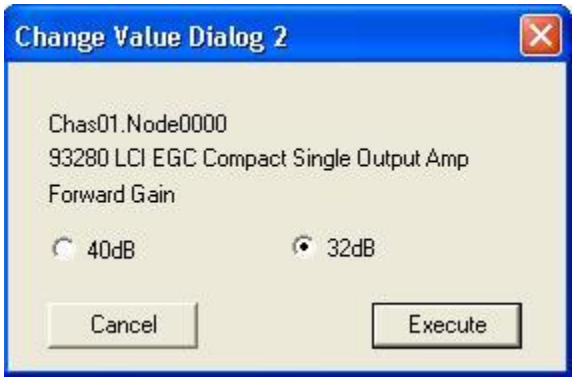
5. Double-click the parameter you want to set up in the configuration window.

   **Result:** A dialog box appears.

*Continued on next page*

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*

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 Gain | 32 or 40 dB |
| | Forward Output ATT | 0 to 8 dB |
| | Forward Output EQ | 0 to 14 dB |
| | Forward Input ATT | 0 to 18 dB |
| | Forward Input EQ | 0 to 18 dB |
| | Forward Power Saving | Off or On |
| | Forward Bandwidth | 862 MHz or 1 GHz |
| Reverse Path | Reverse Input ATT | 0 to 20 dB |
| | Reverse Interstage ATT | 0 to 8 dB |
| | Reverse Output ATT | 0 to 18 dB |
| | Reverse Output EQ | 0 to 15 dB |
| | Reverse Switch | 0 dB, -6 dB, or Off |

*Continued on next page*

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, FixGain, or AGC |
| | High Pilot Frequency | 47 to 1002 MHz |
| | High Pilot Level | 85 to 120 dBµV |
| | Backup High Pilot Frequency | 47 to 1002 MHz |
| | Backup High Pilot Level | 85 to 120 dBµV |
| | Low Pilot Frequency | 47 to 1002 MHz |
| | Low Pilot Level | 85 to 120 dBµV |
| | Backup Low Pilot Frequency | 47 to 1002 MHz |
| | Backup Low Pilot Level | 85 to 120 dBµV |
| | Temperature Back Off | -20, -10, 0, 10, 20, 30, 40, 50, 60 or AUTO degC |
| | Monitor Frequency 0 | 47 to 1002 MHz |
| | Monitor Frequency 1 | 47 to 1002 MHz |
| | Monitor Frequency 2 | 47 to 1002 MHz |
| | Monitor Frequency 3 | 47 to 1002 MHz |
| | Monitor Frequency 4 | 47 to 1002 MHz |
| | Monitor Frequency 5 | 47 to 1002 MHz |
| | Monitor Frequency 6 | 47 to 1002 MHz |
| | Monitor Frequency 7 | 47 to 1002 MHz |
| | Monitor Frequency 8 | 47 to 1002 MHz |
| | Monitor Frequency 9 | 47 to 1002 MHz |

# Setting Up the Amplifier 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 3-8 to determine the number for a required menu.

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

- 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 ATT directly.
- Press and hold "4" on the keypad to set forward output EQ directly.
- Press and hold "5" on the keypad to set reverse input ATT directly.
- Press and hold "6" on the keypad to set reverse output EQ directly.
- Press and hold "7" on the keypad to set reverse output ATT directly.

*Continued on next page*

### 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 Gain | Read-write<br>Select 40 dB or 32 dB |
| | | 112 Fwd Bandwidth | Read-write<br>Select 862 MHz or 1 GHz |
| | 12 Rev Config | 121 Rev Gain | Read-write<br>20-28 dB, 0.5 dB step |
| | 13 Mounted Modules | 131 Transponder | Read-only<br>Mounted or Not Mounted |
| | | 132 AGC Module | Read-only<br>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<br>1°C step |

| **2 Forward** | **Submenu1** | **Submenu2** | **Actions** |
|---|---|---|---|
| | 21 Fwd Input Att | – | Read-write<br>Set Fwd input attenuation<br>0–18 dB, Unit in 0.1 dB, 0.5 dB step |
| | 22 Fwd Input EQ | – | Read-write<br>Set Fwd input EQ<br>0–18 dB, unit in 0.1 dB, 0.5 dB step |
| | 23 Fwd Output Att | – | Read-write<br>Set Fwd output attenuation<br>0–11.5 dB, unit in 0.1 dB, 0.5 dB step |
| | 24 Fwd Output EQ | – | Read-write<br>Set Fwd output EQ<br>0–14 dB, unit in 0.1 dB, 0.5 dB step |
| | 25 Power Saving | – | Read-write<br>Select ON or OFF |

*Continued on next page*

### Menu Structures and Operations, continued

| 3 Reverse | Submenu1 | Submenu2 | Actions |
|---|---|---|---|
| | 31 Rev Input Att | – | Read-write<br>Set Rev input attenuation<br>0–20 dB, unit in 0.1 dB, 0.5 dB step |
| | 32 Rev Switch | – | Read-write<br>Set 0 dB, –6 dB or off |
| | 33 Rev Output ATT | – | Read-write<br>Set Rev output attenuation<br>0–18 dB, unit in 0.1 dB, 0.5 dB step |
| | 34 Rev Output EQ | – | Read-write<br>Set Rev output EQ<br>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.<br>If a setting position is available, it displays Empty; If not available, it displays nothing.<br>Copy the parameters from one product and store those parameters into a handheld EEPROM. (Parameters for both AGC module and Amplifier)<br>Select AMP, AMP+AGC, or Not Exist (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.<br>If no valid setting exists, you cannot enter the menu and No Data displays.<br>Restore the parameters from a Handheld EEPROM to a product. (Parameters for both AGC module and Amplifier)<br>Select AMP, AMP+AGC, or Not Exist (Abort or Execute) |
| | | 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)<br>Select Abort, AMP, AGC, or AMP+AGC |

*Continued on next page*

**Menu Structures and Operations**, continued

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

| 6 TP Module | Submenu1 | Submenu2 | Actions |
|---|---|---|---|
| | 61 TP SW ID | – | Read-only (only when using HMS) |
| | 62 MAC ADDR | – | Read-only |
| | 63 IP ADDR | – | Read-write (only when using HMS)<br>Set IP address |
| | 64 MASTER RESET | – | Read-write<br>Select Abort or Reset |
| | 65 FREQ | 651 STATUS | Read-only |
| | | 652 FREQ SCAN | Read-write (only when using HMS)<br>Select Disable or Enable |
| | | 653 BAUDRATE | Read-write (only when using SMC)<br>Select 9600, 19200, 38400 or ERROR |
| | | 654 TX FREQ | Read-write<br>5–65 MHz, unit in 0.01 MHz |
| | | 655 RX FREQ | Read-write<br>45–174 MHz, unit in 0.01 MHz |
| | | 656 TX LEVEL | Read-write<br>24–50 dB, unit in 1 dB |
| | | 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. | | | |

*Continued on next page*

**Menu Structures and Operations**, continued

| 7 AGC Module | Submenu1 | Submenu2 | Actions |
|---|---|---|---|
| | 71 Pilot Settings | 711 Pilot Hi Freq | Read-write<br>Pilot High Frequency, 47-1002 MHz, Unit in 0.0001 MHz |
| | | 712 Pilot Hi Level | Read-write<br>Pilot High Level, 85-120 dBµV, Unit in 0.1 dBµV |
| | | 713 Pilot Lo Freq | Read-write<br>Pilot Low Frequency, 47-1002 MHz, Unit in 0.0001 MHz |
| | | 714 Pilot Lo Level | Read-write<br>Pilot Low Level, 85-120 dBµV, Unit in 0.1 dBµV |
| | 72 Bk Pilot Settings | 722 Bk PilotHi Freq | Read-write, Backup Pilot High Frequency, 47-1002 MHz, Unit in 0.0001 MHz |
| | | 723 Bk PilotHi Level | Read-write, Backup Pilot High Level, 85-120 dBµV, Unit in 0.1 dBµV |
| | | 725 BkPilot Lo Freq | Read-write, Backup Pilot Low Frequency, 47-1002 MHz, Unit in 0.0001 MHz |
| | | 726 BkPilotLo Level | Read-write, Backup Pilot Low Level, 85-120 dBµV, Unit in 0.1 dBµV |
| | 73 Temp Backoff | – | Read-write<br>-20 deg-C, -10 deg-C, 0 deg-C, 10 deg-C, 20 deg-C, 30 deg-C, 40 deg-C, 50 deg-C, 60 deg-C or AUTO |
| | 74 Function | – | Read-write<br>AA, AGC, FixGain, Standby, ! AA, ! AGC, ! FixGain or ! Standby<br>In case of alarms, flashing an exclamatory mark "!" in "! AA/! AGC/! FGain/! Standby" |
| | 75 Alarm | – | Read-only<br>Normal, AA Time Out, AA OutRange, AGC OutRange or PltLevOutRng |
| | 76 Pilot Display | 761 Hi Pilot Slt | Read-only<br>Main/Backup |
| | | 762 Lo Pilot Slt | Read-only<br>Main/Backup |
| | | 763 Active Hi Freq | Read-only<br>Frequency unit in 0.0001 MHz |
| | | 764 Active Hi Level | Read-only<br>Level unit in 0.1 dBµV |
| | | 765 Active Lo Freq | Read-only<br>Frequency unit in 0.0001 MHz |
| | | 766 Active Lo Level | Read-only<br>Level unit in 0.1 dBµV |
| | 77 Identification | 771 Model Number | Read-only<br>Displays AGC model number |
| | | 772 Serial Number | Read-only<br>Displays AGC serial number |
| | | 773 Software ID | Read-only<br>Displays AGC software ID |

## ROSA Element Management System

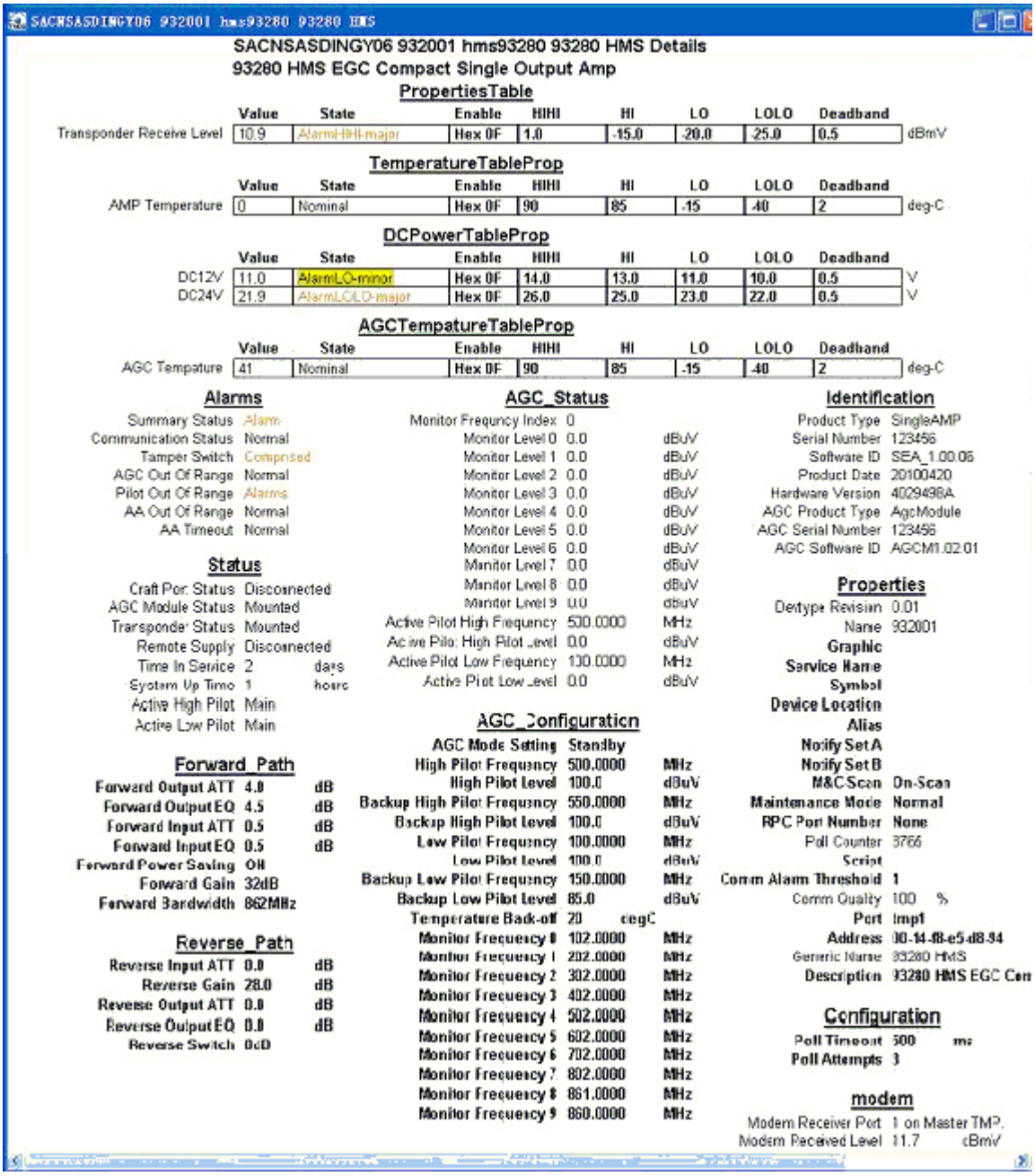
To monitor the amplifier, a transponder must be installed in the amplifier. This transponder will communicate back to the headend through the reverse path. The transponder signal is received at the test point at output. See *Overview Diagram* on page 1-2.

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 30 dB when injected at the reverse path.

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.

## HMS Transponder

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

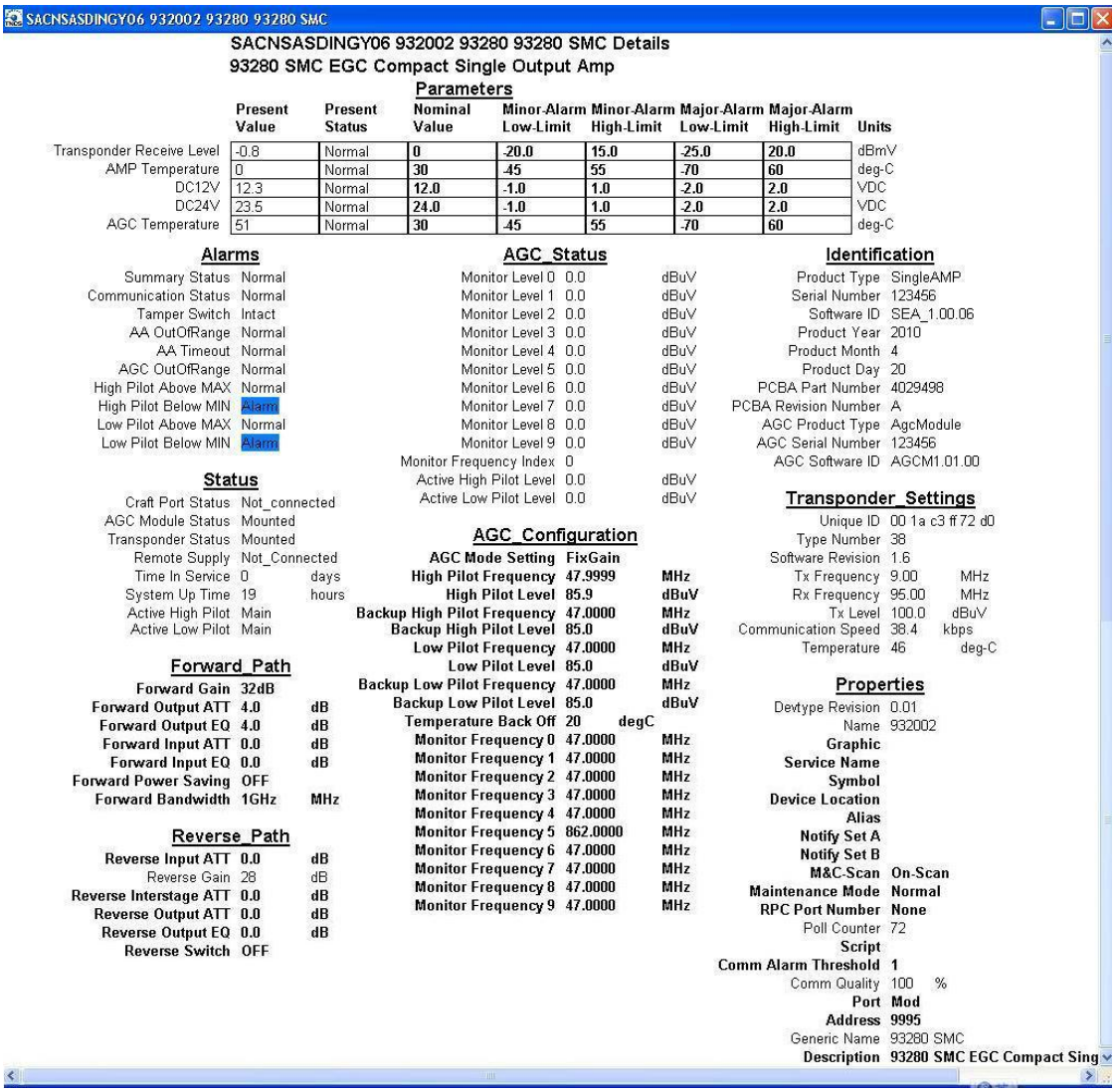



*Continued on next page*

### 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 932002 93280 93280 SMC

SACNSASDINGY06 932002 93280 93280 SMC Details

93280 SMC EGC Compact Single Output Amp

**Parameters**

| | Present Value | Present Status | Nominal Value | Minor-Alarm Low-Limit | Minor-Alarm High-Limit | Major-Alarm Low-Limit | Major-Alarm High-Limit | Units |
|---|---|---|---|---|---|---|---|---|
| Transponder Receive Level | -0.8 | Normal | 0 | -20.0 | 15.0 | -25.0 | 20.0 | dBmV |
| AMP Temperature | 0 | Normal | 30 | -45 | 55 | -70 | 60 | deg-C |
| DC12V | 12.3 | Normal | 12.0 | -1.0 | 1.0 | -2.0 | 2.0 | VDC |
| DC24V | 23.5 | Normal | 24.0 | -1.0 | 1.0 | -2.0 | 2.0 | VDC |
| AGC Temperature | 51 | Normal | 30 | -45 | 55 | -70 | 60 | deg-C |

**Alarms**

| | |
|---|---|
| Summary Status | Normal |
| Communication Status | Normal |
| Tamper Switch | Intact |
| AA OutOfRange | Normal |
| AA Timeout | Normal |
| AGC OutOfRange | Normal |
| High Pilot Above MAX | Normal |
| High Pilot Below MIN | Alarm |
| Low Pilot Above MAX | Normal |
| Low Pilot Below MIN | Alarm |

**Status**

| | | |
|---|---|---|
| Craft Port Status | Not_connected | |
| AGC Module Status | Mounted | |
| Transponder Status | Mounted | |
| Remote Supply | Not_Connected | |
| Time In Service | 0 | days |
| System Up Time | 19 | hours |
| Active High Pilot | Main | |
| Active Low Pilot | Main | |

**Forward_Path**

| | | |
|---|---|---|
| Forward Gain | 32dB | |
| Forward Output ATT | 4.0 | dB |
| Forward Output EQ | 4.0 | dB |
| Forward Input ATT | 0.0 | dB |
| Forward Input EQ | 0.0 | dB |
| Forward Power Saving | OFF | |
| Forward Bandwidth | 1GHz | MHz |

**Reverse_Path**

| | | |
|---|---|---|
| Reverse Input ATT | 0.0 | dB |
| Reverse Gain | 28 | dB |
| Reverse Interstage ATT | 0.0 | dB |
| Reverse Output ATT | 0.0 | dB |
| Reverse Output EQ | 0.0 | dB |
| Reverse Switch | OFF | |

**AGC_Status**

| | | |
|---|---|---|
| Monitor Level 0 | 0.0 | dBuV |
| Monitor Level 1 | 0.0 | dBuV |
| Monitor Level 2 | 0.0 | dBuV |
| Monitor Level 3 | 0.0 | dBuV |
| Monitor Level 4 | 0.0 | dBuV |
| Monitor Level 5 | 0.0 | dBuV |
| Monitor Level 6 | 0.0 | dBuV |
| Monitor Level 7 | 0.0 | dBuV |
| Monitor Level 8 | 0.0 | dBuV |
| Monitor Level 9 | 0.0 | dBuV |
| Monitor Frequency Index | 0 | |
| Active High Pilot Level | 0.0 | dBuV |
| Active Low Pilot Level | 0.0 | dBuV |

**AGC_Configuration**

| | | |
|---|---|---|
| AGC Mode Setting | FixGain | |
| High Pilot Frequency | 47.9999 | MHz |
| High Pilot Level | 85.9 | dBuV |
| Backup High Pilot Frequency | 47.0000 | MHz |
| Backup High Pilot Level | 85.0 | dBuV |
| Low Pilot Frequency | 47.0000 | MHz |
| Low Pilot Level | 85.0 | dBuV |
| Backup Low Pilot Frequency | 47.0000 | MHz |
| Backup Low Pilot Level | 85.0 | dBuV |
| Temperature Back Off | 20 | degC |
| Monitor Frequency 0 | 47.0000 | MHz |
| Monitor Frequency 1 | 47.0000 | MHz |
| Monitor Frequency 2 | 47.0000 | MHz |
| Monitor Frequency 3 | 47.0000 | MHz |
| Monitor Frequency 4 | 47.0000 | MHz |
| Monitor Frequency 5 | 862.0000 | MHz |
| Monitor Frequency 6 | 47.0000 | MHz |
| Monitor Frequency 7 | 47.0000 | MHz |
| Monitor Frequency 8 | 47.0000 | MHz |
| Monitor Frequency 9 | 47.0000 | MHz |

**Identification**

| | |
|---|---|
| Product Type | SingleAMP |
| Serial Number | 123456 |
| Software ID | SEA_1.00.06 |
| Product Year | 2010 |
| Product Month | 4 |
| Product Day | 20 |
| PCBA Part Number | 4029498 |
| PCBA Revision Number | A |
| AGC Product Type | AgcModule |
| AGC Serial Number | 123456 |
| AGC Software ID | AGCM1.01.00 |

**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 | 100.0 | dBuV |
| Communication Speed | 38.4 | kbps |
| Temperature | 46 | deg-C |

**Properties**

| | |
|---|---|
| Devtype Revision | 0.01 |
| Name | 932002 |
| 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 | 72 |
| Script | |
| Comm Alarm Threshold | 1 |
| Comm Quality | 100 % |
| Port | Mod |
| Address | 9995 |
| Generic Name | 93280 SMC |
| Description | 93280 SMC EGC Compact Sing |

## Starting Up the Amplifier with the AGC Module

The following sections describe how to operate amplifiers with the AGC module mounted. The LEDs on the AGC module indicate the status of the module when it is mounted.

When the amplifier is powered up, and during initialization of the AGC module and amplifier, the three LED indicators with different colors flash in sequence for approximately 50 seconds. The AGC module reads the configurations, such as pilot settings and AGC function settings, from the amplifier, and runs 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 output 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 not 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 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 they have been set to the desired values.

1. Connect Terminal A91200 to the amplifier by plugging the connector of the terminal into the LCI socket. The display on the terminal shows the status of the AGC module.
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 ENTER 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. See page 3-7 for details. Value input out of the specified range will not be effective, and an "Out of Range" display will appear.

6. Before using the auto alignment function, the cable temperature also has to be set up. Go to submenu "73 Temp Backoff" and press ▶ and ▼ ▲ to select the desired value. Press ENTER to confirm. When the auto alignment is completed, the temperature returns to 20℃ by default.

## Functions of the AGC Module

### Standby

If no function is required, the AGC module is automatically 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 the auto alignment function is selected, if the differences between the detected pilot levels and the set pilot levels are less then ±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 ±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. See 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. See 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 the 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.

The user cannot switch the AGC module to other functions, or change the values of attenuator or equalizer, until the auto alignment is completed. At this time, both attenuator and equalizer 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 the auto-alignment function. This function is used for adjusting the input attenuator and equalizer only. Before running the auto-alignment function to automatically set the input attenuator and equalizer, make sure to manually set the interstage attenuator and equalizer to a desired value first.

*Continued on next page*

### AGC

The AGC function continuously adjusts output attenuators and equalizers up to ±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 ±4 dB range, an alarm activates on the LED indicators or ROSA Element Management system. See page 3-16 for the descriptions of LED indicators. After each tuning task is completed, the AGC module goes to sleep 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 the output 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 output 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 output attenuator and equalizer remain. If a new AGC module is installed into the amplifier, the values of output 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.

# Temperature Back-off

## Introduction

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 to work at room temperature. This feature is used for the 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.
- Room temperature is defined as 20℃.

## Using the 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 3-17.

There are two ways to determine the temperature compensation needed.

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

# Chapter 4
# Customer Support Information

## Overview

### Introduction

This chapter contains information on obtaining product support.

### Obtaining Product Support

| IF… | THEN… |
|---|---|
| you have general questions about this product | contact your distributor or sales agent for product information or refer to product data sheets on www.cisco.com. |
| 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.

# 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<br>Atlanta, Georgia<br>United States | For *Technical Support*, call:<br>■ Toll-free: 1-800-722-2009<br>■ Local: 678-277-1120 (Press **2** at the prompt)<br>For *Customer Service*, call:<br>■ Toll-free: 1-800-722-2009<br>■ Local: 678-277-1120 (Press **3** at the prompt)<br>■ Fax: 770-236-5477<br>■ E-mail: customer-service@cisco.com |
| Europe,<br>Middle East,<br>Africa | Belgium | For *Technical Support*, call:<br>■ Telephone: 32-56-445-197 or 32-56-445-155<br>■ Fax: 32-56-445-061<br>For *Customer Service*, call:<br>■ Telephone: 32-56-445-444<br>■ Fax: 32-56-445-051<br>■ E-mail: service-elc@cisco.com |
| Japan | Japan | ■ Telephone: 81-3-5908-2153 or +81-3-5908-2154<br>■ Fax: 81-3-5908-2155 |
| Korea | Korea | ■ Telephone: 82-2-3429-8800<br>■ Fax: 82-2-3452-9748<br>■ E-mail: songk@cisco.com |
| China (mainland) | China | ■ Telephone: 86-21-2401-4433<br>■ Fax: 86-21-2401-4455<br>■ E-mail: repaircentercn@external.cisco.com |
| All other<br>Asia-Pacific countries<br>& Australia | Hong Kong | ■ Telephone: 852-2588-4746<br>■ Fax: 852-2588-3139<br>■ E-mail: support.apr@sciatl.com |
| Brazil | Brazil | ■ Telephone: 11-55-08-9999<br>■ Fax: 11-55-08-9998<br>■ E-mail: fattinl@cisco.com or ecavalhe@cisco.com |
| Mexico,<br>Central America,<br>Caribbean | Mexico | For *Technical Support*, call:<br>■ Telephone: 52-3515152599<br>■ Fax: 52-3515152599<br>For *Customer Service*, call:<br>■ Telephone: 52-55-50-81-8425<br>■ Fax: 52-55-52-61-0893 |
| All other<br>Latin America<br>countries | Argentina | For *Technical Support*, call:<br>■ Telephone: 54-23-20-403340 ext 109<br>■ Fax: 54-23-20-403340 ext 103<br>For *Customer Service*, call:<br>■ Telephone: 770-236-5662<br>■ Fax: 770-236-5888<br>■ E-mail: keillov@cisco.com |

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