Imagine
COMMUNICATIONS™

Installation and Operation Manual

ARG6800+
Analog Remote Gain Module

Edition B

175-000148-00

Publication Information

Trademarks

Contact Information

Imagine Communications has office locations around the world. For locations and contact information see:

http://www.imaginecommunications.com/contact us/

Support Contact Information

For support contact information see:

- Support Contacts: http://www.imaginecommunications.com/services/technical support/
- eCustomer Portal: http://support.imaginecommunications.com

ARG6800+
Analog Remote Gain Module

Installation and Operation Manual

Contents

Chapter 3: Operation

Chapter 4: Specifications

Appendix A: Communication and Control Troubleshooting Tips

Index

Preface

Manual Information

Purpose

This manual details the features, installation, operation, maintenance, and specifications for the ARG6800✛ Analog Remote Gain Module.

Audience

This manual is written for engineers, technicians, and operators responsible for installation, setup, maintenance, and/or operation of the ARG6800✛ Analog Remote Gain Module.

Revision History

Table P-1. Revision History of Manual

Edition	Date	Comments
A	June 2003	Initial release
B	December 2006	Minor corrections to content

Writing Conventions

To enhance your understanding, the authors of this manual have adhered to the following text conventions:

Table P-2. Writing Conventions

Term or Convention	Description
Bold	Indicates dialog boxes, property sheets, fields, buttons, check boxes, list boxes, combo boxes, menus, submenus, windows, lists, and selection names
Italics	Indicates E-mail addresses, the names of books or publications, and the first instances of new terms and specialized words that need emphasis
CAPS	Indicates a specific key on the keyboard, such as ENTER, TAB, CTRL, ALT, or DELETE
Code	Indicates variables or command-line entries, such as a DOS entry or something you type into a field
>	Indicates the direction of navigation through a hierarchy of menus and windows
hyperlink	Indicates a jump to another location within the electronic document or elsewhere
Internet address	Indicates a jump to a Web site or URL
✎ **Note**	Indicates important information that helps to avoid and troubleshoot problems

Obtaining Documents

Product support documents can be viewed or downloaded from our Web site at www.broadcast.harris.com/leitch (go to **Support> Documentation**). Alternatively, contact your customer service representative to request a document.

Unpacking/Shipping Information

Unpacking a Product

This product was carefully inspected, tested, and calibrated before shipment to ensure years of stable and trouble-free service.

1. Check equipment for any visible damage that may have occurred during transit.
2. Confirm that you have received all items listed on the packing list.
3. Contact your dealer if any item on the packing list is missing.
4. Contact the carrier if any item is damaged.
5. Remove all packaging material from the product and its associated components before you install the unit.

Keep at least one set of original packaging, in the event that you need to return a product for servicing.

Product Servicing

Except for firmware upgrades, ARG6800✚ modules are not designed for field servicing. All hardware upgrades, modifications, or repairs require you to return the modules to the Customer Service center.

Returning a Product

In the unlikely event that your product fails to operate properly, please contact Customer Service to obtain a Return Authorization (RA) number, then send the unit back for servicing.

Keep at least one set of original packaging in the event that a product needs to be returned for service. If the original package is not available, you can supply your own packaging as long as it meets the following criteria:

• The packaging must be able to withstand the product's weight.

• The product must be held rigid within the packaging.

• There must be at least 2 in. (5 cm) of space between the product and the container.

• The corners of the product must be protected.

Ship products back to us for servicing prepaid and, if possible, in the original packaging material. If the product is still within the warranty period, we will return the product prepaid after servicing.

Restriction on Hazardous Substances (RoHS) Compliance

Directive 2002/95/EC—commonly known as the European Union (EU) Restriction on Hazardous Substances (RoHS)—sets limits on the use of certain substances found in electrical and electronic equipment. The intent of this legislation is to reduce the amount of hazardous chemicals that may leach out of landfill sites or otherwise contaminate the environment during end-of-life recycling. The Directive takes effect on July 1, 2006, and it refers to the following hazardous substances:

- Lead (Pb)
- Mercury (Hg)
- Cadmium (Cd)
- Hexavalent Chromium (Cr-V1)
- Polybrominated Biphenyls (PBB)
- Polybrominated Diphenyl Ethers (PBDE)

According to this EU Directive, all products sold in the European Union will be fully RoHS-compliant and "lead-free." (See our Web site, www.broadcast.harris.com/leitch, for more information on dates and deadlines for compliance.) Spare parts supplied for the repair and upgrade of equipment sold before July 1, 2006 are exempt from the legislation. Equipment that complies with the EU directive will be marked with a RoHS-compliant emblem, as shown in Figure P-1.

RoHS
Compliant

Figure P-1. RoHS Compliance Emblem

Waste from Electrical and Electronic Equipment (WEEE) Compliance

The European Union (EU) Directive 2002/96/EC on Waste from Electrical and Electronic Equipment (WEEE) deals with the collection, treatment, recovery, and recycling of electrical and electronic waste products. The objective of the WEEE Directive is to assign the responsibility for the disposal of associated hazardous waste to either the producers or users of these products. Effective August 13, 2005, producers or users will be required to recycle electrical and electronic equipment at end of its useful life, and may not dispose of the equipment in landfills or by using other unapproved methods. (Some EU member states may have different deadlines.)

In accordance with this EU Directive, companies selling electric or electronic devices in the EU will affix labels indicating that such products must be properly recycled. (See our Web site, www.broadcast.harris.com/leitch, for more information on dates and deadlines for compliance.) Contact your local sales representative for information on returning these products for recycling. Equipment that complies with the EU directive will be marked with a WEEE-compliant emblem, as shown in Figure P-2.
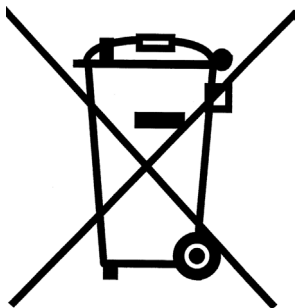
Figure P-2. WEEE Compliance Emblem

Safety

Carefully review all safety precautions to avoid injury and prevent damage to this product or any products connected to it. If this product is rack-mountable, it should be mounted in an appropriate rack using the rack-mounting positions and rear support guides provided. It is recommended that each frame be connected to a separate electrical circuit for protection against circuit overloading. If this product relies on forced air cooling, it is recommended that all obstructions to the air flow be removed prior to mounting the frame in the rack.

If this product has a provision for external earth grounding, it is recommended that the frame be grounded to earth via the protective earth ground on the rear panel.

IMPORTANT! Only qualified personnel should perform service procedures.

Safety Terms and Symbols in this Manual

WARNING

Statements identifying conditions or practices that may result in personal injury or loss of life. High voltage is present.

CAUTION

Statements identifying conditions or practices that can result in damage to the equipment or other property.

Introduction

Overview

The ARG6800✚ is an analog audio remote gain distribution amplifier module with configurable outputs. This module boasts both card-edge and remote control capabilities.

The following topics are described in this chapter:

Product Description

The ARG6800✚ analog audio remote gain distribution amplifier module provides the ultimate flexibility and versatility in one package. The module can be configured to function as either mono or stereo, can have summed outputs, and provides a complete remote (or local) gain range with unsurpassed technical specifications.

The ARG6800✚ can be configured with one of two back connectors: a single-slot back connector with five 3-pin audio connectors (ARG6800✚SR), or a double-slot back connector with ten connectors (ARG6800✚DR).

You can set up, control, and monitor the ARG6800✚ either locally via card-edge switches or remotely on a PC. For remote control, you can use either a serial RS-232 connection (with the ✚Pilot Lite™ software) or an optional ICE6800✚ Ethernet connection (with CCS™ software or remote control panel).

Other ARG6800✚ features include the following:

- Balanced inputs and outputs

- Remote control for mute settings

- Remote indication for channel state and overload

- Remote and local control for independent channel gain adjustment

- Local control for selecting output configuration

- Configurable outputs to one of the following options:

    - Eight outputs designated to one channel (1x8)

    - Four outputs designated to channel A, four outputs designated to channel B (dual 1x4)

    - Eight outputs designated to the combined stream of both channels (2x8 sum)

Module Descriptions

Front Module

Figure 1-1 is a top-front view of a the ARG6800✚ front module, and shows the location of LEDs, controls, and jumpers.
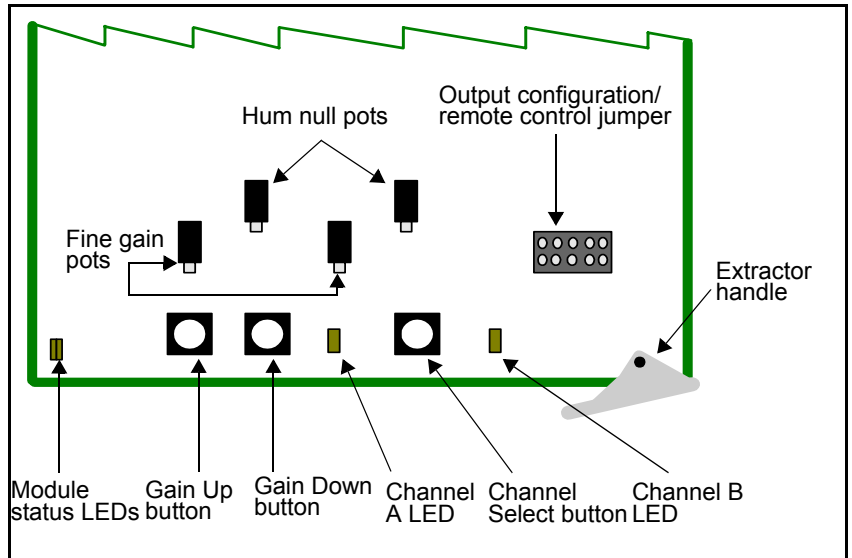
Figure 1-1. ARG6800✚ Module Controls

Table 1-1 on page 4 briefly describes LEDs, switches, and jumpers. See Chapter 3: "Operation" for more information on ARG6800✚ front module controls and jumpers.

Table 1-1. Generic ARG6800✚ Front Module Features

Feature	Description
Module status LEDs	Various color and lighting combinations of these LEDs indicate the module state. See "LEDs and Alarms" in Chapter 3 for more information.
Gain Up and Down buttons	Press to increase or decrease the gain accordingly. Use a monitoring application (such as +Pilot Lite or another CCS software application like Pilot™, or Navigator™) to read the actual gain levels.
Channel Select button	Press to select between channel A and B.
Channel A and B LEDs	Verify the selected channel. The selected channel (A/B) is indicated by the corresponding lit LED.
Fine gain pots controls	Rotate the potentiometer to adjust the attenuation of the input signal to a maximum of ±1.5 dB, ±5%. (This control is factory set.)
Hum null pots controls	Rotate the potentiometer to adjust the offset between the input balanced pair. (This control is factory set.)
Output configuration/ remote control jumper	Set the jumper to configure the output locally or remotely. Jumper settings include the following: • **1x8 Ch A:** All eight outputs are set to channel A • **1x8 Ch B:** All eight outputs are set to channel B • **Dual 1x4**: Four outputs are sets to channel A, four outputs are set to channel B • **Sum:** All eight outputs are set to output the averaged stream of both channel A and B • **Remote:** Remote configuration, operation, and monitoring of the ARG6800✚ allowed

Back Connectors

FR6802✚ Frame Back Connectors

Note

f you connect the ARG6800✚ front module to an ARG6800✚SR single-slot back connector, the output configuration will be fixed to Channel A for all eight outputs. As well, the remote parameters for Channel B Gain, Mute, and State will be disabled.

Figure 1-2 shows the single-slot back connector used by the ARG6800✚ when installed in an FR6802✚XF or FR6802✚QXF frame.
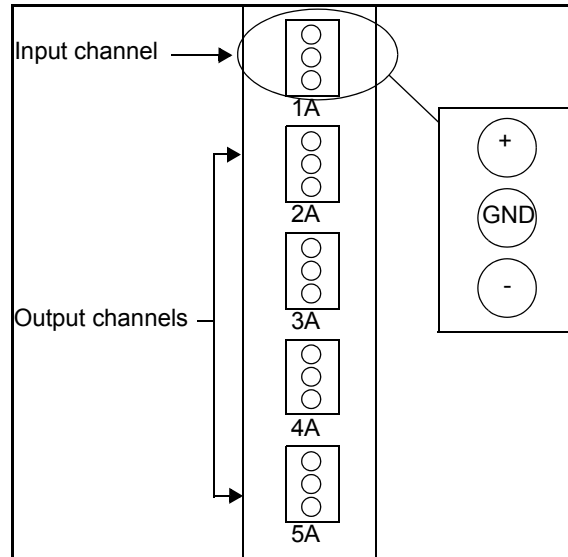
Figure 1-2. Single-Slot Back Connector for FR6802✚ Frame (ARG6800✚SR)

Figure 1-3 on page 6 shows the double-slot back connector used by the ARG6800✚ when installed in an FR6802✚XF or FR6802✚QXF frame.
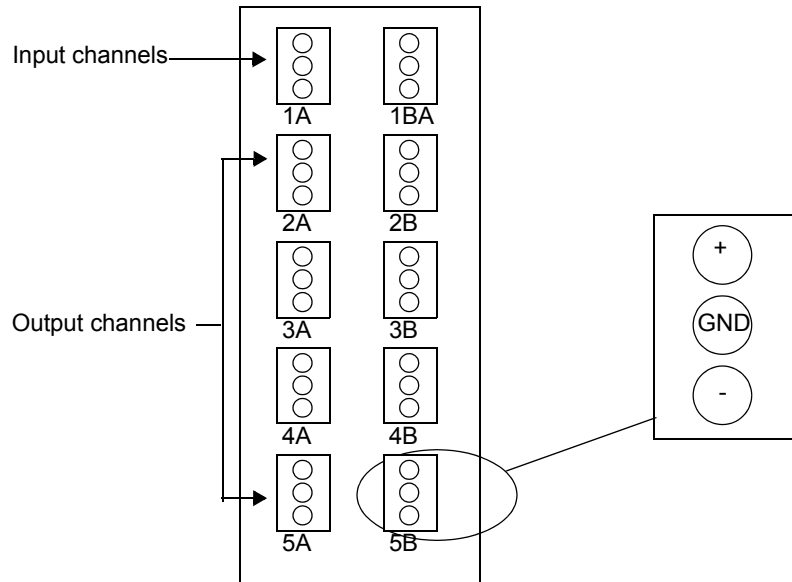
Figure 1-3. Double-Slot Back Connector for FR6802✚ Frame (ARG6800✚DR)

Signal Flow
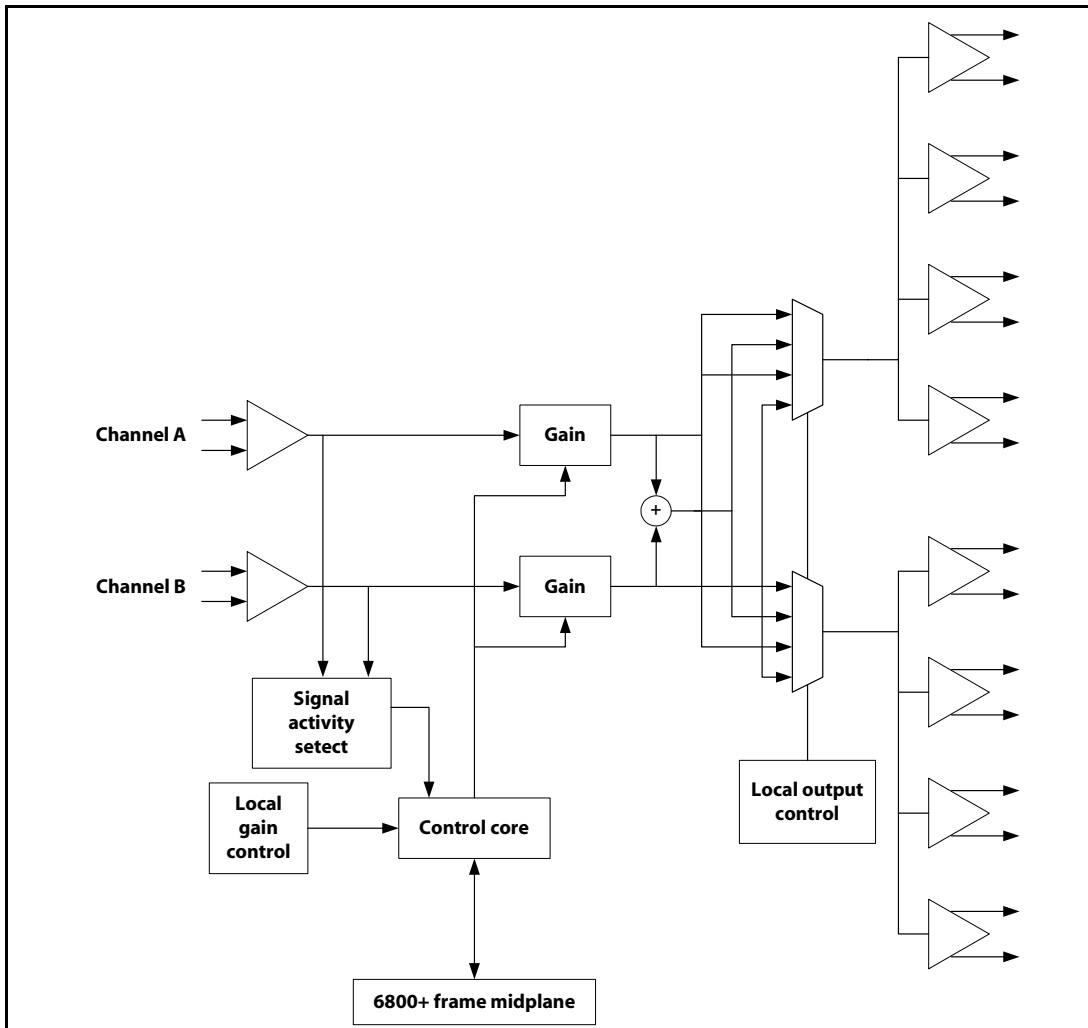
Figure 1-4. Signal Flow Diagram

Chapter 2
Installation

Overview

This chapter describes the ARG6800✛ installation process, including the following topics:

⚠️ **CAUTION**

Before installing this product, read the 6800✛ Series Safety Instructions and Standards manual shipped with every *FR6802✛ Frame Installation and Operation Manual*, or downloadable from our Web site at www.broadcast.harris.com/leitch. This safety manual contains important information about the safe installation and operation of 6800✛ series products.

See the *FR6802✛ Frame Installation and Operation Manual* for information about installing and operating an FR6802✛ frame and its components.

Maximum 6800✚ Frame Power Ratings

The power consumption for the ARG6800✚ module is 3 W.

Table 2-1 describes the maximum allowable power ratings for 6800✚ frames. Note the given maximums before installing any 6800✚ modules in your frame.

Table 2-1. Maximum Power Ratings for 6800✚ Frames

6800✚ Frame Type	Max. Frame Power Dissipation	Number of Usable Slots	Max. Power Dissipation Per Slot
FR6802✚XF (frame with AC power supply)	120 W	20	6 W
FR6802✚XF48 (frame with DC power supply)	105 W	20	5.25 W
FR6802✚QXF (frame with DC or AC power supply)	120 W	20	6 W

Unpacking the Module

Preparing the Product for Installation

Before you install the ARG6800✛, perform the following:

- Check the equipment for any visible damage that may have occurred during transit.

- Confirm receipt of all items on the packing list. See "Checking the Packing List" for more information.

- Remove the anti-static shipping pouch, if present, and all other packaging material.

- Retain the original packaging materials for possible re-use.

See "Unpacking/Shipping Information" on page ix for information about returning a product for servicing.

Checking the Packing List

Table 2-2. Available Product Packages

Ordered Product	Content Description
ARG6800✛	• One ARG6800✛ front module • One *ARG6800✛ Installation and Operation Manual*
ARG6800✛S	• One ARG6800✛ front module • One standard single-slot back connector with five 3-pin male audio connectors (ARG6800+SR) • Five 3-pin female mating connectors • One *ARG6800✛ Installation and Operation Manual*

Table 2-2. Available Product Packages *(Continued)*

Ordered Product	Content Description
ARG6800✚D	• One ARG6800✚ front module • One standard double-slot back connector with ten 3-pin male audio connectors (ARG6800+DR) • Ten 3-pin female mating connectors • One *ARG6800✚ Installation and Operation Manual*
ARG6800✚SR	• One standard single-slot back connector with five 3-pin male audio connectors • Five 3-pin female mating connectors
ARG6800✚DR	• One standard double-slot back connector with ten 3-pin male audio connectors • Ten 3-pin female mating connectors

Setting Jumpers

The ARG6800✚ module has one standard jumper (**CJ1**). You can set the jumper to configure the outputs remotely on a PC, or locally.

1. Locate jumper **CJ1** on the module (beside the extractor handle).

   Figure 2-1 shows the location of the **CJ1** jumper.

Local/remote control and channel output jumper
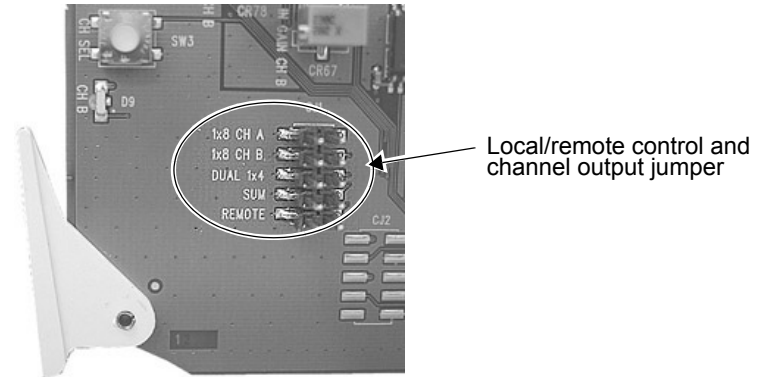
Figure 2-1. Location of the CJ1 Jumper

2. Place a jumper on pins 9 and 10 to set the module for remote control and to configure the outputs on a PC.

   Alternatively, place a jumper on one of the following pin sets to configure the module outputs locally:

   • **Pins 1 and 2 (1x8 Ch A)**: All eight outputs are set to channel A

   • **Pins 2 and 4 (1x8 Ch B)**: All eight outputs are set to channel B

   • **Pins 5 and 6 (Dual 1x4)**: Four outputs are sets to channel A, four outputs are set to channel B

   • **Pins 7 and 8 (Sum)**: All eight outputs are set to output the combined stream of both channel A and B

   Figure 2-2 identifies the pin locations.
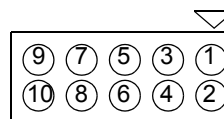
Figure 2-2. Pin Locations on Jumper CJ1

All other module parameters (such as **Mute**) must be set remotely.

Installing 6800✛ Modules

Required Frames and Back Connector Types

There are three types of modules:

*   Double-slot back connectors

*   Single-slot back connectors

*   Front modules

Back connectors come in two sizes: double-slot and single-slot. The 6800✛ front modules can connect to either single- or double-slot back connectors depending on the product type (See the *Installation and Operation Manual* that accompanies an individual front module for details on its back connector requirements).

Up to twenty front modules connected to single-slot back connectors fit in an FR6802✛ frame. Up to ten front modules can fit in a frame if they are connected to double-slot back connectors (two spaces are required to accommodate the extra slot of the back connector).

You can install most 6800✛ modules in any unused slot without interfering with other frame functions.

Installing and Removing ARG6800✛ Modules

These modules require no specialized installation or removal procedures. However, if installing both front and rear modules, ensure that the back module is installed first before plugging in the front module. When removing both the front and rear modules, ensure that the front module is unplugged from the frame first, before removing the rear module.

*   See the *FR6802✛ Frame Installation and Operation Manual* for information about installing and operating an FR6802✛ frame and its components.

*   See the *6800✛ Safety Instructions and Standards Manual* for important information about safely installing your module.

Once you have installed your ARG6800✛ modules, you can connect them to the appropriate input and outputs.

Making Connections

Once you have installed an ARG6800✚ back connector, plug the 3-pin female mating connectors into the 3-pin male audio connectors on the back connector. Now you can connect it to the appropriate audio signal inputs and outputs. See Figure 1-2 on page 5 and Figure 1-3 on page 6.

If you have connected the ARG6800✚ front module to an ARG6800✚SR single-slot back connector, the output configuration is fixed to **Channel A** for all four outputs.

Operation

Overview

This chapter describes how to operate the ARG6800✚ using card-edge controls only. See the following documents for information on how to operate this product remotely:

- ✚Pilot Lite User Manual for serial control interface
- CCS™ Navigator™, Pilot™ CoPilot™ or RCP-CCS-1U Remote Control Panel Manual for Ethernet control interface

The following topics are discussed in this chapter:

Understanding Card-Edge Controls

Control Types

> **Note**
>
> For best results, use the available 6800✛ software control options (serial/local or Ethernet/remote) to aid in viewing, setting, and confirming parameter values.

> **Note**
>
> Four potentiometers are also located on the card-edge to adjust the fine gain of the input signal (Fine Gain Ch A/B pots) and to adjust the offset between the input balanced pair (Hum Null Ch A/B pots). These items are factory set, and should only be adjusted by qualified personnel.

You can operate and monitor certain controls for the ARG6800✛ using the **Gain Up/Dwn** and **Ch Sel** buttons, the **Ch A/B** LED indicators, and the CJ1 jumper (used for setting the channel output and local/remote control). See Figure 3-1 for the location of all card-edge controls.

Other settings can only be configured using remote control software (for example, +Pilot Lite for serial control or CCS Pilot or Navigator for Ethernet control). See "Setting Remotely Controlled Parameters" on page 22 for a list of controls that can only be configured on a PC.

Channel A and B LEDs
View these LEDs to identify the currently selected channel

Gain up and down buttons
Press to increase or decrease the gain

Channel select button
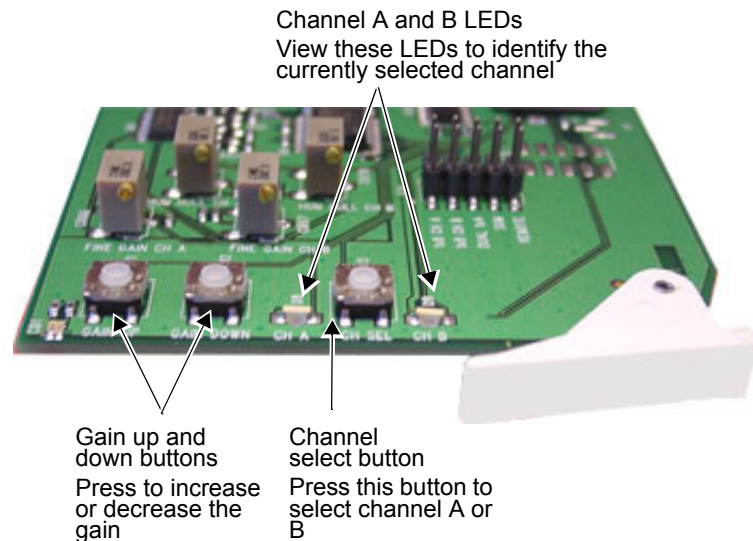Press this button to select channel A or B

Figure 3-1. Card-Edge Controls

Gain Up and Down Buttons

The **Gain Up** and **Gain Dwn** buttons increase and decrease the audio signal gain respectively in 0.5 dB steps. The gain range is -95.5 dB to 31.5 dB.

Channel Select Button and Ch A/B LEDs

The **Ch Sel** button selects between channel A or B. The **Ch A** and **Ch B** LEDs indicate which channel is active. Local control applies to the currently selected channel.

CJ1 Jumper for Channel Output and Local/Remote Control

> **📝 Note**
>
> You need to configure modules for local or remote operation prior to power-up. To change the configuration, first remove power from the module, reset the jumper, and then reapply power.

Locally configure the outputs using this jumper, or set the jumper for remote configuration.

- If you configure the jumper for remote control (pins 9 and 10), any changes that you make to the card-edge buttons and pots will not take effect. The channel selection LEDs will remain unlit to signify that the module is under remote control.

- If you configure the jumper for local control, all gain output configuration must be done with the buttons, pots, and jumpers on the module. Local control changes will be reflected in the remote control software, but you will not be able to change these settings remotely.

  See "Setting Jumpers" on page 13 for more information on configuring the module outputs locally with this jumper.

Fine Gain Ch A and B Potentiometers

> **📝 Note**
>
> These are factory set and should only be adjusted by qualified personnel. A 3/32" slotted screw driver or tweeker is used to adjust pots.

The **Fine Gain Ch A** and **Fine Gain Ch B** pots finely adjust the gain of the input signal and set the exact unity. The gain can be trimmed to a maximum of ±1.5 dB, ±5%.

Hum Null Ch A and B Potentiometers

> **📝 Note**
>
> These are factory set and should only be adjusted by qualified personnel. A 3/32" slotted screw driver or tweeker is used to adjust pots.

The **Hum Null Ch A** and **Hum Null Ch B** pots adjust the offset between the input balanced pair signals.

Setting Local ARG6800✚ Card-Edge Controls

When configuring the module locally, use the available 6800✚ software control options (serial/local or Ethernet/remote) to aid in viewing, setting, and confirming parameter values.

Follow these steps to locally configure the ARG6800✚:

1. Configure the module audio outputs locally by placing a jumper over one of the following pin sets on jumper **CJ1**:

    • **Pins 1 and 2 (1x8 Ch A)** to set all eight outputs to channel A

    • **Pins 3 and 4 (1x8 Ch B)** to set all eight outputs to channel B

    • **Pins 5 and 6 (Dual 1x4)** to set four outputs to channel A and four outputs to channel B

    • **Pins 7 and 8 (Sum)** to set all eight outputs to the combined stream of both channel A and B

   See "Setting Jumpers" on page 13 for more information.

2. Press the **Ch Sel** button to select an audio channel (either A or B).

   The **Ch A** or **Ch B** LED will light to indicate the currently selected channel.

3. Press the **Gain Up** button to increase the audio signal gain on the selected channel.

   Each time you press the button, the gain will increase by 0.5 dB. Increase the gain to a maximum of 31.5 dB.

4. Press the **Gain Dwn** button to decrease the audio signal gain on the selected channel.

   Each time you press the button, the gain will decrease by 0.5 dB. Decrease the gain to a minimum of -95.5 dB.

5. Using a 3/32" slotted screwdriver or tweeker, qualified personnel may choose to adjust the **Fine Gain Ch A** and **Fine Gain Ch B** potentiometers, or the **Hum Null Ch A** and **Hum Null Ch B** potentiometers at this time.

   As the potentiometer settings are factory set, they should not need readjustment for normal operating circumstances.

Operation Notes

Note the following:

*   Each time the ARG6800✚ powers up, the channel gain returns to the last known value.

*   The default setting for the local gain channel selection is channel A.

*   Local changes made to gain controls will be reflected in the remote gain control settings of your CCS control software application.

*   When the module is set to local control, gain adjustment and output configuration are done on the card-edge but also reflected in your CCS control software application. Any remote attempts to adjust the gain, configure the outputs, or mute the signal will have no effect.

*   When the module is set to remote control, any local attempts to use card-edge features will have no effect. The **Ch A/B** LEDs on the module will be unlit to signify that the module is under remote control.

*   If a jumper is not placed on the **CJ1** jumper, the module will route all outputs to channel A.

*   If the input channel is <-40 dBu for five seconds, it is considered inactive. If the input the channel is >-40 dBu for five seconds, it is considered active. This channel state information is relayed to you through your CCS control software application.

Setting Remotely Controlled Parameters

The ARG6800✤ has several parameters that cannot be set or monitored with card-edge controls. Table 3-1 describes ARG6800✤ parameters and alarms that are only accessible remotely.

Legend

*=Indicates parameters that are not available when the ARG6800✤ is connected to an ARG6800✤SR back connector.

[RO]=Indicates that parameters are read-only/feedback, and cannot be used to select controls.

See your CCS control software application manual or online help for more information on setting and monitoring the following parameters remotely:

Table 3-1. Remotely Controlled Parameters

Parameter Name	Range	Description
Out Config *	• 1x8 Ch A • 1x8 Ch B • Dual 1x4 • Sum	Sets the output configuration for the module
Ch A	-95.5 to 31.5 dB	Sets the gain for channel A in steps of 0.5 dB (can also be set locally)
Ch B *	-95.5 to 31.5 dB	Sets the gain for channel B in steps of 0.5 dB (can also be set locally)
Ch A Mute	• On • Off	Mutes channel A
Ch B Mute *	• On • Off	Mutes channel B
Ch A State [RO]	• Active • Inactive	Indicates if channel A is active or inactive

Table 3-1. Remotely Controlled Parameters *(Continued)*

Parameter Name	Range	Description
Ch B State *	• Active • Inactive	Indicates if channel B is active or inactive (read-only parameter)
Ch A Overload (alarm) [RO]	• On • Off	Indicates is an overload condition exists on channel A
Ch B Overload (alarm) [RO]	• On • Off	Indicates is an overload condition exists on channel B

See"LEDs and Alarms" on page 24 for more information on remotely monitoring ARG6800✚ alarms.

Reading the Software Version

The current software version of your ARG6800✚ module can only be viewed using Pilot (via Ethernet control). See your *CCS Pilot User Manual* or Online Help for information on viewing software versions.

LEDs and Alarms

Channel A and B LEDs

The **Ch A** and **Ch B** LEDs indicate which channel is currently selected.

Module Status LEDs

The ARG6800✚ module does not have any card-edge alarms. Instead, module status LEDs on the corner of the module light if an error is detected. See Figure 1-1 on page 3 for the location of these LEDs, and Table 3-2 for a definition of the LED colors.

Alarms are usually logged and monitored within the available 6800✚ software control applications (for example, +Pilot Lite or Pilot). See the appropriate software control user manual or online help for more information.

Table 3-2. Status LED Descriptions

LED Color Sequence	Meaning
Off	There is no power to the module; the module is not operational.
Green	There is power to the module; the module is operating properly.
Red	There is an alarm condition.

Chapter 4
Specifications

Overview

The following specification tables appear in this chapter:

- "Balanced Analog Audio Input" on page 26
- "Balanced Analog Audio Output" on page 26
- "Performance" on page 27
- "Channel Monitoring Specifications" on page 27
- "Power Consumption" on page 27

Specifications and designs are subject to change without notice.

Balanced Analog Audio Input

Item	Specification
Number of inputs	• ARG6800✚SR: 1 input • ARG6800✚DR: 2 inputs
Connector	3-pin audio connector
Signal type	Balanced
Input impedance	HiZ, >30 kΩ
Maximum input level	+28 dBu
CMR range	±20 V
CMRR (common mode rejection ratio)	90 dB @ 60 Hz @ 8 dBu
Gain range	-95.5 to 31.5 dB in 0.5 dB steps (gain increment tolerance ±0.05 dB)
Gain trim	Local front adjust potentiometers provide ±1.5 dB to set exact unity

Balanced Analog Audio Output

Item	Specification
Number of outputs	• ARG6800✚SR: 4 outputs • ARG6800✚DR: 8 outputs
Connector	3-pin audio connector
Signal type	Balanced
Output impedance	66Ω
Maximum output level	+28 dBu

Performance

Item	Specification
SNR	>90 dB @ unity gain, 20 Hz to 20 kHz relative to +8 dBu signal, unweighted
Frequency response	±0.05 dB 20 Hz to 20 kHz relative to 1 kHz @ unity gain
THD	<0.02% 20 Hz to 20 kHz @ 24 dBu
IMD	<0.02%, SMPTE @ +18 dBu
Crosstalk	>85 dB isolation, 20 Hz to 20 kHz
Output isolation	>70 dB, 20 Hz to 20 kHz

Channel Monitoring Specifications

Item	Specification
Channel state	• Inactive state if Channel <-40 dBu for 5 sec • Active state if Channel >-40 dBu for 5 sec
Channel overload	Overload condition if Channel >23.5 dBu for 1 sec

Power Consumption

Total power required by the ARG6800✚ is 3 W.

Communication and Control Troubleshooting Tips

Overview

Find the following troubleshooting information in this appendix:

General Troubleshooting Steps

Follow these steps in troubleshooting 6800✚ product problems:

1. Review the "Software Communication and Control Issues" on page 30 outlined in this chapter.

2. Search this product manual and other associated documentation for answers to your question.

   Product documentation (including manuals, online help, application notes, erratas, product release notes, and more) can be found on the Leitch Web site at www.broadcast.harris.com/leitch (Support section), along with technical support information, training information, product downloads, and the Leitch product knowledge base.

3. Contact your Customer Service representative if, after following these initial steps, you cannot resolve the issue.

   To contact Customer Service, see "Contacting Customer Service" on page 34.

> ### 📝 Note
>
> Associated documentation for 6800✚ series products can generally be found in the product-specific manual that accompanies every module, in the *FR6802✚ Frame Installation and Operation Manual*, and in the *6800✚ Safety Instructions and Standards Manual*.

Software Communication and Control Issues

- "✚ Pilot Lite Fails to Communicate with Installed Modules" on page 30
- "✚ Pilot Lite Does Not Find All Modules in Frame" on page 32
- "✚ Pilot Lite or CCS Software Application Not Responding" on page 33
- "✚ Pilot Lite Cannot Control a Module Showing in the Control Window" on page 33
- "✚ Pilot Lite Status Bar Reports "Not Ready"" on page 33
- "CCS Software Application or Remote Control Panel Does Not Communicate with Module" on page 33
- "Alarm Query Fails When a Device Reboots" on page 34

✚ Pilot Lite Fails to Communicate with Installed Modules

Confirm that the following items are not the reason for the communication failure:

- Proper module slot has not been specified (✚ Pilot Lite is not communicating with the appropriate slot). See your *FR6802+ Frame Installation and Operation Manual* for more information on slot identification.

- COM port is used elsewhere (Check that the correct COM port is configured in ✚ Pilot Lite and that another application is not using that COM port).

- Actual frame ID does not match with the two DIP switch settings in the back of the frame (✚ Pilot Lite is not communicating with the proper frame). See your *FR6802+ Frame Installation and Operation Manual* for more information on frame ID switch settings.

- Null modem cable is not being used. Between the PC running ✚ Pilot Lite and the FR6802✚ frame, there should be a null RS-232 modem cable. At minimum, this requires that pins 2 and 3 are crossed and 5 to 5 for ground.

- ICE6800✚ module is installed in the frame (✚ Pilot Lite control is disabled if an ICE6800✚ module is installed in the frame; ICE6800✚ modules are used for CCS control).

- A legacy 6800 series product is in the frame. ✚ Pilot Lite cannot communicate with legacy 6800 series products. They will not be discovered or controlled by ✚ Pilot Lite, although they can be installed in the FR6802✚ frame and work using card edge controls. The module must be from the 6800✚ product family.

- Check that the back module does not have any bent pins, following this procedure:

  a. Unplug the front module.

  b. Unscrew and remove the back module.

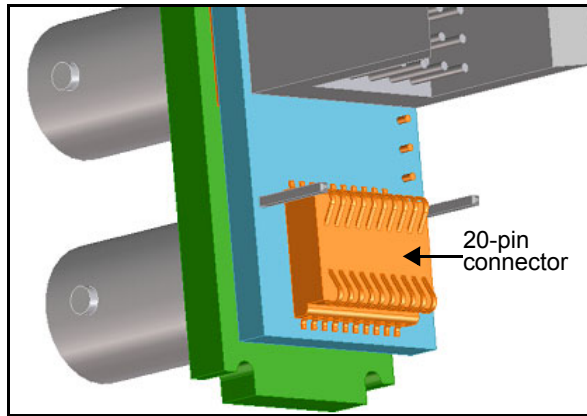c. View the 20-pin spring connector at the bottom of the back module. (See Figure A-1.)

Figure A-1. Back Module to Front Module Connector

This connector should not have any bent or pressed pins. Even a slightly depressed or bent pin may cause genlock issues.

d. If there are bent pins, carefully reposition them to their correct positions.

If this is not possible, you can exchange the back module for a new one (see the available back connectors in Table 2-2 on page 11).

✚ Pilot Lite Does Not Find All Modules in Frame

If a discovery is started too soon after frame power-up, ✚ Pilot Lite will not find all the installed modules. Refresh ✚ Pilot Lite (**File** > **Refresh**), and ensure that installed modules are fully powered-up first before discovery.

If a module is plugged into the frame after a discovery, ✚ Pilot Lite does not automatically detect the module. Refresh ✚ Pilot Lite (**File** > **Refresh**) to discover the newly installed module.

If a Legacy 6800 series product is in the frame, ✚ Pilot Lite will not detect it. ✚ Pilot Lite cannot communicate with legacy 6800 series products. They will not be discovered or controlled by ✚ Pilot Lite although they can be installed in the FR6802✚ frame and work using card edge controls. For ✚ Pilot Lite to find a module, it must be from the 6800✚ product family.

✚ Pilot Lite or CCS Software Application Not Responding

✚ Pilot Lite and CCS applications such as Navigator or Pilot cannot run on the same PC at the same time. Both applications can be installed, but only one can be opened at a time.

✚ Pilot Lite Cannot Control a Module Showing in the Control Window

Consider these questions:

- Did you physically set the jumper for local control? If so, set this jumper to the REM position for remote control.

- Does the card name in the control window physically match the card type in the frame?

- Is the module properly seated in the frame? Check the positioning of the module in its slot in the frame.

- Does the Control window indicate the device is "ready"? The device may be powered off or disconnected from the network.

✚ Pilot Lite Status Bar Reports "Not Ready"

✚ Pilot Lite reports each device's connection status in the status bar. If the connection status message reads "Not Ready," check the following:

- Is the module properly seated in the frame? Check the position of the module in the frame.

- Is the frame connected to the network? Check the device's network connection.

If the status bar still reports no status or "Not Ready" for the frame or device, try restarting ✚ Pilot Lite.

CCS Software Application or Remote Control Panel Does Not Communicate with Module

CCS software applications (such as Pilot, CoPilot, and Navigator) and remote control panels require the purchase and installation of an ICE6800✚ module in an FR6802✚ frame in order to communicate remotely via Ethernet.

Alarm Query Fails When a Device Reboots

When you reboot a device connected to your PC, the alarm traffic hitting the network may cause an alarm query request to time out and fail. While the query does not automatically retry, it will post an "Alarm query failed" message to the **Diagnostics** window.

To clear an "Alarm query failed" message, right-click inside the **Diagnostics** window, and then select **Refresh** from the resulting context menu.

Hardware Communication and Control Issues

- "Frames Fail to Communicate with the PC after a Power Failure" on page 34
- "Module Does Not Seem to Work" on page 34

Frames Fail to Communicate with the PC after a Power Failure

You must exit the software and restart after the frame recovers from its power failure. To restore communications between the PC and the frames, ensure that the frames have three or more minutes to recover from the power failure before you exit the application and restart the PC.

Module Does Not Seem to Work

Although the following troubleshooting tips may seem obvious, please take the time to ensure the following:

- All appropriate rear connections are securely made
- The board is securely installed (with no bent pins)
- The frame is turned on

Contacting Customer Service

We are committed to providing round-the-clock, 24-hour service to our customers around the world. Visit our Web site at /www.broadcast.harris.com/leitch and click on **Support** > **Technical Support** for information on how to contact the Customer Service team in your geographical region.

Index

A

Active input channel 21
Alarms 24
    alarm query failed 34
    overload 23
Application not responding 33
Audio
    channel select 20
    gain button 18
    input and output specifications 26
    output specification 26

B

Back connectors 5, 22
Balanced analog audio specifications 26

C

CCS software control applications 24, 33
Channel A/B LEDs 4, 19, 21, 24
    location 3
Channel monitoring specification 27
Channel output jumper 19
Channel select button 3, 4, 19
Communication failure, frame 34
Control problems 33
CoPilot 33

D

Discovery failure 32
Double-slot back connector 6, 12

E

Error detection 24

F

Features 2
Fine gain adjust 3, 4, 19, 20
Frame power ratings 10

G

Gain up and down buttons 3, 4, 18

H

Hum null adjust 3, 4, 19, 20

I

Inactive input channel 21
Input specifications 26
Installed modules 32

HARRIS ®

*assured*communications™

Broadcast Communications Division
4393 Digital Way | Mason, OH USA 45040 | Tel: 1 (513) 459 3400
www.broadcast.harris.com