Pacific DA-204
12G/6G/3G/HD/SD-SDI Reclocking Distribution Amplifier

ABOUT THIS MANUAL

This manual contains information about using the Avitech Pacific DA-204 reclocking distribution amplifier. There are three chapters in this manual:

✓ **Getting Started** introduces the features, specifications as well as external components of the Pacific DA-204.

✓ **Hardware Configuration** discusses the steps to install/remove modular cards of the Pacific DA-204.

✓ **System Setup and DIP Switch Configuration** covers signal routings of the Pacific DA-204 via DIP switches.

The following conventions are used to distinguish elements of text throughout this manual.

provides additional hints or information that require special attention.

Any name of a menu, command, icon or button on the screen is shown in a bold typeset. For example: On the **Start** menu select **Settings**.

To assist us in making improvements to this user manual, we welcome any comments and constructive criticism. Please send all such – in writing to: sales@avitechvideo.com.

WARNING

Do not attempt to disassemble the Pacific extender module(s). Doing so may void the warranty. There are no serviceable parts inside. Please refer all servicing to qualified personnel.

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This product follows the provisions of the European Directive 1999/5/EC.

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Nederlands (Dutch)
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1. Getting Started

The Avitech Pacific DA-204 is a high-performance, multi-rate SDI distribution amplifier. Featuring automatic input format detection, built-in cable equalizer, reclocker and low-jitter cable driver, both the modular and standalone Pacific DA-204 offer flexible and reliable signal distribution over long cable runs. It is capable of handling distribution of SD, HD, 3G, 6G, as well as 12G-SDI signals for 4K applications. The Pacific DA-204 delivers a simple, robust and future-proofing solution and can be easily integrated with Avitech multiviewers, video wall processors, as well as a variety of existing AV systems.

This chapter introduces the features, specifications, as well as the external components of Avitech Pacific DA-204.

1.1 Package Contents

For the modular 1RU Pacific DA-204, the following standard items are included in the shipping package:

Avitech Pacific DA-204	**Utility Disc (user manual)**
12V DC Power Adapter (optional)	**Ears with screws** **(already installed on Pacific DA-204 upon order for assembly onto rackmount)**

Table 1-1 Package Contents (Pacific DA-204)

For the standalone Pacific DA-204, the following standard items are included in the shipping package:

Avitech Pacific DA-204 (standalone)

Utility Disc (user manual)

12V DC Power Adapter (optional)

Table 1-2 Package Contents (standalone Pacific DA-204)

1.2   Product Features

The Pacific DA-204 is a modular card-based, reclocking distribution amplifier designed for high-end broadcast and production applications. Its 1RU rackmount chassis is capable of housing up to 8 independent cards for multi-rate SDI signal distribution over long distances. All cards are hot-swappable, supporting easy card replacement or expansion with minimized system downtime and operation interruptions.

Offering two types of distribution amplifier cards (12Gbps and 3Gbps Card) that can be freely mixed in the chassis, the Pacific DA-204 automatically senses up to 12G and 3G-SDI source signals with multi-channel embedded audio. Each card features lossless 1x4 or two sets of 1x2 signal distribution that can be easily configured via individual DIP switch. Automatically detecting input signal absence, the Pacific DA-204 manages to reroute and switch to the backup source upon signal loss (less than 60 milliseconds to detect and complete signal rerouting). Incorporating adaptive cable equalizer, reclocker and low-jitter cable driver, the Pacific DA-204 ensures long cable runs while maintaining signal integrity for high-resolution videos with up to 4K clarity.

Alternatively, the standalone Pacific DA-204 (12Gs / 3Gs) are designed to meet applications with small-scale signal distribution requirements. Utilizing the same routing flexibility, input signal presence detection, as well as 12G/6G/3G/HD/SD-SDI compatibility, the standalone Pacific DA-204 delivers a signal distribution solution with optimized space-usage, simple installation and low power consumption.

1.3 Specifications

Input	

SDI IN
(BNC connector)
	Automatic sensing
	❖ *12G / 6G / 3G / HD / SD-SDI (SMPTE 424M / 292M / 259M)*
	  ✓ *12Gbps Card / 12Gs supports data rates up to 11.88 Gbps (12G-SDI)*
	  ✓ *3Gbps Card / 3Gs supports data rates up to 2.97 Gbps (3G-SDI)*
	  ✓ *2 × BNC per card / standalone Pacific DA-204*

Output	

SDI OUT
(BNC connector)
	Follows SDI input (non-configurable)
	❖ *12G / 6G / 3G / HD / SD-SDI*
	  ✓ *12Gbps Card / 12Gs supports data rates up to 11.88 Gbps (12G-SDI)*
	  ✓ *3Gbps Card / 3Gs supports data rates up to 2.97 Gbps (3G-SDI)*
	  ✓ *4 × BNC per card / standalone Pacific DA-204*

Others	

Cable Equalization	1694a coax cable
	❖ *12Gbps Card / 12Gs*
	  ✓ *12G-SDI, 60m*
	  ✓ *6G-SDI, 100m*
	  ✓ *3G-SDI, 220m*
	  ✓ *HD-SDI, 265m*
	  ✓ *SD-SDI, 530m*
	❖ *3Gbps Card / 3Gs*
	  ✓ *3G-SDI, 100m*
	  ✓ *HD-SDI, 200m*
	  ✓ *SD-SDI, 400m*

Power	Power consumption: ❖ *Max. 24 Watt (1RU)* ❖ *Max. 3 Watt (standalone)* Power supply: ❖ *100-240V AC / 12V 2.5A DC power adapter (1RU); dual redundant* ❖ *100-240V AC /12V 2.5A DC power adapter (standalone)*
Dimensions **(LxWxH) /** **Weight**	Dimensions: ❖ *6.30 x 17.28 x 1.75 in (16.01 x 43.90 x 4.44 cm) for 1RU model* ❖ *4.70 x 5.00 x 1.36 in (11.93 x 12.70 x 3.46 cm) for standalone model* Weight: ❖ *5.69 lb (2.59 Kg) for 1RU model* ❖ *1.18 lb (0.534 Kg) and 1.13 lb (0.512 Kg) for 12Gs and 3Gs respectively*
Environment / **Safety**	Temperature: ❖ *Operation: 0 ℃ (32 ℉) to 40 ℃ (104 ℉)* ❖ *Storage: –10 ℃ (14 ℉) to 50 ℃ (122 ℉)* Humidity: 0 % to 80 % relative, non-condensing Safety: FCC/CE/C-Tick/Class B

Table 1-3 Specifications
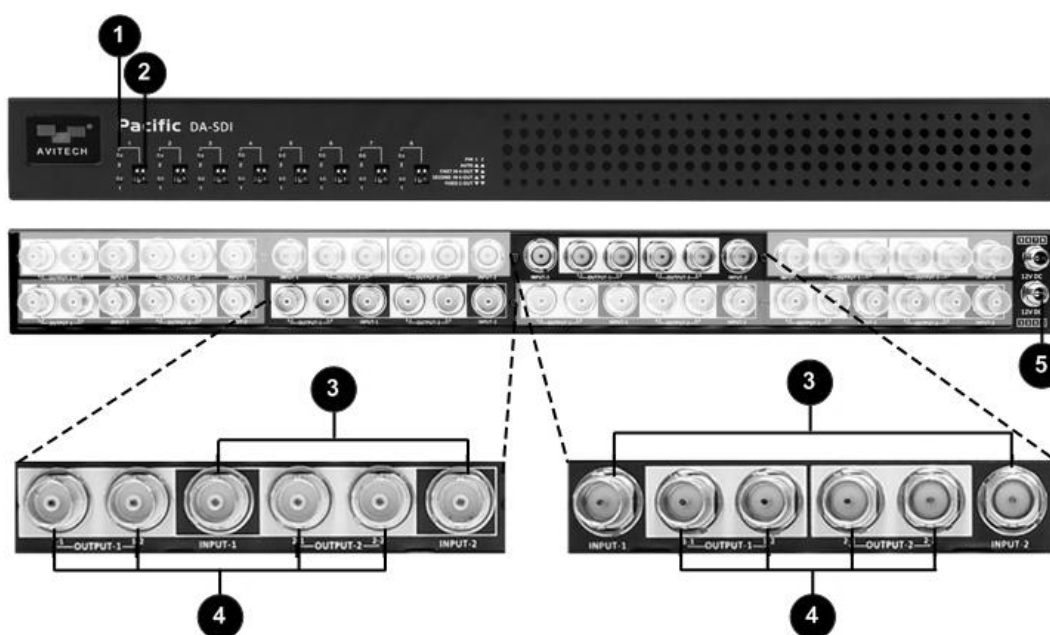
1.4. Connections to the Pacific DA-204

Figure 1-1 Pacific DA-204 (1RU) Components: 12Gbps Card (right) and 3Gbps Card (left)

Front Panel	
❶ **Indicators**	❖ **1 / 2** ✓ Glows amber when in standby mode (no signal is present at **INPUT-1/2**). ✓ Glows green when signal is present at **INPUT-1/2**.
❷ **DIP Switches**	Sets the signal routing configuration.

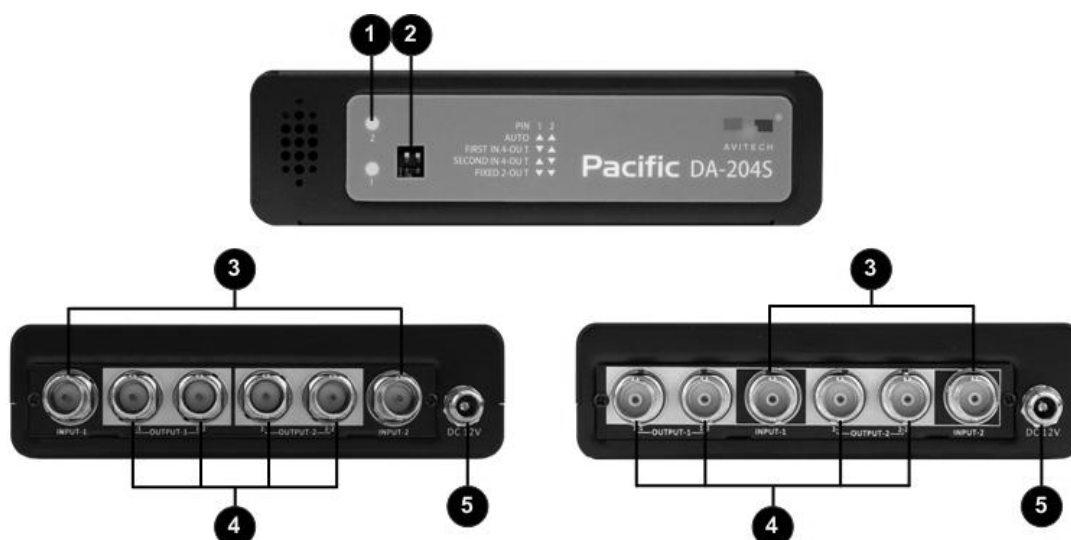| Rear Panel	
❸ **INPUT (BNC)**	❖ **12Gbps Card** Connects to 12G/6G/3G/HD/SD-SDI video source signal. ❖ **3Gbps Card** Connects to 3G/HD/SD-SDI video source signal. <u>Note</u>: SDI video input supports up to 16-channel embedded audio.
❹ **OUTPUT (BNC)**	Connects to SDI monitors or downstream equipment. <u>Note</u>: SDI video output supports up to 16-channel embedded audio.
❺ **Power (12V DC)**	Connects to 12V DC power supply (dual redundant).

Table 1-4 Pacific DA-204 (1RU) Component Description

Figure 1-2 Pacific DA-204 (standalone) Components: 12Gs (left) and 3Gs (right)

Front Panel	
❶ **Indicators**	❖ **1 / 2** ✓ Glows amber when in standby mode (no signal is present at **INPUT-1/2**). ✓ Glows green when signal is present at **INPUT-1/2**.
❷ **DIP Switches**	Sets the signal routing configuration.

Rear Panel	
❸ **INPUT (BNC)**	❖ **Pacific DA-204 12Gs** Connects to 12G/6G/3G/HD/SD-SDI video source signal. ❖ **Pacific DA-204 3Gs** Connects to 3G/HD/SD-SDI video source signal. <u>Note</u>: SDI video input supports up to 16-channel embedded audio.
❹ **OUTPUT (BNC)**	Connects to SDI monitors or downstream equipment. <u>Note</u>: SDI video output supports up to 16-channel embedded audio.
❺ **Power (12V DC)**	Connects to 12V DC power supply.

Table 1-5 Pacific DA-204 (standalone) Component Description

Pacific DA-204 12Gs and 3Gs use the same front panel.

2. Hardware Configuration

This chapter discusses the process of installing and removing a card of the 1RU Pacific DA-204.

2.1 Installing a New Card on Blank Slot

The Pacific DA-204 1RU chassis accepts the following cards:

- ✓ 12Gbps Card
- ✓ 3Gbps Card

To install a card on a blank slot, perform the following steps:

Step 1.   Remove the two screws securing the back plate.

Figure 2-1 Remove the Two Plate Screws

Step 2.   Remove the back plate.

Figure 2-2 Remove the Back Plate

Step 3.   Align both sides of the card to the rails of the slot, and then slide the card all the way into the chassis.

Figure 2-3 Align the New Card to the Rail on Both Sides

Step 4. Secure the screws on both sides to fix the newly installed card to the chassis.

Figure 2-4 Secure the Card Screws on Both Sides

2.2 Removing a Previously Installed Card

To remove or replace an installed card, perform the following steps:

Step 1. Remove the two screws securing the card to be removed from the chassis.

Figure 2-5 Remove the Two Card Screws

Step 2. Pull the card to be removed away from the chassis.

Figure 2-6 Remove the Modular Card

Step 3. Install another card (or a back plate cover) to the chassis and secure both screws.

All cards are hot-swappable and can be installed or removed without powering down the Pacific DA-204.

3. System Setup and DIP Switch Configuration

This chapter covers the steps of setting up the Pacific DA-204, as well as its four routing modes configured through the front panel DIP switches.

To set up the Pacific DA-204, perform the following steps:

Step 1. *Connect video source device(s) to the target BNC input connector(s).*

Step 2. *Connect outputs to SDI monitors or downstream equipment.*

Step 3. *Set the DIP switch on the front panel to alter signal routings (each DIP switch corresponds to one card paired with the same numeric label). Refer to the following DIP switch settings to configure signal routings:*

| Video Routing	DIP Switch Pin Position	
	Pin 1	Pin 2
Automatic routing	OFF (▲)	OFF (▲)
First input to four (4) outputs	ON (▼)	OFF (▲)
Second input to four (4) outputs	OFF (▲)	ON (▼)
Fixed one (1) input to two outputs (2)	ON (▼)	ON (▼)

Figure 3-1 Pacific DA-204 Front Panel DIP Switch Setting

Figure 3-2 Pacific DA-204 Front Panel: 8 DIP Switches Correspond to 8 Cards

1. AUTO *signal routing (1-to-4 or two sets of 1-to-2 signal distribution)* –
- ✓ *If input signals are detected at both* **INPUT-1** *and* **INPUT-2** *ports,* **INPUT-1** *signal will output to* **OUTPUT-1 (1-1 & 1-2)** *ports while* **INPUT-2** *signal will output to* **OUTPUT-2 (2-1 & 2-2)** *ports.*
- ✓ *If an input signal is detected at either* **INPUT-1** *or* **INPUT-2** *port, the signal will output to* **OUTPUT-1 (1-1 & 1-2)** *and* **OUTPUT-2 (2-1 & 2-2)** *ports.*
- ✓ *If loss of signal occurs at either* **INPUT-1** *or* **INPUT-2** *port, the Pacific DA-204 automatically senses signal absence and reroutes the available input signal to* **OUTPUT-1 (1-1 & 1-2)** *and* **OUTPUT-2 (2-1 & 2-2)** *ports.*
- ✓
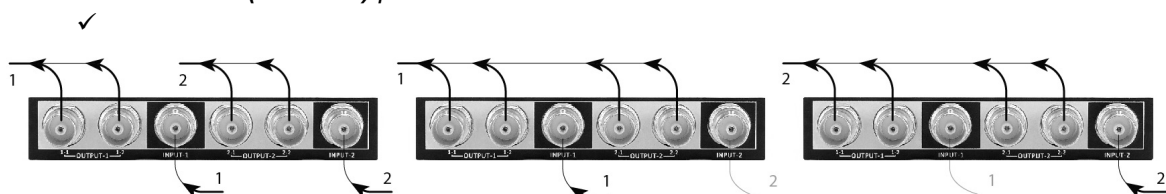
Figure 3-3 Pacific DA-204 DIP Switch Setting (AUTO)

2. FIRST IN 4-OUT *signal routing (1-to-4 signal distribution) –*
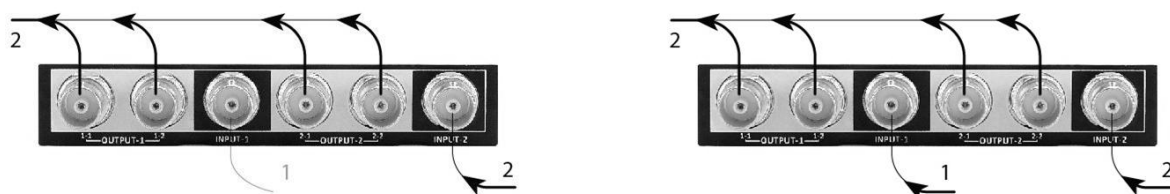- ✓ **INPUT-1** *signal, if detected, will output to* **OUTPUT-1 (1-1 & 1-2)** *and* **OUTPUT-2 (2-1 & 2-2)** *ports regardless of signal presence at* **INPUT-2** *port.*

Figure 3-4 Pacific DA-204 DIP Switch Setting (FIRST IN 4-OUT)

3. SECOND IN 4-OUT *signal routing (1-to-4 signal distribution) –*
- ✓ **INPUT-2** *signal, if detected, will output to* **OUTPUT-1 (1-1 & 1-2)** *and* **OUTPUT-2 (2-1 & 2-2)** *ports regardless of signal presence at* **INPUT-1** *port.*

Figure 3-5 Pacific DA-204 DIP Switch Setting (SECOND IN 4-OUT)

4. FIXED 2-OUT *signal routing (two sets of 1-to-2 signal distribution) –*
- ✓ **INPUT-1** *signal, if detected, will output to* **OUTPUT-1 (1-1 & 1-2)** *ports regardless of signal presence at* **INPUT-2** *port.*
- ✓ *Likewise,* **INPUT-2** *signal, if detected, will output to* **OUTPUT-2 (2-1 & 2-2)** *ports regardless of signal presence at* **INPUT-1** *port.*
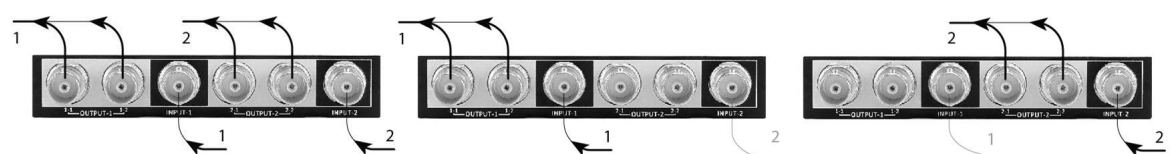
Figure 3-6 Pacific DA-204 DIP Switch Setting (FIXED 2-OUT)

📄 *Both 12Gbps and 3Gbps Cards of the 1RU Pacific DA-204 as well as the standalone Pacific DA-204 (12Gs and 3Gs) utilize the same DIP switch settings for video routing configurations.*