Imagine COMMUNICATIONS

Installation and Operation Manual

Selenio 6800+ DA-6802+ Series

Modular Distribution Amplifiers

Version 2.0

November 2015

Publication Information

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Preface

Manual Information

Purpose

This manual details the features, installation, operation, maintenance, and specifications for the DA-6802+ Series.

Audience

This manual is written for engineers, technicians, and operators responsible for installation, setup, maintenance, and/or operation of the DA-6802+ Series.

Revision History

Edition	Date	Revision History
A	2008/2009	Initial release
Version 2.0	November 2015	Version 2 hardware and software created. The following product manuals are combined into this one DA6802+ Series manual: • DA-ASI6802+D • DA-H/HR/S/SR6802+D • DA-H/HR/S/SR6802+DL • DA-H/HR/S/SR6802+S

Writing Conventions

This manual adheres to the following writing conventions.

Term or Convention	Description
Bold	Indicates dialog box, property sheet, field, button, check box, list box, combo box, menu, submenu, window, list, and selection names
Italics	Indicates email addresses, names of books and publications, and 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, DELETE

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Term or Convention	Description
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

Obtaining Documents

Product support documents can be viewed or downloaded from our website. 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.

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, and 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.

Product Servicing

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

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.

Restriction on Hazardous Substances (RoHS) Compliance

Directive 2011/65/EU (RoHS 2)—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, which took effect on July 1, 2006, refers to the following hazardous substances:

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

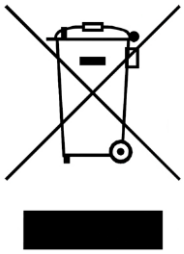
According to this EU Directive, all products sold in the European Union will be fully RoHS-compliant and “lead-free.” (See our website for more information.) Spare parts supplied for the repair and upgrade of

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.

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. As of August 13, 2005, the producers or users of these products were 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 website for more information.) 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.



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

Product Description

DA-6802+ Series distribution amplifiers are designed to distribute serial digital signals according to SMPTE 257C, SMPTE 292M, SMPTE 424M, and DVB-ASI (actual capability depends upon the front module selected). DA-6802+ Series products feature high reliability, excellent video performance, and low cost.

You can control and monitor these distribution amplifier modules locally at the card-edge, or remotely, using Ethernet-based software and web browsers. Additionally, Version 2.0 DA-6802+ Series products include the capability for factory recall and field software upgrades.

Note: Front modules bearing the V2 sticker are optimized for use with V2 back modules. Other combinations of old and new front and back modules are not supported. See Front Module (on page 13) and Back Modules (on page 14) for the locations of the V2 markings.

The diagram below illustrates the meaning of the different DA-6802+ Series variations.

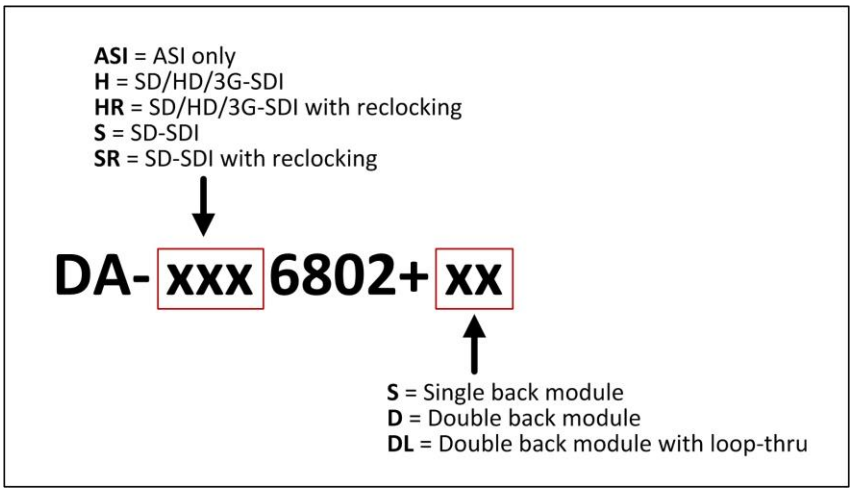


Figure 1: Product Naming Key

Features in the Different Modules

The table below summarizes the features available on each product in the series.

Table 1: DA-6802+ Series Features by Module Type

Module Part Number	Supported Signal Types			Reclocking	Physical Ports *		
	SD/ASI	HD	3G		Outputs	Passive Loop-thru	Decouple Transformer
DA-S6802+S	X				4		
DA-SR6802+S	X			X	4		
DA-H6802+S	X	X	X		4		
DA-HR6802+S	X	X	X	X	4		
DA-S6802+D	X				8		
DA-SR6802+D	X			X	8		
DA-H6802+D	X	X	X		8		
DA-HR6802+D	X	X	X	X	8		
DA-S6802+DL **	X				9	X	
DA-SR6802+DL **	X			X	9	X	
DA-H6802+DL **	X	X	X		9	X	
DA-HR6802+DL **	X	X	X	X	9	X	
DA-ASI6802+D	X			X	8		X

* Enabled by back modules
**Second loop-thru port must be connected, or properly terminated with 75Ω

Main Features

All of the DA-6802+ Series modules include the following features:

- One BNC input for DVB-ASI or other video inputs
- Input signal presence detection and reporting
- Automatic input cable equalization
- Card edge LED status reporting
- Remote monitoring and control using CCS or Ethernet via built-in HTTP web server (frame requires 6800+ETH resource card for remote functionality)

Part numbers for these products end with an **S** for single-slot, or **D** for double slot. Other specific features are as follows:

DA-ASI6802+D ASI Reclocking Module

- Automatic reclocking of 270 Mb/s DVB-ASI
- LED status reporting of reclocking and data rate
- Input decoupling transformer for DC offset protection

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DA-H/HR/S/SR6802+D ASI/SDI Reclocking or Non-Reclocking Modules

These modules are available with single slot (four output) and double slot (eight output) back modules.

DA-H6802+

- DVB-ASI or SD/HD/3G-SDI capability
- Direct input signal fanout without reclocking

DA-HR6802+

- DVB-ASI or SD/HD/3G-SDI capability
- Selectable automatic/manual reclocking for SD/HD/3G-SDI
- Selectable manual reclocking bypass for DVB-ASI and non SDI signals

DA-S6802+

- DVB-ASI or SD-SDI capability
- Direct input signal fanout without reclocking

DA-SR6802+

- DVB-ASI or SD-SDI capability
- Selectable automatic/manual reclocking for SD-SDI
- Selectable manual reclocking bypass for DVB-ASI and non SDI signals

DA-H/HR/S/SR6802+DL ASI/SDI Looping Input, Re-Clocking or Non-Re-Clocking Modules

The +DL modules of the DA-6802+ Series include the same features as the +D modules, except that a Loop-thru input connector is provided on +DL versions.

The features of the +D modules are also available in the following products:

- DA-H6802+DL
- DA-HR6802+DL
- DA-S6802+DL
- DA-SR6802+DL

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Front Module

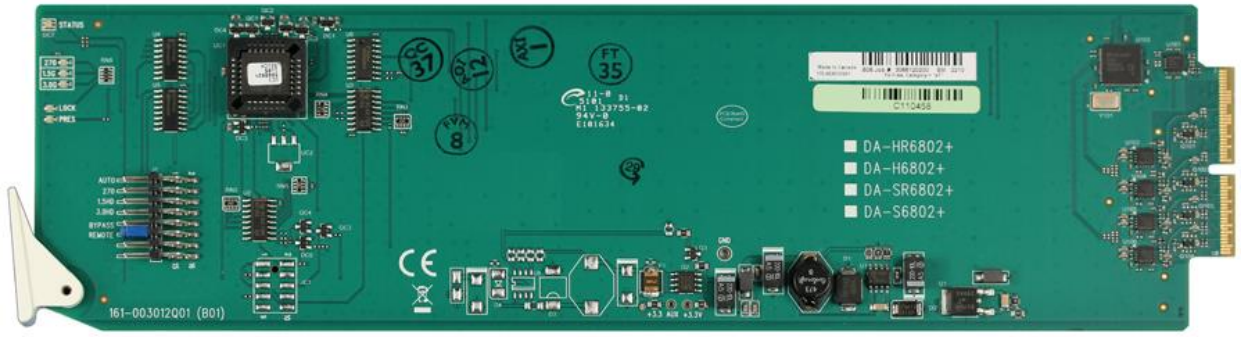


Figure 2: Version 1 DA-6802+ Series Front Module

Figure 3: Version 2 DA-6802+ Series Front Module

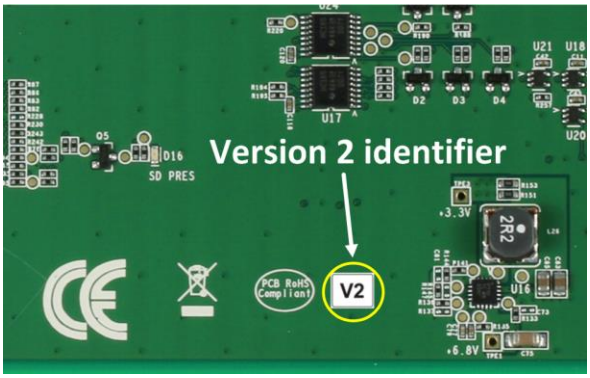


Figure 4: Version 2 Identifier

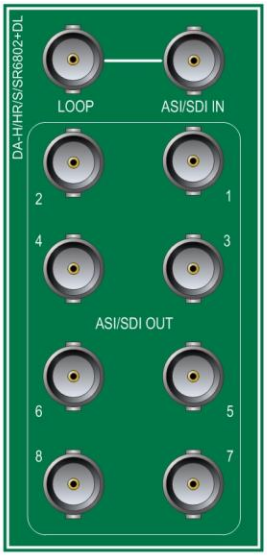
Back Modules

DA-ASI6802+D

ASI Re-Clocking
Distribution Amp

DA-H/HR/S/SR6802+D

ASI or SDI
Re-Clocking or Non-Re-Clocking
Distribution Amp*

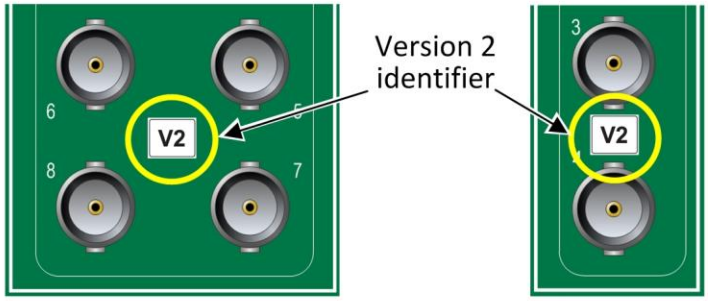


DA-H/HR/S/SR6802+DL

ASI or SDI Looping Input**
Re-Clocking or Non-Re-Clocking
Distribution Amp*

DA-H/HR/S/SR6802+S

ASI or SDI
Re-Clocking or Non-Re-Clocking
Single-Slot Distribution Amp*



* The DA-6802+ Series **front module** determines whether SDI inputs and outputs shown are SD or SD/HD/3G.
**If lefty empty, the loop-thru connector must have a 75Ω terminator.

Figure 5: DA-6802+ Series Back Modules and V2 Identifiers

Signal Flow

This signal flow diagram includes all possible versions of the DA-6802+ Series. Each product's actual capabilities depend upon the front module selected.

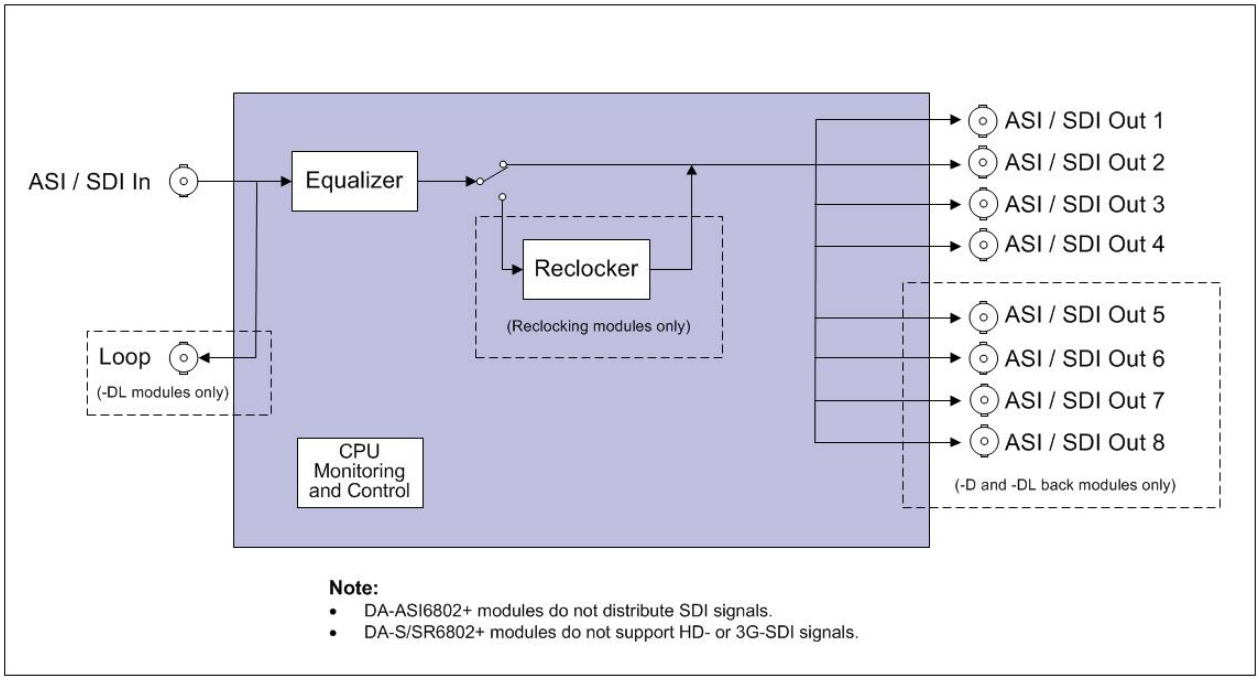


Figure 6: DA-6802+ Series Signal Flow Diagram

Installation

DA-6802+ Series modules do not require any specialized installation procedures. See the FR6802+ *Frame Installation and Operation Manual* for information about installing and operating an FR6802+ frame and its components. Before installing this DA-6802+ Series product, read the *6800+ Series Safety Instructions and Standards* manual, which can be downloaded from our website.

Note: Front modules bearing the V2 sticker are optimized for use with the V2 back module. Other combinations of old and new front/back modules are not supported.

Preparing for Installation

Before you install a DA-6802+ Series module, perform the following:

- Check the equipment for any visible damage that may have occurred during transit.
- Confirm that you have received a front and back module. A back module lexan label may be shipped separately, or maybe be already affixed to the product.
- Remove the anti-static shipping pouch, if present, and all other packaging material.
- Retain the original packaging materials for possible re-use.
- Contact your Customer Service representative if parts are missing or damaged. See "Unpacking/Shipping Information" on page ix for information about returning a product for servicing.

Maximum 6800+ Frame Power Ratings

The power consumption of a DA-6802+ Series product is <2 W.

The table below describes the maximum allowable power ratings for FR6800+ series frames. Note the given maximums before installing any modules in your frame.

DA-6802+ Series modules can only be installed in FR6802+ frames. and cannot be used with older 6800 / 7000 series frames.

Table 2: Maximum Power Ratings for FR6800+ Frames

6800+ Frame Type	Maximum Frame Power Dissipation	Number of Usable Slots	Maximum. 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

6800+ Frame Type	Maximum Frame Power Dissipation	Number of Usable Slots	Maximum. Power Dissipation Per Slot
FR6802+QXF (frame with AC or DC power supply)	120 W	20	6 W
• FR6822+QXFE frame • FR6822+F frame containing a 6800+ETH module (version. 4.9 or later)	120W	20	6W

Operation

For obtain the best results operating the DA-6802+ Series, use the web browser or software controls to aid in viewing, setting, and confirming parameter values. (See the instructions located in the product manual of your 6800+ series frame to use the web browser control.)

If you choose to operate theDA-6802+ Series module using the card-edge method, refer to the Parameters (on page 25), where you can view the various banks, hex switch positions, and parameter options and values.

Note: There are differences in the operation of Version 1 and Version 2 modules. All DA-6802+ Series modules use jumpers to set Local/Remote control. However, Version 1 modules use jumpers to set certain parameters. See Jumper Selections (on page 21) for details.

Operating Notes

When changing a control parameter on a DA-6802+ Series module, the effect is immediate. However, the module requires up to 20 seconds to save the latest change. After 20 seconds, the new settings are saved and will be restored if the module loses power and must be restarted.

Reclocker Mode Options

Table 3: Available Parameter Options, Listed by Module

Module Part Number	Options of Reclocker Mode Parameter				
	Auto	270 Mb/s	HD	3G	Bypass
DA-HR6802+S	X	X	X	X	X
DA-HR6802+D	X	X	X	X	X
DA-HR6802+DL	X	X	X	X	X
DA-SR6802+S		X			X
DA-SR6802+D		X			X
DA-SR6802+DL		X			X
DA-ASI6802+D		X			X
Grey cells indicate the default value of the module.					

Version 1 Modules

Remote/Local Jumper

The **Remote/Local** jumper enables either remote, or local (card-edge) configuration, operation, and monitoring of DA-6802+ Series modules. If the jumper is set to **REMOTE** (the default location), the module can be controlled and monitored remotely. If the shunt is removed, the module can only be controlled locally via card-edge control, but can be monitored remotely. The card-edge control is always functional regardless of the **Remote/Local** jumper setting.

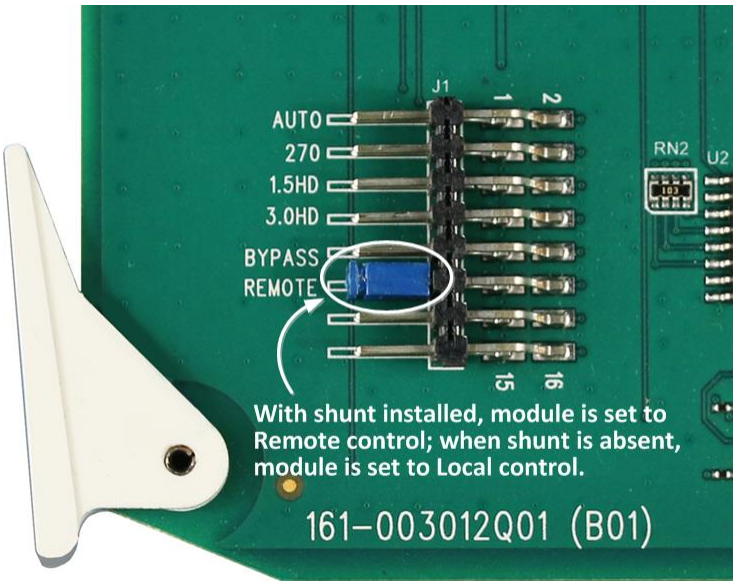


Figure 7: Remote/Local Jumper Location (Version 1)

Parameters

Note: Bank/hex switch controls and default parameter settings are available only on Version 2 modules.

Table 4: DA-6802+ Series Version 2 Parameters

Name	Range	Description
Signal Present [RO]	• No • Yes	Indicates if input is present or not
Slew Rate	• Auto • SD • HD	Sets the output slew rate control
Serial Number	• String	Displays the module's unique identifier
License Key	• String	Activates options
Locked Data Rate [RO]	• Unknown • 270 Mb/s • Bypass Mode • 1.485 Gb/s HD • 2.97 Gb/s HD*	Displays the data rate to which the module is locked
Reclocking Mode [RO]	• Auto • 270 Mb/s • Bypass Mode • 1.485 Gb/s HD • 2.97 Gb/s HD*	Displays the data rate to which the module is forced to lock
Loss of Input Alarm	• Disable • Enable	Enables/disables the Loss of Input alarm
Loss of Lock Alarm	• Disable • Enable	Enables/disables the Loss of Lock alarm
*Available on "HR" versions		

Discovery and Control Using CCS Software

To discover your DA-6802+ Series module, CCS Navigator must be in **Build** mode. Follow these steps:

1. If the Discovery window is not open, click **Tools > Discovery** in the main menu.
   A **Discovery** window opens, most likely in the bottom left corner of the screen.
2. Click **Options**, and then click **Add**.
3. Enter the IP address of the frame that contains your module, the frame that contains your ICE6800+ module, or the frame that contains a 6800+ETH module that provides access to your module.

4. Click **OK** to close the **Add IP address** window, and then **OK** again to close the **Discovery Options** window.
5. Click **Start**.

   This triggers Pilot or Navigator to run a discovery.
6. When your discovery is complete, **Discovery Completed** is displayed in the **Discovery** window. To continue, click **Save**. The objects you you have discovered are saved to the **Discovery** folder of the **Navigation** pane.

You can now switch to **Control** mode by selecting **Operational Mode > Control** from the main menu. Double-click DA-6802+ Series in the **Navigation** pane. The **Control** window opens, displaying the module's controls.

Card-Edge Control

On Version 1 modules, jumpers are used to set parameters at the card-edge (there is no hex switch). A selection shown on the board in the jumper area (such as **1.5HD**, for example), is enabled when a shunt is pushed onto those jumper pins. Note that the available options vary according to your module. (See Reclocker Mode Options (on page 18).)

Jumper Selections

Table 5: Jumper Selections

Jumper	Description
AUTO (Default)	Automatically detects the rate; if no selection rate jumper is selected (**270, 1.5 HD**, or **3.0 HD**), the selection will be **AUTO**.
270	Forces reclocker to lock to a 270 Mb/s signal. Set the jumper on the pin that allows the reclocker to handle 270 Mb/s data only. • If 270 reclock mode is selected, the 270 Mb/ s LED will light. • If the module can successfully lock to the input, the **Lock** LED will light. • If reclocking is not successful, the lock LED will turn off and un-reclocked data will be present at output.
1.5HD	Forces reclocker to lock to a 1.485 Gb/s signal. Set the jumper on the pin that allows the reclocker to handle 1.485 Gb/s data only. • If 1.5HD reclock mode is selected, the 1.5 Gb/s LED will light. • If the module can successfully lock to the input, the **Lock** LED will light. • If reclocking is not successful, the lock LED will turn off and un-reclocked data will be present at output.
3.0HD	Forces reclocker to lock to a 2.97 Gb/s signal. Set the jumper on the pin that allows the reclocker to handle 2.97 Gb/s data only. • If 3.0HD reclock mode is selected, the 3.0 Gb/s LED will light. • If the module can successfully lock to the input, the **Lock** LED will light. • If reclocking is not successful, the lock LED will turn off and un-reclocked data will be present at the output.
BYPASS	Bypasses the reclocker
REMOTE	Selects remote control operation

Module Status Indicator LED

The Module Status LED is located at the card edge.

Table 6: Module Status Indicator 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.
Amber	There is a fault condition. See Alarms (on page 28) for details.

Module-Specific LEDs

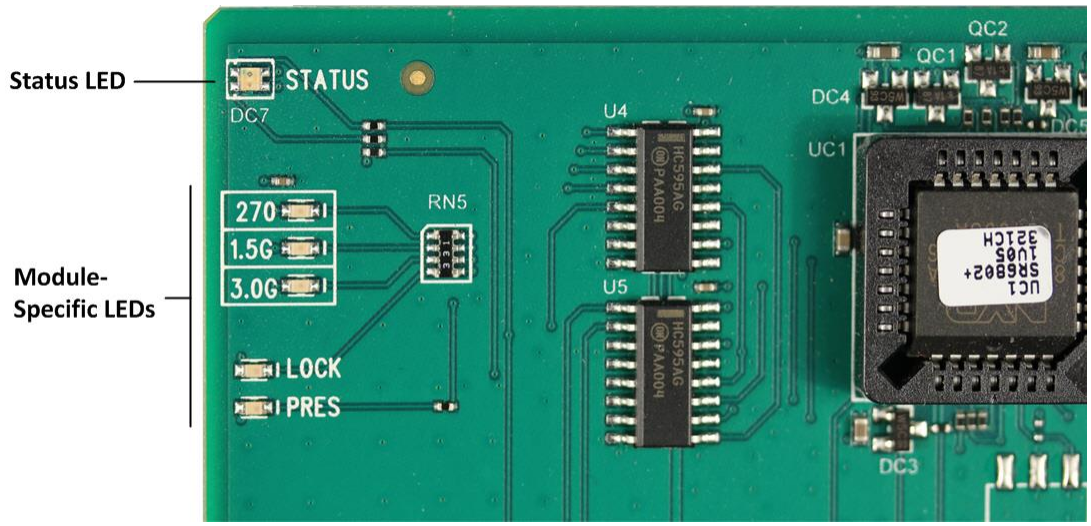


Figure 8: Module-Specific LEDs (Version 1)

Table 7: Descriptions of Module-Specific Status LEDs (Version 1)

Name	Color	Function
PRES	Green	Input signal present,
	Off	Input signal absent
LOCK*	Green	Signal locked
	Off	Signal cannot be locked
270*	Green	Input signal is relocked at 270 Mb/s,
	Off	Input signal is not relocked at 270 Mb/s
1.5G†	Green	Input signal is relocked at 1.485 Gb/s
	Off	Input signal is not relocked at 1.485 Gb/s
3.0G†	Green	Input signal is relocked at 2.97 Gb/s
	Off	Input signal is not relocked at 2.97 Gb/s
* Operational on DA-SR6802+DL and DA-HR6802+DL modules only † Operational on DA-HR6802+DL modules only		

Version 2 Modules

Remote/Local Jumper

The **Remote/Local** jumper enables either remote, or local (card-edge) configuration, operation, and monitoring of the DA-6802+ Series module. If the jumper is set to **REMOTE** (the default location), the module can be controlled and monitored remotely. If the jumper is set to **LOC**, the module can only be controlled locally via card-edge control, but can be monitored remotely. The card-edge control is always functional regardless of the **Remote/Local** jumper setting.

Place a jumper on pins 1 and 2 to set the module for **Remote** control, or pins 2 and 3 to set the module for **Local** control.

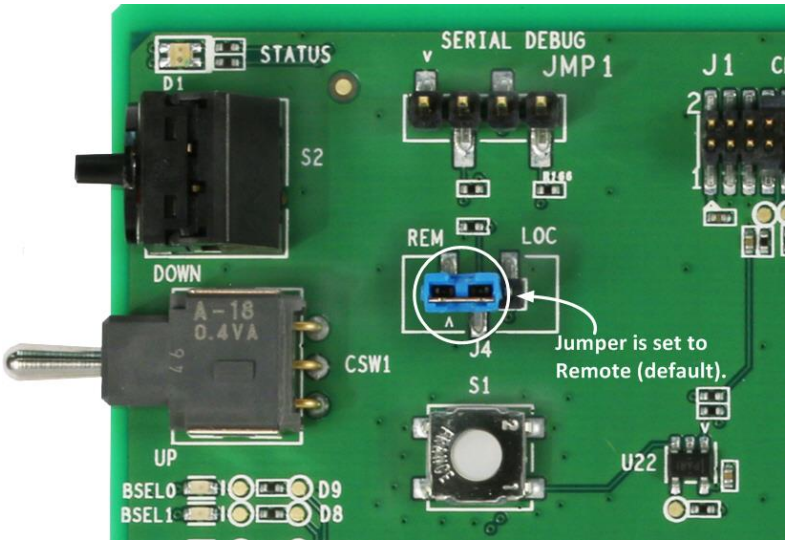


Figure 9: Remote/Local Jumper Location (Version 2)

Discovery and Control Using CCS Software

To discover your DA-6802+ Series module, CCS Navigator must be in **Build** mode. Follow these steps:

1. If the Discovery window is not open, click **Tools > Discovery** in the main menu.
   A **Discovery** window opens, most likely in the bottom left corner of the screen.
2. Click **Options**, and then click **Add**.
3. Enter the IP address of the frame that contains your module, the frame that contains your ICE6800+ module, or the frame that contains a 6800+ETH module that provides access to your module.
4. Click **OK** to close the **Add IP address** window, and then **OK** again to close the **Discovery Options** window.
5. Click **Start**.
   This triggers Pilot or Navigator to run a discovery.

6. When your discovery is complete, **Discovery Completed** is displayed in the **Discovery** window. To continue, click **Save**. The objects you you have discovered are saved to the **Discovery** folder of the **Navigation** pane.

You can now switch to **Control** mode by selecting **Operational Mode > Control** from the main menu. Double-click DA-6802+ Series in the **Navigation** pane. The **Control** window opens, displaying the module's controls.

Card-Edge Control

On Version 2 modules, follow these steps to change the parameter settings at the card edge:

1. Rotate the mode select rotary switch (hex switch) to **0.**
2. Once the hex switch is set to **0**, toggle the navigation switch up or down to select a bank.

   View the two control LEDs next to the navigation toggle switch to see which bank is currently selected.

Table 8: Selected Bank as Indicated by Control LEDs

Bank Number	LED 1	LED 0
0	Off	Off
1	Off	On

   See Parameters (on page 25) to view the various banks, hex switch positions, and corresponding parameter options and values.

3. Rotate the hex switch to the parameter number (**1** to **9**) or letter (**A** to **F**) of the option you want to set.
4. Toggle the navigation switch to select and set the value of the chosen parameter.
5. Rotate the hex switch to another parameter number/letter in the current bank, and then repeat step 4.

   or

   Rotate the hex switch to the **0** position again to select a different bank, and then repeat steps 3 and 4.

Parameters

Table 9: DA-6802+ Series Parameters (Version 2)

Parameter Group	Parameter Name	Bank/Hex Switch Controls	Description	Options
	Bank Select	X, 0	Selects the bank for card-edge control operation	0, 1
General	Serial Number [RO]	--	Reports the serial number of the module	<strings>
	License Key	--	Configures the license key for the module Note: After changing the license key, the module will reboot itself automatically. When using CCS Navigator, it is necessary to re-discover the module. Meanwhile, a factory recall is recommended.	<strings>
	Factory Recall	0, F	Returns all parameters to their factory settings	• Yes • No
	Soft Reboot	0, E	Restarts the module	• No (default) • Yes
Processing	Signal Present [RO]	--	Reports the presence of input signal	• No • Yes
	Signal Rate Supported [RO]	--	Reports if the input signal rate is supported by current module Note: This parameter is only available on the DA-S6802+S/D/DL modules	• No • Yes
	Reclocker Mode	1, 1	Sets the signal rate for reclocking (Options and defaults vary according to the module type; see Reclocker Mode Options (on page 18)). Note: Outputs are muted if the reclocker is unable to lock to an Auto, 270 Mb/s, HD, or 3G input signal.	• Auto • 270 Mb/s • HD • 3G • Bypass
	Locked Data Rate [RO]	--	Reports the data rate of the input signal if the reclocker is locked appropriately.	• 270 Mb/s • HD • 3G • Unknown • Bypass
	Output Slew Rate	1, 2	Configures the slew rate for the output drivers. (This parameter is only available for DA-H6802+S/D/DL and DA-HR6802+S/D/DL modules.)	• Auto (default) • SD • HD/3G

Recalling Default Parameter Settings

Version 2 modules have the ability to recall original factory default settings, as shown in the Parameters (on page 25) table.

To return this module to its default settings, you can either reset each parameter individually or do a global recall following this procedure:

1. Rotate the hex switch to **0.**
2. Toggle the navigation switch to the bank number 0.

   Use the control LEDs to verify which bank you have selected, or use an available 6800+ software control option (serial/local or Ethernet/remote) to aid in confirming your bank selection.
3. Rotate the hex switch to the global recall parameter F.
4. Toggle the navigation switch to **On**.

   Use an available 6800+ software control option to aid in viewing, setting, and confirming the parameter value.

Module Status LEDs

The Module Status LED is located at the card edge.

Table 10: Module Status Indicator 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.
Amber	There is a fault condition. See Alarms (on page 28) for details.

Module-Specific LEDs

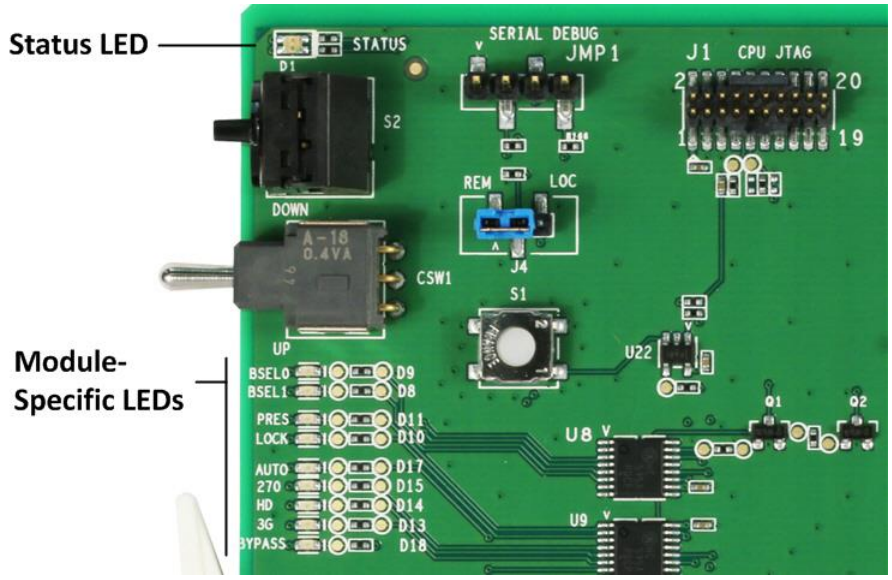


Figure 10: Module-Specific LEDs (Version 2)

Table 11: Descriptions of Module-Specific Status LEDs (Version 2)

LED Name	**Meaning When Lit**	
PRES	The input signal is present.	
LOCK	The input signal is properly locked.	
AUTO	The reclocker is configured in **Auto** mode.	
	LED Meaning When AUTO is ON	**LED Meaning When AUTO is OFF**
270	The input signal is 270Mbps and locked.	The reclocker is forced to the 270Mbps rate.
HD	The input signal is HD and locked.	The reclocker is forced to the HD-SDI rate.
3G	The input signal is 3G and locked.	The reclocker is forced to the 3G-SDI rate.
BYPASS	(Not lit unless signal is bypassed)	The reclocker is forced to a Bypass position.

Alarms

If an alarm is triggered, the **Module Status** LED turns to amber.

Table 12: Alarm Definitions

Alarm Name	Alarm Description	Alarm Priority	Default Trigger Delay	Default Clear Delay
Loss of Input	Input signal is lost or absent	6	1.0 sec	2.0 sec
Loss of Lock	Input signal is not locked (This alarm is only available for DA-SR6802+S/D/DL, DA-HR6802+S/D/DL, and DA-ASI6802+D.)	6	1.0 sec	2.0 sec
Signal Rate Not Supported	The input signal rate is not supported by the module (This alarm only applies to DA-S6802+S/D/DL modules.)	6	1.0 sec.	2.0 sec

Version 2 Specifications

Video Input (ASI)

Table 13: DA-ASI6802+D ASI Input Specifications

Item	Specification
Number of Inputs	1
Connector	BNC per IEC169-8
Impedance	75Ω
Return Loss	>15 dB 5 MHz to 270 MHz
Minimum Sensitivity Voltage	200 mV
Maximum Input Voltage	880 mV
Cable Equalization @ 270 Mb/s	• 1164 ft (355m), Belden 1694A • >984 ft (>300m) Belden 8281B

Video Input (SDI)

Table 14: SD/HD/3G-SDI Input Specifications

Item	Specification
Number of Inputs	1
Signal Type (varies according to module)	• SMPTE 259M-C (SD-SDI) • SMPTE 292M-C (HD-SDI) • SMPTE 424M (3G-SDI)
Connector	BNC per IEC169-8
Impedance	75Ω
Return Loss	• SD: 15 dB (5MHz to 270MHz) • HD: 15 dB (5MHz to 1.5G) • 3G: 10 dB (1.5G to 3G)

Cable Equalization
(Belden 1694A)
	• SD-SD (+S/+D/+DL BM):
	  • 1263 ft (385m)
	  • >984 ft (>300m) for Belden 8281B
	• HD-SDI (+S/+D/+DL BM):
	  • 475ft (145m)
	• 3G-SDI:
	  • 311 ft (95m) (+S BM)
	  • 344 ft (105m) (+D BM)
	  • 147 ft (45m) (+DL BM)

Maximum Signal Level	880 mV

Video Output (ASI)

Table 15: DA-ASI6802+D ASI Output Specifications

Item	Specification
Number of Outputs	8
Connector	BNC per IEC169-8
Impedance	75Ω
Output Voltage (pk-to-pk)	800 mV ± 10%
Maximum Rise Time	1.2 ns
Reclocking	270 Mb/s

Video Output (SDI)

Table 16: SD/HD/3G-SDI Output Specifications

Item	Specification
Number of Outputs	• Double Back Module: 8 • Single Back Module: 4 • Looping Back Module: 9
Signal type	• SMPTE 259M-C (SD-SDI) • SMPTE 292M-C (HD-SDI) • SMPTE 424M (3G-SDI)
Connector	BNC per IEC169-8
Impedance	75Ω
Return Loss*	• SD: 15 dB (5MHz to 270MHz) • HD: 15 dB (5MHz to 1.5G) • 3G: 10 dB (1.5G to 3G)
Data Rate	• SMPTE 259M-C (SD): 270 Mbps • SMPTE 292M-C (HD): 1.485 Gbps, 1.485/1.001 Gb/s • SMPTE 424M (3G): 2.97 Gbps, 2.97/1.001 Gb/s
Signal Level	800 mV ± 10%
DC Offset	0.0 V ± 0.5 V
Rise and Fall Time	• SD-SDI: 400 – 1500 ps (20% to 80%) • HD-SDI: < 270 ps (20% to 80%) • 3G-SDI: <135 ps
Overshoot	< 10% of amplitude (all outputs terminated)
Jitter	**Timing Jitter** • SD-SDI: < 0.2 UI (pk-to-pk) • HD-SDI: < 1 UI (pk-to-pk) • 3G-SDI:< 2UI (pk-to-pk) **Alignment Jitter** • SD-SDI: < 0.2 UI (pk-to-pk) • HD-SDI: < 0.2 UI (pk-to-pk) • 3G-SDI: < 0.3 UI (pk-to-pk)
* Values for primary outputs only; excludes loopback	

Propagation Delay

Table 17: Propagation Delay Specification (Reclock Mode)

Item	Specification
Delay	• SD: ≤74 ns • HD and 3G: ≤13 ns

Power Consumption

The power consumption of a Version 2DA-6802+ Series module package is <2.0 W.

Temperature

Item	Specification
Performance Temperature	32° to 122° F (0° to 50° C)
Operating Temperature	41° to 113° F (5° to 45° C)

Software Communication Problems

CCS Navigator/Web Browser Non-Communication

The frame is powered up, but the module does not communicate with CCS Navigator or the web GUI interface.

Solutions

- Ensure you have specified the proper module slot.
  See your *6800+ Frame Installation and Operation Manual* for more information about slot identification.
- Confirm there is an 6800+ETH module installed in the frame.
- Remove any legacy 6800 series product that is in the frame.
  CCS software cannot communicate with legacy 6800 series products, even if these modules may operate with card-edge controls in the frame. Legacy 6800 products do not have the "**+**" symbol on their extractor handles.
- Check for bent pins on the back module by following this procedure:
  i. Unplug the front module.
  ii. Unscrew and remove the back module.
  iii. Inspect the 20- or 30-pin spring connector at the bottom of the back module, and verify that the connector does not have any slightly bent pins.
  iv. Carefully reposition any bent pins. If this is not possible, contact our Customer Support department.

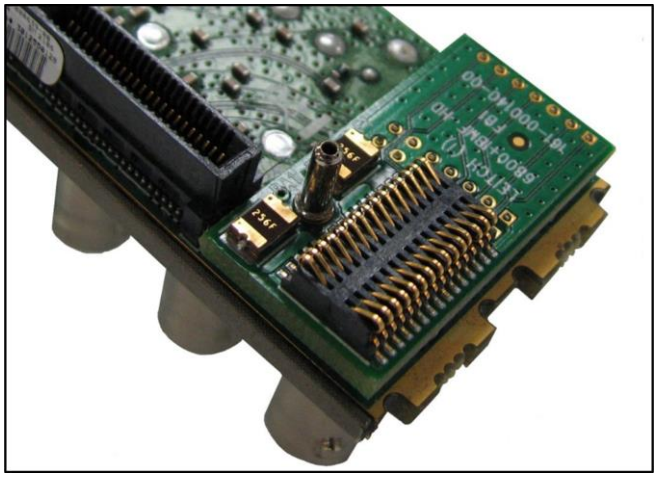


Figure 11: Typical Back Module Spring Connector

IP Address Forgotten

The IP address of the frame has been forgotten.

Solution

Follow this procedure:

1. Remove the ETH6800**+** module from the frame.
2. Select DIP switch 2 on the ETH6800**+** module and slide the tab to the forward position.
   This sets the ETH6800**+** module to its default IP address of **192.168.100.250**.

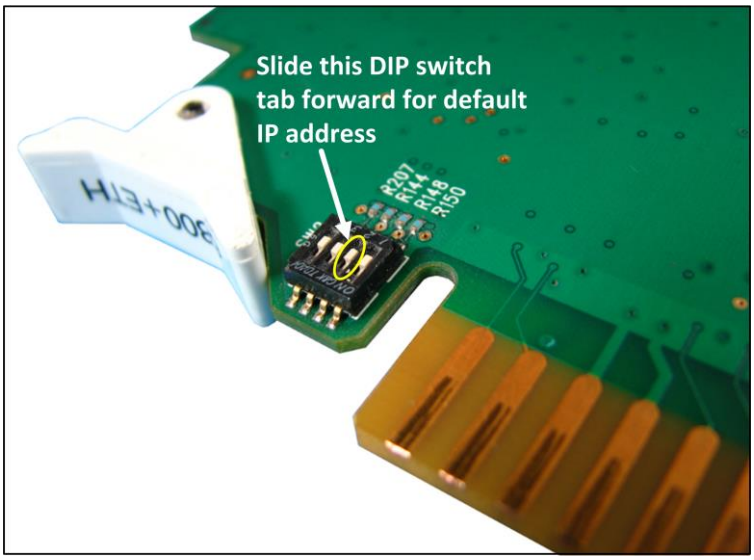


Figure 12: ETH6800+ DIP Switch

3. Use CCS Navigator or the web browser to interface with the ETH6800**+** module and then set the desired IP address.
4. Set the DIP switch back to its normal position and then re-insert the module.

Ethernet Loss of Connection

There is no Ethernet connection to the frame.

Solutions

- Verify that the correct IP address is being used. If your are not certain, refer to the above procedure to set to default IP.
- Verify that the ethernet cable is the correct type (a *crossover* cable is required for direct connection from a PC).

- Verify the **Link** and **Activity** (left and right) status LEDS are active on the RJ-45 connector at the rear of the frame.
- Verify the **Status** LED is lit and green on the ETH6800+ card, as viewed from the front of the frame with the door open.
- Verify that the security settings on the PC allow for connection to a frame (TCP port 80 and UDP ports 4000/4050 must be open).
- Verify that the PC is configured for and can communicate on the desired subnet.

Modules Missing

CCS software sees the frame, but does not find all of the modules.

Solutions

- Remove any legacy 6800 series products.
- Plug your modules in before starting the discovery.
- Start your discovery after the frame and all modules have fully powered up.
- Refresh the CCS software and ensure that the installed modules are fully powered up first before discovery.

CCS Non-Response

CCS Software does not respond after it is launched.

Solutions

Close any CCS software that is already launched.

No Control Via CCS

CCS software shows a module in the **Control** window, but cannot control it.

Solution

Follow this procedure:

1. Set the module's Local/Remote jumper to **Remote.**
2. Ensure the module name in the **Control** window matches the module type in the frame.
3. Gently push the module into its slot in the frame to ensure it is seated properly and powered up.
4. Verify that the **Control** window indicates the device is ready.

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Hardware Communication Problems

Power Failure

After a power failure, the frames and PC do not communicate.

Solution

Follow this procedure:

1. Wait four minutes for the frames to recover from the power failure.
2. Close the CCS software, and then restart the PC.
3. Restart the software application.

Module Not Responding

The module does not seem to work.

Solutions

- Ensure the correct frame is powered up.
- Verify that all appropriate rear connections are secure.
- Gently push the module into its slot in the frame to ensure it is seated properly. Then verify the **Status** LED on the module is lit and green.
- Ensure the back module does not have bent pins by following this procedure:
    i. Unplug the front module.
    ii. Unscrew and remove the back module.
    iii. Carefully reposition any bent pins. If this is not possible, contact Customer Support.

  Note: *Depressed* pins are will not affect the functionality of the product.

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