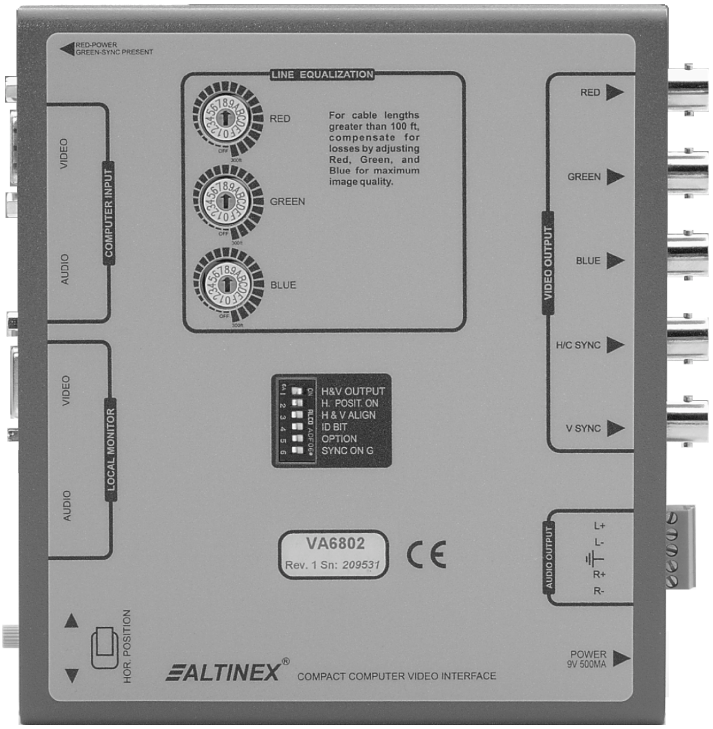

MANUAL PART NUMBER: 400-0079-002
PRODUCT REVISION: 1

VA6802

COMPACT ANALOG INTERFACE

WITH STEREO AUDIO

USER'S GUIDE

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INTRODUCTION

Thank you for purchasing the **VA6802** Compact Analog Interface with Stereo Audio. We are sure you will find it a reliable and useful product.

Superior performance for the right price backed by solid technical and customer support is what we have to offer.

The product you are holding in your hands is designed using state-of-the-art technology and is superior to anything available on the market. You will find this and our other products reliable, long lasting, and simple to operate.

We are committed to providing our customers with solutions to the most demanding audio-visual installations at very competitive pricing.

We appreciate your selection of our products and are confident that you will join the ranks of our many satisfied customers throughout the world.

This manual covers:

VA6802 VGA – Pack
VA6802 MAC – Pack
VA6802 SUN/SGI – Pack
VA6802 RGB – Pack
VA6802 Combo – Pack
VA6802 Super – Pack

TABLE OF CONTENTS

Page

PRECAUTIONS / SAFETY WARNINGS 2
- GENERAL 2
- RACK MOUNT SAFETY GUIDELINES 2
- INSTALLATION 2
- CLEANING 2
- FCC / CE NOTICE 2

ABOUT YOUR INTERFACE 3

TECHNICAL SPECIFICATIONS 3

VA6802 DESCRIPTION 4
- INPUT 4
- MAIN RGBHV OUTPUT 4
- LOCAL MONITOR OUTPUT 5
- HORIZONTAL POSITION ADJUSTMENT KNOB. 5
- EXTERNAL POWER ADAPTER 5
- MOUNTING CAPABILITY 5
- AUDIO 5
- BANDWIDTH 5
- EQUALIZATION 5

APPLICATION DIAGRAM 6

INSTALLING YOUR INTERFACE 7

OPERATION 7
- DIP – SWITCH SETTINGS 7
- H&V OUT SWITCH 7
- HORIZONTAL POSITION ON SWITCH 7
- H & V ALIGN SWITCH 7
- I.D. BIT SWITCH 8
- OPTION SWITCH 8
- SYNC ON GREEN SWITCH 8

ACCESSORIES 8

FAQ (FREQUENTLY ASKED QUESTIONS) 9

TROUBLESHOOTING GUIDE 9

ALTINEX POLICY 10
- LIMITED WARRANTY 10
- RETURN POLICY 10
- CONTACT INFORMATION 10

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PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **VA6802** Interface. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **VA6802** and to prevent fire and shock hazard. Please read them carefully and heed all warnings.

1.1. GENERAL

- There are no user serviceable parts inside. Only qualified ALTINEX service personnel must perform all service on the **VA6802**.

1.2. SAFETY GUIDELINES FOR THE RACK-MOUNTING OF THE VA6802

- Maximum operating ambient temperature is 35 (degrees C).
- Never restrict the airflow through the devices' fan or vents.
- When installing equipment into a rack, distribute the units evenly. Otherwise, hazardous conditions may be created by an uneven weight distribution.
- Connect the unit to a properly rated supply circuit.
- Reliable Earthing (Grounding) of Rack-Mounted Equipment should be maintained.

1.3. INSTALLATION

- For best results, place the **VA6802** Interface on a flat, level surface in a dry area away from dust and moisture.
- To prevent fire or shock, do not expose this unit to rain or moisture.
- To turn off the main power, be sure to remove the adapter from the wall. The power outlet socket should be installed as close to the equipment as possible, and should be easily accessible.
- Do not place the **VA6802** Interface in direct sunlight, near heaters or heat radiating appliances, or near any liquid.
- Exposure to direct sunlight, smoke, or steam can harm internal components.
- Handle the **VA6802** Interface carefully. Dropping or jarring can damage internal components.
- Do not place heavy objects on top of the **VA6802**.
- Do not pull the adapter or any cable that is attached to the **VA6802** Interface.
- If the **VA6802** is to be mounted to a table or wall, use only Altinex made mounting accessories, such as brackets (**MB1001**) and cables for optimum setup.
- If the **VA6802** Interface is not used for an extended period, disconnect the adapter from the wall to avoid fire, shock, and loss of power.

1.4. CLEANING

- Unplug the **VA6802** adapter before cleaning.
- Clean surfaces with a dry cloth. Never use strong detergents or solvents such as alcohol or thinner. Do not use a wet cloth or water to clean the unit.

1.5. FCC / CE NOTICE

- This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- 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 the 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 the user will be required to correct the interference at his own expense.

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- Any changes or modifications to the unit not expressly approved by Altinex, Inc. could void the user's authority to operate the equipment.

ABOUT YOUR INTERFACE 2

There are a great variety of computers and computer video cards on the market today. There are also numerous data monitors and large screen data projectors. When displaying a computer image on a large screen data projector or on a large screen monitor, it often becomes clear that some computers are not always compatible with these display devices. The **VA6802** Computer Video Interface that you have just purchased from ALTINEX is designed to resolve this incompatibility.

Interface Capabilities

The **VA6802** is a high resolution computer video interface with stereo audio designed to allow the connections of VGA, SVGA, XGA, UXGA, MAC, SUN, SGI, and other analog computer video sources to scan rate compatible monitors, projectors, and LCD displays.

The **VA6802** amplifies video signals and converts sync to various formats. It does not change the scan-rate or the resolution of the video signal. The computer and projector must be scan rate compatible with each other.

The **VA6802** input is VGA compatible. The **VA6802** provides two fully buffered outputs: a main output on 5 BNC connectors provides RGBHV, RGBS, or RGsB, and a pass-through 15-pin HD monitor output. The monitor output is typically used to transmit signals to a local monitor. If the input signal format is RGBS or RGBHV, the main output may be RGBHV, RGBS, or RGsB. If the input signal is RGsB, the output must be RGsB. The **VA6802** is not designed to separate sync from green.

The **VA6802** is capable of equalizing the attenuation effects of long cable runs, up to 300 feet or more depending upon the type of cable. The **VA6802** accepts stereo audio input and offers balanced or unbalanced stereo audio output on a terminal block connector. There is a 3.5mm jack for computer audio input, which may be returned to the local audio system with a 3.5mm jack for buffered stereo audio output. A 5-pin terminal block is available for stereo audio transmission to the main sound system. These connectors are easily adaptable to stereo mini or RCA type connectors.

TECHNICAL SPECIFICATIONS 3

FEATURES/ DESCRIPTION	Audio	Video
GENERAL		
No. of Inputs	1	1
Input Connector	3.5 mm jack (F)	15-pin HD(F)
No. of Outputs	2	1 Main + 1 Local Monitor
Local Audio Output Connector	3.5 mm jack	—
Local Monitor Output Connector	—	15-pin HD Female
Main Output Connector	5-pin Terminal Block	5 BNC Female
Compatibility	Stereo or mono Audio	VGA/SVGA/XGA/UXGA MAC/SUN/SGI and other analog computer video sources

Table 1. **VA6802** General

MECHANICAL	
Depth (inches)	5.46 in. (139mm)
Width (inches)	6.06 in. (154mm)
Height (inches)	1.27 in (32mm)
Weight (pounds)	1.0 lb. (0.45kg)
Ship Weight (pounds)	1.6 lb. (0.73kg)
Material	Aluminum
Finish	Paint, Altinex Grey
Top Panel	Lexan Overlay
T° Operating	10°C-35°C
T° Maximum	50°C
Humidity	90% non-condensing
MTBF (calculations)	40,000 hrs

Table 2. **VA6802** Mechanical

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ELECTRICAL	Audio	Video
Input Signals		
Level	—	1.7V max
Impedance	10K Ohms	75 Ohms ± 1% (terminated)
Max Level	0 dBu	—
Input Sync Signals		
Horizontal, Vertical, & Composite	—	TTL(+/-)
Sync on Green	—	-0.3V
Impedance	—	10k Ohms
Output Signals		
Level	—	1.7V p-p max (terminated)
Impedance	50 Ohms (unbalanced), 100 Ohms (balanced)	75 Ohms
Gain	—	0 dB
High Frequency Gain	—	Adjustable by equalization up to 2 dB max
Drive (w/ 600 Ohms input)	>10 dBu	—
Output Sync Signal		
Composite, Horizontal, Vertical	—	TTL(+/-)
Sync on Green	—	-0.3V
Impedance	—	22 Ohms
Frequency Compatibility		
Horizontal	—	15 -130 kHz
Vertical	—	25 -180 kHz
Minimum Video Bandwidth	—	- 3dB @ 350 MHz
Horizontal Position Range	—	20%
Cross-talk	—	20dB @ 100MHz
Audio Throughput	**Audio**	**Video**
Gain	+6 dB balanced, 0 dB unbalanced	—
Frequency Response	10 Hz to 20 kHz (+/-0.05 dB)	—
Noise Floor	-98 dB @ 20 kHz	—
CMRR	>40 dB, 10 Hz to 20 kHz	—
Power		
External Power Adapter (DC)	9V DC-500 mA	

Table 3. **VA6802** Electrical

VA6802 DESCRIPTION 4

4.1. INPUT

The **VA6802** uses a 15-pin HD connector for input, which is compatible with standard VGA pin-outs. This allows the connection of a computer using coaxial cables to a 15-pin HD connector cable. This allows greater flexibility and versatility of the **VA6802.** The input and output cables for various computers are available.

PINS	COMPUTER INPUT	LOCAL MONITOR OUTPUT
1	Red Video	Red Video
2	Green Video	Green Video
3	Blue Video	Blue Video
4	ID2	ID 2
5	SCL/SDA Ref.	N/C
6	Signal Return	Signal Return
7	Signal Return	Signal Return
8	Signal Return	Signal Return
9	Vesa 5V Input	Composite Signal
10	Sync Return	Signal Return
11	ID Ø	N/C
12	SDA	N/C
13	Horizontal Sync/Composite Sync	Horizontal Sync/Composite Sync
14	Vertical Sync	Vertical Sync
15	SCL	N/C

Table 4. **VA6802** (15-pin HD) pin-outs

4.2. MAIN RGBHV OUTPUT

BNC connectors are considered standard connectors for audio-visual systems. They offer a better quality connection for high-resolution video signals. They also allow easy cable maintenance in the field. This output offers RGBHV, RGBS, and

RGsB output signals (RGsB type input is pass-through only). With these connectors, the **VA6802** can be connected to compatible projectors using 4 coax or 5 coax cables.

CONNECTOR	OUTPUT (5-BNC FEMALE)
RED	Red Video
GREEN	Green Video
BLUE	Blue Video
H/C SYNC	Horizontal or Composite Sync
V SYNC	Vertical Sync

Table 5. **VA6802** (5-BNC) output pin-outs

4.3. LOCAL MONITOR OUTPUT

A buffered output is very helpful in connecting your local monitor to the interface. This output is fully buffered; therefore, any reflections are totally eliminated. The output is provided through a 15-pin HD connector.

4.4. HORIZONTAL POSITION ADJUSTMENT KNOB

Although most monitors and projectors are fully capable of adjusting the horizontal position of the image, in some instances it is helpful to adjust the horizontal position at the interface. This control is also helpful when using multiple computers.

In some cases, adjusting the horizontal position at the interface may simplify the projector set up.

4.5. EXTERNAL POWER ADAPTER

The **VA6802** is powered using a 9VDC 500mA adapter. The power regulation is provided inside the unit. The adapter uses a 3.5mm connector with a center conductor (+) and a shell (-). A selection of several power adapters is available for different countries from 110 VAC to 240 VAC.

4.6. MOUNTING CAPABILITY

The **VA6802** is designed for easy mounting to a table, wall, or inside a rack using the **MB1001** mounting brackets. Two mounting holes are provided on each side of the unit for the mounting brackets.

4.7 AUDIO

The **VA6802** accepts stereo audio input and offers balanced or unbalanced stereo audio output on a terminal block connector. There is a 3.5mm jack for computer audio input, which may be returned to the local audio system with a 3.5mm jack for stereo audio output. A 5-pin terminal block is available for stereo audio transmission to the main sound system. These connectors are easily adaptable to stereo mini or RCA type connectors.

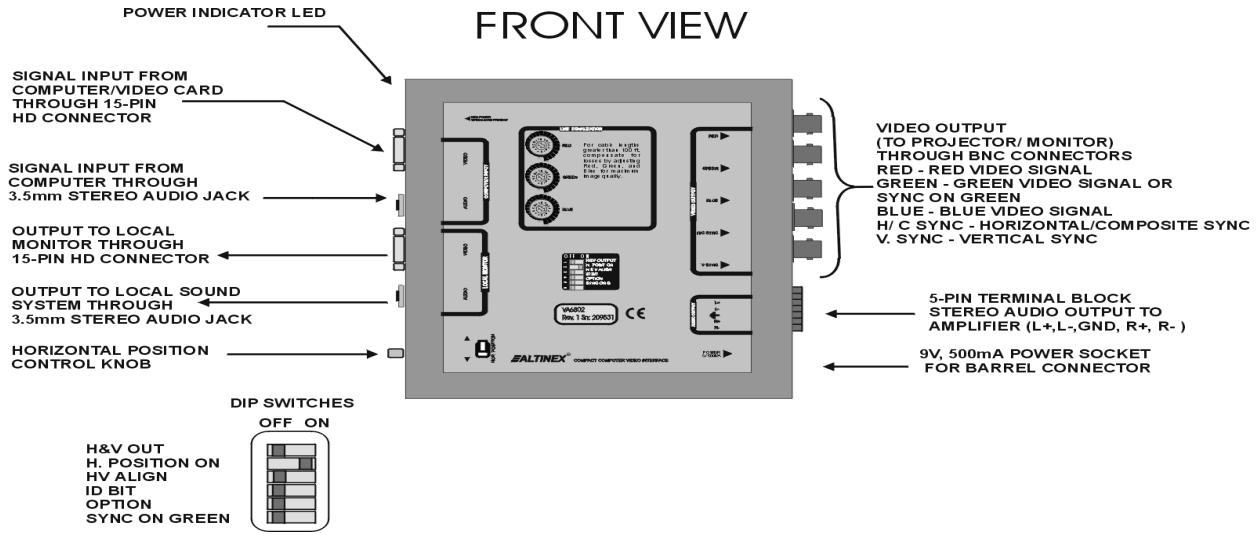
4.8 BANDWIDTH

The minimum bandwidth is 350 MHz. This exceptionally high bandwidth allows the passing of the third harmonics of the video signal, thus maintaining the highest quality of the input signal.

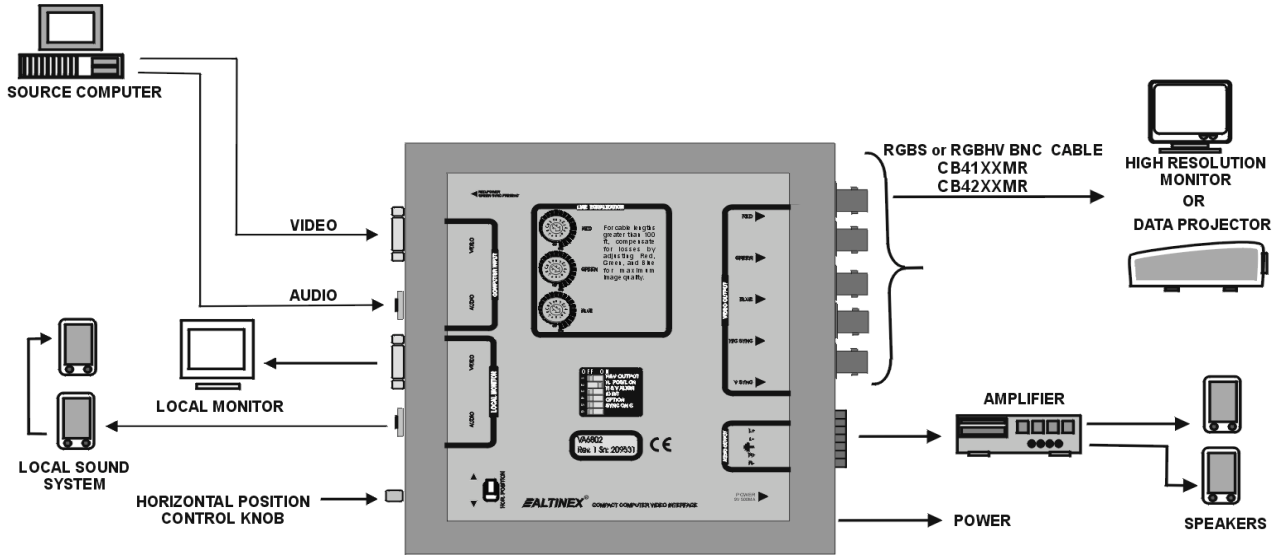
4.9 EQUALIZATION

Equalization is a means of boosting Red, Green, and Blue signals at high frequencies with digital adjustment knobs when using cable runs over 100 feet. This works for up to 300 feet or more of cable depending on the type of cable. The attenuation of red, green, and blue signals due to long cables may be effectively removed.

VA6802 DESCRIPTION (con't)



APPLICATION DIAGRAM 5



	AUDIO	VIDEO
SOURCE	Audio input cable is available from Altinex Audio (3.5mm) cable part # CB102-SMM0006SMM	Video input cable is available from Altinex MS8122CA for MAC pack MS8124CA for SUN pack MS8126CA for VGA pack MS8128CA for SGI pack
LOCAL MONITOR	Audio input cable is available from Altinex Audio (3.5mm) cable part # CB102-SMM0006SMM	Video input cable is available from Altinex MS8121CA for MAC pack MS8123CA for SUN pack MS8125CA for VGA pack MS8127CA for SGI pack

INSTALLING YOUR INTERFACE 6

Step 1. Connect one end of the input cable to the video output port of your source computer and the 15-pin HD connector end to the video input port of the **VA6802**.

Step 2. Also connect one end of the audio input cable to the audio output port of your source computer and the 15-pin HD connector end to the audio input**.**

Step 3. Connect the cable from a local monitor to the local monitor output of the **VA6802**.

Step 4. Also connect the audio cable from a local audio amplifier to the local audio output of the **VA6802**.

Step 5. Connect one end of coaxial cable between a projector/monitor and the BNC connectors on the side of the **VA6802**. Usually either a 4 BNC or 5 BNC coaxial cable is used, depending on the display device's requirement of Composite SYNC (RGBS) or HSYNC & VSYNC.

Step 6. Also connect audio speaker wire from the main sound system amplifier to the 5-pin terminal block connector of the **VA6802**.

Step 7. Make sure that the dip-switches are set as desired and as explained in Section 7.

Step 8. Connect the external power supply (AC Adapter provided with the unit) with 2.5mm plug and 9V DC at 500mA output. The power indicator light on the **VA6802** should turn on.

Step 9. First, adjust the horizontal image position using the monitor or projector control. If further adjustments of the image are needed, use the knob located on the left side of the **VA6802** Interface with the Horizontal Position Dip-switch in the ON position.

Step 10. Adjust the red, green, and blue equalization settings for the best image quality.

OPERATION 7

The settings of the **VA6802** Interface can be adjusted using the dip-switches as described below. The **VA6802** will operate successfully as long as cables are attached properly and other technical specifications are followed.

7.1. DIP – SWITCH SETTINGS

DIP-SWITCH	OFF	ON
H&V Out	X	
H Position ON		X
H&V Align	X	
ID Bit	X	
Option	X	
Sync on Green	X	

Table 6. Dip-switch default settings

7.2. H&V OUT SWITCH

This dip-switch controls the sync signal that will be present on the Horizontal/Composite sync and Vertical sync connectors. This switch allows a composite sync to be separated into H&V.

7.3 HORIZONTAL POSITION ON SWITCH

When in the OFF position, the switch will disable the adjustment of the horizontal position of the image through the dial located on the input side plate. If the Horizontal Position switch is in the ON position, the horizontal position control of image is possible through the knob on the side of the **VA6802**.

With the **VA6802**'s Horizontal Position switch in the OFF position (Horizontal position control disabled), it is recommended to first adjust the horizontal position of the image using the monitor or projector's Horizontal Position control. If the horizontal position of the image needs further adjustments, adjust it with the dial located on the **VA6802** Interface. The horizontal position dip-switch is in the ON position at this time.

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7.4 H & V ALIGN SWITCH

By default the H & V ALIGN dip-switch is in the OFF position, so Horizontal and Vertical SYNC signals are independent. By turning this dip-switch to the ON position, the pulse of both HSYNC & VSYNC signals start at the same point so that the picture is aligned.

7.5 I.D. BIT SWITCH

Some computers on the market, especially laptop computers, require the presence of a local monitor to correctly output video. The ID Bit switch, when turned ON, will connect Pin 4 to ground. This enables the interface to imitate a local monitor if one is not being used in the system. When the ID Bit switch is in the OFF position, the ID Bit of pin 4 is passed through to the HD local monitor output.

7.6 OPTION SWITCH

By default, this dip-switch is in the OFF position. By putting it in the ON position, the duration of Vertical SYNC of the signal is reduced to 10ms. This allows stability of the signal on a long run cable.

7.7 SYNC ON GREEN SWITCH

Often systems that use large matrix switchers are designed to switch signals in RGsB format. This is done to reduce the cost of the switcher and cable. In these types of systems, the ability of the **VA6802** to output Sync on Green can be very helpful. It is important to note that the **VA6802** will not separate sync from the green signal, if the input signal is RGsB. It will simply amplify video and pass it through. It will, however combine Sync with Green Video when the switch is in the ON position; regardless of whether the input signal is RGBS or RGBHV.

ACCESSORIES 8

Model No.	Description
PS5502US	9 V 500 mA Power Supply (requires Adapter Cable)
PS5512UK	9 V 500 mA Power Supply for UK
PS5522AU	9 V 500 mA Power Supply for Australia
PS5532GR	9 V 500 mA Power Supply for Germany
PS5542JP	9 V 500 mA Power Supply for Japan

Table 7. Power Supply Selection.

Model No.	Description
VGA-Pack	
MS8125CA	VGA Output cable for **VA6802**
MS8126CA	VGA Input cable for **VA6802**
MAC–Pack	
MS8121CA	MAC Output cable for **VA6802**
MS8122CA	MAC Input cable for **VA6802**
SUN/SGI–Pack	
MS8123CA	SUN Output cable for **VA6802**
MS8124CA	SUN Input cable for **VA6802**
RGB-Pack	
	5 coax. (BNC) cable for **VA6802**
Stereo/Mono	
CB102-SMM0006SMM	Audio (3.5mm) cable for **VA6802**

Table 8. Selection of Interface Cables.

Model No.	Description
	RACK MOUNT ACCESSORIES
MB1001	Rack/Wall mount brackets for VA6800 series.
COMBO-PACK	VGA+MAC INPUT & OUTPUT cables
SUPER-PACK	VGA+MAC+SUN/SGI INPUT & OUTPUT cables

Table 9. Optional Accessories

The standard cables are available 3 feet lengths. Please call 1-714-990-2300 for a wider selection of cables (6 ft, 12 ft).

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FAQ (FREQUENTLY ASKED QUESTIONS) 9

No:	Question	Answer
1	When and why do I need to use the Horizontal Position Dip-switch?	The Horizontal Position Dip-switch enables or disables the control of the horizontal position of the image using the control knob on the left side of the **VA6802**. First, adjust the horizontal position using the monitor or projector control, and then use the horizontal position control of the **VA6802**, if needed.
2	What dip-switch do I set to receive the composite SYNC output?	If the desired output signal is composite sync, then turn OFF the H & V Out Dip-switch and connect only 4 wires (RGBS) to RED, GREEN, BLUE, and H/C SYNC connectors.
3	When and why would I use the Sync on Green dip-switch, although the unit does not separate Sync from Green?	The **VA6802** does not separate the Sync signal from the Green signal, but if the desired output is in RGsB format regardless of the input signal, turn the Sync on Green dip-switch to the ON position.
4	When do I use the H & V Out Dip-switch?	If the desired output is in RGBHV format, turn ON the H & V Out Dip-switch. If the H & V Out dip-switch is OFF then the output signal may have Composite Sync present on the Horizontal Sync connector.

TROUBLESHOOTING GUIDE 10

- Please make sure that the amplitude level of the input signal is as follows:
  a) RED, GREEN, and BLUE are less than 1.2 Volts.
  b) HSYNC & VSYNC are less than 5.0 Volts
- Please use only an Altinex supplied power supply (AC Adapter) for proper operation.
- If problems show up on the display after continuous usage at higher voltage, higher temperature, higher humidity, or at other extreme environmental conditions, please correct those extreme conditions.
- If the screen is large in the vertical direction and if you are using Composite Sync on the main output, please disconnect the V. SYNC connector. Also, make sure that the H & V Out dip-switch is in the OFF position.
- First, adjust the horizontal position control of the display and then use the horizontal position control knob located on the **VA6802**, if needed.
- If you are using RGsB format (Sync on Green), make sure that the Sync on Green Dip-switch on the front panel is in the ON position.

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ALTINEX POLICY 11

11.1. LIMITED WARRANTY

ALTINEX warrants that its products and cables are free from defects in materials under normal use and service. This warranty is limited to repairing at company's factory any part or parts of the product, which upon company's examination shall disclose to be, thus defective. Products considered defective should be returned to company with transportation charges prepaid within 2 years or (90 days for cables) from date of shipment to the purchaser. The warranty is expressly instead of all other warranties expressed or implied. ALTINEX neither assumes nor authorizes any other person to assume for it any other liability concerning the sale of the products. This warranty shall not apply to any product that shall have been repaired or altered outside of company's factory in any way so as, in its judgment, to affect its stability or reliability, or that has been subject to misuse, negligence, or accident.

11.2. RETURN POLICY

It is very important to Altinex that you receive the products that you have ordered and that this product fulfills your need. In the unlikely event, that Altinex product needs to be returned please follow policy below:

Altinex will accept product returns for period of 30 days from authorized Altinex dealers. Products must be returned in an unopened package.

If product has been opened, the restocking fees will apply. For restocking fee amount, please contact an Altinex Sales Representative.

If product is in your possession for more than 30 days, the restocking fees will apply.

Altinex will not accept any returns on cables or custom products.

If your product is in warranty and needs service, contact the Altinex Sales Department for RMA (Return Material Authorization). Products returned without RMA number may experience a delay in service.

If your product is out of warranty and needs service, contact the Altinex Sales Department for RMA (Return Material Authorization). Products returned without RMA number may experience a delay in service. The service charges will be quoted to you before actual repairs are done.

11.3. CONTACT INFORMATION

Sales Department
Phone: 714-990-2300
Fax: 714-990-3303

Accounting Department
Phone: 714-990-6088
Fax: 714-990-5778