

MANUAL PART NUMBER: 400-0036-003
PRODUCT REVISION: 2

VA6854WM [REV 2]

WALL / FURNITURE MOUNT INTERFACE USER'S GUIDE

INTERFACES

INTRODUCTION

Thank you for purchasing the **VA6854WM** Analog Computer Video Interface. We are sure you will find it reliable and simple to use.

Superior performance for the right price, backed by solid technical and customer support is what Altinex has 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 signal management 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:

VA6854WM - Wall/Furniture Mount Interface

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PRECAUTIONS / SAFETY WARNINGS 1

Please read this manual carefully before using your **VA6854WM** Interface. Keep this manual handy for future reference. These safety instructions are to ensure the long life of your **VA6854WM** and to prevent fire and shock hazard. Please read them carefully and heed all warnings.

1.1 GENERAL

- Unauthorized personnel shall not open the unit since there are high-voltage components inside.
- Qualified Altinex service personnel, or their authorized representatives must perform all service.

1.2 SAFETY GUIDELINES FOR THE RACK-MOUNTING OF THE VA6854WM

- 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 **VA6854WM** 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. Do not place the **VA6854WM** 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 **VA6854WM** Interface carefully. Dropping or jarring can damage internal components.
- Do not place heavy objects on top of the **VA6854WM**.

- Please use a proper power supply capable of supplying at least 100 mA at +12 V DC.

1.4 CLEANING

- Unplug the **VA6854WM** power cord 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.
- 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

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The **VA6854WM** is an analog video interface designed to allow the connection of a computer video source to a scan-rate compatible monitor or projector. It is compatible with VGA through UXGA, MAC, SUN, and SGI computer video sources.

Designed for mounting into a wall or into furniture, the **VA6854WM** fits directly into a standard electrical enclosure and typically becomes a permanent part of an audio/visual system in a fixed installation. The **VA6854WM** may be mounted into a 3-gang wide enclosure by itself or it may be mounted into a 6-gang wide enclosure, installed together with an Access Plate, which can be punched for a custom set of connectors. Once installed, the **VA6854WM** appears similar to a wall plate, offering a simple manner of connection for the user while making critical interface control capabilities available.

The **VA6854WM** uses a 15-pin HD connector on the face of the input that is compatible with standard VGA cables. The **VA6854WM** offers two outputs: one on the face of the unit which uses a 15-pin HD connector to transmit signals to a local monitor, and one on the back of the unit offering RGBSHV on 6 BNC connectors to transmit signals to a monitor or projector. The output on the back of the unit provides RGsB, RGBS or RGBHV format signals. The **VA6854WM** is not designed to strip Sync from Green; if the input signal format is RGsB, only RGsB will be available on the output.

A horizontal position control is accessible on the face of the **VA6854WM**. Six dip-switches on the plate provide features, which may occasionally be needed for compatibility purposes, though these switches may be covered after installation, if desired.

A variety of different Access Plates is available for the **VA6854WM**. The **VA6854WM** requires a 9-12V DC 100mA power supply, which can be easily connected to the two bare leads on the back of the unit. Two types of power supplies are available: the **PS5503US**, a 'wall-wart' type adapter that can power up to two interfaces, and the **PS5581SM**, a rack-mountable unit that can power up to 25 interfaces.

The primary function of the **VA6854WM** is to act as a computer video interface. In general, a computer video interface provides three key functions: a.) To allow for the connection of both a local monitor and a presentation monitor/projector at the simultaneously, b.) To process sync, if desired, to convert the incoming sync to a format acceptable by the presentation monitor/projector, and c.) To provide a means of adapting connector types, since rarely does the presentation monitor input connector match the computer output connector.

In addition, a computer video interface has the ability to make certain sync adjustments which help to make the computer image compatible in a system. It does not change the scan-rate or the resolution of the video signal. The computer and projector must be scan rate compatible.

TECHNICAL SPECIFICATIONS

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FEATURES/DESCRIPTION	VA6854WM
GENERAL	
No. of Inputs	1
Input Connector	15-pin HD Female
No. of Outputs	1 Main + 1 Local Monitor
Main Output Connector	Set of 6 BNC Female
Local Monitor Output Connector	15-pin HD Female
Compatibility	VGA/SVGA /XGA Compatible Signals, MAC/Sun/SGI Workstations

Table 1. **VA6854WM** General

MECHANICAL	VA6854WM
Width (W , W)	5.50in, 4.50in (140mm, 114mm)
Height (H , H , H)	3.75in, 2.75in, 0.88in (95mm, 70mm, 22mm)
Depth (D)	2.00in (51mm)
Weight (pounds)	1.0lbs (0.5kg)
Ship Weight (pounds)	1.6lbs (0.75kg)
Material	Steel
Finish	Black
Front/Back Panels	Lexan
T° Operating	10°C-35°C
T° Maximum	50°C
Humidity Technical	90% non-condensing
MTBF (calculations)	40,000 hrs

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Table 2. **VA6854WM** Mechanical

ELECTRICAL	VA6854WM
Input Video Signals	
Analog Signal	0.3 to 1.2V p-p
Impedance	75 Ohms
Rise/Fall Time (ns)	0.9
Input Sync Signals	
Horizontal, Vertical, & C-Sync	TTL(+/-)
Sync on Green	-0.3V
Impedance	10k Ohms
Output Video Signals	
Analog Signal	0.77V p-p
Impedance	75 Ohms
Rise/Fall Time (ns)	1.2
Output Sync Signals	
Composite Sync	TTL(+/-)
Sync on Green	-0.3V
Impedance	22 Ohms
Frequency Compatibility	
Typical Video Bandwidth	425 MHz
Minimum Video Bandwidth	350 MHz
Horizontal	15-130 kHz
Vertical	25-180 kHz
Horizontal Position Range	
	20 %
Cross-talk	
	39dB @ 100 MHz
Power	
External Power Adapter (AC)	9V DC-100 mA (unregulated) or 9-12V DC-100 mA (regulated)
Power Consumption	
	1.0 watts max.

Table 3. **VA6854WM** Electrical

PRODUCT DESCRIPTION 4

4.1 COMPUTER VIDEO INPUT (15-PIN HD CONNECTOR)

The 15-pin HD input on the face of the **VA6854WM** allows connection of a computer to the interface using an Altinex computer Input cable. High quality VGA cables that has standard VGA pin-outs may be used to get greater flexibility, versatility, and results from the **VA6854WM**.

PIN No.	INPUT SIGNALS ON 15-PIN HD FEMALE CONNECTOR
1	Red Video
2	Green Video
3	Blue Video
4	ID Bit 2 (Connected to Ground when ID Bit switch is ON)
5	SCL/SDA ID Bit Reference
6	Ground
7	Ground
8	Ground
9	No connection
10	Ground
11	ID Bit 0
12	SDA ID Bit
13	Horizontal Sync/Composite Sync
14	Vertical Sync
15	SCL ID Bit

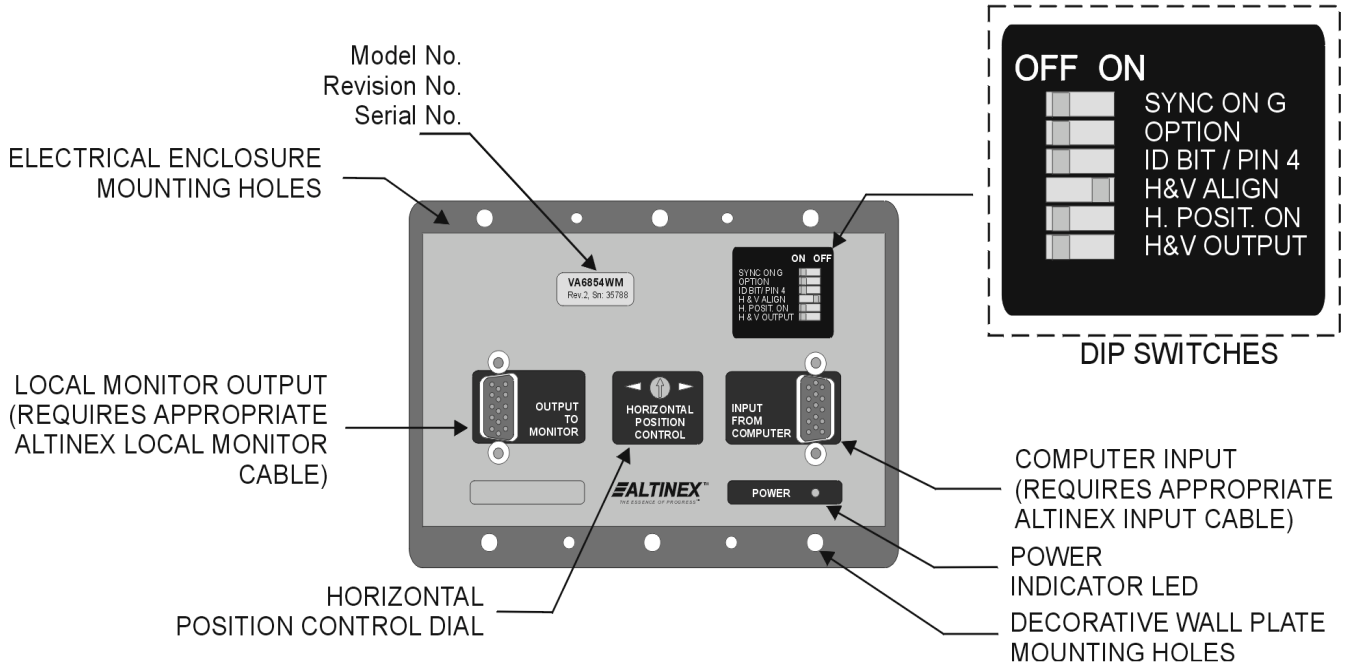
Table 4. Computer Video Input

4.2 LOCAL MONITOR OUTPUT (15-PIN HD CONNECTOR)

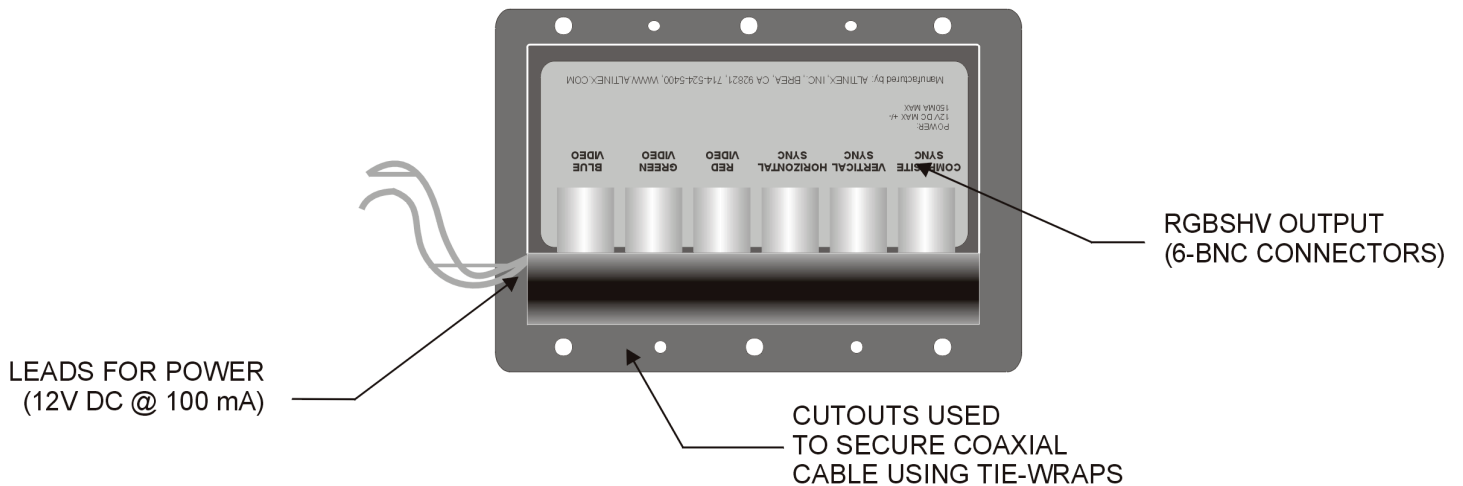
The Local Monitor output on the face of the **VA6854WM** is very helpful in connecting a local monitor to the interface through a 15-pin HD connector. Altinex Local Monitor Cables are available for these purposes described in Accessories section 8. It is a fully buffered output, so a local monitor may actually be placed a distance away from the interface without loss to the signal.

ID Bit pins are passed through from the 15 pin HD Input to the 15 pin HD Output in order to allow for the proper boot up of certain local monitors requiring these ID Bits for this function.

FRONT PANEL OF VA6854WM



BACK PANEL OF VA6854WM



PIN No.	15-PIN HD FEMALE
1	Red Video
2	Green Video
3	Blue Video
4	ID Bit 2 (Grounded when ID Bit switch is ON)
5	SCL/SDA ID Bit Reference
6	Ground
7	Ground
8	Ground
9	Composite Sync
10	Ground
11	ID Bit 0
12	SDA ID Bit
13	Horizontal Sync
14	Vertical Sync
15	SCL ID Bit

Table 5. Local Monitor Output

4.3 MAIN OUTPUT THROUGH 6-BNC CONNECTORS

The main output on the rear of the **VA6854WM** offers six BNC connectors for Red, Green, Blue, Composite Sync, Horizontal Sync, and Vertical Sync. BNC-type connectors are used on this output because they offer high quality connections, and they are easy to terminate and maintain in the field. Using this output, the **VA6854WM** may be connected to the main presentation monitor/projector or it may be connected to a switching or distribution system, through the proper 4 or 5 coax cables with BNC connectors. This output offers RGBHV, RGBS and RGsB output signals.

CONNECTOR	OUTPUT (6-BNC FEMALE)
RED VIDEO	Red Video
GREEN VIDEO	Green Video
BLUE VIDEO	Blue Video
HORIZONTAL SYNC	Horizontal Sync
VERTICAL SYNC	Vertical Sync
COMPOSITE SYNC	Composite Sync

Table 6. RGBSHV Main Output (6-BNC)

4.4 HORIZONTAL POSITION ADJUSTMENT

Although most monitors and projectors have the capability to adjust the horizontal position of the image, in some instances, it is easier to adjust the horizontal position at the interface. It is recommended that with the interface's horizontal position control centered, the image should first be adjusted using the monitor or projector control. Then rotate the interface horizontal position control in the appropriate direction. Since the Horizontal position control is available on the face of the unit, the user can make slight adjustments with ease.

4.5 POWER REQUIREMENTS

The **VA6854WM** operates on 9-12V DC, 100 mA power. Two bare leads are provided on the rear of the unit for easy connection through two screw caps. Altinex offers an optional rack-mountable power supply - **PS5581SM**, which is capable of supplying power to up to 25 **VA6854WM** units. Altinex also offers **PS5503US**, an external power adapter, which can provide power to two **VA6854WM** units.

4.6 BANDWIDTH

The typical bandwidth of the **VA6854WM** is 425 MHz. The minimum bandwidth is 350 MHz. This exceptionally high bandwidth allows passing of the third harmonics of the video signal, thus maintaining the highest quality of the input signal.

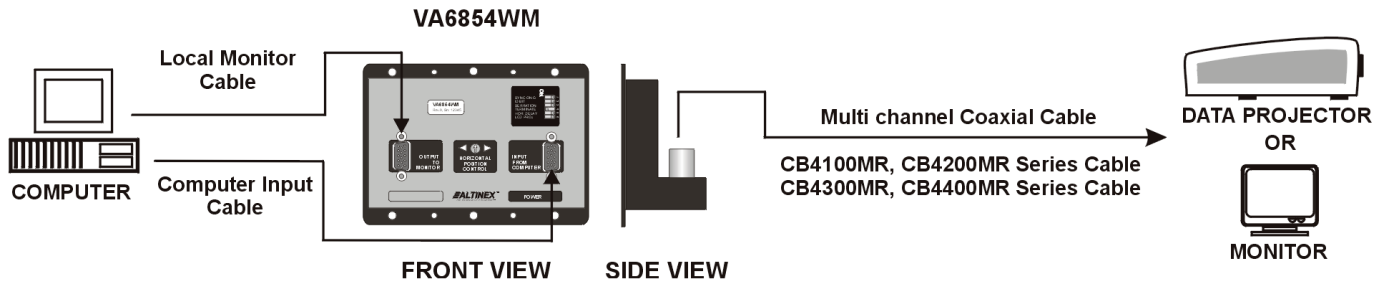
APPLICATION DIAGRAM

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COMPUTER

INTERFACE

VIDEO DISPLAY



INSTALLING YOUR INTERFACE

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- Step 1.** The **VA6854WM** is designed to be installed horizontally, directly into a standard 3-Gang electrical enclosure (or 6-Gang enclosure w/area for custom connection) with a device plate on it. The appropriate Main output cables, which are connected to the rear of the **VA6854WM**, should be run into the electrical enclosure/conduit before attaching the **VA6854WM**. Please leave enough slack to allow the interface to be pulled out for maintenance, if necessary.
- Step 2.** Attach bare power leads to a 9 -12V DC power supply capable of supplying a minimum of 500mA using the provided two screw caps. Polarity of signal does not matter. One can also use the optional **PS5581SM** power supply. Test power connection. A red LED light on the front panel of the **VA6854WM** will indicate that unit is turned ON.
- Step 3.** Test interface capabilities. Connect your three, four, or five coaxial cables of the output cable to the appropriate BNC connectors on the rear of the **VA6854WM**. If the RGBS format is to be used as output of the **VA6854WM**, then simply connect four coaxial cables to the RED, GREEN, BLUE & COMPOSITE SYNC BNC

connectors and leave the H-Sync and V-Sync channels unconnected. If the RGBHV format is to be used in the system connect five coaxial cables to RED, GREEN, BLUE, HORIZONTAL SYNC & VERTICAL SYNC BNC connectors and leave the COMPOSITE-SYNC BNC connector. If output is desired in RGsB format then connect through coaxial cable to RED, GREEN, BLUE BNC connectors. Feed a signal from the computer source into the connector labeled Computer Input using provided Altinex input cables and confirm image quality on the main presentation display. Test the Local Monitor output port of **VA6854WM** by attaching a computer monitor to the 15-pin HD connector labeled Local Monitor Output located on the Front plate of the **VA6854WM**.

- Step 4.** With the Horizontal Position Control Dial Centered (arrow pointing straight up), adjust the position of image through control provided on Main monitor or projector. Then, if necessary, slight adjustments in horizontal position of the image may be done with the Horizontal Position Control Dial on the **VA6854WM**. Test with all possible computer resolutions, if possible.

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Step 5. Once all features of the **VA6854WM** have been tested, the interface may be placed into the electrical enclosure. A total of six screws and six washers are provided to secure the interface to the device plate, which should have six, threaded holes available. The washers should be used between the device plate and the rear panel of the **VA6854WM**. Two tie-wraps are included with the **VA6854WM**, which can be used to secure the main coaxial output cable.

Step 6. Once the interface has been firmly mounted, install your selected decorative access plate (**WP1235WM**, **WP1236WM**, **WP1237WM**, or **WP1238WM**) using the six painted screws that come with the plate. Alternately, you may install your own custom plate designed for the **VA6854WM**. If the interface has been installed properly, the edges of the plate should be flush with the wall or furniture.

Step 7. Test all cables to be used with the **VA6854WM**. The **VA6854WM** is designed to be used with Altinex Computer Input and Local Monitor Cables. The use of standard VGA cables from other manufacturers on the Input to the **VA6854WM** may cause picture loss or sync instability.

Step 8. Please set dip-switches as described in section 7 and you should see a good image from the computer on both the projector and local monitor.

CONGRATULATIONS! YOU ARE DONE.

If you experience any problems, please call
1-800-258-4623 or 1-714-990-2300 for
international calls.

The settings of the **VA6854WM** Interface can be adjusted using the dip-switches as follows. There are no other adjustments necessary to operate the unit. The **VA6854WM** will operate successfully as long as the cables are attached properly and technical specifications are followed.

DIP SWITCH	OFF	ON
SYNC ON G	X	
OPTION	X	
ID BIT/PIN 4	X	
H&V ALIGN	X	
H. POSITION. ON		X
H&V OUTPUT	X	

Table 7. Default settings of dip-switches

7.1 SYNC ON GREEN OUTPUT 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 **VA6854WM** to output Sync on Green can be very helpful. It is important to note that the **VA6854WM** 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 RGSB or RGBHV.

7.2 OPTION

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.

7.3 I.D. BIT SWITCH

Some computers on the market, especially laptop computers, require a local monitor to be present 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.

7.4 H & V ALIGN

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 H. POSITION

When in the OFF position, the switch will disable the adjustment of the Horizontal position of the image through the dial located on the front plate. If the H. Position switch is in the ON position, the horizontal position control of image is possible through the dial on the face plate of the **VA6854WM**.

With the **VA6854WM**'s H. 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 H. Position control. If the Horizontal position of the image needs further adjustments, adjust it with the dial located on the **VA6854WM** Interface. The Horizontal position dip-switch is in the ON position at this time.

7.6 H & V OUTPUT

This dip-switch controls the SYNC signal that will be present on Composite SYNC and Horizontal SYNC connectors. These connectors are found on the output.

H & V Output dip-switch	INPUT	Signal on Composite SYNC connector	Signal on Horizontal SYNC connector
OFF	RGBS	Comp SYNC	Comp SYNC
	RGBHV	HSYNC	HSYNC
ON	RGBS	Comp SYNC	HSYNC
	RGBHV	HSYNC	HSYNC

Table 8. H & V Output

ACCESSORIES 8

Model No.	Description
COVER PLATES	
WP1235WM	3-Gang Wide Cover Plate without Dip-Switch
WP1236WM	3-Gang Wide Cover Plate with Dip-Switch
WP1237WP	6-Gang Wide Cover Plate without Dip-Switch
WP1238WP	6-Gang Wide Cover Plate with Dip-Switch
ELECTRICAL ENCLOSURES	
WB1250WM	3-Gang Wide Standard Electrical Enclosure
WB1252WM	6-Gang Wide Standard Electrical Enclosure
POWER SUPPLIES	
PS5503US	9V 500mA Power Supply for U.S. w/50ft of wire
PS5581SM	45 Watt Rack Mountable Power Supply (12V, 4.0 Amp)
INTERFACE CABLES	
MS8121CA	MAC Local Monitor Cable
MS8122CA	MAC Input Cable
MS8123CA	SUN/SGI Local Monitor Cable
MS8124CA	SUN/SGI Input Cable
MS8125CA	VGA/SVGA/XGA Local Monitor Cable
MS8126CA	VGA/SVGA/XGA Input Cable
MS8129CA	5-BNC Workstation Input/Monitor Cable

All cables listed above are 3 ft long. The same cables listed above are available in 6 ft and 12 ft lengths, please call for this wider selection of cables.

FAQ (FREQUENTLY ASKED QUESTIONS) 9

No:	Question	Answer
1	When and why would I use the Sync on Green dip-switch, although the unit does not separate Sync from Green?	The VA6854WM does not separate the Sync signal from Green, but if the desired output is RGsB format regardless of the input signal, turn the Sync on Green dip switch to the ON position.
2	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 dial on the VA6854WM . First adjust the Horizontal position using the monitor or projector's control, and then use the Horizontal position control of the VA6854WM for further adjustments.
3	What does it mean when the output is buffered and why it is so important?	A fully buffered output means that a display can actually be placed at a distance of 75 feet from the interface without loss to the signal.
4	When do I need an Option switch?	Use the option switch if your display requires a small Vertical SYNC signal.
5	When do I use the H & V output selection switch?	When the signal input is in RGSB or RGBHV the type of SYNC of the outgoing signal is determined through the H&V Output dip-switch.

TROUBLESHOOTING GUIDE 10

1. Please use only a power supply that is capable of supplying at least 100 mA at +12V DC.
2. If problems arise on the display after continuous usage at higher voltage, higher temperature, higher humidity, or other extreme environmental conditions, please correct those extreme conditions.
3. Make sure that the cables have the correct pin-outs and the connection and quality of cables are good.
4. If the output is in RGsB format (Sync on Green), make sure that dip-switch # 1 on the front panel is in the ON position.
5. Please adjust the monitor or projector's Horizontal Position control with the control of the **VA6854WM** in the OFF position. After adjustments are made, if the picture is not clear, then please use the Horizontal Position control of the **VA6854WM**.
6. If the picture is not stable on the projector, please turn the H & V Align dip-switch in the ON position.

ALTINEX POLICY

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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 pre-paid 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 in connection with 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 a product that you have ordered and that this product fulfills your need. In the unlikely event, that an Altinex product needs to be returned please follow the policy below:

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

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

If the 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 an RMA (Return Material Authorization). Products returned without an RMA number may experience a delay in service.

If your product is out of warranty and needs service, contact the Altinex Sales Department for an RMA

(Return Material Authorization). Products returned without an RMA number may experience a delay in service. The service charges will be quoted to you before the 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