BLACK BOX Catalogue Ltd.

The Source for Connectivity.

Multi-Input Video Scaler (AC216A)

User's Manual

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BLACK BOX
724-746-5500

Multi-Input Video Scaler
MODEL: AC216A
EDITION: November 2002

ENGLISH

SAFETY INSTRUCTIONS

All of the safety and operating instructions should be read before the product is operated and should be retained for further reference. Please follow all of the warnings on this product and its operating instructions.

CAUTION :

WARNING: To prevent the risk of electric shock and fire, do not expose this device to rain, humidity or intense heat sources (such as heaters or direct sunlight). Slots and openings in the device are provided for ventilation and to avoid overheating. Make sure the device is never placed on or near a textile surface that could block the openings. Also keep away from excessive dust, vibrations and shocks.

POWER: Only use the power supply indicated on the device or on the power source. Devices equipped with a grounding plug should only be used with a grounding type outlet. In no way should this grounding be modified, avoided or suppressed.

POWER CORD: Use the On (I) / Off (O) switch to power On or Off devices equipped with that switch. All other devices should be plugged and unplugged from wall outlet. In both cases, please follow these instructions:

- The power cord of the device should be unplugged from the outlet when left unused for several days.

- To unplug the device, do not pull on the power cord but always on the plug itself.

- The outlet should always be near the device and easily accessible.

- Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them.

If the power supply cord is damaged, unplug the device. Using the device with a damaged power supply cord may expose you to electric shocks or other hazards. Verify the condition of the power supply cords once in a while. Contact your dealer or service center for replacement if damaged.

CONNECTIONS: All inputs and outputs (except for the power input) are TBTS defined under EN60950.

SERVICING: Do not attempt to service this product yourself by opening or removing covers and screws since it may expose you to electric shocks or other hazards. Refer all problems to qualified service personnel.

OPENINGS: Never push objects of any kind into this product through the openings. If liquids have been spilled or objects have fallen into the device, unplug it immediately and have it checked by a qualified technician.

INSTRUCTIONS DE SÉCURITÉ:

Afin de mieux comprendre le fonctionnement de cet appareil nous vous conseillons de bien lire toutes les consignes de sécurité et de fonctionnement de l'appareil avant utilisation. Conserver les instructions de sécurité et de fonctionnement afin de pouvoir les consulter ultérieurement. Respecter toutes les consignes marquées dans la documentation, sur le produit et sur ce document.

ATTENTION : Afin de prévenir tout risque de choc électrique et d'incendie, ne pas exposer cet appareil à la pluie, à l'humidité et aux sources de chaleur intense.

INSTALLATION : Veillez à assurer une circulation d'air suffisante pour éviter toute surchauffe à l'intérieur de l'appareil. Ne placez pas l'appareil sur ou à proximité de surface textile susceptible d'obstruer les orifices de ventilation. N'installez pas l'appareil à proximité de sources de chaleur comme un radiateur ou une bouche d'air chaud, ni dans un endroit exposé au rayonnement solaire direct, à des poussières excessives, à des vibrations ou à des chocs mécaniques. Ceci pourrait provoquer un mauvais fonctionnement et un accident.

ALIMENTATION : Ne faire fonctionner l'appareil qu'avec la source d'alimentation indiquée sur l'appareil ou sur son bloc alimentation. Pour les appareils équipés d'une alimentation principale avec fil de terre, ils doivent être obligatoirement connectés sur une source équipée d'une mise à la terre efficace. En aucun cas cette liaison de terre ne devra être modifiée, contournée ou supprimée.

CORDON D'ALIMENTATION : Pour les appareils équipés d'un interrupteur général (Marche I / Arrêt O), la mise sous tension et la mise hors tension se fait en actionnant cet interrupteur général. Pour les appareils sans interrupteur général, la mise sous tension et la mise hors tension se fait directement en connectant et déconnectant le cordon d'alimentation de la prise murale.
Dans les 2 cas ci-dessus appliquer les consignes suivantes :
- Débrancher le cordon d'alimentation de la prise murale si vous prévoyez de ne pas utiliser l'appareil pendant quelques jours ou plus.
- Pour débrancher le cordon, tirez le par la fiche. Ne tirez jamais sur le cordon proprement dit.
- La prise d'alimentation doit se trouver à proximité de l'appareil et être aisément accessible.
- Ne laissez pas tomber le cordon d'alimentation et ne posez pas d'objets lourds dessus.
Si le cordon d'alimentation est endommagé, débranchez le immédiatement de la prise murale. Il est dangereux de faire fonctionner cet appareil avec un cordon endommagé, un câble abîmé peut provoquer un risque d'incendie ou un choc électrique. Vérifier le câble d'alimentation de temps en temps. Contacter votre revendeur ou le service après vente pour un remplacement.

CONNEXIONS : Toutes les entrées et sorties (exceptée l'entrée secteur) sont de type TBTS (Très Basse Tension de Sécurité) définies selon EN 60950.

RÉPARATION ET MAINTENANCE : L'utilisateur ne doit en aucun cas essayer de procéder aux opérations de dépannage, car l'ouverture des appareils par retrait des capots ou de toutes autres pièces constituant les boîtiers ainsi que le dévissage des vis apparentes à l'extérieur, risque d'exposer l'utilisateur à des chocs électriques ou autres dangers. Contacter le service après vente ou votre revendeur ou s'adresser à un personnel qualifié uniquement.

OUVERTURES ET ORIFICES : Les appareils peuvent comporter des ouvertures (aération, fentes, etc...), veuillez ne jamais y introduire d'objets et ne jamais obstruer ses ouvertures. Si un liquide ou un objet pénètre à l'intérieur de l'appareil, débranchez immédiatement l'appareil et faites le contrôler par un personnel qualifié avant de le remettre en service.

ISTRUZIONI DI SICUREZZA

Allo scopo di capire meglio il funzionamento di questa apparecchiatura vi consigliamo di leggere bene tutti i consigli di sicurezza e di funzionamento prima dell'utilizzo. Conservare le istruzioni di sicurezza e di funzionamento al fine di poterle consultare ulteriormente. Seguire tutti i consigli indicati su questo manuale e sull'apparecchiatura.

ATTENZIONE : Al fine di prevenire qualsiasi rischio di shock elettrico e d'incendio, non esporre l'apparecchiatura a pioggia, umidità e a sorgenti di eccessivo calore.

INSTALLAZIONE : Assicuratevi che vi sia una sufficiente circolazione d'aria per evitare qualsiasi surriscaldamento all'interno dell'apparecchiatura. Non collocare l'apparecchiatura in prossimità o su superfici tessili suscettibili di ostruire il funzionamento della ventilazione. Non installate l'apparecchiatura in prossimità di sorgenti di calore come un radiatore o una fuoruscita d'aria calda, né in un posto esposto direttamente ai raggi del sole, a polvere eccessiva, a vibrazioni o a shock meccanici. Ció potrebbe provocare un erroneo funzionamento e un incidente.

ALIMENTAZIONE : Far funzionare l'apparecchiatura solo con la sorgente d'alimentazione indicata sull'apparecchiatura o sul suo alimentatore. Per le apparecchiature fornite di un'alimentazione principale con cavo di terra, queste devono essere obbligatoriamente collegate su una sorgente fornita di una efficiente messa a terra. In nessun caso questo collegamento potrà essere modificato, sostituito o eliminato.

CAVO DI ALIMENTAZIONE : Per le apparecchiature fornite di interruttore generale (Acceso I / Spento O), l'accensione e lo spegnimento dell'apparecchiatura si effettuano attraverso l'interruttore. Per le apparecchiature senza interruttore generale, l'accensione e lo spegnimento si effettuano direttamente inserendo o disinserendo la spina del cavo nella presa murale.
In entrambe i casi applicare i seguenti consigli :
- Disconnettere l'apparecchiatura dalla presa murale se si prevede di non utilizzarla per qualche giorno.
- Per disconnettere il cavo tirare facendo forza sul connettore.
- La presa d'alimentazione deve trovarsi in prossimità dell'apparecchiatura ed essere facilmente accessibile.
- Non far cadere il cavo di alimentazione né appoggiarci sopra degli oggetti pesanti.
Se il cavo di alimentazione é danneggiato, spegnere immediatamente l'apparecchiatura. E' pericoloso far funzionare questa apparecchiatura con un cavo di alimentazione danneggiato, un cavo graffiato puó provocare un rischio di incendio o uno shock elettrico. Verificare il cavo di alimentazione spesso. Contattare il vostro rivenditore o il servizio assistenza per una sostituzione.

CONNESSIONE : Tutti gli ingressi e le uscite (eccetto l'alimentazione) sono di tipo TBTS definite secondo EN 60950.

RIPARAZIONI E ASSISTENZA : L'utilizzatore non deve in nessun caso cercare di riparare l'apparecchiatura, poiché con l'apertura del coperchio metallico o di qualsiasi altro pezzo costituente la scatola metallica, nonché svitare le viti che appaiono esteriormente, poiché ció puó provocare all'utilizzatore un rischio di shock elettrico o altri rischi.

APERTURE DI VENTILAZIONE : Le apparecchiature possono comportare delle aperture di ventilazione, si prega di non introdurre mai oggetti o ostruire le sue fessure. Se un liquido o un oggetto penetra all'interno dell'apparecchiatura, disconnetterla e farla controllare da personale qualificato prima di rimetterla in servizio.

SICHERHEITSHINWEISE:

Um den Betrieb dieses Geräts zu verstehen, raten wir Ihnen vor der Inbetriebnahme alle Sicherheits und Betriebsanweisungen genau zu lesen. Diese Sicherheits- und Betriebsanweisungen für einen späteren Gebrauch sicher aufbewahren. Alle in den Unterlagen, an dem Gerät und hier angegebenen Sicherheitsanweisungen einhalten.

VORSICHT & WARNUNG

ACHTUNG: um jegliches Risiko eines Stromschlags oder Feuers zu vermeiden, das Gerät nicht Regen, Feuchtigkeit oder intensiven Wärmequellen aussetzen.

EINBAU : Eine ausreichende Luftzufuhr sicherstellen, um jegliche Überhitzung im Gerät zu vermeiden. Das Gerät nicht auf und in Nähe von Textiloberflächen, die Belüftungsöffnungen verschließen können, aufstellen. Das Gerät nicht in Nähe von Wärmequellen, wie z.B. Heizkörper oder Warmluftkappe, aufstellen und es nicht dem direkten Sonnenlicht,übermäßigem Staub, Vibrationen oder mechanischen Stößen aussetzen. Dies kann zu Betriebsstörungen und Unfällen führen.

STROMVERSORGUNG : Das Gerät nur mit der auf dem Gerät oder dem Netzteil angegebenen Netzspannung betreiben. Geräte mit geerdeter Hauptstromversorgung müssen an eine Stromquelle mit effizienter Erdung angeschlossen werden. Diese Erdung darf auf keinen Fall geändert, umgangen oder entfernt werden.

STROMKABEL : Für Geräte mit einem Hauptschalter (Ein/Aus) erfolgt die Stromversorgung und unterbrechung mittels dieses Hauptschalters. Geräte ohne Hauptschalter werden durch das Einstecken oder Herausziehen des Steckers in den Wandanschluß ein- oder ausgeschaltet. Für beide Fälle gelten folgende Richtlinien :
    - Den Stecker aus dem Wandanschluß herausziehen wenn Sie das Gerät mehrere Tage oder länger nicht benutzen.
    - Das Kabel mittels dem Stecker herausziehen. Niemals am Stromkabel selbst ziehen.
    - Die Steckdose muß sich in der Nähe des Geräts befinden und leicht zugänglich sein.
    - Das Stromkabel nicht fallen lassen und keine schweren Gegenstände auf es stellen.
Wenn das Stromkabel beschädigt ist, das Gerät sofort abschalten. Es ist gefährlich das Gerät mit einem beschädigten Stromkabel zu betreiben; ein abgenutztes Kabel kann zu einem Feuer oder Stromschlag führen. Das Stromkabel regelmäßig untersuchen. Für den Ersatz, wenden Sie sich an Ihren Verkäufer oder Kundiendienststelle.

ANSCHLÜSSE : Bei allen Ein- und Ausgängen (außer der Stromversorgung) handelt es sich, gemäß EN 60950, um Sicherheits Kleinspannunganschlüsse.

REPARATUE UND WARTUNG : Der Benutzer darf keinesfalls versuchen das Gerät selbst zu reparieren, die Öffnung des Geräts durch Abnahme der Abdeckhaube oder jeglichen anderen Teils des Gehäuses sowie die Entfernung von außen sichtbaren Schrauben zu Stromschlägen oder anderenGefahren für den Benutzer führen kann. Wenden Sie sich an Ihren Verkäufer, Ihre Kundendienststelle oder an qualifizierte Fachkräfte.

ÖFFNUNGEN UND MUNDUNGEN : Die Geräte können über Öffnungen verfügen (Belüftung, Schlitze, usw.). Niemals Gegenstände in die Öffnungen einführen oder die Öffnungen verschließen. Wenn eine Flüssigkeit oder ein Gegenstand in das Gerät gelangt, den Stecker herausziehen und es vor einer neuen Inbetriebnahme von qualifiziertem Fachpersonal überprüfen lassen.

INSTRUCCIONES DE SEGURIDAD:

Para comprender mejor el funcionamiento de este aparato, le recomendamos que lea cuidadosamente todas las consignas de seguridad y de funcionamiento del aparato antes de usarlo. Conserve las instrucciones de seguridad y de funcionamiento para que pueda consultarlas posteriormente. Respete todas las consignas indicadas en la documentación, relacionadas con el producto y este documento.

PRECAUCIONES Y OBSERVACIONES

CUIDADO : Para prevenir cualquier riesgo de choque eléctrico y de incendio, no exponga este aparato a la lluvia, a la humedad ni a fuentes de calorintensas.

INSTALACIÓN : Cerciórese de que haya una circulación de aire suficiente para evitar cualquier sobrecalentamiento al interior del aparato. No coloque el aparato cerca ni sobre una superficie textil que pudiera obstruir los orificios de ventilación. No instale el aparato cerca de fuentes de calor como radiador o boca de aire caliente, ni en un lugar expuesto a los rayos solares directos o al polvo excesivo, a las vibraciones o a los choques mecánicos. Esto podría provocar su mal funcionamiento o un accidente.

ALIMENTACIÓN : Ponga a funcionar el aparato únicamente con la fuente de alimentación que se indica en el aparato o en su bloque de alimentación. Los aparatos equipados con una alimentación principal con hilo de tierra deben estar conectados obligatoriamente a una fuente equipada con una puesta a tierra eficaz. Por ningún motivo este enlace de tierra deberá ser modificado, cambiado o suprimido.

CABLE DE ALIMENTACIÓN : Para los aparatos equipados con un interruptor general (Marcha I / Paro O), la puesta bajo tensión y la puesta fuera de tensión se hace accionando este interruptor general.. En los aparatos que no tienen interruptor general, la puesta bajo tensión y la puesta fuera de tensión se hace directamente conectando y desconectando el enchufe mural.
En ambos casos, se deberá respetar las siguientes consignas:
    - Desconectar el aparato del enchufe mural si no piensa utilizarlo durante varios días.
    - Para desconectar el cable, tire de la clavija. No tire nunca del cable propiamente dicho.
    - El enchufe de alimentación debe estar cerca del aparato y ser de fácil acceso.
    - No deje caer el cable de alimentación ni coloque objetos pesados encima de él.
Si el cable de alimentación sufriera algún daño, ponga el aparato inmediatamente fuera de tensión. Es peligroso hacer funcionar este aparato con un cable averiado, ya que un cable dañado puede provocar un incendio o un choque eléctrico. Verifique el estado del cable de alimentación de vez en cuando. Póngase en contacto con su distribuidor o con el servicio de posventa si necesita cambiarlo.

CONEXIONES : Todas las entradas y salidas (excepto la entrada del sector) son de tipo TBTS (Muy Baja Tensión de Seguridad) definidas según EN 60950

REPARACIÓN Y MANTENIMIENTO : Por ningún motivo, el usuario deberá tratar de efectuar operaciones de reparación, ya que si abre los aparatos retirando el capó o cualquier otra pieza que forma parte de las cajas o si destornilla los tornillos aparentes exteriores, existe el riesgo de producirse una explosión, choques eléctricos o cualquier otro incidente. Contacte el servicio de posventa, a su distribuidor o dirigirse con personal cualificado únicamente.

ABERTURAS Y ORIFICIOS : Los aparatos pueden contener aberturas (aireación, ranuras, etc.). No introduzca allí ningún objeto ni obstruya nunca estas aberturas. Si un líquido o un objeto penetra al interior del aparato, desconéctelo y hágalo revisar por personal cualificado antes de ponerlo nuevamente en servicio.

Multi-Input Video Scaler (AC216A)

Chapter 1 : INTRODUCTION

1-1. SUPPLIED EQUIPMENT

- 1 **Multi-Input Video Scaler (AC216A).**

- 1 External power supply.

- 1 AC Power supply Cord.

- 1 RCA male / RCA male cable.

- 1 VGA cable (HD 15 Male / HD 15 Male).

- 1 S.VIDEO (Y/C) cable (4 pin mini DIN Male/ Male).

- 1 RCA Female / BNC male adapters.

- 1 Infra red remote control unit.

- 2 batteries for the remote control unit (SIZE AAA).

- 1 User's manual with a 3.5" disk (RS-232 software).

1-2. GENERAL INFORMATION

The Multi-Input Video Scaler combines the functions of a Video Scaler with a Multi-input Switcher. In addition, a Computer or External input is provided for direct display of your Presentations or Internet applications. It can be easily controllable thanks to its infra-red remote control, and its RS-232 port.

- The Multi-Input Video Scaler is a new SCALER / LINE DOUBLER / QUADRUPLER / MULTIPLIER which significantly increases the Video image resolution and brightness. The High Quality Digital decoder includes a new advanced Comb Filter, a robust sync. detection and a 3D auto-adaptive de-interlacing scheme (for motion artifacts), with correction of the "film to video" transfer (3/2 pulldown for NTSC). It provides you with a "cinema like" image.

- In addition, and according to your requirements, you can adjust special image parameters like the Sharpness for details emphasis. You can also select a filter which removes unwanted alias frequencies found in some LCD video-projectors.

- The input source aspect-ratio 4/3 - Letterbox - Widescreen Anamorphic can be selected, as well as the 4/3 & 16/9 Screen selection to avoid "resizing" the video-projector ZOOM when viewing 4/3 Sources on a 16/9 display.

- It provides a cost effective, time base corrected scaling Solution for the Home Theater applications.

1-3. INSTALLING BATTERIES IN THE IR REMOTE CONTROL

① Open the cover.

② Insert batteries (SIZE AAA).
NOTE: Make sure to match the + and - on the batteries to the marks inside the battery compartment.

③ Close the cover.

    NOTE: • Do not charge, heat, open, or short-circuit the batteries.
        • Do not throw the batteries into a fire.
        • Do not use different types of batteries together, or mix old and new batteries.
        • If the remote control does not function correctly or if the operating range becomes reduced, replace all batteries with new ones.

Chapter 2 : TECHNICAL DESCRIPTION

2-1. FRONT PANEL

POWER: LED indicating device is ON.

INPUT SELECTION:
- A short push on this button allows selecting successively the following input:
  - COMPOSITE 1
  - COMPOSITE 2
  - S.VIDEO 1
  - S.VIDEO 2
  - RGB.S
  - COMPONENT
  - COMPUTER
- A long push on this button (5 seconds) allows making the hard reset procedure. See Chapter 9 : TROUBLESHOOTING.

FORMAT: 2 LED's indicating the selected input aspect ratio.
4/3: 4/3 format.
16/9: Letterbox format.
4/3 + 16/9: Widescreen Anamorphic format.

DISPLAY: Selection of the display device type.
- LCD: Liquid Crystal Display device
- CRT/DMD: display device using CRT (Cathode Ray Tube) or DMD (DLP) technologies.

3/2 FILM: Automatic correction of "movie to video transfer" (3/2 pull down for the NTSC movies).

2-2. REAR PANEL

POWER SUPPLY: Low voltage power supply input (on 6-pin mini DIN connector).

REMOTE RS-232: Standard Remote Control on DB9 connector.

VIDEO INPUTS

    C.V 1: COMPOSITE 1 Video Input (on BNC connector).

    C.V 2: COMPOSITE 2 Video Input (on BNC connector).

    S.V 1: S.VIDEO 1 (Y/C) input (on 4-pin mini DIN connector).

    S.V 2: S.VIDEO 2 (Y/C) input (on 4-pin mini DIN connector).

    R-Y, Y, B-Y: COMPONENT (Interlaced YUV) Video Inputs (on 3 BNC connectors).

    R, G, B, SYNC: RGB.S video input (on 4 BNC connectors).

    COMPUTER INPUT: Computer (PC, MAC, and WORKSTATION) or external input on HD15 female connector.

DISPLAY OUTPUT DATA output (RGB HV) on HD 15 female connector.

2-3. IR REMOTE CONTROL

|	
ON:	Sets the device ON.
PC:	COMPUTER input selection
OFF:	Sets the device OFF.
C.V1:	COMPOSITE 1 input selection.
C.V2:	COMPOSITE 2 input selection.
YUV:	COMPONENT (YUV) input selection.
S.V1:	S.VIDEO 1 input selection.
S.V2:	S.VIDEO 2 input selection.
RGBS:	RGBS input selection.
POS:	Allows to adjust the horizontal and the vertical position of the image. Controlled by the ◄ , ► , ▲ , ▼ keys.
SIZE:	Allows to adjust the horizontal and vertical size of the image. Controlled by the ◄ , ► , ▲ , ▼ keys.
- , **+**	Increase or decrease the value of the selected adjustment.
◄ , ► , ▲ , ▼	Control functions of the selected adjustment. **NOTE**: The ► key allows validating a selection.
MENU:	Displays the OSD MENU (see Chapter 5 : OSD MENUS). A 2nd push will remove the OSD from the screen.
RESET:	Set to the factory value the image adjustments (POS, SIZE, COLOR...). See OSD menu #2-2.
HUE:	Picture's TINT (controlled by the **-** & **+** keys). Only active with a Composite or S.VIDEO NTSC source.
A - RATIO:	Select the Aspect Ratio corresponding to your input and validate with **+** key. **4/3 standard**: 4/3 input aspect ratio. **letter box**: letter box input aspect ratio. **WS anamorphic**: Widescreen anamorphic input aspect ratio. (To be used only if your DVD PLAYER is set in 16/9 TV shape).
◕	COLOR adjustment (controlled by the **-** & **+** keys).
◑	CONTRAST adjustment (controlled by the **-** & **+** keys).
☼	BRIGHTNESS adjustment (controlled by the **-** & **+** keys).

NOTE: The OSD (On Screen Display) cannot be displayed when the COMPUTER input is selected. (Thus only the input selection keys of the IR Remote Control are active).

Chapter 3 : STARTING

3-1. CONNECTIONS

① Connect the Power Supply to the POWER connector of the **Multi-Input Video Scaler**.

② Connect the AC Power Cord to the Power Supply and to an AC power outlet.

③ Connect your Video Sources (VCR, DVD, Camera, Laser disc ...) to the C.V1, C.V2, S.V1, S.V2, RGB.S and R-Y, Y, B-Y (Component/ Interlaced YUV) input connectors.

④ Connect your computer source to the COMPUTER input.

⑤ Connect the "DISPLAY OUTPUT" of the **Multi-Input Video Scaler** to the DATA INPUT of your Display device (Data projector, Plasma screen...).

⑥ Turn ON all of your input sources, and then your display device.
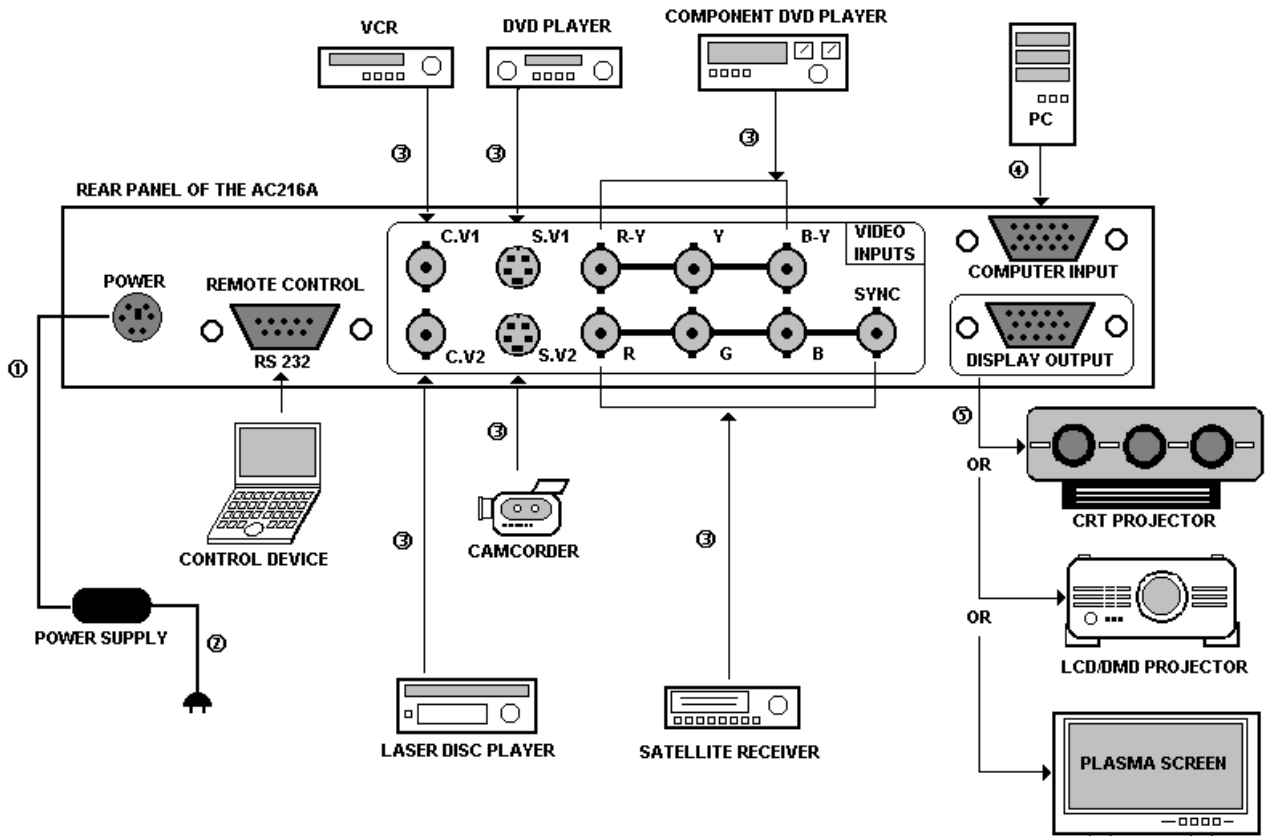
### 3-2. COMPOSITE VIDEO INPUTS (C.V1 & C.V2)

The Composite Video signal, usually called COMPOSITE or VIDEO, is available on the most video equipment (VCR, DVD, CAMERA…), but is also the lowest in picture quality. The video standard of this signal could be NTSC, PAL or SECAM. The signal is transmitted by a single coaxial cable, and is connected to the video equipment with a RCA or BNC connector.

CONNECTION
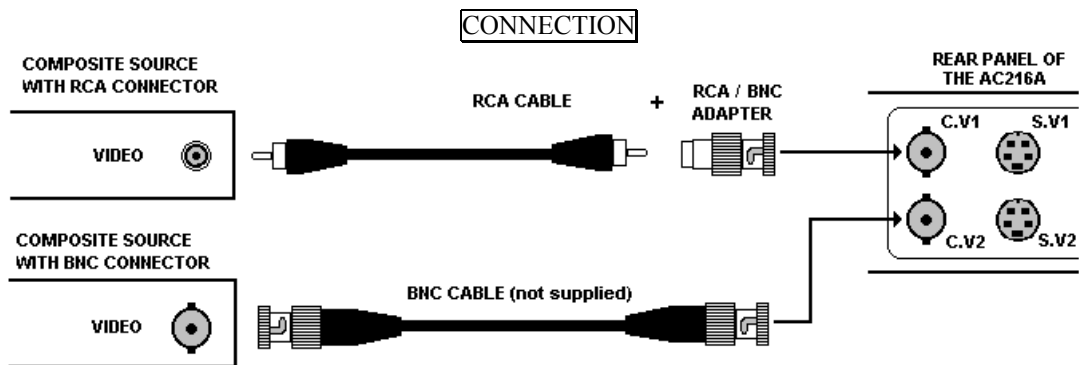
3-3. S.VIDEO INPUTS (S.V1 & S.V2)

The S.VIDEO (Super Video) signal, also called Y/C, HI-8™, or S.VHS™, is available on most DVD players and high quality VCR (S.VHS). The S.VIDEO signal in which the Luminance (Y) and Chrominance (C) information are separately transmitted (2 wires) gives a higher quality picture than the Composite video signal. The S.VIDEO connector is usually a 4 pin Mini-DIN connector also called Oshiden™ connector.

CONNECTION
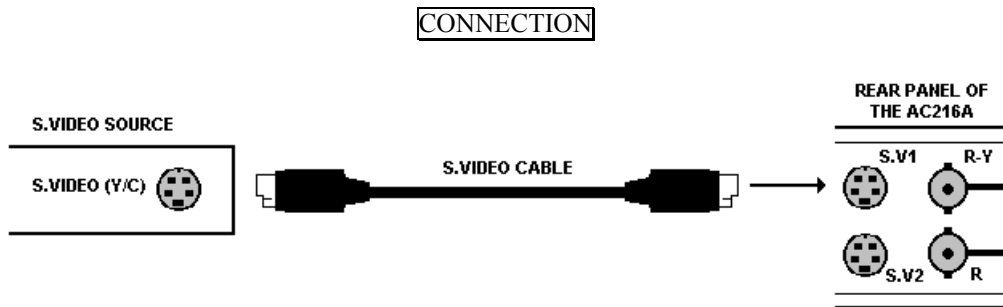
3-4. RGB.S INPUT

The RGB.S signal, also called RGB Sync. is an RGB signal with COMPOSITE Sync. This signal is widely used in broadcasting and is available on European DVD players and Satellite receivers. The RGB.S signal is transmitted with 4 coaxial cables, and also has a better picture quality than COMPOSITE or S.VIDEO signals. The RGB.S connectors are usually BNC connectors for Broadcasting equipment, and SCART connector for DVD players and Satellite Receivers.

CONNECTION
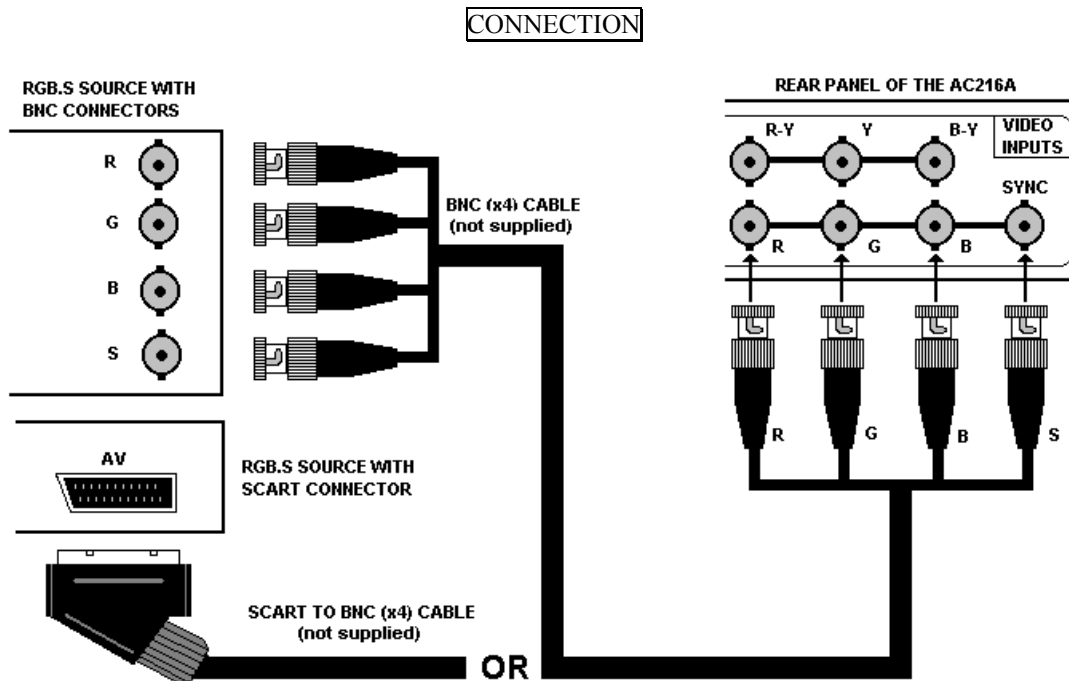
3-5. COMPONENT VIDEO INPUT (Interlaced YUV)

The Component Video signal, also called YUV (Y, R-Y, B-Y), or BETACAM™, is widely used in broadcasting and is available on high-quality DVD players. The COMPONENT signal is transmitted on 3 coaxial cables, and also has a better quality picture than COMPOSITE and S.VIDEO signals. The COMPONENT connectors are usually RCA (x3), or BNC (x3) connectors.
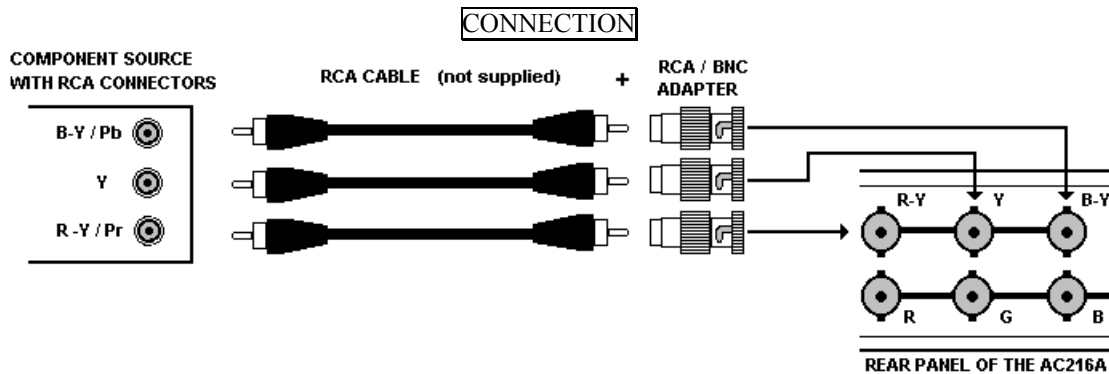
CONNECTION

3-6. COMPUTER INPUT

This input is used to pass-through any High-Definition or Computer signals. The signal connected to this input is sent directly to the display output. Also you may connect a Computer source (PC, MAC, WORKSTATION), or a high definition source (progressive DVD player, HDTV). Use the VGA supplied cable (HD15 male/male) to connect a PC. For the others sources you may need some adapters (not supplied).

3-7. DISPLAY OUTPUT

The **Multi-Input Video Scaler** is equipped with an HD 15 female output connector. If your display device is equipped only with 5 BNC input connectors: use an HD 15 to BNC (x5) cable (please see connection schematic below).
The **Multi-Input Video Scaler** provides an RGBHV (H & V Separate Sync.) signal.

CONNECTION
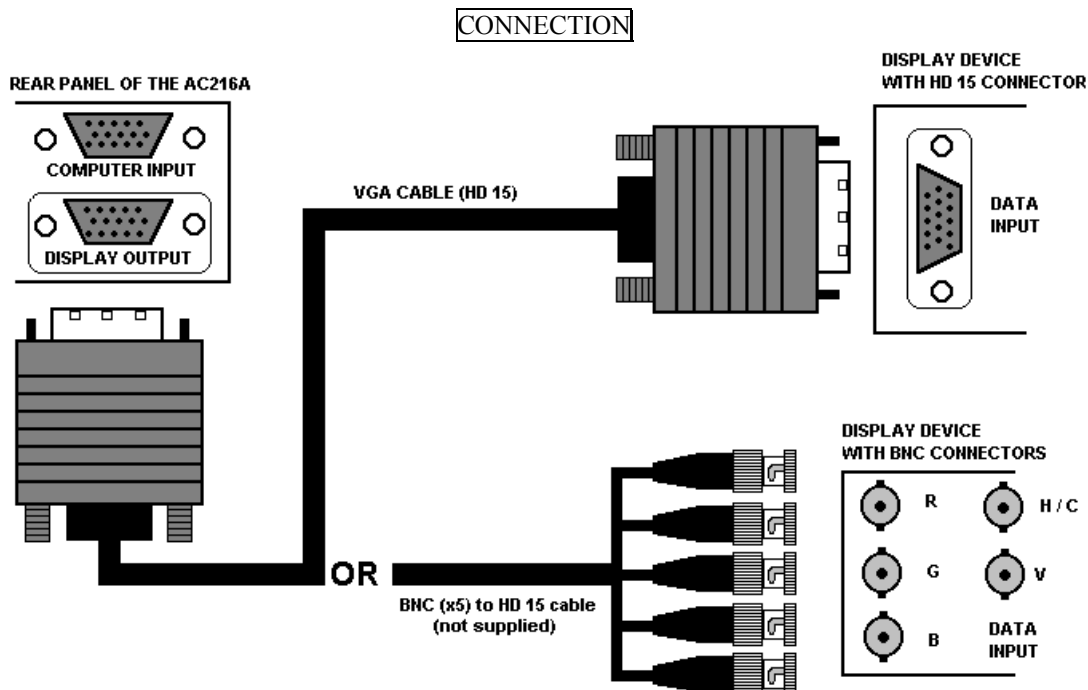
Chapter 4 : OPERATING MODE

4-1. SETTINGS

① We recommend resetting the **Multi-Input Video Scaler** to all of its default values, with the OSD menu # 4-4, before proceeding.

② Select the video type of the signal connected to the RGB input (OSD menu # 3-2).

③ Select the Type of Screen (4/3 or 16/9) in the OSD menu # 1-2.

④ Select the type of display device (LCD or DMD/CRT) with the front panel DISPLAY switch.

⑤ Select an Output Format (OSD menu # 1-1).

NOTE: For fixed pixels display device (DMD, LCD, PLASMA…), always select the output format corresponding to the native resolution of your display device. Thus, the display device will not have to scale the image and the result will be better.

NOTE: The COMPUTER input is routed directly through to the DISPLAY OUTPUT connector. You can therefore connect a Computer source (PC, MAC, and WORKSTATION) or a High Definition video source (progressive DVD player, HDTV) to the COMPUTER INPUT. Thus when the COMPUTER INPUT is selected the output format is identical to the format connected to the COMPUTER input.

4-2. IMAGE ADJUSTMENTS

For each input source connected to the **Multi-Input Video Scaler**, make the following adjustments:

① Select the aspect ratio of your input source with the A-RATIO key of the IR Remote Control.

② Adjust the position and size of the image with the POS and SIZE keys of the IR Remote Control.

③ Do any other adjustments, if necessary, with the IR Remote Control (Color, contrast, brightness, hue) and with the OSD menu # 2 (Sharpness, Gamma).

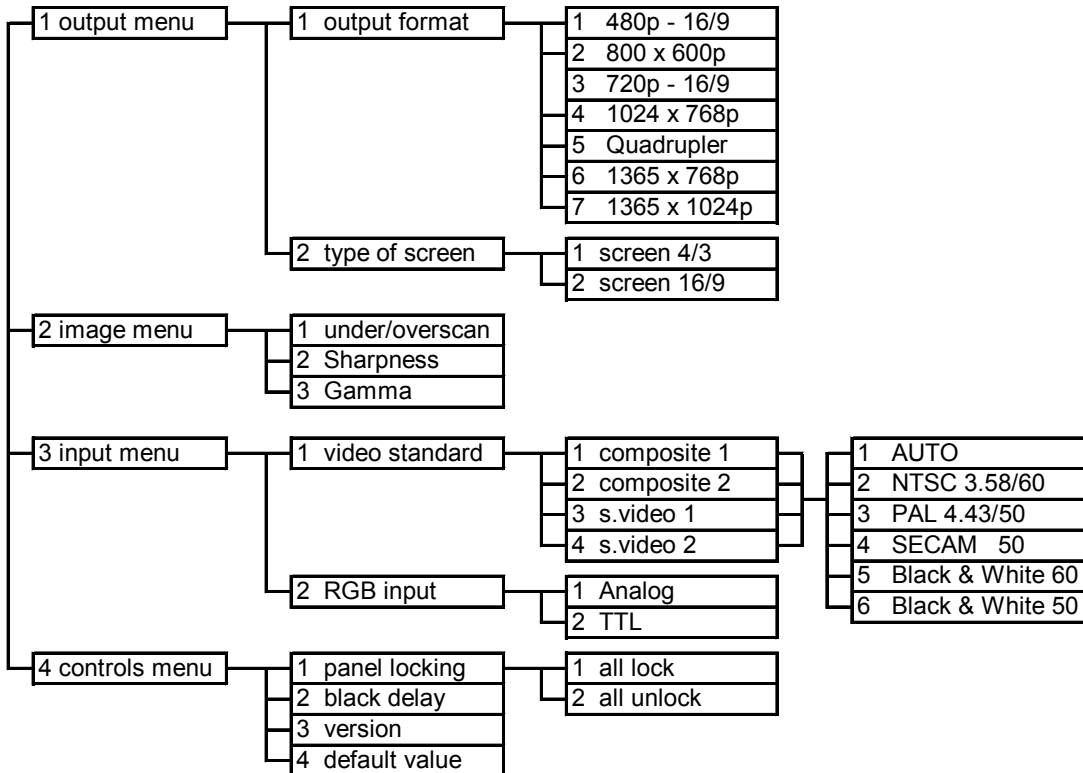**NOTE**: The image adjustments are only active for the selected video input.

NOTE: To RESET your image adjustments to the factory default values, select the video input and then use the RESET key of the IR Remote Control.

Chapter 5 : OSD MENUS

The MENU key of the IR Remote Control allows displaying the OSD MENUS. Select a menu with ▼ ▲ and validate with ▶ .

5-1. OSD MENUS DIAGRAM

```
1 output menu ──── 1 output format ──── 1  480p - 16/9
                                         2  800 x 600p
                                         3  720p - 16/9
                                         4  1024 x 768p
                                         5  Quadrupler
                                         6  1365 x 768p
                                         7  1365 x 1024p

                   2 type of screen ──── 1  screen 4/3
                                         2  screen 16/9

2 image menu ───── 1 under/overscan
                   2 Sharpness
                   3 Gamma

3 input menu ───── 1 video standard ─── 1 composite 1 ─── 1  AUTO
                                        2 composite 2     2  NTSC 3.58/60
                                        3 s.video 1       3  PAL 4.43/50
                                        4 s.video 2       4  SECAM   50
                                                          5  Black & White 60
                   2 RGB input ──────── 1 Analog          6  Black & White 50
                                        2 TTL

4 controls menu ── 1 panel locking ─── 1 all lock
                   2 black delay        2 all unlock
                   3 version
                   4 default value
```

5-2. OSD MENUS DESCRIPTION

NOTE: The OSD MENUS can not be displayed when the COMPUTER input is selected.

1 [OUTPUT MENU]. Select a function with ▼ ▲ and validate with ▶ .

1-1 [**output format**]

NOTE: Before changing the output format, make sure the display device is capable of supporting the new output format. If you loose the displayed image after changing the output format please refer to Chapter 9 : TROUBLESHOOTING.

Select an output format with ▼ ▲ and validate with ▶ .

- 480p - 16/9 (Plasma 42" at 50 Hz or 59.94 Hz - 16/9)
- 800 x 600p (at 50 Hz or 59.94 Hz - 4/3)
- 720p - 16/9 (HDTV at 50 Hz or 59.94 Hz - 16/9)
- 1024 x 768p (at 50 Hz or 59.94 Hz - 4/3)
- Quadrupler (960p at 59.94 Hz or 1152p at 50 Hz - 4/3)
- 1365 x 768p (at 50 Hz or 59.94 Hz - 16/9)
- 1365 x 1024p (at 50 Hz or 59.94 Hz - 4/3).

NOTE: The output frame rate is 50 Hz for PAL & SECAM video signal and 59.94 Hz for NTSC video signal.

NOTE: For fixed pixels display device (DMD, OSD, PLASMA…), always select the output format corresponding to the native resolution of the display device. This way, the display device will not have to scale the image and the result will be better.

1-2 [type of screen]

Select an item with ▼ ▲ and validate with ▶ .

- [screen 4/3] = if your image is displayed on a 4/3 screen.
- [screen 16/9] = if your image is displayed on a 16/9 screen.

5-2.OSD MENUS DESCRIPTION (continued)

2 [IMAGE MENU]. Select a function with ▼ ▲ and validate with ▶ .
NOTE: This menu is available and active on the selected video source. This menu is not available for the COMPUTER
   INPUT. The image settings and adjustments can be different and separately memorized for each video input.

2-1 [under/overscan]
Select Underscan or Overscan with ▼ ▲ and validate with ▶ .
- [underscan] = Output image is the full input image.
- [overscan] = Output image is 10% bigger than in Underscan mode.

2-2 [sharpness]
This function increases the details of the image (value > 0) or increases the Smoothness (value < 0).
Adjust the sharpness with the ◀ ▶ keys.

2-3 [gamma]
This function gives greater depth to darker portions of the image for more exciting theatrical experience or brightens
dark portions of the image for more enhanced presentations.
Adjust the gamma with the ◀ ▶ keys.

3 [INPUT MENU]. Select a function with ▼ ▲ and validate with ▶ .

3-1 [video standard]
① Select an input with ▼ ▲ and validate with ▶ .
② Then select the video standard with ▼ ▲ and validate with ▶ .
- [AUTO] = Automatic detection.
- [NTSC (3.58/60 Hz)] = NTSC detection only.
- [PAL (4.43/50 Hz)] = PAL detection only.
- [SECAM (50 Hz)] = SECAM detection only.
- [Black and white 60 Hz] = Black and White at 60 Hz detection only.
- [Black and white 50 Hz] = Black and White at 50 Hz detection only.

3-2 [RGB input]
Select the video type for the RGBS input with ▼ ▲ and validate with ▶ .
- [75 ohms] = RGB/S video signal with an analog Sync. (0.3 Vp/p).
- [TTL] = RGB/S video signal with a TTL Sync.

4 [controls menu]. Select a function with ▼ ▲ and validate with ▶ .

4-1 [panel locking]
This function allows to lock the front panel switches. Select an item with ▼ ▲ and validate with ▶ .
- [all lock] = All front panel switches are Locked.
- [all unlock] = All front panel switches are Unlocked.

4-2 [black delay]
This function allows to adjust the duration of the black delay when switching between sources.
Adjust the delay (between 1 and 10 seconds) with the ◀ ▶ keys.

4-3 [version]
Status of the internal firmware of the unit.

4-4 [default value]
This function allows to sets the **Multi-Input Video Scaler** to all its factory settings. Select an item with ▼ ▲ and
validate with ▶ .
- [no] =   No Adjustments and Settings are modified.
- [yes] = Clears the following adjustments and sets them to the Factory Settings.

FUNCTION	POSITION	FUNCTION	POSITION
1-1 Output format	1024 x 768p.	3-2 RGB input	analog
1-2 type of screen.	screen 4/3.	4-1 panel locking	unlock.
2-1 under/overscan.	overscan	4-2 black delay	2 seconds.
3-1 video standard.	AUTO		

Chapter 6 : TECHNICAL SPECIFICATIONS

6-1. VIDEO INPUTS

- **RGB.S** (4 BNC connectors)
15.625 kHz / 50 Hz.... 15.735 kHz / 60 Hz (625L .....525L)

Levels:	R, G, B = 3 x 0.7 Vp/p. SYNC. = 0.3 Vp/p or TTL.
Impedance:	R, G, B = 75 Ohms. SYNC. = 75 Ohms or Hi-Z.

- **COMPONENT (Interlaced YUV) - R-Y / Y / B-Y** (3 BNC connectors)
15.625 kHz / 50 Hz.... 15.735 kHz / 60 Hz (625L .....525L)

Levels:	Y = 1 Vp/p (0.7 V Luma + 0.3 Sync.) R-Y = 0.7 Vp/p. B-Y = 0.7 Vp/p.
Impedance:	Y, R-Y, B-Y = 75 Ohms.

- **S.VIDEO (Y/C)** (4 pin mini DIN connector)
PAL / SECAM 15.625 kHz / 50 Hz (625L)
NTSC (3.58 MHz / 4.43 MHz) 15.735 kHz / 60 Hz (525L)

Levels:	Y = 1 Vp/p (0.7 V Luma + 0.3 V Sync.). C = 0.3 Vp/p.
Impedance:	75 Ohms.

- **COMPOSITE VIDEO** (BNC connector)
PAL / SECAM 15.625 kHz / 50 Hz (625L)
NTSC (3.58MHz / 4.43 MHz) 15.735 kHz / 60 Hz (525L)

Levels:	1 Vp/p (0.7 V Luma + 0.3 V Sync.).
Impedance:	75 Ohms.

6-2. COMPUTER INPUT (15 PINS HD F connector)

Hardware compatibility:	Line frequency: From 24 kHz to 85 kHz. Frame frequency: From 24 Hz to 120 Hz.

6-3. DISPLAY OUTPUT (HD 15 F CONNECTOR)

Levels:	R, G, B = 0.7 Vp/p. Sync: Separate H & V = TTL.
Impedance:	R, G, B, H, V = 75 Ohms.
Format:	• If the computer input is selected: the output format is identical to the Computer input format. • If a video input is selected: select one of the output format in the OSD menu # 1-1.

6-4. REMOTE PORT (DB9 Female connector)

Level:	RS-232.
Data Rate:	9600 bauds, 8 data bits, 1 stop bit, no parity bit, no flow control.

6-5. ENVIRONMENTAL

|	
Power Supply:	External CE / UL / CSA / IEC 950 (25W), Universal, Automatic. Input: 100 VAC to 250 VAC; 50-60Hz; I = 0.5 A Max.
Storage temperature:	-25 °C to +85 °C (-13 °F to + 185 °F).
Operating temperature:	0 °C to 50 °C (32 °F to 122 °F)
Maximum ambient operating temperature:	< 40 °C (<104 °F).
Hygrometry:	10 % to 80 % (without condensation).
Dimension:	D 190 x W 246 x H 44mm. D 7.5" x W 9.7" x 1.7".
Weight:	1.5 kg / 3.3 lbs. (without power supply).

Chapter 7 : CONTROL SOFTWARE

7-1. CONNECTION

• CONNECTING THE RS-232

Connect the serial port of your controlling device to the REMOTE CONTROL (RS-232) connector (DB9 Female) of the **Multi-Input Video Scaler** with a **straigh**t cable (DB9 female / DB9 male).

• PIN-OUT

PIN #	FUNCTIONS
2	TRANSMIT DATA (Tx)
3	RECEIVE DATA (Rx)
5	GROUND (Gnd)
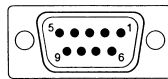
DB9 female
(Rear panel of the **Multi-Input Video Scaler**)

• SPEED TRANSMISSION: 9600 bauds, 8 data bits, 1 stop bit, no parity bit, and no flow control.

7-2. "AC216A REMOTE CONTROL" SOFTWARE

Your **Multi-Input Video Scaler** is shipped with a WINDOWS 95/98/2000/Me/XP compatible "AC216A REMOTE CONTROL" software (3.5" disk). This software allows you to make adjustments and controls by a simple mouse click (output format, image adjustments, etc...).

• SOFTWARE INSTALLATION:
① Turn ON your computer and wait for WINDOWS to completely start,
② Insert the disk into the floppy drive,
③ In the WINDOWS PROGRAM MANAGER menu, click on RUN,
④ Choose the disk drive and click on **setup.exe** (ex : **A:\setup.exe** if the 3.5" disk is drive A),
⑤ Follow the WINDOWS installation instructions: WINDOWS will create a file:
 C:\Program files\BLACKBOX\AC216A Remote Control.

• STARTING UP:
① Connect the RS-232 cables between the controlling device and the **Multi-Input Video Scaler** as indicated in section 9-1.
② Then power ON all of the devices.
③ Click on the programs file **AC216A** in Start-Program-BLACKBOX-AC216A to run the software,
④ Click on the **Controls** menu and select the **Serial port**,

The **Multi-Input Video Scaler** is now connected to the computer (if not, verify the DB9 serial connection and the selected serial port).
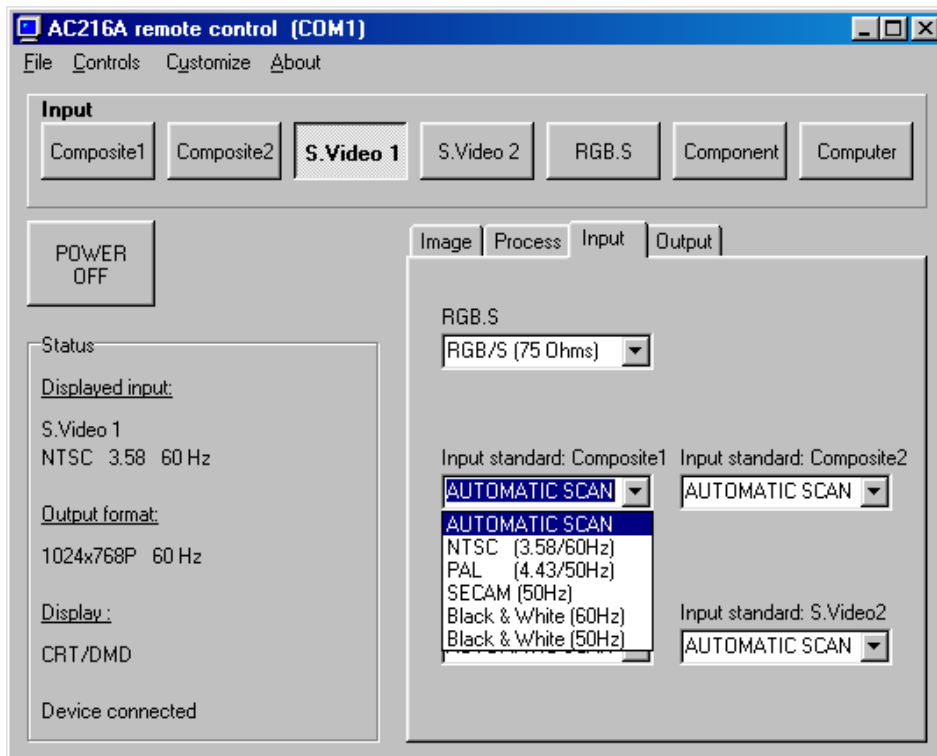
7-3. SOFTWARE SETUP

① Select the **Serial port** in the **Controls** menu.
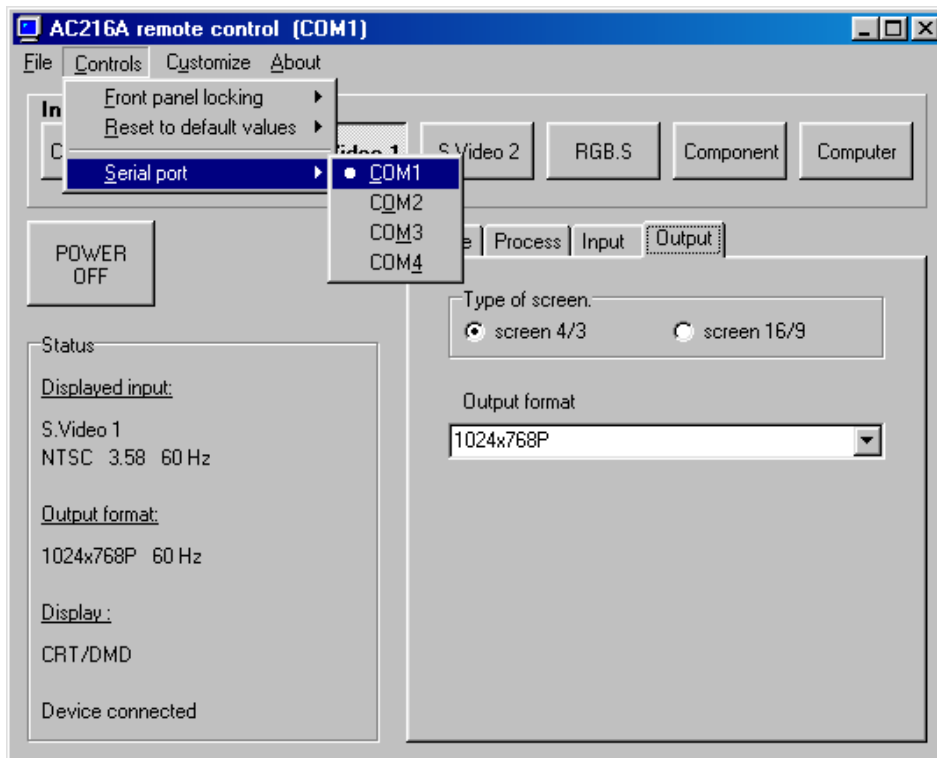
The **Multi-Input Video Scaler** is now connected to the computer ; do a **Reset to default values** (**controls** menu) if necessary.

② In the **Input** menu, select the video type for the **RGB.S** input, and set the video standard for all of the other video inputs.

7-3. SOFTWARE SETUP (continued)

③　In the **Output** menu, select the **Output Format**, and the **Type of screen.**
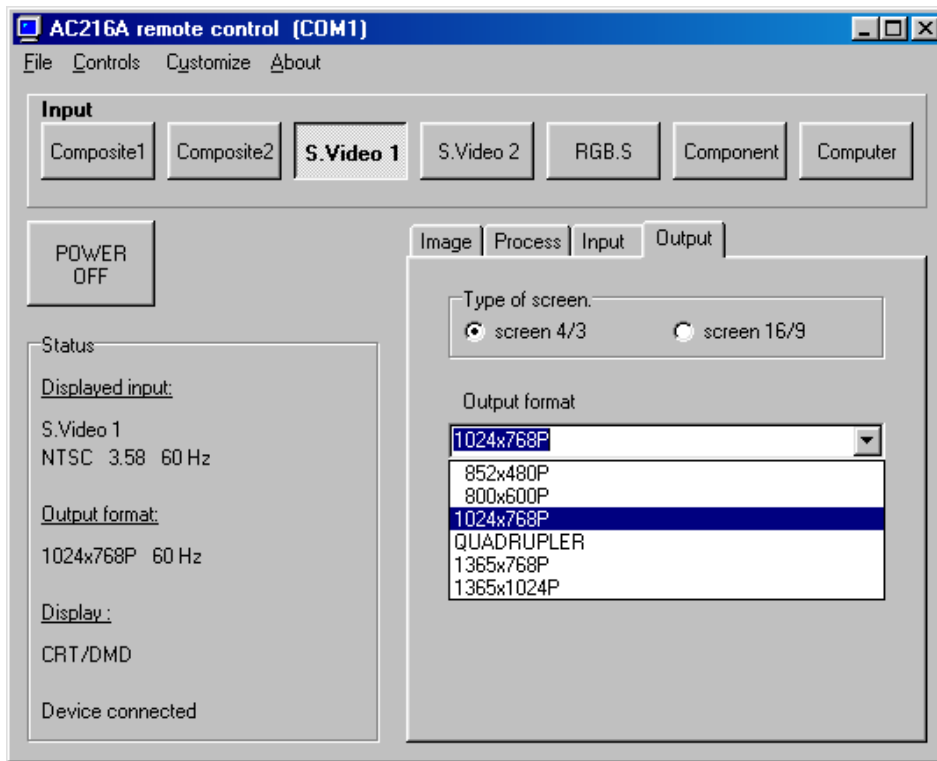
④　In the **Image** and **Process** menu, do the adjustments for all of your video inputs.
NOTE: The **Image** and **Process** menu are available only for video inputs, and acts on the video displayed output.

Chapter 8 : PROGRAMMER'S GUIDE

8-1. INTRODUCTION

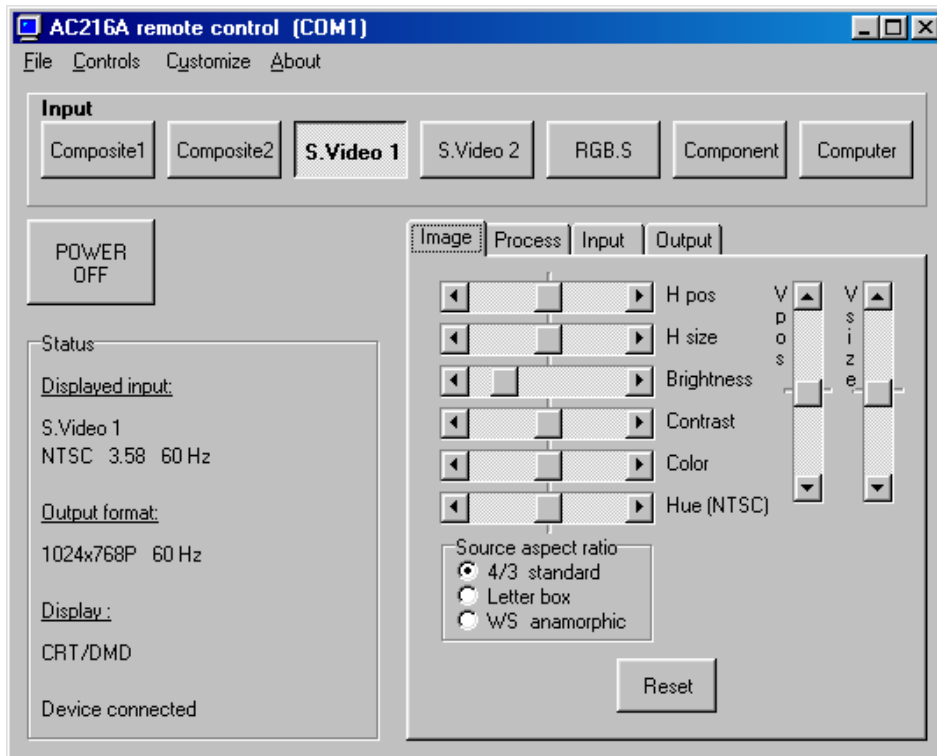If you need to use your own Software Control program with a PC or WORKSTATION via an RS-232 port, the **Multi-Input Video Scaler** allows communication through an ASCII code protocol.

The **Multi-Input Video Scaler** treats any character that it receives on the RS-232 as a possible command but it only accepts legal commands. There is no starting/ending code needed in a command string.

A command can be a single character typed on a keyboard and does not require any special character before or after it. (It is not necessary to press "ENTER" on the keyboard). A command can be preceded by a value. (See chapter 8-2 COMMANDS STRUCTURE).

When the **Multi-Input Video Scaler** receives a valid command, it will execute the command. Then the **Multi-Input Video Scaler** will send back the status of all the parameters that have changed due to this command.

If the command cannot be executed (value out of range, no signal on the selected input), the **Multi-Input Video Scaler** will just send back the current status of the corresponding parameters.
If the command is invalid, an error response will be returned to the controlling device. All responses returned to the controlling device end with a carriage return <CR> and a line feed<LF> signaling the end of the response character string (See chapter 8-3 ERROR RESPONSES)

8-2. COMMANDS STRUCTURE

Commands are usually composed of a numerical value followed by the command character. The characters used without any numerical value return the current setting of the command.

COMMAND structure = VALUE (optional) + CHARACTER.

Examples:

COMMAND		RESPONSE	DESCRIPTION
VALUE	CHARACTER		
none	**H**	**HPOS15**	Read Horizontal position.
10	**V**	**VPOS10**	Set Vertical position to 10.

8-3. ERROR RESPONSES

When the **Multi-Input Video Scaler** receives from the controlling device an invalid command or value, it returns an error response:

COMMAND		RESPONSE	DESCRIPTION
VALUE	CHARACTER(S)		
none	**Z**	**E10**	Invalid command.
70260	**V**	**E13**	Invalid value.

8-4. COMMANDS AND RESPONSES TABLE

The following table resumes commands which are recognized as valid and the responses that will be returned to the host (on the RS-232 port).

ASCII COMMAND	RESPONSE TO HOST	COMMAND DESCRIPTION	VALUE		EXAMPLES		
			MIN	MAX	COMMAND	RESPONSE	ACTION EXPLANATION
Input commands							
C	CH	Input selection.	0	6	1C	CH1	Select composite 2 input
p	PSTD	Standard input selection.	0	14	0p	PSTD0	Set to NTSC standard
L	TTL	TTL/75Ω load selection.	0	1	0L	TTL0	Set RGBS sync. under 75Ω
Output commands							
F	OFMT	Output format selection.	0	5	2F	OFMT2	Select 800 x 600 p
s	SCRN	Type of screen selection.	0	1	0s	SCRN0	Select 4/3 screen
Image commands							
P	PCH	Input selection for adjustment.	0	7	1P	PCH1	Select composite 2 input
H	HPOS	Horizontal position.	0	255	15H	HPOS15	Set H position to 15
V	VPOS	Vertical position.	0	255	10V	VPOS10	Set V position to 10
W	HSIZ	Horizontal size.	0	255	W	HSIZ250	Read H size value
S	VSIZ	Vertical size.	0	255	150S	VSIZ150	Set V size to 150
D	CON	Contrast adjustment.	0	255	D	CON128	Read contrast value
O	COL	Color adjustment.	0	255	55O	COL55	Set color value to 55
B	BRIG	Brightness adjustment.	0	255	45B	BRIG45	Set brightness value to 45
T	HUE	Hue adjustment.	0	255	T	HUE128	Read HUE value
Q	OVER	Under/Overscan mode selection.	0	1	0Q	OVER0	Set to overscan mode
a	IASP	Input aspect ratio selection.	0	2	0a	IASP0	Set aspect ratio to 4/3
R	SHAR	Sharpness adjustment.	0	8	8R	SHAR8	Set sharpness value to 8
M	GAM	Gamma adjustment.	0	3	M	gam2	Read gamma value
Controls commands							
r	PRES	RESET.	0	1	1r	PRES1	Set the image adjustments to the factory settings
y	LOCK	Lock front panel.	0	1	0y	LOCK0	Unlock the front panel
K	BLKD	Black delay selection.	1	10	3K	BLKD3	Set black delay to 3s
v	VER	Product version.	0	65535	v	VER-----	Read the unit's internal version (0 to 65535)
Y	FRES	DEFAULT VALUE.	0	1	1Y	FRES1	Reset to default values
b	STBY	POWER.	0	1	1b	STBY1	ON STANDBY.
?	DEV	Device type.	0	65535	?	DEV14	14 = Multi-Input Video Scaler.
Status commands (read only)							
I	IFA	Input video standard status.	0	11	I	IFA0	Selected input is NTSC standard (3.58/60)

NOTE: The commands values are describe in the following section.

8-5. VALUES DESCRIPTION

ASCII COMMAND	RESPONSE TO HOST	COMMAND DESCRIPTION	VALUE	DESCRIPTION
Input commands				
C	CH	Input selection.	None	Read the selected input.
			0	Select COMPOSITE 1 input.
			1	Select COMPOSITE 2 input.
			2	Select S.VIDEO 1 input.
			3	Select S.VIDEO 2 input.
			4	Select RGBS input.
			5	Select COMPONENT (Interlaced YUV) input.
			6	Select COMPUTER input.
p	PSTD	Input standard selection for the COMPOSITE & S.VIDEO inputs.	None	Read the input type.
			0	Set to NTSC (3.58 / 60).
			1	Set to PAL (4.43 / 50).
			2	Set to SECAM (50).
			3	Set to Black & White (60).
			4	Set to Black & White (50).
			14	Set to AUTO
L	TTL	TTL/75Ω selection (RGBS input).	None	Read the RGB.S input status.
			0	Set the RGB.S sync. to 75Ω load.
			1	Set the RGB.S sync. to TTL.
Output commands				
F	OFMT	Output format selection.	None	Read the output format.
			1	Set to 480p - 16/9.
			2	Set to 800 x 600p.
			3	Set to 720p - 16/9.
			4	Set to 1024 x 768p.
			5	Set to Quadrupler.
			6	Set to 1365 x 768p.
			7	Set to 1365 x 1024p.
s	SCRN	Type of Screen selection.	None	Read the output screen type.
			0	Set to 4/3 screen.
			1	Set to 16/9 screen.
Image commands				
P	PCH	Input selection for adjustment.		Identical as C command.
Q	OVER	Under/Overscan mode selection.	None	Read the Under/Overscan mode.
			0	Set to Overscan mode.
			1	Set to Underscan mode.
a	IASP	Input Aspect Ratio selection.	None	Read the selected input aspect ratio.
			0	Select 4/3 standard.
			1	Select letterbox.
			2	Select Widescreen Anamorphic.
M	GAM	Gamma selection.	None	Read gamma value.
			0	Set gamma to −1.
			1	Set gamma to 0.
			2	Set gamma to 1.
			3	Set gamma to 2.
Controls commands				
K	BLKD	Black delay selection.	None value	Read the black delay.
			1	Set black delay value to 1s.
			(…)	Set black delay value to (…).
			10	Set black delay value to 10s.
y	LOCK	Front panel locking function.	None	Read the front panel locking status.
			0	Unlock the front panel.
			1	Lock the front panel.
b	STBY	POWER.	None	Read the STANDBY POWER status.
			0	OFF STANDBY POWER.
			1	ON STANDBY POWER.

8-5. VALUES DESCRIPTION (continued)

ASCII COMMAND	RESPONSE TO HOST	COMMAND DESCRIPTION	VALUE	DESCRIPTION
Status commands				
I	IFA	Status of the selected input.	0	NTSC (3.58/60 Hz).
			1	PAL (4.43/50 Hz).
			2	SECAM (50 Hz).
			3	black and white 60 Hz.
			4	black and white 50 Hz.
			5	YUV 60 Hz.
			6	YUV 50 Hz.
			7	RGB.S 60 Hz.
			8	RGB.S 50 Hz.
			9	incompatible signal.
			10	no input.
			11	computer signal.

8-6. ASCII / HEX / DEC TABLE

ASCII	HEX	DEC	ASCII	HEX	DEC	ASCII	HEX	DEC
space	20	32	@	40	64	`	60	96
!	21	33	A	41	65	a	61	97
"	22	34	B	42	66	b	62	98
#	23	35	C	43	67	c	63	99
$	24	36	D	44	68	d	64	100
%	25	37	E	45	69	e	65	101
&	26	38	F	46	70	f	66	102
'	27	39	G	47	71	g	67	103
(	28	40	H	48	72	h	68	104
)	29	41	I	49	73	i	69	105
*	2A	42	J	4A	74	j	6A	106
+	2B	43	K	4B	75	k	6B	107
,	2C	44	L	4C	76	l	6C	108
-	2D	45	M	4D	77	m	6D	109
.	2E	46	N	4E	78	n	6E	110
/	2 F	47	O	4 F	79	o	6 F	111
0	30	48	P	50	80	p	70	112
1	31	49	Q	51	81	q	71	113
2	32	50	R	52	82	r	72	114
3	33	51	S	53	83	s	73	115
4	34	52	T	54	84	t	74	116
5	35	53	U	55	85	u	75	117
6	36	54	V	56	86	v	76	118
7	37	55	W	57	87	w	77	119
8	38	56	X	58	88	x	78	120
9	39	57	Y	59	89	y	79	121
:	3A	58	Z	5A	90	z	7A	122
;	3B	59	[	5B	91	{	7B	123
<	3C	60	\	5C	92	|	7C	124
=	3D	61	]	5D	93	}	7D	125
>	3E	62	^	5E	94	~	7E	126
?	3F	63	_	5F	95	DEL	7F	127

Chapter 9 : TROUBLESHOOTING

9-1. SYMPTOM AND CORRECTION TABLE

SYMPTOM	CAUSE	CORRECTION	PLEASE SEE
• **NO POWER** (No LED turns ON)	• The power cord is disconnected	• Connect the AC power cord to the **Multi-Input Video Scaler** and to the power outlet.	• Chapter 3-1
	• The **Multi-Input Video Scaler** is "POWER OFF".	• Press the ON key of the IR Remote Control.	• Chapter 3-1
• **NO PICTURE** (But the OSD is displayed) The OSD displays for example : "S.Video 1 = No video"	• The input source is not selected correctly.	• Select the input source, with the front panel push button, according to the equipment connected to the **Multi-Input Video Scaler**.	• Chapter 3-1
	• The input source is OFF.	• Power ON the input source.	• Input source user's manual
	• The input source is disconnected.	• Connect the input source to the **Multi-Input Video Scaler**.	• Chapter 3-1
• **NO PICTURE** (The OSD is not displayed).	• The display device is OFF.	• Power ON the display device.	• Display device user's manual
	• The display device is disconnected.	• Connect the DISPLAY OUTPUT of the **Multi-Input Video Scaler** to the DATA (PC/RGB) input of your display device.	• Display device user's manual
	• The DATA (PC/RGB) input of your display device is not selected correctly.	• Select the DATA (PC/RGB) input on your display device.	• Display device user's manual
	• The display device is not compatible with the selected output format.	• Check if the Display device is compatible with the selected output format. If not, make a HARD RESET procedure.	• Chapter 5 : OSD menu # 1-1 • Display device user's manual
• The IR remote control does not work properly	• The IR remote control is not pointed at the IR sensor of the **Multi-Input Video Scaler**.	• Point the IR remote control at the IR sensor of the **Multi-Input Video Scaler**.	
	• The IR remote control is too far from the device.	• Operate the IR remote control within about 5 meters.	
	• The batteries in the IR remote control are exhausted.	• Replace the batteries with new ones.	• Chapter 1-3

9-2. HARD RESET PROCEDURE

This procedure allows to get back the display image that you have lost by mistake. (For example: If the selected Output format is not compatible with the display device).

- Press on the front panel "input selection" key during 5 seconds. The **Multi-Input Video Scaler** will then display successively the OSD message "DISPLAY TEST...." in each Output format.
- When this OSD message appears on your screen, then press the input select key.
- Then select the input and the adjustments that you need.