



SMART SWITCH VIDEO™ - SMV 415 **SMART SWITCH AUDIO™ - SMA 415**

User's Manual

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SAFETY INSTRUCTIONS : ENGLISH

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 radiators 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 product, have a qualified technician check it before re-using it.

INSTRUCTIONS DE SECURITE : FRANCAIS

INSTRUCTION : 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.

PRECAUTION & AVERTISSEMENT :

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 intenses.

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 et 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 / 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 la prise murale.

Dans les 2 cas ci-dessus appliquer les consignes suivantes :

- Débrancher l'appareil de la prise murale si vous prévoyez de ne pas l'utiliser 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, mettez immédiatement l'appareil hors tension. 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.

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

REPARATION 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 l'appareil et faites le contrôler par un personnel qualifié avant de le remettre en service.

ANALOG WAY

SICHERHEITSHINWEISE : DEUTSCH

HINWEIS : 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 Kundendienststelle.

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

REPARATUR 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 anderen Gefahren 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: ESPAÑOL

INSTRUCCIONES : 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 calor intensas.

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 diríjase 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.

SMART SWITCH VIDEO™ - SMV 415 **SMART SWITCH AUDIO™ - SMA 415**

1) SUPPLIED EQUIPMENT

SUPPLIED EQUIPMENT WITH THE SMV 415 :

- 1 x AC Power Supply Cord
- 1 x 190 Rackmount kit
- 1 x S. Video Cable (1.8 m / 6 ft)
- 1 x VGA M / M Cable (1.8 m / 6 ft)
- 1 x RCA / RCA (M / M) Cable (1.2 m / 4 ft)
- 1 x RCA F / BNC M Adapter
- 1 x MAC / VGA 10 positions Adapter
- 1 x DB 9 M/F Remote Cable (0.5 m / 1.6 ft)

SUPPLIED EQUIPMENT WITH THE SMA 415 :

- 1 x AC Power Supply Cord
- 1 x 190 Rackmount kit
- 1 x Stereo Audio Cable 3.5 Jack M/M (1.2 m / 4 ft)
- 1 x DB 9 M/F Remote Cable (0.5 m / 1.6 ft)
- 19 x Audio 5 pin Screw Terminal Connectors

2) INSTALLING THE SMV 415 AND THE SMA 415

- Table top mounting The SMV 415 and the SMA 415 can be used directly on a table.
These units are delivered with 4 plastic feet.
- Rack mounting Compatible with a 19" enclosure (CEI 297).
You can install the SMV 415 and the SMA 415 in a 19" cabinet,
by using the supplied 19" corner adapters.

IMPORTANT : Please read all of the SAFETY INSTRUCTIONS (Pages 2-3) before starting.

3) GENERAL INFORMATIONS

The **SMART SWITCH VIDEO™** and the **SMART SWITCH AUDIO™**, takes place in the Analog Way's Millenium Trilogy, with the new **SMART BOOSTER™**, and all are compatible with the **SMART CUT 2™** and the **SMART FADE™**.

The **SMART SWITCH VIDEO™** and the **SMART SWITCH AUDIO™** are some Multi-Way **4 x {3 Inputs to 1 Output}** Switcher devices for computer and video signals (RGB HV, RGB/S, RGsB, YUV, Composite Video, S.VIDEO and HDTV).

Each of the 4 Inputs can be switched independently. It is the equivalent of integrating in the same enclosure, 4 different Switcher Boxes of 3 Inputs to 1 Output each.

The **SMV 415** and the **SMA 415** can switch between any HDTV, TV and Computer sources such as PC, MAC®, Laptop, any Workstation, Line Doubler, Scaler, Video Presenter, Video & Industrial Camera, VCR, DVD...

The **SMV 415** and the **SMA 415** can be hooked-up in series by their RS-232 connectors enabling the two devices to be controlled simultaneously.

They are also compatible with the **SMART CUT 2™** and the **SMART FADE™** allowing to increase the number of **SMART CUT2™** and **SMART FADE™** inputs up to 18.

4) SMV 415 TECHNICAL DESCRIPTION

● FRONT PANEL



EXTENDED INPUT # 3 :

- **S.VIDEO** : S.VIDEO Input # 3 (on 4 pin mini DIN connector)
- **RGBS / R-Y, Y, B-Y** : RGsB or RGBS or YUV (Component) Input # 3 (on BNC connectors)
- **COMPUTER** : Computer Input # 3 (on HD 15 F connector)

COMPUTER : Computer Input selection

COMPOSITE VIDEO : Composite Video Input selection

S.VIDEO : S.VIDEO Input selection

RGB & COMPONENT : RGB & Component Input selection

KEY LOCK : Front Panel Locking
A 3 seconds push locks or unlocks the front panel push buttons
LED ON = Locked
LED OFF = Unlocked

C. VIDEO & S. VIDEO MODE : C.VIDEO & S.VIDEO Mode selection
Allows to choose the number of Inputs needed
A 3 seconds push allows to change the mode

MODE A : 6 Composite Video Inputs + 3 S.VIDEO Inputs

MODE B : 4 Composite Video Inputs + 4 S.VIDEO Inputs

MODE C : 2 Composite Video Inputs + 5 S.VIDEO Inputs

MODE D : 6 S.VIDEO Inputs

(TEST) : A short push on this buttons allows to know which Inputs are active on the SMV 415, corresponding to the selected Mode

4) SMV 415 TECHNICAL DESCRIPTION (continued)

● REAR PANEL



POWER INPUT : Standard IEC connector (100-250 VAC, 50-60 Hz, Automatic)

REMOTE IN (PC) : Standard Remote Control Input (DB 9 Female connector)

REMOTE OUT (CHAIN) : Standard Remote Control Output (DB 9 Male connector)

COMPUTER :

INPUT 1 : Computer Input # 1 (On HD 15 Female connector)

INPUT 2 : Computer Input # 2 (On HD 15 Female connector)

OUTPUT : Computer Output (On HD 15 Female connector)

RGB / YUV / HDTV :

INPUT 1 : RGsB or RGBS or YUV (Component) Input # 1 (On 3 or 4 BNC Female connectors)

INPUT 2 : RGsB or RGBS or YUV (Component) Input # 2 (On 3 or 4 BNC Female connectors)

OUTPUT : RGsB or RGBS or YUV (Component) Output (On 3 or 4 BNC Female connectors)

NOTE : RGBS signals are on 4 BNC connectors (R-G-B-S)

RGsB and YUV signals are on 3 BNC connectors (R-Y, Y, B-Y)

S.VIDEO & COMPOSITE :

YC 1 : S.VIDEO Input # 1 (On 4 Pin mini DIN Female connector)

YC 2 : S.VIDEO Input # 2 (On 4 Pin mini DIN Female connector)

Y4 C4 : S.VIDEO Input # 4 (On 2 BNC Female connectors)

Y5 C5 : S.VIDEO Input # 5 (On 2 BNC Female connectors)

Y6 C6 : S.VIDEO Input # 6 (On 2 BNC Female connectors)

CV 1 : Composite Video Input # 1 (On 1 BNC Female connector)

CV 2 : Composite Video Input # 2 (On 1 BNC Female connector)

CV 3 : Composite Video Input # 3 (On 1 BNC Female connector)

CV 4 : Composite Video Input # 4 (On 1 BNC Female connector)

CV 5 : Composite Video Input # 5 (On 1 BNC Female connector)

CV 6 : Composite Video Input # 6 (On 1 BNC Female connector)

C.VIDEO OUT : Composite Video Output (On BNC Female connectors)

S.VIDEO OUT : S.VIDEO Output (On 4 pin mini DIN or 2 BNC Female connectors)*

***NOTE :** Do not use at the same time the S.VIDEO Output on 4 pin mini DIN and on the 2 BNC connectors.

4) SMV 415 TECHNICAL DESCRIPTION (continued)

• SPECIFICATIONS

• COMPUTER INPUT (ON HD 15 FEMALE CONNECTORS)

Software compatibility : All softwares compatible

Hardware compatibility : PC, MAC®, WORKSTATION

Resolution : From VGA (640 x 480) to UXGA (1600 x 1280)

RGsB, RGBS, RGBHV compatible

Line Frequency : From 31.5 kHz to 150 kHz

Frame Rate : From 24 Hz to 170 Hz

RGB Bandwidth : 300Mhz

Levels : R, G, B = 0.7 Vp/p
H & V Sync. = TTL
COMP Sync. = 0.3 Vp/p or TTL
SOG = 0.3 Vp/p

Impedance : 75 Ohms (R, G, B) ; Hi-Z (H & V and COMP Sync.)

• RGB / YUV / HDTV INPUT

Accepts signals from both Computer & Video Sources

RGsB, RGBS, YUV, HDTV Compatible Sync & Rate

Line Frequency : from 15 kHz to 150 kHz

Frame Frequency : from 24 Hz to 170 Hz

Bandwidth : 300 MHz

◆ RGsB & RGBS INPUT (ON 3 OR 4 BNC CONNECTORS)

15.625 kHz / 50 Hz (625 L) to 150 kHz

Levels : R, G, B = 0.7Vp/p
COMP SYNC = 0.3 Vp/p or TTL
SOG = 0.3 Vp/p

Impedance : R, G, B = 75 Ohms

◆ YUV (COMPONENT) INPUT (ON 3 BNC CONNECTORS)

15.625 kHz / 50 Hz (625 L) 15.735 kHz / 60 Hz (525 L)

Levels : Y = 0.7 Vp/p (Luma) + 0.3 Vp/p (Sync.)
U, V = 0.7 Vp/p

Impedance : 75 Ohms

◆ HDTV INPUT (ON 3 BNC CONNECTORS)

Levels : Y = 0.7 Vp/p with ± 0.3 V Tri-level Sync.
Dr = 0.7 Vp/p (with Tri-level Sync.)
Db = 0.7 Vp/p (with Tri-level Sync.)
RGB = 0.7 Vp/p with ± 0.3 V Tri-level Sync.

Impedance : 75 Ohms

• S.VIDEO (Y/C) INPUT (ON 4 PIN MINI DIN OR 2 BNC FEMALE CONNECTORS)

15.625 kHz / 50 Hz (625 L) 15.735 kHz / 60 Hz (525 L)

Levels : Y = 1 Vp/p (0.7 Vp/p Luma + 0.3 Vp/p Sync.)
C = 0.3 Vp/p (Chroma Burst)

Impedance : 75 Ohms (Chroma & Luma)

4) SMV 415 TECHNICAL DESCRIPTION (continued)

- **C.VIDEO INPUT** (ON 1 BNC FEMALE CONNECTOR)

15.625 kHz / 50 Hz (625 L) 15.735 kHz / 60 Hz (525 L)

Level : 1 Vp/p (0.7 Vp/p Luma + 0.3 Vp/p Sync.)

Impedance : 75 Ohms

- **COMPUTER & VIDEO OUTPUTS** (ON HD 15 AND 1 TO 4 BNC FEMALE CONNECTORS)

RGB, YUV, Luma (Y), Composite Video = 0.7 Vp/p (75 Ohms)

For HD15 Output : SYNC. = H&V (TTL), Comp. Sync. (TTL), SOG (0.3 Vp/p)

For BNC Output : SYNC. = Comp. Sync. (TTL or 0.3 Vp/p), SOG (0.3 Vp/p)

For S.VIDEO & C.VIDEO Output : SYNC. = 0.3 Vp/p

- **REMOTE PORTS** (ON DB 9 MALE AND FEMALE CONNECTORS)

Level : RS-232

Data Rate : 9600 Bauds, 8 data bits, 1 stop bit, No parity bit

- **ENVIRONMENTAL**

Power Supply : Internal CE / UL / CSA / IEC 950 (25 W), Universal, Automatic
Input : 100 VAC to 250 VAC; 50-60 Hz; I = 1 A Max.

Temperature : Storage : -25°C to +85°C

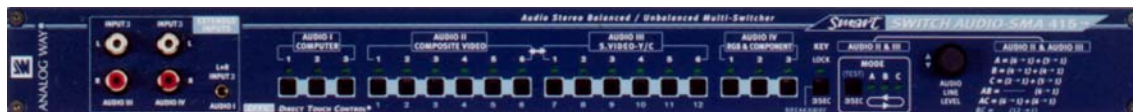
Hygrometry : 10% to 80% (without condensation)

Dimensions : 1U, 19" Rackmount compatible
W 440 x D 200 x H 44 mm
W 17.3" x D 7.8" x H 1.74"

Weight : 2.2 Kg / 4.85 Lbs

5) SMA 415 TECHNICAL DESCRIPTION

● FRONT PANEL



EXTENDED INPUT # 3:

- AUDIO III INPUT (L+R)** : Input # 3 of the Audio Group III (On 2 RCA Female connectors)
- AUDIO IV INPUT (L+R)** : Input # 3 of the Audio Group IV (On 2 RCA Female connectors)
- AUDIO I INPUT (L+R)** : Input # 3 of the Audio Group I (On Jack 3.5 Female connector)

AUDIO I (COMPUTER) : Group I Input selection

AUDIO II (COMPOSITE VIDEO) : Group II Input selection

AUDIO III (S.VIDEO - Y / C) : Group III Input selection

AUDIO IV (RGB & COMPONENT) : Group IV Input selection

KEY LOCK : Front Panel Locking Push Button. A 3 seconds push locks or unlocks the front panel push buttons
LED ON : Front Panel Locked
LED OFF : Front Panel Unlocked

BREAKAWAY : Function active only when the SMA 415 is coupled with the SMV 415 (Please see SMV 415 with SMA 415 application – Chapter 9)

AUDIO II & III MODE : Audio II & III Mode selection
Allows to change the number of Inputs needed
(A 3 seconds push allows to change the Mode)

MODE A : 6 Audio II + 3 Audio III Inputs

MODE B : 4 Audio II + 4 Audio III Inputs

MODE C : 2 Audio II + 5 Audio III Inputs

MODE AB : 6 Audio III Inputs

MODE AC : 6 Audio II + 6 Audio III Inputs

MODE BC : 12 Audio Inputs

(TEST) : A short push on this button allows to know which Inputs are active on the SMA 415, corresponding to the selected Mode

AUDIO LINE LEVEL : Audio level adjustment for each Input
Push simultaneously on the chosen Input push button and turn the rotary button to adjust the Audio level for that Input

5) SMA 415 TECHNICAL DESCRIPTION (continued)

● REAR PANEL



POWER INPUT : Standard IEC connector (100-250 VAC, 50-60 Hz, Automatic)

REMOTE IN (PC) : Standard Remote Control Input (DB 9 Female connector)

REMOTE OUT (CHAIN) : Standard Remote Control Output (DB 9 Male connector)

AUDIO I (COMPUTER) :

1 IN : Input # 1 of the Audio I Group (On Jack 3.5 F connector)
2 IN : Input # 2 of the Audio I Group (On Jack 3.5 F connector)
OUT : Output of the Audio I Group (On 5 pin screw terminal)

AUDIO IV (RGB / YUV) :

1 IN : Input # 1 of the Audio IV Group (On Jack 3.5 F connector & 5 pin screw terminal)
2 IN : Input # 2 of the Audio IV Group (On Jack 3.5 F connector & 5 pin screw terminal)
3 IN : Input # 3 of the Audio IV Group (On 5 pin screw terminal)
OUT : Output of the Audio IV Group (On 5 pin screw terminal)

AUDIO III (S. VIDEO) :

1 IN : Input # 1 of the Audio III Group (On Jack 3.5 F connector & 5 pin screw terminal)
2 IN : Input # 2 of the Audio III Group (On Jack 3.5 F connector & 5 pin screw terminal)
3 IN : Input # 3 of the Audio III Group (On 5 pin screw terminal)
4 IN : Input # 4 of the Audio III Group (On Jack 3.5 F connector & 5 pin screw terminal)
5 IN : Input # 5 of the Audio III Group (On Jack 3.5 F connector & 5 pin screw terminal)
6 IN : Input # 6 of the Audio III Group (On Jack 3.5 F connector & 5 pin screw terminal)
OUT : Output of the Audio III Group (On 5 pin screw terminal)

AUDIO II (COMPOSITE VIDEO) :

1 IN : Input # 1 of the Audio II Group (On Jack 3.5 F connector & 5 pin screw terminal)
2 IN : Input # 2 of the Audio II Group (On Jack 3.5 F connector & 5 pin screw terminal)
3 IN : Input # 3 of the Audio II Group (On Jack 3.5 F connector & 5 pin screw terminal)
4 IN : Input # 4 of the Audio II Group (On Jack 3.5 F connector & 5 pin screw terminal)
5 IN : Input # 5 of the Audio II Group (On Jack 3.5 F connector & 5 pin screw terminal)
6 IN : Input # 6 of the Audio II Group (On Jack 3.5 F connector & 5 pin screw terminal)
OUT : Output of the Audio II Group (On 5 pin screw terminal)

UNBALANCED OUTPUT :

AUDIO I : Audio I Unbalanced Output L+R (On RCA Female connectors)
AUDIO IV : Audio IV Unbalanced Output L+R (On RCA Female connectors)
AUDIO III : Audio III Unbalanced Output L+R (On RCA Female connectors)
AUDIO II : Audio II Unbalanced Output L+R (On RCA Female connectors)

L = Left
R = Right

5) SMA 415 TECHNICAL DESCRIPTION (continued)

• SPECIFICATIONS

• AUDIO

<i>Gain :</i>	0 dB
<i>Bandwidth :</i>	16 Hz to 100 kHz at -3 dB (No Slew Rate limits)
<i>S / N :</i>	80 dB at $V_i = +10$ dBm 85 dBA at $V_i = +10$ dBm
<i>THD + Noise :</i>	0.05 % at -10 dBm (1 kHz)

• AUDIO INPUTS (ON JACK 3.5 mm FEMALE OR RCA FEMALE OR 5 PINS SCREW TERMINAL)

<i>Input Level (V_i) :</i>	+10 dBm Max.
<i>Impedance (Z_i) :</i>	22 K Ω (unbalanced) 44 K Ω (balanced)
<i>Gain :</i>	$-\infty$ to 6 dB adjustable

• AUDIO OUTPUTS (ON RCA FEMALE OR 5 PINS SCREW TERMINAL)

<i>Output (V_o):</i>	+10 dBm Max.
<i>Impedance :</i>	300 Ω (unbalanced) 600 Ω (balanced)

• REMOTE PORTS (ON DB 9 MALE AND FEMALE CONNECTORS)

<i>Level :</i>	RS-232
<i>Data Rate :</i>	9600 Bauds, 8 data bits, 1 stop bit, No parity bit

• ENVIRONMENTAL

<i>Power Supply :</i>	Internal CE / UL / CSA / IEC 950 (25 W), Universal, Automatic Input : 100 VAC to 250 VAC; 50-60 Hz; I = 1 A Max.
<i>Temperature :</i>	Storage : -25°C to +85°C
<i>Hygrometry :</i>	10% to 80% (without condensation)
<i>Dimensions :</i>	1U, 19" Rackmount compatible W 440 x D 200 x H 44 mm W 17.3" x D 7.8" x H 1.74"
<i>Weight :</i>	2.2 Kg / 4.85 Lbs

6) SMART SWITCH VIDEO ALONE APPLICATION

6-1) CONNECTIONS :

NOTE : All devices must be OFF before connecting

1 - COMPUTER CONNECTIONS :

- CONNECT your Computer sources (up to 3) to the COMPUTER INPUTS of the SMV 415.
- CONNECT your data display device (monitor, projector,) to the COMPUTER OUTPUT of the SMV 415.

2 - RGB / YUV CONNECTIONS :

- CONNECT your RGB / YUV sources (up to 3) to the RGB / YUV INPUTS of the SMV 415.
- CONNECT your display device (TV, VCR,) to the RGB / YUV OUTPUT of the SMV 415.

3 - S.VIDEO (Y/C) CONNECTIONS :

- CONNECT your S.VIDEO (Y/C) sources (up to 6) to the S.VIDEO INPUTS of the SMV 415. (YC1, YC2, S. Video 3 on 4 pin mini DIN connector, Y4C4, Y5C5, Y6C6 on 2 BNC connectors).
- CONNECT your display device (TV, VCR,) to the S.VIDEO OUTPUT (BNC or 4 pin mini DIN) of the SMV 415.

NOTE : The S.VIDEO and C.VIDEO INPUTS are configurable. (Please see chapter 6-2).

4 - COMPOSITE VIDEO CONNECTIONS :

- CONNECT your COMPOSITE VIDEO sources (up to 6) to the COMPOSITE VIDEO INPUTS of the SMV 415.
- CONNECT your display device (TV, VCR,) to the C.VIDEO OUTPUT of the SMV 415.

5 - CONNECT The AC Power Supply Cord to the rear of the SMV 415.

6 - SELECT The C.VIDEO & S.VIDEO Mode corresponding to your configuration (front panel push buttons). (Please see chapter 6-2).

6-2) C. VIDEO & S. VIDEO MODE SELECTION :

Select the mode corresponding to your configuration :

- To change the mode, press the MODE button during 3 seconds.
- A short push allows to know which inputs are active corresponding to the selected mode.

MODE	C.VIDEO Inputs	S.VIDEO Inputs
A (6 C.VIDEO + 3 S.VIDEO)	CV 1 → CV 6	YC 1, YC 2, S.VIDEO 3
B (4 C.VIDEO + 4 S.VIDEO)	CV 1 , CV 2, CV 3, CV 4	YC 1, YC 2, S.VIDEO 3, Y4 C4
C (2 C.VIDEO + 5 S.VIDEO)	CV 1 & CV 2	YC 1, YC 2, S.VIDEO 3, Y4 C4, Y5 C5
AB (6 S.VIDEO)	NONE	YC 1, YC 2, S.VIDEO 3, Y4 C4, Y5 C5, Y6 C6

6-3) SWITCHING OPERATION :

Select for each group (COMPUTER, C.VIDEO, S.VIDEO, RGB / YUV) an Input with the front panel push buttons (LED is ON for the displayed Inputs).

6-4) REMOTE CONTROL :

To control the SMV 415 by Remote Control (RS-232), connect the serial port of your Computer to the REMOTE IN (PC) connector of the SMV 415.

NOTE : Use the SMART SWITCH REMOTE CONTROL Software.

7) SMART SWITCH VIDEO™ WITH SMART CUT 2™ (or SMART FADE™) APPLICATION

NOTE : In this section the term SMART CUT 2™ is used to define the SMART CUT 2™ or the SMART FADE™ device.

7-1) CONNECTIONS (See also the connection scheme page 21) :

- 1 - CONNECT The REMOTE OUT (CHAIN) DB 9 Male connector of the SMV 415 to the REMOTE CONTROL DB 9 Female connector of the SMART CUT 2™ with a DB 9 Male / Female cable.
- 2 - COMPUTER CONNECTIONS :
 - CONNECT your Computer sources (up to 3) to the COMPUTER INPUTS of the SMV 415.
 - CONNECT the COMPUTER OUTPUT of the SMV 415 to the COMPUTER 1 Input of the SMART CUT 2™.
- 3 – RGB/YUV CONNECTIONS :
 - CONNECT your RGB / YUV sources (up to 3) to the RGB / YUV INPUTS of the SMV 415.
 - CONNECT the RGB / YUV OUTPUT of the SMV 415 to the RGBS / YUV Input of the SMART CUT 2™.
- 4 - S.VIDEO (Y/C) CONNECTIONS :
 - CONNECT your S.VIDEO (Y/C) sources (up to 6) to the S.VIDEO INPUTS of the SMV 415. (YC1, YC2, S. VIDEO 3 on 4 pin mini DIN connector, Y4C4, Y5C5, Y6C6 on 2 BNC connectors).
 - CONNECT the S.VIDEO OUTPUT (BNC or 4 pin mini DIN) of the SMV 415 to the S.VIDEO 1 Input of the SMART CUT 2™.

NOTE : The S.VIDEO and C.VIDEO INPUTS are configurable. (Please see chapter 7-2).
- 5 - COMPOSITE VIDEO CONNECTIONS :
 - CONNECT your COMPOSITE VIDEO sources (up to 6) to the COMPOSITE VIDEO INPUTS of the SMV 415.
 - CONNECT the C.VIDEO OUTPUT of the SMV 415 to the C. VIDEO 1 Input of the SMART CUT 2™.
- 6 - CONNECT Any additional Inputs if necessary directly to the SMART CUT 2™ (COMPUTER 2, C.VIDEO 2, S.VIDEO 2).
- 7 - CONNECT Your data display device (monitor, projector,...) to the DISPLAY OUTPUT of the SMART CUT 2™ (Front panel switch).
- 8 - CONNECT The AC Power Supply Cords to the rear of the SMV 415.
The AC Power Supply Cords to the rear of the SMART CUT 2™ and switch ON the SMART CUT 2™.
- 9 - SELECT The C.VIDEO & S.VIDEO Mode corresponding to your configuration.
(Please see chapter 7-2).

7) SMART SWITCH VIDEO™ WITH SMART CUT 2™ (or SMART FADE™) APPLICATION (continued)

7-2) C. VIDEO & S. VIDEO MODE SELECTION :

Select the mode corresponding to your configuration :

- To change the mode , press the MODE button during 3 seconds.
- A short push allows to know which inputs are active corresponding to the selected mode.

MODE	C.VIDEO Inputs	S.VIDEO Inputs
A (6 C.VIDEO + 3 S.VIDEO)	CV 1 → CV 6	YC 1, YC 2, S.VIDEO 3
B (4 C.VIDEO + 4 S.VIDEO)	CV 1 , CV 2, CV 3, CV 4	YC 1, YC 2, S.VIDEO 3, Y4 C4
C (2 C.VIDEO + 5 S.VIDEO)	CV 1 & CV 2	YC 1, YC 2, S.VIDEO 3, Y4 C4, Y5 C5
AB (6 S.VIDEO)	NONE	YC 1, YC 2, S.VIDEO 3, Y4 C4, Y5 C5, Y6 C6

7-3) SETTING (SMART CUT 2™ LCD Menu) :

- Default Value : Before any new adjustment, it is possible to reset the SMART CUT 2™ to its default value (Factory Settings) with the LCD Menu # 5-6. (Menu #6-5 for the SMART FADE™)
- Video Input :
 - Select Extend Switch (LCD Menu # 5-4 for the SMART CUT 2™; menu # 6-3 for the SMART FADE™)
 - Verify or set the automatic or manual video detection (LCD Menu # 1-1).
 - Verify or set the type of all of your RGB / YUV Inputs (LCD Menu # 1-3).
- Display Output : (LCD Menu # 2)
 - Verify or set the Output Sync. type which correspond to your display device (LCD Menu # 2-1).
 - Verify or select a reference sync. operating mode (LCD Menu # 2-2).
- Image Setting : (LCD Menu # 3)
 - You can adjust the image setting for each video Input. The setting will be automatically memorized until a new setting is done.

NOTE : The image adjustments are only active for the selected (displayed) video input.

 - To preset your image adjustment, select one video to display the output, then use the LCD Menu # 3-12 (preset).

7-4) SWITCHING OPERATIONS :

- Pre select an Input on the SMV 415 or directly on the SMART CUT 2™ (for COMPUTER 2, C.VIDEO 2, S.VIDEO 2 and BLACK). The corresponding LED is blinking.
- Push on CUT to display the pre-selected Input (LED is ON).

7-5) REMOTE CONTROL :

- To control the 2 devices by Remote Control (RS-232), connect the serial port of your Computer to the REMOTE IN (PC) connector of the SMV 415.

NOTE : Use the SMART CUT 2™ REMOTE CONTROL Software.

8) SMART SWITCH AUDIO™ ALONE APPLICATION

8-1) CONNECTIONS :

- 1 - CONNECT Your Audio sources to the AUDIO INPUTS of the SMA 415.
- 2 - CONNECT Your Audio devices (stereo amplifier,) to the corresponding AUDIO OUTPUTS of the SMA 415.
NOTE : The Audio II & III groups are configurable. (Please see chapter 8-2).
- 3 - CONNECT The AC Power Supply Cord to the rear of the SMA 415.
- 4 - SELECT The Audio Mode corresponding to your configuration. (Please see chapter 8-2).

8-2) AUDIO II & AUDIO III MODE SELECTION :

Select the mode corresponding to your configuration :

- To change the mode, press the MODE button during 3 seconds.
- A short push allows to know which inputs are active corresponding to the selected mode.

MODE	AUDIO II-C.VIDEO inputs	AUDIO III-S.VIDEO inputs
A (6 C.VIDEO + 3 S.VIDEO)	1 → 6	1 → 3
B (4 C.VIDEO + 4 S.VIDEO)	1 → 4	1 → 4
C (2 C.VIDEO + 5 S.VIDEO)	1 → 2	1 → 5
AB (6 S.VIDEO)	NONE	1 → 6
AC (6 C.VIDEO + 6 S.VIDEO)	1 → 6	1 → 6
BC (12 S.VIDEO)	1 → 6	7 → 12

NOTE : For the BC Mode, the Output is AUDIO III OUT.

8-3) SWITCHING OPERATION :

Select for each group (AUDIO I, II, III, IV) a source with the front panel push buttons.
(LEDs are ON for the diffused sources).

8-4) REMOTE CONTROL :

To control the SMA 415 by Remote Control (RS-232), connect the serial port of your Computer to the REMOTE IN (PC) connector of the SMA 415.

NOTE : Use the SMART SWITCH REMOTE CONTROL Software.

9) SMART SWITCH VIDEO™ WITH SMART SWITCH AUDIO™ APPLICATION

9-1) CONNECTIONS (see also connection scheme page 22) :

- 1 - CONNECT The REMOTE OUT (CHAIN) DB 9 Male connector of the SMA 415 to the REMOTE IN (PC) DB 9 Female connector of the SMV 415 with a DB 9 Male / Female cable.
- 2 - COMPUTER CONNECTIONS :
 - CONNECT your Computer sources (up to 3) to the COMPUTER INPUTS of the SMV 415 and to the Audio Inputs of the SMA 415.
 - CONNECT your Display device (monitor, projector,) to the COMPUTER OUTPUT of the SMV 415.
 - CONNECT your Audio device (stereo amplifier,) to the AUDIO I-COMPUTER OUTPUT of the SMA 415.
- 3 - RGB / YUV CONNECTIONS :
 - CONNECT your RGB / YUV sources (up to 3) to the RGB / YUV INPUTS of the SMV 415 and to the Audio Inputs of the SMA 415.
 - CONNECT your Display device (TV, VCR,) to the RGB / YUV OUTPUT of the SMV 415.
 - CONNECT your Audio device (stereo amplifier,) to the AUDIO IV-RGB / YUV OUTPUT of the SMA 415.
- 4 - S.VIDEO (Y/C) CONNECTIONS :
 - CONNECT your S.VIDEO (Y/C) sources (up to 6) to the S.VIDEO INPUTS of the SMV 415 and to the Audio Inputs of the SMA 415. (YC1, YC2, S.VIDEO 3 on 4 pin mini DIN connector, Y4C4, Y5C5, Y6C6 on 2 BNC connectors).
 - CONNECT your Display device (TV, VCR,) to the S.VIDEO OUTPUT (BNC or 4 pin mini DIN) of the SMV 415.
 - CONNECT your Audio device (stereo amplifier,) to the AUDIO III-S.VIDEO OUTPUT of the SMA 415.

NOTE : The S.VIDEO and C.VIDEO INPUTS are configurable. (Please see chapter 9-2).
- 5 - COMPOSITE VIDEO CONNECTIONS :
 - CONNECT your COMPOSITE VIDEO sources (up to 6) to the COMPOSITE VIDEO INPUTS of the SMV 415 and to the Audio Inputs of the SMA 415.
 - CONNECT your Display device (TV, VCR,) to the C. VIDEO OUTPUT of the SMV 415.
 - CONNECT your Audio device (stereo amplifier,) to the AUDIO II C.VIDEO OUTPUT of the SMA 415.
- 6 - CONNECT The AC Power Supply Cords to the rear of the SMA 415, then connect the AC Power Supply Cords to the rear of the SMV 415.
- 7 - SELECT The C.VIDEO & S.VIDEO Mode, corresponding to your configuration, with the SMV 415 MODE push button. (Please see chapter 9-2).

9) SMART SWITCH VIDEO™ WITH SMART SWITCH AUDIO™ APPLICATION (continued)

9-2) C.VIDEO & S.VIDEO MODE SELECTION :

Select the mode corresponding to your configuration :

-To change the mode, press the MODE button during 3 seconds.

-A short push allows to know which inputs are active corresponding to the selected mode.

MODE	C.VIDEO Inputs	S.VIDEO Inputs
A (6 C.VIDEO + 3 S.VIDEO)	CV 1 → CV 6	YC 1, YC 2, S.VIDEO 3
B (4 C.VIDEO + 4 S.VIDEO)	CV 1 , CV 2, CV 3, CV 4	YC 1, YC 2, S.VIDEO 3, Y4 C4
C (2 C.VIDEO + 5 S.VIDEO)	CV 1 & CV 2	YC 1, YC 2, S.VIDEO 3, Y4 C4, Y5 C5
AB (6 S.VIDEO)	NONE	YC 1, YC 2, S.VIDEO 3, Y4 C4, Y5 C5, Y6 C6

9-3) SWITCHING OPERATION :

Select for each group (COMPUTER, C.VIDEO, S.VIDEO, RGB / YUV) an Input with the push buttons of the SMV 415 (LED is ON for the displayed Inputs).

9-4) REMOTE CONTROL :

To control the 2 devices by Remote Control (RS-232), connect the serial port of your Computer to the REMOTE IN (PC) connector of the SMA 415.

NOTE : Use the SMART SWITCH REMOTE CONTROL Software.

**10) SMART SWITCH VIDEO™ WITH SMART SWITCH AUDIO™ AND WITH SMART CUT 2™
(or SMART FADE™) APPLICATION**

NOTE : In this section the term SMART CUT 2™ is used to define the SMART CUT 2™ or the SMART FADE™ device.

10-1) CONNECTIONS :

- 1 - CONNECT The REMOTE OUT (CHAIN) DB 9 Male connector of the SMA 415 to the REMOTE IN (PC) DB 9 Female connector of the SMV 415 with a DB 9 Male / Female cable.
- 2 - CONNECT The REMOTE OUT (CHAIN) DB 9 Male connector of the SMV 415 to the REMOTE CONTROL DB 9 Female connector of the SMART CUT 2™ with a DB 9 Male / Female cable.
- 3 - COMPUTER CONNECTIONS :
 - CONNECT your Computer sources (up to 3) to the COMPUTER INPUTS of the SMV 415 and to the Audio Inputs of the SMA 415.
 - CONNECT the COMPUTER OUTPUT of the SMV 415 and the AUDIO I-COMPUTER OUTPUT of the SMA 415 to the COMPUTER 1 Input of the SMART CUT 2™.
- 4 - RGB / YUV CONNECTIONS :
 - CONNECT your RGB / YUV sources (up to 3) to the RGB / YUV INPUTS of the SMV 415 and to the Audio Inputs of the SMA 415.
 - CONNECT the RGB / YUV OUTPUT of the SMV 415 and the AUDIO IV- RGB / YUV OUTPUT of the SMA 415 to the RGBS / YUV Input of the SMART CUT 2™.
- 5 - S.VIDEO (Y/C) CONNECTIONS :
 - CONNECT your S.VIDEO (Y/C) sources (up to 6) to the S.VIDEO INPUTS of the SMV 415 and to the Audio Inputs of the SMA 415.(YC1, YC2, S.VIDEO 3 on 4 pin mini DIN connector, Y4C4, Y5C5, Y6C6 on 2 BNC connectors).
 - CONNECT the S. VIDEO OUTPUT of the SMV 415 and the AUDIO III-S.VIDEO OUTPUT of the SMA 415 to the S. VIDEO 1 Input of the SMART CUT 2™.

NOTE : The S.VIDEO and C.VIDEO INPUTS are configurable. (Please see chapter10-2).
- 6 - COMPOSITE VIDEO CONNECTIONS :
 - CONNECT your COMPOSITE VIDEO sources (up to 6) to the COMPOSITE VIDEO INPUTS of the SMV 415 and to the Audio Inputs of the SMA 415.
 - CONNECT the C. VIDEO OUTPUT of the SMV 415 and the AUDIO II-C.VIDEO OUTPUT of the SMA 415 to the C. VIDEO 1 Input of the SMART CUT 2™.
- 7 - CONNECT Any additional Inputs if necessary directly to the SMART CUT 2™ (COMPUTER 2, C.VIDEO 2, S.VIDEO 2).
- 8 - CONNECT Your data display device (monitor, projector,...) and your audio device (stereo amplifier) to the DISPLAY OUTPUT of the SMART CUT 2™
- 9 - CONNECT The AC Power Supply Cords to the rear of the SMA 415,
Then connect the AC Power Supply Cords of the SMV 415,
Then connect the AC Power Supply Cords of the SMART CUT 2™ and switch ON the SMART CUT 2™.
- 10 - SELECT The C.VIDEO & S.VIDEO Mode corresponding to your configuration
(Please see Chapter 10-2).

10) SMART SWITCH VIDEO™ WITH SMART SWITCH AUDIO™ AND WITH SMART CUT 2™ APPLICATION (continued)

10-2) C.VIDEO & S.VIDEO MODE SELECTION :

Select the mode corresponding to your configuration :

- To change the mode, press the MODE button during 3 seconds.
- A short push allows to know which inputs are active corresponding to the selected mode.

MODE	C.VIDEO Inputs	S.VIDEO Inputs
A (6 C.VIDEO + 3 S.VIDEO)	CV 1 → CV 6	YC 1, YC 2, S.VIDEO 3
B (4 C.VIDEO + 4 S.VIDEO)	CV 1 , CV 2, CV 3, CV 4	YC 1, YC 2, S.VIDEO 3, Y4 C4
C (2 C.VIDEO + 5 S.VIDEO)	CV 1 & CV 2	YC 1, YC 2, S.VIDEO 3, Y4 C4, Y5 C5
AB (6 S.VIDEO)	NONE	YC 1, YC 2, S.VIDEO 3, Y4 C4, Y5 C5, Y6 C6

10-3) SETTING (SMART CUT 2™ LCD Menu) :

- Default Value : Before any new adjustment, it is possible to reset the SMART CUT 2™ to its default value (Factory Settings) with the LCD Menu # 5-6 (menu # 6-5 for the SMART FADE™)
- Video Input :
 - Select Extend Switch (LCD Menu # 5-4 for SMART CUT 2™; and menu # 6-3 for the SMART FADE™).
 - Verify or set the automatic or manual video detection (LCD Menu # 1-1).
 - Verify or set the type of all of your RGB / YUV Inputs (LCD Menu # 1-3).
- Display Output : (LCD Menu # 2)
 - Verify or set the Output Sync. type which correspond to your display device (LCD Menu # 2-1).
 - Verify or select a reference sync. operating mode (LCD Menu # 2-2).
- Image Setting : (LCD Menu # 3)
 - You can adjust the image setting for each video Input. The setting will be automatically memorized until a new setting is done.

NOTE : The image adjustments are only active for the selected (displayed) video input.

- To preset your image adjustment, select one video to display the output, then use the LCD Menu # 3-12 (preset).

10-4) SWITCHING OPERATIONS :

- Pre-select an Input on the SMV 415 or directly on the SMART CUT 2™ (for COMPUTER 2, C.VIDEO 2, S.VIDEO 2 and BLACK). The corresponding LED is blinking.
Push on CUT to display the pre-selected Input (LED is ON).

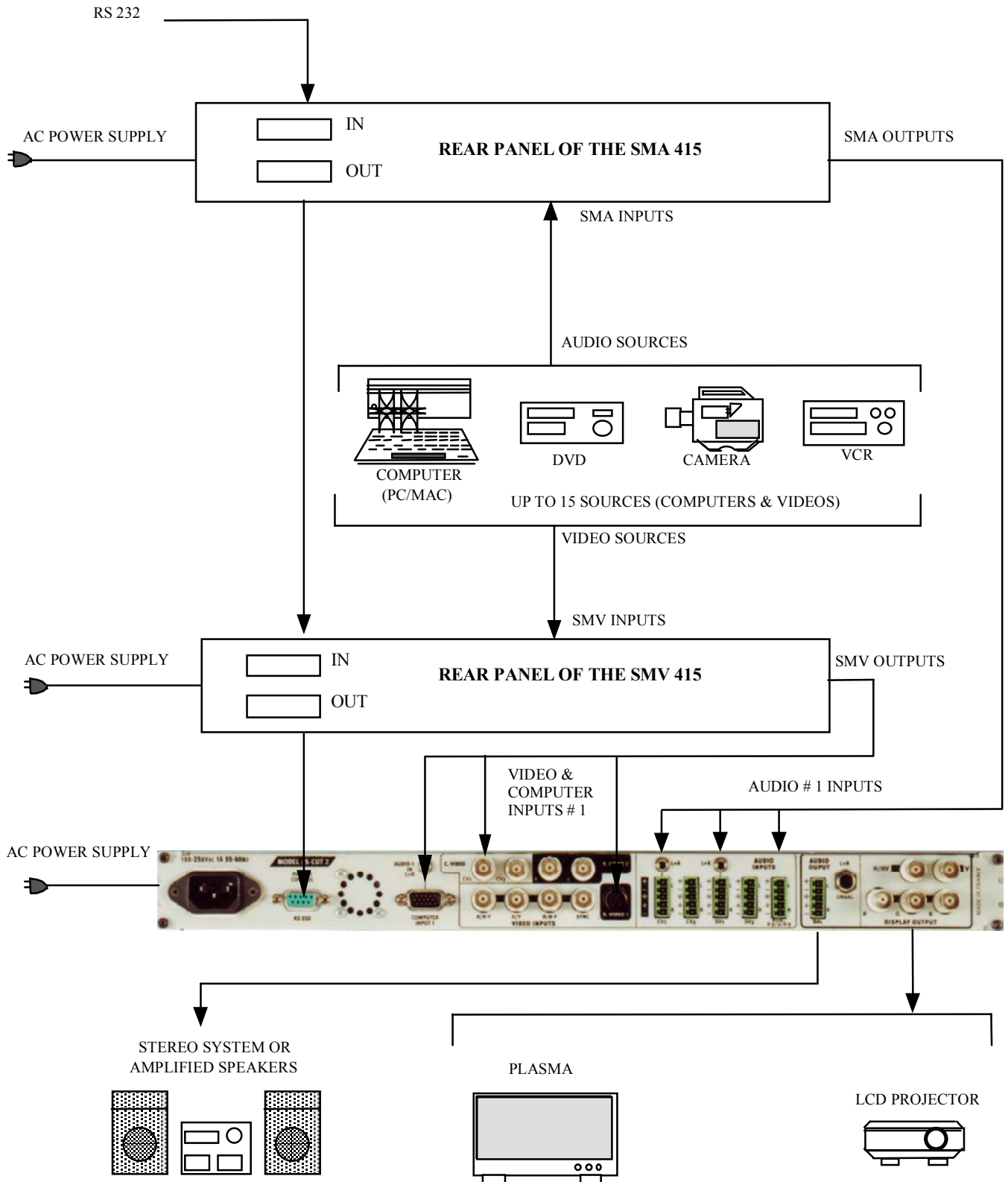
10-5) REMOTE CONTROL :

- To control the 3 devices by Remote Control (RS-232), connect the serial port of your Computer to the REMOTE IN (PC) connector of the SMA 415.

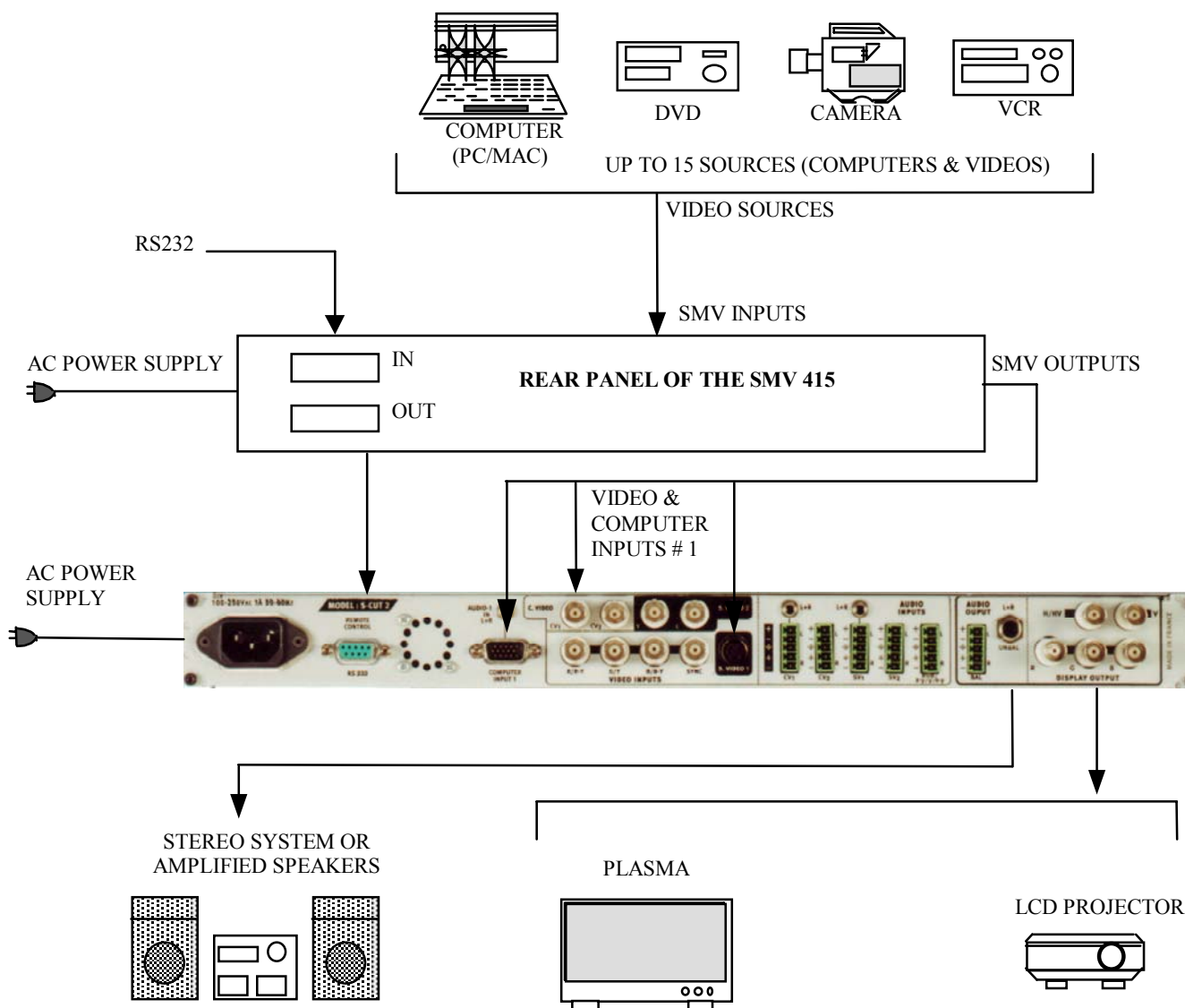
NOTE : Use the SMART CUT 2™ REMOTE CONTROL Software.

11) CONNECTIONS

SMA 415 & SMV 415 & SMART CUT 2(or SMART FADE™)

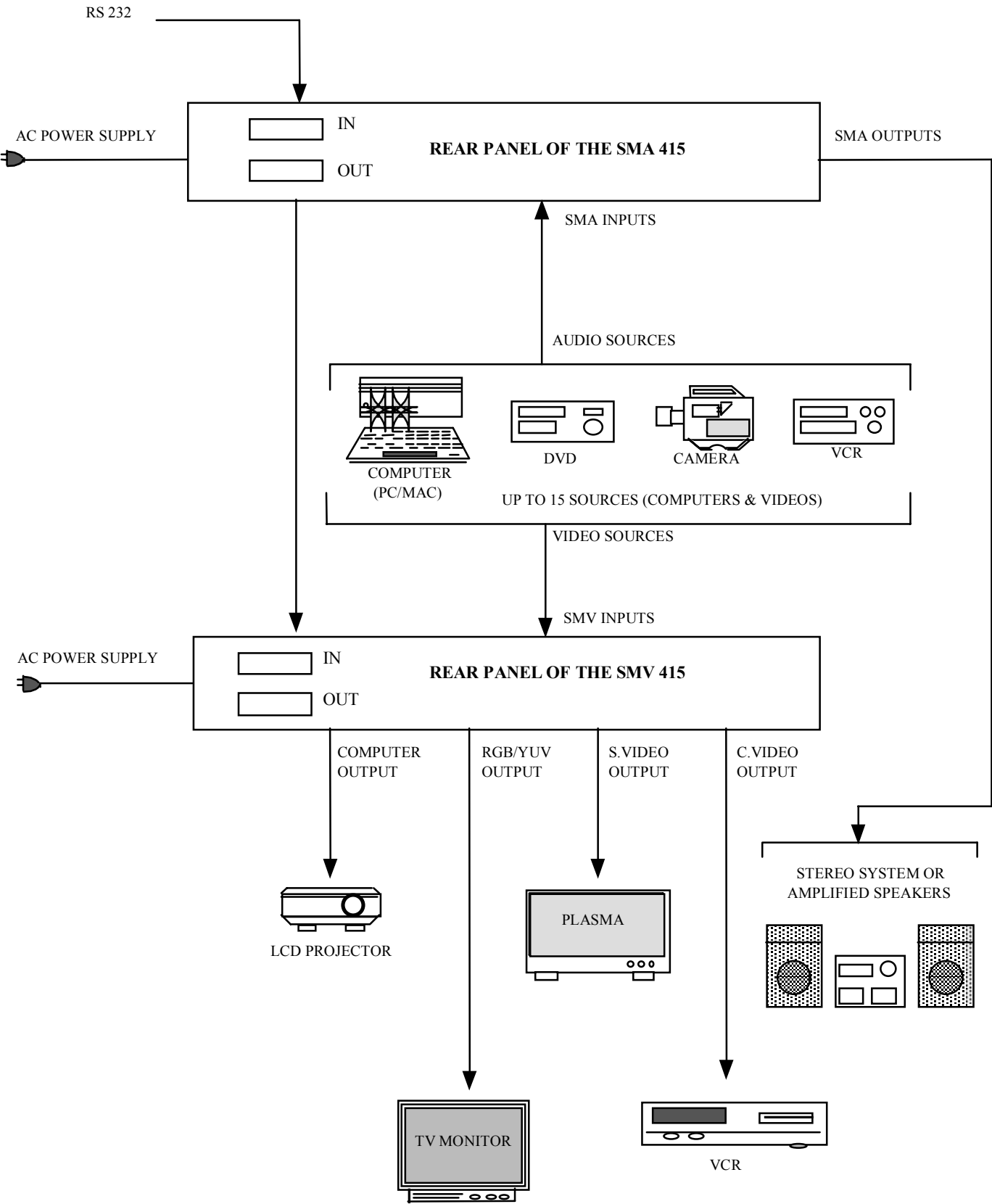


11) CONNECTIONS

SMV 415 & SMART CUT 2™ (or SMART FADE™)

11) CONNECTIONS

SMA 415 & SMV 415



12) REMOTE CONTROL RS 232

The RS-232 communication interface built in your Smart Switch, allows it to be controlled from a host system. The RS-232 connector pin-out and software installation are shown below.

12-1) "SMART SWITCH REMOTE CONTROL " SOFTWARE

Your SMART SWITCH is shipped with a WINDOWS compatible software "SMART SWITCH CONTROL PROGRAM". This software allows you to make adjustments and to control the unit by a simple mouse click. Contained on a 3"1/2 disk, this software needs less than 1.44 Mo of hard drive space.

The "SMART SWITCH CONTROL PANEL" software is compatible with WINDOWS 95/98/2000.

• INSTALLING ON PC :

1. Turn your computer ON and wait for WINDOWS to completely start,
2. Insert the disk into the floppy disk 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"1/2 disk is in drive A),
5. Follow the WINDOWS installation instructions.

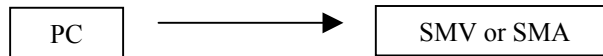
WINDOWS will create a file C:\Program files\Analog Way\SmartSwitch

12-2) CONNECTION

• CONNECTING THE RS-232

• If you use the SMV 415 or the SMA 415 alone :

- Connect the serial port of your Controlling Device (computer) to the REMOTE IN (PC) connector (DB 9 F) of the Smart Switch with a straight cable (DB 9 Female / DB 9 Male).



• If you use the SMV 415 with the SMA 415 * :

- Connect the serial port of your Controlling Device (computer) to the REMOTE IN (PC) connector (DB 9 F) of the SMA 415 with a straight cable (DB 9 Female / DB 9 Male).
- Connect the REMOTE OUT (CHAIN) connector (DB 9 M) of the SMA 415 to the REMOTE IN (PC) connector (DB 9 F) of the SMV 415 with a straight cable (DB 9 Female / DB 9 Male).

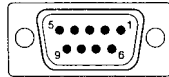


* The Controlling Device's RS 232 Port must be linked directly to the SMA 415 and then the SMA 415 to the SMV 415.

12) REMOTE CONTROL RS 232 (continued)

● PIN-OUT

Pin n°	Functions
2	TRANSMIT DATA (Tx)
3	RECEIVE DATA (Rx)
5	GROUND (Gnd)



DB 9 connector
(Rear panel of SMV / SMA)

- SPEED TRANSMISSION: 9600 Bauds, 8 Data bits, 1 Stop bit, No Parity bit.

12-3) STARTING

- Connect the RS 232 cables between the controlling device and the SMART SWITCH (DB 9 connectors).
- Then Power ON all devices
- Click on the program files **ANALOG WAY \ SMART SWITCH** to run the software,
- Click on the **CONTROLS** menu and select the **SERIAL PORT**,

The SMV / SMA is now connected to the computer (if not, verify the DB9 serial connection and the selected serial port)

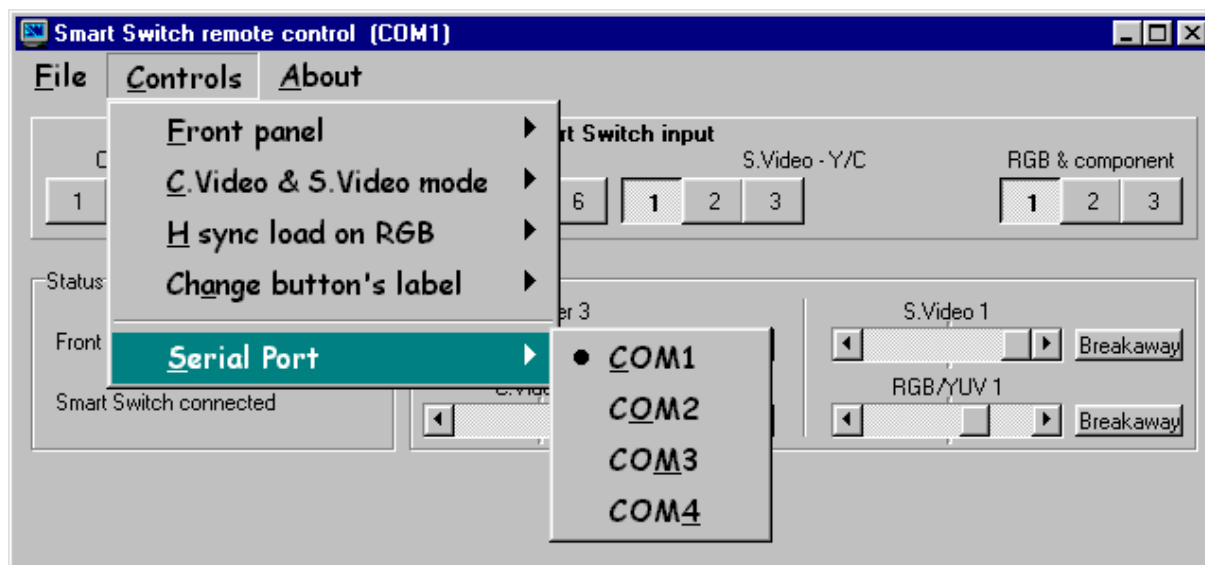
NOTE : Please see the "CONTROL PANEL SCREENS" in the following section.

12) REMOTE CONTROL RS 232 (continued)

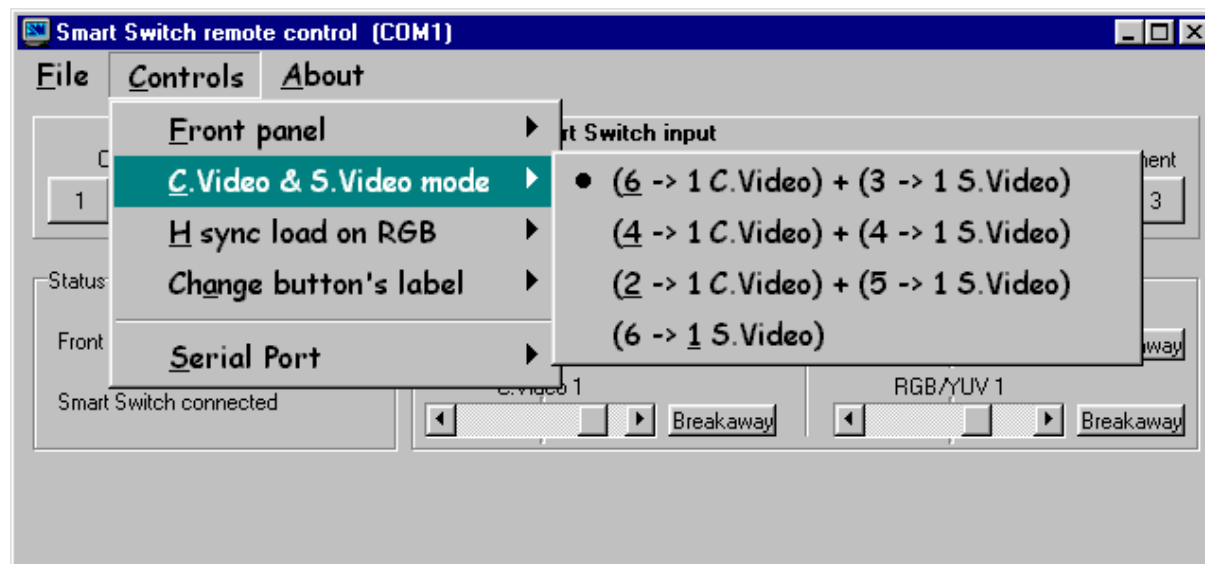
12-4) CONTROL PANEL SCREENS

- SMV 415 ALONE OR SMV 415 LINKED TO THE SMA 415

- Select the SERIAL PORT in the CONTROLS menu



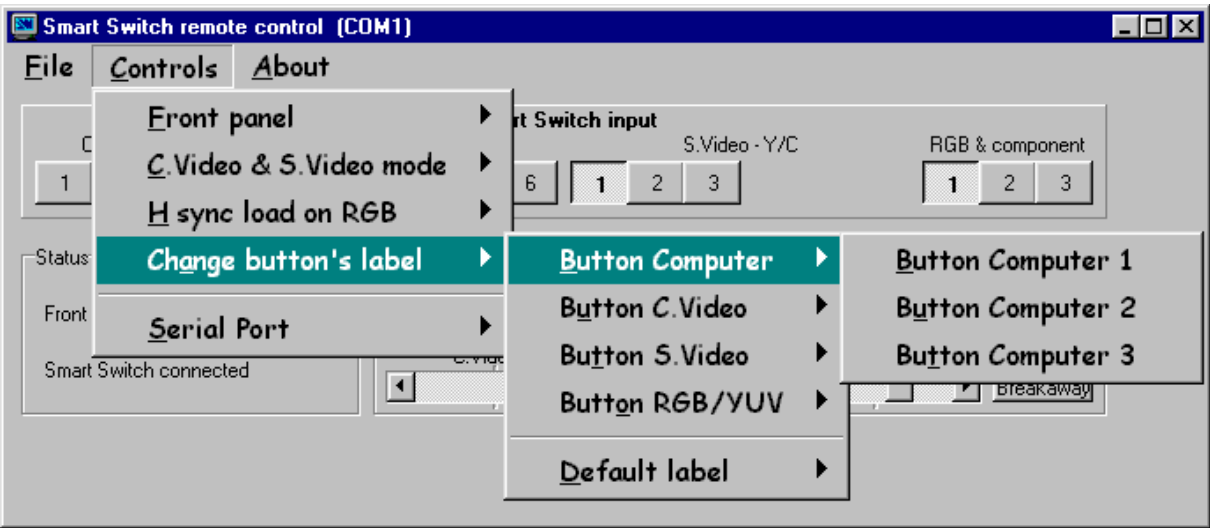
- Choose the C.VIDEO/S.VIDEO mode; the quantity of C.VIDEO and S.VIDEO inputs that you need depending on your application



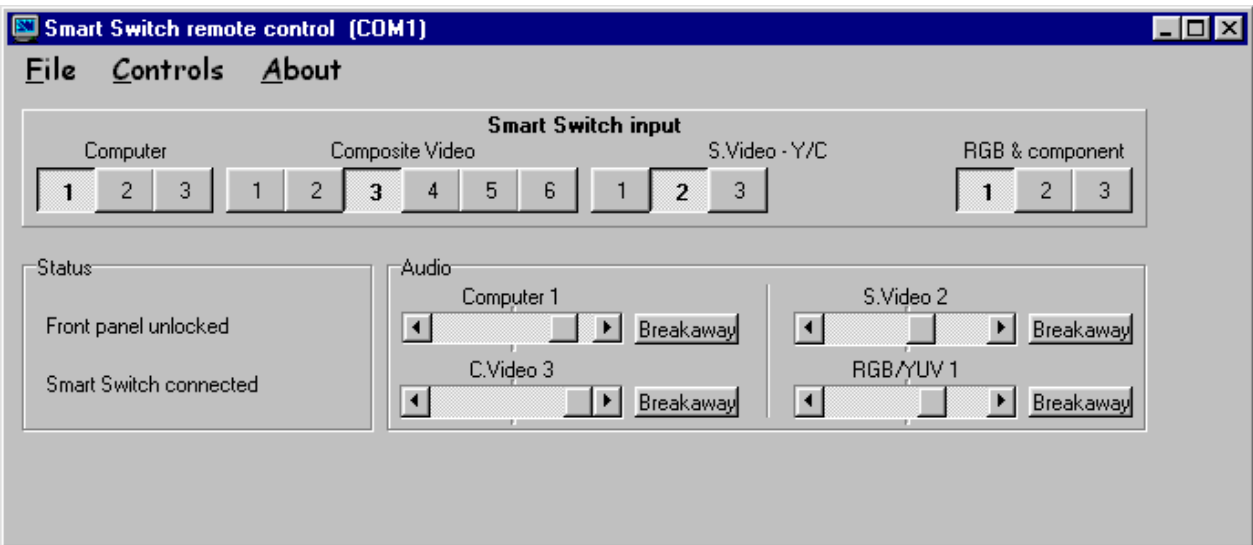
12) REMOTE CONTROL RS 232 (continued)

12-4) CONTROL PANEL SCREENS (continued)

- If you want to change the label of each input (example PC1, PC2, VCR1, VCR2,CAM1, CAM 2,)



- To select an input click directly on its corresponding button.
NOTE : You can select one input for each group.

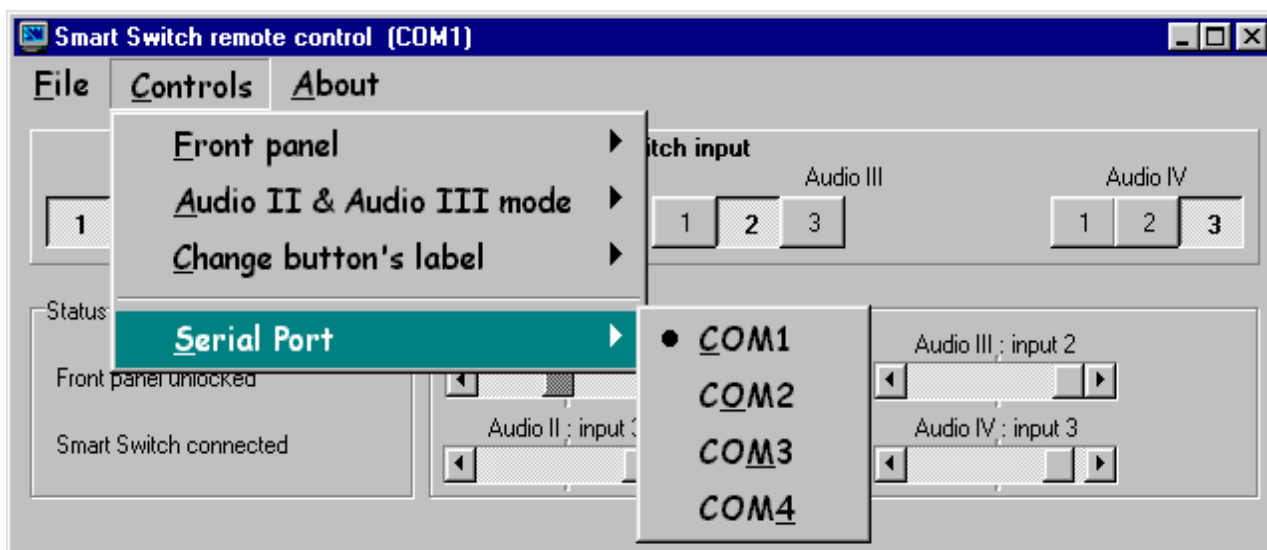


12) REMOTE CONTROL RS 232 (continued)

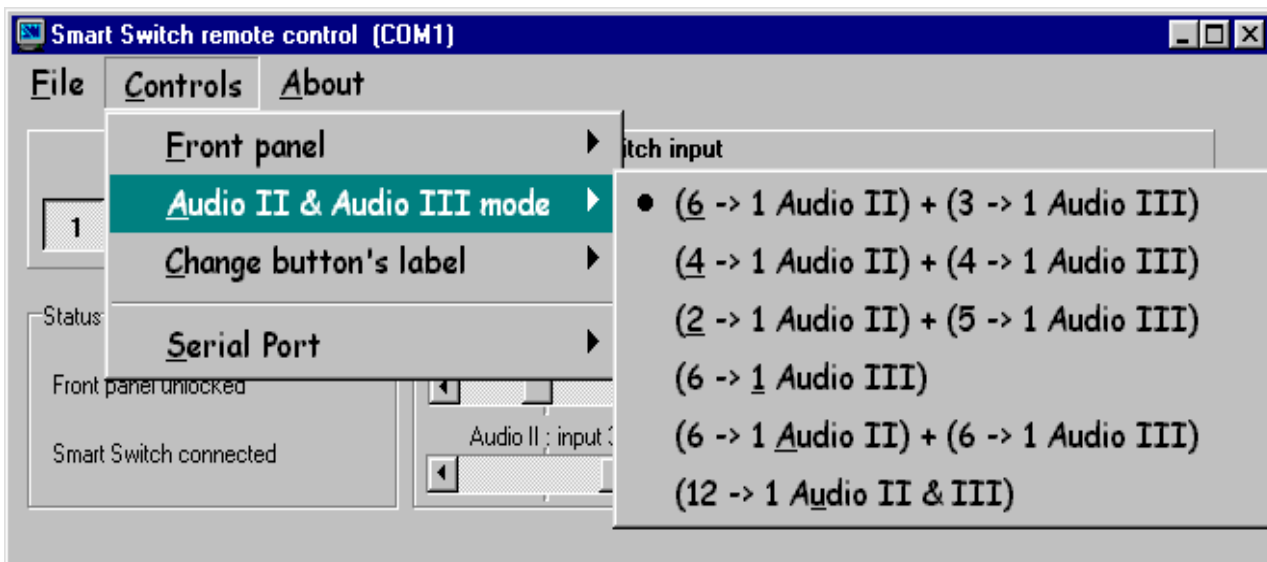
12-4) CONTROL PANEL SCREENS (continued)

- SMA 415 ALONE

- Select the SERIAL PORT in the CONTROLS menu



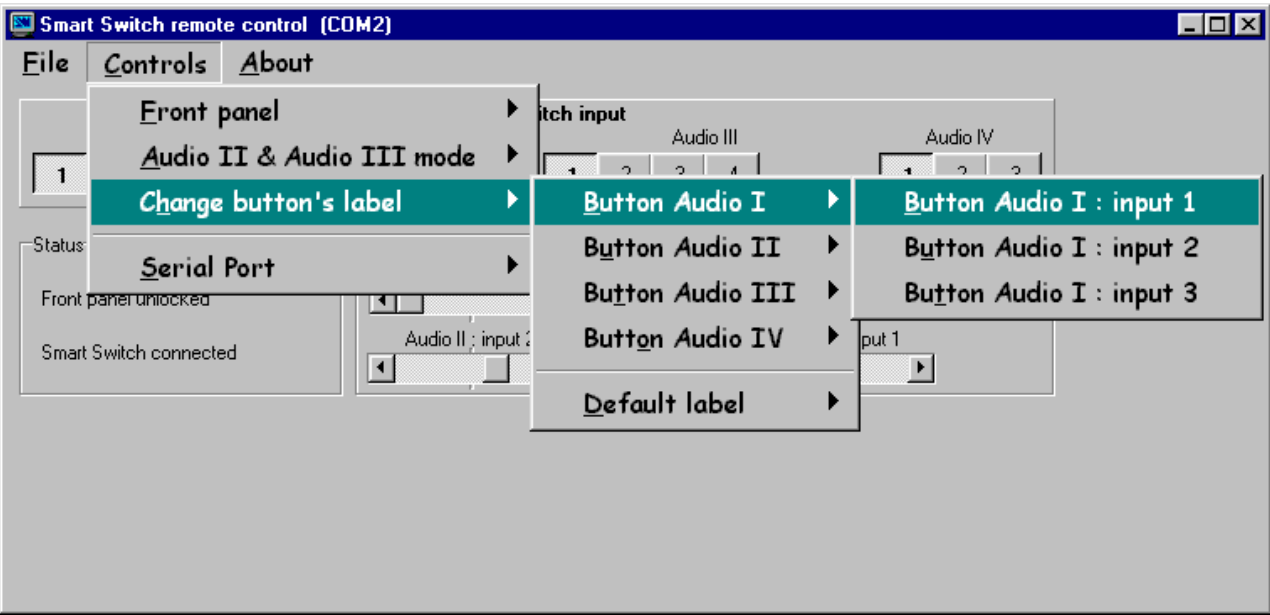
- Choose the AUDIO II / AUDIO III mode; the quantity of AUDIO II / AUDIO III inputs that you need depending on your application



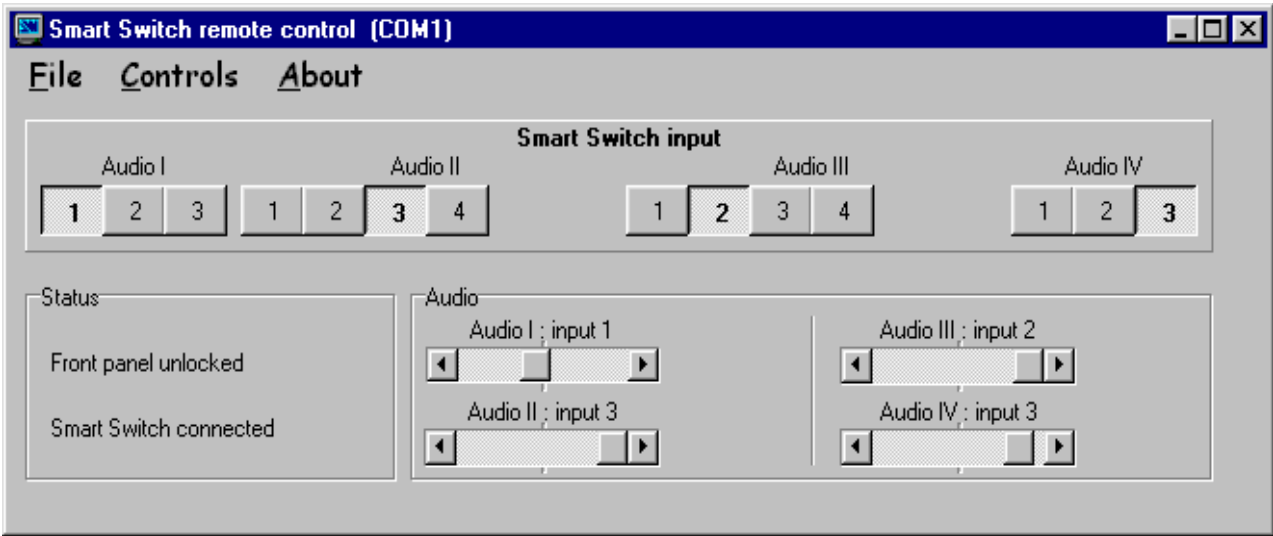
12) REMOTE CONTROL RS 232 (continued)

12-4) CONTROL PANEL SCREENS (Continued)

- If you want to change the label of each input (example MIC 1, TAPE 2, TUNER 1, CAM3,)



- To select an input click directly on its corresponding button.
Note : You can select one input for each group.



12) REMOTE CONTROL RS 232 (continued)

12-5) HOST / SMV 415 & SMA 415 COMMUNICATION

If you need to use your own Control Software program with a PC or WORKSTATION by a RS-232 port. The SMV 415 & SMA 415 allow to communicate by simple transmit and receive ASCII codes.

The SMV 415 & SMA 415 treat any character that they receive on the RS-232 as a possible command but accept only legal commands.

There are no codes to say that a command is coming, or that a command has ended.

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).

Simple commands can come from a PC or any other controlling device.

When the SMV 415 or the SMA 415 receives a valid command, it will execute the command and send a response back to the host device.

If the command is invalid, an error response will be returned to the host.

All responses to the host end with a carriage return and a line feed (CR / LF) signaling the end of the response character string.

- PROTOCOL : Simple character

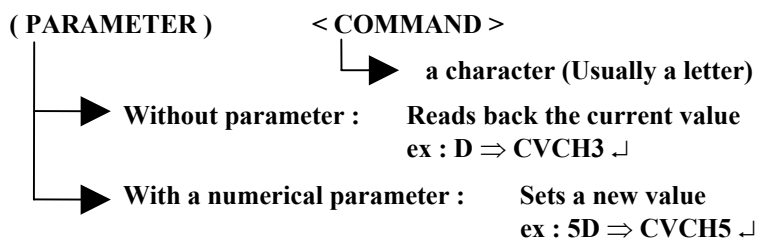
- CONTROL STRUCTURE

Controls are usually composed of a numerical value followed by the letter of the command.

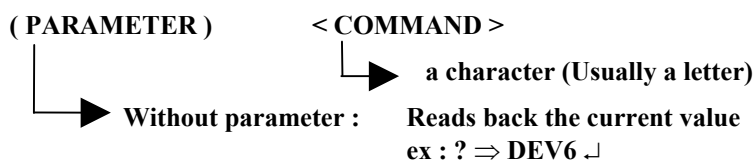
A letter used without a numerical value returns the current setting of the command.

Please see "COMMANDS AND RESPONSES TABLE".

- COMMANDS : SMV 415 : m, D, E, F, G, J, Z
 SMA 415 : e, [, \,], ^, ;, <, =, >, d



- COMMANDS (Read only : STATUS) : SMV 415 : ?, k
 SMA 415 : ?, :



12) REMOTE CONTROL RS 232 (continued)

12-5). HOST / SMART SWITCH COMMUNICATION (continued)

• COMMANDS AND RESPONSES TABLE

The following table resumes the commands which are recognized as valid and the responses that will be returned to the host (on the RS-232 port). Error response formats and possible error types are shown at the bottom of this table.

COMMAND ASCII	RESPONSE TO HOST	COMMAND DESCRIPTION	VALUE		EXAMPLE		
			MIN	MAX	COMMAND	RESPONSE	ACTION EXPLANATION
<u>INPUT CONTROLS OF THE SMV 415</u>							
m	VMODE	C.VIDEO & S.VIDEO MODE SELECTION	0	3	1m	VMODE1	SELECTS MODE B
D	CVCH	C.VIDEO SELECTION	0	6	3D	CVCH3	SELECTS C.VIDEO 3
E	SVCH	S.VIDEO SELECTION	0	6	6	SVCH6	SELECTS S.VIDEO 6
F	YUVCH	YUV / RGBS SELECTION	0	3	F	YUVCH1	READS THE SELECTION OF THE RGB / YUV INPUTS
G	COMPCH	COMPUTER SELECTION	0	3	2G	COMPCH2	SELECTS COMPUTER 2
J	SLOAD	75 Ω LOAD ON YUV SYNC. INPUTS	0	7	5J	SLOAD5	75 Ω ON SYNC. 1 AND SYNC. 3
Z	VCMD	FRONT PANEL LOCKING	0	1	1Z	VCMD1	LOCKS THE FRONT PANEL
<u>INPUT STATUS OF THE SMV 415 (READ ONLY)</u>							
?	DEV	DEVICE TYPE	0	65535	?	DEV6	SMV 415 DEVICE
k	v_	SMV 415 FIRMWARE VERSION			k	v_13316	READS THE SMV 415 FIRMWARE VERSION
<u>INPUT CONTROLS OF THE SMA 415</u>							
e	AMODE	AUDIO II & AUDIO III MODE SELECTION	0	5	0e	AMODE0	SELECTS MODE A
[	ACVCH	AUDIO II SELECTION	0	12	2[	ACVCH2	SELECTS INPUT # 2 OF THE AUDIO II GROUP
\	ASVCH	AUDIO III SELECTION	0	6	1\	ASVCH1	SELECTS INPUT # 1 OF THE AUDIO III GROUP
]	AYRCH	AUDIO IV SELECTION	0	3	3]	AYRCH3	SELECTS INPUT # 3 OF THE AUDIO IV GROUP
^	APCCH	AUDIO I SELECTION	0	3	1^	APCCH1	SELECTS INPUT # 1 OF THE AUDIO I GROUP
;	ACVLV	AUDIO LEVEL FOR THE SELECTED INPUT IN THE AUDIO II GROUP	0	255	200;	ACVLV200	SETS THE AUDIO LEVEL OF THE AUDIO II SELECTED INPUT TO 200
<	ASVLV	AUDIO LEVEL FOR THE SELECTED INPUT IN THE AUDIO III GROUP	0	255	<	ASVLV50	READS THE AUDIO LEVEL OF THE AUDIO III SELECTED INPUT
=	AYRLV	AUDIO LEVEL FOR THE SELECTED INPUT IN THE AUDIO IV GROUP	0	255	180=	AYRLV180	SETS THE AUDIO LEVEL OF THE AUDIO IV SELECTED INPUT TO 180
>	APCLV	AUDIO LEVEL FOR THE SELECTED INPUT IN THE AUDIO I GROUP	0	255	150>	APCLV150	SETS THE AUDIO LEVEL OF THE AUDIO I SELECTED INPUT TO 150
d	ACMD	FRONT PANEL LOCKING	0	1	1d	ACMD1	LOCKS THE FRONT PANEL
<u>INPUT STATUS OF THE SMA 415 (READ ONLY)</u>							
?	DEV	DEVICE TYPE	0	65355	?	DEV7	SMA 415 DEVICE
:	a_	SMA 415 FIRWARE VERSION			:	a_15236	READS THE SMA 415 FIRWARE VERSION

12) REMOTE CONTROL RS 232 (continued)

12-5) HOST / SMART SWITCH COMMUNICATION (continued)

• ERROR RESPONSES

When the SMART SWITCH VIDEO™ or the SMART SWITCH AUDIO™ receives from the host an invalid command or value, it returns an error response (*See below*).

E10 ↵ Invalid command (See "COMMAND" column)

E13 ↵ Invalid value (See "VALUE" column)

• COMMANDS DESCRIPTION

Values sent or received are in decimal.

Depending on the command letter, the value can be used as a linear control (ex : 255< to set the level of the AUDIO III's selected Input to the maximum) or as a set of bits (ex : J command with multiple controls).

In this case, the value must be converted in binary base to understand every bit action.

EXAMPLE Host receives message SLOAD5

Decimal value 5 = Binary value 101

$5 = (4 \times 1) + (2 \times 0) + (1 \times 1)$

bit 0 = 1 means 75 Ω on Sync. 1

bit 1 = 0 means no load on Sync. 2

bit 2 = 1 means 75 Ω on Sync. 1

① COMMANDS FOR THE SMV 415

- **m command** is used to select the C.VIDEO & S.VIDEO MODE

DECIMAL VALUE	SELECTION
0	MODE A (6 C.VIDEO + 3 S.VIDEO)
1	MODE B (4 C.VIDEO + 4 S.VIDEO)
2	MODE C (2 C.VIDEO + 5 S.VIDEO)
3	MODE AB (6 S.VIDEO)

- **D command** is used to select the C.VIDEO channel.

DECIMAL VALUE	SELECTION
0	NO CHANNEL SELECTED (OUTPUT = BLACK)
1	C.VIDEO 1
2	C.VIDEO 2
3	C.VIDEO 3
4	C.VIDEO 4
5	C.VIDEO 5
6	C.VIDEO 6

- **E command** is used to select the S.VIDEO channel.

DECIMAL VALUE	SELECTION
0	NO CHANNEL SELECTED (OUTPUT = BLACK)
1	S.VIDEO 1
2	S.VIDEO 2
3	S.VIDEO 3
4	S.VIDEO 4
5	S.VIDEO 5
6	S.VIDEO 6

12) REMOTE CONTROL RS 232 (continued)

12-5) HOST / SMART SWITCH COMMUNICATION (continued)

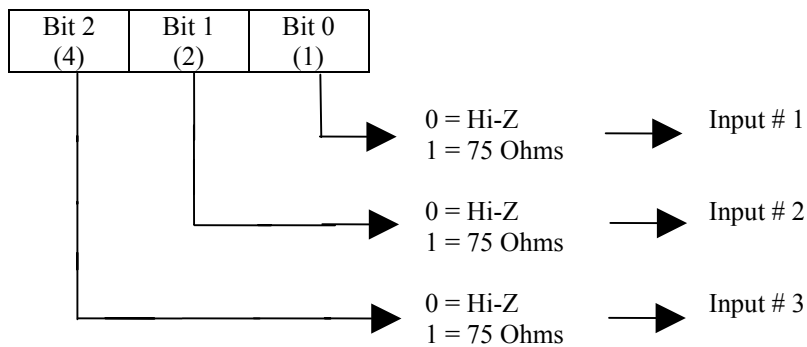
- **F command** is used to select the RGBS / YUV channel.

DECIMAL VALUE	SELECTION
0	NO CHANNEL SELECTED (OUTPUT = BLACK)
1	RGBS / YUV 1
2	RGBS / YUV 2
3	RGBS / YUV 3

- **G command** is used to select the COMPUTER channel.

DECIMAL VALUE	SELECTION
0	NO CHANNEL SELECTED (OUTPUT = BLACK)
1	COMPUTER 1
2	COMPUTER 2
3	COMPUTER 3

- **J command** is used to load 75 Ω or Hi-Z the Input Sync. of the RGB group ("SYNC" BNC)



- **Z command** is used to lock the FRONT PANEL.

DECIMAL VALUE	SELECTION
0	FRONT PANEL UNLOCKED
1	FRONT PANEL LOCKED

- **?, k commands** are used to retrieve the status of the internal firmware version of the device.

12) REMOTE CONTROL RS 232 (continued)

12-5) HOST / SMART SWITCH COMMUNICATION (continued)

② COMMANDS FOR THE SMA 415

- **e command** is used to select the AUDIO II & AUDIO III MODE.

DECIMAL VALUE	SELECTION
0	MODE A (6 AUDIO II + 3 AUDIO III)
1	MODE B (4 AUDIO II + 4 AUDIO III)
2	MODE C (2 AUDIO II + 5 AUDIO III)
3	MODE AB (6 AUDIO III)
4	MODE AC (6 AUDIO II + 6 AUDIO III)
5	MODE BC (12 AUDIO (II + III)) *

- **[command** is used to select the INPUT CHANNEL OF AUDIO II.

DECIMAL VALUE	SELECTION
0	NO CHANNEL SELECTED
1	INPUT # 1 OF AUDIO II
2	INPUT # 2 OF AUDIO II
3	INPUT # 3 OF AUDIO II
4	INPUT # 4 OF AUDIO II
5	INPUT # 5 OF AUDIO II
6	INPUT # 6 OF AUDIO II
7	INPUT # 1 OF AUDIO III *
8	INPUT # 2 OF AUDIO III *
9	INPUT # 3 OF AUDIO III *
10	INPUT # 4 OF AUDIO III *
11	INPUT # 5 OF AUDIO III *
12	INPUT # 6 OF AUDIO III *

* : The Audio III Group is active as an extension of the Audio II Group only when the Mode BC is active.

- **\ command** is used to select the INPUT CHANNEL OF AUDIO III. **

DECIMAL VALUE	SELECTION
0	NO CHANNEL SELECTED
1	INPUT # 1 OF AUDIO III
2	INPUT # 2 OF AUDIO III
3	INPUT # 3 OF AUDIO III
4	INPUT # 4 OF AUDIO III
5	INPUT # 5 OF AUDIO III
6	INPUT # 6 OF AUDIO III

** : The \ command is inactive in BC MODE.

12) REMOTE CONTROL RS 232 (continued)

12-5) HOST / SMART SWITCH COMMUNICATION (continued)

- **| command** is used to select the INPUT CHANNEL OF AUDIO IV.

DECIMAL VALUE	SELECTION
0	NO CHANNEL SELECTED
1	INPUT # 1 OF AUDIO IV
2	INPUT # 2 OF AUDIO IV
3	INPUT # 3 OF AUDIO IV

- **^ command** is used to select the INPUT CHANNEL OF AUDIO I.

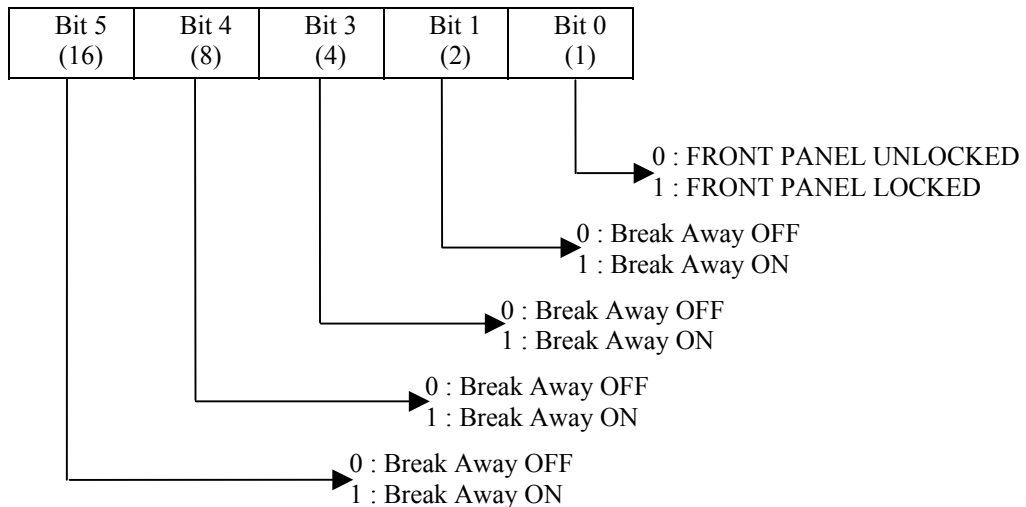
DECIMAL VALUE	SELECTION
0	NO CHANNEL SELECTED
1	INPUT # 1 OF AUDIO I
2	INPUT # 2 OF AUDIO I
3	INPUT # 3 OF AUDIO I

- **; and < and = and > commands** are used to control the AUDIO LEVEL of each inputs.

0 → minimum

255 → maximum

- **d command** is used to lock the FRONT PANEL.



- **?, : commands** are used to retrieve the status of the internal firmware version of the device.

12) REMOTE CONTROL RS 232 (continued)**12-5) HOST / SMART SWITCH COMMUNICATION (continued)****ASCII / HEX / DEC TABLE**

ASC II	HEX	DEC	ASC II	HEX	DEC	ASC II	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
?	3 F	63	—	5 F	95	DEL	7 F	127

WARRANTY

Analog Way warrants the product against any defects in materials and workmanship for a period of three years from the date of purchase (back to the factory).

In the event of any malfunction during the warranty period, Analog Way will, at its option, repair or replace the defective units, including free materials and labor.

This warranty does not apply if the product has been :

- improperly installed or abused,
- handled with improper care,
- used or stocked in abnormal conditions,
- modified, opened,
- damaged by fire, war, or Natural disasters (Acts of God).

In no way shall Analog Way be responsible for direct or indirect loss of profit or consequential damages resulting from any defect in this product.

In case of any problem, get the serial number of the unit, a description of the problem, and then call your authorized dealer.