ANALOG WAY®

SMART CUT 2™
(S-CUT 2)

User's Manual

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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 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.

DEUTSCH

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 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.

ESPAÑOL

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.

ENGLISH

SMART CUT 2™

Chapter 1 : INTRODUCTION

1-1. SUPPLIED EQUIPMENT

- **1 SMART CUT 2™ (S-CUT 2).**
- 1 set of 19" Brackets.
- 1 AC Power supply cord.
- 1 VGA cable (HD15 Male / Male).
- 1 S.VIDEO (Y/C) cable (mini DIN 4/mini DIN 4).
- 1 BNC (x5) to HD 15 Female cable.
- 1 set of 6 MCO (5-pins) female connectors (for audio connection).
- 1 user's Manual.

Supplied equipment with the optional RS-232 interface (SCUT 2-M).

- 1 Remote Control Software (3.5" Disk).

1-2. GENERAL INFORMATION

The SMART CUT 2™ integrates three functions for more convenient and easy presentations: SCALER, AUDIO & VIDEO Seamless Switcher ®.

- **It is a 5 VIDEO** (2 x Composite, 2 x S.VIDEO, 1 x Component or RGB/S) and **2 COMPUTER** (up to 1280 x 1024) inputs **SEAMLESS SWITCHER** with a built'in **SCALER**.

Each **VIDEO** source is scaled and genlocked to match the resolution of your COMPUTER from 640 x 480 up to 1280 x 1024. The SMART CUT 2™ offers a clean and fast switching with no glitch between :

- any VIDEO and 1 COMPUTER source (in seamless mode),
- VIDEO sources (with a fast "Black Cut"),
- COMPUTER sources (with a fast "Black cut").

All video inputs are scaled to the selected computer input. This allows a "One-Time" adjustment for your display resolution.

- The SMART CUT 2™ is also a state of the art improved **SCALER / LINE MULTIPLIER** which significantly increases the resolution and brightness of the TV image. The new High quality decoder includes an Advanced Comb Filter, a high robust sync. detection and an improved adaptive de-interlacing scheme (for motion artifacts). It gives you a clean "film like" native display non-interlaced image.
- **Each of the 7 inputs** is fitted with an **STEREO AUDIO** line. It allows the audio to follow your video image or to break away from your video. The level of any audio line is separately adjustable and a Master Volume Control is dedicated to trim the overall sound level.

1-3. SMART CUT 2™ REFERENCES

REFERENCES	DESIGNATIONS
S-CUT 2	SMART CUT 2™ without option
S-CUT 2-M	SMART CUT 2™ with optional RS-232 interface.
S-CUT 2-DILA	SMART CUT 2™ with optional D-ILA output format.
S-CUT 2-M-DILA	SMART CUT 2™ with optional RS-232 interface and optional D-ILA output format.
OPT-ROOM-1	Optional ROOM control output for SMART CUT 2™.

1-4. SMART CUT 2™ OPTIONAL ACCESSORIES REFERENCES

REFERENCES	DESIGNATIONS
RK20	Remote KEYPAD for S-CUT 2-M.
SMV415	SMART SWITCH VIDEO™ : allows to extend up to 18 the video inputs of your S-CUT-M.
SMA415	SMART SWITCH AUDIO™ : allows to extend up to 18 the audio inputs of your S-CUT-M.
SMB413	SMART BOOSTER™ (multiway universal booster).

Chapter 2 : INSTALLATION

IMPORTANT: **Please read all the safety instructions (page 2 to 4) before starting.**

- *Table Top Mounting:* The SMART CUT 2™ can be used directly on a table: the unit is equipped with 4 plastic feet.

- *Rack Mounting:* The SMART CUT 2™ is compatible with a 19" enclosure . Please follow the instructions below to install the SMART CUT 2™ into a 19" rack :

① **Screw the supplied 19" brackets to the sides of the SMART CUT 2™ .**

② **Attach the SMART CUT 2™ to the rack by using 4 screws in the front panel holes (screws not included).**

IMPORTANT:

- **The openings in the top cover and in the rear panel are for cooling. Do not cover these openings.**
- **Be sure that no weight is added to the SMART CUT 2™ in excess of 2 kg (4.4 lbs.).**
- **The maximum ambient operating temperature must not exceed 40°C (104°F).**
- **The rack and all mounted equipment in it must be reliably grounded to national and local electrical codes.**

Chapter 3 : TECHNICAL DESCRIPTION

3-1. FRONT PANEL

COMPUTER INPUT 2: COMPUTER #2 (PC, MAC, WORKSTATION) input on HD15 female connector.
AUDIO-2 IN L+R: COMPUTER #2 audio stereo input on 3.5 JACK connector.

COMPUTER 1 / COMPUTER 2: COMPUTER 1 or COMPUTER 2 input selection.
C.VIDEO 1 / C.VIDEO 2: C.VIDEO 1 or C.VIDEO 2 input selection.
S.VIDEO 1 / S.VIDEO 2: S.VIDEO 1 or S.VIDEO 2 input selection.
RGB & COMPONENT: RGB and COMPONENT (YUV) input selection.

BLACK: BLACK selection.
AUDIO MUTE: Allows to turn OFF the audio output.

CUT: Allows to switch between the input sources.

◂ ▸ CONTROL Allows to select items in the LCD menu.
EXIT MENU: Allows to exit from an LCD menu.
ENTER: Allows to validate a selected item.

ON / OFF: AC power switch (O = OFF, I = ON).

3-2. REAR PANEL

POWER INPUT: Standard IEC connector (100-250VAC, 1A, 50-60Hz automatic).

REMOTE RS-232: Standard remote control (RS-232) on DB9 female connector.

COMPUTER INPUT 1: COMPUTER #1 (PC, MAC, WORKSTATION) input on HD15 female connector.

AUDIO-1 IN L+R: COMPUTER #1 audio stereo input on 3.5 JACK connector.

VIDEO INPUTS
C.V 1: Composite video #1 input on BNC connector.
C.V 2: Composite video #2 input on BNC connector.
S.VIDEO 1: S.VIDEO #1 input on 4-pins mini DIN connector.
S.VIDEO 2: S.VIDEO #2 input on 2 x BNC connectors.
RGB SYNC / R-Y, Y, B-Y: RGB/S or YUV (COMPONENT) video input on 3 or 4 BNC connectors.

AUDIO INPUTS
CV1: Audio stereo input unbalanced on 3.5 JACK connector.
Audio stereo input balanced/unbalanced on 5-pins MCO female connector.
CV2: Audio stereo input balanced/unbalanced on 5-pins MCO female connector.
SV1: Audio stereo input unbalanced on 3.5 JACK connector.
Audio stereo input balanced/unbalanced on 5-pins MCO female connector.
SV2: Audio stereo input balanced/unbalanced on 5-pins MCO female connector.
RGB / R-Y, Y, B-Y: Audio stereo input balanced/unbalanced on 5-pins MCO female connector.

AUDIO OUTPUTS Audio stereo output unbalanced on 2 x RCA connector.
Audio stereo output balanced/unbalanced on 5-pins MCO female connector.

DISPLAY OUTPUT DATA output (RGBHV or RGB/S) on 4 or 5 BNC connectors.

Chapter 4 : STARTING

4-1. CONNECTIONS

① Turn OFF all of your equipment before connecting.

② Connect the AC Power supply cord to the SMART CUT 2™ and to an AC power outlet.

③ Connect your video sources (VCR, DVD, camera, laser disc, ...) to the C.V1, C.V2, S.VIDEO 1, S.VIDEO 2 and RGB/S & COMPONENT (R-Y, Y, B-Y) inputs.

④ Connect your main computer source to the "COMPUTER INPUT 1" and your second computer source to "COMPUTER INPUT 2" (front panel).

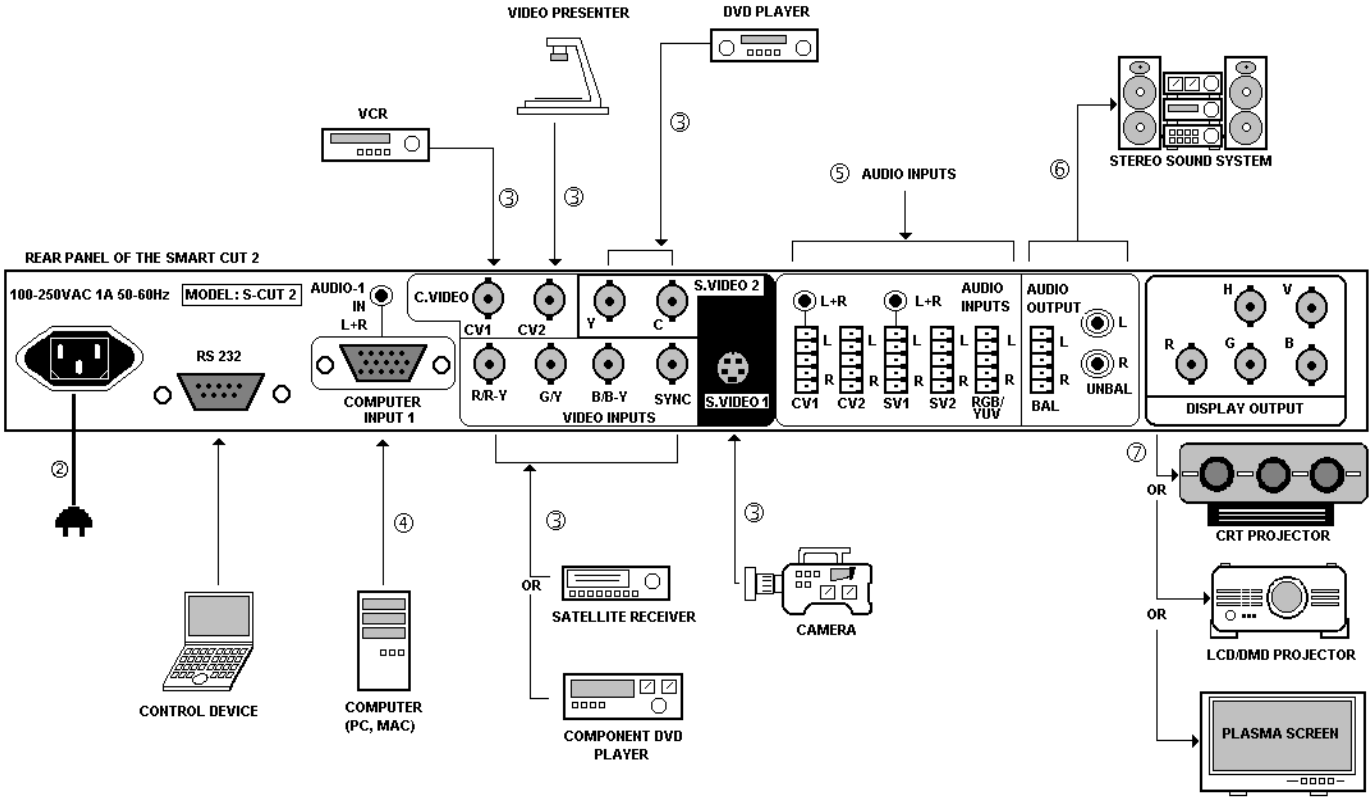
⑤ Connect all of your audio sources to the corresponding AUDIO INPUTS.

⑥ Connect the audio output to your sound system.

⑦ Connect the "DISPLAY OUTPUT" of the SMART CUT 2™ to the DATA INPUT of your display device (data projector, plasma screen,...).

⑧ Turn ON all of your input sources, the SMART CUT 2™ (front panel switch) and then your display device.

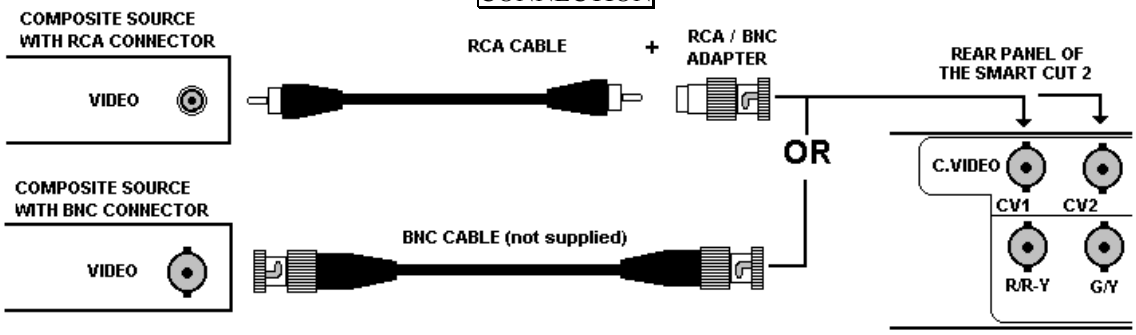
NOTE: For switching operation please see Chapter 5 : OPERATING MODE



4-2. COMPOSITE VIDEO INPUTS (C.V1 & C.V2)

The Composite Video signal, usually called COMPOSITE or VIDEO, is available on most video equipment (VCR, DVD, CAMERA…), but it 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 an RCA or BNC connector.

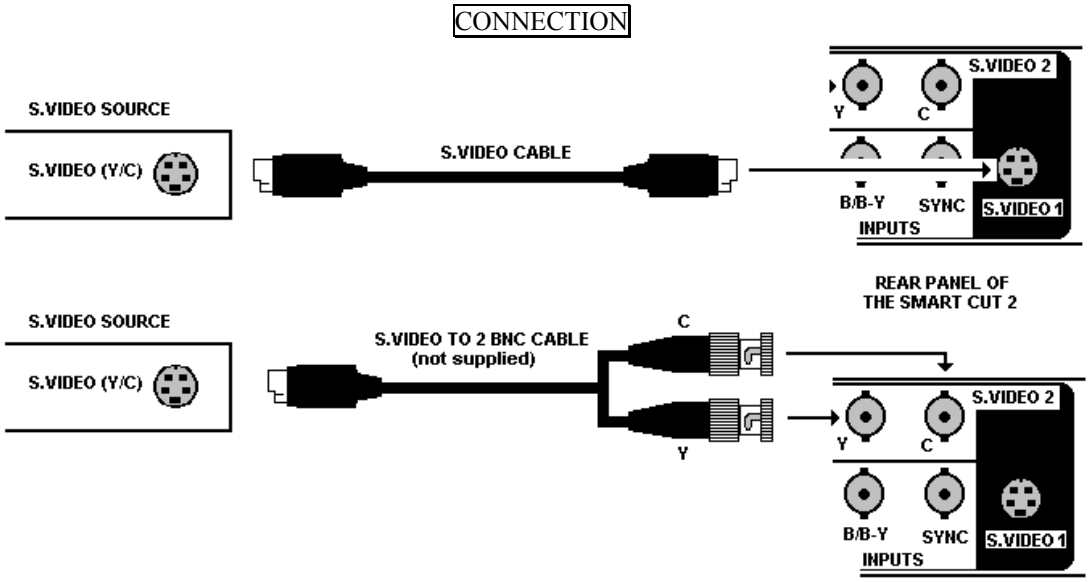
CONNECTION



4-3. S.VIDEO INPUTS

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-pins Mini-DIN connector also called Oshiden™ connector. It can also sometimes be on 2 BNC connectors.

CONNECTION

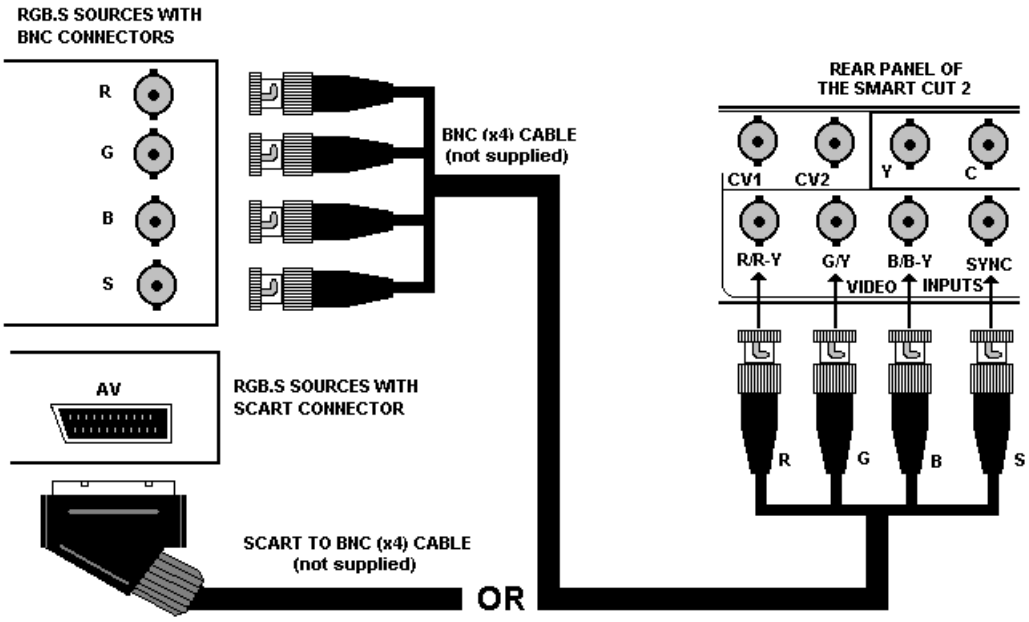


4-4. RGB/S & COMPONENT INPUT

① RGB/S VIDEO SIGNAL

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 it has a better picture quality than COMPOSITE or S.VIDEO signals. The RGB/S connectors are usually BNC connectors for Broadcasting equipment, and SCART connectors for DVD players and Satellite Receivers.

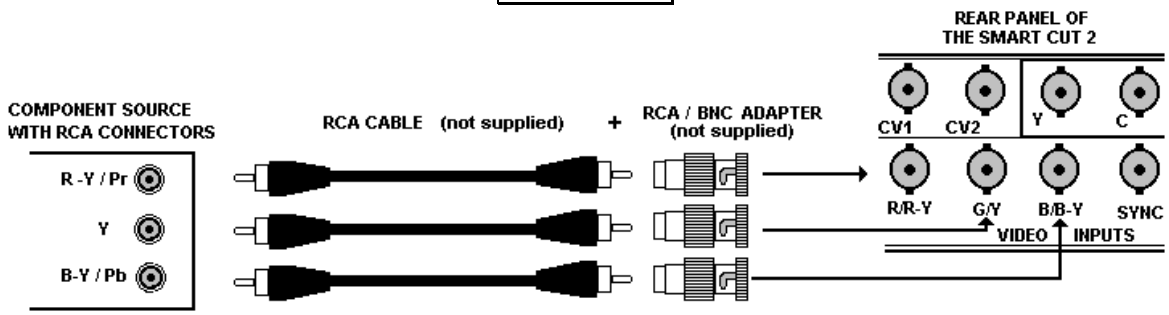
CONNECTION



② COMPONENT VIDEO SIGNAL (Y, R-Y, B-Y)

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 with 3 coaxial cables, and also has a better picture quality than COMPOSITE and S.VIDEO signals. The COMPONENT connectors are usually RCA (x3), or BNC (x3) connectors.

CONNECTION

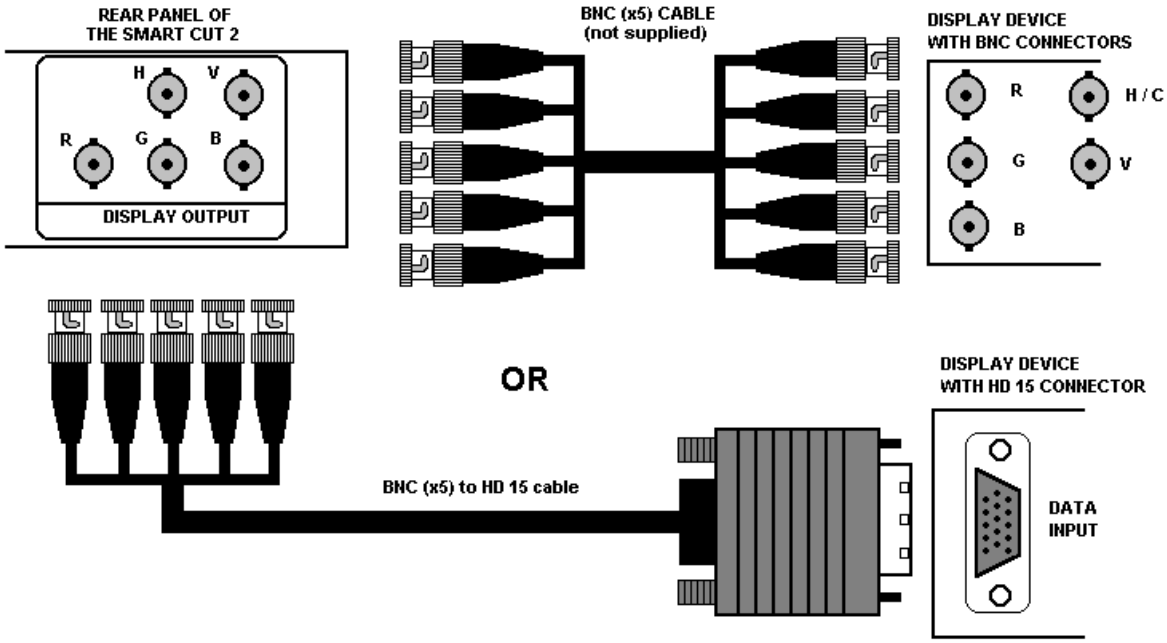


4-5. COMPUTER INPUTS

The SMART CUT 2™ is provided with two COMPUTER inputs: COMPUTER 1 (in rear panel) and COMPUTER 2 (in front panel). These inputs are used to pass-through any COMPUTER signals. In SEAMLESS mode, the signal connected to one of the 2 inputs is used as the "reference". Then each video input will be scale to the same referenced format before to be displayed onto the output.

4-6. DISPLAY OUTPUT

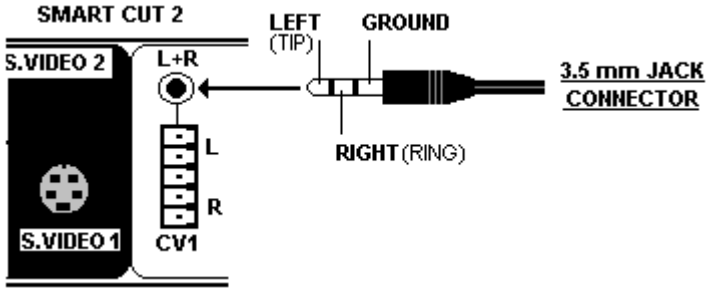
The SMART CUT 2™ is equipped with a 5 BNC connectors output. If your display device is equipped with an HD 15 connector : use the supplied BNC to HD 15 cable (See connection schematic below).
The SMART CUT 2™ can provide an RGBHV (H & V Separate Sync.) or an RGB/S (Composite Sync.) output signal. If your display device only accepts Composite Sync., connect the C.SYNC. cable to the H BNC of the SMART CUT 2™ and select COMP (Composite Sync.) in the LCD menu # 2-1.



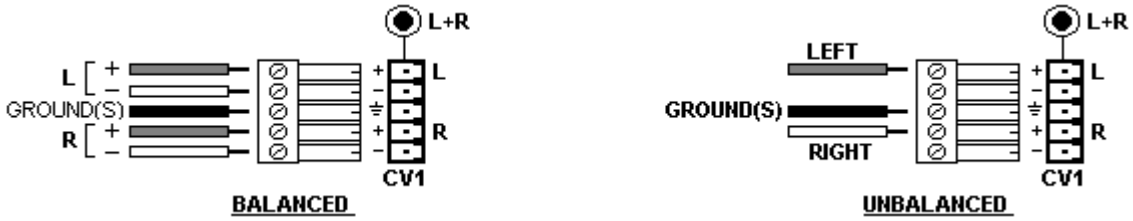
4-7. AUDIO INPUTS

Each audio inputs have a 3.5 mm jack connector and/or a 5-pins MCO connector.

- **3.5 mm jack connector**
  The COMPUTER 1, COMPUTER 2, C.VIDEO 1 and S.VIDEO 1 inputs are equipped with this audio connector. This connector allows to connect only UNBALANCED audio source. Connect your UNBALANCED audio sources as follow:



- **5-pins MCO female connector**
  The C.VIDEO 1, C.VIDEO 2, S.VIDEO 1, S.VIDEO 2, and RGB/YUV inputs are equipped with this connector. This connector allows to connect BALANCED or UNBALANCED audio inputs. Connect your audio sources as follow:



4-8. AUDIO OUTPUTS

The audio output is provided with a RCA(x2) connectors and a 5-pins MCO female connector. The RCA connectors allow to connect only UNBALANCED audio systems, and the 5-pins MCO female connector allows to connect BALANCED or UNBALANCED audio systems.

Chapter 5 : OPERATING MODE

The SMART CUT 2™ can be used in three different synchronization modes.

- The **SEAMLESS MODE**, allows to switch seamlessly between the "referenced" COMPUTER input and the others video inputs. All the video inputs are scaled to the same format as the "referenced" COMPUTER format.
  NOTE: The switching between video and video, or between computer and computer, or between video and the "no referenced" computer, will be operate with a black transition.

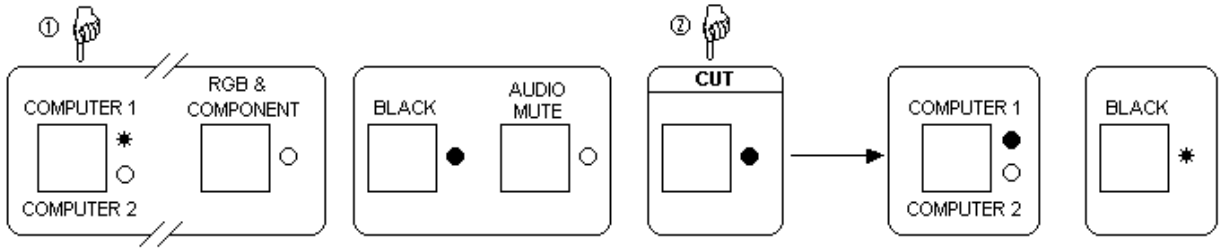
- The **SCALER MODE** allows to select an output format corresponding to your application. All video inputs are scaled to the selected format. The switching between all the inputs will be operate with a black transition.

- The **SCALER FOLLOW MODE** allows to synchronized the output frame rate onto the selected input frame rate (50 Hz or 59.94 Hz). This mode allows to improve the motion picture. The switching between all the inputs will be operate with a black transition.

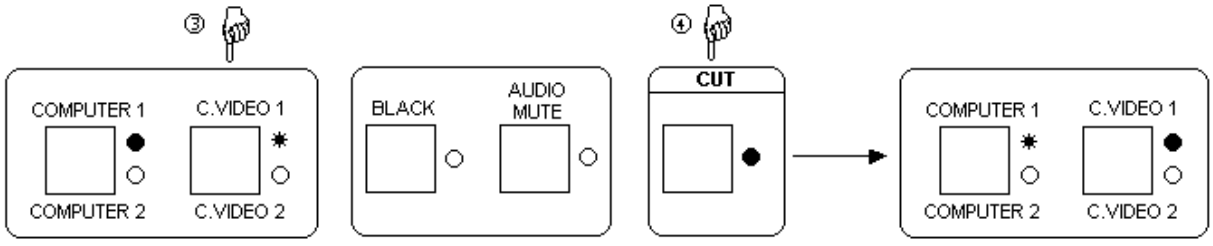
5-1. THE SEAMLESS MODE

- **SETTINGS**
  ① We recommend to reset the SMART CUT 2™ to all of its default values, with the LCD menu # 5-6, before proceeding.
  ② Select the output Sync. type which corresponds to your display device (LCD menu # 2-1).
  ③ Select the "referenced" COMPUTER with the LCD MENU #2-2 (reference sync).
  NOTE: Select reference sync = COMPUTER 1, if you want to do SEAMLESS transition between the COMPUTER 1 input and all the others video inputs.

- **SEAMLESS SWITCHING OPERATION**
  ① Pre-select the COMPUTER 1 input with the front panel selection key (LED is blinking).
  NOTE: If your referenced COMPUTER is COMPUTER 2, select COMPUTER 2 with the front panel selection key (press twice the selection key)
  ② Press the CUT KEY to display the COMPUTER 1 onto the OUTPUT (the COMPUTER 1 LED is ON).



  ③ Pre-select a video input (C.VIDEO 1, C.VIDEO 2, S.VIDEO 1, S.VIDEO 2, or RGB & COMPONENT) with the front panel selection keys (the corresponding LED is blinking).
  ④ Press the CUT key to display seamlessly the video onto the output.



NOTE: ● = LED ON ✸ = LED BLINKING ❍ = LED OFF

5-1. THE SEAMLESS MODE (continued)

- **DISPLAY DEVICE ADJUSTMENTS**
  ① Pre-select the referenced COMPUTER and display it onto the output.

  ② Adjust directly the display device itself, using its position and size control parameters.
  NOTE: If the 2 COMPUTER inputs are used you must adjust your display device for both COMPUTER.

- **IMAGE ADJUSTMENTS**

For each input source connected to the SMART CUT 2™, do the following adjustments:

① Adjust the position and size with the LCD menus (#3-1, #3-2, #3-3, #3-4).

② Do any other adjustments, if necessary, available with the LCD menu # 3 (color, brightness, image process…).

NOTE: For the RGB/YUV input, select the video type of the signal connected to this input (LCD menu # 1-3).

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

NOTE: To preset your image adjustments to the factory values, select the video input and then use the LCD menu # 3-12 (Preset).

- **AUDIO ADJUSTMENT**

① Adjust the master volume (LCD menu # 4-1).

② Set the Auto (follow) or "breakaway" audio mode (LCD menu # 4-3):
- AUTO = the audio switching follows automatically the video switching,
- If not AUTO, then you can lock the audio output on one video or computer audio input (LCD menu # 4-3).

③ Adjust for each audio input the audio level (LCD menu # 4-2).

5-2. THE SCALER MODE (NOT SEAMLESS)

- **SETTINGS**

① We recommend to reset the SMART CUT 2™ to all of its default values, with the LCD menu # 5-6, before proceeding.

② Select the output Sync. type which corresponds to your display device (LCD menu # 2-1).

③ Set **reference sync = no comput** with the LCD menu # 2-2.

④ Set **output rate = internal rate** with the LCD menu # 2-4.

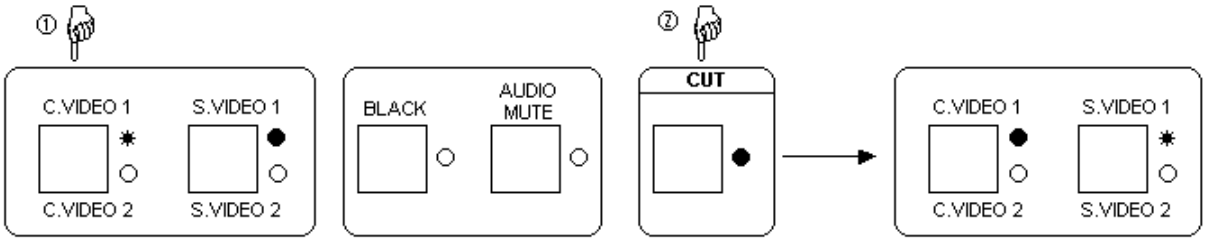
⑤ Select an output format with the LCD menu # 2-3.

NOTE: For fixed pixels display devices (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.

- **SWITCHING OPERATION (NOT SEAMLESS)**

① Pre-select a video input (for example C.VIDEO 1).

② Press the CUT key to display it onto the output. The switching operates with a black transition.



- **DISPLAY DEVICE ADJUSTMENTS**

① Pre-select a video input and display it onto the output.

② Adjust directly the display device itself, using its position and size control parameters.

- **IMAGE ADJUSTMENTS:** Identical as the SEAMLESS MODE, see chapter 5-1.

- **AUDIO ADJUSTMENT:** Identical as the SEAMLESS MODE, see chapter 5-1.

5-3. THE SCALER FOLLOW MODE

- **SETTINGS**
  ① We recommend to reset the SMART CUT 2™ to all of its default values, with the LCD menu # 5-6, before proceeding.

  ② Select the output Sync. type which corresponds to your display device (LCD menu # 2-1).

  ③ Set **reference sync = no comput** with the LCD menu # 2-2.

  ④ Set **output rate = video in rate** with the LCD menu # 2-4.

  ⑤ Select an output format with the LCD menu # 2-3.

  NOTE: For fixed pixels display devices (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.

- **SWITCHING OPERATION**: Identical as the SCALER MODE, see chapter 5-2.

- **DISPLAY DEVICE ADJUSTMENTS**
  ① Pre-select a video input and display it onto the output.

  ② Adjust directly the display device itself, using its position and size control parameters.

  NOTE: If you used video sources with different frame rate (i.e : PAL and NTSC), you should adjust your display device for the both sources.

- **IMAGE ADJUSTMENTS:** Identical as the SEAMLESS MODE, see chapter 5-1.

- **AUDIO ADJUSTMENT:** Identical as the SEAMLESS MODE, see chapter 5-1.

5-4. SYNCHRONIZATION MODE TABLE

MODES	THE SEAMLESS MODE	THE SCALER MODE	THE SCALER FOLLOW MODE
APPLICATIONS	Video and Computer Presentation.	Video presentation (without computer).	Video display (improved for motion picture in PAL / SECAM / NTSC).
SYNCHRONIZATION	Locked on the "referenced" Computer (Computer 1 or Computer 2).	Internal Sync. generated by the SMART CUT 2™.	Locked on the selected video input (50 Hz if PAL/SECAM, 59.94 Hz if NTSC).
LCD MENU	# 2-2 = COMPUTER X.	# 2-3 = NO COMPUT # 2-4 = INTERNAL RATE	# 2-3 = NO COMPUT. # 2-4 = VIDEO IN RATE.
TRANSITION MODE	• Seamless transition between the "referenced" computer and all the Video inputs. • Fast Cut to Black for other switching.	• All switching with a Fast Cut to Black.	• All switching with a Fast Cut to Black.
OUTPUT FORMATS	Identical to the format of the "referenced" Computer (Resolution: from 640 x 480 up to 1280 x 1024; Line frequency: from 31.5 kHz up to 64 kHz / 60Hz)	VGA at 60 Hz or 75 Hz PLASMA 42" at 60 Hz or 72 Hz SVGA at 60 Hz or 75 Hz MAC at 66 Hz or 75 Hz XGA2 at 60 Hz or 75 Hz PLASMA 50" at 56 Hz or 75 Hz SXGA at 60 Hz or 75 Hz D-ILA at 75 Hz (optional)	640 x 480 at 50 or 59.94 Hz 852 x 480 at 50 or 59.94 Hz 800 x 600 at 50 or 59.94 Hz 832 x 624 at 50 or 59.94 Hz 1024 x 768 at 50 or 59.94 Hz 1280 x 768 at 50 or 59.94 Hz 1280 x 1024 at 50 or 59.94 Hz 1365 x 1024 at 50 or 59.94 Hz (optional)

Chapter 6 : LCD SCREEN DESCRIPTION

6-1. INTRODUCTION

The LCD screen is composed of 2 modes: the STATUS MODE and the CONTROL MODE.

- The STATUS MODE indicates the input and output status of the SMART CUT 2™.
- The CONTROL MODE allows to select and adjust the parameters of the SMART CUT 2™.

6-2. CONTROL BUTTONS

The LCD screen is controlled by 3 buttons :

◂ ▸ **CONTROL** knob: To scroll thru the different menus.

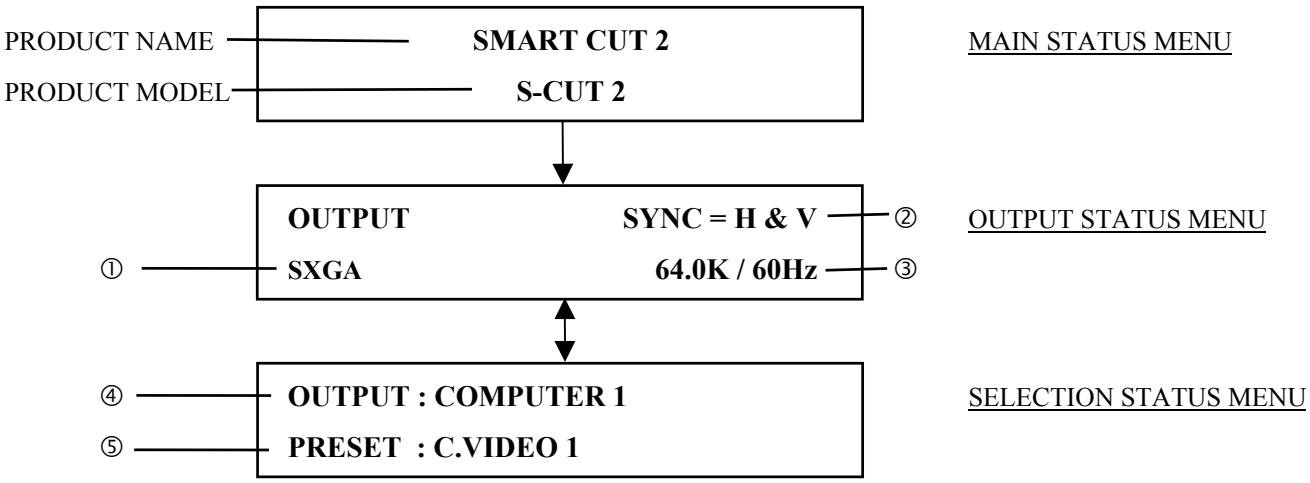
EXIT / **MENU** button:
- From the STATUS MODE, press this button to display the CONTROL MODE.
- From the CONTROL MODE, press this button to :
  - return to the previous menu.
  - return to the STATUS MODE (press several times).
  - return without safeguarding the item.

ENTER button :
- From the STATUS MODE, press this button to return to the last consulted menu.
- From the CONTROL MODE, press this button to confirm a selected item.

NOTE : When entering in the CONTROL MODE, the LCD window will automatically display the STATUS MODE after 60 seconds of inactivity of the front panel buttons.

6-3. STATUS MODE

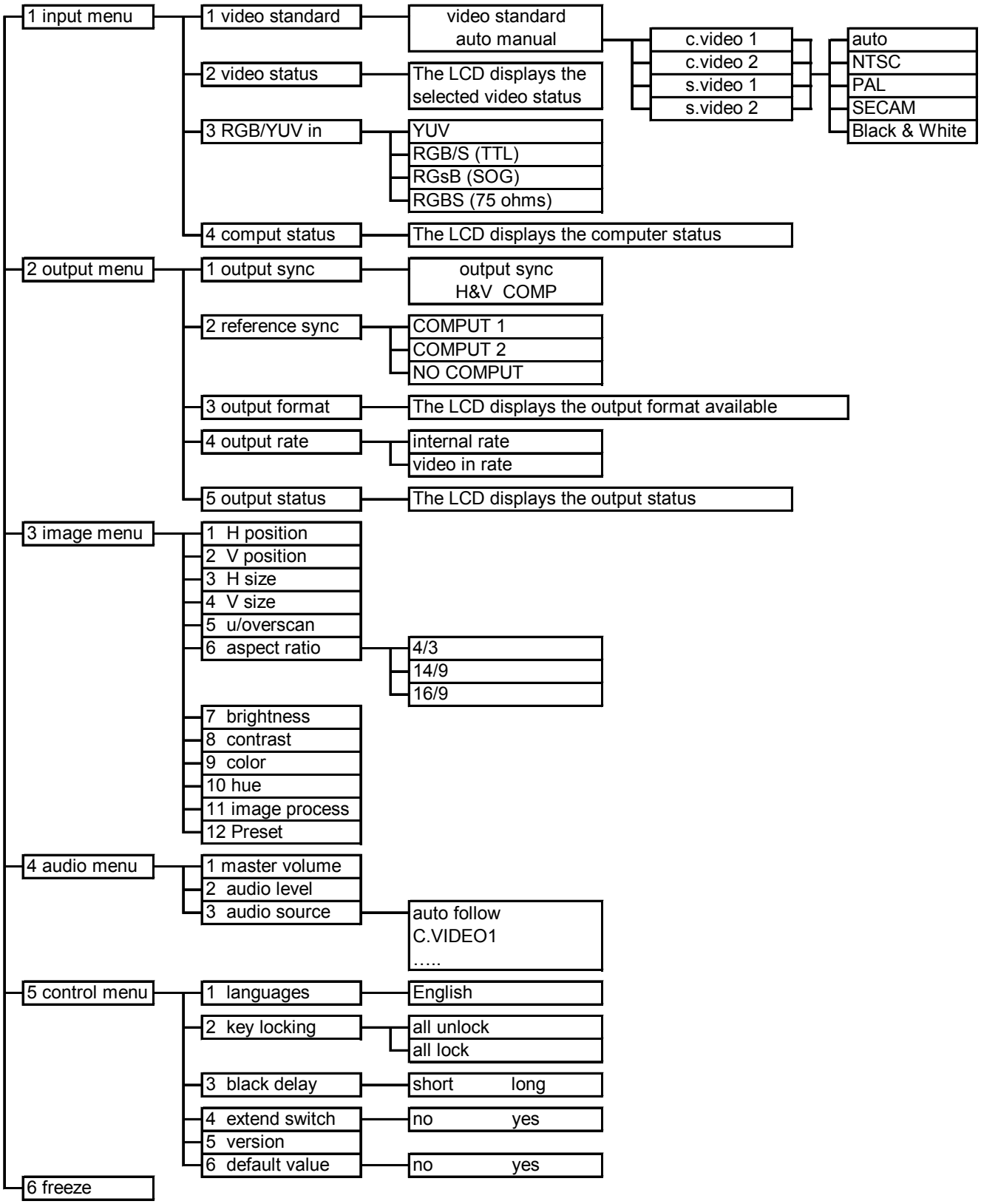
When switching ON, the LCD SCREEN shows the product's name and reference as follows:



① OUTPUT FORMAT.
② OUTPUT SYNC TYPE.
③ OUTPUT LINE FREQUENCY / FRAME FREQUENCY.
④ SELECTED INPUT (DISPLAYED ONTO THE OUTPUT).
⑤ PRE-SELECTED INPUT.

6-4. CONTROL MODE

The menus of the CONTROL MODE are configured as follow :



Chapter 7 : LCD FUNCTIONS DESCRIPTION

1 ▸ [INPUT MENU] + ENTER.

1-1 [video standard] + ENTER.

Select an item with ◂ ▸ + **ENTER.**

- [auto] = Automatic recognition of the video standard for each input. If the standard is not detected correctly, please use the [manual] setting.
- [manual] = Manual selection of the video standard for each input.

① Select an input with ◂ ▸ + **ENTER.**

- [c.video 1]
- [c.video 2]
- [s.video 1]
- [s.video 2]

② Select the video standard with ◂ ▸ + **ENTER.**

- [auto] = Automatic detection.
- [NTSC] = NTSC detection only.
- [PAL] = PAL detection only.
- [SECAM] = SECAM detection only.
- [Black & White] = Black and White detection only.

NOTE: If a SMART SWITCH VIDEO™ is connected to the SMART CUT 2™, the LCD window displays all of the C.VIDEO & S.VIDEO inputs. The inputs preceded by EXTEND (Example : EXTEND CV2) are the inputs directly connected to the SMART CUT 2™.

1-2 [video status] + ENTER.

Indicates the status of the selected video input.

- [S.VIDEO 1] = Selected input.
- [NTSC] = Video standard of this input.

1-3 [RGB/YUV in] + ENTER.

Select the video signal connected to the RGB / YUV (R-Y / Y / B-Y) input :

- [YUV] = Component (YUV) video signal.
- [RGB/S (TTL)] = RGB/S video signal with TTL Composite Sync.
- [RGsB (SOG)] = RGsB video signal with analog Composite Sync. On Green.
- [RGB/S (75 Ω)] = RGB/S with an analog Composite Sync. (0.3 V).

NOTE: If a SMART SWITCH VIDEO™ is connected to the SMART CUT 2™, first select an RGB/YUV input (for example RGB/YUV1) and then select the video signal for this input. Renew this operation for all of the other RGB/YUV inputs.

1-4 [comput status] + ENTER.

Indicates the status of the computer.

- [COMP] = Composite Sync. or [H&V] = H & V Separate Sync.
- [SXGA] = Name of the input format.
- [64.0K / 60Hz] = Input line frequency / Input frame frequency (kHz / Hz).

2 ▸ [OUTPUT MENU] + ENTER.

2-1 [**output sync**] + **ENTER.**
Select the Output Sync. type with ◂ ▸ + **ENTER.**
- [H&V] = H & V Separate Sync.
- [COMP] = Composite Sync.

2-2 [**reference sync**] + **ENTER.**
Select the Reference Sync. with ◂ ▸ + **ENTER.**
- [COMPUTER 1] = SMART CUT 2™ is in **Seamless mode**. The output is synchronized on Computer 1.
- [COMPUTER 2] = SMART CUT 2™ is in **Seamless mode**. The output is synchronized on Computer 2.
- [NO COMPUT] = **Scaler mode** (not Seamless), the LCD menu displays a list of output formats. Then Select an output format with ◂ ▸ + **ENTER.**

NOTE : If a SMART SWITCH VIDEO™ is connected to the SMART CUT 2 ™, the LCD window displays :

- [COMPUTER 1] = SMART CUT 2™ is in **Seamless mode**. The output is synchronized on Computer 1.
- [COMPUTER 2] = SMART CUT 2™ is in **Seamless mode**. The output is synchronized on Computer 2.
- [COMPUTER 3] = SMART CUT 2™ is in **Seamless mode**. The output is synchronized on Computer 3.
- [EXTEND PC 2] = SMART CUT 2™ is in **Seamless mode**. The output is synchronized on EXTEND PC 2.
- [NO COMPUT] = **Scaler mode** (not seamless) then the LCD Menu displays a list of output formats.

2-3 [**output format**] + **ENTER.**
- If [reference sync] = [COMPUTER 1], [COMPUTER 2], [COMPUTER 3] or [EXTEND PC 2], the LCD window displays the "referenced" computer input.

- If [reference sync] = [NO COMPUT], the LCD window displays a list of output format, then select an output format with ◂ ▸ + **ENTER.**

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

2-4 [**output rate**] + **ENTER.**
- If [reference sync] = [COMPUTER 1], [COMPUTER 2], [COMPUTER 3], [EXTEND PC 2], the LCD window displays the computer status.

- If [reference sync] = [NO COMPUT] selected, select an item with ◂ ▸ + **ENTER.**
  - [internal rate] = Output Frame Rate = 60Hz or 75Hz depending of the selected format.
  - [video in rate] = Output Frame Rate is identical to the Video Input Rate (50 Hz frame rate if video input is PAL / SECAM / 625L or 59.94 Hz if video input is NTSC / 525L).

2-5 [**output status**] + **ENTER.**
- [COMP] = Composite Sync. or [H&V] = H&V Separate Sync.
- [SXGA] = Name of the Output Format.
- [64.0K / 60Hz] = Output Line Frequency / Output Frame Frequency (kHz / Hz).

3 ▸ [IMAGE MENU] + ENTER.

NOTE: This menu is active only on the displayed video source. This menu is not available for the COMPUTER inputs. The image settings and adjustments can be different and memorized for each video input.

3-1 [**H position**] + **ENTER.**
Adjust the Horizontal position with ◂ ▸ + **ENTER.**

3-2 [**V position**] + **ENTER.**
Adjust the Vertical position with ◂ ▸ + **ENTER.**

3-3 [**H size**] + **ENTER.**
Adjust the Horizontal size with ◂ ▸ + **ENTER.**

3-4 [**V size**] + **ENTER.**
Adjust the Vertical size with ◂ ▸ + **ENTER.**

3-5 [**u / over scan**] + **ENTER.**
Select Underscan or Overscan with ◂ ▸ + **ENTER.**
- [underscan] = Output image is full screen.
- [overscan] = Output image is 10% bigger than in Underscan mode.

3-6 [**aspect ratio**] + **ENTER.**
Select an Aspect Ratio with ◂ ▸ + **ENTER.**
- [4/3] = 4/3 Aspect Ratio.
- [14/9] = 14/9 Aspect Ratio.
- [16/9] = 16/9 Aspect Ratio.

3-7 [**brightness**] + **ENTER.**
Adjust the Brightness with ◂ ▸ + **ENTER.**

3-8 [**contrast**] + **ENTER..**
Adjust the Contrast with ◂ ▸ + **ENTER**

3-9 [**color**] + **ENTER.**
Adjust the Color with ◂ ▸ + **ENTER.**

3-10 [**hue**] + **ENTER.**
Adjust the Tint of the picture (NTSC only) with ◂ ▸ + **ENTER.**

3-11 [**image process**] + **ENTER.**
Select an item with ◂ ▸ + **ENTER** between:
- NO PROCESSING.
- SHARPNESS 1.
- SHARPNESS 2.
- SHARPNESS 3.
- GAMMA 1.
- GAMMA 2.
- SHARP 1 + GAMMA 1.
- SHARP 2 + GAMMA 1.

3-12 [**preset**] + **ENTER.**
- [YES] = Erases all of the Image Settings (#3-1, #3-2, ... #3-11) of the selected input and sets them back to the factory settings.
- [NO] = Do not erase the Image Settings memorized.

4 ▸ [AUDIO MENU] + ENTER.

4-1 [**master volume**] + **ENTER.**
Adjust the audio output level with ◂ ▸ + **ENTER.**

4-2 [**audio level**] + **ENTER.**
This function allows to separately adjust the level of each audio inputs. Select an audio input with ◂ ▸ + **ENTER** and adjust the level with ◂ ▸ + **ENTER.**

4-3 [**audio source**] + **ENTER.**
Select an item with ◂ ▸ + **ENTER**:
- [AUTO FOLLOW] = The audio follows the displayed video / computer output.
- [xxxx] = The selected audio input is permanently diffused.

NOTE: If a SMART SWITCH AUDIO™ is connected to the SMART CUT 2™, the LCD window displays all of the audio inputs. The inputs preceded by EXTEND (Example : EXTEND CV 2) are the inputs directly connected to the SMART CUT 2™.

5 ▸ [CONTROL MENU] + ENTER.

5-1 [**languages**] + **ENTER.**

5-2 [**key locking**] + **ENTER.**
Select which locking function you need with ◂ ▸ + **ENTER**.
- [all unlock] = All front panel switches are unlocked.
- [all lock] = All front panel switches are locked.

5-3 [**black delay**] + **ENTER.**
Select the duration of the Black Delay. This Black Delay allows to avoid any unwanted visual effects (drop out or glitch) on your display device.
- [short] = 1 second delay.
- [long] = 3 second delay.

5-4 [**extend switch**] + **ENTER.**
Select this function if you use a SMART SWITCH VIDEO™ (SMV415) and/or a SMART SWITCH AUDIO™ (SMA415) connected to your SMART CUT 2™.
- [NO] = No SMART SWITCH connected to the SMART CUT 2™.
- [YES] = SMART SWITCH connected to the SMART CUT 2™.

5-5 [**version**] + **ENTER.**
Status of the internal firmware : K = xxxx L = xxxx R = xxxx V = xxxx

5-6 [**default value**] + **ENTER.**
- [NO] = No Adjustments and Settings are modified.
- [YES] = Clears the following Adjustments and sets them to the Factory Setting.

FUNCTION	POSITION	FUNCTION	POSITION
1-1 VIDEO STANDARD	automatic	**4-1** MASTER VOLUME	181.
1-3 RGB / YUV IN	YUV (Component).	**4-2** AUDIO LEVEL	181.
2-1 OUTPUT SYNC	H & V .	**4-3** AUDIO SOURCE	AUTO (FOLLOW).
2-2 REFERENCE SYNC	Computer 1.	**5-3** BLACK DELAY	SHORT.
2-3 OUTPUT FORMAT	XGA 60 Hz	**5-4** EXTEND SWITCH	NO
2-4 OUTPUT RATE	Internal Rate	BLACK	ON
3-5 U / OVER SCAN	UNDERSCAN.	MUTE	ON
3-6 ASPECT RATIO	4/3.		

6 ▸ [FREEZE] + ENTER.
Select an item with ◂ ▸ + **ENTER.**
- FREEZE [YES] = Freezes the displayed image.
- UNFREEZE [YES] = Unfreezes the displayed image.

NOTE : The FREEZE function is active only on the video inputs.

Chapter 8 : TECHNICAL SPECIFICATIONS

8-1. 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: RGB = 75 Ohms.
SYNC. = 75 Ohms or Hi-Z.

• **COMPONENT (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 (0.3 V Sync. + 0.7 V Luma).
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 & 2 BNC connectors).

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 (0.3 V Sync. + 0.7 V Luma).
C = 0.3 Vp/p (Chroma Burst).

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 (0.3 V Sync. + 0.7 V Luma).

Impedance: 75 Ohms.

8-2. COMPUTER INPUTS (15 PINS HD F connector)

• **COMPATIBILITY IN SCALER MODE (NOT SEAMLESS)**

Hardware compatibility: PC, MAC ®, WORKSTATION.
Line frequency : from 31.5 kHz to 85 kHz.
Resolution : from VGA (640 x 480) to UXGA (1600 x 1280).
Automatic recognition of Sync. : H & V separate or COMP. Sync.

Levels: R, G, B = 3 x 0.7 Vp/p.
Separate H & V Sync = TTL.
Composite Sync. = TTL & 0.3 V.

Impedance: R, G, B = 75 Ohms.
H = 75 ohms or Hi-Z.
V = 75 ohms.

• **COMPATIBILITY IN SEAMLESS SWITCHER MODE**

Hardware compatibility: PC, MAC ®, WORKSTATION.
Line frequency : from 31.5 kHz up to 64 kHz
Resolution : from VGA (640 x 480) @ 60 Hz to SXGA (1280 x 1024) @ 60 Hz.

8-3. AUDIO INPUTS

7 stereo inputs : Video = Balanced and unbalanced inputs.
Computer = Unbalanced inputs.

Vi = +4 dBm Max.
Zi = 22 kΩ unbalanced.
Zi = 44 kΩ balanced.
Gain = +6 / -12 dB adjustable.

8-4. DISPLAY OUTPUT (4/5 BNC connectors)

Levels: R, G, B = 0.7 Vp/p.
Sync. : Separate H & V = TTL.
: Composite = TTL.

Impedance: R, G, B, H & V = 75 ohms.

Format:
- If a computer input is selected : the output format is the same as the selected Computer input format.
- If a video input is selected : in seamless mode, the output format is the same as the referenced computer input format. In scaler mode the output format is one of the formats available in the LCD menu # 2-2.

8-5. AUDIO OUTPUT

2 stereo outputs (Balanced and Unbalanced).
Vo = +4 dBm Max.
Zo = 600 Ω balanced.
Zo = 300 Ω unbalanced.
G = 0 dB nominal, with Master volume.

8-6. REMOTE PORT (DB 9 female connector)

Levels: RS-232.

Data Rate: 9600 Bauds, 8 data bits, 1 stop bit, no parity bit, no flow control.

8-7. ENVIRONMENTAL

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

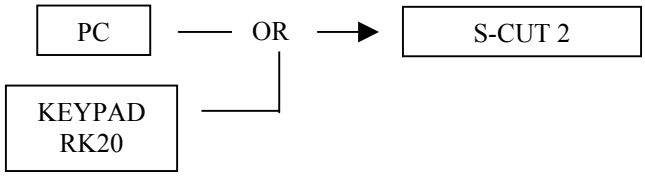
Dimensions: D 300 x W 440 x H 44 mm / D 11.8" x W 17.3" x H 1.74".
W = 480 mm / 19" with the 19" brackets.
Compatible with the 19" rack (height = 1 unit)

Weight: 3.4 kg / 7.48 lbs.

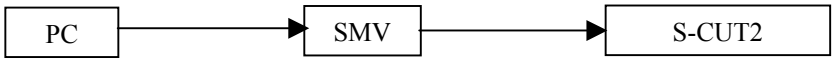
Chapter 9 : CONTROL SOFTWARE

9-1. CONNECTION

- **CONNECTING THE RS-232:**
  - If you use the SMART CUT 2™ alone :
    - Connect the serial port of your Control Device (PC) to the REMOTE CONTROL (RS-232) connector (DB 9 Female) of the SMART CUT 2™ with a straight cable (DB 9 Female / DB 9 Male).

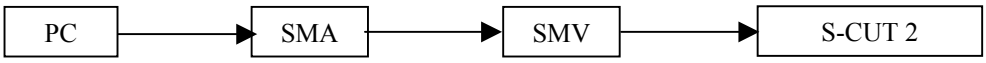


  - If you use the SMART CUT 2™ with the SMART SWITCH VIDEO™:
    - Connect the serial port of your Control Device (PC) to the REMOTE IN (PC) connector (DB 9 Female) of the SMV415 with a straight cable (DB 9 Female / DB 9 Male).
    - Connect the REMOTE OUT (CHAIN) connector (DB 9 M) of the SMV415 to the REMOTE CONTROL (RS 232) connector (DB 9 Female) of the SMART CUT 2™ with a straight cable (DB 9 Female / DB 9 Male).



NOTE : The Remote Keypad (RK20) is not compatible when the SMART CUT 2™ is used with the SMV415.

  - If you use the SMART CUT 2™ with the SMART SWITCH VIDEO™ and with the SMART SWITCH AUDIO™:
    - Connect the serial port of your Control Device (PC) to the REMOTE IN (PC) connector (DB 9 Female) of the SMA415 with a straight cable (DB 9 Female / DB 9 Male).
    - Connect the REMOTE OUT (CHAIN) connector (DB 9 Male) of the SMA415 to the REMOTE IN (PC) connector (DB 9 Female) of the SMV415 with a straight cable (DB 9 Female / DB 9 Male).
    - Connect the REMOTE OUT (CHAIN) connector (DB 9 M) of the SMV415 to the REMOTE CONTROL (RS-232) connector (DB 9 Female) of the SMART CUT 2™ with a straight cable (DB 9 Female / DB 9 Male).

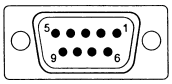


NOTE: The Remote Keypad (RK20) is not compatible when the SMART CUT 2™ is used with the SMV415 & SMA415.

9-1. CONNECTION (continued)

- **PIN-OUT:**

PIN #	FUNCTIONS
2	TRANSMIT DATA (Tx)
3	RECEIVE DATA (Rx)
5	GROUND (Gnd)
8	+12 Vdc (power of the RK-20)



DB 9 female
(Rear panel of the SMART CUT 2™)

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

9-2. "SMART CUT 2™ REMOTE CONTROL" SOFTWARE

Your SMART CUT 2™ is shipped with a WINDOWS (95/98/2000/Me/XP) compatible "SMART CUT 2™ REMOTE CONTROL" software (3.5" disk). This software allows you to control and make adjustments by a simple mouse click (output format, image adjustments, etc...).

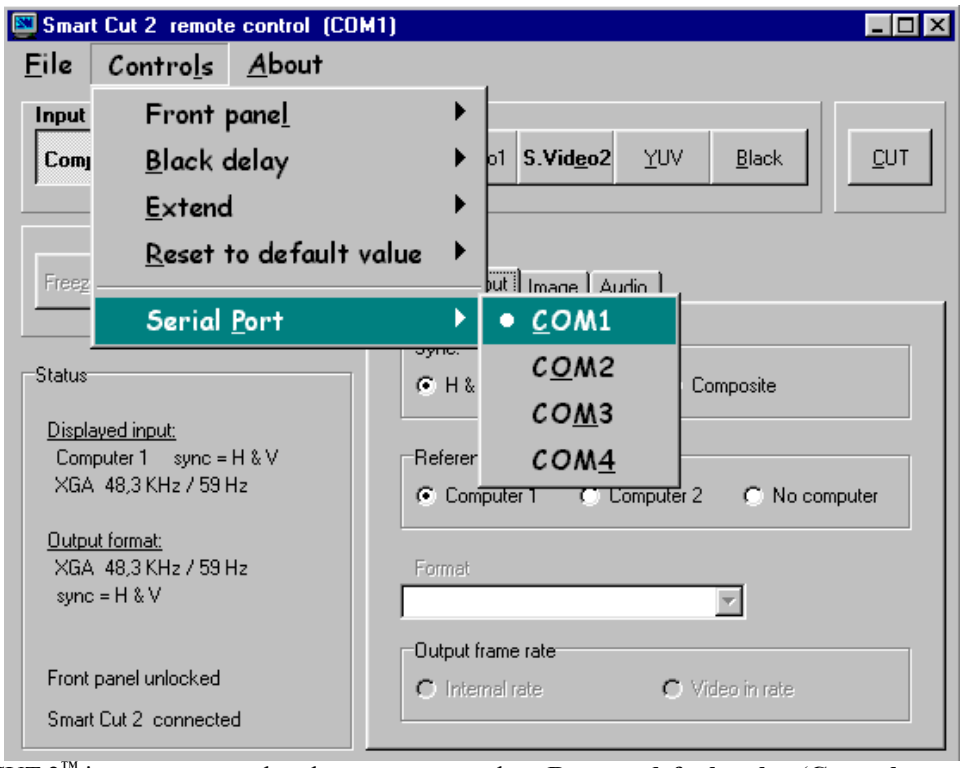
- **SOFTWARE INSTALLATION:**
  ① Turn your computer ON and wait for WINDOWS to completely start.
  ② Insert the disk into the floppy drive.
  ③ In the WINDOWS **START** menu, click on **RUN**.
  ④ Choose the disk drive and click on **setup.exe** (ex : A:**setup.exe** if disk 3.5" is drive A).
  ⑤ Follow the WINDOWS installation instructions. WINDOWS will create a file C:\Programfiles\ANALOGWAY\ SMART CUT 2 remote control.

- **STARTING UP:**
  ① Connect the RS-232 cables between the control device and the SMART CUT 2™ as indicated in section 9-1.
  ② Then only power ON all of the devices.
  ③ Click on the program files **S-CUT 2** in **Start-program-ANALOGWAY-SMART CUT 2** to run the software.
  ④ Click on **Control** menu and select the **Serial port**.

  The SMART CUT 2™ is now connected to the computer (if not, verify the DB9 serial connection and the selected serial port).

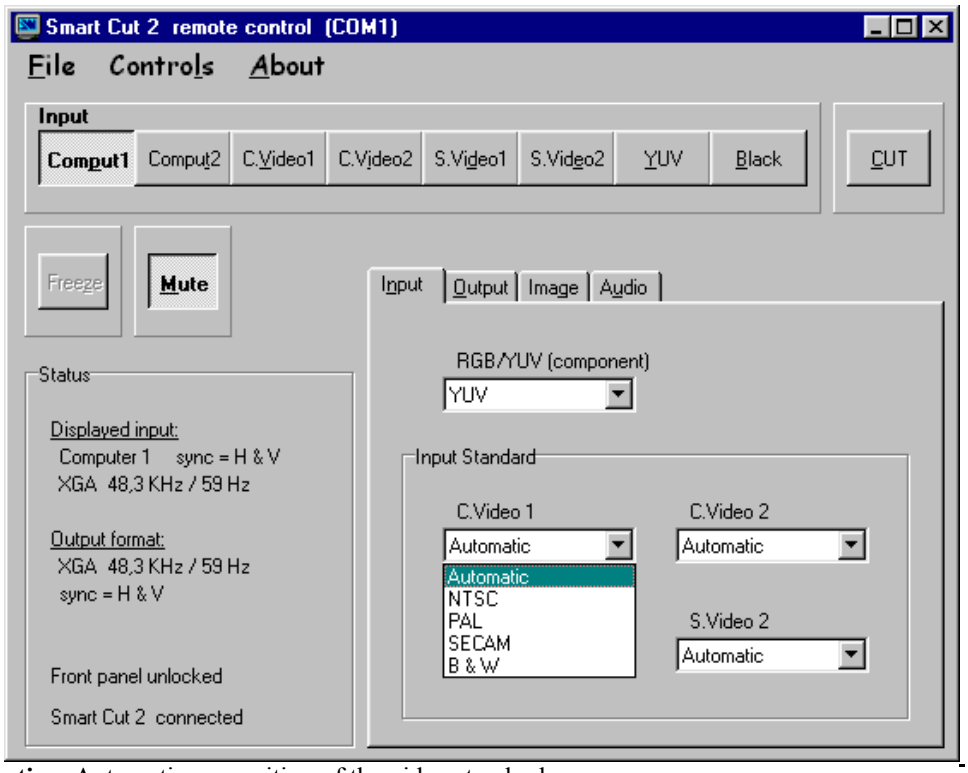
9-3. SOFTWARE SET UP

① Select the **Serial Port** in the **Controls** menu.



The SMART CUT 2™ is now connected to the computer ; make a **Reset to default value** (**Controls** menu) if necessary.

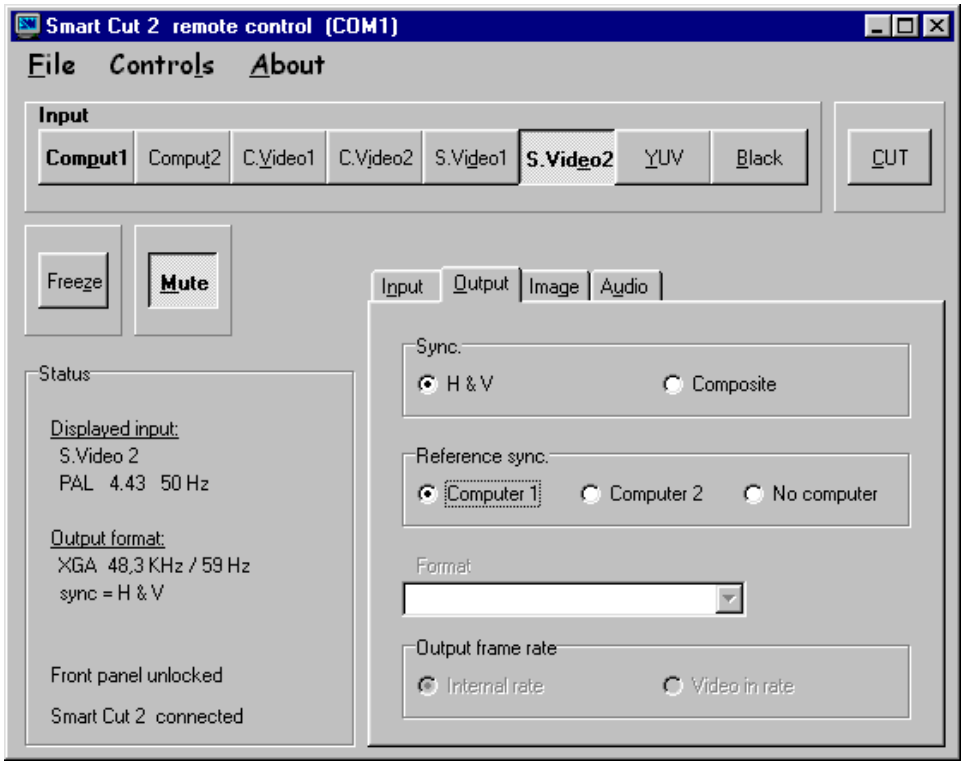
② In the **Input** menu, select the video type for the **RGB / YUV** input, and select the video standard for all of the other video inputs.



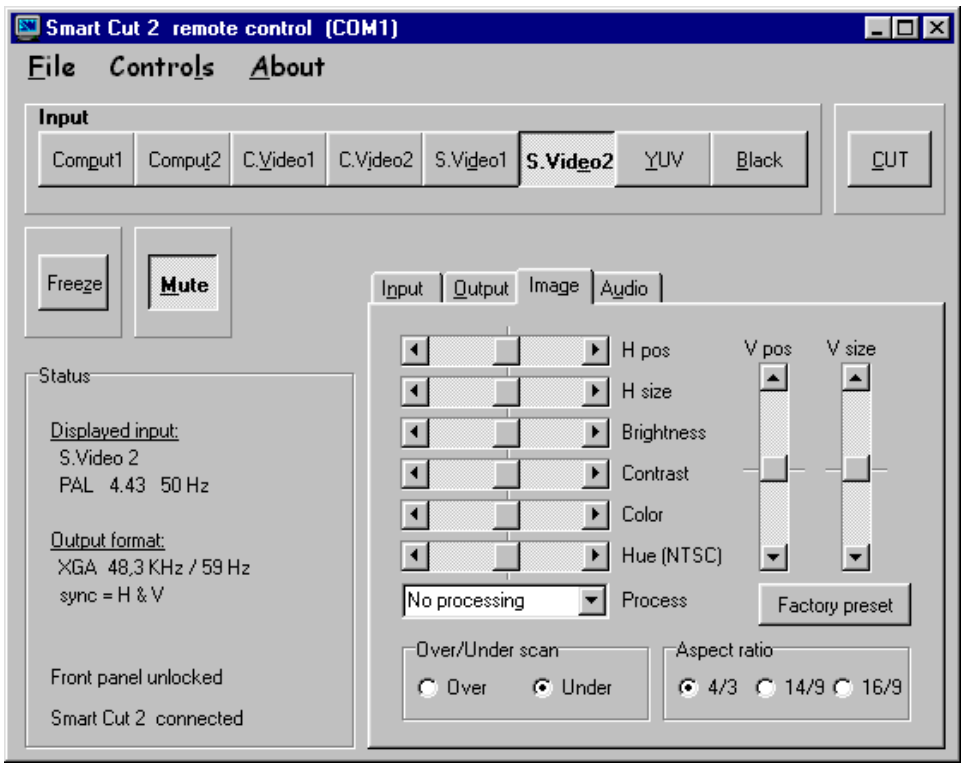
NOTE:**Automatic** = Automatic recognition of the video standard.

9-3. SOFTWARE SET UP (continued)

③ In the **Output** menu, select the output Sync. type (**Sync.**) and the **Reference sync.** If Reference Sync. = no computer, select the output format (**Format**) and the **Output frame rate**.

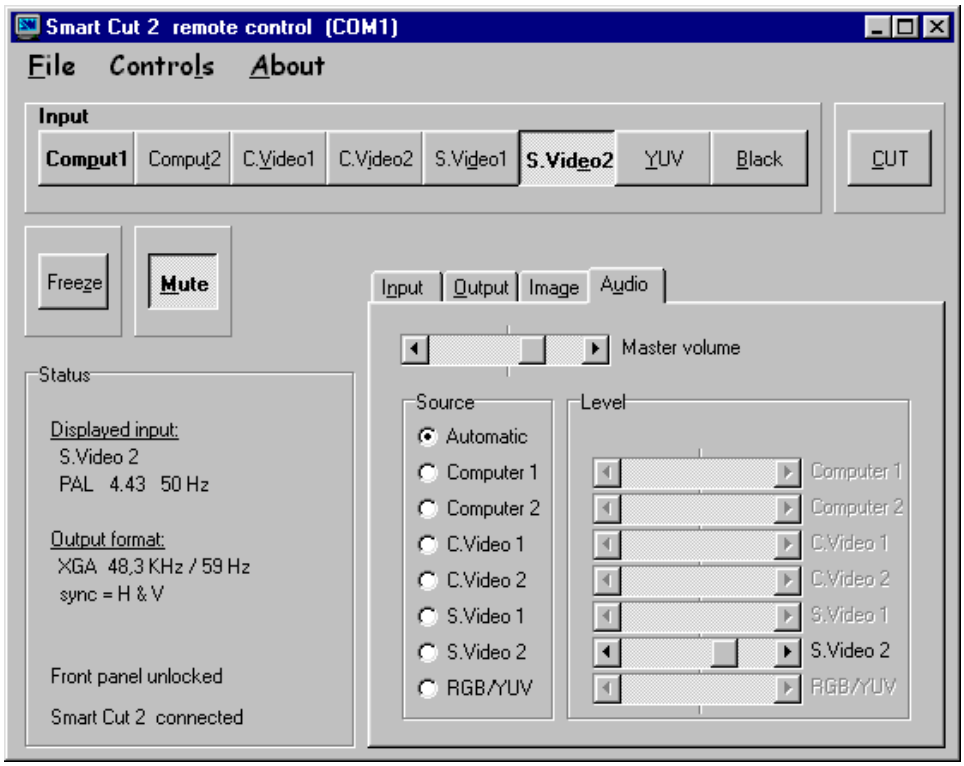


④ In the **Image** menu, make the adjustments for all of your video inputs.
NOTE: The **Image** menu is only available for the video inputs, and acts on the displayed image.

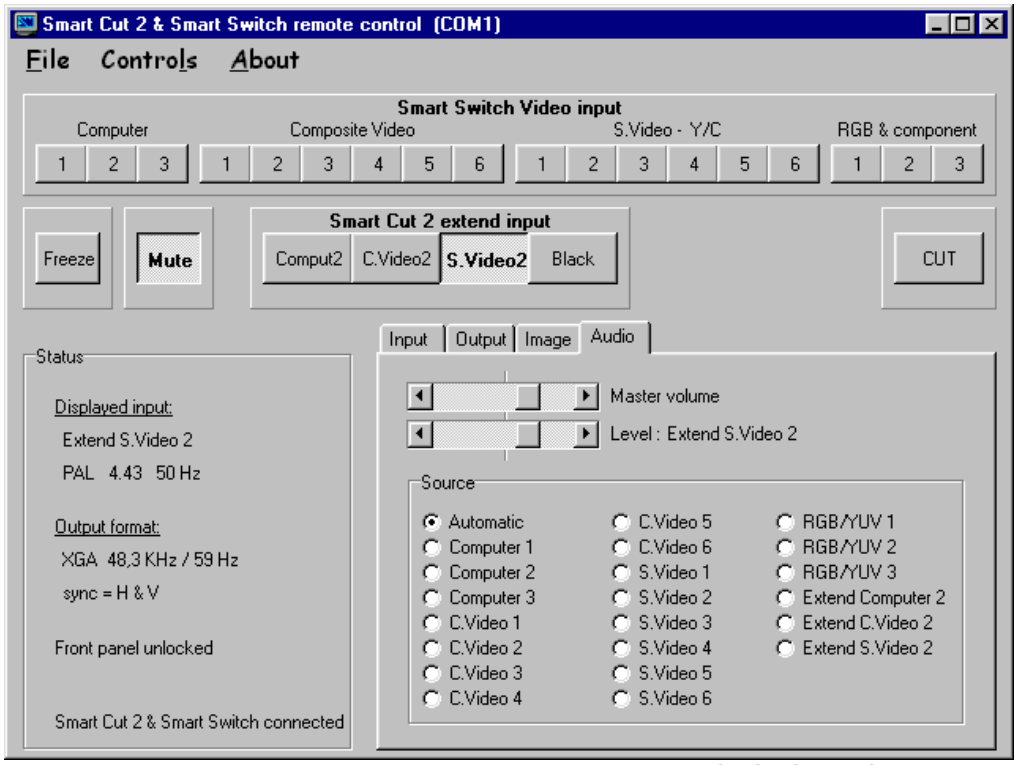


9-3. SOFTWARE SET UP (continued)

⑤ In the **Audio** menu, select the **Master volume**, the audio source (**Source**) and the **Level** of each audio inputs. **NOTE**: Select **Automatic** for audio follow switching.



⑥ When a SMART SWITCH VIDEO™ is connected to the SMART CUT 2™, select **Extend Switch** in the **Controls menu**. Then the software display the following window.



Then make all of yours adjustments as indicated in this section in ②, ③, ④ and ⑤.

Chapter 10 : RS-232 PROGRAMMER'S GUIDE

10-1. INTRODUCTION

If you need to use your own Software Control program from a PC or WORKSTATION with an RS-232 port, the SMART CUT 2™ allows communication through an ASCII code protocol.

The SMART CUT 2™ treats any character that it receives on the RS-232 as a possible command but 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 10-2 COMMANDS STRUCTURE).

When the SMART CUT 2™ receives a valid command, it will execute the command. Then it will send back the status of 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 SMART CUT 2™ will just sends back the current status of the corresponding parameters.

If the command is invalid, an error response will be returned to the control device. All responses returned to the control device end with a carriage return <CR> and a line feed <LF> signaling the end of the response character string (see chapter 10-3. ERROR RESPONSES).

10-2. 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.

COMMANDS structure = VALUE (optional) + CHARACTER.

Examples:

COMMAND		RESPONSE	DESCRIPTION
VALUE	CHARACTER		
none	**o**	**OSIG**	Read the output sync type.
10	**V**	**VPOS10**	Set Vertical position to 10.

10-3. ERROR RESPONSES

When the SMART CUT 2™ receives from the control device an invalid command or value, it returns an error response:

COMMAND		RESPONSE	DESCRIPTION
VALUE	CHARACTER		
none	**Z**	**E10**	Invalid command.
70260	**H**	**E13**	Invalid value.

10-4. COMMANDS AND RESPONSES TABLE

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

COMMAND ASCII	RESPONSE	COMMAND DESCRIPTION	VALUE		EXAMPLE		
			MIN	MAX	COMMAND	RESPONSE	ACTION EXPLANATION
INPUT COMMANDS							
i	IPRES	INPUT PRE-SELECTION.	0	25	1i	IPRES1	PRE-SELECTS COMPUTER 1.
r	IRGB	VIDEO TYPE OF RGB/YUV INPUT.	0	3	r	IRGB1	READS VIDEO TYPE RGB/YUV INPUT.
w	ISTDC1	INPUT STANDARD C.VIDEO 1.	0	4	w	ISTDC10	READS THE VIDEO STANDARD DETECTION.
x	ISTDC2	INPUT STANDARD C.VIDEO 2.	0	4	x	ISTDC21	READS THE VIDEO STANDARD DETECTION.
y	ISTDS1	INPUT STANDARD S.VIDEO 1.	0	4	y	ISTDS14	READS THE VIDEO STANDARD DETECTION.
z	ISTDS2	INPUT STANDARD S.VIDEO 2.	0	4	z	ISTDS21	READS THE VIDEO STANDARD DETECTION.
m	VMODE	C. VIDEO & S.VIDEO MODE SELECTION.	0	3	1m	VMODE1	SELECTS MODE B.
q	PCHAN	SELECTS THE INPUT TO MODIFY WITH g AND h COMMANDS.	8	22	q	PCHAN8	SELECTS C.VIDEO 1.
g	IRGBX	VIDEO TYPE OF RGB/YUV INPUTS.	0	3	g	IRGBX1	READS VIDEO TYPE OF THE RGB/YUV INPUTS.
h	ISTDX	INPUT STANDARD.	0	4	1h	ISTDX1	SELECTS NTSC STANDARD.
OUTPUT COMMANDS							
u	SSYNC	REFERENCE SYNC.	0	25	u	SSYNC1	READS THE REFERENCE SYNC.
O	OFMT	OUTPUT FORMAT.	0	13	O	OFMT2	READS THE OUTPUT FORMAT.
o	OSIG	OUTPUT SYNC TYPE.	0	1	1o	OSIG1	SETS THE OUTPUT SYNC TO COMP. SYNC.
IMAGE COMMANDS (VIDEO ONLY)							
H	HPOS	HORIZONTAL POSITION.	0	255	20H	HPOS20	SETS H. POSITION TO 20.
V	VPOS	VERTICAL POSITION.	0	255	V	VPOS73	READS V POSITION.
W	HSIZ	HORIZONTAL SIZE.	0	255	W	HSIZ128	READS H WIDTH.
S	VSIZ	VERTICAL SIZE.	0	255	157S	VSIZ157	SETS V SIZE TO 157.
B	BRGT	BRIGHTNESS ADJUSTMENT.	0	255	B	BRGT15	READS BRIGHTNESS LEVEL.
C	CONTR	CONTRAST ADJUSTMENT.	0	255	C	CONTR50	READS CONTRAST LEVEL.
s	COLOR	COLOR SATURATION.	0	255	s	COLOR125	READS COLOR SATURATION LEVEL.
T	HUE	HUE ADJUSTMENT (NTSC ONLY)	0	255	T	HUE120	READS HUE LEVEL.
f	SHARP	IMAGE PROCESS.	0	7	f	SHARP4	READS IMAGE PROCESS.
b	IASP	ASPECT RATIO.	0	2	2b	IASP2	SETS ASPECT RATIO TO16/9.
AUDIO COMMANDS							
M	AMAST	AUDIO MASTER VOLUME.	0	255	10M	AMAST 10	SETS AUDIO MASTER VOLUME TO 10.
a	ALEV	AUDIO LEVEL	0	255	a	ALEV50	READS AUDIO LEVEL OF SELECTED CHANNEL.
A	ACHAN	AUDIO CHANNEL (FOLLOW OR BREAKAWAY MODE)	0	25	3A	ACHAN3	SETS C.VIDEO 1 FOR AUDIO CHANNEL.

10-4. COMMANDS AND RESPONSES TABLE (continued)

COMMAND ASCII	RESPONSE	COMMAND DESCRIPTION	VALUE		EXAMPLE		
			MIN	MAX	COMMAND	RESPONSE	ACTION EXPLANATION
STATUTS COMMANDS (READ ONLY)							
U	UNIT	MEASURES UNITY IN kHz.	0	65535	U	UNIT----	READ UNITY OF MEASURE.
l	CLD	DURATION OF A COMPUTER LINE.	0	65535	l	CLD----	READ LINE FREQUENCY OF SELECTED COMPUTER.
t	CFD	NUMBER OF LINE PER FIELD OF COMPUTER.	0	65535	t	CFD----	READ LINE PER FIELD OF SELECTED COMPUTER.
P	CSTA	COMPUTER STATUS.	0	31	P	CSTA----	READ COMPUTER STATUS.
c	CCHAN	INPUT NUMBER OF THE COMPUTER WHICH STATUS IS GIVEN.	0	25	c	CCHAN1	COMPUTER STATUS IS FOR COMPUTER 1 INPUT.
p	VSTA	VIDEO STATUS.	0	16	p	VSTA13	READ THE VIDEO STATUS.
v	VCHAN	INPUT NUMBER OF THE VIDEO WHICH STATUS IS GIVEN.	0	22	v	VCHAN7	VIDEO STATUS IS FOR RGB/YUV INPUT.
n	SCSTA	REFERENCE SYNC STATUS.	0	25	n	SCSTA1	REFERENCE SYNC IS COMPUTER 1.
I	ICHAN	SELECTED INPUT (DISPLAYED)	0	25	I	ICHAN1	SELECTED INPUT IS COMPUTER 1 INPUT.
MISCELLANEOUS COMMANDS							
Y	CMD	MISCELLANEOUS CONTROL.	0	4095	1Y	CMD1	CUT ACTION.
?	DEV	DEVICE TYPE.	0	65535	?	DEV9	READ DEVICE TYPE (9 = SMART CUT 2™).
K	K_	"K" FIRMWARE VERSION.	0	65535	K	K_	READ K VERSION.
L	L_	"L" FIRMWARE VERSION.	0	65535	L	L_	READ L VERSION.
R	R_	"R" FIRMWARE VERSION.	0	65535	R	R_	READ R VERSION.
X	V_	"X" FIRMWARE VERSION.	0	65535	X	V_	READ X VERSION.

10-5. COMMANDS DESCRIPTION

Values sent or received are in decimal.
Depending on the command letter, the value can be used as a linear control (ex : 255W to set the horizontal size to the maximum) or as a set of bits (ex : P command with multiple controls).
In this case, the value must be converted in binary base to understand every bit action.

EXAMPLE: Host receives message CSTA25 (P command)
Decimal value 25 = Binary value 11001
25 = (16 x 1) + (8 x 1) + (4 x 0) + (2 x 0) + (1 x 1)

bit 0 = 1 means sync. detected.
bit 1 = 0 means H & V sync. detected.
bit 2 = 0 means non interlaced format detected.
bit 3 = 1 means computer selected = "referenced" computer.
bit 4 = 1 means the "Referenced computer" format is in the range of compatibility.

10-5. COMMANDS DESCRIPTION (continued)

① **INPUT COMMANDS**

• **i command** is used to pre-select an input.

- SMART CUT 2™ ALONE APPLICATION

DECIMAL VALUE	INPUT # SELECTION	RESPONSE	APPLICATION
0	BLACK	IPRES0	
1	COMPUTER 1	IPRES1	
2	COMPUTER 2	IPRES2	
3	C.VIDEO 1	IPRES3	S-CUT 2
4	C.VIDEO 2	IPRES4	ALONE
5	S.VIDEO 1	IPRES5	
6	S.VIDEO 2	IPRES6	
7	RGB / YUV	IPRES7	

- SMART CUT 2™ + SMART SWITCH VIDEO™ APPLICATION

DECIMAL VALUE	INPUT # SELECTION	RESPONSE	APPLICATION
0	BLACK	IPRES0	
2	EXTEND PC 2	IPRES2	
4	EXTEND C.VIDEO 2	IPRES4	
6	EXTEND S.VIDEO 2	IPRES6	
8	C.VIDEO 1	IPRES8	
9	C.VIDEO 2	IPRES9	
10	C.VIDEO 3	IPRES10	
11	C.VIDEO 4	IPRES11	
12	C.VIDEO 5	IPRES12	
13	C.VIDEO 6	IPRES13	S-CUT 2
14	S.VIDEO 1	IPRES14	+
15	S.VIDEO 2	IPRES15	SMV415
16	S.VIDEO 3	IPRES16	
17	S.VIDEO 4	IPRES17	
18	S.VIDEO 5	IPRES18	
19	S.VIDEO 6	IPRES19	
20	RGB / YUV 1	IPRES20	
21	RGB / YUV 2	IPRES21	
22	RGB / YUV 3	IPRES22	
23	COMPUTER 1	IPRES23	
24	COMPUTER 2	IPRES24	
25	COMPUTER 3	IPRES25	

• **r command** is used to select the video type of the RGB/YUV input.

- SMART CUT 2™ ALONE APPLICATION

DECIMAL VALUE	SELECTION	RESPONSE	APPLICATION
0	YUV	IRGB0	
1	RGB/S (TTL)	IRGB1	S-CUT 2
2	RGsB (SOG)	IRGB2	ALONE
3	RGB/S (75Ω)	IRGB3	

• **w, x, y, z commands** are used to select the video standard of the C.VIDEO1, C.VIDEO2, S.VIDEO1 and S.VIDEO2 input.

- SMART CUT 2™ WITH OR WITHOUT SMART SWITCH VIDEO™ APPLICATION

DECIMAL VALUE	SELECTION	RESPONSE	APPLICATION
0	AUTOMATIC	ISTD--0	
1	NTSC (3.58 / 60Hz))	ISTD--1	
2	PAL (4.43 / 50Hz)	ISTD--2	ALL
3	SECAM	ISTD--3	
4	BLACK & WHITE	ISTD--4	

10-5. COMMANDS DESCRIPTION (continued)

- **m command** is used to select the C.VIDEO & S.VIDEO mode (front panel of the SMA415 & SMV415).

  - SMART CUT 2™ + SMART SWITCH VIDEO™ APPLICATION

DECIMAL VALUE	SELECTION	RESPONSE	APPLICATION
0	MODE A (6 C.VIDEO + 3 S.VIDEO)	VMODE0	
1	MODE B (4 C.VIDEO + 4 S.VIDEO)	VMODE1	S-CUT 2
2	MODE C (2 C.VIDEO + 5 S.VIDEO)	VMODE2	+ SMV415
3	MODE AB (6 S.VIDEO)	VMODE3	

- **q command** is used to select the input you want to modify with the g and h commands.

  - SMART CUT 2™ + SMART SWITCH VIDEO™ APPLICATION

DECIMAL VALUE	INPUT # SELECTION	RESPONSE	APPLICATION
8	C.VIDEO 1	PCHAN8	
9	C.VIDEO 2	PCHAN9	
10	C.VIDEO 3	PCHAN10	
11	C.VIDEO 4	PCHAN11	
12	C.VIDEO 5	PCHAN12	
13	C.VIDEO 6	PCHAN13	S-CUT 2
14	S.VIDEO 1	PCHAN14	+
15	S.VIDEO 2	PCHAN15	SMV415
16	S.VIDEO 3	PCHAN16	
17	S.VIDEO 4	PCHAN17	
18	S.VIDEO 5	PCHAN18	
19	S.VIDEO 6	PCHAN19	
20	RGB / YUV 1	PCHAN20	
21	RGB / YUV 2	PCHAN21	
22	RGB / YUV 3	PCHAN22	

- **g command** is used to select the video type of the RGB / YUV inputs.

  - SMART CUT 2™ + SMART SWITCH VIDEO™ APPLICATION

DECIMAL VALUE	SELECTION	RESPONSE	APPLICATION
0	YUV	IRGBX0	
1	RGB/S (TTL)	IRGBX1	S-CUT 2
2	RGsB (SOG)	IRGBX2	+ SMV415
3	RGB (75Ω)	IRGBX3	

  NOTE: The g command acts on the input selected with the q command.

- **h command** is used to select the video standard of the video inputs.

  - SMART CUT 2™ + SMART SWITCH VIDEO™ APPLICATION

DECIMAL VALUE	SELECTION	RESPONSE	APPLICATION
0	AUTOMATIC	ISTDX0	
1	NTSC (3.58 / 60Hz)	ISTDX1	S-CUT 2
2	PAL (4.43 / 50Hz)	ISTDX2	+
3	SECAM	ISTDX3	SMV415
4	BLACK & WHITE	ISTDX4	

  NOTE: The h command acts on the input selected with the q command.

10-5. COMMANDS DESCRIPTION (continued)

② **OUTPUT COMMANDS**

- **u command** is used to select the reference sync.

  - SMART CUT 2™ ALONE APPLICATION.

DECIMAL VALUE	SELECTION	RESPONSE	APPLICATION
0	INTERNAL RATE	SSYNC0	
1	COMPUTER 1	SSYNC1	S-CUT 2
2	COMPUTER 2	SSYNC2	ALONE
3	VIDEO IN RATE	SSYNC3	

  - SMART CUT 2™ + SMART SWITCH VIDEO™ APPLICATION.

DECIMAL VALUE	SELECTION	RESPONSE	APPLICATION
0	INTERNAL RATE	SSYNC0	
2	EXTEND PC 2	SSYNC2	
3	VIDEO IN RATE	SSYNC3	S-CUT 2
23	COMPUTER 1	SSYNC23	+
24	COMPUTER 2	SSYNC24	SMV415
25	COMPUTER 3	SSYNC25	

- **O command** is used to select the output format.

DECIMAL VALUE	SELECTION (OUTPUT FORMAT)	RESPONSE	APPLICATION
0	VGA (640 x 480) at 60Hz	OFMT0	
1	PLASMA 42" (852 x 480) at 60Hz	OFMT1	
2	SVGA (800 x 600) at 60Hz	OFMT2	
3	MAC (640 x 480) at 66Hz	OFMT3	
4	XGA (1024 x 768) at 60Hz	OFMT4	
5	PLASMA 50" (1280 x 768) at 56Hz	OFMT5	ALL APPLICATIONS
6	SXGA (1280 x 1024) at 60Hz	OFMT6	WITH NO COMPUTER
7	VGA (640 x 480) at 75Hz	OFMT7	USED AS REFERENCE
8	PLASMA 42" (852 x 480) at 72Hz	OFMT8	SYNC.
9	SVGA (800 x 600) at 75Hz	OFMT9	
10	MAC 16" (832 x 624) at 75Hz	OFMT10	
11	XGA (1024 x 768) at 75Hz	OFMT11	
12	PLASMA 50" (1280 x 768) at 75Hz	OFMT12	
13	SXGA (1280 x 1024) at 75Hz	OFMT13	
14	D-ILA (1365 x 1024) at 75Hz	OFMT14	

NOTE: The O command is active only if "no computer" is selected as a reference (the response of the n command should be 0 or 3).

- **o command** is used to select the output sync type.

DECIMAL VALUE	SELECTION (OUTPUT SYNC TYPE)	RESPONSE	APPLICATION
0	H & V SEPARATE SYNC.	OSIG0	ALL
1	COMPOSITE SYNC.	OSIG1	

10-5. COMMANDS DESCRIPTION (continued)

③ IMAGE COMMANDS

The following commands are active only on the selected (displayed) video input.
They are not active for the COMPUTER input.

- **H, V, W, S, B, C, s, T, commands** are used to control the output adjustments.

  0 = minimum
  255 = maximum

- **f command** is used to select the image process.

  - SMART CUT 2™ WITH OR WITHOUT SMART SWITCH VIDEO™ APPLICATION.

DECIMAL VALUE	SELECTION (IMAGE PROCESS)	RESPONSE	APPLICATION
0	NO PROCESS	SHARP0	
1	SHARPNESS 1	SHARP1	
2	SHARPNESS 2	SHARP2	
3	SHARPNESS 3	SHARP3	ALL
4	GAMMA 1	SHARP4	
5	GAMMA 2	SHARP5	
6	SHARPNESS 1 + GAMMA 1	SHARP6	
7	SHARPNESS 2 + GAMMA 1	SHARP7	

- **b command** is used to select the video input's aspect ratio.

DECIMAL VALUE	SELECTION OF ASPECT RATIO	RESPONSE	APPLICATION
0	4/3	IASP0	
1	14/9	IASP1	ALL
2	16/9	IASP2	

④ AUDIO COMMANDS

- **M, a commands** are used to control the audio adjustments (MASTER VOLUME & AUDIO LEVEL).

  0 = minimum
  255 = maximum

- **A command** is used to select the audio channel.

  - SMART CUT 2™ ALONE APPLICATION.

DECIMAL VALUE	INPUT # SELECTION	RESPONSE	APPLICATION
0	AUTOMATIC	ACHAN0	
1	COMPUTER 1	ACHAN1	
2	COMPUTER 2	ACHAN2	
3	C.VIDEO 1	ACHAN3	S-CUT 2
4	C.VIDEO 2	ACHAN4	ALONE
5	S.VIDEO 1	ACHAN5	
6	S.VIDEO 2	ACHAN6	
7	RGB/YUV	ACHAN7	

10-5. COMMANDS DESCRIPTION (continued)

- SMART CUT 2™ + SMART SWITCH AUDIO™ APPLICATION.

DECIMAL VALUE	INPUT # SELECTION	RESPONSE	APPLICATION
0	AUTOMATIC	ACHAN0	
2	EXTEND PC 2	ACHAN2	
4	EXTEND C.VIDEO 2	ACHAN4	
6	EXTEND S.VIDEO 2	ACHAN6	
8	C.VIDEO 1	ACHAN8	
9	C.VIDEO 2	ACHAN9	
10	C.VIDEO 3	ACHAN10	
11	C.VIDEO 4	ACHAN11	
12	C.VIDEO 5	ACHAN12	
13	C.VIDEO 6	ACHAN13	S-CUT 2
14	S.VIDEO 1	ACHAN14	+
15	S.VIDEO 2	ACHAN15	SMA415
16	S.VIDEO 3	ACHAN16	+
17	S.VIDEO 4	ACHAN17	SMV415
18	S.VIDEO 5	ACHAN18	
19	S.VIDEO 6	ACHAN19	
20	RGB / YUV 1	ACHAN20	
21	RGB / YUV 2	ACHAN21	
22	RGB / YUV 3	ACHAN22	
23	COMPUTER 1	ACHAN23	
24	COMPUTER 2	ACHAN24	
25	COMPUTER 3	ACHAN25	

⑤ STATUS COMMANDS (READ ONLY).

This control family is read only ; it cannot be preceded by a value.

- **U command** returns the UNIT value, used to calculate the computer line and frame frequency.

- **l command** returns the Computer Line Duration (CLD value).

  The following formula allows to calculate the input line frequency in kHz.

  $$\frac{\text{UNIT VALUE}}{\text{CLD VALUE}} = \text{Input line frequency in kHz.}$$

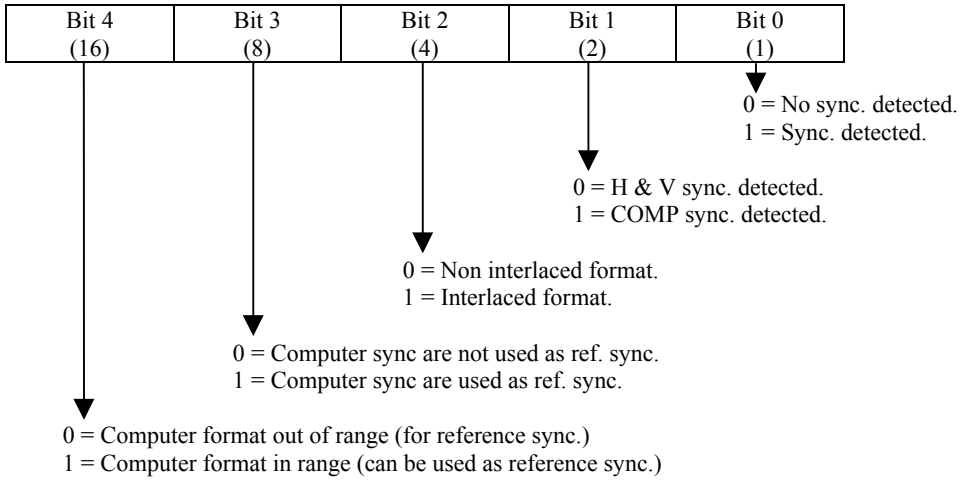
- **t command** returns the Computer lines per Frame (CFD value).

  The following formula allows to calculate the computer input frame frequency in Hz.

  $$\frac{\text{INPUT LINE FREQUENCY (Hz)}}{\text{CFD VALUE}} = \text{Input frame frequency in Hz.}$$

10-5. COMMANDS DESCRIPTION (continued)

- **P command** returns the Computer status. (RESPONSE : CSTA--).



- **c command** is used to know the computer number which status is displayed.

  - SMART CUT 2™ ALONE APPLICATION.

DECIMAL VALUE	SELECTION	RESPONSE	APPLICATION
0	NO COMPUTER	CCHAN0	
1	COMPUTER 1	CCHAN1	S-CUT 2 ALONE
2	COMPUTER 2	CCHAN2	

  - SMART CUT 2™ + SMART SWITCH VIDEO™ APPLICATION.

DECIMAL VALUE	SELECTION	RESPONSE	APPLICATION
0	NO COMPUTER	CCHAN0	
2	EXTEND PC 2	CCHAN2	S-CUT 2
23	COMPUTER 1	CCHAN23	+
24	COMPUTER 2	CCHAN24	SMV415
25	COMPUTER 3	CCHAN25	

10-5. COMMANDS DESCRIPTION (continued)

- **p command** returns the video status.

DECIMAL VALUE	VIDEO STATUS	RESPONSE	DECIMAL VALUE	VIDEO STATUS	RESPONSE
0	NO VIDEO	VSTA0	9	PAL 4.43 50 Hz	VSTA9
1	WRONG SIGNAL	VSTA1	10	SECAM 50 Hz	VSTA10
2	NTSC 3.58 60 Hz	VSTA2	11	B & W 50 Hz	VSTA11
3	NTSC 3.58 50 Hz	VSTA3	12	B & W 60 Hz	VSTA12
4	NTSC 4.43 60 Hz	VSTA4	13	YUV 50 Hz	VSTA13
5	NTSC 4.43 50 Hz	VSTA5	14	YUV 60 Hz	VSTA14
6	PAL 3.58 60 Hz	VSTA6	15	RGB 50 Hz	VSTA15
7	PAL 3.58 50 Hz	VSTA7	16	RGB 60 Hz	VSTA16
8	PAL 4.43 60 Hz	VSTA8			

- **v command** is used to know the number of the video input which status is displayed.

  - SMART CUT 2™ ALONE APPLICATION.

DECIMAL VALUE	STATUS OF VIDEO #	RESPONSE	APPLICATION
0	NO VIDEO SELECTED	VCHAN0	
3	C.VIDEO 1	VCHAN3	
4	C.VIDEO 2	VCHAN4	S-CUT 2
5	S.VIDEO 1	VCHAN5	ALONE
6	S.VIDEO 2	VCHAN6	
7	RGB / YUV	VCHAN7	

  - SMART CUT 2™ + SMART SWITCH VIDEO™ APPLICATION.

DECIMAL VALUE	STATUS OF VIDEO #	RESPONSE	APPLICATION
0	NO VIDEO SELECTED	VCHAN0	
4	EXTEND C.VIDEO 2	VCHAN4	
6	EXTEND S.VIDEO 2	VCHAN6	
8	C.VIDEO 1	VCHAN8	
9	C.VIDEO 2	VCHAN9	
10	C.VIDEO 3	VCHAN10	
11	C.VIDEO 4	VCHAN11	
12	C.VIDEO 5	VCHAN12	
13	C.VIDEO 6	VCHAN13	S-CUT 2
14	S.VIDEO 1	VCHAN14	+
15	S.VIDEO 2	VCHAN15	SMV415
16	S.VIDEO 3	VCHAN16	
17	S.VIDEO 4	VCHAN17	
18	S.VIDEO 5	VCHAN18	
19	S.VIDEO 6	VCHAN19	
20	RGB / YUV 1	VCHAN20	
21	RGB / YUV 2	VCHAN21	
22	RGB / YUV 3	VCHAN22	

- **n command** returns the reference sync status (same table as the **u** command). RESPONSE : SCSTA--

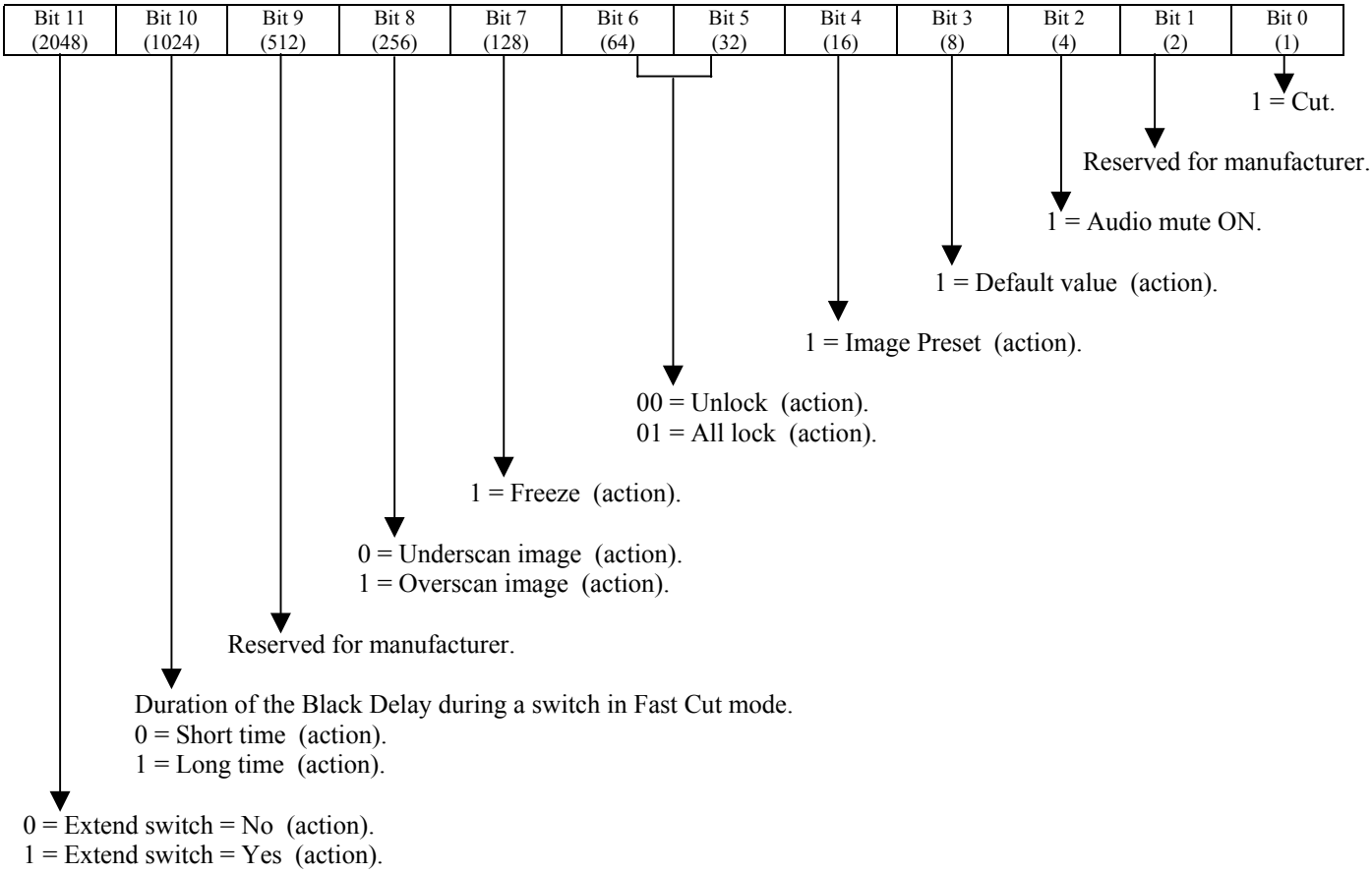
- **I command** returns the selected displayed input (same table as the **i command**). RESPONSE : ICHAN--

10-5. COMMANDS DESCRIPTION (continued)

⑥ **MISCELLANEOUS COMMANDS**

- SMART CUT 2™ with or without SMART SWITCH VIDEO™ APPLICATION.

• **Y command** is used to control the CUT, the AUDIO MUTE, the RESET TO DEFAULT VALUE, the FRONT PANEL LOCK, the FREEZE…(RESPONSE : CMD----).



NOTE: To modify an adjustment you should first read the value of the command, then modify the value of the corresponding bit without modifying the value of the other bits, and then return the new value.

Example : If the actual adjustment is : Short, overscan, Unfreeze, Front panel unlocked, then the return value is :

Bit 11 (2048)	Bit 10 (1024)	Bit 9 (512)	Bit 8 (256)	Bit 7 (128)	Bit 6 (64)	Bit 5 (32)	Bit 4 (16)	Bit 3 (8)	Bit 2 (4)	Bit 1 (2)	Bit 0 (1)
X	0	X	1	0	0	0	0	X	0	X	X

Now if you want to lock the front panel, you should set the bit 5 to 1, without changing the value of the other bits. In this case you should add 32 to the previous value.

• **?, K, R, L, X, commands** are the status of the device's internal firmware (read only).

10-6. 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

WARRANTY

Analog Way warrants the product against any defects in material 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 discretion, repair or replace the defective unit, including free material 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.