

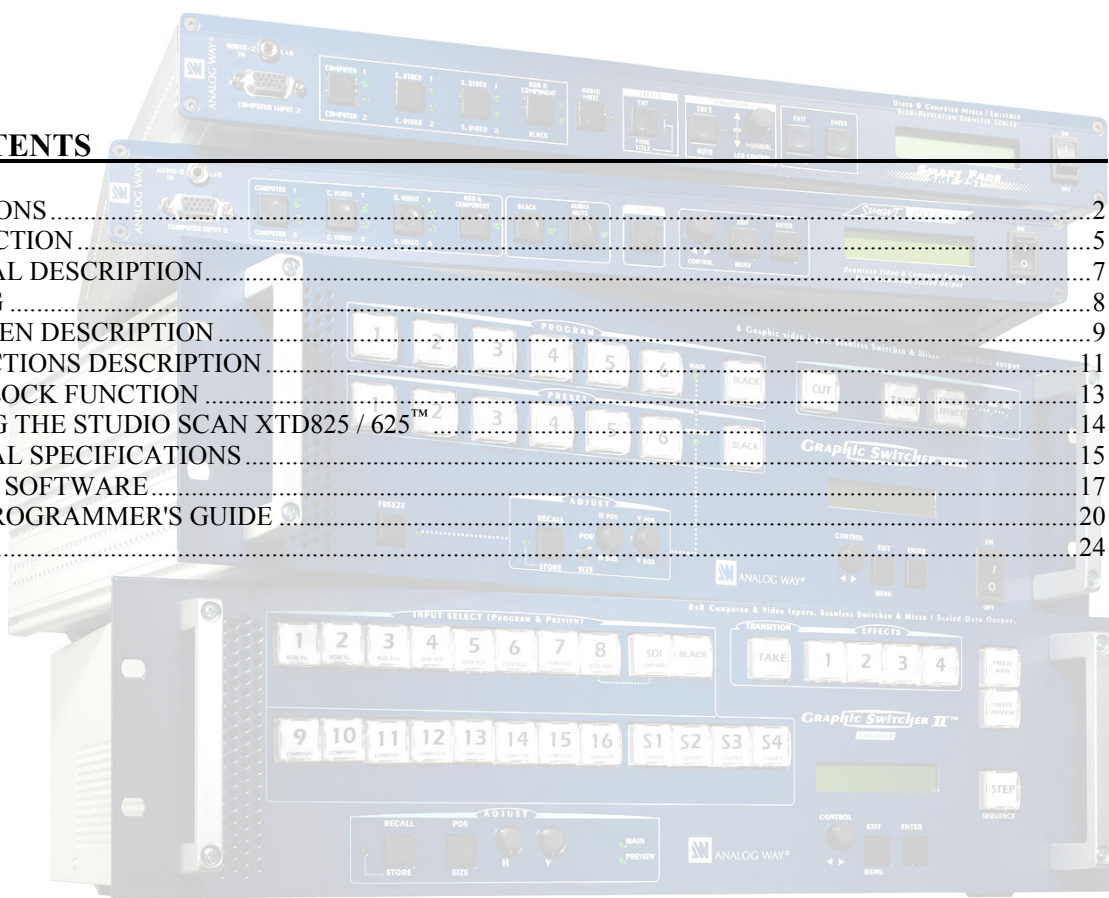


STUDIO SCAN XTD825 / 625™ (XTD825 / XTD625)

User's Manual

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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.

ISTRUZIONI 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. Ciò potrebbe provocare un erraneo 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 è danneggiato, spegnere immediatamente l'apparecchiatura. E' pericoloso far funzionare questa apparecchiatura con un cavo di alimentazione danneggiato, un cavo graffiato può 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 ciò può provocare all'utilizzatore un rischio di shock elettrico o altri rischi.

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

SICHERHEITSHINWEISE:

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

VORSICHT & WARNUNG

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

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

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

STROMKABEL : Für Geräte mit einem Hauptschalter (Ein/Aus) erfolgt die Stromversorgung und unterbrechung mittels dieses Hauptschalters. Geräte ohne Hauptschalter werden durch das Einstecken oder Herausziehen des Steckers in den Wandanschluß ein- oder ausgeschaltet.

Für beide Fälle gelten folgende Richtlinien :

- Den Stecker aus dem Wandanschluß herausziehen wenn Sie das Gerät mehrere Tage oder länger nicht benutzen.
- Das Kabel mittels dem Stecker herausziehen. Niemals am Stromkabel selbst ziehen.
- Die Steckdose muß sich in der Nähe des Geräts befinden und leicht zugänglich sein.
- Das Stromkabel nicht fallen lassen und keine schweren Gegenstände auf es stellen.

Wenn das Stromkabel beschädigt ist, das Gerät sofort abschalten. Es ist gefährlich das Gerät mit einem beschädigten Stromkabel zu betreiben; ein abgenutztes Kabel kann zu einem Feuer oder Stromschlag führen. Das Stromkabel regelmäßig untersuchen. Für den Ersatz, wenden Sie sich an Ihren Verkäufer oder 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:

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 sufre 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.

STUDIO SCAN XTD825 / 625™

Chapter 1 : INTRODUCTION

1-1. SUPPLIED EQUIPMENT

- 1 STUDIO SCAN XTD825™ (XTD825) or 1 STUDIO SCAN XTD625™ (XTD625).
- 1 Set of 19" Brackets (XTD825 only).
- 1 AC power supply cord.
- 1 S.VIDEO cable (4-pin mini DIN / 4-pin mini DIN).
- 1 VGA cable (HD15 male / HD15 male).
- 1 BNC (x5) to BNC (x5) cable.
- 1 CD-ROM (Remote Control Software).
- 1 User's manual.

Supplied equipment with the optional DVI input (OPT-DVI-XTD)

- 1 DVI-D (M/M dual link) cable.

1-2. GENERAL INFORMATION

The STUDIO SCAN XTD825 / 625™ is a BROADCAST Computer to Video Scan Converter with GENLOCK which allows you to convert your workstation, PC or MACINTOSH®, graphic images into video. The conversion is ensured in REAL TIME, FULL SCREEN. The XTD825/XTD625 is Auto-Scan and offers you a lot of user-friendly features for an easy and optimized conversion:

- High performance Genlock, to OVERLAY graphics onto incoming video (external switcher). All of the Line & Subcarrier phase parameters are adjustable and meet ITU-R (601) specifications.
- LCD windows for efficient control and status of all the functions.
- Linear Pan/Zoom, up to 200%, to offer you the choice of the best picture size and position according to your application.
- High performance 8 levels of anti-flicker, to significantly decrease the interlaced inherent flicker of the video output. The XTD825/XTD625 offers you a very large anti-flicker algorithm pattern to surely find the adjustment that perfectly fits to your application.
- Computer input format memory, 16 User presets, to store the exact adjustments of the format that you are frequently using. Ideal and very useful for rental or multi computer applications.
- In addition, the video composite (NTSC / NTSCj / PAL), S.VIDEO and RGB/YUV outputs are buffered. The COMPOSITE, RGB/YUV video directly drive the BNC connectors. An optional SDI, 10 bits, 4:2:2 which meet SMPTE 259 M specifications timings output is also available.

STUDIO SCAN XTD825 / 625™ offers all of the features to ensure a broadcast and professional conversion. It offers State of the Art Digital Signal Processing and takes part in the leading edge of the Scan Conversion technology.

1-3. STUDIO SCAN XTD825 / 625™ REFERENCES

REFERENCES	DESIGNATIONS
XTD825	STUDIO SCAN XTD825™.
XTD825-D1	STUDIO SCAN XTD825™ with optional SDI (4:2:2) output.
XTD625	STUDIO SCAN XTD625™.
XTD625-D1	STUDIO SCAN XTD625™ with optional SDI (4:2:2) output.
OPT-DVI-XTD	Optional DVI input (available only on XTD825 & XTD825-D1 version)

1-4. REFERENCES SPECIFICATIONS TABLE

▼REFERENCES▼	INPUT					OUTPUTS			
	Line frequency		Resolution max	Analog + loop (HD15)	Digital + loop (DVI)	Composite video	S.VIDEO	YUV RGBS/RGsB	SDI
	Min	Max							
XTD625	29 kHz	85 kHz	1280x1024	●		●	●	●	
XTD625-D1	29 kHz	85 kHz	1280x1024	●		●	●	●	●
XTD825	29 kHz	110 kHz	1600x1200	●		●	●	●	
XTD825-D1	29 kHz	110 kHz	1600x1200	●		●	●	●	●
XTD825 + OPT-DVI-XTD	29 kHz	110 kHz	1600x1200	●	●	●	●	●	
XTD825-D1 + OPT-DVI-XTD	29 kHz	110 kHz	1600x1200	●	●	●	●	●	●

1-5. INSTALLATION

- **Table Top Mounting:** The STUDIO SCAN XTD825 / 625™ can be used directly on a table: the unit is equipped with 4 plastic feet.
- **Rack Mounting:** The STUDIO SCAN XTD825 / 625™ is compatible with a 19" enclosure. Please follow the instructions below to install the STUDIO SCAN XTD825 / 625™ into a 19" rack:

- ① **Screw the supplied 19" brackets to the sides of the STUDIO SCAN XTD825™ (XTD825 only).**



- ② **Attach the STUDIO SCAN XTD825 / 625™ to your rack by using 4 screws in the front panels (screws are not included).**

IMPORTANT:

- The openings in the front panel and in the rear panel are for cooling. Do not cover these openings.
- Be sure that no weight is added to the STUDIO SCAN XTD825 / 625™ 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 2 : TECHNICAL DESCRIPTION

2-1. FRONT PANEL



FREEZE: Allows to freeze the displayed image.

ADJUSTMENTS

UNDER - OVER - ZOOM: Underscan, Overscan or Zoom mode selection.

POS: Position mode selection.

H: Horizontal Image adjustment.

V: Vertical Image adjustment.

NOTE: H and V knobs act on the position or size of the image according to the selected POS/SIZE mode.

SIZE: Size mode selection.

LCD CONTROL

◀ ▶: Allows to select items in the LCD menu.

EXIT MENU: Allows to exit from a LCD menu.

ENTER: Allows to validate a selected item.

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

2-2. REAR PANEL



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

REMOTE CONTROL: Standard RS-232, DB9 female connector.

COMPUTER INPUT: Analog computer input on HD15 female connector.
Digital computer input on DVI-I female connector (available in option on XTD825 & XTD825-D1 version).

RGB Hi-Z / 75 Ω: RGB input load. Set this button on Hi-Z if you connect a monitor on the MONITOR OUT connector. If not set it on 75 Ω.

MONITOR OUTPUT: Analog computer output (loopthrough) on HD15 female connector.
Digital computer output (loopthrough) on DVI-I female connector (available in option on XTD825 & XTD825-D1 version).

GENLOCK

IN: GENLOCK input.

OUT: GENLOCK output (loopthrough).

OUTPUTS

ANALOG OUT: R, G, B, S: RGB/S or RGsB video outputs (on 3 or 4 BNC connectors).

R-Y, Y, B-Y: Component video output (on 3 BNC connectors).

S.VIDEO: S.VIDEO outputs (4-pin mini DIN connector).

COMPOSITE: Composite video outputs (1 BNC connector).

SDI OUT (OPTIONAL): Optional SDI (4:2:2) output (on 1 BNC connector).

Chapter 3 : STARTING

3-1. CONNECTIONS

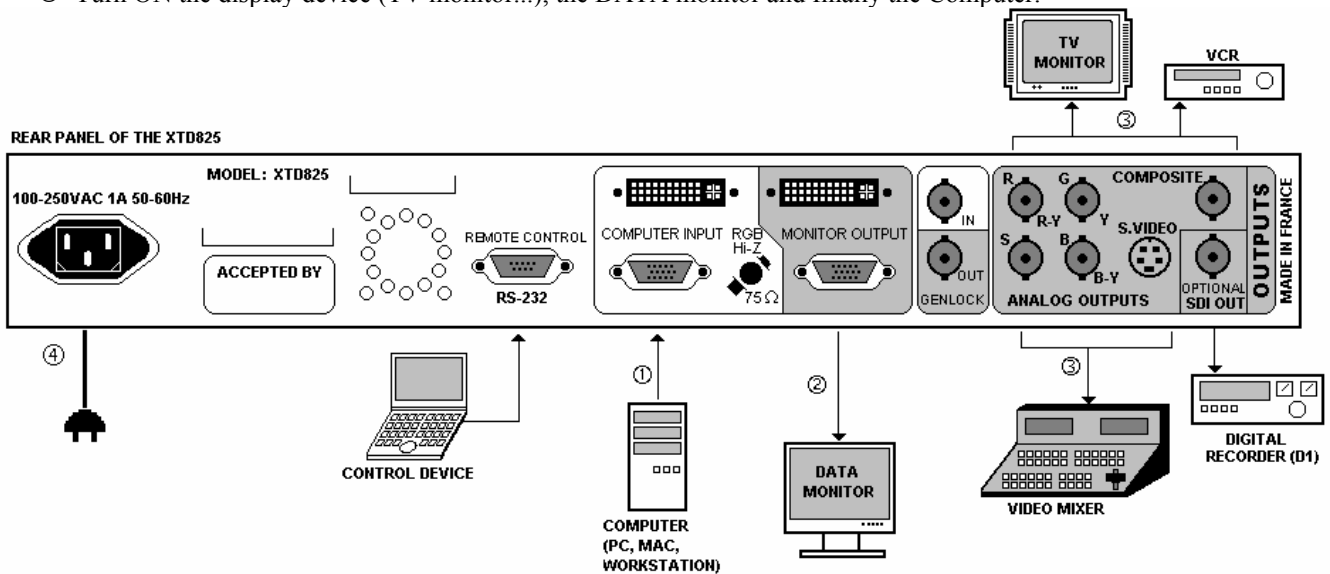
- ① Connect your computer (Workstation, PC or MAC) to the "COMPUTER INPUT" connector (HD15 or DVI-I female) of the XTD825/625.

- ② Connect your DATA monitor to the "MONITOR OUTPUT" connector (HD15 or DVI-I female) of the XTD825/625.

NOTE: Set the RGB Hi-Z/75 Ω button on Hi-Z if you connect a monitor on the "MONITOR OUTPUT" connector. If not set it on 75 Ω .

NOTE: It's not possible to view the digital computer source (DVI-I input) onto a monitor connected to the analog monitor output (HD15 output). It's not possible to view the analog computer source (HD15 input) onto a monitor connected to the digital monitor output (DVI-I output).

- ③ Connect your display device (TV monitor, VCR, digital recorder...) to the outputs (ANALOG or SDI) of the XTD825/625.
- ④ Connect the AC Mains cable to the XTD825/625 and power "ON" the Main Switch (on front panel).
- ⑤ Turn ON the display device (TV monitor...), the DATA monitor and finally the Computer.



3-2. SETTINGS

- ① We recommend to reset the device to all of its DEFAULT VALUE with the LCD menu # 4-4, before proceeding.
- ② For the XTD825 versions with optional DVI input, select the input type (analog or DVI) with the LCD menu # 1-2.
- ③ Select an output standard with the LCD menu # 2-2.
- ④ Select an output rate with the LCD menu # 2-3.
- ⑤ Select the type of the RGB/YUV output with the LCD menu # 2-4.

3-3. ADJUSTMENTS

- ① Select the UNDERSCAN mode with the front panel button (UNDER LED is ON).
- ② Adjust the position & size with the front panel buttons to fill the image in the full screen.
- ③ Select the needed mode (OVER or ZOOM) with the front panel button. If you select ZOOM, adjust the horizontal and vertical size of the image with the front panel buttons.
- ④ Make the others adjustments, if necessary, available in LCD menu # 3 (black level, RGB level, flicker level, horizontal smooth...). Valid all the LCD adjustments with **ENTER**.

NOTE: The STUDIO SCAN XTD825 / 625™ is provided with 40 NON-volatile image memories. Each of these memories contains the input format parameters and all of the image adjustments (position, size...). When the 40 memories are used, each new memorization erases the oldest memory.

Chapter 4 : LCD SCREEN DESCRIPTION

4-1. 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 STUDIO SCAN XTD825 / 625™.
- The CONTROL MODE allows to select and adjust the parameters of the STUDIO SCAN XTD825 / 625™.

4-2. LCD CONTROL BUTTONS

The LCD screen is controlled by 2 buttons and 1 knob:

◀ ▶ 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 without safeguarding the selection.
 - return to the STATUS MODE (press several times).

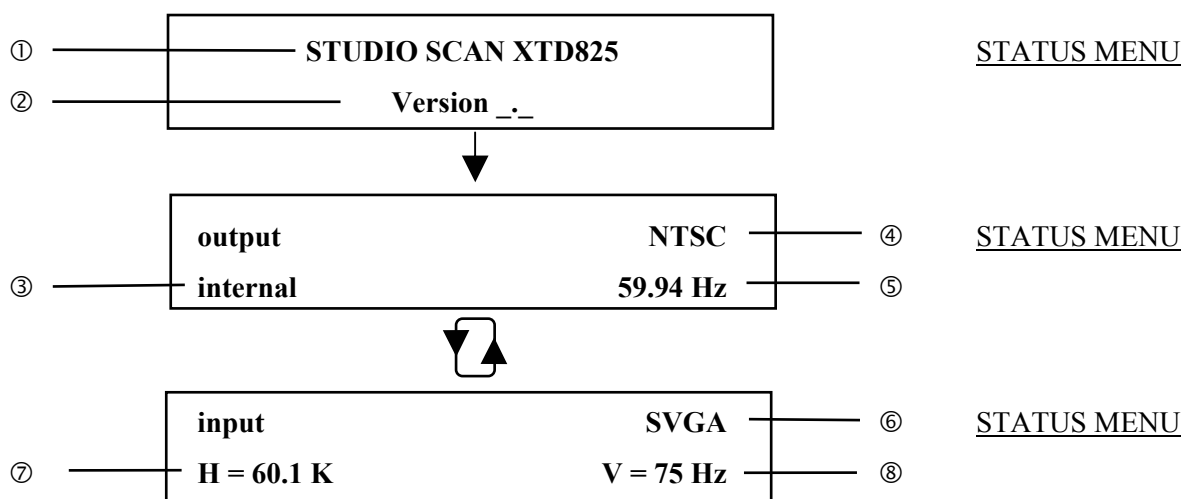
ENTER button:

- 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.

4-3. STATUS MODE

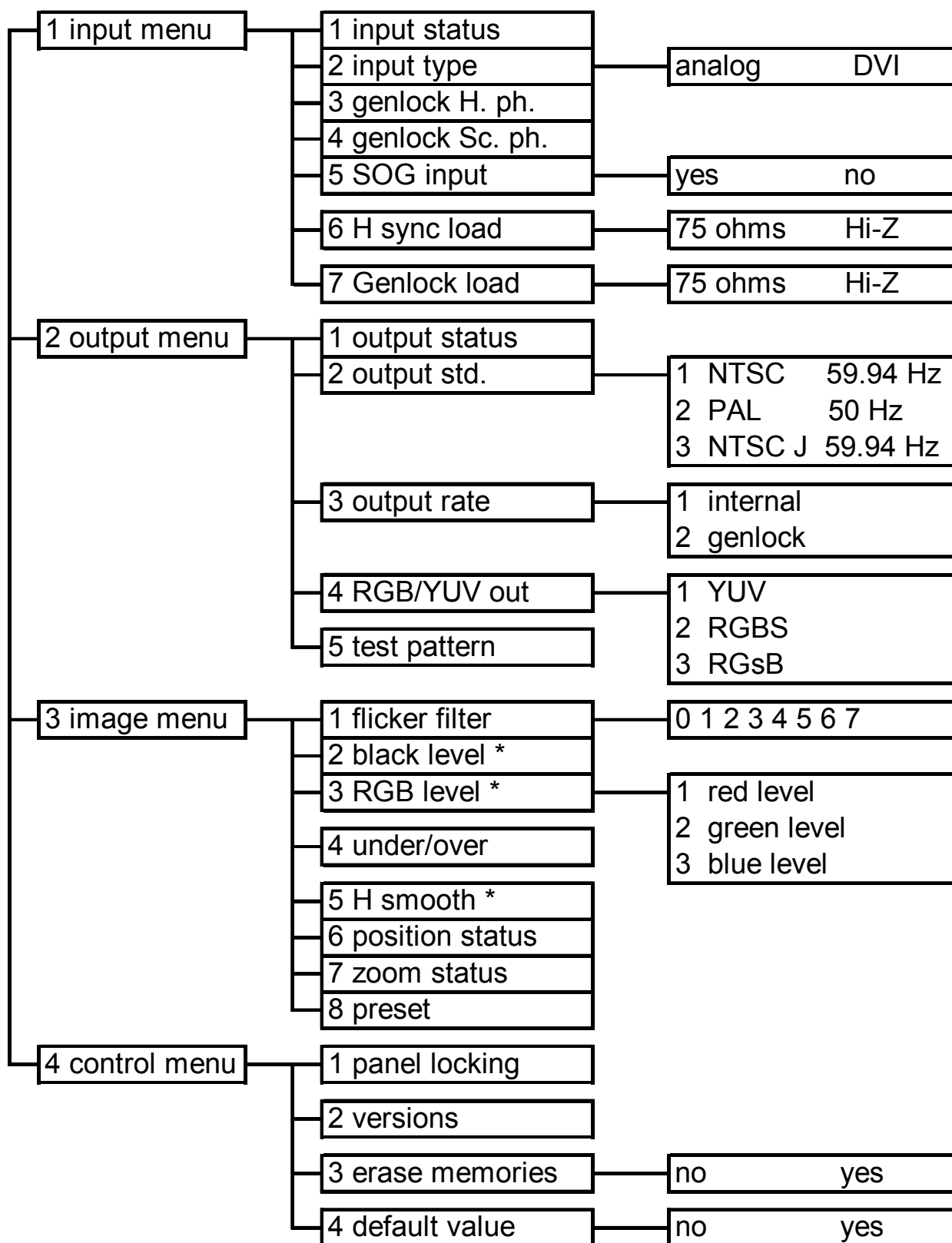
When switching ON, the LCD SCREEN shows the product's name and reference as follows:



- ① Device designation.
- ② Device version.
- ③ Synchronization mode.
- ④ Output standard.
- ⑤ Output frame rate.
- ⑥ Input format.
- ⑦ Horizontal input frequency.
- ⑧ Vertical input frequency.

4-4. CONTROL MODE

The menus of the CONTROL MODE are configured as follow:



* not available for the DVI input source.

Chapter 5 : LCD FUNCTIONS DESCRIPTION

1 [INPUT MENU] + ENTER.

1-1 [input status] + ENTER.

Displays the input status.

- **[INPUT]:** [XGA] = input format.
[60 Hz] = input frame frequency.
- **[GENLOCK]:** [none] = genlock signal not detected.

1-2 [Input type] + ENTER. (Available on XTD825 version with optional DVI input)

Select one of the following input type with ◀ ▶ + ENTER:

- **[analog]** = Analog computer source connected to the HD15 input connector.
- **[DVI]** = Digital computer source connected to the DVI input connector.

1-3 [Genlock H. ph.] + ENTER.

This function allows to adjust the genlock horizontal phase. Adjust with ◀ ▶ + ENTER.

1-4 [Genlock Sc. ph.] + ENTER.

This function allows to adjust the genlock Subcarrier phase. Adjust with ◀ ▶ + ENTER.

1-5 [SOG input] + ENTER.

Select [Yes] if your input signal is in RGsB (SOG), and valid with ENTER.

1-6 [H sync load] + ENTER.

Select the Horizontal sync load of your input signal with ◀ ▶ + ENTER.

1-7 [Genlock load] + ENTER.

Set on **Hi-Z** if the genlock out is used.

2 [OUTPUT MENU] + ENTER.

2-1 [output status] + ENTER.

Displays the output status.

2-2 [output std.] + ENTER.

Select one of the following standard with ◀ ▶ + ENTER:

- **[NTSC]** = NTSC standard for composite and S.VIDEO output and 60Hz frame rate for RGB/S and YUV output.
- **[PAL]** = PAL standard for composite and S.VIDEO output and 50Hz frame rate for RGB/S and YUV output.
- **[NTSCj]** = NTSC japan standard for composite and S.VIDEO output and 60Hz frame rate for RGB/S and YUV output.

2-3 [output rate] + ENTER.

Select one of the following functions with ◀ ▶ + ENTER.

- **[internal]** = The output standard depends of the selected output standard in LCD menu # 2-2.
- **[genlock]** = The output standard is synchronized onto the genlock input standard.

2-4 [RGB/YUV out] + ENTER.

Select the RGB/YUV wanted output with ◀ ▶ + ENTER.

- **[YUV]** = component video output.
- **[RGBS]** = RGB/S video output.
- **[RGsB]** = RGB with Sync On Green video output.

2-5 [test pattern] + ENTER.

Select one item with ◀ ▶ + ENTER.

- **[yes]** = displays a test pattern onto the output.
- **[no]** = turns OFF the test pattern.

3 [IMAGE MENU] + ENTER.**3-1 [flicker filter] + ENTER.**

Select one of the 8 levels of the anti-flicker with ◀ ▶ and validate with **ENTER**.

3-2 [Black Level] + ENTER. (Not available for the DVI input source).

Adjust the Black level with ◀ ▶ + **ENTER**.

3-3 [RGB Levels] + ENTER. (Not available for the DVI input source).

Select an item with ◀ ▶ + **ENTER**.

- **[Red]** = Adjust the level of the Red with ◀ ▶ + **ENTER**.
- **[Green]** = Adjust the level of the Green with ◀ ▶ + **ENTER**.
- **[Blue]** = Adjust the level of the Blue with ◀ ▶ + **ENTER**.

3-4 [under/over] + ENTER.

Select an item with ◀ ▶ + **ENTER**.

- **[underscan]** = the output image is full screen.
- **[overscan]** = the output is 10% bigger than in underscan mode.

3-5 [H. smooth] + ENTER. (Not available for the DVI input source).

Select an item with ◀ ▶ + **ENTER**.

- **[ON]** = active the horizontal filter.
- **[OFF]** = inactive the horizontal filter.

3-6 [position status] + ENTER.

Displays the image position status.

3-7 [zoom status] + ENTER.

Displays the image zoom status.

3-8 [preset] + ENTER.

This function allows to set all the image parameters (flicker filter, Black level, RGB level, under/overscan, position & size) to the factory settings.

4 [CONTROL MENU] + ENTER.**4-1 [panel locking] + ENTER.**

This function allows to lock the front panel buttons. Select an item with ◀ ▶ + **ENTER**.

- **[lock]** = allows to lock the front panel push button.
- **[unlock]** = doesn't lock the front panel button.

NOTE: To unlock push simultaneously on **ENTER** and **EXIT**.

4-2 [version] + ENTER.

Status of the internal firmware.

4-3 [erase memories] + ENTER.

This function allows to erase all the image settings memorized.

4-4 [default value] + ENTER.

This function allows to clear the following adjustments and set them to the factory value:

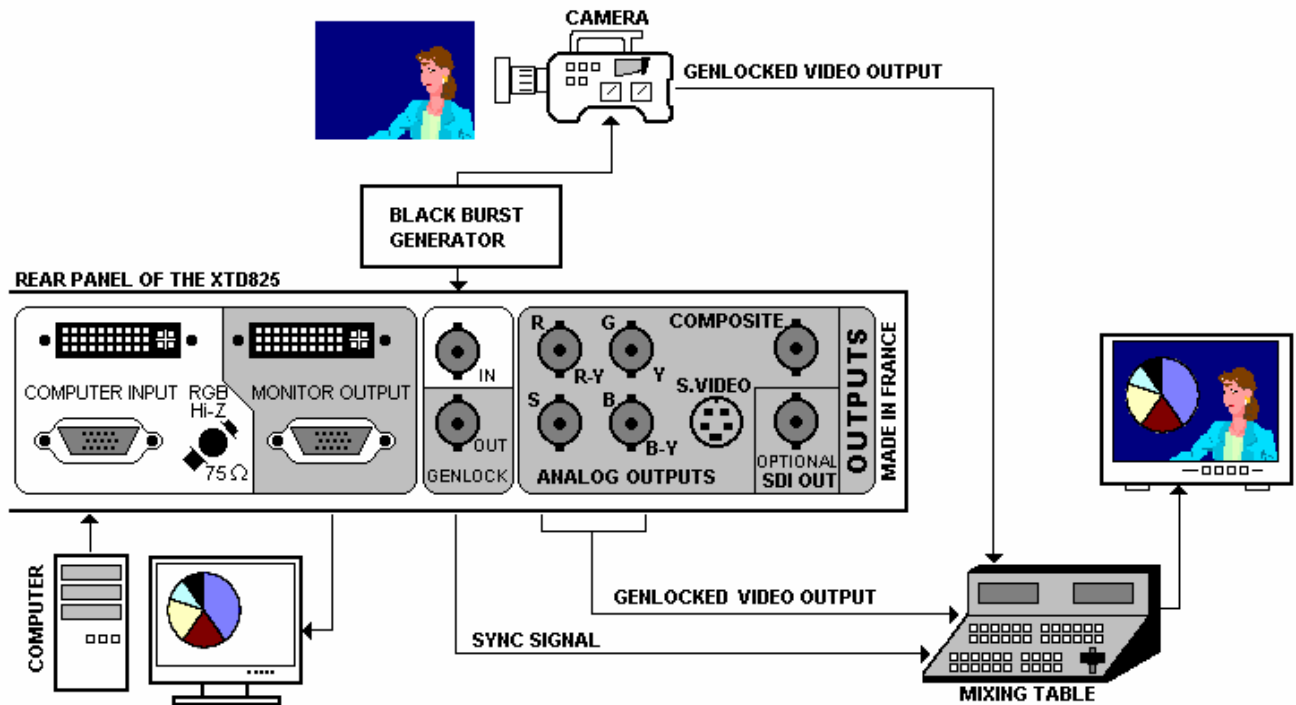
FUNCTION	POSITION	FUNCTION	POSITION
1-2 Input type	analog	2-4 RGB/YUV out	YUV
1-3 Genlock H Ph	0	2-5 test pattern	no.
1-4 Genlock Sc. Ph.	0	3-1 Flicker Filter	level 1.
1-5 SOG input	no.	3-2 Black level.	0
1-6 H sync load	Hi-Z.	3-3 RGB levels.	0
1-7 Genlock load	Hi-Z.	3-4 under/over	underscan.
2-2 Output standard	NTSC	3-5 H smooth	off.
2-3 Output rate	internal.	4-1 panel locking	unlock.

Chapter 6 : THE GENLOCK FUNCTION

6-1. INTRODUCTION

The genlock function allows to synchronize many video equipment in order to mix images together (i.e.: to overlay graphic image onto incoming video).

6-2. CONNECTION



6-3. ADJUSTMENTS

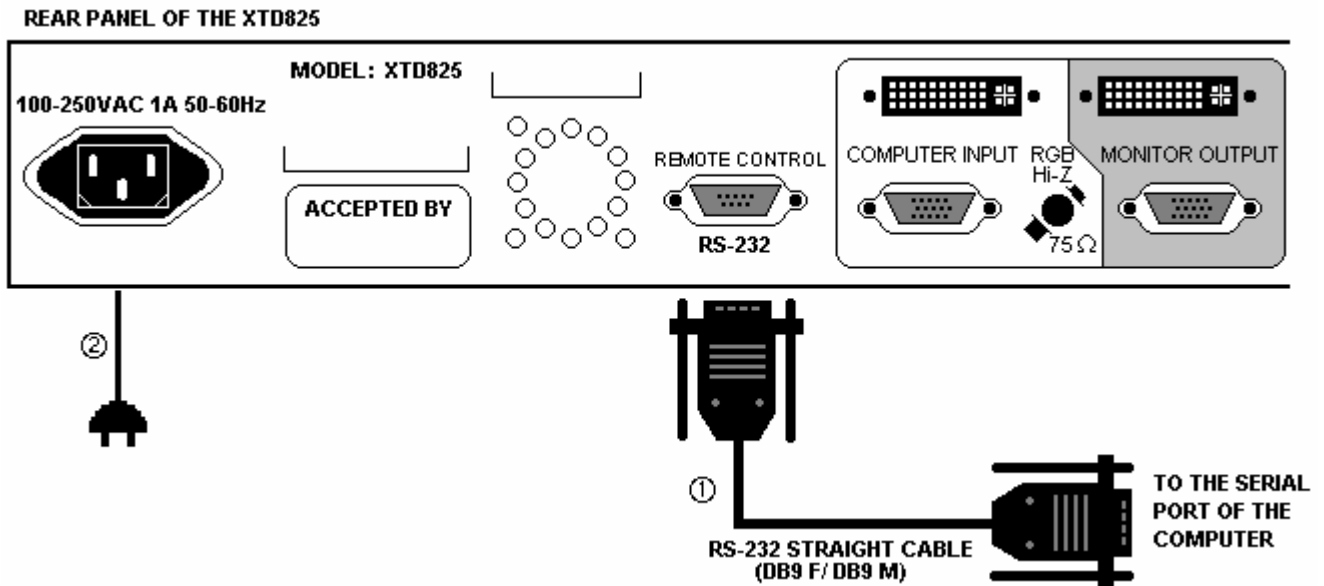
- ① Set the **genlock load** under **Hi-Z** if the genlock output is used (**INPUT MENU>Genlock load>Hi-Z**). If not, set it under **75Ω**.
- ② Adjust the horizontal (line) phase between the Black burst generator and the output (PAL or NTSC), has to be equivalent to 0. Make the adjustment with the LCD menu (**INPUT MENU>Genlock H ph**).
- ③ Adjust the Subcarrier phase between the Black burst generator and the output (PAL or NTSC), has to be equivalent to 0. Make the adjustment with the LCD menu (**INPUT MENU>Genlock SC. ph**).

Chapter 7 : UPDATING THE STUDIO SCAN XTD825 / 625™

The STUDIO SCAN XTD825 / 625™ can be update thanks a COMPUTER (PC) via its REMOTE CONTROL (RS-232) connector.

7-1. CONNECTIONS:

- ① Connect the "REMOTE CONTROL RS-232" connector of the STUDIO SCAN XTD825 / 625™ to the SERIAL port of your COMPUTER with a DB9 M/F straight cable.
- ② Connect the STUDIO SCAN XTD825 / 625™ to an AC power outlet.
- ③ Switch **OFF** the STUDIO SCAN XTD825 / 625™ (FRONT PANEL SWITCH = **O**).



7-2. UPDATE INSTRUCTIONS:

- ① Open the file "Updater825 " (in start/Program/ANALOG WAY/XTD825).
- ② Click on "START" on the SOFTWARE.
- ③ Press the ENTER button of the STUDIO SCAN XTD825 / 625™ (FRONT PANEL), and SWITCH it **ON** simultaneously (FRONT PANEL SWITCH = **I**). All front panel LEDs switch ON and OFF, the LCD screen displays Downloading, and the upgrade will start. Then you can release the ENTER button.
- ④ When the software displays "Program operation completed", SWITCH OFF and ON the STUDIO SCAN XTD825 / 625™ with the FRONT PANEL SWITCH.
- ⑤ Click on the "Quit" button to close the update SOFTWARE.

NOTE: YOUR STUDIO SCAN XTD825 / 625™ IS NOW READY TO WORK.

NOTE: THE UPDATER FILES ARE AVAILABLE ON OUR WEB SITE: www.analogway.com

Chapter 8 : TECHNICAL SPECIFICATIONS

8-1. COMPUTER INPUT

- **ANALOG COMPUTER INPUT (on HD15 connector)**

Line frequency: **XTD825:** From 29 kHz to 110 kHz.
XTD625: From 29 kHz to 85 kHz.

Frame frequency: Up to 130 Hz.

Resolution: **XTD825:** Up to 1600 x 1200.
XTD625: Up to 1280 x 1024.

Sync. types: RGBHV, RGB/S, RGsB (Sync On Green).

Levels: R, G, B = 3 x 0.7 Vp/p.
H & V Sync = TTL.
Composite Sync = TTL and 0.3 V.
SOG (Sync On Green) = 0.3 V.

Impedance: R, G, B, V, H = 75 Ohm.

- **DIGITAL COMPUTER INPUT (on optional DVI-I connector)**

Format: Digital Visual Interface (DVI)

Resolution:

- 640 x 480 @ 60Hz (up to 120 Hz).
- 800 x 600 @ 60Hz (up to 120 Hz).
- 1024 x 768 @ 60Hz (up to 120 Hz).
- 1280 x 1024 @ 60Hz (up to 75 Hz).
- 1600 x 1200 @ 60Hz BR (reduced blanking).

8-2. VIDEO OUTPUTS

- **RGB/S VIDEO (on 4 BNC connectors).**

Frequency: 15.625 kHz / 50 Hz (625 lines).
15.735 kHz / 60 Hz (525 lines).

Levels: R, G, B = 0.7 Vp/p.
Sync = 2 Vp/p.
SOG = 2 Vp/p.

Impedance: 75 Ohm.

- **COMPONENT (on 3 BNC connectors).**

Frequency: 15.625 kHz / 50 Hz (625 lines).
15.735 kHz / 60 Hz (525 lines).

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

Impedance: 75 Ohm.

- **S.VIDEO (on 4-pin mini DIN connector).**

Standard: PAL: 15.625 kHz / 50 Hz - 625 lines.
NTSC: 15.735 kHz / 60 Hz - 525 lines.

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

Impedance: 75 Ohm.

- **COMPOSITE VIDEO (on BNC connector or HD15 female connector).**

Standard: PAL: 15.625 kHz / 50 Hz - 625 lines.
NTSC: 15.735 kHz / 60 Hz - 525 lines.

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

Impedance: 75 Ohm.

- **SDI OUTPUT (OPTIONAL) (on BNC)**

Signal: 270 Mbps serial digital output conforming to SMPTE 259M.

Impedance: 75 Ohm.

8-3. GENLOCK (INPUT / OUTPUT)

Black Burst: PAL or NTSC (Loop through).
Impedance: 75 Ohm or Hi-Z.

8-4. REMOTE PORT

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

8-5. ENVIRONMENTAL

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

Hygrometry: 10 % to 80 % (without condensation).

Dimensions:

- **XTD825:** W 440 x D 300 x H 44 mm / 17.3" W x 11.8" D x 1.74" H.
W = 482mm / 19" with the rackmount kit.
- **XTD625:** W 482 x D 300 x H 44 mm / 19" W x 11.8" D x 1.74" H.
- Compatible with 19" Standard, height = 1 unit.

Weight: 3.3 kg / 7.3 Lbs.

Chapter 9 : CONTROL SOFTWARE

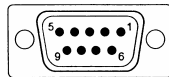
9-1. CONNECTION

• CONNECTING THE RS-232:

Connect the serial port of your control device to the REMOTE CONTROL (RS-232) connector (DB 9 Female) of the STUDIO SCAN XTD825 / 625™ with a **straight** cable (DB 9 Female / DB 9 Male).

• PIN-OUT:

PIN #	FUNCTIONS
2	TRANSMIT DATA (Tx)
3	RECEIVE DATA (Rx)
5	GROUND (Gnd)



DB 9 female

(Rear panel of the STUDIO SCAN XTD825 / 625™)

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

9-2. "STUDIO SCAN XTD825 / 625 REMOTE CONTROL" SOFTWARE

Your device is shipped with a Windows compatible **Remote Control Software**. This software allows you to control and make all adjustments by a simple mouse click.

• SOFTWARE INSTALLATION:

- ① Turn your computer ON and wait for Windows to completely start.
- ② Insert the CD-ROM into your drive: the ANALOG WAY home window will open automatically.
- ③ Select the language of the CD-ROM menus, then click on "Install a Remote Control Software" and select the name of your device.

IMPORTANT: If the Autorun is not enabled: From the Windows desktop, open My Computer and select the CD-ROM drive. Select the Autorun folder, then select the autorun.exe file.

- ④ Follow the Windows installation instructions.

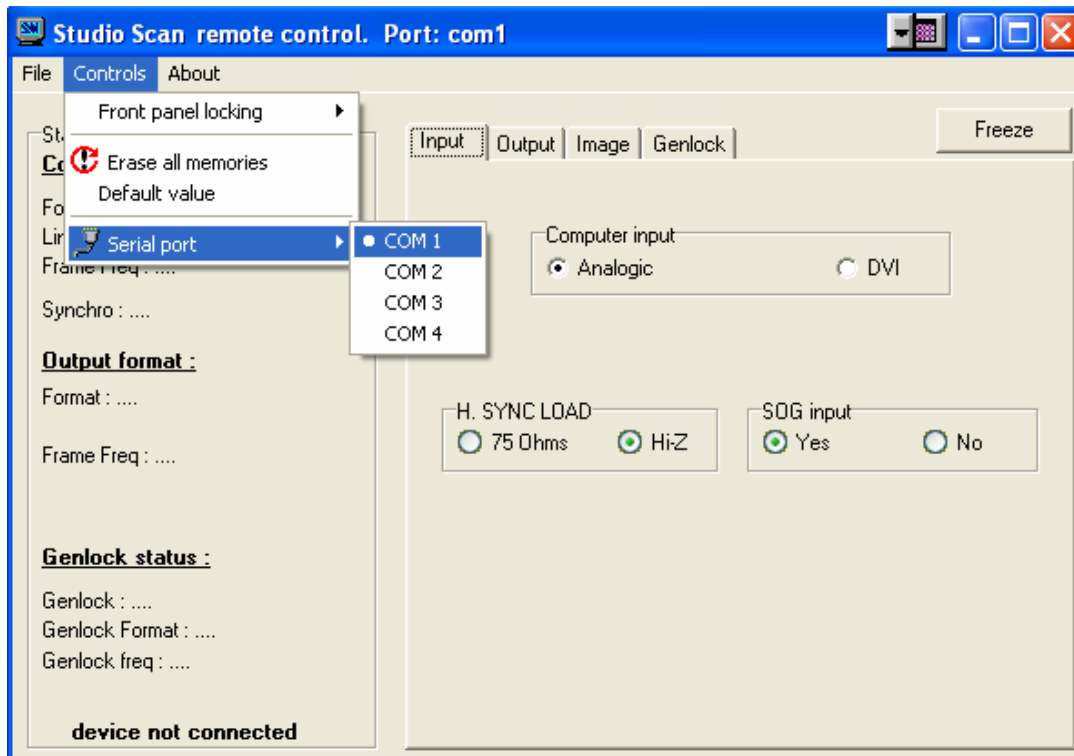
• COMMUNICATION SETUP:

- ① Connect the RS-232 cables between the control device and the STUDIO SCAN XTD825 / 625™ as indicated in section 9-1.
- ② Then only power ON all of the devices.
- ③ Click on the program files **XTD825-625** in **Start-program-ANALOGWAY-STUDIO SCAN** to run the software.
- ④ Click on **Controls** menu and select the **Serial port**.

The STUDIO SCAN XTD825 / 625™ is now controllable by the computer.

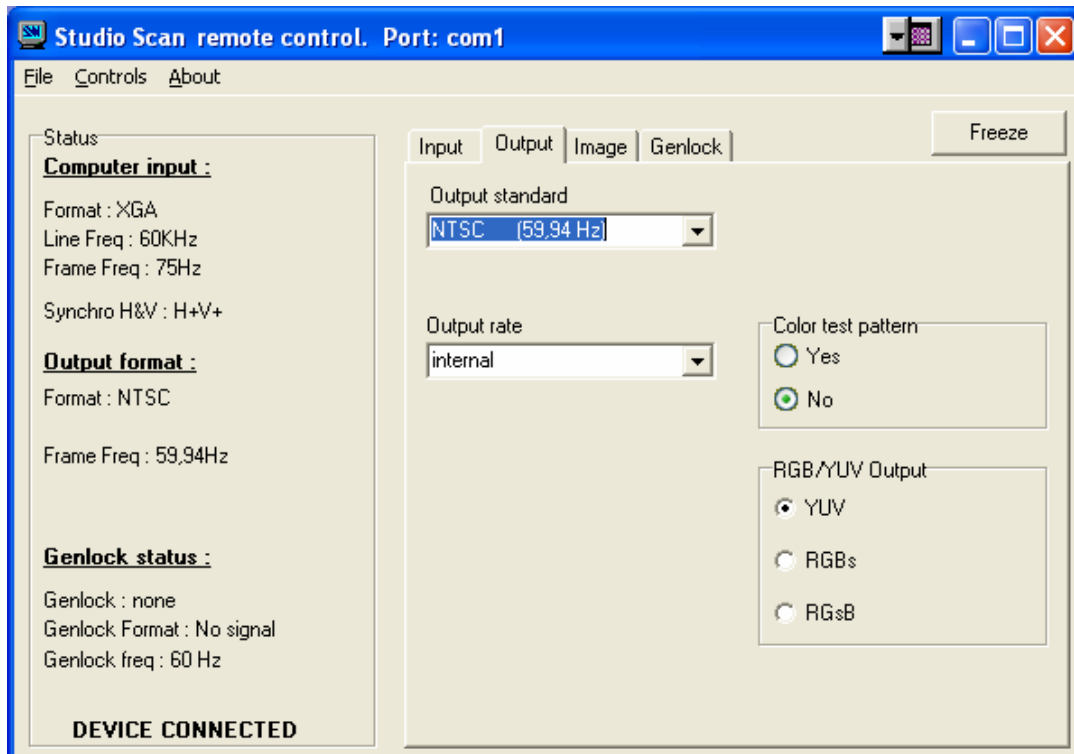
9-3. SOFTWARE SET UP

- ① Select the **Serial port** in the **Controls** menu.



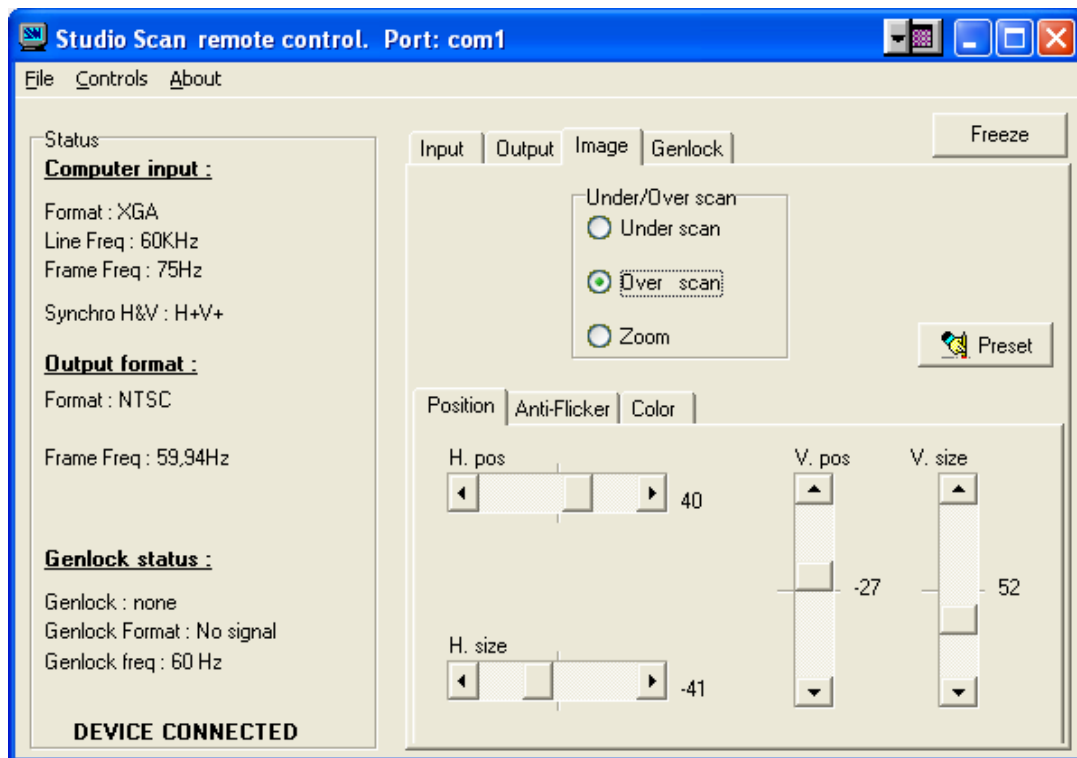
The STUDIO SCAN XTD825 / 625™ is now connected to the control device.

- ② In the **Input** menu:
- Select the input type (analogic or DVI).
 - Set the H sync load of the input.
 - Select "Yes" in the SOG Input section if your input is a RGsB (SOG) source.
- ③ In the **Output** menu, select an **Output standard**, an **Output rate** mode and the **RGB/YUV output** type.

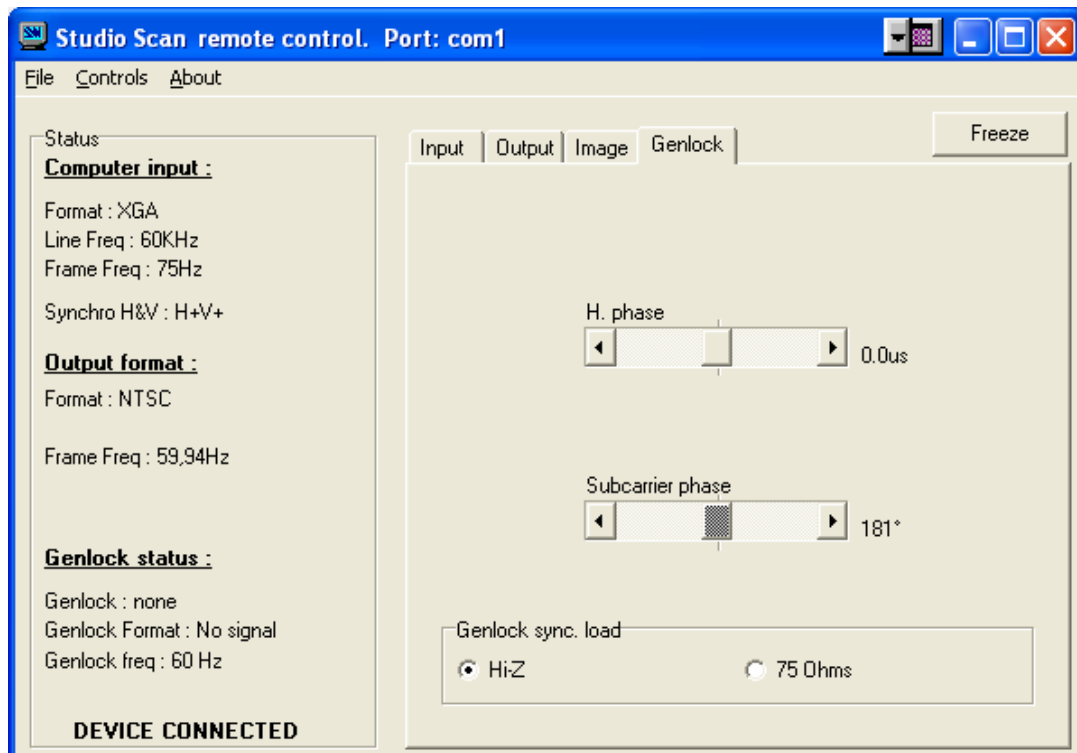


9-3. SOFTWARE SET UP (continued)

- ④ In the **Image** menu, select the Under/over scan mode. Then make the following adjustment:
- in the position section: adjust the position and size of the image.
 - in the color section: adjust the Red, Green, Bleu and Black level.
 - in the Anti-Flicker section adjust the flicker and the horizontal smooth.



- ⑤ In the **Genlock** menu, select the Genlock load and then adjust the H. phase and subcarrier phase.



Chapter 10 : RS-232 PROGRAMMER'S GUIDE

10-1. INTRODUCTION

If you need to use your own Control Software Program with a PC, MAC or WORKSTATION by a RS-232 port. The STUDIO SCAN XTD825 / 625™ allows to communicate by simple transmit or receive ASCII code.

The STUDIO SCAN XTD825 / 625™ treats any character that it received on the RS-232 as a possible command but accepts only legal commands. There are no starting/ending in a command string.

A command can be 1 or 2 characters typed on a keyboard and does not required any special characters before or after it (it is not necessary to press "ENTER" from the keyboard). A command can be preceded by a value (see chapter 10-2. COMMANDS STRUCTURE).

When the STUDIO SCAN XTD825 / 625™ receives a valid command, it will execute the command. Then the STUDIO SCAN XTD825 / 625™ will send back the status of all 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 STUDIO SCAN XTD825 / 625™ just send 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 sent 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 characters (1 or 2). The characters used without any numerical value return the current setting of the command.

COMMAND = VALUE (optional) + CHARACTER(S).

Examples:

COMMAND		RESPONSE	DESCRIPTION
VALUE	CHARACTER(S)		
none	F	TSY3	Read the output format.
10	v	VP10	Set the vertical position to 10.

10-3. ERROR RESPONSES

When the STUDIO SCAN XTD825 / 625™ receives from the controlling device an invalid command or value, it returns an error response:

COMMAND		RESPONSE	DESCRIPTION
VALUE	CHARACTER		
none	BB	E10	Invalid command.
70260	v	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).

ASCII COMMAND	RESPONSE	COMMAND DESCRIPTION	TYPE	VALUE		
				MIN	MAX	DESCRIPTION
FRONT PANEL COMMANDS						
z	FRZ	FREEZE.	Rd/Wr	0	1	0 = freeze inactive 1 = freeze active.
a	ASP	Size mode selection.	Rd/Wr	0	2	0 = underscan. 1 = overscan. 2 = ZOOM.
h	HP	Horizontal position adjustment.	Rd/Wr	0	255	
v	VP	Vertical position adjustment.	Rd/Wr	0	255	
w	HW	Horizontal size adjustment.	Rd/Wr	0	255	
s	VS	Vertical size adjustment.	Rd/Wr	0	255	
H	ZHP	Zoom horizontal position.	Rd/Wr	0	255	
V	ZVP	Zoom vertical position.	Rd/Wr	0	255	
W	ZHW	Zoom horizontal size.	Rd/Wr	0	255	0 = 100% 255 =200%
S	ZVS	Zoom vertical size.	Rd/Wr	0	255	0 = 100% 255 =200%
R	REC	RECALL.	Rd/Wr	0	1	1 = recall (automatic reset)
M	STO	STORE.	Rd/Wr	0	1	1 = store (automatic reset)
INPUT COMMANDS						
D	RGBI	Input type	Rd/Wr	0	1	0 = analog 1 = DVI
GP	REFH	Genlock H phase adjustment	Rd/Wr	0	255	
GS	REFS	Genlock subcarrier phase adjustment.	Rd/Wr	0	65535	
GL	GLD	Genlock load.	Rd/Wr	0	1	0 = Hi-Z 1 = 75 ohms.
E	SOGI	SOG input selection.	Rd/Wr	0	1	0 = no 1 = yes.
l	LOAD	H sync load selection.	Rd/Wr	0	1	0 = Hi-Z 1 = 75 ohms.
OUTPUT COMMANDS						
F	OFMT	Output standard selection	Rd/Wr	0	7	0 = NTSC 1 = PAL 2 = NTSCj.
GR	REFR	Synchronization mode selection.	Rd/Wr	0	1	0 = internal. 1 = genlock.
e	OSIG	RGB/YUV output selection.	Rd/Wr	0	2	0 = YUV. 1 = RGBS. 2 = RGsB.
P	OPAT	Test pattern selection.	Rd/Wr	0	1	0 = no test pattern. 1 = test pattern selected.
IMAGE COMMANDS						
f	FLK	Flicker level selection.	Rd/Wr	0	7	
k	BLK	Black level adjustment	Rd/Wr	0	255	
r	RLV	Red level adjustment.	Rd/Wr	0	127	
g	GLV	Green level adjustment.	Rd/Wr	0	127	
b	BLV	Bleu level adjustment.	Rd/Wr	0	127	
L	HSMT	Horizontal smooth	Rd/Wr	0	1	0 = OFF 1 = ON.
yp	PRES	PRESET	Rd/Wr	0	1	1 = PRESET (automatic reset).
CONTROLS COMMANDS						
yl	LOCK	Front panel locking selection.	Rd/Wr	0	1	0 = unlocks all buttons. 1 = locks all buttons.
yc	EPOS	Erase memory.	Rd/Wr	0	1	1 = erase all memories (automatic reset).
Y	FRES	Default value.	Rd/Wr	0	1	1 = set all the parameters to the default value (automatic reset).
xu	VERU	Device version	Rd	0	65535	Example: 104 = Version 1.4
xi	I_	Identification number.	Rd	0	65535	Value displayed in hexadecimal in the device.
NOTE: * = available with the optional DVI input only. Rd = Read only command. Rd/Wr = Read and write command.						

10-4. COMMANDS AND RESPONSES TABLE (continued)

ASCII COMMAND	RESPONSE	COMMAND DESCRIPTION	TYPE	VALUE		
				MIN	MAX	DESCRIPTION
STATUS COMMANDS						
U	UNIT	Measures unity in kHz.	Rd	0	65535	
il	ILD	This command allows to calculate the input line frequency in kHz	Rd	0	65535	Line frequency (in kHz) = (UNIT VALUE) ÷ (ILD VALUE).
id	IFD	This command allows to calculate the input frame frequency in Hz.	Rd	0	65535	Frame frequency (in Hz) = (Line frequency in Hz) ÷ (IFD VALUE).
ik	IST	Input sync type detection	Rd	0	3	0 = separate H & V 1 = Composite sync (TTL) 2 = SOG (Sync On Green) 3 = Composite sync (analog)
ip	IPS	Input sync detection.	Rd	0	1	0 = no sync detected 1 = sync detected
ih	IHP	Sign of the horizontal input sync.	Rd	0	1	0 = negative 1 = positive
iv	IVP	Sign of the vertical input sync.	Rd	0	1	0 = negative 1 = positive
ii	IIN	Interlaced signal detection.	Rd	0	1	0 = not interlaced 1 = interlaced
io	IOO	Status of the signal in comparison with the input range frequency.	Rd	0	1	0 = in range 1 = out of range
if	IFA	Input format detection	Rd	0	8	0 = no signal 1 = "out of range" signal. 2 = VGA1 350l 3 = VGA2 400l 4 = VGA3 480l 5 = SVGA 6 = XGA 7 = SXGA 8 = UXGA
GA	REFA	Status of the synchronization mode	Rd	0	2	0 = internal 1 = genlock 2 = wrong signal.
GF	REFF	Status of the synchronized format (genlock).	Rd	0	2	0 = no signal 1 = NTSC 59.94 Hz. 2 = PAL 50 Hz.
GT	REFT	Frame frequency of the synchronized signal (genlock) (in hundredth of Hz)	Rd	0	65535	
NOTE: * = available with the optional DVI input only.				Rd = Read only command. Rd/Wr = Read and write command.		

10-5. 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.