ANALOG WAY®

STUDIO SCAN XTD 620
(XTD 620)

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.

PRÉCAUTION & AVERTISSEMENT :

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

FRANÇAIS

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.

AVVISI E PRECAUZIONI :

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.

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.

ITALIANO

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.

STUDIO SCAN XTD 620

Chapter 1 : INTRODUCTION

1-1. SUPPLIED EQUIPMENT

- 1 **STUDIO SCAN XTD 620.**
- 1 Set of 19"brackets.
- 1 AC Mains Cable.
- 1 VGA Male / Female Cable HD15.
- 1 S.VIDEO Male / Male Cable.
- 1 RCA Male / RCA Male Cable.
- 1 RCA Female / BNC Male adapter.
- 1 Remote Control software (3.5" disk).
- 1 User's manual.

1-2. GENERAL INFORMATION

Especially dedicated to the portable Broadcast Studio Environments, STUDIO SCAN XTD 620 is a professional Computer to Video Scan Converter with GENLOCK which allows you to convert your **Workstation**, **PC** and **MACINTOSH** ® graphic images (up to 1280 x 1024) into **Video**. The conversion is ensured in REAL TIME and FULL SCREEN (UNDERSCAN / OVERSCAN function). The STUDIO SCAN XTD 620 is Auto Scan and has lots of user-friendly features for an easy and optimal conversion:

- **High performance professional Genlock**, to OVERLAY graphics onto incoming video (external switcher). All the Line & Subcarrier phase setting are configurable.
- **LCD window** for efficient control and status of all the functions.
- **Direct Touch Control (DTC**), for instant and simple image adjustments.
- **Linear Pan/Zoom**, up to 200%, to offer you the choice of the best picture size and position according to your application.
- **High performance Multi-Levels Anti-Flicker**, to significantly decrease the inherent interlaced flicker of the video output. The XTD 620 offers you a very large Anti-Flicker operating range to be sure to find the ideal settings to best fit to your application.
- **Computer input format memory,** 16 User presets, to store the exact settings already made or ones often use, in order to renew the processing for each application. Ideal and very useful for rental or multi computer applications.

In addition, all of the video outputs (NTSC/NTSC J/PAL/SECAM, S.VIDEO, RGB/S, COMPONENT/YUV (BETACAM™, DVCAM™, DVCPRO™) are buffered. The Composite, RGB/S and Component video directly drive the BNC connectors. An additional Luma Key output is provided.

The STUDIO SCAN XTD 620 offers all of the features to ensure a Professional and Broadcast conversion. It offers State of the Art full RGB 16 million colors Digital Processing and is in the forefront of the Scan Conversion technology.

Chapter 2 : INSTALLATION

- *Table Top Mounting* : The STUDIO SCAN XTD 620 can be used directly on a table: the unit is equipped with 4 plastic feet.

- *Rack Mounting* : The STUDIO SCAN XTD 620 is compatible with a 19" enclosure . Please follow the instructions below to install the STUDIO SCAN XTD 620 into a 19" rack :

  - **Screw the supplied 19" brackets to the sides of the STUDIO SCAN XTD 620.**

  - **Put the STUDIO SCAN XTD 620 into the rack.**
    NOTE : The 19" front panel screws are not included.

  - **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 STUDIO SCAN XTD 620 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

POWER: LED indication AC mains plugged.

FREEZE: Allows to freeze the displayed image.

STD / OVER / ZOOM: Standard / Overscan / Zoom Mode.

POS / SIZE: Position or Size Image Mode (Controlled by the H & V buttons).

H.POS / H.SIZE: Horizontal Image Control.

V.POS / V.SIZE: Vertical Image Control.

RECALL / STORE: RECALL (A Short push on the button): Allow to recall the Stored Image setting.

STORE (A Long push, LED = On) :Allow to store the Input format with his image setting.

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.

LCD SCREEN: Displays the device Status or the Control Menus.

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

3-2. REAR PANEL

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

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

GENLOCK:

IN: Input (BNC).
OUT: Output (BNC).
Hi.Z / 75 Ohms: Left Position = Hi.Z, Loopthrough.
Right Position = 75 Ohms.

COMPUTER IN: Input PC (SUB-D HD15 Male).

RGB Hi.Z / 75 Ohms: Push this button if a monitor is used.

MONITOR OUT: Output PC (SUB-D HD15 Female).

PAL/NTSC: Video Composite Output.

S.VIDEO: Y/C Output (4 pin mini DIN).

RGB / Y, R-Y, B-Y: Button to release for a component output (Y, R-Y, B-Y).

RGB / Y, R-Y, B-Y: RGB/S, RGsB or YUV Output (BNC). To select RGsB or RGB/S, see Chapter 7 : LCD FUNCTIONS DESCRIPTION.

4:2:2 (OPTIONAL): Digital Video Output (D1), only active on XTD 620 - D1 version.

Chapter 4 : STARTING

4-1. CONNECTIONS

① Connect your Computer (Workstation, PC or MAC) to the "COMPUTER IN" connector of the STUDIO SCAN XTD 620.

② Connect your computer monitor to the "MONITOR OUT" connector of the STUDIO SCAN XTD 620.

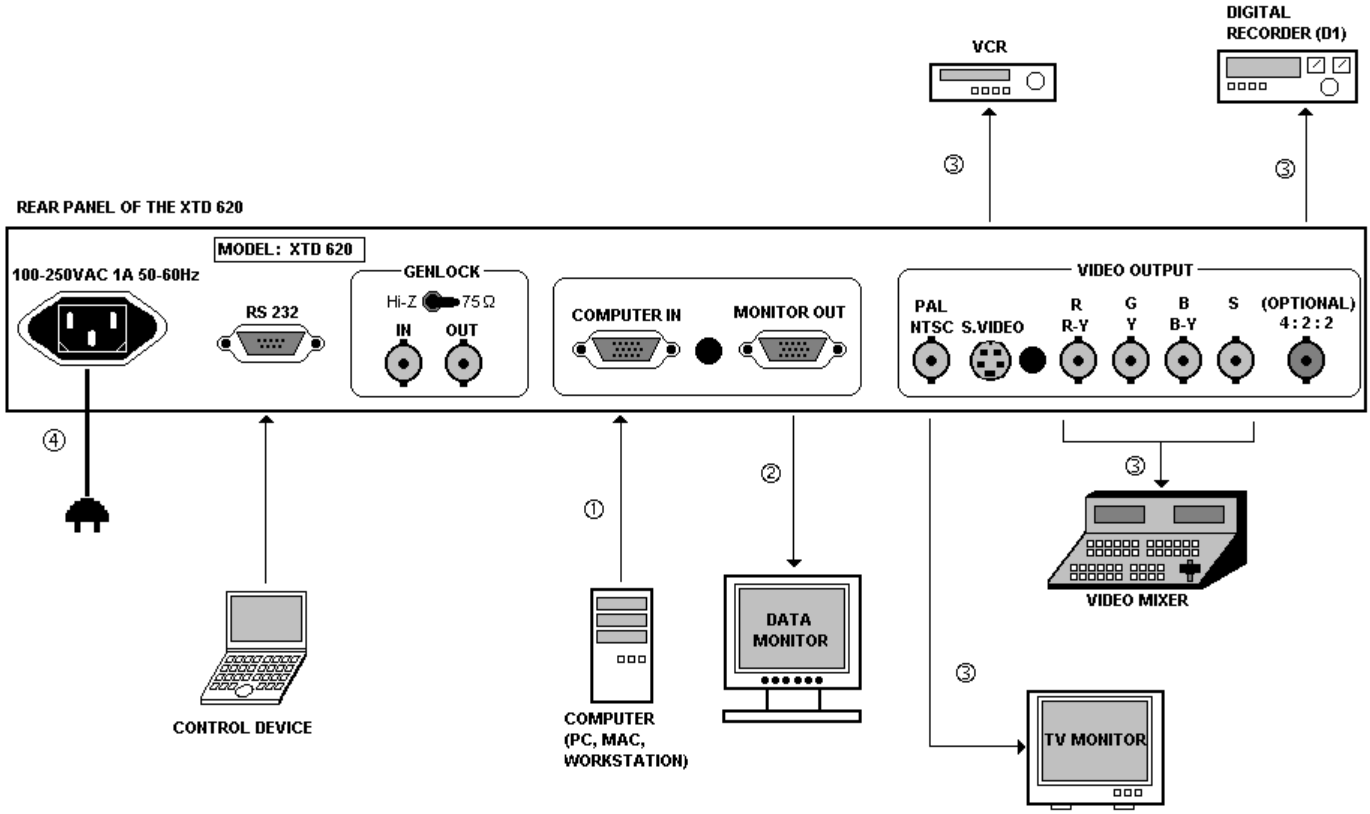
NOTE: If you don't connect a monitor to this output, set the Hi-Z / 75Ω push button to 75Ω.

③ Connect your video display device (TV, VCR, ...) to the "VIDEO OUTPUT" of the STUDIO SCAN XTD 620.

④ Connect the AC Mains Cable to the STUDIO SCAN XTD 620 and power "ON" the Main Switch (Front panel). The "POWER" LED is now turned ON.

⑤ Turn ON the Monitor and then the Computer.

NOTE: THE UNIT SHOULD BE GIVEN 5 MINUTES TO WARM UP.



Chapter 5 : DTC DIRECT TOUCH CONTROL

The Front panel ***DTC*** (Direct Touch Control) is dedicated to the control and storage of the image parameters.
Their direct access allow to modify instantaneously and easily the SIZE and POSITION adjustments of the picture.

FREEZE: Image Freeze (Active when LED is turned ON).

STD / OVER / ZOOM: This function is very useful for all users as it allows you to choose the best picture Size and Position which perfectly fit to your application.

Three different Zoom Mode (STD / OVER / ZOOM) are available by a three sequences push button (Front panel).

- STD mode (Underscan): Your image is displayed in full screen.
- OVER mode (Overscan): Your image is displayed 10% bigger than in the STD mode.
- ZOOM mode: Your image can be displayed (Sizing) between 100% and 200% continuously.

NOTE: The STD / OVER / ZOOM mode can be also controlled by the LCD menu. See Chapter 6 : LCD SCREEN.

RECALL / STORE:

RECALL: A short Push on this button allows to recall and display instantaneously the image settings (H & V, POS, SIZE, PAN and ZOOM) which are in memory.

STORE: A long push on this button (3 seconds and the LED flashes once) allows to memorize all the image settings.

NOTE: Important wait for 5 minutes after Switch ON the STUDIO SCAN, before storage of Input format, it is better for picture stability.

POS / SIZE: Position and Size mode selection.

Hpos / Hsize:
&
Vpos / Vsize:

Two digital buttons allow to adjust the Horizontal and Vertical adjustments (SIZE and POSITION).

NOTE: They are active whatever the STD / OVER or ZOOM mode selected.

IMPORTANT: To benefit of the full adjustment capacity of Vpos, Hpos in ZOOM Mode, you should have first, fully* adjust your image in the screen in STD Mode. (* Fully mean : The whole image and the perimeter are visible).

IMPORTANT: All the adjustments must be realized without the "Freeze" (FREEZE LED turned OFF).

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 STUDIO SCAN XTD 620.
- The CONTROL MODE allows to select and adjust the parameters of the STUDIO SCAN XTD 620.

6-2. LCD CONTROL BUTTONS

The LCD screen is controlled by 3 buttons :

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

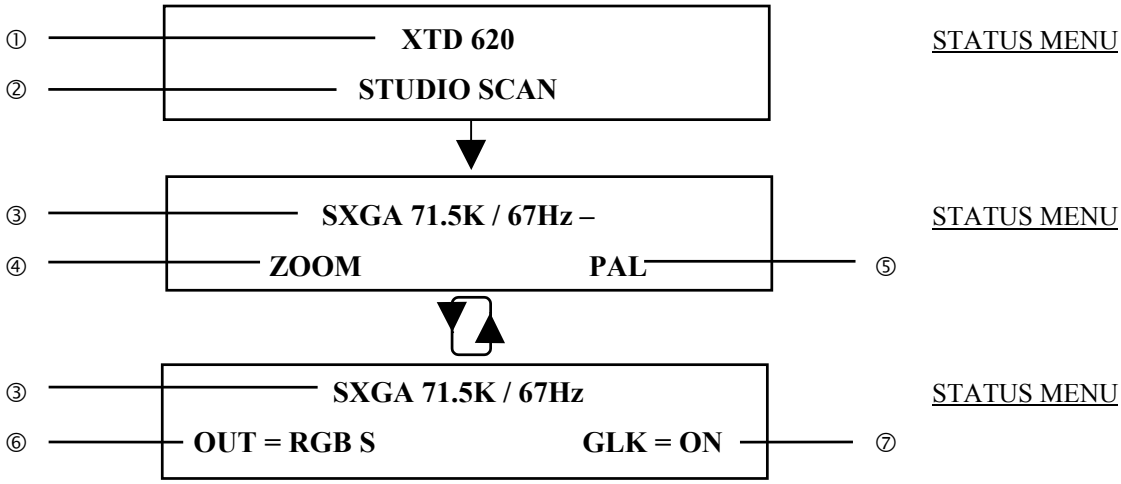
EXIT / **MENU** button:
- From the STATUS MODE, press this button to display the CONTROL MODE
- From the CONTROL MODE, press this button to :
  - return to the previous menu,
  - return to the STATUS MODE (press several times),
  - return without safeguarding the item.

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 Product reference

② Product designation

③ Computer Input Status
- [NO INPUT]
- [OUT OF RANGE]
- [SXGA 71.5K/67Hz _] : (Name of the format, Line and Frame frequency, I if Interlaced signal)

④ ZOOM MODE
- [STD] = STANDARD MODE (UNDERSCAN)
- [OVER] = OVERSCAN MODE
- [ZOOM] = ZOOM MODE

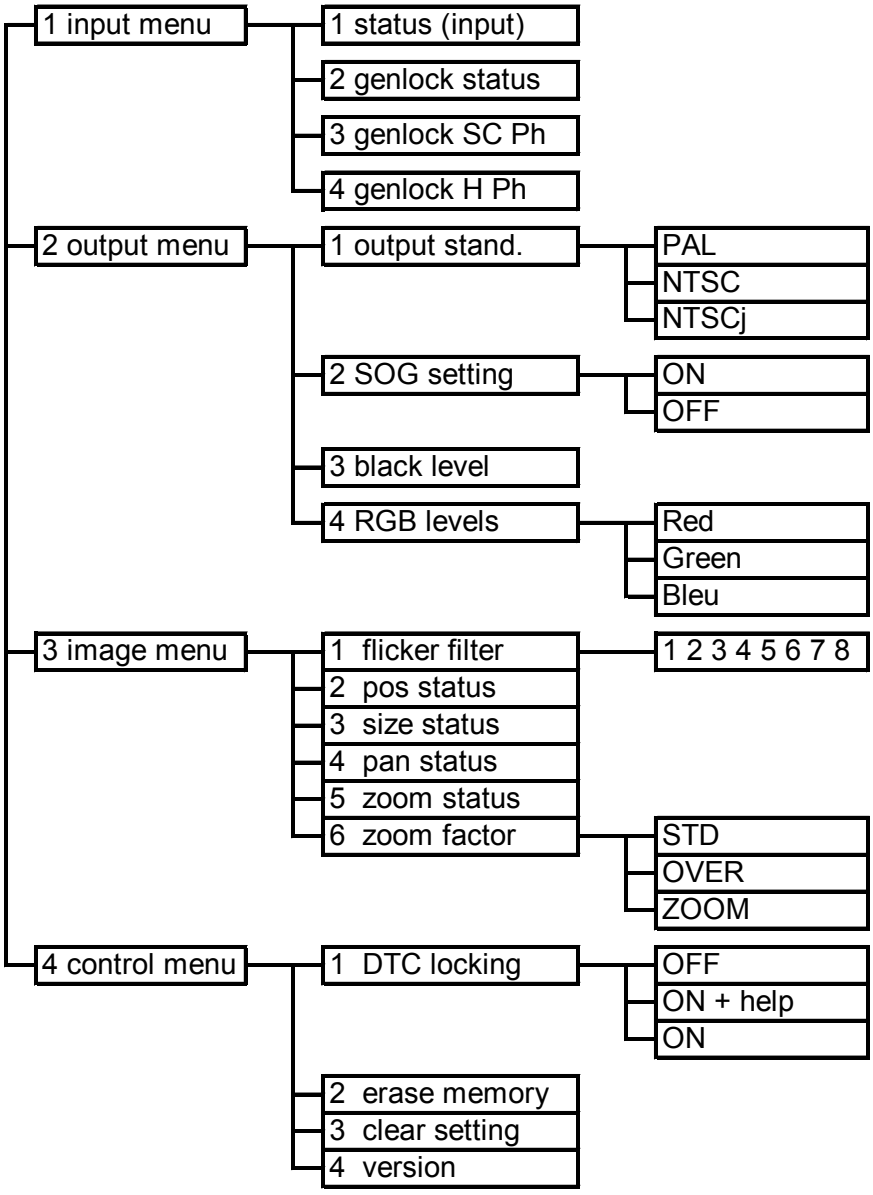
⑤ OUTPUT STANDARD
- [PAL] = Europe
- [NTSC] = USA
- [NTSCj] = Japan

⑥ VIDEO OUTPUT STATUS
- [RGsB] = RGB with SOG
- [RGB S] = RGB with Composite Sync.
- [YUV] = COMPONENT

⑦ INPUT GENLOCK STATUS
- GLK = [ON]
- GLK = [OFF]
- GLK = [ERR]

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 [Status (Input)] + ENTER.

- [VGA 31.5K/60Hz _]

Name of the format, Line and Frame frequency [kHz / Hz], Non Interlaced [ ] or Interlaced format [I].
Input Sync : H & V Separated with polarities [H+ V+], Composite Sync [COMP], Sync On Green [SOG].

- [NO INPUT] = No one signal detected on the "COMPUTER IN" connector of the device.
- [OUT OF RANGE] = Input is Out of Range.

IMPORTANT: WHEN FORMAT IS OUT OF RANGE, YOU HAVE TO DECREASE THE REFRESH FREQUENCY OR THE RESOLUTION OF THE COMPUTER DISPLAY TO BE COMPATIBLE WITH THE INPUT RANGE OF THE DEVICE (See your computer video card parameter).

1-2 [Genlock Status] + ENTER.

- [ON] = Input Genlock Signal is OK.
- [OFF] = No Signal on Genlock Input.
- [ERR] = Error, Wrong Signal on Genlock Input.
  A Wrong Signal on Genlock Input could be :
  - A NTSC Black Burst Signal when the STUDIO SCAN XTD 620is in PAL Mode,
  - A PAL Black Burst Signal when the STUDIO SCAN XTD 620is in NTSC Mode.
  You must change your Black Burst signal or change your Output Standard (*See LCD Menu #2 1*)

1-3 [Genlock SC Ph] + ENTER.

Adjustment of the Sub-Carrier phase (360° by 0.5° Step). See Chapter 11 : THE GENLOCK FUNCTION.

1-4 [Genlock H Ph] + ENTER.

Adjustment of the Line Sync Phase (-1µSec / +2µSec by 15nSec Step). See Chapter 11 : THE GENLOCK FUNCTION.

2 [Output Menu] + ENTER.

2-1 [Output Stand.] + ENTER.

- [PAL] = For Europe : 15.625Khz / 50Hz Interlaced (CCIR 625L).
- [NTSC] = For USA = 15.735KHz / 60Hz Interlaced (RS170 - 525L).
- [NTSCj] = For JAPAN : Same as USA NTSC but with Setup.

2-2 [SOG Setting] + ENTER.

- [ON] = Video Output is RGsB (RGB with Sync On Green).
- [OFF] = Video Output is RGB S (RGB with Composite Sync).

2-3 [Black Level] + ENTER.

- Adjustment of the Black Level (+/- 50mVp/p).

2-4 [RGB Levels] + ENTER.

RGB Level +/- 30%, with 0.7Vp/p Max.

- [Red] = Adjustment of the Red Level + **ENTER.**
- [Green] = Adjustment of the Green Level + **ENTER.**
- [Blue] = Adjustment of the Blue Level + **ENTER.**

3 [Image Menu] + ENTER.

3-1 [flicker filter] + ENTER.
- [1] ➔ [8] = Multilevels Anti-flicker setting.

3-2 [pos status] + ENTER.
- Horizontal & Vertical Position Value in the STD mode.

3-3 [size status] + ENTER.
- Horizontal & Vertical Size Value in the STD mode.

3-4 [pan status] + ENTER.
- Horizontal & Vertical Panning Value in the ZOOM mode.

3-5 [zoom status] + ENTER.
- Horizontal & Vertical Zooming Value in the ZOOM mode.

3-6 [zoom factor] + ENTER.
- [STD] = Your Image is Full screen.
- [OVER] = Your Image is 10% bigger than in STD mode.
- [ZOOM] = Your Image could be continuously sizing between 100% and 200% of the STD mode. Chapter 5 : *DTC* DIRECT TOUCH CONTROL

4 [Control Menu] + ENTER.

4-1 [*DTC* locking] + ENTER.
- Allow to locked all the ***DTC*** Direct Touch Control of the front panel.
- [OFF] = ***DTC*** is active.
- [ON + help] = ***DTC*** is locked, when pushing and turning a ***DTC*** Control nothing happens but the LCD window is immediately displaying the instructions to unlocked the ***DTC.***
- [ON] = ***DTC*** is locked, when pushing and turning a ***DTC*** Control nothing happens.

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

4-2 [erase memory] + ENTER.
- [NO] = Do not erase all the Input Format and setting memory.
- [YES] = Erase all the Input Format and setting memorized.

4-3 [clear settings] + ENTER.
- [NO] = Do not clear the Unit adjustments.
- [YES] = Clear the following adjustments and set them to factory value :
  - 1 3 Genlock SC Ph = Standard Factory Setting.
  - 1 4 Genlock H Ph = Standard Factory Setting.
  - 2 1 Output Stand. = NTSC.
  - 2 2 SOG Setting = OFF (Output is RGB S).
  - 2 3 Black level = Standard Factory Setting.
  - 2 4 RGB levels = Standard Factory Setting.
  - 3 1 Flicker Filter = Level 5.
  - 3 2 Zoom factor = STD (Underscan).

4-4 [Version] + ENTER
Status of the internal firmware.
- xxxx xxxx xxxx

Chapter 8 : TECHNICAL SPECIFICATIONS

- **DISPLAY**

Graphic to Video: Resolution: up to 1280 x 1024.
Line frequency: up to 85 kHz.

THE RECOGNITION OF THE DIFFERENT DISPLAY MODE IS AUTOMATIC AND IMMEDIATE.

Graphic Monitoring: The WORKSTATION / PC / MAC monitor is available without any troubles.

Scanning: AUTO SCAN MODE.

Colors: 16 Millions (3 RGB Memory Plane).

Anti-Flicker: 8 levels.

Graphic Format: COMPUTER into VIDEO translation “Full screen” TV.

Image Freeze: Synchronized in frame (Freeze).

Video Output: Tolerance on f. line = +/- 25ppm (Quartzed).
Chroma Burst = Synchronized on f. line.
15.625 kHz / 50 Hz Interlaced (CCIR - 625 L).
15.735 kHz / 60 Hz Interlaced (RS 170 - 525 L).

- **COMPUTER INPUT / OUTPUT (Loop-Through)**

VGA Input: RGB / HV Standard VGA.(SUB-D HD15 male connector).
VGA Output: RGB / HV Standard VGA (SUB-D HD15 female connector).
WORKSTATION & MACINTOSH Input : RGB/HV or RGB + Sync (or Sync. On Green).
WORKSTATION & MACINTOSH Output : RGB/HV or RGB + Sync (or Sync. On Green).

Switch: 75 Ohms / high impedance (R, G, B).

Levels: R, G, B = 3 x 0.7 Vp/p.
H & V Sync = TTL compatible or Interface ECL compatible (0.3 to 1.5 V).
SOG (Sync On Green) = 0.3 Vp/p.

- **VIDEO OUTPUTS**

4:2:2 D1 Output (OPTIONAL) (on BNC)

Signal: SMPTE 259M (270Mbits).

Impedance: 75 Ohms.

RGB/S or RGsB Output (on BNC) :

Levels: R, G, B = 3 x 0.7 Vp/p.
Sync = 2 Vp/p.
SOG = 0.3 Vp/p.

Impedance: R, G, B, S = 75 Ohms.

Output Y, R-Y, B-Y (BETACAM ™, DVCAM ™, DVCPRO ™) on BNC:

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

Impedance: 75 ohms for Y, R-Y, B-Y.

- **VIDEO OUTPUTS (continued)**

S.VIDEO Output (4 pin mini DIN) :

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

Composite PAL / NTSC Output (On BNC) :

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

- **GENLOCK (INPUT / OUTPUT)**

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

- **REMOTE PORT**

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

- **ENVIRONMENTAL**

Hardware Compatibility:	Line frequency: from 29 kHz to 85 kHz (Interlaced or not). Resolution: up to 1280 x 1024.
Software Compatibility:	ALL software compatible with SUN®, SGI®, INTERGRAPH®, POWER PC®, POWER MAC®, PC, MAC®.
Power Supply:	Internal CE / UL / CSA / IEC 950 (100W). Input : 100VAC to 250VAC ; 50-60Hz ; I = 1A Max.
Temperature:	Storage : -25 °C to +85 °C.
Hygrometry:	10% to 80% (without condensation).
Dimension:	W 480 x D 300 x H 44 mm / 17” W x 11.82” D x 1.74” H. (Compatible with 19” Standard, Height = 1 unit).
Weight:	2.5 kg / 5.5 Lbs.

The Device is in compliance with CE label.

Chapter 9 : CONTROL SOFTWARE

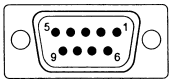
9-1. CONNECTION

- **CONNECTING THE RS-232:**

Connect the serial port of your Controlling Device to the REMOTE CONTROL (RS-232) connector (DB 9 Female) of the STUDIO SCAN XTD 620 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 XTD620)

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

9-2. "STUDIO SCAN REMOTE CONTROL" SOFTWARE

Your STUDIO SCAN XTD620 is shipped with a compatible DOS "STUDIO SCAN CONTROL PROGRAM" (3"1/2 disk). This software allows you to make adjustments and controls by a simple keyboard command (Frame freeze, Image adjustments, Storage, etc...).

- **SOFTWARE INSTALLATION (on DOS PC):**
  ① Turn your computer ON and wait for his complete Starting.
  ② Insert the disk into the floppy drive.
  ③ Under DOS type in : A:INSTALL A: C: ↵.

- **STARTING UP:**
  ① Connect the serial Port of the computer to the RS-232 Remote Connector of the STUDIO SCAN.
  ② Type in "XTD" followed by the number of the connected Serial port (Ex : "XTD 2" ↵).
  ③ TURN ON all your devices.

  When powering ON the STUDIO SCAN, the REMOTE CONTROL RS-232 is automatically activated after a few seconds. Adjustments are automatically controllable by both front panel and REMOTE CONTROL.
  The last modified adjustment will be taken into account.

- **USING:** - Type in the red letter to activate the control (Ex : "F" for "Freeze").
  - Use the 4 arrows for the Hpos, Vpos and Hsize, Vsize control.
  - Type in TAB to change the screen.
  - Type in ESC to go back to DOS.

  NOTE: Type Q for the status of internal firmware.

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 XTD 620 allows to communicate by simple transmit or receive ASCII code.

The STUDIO SCAN XTD 620 treats any character that it received on the RS-232 as a possible command but accepts only legal commands. There are no codes to say that a command is coming, or that a command is ended.
A command could be a single character typed on a keyboard and does not required any special characters before or after (it is not necessary to press "ENTER" from the keyboard).
Simple commands could be from a PC or any other controlling device.
When the STUDIO SCAN receives a valid command, it will execute the command and send a response back to the host device.
If the command is invalid, an error response will be returned to the host.
All responses to the host end with a carriage return and a line feed (CR / LF) signaling the end of the response character string.

- **PROTOCOL:** Simple Character

- **CONTROLS STRUCTURE:**
Controls are usually composed of a numeric value followed by the letter of the command.
The letter used without numeric value returns the current setting of the command.

See "Command and Response Table"

(PARAMETER) **< COMMAND >**
→ 1 Character (Usually a letter)

→ Without parameter : Read back the current value
ex : H ⇒ Hph10 ↵

→ With a numerical parameter : Set a new value
ex : 80 H ⇒ Hph80 ↵

NOTE: The { or } parameter are active only on Image positioning and zooming commands (H, V, W, S, h, v, w, s).

(PARAMETER) < COMMAND >

→ Character { : Increase current value by 1
ex : { H ⇒ Hph81 ↵

→ Character } : Decrease current value by 1
ex : } H ⇒ Hph79 ↵

10-2. COMMANDS AND RESPONSES TABLE

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

ASCII COMMAND	RESPONSE TO HOST	COMMAND DESCRIPTION	VALUE		EXAMPLES		
			MIN	MAX	COMMAND	RESPONSE	ACTION EXPLANATION
Image commands							
H	Hpo	Horizontal positioning	0	255	20H	Hpo20	Set Hpos to 20
V	Vpo	Vertical positioning	0	255	V	Vpo73	Read V position
W	Hsz	Horizontal width	0	255	W	Hsz128	Read H width
S	Vsz	Vertical size	0	255	157S	Vsz157	Set Vsize
h	Hpn	Horizontal panning	0	255	128h	Hpn128	Set H panning
v	Vpn	Vertical panning	0	255	v	Vpn102	Read V panning
w	Hzm	Horizontal zoom factor	0	255	100w	Hzm100	Set H zoom
s	Vzm	Vertical zoom factor	0	255	150s	Vzm150	Set V zoom
Output commands							
* T	TSO	Output standard	0	63	T	TSO33	Read Output standard
F	FLK	Filter Flicker level	0	7	4F	FLK4	Set to level # 4
N	BLV	Black level	0	255	N	BLV128	Read Black level
R	REDLV	Red level	0	255	106R	REDLV106	Set Red level
G	GRELV	Green level	0	255	G	GRELV128	Read Green level
B	BLULV	Blue level	0	255	B	BLULV127	Read Blue level
Genlock controls							
k	GLK	Genlock status	0	2	k	GLK0	Read Genlock status
I	SCPH	Sub carrier phase setting	0	1023	522I	SCPH522	Set SC Ph
i	HPHI	Horizontal Sync phase setting	0	255	138i	HPHI138	Set H Ph
Input status (Read only)							
d	DHI	Horizontal period of input signal	0	65535	d	DHI564	Read line frequency
l	GRT	Number of line per field	0	65535	l	GRT525	Read line per field
* t	TSY	Sync type	0	255	t	TSY113	Read Sync type
u	UNIT	Measures unity in kHz	0	65535	u	UNIT17734	Read unity of measures
Miscellaneous							
* c	MISC	Miscellaneous controls	0	31	c	MISC0	Read controls
* b	BP	Front panel actions	0	31	8b	BP8	Set Freeze mode
?	DEV	device type	0	2	?	DEV1	Read device type
M	M_	"M" Firmware Version	0	65535	M	M_13316	Read "M" Version
L	L_	"L" Firmware Version	0	65535	L	L_18915	Read "L" Version
r	R_	"R" Firmware Version	0	65535	r	R_57427	Read "R" Version

* See Chapter 10-4 COMMANDS DESCRIPTION

10-3. ERROR RESPONSES

When the STUDIO SCAN receives from the host an invalid command or value, it returns an error response:

E10 ↵ invalid command (See : "Command" Column)

E13 ↵ invalid value (See "Value" Column)

10-4. COMMANDS DESCRIPTION

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

Example: Host receives message TSO65
Decimal value 65 = Binary value 0100 0001.
65 = (128 x 0) + (64 x 1) + (32 x 0) + (16 x 0) + (8 x 0) + (4 x 0) + (2 x 0) + (1 x 1).
bit 6 = 1 mean output of YUV signals.
bit 4 = 0 mean RGsB output when selected with rear button.
bit 3 and bit 2 = 00 mean Standard (Underscan) output.
bit 1 and bit 0 = 01 mean NTSC standard output.

- **IMAGE POSITIONING AND ZOOMING**

H, V, W, S commands are used to control Size and Position of output image in Standard or Overscan mode.

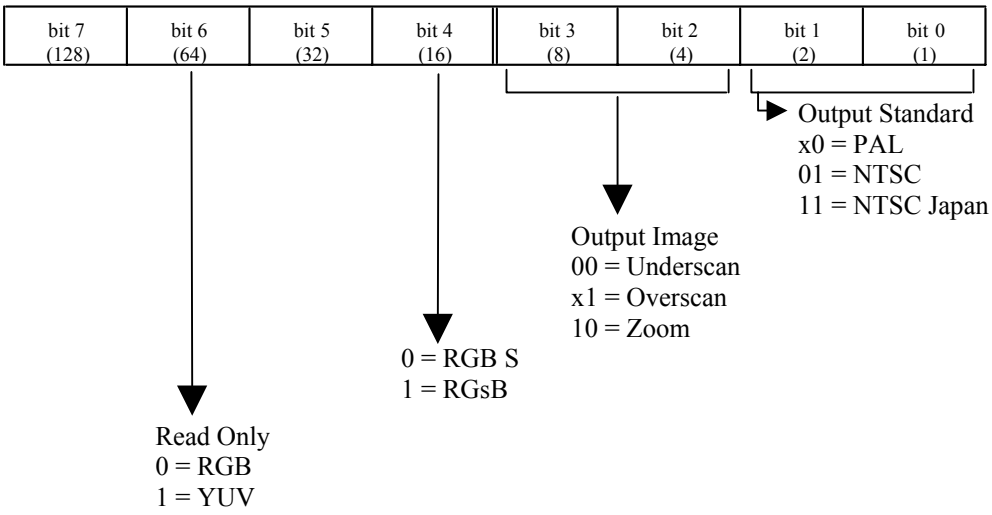
h, v, w, s commands are used to control Zooming and Panning of output image in Zoom mode.

Commands can be used in two different ways : - Command letter alone to read present value,
- ASCII numbers followed by command letter to set a value.

NOTE: Depending on computer video input signal, the maximum values for H and V commands could be less than 255. Take care of increase H or V value using } character until reception of MISC with Hpos Max or Vpos Max flags set.

- **OUTPUT CONTROLS**

T command is used to control Output Standard, Zoom Mode, Output SOG setting and YUV / RGB setting.
Value must be converted from / to binary as follow :



F command control the Flicker Filter on 8 levels from 0 to 7.
N command control the output signal Black level on 256 levels from 0 to 255.
R, G, B commands control the Red or Green or Blue level on 256 levels from 0 to 255.

• **GENLOCK CONTROLS**

k command is used to read the Genlock status.
Value returned mean: 0 = No Genlock signal
1 = Genlock signal ON and OK
2 = Wrong Genlock signal

I command controls the sub carrier phase (Sc Ph) of the Genlock with 1024 levels from 0 to 1023.

i command controls the Horizontal Synchro phase (H Ph) of the Genlock with 256 levels from 0 to 255.

• **INPUT STATUS CONTROLS**

This control family is read only. They can't be preceded with value.

u command returns the UNIT value.

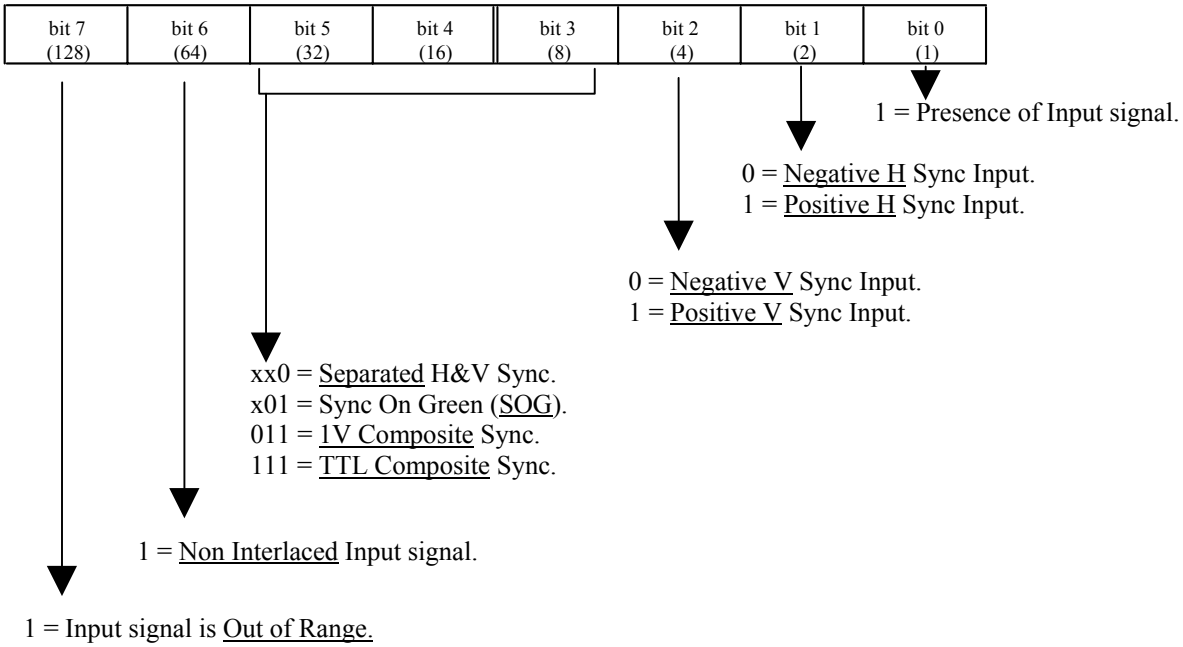
d command returns the DHI value.

The following formula allow to calculate the computer input line frequency (in kHz): $\frac{\text{UNIT VALUE}}{\text{DHI VALUE}}$

l command returns the GRT value.

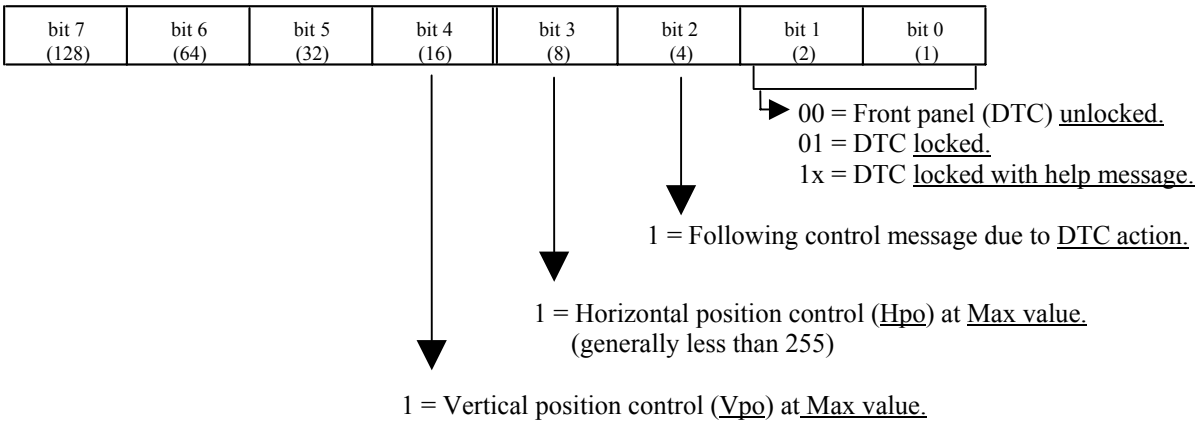
The following formula allow to calculate the input frame frequency (in Hz) : $\frac{\text{Input Line Frequency (Hz)}}{\text{GRT Value}}$

t command returns Input signal status.

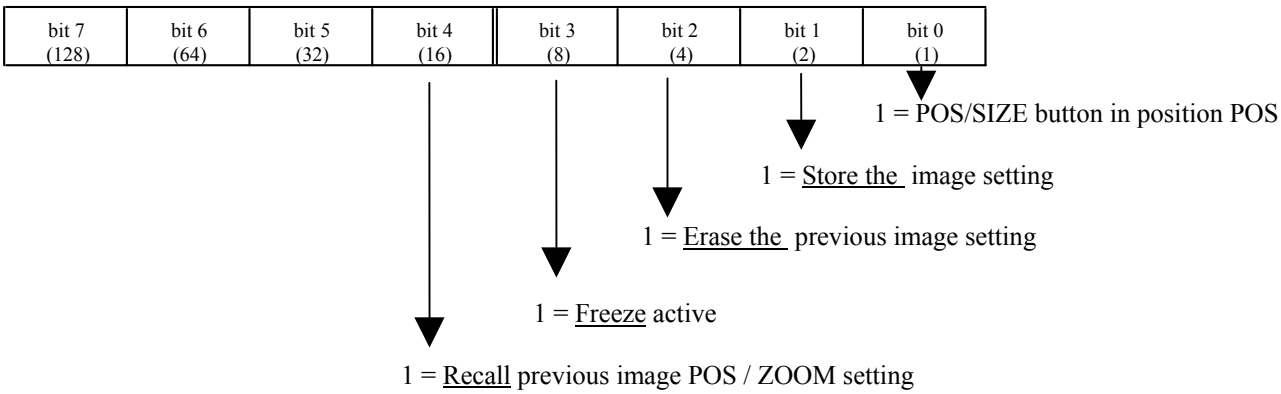


- **MISCELLANEOUS CONTROLS**

c command controls actions from Front panel (***DTC*** actions)



b command controls status from DTC or action to DTC



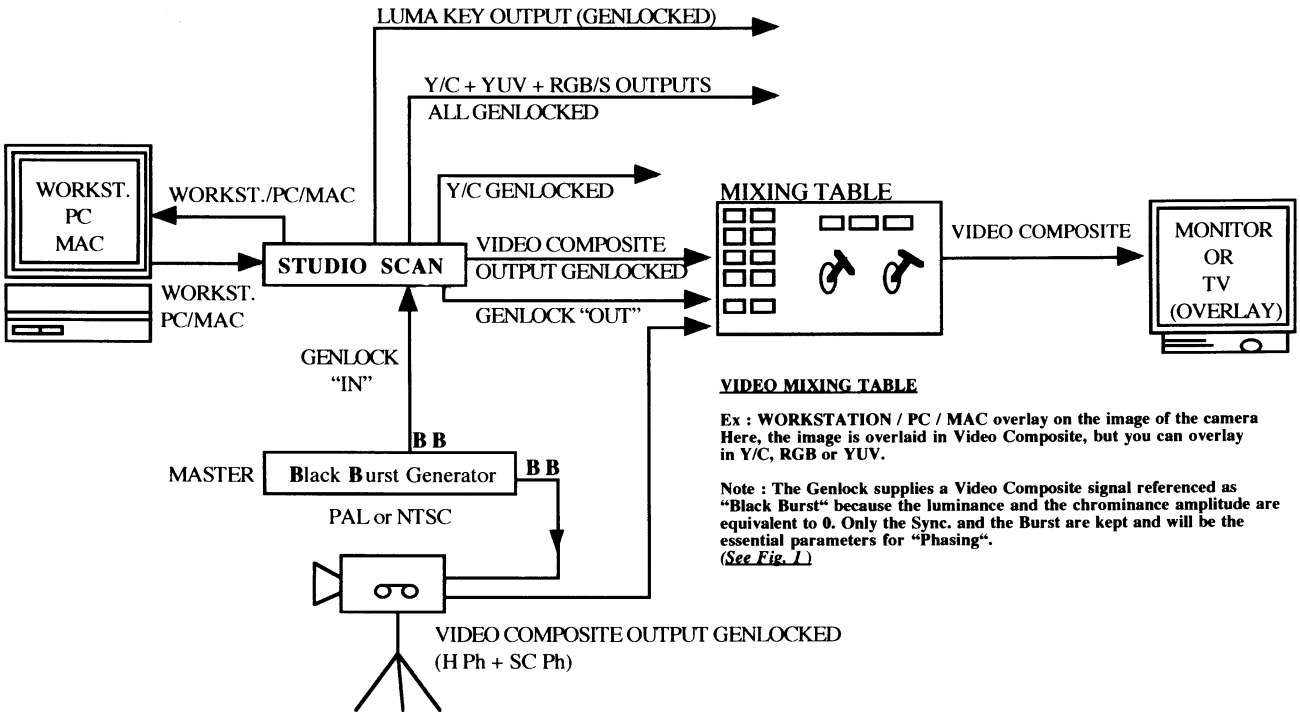
? command returns device type 1 = XTD820 type.
2 = XTD620 type.

M, L, r commands returns firmware versions.

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

Chapter 11 : THE GENLOCK FUNCTION

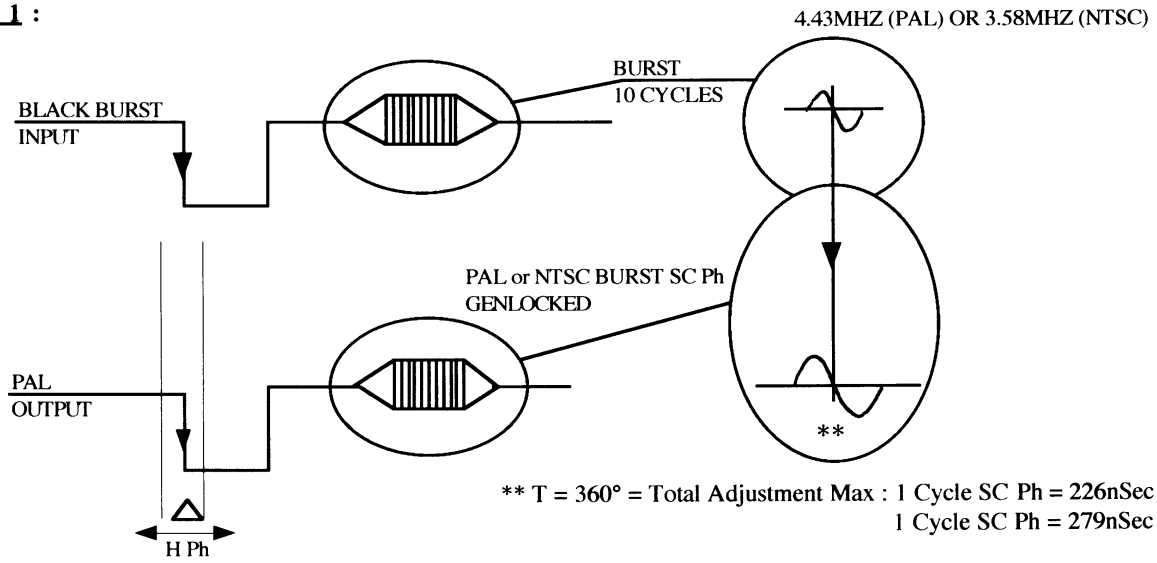


VIDEO MIXING TABLE

Ex : WORKSTATION / PC / MAC overlay on the image of the camera Here, the image is overlaid in Video Composite, but you can overlay in Y/C, RGB or YUV.

Note : The Genlock supplies a Video Composite signal referenced as "Black Burst" because the luminance and the chrominance amplitude are equivalent to 0. Only the Sync. and the Burst are kept and will be the essential parameters for "Phasing".
(See Fig. 1)

Fig 1 :



** T = 360° = Total Adjustment Max : 1 Cycle SC Ph = 226nSec for PAL
1 Cycle SC Ph = 279nSec for NTSC

△ = Approximately 3 μS for the line phase adjustment, with H Ph pot
(H Ph on the Front panel = possible compensation for the different devices delay)

PHASE LINE [H Ph] : For a correct overlay, the phase sync between the genlock and the PAL or NTSC has to be equivalent to 0. Make the adjustment with the LCD Control Menu #1 4 "genlock H Ph").

BURST [SC Ph] : It includes 10 cycles of 4.43MHz period (PAL) or 3.58MHz (NTSC)
For a correct colors overlay, the phase between the Genlock and the PAL or NTSC output of the STUDIO SCAN has to be equivalent to O. Make the adjustment with the LCD Control Menu #1 3 "genlock SC Ph" which allows to make 360° rotation

IMPORTANT ! Please, adjust first the Phase line [H Ph] and then the phase Subcarrier [SC Ph].
In Master Mode, the Genlock LCD Menu are inactive.

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.