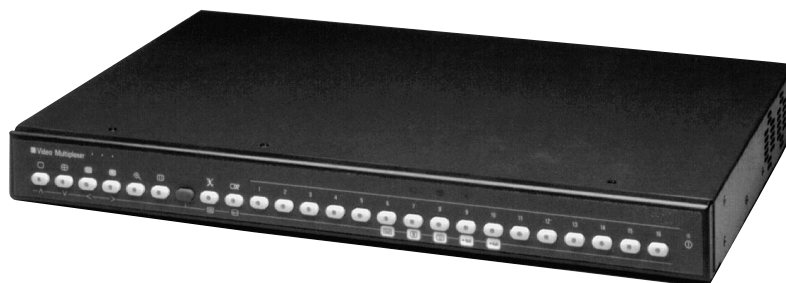


LTC 2600 Series



Security Systems

EN

Instruction Manual
Video Multiplexers

BOSCH

Important Safeguards

1. **Read, Follow, and Retain Instructions** - All safety and operating instructions should be read and followed before operating the unit. Retain instructions for future reference.
2. **Heed Warnings** - Adhere to all warnings on the unit and in the operating instructions.
3. **Attachments** - Attachments not recommended by the product manufacturer should not be used, as they may cause hazards.
4. **Installation Cautions** - Do not place this unit on an unstable stand, tripod, bracket, or mount. The unit may fall, causing serious injury to a person and serious damage to the unit. Use only manufacturer-recommended accessories, or those sold with the product. Mount the unit per the manufacturer's instructions. Appliance and cart combination should be moved with care. Quick stops, excessive force, or uneven surfaces may cause the appliance and cart combination to overturn.
5. **Cleaning** - Unplug the unit from the outlet before cleaning. Follow any instructions provided with the unit. Generally, using a damp cloth for cleaning is sufficient. Do not use liquid cleaners or aerosol cleaners.
6. **Servicing** - Do not attempt to service this unit yourself. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
7. **Damage Requiring Service** - Unplug the unit from the main AC power source and refer servicing to qualified service personnel under the following conditions:
 - When the power supply cord or plug is damaged.
 - If liquid has been spilled or an object has fallen into the unit.
 - If the unit has been exposed to water and/or inclement weather (rain, snow, etc.).
 - If the unit does not operate normally, when following the operating instructions. Adjust only those controls specified in the operating instructions. Improper adjustment of other controls may result in damage, and require extensive work by a qualified technician to restore the unit to normal operation.
 - If the unit has been dropped or the cabinet damaged.
 - If the unit exhibits a distinct change in performance, this indicates that service is needed.
8. **Replacement Parts** - When replacement parts are required, the service technician should use replacement parts specified by the manufacturer, or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electrical shock, or other hazards.
9. **Safety Check** - Upon completion of servicing or repairs to the unit, ask the service technician to perform safety checks to ensure proper operating condition.
10. **Power Sources** - Operate the unit only from the type of power source indicated on the label. If unsure of the type of power supply to use, contact your dealer or local power company.
 - For units intended to operate from battery power, refer to the operating instructions.
 - For units intended to operate **with External Power Supplies**, use only the recommended approved power supplies.
 - For units intended to operate with a limited power source, this power source must comply with EN60950. Substitutions may damage the unit or cause fire or shock.
 - For units intended to operate at 24VAC, normal input voltage is **24VAC**. Voltage applied to the unit's power input should not exceed 30VAC. User-supplied wiring, from the 24VAC supply to unit, must be in compliance with electrical codes (Class 2 power levels). Do not ground the 24VAC supply at the terminals or at the unit's power supply terminals.
11. **Coax Grounding** - If an outside cable system is connected to the unit, ensure that the cable system is grounded. U.S.A. models only--Section 810 of the National Electrical Code, ANSI/NFPA No.70, provides information regarding proper grounding of the mount and supporting structure, grounding of the coax to a discharge unit, size of grounding conductors, location of discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.
12. **Grounding or Polarization** - This unit may be equipped with a polarized alternating current line plug (a plug with one blade wider than the other). This safety feature allows the plug to fit into the power outlet in only one way. If unable to insert the plug fully into the outlet, try reversing the plug. If the plug still fails to fit, contact an electrician to arrange replacement of the obsolete outlet. Do not defeat the safety purpose of the polarized plug. Alternately, this unit may be equipped with a 3-wire grounding plug (a plug with a third pin, for grounding). This safety feature allows the plug to fit into a grounding power outlet only. If unable to insert the plug into the outlet, contact an electrician to arrange replacement of the obsolete outlet. Do not defeat the safety purpose of the grounding plug.
13. **Lightning** - For added protection during a lightning storm, or when this unit is left unattended and unused for long periods of time, unplug the unit from the wall outlet and disconnect the cable system. This will prevent damage to the unit due to lightning and power line surges.

For Indoor Product

1. **Water and Moisture** - Do not use this unit near water - for example, in a wet basement, in an unprotected outdoor installation, or in any area classified as a wet location.
2. **Object and Liquid Entry** - Never push objects of any kind into this unit through openings, as they may touch dangerous voltage points or short out parts that could result in a fire or electrical shock. Never spill liquid of any kind on the unit.
3. **Power Cord and Power Cord Protection** - For units intended to operate with 230VAC, 50Hz, the input and output power cord must comply with the latest versions of IEC Publication 227 or IEC Publication 245.
Power supply cords should be routed so they are not likely to be walked on or pinched. Pay particular attention to location of cords and plugs, convenience receptacles, and the point of exit from the appliance.
4. **Overloading** - Do not overload outlets and extension cords; this can result in a risk of fire or electrical shock.

For Outdoor Product

Power Lines - An outdoor system should not be located in the vicinity of overhead power lines, electric lights, or power circuits, or where it may contact such power lines or circuits. When installing an outdoor system, extreme care should be taken to keep from touching power lines or circuits, as this contact might be fatal. U.S.A. models only - refer to the National Electrical Code Article 820 regarding installation of CATV systems.

For Rack-mount Product

1. **Ventilation** - This unit should not be placed in a built-in installation or rack, unless proper ventilation is provided, or the manufacturer's instructions have been adhered to. The equipment must not exceed its maximum operating temperature requirements.
2. **Mechanical Loading** - Mounting of the equipment in a rack shall be such that a hazardous condition is not achieved due to uneven mechanical loading.



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC SENSITIVE
DEVICES

WARNING:

Electrostatic-sensitive device. Use proper CMOS/MOSFET handling precautions to avoid electrostatic discharge.

NOTE: Grounded wrist straps must be worn and proper ESD safety precautions observed when handling the electrostatic-sensitive printed circuit boards.

Safety Precautions



CAUTION

RISK OF ELECTRIC
SHOCK. DO NOT OPEN!



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol indicates the presence of uninsulated "dangerous voltage" within the product's enclosure. This may constitute a risk of electric shock.



The user should consult the operating and maintenance (servicing) instructions in the literature accompanying the appliance.



Attention: Installation should be performed by qualified service personnel only in accordance with the National Electrical Code or applicable local codes.



Power Disconnect. Units with or without ON-OFF switches have power supplied to the unit whenever the power cord is inserted into the power source; however, the unit is operational only when the ON-OFF switch is in the ON position. The power cord is the main power disconnect for all units.

FCC & ICES INFORMATION

(U.S.A. and Canadian Models Only)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:





- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules and ICES-003 of Industry Canada. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and radiates radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his expense.







Intentional or unintentional changes or modifications, not expressly approved by the party responsible for compliance, shall not be made. Any such changes or modifications could void the user's authority to operate the equipment. If necessary, the user should consult the dealer or an experienced radio/television technician for corrective action. The user may find the following booklet, prepared by the Federal Communications Commission, helpful: How to Identify and Resolve Radio-TV Interference Problems. This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

WARNING: This is a Class A product. In a domestic environment, this product may cause radio interference, in which case, the user may be required to take adequate measures.







Sécurité

	ATTENTION RISQUE D'ÉLECTROCUTION. NE PAS OUVRIR !	
<p>ATTENTION : POUR ÉVITER TOUT RISQUE D'ÉLECTROCUTION, N'ESSAYEZ PAS DE RETIRER LE CAPOT (OU LE PANNEAU ARRIÈRE). CET APPAREIL NE CONTIENT AUCUN COMPOSANT SUSCEPTIBLE D'ÊTRE RÉPARÉ PAR L'UTILISATEUR. CONFIEZ LA RÉPARATION DE L'APPAREIL À DU PERSONNEL QUALIFIÉ.</p>		
	Ce symbole signale que le produit renferme une « tension potentiellement dangereuse » non isolée susceptible de provoquer une électrocution.	
	Ce symbole invite l'utilisateur à consulter les instructions d'utilisation et d'entretien (dépannage) reprises dans la documentation qui accompagne l'appareil.	
	Attention : l'installation doit exclusivement être réalisée par du personnel qualifié, conformément au code national d'électricité américain (NEC) ou au code d'électricité local en vigueur.	
	Coupure de l'alimentation. Qu'ils soient pourvus ou non d'un commutateur ON/OFF, tous les appareils reçoivent de l'énergie une fois le cordon branché sur la source d'alimentation. Toutefois, l'appareil ne fonctionne réellement que lorsque le commutateur est réglé sur ON. Le débranchement du cordon d'alimentation permet de couper l'alimentation des appareils.	

Sicherheitshinweise

	VORSICHT ELEKTRISCHE SPANNUNG. NICHT ÖFFNEN!	
<p>VORSICHT: UM EINEN ELEKTRISCHEN SCHLAG ZU VERMEIDEN, IST DIE ABDECKUNG (ODER RÜCKSEITE) NICHT ZU ENTFERNEN. ES BEFINDEN SICH KEINE TEILE IN DIESEM BEREICH, DIE VOM BENUTZER GEWARTET WERDEN KÖNNEN. LASSEN SIE WARTUNGSARBEITEN NUR VON QUALIFIZIERTEM WARTUNGSPERSONAL AUSFÜHREN.</p>		
	Das Symbol macht auf nicht isolierte „gefährliche Spannung“ im Gehäuse aufmerksam. Dies kann zu einem elektrischen Schlag führen.	
	Der Benutzer sollte sich ausführlich über Anweisungen für die Bedienung und Instandhaltung (Wartung) in den begleitenden Unterlagen informieren.	
	Achtung! Die Installation sollte nur von qualifiziertem Kundendienstpersonal gemäß jeweils zutreffender Elektrovorschriften ausgeführt werden.	
	Unterbrechung des Netzanschlusses. Geräte mit oder ohne Netzschalter haben Spannung am Gerät anliegen, sobald der Netzstecker in die Steckdose gesteckt wird. Das Gerät ist jedoch nur betriebsbereit, wenn der Netzschalter (EIN/AUS) auf EIN steht. Wenn das Netzkabel aus der Steckdose gezogen wird, ist die Spannungszuführung zum Gerät vollkommen unterbrochen.	

Precauciones de Seguridad

	ATTENZIONE PERICOLO DI SCOSSA ELETTRICA. NON APRIRE.	
<p>PRECAUCIÓN: PARA DISMINUIR EL RIESGO DE DESCARGA ELÉCTRICA, NO RETIRE LA CUBIERTA (NI LA PARTE POSTERIOR). NO EXISTEN PIEZAS DE RECAMBIO EN EL INTERIOR DEL EQUIPO. EL PERSONAL DE SERVICIO CUALIFICADO SE ENCARGA DE REALIZAR LAS REPARACIONES.</p>		
	Este símbolo indica que existen puntos de tensión peligrosos sin aislamiento dentro de la cubierta de la unidad. Estos puntos pueden constituir un riesgo de descarga eléctrica.	
	El usuario debe consultar las instrucciones de funcionamiento y mantenimiento (reparación) en la documentación que se suministra con el aparato.	
	Atención: la instalación la debe realizar únicamente personal cualificado de conformidad con el National Electric Code o las normas aplicables en su país.	
	Desconexión de la alimentación. Las unidades con o sin interruptores de encendido/apagado reciben alimentación eléctrica siempre que el cable de alimentación esté conectado a la fuente de alimentación. Sin embargo, la unidad sólo funciona cuando el interruptor está en la posición de encendido. El cable de alimentación es la principal fuente de desconexión de todas las unidades.	







Veiligheidsmaatregelen

	VOORZICHTIG GEVAARVOOR ELEKTRISCHE SCHOK. NIET OPENEN!	
<p>VOORZICHTIG: OPEN DE BEHUIZING OF DE ACHTERKANT VAN HET APPARAAT NIET. ZO VERMINDERT U HET RISICO OP ELEKTRISCHE SCHOKKEN. IN HET APPARAAT BEVINDEN ZICH GEEN ONDERDELEN DIE U ZELF KUNT REPAREREN. LAAT SERVICE EN ONDERHOUD UITVOEREN DOOR GEKWALIFICEERD PERSONEEL.</p>		
	<p>Dit symbool geeft aan dat er binnen in het apparaat ongeïsoleerde, gevaarlijke spanning aanwezig is die mogelijk elektrische schokken kan veroorzaken.</p>	
	<p>De gebruiker dient de bedienings- en onderhoudsvoorschriften te raadplegen in de documentatie die werd meegeleverd met het apparaat.</p>	
	<p>Attentie: het apparaat mag alleen door gekwalificeerd personeel worden geïnstalleerd. De installatie dient in overeenstemming met de nationale elektrische richtlijnen of de van toepassing zijnde lokale richtlijnen te worden uitgevoerd.</p>	
	<p>Spanning uitschakelen. Apparatuur met of zonder aan-uitschakelaar staat onder spanning zolang de stekker is aangesloten op de wandcontactdoos. De apparatuur is uitsluitend in werking als de aan-uitschakelaar aan staat. Het netsnoer is de "hoofdschakelaar" voor alle apparatuur.</p>	

Sicurezza

	ATTENZIONE PERICOLO DI SCOSSA ELETTRICA. NON APRIRE.	
<p>ATTENZIONE: PER RIDURRE IL RISCHIO DI SCOSSE ELETTRICHE NON RIMUOVERE LA COPERTURA (O IL PANNELLO POSTERIORE). L'UNITÀ NON CONTIENE COMPONENTI INTERNI RIPARABILI DALL'UTENTE. PER QUALSIASI INTERVENTO, RIVOLGERSI A PERSONALE TECNICO QUALIFICATO.</p>		
	<p>Questo simbolo indica la presenza di "tensione pericolosa" non isolata all'interno del contenitore del prodotto. Ciò comporta un potenziale rischio di scosse elettriche.</p>	
	<p>Si consiglia di consultare le istruzioni operative e di manutenzione (interventi tecnici) contenute nella documentazione fornita con il dispositivo.</p>	
	<p>Attenzione: l'installazione deve essere effettuata esclusivamente da personale tecnico qualificato in conformità con il National Electrical Code o con le normative locali vigenti.</p>	
	<p>Scollegamento dell'alimentazione. Le unità dotate o sprovviste di interruttori ON-OFF vengono alimentate quando si inserisce il cavo nella presa dell'alimentazione. L'unità è tuttavia in funzione solo quando l'interruttore ON-OFF si trova nella posizione ON. Il cavo di alimentazione costituisce il dispositivo di scollegamento dell'alimentazione principale per tutte le unità.</p>	

Medidas de Segurança

	CUIDADO RISCO DE CHOQUE ELÉTRICO. NÃO ABRIR!	
<p>CUIDADO: PARA REDUZIR O RISCO DE CHOQUE ELÉTRICO, NÃO RETIRE A TAMPA (OU A PARTE POSTERIOR). NO INTERIOR, NÃO EXISTEM PEÇAS QUE POSSAM SER REPARADAS PELO UTILIZADOR. REMETA A ASSISTÊNCIA PARA OS TÉCNICOS QUALIFICADOS.</p>		
	<p>Este símbolo indica a presença de "tensão perigosa" não isolada dentro da estrutura do produto, o que pode constituir risco de choque elétrico.</p>	
	<p>O utilizador deve consultar as instruções de funcionamento e manutenção (assistência) nos documentos que acompanham o aparelho.</p>	
	<p>Atenção: a instalação deve ser executada apenas por técnicos qualificados da assistência, de acordo com o código elétrico nacional ou os códigos locais aplicáveis.</p>	
	<p>Corte de corrente. As unidades com ou sem interruptores ON-OFF (ligar/desligar) recebem corrente sempre que o fio de alimentação está introduzido na fonte de alimentação; contudo, a unidade apenas está operacional quando o interruptor ON-OFF está na posição ON. O fio de alimentação destina-se a desligar a corrente em todas as unidades.</p>	

安全预防措施

	CAUTION RISK OF ELECTRIC SHOCK. DO NOT OPEN!	
<p>注意：为避免受到电击，不要拆除机盖（或后盖）。用户不得擅自维修里面的部件。有关维修事项，请咨询合格的维修人员。</p>		
	<p>此符号表示产品机壳内存在未绝缘的“危险电压”。这可能导致电击。</p>	
	<p>用户应参照设备附带的操作和维护（维修）说明。</p>	
	<p>注意：安装须由合格的维修人员遵照美国国家电工标准或相关电气规则进行。</p>	
	<p>断开电源。在电源线插入电源时，配备或未配备 ON-OFF 开关的设备都已通电；但设备只有在 ON-OFF 开关处于 ON 位置时才能工作。对于所有设备，电源线是断开电源的主要方式。</p>	

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1 INTRODUCTION

1.1 Guide to This Manual

This manual contains all necessary information to safely install, program, and operate the LTC 2600 Series Video Multiplexer. Consult the Table of Contents for a detailed list of topics covered. Step-by-step procedures and sample menus guide you through each phase of multiplexer setup and programming.

Installation of the multiplexer includes mounting, connecting the multiplexer to system peripherals (i.e. monitors, cameras, VCRs), and learning the multiplexer controls.

Instructions for programming the multiplexer are divided into three sections for easy reference and understanding:

- **QUICK SETUP:** provides complete instructions for the QUICK SETUP programming menus which allow setup of all basic, general multiplexer functions.
- **ADVANCED SETUP:** provides complete instructions for the ADVANCED programming menus which allow set up of all basic, general multiplexer functions plus special operations including Action Setup, Alarm Setup, etc.
- **System4™ PROGRAMMING:** provides specific programming instructions pertaining only to the additional operating functions offered by System4 multiplexer models.

Operating instructions cover all basic and enhanced (combined) operating modes. Those operating functions specific only to System4 models are detailed in a separate section. Firmware version 3.02 or greater.

This manual also contains detailed technical reference materials, including programming menu trees and sample system configuration diagrams, which are located in the APPENDIXES.

2 UNPACKING

Unpack carefully. This is electronic equipment and should be handled carefully.

Check for the following items:

- LTC 2600 Series Video Multiplexer
- Installation Instructions (manual)
- Quick Reference Guide
- One 25-pin D-type connector with screw terminal (used for Alarm/Accessory connections to include biphasic connections when the LTC 2622/90 is used)
- Rack-mount kit
- One 15-pin D-type connector with screw terminal (used for biphasic output – LTC 2672 and LTC 2682 only)
- Two power cords
- In-line Transient Protector (see Section 5.2); - Part #303 3900 001

If an item appears to have been damaged in shipment, replace it properly in its carton and notify the shipper. If any items are missing, notify your Bosch Security Systems, Inc. Sales Representative or Customer Service.

The shipping carton is the safest container in which the unit may be transported. Save it for possible future use.

3 SERVICE

If the unit ever needs repair service, the customer should contact the nearest Bosch Security Systems Inc. Service Center for authorization to return and shipping instructions.

Service Centers

USA

Phone: 800-366-2283 or 717-735-6638

fax: 800-366-1329 or 717-735-6639

CCTV Spare Parts

Phone: 800-894-5215 or 408-956-3853 or 3854

fax: 408-957-3198

e-mail: BoschCCTVparts@ca.slr.com

Canada

Phone: 514-738-2434

Europe, Middle East & Asia Pacific Region

Phone: 32-1-440-0711

For additional information, see

www.boschsecuritysystems.com.

4 UNDERSTANDING VIDEO MULTIPLEXERS

The LTC 2600 Series Video Multiplexers are designed to control multichannel recording and playback with the added capability of multiscreen viewing. The units allow monitoring of multiple camera sites without the need for multiple monitors and VCRs. They can be programmed easily via front panel control keys and on-screen display menus.

Video multiplexers are available in the following main categories:

- Standard Models provide high quality multiplexing. They are designed to be plug-and-play, therefore simplifying installation.
- System4 Triplex Models provide a variety of advanced system features such as control via remote keypad, PC control, system camera control (i.e. Pan/Tilt/Zoom control for controllable cameras), as well as enhanced multiplexing (e.g. two multiscreen outputs and two VCRs to increase recording speed).

Each type of multiplexer may operate in one of the following modes:

- Simplex Models allow live multiscreen monitor viewing or playback or VCR recording.
- Duplex Models allow live multiscreen monitor viewing or playback and at the same time record all video.
- Triplex Models allow live multiscreen monitor viewing and playback and at the same time record all video.

To identify your specific LTC 2600 Series Video Multiplexer model, refer to the following chart which also provides basic operating specifications:

Model No.	Mode	Rated Voltage	Voltage Range	Power
6-channel: Color LTC 2622/90	Duplex	120/230 VAC, 50/60 Hz	108 to 253	30 W
9-channel: Monochrome LTC 2632/90	Duplex	120/230 VAC, 50/60 Hz	108 to 253	30 W
9-channel: Universal LTC 2642/90	Duplex	120/230 VAC, 50/60 Hz	108 to 253	30 W
9-channel: System4 LTC 2672/90	Triplex	120/230 VAC, 50/60 Hz	108 to 253	30 W
16-channel: Monochrome LTC 2652/90	Duplex	120/230 VAC, 50/60 Hz	108 to 253	30 W
16-channel: Universal LTC 2661/90	Simplex	120/230 VAC, 50/60 Hz	108 to 253	30 W
16-channel: Universal LTC 2662/90	Duplex	120/230 VAC, 50/60 Hz	108 to 253	30 W
16-channel: System4 LTC 2682/90	Triplex	120/230 VAC, 50/60 Hz	108 to 253	30 W

5 INSTALLING THE VIDEO MULTIPLEXER

5.1 Mounting

The multiplexer is supplied as a desktop unit. If desired, the unit may be mounted via using the included rack mount kit.

5.2 Connecting the Video Multiplexer System

1. Refer to FIGURES 5A, 5B, and/or 5C for details on the input/output connections supplied by the multiplexer. (Be sure to reference the appropriate drawing for your multiplexer model.)
2. Review the typical installation diagrams provided in APPENDIX B at the back of the manual, and determine the number of cameras, monitors, and VCRs to be incorporated into the system.

3. Connect all peripherals (e.g. cameras, monitors, VCRs) to the corresponding inputs/outputs on the multiplexer rear panel.

NOTE: The Quick Reference Guide supplied with your multiplexer provides additional easy-to-follow instructions and diagrams for completing system connections.

4. Connecting the Video Multiplexer System:
Before applying power, locate the in-line surge protector packaged with the Multiplexer, and install it between the Multiplexer unit and the power cord (see installation example right).

5. When all connections have been completed, apply power to the system.

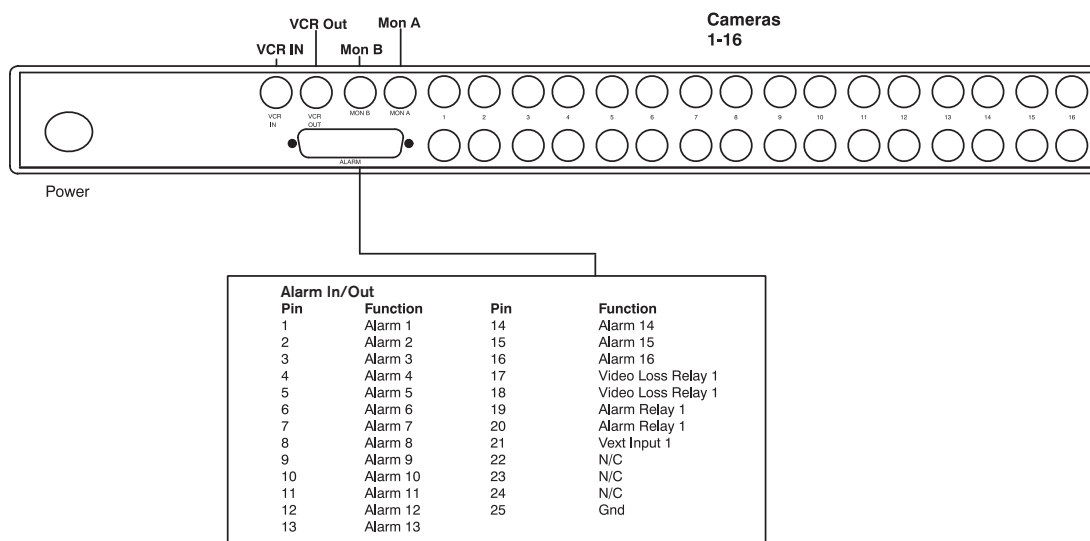
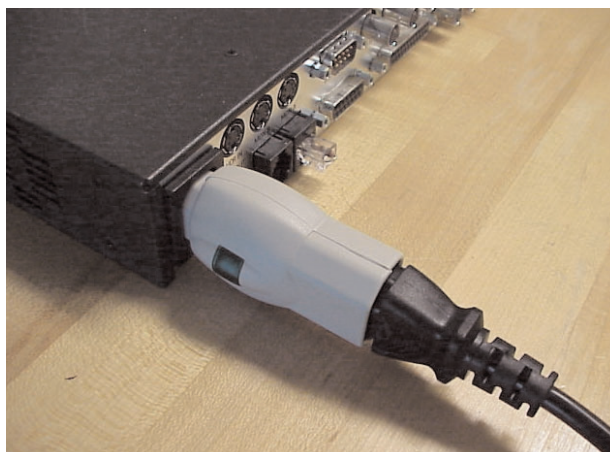


Figure 5A: 16-channel Back Panels

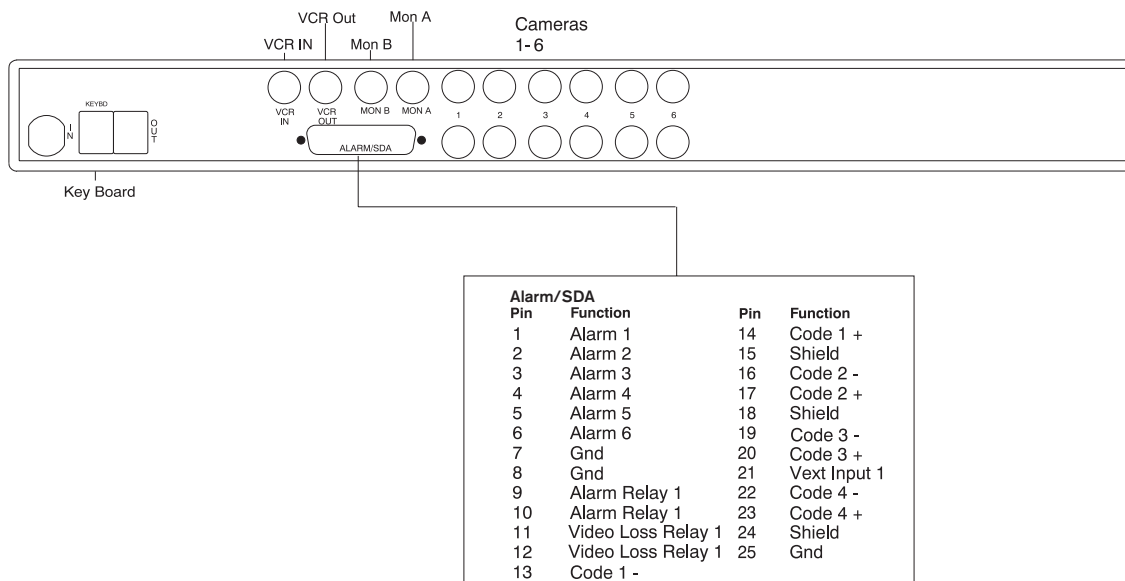


Figure 5B: 6-channel Back Panels

****From Console port of System4 to RS-232 port of Bosch VCRs.**

9-pin D sub to 25-pin D sub

2	2
3	3
4	6
5	7
6	20
7	5
8	4

Jumper 1+6 or purchase a S1383 cable.

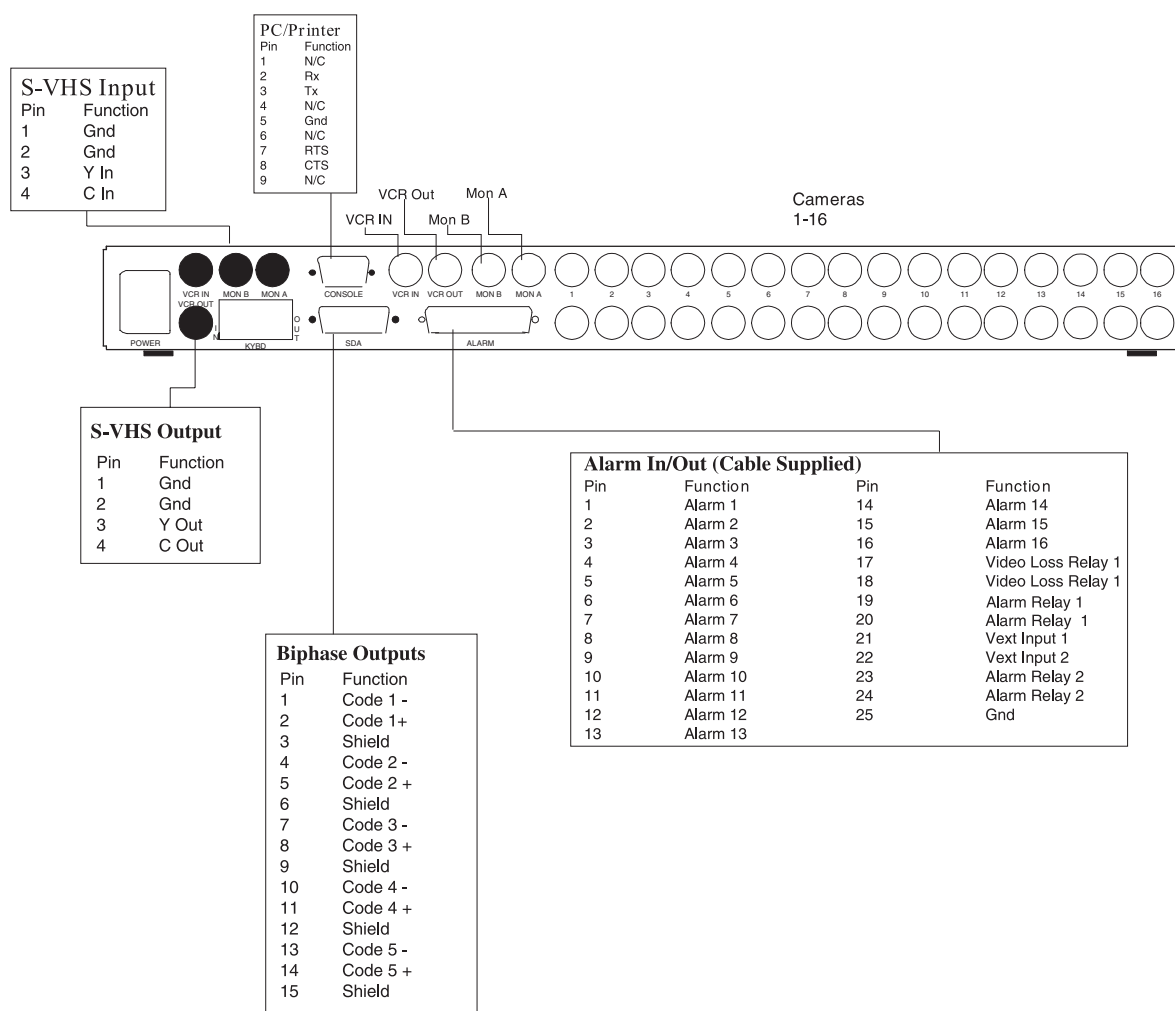


Figure 5C: 16-channel System4 Back Panels

* S-VHS (IN/OUT)

Limited distance need S-VHS Monitor, S-VHS VCR, and S-VHS tape.

** Please refer to APPENDIX F for cable details.

5.3 Guide to the Multiplexer Controls

Before attempting any multiplexer programming, you should become familiar with the function of the multiplexer controls. This section provides a summary of the front panel controls and indicators. Refer to FIGURES 5D, 5E, and/or 5F for the appropriate front panel illustration.

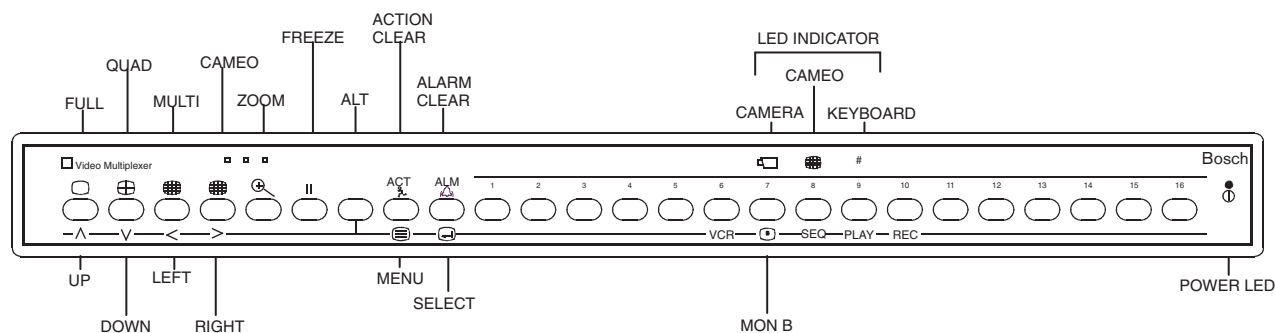


Figure 5D: 16-channel Front Panel

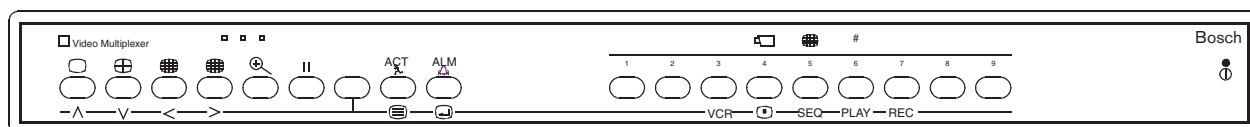


Figure 5E: 9-channel Front Panel

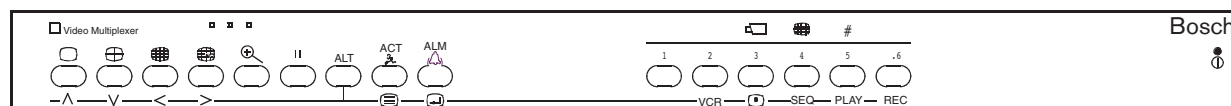













Figure 5F: 6-channel Front Panel

Front Panel Indicators

LED	Indication
POWER	Power supplied to unit
ALT	Primary indication: Alternate functions (Flashing): Camera-to-cameo mode (ALT + SELECT)
RECORD	Record mode enabled (LED LIT)
PLAYBACK	Playback mode enabled (LED LIT)
VCR Test	VCR Test enabled (LED LIT)
MON B	Monitor B enabled (Front panel keys control monitor B display) (LED LIT)
SEQ	Sequence mode enabled (LED LIT)
CAMEO	Cameo mode enabled (Camera keys control cameo images)
CAMERA	Camera mode enabled (Camera keys control camera images)
KEYPAD	Numeric mode enabled (Camera keys act as numeric keys)
ZOOM	Enlarge/zoom mode enabled
ACT	Steady: Action is enabled Flashing: Action has occurred Off: Action Disabled
ALM	Steady: Alarm is enabled Flashing: Alarm has occurred Off: Action Disabled

Primary Selections		Controls	
Description	Icon	Secondary Selections	Icon
FULL		UP	^
QUAD		DOWN	v
MULTI		LEFT	<
CAMEO		RIGHT	>
ZOOM			
FREEZE			
ALT			
ACTION CLEAR	ACT 	MENU	
ALARM CLEAR	ALM 	SELECT	

6 PROGRAMMING – QUICK SETUP


NOTE: The Programming Section of this manual is divided into 3 parts: QUICK SETUP, ADVANCED SETUP, and System4 ADVANCED SETUP.

Programming of all Bosch LTC 2600 Series multiplexers is included in the QUICK SETUP and ADVANCED SETUP sections. Additional setup parameters for the System4 version multiplexers only are included in the System4 ADVANCED SETUP section.




6.1 Using QUICK SETUP

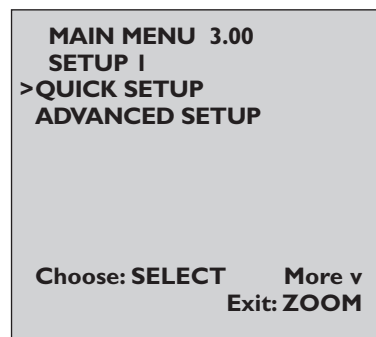
For typical multiplexer system operation, QUICK SETUP allows quick and easy programming of vital system data and operating parameters. The QUICK SETUP program includes the following:


- Time/Date
- AutoSet (automatic programming of system cameras)
- VCR Setup

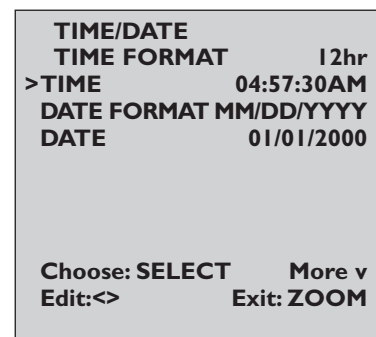
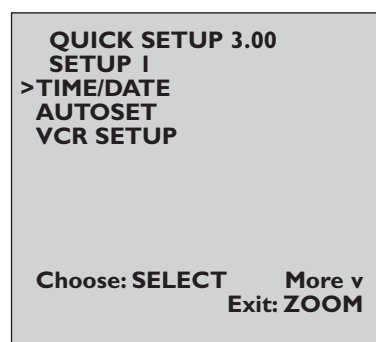
The following programming information applies to all LTC 2600 Series multiplexer models. If you need help at any point in the programming, consult the built-in HELP feature by pressing the **ALT**  key.

NOTE: Upon power up, the multiplexer will be using the factory-set default parameters. (See APPENDIX C for complete listing of the Factory Default Settings.) During QUICK SETUP programming, the menus will be displayed on MON A in the system.

1. To access the menu screens, press the **ALT**  key followed by the **MENU**  key. The Main Menu (as shown below) displays both programming setup options: QUICK SETUP and ADVANCED SETUP. Choose the *QUICK SETUP* option by using the direction (arrow) keys, then press **SELECT** .



2. Select TIME/DATE from the *QUICK SETUP* menu. Enter the time format (12 or 24 hours), time, date format (dd/mm/yyyy; mm/dd/yyyy; yyyy/mm/dd), and date information as requested. (Refer to the following sample menus which correspond to the on-screen Time/Date menus—read each row from left to right.) When you have finished programming all time/date parameters, use the **ZOOM**  key to return to the *QUICK SETUP* menu.



TIME FORMAT

Set the time format to
12 hr or 24 hr clock

12 hr
^

Default: FREEZE Edit: ^v
Save: SELECT Exit: ZOOM

TIME

Set system time for display
and recording

01:15:45AM
^

MOVE CURSOR: <>
Edit: ^v
Save: SELECT Exit: ZOOM

DATE FORMAT

Select Date MM/DD/YYYY
^

Default: FREEZE Edit: ^v
Save: SELECT Exit: ZOOM

DATE

Set system date for display
and recording 01/01/2000
^

MOVE CURSOR: <>
Edit: ^v
Save: SELECT Exit: ZOOM


3. Select **AUTOSET** from the *QUICK SETUP* menu to automatically configure the video multiplexer for the number of cameras connected (see the following sample menus). Recording, camera sequence, and video loss list are also configured in this menu.

QUICK SETUP 3.00
SETUP I
TIME/DATE
>AUTOSET
VCR SETUP

Choose: SELECT More ^v
Exit: ZOOM

AUTOSET
SETUP I
>AUTOSET ALL BELOW
RECORD LIST
VIDEO LOSS LIST
SEQUENCES

Choose: SELECT More ^v
Exit: ZOOM

4. Selecting **AUTOSET ALL BELOW** will automatically set the record list, sequence, and video loss list (according to the number of camera inputs detected by the multiplexer). Selecting any of the other options in this menu will set only the selected option.
5. When **AUTOSET** is completed, a message will be displayed for nine seconds. The camera inputs detected in the setup process are displayed as shown in this sample screen. Return to the *QUICK SETUP* menu by pressing the **ZOOM**  key.

AUTOSET ALL
SETUP I
01 02 03 04 05 06 07 - - - - -
- - - - -
the above cameras were
included in selected system
list(s)

Hit any Key to Continue

6. From the *QUICK SETUP* menu, select **VCR SETUP** (sample menus are shown below). Then select **RECORD SETUP** to specify the VCR model and time-lapse mode.

```

QUICK SETUP 3:00
SETUP I
TIME/DATE
AUTOSET
>VCR SETUP

Choose: SELECT      ^ More
Exit: ZOOM

```

```

VCR SETUP
SETUP I
>RECORD SETUP *VCR OUT*
PLAYBACK FORMAT LTC2600
RECORD LOCK      OFF

Choose: SELECT      More v
Exit: ZOOM

```

```

RECORD SETUP
*VCR OUT* SETUP I
>VEXT INPUT      OFF
SELECT VCR
TIME LAPSE      2hr SP
RECORD LIST
VCR OUT

Choose: SELECT      More v
Edit: <>            Exit: ZOOM

```

7. From the *RECORD SETUP* menu, select the **SELECT VCR** option. Select the appropriate VCR model by scrolling through the different selections listed with the TYPE parameter until you find your VCR model.

NOTE: If your VCR type is not listed in the *SELECT VCR* menu, refer to the *ADVANCED SETUP* programming section for instructions on setting a custom VCR model.

```

RECORD SETUP
*VCR OUT* SETUP I
VEXT INPUT      OFF
>SELECT VCR
TIME LAPSE      2hr SP
RECORD LIST
VCR OUT

Choose: SELECT      ^ More
Exit: ZOOM

```

```

SELECT VCR
*VCR OUT* SETUP I
>TYPE      LTC399I
EDIT CUSTOM VCR

Choose: SELECT      More v
Exit: ZOOM



```

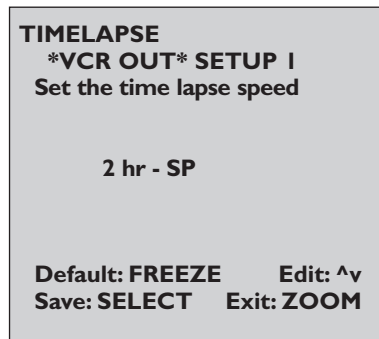
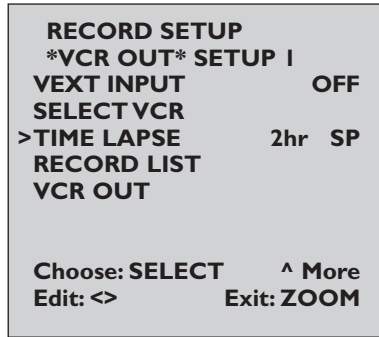
```

SELECT VCR
*VCR OUT* SETUP I
Match VCR type with the VCR
connected to optimize
recording speeds.
LTC399I
      ^

Default: FREEZE      Edit: ^v
Save: SELECT      Exit: ZOOM

```

8. Once the VCR has been selected, press the **SELECT**  key followed by the **ZOOM**  key to return to the *RECORD SETUP* menu. Select **TIME LAPSE** from the menu. Scroll through the time-lapse speeds until you find the appropriate recording speed of your VCR.



NOTE: After you specify the VCR model, the multiplexer will present the time-lapse settings available for the selected VCR. Ensure the same setting is entered in the VCR time-lapse menu as selected on the VCR for recording.

9. Optional VCR SETUP Programming:
PLAYBACK FORMAT

To play back a tape that has been previously recorded on a nonBosch multiplexer, use the **PLAYBACK FORMAT** option to program the unit accordingly. From the *VCR Setup* menu, select the **PLAYBACK FORMAT** option, then select the appropriate tape format. (The factory-set default for this option is LTC 2600 format.)

PLAYBACK FORMAT options:

- LTC 2600 (Same as TC82XXC, TC825X-X Series)
- TC8298B Series (Same as TC82XXA Series)
- DM (Same as Uniplex II, Sprite Series)
- Robot (Same as MV90X Series)
- Pelco
- Vicon

10. Optional VCR SETUP Programming:
RECORD LOCK

When enabled (ON), this feature locks the multiplexer in the *record* mode; recording cannot be stopped from the front panel or keyboard unless the lock option is turned OFF in the *VCR Setup* menu.

7 PROGRAMMING – ADVANCED SETUP

NOTE: Please refer to SECTION 6, Programming - Quick Setup for details.



7.1 Using ADVANCED SETUP

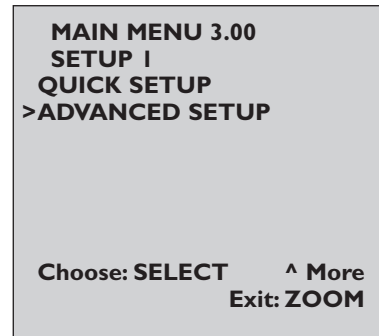
For specialized multiplexer system operation, use the ADVANCED SETUP programming menus to customize your system configuration. The ADVANCED SETUP program includes the following:


- Time/Date (as described in QUICK SETUP)
- Auto Set (as described in QUICK SETUP)
- VCR Setup
- Action Setup
- Alarm Setup
- Camera Titles
- Camera Sequences
- Configure Setups (in which preconfigured modes of operation are stored in memory for use at a specified time)
- Configure Displays (in which the format of the information shown on the displays is configured)
- Video Loss (in which the system functioning is set for when a video loss occurs)
- Default Settings (enables changes to the factory-set default parameters)
- Languages (allows the menu language to be changed)

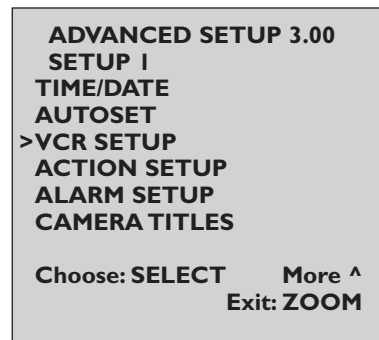
NOTE: For information regarding **QUICK FUNCTION KEYS** enabling *instant access* to the programming lists on the LTC 2600 Video Multiplexer, please refer to APPENDIX E at the back of this manual.

IMPORTANT! The following procedure assumes that all options will be programmed (all options, however, are not necessarily required for your system configuration). If you do not wish to program any particular ADVANCED SETUP feature, simply skip over that step and move on to the next one (as applies to your system configuration).

1. To access the menu screens, press the **ALT**  key followed by the **MENU**  key. The Main Menu (as shown below) displays both programming setup options: **QUICK SETUP** and **ADVANCED SETUP**.



Choose the **ADVANCED SETUP** option by using the direction (arrow) keys, then press **SELECT** .



2. For TIME/DATE programming, please refer to the information provided in the QUICK SETUP section of this manual. Programming this parameter is identical for both ADVANCED SETUP and QUICK SETUP.
3. For AUTOSET programming, please refer to the information provided in the QUICK SETUP section of this manual. Programming this parameter is identical for both ADVANCED SETUP and QUICK SETUP.

4. The LTC 2600 Series multiplexers are configured to record and playback from a wide range of VCRs. The VCR provides a pulse (VEXT) each time a video field is recorded to tape. This signal lets the multiplexer know that it can switch to a new camera. This feature also simplifies installation by synchronizing the normal and alarm recording speeds. You will need to decide how you are going to synchronize the multiplexer and the VCR. Either accomplish the following steps for synchronization using the VEXT input (recommended), or perform the alternate method (programming the VCR model and corresponding time-lapse speed).

NOTE: VCR SETUP is an involved programming sequence with many options. Please read through the information in this section carefully to understand all the options available.

Synchronizing the VCR using the VEXT Signal

If provided by the VCR, use of a VEXT signal is the preferred method of synchronizing the Multiplexer and the VCR. The VEXT pulse is a signal provided by the VCR that causes the Multiplexer to sequence to the next camera. It is highly recommended to use this method if supported by the VCR as it will ensure optimal update rate and performance of the Multiplexer. Select VCR SETUP (menu shown below).

- Connect and enable the VEXT output from the VCR, then choose the recording speed of the VCR.
- Connect the VEXT output from the VCR (CAM SW Out or Record Out) to Pin 21 and Ground to Pin 25 of the Alarm In/Out.
- From the *VCR SETUP* menu, select the **RECORD SETUP** option.
- From the *RECORD SETUP* menu, select **VEXT INPUT**. Switch it to the ON setting (the factory default is OFF). Using this feature will bypass the time-lapse setting in the multiplexer VCR selection menu (i.e. programming SELECT VCR and TIMELAPSE are not required.)

QUICK SETUP 3.00
SETUP I
TIME/DATE
AUTOSET
>VCR SETUP

Choose: **SELECT** ^ More
 Exit: **ZOOM**

VCR SETUP
SETUP I
>RECORD SETUP *VCR OUT
PLAYBACK FORMAT LTC2600
RECORD LOCK **OFF**

Choose: **SELECT** More v
 Exit: **ZOOM**

RECORD SETUP
***VCR OUT* SETUP I**
VEXT INPUT **OFF**
SELECT VCR
>TIME LAPSE 2 hr **SP**
RECORD LIST
VCR OUT

Choose: **SELECT** More ^
 Edit: <> Exit: **ZOOM**

VEXT INPUT
***VCR OUT* SETUP I**
 Select 'ON' to synchronize the
 mux with the VCR recording
 speed

OFF
 ^

Default: **FREEZE** Edit: ^v
 Save: **SELECT** Exit: **ZOOM**

Alternate Method for Synchronizing the VCR

The alternate method for synchronization of the multiplexer and the VCR requires selecting the appropriate VCR model, then selecting the identical setting in the VCR time-lapse menu.

- From the *VCR SETUP* menu, select **RECORD SETUP**.
- From the *RECORD SETUP* menu, select the **SELECT VCR** option.
- Scroll through the different selections listed with the TYPE parameter (using the arrow keys) until you find your VCR model.
- Return to the *RECORD SETUP* menu, and select the **TIME LAPSE** option.

Scroll through the time-lapse speeds (using the arrow keys) until you find the corresponding recording speed of your VCR.

```

RECORD SETUP
*VCR OUT* SETUP I
VEXT INPUT          OFF
SELECT VCR
>TIME LAPSE         2 hr  SP
RECORD LIST
VCR OUT

Choose: SELECT      More v
Edit: <>            Exit: ZOOM

```

```

RECORD SETUP
*VCR OUT* SETUP I
VEXT INPUT          OFF
>SELECT VCR
TIME LAPSE         2 hr  SP
RECORD LIST
VCR OUT

Choose: SELECT      More v
Edit : <>           Exit: ZOOM

```

```

VCR SETUP
SETUP I
>RECORD SETUP *VCR OUT
PLAYBACK FORMAT LTC2600
RECORD LOCK        OFF

Choose: SELECT      More v
Exit: ZOOM

```

```

SELECT VCR
*VCR OUT* SETUP I
|Match VCR type with the VCR
|connected to optimize
|recording speeds.
LTC399I
^

Default: FREEZE      Edit: ^v
Save: SELECT         Exit: ZOOM

```

```

SELECT VCR
*VCR OUT* SETUP I
>TYPE              LTC399I
EDIT CUSTOM VCR

Choose: SELECT      More ^
Edit: <>            Exit: ZOOM

```

```

TIMELAPSE
*VCR OUT* SETUP I
Set the time lapse speed

2 hr - SP
^

Default: FREEZE      Edit: ^v
Save: SELECT         Exit: ZOOM

```

Custom VCR Option

If Vext option will not be used and programming VCR cannot be accomplished through *Quick Setup*, choose the **Custom VCR** option. Up to six custom setups can be stored in the VCR list. The field rate must be determined for each of the *VCR time-lapse* modes. Field rates are available in the VCR's instruction manual or may be obtained by contacting the VCR manufacturer's technical support. Enter this information in the *time-lapse* menu. All video recording rates must be in fps (fields per second). All available recording rates for the VCR must be included.

- From the *VCR SETUP* menu, select **RECORD SETUP**.
- From the *RECORD SETUP* menu, select the **SELECT VCR** option.
- From the *SELECT VCR* menu, select the **EDIT CUSTOM VCR** option.
- Select **CUSTOM VCR 1**, and program the VCR SETUP TITLE and TIME LAPSE SETTING as shown in the menus below.

```

SELECT VCR
*VCR OUT* SETUP I
TYPE          LTC399I
>EDIT CUSTOM VCR

Choose: SELECT      ^ More
Exit: ZOOM

```

```

EDIT CUSTOM VCR
>CUSTOM VCR 1
CUSTOM VCR 2
CUSTOM VCR 3
CUSTOM VCR 4
CUSTOM VCR 5
CUSTOM VCR 6

Choose: SELECT      More v
Exit: ZOOM

```

```

EDIT CUSTOM VCR
CUSTOM VCR I
>VCR SETUP TITLE
TIMELAPSE SETTING

```

```

Choose: SELECT      More v
Exit: ZOOM

```

```

VCR SETUP TITLE
CUSTOM VCR I
Each VCR setup can be given a
12-character name.
CUSTOM.VCR. I
^

```

```

Move Cursor: <>
Default: FREEZE      Edit: ^v
Save: SELECT      Exit: ZOOM

```

```

TIME LAPSE SETTINGS
CUSTOMER VCR I
HOUR   FIELD   SP/HD
01-003  50.00  SP
02-012  12.50  SP
03-024  06.25  SP
04-048  03.10  SP

```

```

Move Cursor: <>
Default: FREEZE      Edit: ^v
Save: SELECT      Exit: ZOOM

```


Record List Option

The *RECORD LIST* option (in the *RECORD SETUP* menu) is used to customize the list of cameras to be recorded. Enter the information as requested in the sample menus shown below.

```

RECORD SETUP
*VCR OUT* SETUP I
VEXT INPUT OFF
SELECT VCR
TIME LAPSE 2 hr SP
>RECORD LIST
VCR OUT

Choose: SELECT ^ More
Exit: ZOOM

```

```

RECORD LIST
*VCR OUT* SETUP I
01 02 03 04 -----
-----
Use camera keys to select
camera for list

Camera: 1 to 16
Default: FREEZE
Save: SELECT Exit: ZOOM

```

VCR OUT Option

The *VCR OUT* option (in the *RECORD SETUP* menu, as shown below) is used to program the function of the VCR output relay. The VCR OUTPUT relay controls external devices such as changing the recording speed when an action and/or alarm occurs. The VCR output relay will remain active while there are active alarms or action. The following functions can be programmed:

- **Output:** The output relay can be activated on an action, alarm, action and alarm, or off, enabling the installer to prioritize the recording of camera pictures.
- **Alarm speed:** The VCR recording speed can be set to match the alarm recording speed of the VCR for an action/alarm input, ensuring that no part of any incident is missed.
- **Output relay:** The output relay can be set to operate as normally closed (N/C) or normally open (N/O) contacts. Typical VCR inputs are normally open contacts.

```

RECORD SETUP
*VCR OUT* SETUP I
VEXT INPUT OFF
SELECT VCR
TIME LAPSE 2 hr SP
RECORD LIST
>VCR OUT

Choose: SELECT ^ More v
Exit: ZOOM

```

```

VCR OUTPUT
SETUP I
>OUTPUT OFF
ALM/ACT SPEED 3 HR - SP
ALARM REC INTERLEAVE
ACTION REC INTERLEAVE
OUTPUT RELAY N/O

Choose: SELECT More v
Edit: <> Exit: ZOOM

```

(This completes the VCR SETUP programming.)

5. Return to the *ADVANCED SETUP* menu. Select the *ACTION SETUP* option. The LTC 2600 Series multiplexer includes a Digital Motion Detection feature that detects movement within the camera scene. When this feature is programmed and motion is detected, the record/display rates will increase. Using the *ACTION LIST* facility, the priority of recording can be changed to include recording of camera pictures and at the same time prioritize picture display on the monitor.

```

ADVANCED SETUP 3.00
SETUP I
TIME/DATE
AUTOSET
VCR SETUP
>ACTION SETUP
ALARM SETUP
CAMERA TITLES

Choose: SELECT      ^ More v
Exit: ZOOM
  
```

```

ACTION SETUP
SETUP I
>ACTION DWELL      08 sec
ACTION LIST
ACTION ZONES
WALKTHROUGH
DIRECTION ZONE

Choose: SELECT      More v
Edit: <>            Exit: ZOOM
  
```

The parameters in the *ACTION SETUP* menu are defined and programmed as follows:

ACTION DWELL: The action will be held for monitor display (full video on MON B, when applicable) and recording for the programmed duration (3 to 60 seconds). Press the <left / >right keys to increment/decrement.

NOTE: For 6-channel models only (LTC 2622/90).

ACTION LIST: Selects cameras to have motion detection. Entering the *ACTION LIST* menu enables this list to be customized to a specific configuration.

ACTION DISPLAY: Action display is available for MON A and MON B. Action display MON A setting will allow customized action viewing. Multiple actions will override programmed setting(s) and display a 5+1 multiscreen with ACTION flashing in the text display area. MON B will show full screen on action and at 2 second intervals when multiple actions are sensed.

ACTION ZONES: The screen is divided into a 14 X 16 grid (224 zones). Enabling or Disabling zones will allow the installer to specify which areas of the scene will detect action. For example, for an outdoor application, some of the scene includes a view of the sky. In this case, the grid areas covering the sky can be disabled.

```






ACTION SETUP
SETUP I
ACTION DWELL      08 sec
ACTION LIST
>ACTION ZONES
WALKTHROUGH
DIRECTION ZONE

Choose: SELECT      More v
Edit: <>            Exit: ZOOM
  
```

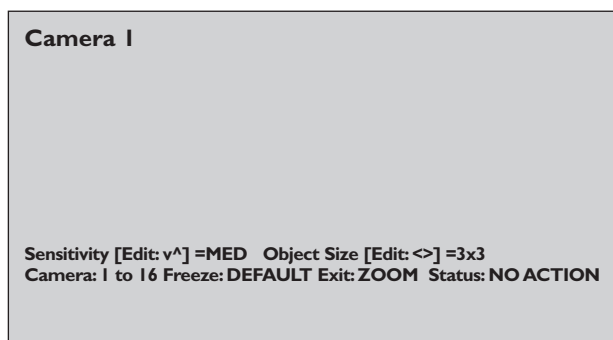
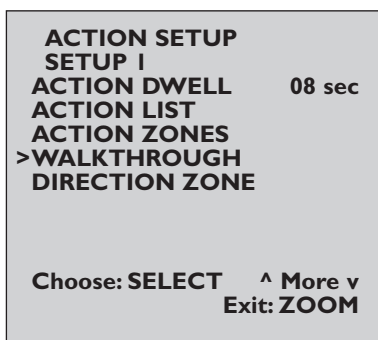
```

x x x x x x x x x x x x x x
Camera 1 x x x x x x x x x x
x x x x x x x x x x x x x x
x x x x x x x x x x x x x x
x x x x x x x x x x x x x x
x x




Zone [Edit: MENU] =ENABLE (x) Move Cursor: ^v
Camera: 1 to 16 Freeze: DEFAULT Exit: ZOOM
  
```

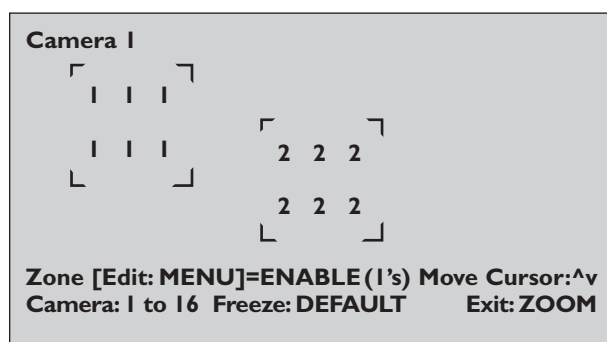
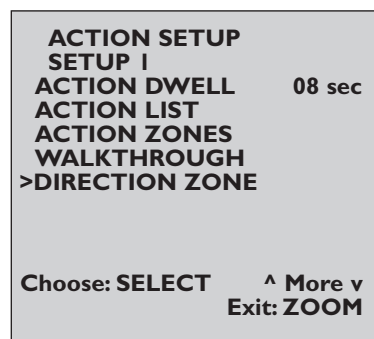
- Once in the ACTION ZONE setup, select the camera requiring setup by depressing the corresponding camera number.
- To enable zones, select the MENU  key, and ensure ZONE (EDIT:MENU) = ENABLE (X) is displayed. Move the cursor using the up, down, left, and/or right arrow keys to enable zones. Enabled zones will display an X.
- To disable zones, select the MENU  key, and ensure ZONE (EDIT:MENU) = DISABLE (O) is displayed. Move the cursor using the up, down, left, and/or right arrow keys to disable zones. Disabled zones will be blank.
- To select the Default Enabled Zones, select the FREEZE key (12 X 14 grid, 168 zones).
- To exit the Action Zone setup, select the ZOOM  key.
- Once in the WALKTHROUGH setup, select the camera requiring setup by depressing the corresponding camera number.
- Set the Sensitivity parameter by using the up/down arrow keys to increase/decrease the zone sensitivity.
- Program the object size by using the cursor keys to select the desired target size (corresponding to the number of zone coordinates covering the target size/area—from 1x1 up to 5x5).
- Press SELECT  to store the information, and press ZOOM  to exit.

WALKTHROUGH: The walkthrough section of the Action Setup is used to set action zone sensitivity and target size within the scene to provide greater accuracy in defining the target (i.e. eliminating nuisance alarms).

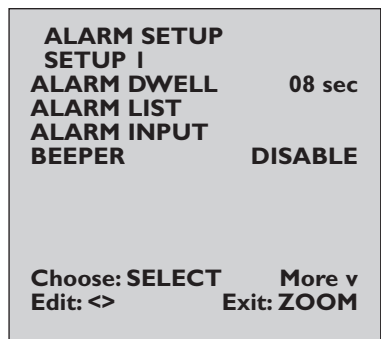
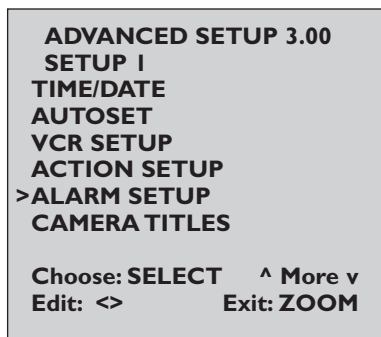


DIRECTION ZONES: A dual set of action areas to be programmed so that both areas must be activated in sequence for an action alarm to occur.

- To program this feature, select the *DIRECTION ZONE* option from the *ACTION SETUP* menu.
- Press the MENU  key to enable Zone 1. Use the cursor keys to position Zone 1 brackets in the desired screen area.
- Repeat these steps for Zone 2.
- Press SELECT  to store the information, and press ZOOM  to exit.



6. Return to the *ADVANCED SETUP* menu. Select the *ALARM SETUP* option. Depending on your multiplexer model, up to 9 or 16 alarm inputs can be connected to the multiplexer and are associated with their corresponding video input. Alarm inputs can be configured as normally open or normally closed. These inputs correspond to the camera inputs so that when an alarm input is initiated, the respective camera picture is displayed or recorded.

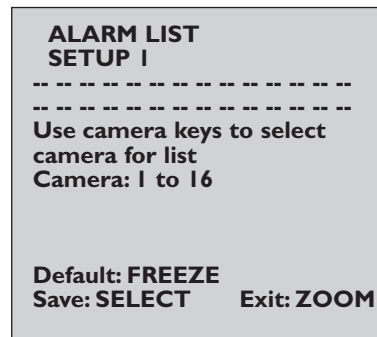


The parameters in the *ALARM SETUP* menu are defined and programmed as follows:

ALARM DWELL: The alarm will be held for monitor display (full video on MON B, when applicable) and recording for the programmed duration (3 to 60 sec). Individual alarms will be recorded for the programmed **ALARM DWELL** time or until the alarm is cleared. If two or more alarms are active at the same time, video is alternately recorded until the dwell time expires or the alarm conditions are cleared.

NOTE: If Alarm Dwell is set to **FOLLOWS**, alarms will follow the alarm input. These alarms cannot be cleared until the alarm contact is reset.

ALARM LIST: The **ALARM LIST** defines which alarm inputs are enabled and will follow programming as established in the **VCR OUT** option if applicable. Alarming camera numbers are selected by pressing the corresponding camera # key on the front panel or keyboard.



NOTE: For 6-channel models only (LTC 2622/90).

ALARM DISPLAY: Alarm display is available for MON A and MON B. Alarm display MON A settings will allow customized alarm viewing and camera pre-position showing. MON B will show full screen on alarm and at 2 second intervals when multiple alarms are activated.

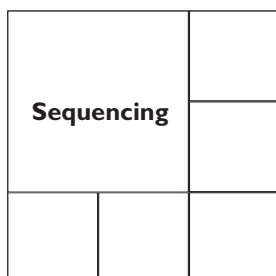
ALARM INPUT: The Alarm Input menu sets the type of input to Normally Open or Normally Closed for an individual alarm input.

BEEPER: The LTC 2600 Series provides an audible alarm. If the beeper is enabled, the beeper will sound for the duration of the alarm. Press any key to turn the beeper off once it has sounded. Setting the beeper to disable will prevent the beeper from sounding.

NOTE: The multiplexer has one alarm output relay. This relay can be programmed to switch ON for alarms.

7. Return to the *ADVANCED SETUP* menu. Select the **CAMERA TITLES** option. Each camera can be designated with a 16-character name, if desired. The factory-set default name for each camera is simply a numerical designation (e.g. camera 01).

8. Return to the *ADVANCED SETUP* menu. Select the *SEQUENCES* option. Camera sequencing on MON A and MON B is a function available to all multiplexer models.
- Quad sequencing is a function available on MON A. There are four Quad screens available and each Quad page can be customized to suit each application.
- Camera sequencing is programmable for cameo 1 of the 5+1 multiscreen display mode of the 6-channel models LTC 2622/90 (as shown below).



9. Return to the *ADVANCED SETUP* menu. Select the **CONFIGURE SETUPS** option. The LTC 2600 Series multiplexer has the capability to provide up to six individually configured setups that are retained in the multiplexer memory. By using these setups, the multiplexer can be programmed to automatically change its mode of operation based on a timer setting. This allows different configurations to be used (e.g. day, night, weekend and holidays). The Record option allows recording to be accomplished during a timed event.

```

ADVANCED SETUP 3.00
SETUP I
ACTION SETUP
ALARM SETUP
CAMERA TITLES
SEQUENCES
>CONFIGURE SETUP

Choose: SELECT    ^ More v
Exit: ZOOM
  
```

```

CONFIGURE SETUP
>LOAD SETUP
COPY SETUP
SETUP TITLE
TIME EVENTS

Choose: SELECT    More v
Exit: ZOOM
  
```

The following options can be programmed for each setup:

- Load Setup: The setup can be configured and then loaded into memory, making it the current operating configuration.
- Copy Setup: A setup can be copied and then saved as another setup.
- Setup Title: Each setup can have an individual title of 12 characters. (This title will displayed on line two of the multiplexer menus).
- Time Events: The Time Event function allows each of the six setups to be programmed for several parameters including start time, duration, and frequency (daily schedule) of recording. A sample menu is shown below. Note that these parameters must be set for each setup (1-6).

```

CONFIGURE SETUP
LOAD SETUP I
COPY SETUP
SETUP TITLE
>TIME EVENTS

Choose: SELECT    More v
Exit: ZOOM
  
```

```

TIME EVENTS
>SETUP I
SETUP 2
SETUP 3
SETUP 4
SETUP 5
SETUP 6

Choose: SELECT    More ^
Exit: ZOOM
  
```

```

TIME EVENTS
SETUP I
>SETUP ON/OFF      OFF
START TIME        00:00
DAYS              SMTWTFs
RUN ONE TIME      ON
RECORD            OFF

Choose: SELECT    More ^
Edit: <>          Exit: ZOOM
  
```

NOTE: RUN ONE TIME allows for individual events to be programmed and then run only one time. After the event, the multiplexer reverts to its "normal" programmed setup(s).

10. Return to the *ADVANCED SETUP* menu.
Select the **CONFIGURE DISPLAY** option.
The monitor displays can be configured to show time/date and camera titles. The format of the text can be changed, as well as the border of the cameo picture. The **CONFIGURE DISPLAY** parameters are defined and programmed as follows:

```

ADVANCED SETUP 3.00
SETUP I
ACTION SETUP
ALARM SETUP
CAMERA TITLES
SEQUENCES
CONFIGURE SETUP
>CONFIGURE DISPLAY

Choose: SELECT   ^ More v
Exit: ZOOM

```

```

CONFIGURE DISPLAY
SETUP I
>TIME DATE MON A   ON
TIME DATE MON B   ON
SCREEN POSITION BOTTOM
CAMERA TITLE MON A ON
CAMERA TITLE MON B ON
TEXT             WHITE/BLACK

Choose: SELECT       More v
Edit: <>             Exit: ZOOM

```

- **Time/Date:** Each monitor can have the time/date display selected on or off. Note that the time and date are only displayed per screen and not per cameo picture.
 - **Cameo Borders:** The cameo border format can be selected, enabling easy definition of the picture. The border can be set to white, gray, or black.
 - **VCR Status:** On/Off for on-screen display of VCR status.
 - **Display Lock List:** For security purposes, designated cameras can be programmed to be blocked out on the display (i.e. NOT displayed). Note that recording of those specified cameras will continue. When enabled, *VCR test mode* is disabled.
 - **Keypad Assign:** Up to 4 with keyboard port expander. Allows operation of MON A or MON B or Both from the respective keyboard.
 - **Screen Position:** Use the position command to select top, middle, or bottom of display for the location of the time/date/camera title information. In the cameo mode, only the time/date position will change; camera titles will remain at the bottom of each cameo image.
 - **Menu Timeout:** 15 minute timer/inactivity exits program menu.
 - **Auto Gain Control:** Video levels of camera inputs may vary. To maintain constant video quality, each camera input has individual automatic gain circuits that are suitable for most applications. Each input can be manually adjusted to optimize performance when desired (to access this function, switch Auto Gain to OFF).
 - **Text:** Each monitor can have the camera title display selected on or off. This ensures that the text can be viewed regardless of what type of background is shown, (i.e. very dark backgrounds can have white text displayed). The text can be displayed in a number of formats as shown in the following chart.
11. Return to the *ADVANCED SETUP* menu.
Select the **VIDEO LOSS** option. The LTC 2600 Series detects loss of video from any camera input by monitoring the camera sync signal. When a loss of video input occurs, the multiplexer provides an output which can be used to activate a warning device (e.g. buzzer, warning light, videoloss message on screen) to alert the operator that a video signal from one of the system cameras has been lost. The *VIDEO LOSS* function contains the following parameters which can be programmed as described:
- **Video Loss List:** Enable/disable individual cameras for the video loss list.
 - **Video Loss Output:** The video loss output can be enabled or disabled.
 - **Video Loss Relay:** The video loss output relay can be set to operate as normally closed contacts or normally open contacts.


```

ADVANCED SETUP 3.00
SETUP I
ALARM SETUP
CAMERA TITLES
SEQUENCES
CONFIGURE SETUP
CONFIGURE DISPLAY
>VIDEOLOSS
  
```

```

Choose: SELECT      ^ More v
Exit: ZOOM
  
```

```

VIDEOLOSS
SETUP I
>VIDEOLOSS LIST
VIDEOLOSS O/P      ENABLE
VID LOSS RLAY      N/O
  
```

```

Choose: SELECT      More ^
Exit: ZOOM
  
```

12. Return to the *ADVANCED SETUP* menu.
 Select the **DEFAULT SETTINGS** Option.
 The multiplexer is supplied with default parameters that are setup at the factory (see APPENDIX at the back of this manual).
 These settings allow normal operation of the multiplexer, enabling easy installation, setup, and use. However, any parameter can be changed to suit local conditions or customized configurations. If changes are made, you always have the option of returning to the default settings by selecting this command from the *ADVANCED SETUP* menu.

```

ADVANCED SETUP
SETUP I
CAMERA TITLES
SEQUENCES
CONFIGURE SETUP
CONFIGURE DISPLAY
VIDEOLOSS
>DEFAULT SETTINGS
  
```

```

Choose: SELECT      More ^
Edit: <>            Exit: ZOOM
  
```

DEFAULT SETTINGS

Yes = use factory
 default settings.

NO
 ^

```

Default: FREEZE      Edit: ^v
Save: SELECT        Exit: ZOOM
  
```

13. Return to the *ADVANCED SETUP* menu.
 Select the **LANGUAGES** option. To simplify the setup process, the menus of the LTC 2600 Series can be displayed in any one of six different languages. These languages are as follows:

English	French
German	Spanish
Dutch	Italian
Polish	

```

ADVANCED SETUP
SETUP I
SEQUENCES
CONFIGURE SETUP
CONFIGURE DISPLAY
VIDEOLOSS
DEFAULT SETTINGS
>LANGUAGE      ENGLISH
  
```

```

Choose: SELECT      ^ More ^
Edit: <>            Exit: ZOOM
  
```

LANGUAGE

Select English, German
 French, Spanish,
 Italian, Dutch, or Polish
 ENGLISH
 ^

```

Default: FREEZE      Edit: ^v
Save: SELECT        Exit: ZOOM
  
```

8 System4 PROGRAMMING

The System4 multiplexers offer additional programming options for greater system customization. System4 multiplexer initial programming requirements are outlined in the QUICK SETUP and/or ADVANCED SETUP sections of this manual. Additional features outlined in this section: VCR SETUP, ACTION SETUP, ALARM SETUP, CONFIGURE DISPLAY, CAMERA SEQUENCES, PC PRINTER SETUP, LOG, PASSWORD, and EXPAND SYSTEM are accessed through the *ADVANCED SETUP* menu as shown below.

```

ADVANCED SETUP
SETUP I
>TIME/DATE
AUTOSET
VCR SET UP
ACTION SETUP
ALARM SETUP
CAMERA TITLES
SEQUENCES
CONFIGURE SETUP
CONFIGURE DISPLAY
PC/PRINTER
VIDEOLOSS
LOG
PASSWORD
EXPAND SYSTEM
DEFAULT SETTING
REMOTE SYSTEM4 SETUP
LANGUAGE
Choose: SELECT      More ^
Edit: <>      Exit: ZOOM
  
```

Please refer to the ADVANCED SETUP programming section in this manual for the standard ADVANCED SETUP programming features available to all multiplexer models. The following sections describe those programming options unique to System4 multiplexers—this information is intended to be supplemental to the information provided in the ADVANCED SETUP section.

8.1 System4 Advanced Setup: VCR Setup

System4 multiplexers provide several additional options for VCR SETUP programming. These options are shown in the sample menus below and include two separate RECORD SETUPS (VCR OUT and MON B as an alternate VCR output) and two RECORD LISTS (accessed through each RECORD SETUP menu). VCR REMOTE SETUP is an added bonus for quick and easy system setup. Optional programming for RECORD FORMAT is also provided.

```

VCR SETUP
SETUP I
>RECORD SETUP *VCR OUT*
RECORD SETUP *MON B*
PLAYBACK FORMAT LTC2600
RECORD FORMAT LTC2600
RECORD LOCK OFF

Choose: SELECT      v More ^
Exit: ZOOM
  
```

```

RECORD SETUP
*VCR OUT* SETUP I
VEXT INPUT OFF
SELECT VCR
TIME LAPSE 2 hr -SP
RECORD LIST
VCR OUT
>VCR REMOTE SETUP

Choose: SELECT      v More ^
Exit: ZOOM
  
```

```

VCR REMOTE SETUP

YES
^

Default: FREEZE      Edit: ^v
Save: SELECT      Exit: ZOOM
  
```

VCR REMOTE SETUP, when selected, will configure the VCR recording speed and format of the remote VCR automatically (provided the RS-232 connections have been established) based on information contained in the RECORD SETUP menu. This option is not available for RECORD SETUP MON B (see following menus) as there is only one serial port on the multiplexer.

RECORD SETUP MON B is similar to the RECORD SETUP VCR OUT programming.

```

VCR SETUP
SETUP I
RECORD SETUP *VCR OUT*
>RECORD SETUP *MON B*
PLAYBACK FORMAT LTC2600
RECORD FORMAT LTC2600
RECORD LOCK          OFF

Choose: SELECT      ^ More
Exit: ZOOM

```

```

RECORD SETUP
*MON B* SETUP I
>VEXT INPUT          OFF
SELECT VCR
TIME LAPSE           2 hr - SP
RECORD LIST
VCR OUT

Choose: SELECT      More ^
Edit: <>           Exit: ZOOM

```

Optional VCR SETUP Programming for System4: RECORD FORMAT

System4 provides the capability of recording in three types of teletext (Recording) formats:

- TC8298B (Includes TC82XXA, TC82XXB Series)
- LTC 2600 (Includes TC82XXC Series)
- VITC

8.2 System4 Advanced Setup: Action Setup

In System4 models, MON A has the capability of displaying a customized view during ACTION detection. Camera selection will be completed by selecting the corresponding camera # key on the front panel or the keyboard. Program the ACTION DISPLAY MON A menu as follows:

- Full: If **Full** is selected, the selected camera will be displayed in the full screen format.
- Quad: If **Quad** is selected, any combination of up to 4 separate cameras may be displayed as selected. There must be a camera selected for the first position.

- Multi: If Multi is selected, such as 4+3, 3x3, 8+2, 12+1, or 4x4, it will display the multiscreen view as it was originally programmed in the live view setup. Individual cameras may not be selected from this menu.

```

ADVANCED SETUP
SETUP I
TIME/DATE
AUTOSET
VCR SETUP
>ACTION SETUP
ALARM SETUP
CAMERA TITLES

Choose: SELECT      ^ More v
Exit: ZOOM

```

```

ACTION SETUP
SETUP I
ACTION DWELL          08 sec
ACTION LIST
>ACTION DISPLAY MON A
ACTION ZONES
WALKTHROUGH
DIRECTION ZONE

Choose: SELECT      More v
Edit: <>           Exit: ZOOM

```

```

ACTION DISPLAY MON A
INPUT I
MODE                  CAM
>QUAD                 01
--
--
--

Input: 1 to 16
Default: FREEZE
Save: SELECT      Exit: ZOOM

```

NOTE: When multiple cameras are selected in the Quad or Multi Action Display Options and when the action is active, the selected cameras become a group and the group will be included in the exclusive or interleave recording function as programmed in the ACTION SETUP menu.

8.3 System4 Advanced Setup: Alarm Setup

In System4 models, MON A has the capability of displaying a customized view during ALARM input. Camera selection will be completed by selecting camera # key on the front panel or the keyboard. Program the *ALARM DISPLAY MON A* menu as follows:

- **Full:** If **Full** is selected, the selected camera will be displayed in the full screen format. If the camera call-up is a pan/tilt unit with pre-position option or AutoDome®, pre-position call up may also be programmed from 1-16.
- **Quad:** If **Quad** is selected, any combination of up to 4 separate cameras may be displayed as selected. There must be a camera selected for the first position. If the camera selected is a pan/tilt unit with pre-position option or AutoDome, pre-position call up may also be programmed for each selected camera from 1-16.
- **Multi:** If **Multi** is selected, it will display the multiscreen view as it was originally programmed in the live view setup. Four separate cameras may be selected for pre-position activation during alarm input. Pre-positions programmed for selected cameras may be from 1-16 if the camera selected is a pan/tilt unit with pre-position option or an AutoDome.

```

ADVANCED SETUP 3.00
SETUP I
TIME/DATE
AUTOSET
VCR SETUP
ACTION SETUP
>ALARM SETUP
CAMERA TITLES

Choose: SELECT    ^ More v
Exit: ZOOM
  
```

```

ALARM SETUP
SETUP I
ALARM DWELL          08 sec
ALARM LIST
>ALARM DISPLAY MON A
ALARM INPUT
BEEPER              DISABLE

Choose: SELECT    More v
Edit: <>          Exit: ZOOM
  
```

```

ALARM DISPLAY MON A
INPUT I
MODE                CAM  PP
>----

Input: 1 to 16
Default: FREEZE
Save: SELECT    Exit: ZOOM
  
```

```

ALARM DISPLAY MON A
INPUT I
MODE                CAM  PP
>FULL              01   16

Input: 1 to 16
Default: FREEZE
Save: SELECT    Exit: ZOOM
  
```

```

ALARM DISPLAY MON A
INPUT I
MODE                CAM  PP
>QUAD              01   16
---                ---  ---
---                ---  ---
---                ---  ---

Input: 1 to 16
Default: FREEZE
Save: SELECT    Exit: ZOOM
  
```

```

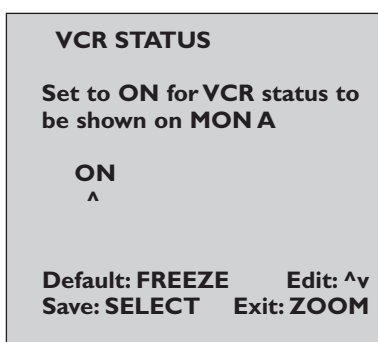
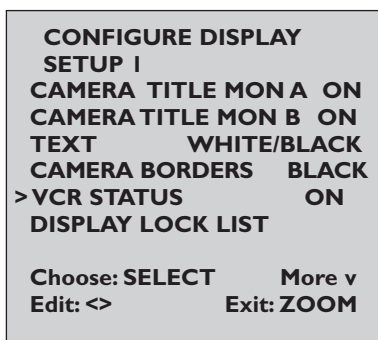
ALARM DISPLAY MON A
INPUT I
MODE                CAM  PP
>8+2              01   16
---                ---  ---
---                ---  ---
---                ---  ---

Input: 1 to 16
Default: FREEZE
Save: SELECT    Exit: ZOOM
  
```

NOTE: When multiple cameras are selected in the Quad or Multialarm Display Options and the alarm is active, the selected cameras become a group and the group will be included in the exclusive or interleave recording function as programmed in the *ALARM SETUP* menu. When multiple alarms are detected, MON A will automatically display a multiscreen view (3x3 for the nine channel and 4x4 on the 16 channel model).

8.4 System4 Advanced Setup: Configure Display

System4 multiplexers provide an additional option for programming through the *CONFIGURE DISPLAY* menu. To access this option, you must scroll (arrow key) beyond TEXT in the menu.



8.5 System4 Advanced Setup: Camera Sequences

The System4 models allow sequential display of cameras on the monitor in *FULL* or *Quad* viewing modes. Cameras can be repeated in sequencing displays to enable important scenes to be viewed at greater frequency.

Sequences can be set for MON A and MON B as shown in the sample menu.

- **FULL** screen display can be set for sequencing with programmable dwell time from 1 to 60 seconds. The camera pictures can be sequenced in any order in 16 sequence steps, for example 1, 5, 8, 4, 1, 2, 3, 1, 6, 8, 1. In this sequence, camera 1 is viewed every fourth time of the sequence.

- **QUAD** screen display can be set for sequencing with programmable dwell time from 1 to 60 seconds.

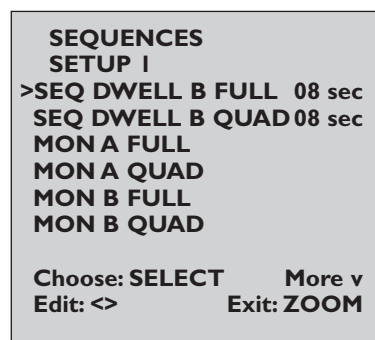
NOTE: Each quadrant can be programmed to show any individual camera(s). And, the camera(s) (programmed for each quad) can be sequenced in any order. For example, the following sequences could be set up for MON A:

CAMEO 1: 01, 05, 09, 13

CAMEO 2: 02, 06, 10, 14

CAMEO 3: 03, 07, 11, 15

CAMEO 4: 04, 08, 12, 16



NOTE: If this feature is not programmed for a custom configuration, the factory default setting takes the cameras in order (e.g. first quad - cameras 1,2,3,4; second quad - cameras 5,6,7,8, etc.)

8.6 System4 Advanced Setup: PC Printer Setup (RS-232 Setup for PC/Printer/VCRs)

The System4 multiplexer has a console port which can be configured for a PC, CCL, printer, or connected to a VCR.

- **PC:** When connected to a PC, new software can be downloaded to the multiplexer. Additionally, the LTC 2650 Graphical User Interface software and a PC running Windows 95, 98, or NT can be used to control the multiplexer.
- **CCL:** When connected to a PC, CCL commands may be used for programming and controlling the multiplexer.
- **VCR:** When connected to selected Bosch VCRs, LTC 2601/00 or LTC 2602/00 keyboard will control primary VCR functions (Record, Play, Stop, Fast Forward, Rewind).
- **Printer:** When a printer is connected, a copy of the logged events can be printed.
- **Autoprint:** When enabled, will automatically print log events as they occur. The print commands are not displayed in the PC/Printer menu until the CONNECT TO parameter is set to PRINTER.

```

ADVANCED SETUP
SETUP I
ALARM SETUP
CAMERA TITLES
SEQUENCES
CONFIGURE SETUPS
CONFIGURE DISPLAY
>PC/PRINTER

Choose: SELECT      ^ More v
Exit: ZOOM
  
```

```

PC/PRINTER

>CONNECT TO          VCR
SERIAL PORT          96,N,8,I

Choose: SELECT      More v
Edit: <>            Exit: ZOOM
  
```

8.7 System4 Advanced Setup: Log

The LOG option allows the operator to view a history of action, recording, and alarm activity. Up to 300 events are retained in the log. The AUTOPRINT command will automatically print log events, therefore providing a larger event history. When the log is full, the oldest events are overwritten.

The LOG option includes:

- **View Log:** View the list of logged events.
- **Log Setup:** Select which events are recorded to the log—these can be alarm, action, event, and video loss.

8.8 System4 Advanced Setup: Password

In System4 multiplexers, access to the multiplexer setup menus can be password protected to prevent unauthorized entry. If the first number of the password is between 5 and 9, the **Quick Edit** key operation will be disabled (see APPENDIX E for more information on the **Quick Function** keys).

8.9 System4 Advanced Setup: Expand System Setup

The EXPAND SYSTEM SETUP feature provides the ability to program the system for operation with numerous interconnected multiplexers. Expanded camera identification is also provided, as well as automatic time synchronization which is necessary for the proper operation of an expanded multiplexer system.

```

ADVANCED SETUP
SETUP I
PC/PRINTER
VIDEOLOSS
LOG
PASSWORD
>EXPAND SYSTEM
DEFAULT SYSTEM
Choose:SELECT

      ^ More v
      Exit: ZOOM
  
```

```

EXPAND SYSTEM

>NUMBER MUX          01
CAMERA RENUMBER
TIME SYNC NOW

Choose: SELECT      More v
Edit: <>            Exit: ZOOM
  
```


NUMBER MUX: To ensure proper operation with multiple multiplexers, the following steps are recommended:

- Use the LTC 2609/00 black cable kit when making a connection between multiplexers.
- Program the Mux ID for each multiplexer from the front panel only. To properly control multiple multiplexers from a system keyboard, a unique number from 1 to 30 must be assigned to each multiplexer. This number is then used to select the multiplexer from any system keyboard.

NOTE: In installations requiring multiple video multiplexers, the LTC 2601 and LTC 2602 system keyboards can control up to 30 interconnected System4 multiplexers. See APPENDIX B for illustrations of these special system configurations.

CAMERA RENUMBER: To provide unique identification of cameras in a large installation, camera numbering can be redesignated up to 999. Regardless of camera renumbering, cameras are selected using camera numbers 1 to 16 via the front panel or system keyboard. Selected monitors will show the redesignated camera number.

TIME SYNCHRONIZATION: Expanded systems may require internal clock synchronization providing identical time information across each of the interconnected System4 multiplexers. For this purpose, TIME SYNC NOW must be enabled. The multiplexer will send a broadcast command to synchronize the clock daily.

8.10 System4 Advanced Setup: Remote System4 Setup

When using the System4 multiplexer with a System4 Server for digital recording and network access, this setup parameter is used. Select **YES** only if used with the System4 Server. Default is NO.

9 OPERATING THE LTC 2600 SERIES VIDEO MULTIPLEXER

Operating the LTC 2600 Series Video Multiplexer requires a general knowledge of basic and combined operating modes as described in this section. Basic operating modes are LIVE (Display), RECORD, and PLAYBACK.


Duplex multiplexer models provide combinations of the basic modes (e.g. simultaneous recording plus playback when two VCRs are used). When operating access is a concern, the multiplexer's security lockout feature can be enabled. Three levels of access are provided as described at the end of this section.



9.1 Live Display Mode

Live camera pictures can be displayed on monitors A and B.

- MON A is the main functional monitor and can be displayed in *FULL*, *QUAD*, or *MULTI*. Alarm, action, and video loss warnings are displayed on this monitor.
- MON B will display the selected camera in full screen or sequencing under normal operating (*recording*) modes. When an alarm or action input is detected, the corresponding camera picture with the flashing Alarm/Action indicator will be displayed on MON B for the programmed dwell time. When multiple alarms or actions occur, camera pictures will be sequenced on MON B at the two-second dwell time.
- Multiscreen display modes can be displayed on both Monitors (A and B). All alarm action and video loss warnings are displayed on both monitors. The alarm/action call-up will occur only when MON B is in *full screen* mode. Multiscreen will not be available on MON B during recording operations.


Displaying Live Camera Pictures

Full Screen Display: Shows one camera, full screen on one monitor. Press the **FULL SCREEN**  key on the front panel, then press the appropriate camera number key for the camera you wish to be displayed.



Quad Screen Display: Divides the screen into four separate areas. Press the **QUAD**  key once to enable the feature. Press the key repeatedly to toggle through different viewing configurations. Pressing **ALT** , then **SEQ** will sequence through all quad screens available with model in use.

Multiscreen Display: Enabling this feature shows different multiscreen configurations.




- 6 channel: 5+1
- 9 channel: 4+3, 3X3
- 16 channel: 4+3, 8+2, 12+1, 3X3, and 4X4



Press the **MULTI**  repeatedly to toggle through the different multiscreen display options.

Cameo Mode: When in *MULTI* or *QUAD* modes, the screen area where a camera is displayed is called a **CAMEO**.

NOTE: The numbered front panel keys can refer to either cameras or cameos. Press the **CAMEO**  key to enable the operation of these keys in the cameo function. (The **CAMEO** LED is illuminated when the multiplexer is in the **CAMEO** mode.) Press the **CAMEO**  key again to revert to the camera function.

Cameras can be assigned to any selected cameo and can be changed as often as required. This can be done by one of the following:



- Assigning all cameras: Press the **ALT**  key. The **ALT** LED will illuminate, then press the **SELECT**  key. The first cameo will be selected and show a flashing camera title. By pressing the desired camera key, that camera will be assigned to the cameo, and the next cameo is automatically selected (shown by the flashing camera titles). Again press the selected camera key; this is assigned and the process repeated until all cameos have been assigned a camera. Press the **ALT**  key to exit.

- Individual assignments: In the *MULTI* or *QUAD* mode, the Camera keys are assigned as Cameo keys automatically. Select relevant cameo key, 1 to 16. The relevant cameo is selected. Press the **CAMEO**  key. The cameo keys revert back to selecting cameras. Press the **CAMERA** key to assign the selected camera to cameo. Press **CAMEO**  to exit.

Zoom: Enables the active camera display (a cameo in multi or quad display) to be digitally enlarged by a factor of 4:1. *Zoom* will be displayed on the monitor screen. Selecting any other camera (using the camera keys) will display that camera image in full screen enlarged mode. The arrow keys allow closer inspection of any part of the selected image.


Freeze: Holds the selected camera picture on either full screen or cameo. The currently selected camera image will be frozen, and *FREEZE* will be displayed on the screen. This feature allows closer inspection of any part of the selected image. Press the **FREEZE** key again to release the image from this function. Changing the *display screen* mode releases the *freeze* mode from all cameos.

Alarms and Actions: The **ALM** or **ACT** LED will flash when an alarm or action condition occurs. If viewing in a multiscreen view or quad view, *ALARM/ACTION* will flash in the corresponding cameo if the affected camera is in view. When an alarm or action is detected, the corresponding camera picture is displayed in full screen on **MON B** only when **MON B** is in the *full screen viewing* mode. Clearing an Alarm/Action will stop any recording associated with that function.

Clearing Alarm/Action: Press the **ALM**  or **ACT**  key, and all alarms/actions will be reset.

9.2 Record


To record live pictures:

1. Press the green **ALT**  key, then press the camera number key above the REC LED. This key combination toggles (ON/OFF) the *RECORD* mode.
2. Ensure the REC LED is illuminated for proper recording functions.

NOTE: If the REC LOCK has been enabled in system programming, the REC LED cannot be disabled. When the REC LED is illuminated, there will be no multiscreen viewing capability on MON A if a simplex unit is used or on MON B if a duplex unit is used.

9.3 Playback

To playback the recorded pictures:

1. Press the green **ALT**  key, then press the camera number key above PLAY LED. This key combination toggles (ON/OFF) the *PLAYBACK* mode.
2. Ensure the PLAY LED is illuminated for proper recording functions.

NOTE: Recorded video will be played back on MON A only allowing FULL, QUAD, or MULTI screen viewing capabilities.

9.4 Combined Modes

The Duplex multiplexer models also provide combinations of the basic modes of operation as described in this section.

Record Plus Multiscreen Display (See APPENDIX B): Allows live pictures to be displayed on MON A in either FULL, QUAD, or MULTI screen mode. FULL screen or sequencing of all cameras can be displayed on MON B while recording selected cameras onto the VCR.

Simultaneous Record plus Playback (See APPENDIX B): Allows recorded camera pictures to be played back and displayed on MON A in either FULL, QUAD, or MULTI screen mode; live FULL screen display of the selected camera picture or sequencing all cameras on MON B; and at the same time, record the selected live camera pictures onto the VCR. Two VCRs are required for this operation. When not recording, the following mode can be programmed:

Live Multiscreen on MON A and MON B: The duplex unit provides two independent output monitors, each with the capability to provide FULL, QUAD, or MULTI screen display.

Simultaneous Playback plus Multiscreen Display: The Duplex units allow live pictures to be displayed on MON B in either FULL, QUAD, or MULTI screen mode and playback recorded camera pictures to be displayed on MON A in either FULL, QUAD, or MULTI screen mode.


9.5 Security Lockout

The LTC 2600 Series Multiplexer provides three levels of access for operation: (1) Full Access, (2) Limited Access, and (3) Lockout (i.e. No access/no front panel manipulation possible).

The key commands controlling this feature are as follows:

- QUAD + ZOOM + ALM All user functions and menus.
- QUAD + CAMEO + ALT All user functions except menus.
- QUAD + CAMEO + FREEZE Lock out the front panel.

9.6 VCR Test Mode

Toggles between viewing the output of the VCR (the VCR monitor mode) and viewing a camera input. Press **ALT** , then **VCR** key and the VCR LED will light. The *VCR* mode is used to examine the video which will be recorded by the VCR during recording or to adjust the tracking for optimal playback picture of the VCR. This function will also be required for on-screen programming of VCR units. It should only be used if both the input and output of a single VCR are connected to the multiplexer.

10 System4 ENHANCED OPERATION

NOTE: The following information pertains to System4 multiplexer models only.

System4 multiplexers provide special *operating* modes which enable enhanced operation and special customized system configurations, including expanded systems with control from system keyboards. This section describes the operating features/modes specific to System4 models. Keyboard descriptions and operating functions are also provided.

10.1 System4 Special Operating Features

Please refer to the OPERATING THE LTC 2600 MULTIPLEXER SECTION in this manual for the standard operating features available to all multiplexer models. The following sections describe those operating features/modes unique to System4 multiplexers—this information is intended to be supplemental to the information provided in the OPERATING THE LTC 2600 SECTION.

Two Output Relays for Actions/Alarms



System4 triplex multiplexers provide two output relays for actions or alarms. These relays may be programmed through the *ACTION SETUP* or *ALARM SETUP* menus in ADVANCED SETUP.

Simultaneous Record to Two VCRs (See APPENDIX B for an illustration of this system configuration).


System4 triplex models allow the following:

- Display of full screen live video on MON A.
- Record the selected camera pictures (as defined in the VCR1 RECORD LIST) to VCR 1.
- Record the selected camera pictures (as defined in the VCR2 RECORD LIST) to VCR 2.

Two VCRs are required for this operation—one to record the output from the VCR OUT connector and one to record the output from the MON B connection (MON B becomes a VCR output for VCR 2). By using two recorders, customized record lists can be generated for each VCR. For example, while the first VCR is recording normally, the second VCR can be setup to record only alarm or action video pictures.

To program the unit to operate in this mode, press **ALT** , then **2**, then the **REC** key. This will engage the multiplexer to send video to both VCRs. Pressing **ALT** , then **REC** will disable this option. Normal viewing modes will not be available on MON B if being used as an alternate VCR OUTPUT.

Simultaneous Playback plus Multiscreen Display: The System4 triplex models allow live pictures to be displayed on MON B in either *FULL*, *QUAD*, or *MULTI screen* mode and playback recorded camera pictures to be displayed on MON A in either *FULL*, *QUAD*, or *MULTI screen* mode.

Simultaneous Playback on MON A and MON B: The System4 triplex models allow simultaneous playback on both MON A and MON B of multiple recorded images. MON A is selectable for any screen display mode, while MON B can select any of the recorded cameras in full screen display only. To perform simultaneous playback, press **ALT** , then **2**, then **PLAY**.

Time/Date Search on VCR Analog Tapes: Select the quick key sequence *ALT-1-VCR-PLAY*, and the playback search menu window will be displayed.

NOTE: If playback is not selected or a VCR is not connected to the RS-232 port, a *NO PLAYBACK* error message will be displayed and the *playback search* menu will not start.

PLAYBACK SEARCH

>SEARCH TIME 00:00

SEARCH DATE 02/03/1999

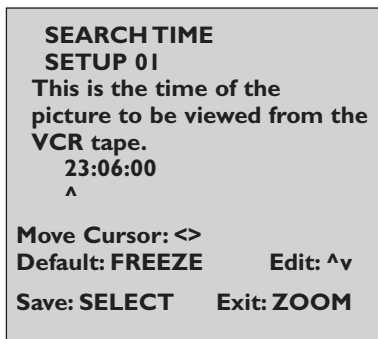
START SEARCH

Choose: SELECT More v

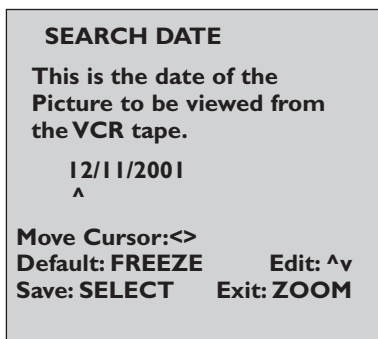
Edit: <> Exit: ZOOM

The search time and date will reflect the last time and date read from the previously recorded tape.

Set the Search Time as shown below:

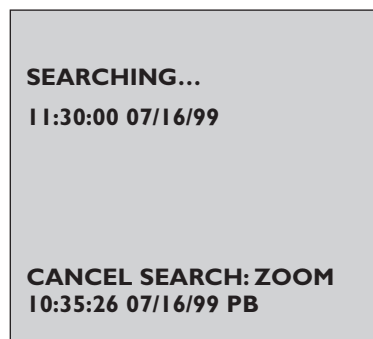


Set the Search Date as shown below:



To start the search:

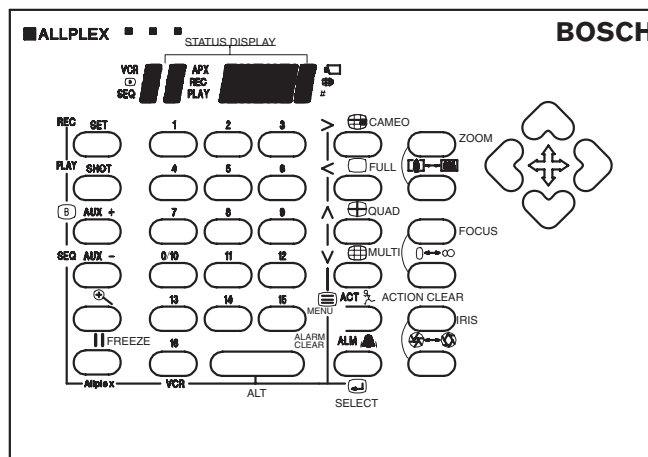
- Select the quick key sequence *ALT-1-VCR-PLAY*, and the playback search window menu will be displayed.
- Set the required date/time (Note the current playback time will appear as a default).
- Select START SEARCH. The search display window will appear showing the desired time, the last date and time read from the recorded tape, and the VCR status.
- The multiplexer will automatically forward/rewind the tape to the required time/date.
- When the required time/date is found, the message "Search Completed" will be displayed. The beeper will sound, and after 3 seconds, the initial playback screen will be displayed on MON A.
- If the multiplexer cannot find the required time/date, it will prompt the user and discontinue the search, returning to the initial playback screen.
- To abort the search at any time, press the ZOOM key.



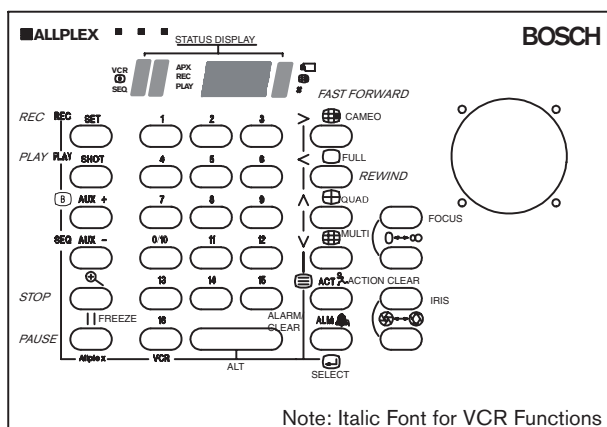
10.2 System Keyboards

The LTC 2601/00 and LTC 2602/00 are full function keyboards designed for system control, programming, and Pan/Tilt/Zoom (Bosch Allegiant R/D or AutoDome) operation with the System4 Model multiplexers. By using the keyboard port expander LTC 2604 Series unit, purchased separately, up to four keyboards may be connected. Optional hardware for remote location of keyboards includes the following:

- **LTC 8558/00 Keyboard Extension Cable:**
Six conductor extension cable provides data/power for remote LTC 2601 and LTC 2602 keyboards to 30 meters (100 feet) away from the multiplexer unit.
- **LTC 8557 Series Keyboard Extension Kits:**
Interface kits used to permit remote LTC 2601 and LTC 2602 keyboards up to 1.6 km (5000 ft) away from the multiplexer. Customer supplied 24-gauge shielded twisted pair (Belden 9841 or equivalent) required between the multiplexer and the keyboard. Kits provide two junction boxes, interface cable, and appropriate power supply (in each version).



LTC 2601/00 Keyboard



LTC 2602/00 Keyboard

Keyboard Operation

Numeric Display: The numeric display is a three-digit display that shows the number of the multiplexer that the keyboard is currently controlling. The two modes for this display are:


- The first mode displays the multiplexer number (*default mode*).
- The second mode is called the *keyboard test mode*, which displays the key code for the individual key pressed.

Status Display: The status display indicators are located on either side of the numeric display at the top of the keyboard. On the right side of the numeric display, there are three status display indicators: Camera, Cameo, and Pound. On the left side of the numeric display, there are six status display indicators: VCR, MON B, Sequence, Allplex, Record, and Playback.


LED Display: Certain keys have an LED indicator to light up or flash to indicate that the function is either enabled or in the alarm state. The keys that are tied to an LED are: Cameras 1 – 16, **ALT**, **ACT**, and **ALM**. The operation of these LEDs is identical to those on the front panel of the multiplexer.

Numeric Keypad: The numeric keypad is designed to serve three purposes: selecting cameras, selecting cameos, and numeric entry. The operation of the numeric keypad keys is identical to the multiplexer front panel.


Additional Function Keys: The system keyboards contain additional function keys not available on the front panel of the multiplexer. They are as follows:

Allplex Selection - (Requires two-key combination: "Allplex") then #, then **SELECT**  key to select new Allplex number. The system accepts only valid Allplex numbers 1 through 30.

SET - Set is a pre-position function of an AutoDome or Pan/Tilt and Zoom lens.

Press **SET** to record a preset scene at remote camera site. (Up to 99 presets can be recorded for Bosch's R/D or AutoDome.) Set a preset function of a camera: Press **Full** then camera numbers (1-16). Use the joystick to move the camera to the scene that you want to store, then press **SET**, # (1-99), then **SELECT** .

SHOT - Press **SHOT** to call up a preset scene at remote camera site.

Call up a preset function of a camera: Press **SHOT**, # (1-99), then **SELECT** .

AUX+ - Press **AUX+** to select a receiver/driver auxiliary function at the camera location.

AUX- - Press **AUX-** to deselect any receiver/driver auxiliary functions currently in the *ON* state.

(NOTE: Refer to Bosch's R/D or AutoDome Instruction Manual for Auxiliary function)

Multikey Access Functions: Simultaneously press the multiple keys listed to enable the function as described.

QUAD + CAMEO + Allplex: Set the keyboard user level to NO ACCESS.

QUAD + CAMEO + ALT: Set the keyboard user level to LIMITED ACCESS.

QUAD + ENTER + ENLARGE: Set the keyboard user level to FULL ACCESS.

VCR Control

VCR + SELECT - To toggle the *VCR CONTROL* mode ON and OFF.

Use the following keys for VCR functions:

VCR Function	Press Key
RECORD	REC/SET
PLAYBACK	PLAY/SHOT
STOP	ZOOM
PAUSE	FREEZE
FAST FORWARD	CAMEO/>
FAST REWIND	FULL/<

Allplex + SELECT: To switch control to another multiplexer.

Allplex + ALT: To Enter and Exit the keyboard *TEST* mode.

Pan/Tilt Control: For Pan/Tilt controllable units, operation of the joystick (LTC 2602) or four directional keys (LTC 2601) will make the selected camera tilt up or down, pan left or right, or move diagonally.

Lens Control: The joystick of the LTC 2602 keyboard is used to provide zoom control by rotating the knob in either a clockwise or counterclockwise direction. The LTC 2601 provides two additional keys required to operate the *zoom* functions. Push buttons are included with both keyboards to control focus near or far and to open or close the iris (on applicable lenses).

Appendix A: Features and Specifications

LTC 2600 Series Model Features

FEATURES	LTC 2622/90	LTC 2632/90	LTC 2642/90	LTC 2652/90	LTC 2661/90	LTC 2662/90	LTC 2672/90	LTC 2682/90
Camera inputs	6	9	9	16	16	16	9	16
Color Simplex operation	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Monochrome Simplex operation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Color Duplex operation	Yes	No	Yes	No	Yes	Yes	Yes	Yes
Monochrome Duplex operation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Color Triplex operation	No	No	No	No	No	No	Yes	Yes
Simultaneously record and display live multiscreen	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Simultaneously record and play back	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Simultaneously play back and display live multiscreen	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Simultaneously record and play back and display live multiscreen	No	No	No	No	No	No	Yes	Yes
Camera display lock-out	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Digital motion detection with direction sensing	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Programmable VCR outputs	1	1	1	1	1	1	2	2
Monitor outputs	2	2	2	2	2	2	2	2
Remote keyboard with P/T/Z (biphase outputs for P/T/Z)	Yes (4)	No	No	No	No	No	Yes (5)	Yes (5)
Video loss detection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Custom alarm display on Mon A with multiple preset call-up	No	No	No	No	No	No	Yes	Yes
Vext inputs (5 Volt to 12 Volt)	1	1	1	1	1	1	2	2
Alarm inputs	6	9	9	16	16	16	9	16
Alarm output relays	1	1	1	1	1	1	2	2
S-VHS for Monitor A and B	No	No	No	No	No	No	Yes	Yes
S-VHS for VCR In/Out	No	No	No	No	No	No	Yes	Yes
Auto-terminating BNCs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PC programmable	No	No	No	No	No	No	Yes	Yes

Appendix B: Special Applications/System Configurations

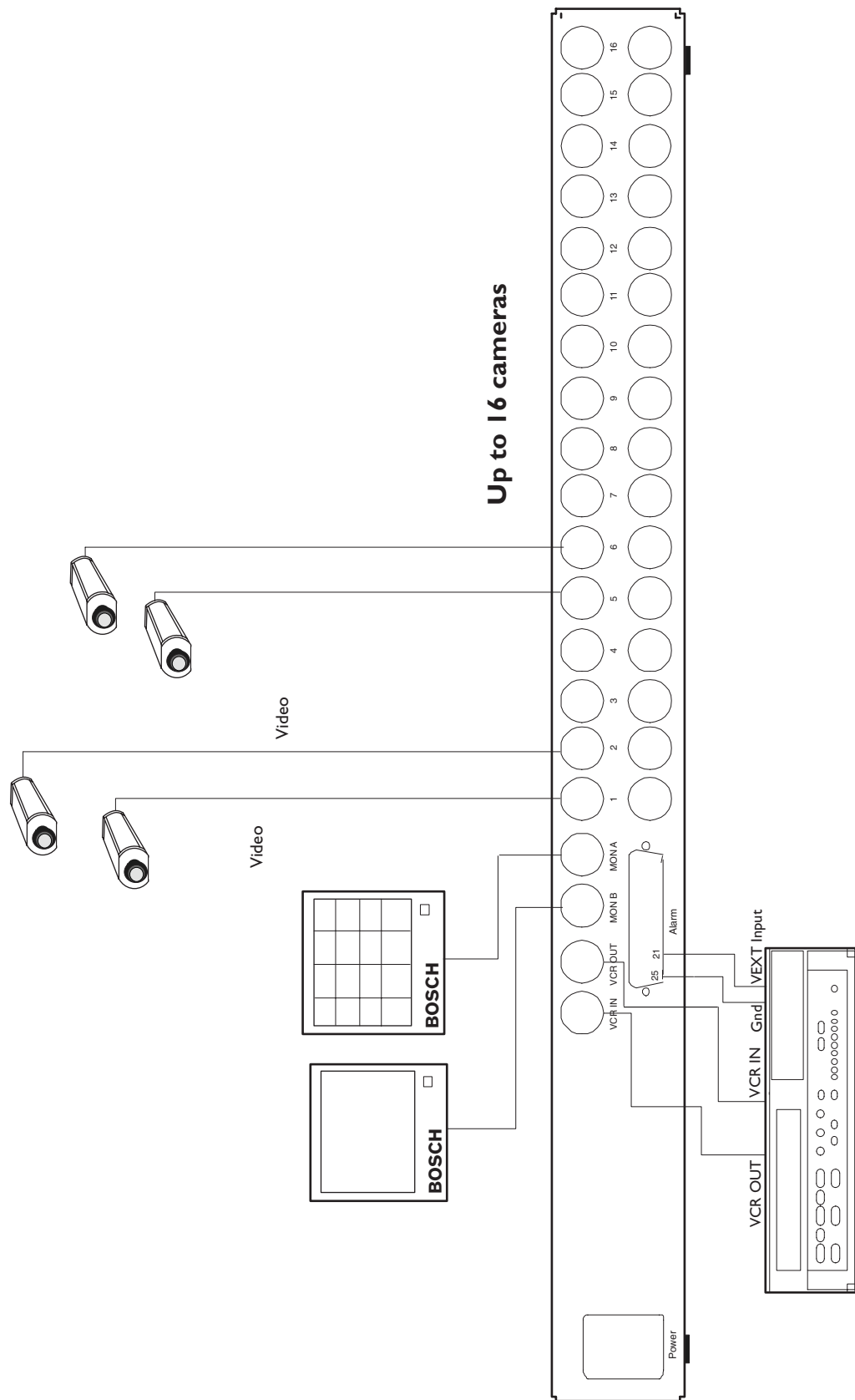


Figure B1: Record Plus Multiscreen Display

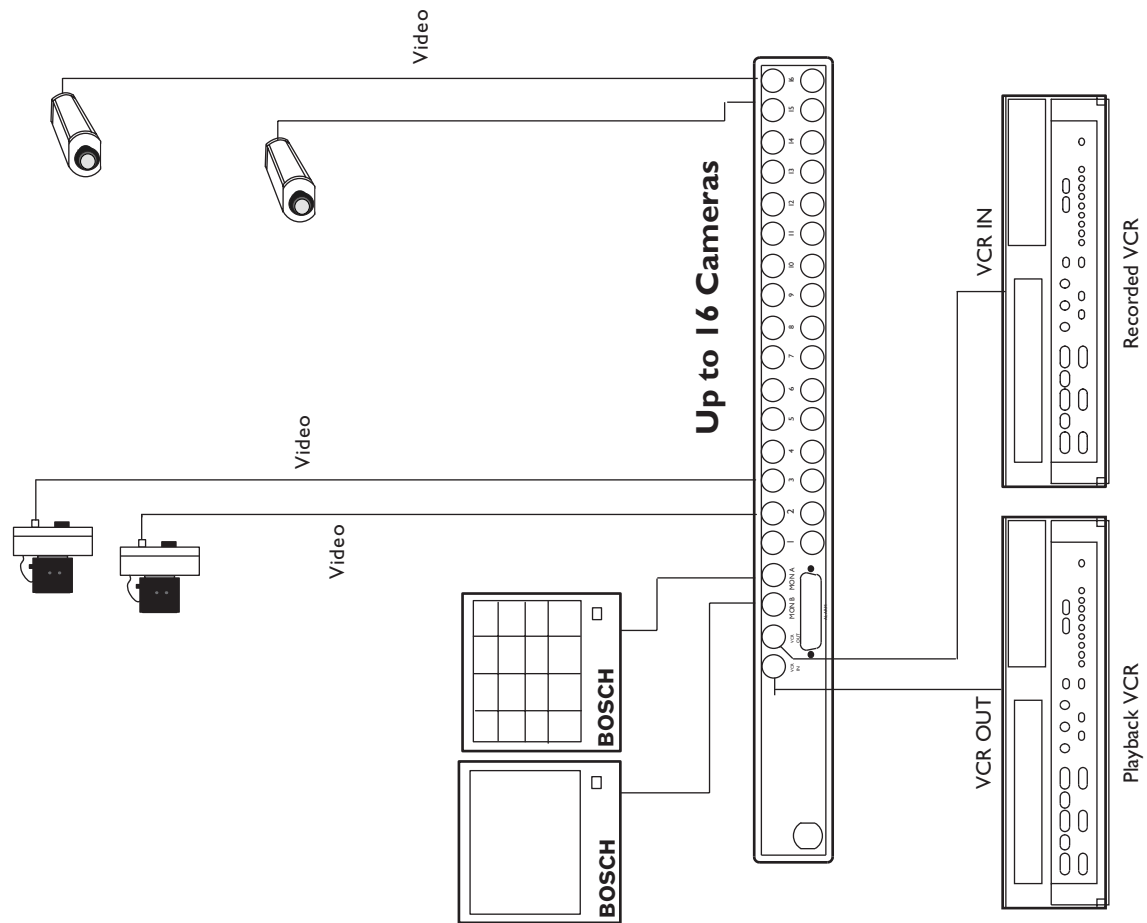


Figure B2: Simultaneous Record Plus Playback

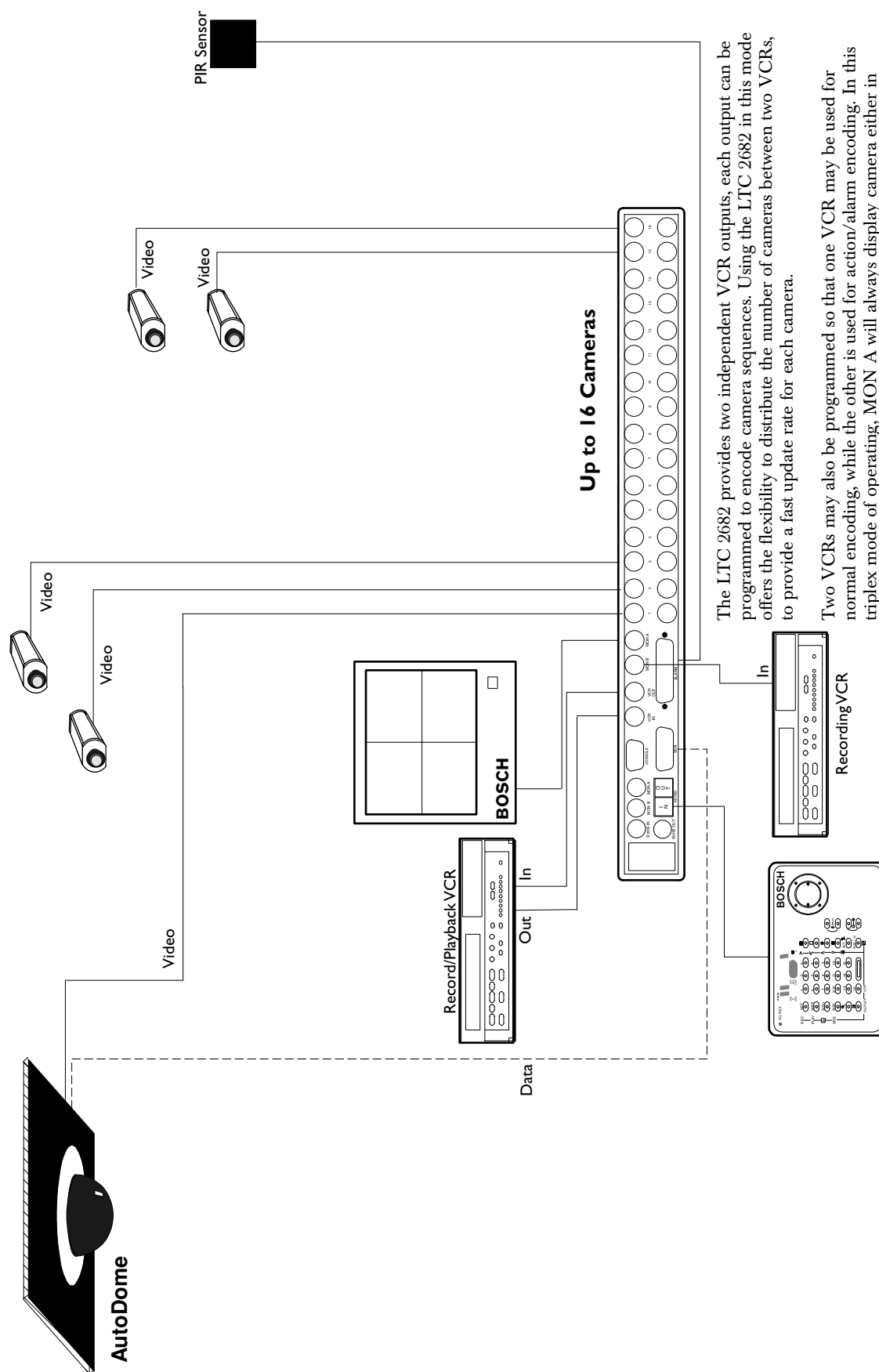


Figure B3: Simultaneous Record to Two VCRs (Triplex Operation)

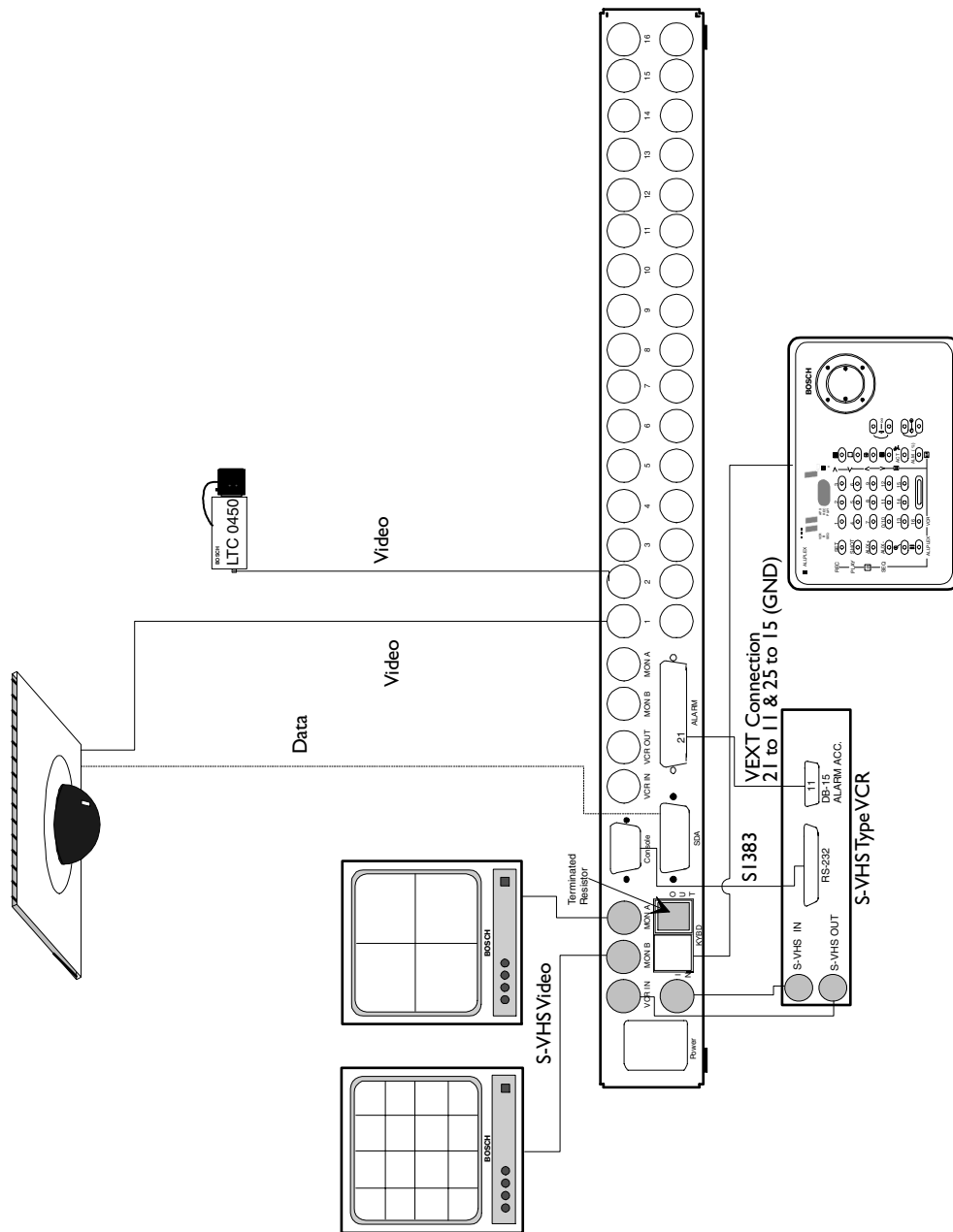


Figure B4: System4 Triplex Typical Operation

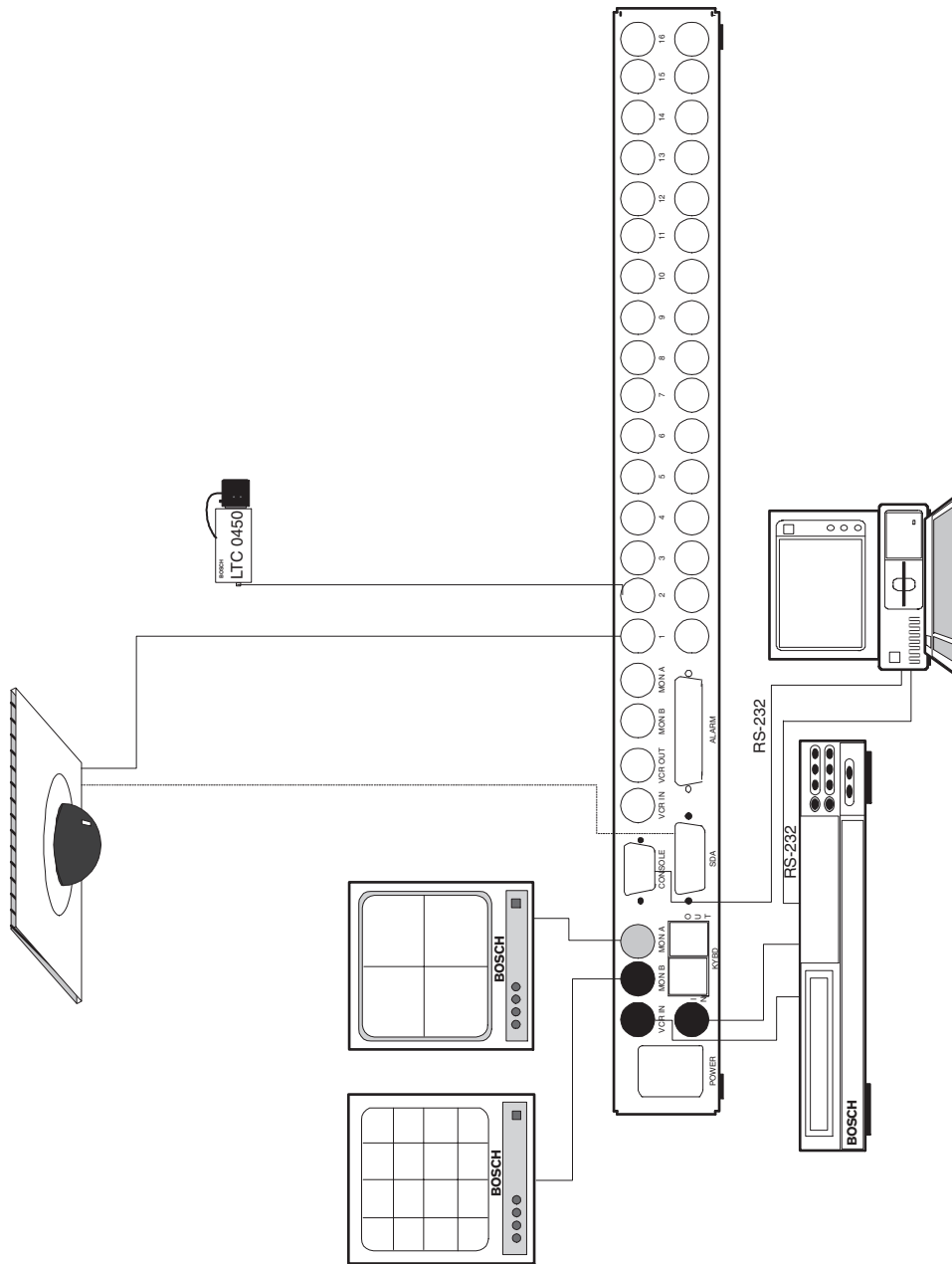


Figure B5: LTC 2672 and LTC 2682 Series with LTC 2650 GUI

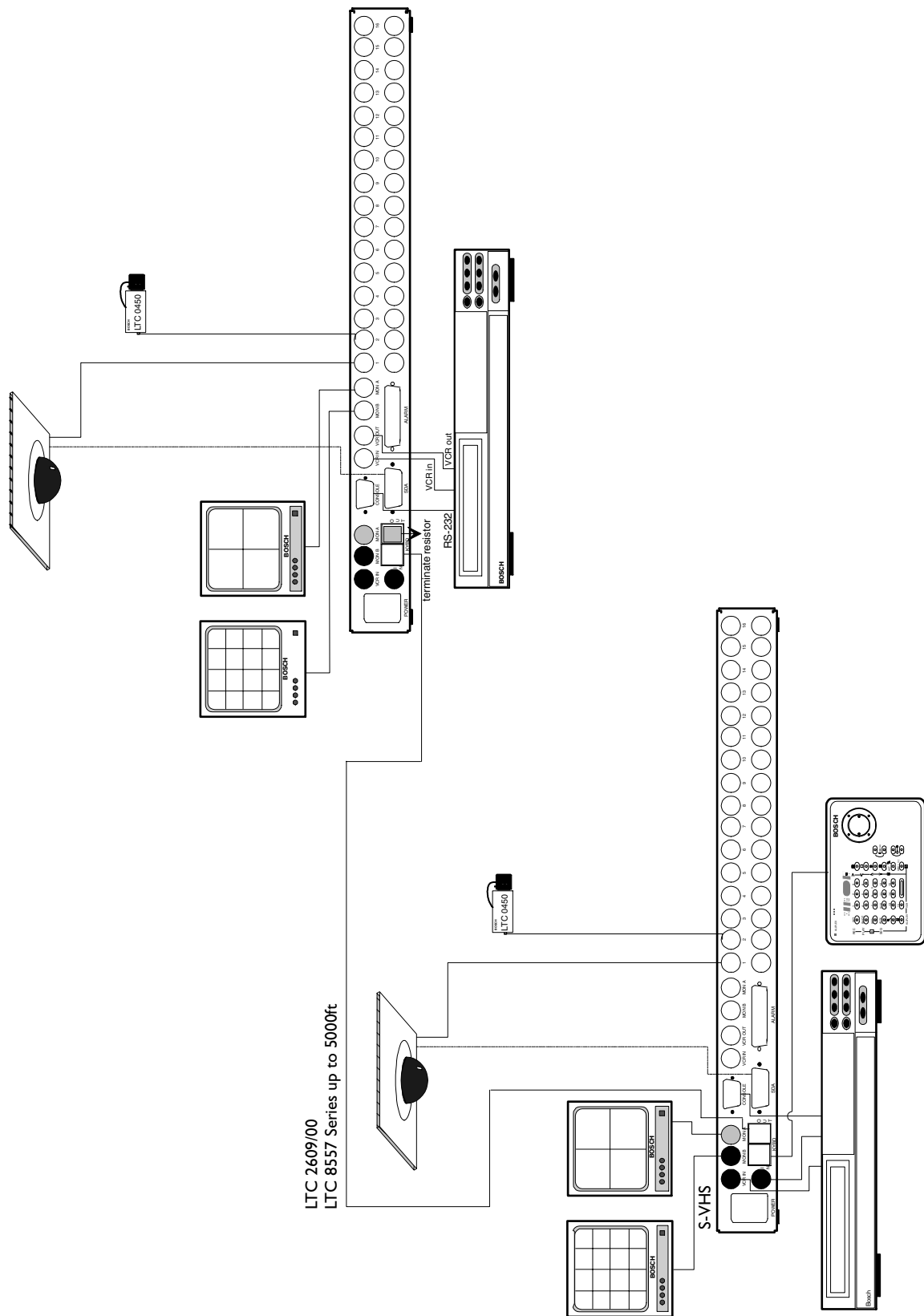
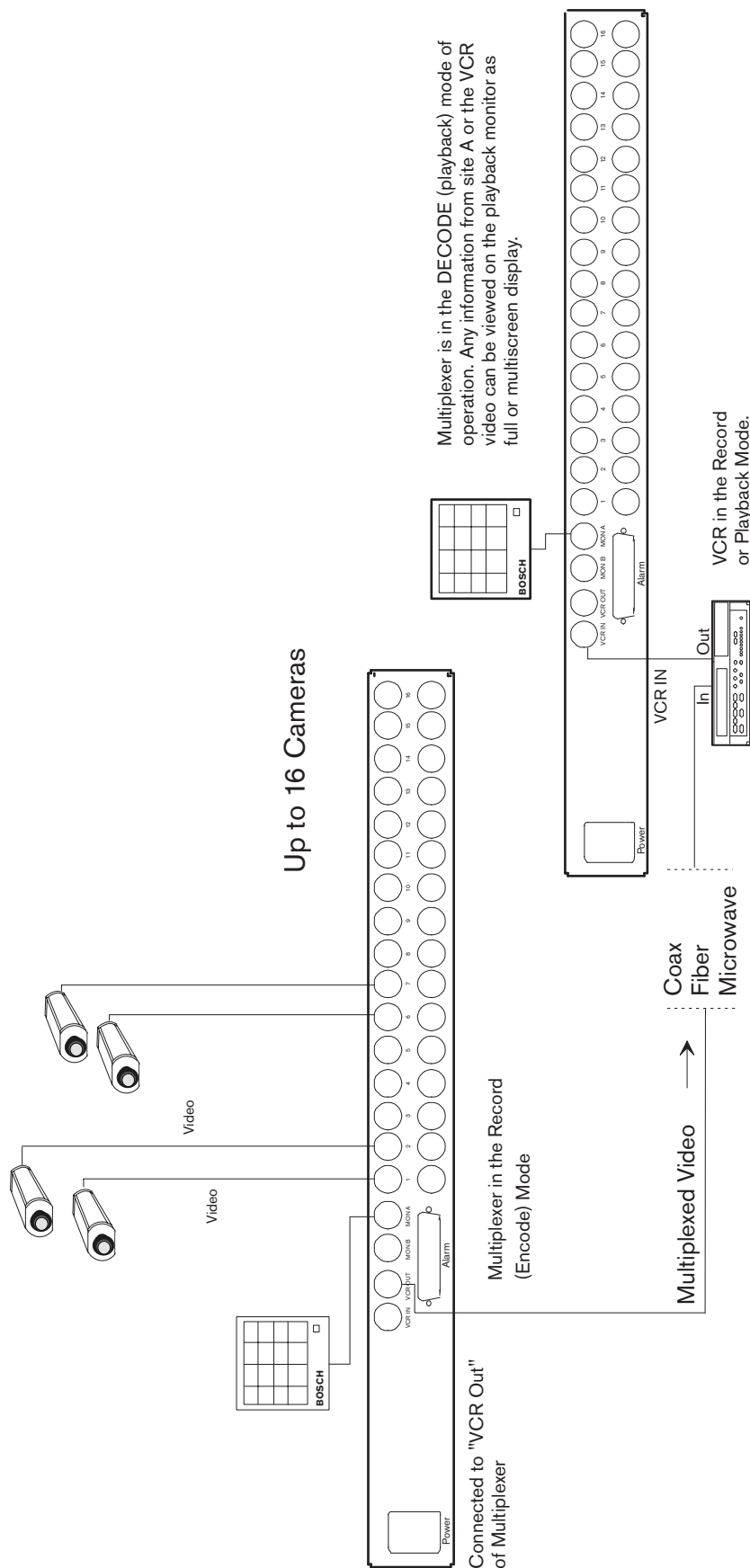


Figure B6: Control of Multiple Multiplexers from a Single Keyboard



This application using two 16 channels multiplexed allows the video from one location to be sent as a multiplexed signal to another site via a single transmission link such as coax, fiber, or microwave.

Any or all of the camera may be decoded at the monitor (site B) location. Using this configuration minimizes the number of video links between the sites.

Figure B7: Transmitting 16 Videos over One Single Coax

Appendix C: FACTORY DEFAULT SETTINGS

ITEM	DEFAULT	OPTIONS
DATE/TIME:		
Date	01/01/1998	
Time	12/00/00	
Time Format	24 hr	12 hr, 24 hr
Date Format	dd/mm/yy (PAL)	mm/dd/yy dd/mm/yy yy/mm/dd
	mm/dd/yy (NTSC)	
VCR SETUP:		
Time-lapse	3 hr (PAL)	PAL: 3 to 720 hrs or as programmed
	2 hr (NTSC)	NTSC: 2 to 720 hrs or as programmed
Record List	01-16	01-16. Any camera in a 16 camera sequence i.e. 1, 5, 8, 4, 2, 3, 4
Playback Format	LTC 2600	LTC 2600, TC8298B, Robot, DM, Pelco, Vicon
Record Format	LTC 2600	LTC 2600, TC8298B, VITC
Record Lock	Off	Off, On
	VEXT	Off Off, On for both VCR OUT and MON B
	Remote VCR Setup	On (Sys4 models) Off, On
CREATE VCR SETUP:		
VCR Title	Custom VCR 1	
VCR/Field Table	3 hrs (PAL)	PAL: 3 to 720 hrs or as programmed
	2 hrs (NTSC)	NTSC: 2 to 720 hrs or as programmed
VCR OUTPUT:		
Output	Off	Off, ACT, ALM, ACT/ALM
Output Relay	N/O	N/O, N/C
ALM/ACT Speed	3 hrs (PAL)	3 to 720 hrs
	2 hrs (NTSC)	2 to 720 hrs
Alarm Record	INTERLEAVE	INTERLEAVE, Exclusive
Action Record	INTERLEAVE	INTERLEAVE, Exclusive
ALARM SETUP:		
Alarm Dwell	8 sec	1 - 60 sec FOLLOWS
Alarm Display Mon A	Full	Full, Quad, 4+3, 8+2, 3x3, 12+1, 4x4
(Sys4 models only)		
Alarm List	All off	Select any camera
Alarm Inputs	N/O	N/O, N/C
Beeper	Disable	Enable, disable
ACTION SETUP:		
Action Dwell	8 sec	1 - 60 sec
Action Display Mon A	Full	Full, Quad, 4+3, 8+2, 3x3, 12+1, 4x4
(Sys4 models only)		
Action List	All off	
Action Zones	On Except Outer	On/Off (All Zones)
Direction Sensing		
Walkthrough	MED	MIN, LOW, MED, HI
Beeper	Disable	Enable, disable

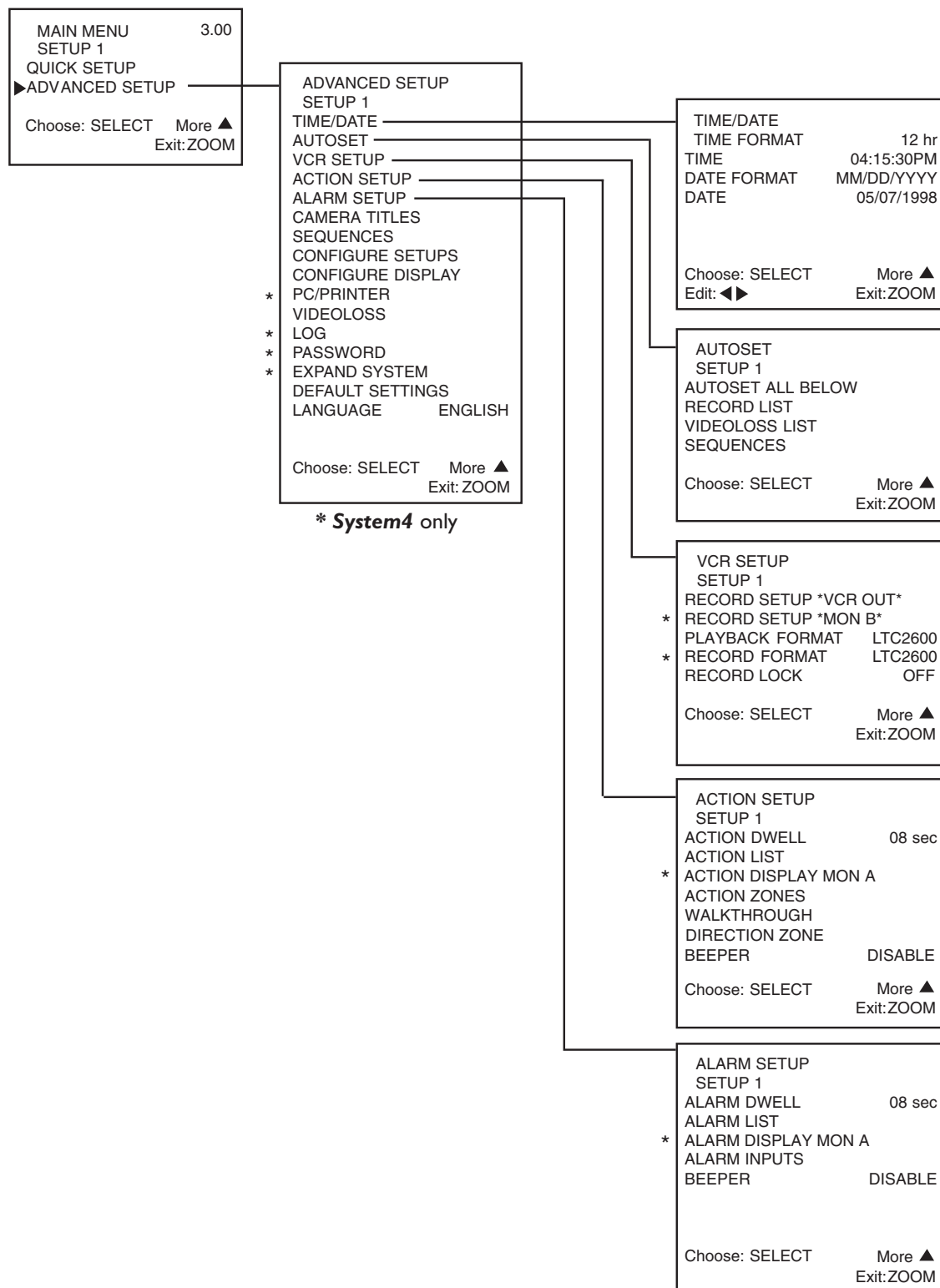
ITEM	DEFAULT	OPTIONS
CAMERA TITLE:		
Camera Title	CAMERA 1	
SEQUENCES:		
Seq Dwell Full A	8 sec	1 - 60 sec
Seq Dwell Quad A	8 sec	1 - 60 sec
Seq Dwell Full B	8 sec	1 - 60 sec
Seq Dwell Quad B	8 sec	1 - 60 sec
Mon A Full	1-16	1-16. Any camera in a 16 camera sequence i.e.1, 5, 8, 4, 2, 3, 4
Mon A Quad	1-4, 5-8, 9-12, 13-16	Any camera to cameo assignment is allowed Note: 9-channel product has only 3 Quads instead of 4
Mon B Full	1-16	1-16. Any camera in a 16 camera sequence i.e.1, 5, 8, 4, 2, 3, 4
Mon B Quad	1-4, 5-8, 9-12, 13-16	Any camera to cameo assignment is allowed Note: 9-channel product has only 3 Quads instead of 8
CONFIGURE SETUPS:		
Setup Title	SETUP 1	Any 12 character title
System4 Models ONLY:		
PC/PRINTER/VCR:		
Connect to	VCR	Printer; GUI, CCL, VCR
Serial Port	96, n, 8, 1	Baud: 6, 12, 24, 48, 96, 192 Parity: o(odd), e(even), n(none) Data bits: 7, 8 Stop bit 1
Autoprint	Disable	Enable, disable
LOG:		
Log Setup	All off	ACT, ALM, EVT, VL,ERR - All can be either selected or not selected
PASSWORD:		
Password	1111	1111 - 9999, where 1111 = no password
EXPAND SYSTEM:		
Number Mux	01	01 to 30
TIME EVENTS:		
Setup on/off	Off	On, off
Start Time	00:00	
Days	SMTWTFS	SMTWTFS - Any day or days of the week
Run One Time	Off	On, off
Record	Off	On, off

ITEM	DEFAULT	OPTIONS
CONFIGURE DISPLAY:		
Time/Date MON A	On	On, off
Time/Date MON B	On	On, off
Show Text MON A	On	On, off
Show Text MON B	On	On, off
Text	White: Black	Clear: White, Clear: Gray, Clear: Black
		White: Clear, White: Gray, White: Black
		Gray: Clear, Gray: White, Gray: Black
		Black: Clear, Black: White, Black: Gray
Cameo Borders	Black	White, Gray Black
VCR Status	Off	On/off
Display Lock List	1-16	1-16. Any camera in a camera sequence
Menu Timeout	On	On, off
Auto Gain Control	On	On, off
VIDEO LOSS:		
Video Loss o/p	Enable	Enable, disable
Video Loss Relay	N/O	N/C, N/O
Video Loss List	No Cameras Selected	Any Camera or Cameras
LANGUAGE:		
Language	English	English, French, German, Spanish, Italian, Dutch

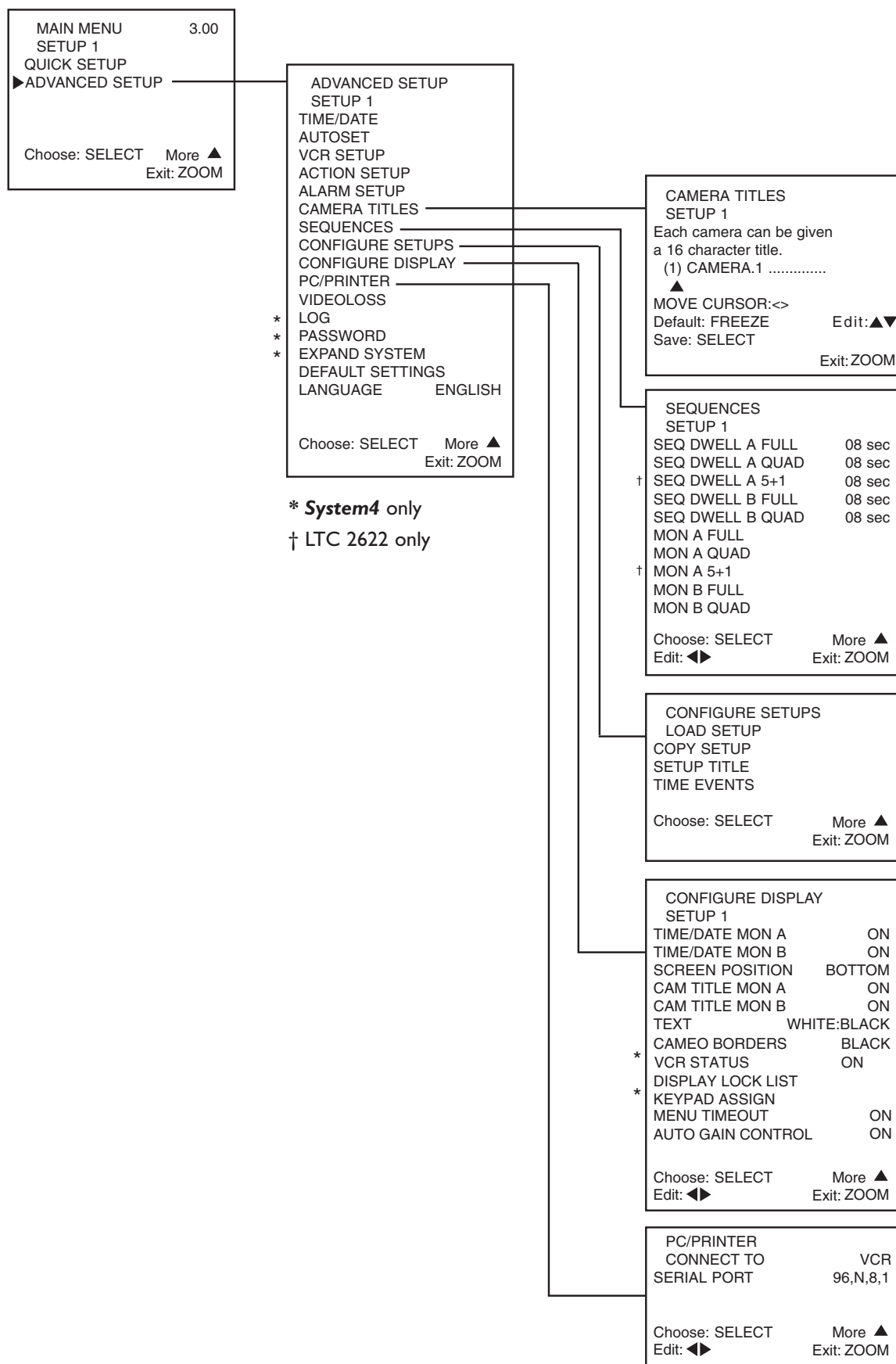
Appendix D: Programming Reference

Menu Trees: Advanced Setup

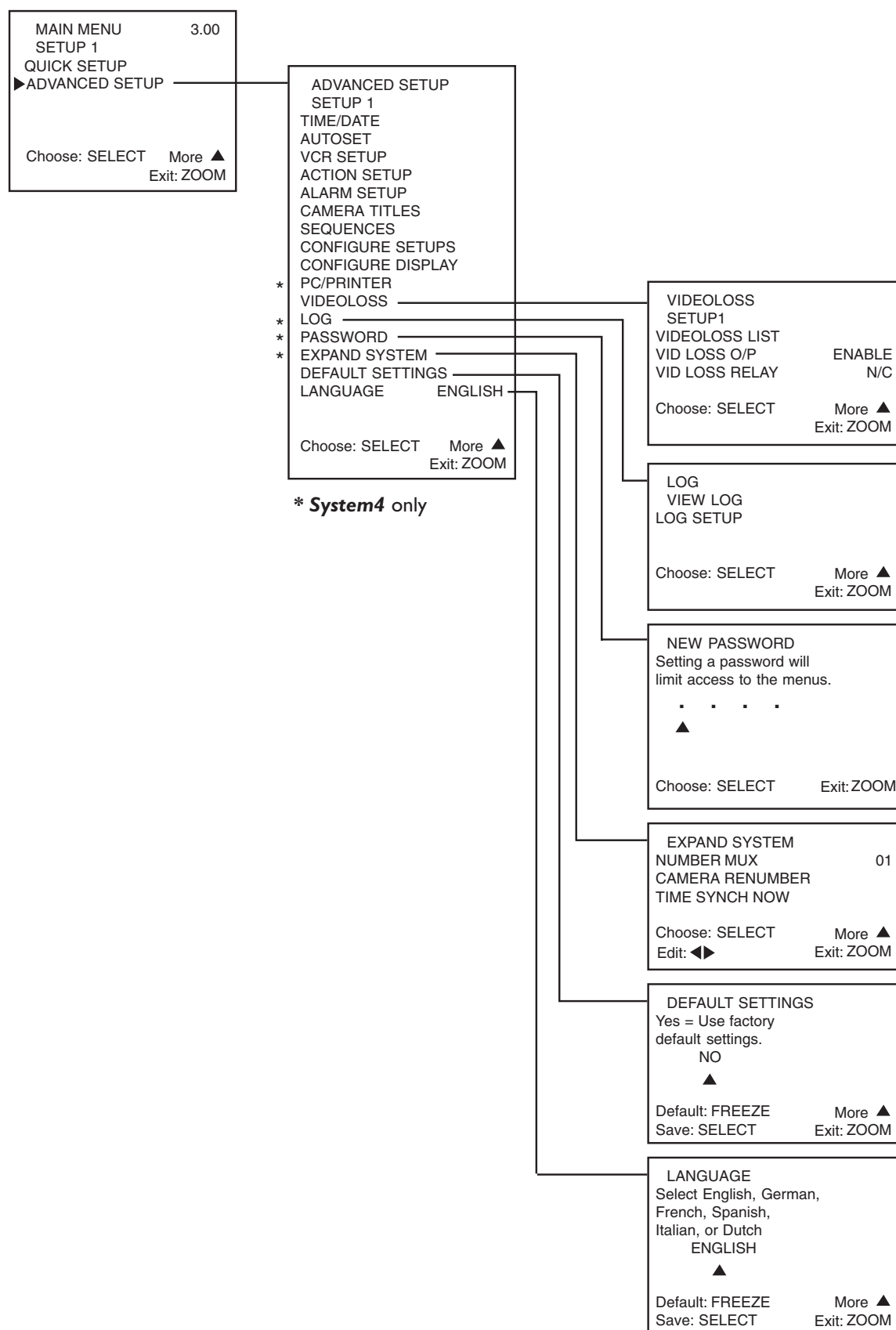
The following menu trees provide reference for locating advanced programming functions. Descriptions of all functions are located in the ADVANCED SETUP programming section.



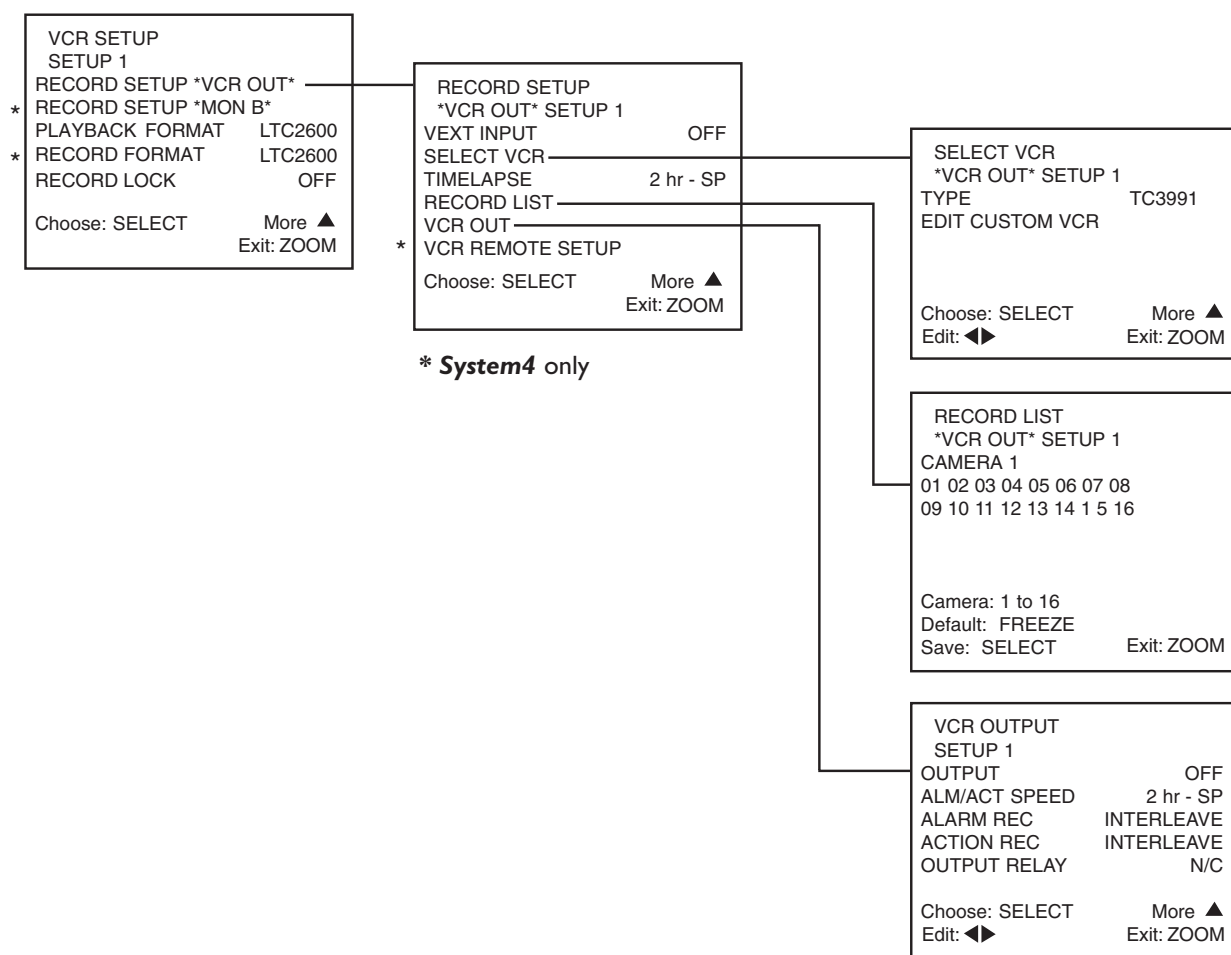
Menu Trees: Advanced Setup (continued)



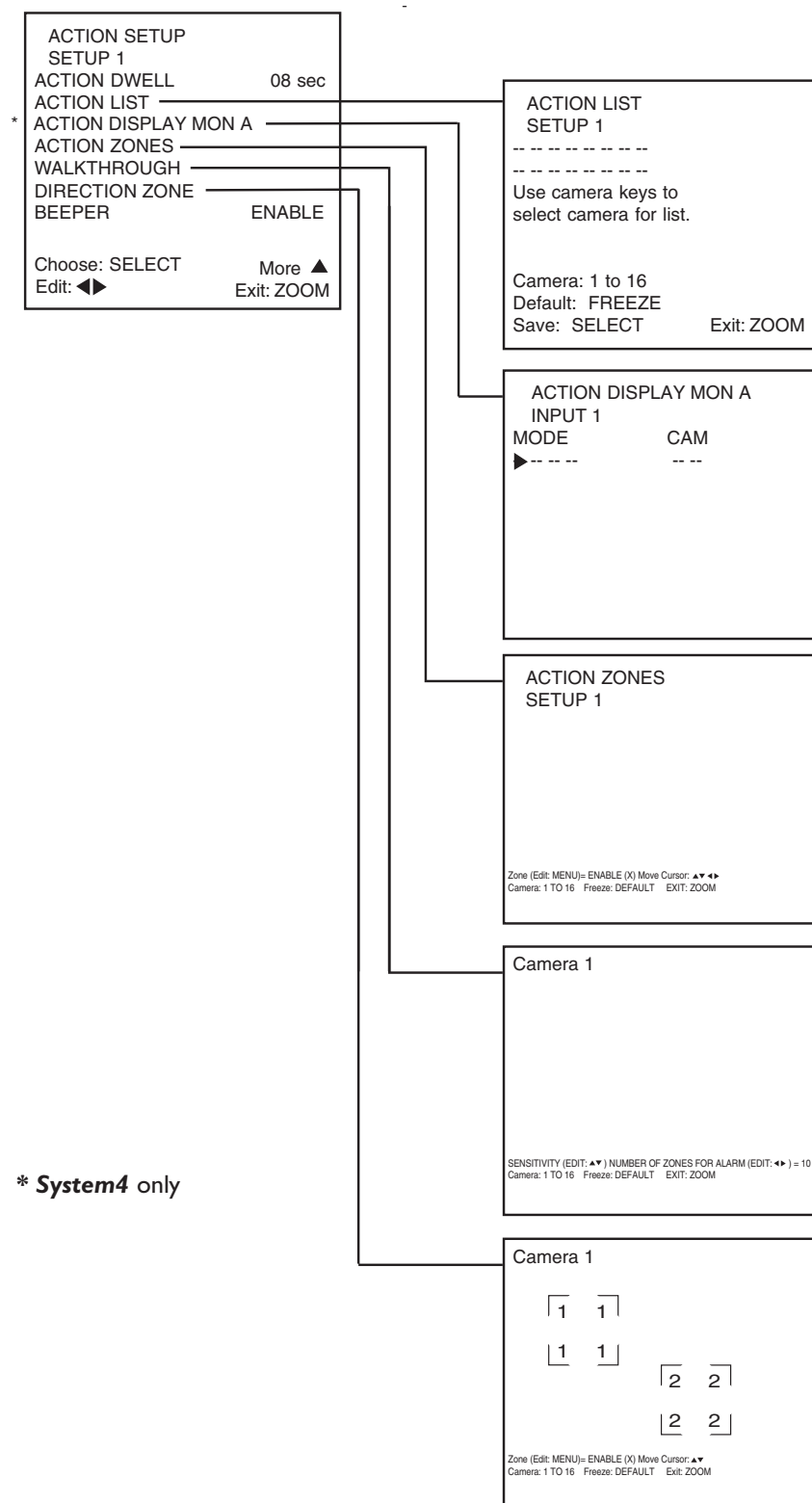
Menu Trees: Advanced Setup (continued)



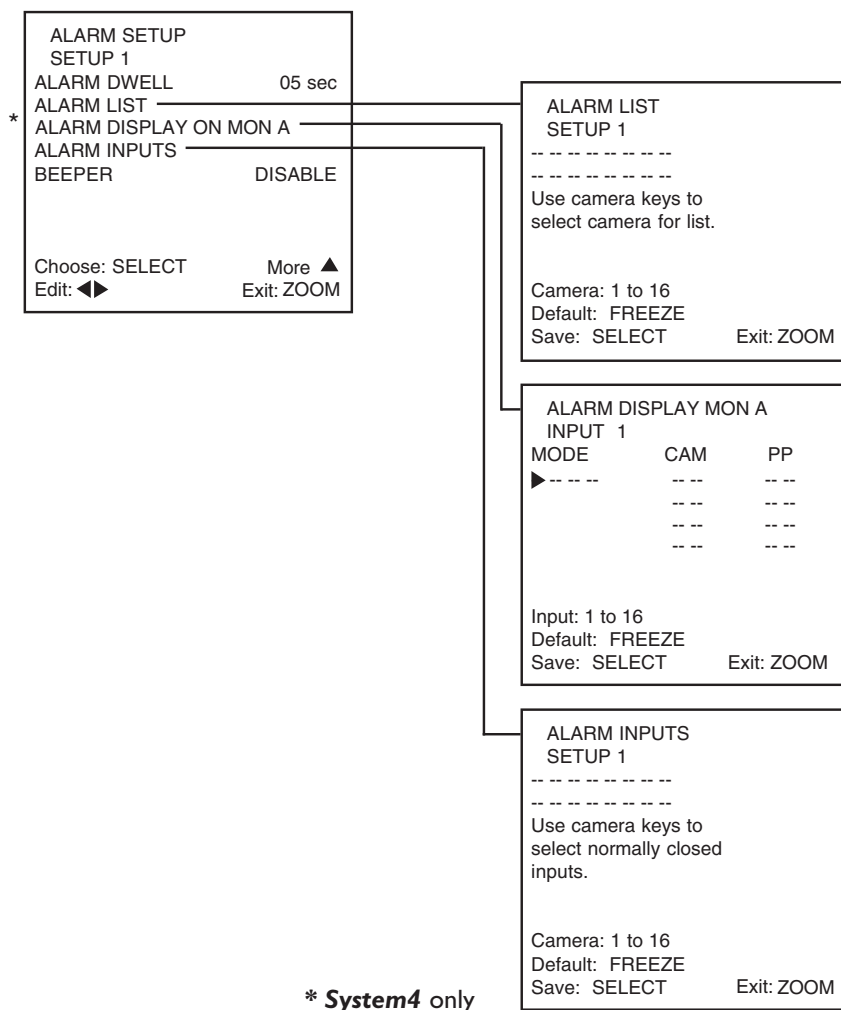
Menu Trees: Advanced Setup - VCR SETUP



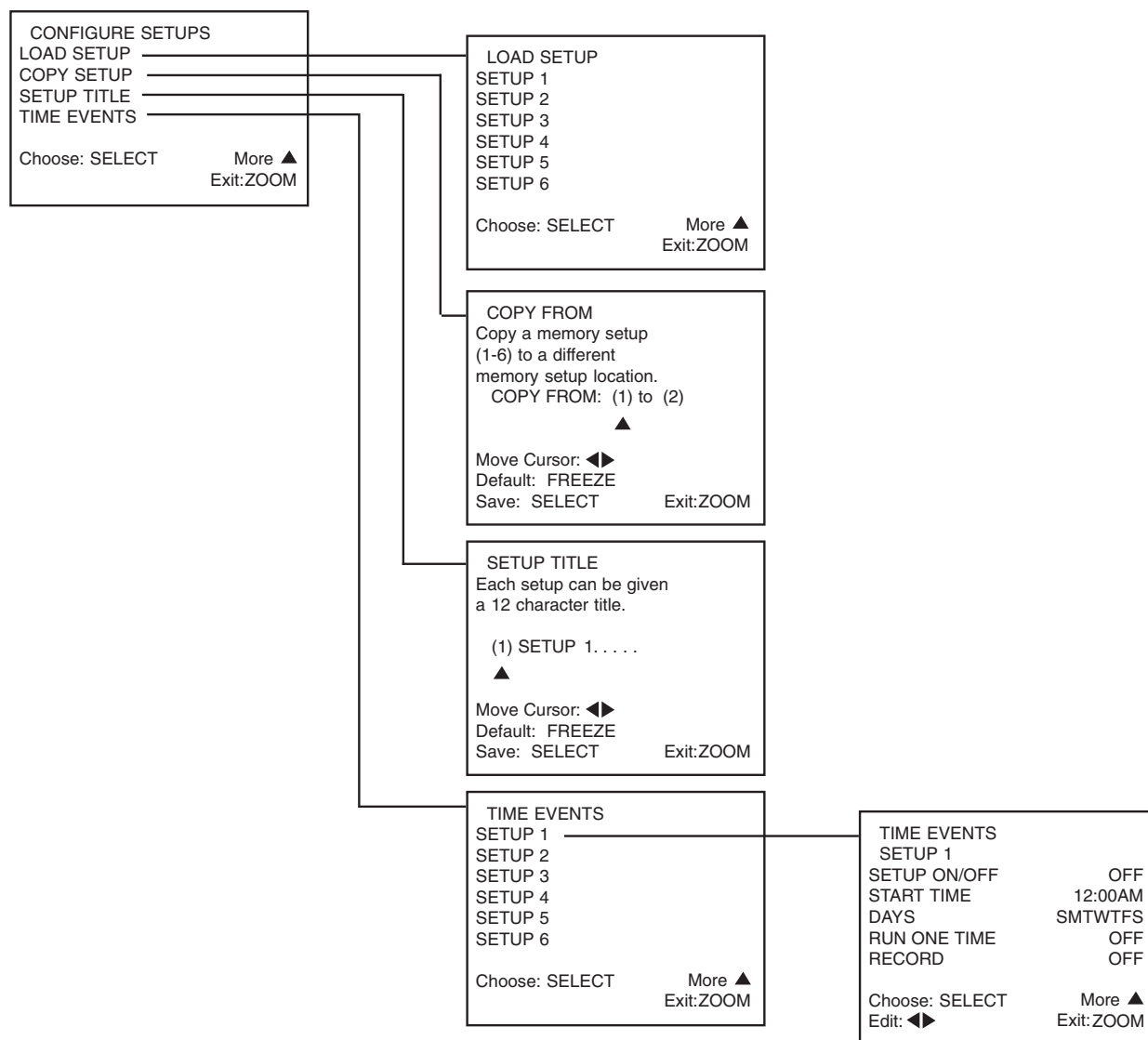
Menu Trees: Advanced Setup - ACTION SETUP



Menu Trees: Advanced Setup - ALARM SETUP









Menu Trees: Advanced Setup - CONFIGURE SETUPS







Appendix E: Quick Function Keys

The LTC 2600 Series Video Multiplexer provides Quick Function Keys which enable *instant access* to the programming lists critical for multiplexer operation. To access the list commands, you must press a sequence of keys.

First, press ALT , followed by 1, and then one of these additional keys to select the required list:

ALM 	To access the Alarm List
ACT 	To access the Action List
ZOOM 	To access the Video loss List
RECORD	To access the Record List
FULL 	To access the Sequence List for MON A in Full Screen mode
QUAD 	To access the Sequence List for MON A in Quad mode
MON B  , FULL	To access the Sequence List for MON B in Full Screen mode
PLAY	To access the Playback Format selection

System4 models provide additional quick function key combinations which apply to the operation of the second record list. Press ALT , followed by 1,  (MON B).

RECORD	To access the VCR2 Record List
MON B  , QUAD	To access the Sequence List for MON B in Quad mode
MON B  , REC	To access the Record List on MON B

Appendix F: Accessory Cables for the LTC 2600 Series Multiplexers

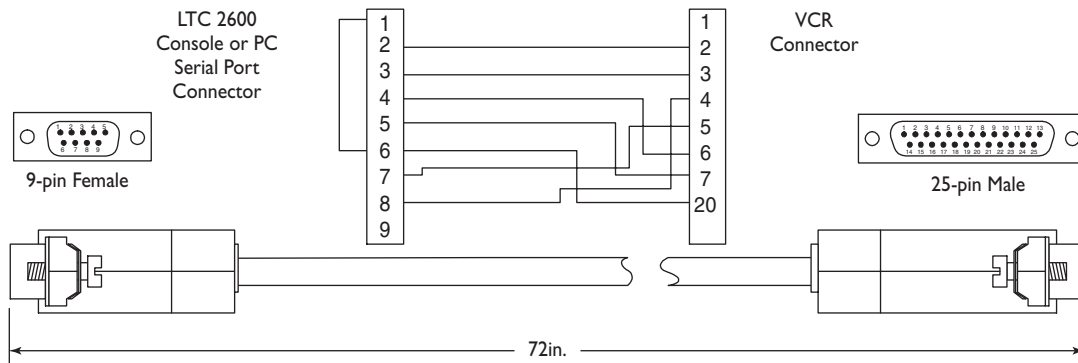


Figure F1: S1383 RS-232 VCR/Multiplexer Cable

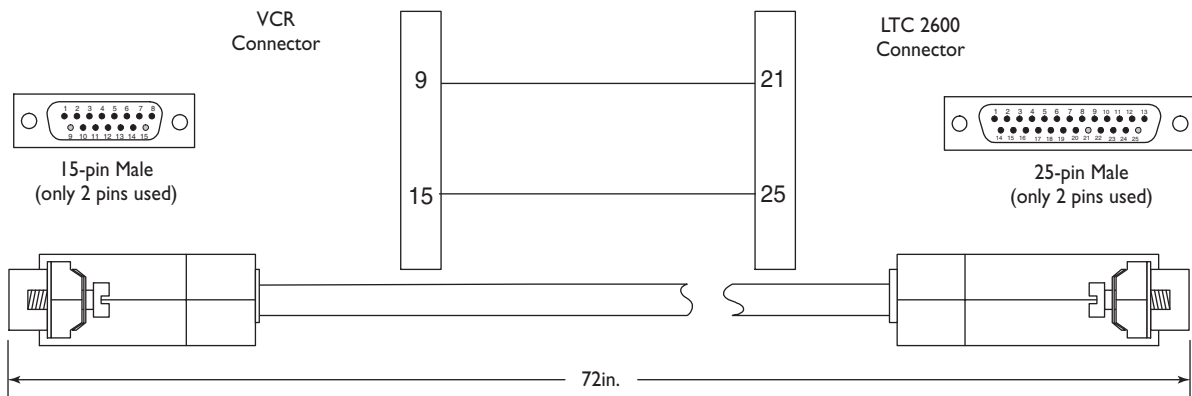


Figure F2: S1386 VEXT Cable

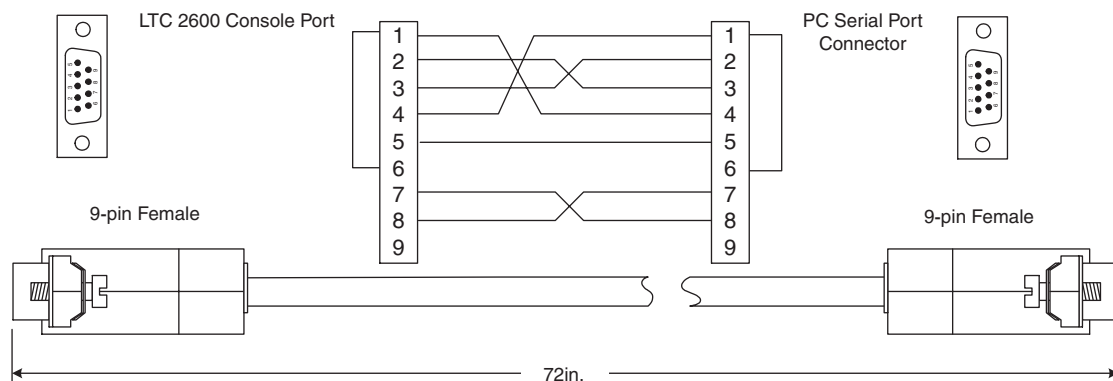


Figure F3: System4 Cable – S1385 Console to PC Cable

LTC 2600 Series Video Multiplexers

Instructions For USE

The following instructions are a supplement to the LTC 2600 Series Video Multiplexers Manual shipped with the unit. These instructions pertain to new and enhanced features recently added to the LTC 2600 Series Video Multiplexers. Review these instructions carefully, in conjunction with the existing LTC 2600 documentation.

For All LTC 2600 Series Models:

Additional/Enhanced Motion Detection Features

Manual Reference:

SECTION 7: ADVANCED PROGRAMMING & OPERATION, ACTION SETUP

ACTION SETUP
SETUP 1
ACTION DELL 05 sec
ACTION LIST
ACTION ZONES
WALKTHROUGH
SUPPRESSION ZONE
DIRECTION ZONE

Choose: SELECT

Walkthrough, an existing motion detection feature, has been enhanced to include programming for the object size, which provides greater accuracy in defining the target (i.e. eliminating nuisance alarms).

Press **Menu** to enable the *Walkthrough* feature. Set the *Sensitivity* parameter according to the existing instructions. Program the *Object Size* by using the cursor keys to select the desired target size (corresponding to the number of zone coordinates covering the target size/area). Program the other parameters (*Number of Zones*, etc.) according to the manual. Press **Select** to store the information, and press **Zoom** to exit.

Direction Zones are a dual set of action areas to be programmed so both areas must be activated in sequence to cause an action alarm to occur. To program this feature, locate *Direction Zones* in the *Action Setup* Menu, then select the *Direction Zone* option.

Press **Menu** to enable the *Zone 1*. Use the cursor keys to position the *Zone 1* brackets in the desired screen area. Repeat these steps for *Zone 2*. Press **Select** to store the information, and press **Zoom** to exit.

For System4 Models:

Full-duplex Communication VCR Capabilities

Manual Reference:

SECTION 5: INSTALLING THE VIDEO MULTIPLEXER

SECTION 7: PROGRAMMING - ADVANCED SETUP

Full-duplex communication VCR Operation is enhanced with full-duplex capabilities between the video multiplexer and the VCR when using a Bosch VCR (LTC 3960 Series, LTC 3963 Series, LTC 3990/50, or LTC 3991/60).

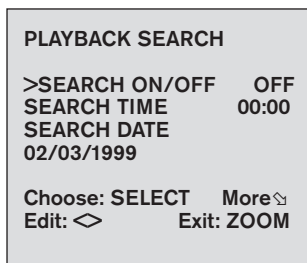
Programming the *Time-lapse* parameter (during *Quick Setup* or *VCR setup* from *advance setup* menu) to the proper tape speed maintains proper multiplexer speed, and overrides any other speed inputs that may prevent proper recording. Visual confirmation of *VCR Status* is provided through the *Configure Display* menu.

RECORD SETUP
VCR OUT SETUP 1
>VEXT INPUT OFF
SELECT VCR 6hr-HD
TIME LAPSE
RECORD LIST
VCR OUT
VCR REMOTE SETUP
Choose: SELECT More: V
Exit: ZOOM

To program the *VCR Setup Time-lapse* parameter, review the *Quick Setup* information provided in the LTC 2600 Series Manual, and refer to the enhanced System4 *VCR Setup* Menu.

VCR Status appears as an additional parameter on the *Configure Display* menu. The default setting is ON; unless disabled, a visual confirmation of the VCR operating mode and recording speed will be shown on-screen.

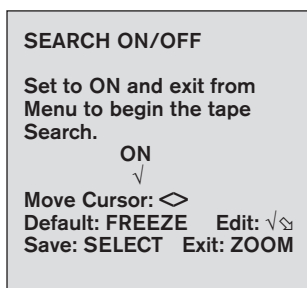
Time date search on VCR analog tapes



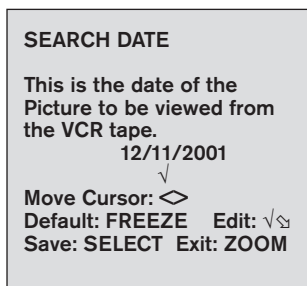
Select the *Quick Key Sequence ALT-1-VCR-PLAY* to display the *Playback Search* menu window. If *Playback* is not selected or a VCR is not connected to RS-232, an error message will appear instead of the *Playback Search* menu.

The search time and date reflects the last time and date read from previous recorded tape.

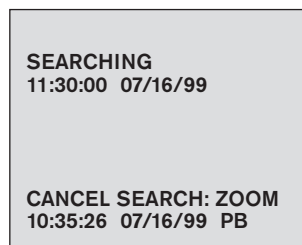
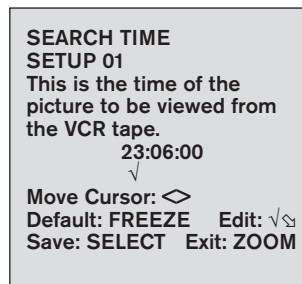
Selecting *Search On/Off*...



Selecting *Search Date*...



Selecting *Search Time*...



To Start *Search*:

- Select the *Search* option and set the required date/time.
- Exit the menu (press **ZOOM**).
- The *Search Display* window will clear and *Searching...* will be displayed across the MON A screen, followed by the required date and time.
- The last date and time read from the recorded tape will be shown at the bottom of the screen.
- The mux will automatically forward/rewind the tape to the desired time/date and *Search Completed* will be displayed. The beeper will sound and after 3 seconds, the initial playback screen will be displayed on MON A.
- If the mux cannot find the desired time/date, it will prompt the user to continue.
- To turn off *Search*, press **ZOOM**. The message *Search abandoned* will be displayed on MON A.

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