Allegiant® Main CPU Interface Software Command Console Language

User Manual

Eng

LTC 8100, LTC 8200, LTC 8300, LTC 8500, LTC 8600, LTC 8800 & LTC 8900 Series

CPU Revision Level 8.1

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1 INTRODUCTION

The Command Console Language is used to control functions of an Allegiant® Series LTC 8100, LTC 8200, LTC 8300, LTC 8500, LTC 8600, LTC 8800, or LTC 8900 switching/controller system through the use of its integral RS-232C port. A personal computer, dumb terminal, or the Hyperterminal program supplied with Microsoft Windows® may be used to communicate with the Allegiant system to control various system functions, video switching, receiver/driver actions, and alarms.

This capability allows the Allegiant system to be interfaced with external software which typically is used to sense alarms or handle access control on an existing computer system. It is strongly recommended that only qualified programmers who are already familiar with the Allegiant system operation make use of this interfacing feature.

2 GENERAL INSTRUCTIONS

As the Allegiant® system is shipped from the factory, the CONSOLE port communication protocols are set according to the table below. These settings can be changed either using an Allegiant system keyboard, the optional **Allegiant LTC 8059/00 Master Control Software for Windows®** package, the optional **Allegiant LTC 8850/00 Graphical User Interface** software package, or the appropriate command as listed in this manual.

Baud Rate = 19,200 (1200 on CPU revisions < 7.2)
Stop Bits = 1
Data Bits = 8
Parity = none
Handshake = ON

The 9-pin CONSOLE port is located on the rear panel of the Allegiant main CPU bay and has pinouts as indicated in the table below. If the **Handshake** feature is enabled but not desired, the signals can be defeated by placing a jumper across pins 4 and 5 of the CONSOLE port mating connector. If a jumper is added, remove any other cable connections on these two pins.

CONSOLE Port Pinouts:	
Pin #	**Function**
1	Chassis Ground
2	Receive
3	Transmit
4	CTS
5	RTS
6	No Connection
7	Data Ground
8	No Connection
9	No Connection

If multiple external devices will be connected to a single Allegiant, the **LTC 8712 Series Console Port Expander** accessory device may be used. Up to four devices can be interfaced to the CONSOLE port via the LTC 8712 port expander unit. Note that the 9-pin PRINTER port and the 9-pin ALARM port which are also located on the rear panel of certain Allegiant models can be configured via DIP switches located on the Allegiant's CPU module to operate as a CONSOLE port if desired. Refer to the **Installation and Operating Instructions** manual supplied with the Allegiant system for more information and selection of these features. All three RS-232 ports can be operated simultaneously if necessary, but the LTC 8712 Series unit can only be used on CONSOLE ports and PRINTER ports configured to operate as CONSOLE ports. The PRINTER port has the same pinouts as the CONSOLE port, but the ALARM port on the Allegiant bay has a different pinout and is shown below.

ALARM Port Pinouts:	
Pin #	**Designation**
1	RTS
2	Tx
3	CHASSIS GND
4	DATA GND
5	DATA GND
6	Rx
7	CTS
8	12 VAC
9	12 VAC

A CONSOLE port to a standard 9-pin PC serial port cable is available by ordering part **LTC 8506/00**. If you choose to make up a cable yourself, the connections are shown below for reference.

LTC 8506/00 CONSOLE Cable Pinouts:		
9-pin Male (CONSOLE)	**Allegiant Designation**	**9-pin Female (PC Side)**
1	Chassis GND	None
2	Receive Data	3
3	Transmit Data	2
4	CTS	1
5	RTS	8
6	No Connection	None
7	Data GND	5
8	No Connection	None
9	No Connection	None
		(pins 4 & 6 jumped)
		(pins 1 & 7 jumped)

In general, the commands are very **space** sensitive and should be entered exactly as indicated. For example, text commands contain a space between the text and the associated data values. A space is also inserted between the multiple data values within a command. Once on-line, the system prompt should appear from the connected system. If the prompt is not present, pressing **ENTER** (or sending carriage return character 0D hex) should bring the prompt up. The prompt will look as follows:

TC8100> (for LTC 8100 Series systems)

TC8200> (for LTC 8200 Series systems)

TC8300> (for LTC 8300 Series systems)

TC8500> (for LTC 8500 Series systems)

TC8600> (for LTC 8600 Series systems)

TC8700> (for older TC8700 Series systems)

TC8800> (for LTC 8800 Series systems)

TC8900> (for LTC 8900 Series systems)

All commands should be entered only when the above prompt is present, unless otherwise specified. Typically, a single command per line is entered, but multiple commands may be entered if desired. Multiple commands on the same line must be separated using a semicolon (;) and can not exceed a maximum of 126 characters (including spaces). All command lines must be followed by a carriage return character (0D hex). The choice of using decimal or hexadecimal numbers is selectable (see **System Commands**). Decimal is the default.

Many CCL commands require numeric data to be entered. In some cases, it is more convenient to use hexadecimal numeric values. Rather than change the numeric base of the system back and forth, it is possible to include a prefix which will implicitly designate the numeric value as either a decimal number or a hexadecimal number. To designate a value as a decimal number (regardless of the current system numeric base setting), proceed the value with **0m** (zero + small letter m). To designate a value as a hexadecimal value, proceed the value with **0x** (zero + small letter x).

For example, the value 25 can be included in a command in one of three formats:

1. **25** means that the value will be interpreted based on the current numeric base setting of the system.
2. **0m25** means that the value will be interpreted as a decimal number regardless of the system setting.
3. **0x25** means that the value will be interpreted as a hexadecimal number regardless of the system setting.

NOTE: The prompt used in the examples to follow will be shown as **TC8x00>** if the command is common to all systems. If the command is unique to a certain model, the specific prompt for that system will be shown.

Three distinct conventions are used in this manual when specifying camera and remote device numbers. They are best understood by reviewing the following example table which depicts an LTC 8500 Series system.

Index No.	Physical No.	Logical No.
1	1	1
2	2	999
3	3	3
(Continue Series)	"	"
63	63	63
64	64	64
65	(Not Applicable)	65
66	(Not Applicable)	66
(Continue Series)	"	"
319	"	319
320	(Not Applicable)	320

The **Index** column is a sequential list of numbers ranging from 1 to the maximum number associated with the particular Allegiant system. The **Physical** column represents the actual number of video inputs found on the rear panel of an Allegiant matrix bay. The **Logical** column represents the camera number which is entered by operators via system keyboards, which is displayed on the text overlay of system monitors. When shipped from the factory, the system's **logical** camera number is the same as the **index** number. Using the Allegiant's **LTC 8059/00 Master Control Software for Windows®** package or the **LTC 8850 Graphical User Interface** software, the **logical** camera numbers can be redesignated to any 3 or 4 digit number. An example of this is shown in line two of the table above. Note that index numbers that range above the quantity of physical numbers are provided exclusively for use in Allegiant satellite system configurations.

As a reference, the maximum ranges for the numbering system are listed in the table below:

System	Index No.	Physical No.	Logical No.
LTC 8100	1 to 264	1 to 8	Any 4 digits
LTC 8200	1 to 272	1 to 16	Any 4 digits
LTC 8300	1 to 288	1 to 32	Any 4 digits
LTC 8500	1 to 320	1 to 64	Any 3 digits
LTC 8600	1 to 1152	1 to 128	Any 4 digits
LTC 8800	1 to 2304	1 to 256	Any 4 digits
LTC 8900	1 to 4608	1 to 4096	Any 4 digits

These **index**, **physical**, and **logical** numbers are used with certain commands to specify the camera or remote devices being controlled. Note that no duplicate camera numbers are permitted within the same system. Please be careful to use the appropriate number type as instructed.

System User numbers available in an Allegiant system range from 1 to 32 (1 to 128 in LTC 8900 systems). Using the Allegiant's **LTC 8059/00 Master Control Software for Windows®** package or the **LTC 8850 Graphical User Interface** software package, this User **index** number range can be redesignated to any nonduplicate 3 digit **logical** User number. When shipped from the factory, the system's **logical** user number is the same as the **index** user number. Both **index** and **logical** type user numbers are used in various commands listed in this manual. Please be careful to use the appropriate number type as instructed.

Again, it is recommended that only professional programmers make use of the Allegiant interfacing feature, since certain commands may affect the performance of the system.

3 SWITCHING/SEQUENCE COMMANDS

3.1 Switch Logical Camera to Monitor

FORMAT = LCM (logical camera#) (logical monitor#)

EXAMPLE: To switch monitor number 5 to view logical camera number 2, the following command is used:

LTC8x00 > LCM 2 5

NOTE: This command utilizes a **logical** camera number designation. Since the Allegiant has the capability of renumbering the physical video inputs, use of the logical camera number switch command will ensure correct selections regardless of the system configuration.

This command does not affect the current state (on or off) of the on-screen title display. If the on-screen title must be forced to either the on or off state, the LCM+ or LCM– commands described below should be used.

Use of this command to control video switching when interfacing to Allegiant Satellite system configurations is strongly recommended.

3.2 Switch Logical Camera to Monitor and Display On-screen Title

FORMAT = LCM+ (logical camera#) (logical monitor#)

EXAMPLE: To switch monitor number 5 to view logical camera number 2 (and enable the on-screen title display), the following command is used:

TC8x00 > LCM+ 2 5

NOTE: This command is identical to the **LCM** command described above, except the on-screen title will be instantly activated if it was previously off.

If display of the on-screen title is not desired, the **LCM–** command described below should be used.

3.3 Switch Logical Camera to Monitor with No On-screen Title

FORMAT = LCM– (logical camera#) (logical monitor#)

EXAMPLE: To switch monitor number 5 to view logical camera number 2 (and blank the on-screen display), the following command is used:

TC8x00 > LCM– 2 5

NOTE: This command is identical to the **LCM+** command described above, except the on-screen title will be instantly blanked when this command is used.

3.4 Switch Logical Camera to Monitor with Pre-position Call

FORMAT = LCMP (logical camera#) (logical monitor#) (pre-position#)

EXAMPLE: To switch logical camera 1 to monitor 2 and activate the camera's pre-position function 3, enter the following command:

TC8x00 > LCMP 1 2 3

With the exception of the pre-position activation function, the LCMP command is identical to the LCM command described above.

3.5 Switch Logical Camera to Monitor and Temporarily Override On-screen Displays

FORMAT = X-TITLES (index monitor#) (index camera#) "16 characters" "16 characters"

EXAMPLE: To switch index monitor 2 to display index camera 1and temporarily override their normal text displays with new text, enter the following command:

TC8x00 > X-TITLES 2 1 "Top Title" "Bottom Title"

Up to 16 character text messages can be used. If either or both text lines are not to be overridden, send a –1 value in place of the text message. To restore either or both lines to their original titles, send a 0 (zero) value in place of the text messages. A system reset will also restore the displays to their original titles.

NOTE: Because of a hardware limitation in the LTC 8500 system, a space is automatically inserted between the third and fourth characters in a top line override message.

3.6 Switch Physical Camera to Monitor

FORMAT = MON+CAM (physical monitor#) (physical camera#)

EXAMPLE: To switch monitor number 5 to view the camera **physically** connected to video input number 2, enter the following:

TC8x00 > MON+CAM 5 2

NOTE: Numeric values in this command should not exceed the physical design capacity of the Allegiant system being controlled. This command should also be used with caution in Allegiant systems where the camera numbers have been redesignated and no longer correspond to the actual video inputs. In systems that have been redesignated, it is recommended to use the **LCM** logical camera number switch commands described previously.

3.7 Run Sequence by Monitor Number

FORMAT = MON-RUN (monitor#)

EXAMPLE: If monitor number 2 is currently loaded with a sequence in the **HOLD** mode, the sequence may be run by the following command:

TC8x00 > MON-RUN 2

NOTE: A sequence must currently be **loaded** on the monitor.

3.8 Run Sequence by Keyboard Number

FORMAT = RUN (keyboard#)

EXAMPLE: If keyboard number 2 (where 2 is the actual port the keyboard is connected to on the Allegiant main bay) is currently controlling a monitor where a sequence is currently in the **HOLD** mode, the sequence may be run by the following command:

TC8x00 > RUN 2

NOTE: A sequence must already be **loaded** on the monitor and the keyboard must be **controlling** that monitor. If a sequence is already running when this command is used, the sequence will immediately advance to the next step.

3.9 Hold Sequence by Monitor Number

FORMAT = MON-HOLD (monitor#)

EXAMPLE: If monitor number 2 contains a sequence currently in the **RUN** mode, the sequence may be stopped by the following command:

TC8x00 > MON-HOLD 2

3.10 Hold Sequence by Keyboard Number

FORMAT = HOLD (keyboard#)

EXAMPLE: If keyboard number 2 (where 2 is the actual port the keyboard is connected to on the Allegiant main bay) is currently controlling a monitor where a sequence is currently in the RUN mode, the sequence may be stopped by the following command:

TC8x00 > HOLD 2

NOTE: The keyboard must be currently **controlling** the monitor which is running the sequence.

3.11 Step Sequence Forward by Monitor Number

FORMAT = MON-NEXT (monitor#)

EXAMPLE: If monitor number 2 is currently **loaded** with a sequence which was previously running in the forward direction and is now in the HOLD mode, the sequence may be advanced one step forward by the following command:

TC8x00 > MON-NEXT 2

If the sequence was previously running in the reverse direction and is now in the **HOLD** mode, this command will change the direction only. If the sequence is currently running in the forward direction, this command will cause the sequence to immediately advance one step. If the sequence is currently running in the reverse direction, this command will change the direction, causing it to now run in the forward direction.

3.12 Step Sequence Forward by Keyboard Number

FORMAT = NEXT (keyboard#)

EXAMPLE: If keyboard number 2 (where 2 is the actual port the keyboard is connected to on the Allegiant main bay) is currently controlling a monitor where a sequence was previously running in the forward direction and is now in the **HOLD** mode, the sequence may be advanced one step forward by the following command:

TC8x00 > NEXT 2

NOTE: The keyboard must be currently **controlling** the monitor which the sequence is **loaded** on.

If the sequence was previously running in the reverse direction and is now in the HOLD mode, this command will change the direction only. If the sequence is currently running in the forward direction, this command will cause the sequence to immediately advance one step. If the sequence is currently running in the reverse direction, this command will change the direction, causing it to now run in the forward direction.

3.13 Step Sequence Backward by Monitor Number

FORMAT = MON-PREV (monitor#)

EXAMPLE: If monitor number 2 is currently **loaded** with a sequence which was previously running in the reverse direction and is now in the **HOLD** mode, the sequence may be advanced one step backwards by the following command:

TC8x00 > MON-PREV 2

If the sequence was previously running in the forward direction and is now in the **HOLD** mode, this command will change the direction only. If the sequence is currently running in the reverse direction, this command will cause the sequence to immediately advance one step backwards. If the sequence is currently running in the forward direction, this command will change the direction, causing it to now run in the reverse direction.

3.14 Step Sequence Backward By Keyboard Number

FORMAT = PREV (keyboard#)

EXAMPLE: If keyboard number 2 (where 2 is the actual port the keyboard is connected to on the Allegiant main bay) is currently controlling a monitor where a sequence was previously running in the reverse direction and is now in the **HOLD** mode, the sequence may be advanced one step backwards by the following command:

TC8x00 > PREV 2

NOTE: The keyboard must be currently **controlling** the monitor which the sequence is **loaded** on.

If the sequence was previously running in the forward direction and is now in the **HOLD** mode, this command will change the direction only. If the sequence is currently running in the reverse direction, this command will cause the sequence to immediately advance one step backwards. If the sequence is currently running in the forward direction, this command will change the direction, causing it to now run in the reverse direction.

3.15 Sequence Request

FORMAT = SEQ-REQ (sequence#) (monitor#)

EXAMPLE: If sequence number 5 is to be **loaded** onto monitor number 2, enter the following command:

TC8x00 > SEQ-REQ 5 2

NOTE: This command does not check user priority levels and will replace any existing sequence currently **loaded** on the monitor. The sequence must also be a valid sequence (either contain the monitor number if an absolute sequence or be a relative sequence) for the monitor it is to be **loaded** onto. Error number 51 will be returned if not. Salvo sequences must also be 'loaded' onto valid monitors and must not be started on a monitor where the sequence will exceed the number of monitors available. If the monitor numbers are exceeded, error number 52 will be returned.

3.16 Sequence Unload

FORMAT = SEQ-ULD (monitor#)

EXAMPLE: If a sequence is currently **loaded** on monitor number 5, it may be **removed** from the monitor by the following command:

TC8x00 > SEQ-ULD 5

NOTE: This command does not check user priority levels and therefore will **unload** any current sequence. Also note that this command does not delete the sequence from the system. The sequence is still stored in the system and may be **reloaded** as desired. If a sequence is not currently **loaded**, no action will result.

3.17 Sequence Delete

FORMAT = DEL-SEQ (sequence#)

EXAMPLE: If sequence number 9 is to be deleted from the system, enter the following command:

TC8x00 > DEL-SEQ 9

NOTE: This command irrevocably deletes the sequence from the system. If the sequence does not currently exist, no action is taken. There will be a short delay (typically 1 or 2 seconds) after this command is sent before the system can accept a new command.

3.18 Request Sequence Summary Table

FORMAT = DIR

EXAMPLE: If a listing of the sequence summary table is desired, enter the following command:

TC8x00 > DIR

The system responds with a table of information indicating sequence numbers, sequence names, and sequence lengths for all sequences which are stored in the system memory.

4 KEYBOARD FUNCTIONS

4.1 Change Keyboard Monitor To Be Controlled

FORMAT = CHG-MON (monitor#) (keyboard#)

EXAMPLE: If keyboard number 1 is to be switched to monitor number 4 to control the camera currently displayed on monitor 4, enter the following command:

TC8x00 > CHG-MON 4 1

NOTE: This command only changes the monitor which is to be **controlled**. The camera displayed on that monitor is not affected as it is in the next command listed below. This command can be used to change the keyboard to a monitor which has a sequence already **loaded**. The sequence may then be started, stopped, etc. using the proper command as described above. Note that the keyboard must be in the **logged-in** state. Error number 41 will be returned if not.

4.2 Change Keyboard Monitor and Camera Numbers

FORMAT = MON-CAM (monitor#) (keyboard#) (camera#)

EXAMPLE: If keyboard number 1 (where 1 is the actual port the keyboard is connected to on the Allegiant main bay) is to be switched to monitor number 4 to view **index** camera number 8, enter the following command:

TC8x00 > MON-CAM 4 1 8

NOTE: This command not only changes the monitor which is to be **controlled** by the keyboard, it also permits callup of a particular camera as part of the command. Note that the keyboard must be in the **logged-in** state. Error number 41 will be returned if not.

4.3 Log Keyboard On

FORMAT = KBD-LOGON (keyboard#) (index user#)

EXAMPLE: If logical user number 3 is to be logged-on to system keyboard number 1 (where 1 is the actual port the keyboard is connected to on the Allegiant main bay), enter the following command:

TC8x00 > KBD-LOGON 1 3

NOTE: This command duplicates the function of an operator **logging-in** on a system keyboard.

4.4 Log Keyboard Off

FORMAT = KBD-LOGOFF (keyboard#)

EXAMPLE: If system keyboard number 1 (where 1 is the actual port the keyboard is connected to on the Allegiant main bay) is to be logged-off, enter the following command:

TC8x00 > KBD-LOGOFF 1

NOTE: This command duplicates the function of logging-off of a system keyboard. Also note that the command will force the keyboard to log-off regardless of the dip switch setting on the Allegiant's CPU, which determines activation of the log-in feature.

5 SEQUENCE PROGRAMMING FUNCTIONS

Sequence programming requires an interactive process between the Allegiant system and an external computing device. A sequence **program** must be generated using the computing device, then the tabulated information must be transferred into the Allegiant system using strict guidelines.

The computing device must contain or determine the following information before transfer to the Allegiant system can be made:

1. Sequence name - 8 characters max.
2. Sequence number - range is 1 to 60.
3. Monitors used in sequence - determined from sequence table.
4. Length of sequence - determined from sequence table based on the total number of steps in the sequence.
5. Sequence type - must be specified as Absolute or Relative.
6. Overwrite authority - used when the sequence already exists in the Allegiant system.
7. Camera ID hash number - to insure camera numbers used in sequence match those programmed in the Allegiant system. To calculate the camera hash number, multiply each camera's **logical** ID number by its **index** number. The camera hash is the sum of these products, modulo 65536 (10000 hex). Trunk inputs and unconfigured cameras are not included in the calculation. If necessary, you can use the **CAMERA-HASH** command described in the **System Commands** section of this manual to report the system's current HASH value.
8. Actual sequence table with camera, monitor, dwell times, and any remote control information - Operator programmed.

Once the above information is known, the computing device can then transfer the sequence data in the following format:

1. Send one or two carriage return characters (hex 0D) to request TC8x00 prompt. Prompt consists of space (hex 20), carriage return (hex 0D), line feed (hex 0A), TC8x00, space, >, space. Prepare system for download by sending DSEQ command followed by a carriage return. TC8x00 responds with echo of DSEQ command and 01 hex, then hex 06 if it is ok to proceed. Any other response would indicate that the system is not ready to accept a sequence download.
2. Download 128 byte control block, formatted as indicated below, containing sequence status information. Include one checksum byte at the end of the block. The checksum byte is the low order byte of the sum of the contents of the 128 bytes.
3. If all data was received correctly, the system acknowledges with hex 06. If a timeout or checksum error was encountered, the system will respond with a hex 05 up to three times. After three errors, the system will abort the download, responding with a hex 15, a hex 06, a carriage return (hex 0D), then the system prompt. A message indicating the reason for the error will be generated by the system's printer port.

   After a short time to evaluate the control block data (for reasons other than timeouts or checksum errors), the system returns a status byte consisting of one of the following:

Hex Code	Meaning
82	OK to proceed and overwrite existing sequence.
80	OK to proceed with new sequence download.
20	Incorrect camera hash number; Abort.
10	Sequence currently Running (Sequence must be in stop mode before overwrite possible); Abort.
04	Sequence currently in Edit mode; Abort.
02	Sequence currently exists and Overwrite byte has not been set (see the following); Abort.
01	Insufficient room in memory; Abort.

4. Note that hex 06, then the system prompt, will be returned after all responses except hex 82 and hex 80. With error responses, a **Sequence Download Aborted** message will be generated by the system's printer port. If an error response is received, the control block will need to be downloaded again once the appropriate corrective action is taken.
5. Download actual sequence table information in one or more blocks containing 128 bytes. Format as indicated in the appropriate section to follow.

BYTE	CONTENTS
0	Set bits of 8 bit word corresponding to monitors used in sequence. BYTE 0 = monitors 1–6 with 2 most significant bits always **reset**. If Relative sequence, the LSB bit of the 8 bit word must always be set; if not, shift bytes right until this condition is met.
1, 2, 3	Always **reset**.
4	MSB bit always set. Next bit set if Relative sequence or reset if Absolute sequence. Other bits always reset (Relative = hex C0, Absolute = hex 80).
5	Relative monitor difference value. For Relative sequences, value is equal to the number of times the 8 bit word in BYTE 0 was shifted. If Absolute sequence, byte is reset.
6–13	Sequence name - ASCII characters padded with spaces (hex 20).
14	Contains MSB # of actual sequence steps.
15	Contains LSB # of actual sequence steps.
16, 17	All bits set.
18	Sequence number (0–59 or 0–3B hex).
19	Set to 1 for Overwrite of existing sequence, set to 0 if Overwrite is not desired.
20	MSB camera hash number. See the following.
21	LSB camera hash number. See the following.
22–127	Always reset.

5.1 LTC 8300 Systems

The **LTC 8300** control block of 128 bytes must consist of the following:

LTC 8300 Camera hash number - If the system camera numbers have not been redesignated and range from 1 to 32 (with cameras 33 to 288 unconfigured), the camera hash number is 2CB0 hex, which would make byte 20 equal to 2C hex and byte 21 equal to B0 hex.

The **LTC 8300** Sequence table is transferred in blocks of 128 bytes plus a checksum. Each block contains up to 12 sequence steps (unused steps are zero filled). The checksum byte is the sum of the contents of the 128 bytes. The **LTC 8300** sequence steps have the following six byte format:

BYTE	CONTENTS
0	Dwell time (1 to 60 seconds or 61 = SALVO, 62 = HOLD, 63 = UNLOAD).
1	Always reset.
2	MSB of camera **index** number minus 1(0 to 287).
3	LSB of camera **index** number minus 1.
4	Monitor number (0 to 5) minus Relative Monitor Difference (contents of control block BYTE 5).
5	Receiver driver command, if any (refer to R/C command table).

The receiver driver command byte has an opcode number in its lower nibble and a data value in its upper nibble. See the **Rreceiver/Driver Commands** section of this manual for a list of valid opcodes and data values.

The format of the blocks is as follows:

Data of Bytes	Number Bytes	Total
Sequence step 1	6	6
Sequence step 2	6	12
.	.	.
.	.	.
.	.	.
Sequence step 12	6	72
Zero fill	56	128
Checksum	1	129

After the 128 byte block is sent, the next byte must contain the checksum of the 128 byte block. The LTC 8300 system will respond with a hex 06 if correct or a hex 15 if an error has resulted. Continue if correct or start over if an error has occurred.

If the sequence contains additional lines, the preceding format is continued in transfers of 12 sequence lines for each 128 bytes. A checksum byte should be sent after each 128 byte block transfer, and the LTC 8300 should respond after each checksum is sent.

5.2 LTC 8500 Systems

The **LTC 8500** control block of 128 bytes must consist of the following:

BYTE	CONTENTS
0	Set bits corresponding to monitors used in sequence (LSB = monitor 1). If Relative sequence, the LSB bit must always be set; if not, shift byte right until this condition is met.
1	MSB bit always set. Next bit set if Relative sequence or reset if Absolute sequence. Other bits always reset (Relative = hex C0, Absolute = hex 80).
2	Contains MSB # of actual sequence steps.
3	Contains LSB # of actual sequence steps.
4	Relative monitor difference value. For Relative sequences, value is equal to the number of times BYTE 0 was shifted. If Absolute sequence, byte is reset.
5	Reserved. Always reset.
6–13	Sequence name - ASCII characters padded with spaces (20 hex).
14–29	Always reset.
30, 31	All bits set.
32–36	Always reset.
37	Sequence number (0–59 or 0–3B hex).
38	Set to 1 for Overwrite of existing sequence, set to 0 if Overwrite is not desired.
39	MSB camera hash number. See the following.
40	LSB camera hash number. See the following.
41–127	Always reset.

LTC 8500 Camera hash number - If the system camera numbers have not been redesignated and range from 1 to 64 (with cameras 65 to 320 unconfigured), the camera hash number is 5D60 hex, which would make byte 39 equal to 5D hex and byte 40 equal to 60 hex.

The **LTC 8500** Sequence table is transferred in blocks of 128 bytes plus a checksum. Each block contains up to 12 sequence steps (unused steps are zero filled). The checksum byte is the sum of the contents of the 128 bytes.

The **LTC 8500** sequence steps have the following six byte format:

BYTE	CONTENTS
0	Dwell time (1 to 60 seconds or 61 = SALVO, 62 = HOLD, 63 = UNLOAD).
1	Always reset.
2	MSB of camera **index** number minus 1(0 to 319).
3	LSB of camera **index** number minus 1.
4	Monitor number (0 to 7) minus Relative Monitor Difference (contents of control block BYTE 4).
5	Receiver driver command, if any (refer to R/C command table).

The receiver/driver command byte has an opcode number in its lower nibble and a data value in its upper nibble. See the **Receiver/Driver Commands** section of this manual for a list of valid opcodes and data values.

The format of the blocks is as follows:

Data of Bytes	Number Bytes	Total
Sequence step 1	6	6
Sequence step 2	6	12
.	.	.
.	.	.
.	.	.
Sequence step 12	6	72
Zero fill	56	128
Checksum	1	129

After the 128 byte block is sent, the next byte must contain the checksum of the 128 byte block. The LTC 8500 system will respond with a hex 06 if correct or a hex 15 if an error has resulted. Continue if correct or start over if an error has occurred.

If the sequence contains additional lines, the preceding format is continued in transfers of 12 sequence lines for each 128 bytes. A checksum byte should be sent after each 128 byte block transfer, and the LTC 8500 should respond after each checksum is sent.

5.3 LTC 8600 Systems

The **LTC 8600** control block of 128 bytes must consist of the following:

BYTE	CONTENTS
0, 1	Set bits of 16 bit word corresponding to monitors used in sequence. BYTE 0 = monitors 9–16, BYTE 1 = monitors 1–8 (LSB = monitor 1). If Relative Sequence, the LSB bit of the 16 bit word must always be set; if not, shift bytes right until this condition is met.
2, 3	Always reset.
4	MSB bit always set. Next bit set if Relative sequence or reset if Absolute sequence. Other bits always reset (Relative = hex C0, Absolute = hex 80).
5	Relative monitor difference value. For Relative sequences, value is equal to the number of times the 16 bit word in BYTES 0,1 was shifted. If Absolute sequence, byte is reset.
6–13	Sequence name - ASCII characters padded with spaces (20 hex).
14	Contains MSB # of actual sequence steps.
15	Contains LSB # of actual sequence steps.
16, 17	All bits set.
18	Sequence number (0–59 or 0–3B hex).
19	Set to 1 for Overwrite of existing sequence, set to 0 if Overwrite is not desired.
20	MSB camera hash number. See the following.
21	LSB camera hash number. See the following.
22–127	Always reset.

LTC 8600 Camera hash number - If the system camera numbers have not been redesignated and range from 1 to 128 (with cameras 129 to 1152 unconfigured), the camera hash number is CAC0 hex, which would make byte 20 equal to CA hex and byte 21 equal to C0 hex.

The **LTC 8600** Sequence table is transferred in blocks of 128 bytes plus a checksum. Each block contains up to 12 sequence steps (unused steps are zero filled). The checksum byte is the sum of the contents of the 128 bytes. The **LTC 8600** sequence steps have the following six byte format:

BYTE	CONTENTS
0	Dwell time (1 to 60 seconds or 61 = SALVO, 62 = HOLD, 63 = UNLOAD).
1	Always reset.
2	MSB of camera **index** number minus 1(0 to 1151).
3	LSB of camera **index** number minus 1.
4	Monitor number (0 to 15) minus Relative Monitor Difference (contents of control block BYTE 5).
5	Receiver driver command, if any (refer to R/C command table).

The receiver/driver command byte has an opcode number in its lower nibble and a data value in its upper nibble. See the **Receiver/Driver Commands** section of this manual for a list of valid opcodes and data values.

The format of the blocks is as follows:

Data of Bytes	Number Bytes	Total
Sequence step 1	6	6
Sequence step 2	6	12
.	.	.
.	.	.
.	.	.
Sequence step 12	6	72
Zero fill	56	128
Checksum	1	129

After the 128 byte block is sent, the next byte must contain the checksum of the 128 byte block. The LTC 8600 system will respond with a hex 06 if correct or a hex 15 if an error has resulted. Continue if correct or start over if an error has occurred.

If the sequence contains additional lines, the preceding format is continued in transfers of 12 sequence lines for each 128 bytes. A checksum byte should be sent after each 128 byte block transfer, and the LTC 8600 should respond after each checksum is sent.

5.4 LTC 8800 Systems

The **LTC 8800** control block of 128 bytes must consist of the following:

BYTE	CONTENTS
0–3	Set the lower 32 bits of a 64 bit word corresponding to monitors used in sequence. BYTE 0 = monitors 25–32, BYTE 1 = monitors 17–24, BYTE 2 = monitors 9–16, BYTE 3 = monitors 1–8 (LSB = monitor 1). If Relative sequence, the LSB bit of the 64 bit word must always be set; if not, shift bytes right until this condition is met. See also BYTES 32–35 below.
4	MSB bit always set. Next bit set if Relative sequence or reset if Absolute sequence. Other bits always reset (Relative = hex C0, Absolute = hex 80).
5	Relative monitor difference value. For Relative sequences, value is equal to the number of times the 64 bit word in BYTES 0–3, and 32–35 was shifted. If Absolute sequence, byte is reset.
6–13	Sequence name - ASCII characters padded with spaces (20 hex).
14	Contains MSB # of actual sequence steps.
15	Contains LSB # of actual sequence steps.
16, 17	All bits set.
18	Sequence number (0–59 or 0–3B hex).
19	Set to 1 for Overwrite of existing sequence, set to 0 if Overwrite is not desired.
20	MSB camera hash number. See below.
21	LSB camera hash number. See below.
22–31	Always reset.
32–35	Set the higher 32 bits of a 64 bit word corresponding to monitors used in sequence. BYTE 32 = monitors 57–64, BYTE 33 = monitors 49–56, BYTE 34 = monitors 41–48, BYTE 35 = monitors 33–40 (LSB = monitor 33). If Relative Sequence, the LSB bit of the 64 bit word (in BYTE 3 above) must always be set; if not, shift bytes right until this condition is met. See also BYTES 0-3 above.
36–127	Always reset.

LTC 8800 Camera hash number - If the system camera numbers have not been redesignated and range from 1 to 256 (with cameras 257 to 2304 unconfigured), the camera hash number is D580 hex, which would make byte 20 equal to D5 hex and byte 21 equal to 80 hex.

The **LTC 8800** Sequence table is transferred in blocks of 128 bytes plus a checksum. Each block contains up to 12 sequence steps (unused steps are zero filled). The checksum byte is the sum of the contents of the 128 bytes. The **LTC 8800** sequence steps have the following six byte format:

BYTE	CONTENTS
0	Dwell time (1 to 60 seconds or 61 = SALVO, 62 = HOLD, 63 = UNLOAD.
1	Always reset.
2	MSB of camera **index** number minus 1 (0 to 2303).
3	LSB of camera **index** number minus 1.
4	Monitor number (0 to 63) minus Relative Monitor Difference (contents of control block BYTE 5).
5	Receiver driver command, if any (refer to R/C command table).

The receiver/driver command byte has an opcode number in its lower nibble and a data value in its upper nibble. See the **Receiver/Driver Commands** section of this manual for a list of valid opcodes and data values.

The format of the blocks is as follows:

Data of Bytes	Number Bytes	Total
Sequence step 1	6	6
Sequence step 2	6	12
.	.	.
.	.	.
.	.	.
Sequence step 12	6	72
Zero fill	56	128
Checksum	1	129

After the 128 byte block is sent, the next byte must contain the checksum of the 128 byte block. The LTC 8800 system will respond with a hex 06 if correct or a hex 15 if an error has resulted. Continue if correct or start over if an error has occurred.

If the sequence contains additional lines, the preceding format is continued in transfers of 12 sequence lines for each 128 bytes. A checksum byte should be sent after each 128 byte block transfer, and the LTC 8800 should respond after each checksum is sent.

5.5 LTC 8100, LTC 8200, LTC 8900 Systems

These systems do not support sequence downloads from external computing devices. Programming of sequences must be done via system keyboards or via PC-based Allegiant software packages.

6 LOCKOUT COMMANDS

Lockout commands are used to restrict users or system keyboards from gaining access to certain system functions. Users may be restricted from operating keyboards, selecting monitors, viewing cameras, and controlling remote devices. System keyboards may be restricted from accessing monitors, cameras, and remote devices (receiver/drivers). The locks may be installed either in blocks or individually based on user or keyboard numbers. Block type lock commands would be used when it is necessary to reassign system wide restrictions associated with a lockout table. Individual type lock commands would be used when it is necessary to reassign restrictions for only a single user or a single keyboard. These commands duplicate the lockout table functions found in the Allegiant's **LTC 8059/00 Master Control Software** package or the **LTC 8850/00 Graphical User Interface** software package.

Note that if the system log-on feature is not enabled, the user related restrictions will appear to be based upon system keyboards (at least until the limit of physical keyboards supported by the system is exceeded). The system keyboards are automatically defaulted by the system to be associated with a user number when the log-on feature is not enabled, i.e., keyboard 1 is defaulted to user 1, keyboard 2 to user 2, and so on.

In the block type lock commands, certain user and keyboard data values are determined using a **bit-map** concept. If a bit is set to logical **1**, the corresponding user or keyboard would be restricted from accessing the device.

For LTC 8100, LTC 8200, LTC 8300, LTC 8500, LTC 8600, and LTC 8800 Series systems supporting 32 different users (or keyboards if the log-in feature is not enabled) in the system, the bit-map would consist of a 32 bit word (four data bytes), where the least significant bit represents user (or keyboard) number 1. In LTC 8900 systems, the 128 Users in the system would consist of a 128 bit word (sent as 4 groups of 4 data bytes).

If applicable, leading zeros at the beginning of the individual data groups do not need to be included. If all bits of a data group are logical zeros, only a single zero needs to be sent to represent that group.

For keyboard bit-maps, the LTC 8100, LTC 8200, and LTC 8500 systems support 8 or less keyboards, so the keyboard bit-map would consist of a single 8 bit word (1 data byte). With LTC 8600 systems, 16 keyboards are permitted, so the keyboard bit-map would consist of a 16 bit word (2 data bytes). LTC 8800 and LTC 8900 systems support 64 keyboards, so 4 data bytes are required.

In individual type lock commands, the **lock data** value must be set to logical **1** for the device to be locked or logical **0** to be unlocked. The examples below assume that the current numeric base is **Hexadecimal**.

Priority based monitor locks are also available that can be set/removed according to user number. These commands duplicate the monitor lock/unlock functions which can be entered via a system keyboard.

There will be a short delay (typically 1 or 2 seconds) after lockout commands are sent before the system can accept a new command.

6.1 Set *Monitor-to-user* Block Lockouts

This command configures a lockout table that determines which system users are permitted access to a specific system monitor. When a user is restricted from a system monitor, the currently displayed camera cannot be changed by the user if the keyboard is currently controlling the monitor when the lock is installed. If the keyboard is not currently controlling the monitor, the user will not be able to select the locked monitor.

FORMAT = LOCK-MON-USR (monitor#) (user bit-map)

EXAMPLE: If Users 4, 5, 7, 8, 15, and 25 are to be restricted from accessing monitor number 2, enter the following command (using hex base):

```
TC8x00> LOCK-MON-USR  2   010040D8
```

Same command formatted for LTC 8900 system:

TC8900> LOCK-MON-USR 2 00000000 00000000 00000000 010040D8

Since leading zeros are not absolutely necessary, the same command for an LTC 8900 system can be sent as follows:

TC8900> LOCK-MON-USR 2 0 0 0 10040D8

6.2 Set *Camera-to-user* Block Lockouts

This command configures a lockout table that determines which system users are permitted access to a specific system camera. When a user is restricted from accessing a system camera, the camera cannot be switched to any monitor by the user. Since the user cannot access the camera, any remote (receiver/driver) associated with the camera is not controllable by the user.

FORMAT = LOCK-CAM-USR (index camera#) (user bit-map)

EXAMPLE: If Users 4, 5, 7, 8, 15, and 25 are to be restricted from accessing camera number 250, enter the following command (using hex base):

TC8x00> LOCK-CAM-USR FA 010040D8

Same command formatted for LTC 8900 system:

TC8900> LOCK-CAM-USR FA 00000000 00000000 00000000 010040D8

Since leading zeros are not absolutely necessary, the same command for an LTC 8900 system can be sent as follows:

TC8900> LOCK-CAM-USR FA 0 0 0 10040D8

6.3 Set *Remote-to-user* Block Lockouts

This command configures a lockout table that determines which system users are permitted access to control the remote (receiver/driver) associated with a system camera.

FORMAT = LOCK-REM-USR (index remote#) (user bit-map)

EXAMPLE: If Users 4, 5, 7, 8, 15, and 25 are to be restricted from accessing the remote associated with camera number 202, enter the following command (using hex base):

TC8x00> LOCK-REM-USR CA 010040D8

Same command formatted for LTC 8900 system:

TC8900> LOCK-REM-USR CA 00000000 00000000 00000000 010040D8

Since leading zeros are not absolutely necessary, the same command for a LTC 8900 system can be sent as follows:

TC8900> LOCK-REM-USR CA 0 0 0 10040D8

6.4 Set *Keyboard-to-user* Block Lockouts

This command configures a lockout table that determines which system users are permitted access to a specific system keyboard. The system log-on feature must be enabled when using this command. When users are restricted from accessing a system keyboard, they are prohibited from logging-on to that keyboard.

FORMAT = LOCK-KBD-USR (keyboard#) (user bit-map)

EXAMPLE: If Users 4, 5, 7, 8, 15, and 25 are to be restricted from accessing keyboard number 3, enter the following command (using hex base):

TC8x00> LOCK-KBD-USR 3 010040D8

Same command formatted for LTC 8900 system:

TC8900> LOCK-KBD-USR 3 00000000 00000000 00000000 010040D8

Since leading zeros are not absolutely necessary, the same command for a LTC 8900 system can be sent as follows:

TC8900> LOCK-KBD-USR 3 0 0 0 10040D8

6.5 Set *Monitor-to-keyboard* Block Lockouts

This command configures a lockout table that determines which system keyboards are permitted access to a specific system monitor. When a keyboard is restricted from a system monitor, the currently displayed camera cannot be

changed if the keyboard is currently controlling the monitor when the lock is installed. If the keyboard is not currently controlling the monitor, it will be prohibited from selecting the locked monitor. Note that the restrictions will apply regardless of the user associated with the keyboard.

FORMAT = LOCK-MON-KBD (monitor#) (keyboard bit-map)

EXAMPLE: If keyboards 4, 5, 7, 8, 15, and 25 on a LTC 8800 system are to be restricted from accessing monitor number 2, enter the following command (using hex base):

TC8x00> LOCK-MON-KBD 2 010040D8

Same command formatted for LTC 8900 system:

TC8900> LOCK-MON-KBD 2 00000000 010040D8

Since leading zeros are not absolutely necessary, the same command for a LTC 8900 system can be sent as follows:

TC8900> LOCK-MON-KBD 2 0 10040D8

NOTE: The first example is shown for an LTC 8800 system which supports 32 keyboards. The second example shows the format for an LTC 8900 system which supports 64 keyboards. The keyboard bit-map value must be changed accordingly for LTC 8300 systems (4 keyboards are supported), LTC 8500 systems (8 keyboards are supported), or LTC 8600 systems (16 keyboards are supported).

6.6 Set *Camera-to-keyboard* Block Lockouts

This command configures a lockout table that determines which system keyboards are permitted access to a specific system camera. Note that the restrictions will apply regardless of the User associated with the keyboard. Since the keyboard cannot access the camera, any remote (receiver/driver) associated with the camera is not controllable by the locked keyboard.

FORMAT = LOCK-CAM-KBD (index camera#) (keyboard bit-map)

EXAMPLE: If keyboards 4, 5, 7, 8, 15, and 25 on an LTC 8800 system are to be restricted from accessing camera number 250, enter the following command (using hex base):

TC8x00> LOCK-CAM-KBD FA 010040D8

Same command formatted for LTC 8900 system:

TC8900> LOCK-CAM-KBD FA 00000000 010040D8

Since leading zeros are not absolutely necessary, the same command for an LTC 8900 system can be sent as follows:

TC8900> LOCK-CAM-KBD FA 0 10040D8

NOTE: The first example is shown for an LTC 8800 system which supports 32 keyboards. The second example shows the format for an LTC 8900 system which supports 64 keyboards. The keyboard bit-map value must be changed accordingly for LTC 8300 systems (4 keyboards are supported), LTC 8500 systems (8 keyboards are supported), or LTC 8600 systems (16 keyboards are supported).

6.7 Set *Remote-to-keyboard* Block Lockouts

This command configures a lockout table that determines which system keyboards are permitted access to control the remote (receiver/driver) associated with a system camera.

FORMAT = LOCK-REM-KBD (index remote#) (keyboard bit-map)

EXAMPLE: If keyboards 4, 5, 7, 8, 15, and 25 on an LTC 8800 system are to be restricted from accessing the remote associated with camera number 202, enter the following command (using hex base):

TC8x00> LOCK-REM-KBD CA 010040D8

Same command formatted for LTC 8900 system:

TC8900> LOCK-REM-KBD CA 00000000 010040D8

Since leading zeros are not absolutely necessary, the same command for an LTC 8900 system can be sent as follows:

TC8900> LOCK-REM-KBD CA 0 10040D8

NOTE: The first example is shown for an LTC 8800 system which supports 32 keyboards. The second example shows the format for an LTC 8900 system which supports 64 keyboards. The keyboard bit-map value must be changed accordingly for LTC 8300 systems (4 keyboards are supported), LTC 8500 systems (8 keyboards are supported), or LTC 8600 systems (16 keyboards are supported).

6.8 Set *Monitor-to-user* Individual Lockouts

This command permits an individual user to be restricted from accessing a system monitor. When a user is restricted from a system monitor, the currently displayed camera cannot be changed by the user if the keyboard is currently controlling the monitor when the lock in installed. If the keyboard is not currently controlling the monitor, the user will not be able to select the locked monitor.

FORMAT = SET-MON-USR-LOCK (monitor#) (index user#) (lock data)

EXAMPLE: If user 4 is to be restricted from accessing monitor number 2, enter the following command (using hex base):

TC8x00> SET-MON-USR-LOCK 2 4 1

6.9 Set *Camera-to-user* Individual Lockouts

This command permits an individual user to be restricted from accessing a system camera. When a user is restricted from accessing a system camera, the camera cannot be switched to any monitor by the user. Since the user cannot access the camera, any remote (receiver/driver) associated with the camera is not controllable by the user.

FORMAT = SET-CAM-USR-LOCK (index camera#) (index user#) (lock data)

EXAMPLE: If user 4 is to be restricted from accessing camera number 18, enter the following command (using hex base):

TC8x00> SET-CAM-USR-LOCK 12 4 1

6.10 Set *Remote-to-user* Individual Lockouts

This command permits an individual user to be restricted from controlling the remote (receiver/driver) associated with a system camera.

FORMAT = SET-REM-USR-LOCK (index remote#) (index user#) (lock data)

EXAMPLE: If user 14 is to be restricted from accessing the remote associated with camera number 33, enter the following command (using hex base):

TC8x00> SET-REM-USR-LOCK 21 E 1

6.11 Set *Keyboard-to-user* Individual Lockouts

This command permits an individual user to be restricted from accessing a specific system keyboard. The system log-on feature must be enabled when using this command. When users are restricted from accessing a system keyboard, they are prohibited from logging on to that keyboard.

FORMAT = SET-KBD-USR-LOCK (keyboard#) (index user#) (lock data)

EXAMPLE: If user 10 is to be restricted from accessing keyboard number 3, enter the following command (using hex base):

TC8x00> SET-KBD-USR-LOCK 3 A 1

6.12 Set *Monitor-to-keyboard* Individual Lockouts

This command permits a keyboard to be restricted from accessing a system monitor. When a keyboard is restricted from a system monitor, the currently displayed camera cannot be changed if the keyboard is currently controlling the monitor when the lock is installed. If the keyboard is not currently controlling the monitor, it will be prohibited from selecting the locked monitor.

NOTE: The restrictions will apply regardless of the user associated with the keyboard.

FORMAT = SET-MON-KBD-LOCK (monitor#) (keyboard#) (lock data)

EXAMPLE: If keyboard 4 is to be restricted from accessing monitor number 11, enter the following command (using hex base):

TC8x00> SET-MON-KBD-LOCK B 4 1

6.13 Set *Camera-to-keyboard* Individual Lockouts

This command permits a keyboard to be restricted from accessing a system camera. When a keyboard is restricted from accessing a system camera, the camera cannot be switched to any monitor using the keyboard. Since the keyboard will not permit access to a camera, any remote (receiver/driver) associated with the camera is not controllable from the keyboard.

NOTE: The restrictions will apply regardless of the user associated with the keyboard.

FORMAT = SET-CAM-KBD-LOCK (index camera#) (keyboard#) (lock data)

EXAMPLE: If keyboard 4 is to be restricted from accessing camera number 18, enter the following command (using hex base):

TC8x00> SET-CAM-KBD-LOCK 12 4 1

6.14 Set *Remote-to-keyboard* Individual Lockouts

This command permits a keyboard to be restricted from controlling the remote (receiver/driver) associated with a system camera.

FORMAT = SET-REM-KBD-LOCK (index remote#) (keyboard#) (lock data)

EXAMPLE: If keyboard 14 is to be restricted from accessing the remote associated with camera number 33, enter the following command (using hex base):

TC8x00> SET-REM-KBD-LOCK 21 E 1

6.15 Lock Monitor Based On User Priority

This command permits a monitor to be locked based on a user number. It duplicates the same function that an operator does when activating the **Monitor-lock-on** command using a system keyboard. Once the monitor is locked, only the operator who locked it or those operators with a higher priority would be able to control its video switching.

FORMAT = LOCK-MONITOR (monitor#) (logical user#)

EXAMPLE: If monitor 4 is to be locked by **logical** user number 8, enter the following command:

TC8x00> LOCK-MONITOR 4 8

6.16 Unlock Monitor Based On User Priority

This command permits a locked monitor to be unlocked based on a user number. It duplicates the same function that an operator does when activating the **Monitor-lock-off** command using a system keyboard. The monitor can only be unlocked by the operator who locked it or by those operators with a higher priority.

FORMAT = UNLOCK-MONITOR (monitor#) (logical user#)

EXAMPLE: If monitor 6 is to be unlocked by **logical** user number 2, enter the following command:

TC8x00> UNLOCK-MONITOR 6 2

6.17 Lock Remote Based On User Priority

This command provides the capability to restrict control over receiver/drivers based on the priority level of a user number. It duplicates the same function that an operator does when activating the **Lock <camera number> On** command using a system keyboard. Once the remote device is locked, only the operator who locked it or those operators with higher priority levels would be able to control it. If the remote device is already locked by an operator with a higher priority level, no action will occur.

FORMAT = LOCK-REMOTE (logical camera#) (user index#)

EXAMPLE: If the receiver/driver associated with camera 6 is to be locked by user **index** number 3, enter the following command:

TC8x00> LOCK-REMOTE 6 3

6.18 Unlock Remote Based On User Priority

This command permits a locked receiver/driver to be unlocked based on the priority level of a user number. It duplicates the same function that an operator does when activating the **Lock <camera number> Off** command using a system keyboard. The remote device can only be unlocked by the operator who locked it or by those operators with a higher priority level. If the remote device had been locked by an operator with a higher priority level, no action will occur.

FORMAT = UNLOCK-REMOTE (logical camera#) (user index#)

EXAMPLE: If the receiver/driver associated with camera 7 is to be unlocked by user **index** number 2, enter the following command:

TC8x00> UNLOCK-REMOTE 7 2

7 RECEIVER/DRIVER COMMANDS

7.1 Basic Control Commands

FORMAT = R/C (logical camera#) (OpCode#) (Data)

Select the OpCode# (the OpCode# is used to identify the function group) and Data information for the desired action according to the table below using the values corresponding to the existing numeric mode (Decimal or Hex):

OpCode# (hex)	OpCode# (decimal)	Data (hex)	Data (decimal)	Function
1	1	1	1	Turn Aux 1 ON
1	1	2	2	Turn Aux 1 OFF
1	1	3	3	Toggle Aux 1
1	1	5	5	Turn Aux 2 ON
1	1	6	6	Turn Aux 2 OFF
1	1	7	7	Toggle Aux 2
1	1	9	9	Turn Aux 3 ON
1	1	A	10	Turn Aux 3 OFF
1	1	B	11	Toggle Aux 3
1	1	D	13	Turn Aux 4 ON
1	1	E	14	Turn Aux 4 OFF
1	1	F	15	Toggle Aux 4
2	2	n=0 to F	n=0 to 15	Go To Pre-pos#(n+1)
3	3	t=0 to 7	t=0 to 7	Zoom IN for (t+1)/2 sec
3	3	t=8 to F	t=8 to 15	Zoom OUT for (t-7)/2 sec
4	4	t=0 to F	t=0 to 15	RIGHT for (t+1)/2 sec
5	5	t=0 to F	t=0 to 15	LEFT for (t+1)/2 sec
6	6	t=0 to F	t=0 to 15	DOWN for (t+1)/2 sec
7	7	t=0 to F	t=0 to 15	UP for (t+1)/2 sec
A	10	t=0 to 7	t=0 to 7	Focus FAR for (t+1)/2 sec
A	10	t=8 to F	t=8 to 15	Focus NEAR for (t-7)/2 sec
B	11	1	1	Aux 5 ON
B	11	2	2	Aux 5 OFF
B	11	3	3	Toggle Aux 5
B	11	5	5	Aux 6 ON
B	11	6	6	Aux 6 OFF
B	11	7	7	Toggle Aux 6
B	11	9	9	Aux 7 ON
B	11	A	10	Aux 7 OFF
B	11	B	11	Toggle Aux 7
C	12	n=0 to F	n=0 to 15	Set Pre-pos#(n+1)

EXAMPLE: To activate pre-position # 16 on camera # 1, enter the following command:

TC8x00>R/C 1 2 15

NOTE: Since the decimal mode is being assumed, the numeric value for the data was selected from the decimal column in the table. Also note that the actual number of seconds a time dependent command will be activated may only approximate the value entered.

7.2 Simultaneous Pan/Tilt/Zoom Control Commands

(TC8561A Series Receiver/Drivers and TC8561 Series Receiver/Drivers require software version 204 or higher)

FORMAT = REMOTE-ACTION (logical camera#) (data1) (data2)

For this command, the control functions in the remote device are determined according to the bit-mapped data1 and

data2 contents. This format allows for multiple functions to be performed simultaneously. A logic **1** in a bit position means that the associated function will be activated. After a command is sent, the activated functions will remain active until they are cancelled by sending the command again with both data fields set to 0. The format for data1 and data2 is as follows:

	Pan/Tilt Functions			***Zoom Lens Functions***				
	Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
data1	0	0	0	LEFT	UP	OUT	NEAR	OPEN
data2	0	0	0	RIGHT	DOWN	IN	FAR	CLOSED

EXAMPLE: To activate the receiver/driver left and down functions for camera number 2, send the following command:

TC8x00 > REMOTE-ACTION 2 16 8

Since the decimal mode is being assumed, the values for data1 and data2 were determined using the decimal equivalents for the left and down functions.

7.3 Toggle Pan/Tilt/Zoom Control Commands

(TC8561A Series Receiver/Drivers and TC8561 Series Receiver/Drivers require software version 204 or higher)

FORMAT = REMOTE-TGL (logical camera#) (data1) (data2)

For the **Toggle** commands, the control information is selected according to the bit-mapped data1 and data2 contents. This format allows for multiple functions to be performed simultaneously. A logic **1** in a bit position means that the associated function will be toggled (turned ON if currently OFF, or turned OFF if currently ON). A **Cancel All** command can be sent which immediately turns OFF all pan/tilt/zoom functions by setting the MSB of data1. Note that once the function is activated, it will remain active until either the command is sent again or the **Cancel All** command is sent. The format for data1 and data2 is as follows:

Cancel All command:

	Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
data1	1	x	x	x	x	x	x	x
data2	x	x	x	x	x	x	x	x

Toggle commands:

	Pan/Tilt Lens					***Zoom Lens***		
	Bit7	**Bit6**	**Bit5**	**Bit4**	**Bit3**	**Bit2**	**Bit1**	**Bit0**
data1	0	x	x	LEFT	UP	OUT	NEAR	OPEN
data2	x	x	x	RIGHT	DOWN	IN	FAR	CLOSED

Where **x** = don't care.

EXAMPLE: To toggle the functions left and down simultaneously for camera # 5, enter the following command:

TC8x00>REMOTE-TGL 5 16 8

NOTE: Since the decimal mode is being assumed, the values for data1 and data2 were determined using the decimal equivalents for the left and down functions.

7.4 Set Pre-position

FORMAT = PREPOS-SET (logical camera#) (pre-position#)

EXAMPLE: If camera number 10 is to be programmed for pre-position number 25, move the camera into the desired pan/tilt/zoom position, then enter the following command:

TC8x00> PREPOS-SET 10 25

NOTE: The range of valid pre-position numbers is from 1 to 16 for camera sites equipped with old TC8561 Series receiver/drivers and from 1 to 99 for camera sites containing the newer TC8561A or LTC 8561 Series receiver/drivers. Older TC700 Series AutoDome dome cameras will respond to either 66 or 99 pre-positions depending on the age of the model. Higher pre-position numbers (above 100) are also used to activate certain programming functions in the AutoDome Series. Note that number ranges above 100 are also not supported on older TC8500 series (those with CPU versions under 7.0).

7.5 Call Pre-position

FORMAT = PREPOS (logical camera#) (pre-position#)

EXAMPLE: If camera number 50 is to be sent to pre-position number 8, enter the following command:

TC8x00> PREPOS 50 8

NOTE: The range of valid pre-position numbers is from 1 to 16 for camera sites equipped with old TC8561 Series receiver/drivers and from 1 to 99 for camera sites containing the newer TC8561A or LTC 8561 Series receiver/drivers. Older TC700 Series AutoDome dome cameras will respond to either 66 or 99 pre-positions depending on the age of the model. Higher pre-position numbers (above 100) are also used to activate certain programming functions in the AutoDome Series. Note that number ranges above 100 are also not supported on older LTC 8500 Series (those with CPU versions under 7.0).

7.6 Auxiliary Control Commands

The following series of auxiliary control commands can be used instead of the R/C series auxiliary control commands listed above. In addition, the **Latch** type commands listed below provide the ability to control level type adjustments associated with the AutoDome Series of dome cameras. Note that these commands were not supported on older LTC 8500 Series (those with CPU versions under 7.0).

7.6.1 Auxiliary On

FORMAT = AUX-ON (logical camera#) (auxiliary#)

EXAMPLE: If auxiliary number 5 is to be activated on receiver/driver number 8, enter the following command:

TC8x00> AUX-ON 8 5

NOTE: No action will result if the remote device being controlled does not support the Auxiliary# value sent. Note that this command was not supported on older LTC 8500 Series (those with CPU versions under 7.0).

7.6.2 Auxiliary Off

FORMAT = AUX-OFF (logical camera#) (auxiliary#)

EXAMPLE: If auxiliary number 4 is to be deactivated on receiver/driver number 9, enter the following command:

TC8x00> AUX-OFF 9 4

NOTE: No action will result if the remote device being controlled does not support the Auxiliary# value sent. Note that this command was not supported on older LTC 8500 Series (those with CPU versions under 7.0).

7.6.3 Auxiliary Toggle

FORMAT = AUX-TGL (logical camera#) (auxiliary#)

EXAMPLE: If auxiliary number 2 is to be toggled on receiver/driver number 6, enter the following command:

TC8x00> AUX-TGL 6 2

NOTE: No action will result if the remote device being controlled does not support the Auxiliary# value sent. Note that this command was not supported on older LTC 8500 Series (those with CPU versions under 7.0).

7.6.4 Latch Auxiliary On

FORMAT = LATCH-AUX-ON (logical camera#) (auxiliary#)

EXAMPLE: If auxiliary number 5 is to be latched on receiver/driver number 8, enter the following command:

TC8x00> LATCH-AUX-ON 8 5

This command is useful for making level type adjustments on the AutoDome series of cameras.

NOTE: No action will result if the remote device being controlled does not support the Auxiliary# value sent.

NOTE: This command was not supported on older LTC 8500 Series (those with CPU versions under 7.0).

7.6.5 Latch Auxiliary Off

FORMAT = LATCH-AUX-OFF (logical camera#) (auxiliary#)

EXAMPLE: If auxiliary number 5 is to be **unlatched** on receiver/driver number 8, enter the following command:

TC8x00> LATCH-AUX-OFF 8 5

This command is useful for making level type adjustments on the AutoDome Series of cameras.

NOTE: No action will result if the remote device being controlled does not support the Auxiliary# value sent. Note that this command was not supported on older LTC 8500 Series (those with CPU versions under 7.0).

7.6.6 Cancel Auxiliary Latch

FORMAT = CANCEL-AUX-LATCH (logical camera #)

EXAMPLE: To stop operation of a **LATCH-AUX-ON** or **LATCH-AUX-OFF** command on receiver/driver number 8, enter the following command:

TC8x00> CANCEL-AUX-LATCH 8

This command will cancel a continuously operating level adjustment (started by LATCH-AUX-ON or LATCH-AUX-OFF) on an AutoDome camera.

NOTE: This command was not supported on older LTC 8500 Series (those with CPU versions under 7.0).

7.7 Variable Speed Control Commands

The following series of variable speed control commands are used to control the variable speed functions of the AutoDome Series of dome cameras. Once a variable speed command is received by the AutoDome, it will continue to operate until the **all off** or another control command is received.

FORMAT = VARSPEED_PTZ [logical camera #] [pan speed] [tilt speed] [zoom speed] [function code]

Where:

logical camera # = the logical number of the camera to be controlled.
pan speed = a number from 0 to F (hexadecimal); 0 = slowest, F = fastest.
tilt speed = a number from 0 to F (hexadecimal); 0 = slowest, F = fastest.
zoom speed = a number from 0 to 7; 0 = slowest, 7 = fastest.
function code = selected from the following table:

Function	Hex	Decimal
all off	000	0
pan right	001	1
pan left	002	2
tilt down	004	4
tilt up	008	8
zoom out	010	16
zoom in	020	32
focus near	040	64
focus far	080	128
iris close	100	256
iris open	200	512

Function codes may be added together to operate multiple functions with a single command line.

NOTE: the TC700 Series AutoDome lenses only provide two lens speeds. Speed values 0 to 4 will activate the slower speed and speed values 5 to 7 will activate the faster speed. Also note that this command is not supported on old TC8561 and TC8561A Series Receiver/Drivers. LTC 8561 Series Receiver/Driver with software **514** or higher is required.

EXAMPLE: If camera number 5 is to be panned left at maximum speed, enter the following command (hexadecimal mode shown):

TC8x00> VARSPEED_PTZ 5 F 0 0 2

8 ALARM COMMANDS

It is recommended that the following commands listed for arming/disarming only be used when the alarm response mode has been selected using the system keyboard or the SET-ALM-CONFIG command described to follow. If the system has been programmed using the **LTC 8059/00 Master Control Software for Windows** or the **LTC 8850/00 Graphical User Interface** software, the arm/disarm commands must conform exactly to the programmed monitor group alarm configurations or incorrect operations may result.

NOTE: In the default mode, the alarm number activated corresponds to a camera having the same number, i.e., alarm #1 activates camera #1. This relationship can be reassigned using the **LTC 8059/00 Master Control Software for Windows** or the **LTC 8850 Graphical User Interface** software packages so that an alarm number may refer to any camera number and even include multiple cameras (up to 4 per alarm).

Also note that the following commands will not effect the way the system responds to the alarmed camera. The way the system responds is determined by which alarm response mode is active and how the individual cameras and monitors have been armed.

8.1 Activate an Alarm

FORMAT = +ALARM (alarm#)

EXAMPLE: To activate alarm number 6, enter the following command:

TC8x00>+ALARM 6

NOTE: Before this command can be used again for the same alarm number, the –ALARM command described below must first be sent.

8.2 Deactivate an Alarm

FORMAT = –ALARM (alarm#)

EXAMPLE: To deactivate previously activated alarm number 6, enter the following command:

TC8x00>-ALARM 6

This command must always be sent to reset an existing alarm before another +ALARM command with the same alarm number is sent.

8.3 Acknowledge Monitor in Alarm

FORMAT = MON-ACK-ALARM (monitor number)

EXAMPLE: To acknowledge an alarm camera currently being displayed on alarm monitor 3, enter the following command:

TC8x00 > MON-ACK-ALARM 3

This command duplicates the function of the **Acknowledge** button on an Allegiant system keyboard. If the command is used in an inapplicable manner, an appropriate alarm related error number will be returned.

8.4 Run Alarm Sequence by Monitor Number

FORMAT = MON-ALM-RUN (monitor number)

EXAMPLE: If monitor number 2 contains a sequence of alarm cameras currently in the **Hold** mode, the alarm sequence may be run by the following command:

TC8x00 > MON-ALM-RUN 2

This command duplicates the function of the **Run** button on an Allegiant system keyboard. If an alarm sequence is already running when this command is used, the sequence will immediately advance to the next step.

8.5 Hold Alarm Sequence by Monitor Number

FORMAT = MON-ALM-HOLD (monitor number)

EXAMPLE: If monitor number 2 is currently running a sequence of cameras in alarm, the alarm sequence may be stopped by the following command:

TC8x00 > MON-ALM-HOLD 2

This command duplicates the function of the **Hold** button on an Allegiant system keyboard.

8.6 Step Alarm Sequence Forward by Monitor Number

FORMAT = MON-ALM-NEXT (monitor number)

EXAMPLE: If monitor number 2 contains a sequence of alarm cameras which was previously running in the forward direction and is now in the **Hold** mode, the alarm sequence may be advanced one step forward using the following command:

TC8x00 > MON-ALM-NEXT 2

This command duplicates the function of the **Next** button on an Allegiant system keyboard. If the alarm sequence was previously running in the reverse mode and is now in the **Hold** mode, this command will change the direction of the alarm sequence only. If the alarm sequence is currently running in the reverse direction, this command will change the direction, causing it to now run in the forward direction.

8.7 Step Alarm Sequence Backward By Monitor Number

FORMAT = MON-ALM-PREV (monitor number)

EXAMPLE: If monitor number 2 contains a sequence of alarm cameras which was previously running in the reverse direction and is now in the **Hold** mode, the alarm sequence may be advanced one step backwards, using the following command:

TC8x00 > MON-ALM-PREV 2

This command duplicates the function of the **Previous** button on an Allegiant system keyboard. If the alarm sequence was previously running in the forward mode and is now in the **Hold** mode, this command will change the direction of the alarm sequence only. If the alarm sequence is currently running in the forward direction, this command will change the direction, causing it to now run in the reverse direction.

8.8 Set System's Alarm Response Mode

FORMAT = SET-ALM-CONFIG (data)

EXAMPLE: To set the system to respond using the preconfigured **Basic** alarm response mode, enter the following command:

TC8x00 > SET-ALM-CONFIG 1

To set the system to respond using the preconfigured **Autobuild** alarm response mode, use a data value of 2. To set the system to respond using the preconfigured **Sequence** & **Display** alarm response mode, use a data value of 3. This command duplicates the functions available for selecting one of the system's preconfigured alarm response modes, using either a system keyboard (User Function 19), or the AutoSet feature available in the Allegiant PC-based configuration software package. Refer to the system main installation manual for complete details on the 3 preconfigured alarm response modes.

8.9 Arm/Disarm Alarm

FORMAT = ALARM-TBL (data) (alarm#)

This command duplicates the system keyboard's Alarm ON/OFF function. The data field must be selected from the **Binary Progression Table** (see **Section 8.11**) according to which monitors the alarm will be armed/disarmed on. Each alarm to be armed/disarmed must be entered this way. The system alarm ranges are as follows: 1–64 for LTC 8100, LTC 8200, and LTC 8300; 1–128 for LTC 8500; 1–512 for LTC 8600; 1–1024 for LTC 8800; and 1–2048 for LTC 8900 systems. Note that existing Allegiant Series alarm accessory products are only capable of supporting 1024 physical alarms on LTC 8900 systems, but up 2048 are available via an external interface using CCL commands.

For the LTC 8100, MAX-MON is 2, and MAX DATA is 3 (hex 03).

For the LTC 8200, MAX-MON is 5, and MAX DATA is 31 (hex 1F).

For the LTC 8300, MAX-MON is 6, and MAX DATA is 63 (hex 3F).

For the LTC 8500, MAX-MON is 8, and MAX DATA is 255 (hex FF).

For the LTC 8600, MAX-MON is 16, and MAX DATA is 65535 (hex FFFF).

For the LTC 8800, MAX-MON is 64, and MAX DATA is hex FFFFFFFFFFFFFFFF. Data should be entered as two separate values (most significant 32 bits, then least significant 32 bits).

For the LTC 8900, MAX-MON is 512, and MAX DATA would consist of 128 **F** hex characters! Because of this large number, the data field needs to be split into 16 separate packets, each having 32 bits. If possible, do not

include leading zeros in the individual packets, because the entire command must fit into the line capacity of 127 characters. Due to this limit, there will be certain combinations of this command that will be impossible to send.

EXAMPLE: To enable alarms on monitors 1 and 2 for alarm input 5, enter the following command:

TC8x00>ALARM-TBL 3 5

NOTE: This command only arms/disarms alarm inputs. Each system monitor must also be armed/disarmed to correspond with the alarm inputs.

There will be a short delay (typically 1 or 2 seconds) after this command is sent before the system can accept a new command.

8.10 Arm/Disarm Alarm Group

FORMAT = GROUP-ALARM-TBL (data) (alarm#)

This command is similar to the ALARM-TBL command described in the preceding section, but is used to arm/disarm Alarm Groups rather than alarm monitor numbers. Note that this command must be used carefully when working with the monitor Alarm Group alarm concept, since each system can be configured to have a single Alarm Group encompassing all system monitors, or multiple Alarm Groups, each having a different quantity of system monitors.

The data field must be selected from the **Binary Progression Table** shown in **Section 8.11**, according to which Alarm Groups will be armed/disarmed. Each alarm to be armed/disarmed must be entered this way. The system alarm ranges are as follows: 1–64 for LTC 8100, LTC8200, and LTC 8300; 1–128 for LTC 8500; 1–512 for LTC 8600; 1–1024 for LTC 8800; and 1–2048 for LTC 8900 systems. Note that existing Allegiant Series alarm accessory products are only capable of supporting 1024 physical alarms on LTC 8900 systems, but up 2048 are available via an external interface using CCL commands.

For the LTC 8100, MAX-MON is the maximum number of possible Alarm Groups which equals 2, and MAX DATA is 3 (hex 03).

For the LTC 8200, MAX-MON is the maximum number of possible Alarm Groups which equals 5, and MAX DATA is 31 (hex 1F).

For the LTC 8300, MAX-MON is the maximum number of possible Alarm Groups which equals 6, and MAX DATA is 63 (hex 3F).

For the LTC 8500, MAX-MON is the maximum number of possible Alarm Groups which equals 8, and MAX DATA is 255 (hex FF).

For the LTC 8600, MAX-MON is the maximum number of possible Alarm Groups which equals 16, and MAX DATA is 65535 (hex FFFF).

For the LTC 8800, MAX-MON is the maximum number of possible Alarm Groups which equals 64, and MAX DATA is hex FFFFFFFFFFFFFFFF. Data should be entered as two separate values (most significant 32 bits, then least significant 32 bits).

For the LTC 8900, MAX-MON is the maximum number of possible Alarm Groups which equals 512, and MAX DATA would consist of 128 **F** hex characters! Because of this large number, the data field must be split into 16 separate packets, each having 32 bits. If possible, do not include leading zeros in the individual packets, because the entire command must fit into the line capacity of 127 characters. Due to this limit, there are certain combinations of this command that will be impossible to send.

EXAMPLE: To enable alarms on Alarm Group 1 and 2 for alarm input 5, enter the following command:

TC8x00> GROUP-ALARM-TBL 3 5

NOTE: This command only arms/disarms alarm inputs. Each Alarm Group must also be armed/disarmed to correspond with the desired alarm inputs.

There is a short delay (typically 1 or 2 seconds) after this command is sent before the system can accept a new command.

8.11 Arm/Disarm Monitors as a Group

FORMAT = MON-ARM (data)

This command is similar to using the system keyboard's User Monitor ON/OFF function, but effects all monitors in the system simultaneously. The data field is selected from the **Binary Progression Table** shown below, according to which step/review monitors will be armed/disarmed. One command is structured to arm/disarm all monitors in the system at the same time. Note that this command must be used carefully when working with the Monitor Group alarm concept. Ensure that at least one Step monitor is armed for each Monitor Group that is being armed. If this is not done, no monitors will be armed in that Monitor Group. Since there can be 1 or 2 Monitor Groups in an LTC 8100, (1 to 5 in a LTC 8200, 1 to 8 in a LTC 8500, 1 to 16 in a LTC 8600, 1 to 64 in a LTC 8800, and 1 to 512 in a LTC 8900), this can become a very complex command.

For the LTC 8100, MAX-MON is 2, and MAX DATA is 3 (hex 03).

For the LTC 8200, MAX-MON is 5, and MAX DATA is 31 (hex 1F).

For the LTC 8300, MAX-MON is 6, and MAX DATA is 63 (hex 3F).

For the LTC 8500, MAX-MON is 8, and MAX DATA is 255 (hex FF).

For the LTC 8600, MAX-MON is 16, and MAX DATA is 65535 (hex FFFF).

For the LTC 8800, MAX-MON is 64, and MAX DATA is hex FFFFFFFFFFFFFFFF. Data should be entered as two separate values (most significant 32 bits, then least significant 32 bits).

For the LTC 8900, MAX-MON is 512, and MAX DATA would consist of 128 **F** hex characters! Because of this large number, the data field must be split into 16 separate packets, each having 32 bits. If possible, do not include leading zeros in the individual packets, because the entire command must fit into the line capacity of 127 characters. Due to this limit, there will be certain combinations of this command that are impossible to send.

EXAMPLE: To arm monitors 1 and 2 to respond to alarms, enter the following command:

TC8x00>MON-ARM 3

There is a short delay (typically 1 or 2 seconds) after this command is sent before the system can accept a new command.

Binary Progression Table

MONITORS TO BE ARMED								DATA	CONTENTS
MAX-MON	.	.	.	4	3	2	1		
-	.	.	.	-	-	-	-	0	All monitors disarmed
-	.	.	.	-	-	-	A	1	Monitor 1 armed
-	.	.	.	-	-	A	-	2	Monitor 2 armed
-	.	.	.	-	-	A	A	3	Monitors 1 & 2 armed
-	.	.	.	-	A	-	-	4	Monitor 3 armed
-	.	.	.	-	A	-	A	5	Monitors 1 & 3 armed
				.					
				(Continue Series)					
				.					
A	.	.	.	A	A	-	A	MAX DATA-2	Monitor 2 disarmed
A	.	.	.	A	A	A	-	MAX DATA-1	Monitor 1 disarmed
A	.	.	.	A	A	A	A	MAX DATA	All monitors armed

8.12 Arm Specific Range of Monitors

FORMAT = ARM-MONITORS (starting index monitor number) (ending index monitor number)

EXAMPLE: To arm monitors 2 through 5, enter the following command:

TC8x00> ARM-MONITORS 2 5

This command can also be used to arm a single monitor by specifying the same number as the starting monitor number and the ending monitor number. In this format, the command essentially duplicates the system keyboard's **User Monitor ON** function.

EXAMPLE: To arm only monitor 6, enter the following command:

TC8x00> ARM-MONITORS 6 6

8.13 Disarm Specific Range of Monitors

FORMAT = DISARM-MONITORS (starting index monitor number) (ending index monitor number)

EXAMPLE: To disarm monitors 3 through 7, enter the following command:

TC8x00> DISARM-MONITORS 3 7

This command can also be used to disarm a single monitor by specifying the same number as the starting monitor number and ending monitor number. In this format, the command essentially duplicates the system keyboard's **User Monitor OFF** function.

EXAMPLE: To disarm only monitor 8, enter the following command:

TC8x00> DISARM-MONITORS 8 8

8.14 Set Step & Review Alarm Monitors

FORMAT = REVIEW-MON (Review monitor #) STEP-MON (Step monitor #)

EXAMPLE: To assign monitor number 1 as a Review monitor and monitor number 2 as a Step monitor, enter the following two commands:

TC8x00>REVIEW-MON 1

TC8x00>STEP-MON 2

Any system monitor may be designated as either a Review or a Step monitor, but there must be at least 1 Step monitor in any Monitor Group. Since there can be 1 or 2 Monitor Groups in an LTC 8100 (1 to 5 in an LTC 8200, 1 to 8 in an LTC 8500, 1 to 16 in an LTC 8600, 1 to 64 in an LTC 8800 and 1 to 512 in an LTC 8900), this command must conform to the existing Monitor Group configuration if the system is to function properly. Note that the ARM/DISARM ALARM table must also be valid for the desired monitors before alarm video will be displayed. If there are no system conflicts, the assigned monitor will also be armed.

8.15 Enable Custom Alarm

FORMAT = ENABLE-CUSTOM-ALARM (data 1) (data 2)

EXAMPLE: If Custom Alarm numbers 1 through 4 are to be enabled, enter the following command:

TC8x00 > ENABLE-CUSTOM-ALARM 1 4

To enable a single alarm number, you can omit the second data value. To enable all Custom Alarms, omit both data values.

8.16 Disable Custom Alarm

FORMAT = DISABLE-CUSTOM-ALARM (data 1) (data 2)

EXAMPLE: If Custom Alarm numbers 1 through 4 are to be disabled, enter the following command:

TC8x00 > DISABLE-CUSTOM-ALARM 1 4

To disable a single alarm number, you can omit the second data value. To disable all Custom Alarms, omit both data values.

8.17 Define Alarm Input Polarity

NOTE: This command is only applicable to Allegiant LTC 8100, LTC 8200, and LTC 8300 systems.

FORMAT = __ALARM__POLARITY <data>

This command is used to configure the integral alarm inputs of the Allegiant systems to accept either normally open (default) or normally closed contacts. The **data** parameter consists of a binary progression table of **bits** that correspond to the alarm inputs. Using a binary progression table, each alarm input can be individually configured to operate as either **polarity** type. A **bit** would be set to logical **1** to designate inputs as normally closed (contact opens to activate an alarm), or logical **0** to designate inputs as the default normally open (contact closes to activate an alarm). The least significant bit represents alarm input 1. The maximum data value would depend on the Allegiant model. For LTC 8100 (alarm inputs = 8), the max value (to configure all alarms as normally closed) would be decimal 255 or hexadecimal FF; for LTC 8200 (alarm inputs = 16), max value is decimal 65535 or hexadecimal FFFF; for LTC 8300 (alarm inputs = 32), max value is decimal 4294967295 or hexadecimal FFFFFFFF.

EXAMPLE 1: Configure LTC 8100 to accept normally closed contacts for alarm inputs 1–4 and normally open contacts for alarm inputs 5–8 (shown using a decimal data parameter).

TC8x00 > __ALARM__POLARITY 15

EXAMPLE 2: Configure LTC 8100 to accept normally closed contacts for even numbered alarm inputs and normally open contacts for odd numbered alarm inputs (shown using a decimal data parameter).

TC8x00 > __ALARM__POLARITY 170

EXAMPLE 3: Configure LTC 8300 to accept normally closed contacts for even numbered alarm inputs and normally open contacts for odd numbered alarm inputs (shown using a decimal data parameter).

TC8x00 > __ALARM__POLARITY 2863311530

Issuing the command without specifying a data value will **display** the current alarm input configuration. Issuing the command on an incompatible Allegiant system will result in the response **UNIMPLEMENTED**.

8.18 Define Alarm Relay Output Polarity

NOTE: This command is only applicable to Allegiant LTC 8100, LTC 8200, and LTC 8300 systems.

FORMAT = __RELAY__POLARITY <data>

This command is used to configure the alarm relay outputs as either normally open (close on alarm) or normally closed. The **data** parameter consists of a binary progression table of **bits** that correspond to the relays. Using a binary progression table, each alarm relay can be individually configured to operate as either **polarity** type. A **bit** would be set to logical **1** to designate relays as normally closed (relay opens on an alarm condition), or logical **0** to designate relays as default normally open (relay closes on an alarm condition). The least significant bit represents alarm relay 1. The maximum data value would depend on the Allegiant model. For LTC 8100 (alarm relays = 2), the max value (to configure both relays as normally closed) would be decimal/hexadecimal 3; for LTC 8200 (alarm relays = 5), max value is decimal 31 or hexadecimal 1F; for LTC 8300 (alarm relays = 6), max value is decimal 63 or hexadecimal 3F.

EXAMPLE 1: Configure LTC 8100 to generate normally closed contacts for alarm relay 1 and normally open contacts for relay 2 (shown using a decimal data parameter).

TC8x00 > __RELAY__POLARITY 1

EXAMPLE 2: Configure LTC 8300 to generate normally closed contacts for relays 1, 2, and 3 and normally open contacts for alarm relays 4 and 5 (shown using a decimal data parameter).

TC8x00 > __RELAY__POLARITY 7

9 SYSTEM STATUS COMMANDS

Status commands are useful for determining various real time conditions of the switching system. After any of the commands listed below are sent, the Allegiant responds with an echo of the status command, the **NAK** (15 hex) character (except on all systems prior to CPU software revision number 5.1, where a space character (20 hex) is sent instead), the data bytes as explained in the following, and a checksum byte (the sum of the data bytes module 256). The prompt (TC8x00>) is returned after the status response has been completed. Note that the examples below show the responses after the command has been echoed by the system.

9.1 Alarm Status

This command is used to determine the alarm status of the system.

FORMAT = ALM-STATUS

RESULT: The number of returned data bytes corresponds to the number of bits required to represent the total number of alarms in the relevant system. For LTC 8100, LTC 8200, and LTC 8300 systems, 8 data bytes are required to represent the 64 alarms in the system. LTC 8500 systems respond with 16 data bytes (128 alarm numbers). LTC 8600 systems respond with 64 data bytes (512 alarm numbers). LTC 8800 systems respond with 128 data bytes (1024 alarm numbers). The LTC 8900 responds with 256 data bytes (2048 alarm numbers). Bits which are **set** represent active alarms. For each byte, the LSB represents the lowest alarm number.

EXAMPLE: For an LTC 8300 with alarm numbers 2, 9, and 42 in alarm, the status response (shown in hex) is as follows: 15 02 01 00 00 00 02 00 00 05.

9.2 Crosspoint Status

This command is used to determine the camera-to-monitor switching status.

FORMAT = MON-STATUS

RESULT: The system responds for each monitor in the system with 2 data bytes. The first data byte pair corresponds to the index camera number switched to monitor 1. The first byte of the pair represents the high order part of the index camera number, and the second byte of the pair corresponds to the low order part of the index camera number. Camera numbers are **index** numbers starting at zero (LTC 8100 = 0 to 263, LTC 8200 = 0 to 271, LTC 8300 = 0 to 287, LTC 8500 = 0 to 319, LTC 8600 = 0 to 1151, LTC 8800 = 0 to 2303, LTC 8900 0 to 4607).

EXAMPLE: For an LTC 8600 with cameras 1, 10, 25, 36, 40, 52, 58, 64, 80, 85, 93, 99, 102, 115, 123, and 128 on monitors 1 through 16 respectively, the status response (shown in hex) is as follows: 15 00 00 00 09 00 18 00 23 00 27 00 33 00 39 00 3F 00 4F 00 54 00 5C 00 62 00 65 00 72 00 7A 00 7F 47.

9.3 Sequence Status

This command reports information concerning sequences loaded on the system monitors.

FORMAT = SEQ-STATUS

RESULT: The response contains information on both the monitor alarm status of the system and the sequence status. The alarm status data bytes precede the data bytes for the sequence information.

The alarm status data is sent as a bitmap of the monitors in alarm. Each byte of data represents up to 8 monitors. A single data byte is sent for LTC 8100, LTC 8200, LTC 8300, and LTC 8500 systems; 2 bytes for LTC 8600 systems; 8 bytes for LTC 8800 systems; and 64 bytes for LTC 8900 systems. The least significant bit (LSB) represents the lowest monitor number. The first byte corresponds to monitors 1 to 8. Bits which are set represent monitors in alarm. If a monitor is currently in alarm, the sequence data corresponding to that monitor is not valid during the alarm condition.

The sequence information is sent as a packet of five data bytes for each monitor in the system. There will be 2 data packets for LTC 8100 systems, 5 data packets for LTC 8200 systems, 6 data packets for LTC 8300 systems, 8 for LTC 8500 systems, 16 for LTC 8600 systems, 64 for LTC 8800 systems, and 512 for LTC 8900 systems. The content of the five data bytes is generated as follows:

The first byte of the packet contains the sequence number (0 to 255 for LTC 8900, 0 to 59 for all others). If no sequence is loaded on the monitor, this value contains 255 (FF hex), and the data contained in the following bytes is invalid and should be ignored.

The second byte of the packet contains the index number of the user (0 to 127 for LTC 8900, 0 to 31 for all others) who loaded the sequence. The value 255 (FF hex) may be sent if no sequence is loaded.

The third byte of the packet contains the number of the keyboard (0 to 1 for LTC 8100 systems, 0 to 3 for LTC 8200 and LTC 8300 systems, 0 to 7 for LTC 8500 systems, 0 to 15 for LTC 8600 systems, 0 to 31 for LTC 8800 systems, and 0 to 63 for LTC 8900 systems) which was used to load the sequence. If a system keyboard was not used or if no sequence is loaded, the value is considered undefined and will typically contain 255 (FF hex).

The fourth byte of the packet contains the status of the sequence. If no sequence is loaded, the value is considered undefined and should be ignored. In a sequence containing multiple monitors, this data is valid only for the lowest monitor number programmed in the sequence. The data is generated as follows:

0 = Sequence in hold backwards.
1 = Sequence in run backwards.
2 = Sequence in hold forwards.
3 = Sequence in run forwards.

The fifth byte of the packet contains the number of the lowest monitor number (monitor 1 = 0) in a sequence containing multiple monitors. This data is necessary to determine the correct sequence status as indicated above. The value 255 (FF hex) may be sent if no sequence is loaded. Since a single byte is used for this purpose, the status for only the first 256 monitors (out of a possible 512) are available in LTC 8900 systems.

EXAMPLE (For system not in alarm): For an LTC 8600 with a forward running sequence number 34 loaded onto and programmed only for monitor 2 by User 3 using keyboard number 4, the response (shown in hex) will be as follows: 15 00 00 FF FF FF 02 FF 21 02 03 03 01 FF FF FF 02 FF FF FF FF 02 FF FF FF FF 02 FF FF FF FF 02 FF FF FF FF 02 FF FF FF FF 02 FF FF FF FF 02 FF FF FF FF 02 FF FF FF FF 02 FF FF FF FF 02 FF FF FF FF 02 FF FF FF FF 02 FF FF FF FF 02 FF FF FF FF 02 FF FF FF FF 02 FF FF FF FF 02 FF 0C.

9.4 Keyboard Status

This command is used to determine the current status of the various system keyboards.

FORMAT = KBD-STATUS

RESULT: The system responds for each keyboard in the system with a five byte packet of data. There are 2 data packets for LTC 8100 systems, 4 data packets for LTC 8200 and LTC 8300 systems, 8 data packets for LTC 8500 systems, 16 for LTC 8600 systems, 32 for LTC 8800 systems, and 64 for LTC 8900 systems. The first packet represents data for keyboard 1, the second for keyboard 2, etc.

The first byte of each packet contains the monitor number (monitor 1 starts at zero) currently being controlled by the keyboard. Since a single byte is used for this purpose, the status for only the first 256 monitors (out of a possible 512) are available in LTC 8900 systems.

The second byte of the packet contains the index user number (User 1 = zero) currently assigned to the keyboard.

The third byte of the packet represents **log-on** and **installed** status. Bit 0 of the third byte represents the log-on condition. If set, the keyboard is currently **logged-on**; if 0, all other information is invalid. Bit 6 of the third byte represents the **installed** status. If set, the keyboard is considered **installed** (non-installed keyboards are not polled by the system); if 0, all other information is invalid.

The fourth byte of the packet is generated as follows:

Bit 7 is set whenever the logged-in operator is controlling a remote (receiver/driver) on systems containing CPU revision level 5.2 or higher. In systems prior to level 5.2, this bit is always reset.

Bits 0 to 6 contain the high order index camera number data.

The fifth byte of the packet contains the low order index camera number data (camera 1 = zero).

EXAMPLE: For an LTC 8500 system with the following conditions:

1. All keyboards are installed and logged-in.
2. User 1 is logged-in to keyboard 1, User 2 to keyboard 2, etc.
3. Keyboard 1 is controlling monitor 1 which displayed camera 1, keyboard 2 is controlling monitor 2 and camera 2, etc.

The status response (shown in hex) is as follows: 15 00 00 41 00 00 01 01 41 00 01 02 02 41 00 02 03 03 41 00 03 04 04 41 00 04 05 05 41 00 05 06 06 41 00 06 07 07 41 00 07 5C.

9.5 Monitor Status

This command reports the information contained in the status section of the text overlay displayed on the system monitor screens.

FORMAT = MON-STATUS-LINE

RESULT: The system responds with a 3 byte packet for each system monitor. The LTC 8100 contains a total of 6 data bytes (2 data packets plus checksum); the LTC 8200 contains a total of 15 data bytes (5 data packets); the LTC 8300 contains a total of 18 data bytes (6 data packets); the LTC 8500 contains a total of 24 data bytes (8 data packets); the LTC 8600 has 48 data bytes (16 data packets); the LTC 8800 has 192 (64 data packets); and the LTC 8900 has 1536 data bytes (512 data packets). The first packet corresponds to the status of monitor 1.

NOTE: Certain bytes of this command are not valid in LTC 8900 systems having sequence numbers greater than 63.

The first byte of the packet is generated as follows:

If bit 7 (the most significant bit) is set, the remaining bits represent an error number being displayed. Current error numbers range from 1 to 96. A complete listing of the error numbers and their meanings can be found in the **Allegiant Series Installation and Operating Instruction** manual.

If bit 7 is clear and bit 2 is set, the remaining bits represent the number of a user who locked a monitor or a remote. This is displayed on the monitor text overlay immediately after either error 3 (remote locked) or error 4 (monitor locked) is displayed, occurring whenever someone unsuccessfully attempts to access a locked monitor or remote. The system first displays the error number for a few seconds, then the number of the user who locked the device. To translate the value of the status byte into the user number (when bit 7 is clear and bit 2 is set), use the following formula: user = (data div 8) * 4 + (data mod 4) + 1.

If both bits 7 and 2 are clear, bits 4 to 6 represent the alarm switcher state as follows:

40 (hex) = No alarm sequence.
00 (hex) = Alarm sequence stopped backwards.
10 (hex) = Alarm sequence running backwards.
20 (hex) = Alarm sequence stopped forwards.
30 (hex) = Alarm sequence running forwards.

If both bits 7 and 2 are clear, bit 1 is set if someone has locked the monitor. Bit 0 is set if someone has locked the current remote device.

The second byte of the packet is generated as follows:

Bits 6 and 7 indicate the sequence type (invalid in LTC 8900 systems where sequence is greater than 99):
00 (hex) = No sequence loaded.
40 (hex) = Absolute type sequence loaded.
80 (hex) = Relative type sequence loaded.
Bits 4 and 5 indicate the monitor armed status:
00 (hex) = Monitor not armed.
10 (hex) = Monitor armed as Step type monitor.
20 (hex) = Monitor armed as Display type monitor.
30 (hex) = Data temporarily unavailable (alarm response currently being updated).
Bit 3 indicates the current camera armed status:
00 (hex) = Camera not armed.
08 (hex) = Camera armed.
Bits 0 to 2 indicate the switching sequence state:
04 (hex) = No sequence loaded.
00 (hex) = Sequence stopped backwards.
01 (hex) = Sequence running backwards.
02 (hex) = Sequence stopped forwards.
03 (hex) = Sequence running forwards.

The third byte of the packet is generated as follows (invalid in LTC 8900 systems where sequence is greater than 63):

Bits 6 and 7 indicate the current alarm status:
00 (hex) = Monitor not in alarm.
40 (hex) = Current camera being displayed in alarm.
80 (hex) = Monitor is in alarm, current camera is not in alarm.
Bits 0 to 5 indicate the sequence number:
0 = No sequence loaded.
Not 0 = Represents loaded sequence number (1 to 60).

EXAMPLE: For an LTC 8500 system with the following conditions:

1. Monitor 1 is running Absolute sequence number 5 in the forward direction, is not armed for alarms, and is displaying a camera with a remote lock.
2. Monitor 2 is locked and is running an Alarm sequence in the forward direction.
3. All other system monitors have no sequences, are not armed for alarms, and have no locks.

The response will beas follows: 15 41 43 05 32 1C 40 40 04 00 40 04 00 40 04 00 40 04 00 40 04 00 40 04 00 AF.

10 VIDEO DETECTION COMMANDS

NOTE: The following applies to LTC 8100, LTC 8200, LTC 8300, LTC 8600, LTC 8800, and LTC 8900 Systems only.

The LTC 8100, LTC 8200, LTC 8300, LTC 8600, LTC 8800, and LTC 8900 systems have the capability of detecting and monitoring the presence of the video signals applied to their inputs. The Video Detection commands listed below provide a means to (a) Automatically scan the inputs, identify those inputs presently receiving video, and begin monitoring them; (b) Individually enable or disable the monitoring of a specific input; (c) Interrogate the current detection status; and (d) Assign which monitors and keyboards will respond to video loss events.

10.1 Execute Automatic Video Scan

To execute an automatic scan of all video inputs to identify those inputs receiving video, enter the following:

TC8x00> AUTO-INSTALL

After this command has been executed, the system begins monitoring the status of all inputs which were found to have video present. When a monitored input loses or regains video, the system will print a message on the printer.

10.2 Enable/Disable Video Monitoring of Input

FORMAT = INSTALL-CAM (input) (data)

A single video input may be enabled or disabled for video loss monitoring. In the command above, the camera's physical video BNC number is entered as the **input** value. To enable the input to be monitored, the value 1 (or any non-zero value) is entered for the **data**. To disable the input from being monitored, enter a 0 for the **data** value. Legal physical **input** numbers are 1 to 8 for an LTC 8100, 1 to 16 for an LTC 8200, 1 to 32 for an LTC 8300, 1 to 128 for an LTC 8600, 1 to 256 for an LTC 8800, and 1 to 4096 for an LTC 8900.

EXAMPLE: To enable system camera number 5 (actually physical BNC number 5) to be monitored for loss of its video signal, enter the following command:

TC8x00> INSTALL-CAM 5 1

10.3 Disable Video Monitoring of All Inputs

To disable video loss monitoring of all of the Allegiant's video inputs, enter the following command:

TC8x00 > UNINSTALL-ALL

The Allegiant will no longer respond to video loss events or send messages to its printer port when video signals are lost.

10.4 Video Detection Status

This feature is used to interrogate the system to determine the current video input status. The status data indicates which inputs are receiving video signals and which inputs are being monitored for video loss. (The system always looks for video on every input, but only **monitored** inputs will cause the system to generate a warning message when video is lost or regained.) To obtain the latest status report, enter the command as follows:

TC8x00> VIDEO-STATUS

After the command is echoed back to the console, the Allegiant sends the **NAK** (15 hex) character (except on systems prior to CPU software revision number 5.1, where a space character (20 hex) is sent instead), followed by the video status data, and a checksum. The checksum is an 8-bit sum of the video status data bytes. The number of data bytes will be equal to the number of local physical camera inputs (8 for an LTC 8100, 16 for an LTC 8200, 32 for an LTC 8300, 128 for an LTC 8600, 256 for an LTC 8800, and 4096 for an LTC 8900) divided by 4. Each byte contains status information for four cameras in the following format:

I3 V3 I2 V2 I1 V1 I0 V0

V0 is bit 0 (the least significant bit); I3 is bit 7 (the most significant). V0 will be 1 if the first camera represented in this byte has video present. I0 will be 1 if system monitoring of the camera input has been enabled. V0 is valid regardless of the value of I0. Subsequent data bytes will each contain data for 4 cameras in the same fashion until status information is received for all inputs.

10.5 Enable/Disable Monitors for Video Loss Events

When a system monitor is enabled for video loss response, an internal raster generator displays the on-screen number/title for the camera channel which has lost its video input signal.

FORMAT = MON-VIDLOSS-RESPONSE (monitor bitmap group) (secondary monitor bitmap group)

EXAMPLE: To enable video loss response for system monitor numbers 1, 33, and 34 in an LTC 8800 system (64 monitor capacity), enter the following command:

TC8x00 > MON-VIDLOSS-RESPONSE 3 1

The first **monitor bitmap group** value is sufficient to cover the monitor numbers associated with LTC 8100, LTC 8200, LTC 8300, LTC 8500, and LTC 8600 systems (16 monitors maximum). For LTC 8800 and LTC 8900 systems, the first group value applies to the most significant 32 system monitors. For LTC 8800 systems (64 monitor capacity) a **secondary monitor bitmap group** which would apply to system monitors 1 to 32 is also necessary. For LTC 8900 systems (512 monitor capacity), a total of 16 monitor group bitmap values must be specified. Each **bit** in the bitmap group corresponds to a system monitor and must be set to **true** (logical 1) to enable responses or **false** (logical 0) to disable responses to video loss events.

10.6 Enable/Disable Allegiant Keyboard for Video Loss Events

When a system keyboard is enabled for video loss response, it generates a single beep whenever a video loss event occurs in the Allegiant system.

FORMAT = KBD-VIDLOSS-RESPONSE (keyboard bitmap group) (secondary keyboard bitmap group)

EXAMPLE: To enable video loss response for system keyboard numbers 1, 2, and 3 in an LTC 8500 system (8 keyboard capacity), enter the following command:

TC8x00 > KBD-VIDLOSS-RESPONSE 7

The first **keyboard bitmap group** value is sufficient to cover the keyboard numbers associated with LTC 8100, LTC 8200, LTC 8300, LTC 8500 and LTC 8600 systems (16 keyboards maximum). For LTC 8800 and LTC 8900 systems (64 keyboard capacity), the first group value applies to the most significant 32 system keyboards. The **secondary keyboard bitmap group** applies to system keyboards 1 to 32 in LTC 8800 and LTC 8900 systems. Each **bit** in the bitmap group corresponds to a system keyboard and must be set to **true** (logical 1) to enable responses or **false** (logical 0) to disable responses to video loss events.

11 ALLEGIANT COAXIAL TRANSMISSION SYSTEM (ACTS) COMMANDS

The ACTS commands listed below apply only to Allegiant systems which are currently being used in conjunction with the LTC 8590 Series Allegiant CTS hardware products. Since the ACTS Series were discontinued in 2001, there is no need to support these commands in new system interfaces.

11.1 Close ACTS Remote Module Relay

FORMAT = CTS-CLOSE-RELAY (logical camera#) (relay#)

EXAMPLE: To close relay 1 associated with camera 3 on the LTC 8598/x0 ACTS Remote Module, send the following command:

TC8x00 > CTS-CLOSE-RELAY 3 1

Although valid relay numbers range from 1 to 4, current LTC 8589 hardware provides 2 relays only.

11.2 Open ACTS Remote Module Relay

FORMAT = CTS-OPEN-RELAY (logical camera#) (relay#)

EXAMPLE: To open relay 2 associated with camera 4 on the LTC 8598/x0 ACTS Remote Module, send the following command:

TC8x00 > CTS-OPEN-RELAY 4 2

Although valid relay numbers range from 1 to 4, current LTC 8589 hardware provides 2 relays only.

11.3 Toggle ACTS Remote Module Relay

FORMAT = CTS-TOGGLE-RELAY (logical camera#) (relay#)

EXAMPLE: To toggle (close if opened; open if closed) the relay 1 associated with camera 3 on the LTC 8598/x0 ACTS Remote Module, send the following command:

TC8x00 > CTS-TOGGLE-RELAY 3 1

Although valid relay numbers range from 1 to 4, current LTC 8589 hardware provides 2 relays only.

11.4 Enable/Disable ACTS Audio Group

FORMAT = CTS-AUDIO-GROUP (logical audio group#)

EXAMPLE: To enable audio group 1, send the following command:

TC8x00 > CTS- AUDIO-GROUP 1

Valid audio group numbers range from 1 to 9999. To disable the currently active audio group, send a **0** for the **logical audio group#**. To determine which group is currently active, do not send the numeric parameter. The Allegiant responds with the number of the currently active audio group. If no audio groups currently exist in the system, this command has no effect.

11.5 Enable/Disable ACTS Audio Following on Monitor

FORMAT = CTS-AUDIO-FOLLOWING (monitor#) (data1)

EXAMPLE: To enable audio following on system monitor number 5, send the following command:

TC8x00 > CTS-AUDIO-FOLLOWING 5 1

The range of valid monitor numbers depends on the Allegiant model. To disable audio following, change **data1** to a **0**. To determine if audio following is enabled for a monitor, do not send the data1 parameter. The Allegiant will respond with a **1** if the monitor is enabled, or a **0** if the monitor is not enabled for audio following. If the system is not configured for ACTS operation, this command has no effect.

11.6 Specify ACTS Interface Port

FORMAT = _CTS_PORT (data1)

EXAMPLE: To configure the Allegiant's **CONSOLE** port to communicate with an LTC 8590 Series Main Controller, send the following command:

TC8x00 > _CTS_PORT 1

Valid port numbers for **data1** are as follows:

0 = no ACTS unit connected

1 = CONSOLE

2 = Printer

3 = Alarm

4 = comm1

5 = comm2

12 ON-SCREEN DISPLAY COMMANDS

12.1 Set Time Format

To set the time format to be displayed in either the 12 or 24 hour mode, enter one of the following:

TC8x00>12HR (for 12 hour AM/PM display)

TC8x00>24HR (for 24 hour display)

12.2 Set Date Format

To set the date to be displayed in any one of 3 formats, enter one of the following:

TC8x00>STANDARD-DF (for day/month/year format)

TC8x00>US-DF (for month/day/year format)

TC8x00>ASIAN-DF (for year/month/day format)

12.3 Set Camera Title

FORMAT = CAM-TITLE "ABCDEFGHIJKLMNOP" (index camera#)

EXAMPLE: To program the title LOADING DOCK for camera number 6, enter the following command:

TC8x00> CAM-TITLE "LOADING DOCK" 6

NOTE: The title may contain a maximum of 16 characters (including spaces). This command is suitable for use with standard PC keyboard characters. To utilize the Allegiant's **extended** character set, the CAM-XTITLE command (explained below) must be used. Since the camera title is stored in nonvolatile memory, there will be a short delay (typically 1 or 2 seconds) after this command is sent before the system can accept a new command.

12.4 Set *Extended Character* Camera Title

FORMAT = CAM-XTITLE (index camera#) (character value 1) . . . . . (character value 16)

EXAMPLE: To program a title for index camera number 9 that will consist of **extended** Allegiant characters (character values shown are examples only), enter the following command:

TC8x00 > CAM-XTITLE 9 1234 902 500 1586 290

The values to use for the extended characters can be obtained from the Allegiant Character ROM tables found in the Allegiant's Installation and Operating Instruction manual. A maximum of 16 **single width** extended characters can be entered for each camera. In many instances, extended Allegiant characters are comprised of **double width** characters. For **double width** characters, the same value must be entered in consecutive positions. If double width characters are used, the first double width character must begin in an odd field (i.e., 1st character, 3rd character, 11th character, etc.). If less than 16 characters are entered, space characters are automatically appended to the title.

12.5 Set Monitor Title

FORMAT = PUT.MSG "ABCDEFGHIJKL" (monitor#)

EXAMPLE: To enter the title MONITOR #3 for monitor number 3, enter the following command:

TC8x00>PUT.MSG "MONITOR #3" 3

The title may contain a maximum of 12 characters (spaces included). Also note that the specific monitor must have the monitor message feature enabled. This must be selected by either using the **MON-MSG** command listed below or through the USER function using the system keyboard. Refer to the system operation manual for further instructions on USER function 5 procedure. Since the monitor title is stored in nonvolatile memory, there will be a short delay (typically 1 or 2 seconds) after this command is sent before the system can accept a new command.

12.6 Select Monitor Title Option

FORMAT = MON-MSG (monitor#)

EXAMPLE: To select the monitor title option instead of the monitor status display for monitor number 3, enter the following command:

TC8x00>MON-MSG 3

This command duplicates the USER function 5 using a system keyboard.

12.7 Select Monitor Status Option

FORMAT = MON-STAT (monitor#)

EXAMPLE: To select the monitor status option instead of the monitor title display for monitor number 3, enter the following command:

TC8x00>MON-STAT 3

This command duplicates the USER function 5 using a system keyboard.

12.8 Enable On-screen Controllable Camera Indicator

FORMAT = _CAMERA_CONTROL_STATUS (data)

EXAMPLE: To enable the on-screen display of the Allegiant's controllable camera indicator, enter the following command:

TC8x00 > _CAMERA_CONTROL_STATUS 1

To disable the display of the indicator character, send the command with a data value of 0 (zero). The indicator character appears in the monitor status area of the on-screen display for cameras which have been configured as **controllable**. Cameras may be designated as **controllable** using either the CAMERA_CONTROLLABLE command (described below), the **Master Control Software for Windows®**, the **Allegiant GUI** software package, or via Allegiant keyboard User Function 35.

This command utilizes an on-screen character which may not be available if the system was purchased with a custom character set. Under these circumstances, an incorrect character may be displayed.

12.9 Designate Camera as Controllable

FORMAT = CAMERA_CONTROLLABLE (index camera number) (data)

EXAMPLE: To designate Allegiant camera number 5 as a **controllable** camera, enter the following command:

TC8x00 > CAMERA_CONTROLLABLE 5 1

This command is used to designate which system cameras are equipped with pan/tilt/zoom functions. Cameras which are designated as **controllable** will display an on-screen indicator in the monitor status area of the system monitors. To remove the designation for a controllable camera, send the command with a data value of **0** (zero). The controllable camera on-screen indicator feature must also be enabled (see CAMERA_CONTROL_STATUS command) to view the special indicator character. Cameras may also be designated as **controllable** using either the _CAMERA_CONTROL_STATUS command (described above), the **Master Control Software for Windows®**, the **Allegiant GUI** software package, or via the Allegiant keyboard User Function 35.

This command utilizes an on-screen character which may not be available if the system was purchased with a custom character set. Under these circumstances, an incorrect character may be displayed.

12.10 Set Monitor Overlay Position

This command sets the position of the overlay information on a system monitor. The x-data value ranges from 0 (far left of screen) to 7 (far right of screen). The y-data value ranges from 0 (top of screen) to 15 (bottom of screen). Valid ranges for monitor numbers are LTC 8300 = 6, LTC 8500 = 8, LTC 8600 = 16, LTC 8800 = 64, and LTC 8900 = 256.

FORMAT = MON-OVERLAY-POS (monitor#) (X-data) (Y-data)

EXAMPLE: To position the overlay information on monitor number 1 to a center screen setting, enter the following command:

TC8x00>MON-OVERLAY-POS 1 2 5

12.11 Enable/Disable Monitor Overlay

This command determines which sections of the overlay information will be displayed on a system monitor. The **data1** value determines if the camera number, titles, and status information will be displayed. The **data2** value determines if time and data information will be displayed. Enter a **1** in the appropriate position if the information is to be displayed or a **0** for it to be disabled. Valid ranges for monitor numbers are LTC 8300 = 6, LTC 8500 = 8, LTC 8600 = 16, LTC 8800 = 64, and LTC 8900 = 256. Currently, the LTC 8500 system does not support the selection to display time/date only (data1=0, data2=1).

FORMAT = MON-OVL-ENABLE (monitor#) (data1) (data2)

EXAMPLE: To set the overlay information on monitor number 1 to display time and data information only, enter the following command:

TC8x00>MON-OVL-ENABLE 1 0 1

12.12 Set Monitor Overlay Brightness

This command sets the white brightness of a monitor's overlay information. The data value ranges from 0 (full brightness) to 3 (dimmest setting). Valid ranges for monitor numbers are LTC 8300 = 6, LTC 8500 = 8, LTC 8600 = 16, LTC 8800 = 64, and LTC 8900 = 256.

FORMAT = MON-BRIGHTNESS (monitor#) (data)

EXAMPLE: To set the overlay information on monitor number 1 to its brightest setting, enter the following command:

TC8x00>MON-BRIGHTNESS 1 0

12.13 Monitor Message Override

This command provides a means to *temporarily* override the normal monitor/status overlay section of a system's monitor to display a 12 character message. The message will be displayed until the system is reset (either via the reset system command or via an AC power off/on cycle) or by issuing the command without the text field. Since messages sent using this command are stored in *temporary* memory, they can be changed frequently and will update on the displays more quickly than using the **PUT-MSG** monitor title command described earlier. The System monitor(s) must be set to their Monitor Titles (rather than Status displays) option for this feature to operate (see also MON-MSG command described above). Valid ranges for monitor numbers are LTC 8300 = 5, LTC 8500 = 8, LTC 8600 = 16, LTC 8800 = 64, and LTC 8900 = 256.

FORMAT = MON-MSG-OVERRIDE (monitor#) "ABCDEFGHIJKL"

EXAMPLE: To override the standard monitor message on monitor number 1, enter the following command:

TC8x00>MON-MSG-OVERRIDE 1 "TEST MESSAGE"

NOTE: The **Monitor Title** overlay option must be active for these messages to be displayed.

12.14 Override Top Line of On-screen Display

This command is similar to the MON-MSG-OVERRIDE command described above. With this command, the top left side of the normal on-screen title display can be replaced (the time display is not affected). Since this command is also stored in *temporary* memory, it may be changed frequently and has no update delay associated with it. Up to 16 characters (15 for LTC 8500 systems) may be included in the message.

FORMAT = TOP-TITLE-OVERRIDE (monitor#) "16 character max"

EXAMPLE: To display a special message in the top line of the on-screen text, use the following command:

TC8x00 > TOP-TITLE-OVERRIDE 1 "This is a sample"

To return the title to its normal display mode, the command can be sent again without specifying the text parameter, or the system can be reset (power off/on). The left side of the top line of the on-screen text can be blanked out completely by sending this command with no text between the quotes.

12.15 Override Bottom Line of On-screen Display

This command is similar to the TOP-TITLE-OVERRIDE command described above. With this command, the bottom left side of the normal on-screen title display can be replaced (the date display is not affected). Since this command is also stored in *temporary* memory, it may be changed frequently and has no update delay associated with it. Up to 16 characters (15 for LTC 8500 systems) may be included in the message.

FORMAT = BOTTOM-TITLE-OVERRIDE (monitor#) "16 character max"

EXAMPLE: To display a special message in the bottom line of the on-screen text, use the following command:

TC8x00 > BOTTOM-TITLE-OVERRIDE 1 "This is a sample"

To return the title to its normal display mode, the command can be sent again without specifying the text parameter, or the system can be reset (power off/on). The left side of the bottom line of the on-screen text can be blanked out completely by sending this command with no text between the quotes.

12.16 Broadcast Message

To broadcast a temporary message (default time = 10 seconds) of up to 24 characters (12 characters for LTC 8500 systems) in length to ALL monitors, enter the following command:

TC8500>BROADCAST “ABCDEFGHIJKL”

TC8x00>BROADCAST “ABCDEFGHIJKLMNOPQRSTUVWX”

12.17 Enable Video Loss Raster Generator

This command controls the internal raster generator which is used in conjunction with the system’s video loss message feature. It is only valid on LTC 8300, LTC 8600, LTC 8800, and LTC 8900 systems.

TC8x00>_VIDLOSS_SYNC_GEN 1

To disable the raster generator, change the numeric value to zero

12.18 Set Raster Format

The LTC 8300, LTC 8600, LTC 8800, and LTC 8900 systems contain an integral raster generator which is used in conjunction with the system’s video loss message feature. The raster format of this internal generator should be set to match the type of signals being used in the system (either NTSC or PAL). Normally, this setting is configured at the factory and should never require attention. In the unlikely event that the format must be changed, the following command can be used to set the desired format to NTSC mode:

TC8x00> _VIDEO_FORMAT 1

To set the format to PAL mode, change the numeric value to zero.

13 SYSTEM COMMANDS

13.1 Request System Software Revision Number

To request the software revision information of the system, enter the following command:

TC8x00>REVISION

The system will respond with two sets of numbers on the same line that the command was entered. The first number will represent the current CPU operating level of the system. The second number (displayed in parenthesis) is an internal number used by the Allegiant PC-based Software packages to determine version compatibility.

13.2 Request Camera Hash Value

Logical camera numbers being used in sequences programmed by an external computing device must match those programmed in the Allegiant system. Using system default settings, this would always be the case. In situations where the system’s logical camera numbers have been changed, a problem will occur. To ensure that this situation doesn’t occur, a **camera hash** value is included as part of any sequence download. Information on how to calculate and use the camera hash value can be found in the Sequence Functions section of this manual. If necessary, the command below can be used to obtain the current value directly from an operating system. Enter the following command to request the camera hash value:

TC8x00>CAMERA-HASH

13.3 Set Hexadecimal Mode

If numeric values are to be entered in hexadecimal format, enter the command as follows:

TC8x00>HEX

13.4 Set Decimal Mode

If numeric values are to be entered in decimal format, enter the command as follows:

TC8x00>DECIMAL

13.5 Set Time

To set the time in the system, enter the time in a 24 hour format in the form shown below:

TC8x00>!TIME (hour) (minute) (second)

EXAMPLE: To set the time for 1:00 PM, enter the following command:

TC8x00>!TIME 13 0 0

The updated time will then be displayed on all monitors.

13.6 Display Time

To display the time on the current output device, issue the following command:

TC8x00>TIME

03:14:34 (system time will be displayed)

13.7 Set Date

To set the date in the system, enter the date in the following format:

TC8x00>!DATE (month) (day) (year)

EXAMPLE: To set the date for June 4, 1989, enter the following command:

TC8x00>!DATE 6 4 89

The updated date will then be displayed on all monitors.

13.8 Display Date

To display the date on the current output device, issue the following command:

TC8x00>DATE

03-09-89 (system date displayed)

13.9 Display Date and Time

To display the system date using a 4-digit year format along with the system time in a 24 hour format, issue the following command:

TC8x00 > DATE-TIME

Fri 2 Jul 1999 13:08:12 (system date and time is displayed)

13.10 Send Message from Biphase Port

This command is used to send a single text message out the Allegiant's biphase control code port. This can be a powerful feature when used in Allegiant systems configured to operate in a Master/Satellite configuration. Since a biphase control code data line must be connected to each remote system in a Satellite configuration, this becomes a convenient method for sending CCL commands from the Master system to the remote Satellite systems. Note that it is not necessary to include a carriage return character at the end of the message text because one is automatically appended to the command.

FORMAT = _SEND_SAT (Satellite address - 1) "message"

EXAMPLE: To generate alarm number 2 in a remote Satellite system having address 1, send the alarm CCL command to the remote system using the following command:

TC8x00 > _SEND_SAT 0 "+ALARM 2"

When sending commands to Satellite systems that include numeric data, it is recommended to use hexadecimal numeric values. System generated Satellite commands include the **hex** numeric base command, so the Satellite system will normally be in the hexadecimal base mode. If decimal values must be used, include the **decimal** numeric base specifier (**0m**) to implicitly identify decimal values as shown below:

EXAMPLE: To generate the (decimal) alarm number 14 in a remote Satellite system having address 1, send the alarm CCL command to the remote system using the following command:

TC8x00 > _SEND_SAT 0 "+ALARM 0m14"

A special case exists when the Master system is sending a command to generate a CCL Broadcast message at a Satellite location. In this case, the message portion of the command must be enclosed in double quotes. For example, to have the Satellite system broadcast "hello" to all of its system monitors, the command from the Master would be:

TC8x00 > _SEND_SAT 0 "Broadcast ""hello"" "

If an Allegiant system is combined with a stand-alone LTC 8780 Series Data Converter Unit, this command provides the capability to generate customized text strings for controlling external RS-232 capable devices which support the use of text commands.

13.11 Send Data Packet from Biphase Port

This command is similar to the **_SEND_SAT** command described previously except it allows you to send generalized numeric values and/or ASCII strings. If multiple data parameters are sent, they are automatically concatenated into a single data packet when the command is issued.

FORMAT = _SEND_BIPHASE (address) (data 1) (data 2) (data 3) . . . (data n)

Where:

a. The **address** value corresponds to the configured address in the external device which will receive and decode the command being issued. When sending data to a camera's receiver/driver, this value is equal to the receiver/driver address minus 1. When sending data to a Satellite system, this value is equal to the Satellite address plus the decimal number 14335. (Use 14336 for Satellite 1, 14337 for Satellite 2, etc. up to 14591 for Satellite 256.)

b. The **data 1, data 2, ... data n** values correspond to the numeric or ASCII data included in the transmission. When sending receiver/driver protocol commands, the first data byte should correspond to the Op-code byte associated with these types of commands (refer to document Receiver/Driver and AutoDome Control Code Protocol for more information on using receiver/driver protocol commands). Note that it is not necessary to include the Length Byte associated with the receiver/driver protocol because it is automatically inserted by the system into the data packet. Subsequent data values would include the data bytes associated with the Op-code byte being sent. The Checksum byte associated with the receiver/driver protocol is also calculated and included in the data packet automatically.

Text strings should be enclosed in quotes. Each character will be broken into its associated ASCII character and sent as an individual byte.

Parameter values which are being passed into a command when it is being used in an Allegiant system's Script must be preceded by a single tick mark (‘).

Carriage return codes (code number 13) are not automatically included. If sending CCL commands, this must be included after the text/data portion of the CCL message packet. To ensure the implicit use of decimal numbers, the decimal numeric specifier **0m** should precede the value, as in **0m13**.

EXAMPLE 1 - Alarm activation message to Satellite address to activate alarm 1:

```
_SEND_BIPHASE 14366 “+ALARM 1” 0m13
```

EXAMPLE 2 - Sample Script for use in Satellite system configurations to activate/deactivate both Master and remote Satellite alarms. Appropriate Custom Alarm responses can be used to generate the **alm_on (alarm#)** and **alm_off (alarm#)** commands. Note that the specified alarm number is being passed from the Custom Alarm command into the script as a parameter:

```
! Custom Alarm format = Alm_On (alarm#)
begin Alm_On
+alarm %1
_ SEND_BIPHASE 14336 “+alarm” ‘1 0m13
break

! Custom Alarm format = Alm_Off (alarm#)
begin Alm_Off
-alarm %1
_ SEND_BIPHASE 14336 “-alarm” ‘1 0m13
break
```

EXAMPLE 3 — Sample Script for use in Satellite system configurations to activate both Master and remote Satellite alarms when **Forever** Capture alarm option is used. Since the alarms are **captured**, acknowledgement must be done manually and independently at each of the two system sites:

```
! Custom Alarm format = Alm_sig (alarm#)
begin Alm_sig
spawn: Dual_alm %1
break

begin Dual_alm
+alarm %1
_ SEND_BIPHASE 14336 “+alarm” ‘1 0m13
wait 1
-alarm %1
_SEND_BIPHASE 14336 “-alarm” ‘1 0m13
break
```

EXAMPLE 4 — Sample script to send a receiver/driver protocol command out Biphase port (as when issuing commands to an LTC 0600 Series camera). Note that the Length byte and Checksum byte associated with receiver/driver protocol commands do not need to be included in the command because they are automatically added by the system:

```
! Script to issue receiver/driver command Aux 1 ON for camera 1
begin Cam_1
_SEND_BIPHASE  0  7  1  1
break
```

13.12 Sound Keyboard Beep

FORMAT = BEEP (keyboard#)

EXAMPLE: To activate the short beep sound of a system keyboard, enter the following command:

```
TC8x00>BEEP 3
```

Keyboard number 3 will sound a single beep.

13.13 Reset System

To duplicate a power off and on reset condition to the system, enter the following command:

```
TC8x00>RESET-SYSTEM
```

The reset message will then be displayed.

13.14 Define RS-232 Port Mode

To convert an Allegiant CONSOLE port to operate as a PRINTER port, enter the following command:

```
TC8x00>PRT2CON 1
```

To convert back to a CONSOLE port, the same command should be used, but the data value must be entered as 0 instead of 1. Note that when a port is configured as a Printer, the command will not be echoed back to the sending device.

To define a port to act like both a CONSOLE and a PRINTER, use a data value of **–1**.

13.15 Display RS-232 Port Mode

To display the current mode of an Allegiant RS-232 port, enter the following command:

```
TC8x00 > CURRENT-MODE
```

The Allegiant will respond with **NORMAL** if the port is currently functioning as a CONSOLE. The Allegiant will respond with **COPY** if the port is currently functioning as a PRINTER. The Allegiant will respond with **MERGE** if the port is currently functioning as a combined CONSOLE/PRINTER.

13.16 Echo Message

To send a message to the Allegiant which will be echoed back along with the system's time and date, enter the following command:

TC8x00>DISPLAY "text message"

The text message must be enclosed in quotes and can consist of up to 117 characters in length. The system will respond with:

{Date} {Time} {text message}

13.17 Print Message

To print a message on the Allegiant's Printer port (along with the time and date) enter the following command:

TC8x00> PRINT "text message"

The text message must be enclosed in quotes. The system will print the date, time, and message.

13.18 Set Direct RS-232 Allegiant Interface Port Parameters

To change the RS-232 parameters for the Allegiant interface port to which you are currently connected, enter the following command followed by data values corresponding to the table shown below:

TC8x00>SET-RS232 {data1} {data2} {data3} {data4} {data5}

The Allegiant will respond with an **OK** when done.

Values for **data1** through **data5**:

Baud Rate	Data Bits	Parity Bit	Stop Bit	Handshake Setting
1=1200	7=7	0=None [1]	1=1 [1]	0=OFF
2=2400	8=8 [1]	1=Even	2=2	1=ON
3=4800		2=Odd		
4=9600				
5=19200				
6=57600 [2]				

1. Use of these values is recommended.
2. This value is not valid for LTC 8500 Series PRINTER and ALARM ports.

13.19 Request Direct RS-232 Port Parameters

To request the current system settings for an Allegiant interface port to which you are currently connected, enter the following command:

TC8x00>GET-RS232

The system will respond with a series of numbers which correspond to the values shown in the table under the SET-RS232 command.

13.20 Set Indirect RS-232 Allegiant Interface Port Parameters

To change the RS-232 parameters for an Allegiant interface port that you are NOT connected to directly, enter the following command using the format shown. Use the same values for **data1** through **data5** as described in the table above.

TC8x00 > SET-PORT-RS232 {port number} {data1} {data2} {data3} {data4} {data5}

The Allegiant will respond with an **OK** when done.

Valid Allegiant RS-232 port numbers are as follows:

0 = Console port (except on LTC 8900 systems) and/or first port if using an LTC 8712 Series Port Expander connected to the Console port. On LTC 8900 systems, this value is used for the Primary and Backup Controller ports.

1 = Second port if using an LTC 8712 Series Port Expander connected to the Console port.

2 = Third port if using an LTC 8712 Series Port Expander connected to the Console port.

3 = Fourth port if using an LTC 8712 Series Port Expander connected to the Console port.

4 = Printer port (except on LTC 8900 systems) and/or first port if using an LTC 8712 Series Port Expander connected to the Printer port. On LTC 8900 systems only, this value is used for the Console port and/or the first port if using an LTC 8712 Series Port Expander connected to the LTC 8900's Console port.

5 = Second port if using an LTC 8712 Series Port Expander connected to the Printer port (except on LTC 8900 systems). On LTC 8900 systems only, this value is used for the second port if using an LTC 8712 Series Port Expander connected to the LTC 8900's Console port.

6 = Third port if using an LTC 8712 Series Port Expander connected to the Printer port (except on LTC 8900 systems). On LTC 8900 systems only, this value is used for the third port if using an LTC 8712 Series Port Expander connected to the LTC 8900's Console port.

7 = Fourth port if using an LTC 8712 Series Port Expander connected to the Printer port (except on LTC 8900 systems). On LTC 8900 systems only, this value is used for the fourth port if using an LTC 8712 Series Port Expander connected to the LTC 8900's Console port.

8 = Alarm port.

NOTES:

1. Port numbers 4, 5, 6, and 7 are valid only for those Allegiant models equipped with Printer ports.
2. Port number 8 is valid only for those Allegiant models equipped with an Alarm port.

13.21 Request Indirect RS-232 Allegiant Interface Port Parameters

To request the current RS-232 parameters for an Allegiant interface port that you are NOT connected directly to, enter the following command using the format shown.

TC8x00 > GET-PORT-RS232 {port}

Valid port numbers are the same as shown for the SET-PORT-RS232 command described above. The system will respond with a series of numbers which correspond to the values shown in the table under the SET-RS-232 command.

13.22 Enable Time Event Function

This command is used to enable the operation of Time Events functions which have been previously programmed into the Allegiant system. The actual Time Event functions can only be programmed into an Allegiant using one of the Allegiant PC-based software packages (LTC 8059/00 MCSW or LTC 8850/00 GUI).

FORMAT = ENABLE-TEVENT: (first event) (last event)

EXAMPLE: To enable operation of the first 5 system Time Events, enter the following command:

TC8x00 > ENABLE-TEVENT: 1 5

To enable a single event, specify only the **first event** parameter. To enable all Time Events, do not include either parameter.

13.23 Disable Time Event Function

This command is used to disable the operation of Allegiant Time Events functions.

FORMAT = DISABLE-TEVENT: (first event) (last event)

EXAMPLE: To disable the operation of the first 5 Time Events, enter the following command:

TC8x00 > DISABLE-TEVENT: 1 5

To disable a single event, specify only the **first event** parameter. To disable all Time Events, do not include either parameter.

13.24 Enable/Disable Trunk Caching

This command is only applicable to Allegiant systems operating in a **cascaded** Satellite configuration. A **cascaded** Satellite system is a system where a Master system has a Satellite which is the Master of another Satellite. In systems of this type, it is possible to experience an undesirable switching effect due to **unbalanced** trunk lines. Unbalanced trunk lines occur when there are more trunk lines between the **top level** Master and its **middle level** Satellite/Master than there are between the **middle level** Satellite/Master and the **lowest level** Satellite. In this situation, an internal system **trunk caching function** can cause undesirable switching at the **middle level** Satellite/Master when the **top level** Master is finished viewing a camera from the **low level** Satellite. This command allows the trunk caching function to be disabled.

FORMAT = _DISABLE_TRUNK_CACHING (data)

EXAMPLE: To disable the trunk caching function, enter the following command:

TC8x00 > _DISABLE_TRUNK_CACHING (1)

To return to system defaults, the trunk caching function can be restored by sending the command with a data value of 0. This command duplicates Allegiant system keyboard User Function 41.

13.25 Default Camera Numbers

The default camera number ranges on CPUs prior to revision 6.8 set all **logical** camera numbers equal to their **index** number values. Starting with CPU revision 6.8 and higher, the **logical** camera numbers above the system's physical capacity will be defaulted to an **unconfigured** state. Normally this command would not need to be used, but in some cases it may be necessary to convert the camera numbers back to the old default values to maintain compatibility with older external interface programs which have used sequence downloads. To reconfigure the **logical** camera numbers back to their old default values, enter the following command:

TC8x00> _RECONFIGURE_CAMERA_NUMBERS 1

NOTE: This command will not affect any camera inputs which have been designated as Trunk lines. Also, the command may be issued with a numeric value of zero to set the camera numbers to the **new** default values.

There will be a short delay (typically 1 or 2 seconds) after this command is sent before the system can accept a new command.

13.26 Display Index Camera Number

In systems where the Logical camera numbers have been redesignated, this command is used to display the associated Index camera number assigned to the specified Logical camera number.

FORMAT = FIND-LOG-CAM (logical camera#)

EXAMPLE: If you want to determine the Index camera number assigned to Logical camera number 1, enter the following command:

TC8x00 > FIND-LOG-CAM 1

The system will respond on the same line with the associated Index camera number. Note that it is only possible to reassign Logical camera numbers using one of the Allegiant PC-based software packages.

13.27 Display Index Monitor Number - Valid for LTC 8900 Systems Only

In LTC 8900 systems where the Logical monitor numbers have been redesignated, this command is used to display the associated Index monitor number assigned to the specified Logical monitor number.

FORMAT = FIND-LOG-MON (logical monitor#)

EXAMPLE: If you want to determine the Index monitor number assigned to Logical monitor number 1, enter the following command:

TC8x00 > FIND-LOG-MON 1

The system will respond on the same line with the associated Index monitor number. Note that it is only possible to reassign Logical monitor numbers in LTC 8900 systems using one of the Allegiant PC-based software packages.

13.28 Display Logical Camera Number

In systems where the Logical camera numbers have been redesignated, this command is used to display the associated Logical camera number assigned to the specified Index camera number.

FORMAT = GET-CAM-LOG-NUM (index camera#)

EXAMPLE: If you want to determine the Logical camera number assigned to Index camera number 1, enter the following command:

TC8x00 > GET-CAM-LOG-NUM 1

The system will respond on the same line with the associated Logical camera number. Note that it is only possible to reassign Logical camera numbers using one of the Allegiant PC-based software packages.

13.29 Display Logical Monitor Number - Valid for LTC 8900 Systems Only

In LTC 8900 systems where the Logical monitor numbers have been redesignated, this command is used to display the associated Logical monitor number assigned to the specified Index monitor number.

FORMAT = GET-MON-LOG-NUM (logical camera#)

EXAMPLE: If you want to determine the Logical monitor number assigned to Index monitor number 1, enter the following command:

TC8x00 > GET-MON-LOG-NUM 1

The system will respond on the same line with the associated Logical monitor number. Note that it is only possible to reassign Logical monitor numbers in LTC 8900 systems using one of the Allegiant PC-based software packages.

13.30 Default System to Factory Settings

To reset the system to the factory default settings, enter the following command:

TC8x00>DEFAULT

When this command is entered, the system will reset to the following conditions:

1. Console, printer, and alarm ports are set to 19,200/8/1/none/off.
2. Time/date to 10:00, 1/1/90, 12Hr, US format.
3. Basic alarm response mode, with Monitor 1 and Monitor 2 armed for all alarms.
4. Alarm dwell time is set to two seconds on LTC 8500 Series systems and one second on LTC 8300, LTC 8600, LTC 8800, and LTC 8900 Series systems.
5. All alarm titles are disabled.
6. Broadcast timer is set to 10 seconds.
7. All keyboards are polled.
8. Boot screen memory is cleared.
9. All sequences are deleted.
10. Monitor overlays are enabled, set to full brightness, and positioned at the bottom center of screen.
11. All lockout tables are cleared.
12. All monitors display camera 1.
13. Keyboards are set to control monitors corresponding to keyboard port numbers.
14. All camera numbers are set to correspond to physical inputs. Camera titles set to **Camera Title ?**
15. Monitor titles are set to **MONITOR 00XX**.
16. System is set to **Limited Printing** mode (not applicable on LTC 8900 systems).
17. Use of default camera is enabled on Log-in.
18. Administrator is enabled for multiple keyboard Log-in.
19. Leading zeros are displayed in 3 digit format for camera numbers on LTC 8300, LTC 8600, LTC 8800, and LTC 8900 Series.
20. Monitor and alarm crosspoint and alarm active data are sent to the biphase line on LTC 8300, LTC 8600, LTC 8800, and LTC 8900 Series.
21. User table is reset to default.
22. All time-events are deleted.

NOTE: There will be a considerable delay (typically 15 to 60 seconds) after this command is sent before the system is operational again.

14 ALLEGIANT DIAGNOSTIC COMMANDS

Allegiant diagnostic commands are not intended to be used by an external interface device during normal service operation. They are typically used during development of the interface software or in conjunction with factory technical support personnel. The commands listed below have been included solely for this purpose.

14.1 Display Detected Cameras

This command responds with a listing of camera numbers which have been detected by the system's video loss feature. This command is not applicable to LTC 8500 systems, which do not currently support the video loss detection feature (the word **none** will always be returned).

TC8x00> WORKING-CAMS

14.2 CPU Flash Memory Check

Prior to upgrading the firmware in a CPU via a "mot" file download, it is best to verify the protected sectors of the flash memory. To verify the integrity of the CPU's flash memory, enter the following command:

TC8x00> _DUMP_FLASH_MAP

This command will show information about which memory sectors are write-protected and which are not for each bank of memory. For example, an LTC 8800 or LTC 8900 will respond with:

OF: FE FF FF FF

The first **OF:** or other characters in this position, reflects a bitmap of the flash banks which have been detected and can be ignored. After that, the **FE** indicates that only a single sector in the first bank is write-protected. This is the sector that contains the boot code for downloading firmware upgrades and it is the only one that should ever show up as being write-protected. Note that the number of FF pairs that are displayed will depend on the model. If you see anything other than FE in this position or FF anywhere else, do not attempt to upgrade the CPU firmware using the download process. The flash memory ICs must be replaced. In some cases, you may see all FFs. In this case, the boot sector is not write protected. You can still upgrade the flash (not recommended), but if it fails for any reason during the firmware download, you will most likely never be able to establish communication again.

14.3 Display CPU Parameter Settings

This command will display the current contents of the Allegiant CPU's **Parameters Table**. The response will include information on the Allegiant's RS-232 configurations and various other system related settings. The current functions of the Allegiant CPU's Dip Switch settings are also shown.

An example response from an LTC 8800 system is shown below:

TC8800> PARAM-TBL

LTC 8800 Video Switching System Parameter Table

INTERFACE	CONSOLE	PRINTER	ALARM	COMM1	COMM2	KEYBOARD
Baud:	19200	19200	19200	125 K	125 K	9600
Stop Bits:	1	1	1	2	1	1
Data Bits:	8	8	8	8	8	8
Parity:	None	None	None	MultiDrp	MultiDrp	None
Handshake:	No	No	No	No	No	No

KBD INSTALLED
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

Broadcast Duration: 10 s

MISCELLANEOUS OPTIONS

Sys Adm Login Mult:	Yes	XPoint 1-32 to SDA:	No	Alm Status 1- 256:	No
Change Cam on Logon:	Yes	Xpoint 33-64 to SDA:	No	Alm Status 257- 512:	No
Kbd 1-8 on Expander:	No	Logical Cam Xpoints:	No	Alm Status 513- 768:	No
Camera Leading Zero:	Yes	Limited Printing:	Yes	Alm Status 769-1024:	No
Four-digit Cam Num:	No	Variable-speed OSRD:	Yes	Alarm Xpoint to SDA:	No
Display Cam Control:	No	Override Lost Video:	Yes	Require Kbd login:	Yes
Require Con login:	No	Expand Console Port:	No	Expand Printer Port:	No
Slow VOM Updates:	No				

DIP Sw#	COMMENT	STATUS
0.3	Force Expanded Console Mode	No
0.4	Force Exp Con 57600 Baud	No
1.1	not used	Off
1.2	Use Alarm Port as Console	No
1.3	Old kbd 4/8 poll-byte selection	Off
1.4	Printer defaults to normal console	Yes
1.5	Enable Login selection	Yes
1.6	not used	Off
1.7	New keyboard communications format	Yes
1.8	Custom comm parms and boot screen	Yes

14.4 Display Input Module Status

This command displays the number of Video Input modules installed in an Allegiant system matrix bay. When issued to the LTC 8100, LTC 8200, or LTC 8300, a value of 1 will always be returned. This command is not applicable to LTC 8500 systems (the word **none** will always be returned). LTC 8600 and LTC 8800 systems will return a value between 1 and 8, which corresponds to the actual number of input modules currently installed in the main CPU bay.

When issued to an LTC 8900 system, the response will show a hexadecimal representation where each bit corresponds to an individual module installed for both Input and Output matrix bays for all possible system matrix bays. Locations having the value **0** indicates that the associated matrix bay is not currently connected or is nonexistent in the system. Each of the 8 rows of numbers displayed corresponds to a monitor number range. Row 1 corresponds to Input and Output matrix bays associated with monitors 1 to 64; row 2 is for monitors 65 to 128; etc. The first value in each row displays the number of output cards installed in the monitor bay. The next 16 values in each row correspond to the number of input modules installed in the **first level** Input bays. The first of these 16 values represents the camera bay for cameras 1 to 256; the second is for cameras 257 to 512; etc. The remaining 4 values in each row correspond to the number of input modules installed in the **second level** Input bays. In all cases, the hexadecimal values can be interpreted as follows: Convert the hexadecimal value to its binary number equivalent. The least significant bit (right most value) corresponds to the module installed in slot 1 (the left most slot when viewed from front of bay). All **0** bits correspond to empty slots. All **1** bits correspond to slots where modules are installed.

TC8x00> VIMS-INSTALLED

14.5 Display Crosspoint Status

When this command is issued, a response will be returned showing the cameras currently switched to the system monitors. This is more commonly referred to as Crosspoint status.

TC8x00> _DUMP_XP

Each value of the response represents a camera number. The first value is the camera on Monitor 1; the second value is the camera on Monitor 2; etc.

14.6 Display Satellite Trunk Status

When issued to the Master system in a Satellite system configuration, this command displays information on the state of its Satellite Trunk video lines.

TC8x00> TRUNK-DIAG

14.7 List Bootscreen Script Program

This command will list any stored command script program currently residing in the Allegiant's CPU memory. Each script line will be preceded with a line number. At the end of the script listing, information is also included about the status of the Allegiant keyboard's STAR key and the current mode of the script debugging feature.

TC8x00> Bootscreen

14.8 Enable/Disable Command Script Debug Mode

This command enables/disables the Allegiant CPU's Command Script debug mode. If a user programmed Command Script function is not operating properly, use of the Command Script debug mode may be helpful in locating the source of errors in the script program.

TC8x00 > SCRIPT-DEBUG (data)

To enter the debug mode, a **0** (zero) should be entered for the data parameter. To exit the debug mode, a **1** should be used for the data parameter.

14.9 Display Matrix Bay Firmware Revisions - LTC 8900 Series Only

When this command is issued to an LTC 8900 system CPU bay, a response will be returned listing the firmware version numbers of all of the video input and video output matrix bays connected to the system.

TC8x00> BAY-REVISION

Each line of the response will represent a matrix bay which will be identified by a 2 number pair. If the second number is **0**, the number pair will always refer to a monitor bay. Number pair **1,0** represents the monitor bay with monitors 1 to 64 connected to it; number **2,0** represents the monitor bay for monitors 65 to 128; etc.

If the second number is not **0**, the number pair refers to a camera bay. Number pair **1,1** represents the camera bay with cameras 1 to 256 connected to it which is associated with monitor bay 1; number **1,2** represents the camera bay with cameras 257 to 512 connected to it which is associated with monitor bay 1; number **2,1** represents the camera bay with cameras 1 to 256 connected to it which is associated with monitor bay 2; etc.

The bay's firmware revision number will be displayed immediately after the two numbers. Other board revision numbers for internal use will also be displayed and should be completely ignored.

14.10 Diagnostic Commands - LTC 8590 ACTS Series Only

14.10.1 Send ACTS Debugging Messages to Allegiant Printer

This command enables ACTS debugging messages to be sent to the Allegiant Printer port.

TC8x00> _DEBUG_CTS 1

To disable ACTS debugging, substitute a **0** instead of the **1** parameter. To ask the current status of Printer port debugging messages, do not use any parameter. When asked, either a **0** (disabled) or a **1** (enabled) value will be returned.

14.10.2 Display ACTS Software Revision

This command will display the software revision of all LTC 8590 Series Main Control units connected to the Allegiant.

TC8x00> _CTS_REVISION

Groups of **0000** will be returned where no units are detected. The total quantity of **0000** groups varies depending on the number of units supported by the Allegiant model being debugged.

14.10.3 Display ACTS Cameras

This command displays the designated camera numbers (values configured via the thumbwheels of the LTC 8590 Series Remote units) of all cameras connected using ACTS hardware devices.

TC8x00> _CTS_CAMERAS

The value **0** is returned for positions where no cameras are detected. The total quantity of **0** values varies depending on the number of units supported by the Allegiant model being debugged.

14.10.4 Display ACTS Alarm Input States

This command displays the current status of the LTC 8590 Series Remote unit's alarm inputs.

TC8x00> CTS-DIGITAL-INPUTS

Since the Remote units support 3 alarm inputs, the display represents a binary value of the simultaneous alarm states. A value of **00** indicates no alarm conditions are active. The value **00** is also returned for positions where no units are detected. The total quantity of **00** values varies depending on the number of units supported by the Allegiant model being debugged.

14.10.5 Activate/Display ACTS Relay Output States

This command is used to activate/deactivate/display the LTC 8590 Series Remote unit's relay outputs. The format of the command is as follows:

TC8x00> CTS-RELAY-MASK camera-number relay-mask

The **camera-number** parameter is the designated camera number configured in the ACTS Remote unit's Thumbwheel. The **relay-mask** parameter is the binary value representing the status of the relay outputs. Although valid relay numbers range from 1 to 4, current LTC 8589 hardware provides 2 relays only. Do not specify a **relay-mask** parameter with the command to ask the current status of the Remote unit's relay outputs.

15 ERROR MESSAGES

The following list describes the error messages generated by the Allegiant systems when an improper command has been received. Messages due to **internal system errors** are displayed along with date and time of occurrence.

- **Error in command's parameters:**

  ERROR : not enough arguments

  ERROR : too many arguments

  ERROR : expected numeric (radix-name) argument

  ERROR : expected argument in quotes

  ERROR : overflow evaluating numeric argument

  ERROR : argument(s) out of range

  ERROR : arguments should be in ascending order

- **Undefined logical camera number given in command parameter:**

  ERROR : invalid camera number

- **Unknown CCL command:**

  Console Command "(unrecognized command)" not found

- **Entered string matches two or more CCL commands:**

  Console Command "(string)" ambiguous

- **Undocumented CCL command has not been implemented:**

  UNIMPLEMENTED

- **CCL command is not valid for this unit:**

  ERROR : command not supported on this system

- **Not enough stack space to process command:**

  ERROR : insufficient stack space

- **Not enough heap space to process command:**

  ERROR : out of memory

- **Error with undocumented ABBR command:**

  Abbreviation Table Full

- **Error with SET-STAR command:**

  ERROR : could not find script

- **Error with undocumented CLR-BOOT command:**

  FAILED

- **Error with KBD-LOGON command:**

  ERROR : invalid user ID number

  ERROR : user locked out of keyboard

- **Error executing SEQ-REQ command:**

  ERROR (two character error number per below)

  6 = monitor-lockout table locks system administrator from monitor

  50 = sequence does not exist

  51 = absolute sequence requested on wrong monitor

  52 = monitor number too high for this relative sequence

  56 = sequence is currently being edited

- **Internal system error due to reprogramming of alarm tables while alarms are active:**

  "SYSTEM WARNING: ALARM VIDEO DISCARDED DUE TO RECONFIGURATION OF ALARM SYSTEM"

- **Internal system error due to alarm overflow (thousands of alarm videos are simultaneously displayed):**

  "SYSTEM WARNING: ALARM (number) DISCARDED DUE TO INTERNAL ALARM SYSTEM OVERFLOW"

- **Internal system error due to monitor being armed while too many alarms are active:**

  "SYSTEM WARNING: ALARM VIDEO DISCARDED DUE TO INTERNAL ALARM SYSTEM OVERFLOW"

- **Internal system error due to hardware eeprom error (should never happen):**

  "SYSTEM WARNING: EEPROM WRITE ERROR'"

- **Internal system error due to recursive eeprom usage (should never happen):**

  "SYSTEM WARNING: INTERNAL EEPROM PRIVILEGE STACK OVERFLOW"

- **Internal errors when printing out system messages (should never happen):**

  "SYSTEM ERROR: ILLEGAL TABLE MESSAGE NUMBER"

  "SYSTEM ERROR: ILLEGAL SYSTEM MESSAGE NUMBER"

  "SYSTEM ERROR: UNKNOWN MESSAGE TYPE"

- **Internal error in heap memory management (should never happen):**

  "HEAP ERROR: (error code)"

- **Internal error with undocumented RADIX command (should never happen):**

  "ERROR: unknown radix!"

- **Internal system error due to semaphore deadlock or time-out (should never happen):**

  "SEVERE SYSTEM WARNING: SEMAPHORE DEADLOCK Sem = (n); task = (n); owner = (n)"

  "SEVERE SYSTEM WARNING: semaphore TIMEOUT Sem = (n); task = (n); owner = (n)"

- **Error while processing a bootscreen script:**

  SCRIPT ERROR on line (n):

  out of memory while processing arguments

  syntax error in script command

  out of memory while processing .FOR loop

  no matching .FOR for .NEXT command

  unknown error

- **Error using *MON-CAM* or *CHG-MON* command when specifying a *logged-off* keyboard:**

  ERROR 41

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