Sensormatic

APPLICATION NOTE

ASCII SET-UP STRINGS
FOR
MATRIX SWITCHING SYSTEMS

AN_0005

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1.0 GENERAL DESCRIPTION

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This document defines the code structure required to program or set-up selected features of an American Dynamics matrix switching system from an external computer or terminal. Control of American Dynamics matrix systems via a computer or terminal is also possible. For a complete listing of control interface codes, please refer to Application Note AN_0001 - ASCII Control Commands for Matrix Switching Systems.

The examples in this document illustrate how to program selected functions of the matrix switching system. Not all functions are shown. The setup and programming commands consist of ASCII command strings transmitted from the controlling device (eg. computer, terminal, etc.) to the matrix system CPU via RS-232. Programmable features covered in this document include camera titling, date and time programming, and monitor status.

The matrix switching system's CPU, whether internal or external, has multiple full duplex RS-232 control ports. Each port is configurable through the matrix system's internal menus to accept data words with 7 or 8 data bits, 1 or 2 stop bits and parity selection (none, even or odd). Port usage should be set to terminal operation, and the baud rates are selectable between 1200, 2400, 4800 or 9600 baud. The default port setting is for keyboard operation at 1200 baud with 8 data bits, 1 stop bit and no parity. The 7-bit ASCII code set is used for control instructions.

All commands must be followed by a terminating character such as a carriage return <**CR**> (HEX **0D**). The system CPU will also recognize a lower case letter, specifically *"a", "b", "c"* or *"d"* to terminate all control and operation commands. Other ASCII control codes, such as *LF* (HEX **0A**) are ignored. For data flow control, the software handshake *Control Q* (ASCII **DC1** or HEX **11**) and *Control S* (ASCII **DC3** or HEX **13**), also known as *XON* and *XOFF,* is supported.

2.0   Camera Titling

Camera titles are displayed in two lines of eight characters each. Titles can be downloaded to or uploaded from the matrix switcher.

Download
To download camera titles, the data string will consist of the Camera Number, comma, 16 character Title, comma, Sub-Command, Command and a carriage return. The ASCII characters allowed for titles are from ASCII 32 decimal (SPACE) to ASCII 96 decimal (`) (open single quote). No lowercase letters are available.

Setup String: ***Camera#,Title,0Z* <CR>**

where *Camera#* = 1 to 1024 (for AD2050 systems)
   Title = up to 16 allowable ASCII characters

Example: To download the title "American Dynamics" to camera 28

Transmit ASCII: **28,AMERICANDYNAMICS,0Z<CR>**

Upload
To upload camera titles, the data string will consist of the Function Descriptor, Camera Number, Sub-Command, Command and a carriage return.

Setup String: ***?,Camera#,0Z<CR>***

Example: To upload title (programmed above) from camera 28

Transmit ASCII: **?,28,0Z<CR>**

Receive ASCII: 28, AMERICANDYNAMICS,0Z<CR>

3.0 Day of the Week, Date & Time

Day of the Week
To download the Day of the Week, the data string will consist of the DOW number, comma, Sub-Command, Command and a carriage return.

    Setup String: ***DOW,2X<CR>***

                where *DOW* = 1 (Sunday), 2 (Monday) ...etc., 7 (Saturday)

    Example: Program the day of the week for Monday

    Transmit ASCII: **2,2X<CR>**

Date
To download the Date, a date format must be selected. Three date formats are available: month-day-year, day-month-year, and year-month-day. The data string will consist of the Month number, comma, Day number, comma, Year number, comma, Sub-Command (date format selector), Command and a carriage return.

    Setup String: ***MM,DD,YY,1X<CR>*** or
                            DD,MM,YY,3X<CR> or
                            YY,MM,DD,4X<CR>

                where *DD* = Day, 01 through 31
                       MM = Month, 01 through 12
                       YY = Year, 00 through 99

    Example: Program the date for August 5, 1994 using the MM,DD,YY format

    Transmit ASCII: **08,05,94,1X<CR>**

Time
To download the Time, the data string format consists of the Hours, comma, Minutes, comma, Seconds, comma, Sub-Command, Command and a carriage return. The time is displayed as a 24 hour clock, therefore, AM and PM are not required.

    Setup String: ***HH,MM,SS,0X<CR>***

                where *HH* = Hours, 01 through 24
                       MM = Minutes, 00 through 59
                       SS = Seconds, 00 through 59

    Example: Program the time for 1:35:20 PM (which translates to 13:35:20)

    Transmit ASCII: **13,35,20,0X<CR>**

4.0   Monitor Status

The Monitor Status feature provides information for all the monitors on a matrix system such as camera currently displayed, tour number and state (Hold, Run, Salvo), alarm status, camera lock/unlock state, and video/sync loss status.

Setup Strings: **0!<CR>** to start Monitor Status upload
                  3!<CR> to start Monitor Status upload on AD1996 CPU with Video Loss Detection Module (AD2010DBVL)

                  1!<CR> to stop Monitor Status upload (all systems)

Example: Transmit ASCII command *0!<CR>* (or *3!<CR>*) to start Monitor Status upload

Receive String: *Monitor,Camera,HoldRunSalvo,Alarm,LockUnlock,!<CR>*

                  or

                  Monitor,Camera,HoldRunSalvo,Alarm,LockUnlock,VideoLoss, SyncLoss, Tour,!<CR>   (for AD1996 CPU with Video Loss Module & S/W)

                  where *Monitor* = monitor number 001 to 128
                      Camera = camera number 0001 to 1024
                      HoldRunSalvo = "H"old, "R"un or "S"alvo state
                      Alarm = "A"larm or " " (No alarm) on monitor
                      LockUnlock = "L"ocked or "U"nlocked camera state
                      VideoLoss ="1" (Yes), "0" (No) or " 2" (Don't Care)
                      SyncLoss ="1" (Yes), "0" (No) or " 2" (Don't Care)
                      Tour = tour number 0 to 64

AD168 & MP48 Matrix Systems

When interfacing to the AD168 and MP48 Matrix System, a Start Monitor and Stop Monitor needs to be specified for the Monitor Status upload to occur. The data string will consist of the Start Monitor, comma, Stop Monitor, comma, Sub command, command and a carriage return.

Setup String: Start Monitor,Stop Monitor,3!<CR>

                       Where Start Monitor = Monitor 1 to 24
                             Stop Monitor = Monitor 1 to 24

Example: To Start Monitor Status upload on monitors 12 to 24

Transmit ASCII: 12,24,3!<CR>

5.0   Keyboard Status (AD168 & MP48 MATRIX SYSTEMS ONLY)

The Keyboard Status feature provides information for all keyboards connected to the matrix system such as monitor currently called to the keyboard, camera currently called to the keyboard, priority level currently assigned to the keyboard or to the keyboard user, and the user currently logged on the keyboard if user codes are enabled on the matrix system.

To upload Keyboard Status, the data string will consist of a Start Keyboard, comma, Stop Keyboard, comma, Sub Command, command and a carriage return.

Setup String: Start Keyboard,Stop Keyboard,4!<CR>

Where Start Keyboard = Keyboard 1 to 32
Stop Keyboard = Keyboard 1 to 32

4!   Starts Keyboard Status upload

1!   Stops Keyboard Status upload

Example: To start Keyboard Status upload for keyboards 15 to 32

Transmit ASCII: 15,32,4!<CR>

Receive String: Keyboard, Monitor, Camera, Priority Level, User Number, 4!<CR>

where Keyboard = keyboard number 1 to 32
Monitor = monitor 1 to 24
Camera = 1 to 180
Priority = 1 to 8
User = 1 to 64

APPENDIX A

ASCII	HEX	DEC	ASCII	HEX	DEC	ASCII	HEX	DEC
Space	20	32	6	36	54	L	4C	76
!	21	33	7	37	55	M	4D	77
"	22	34	8	38	56	N	4E	78
#	23	35	9	39	57	O	4F	79
$	24	36	:	3A	58	P	50	80
%	25	37	;	3B	59	Q	51	81
&	26	38	<	3C	60	R	52	82
'	27	39	=	3D	61	S	53	83
(	28	40	>	3E	62	T	54	84
)	29	41	?	3F	63	U	55	85
*	2A	42	@	40	64	V	56	86
+	2B	43	A	41	65	W	57	87
,	2C	44	B	42	66	X	58	88
-	2D	45	C	43	67	Y	59	89
.	2E	46	D	44	68	Z	5A	90
/	2F	47	E	45	69	[	5B	91
0	30	48	F	46	70	\	5C	92
1	31	49	G	47	71	]	5D	93
2	32	50	H	48	72	^	5E	94
3	33	51	I	49	73	_	5F	95
4	34	52	J	4A	74	`	60	96
5	35	53	K	4B	75			