

	ENGINEERING CHANGE ORDER			Number 03-																												
	Project Engineer	Stephen L. Robinson		None	Page 1 of 1																											
	Change Requested By	Stephen L. Robinson																														
Description of Change Release of technical documentation for archive: AD, Burle System Output Codes, Nov. 3, 1997																																
Reason for Change None																																
Scope of Change				Documentation Affected																												
☐ Changes Form, Fit, or Function ☐ Other performance enhancement ☒ Internal				Product Model Number: None <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 70%;">Drawing Number</th> <th style="width: 15%;">Old Rev</th> <th style="width: 15%;">New Rev</th> </tr> <tr><td>None</td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> </table>		Drawing Number	Old Rev	New Rev	None																							
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None																																
Type of Change		Material Disposition																														
☐ New Product ☐ Error ☐ Design Improvement ☒ Additional Info ☐ Cost Reduction ☐ Conform to Present Practices		☒ None ☐ Scrap ☐ Rework ☐ Finished Goods ☐ Work In Progress ☐ Stock ☐ Running Change																														
Approvals	Engineering Signature	Date	Manager's Initials in Appropriate Box ☐ EWS ☐ Hot ☒ Normal																													
	Materials Signature	Date																														
Cost Impact	0	New Comp. Cost	0																													
Obsol. Impact	0	New Comp. Lead Time	0																													
Required Tasks (use attachments if necessary)				Initials	Date																											
Manufacturing None																																
Production None																																
Materials None																																
Stock Room None																																
Sales / Marketing None																																
Repair None																																
Quality Assurance None																																
Other None																																



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To: Bill Arbuckle

From: Frank Chemega

Fax: 1 (209) 292-1018

Pages: 3

Phone: 1 (800) 289-9100

Date: December 8, 1997

Re: AD/Burle Protocol

CC:

☐ Urgent ☒ For Review ☒ Please Comment ☒ Please Reply ☐ Please Recycle

• Comments: Bill,

Good Morning!!!! Please find on the following pages the AD/Burle Protocol for receiver/driver operation. Some of the codes are the same for a Burle system. The differences are in the variable speed words and preset commands. If you have any questions, please don't hesitate to call me. Thank you,

Frank

292-5774

APPENDIX B PAGE 1 OF 2

AD/BURLE SYSTEM OUTPUT CODE DEFINITION

START BIT BIT 15	FUNCTION BITS BIT 14	SUB IDENTIFICATION BITS BITS 11-9								CAMERA # OR DATA BITS 8-3	SHIFT BIT BIT 2	STOP BITS BITS 1, 0
A L W A Y S A 1												
	REMOTE 0	DOWN SPEED 8	OPEN	FAR	TELE	CLOSE	NEAR	WIDE	LEFT SPEED 8	CAMERA 1-64	0	00
	REMOTE 0	UP SPEED 8	RIGHT SPEED 8	AUX 1 OFF	AUX 1 ON	AUX 2 OFF	AUX 2 ON	AUX 3 OFF	AUX 3 ON	CAMERA	0	00
	PRESET 0	CALL 1	CALL 2	CALL 3	CALL 4	CALL 5	CALL 6	CALL 7	CALL 8	CAMERA	0	00
	PRESET 0	SET 1	SET 2	SET 3	SET 4	SET 5	SET 6	SET 7	SET 8	CAMERA	0	00
	MONITOR SWITCHER/ STATUS 1	MON 1	MON 2	MON 3	MON 4	MON 5	MON 6	MON 7	MON 8	CAMERA	0	00
	MON TITLE 1	MON 1	MON 2	MON 3	MON 4	MON 5	MON 6	MON 7	MON 8	DATA 7 BIT ASCII	1 OR 0	00
	TIME DATE 1	MON 1	USED DIFFERENTLY IN DIFFERENT AD SWITCHING PRODUCTS								CAMERA 7 BIT ASCII	1 OR 0
BROADCAST TO ALL MONS												
CAMERA SWITCHER 1	MON 1	MON 2	MON 3	MON 4	MON 5	MON 6	MON 7	MON 8	CAMERA	0	00	

used over 1 word (16 bits)
for BASIC commands

APPENDIX A PAGE 2 OF 2

START BIT BIT 15	FUNCTION BITS BIT 14	SUB IDENTIFICATION BITS BITS 11-9								CAMERA # OR DATA BITS 8-3	SHIFT BIT BIT 2	STOP BITS BITS 1, 0
A L W A Y S A 1			000	001	010	011	100	101	110	111	1	00
	PAN DOWN 0 00	DOWN SPEED 1	DOWN SPEED 2	DOWN SPEED 3	DOWN SPEED 4	DOWN SPEED 5	DOWN SPEED 6	DOWN SPEED 7	CALL 9-72 WORD 1	CAMERA 1-84	1	00
	PAN UP 0 01	UP SPEED 1	UP SPEED 2	UP SPEED 3	UP SPEED 4	UP SPEED 5	UP SPEED 6	UP SPEED 7	CALL 9-72 WORD 2	CAMERA SHOT #	1	00
	PAN LEFT 0 10	LEFT SPEED 1	LEFT SPD 2	LEFT SPEED 3	LEFT SPEED 4	LEFT SPEED 5	LEFT SPEED 6	LEFT SPEED 7	SET 9-72 WORD 1	CAMERA	1	00
	PAN RIGHT 0 11	RIGHT SPEED 1	RIGHT SPEED 2	RIGHT SPEED 3	RIGHT SPEED 4	RIGHT SPEED 5	RIGHT SPEED 6	RIGHT SPEED 7	SET 9-72 WORD 2	CAMERA SHOT #	1	00

SETS AND CALLS 9-72 ARE 2 WORDS SENT BACK TO BACK
 THE FIRST WORD CONTAINS THE CAMERA NUMBER
 AND THE SECOND WORD CONTAINS THE SHOT NUMBER

USED 2 WORDS (32 BITS)

FOR EXTENDED COMMENTS



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To: Steven Robinson

From: Frank Chemega

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Pages: 7

Phone: 1 (800) 289-9100

Date: February 28, 1997

Re: More data on AD code

CC:

☐ **Urgent** ☒ **For Review** ☒ **Please Comment** ☐ **Please Reply** ☐ **Please Recycle**

• **Comments:** Steve,

Please find on the following pages the additional data I have found on the AD code. This is for the AD1983.

Frank

AD1983 RS-232 CODE DESCRIPTION

The following is an explanation of the code structure for the AD1983 Code Converter. This document contains the codes required to control American Dynamics receiver/drivers via RS-232 using one AD1983, setup as a receiver.

Control of the AD1983 Code Converter is accomplished using the proper 16-bit binary codes transmitted as two 8 bit bytes via RS-232.

The AD1983 has one control port. This port can be set up, via internal jumpers, to operate at a fixed baud rate of 1200, 2400, 4800, or 9600 baud. All commands are transmitted to the AD1983 as two 8 bit bytes. These bytes are interpreted and control the various functions.

The codes are all two byte commands which contain 8-bits per byte. Each two byte command follows the format:

byte 1	byte 2
7 6 5 4 3 2 1 0	7 6 5 4 3 2 1 0
P P P P P P P C	0 C C C C C P 0

P is a total of 8-bits (spans both bytes) for opcode
C is a 6-bit field for Camera # (spans both bytes)

In byte 2, both bit 7 and bit 0 MUST be 0.

The code supports 64 camera numbers. Since the camera number field is 6 bits, the camera numbers 1 through 64 are coded as 0 through 63.

COMMAND CODES

The following are the two byte commands and their function. The camera number, in binary, must be inserted into these commands.

Note: If variable speed p/t units are not used, speed 8 will be used to move p/t's.

8000	down speed 8
8200	open
8400	far
8600	tele
8800	close
8A00	near
8C00	wide
8E00	left speed 8

9000	up speed 8
9200	right speed 8
9400	aux1off
9600	aux1on
9800	aux2off
9A00	aux2on
9C00	aux3off
9E00	aux3on

A000	call shot 1
A200	call shot 2
A400	call shot 3
A600	call shot 4
A800	call shot 5
AA00	call shot 6
AC00	call shot 7
AE00	call shot 8

B000	set shot 1
B200	set shot 2
B400	set shot 3
B600	set shot 4
B800	set shot 5
BA00	set shot 6
BC00	set shot 7
BE00	set shot 8

COMMAND CODES CONT

8002 down speed 1
8202 down speed 2
8402 down speed 3
8602 down speed 4
8802 down speed 5
8A02 down speed 6
8C02 down speed 7
8E02 call shot 9-72, camera #

9002 up speed 1
9202 up speed 2
9402 up speed 3
9602 up speed 4
9802 up speed 5
9A02 up speed 6
9C02 up speed 7
9E02 call shot 9-72, shot #

A002 left speed 1
A202 left speed 2
A402 left speed 3
A602 left speed 4
A802 left speed 5
AA02 left speed 6
AC02 left speed 7
AE02 set shot 9-72 camera #

B002 right speed 1
B202 right speed 2
B402 right speed 3
B602 right speed 4
B802 right speed 5
BA02 right speed 6
BC02 right speed 7
BE02 set shot 9-72 shot#

NOTE: Each command must be sent 15 times per second for continuous movement.

EXAMPLES:

1) CAMERA 1, DOWN (SPEED 8):

DOWN (SPEED 8), HEX CODE 8000:

```

hex      8      0      0      0
-----
binary   1000:0000:0000:0000

CAMERA 1 represented as 0, in 6-bit binary 0 0 0 0 0 0

```

Camera number is inserted into the 16 bits as follows:

```

hex      8      0      0      0
-----
binary   1000:0000:0000:0000
                ^   ^^^  ^^
                !   !!!  !!
camera bits:   c   a m e r a
                0   0 0 0 0 0

final command 1000 0000 0000 0000
( hex )       8      0      0      0

```

Now the 16 bits should be split into two bytes and sent over communication line: FIRST COMMAND 80, SECOND COMMAND 00.

2) CAMERA 4, UP (SPEED 8):

UP (SPEED 8), HEX CODE 9000:

CAMERA 4 represented as 3, in 6-bit binary 0 0 0 0 1 1

```

hex      9      0      0      0
-----
binary   1001:0000:0000:0000
                ^   ^^^  ^^
                !   !!!  !!
camera bits:   c   a m e r a
                0   0 0 0 1 1

final command 1001 0000 0000 1100
( hex )       9      0      0      C

```

Now the 16 bits should be split into two bytes and sent over communication line: FIRST COMMAND 90, SECOND COMMAND 0C.

EXAMPLES CONT':

3) CAMERA 64, TELE:

TELE, HEX CODE 8600:

CAMERA 64 represented as 63, in 6-bit binary 1 1 1 1 1 1

hex	8	6	0	0
	-----	-----	-----	-----
binary	1000	: 0110	: 0000	: 0000
		^	^ ^ ^	^ ^
		!	! ! !	! !
camera bits:		c	a m e r a	
		1	1 1 1 1 1	

final command	1000	0111	0111	1100
(hex)	8	7	7	C

Now the 16 bits should be split into two bytes and sent over communication line: FIRST COMMAND 87, SECOND COMMAND 7C.

4) CAMERA 4, WIDE:

WIDE, HEX CODE 8C00:

CAMERA 4 represented as 3, in 6-bit binary 0 0 0 0 1 1

hex	8	C	0	0
	-----	-----	-----	-----
binary	1000	: 1100	: 0000	: 0000
		^	^ ^ ^	^ ^
		!	! ! !	! !
camera bits:		c	a m e r a	
		0	0 0 0 1 1	

final command	1000	1100	0000	1100
(hex)	8	C	0	C

Now the 16 bits should be split into two bytes and sent over communication line: FIRST COMMAND 8C, SECOND COMMAND 0C.

EXAMPLES CONT:

5) CAMERA 4, SET SHOT (PRE-POS.) 1

SET SHOT 1, HEX CODE B000:

CAMERA 4 represented as 3, in 6-bit binary 0 0 0 0 1 1

hex	B	0	0	0
	-----	-----	-----	-----
binary	1011	: 0000	: 0000	: 0000
		^	^^^	^^
		!	!!!!	!!
camera bits:		c	a m e r a	
		0	0 0 0 1 1	

final command	1001	0000	0000	1100
(hex)	B	0	0	C

Now the 16 bits should be split into two bytes and sent over communication line: FIRST COMMAND B0, SECOND COMMAND 0C.

6) CAMERA 4, CALL SHOT (PRE-POS.) 1

CALL SHOT 1, HEX CODE A000:

CAMERA 4 represented as 3, in 6-bit binary 0 0 0 0 1 1

hex	A	0	0	0
	-----	-----	-----	-----
binary	1010	: 0000	: 0000	: 0000
		^	^^^	^^
		!	!!!!	!!
camera bits:		c	a m e r a	
		0	0 0 0 1 1	

final command	1001	0000	0000	1100
(hex)	A	0	0	C

Now the 16 bits should be split into two bytes and sent over communication line: FIRST COMMAND A0, SECOND COMMAND 0C.

NOTE: If more than 8 pre-position shots are needed please contact the American Dynamics Applications Department at 914-365-1000.