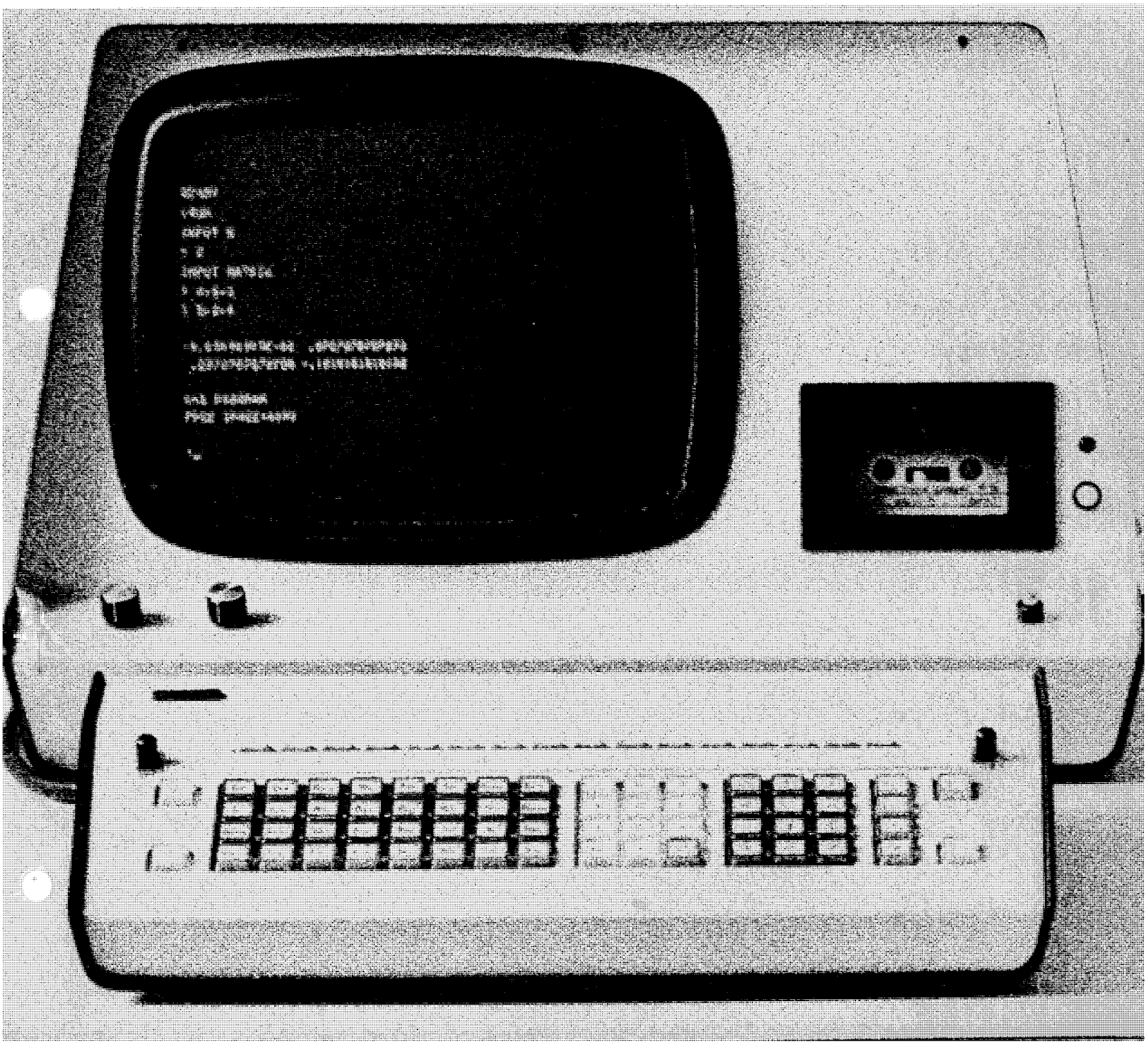
WANG

2201
OUTPUT WRITER
REFERENCE MANUAL

SYSTEM 2200



2201
Output Writer Reference Manual

2nd Edition

WANG LABORATORIES, INC.
836 NORTH STREET, TEWKSBURY, MASSACHUSETTS 01876, TEL.(617) 851-4111, TWX 710 343-6769, TELEX 94-7421

HOW TO USE THIS MANUAL

This manual has been written to provide quick answers to questions concerning the operation of the 2201 Output Writer. It is designed for users who are already familiar with the System 2200 and its BASIC language instruction set. For users who are not familiar with the operation of the System 2200, it is recommended that the System 2200 BASIC Programming Manual be read before proceeding with this manual.

The manual is divided into five sections covering the operating procedures of the Output Writer.

TABLE OF CONTENTS

Section I
General Information

INTRODUCTION

UNPACKING AND INSPECTION

INSTALLATION

TURN ON PROCEDURE

INITIALIZING THE OUTPUT WRITER

TYPING ELEMENT

SECTION I GENERAL INFORMATION

INTRODUCTION

This manual is designed to provide the user with a quick and easy reference to the operational features of the 2201 Output Writer. Arranging the manual into five sections is designed to assist you in answering your questions quickly and efficiently.

Section I — Introduces the 2201 Output Writer along with the unpacking, installation, and turn-on procedure necessary to prepare the system for use.

Section II — Explains the SELECT statement as it pertains to the 2201 Output Writer.

Section III — Describes printing in upper and lower case on the Output Writer.

Section IV — Describes the Hexadecimal Function, along with Tabbing and Special Codes.

Section V — Contains a list of HEX Codes and specifications for the Output Writer.

UNPACKING AND INSPECTION

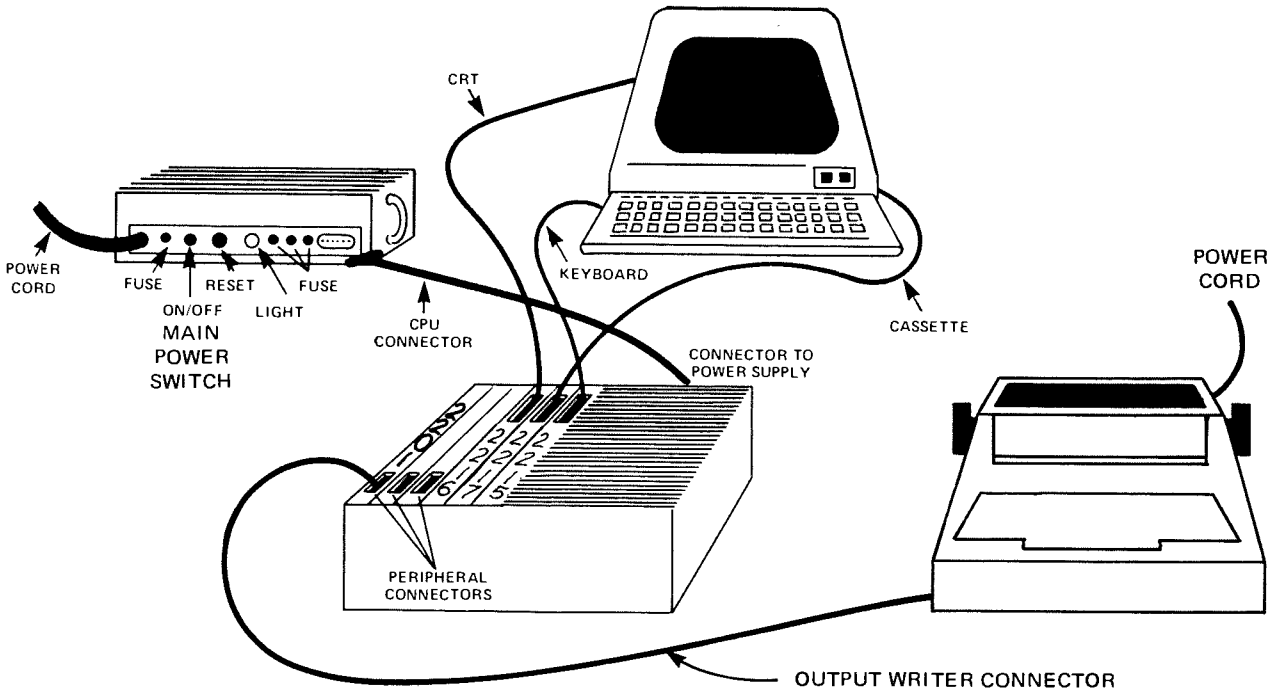
(Call your WANG Service Representative if there are any problems with your system.)

Carefully unpack equipment and inspect all units for shipping damage. If damage is noticed, do not proceed. Notify the shipping agency. Check equipment received against the purchase order. Decals specifying model numbers can be found on all WANG equipment, usually on the back of each unit.

INSTALLATION

To install your 2201, use the following procedure:

1. Turn ON/OFF switches on all equipment OFF.
2. Plug the 2201 Output Writer into CPU chassis. The peripheral connector on the CPU is labeled for the Output Writer. After attaching the cord, make sure the lock clips are snapped in.
3. Plug Output Writer power cord into wall outlet.
4. Plug the main power cord of the CPU chassis into Power Supply Unit; plug Power Supply Unit into wall outlet.



TURN ON PROCEDURE

1. Turn power switches ON on all peripherals (including CRT).
2. Move the main power switch on Power Supply Unit to the ON position (light on Power Supply Unit illuminates). This procedure Master Initializes the system.
3. The CRT display appears as illustrated below.

```
READY
:_
```

4. Place the MANUAL/AUTO switch of the Output Writer in the AUTO position. The Output Writer is ready to function as an Output Device and receive commands from the keyboard of the System 2200.

NOTE:

When in the MANUAL position, the Output Writer is disengaged from the System 2200 and can be used as a standard typewriter.

Your System 2200 is now ready to use.

If a system failure should occur, try to restore operation by touching the RESET button on the keyboard or power supply unit. If normal operation is not restored, Master Initialize the system by turning the power OFF, then ON again (power ON/OFF switch is on the power supply unit). If the system is still non-functional, repeat the installation procedure, then call your WANG Service Representative.

INITIALIZING THE OUTPUT WRITER

An Initialization procedure must be performed after one of the following conditions occurs:

- The Output Writer is plugged into the CPU.
- The MANUAL/AUTO switch on the Output Writer is changed from MANUAL to AUTO.

The Initialization procedure is:

PRESS RESET

This Initialization procedure insures that the Output Writer is in UPPER CASE Mode. If the procedure is not used, the first line of output may be in LOWER CASE Mode.

TYPING ELEMENT

The standard element available on the Output Writer is the Prestige Elite 72.

Certain characters are different on the CRT than on the Output Writer:

CRT	OUTPUT WRITER
<	[
>	]
↑	!

The three characters <, >, and ↑ are not standard Selectric characters; they are replaced by the [,], and ! symbols on the Output Writer.

NOTE:

The following sections give detailed instructions, with examples, how to address and use the 2201 Output Writer. Refer to the System 2200 Reference Manual for a more detailed description of PRINT, LIST and SELECT commands.

Section II
Device Selection

DEVICE CODES

THE SELECT STATEMENT

CARRIAGE WIDTH AND LINE COUNT

COMBINED PARAMETERS

SHORTCUT SELECTION METHOD

DESELECTING THE OUTPUT WRITER

SECTION II DEVICE SELECTION

DEVICE CODES

A three character Device Code is assigned to each Output Writer that is attached to the System 2200. This code is used when selecting the Output Writer for output. The Device Code is a three character HEX Code (XYY). The first character is the Device Type, and the last two characters in the code are the Device Address. The Device Address for the first Output Writer in the system is 11; the address for a second Output Writer, if desired, is 12. The Device Address can be only 11 and 12.

There are three one-digit Device Types available for the Output Writer:

Type 0 - This Device Type addresses devices that are not normally indexed to the next line when a carriage return is executed. With a Type 0, the System 2200 automatically adds a line feed after each carriage return. The Output Writer automatically executes a line feed when a carriage return is executed. Therefore, if the Device Codes of 011 or 012 are used for the Output Writer, all output is double spaced.

Type 2 - This Device Type addresses devices that normally execute a line feed when a carriage return is executed. Therefore, if the Device Codes of 211 or 212 are used with the Output Writer, all output is single spaced.

Type 4 - The SELECT statement specifies the maximum line length on the Output Writer. Device Types 0 and 2 tell the system to keep a count of the number of characters used for each line. When the number of characters equals the specified line length, a carriage return is executed. Choosing Device Codes 411 or 412, however, suppresses this feature by not executing a carriage return when the number of characters equals the line length. This is helpful when extra characters, such as Backspace or Underline are required. The carriage return is not executed until the carriage return command is given. If Device Codes of 411 or 412 are used with the Output Writer, all output is double spaced, since the System 2200 automatically adds a line feed after each carriage return (as with Type 0).

SECTION II DEVICE SELECTION

THE SELECT STATEMENT

The SELECT statement (see System 2200 Reference Manual) selects the 2201 Output Writer to output data. The Output Writer can be selected for three distinct types of output by using the SELECT parameters PRINT, LIST, and CO.

The SELECT statement can be keyed in either in an Immediate Mode statement or as part of a program.

```
:SELECT PRINT 211
```

The above SELECT PRINT statement selects the Output Writer with the Device Address Code 211 for all program output resulting from the execution of PRINT or PRINTUSING statements. Printout resulting from PRINT statements entered in the Immediate Mode appear on the CRT unless the Output Writer is selected for CO (see SELECT CO 211).

Example:

```
:10 SELECT PRINT 211
:20 PRINT "X", "X↑2"
:30 FOR X=1 TO 5
:40 PRINT X, X↑2
:50 NEXT X
:RUN
```

OR

```
:SELECT PRINT 211
:20 PRINT "X", "X↑2"
:30 FOR X=1 TO 5
:40 PRINT X, X↑2
:50 NEXT X
:RUN
```

RESULTANT 2201 PRINTOUT:

X	X!2
1	1
2	4
3	9
4	16
5	25

```
:SELECT LIST 211
```

The above SELECT LIST statement selects the Output Writer with the Device Address Code 211 for all program listing.

Example:

To list the program in the above example on the 2201:

```
:SELECT LIST 211
:LIST
```

RESULTANT 2201 PRINTOUT:

```
10 SELECT PRINT 211
20 PRINT "X","X!2"
30 FOR X=1TO 5
40 PRINT X,X!2
50 NEXT X
```

```
:SELECT CO 211
```

The above SELECT CO statement selects the Output Writer with the Device Address Code 211 for all console output. Console output includes all system information, such as the READY message, output from the STOP and END statements, any information keyed into the System 2200, and all output from Immediate Mode operations, TRACE statements, and error messages.

Key: SELECT CO 211 EXECUTE

```
RESULTANT 2201 PRINTOUT:

:
```

Key: RESET

```
RESULTANT 2201 PRINTOUT:

:
READY
:
```

All information keyed into the System 2200 is printed on the Output Writer.

CARRIAGE WIDTH AND LINE COUNT

The maximum number of characters allowed on the Output Writer carriage is 156. To accomodate various paper widths and special forms, the length of the output line can be specified by enclosing the desired carriage width in parentheses following the Device Address Code in the SELECT statement. This number is stored within the System 2200 and indicates to the system what the effective carriage width of the selected device is to be. For example:

SELECT PRINT 211 (156)	(Select 2201 for printing, set carriage width to 156)
SELECT LIST 211 (80)	(Select 2201 for listing, set carriage width to 80)
SELECT CO 212 (132)	(Select 2201 for console output, set carriage width to 132)

If a carriage width is not specified for PRINT, LIST, or CO, the last carriage widths selected for these operations are used. Master Initialization sets these carriage widths to 64 characters.

The carriage width setting is used by the system, to generate an automatic carriage return when a line exceeds the specified carriage width and no carriage return is supplied by the program. This prevents loosing or overtyping printout. As a line of output is typed on the 2201 Output Writer, the System 2200 keeps a count of the number of characters sent to the 2201. If this line count equals the current value of the carriage width before the output line is complete, a carriage return is executed; the line count is reset to zero and the unfinished output is continued on the next line. If the output is completed and a carriage return is transmitted before the line count equals the carriage width, the system automatically resets the line count to zero for the start of a new line (a print statement with no trailing comma or semi-colon causes a carriage return to be executed at the end of the output). The line count is reset to zero under any one of the following conditions:

1. The line count equals the carriage width,
2. A carriage return is output when printing,
3. The system is RESET,
4. A CLEAR command is executed,
5. The system is Master Initialized,
6. The 2201 is reselected for LIST, PRINT, or Console Output.

The following example illustrates the automatic carriage return generated by the selected carriage width.

Example:

```
:SELECT PRINT 211(5) (NOTE, carriage width of 5 selected)
:10 PRINT "THE QUICK BROWN FOX JUMPS"
:RUN
```

The following output is printed on the 2201:

```
THE Q
UICK
BROWN
FOX J
UMPS.
```

COMBINED PARAMETERS

More than one parameter can be combined in a SELECT statement. For example:

```
SELECT PRINT 211 (156), LIST 211 (80), CO 212 (132)
```

SHORTCUT SELECTION METHOD

The 2201 Output Writer may be selected for all System 2200 printout by the following procedure:

```
:SELECT CO 211
:CLEAR
```

The CLEAR command automatically assigns the PRINT and LIST parameters to the current Console Output Device.

CAUTION: This method should not be used if a program to be saved exists in memory as the CLEAR command clears memory.

DESELECTING THE OUTPUT WRITER

The 2201 Output Writer can be deselected by:

1. Selecting another device for PRINT, LIST, or CO.
2. Master Initialization (turning ON/OFF switch OFF, then ON) automatically selects the Primary Console Devices for all I/O operations.
3. Entering a CLEAR command with no parameters deselects the LIST and PRINT functions to the current Console Output Device.

Section III
Formatting Output

PRINT AND PRINTUSING STATEMENTS

THE TAB(FUNCTION

UPPER AND LOWER CASE LITERALS

SECTION III FORMATTING OUTPUT

PRINT AND PRINTUSING STATEMENTS

The PRINT and PRINTUSING statements are used in the same manner with the Output Writer as they are used with the CRT. The only difference is the maximum number of zones available on the Output Writer. The carriage width of all output devices are divided into as many zones of 16 characters as possible.

The 2201 has a carriage width of 157 characters, divided into nine zones of 16 characters each, and one zone of 13 characters. The zones constitute columns 0-15, 16-31, 32-47, 48-63, 64-79, 80-95, 96-111, 112-127, 128-143, and 144-156 respectively.

If commas separate elements in a PRINT statement, then each element is printed at the start of a new zone. If semicolons separate elements in a PRINT statement, zoned format is ignored, and the output appears in packed format (see System 2200 Reference Manual for discussion of zoned and packed format).

THE TAB(FUNCTION

The TAB(function is also used in the same manner with the Output Writer as it is used with the CRT. When a PRINT statement containing a TAB(function is executed, the Output Writer typing element spaces to the column specified by the integer portion of the TAB expression.

To space over the correct number of places, the System 2200 evaluates the TAB expression and compares it with the carriage width. If the expression is greater than the carriage width, the system moves the carriage to the start of a new line and resets the line count to zero. If the expression is less than or equal to the carriage width, the system subtracts the current line count from the TAB argument and moves the typing element that number of spaces to the desired position by outputting the appropriate number of space characters. Each time a character is output (i.e., the element is moved one space), the line count is incremented by one. If the carriage has already passed the specified column, the TAB command is ignored. Values of TAB expressions greater than 157 are illegal, since the maximum number of characters allowed per line is 157.

Example:

```
:SELECT PRINT 211 (80)
:10 PRINT TAB(30); "NAME"
:RUN
```

Executing the above program causes the Output Writer to space to column 30 before typing NAME.

The TAB(function does not use preset tabs that can be set on the typewriter. Since the TAB(function causes the output of a number of space characters for positioning to the indicated column, it is slower than standard typewriter tabbing. HEX Codes can be output via the PRINT statement to instruct the 2201 to clear tabs, set tabs or tab to a preset location. (Refer to Section IV on HEX Codes for discussion of typewriter tabbing.) In applications where a great deal of repetitive tabbing is required, the use of programmable mechanical tabbing on the typewriter can significantly decrease the time required to produce printed output.

UPPER AND LOWER CASE LITERALS

Literal character strings and string variable values can be printed on the Output Writer in either upper or lower case.

A special form of literal string is available for specifying lower case characters; the literal string is enclosed in single quotes. For example, the following statements

```
:SELECT PRINT 211
:10 PRINT "J"; 'OHN'; "D"; 'OE'
```

print the following on the Output Writer: JohnDoe

The statements

```
:10  SELECT PRINT 211
:20  N$ = 'ABCDXYZ'
:30  PRINT N$
:RUN
```

print the following:

```
abcdxyz
```

There is another method of outputting lower case literals if the 2222 ALPHANUMERIC keyboard is used. When the toggle switch on the 2222 is in the 'A/a' position, the keyboard acts like a standard typewriter keyboard. When a key is touched, lower case type is generated. Lower case literals can be entered into string variable values this way. The SHIFT key is used to obtain upper case literals.

Example:

```
:10  INPUT A$
:20  SELECT PRINT 211
:30  PRINT A$
:40  END
:RUN
```

On the 2222 keyboard, keying in:

? (J) (O) (H) (N) EXECUTE (without shifting)

prints the following on the Output Writer

```
john
```

The following characters are valid for use in lower case literals on the 2222 keyboard:

Letters:	ABCDEFGHIJKLMNOPQRSTUVWXYZ
Digits:	0123456789
Special Characters:	blank ! " # $ % & ( ) * + , - . / : ; [=] ?

NOTE: *Lower case literals can also be printed using HEX Codes (see Section IV).*

Section IV
The Hex Function

HEX CODES

TABBING ON THE OUTPUT WRITER

SPECIAL CODES

SECTION IV THE HEX FUNCTION

HEX CODES

The Hexadecimal function (HEX) is a form of literal string that enables a user to use any 8-bit codes in a BASIC program; the HEX function can be used wherever literal strings enclosed in double quotes can be used. The HEX function can be used to output characters that do not appear on the 2215 or 2222 keyboards. It can also be used to output control commands to peripherals such as the 2201 Output Writer (LINE FEED, SET TAB, etc.).

General Form:	HEX (hexdigit hexdigit [hexdigit hexdigit...])
Where:	hexdigit = a digit 0-9, or a letter A-F.

The more useful HEX command codes for the Output Writer are shown in the following table:

HEX(08) – BACKSPACE
HEX(09) – TAB
HEX(0A) – LINE FEED
HEX(0D) – CARRIAGE RETURN
HEX(19) – CLEAR TAB
HEX(1A) – SET TAB
HEX(5F) – UNDERLINE

A complete list of HEX codes pertaining to the Output Writer is given in Appendix A. On most System 2200 output peripherals, the command codes that do not affect the carriage position begin with zero. Therefore, these commands do not affect the line count. Codes beginning with a non-zero hexadecimal digit cause the line count to be incremented by one.

Example:

```
:SELECT PRINT 211
:10 PRINT HEX(1A);
```

Executing these statements sets a tab on the Output Writer.

NOTE:

The semicolon at the end of statement 10 suppresses the carriage return that is normally output at the end of the PRINT statement.

TABBING ON THE OUTPUT WRITER

Tabulated output on the 2201 Output Writer is faster with the use of tab settings. The typewriter actually jumps to the set position like a standard typewriter.

Outputting the Hexadecimal Code, HEX(09), causes the Output Writer to tab to the next setting; this is considerably faster than spacing each time to the specified column, using the PRINT TAB(function.

Tab settings may be set and cleared within a BASIC program. For example, executing the following lines clears up to 8 tab settings:

```
                    :SELECT PRINT 211 (156)
                    :10  FOR I = 1 TO 8
Tab to next setting ------> :20  PRINT HEX(09);
Clear tab ----------------> :30  PRINT HEX (19);
                    :40  NEXT I :PRINT
```

SECTION IV THE HEX FUNCTION

NOTE:

HEX Codes can be combined. Statements 20 and 30 of the above program can be combined to read

:25 PRINT HEX(0919);

There are two simple techniques that can be used to set the mechanical tabs on the 2201 Output Writer under program control. One method is to use spaces enclosed in quotation marks to move the carriage to the column where a tab is to be set.

Example:

```
:SELECT PRINT 211 (156)
:10 PRINT "    "; HEX(1A);"      "; HEX(1A);"      "; HEX(1A)
        (5 spaces)          (5 spaces)          (5 spaces)
```

Statement line 10 will set tabs in columns 5, 10 and 15.

The second method is to use the TAB( ) expression to move the carriage to the desired column. When using this method, it is important to remember two things:

1. Since the HEX code for SET TAB begins with a non-zero hexadecimal digit, the line count maintained in the System 2200 is incremented by one when the SET TAB character is output to the 2201 even though the carriage does not move, and
2. When the TAB( ) expression is used, the system calculates the number of columns to space over by subtracting the line count from the TAB( ) expression.

If the TAB( ) expression and the SET TAB command are not used together correctly, tabs will not be set in the intended locations. The following example illustrates this point:

Example:

```
:SELECT PRINT 211 (156)
:10 PRINT TAB(10); HEX(1A); TAB(20); HEX(1A); TAB(30); HEX(1A)
```

When TAB(10) is executed, the system subtracts the current line count from the TAB( ) expression (i.e., 10 – 0) and moves the carriage 10 spaces to column 10 by outputting 10 space characters; the line count is incremented to 10. The first SET TAB command sets a tab in this column and increments the line count to 11, although the carriage remains positioned in column 10. When TAB(20) is executed, the system again subtracts the current line count from the TAB( ) expression (i.e., 20 – 11) and spaces over 9 spaces to column 19 by outputting 9 space characters; the line count is incremented to 20. The second SET TAB command sets a tab in column 19 and increments the line count to 21. When executing the TAB(30) expression, the carriage is again moved 9 spaces (i.e., 30 – 21) to column 28; the line count is incremented to 30. A tab is then set in column 28, and the line count incremented to 31. To correctly use the TAB(function to set TABS, the TAB( ) expressions must include an additional count for each previously transmitted SET TAB character in a line. The following example will set tabs in columns, 10, 20 and 30.

Example:

To set tabs at columns 10, 20 and 30

```
:SELECT PRINT 211 (156)
:10 PRINT TAB(10); HEX(1A); TAB(21); HEX(1A); TAB(32); HEX(1A)
 or
 10 FOR I = 10 TO 32 STEP 11
 20 PRINT TAB (I); HEX(1A);
 30 NEXT I
```

The following statement prints "SALESMAN", tabs to the 1st tab setting, and prints "AMOUNT":

```
:10 PRINT "SALESMAN"; HEX(09); "AMOUNT"
```

SPECIAL CODES

There are HEX Command Codes other than TAB, SET TAB, CLEAR TAB available on the Output Writer. They are SPACE, BACKSPACE, LINE FEED, and CR/LF. HEX Codes are used to designate these commands. HEX Codes can also be used to generate upper case and lower case literals. A complete list of HEX Codes is given in Appendix A.

Example:

```
                    :SELECT PRINT 211
CR and LF ------->  :10 PRINT HEX(0D0A);
PRINT Wang ------>  :20 PRINT "W"; 'ang';
                    :30 FOR I = 1 TO 4
BACKSPACE ------->  :40 PRINT HEX(08);
                    :50 NEXT I
                    :60 FOR I = 1 TO 4
UNDERLINE ------->  :70 PRINT HEX(5F);
                    :80 NEXT I
PRINT Labs ------>  :90 PRINT HEX (204C6162732E)
```

Executing the above program prints the following on the Output Writer:

Wang Labs.

Section V
Appendices

APPENDIX A

HEXADECIMAL CODES

APPENDIX B

SPECIFICATIONS FOR THE 2201 OUTPUT WRITER

APPENDIX A – HEXADECIMAL CODES

HEX CODE	2201 CHARACTER	CRT CHARACTER
HEX(01)	Not Available *	Cursor home
HEX(03)	Not Available *	Clears screen and cursor home
HEX(08)	Backspace	Backspace
HEX(09)	Tab *	Not Available
HEX(0A)	Line Feed	Cursor down ↓ (line feed)
HEX(0C)	Not Available *	Cursor up ↑ (reverse index)
HEX(0D)	CR/LF	CR/LF
HEX(0E)	Shift *	Not Available
HEX(0F)	Shift Off *	Not Available
HEX(19)	Clear Tab *	Not Available
HEX(1A)	Set Tab *	Not Available
HEX(1E)	¢ *	Not Available
HEX(1F)	° (Degree) *	Not Available
HEX(20)	Space	Space
HEX(21)	!	!
HEX(22)	"	"
HEX(23)	#	#
HEX(24)	$	$
HEX(25)	%	%
HEX(26)	&	&
HEX(27)	'	' (apostrophe)
HEX(28)	(	(
HEX(29)	)	)
HEX(2A)	*	*
HEX(2B)	+	+
HEX(2C)	,	, (comma)
HEX(2D)	–	– (minus)
HEX(2E)	.	.
HEX(2F)	/	/
HEX(30)	0	0
HEX(31)	1	1
HEX(32)	2	2
HEX(33)	3	3
HEX(34)	4	4
HEX(35)	5	5
HEX(36)	6	6
HEX(37)	7	7
HEX(38)	8	8
HEX(39)	9	9

*Designates Codes that are different on the CRT than on the 2201 Output Writer.

APPENDIX A – HEXADECIMAL CODES

HEX CODE	2201 CHARACTER		CRT CHARACTER
HEX(3A)	:		:
HEX(3B)	;		;
HEX(3C)	[	*	<
HEX(3D)	=		=
HEX(3E)	]	*	>
HEX(3F)	?		?
HEX(40)	@		@
HEX(41)	A		A
HEX(42)	B		B
HEX(43)	C		C
HEX(44)	D		D
HEX(45)	E		E
HEX(46)	F		F
HEX(47)	G		G
HEX(48)	H		H
HEX(49)	I		I
HEX(4A)	J		J
HEX(4B)	K		K
HEX(4C)	L		L
HEX(4D)	M		M
HEX(4E)	N		N
HEX(4F)	O		O
HEX(50)	P		P
HEX(51)	Q		Q
HEX(52)	R		R
HEX(53)	S		S
HEX(54)	T		T
HEX(55)	U		U
HEX(56)	V		V
HEX(57)	W		W
HEX(58)	X		X
HEX(59)	Y		Y
HEX(5A)	Z		Z
HEX(5B)	[		[
HEX(5C)	Not Available	*	\
HEX(5D)	]		]
HEX(5E)	!	*	↑
HEX(5F)	_(Underline)	*	←

*Designates Codes that are different on the CRT than on the 2201 Output Writer.

APPENDIX A – HEXADECIMAL CODES

HEX CODE	2201 CHARACTER		CRT CHARACTER
HEX(61)	a	*	A
HEX(62)	b	*	B
HEX(63)	c	*	C
HEX(64)	d	*	D
HEX(65)	e	*	E
HEX(66)	f	*	F
HEX(67)	g	*	G
HEX(68)	h	*	H
HEX(69)	i	*	I
HEX(6A)	j	*	J
HEX(6B)	k	*	K
HEX(6C)	l	*	L
HEX(6D)	m	*	M
HEX(6E)	n	*	N
HEX(6F)	o	*	O
HEX(70)	p	*	P
HEX(71)	q	*	Q
HEX(72)	r	*	R
HEX(73)	s	*	S
HEX(74)	t	*	T
HEX(75)	u	*	U
HEX(76)	v	*	V
HEX(77)	w	*	W
HEX(78)	x	*	X
HEX(79)	y	*	Y
HEX(7A)	z	*	Z

*Designates Codes that are different on the CRT than on the 2201 Output Writer.

APPENDIX B – SPECIFICATIONS FOR THE 2201 OUTPUT WRITER

Paper Capacity	15-1/2 in.
Writing Line	13 in.
Characters per Inch	12
Characters per Line	157
No. of Lines per Inch	6
Type Face	Prestige Elite 72 (IBM)
Max. Printing Speed	15 char sec (approx)
Return (CR + LF) Time	.15 sec + 60 ms/in.
Shift Time	150 ms (approx)
Space/Back Space Time	70 ms (approx)
INDEX (LF) Time	150 ms (approx)
Tabulation Time (5 in. max.)	.5 sec
Set/Clear Tab Time	.5 sec
Size: Height	8-1/2 in.
Width	21 in.
Depth	15-1/2 in.
Weight:	40 lbs
Power Requirements	115 VAC ± 10%, 60 Hz ± 1/2 cycle (230 VAC, 50 Hz on special order, no charge)
Connection Cable to System 2200	12 ft included

OPTION:

Pin Feed Platen. Paper Requirements	14-5/8 in.
Environment:	50° F to 90° F (10° C to 32° C) 40% to 60% relative humidity

INDEX

To help us to provide you with the best manuals possible, please make your comments and suggestions concerning this publication on the form below. Then detach, fold, tape closed and mail to us. All comments and suggestions become the property of Wang Laboratories, Inc. For a reply, be sure to include your name and address. Your cooperation is appreciated.

TITLE OF MANUAL:

COMMENTS:

Fold

Fold

(Please tape. Postal regulations prohibit the use of staples.)

WANG

Fold

FIRST CLASS
PERMIT NO. 16
Tewksbury, Mass.

BUSINESS REPLY MAIL
NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

– POSTAGE WILL BE PAID BY –

WANG LABORATORIES, INC.
836 NORTH STREET
TEWKSBURY, MASSACHUSETTS 01876

Attention: Marketing Department

Fold

Cut along dotted line.

Printed in U.S.A.

WANG LABORATORIES (CANADA) LTD.
180 Duncan Mill Road
Don Mills, Ontario M3B 1Z6
TELEPHONE (416) 449-7890
TELEX 06-966546

WANG EUROPE, S.A.
Buurtweg 13
9412 Ottergem
Belgium
TELEPHONE: 053/74514
TELEX: 26077

WANG ELECTRONICS LTD.
1, Olympic Way, 4th Floor
Wembley Park,
Middlesex, England
TELEPHONE: 01/903/6755
TELEX: 923498

WANG FRANCE SARL
47, Rue de la Chapelle
Paris 18, France
TELEPHONE 203.27.94 or 203.25.94

WANG LABORATORIES GMBH
Moselstrasse No. 4
6000 Frankfurt am Main
West Germany
TELEPHONE (0611) 252061-64

WANG SKANDINAVISKA AB
Fredsgaten 17
S-172-23
Sundbyberg 1, Sweden
TELEPHONE 08-98-12-45

WANG NEDERLAND B.V.
Damstraat 2
Utrecht, Netherlands
TELEPHONE 030-930947

WANG PACIFIC LTD.
61, King Yip Street, 1st Floor
Kwun Tong Kowloon, Hong Kong
TELEPHONE 3-434231/2

WANG INDUSTRIAL CO., LTD.
110-118 Kuang-Fu N. Rd.
Taipei, Taiwan
Republic of China
TELEPHONE 784181-3

WANG GESELLSCHAFT MBH
Grinzinger Allee 16
1190 Vienna 19
Austria
TELEPHONE (0222) 32.42.43

WANG COMPUTER PTY. LTD.
25 Bridge Street
Pymble, NSW 2073
Australia
TELEPHONE 449-6388

WANG INTERNATIONAL TRADE, INC.
836 North Street
Tewksbury, Massachusetts 01876
TELEPHONE (617) 851-4111
TWX 710-343-6769
TELEX 94-7421

WANG COMPUTER SERVICES
836 North Street
Tewksbury, Massachusetts 01876
TELEPHONE (617) 851-4111
TWX 710-343-6769
TELEX 94-7421

24 Mill Street
Arlington, Massachusetts 02174
TELEPHONE (617) 648-8550

WANG LABORATORIES, INC.
836 NORTH STREET TEWKSBURY, MASSACHUSETTS 01876 TEL (617) 851 4111, TWX 710 343 6769 TELEX 94 7421

Printed in U.S.A.
700-3113A
12-73-2M
Price $7.50