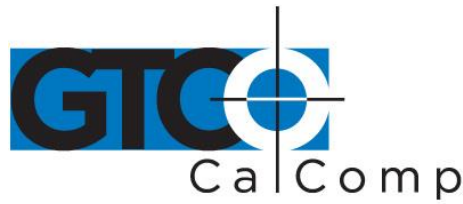




## DRAWINGBOARD III COMMANDS

### Room Defaults

TYPE	RECALL 1	RECALL 2	RECALL 3	RECALL 4, 8	RECALL 5, 7	RECALL 6
FORMAT	#23	#30	#0	#7	#23	#20
MODE	RUN	TRACK	POINT	RUN	RUN INC	RUN INC
PARITY	8 NONE	8 ODD	7 EVEN	8 NONE	8 NONE	8 NONE
BAUD	9600	9600	9600	9600	9600	9600
RESOLUTION	1000 LPI	500 LPI	200 LPI	1000 LPI	1000 LPI	1000 LPI
DATA RATE	125	100	125	125	40	40



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MENU BITS ->	RECALL	1	2	3	4	5	6	8	7	m a c	MENU BITS	RECALL ->	1	2	3	4	5	6	8	7	m a c
M1.7 A[01] MODE 1 <i>bank a</i>		1	1	0	1	1	1	1	1	1	M5.7 B[15] MOUSE 1		0	0	0	0	0	0	0	0	0
M1.6 A[02] MODE 2		1	0	1	1	1	1	1	1	1	M5.6 B[16] MOUSE 2		0	0	0	0	0	0	0	0	0
M1.5 A[03] INC VALUE 1		0	0	0	0	0	0	0	0	0	M5.5 B[17] HIGH/LOW		0	0	0	0	0	0	0	0	0
M1.4 A[04] INC VALUE 2		0	0	0	0	1	1	0	1	1	PROXIMITY		1	1	1	0	1	1	0	1	0
M1.3 A[05] PROMPT		0	0	0	0	0	0	0	0	1	M5.4 B[18] CTS LINE ENABLE		0	0	0	0	X	X	x	X	0
M1.2 A[06] DATA RATE 1		1	1	1	1	1	1	1	1	1	M5.3 C[01] PORTRAIT 0 <i>bank c</i>		0	0	0	0	0	0	0	0	0
M1.1 A[07] DATA RATE 2		1	0	1	1	0	0	1	0	1	M5.2 C[02] CR DISABLE		1	1	1	0	X	X	x	X	0
M1.0 A[08] DATA RATE 3		1	0	1	1	0	0	1	0	1	M5.1 C[03] BEEP ON PENDWN		0	0	0	0	1	1	0	1	1
M2.7 A[09] RESOLUTION 1		1	1	0	1	1	1	1	1	1	M6.7 C[05] TILT TO PRESSURE		0	0	0	0	0	0	0	0	0
M2.6 A[10] RESOLUTION 2		1	0	0	1	1	1	1	1	1	M6.6 C[06] PORTRAIT 1		0	0	0	0	X	X	x	X	0
M2.5 A[11] RESOLUTION 3		0	0	1	0	0	0	0	0	0	M6.5 C[07] TOP ORIGIN		0	0	0	0	X	X	x	X	0
M2.4 A[12] FORMAT 1		1	1	0	0	1	1	0	1	1	M6.4 C[08] 9500 style cursor		0	0	0	0	X	X	x	X	0
M2.3 A[13] FORMAT 2		0	1	0	0	0	0	0	0	0	M6.3 C[09] (RESERVED)		0	0	0	0	X	X	x	X	0
M2.2 A[14] FORMAT 3		1	1	0	1	1	1	1	1	0	M6.2 C[10] (RESERVED)		0	0	0	0	X	X	x	X	0
M2.1 A[15] FORMAT 4		1	1	0	1	1	0	1	1	1	M6.1 C[11] (RESERVED)		0	0	0	0	X	X	x	X	0
M2.0 A[16] FORMAT 5		1	0	0	1	1	0	1	1	1	M6.0 C[12] (RESERVED)		0	0	0	0	X	x	x	X	0
M3.7 A[17] LF ENABLED		0	1	1	1	0	0	1	0	0	M7.7 C[13] L_COMMANDS		0	0	0	0	0	0	0	0	0
M3.6 A[18] 7 OR 8 DATA		1	1	0	1	1	1	1	1	1	M7.6 C[14] McD spr		0	0	0	0	0	0	0	0	0
M3.5 B[01] BAUD RATE 1		0	0	0	0	0	0	0	0	0	M7.5 C[15] Auto/tek/lectra spr		0	0	0	0	0	0	0	0	0
<i>bank b</i>		0	0	0	0	0	0	0	0	0	M7.4 C[16] jccs		0	0	0	0	0	0	0	0	0
M3.4 B[02] BAUD RATE 2		1	1	1	1	1	1	1	1	0	M7.3 C[17] otsuka		0	0	0	0	0	0	0	0	0
M3.3 B[03] BAUD RATE 3		1	0	0	1	1	1	1	1	1	M7.2 C[18] lectra large format		0	0	0	0	0	0	0	0	0
M3.2 B[04] PARITY 1		0	0	0	0	0	0	0	0	0	M7.1 ?[??] DISABLE FUNCTION		0	0	0	0	X	X	x	X	1
M3.1 B[05] PARITY 2		0	0	1	0	0	0	0	0	0	B		0	0	0	0	X	X	x	X	1
M3.0 B[06] PARITY 3											M7.0 ?[??] CMENU_ACTIVE										
M4.7 B[07] FREQUENCY		0	0	0	0	X	X	x	X	0	recall 1 C7,D7,4C,00,12,00,00										
M4.6 B[08] NO MM OR 2000		0	0	0	0	0	0	0	0	1	recall 2 84,9E,C8,00,12,00,00										
M4.5 B[09] MUST USE ESC		0	0	0	0	0	0	0	0	0	recall 3 47,20,89,00,12,00,00										
9X00		0	0	0	0	1	1	0	1	1	recall 4 C7,C7,CC,00,00,00,00										
M4.4 B[10] PROXIMITY		0	0	0	0	0	1	0	0	0	recall 5 D4,D7,4C,10,11,00,01										
M4.3 B[11] PPEN		0	0	0	0	0	1	0	0	0	recall 6 D4,D4,4C,1F,11,00,01										
M4.2 B[12] HEIGHT		0	0	0	0	0	1	0	0	0	MAC SER DF,D3,44,60,01,00,03										
M4.1 B[13] TILT_DATA		0	0	0	0	0	1	0	0	0											
M4.0 B[14] TILT_CORRECT																					

X is the last value. I.E. It does not change these bits.



## Operating Modes

**Run Mode:** Digitizer outputs coordinate data continuously.

**Track Mode:** Digitizer outputs coordinate data when button is down.

**Line Mode:** Digitizer outputs coordinate data points when a button is down; plus one when the button is released.

**Point Mode:** One point is sent when a button is pressed.

**Prompt:** Places the additional restriction on data transmission that the host must transmit a prompt character to the tablet for each data point output. All other rules of normal operation apply. The prompt character is "?". Prompting is a feature which operates in conjunction with any of the standard modes.

**Increment:** Puts a movement filter on data in any mode. The transducer must move N counts before the data can be sent or on a button transition. Then both axis data is updated.

**Grid Update:** Similar to **Increment Mode**, except only the axis that the increment occurred in is updated; the other axis is its old value.

**Send Data Out of Proximity:** If this flag is set, coordinate data will be sent when it meets the output conditions in or out of the active area. Cordless units may not respond to button information until cursor is close to tablet.

**Send Margin Data:** If this flag is set, coordinate data point will be sent when it meets the output conditions in the active area or when in margins.

**NOTE:** Margins on some of the tablets are very small and large, leaving the table than coming in to the tablet.

**Mouse Mode:** Overrides the tablets baud rate parity and operating mode. It puts the tablet in run increment mode at 1200 baud and outputs relative data at 100 lpi (can make high resolution if needed) in either Microsoft or mouse system mouse format.



**NOTE:** On Microsoft emulation, if cts is toggled, the tablet sends a “M” to the host computer.

**Delta Mode:** (mm mode only) Send relative data.

## Firmware

### Output Formats

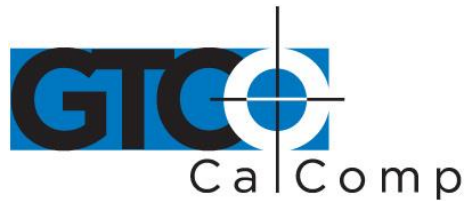
The following codes are used in describing the output formats:

C	<b>Cursor Status.</b> In ASCII formats, indicates a single status character.
Cn	<b>Cursor Status Bit.</b> In binary formats, a bit representing cursor status. The highest-numbered “Cn” is the MSB and “C0” for the LSB.
,	ASCII comma.
CR	ASCII carriage return (HEX 0D).
LF	ASCII Line Feed HEX 0A
T0	Tablet status bit 0 or 1 set by command.
X	<b>Data Digit.</b> In ASCII formats, a numeric character representing coordinated data. The number of X symbols represents the number of allowable digits.
Xn	<b>Data Bit.</b> In binary formats, a bit representing coordinated data. The highest-numbered “n” is the MSB.
pn	Pressure pen data 0-7.
pp	Pressure pen data ASCII.

## ASCII Formats

### Any Size

4 9100 1	T M C XXXXX YYYYY	CR [LF]
5 9100 2	XXXXX, YYYYY, T M C	CR [LF]
6 9100 3	C P XXXXX, YYYYY	CR [LF]
7 9100 4	SP XX.XXX, SP YYYY.YY, TM	CR [LF] 1000 LPI
	SP XXXX.XX, SP YYYY.YY, TMC	CR [LF] 100 LPmm
	SP XXXX.X, SP YYYY.Y, TMC	CR [LF] 10 LPmm
	SP XXXX. , SP YYYY. , TMC	CR [LF] OTHER



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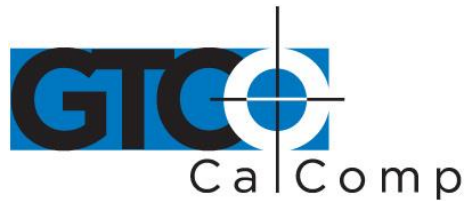
8	+XX.XXX, +YY.YYY, CACB, T0	CR [LF] 1000 LPmm
	+XXXX.XX, +YYYY.YY, CACB, T0	CR [LF] 100 LPmm
	+XXXX.X, +YYYY.Y, CACB, T0	CR [LF] 10 LPmm
	+XXXXX., +YYYYY., CACB, T0	CR [LF] OTHER

**33120 or 33180 w/RES <510 LPI or 33240 and RES <405**

0	2A	XXXX, YYYY, C	CR [LF]
1	2C	C XXXX YYYY	CR [LF]
2	@ C	+XXXX +YYYY	CR [LF]
3	mA	XXXX, YYYY, C	CR [LF]
3	DELTA	+XXXX, +YYYY, C	CR [LF]
9	C	XXXX SP YYYY	CR [LF]
10	2F	C XXXX YYYY	CR [LF]
11		XXXX YYYY C	CR [LF]
12	2E	XXXX, YYYY, C	CR [LF]
13	2D	C +XXXX +YYYY	CR [LF]
14		+XXXX +YYYY C	CR [LF]
15		+XXXXX, +YYYYY, CACB, T0	CR [LF]
16		+XXXX.XXX, +YYYY.YYY, CACB, T0	CR [LF]
17	cur	*,[ -]xxxxxx, [-]yyyyy, cc	cr [lf]
17	pen	#,[ -]xxxxxx, [-]yyyyy, cc	cr [lf] NOTE pen buttons are 0,1,2,4
17	ppen	!,[ -]xxxxxx, [-]yyyyy, [-]ppp	cr [lf]

**33120 or 33180 w/RES >509 LPI or 33240 and RES >404 or Other Tablet Size and RES <1274**

0	2A	XXXXX, YYYYY, C	CR [LF]
1	2C	C XXXXX YYYYY	CR [LF]
2	@ C	+XXXXX +YYYYY	CR [LF]
3	mA	XXXXX, YYYYY, C	CR [LF]
3	DELTA	+XXXXX, +YYYYY, C	CR [LF]



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```

9   C      XXXXX SP YYYYY      CR [LF]
10 2F     C XXXXX YYYYY      CR [LF]
11      XXXXX YYYYY C      CR [LF]
12 2E     XXXXX ,YYYYY , C    CR [LF]
13 2D     C +XXXXX +YYYYY     CR [LF]
14 +XXXXX +YYYYY C      CR [LF]
15 +XXXXX , +YYYYY ,CACB,T0  CR [LF]
16 +XXXX.XXX , +YYYY.YYY ,CACB,T0  CR [LF]
17 cur    *.[-]xxxxx , [-]yyyyy , cc  cr [lf]
17 pen    #.[-]xxxxx , [-]yyyyy , cc  cr [lf]
17 ppen   !.[-]xxxxx , [-]yyyyy .[-]ppp cr [lf]

```

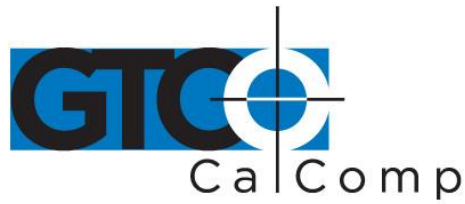
**Any Size >24 Inches w/RES >1274**

```

0 2A     XXXXXX , YYYYYY ,C    CR [LF]
1 2C     C XXXXXX YYYYYY     CR [LF]
2   @ C +XXXXXX +YYYYYY     CR [LF]
3 mA     XXXXXX , YYYYYY , C   CR [LF]
3 DELTA  +XXXXXX , +YYYYYY , C   CR [LF]
4 9100 1  T M C XXXXXX YYYYYY  CR [LF]
5 9100 2  XXXXXX , YYYYYY ,T M C   CR [LF]
6 9100 3  C P XXXXXX YYYYYY     CR [LF]
9   C      XXXXXX SP YYYYYY     CR [LF]
10 2F     C XXXXXX YYYYYY     CR [LF]
11      XXXXXX YYYYYY C      CR [LF]
12 2E     XXXXXX ,YYYYY , C    CR [LF]
13 2D     C +XXXXXX +YYYYYY     CR [LF]
14 +XXXXXX +YYYYYY C      CR [LF]
15 +XXXXXX , +YYYYYY ,CACB,T0  CR [LF]
16 +XXXX.XXX , +YYYY.YYY ,CACB,T0  CR [LF]
17 cur    *.[-]xxxxxX , [-]Yyyyyy , cc  cr [lf]
17 pen    #.[-]xxxxxX , [-]Yyyyyy , cc  cr [lf]
17 ppen   !.[-]xxxxxX , [-]Yyyyyy .[-]ppp   cr [lf]

```





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**Formats Update/Enhanced in 70171/70180 (ppppp is Pressure Data)**

```

3      xxxxx,yyyyy,ppppp,c      CR [LF]      pressure 0 to 127
15 +xxxxxx , +yyyyyy , CACB , T0      CR [LF] OTHER      >1270
15 +xxxxxx , +yyyyyy ,+ppppp,CACB,T0  CR [LF] pressure 0 to 255
15 +xxxxxx , +yyyyyy ,+ppppp,CACB,T0  CR [LF]      >1270 pressure 0 to 255
16 +xxxx.XXX , +yyyy.YYY ,+ppppp,CACB,T0 CR [LF] (40*25) pressure 0 to 255
8  +XX.XXX , +YY.YYY ,+ppppp, CACB , T0  CR [LF] 1000 LPI pressure 0 to 255
   +XXXX.XX , +YYYY.YY ,+ppppp, CACB , T0  CR [LF] 100 LPmm
   +XXXX.X , +YYYY.Y ,+ppppp, CACB , T0    CR [LF] 10 LPmm
   +XXXXX. , +YYYYY. ,+ppppp, CACB , T0    CR [LF] OTHER
  
```

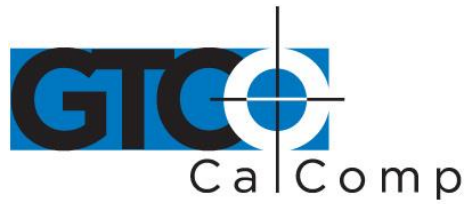
**Binary Formats**

**20 Format ATF**

	7	6	5	4	3	2	1	0	
1	1	C4	C3	C2	C1	C0	X15	X14	PR 0 = IN PROX 1 = OUT OF PROX
2	0	X13	X12	X11	X10	X9	X8	X7	
3	0	X6	X5	X4	X3	X2	X1	X0	
4	0	0	PR	(X17	X16	Y16)	Y15	Y14	TILT 40 TO 3F HEX 00 = VERT.
5	0	Y13	Y12	Y11	Y10	Y9	Y8	Y7	
6	0	Y6	Y5	Y4	Y3	Y2	Y1	Y0	PRESSURE 0 TO 127
7	0	XT6	XT5	XT4	XT3	XT2	XT1	XT0	
8	0	YT6	YT5	YT4	YT3	YT2	YT1	YT0	HEIGHT 0 TO 127
9	0	P6	P5	P4	P3	P2	P1	P0	
10	0	H6	H5	H4	H3	H2	H1	H0	

**21 Format Wacom Bin Pen/Cursor**

	7	6	5	4	3	2	1	0	
1	1	PR	C/P	0	0	X16	X15	X14	PR = 1 IF IN PROX 0 IF OUT C/P 0 IF CURSOR 1 IF PEN
2	0	X13	X12	X11	X10	X9	X8	X7	
3	0	X6	X5	X4	X3	X2	X1	X0	BD IS BUTTON DOWN
4	0	0	0	0	0	Y16	Y15	Y14	
5	0	Y13	Y12	Y11	Y10	Y9	Y8	Y7	
6	0	Y6	Y5	Y4	Y3	Y2	Y1	Y0	
7	0	0	BD	C4	C3	C2	C1	C0	



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**21 Format Wacom Bin Pressure Pen and Pen Enabled +/-31**

	7	6	5	4	3	2	1	0	
1	1	PR	1	1	0	X16	X15	X14	PR = 1 IF IN PROX 0 IF OUT C/P 0 IF CURSOR 1 IF PEN  PS IS SIGN BIT OF PRES. PRESSURE -31 TO +31
2	0	X13	X12	X11	X10	X9	X8	X7	
3	0	X6	X5	X4	X3	X2	X1	X0	
4	0	0	0	0	0	Y16	Y15	Y14	
5	0	Y13	Y12	Y11	Y10	Y9	Y8	Y7	
6	0	Y6	Y5	Y4	Y3	Y2	Y1	Y0	
7	0	PS	P5	P4	P3	P2	P1	P0	

**22 Format**

	7	6	5	4	3	2	1	0	
1	P7	P6	P5	P4	P3	P2	P1	P0	PR 0 = IN PROX 1 = OUT OF PROX
2	1	C4	C3	C2	C1	C0	X15	X14	
3	0	X13	X12	X11	X10	X9	X8	X7	
4	0	X6	X5	X4	X3	X2	X1	X0	
5	0	0	PR	(X17	X16	Y16)	Y15	Y14	
6	0	Y13	Y12	Y11	Y10	Y9	Y8	Y7	
7	0	Y6	Y5	Y4	Y3	Y2	Y1	Y0	

**23 Format (2G) Also 24 and 27 (Cursor Coding is Different between 23, 24 and 27)**

	7	6	5	4	3	2	1	0	
1	1	C4	C3	C2	C1	C0	X15	X14	PR 0 = IN PROX 1 = OUT OF PROX
2	0	X13	X12	X11	X10	X9	X8	X7	
3	0	X6	X5	X4	X3	X2	X1	X0	
4	0	0	PR	X17	X16	Y16	Y15	Y14	
5	0	Y13	Y12	Y11	Y10	Y9	Y8	Y7	
6	0	Y6	Y5	Y4	Y3	Y2	Y1	Y0	



**If tilt data is enabled, format 23 with change to:**

	7	6	5	4	3	2	1	0	
1	1	C4	C3	C2	C1	C0	X15	X14	PR 0 = IN PROX 1 = OUT OF PROX  TILT 40 TO 3F HEX 00 = VERT.
2	0	X13	X12	X11	X10	X9	X8	X7	
3	0	X6	X5	X4	X3	X2	X1	X0	
4	0	0	PR	(X17	X16	Y16)	Y15	Y14	
5	0	Y13	Y12	Y11	Y10	Y9	Y8	Y7	
6	0	Y6	Y5	Y4	Y3	Y2	Y1	Y0	
7	0	XT6	XT5	XT4	XT3	XT2	XT1	XT0	
8	0	YT6	YT5	YT4	YT3	YT2	YT1	YT0	

**23 Format (2G) from 0 to 1 FH (0 to 31) Only If Pressure Pen Data is Enabled**

	7	6	5	4	3	2	1	0	
1	1	P4	P3	P2	P1	P0	X15	X14	PRESSURE 0 TO 31  PR 0 = IN PROX 1 = OUT OF PROX
2	0	X13	X12	X11	X10	X9	X8	X7	
3	0	X6	X5	X4	X3	X2	X1	X0	
4	0	0	PR	X17	X16	Y16	Y15	Y14	
5	0	Y13	Y12	Y11	Y10	Y9	Y8	Y7	
6	0	Y6	Y5	Y4	Y3	Y2	Y1	Y0	

**26 Format**

	7	6	5	4	3	2	1	0	
1	1	PR	0	C4	C3	C2	C1	C0	PR 0 = IN PROX 1 = OUT OF PROX
2	0	X6	X5	X4	X3	X2	X1	X0	
3	0	X13	X12	X11	X10	X9	X8	X7	
4	0	Y6	Y5	Y4	Y3	Y2	Y1	Y0	
5	0	Y13	Y12	Y11	Y10	Y9	Y8	Y7	

**28 Format (2B) Also 25 (Cursor Coding Different between 25 and 28)**

	7	6	5	4	3	2	1	0	
1	0	1	C3	C2	C1	C0	C4	PR	PR 0 = IN PROX 1 = OUT OF PROX on format 28 no c4 bit
2	0	0	X5	X4	X3	X2	X1	X0	
3	0	0	X11	X10	X9	X8	X7	X6	
4	0	0	Y5	Y4	Y3	Y2	Y1	Y0	
5	0	0	Y11	Y10	Y9	Y8	Y7	Y6	



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**30 Format**

	7	6	5	4	3	2	1	0	
1	1	PR	T0	X14*	Y14*	C2	C1	C0	PR 0 = IN PROX 1 = OUT OF PROX
2	0	X6	X5	X4	X3	X2	X1	X0	
3	0	X13	X12	X11	X10	X9	X8	X7	
4	0	Y6	Y5	Y4	Y3	Y2	Y1	Y0	
5	0	Y13	Y12	Y11	Y10	Y9	Y8	Y7	
6	0	p6	p5	p4	p3	p2	p1	p0	

**30 Format DELTA**

	7	6	5	4	3	2	1	0	
1	1	PR	T0	X14*	Y14*	C2	C1	C0	PR 0 = IN PROX 1 = OUT OF PROX
2	0	X6	X5	X4	X3	X2	X1	X0	
3	0	Y6	Y5	Y4	Y3	Y2	Y1	Y0	

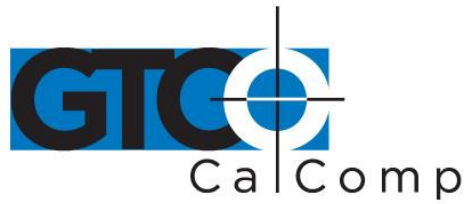
**NOTE:** Can only get to DELTA format using mm commands. X14\* and Y14\* are set high (1) for + and low (0) for X14, Y14 not.

**31 Format**

	7	6	5	4	3	2	1	0	
1	0	1	0	0	T2	T1	T0	PR	PR 0 = IN PROX 1 = OUT OF PROX t2, 1, and 0 = 100 or 000 (lectra)
tg2	0	0	0	C4	C3	C2	C1	C0	
3	0	0	X5	X4	X3	X2	X1	X0	
4	0	0	X11	X10	X9	X8	X7	X6	
5	0	0	0	X16	X15	X14	X13	X12	
6	0	0	Y5	Y4	Y3	Y2	Y1	Y0	
7	0	0	Y11	Y10	Y9	Y8	Y7	Y6	
8	0	0	0	Y16	Y15	Y14	Y13	Y12	
9	0	0	P5	P4	P3	P2	P1	P0	
10	0	0	P11	P10	P9	P8	P7	P6	
11	0	0	0	P16	P15	P14	P13	P12	

**Microsoft Mouse Format ^m 2m**

	7	6	5	4	3	2	1	0	
1	1	1	L	R	Y7	Y6	X7	X6	L IS LEFT BUTTON R IS RIGHT BUTTON
2	1	0	X5	X4	X3	X2	X1	X0	
3	1	0	Y5	Y4	Y3	Y2	Y1	Y0	



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**Mouse System Mouse Format ^m 2m**

	7	6	5	4	3	2	1	0	L IS LEFT BUTTON R IS RIGHT BUTTON M IS MIDDLE BUTTON
1	1	0	0	0	0	L	M	R	
2	X7	X6	X5	X4	X3	X2	X1	X0	
3	Y7	Y6	Y5	Y4	Y3	Y2	Y1	Y0	
4	X7	X6	X5	X4	X3	X2	X1	X0	
5	Y7	Y6	Y5	Y4	Y3	Y2	Y1	Y0	

**Cursor Coding**

Pen	0, 2, 9, 11 and 10	20, 21, 22, 23, 24, 25, 27 and 28	26 and 31	1  RUN	3, 29 and 30	4, 5, 6 and 7	17	8, 15 and 16	12 and 14	M	m
up	0	00000	00000	8 9	0	U	00	00	SP	7	0
tip (0)	1	00001	00001	0 1	1	0	01	01	0	3L	2L
sw1	2	00010	00010	2 3	2	1	02	02	1	5M	3LR
sw2	4	00100	00011	4 5	3	2	04	03	2	6R	1R
0+1	3	00011	00001	0 1	3	0	03	01	0	1LM	3LR
0+2	5	00101	00101	0 1	3	4	05	05	4	2LR	3LR
1+2	6	00110	00110	2 3	3	5	06	06	5	4MR	3LR
0+1+2	7	00111	00001	0 1	3	0	07	01	0	0LMR	3LR

4 Button Cursor	0, 2, 9, 10 and 11	20, 22, 23, 24, 25, 27 and 28	1  RUN	3, 29 and 30	4, 5, 6 and 7	8, 15, 16 and 17	12 and 14	M	m
up	0	00000	8 9	0	U	00	SP	7	0
0	1	00001	0 1	1	0	01	0	3L	2L
1	2	00010	2 3	2	1	02	1	5M	3RL
2	4	00100	4 5	3	2	03	2	6R	1R
3	8	01000	6 7	4	3	04	3	6R	1R
0+1	3	00011	0 1	3	0	01	0	LM	3LR
0+2	5	00101	0 1	3	4	05	4	LR	3LR



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1+2	6	00110	2 3	3	5	06	5	MR	3LR
0+1+2	7	00111	0 1	3	0	01	0	LMR	3LR
0+3	9	01001	0 1	5	0	01	0	LR	3RL
1+3	:	01010	2 3	6	1	02	1	MR	3RL
0+1+3	;	01011	0 1	7	0	01	0	LMR	3LR
2+3	<	01100	4 5	7	2	03	2	R	1R
0+2+3	=	01101	0 1	7	0	01	0	LR	3LR
1+2+3	>	01110	2 3	7	1	02	1	MR	3LR
0+1+2+3	?	01111	0 1	7	0	01	0	LMR	3LR

16/25 Button Cursor	0, 2, 9, 10 and 11	20, 22, 23 and 25	21, 26, 24, 27, 28 and 31	1 RUN	3, 29 and 30	4, 5, 6 and 7	8, 15 and 16	12 and 14	M	m
up	0	00000	00000	8 9	0	U	00	sp	7	0
0	1	10000	00001	0 1	1	0	01	0	3L	2L
1	2	10001	00010	2 3	2	1	02	1	5M	2L
2	4	10010	00011	4 5	3	2	03	2	6R	1R
3	3	10011	00100	6 7	4	3	04	3	6R	1R
4	5	10100	00101	0 1	5	4	05	4	3L	2L
5	6	10101	00110	2 3	6	5	06	5	5M	2L
6	7	10110	00111	4 5	7	6	07	6	6R	1R
7	8	10111	01000	6 7	0	7	08	7	6R	1R
8	9	11000	01001	0 1	1	8	09	8	3L	2L
9	:	11001	01010	2 3	2	9	10	9	5M	2L
A	;	11010	01011	4 5	3	A	11	#	6R	1R
B	<	11011	01100	6 7	4	B	12	*	6R	1R
C	=	11100	01101	0 1	5	C	13	0	3L	2L
D	>	11101	01110	2 3	6	D	14	1	5M	2L
E	?	11110	01111	4 5	7	E	15	2	6R	1R
F	@	11111	10000	6 7	0	F	16	3	6R	1R
G	A	00001	10001	0 1	1	G	17	0	3 L	2L
H	B	00010	10010	2 3	2	H	18	1	5 M	3RL
I	C	00011	10011	4 5	3	I	19	2	1LM	3LR
J	D	00100	10100	6 7	3	J	20	3	6 R	1R



K	E	00101	10101	0 1	3	K	21	4	2 LR	3LR
L	F	00110	10110	2 3	3	L	22	5	4MR	3LR
M	G	00111	10111	4 5	3	M	23	6	LMR	3LR
N	H	01000	11000	6 7	4	N	24	7	6 R	1R
O	I	01001	11001	0 1	5	O	25	8	LR	3RL

**Format 13**

mode	U0123456789ABCDEF
RUN	34DTd4DTd4DTd4DTd
TRACK	1AQa1AQa1AQa1AQa
POINT	2BRb2BRb2BRb2BRb
1 <sup>st</sup> pen down	0@P`0@P`0@P`0@P`

**Commands (RS-232)**

**NOTE:** One byte commands cannot be inhibited by the one byte command enable menu bit.

DC1 (X ON) start transmission after a x off.

DC3 (X OFF) stop transmission on the next chapter.

BEL (CNT G) Beep or BEL makes the tablet beep if beeper is installed.

"?" is the default prompt character.

Tablet can respond to 2x00 commands in the 2000/9100 subsets.

**2000 Commands (2x00)**

**NOTE:** Use commands below only when in 2000 mode/formats. Can be inhibited by one byte enable menu bit.

@Track mode 1 pps	H run mode 1 pps	P point mode
A track mode 5 pps	I run mode 5 pps	Q point prompt mode
B track mode 10 pps	J run mode 10 pps	R run prompt mode
C track mode 20 pps	K run mode 20 pps	S halt or stop mode
D track mode 40 pps	L run mode 40 pps	T track prompt mode
E track mode 75 pps	M run mode 75 pps	
F track mode 100 pps	N run mode 100 pps	
G track mode 125 pps	O run mode 125 pps	



**MM and 2000 Commands**

**NOTE:** Commands work in both mm and 2000 mode/formats. Do not write drivers using these to be 2x00 and 9x00 compatible. Commands below can be inhibited by the one byte enable menu bit.

- a            Send size.
- b            Set origin to upper left.
- c            Set origin to lower left. On 6x9, b set vertical and c set horizontal.

d	100 lpi	i	20 lpmm	n	2 lpi
e	200 lpi	j	1000 lpi	o	50 lpmm (1270 lpi)
f	10 lpmm	k	1270 lpi (2x00 mode only)	p	4 lpi
g	400 lpi			q	40 lpmm
h	400 lpi	l	1 lpi		

**MM Commands**

**NOTE:** Use below commands only when in mode/formats. Can be inhibited by the one byte enable menu bit.

nul            Reset (only in MM formats). Note the nul reconfigure in tablet a.

- 0    TABLET BIT TO 0            1    TABLET BIT TO 1
- @   RUN MODE                    A    TRACK
- B    POINT MODE                 D    REMOTE MODE (PROMPT)
- E    SET DELTA MODE             F    CLEAR DELTA MODE
  
- G h   AXIS UPDATE                I h   INC MODE
- bin ASCII
- Q    140 100 DATA RATE
- R    75 50
- S    25 20
- T    7 7



**MM Commands Added on 70171, 70180**

- s 2000 lpi
- u 80 lpmm
- v 100 lpmm
- za ascii (#3)
- zb bin (#30)
- z8 8 none
- z9 8 odd
- zp0 no pressure data
- zp1 pressure data
- zu microgrid emulation
- a -size + pressure set to max if enabled on summa formats (3, 8, 15, 16, 30 and 31)

**Format Commands**

**NOTE:** Usable in mm or 2000 modes/formats.

**NOTE:** Do not write drivers using these to be 2x00 and 9x00 compatible.

**NOTE:** Use these commands can be inhibited by the one byte enable menu bit.

Format commands that can be used from either mode, but can change the current format mode (2000 or mm). After format change, send the operating mode you want. (I.E. Run, Track Point, etc.)

mA	MM ASCII FORMAT 9600 8 ODD 1 MM COMMANDS (11.7 BY 11.7)
mB	MM BINARY FORMAT 9600 8 ODD 1 MM COMMANDS (11.7 BY 11.7)
2A	2000 ASCII 9600 7 EVEN 1 2000 COMMANDS
2B	2000 BINARY 9600 7 EVEN 1 2000 COMMANDS
2C	WEDGE FORMAT 9600 7 EVEN 1 2000 COMMANDS
2D	HI TABLET (BAUD RATE IS 4800)
2E	HITACHI ASCII
2F	GTCO ASCII
2G	GTCO BIN (PARITY/DATA IS 8 NONE)
2M	MOUSE SYSTEMS MOUSE EMULATION (1200 BAUD 8 NONE)
2m	MICROSOFT MOUSE 1200 8 NONE
2I	REMOVE LINE FEED OFF ASCII FORMATS





**NOTE:** Format and communication commands will change current soft switch settings, but does not save the change in the nvram.

**9100/2500 Commands**

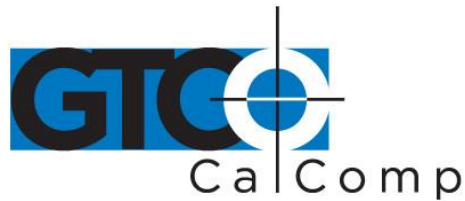
ESC % A [0/1] CR        DISABLE/ENABLE DATA OUT OF PORT A  
ESC % B [0/1] CR        DISABLE/ENABLE DATA OUT OF PORT B  
NOTE ON 3400 AS 2300 THE I/O PORT IS BOTH A AND B

ESC % C n1 h1 n2 n3 CR    SET COMMUNICATION PARAMETERS  
                          n3 = 1 STOP BITS 1  
                          n2 = DATA BITS 7 OR 8  
                          h1= PARITY N,E,O,M,S(NONE, EVEN, ODD, MARK, SPACE)  
                          BAUD RATE n1 =0 TO 7  
                          0=19200 1=9600 2=4800 3=2400 4=1200 5=600 6=300 7= 150  
                          \*\* CHANGES MENU BITS \*\*

ESC % H CR        HALT MODE  
ESC % I CR        INC TRACK MODE  
ESC % I R CR      INC RUN MODE  
ESC % I T CR      INC TRACK MODE  
ESC % I U CR      INC LINE MODE

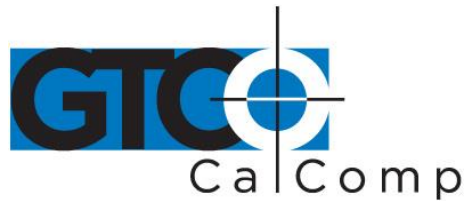
ESC % J R n,0 CR SET RESOLUTION (N=1 TO 2540 LPI)  
ESC % J M n,0 CR SET RES (N=1 TO 100)  
ESC % J L L CR    SET ORIGIN TO LOWER LEFT  
ESC % J L R CR    SET ORIGIN TO LOWER RIGHT  
ESC % J U L CR    SET ORIGIN TO UPPER LEFT  
ESC % J U R CR    SET ORIGIN TO UPPER RIGHT  
ESC % J C CR      SET ORIGIN TO CENTER  
ESC % J O CR      DPOINT SET ORIGIN TO NEXT POINT  
ESC % J P [0|1|2|3|4|5|6|7]      SET PORTRAIT MODE

ESC % L CR        SET/CLEAR LINE FEED ON DATA\*\* CHANGES MENU BITS \*\*  
ESC % L 0 CR      DISABLE LINE FEED ON DATA  
ESC % L 1 CR      ENABLE LINE FEED ON DATA



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ESC % N [0/1] CR        SEND DATA IN MARGINS  
ESC % P CR        POINT MODE  
ESC % Q CR        CLEAR PROMPT MODE  
ESC % Q H CR       SET PROMPT MODE AND PROMPT CHARACTER= H  
ESC % R CR        RUN MODE  
ESC % T CR        TRACK MODE  
ESC % U CR        LINE MODE  
ESC % V E CR       SET UP DEFAULT SETTINGS IN ALL 4 RECALLS \*\* CHANGES MENU BITS \*\*  
ESC % V F CR       MAKE CURRENT SWITCH SETTINGS ACTIVE CLEARS SOFTWARE SETUP  
                  AND CLEARS PORT DISABLE \*\* CHANGES MENU BITS \*\*  
ESC % V F n CR      SAVE CURRENT SWITCH SETTINGS IN UPB N= 1 TO 3  
ESC % V F 4 CR      SAVE CURRENT SWITCH SETTINGS IN UPB 4  
                  RESERVED FOR CALCOMP AND DEVELOPERS  
ESC % V R CR       RESET TABLET \*\* CHANGES MENU BITS \*\*  
ESC % V R n CR      RECALL BANK N AND MAKE SETTING ACTIVE N= 1 TO 3  
ESC % V R 4 CR      RECALL BANK 4 RESERVED FOR CALCOMP AND DEVELOPERS  
ESC % V R 5 CR      RECALLS CALCOMP SOFTWARE SETTING  
ESC % V R 6 CR      RECALLS FORMAT 20 AFT ON  
ESC % V R 7 CR      RESERVED  
ESC % V R 8 CR      RESERVED  
  
ESC % V S CR       SEND TABLET SIZE  
  
ESC % V V n CR      SET EXTRA DATA MODES. N= 00110XXXB \*\* CHANGES MENU BITS \*\*  
                  "1"        \* TILT CORRECT  
                  "2"        \* TILT DATA  
                  "4"        \* HEIGHT DATA  
  
ESC % V A [0/1]      PRESSURE PEN DATA 0=OFF 1=ON \*\* CHANGES MENU BITS \*\*  
ESC % V A [2/3]      TILT TO PRESSURE PEN DATA 2=OFF 3=ON\*\* CHANGES MENU BITS \*\*  
ESC % V A V n        SET PRESSURE PEN LEVEL N = 0 TO 255  
  
ESC % V 0            LED 2 OFF  
ESC % V 1            LED 2 ON  
ESC % V 8            DISABLE BEEPER \*\* CHANGES MENU BITS \*\*  
ESC % V 9            ENABLE BEEPER \*\* CHANGES MENU BITS \*\*  
ESC % V 4            DISABLE BEEPER CLICK ON PEN DOWN \*\* CHANGES MENU BITS \*\*  
ESC % V 5            ENABLE BEEPER CLICK ON PEN DOWN \*\* CHANGES MENU BITS \*\*



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ESC % V m [0|1] CR SET/CLEAR ENABLE MENU \*\* CHANGES MENU BITS \*\*  
 ESC % V f [0|1] CR SET/CLEAR ENABLE FUNCTION BLOCKS \*\* CHANGES MENU BITS \*\*  
 ESC % V d n CR SET SCANNING RATE  
 (70171, 70180 ONLY N = 0,1,2,4,8,16= 1.6,3.2,.8,.4,.2 msec. DYNAMIC)  
 (70180 n=32 = 6.4 msec scan non back light only)  
 ESC % W n CR SET DATA RATE (N=1 TO 125)  
 ESC % X n CR SET INC VALUE (N=0 TO 64000 )  
 ESC % Y n CR SET INC VALUE (N= 0 TO 64000 )  
 ESC % Z [0/1] CR SEND DATA OUT OF PROXIMITY  
 ESC % Z 2/3 CR 3= SET LOW PROXIMITY 2= SET HIGH PROXIMITY \*\* CHANGES MENU BITS  
 ESC % ^ N CR SET FORMAT NUMBER (N=0 TO 31 , "M", "m" )\*\* CHANGES MENU BITS \*\*  
 0= 2000 ASCII 1=WEDGE 2=  
 3= MM ASCII 4= 9100 #1 5= 9100 #2  
 6= 9100 #3 7= 9100 #4 8=  
 9= GTCO ASCII 10= 11= 12= 13=HI  
 14= HITACHI ASCII 15= 16=  
 17= WACOM ASCII 18= 19=  
 20= CAL BIN WITH EVERY 21=WACOM BIN 22 23= G  
 BIN 24=  
 25 26 27  
 28 29 MM BIN DELTA 30 MM BIN  
 31  
 M=MOUSE(MOUSE SYSTEMS) m=MOUSE(MICROSOFT)

### Diagnostic Commands

ESC % \_ \_ V CR VERSION REV AND PART NUMBERS  
 70xxxA 16XXX CR LF

ESC % \_ \_ p CR SHOW PRODUCT  
 CALCOMP 3400 or CALCOMP 3300