

100XX ULTRASLATE COMMANDS RS-232

Power Up Default

9600 8 no parity 1 stop bit Format #23 Run mode 1000 lpi 100 pps

Operating Modes

Run Mode: Digitizer outputs coordinate data continuously.

Increment Mode Filter: Puts a movement filter on data in any mode. The transducer must move N counts before the data can be sent. Then both axis data are updated. If out of proximity data is enabled in increment mode, one data point may be sent on leaving proximity.

Prompt Mode Modifier: 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 above standard modes.

Send Data Out of Proximity Mode Modifier: 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.

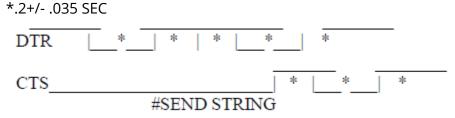
NOTE: This command should be sent after the mode commands.

Send Data in Margin: 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.

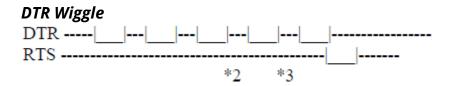
NOTE: Margins on some of the tablets are very small and are larger leaving the tablet than coming in.



Plug and Play (WINDOWS 95)



DTR goes high and then within 165 msec to 235 msec CTS goes high. Then the tablet sends the "plug and play" string at 1200 baud 7 data no parity 2 stop bits. The string could be "(^a\$CAL0010\\TABLET\\ 4x5 TABLET cs) cr If" or similar. See plug and play spec for more information.



RTS should be high well before DTR is dropped (1/18). DTR low times should be at least one timer tick (1/18) long and no longer than two ticks. This wiggle does not work 100% compared to older products. It is the same as sending "ESC % C 1 N 8 1 cr" and "ESC % A 0 cr." Go to effect at *2. CTS should be low for at least one timer tick and DTR should be high during this time. At time *3, the tablet will send "T" and for each time CTS is toggled, one more "T" will be sent. To get out of this mode, send the tablet "ESC % VR cr for a hard reset or use the "ESC % A1" command.



Binary Formats

20 Format AFT

	7 6 5 4 3 2 1 0	
1 2 3 4 5 6 7 8 9 10	1 C4 C3 C2 C1 C0 X15 X14 0 X13 X12 X11 X10 X9 X8 X7 0 X6 X5 X4 X3 X2 X1 X0 0 SB PR (X17 X16 Y16)Y15 Y14 0 Y13 Y12 Y11Y10 Y9 Y8 Y7 0 Y6 Y5 Y4 Y3 Y2 Y1 Y0 0 XT6 XT5 XT4 XT3 XT2 XT1 XT0 0 YT6 YT5 YT4 YT3 YT2 YT1 YT0 0 P6 P5 P4 P3 P2 P1 P0 0 H6 H5 H4 H3 H2 H1 H0 0 0 0 0 0 0 p-1 p-2 extra pressure 0 0 0 1 T3 t2 t1 t0 transducer type 0 0 1 x reserved 0 1 x reserved	PR 0= IN PROXIMITY 1= OUT OF PROXIMITY SB= 0 byte 10 is height data SB = 1 byt3 10 is special data TILT 40 TO 3F HEX 00= VERT. PRESSURE 0 TO 127 HEIGHT 0 TO 127 OR SPECIAL DATA IT CAN FLAG TRANSDUCER TYPE AND PRESSURE LSBS 0000= pressure pen 0100,1000 = UNKNOWN ELSE RESERVED

23 Format

	7 6 5 4 3 2 1 0	
1 2 3 4 5 6	1 C4 C3 C2 C1 C0 X15 X14 0 X13 X12 X11 X10 X9 X8 X7 0 X6 X5 X4 X3 X2 X1 X0 0 0 PR (X17 X16 Y16)Y15 Y14 0 Y13 Y12 Y11Y10 Y9 Y8 Y7 0 Y6 Y5 Y4 Y3 Y2 Y1 Y0	PR 0= IN PROX 1= OUT OF PROX



Pen Coding

PEN	20,23
Up	00000
TIP 0	00001
SW11	00010
SW22	00100
0+1	00011
0+2	00101
1+2	00110
0+1+2	00111

Commands (RS-232)

DC1 (X ON) start transmission after a x off (SAME AS ESC % A 1). DC3 (X OFF) stop transmission on the next packet (SAME AS ESC % A 0). "?" is the prompt character.

9X00 Commands

ESC % A 0 cr disable data out of RS232 port ESC % A 1 cr enable data out of RS232 port

ESC % C 0 N 8 1 cr set communication parameters 19200 8 NONE ESC % C 1 N 8 1 cr set communication parameters 9600 8 NONE

Note at baud rates > 9600 care should be taken that command will not be overwritten.

ESC % I R cr inc run mode inc value = 1

ESC % R cr run mode

ESC % J R 1000,0 cr set resolution 1000 Lines per inch ESC % J M 100,0 cr set res To 100 Lines per mm

ESC % N 0 CR enable margin data ESC % N 1 cr disable margin data

ESC % Q cr clear prompt mode

ESC % Q ? cr set prompt mode and prompt character MUST BE"?"

ESC % V B 0 CR disable special data ESC % V B 1 CR enable special data

ESC % V R cr reset tablet

ESC % V R 5 cr equivalent to Z0,^23,IR,Qcr,JR1000,VB0,C1N81



ESC % V S cr	send tablet size in current format
ESC % Z 0 cr ESC % Z 1 cr	send data out of proximity do not send data out of proximity
ESC % ^ 23 cr ESC % ^ 20 cr	set format to gtco bin set format to 20 cal bin with atf
ESC % W n CR	data rate $$ n= points pre sec . will round down to even divisors of 200. Ie 200,100,66,50,40,33,5,4,3,2,1
ESC % V CR	firmware version, rev and date "900xxx rr mm/yy cr lf"
ESC %p CR	porduct id "CalComp 1000 cr If"