

# Part IV

## Appendices

In the first three parts, you learned a about creating templates for your favorite applications using the Virtual Tablet Editor. You can now use the tools and features of the Editor to create templates with the level of complexity you wish.

In the next four appendices, you'll find important reference material for utilizing the Virtual Tablet Interface to its fullest on your computer system:

- n Virtual Key Codes used by the Virtual Tablet Interface utilities and drivers.
- n A dynamic-link library that provides the digitizer interface to Windows.
- n A DOS device driver that provides the digitizer interface to DOS.
- n A reference guide to supported digitizing devices.

# Appendix A

## Virtual Key Codes

The following table lists the Virtual Key Codes used in keystroke templates to define character sequences sent to the target application each time the region is activated. The table is divided into three columns with the decimal key code followed by the key description. If you are entering the decimal code into the keystroke field in the Region Properties dialog box, remember to pad the decimal with zeros to three numerals.

000	Null	001	Ctrl-A	002	Ctrl-B
003	Ctrl-C	004	Ctrl-D	005	Ctrl-E
006	Ctrl-F	007	Ctrl-G	008	Ctrl-H
009	Ctrl-I	010	Ctrl-J	011	Ctrl-K
012	Ctrl-L	013	Ctrl-M	014	Ctrl-N
015	Ctrl-O	016	Ctrl-P	017	Ctrl-Q
018	Ctrl-R	019	Ctrl-S	020	Ctrl-T
021	Ctrl-U	022	Ctrl-V	023	Ctrl-W
024	Ctrl-X	025	Ctrl-Y	026	Ctrl-Z
027	Escape	028	Ctrl-\	029	Ctrl-]
030	Ctrl-6	031	Ctrl-Minus	032	Space
033	!	034	"	035	#
036	\$	037	%	038	&
039	'	040	(	041	)
042	*	043	+	044	,
045	-	046	.	047	/
048	0	049	1	050	2
051	3	052	4	053	5
054	6	055	7	056	8
057	9	058	:	059	;
060	<	061	=	062	>
063	?	064	@	065	A
066	B	067	C	068	D
069	E	070	F	071	G
072	H	073	I	074	J
075	K	076	L	077	M
078	N	079	O	080	P
081	Q	082	R	083	S
084	T	085	U	086	V
087	W	088	X	089	Y
090	Z	091	[	092	\
093	]	094	^	095	_
096	`	097	a	098	b
099	c	100	d	101	e
102	f	103	g	104	h
105	i	106	j	107	k
108	l	109	m	110	n
111	o	112	p	113	q
114	r	115	s	116	t
117	u	118	v	119	w
120	x	121	y	122	z
123	{	124		125	}
126	~	127	Ctrl-Backspace	128	Backspace
129	Tab	130	Ctrl-Return	131	Return
132	Alt-Escape	133	Alt-Backspace	134	Shift-Tab

135	Alt-Q	136	Alt-W	137	Alt-E
138	Alt-R	139	Alt-T	140	Alt-Y
141	Alt-U	142	Alt-I	143	Alt-O
144	Alt-P	145	Alt-[	146	Alt-]
147	Alt-A	148	Alt-S	149	Alt-D
150	Alt-F	151	Alt-G	152	Alt-H
153	Alt-J	154	Alt-K	155	Alt-L
156	Alt-Z	157	Alt-X	158	Alt-C
159	Alt-V	160	Alt-B	161	Alt-N
162	Alt-M	163	FI	164	F2
165	F3	166	F4	167	F5
168	F6	169	F7	170	F8
171	F9	172	F10	173	Home
174	UpArrow	175	PageUp	176	LeftArrow
177	RightArrow	178	End	179	DownArrow
180	PageDown	181	Insert	182	Delete
183	Shift-F1	184	Shift-F2	185	Shift-F3
186	Shift-F4	187	Shift-F5	188	Shift-F6
189	Shift-F7	190	Shift-F8	191	Shift-F9
192	Shift-F10	193	Ctrl-F1	194	Ctrl-F2
195	Ctrl-F3	196	Ctrl-F4	197	Ctrl-F5
198	Ctrl-F6	199	Ctrl-F7	200	Ctrl-F8
201	Ctrl-F9	202	Ctrl-F10	203	Alt-F1
204	Alt-F2	205	Alt-F3	206	Alt-F4
207	Alt-F5	208	Alt-F6	209	Alt-F7
210	Alt-F8	211	Alt-F9	212	Alt-F10
213	Ctrl-LeftArrow	214	Ctrl-RightArrow	215	Ctrl-End
216	Ctrl-PageDown	217	Ctrl-Home	218	Alt-1
219	Alt-2	220	Alt-3	221	Alt-4
222	Alt-5	223	Alt-6	224	Alt-7
225	Alt-8	226	Alt-9	227	Alt-0
228	Alt-Minus	229	Alt-=	230	Ctrl-PageUp
231	F11	232	F12	233	Shift-F11
234	Shift-F12	235	Ctrl-F11	236	Ctrl-F12
237	Alt-F11	238	Alt-F12	239	Ctrl-UpArrow
240	Ctrl-DownArrow	241	Ctrl-Insert	242	Ctrl-Delete
243	Ctrl-Escape	244	Shift-Escape	245	Shift-Insert
246	Shift-Delete	247	Shift-Home	248	Shift-End
249	Shift-PageUp	250	Shift-PageDown	251	Shift-RightArrow
252	Shift-LeftArrow	253	Shift-UpArrow	254	Shift-DownArrow

# Appendix B

## Windows Driver

### Description

This dynamic link library provides the between Microsoft Windows and the digitizing device. The library may be specified as the Windows mouse driver or loaded independently by Windows applications and supports the following functions: mouse driver, Pen Windows driver, template manager and tracing input.

### Invocation

To load the library as the Windows mouse driver, the **[Boot]** section of the Windows SYSTEM.INI file must be modified as follows:

**mouse.driv=VTABLET.DLL**

Upon loading, the driver looks in the SYSTEM.INI file under the **[Virtual Tablet]** heading for the following information which may be modified by the user (note some information is required):

**Comm=n** Use serial communications port **n** where **n** is between 1 and 2. Driver defaults to Comm 1 which is over-ridden by this switch.

**Filter=n** Filtering of packets to smooth screen jitter where **n** is between 0 and 5. Zero disables filtering and 5 provides the highest level. The default is three.

**Tablet=n** Select digitizing tablet **n** corresponding to the tablet numbers defined in Appendix D. The driver defaults to tablet number 2, SummaSketch MM1 1201, which is over-ridden by this switch.

**xExtent=n** Sets the tablets horizontal axis to **n** which defaults to a VGA screen resolution of 640. The **xExtent** must be between 0 and 32,767. Higher values will map to quicker cursor movement on the screen. This value is ignored under Pen Windows.

**yExtent=n** Sets the tablets vertical axis to **n** which defaults to a VGA screen resolution of 480. The **yExtent** must be between 0 and 32,767. Higher values will map to quicker cursor movement on the screen. This value is ignored under Pen Windows.

**Absolute=n** Sets absolute positioning on (**n=1**) or off (**n=0**). This value is ignored under Windows 3.0 and Pen Windows. The default is off (relative) for compatibility with earlier versions of Windows.

**ReportRate=n** Sets the report rate speed to **n** where 0=Slow, 1=Normal (default) and 2=Fast. Reports are relative to each particular digitizer but can affect system performance depending on other peripherals and the mode in which Windows is running (see AutoEnhance below). This configuration parameter generally does not need to be changed.

**AutoEnhance=n** Sets AutoEnhance mode detection to **n** where 0=Off (default) and 1= On. When enabled, AutoEnhance mode will automatically lower the tablet's report rate under Enhanced Mode Windows and leave it alone otherwise. This value is ignored under Real and Standard mode Windows and cannot set the report rate below 0 (Slow). Set this parameter to 1=On if your Enhanced Mode sessions are sluggish or even crash with many DOS sessions open.

### Notes

The dynamic link library will fail to load if the configuration information in the SYSTEM.INI file is incorrect, or the DOS driver is currently in use. All errors encountered in loading are written to the SYSTEM.INI file under the topic **[Virtual Tablet]** on the line beginning with **Status=**. Normal loading sets this entry to **Status=OK**.

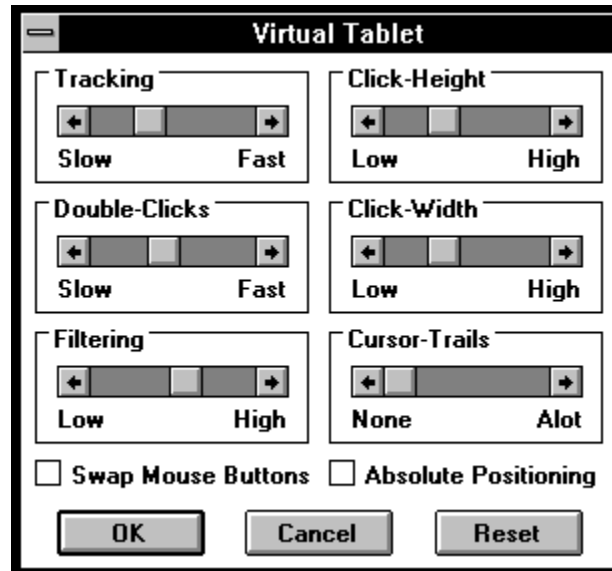
If the library is not specified as the mouse driver under Windows 3.0, cursor movement in templates will be inhibited (though template commands and tracing functions will continue to work). Under Windows 3.1, the driver may be loaded independently of the mouse driver and will manage the cursor in conjunction with another pointing device.

Only one device is permitted per system unless one is configured for DOS and the other for Windows. However, regardless of configuration, only one instance of the DOS driver may be loaded even if with different port designators.

This library disables the DOS driver until Windows is exited. The DOS device driver is not required for use with Windows and therefore need not be loaded thereby saving some memory in the DOS and Windows environments.

## Control Panel Applet

If you are running Windows 3.1 or later and have installed VTABLET.DLL as the mouse driver, pen driver or an installable driver, the Control Panel will display an icon which can be used to configure the driver. After selecting the icon, the dialog box for the virtual tablet driver is displayed.



The dialog box allows you to configure system pointer functions such as the tracking and double-click speed, double-click height and width, and number of mouse trails on the display at any time. The driver's filtering value and method of positioning may be also be set. For more information on setting these values, please refer to the Windows User Guide or text files for changing WIN.INI and SYSTEM.INI that came with your Windows disks.

When you have completed your changes, click the OK button or press ENTER. Then, restart Windows to have the changes take effect. Otherwise, you can cancel your changes by clicking the Cancel button or pressing the ESCAPE key. you can return the values to their Windows defaults at any time by clicking the Reset button.

# Appendix C

## DOS Driver

### Description

This DOS device driver interfaces between applications, utilities and the digitizing device for DOS-based applications including the Autodesk Device Interface.

### Invocation

**device = VTABLET.SYS [/Cn] [/Tn] [/An] [/Sn]**

Upon loading, the driver looks on the command line for the following information which may be modified by the user (note some information is required):

- /Cn**                    Use serial communications port **n** where **n** is between 1 and 2. Driver defaults to Comm 1 and is over-ridden by this switch.
- /Tn**                    Select digitizing tablet **n** corresponding to the tablet numbers defined in Appendix D. The driver defaults to tablet number 2, SummaSketch MM1 1201, which is over-ridden by this switch.
- /An**                    Sets the Autodesk Device Interface software interrupt vector for the digitizer interface to **n** such as **/A121**. Must be a decimal value between 120 and 128.
- /Sn**                    Sets the report rate speed to **n** where 0=Slow, 1=Normal (default) and 2=Fast. Reports are relative to each particular digitizer but can affect system performance depending on other peripherals. This configuration parameter generally does not need to be changed.

### Notes

Only one driver is permitted per system unless one is configured for DOS and the other for Windows. However, regardless of configuration, only one instance of the DOS driver may be loaded even with different port designators.

The Windows driver, VTABLET.DLL, disables the DOS driver until no longer needed. However, the DOS device driver is not required for use with Windows and need not be loaded thereby saving some memory in the DOS environment.

# Appendix D

## Digitizers Supported

The Virtual Tablet Interface supports a variety of digitizers which are identified to the drivers, utilities and applications by number. Generally, you will not need to change the tablet identifier for your system unless you change digitizers or installed the Interface incorrectly. This Appendix enumerates supported configurations for each digitizer. If your tablet is not listed below, choose one that best matches the active area and report format of your digitizer.

No.	Vendor	Model	Active Area	Baud	Stop	Data	Parity	Format
0	Summa	BitPad Plus	12" x 12"	9600	2	7	Even	BitPad
1	Summa	MM1 961	9" x 6"	9600	1	8	Odd	MM
2	Summa	MM1 1201	11.7" x 11.7"	9600	1	8	Odd	MM
3	Summa	MM1 1812	18" x 12"	9600	1	8	Odd	MM
4	Summa	MG 1212	12" x 12"	9600	2	7	Even	UIOF
5	Summa	MG 1812	18" x 12"	9600	2	7	Even	UIOF
6	Summa	MG 1620	16" x 20"	9600	2	7	Even	UIOF
7	Summa	MG 1724	17" x 24"	9600	2	7	Even	UIOF
8	Summa	MG 2020	20" x 20"	9600	2	7	Even	UIOF
9	Summa	MG 2417	24" x 17"	9600	2	7	Even	UIOF
10	Summa	MG 2436	24" x 36"	9600	2	7	Even	UIOF
11	Summa	MG 3648	36" x 48"	9600	2	7	Even	UIOF
12	Summa	MG 4260	42" x 60"	9600	2	7	Even	UIOF
13	Calcomp	23120	12" x 12"	9600	1	8	None	GTCO5
14	Calcomp	23180	18" x 12"	9600	1	8	None	GTCO5
15	Calcomp	23240	24" x 18"	9600	1	8	None	GTCO5
16	Calcomp	25120	12" x 12"	9600	1	8	None	GTCO5
17	Calcomp	25180	18" x 12"	9600	1	8	None	GTCO5
18	Calcomp	91140	36":x 14"	9600	1	8	None	GTCO5
19	Calcomp	91240	24" x 17"	9600	1	8	None	GTCO5
20	Calcomp	91250	24" x 24"	9600	1	8	None	GTCO5
21	Calcomp	91360	36" x 24"	9600	1	8	None	GTCO5
22	Calcomp	91480	36" x 48"	9600	1	8	None	GTCO5
23	Calcomp	91600	60" x 48"	9600	1	8	None	GTCO5
24	Calcomp	95360	36" x 24"	9600	1	8	None	GTCO5
25	Calcomp	95480	48" x 36"	9600	1	8	None	GTCO5
26	Calcomp	95600	60" x 48"	9600	1	8	None	GTCO5
27	Kurta	IS/ONE	8.5" x 11"	9600	1	8	None	Binary 2B
28	Kurta	IS/ONE	12" x 12"	9600	1	8	None	Binary 2B
29	Kurta	IS/ONE	12" x 17"	9600	1	8	None	Binary 2B
30	Summa	MM2 961	9" x 6"	9600	1	8	Odd	MM
31	Summa	MM2 1201	11.7" x 11.7"	9600	1	8	Odd	MM
32	Summa	MM2 1812	18" x 12"	9600	1	8	Odd	MM
33	Calcomp	33120	12" x 12"	9600	1	8	None	GTCO5
34	Calcomp	33180	18" x 12"	9600	1	8	None	GTCO5
35	Calcomp	33240	24" x 18"	9600	1	8	None	GTCO5
36	Calcomp	33360	36" x 24"	9600	1	8	None	GTCO5
37	Calcomp	33480	48" x 36"	9600	1	8	None	GTCO5
38	Calcomp	33600	60" x 44"	9600	1	8	None	GTCO5

**30, 31** When used with a sixteen-button cursor, configure these devices as MicroGrids (4,5) for proper operation.