Reprogramming the Andromeda II Series Keypads

Programmers Guide

Overview

This document covers basic keypad remapping changes for the Andromeda II Series keypads. The goal is to provide enough information to allow programmers to detect the active keypad type and layout, redefine basic scan code values generated and modify more advanced keypad functions such as shift plane, modifier and multi keys.

Implementation

Simply put, the keypad driver uses the scan code values returned by the keypad device as an index into these registry entries to determine the virtual key value sent to the system.
The keypad scan code mappings are controlled by registry entries. These registry entries are read each time the keypad driver loads. Modifying a keypad consists of these basic steps:

1. Determine the keypad driver and layout location in the registry. There are two basic types of keypad drivers to consider:
   - USB keyboards:CN30 / CV30 / CN3 / CK32
   - Matrix style keypads in which the keypad driver decodes GPIO matrix “intersections” to determine the key that was pressed: CK60 / CK61
   - NOTE: Direct Keys, which are keys tied to specific GPIO lines, are more like switches. They can perform many of the same functions as matrix keypad keys. These keys occur on CN30 / CK32 / CV30 / CN3. Their remapping is almost identical to the matrix type of keypad driver.
2. Modify the desired keys in their respective keypad layout registry entries.
3. Signal to the driver via a Named Event to update the keypad.

Keypad Determination and Layout Registry Location

KeypboardDriver and Keyboard type will cue the programmer to the driver type active. “CurrentActiveLayoutKey” will contain the actual string the programmer can use for registry operations to modify the keypad content based on driver type.

USB Keypads

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]
“KeyboardDriver”= ”ITCHIDKbd.dll”
“KeyboardType”= “USB”
“CurrentActiveLayoutId”=<layout id string>
“CurrentActiveLayoutKey”=<registry key layout string>

Matrix Keypads

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]
“KeyboardDriver”= ”pxa27x_keypad.dll”
“KeyboardType”= ”GPIO”
“ActiveConfig”=<keypad id string>

Registry Entries USB Keypads

There are 3 main “shift plane” registry entries that map the keypad device USB codes to the scan code values. The scan codes are then sent off to get translated into virtual keys. The shift plane registry entry that is used is determined by the current state of the Gold and Aqua keys. If the Gold key is pressed, then the “Gold shift plane” array is used. If the Aqua key is pressed, then the “Aqua shift plane” array is used. If neither Gold nor Aqua key is being held down, then the “Normal, unshifted plane” array is used. There is a 4th shift plane used for keypads containing Alpha Lock keypads such as those on the CK32.

The name of the 4 registry entries that define the Normal, Gold, Aqua and Alpha Lock shift planes are as follows:
NOTE: <CurrentActiveLayoutId> is the string that can be obtained from the above registry entry of the same name. The entire string (excluding the HKEY_LOCAL_MACHINE) is contained in <CurrentActiveLayoutKey>

HKLM\Drivers\HID\ClientDrivers\ITCKeyboard\Layout\\< CurrentActiveLayoutId >\
- “ShiftPlane0” (Normal)
- “ShiftPlane1” (Gold)
- “ShiftPlane2” (Aqua)
- “ShiftPlane3” (Alpha)

These are the registry entries you will need to modify to remap your keypad. Each plane is a list of active keys for that layout / plane. They have the format:

“ShiftPlane***X***” = hex: \
pp1,uu1,aa1,bb1,cc1,sc1, \
pp2,uu2,aa2,bb2,cc2,sc2, \
…
ppN,uuN,aaN,bbN,ccN,scN

Where:

pp***X*** = USB Code Page for key ***X***
- Available Code Pages:
  - HID_USAGE_PAGE_KEYBOARD = 0x07 – This is most common page for keypad keys
  - HID_USAGE_PAGE_CONSUMER = 0x0C – This is used most often for Shift Plane Keys

uu***X*** = USB Usage for key ***X*** – This is the USB equivalent for a hardware scan code and is used in conjunction with USB Code Page for identifying the specific key pressed

aa***X*** = High order byte for flags associated with key ***X***

bb***X*** = Middle byte for flags associated with key ***X***

cc***X*** = Low order byte for flags associated with key ***X***

Flags:

Bit 0:	00,00,01:	Shift Key Index (Changes Shift planes).
Bit 1:	00,00,02:	Named Event Index (Sets/Resets a Named Event Level based on Key State and Sets a Named Event at every Key State Change)
Bit 2:	00,00,04:	MultiKey Index(Single key press emulates multiple key strokes)
Bit 3:	00,00,08:	Modifier Index (Shift/Control/Alt/Caps/etc.)
Bit 4:	00,00,10:	App Launch (Microsoft Shell Application Launch Key)
Bit 5:	00,00,20:	Function Key Index (Launches a specified function from a DLL)
Bit 6:	00,00,40:	Rotate Key Index (Key that cycles through a specific set of keys)
Bit 7:	00,00,80:	Reserved
Bit 8:	00,01,00:	Extended Key)PC Scan Code is accompanied by the Extended 0xE0 Byte)
Bit 9:	00,02,00:	Non Repeating (Key does not Auto Repeat)
Bit 10:	00,04,00:	Silent (No key click).
Bit 11:	00,08,00:	VKEY (No Scan Code-vkey translation)
Bit 12:	00,10,00:	Ignored (NOOP key).

Bit 13:	00,20,00:	Shifted (Sends Shift before key).
Bit 14:	00,40,00:	No Chord (Only for multikeys).
Bit 15:	00,80,00:	Reserved
Bit 16:	01,00,00:	Sticky Once (Key remains pressed until next key press of any key)
Bit 17:	02,00,00:	Sticky Persist (Key remains pressed until next key press of the same key)
Bit 18:	04,00,00:	Sticky Lock (Key pressed twice in a row remains pressed until next key press of same key. Otherwise behaves like Sticky Once.)
Bit 19:	08,00,00:	Reserved
Bit 20:	10,00,00:	LED 1 (Key lights CAPS LOCK LED when depressed)
Bit 21:	20,00,00:	LED 2 (Key lights NUM LOCK LED when depressed)
Bit 22:	40,00,00:	LED 3 (Key lights SCOLL LOCK LED when depressed)
Bit 23:	80,00,00:	Reserved

sc***X*** = Scan code / VKey / Index / etc. Associated with key ***X*** This relates directly to the flags associated with the entry

- Bit0 set (SHIFTKEY) indicates sc***X*** is index into ShiftKeys Registry entries (see below)
- Bit1 set (NAMEDEVENT) indicates sc***X*** is index into Events\State and Events\Delta Registry entries.
- Bit2 set (MULTIKEY) indicates sc***X*** is index into MultiKeys Registry entries.
- Bit3 set (MODIFIER) indicates sc***X*** is index into ModifiersKeys Registry entries
- Bit4 set (APPLAUNCH) indicates sc***X*** is a Shell Application Launch Virtual Key with associated Registry entries
- Bit5 set (FUNCTIONKEY) indicates sc***X*** is index into FunctionKeys Registry entries
- Bit6 set (ROTATEKEY) indicates sc***X*** is index into RotateKeys Registry entries
- Bit11 set (VKEY) indicates sc***X*** is an Actual Virtual Key requiring no translation

If none of these bits are set, the key is considered to be the hardware scan code for a standard PC PS2 keyboard.

There are also several types of special function keys that are simply indexed by the shift planes. These registry entries give further definition to the keys unavailable in the standard shift plane entries.

HKLM\Drivers\HID\ClientDrivers\ ITCKeyboard\Layout\< CurrentActiveLayoutId >\ShiftKeys
Entries under this key contain description of the individual Shift Plane keys and are individually indexed
"ShiftKey***X***" = hex: aa,bb,cc,sc

HKLM\Drivers\HID\ClientDrivers\ ITCKeyboard\Layout\< CurrentActiveLayoutId >\ModifiersKeys
Entries under this key contain description of the individual Modifier keys (Shift, Control, Alt, Caps Lock, Num Lock, Shift Lock) and are individually indexed.
"ModKey***X***" = hex: aa,bb,cc,sc

HKLM\Drivers\HID\ClientDrivers\ ITCKeyboard\Layout\< CurrentActiveLayoutId >\MultiKeys
Entries under this key contain multiple key descriptions. When a MultiKey is pressed, it emulates pressing all the keys in its list in the order of entry.

"Multi***X***" = hex: aa1,bb1,cc1,sc1, \
aa2,bb2,cc2,sc2, \
…
aa***N***,bb***N***,cc***N***,sc***N***

HKLM\Drivers\HID\ClientDrivers\ ITCKeyboard\Layout\ <CurrentActiveLayoutId>\FunctionKeys
Entries under this key will launch the named function from the named DLL and pass the included parameter if available.

"FunctionKey***X***" = multi_sz: sz1, sz2
"FunctionKey***X***Flags" = dword:fl
Where:
sz1 = DLL Name
sz2 = DLL Function
fl = Function Parameters

HKLM\Drivers\HID\ClientDrivers\ ITCKeyboard\Layout\< CurrentActiveLayoutId >\Events\State
Entries under this key are the actual names for manual reset events that will be set/reset to reflect the actual keys state (pressed or released)

"Event***X***" = (STATE_EVENT_NAME)

HKLM\Drivers\HID\ClientDrivers\ ITCKeyboard\Layout\< CurrentActiveLayoutId >\Events\Delta
Entries under this key are the actual names for automatic reset events that will be set at each level change of the key.

"Event***X***"=(DELTA_EVENT_NAME)

HKLM\Drivers\HID\ClientDrivers\ ITCKeyboard\Layout\< CurrentActiveLayoutId >\RotateKeys
Entries under this key are a list of alternate keys that can be rotated through via successive key presses. A selection is made if the same key is not pressed with in a specified delay, or a different key is pressed, then the current index in the specific rotate key list is transmitted.

"RotateKey***X***" = hex: aa1,bb1,cc1,sc1, \
aa2,bb2,cc2,sc2, \
…
aa***N***,bb***N***,cc***N***,sc***N***

Special Named Events Associated with USB Keypads

There are Named Events associated with the USB Keyboard driver for notifying both the developer's application and the keyboard driver of unique circumstances associated with the keypad driver.

Events monitored by the Keypad Driver:

"ITC_KEYBOARD_CHANGE_USB"
This event is to be set by the application whenever the USB keyboard map has been changed in the registry and results in an unload / load of the keyboard overlay.

ITC_KEYCLICK_CHANGE"
This event signifies that the key click setting may have changed

"ITC_TE2000_KEYBOARD_ACTIVE"
This event is set by TE2000 to notify the keypad driver that TE2000 is has keyboard focus and any modifications to special Terminal Emulation Keys are now in effect (e.g. Shift applied to Function Keys).

Notifications set by the Keypad Driver:

"ITC_USB_KEYBOARD_LOAD_COMPLETE"
This event signifies that USB keyboard overlay map has just been loaded by the driver

"ITC_USB_KEYBOARD_UNLOAD_BEGIN"
This event signifies that USB keyboard is beginning unload of current keyboard overlay map

"_KeyPress"
This event is set every keypress.

Special USB Keypad Registry Restore Location

Upon a clean boot, the USB keyboard layouts are copied to a "reserved" location to provide a "restore point" for the USB keypads for developers to copy if they want to restore the registry upon exiting from their application. Originals of all USB keypad layouts are located at:
[HKEY_LOCAL_MACHINE\Drivers\HID\ClientDrivers\ITCKeyboard\Layout.ORIG]

Programming Steps

The following steps illustrate how to change a single key on a USB keypad. It can easily be extended to change more than one key if desired.

1. **Determine keypad layout to modify.**

2. **Read the shift plane mapping**
   The best way to read in the shift planes are to call RegQueryValueEx without a buffer to get the size of the shiftplane, than create the buffer of the appropriate size and than call RegQueryValueEx again to get the data. ShiftPlane0 contains the USB codes for every active key on the USB keyboard. With the other two shift planes, only keys that are in use were mapped. So, there are several dead keys in both the Orange and Blue shift planes, and they are not included in the registry layout.

   The shift planes are located here:

3. **Modify the shift plane mapping**
   Write the desired scan code value to the key offset of the desired shift plane.

   You can use the attached key layout table in Appendix B and the shift plane layout in Appendix A to find the scan code for the key(s) you want to remap along with the flags.

4. **Save the modified shift plane mappings.**
   Write the registry values

5. **Signal the the keypad to reload**.
   Open the named event **"ITC_KEYBOARD_CHANGE_USB"** and call **SetEvent().**

Programming Examples

1. Removing a key from a layout
2. Modifying an active key on a shift plane
3. Adding a key to unused key on a shift plane
4. Adding a new Named Event key

Registry Entries Matrix Keypads

There are 3 main “shift plane” registry entries which map the keypad device Scan Codes to the windows virtual key values. Each registry entry is an array of 128 WORDs (2 byte unsigned int, little endian). Since scan codes generated by the keypad device can range in value from 0x00 to 0x7f, the driver simply uses the generated scan code value as an index into one of the shift plane entries to determine the virtual key value which is sent up to the system.

The shift plane registry entry that is used is determined by the current state of the Gold and Aqua keys. If the Gold key is being held down then the “Gold shift plane” array is used. If the Aqua key is being held down, then the “Aqua shift plane” array is used. If neither Gold nor Aqua key is being held down, then the “Normal, unshifted plane” array is used.

The name of the 3 registry entries that define the Normal, Gold, and Aqua shift planes are as follows:

HKLM\HARDWARE\DEVICEMAP\KEYBD\xxxx\Vkey (Normal)
HKLM\HARDWARE\DEVICEMAP\KEYBD\xxxx\VkeyGold (Gold)
HKLM\HARDWARE\DEVICEMAP\KEYBD\xxxx\VkeyAlpha (Aqua)

Where xxxx is a four digit keypad ID which identifies the type of keypad on your device.

These are the registry entries (which are arrays of 128 WORDs) you will need to modify to remap your keypad.

Programming steps

The following steps illustrate how to change a single key on the CK60 keypad. It can easily be extended to change more than one key if desired.

1. **Identify your KeyPad**

   Read the 4 bytes of text stored in registry entry

   HKEY_LOCAL_MACHINE\Drivers\BuiltIn\KEYPAD\ActiveConfig

   This value is herein referred to as <KPID>.

2. **Read the shift plane mapping**

   Read these each of these key values into a WORD array of size 128

   HKLM\HARDWARE\DEVICEMAP\KEYBD\<KPID>\Vkey (Normal)
   HKLM\HARDWARE\DEVICEMAP\KEYBD\<KPID>\VkeyGold (Gold)
   HKLM\HARDWARE\DEVICEMAP\KEYBD\<KPID>\VkeyAlpha (Aqua)

   Note that not all keypads have entries for VkeyGold and VkeyAlpha

3. **Modify the shift plane mapping**

   Write the desired virtual key value to the Scan Code offset of the desired shift plane.

   You can use the attached scan code diagrams in Appendix A to find the scan code for the key(s) you

want to remap. Note that in all cases, scan code 00h is the left scan trigger and scan code 10h is the right scan trigger.

4. **Save the modified shift plane mappings.**

   Write the registry values

5. **Signal the the keypad to reload**.

   Open the named event **"ITC_KEYBOARD_CHANGE"** and call **SetEvent().**

Programming Examples

Appendix A:
USB Page and Usage ID Values

Key Name	HID Usage Page	HID Usage ID	PS/2 Set
System Power	0x01	0x81	0xE0 0x37
System Sleep	0x01	0x82	0xE0 0x3F
System Wake	0x01	0x83	0xE0 0x5E
No Event	0x07	0x00	None
Overrun Error	0x07	0x01	0x00
POST Fail	0x07	0x02	0xFC
Error Undefined	0x07	0x03	UNASSIGNED
a A	0x07	0x04	0x1C
b B	0x07	0x05	0x32
c C	0x07	0x06	0x21
d D	0x07	0x07	0x23
e E	0x07	0x08	0x24
f F	0x07	0x09	0x2B
g G	0x07	0x0A	0x34
h H	0x07	0x0B	0x33
i I	0x07	0x0C	0x43
j J	0x07	0x0D	0x3B
k K	0x07	0x0E	0x42
l L	0x07	0x0F	0x4B
m M	0x07	0x10	0x3A
n N	0x07	0x11	0x31
o O	0x07	0x12	0x44
p P	0x07	0x13	0x4D
q Q	0x07	0x14	0x15
r R	0x07	0x15	0x2D
s S	0x07	0x16	0x1B
t T	0x07	0x17	0x2C
u U	0x07	0x18	0x3C
v V	0x07	0x19	0x2A
w W	0x07	0x1A	0x1D
x X	0x07	0x1B	0x22
y Y	0x07	0x1C	0x35
z Z	0x07	0x1D	0x1A
1 !	0x07	0x1E	0x16
2 @	0x07	0x1F	0x1E
3 #	0x07	0x20	0x26
4 $	0x07	0x21	0x25
5 %	0x07	0x22	0x2E
6 ^	0x07	0x23	0x36
7 &	0x07	0x24	0x3D
8 *	0x07	0x25	0x3E
9 (	0x07	0x26	0x46

0)	0x07	0x27	0x45
Return	0x07	0x28	0x5A
Escape	0x07	0x29	0x76
Backspace	0x07	0x2A	0x66
Tab	0x07	0x2B	0x0D
Space	0x07	0x2C	0x29
- _	0x07	0x2D	0x4E
= +	0x07	0x2E	0x55
[{	0x07	0x2F	0x54
] }	0x07	0x30	0x5B
\ |	0x07	0x31	0x5D
Europe 1	0x07	0x32	0x5D
; :	0x07	0x33	0x4C
‘ “	0x07	0x34	0x52
` ~	0x07	0x35	0x0E
, <	0x07	0x36	0x41
. >	0x07	0x37	0x49
/ ?	0x07	0x38	0x4A
Caps Lock	0x07	0x39	0x58
F1	0x07	0x3A	0x05
F2	0x07	0x3B	0x06
F3	0x07	0x3C	0x04
F4	0x07	0x3D	0x0C
F5	0x07	0x3E	0x03
F6	0x07	0x3F	0x0B
F7	0x07	0x40	0x83
F8	0x07	0x41	0x0A
F9	0x07	0x42	0x01
F10	0x07	0x43	0x09
F11	0x07	0x44	0x78
F12	0x07	0x45	0x07
Print Screen	0x07	0x46	0xE0 0x7C
Scroll Lock	0x07	0x47	0x7E
Break	0x07	0x48	0xE0 0x7E
Pause	0x07	0x48	
Insert	0x07	0x49	0xE0 0x70
Home	0x07	0x4A	0xE0 0x6C
Page Up	0x07	0x4B	0xE0 0x7D
Delete	0x07	0x4C	0xE0 0x71
End	0x07	0x4D	0xE0 0x69
Page Down	0x07	0x4E	0xE0 0x7A
Right Arrow	0x07	0x4F	0xE0 0x74
Left Arrow	0x07	0x50	0xE0 0x6B
Down Arrow	0x07	0x51	0xE0 0x72
Up Arrow	0x07	0x52	0xE0 0x75
Num Lock	0x07	0x53	0x77
Keypad /	0x07	0x54	0xE0 0x4A
Keypad *	0x07	0x55	0xE0 0x7C
Keypad -	0x07	0x56	0xE0 0x7B
Keypad +	0x07	0x57	0x79
Keypad Enter	0x07	0x58	0xE0 0x5A
Keypad 1	0x07	0x59	0x69
Keypad 2	0x07	0x5A	0x72
Keypad 3	0x07	0x5B	0x7A
Keypad 4	0x07	0x5C	0x79
Keypad 5	0x07	0x5D	0x73
Keypad 6	0x07	0x5E	0x74
Keypad 7	0x07	0x5F	0x6C
Keypad 8	0x07	0x60	0x75
Keypad 9	0x07	0x61	0x7D
Keypad 0	0x07	0x62	0x70
Keypad .	0x07	0x63	0x71
Europe 2	0x07	0x64	0x61
App	0x07	0x65	0xE0 0x2F
Keyboard Power	0x07	0x66	0xE0 0x37
Keypad =	0x07	0x67	0x0F

F13	0x07	0x68	VKEY
F14	0x07	0x69	VKEY
F15	0x07	0x6A	VKEY
F16	0x07	0x6B	VKEY
F17	0x07	0x6C	VKEY
F18	0x07	0x6D	VKEY
F19	0x07	0x6E	VKEY
F20	0x07	0x6F	VKEY
F21	0x07	0x70	VKEY
F22	0x07	0x71	VKEY
F23	0x07	0x72	VKEY
F24	0x07	0x73	VKEY
Keyboard Execute	0x07	0x74	UNASSIGNED
Keyboard Help	0x07	0x75	UNASSIGNED
Keyboard Menu	0x07	0x76	UNASSIGNED
Keyboard Select	0x07	0x77	UNASSIGNED
Keyboard Stop	0x07	0x78	UNASSIGNED
Keyboard Again	0x07	0x79	UNASSIGNED
Keyboard Undo	0x07	0x7A	UNASSIGNED
Keyboard Cut	0x07	0x7B	UNASSIGNED
Keyboard Copy	0x07	0x7C	UNASSIGNED
Keyboard Paste	0x07	0x7D	UNASSIGNED
Keyboard Find	0x07	0x7E	UNASSIGNED
Keyboard Mute	0x07	0x7F	UNASSIGNED
Keyboard Volume Up	0x07	0x80	UNASSIGNED
Keyboard Volume Down	0x07	0x81	UNASSIGNED
Keyboard Locking Caps Lock	0x07	0x82	UNASSIGNED
Keyboard Locking Num Lock	0x07	0x83	UNASSIGNED
Keyboard Locking Scroll Lock	0x07	0x84	UNASSIGNED
Keypad ,	0x07	0x85	UNASSIGNED
Keyboard Equal Sign	0x07	0x86	UNASSIGNED
Keyboard Int'l 1	0x07	0x87	UNASSIGNED
Keyboard Int'l 2	0x07	0x88	UNASSIGNED
Keyboard Int'l 3	0x07	0x89	UNASSIGNED
Keyboard Int'l 4	0x07	0x8A	UNASSIGNED
Keyboard Int'l 5	0x07	0x8B	UNASSIGNED
Keyboard Int'l 6	0x07	0x8C	UNASSIGNED
Keyboard Int'l 7	0x07	0x8D	UNASSIGNED
Keyboard Int'l 8	0x07	0x8E	UNASSIGNED
Keyboard Int'l 9	0x07	0x8F	UNASSIGNED
Keyboard Lang 1	0x07	0x90	UNASSIGNED
Keyboard Lang 2	0x07	0x91	UNASSIGNED
Keyboard Lang 3	0x07	0x92	UNASSIGNED
Keyboard Lang 4	0x07	0x93	UNASSIGNED
Keyboard Lang 5	0x07	0x94	UNASSIGNED
Keyboard Lang 6	0x07	0x95	UNASSIGNED
Keyboard Lang 7	0x07	0x96	UNASSIGNED
Keyboard Lang 8	0x07	0x97	UNASSIGNED
Keyboard Lang 9	0x07	0x98	UNASSIGNED
Keyboard Alternate Erase	0x07	0x99	UNASSIGNED
Keyboard SysReq/Attention	0x07	0x9A	UNASSIGNED
Keyboard Cancel	0x07	0x9B	UNASSIGNED
Keyboard Clear	0x07	0x9C	UNASSIGNED
Keyboard Prior	0x07	0x9D	UNASSIGNED
Keyboard Return	0x07	0x9E	UNASSIGNED
Keyboard Separator	0x07	0x9F	UNASSIGNED
Keyboard Out	0x07	0xA0	UNASSIGNED
Keyboard Oper	0x07	0xA1	UNASSIGNED
Keyboard Clear/Again	0x07	0xA2	UNASSIGNED
Keyboard CrSel/Props	0x07	0xA3	UNASSIGNED
Keyboard ExSel	0x07	0xA4	UNASSIGNED
RESERVED	0x07	0xA5-0xDF	RESERVED
Left Control	0x07	0xE0	0x14

Left Shift	0x07	0xE1	0x12
Left Alt	0x07	0xE2	0x11
Left GUI	0x07	0xE3	0xE0 0x1F
Right Control	0x07	0xE4	0xE0 0x14
Right Shift	0x07	0xE5	0x59
Right Alt	0x07	0xE6	0xE0 0x11
Right GUI	0x07	0xE7	0xE0 0x27
RESERVED	0x07	0xE8-0xFFFF	RESERVED

Virtual Key Values

Key Label	Virtual Key Define	VKey Value	Scan Code	Flags
	VK_LBUTTON	0x01		
	VK_RBUTTON	0x02		
	VK_CANCEL	0x03		
	VK_MBUTTON	0x04		
	VK_XBUTTON1	0x05		
	VK_XBUTTON2	0x06		
	VK_LBUTTON	0x01		
	UNDEFINED	0x07		
Backspace	VK_BACK	0x08	0x66	0x000000 (Scan Code)
Tab	VK_TAB	0x09	0x0D	0x000000 (Scan Code)
RESERVED	RESERVED	0x0A		
RESERVED	RESERVED	0x0B		
Clear	VK_CLEAR	0x0C		0x000800 (VKEY)
Enter	VK_RETURN	0x0D	0x5A	0x000000 (Scan Code)
Shift	VK_SHIFT	0x10		
Ctrl	VK_CONTROL	0x11		
Alt	VK_MENU	0x12		
Pause	VK_PAUSE	0x13		
Caps Lock	VK_CAPITAL	0x14	0x58	0x000008 (Modifier Index 4)
	VK_KANA / VK_HANGEUL / VK_HANGUL	0x15		
	UNDEFINED	0x16		
	VK_JUNJA	0x17		
	VK_FINAL	0x18		
	VK_HANJA / VK_KANJI	0x19		
	UNDEFINED	0x1A		
Escape	VK_ESCAPE	0x1B	0x76	0x000000 (Scan Code)
	VK_CONVERT	0x1C	0x64	
	VK_NOCONVERT	0x1D	0x67	
	VK_ACCEPT	0x1E		
	VK_MODECHANGE	0x1F		
Space	VK_SPACE	0x20	0x29	0x000000 (Scan Code)
Page Up	VK_PRIOR	0x21	0x7D	0x000001 (Extended Scan Code)
Page Down	VK_NEXT	0x22	0x7A	0x000001 (Extended Scan Code)
End	VK_END	0x23	0x69	0x000001 (Extended Scan Code)
Home	VK_HOME	0x24	0x6C	0x000001 (Extended Scan Code)
Left	VK_LEFT	0x25	0x6B	0x000001 (Extended Scan Code)
Up	VK_UP	0x26	0x75	0x000001 (Extended Scan Code)
Right	VK_RIGHT	0x27	0x74	0x000001 (Extended Scan Code)
Down	VK_DOWN	0x28	0x72	0x000001 (Extended Scan Code)
Select	VK_SELECT	0x29		0x000800 (VKEY)
Print	VK_PRINT	0x2A		0x000800 (VKEY)
	VK_EXECUTE	0x2B		
	VK_SNAPSHOT	0x2C	0x84	0x000001 (Extended Scan Code)
Insert	VK_INSERT	0x2D	0x70	0x000001 (Extended Scan Code)
Delete	VK_DELETE	0x2E	0x71	0x000001 (Extended Scan Code)
Help	VK_HELP	0x2F		0x000800 (VKEY)
0)	VK_0	0x30	0x45	0x000000 (Scan Code)
1 !	VK_1	0x31	0x16	0x000000 (Scan Code)
2 @	VK_2	0x32	0x1E	0x000000 (Scan Code)
3 #	VK_3	0x33	0x26	0x000000 (Scan Code)
4 $	VK_4	0x34	0x25	0x000000 (Scan Code)
5 %	VK_5	0x35	0x2E	0x000000 (Scan Code)
6 ^	VK_6	0x36	0x36	0x000000 (Scan Code)
7 &	VK_7	0x37	0x3D	0x000000 (Scan Code)

8 *	VK_8	0x38	0x3E	0x000000 (Scan Code)
9 (	VK_9	0x39	0x46	0x000000 (Scan Code)
	UNDEFINED	0x3A	0x1C	
	UNDEFINED	0x3B	0x32	
	UNDEFINED	0x3C	0x21	
	UNDEFINED	0x3D	0x23	
	UNDEFINED	0x3E	0x24	
	UNDEFINED	0x3F	0x2B	
	UNDEFINED	0x40	0x34	
a A	VK_A	0x41	0x33	0x000000 (Scan Code)
b B	VK_B	0x42	0x43	0x000000 (Scan Code)
c C	VK_C	0x43	0x3B	0x000000 (Scan Code)
d D	VK_D	0x44	0x42	0x000000 (Scan Code)
e E	VK_E	0x45	0x4B	0x000000 (Scan Code)
f F	VK_F	0x46	0x3A	0x000000 (Scan Code)
g G	VK_G	0x47	0x31	0x000000 (Scan Code)
h H	VK_H	0x48	0x44	0x000000 (Scan Code)
i I	VK_I	0x49	0x4D	0x000000 (Scan Code)
j J	VK_J	0x4A	0x15	0x000000 (Scan Code)
k K	VK_K	0x4B	0x2D	0x000000 (Scan Code)
l L	VK_L	0x4C	0x1B	0x000000 (Scan Code)
m M	VK_M	0x4D	0x2C	0x000000 (Scan Code)
n N	VK_N	0x4E	0x3C	0x000000 (Scan Code)
o O	VK_O	0x4F	0x2A	0x000000 (Scan Code)
p P	VK_P	0x50	0x1D	0x000000 (Scan Code)
q Q	VK_Q	0x51	0x22	0x000000 (Scan Code)
r R	VK_R	0x52	0x35	0x000000 (Scan Code)
s S	VK_S	0x53	0x1A	0x000000 (Scan Code)
t T	VK_T	0x54	0x1C	0x000000 (Scan Code)
u U	VK_U	0x55	0x32	0x000000 (Scan Code)
v V	VK_V	0x56	0x21	0x000000 (Scan Code)
w W	VK_W	0x57	0x23	0x000000 (Scan Code)
x X	VK_X	0x58	0x24	0x000000 (Scan Code)
y Y	VK_Y	0x59	0x2B	0x000000 (Scan Code)
z Z	VK_Z	0x5A	0x34	0x000000 (Scan Code)
Left Win (Start)	VK_LWIN	0x5B	0x1F	0x000001 (Extended Scan Code)
Right Win	VK_RWIN	0x5C	0x27	0x000001 (Extended Scan Code)
App	VK_APPS	0x5D	0x2F	0x000001 (Extended Scan Code)
	RESERVED	0x5E		
	VK_SLEEP	0x5F		
0	VK_NUMPAD0	0x60	0x70	
1	VK_NUMPAD1	0x61	0x69	0x000000 (Scan Code)
2	VK_NUMPAD2	0x62	0x72	0x000000 (Scan Code)
3	VK_NUMPAD3	0x63	0x7A	0x000000 (Scan Code)
4	VK_NUMPAD4	0x64	0x6B	0x000000 (Scan Code)
5	VK_NUMPAD5	0x65	0x73	0x000000 (Scan Code)
6	VK_NUMPAD6	0x66	0x74	0x000000 (Scan Code)
7	VK_NUMPAD7	0x67	0x6C	0x000000 (Scan Code)
8	VK_NUMPAD8	0x68	0x75	0x000000 (Scan Code)
9	VK_NUMPAD9	0x69	0x7D	0x000000 (Scan Code)
*	VK_MULTIPLY	0x6A	0x7C	0x000000 (Scan Code)
+	VK_ADD	0x6B	0x79	0x000000 (Scan Code)
	VK_SEPERATOR	0x6C		0x000000 (Scan Code)
-	VK_SUBTRACT	0x6D	0x7B	0x000000 (Scan Code)
.	VK_DECIMAL	0x6E	0x71	0x000000 (Scan Code)
/	VK_DIVIDE	0x6F	0x4A	0x000001 (Extended Scan Code)
F1 (Smile)	VK_F1 (VK_TSOFT1)	0x70	0x05	0x000000 (Scan Code)
TE F1	VK_LSHIFT + VK_F1	0x70	0x05	0x002000 (Shifted Scan Code)
F2 (Frown)	VK_F2 (VK_TSOFT2)	0x71	0x06	0x000000 (Scan Code)
TE F2	VK_LSHIFT + VK_F2	0x71	0x06	0x002000 (Shifted Scan Code)
F3 (Send)	VK_F3 (VK_TTALK)	0x72	0x04	0x000000 (Scan Code)
TE F3	VK_LSHIFT + VK_F3	0x72	0x04	0x002000 (Shifted Scan Code)
F4 (End)	VK_F4 (VK_TEND)	0x73	0x0C	0x000000 (Scan Code)
TE F4	VK_LSHIFT + VK_F4	0x73	0x0C	0x002000 (Shifted Scan Code)
F5	VK_F5	0x74	0x03	0x000000 (Scan Code)
TE F5	VK_LSHIFT + VK_F5	0x74	0x03	0x002000 (Shifted Scan Code)
F6 (Vol Up)	VK_F6 (VK_TVOLUMEUP)	0x75	0x0B	0x000000 (Scan Code)
TE F6	VK_LSHIFT + VK_F6	0x75	0x0B	0x002000 (Shifted Scan Code)
F7 (Vol Down)	VK_F7 (VK_TVOLUMEDOWN)	0x76	0x83	0x000000 (Scan Code)
TE F7	VK_LSHIFT + VK_F7	0x76	0x83	0x002000 (Shifted Scan Code)
F8	VK_F8 (VK_TSTART)	0x77	0x0A	0x000000 (Scan Code)
TE F8	VK_LSHIFT + VK_F8	0x77	0x0A	0x002000 (Shifted Scan Code)
F9	VK_F9 (VK_TPOUND)	0x78	0x01	0x000000 (Scan Code)
TE F9	VK_LSHIFT + VK_F9	0x78	0x01	0x002000 (Shifted Scan Code)
F10	VK_F10 (VK_TRECORD)	0x79	0x09	0x000000 (Scan Code)

TE F10	VK_LSHIFT + VK_F10	0x79	0x09	0x002000 (Shifted Scan Code)
F11 (SYM)	VK_F11 (VK_SYMBOL)	0x7A	0x78	0x000000 (Scan Code)
TE F11	VK_OEM_INTERMEC_F11	0x7A	0xE8	0x000800 (VKEY)
F12	VK_F12	0x7B	0x07	0x000000 (Scan Code)
TE F12	VK_LSHIFT + VK_F12	0x7B	0x07	0x002000 (Shifted Scan Code)
F13	VK_F13	0x7C		0x000800 (VKEY)
TE F13	VK_LSHIFT + VK_F13	0x7C		0x002800 (Shifted VKEY)
F14	VK_F14	0x7D		0x000800 (VKEY)
TE F14	VK_LSHIFT + VK_F14	0x7D		0x002800 (Shifted VKEY)
F15	VK_F15 (VK_END_ALL_DATA_CALLS)	0x7E		0x000800 (VKEY)
TE F15	VK_LSHIFT + VK_F15	0x7E		0x002800 (Shifted VKEY)
F16	VK_F16 (VK_TSPEAKERPHONE_TOGGLE)	0x7F		0x000800 (VKEY)
TE F16	VK_LSHIFT + VK_F16	0x7F		0x002800 (Shifted VKEY)
F17	VK_F17 (VK_TFLIP)	0x80		0x000800 (VKEY)
TE F17	VK_LSHIFT + VK_F17	0x80		0x002800 (Shifted VKEY)
F18	VK_F18 (VK_TPOWER)	0x81		0x000800 (VKEY)
TE F18	VK_LSHIFT + VK_F18	0x81		0x002800 (Shifted VKEY)
F19	VK_F19 (VK_REDKEY)	0x82		0x000800 (VKEY)
TE F19	VK_LSHIFT + VK_F19	0x82		0x002800 (Shifted VKEY)
F20	VK_F20 (VK_ROCKER)	0x83		0x000800 (VKEY)
TE F20	VK_LSHIFT + VK_F20	0x83		0x002800 (Shifted VKEY)
F21	VK_F21 (VK_DPAD)	0x84		0x000800 (VKEY)
TE F21	VK_LSHIFT + VK_F21	0x84		0x002800 (Shifted VKEY)
F22	VK_F22 (VK_KEYLOCK)	0x85		0x000800 (VKEY)
TE F22	VK_LSHIFT + VK_F22	0x85		0x002800 (Shifted VKEY)
F23	VK_F23 (VK_ACTION)	0x86		0x000800 (VKEY)
TE F23	VK_LSHIFT + VK_F23	0x86		0x002800 (Shifted VKEY)
F24	VK_F24 (VK_VOICEDIAL)	0x87		0x000800 (VKEY)
TE F24	VK_LSHIFT + VK_F24	0x87		0x002800 (Shifted VKEY)
Page Left	VK_OEM_INTERMEC_PAGE_LEFT	0x88		0x000800 (VKEY)
Page Right	VK_OEM_INTERMEC_PAGE_RIGHT	0x89		0x000800 (VKEY)
View Left	VK_OEM_INTERMEC_VIEW_LEFT	0x8A		0x000800 (VKEY)
View Right	VK_OEM_INTERMEC_VIEW_RIGHT	0x8B		0x000800 (VKEY)
View Up	VK_OEM_INTERMEC_VIEW_UP	0x8C		0x000800 (VKEY)
View Down	VK_OEM_INTERMEC_VIEW_DOWN	0x8D		0x000800 (VKEY)
	UNASSIGNED	0x8E		
	UNASSIGNED	0x8F		
Num Lock	VK_NUMLOCK	0x90		
Scroll Lock	VK_SCROLL	0x91		
SysReq	VK_OEM_INTERMEC_SREQ	0x92		0x000800 (VKEY)
Field +	VK_OEM_INTERMEC_FLD_PLUS	0x93		0x000800 (VKEY)
Field -	VK_OEM_INTERMEC_FLD_MINUS	0x94		0x000800 (VKEY)
Field Exit	VK_OEM_INTERMEC_FLD_EXIT	0x95		0x000800 (VKEY)
Dup	VK_OEM_INTERMEC_DUP	0x96		0x000800 (VKEY)
NewLn	VK_OEM_INTERMEC_NEWLN	0x97		0x000800 (VKEY)
Return	VK_OEM_INTERMEC_RETURN	0x98		0x000800 (VKEY)
	UNASSIGNED	0x99		
	UNASSIGNED	0x9A		
	UNASSIGNED	0x9B		
	UNASSIGNED	0x9C		
	UNASSIGNED	0x9D		
	UNASSIGNED	0x9E		
	UNASSIGNED	0x9F		
Left Shift	VK_LSHIFT	0xA0	0x12	0x000000 (Scan Code)
Right Shift	VK_RSHIFT	0xA1	0x59	0x000000 (Scan Code)
Left Ctrl	VK_LCONTROL	0xA2	0x14	0x000000 (Scan Code)
Right Ctrl	VK_RCONTROL	0xA3	0x14	0x000001 (Extended Scan Code)
Left Alt	VK_LMENU	0xA4	0x11	0x000000 (Scan Code)
Right Alt	VK_RMENU	0xA5	0x11	0x000001 (Extended Scan Code)
	VK_BROWSER_BACK	0xA6	0x38	0x000001 (Extended Scan Code)
	VK_BROWSER_FORWARD	0xA7	0x30	0x000001 (Extended Scan Code)
	VK_BROWSER_REFRESH	0xA8	0x20	0x000001 (Extended Scan Code)
	VK_BROWSER_STOP	0xA9	0x28	0x000001 (Extended Scan Code)
	VK_BROWSER_SEARCH	0xAA	0x10	0x000001 (Extended Scan Code)
	VK_BROWSER_FAVORITES	0xAB	0x18	0x000001 (Extended Scan Code)
	VK_BROWSER_HOME	0xAC	0x3A	0x000001 (Extended Scan Code)
	VK_VOLUME_MUTE	0xAD	0x23	0x000001 (Extended Scan Code)
	VK_VOLUME_DOWS	0xAE	0x21	0x000001 (Extended Scan Code)
	VK_VOLUME_UP	0xAF	0x32	0x000001 (Extended Scan Code)
	VK_MEDIA_NEXT_TRACK	0xB0	0x4D	0x000001 (Extended Scan Code)
	VK_MEDIA_PREV_TRACK	0xB1	0x15	0x000001 (Extended Scan Code)
	VK_MEDIA_STOP	0xB2	0x3B	0x000001 (Extended Scan Code)
	VK_MEDIA_PLAY_PAUSE	0xB3	0x34	0x000001 (Extended Scan Code)
	VK_LAUNCH_MAIL	0xB4	0x48	0x000001 (Extended Scan Code)
	VK_LAUNCH_MEDIA_SELECT	0xB5	0x50	0x000001 (Extended Scan Code)

	VK_LAUNCH_APP1	0xB6	0x40	0x000001 (Extended Scan Code)
	VK_LAUNCH_APP2	0xB7	0x2B	0x000001 (Extended Scan Code)
	RESERVED	0xB8		
	RESERVED	0xB9		
; :	VK_OEM_1 \ VK_SEMICOLON	0xBA	0x4C	0x000000 (Scan Code)
= +	VK_OEM_PLUS \ VK_EQUAL	0xBB	0x55	0x000000 (Scan Code)
, <	VK_OEM_COMMA \ VK_COMMA	0xBC	0x41	0x000000 (Scan Code)
- _	VK_OEM_MINUS \ VK_HYPHEN	0xBD	0x4E	0x000000 (Scan Code)
. >	VK_OEM_PERIOD \ VK_PERIOD	0xBE	0x49	0x000000 (Scan Code)
/ ?	VK_OEM_2 \ VK_SLASH	0xBF	0x4A	0x000000 (Scan Code)
` ~	VK_OEM_3 \ VK_BACKQUOTE	0xC0	0x0E	0x000000 (Scan Code)
	VK_APP_LAUNCH1	0xC1		
	VK_APP_LAUNCH2	0xC2		
	VK_APP_LAUNCH3	0xC3		
	VK_APP_LAUNCH4	0xC4		
	VK_APP_LAUNCH5	0xC5		
	VK_APP_LAUNCH6	0xC6		
	VK_APP_LAUNCH7	0xC7		
	VK_APP_LAUNCH8	0xC8		
	VK_APP_LAUNCH9	0xC9		
	VK_APP_LAUNCH10	0xCA		
	VK_APP_LAUNCH11	0xCB		
	VK_APP_LAUNCH12	0xCC		
	VK_APP_LAUNCH13	0xCD		
	VK_APP_LAUNCH14	0xCE		
	VK_APP_LAUNCH15	0xCF		
Reserved	RESERVED	0xD0		
Reserved	RESERVED	0xD1		
Reserved	RESERVED	0xD2		
Reserved	RESERVED	0xD3		
Reserved	RESERVED	0xD4		
Reserved	RESERVED	0xD5		
Reserved	RESERVED	0xD6		
Reserved	RESERVED	0xD7		
Undefined	UNASSIGNED	0xD8		
Undefined	UNASSIGNED	0xD9		
Undefined	UNASSIGNED	0xDA		
[{	VK_OEM_4 \ VK_LBRACKET	0xDB	0x54	0x000000 (Scan Code)
\ |	VK_OEM_5 \ VK_BACKSLASH	0xDC	0x5D	0x000000 (Scan Code)
] }	VK_OEM_6 \ VK_RBRACKET	0xDD	0x5B	0x000000 (Scan Code)
' "	VK_OEM_7 \ VK_APOSTROPHE	0xDE	0x52	0x000000 (Scan Code)
Varies	VK_OEM_8 \ VK_OFF	0xDF	0x3F	0x000001 (Extended Scan Code)
Keypad	VK_OEM_INTERMEC_KEYPD	0xE0		0x000800 (VKEY)
Erase	VK_OEM_INTERMEC_ERASE	0xE1		0x000800 (VKEY)
	VK_OEM_102 / VK_EXTEND_BSLASH	0xE2	0x51	
Yes	VK_OEM_INTERMEC_YES	0xE3		0x000800 (VKEY)
No	VK_OEM_INTERMEC_NO	0xE4		0x000800 (VKEY)
	VK_PROCESSKEY	0xE5		
Roll Up	VK_OEM_INTERMEC_ROLL_UP	0xE6		0x000800 (VKEY)
	VK_PACKET	0xE7		
TE F11	VK_OEM_INTERMEC_F11	0xE8		0x000800 (VKEY)
Reset	VK_OEM_INTERMEC_RESET	0xE9		0x000800 (VKEY)
PrvSc	VK_OEM_INTERMEC_PRV_SC	0xEA		0x000800 (VKEY)
NextSc	VK_OEM_INTERMEC_NEXT_SC	0xEB		0x000800 (VKEY)
PA2	VK_OEM_INTERMEC_PA2	0xEC		0x000800 (VKEY)
PA3	VK_OEM_INTERMEC_PA3	0xED		0x000800 (VKEY)
Find	VK_OEM_INTERMEC_FIND	0xEE		0x000800 (VKEY)
Remove	VK_OEM_INTERMEC_REMOVE	0xEF		0x000800 (VKEY)
Mode	VK_OEM_INTERMEC_MODE	0xF0		0x000800 (VKEY)
Hex	VK_OEM_INTERMEC_HEX	0xF1		0x000800 (VKEY)
Roll Down	VK_OEM_INTERMEC_ROLL_DOWN	0xF2		0x000800 (VKEY)
Autolog	VK_OEM_INTERMEC_AUTOLOGIN	0xF3		0x000800 (VKEY)
FMark	VK_OEM_INTERMEC_FMARK	0xF4		0x000800 (VKEY)
Clr	VK_OEM_INTERMEC_CLR	0xF5		0x000800 (VKEY)
Attention	VK_ATTN	0xF6		0x000800 (VKEY)
	VK_CRSEL	0xF7		
	VK_EXSEL	0xF8		
EEOF	VK_EREOF	0xF9		0x000800 (VKEY)
	VK_PLAY	0xFA		
	VK_ZOOM	0xFB		
Reserved	VK_NONAME	0xFC		
PA1	VK_PA1	0xFD		0x000800 (VKEY)
	VK_OEM_CLEAR	0xFE		

Appendix B:
Default USB Keypad Registry Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]

"KeyboardDriver" = "ITCHIDKbd.dll"
"KeyboardType" = "USB"
"CurrentActiveLayoutId" = "0000"
"CurrentActiveLayoutKey"= "Drivers\HID\ClientDrivers\ITCKeyboard\Layout\0000"

CN30 Programmable / Managers Key Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]

"KeyboardDriver" = "ITCHIDKbd.dll"
"KeyboardType" = "USB"
"CurrentActiveLayoutId" = "CN30\0001"
"CurrentActiveLayoutKey" = "Drivers\HID\ClientDrivers\ITCKeyboard\Layout\CN30\0001"

CN30 VT-ANSI Keypad Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]

"KeyboardDriver" = "ITCHIDKbd.dll"
"KeyboardType" = "USB"
"CurrentActiveLayoutId" = "1662_6200_4"
"CurrentActiveLayoutKey" = "Drivers\HID\ClientDrivers\ITCKeyboard\Layout\1662_6200_4"

CN30 3270-5250 Key Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]

"KeyboardDriver" = "ITCHIDKbd.dll"
"KeyboardType" = "USB"
"CurrentActiveLayoutId" = "1662_6200_5"
"CurrentActiveLayoutKey" = "Drivers\HID\ClientDrivers\ITCKeyboard\Layout\1662_6200_5"

CN30 Numeric Key Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]

"KeyboardDriver" = "ITCHIDKbd.dll"
"KeyboardType" = "USB"
"CurrentActiveLayoutId" = "1662_6172_0"
"CurrentActiveLayoutKey" = "Drivers\HID\ClientDrivers\ITCKeyboard\Layout\1662_6172_0"

CV30 "Space Constrained" Key Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]

"KeyboardDriver" = "ITCHIDKbd.dll"
"KeyboardType" = "USB"
"CurrentActiveLayoutId" = "1662_6203_6"
"CurrentActiveLayoutKey" = "Drivers\HID\ClientDrivers\ITCKeyboard\Layout\1662_6203_6"

CV30 Standard Key Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]

“KeyboardDriver” = ”ITCHIDKbd.dll”
“KeyboardType” = “USB”
“CurrentActiveLayoutId” = ”1662_6208_1”
“CurrentActiveLayoutKey” = ”Drivers\HID\ClientDrivers\ITCKeyboard\Layout\1662_6208_1”

CV30 3270 Key Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]

“KeyboardDriver” = ”ITCHIDKbd.dll”
“KeyboardType” = “USB”
“CurrentActiveLayoutId” = ”1662_6208_2”
“CurrentActiveLayoutKey” = ”Drivers\HID\ClientDrivers\ITCKeyboard\Layout\1662_6208_2”

CV30 5250 Key Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]

“KeyboardDriver” = ”ITCHIDKbd.dll”
“KeyboardType” = “USB”
“CurrentActiveLayoutId” = ”1662_6208_3”
“CurrentActiveLayoutKey” = ”Drivers\HID\ClientDrivers\ITCKeyboard\Layout\1662_6208_3”

CV30 VT220 Key Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]

“KeyboardDriver” = ”ITCHIDKbd.dll”
“KeyboardType” = “USB”
“CurrentActiveLayoutId” = ”1662_6208_4”
“CurrentActiveLayoutKey” = ”Drivers\HID\ClientDrivers\ITCKeyboard\Layout\1662_6208_4”

CN3 Alpha Numeric Key Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]

“KeyboardDriver” = ”ITCHIDKbd.dll”
“KeyboardType” = “USB”
“CurrentActiveLayoutId” = ”CN3\0001”
“CurrentActiveLayoutKey” = ”Drivers\HID\ClientDrivers\ITCKeyboard\Layout\CN3\0001”

CN3 Numeric (Phone) Key Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]

“KeyboardDriver” = ”ITCHIDKbd.dll”
“KeyboardType” = “USB”
“CurrentActiveLayoutId” = ”CN3\0002”
“CurrentActiveLayoutKey” = ”Drivers\HID\ClientDrivers\ITCKeyboard\Layout\CN3\0002”

CK32 42 Key Programmable Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]

“KeyboardDriver” = ”ITCHIDKbd.dll”
“KeyboardType” = “USB”
“CurrentActiveLayoutId” = ”CK32\0001”
“CurrentActiveLayoutKey” = ”Drivers\HID\ClientDrivers\ITCKeyboard\Layout\CK32\0001”

CK32 42 Key VT-ANSI Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]
“KeyboardDriver” = ”ITCHIDKbd.dll”
“KeyboardType” = “USB”
“CurrentActiveLayoutId” = ”CK32\0002”
“CurrentActiveLayoutKey” = ”Drivers\HID\ClientDrivers\ITCKeyboard\Layout\CK32\0002”

CK32 42 Key 3270-5250 Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]
“KeyboardDriver” = ”ITCHIDKbd.dll”
“KeyboardType” = “USB”
“CurrentActiveLayoutId” = ”CK32\0003”
“CurrentActiveLayoutKey” = ”Drivers\HID\ClientDrivers\ITCKeyboard\Layout\CK32\0003”

CK32 53 Key Programable Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]
“KeyboardDriver” = ”ITCHIDKbd.dll”
“KeyboardType” = “USB”
“CurrentActiveLayoutId” = ”CK32\0004”
“CurrentActiveLayoutKey” = ”Drivers\HID\ClientDrivers\ITCKeyboard\Layout\CK32\0004”

CK32 53 Key VT-ANSI Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]
“KeyboardDriver” = ”ITCHIDKbd.dll”
“KeyboardType” = “USB”
“CurrentActiveLayoutId” = ”CK32\0005”
“CurrentActiveLayoutKey” = ”Drivers\HID\ClientDrivers\ITCKeyboard\Layout\CK32\0005”

CK32 53 Key 3270-5250 Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]
“KeyboardDriver” = ”ITCHIDKbd.dll”
“KeyboardType” = “USB”
“CurrentActiveLayoutId” = ”CK32\0006”
“CurrentActiveLayoutKey” = ”Drivers\HID\ClientDrivers\ITCKeyboard\Layout\CK32\0006”

CK32 56 Key Programable Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]
“KeyboardDriver” = ”ITCHIDKbd.dll”
“KeyboardType” = “USB”
“CurrentActiveLayoutId” = ”CK32\0007”
“CurrentActiveLayoutKey” = ”Drivers\HID\ClientDrivers\ITCKeyboard\Layout\CK32\0007”

CK32 56 Key VT-ANSI Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]

“KeyboardDriver” = ”ITCHIDKbd.dll”
“KeyboardType” = “USB”
“CurrentActiveLayoutId” = ”CK32\0008”
“CurrentActiveLayoutKey” = ”Drivers\HID\ClientDrivers\ITCKeyboard\Layout\CK32\0008”

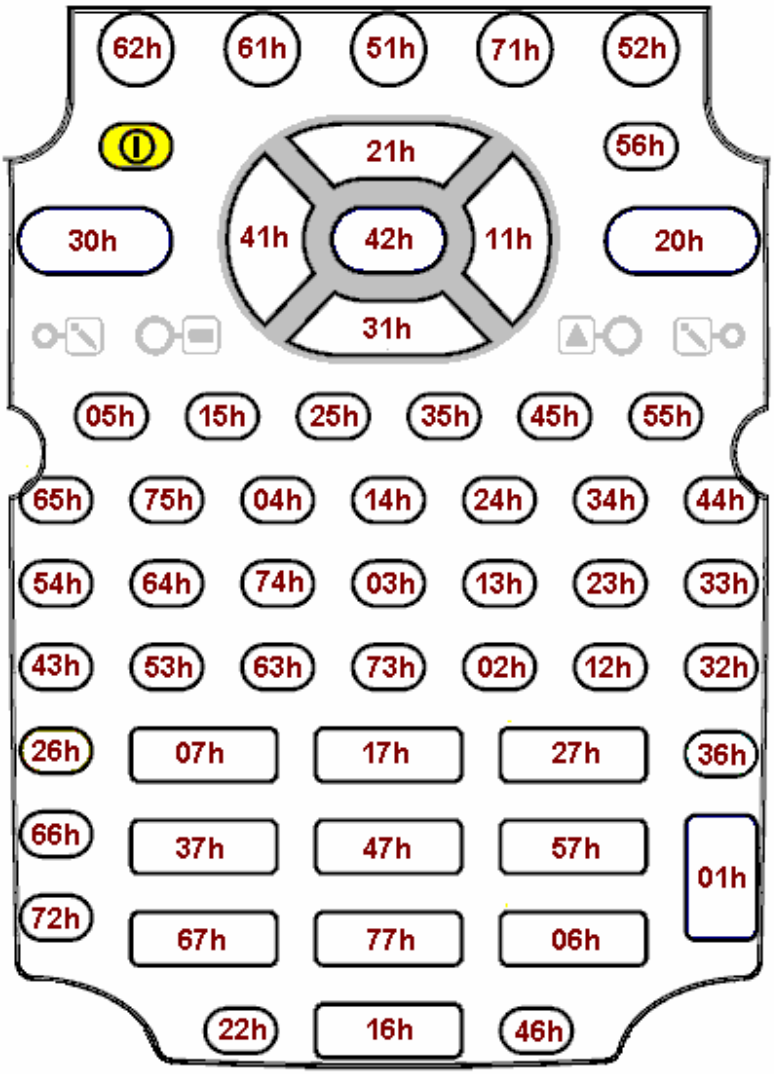
CK32 56 Key 3270-5250 Values

[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\KEYBD]

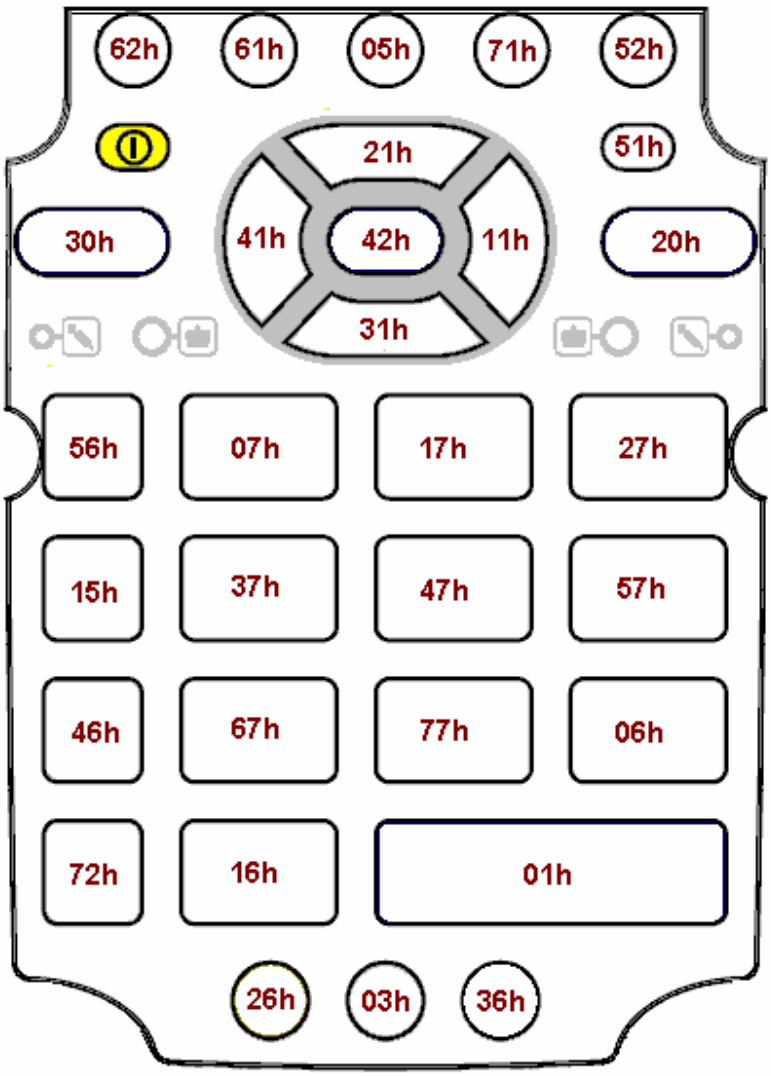
“KeyboardDriver” = ”ITCHIDKbd.dll”
“KeyboardType” = “USB”
“CurrentActiveLayoutId” = ”CK32\0009”
“CurrentActiveLayoutKey” = ”Drivers\HID\ClientDrivers\ITCKeyboard\Layout\CK32\0009”

Appendix C: CK6x Scan code diagrams

Note that all values are hexadecimal.



58 Key Keypad Scan Codes



DSD Keypad Scan Codes

Frito Keypad Scan Codes