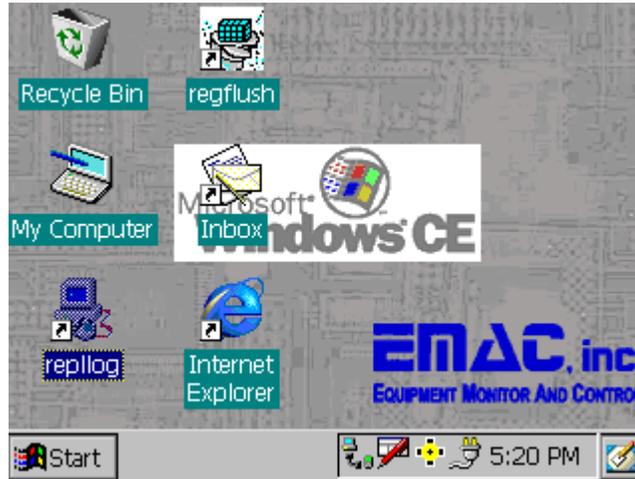


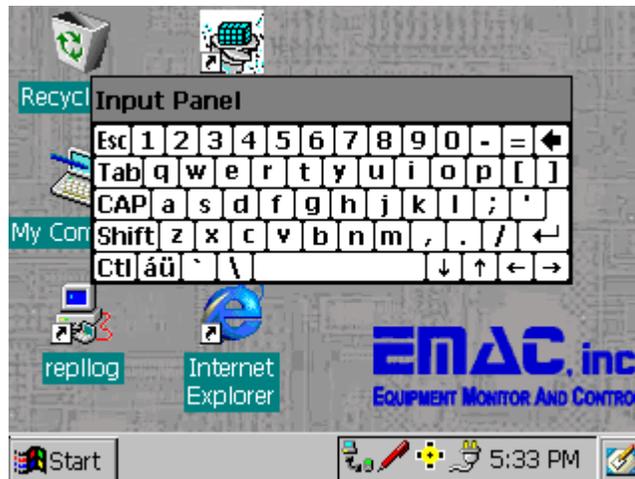
Windows CE 3.0

For the
PPC-E5



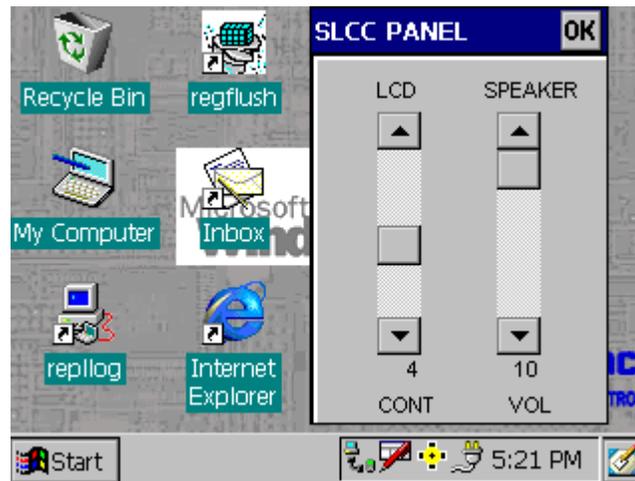
Key Features:

Soft Keyboard



A Soft Keyboard is provided with all of the PPC-E5 CE builds. This is provided in addition to a standard keyboard driver.

SLCC (Sound and LCD Contrast Control)



The SLCC application controls the contrast of the LCD and the volume of the PC speaker. This is accomplished by opening the Com1 serial port and sending serial packets to the SLCC. This application is launched on startup and will set the contrast and volume to defaults, if a registry entry is not found. The setting range can be 0 to 10. The default values are 4 for the contrast and 5 for the PC speaker. The registry settings are located in:

```
[HKEY_CURRENT_USER\Software\SLCC]
"Volume"=dword:00000005
"Contrast"=dword:00000004
```

Persistent Registry



Since Windows CE saves its Registry Entries in volatile RAM, when the system is rebooted the updates are lost. The PPC-E5 Windows CE build contains a driver to write the Registry to the DiskOnChip, resulting in a non-volatile or Persistent Registry. The FlushReg application, that is provided, makes an API call to flush the registry to the DiskOnChip. The sample code below shows an example of API calls in Visual BASIC and Visual C++.

Embedded Visual BASIC

```
Option Explicit
Private Const HKEY_LOCAL_MACHINE=&H80000002
Public Declare Function RegFlushKey Lib "Coredll" (ByVal hKey As Long) As Long

Private Sub cmdFlushReg_Click()

    Dim lngerrorcode As Long
    Dim lResult As Long

    txtRegKey.Text=txtRegKey.Text &"Flushing Registry" & Chr(13) & Chr(10)
    lngerrorcode = RegFlushKey(HKEY_LOCAL_MACHINE)

    if lngerrorcode=0 Then

        txtRegKey.Text = txtRegKey.Text & "Success"& Chr(13) & Chr(10)& Chr(13) & Chr(10)
    Else
        txtRegKey.Text = txtRegKey.Text & "Success"& Chr(13) & Chr(10)& Chr(13) & Chr(10)
    End If
End Sub
```

Embedded Visual C++

```
#include <windows.h>
#include <stdio.h>

int WINAPI WinMain(HINSTANCE hInstance, HINSTANCE hPrevInstance,LPWSTR lpCmdLine, int nCmdShow)
{

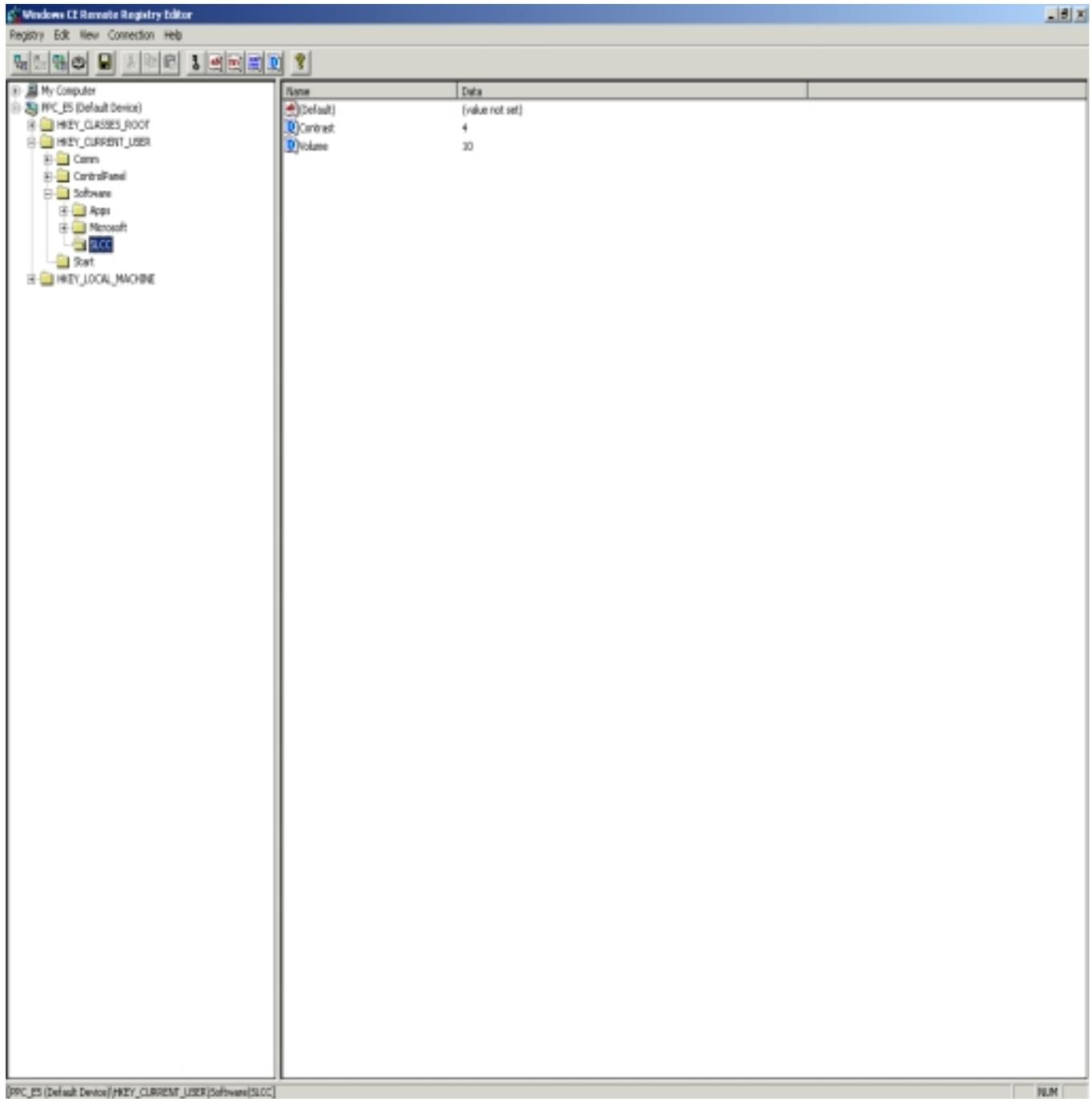
    LONG status;

    RETAILMSG(TRUE, (TEXT("WriteRegistry: HKEY_LOCAL_MACHINE\r\n")));

    if (ERROR_SUCCESS != (status = RegFlushKey(HKEY_LOCAL_MACHINE)))

        {
        ERRORMSG(TRUE, (TEXT("Write Registry: HKEY_LOCAL_MACHINE not written (%1) \r\n"),status));
        return (FALSE);
        }
return (TRUE);
}
```

Microsoft Embedded Tools can also be used to edit and view the registry.



Microsoft Embedded Tools can be ordered on-line for free via the Microsoft web-site.

Active Sync

With these builds the only type of active sync connection available is a null modem connection.

Though Com3 and Com4 are available for a serial connection, the default debug build will only have Com3 available. This can be changed to Com4 if the wce_load.ini is set to use Com3 as the debug port (Com1

and Com2 are reserved for use by the SLCC and the touchscreen controller respectively and are not available for any other use).

Active Sync uses Handshaking signals and the following null modem cable configuration:

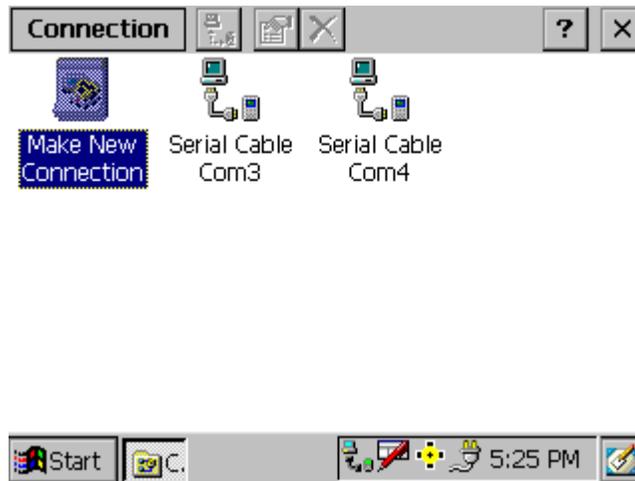
9-pin D-Sub

System 1	Pin	Pin	System 2
TX	3-----	2	RX
RX	2-----	3	TX
RTS	7-----	8	CTS
CTS	8-----	7	RTS
DSR	6-----	4	DTR
DCD	1		
DTR	4-----	6	DSR
		1	DCD
GND	5-----	5	GND

Initiation of an Active Sync Session

This build has been tested with Active Sync 3.1 which can be downloaded from the Microsoft web-site.

In order to connect, Windows CE must have a connection in Start->Programs->Communication->Remote Networking. This is actually the application Remnet.exe.

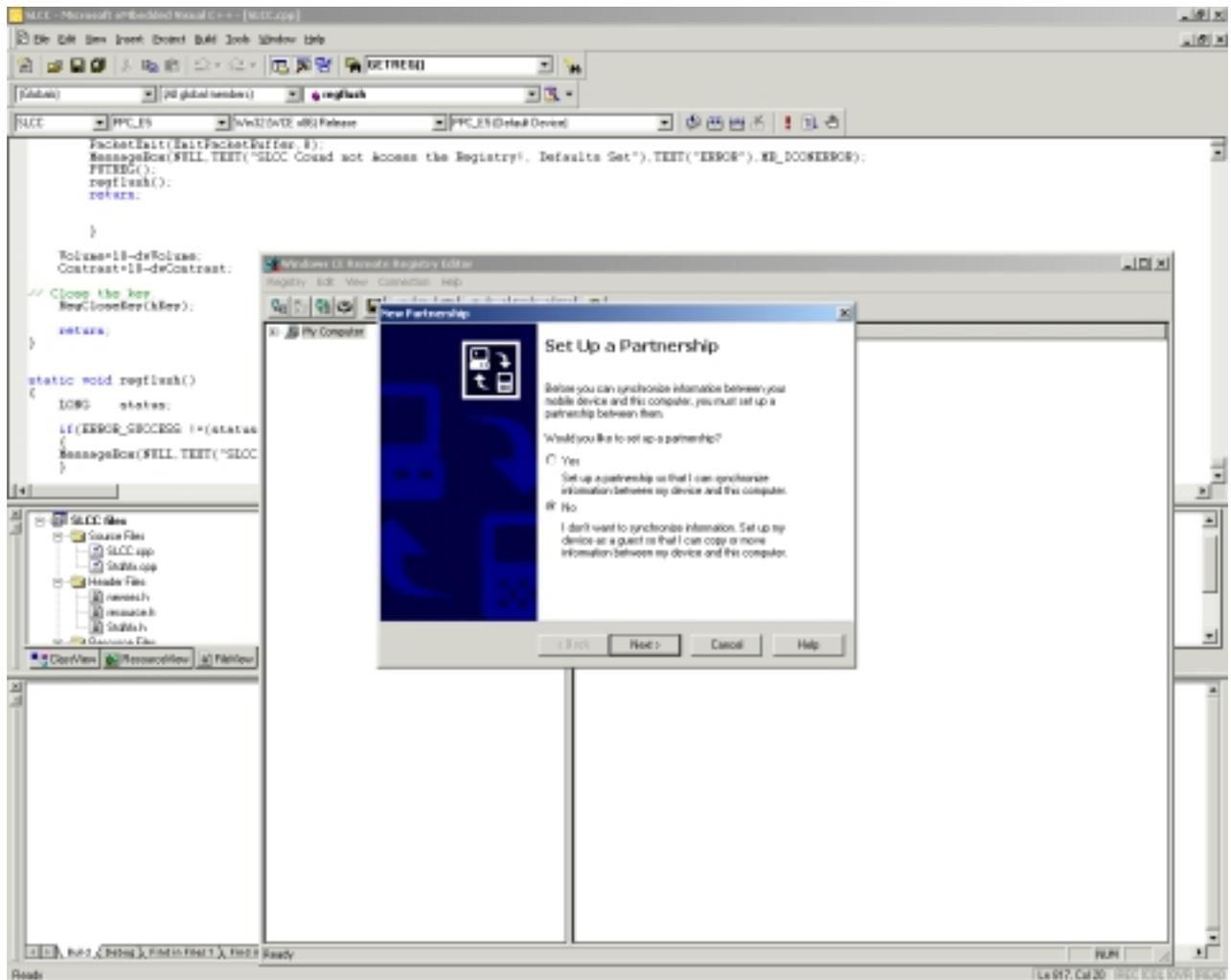


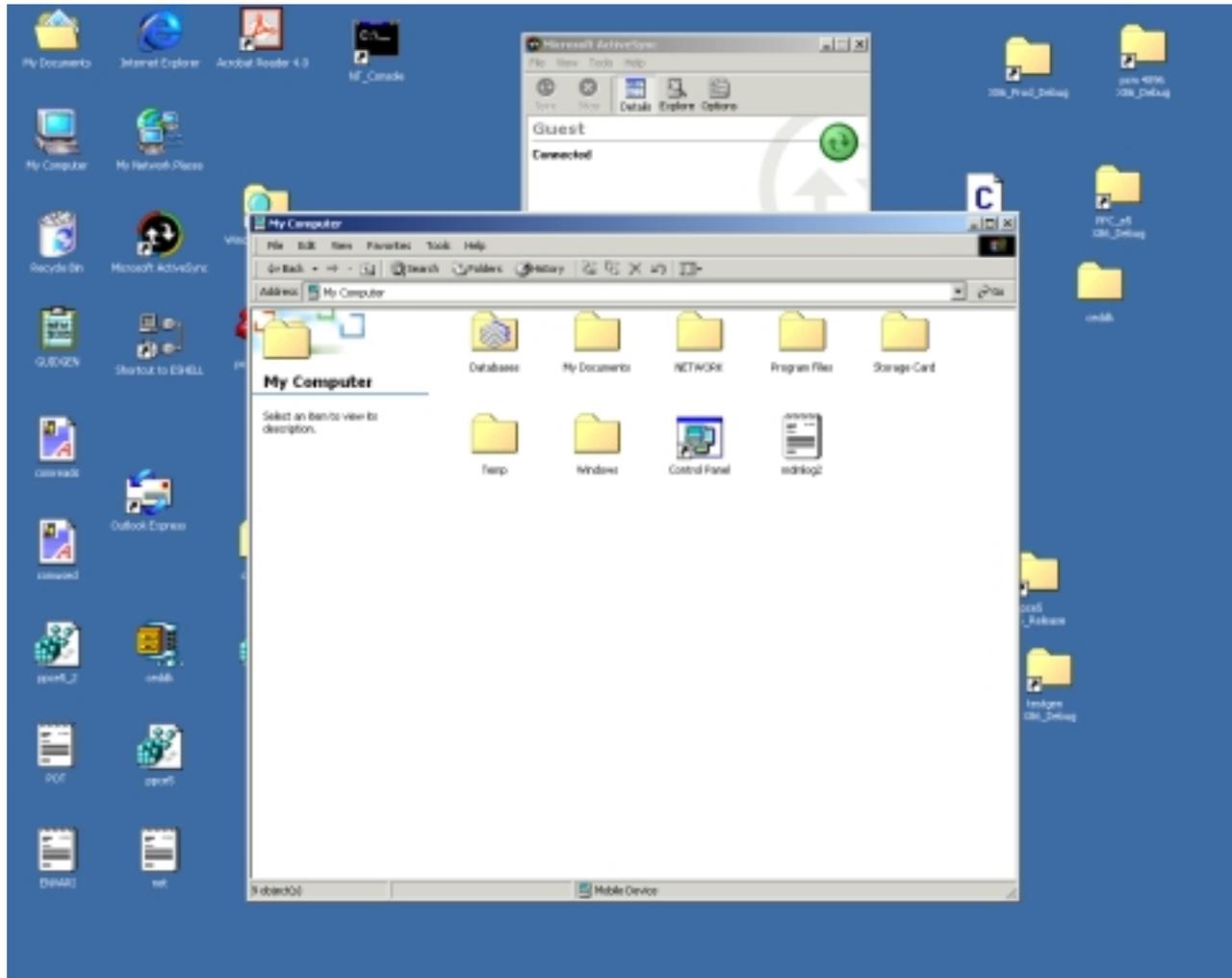
The Windows CE build for the PPC-E5 already has two connections made that will connect Com3 or Com4. These connections have a default baud rate of 19200. This can be changed to a higher baud rate by choosing properties and configure. These two connections are pre-configured and will connect via Active Sync. Before a connection can be made, the communication applet in the control panel must be set to allow a connection to the desktop and be set to the desired connection. This is pre-set to Com3. To initiate the connection Active Sync must be running on the desktop and searching for the device. Then by running the

application Replug.exe, which is located in the Windows directory. This Windows CE build also provides a shortcut to Replug.exe on the desktop. Replug.exe will try to establish a connection with the desktop computer. It is possible for this to fail as Active Sync tries to discover the baud rate. This may be avoided by selecting a slower baud rate in the Remote Networking applet.



Since Windows CE does not support Partnerships. Active Sync will require a selection of no to Partnerships. At this point you can explore the file structure of the remote device. This type of connection is supported via Embedded Tools (see figure on next page).





In addition to Active Sync, the PPC-E5 also supports the Ethernet Manual Server Connection. This connection provides a remote connection via Microsoft Embedded Tools.

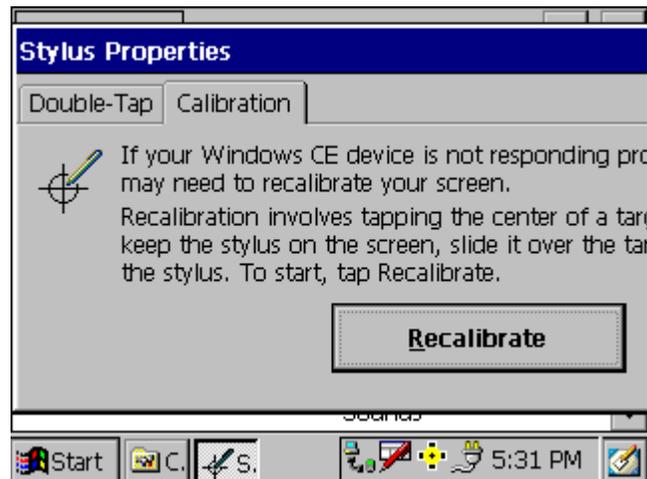
Touch Screen Calibration

A touch screen driver is standard with PPC-E5 Windows CE builds, in addition to a standard mouse driver. Typically the default settings in the registry will provide enough calibration to maneuver through the CE desktop and allow you to get to the Stylus calibration routine which is in the control panel. If for some reason the calibration is too far off, power down the system and connect a PS2 mouse, power it up and use it to start the Stylus calibration routine (of course, once it is started you must use the touchscreen instead of the mouse).

The touchscreen calibration icon is titled "Stylus".



Tapping this will start the calibration sequence which is shown in the following figures.



Carefully press and briefly hold
stylus on the center of the target.
Repeat as the target moves around the screen.



New calibration settings have been measured.
Tap the screen to accept the new settings, or
wait for 30 seconds to restore old settings.

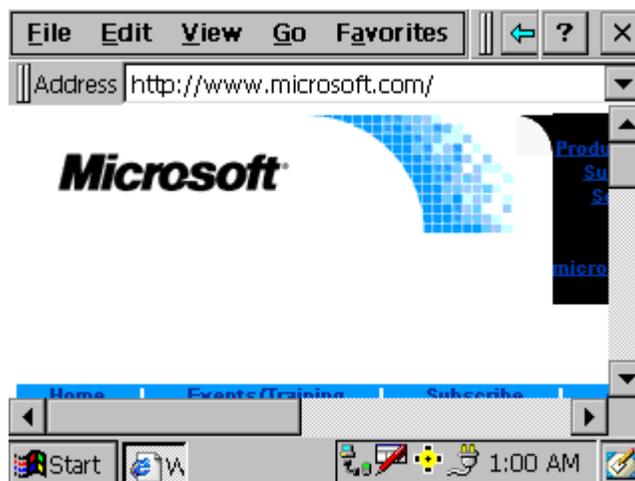
Time limit : 27 sec

This calibration will be written to the Registry. You must perform a Registry flush to store it in the Persistent Registry, otherwise it will be lost when the system reboots.

Pocket Word

This is not on any of our standard builds for PPC-E5 , but available with added licensing.

Pocket Explorer



The PPC-E5 Windows CE 3.0 build includes Pocket Explorer. This will allow an Internet Connection utilizing the SMC 10baseT Ethernet.

Windows CE Registry Settings for SMC 10baseT Ethernet

A static IP configuration can be accomplished by editing the following registry settings (the settings are auto-connect to DHCP server):

```
[HKEY_LOCAL_MACHINE\Comm\SMC91C9X]
    "DisplayName"="SMC91C9X Compatible Ethernet Driver"
    "Group"="NDIS"
    "ImagePath"="SMC91C9X.dll"

[HKEY_LOCAL_MACHINE\Comm\SMC91C9X\Linkage]
    "Route"=multi_sz:"SMC91C9X1"

[HKEY_LOCAL_MACHINE\Comm\SMC91C9X1]
    "DisplayName"="SMC91C9X Compatible Ethernet Driver"
    "Group"="NDIS"
    "ImagePath"="SMC91C9X.dll"

[HKEY_LOCAL_MACHINE\Comm\SMC91C9X1\Parms]
    "BusNumber"=dword:0
    ; Set the bus number for your type of interface: 1 for ISA, 5 for PCI, and
    8 for PCMCIA
    "BusType"=dword:1
    ; JP4 jumper settings deterring IRQ and I/O base address
    ;   Config   IRQ   I/O base   Jumpers present
    ;           0     5         300         ABC
    ;           1     9         320         AB
    ;           2     11        340         AC
```

```

;           3           7           360           C
"InterruptNumber"=dword:09
"IOBaseAddress"=dword:00320
"Transceiver"=dword:3
; CardType must be set to 1 for PCMCIA otherwise 0 for ISA and PCI
"CardType"=dword:0

[HKEY_LOCAL_MACHINE\Comm\SMC91C9X1\Parms\TcpIp]
; Enable 1 or Disable 0, DHCP services
"EnabledDHCP"=dword:1
; Set DNS and DefaultGateway Addresses as needed
;
; "DNS"="0.0.0.0"
; "DefaultGateway"="0.0.0.0"
; Use zero for broadcast address? (or 255.255.255.255)
"UseZeroBroadcast"=dword:0
; TCP/IP address. The IpAddress must be 0.0.0.0 if DHCP is enabled.
"IpAddress"="0.0.0.0"
; The subnet masks for the above IP addresses
"Subnetmask"="255.255.0.0"

[HKEY_LOCAL_MACHINE\Comm\TcPIP\Linkage]
; This is the list of lliP drivers to load
"Bind"=multi_sz:"ppp", "SMC91C9X1"

```